NOTICE AND AGENDA

ATTENTION

IN-PERSON AUDIENCES AT PLANNING & ZONING COMMISSION MEETINGS HAVE BEEN SUSPENDED UNTIL FURTHER NOTICE

The meetings will continue to be live streamed on the city's website (https://www.flagstaff.az.gov/1461/Streaming-City-Council-Meetings)

To participate in the meeting click the following link:
Join Microsoft Team Meeting

The public can submit comments that will be read at the dais by a staff member to CDPandZCommission@flagstaffaz.gov.

CITY OF FLAGSTAFF & COCONINO COUNTY JOINT PLANNING & ZONING COMMISSION MEETING
WEDNESDAY, APRIL 27, 2022

COUNCIL CHAMBERS
211 WEST ASPEN AVENUE
4:00 P.M.

1. Call to Order

2. Roll Call

NOTE: One or more Commission Members may be in attendance telephonically or by other technological means.

MARIE JONES, VICE CHAIR
BOB HARRIS III
DR. RICARDO GUTHRIE
CAROLE MANDINO
DR. ALEX MARTINEZ
MARY NORTON
LLOYD PAUL

3. Public Comment

At this time, any member of the public may address the Commission on any subject within their jurisdiction that is not scheduled before the Commission on that day. Due to Open Meeting Laws, the Commission cannot discuss or act on items presented during this portion of the agenda. To address the Commission on an item that is on the agenda, please wait for the Chair to call for Public Comment at the time the item is heard.

4. APPROVAL OF MINUTES

Approval of the minutes from the regular meeting on Wednesday, March 23, 2022.

5. PUBLIC HEARING

A. Restoration Soils PZ-21-00117-03

A minor *Flagstaff Regional Plan 2030* amendment request from Square Peg Development, on behalf of the property owner, Arizona State Land Department, to change the area type designation on Map 21 and 22 from Area in White to Existing Employment for approximately 24.75 acres located at 2661 N El Paso Road.

STAFF RECOMMENDED ACTION:

Staff recommends the Planning and Zoning Commission forward the minor *Flagstaff Regional Plan 2030* amendment to the City Council with a recommendation for approval in accordance with the findings.

B. **PZ-21-00117-01 Restoration Soils Zoning Map Amendment:**
Direct to Ordinance Zoning Map Amendment requested by Square Peg Development, on behalf of the property owner Arizona State Land Department, of approximately 7.29 acres located at 2661 N El Paso Road from the Highway Commercial (HC) zone with the Resource Protection Overlay (RPO) to the Heavy Industrial Open (HI-O) zone with the Resource Protection Overlay (RPO).

STAFF RECOMMENDED ACTION:

Staff believes that the proposed Zoning Map amendment is in substantial conformance with the required findings and recommends the Planning & Zoning Commission forward the request to the City Council with a recommendation approving an amendment to the Zoning Map for 7.29 acres from the Highway Commercial (HC) to the Heavy Industrial Open (HI-O) zone, subject to the following conditions:

1. All other requirements of the Zoning Code and other City codes, ordinances, and regulations shall be met by the proposed development.
2. In the event the property is rezoned, and the applicant fails to obtain final Civil Plan approval within two (2) years of the effective date of the rezoning ordinance, then the City may schedule a public hearing before the City Council for the purpose of causing the zoning on the Property to revert to the former classification of Highway Commercial (HC) in accordance with A.R.S. § 9-462.01.

C. **Case No. PZ-22-00045:** City's request for a Zoning Code Text Amendment to modify the notification requirements for Development Agreements.

STAFF RECOMMENDED ACTION:

Staff recommends the Planning and Zoning Commission, in accordance with the findings provided in the staff report, make a recommendation to the City Council for approval of the Zoning Code Text Amendment.

6. **GENERAL BUSINESS**

A. **Ghost Tree at Pine Canyon PZ-21-00155-03**
TLC PC Land Investors, LLC requests Preliminary Plat approval for Ghost Tree at Pine Canyon located at 3201 South Clubhouse Circle, a 12-unit single-family home subdivision on 7.87 acres in the Single-Family Residential (R1) Zone.

STAFF RECOMMENDED ACTION:

Staff recommends the Planning & Zoning Commission, in accordance with the findings presented in this report, forward the Preliminary Plat to the City Council with a recommendation of approval.

7. **OTHER BUSINESS**
Election of Chair and Vice-Chair, and volunteer to serve on the Open Space Commission. (The Open Space Commission meets on the 4th Monday of the month from 4-6.)

8. MISCELLANEOUS ITEMS TO/FROM COMMISSION MEMBERS

9. ADJOURNMENT

CERTIFICATE OF POSTING OF NOTICE

The undersigned hereby certifies that a copy of the foregoing notice was duly posted at Flagstaff City Hall on 4/22/22, at 2:00 p.m. This notice has been posted on the City's website and can be downloaded at www.flagstaff.az.gov.

Dated this _____ day of _____, 2022.

_____
Tammy Bishop, Administrative Specialist

Planning & Zoning Commission **5. A.**

Meeting Date: 04/27/2022

From: Tiffany Antol, Senior Planner

Information

TITLE:

Restoration Soils PZ-21-00117-03

A minor *Flagstaff Regional Plan 2030* amendment request from Square Peg Development, on behalf of the property owner, Arizona State Land Department, to change the area type designation on Map 21 and 22 from Area in White to Existing Employment for approximately 24.75 acres located at 2661 N El Paso Road.

STAFF RECOMMENDED ACTION:

Staff recommends the Planning and Zoning Commission forward the minor *Flagstaff Regional Plan 2030* amendment to the City Council with a recommendation for approval in accordance with the findings.

Attachments

Staff Report

Existing Future Growth Illustration

Proposed Regional Plan Amendment area

PLANNING AND DEVELOPMENT SERVICES REPORT
FLAGSTAFF REGIONAL PLAN 2030 AMENDMENT

PUBLIC HEARING
PZ-21-00117-03

DATE: **April 7, 2022**
MEETING DATE: **April 27, 2022**
REPORT BY: **Tiffany Antol, AICP**

REQUEST:

A minor *Flagstaff Regional Plan 2030* amendment request from Square Peg Development, on behalf of the property owner, Arizona State Land Department, to change the area type designation on Map 21 and 22 from Area in White to Existing Employment for approximately 24.75 acres located at 2661 N El Paso Road.

STAFF RECOMMENDATION:

Staff recommends the Planning and Zoning Commission forward the minor *Flagstaff Regional Plan 2030* amendment to the City Council with a recommendation for approval.

PRESENT LAND USE:

Undeveloped land in the Area in White area type category.

PROPOSED LAND USE:

Employment area type, which would support the use of the property as a Composting Facility.

NEIGHBORHOOD DEVELOPMENT:

North: Cemex facility, zoned Heavy Industrial Open (HI-O)
East: Vacant land and the Wildcat Wastewater Treatment Plant, zoned Public Facility (PF)
South: Vacant land owned by the Arizona State Land Department, zoned Highway Commercial (HC)
West: Vacant land owned by Arizona State Land Department, zoned Highway Commercial (HC)

REQUIRED FINDINGS:

The Planning and Zoning Commission shall find that the proposed *Flagstaff Regional Plan 2030* (the "Plan") amendment meets the requirements of the General Plan and Subdivision Code (City Code Title 11).

In considering the request for an amendment to the Plan, the goals and policies should be considered to ensure that the requested change to the Future Growth Illustration is in conformance with the overall vision. "The Flagstaff Regional Plan establishes the vision for the future growth and development of Flagstaff and its surrounding area through goals and policies" (p. III-4). "General plans are not static documents; they recognize growth as a dynamic process, which may require revisions to the plan as circumstances or changes warrant" (p. III-1).

STAFF REVIEW:

Introduction/Background Discussion

This request is the first of two related items on the Commission's agenda; the second request is a Zoning Map Amendment request for 7.29 acres from Highway Commercial (HC) to Heavy Industrial-Open (HI-O).

Square Peg Development, (the "Applicant") on behalf of the property owner, Arizona State Land Department, is requesting a minor *Flagstaff Regional Plan 2030* (FRP 2030) amendment to ensure conformance with a proposed Zoning Map Amendment to Heavy Industrial Open (HI-O) zoning. The Zoning Map Amendment includes a total of 7.29 acres. The proposed amendment to the FRP 2030 will affect approximately 24.75 acres of land depicted on the Future Growth Illustration (Maps 21 and 22). The proposed plan amendment is larger than the rezoning request in anticipation of potential future expansions of the subject use.

A Regional Plan Amendment is required for expanding or changing the boundaries of one area type to another area type. Any changes to the Plan not shown in the Major Plan Amendments Chart are considered minor plan amendments. Minor plan amendment analysis is focused on conformance with the goals and policies of the Regional Plan. Examples of minor plan amendments include identifying a new area type for an "Area in White" on Maps 21 and 22.

Flagstaff Regional Plan 2030 Amendment Request

As discussed in the "How This Plan Works" chapter (page III-4), the *Flagstaff Regional Plan 2030* is used in the regulatory decision-making process by the Planning & Zoning Commission, City Council, and City staff. The Commission and the Council are responsible for making development decisions such as zoning map amendments or specific plan amendments, which depends on whether the proposed changes or projects are consistent with the Plan's goals and policies. The Future Growth Illustration on Maps 21 and 22 (same map; one is regional scale and one city scale) and the text of the Plan will provide supplemental information for the interpretation of goals and policies. In case of any conflict between the Future Growth Illustration and the Plan's goals and policies, the goals and policies will prevail.

The Future Growth Illustration has two types of land use designations: "Area Types" describe the placemaking context of Urban, Suburban, Rural, or Employment and "Place Types" such as activity centers, corridors, and neighborhoods provide the framework for the density, intensities, and mix of uses within the area types. This application proposes to change the area type of "Areas in white retain their existing entitlements" but not the place type for this project. "Areas in white retain their existing entitlements" is used to describe areas that have not been assigned an area type. In most cases, these parcels are public lands held by the Forest Service, Arizona State Land Department, or City of Flagstaff. The Comprehensive Planning Manager has made the interpretation that the surrounding area types on Maps 21 and 22 should be considered for consistency. In cases where a parcel is adjacent to more than one area type, either could be extended to the property. In this case the subject property sits in between areas designated as Future Employment. With this request the existing "Area in White" will, if approved, be assigned the Employment area type.

Attached are exhibits comparing the existing Future Growth Illustration map to the proposed Future Growth Illustration map. These maps and any applicable text of the FRP 2030 should be considered in the context of the Plan's goals and policies. A discussion of the FRP 2030 goals and policies is provided below. There are no goals and policies that reference "Areas in white retain their existing entitlements."

APPLICABLE GENERAL PLAN GOALS AND POLICIES

Staff has identified the following Regional Plan Goals and Policies that could be applied to support the proposed minor Regional Plan Amendment. The list of goals and policies are followed by an analysis.

Environmental Planning & Conservation

Goal E&C.1. Proactively improve and maintain the region's air quality.

Policy E&C.1.4. Maintain air quality through pursuit of non-polluting industry and commercial enterprises.

Policy E&C. 1.5. See feasible alternative to reduce the smoke produced through prescribed burns and slash piles while continuing efforts to return fire to its natural role in the ecosystem.

Goal E&C.2. Reduce greenhouse gas emissions.

Policy E&C.2.2. Promote investments that strengthen climate resiliency.

Goal E&C.3. Strengthen community and natural environment resiliency through climate adaptation efforts.

Policy E&C.3.3. Invest in forest health and watershed protection measures.

Growth Areas & Land Use

Goal LU.16. Establish heavy industrial areas that provide for the manufacturing of goods, flexible space, and intermodal facilities that are well maintained, attractive and compatible with adjoining nonindustrial uses.

Policy LU.16.1. Encourage the continued intensification, expansion, and protection of existing industrial, warehousing, and distribution uses from encroachment where appropriate.

Policy LU.16.2 Ensure new industrial areas are compatible with surrounding uses.

Policy LU.16.3. Locate new industrial areas near the rail line, major highways or the interstate, and ensure they are designed to be compatible with surrounding uses and gateway features.

Policy LU.16.4. Limit the impacts of truck traffic on residential areas.

Policy LU.16.5. Consider all health impacts on the community in the design of new industrial uses, such as wastewater treatment, traffic safety, noise, and other impacts.

Economic Development

Goal ED.3. Regional economic development partners support the start-up, retention, and expansion of existing business enterprises.

Policy ED.3.8. Protect existing business and industrial lands uses from encroachment and allow for their expansion.

Policy Analysis

Since the adoption of the Plan there have been eleven minor amendments. These amendments have primarily focused on increasing the Park/Open Space area type. There have been no amendments to date increasing the Employment area type. There has been one amendment converting approximately 36.5 acres of Employment to the Park/Open Space area type (McMillan Mesa Natural Area). This proposed amendment would add back approximately 24.75 acres of Employment area type, which is one of the most protected area types identified in the Plan. Similarly, approximately 119 acres of land have been rezoned from industrial zones to other zoning categories since 2014. This request will support an additional 7.29 acres of industrial land in the rarest zoning category Heavy Industrial.

The proposed amendment is supported by several goals and policies within the Plan. The subject use is also supported by several goals and policies. The City is currently deficient in areas zoned Heavy Industrial or Heavy Industrial-0pen which limits the types of operation proposed. The proposed location is an ideal candidate for this amendment. The goals and policies listed above support the location of this use because it is in an area that has nearby industrial uses on a road that is designated a truck route and that has limited residential access. Its proximity to the railroad and interstate makes it compatible in terms of noise and other impacts that are typical for the area. These conditions support the finding of conformance with the Regional Plan.

PUBLIC FACILITIES AND SERVICE IMPACT ANALYSIS: No system impact analysis is required with this application.

Public Input

Public hearings before the Planning and Zoning Commission and City Council are conducted in conjunction with the Regional Plan and Zoning Map Amendment requests. In accordance with Arizona Revised Statute and Section 10-20.30.080 (p. 20.30-9) of the Zoning Code, notice of the public hearings were provided by placing an ad in the Arizona

Daily Sun, posting notices on the property, and mailing a notice to all property owners within 300 feet of the property.

The applicant held a neighborhood meeting on April 7, 2022, at 6:00 pm via Zoom. No one from the public attended the meeting. As of the writing of this report, staff has not received any comments regarding this application.

RECOMMENDATION:

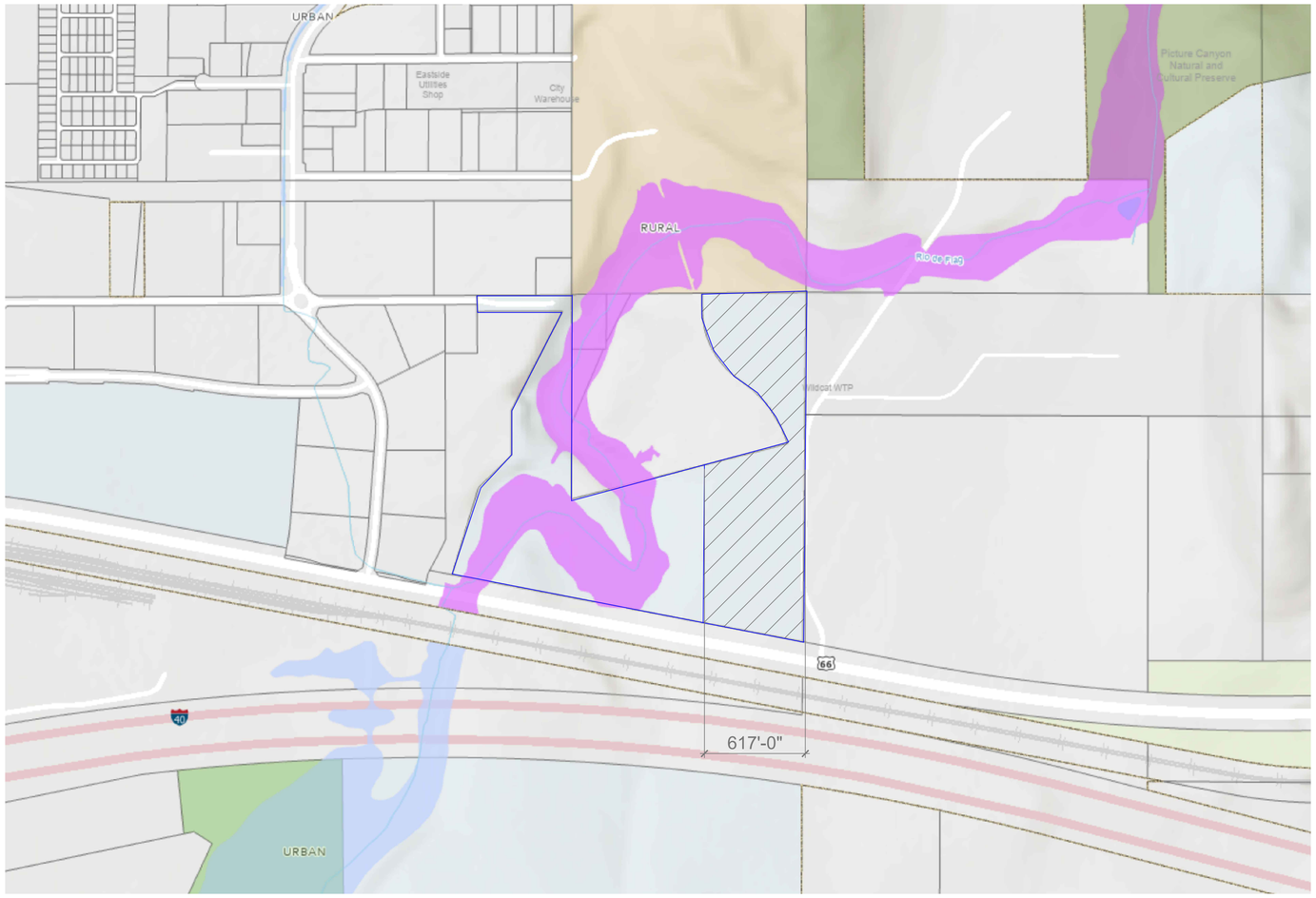
Staff believes that the proposed amendment to the Regional Plan is supportable under the guidelines of the *Flagstaff Regional Plan 2030 and* would recommend approval of the proposed amendment.

Attachments:

- Future Growth Illustration – Existing
- Future Growth Illustration – Proposed
- Proposed Regional Plan Amendment Area

Existing Flagstaff Regional Plan 2030

Future Growth Illustration



1 Area of Minor Plan Amendment
1=5000

Description: Area of Minor Plan Amendment

All of that area within 617 feet of the eastern property boundary of that parcel known as ASLD Parcel:M&B IN NE N2S2NW S2S2N2NW.

This includes the area that is part of the approved Site Plan Application for Restoration Soils, as well as the remaining areas to the north and south. It does not include the area to the west, where the Rio de Flag floodplain is located.

General Notes

No.	Revision/Issue	Date

Firm Name and Address
Restoration Soils
c/o David Hayward
3325 N Antler Xing
Flagstaff, AZ 86001
510-331-3380,
david@squarepegaz.com

Project Name and Address
Restoration Soils Facility
ASLD Parcel:
M&B IN NE N2S2NW S2S2N2NW

Project	Sheet
Date 3-21-2022	1
Scale	

Planning & Zoning Commission **5. B.**

Meeting Date: 04/27/2022

From: Tiffany Antol, Senior Planner

Information

TITLE:

PZ-21-00117-01 Restoration Soils Zoning Map Amendment:

Direct to Ordinance Zoning Map Amendment requested by Square Peg Development, on behalf of the property owner Arizona State Land Department, of approximately 7.29 acres located at 2661 N El Paso Road from the Highway Commercial (HC) zone with the Resource Protection Overlay (RPO) to the Heavy Industrial Open (HI-O) zone with the Resource Protection Overlay (RPO).

STAFF RECOMMENDED ACTION:

Staff believes that the proposed Zoning Map amendment is in substantial conformance with the required findings and recommends the Planning & Zoning Commission forward the request to the City Council with a recommendation approving an amendment to the Zoning Map for 7.29 acres from the Highway Commercial (HC) to the Heavy Industrial Open (HI-O) zone, subject to the following conditions:

1. All other requirements of the Zoning Code and other City codes, ordinances, and regulations shall be met by the proposed development.
2. In the event the property is rezoned, and the applicant fails to obtain final Civil Plan approval within two (2) years of the effective date of the rezoning ordinance, then the City may schedule a public hearing before the City Council for the purpose of causing the zoning on the Property to revert to the former classification of Highway Commercial (HC) in accordance with A.R.S. § 9-462.01.

Attachments

Authorization Letter
Application
Staff Report
Narrative and Regional Plan Analysis
Site Plan
Preliminary Drainage Letter
Neighborhood Meeting Plan

Douglas A. Ducey
Governor

Lisa A. Atkins
Commissioner

Arizona State Land Department

1616 West Adams, Phoenix, AZ 85007
(602) 542-4631

July 19, 2021

David Hayward
Square Peg Development, LLC
3325 North Antler Crossing
Flagstaff, AZ 86001

RE: State Trust Land located in T21N, R8E, Section 8 in the City of Flagstaff
Special Land Use Permit (SLUP) KE#23-122210-030-100
Rezoning from Highway Commercial to Heavy Industrial to Establish a Mulch, Compost and Soil Amendment Processing Yard

Dear Mr. Hayward:

The Arizona State Land Department ("ASLD") has received your request for permission to act as authorized agent for ASLD to apply to the City of Flagstaff (the "Jurisdiction") for a rezoning application (the "Entitlements") to establish a mulch, compost and soil amendment processing yard on State Trust land, as described in the materials provided to ASLD dated June 10, 2021, attached hereto as Exhibit A.

Square Peg Development, LLC, its employees, representatives, agents, and/or consultants (hereinafter "Applicant") therefore, has permission to file for the Entitlements as required by the Jurisdiction.

Please be advised the following conditions and understandings accompany this approval:

1. Applicant shall pay all costs associated with the Entitlements and shall not be reimbursed by ASLD or by any subsequent purchaser at auction.

2. Applicant, their employees, representatives, agents, and/or consultants shall be permitted to act as ASLD's agents to procure the Entitlements and any related permits or approvals which may be required (the "Entitlement Process"), subject to final review and approval by ASLD.

3. Applicant shall diligently pursue the satisfaction of all Entitlements. Further, it shall respond to all inquiries by ASLD as to the status of the Entitlement Process and provide regular updates without formal request.

4. Prior to beginning the Entitlement Process, the Applicant shall provide ASLD with an outline of the proposal and a timeline for the process which identifies key dates with the Jurisdiction or other jurisdictional agency staff and project hearing dates with any agency or jurisdiction. All

documentation, including, but not limited to: land use plans, engineering drawings, application materials and development agreements, shall be submitted to ASLD for approval prior to the date the documentation is filed with the approving jurisdiction. A copy of the application shall be submitted to ASLD on the same day it is filed with the Jurisdiction or other jurisdictional agency.

5. ASLD staff shall be invited, but not required to attend, all meetings with the various agencies, elected officials, and the Jurisdiction as the Entitlements are processed through relevant hearings. A minimum of five (5) business days' notice shall be provided to Department staff in advance of any meeting.

6. Applicant shall submit to ASLD all staff reports and draft stipulations that will be considered by the Jurisdiction on the day they are received by the Applicant, and at least ten (10) business days before each public meeting or hearing, if possible.

7. The Jurisdiction is authorized to enter and inspect the subject property.

8. This authorization may be revoked at any time without notice and in no way creates an obligation on the part of ASLD of any kind.

All information will be provided to Van Robinson, ASLD Real Estate Division with a copy Jon Froke, AICP, ASLD Planning & Engineering Division.

ASLD appreciates your consideration in this matter and looks forward to working with you through this process. If you have any questions, please contact Van Robinson at (602) 542-3127 or vrobinson@azland.gov or Jon Froke at (602) 542-3126 or jfroke@azland.gov.

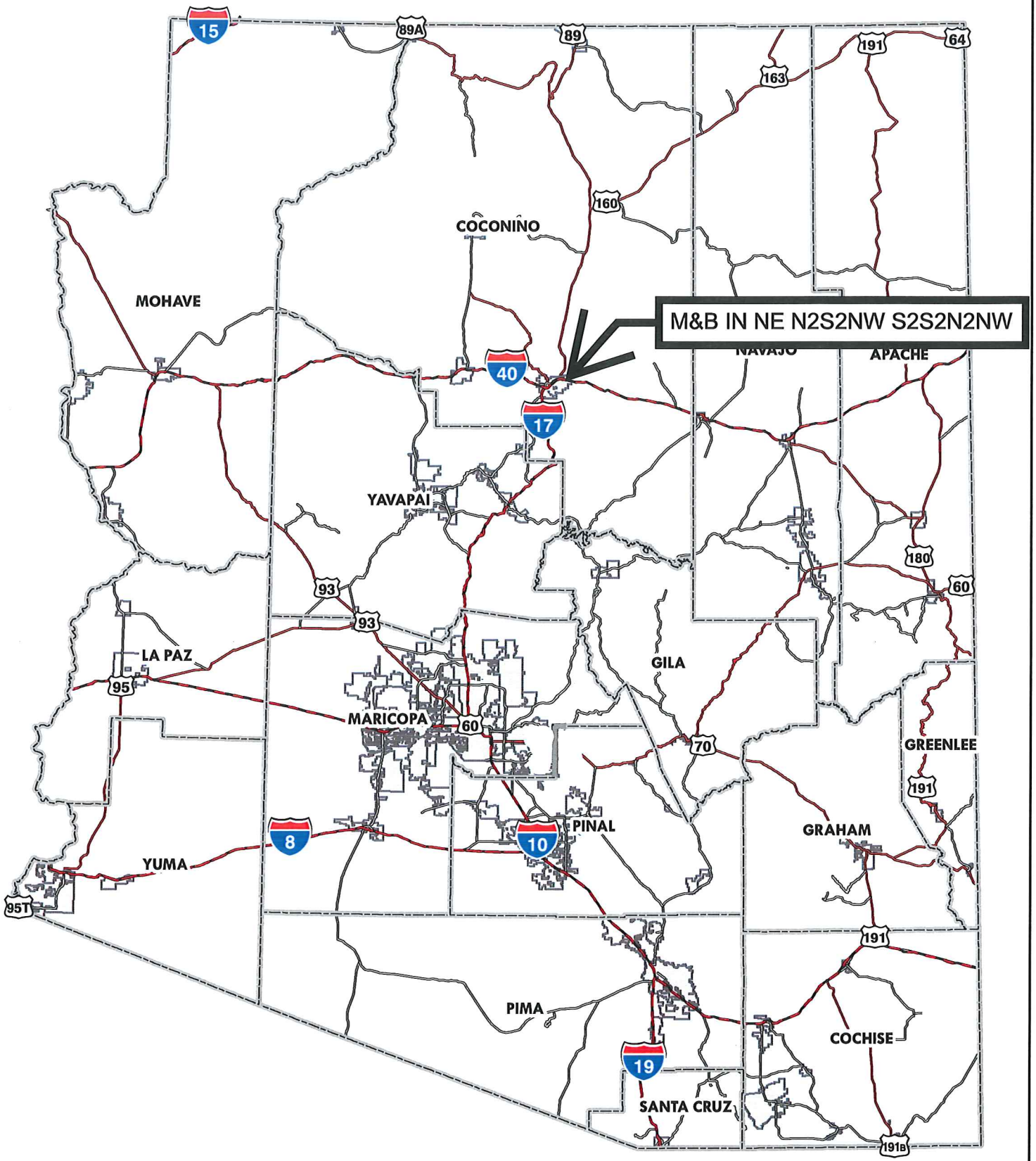
Sincerely,

Mark Edelman, AICP
Director
Planning & Engineering Division

cc: Van Robinson, ASLD Real Estate Division
Jon Froke, AICP, ASLD Planning & Engineering Division

EXHIBIT A

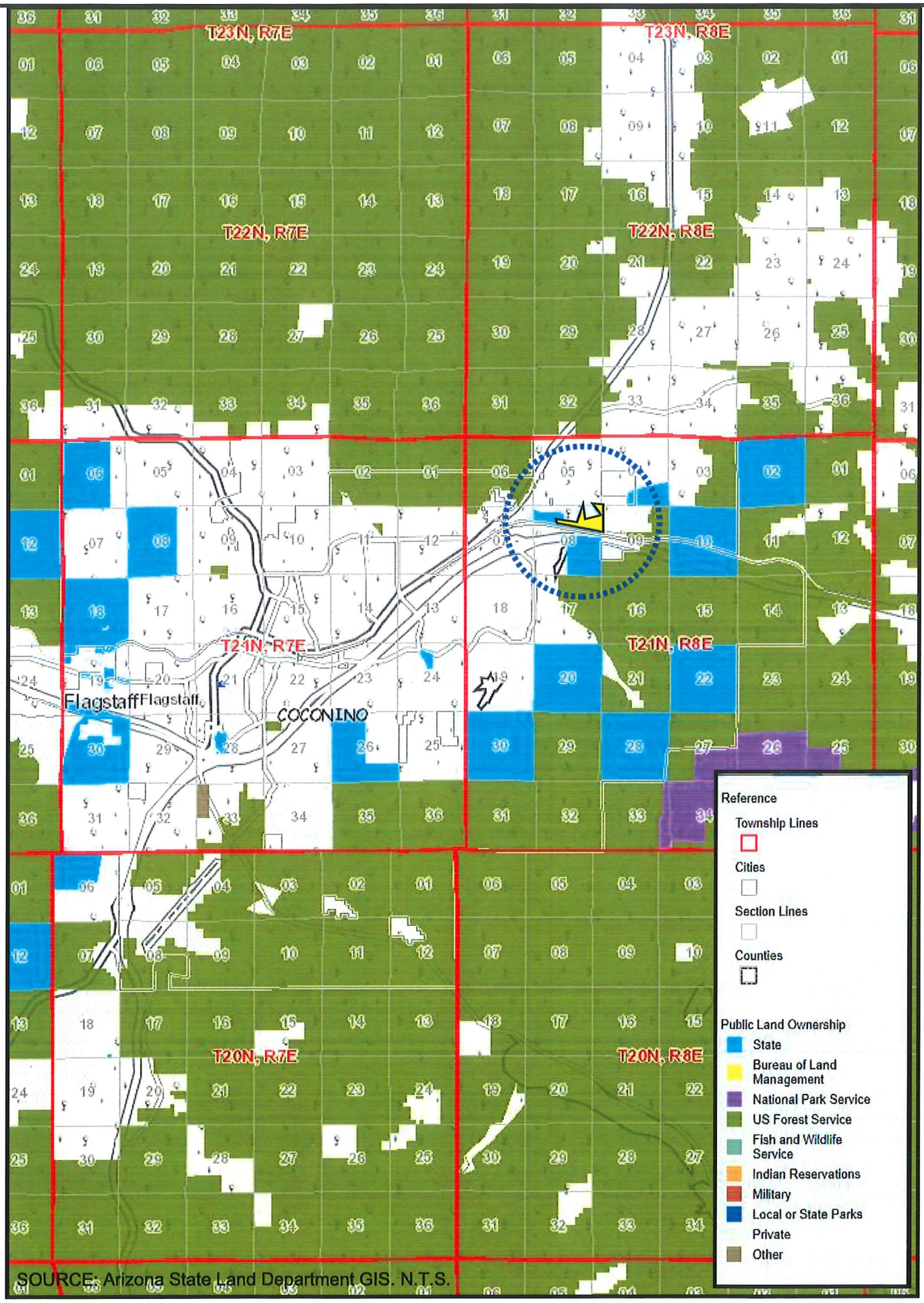
SLUP Application - 23-122210-03-100 STATE LEVEL



SOURCE: Arizona State Land Department. N.T.S.

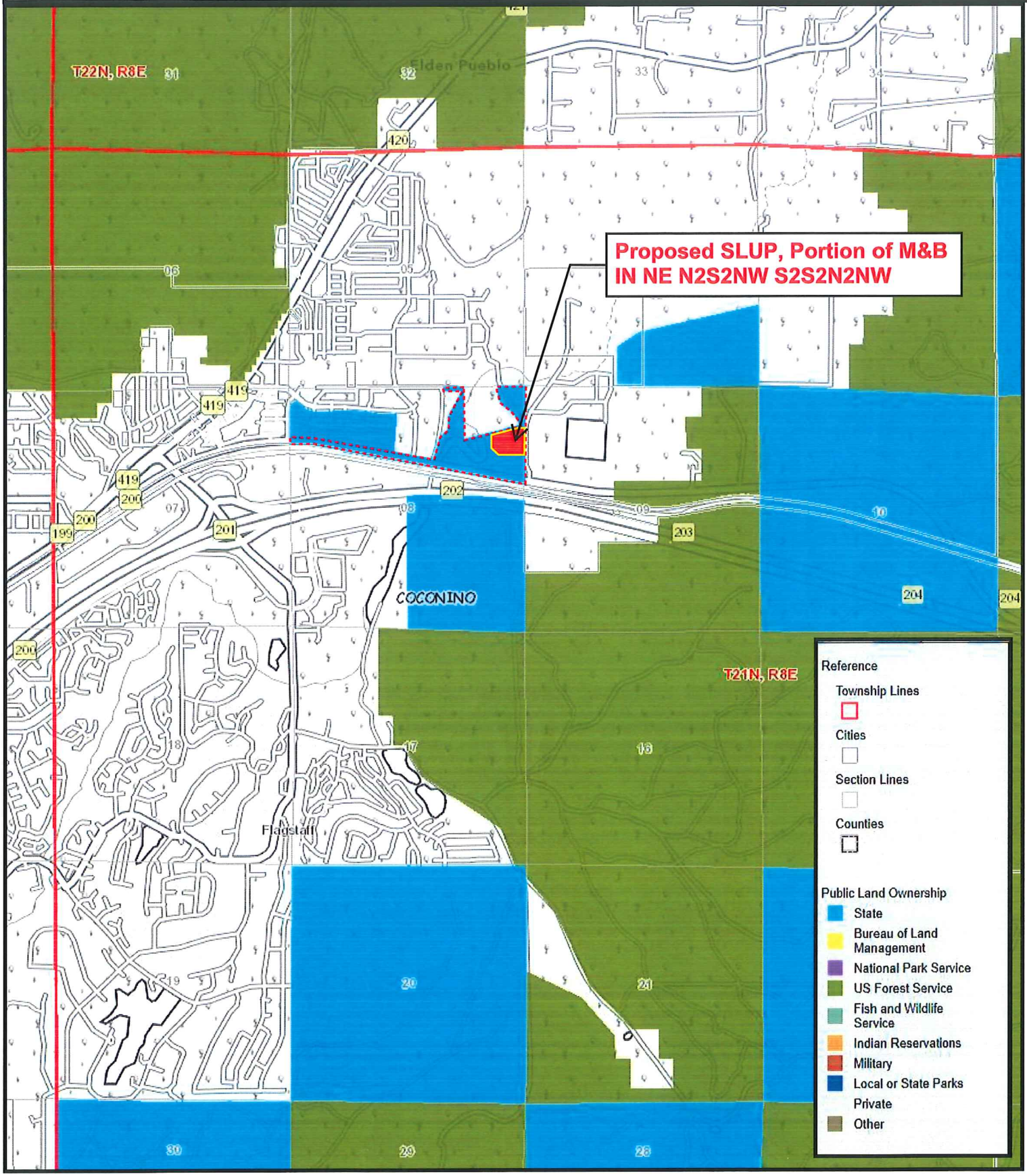
Datum & Projection:
North American Datum 1983 HARN
UTM Zone 12 North - Meters

SLUP Application - 23-122210-03-100 REGIONAL LEVEL



SOURCE: Arizona State Land Department GIS. N.T.S.

SLUP Application - 23-122210-03-100 SECTION LEVEL



SOURCE: Arizona State Land Department GIS. N.T.S.

City of Flagstaff

Community Development Division

211 W. Aspen Ave
Flagstaff, AZ 86001
www.flagstaff.az.gov

P: (928) 213-2618
F: (928) 213-2609

Date Received	**Application for Concept Zoning Map Amendment**	File Number

Project Name Restoration Soils Yard			
Site Address M&B IN NE N2S2NW S2S2N2NW	**Parcel Number(s)** NA	**Subdivision& Lot Number** NA	**Site Acreage** 8.95
Existing Zoning District HC	**Proposed Zoning District** HI-O	**Existing Regional Plan Area and Place Type** Area in White	
Existing Use Vacant Disturbed Land	**Proposed Use** Mulch and Compost Facility		
Property Information:	☐ Yes ☒ No Located in an existing Local/National Historic District? (Name:_____) ☐ Yes ☒ No Existing structures are over 50 years old at the time of application? ☒ Yes ☐ No Subject property is undeveloped land?		
Type of Zoning Map Amendment (Small, Medium, Large or Multi-Phase) Small			

Property Owner(s) Arizona State Land Department c/o Van Robinson	**Phone** 602-542-3127
Mailing Address 1616 West Adams, Phoenix, AZ 85007 **City, State, Zip**	**E-mail** vrobinson@azland.gov
Applicant(s) Square Peg Development c/o David Hayward	**Phone** 510-331-3380
Mailing Address 3325 N Antler Xing, Flagstaff, AZ 86001 **City, State, Zip**	**E-mail** david@squarepegaz.com
Project Representative(s) NA	**Phone**
Mailing Address **City, State, Zip**	**E-mail**

Property Owner Signature (required) See attached ASLD Letter	**Date**	**Applicant Signature**	**Date** 7-20-21

For City Use

Date Filed:	**File Number(s):**	
P & Z Hearing Date:	**Publication and Posting Date:**	
Council Hearing Date:	**Publication and Posting Date:**	
Fee Receipt Number:	**Amount:**	**Date:**

Action by Planning and Zoning Commission:	**Action by City Council:**
☐ **Approved**	☐ **Approved**
☐ **Denied**	☐ **Denied**
☐ **Continued**	☐ **Continued**

Staff Assignments	**Planning**	**Engineering**	**Fire**	**PW/Water Services**	**Stormwater**

Application for Concept Zoning Map Amendment

The information included below is intended to help an applicant complete the necessary forms and provide the required information in support of an application for a Concept Zoning Map Amendment (i.e., rezoning) as established in Zoning Code Division 10-20.50 (Amendments to the Zoning Code Text and the Zoning Map).

Concept Zoning Plan

Using a **Concept Zoning Plan** as the basis for the application (Authorization to "Rezone" with a Concept Zoning Plan), an application for Zoning Map Amendment will be processed before an application for Site Plan or Preliminary Plat Review is considered.

Prior to the acceptance of a Concept Zoning Map Amendment application, an **Impact Analysis Scoping Meeting** is required (see attached application). This meeting requires the applicant to submit a **Concept Plan with Proposed Uses, Vicinity Maps, Context Map**, **Concept Phasing Map**, **and Housing Types Table** (if applicable) as well as a **Proposed Circulation Map.** This will include square footage of nonresidential uses as well as number of dwelling units. The impact analysis will need to evaluate all proposed uses to determine the direct impacts created by the development.

General Processing Information for all Applications

1. Application(s) shall be made on the forms provided by the City which shall bear the signature of the owner of the property affected. If the applicant is other than the owner, the applicant shall also sign the application. The application shall include all information and materials specified in the checklist along with the required fee.
2. All applications shall be reviewed by staff to determine the completeness of the application prior to it being scheduled for a public hearing before the Planning and Zoning Commission or City Council. Prior to the first hearing with the Planning and Zoning Commission, the Planning Development Manager will notify the applicant of the required number of copies of the completed application to submit for the public hearing review.
3. The Planning Director may request any additional information that is relevant to assist in the review of the rezoning request (Zoning Code Section 10-20.50.040.C.3). The Planning Director may also waive the requirements for any of the information required in Zoning Code Section 10-20.50.040.C if it is determined that such information is not necessary in order to complete a review of the requested Zoning Map Amendment.
4. The applicant shall schedule and conduct neighborhood meetings in compliance with Zoning Code Section 10.20.30.060.
5. Each request for rezoning shall be advertised in a local newspaper, have notices sent to surrounding property owners, and have the notice posted on the property at least 15 calendar days prior to the first public hearing.
6. A minimum of 30 calendar days is required to process an application for a Planning and Zoning Commission public hearing. The Planning and Zoning Commission meets on the second and fourth Wednesday of each month.
7. The requested rezoning will be scheduled for a public hearing by the City Council a minimum of 21 calendar days or more after action by the Commission.

Findings for Granting a Zoning Map Amendment

An amendment to the Zoning Map may be approved only if all the following findings are made, as applicable to the type of amendment proposed:

1) The proposed amendment is consistent with and conforms to the goals of the General Plan and any applicable specific plans;
2) The proposed amendment will not be detrimental to the public interest, health, safety, convenience, or welfare of the City, and will add to the public good as described in the General Plan; and
3) The affected site is physically suitable in terms of design, location, shape, size, operating characteristics, and the provision of public and emergency vehicle (e.g., fire and medical) access and public services and utilities (e.g., fire protection, police protection, potable water, schools, solid waste collection and disposal, storm drainage, wastewater collection, treatment, and disposal) to ensure that the requested zone designation and the proposed or anticipated uses and/or development will not endanger, jeopardize, or otherwise constitute a hazard to the property or improvements in the vicinity in which the property is located.

Applications for Concept Zoning Map Amendments will not be accepted or scheduled for public hearing until all submission requirements are met. Neither the application nor accompanying development plans can be amended or modified once an application has been scheduled for public hearing.

The submittals required for applications for Zoning Map Amendments vary based on the size of the development and whether an amendment to the General Plan is required, as set forth below:

1. **Small-Scale Zoning Map Amendments**. These are applications for Zoning Map Amendments for which no infrastructure analyses are required by the *City of Flagstaff Engineering Standards* and are determined by the Planning Director to be consistent with the General Plan and to be compatible with surrounding development. These applications typically include developments on small lots or parcels (a duplex, for example). For such applications, the requirements for a site analysis and Concept Zoning Plan may be waived if they are not warranted in the opinion of the Planning Director.

2. **Medium-Scale Zoning Map Amendments.** These are applications for Zoning Map Amendments for developments that fall below the thresholds for large-scale Zoning Map Amendments and that meet the following thresholds:
    a. Require a minor amendment to the General Plan; and/or
    b. Require infrastructure analyses in accordance with the *City of Flagstaff Engineering Standards*.

    Such applications must meet the minimum submittal requirements for a Concept Zoning Plan (see Part II – Concept Zoning Plan checklists on page 5 of this application), in addition to a development agreement that defines applicant/City obligations, if needed.

3. **Large-Scale Zoning Map Amendments.** These are applications for Zoning Map Amendments that meet the following thresholds:
    a. Residential developments over 100 units; all commercial developments over 50,000 square feet or 15 acres; all industrial and research and development uses over 150,000 square feet or 20 acres; or
    b. Require a major amendment to the General Plan.

    For such applications, the minimum submittal requirements for a Concept Zoning Plan are required, as well as infrastructure analyses as required by the *City of Flagstaff Engineering Standards*. Additional requirements for citizen outreach may also be required depending on the size of the proposed development. In addition, a development agreement that defines applicant/City obligations is required to be submitted.

4. **Multi-Phase Scale Zoning Map Amendments.** These are applications for Zoning Map amendments for very large projects that meet the following thresholds:
    a. Are complex in terms of their associated development issues; involve the future subdivision of land and the potential for multiple land developers; include multiple land use types; include multiple zone designations; involve complex utility infrastructure issues; and will require the design and layout of an internal street network to connect to existing streets; or
    b. Require a major amendment to the General Plan.

    For such applications, the minimum submittal requirements for a Concept Zoning Plan are required, in addition to the requirements for an Enhanced Concept Zoning Plan in Section II.6 of the Concept Zoning Map Amendment checklist on page 6 of this application.

Public Record

All information submitted in conjunction with this application will become part of the public record and may be provided to members of the public. You must notify the City prior to submitting this application if you believe the information you are submitting may be proprietary or confidential.

CITY OF FLAGSTAFF	**Concept Zoning Map Amendment** Concept Zoning Plan Development Application Checklist

Minimal Submittal Requirements:
As part of the Impact Analysis Scoping Meeting (if required), the Planning Development Manager assigned to your project will identify those items from this Application Checklist that will be required for Concept Zoning Map Amendment application submittal. An application that does not include all required items will be returned for corrections. If you have any questions regarding the information above or items indicated on this checklist, please contact your Planning Development Manager at the contact information listed on Page 8 of this application.

PART I – GENERAL REQUIREMENTS

Staff Use Only		**Description of Documents Required for Complete Application.** No application shall be accepted without all items marked below.
Req	Sub	
☒	☐	**I.1 Zoning Map Amendment Development Checklist** (this list) completed and signed by a Planning Development Manager.
☒	☐	**I.2 Application Fee** □ Small Scale □ Medium Scale □ Large Scale □ Multi-Phase scale □ Low Density Residential Base fee $_____ + (Per acre fee $_____ x Number of acres _____) = ***TOTAL:** **$**_____ ***Please note, this fee calculation is good for six months from the date listed on Page 8 of this application. If submittal is to occur after expiration of this calculation, please contact the Planning Development Manager listed on Page 8 of this checklist for an updated fee.**
☒	☐	**I.3 Completed Application for Concept Zoning Map Amendment Review** – 1 copy The application must be signed by the applicant and the current property owner of record. If the property owner is unavailable to sign the application, a Letter of Authorization must be submitted.
☒	☐	**I.4 – Electronic Submittal** An electronic copy of all submitted information (.pdf or .tif format) with individual files labeled by checklist heading type (i.e., II.1 Cover Sheet; II.2 Vicinity Map).
☒	☐	**I.5 Legal Description** –1 copy A correct and approved legal description (metes and bounds) and map of the subject property is required. Please note that legal descriptions must have been approved by the City before the requested amendment and ordinance will be considered by the City Council. The legal description must be: • Submitted on acid free paper. • Submitted in an electronic (.pdf) format.
☒	☐	**I.6 Title Report – No older than 30 days from the submittal date** – 1 copy Include complete Schedule A and Schedule B.
☒	☐	**I.7 Neighborhood Meeting(s) Plan**– 1 copy A plan for how the applicant intends to conduct the neighborhood meeting(s) in compliance with Zoning Code Sections 10-20.30.060 and 10-20.30.070. This plan shall include the following information: • Property owners, citizens, jurisdictions, and public agencies within 300 feet of the development site or that may be affected by the application, Homeowners Associations and Neighborhood Associations within 1,000 feet of the subject property, and the Registry of Interested persons or groups. The Planning Director may expand the required notification area based on the location and context of the subject property. • Proposed notification methods (e.g., mail, e-mail, newspaper, or posting of the subject property with a 4 foot by 4 foot sign 10 days prior to the meeting) for persons and organizations identified above. • Form, structure, and agenda of the meeting (e.g., town meeting, workshop, charrette, or other appropriate public outreach technique). • Opportunities for those particularly affected parties to discuss and provide input on the applicant's proposal. • Location, date, and time of the neighborhood meeting. • Methods to keep the Planning Director informed of the status and results of the neighborhood meeting.
☒	☐	**I.8 Notice of Public Hearings**– 1 copy (Public Hearing notice format is attached to this application) Neighborhood notifications must conform to all requirements of Zoning Code Section 10-20.30.080 and include: • A list of all property owners and addresses (the Planning Director may expand this notification area) of the subject property, as well as potentially affected citizens identified in the Citizen Participation Plan. • Affidavits of notice mailing and sign posting (see attached).

☒	☐	**I.9 Neighborhood Meeting Record of Proceedings** – 1 copy The applicant shall create a written summary of the meetings which shall be submitted prior to the application being deemed complete and include: • Certification that the meeting was noticed and conducted in compliance with Zoning Code Section 10-20.30.060. • Details of techniques used to involve the public, including: o Dates and locations of neighborhood meetings; o Copies of letters, notices, newsletters, and other correspondence, including dates and numbers of mailings or deliveries; o A copy of the mailing list and a summary of where residents, property owners, and potentially affected citizens receiving notices, newsletters, or other written materials were located; o The number and names of people that participated in the process based on the sign-in sheet for the meeting; and o A dated photograph of the sign installed in compliance with Zoning Code Section 10-20.30.060.D.6. • A summary of concerns, issues, and problems expressed during the neighborhood meeting, including: o The substance of the concerns, issues, and problems; and o The applicant's response to the comments received at the public meeting. • The applicant shall also send a copy of the written summary to all the people who recorded their names on the sign-in sheet for the meeting within two weeks of the meeting.
☐	☐	**I.10 Development Agreement Application and Fee**
☐	☐	**I.11 Owner Certification Acknowledging Receipt of Notice of Right to Appeal Exactions and Dedications**
☒	☐	**I.12 Electronic Submittal** – 1 copy An electronic copy of all submitted information (.pdf format).

PART II – CONCEPT ZONING PLAN

Staff Use Only		
Req	Sub	**Description of Documents Required for Complete Application.** No application shall be accepted without all items marked below. All plans shall be plotted at an appropriate scale for ease of reading and reproduction. Please note the Concept Zoning Plan does not need to be based on accurate survey data. The City's GIS topographic and other data, as well as the City's aerial photographs, are appropriate for use as the base layer for the Concept Zoning Plan.
☒	☐	**II.1 Cover Sheet** – 1 copy (minimum 8.5" x 11") The cover sheet of the Concept Zoning Plan shall include the following: **Administrative Data:** • Property owner's name, address, and phone number. • Developer's name, address, and phone number. • Preparer's name, address, and phone number. • The name, address, and phone number of all consultants assisting with the application. • Date of plan preparation. **Property Data:** • Site address. • Assessor's parcel number. • Site area (acres). • Existing zoning classification(s). • Proposed zoning classification(s). **Project Data:** • Development name. • Residential – General computation of proposed number of dwelling units, units per acre, and building types. • Commercial – General computation of proposed non-residential (commercial/industrial) square footage, Floor Area Ratio (FAR), and building types. • Mixed-Use – Include the requirements for both Residential and Commercial projects listed above. • Open Space – General description of proposed open space type(s).
☒	☐	**II.2 Vicinity Map** – 1 copy (minimum 8.5" x 11") (see examples on pages 9-10 of this application for more information) The vicinity map, which may be divided into separate sheets, shall include the following: • The location of the subject property within the city relative to interstate highways, major arterials, and collectors. • Surrounding parcels and streets within 300 feet from the subject property. • An aerial photograph with the subject property highlighted with street names.

☒	☐	**II.3 Context Analysis Map** – 1 copy (minimum 11" x 17") The context analysis map shall be drawn on an aerial photograph and shall identify the following within 300 feet of the subject property (see examples on page 11 of this application): • Subject property boundaries. • Existing zoning. • Existing uses. • Street names. • Contour lines (minimum 2-foot intervals). • Other natural features (i.e., flood plains, floodways, and general locations of slopes and forest resources).
☒	☐	**II.4 Site Analysis Map** – 1 copy (minimum 11" x 17") In accordance with Section 10-30.60.030 of the Zoning Code, the site analysis map shall be drawn on an aerial photograph and shall identify the following: • Topography of the site – Areas with the following slopes: 0 to 16.99%, 17 to 24.99%, 25 to 34.99%, 35% and steeper. • Solar orientation or aspect – The ability of development to take advantage of the sun's energy. • Existing or native vegetation types and relative quality. • View corridors – Analysis to determine view corridors to and from the subject property. • Climatic considerations – Understanding of prevailing wind and precipitation patterns and frequency. • Subsurface conditions – Soil and foundation conditions. • Drainage swales and stream corridors – Locations identified to minimize disturbance. • Built environment and land use context: ▪ Subject property boundaries and adjoining land uses. ▪ Location of adjacent roadways, driveways, off-street vehicular connections, pedestrian ways, access points, and easements. ▪ Existing structures and other built improvements including residential building footprints constructed before 1946 and commercial building footprints that are over 50 years old at the time of application. ▪ Prehistoric and historic sites, structures, and routes.
☒	☐	**II.5 Concept Zoning Plan** – 1 copy (minimum 11" x 17") The Concept Zoning Plan shall be drawn on an aerial photograph and shall include the following: ▪ Scale and north arrow. ▪ Legend. ▪ Date prepared. ▪ Subject property boundary. ▪ Contour lines (minimum 2-foot intervals). ▪ List of all uses proposed on the subject property. ▪ List of all uses that will not be permitted on the subject property. ▪ Illustrative photographs and descriptions (i.e., estimated number of dwelling units, number of floors, non-residential square footage, and FAR, etc.) of proposed building types and forms. ▪ Identification of maximum building envelope for all proposed uses (identification of proposed building footprints is optional). ▪ Conceptual representation of parking areas with approximate number of total parking provided (depiction of a detailed parking layout is not required). ▪ Location of existing improvements, buildings, and uses on the subject property. ▪ Rights-of-way with street names, pedestrian facilities, transit facilities, Flagstaff Urban Trail System (FUTS), etc. ▪ Conceptual representation of points of connection to rights-of-way, pedestrian facilities, FUTS, etc. ▪ Conceptual representation of areas proposed for forest resource preservation (if the subject property is located within the Resource Protection Overlay). ▪ Conceptual representation of areas proposed for open space, civic space, parks, etc. ▪ Photographs to represent proposed civic space types. ▪ Conceptual representation of areas proposed for stormwater detention and Low Impact Development. ▪ Location, size, and type of existing and proposed utilities with a conceptual representation of points of connection. ▪ Description of any proposed grading activity for the subject property. ▪ Any other information the applicant would like to submit in support of the requested Zoning Map Amendment.
☐	☐	**II.6 Enhanced Concept Zoning Plan** – 1 copy (minimum 11" x 17") In multi-phase developments, the Concept Zoning Plan shall be enhanced to add the following: • Indicate the proposed zoning designation(s) within the subject area. • Conceptual representation of vehicular circulation (collector roads and above) within the project area and connections to existing vehicular infrastructure. • Three-dimensional bulk and mass analysis/visualization of the project or parts of the project. • Architectural rendering. • Phasing map indicating the sequence of zoning, development, and public utility and infrastructure improvements.

☒	☐	**II.7 Project Narrative** – 1 copy The narrative should include the following: • Project title and date. • The reason for the request. • An analysis of how the proposed amendment is consistent with and conforms to the goals of the General Plan and any applicable specific plan(s). This analysis shall include any relevant goals and policies that DO NOT support the application. • A summary of how the proposed amendment will not be detrimental to the public interest, health, safety, convenience, or welfare, and will add to the public good. • A description of how the subject property is physically suitable in terms of design, location, shape, size, operating characteristics, and the provision of public and emergency vehicle access, public services, and utilities (e.g., fire protection, police protection, potable water, schools, solid waste collection and disposal, stormwater drainage, and wastewater collection, treatment, and disposal) to ensure that the requested amendment and the proposed uses will not endanger, jeopardize, or otherwise constitute a hazard to the subject property or improvements within the vicinity of the subject property. • A description of how essential public services (i.e., water, wastewater, stormwater, solid waste) will be provided. • An analysis of how the proposed amendment will benefit the community. • Any additional information the applicant would like to submit in support of the requested amendment.

PART III – REQUIRED REPORTS, STUDIES, ANALYSIS, AND RELATED DATA

Staff Use Only		
Req	Sub	**Description of Documents Required for Complete Application.** No application shall be accepted without all items marked below.
☐	☐	**III.1 Cultural Resource Study** – 1 copy All cultural resource studies must be prepared by a qualified historic preservation professional and include the following information: • Introductory information (identification of the development, property owners, clients, study preparers, contents, and index). • A description of the study area and context and a description of the study boundaries and how these were determined. • A description of existing conditions. • A description of proposed work. • A summary of research results; review of literature and records (AZSITE, ASLD, Government Land Office Maps and Sanborn Maps, land use records, and so forth). • A detailed description of the site history. • A complete description and evaluation of the significance and integrity of actual and potential cultural resources. • An evaluation of potential impacts of proposed work on actual or potential cultural resources including any indirect or residual impacts. • Specific recommendations for mitigation of major impacts on actual or potential cultural resources. • When appropriate, specific recommendations for additional research and documentation.
☐	☐	**III.2 Preliminary Drainage Report** – 1 copy Please contact Stormwater Staff for submittal requirements.
☐	☐	**III.3 Drainage Impact Analysis** – 1 copy Please contact Stormwater Staff for submittal requirements.
☐	☐	**III.4 Water and Sewer Impact Analysis** – 1 copy Please contact Water Services Staff for submittal requirements.
☐	☐	**III.5 Reclaimed Water Impact Analysis** – 1 copy Please contact Water Services Staff for submittal requirements.
☐	☐	**III.6 Traffic Impact Analysis** – 1 copy See attached Application for Impact Analysis Scoping Meeting.

PART IV – OTHER SUBMITTAL RQUIREMENTS

Staff Use Only		**Description of Documents Required for Complete Application.** No application shall be accepted without all items listed below.
Req	Sub	
☐	☐	**IV.1 Other Requirements** Please provide the following: _____ _____ _____ _____ _____ _____ _____ _____

PART V – PLANNING DEVELOPMENT MANAGER

No application shall be accepted without a Planning Development Manager signature below.

V.1 Planning Development Manager Contact Information

If you have any questions regarding this application checklist, please contact your Planning Development Manager (PDM). If you did not receive a completed copy of this checklist as part of your Concept Plan review, please contact the PDM assigned to your Concept Plan application.

PDM Name (print): _____ **Phone:** _____

PDM E-mail: _____ **Date:** _____

PDM Signature: _____

PLANNING AND DEVELOPMENT SERVICES REPORT
CONCEPT ZONING MAP AMENDMENT

PUBLIC HEARING
PZ-21-00117-01

DATE: **April 11, 2022**
MEETING DATE: **April 27, 2022**
REPORT BY: **Tiffany Antol, AICP**

REQUEST:
Direct to Ordinance Zoning Map Amendment requested by Square Peg Development, on behalf of the property owner Arizona State Land Department, of approximately 7.29 acres located at 2661 N El Paso Road from the Highway Commercial (HC) zone with the Resource Protection Overlay (RPO) to the Heavy Industrial Open (HI-O) zone with the Resource Protection Overlay (RPO).

STAFF RECOMMENDATION:
Staff believes that the proposed Zoning Map amendment is in substantial conformance with the required findings and recommends the Planning & Zoning Commission forward the request to the City Council with a recommendation approving an amendment to the Zoning Map for 7.29 acres from the Highway Commercial (HC) to the Heavy Industrial Open (HI-O) zone, subject to the following conditions:

1. All other requirements of the Zoning Code and other City codes, ordinances, and regulations shall be met by the proposed development.
2. In the event the property is rezoned, and the applicant fails to obtain final Civil Plan approval within two (2) years of the effective date of the rezoning ordinance, then the City may schedule a public hearing before the City Council for the purpose of causing the zoning on the Property to revert to the former classification of Highway Commercial (HC) in accordance with A.R.S. § 9-462.01.

PRESENT LAND USE:
The subject property ("Property") is approximately 7.29 acres of vacant land.

PROPOSED LAND USE:
The applicant proposes to develop the site as a composting facility. Composting Facility is defined by the Zoning Code as a facility in which controlled biological decomposition of organic solid waste, excluding restaurant grease and septage, derived primarily from off-site locations under in-vessel anaerobic or aerobic conditions, occurs for commercial purposes. Additionally, the applicant is proposing to add a sawmill to the site sometime in the future. This request does not intend to modify the allowed uses within Heavy Industrial Open zone.

NEIGHBORHOOD DEVELOPMENT:
See the attached area context map.

North: Cemex facility, zoned Heavy Industrial Open (HI-O)
East: Vacant land and the Wildcat Wastewater Treatment Plant, zoned Public Facility (PF)
South: Vacant land owned by the Arizona State Land Department, zoned Highway Commercial (HC)
West: Vacant land owned by the Arizona State Land Department, zoned Highway Commercial (HC)

I. Project Introduction

A. Background/Introduction

This is the second of two related items on the Commission's agenda; the first request is a Minor Regional Plan Amendment for 24.75 acres. This amendment is necessary to support this rezoning application.

The applicant, Square Peg Development, is requesting a Direct to Ordinance Zoning Map Amendment on behalf of the property owner, Arizona State Land Department, to rezone approximately 7.29 acres from the Highway Commercial (HC) zone to the Heavy Industrial Open (HI-O) zone located at 2661 N El Paso Road. This amendment would allow the

development of a Composting Facility for the purposes of producing mulch, compost, soil amendments, screened aggregates, and value-added forest-based products. The chip and mulch operation will utilize and process waste biomass and natural feedstocks, including but not limited to logs, slash, stumps, soil, and screened aggregates. Ancillary forest industry operation such as biomass chipping and grinding, portable sawmills, pole peeling, and firewood processing may operate on site with the by-products of these operations used in compost, soil amendment, and native soils mixes. The proposed uses are as follows:

- Composting Facility
- Solid Amendment and Native Soil Mix Processing
- Screened Aggregate Processing
- Biomass Based Mulch and Wood Chip Manufacturing
- Portable Timber Mill Operation
- Firewood and Associated Bark Mulch Processing
- Forest Industry Material and Equipment Storage

B. Proposed Rezoning and Development Plan

The applicant, Square Peg Development, is requesting rezoning approval to permit the development of a Composting Facility as described above.

Site Plan

On March 15, 2022, the Inter-Department Staff (IDS) approved the Site Plan and deemed the rezoning application to be complete. If this rezoning is approved, the applicant will only need to submit civil plans.

A. Zoning – City of Flagstaff Zoning Code

If this Direct to Ordinance Zoning Map Amendment request is approved, approximately 7.29 acres will be rezoned to the Heavy Industrial Open (HI-O) zone. Development of the site will be required to comply with the standards of the Zoning Code. This rezoning will not be tied or conditioned on the approved Site Plan.

i. Site Planning Standards

These standards do not apply to Industrial uses.

ii. Resource Protection

There is a Resource Protection Overlay zone on the subject site. The Zoning Code requires 30% of the tree resources to be saved. A Natural Resource Protection Plan (NRPP) was submitted as part of the site plan application, which shows there are no tree resource to be preserved on site. The NRPP does identify an area of 35% percent or greater slope which will remain entirely undisturbed. If this rezoning is approved, staff will ensure compliance with the Zoning Code during Civil Plan review.

iii. Open Space & Civic Space

The proposed use does not require either open space or civic space.

iv. Pedestrian and Bicycle Circulation Systems

There are no proposed pedestrian or bicycle facilities proposed as part of this application.

v. Compatibility and Architectural Design Standards

No new construction is proposed for the site. The property is owned by the Arizona State Land Department and the applicant has obtained a Special Land Use Permit (SLUP) to utilize the property as a ground-based green waste recycling operation generating mulch and compost. The SLUP prohibits permanent improvements on the site.

vi. Landscaping

The applicant has requested a Variance from the Landscaping and Screening standards within the Zoning Code. The Variance will be determined by the City Council should they elect to serve as the Board of Adjustment on this matter. If the Variance is not approved, the applicant will be required to meet these standards on the site. For additional information see attached Variance report and recommendation.

vii. Outdoor Lighting

The subject property is located within Lighting Zone 3, which means that it is located further away from astronomical resources within and surrounding the City of Flagstaff. Lighting Zone 3 has the lowest-level standards regarding outdoor lighting and allows for a total of 100,000 lumens per acre for industrial development. Outdoor lighting is not currently proposed for this site.

viii. Parking

There are no specific parking requirements for a Composting Facility found within the Zoning Code. Staff worked with the applicant to develop a parking ratio that met the needs of the proposed use utilizing the requirements for a Construction Yard. A total of four parking spaces are required based on total number of employees and base storage area.

ix. Historic/Cultural Resources

The Heritage Preservation Officer has determined that the resource clearance completed by the Arizona State Land Department is sufficient and no additional review is required.

B. Public Systems Impact Analysis

i. Traffic/Right-of-Way Impact

No analysis was required.

ii. Water and Wastewater Impact

No analysis was required.

iii. Stormwater Analysis

The development of the subject project consists of new gravel road and a concrete pad with four parking spots. The drainage design for the site is designed to retain the difference between the pre- and post-development runoff volumes on site.

II. Zoning Map Amendment Findings

An application for a Zoning Map Amendment shall be submitted to the Planning Director and shall be reviewed and a recommendation prepared. The Planning Director's recommendation shall be transmitted to the Planning and Zoning Commission in the form of a staff report prior to a scheduled public hearing. The recommendation shall include: an evaluation of the consistency and conformance of the proposed amendment with the goals and policies of the General Plan and any applicable specific plans; the grounds for the recommendation based on the standards and purposes of the zones set forth in Section 10-40.20 (Establishment of Zones) of the Zoning Code; and whether the amendment should be granted, granted with conditions to mitigate anticipated impacts caused by the proposed development, or denied.

Zoning Map Amendments shall be evaluated based on the following findings:

A. Finding #1:

The proposed amendment must be found to be consistent with and in conformance with the goals and policies of the General Plan and any applicable specific plans. If the application is not consistent with the General Plan, and any other applicable specific plan, the applicable plan must be amended in compliance with the procedures established in Chapter 11-10 of the City Code (Title 11: General Plans and Subdivisions) prior to considering the proposed amendment.

i. General Plan/Flagstaff Regional Plan (FRP 2030) Process and Analysis Summary
See Minor Regional Plan Amendment staff summary.

ii. Applicable General Plan Goals and Policies
See Minor Regional Plan Amendment staff summary.

B. Finding #2

To meet the finding, the proposed amendment must be determined not to be detrimental to the public interest, health, safety, convenience, or welfare of the City of Flagstaff (the "City") and will add to the public good as described in the General Plan.

Staff believes that the proposed project will not be detrimental to the public health, safety, or welfare so long as it is developed in accordance with all codes and requirements.

C. Finding #3

To meet the finding, the affected site must be determined to be physically suitable in terms of design, location, shape, size, and operating characteristics; and the provision of public and emergency vehicle access, public services, and utilities to ensure that the requested zone designation and the proposed or anticipated uses and/or development will not endanger, jeopardize, or otherwise constitute a hazard to the property or improvements in the vicinity in which the property is located.

Staff believes that the proposed application meets this finding. The Inter-Division Staff reviewed the application and concluded that the site was suitable for the proposed development with the improvements as identified in this report. The IDS team based its conclusion on the review of all applicable codes and requirements as well as impact analysis for the site.

III. Citizen Participation

Public hearings before the Planning and Zoning Commission and City Council are conducted in conjunction with requests for Zoning Map Amendments. In accordance with Arizona State Statute, notice of the public hearing was provided by placing an ad in the Arizona Daily Sun, posting notices on the property, and mailing a notice to all property owners within 300 feet of the site excluding rights-of-ways.

The applicant held one virtual neighborhood meeting using the Zoom platform regarding this case on April 7th at 6:00pm. No one from the public attended the meeting. The second required meeting was waived by the Planning Director. Staff has not received any comments from the public as of the writing of this report.

Attachments:

- Authorization Letter
- Application
- Project Narrative & Regional Plan Analysis
- Site Plan
- Preliminary Drainage Letter
- Citizen Participation Plan
- Variance Report

Restoration Soils Concept Rezone Narrative

Project Title

Restoration Soils Yard

3-21-2022

Project/Development Request Description

The applicant wishes to establish a ground-based green waste and biomass processing operation on an 7.29 acre vacant, disturbed but undeveloped portion of a tract of land owned by the Arizona State Land Department. The applicant has received approval from the department to move ahead with an application for a Special Land Use Permit for the parcel running for two years. The proposal includes grading an 4 acre area; installing appropriate run-off controls and detention, installing required fire protection, and creation of limited aggregate-surfaced parking.

The parcel is currently zoned Highway Commercial and this application is to have it re-zoned as Heavy-Industrial. Under it's Heavy Industrial Zoning, Restoration Soils LLC will process and produce mulch, compost, soil amendments, screened aggregates and value added forest based products. The chip and mulch operation will utilize and process waste biomass and natural feedstocks, including but not limited to logs, slash, stumps, soil, and screened aggregates). Ancillary forest industry operations (conducted either directly by Restoration Soils, or by partners) such as biomass chipping and grinding, portable sawmills, pole peeling, and firewood processing may operate on site with the by-products of these operations used in compost, soil amendment and native soils mixes. More specifically the proposed uses are as follows:

Composting Facility
Soil Amendment and Native Soil Mix Processing
Screened Aggregate Processing
Biomass Based Mulch and Wood Chip Manufacturing
Portable Timber Mill Operation
Firewood and Associated Bark Mulch Processing
Forest Industry Material and Equipment Storage

Conformance with General Plan

The proposed amendment is consistent with and furthers the goals of the Regional Plan primarily across the areas described below. Further conformance with over sixty specific Regional Plan policies is detailed in Appendix A.

Sustainability, Environment and Water Resources

Much of the conformance with the Regional Plan, and what distinguishes this proposal from many, is in the areas of environmental planning, forest health, sustainable industry, and water conservation.

Firstly, without successful and growing industries, forest restoration efforts cannot succeed. Disposal and use of low to no value slash/timber byproducts is one of the major impediments to increasing the pace and scale of forest restoration efforts across rural northern Arizona. This parcel can serve as an

important foundation for the development of a forest industry cluster/incubator and play an important role for moving forest restoration efforts forward on state, federal and private lands.

Secondly, proposed compost processing will use only reclaimed water and recycled site run-off. There will be no use of potable water on site for the foreseeable future. Furthermore, compost has been clearly shown to increase soil quality and therefore the soils' ability to retain water, reduce water requirements for landscaping, and reduce runoff. Compost can also play an important role in land reclamation, wildfire recovery, and erosion control, all contributing to watershed protection.

Lastly, the proposed use is specifically to enhance, grow, and support the development of green industry and jobs that such growth would bring. Such environmentally responsible industry is rooted in this type of multi-disciplinary business operating across the public-private industry boundary.

Growth and Land Use

Another important aspect in which this proposed zoning map amendment is in conformance with the Regional plan is in the area of growth and land use. The proposed development is well-within the urban growth boundary. While it may be a stretch to classify this as in-fill development, it is surrounded on all sides by existing uses. Furthermore those uses are either themselves Heavy Industrial, or are public facility uses that closely approximate Heavy Industrial in their character (i.e. one of the city wastewater treatment plants, and the ADOT heavy equipment and material yard).

The site has close access to Interstate 40 as well as the railroad and an existing rail spur. Access to the site itself is off a side road, reducing turn-out impacts, but then immediately to a major local road with existing low traffic counts (West Route 66). Truck traffic to and from the site would not have to pass through any residential neighborhoods, and would be consistent with the existing truck and heavy vehicle traffic on the access road.

These above two factors are likely why (though itself an *Area in White*) the site is enclosed on two sides by a proposed future Industrial / Business Park - Special District on the Future Growth Illustration Map in the Flagstaff Regional Plan.

Incompatible Goals and Policies

While the proposed development is in conformance with a large number (60+) of Regional Plan goals and policies – both as detailed above and as described in appendix A – there are four policies that we have identified that may not support the amendment. These are as follows:

> *Policy WR.3.2. Favor low-water consuming businesses and industries over water-intensive uses.*
>
> While proposed operations for this facility include the use of aerated static piles for composting, which uses less water than windrow systems, there are other industries that use zero water in their manufacturing processes.
>
> *Policy E.1.13. Promote and encourage the use of fuel-efficient vehicles that use renewable fuels.*
>
> While there is the option to use electricity generated from biomass or other renewables for future manufacturing processes, initial equipment will be diesel fueled.
>
> *Policy CC.1.2. Continue to define and further develop the community character by incorporating the natural setting into the built environment at all design scales.*

It is not feasible for the proposed development to incorporate natural setting into the design of a site organized for industrial material processing.

Policy LU.5.2. Promote infill development over peripheral expansion to conserve environmental resources, spur economic investments, and reduce the cost of providing infrastructure and services.

The development is too large and low value per acre to be feasible for an infill site located closer to the center of town.

Impact on the Public Good

As mentioned in the previous section successful forest restoration efforts require a vibrant local industry to process and use low to no value slash/timber byproducts. The proposed use for this parcel as a forest industry cluster/incubator would play an important role for moving forest restoration efforts forward on state, federal and private lands. This significantly positively impacts the public good by reducing the likelihood of catastrophic wildfire and potentially reducing the cost of restoration efforts in the long run.

Furthermore the products proposed for production at this facility have significant public benefits in and off themselves. Again, as mentioned in the previous section, compost increases soil quality and the soils ability to retain water, reducing both water requirements for landscaping and runoff. Compost can also play an important role in land reclamation, wildfire recovery, and erosion control.

The proposed use as a compost facility has a much lower potential environmental, health, and safety impact than other uses allowed in the zone. The applicant has consulted with ADEQ and will procure the minimal appropriate permits required for the use, while conducting monitoring as required. Appropriate and industry best practice measures will be used to prevent possible detrimental impacts of odors, high-nitrogen run-off and insect vectors, though given the small scale of the operation we expect these impacts to be negligible.

Normal considerations of the impact of increased vehicle traffic are of limited concern for the proposed use given anticipated additional volumes fall far below the thresholds requiring impact analysis.

Physical Suitability of Site

Shape, Size, Operating Characteristics and Design: The site allows for an appropriate number of acres for initial operations, ancillary services, and immediate expansion. Mostly level and square, the shape also lends itself well to operating requirements with a low up-front investment in earth moving operations.

Location, provision of public and emergency vehicle access, public services, and utilities: The site is located within the urban growth boundary and has easy access to all city utilities and public services as well as emergency services. Proposed operation involving biomass requires coordination with the fire department, creation of an appropriate emergency response plan and installation of appropriate mitigation measures. Requirements for utilities set by the operating characteristics of the facility are limited to onsite stormwater management and fire hydrant access.

Essential Services

Water: Potable water is not required on site for the proposed use. If a change in use were to cause it to be required, a water main is being installed on El Paso Flagstaff Rd. Reclaimed water from the adjacent standpipe will be used for operations.

Wastewater: Wastewater will not be generated on site.

Stormwater: Stormwater will be managed and reused onsite with appropriately designed LID and other systems.

Solid waste: With less than one FTE predicted for on0-site employment, waste will be hauled off privately. If further waste service is needed it will be contracted with public or private service providers.

Community Benefit

Along with those benefits identified within the first two paragraphs of the previous section, and the ways in which this proposed amendment furthers the goals of the regional plan, re-zoning as Heavy Industrial also replaces a significant portion of the Heavy Industrial Zoned land that the city has lost. A vibrant community is one not based on a single industry or service sector but recognizes the need for multiple inputs into the local economy. As Flagstaff has grown, we have shifted much of our land into residential and service use without providing appropriate replacements to locate industrial facilities. This has caused a dramatic increase the cost of industrial land and facilities, which when added to the high price of housing, creates a significant hurdle to new industry establishing itself in our community. As a highly impacted, previously disturbed site comprised primarily of dumped material this parcel is ideal for the type of Heavy Industrial rezoning required to mitigate those negative impacts.

Appendix A: Conformance with Specific Plan Goals and Policies

Chapter IV - Environmental Planning & Conservation

AIR QUALITY GOALS AND POLICIES

Goal E&C.1. Proactively improve and maintain the region's air quality.

Policy E&C.1.3. Encourage strategies and partnerships to mitigate dust.

> *Compost improves soil quality and vegetative cover, reducing dust.*

Policy E&C.1.4. Maintain air quality through pursuit of non-polluting industry and commercial enterprises.

> *Compost and mulch production are a low-to-no polluting processes.*

Policy E&C.1.5. Seek feasible alternatives to reduce the smoke produced through prescribed burns and slash piles while continuing efforts to return fire to its natural role in the ecosystem.

> *A key portion of this business plan is to mulch and compost slash as an alternative to other fuel reduction methods*.

CLIMATE CHANGE AND ADAPTATION GOALS AND POLICIES

Goal E&C.2. Reduce greenhouse gas emissions.

Policy E&C.2.1. Encourage the reduction of all energy consumption, especially fossil-fuel generated energy, in public, commercial, industrial, and residential sectors.

> *Using green waste to create compost removes it as a methane-producing contributor to greenhouse gas production at the landfill.*

Policy E&C.2.2. Promote investments that strengthen climate resiliency.

> *Compost improves soil structure and porosity, reducing water consumption and runoff.*

Goal E&C.3. Strengthen community and natural environment resiliency through climate adaptation efforts.

Policy E&C.3.2. Review and revise existing regulations, standards, and plans (codes, ordinances, etc.) to reduce the community's vulnerability to climate change impacts.

> *Compost improves soil structure and porosity, reducing water consumption and runoff.*

Policy E&C.3.3. Invest in forest health and watershed protection measures.

> *Compost improves soil structure and porosity, reducing water consumption and runoff. Creating industries for processing forest restoration by-products is key to improving forest health.*

Policy E&C.3.4. Increase the region's preparedness for extreme climate events.

> *Compost improves soil structure and porosity, reducing runoff from extreme weather events.*

Goal E&C.4. Integrate available science into policies governing the use and conservation of Flagstaff 's natural resources.

Policy E&C.4.2. Develop water use policies that attempt to integrate current best projections of climate change effects on the Colorado Plateau's water resources and emphasize conservation.

Compost improves soil structure and porosity, reducing water consumption.

DARK SKIES GOALS AND POLICIES

Goal E&C.5. Preserve dark skies as an unspoiled natural resource, basis for an important economic sector, and core element of community character.

Policy E&C.5.1. Evaluate the impacts of the retention of dark skies regarding lighting infrastructure and regulatory changes, land use decisions or changes, and proposed transportation developments within the region

The proposed site plan includes zero exterior fixtures.

ECOSYSTEM HEALTH GOALS AND POLICIES

Goal E&C.6. Protect, restore and improve ecosystem health and maintain native plant and animal community diversity across all land ownerships in the Flagstaff region.

Policy E&C.6.1. Encourage public awareness that the region's ponderosa pine forest is a fire-dependent ecosystem and strive to restore more natural and sustainable forest composition, structure, and processes.

Creating industries for processing forest restoration by-products is key to improving forest health.

Policy E&C.6.2. Encourage all landowners and land management agencies to emphasize forest ecosystem restoration and catastrophic fire risk reduction for the lands under their respective jurisdictions.

This project is in partnership with the Arizona State Land Department, emphasizing and improving on their commitment to promoting forest health on their land and elsewhere.

Policy E&C.6.3. Promote protection, conservation, and ecological restoration of the region's diverse ecosystem types and associated animals.

This parcel is previously disturbed and heavily impacted by dumping of off-site soil. Using this land for Heavy Industrial use is a superior alternative to greenfield land/development.

Policy E&C.6.5. Preserve Flagstaff's wetland areas and discourage inappropriate development that may adversely affect them and the ecosystem services they provide.

This parcel not wetland. Using this land for Heavy Industrial use is a superior alternative to development of wetland parcels.

Policy E&C.6.6. Support cooperative efforts for forest health initiatives or practices, such as the Four Forest Restoration Initiative (4FRI), to support healthy forests and protect our water system.

Creating industries for processing forest restoration by-products is key to improving forest health.

Policy E&C.6.7. Use best practices to control the spread of exotic and invasive plants, weeds, and animals, and eradicate where possible.

The current site is host to significant invasive weeds, development will control those weeds and prevent their spread to neighboring parcels. Including the Wildcat Treatment Plant

ENVIRONMENTALLY SENSITIVE LANDS GOALS AND POLICIES

Goal E&C.7. Give special consideration to environmentally sensitive lands in the development design and review process.

Policy E&C.7.1. Design development proposals and other land management activities to minimize the alteration of natural landforms and maximize conservation of distinctive natural features.

The proposed development does not alter any natural landforms or distinctive natural features.

NATURAL QUIET GOALS AND POLICIES

Goal E&C.8. Maintain areas of natural quiet and reduce noise pollution.

Policy E&C.8.1. Establish location-appropriate sound management tools with measurable criteria. Policy E&C.8.2. Evaluate land uses and transportation proposals for their potential noise impacts.

The proposed site is distant from any residential uses that would be impacted by noise generation.

SOILS GOALS AND POLICIES

Goal E&C.9. Protect soils through conservation practices.

Policy E&C.9.2. Construction projects employ strategies to minimize disturbed area, soil compaction, soil erosion, and destruction of vegetation.

Compost improves soil structure and porosity and is frequently used in post-construction soil remediation.

WILDLIFE GOALS AND POLICIES

Goal E&C.10. Protect indigenous wildlife populations, localized and larger-scale wildlife habitats, ecosystem processes, and wildlife movement areas throughout the planning area.

Policy E&C.10.3. Protect sensitive and uncommon habitats such as ephemeral wetlands, riparian habitats, springs and seeps, rare plant communities, and open prairie ecosystems including the physical

elements such as water sources and soil types on which they depend through open space acquisition efforts, avoiding these features in the design of subdivisions and other development, etc.

> *This development avoids all ephemeral wetlands, riparian habitats, springs and seeps, rare plant communities, and open prairie ecosystems including the physical elements such as water sources and soil types.*

Chapter V - Open Space

OPEN SPACE GOALS AND POLICIES

Goal OS.1.The region has a system of open lands, such as undeveloped natural areas, wildlife corridors and habitat areas, trails, access to public lands, and greenways to support the natural environment that sustains our quality of life, cultural heritage, and ecosystem health.

Policy OS.1.2.While observing private property rights, preserve natural resources and priority open lands, under the general guidance of the Flagstaff Area Open Space and Greenways Plan and the Natural Environment maps.

> *This proposal avoids any development in the adjacent rural floodplain and slope resource areas.*

Chapter VI - Water Resources

WATER SOURCES GOALS AND POLICIES

Goal WR.1. Maintain a sustainable water budget incorporating regional hydrology, ecosystem needs, and social and economic well-being.

Policy WR.1.1. Participate in and support regional processes to develop a sustainable water budget.

> *Compost improves soil structure and porosity, reducing water consumption.*

Goal WR.2. Manage a coordinated system of water, wastewater, and reclaimed water utility service facilities and resources at the City level and identify funding to pay for new resources.

Policy WR.2.1. Develop and adopt an integrated water master plan that addresses water resources, water production and its distribution, wastewater collection and its treatment, and reclaimed water treatment and its distribution.

> *Proposed production operations at this facility will use reclaimed water only in and recycle all water run-off on site.*

WATER DEMAND GOALS AND POLICIES

Goal WR.3. Satisfy current and future human water demands and the needs of the natural environment through sustainable and renewable water resources and strategic conservation measures.

Policy WR.3.1.Work together with regional partners to address regional human and environmental water needs.

This project is in partnership with the Arizona State Land Department, emphasizing and improving on their commitment to promoting forest health on their land and elsewhere while also recognizing the impact mulch and compost has on improving soil health and reducing water consumption.

Policy WR.3.2. Favor low-water consuming businesses and industries over water-intensive uses.

Proposed operations for this facility include the use of aerated static piles for composting, which uses less water than windrow systems.

Policy WR.3.4. Use reclaimed water and rainwater harvesting wherever appropriate and practical.

Proposed production operations at this facility will use reclaimed water only in and recycle all water run-off on site.

Goal WR.4. Logically enhance and extend the City's public water, wastewater, and reclaimed water services including their treatment, distribution, and collection systems in both urbanized and newly developed areas of the City to provide an efficient delivery of services.

Policy WR.4.3. Development requiring public utility services will be located within the Urban Growth Boundary.

This development is within the Urban Growth Boundary

STORMWATER AND WATERSHED MANAGEMENT GOALS AND POLICIES

Goal WR.5. Manage watersheds and stormwater to address flooding concerns, water quality, environmental protections, and rainwater harvesting.

Policy WR.5.1. Preserve and restore existing natural watercourse corridors, including the 100-year floodplain, escarpments, wildlife corridors, natural vegetation, and other natural features using methods that result in a clear legal obligation to pre- serve corridors in perpetuity, where feasible.

This proposal avoids any development in the adjacent rural floodplain and slope resource areas.

Policy WR.5.6. Implement stormwater harvesting techniques to support water conservation strategies by collecting and using local precipitation in the vicinity where it falls to support both human and overall watershed health needs.

Proposed production operations at this facility will recycle all water run-off on site.

Policy WR.5.7. Support healthy watershed characteristics through implementation of practices, consistent with the City of Flagstaff Low Impact Design Manual, that improve flood control and flood attenuation, stormwater quality, and water sustain- ability; increase groundwater recharge; enhance open space quality; increase biodiversity; and reduce land disturbance and soil compaction.

Development at this site will be in conformance with the Flagstaff Low Impact Design Manual

WATER QUALITY GOALS AND POLICIES

Goal WR.6. Protect, preserve, and improve the quality of surface water, groundwater, and reclaimed water in the region.

Policy WR.6.2. Recognizing the concern about water quality, seek methods to divert contaminants from the waste stream.

Composting diverts potential high-nitrogen material from the waste stream.

Policy WR.6.3. Implement best management practices to protect, restore, and maintain surface waters and their contributing watersheds.

Using compost in lieu of artificial fertilizer reduces nitrogen run-off into surface waters.

Policy WR.6.4. Encourage low-impact development strategies.

Development at this site incorporates low-impact development strategies.

Chapter VII - Energy

EFFICIENT USE OF ENERGY GOALS AND POLICIES

Goal E.1. Increase energy efficiency.

Policy E.1.7. Support policies and programming that reduce electricity, natural gas, and water consumption in order to conserve natural resources and reduce financial costs.

Compost improves soil structure and porosity, reducing water consumption.

RENEWABLE ENERGY GOALS AND POLICIES

Goal E.2. Expand production and use of renewable energy.

Policy E.2.4. Encourage small-scale renewable energy production and use on the local level on appropriate residential, commercial, and industrial parcels.

Potential areas for expansion of the forest products recycling sector include small scale biomass facilities and waste-to-energy generators.

Policy E.2.5. Pursue, promote, and support utility-scale renewable energy production such as biomass facilities, solar electric- ity, wind power, waste-to-energy, and other alternative energy technologies.

Potential areas for expansion of the forest products recycling sector include small scale biomass facilities and waste-to-energy generators that could be expanded into, or provide proof of concept, for utility scale operations.

Chapter VIII - Community Character

SCENIC RESOURCES AND NATURAL SETTING GOALS AND POLICIES

Goal CC.1. Reflect and respect the region’s natural setting and dramatic views in the built environment.

Policy CC.1.1. Preserve the natural character of the region through planning and design to maintain views of significant land- marks, sloping landforms, rock outcroppings, water courses, floodplains, and meadows, and conserve stands of ponderosa pine.

> *The proposed development does not impact views of significant land- marks, sloping landforms, rock outcroppings, water courses, floodplains, and meadows, and conserve stands of ponderosa pine.*

Policy CC.1.3. Design development patterns to maintain the open character of rural areas, protect open lands, and protect and maintain sensitive environmental areas like mountains, canyons, and forested settings.

> *The proposed development does not impact sensitive environmental areas or usable existing open space.*

ARTS, SCIENCES,AND EDUCATION GOALS AND POLICIES

Goal CC.5. Support and promote art, science, and education resources for all to experience.

Policy CC.5.5. Promote and expand scientific research as a key component to the Flagstaff region's character.

> *The proposed use includes research and development into additional uses of compost and forest productions and their potential contribution to a green economy.*

Chapter IX - Growth Areas & Land Use

GREENFIELD DEVELOPMENT GOALS AND POLICIES

Goal LU.2. Develop Flagstaff 's Greenfields in accordance with the Regional Plan and within the growth boundary.

Policy LU.2.2. Design new development to coordinate with existing and future development, in an effort to preserve viewsheds, strengthen connectivity, and establish compatible and mutually supportive land uses.

> *The proposed development and use coordinates well with the surround impactful heavy industrial and public facility (wastewater treatment) uses.*

Policy LU.2.3. New development should protect cultural and natural resources and established wildlife corridors, where ap- propriate.

> *The proposed development does not impact cultural and natural resources and established wildlife corridors.*

Policy LU.2.4. Utilize Low Impact Development (LID) strategies and stormwater best practices as part of the overall design for new development.

> *The proposed development will utilize Low Impact Development (LID) strategies and stormwater best practices.*

APPLICABLE TO ALL LAND USES GOALS AND POLICIES

Goal LU.3. Continue to enhance the region's unique sense of place within the urban, suburban, and rural context.

Policy LU.3.2. Coordinate land use, master planning, and recreational uses, when feasible, with local, state, and federal land management agencies and tribal land owners.

The use of this land is in coordination with the Arizona State Land Department

Policy LU.3.5. Allow and encourage urban agriculture.

Potential future expansion of this use includes into urban agriculture. A source of quality local compost is necessary to support urban agriculture.

Goal LU.5. Encourage compact development principles to achieve efficiencies and open space preservation.

Policy LU.5.1. Encourage development patterns within the designated growth boundaries to sustain efficient infrastructure projects and maintenance.

The proposed development is within the designated growth boundary.

Policy LU.5.4. Encourage development to be clustered in appropriate locations as a means of preserving natural resources and open space, and to minimize service and utility costs, with such tools as Transfer of Development Rights (TDR).

The proposed development is clustered with existing and proposed Heavy Industrial Uses and close to appropriate transportation infrastructure (highway and rail)

Goal LU.6. Provide for a mix of land uses.

Policy LU.6.2. Consider commercial core areas, corridors, activity centers, employment centers, research and development parks, special planning areas, and industrial uses as appropriate place types and area types for employment opportunities.

The proposed development is within the Industrial / Business Park - Special District designated growth area for employment.

Goal LU.7. Provide for public services and infrastructure.

Policy LU.7.1. Concentrate urban development in locations that use land efficiently, and are served by roads, water, sewer, and other public facilities and services, and that support transit, reduced vehicle trips, and conservation of energy and water.

The site has access to existing roads, water, and sewer and is infill between existing uses.

Policy LU.7.3. Require development proposals to address availability of adequate public services.

The development proposal addresses the availability of adequate public services.

Goal LU.8. Balance future growth with available water resources.

Policy LU.8.2. Impacts on the City's water delivery infrastructure should be a consideration for all residential and nonresidential development proposals.

The proposed development is immediately adjacent to the required reclaimed water source. Future expansion of infrastructure would be relatively simple.

EMPLOYMENT AREA GOALS AND POLICIES

Goal LU.16. Establish heavy industrial areas that provide for the manufacturing of goods, flexible space, and intermodal facilities that are well maintained, attractive and compatible with adjoining nonindustrial uses.

Refer to Policy ED.3.9 in Chapter XIV - Economic Development.

Policy LU.16.1. Encourage the continued intensification, expansion, and protection of existing industrial, warehousing, and distribution uses from encroachment where appropriate.

The proposed use is an expansion of existing heavy industrial uses in the area.

Policy LU.16.2. Ensure new industrial areas are compatible with surrounding areas.

The proposed heavy industrial use is highly compatible with the surrounding heavy industrial and high impact public facility uses.

Policy LU.16.3. Locate new industrial areas near the rail line, major highways or the interstate, and ensure they are designed to be compatible with surrounding uses and gateway features.

The proposed site is immediately adjacent to the interstate, railway, and close to the I40 interchange.

Policy LU.16.4. Limit the impacts of truck traffic on residential areas.

Zero truck traffic to and from the site would pass through residential neighborhoods.

Policy LU.16.5. Consider all health impacts on the community in the design of new industrial uses, such as wastewater treatment, traffic safety, noise, and other impacts.

The proposed site is distant from any residential use, greatly mitigating the health impacts of traffic, safety, noise, and other impacts.

Chapter XII - Public Buildings, Services, Facilities, & Safety

RESILIENCY PLANNING GOALS AND POLICIES

Goal PF.1.Work across all government operations and services to prepare for the impacts of natural and human-caused hazards.

Solid Waste

Policy PF.1.7. Develop strategies and take meaningful steps towards extending the life of the landfill.

The proposed composting facility would divert significant amounts of green waste from the landfill.

Chapter XIV - Economic Development

BUSINESS RETENTION, EXPANSION,AND ENTREPRENEURSHIP GOALS AND POLICIES

Goal ED.3. Regional economic development partners support the start-up, retention, and expansion of existing business enterprises.

Policy ED.3.6. Foster entrepreneurialism and start-up businesses with incubator and accelerator programs in sectors that demonstrate considerable growth potential.

> *The proposed development includes the ability to expand and provide land for forest resource industry cluster businesses.*

Policy ED.3.7. Support and encourage regional agriculture.

> *Compost is a key component in organic agriculture.*

Policy ED.3.8. Protect existing business and industrial land uses from encroachment and allow for their expansion.

> *The proposed use expands upon neighboring Heavy Industrial Uses.*

BUSINESS ATTRACTION GOALS AND POLICIES

Goal ED.4. Support efforts to recruit diverse new businesses and industries compatible with the region.

Policy ED.4.2. Promote variety and flexibility in land use and development options within the urban growth boundary.

> *Providing flexibility in development requirements, such as landscaping, allows the proposed business to operate under the requirements of the ASLD Special Land Use Permit.*

Policy ED.4.5. In an effort to promote the sustainability of resources, the City will encourage all new and expanded commercial and industrial development to be energy and water efficient.

> *Proposed processing operations will use reclaimed water only and recycle all site run-off.*

COMMUNITY CHARACTER GOALS AND POLICIES

Goal ED.7. Continue to promote and enhance Flagstaff ’s unique sense of place as an economic development driver.

Policy ED.7.1. Support planning, design, and development that positively, creatively, and flexibly contribute to the community image.

> *The proposed use is a local driven initiative the reflects both a focus on forest health and an important investment in growing a local green economy. Both of which are key aspects of the image of our community.*

SITE PLAN
FOR
RESTORATION SOILS YARD
FLAGSTAFF, ARIZONA

A PORTION OF THE NORTHEAST QUARTER OF SECTION 8, TOWNSHIP 21 NORTH, RANGE 8 EAST, OF THE GILA AND SALT RIVER MERIDIAN COCONINO COUNTY, ARIZONA

PROPERTY INFORMATION:

M&B IN NE N2S2NW S2S2N2NW
SITE ADDRESS: NONE, TBD
ASSESSOR'S PARCEL NUMBER: NONE, ASLD
ENTIRE STATE LAND (ACRES): 51.41 ACRES
GROSS SITE (ACRES): 7.29 ACRES
NET SITE (ACRES): 4.01 ACRES
EXISTING ZONING CLASSIFICATION(S): HIGHWAY COMMERCIAL
PROPOSED ZONING CLASSIFICATION(S): HEAVY INDUSTRIAL – OPEN

PROJECT DEVELOPER:

RESTORATION SOILS, LLC
DAVID HAYWARD
3325 N. ANTLER XING
FLAGSTAFF, AZ 86001
(510) 331-3380

PROJECT ENGINEER:

SHEPHARD-WESNITZER, INC.
STEPHEN IRWIN, PE
110 WEST DALE AVE
FLAGSTAFF, AZ 86001
(928) 773-0354

CITY CONCEPT APPROVAL

THE CITY APPROVES THESE PLANS FOR CONCEPT ONLY. ALL LIABILITY FOR ERRORS AND OMISSIONS IS THE RESPONSIBILITY OF THE DESIGN ENGINEER.

CITY ENGINEER:

BY: _____ DATE:

CITY PUBLIC WORKS DIRECTOR

BY: _____ DATE:

CITY WATER SERVICES DIRECTOR

BY: _____ DATE:

AUTHORIZATION TO CONSTRUCT:

THE SIGNATURES ABOVE ARE REQUIRED BEFORE THE CONTRACTOR CAN COMMENCE. UNSIGNED, THESE PLANS HAVE NOT BEEN COMPLETED WITH RESPECT TO AGENCY REVIEW AND APPROVAL.

UTILITY COMPANY APPROVAL

ARIZONA PUBLIC SERVICE

BY: _____ DATE:

UNISOURCE ENERGY SERVICES

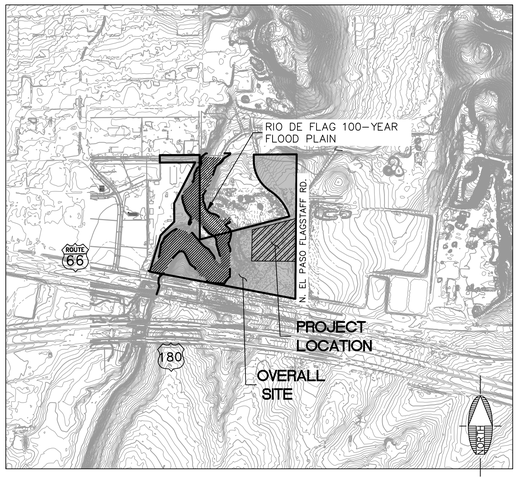
BY: _____ DATE:

CENTURYLINK

BY: _____ DATE:

ALTICE USA

BY: _____ DATE:



VICINITY MAP

Sheet List Table	
Sheet Number	Sheet Title
CVR	COVER SHEET
SP01	SITE PLAN
NRPP	NATURAL RESOURCE PROTECTION PLAN

LEGEND

- ROW
- EASEMENT
- LOT LINE
- SETBACK
- S — S — GRAVITY SEWER LINE
- PUBLIC WATER LINE
- G — G — G — EX. GAS
- UGE — EX. UNDERGROUND ELEC
- W — W — EX. WATER LINE
- SS — SS — EX. SEWER LINE
- STORM DRAIN PIPE
- FIRE HYDRANT
- GATE VALVE
- EX SEWER MANHOLE
- STORM DRAIN MANHOLE
- CATCH BASIN
- LIGHT POLE
- NATIVE ROCK WALL

UTILITY COMPANY CONTACTS

APS
CONTACT: CHAD BROOKS
2200 E. HUNTINGTON
FLAGSTAFF, AZ 86004
CHAD. BROOKS@APS.COM
PHONE: (928) 773-6440

UNISOURCE ENERGY SERVICES
CONTACT: MARTIN CONBOY
2901 W SHAMRELL BLVD #110
FLAGSTAFF, AZ 86001
MCONBOY@UESAZ.COM
PHONE: (928) 226-2269

LUMEN
CONTACT: MANUEL HERNANDEZ
112 NORTH BEAVER STREET
FLAGSTAFF, AZ 86001
MANUEL.HERNANDEZ4@LUMEN.COM
PHONE: (520) 600-24814

ALTICE USA
CONTACT: SANFORD YAZZIE
1601 SOUTH PLAZA WAY
FLAGSTAFF, AZ 86001
SANFORD.YAZZIE@ALTICEUSA.COM
PHONE: (928) 266-0672

IMPERVIOUS AREA SUMMARY

PRE-DEVELOPMENT IMPERVIOUS AREA = 0 SF
POST-DEVELOPMENT IMPERVIOUS AREA = 15,117 SF

NEW IMPERVIOUS AREA = 15,117 SF
1" LID VOLUME = 1,260 CF

LID AND DETENTION ARE REQUIRED AND WILL BE PROVIDED IN AN ABOVE GROUND RETENTION BASIN.

DRAINAGE SUMMARY

1" LID VOLUME REQUIRED= 1,260 CF

100-YEAR TOTAL STORAGE VOLUME REQUIRED = 4,855 CF

TOTAL RETENTION/VOLUME PROVIDED = 5,000 CF

FEMA DESIGNATION:

THIS PROJECT IS LOCATED WITHIN ZONE X OF FEMA FIRM MAP #04005C6831G AND ZONE AE OF MAP #04005C6827G , EFFECTIVE SEPTEMBER 3, 2010. ZONE X IS DESCRIBED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

PARKING CALCULATIONS

1 SPOT PER EMPLOYEE FOR CONSTRUCTION SUPPLY YARD
3 SPOTS PER EMPLYEE FOR THE MINI-STORAGE WAREHOUSING

TOTAL NUMBER OF PARKING SPOTS: 1+3 = 4

UTILITY CONFLICT

UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND WERE COMPILED FROM RECORD DRAWINGS, SURVEY, AND CONSTRUCTION PLANS FURNISHED BY OTHERS. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR DETERMINING THE ACTUAL LOCATIONS OF ALL UNDERGROUND LINES THAT MAY AFFECT WORK PRIOR TO CONSTRUCTION.

PRELIMINARY

NOT FOR CONSTRUCTION, BIDDING OR RECORDING

C.O.F. Project # PZ 21-00117

FLAGSTAFF
ARIZONA

RESTORATION SOILS YARD

COVER SHEET

JOB NO: 21214
DATE: FEB 22
SCALE: AS SHOWN
DRAWN: JEE
DESIGN: JEE, CNP
CHECKED: SCI

110 W. Dale Avenue
Flagstaff, AZ 86001
928.773.0354
928.774.8934 fax
www.swiaz.com

Shephard Wesnitzer, Inc.

REVISIONS

NO.	DESCRIPTION	DATE	BY

Call at least two full working days before you dig, it's the law!
ARIZONA811 Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)

DRAWING NO.
CVR

SHT NO. 1 OF 3

PLOTTED: Feb 24, 2022–8:12am

CLEAR VIEW ZONE CALCULATIONS

ID #	MAJOR STREET	MANEUVER DIRECTION	DESIGN SPEED $(V_{MAJOR})^1$	TIME GAP $t_{g\,(unadjusted)}{}^2$	GRADE ≤ 3%	MULTIPLE LANE CROSSINGS	NO. OF LANES[4]	TIME GAP $t_{g(adjusted)}{}^2$	INTERSECTION SIGHT DISTANCE (ISD[3])	STOPPING SIGHT DISTANCE (SSD)
D1	N. EL PASO FLAGSTAFF RD.	LEFT	25	7.5	Yes	No	1	8.6	316	155
D2	N. EL PASO FLAGSTAFF RD.	RIGHT	25	6.5	Yes	No	1	7.6	279	155

Notes:

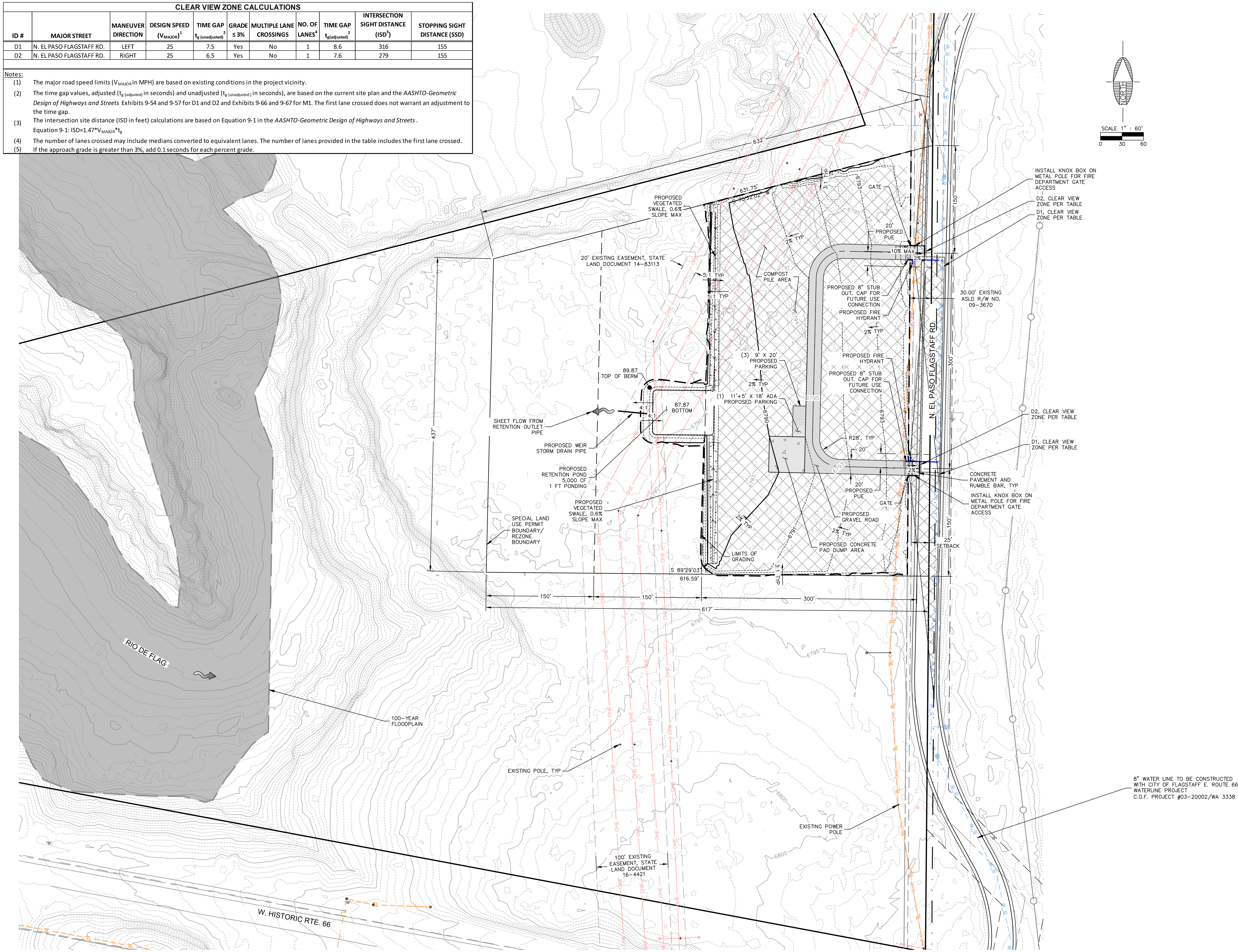
(1) The major road speed limits (V_{MAJOR} in MPH) are based on existing conditions in the project vicinity.

(2) The time gap values, adjusted ($t_{g\,(adjusted)}$ in seconds) and unadjusted ($t_{g\,(unadjusted)}$ in seconds), are based on the current site plan and the *AASHTO-Geometric Design of Highways and Streets* Exhibits 9-54 and 9-57 for D1 and D2 and Exhibits 9-66 and 9-67 for M1. The first lane crossed does not warrant an adjustment to the time gap.

(3) The intersection site distance (ISD in feet) calculations are based on Equation 9-1 in the *AASHTO-Geometric Design of Highways and Streets*.
Equation 9-1: $ISD=1.47*V_{MAJOR}*t_g$

(4) The number of lanes crossed may include medians converted to equivalent lanes. The number of lanes provided in the table includes the first lane crossed.

(5) If the approach grade is greater than 3%, add 0.1 seconds for each percent grade.



PRELIMINARY

NOT FOR CONSTRUCTION, BIDDING OR RECORDING

FLAGSTAFF ARIZONA

RESTORATION SOILS YARD

SITE PLAN

JOB NO:	21214
DATE:	FEB 22
SCALE:	AS SHOWN
DRAWN:	JEE
DESIGN:	JEE, CNP
CHECKED:	SCI

110 W. Dale Avenue
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www.swiaz.com

Shephard Wesnitzer, Inc.

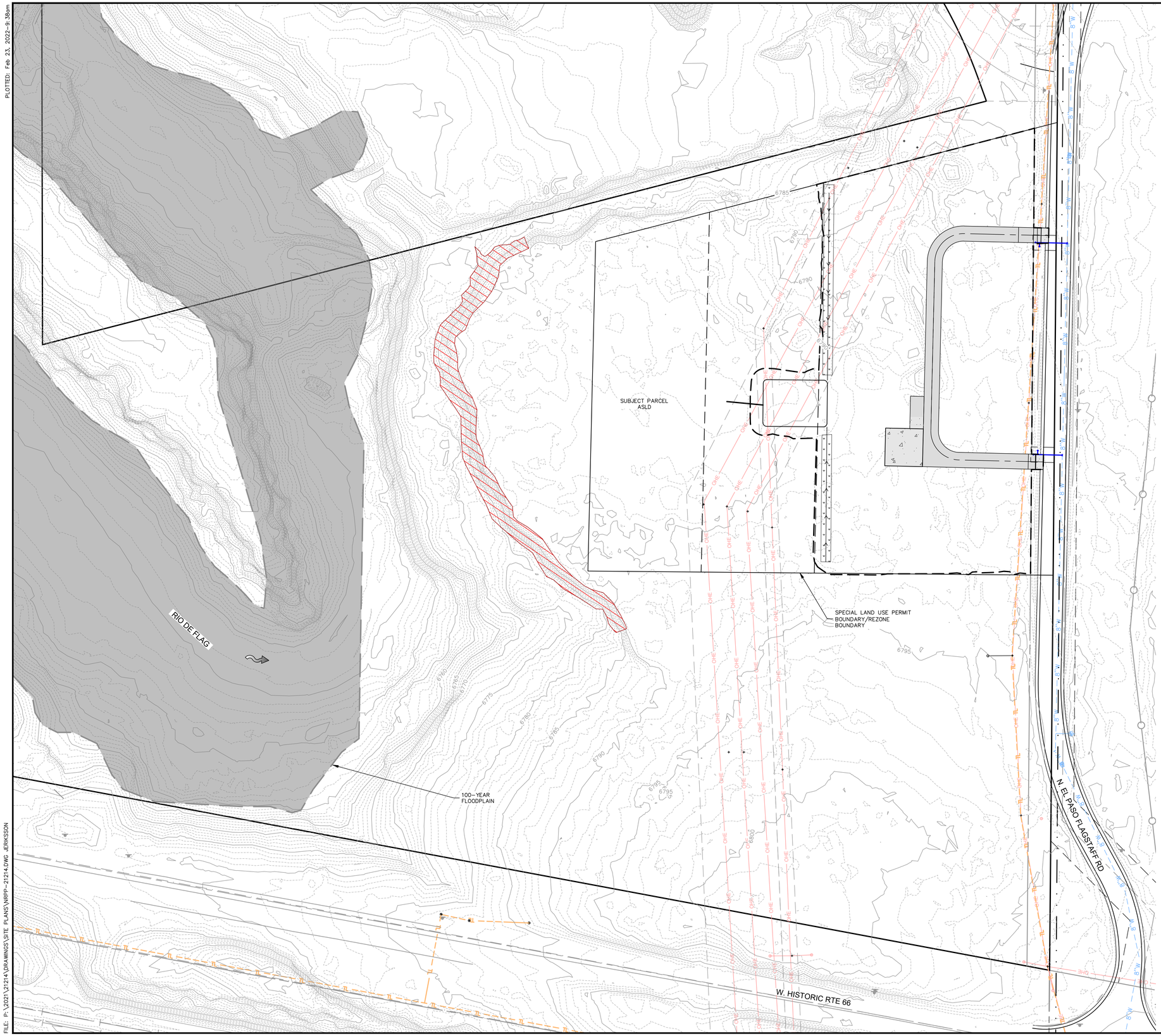
NO.	DESCRIPTION	DATE	BY
REVISIONS			

C.O.F. Project # PZ 21-00117

DRAWING NO. SP01

SHT NO. 2 OF 3

FILE: P:\2021\21214\DRAWINGS\SITE PLANS\SITE PLAN-21214.DWG JERIKSSON



LEGEND

- PROPERTY BOUNDARY
- 100-YEAR FLOODPLAIN
- DISTURBED AREA
- SLOPE RESOURCES 17-24.99%
- SLOPE RESOURCES 25-34.99%
- SLOPE RESOURCES >35%
- EXISTING TREE CANOPY

SCALE 1" : 60'
0 30 60

STEEP SLOPE RESOURCES	
	INDUSTRIAL
REQUIRED PRESERVATION RATE FOR 17-24.99%	60%
SLOPE AREA (SF) FOR 17-24.99%	80%
SLOPE AREA (SF) FOR >25%	100%
REQUIRED PRESERVATION (SF)	15,456
PRESERVED SLOPE (SF)	15,456
PRESERVATION RATE	100.0%

NOTE:

THERE ARE EXISTING TREES ON THE SOUTH END OF THE PROJECT THAT WILL NOT BE DISTRUBED AND PROTECTED IN PLACE. PER CITY OF FLAGSTAFF ZONING CODE SECTION 10-50.90.060, INDUSTRIAL ZONES PRESERVATION RATE IS 20%.

PRELIMINARY

NOT FOR CONSTRUCTION, BIDDING OR RECORDING

C.O.F. Project # PZ 21-00117

FLAGSTAFF
ARIZONA

RESTORATION SOILS YARD

NATURAL RESOURCE PROTECTION PLAN

JOB NO:	21214
DATE:	FEB 22
SCALE:	AS SHOWN
DRAWN:	JEE
DESIGN:	JEE, CNP
CHECKED:	SCI

110 W. Dale Avenue
Flagstaff, AZ 86001
928.773.0334
928.774.6934 fax
www.swiaz.com

SWI
Shephard Wesnitzer, Inc.

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DRAWING NO.
NRPP

SHT NO. 3 OF 3

Shephard Wesnitzer, Inc.

110 West Dale Avenue
Flagstaff, AZ 86001

928.773.0354
928.774.8934 fax

www.swiaz.com

Engineering an environment of excellence.

PRELIMINARY
NOT FOR CONSTRUCTION, BIDDING OR RECORDING

Attention: Doug Slover
City of Flagstaff
211 W. Aspen Ave.
Flagstaff, AZ 86001

February 24, 2022
SWI # 21214

RE: RESTORATION SOILS YARD (Preliminary Drainage Letter)
COF Project No. PZ-21-00117

Dear Mr. Slover:

This drainage letter is being provided to support the Site Plan submittal for the proposed Restoration Soils Yard development located on ASLD land at the intersection of N. El Paso Flagstaff Rd and W. Historic Route 66. The site is currently zoned Highway Commercial but will be rezoned to Heavy Industrial - Open with the proposed project. Access to the site will be provided by two driveways to N. El Paso Flagstaff Rd. The overall state land is approximately 51.41 acres. The proposed site will be constructed on approximately 7.29 acres with the development located on the eastern 4.01 acres of the site. The proposed development consists a new gravel road and a concrete pad with 4 parking spots.

The objective of this letter is to determine the impact the proposed development will have on the runoff characteristics of the site. Mitigation measures will be provided for the adverse impacts to the runoff conditions per the City of Flagstaff Stormwater Management Design Manual (COFSMDM).

Hydrology

The SCS TR-55 Method was used to determine peak runoff rates for the pre-development and post-development conditions. Rainfall data was taken from the COFSMDM.

The property is currently undeveloped with vegetation consisting of native grasses. The site is currently stockpiled with non-native material. Soils on the site were determined to consist of stony loam material per the NRCS Web Soil Survey. The property is relatively flat with the exception of some steeper slopes to the West. The site currently drains west and north/west at a 2-3% slope towards Rio De Flag. The high point of the site is located in the northeast and southeast of the property. A small portion on the southeast corner

drains south towards W. Historic Route 66. A narrow strip of land by the easterly property line drains to the east to an existing road dich along N. El Paso Flagstaff Rd.

The proposed grading and drainage plan was used to delineate Post-development Drainage Basins (A and B), which generally match the existing drainage patterns. Since this project is located on a portion of the overall site the drainage analysis is only for the eastern portion of the site draining west towards the Rio De Flag.

DETENTION/LID

Bentley's *PondPack* computer program was used to calculate the pre- and post-developed hydrographs for the Type II, 2-year, 10-year, and 100-year, 24-hour storm events for each basin. PondPack calculations utilized the SCS TR-55 Method. Curve Numbers (CNs) were determined based on existing soil conditions, proposed improvements, and weighted based on coverage area. The modeling report from PondPack and a drainage exhibit showing Pre- and Post-development basins are included as attachments to this letter. The table below summarizes the pre vs. post preliminary required storage volumes for the project.

Table 1: Peak Discharge Rates

Peak Discharge Rates						
Pre-Development Condition Peak Discharge Rates						
Basin ID	Area (acres)	Tc (hr)	CN	Runoff Flows (cfs)		
				Q_2	Q_{10}	Q_{100}
A	5.07	1.21	80	-	2.59	5.83
B	2.07	1.35	80	-	0.98	2.21
Post-Development Condition Peak Discharge Rates						
Basin ID	Area (acres)	Tc (min)	CN	Runoff Flows (cfs)		
				Q_2	Q_{10}	Q_{100}
A	6.75	1.21	81	1.13	3.83	5.97
B	0.39	1.35	80	0.09	0.21	0.46

Table 2: Detention Volume

Pre-Development Conditions Runoff Volumes				
Basin ID	Area (acres)	Tc (min)	Curve Number	Runoff Volume (cf)
A	5.07	1.21	80	45,458
B	2.07	1.35	80	18,509
Post-Development Conditions Runoff Volumes				
Area (acres)	Area (acres)	Tc (min)	Curve Number	Runoff Volume (cf)
A	6.75	1.21	81	64,990
B	0.39	1.35	80	3,832
			Required Retention Volume (cf)	4,855

Due to the decrease of basin area in the post-development condition for basin B, the runoff volume of the basin (B2) will decrease in the post-development condition; therefore, no detention of stormwater runoff for B is required. The required storage volume for basin A in the post-development condition resulted in 4,855 cubic feet. Storage is required for Basin A, which will be provided by the Retention basin. The site will continue to slope to the northeast and surface drain into the basin that will provide approximately 5,000 cubic feet. The outlet structure will consist of a berm, weir and discharge pipe with an orifice to drain the basin within 24 to 36 hours.

This project is required to account for the first flush of 1 inch over all new impervious areas per the COFSMDM. There is no impervious cover for the pre-development conditions. The increase in proposed impervious cover is 15,117 square feet, which results in 1,260 cubic feet of required LID volume. The retention basin will provide the LID volume required for the project. The treatment of this volume is achieved through the use of vegetated swales, see attached Hydraflow design report. The table below summaries the impervious area coverage and required LID Volume for the project.

Table 3 – Impervious Area/LID Summary

Impervious Area & LID Analysis					
				LID Required Depth (ft)	0.0833
Basin ID	Basin Area (sf)	Existing Impervious Area (sf)	Proposed Impervious Area (sf)	Net Impervious Area (sf)	Required LID Volume (CF)
A	693,835	0	15,117	15,117	1,260
1. Gross required 1" LID volume is for all post-development impervious area including streets, parking, sidewalks and buildings.					

Safe overflow of the pond is provided with a riprap lined weir. The overflow weir will be further designed during constructions plans.

CONCLUSION

Peak discharge rates for the 2-, 10- and 100-year storm events were determined for the project site for both the pre- and post-development conditions. Runoff volumes for the 100-year storm event were calculated to determine the detention volumes required at each drainage basin. The drainage design for the Restoration Soils Yard Project will be designed to retain the difference between the pre- and post-development runoff volumes for the Project basins. All drainage conveyance structures and retention facilities will be designed per the requirements outlined in the COFSMDM and LIDM. Refer to the Drainage Exhibits and Concept Plan prepared by SWI for locations and notes.

The design concepts in this report will ensure that the drainage integrity of the site is sustained with proper maintenance activity. Activities include frequent clearing of debris and sediment from the retention facilities and swales, disturbed slope treatment and

erosion control at the outlet pipe. Frequent monitoring will ensure expedient remedies to common problems such as erosion, sedimentation, and flow obstructions.

REFERENCES

Publications
City of Flagstaff Stormwater Management Design Manual, March 2009
Ordinance 2012-03, April 2012
City of Flagstaff Low Impact Development Manual, January 2009
TR-55, Urban Hydrology for Small Watersheds, NRCS, June 1986

Software
PondPack, Bentley Systems, Inc., Version *8i*

Refer to the Grading & Drainage Plan for the location of the proposed stormwater discharge point and the proposed site design.

Please let us know if you have any questions, comments, or need any additional information.

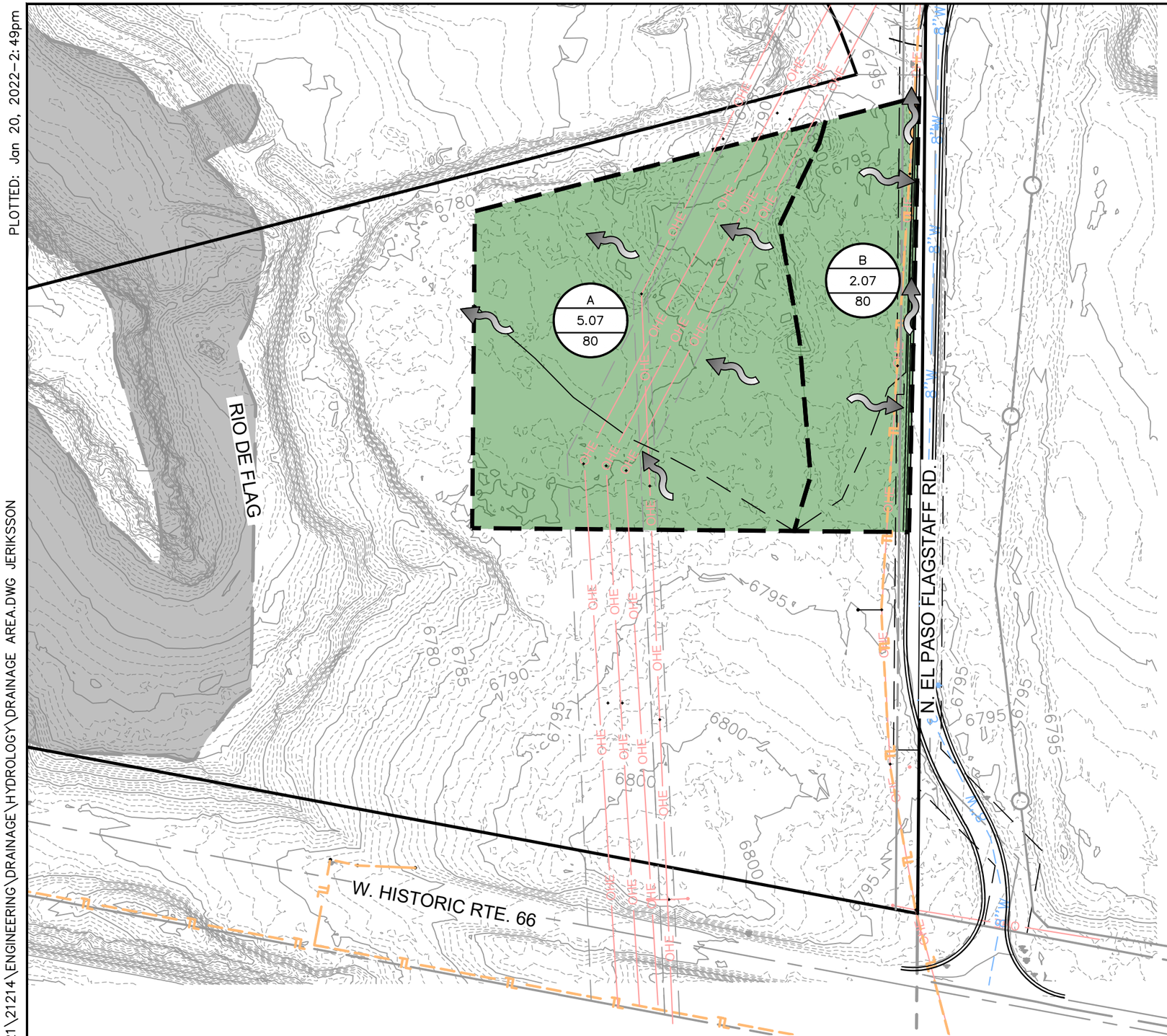
Sincerely,
Shephard – Wesnitzer, Inc.

Stephen C. Irwin, P.E.
Project Engineer

Attachments:
- Drainage Exhibit
- NRCS Web Soil Survey
- Hydraflow Report
- PondPack Report

PLOTTED: Jan 20, 2022 – 2:49pm

FILE: P:\2021\21214\ENGINEERING\DRAINAGE\HYDROLOGY\DRAINAGE AREA.DWG JERIKSSON



LEGEND

- PRE DEVELOPMENT BASIN DELINEATION
- SHEET FLOW
- SHALLOW CONCENTRATED FLOW
- 80 — HERBACEOUS AREA
- DRAINAGE ARROW
- ID / A / CN — ID = BASIN IDENTIFICATION, A = AREA IN ACRES, CN = SCS CURVE NUMBER

NORTH

SCALE 1" : 150'
0 75 150

PRELIMINARY

NOT FOR CONSTRUCTION, BIDDING OR RECORDING

C.O.F. Project # PZ 21-00117

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811 BLUE STAKE, INC.
Call 811 or click Arizona811.com

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SWI Shephard Wesnitzer, Inc.
110 W. Dale Avenue
Flagstaff, AZ 86001
928.773.0354
928.774.8934 fax
www.swiaz.com

JOB NO:	21214
DATE:	JAN 22
SCALE:	AS SHOWN
DRAWN:	JEE
DESIGN:	JEE, CNP
CHECKED:	SCI

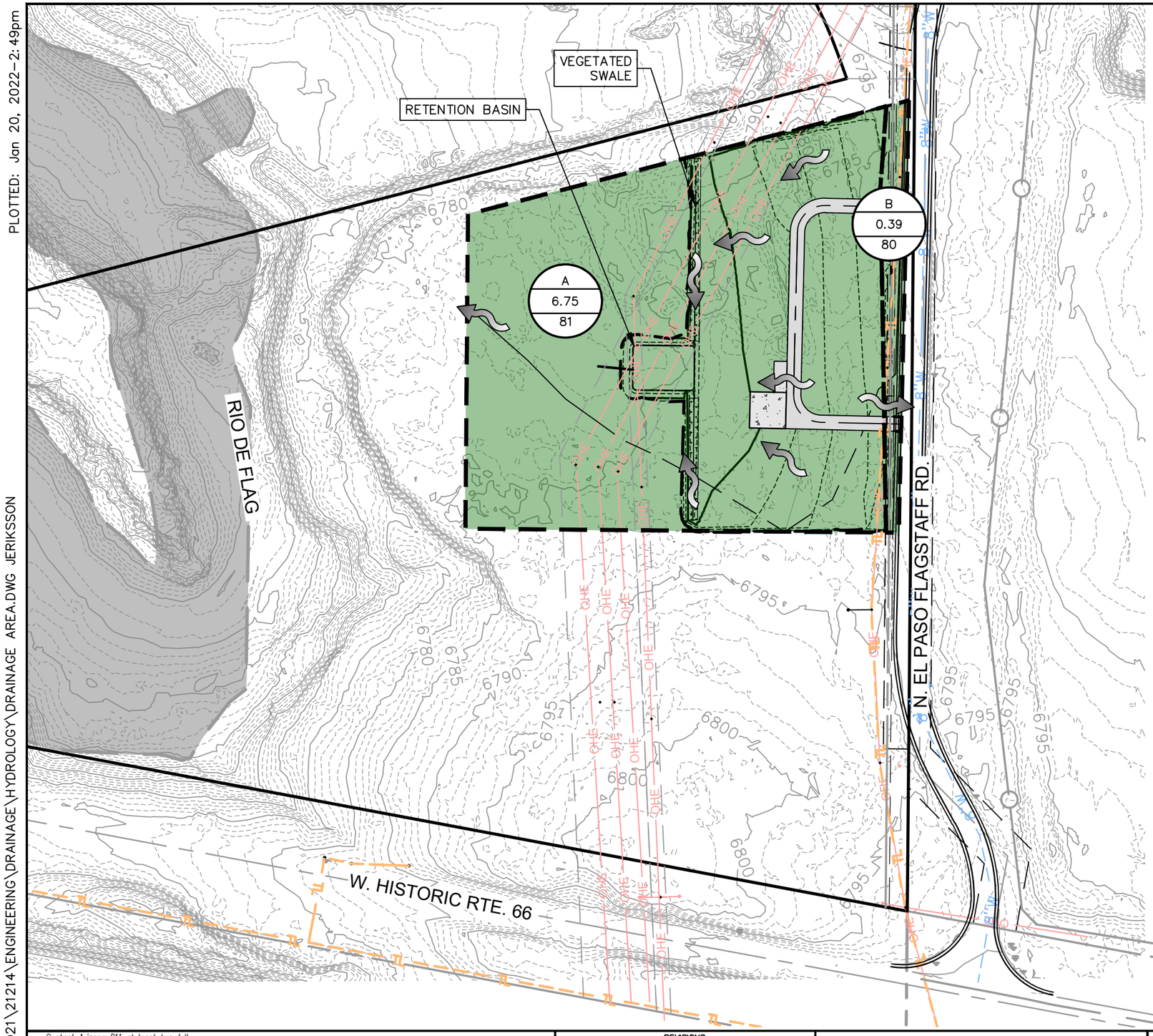
RESTORATION SOILS YARD — FLAGSTAFF ARIZONA

PRE-DEVELOPMENT DRAINAGE MAP

SHEET D01 OF 2

PLOTTED: Jan 20, 2022 – 2:49pm

FILE: P:\2021\21214\ENGINEERING\DRAINAGE\HYDROLOGY\DRAINAGE AREA.DWG JERIKSSON



LEGEND

- POST DEVELOPMENT BASIN DELINEATION
- SHEET FLOW
- SHALLOW CONCENTRATED FLOW
- 98 — ROW/ IMPERVIOUS AREA
- 77 — HERBACEOUS AREA
- DRAINAGE ARROW
- ID / A / CN — ID = BASIN IDENTIFICATION, A = AREA IN ACRES, CN = SCS CURVE NUMBER

NORTH

SCALE 1" : 150'
0 75 150

PRELIMINARY

NOT FOR CONSTRUCTION, BIDDING OR RECORDING

C.O.F. Project # PZ 21-00117

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811 BLUE STAKE, INC.
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Shephard Wesnitzer, Inc.
110 W. Dale Avenue
Flagstaff, AZ 86001
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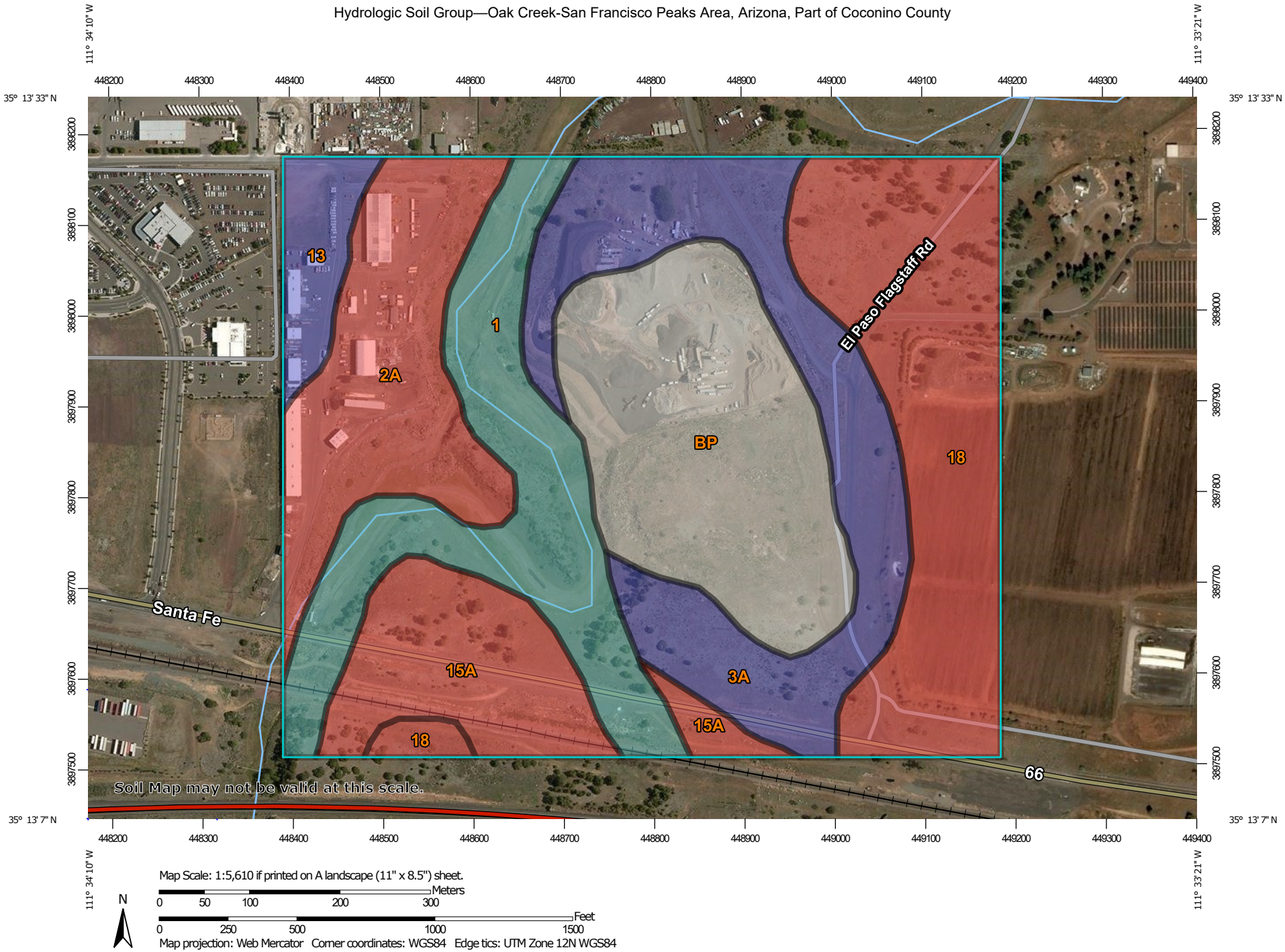
JOB NO:	21214
DATE:	JAN 22
SCALE:	AS SHOWN
DRAWN:	JEE
DESIGN:	JEE, CNP
CHECKED:	SCI

RESTRORATION SOILS YARD — FLAGSTAFF ARIZONA

POST-DEVELOPMENT DRAINAGE MAP

SHEET D02 OF 2


111° 34' 10" W
111° 33' 21" W
35° 13' 33" N
35° 13' 7" N
448200
448300
448400
448500
448600
448700
448800
448900
449000
449100
449200
449300
449400
3898200
3898100
3898000
3897900
3897800
3897700
3897600
3897500
13
1
2A
BP
18
3A
15A
18
15A
El Paso Flagstaff Rd
Santa Fe
66
Soil Map may not be valid at this scale.
Map Scale: 1:5,610 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 50 100 200 300
Feet
0 250 500 1000 1500
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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 1:24,000.

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: Oak Creek-San Francisco Peaks Area, Arizona, Part of Coconino County
Survey Area Data: Version 11, Sep 16, 2021

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

Date(s) aerial images were photographed: Aug 13, 2010—Jun 25, 2015

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Jacques clay loam, 0 to 2 percent slopes	C	20.4	15.6%
2A	Brolliar stony clay loam, 2 to 8 percent slopes	D	17.5	13.4%
3A	Baldy stony loam, 8 to 15 percent slopes	B	23.4	17.9%
13	Lynx loam, 0 to 2 percent slopes	B	4.4	3.4%
15A	Tortugas-Daze complex, 0 to 15 percent slopes	D	13.0	10.0%
18	Boysag gravelly loam, 0 to 8 percent slopes	D	26.8	20.5%
BP	Pits-Dumps complex		25.0	19.1%
Totals for Area of Interest			**130.5**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Dec 20 2021

VEGITATED SWALE - 21214

Trapezoidal

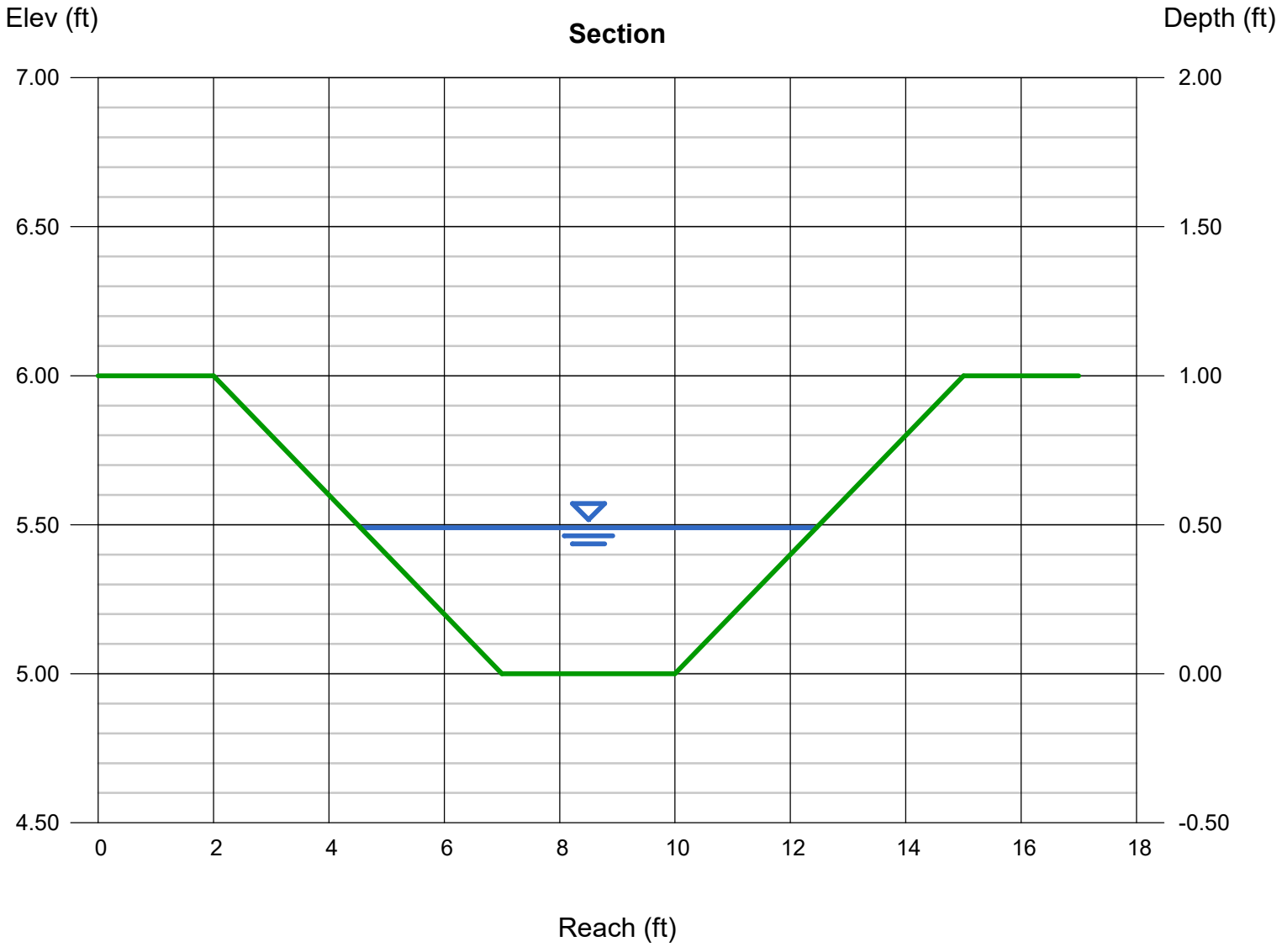
Bottom Width (ft)	= 3.00
Side Slopes (z:1)	= 5.00, 5.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 5.00
Slope (%)	= 0.60
N-Value	= 0.055

Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.66

Highlighted

Depth (ft)	= 0.49
Q (cfs)	= 2.660
Area (sqft)	= 2.67
Velocity (ft/s)	= 1.00
Wetted Perim (ft)	= 8.00
Crit Depth, Yc (ft)	= 0.26
Top Width (ft)	= 7.90
EGL (ft)	= 0.51



Pond pack 21214

Project Summary	
Title	21214 RESTORATION SOILS YARD
Engineer	JEE
Company	SWI
Date	1/18/2022

Notes

Table of Contents

Table of Contents

Table of Contents

Pond pack 21214

Subsection: User Notifications

User Notifications?	No user notifications generated.

Pond pack 21214

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
BASIN B EXISTING	Pre-Development 10 YEAR	10	8,521.000	12.750	0.98
BASIN B EXISTING	Pre-Development 100 YEAR	100	18,509.000	12.750	2.21
BASIN A EXISTING	Pre-Development 10 YEAR	10	20,934.000	12.650	2.59
BASIN A EXISTING	Pre-Development 100 YEAR	100	45,458.000	12.650	5.83
BASIN A PROPOSED	Post-Development 2 YEAR	2	13,709.000	13.200	1.13
BASIN A PROPOSED	Post-Development 10 YEAR	10	30,771.000	12.650	3.84
BASIN A PROPOSED	Post-Development 100 YEAR	100	64,990.000	13.150	5.97
BASIN B PROPOSED	Post-Development 2 YEAR	2	811.000	12.750	0.09
BASIN B PROPOSED	Post-Development 10 YEAR	10	1,794.000	12.750	0.21
BASIN B PROPOSED	Post-Development 100 YEAR	100	3,832.000	12.750	0.46

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
OUTLET B	Post-Development 2 YEAR	2	811.000	12.750	0.09
OUTLET B	Post-Development 10 YEAR	10	1,794.000	12.750	0.21
OUTLET B	Pre-Development 10 YEAR	10	8,521.000	12.750	0.98
OUTLET B	Post-Development 100 YEAR	100	3,832.000	12.750	0.46
OUTLET B	Pre-Development 100 YEAR	100	18,509.000	12.750	2.21
OUTLET A	Post-Development 2 YEAR	2	13,709.000	13.200	1.13
OUTLET A	Post-Development 10 YEAR	10	30,771.000	12.650	3.84
OUTLET A	Pre-Development 10 YEAR	10	20,934.000	12.650	2.59
OUTLET A	Post-Development 100 YEAR	100	64,990.000	13.150	5.97
OUTLET A	Pre-Development 100 YEAR	100	45,458.000	12.650	5.83

Pond pack 21214

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Time-Depth Curve: 10 YEAR 24 HR	
Label	10 YEAR 24 HR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.2	0.2
4.500	0.2	0.2	0.2	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.3
6.500	0.3	0.3	0.3	0.3	0.3
7.000	0.3	0.3	0.3	0.3	0.3
7.500	0.3	0.3	0.3	0.3	0.3
8.000	0.3	0.4	0.4	0.4	0.4
8.500	0.4	0.4	0.4	0.4	0.4
9.000	0.4	0.4	0.4	0.5	0.5
9.500	0.5	0.5	0.5	0.5	0.5
10.000	0.5	0.5	0.5	0.6	0.6
10.500	0.6	0.6	0.6	0.6	0.7
11.000	0.7	0.7	0.7	0.8	0.8
11.500	0.8	0.9	1.0	1.2	1.6
12.000	1.9	2.0	2.0	2.1	2.1
12.500	2.1	2.1	2.2	2.2	2.2
13.000	2.2	2.2	2.3	2.3	2.3
13.500	2.3	2.3	2.3	2.3	2.4
14.000	2.4	2.4	2.4	2.4	2.4
14.500	2.4	2.4	2.4	2.4	2.4
15.000	2.5	2.5	2.5	2.5	2.5
15.500	2.5	2.5	2.5	2.5	2.5
16.000	2.5	2.5	2.5	2.6	2.6
16.500	2.6	2.6	2.6	2.6	2.6

Pond pack 21214

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	2.6	2.6	2.6	2.6	2.6
17.500	2.6	2.6	2.6	2.6	2.6
18.000	2.7	2.7	2.7	2.7	2.7
18.500	2.7	2.7	2.7	2.7	2.7
19.000	2.7	2.7	2.7	2.7	2.7
19.500	2.7	2.7	2.7	2.7	2.7
20.000	2.7	2.7	2.7	2.8	2.8
20.500	2.8	2.8	2.8	2.8	2.8
21.000	2.8	2.8	2.8	2.8	2.8
21.500	2.8	2.8	2.8	2.8	2.8
22.000	2.8	2.8	2.8	2.8	2.8
22.500	2.8	2.8	2.8	2.8	2.8
23.000	2.8	2.9	2.9	2.9	2.9
23.500	2.9	2.9	2.9	2.9	2.9
24.000	2.9	(N/A)	(N/A)	(N/A)	(N/A)

Pond pack 21214

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Time-Depth Curve: 10 YEAR 24 HR	
Label	10 YEAR 24 HR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.2	0.2
4.500	0.2	0.2	0.2	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.3
6.500	0.3	0.3	0.3	0.3	0.3
7.000	0.3	0.3	0.3	0.3	0.3
7.500	0.3	0.3	0.3	0.3	0.3
8.000	0.3	0.4	0.4	0.4	0.4
8.500	0.4	0.4	0.4	0.4	0.4
9.000	0.4	0.4	0.4	0.5	0.5
9.500	0.5	0.5	0.5	0.5	0.5
10.000	0.5	0.5	0.5	0.6	0.6
10.500	0.6	0.6	0.6	0.6	0.7
11.000	0.7	0.7	0.7	0.8	0.8
11.500	0.8	0.9	1.0	1.2	1.6
12.000	1.9	2.0	2.0	2.1	2.1
12.500	2.1	2.1	2.2	2.2	2.2
13.000	2.2	2.2	2.3	2.3	2.3
13.500	2.3	2.3	2.3	2.3	2.4
14.000	2.4	2.4	2.4	2.4	2.4
14.500	2.4	2.4	2.4	2.4	2.4
15.000	2.5	2.5	2.5	2.5	2.5
15.500	2.5	2.5	2.5	2.5	2.5
16.000	2.5	2.5	2.5	2.6	2.6
16.500	2.6	2.6	2.6	2.6	2.6

Pond pack 21214

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	2.6	2.6	2.6	2.6	2.6
17.500	2.6	2.6	2.6	2.6	2.6
18.000	2.7	2.7	2.7	2.7	2.7
18.500	2.7	2.7	2.7	2.7	2.7
19.000	2.7	2.7	2.7	2.7	2.7
19.500	2.7	2.7	2.7	2.7	2.7
20.000	2.7	2.7	2.7	2.8	2.8
20.500	2.8	2.8	2.8	2.8	2.8
21.000	2.8	2.8	2.8	2.8	2.8
21.500	2.8	2.8	2.8	2.8	2.8
22.000	2.8	2.8	2.8	2.8	2.8
22.500	2.8	2.8	2.8	2.8	2.8
23.000	2.8	2.9	2.9	2.9	2.9
23.500	2.9	2.9	2.9	2.9	2.9
24.000	2.9	(N/A)	(N/A)	(N/A)	(N/A)

Pond pack 21214

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Time-Depth Curve: 100 YEAR 24 HR	
Label	100 YEAR 24 HR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.3	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.3	0.3	0.3	0.3	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.4	0.4	0.4	0.4	0.4
7.000	0.5	0.5	0.5	0.5	0.5
7.500	0.5	0.5	0.5	0.5	0.5
8.000	0.5	0.6	0.6	0.6	0.6
8.500	0.6	0.6	0.6	0.6	0.7
9.000	0.7	0.7	0.7	0.7	0.7
9.500	0.7	0.8	0.8	0.8	0.8
10.000	0.8	0.8	0.9	0.9	0.9
10.500	0.9	1.0	1.0	1.0	1.0
11.000	1.1	1.1	1.1	1.2	1.2
11.500	1.3	1.4	1.6	2.0	2.6
12.000	3.0	3.1	3.2	3.3	3.3
12.500	3.4	3.4	3.4	3.5	3.5
13.000	3.5	3.5	3.6	3.6	3.6
13.500	3.6	3.7	3.7	3.7	3.7
14.000	3.7	3.8	3.8	3.8	3.8
14.500	3.8	3.8	3.8	3.9	3.9
15.000	3.9	3.9	3.9	3.9	3.9
15.500	4.0	4.0	4.0	4.0	4.0
16.000	4.0	4.0	4.0	4.0	4.1
16.500	4.1	4.1	4.1	4.1	4.1

Pond pack 21214

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	4.1	4.1	4.1	4.1	4.1
17.500	4.2	4.2	4.2	4.2	4.2
18.000	4.2	4.2	4.2	4.2	4.2
18.500	4.2	4.2	4.3	4.3	4.3
19.000	4.3	4.3	4.3	4.3	4.3
19.500	4.3	4.3	4.3	4.3	4.3
20.000	4.3	4.3	4.4	4.4	4.4
20.500	4.4	4.4	4.4	4.4	4.4
21.000	4.4	4.4	4.4	4.4	4.4
21.500	4.4	4.4	4.4	4.4	4.4
22.000	4.5	4.5	4.5	4.5	4.5
22.500	4.5	4.5	4.5	4.5	4.5
23.000	4.5	4.5	4.5	4.5	4.5
23.500	4.5	4.5	4.5	4.5	4.6
24.000	4.6	(N/A)	(N/A)	(N/A)	(N/A)

Pond pack 21214

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Time-Depth Curve: 100 YEAR 24 HR	
Label	100 YEAR 24 HR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.3	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.3	0.3	0.3	0.3	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.4	0.4	0.4	0.4	0.4
7.000	0.5	0.5	0.5	0.5	0.5
7.500	0.5	0.5	0.5	0.5	0.5
8.000	0.5	0.6	0.6	0.6	0.6
8.500	0.6	0.6	0.6	0.6	0.7
9.000	0.7	0.7	0.7	0.7	0.7
9.500	0.7	0.8	0.8	0.8	0.8
10.000	0.8	0.8	0.9	0.9	0.9
10.500	0.9	1.0	1.0	1.0	1.0
11.000	1.1	1.1	1.1	1.2	1.2
11.500	1.3	1.4	1.6	2.0	2.6
12.000	3.0	3.1	3.2	3.3	3.3
12.500	3.4	3.4	3.4	3.5	3.5
13.000	3.5	3.5	3.6	3.6	3.6
13.500	3.6	3.7	3.7	3.7	3.7
14.000	3.7	3.8	3.8	3.8	3.8
14.500	3.8	3.8	3.8	3.9	3.9
15.000	3.9	3.9	3.9	3.9	3.9
15.500	4.0	4.0	4.0	4.0	4.0
16.000	4.0	4.0	4.0	4.0	4.1
16.500	4.1	4.1	4.1	4.1	4.1

Pond pack 21214

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	4.1	4.1	4.1	4.1	4.1
17.500	4.2	4.2	4.2	4.2	4.2
18.000	4.2	4.2	4.2	4.2	4.2
18.500	4.2	4.2	4.3	4.3	4.3
19.000	4.3	4.3	4.3	4.3	4.3
19.500	4.3	4.3	4.3	4.3	4.3
20.000	4.3	4.3	4.4	4.4	4.4
20.500	4.4	4.4	4.4	4.4	4.4
21.000	4.4	4.4	4.4	4.4	4.4
21.500	4.4	4.4	4.4	4.4	4.4
22.000	4.5	4.5	4.5	4.5	4.5
22.500	4.5	4.5	4.5	4.5	4.5
23.000	4.5	4.5	4.5	4.5	4.5
23.500	4.5	4.5	4.5	4.5	4.6
24.000	4.6	(N/A)	(N/A)	(N/A)	(N/A)

Pond pack 21214

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 2 years
Storm Event: 2 YEAR 24 HR

Time-Depth Curve: 2 YEAR 24 HR	
Label	2 YEAR 24 HR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	2 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.0	0.0	0.0
2.000	0.0	0.0	0.0	0.0	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.1	0.1
4.500	0.1	0.1	0.1	0.1	0.1
5.000	0.1	0.1	0.1	0.1	0.1
5.500	0.1	0.1	0.1	0.1	0.2
6.000	0.2	0.2	0.2	0.2	0.2
6.500	0.2	0.2	0.2	0.2	0.2
7.000	0.2	0.2	0.2	0.2	0.2
7.500	0.2	0.2	0.2	0.2	0.2
8.000	0.2	0.2	0.2	0.2	0.2
8.500	0.3	0.3	0.3	0.3	0.3
9.000	0.3	0.3	0.3	0.3	0.3
9.500	0.3	0.3	0.3	0.3	0.3
10.000	0.3	0.4	0.4	0.4	0.4
10.500	0.4	0.4	0.4	0.4	0.4
11.000	0.5	0.5	0.5	0.5	0.5
11.500	0.5	0.6	0.7	0.8	1.1
12.000	1.3	1.3	1.3	1.4	1.4
12.500	1.4	1.4	1.4	1.5	1.5
13.000	1.5	1.5	1.5	1.5	1.5
13.500	1.5	1.5	1.6	1.6	1.6
14.000	1.6	1.6	1.6	1.6	1.6
14.500	1.6	1.6	1.6	1.6	1.6
15.000	1.6	1.6	1.6	1.7	1.7
15.500	1.7	1.7	1.7	1.7	1.7
16.000	1.7	1.7	1.7	1.7	1.7
16.500	1.7	1.7	1.7	1.7	1.7

Pond pack 21214

Subsection: Time-Depth Curve
Label: Time-Depth - 1

Return Event: 2 years
Storm Event: 2 YEAR 24 HR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	1.7	1.7	1.7	1.7	1.7
17.500	1.8	1.8	1.8	1.8	1.8
18.000	1.8	1.8	1.8	1.8	1.8
18.500	1.8	1.8	1.8	1.8	1.8
19.000	1.8	1.8	1.8	1.8	1.8
19.500	1.8	1.8	1.8	1.8	1.8
20.000	1.8	1.8	1.8	1.8	1.8
20.500	1.8	1.8	1.8	1.8	1.8
21.000	1.9	1.9	1.9	1.9	1.9
21.500	1.9	1.9	1.9	1.9	1.9
22.000	1.9	1.9	1.9	1.9	1.9
22.500	1.9	1.9	1.9	1.9	1.9
23.000	1.9	1.9	1.9	1.9	1.9
23.500	1.9	1.9	1.9	1.9	1.9
24.000	1.9	(N/A)	(N/A)	(N/A)	(N/A)

Pond pack 21214

Subsection: Time of Concentration Calculations
Label: BASIN A EXISTING

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	300.00 ft
Manning's n	0.400
Slope	0.018 ft/ft
2 Year 24 Hour Depth	1.9 in
Average Velocity	0.07 ft/s
Segment Time of Concentration	1.161 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	242.00 ft
Is Paved?	False
Slope	0.006 ft/ft
Average Velocity	1.25 ft/s
Segment Time of Concentration	0.054 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	1.214 hours

==== SCS Channel Flow

Tc =

R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:

V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Pond pack 21214

Subsection: Time of Concentration Calculations
Label: BASIN A EXISTING

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	300.00 ft
Manning's n	0.400
Slope	0.018 ft/ft
2 Year 24 Hour Depth	1.9 in
Average Velocity	0.07 ft/s
Segment Time of Concentration	1.161 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	242.00 ft
Is Paved?	False
Slope	0.006 ft/ft
Average Velocity	1.25 ft/s
Segment Time of Concentration	0.054 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	1.214 hours

==== SCS Channel Flow

Tc =

R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:

V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Pond pack 21214

Subsection: Time of Concentration Calculations
Label: BASIN B EXISTING

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	276.00 ft
Manning's n	0.400
Slope	0.013 ft/ft
2 Year 24 Hour Depth	1.9 in
Average Velocity	0.06 ft/s
Segment Time of Concentration	1.243 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	377.00 ft
Is Paved?	False
Slope	0.004 ft/ft
Average Velocity	1.02 ft/s
Segment Time of Concentration	0.103 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	1.346 hours

==== SCS Channel Flow

Tc =

R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:

V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Pond pack 21214

Subsection: Time of Concentration Calculations
Label: BASIN B EXISTING

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	276.00 ft
Manning's n	0.400
Slope	0.013 ft/ft
2 Year 24 Hour Depth	1.9 in
Average Velocity	0.06 ft/s
Segment Time of Concentration	1.243 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	377.00 ft
Is Paved?	False
Slope	0.004 ft/ft
Average Velocity	1.02 ft/s
Segment Time of Concentration	0.103 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	1.346 hours

==== SCS Channel Flow

Tc =

R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:

V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Pond pack 21214

Subsection: Runoff CN-Area
Label: BASIN A PROPOSED

Return Event: 2 years
Storm Event: 2 YEAR 24 HR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Herbaceous - poor - Soil B	80.000	294,204.000	0.0	0.0	80.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	13,879.000	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	308,083.000	(N/A)	(N/A)	80.811

Pond pack 21214

Subsection: Runoff CN-Area
Label: BASIN A EXISTING

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Herbaceous - poor - Soil B	80.000	220,818.000	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	220,818.000	(N/A)	(N/A)	80.000

Pond pack 21214

Subsection: Runoff CN-Area
Label: BASIN A PROPOSED

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Herbaceous - poor - Soil B	80.000	294,204.000	0.0	0.0	80.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	13,879.000	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	308,083.000	(N/A)	(N/A)	80.811

Pond pack 21214

Subsection: Runoff CN-Area
Label: BASIN A EXISTING

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Herbaceous - poor - Soil B	80.000	220,818.000	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	220,818.000	(N/A)	(N/A)	80.000

Pond pack 21214

Subsection: Runoff CN-Area
Label: BASIN A PROPOSED

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Herbaceous - poor - Soil B	80.000	294,204.000	0.0	0.0	80.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	13,943.000	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	308,147.000	(N/A)	(N/A)	80.814

Pond pack 21214

Subsection: Runoff CN-Area
Label: BASIN B PROPOSED

Return Event: 2 years
Storm Event: 2 YEAR 24 HR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Herbaceous - poor - Soil B	80.000	16,836.000	0.0	0.0	80.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	1,181.000	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	18,017.000	(N/A)	(N/A)	81.180

Pond pack 21214

Subsection: Runoff CN-Area
Label: BASIN B EXISTING

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Herbaceous - poor - Soil B	80.000	90,085.000	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	90,085.000	(N/A)	(N/A)	80.000

Pond pack 21214

Subsection: Runoff CN-Area
Label: BASIN B PROPOSED

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Herbaceous - poor - Soil B	80.000	16,836.000	0.0	0.0	80.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	1,181.000	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	18,017.000	(N/A)	(N/A)	81.180

Pond pack 21214

Subsection: Runoff CN-Area
Label: BASIN B EXISTING

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Herbaceous - poor - Soil B	80.000	90,085.000	0.0	0.0	80.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	90,085.000	(N/A)	(N/A)	80.000

Pond pack 21214

Subsection: Runoff CN-Area
Label: BASIN B PROPOSED

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft²)	C (%)	UC (%)	Adjusted CN
Herbaceous - poor - Soil B	80.000	16,836.000	0.0	0.0	80.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	1,174.000	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	18,010.000	(N/A)	(N/A)	81.173

Pond pack 21214

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method (Computational Notes)

Definition of Terms

At	Total area (acres): At = Ai+Ap
Ai	Impervious area (acres)
Ap	Pervious area (acres)
CNi	Runoff curve number for impervious area
CNp	Runoff curve number for pervious area
fLoss	f loss constant infiltration (depth/time)
gKs	Saturated Hydraulic Conductivity (depth/time)
Md	Volumetric Moisture Deficit
Psi	Capillary Suction (length)
hK	Horton Infiltration Decay Rate (time^-1)
fo	Initial Infiltration Rate (depth/time)
fc	Ultimate(capacity)Infiltration Rate (depth/time)
Ia	Initial Abstraction (length)
dt	Computational increment (duration of unit excess rainfall) Default dt is smallest value of 0.1333Tc, rtm, and th (Smallest dt is then adjusted to match up with Tp)
UDdt	User specified override computational main time increment (only used if UDdt is => .1333Tc)
D(t)	Point on distribution curve (fraction of P) for time step t
K	2 / (1 + (Tr/Tp)): default K = 0.75: (for Tr/Tp = 1.67)
Ks	Hydrograph shape factor = Unit Conversions * K: = ((1hr/3600sec) * (1ft/12in) * ((5280ft)**2/sq.mi)) * K Default Ks = 645.333 * 0.75 = 484
Lag	Lag time from center of excess runoff (dt) to Tp: Lag = 0.6Tc
P	Total precipitation depth, inches
Pa(t)	Accumulated rainfall at time step t
Pi(t)	Incremental rainfall at time step t
qp	Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi. = (Ks * A * Q) / Tp (where Q = 1in. runoff, A=sq.mi.)
Qu(t)	Unit hydrograph ordinate (cfs) at time step t
Q(t)	Final hydrograph ordinate (cfs) at time step t
Rai(t)	Accumulated runoff (inches) at time step t for impervious area
Rap(t)	Accumulated runoff (inches) at time step t for pervious area
Rii(t)	Incremental runoff (inches) at time step t for impervious area
Rip(t)	Incremental runoff (inches) at time step t for pervious area
R(t)	Incremental weighted total runoff (inches)
Rtm	Time increment for rainfall table
Si	S for impervious area: Si = (1000/CNi) - 10
Sp	S for pervious area: Sp = (1000/CNp) - 10
t	Time step (row) number
Tc	Time of concentration
Tb	Time (hrs) of entire unit hydrograph: Tb = Tp + Tr
Tp	Time (hrs) to peak of a unit hydrograph: Tp = (dt/2) + Lag
Tr	Time (hrs) of receding limb of unit hydrograph: Tr = ratio of Tp

Pond pack 21214

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method
Computational Notes
Precipitation

Column (1)	Time for time step t
Column (2)	D(t) = Point on distribution curve for time step t
Column (3)	Pi(t) = Pa(t) - Pa(t-1): Col.(4) - Preceding Col.(4)
Column (4)	Pa(t) = D(t) x P: Col.(2) x P

Pervious Area Runoff (using SCS Runoff CN Method)

Column (5)	Rap(t) = Accumulated pervious runoff for time step t
	If (Pa(t) is <= 0.2Sp) then use: Rap(t) = 0.0
	If (Pa(t) is > 0.2Sp) then use:
	
	Rap(t) = (Col.(4)-0.2Sp)**2 / (Col.(4)+0.8Sp)

Column (6)	Rip(t) = Incremental pervious runoff for time step t Rip(t) = Rap(t) - Rap(t-1) Rip(t) = Col.(5) for current row - Col.(5) for preceding row.

Impervious Area Runoff

Column (7 & 8)...	Did not specify to use impervious areas.

Incremental Weighted Runoff

Column (9)	R(t) = (Ap/At) x Rip(t) + (Ai/At) x Rii(t) R(t) = (Ap/At) x Col.(6) + (Ai/At) x Col.(8)

SCS Unit Hydrograph Method

Column (10)	Q(t) is computed with the SCS unit hydrograph method using R(t) and Qu(t).

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN A PROPOSED

Return Event: 2 years
Storm Event: 2 YEAR 24 HR

Storm Event	2 YEAR 24 HR
Return Event	2 years
Duration	24.000 hours
Depth	1.9 in
Time of Concentration (Composite)	1.214 hours
Area (User Defined)	308,147.000 ft²

Computational Time Increment	0.253 hours
Time to Peak (Computed)	13.173 hours
Flow (Peak, Computed)	1.14 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	13.200 hours
Flow (Peak Interpolated Output)	1.13 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	308,147.000 ft²
Maximum Retention (Pervious)	2.3 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.6 in
Runoff Volume (Pervious)	14,235.115 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	13,709.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.214 hours
Computational Time Increment	0.253 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN A PROPOSED

Return Event: 2 years
Storm Event: 2 YEAR 24 HR

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.22 ft³/s
Unit peak time, Tp	1.267 hours
Unit receding limb, Tr	5.067 hours
Total unit time, Tb	6.333 hours

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: BASIN A PROPOSED Storm Event: 2 YEAR 24 HR

Storm Event	2 YEAR 24 HR
Return Event	2 years
Duration	24.000 hours
Depth	1.9 in
Time of Concentration (Composite)	1.214 hours
Area (User Defined)	308,147.000 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.400	0.00	0.00	0.00	0.00	0.00
11.650	0.01	0.02	0.03	0.04	0.05
11.900	0.07	0.10	0.13	0.16	0.20
12.150	0.23	0.28	0.34	0.40	0.45
12.400	0.51	0.57	0.64	0.70	0.76
12.650	0.83	0.88	0.92	0.96	1.00
12.900	1.05	1.07	1.09	1.10	1.12
13.150	1.13	1.13	1.12	1.12	1.11
13.400	1.10	1.09	1.06	1.04	1.01
13.650	0.99	0.96	0.93	0.90	0.87
13.900	0.84	0.81	0.79	0.76	0.74
14.150	0.71	0.69	0.67	0.65	0.63
14.400	0.61	0.59	0.58	0.56	0.54
14.650	0.53	0.51	0.50	0.49	0.47
14.900	0.46	0.45	0.44	0.43	0.42
15.150	0.41	0.40	0.39	0.38	0.37
15.400	0.36	0.36	0.35	0.34	0.34
15.650	0.33	0.32	0.32	0.31	0.31
15.900	0.30	0.30	0.29	0.29	0.28
16.150	0.28	0.27	0.27	0.26	0.26
16.400	0.26	0.25	0.25	0.25	0.24
16.650	0.24	0.24	0.23	0.23	0.23
16.900	0.22	0.22	0.22	0.22	0.21
17.150	0.21	0.21	0.21	0.20	0.20
17.400	0.20	0.20	0.20	0.19	0.19
17.650	0.19	0.19	0.19	0.18	0.18
17.900	0.18	0.18	0.18	0.18	0.17
18.150	0.17	0.17	0.17	0.17	0.17
18.400	0.17	0.17	0.17	0.16	0.16
18.650	0.16	0.16	0.16	0.16	0.16
18.900	0.16	0.16	0.15	0.15	0.15
19.150	0.15	0.15	0.15	0.15	0.15
19.400	0.15	0.15	0.14	0.14	0.14

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: BASIN A PROPOSED Storm Event: 2 YEAR 24 HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.650	0.14	0.14	0.14	0.14	0.14
19.900	0.14	0.14	0.14	0.13	0.13
20.150	0.13	0.13	0.13	0.13	0.13
20.400	0.13	0.13	0.13	0.13	0.12
20.650	0.12	0.12	0.12	0.12	0.12
20.900	0.12	0.12	0.12	0.12	0.12
21.150	0.12	0.12	0.11	0.11	0.11
21.400	0.11	0.11	0.11	0.11	0.11
21.650	0.11	0.11	0.11	0.11	0.11
21.900	0.11	0.11	0.11	0.11	0.11
22.150	0.11	0.11	0.11	0.11	0.11
22.400	0.11	0.11	0.10	0.10	0.10
22.650	0.10	0.10	0.10	0.10	0.10
22.900	0.10	0.10	0.10	0.10	0.10
23.150	0.10	0.10	0.10	0.10	0.10
23.400	0.10	0.10	0.10	0.10	0.10
23.650	0.10	0.10	0.10	0.10	0.10
23.900	0.10	0.10	0.10	(N/A)	(N/A)

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN A EXISTING

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Storm Event	10 YEAR 24 HR
Return Event	10 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	1.214 hours
Area (User Defined)	220,818.000 ft²

Computational Time Increment	0.162 hours
Time to Peak (Computed)	12.630 hours
Flow (Peak, Computed)	2.60 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.650 hours
Flow (Peak Interpolated Output)	2.59 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	220,818.000 ft²
Maximum Retention (Pervious)	2.5 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.2 in
Runoff Volume (Pervious)	21,359.706 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	20,934.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.214 hours
Computational Time Increment	0.162 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN A EXISTING

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.73 ft³/s
Unit peak time, Tp	0.810 hours
Unit receding limb, Tr	3.238 hours
Total unit time, Tb	4.048 hours

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: BASIN A EXISTING Storm Event: 10 YEAR 24 HR

Storm Event	10 YEAR 24 HR
Return Event	10 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	1.214 hours
Area (User Defined)	220,818.000 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.200	0.00	0.00	0.00	0.00	0.00
10.450	0.00	0.00	0.01	0.01	0.01
10.700	0.01	0.01	0.01	0.02	0.02
10.950	0.02	0.03	0.03	0.03	0.04
11.200	0.04	0.05	0.05	0.06	0.07
11.450	0.07	0.08	0.10	0.11	0.12
11.700	0.16	0.19	0.23	0.30	0.41
11.950	0.51	0.63	0.81	0.98	1.16
12.200	1.38	1.60	1.82	1.99	2.16
12.450	2.33	2.43	2.49	2.56	2.59
12.700	2.57	2.55	2.51	2.43	2.35
12.950	2.27	2.15	2.04	1.92	1.81
13.200	1.71	1.61	1.52	1.44	1.36
13.450	1.29	1.23	1.17	1.11	1.06
13.700	1.01	0.96	0.92	0.88	0.84
13.950	0.81	0.77	0.74	0.71	0.69
14.200	0.66	0.64	0.62	0.60	0.58
14.450	0.56	0.54	0.52	0.51	0.50
14.700	0.48	0.47	0.46	0.45	0.44
14.950	0.43	0.42	0.41	0.40	0.40
15.200	0.39	0.38	0.38	0.37	0.36
15.450	0.36	0.35	0.35	0.34	0.34
15.700	0.33	0.33	0.32	0.32	0.31
15.950	0.31	0.30	0.30	0.30	0.29
16.200	0.29	0.29	0.28	0.28	0.28
16.450	0.27	0.27	0.27	0.26	0.26
16.700	0.26	0.26	0.25	0.25	0.25
16.950	0.25	0.24	0.24	0.24	0.24
17.200	0.24	0.23	0.23	0.23	0.23
17.450	0.23	0.23	0.22	0.22	0.22
17.700	0.22	0.22	0.22	0.22	0.22
17.950	0.21	0.21	0.21	0.21	0.21
18.200	0.21	0.21	0.20	0.20	0.20

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: BASIN A EXISTING Storm Event: 10 YEAR 24 HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.450	0.20	0.20	0.20	0.20	0.20
18.700	0.19	0.19	0.19	0.19	0.19
18.950	0.19	0.19	0.19	0.19	0.18
19.200	0.18	0.18	0.18	0.18	0.18
19.450	0.18	0.18	0.17	0.17	0.17
19.700	0.17	0.17	0.17	0.17	0.17
19.950	0.16	0.16	0.16	0.16	0.16
20.200	0.16	0.16	0.16	0.15	0.15
20.450	0.15	0.15	0.15	0.15	0.15
20.700	0.15	0.15	0.14	0.14	0.14
20.950	0.14	0.14	0.14	0.14	0.14
21.200	0.14	0.14	0.14	0.14	0.14
21.450	0.14	0.14	0.14	0.14	0.14
21.700	0.14	0.14	0.14	0.13	0.13
21.950	0.13	0.13	0.13	0.13	0.13
22.200	0.13	0.13	0.13	0.13	0.13
22.450	0.13	0.13	0.13	0.13	0.13
22.700	0.13	0.13	0.13	0.13	0.13
22.950	0.13	0.13	0.13	0.13	0.13
23.200	0.13	0.13	0.13	0.13	0.13
23.450	0.13	0.13	0.13	0.13	0.13
23.700	0.13	0.13	0.13	0.12	0.12
23.950	0.12	0.12	(N/A)	(N/A)	(N/A)

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN A PROPOSED

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Storm Event	100 YEAR 24 HR
Return Event	100 years
Duration	24.000 hours
Depth	4.6 in
Time of Concentration (Composite)	1.214 hours
Area (User Defined)	308,147.000 ft²

Computational Time Increment	0.253 hours
Time to Peak (Computed)	13.173 hours
Flow (Peak, Computed)	5.98 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	13.150 hours
Flow (Peak Interpolated Output)	5.97 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	308,147.000 ft²
Maximum Retention (Pervious)	2.3 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.6 in
Runoff Volume (Pervious)	66,752.962 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	64,990.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.214 hours
Computational Time Increment	0.253 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN A PROPOSED

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.22 ft³/s
Unit peak time, Tp	1.267 hours
Unit receding limb, Tr	5.067 hours
Total unit time, Tb	6.333 hours

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: BASIN A PROPOSED Storm Event: 100 YEAR 24 HR

Storm Event	100 YEAR 24 HR
Return Event	100 years
Duration	24.000 hours
Depth	4.6 in
Time of Concentration (Composite)	1.214 hours
Area (User Defined)	308,147.000 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.750	0.00	0.00	0.00	0.00	0.00
8.000	0.00	0.00	0.00	0.00	0.01
8.250	0.01	0.01	0.01	0.01	0.01
8.500	0.01	0.01	0.02	0.02	0.02
8.750	0.02	0.02	0.02	0.03	0.03
9.000	0.03	0.04	0.04	0.04	0.04
9.250	0.05	0.05	0.05	0.06	0.06
9.500	0.07	0.07	0.07	0.08	0.08
9.750	0.09	0.09	0.10	0.10	0.11
10.000	0.11	0.12	0.12	0.13	0.13
10.250	0.14	0.14	0.15	0.16	0.16
10.500	0.17	0.18	0.19	0.19	0.20
10.750	0.21	0.22	0.23	0.24	0.25
11.000	0.26	0.28	0.29	0.30	0.32
11.250	0.33	0.35	0.37	0.38	0.41
11.500	0.44	0.47	0.50	0.53	0.62
11.750	0.71	0.81	0.91	1.00	1.19
12.000	1.39	1.58	1.78	1.98	2.27
12.250	2.57	2.88	3.19	3.49	3.79
12.500	4.09	4.38	4.68	4.98	5.18
12.750	5.35	5.51	5.67	5.83	5.90
13.000	5.92	5.94	5.95	5.97	5.93
13.250	5.84	5.75	5.66	5.57	5.44
13.500	5.27	5.11	4.94	4.77	4.61
13.750	4.43	4.26	4.09	3.92	3.76
14.000	3.63	3.49	3.36	3.22	3.10
14.250	2.99	2.89	2.79	2.69	2.59
14.500	2.51	2.43	2.35	2.27	2.19
14.750	2.12	2.06	1.99	1.93	1.86
15.000	1.81	1.76	1.71	1.66	1.61
15.250	1.57	1.53	1.49	1.45	1.41
15.500	1.38	1.35	1.32	1.29	1.26
15.750	1.23	1.21	1.18	1.16	1.13

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: BASIN A PROPOSED Storm Event: 100 YEAR 24 HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.000	1.11	1.09	1.07	1.05	1.03
16.250	1.01	0.99	0.97	0.96	0.94
16.500	0.92	0.91	0.89	0.88	0.87
16.750	0.85	0.84	0.83	0.82	0.80
17.000	0.79	0.78	0.77	0.76	0.75
17.250	0.74	0.73	0.72	0.72	0.71
17.500	0.70	0.69	0.68	0.67	0.67
17.750	0.66	0.65	0.65	0.64	0.63
18.000	0.63	0.62	0.61	0.61	0.60
18.250	0.60	0.59	0.59	0.59	0.58
18.500	0.58	0.57	0.57	0.56	0.56
18.750	0.56	0.55	0.55	0.54	0.54
19.000	0.54	0.53	0.53	0.53	0.52
19.250	0.52	0.52	0.51	0.51	0.50
19.500	0.50	0.50	0.49	0.49	0.49
19.750	0.48	0.48	0.48	0.47	0.47
20.000	0.47	0.46	0.46	0.46	0.45
20.250	0.45	0.45	0.44	0.44	0.44
20.500	0.43	0.43	0.43	0.42	0.42
20.750	0.42	0.41	0.41	0.41	0.41
21.000	0.40	0.40	0.40	0.40	0.39
21.250	0.39	0.39	0.39	0.38	0.38
21.500	0.38	0.38	0.38	0.38	0.37
21.750	0.37	0.37	0.37	0.37	0.37
22.000	0.37	0.36	0.36	0.36	0.36
22.250	0.36	0.36	0.36	0.36	0.36
22.500	0.35	0.35	0.35	0.35	0.35
22.750	0.35	0.35	0.35	0.35	0.35
23.000	0.35	0.34	0.34	0.34	0.34
23.250	0.34	0.34	0.34	0.34	0.34
23.500	0.34	0.34	0.34	0.34	0.33
23.750	0.33	0.33	0.33	0.33	0.33
24.000	0.33	(N/A)	(N/A)	(N/A)	(N/A)

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN A EXISTING

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Storm Event	100 YEAR 24 HR
Return Event	100 years
Duration	24.000 hours
Depth	4.6 in
Time of Concentration (Composite)	1.214 hours
Area (User Defined)	220,818.000 ft²

Computational Time Increment	0.162 hours
Time to Peak (Computed)	12.630 hours
Flow (Peak, Computed)	5.86 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.650 hours
Flow (Peak Interpolated Output)	5.83 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	220,818.000 ft²
Maximum Retention (Pervious)	2.5 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	46,238.975 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	45,458.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.214 hours
Computational Time Increment	0.162 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN A EXISTING

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.73 ft³/s
Unit peak time, Tp	0.810 hours
Unit receding limb, Tr	3.238 hours
Total unit time, Tb	4.048 hours

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: BASIN A EXISTING Storm Event: 100 YEAR 24 HR

Storm Event	100 YEAR 24 HR
Return Event	100 years
Duration	24.000 hours
Depth	4.6 in
Time of Concentration (Composite)	1.214 hours
Area (User Defined)	220,818.000 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
8.000	0.00	0.00	0.00	0.00	0.00
8.250	0.00	0.00	0.01	0.01	0.01
8.500	0.01	0.01	0.01	0.01	0.01
8.750	0.02	0.02	0.02	0.02	0.03
9.000	0.03	0.03	0.03	0.04	0.04
9.250	0.04	0.04	0.05	0.05	0.05
9.500	0.06	0.06	0.07	0.07	0.07
9.750	0.08	0.08	0.08	0.09	0.09
10.000	0.10	0.10	0.10	0.11	0.11
10.250	0.12	0.12	0.13	0.14	0.14
10.500	0.15	0.16	0.16	0.17	0.18
10.750	0.19	0.20	0.21	0.22	0.23
11.000	0.24	0.25	0.27	0.28	0.29
11.250	0.31	0.33	0.35	0.37	0.39
11.500	0.41	0.45	0.49	0.52	0.61
11.750	0.71	0.80	0.98	1.22	1.46
12.000	1.76	2.15	2.54	2.94	3.41
12.250	3.89	4.36	4.71	5.05	5.39
12.500	5.58	5.69	5.80	5.83	5.75
12.750	5.67	5.56	5.36	5.15	4.94
13.000	4.67	4.40	4.13	3.88	3.65
13.250	3.42	3.22	3.04	2.87	2.70
13.500	2.57	2.43	2.30	2.19	2.08
13.750	1.97	1.88	1.79	1.71	1.63
14.000	1.57	1.50	1.43	1.38	1.32
14.250	1.27	1.23	1.18	1.14	1.10
14.500	1.07	1.03	1.00	0.97	0.94
14.750	0.92	0.89	0.87	0.85	0.83
15.000	0.81	0.79	0.78	0.76	0.75
15.250	0.73	0.72	0.71	0.70	0.68
15.500	0.67	0.66	0.65	0.64	0.63
15.750	0.62	0.61	0.60	0.59	0.58
16.000	0.58	0.57	0.56	0.55	0.55

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: BASIN A EXISTING Storm Event: 100 YEAR 24 HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.250	0.54	0.53	0.53	0.52	0.51
16.500	0.51	0.50	0.50	0.49	0.49
16.750	0.48	0.48	0.47	0.47	0.46
17.000	0.46	0.45	0.45	0.45	0.44
17.250	0.44	0.44	0.43	0.43	0.43
17.500	0.42	0.42	0.42	0.42	0.41
17.750	0.41	0.41	0.41	0.40	0.40
18.000	0.40	0.40	0.39	0.39	0.39
18.250	0.39	0.38	0.38	0.38	0.38
18.500	0.37	0.37	0.37	0.37	0.36
18.750	0.36	0.36	0.36	0.35	0.35
19.000	0.35	0.35	0.34	0.34	0.34
19.250	0.34	0.34	0.33	0.33	0.33
19.500	0.33	0.32	0.32	0.32	0.32
19.750	0.31	0.31	0.31	0.31	0.30
20.000	0.30	0.30	0.30	0.30	0.29
20.250	0.29	0.29	0.29	0.28	0.28
20.500	0.28	0.28	0.28	0.27	0.27
20.750	0.27	0.27	0.27	0.27	0.26
21.000	0.26	0.26	0.26	0.26	0.26
21.250	0.26	0.26	0.26	0.26	0.25
21.500	0.25	0.25	0.25	0.25	0.25
21.750	0.25	0.25	0.25	0.25	0.25
22.000	0.25	0.25	0.25	0.25	0.25
22.250	0.24	0.24	0.24	0.24	0.24
22.500	0.24	0.24	0.24	0.24	0.24
22.750	0.24	0.24	0.24	0.24	0.24
23.000	0.24	0.24	0.24	0.24	0.24
23.250	0.24	0.23	0.23	0.23	0.23
23.500	0.23	0.23	0.23	0.23	0.23
23.750	0.23	0.23	0.23	0.23	0.23
24.000	0.23	(N/A)	(N/A)	(N/A)	(N/A)

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN A PROPOSED

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Storm Event	10 YEAR 24 HR
Return Event	10 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	1.214 hours
Area (User Defined)	308,147.000 ft²

Computational Time Increment	0.162 hours
Time to Peak (Computed)	12.626 hours
Flow (Peak, Computed)	3.85 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.650 hours
Flow (Peak Interpolated Output)	3.84 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	308,147.000 ft²
Maximum Retention (Pervious)	2.3 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.2 in
Runoff Volume (Pervious)	31,378.957 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	30,771.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.214 hours
Computational Time Increment	0.162 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN A PROPOSED

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.60 ft³/s
Unit peak time, Tp	0.809 hours
Unit receding limb, Tr	3.237 hours
Total unit time, Tb	4.047 hours

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: BASIN A PROPOSED Storm Event: 10 YEAR 24 HR

Storm Event	10 YEAR 24 HR
Return Event	10 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	1.214 hours
Area (User Defined)	308,147.000 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.900	0.00	0.00	0.00	0.00	0.00
10.150	0.00	0.01	0.01	0.01	0.01
10.400	0.01	0.01	0.02	0.02	0.02
10.650	0.03	0.03	0.03	0.04	0.04
10.900	0.05	0.05	0.06	0.06	0.07
11.150	0.08	0.08	0.09	0.10	0.11
11.400	0.12	0.13	0.15	0.17	0.19
11.650	0.21	0.26	0.32	0.37	0.49
11.900	0.64	0.78	0.98	1.23	1.49
12.150	1.76	2.08	2.40	2.72	2.98
12.400	3.22	3.47	3.61	3.71	3.80
12.650	3.84	3.80	3.77	3.72	3.59
12.900	3.47	3.35	3.17	3.00	2.83
13.150	2.67	2.52	2.36	2.23	2.11
13.400	2.00	1.89	1.80	1.71	1.62
13.650	1.55	1.47	1.40	1.34	1.28
13.900	1.22	1.17	1.13	1.08	1.04
14.150	1.00	0.96	0.92	0.89	0.86
14.400	0.83	0.81	0.78	0.76	0.74
14.650	0.72	0.70	0.68	0.66	0.65
14.900	0.63	0.62	0.61	0.59	0.58
15.150	0.57	0.56	0.55	0.54	0.53
15.400	0.52	0.52	0.51	0.50	0.49
15.650	0.48	0.48	0.47	0.46	0.45
15.900	0.45	0.44	0.44	0.43	0.43
16.150	0.42	0.42	0.41	0.41	0.40
16.400	0.40	0.39	0.39	0.38	0.38
16.650	0.37	0.37	0.37	0.36	0.36
16.900	0.36	0.35	0.35	0.35	0.34
17.150	0.34	0.34	0.34	0.33	0.33
17.400	0.33	0.33	0.33	0.32	0.32
17.650	0.32	0.32	0.32	0.31	0.31
17.900	0.31	0.31	0.31	0.30	0.30

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: BASIN A PROPOSED Storm Event: 10 YEAR 24 HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.150	0.30	0.30	0.30	0.29	0.29
18.400	0.29	0.29	0.29	0.29	0.28
18.650	0.28	0.28	0.28	0.28	0.27
18.900	0.27	0.27	0.27	0.27	0.27
19.150	0.26	0.26	0.26	0.26	0.26
19.400	0.25	0.25	0.25	0.25	0.25
19.650	0.25	0.24	0.24	0.24	0.24
19.900	0.24	0.24	0.23	0.23	0.23
20.150	0.23	0.23	0.22	0.22	0.22
20.400	0.22	0.22	0.22	0.21	0.21
20.650	0.21	0.21	0.21	0.21	0.21
20.900	0.21	0.20	0.20	0.20	0.20
21.150	0.20	0.20	0.20	0.20	0.20
21.400	0.20	0.20	0.20	0.20	0.20
21.650	0.20	0.19	0.19	0.19	0.19
21.900	0.19	0.19	0.19	0.19	0.19
22.150	0.19	0.19	0.19	0.19	0.19
22.400	0.19	0.19	0.19	0.19	0.19
22.650	0.19	0.19	0.19	0.19	0.19
22.900	0.19	0.19	0.18	0.18	0.18
23.150	0.18	0.18	0.18	0.18	0.18
23.400	0.18	0.18	0.18	0.18	0.18
23.650	0.18	0.18	0.18	0.18	0.18
23.900	0.18	0.18	0.18	(N/A)	(N/A)

Storm Event	2 YEAR 24 HR
Return Event	2 years
Duration	24.000 hours
Depth	1.9 in
Time of Concentration (Composite)	1.346 hours
Area (User Defined)	18,010.000 ft²

Computational Time Increment	0.179 hours
Time to Peak (Computed)	12.742 hours
Flow (Peak, Computed)	0.09 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.750 hours
Flow (Peak Interpolated Output)	0.09 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	18,010.000 ft²
Maximum Retention (Pervious)	2.3 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.6 in
Runoff Volume (Pervious)	832.483 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	811.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.346 hours
Computational Time Increment	0.179 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN B PROPOSED

Return Event: 2 years
Storm Event: 2 YEAR 24 HR

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.35 ft³/s
Unit peak time, Tp	0.897 hours
Unit receding limb, Tr	3.589 hours
Total unit time, Tb	4.487 hours

Storm Event	2 YEAR 24 HR
Return Event	2 years
Duration	24.000 hours
Depth	1.9 in
Time of Concentration (Composite)	1.346 hours
Area (User Defined)	18,010.000 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.650	0.00	0.00	0.00	0.00	0.00
11.900	0.01	0.01	0.01	0.02	0.02
12.150	0.03	0.03	0.04	0.05	0.06
12.400	0.06	0.07	0.07	0.08	0.08
12.650	0.08	0.08	0.09	0.09	0.09
12.900	0.09	0.08	0.08	0.08	0.08
13.150	0.07	0.07	0.07	0.06	0.06
13.400	0.06	0.05	0.05	0.05	0.05
13.650	0.05	0.04	0.04	0.04	0.04
13.900	0.04	0.04	0.03	0.03	0.03
14.150	0.03	0.03	0.03	0.03	0.03
14.400	0.03	0.03	0.02	0.02	0.02
14.650	0.02	0.02	0.02	0.02	0.02
14.900	0.02	0.02	0.02	0.02	0.02
15.150	0.02	0.02	0.02	0.02	0.02
15.400	0.02	0.02	0.02	0.02	0.02
15.650	0.02	0.02	0.01	0.01	0.01
15.900	0.01	0.01	0.01	0.01	0.01
16.150	0.01	0.01	0.01	0.01	0.01
16.400	0.01	0.01	0.01	0.01	0.01
16.650	0.01	0.01	0.01	0.01	0.01
16.900	0.01	0.01	0.01	0.01	0.01
17.150	0.01	0.01	0.01	0.01	0.01
17.400	0.01	0.01	0.01	0.01	0.01
17.650	0.01	0.01	0.01	0.01	0.01
17.900	0.01	0.01	0.01	0.01	0.01
18.150	0.01	0.01	0.01	0.01	0.01
18.400	0.01	0.01	0.01	0.01	0.01
18.650	0.01	0.01	0.01	0.01	0.01
18.900	0.01	0.01	0.01	0.01	0.01
19.150	0.01	0.01	0.01	0.01	0.01
19.400	0.01	0.01	0.01	0.01	0.01
19.650	0.01	0.01	0.01	0.01	0.01

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: BASIN B PROPOSED Storm Event: 2 YEAR 24 HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.900	0.01	0.01	0.01	0.01	0.01
20.150	0.01	0.01	0.01	0.01	0.01
20.400	0.01	0.01	0.01	0.01	0.01
20.650	0.01	0.01	0.01	0.01	0.01
20.900	0.01	0.01	0.01	0.01	0.01
21.150	0.01	0.01	0.01	0.01	0.01
21.400	0.01	0.01	0.01	0.01	0.01
21.650	0.01	0.01	0.01	0.01	0.01
21.900	0.01	0.01	0.01	0.01	0.01
22.150	0.01	0.01	0.01	0.01	0.01
22.400	0.01	0.01	0.01	0.01	0.01
22.650	0.01	0.01	0.01	0.01	0.01
22.900	0.01	0.01	0.01	0.01	0.01
23.150	0.01	0.01	0.01	0.01	0.01
23.400	0.01	0.01	0.01	0.01	0.01
23.650	0.01	0.01	0.01	0.01	0.01
23.900	0.01	0.01	0.01	(N/A)	(N/A)

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN B EXISTING

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Storm Event	10 YEAR 24 HR
Return Event	10 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	1.346 hours
Area (User Defined)	90,085.000 ft²

Computational Time Increment	0.179 hours
Time to Peak (Computed)	12.740 hours
Flow (Peak, Computed)	0.98 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.750 hours
Flow (Peak Interpolated Output)	0.98 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	90,085.000 ft²
Maximum Retention (Pervious)	2.5 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.2 in
Runoff Volume (Pervious)	8,713.914 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,521.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.346 hours
Computational Time Increment	0.179 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN B EXISTING

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.74 ft³/s
Unit peak time, Tp	0.897 hours
Unit receding limb, Tr	3.589 hours
Total unit time, Tb	4.486 hours

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: BASIN B EXISTING Storm Event: 10 YEAR 24 HR

Storm Event	10 YEAR 24 HR
Return Event	10 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	1.346 hours
Area (User Defined)	90,085.000 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.400	0.00	0.00	0.00	0.00	0.00
10.650	0.00	0.00	0.00	0.00	0.01
10.900	0.01	0.01	0.01	0.01	0.01
11.150	0.01	0.02	0.02	0.02	0.02
11.400	0.02	0.03	0.03	0.03	0.04
11.650	0.04	0.06	0.07	0.09	0.10
11.900	0.14	0.18	0.22	0.27	0.33
12.150	0.40	0.46	0.53	0.61	0.68
12.400	0.75	0.80	0.86	0.91	0.94
12.650	0.95	0.97	0.98	0.97	0.96
12.900	0.95	0.93	0.89	0.86	0.83
13.150	0.79	0.75	0.71	0.68	0.64
13.400	0.61	0.58	0.55	0.52	0.50
13.650	0.47	0.45	0.44	0.42	0.40
13.900	0.38	0.37	0.35	0.34	0.32
14.150	0.31	0.30	0.29	0.28	0.27
14.400	0.26	0.25	0.24	0.23	0.23
14.650	0.22	0.21	0.21	0.20	0.20
14.900	0.19	0.19	0.18	0.18	0.18
15.150	0.17	0.17	0.17	0.16	0.16
15.400	0.16	0.15	0.15	0.15	0.15
15.650	0.14	0.14	0.14	0.14	0.14
15.900	0.13	0.13	0.13	0.13	0.13
16.150	0.12	0.12	0.12	0.12	0.12
16.400	0.12	0.11	0.11	0.11	0.11
16.650	0.11	0.11	0.11	0.11	0.10
16.900	0.10	0.10	0.10	0.10	0.10
17.150	0.10	0.10	0.10	0.10	0.10
17.400	0.10	0.09	0.09	0.09	0.09
17.650	0.09	0.09	0.09	0.09	0.09
17.900	0.09	0.09	0.09	0.09	0.09
18.150	0.09	0.09	0.09	0.08	0.08
18.400	0.08	0.08	0.08	0.08	0.08

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: BASIN B EXISTING Storm Event: 10 YEAR 24 HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.650	0.08	0.08	0.08	0.08	0.08
18.900	0.08	0.08	0.08	0.08	0.08
19.150	0.08	0.08	0.08	0.07	0.07
19.400	0.07	0.07	0.07	0.07	0.07
19.650	0.07	0.07	0.07	0.07	0.07
19.900	0.07	0.07	0.07	0.07	0.07
20.150	0.07	0.07	0.06	0.06	0.06
20.400	0.06	0.06	0.06	0.06	0.06
20.650	0.06	0.06	0.06	0.06	0.06
20.900	0.06	0.06	0.06	0.06	0.06
21.150	0.06	0.06	0.06	0.06	0.06
21.400	0.06	0.06	0.06	0.06	0.06
21.650	0.06	0.06	0.06	0.06	0.06
21.900	0.06	0.06	0.05	0.05	0.05
22.150	0.05	0.05	0.05	0.05	0.05
22.400	0.05	0.05	0.05	0.05	0.05
22.650	0.05	0.05	0.05	0.05	0.05
22.900	0.05	0.05	0.05	0.05	0.05
23.150	0.05	0.05	0.05	0.05	0.05
23.400	0.05	0.05	0.05	0.05	0.05
23.650	0.05	0.05	0.05	0.05	0.05
23.900	0.05	0.05	0.05	(N/A)	(N/A)

Storm Event	100 YEAR 24 HR
Return Event	100 years
Duration	24.000 hours
Depth	4.6 in
Time of Concentration (Composite)	1.346 hours
Area (User Defined)	18,010.000 ft²

Computational Time Increment	0.179 hours
Time to Peak (Computed)	12.742 hours
Flow (Peak, Computed)	0.46 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.750 hours
Flow (Peak Interpolated Output)	0.46 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	18,010.000 ft²
Maximum Retention (Pervious)	2.3 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.6 in
Runoff Volume (Pervious)	3,903.780 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,832.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.346 hours
Computational Time Increment	0.179 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN B PROPOSED

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.35 ft³/s
Unit peak time, Tp	0.897 hours
Unit receding limb, Tr	3.589 hours
Total unit time, Tb	4.487 hours

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: BASIN B PROPOSED Storm Event: 100 YEAR 24 HR

Storm Event	100 YEAR 24 HR
Return Event	100 years
Duration	24.000 hours
Depth	4.6 in
Time of Concentration (Composite)	1.346 hours
Area (User Defined)	18,010.000 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
8.400	0.00	0.00	0.00	0.00	0.00
8.650	0.00	0.00	0.00	0.00	0.00
8.900	0.00	0.00	0.00	0.00	0.00
9.150	0.00	0.00	0.00	0.00	0.00
9.400	0.01	0.01	0.01	0.01	0.01
9.650	0.01	0.01	0.01	0.01	0.01
9.900	0.01	0.01	0.01	0.01	0.01
10.150	0.01	0.01	0.01	0.01	0.01
10.400	0.01	0.01	0.01	0.01	0.01
10.650	0.01	0.02	0.02	0.02	0.02
10.900	0.02	0.02	0.02	0.02	0.02
11.150	0.02	0.02	0.03	0.03	0.03
11.400	0.03	0.03	0.03	0.04	0.04
11.650	0.04	0.05	0.06	0.07	0.07
11.900	0.09	0.11	0.13	0.15	0.18
12.150	0.21	0.24	0.28	0.31	0.34
12.400	0.37	0.39	0.41	0.44	0.44
12.650	0.45	0.45	0.46	0.45	0.44
12.900	0.43	0.42	0.41	0.39	0.37
13.150	0.35	0.34	0.32	0.30	0.28
13.400	0.27	0.25	0.24	0.23	0.22
13.650	0.20	0.20	0.19	0.18	0.17
13.900	0.16	0.15	0.15	0.14	0.14
14.150	0.13	0.12	0.12	0.11	0.11
14.400	0.11	0.10	0.10	0.10	0.09
14.650	0.09	0.09	0.08	0.08	0.08
14.900	0.08	0.08	0.07	0.07	0.07
15.150	0.07	0.07	0.07	0.06	0.06
15.400	0.06	0.06	0.06	0.06	0.06
15.650	0.06	0.06	0.05	0.05	0.05
15.900	0.05	0.05	0.05	0.05	0.05
16.150	0.05	0.05	0.05	0.05	0.05
16.400	0.04	0.04	0.04	0.04	0.04

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: BASIN B PROPOSED Storm Event: 100 YEAR 24 HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.650	0.04	0.04	0.04	0.04	0.04
16.900	0.04	0.04	0.04	0.04	0.04
17.150	0.04	0.04	0.04	0.04	0.04
17.400	0.04	0.04	0.04	0.04	0.04
17.650	0.04	0.03	0.03	0.03	0.03
17.900	0.03	0.03	0.03	0.03	0.03
18.150	0.03	0.03	0.03	0.03	0.03
18.400	0.03	0.03	0.03	0.03	0.03
18.650	0.03	0.03	0.03	0.03	0.03
18.900	0.03	0.03	0.03	0.03	0.03
19.150	0.03	0.03	0.03	0.03	0.03
19.400	0.03	0.03	0.03	0.03	0.03
19.650	0.03	0.03	0.03	0.03	0.03
19.900	0.03	0.03	0.03	0.03	0.03
20.150	0.02	0.02	0.02	0.02	0.02
20.400	0.02	0.02	0.02	0.02	0.02
20.650	0.02	0.02	0.02	0.02	0.02
20.900	0.02	0.02	0.02	0.02	0.02
21.150	0.02	0.02	0.02	0.02	0.02
21.400	0.02	0.02	0.02	0.02	0.02
21.650	0.02	0.02	0.02	0.02	0.02
21.900	0.02	0.02	0.02	0.02	0.02
22.150	0.02	0.02	0.02	0.02	0.02
22.400	0.02	0.02	0.02	0.02	0.02
22.650	0.02	0.02	0.02	0.02	0.02
22.900	0.02	0.02	0.02	0.02	0.02
23.150	0.02	0.02	0.02	0.02	0.02
23.400	0.02	0.02	0.02	0.02	0.02
23.650	0.02	0.02	0.02	0.02	0.02
23.900	0.02	0.02	0.02	(N/A)	(N/A)

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN B EXISTING

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Storm Event	100 YEAR 24 HR
Return Event	100 years
Duration	24.000 hours
Depth	4.6 in
Time of Concentration (Composite)	1.346 hours
Area (User Defined)	90,085.000 ft²

Computational Time Increment	0.179 hours
Time to Peak (Computed)	12.740 hours
Flow (Peak, Computed)	2.21 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.750 hours
Flow (Peak Interpolated Output)	2.21 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	90,085.000 ft²
Maximum Retention (Pervious)	2.5 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	18,863.671 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	18,509.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.346 hours
Computational Time Increment	0.179 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN B EXISTING

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.74 ft³/s
Unit peak time, Tp	0.897 hours
Unit receding limb, Tr	3.589 hours
Total unit time, Tb	4.486 hours

Storm Event	100 YEAR 24 HR
Return Event	100 years
Duration	24.000 hours
Depth	4.6 in
Time of Concentration (Composite)	1.346 hours
Area (User Defined)	90,085.000 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
8.200	0.00	0.00	0.00	0.00	0.00
8.450	0.00	0.00	0.00	0.00	0.00
8.700	0.01	0.01	0.01	0.01	0.01
8.950	0.01	0.01	0.01	0.01	0.01
9.200	0.01	0.02	0.02	0.02	0.02
9.450	0.02	0.02	0.02	0.02	0.03
9.700	0.03	0.03	0.03	0.03	0.03
9.950	0.03	0.04	0.04	0.04	0.04
10.200	0.04	0.05	0.05	0.05	0.05
10.450	0.05	0.06	0.06	0.06	0.06
10.700	0.07	0.07	0.07	0.08	0.08
10.950	0.09	0.09	0.10	0.10	0.11
11.200	0.11	0.12	0.12	0.13	0.14
11.450	0.15	0.16	0.17	0.18	0.20
11.700	0.23	0.26	0.30	0.35	0.44
11.950	0.53	0.61	0.73	0.87	1.02
12.200	1.16	1.32	1.48	1.64	1.78
12.450	1.89	1.99	2.10	2.14	2.17
12.700	2.19	2.21	2.17	2.13	2.10
12.950	2.04	1.96	1.89	1.81	1.72
13.200	1.62	1.53	1.44	1.37	1.29
13.450	1.22	1.16	1.10	1.05	0.99
13.700	0.95	0.90	0.86	0.82	0.79
13.950	0.75	0.71	0.69	0.66	0.63
14.200	0.61	0.58	0.56	0.54	0.52
14.450	0.50	0.48	0.47	0.45	0.44
14.700	0.42	0.41	0.40	0.39	0.38
14.950	0.37	0.36	0.35	0.34	0.34
15.200	0.33	0.32	0.31	0.31	0.30
15.450	0.30	0.29	0.29	0.28	0.28
15.700	0.27	0.27	0.26	0.26	0.26
15.950	0.25	0.25	0.24	0.24	0.24
16.200	0.23	0.23	0.23	0.22	0.22

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 100 years
Label: BASIN B EXISTING Storm Event: 100 YEAR 24 HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.450	0.22	0.21	0.21	0.21	0.21
16.700	0.20	0.20	0.20	0.20	0.20
16.950	0.19	0.19	0.19	0.19	0.19
17.200	0.18	0.18	0.18	0.18	0.18
17.450	0.18	0.18	0.18	0.17	0.17
17.700	0.17	0.17	0.17	0.17	0.17
17.950	0.17	0.16	0.16	0.16	0.16
18.200	0.16	0.16	0.16	0.16	0.16
18.450	0.16	0.15	0.15	0.15	0.15
18.700	0.15	0.15	0.15	0.15	0.15
18.950	0.15	0.14	0.14	0.14	0.14
19.200	0.14	0.14	0.14	0.14	0.14
19.450	0.14	0.14	0.13	0.13	0.13
19.700	0.13	0.13	0.13	0.13	0.13
19.950	0.13	0.13	0.12	0.12	0.12
20.200	0.12	0.12	0.12	0.12	0.12
20.450	0.12	0.12	0.12	0.11	0.11
20.700	0.11	0.11	0.11	0.11	0.11
20.950	0.11	0.11	0.11	0.11	0.11
21.200	0.11	0.11	0.11	0.11	0.11
21.450	0.10	0.10	0.10	0.10	0.10
21.700	0.10	0.10	0.10	0.10	0.10
21.950	0.10	0.10	0.10	0.10	0.10
22.200	0.10	0.10	0.10	0.10	0.10
22.450	0.10	0.10	0.10	0.10	0.10
22.700	0.10	0.10	0.10	0.10	0.10
22.950	0.10	0.10	0.10	0.10	0.10
23.200	0.10	0.10	0.10	0.10	0.10
23.450	0.10	0.10	0.10	0.09	0.09
23.700	0.09	0.09	0.09	0.09	0.09
23.950	0.09	0.09	(N/A)	(N/A)	(N/A)

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN B PROPOSED

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Storm Event	10 YEAR 24 HR
Return Event	10 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	1.346 hours
Area (User Defined)	18,010.000 ft²

Computational Time Increment	0.179 hours
Time to Peak (Computed)	12.742 hours
Flow (Peak, Computed)	0.21 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.750 hours
Flow (Peak Interpolated Output)	0.21 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	18,010.000 ft²
Maximum Retention (Pervious)	2.3 in
Maximum Retention (Pervious, 20 percent)	0.5 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.2 in
Runoff Volume (Pervious)	1,833.977 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,794.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	1.346 hours
Computational Time Increment	0.179 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Pond pack 21214

Subsection: Unit Hydrograph Summary
Label: BASIN B PROPOSED

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.35 ft³/s
Unit peak time, Tp	0.897 hours
Unit receding limb, Tr	3.589 hours
Total unit time, Tb	4.487 hours

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: BASIN B PROPOSED Storm Event: 10 YEAR 24 HR

Storm Event	10 YEAR 24 HR
Return Event	10 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	1.346 hours
Area (User Defined)	18,010.000 ft²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.550	0.00	0.00	0.00	0.00	0.00
10.800	0.00	0.00	0.00	0.00	0.00
11.050	0.00	0.00	0.00	0.00	0.00
11.300	0.01	0.01	0.01	0.01	0.01
11.550	0.01	0.01	0.01	0.01	0.02
11.800	0.02	0.02	0.03	0.04	0.05
12.050	0.06	0.07	0.09	0.10	0.12
12.300	0.13	0.15	0.16	0.17	0.18
12.550	0.19	0.20	0.20	0.21	0.21
12.800	0.21	0.20	0.20	0.20	0.19
13.050	0.18	0.18	0.17	0.16	0.15
13.300	0.14	0.14	0.13	0.12	0.12
13.550	0.11	0.10	0.10	0.10	0.09
13.800	0.09	0.08	0.08	0.08	0.07
14.050	0.07	0.07	0.06	0.06	0.06
14.300	0.06	0.06	0.05	0.05	0.05
14.550	0.05	0.05	0.05	0.04	0.04
14.800	0.04	0.04	0.04	0.04	0.04
15.050	0.04	0.04	0.04	0.04	0.03
15.300	0.03	0.03	0.03	0.03	0.03
15.550	0.03	0.03	0.03	0.03	0.03
15.800	0.03	0.03	0.03	0.03	0.03
16.050	0.03	0.03	0.03	0.03	0.02
16.300	0.02	0.02	0.02	0.02	0.02
16.550	0.02	0.02	0.02	0.02	0.02
16.800	0.02	0.02	0.02	0.02	0.02
17.050	0.02	0.02	0.02	0.02	0.02
17.300	0.02	0.02	0.02	0.02	0.02
17.550	0.02	0.02	0.02	0.02	0.02
17.800	0.02	0.02	0.02	0.02	0.02
18.050	0.02	0.02	0.02	0.02	0.02
18.300	0.02	0.02	0.02	0.02	0.02
18.550	0.02	0.02	0.02	0.02	0.02

Pond pack 21214

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: BASIN B PROPOSED Storm Event: 10 YEAR 24 HR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.800	0.02	0.02	0.02	0.02	0.02
19.050	0.02	0.02	0.02	0.02	0.02
19.300	0.02	0.02	0.02	0.02	0.01
19.550	0.01	0.01	0.01	0.01	0.01
19.800	0.01	0.01	0.01	0.01	0.01
20.050	0.01	0.01	0.01	0.01	0.01
20.300	0.01	0.01	0.01	0.01	0.01
20.550	0.01	0.01	0.01	0.01	0.01
20.800	0.01	0.01	0.01	0.01	0.01
21.050	0.01	0.01	0.01	0.01	0.01
21.300	0.01	0.01	0.01	0.01	0.01
21.550	0.01	0.01	0.01	0.01	0.01
21.800	0.01	0.01	0.01	0.01	0.01
22.050	0.01	0.01	0.01	0.01	0.01
22.300	0.01	0.01	0.01	0.01	0.01
22.550	0.01	0.01	0.01	0.01	0.01
22.800	0.01	0.01	0.01	0.01	0.01
23.050	0.01	0.01	0.01	0.01	0.01
23.300	0.01	0.01	0.01	0.01	0.01
23.550	0.01	0.01	0.01	0.01	0.01
23.800	0.01	0.01	0.01	0.01	0.01

Pond pack 21214

Subsection: Addition Summary
Label: OUTLET A

Return Event: 2 years
Storm Event: 2 YEAR 24 HR

Summary for Hydrograph Addition at 'OUTLET A'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	BASIN A PROPOSED

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	BASIN A PROPOSED	13,709.018	13.200	1.13
Flow (In)	OUTLET A	13,709.018	13.200	1.13

Pond pack 21214

Subsection: Addition Summary
Label: OUTLET A

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Summary for Hydrograph Addition at 'OUTLET A'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	BASIN A PROPOSED

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	BASIN A PROPOSED	30,770.848	12.650	3.84
Flow (In)	OUTLET A	30,770.848	12.650	3.84

Pond pack 21214

Subsection: Addition Summary
Label: OUTLET A

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Summary for Hydrograph Addition at 'OUTLET A'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	BASIN A EXISTING

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	BASIN A EXISTING	20,934.408	12.650	2.59
Flow (In)	OUTLET A	20,934.408	12.650	2.59

Pond pack 21214

Subsection: Addition Summary
Label: OUTLET A

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Summary for Hydrograph Addition at 'OUTLET A'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	BASIN A PROPOSED

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	BASIN A PROPOSED	64,990.212	13.150	5.97
Flow (In)	OUTLET A	64,990.212	13.150	5.97

Pond pack 21214

Subsection: Addition Summary
Label: OUTLET A

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Summary for Hydrograph Addition at 'OUTLET A'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	BASIN A EXISTING

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	BASIN A EXISTING	45,457.665	12.650	5.83
Flow (In)	OUTLET A	45,457.665	12.650	5.83

Pond pack 21214

Subsection: Addition Summary
Label: OUTLET B

Return Event: 2 years
Storm Event: 2 YEAR 24 HR

Summary for Hydrograph Addition at 'OUTLET B'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	BASIN B PROPOSED

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	BASIN B PROPOSED	810.945	12.750	0.09
Flow (In)	OUTLET B	810.945	12.750	0.09

Pond pack 21214

Subsection: Addition Summary
Label: OUTLET B

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Summary for Hydrograph Addition at 'OUTLET B'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	BASIN B PROPOSED

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	BASIN B PROPOSED	1,794.364	12.750	0.21
Flow (In)	OUTLET B	1,794.364	12.750	0.21

Pond pack 21214

Subsection: Addition Summary
Label: OUTLET B

Return Event: 10 years
Storm Event: 10 YEAR 24 HR

Summary for Hydrograph Addition at 'OUTLET B'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	BASIN B EXISTING

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	BASIN B EXISTING	8,520.889	12.750	0.98
Flow (In)	OUTLET B	8,520.889	12.750	0.98

Pond pack 21214

Subsection: Addition Summary
Label: OUTLET B

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Summary for Hydrograph Addition at 'OUTLET B'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	BASIN B PROPOSED

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	BASIN B PROPOSED	3,831.771	12.750	0.46
Flow (In)	OUTLET B	3,831.771	12.750	0.46

Pond pack 21214

Subsection: Addition Summary
Label: OUTLET B

Return Event: 100 years
Storm Event: 100 YEAR 24 HR

Summary for Hydrograph Addition at 'OUTLET B'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	BASIN B EXISTING

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	BASIN B EXISTING	18,508.923	12.750	2.21
Flow (In)	OUTLET B	18,508.923	12.750	2.21

Pond pack 21214

Index

SQUARE PEG

Restoration Soils Zoning Map Amendment

Neighborhood Meeting Plan - 3/21/22

Property owners, citizens, jurisdictions, and public agencies within 300 feet of the development site:

City of Flagstaff – Water Services
2323 N Walgreens St. Suite 1
Flagstaff, AZ 86004

UNITED METRO MATERIALS INC
In Care Of Name CEMEX USA
Owner Address 1501 BELVEDERE RD
WEST PALM BCH, FL 33406

Arizona Department of Transportation
Attn ROW/Properties
205 S. 17th Ave.
MD 612E
Phoenix, AZ 85007

Proposed notification methods: The above list of persons and entities will be contacted by mail. An approved sign will be placed on site.

Form, structure, and agenda of the meeting: Town Meeting Format, due to Covid concerns, the meeting will be held online. The agenda will be:

1) Introduction of Development/Restoration Soils Team
2) Introduction of other Attendees
3) Description of Project/New Business
4) Description of Zoning Request and Process
5) Roundtable of concerns, issues, and problems per attendee

Feedback Options: Attendees at the meeting, those receiving notifications, and signage will all receive a project specific email and mailing address to send comments, feedback, and concerns. Concerns, issues, and problems heard at the neighborhood meeting will be recorded in the minutes.

Location, date, and time of the neighborhood meeting:

Online via Zoom 4/7/22, 6:00PM

Updates: Updates on the status and results of the neighborhood meeting will be emailed to the Current Planning Single Point of Contact

PLANNING AND DEVELOPMENT SERVICES

Board of Adjustment Report

PUBLIC HEARING

PZ-21-00117-06

DATE: **February 4, 2022**

MEETING DATE: **March 23, 2022**

REPORT BY: **Tiffany Antol, AICP**

REQUEST:

A request for a Zoning Code Variance from the minimum screening requirements of Section 10-50.50.050.A and the minimum landscape requirements of Division 10-50.60. The applicant proposes to develop a ground-based green waste recycling operation generating mulch and compost without screen walls or fences and without landscaping. The subject property is located at 2661 N El Paso Flagstaff Road and is zoned Highway Commercial (HC) but is proposed to be rezoned to Heavy Industrial (HI).

STAFF RECOMMENDATION:

Staff recommends that the Board of Adjustment finds that the criteria required for granting of a variance have been met, and approve the variance application subject to the following conditions:

1. As long as the proposed use operates under a Special Land Use Permit under the ownership of the Arizona State Land Department, the site will not be required to provide screening or landscaping as required by the Zoning Code.

OWNER

Arizona State Land Department

APPLICANT CONTACT

Restoration Soils, c/o David Hayward, Manager

NEIGHBORHOOD DEVELOPMENT:

North: Cemex facility, zoned Heavy Industrial Open (HI-O)

South: Vacant Land owned by Arizona State Land Department, zoned Highway Commercial (HC), East Route 66

East: Vacant land and the Wildcat Wastewater Treatment Plant, zoned Public Facility (PF)

West: Vacant land owned by Arizona State Land Department, zoned Highway Commercial (HC)

INTRODUCTION AND DISCUSSION:

The applicant is requesting a variance to remove the requirement for screening and landscaping. The property is owned by the Arizona State Land Department and the applicant has obtained a Special Land Use Permit (SLUP) to utilize the property as a ground-based green waste recycling operation generating mulch and compost. The SLUP prohibits permanent improvements on site and has been issued for a

term of two years with the possibility to extend. Proposed improvements to the site will be limited to grading, fire safety, and stormwater management.

The property subject to the Special Use Permit is limited to a total of 8.95 acres of a larger parcel which is currently zoned Highway Commercial (HC). The applicant is proposing to rezone the 8.95 acres to Heavy Industrial (HI) which allows for composting facilities. Composting Facility is defined by the Zoning Code as a facility in which controlled biological decomposition of organic solid waste, excluding restaurant grease and septage, derived primarily from off-site locations under in-vessel anaerobic or aerobic conditions, occurs for commercial purposes.

The subject property is in a remote area surrounded by other similar uses without the benefit of screening or landscaping. El Paso Flagstaff Road does provide direct access to the Picture Canyon Trailhead which is heavily used by the public.

ZONING CODE REQUIREMENTS:

Section 10-50.50.050 of the Zoning Code requires all outdoor storage areas for materials, mechanical equipment, or vehicles, and all loading/unloading areas or service bays to be screened from street view by a screen wall constructed to a minimum height of six feet and designed in compliance with the standards of the Zoning Code.

Division 10-50.60 of the Zoning Code requires all new developments (except single-family residential uses) to provide landscaping in accordance with the division. Section 10-50.60.040.B.1.b requires properties within the Industrial Zones to provide a minimum landscape buffer of at least five feet when a six-foot fence or wall is required or ten feet without a screen wall. No peripheral buffering or parking lot landscaping is required for this development.

VARIANCE CRITERIA AND ANALYSIS:

Pursuant to A.R.S. Section §9-462.06, the Board of Adjustment is authorized to consider and approve variances from the otherwise applicable provisions of the Zoning Code subject to specific standards or findings. Division 10-20.70 of the Zoning Code establishes the process for applying and the requirements to review and approve a variance application by the Board of Adjustment. The information to be considered by the Board in the approval or denial of a variance application is limited to four (4) criteria specified below. It should be noted that the Board of Adjustment may only consider and apply arguments pertaining to the findings.

A variance shall only be granted if the applicant demonstrates **all** of the following:

1. **That, because of special circumstances applicable to the property, including its size, shape, topography, location, or surroundings, the strict application of these regulations will deprive such property of privileges enjoyed by other property of the same classification in the same zone;**

   Applicant Statement:

   The special circumstances are that the parcel in question shall remain under the ownership of the Arizona State Land Department/Trust. Application of the requirement for the landscaping and screening necessarily requires that the applicant provide facilities for the benefit of the city/public that they do not have the ability to retain. Any other property not subject to these special circumstances enjoys the privilege of retaining their improvements to their property.

   Staff Analysis:

   There are only three development sites in the city currently zoned Heavy Industrial. One has an unscreened temporary use adjacent to a residential area, the second has an unscreened industrial use

adjacent to the subject site and the other does not have industrial uses nor is it likely to in the future (currently used as a police station, detention facility, and park). The subject site is located within the vicinity of other similar uses, one within the Heavy Industrial Zone, that do not provide screening or landscaping. The applicant is requesting to develop their use subject to the same privileges enjoyed by other properties in the immediate vicinity.

The subject site has a rolling terrain and is a large enough site that a six-foot screen fence or landscaping along the property frontage is unlikely to screen the proposed use which will consist of material stockpiles.

2. That a grant of a variance will be subject to conditions to ensure that the adjustment authorized is the minimum variation needed and that it will not constitute a grant of special privileges inconsistent with the limitations upon other properties in the vicinity and zone in which such property is located;

Applicant Statement:

The applicant is not aware of any other properties zoned Heavy Industrial, subject to these requirements, that are also Arizona State Land Department land, and that would therefore be subject to these same limitations. The other properties in the vicinity, including the CEMEX storage facility and the City of Flagstaff wastewater treatment plan, are not compliant with *10-50.50.050 Screen Walls* or Division 10-50.60: Landscaping Standards.

Staff Analysis:

There are very few parcels within the City of Flagstaff that are currently zoned Heavy Industrial. This zoning category is intended to provide locations for the most intensive industrial uses possible within the city. As noted above, the property is located within the vicinity of other similar uses that currently do not provide screening or landscaping and are subject to the same conditions as the subject site.

3. The special circumstances applicable to the property are not self-imposed by any person having an interest in the property; and

Applicant Statement:

The requirements of the Arizona State Land Department regarding Special Land Use Permits are determined by statutes not the department or the applicant.

Staff Analysis:

The site has unique topography which limits the ability for screen fencing or property frontage landscape to adequately screen the proposed use which will include large material stockpiles. The placement of the required screening and landscaping does little to preserve the aesthetic quality of an area that already serves several unscreened industrial uses.

4. **The variance will not allow the establishment of a use which: (1) is not otherwise permitted in the zone, (2) would result in the extension of a nonconforming use or structure, or (3) would change the terms of the zone of any or all of the subject property.**

Applicant Statement:

The use as described in the project request is allowed in the zone, neither another use nor any use not permitted in the HI zone will be established, created, or facilitated by this variance. There is no existing nonconforming use or structure to be extended. The requested variance is not specific to the use or zone of the subject property, it relates to requirements that exist across all zones, so therefore does not change the terms of the HI zone of the property.

Staff Analysis:

The approval of a variance will not establish a use on the property that: 1) is not allowed in the Heavy Industrial (HI) zone; 2) would result in the extension of a nonconforming use or structure; or, 3) changes the terms of the Heavy Industrial (HI) zone of any or all the subject property.

NOTICE OF PUBLIC HEARING

The applicant has provided notice by mail of the Board of Adjustment hearing for this application to the property owners within 300 feet of the subject property and staff has placed a sign on the property. The notice and sign contain the date, time, and place of the hearing.

As of the date of this report, staff has not received any public comments regarding the proposed application.

ATTACHMENTS:

1. Application
2. Narrative
3. Vicinity and Context Aerial Map

Planning & Zoning Commission **5. C.**

Meeting Date: 04/27/2022

From: Tiffany Antol, Senior Planner

Information

TITLE:

Case No. PZ-22-00045: City's request for a Zoning Code Text Amendment to modify the notification requirements for Development Agreements.

STAFF RECOMMENDED ACTION:

Staff recommends the Planning and Zoning Commission, in accordance with the findings provided in the staff report, make a recommendation to the City Council for approval of the Zoning Code Text Amendment.

Attachments

Staff Report

Application

Proposed Text Amendment

PLANNING AND DEVELOPMENT SERVICES REPORT

Zoning Code Text Amendment

PUBLIC HEARING	**DATE:**	**March 21, 2022**
PZ-22-00045	**MEETING DATE:**	**April 13, 2022**
	REPORT BY:	**Tiffany Antol, AICP**

REQUEST:

City's request for a Zoning Code Text Amendment to modify the notification requirements for Development Agreements.

STAFF RECOMMENDATION:

Staff recommends the Planning and Zoning Commission, in accordance with the findings presented in this report, make a recommendation to the City Council for approval of the Zoning Code Text Amendment.

I. Proposed Amendment:

The proposed amendment is to add notification requirements for Development Agreements inlucuding modifications to existing agreements. A development agreement is a legally binding contract between a property owner or developer and a local government, often including terms not otherwise required through existing regulations.

The proposed amendment includes the following:

10-20.40.060 Development Agreements

E. Notification Requirements.

1. Notice of a Development Agreement, including an amendment to an existing agreement. Prior to consideration of any action on a Development Agreement, notice of the City Council's public meeting shall be provided pursuant to the public hearing requirements of Section 10-20.30.080. Notice of Public Hearings.

II. Zoning Code Text Amendment

The Planning Director shall provide a recommendation to the Planning and Zoning Commission for its review. The Director's recommendation shall be transmitted to the Planning and Zoning Commission in the form of a staff report prior to a scheduled public hearing. The recommendation shall include the following: an evaluation of the consistency and conformance of the proposed amendment with the goals and policies of the General Plan and any applicable specific plans; the grounds for the recommendation based on the standards and purposes of the zones set forth in Section 10-40.20 (Establishment of Zones) of the Zoning Code; and a recommendation on whether the amendment should be granted or denied.

A Zoning Code Text Amendment shall be evaluated based on the following findings:

A. Finding #1:

The proposed amendment is consistent with and conforms to the objectives and policies of the General Plan and any applicable specific plan;

The amendment's primary purpose is to engage and inform the public on the development agreement process. There are no specific goals and policies that reference increasing public engagement on this topic. However, the intention of the Regional Plan is to engage the public in development cases that are often subject to development agreements. This text amendment is more of an administrative directive rather than a substantive development standard modification.

B. Finding #2

The proposed amendment will not be detrimental to the public interest, health, safety, convenience, or welfare of the City;

The amendment provisions are not anticipated to be detrimental to the public interest, health, safety, convenience, or welfare of the City. The proposed provision is intended to provide additional community notification.

C. Finding #3

The proposed amendment is internally consistent with other applicable provisions of this Zoning Code.

The amendment is internally consistent, utilizes the existing format, and does not conflict with other Zoning Code provisions. It maintains the Zoning Code's purpose as a comprehensive contemporary set of land uses and requirements that are straightforward, usable, and easily understood.

III. CITIZEN PARTICIPATION

Persons of interest on file with the Planning and Development Services section of the Community Development Division were notified of the Planning and Zoning Commission and City Council work sessions and public hearing via first-class mail. Moreover, notification of the work sessions and public hearings were published on the City's Facebook and in the Arizona Daily Sun. As of the date of this report, staff has not received anyquestions from the public.

V. PLANNING AND ZONING COMMISSION WORK SESSION

At the Planning and Zoning Commission Work Session of March 23, 2022, staff reviewed the proposed Zoning Code Text Amendment application with the Commission. The Commission had general questions regarding the use of electronic notification methods. Staff has brought this issue to the attention of the Planning Director for further direction.

Attachments:

1. Application
2. Draft of Case No. PZ-22-00045 Updates to Zoning Code –Notification Requirements for Development Agrrements (Including Amendments)

City of Flagstaff

Community Development Division

211 W. Aspen Ave
Flagstaff, AZ 86001
www.flagstaff.az.gov

P: (928) 213-2618
F: (928) 213-2609

Date Received	Application for Zoning Code Text Amendment	File Number
2/24/22		PZ-22-00045

Applicant(s)/Property Owner(s)	Title	Phone	Email
Michelle McNulty	Planning Director	928-213-26	Michelle.mcnulty@flagstaffaz.gov
Mailing Address		**City, State, Zip**	
211 W Aspen Avenue, Flagstaff, AZ 86001			
Representative (If applicable)	**Title**	**Phone**	**Email**
Tiffany Antol		928-213-2605	tantol@flagstaffaz.gov
Mailing Address		**City, State, Zip**	
211 W Aspen Avenue, Flagstaff, AZ 86001			

Property Address	City, State, Zip
N/A	

Application Name: Notification Requirements for Development Agreements (Including Amendments)
Zoning Code Text Amendment
Chapter Name and Number: Title 10
Division Name and Number: 10-20.40 Permits and Approvals
Section Name and Number: 10-20.40.060 Development Agreement
Chapter Name and Number:
Division Name and Number:
Section Name and Number:
Chapter Name and Number:
Division Name and Number:
Section Name and Number:

Additional Information:

Owner's Signature (required)	Date:	Representative Signature (If applicable)	Date:
		Michelle McNulty	2/25/22

For City Use		
Date Filed:	File Number(s):	Fee Receipt Number:
P & Z Hearing Date:	Publication and Posting Date:	Amount:
Council Hearing Date:	Publication and Posting Date:	Date:
Received by:	Comments:	

Case No. PZ-22-00045 Updates to Zoning Code 2022 – Notification Requirements for Development Agreements (Including Amendments)

An amendment to the City Code and the Flagstaff Zoning Code

HOW TO READ THIS DOCUMENT

Unless otherwise stated, provisions that are being deleted are shown in bold red strikethrough text, like this: ~~**Provisions that are being deleted are shown with a bold red strikethroughs text.**~~

Provisions that are being added are shown in bold blue text, like this: **Provisions that are being added are shown in bold blue text.**:

Section 1. Amend Title 10 Flagstaff Zoning Code, Division 10-20.40: Permits and Approvals, Section 10-20.40.060 Development Agreements, to add subsection E. Notification Requirements for a Development Agreement, as follows:

10-20.40.060 Development Agreements

E. Notification Requirements.

1. Notice of a Development Agreement, including an amendment to an existing agreement. Prior to consideration of any action on a Development Agreement, notice of the City Council's public meeting shall be provided pursuant to the public hearing requirements of Section 10-20.30.080. Notice of Public Hearings.

Planning & Zoning Commission **6. A.**

Meeting Date: 04/27/2022

From: Genevieve Pearthree, Senior Planner

Information

TITLE:

Ghost Tree at Pine Canyon PZ-21-00155-03

TLC PC Land Investors, LLC requests Preliminary Plat approval for Ghost Tree at Pine Canyon located at 3201 South Clubhouse Circle, a 12-unit single-family home subdivision on 7.87 acres in the Single-Family Residential (R1) Zone.

STAFF RECOMMENDED ACTION:

Staff recommends the Planning & Zoning Commission, in accordance with the findings presented in this report, forward the Preliminary Plat to the City Council with a recommendation of approval.

Executive Summary:

TLC PC Land Investors, LLC requests Preliminary Plat approval for Ghost Tree at Pine Canyon located at 3201 South Clubhouse Circle, a 12-unit single-family home subdivision on 7.87 acres in the Single-Family Residential (R1) Zone. The site has a Resource Protection Overlay and is currently vacant. It is located in the northwestern corner of the larger 660-acre Pine Canyon development

Attachments

Staff Report
Application
Vicinity Map
Preliminary Plat
Review Agency Notifications

PLANNING & DEVELOPMENT SERVICES REPORT
PRELIMINARY PLAT

PZ-21-00155-03

DATE: **March 29, 2022**
MEETING DATE: **April 27, 2022**
REPORT BY: **Genevieve Pearthree**

REQUEST:
TLC PC Land Investors, LLC requests Preliminary Plat approval for Ghost Tree at Pine Canyon located at 3201 South Clubhouse Circle, a 12-unit single-family home subdivision on 7.87 acres in the Single-Family Residential (R1) Zone.

STAFF RECOMMENDATION:
Staff recommends the Planning and Zoning Commission, in accordance with the findings presented in this report, forward the Preliminary Plat to the City Council with a recommendation of approval.

PRESENT LAND USE:
The vacant subject site is located within the northwestern corner of the larger Pine Canyon development, which encompasses 660-acres. Pine Canyon includes a 31,000 square foot clubhouse, an eighteen-hole golf course occupying approximately 215 acres, 539 single-family lots, 46 townhome lots, and 60 condominiums.

PROPOSED LAND USE:
Ghost Tree at Pine Canyon subdivision, consisting of 12 single-family lots located on 7.87 acres in the Single-Family Residential (R1) Zone.

NEIGHBORHOOD DEVELOPMENT:
See the attached vicinity map for more information.

North: Estates at Pine Canyon Unit One (golf course and undeveloped land), R1 Zone
South: Pine Canyon main entrance and Estates at Pine Canyon Unit One (golf course and single-family homes), R1 Zone
East: Estates at Pine Canyon Unit One (golf course), R1 Zone
West: Estates at Pine Canyon Unit One (golf course and undeveloped land), R1 Zone

REQUIRED FINDINGS:
The Planning and Zoning Commission shall find the Preliminary Plat meets the requirements of the City Code Title 10, Flagstaff Zoning Code; City Code Title 11, General Plans and Subdivisions; and City Code Title 13, Engineering Design Standards and Specifications.

RECOMMENDATION
Staff recommends the Planning and Zoning Commission, in accordance with the required findings presented in this report, forward the Preliminary Plat to the City Council with a recommendation of approval.

STAFF REVIEW:

I. Project Information

A. Background
In June of 2000, the City Council approved a rezoning request and development agreement allowing the development of Pine Canyon, which includes a mixture of condominium, townhomes, estate homes, clubhouse and recreational facilities, maintenance and storage facilities, and an 18-hole private golf course with accessory facilities, located on

approximately 660 acres. The primary entrance to Pine Canyon is located near the intersection of Lone Tree Road and John Wesley Powell Blvd, just west of the Ghost Tree plat.

TLC PC Land Investors, LLC is seeking Preliminary Plat approval for a 12-lot single-family residential subdivision within the larger Pine Canyon development. Lot sizes range from 9,342 square feet to 21,861 square feet. The subdivision is one of the last undeveloped areas in Pine Canyon and is located between existing golf course and residential uses.

New infrastructure will need to be provided for the project including a new private road, new water and sewer lines, and Low Impact Development (LID) basins. The proposed lots have been reviewed for compliance with the R1 Zoning district standards as well as conformance with the Resource Protection Overlay. City Staff approved the Preliminary Plat with conditions on March 30, 2022.

B. Type of Plat

This Preliminary Plat request is for a single-family residential subdivision consisting of 12 individual lots. All areas in the subdivision not allocated as lots are reserved as tracts. The size and purpose of the tracts are listed in the Tract Summary Table on page 4 of the plat.

II. Required Findings: Conformance with City Development Standards and Regional Plan

Staff reviewed and approved the Preliminary Plat based on conformance with City Code Title 10, Flagstaff Zoning Code; City Code Title 11, General Plans and Subdivisions; and City Code Title 13, Engineering Design Standards and Specifications.

A. City of Flagstaff Zoning Code

i. Single-Family Residential (R1) Zone

The property is zoned R1, Single-Family Residential. The lots within Ghost Tree at Pine Canyon Subdivision comply with the minimum density, lot size, width, and depth requirements for the R1 Zone. For the purposes of tree and steep slope resource protection, the plat proposes unique building envelopes for each lot that meet or exceed the minimum required setbacks for the R1 zone (see pages 4 and 5 of the Preliminary Plat).

- Front: 15’ (25’ for parking)
- Interior Side: 8’
- Exterior Side: 15’
- Rear: 25’

ii. Natural Resources

The subject property is located within the Resource Protection Overlay. A Resource Protection Plan was provided in conjunction with this Preliminary Plat. Resources on the site include moderate slopes and forest; there are no floodplains on the site. The Resource Protection Plan submitted with the Preliminary Plat application indicated that the minimum protection standards would be met using unique building envelopes for each lot and identifying the driveway location for each lot.

Forest Resource Protection in the R1 Zone: Ghost Tree at Pine Canyon Subdivision

EXISTING TREE RESOURCE POINTS	REQUIRED PROTECTION LEVEL & POINTS	PROPOSED PROTECTION LEVEL & POINTS
529 points	50% or 265 points	50.66% or 268 points

Steep Slope Protection in the R1 Zone: Ghost Tree at Canyon Pine Bluff Subdivision

SLOPE RESOURCE	TOTAL SQUARE FEET	REQUIRED PROTECTION LEVEL & SQUARE FOOTAGE	PROTECTED LEVEL & PROTECTED SQUARE FOOTAGE
Slope: 17-24.9%	88,711	70% or 62,098 sq. ft.	70.3%* or 62,374 sq. ft.
Slope: 25% -34.9%	25,989	80% or 20,158 sq. ft.	84.2%* or 21,882 sq. ft.
Slope: 35%+	None	--	--

*The developer credited approximately 1367 square feet of excess slope to meet minimum forest resource protection thresholds.

iii. Parks, Open Space, Pedestrian, and Bicycle Facilities

As part of the overall Pine Canyon development, a 10-foot-wide paved FUTS trail from the intersection of existing Lone Tree Road to the intersection of JWP Blvd along the north side of the extension of Lone Tree Road to the intersection of Zuni was completed. A 10-foot-wide paved FUTS trail was also constructed from the intersection of Lake Mary Road on the east side of JWP Blvd to the Lone Tree intersection. An extension of the trail was also constructed from the intersection of existing Lone Tree/JWP eastward along the south side of JWP towards the proposed third entrance to Pine Canyon where the FUTS enters the Pine Canyon development and extends to Fisher Point.

C. City of Flagstaff Engineering Standards

As part of the Preliminary Plat review Staff conducted a public systems analysis to confirm preliminary compliance with Engineering Standards. Following Preliminary Plat approval, the applicant shall submit and receive approval for Civil Engineering Plans for the subdivision prior to review and approval of the Final Plat. Approval of the Civil Engineering Plans will be contingent on the plat meeting City Engineering Standards.

i. Access and Traffic

A Traffic Impact Analysis was prepared and approved for the entire Pine Canyon master planned community. Improved access to the development is provided by John Wesley Powel (JWP) Blvd from Lake Mary Road, and by the extension of Lone Tree Road from the intersection of Lone Tree Road and Zuni Drive to the intersection of JWP Blvd. All interior streets within Pine Canyon are private and maintained by the Homeowner's Association. A private looped street named Clubhouse Circle provides access throughout Pine Canyon. A new private street with a cul-de-sac (Tract A) will provide direct access to the subject site from Clubhouse Circle.

ii. Water and Wastewater

The proposed development is serviced by a Zone B water pressure system. All the proposed water mains will be public. The developer has already extended a twenty (20) inch transmission main within the alignment of JWP Blvd from Lake Mary Road into Pine Canyon. A sixteen (16) inch looped water main has been constructed within the alignment of Clubhouse Circle. A new water line will connect to the existing water main west of the subdivision in Clubhouse Circle.

Eight-inch public sewer lines have already been constructed beneath the private streets in Pine Canyon. These public mains flow by gravity into a private lift station. This private lift station transfers the wastewater through a force main north into a public gravity sewer line. All maintenance associated with the private force mains and lift station is the responsibility of the developer/Homeowner Association. A new sewer line will connect to the existing sewer main west of the subdivision in Clubhouse Circle.

iii. Stormwater

A Stormwater Analysis was previously completed for the entire Pine Canyon development and was accepted by the Stormwater Manager. The development was required to provide subregional on-site detention in the golf course ponds that serve a dual purpose for storage of irrigation water and stormwater detention. Development of the first phase and golf course constructed this system. The applicant also proposes to add several LID basins inside the proposed subdivision and just outside of the proposed subdivision on the golf course. The basins outside of the subdivision boundaries will be documented with Civil Engineering Plan approval.

Attachments:

- Application
- Preliminary Plat, including the Natural Resource Protection Plan (8 sheets, 24 x 36")
- Vicinity Map
- Utility notification letters

City of Flagstaff — Community Development Division

211 W. Aspen Ave
Flagstaff, AZ 86001
www.flagstaff.az.gov
P: (928) 213-2618

Date Received	**Application for Subdivision Review**	File Number

Property Owner(s) Todd Severson, TLC PC Land Investors, LLC VP		**Phone** 602-616-6828
Mailing Address 8601 N. Scottsdale Road, Suite 335	**City, State, Zip** Scottsdale, AZ 85253	**Email** tseverson@symmetrycompanies.com
Applicant(s) Todd Severson, TLC PC Land Investors, LLC		**Phone** 602-616-6828
Mailing Address 8601 N. Scottsdale Road, Suite 335	**City, State, Zip** Scottsdale, AZ 85253	**Email** tseverson@symmetrycompanies.com
Project Representative Davin Benner, Granite basin Engineering		**Phone** 928-717-0171
Mailing Address 1981 Commerce Center Circle, Ste. B	**City, State, Zip** Prescott, AZ 86301	**Email** davin@granitebasinengineering.com

Requested Review:
- ☐ Development Master Plan
- ☐ Modified Subdivision
- Conceptual Plat
- X Preliminary Plat
- ☒ Preliminary Plat P&Z and Council
- ☐ Final Plat- Council

Project Name: Ghost Tree at Pine Canyon	**Site Address:** 3201 South Clubhouse Circle		**Parcel Number** 105-10-206
Proposed Use 12 Single Family Lots	**Existing Use** Vacant Land	**Subdivision, Tract & Lot Number** The Estates at Pine Canyon–Unit One, Tract 23	
Zoning District R1	**Regional Plan Category**	**Flood Zone**	**Size of Site (Sq. ft. or Acres)** 5.94 acres

Property Information:
- ☐ Yes X No Located in an existing Local/National Historic District? (Name:_____)
- ☐ Yes X No Existing structures are over 50 years old at the time of application?
- X Yes ☐ No Subject property is undeveloped land?

Surrounding Uses	**North:** Pine Canyon Golf Course	**South** PC Golf Course & Single Family	**East** Undeveloped Tract 25	**West** PC Golf Course & Single Family
(Res, Com, Ind)				

Proposed Use: Single Family Lots	**Number of Lots** 12	**Number of Units** 12	**Number of acres per use**	**Building Square Feet**

Please complete a "*Subdivision Review Application*" and provide an initialed "*Application and Information Checklist*" form along with the required number of plans and information as appropriate for a Development Master Plan, Conceptual, Preliminary or Final Plat. **Incomplete submittals will not be scheduled.**

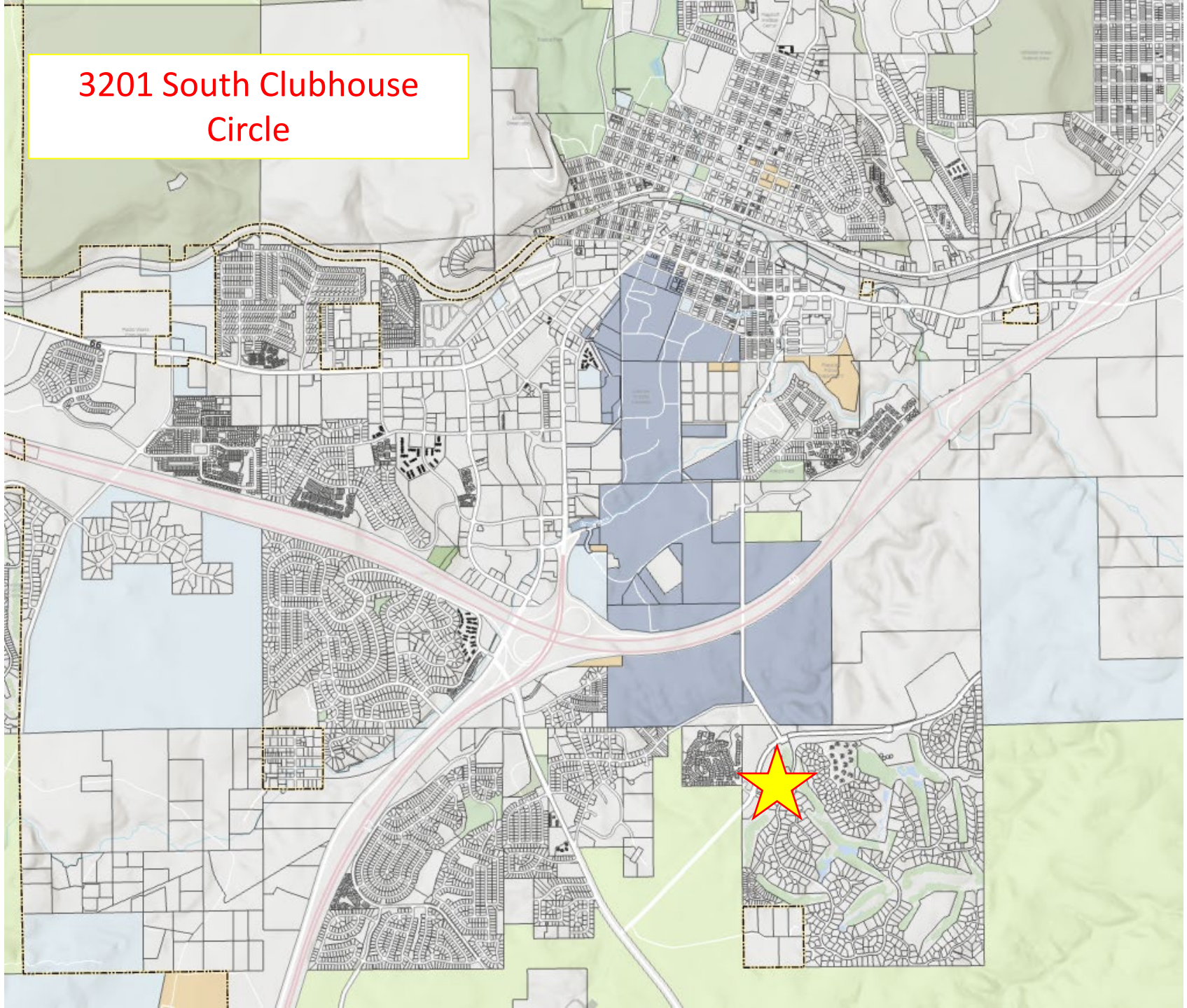
Property Owner Signature:	**Date:** 01/17/2021	**Applicant Signature:**	**Date:** 01/17/2021

For City Use

Date Filed:	**Case Number (s)**	
P & Z Hearing Date:	**Publication and Posting Date:**	
Council Hearing Date:	**Publication and Posting Date:**	
Fee Receipt Number:	**Amount:**	**Date:**

Action by Planning and Zoning Commission:	**Action By City Council:**
☐ **Approved**	☐ **Approved**
☐ **Denied**	☐ **Denied**
☐ **Continued**	☐ **Continued**

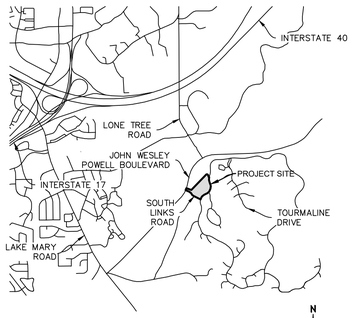
Staff Assignments	**Planning**	**Engineering**	**Fire**	**Public Works/Utilities**	**Stormwater**


3201 South Clubhouse Circle

PLOTTED: Apr 07, 2022--1:29pm

PRELIMINARY PLAT FOR
GHOST TREE AT PINE CANYON

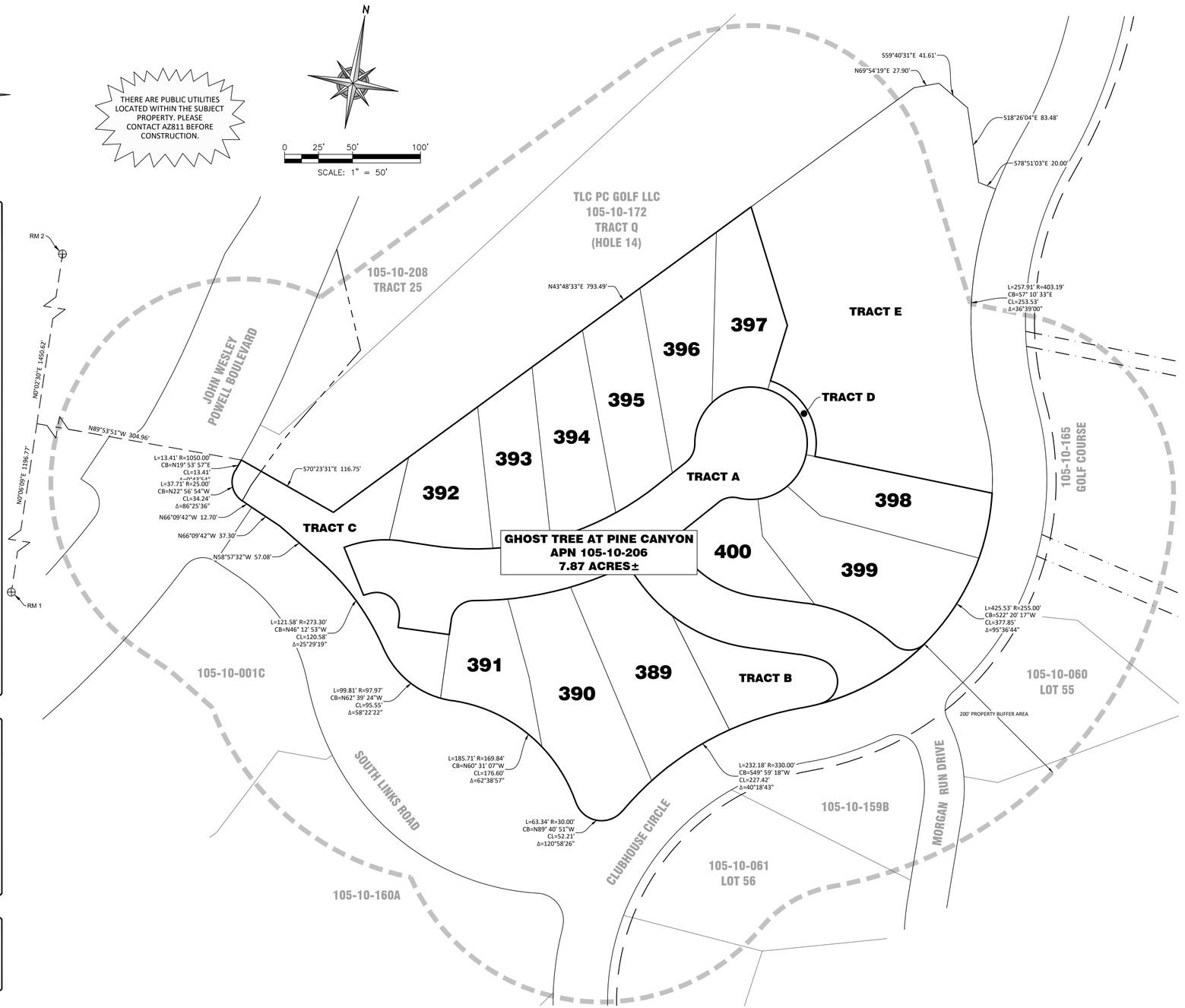
3201 SOUTH CLUBHOUSE CIRCLE, APN 105-10-206
TRACT 23 OF THE ESTATES AT PINE CANYON UNIT 1, CASE 8 MAP 92C
LOCATED IN SECTION 34, TOWNSHIP 21N, RANGE 7E,
GILA AND SALT RIVER MERIDIAN, YAVAPAI COUNTY, ARIZONA



VICINITY MAP
SCALE: 1" = 1/2 MILE

THERE ARE PUBLIC UTILITIES LOCATED WITHIN THE SUBJECT PROPERTY. PLEASE CONTACT AZ811 BEFORE CONSTRUCTION.

0 25' 50' 100'
SCALE: 1" = 50'



LEGEND

★	FOUND 1/2" REBAR & CAP RLS 23372
◉	FOUND 1/2" REBAR & CAP RLS 23372
⊗	FOUND BOAT SPIKE & WASHER RLS 23372
◐	FOUND 1/2" REBAR NO MARKINGS
○	CALCULATED POINT NOTHING FOUND OR SET
◆	TO BE SET 1/2" REBAR WITH MARKINGS RLS 33861
S45°45'45"W 45.00'	PROPOSED LOT DATA BASED ON CALCULATIONS
S73°15'32"W 86.18'	PARENT PARCEL DATA BASED ON FIELD SURVEY
(S55°55'55"W 50.00')R	RECORD DATA; CASE 9 OF MAPS PAGE 28 OF C.C.O.R.
	PROPOSED LOT BOUNDARY
	PLATTED RIGHT OF WAY
	ADJACENT BOUNDARY LINE
	BUILDING ENVELOPES
	BOUNDARY TIE LINES
	EXISTING EASEMENT AS NOTED
	PROPOSED GOLF COURSE EASEMENT
	PROPOSED SHARED DRIVEWAY CROSS ACCESS EASEMENT
	PROPOSED SEWER EASEMENT
	PROPOSED ACCESS EASEMENT
	CLEAR VIEW ZONE (STREET TYPE VI)
S	EXISTING SEWER LINE
W	EXISTING WATER LINE
S	PROPOSED SEWER LINE
W	PROPOSED WATER LINE
	PROPOSED SEWER SERVICE
	PROPOSED WATER SERVICE
7000	EXISTING INDEX CONTOUR
	INTERMEDIATE CONTOUR
7000	PROPOSED INDEX CONTOUR
	PROPOSED INTERMEDIATE CONTOUR
	PROPOSED PAVEMENT LINE
	PROPOSED DRAINAGE SWALE
	PROPOSED ROCV/DETENTION POND

UTILITY COMPANY APPROVALS

ARIZONA PUBLIC SERVICE COMPANY	DATE
UNISOURCE ENERGY SERVICES	DATE
CENTURYLINK	DATE
SPARKLIGHT	DATE

PROJECT WATER INFORMATION

1. THE CITY OF FLAGSTAFF PROVIDES WATER [UTILITY] SERVICE PURSUANT TO STATE LAW, AND IS CURRENTLY OPERATING UNDER A DESIGNATION OF ADEQUATE WATER SUPPLY GRANTED BY THE ARIZONA DEPARTMENT OF WATER RESOURCES, APPLICATION NO. 41-900002.0002.

PROJECT INFORMATION

CLIENT:
TLC PC LAND INVESTORS, LLC
8601 NORTH SCOTTSDALE ROAD SUITE 335
SCOTTSDALE, ARIZONA 85253
(928) 830-0866

ENGINEER / SURVEYOR:
GRANITE BASIN ENGINEERING, INC.
1981 COMMERCE CENTER CIRCLE, SUITE B
PRESCOTT, ARIZONA 86301
(928) 717-0171

SITE DATA:
ASSESSOR PARCEL NUMBER(S)
105-10-206 (7.87 AC.±)
3201 SOUTH CLUBHOUSE CIRCLE

ZONING NOTE:
CITY OF FLAGSTAFF ZONING INFORMATION
R1; SINGLE FAMILY RESIDENTIAL
(SEE BUILDING ENVELOPE DATA, SHEETS 5 & 6)

DISTURBANCE LIMITATION NOTE:
DISTURBANCE IS LIMITED TO THE AREAS INSIDE THE BUILDING ENVELOPE IDENTIFIED ON EACH LOT.

FLOODPLAIN NOTE:
THE SURVEYED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION ZONE "X" BY THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, ON FLOOD INSURANCE RATE MAP NO. 04005C6817G, WITH A DATE OF IDENTIFICATION OF SEPTEMBER 3, 2010 FOR COMMUNITY NUMBER 040020, IN COCONINO COUNTY, STATE OF ARIZONA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID SURVEYED PROPERTY IS SITUATED.

SEWAGE DISPOSAL:
CITY OF FLAGSTAFF

WATER PROVIDER:
CITY OF FLAGSTAFF

FIRE PROTECTION:
CITY OF FLAGSTAFF FIRE DEPARTMENT

SCHOOL DISTRICT:
FLAGSTAFF UNIFIED SCHOOL DISTRICT #1

SHEET INDEX

BASIS OF BEARINGS & BENCHMARKS

THE BASIS OF BEARING FOR THIS SURVEY IS ON THE CITY OF FLAGSTAFF LOCAL DATUM AND THE NAVD 88 VERTICAL DATUM AND IS N 00 D 04' 09" EAST ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 34 BETWEEN THE WEST QUARTER CORNER (RM 1) MARKED BY A BLM BRASS CAP DATED 1965 AND THE NORTHWEST CORNER (RM 2)MARKED BY A BLM BRASS CAP DATED 1965.

REFERENCE MARK	NORTHING	EASTING	ELEVATION(29)
RM 1	37032.86	35330.44	6990.37
RM 2	37575.70	35644.49	6971.52

THE COORDINATE SYSTEM FOR THIS PROJECT IS THE CITY OF FLAGSTAFF LOCAL COORDINATE SYSTEM MODIFIED FROM ARIZONA STATE PLANE CENTRAL ZONE. THE PROJECT IS DESIGNED ON THE NAVD 88 ELEVATION.

SURVEYOR'S CERTIFICATE:

I, THOMAS A. LIUZZO, DO HEREBY CERTIFY THAT I AM A REGISTERED LAND SURVEYOR, AND THAT I HOLD LICENSE NUMBER 33861 AS PRESCRIBED UNDER THE LAWS OF THE STATE OF ARIZONA, I FURTHER CERTIFY THAT I HAVE PREPARED THIS PLAT FROM THE ORIGINAL FIELD NOTES MADE DURING A SURVEY OF THE TRACT OF LAND SHOWN ON THIS PLAT AND THAT THIS PLAT IS A TRUE AND ACCURATE MAP OF THE LAND SURVEYED AND WAS PERFORMED IN ACCORDANCE WITH THE ARIZONA MINIMUM STANDARDS FOR LAND SURVEY EFFECTIVE FEBRUARY 2002.

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
33861
THOMAS A. LIUZZO
Date Signed
ARIZONA, USA
Expires 6/30/23

Registered Professional Engineer (Civil)
CERTIFICATE NO.
37846
DAVIN M. BENNER
Date Signed
ARIZONA, USA
Expires 9/30/23

Call at least two full working days before you begin excavation
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

REVISIONS

NUM.	DESCRIPTION	DATE	BY

☒ FOR REVIEW ONLY ☐ FOR BID ONLY ☐ FOR APPROVAL ONLY ☐ FOR RECORDING ONLY ☐ FOR CONSTRUCTION ONLY ☐ FOR AS-BUILT ONLY

GRANITE BASIN ENGINEERING, INC.
1981 COMMERCE CENTER CIRCLE, SUITE B PRESCOTT, ARIZONA 86301
PH (928) 717-0171 FAX (928) 717-0181
WWW.GRANITEBASINENGINEERING.COM

TLC PC LAND INVESTORS, LLC
8601 NORTH SCOTTSDALE ROAD, SUITE 335
SCOTTSDALE, ARIZONA 85253

3201 SOUTH CLUBHOUSE CIRCLE
GHOST TREE AT PINE CANYON
CONCEPTUAL PLAN

PRELIMINARY FOR REVIEW AND COMMENT

JOB:	19009
DATE:	4/7/2022
SCALE:	AS SHOWN
DRAWN:	TS
DESIGN:	TS
CHECKED:	TL

1

FILE: Z:\Projects\PINE CANYON\PROJECTS\19009 PC Tract 23 GHOST TREE\DWG\PPLAT\19009-01-PPLAT-COVER.dwg <<C3D_Imperial>>

THERE ARE PUBLIC UTILITIES LOCATED WITHIN THE SUBJECT PROPERTY. PLEASE CONTACT AZ811 BEFORE CONSTRUCTION.
N
0 25' 50' 100'
SCALE: 1" = 50'
TLC PC GOLF LLC
105-10-172
TRACT Q
105-10-208
TRACT 25
JOHN WESLEY POWELL BOULEVARD
S59°40'31"E 41.61'
N69°54'19"E 27.90'
S18°26'04"E 83.48'
EXISTING DRAINAGE CULVERTS
S78°51'03"E 20.00'
N43°48'33"E 793.49'
EXISTING GOLF CART PATH
L=257.91' R=403.19'
CB=S7° 10' 33"E
CL=253.53'
Δ=36°39'00"
EXISTING 16' PUE PER CASE 8 MAP 92C
EXISTING 10' TRAIL EASEMENT PER CASE 8 MAP 92C
105-10-165
GOLF COURSE
GOLF CART PATH TO BE REMOVED & RELOCATED
L=13.41' R=1050.00'
CB=N19° 53' 57"E
CL=13.41'
Δ=0°43'54"
L=37.71' R=25.00'
CB=N22° 56' 54"W
CL=34.24'
Δ=86°25'36"
S70°23'31"E 116.75'
N66°09'42"W 12.70'
N66°09'42"W 37.30'
N58°57'32"W 57.08'
EXISTING 60' ROW PER CASE 8 MAP 92C
EXISTING 24' PUE PER CASE 8 MAP 92C
L=425.53' R=255.00'
CB=S22° 20' 17"W
CL=377.85'
Δ=95°36'44"
105-10-001C
L=121.58' R=273.30'
CB=N46° 12' 53"W
CL=120.58'
Δ=25°29'19"
SOUTH LINKS ROAD
EXISTING SEWER MAIN
EXISTING WATER MAIN
105-10-060
LOT 55
EXISTING GOLF CART PATH
SITE BENCHMARK TBM CENTERLINE BRASS CAP
N=39923.41
E=32773.59
EL=6945.99
L=99.81' R=97.97'
CB=N62° 39' 24"W
CL=95.55
Δ=58°22'22"
EXISTING DRAINAGE CULVERT
EXISTING ROW VARIES PER CASE 8 MAP 92C
L=185.71' R=169.84'
CB=N60° 31' 07"W
CL=176.60'
Δ=62°38'57"
L=232.18' R=330.00'
CB=S49° 59' 18"W
CL=227.42'
Δ=40°18'43"
EXISTING DRAINAGE CHANNEL WITH RIPRAP
105-10-159B
EXISTING DRAINAGE CULVERT
L=63.34' R=30.00'
CB=N89° 40' 51"W
CL=52.21'
Δ=120°58'26"
CLUBHOUSE CIRCLE
MORGAN RUN DRIVE
105-10-061
LOT 56
105-10-160A

PLOTTED: Apr 07, 2022-1:30pm

FILE: Z:\Projects\PINE CANYON\PROJECTS\19009 PC Tract 23 GHOST TREE\DWG\PPLAT\19009-02-PPLAT-EX.dwg <<c30_Imperial>>

Call at least two full working days before you begin excavation.
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1981 COMMERCE CENTER CIRCLE, SUITE B, PRESCOTT, ARIZONA 86301
WWW.GRANITEBASINENGINEERING.COM

TLC PC LAND INVESTORS, LLC
8601 NORTH SCOTTSDALE ROAD, SUITE 335
SCOTTSDALE, ARIZONA 85253

3201 SOUTH CLUBHOUSE CIRCLE
GHOST TREE AT PINE CANYON
EXISTING CONDITIONS

PRELIMINARY
FOR REVIEW
AND COMMENT

JOB:	19009
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SCALE:	AS SHOWN
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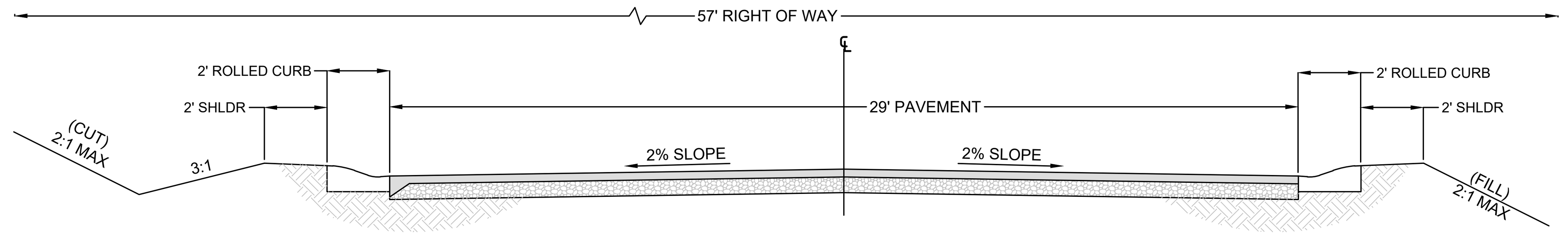
DESIGN:	TS
CHECKED:	TL

2

SHEET 2 OF 8



LOCAL RESIDENTIAL STREET SECTION

SCALE: 1/4" = 1'

-CUL-DE-SAC PER COF FD AMENDMENTS TO 2018 IFC SECTION 503.2.4
-LOCAL RESIDENTIAL STREET SECTION PER TABLE 13-10-011-01 CITY CODE WITHOUT SIDEWALK
-10% MAXIMUM ROADWAY SLOPE ALLOWED
-'FIRE LANE - NO PARKING' SIGNS SHALL BE PLACED PER COF FIRE DEPARTMENT REQUIREMENTS

RAW EARTHWORK
EXCAVATION (CUT) ≈ 1,245 CY
EMBANKMENT (FILL) ≈ 1,013 CY

EARTHWORK ASSUMPTIONS

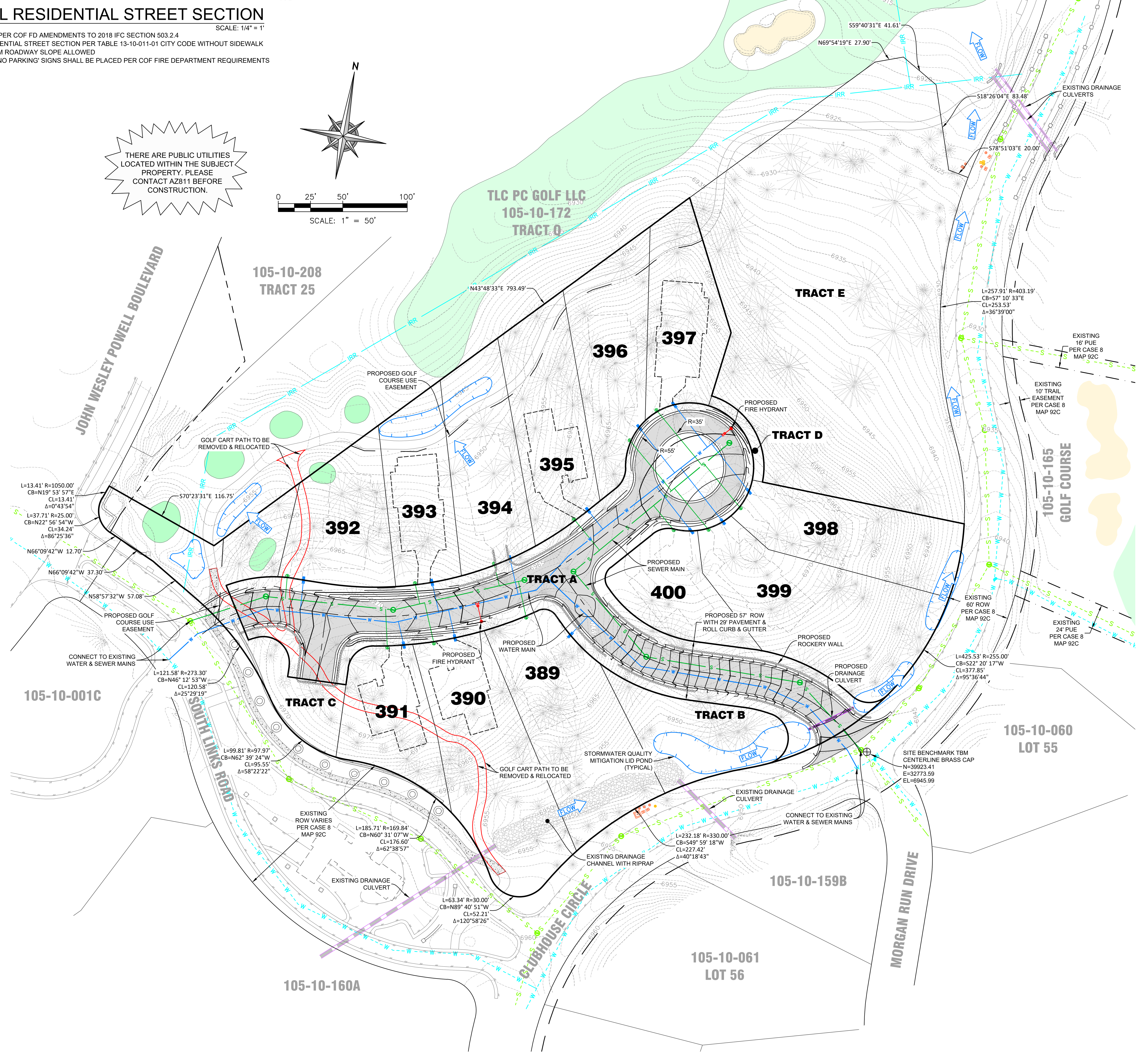
1. EARTHWORK SHALL FOLLOW RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
2. EXCAVATION FOR PAVEMENT SECTION ASSUMED TO BE 9" BELOW FINAL GRADE.
3. CONTRACTOR SHALL OBTAIN SEPARATE GRADING PERMIT FOR SURPLUS MATERIAL PLACED OFF-SITE IN CONFORMANCE WITH THE CITY OF FLAGSTAFF REQUIREMENTS.

DRIVEWAY SLOPES

0' - 25'	16%
25' - 150'	20%
150' +	10%

THERE ARE PUBLIC UTILITIES LOCATED WITHIN THE SUBJECT PROPERTY. PLEASE CONTACT AZ811 BEFORE CONSTRUCTION.

SCALE: 1" = 50'



PLOTTED: Apr 07, 2022-1:31pm
FILE: Z:\Projects\PINE CANYON\PROJECTS\19009 PC Tract 23 GHOST TREE\DWG\PPLAT\19009-03-PPLAT-PROP.dwg <<C30_imperial>>

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GRANITE BASIN ENGINEERING, INC
WWW.GRANITEBASINENGINEERING.COM

TLC PC LAND INVESTORS, LLC
8601 NORTH SCOTTSDALE ROAD, SUITE 335
SCOTTSDALE, ARIZONA 85253

3201 SOUTH CLUBHOUSE CIRCLE
GHOST TREE AT PINE CANYON
PROPOSED CONDITIONS

PRELIMINARY FOR REVIEW AND COMMENT

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SCALE:	AS SHOWN
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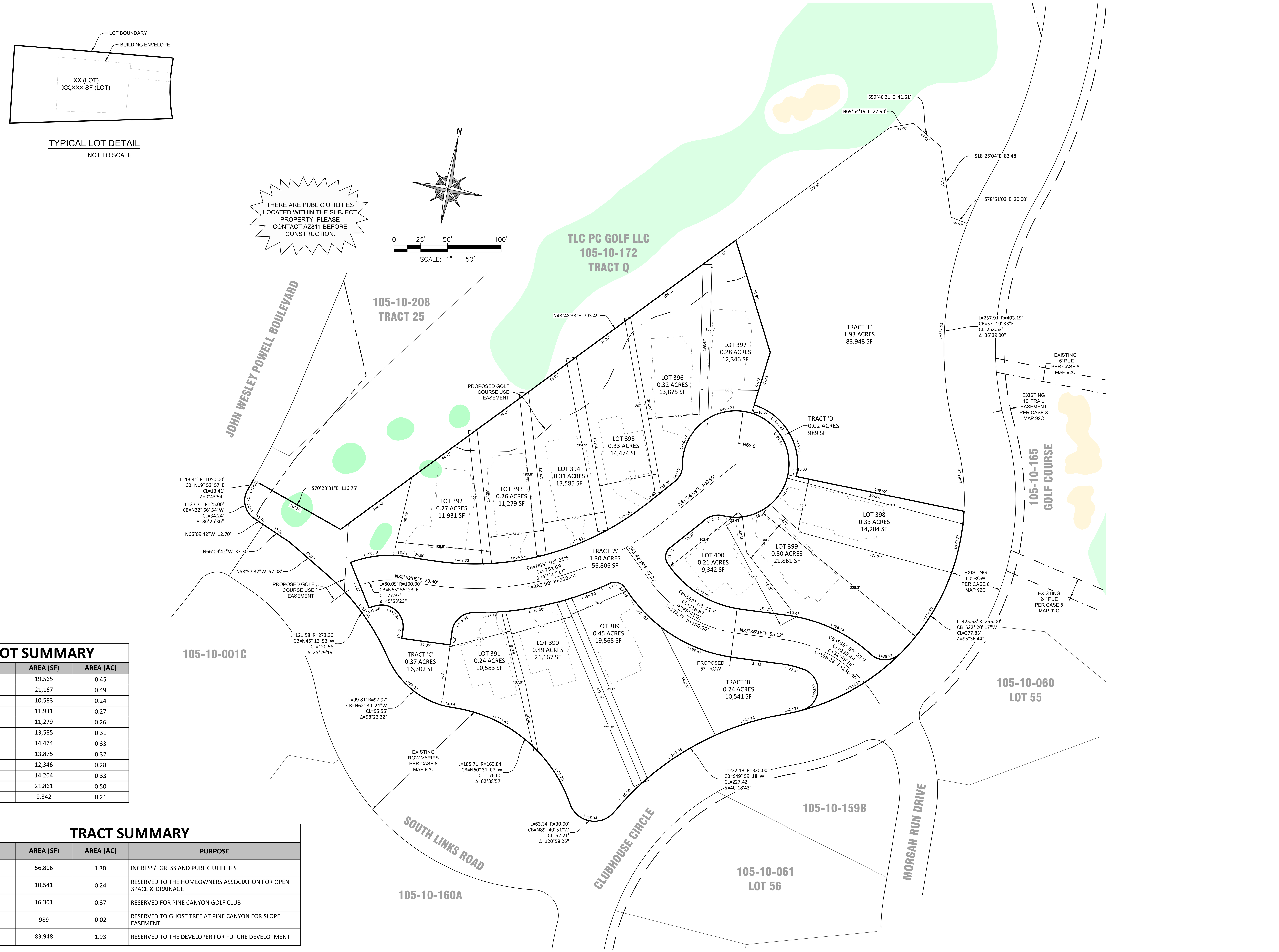
CHECKED:	TL

3



LOT SUMMARY

LOT #	AREA (SF)	AREA (AC)
389	19,565	0.45
390	21,167	0.49
391	10,583	0.24
392	11,931	0.27
393	11,279	0.26
394	13,585	0.31
395	14,474	0.33
396	13,875	0.32
397	12,346	0.28
398	14,204	0.33
399	21,861	0.50
400	9,342	0.21

TRACT SUMMARY

TRACT	AREA (SF)	AREA (AC)	PURPOSE
A	56,806	1.30	INGRESS/EGRESS AND PUBLIC UTILITIES
B	10,541	0.24	RESERVED TO THE HOMEOWNERS ASSOCIATION FOR OPEN SPACE & DRAINAGE
C	16,301	0.37	RESERVED FOR PINE CANYON GOLF CLUB
D	989	0.02	RESERVED TO GHOST TREE AT PINE CANYON FOR SLOPE EASEMENT
E	83,948	1.93	RESERVED TO THE DEVELOPER FOR FUTURE DEVELOPMENT

REVISIONS

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- ☐ FOR RECORDING ONLY
- ☐ FOR CONSTRUCTION ONLY
- ☐ FOR AS-BUILT ONLY

GRANITE BASIN ENGINEERING, INC
1981 COMMERCE CENTER CIRCLE, SUITE B, PRESCOTT, ARIZONA 86301
WWW.GRANITEBASINENGINEERING.COM

TLC PC LAND INVESTORS, LLC
8601 NORTH SCOTTSDALE ROAD, SUITE 335
SCOTTSDALE, ARIZONA 85253

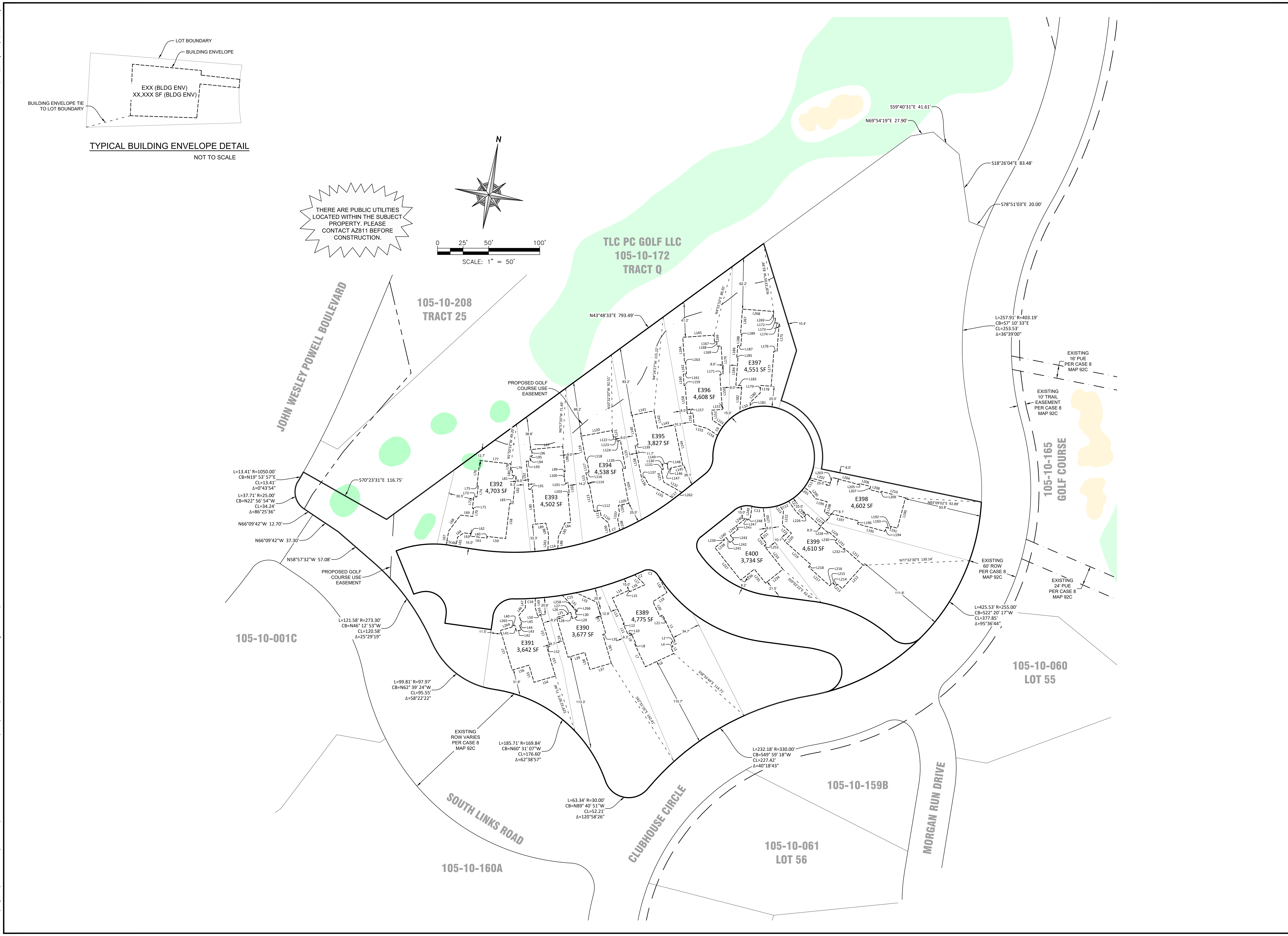
3201 SOUTH CLUBHOUSE CIRCLE
GHOST TREE AT PINE CANYON
LOTTING PLAN

PRELIMINARY FOR REVIEW AND COMMENT

JOB:	19009
DATE:	4/7/2022
SCALE:	AS SHOWN
DRAWN:	TS
DESIGN:	TS
CHECKED:	TL

4

PLOTTED: Apr 07, 2022–1:39pm



LOT BOUNDARY
BUILDING ENVELOPE
EXX (BLDG ENV)
XX,XXX SF (BLDG ENV)
BUILDING ENVELOPE TIE TO LOT BOUNDARY
TYPICAL BUILDING ENVELOPE DETAIL
NOT TO SCALE
THERE ARE PUBLIC UTILITIES LOCATED WITHIN THE SUBJECT PROPERTY. PLEASE CONTACT AZ811 BEFORE CONSTRUCTION.
N
SCALE: 1" = 50'
TLC PC GOLF LLC
105-10-172
TRACT Q
105-10-208
TRACT 25
JOHN WESLEY POWELL BOULEVARD
S59°40'31"E 41.61'
N69°54'19"E 27.90'
S18°26'04"E 83.48'
S78°51'03"E 20.00'
N43°48'33"E 793.49'
L=257.91' R=403.19'
CB=S7° 10' 33"E
CL=253.53'
Δ=36°39'00"
EXISTING 16' PUE PER CASE 8 MAP 92C
EXISTING 10' TRAIL EASEMENT PER CASE 8 MAP 92C
PROPOSED GOLF COURSE USE EASEMENT
105-10-165
GOLF COURSE
E397
4,551 SF
E396
4,608 SF
E395
3,827 SF
E394
4,538 SF
E393
4,502 SF
E392
4,703 SF
E398
4,602 SF
E399
4,610 SF
E400
3,734 SF
E389
4,775 SF
E390
3,677 SF
E391
3,642 SF
S70°23'31"E 116.75'
L=13.41' R=1050.00'
CB=N19° 53' 57"E
CL=13.41'
Δ=0°43'54"
L=37.71' R=25.00'
CB=N22° 56' 54"W
CL=34.24'
Δ=86°25'36"
N66°09'42"W 12.70'
N66°09'42"W 37.30'
N58°57'32"W 57.08'
PROPOSED GOLF COURSE USE EASEMENT
EXISTING 60' ROW PER CASE 8 MAP 92C
EXISTING 24' PUE PER CASE 8 MAP 92C
L=425.53' R=255.00'
CB=S22° 20' 17"W
CL=377.85'
Δ=95°36'44"
105-10-001C
L=121.58' R=273.30'
CB=N46° 12' 53"W
CL=120.58'
Δ=25°29'19"
L=99.81' R=97.97'
CB=N62° 39' 24"W
CL=95.55
Δ=58°22'22"
EXISTING ROW VARIES PER CASE 8 MAP 92C
L=185.71' R=169.84'
CB=N60° 31' 07"W
CL=176.60'
Δ=62°38'57"
L=232.18' R=330.00'
CB=S49° 59' 18"W
CL=227.42'
Δ=40°18'43"
L=63.34' R=30.00'
CB=N89° 40' 51"W
CL=52.21'
Δ=120°58'26"
105-10-060
LOT 55
105-10-159B
105-10-061
LOT 56
105-10-160A
SOUTH LINKS ROAD
CLUBHOUSE CIRCLE
MORGAN RUN DRIVE

Call at least two full working days before you begin excavation.
ARIZONA811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

NUM.	DESCRIPTION	DATE	BY

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5

SHEET 5 OF 8

FILE: Z:\Projects\PINE CANYON\PROJECTS\19009 PC Tract 23 GHOST TREE\DWG\PPLAT\19009-05-PPLAT-BE.dwg <<C30_Imperial>>

LOT 389

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
L20	19.79	S35° 06' 23.24"E	
L19	20.37	S46° 52' 11.03"W	
L18	24.76	S37° 33' 42.83"E	
C1	19.27	78.86	14.00
C2	11.80	1.79	378.50
L17	17.48	N56° 17' 36.48"W	
L16	20.42	N55° 09' 15.24"E	
L15	2.00	S34° 58' 34.00"E	
L14	22.64	N55° 09' 15.24"E	
L13	34.15	N35° 06' 23.24"W	
L12	1.46	N54° 53' 36.76"E	
L11	14.36	N35° 06' 23.24"W	
L10	3.89	S54° 53' 36.76"W	
L9	14.00	N35° 11' 17.90"W	
L8	1.46	N54° 53' 36.76"E	
L7	30.83	N35° 06' 23.24"W	
L21	3.92	N54° 53' 36.76"E	
L6	38.29	S54° 53' 36.76"W	
L5	8.00	S35° 06' 23.24"E	
L4	2.77	S54° 53' 36.76"W	
L3	5.73	S35° 06' 23.24"E	
L2	4.93	S54° 53' 36.76"W	
L1	34.62	S35° 06' 23.24"E	

LOT 390

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
L27	3.53	N63° 39' 09.08"E	
L33	27.50	S75° 59' 14.96"E	
L31	27.18	N53° 36' 44.49"W	
L30	6.51	N26° 20' 50.92"W	
L29	5.73	N63° 39' 09.08"E	
L28	7.78	S26° 20' 50.92"E	
L38	21.83	N26° 20' 50.92"W	
L37	27.23	S63° 39' 09.08"W	
L35	3.77	S63° 39' 09.08"W	
L34	40.16	S26° 20' 50.92"E	
L39	21.33	S63° 39' 09.08"W	
L24	50.61	N26° 20' 50.92"W	
L25	14.89	N63° 39' 09.08"E	
L26	1.26	N26° 20' 50.92"W	
C15	17.06	2.89	338.18
L266	2.73	S63° 39' 09.08"W	

LOT 391

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
L57	50.61	N26° 22' 49.15"W	
L56	21.33	S63° 37' 10.85"W	
L55	21.83	N26° 22' 49.15"W	
L54	27.19	S63° 37' 10.85"W	
L53	36.78	S26° 32' 23.74"E	
L52	3.91	S63° 37' 10.85"W	
L51	40.16	S26° 22' 49.15"E	
L50	3.81	N63° 37' 10.85"E	
L49	10.94	S8° 33' 12.11"E	
L47	11.01	N8° 33' 12.11"W	
L46	11.77	N31° 03' 25.68"E	
L40	3.53	N63° 37' 10.85"E	
L42	5.73	N63° 37' 10.85"E	
L41	7.78	S26° 22' 49.15"E	
L45	11.67	N26° 22' 49.15"W	
L44	2.73	N63° 37' 10.85"E	
L43	6.51	N26° 22' 49.15"W	
C16	12.04	1.82	378.50
L263	10.77	N26° 22' 49.15"W	
L264	14.89	S63° 37' 10.85"W	
L265	1.26	S26° 22' 49.15"E	

LOT 392

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
L70	9.89	N3° 32' 25.96"W	
L69	15.00	N86° 27' 34.04"E	
L68	24.26	N26° 27' 34.04"E	
L67	17.20	N0° 30' 47.86"E	
C5	4.61	2.05	128.50
L66	7.41	S88° 52' 04.99"W	
L65	11.39	S0° 34' 43.23"W	
L64	9.18	S45° 20' 29.03"W	
L63	8.61	S86° 27' 34.04"W	
L62	3.07	N3° 32' 25.96"W	
L61	20.42	S86° 27' 34.04"W	
L60	2.00	S3° 32' 25.96"E	
L59	22.64	S86° 27' 34.04"W	
L76	30.83	N3° 32' 25.96"W	
L75	1.46	S86° 27' 34.04"W	
L74	14.00	N3° 27' 31.29"W	
L73	3.89	N86° 27' 34.04"E	
L72	14.36	N3° 32' 25.96"W	
L71	1.46	S86° 27' 34.04"W	
L81	4.93	N86° 27' 34.04"E	
L80	5.73	S3° 32' 25.96"E	
L79	2.77	N86° 27' 34.04"E	
L78	8.00	S3° 32' 25.96"E	
L77	38.29	N86° 27' 34.04"E	
L82	34.62	S3° 32' 25.96"E	
L83	3.92	S86° 27' 34.04"W	
L58	42.98	S3° 32' 25.96"E	

LOT 393

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
L96	8.00	N15° 18' 45.78"W	
L94	5.73	N15° 18' 45.78"W	
L95	2.77	N74° 41' 14.22"E	
L93	4.93	N74° 41' 14.22"E	
L91	3.92	S74° 41' 14.22"W	
L92	34.62	N15° 18' 45.78"W	
L90	42.98	N15° 18' 45.78"W	
L89	12.84	S74° 41' 14.22"W	
L88	14.42	N23° 05' 09.39"W	
L86	14.37	S6° 50' 54.12"E	
L85	18.88	S15° 01' 57.08"W	
L84	7.17	S74° 41' 14.22"W	
L103	1.46	S74° 41' 14.22"W	
L102	14.36	S15° 18' 45.78"E	
L101	3.89	N74° 41' 14.22"E	
L100	14.00	S15° 23' 40.45"E	
L99	1.46	S74° 41' 14.22"W	
L98	30.83	S15° 18' 45.78"E	
L97	38.29	N74° 41' 14.22"E	
L261	19.03	S7° 29' 05.03"E	
C7	12.26	2.19	321.50

LOT 394

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
L113	34.15	N20° 18' 30.70"W	
L112	7.18	S69° 41' 29.30"W	
L111	8.16	N20° 18' 30.70"W	
L110	11.27	N60° 29' 29.64"W	
L109	14.31	N20° 36' 21.85"W	
C7	12.26	2.19	321.50
L108	13.50	S20° 36' 21.85"E	
L107	9.76	S2° 32' 17.89"W	
L106	8.01	S20° 18' 30.70"E	
L105	12.83	S69° 41' 29.30"W	
L104	42.98	S20° 18' 30.70"E	
L114	1.46	S69° 41' 29.30"W	
L116	3.89	N69° 41' 29.30"E	
L115	14.36	N20° 18' 30.70"W	
L117	14.00	N20° 13' 36.04"W	
L119	30.83	N20° 18' 30.70"W	
L118	1.46	S69° 41' 29.30"W	
L126	3.92	S69° 41' 29.30"W	
L125	34.62	S20° 18' 30.70"E	
L124	4.93	N69° 41' 29.30"E	
L123	5.73	S20° 18' 30.70"E	
L122	2.77	N69° 41' 29.30"E	
L121	8.00	S20° 18' 30.70"E	
L120	38.29	N69° 41' 29.30"E	

LOT 395

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
L136	10.61	N37° 58' 45.54"W	
L135	35.57	N71° 23' 29.93"W	
L132	25.54	S70° 16' 20.82"E	
L131	2.73	S68° 41' 45.06"W	
L130	6.51	S21° 18' 14.94"E	
L139	3.77	N68° 41' 45.06"E	
L137	3.81	S68° 41' 45.06"W	
L138	40.16	N21° 18' 14.94"W	
L140	36.78	N21° 18' 14.94"W	
L142	21.83	S21° 18' 14.94"E	
L141	27.23	N68° 41' 45.06"E	
L149	5.73	S68° 41' 45.06"W	
L148	7.78	N21° 18' 14.94"W	
L147	3.53	S68° 41' 45.06"W	
L146	1.26	S21° 18' 14.94"E	
L145	14.89	S68° 41' 45.06"W	
L143	21.33	N68° 41' 45.06"E	
L144	50.61	S21° 18' 14.94"E	
L262	4.87	N41° 24' 37.87"E	
C17	7.13	1.27	321.50

LOT 396

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
L171	3.92	S75° 59' 26.67"W	
L170	34.62	S14° 00' 33.33"E	
L169	4.93	N75° 59' 26.67"E	
L168	5.73	S14° 00' 33.33"E	
L167	2.77	N75° 59' 26.67"E	
L166	8.00	S14° 00' 33.33"E	
L165	38.29	N75° 59' 26.67"E	
L163	1.46	S75° 59' 26.67"W	
L164	30.83	N14° 00' 33.33"W	
L162	14.00	N13° 55' 38.67"W	
L161	3.89	N75° 59' 26.67"E	
L160	14.36	N14° 00' 33.33"W	
L159	1.46	S75° 59' 26.67"W	
L158	34.15	N14° 00' 33.33"W	
L157	7.17	S75° 59' 26.67"W	
L156	14.13	N14° 00' 33.33"W	
L155	17.17	N84° 00' 00.67"W	
L154	15.15	N66° 03' 36.96"W	
C9	12.04	11.12	62.00
L153	15.05	S66° 03' 36.96"E	
L152	12.18	S14° 00' 33.33"E	
L151	12.84	S75° 59' 26.67"W	
L150	42.98	S14° 00' 33.33"E	

LOT 397

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
C10	13.42	12.40	62.00
L181	7.25	S5° 39' 20.46"E	
L180	16.41	S36° 41' 01.42"W	
L179	9.38	S5° 39' 20.46"E	
L178	12.84	S84° 20' 39.54"W	
L177	42.98	S5° 39' 20.46"E	
L176	3.92	S84° 20' 39.54"W	
L175	34.62	S5° 39' 20.46"E	
L174	4.93	N84° 20' 39.54"E	
L173	5.73	S5° 39' 20.46"E	
L184	34.15	N5° 39' 20.46"W	
L183	7.17	S84° 20' 39.54"W	
L182	32.70	N5° 39' 20.46"W	
L185	1.46	S84° 20' 39.54"W	
L172	2.77	N84° 20' 39.54"E	
L189	1.46	S84° 20' 39.54"W	
L188	14.00	N5° 34' 25.79"W	
L187	3.89	N84° 20' 39.54"E	
L186	14.36	N5° 39' 20.46"W	
L267	30.83	S5° 39' 20.46"E	
L268	38.29	S84° 20' 39.54"W	
L269	8.00	N5° 39' 20.46"W	

LOT 398

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
L210	30.83	S85° 03' 16.75"E	
L209	1.46	N4° 56' 43.25"E	
L208	14.00	S84° 58' 22.08"E	
L207	3.89	S4° 56' 43.25"W	
L206	14.36	S85° 03' 16.75"E	
L205	1.46	N4° 56' 43.25"E	
L204	34.15	S85° 03' 16.75"E	
L203	7.16	N4° 56' 43.25"E	
L202	25.78	S85° 41' 03.85"E	
C11	13.61	12.58	62.00
L201	8.82	N64° 24' 55.60"W	
L200	10.49	N46° 16' 48.96"W	
L190	38.29	S4° 56' 43.25"W	
L199	15.00	N85° 03' 16.75"W	
L198	12.85	N4° 56' 43.25"E	
L197	42.98	N85° 03' 16.75"W	
L196	3.92	N4° 56' 43.25"E	
L195	34.62	N85° 03' 16.75"W	
L194	4.93	S4° 56' 43.25"W	
L193	5.73	N85° 03' 16.75"W	
L191	8.00	N85° 03' 16.75"W	

LOT 399

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
L226	7.16	N31° 50' 29.08"E	
L225	11.75	S56° 06' 23.72"E	
L224	15.34	S45° 37' 47.55"E	
C12	12.29	11.35	62.00
L223	8.51	N45° 37' 47.55"W	
L222	17.33	N5° 25' 00.56"W	
L221	15.00	N58° 09' 30.92"W	
L220	12.85	N31° 50' 29.08"E	
L227	34.15	S58° 09' 30.92"E	
L228	1.46	N31° 50' 29.08"E	
L230	3.89	S31° 50' 29.08"W	
L231	14.00	S58° 04' 36.26"E	
L229	14.36	S58° 09' 30.92"E	
L211	30.83	S58° 09' 30.92"E	
L232	1.46	N31° 50' 29.08"E	
L212	38.29	S31° 50' 29.08"W	
L216	4.93	S31° 50' 29.08"W	
L215	5.73	N58° 09' 30.92"W	
L214	2.77	S31° 50' 29.08"W	
L213	8.00	N58° 09' 30.92"W	
L217	34.62	N58° 09' 30.92"W	
L218	3.92	N31° 50' 29.08"E	
L219	42.98	N58° 09' 30.92"W	

LOT 400

Parcel Line and Curve Table

SEGMENT #	LENGTH	BEARING/DELTA	RADIUS
L252	12.82	S48° 35' 22.13"E	
L251	9.52	S41° 24' 37.87"W	
L250	28.37	S16° 57' 56.01"E	
C13	14.08	13.01	62.00
L249	14.10	N2° 50' 42.44"W	
L248	4.46	N41° 24' 37.87"E	
L247	2.99	S48° 35' 22.13"E	
L246	16.03	N41° 24' 37.87"E	
L245	4.50	N48° 35' 22.13"W	
L244	12.16	N41° 24' 37.87"E	
L243	6.51	N48° 35' 22.13"W	
L242	5.73	N41° 24' 37.87"E	
L241	7.78	S48° 35' 22.13"E	
L240	3.53	N41° 24' 37.87"E	
L239	1.26	N48° 35' 22.13"W	
L238	14.89	N41° 24' 37.87"E	
L237	50.61	N48° 35' 22.13"W	
L236	21.33	S41° 24' 37.87"W	
L235	21.83	N48° 35' 22.13"W	
L253	3.77	S41° 24' 37.87"W	
L233	36.78	S48° 35' 22.13"E	
L234	27.23	S41° 24' 37.87"W	

Call at least two full working days before you begin excavation.
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REVISIONS

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GRANITE BASIN ENGINEERING, INC

TLC PC LAND INVESTORS, LLC
8601 NORTH SCOTTSDALE ROAD, SUITE 335
SCOTTSDALE, ARIZONA 85253

3201 SOUTH CLUBHOUSE CIRCLE
GHOST TREE AT PINE CANYON
BUILDING ENVELOPE GEOMETRIC TABLES

PRELIMINARY
FOR REVIEW
AND COMMENT

JOB: 19009
DATE: 4/7/2022
SCALE: AS SHOWN
DRAWN: TS
DESIGN: TS
CHECKED: TL

6

PLOTTED: Apr 07, 2022--1:41pm

FILE: Z:\Projects\PINE CANYON\PROJECTS\19009 PC Tract 23 GHOST TREE\DWG\PPLAT\19009--07--PPLAT--NRPP.dwg <<3D_Imperial>>

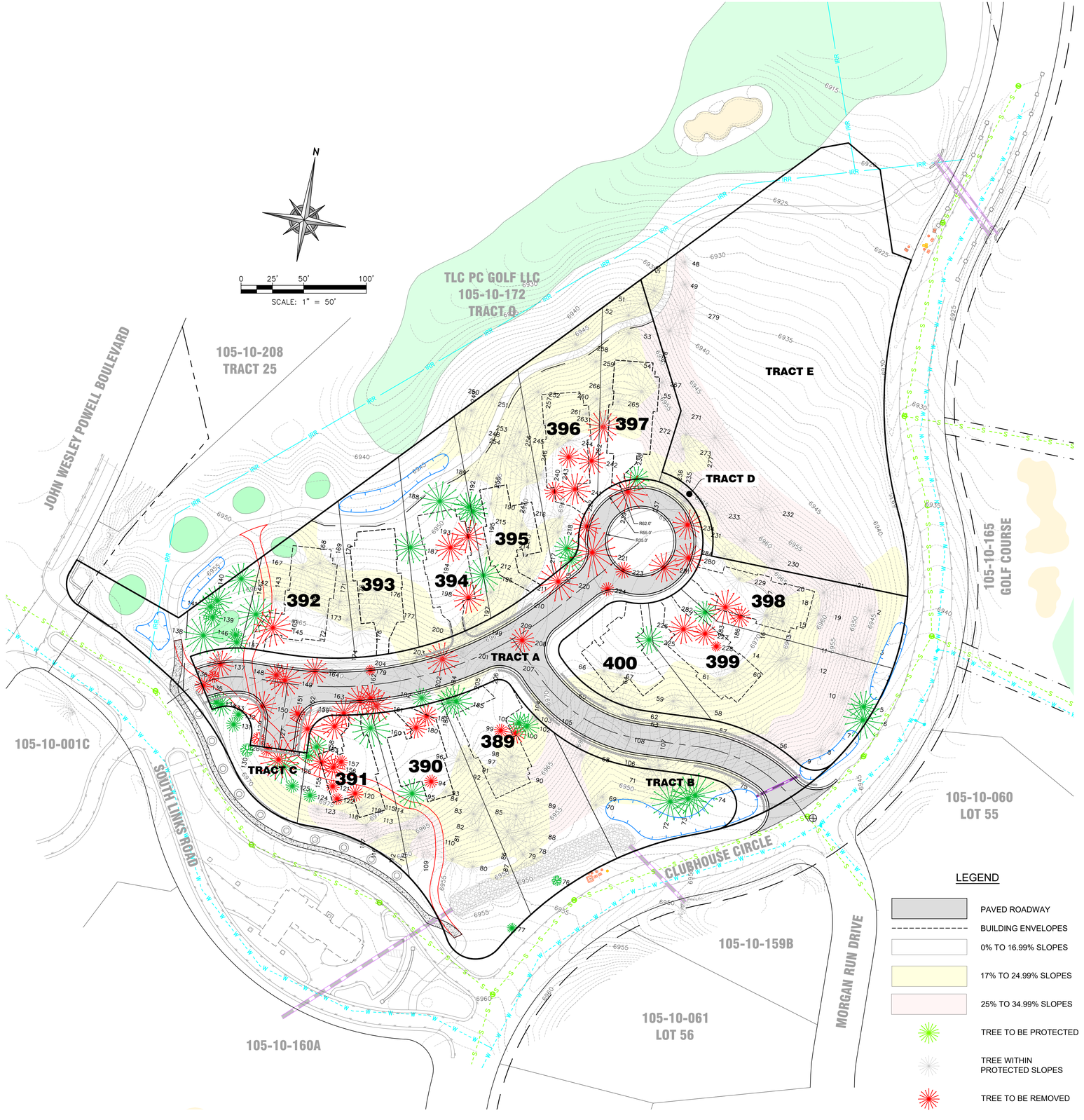
STEEP SLOPES RESOURCE PROTECTION & ALLOWABLE DISTURBANCE

LOTS & AREAS			SLOPE RESOURCE & ALLOWABLE DISTURBANCE		
	AREA		17 - 24.99% SLOPES	25 - 34.99% SLOPES	TOTAL STEEP SLOPE DISTURBANCE
			DISTURBANCE WITHIN BUILDING ENVELOPE	DISTURBANCE WITHIN BUILDING ENVELOPE	
LOT/UNIT	(ACRE)	(SF)	(SF)	(SF)	(SF)
389	0.45	19,565	1,906	73	1,979
390	0.49	21,167	143	0	143
391	0.24	10,583	596	0	596
392	0.27	11,931	2,303	0	2,303
393	0.26	11,279	2,488	0	2,488
394	0.31	13,585	111	0	111
395	0.33	14,474	2,733	0	2,733
396	0.32	13,875	2,181	0	2,181
397	0.28	12,346	2,536	804	3,340
398	0.33	14,204	1,644	620	2,264
399	0.50	21,861	1,345	0	1,345
400	0.21	9,342	528	0	528
TOTALS	4.00	174,212	18,514	1,497	20,011
BALANCE OF ALLOWABLE LOT DISTURBANCE OF STEEP SLOPES FROM INFRASTRUCTURE			18,790	2,588	21,378
PROTECTED STEEP SLOPES (OVER & ABOVE MINIMUM REQUIRED)			276	1,091	1,367
FOREST RESOURCE POINTS (1 POINT PER 50 SF)			5	21	26

PARENT PROPERTY SLOPE DATA							
RANGE	AREA	ALLOWABLE DISTURBANCE		INFRASTRUCTURE DISTURBANCE		BALANCE (ALLOWABLE LOT DISTURBANCE)	
(%)	(SF)	(%)	(SF)	(%)	(SF)	(%)	(SF)
17 - 24.99%	88,711	30%	26,613	9%	7,823	21%	18,790
25 - 34.99%	25,989	20%	5,198	10%	2,610	10%	2,588
> 35% (*)	0	-	-	-	-	-	-
TOTALS	114,700		31,811		10,433		21,378

FOREST RESOURCE PROTECTION DATA

FOREST RESOURCES	POINTS	%
PARENT PROPERTY TOTAL AVAILABLE FOREST RESOURCE CREDIT POINTS (SEE SHEET 8)	529	100.00%
FOREST RESOURCE CREDIT POINTS, PROTECTED OUTSIDE OF BUILDING ENVELOPES, DERIVED FROM TREE SURVEY (SEE SHEET 8)	242	45.75%
FOREST RESOURCE CREDIT POINTS DERIVED FROM PROTECTED STEEP SLOPES (OVER & ABOVE MINIMUM REQUIRED)	26	4.91%
TOTAL PROTECTED FOREST RESOURCE CREDIT POINTS	268	50.66%



Call at least two full working days before you begin excavation
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

REVISIONS

NUM.	DESCRIPTION	DATE	BY

- ☒ FOR REVIEW ONLY
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- ☐ FOR APPROVAL ONLY
- ☐ FOR RECORDING ONLY
- ☐ FOR CONSTRUCTION ONLY
- ☐ FOR AS-BUILT ONLY

GRANITE BASIN ENGINEERING, INC.
1961 COMMERCE CENTER CIRCLE, PRESCOTT, ARIZONA 86301
PH: (928) 717-5171 FAX: (928) 717-5181
WWW.GRANITEBASINENGINEERING.COM

TLC PC LAND INVESTORS, LLC
8601 NORTH SCOTTSDALE ROAD, SUITE 335
SCOTTSDALE, ARIZONA 85253

3201 SOUTH CLUBHOUSE CIRCLE
GHOST TREE AT PINE CANYON
NATURAL RESOURCE PROTECTION PLAN & TREE SURVEY

PRELIMINARY FOR REVIEW AND COMMENT

JOB:	19009
DATE:	4/7/2022
SCALE:	AS SHOWN
DRAWN:	TS
DESIGN:	TS
CHECKED:	TL

7

GHOST TREE AT PINE CANYON - FOREST RESOURCE DATA

* THIS TABLE DOES NOT INCLUDE ANY FOREST RESOURCES (TREES) WITHIN STEEP SLOPE AREAS

UNIT / TRACT	FOREST RESOURCE ID	FOREST RESOURCE SPECIE	FOREST RESOURCE DBH (in)	FOREST RESOURCE POINTS	FOREST RESOURCE CREDIT MULTIPLIER (0=REMOVED) (1=PROTECTED)	PROTECTED FOREST RESOURCE CREDIT
389	76	JUNIPER	6	8	1	8
389	99	PONDEROSA	8	1	0	0
389	100	PONDEROSA	13	4	0	4
389	101	PONDEROSA	13	4	1	4
389	102	PONDEROSA	15	4	1	4
389	183	PONDEROSA	16	4	1	4
389	185	PONDEROSA	20	8	1	8
390	77	PONDEROSA	6	1	1	1
390	94	PONDEROSA	8	1	0	0
390	95	PONDEROSA	18	8	1	8
390	180	PONDEROSA	13	4	0	0
390	181	PONDEROSA	13	4	0	0
391	120	PONDEROSA	10	2	0	0
391	121	PONDEROSA	8	1	0	0
391	122	PONDEROSA	7	1	0	0
391	124	PONDEROSA	8	1	1	1
391	153	PONDEROSA	13	4	1	4
391	154	PONDEROSA	8	1	1	1
391	155	PONDEROSA	17	4	0	0
391	156	PONDEROSA	14	4	0	0
391	157	PONDEROSA	8	1	0	0
391	158	PONDEROSA	16	4	0	0
391	160	PONDEROSA	24	8	1	8
392	144	PONDEROSA	23	8	1	8
392	145	PONDEROSA	23	8	0	0
394	187	PONDEROSA	20	8	1	8
394	188	PONDEROSA	24	8	1	8
394	192	PONDEROSA	18	8	1	8
394	193	PONDEROSA	20	8	0	0
394	194	PONDEROSA	18	8	0	0
394	198	PONDEROSA	19	8	0	0
395	191	PONDEROSA	18	8	1	8
395	196	PONDEROSA	22	8	1	8
396	218	PONDEROSA	15	4	1	4
396	219	PONDEROSA	15	4	1	4
396	240	PONDEROSA	12	2	0	0
396	241	PONDEROSA	19	8	0	0
396	242	PONDEROSA	17	4	0	0
396	243	PONDEROSA	13	4	0	0
397	238	PONDEROSA	15	4	1	4
397	262	PONDEROSA	20	8	0	0
398	186	PONDEROSA	13	4	0	0
398	283	PONDEROSA	21	8	0	0
399	5	PONDEROSA	19	8	1	8
399	6	PONDEROSA	24	8	1	8
399	226	PONDEROSA	18	8	0	0
399	227	PONDEROSA	14	4	0	0
399	228	PONDEROSA	6	1	0	0
399	282	PONDEROSA	14	4	1	4
400	225	PONDEROSA	17	4	1	4
TRACT 'A'	129	JUNIPER	8	8	0	0
TRACT 'A'	133	PONDEROSA	14	4	1	4
TRACT 'A'	134	PONDEROSA	10	2	1	2
TRACT 'A'	135	PONDEROSA	10	2	0	0
TRACT 'A'	136	JUNIPER	7	8	0	0
TRACT 'A'	137	PONDEROSA	16	4	0	0
TRACT 'A'	148	PONDEROSA	14	4	0	0
TRACT 'A'	149	PONDEROSA	20	8	0	0
TRACT 'A'	150	PONDEROSA	18	8	0	0
TRACT 'A'	151	PONDEROSA	10	2	0	0
TRACT 'A'	152	PONDEROSA	26	20	0	0
TRACT 'A'	159	PONDEROSA	17	4	1	4
TRACT 'A'	161	PONDEROSA	20	8	0	0
TRACT 'A'	162	PONDEROSA	16	4	0	0
TRACT 'A'	163	PONDEROSA	18	8	0	0
TRACT 'A'	164	PONDEROSA	16	4	0	0
TRACT 'A'	179	PONDEROSA	6	1	0	0
TRACT 'A'	182	PONDEROSA	12	2	1	2

UNIT / TRACT	FOREST RESOURCE ID	FOREST RESOURCE SPECIE	FOREST RESOURCE DBH (in)	FOREST RESOURCE POINTS	FOREST RESOURCE CREDIT MULTIPLIER (0=REMOVED) (1=PROTECTED)	PROTECTED FOREST RESOURCE CREDIT
TRACT 'A'	202	PONDEROSA	20	8	0	0
TRACT 'A'	208	PONDEROSA	15	4	0	0
TRACT 'A'	220	PONDEROSA	24	8	0	0
TRACT 'A'	221	PONDEROSA	30	20	0	0
TRACT 'A'	222	PONDEROSA	17	4	0	0
TRACT 'A'	223	PONDEROSA	10	2	0	0
TRACT 'A'	224	PONDEROSA	8	1	0	0
TRACT 'A'	234	PONDEROSA	18	8	0	0
TRACT 'A'	239	PONDEROSA	24	8	0	0
TRACT 'A'	280	PONDEROSA	18	8	0	0
TRACT 'A'	281	PONDEROSA	18	8	0	0
TRACT 'B'	72	PONDEROSA	24	8	1	8
TRACT 'B'	73	PONDEROSA	22	8	1	8
TRACT 'B'	74	PONDEROSA	27	20	1	20
TRACT 'C'	125	PONDEROSA	8	1	1	1
TRACT 'C'	126	PONDEROSA	20	8	1	8
TRACT 'C'	127	PONDEROSA	24	8	0	0
TRACT 'C'	128	PONDEROSA	8	1	0	0
TRACT 'C'	130	JUNIPER	8	8	1	8
TRACT 'C'	131	PONDEROSA	9	2	1	2
TRACT 'C'	132	PONDEROSA	7	1	1	1
TRACT 'C'	138	PONDEROSA	24	8	1	8
TRACT 'C'	139	PONDEROSA	12	2	1	2
TRACT 'C'	140	PONDEROSA	18	8	1	8
TRACT 'C'	141	PONDEROSA	16	4	1	4
TRACT 'C'	142	PONDEROSA	19	8	1	8
TRACT 'C'	146	PONDEROSA	8	1	1	1
TRACT 'C'	147	PONDEROSA	13	4	1	4
			TOTAL	**529**	**TOTAL PROTECTED**	**242**

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1981 COMMERCE CENTER CIRCLE, SUITE B, PRESCOTT, ARIZONA 86301
WWW.GRANITEBASINENGINEERING.COM

TLC PC LAND INVESTORS, LLC
8601 NORTH SCOTTSDALE ROAD, SUITE 335
SCOTTSDALE, ARIZONA 85253

3201 SOUTH CLUBHOUSE CIRCLE
GHOST TREE AT PINE CANYON
FOREST RESOURCE DATA

PRELIMINARY
FOR REVIEW
AND COMMENT

JOB:	19009
DATE:	4/7/2022
SCALE:	AS SHOWN
DRAWN:	TS
DESIGN:	TS
CHECKED:	TL

8

2200 E Huntington Dr.
Flagstaff, Az. 86004

1-12-2022

Kaline Hutchinson

Re: Ghost Tree at Pine Canyon

Dear Kaline,

The above referenced project is located in Arizona Public Service Company's electric service area. The Company extends its lines in accordance with the "Conditions Governing Extensions of Electric Distribution Lines and Services," Schedule 3, and the "Terms and Conditions for the Sale of Electric Service," Schedule 1, on file with the Arizona Corporation Commission at the time we begin installation of the electric facilities.

Application for the Company's electric service often involves construction of new facilities for various distances and costs depending upon customer's location, load size and load characteristics. With such variations, it is necessary to establish conditions under which Arizona Public Service will extend its facilities.

The enclosed policy governs the extension of overhead and underground electric facilities to customers whose requirements are deemed by Arizona Public Service to be usual and reasonable in nature.

Please give me a call at 928-773-6440 so that we may set up an appointment to discuss the details necessary for your project.

Sincerely,

Chad Brooks

Chad Brooks
Customer Project Representative SR
Flagstaff Construction

Kaline Hutchinson

From: Bob (Robert) Kuhn <bkuhn@fusd1.org> on behalf of Bob (Robert) Kuhn
Sent: Thursday, January 6, 2022 1:49 PM
To: Tucker Sweeney; Steven M. Rhode
Cc: Kaline Hutchinson
Subject: Re: Ghost Tree at Pine Canyon

Tucker and Kaline,
With the confirmation of the size of the cul-de-sac the plans look good.
Thanks,
Bob Kuhn
Asst. Supt. of Operations
Flagstaff U.S.D.#1
928-220-2035 cell
928-527-6010 office

From: Tucker Sweeney <tucker@granitebasinengineering.com>
Sent: Thursday, January 6, 2022 12:47 PM
To: Bob (Robert) Kuhn <bkuhn@fusd1.org>
Cc: Kaline Hutchinson <kaline@granitebasinengineering.com>
Subject: Ghost Tree at Pine Canyon

Good afternoon Bob,

The cul-de-sac is per City of Flagstaff Standard Detail 10-04-011. The inside edge of pavement radius is 30 feet and the outside edge of pavement is 50 feet.

Please feel free to contact me with any further questions or comments.

Regards,

Tucker Sweeney, Designer
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Ph: 928.717.0171
Fx: 928.717.0181
Cell: 928.899.5894
tucker@granitebasinengineering.com

From: Bob (Robert) Kuhn <bkuhn@fusd1.org>
Sent: Wednesday, January 5, 2022 3:14 PM
To: kaline@granitebasinengineering.com
Cc: Michael Penca <mpenca@fusd1.org>; Steven M. Rhode <srhode@fusd1.org>
Subject: Re: Will Serve Letter - Ghost Tree at Pine Canyon

Kaline,

I am the Asst. Supt. of Operations for FUSD I review proposed subdivisions for the district. In reviewing your plans what is the size of the cul-de-sac shown on the plans?

Bob Kuhn
Asst. Supt. of Operations
Flagstaff U.S.D.#1
928-220-2035 cell
928-527-6010 office

From: Michael Penca <mpenca@fusd1.org>
Sent: Wednesday, January 5, 2022 12:09 PM
To: Bob (Robert) Kuhn <bkuhn@fusd1.org>
Subject: Fw: Will Serve Letter - Ghost Tree at Pine Canyon

Please review and touch base with me. I will follow up with an email to confirm receipt.

Michael A. Penca
Superintendent
928-527-6002
mpenca@fusd1.org

FLAGSTAFF UNIFIED School District

From: Kaline Hutchinson <kaline@granitebasinengineering.com>
Sent: Wednesday, January 5, 2022 11:35 AM
To: Michael Penca <mpenca@fusd1.org>
Subject: Will Serve Letter - Ghost Tree at Pine Canyon

Mr. Penca -

We have a prerequisite to notify the Flagstaff Unified School District of a new community per the County's Preliminary Plat Application Checklist.

Please find our request for a will serve letter for Ghost Tree at Pine Canyon. Also attached is a Concept Plat for your reference. Please let me know if you need anything else to complete your review.

We sincerely appreciate your time and consideration.

Kaline Hutchinson
Operations Manager
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Office: 928-717-0171
www.granitebasinengineering.com

Kaline Hutchinson

From: Bohn, Eric <ebohn@coconino.az.gov> on behalf of Bohn, Eric
Sent: Wednesday, January 12, 2022 10:08 AM
To: Kaline Hutchinson
Subject: Re: Will Serve Letter - Ghost Tree at Pine Canyon - Courtesy Reminder for Coconino County

Hi Kaline,

If this purely a single-family residential development as stated, there are no licenses or permits to obtain from the health department prior to construction.

Thanks,

Eric
Eric Bohn, REHS/RS
Environmental Health Specialist III
Coconino County Health & Human Services
928-679-8757 office

COCONINO COUNTY ARIZONA
Health & Human Services

From: Kaline Hutchinson <kaline@granitebasinengineering.com>
Sent: Wednesday, January 12, 2022 10:01 AM
To: Bohn, Eric <ebohn@coconino.az.gov>
Subject: FW: Will Serve Letter - Ghost Tree at Pine Canyon - Courtesy Reminder for Coconino County

Good Morning Eric –

Can you please confirm that there are no issues with Ghost Tree at Pine Canyon as presented? We are hoping to submit our plat application next week and Coconino County will be looking for these confirmations as part of our package. Please let me know if you had any further questions.

Thanks very much.

Kaline Hutchinson
Operations Manager
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Office: 928-717-0171
www.granitebasinengineering.com

From: Kaline Hutchinson <kaline@granitebasinengineering.com>
Sent: Friday, January 7, 2022 12:15 PM
To: 'Bohn, Eric' <ebohn@coconino.az.gov>
Subject: RE: Will Serve Letter - Ghost Tree at Pine Canyon

Eric –

Thanks for getting back to us so quickly. This is a small phase of a large master planned community of single family residential homes. This are not commercial in any sense of the word.

Kaline Hutchinson
Operations Manager
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Office: 928-717-0171
www.granitebasinengineering.com

From: Bohn, Eric <ebohn@coconino.az.gov>
Sent: Friday, January 7, 2022 9:23 AM
To: Kaline Hutchinson <kaline@granitebasinengineering.com>
Subject: Re: Will Serve Letter - Ghost Tree at Pine Canyon

Hello Kaline,

Thank you for reaching out and notifying us of your plans. Is this proposed development being operated like a "hotel/motel" with nightly rentals, housekeeping services, and/or linen service?

Eric

Eric Bohn, REHS/RS
Environmental Health Specialist III
Coconino County Health & Human Services
928-679-8757 office

COCONINO COUNTY ARIZONA
Health & Human Services

From: Kaline Hutchinson <kaline@granitebasinengineering.com>
Sent: Wednesday, January 5, 2022 11:40 AM
To: Bohn, Eric <ebohn@coconino.az.gov>
Subject: Will Serve Letter - Ghost Tree at Pine Canyon

Good Morning Mr. Bohn –

We have a prerequisite to notify the Coconino Health Department of a new community per the County's Preliminary Plat Application Checklist. Please find our request for a will serve letter for Ghost Tree at Pine Canyon. Also attached is a Concept Plat for your reference. Please let me know if you need anything else to complete your review.

We sincerely appreciate your time and consideration.

Kaline Hutchinson
Operations Manager
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Office: 928-717-0171
www.granitebasinengineering.com

Kaline Hutchinson

From: Kaline Hutchinson
Sent: Wednesday, January 12, 2022 10:10 AM
To: 'jason.quinlan@suddenlink.com'
Cc: 'Sanford.Yazzie@AlticeUSA.com'
Subject: RE: Will Serve Letter - Ghost Tree at Pine Canyon - Courtesy Reminder for Suddenlink
Attachments: 19010 - Ghost Tree at PC - Will Serve - Suddenlink.pdf; 02_Ghost Tree Revised Concept Plat-2021-11-24.pdf

Good Morning Gentlemen –

I'm just following up on this will serve letter request for Ghost Tree at Pine Canyon in Flagstaff. We will be submitting our plat application next week and the County will be looking for these letters to be a part of that package. Please let us know if you have any further questions.

Thanks in advance.

Kaline Hutchinson
Operations Manager
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Office: 928-717-0171
www.granitebasinengineering.com

From: Kaline Hutchinson <kaline@granitebasinengineering.com>
Sent: Wednesday, January 5, 2022 5:05 PM
To: 'jason.quinlan@suddenlink.com' <jason.quinlan@suddenlink.com>
Subject: Will Serve Letter - Ghost Tree at Pine Canyon

Good Morning Jason –

I found your name online and hope that you are the right person. Glen Clark used to be our contact for these, but I received a bounce back on his address. Please find our request for a will serve letter for Ghost Tree at Pine Canyon. Also attached is a Concept Plat for your reference. Please let me know if you need anything else to complete your review.

We sincerely appreciate your time and consideration.

Kaline Hutchinson
Operations Manager
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Office: 928-717-0171
www.granitebasinengineering.com

GRANITE BASIN ENGINEERING, INC

January 5, 2022

Glen Clark
Suddenlink Communications

glen.clark@suddenlink.com

Re: Ghost Tree at Pine Canyon

Dear Glen;

On behalf of TLC PC Land Investors, LLC, Granite Basin Engineering is requesting a "will serve" letter from your organization as part of the predevelopment, due diligence review of a proposed 12 residential lot community on parcel 105-10-206 within the Pine Canyon master community as seen in the attached Concept Plat. This 5.92 acre property is located in Section 21, Township 7, Range 34 of the Gila and Salt River Meridian, Flagstaff, AZ.

Please respond at your soonest convenience or let me know if further information is needed. Thank you for your assistance.

Sincerely,

Kaline Hutchinson
kaline@granitebasinengineering.com
Operations Manager
Granite Basin Engineering

Kaline Hutchinson

From: Kaline Hutchinson
Sent: Wednesday, January 12, 2022 10:17 AM
To: 'jason.dale@centurylink.com'
Subject: FW: Will Serve Letter - Ghost Tree at Pine Canyon
Attachments: 19010 - Ghost Tree at PC - Will Serve - Centurylink.pdf; 02_Ghost Tree Revised Concept Plat-2021-11-24.pdf

Good Morning Jason –

I'm just following up on this will serve letter request for Ghost Tree at Pine Canyon in Flagstaff. We will be submitting our plat application next week and the County will be looking for these letters to be a part of that package. Please let us know if you have any further questions.

As always, I appreciate your assistance. Thanks in advance.

Kaline Hutchinson
Operations Manager
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Office: 928-717-0171
www.granitebasinengineering.com

From: Kaline Hutchinson <kaline@granitebasinengineering.com>
Sent: Wednesday, January 5, 2022 11:29 AM
To: 'jason.dale@centurylink.com' <jason.dale@centurylink.com>
Subject: Will Serve Letter - Ghost Tree at Pine Canyon

Good Morning Jason –

Please find our request for a will serve letter for Ghost Tree at Pine Canyon. Also attached is a Concept Plat for your reference. Please let me know if you need anything else to complete your review.

We sincerely appreciate your time and consideration.

Kaline Hutchinson
Operations Manager
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Office: 928-717-0171
www.granitebasinengineering.com

GRANITE BASIN ENGINEERING, INC

January 5, 2022

Jason Dale
Field Engineer
Centurylink
112 N. Beaver Street
Flagstaff, AZ 86001

jason.dale@centurlink.com

Re: Ghost Tree at Pine Canyon

Dear Jason;

On behalf of TLC PC Land Investors, LLC, Granite Basin Engineering is requesting a "will serve" letter from your organization as part of the predevelopment, due diligence review of a proposed 12 residential lot community on parcel 105-10-206 within the Pine Canyon master community as seen in the attached Concept Plat. This 5.92 acre property is located in Section 21, Township 7, Range 34 of the Gila and Salt River Meridian, Flagstaff, AZ.

Please respond at your soonest convenience or let me know if further information is needed. Thank you for your assistance.

Sincerely,

Kaline Hutchinson
kaline@granitebasinengineering.com
Operations Manager
Granite Basin Engineering

Kaline Hutchinson

From: Kaline Hutchinson
Sent: Wednesday, January 12, 2022 10:13 AM
To: 'bberner@uesaz.com'
Subject: FW: Will Serve Letter - Ghost Tree at Pine Canyon - Courtesy Reminder for UES
Attachments: 19010 - Ghost Tree at PC - Will Serve - Unisource.pdf; 02_Ghost Tree Revised Concept Plat-2021-11-24.pdf

Good Morning Blake –

I'm just following up on this will serve letter request for Ghost Tree at Pine Canyon in Flagstaff. We will be submitting our plat application next week and the County will be looking for these letters to be a part of that package. Please let us know if you have any further questions.

Thanks in advance.

Kaline Hutchinson
Operations Manager
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Office: 928-717-0171
www.granitebasinengineering.com

From: Kaline Hutchinson <kaline@granitebasinengineering.com>
Sent: Wednesday, January 5, 2022 11:30 AM
To: 'bberner@uesaz.com' <bberner@uesaz.com>
Subject: Will Serve Letter - Ghost Tree at Pine Canyon

Good Morning Blake –

Please find our request for a will serve letter for Ghost Tree at Pine Canyon. Also attached is a Concept Plat for your reference. Please let me know if you need anything else to complete your review.

We sincerely appreciate your time and consideration.

Kaline Hutchinson
Operations Manager
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Office: 928-717-0171
www.granitebasinengineering.com

GRANITE BASIN
ENGINEERING, INC

January 5, 2022

Blake Berner, Planner
Unisource Energy Services
1459 E. Butler Ave.
Flagstaff, AZ 86001

bberner@uesaz.com

Re: Ghost Tree at Pine Canyon

Dear Blake;

On behalf of TLC PC Land Investors, LLC, Granite Basin Engineering is requesting a "will serve" letter from your organization as part of the predevelopment, due diligence review of a proposed 12 residential lot community on parcel 105-10-206 within the Pine Canyon master community as seen in the attached Concept Plat. This 5.92 acre property is located in Section 21, Township 7, Range 34 of the Gila and Salt River Meridian, Flagstaff, AZ.

Please respond at your soonest convenience or let me know if further information is needed. Thank you for your assistance.

Sincerely,

Kaline Hutchinson
kaline@granitebasinengineering.com
Operations Manager
Granite Basin Engineering

Kaline Hutchinson

From: Kaline Hutchinson
Sent: Tuesday, January 18, 2022 10:40 AM
To: 'gmiller@flagstaffaz.gov'
Subject: FW: Ghost Tree at Pine Canyon - Unit One, Tract 23
Attachments: 02_Ghost Tree Revised Concept Plat-2021-11-24.pdf; 05-Waiver of WSIA Pine Bluff Plat in Pine Canyon 10-16-2019.pdf

Good Morning Gary –

Your office was kind enough to redirect me to you for this will serve request at Pine Canyon. We are applying for the pre-plat with the City of Flagstaff for Ghost Tree at Pine Canyon and we'd like to request a will serve letter as your earliest convenience. The Concept Plat is attached along with the letter Ryan previously completed for another phase of this same community. Please let us know if you have any questions.

Thanks very much.

Kaline Hutchinson
Operations Manager
Granite Basin Engineering, Inc.
1981 Commerce Center Circle, Suite B
Prescott, AZ 86301
Office: 928-717-0171
www.granitebasinengineering.com