

# MEMO

**Date:** July 20, 2022

**To:** Robb MacDonald, Engineering Department  
T.J. Frans, Engineering Department  
Alan Perry, Fire Marshal  
Chris Bryant, Building Department  
Dave Wright, Police Department  
Dave Marston, Mapping Department  
Angie Hopf, Mapping Department  
Bailey Barnes, Mapping Department  
Vallivue School District  
Pioneer Irrigation District  
Nampa Meridian Irrigation District  
Compass Idaho  
Caldwell Transportation  
Brown Bus Company  
Canyon Highway District #4  
Idaho Transportation Department  
Valley Regional Transit  
Idaho Power  
Intermountain Gas  
Bureau of Reclamation, Snake River Area Office  
USPS Caldwell

**From:** Alex Jones, Planner Technician  
Caldwell P & Z Department

**RE: Case Number CPM21-000002/ANN21-000014/ZON21-000005/SUB21-000041/SUP21-000015: Arrowrock Farms**

Please review the attached REVISED application and information, original Public Agency Memo sent on March 22, 2022. Please provide us with your UDATED written input. We request that you e-mail any comments as soon as possible but no later than **Friday, August 12, 2022.**

E-mail: [P&Z@cityofcaldwell.org](mailto:P&Z@cityofcaldwell.org)

**CASE NO: CPM21-000002/ANN21-000014/ ZON21-000005/ SUB21-000041/SUP21-000015:** Trilogly Development is requesting a Comprehensive Plan Map Amendment for 10.99 acres to modify the designation from H-C (Highway Corridor) to (Medium Density Residential). Concurrently a request for annexation of 37.92 acres including parcels R3270901100 (approximately 17.77 acres) and R32709011B0 (approximately 17.4 acres) with zoning designations of R-2 (Medium Density Residential) for 10.99 acres and H-C (Highway Corridor) for approximately 27 acres and a Preliminary Plat for **Arrowrock Farms Subdivision**, consisting of 40 single family lots, 60 townhome lots, 52-4plex lots (208 residential units) and three (2) commercial lots. Additionally requested is a Special Use Permit for the townhomes proposed for the H-C (Highway Corridor) zone. The property is designated as Highway Corridor in the 2040 Comprehensive Plan. The subject property is located on the northwest corner of Karcher Rd and S. Indiana Ave and south of Kingsview Est No 2.

This case is scheduled to be presented before the **Caldwell Hearing Examiner on Tuesday, August 23, 2022 at 7:00 pm.**

We will assume that you have no objections, concerns or comments if you do not reply to this request within the requested timeframe. If you have any questions, you may contact me at 208-455-4604.

# Gem State Planning, LLC

October 22, 2021,

REVISED November 11, 2021

REVISED July 19, 2022 – due to ITD right-of-way encroachment

Mr. Jerome Mapp, Director

Mr. Alexander Jones, Planner

City of Caldwell Planning and Zoning

621 Cleveland Boulevard

Caldwell, Idaho 83605

Subject: Arrowrock Farm Subdivision (aka Vertrees property)  
Applications for Annexation, Rezone and Preliminary Plat

Dear Mr. Mapp and Mr. Jones:

On behalf of Trilogy Development, please accept the attached applications and support materials for Arrowrock Farm Subdivision, a mixed use development with commercial lots and a mix of housing opportunities; located on the northwest corner of Hwy 55/Karcher Road and Indiana Boulevard (3N, 3W, Section 10). We are requesting annexation of 37.93 acres into the City of Caldwell with a mix of land uses, including ~~39~~ 40 single family homes, ~~58~~ 60 townhomes, ~~22 4plex lots (88 units)~~ 52 4plex units and ~~3~~ 2 commercial lots. The resulting gross density of Arrowrock Farms is ~~4.9~~ 4.00 dwelling units/acre (using annexation area). The gross density is 4.33 du/acre without the commercial lots.

## Annexation/Comprehensive Plan

The Caldwell Comprehensive Plan Future Land Use Map designates this property as Highway Corridor (H-C) due to its location along Karcher Road. The comprehensive plan suggests uses such as commercial, light industrial, office and high density residential, and notes that the function of Karcher Road should not be compromised.

We are requesting the Highway Corridor (H-C) zone for a portion of the development site or 26.67 acres. The H-C zone is a mixed use zone that is allowable in the similarly described (but somewhat confusing) H-C Comprehensive Plan designation. The H-C zone will include the commercial, 4plex and townhome land uses.

Due to the location of the property adjacent to two single family subdivisions, Kingsview Estates to the north and Quail Ridge to the northwest, we are requesting annexation of a portion of the site as R-2 or 11.26 acres. This is the same zoning as the adjacent subdivisions and this zone will allow a reasonable and attractive transition from single family/townhomes to 4plexes and commercial lots in the H-C zone. The updated legal descriptions for the two zoning designations are include in our application package.

**9839 W. Cable Car Street, Suite 101, Boise, Idaho 83709**

We are including an application for a Comprehensive Plan Map Amendment for the Medium Density portion of the property. The recently updated zoning code (updated after our original application date) does not allow single family homes in the H-C zoning designation. As noted previously the R-2 zone is necessary to provide a transition from the existing R-2 lots in Kingsview Estates and Quail Ridge Subdivisions.

### **Preliminary Plat**

As shown on the Preliminary Plat, Arrowrock Farm Subdivision includes ~~39~~ 40 single family lots. These lots meet the size and lot dimension for the R-2 zone. (Caldwell Zoning Code 10-02-03) The single family lots then transition to townhome lots. The ~~58~~ 60 townhouses are 2 story, front loaded, attached homes constructed in groups of 4 homes. These lots range in size from 2600 sf to 4160 sf. We have provided additional off-street parking space for the townhome lots.

The 13 4plex buildings are located on the 4.42 acre Lot 9, Block 5 and totals 52 dwelling units. Each 4plex has 2 units down and 2 units upstairs. The 4plex units are a mix of 1 BR/1BA, 2 BR/2BA and 3 BR/2BA. There are 142 standard and 6 handicap parking spaces for the dwelling units, for 2.85 parking spaces per unit for residents and guests.

In the commercial area, we are showing ~~3~~ 2 buildable lots, ~~3~~ 1 common lot and 1 driveway lot, totaling ~~2.68~~ 2.86 acres. This area may be sold to a commercial user and the orientation of the lots and buildable area may change.

### **Open Space**

Arrowrock Farm will have ample open spaces and amenities. This new community will include 9.51% open space, not including drainage lots, buffers on Karcher Road and Indiana Avenue, or the Deer Flat Caldwell Lateral easement that is over 2.2 acres. A 10' asphalt pathway along the south side of the Lateral will connect to the path in the Quail Ridge Subdivision to the north.

Residents will enjoy a playground and picnic shelter in the centrally located open space on Lot 12, Block 6. A shade structure on Lot 6, Block 3, will provide a gathering area for residents and guests. A pickleball court on Lot 9, Block 5, is sure to be a "hit".

A clubhouse, playground and parking area, located on Lot 11, Block 5, will serve the 4plex residents. These amenities are conveniently located and provide a nice space for the kids' birthday parties and other community events.

We are sensitive to our neighbors who live in the outparcel on Indiana Avenue. Their property is not a part of Arrowrock Farm. We are providing a landscaped buffer surrounding their property and show a future connection to Gray Ridge Lane, should their driveway onto Indiana Avenue be closed.

## **Streets and Utilities**

Indiana Avenue is a Minor Arterial and Karcher Road/Hwy 55 is a Principal Arterial, according to the Caldwell Functional Street Classification Map. These major roadways will allow useful access to all points north, south, east and west. We are planning for two connections to Indiana Avenue. Deerfield Drive, with an attractive center median, will be a full movement intersection and the main access to Arrowrock Farm. Gray Ridge Lane will be a right in-right out private driveway that will serve the commercial uses on the corner and also serves as a secondary access to Indiana Avenue. We are connecting to the stub streets, Carl Port Way and Aptos Avenue, in the adjacent subdivisions.

Sewer, water and pressurized irrigation will be provided to each lot. The Deer Flat-Caldwell Lateral is covered by a 70' wide easement. The Lateral will remain open. As noted previously, a connecting pathway will be constructed along the south side of the Lateral. The Lateral will be fenced as shown on the landscape plan.

## **Traffic Study**

A traffic study was completed in March 2022. The estimated traffic distribution from the site is 35% north of the site traveling on Indiana Avenue and 65% south of the site on Indiana Ave to the Karcher Road. Then 55% of traffic will travel east on Karcher Road.

The traffic study also outlined eight in-process development in the vicinity of Arrowrock Farm Subdivision.

## **Landscaping**

Landscaping is integral to the mix of residential uses in Arrowrock Farm Subdivision. Buffers and open areas will include significant planting beds and a variety of trees that can be irrigated with drip irrigation. We have included a detailed landscape plan and a color rendering with our application.

## **Neighborhood Meeting**

A well-attended neighborhood meeting was held on Monday, August 23, 2021, at 6 pm. The meeting was held on site. The development was called Rocky Ridge at the time of the meeting and the sign-up sheet is attached. The neighbors were concerned about traffic through their neighborhood, the loss of the farm that can be seen from their homes and the density of the proposed development.

Soon after the neighborhood meeting, we sent the sign-up sheet to a representative of the Quail Ridge HOA. We also emailed a copy of page 2 of the Preliminary Plat to all the attendees of the neighborhood meeting who provided email addresses.

We have continued email correspondence with Brett and Yvette Darney, the owners of the 2 acre out-parcel that abuts Arrowrock Farm. Mr. Darney had questions about irrigation and fencing around his property.

**9839 W. Cable Car Street, Suite 101, Boise, Idaho 83709**

The required revisions to the Preliminary Plat have delayed the hearing schedule. We have attempted to inform the neighbors of the hearing delays. I appreciate the assistance of Candace, a neighbor in Quail Ridge, for keeping her neighbors informed of the changes and delays.

### **Summary**

Arrowrock Farm Subdivision is an attractive mixed-use community that meets the requirements of the Comprehensive Plan and Caldwell zoning code, while respecting the adjacent single family residential homes.

We appreciate the Planning Staff working with us **on changes to the plat caused by the newly establish right of way required by ITD for the widening of Karcher Road.** We look forward to working with you through the approval process. Please do not hesitate to contact me if you have questions.

Sincerely,

*Jane Suggs*

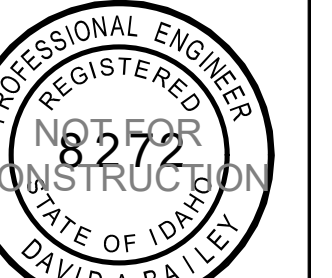
Jane Suggs

cc: Shawn Brownlee, Trilogy Development

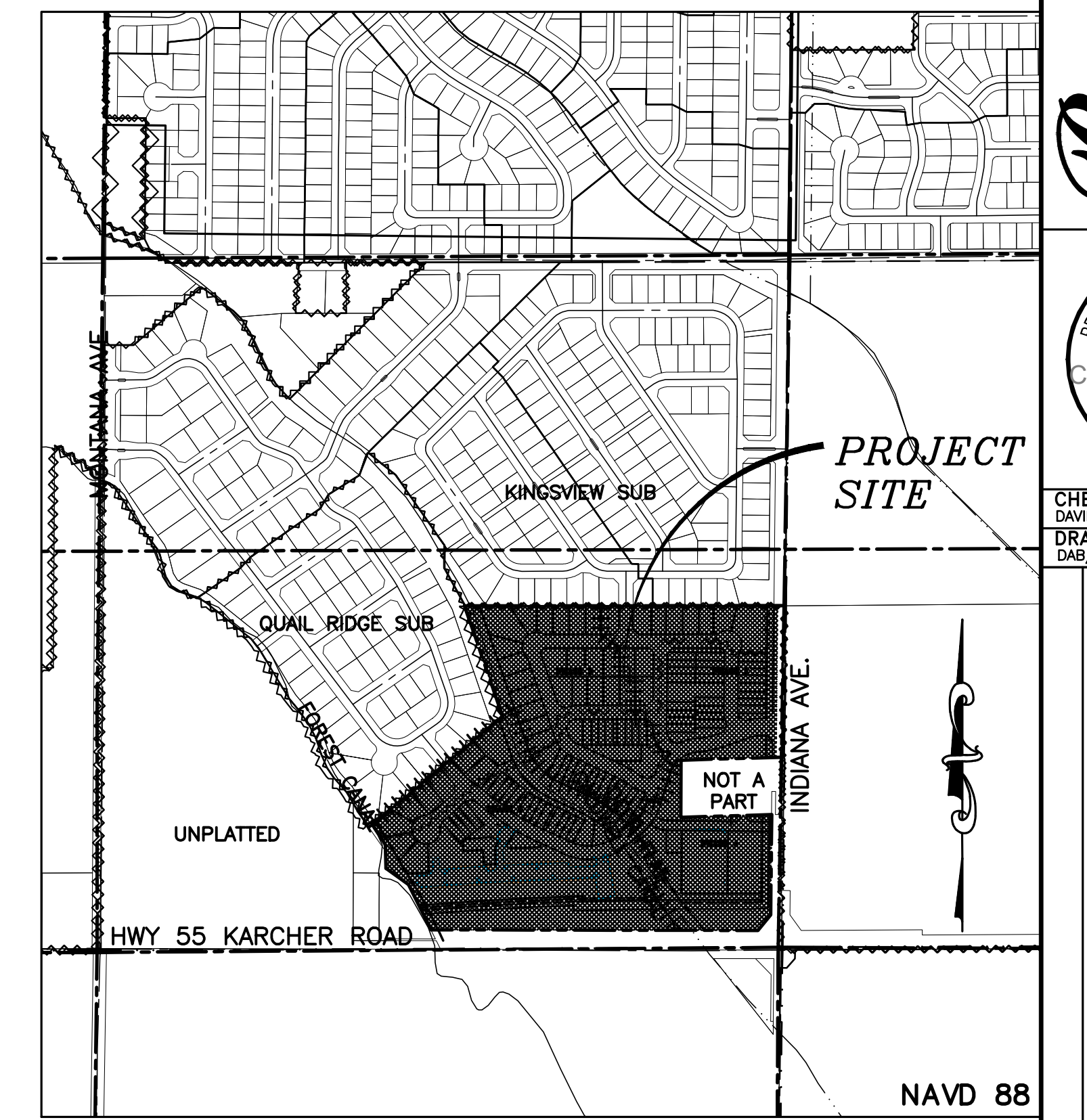
# PRELIMINARY PLAT FOR ARROWROCK FARM SUBDIVISION

LOCATED IN THE SE 1/4 OF SECTION 10  
T.3N., R.3W., B.M.  
CALDWELL, CANYON COUNTY, IDAHO  
2022

**Bailey Engineering, Inc.**  
CIVIL ENGINEERING | PLANNING | CADD  
1116 E. STATE ST. STE. 210  
BOISE, ID 83709  
TEL: 208-896-8013  
WWW.BAILEYENGINEERING.COM

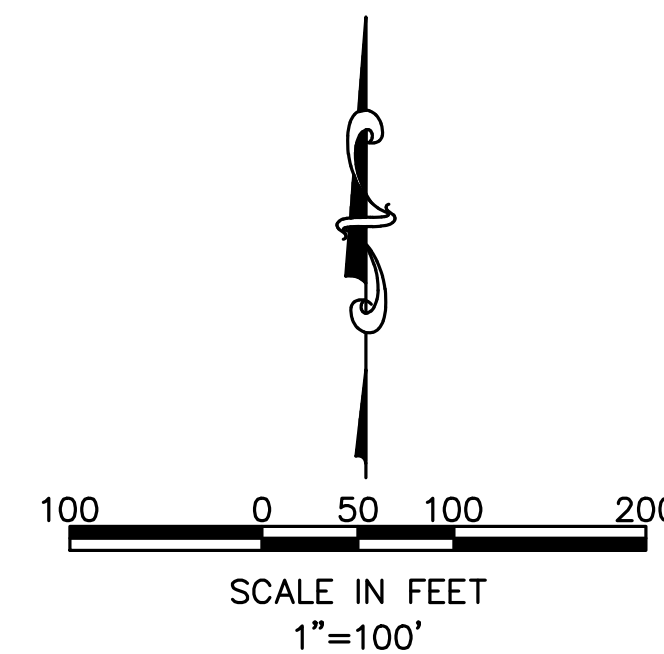
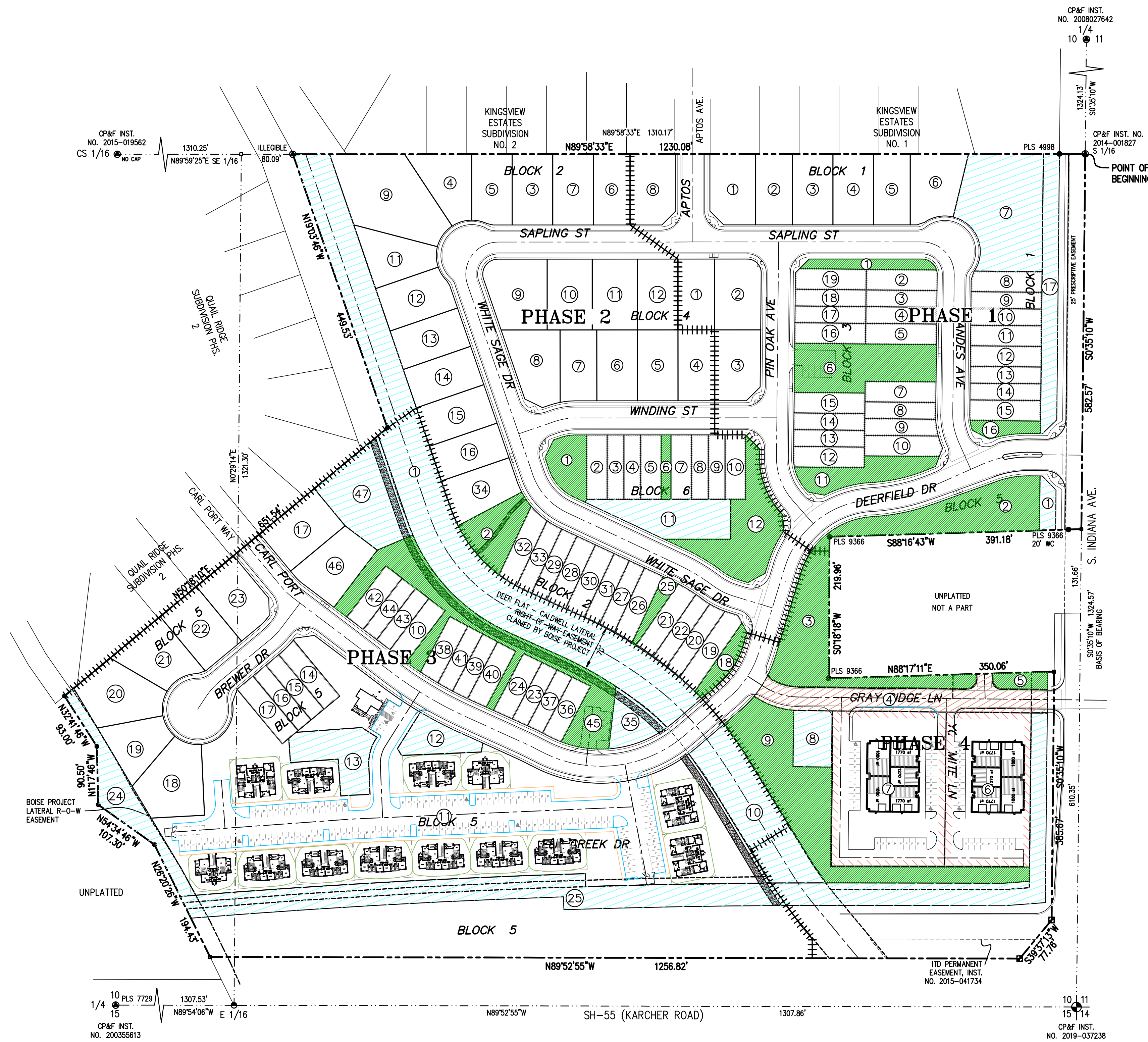


CHECKED BY:  
DAVID A. BAILEY, P.E.  
DRAWN BY:  
DAS/DSS



VICINITY MAP  
VERTREES SUBDIVISION  
1"=500'

Common Lots		
Lot	Area	Description
BLOCK 1 Lot 7: OPEN	21306	DRAINAGE
BLOCK 1 Lot 16: OPEN	2355	COMMON LOT OPEN
BLOCK 1 Lot 17: OPEN	10624	INDIANA BUFFER
BLOCK 2 Lot 1: OPEN	69820	DEERFLAT HIGHLINE CANAL
BLOCK 2 Lot 2: OPEN	7092	COMMON LOT OPEN
BLOCK 2 Lot 18: OPEN	2866	COMMON LOT OPEN
BLOCK 2 Lot 25: OPEN	1901	COMMON LOT OPEN
BLOCK 2 Lot 35: OPEN	4833	SD POND
BLOCK 2 Lot 45: OPEN	22588	COMMON LOT OPEN
BLOCK 2 Lot 47: OPEN	14143	SD POND
BLOCK 3 Lot 1: OPEN	3183	COMMON LOT OPEN
BLOCK 3 Lot 6: OPEN	14723	COMMON LOT OPEN
BLOCK 3 Lot 11: OPEN	7148	COMMON LOT OPEN
BLOCK 5 Lot 1: OPEN	1867	INDIANA BUFFER
BLOCK 5 Lot 2: OPEN	16858	COMMON LOT OPEN
BLOCK 5 Lot 3: OPEN	17634	COMMON LOT OPEN
BLOCK 5 Lot 5: OPEN	2122	COMMON LOT OPEN
BLOCK 5 Lot 8: OPEN	5232	SD POND
BLOCK 5 Lot 9: OPEN	27613	COMMON LOT OPEN
BLOCK 5 Lot 10: OPEN	19063	DEERFLAT HIGHLINE CANAL
BLOCK 5 Lot 12: OPEN	5057	SD POND
BLOCK 5 Lot 13: OPEN	8512	SD POND
BLOCK 5 Lot 24: OPEN	10186	LATERAL
BLOCK 5 Lot 25: OPEN	53944	BUFFER
BLOCK 6 Lot 1: OPEN	4991	COMMON LOT OPEN
BLOCK 6 Lot 6: OPEN	1500	COMMON LOT OPEN
BLOCK 6 Lot 11: OPEN	10496	SD POND
BLOCK 6 Lot 12: OPEN	13541	COMMON LOT OPEN



## PLAN SHEET INDEX

SHEET	DESCRIPTION
PP-1	-COVER SHEET, INDEX, VICINITY MAP, NOTES
PP-2	-PRELIMINARY PLAT LAYOUT
PP-3	-CURVE AND LOT TABLES
PP-4	-PRELIMINARY ENGINEERING PLAN
PP-5	-PRELIMINARY SEWER PROFILES
PP-6	-PRELIMINARY SEWER PROFILES
PP-7	-ADJACENT OWNERS

## PLAT LEGEND

BOUNDARY	---
LOT LINES	---
ROAD CENTERLINE	---
RIGHT OF WAY	---
LOT NUMBER	①
LOT AREA	6,000 sq ft
BLOCK NUMBER	BLOCK 7
EASEMENT	---
SETBACK	---
CURB GUTTER SW	---
STREET NAME	W. ASHTON DR.
SEWER LINE	---
WATER LINE	---
STORM DRAIN LINE	---
PRESSURE IRRIGATION	---
GRAVITY IRRIGATION	---
FLOW ARROW	---

## NOTES

- NO DIRECT LOT ACCESS SHALL BE ALLOWED S. INDIANA AVE OR STATE HIGHWAY 55 (KARCHER ROAD).
- ALL LOTS SHALL HAVE A SEWER SERVICE PROVIDED FOR DISCHARGE INTO CITY OF CALDWELL SEWER MAINS.
- DOMESTIC WATER WILL BE PROVIDED TO ALL LOTS BY CALDWELL CITY WATER.
- ALL LOT LINES COMMON TO A PUBLIC RIGHT-OF-WAY LINE OR PROJECT BOUNDARY SHALL HAVE A TEN (10) FOOT PERMANENT PUBLIC UTILITIES, IRRIGATION, AND DRAINAGE EASEMENT, EXCEPT AS OTHERWISE SHOWN.
- EACH SIDE OF COMMON LOT LINES SHALL HAVE A FIVE (5') FOOT PERMANENT PUBLIC UTILITIES, IRRIGATION, AND DRAINAGE EASEMENT, EXCEPT AS OTHERWISE SHOWN. REAR OF EACH COMMON LOT SHALL HAVE A TEN (10) FOOT PERMANENT PUBLIC UTILITIES, IRRIGATION, AND DRAINAGE EASEMENT, EXCEPT AS OTHERWISE SHOWN.
- ALL COMMON AREA LOTS SHALL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION OR ITS ASSIGNS.
- ALL STREETS WILL BE PUBLIC AND CONSTRUCTED TO CITY OF CALDWELL ROAD STANDARDS.
- STORM WATER DRAINAGE SHALL BE COLLECTED AND/OR RETAINED ON SITE BY CATCH BASINS AND UNDERGROUND PIPING PER CITY OF CALDWELL STORM WATER STANDARDS.
- FIRE PROTECTION WILL BE ENGINEERED TO THE GUIDELINES OF THE CITY OF CALDWELL FIRE DISTRICT.
- THE DEVELOPER WILL COMPLY WITH IDAHO CODE 31-3805 BY PROVIDING PRESSURE IRRIGATION TO ALL LOTS PER CITY OF CALDWELL STANDARDS AND THE PIONEER IRRIGATION DISTRICT. COORDINATION WILL OCCUR WITH CALDWELL MUNICIPAL IRRIGATION DISTRICT AND/OR PIONEER IRRIGATION TO DETERMINE SOURCE OF PRESSURIZED IRRIGATION. A PRESSURE IRRIGATION PUMP STATION WILL BE CONSTRUCTED IF NECESSARY.
- THIS DEVELOPMENT RECOGNIZES SECTION 22-4503, RIGHT TO FARM ACT, WHICH STATES, IDAHO CODE "NO AGRICULTURAL OPERATION OR AN APPURTENANCE TO IT SHALL BE OR BECOME A NUISANCE, PRIVATE OR PUBLIC, BY ANY CHANGED CONDITIONS IN OR ABOUT THE SURROUNDING NONAGRICULTURAL ACTIVITIES AFTER THE SAME HAS BEEN IN OPERATION FOR MORE THAN ONE (1) YEAR, WHEN THE OPERATION WAS NOT A NUISANCE AT THE TIME THE OPERATION BEGAN, PROVIDED THAT THE PROVISIONS OF THIS SECTION SHALL NOT APPLY WHENEVER A NUISANCE RESULTS FROM THE IMPROPER OR NEGLIGENT OPERATION OF ANY AGRICULTURAL OPERATION OR AN APPURTENANCE TO IT."
- THE SUBJECT PROPERTY DOES NOT FALL WITHIN A FEMA FLOOD HAZARD ZONE. REFERENCE FIRM PANEL 1602703757 EFFECTIVE DATE MAY 24, 2011.
- PORTIONS OF BLOCK 2 LOT 30 & BLOCK 5 LOT 8 & 14, CONTAIN THE DEER FLAT CALDWELL LATERAL. THE DEER FLAT CALDWELL LATERAL WILL REMAIN AN OPEN WATERWAY WITH DEVELOPMENT.
- SEE PRELIMINARY LANDSCAPE PLAN FOR PATHWAY LOCATIONS.
- TO THE BEST OF THE PREPARER'S KNOWLEDGE, THIS PRELIMINARY PLAT MEETS REQUIREMENTS OF CALDWELL CITY CODE.

<b>ACREAGE</b> TOTAL PARCEL - 35.20 ACRES TOTAL LOTS - 132 BUILDABLE LOTS - 103 SFR LOTS - 40 TOWNHOUSE LOTS - 60 4-FLEX LOTS - 1 LOT, 13-4-FLEX (52 UNITS) COMMERCIAL LOTS - 2 COMMON/OPEN LOTS - 23 PRIVATE ROAD - 1 TOTAL 162 DWELLING UNITS DENSITY DU/ACRE - 4.31 USABLE OPEN SPACE - 3.35 AC - 9.51%	<b>COMPREHENSIVE PLAN</b> HIGHWAY MIXED USE	MERIDIAN, ID 83646 ENDURANCE HOLDINGS, LLC 1977 E OVERLAND RD MERIDIAN, IDAHO 83642
<b>PARKING</b> 13 4-FLEX BUILDINGS - 52 UNITS 142 REGULAR PARKING 6 HANDICAP PARKING - 2 VAN ACCESSIBLE 2.85 HANDICAP STALLS/UNIT	<b>SEWAGE DISPOSAL</b> CALDWELL CITY SEWER	<b>DEVELOPER</b> TRILOGY DEVELOPMENT, INC. 9839 W CABLE CAR ST SUITE 101 BOISE, ID 83709 208-896-8858
<b>COMMERCIAL</b> 49 REGULAR PARKING 5 HANDICAP	<b>WATER SUPPLY</b> CALDWELL CITY WATER	<b>ENGINEER</b> DAVID A. BAILEY, P.E. BAILEY ENGINEERING, INC. 1119 E. STATE ST., SUITE 210 EAGLE, ID 208-938-0013
<b>ZONING</b> EXISTING - COUNTY PROPOSED - HIGHWAY CORRIDOR / RZ	<b>CITY</b> CALDWELL CITY	<b>PLANNER/CONTACT</b> SHAWN BROWNLEE TRILOGY DEVELOPMENT, INC. 9839 W CABLE CAR ST SUITE 101 BOISE, ID 83709 208-896-8858
<b>SETBACKS</b> FRONT 20 INTERIOR SIDE 6 STREET SIDE 15 REAR 15	<b>SCHOOL DISTRICT</b> VALLIVUE SCHOOL DISTRICT 139 EAGLE, ID	<b>OWNERS</b> VERTREES ROBERT AND JACKIE LIVING TRUST 5467 W ASTONTE DR

REVISED

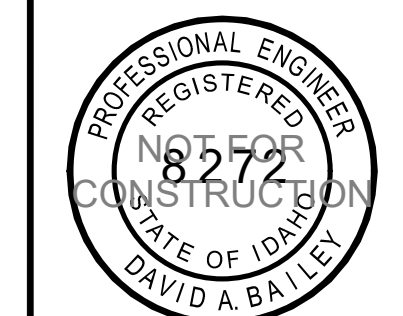
PRELIMINARY PLAT  
ARROWROCK FARM SUBDIVISION  
TRILOGY DEVELOPMENT, INC.

DATE:  
07/15/2022  
PROJECT:  
C2020-032  
SHEET  
PP-1

**PRELIMINARY PLAT FOR  
ARROWROCK FARM SUBDIVISION**

LOCATED IN THE SE 1/4 OF SECTION 10  
T.3N., R.3W., B.M.  
CALDWELL, CANYON COUNTY, IDAHO  
2022

**Bailey Engineering, Inc.**  
CIVIL ENGINEERING | PLANNING | CADD  
1116 E. STATE ST. STE. 210  
BOISE, ID 83706  
TEL: 208-338-6013  
WWW.BAILEYENGINEERING.COM



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DAVID A. BAILEY P.E.  
DRAWN BY:  
DMS/DSS

REVISIONS  
NO. DATE DESCRIPTION

**PRELIMINARY PLAT  
ARROWROCK FARM SUBDIVISION  
TRILOGY DEVELOPMENT, INC.**

DATE:  
07/15/2022  
PROJECT:  
C2020-032  
SHEET  
**PP-2**



**PLAT LEGEND**

- BOUNDARY
- LOT LINES
- ROAD CENTERLINE
- RIGHT OF WAY
- LOT NUMBER
- LOT AREA
- BLOCK NUMBER
- EASEMENT
- SETBACK
- CURB GUTTER SW
- STREET NAME
- SEWER LINE
- WATER LINE
- STORM DRAIN LINE
- PRESSURE IRRIGATION
- GRAVITY IRRIGATION
- FLOW ARROW

CP&F INST.  
NO. 2015-019562  
CS 1/16

CP&F INST. NO. 2014-001827  
S 1/16

CP&F INST. NO. 200355613

CP&F INST. NO. 2019-037238

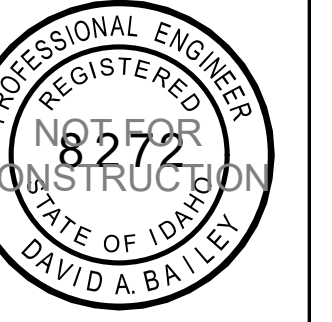
SCALE IN FEET  
1"=60'



PRELIMINARY PLAT FOR  
ARROWROCK FARM SUBDIVISION

LOCATED IN THE SE 1/4 OF SECTION 10  
T.3N., R.3W., B.M.  
CALDWELL, CANYON COUNTY, IDAHO  
2022

Bailey Engineering, Inc.  
CIVIL ENGINEERING | PLANNING | CADD  
1116 E STATE ST STE 210  
BOISE, ID 83706  
TEL: 208-338-9013  
WWW.BAILEYENGINEERING.COM



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DAVID A. BAILEY P.E.  
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DMS/DSS

REVISED  
NO. DATE DESCRIPTION

LOT & CURVE TABLES  
ARROWROCK FARM SUBDIVISION  
TRILOGY DEVELOPMENT, INC.

DATE:  
07/15/2022  
PROJECT:  
C2020-039

SHEET  
PP-3

Curve Table					
Curve #	Radius	Length	Chord	Bearing	Delta
C1	100.00	42.65	42.33	N11°37'53"W	24°26'07"
C2	50.00	79.07	71.09	N44°43'08"W	90°36'37"
C3	50.00	94.91	81.29	S35°35'38"W	108°45'50"
C4	100.00	80.13	78.00	S41°55'49"E	45°54'42"
C5	300.00	62.58	62.47	S58°54'36"E	11°57'10"
C6	100.00	35.05	34.87	S62°58'29"E	20°04'57"
C7	100.00	33.07	32.92	N80°30'03"E	18°57'01"
C8	100.00	73.21	71.59	N20°23'16"W	41°56'53"
C9	100.00	23.00	22.95	S46°17'15"E	13°10'51"
C10	600.00	133.42	133.14	S59°14'53"E	12°44'25"
C11	300.00	33.00	32.02	S63°25'10"E	4°23'51"
C12	200.00	241.81	227.35	N84°08'32"E	69°16'27"
C13	150.00	85.14	84.00	N33°14'40"E	32°31'15"
C14	150.00	82.87	81.82	N32°48'40"E	31°39'15"
C15	150.00	99.81	97.98	N67°42'01"E	38°07'27"
C16	300.00	107.92	107.34	N76°27'24"E	20°36'42"
C17	180.00	76.77	76.19	N78°22'07"E	24°26'07"
C18	100.00	29.40	29.30	N41°52'48"E	16°50'44"
C19	100.00	23.00	22.95	N43°42'46"E	13°10'51"
C20	55.00	24.76	24.55	S77°07'47"E	25°47'19"
C21	55.00	32.18	31.72	N73°12'50"E	33°31'26"
C22	55.00	40.22	39.33	N35°30'03"E	41°54'10"
C23	55.00	32.18	31.72	N02°12'45"W	33°31'26"
C24	55.00	24.54	24.33	N31°45'16"W	25°33'36"
C25	126.50	19.55	19.53	N23°24'10"W	8°51'23"
C26	126.50	26.18	26.14	N33°45'39"W	11°51'36"
C27	126.50	33.67	33.57	N47°18'53"W	15°14'53"
C28	126.50	21.96	21.93	N59°04'45"W	9°56'50"
C29	273.50	12.04	12.04	N63°37'29"W	2°31'23"
C30	273.50	32.08	32.06	N59°00'11"W	6°43'14"
C31	273.50	12.93	12.93	N54°17'17"W	2°42'33"
C32	126.50	13.08	13.07	N55°53'43"W	5°55'24"
C33	126.50	26.40	26.35	N64°50'08"W	11°57'27"
C34	126.50	4.86	4.86	N71°54'54"W	2°12'06"
C35	123.50	70.10	69.16	N33°14'40"E	32°31'15"
C36	452.84	15.00	15.00	S44°47'56"E	1°53'53"
C37	452.84	32.30	32.29	S47°47'27"E	4°05'10"
C38	452.84	10.89	10.89	S50°31'23"E	1°22'40"
C39	685.57	15.18	15.18	S51°50'46"E	1°16'08"
C40	685.57	26.02	26.01	S53°34'04"E	2°10'27"
C41	685.57	32.00	32.00	S55°59'32"E	2°40'29"
C42	685.57	7.04	7.04	S57°37'25"E	0°35'17"
C43	685.57	32.16	32.15	S59°15'41"E	2°41'15"
C44	685.57	26.04	26.04	S61°41'36"E	2°10'35"
C45	685.57	26.01	26.00	S63°52'06"E	2°10'24"
C46	685.57	7.94	7.94	S65°17'12"E	0°39'47"
C47	219.00	16.46	16.45	S63°27'56"E	4°18'20"
C48	219.00	32.33	32.30	S57°05'02"E	8°27'28"
C49	219.00	99.91	99.04	S39°47'09"E	26°08'17"
C50	219.00	29.87	29.85	S22°48'33"E	7°48'53"

Curve Table					
Curve #	Radius	Length	Chord	Bearing	Delta
C51	289.00	20.78	20.78	S20°57'42"E	4°07'12"
C52	289.00	214.86	209.94	S44°19'12"E	42°35'48"
C53	615.57	97.42	97.31	S61°05'05"E	9°04'02"
C54	615.57	57.36	57.34	S53°52'53"E	5°20'21"
C55	382.84	44.62	44.59	S47°52'23"E	6°40'40"
C56	173.50	12.73	12.72	N51°36'22"E	4°12'09"
C57	173.50	97.94	96.65	N69°52'45"E	32°20'37"
C58	173.50	75.05	74.47	S81°33'24"E	24°47'05"
C59	173.50	24.05	24.04	S65°11'33"E	7°56'37"
C60	326.50	8.00	8.00	S61°55'21"E	1°24'14"
C61	326.50	17.06	17.06	S64°07'17"E	2°59'38"
C62	573.50	9.21	9.21	S65°09'30"E	0°55'12"
C63	573.50	26.01	26.01	S63°23'57"E	2°35'54"
C64	573.50	26.01	26.01	S60°48'03"E	2°35'54"
C65	573.50	32.09	32.09	S57°53'55"E	3°12'22"
C66	73.50	24.31	24.20	S80°30'03"W	18°57'01"
C67	73.50	58.90	57.33	S41°55'49"E	45°54'42"
C68	326.50	68.11	67.99	S58°54'36"E	11°57'10"
C69	73.50	25.76	25.63	S62°58'29"E	20°04'57"
C70	176.50	54.29	54.08	N25°47'47"E	17°37'28"
C71	126.50	92.61	90.56	N20°23'16"W	41°56'53"
C72	147.00	52.08	51.81	S80°28'10"W	20°18'02"
C73	326.50	93.89	93.57	S78°31'27"W	16°28'36"
C74	123.50	112.42	108.58	S60°41'08"W	52°09'14"
C75	123.50	37.99	37.84	S25°47'47"W	17°37'28"
C76	176.50	29.90	29.87	S21°50'15"W	9°42'25"
C77	19.00	11.57	11.39	S43°55'56"E	34°52'31"
C78	84.00	41.11	40.71	S75°23'30"E	28°02'39"
C79	14.00	22.56	20.20	N44°25'08"E	92°20'05"
C80	14.00	21.42	19.39	S45°34'47"E	87°39'59"
C81	121.00	7.43	7.42	S87°39'20"E	3°30'59"
C82	121.00	65.83	65.02	S70°18'45"E	31°10'12"
C83	176.50	30.47	30.43	S44°33'34"W	9°53'29"
C84	1071.00	94.98	94.95	S33°56'04"E	5°04'53"
C85	499.00	50.34	50.32	S34°17'01"E	5°46'47"
C86	12140.00	20.87	20.87	S89°55'52"E	0°05'55"
C87	381.84	3.98	3.98	S36°16'44"E	0°35'49"
C88	226.50	13.66	13.66	S51°14'00"W	3°27'23"
C89	999.00	79.97	79.95	S33°41'13"E	4°35'12"
C90	571.00	5.11	5.11	S31°39'01"E	0°30'46"
C91	12140.00	87.12	87.12	N89°48'50"E	0°24'40"
C92	12140.00	286.68	286.67	N88°55'55"E	1°21'11"
C93	12105.00	428.43	428.40	N89°06'15"E	2°01'40"
C94	226.50	260.19	246.12	S85°52'13"W	65°49'05"
C95	273.50	20.99	20.99	N63°25'10"W	4°23'51"
C96	626.50	67.22	67.19	N62°32'40"W	6°08'52"
C97	626.50	72.09	72.05	N56°10'27"W	6°35'33"
C98	126.50	2.75	2.75	S37°44'44"W	1°14'50"
C99	126.50	26.35	26.30	S44°20'10"W	11°56'01"
C100	68.82	43.39	42.67	S17°41'00"W	36°07'26"

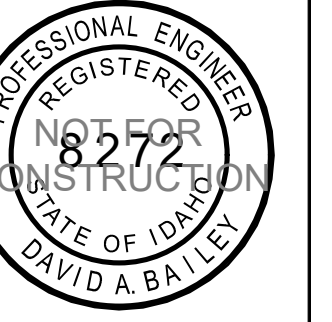
Curve Table					
Curve #	Radius	Length	Chord	Bearing	Delta
C101	55.00	91.59	81.37	S36°35'49"W	95°24'36"
C102	55.00	44.25	43.06	N72°39'01"W	46°05'43"
C103	55.00	37.38	36.67	N30°07'53"W	38°56'33"
C104	55.00	39.33	38.50	N09°49'38"E	40°58'30"
C105	55.00	56.69	54.22	N59°50'37"E	59°03'29"
C106	73.50	16.91	16.87	N43°42'45"E	13°10'51"
C107	12160.00	24.30	24.30	N85°20'39"E	0°06'52"
C108	176.50	39.81	39.72	S33°09'09"W	12°55'21"
C109	573.50	26.43	26.42	S54°58'32"E	2°38'24"
C110	573.50	7.78	7.78	S53°16'00"E	0°46'39"
C111	73.50	16.91	16.87	S46°17'15"E	13°10'51"
C112	55.00	46.49	45.12	N79°24'43"E	48°25'53"
C113	55.00	105.56	90.09	S21°23'16"E	109°58'08"
C114	55.00	1.70	1.70	S34°28'52"W	1°46'09"
C115	73.50	9.16	9.15	S02°58'56"E	7°08'13"
C116	73.50	15.66	15.63	S12°39'14"E	12°12'22"
C117	23.50	6.73	6.70	N07°36'49"W	16°23'58"
C118	23.50	30.44	28.35	N52°55'07"W	74°12'39"
C119	73.50	15.39	15.36	S05°24'38"E	11°59'36"
C120	73.50	38.43	37.99	S26°23'04"E	29°57'17"
C121	176.50	74.22	73.68	N74°42'55"E	24°05'41"
C122	164.00	275.38	104.68	N75°50'15"E	21°46'45"
C123	126.50	19.74	19.72	N19°22'46"W	8°56'21"
C124	126.50	26.41	26.36	N08°55'43"W	11°57'43"
C125	126.50	7.60	7.60	N01°13'37"W	3°26'36"
C126	21.50	34.00	30.57	N44°43'08"W	90°36'37"
C127	23.50	44.80	38.32	S35°21'53"W	109°13'20"
C128	12125.00	579.35	579.30	N86°43'17"E	2°44'16"
C129	126.50	17.18	17.16	N74°54'55"E	7°46'47"
C130	126.50	24.66	24.62	N84°23'26"E	11°10'14"
C131	12160.00	605.65	605.58	N86°49'42"E	2°51'13"

Parcel Table				
Lot	Area	Perimeter	Type	
BLOCK 1 Lot 1	7579	349	SFR R-2	
BLOCK 1 Lot 2	6270	334	SFR R-2	
BLOCK 1 Lot 3	6930	346	SFR R-2	
BLOCK 1 Lot 4	6930	346	SFR R-2	
BLOCK 1 Lot 5	6270	334	SFR R-2	
BLOCK 1 Lot 6	7976	371	SFR R-2	
BLOCK 1 Lot 7: OPEN	21306	611	DRAINAGE	
BLOCK 1 Lot 8	3490	280	TOWNHOME	
BLOCK 1 Lot 9	2860	272	TOWNHOME	
BLOCK 1 Lot 10	2860	272	TOWNHOME	
BLOCK 1 Lot 11	3520	284	TOWNHOME	
BLOCK 1 Lot 12	3520	284	TOWNHOME	
BLOCK 1 Lot 13	2860	272	TOWNHOME	
BLOCK 1 Lot 14	2860	272	TOWNHOME	
BLOCK 1 Lot 15	3518	283	TOWNHOME	
BLOCK 1 Lot 16: OPEN	2355	254	COMMON LOT OPEN	
BLOCK 1 Lot 17: OPEN	10624	906	INDIANA BUFFER	
BLOCK 2 Lot 1: OPEN	69820	2346	DEERFLAT HIGHLINE CANAL	
BLOCK 2 Lot 2: OPEN	7092	355	COMMON LOT OPEN	
BLOCK 2 Lot 3	6930	346	SFR R-2	
BLOCK 2 Lot 4	7320	373	SFR R-2	
BLOCK 2 Lot 5	6752	339	SFR R-2	
BLOCK 2 Lot 6	6270	334	SFR R-2	
BLOCK 2 Lot 7	6930	346	SFR R-2	
BLOCK 2 Lot 8	7579	349	SFR R-2	
BLOCK 2 Lot 9	17217	541	SFR R-2	
BLOCK 2 Lot 10	3200	264	TOWNHOME	
BLOCK 2 Lot 11	7369	374	SFR R-2	
BLOCK 2 Lot 12	7549	354	SFR R-2	
BLOCK 2 Lot 13	6964	347	SFR R-2	
BLOCK 2 Lot 14	6969	347	SFR R-2	
BLOCK 2 Lot 15	6974	347	SFR R-2	
BLOCK 2 Lot 16	6314	336	SFR R-2	
BLOCK 2 Lot 17	8250	370	SFR R-2	
BLOCK 2 Lot 18: OPEN	2866	288	COMMON LOT OPEN	
BLOCK 2 Lot 19	4160	321	TOWNHOME	
BLOCK 2 Lot 20	3155	296	TOWNHOME	
BLOCK 2 Lot 21	3759	299	TOWNHOME	
BLOCK 2 Lot 22	3075	289	TOWNHOME	
BLOCK 2 Lot 23	2571	250	TOWNHOME	
BLOCK 2 Lot 24	3190	263	TOWNHOME	
BLOCK 2 Lot 25: OPEN	1901	264	COMMON LOT OPEN	
BLOCK 2 Lot 26	3602	290	TOWNHOME	
BLOCK 2 Lot 27	2868	273	TOWNHOME	
BLOCK 2 Lot 28	3512	284	TOWNHOME	
BLOCK 2 Lot 29	2863	272	TOWNHOME	
BLOCK 2 Lot 30	3499	283	TOWNHOME	
BLOCK 2 Lot 31	2843	271	TOWNHOME	

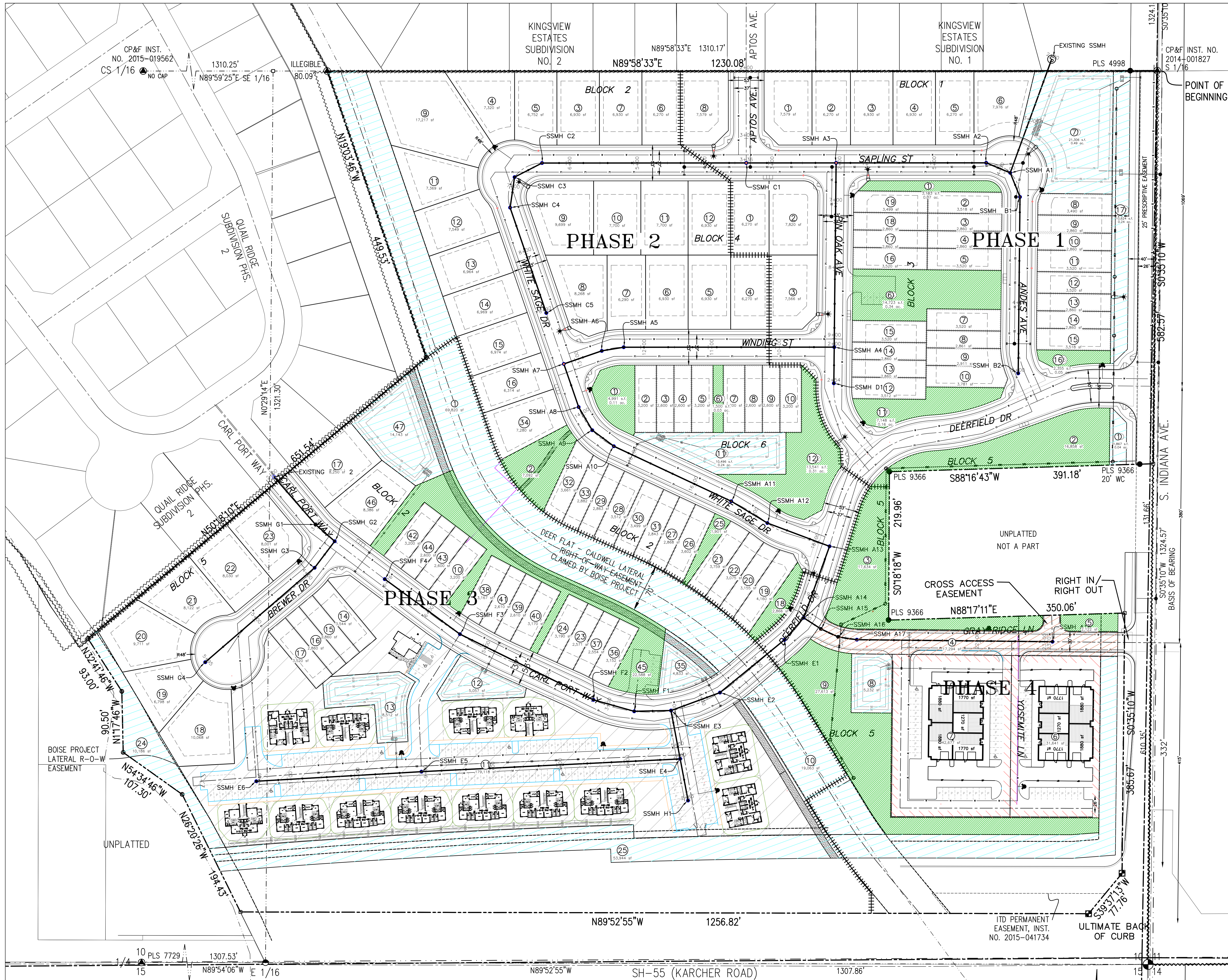
**PRELIMINARY ENGINEERING FOR  
ARROWROCK FARM SUBDIVISION**

LOCATED IN THE SE 1/4 OF SECTION 10  
T.3N., R.3W., B.M.  
CALDWELL, CANYON COUNTY, IDAHO  
2022

**Bailey Engineering, Inc.**  
CIVIL ENGINEERING / PLANNING / CADD  
1116 E STATE ST STE 210  
BOISE, ID 83706  
TEL: 208-338-8013  
WWW.BAILEYENGINEERING.COM

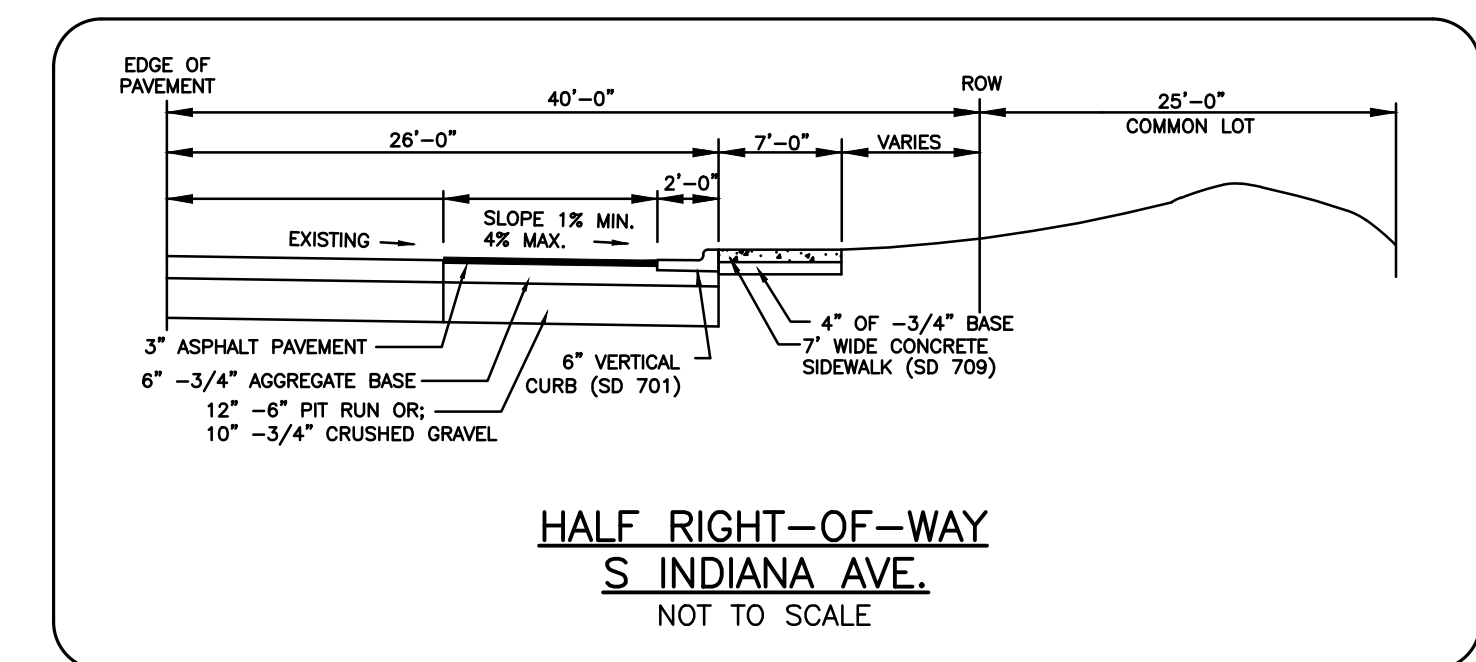
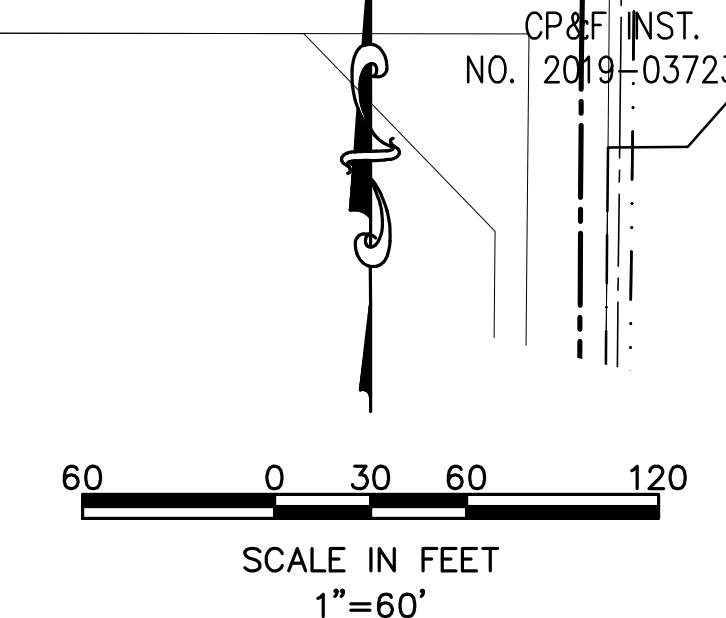
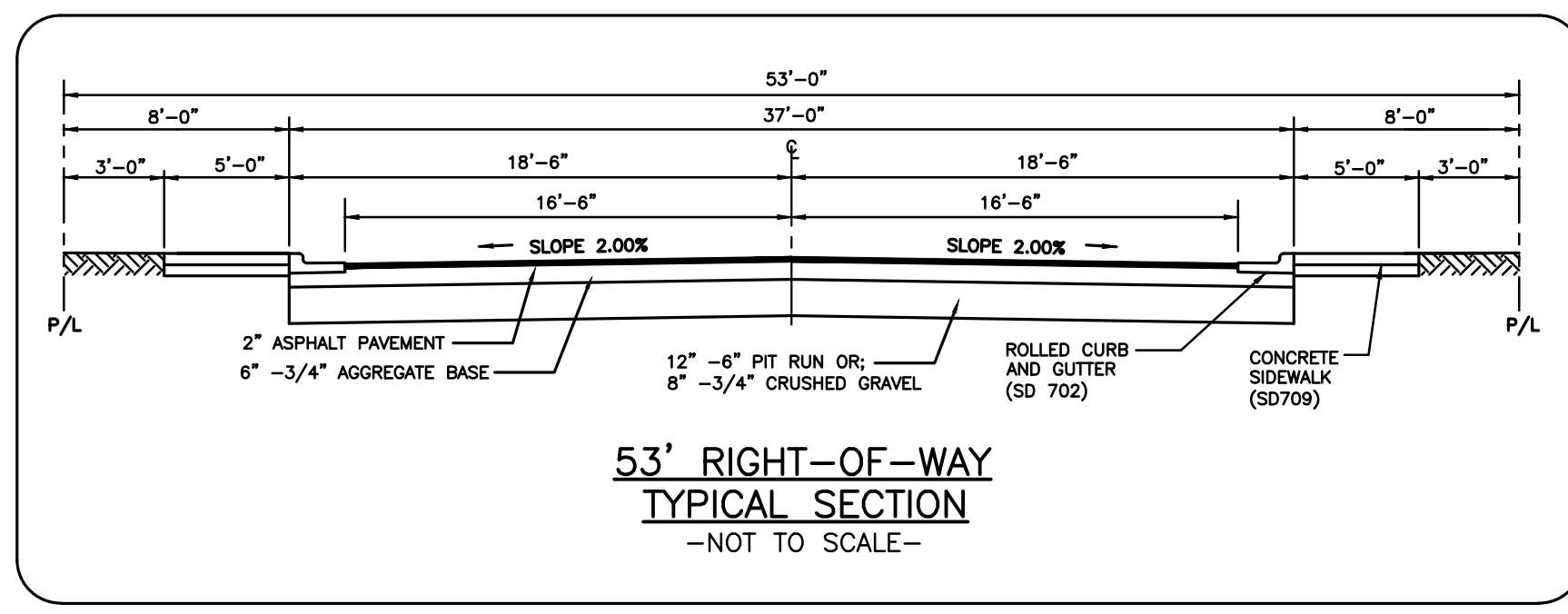
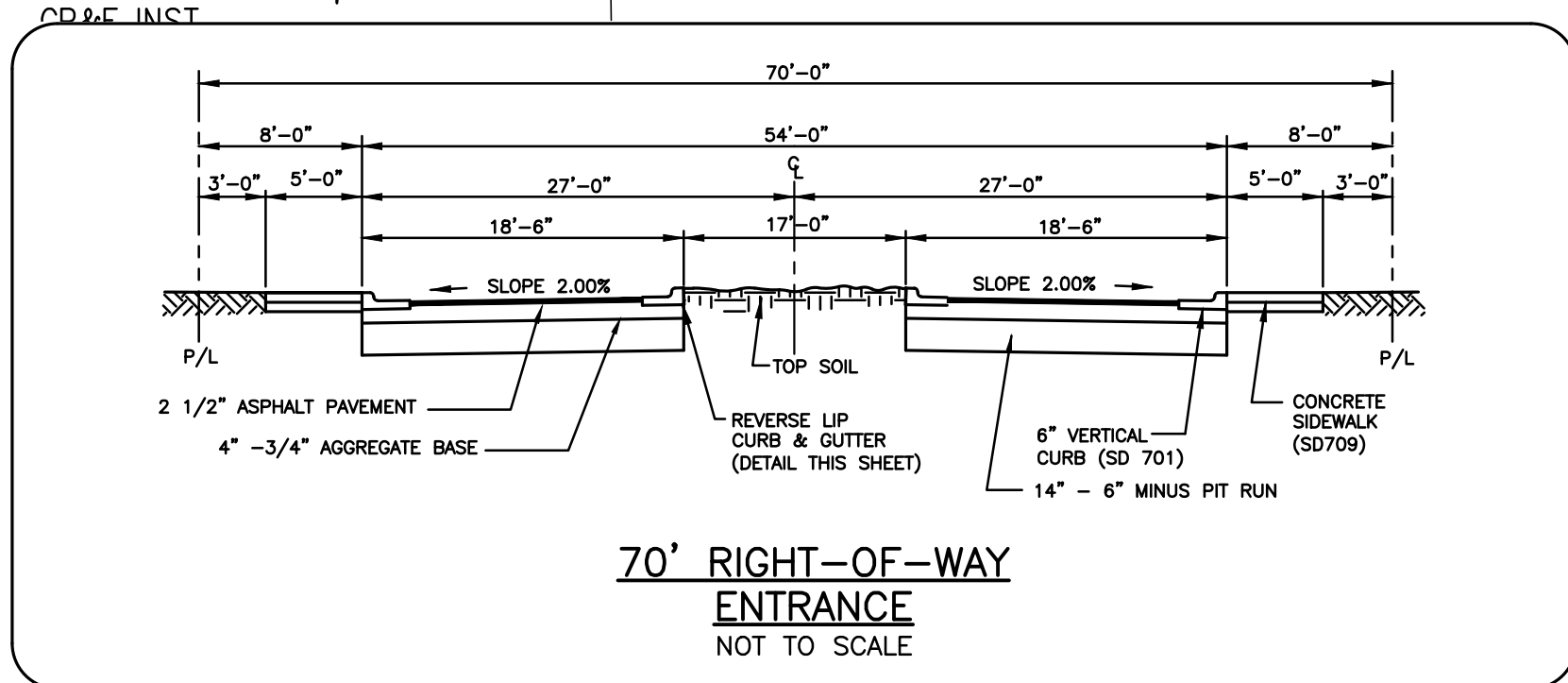


CHECKED BY:  
DAVID A. BAILEY P.E.  
DRAWN BY:  
DMS/DSS



**PLAT LEGEND**

- BOUNDARY
- LOT LINES
- ROAD CENTERLINE
- RIGHT OF WAY
- LOT NUMBER
- LOT AREA
- BLOCK NUMBER
- EASEMENT
- SETBACK
- CURB CUTTER SW
- STREET NAME
- SEWER LINE
- WATER LINE
- STORM DRAIN LINE
- PRESSURE IRRIGATION
- GRAVITY IRRIGATION
- FLOW ARROW



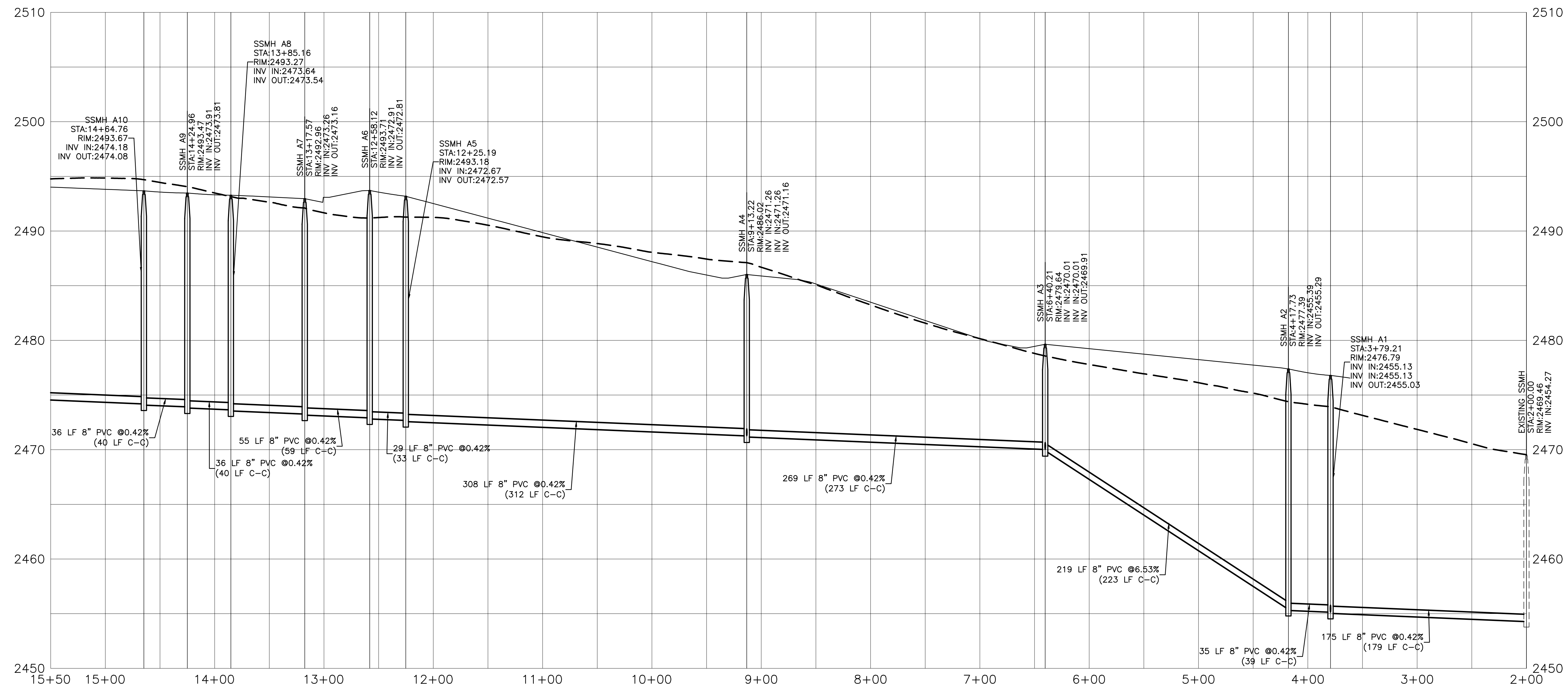
REVISIONS

NO.	DATE	DESCRIPTION

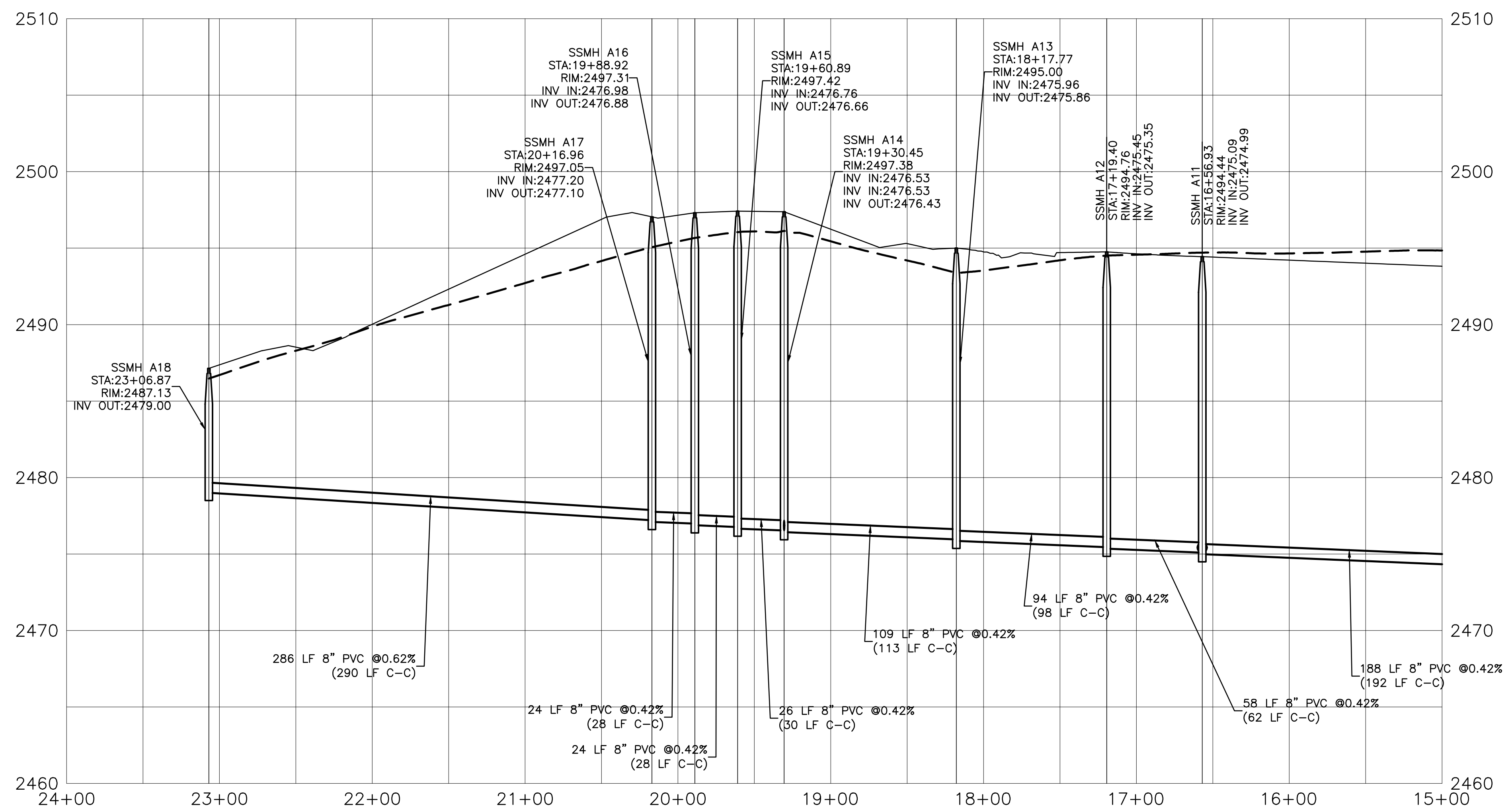
**PRELIMINARY ENGINEERING**  
**ARROWROCK FARM SUBDIVISION**  
**TRILOGY DEVELOPMENT, INC.**

DATE: 07/15/2022  
PROJECT: C2020-032  
SHEET **PP-4**

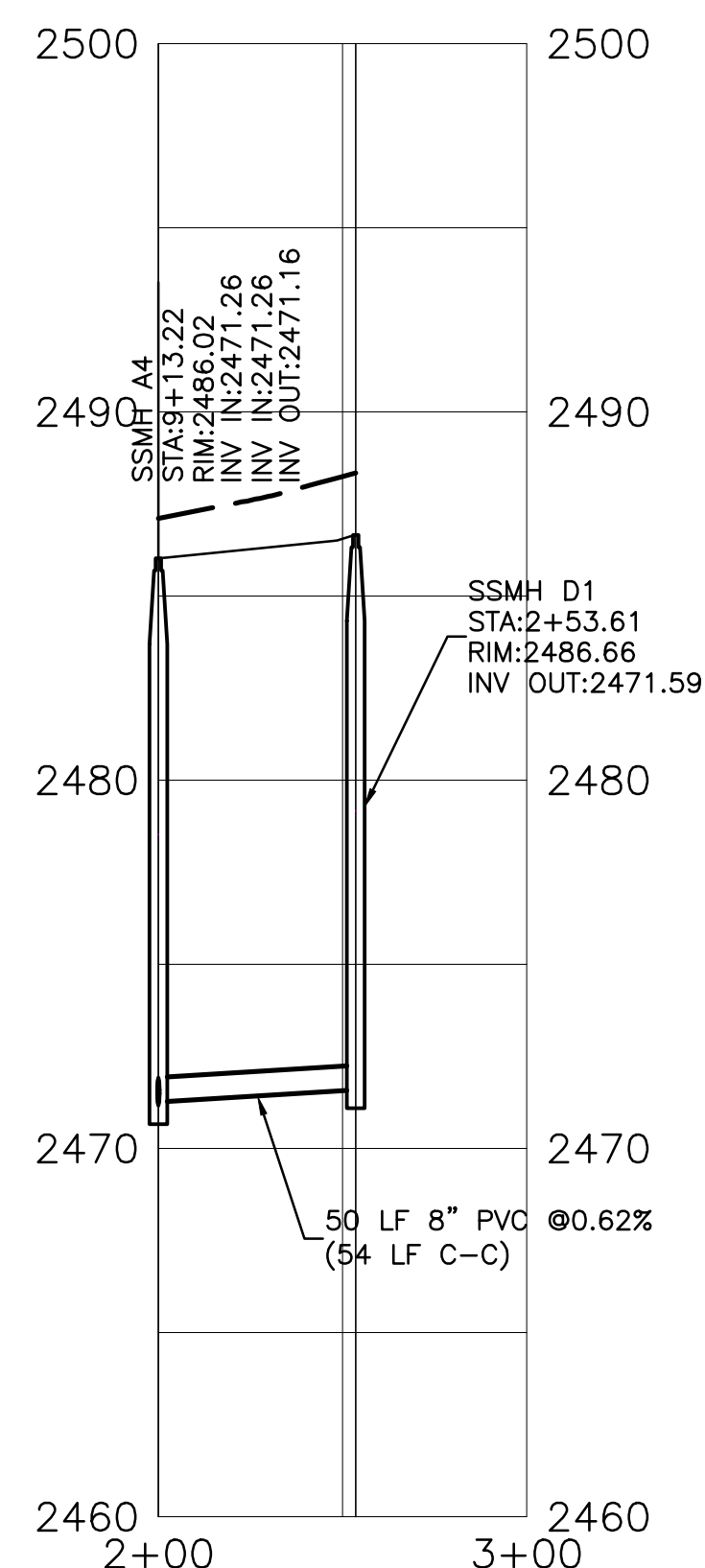
SEWER LINE A PROFILE



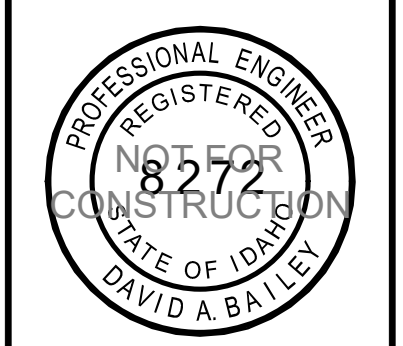
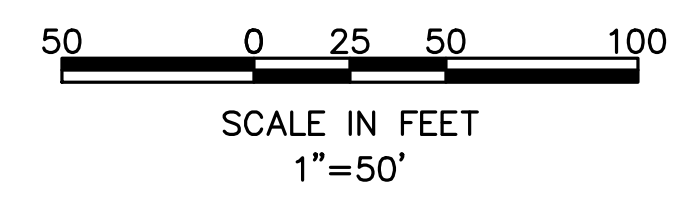
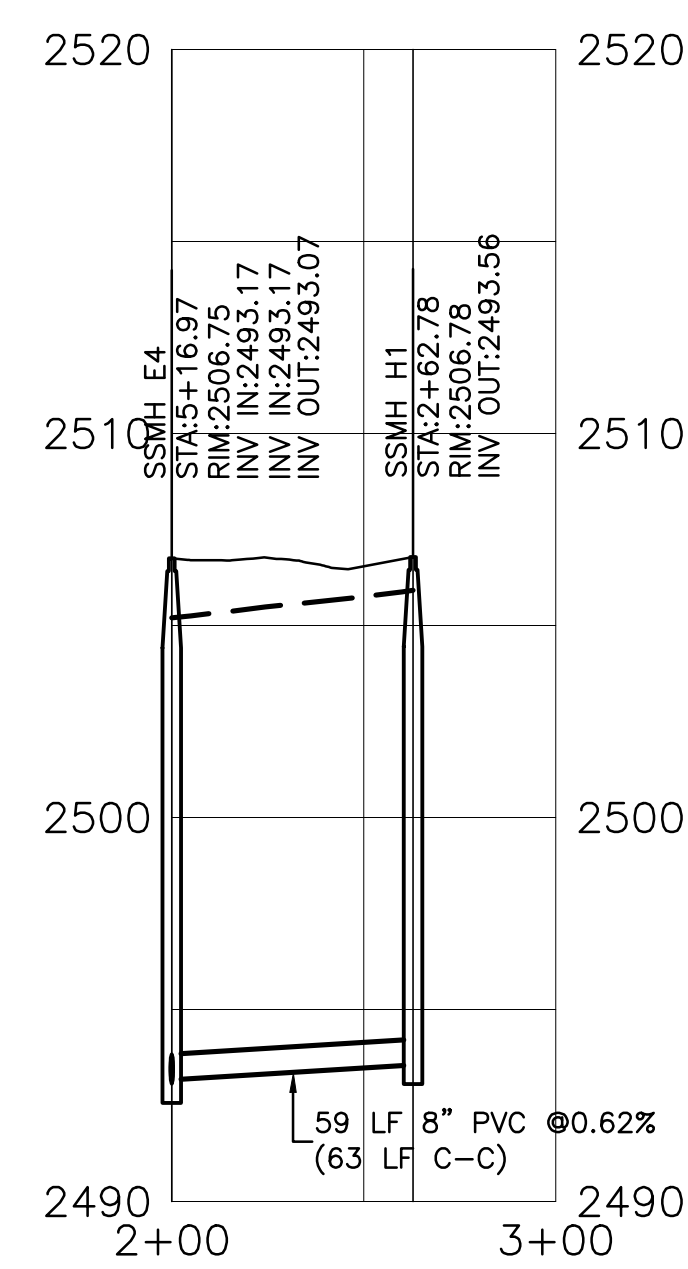
SEWER LINE A PROFILE



SEWER LINE D PROFILE



SEWER LINE H PROFILE



CHECKED BY:  
DAVID A. BAILEY P.E.

DRAWN BY:  
DES

REVISED	NO.	DATE	DESCRIPTION

DATE:  
07/14/2022  
 PROJECT:  
C2020-032







## PLANT PALETTE

SYM	COMMON NAME	BOTANICAL NAME	SIZE
<b>EVERGREEN TREES</b>			
	AUSTRIAN PINE	PINUS NIGRA	6-8' HT B4B
	HOOP'S BLUE SPRUCE	PICEA FUNGENS 'HOOPSII'	6-8' HT B4B
	NORWAY SPRUCE	PICEA ABIES	6-8' HT B4B
	SKY HIGH JUNIPER	JUNIPERUS SCOPULORUM 'BAILIGH'	6-8' HT B4B
	VANDERWOLFS PINE	PINUS FLEXILIS 'VANDERWOLFS'	6-8' HT B4B
<b>SHADE TREES (CLASS III)</b>			
	BLOODGOOD LONDON PLANETREE	PLATANUS x ACERIFOLIA 'BLOODGOOD'	2" CAL B4B
	SWAMP OAK	QUERCUS BICOLOR	2" CAL B4B
<b>SHADE/STREET TREES (CLASS II)</b>			
	CRIMSON SPIRE OAK	QUERCUS ROBUR x Q. ALBA 'CRIMSCHMIDT'	2" CAL B4B
	SKYLINE HONEYLOCUST	GLEDITSIA TRIACANTHOS INERMIS 'SKYCOLE'	2" CAL B4B
	LITTLELEAF LINDEN	TILIA CORDATA	2" CAL B4B
	PACIFIC SUNSET MAPLE	ACER TRUNCATUM x A. PLATANOIDES 'KEITHSFORM'	2" CAL B4B
	TULIP TREE	LIRIODENDRON TULIPIFERA	2" CAL B4B
<b>ORNAMENTAL TREES (CLASS I)</b>			
	FLAME AMUR MAPLE	ACER GINNALA 'FLAME'	6-8' HT. MULTI-STEM
	CANADA RED CHOKECHERRY	PRUNUS VIRGINIANA 'CANADA RED'	6-8' HT. MULTI-STEM
	CHANTICLEER PEAR	PYRUS CALLERYANA 'GLENS FORM'	2" CAL B4B
	CRUZAN CRUSADER HAWTHORN	CRATAEGUS CRUS-GALLI 'CRUZAM'	2" CAL B4B
	ROYAL RAINDROPS CRABAPPLE	MALUS x 'JFS-KV8'	2" CAL B4B
	SPRING SNOW CRABAPPLE	MALUS 'SPRINGSNOW'	2" CAL B4B
<b>SHRUBS/ORNAMENTAL GRASSES/PERENNIALS</b>			
	ARIZONA SUN GAILLARDIA	GAILLARDIA x 'ARIZONA SUN'	1 GAL
	BLACK EYED SUSAN	RUDBECKIA FULGIDA 'GOLDSTRUM'	1 GAL
	BLUE GRAMMA GRASS	BOUTELOUA GRACILIS 'BLONDE AMBITION'	1 GAL
	BLUE MIST SPIREA	CARYOPTERIS x CLANDONENSIS 'BLUE MIST'	2 GAL
	BLUE OAT GRASS	HELICTOTRICHON SEKIPERVIRENS	1 GAL
	BLUE RUG JUNIPER	JUNIPERUS HORIZONTALIS 'WILTON'	3 GAL
	PURPLE CONEFLOWER	ECHINACEA PURPUREA	1 GAL
	RED FLOWER CARPET ROSE	ROSA 'FLOWER CARPET- NOARE'	2 GAL
	DARTS GOLD NINEBARK	PHYSOCARPUS OPULIFOLIUS 'DARTS GOLD'	3 GAL
	STELLA DE ORO DAYLILY	HEMEROCALLIS 'STELLA D'ORO'	1 GAL
	FINE LINE BUCKTHORN	RHAMNUS FRAGULA 'RON WILLIAMS'	5 GAL
	GRO-LOW SUMAC	RHUS AROMATICA 'GRO-LOW'	3 GAL
	RED HOT POKER	KNIPHOFIA UVARIA 'FLAMENCO'	1 GAL
	HUSKER RED PENSTEMON	PENSTEMON DIGITALIS 'HUSKER RED'	1 GAL
	IVORY HALO DOGWOOD	CORNUS ALBA 'BAILHALO'	5 GAL
	KARL FOERSTER REED GRASS	CALAMAGROSTIS ARUNDINACEA 'K.F.'	1 GAL
	LITTLE DEVIL NINEBARK	PHYSOCARPUS OPULIFOLIUS 'DONNA MAY'	3 GAL
	HIDCOTE BLUE ENGLISH LAVENDER	LAVANDULA ANGUSTIFOLIA 'HIDCOTE BLUE'	1 GAL
	IVORY TOWER YUCCA	YUCCA FILAMENTOSA 'IVORY TOWER'	3 GAL
	MAIDEN GRASS	MISCANTHUS SINENSIS 'GRACILLIMUS'	1 GAL
	BRAKELIGHTS RED YUCCA	HESPERALOE PARVIFLORA 'PERPA'	3 GAL
	SUMMERWINE NINEBARK	PHYSOCARPUS OPULIFOLIA 'SEWARD'	5 GAL
	TIGER EYE SUMAC	RHUS TYPHINA 'BAILTIGER'	5 GAL



## NOTES

- ALL LANDSCAPE SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF CALDWELL ORDINANCE REQUIREMENTS.
- ALL PLANTING AREAS TO BE WATERED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.
- TREES SHALL NOT BE PLANTED WITHIN THE 10-FOOT CLEAR ZONE OF ALL STORM DRAIN PIPE, STRUCTURES, OR FACILITIES IN PARKSTRIPS. SEEPAGE BEDS MUST BE PROTECTED FROM ANY AND ALL CONTAMINATION DURING THE CONSTRUCTION AND INSTALLATION OF THE LANDSCAPE IRRIGATION SYSTEM. ALL SHRUBS PLANTED OVER OR ADJACENT TO SEEPAGE BEDS TO HAVE A ROOT BALL THAT DOES NOT EXCEED 18" IN DIAMETER. NO LAWN SOD TO BE PLACED OVER DRAINAGE SWALE SAND WINDOWS.
- NO TREES SHALL IMPEDE THE 40' VISION TRIANGLES AT ALL INTERSECTIONS. NO CONIFEROUS TREES OR SHRUBS OVER 3' HIGH AT MATURITY WILL BE LOCATED WITHIN VISION TRIANGLE OR ROW. AS TREES MATURE, THE OWNER SHALL BE RESPONSIBLE FOR PRUNING TREE CANOPIES TO MEET REQUIREMENTS FOR MAINTAINING CLEAR VISIBILITY WITHIN 40' STREET AND DEPARTURE VISION TRIANGLE. TREES SHALL BE PLANTED NO CLOSER THAN 50' FROM INTERSECTION STOP SIGNS.
- CLASS II TREES AND LANDSCAPE IN FRONT OF BUILDING LOTS ON INTERIOR STREETS TO BE COMPLETED DURING CONSTRUCTION ON THESE LOTS. TREE LOCATIONS MAY BE ALTERED TO ACCOMMODATE DRIVENWAYS AND UTILITIES. TREES MUST BE CLASS II AND SHALL NOT BE PLANTED WITHIN 5' OF WATER METERS OR UNDERGROUND UTILITY LINES.
- PLANT LIST IS REPRESENTATIVE AND SUBJECT TO ADDITIONS AND/OR SUBSTITUTIONS OF SIMILAR SPECIES THAT ARE SUBJECT TO CITY FORESTER'S PRE-APPROVAL. PLANTING BED DESIGN AND QUANTITIES MAY BE ALTERED DURING FINAL PLAT LANDSCAPE PLAN DESIGN. BURLAP AND WIRE BASKETS TO BE REMOVED FROM ROOT BALL AS MUCH AS POSSIBLE, AT LEAST HALF-WAY DOWN THE BALL OF THE TREE. ALL NYLON ROPES TO BE COMPLETELY REMOVED FROM TREES.
- ALL EXISTING TREES TO BE REMOVED.

## DEVELOPMENT DATA

TOTAL AREA	35.20 ACRES
TOTAL LOTS	132
SF RESIDENTIAL LOTS	40
TOWNHOUSE LOTS	60
4-PLEX LOTS	1 LOT, 13-4 PLEX (52 UNITS)
COMMERCIAL LOTS	2
COMMON LOTS	23
PRIVATE ROAD	1
USABLE OPEN SPACE	2.73 AC (7.76%)
EXISTING ZONING	COUNTY
PROPOSED ZONING	HIGHWAY CORRIDOR/R2

## LANDSCAPE CALCULATIONS

LOCATION	BUFFER WIDTH	LENGTH	REQUIRED	PROVIDED
S. INDIANA AVE.	25'	875' / 35 = 875' / 1 =	25 TREES 125 SHRUBS	36 TREES 125+ SHRUBS
SH-55 (KARCHER RD.)	30'	1140' / 35 = 1140' / 1 =	33 TREES 163 SHRUBS	64 TREES 163+ SHRUBS
COMMON AREAS				283 TREES
TOTAL NUMBER OF TREES			58 TREES	383 TREES

**OWNERS**  
 VERTREES, ROBERT & JACKIE LIVING TRUST  
 5467 W. ASTONTE DR. MERIDIAN, IDAHO 83646

ENDURANCE HOLDINGS, LLC  
 1977 E. OVERLAND RD. MERIDIAN, IDAHO 83646

**DEVELOPER**  
 TRILOGY DEVELOPMENT  
 9839 W. CABLE CAR ST. STE 101 BOISE, IDAHO 83709 (208) 895-8858

**ENGINEER**  
 DAVID A. BAILEY, P.E.  
 BAILEY ENGINEERING, INC.  
 1119 E. STATE ST., STE 210 EAGLE, IDAHO

**PLANNER/CONTACT**  
 SHAWN BROWNLEE  
 TRILOGY DEVELOPMENT, INC.  
 9839 W. CABLE CAR ST. STE 101 BOISE, IDAHO 83709 (208) 895-8858

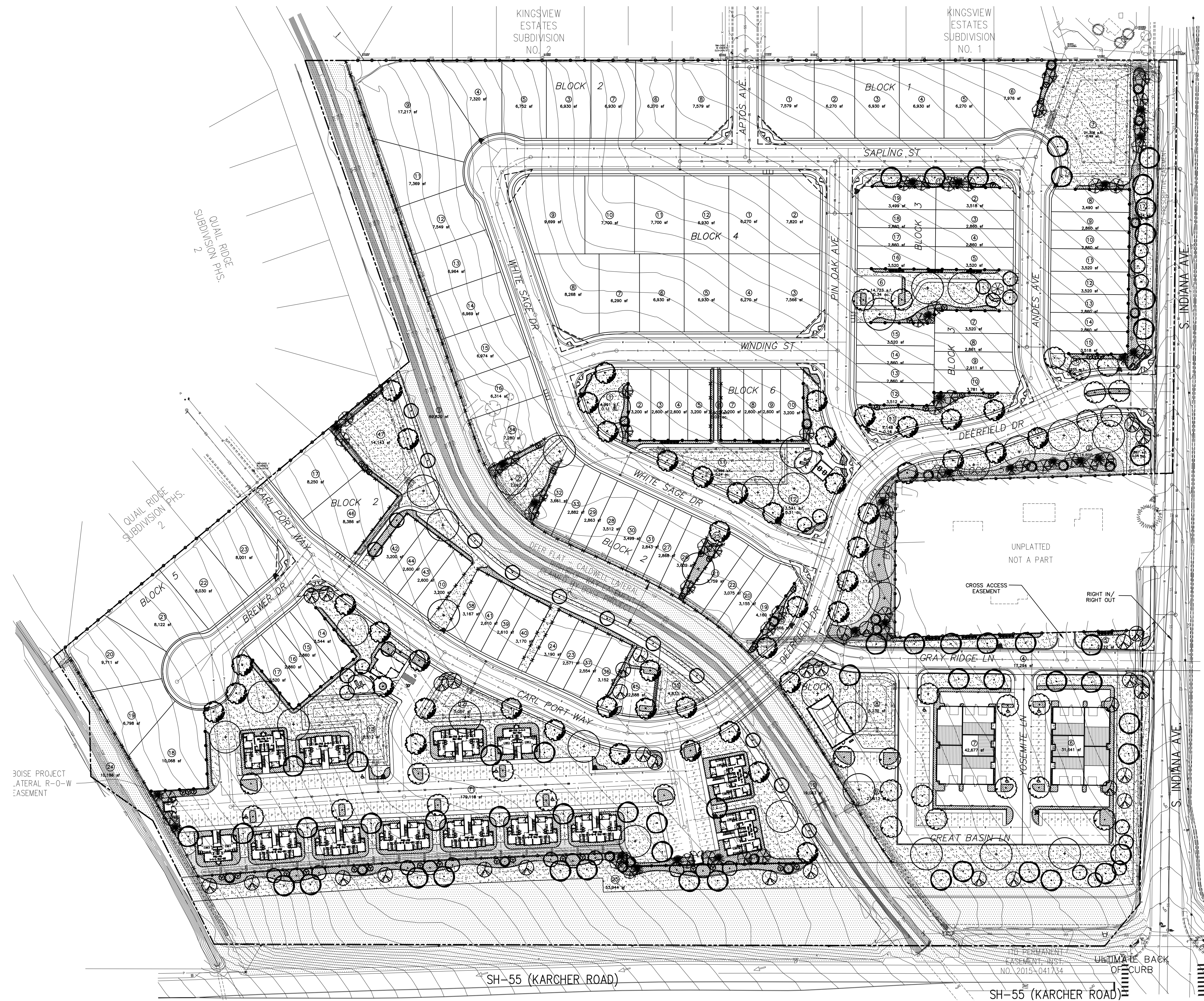
SCALE 1" = 80'  
 JULY 18, 2022



# ARROWROCK FARM SUBDIVISION

CALDWELL, IDAHO

## PRELIMINARY PLAT LANDSCAPE PLAN



### PLANT PALETTE

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	LITTLELEAF LINDEN	TILIA GORDATA	2" CAL B4B
	PACIFIC SUNSET MAPLE	ACER TRUNCATUM x A. PLATANOIDES 'KEITHSFORM'	2" CAL B4B
	TULIP TREE	LIRIODENDRON TULIFIFERA	2" CAL B4B
<b>ORNAMENTAL TREES (CLASS I)</b>			
	FLAME AMUR MAPLE	ACER GINNALA 'FLAME'	6-8' HT. MULTI-STEM
	CANADA RED CHOKECHERRY	PRUNUS VIRGINIANA 'CANADA RED'	6-8' HT. MULTI-STEM
	CHANTICLEER PEAR	PYRUS CALLERYANA 'GLEN'S FORM'	2" CAL B4B
	CRUZAN CRUSADER HAWTHORN	CRATAEGUS CRUS-GALLI 'CRUZAM'	2" CAL B4B
	ROYAL RAINDROPS CRABAPPLE	MALUS x 'JFS-KM5'	2" CAL B4B
	SPRING SNOW CRABAPPLE	MALUS 'SPRINGSNOW'	2" CAL B4B
<b>SHRUBS/ORNAMENTAL GRASSES/PERENNIALS</b>			
	ARIZONA SUN GAILLARDIA	GAILLARDIA x 'ARIZONA SUN'	1 GAL
	BLACK EYED SUSAN	RUDBECKIA FULGIDA 'GOLDSTRUM'	1 GAL
	BLUE GRAMMA GRASS	BOUTELOUA GRACILIS 'BLONDE AMBITION'	1 GAL
	BLUE MIST SPIREA	CARYOPTERIS x CLANDONENSIS 'BLUE MIST'	2 GAL
	BLUE OAT GRASS	HELICTOTRICHON SEMPERVIRENS	1 GAL
	BLUE RUG JUNIPER	JUNIPERUS HORIZONTALIS 'MILTONI'	3 GAL
	PURPLE CONEFLOWER	ECHINACEA PURPUREA	1 GAL
	RED FLOWER CARPET ROSE	ROSA 'FLOWER CARPET- NOARE'	2 GAL
	DART'S GOLD NINEBARK	PHYSCARPUS OPULIFOLIUS 'DART'S GOLD'	3 GAL
	STELLA DE ORO DAYLILY	HEMEROCALLIS 'STELLA D'ORO'	1 GAL
	FINE LINE BUCKTHORN	RHAMNUS FRAGULA 'RON WILLIAMS'	3 GAL
	GRO-LOW SUMAC	RHUS AROMATICA 'GRO-LOW'	3 GAL
	RED HOT POKER	KNIPHOFIA UVARIA 'FLAMENGO'	1 GAL
	HUSKER RED PENSTEMON	PENSTEMON DIGITALIS 'HUSKER RED'	1 GAL
	IVORY HALO DOGWOOD	CORNUS ALBA 'BAILHALO'	5 GAL
	KARL FOERSTER REED GRASS	CALAMAGROSTIS ARUNDINACEA 'K.F.'	1 GAL
	LITTLE DEVIL NINEBARK	PHYSCARPUS OPULIFOLIUS 'DONNA MAY'	3 GAL
	HIDCOTE BLUE ENGLISH LAVENDER	LAVANDULA ANGUSTIFOLIA 'HIDCOTE BLUE'	1 GAL
	IVORY TOWER YUCCA	YUCCA FILAMENTOSA 'IVORY TOWER'	3 GAL
	MAIDEN GRASS	MISCANTHUS SINENSIS 'GRACILLIMUS'	1 GAL
	BRAKELIGHTS RED YUCCA	HESPERALOE PARVIFLORA 'PERPA'	3 GAL
	SUMMERWINE NINEBARK	PHYSCARPUS OPULIFOLIA 'SEWARD'	5 GAL
	TIGER EYE SUMAC	RHUS TYPHINA 'BAILTIGER'	5 GAL
	LAWN		
	6' VINYL FENCE ALONG PERIMETER PROPERTY LINES. SEE DTL 4, THIS SHT.		
	EXISTING FENCING TO REMAIN (TYP)		
	5' IRON FENCE ADJACENT TO COMMON LOTS & DEER FLAT LATERAL EASEMENT. SEE DTL 5, THIS SHT.		

### NOTES

- ALL LANDSCAPE SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF CALDWELL ORDINANCE REQUIREMENTS.
- ALL PLANTING AREAS TO BE WATERED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.
- TREES SHALL NOT BE PLANTED WITHIN THE 10-FOOT CLEAR ZONE OF ALL STORM DRAIN PIPE, STRUCTURES, OR FACILITIES IN PARKSTRIPS. SEE PAGE BEDS MUST BE PROTECTED FROM ANY AND ALL CONTAMINATION DURING THE CONSTRUCTION AND INSTALLATION OF THE LANDSCAPE IRRIGATION SYSTEM. ALL SHRUBS PLANTED OVER OR ADJACENT TO SEEPAGE BEDS TO HAVE A ROOT BALL THAT DOES NOT EXCEED 18" IN DIAMETER. NO LAWN SOD TO BE PLACED OVER DRAINAGE SHALE SAND WINDOWS.
- NO TREES SHALL IMPEDE THE 40' VISION TRIANGLES AT ALL INTERSECTIONS. NO CONIFEROUS TREES OR SHRUBS OVER 3' HIGH AT MATURITY WILL BE LOCATED WITHIN VISION TRIANGLE OR ROW. AS TREES MATURE, THE OWNER SHALL BE RESPONSIBLE FOR PRUNING TREE CANOPIES TO MEET REQUIREMENTS FOR MAINTAINING CLEAR VISIBILITY WITHIN 40' STREET AND DEPARTURE VISION TRIANGLE. TREES SHALL BE PLANTED NO CLOSER THAN 50' FROM INTERSECTION STOP SIGNS.
- CLASS II TREES AND LANDSCAPE IN FRONT OF BUILDING LOTS ON INTERIOR STREETS TO BE COMPLETED DURING CONSTRUCTION ON THESE LOTS. TREE LOCATIONS MAY BE ALTERED TO ACCOMMODATE DRIVENAYS AND UTILITIES. TREES MUST BE CLASS II AND SHALL NOT BE PLANTED WITHIN 5' OF WATER METERS OR UNDERGROUND UTILITY LINES.
- PLANT LIST IS REPRESENTATIVE AND SUBJECT TO ADDITIONS AND/OR SUBSTITUTIONS OF SIMILAR SPECIES THAT ARE SUBJECT TO CITY FORESTER'S PRE-APPROVAL. PLANTING BED DESIGN AND QUANTITIES MAY BE ALTERED DURING FINAL PLAT LANDSCAPE PLAN DESIGN. BURLAP AND WIRE BASKETS TO BE REMOVED FROM ROOT BALL AS MUCH AS POSSIBLE, AT LEAST HALF-WAY DOWN THE BALL OF THE TREE. ALL NYLON ROPES TO BE COMPLETELY REMOVED FROM TREES.
- ALL EXISTING TREES TO BE REMOVED.

### DEVELOPMENT DATA

TOTAL AREA	35.20 ACRES
TOTAL LOTS	132
SF RESIDENTIAL LOTS	40
TOWNHOUSE LOTS	60
4-PLEX LOTS	1 LOT, 13-4 PLEX (52 UNITS)
COMMERCIAL LOTS	2
COMMON LOTS	23
PRIVATE ROAD	1
USABLE OPEN SPACE	2.73 AC (7.76%)
EXISTING ZONING	COUNTY
PROPOSED ZONING	HIGHWAY CORRIDOR/R2

### LANDSCAPE CALCULATIONS

LOCATION	BUFFER WIDTH	LENGTH	REQUIRED	PROVIDED
S. INDIANA AVE.	25'	875' / 35 = 875' / 7 =	25 TREES 125 SHRUBS	36 TREES 125+ SHRUBS
SH-55 (KARCHER RD.)	30'	1140' / 35 = 1140' / 7 =	33 TREES 163 SHRUBS	64 TREES 163+ SHRUBS
COMMON AREAS				283 TREES
TOTAL NUMBER OF TREES			58 TREES	383 TREES

# ARROWROCK FARM SUBDIVISION

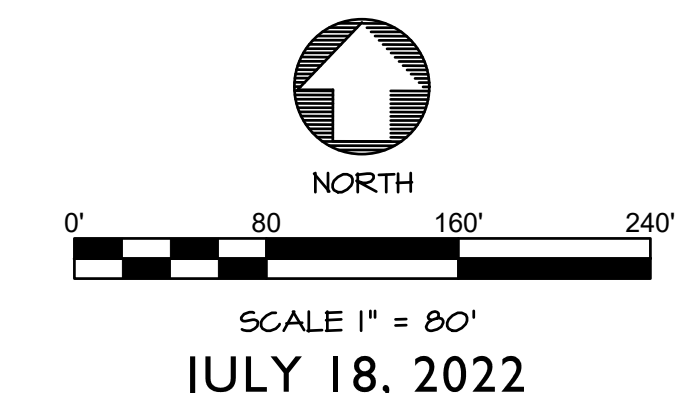
CALDWELL, IDAHO

## PRELIMINARY PLAT LANDSCAPE PLAN

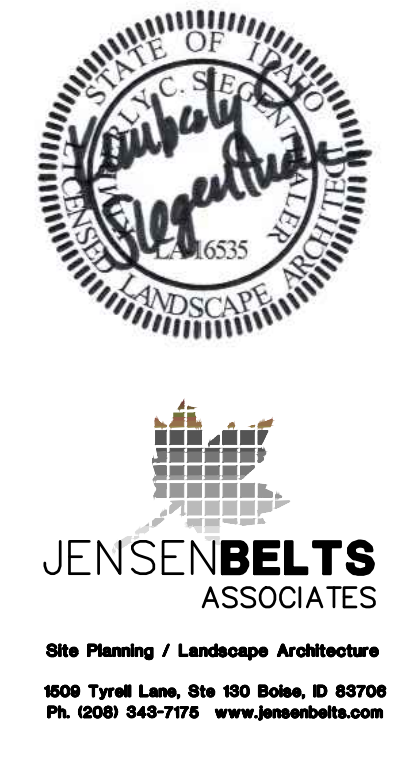
**OWNERS**  
 VERTREES, ROBERT & JACKIE LIVING TRUST  
 5467 W. ASTONITE DR. MERIDIAN, IDAHO 83646  
 ENDURANCE HOLDINGS, LLC  
 1977 E. OVERLAND RD. MERIDIAN, IDAHO 83646

**DEVELOPER**  
 TRILOGY DEVELOPMENT  
 9839 W. CABLE CAR ST. STE 101 BOISE, IDAHO 83709  
 (208) 895-8858

**ENGINEER**  
 DAVID A. BAILEY, P.E.  
 BAILEY ENGINEERING, INC.  
 1119 E. STATE ST., STE 210 EAGLE, IDAHO



**PLANNER/CONTACT**  
 SHAWN BROWNLEE  
 TRILOGY DEVELOPMENT, INC.  
 9839 W. CABLE CAR ST. STE 101 BOISE, IDAHO 83709  
 (208) 895-8858



**JENSENBELTS ASSOCIATES**  
 Site Planning / Landscape Architecture  
 1020 Tyler Lane, Ste 100 Boise, ID 83708  
 Ph: (208) 545-7170 www.jensbelts.com



### PLANT PALETTE

(REFERENCE SHEET L4)

SYM COMMON NAME

#### EVERGREEN TREES

- AUSTRIAN PINE
- HOOP'S BLUE SPRUCE
- NORWAY SPRUCE
- SKY HIGH JUNIPER
- VANDERKOLFF'S PINE

#### SHADE TREES (CLASS III)

- BLOODGOOD LONDON PLANETREE
- SWAMP OAK

#### SHADE/STREET TREES (CLASS II)

- CRIMSON SPIRE OAK
- SKYLINE HONEYLOCUST
- LITTLELEAF LINDEN
- PACIFIC SUNSET MAPLE
- TULIP TREE

#### ORNAMENTAL TREES (CLASS I)

- FLAME AMUR MAPLE
- CANADA RED CHOKECHERRY
- CHANTICLEER PEAR
- CRUZAN CRUSADER HAWTHORN
- ROYAL RAINDROPS CRABAPPLE
- SPRING SNOW CRABAPPLE

#### SHRUBS/ORNAMENTAL GRASSES/PERENNIALS

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- BLUE MIST SPIREA
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- BLUE RUG JUNIPER
- PURPLE GONIFLOWER
- RED FLOWER CARPET ROSE
- DARTS GOLD NINEBARK
- STELLA DE ORO DAYLILLY
- FINE LINE BUCKTHORN
- GRO-LOW SUMAC
- RED HOT POKER
- HUSKER RED PENSTEMON
- IVORY HALO DOGWOOD
- KARL FOERSTER REED GRASS
- LITTLE DEVIL NINEBARK
- HIDCOTE BLUE ENGLISH LAVENDER
- IVORY TOWER YUCCA
- MAIDEN GRASS
- BRAKELIGHTS RED YUCCA
- SUMMERWINE NINEBARK
- TIGER EYE SUMAC

LAWN

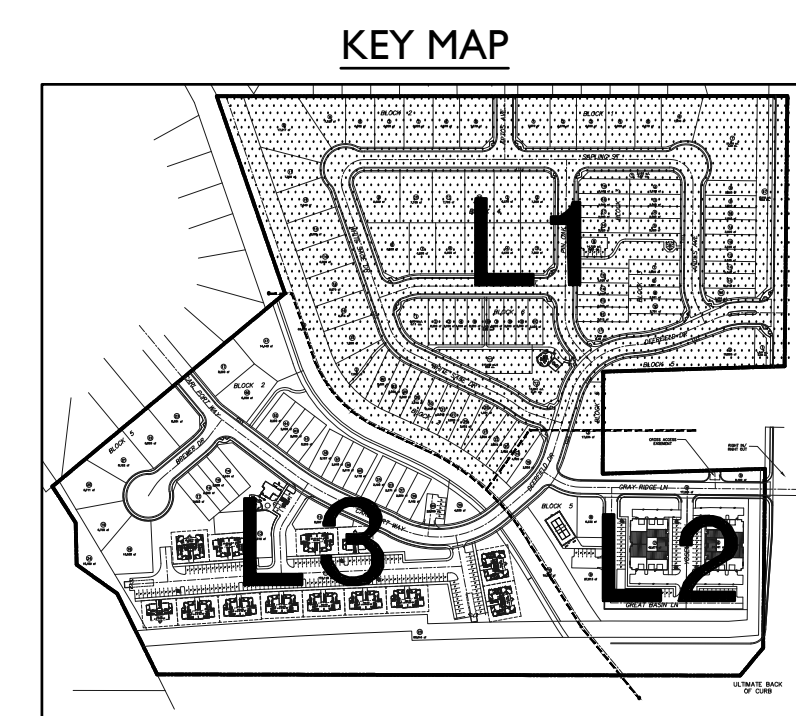
6' VINYL FENCE ALONG PERIMETER PROPERTY LINES. SEE DTL 4, SHT L4

5' IRON FENCE ADJACENT TO COMMON LOTS & DEER FLAT LATERAL EASEMENT. SEE DTL 5, SHT L4

EXISTING FENCING TO REMAIN (TYP)

### NOTES

1. REFERENCE SHEET L4 FOR PLANT PALETTE, FENCING DETAILS, LANDSCAPE NOTES & DETAILS, AND LANDSCAPE CALCULATIONS.



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NORTH

0' 50' 100' 150'

SCALE 1" = 50'



CHECKED BY: KCS  
 DRAWN BY: JUN

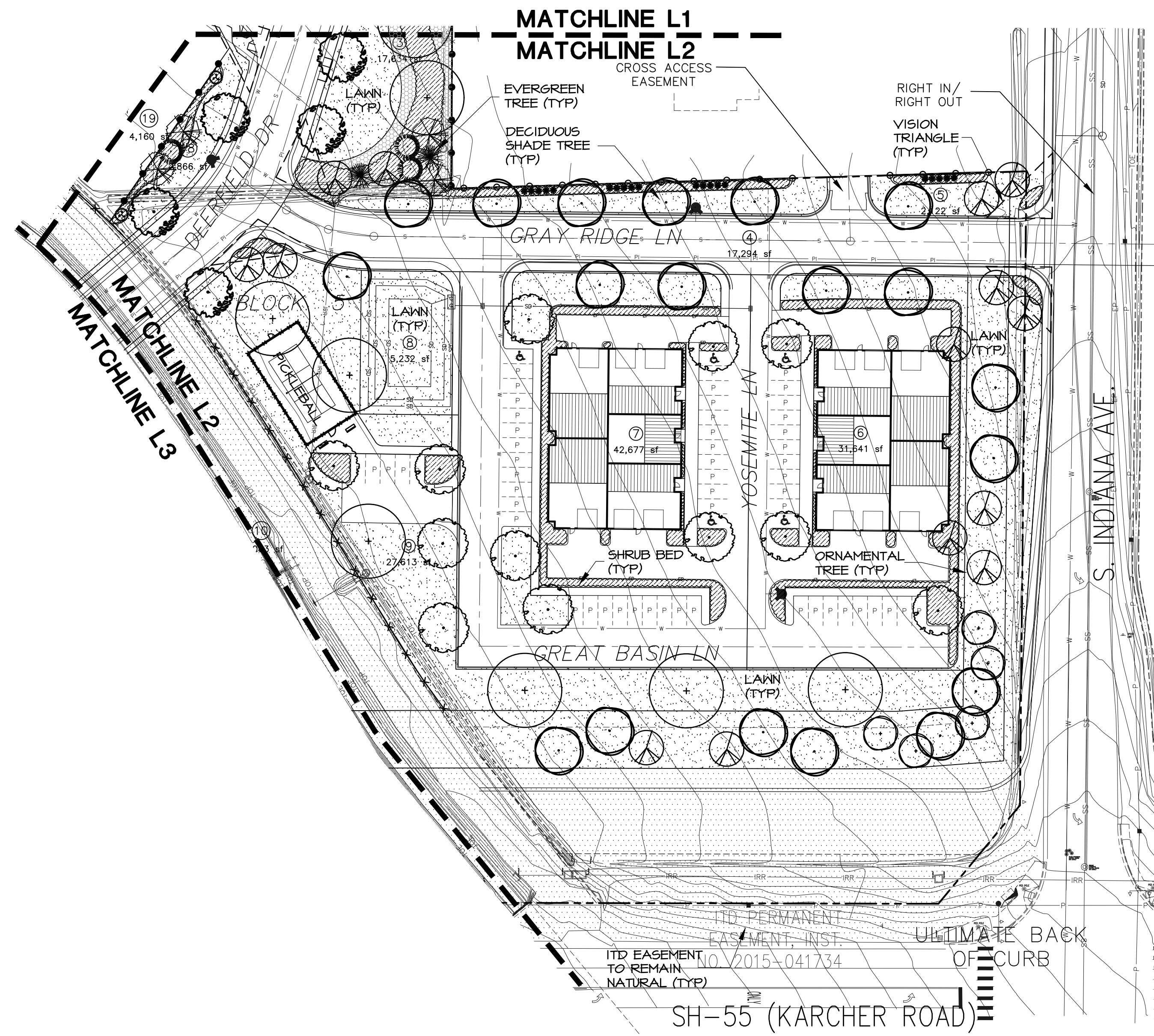
REVISED	NO.	DATE	DESCRIPTION

PRELIMINARY PLAT LANDSCAPE PLAN  
 ARROWROCK FARM SUBDIVISION  
 TRILOGY DEVELOPMENT, INC.

DATE: 07-18-2022  
 PROJECT: JBA-2126

SHEET  
**L1**





# PLANT PALETTE

(REFERENCE SHEET L4)  
 SYM COMMON NAME






## EVERGREEN TREES

-  AUSTRIAN PINE
-  HOOP'S BLUE SPRUCE
-  NORWAY SPRUCE
-  SKY HIGH JUNIPER
-  VANDERWOLF'S PINE







## SHADE TREES (CLASS III)

-  BLOODGOOD LONDON PLANETREE
-  SWAMP OAK

## SHADE/STREET TREES (CLASS II)

-  CRIMSON SPIRE OAK
-  SKYLINE HONEYLOCUST
-  LITTLELEAF LINDEN
-  PACIFIC SUNSET MAPLE
-  TULIP TREE

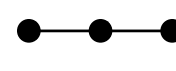
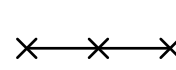
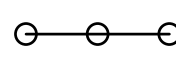
## ORNAMENTAL TREES (CLASS I)

-  FLAME AMUR MAPLE
-  CANADA RED CHOKECHERRY
-  CHANTICLEER PEAR
-  CRUZAN CRUSADER HAWTHORN
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- MAIDEN GRASS
- BRAKELIGHTS RED YUCCA
- SUMMERWINE NINEBARK
- TIGER EYE SUMAC

 LAWN

-  6' VINYL FENCE ALONG PERIMETER PROPERTY LINES. SEE DTL 4, SHT L4
-  5' IRON FENCE ADJACENT TO COMMON LOTS & DEER FLAT LATERAL EASEMENT. SEE DTL 5, SHT L4
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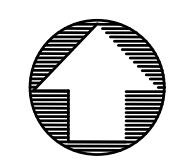
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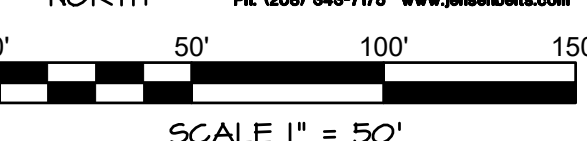
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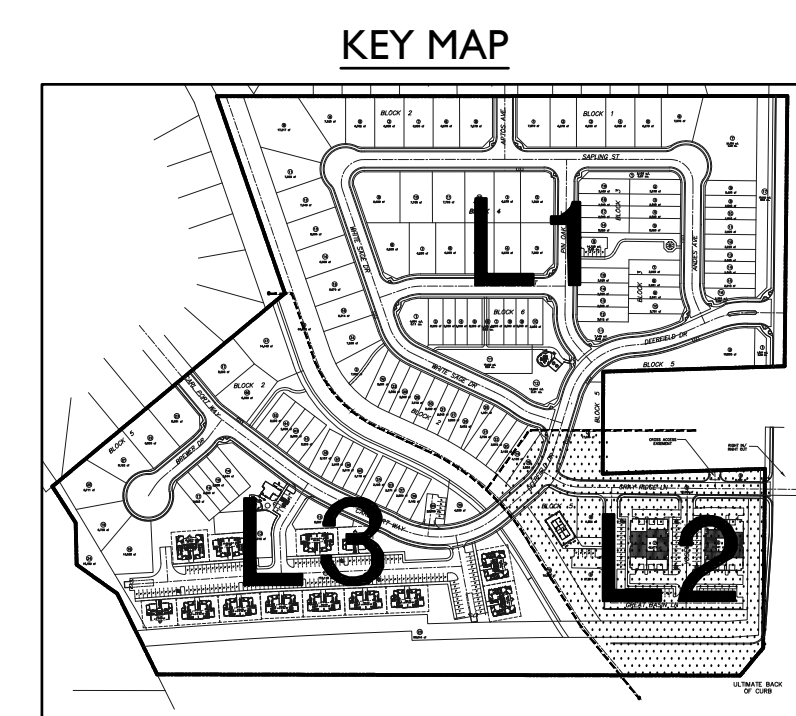
PRELIMINARY PLAT LANDSCAPE PLAN  
 ARROWROCK FARM SUBDIVISION  
 TRILOGY DEVELOPMENT, INC.

DATE: 07-18-2022  
 PROJECT: JBA-2126

SHEET  
**L2**

  
**JENSENBELTS ASSOCIATES**  
 Site Planning / Landscape Architecture  
 909 Tyrrel Lane, Ste. 150 Boise, ID 83706  
 Ph. (208) 543-7776 www.jensenbelts.com

  
 SCALE 1" = 50'





CHECKED BY: KCS  
 DRAWN BY: JUN

REVISED	NO.	DATE	DESCRIPTION

PRELIMINARY PLAT LANDSCAPE PLAN  
 ARROWROCK FARM SUBDIVISION  
 TRILOGY DEVELOPMENT, INC.

DATE: 07-18-2022  
 PROJECT: JBA-2126

SHEET  
**L3**

### PLANT PALETTE

(REFERENCE SHEET L4)

SYM COMMON NAME

#### EVERGREEN TREES

- AUSTRIAN PINE
- HOOP'S BLUE SPRUCE
- NORWAY SPRUCE
- SKY HIGH JUNIPER
- VANDERKOLFS PINE

#### SHADE TREES (CLASS III)

- BLOODGOOD LONDON PLANETREE
- SWAMP OAK

#### SHADE/STREET TREES (CLASS II)

- CRIMSON SPIRE OAK
- SKYLINE HONEYLOCUST
- LITTLELEAF LINDEN
- PACIFIC SUNSET MAPLE
- TULIP TREE

#### ORNAMENTAL TREES (CLASS I)

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- CHANTICLEER PEAR
- CRUZAN CRUSADER HAWTHORN
- ROYAL RAINDROPS CRABAPPLE
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LAWN

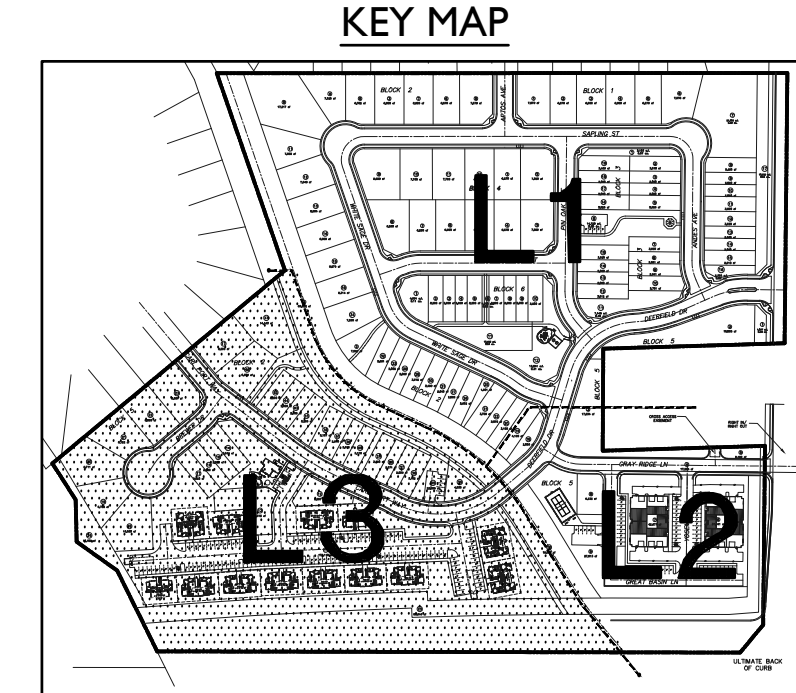
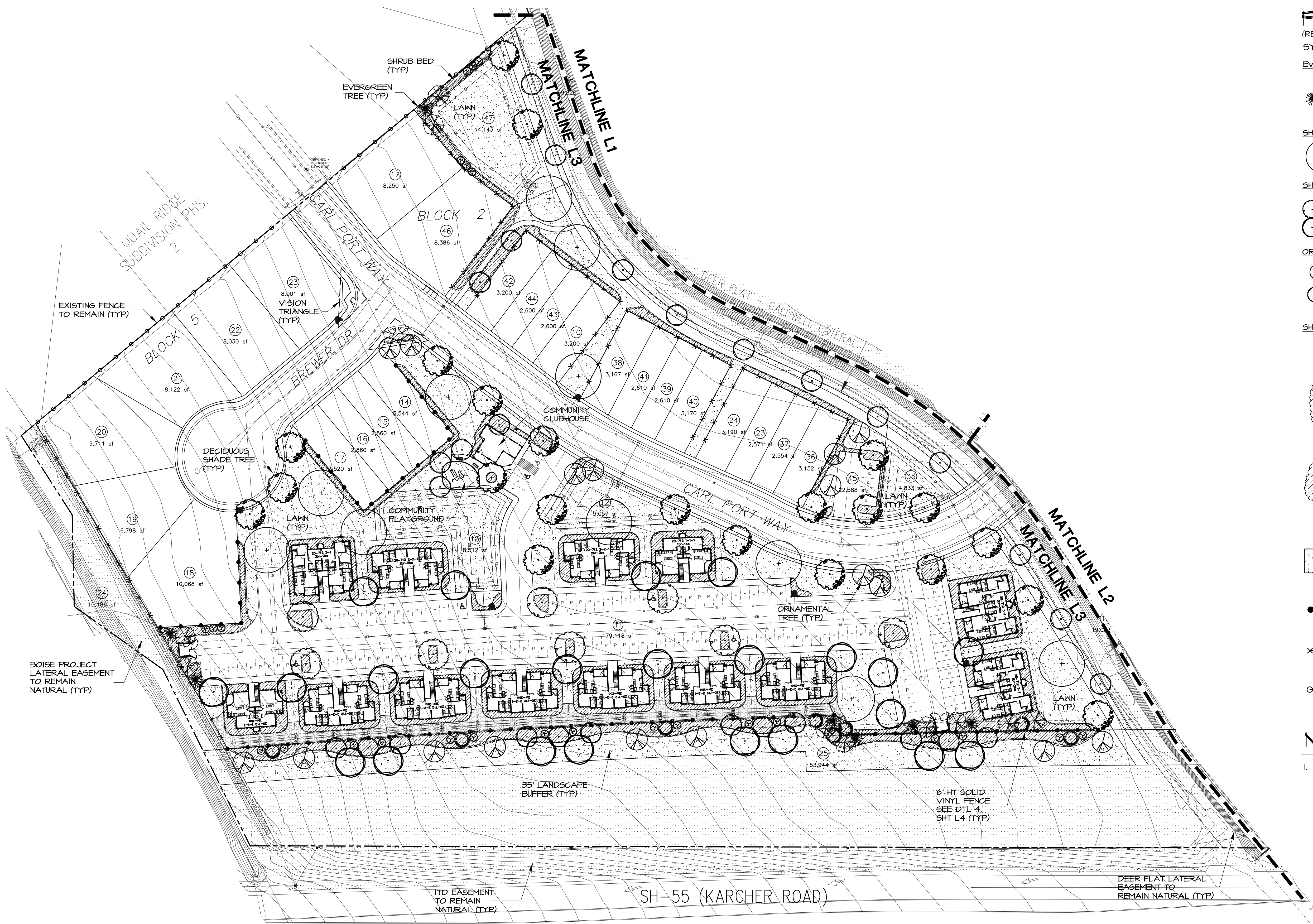
6' VINYL FENCE ALONG PERIMETER PROPERTY LINES. SEE DTL 4, SHT L4

5' IRON FENCE ADJACENT TO COMMON LOTS & DEER FLAT LATERAL EASEMENT. SEE DTL 5, SHT L4

EXISTING FENCING TO REMAIN (TYP)

### NOTES

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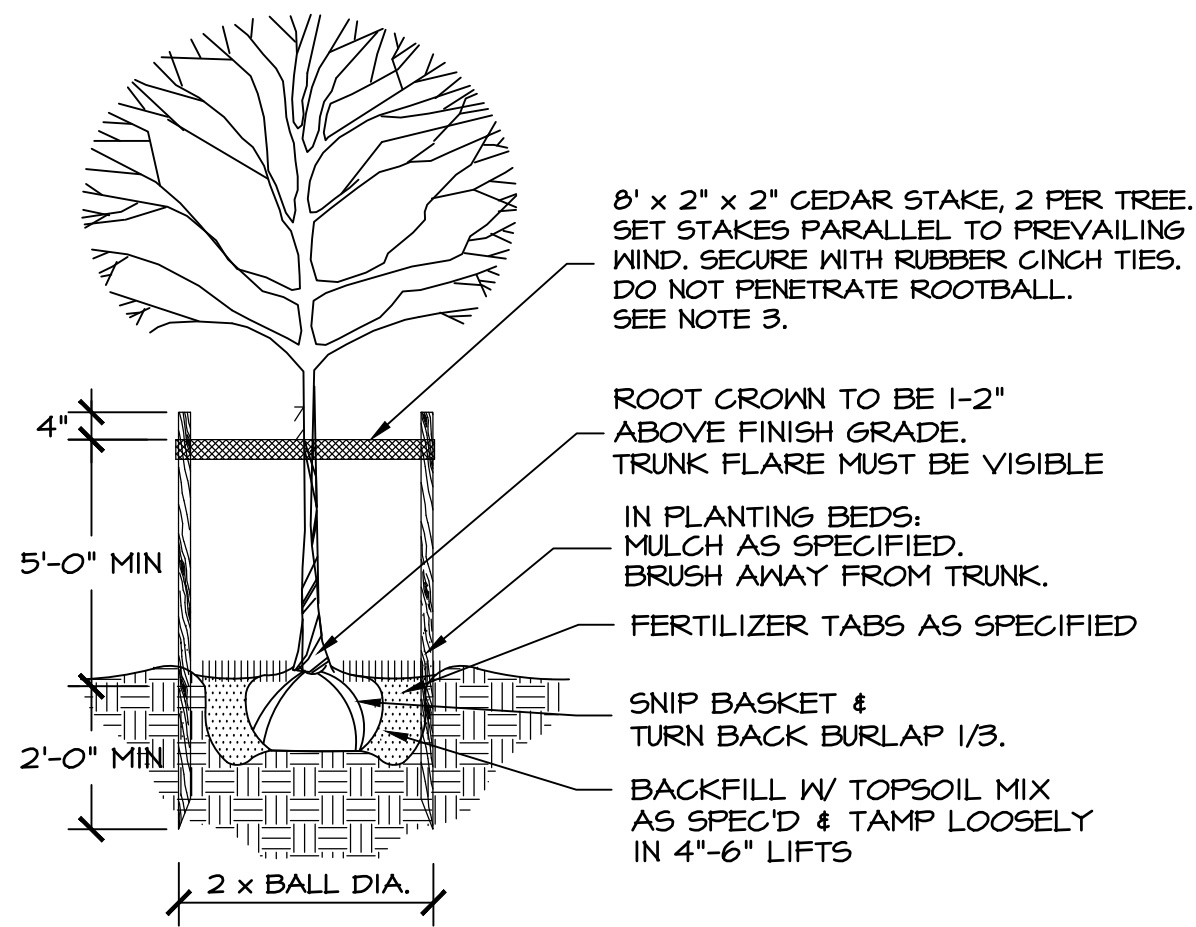


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NORTH

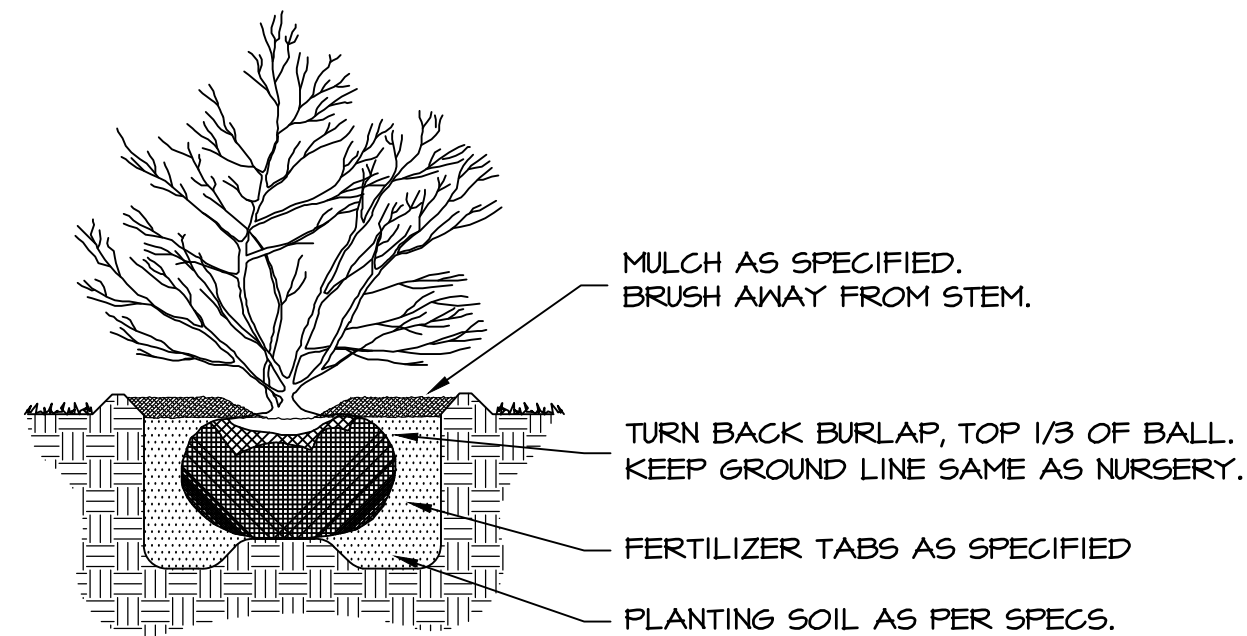
0' 50' 100' 150'

SCALE 1" = 50'



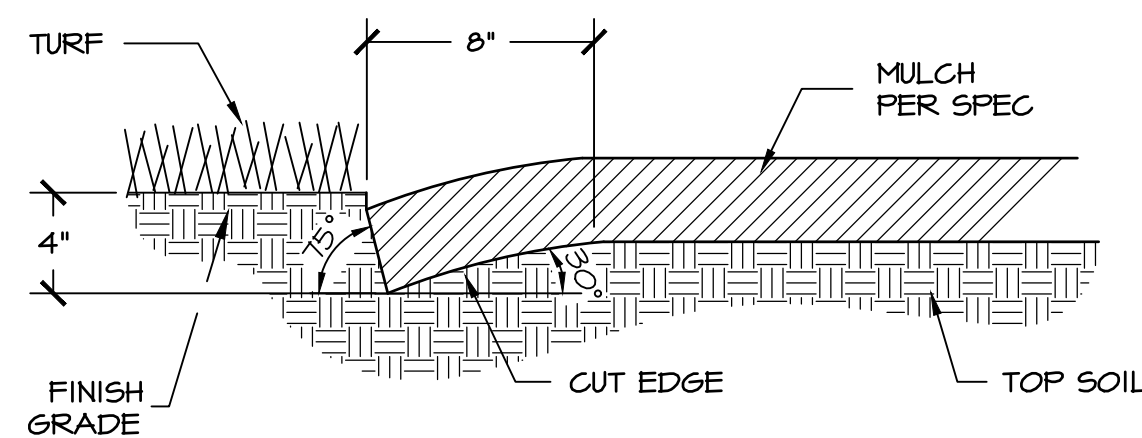
- NOTES:**
1. REMOVE ALL TWINE, ROPE, OR BINDINGS FROM ALL TRUNKS.
  2. REMOVE BURLAP AND WIRE BASKETS FROM THE TOP 1/3 OF ALL ROOT BALLS AFTER PLANTING. IF SYNTHETIC WRAP/BURLAP IS USED, IT MUST BE COMPLETELY REMOVED.
  3. STAKING OF TREES TO BE THE CONTRACTOR'S OPTION; HOWEVER, THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT ALL TREES ARE PLANTED STRAIGHT AND REMAIN STRAIGHT FOR A MIN OF 1 YEAR. ALL STAKING SHALL BE REMOVED AT THE END OF THE 1 YEAR WARRANTY PERIOD.
  4. TREES PLANTED IN TURF AREAS; REMOVE TURF 3' DIA. FROM TREE TRUNK.

**1 TREE PLANTING/STAKING** NOT TO SCALE

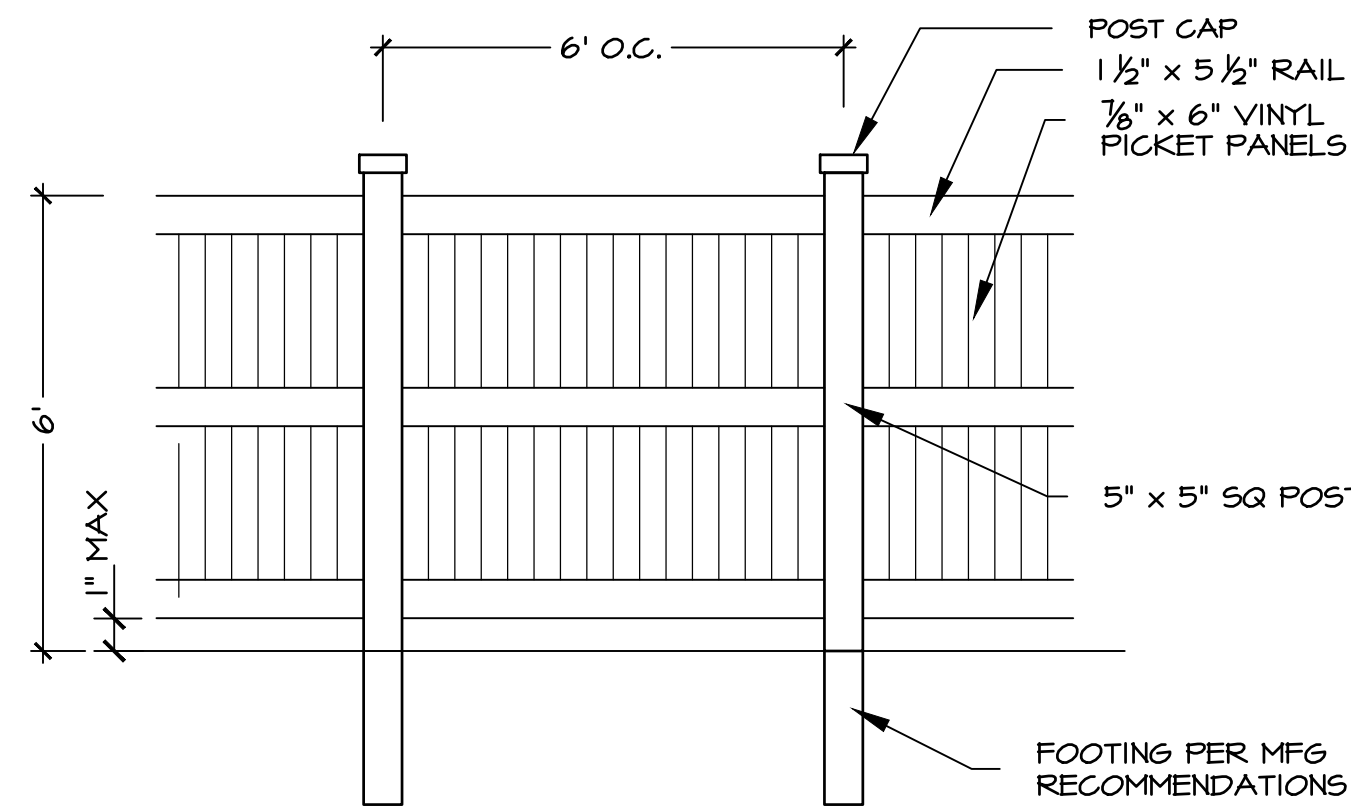


**NOTE:** DIG HOLE TWICE THE SIZE OF ROOTBALL.

**2 SHRUB PLANTING** NOT TO SCALE

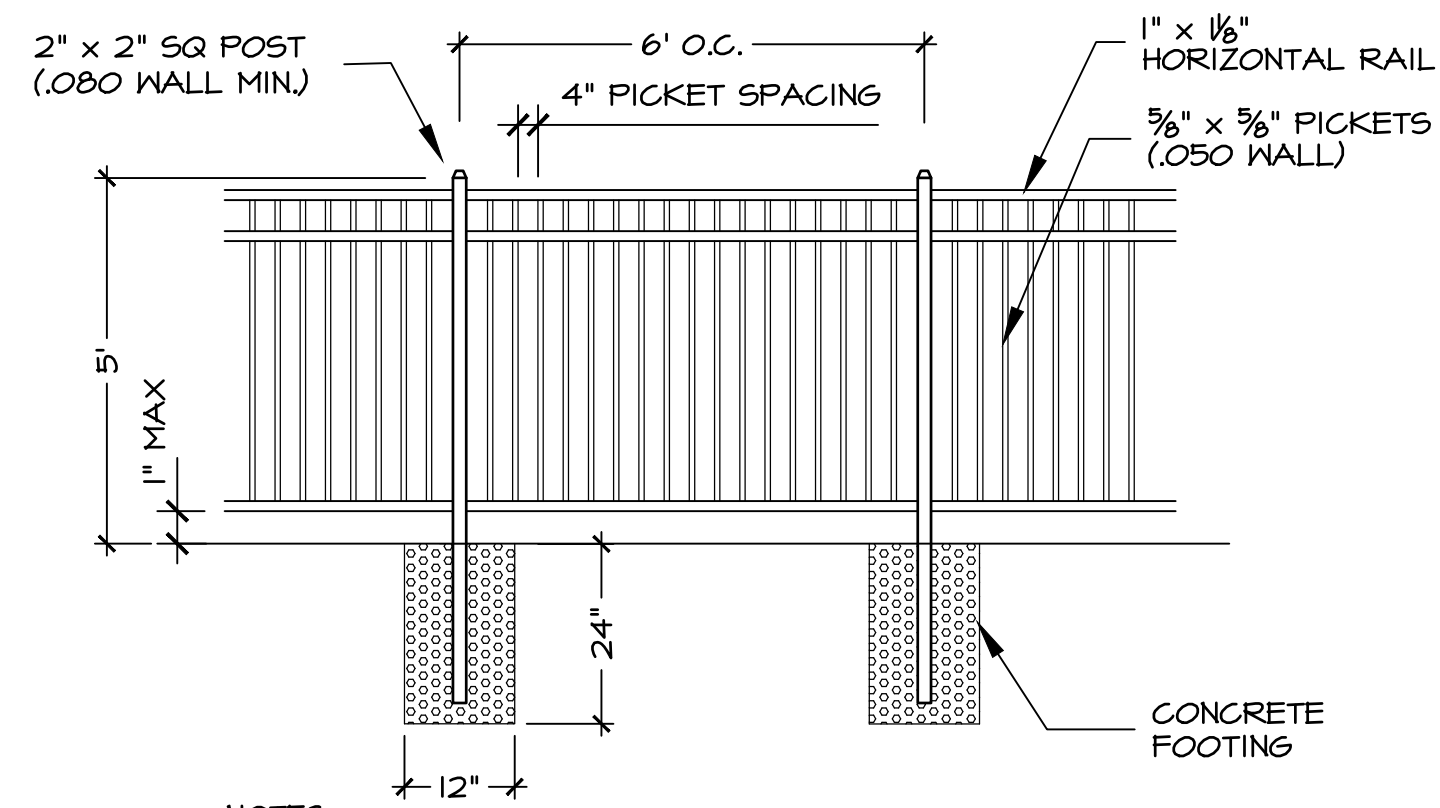


**3 PLANTER CUT BED EDGE** NOT TO SCALE



- NOTES:**
1. FENCE TO STEP DOWN TO 3' HEIGHT 20' FROM ROW.
  2. FENCE STYLE MAY VARY SLIGHTLY.

**4 VINYL PRIVACY FENCE** NOT TO SCALE



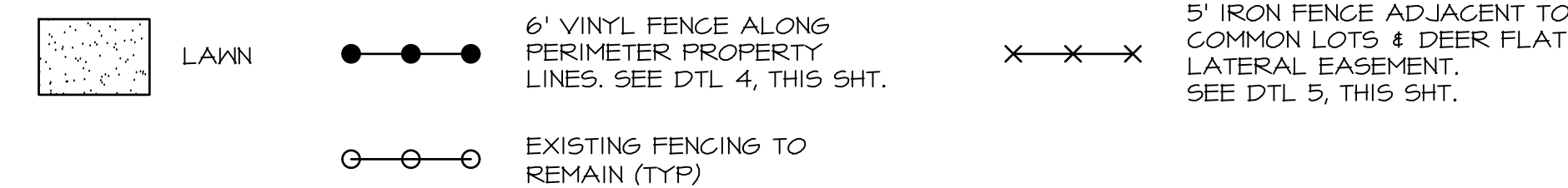
- NOTES:**
1. IRON FENCE STYLE MAY VARY SLIGHTLY. ALL GALVANIZED & POWDERCOATED BLACK.

**5 IRON FENCE** NOT TO SCALE

**PLANT PALETTE**

SYM	COMMON NAME	BOTANICAL NAME	SIZE
<b>EVERGREEN TREES</b>			
●	AUSTRIAN PINE	PINUS NIGRA	6-8' HT B4B
●	HOOP'S BLUE SPRUCE	PICEA PUNGENS 'HOOPSII'	6-8' HT B4B
●	NORWAY SPRUCE	PICEA ABIES	6-8' HT B4B
●	SKY HIGH JUNIPER	JUNIPERUS SCOPULORUM 'BAILIGH'	6-8' HT B4B
●	VANDERWOLFS PINE	PINUS FLEXILIS 'VANDERWOLFS'	6-8' HT B4B
<b>SHADE TREES (CLASS III)</b>			
●	BLOODGOOD LONDON PLANETREE	PLATANUS x ACERIFOLIA 'BLOODGOOD'	2\"/>

<b>SHRUBS/ORNAMENTAL GRASSES/PERENNIALS</b>			
●	ARIZONA SUN GAILLARDIA	GAILLARDIA x 'ARIZONA SUN'	1 GAL
●	BLACK EYED SUSAN	RUIDBECKIA FULGIDA 'GOLDSTRUM'	1 GAL
●	BLUE GRAMMA GRASS	BOUTELOUA GRACILIS 'BLONDE AMBITION'	1 GAL
●	BLUE MIST SPIREA	CARYOPTERIS x GLANDONENSIS 'BLUE MIST'	2 GAL
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●	HIDCOTE BLUE ENGLISH LAVENDER	LAVANDULA ANGUSTIFOLIA 'HIDCOTE BLUE'	1 GAL
●	IVORY TOWER YUCCA	YUCCA FILAMENTOSA 'IVORY TOWER'	3 GAL
●	MAIDEN GRASS	MISCANTHUS SINENSIS 'GRACILLIMUS'	1 GAL
●	BRAKELIGHTS RED YUCCA	HESPERALOE PARVIFLORA 'PERPA'	3 GAL
●	SUMMERWINE NINEBARK	PHYSOCARPUS OPULIFOLIA 'SEWARD'	5 GAL
●	TIGER EYE SUMAC	RHUS TYPHINA 'BAILTIGER'	5 GAL



**NOTES**

1. ALL LANDSCAPE SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF CALDWELL ORDINANCE REQUIREMENTS.
2. ALL PLANTING AREAS TO BE WATERED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.
3. TREES SHALL NOT BE PLANTED WITHIN THE 10-FOOT CLEAR ZONE OF ALL STORM DRAIN PIPE, STRUCTURES, OR FACILITIES IN PARKSTRIPS. SEEPAGE BEDS MUST BE PROTECTED FROM ANY AND ALL CONTAMINATION DURING THE CONSTRUCTION AND INSTALLATION OF THE LANDSCAPE IRRIGATION SYSTEM. ALL SHRUBS PLANTED OVER OR ADJACENT TO SEEPAGE BEDS TO HAVE A ROOT BALL THAT DOES NOT EXCEED 18" IN DIAMETER. NO LAWN SOV TO BE PLACED OVER DRAINAGE SWALE SAND WINDOWS.
4. NO TREES SHALL IMPEDE THE 40' VISION TRIANGLES AT ALL INTERSECTIONS. NO CONIFEROUS TREES OR SHRUBS OVER 3' HIGH AT MATURITY WILL BE LOCATED WITHIN VISION TRIANGLE OR ROW. AS TREES MATURE, THE OWNER SHALL BE RESPONSIBLE FOR PRUNING TREE CANOPIES TO MEET REQUIREMENTS FOR MAINTAINING CLEAR VISIBILITY WITHIN 40' STREET AND DEPARTURE VISION TRIANGLE. TREES SHALL BE PLANTED NO CLOSER THAN 50' FROM INTERSECTION STOP SIGNS.
5. CLASS II TREES AND LANDSCAPE IN FRONT OF BUILDING LOTS ON INTERIOR STREETS TO BE COMPLETED DURING CONSTRUCTION ON THESE LOTS. TREE LOCATIONS MAY BE ALTERED TO ACCOMMODATE DRIVEWAYS AND UTILITIES. TREES MUST BE CLASS II AND SHALL NOT BE PLANTED WITHIN 5' OF WATER METERS OR UNDERGROUND UTILITY LINES.
6. PLANT LIST IS REPRESENTATIVE AND SUBJECT TO ADDITIONS AND/OR SUBSTITUTIONS OF SIMILAR SPECIES THAT ARE SUBJECT TO CITY FORESTER'S PRE-APPROVAL. PLANTING BED DESIGN AND QUANTITIES MAY BE ALTERED DURING FINAL PLAT LANDSCAPE PLAN DESIGN. BURLAP AND WIRE BASKETS TO BE REMOVED FROM ROOT BALL AS MUCH AS POSSIBLE, AT LEAST HALFWAY DOWN THE BALL OF THE TREE. ALL NYLON ROPES TO BE COMPLETELY REMOVED FROM TREES.
7. ALL EXISTING TREES TO BE REMOVED.

**LANDSCAPE CALCULATIONS**

LOCATION	BUFFER WIDTH	LENGTH	REQUIRED	PROVIDED
S. INDIANA AVE.	25'	875' / 35 = 875' / 7 =	25 TREES 125 SHRUBS	36 TREES 125+ SHRUBS
SH-55 (KARCHER RD.)	30'	1140' / 35 = 1140' / 7 =	33 TREES 163 SHRUBS	64 TREES 163+ SHRUBS
COMMON AREAS				283 TREES
TOTAL NUMBER OF TREES			58 TREES	383 TREES

**DEVELOPMENT DATA**

TOTAL AREA	35.20 ACRES
TOTAL LOTS	132
SF RESIDENTIAL LOTS	40
TOWNHOUSE LOTS	60
4-PLEX LOTS	1 LOT, 13-4 PLEX (52 UNITS)
COMMERCIAL LOTS	2
COMMON LOTS	23
PRIVATE ROAD	1
USABLE OPEN SPACE	2.73 AC (7.76%)
EXISTING ZONING	COUNTY
PROPOSED ZONING	HIGHWAY CORRIDOR/R2

**OWNERS**

VERTREES, ROBERT & JACKIE LIVING TRUST 5467 W. ASTONTE DR. MERIDIAN, IDAHO 83646	ENDURANCE HOLDINGS, LLC 1977 E. OVERLAND RD. MERIDIAN, IDAHO 83646
--	--

**DEVELOPER**

TRILogy DEVELOPMENT  
9839 W. CABLE CAR ST. STE 101  
BOISE, IDAHO 83709  
(208) 895-8858

**ENGINEER**

DAVID A. BAILEY, P.E.  
BAILEY ENGINEERING, INC.  
1119 E. STATE ST., STE 210  
EAGLE, IDAHO

**PLANNER/CONTACT**

SHAWN BROWNLEE  
TRILogy DEVELOPMENT, INC.  
9839 W. CABLE CAR ST. STE 101  
BOISE, IDAHO 83709  
(208) 895-8858



CHECKED BY: KCS  
DRAWN BY: JLN

REVISED	NO.	DATE	DESCRIPTION

DATE: 07-18-2022  
PROJECT: JBA-2126

# Properties Within 300 Feet

## City of Caldwell

CPM21-000002  
ANN21-000014  
ZON21-000005  
SUB21-000041  
SUP21-000015

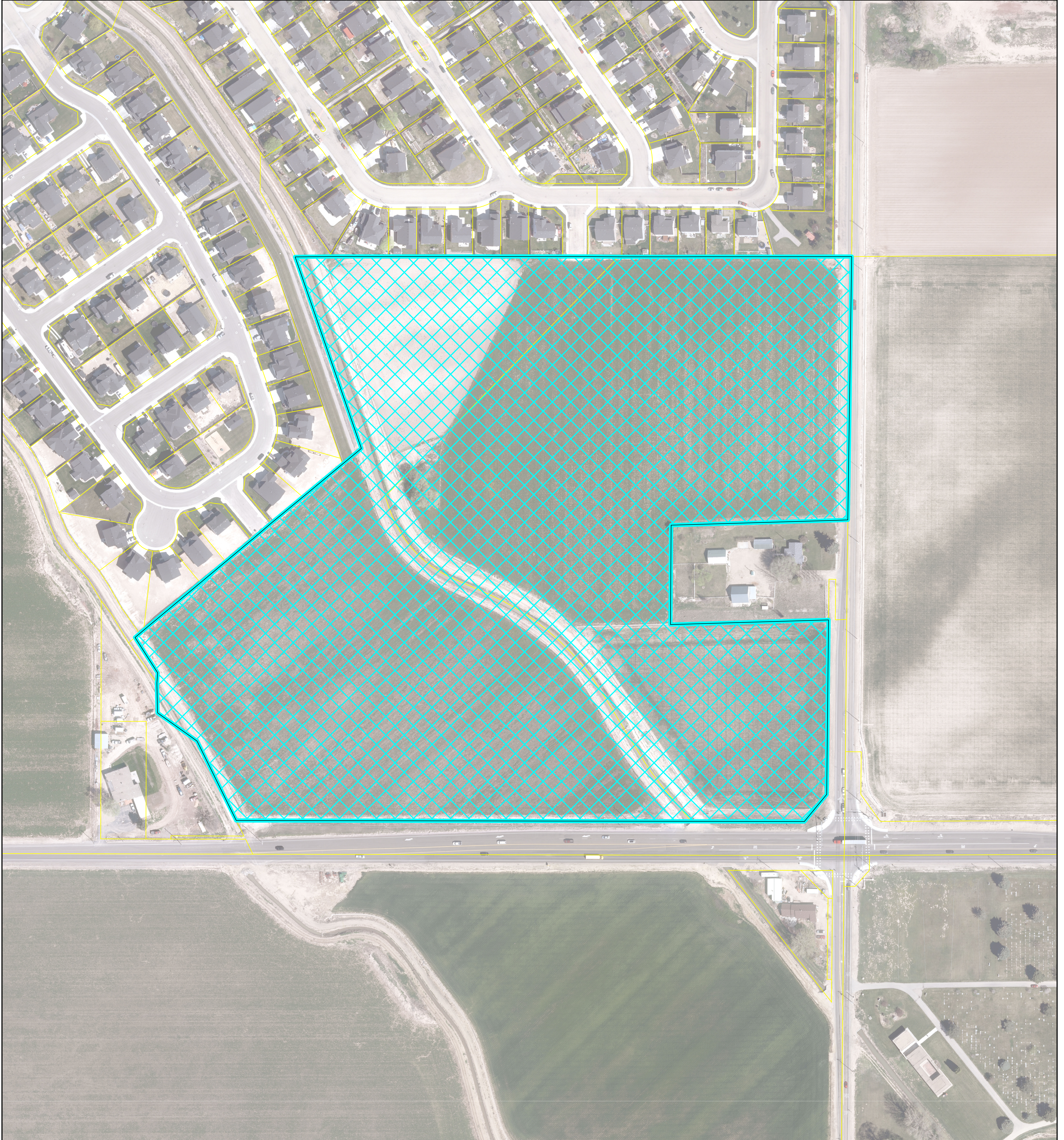
### Legend

-  Subject Property
-  300' Buffer
-  300' Properties
-  Taxlots

### DISCLAIMER

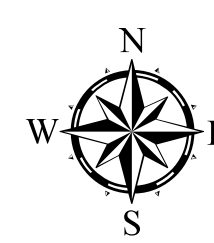
The information represented on this map results from the compilation of a variety of source materials. Its intended use is as a resource for the City of Caldwell Staff. The City of Caldwell makes no representation or warranty as to the accuracy of this product, and in particular, its accuracy as to labeling, dimensions, property boundaries, or placement or location of any map features thereon. THE CITY OF CALDWELL DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR WARRANTY FOR FITNESS OF USE FOR A PARTICULAR PURPOSE, EXPRESS OR IMPLIED, WITH RESPECT TO THIS PRODUCT. Any user of this product accepts the same AS IS, WITH ALL FAULTS, and assumes a responsibility for the use thereof.





**Legend**

- Streets
- Taxlots
- ▭ Subject Property
- ▣ City Boundary
- ▤ Impact Area



**DISCLAIMER**

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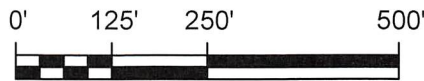
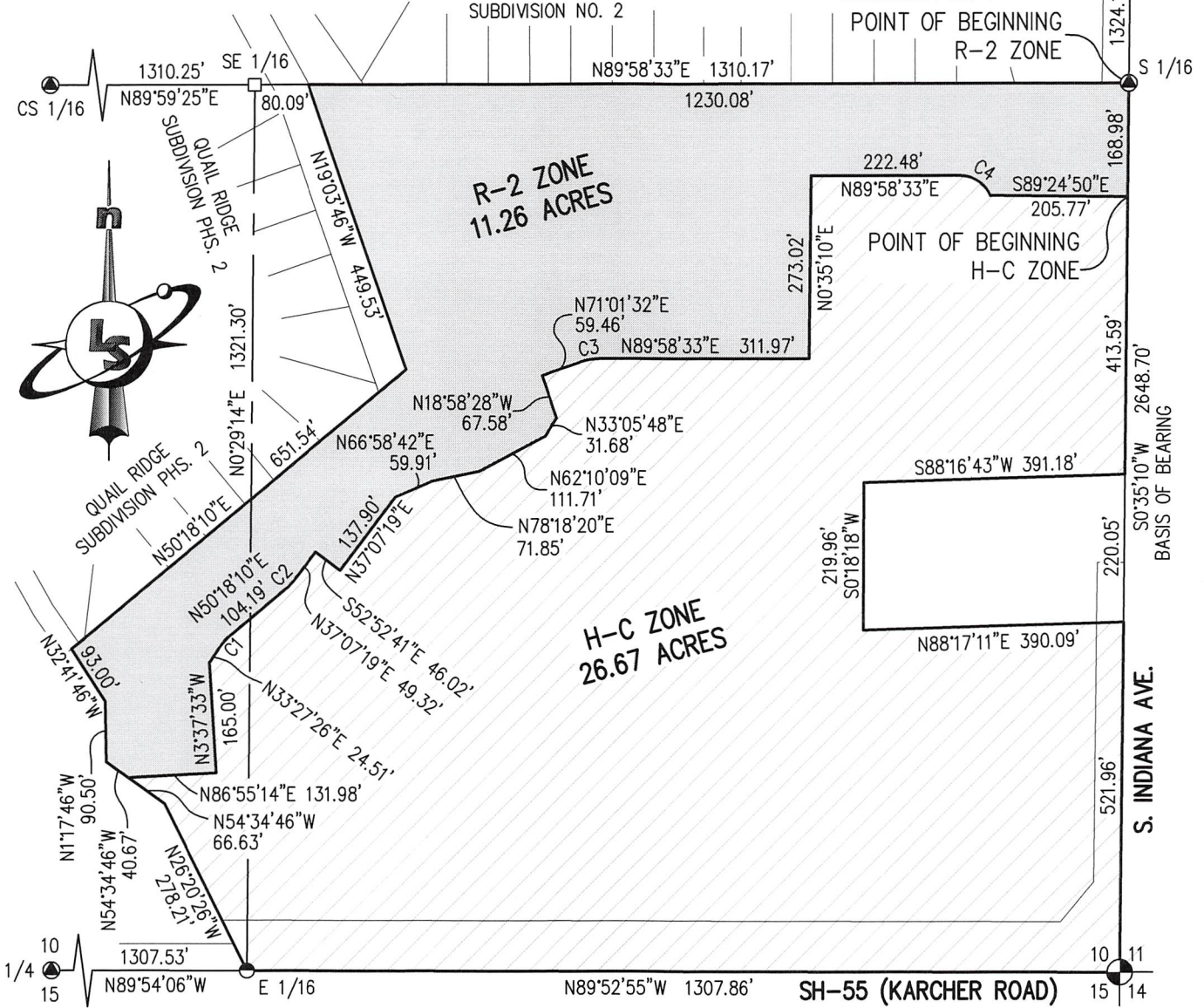
# PROPOSED REZONE

## ARROWROCK FARM SUBDIVISION

LOCATED IN THE S 1/2 OF THE NW 1/4 OF SECTION 10, T.3N., R.3W., B.M.  
CANYON COUNTY, IDAHO

KINGSVIEW ESTATES  
SUBDIVISION NO. 1  
POINT OF BEGINNING  
R-2 ZONE

KINGSVIEW ESTATES  
SUBDIVISION NO. 2



CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	BEARING	CHORD
C1	29.40'	100.00'	16°50'44"	N41°52'48"E	29.30'
C2	23.00'	100.00'	13°10'51"	N43°42'45"E	22.95'
C3	33.07'	100.00'	18°57'01"	N80°30'03"E	32.92'
C4	58.27'	50.00'	66°46'03"	S56°38'25"E	55.02'



**LandSolutions**  
Land Surveying and Consulting

231 E. 5TH ST., STE. A  
MERIDIAN, ID 83642  
(208) 288-2040 (208) 288-2557 fax  
www.landsolutions.biz

**Legal Description**  
**Arrowrock Farm Subdivision**  
**Proposed H-C Zone**

A parcel located in the S ½ of the SE ¼ of Section 10, Township 3 North, Range 3 West, Boise Meridian, Canyon County, Idaho, and more particularly described as follows:

Commencing at a 5/8 inch diameter iron pin marking the northeast corner of the SE ¼ of said Section 10, from which a Brass Cap monument marking the southeast corner of said SE ¼ bears S 0°35'10" W a distance of 2648.70 feet;

Thence along the easterly boundary of said SE ¼ S 0°35'10" W a distance of 1324.13 feet to a 5/8 inch diameter iron pin marking the northeast corner of the S ½ of said SE ¼;

Thence continuing along said easterly boundary S 0°35'10" W a distance of 168.98 feet to the **POINT OF BEGINNING**;

Thence continuing along said easterly boundary S 0°35'10" W a distance of 413.59 feet to a point;

Thence leaving said boundary S 88°16'43" W a distance of 391.18 feet to a point;

Thence S 0°18'18" W a distance of 219.96 feet to a point;

Thence N 88°17'11" E a distance of 390.09 feet to a point on the easterly boundary of said S ½ of the SE ¼;

Thence along said easterly boundary S 0°35'10" W a distance of 521.96 feet to the southeast corner of said S ½ of the SE ¼;

Thence along the southerly boundary of said S ½ of the SE ¼ N 89°52'55" W a distance of 1307.86 feet to the southwest corner of the SE ¼ of the SE ¼ of said Section 10;

Thence leaving said boundary N 26°20'26" W a distance of 278.21 feet to a point on the westerly boundary of that parcel as shown on Record of Survey Instrument No. 200666412, records of Canyon County, Idaho;

Thence continuing along said westerly boundary N 54°34'46" W a distance of 66.63 feet to a point;

Thence leaving said parcel boundary N 86°55'14" E a distance of 131.98 feet to a point;

Thence N 3°37'33" W a distance of 165.00 feet to a point;

Thence N 33°27'26" E a distance of 24.51 feet to a point on a curve;

Thence a distance of 29.40 feet along the arc of a 100.00 foot radius curve right, said curve having a central angle of 16°50'44" and a long chord bearing N 41°52'48" E a distance of 29.30 feet to a point of tangency;

Thence N 50°18'10" E a distance of 104.19 feet to a point of curvature;

Thence a distance of 23.00 feet along the arc of a 100.00 foot radius curve left, said curve having a central angle of 13°10'51" and a long chord bearing N 43°42'45" E a distance of 22.95 feet to a point of tangency;

Thence N 37°07'19" E a distance of 49.32 feet to a point;

Thence S 52°52'41" E a distance of 46.02 feet to a point;

Thence N 37°07'19" E a distance of 137.90 feet to a point;

Thence N 66°58'42" E a distance of 59.91 feet to a point;

Thence N 78°18'20" E a distance of 71.85 feet to a point;

Thence N 62°10'09" E a distance of 111.71 feet to a point;

Thence N 33°05'48" E a distance of 31.68 feet to a point;

Thence N 18°58'28" W a distance of 67.58 feet to a point;

Thence N 71°01'32" E a distance of 59.46 feet to a point of curvature;

Thence a distance of 33.07 feet along the arc of a 100.00 foot radius curve right, said curve having a central angle of 18°57'01" and a long chord bearing N 80°30'03" E a distance of 32.92 feet to a point of tangency;

Thence N 89°58'33" E a distance of 311.97 feet to a point;

Thence N 0°35'10" E a distance of 273.02 feet to a point;

Thence N 89°58'33" E a distance of 222.48 feet to a point of curvature;

Thence a distance of 58.27 feet along the arc of a 50.00 foot radius curve right, said curve having a central angle of 66°46'03" and a long chord bearing S 56°38'25" E a distance of 55.02 feet to a point;

Thence S 89°24'50" E a distance of 205.77 feet to the **POINT OF BEGINNING**.

This parcel contains 26.67 acres more or less.

Clinton W. Hansen, PLS  
Land Solutions, PC  
REVISED: July 19, 2022





**Legal Description**  
**Arrowrock Farm Subdivision**  
**Proposed R-2 Zone**

A parcel located in the S ½ of the SE ¼ of Section 10, Township 3 North, Range 3 West, Boise Meridian, Canyon County, Idaho, and more particularly described as follows:

Commencing at a 5/8 inch diameter iron pin marking the northeast corner of the SE ¼ of said Section 10, from which a Brass Cap monument marking the southeast corner of said SE ¼ bears S 0°35'10" W a distance of 2648.70 feet;

Thence along the easterly boundary of said SE ¼ S 0°35'10" W a distance of 1324.13 feet to a 5/8 inch diameter iron pin marking the northeast corner of the S ½ of said SE ¼, the **POINT OF BEGINNING**;

Thence continuing along said easterly boundary S 0°35'10" W a distance of 168.98 feet to a point;

Thence leaving said boundary N 89°24'50" W a distance of 205.77 feet to a point on a curve;

Thence a distance of 58.27 feet along the arc of a 50.00 foot radius non-tangent curve left, said curve having a central angle of 66°46'03" and a long chord bearing N 56°38'25" W a distance of 55.02 feet to a point of tangency;

Thence S 89°58'33" W a distance of 222.48 feet to a point;

Thence S 0°35'10" W a distance of 273.02 feet to a point;

Thence S 89°58'33" W a distance of 311.97 feet to a point of curvature;

Thence a distance of 33.07 feet along the arc of a 100.00 foot radius curve left, said curve having a central angle of 18°57'01" and a long chord bearing S 80°30'03" W a distance of 32.92 feet to a point of tangency;

Thence S 71°01'32" W a distance of 59.46 feet to a point;

Thence S 18°58'28" E a distance of 67.58 feet to a point;

Thence S 33°05'48" W a distance of 31.68 feet to a point;

Thence S 62°10'09" W a distance of 111.71 feet to a point;

Thence S 78°18'20" W a distance of 71.85 feet to a point;

Thence S 66°58'42" W a distance of 59.91 feet to a point;

Thence S 37°07'19" W a distance of 137.90 feet to a point;

Thence N 52°52'41" W a distance of 46.02 feet to a point;

Thence S 37°07'19" W a distance of 49.32 feet to a point of curvature;

Thence a distance of 23.00 feet along the arc of a 100.00 foot radius curve right, said curve having a central angle of 13°10'51" and a long chord bearing S 43°42'45" W a distance of 22.95 feet to a point of tangency;

Thence S 50°18'10" W a distance of 104.19 feet to a point of curvature;

Thence a distance of 29.40 feet along the arc of a 100.00 foot radius curve left, said curve having a central angle of 16°50'44" and a long chord bearing S 41°52'48" W a distance of 29.30 feet to a point of tangency;

Thence S 33°27'26" W a distance of 24.51 feet to a point;

Thence S 3°37'33" E a distance of 165.00 feet to a point;

Thence S 86°55'14" W a distance of 131.98 feet to a point on the westerly boundary of that parcel as shown on Record of Survey Instrument No. 200666412, records of Canyon County, Idaho;

Thence along said westerly boundary the following described courses and distance:

Thence N 54°34'46" W a distance of 40.67 feet to a point;

Thence N 1°17'46" W a distance of 90.50 feet to a point;

Thence N 32°41'46" W a distance of 93.00 feet to a point on the southerly boundary of Quail Ridge Subdivision Phase 2 as shown in Book 44 of Plats on Page 44, records of Canyon County, Idaho;

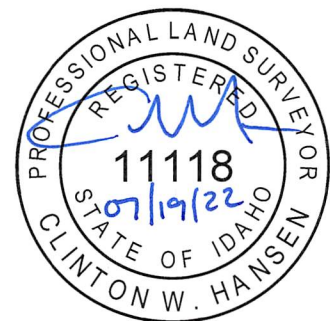
Thence along said southerly boundary N 50°18'10" E a distance of 651.54 feet to a 5/8 inch diameter iron pin marking the southeast corner of said Quail Ridge Subdivision Phase 2;

Thence along the easterly boundary of said Quail Ridge Subdivision Phase 2 N 19°03'46" W a distance of 449.53 feet to a point on the southerly boundary of Kingsview Estates Subdivision No. 2 as shown in Book 38 of Plats on Page 43, records of Canyon County, Idaho, also being the northerly boundary of said S ½ of the SE ¼;

Thence along said boundary, and along the southerly boundary of Kingsview Estates Subdivision No. 2, as shown in Book 37 of Plats on Page 16, records of Canyon County, Idaho, N 89°58'33" E a distance of 1230.08 feet to the **POINT OF BEGINNING**.

This parcel contains 11.26 acres more or less.

Clinton W. Hansen, PLS  
Land Solutions, PC  
REVISED: July 19, 2022



Preliminary Engineering Report

*For*

**Arrowrock Farm Subdivision**  
(Formerly known as Vertrees Subdivision)

Caldwell, Idaho

SEWER/WATER

IRRIGATION

STORM DRAINAGE



PROJECT NO: C2020-032

DATE: 05-06-2021

REVISED: 07-15-2022

DEVELOPER

Trilogy Development  
9839 W. Cable Car St.,  
Suite 101  
Boise, ID 83709  
(208) 895-8858

- The proposed subdivision is located in Caldwell, Idaho. The project site is 35.2 acres and will be subdivided into 40 single-family lots, 60 townhouse lots, 1 4-plex lot (52 units), 2 commercial lots and a number of common lots. The total number of proposed dwelling units is 152.

### **Sewer**

- There is an existing 10” sewer along the northeast corner of the site. This line will be tied into to serve the portion of the site east of the Deer Flat Caldwell Lateral.
- An 8” line in the Carl Port Way street-stub will be tied into to serve the portion of the site west of the Deer Flat Caldwell Lateral.
- New mainlines constructed throughout the development will be sized at 8” unless otherwise specified by the City of Caldwell.

### **Water**

- There is an existing 12” mainline in Indiana as well as two (2) 8” water mains stubbed to the site in Aptos Ave and Carl Port Way that will be tied into to serve the subdivision
- New mainlines constructed throughout the subdivision will be sized at 8” unless otherwise specified by the City of Caldwell
- The 8” water main will cross the Deer Flat-Caldwell Lateral.

### **Gravity Irrigation**

- The Deer Flat-Caldwell Lateral runs through the site as labeled on the preliminary plat. There is a 70’ easement. There are two (2) proposed crossings:
  - One (1) roadway consisting of a culvert, water main crossing, sewer crossing, and pressure irrigation crossing.
  - One (1) pedestrian bridge crossing.
- The Forest Canal runs along the far west boundary. No improvements are proposed within the easement for the canal.
- There are a number of private irrigation ditches/deliveries:
  - There’s a takeout from the Forest Canal that is used to water the eastern portion of the site. This line can likely be abandoned but may need to be tiled to the Deer Flat-Caldwell Canal.
  - There’s a takeout in the south portion of the Deer Flat-Caldwell Lateral that is tiled east along Karcher. This line shall be protected in place.
  - There’s a takeout in the south portion of the Deer Flat-Caldwell Lateral that feeds a concrete ditch that is used for irrigation of the portion of the project east of the Deer Flat-Caldwell Lateral. This line will need to be tiled through the site. Preliminary irrigation piping is shown for this line.

### **Pressurized Irrigation**

- Coordination with Caldwell will be required regarding construction of a new pump station or tying into an existing pump station. The Kingsview pump station is just northeast of the site and the Millagro pump station is north of the site, across Indiana.
- The project will be served by the Caldwell Municipal Irrigation District, with pressure irrigation mains located in the roadways.

- Water rights for the project are 21.09 miner's inches, provided by NMID and delivered by BPBC. As Caldwell requires 1"/acre, a supplemental well will be required.

### **Grading & Drainage**

- Drainage systems will be designed per City of Caldwell Stormwater Policy.
- Geotechnical report dated 09/01/2021 has been received; groundwater in the relative vicinity is known and is a relevant design criterion. Surface drainage facilities will almost certainly be needed. Surface drainage ponds have been designed in common lots as required by City of Caldwell Drainage Policy.
  - Groundwater Monitoring should be continued through the irrigation season.
  - Preliminary plat shows distributed drainage basins with subsurface drainage piping for stormwater conveyance.
- Preliminary drainage calculations are attached.

### **Flood Hazard**

- The site is not in a flood hazard zone, reference FIRM Panel 16027C0375F, effective 05/24/2011.

### **Attachments**

1. Preliminary drainage calculations
2. Preliminary drainage map
3. Water rights
4. Geotechnical report
5. Groundwater Monitoring (updated 06/08/2022)

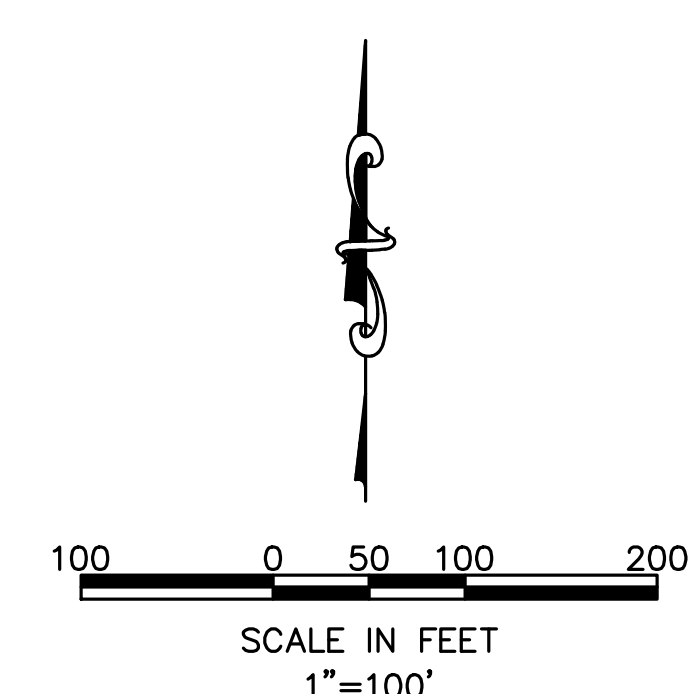
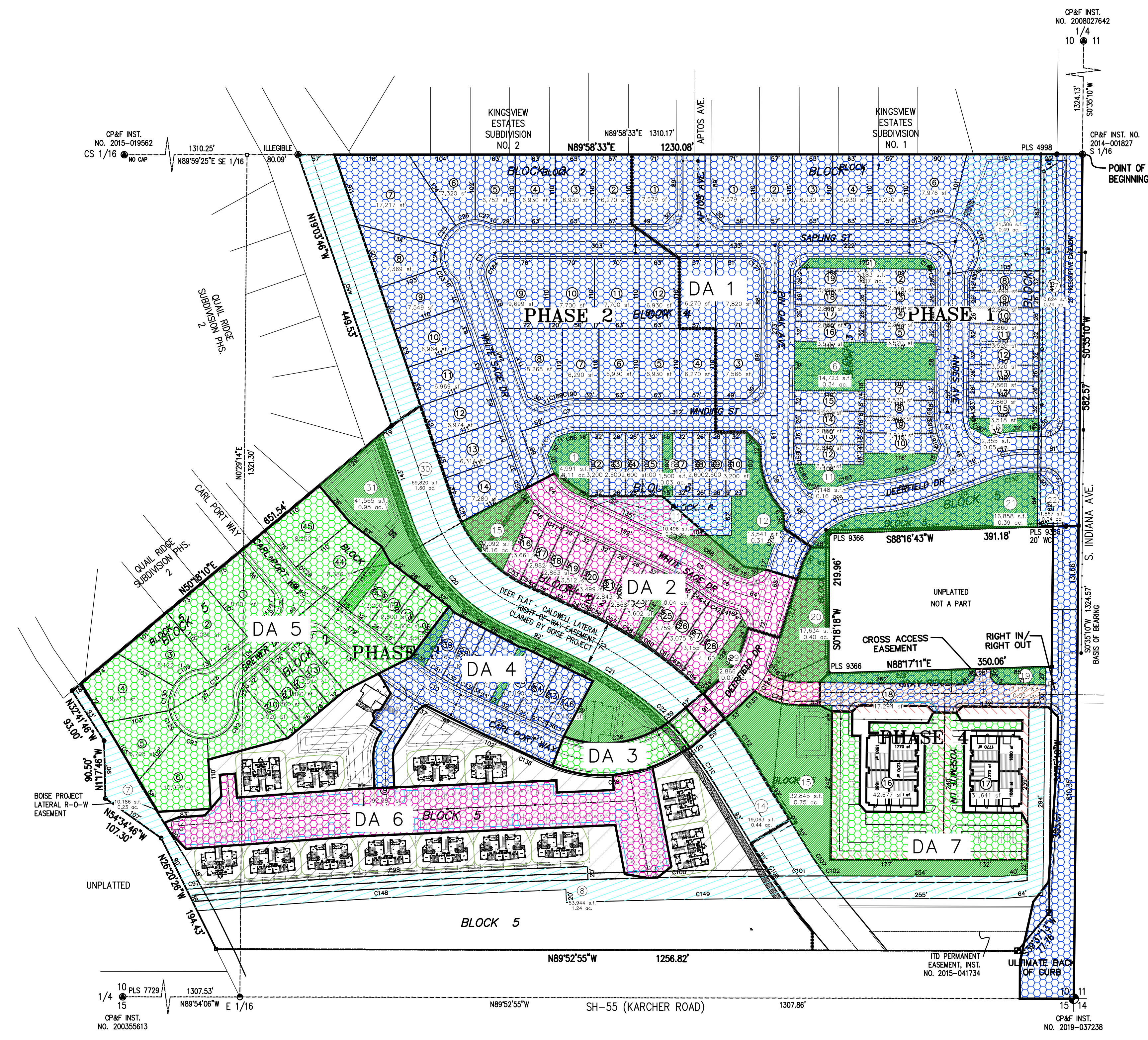
## Arrowrock Farm - Preliminary Drainage Calculations

Updated: 7/11/2022

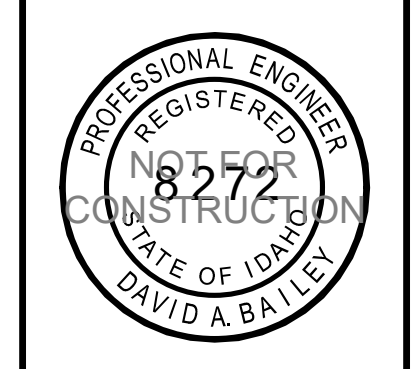
Drainage Areas												
<u>Drainage Area</u>	<u>Area (sf)</u>	<u>Area (acres)</u>	<u>Runoff Coefficient (estimated)</u>	<u>Time of Conc (min) (estimated)</u>	<u>100-Yr Rainfall Intensity (in/hr)</u>	<u>25-Yr Rainfall Intensity (in/hr)</u>	<u>Q100 (cfs)</u>	<u>Q25 (cfs)</u>	<u>Q100 Combined (cfs)</u>	<u>110% of Q100 (cfs)</u>	<u>Drains to SG Trap:</u>	<u>Drains to Pond:</u>
1	676284	15.525	0.50	30	1.82	1.39	14.13	10.79	14.13	15.54		Pond 1
2	113256	2.600	0.50	30	1.82	1.39	2.37	1.81	2.37	2.60		Pond 2
3	11849	0.272	0.95	30	1.82	1.39	0.47	0.36	0.47	0.52		Pond 3
4	46982	1.079	0.50	30	1.82	1.39	0.98	0.75	0.98	1.08		Pond 4
5	138894	3.189	0.50	30	1.82	1.39	2.90	2.22	2.90	3.19		Pond 5
6	60763	1.395	0.95	30	1.82	1.39	2.41	1.84	2.41	2.65		Pond 6
7	42021	0.965	0.95	30	1.82	1.39	1.67	1.27	1.67	1.83		Pond 7

Caldwell IDF		
<u>Tc</u>	<u>100-Year</u>	<u>25-Year</u>
10	3.11	2.37
15	2.62	2.00
20	2.15	1.50
25	1.90	1.45
30	1.82	1.39
60	1.15	0.88

																		Storm Duration (hrs)														
																		0.166	0.25	0.5	1	2	3	6	12	18	24					
																		Intensity (hrs)														
																		3.11	2.62	1.82	1.15	0.66	0.48	0.30	0.19	0.16	0.12					
	Combined Drainage Area (acres)	Weighted Runoff Coefficient	Infiltration Area (sf)	Infiltration Rate (in/hr)	Area at HW Line (sf)	Water Depth (ft)	Capacity (cu ft)	V100 (cu ft)	V100 (cu ft)	V100 (cu ft)	V100 (cu ft)	V100 (cu ft)	V100 (cu ft)	V100 (cu ft)	V100 (cu ft)	V100 (cu ft)	V100 (cu ft)	Design V100 (cu ft)	V100 vs. Capacity (cu ft)	Time to Drain (hrs) [120 max]:												
Pond 1	15.525	0.50	7213	5.33	13942	4.0	<b>42310</b>	18064	22754	30976	37611	39620	39812	40388	32821	29613	4608	<b>40388</b>	1922	12.60												
Pond 2	2.600	0.50	1317	5.33	4995	3.0	<b>9468</b>	3015	3795	5156	6236	6509	6478	6386	4740	3825	-740	<b>6509</b>	2959	11.12												
Pond 3	0.272	0.95	610	5.33	1791	2.0	<b>2401</b>	566	704	924	1038	891	684	62	-1472	-2861	-4976	<b>1038</b>	1363	3.83												
Pond 4	1.079	0.50	427	5.33	2691	3.0	<b>4677</b>	1262	1591	2173	2656	2838	2894	3063	2794	2828	1348	<b>3063</b>	1614	16.14												
Pond 5	3.189	0.50	4961	5.33	7620	2.0	<b>12581</b>	3376	4171	5357	5714	4116	2145	-3768	-17385	-30106	-47304	<b>5714</b>	6867	2.59												
Pond 6	1.395	0.95	1966	5.33	4789	2.0	<b>6755</b>	3013	3778	5076	5996	5915	5523	4348	509	-2585	-9401	<b>5996</b>	759	6.86												
Pond 7	0.965	0.95	1374	5.33	2871	2.0	<b>4245</b>	2082	2611	3506	4138	4074	3794	2957	252	-1938	-6701	<b>4138</b>	107	6.78												



**Bailey Engineering, Inc.**  
 CIVIL ENGINEERING | PLANNING | CADD  
 1119 E. STATE STREET, SUITE 210  
 EAGLE, ID 83616  
 TEL: 208-898-0013  
 www.baileyengineers.com



CHECKED BY:  
 DAVID A. BAILEY P.E.  
 DRAWN BY:  
 JBD

REVISED	NO.	DATE	DESCRIPTION

**DRAINAGE MAP**  
**VERTREES SUBDIVISION**  
**TRILOGY DEVELOPMENT, INC.**

DATE:  
 05-06-2021  
 PROJECT:  
 C2020-032

SHEET  
**MAP**



**NAMPA & MERIDIAN IRRIGATION DISTRICT  
1503 FIRST STREET SOUTH, NAMPA, ID 83651-4395**

**Assessment #  
2303 - -**

**Assessment Number Report**

MailTo: VERTREES, ROBERT-JACKIE LIVING TRUST  
5467 W ASTONTE DR  
MERIDIAN ID 83646-7109

Deeded\_1: VERTREES, ROBERT-JACKIE LIVING TRUST

Property Address: INDIANA AVE  
CALDWELL ID

Canyon County Parcel #: 32709011 0

Legal Description:  
BEG SE COR SEC 10 3N 3W, TH W 1307.9 FT, TH N 703.7 FT, TH N 50\* E 301.7 FT, TH N 18\* W 456.7 FT, TH N 28\* W 159 FT, TH E 1210 FT M/L, TH S 578.08 FT, TH W 391.16 FT, TH S 220 FT, TH E 390.02 FT, TH S 521.92 FT TO BEG

Status: Active	Actual Acres: 35.92	<u>Tax Roll 2020</u>	
Roll: Tax_Roll	District Land: No	Assessment Expense:	17.25
Tax Group: Regular	Urban Irrigation:	District Drainage:	94.53
TCCA: No	Pending Segregation: No	Ridenbaugh Maintenance:	0.00
LID:	Pending Exclusion: No	Project Maintenance:	1,710.96
Bankruptcy: No	Tax Deed: No	Urban Irrigation:	0.00
Delinquent: No			

**Water and Drainage Rights:**

Ridenbaugh Miner's Inches:		Ridenbaugh Drainage Acres:		Ridenbaugh Acre Feet:	
Ridenbaugh Acres:		Project Drainage Acres:	33.76	Project Acre Feet:	67.52
Project Miner's Inches:	21.09	Settlers Drainage Acres:		Arrowrock Acre Feet:	
Project Acres:	33.76	New York Drainage Acres:			

**Water Delivery:**

Delivery Agent	Lateral	Tap	Rotate	RMI	RA	PMI	PA
BoardControl	(none)	0	No			21.09	33.76

**Comments:**

**Notice Mailed to:**

- 2020 VERTREES, ROBERT-JACKIE LIVING TRUST  
5467 W ASTONTE DR  
MERIDIAN ID 83646-7109
- 2019 VERTREES, ROBERT-JACKIE LIVING TRUST  
5467 W ASTONTE DR  
MERIDIAN ID 83646-7109
- 2018 VERTREES, ROBERT-JACKIE LIVING TRUST  
5467 W ASTONTE DR  
MERIDIAN ID 83646-7109
- 2017 VERTREES, ROBERT-JACKIE LIVING TRUST  
5467 W ASTONTE DR  
MERIDIAN ID 83646-7109
- 2016 VERTREES, ROBERT-JACKIE  
2320 SUNSET AVE  
CALDWELL ID 83605-5151
- 2015 VERTREES, ROBERT W  
2320 SUNSET ave  
CALDWELL ID 83605-5151
- 2014 VERTREES, ROBERT W  
2320 SUNSET ave  
CALDWELL ID 83605-5151

**NAMPA & MERIDIAN IRRIGATION DISTRICT  
1503 FIRST STREET SOUTH, NAMPA, ID 83651-4395**

**Assessment #  
2303 - -**

**Assessment Number Report**

2013 VERTREES, ROBERT W  
2320 SUNSET ave  
CALDWELL ID 83605-5151

2012 VERTREES, ROBERT W  
2320 SUNSET ave  
CALDWELL ID 83605-5151

2011 VERTREES, ROBERT W  
2320 SUNSET ave  
CALDWELL ID 83605-5151

2010 VERTREES, ROBERT W  
2320 SUNSET  
CALDWELL ID 83605-5151

2009 VERTREES, ROBERT W  
2320 SUNSET  
CALDWELL ID 83605-5151

2008 VERTREES, ROBERT W  
2320 SUNSET  
CALDWELL ID 83605-5151

2007 VERTREES, ROBERT W  
2320 SUNSET  
CALDWELL ID 83605-5151

2006 VERTREES, ROBERT W  
2320 SUNSET  
CALDWELL ID 83605-5151

2005 VERTREES, ROBERT W  
2320 SUNSET  
CALDWELL ID 83605-5151

2004 VERTREES, ROBERT W  
2320 SUNSET  
CALDWELL ID 83605-5151

2003 VERTREES, ROBERT W  
2320 SUNSET  
CALDWELL ID 83605-5151

2002 VERTREES, ROBERT W  
2320 SUNSET  
CALDWELL ID 83605-5151

2001 VERTREES, ROBERT W  
2320 SUNSET  
CALDWELL ID 83605-5151

2000 VERTREES, ROBERT W  
2320 SUNSET  
CALDWELL ID 83605

**History Log:**

12. Update (15-May-2017 02:33 PM koconnor)

Changed From:

Name/Address:

Modified:

Type: MailTo

Name: VERTREES, ROBERT-JACKIE LIVING TRUST

Address: GENERAL DELIVERY

City: CALDWELL

State: ID

Zip: 83605-9999

**NAMPA & MERIDIAN IRRIGATION DISTRICT  
1503 FIRST STREET SOUTH, NAMPA, ID 83651-4395**

**Assessment #  
2303 - -**

**Assessment Number Report**

-----  
11. Update (18-Oct-2016 09:38 AM sburnham)

Changed From:

Legal Description: BEG SE COR SEC 10 3N 3W, TH W 1307.9 FT, TH N 703.7 FT, TH N 50\* E 301.7 FT, TH N 18\* W 456.7 FT, TH N 28\* W 159 FT, TH E 1210 FT M/L, TH S 578.08 FT, TH W 391.16 FT, TH S 220 FT, TH E 390.02 FT, TH S 521.92 FT TO BEG

Name/Address:

Modified:

Type: Deeded\_1

Name: ROBERT & JACKIE VERTREES LIVING TRUST

Address:

City:

State:

Zip:

Type: MailTo

Name: VERTREES, ROBERT-JACKIE

Address: 2320 SUNSET AVE

City: CALDWELL

State: ID

Zip: 83605-5151

-----  
10. Update (13-Jan-2016 11:38 AM koconnor)

Instrument #: 2015011426

Changed From:

Name/Address:

Modified:

Type: MailTo

Name: VERTREES, ROBERT W

Address: 2320 SUNSET AVE

City: CALDWELL

State: ID

Zip: 83605-5151

-----  
9. Update (27-Dec-2011 02:28 PM pbecker)

Changed From:

Name/Address:

Modified:

Type: MailTo

Name: VERTREES, ROBERT W

Address: 2320 SUNSET ave

City: CALDWELL

State: ID

Zip: 83605-5151

**NAMPA & MERIDIAN IRRIGATION DISTRICT  
1503 FIRST STREET SOUTH, NAMPA, ID 83651-4395**

**Assessment #  
2303 - -**

**Assessment Number Report**

-----  
8. Update (22-Dec-2010 04:54 PM pbecker)

Changed From:

Name/Address:

Modified:

Type: MailTo

Name: VERTREES, ROBERT W

Address: 2320 SUNSET

City: CALDWELL

State: ID

Zip: 83605-5151

-----  
7. Update (18-Sep-2007 09:34 AM TCooper)

Instrument #: 200688892

Changed From:

County Parcel #:

Name/Address:

Modified:

Type: Deeded\_1

Name: VERTREES, ROBERT W

Address:

City:

State:

Zip:

-----  
6. Migrated (03-Mar-2006 07:13 PM Migrated)

Instrument #: 200135169

-----  
5. Migrated (13-Sep-2001 12:00 AM Migrated)

Userbase reason for legal change: Changed by a Segregation.

THE S1/2 E1/2 SE 1/4 SEC 10 3N 3W, EXCEPT COM AT THE SE QTR COR

SEC 10 3N 3W, TH W 1307.9 FT, TH N 703.7 FT TO RPB; TH CONT

N 763.8 FT, TH S 28\*E 159 FT, TH S 18\*E 456.7 FT, TH S 50\*W

301.7 FT TO BEG

-----  
4. Segregated (13-Sep-2001 12:00 AM Migrated)

Userbase Segregation Transaction #: PAB0708

Canceled:

Remaining In: 2303--

New: 2303D--

Remaining-In Parcel

-----  
3. Migrated (10-Oct-2000 12:00 AM Migrated)

Userbase reason for legal change: Legal Description Updated.

THE S1/2 E1/2 SE 1/4 SEC 10 3N 3W, EXCEPTING A PORTION OF THE

SE QTR SEC 10 3N 3W, TH W 1307.9 FT, TH N 703.7 FT TO RPB; TH

CONT N 763.8 FT, TH S 28\*E 159 FT, TH S 18\*E 456.7 FT, TH S 50\*W

**NAMPA & MERIDIAN IRRIGATION DISTRICT  
1503 FIRST STREET SOUTH, NAMPA, ID 83651-4395**

**Assessment #  
2303 - -**

**Assessment Number Report**

301.7 FT TO BEG  
-----

2. Migrated (15-Aug-2000 12:00 AM Migrated)

Userbase reason for legal change: Changed by a Segregation.

BEG SE COR SEC 10 3N 3W, TH N 89\*39' W 1307.9 FT M/L, TH N  
0\*43' E 703.7 FT, TH N 50\*32' E 301.7 FT, TH N 18\*50' W 456.7  
FT, TH N 28\*32' W 159 FT, TH N ALONG W BDRY E-HF SE QTR TO PT  
433.2 FT S FROM NW COR NE QTR SE QTR, TH N 45\* E 617.6 FT TO N  
BDRY SE QTR, TH E 883.3 FT M/L TO NE COR SE QTR, TH S 2640 FT  
M/L TO BEG

-----  
1. Segregated (15-Aug-2000 12:00 AM Migrated)

Userbase Segregation Transaction #: SGH0999

Canceled:

Remaining In: 2303--

New: 2303C--

Remaining-In Parcel  
-----



September 1, 2021

Shawn Brownlee  
Trilogy Development  
9839 West Cable Car Street, Suite 101  
Boise, Idaho 83709  
[shawn@trilogyidaho.com](mailto:shawn@trilogyidaho.com)

**RE: Geotechnical Evaluation  
Vertrees Subdivision  
Caldwell, Idaho  
ALLWEST Proposal No. 521-255G**

Mr. Brownlee:

**ALLWEST** has completed the authorized geotechnical evaluation for the proposed Vertrees Subdivision to be located on the northwestern corner of Indiana Avenue and Karcher Road in Caldwell, Idaho. The purpose of this evaluation was to characterize subsurface soil conditions at the site and provide geotechnical-related recommendations to assist planning, design, and construction of the proposed development. Based on our evaluation, the site is suitable for the planned development. The attached report presents the results of our field evaluation, laboratory testing, and recommendations.

We appreciate the opportunity to be of service to Trilogy Development. If you have any questions or need additional information, please contact us at (208) 895-7898.

Sincerely,

**ALLWEST**

**Adrian Mascorro, P.E.**  
Area Manager



**GEOTECHNICAL EVALUATION  
VERTREES SUBDIVISION  
CALDWELL, IDAHO  
ALLWEST PROJECT NO. 521-111G**

September 1, 2021

**Prepared for:**  
Trilogy Development  
9839 West Cable Car Street, Suite 101  
Nampa, Idaho 83709

**Prepared By:**  
ALLWEST  
255 North Linder Road, Suite 100  
Meridian, Idaho 83642



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Vertrees Subdivision  
Caldwell, Idaho

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Appendix A – Site Vicinity Map, Exploration Location Plan  
Appendix B – Test Pit Logs, Unified Soil Classification System  
Appendix C – Laboratory Test Results



GEOTECHNICAL | ENVIRONMENTAL  
MATERIALS TESTING | SPECIAL INSPECTION

*AN EMPLOYEE-OWNED COMPANY*



## Geotechnical Evaluation Vertrees Subdivision Caldwell, Idaho

**ALLWEST** has completed the geotechnical evaluation for the proposed Vertrees Subdivision to be located on the northwestern corner of Indiana Avenue and Karcher Road in Caldwell, Idaho. The general location of the site is shown on Figure A-1 – *Site Vicinity Map* in Appendix A of this report. The purpose of this evaluation was to identify subsurface soil conditions at the site, and provide opinions and recommendations for the proposed development, relative to earthwork, stormwater disposal, and pavement section design. This report details the results of our field evaluation and presents recommendations to assist development.

### 1.0 SCOPE OF SERVICES

Our scope of services for the project included the following:

- 1) Reviewed a previous geotechnical evaluation for the site, titled *Geotechnical Engineering Report* (dated September 7, 2006) by MTI. You provided us a copy of this report for review.
- 2) Prior to subsurface exploration, we visited the site to observe site accessibility and to pre-mark exploration locations, as required by Idaho Digline.
- 3) Notified Idaho Digline to locate on-site utilities, as required by Idaho state law.
- 4) Subcontracted a backhoe and operator to observe the excavation of 11 test pits throughout the site.
- 5) Visually described, classified, and logged the soils encountered within test pits and obtained soil samples within select test pits.
- 6) Performed seepage tests within select test pits to evaluate subsurface seepage and installed slotted PVC pipe within 9 test pits for future groundwater monitoring.
- 7) Performed laboratory tests on select soil samples to assess some of the soil engineering properties and characteristics.
- 8) Reviewed the results of the field evaluation and laboratory testing, performed engineering analyses, and prepared this report with field and laboratory results, subsurface logs, and geotechnical-related opinions and recommendations.

We provided our services for the project in general accordance with our geotechnical proposal (521-255P) dated May 28, 2021.

### 2.0 PROJECT UNDERSTANDING

Based on electronic communication with you, and review of the *Conceptual Plan* (dated February 14, 2021) by Baily Engineering, we understand the development will consist of



an approximate 35-acre residential subdivision with 124 buildable residential lots, 23 four-plex lots, and 3 commercial lots with associated infrastructure, stormwater disposal facilities, and asphalt-paved roadways. We did not review proposed grading plans, as they were not available at the time of this proposal, but we anticipate cut and fill for site grading to be 3 feet or less.

### **3.0 FIELD EVALUATION PROCEDURES**

On June 15, 2021, we observed the excavation of 11 test pits to maximum depths ranging from 12 to 13 feet below existing ground. We identified subsurface soil conditions, logged the subsurface soil profiles, and obtained soil samples for laboratory testing. We performed field seepage testing at select depths within 5 test pits to help evaluate subsurface soil seepage. At completion of exploration, the test pits were loosely backfilled with excavated soil approximately level with existing ground surfaces. Approximate test pit locations are shown on Figure A-2 – *Exploration Location Plan* in Appendix A. Subsurface exploration was previously performed for the site in 2006 by MTI; we also present the locations of those test pits on Figure A-2.

### **4.0 SITE CONDITIONS**

At the time of exploration, the site primarily consisted of farmland. The Deer Flat Caldwell Canal transects the site from southeast to northwest, and the Forest Canal borders the southwest side of the site. In general, the site is bordered by Indiana Avenue to the east, Karcher Road/Highway 55 to the south, the Forest Canal to the southwest, and existing residential development to the northwest and north.

#### **4.1 General Geologic Conditions**

The geologic conditions at the site are mapped as Glens Ferry Formation (Tgf) on the “*Geologic Map of the Boise Valley and Adjoining Area, Western Snake River Plain, Idaho*” (by Othberg and Stanford, 1992). These tertiary-aged deposits are described as greenish gray poorly consolidated siltstone and fine sandstone with distinct thick beds and indistinct thin bedding (Othberg and Stanford, 1992).

The soils encountered in test pits are not consistent with geologic mapping.

#### **4.2 General Soil Conditions**

The *USDA Natural Resources Conservation Service* (NRCS), which represents the upper 5 feet of soil profile, has mapped the soils on the site as Purdam silt loam. These soils generally consist of silt loam, silty clay loam, cemented materials, and stratified very gravelly sand to loam. Parent materials include mixed alluvium, lacustrine deposits, and/or loess.

The soils encountered in test pits are generally consistent with NRCS mapping.



## 5.0 EXPLORATION AND SAMPLING

We observed the excavation of 11 test pits with a Case 580C rubber-tired backhoe with a 3-foot-wide bucket. We visually described the soils encountered within test pits referencing ASTM D 2488, which utilizes the *Unified Soil Classification System (USCS)*, and we obtained soil samples at select depths for further identification and laboratory testing. We performed seepage testing within 5 test pits on site. The test pit locations were identified on-site with white-flagged stakes or white PVC pipes.

We obtained Google Earth latitude and longitude coordinates of test pit locations with a hand-held cellular device. These coordinates can be found on individual test pit logs in Appendix B and should be considered accurate to the degree implied by the method used.

### 5.1 Subsurface Soil Conditions

At the time of exploration, the site contained approximately 6 inches of surficial roots and vegetation at the ground surface. Where trees are encountered, large roots may be encountered up to 4 feet below ground. In general, the subsurface soils within the observed test pits consisted of surficial lean clayey soils underlain by varying thicknesses of silty and sandy soils overlying gravelly soils with depth. Localized areas of surficial uncontrolled fill were observed in test pits TP-1, TP-5, and TP-7 to depths of 2 feet, 4 feet, and 1½ feet, respectively, which most likely are attributed to adjacent access lanes.

Detailed soil descriptions, depths, and notes are presented on individual test pit logs in Appendix B. The descriptive soil terms used on the test pit logs in this report, can be referenced by the Unified Soil Classification System (USCS). A copy of the USCS is included in Appendix B. Subsurface conditions may vary between exploration locations. Such changes in subsurface conditions may not be apparent until construction, and if they change significantly from those observed during exploration, then accordingly, construction timing, plans, and costs may change.

### 5.2 Subsurface Water

At the time of exploration, we did not observe groundwater to a maximum depth of 13 feet below existing ground. Groundwater in the area is typically influenced by local irrigation and nearby canals, drains, and laterals. Groundwater may also be influenced by precipitation, on-site construction, and development to adjacent sites. Subsurface water will fluctuate throughout the different seasons of the year but will most likely be affected during seasonal snow melt and irrigation seasons (March to October). We recommend monitoring be accomplished to verify seasonal high groundwater elevations throughout the site to assist civil stormwater disposal design.

We installed slotted PVC pipes within 9 test pits throughout the site for future groundwater monitoring. ALLWEST is currently performing monthly groundwater monitoring to confirm the absence or presence of groundwater within the installed pipes.



## 6.0 LABORATORY TESTING

We performed laboratory testing to supplement field classifications and to assess some of the soil engineering properties and parameters. The laboratory tests conducted included moisture content (ASTM D 2216), gradation (ASTM D 1140), Atterberg limits (ASTM D 4318), and California bearing ratio (CBR) (ASTM D 1883). Laboratory test results are summarized in Appendix C and are also presented on test pit logs in Appendix B, where applicable.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our observations, testing, and evaluation, it is our opinion the site is suitable for the planned residential development, provided our recommendations are adhered to. The following recommendations are presented to assist with planning, design, and construction of the development, relative to earthwork, infrastructure, stormwater disposal, and asphalt pavements.

These recommendations are based on our understanding of the proposed development, the conditions observed within exploration locations, laboratory test results, and engineering analysis. If the scope of construction changes, or if conditions are encountered during construction that differ from those described herein, we should be notified so we can review our recommendations and provide revisions, if necessary. Foundation-related recommendations are not provided as part of this evaluation.

### 7.1 Grading and Drainage

We did not review final grading plans for this development, but we anticipate cuts and fills for site grading to be 3 feet or less. We should be notified if actual site grading varies significantly from this stated information, as it may affect our recommendations provided herein.

Final site grading should be such that surfaces slope and drain away from any development areas.

### 7.2 Site Preparation

- Prior to conducting site grading, surficial soil containing vegetation, roots and organics should be removed below proposed site grading fill areas, pavement areas, and any other development areas. In general, we anticipate approximately 6 inches of site stripping will be required for most of the site to remove surficial vegetation and roots.
- Existing uncontrolled fill soils (as encountered in test pits TP-1, TP-5, and TP-7) should be completely over-excavated and replaced with suitably moisture-conditioned and compacted fill soils, to compaction requirements herein.



- Where trees are encountered and will be removed as part of the development, large root systems should be completely over-excavated and replaced with suitable fill soils. Tree roots depths will not fully be known until construction, but we anticipate approximately 3 to 4 feet of over-excavation will be required to remove large tree roots.
- Where existing irrigation ditches/laterals and any soft soils associated with on-site ditches/laterals are located on-site below planned development areas, complete over-excavation of organic-type, loose, and soft/wet soils is required down to firm or medium dense native soils. These over-excavated areas must be replaced with suitably moisture-conditioned and compacted fill soils. Depths and lateral limits of loose and soft/wet soils will not fully be known until construction, and as such, the earthwork contractor should have contingencies in place to ensure these areas are fully over-excavated within future development areas.
- Loose test pit backfill will settle with time, so where any test pits are located below proposed structures or any development areas, the loose test pit backfill soil must be re-excavated its entire depth and replaced with suitably moisture-conditioned and compacted fill soils. Over-excavated soils can be reused to backfill the test pits, provided the soils are not overly saturated, and they can achieve the required compaction criteria as required in section 7.6 *Fill Placement and Compaction*. Test pit locations that were observed by ALLWEST are identified in the field with white-flagged stakes or with white PVC pipes. Approximate test pit locations are shown on Figure A-2 – *Exploration Location Plan*, and also includes approximate MTI test pit locations. We recommend test pit areas be accurately surveyed so that they may be located and remediated, prior to earthwork construction and development.
- After site stripping, over-excavations, loose test pit remediation, and prior to site grading, utility/roadway construction, or any other type of development, the exposed subgrades should be proof-rolled with a minimum of a 5-ton vibratory roller, with loaded dump trucks, with loaded front-end loaders, or with a vibratory hoe-pack, to confirm subgrade stability. This will also assist in identifying any soft subgrade areas. If subgrades are observed to significantly deflect or pump, the subgrades should be over-excavated and replaced with properly compacted fills or stabilized as recommended in section 7.3 *Subgrade Stabilization*.

### 7.3 Subgrade Stabilization

If the subgrade soils are observed to pump or deflect significantly during grading, the subgrades should be stabilized prior to fill placement. Subgrades may be stabilized using geosynthetic reinforcement in conjunction with imported granular structural fill. The required thicknesses of granular structural fill (used in conjunction with geosynthetic reinforcement) will be dependent on the construction traffic loading, which is unknown at this time. Therefore, a certain degree of trial and error may be required during construction to verify recommended stabilization section thicknesses.



Geosynthetic reinforcement should consist of Tensar TX-160 or equivalent. Alternatives to Tensar TX-160 must be approved by the geotechnical engineer prior to use on site. The following recommendations are provided for subgrade stabilization using geosynthetic reinforcement.

- Geosynthetic reinforcement materials should be placed on a non-disturbed subgrade with smooth surface. Loose and disturbed soil should be removed prior to placement of geosynthetic reinforcement materials.
- A minimum weight 4-ounce, non-woven filter fabric should be placed on the undisturbed subgrade. The geosynthetic reinforcement should be placed directly on top of the filter fabric. The filter fabric and geosynthetic reinforcement should be unrolled in the primary direction of fill placement and should be over-lapped at least 3 feet or follow manufacturer's recommendations.
- The geosynthetic materials should be pulled taut to remove slack.
- Construction equipment should not be operated directly on the geosynthetic materials. Fill should be placed from outside the excavation to create a pad to operate equipment on. We recommend a minimum of 12 to 18 inches of granular structural fill be placed over the geosynthetic reinforcement before operating construction equipment on the fill. Low pressure, track-mounted equipment should be used to place fill over the geosynthetic reinforcement.
- Granular structural fill placed directly over geosynthetic reinforcement should be properly moisture-conditioned prior to placement, and once placed, be statically rolled. This combination of filter fabric, geosynthetic reinforcement, and granular structural fill is considered the "bridge" section over soft subgrades.
- After the "bridge" section has been placed, the remaining fill material above the "bridge" section should be compacted to structural fill criteria in section 7.6 *Fill Placement and Compaction* utilizing vibratory compaction methods.
- Vibration should be discontinued if it reduces the subgrade stability. If compaction criterion is not met within the fill lift above the "bridge" section, the "bridge" section is not thick enough, and subgrade stabilization must be attempted again with a greater "bridge" section.

The geotechnical engineer or a representative of the geotechnical engineer must be on-site during subgrade stabilization to verify our recommendations are followed, and to provide additional recommendations, as needed.



### 7.4 Excavation

Excavation of on-site soil can be accomplished with typical excavation equipment. We recommend excavations greater than 4 feet deep be sloped no steeper than 1.5H:1V (horizontal to vertical). Alternatively, deeper excavations may be shored or braced in accordance with *Occupational Safety and Health Administration* (OSHA) specifications and local codes. Regarding trench wall support, the site soil is considered Type C soil according to OSHA guidelines. Ultimately, the contractor is responsible for site safety, excavation configurations and following OSHA guidelines.

### 7.5 Materials

Stripped soils containing vegetation or debris are only suitable for use in non-structural landscape areas. Existing on-site soils may be reused as site grading fill, provided they are stockpiled separately, meet the criteria below, and are moisture-conditioned and compacted as required in this report. Imported granular soils should be free of organics, debris, and other deleterious material and meet the following criteria. Import materials should be approved by ALLWEST prior to delivery to the site.

Fill Type	Criteria
Site Grading Fill	Maximum size ≤ 6 inches; Retained on ¾-inch sieve < 30%; Liquid limit < 50%
Granular Structural Fill, Granular Subbase	Maximum size ≤ 6 inches; Retained on ¾-inch sieve < 30%; Passing No. 200 sieve ≤ 15%; Non-plastic Alternatively, meet ISPWC section 801 (6 inch max)
Crushed Base Course	Maximum size ≤ 1 inch; Retained on ¾-inch sieve < 10%; Passing No. 200 sieve < 10%; Non-plastic Alternatively, meet ISPWC section 802 (Type I)
Utility Trench Backfill	Maximum size ≤ 2 inches; Retained on ¾-inch sieve < 30%; Passing No. 200 sieve ≤ 10%; Non-plastic Alternatively, meet ISPWC section 305 (Type I)

### 7.6 Fill Placement and Compaction

Fill should be placed in lift thicknesses which are appropriate for the compaction equipment used. Typically, 8- to 12-inch-thick loose-lifts are appropriate for typical rubber-tire and steel-drum compaction equipment. Lift thicknesses should be reduced to 4 inches for hand-operated compaction equipment. Fill should be moisture-conditioned to within 2 percentage points of the optimum moisture content prior to placement to facilitate compaction. Fill should be compacted to the following percentages of the maximum dry density as determined by ASTM D 1557 (modified Proctor).

For roadway and utility trench construction only, the local governing jurisdiction may provide their own method of determining the maximum dry density and compaction requirements (including subgrade).



Fill Area	Compaction (%)
Subgrade <sup>1</sup>	Proof-roll <sup>2</sup>
Site Grading Fill / Granular Structural Fill / Pavements	95
Granular Subbase / Crushed Base Course	95 <sup>2</sup>
Utility Trench Backfill	92 <sup>2</sup>

<sup>1</sup>Subgrade stability must be verified and approved by a representative of the geotechnical engineer prior to any fill placement or construction.

<sup>2</sup>For roadway and utility trench construction only, the local governing jurisdiction may provide their own method of determining the maximum dry density and compaction requirements (including subgrade).

### 7.7 Utility Trenches

Support soils for underground utilities will most likely consist of lean clays with sand, sandy lean clays, silty-clays with sand, silts with sand, silty sands, poorly-graded sands with silt, and/or poorly-graded gravels with silt and sand. These soils should provide adequate support for utilities, provided utility subgrades are compacted utilizing vibratory methods, such as with a large vibratory hoe-pack.

If utility pipe subgrades are soft, yielding, and/or saturated at the time of construction, subgrade over-excavation and replacement with competent structural fill may be required below utilities. If support soils yield and/or are saturated at the time of construction, we should be notified to observe these soils and provide additional recommendations, as necessary.

We strongly recommend backfilling trench excavations with fill soils which meet the criteria in section 7.5 *Materials*, as on-site fine-grained soils (silts and clays) may be difficult to moisture-condition and compact in utility trenches.

### 7.8 Wet Weather Construction

We recommend earthwork for this site be scheduled for the drier seasons of the year. If construction is undertaken in wet periods of the year, it will be important to slope the ground surface to provide drainage away from construction. If construction occurs during or immediately after excessive precipitation, it may be necessary to over-excavate and replace saturated subgrade soil, which might otherwise be suitable.

The on-site soils are sensitive to disturbance when wet. If these soils become wet and unstable, we recommend construction traffic is minimized where these soils are exposed. Low ground-pressure (tracked) equipment should be used to minimize disturbance. Soft and disturbed subgrade areas should be excavated to undisturbed soil and backfilled with structural fill, compacted to requirements stated in this report.

In addition, it should be noted the on-site soils tend to have notable adhesion when wet and may be easily transported off-site by construction traffic.





### 7.9 Cold Weather Construction

The on-site soils are frost susceptible. If site grading and construction are anticipated during cold weather, we recommend good winter construction practices be observed. Snow and ice should be removed from excavated and fill areas prior to additional earthwork or construction. Pavement and flatwork portions of the construction should not be placed on frozen ground, nor should the supporting soils be permitted to freeze during or after construction. Frozen soils must not be used as fill.

If native subgrades, or suitably moisture-conditioned and compacted fill lifts, will be left exposed to freezing temperatures overnight, those areas should be protected with a minimum of 12 inches of loose soil, or covered with heated construction blankets, so construction subgrades do not freeze. Any frozen soils should be removed prior to additional fill placement or construction of any kind.

Earthwork construction during cold inclement weather will require a higher level of attention and detail to achieve required construction and compaction criteria and may lead to additional earthwork requirements and extended construction schedules.

### 7.10 Stormwater Disposal

During our field investigation we performed field seepage testing in test pits TP-2, -3, -8, -10, and -11 within poorly-graded gravels with sand (“clean” gravels), poorly-graded gravels with silt and sand (“dirty” gravels), and silty sands (non-cemented). We obtained field-measured seepage rates greater than 30 inches per hour (in/hr) in “clean” gravels, greater than 20 in/hr in “dirty” gravels, and 6 in/hr in non-cemented silty sands.

Due to the variable thicknesses and depths of weak cementation, we do not recommend stormwater disposal be accomplished within silty sands or poorly-graded sands with silt, due to anticipated poor and inconsistent soil seepage rates. Refer to test pit logs in Appendix B to verify depths and contacts of soils which are not suitable for stormwater disposal.

We recommend stormwater disposal occur within the “clean” and “dirty” gravels observed during our field exploration. The following allowable seepage rate should be utilized for on-site stormwater disposal.

- Poorly-graded gravels (“clean” and “dirty”) ..... 8 in/hr

Stormwater disposal facilities should be constructed a minimum of 1 foot into the receiving soil. Seepage beds should be “burrito wrapped” or otherwise maintain a separation/filter fabric between native fine-grained soils and drain rock/filter sand to help prevent fine-soil migration into drainable/filtering media. ALLWEST should observe stormwater disposal facility subgrades to establish if the suitable receiving soil is encountered (based on civil design) and to ensure the separation/filter fabric has been properly installed.



The proper separation from bottom of stormwater disposal facilities and seasonal high groundwater should be maintained. As such, seasonal high groundwater should be confirmed, via groundwater monitoring throughout seasonal snow melt and irrigation seasons, to assist civil stormwater design.

We installed PVC pipes within 9 test pits throughout the site for future groundwater monitoring. ALLWEST is currently performing monthly groundwater monitoring to help establish the absence or presence of groundwater within the installed pipes.

### 7.11 Asphalt Pavements

Prior to pavement section construction, the pavement subgrade should be proof-rolled as recommended in section 7.2 *Site Preparation* (or as recommended by local jurisdictions). Local and collector roadways should be designed for a 20-year *Equivalent Single Axle Load* (ESAL) of 33,000 and 370,000, respectively, which is equivalent to a traffic index (TI) of 6 and 8, respectively. If actual traffic conditions are different than what is stated, we should be notified so that we may modify our pavement section design.

Based on existing site grades, it is anticipated that majority of roadway subgrade areas will consist of lean clays with sand, sandy lean clays, silty-clays with sand, and/or silts with sand. We performed CBR testing on a silty-clay with sand soil to evaluate pavement section design, where we obtained a CBR of 10.7. Based on the variability of subgrade soils and our experience with lean clay soils, we recommend a CBR of 8 be utilized for design, which is approximately equivalent to an R-value of 20.

The following flexible asphalt pavement section design is provided adhering to the *Idaho Transportation Department* (ITD), which utilizes the AASHTO pavement design methodology. Based on subgrade preparation requirements and design assumptions, we recommend the following pavement sections be utilized for subdivision roadway construction for local and collector roadways.

Pavement Application	Asphalt Concrete (inches)	Crushed Base Course (inches)	Granular Subbase (inches)
Local Roadway	2.5	4	10
Collector Roadway	3	6	13

Base course and subbase should conform to the material recommendations as noted in this report and should be placed over a properly prepared subgrade. The subgrade, subbase, and base course surfaces should slope at no less than 2% away from the crown of the roadway to help reduce the potential for surface water infiltration into the underlying pavement subgrade.

Asphalt concrete pavement should be compacted to minimum of 92% of the Rice density. Crack maintenance on pavements should be performed at a minimum of every 3 years,



or when cracking is evident. Crack sealing will help reduce surface water infiltration into the supporting soils.

## 8.0 ADDITIONAL RECOMMENDED SERVICES

To maintain continuity and efficiency, we recommend ALLWEST be retained to provide observations and testing throughout construction. As an independent testing company, ALLWEST can document the recommendations included in this report are properly implemented, provide quality control testing, and observe earthwork for conformance to project specifications. As a minimum, we recommend the following testing and observations be provided by ALLWEST:

- Observe site stripping, any over-excavations, compaction of test pit backfill, and any other soil backfills.
- Observe subgrade proof-rolling and approve subgrades prior to fill construction, materials placement, or roadway section construction.
- Observe removal of disturbed soil and subgrade stabilization, if required.
- Observe seepage bed subgrades and observe overall construction.
- Conduct compaction testing of fill soils for general site grading, utility backfills, and pavement subsections.
- Observe placement of/test asphalt for compaction, oil content and gradation.

If we are not retained to provide the recommended construction observation and testing services, we shall not be responsible for soil engineering-related construction errors or omissions.

## 9.0 EVALUATION LIMITATIONS

This report has been prepared to assist planning, design, and construction of the proposed Vertrees Subdivision in Caldwell, Idaho. Our services consist of professional opinions and conclusions made in accordance with generally accepted geotechnical engineering principles and practices in our local area at the time this report was prepared. This acknowledgement is in lieu of all warranties either expressed or implied.

The following appendices complete this report:

- Appendix A – Site Vicinity Map, Exploration Location Plan
- Appendix B – Test Pit Logs, Unified Soil Classification System
- Appendix C – Laboratory Test Results

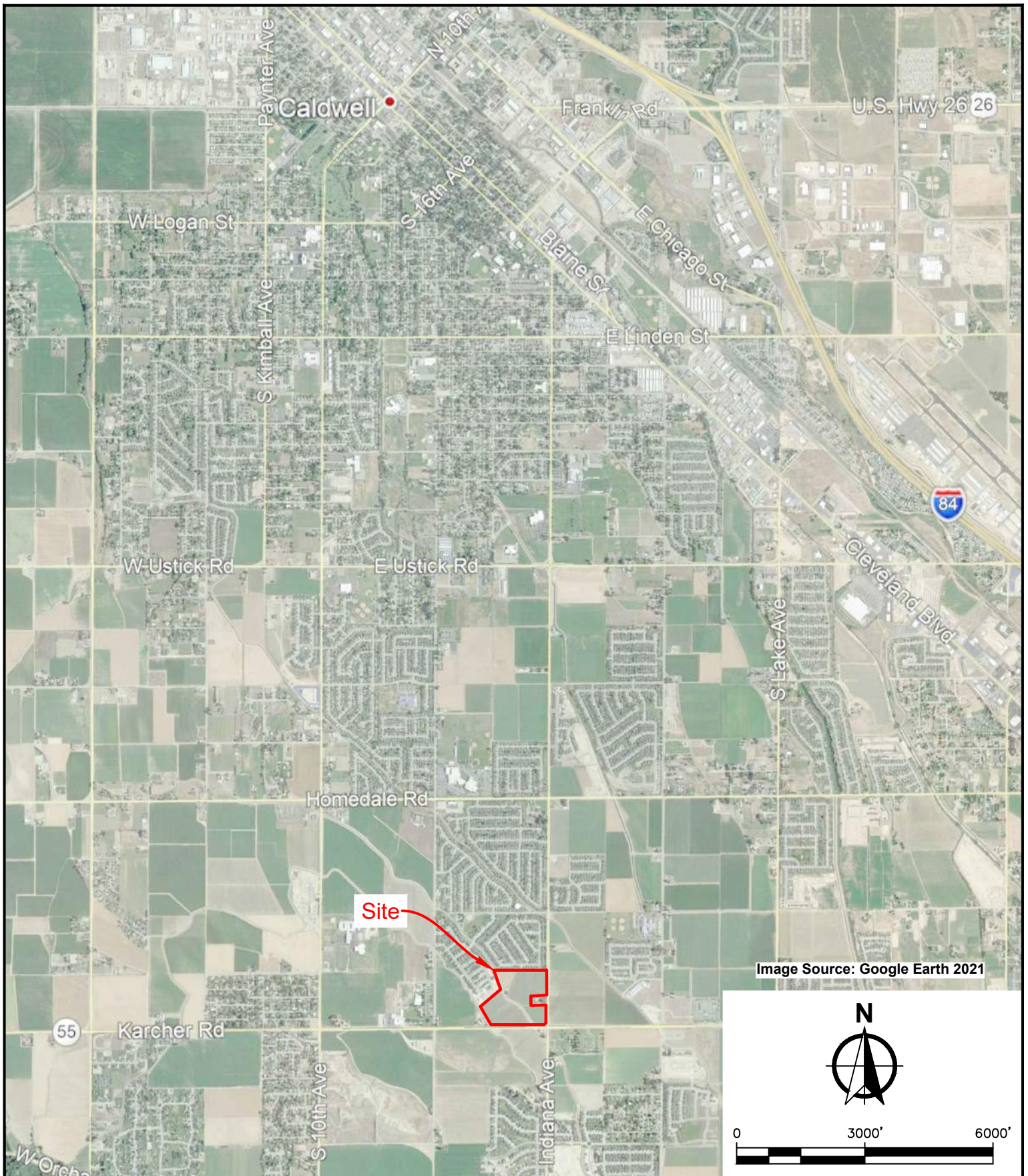


**Appendix A**

**A-1 – Site Vicinity Map**

**A-2 – Exploration Location Plan**





255 N. LINDER ROAD, SUITE 100  
 MERIDIAN IDAHO, 83642  
 PHONE: (208) 895-7898 FAX: (208) 898-3959

**FIGURE A-1: SITE VICINITY MAP**

GEOTECHNICAL EVALUATION

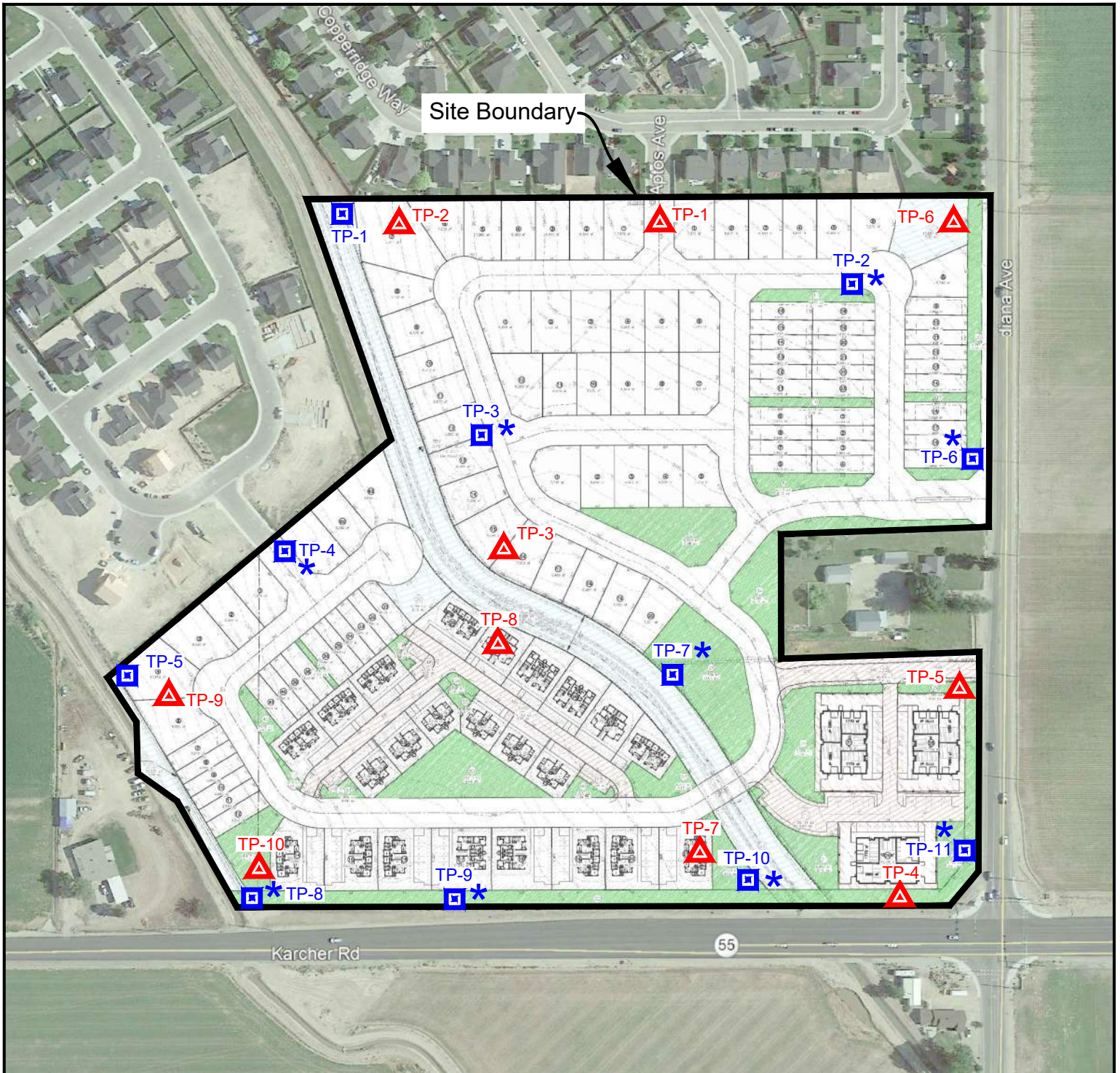
VERTREES SUBDIVISION

CALDWELL, IDAHO

CLIENT: TRILOGY DEVELOPMENT

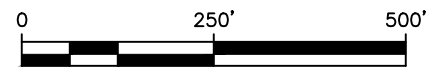
PROJECT NO.: 521-255G

DATE: AUGUST 2021



**LEGEND**

- TP-11 Approximate location of test pit observed by ALLWEST.
- Slotted PVC pipe was installed in test pit.
- TP-10 Approximate Location of test pit observed by MTI on August 8, 2006.



**FIGURE A-2: EXPLORATION LOCATION PLAN**

GEOTECHNICAL EVALUATION

VERTREES SUBDIVISION

CALDWELL, IDAHO

CLIENT: TRILOGY DEVELOPMENT

PROJECT NO.: 521-255G

DATE: AUGUST 2021



255 N. LINDER ROAD, SUITE 100  
 MERIDIAN IDAHO, 83642  
 PHONE: (208) 895-7898 FAX: (208) 898-3959

**Appendix B**  
**Test Pit Logs**  
**Unified Soil Classification System (USCS)**









**ALLWEST  
MERIDIAN, IDAHO  
GEOTECHNICAL SECTION  
TEST PIT LOG**

DATE STARTED: 6/15/2021  
DATE FINISHED: 6/15/2021  
OPERATOR: Steve Just  
COMPANY: Just Dig'lt Exc.  
LOGGER: Anish Pathak  
WEATHER: Sunny

**TP - 1**  
EXCAVATOR: CASE 580C  
EXCAVATION METHOD: 3-ft wide test pit

PROJECT: 521-255G  
Vertrees Subdivision

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

DEPTH (ft)	USCS	LATITUDE (DEGREES): N 43°36'28.5552" (43.607932°) LONGITUDE (DEGREES): W -116°40'38.5896" (-116.677386°)		GRAPHIC LOG	SAMPLE	NOTES
		TOTAL DEPTH: 13'				
		DESCRIPTION				
0		Lean CLAY with sand (Fill); brown, stiff, moist				
1	FILL					
2		SILT with sand (Native); brown, medium dense, moist			BG	Passing No. 200 sieve = 73% Moisture content = 24%
3	ML					
4		Silty SAND; light brown, medium dense, moist				
5	SM	...weak cementation observed throughout				
6		Poorly-graded GRAVEL with silt and sand; light brown, medium dense, moist				
7	GP-GM	...weak cementation observed throughout				
8		Poorly-graded GRAVEL with sand; tan, medium dense, moist				
9		...up to 6-inch-diameter cobbles observed randomly throughout				
10	GP					
11		Test pit terminated at 13 feet.				
12						
13						
14						
15						
15						
15		WATER LEVELS				
		▽ WHILE EXCAVATING ▽ AT COMPLETION ▽ AFTER EXCAVATING				






**ALLWEST  
MERIDIAN, IDAHO  
GEOTECHNICAL SECTION  
TEST PIT LOG**

DATE STARTED: 6/15/2021  
DATE FINISHED: 6/15/2021  
OPERATOR: Steve Just  
COMPANY: Just Dig'it Exc.  
LOGGER: Anish Pathak  
WEATHER: Sunny

**TP - 2**  
EXCAVATOR: CASE 580C  
EXCAVATION METHOD: 3-ft wide test pit

PROJECT: 521-255G  
Vertrees Subdivision

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

DEPTH (ft)	USCS	LATITUDE (DEGREES): N 43°36'27.3564" (43.607599°) LONGITUDE (DEGREES): W -116°40'26.7204" (-116.674089°)		GRAPHIC LOG	SAMPLE	NOTES
		TOTAL DEPTH: 13'				
		DESCRIPTION				
0	CL	Lean CLAY with sand (Native); brown, stiff, moist			BG	Significant roots and vegetation observed to 6 inches. Passing No. 200 sieve = 82% Moisture content = 22% LL = 35, PL = 21, PI = 14
1		Silty SAND; brown to light brown, medium dense, moist				
2	SM	Silty SAND; brown to light brown, medium dense, moist			BG	Passing No. 200 sieve = 37% Moisture content = 29%
3						
4						
5						
6						
7	...moderate cementation observed from 5 to 9 feet					
8						
9	GP-GM	Poorly-graded GRAVEL with silt and sand; light brown, medium dense, moist				Field seepage test performed at 9.5 feet. Field seepage rate = >20 in/hr.
10						
11		...up to 9-inch-diameter cobbles observed randomly throughout				
12						
13	Test pit terminated at 13 feet. Slotted PVC pipe installed to 13 feet.					
14						
15	WATER LEVELS					
	<input type="checkbox"/> WHILE EXCAVATING <input type="checkbox"/> AT COMPLETION <input type="checkbox"/> AFTER EXCAVATING					





**ALLWEST  
MERIDIAN, IDAHO  
GEOTECHNICAL SECTION  
TEST PIT LOG**

DATE STARTED: 6/15/2021  
DATE FINISHED: 6/15/2021  
OPERATOR: Steve Just  
COMPANY: Just Dig'it Exc.  
LOGGER: Anish Pathak  
WEATHER: Sunny

**TP - 3**  
EXCAVATOR: CASE 580C  
EXCAVATION METHOD: 3-ft wide test pit

PROJECT: 521-255G  
Vertrees Subdivision

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

DEPTH (ft)	USCS	LATITUDE (DEGREES): N 43°36'24.6204" (43.606839°) LONGITUDE (DEGREES): W -116°40'35.0328" (-116.676398°)		GRAPHIC LOG	SAMPLE	NOTES
		TOTAL DEPTH: 13'				
		DESCRIPTION				
0		Lean CLAY with sand (Native); brown, stiff, moist				Significant tree roots to 4 feet.
1	CL					
2		Silty SAND; light brown, medium dense, moist				Field seepage test performed at 4.5 feet. Field seepage rate = 6 in/hr.
3		...weak cementation observed from 2.5 to 4 feet				
4	SM					
5		Poorly-graded GRAVEL with silt and sand; light brown, medium dense, moist				
6						
7						
8						
9	GP-GM	...up to 9-inch-diameter cobbles observed randomly throughout				
10						
11						
12						
13		Test pit terminated at 13 feet. Slotted PVC pipe installed to 12 feet.				
14						
15	WATER LEVELS					
	▽ WHILE EXCAVATING ▼ AT COMPLETION ▾ AFTER EXCAVATING					

**ALLWEST  
MERIDIAN, IDAHO  
GEOTECHNICAL SECTION  
TEST PIT LOG**

DATE STARTED: 6/15/2021  
DATE FINISHED: 6/15/2021  
OPERATOR: Steve Just  
COMPANY: Just Dig'it Exc.  
LOGGER: Anish Pathak  
WEATHER: Sunny

**TP - 4**  
EXCAVATOR: CASE 580C  
EXCAVATION METHOD: 3-ft wide test pit

PROJECT: 521-255G  
Vertrees Subdivision

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

DEPTH (ft)	USCS	LATITUDE (DEGREES): N 43°36'23.8752" (43.606632°) LONGITUDE (DEGREES): W -116°40'37.47" (-116.677075°)		GRAPHIC LOG	SAMPLE	NOTES
		TOTAL DEPTH: 13'				
		DESCRIPTION				
0		Silty-CLAY with sand (Native); brown, stiff, moist			BK	Significant roots and vegetation observed to 6 inches.  Passing No. 200 sieve = 85% LL = 29, PL = 22, PI = 7 CBR = 10.7
1	CL-ML					
2						
3		Silty SAND; light brown, medium dense, moist			BG	Passing No. 200 sieve = 15% Moisture content = 26%
4						
5	SM	...weak to moderate cementation observed from 3.5 to 7 feet				
6						
7		Poorly-graded GRAVEL with silt and sand; light brown, medium dense, moist				
8	GP-GM					
9		...weak cementation observed from 8 to 10 feet				
10		Poorly-graded GRAVEL with sand; tan, medium dense, moist				
11	GP					
12		...up to 6-inch-diameter cobbles observed randomly throughout				
13		Test pit terminated at 13 feet. Slotted PVC pipe installed to 12.5 feet.				
14						
15	WATER LEVELS					
	▽ WHILE EXCAVATING ▽ AT COMPLETION ▽ AFTER EXCAVATING					






**ALLWEST  
MERIDIAN, IDAHO  
GEOTECHNICAL SECTION  
TEST PIT LOG**

DATE STARTED: 6/15/2021  
DATE FINISHED: 6/15/2021  
OPERATOR: Steve Just  
COMPANY: Just Dig'it Exc.  
LOGGER: Anish Pathak  
WEATHER: Sunny

**TP - 5**  
EXCAVATOR: CASE 580C  
EXCAVATION METHOD: 3-ft wide test pit

PROJECT: 521-255G  
Vertrees Subdivision

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

DEPTH (ft)	USCS	LATITUDE (DEGREES): N 43°36'20.448" (43.60568°) LONGITUDE (DEGREES): W -116°40'43.7736" (-116.678826°)		GRAPHIC LOG	SAMPLE	NOTES
		TOTAL DEPTH: 13'				
		DESCRIPTION				
0		Lean CLAY with sand (Fill); brown, stiff, moist				
1						
2	FILL					
3						
4		Silty SAND (Native); light brown, medium dense, moist				
5						
6	SM	...weak to moderate cementation observed throughout				
7						
8		Poorly-graded GRAVEL with silt and sand; light brown, medium dense, moist				
9	GP-GM	...weak cementation observed throughout				
10		Poorly-graded GRAVEL with sand; tan, medium dense, moist				
11						
12	GP	...up to 6-inch-diameter cobbles observed randomly throughout				
13		Test pit terminated at 13 feet.				
14						
15						
15		WATER LEVELS				
		▽ WHILE EXCAVATING ▽ AT COMPLETION ▽ AFTER EXCAVATING				


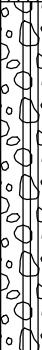

**ALLWEST  
MERIDIAN, IDAHO  
GEOTECHNICAL SECTION  
TEST PIT LOG**

DATE STARTED: 6/15/2021  
DATE FINISHED: 6/15/2021  
OPERATOR: Steve Just  
COMPANY: Just Dig'lt Exc.  
LOGGER: Anish Pathak  
WEATHER: Sunny

**TP - 6**  
EXCAVATOR: CASE 580C  
EXCAVATION METHOD: 3-ft wide test pit

PROJECT: 521-255G  
Vertrees Subdivision

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

DEPTH (ft)	USCS	LATITUDE (DEGREES): N 43°36'24.3612" (43.606767°) LONGITUDE (DEGREES): W -116°40'23.3364" (-116.673149°)		GRAPHIC LOG	SAMPLE	NOTES
		TOTAL DEPTH: 13'				
		DESCRIPTION				
0	CL	Lean CLAY with sand (Native); brown, stiff, moist				Significant roots and vegetation observed to 6 inches.
1						
2	GP-GM	Poorly-graded GRAVEL with silt and sand; light brown, medium dense, moist ...moderate cementation observed from 2.5 to 3.5 feet				
3						
4						
5	GP	Poorly-graded GRAVEL with sand; tan, medium dense, moist				
6						
7						
8						
9						
10						
11						
12						
13		Test pit terminated at 13 feet. Slotted PVC pipe installed to 13 feet.				
14						
15	WATER LEVELS					
	▽ WHILE EXCAVATING ▽ AT COMPLETION ▽ AFTER EXCAVATING					



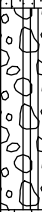

**ALLWEST  
MERIDIAN, IDAHO  
GEOTECHNICAL SECTION  
TEST PIT LOG**

DATE STARTED: 6/15/2021  
DATE FINISHED: 6/15/2021  
OPERATOR: Steve Just  
COMPANY: Just Dig'lt Exc.  
LOGGER: Anish Pathak  
WEATHER: Sunny

**TP - 7**  
EXCAVATOR: CASE 580C  
EXCAVATION METHOD: 3-ft wide test pit

PROJECT: 521-255G  
Vertrees Subdivision

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

DEPTH (ft)	USCS	LATITUDE (DEGREES): N 43°36'20.4264" (43.605674°) LONGITUDE (DEGREES): W -116°40'30.7632" (-116.675212°)		GRAPHIC LOG	SAMPLE	NOTES
		TOTAL DEPTH: 12'				
		DESCRIPTION				
0		Lean CLAY with sand (Fill); brown, stiff, moist				
1	FILL					
2	CL	Lean CLAY with sand (Native); brown, stiff, moist				
3		Silty SAND; light brown, medium dense, moist				
4	SM	...moderate cementation observed throughout				
6	GP-GM	Poorly-graded GRAVEL with silt and sand; light brown, medium dense, moist				
7		...weak to moderate cementation observed throughout				
8		Poorly-graded GRAVEL with sand; tan, medium dense, moist				
10	GP	...up to 6-inch-diameter cobbles observed randomly throughout				
11						
12		Test pit terminated at 12 feet. Slotted PVC pipe installed to 11 feet.				
15	WATER LEVELS					
	▽ WHILE EXCAVATING ▽ AT COMPLETION ▽ AFTER EXCAVATING					

**ALLWEST  
MERIDIAN, IDAHO  
GEOTECHNICAL SECTION  
TEST PIT LOG**

DATE STARTED: 6/15/2021  
DATE FINISHED: 6/15/2021  
OPERATOR: Steve Just  
COMPANY: Just Dig'lt Exc.  
LOGGER: Anish Pathak  
WEATHER: Sunny

**TP - 8**  
EXCAVATOR: CASE 580C  
EXCAVATION METHOD: 3-ft wide test pit

PROJECT: 521-255G  
Vertrees Subdivision

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

DEPTH (ft)	USCS	LATITUDE (DEGREES): N 43°36'16.5888" (43.604608°) LONGITUDE (DEGREES): W -116°40'40.3752" (-116.677882°)		GRAPHIC LOG	SAMPLE	NOTES
		TOTAL DEPTH: 13'				
		DESCRIPTION				
0	CL	Sandy lean CLAY (Native); brown, stiff, moist			BG	Significant roots and vegetation observed to 6 inches. Passing No. 200 sieve = 60% Moisture content = 18% LL = 33, PL = 23, PI = 10
1	GP-GM	Poorly-graded GRAVEL with silt and sand; light brown, medium dense, moist				
2		...weak cementation observed from 3 to 4 feet				
4	GP	Poorly-graded GRAVEL with sand; tan, medium dense, moist				Field seepage test performed at 6 feet. Field seepage rate = >30 in/hr.
5						
6						
7						
8		...up to 9-inch-diameter cobbles observed randomly throughout				
9						
10						
11						
12						
13		Test pit terminated at 13 feet. Slotted PVC pipe installed to 13 feet.				
14						
15	WATER LEVELS					
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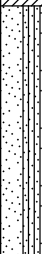


**ALLWEST  
MERIDIAN, IDAHO  
GEOTECHNICAL SECTION  
TEST PIT LOG**

DATE STARTED: 6/15/2021  
DATE FINISHED: 6/15/2021  
OPERATOR: Steve Just  
COMPANY: Just Dig'it Exc.  
LOGGER: Anish Pathak  
WEATHER: Sunny

**TP - 9**  
EXCAVATOR: CASE 580C  
EXCAVATION METHOD: 3-ft wide test pit

PROJECT: 521-255G  
Vertrees Subdivision

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

DEPTH (ft)	USCS	LATITUDE (DEGREES): N 43°36'16.5888" (43.604608°) LONGITUDE (DEGREES): W -116°40'35.8104" (-116.676614°)		GRAPHIC LOG	SAMPLE	NOTES
		TOTAL DEPTH: 13'				
		DESCRIPTION				
0	CL	Sandy lean CLAY (Native); brown, stiff, moist				Significant roots and vegetation observed to 6 inches.
1						
2	SP-SM	Poorly-graded SAND with silt; light brown, medium dense, moist			BG	Passing No. 200 sieve = 11% Moisture content = 20%
3		...weak cementation observed from 2.5 to 4 feet				
4	GP-GM	Poorly-graded GRAVEL with silt and sand; light brown, medium dense, moist				
5		...weak cementation observed from 4 to 6 feet				
7	GP	Poorly-graded GRAVEL with sand; tan, medium dense, moist				
8						
10		...up to 9-inch-diameter cobbles observed randomly throughout				
13		Test pit terminated at 13 feet. Slotted PVC pipe installed to 12 feet.				
14						
15	WATER LEVELS					
	▽ WHILE EXCAVATING ▼ AT COMPLETION ▼ AFTER EXCAVATING					




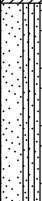
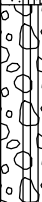

**ALLWEST  
MERIDIAN, IDAHO  
GEOTECHNICAL SECTION  
TEST PIT LOG**

DATE STARTED: 6/15/2021  
DATE FINISHED: 6/15/2021  
OPERATOR: Steve Just  
COMPANY: Just Dig'lt Exc.  
LOGGER: Anish Pathak  
WEATHER: Sunny

**TP - 10**  
EXCAVATOR: CASE 580C  
EXCAVATION METHOD: 3-ft wide test pit

PROJECT: 521-255G  
Vertrees Subdivision

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

DEPTH (ft)	USCS	LATITUDE (DEGREES): N 43°36'16.9668" (43.604713°) LONGITUDE (DEGREES): W -116°40'28.56" (-116.6746°)		GRAPHIC LOG	SAMPLE	NOTES
		TOTAL DEPTH: 13'				
		DESCRIPTION				
0	CL	Lean CLAY with sand (Native); brown, stiff, moist				Significant roots and vegetation observed to 3 inches.
1						
2	SP-SM	Poorly-graded SAND with silt; light brown, medium dense, moist				
3						
4	GP-GM	Poorly-graded GRAVEL with silt and sand; light brown, medium dense, moist				
5		...moderate to strong cementation observed from 4 to 6 feet				
6	GP	Poorly-graded GRAVEL with sand; tan, medium dense, moist				Field seepage test performed at 6.5 feet. Field seepage rate = >30 in/hr.
7						
8						
9						
10						
11						
12						
13						
14						
15	WATER LEVELS					
	▽ WHILE EXCAVATING ▽ AT COMPLETION ▽ AFTER EXCAVATING					




**ALLWEST  
MERIDIAN, IDAHO  
GEOTECHNICAL SECTION  
TEST PIT LOG**

DATE STARTED: 6/15/2021  
DATE FINISHED: 6/15/2021  
OPERATOR: Steve Just  
COMPANY: Just Dig'lt Exc.  
LOGGER: Anish Pathak  
WEATHER: Sunny

**TP - 11**  
EXCAVATOR: CASE 580C  
EXCAVATION METHOD: 3-ft wide test pit

PROJECT: 521-255G  
Vertrees Subdivision

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

DEPTH (ft)	USCS	LATITUDE (DEGREES): N 43°36'17.4708" (43.604853°) LONGITUDE (DEGREES): W -116°40'23.5272" (-116.673202°)		GRAPHIC LOG	SAMPLE	NOTES
		TOTAL DEPTH: 13'				
		DESCRIPTION				
0	CL	Lean CLAY with sand (Native); brown, stiff, moist			BG	Significant roots and vegetation observed to 3 inches.
1						
2	GP-GM	Poorly-graded GRAVEL with silt and sand; light brown, medium dense, moist				Field seepage test performed at 4 feet. Field seepage rate = >20 in/hr.
3						
4						
5	GP	Poorly-graded GRAVEL with sand; tan, medium dense, moist				
6						
7						
8						
9						
10	...up to 9-inch-diameter cobbles observed randomly throughout					
11						
12						
13	Test pit terminated at 13 feet. Slotted PVC pipe installed to 13 feet.					
14						
15	WATER LEVELS					
	▽ WHILE EXCAVATING ▼ AT COMPLETION ▾ AFTER EXCAVATING					

# Unified Soil Classification System

MAJOR DIVISIONS		SYMBOL	TYPICAL NAMES
COARSE GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW Well-Graded Gravel, Gravel-Sand Mixtures.
			GP Poorly-Graded Gravel, Gravel-Sand Mixtures.
		GRAVELS WITH FINES	GM Silty Gravel, Gravel-Sand-Silt Mixtures.
			GC Clayey Gravel, Gravel-Sand-Clay Mixtures.
	SANDS	CLEAN SANDS	SW Well-Graded Sand, Gravelly Sand.
			SP Poorly-Graded Sand, Gravelly Sand.
		SANDS WITH FINES	SM Silty Sand, Sand-Silt Mixtures.
			SC Clayey Sand, Sand-Clay Mixtures.
FINE GRAINED SOILS	SILTS AND CLAYS  LIQUID LIMIT LESS THAN 50%	ML Inorganic Silt, Silty or Clayey Fine Sand.	
		CL Inorganic Clay of Low to Medium Plasticity, Sandy or Silty Clay.	
		OL Organic Silt and Clay of Low Plasticity.	
	SILTS AND CLAYS  LIQUID LIMIT GREATER THAN 50%	MH Inorganic Silt, Elastic Silt, Micaceous Silt, Fine Sand or Silt.	
		CH Inorganic Clay of High Plasticity, Fat Clay.	
		OH Organic Clay of Medium to High Plasticity.	
Highly Organic Soils		PT Peat, Muck and Other Highly Organic Soils.	



**Appendix C**  
**Laboratory Test Results**

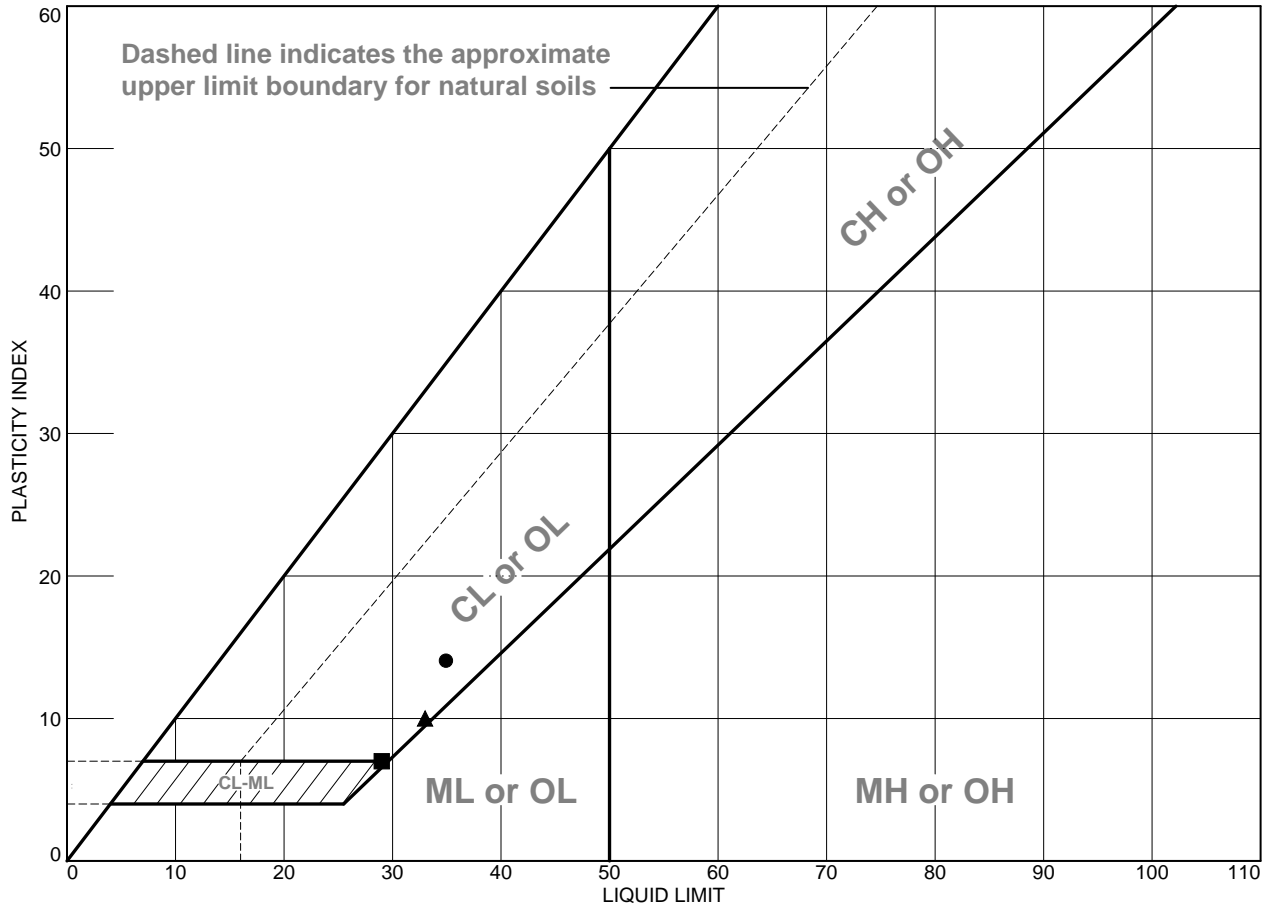


### Summary of Laboratory Test Results

Test Pit No.	Depth (Feet)	Moisture Content (%)	Gradation			Atterberg Limits		CBR (%)			Sample Classification (USCS)
			Gravel (%)	Sand (%)	Silt/Clay (%)	Liquid Limit (%)	Plasticity Index (%)				
1	3 - 3.5	24		27	73						SILT with Sand (ML)
2	0.5 - 1	22		18	82	35	14				Lean CLAY with Sand (CL)
2	2 - 2.5	29		63	37						Silty SAND (SM)
4	1 - 2	-		15	85	29	7	10.7			Silty CLAY with Sand (CL-ML)
4	6 - 6.5	26		85	15						Silty SAND (SM)
8	0.5 - 1	18		40	60	33	10				Sandy Lean CLAY (CL)
9	3 - 3.5	20		89	11						Poorly-Graded SAND with Silt (SP-SM)

Table C-1

# LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Lean Clay with sand	35	21	14	--	82%	CL
■	Silty Clay with sand	29	22	7	--	85%	CL-ML
▲	Sandy Lean Clay	33	23	10	--	60%	CL

**Project No.** 521-255G      **Client:** Trilogy Development  
**Project:** Vertrees Subdivision  
**● Location:** TP-2      **Depth:** 0.5'-1'  
**■ Location:** TP-4      **Depth:** 1'-2'  
**▲ Location:** TP-8      **Depth:** 0.5'-1'

**Remarks:**



**Figure** C-1

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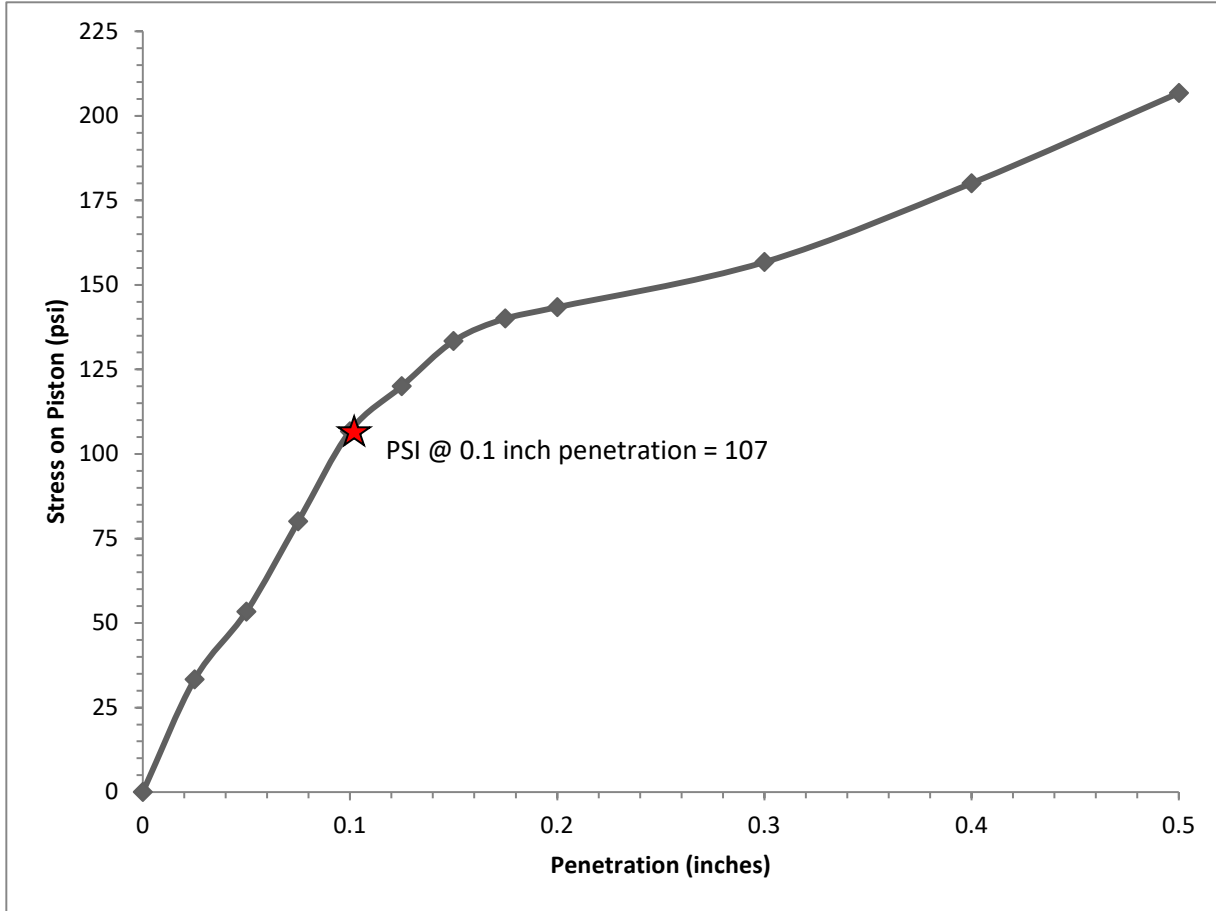
**Tested By:** C. Downes      **Checked By:** J. Varozza

# California Bearing Ratio

## ASTM D1883

Project: Vertrees Subdivision  
 Client: Trilogy Development  
 Date Tested: 8/2/2021  
 Tested By: C. Downes

Project No.: 521-255G  
 Location: TP-4 @ 1 - 2 ft  
 Compaction Method: ASTM D1557  
 Classification: Silty Clay with sand  
 (CL-ML)



CBR @ 0.1 Inch Penetration:	<u>10.7</u>	Maximum Dry Unit Weight (pcf):	<u>115.4</u>
Swell (%):	<u>1.7</u>	Optimum Water Content (%):	<u>13.1</u>
Dry Unit Weight Before Soak (pcf):	<u>104.8</u>	Remold of Max. Dry Unt Wgt (%):	<u>91</u>
Water Content Before Soak (%):	<u>14.2</u>		
Water Content After Soak, Top 1 Inch (%):	<u>26.2</u>		
Surcharge (psf):	<u>50</u>		
Immersion Period (hrs):	<u>96</u>		

Reviewed By: \_\_\_\_\_ James Varozza

Figure: C-2



