FILE # _____

THIS ITEM IS SCHEDULED TO BE HEARD AT A MEETING OF THE SANDOVAL COUNTY PLANNING & ZONING COMMISSION

ON _____ *TIME* _____

SANDOVAL COUNTY PLANNING & ZONING DEPARTMENT

(505) 867-7628

Application for Amendment to the Zoning Ordinance

Check one: X Zone Map Amendment
_____ Petition for Legislative (Text) Amendment

Applicant: PLACITAS SAGE CALVERY - JOYCE THOMPSON/AUDREA MASON
Daytime Phone: _____

Address:

_____

_____

Agent (if any): CAPDS PC — BRYAN BOWEN
Daytime Phone: 303-443-3629

Address: 1510 ZAMIA AVE #103
BOULDER CO 80304

Property Address:
RIDGE ROAD & FINEST LANE, PLACITAS 87043

Acreage of Property:
±6.13 ACRES

Property Legal Description:
LOTS 82-B, 82-B, 83A, 83-B, 84 OF PLACITAS SMALL TRACTS AREA, S34, T13N, R4E

Nearest City/Town/Village to Property:
BERNALILLO, NM.

A Zone Map Amendment from CD-WP to M-P is requested; or a text amendment to Section _____ of the zoning ordinance is requested.

Signature of Applicant or Authorized Agent:

_____

Date: 4.6.16

Required Application Fee must accompany this form.

Applications must be received no later than the Twentieth (20th) day of the month prior to the month that the Planning & Zoning Commission is to hear your request.

ALL MEETINGS OF THE SANDOVAL COUNTY PLANNING & ZONING COMMISSION AND THE BOARD OF COUNTY COMMISSIONERS ARE HELD IN THE COMMISSION ROOM, 1ST FLOOR, SANDOVAL COUNTY COURTHOUSE

FOR OFFICE USE ONLY:

Application Received by: _____ Date: _____

File Number: _____ Receipt Number: _____

Planning & Zoning Commission Final Action: _____

Board of County Commissioners Final Action: _____

_____

Date: _____

CONDITIONS OF APPROVAL OR BASIS FOR DISAPPROVAL WILL BE SPECIFIED IN LETTER OF NOTIFICATION

Revised June 2001

Sandoval County Planning and Zoning Department
1500 Idalia Rd, Bldg. D
Bernalillo, NM 87004
P.O. Box 40
Bernalillo NM 87004
http://www.sandovalcounty.com
505-867-7500

Attention to:
Makita Hill
Long Range Senior Planner

Re: Placitas Sage Cohousing LLC Project
4.06.2016, rev 4.18.2016

Dear Makita,

Caddis and the future residents of the Placitas Sage Cohousing Community are pleased to submit application materials for Master Planned District zoning through a Zone Map Amendment per Section 11 MP and Section 19 (F). If the application materials are found to be complete, we will schedule our pre-application public meeting for neighboring property owners and county staff. We are requesting a public hearing with the Planning and Zoning Commission on Wednesday May 25th.

The following page includes an index of the material we have supplied as a part of this submittal.

The members of Placitas Sage have been working hard to bring their community vision to reality since the summer of 2013 and they are excited to request approval for their project. It's their heartfelt desire to stay in Placitas in a supportive community like this one, and they are eager to move in.

Thank you very much for all the guidance and information you've provided.

Respectfully,

Bryan Bowen, Caddis PC
Kathryn McCamant, CoHousing Solutions
Jim Madueña, JG Madueña Homes
Joyce Thompson and Andrea Mason, Placitas Sage Cohousing

Master Planned District Zoning - Application Materials

Section 11. MP Master Planned Districts
B. Application
1. Conceptual Development Plan **
a) Vicinity Map (boundaries, acreage, adjacent properties and uses) **
b) Delineation of phases *
c) Statement of distribution, type, and intensity of land uses w/in district *
d) Statement of proposed traffic or transportation w/in district *
2. Development Plan for all or each portion of the district **
a) Boundaries and topo of the site
b) Legal Description
c) Locations and acreage of land uses, du numbers and sizes
d) Specification of proposed easements
3. Supportive Data *
a) Purpose and intent of MPD
b) Phasing
c) Perimeter treatment description
d) Principal effect on the surrounding community
C. District Standards *
1. Gross Residential Density
2. Open Space Common Area
3. Building Form and Intensity
4. Mix of Uses
5. Recreational Facilities
6. I-25/Bernalillo Interface Overlay Zone
D. Gross Residential Density Bonus *
1. Goals and Policies of the Sandoval County Comprehensive Plan
2. Innovation
3. Natural Environment
4. Variety
5. Utilization of Existing Roadways and Limited Traffic Generation
6. Architectural Control
7. Law Enforcement Service
8. Fire Protection and Emergency Services
9. Educational Facilities
10. Common Open Space
Section 19 F Zone Map Amendment Guidelines *
Supplemental Materials requested by P&Z staff:
Placitas Sage Water Usage Analysis *
Proof of water availability: Hydrology letter from John Shomaker & Associates, Inc. *
OSE letter (well permits submitted, approval pending)*
Liquid Waste preliminary approval from the New Mexico Environment Department *
Site Threshold Assessment (STH) *
NM DOT Site Threshold Assessment (STH) Approval *
Conceptual building designs + architectural character, three dimensional views **
Fire Access Plan **
Conceptual Access Plan **
Conceptual Grading and Drainage Plan **
Conceptual Storm Water Report **
Conceptual Utility Map showing wells, septic, electrical, PNM easements, etc. **
** See the following **Project Narrative*** *** See the attached **Master Plan Drawing Set**.*

Project Narrative

SUMMARY

Placitas Sage Cohousing seeks to create a small, owner occupied, residential community for adults over age 55 on the site located between Forest Lane and Ridge Road in the area of Placitas known as Placitas West. HOA rules will establish that Placitas Sage Cohousing is an intentional community for elderly population of 55 and over. The project creates an important, and as yet unavailable, alternative housing model for Placitas. As home owners "age out" of their large family homes on an acre or more of land, this senior cohousing neighborhood for people 55 and over will allow Placitas residents to stay in the community where they have deep roots and involvement, while "downsizing" to a more manageable home in a supportive community. This community will be homeowner-managed, low maintenance, and highly accessible. It is self-developed: meaning that decisions are being made based on values of the future residents, rather than profit. We are doing everything we can to keep the project affordable for these Sandoval County seniors.

The proposal includes eighteen small Universally Designed (highly accessible) single story homes in three groupings of duplexes and triplexes referred to as "pods," an art studio/gallery, and a "community center" housing a spiritual center, media area, co-working space, a kitchen, and dining space. The homes average about 965 sf in size, with the largest being 1304 sf. The design respects view sheds, provides significant open space, and strives to limit site disturbance. The landscape is designed to be compatible with the natural environment and appropriate to the climate, xeric, rainwater fed, and eventually will include fruit trees, raised garden beds, trellises, outdoor dining, and land managed by the community as open space in perpetuity in excess of the County requirement. Much of the landscape will be installed by the residents gardening together and making the place their own.

The project will be ecologically appropriate, promoting connections, balancing community and privacy, and feeling like it belongs on the land and in the wider community while promoting physical and emotional safety. We believe that Placitas Sage will be a benefit to the entire community as well as to its residents. In addition, Placitas Sage substantially furthers the goals and policies of the Sandoval County Comprehensive Plan by being the first model of its type and highly innovative on many fronts. It will set a high standard for future developers and inform future development practices.

WHAT IS COHOUSING?

Cohousing is an intentional community of private homes gathered around shared space. Each home has traditional amenities, including a private kitchen. Shared spaces typically feature a common house, which may include a large kitchen and dining area, laundry, and recreational spaces. Shared outdoor space may include parking, walkways, open space, and gardens. Neighbors also share resources like tools and laundry rooms.

Households have independent incomes and private lives, but neighbors collaboratively plan and manage community activities and shared spaces. Legally, Placitas Sage will be a condominium, self-managed by an HOA made up of the residents. Community activities feature regularly-scheduled shared meals, meetings, and workdays. Neighbors gather for parties, games, movies, or other events. Cohousing makes it easy for seniors to support each other as they age, sharing interests, care, and carpooling.

Common characteristics of cohousing include:

- Relationships
    - Neighbors commit to being part of a community for everyone's mutual benefit.

    - Cohousing cultivates a culture of sharing and caring.
    - Design features and neighborhood size (typically 15-40 homes) promote frequent interaction and close relationships.
- Privacy and Community
    - Cohousing neighborhoods are designed for privacy as well as community.
    - Residents balance privacy and community by choosing their own level of engagement.
- Participation
    - Decision making is participatory and generally based on consensus.
    - Self-management empowers residents, builds community, and saves money.
    - Future residents play a role in the development and design process.
- Shared Values
    - Cohousing communities support residents in actualizing shared values.
    - Cohousing communities typically adopt green approaches to living.

Why Residential Use of This Kind is Important:

- Why cohousing:
    - There is rapidly growing interest in this type of senior cohousing model designed for people to age in place. We are creating a fully accessible ADA community.
    - Being able to "age in place" and continue involvement in the wider community.
    - Mutually supportive and sustainable living.
    - This project creates a small senior cohousing neighborhood with a strong sense of community typical of older neighborhoods, which allows Placitas seniors to stay active in their long-term community.
    - Placitas Sage is modeled on successful senior cohousing communities in Santa Fe, Boulder, Oklahoma, and California. Our team includes several cohousing experts. Architect Bryan Bowen, whose parents have lived in Placitas for over 40 years, lives in cohousing himself and has designed numerous other cohousing communities. Development consultant Katie McCamant brings best practices from her 30 years in cohousing development.
- Co-Care:
    - Co-Care is the heart of senior cohousing and the secret of its success. It enables people to live independently for many years longer than if they were aging in place in isolated homes. It is a grassroots model of neighborly mutual support that can help reduce social isolation and promote positive, active aging.
    - We feel that it is time to create a new model for senior living.

Summary of Articles:

What is Co-Housing? McCamant & Durrett, architects. 2007
Living Together, Aging Together By Paula Span, September 9, 2010 NEW YORK TIMES BLOG.
Boomers Take Cohousing Mainstream? Popular in northern Europe, cohousing is still a fringe option in the U.S. But the number of cohousing communities here is set to climb, thanks to Baby Boomers. Chris Bentley Jan 20, 2015 From the ATLANTIC – CITY LAB
How Baby Boomers Are Creating Their Own Retirement Communities US NEWS AND WORLD REPORT - April 20, 2015
The Power of Community, Charles Durrett**,** COMMUNITY MAGAZINE, Spring 2015 Issue 166. p23-26.
20 Questions and Answers About Cohousing, Ellen Ryan, AARP MAGAZINE

Other Resources:

The Cohousing Association of the United States: www.cohousing.org

SUPPORTIVE DATA FOR M-P MASTER PLANNED DISTRICT ZONING, SECTION 11.B.3

1) PURPOSE AND INTENT OF MASTER PLANNED DISTRICT (SEC 11.B.3.A): Our goal in applying through this particular process is to allow for the unified planning of several adjacent parcels which will improve the quality of the outcome and create a beneficial inhabitance like no other in Placitas which fits gracefully into the neighborhood and natural context.
2) PHASING (SEC 11.B.3.B): Placitas Sage will be constructed in a single phase due to its small size and high level of integration and cohesiveness. This will also limit the duration of the construction process, minimizing impact on the neighbors.
3) PERIMETER TREATMENT (SEC 11.B.3.C): The design goal for the perimeter of this small project is to blend in seamlessly with adjacent properties and the natural environment, while providing some buffer from the adjacent roadways. Common open space in the setbacks will be treated similarly as that on the adjacent properties, primary including xeric native vegetation and built elements common to the local vernacular architecture such as low stucco walls, trellises, and entry portales. No walls or fences are being proposed at internal or external lot lines. In addition, lighting will be focused on the ground plane and should result in no light trespass off-site, in accordance with the Dark Skies Initiative.
4) PRINCIPAL EFFECT ON THE SURROUNDING COMMUNITY (SEC 11.B.3.D): Placitas Sage doesn't anticipate creating negative impact or burden on the surrounding community with respect to traffic, water, liquid and solid waste, schools, fire protection, police, or population growth; rather it aspires to be a positive addition to the neighborhood and the wider community. It does not add to the existing area of service for the County or entities that assist it. Traffic impact will be minimal due to the nature of the residents: non-commuters and mostly single-occupant homes. Living in cohousing means you get more of what you need without getting in your car. Solid waste will be removed the same way it is for the surrounding single family homes. Septic systems will be accommodated on site to State standards, State well permits have been applied for, and this community intends to be an EPA Water Wise community, which means it will be very water-efficient. The project will also feature innovative storm water management and landscaping techniques, LID and permaculture thinking. An attached water usage analysis explores this further.
5) DISTRIBUTION, TYPE, AND INTENSITY OF LAND USES W/IN DISTRICT (SEC 11.B.1.C): Placitas Sage homes are small and compact with an average size of about 965 sf, with the largest only being 1304 sf and the smallest at 800 sf. Through this planning process, Placitas Sage will crystalize aspects already commonly found in the community. It arranges modest residences around courtyards in "pods," allowing people to share resources and live well and with ease. It will allow residents to make art in their homes and in a shared studio space, which will also permit the sale of their art. Shared functions will be housed in a central welcoming community building, located to maximize visual connections to the homes, to the public, and to the Sandias. A view from the common space is included on the final page of this document.
6) STATEMENT OF PROPOSED TRAFFIC OR TRANSPORTATION W/IN DISTRICT (SEC 11.B.1.D): A NM DOT Site Threshold Assessment (STH) has been provided that demonstrates that this proposal will not trigger off-site improvements nor meaningfully impact traffic in the neighborhood. As a seniors' community with our own on-site community amenities, Placitas Sage will have minimal traffic impact as compared to other types of residential development.

COMPLIANCE WITH MASTER PLANNED DISTRICT STANDARDS, SECTION 11.C

1) GROSS RESIDENTIAL DENSITY (SEE GROSS RESIDENTIAL DENSITY BONUS 11 D. BELOW): In accordance with this regulation, Placitas Sage is seeking a gross density of 3 du/acre and requesting recommendation of approval from the Zoning Commission based on the criteria listed under 11.D below. Cohousing

communities, especially those planned for senior populations, benefit greatly from proximity to neighbors and have a need for a minimum critical mass in order to allow them to thrive.

2) OPEN SPACE COMMON AREA: The Comprehensive Zoning Ordinance requires that a minimum of 2% of an MPD be designated as open space common-area for recreational use. The open space dedicated to passive recreation in Placitas Sage is in excess of 2%. It will be owned and maintained in common through the condominium's HOA and with their dues, a minimum of 2% will be dedicated in perpetuity.
3) BUILDING FORM AND INTENSITY: The project has been designed with setbacks, lot coverage, lot sizes, and building heights compatible with the surrounding neighborhood and in keeping with the applicable plans as well as the specific characteristics of this site. Given that this proposal includes more detail on these topics than a typical MPD application might, we feel these factors are adequately addressed and controlled through this entitlement process without additional height/setback/lot size restrictions being imposed.
4) MIX OF USES: Placitas Sage is proposing a nicely interwoven set of private uses to serve the residents in an innovative way that's new to Placitas. In addition to the internal community-advancing aspects of this project, Placitas Sage will reflect the nature of its artistic residents by including an art gallery and studio which will welcome the wider community into our common spaces. Communities such as this can act as centers of thought, culture, and spirituality, and to advance that a meditation/ spiritual center is being proposed as a part of the multi-purpose community center.
5) RECREATIONAL FACILITIES: Due to the small scale of the community, only 18 units, and its proximity to excellent existing open space, Placitas Sage is not proposing any on-site recreational facilities beyond delightful, natural, protected open space and wild life corridors; intimate, pleasant, garden courtyards between the units; and the uses in the common house/community center that might be considered to have recreational value. These amenities are most appropriate to the 55+ senior's population.
6) I-25/BERNALILLO INTERFACE OVERLAY ZONE: The subject property does not lie within this overlay zone.

COMPLIANCE WITH GROSS RESIDENTIAL DENSITY BONUS, SEC 11.D

1) GOALS AND POLICIES OF THE SANDOVAL COUNTY COMPREHENSIVE PLAN: Placitas Sage Cohousing complies with and advances the Placitas Area Plan, the West Placitas Residential District Plan, and the Sandoval County Comprehensive Plan. This project proposes 18 small homes grouped (clustered) in three pods, leaving much of the land in open space with a wildlife corridor through the arroyo. This land in particular has already been developed for housing in the past and shows significant impact from those past practices. The areas of disturbed land will be under the new homes, protecting as much of the natural landscape as possible. This design avoids ridge top or wetland/steep slope development, is designed for night sky protection, and follows the other general recommendations of the plans. The Placitas Area Plan calls for "Cluster Development to Improve Open Space." This project builds upon that idea and will execute a model of how wonderful these places can be. The community center is oriented to provide a spectacular view of the Sandias to the south across Forest Service open space. The Rio Grande Valley and Jemez Mountains can be viewed to the west and northwest. By supplying housing for seniors, a variety of diversity that is currently being lost can be retained in the community, and in the County's tax base.
2) INNOVATION: This project is the first of its type in Sandoval County. Senior cohousing is an innovative solution to meet the unique needs of an aging population. Aligning co-care practices to address emotional needs through a supportive community fosters stimulating environments for pro-active seniors. Cohousing aims to address the largest obstacles to aging gracefully, including isolating environments that instill loneliness and fear in over-sterilized, impersonal environments of nursing homes and elderly care facilities. Aging in community allows for a boost in interaction among seniors

and offers an important safety net of social inclusion. Projects like this are changing the realities for seniors who live in them for the better. Beyond the innovations of cohousing, the project is passive solar, highly efficient, aspires to be a DOE Zero Energy Ready Project (http://energy.gov/eere/buildings/zero-energy-ready-home), follows EPA Water Sense practices (https://www3.epa.gov/watersense/), and is intended to be a Build Green NM project. It includes advanced storm water design, LID, and permaculture principals.

3) NATURAL ENVIRONMENT: As anyone who lives in Placitas knows, protecting the watersheds, wildlife corridors, and arroyos is critical. The future residents of Placitas Sage hold these spaces dearly, and as a result all development is kept to the perimeter and graded low into the landscape. The materials match the vernacular that has evolved in the southwest organically over time.
4) VARIETY: This requirement may be intended for larger master planned areas than this applicant is proposing, presumably in an effort to reduce the level of repetitiveness of the housing product offered and increase the diversity of housing stock available to the population. Placitas Sage, in and of itself, offers a new choice otherwise unavailable in Placitas, with housing types that are varied in size and price range, yet highly compatible with the fabric of the community.
5) UTILIZATION OF EXISTING ROADWAYS AND LIMITED TRAFFIC GENERATION: The eighteen units proposed do not create a need for any new public infrastructure and take advantage of existing roads, utility easements, and public services. As compared to most other housing types available in Placitas, these units will yield proportionally fewer trips per day due to the provisions of on-site amenities and the nature of the population served.
6) ARCHITECTURAL CONTROL: Future architectural control beyond oversight of alterations by the HOA board and residents is not anticipated to be necessary, since this is a single phase project with a master plan district submittal that includes the proposed architectural concepts for review and approval.
7) LAW ENFORCEMENT SERVICE: The design of this project provides for adequate and usual law enforcement practices.
8) FIRE PROTECTION AND EMERGENCY SERVICES: The homes in Placitas Sage will be fire sprinkled to NFPA 13D, and the common house/community center will also be fire sprinkled to NFPA requirements. Fire department access has been demonstrated on a diagram in the drawing set. All units have egress windows, 36" wide doors, on grade entries, and are on accessible routes.
9) EDUCATION FACILITIES: No educations facilities are proposed or fitting for this development.
10) COMMON OPEN SPACE: The current site plan shows 96,986 sf of Common Open Space and 56,183 sf Common Open Space in the Setback, as well as significant landscaped Common Outdoor Space (in the pods), and 3,726 sf of Private Outdoor Space (about 200 sf/unit where 60 sf is required) with approximately 29,611 sf of Building Coverage. The portion of the site deemed to be Open Space for Recreational Purposes includes landscaped and hardscaped pods between the units, which will foster community and individual health, as well as capture rainwater and shelter wind to create pleasant and comfortable environments. The portion of the site shown on the site plan as dedicated in perpetuity protects the wildlife corridor and passive recreational spaces.

COMPLIANCE WITH ZONE MAP AMENDMENT GUIDELINES, SEC 19.F

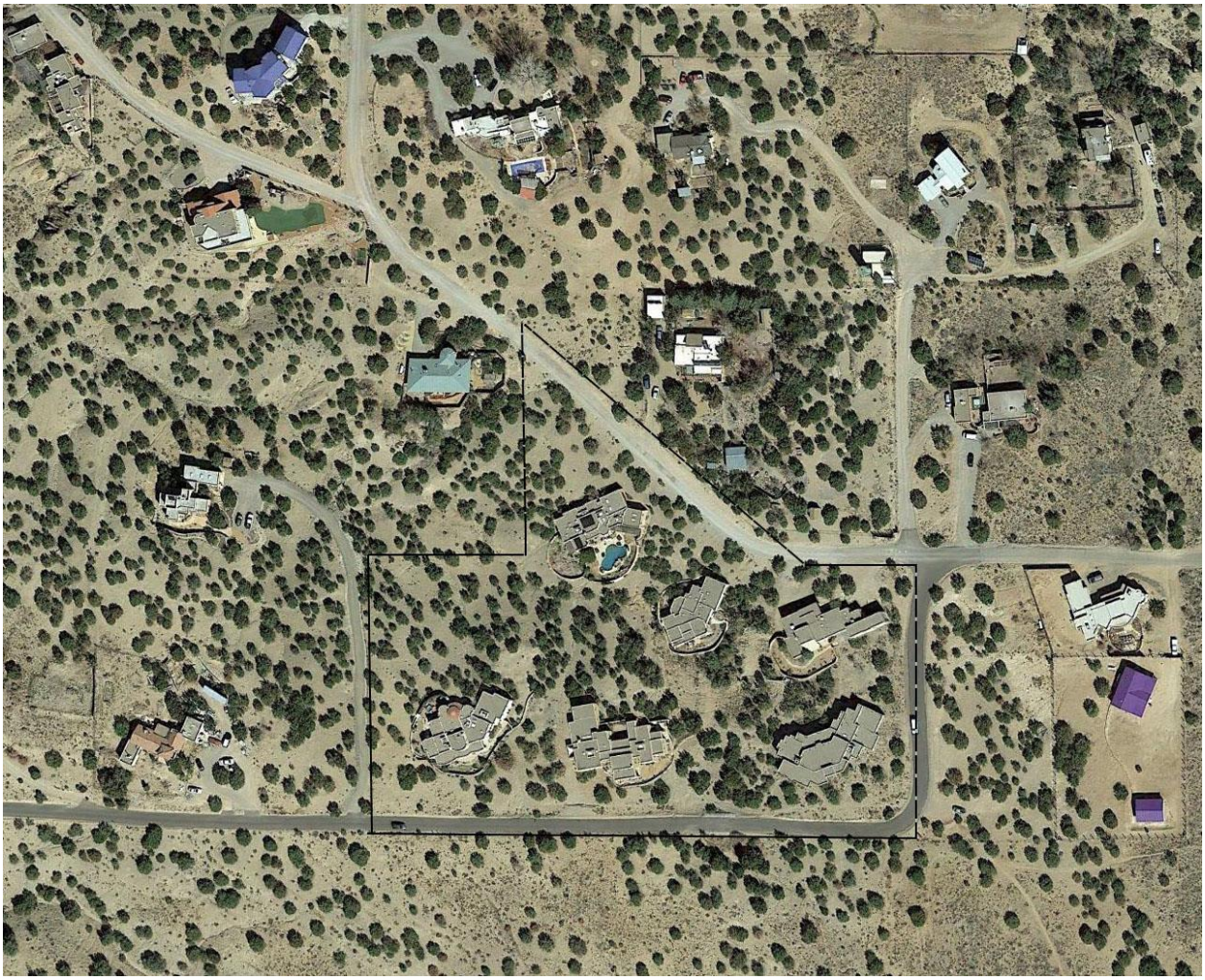
1) ACCESSIBILITY TO PROPERTY: Subject property is accessible from existing infrastructure including Forest Lane to the east and south and Ridge Road for the majority of the north side, and from an existing private drive to the west. Fire access (150' max backing distance plus 150' hose length) has been demonstrated (see drawings) and the applicant has had preliminary meetings with the fire marshal to ensure the design meets their requirements. Utility providers also have access to the site.

2) OFF STREET PARKING/LOADING: Parking per code is shown on the proposed site plan and includes one carport/garage per unit, arranged to consolidate parking areas to reduce automotive impact on the site and to yield an excellent pedestrian oriented environment. The parking calculation is shown on the site plan.
3) WATER AND LIQUID WASTE FACILITIES: John Shomaker & Associates, Inc. has provided a letter regarding water supply on site. TEC Inc. has provided a Conceptual Utility Map showing wells, septic tanks and leach fields as well as dry utilities. The proposed property line layout was derived based on meeting well and septic criteria.
4) EFFECT ON NEIGHBORING PROPERTIES – Placitas Sage will be compatible with the existing community and has support of the immediate property owners. It fits with the "live and let live" attitude of Placitas, respecting the neighbors while doing their own thing. The site grading design has placed the finished floors of the units as low as possible to avoid impacting views of the Sandias or looming over the arroyos, nestling the homes gracefully into the landscape. Also, the retaining walls necessary for supporting the units are integral to (and stacked seamlessly under) the building's exterior walls to avoid the often seen piles of fill dirt cascading into the arroyos. The project is designed to meet the Dark Skies Initiative, with fixtures designed to prevent any off site light trespass. Given the nature of the occupants and the mission of this intentional community, it's unlikely that noise or other impacts will be felt by the neighbors.
5) COMPATIBILITY: Placitas Sage mimics the vernacular architecture and development patterns of the immediate area, with one-story homes in duplexes or triplexes gathered together around comfortable pods, impacting the arroyos as little as possible. The scale and mass of each grouping of homes is comparable to a single family home. A Site Threshold Assessment has been provided by Harwick Transportation Group demonstrating the traffic impact of such a development is negligible and should not trigger any offsite improvements. The design protects contiguous open space and enhances the existing semi-rural character and identity of Placitas West. An aerial view of the Placitas West neighborhood can be found in the drawing set.
6) OVERALL HEALTH AND SAFETY OF THE COMMUNITY: This project will allow longtime residents to stay rather than move away to Albuquerque as they age, preserving their lifestyle and relationships which have been proven to be critical to long term health. It will also offer an integrated community for people who are moving to Placitas from elsewhere, absorbing this impact rather than distributing it.
7) CONFORMANCE WITH THE SANDOVAL COUNTY COMPREHENSIVE PLAN AND OTHER ADOPTED PLANS: The proposed project complies with and advances the Comprehensive Plan, the Placitas Area Plan, the West Placitas Residential District, and the West Placitas District Standards which require a min lot size of 1 acre, no buildings over 28' in height. However, the units desired by the future residents do not meet some of the size minimums of the WPDS, specifically the minimum width of 24' and minimum length of 42' (which would result in a 1080 sf unit, larger than what the downsizing seniors market demands). Our proposed unit mix is identified in the drawings.
8) PRE-APPLICATION MEETING: The members of Placitas Sage have been active in their outreach to the neighbors and community. They are highly motivated to make a place that is well loved and compatible with their home town – they are not professional developers but rather neighbors who are making a grass roots effort to do something wonderful. Partially, this is because they are hoping to appeal to as many local buyers as possible, partly because they want to do the right thing and make sure they understand people's concerns. Placitas Sage has been working on this project for over three years, much of that time spent attempting to find an appropriate site. They have placed articles in the Signpost and held informational meetings in the Placitas Community Library and the Placitas Senior Center. In July of 2015 they held a picnic on this site to acquaint neighbors with their concept. On January 16th of 2016, they held a "meet and greet" to hear neighbor concerns, share current architectural concepts, and explain cohousing. After that meeting, Placitas Sage members made a concerted effort to reach out to each resident of Placitas West, making phone calls,

dropping off informational packets, and going door to door. Upon acceptance of this submittal package, Placitas Sage will schedule and publically notice the County required public meeting, which will be attended by P&Z Staff and to which neighbors, and future occupants will be invited. Before and after that meeting, their outreach efforts will continue to be robust.

By-Right Development Alternative:

Placitas Sage will have less impact on the neighborhood and the landscape than conventional development patterns would. Below is a rendering of the site as it could be developed with six 4000-5000 sf homes, each of which could be occupied by large families resulting in more building coverage on site, pools, and a larger population with greater transportation needs.



THE APPLICANT & PROFESSIONALS

Real People:
Placitas Sage Cohousing LLC consists of a group of seniors, 55 and over, mostly residents of Placitas, who are creating a new model for how they age together. Rather than living in large isolated homes or corporate run retirement facilities, they aspire to life in a pleasant, interdependent, small scale community. By designing their own surroundings, it will be easier for them to live and to grow older more practically and economically. They will be able to inspire each other to stay motivated and active as they age as well as help each other along the way. Many of the members who are a part of this intentional senior community already volunteer in the wider community of active adults and are involved with a variety of community projects such as the Placitas Community Library, the Placitas Artists Series, the Placitas Studio Tour and Holiday Sale, Las Placitas Presbyterian Church, the Casa Rosa Food Pantry, Jardineros, and more. Most members currently live in Placitas. For more information on how the community envisions itself, please see our website: **www.placitassage.org**.

Architect:
Bryan Bowen, of Caddis Architecture in Boulder, CO, was recently named "Architect of the Year" by the Northern Colorado AIA. Bryan grew up on and around this site in Placitas, so he fully understands both the architectural style as well as the nature of the Placitas community. Bryan began his career in architecture as a laborer working under Peter Harris, of Placitas. He lives in Wild Sage Cohousing, a thriving intergenerational community in Boulder, and collaborated in the design Silver Sage Village with Charles Durrett (an intergenerational cohousing and senior cohousing pioneer). Both projects have won numerous awards. In the past 16 years he has also worked with cohousing communities across the US. Cohousing architects partner with future residents to create neighborhoods that are socially vibrant and environmentally sustainable. Bryan is dedicated to the design of livable neighborhoods and beautiful eco-buildings, all with the vision of taking realistic and persistent steps towards true sustainability. Bryan approaches work with a sense of humility and humor, and clients often comment on his ability to distill the chaos of construction and development in a logical and insightful way. For more information on their work, please visit his website: **www.caddispc.com**.

Development Consultant:
Kathryn McCamant, Founder and President of CoHousing Solutions of Nevada City, CA, is the Development Consultant for Placitas Sage. She, along with her husband Charles Durrett, are the most experienced cohousing professionals in the country, having created over 50 cohousing communities in the US and Canada. They introduced the cohousing concept to North America with their book *Cohousing: A Contemporary Approach to Housing Ourselves*. Charles Durrett's later book, *Senior Cohousing: A Community Approach to Independent Living* further develops the concept. Their most recent book is *Creating Cohousing: Building Sustainable Communities documents 25 years of cohousing development in North America.* Communities they have designed have received numerous awards including the National Association of Home Builders' "Best Smart Growth Community Design," HUD's "Building Innovation for Home Ownership," the Institute of Social Innovation in London's "Best Social Innovation," and received the United Nation's World Habitat Award. For a better understanding of cohousing, please see their website at **www.cohousing-solutions.com.**

Builder & Project Manager:
Jim Madueña and Gail McGough-Madueña are owners of JG Madueña Homes, a full service residential and light commercial development and build company which has been since 1984 a fully licensed GB98 general contractor through the New Mexico Construction Industries. Both Jim and Gail are long time members of the Placitas Community and bring a vast amount of knowledge and understanding to the

project. Jim has been selected by his peers to judge for the Santa Fe Parade of Homes and the Albuquerque Home Parade. He is past chair of the Green Build Council of the HBA of Central New Mexico and is an active member. He served on the BANM Council's Technical Advisory Committee for the state of New Mexico and is serving his third term on the board of directors for the state of New Mexico Home Builders Association. He served on the Placitas Community Library Architectural Advisory Board for design and construction of the local library. He is retired from 17 years as a volunteer firefighter for the Placitas Fire Brigade. He currently serves on the Sandoval County P&Z Commission. Jim lives and builds in Placitas. Their website is **www.jgmaduenahomes.com**.

View from the Community Center

Attachments:
Placitas Sage Water Usage Analysis
Proof of water availability: Hydrology letter from John Shomaker & Associates, Inc.
OSE letter (well permits submitted, approval pending)
Liquid Waste preliminary approval from the New Mexico Environment Department
Site Threshold Assessment (STH)
NM DOT Site Threshold Assessment (STH) Approval
Master Plan Submittal Drawing Set dated 4/6/2016

Water Usage Analysis
For Placitas Sage Cohousing

Date: 10.28.2014
To: Placitas Sage Cohousing
From: Caddis Architects
Regarding: Water Usage

The Placitas Sage Community will be an exemplar EPA Water Sense community. There are three main components to our smart water usage plan. They are collection, conservation, and education.

Collection

Our collection strategy includes collecting water from both outside and inside the residences, and using/reusing it as effectively as possible. We will employ the following:

- Roof collection and rain barrels to collect rain water
- Gray water system to collect water from sinks, showers, and household appliances

These collections could then be used for:

- Smart Irrigation
- Excess would drain through bio swales to
- On site water detention/absorption

Conservation

Our conservation strategy is designed to reduce water usage both inside the units and in the surrounding environment. In order to conserve water usage we would:

- Xeriscape planting only drought tolerant landscape plants, with most of the site remaining native
    - Landscape plants would also be edible when and where appropriate
- Use low flow fixtures, dual flush toilets, and high efficiency household appliances
- Homerun hot water lines of less than 5gal, or an at the tap on demand hot water systems

Education

Cohousing creates strong interactive communities. We would use this inherent community structure to help propel forward continuing education about best practices. The buildings would be sub metered to keep residents aware and accountable for their usage and foster competition between building groupings.

Additional Opportunities for Water Conservation:

As a development of 20 single occupancy homes on 8.2 acres, this development will have less intense water usage than what could be built under current zoning. These 20 units will be gathered together in groups of five. Homes in senior cohousing communities are typically smaller single occupancy units. This leads to significantly less water consumption per unit. Ultimately the property will function more like four single family homes on two acre lots. This is because of the efficiencies created by combining low occupancy and shared resources. These shared utilities would include:

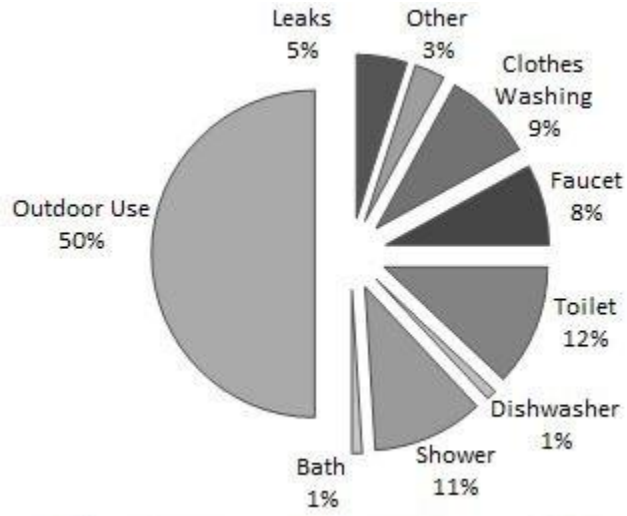
- Laundry facilities composed of high efficiency units; one laundry room per housing group
- 300gal static storage take for fire suppression; one tank per housing group
- Septic tank and leach field; one per housing group (5-8 people)

The development would also share three wells and a common house. The common house would not present any additional water usage because it is only used by the community for tasks that would otherwise happen in the residential units.

The community would also be interested in using a Living Machine to allow for the purification and reuse of even more water onsite. Further evaluation of this and other advanced systems is required before a recommendation can be made.

Conclusion

Combining these strategies will allow us to reduce irrigation, the largest component of normal household water usage, to nothing in all but the driest conditions.



Graph of typical household water use by Colorado State University

It will also dramatically reduce indoor water usage. Using standard low flow fixtures and appliances we can easily reduce indoor water usage by 30%. By getting fixtures and appliances that exceed the EPA's water wise program, recycling grey water, and installing a living machine we could achieve even more dramatic results.

Fixtures:

Pressure-reducing valve: If the water pressure for the main water lines in the community exceeds 35psi, we will install a pressure reducing valve to reduce water usage

Showerheads: The showerheads installed in this project with use 1.75gpm or less

- Hansgrohe Croma E 100 Green 3-Jet Showerhead, 1.75 GPM

Toilets: The toilets installed in this project with use 1.3gpf or less

- Caravelle Smart 270 One Piece, dual flush, 1.28/0.8 gallons per flush

Faucets: The faucets installed in this project with use 1.5gpm or less

- Kitchen: Hansgrohe Talis S 2-Spray HighArc Kitchen Faucet, Pull-Down, 1.5 GPM
- Washroom: Hansgrohe Talis S Single-Hole Faucet, 1.0 GPM

Washing Machine: The washing machines in this project with use 15 gpl or less, and be CEE III certified

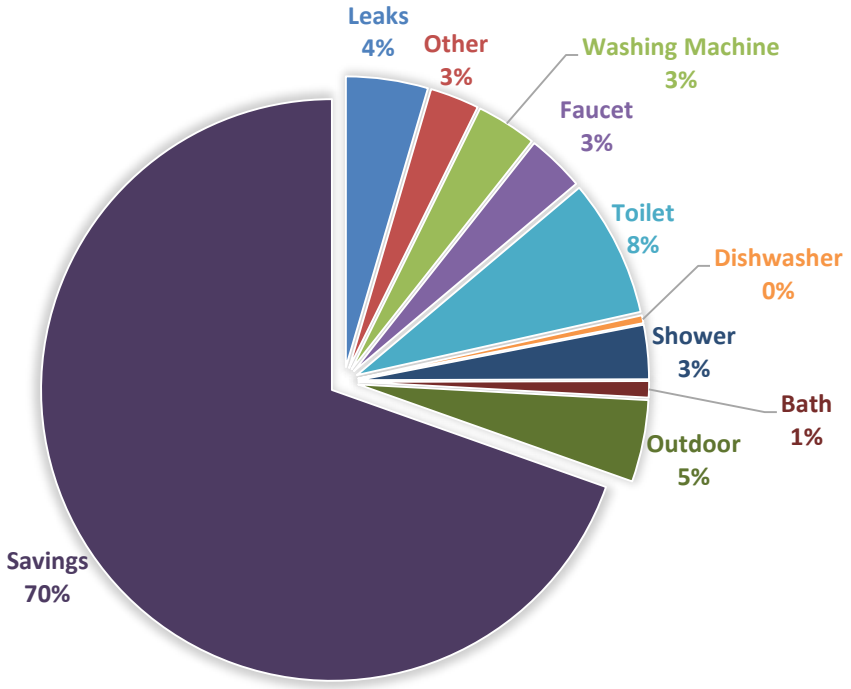
- MAXIMA® FRONT LOAD WASHING MACHINE WITH LARGE CAPACITY – 4.5 CU. FT. 13.5gpl

Dishwashers: The dishwashers in this project with use 3.5gpl or less

- Bosh 24" Recessed Handle Special Application SGE63E15UC 2.2gpl

	Showerhead	Toilet	Faucet	Washing Machine	Dishwasher
Conventional Fixtures	2.5gpm	3.5gpf	2.2gpm	23gpl	4.25gpl
Fixtures Planned	1.75gpm	1.3/0.8 gpf	1.5/1.0gpm	13.5gpl	2.2 gpl
Water Savings	30%	63% to 77%	32% to 55%	41%	48%

WATER USAGE COMPAIRED TO A CONVENTIONAL HOUSEHOLD



Percent Savings Based on (Average Household Usage as determined by CSU) x (Water Savings)

Average Per Capita Daily Water Usage (GPCD)	Percent Savings Compared to Conventional Usage	Predicted Daily Per Capita Water Usage	Predicted Annual Per Capita Water Usage
150gal	70%	45gal	16,200gal

JOHN SHOMAKER & ASSOCIATES, INC.
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January 26, 2016

Ms. Joyce Thompson
Placitas Sage Cohousing
P. O. Box 408
Placitas, New Mexico 87043

by email: revjat@gmail.com

Re: water availability for Placitas Sage project

Dear Ms. Thompson:

You asked several days ago for an evaluation of the availability of water for the proposed Placitas Sage Cohousing project, to be located in the SE/4 Sec. 34, T. 13 N., R. 4 E. about 2 miles east of Bernalillo. I have examined the relevant geologic and hydrogeologic literature, the records of the State Engineer and the U.S. Geological Survey, and information provided by you, and I believe that the yield of a well, the groundwater in storage, and the rate of change in groundwater levels, will be such as to provide an adequate supply for the 100-year period contemplated in Sandoval County subdivision regulations.

Projected Demand

The Placitas Sage project is to be designed as an "exemplar EPA Water Sense community,"[1] with water-conserving fixtures and appliances and minimal outdoor use. The predicted per capita daily water use is 45 gallons. Assuming that each of the proposed 18 connections would represent two people, the total annual demand would be approximately 592,000 gallons per year, or 1.82 ac-ft/yr. A supply sufficient for 100 years would be 182 ac-ft.

Hydrogeologic Setting

The location of the project is shown on the geologic map of Connell et al, 1999 (Plate 1 of Johnson and Campbell, 2008),[2] Figure 1. The aquifer is the Upper Santa Fe Group, the principal aquifer of the Middle Rio Grande valley, and the project is just east of the transition between axial river sands and gravels, and piedmont deposits that include somewhat less well sorted, and more silt- and clay-rich alluvial-fan sediments. The project is about 1.5 miles west of the major fault that separates the down-dropped block containing the valley-fill deposits of the Santa Fe Group on the west, from the older and much less permeable bedrock geologic units on the east (Cretaceous- and Jurassic-age units indicated by the blue and green colors on the map). It is primarily in the area of bedrock aquifers that low well-yields, large water-level declines, and well failures have been a problem in parts of Placitas.

[1] Caddis Architecture Inc. (Boulder, CO), 2015, Memorandum re: water usage: report to Placitas Sage Cohousing, March 12, 2015.

[2] Johnson, P.S., and Campbell, A., 2008, Hydrogeology and water resources of the Placitas area, Sandoval County, New Mexico: New Mexico Bureau of Geology and Mineral Resources Open-File Report 469.

Figure 2 shows the location relative to the hydrogeologic zones defined by Johnson and Campbell. They describe hydrogeologic zone B2a, within which a well at the Placitas Sage project would be located, as shown in the excerpt below. The thickness of Upper Santa Fe Group beds is predicted to be at least 2,000 ft, of which, based on water-level measurements near the Placitas Sage tract, at least 1,600 ft is saturated.

Excerpt from Johnson and Campbell (2008) describing hydrogeologic zone B2a:

2. Zone B2, Eastern Albuquerque Basin

The eastern margin of the Albuquerque Basin consists entirely of a conglomerate-sand facies of Upper Santa Fe Group piedmont deposits. This margin region encompasses a northeast trending strip through the center of the Placitas study area. The region is subdivided into two separate hydrogeologic zones, B2a and B2b (Plate 5), based on aquifer thickness, and sources of recharge.

Hydrogeologic zone B2a consists of thick sequences of Upper Santa Fe Group conglomerate and sand that were deposited adjacent to the Rincon, Ranchos, and Escala faults. This zone incorporates the fastest developing areas in the vicinity of Placitas and includes Placitas Small Tracts, Placitas Homesteads, Tres Vidas, Cedar Creek, Placitas Ranchettes, Placitas North, Juniper Hills, and Windfall subdivisions. Piedmont deposits in zone B2a form a block of relatively permeable gravel and sand about 1.5 miles wide. The sediments also contain mudstone, which is generally rare, but increases proportionally to the west (sections III.B.1(b) and III.D.3). Total thickness of the Upper Santa Fe Group sediment in zone B2a varies from about 2000 to 2500 ft in the southern half, and up to 3500 ft in the northern half of the zone. These sediments possess moderate values of transmissivity (7 ft/d hydraulic conductivity) and produce sufficient quantity and quality of water for domestic purposes (P.Johnson, unpubl. report for Sandoval County, 1999). Depth to productive ground water in zone B2a varies from 550 to 650 ft below land surface in the southern part of the zone, from 350 to 450 ft in Cedar Creek, and from 250 to 400 ft in the area north of Las Huertas Creek. A deeper production zone is located adjacent to the Escala fault near the boundary of San Felipe Pueblo, where ground water is encountered at about 500 ft below land surface. The aquifers in zone B2a are recharged by infiltration of surface water through arroyo channels. Perennial stream flow from Las Huertas Creek and Arroyo del Ojo del Orno contributes significant recharge to the area encompassed by Cedar Creek, Tres Vidas, Placitas Ranchettes, Placitas North, Juniper Hills, and Windfall subdivisions. Stream-channel infiltration is an active recharge mechanism and replenishes the shallow ground-water system in this vicinity on a continual basis. Ground-water residence time in this area is on the order of a few years to 10s of years (Table 6, PW-163). The aquifer in the southern portion of zone B2a has no significant, local source of recharge, and ground-water residence times are probably much longer, on the order of 100s to 1000s of years.

Well Yields

The wells of the Placitas West Water Cooperative (PWWC), RG-11802 and RG-11802-S, are about 350 ft from the northeastern corner of the Placitas Sage tract (Fig. 1). Well RG-11802 was drilled in 1967. A short formal test was conducted in 1977, during which the well produced an average of 42 gpm (gallons per minute) with a drawdown of about 7 ft, leading to a specific capacity of about 6 gpm per foot of drawdown. Well RG-11802-S was drilled in 1998, to a depth of 580 ft, and was tested at 42 gpm. It has continued to supply the PWWC system, and in early 2015 was producing an average of 46.24 gpm when the pump was running.[3]

[3] PWWC Well Pump Log 2015, provided by Leland Bowen January 2016.

Johnson and Campbell (2008) indicate that the hydraulic conductivity of the aquifer in the area of the Placitas Sage tract is about 7 ft/day. A saturated thickness of 370 ft, which would apply if a new well were 800 ft deep, would have a transmissivity of 2,590 ft^2/day. If a specific yield of 0.20 is assumed, adopting the value in the State Engineer administrative groundwater flow model (Barroll, 2001),[4] a specific capacity of about 9.5 gpm per foot of drawdown, at 70 percent well efficiency, would be expected. This is somewhat greater than the specific capacity of the PWWC wells because of the greater saturated thickness in the deeper well.

The average pumping rate required to supply the 1.82 ac-ft/yr predicted demand of the Placitas Sage project would be 1.13 gpm, equivalent to 11.3 gpm pumped for 2.4 hours each day.

Groundwater in Storage

A calculation of groundwater in storage beneath the Placitas Sage tract, following the procedure outlined in the Sandoval County regulations (Section 4.A.5, p. 56) leads to a total of 266 ac-ft, based on the approximate area of the tract, 4.5 ac; a specific yield for the aquifer of 0.20 as in the State Engineer administrative groundwater model (Barroll, 2001); a saturated thickness of 370 ft based on the 430-ft current depth to water as measured in Well RG-71433,[5] and an assumed well depth of 800 ft; and a recovery factor of 0.8. The calculated volume in storage beneath the Placitas Sage tract is greater than the expected 100-year total demand of the project.

Water flows toward a pumping well from the surrounding aquifer in all directions, from both within and outside the particular tract it serves. It is worth noting that the Placitas Sage tract adjoins U.S. Forest Service lands along its southern boundary (see Fig. 1), and no development that would include water wells is expected on the Forest Service lands. Competition for groundwater would be limited to wells in the non-Forest Service area.

Water-Level Change Over Time

Water levels have declined very slowly in this part of the aquifer. Three measurements are known for wells very close to the Placitas Sage tract, all at about the same elevation, as shown in Table 1. The decline indicated by these measurements is about 11 ft over a period of a little more than 39 years, or about 0.28 ft per year. The U.S. Geological Survey published regular measurements of the water level in well RG-38051 (Fig. 1) from 1982 to 2006, as shown in Figure 3. The well is about 0.45 mile northeast of the Placitas Sage tract, and is

[4] Barroll, P., 2001, Documentation of the administrative groundwater model for the Middle Rio Grande Basin: New Mexico Office of the State Engineer, Hydrology Bureau Report 99-3.

[5] Measured on January 22 and 23, 2016 by Eric Hubbard, consulting hydrogeologist, Placitas. Depth is corrected to ground level datum. The original well record for RG-71433 gives a depth to water of 372 ft, in 1999, but this measurement was made immediately after the well was completed is not likely to be representative of the water level in the aquifer. It was very probably influenced by the presence of drilling fluid and water used for jetting to clean perforations, and incomplete development. The well was never tested and has not been in use.

completed in the same aquifer. The trend of non-pumping measurements has been a very steady decline of about 0.25 ft per year. Extrapolation of the recent trend for 100 years would lead to a decline of somewhat less than 30 ft, which, given the 1,600 ft or greater saturated thickness of the aquifer, would leave ample saturated thickness to continue to supply a well at the Placitas Sage tract.

Table 1. Water-level measurements in wells close to the Placitas Sage project. Land-surface elevations of all three wells are similar. See Figure 1 for well locations.

well	date measured	depth to water, ft below ground level
RG-11802 (PWWC 1967 well)	9-10-1977	419
RG-11802-S (PWWC 1998 well)	2-19-1998	424
RG-71433	1-23-2016	430

Water Quality

Water quality will not be discussed here except to say that the general chemical quality of water from the PWWC wells is good, except that arsenic concentration is slightly greater than the Environmental Protection Agency Maximum Contaminant Level of 10 micrograms per liter. Similar water can be expected from a well on the Placitas Sage project tract.

Please let me know if there are questions, or if any further information would be helpful.

Sincerely,

JOHN SHOMAKER & ASSOCIATES, INC.

John W. Shomaker, PhD, CPG, PG
Senior Principal Hydrogeologist

JWS:js

Enc: Figures 1, 2, and 3

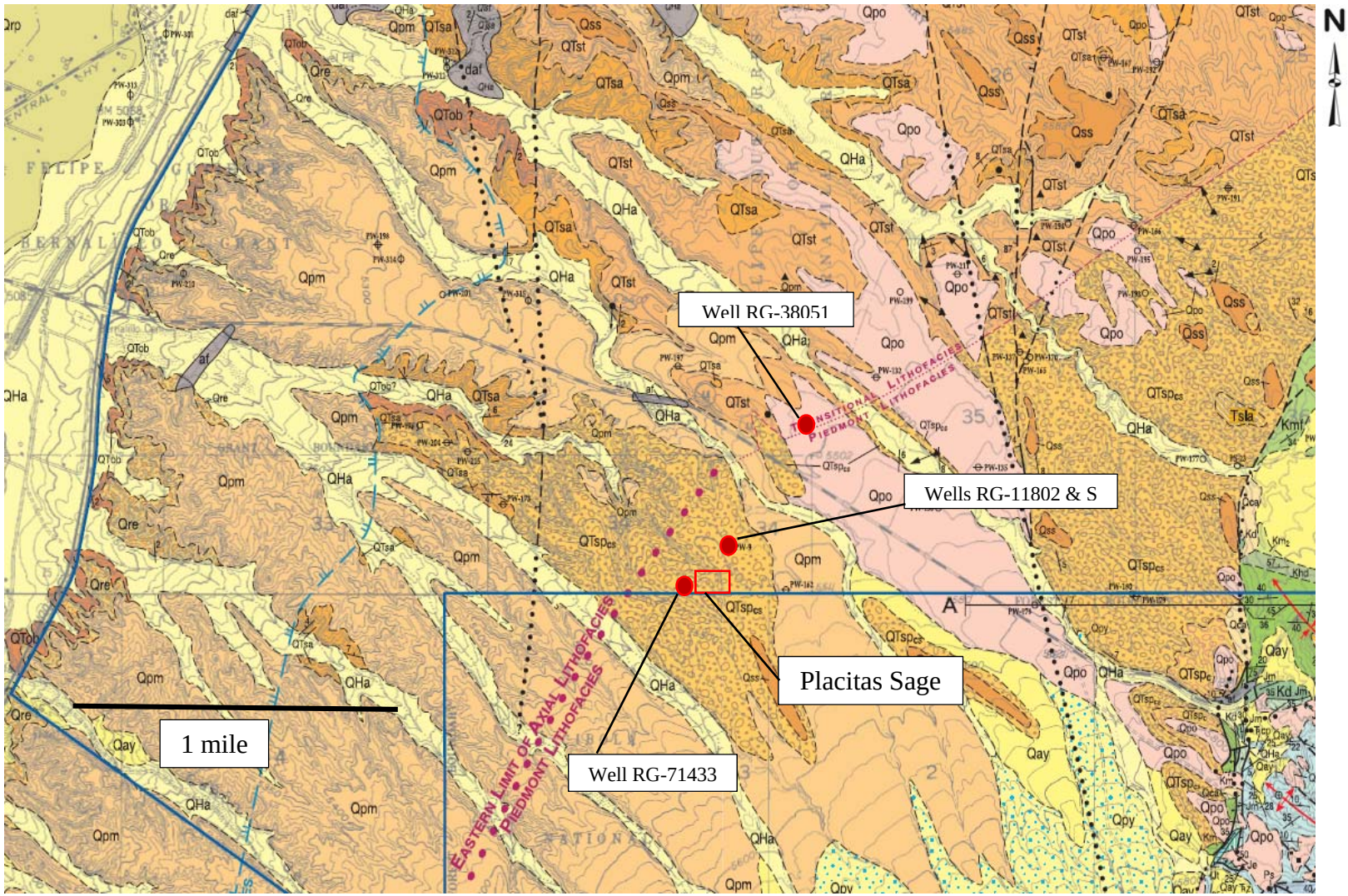

Figure 1. Geologic map showing location of Placitas Sage project in Sec. 34, T. 13 N., R. 4 E. and wells mentioned in text. (Map from Johnson and Campbell, 2008, Plate 1). U.S. Forest Service lands in the southern part of the map area indicated by the blue boundary line. Explanation of geologic units on following page (many units described in explanation are not present within the map area). Black dotted and dashed lines represent faults (dotted where buried, dashed where inferred).

Stream Alluvium

Variable amounts of stream and fan alluvium, locally containing debris-flow and colluvial deposits derived from adjacent slopes and upland areas. Deposits commonly contain sediment recycled from older piedmont and valley-fill deposits. Terraces are associated with major arroyos and streams and are underlain by poorly to moderately stratified alluvium derived from local upland sources.

QHa — **Stream alluvium, undivided (Historic to uppermost Pleistocene)** — Unconsolidated deposits of brown, light gray-brown, and yellowish-brown (10YR) sand, sandy clay loam and gravel. Boulders are common along range front in southwest portion of map area. Unit grades westward to the *Rio Grande* floodplain. Thickness varies from less than 6 to 40 ft.

Qay — **Younger stream alluvium, undivided (Holocene to uppermost Pleistocene)** — Poorly consolidated deposits of very pale brown to light-brown (7.5-10YR) sand to sandy clay loam and gravel. Slightly dissected surface possesses well developed constructional bar-and-swale topography. Associated with broad valley fill units within modern stream valleys that grade to *Rio Grande* floodplain. 6 to 70 ft thick.

Piedmont alluvium

Complex juxtaposition of poorly sorted, poorly stratified, clast- and matrix-supported deposits consisting of subangular to subrounded, poorly to well sorted gravel and sand. Contains primarily granitic, metamorphic and minor limestone clasts derived from the Sandia Mountains and eastern basin margin.

Qpy — **Younger piedmont alluvium (Holocene to uppermost Pleistocene)** — Unconsolidated deposits of brown, light gray-brown, and yellowish-brown (10YR) sand, sandy clay loam and gravel. Boulders are common along mountain-front fans. Surface is moderately to weakly dissected and possesses bar-and-swale topography. Unit can be subdivided based on age, soil development, and inset relationships (see Connell, 1998; Connell *et al.*, 1995). Exposed thickness ranges from less than 10 ft to 120 ft.

Qpm — **Middle piedmont alluvium (upper to middle Pleistocene)** — Poorly to moderately consolidated deposits of very pale brown to light-brown (7.5-10YR) stratified sand to sandy clay loam and gravel. Slightly to moderately dissected surfaces possess bar-and-swale topography. Unit can be subdivided based on age, soil development, and inset relationships (see Connell, 1998; Connell *et al.*, 1995). Exposed thickness ranges from less than 10 ft to 50 ft.

Qpo — **Older piedmont alluvium (middle to lower Pleistocene)** — Poorly to moderately sorted and stratified, moderately consolidated gravel and sand with minor silty-clay mixtures. Unit can be subdivided based on age, soil development, and inset relationships (see Connell, 1998; Connell *et al.*, 1995). Exposed thickness ranges from less than 7 ft to 45 ft.

Quaternary and Tertiary Systems

Upper Santa Fe Group (lower Pleistocene to upper Miocene)

Qss — **Suela alluvium (lower Pleistocene)** — Moderately consolidated deposits of brown, very pale brown to white (7.5YR - 2.5Y) sandy loam, sand and subrounded to subangular cobble to pebble conglomerate overlying remnants of a northwest-sloping pediment surface that cuts across the Placitas fault. The deposit surface is moderately dissected and sits 110 to 165 ft above local base level. The basal contact becomes conformable with underlying *QTsa* northwest of the Escala and Lomos faults. Less than 15 ft thick.

QTt — **Travertine (lower Pleistocene to Pliocene)** — Light-gray nodular to massive limestone interlayered with mudstone. Prominent outcrop at the northern tip of the Cuchilla de San Francisco (Sections 14 and 15, T13N, R5E), where deposit overlies and interfingers with $QTsp_{cs}$. Spring deposits also occur along valleys associated with *Qay* (notably along the base of the Cuchilla de San Francisco) and locally at depositional contacts or along faults. Thickness is variable, but can be greater than 50 ft thick at the northern tip of the Cuchilla de San Francisco.

QTsa — **Fluvial deposits of the ancestral Rio Grande (lower Pleistocene to Pliocene)** — Variable proportions of sandstone, conglomerate and mudstone deposited by the ancestral *Rio Grande*. Sandstone is typically crossbedded. Clasts in conglomerate are quartzite, chert, granite, gneiss, sandstone, volcanic, siltstone, limestone, schist, phyllite and pumice. Mudstone ranges in color from light-brown to grayish-green. Paleoflow measurements are generally south to southwest. Black circles indicate selected exposures of axial sandstone and conglomerate used to delineate areal extent of axial river deposits (*QTsa*) and transitional axial-piedmont deposits (*QTst*).

QTst — **Transitional fluvial-piedmont deposits (lower Pleistocene to Pliocene)** — Interfingered axial river deposits (*QTsa*) and piedmont deposits (*QTsp*). Defined as the zone of overlap between the easternmost outcrops of axial river deposits and the westernmost outcrops of piedmont sandstone and conglomerate.

$QTsp_c$ — **Piedmont deposits, eastern margin (lower Pleistocene to Pliocene)** — Conglomerate deposits with a conglomerate to sandstone ratio greater than 2. Clasts are pebbles, cobbles, and boulders of Paleozoic limestone, sandstone, siltstone, and chert, and Proterozoic granite, gneiss, phyllite, and schist. Proterozoic detritus becomes more abundant in the southern part of the map area. Sandstone is coarse to very coarse and typically crossbedded or horizontally laminated. Matrix-supported conglomerate (debris-flow) deposits are common. Mudstone is very rare.

$QTsp_{cs}$ — **Piedmont deposits, eastern margin (lower Pleistocene to Pliocene)** — Subequal proportions of conglomerate and sandstone deposited in mountain-front alluvial fans. Conglomerate is typically poorly sorted and clast supported, consisting primarily of pebbles and cobbles of lithologies similar to clasts in $QTsp_c$. Sandstone is horizontally laminated or trough crossbedded, moderately to poorly sorted, and often pebbly. Mudstone is rare.

$QTsp_s$ — **Piedmont deposits, eastern margin (lower Pleistocene to Pliocene)** — Sandstone deposits with a conglomerate to sandstone ratio less than 0.5, and with subordinate siltstone. Sandstone is horizontally laminated with subordinate trough and planar crossbedding. Conglomerate occurs in shallow, lenticular beds, is clast supported, and consists of pebbles of Paleozoic sedimentary rocks and Proterozoic rocks. Siltstone is massive to faintly laminated, and forms tabular to broadly lenticular beds.

Mesozoic Erathem

Upper Cretaceous

Kmf — **Menefee Formation** — Contains three informal members: a lower member (324 ft), the Harmon sandstone (140 ft), and an upper member (740 ft). Upper and lower members are similar and contain, in order of abundance: gray, tan to orange-tan, cross-bedded, and laminated to thick-bedded siltstone and sandstone; dark-gray to olive-gray and black shale; dull, dark-brown to shiny black lignitic coal; and maroon to dark-brown iron concretions. The upper Menefee has a greater abundance of shale, carbonaceous material, ironstone, thicker coal seams, and a lenticular calcareous sandstone. The light-gray to buff or gray-tan Harmon Sandstone is a medium grained, well-sorted, quartz sand with cross bedding and limonite staining. Thickness of the Harmon is variable and thins to at least 73 ft in the Hagan basin east of Placitas. The individual members are not differentiated in this study area, but are distinct hydrostratigraphic units. The Harmon hydrostratigraphic unit includes an underlying 41-foot gray-tan, fine- to medium-grained sandstone. The Menefee varies regionally in thickness from 680 ft to 1200 ft due in part to post-depositional erosion. The lower contact with the *Kpl* is interfingering and gradational.

Kpl — **Point Lookout Sandstone** — Gray-tan to light-tan and drab-yellow, very fine to fine-grained, massive, quartz sandstone, with limonitic sandstone lenses, and interbedded thin gray shale. The unit is weakly cemented and a prominent ridge- and ledge-former. Both upper and lower contacts are interfingering and gradational. The unit varies regionally in thickness from about 240 ft near Placitas, to 315 ft in the Hagan basin.

Km_2 — **Mancos Shale, upper Mancos Shale tongue** — Medium- to dark-gray to olive-gray shale, and silty shale, with less abundant very fine to fine-grained sandstone that is locally gypsiferous. This unit is an upper tongue of Mancos shale and forms valleys and covered slopes between the more resistant *Kpl* and *Khd*. The unit produces poor quality, high sulfate ground water. Thickness is variable, and difficult to measure due to cover, but varies from about 240 ft west of Placitas, to 360 ft in the Hagan basin. Upper and lower contacts are gradational.

Khd — **Hosta-Dalton Sandstone** — Drab, yellow-gray to yellow-tan, very fine to medium-grained, weakly cemented sandstone with olive-brown sandstone lenses. The unit is a moderate ridge- and ledge-former. Unit thickness varies from 210 ft near Placitas, to 370 ft in the Hagan basin, where it contains a considerable amount of siltstone and fissile shale that does not occur in the Placitas area. Upper and lower contacts are gradational.

Km_1 — **Lower Mancos Shale** — Lithology is similar to *Km2*, with subequal proportions of olive-brown to gray to black shale, and laminated to interbedded olive-brown to gray, very fine grained sandstone, siltstone, and shale. Selenite and white to yellow gypsum are interbedded throughout the unit. Unit thickness is highly variable regionally and across the study area, ranging from 850 ft west of Placitas to 1850 ft in the Hagan basin. Thickness near the Village of Placitas is intermediate. Upper and lower contacts are gradational, with significant interfingering between the dark gray shale typical of the lower section and underlying *Kd* sandstone.

Kd — **Dakota Formation** — Medium-bedded, pervasively silica cemented, medium-grained, yellowish-gray to orange-yellow quartz arenite. Interbedded dark-gray *Km1* is commonly present. Sandstones are well cemented and weather to form angular and blocky ridges. Unit thickness varies from 75 ft west of Placitas, to less than 25 ft in the Hagan basin.

Upper Jurassic

Jm — **Morrison Formation** — Four members are commonly recognized in northern New Mexico, and discernable in subsurface geologic logs, but are not differentiated in this map area. The members are, in descending order, the Jackpile Sandstone, the Brushy Basin Shale, the Westwater Canyon Sandstone, and the Recapture Shale (correlative to the Summerville Formation). The uppermost Jackpile Sandstone is a distinctive gray-white, kaolinitic, fine- to medium-grained sandstone with a thickness of about 70 ft near Placitas. The Brushy Basin member is a gray, green, and maroon mudstone and shale, with interbedded and intercalated gray to tan sandstone. Thickness is about 240 ft near Placitas. The Westwater Canyon Sandstone is a gray to yellow-buff, medium-grained and weakly cemented sandstone, with a unit thickness of 216 ft near Placitas. The Recapture Shale is not well exposed in the Placitas area, but consists of purple-gray, red-brown, and green-gray mudstone interbedded with tan, gray, and greenish-gray, very fine grained, sandstone. Estimated thickness is 325 ft. The various members are discernable in the subsurface due to distinctive sequences of unique lithology and color. Total unit thickness is relatively uniform, varying regionally from about 850 ft near Placitas, to 780 ft in the Hagan basin.

Figure 1a. Explanation of geologic units.

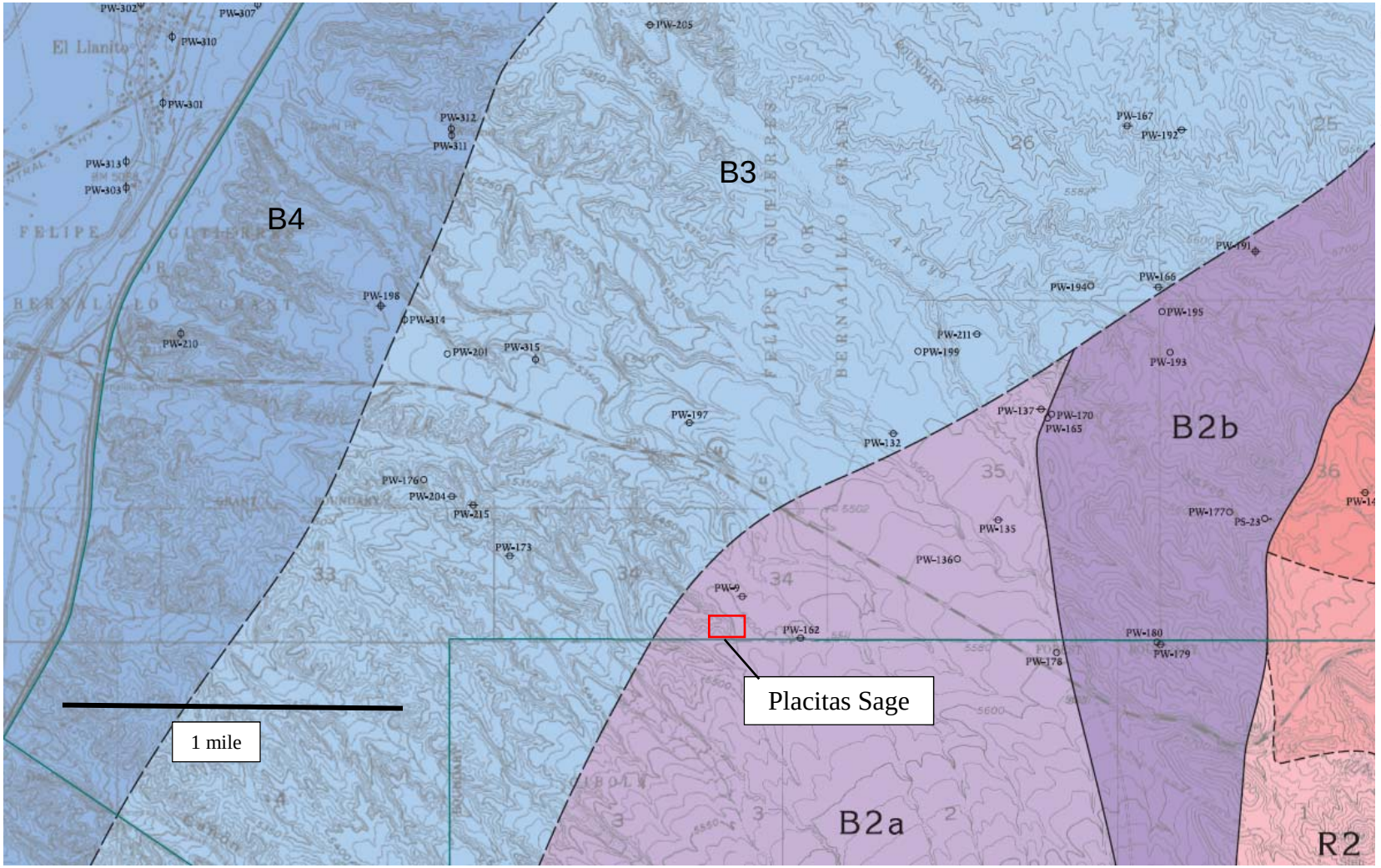

Figure 2. Map showing hydrogeologic zones in the vicinity of the Placitas Sage project, as defined by Johnson and Campbell, 2008 (Plate 7). Zones B2a and B2b are described in the text. Zones B3 and B4 include thicker sequences of Santa Fe Group beds and river gravels of the Albuquerque Basin, with higher hydraulic conductivity than Zone B2a.

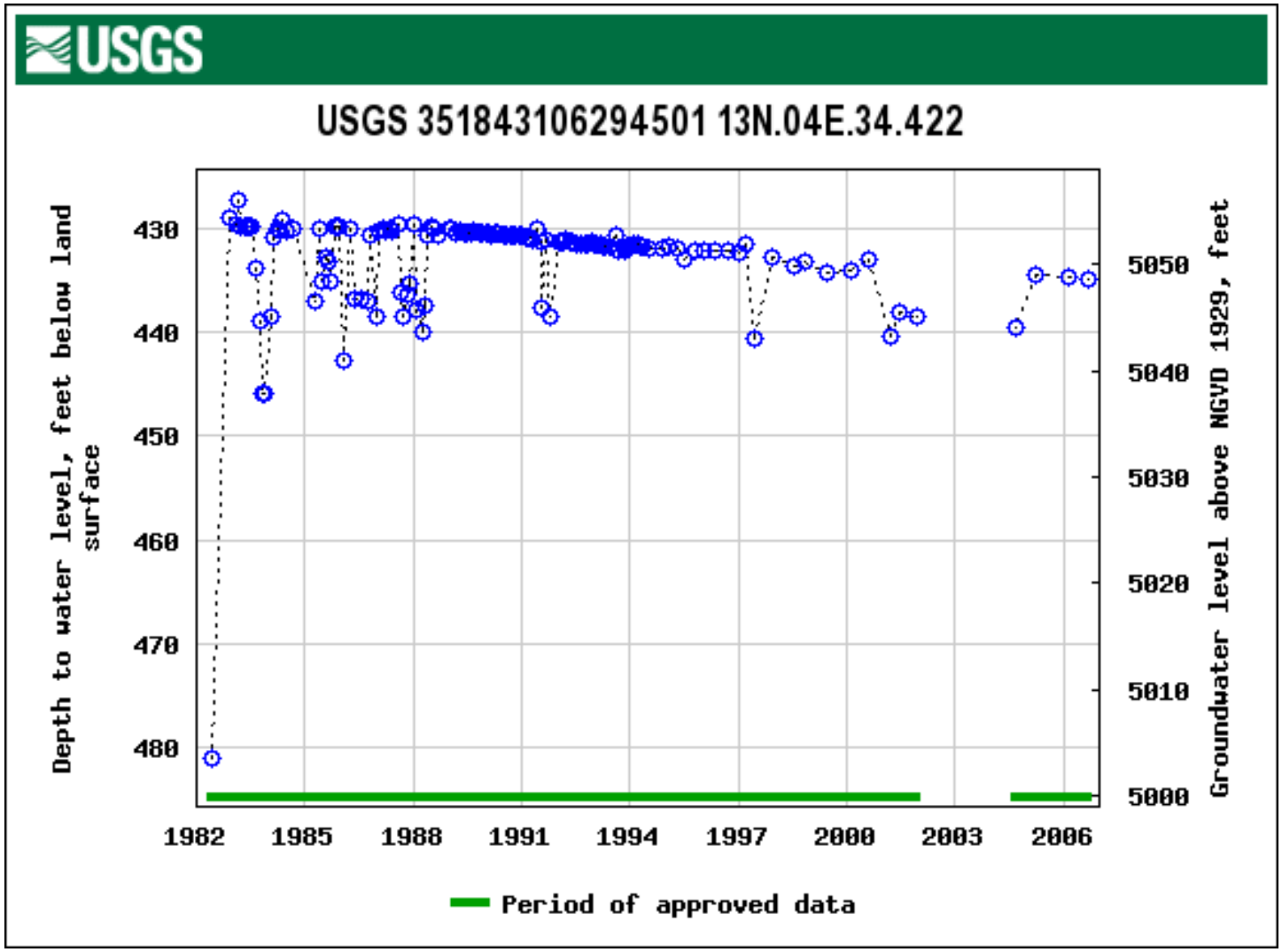

Figure 3. Water-level measurements published by U.S. Geological Survey for well RG-38051, about 0.45 mi northeast of Placitas Sage tract, and completed in the same aquifer. See Figure 1 for location. Measurements below the main trend probably represent pumping or partially recovered levels, or levels measured during pumping from a nearby well.

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Governor
JOHN A. SANCHEZ
Lieutenant Governor

RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

March 28, 2016

Jim Maduena
J.G. Maduena Homes
PO Box 845
Placitas, NM 87043

RE: Placitas Sage Cohousing Project – Preliminary approval

Dear Mr. Maduena:

A review of the proposed Placitas Sage Co-housing project plot dated March 17, 2016 has been completed by the New Mexico Environment Department (NMED), District 1 staff and it has been determined that the development, as proposed on the plot dated March 17, 2016, meets the minimum requirements of the Liquid Waste Treatment and Disposal Regulations (20.7.3 NMAC). Specific details are identified below. Approval is based on the lot sizes, unit densities and design flows that follow. Unknown soil/ site conditions could reduce the allowable design flow on individual lots. Shown are maximum allowable design flows assuming ideal site conditions:

Lot	Units/ Bedrooms Proposed	Lot Size Proposed	Minimum Lot Size Required	Proposed Design Flow	Maximum Allowable Design Flow
83-A	5 units/ 5 bdrms	1.50 acres	1.50 acres	750 gpd	750 gpd
83-B	5 units/ 5 bdrms	1.60 acres	1.50 acres	750 gpd	800 gpd
84-A	5 units/ 5 bdrms	1.63 acres	1.50 acres	750 gpd	815 gpd
84-B	4 units/ 5 bdrms	1.50 acres	1.50 acres	750 gpd	750 gpd

Actual permitting of proposed cluster liquid waste systems shall follow the requirements in 20.7.3 NMAC. This letter does not constitute blanket approval for systems.

Please feel free to contact me with any questions.

Sincerely,

John S. Rhoderick

John Rhoderick, Area Manager
NMED-EHB

Site Threshold Assessment (STH)

A Site Threshold Assessment (STH) is required of all developing or redeveloping properties that directly or indirectly access a state highway.

District No. 3

Project No. _____

Permit Applicant

Date: 1/20/2016

Applicant Name: Joyce Thompson

Business Name: Placitas Sage CoHousing, LLC

Business Address: P.O. Box 408

City: Placitas State: NM Zip Code: 87043 -_____

Site Description

Development Type		Site Information (fill in all that apply)			
Residential	X	Building Size (SF)		Dwelling Units	18
Retail		Parcel Size (ac)		Rooms	
Office		Roadway Frontage (ft)		Beds	
Industrial		Parking Spaces		Students	
Institutional		Employees		Seats	
Lodging		Other		Fuel Pumps	
Restaurant				Courts	
Convenience/Gas				Storage Units	
Other					

The STH examines existing roadway volumes and anticipated site trip generation for the purpose of determining if additional analyses are required. If the site characteristics and the trip generation estimate for a proposed development do not satisfy the requirements for a STA or a TIA as determined by the District Traffic Engineer, the STH should be approved and the traffic study requirement for the proposed development will be complete. If additional analysis is required based on the results of the STH, the District Traffic Engineer should indicate to the applicant the level of analysis that is required.

Existing Roadway Data

Highway No.: NM 165

Highway ADT: 6,440

Number of Lanes (two-way): 2

Site Mile Post: Approx 1.91

Count Year: 2014

Func. Class.: MJCL

Trip Generation

ITE Trip Generation Land Use Category: 230

AM Peak Hour Trips Enter: 2 Exit: 11

PM Peak Hour Trips Enter: 10 Exit: 5

Exceeds Threshold: Y or (N) → If Yes, is a **STA** or **TIA** Required?

Thresholds

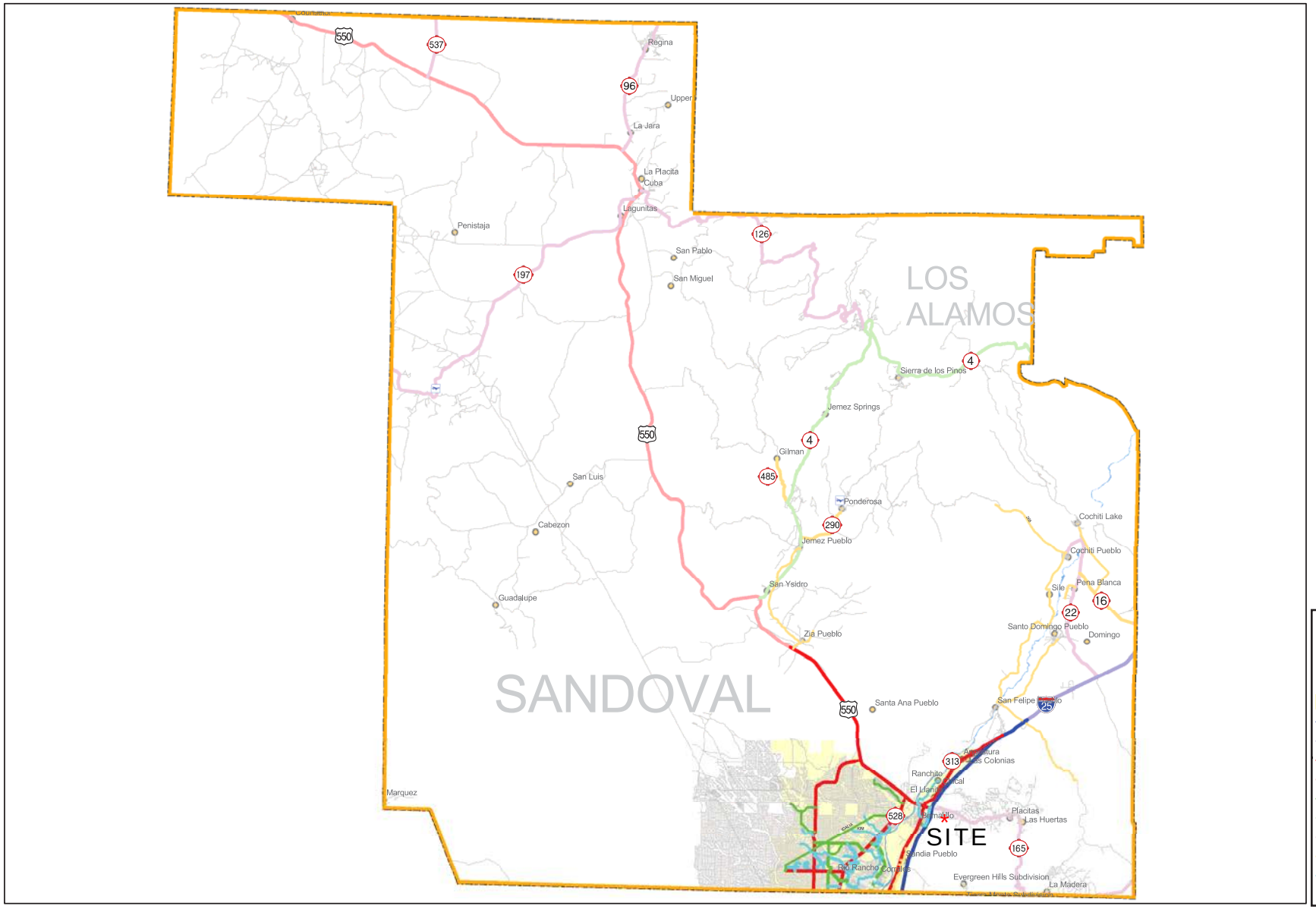
STA: 25 to 99 peak-hour total trips and more than 1,000 vehicles per lane per day on adjacent highway.

TIA: 100 or more peak-hour total trips.

Other Requirement Basis / DTE Comments: Development located 0.45 miles south of NM 165.

NMDOT Functional Re-Classification Submittal 2004 (FINAL)

Sandoval County



03/01/04

NMDOT

GIS

LEGEND

- Airports
- Counties
- Cities, Towns & Villages
- TDUA2000
- INTERST URBAN
- INTERST RURAL
- PRIMARY ARTERIAL URBAN
- PRIMARY ARTERIAL RURAL
- MINOR ARTERIAL URBAN
- MINOR ARTERIAL RURAL
- MAJ COLLECTOR RURAL
- MINOR COLLECTOR RURAL
- COLLECTOR URBAN
- LOCAL URBAN


to I-25
Spur Rd
Prairie Ln
Desert Mountain Rd
NM 165
Dusty Trails Dr
Sage Hill Dr
N
MP 1.91
Cll De Maya
Ridge Rd
Arroyo Conchas
Coyote Run
Wild Horse Ln
Senda Aliento Dr
Freeform Way
Cll Lagartijas
N Forest Ln
Jaditas West Rd
Sandy Ln
Forest Ln
SITE

Trip Generation Worksheet

Land Use: **Residential Condo or Townhouse** **230**

Trip Generation Units:	1	Dwelling Unit
Project Units:	18	

Trip Generation Equations:

Average Vehicle Trip End on a Weekday

Ln(T) = 0.87 Ln(X) + 2.46	
Enter	50%
Exit	50%

Peak Hour of Adjacent St, Traffic 7 to 9 AM

Ln(T) = 0.80 Ln(X) + 0.26	
Enter	17%
Exit	83%

Peak Hour of Adjacent St Traffic, 4 to 6 PM

Ln(T) = 0.82 Ln(X) + 0.32	
Enter	67%
Exit	33%

Daily Trips	**145**
Enter	73
Exit	72
AM Peak Trips	**13**
Enter	2
Exit	11
PM Peak Trips	**15**
Enter	10
Exit	5

Trip Generation based upon ITE *Trip Generation* , 9th Edition.

New Mexico DEPARTMENT OF TRANSPORTATION

March 16, 2016

Mr. Nevin Harwick, P.E
Harwick Transportation Group
1440 Camino Cerrito SE
Albuquerque, New Mexico 87123

Subject: Proposed Placitas Sage Co-Housing
NM 165 Mile Post 2
Placitas, Sandoval County, New Mexico

Dear Mr. Harwick:

This letter is to inform you that the Site Threshold Assessment (STH) for the proposed Placitas Sage Senior Housing dated January 2016 has been reviewed. The proposed development is located south of NM 165 and access to the site would use the existing intersection of NM 165 and Placitas West Road located at approximately mile post 2. Placitas West Rd currently provides access to multiple residential lots and connects to several residential streets.

The NMDOT is satisfied with the information and data presented within the analysis and concur with the minimal anticipated traffic impacts on NM 165 associated with the proposed development. The anticipated Build Out Year for this development is 2017. Based on the provided information, no offsite improvements will be required for this development. Since the roadway accessing NM 165 for this development is an established county road there is no need for a driveway permit with the NMDOT.

If any questions, please feel free to call me at 505.798.6625.

Sincerely,

Nancy R. Perea, P.E.
District Three Traffic Engineer

Copies: Jill Mosher, NMDOT D3 ADE Engineering Support (Actiing)
Margaret Haynes, NMDOT D3
File

Attachments: Placitas Sage Co-housing Site Threshold Assessment

Caddis Architecture, pc.

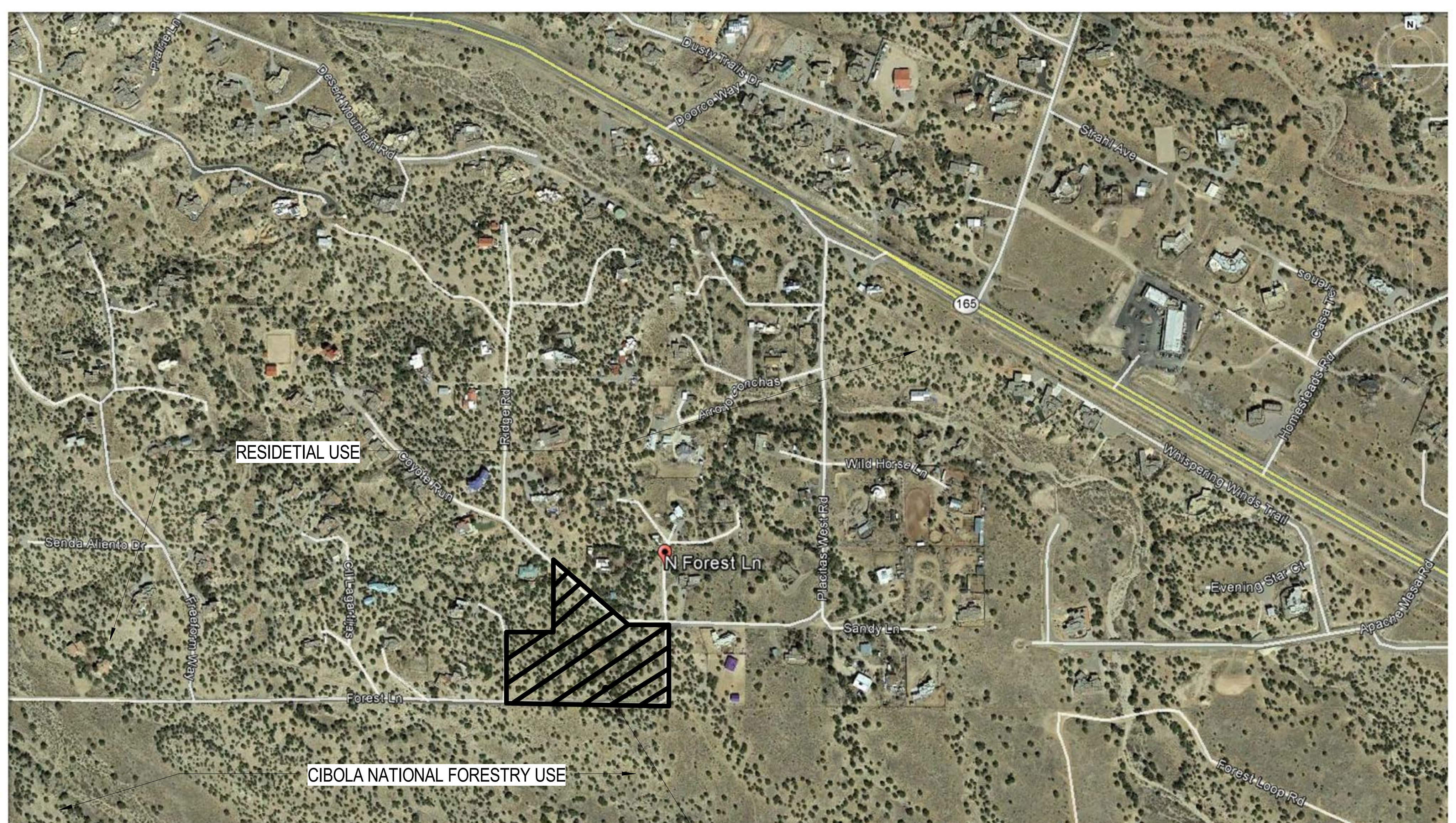
PLACITAS SAGE COHOUSING

Placitas, NM

SHEET INDEX

MASTER PLAN SUBMITTAL
4.6.2016

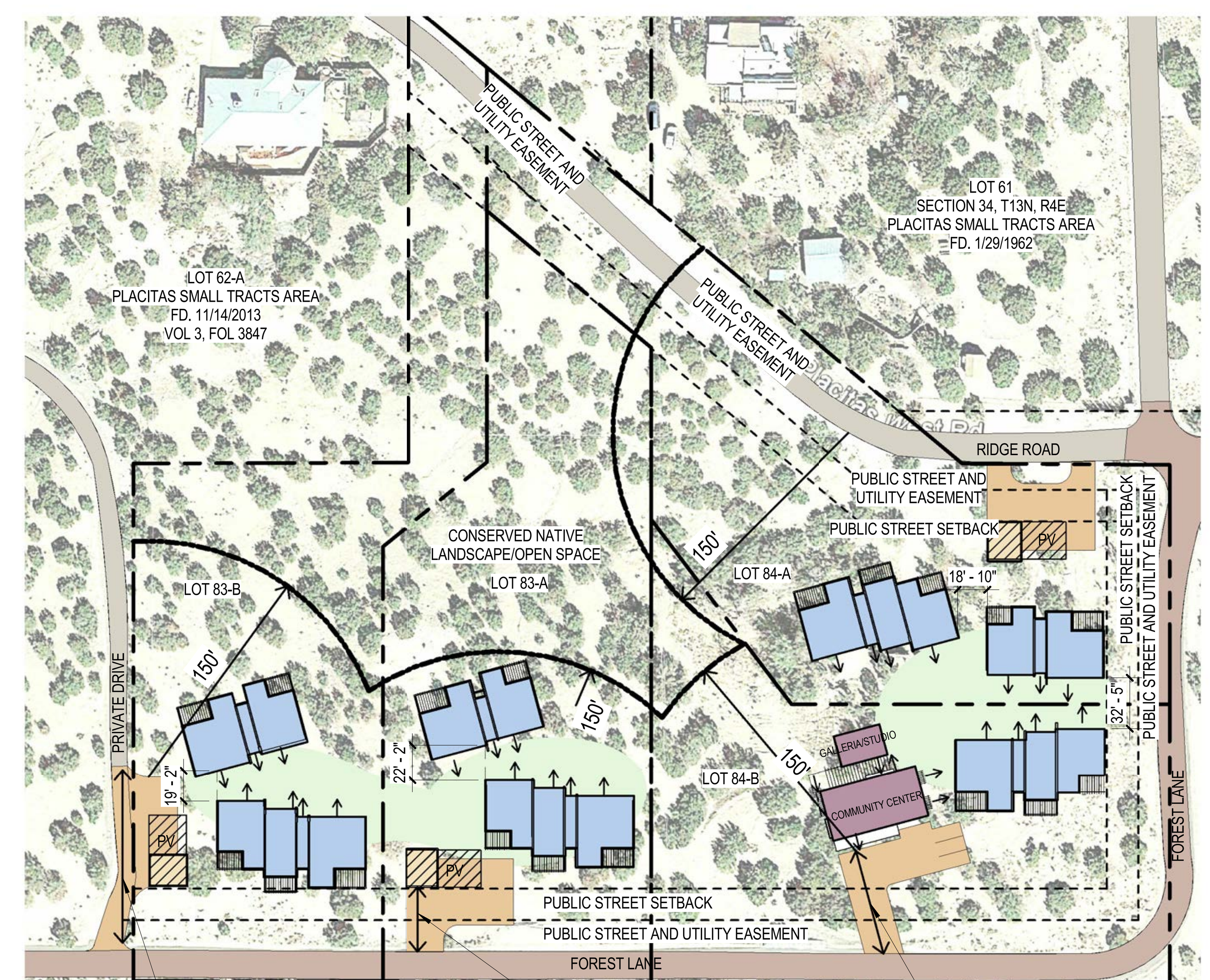
VICINITY MAP (NTS)



SUBJECT PROPERTY LOCATION - 6.18 ACRES

FIRE ACCESS DIAGRAM

SCALE: 1" = 80'-0"



PROJECT CONTACTS

CLIENT
Contact: Joyce Thompson
P: 505.697.2212
Contact's Name: revjat@gmail.com

ARCHITECT
Caddis, P.C.
Project Architect: Bryan Bowen
1510 Zamia Ave. #103
Boulder, CO 80304
P: 303.443.3629
Bryan: bryan@caddispc.com

LANDSCAPE ARCHITECT
TBK Environmental Design
Contact: Barnabas Kane
37 Comstock Court
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Barnabas: bkane@tbkadesign.com

CIVIL ENGINEER
Thompson Engineering Consultants
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Contact's Name: tecnm@yahoo.com

TRAFFIC ENGINEER
Harwick Transportation Group
Contact: Nevin Harwick
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Albuquerque, NM 87123
P: 505.228.9776
Email: nevin@harwicktg.com

DEVELOPMENT CONSULTANT
Cohousing Solutions
Contact: Katie McCamant
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Nevada City, CA 95959
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Katie: kmccamant@cohousing-solutions.com

GENERAL CONTRACTOR
JG Maduena Homes
Contact: Jim Maduena
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Placitas, NM 87043
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Jim: maduenanm@aol.com

Caddis Architecture, etc.
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tel: 303.443.3629
info@caddispc.com
www.caddispc.com

PLACITAS SAGE COHOUSING

Placitas, NM

NOT FOR CONSTRUCTION

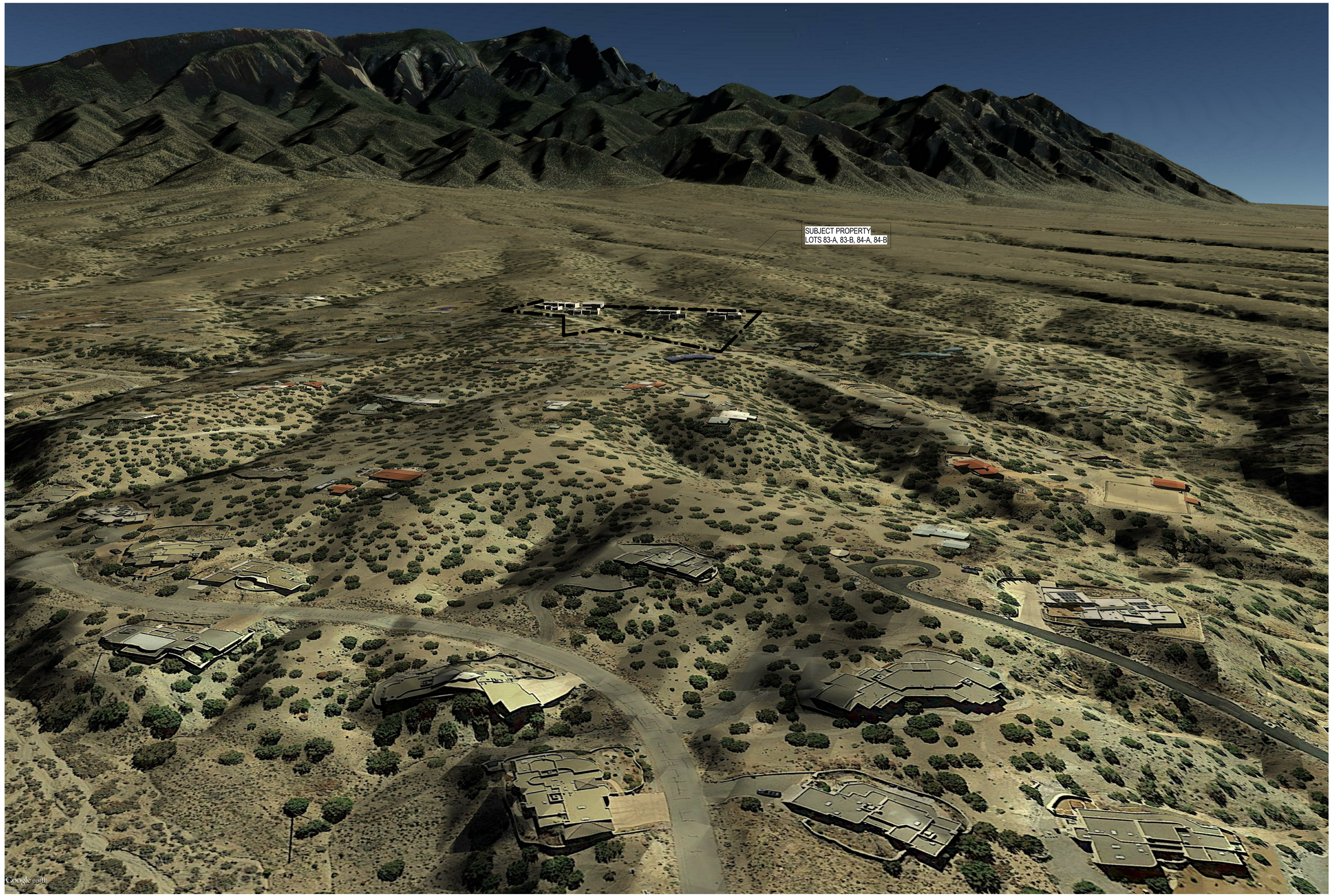
Full Size: 0" 1" 2"
Date: 4.6.2016
Project: 1312
Archive:
Plot Date: 4/7/2016 11:01:13 AM
Revisions:

Rev#	Date	Description

MASTER PLAN SUBMITTAL

COVER SHEET - MASTER PLAN

SHT 1



Caddis Architecture, etc.
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PLACITAS SAGE COHOUSING

Placitas, NM

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Plot Date: 4/7/2016 11:01:13 AM

Revisions:

Rev#	Date	Description

MASTER PLAN SUBMITTAL

NEIGHBORHOOD DEVELOPMENT CONTEXT

SHT 2

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Plot Date: 4/7/2016 11:01:14 AM

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MASTER PLAN SUBMITTAL

STREET PERSPECTIVE VIEW FROM FOREST LANE

SHT 3

SCALE: NTS

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PLACITAS SAGE COHOUSING

Placitas, NM

tbk
t barnabas kane & associates
ENVIRONMENTAL DESIGN.

NOT FOR CONSTRUCTION

Full Size: 0" 1" 2"

Date: 4.6.2016

Project: 1312

Archive:

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MASTER PLAN SUBMITTAL

PICAFLOR PLAZA PERSPECTIVE VIEW

SHT 4

SCALE: NTS

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Archive:

Plot Date: 4/7/2016 11:01:15 AM

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MASTER PLAN SUBMITTAL

PALOMA PLAZA PERSPECTIVE VEIW CONT'D.

SHT 5

SCALE: NTS

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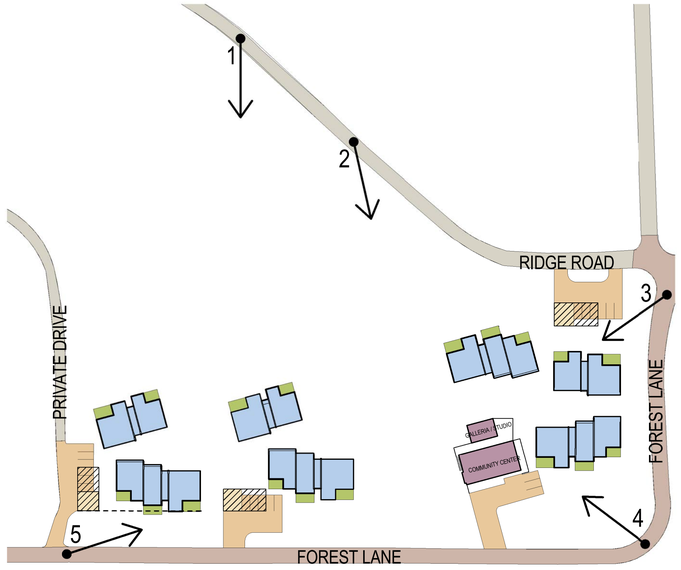
Rev#	Date	Description

MASTER PLAN SUBMITTAL

MARIPOSA PLAZA PERSPECTIVE VIEW

SHT 6



STREET PERSPECTIVE 2 - RIDGE ROAD LOOKING SOUTH-SOUTH-EAST

STREET PERSPECTIVE 3 - FOREST LANE LOOKING SOUTH-WEST

STREET PERSPECTIVE 1 - RIDGE ROAD LOOKING SOUTH

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PLACITAS SAGE COHOUSING

Placitas, NM

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Date: 4.6.2016

Project: 1312

Archive:

Plot Date: 4/7/2016 11:01:17 AM

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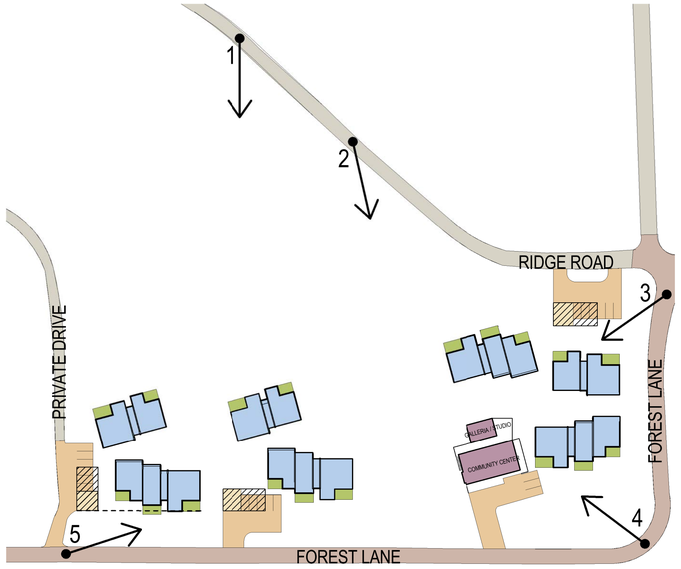
MASTER PLAN SUBMITTAL

RENDERED STREET PERSPECTIVE VIEWS

SHT 7



STREET PERSPECTIVE 5 - FOREST LANE LOOKING NORTH-EAST

STREET PERSPECTIVE 4 - FOREST LANE LOOKING NORTH-WEST

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PLACITAS SAGE COHOUSING

Placitas, NM

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Plot Date: 4/7/2016 11:01:19 AM

Revisions:

Rev#	Date	Description

MASTER PLAN SUBMITTAL

RENDERED STREET PERSPECTIVE VIEWS CONT'D.

SHT 8

LOT 59
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

LOT 60
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

7' PUBLIC UTILITY EASEMENT

FND. 1.5" BLM BRASS CAP 1961

S89°48'44"E 154.37'

FND. #4 REBAR

329.60'

S00°02'39"E

10'X10' WATER METER EASEMENT

LOT 63
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

LOT 62-A
PLACITAS SMALL TRACTS AREA
FD. 11/14/2013
VOL. 3, FOL. 3647

LOT 61
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

66' ROAD & UTILITY EASEMENT

LOT 62-B
1.1679 AC.

RIDGE ROAD

N00°00'03"E 328.68'

5460 5465 5470 5475 5480 5485 5490 5495 5500 5505

S89°52'24"E 164.56' (164.73') (S89°51'39"E)

FND. #4 REBAR/ LS 11597 CAP

N89°47'57"E 158.28'

FND. 3/4" PIPE

16.71'

S89°50'23"W 154.66'

171.38'

FND. 1" PIPE

S89°40'49"E 329.39'

329.28'

S00°00'49"W

LOT 82-A
PLACITAS SMALL TRACTS AREA
FD. 6/24/1999
VOL. 3, FOL. 1876-B

LOT 82-B
1.2463 Ac. gross

LOT 83-B
1.1990 Ac. gross

LOT 83-A
1.2988 Ac.

LOT 84
2.4998 Ac.

25' ACCESS EASEMENT

S00°00'43"W 329.28'

(351.47')

N89°48'40"W 351.18'

N00°03'16"E 331.03'

(341.24')

329.91'

40' ROADWAY & PUBLIC UTILITY EASEMENT

METER
WELL

DRIVEWAY ENCROACHES

N00°08'04"E

spruce tree

spruce tree

40' ROADWAY & PUBLIC UTILITY EASEMENT

ASPHALT PAVEMENT 165.08'

FOREST LANE

158.52'

ASPHALT PAVEMENT 170.89'

ASPHALT PAVEMENT 329.62'

824.10'

N89°52'30"W

FND. 1.5" BLM BRASS CAP 1961

FND. USBLM 1-1/2" BRASS CAP DATED 1961

FND. USBLM 3-1/2" BRASS CAP DATED 1961

WC 1/64 S 34 LB2 LB3 1961

C1/64 S 34 LB4 SE SE 1961

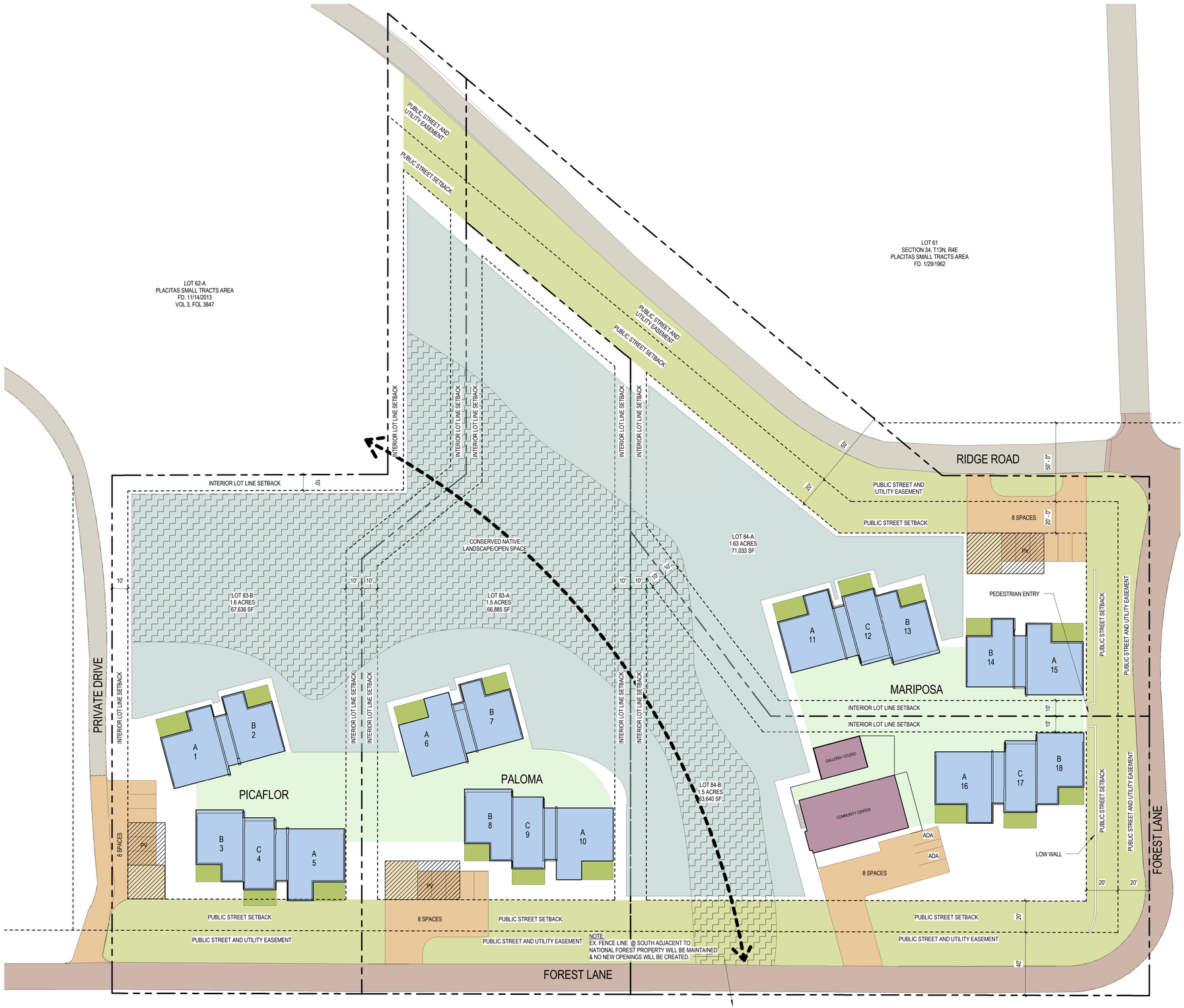
CIBOLA NATIONAL FOREST

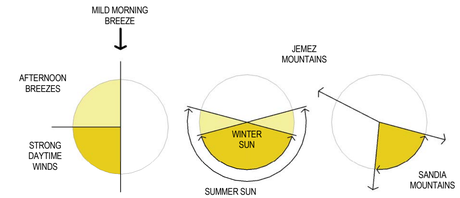
N

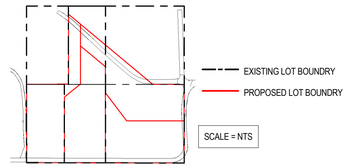
SCALE: 1"=50'

0' 50 100

ALPHA PRO SURVEYING LLC
1436 32ND CIRCLE SE, RIO RANCHO, NEW MEXICO 87124
PHONE (505) 892-1076 ALPHAPROSURVEYING.COM
DRAWN BY: GG FILE NO.:15-092







SITE INFO
LOT AREA: 269,194 SF (+/- 6.18 ACRES)

LEGAL DESCRIPTION
LOTS: 62-B, 82-B, 83-A, 83-B AND 84 OF PLACITAS SMALL TRACTS AREA, SECTION 34, T13N, R4E, NMPM, SANDOVAL COUNTY, NEW MEXICO

PRELIMINARY PROJECT INFO

NUMBER OF DWELLING UNITS:	18 1-BEDROOM FLATS
PINION (A) UNITS:	7 @ 1,304 SF
LAVENDER (B) UNITS:	7 @ 1,053 SF
SUNFLOWER (C) UNITS:	4 @ 812 SF
TOTAL FLOOR AREA OF DWELLING UNITS:	19,747 SF
COMMUNITY CENTER UPPER LEVEL:	2,040 SF
COMMUNITY CENTER LOWER LEVEL:	2,040 SF
STUDIO:	630 SF
DETACHED GARAGE:	3 @ 568SF
TOTAL FLOOR AREA:	45,908 SF

ZONING

CURRENT ZONING	CD-WP (WEST PLACITAS COMMUNITY DISTRICT)
PROPOSED ZONING:	MP (MASTER PLANNED DISTRICT)
PROPOSED LOT AREA/UNIT:	+/- 14,207 SF
MAX ALLOWED DENSITY:	3.0 DU/ACRE
PROPOSED DENSITY:	3.0 DU/ACRE
PROPOSED BUILDING COVERAGE:	+/-19%, +/- 49,537 SF
TOTAL OPEN SPACE PROPOSED:	+/- 228,364 SF, +/- 85%
COMMON OPEN SPACE IN SETBACK:	+/- 56,183 SF
COMMON OPEN SPACE:	+/- 3,726 SF
PRIVATE OUTDOOR SPACE (>60SF EA.):	+/- 51,700 SF
OPEN SPACE IN PERPETUITY:	+/- 97,000 SF, +/- 36%
MIN BUILDING SEPARATION DISTANCE:	15'
PUBLIC STREET SETBACK:	20' PROPOSED
INTERIOR LOT LINE SETBACK:	10' PROPOSED
MIN FRONT YARD SETBACK:	20' PROPOSED
MIN SIDE YARD SETBACK:	10' PROPOSED
MIN REAR YARD SETBACK:	20' PROPOSED

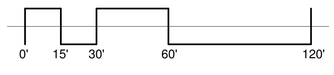
PARKING

REQUIRED MIN 1.5 SPACES/UNIT PLUS 10%:	30 SPACES
MIN 1 COVERED SPACE PER UNIT:	18 SPACES
ADA SPACES REQUIRED FOR 26-50 SPACES:	2 SPACES
PROPOSED COVERED PARKING:	21 SPACES
PROPOSED ADA SPACES:	2 SPACES
TOTAL PROPOSED PARKING:	32 SPACES

NOTE:
INTERNAL PROPERTY LINES SHOWN ARE CONCEPTUAL AND WILL NEED TO BE CONFIRMED WITH INPUT FROM THE COUNTY & STATE JURISDICTIONS

LEGEND:

- PRIVATE HOMES
- COMMON HOUSE
- COMMON OUTDOOR SPACE
- PRIVATE OUTDOOR SPACE
- COMMON OPEN SPACE IN SETBACK
- WILD LIFE CORRIDOR
- OPEN SPACE DEDICATED IN PERPETUITY
- COVERED PARKING W/ PV (TENTATIVE)
- ASPHALT PAVING
- BASE COURSE W/ STABILIZED CRUSHED FINES
- EXISTING UNPAVED ROADS
- 2-CAR GARAGE AREAS
- COMMON OPEN SPACE



caddis
Caddis Architecture, etc.
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www.caddispc.com

PLACITAS SAGE COHOUSING

Placitas, NM

NOT FOR CONSTRUCTION

Full Size: 0" 1" 2"
Date: 4.6.2016
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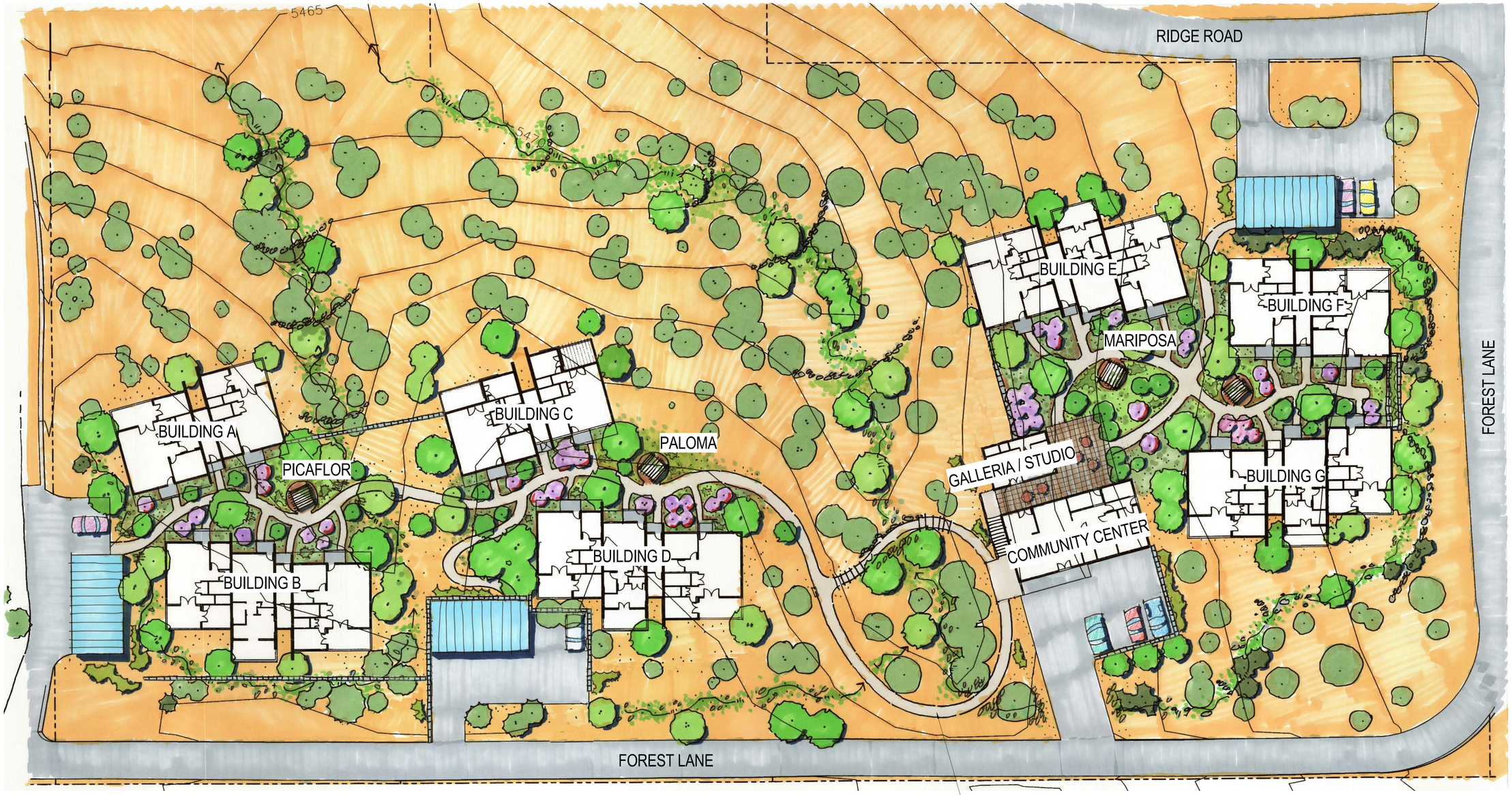
Revisions:

Rev#	Date	Description

MASTER PLAN SUBMITTAL

SITE DEVELOPMENT PLAN

SHT 10



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PLACITAS SAGE COHOUSING

Placitas, NM

tbk
t barnabas kane & associates
ENVIRONMENTAL DESIGN

NOT FOR CONSTRUCTION

Full Size: 0" 1" 2"

Date: 4.6.2016

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Archive:

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Revisions:

Rev#	Date	Description

MASTER PLAN SUBMITTAL

SITE PLAN RENDERING

SHT 11

Placitas Co-Housing 4-1-16

Landscape Narrative
The intent of the proposed landscape is to create an oasis, a productive, functional, food producing landscape with very little supplemental irrigation in the long run. The majority of the new planting will be between the buildings. The buildings act as protection from wind and exposure, much like the walls of a canyon. A majority of the roof slopes are aimed inward to allow for active rainwater capture into cisterns. This dramatically increases the available water, over time, that can be used to irrigate, making this a higher yielding and more resilient landscape. Each roof and tank overflows into a ground pattern, graded into a multi-basined rain garden. Between each walkway and patio the grade is depressed and each basin connected to the next through drain tile or spillways. So during a rain event each basin fills and overflows into the next slowing down the flow rate, spreading the water out across the entire area, and soaking the 'run-off' into the soil, making it available to the plants. This strategy not only helps the health of the landscape it turns storm-water into a resource instead of an expensive erosion hazard. A 'branched drain' gray –water system is also planned and is directed to the types of plants like certain shade trees that can benefit from the year round moisture. In this way gray water will provide the conditions for shade trees to cool the gardens and the buildings in summer reducing energy bills and create a wonderful environment. Restoring the existing drainages through the site with check dams and additional plantings will also improve habitat and infiltrate more water into the natural parts of the landscape.

Planting
The attached plant list is a work in progress and is not meant to be used for installation. However the suggested Plant quantities list below is intended to be used for cost estimating purposes.

Irrigation
A standard drip irrigation system will need to be installed for plant establishment and left in for drought conditions. Its use will vary from year to year and will become an important water management and maintenance component.

Grading
The grading associated with this type of landscape is critical for its success. The approach to the plantings and the species selection is strongly inter-connected. Once the rough grading has been accomplished and the buildings erected the finished grading can begin. The walkways and landscape basins need to be closely coordinated and laid out in concert. The hardscape on the higher areas delineated between the depressed basins and overflows. Fine grading is required for the system to flow and function properly. On a project of this scale I would put an allowance number for this grading at a minimum of $20,000. It will depend on how much mechanized vs. hand labor is used and how well the contractor understands the concept.

Suggested Plant Quantities by category

Plant Type	Size	Quantity
Large Trees	20 gal. , B&B	40
Medium Trees	15 Gal.	55
Evergreen trees	20 Gal. or 24" box	22
Fruit Trees	15 Gal.	60
Large Shrubs	5 Gal.	60
Small Shrubs	1 Gal.	120
Vines/Ground cover	1 Gal.	50
Grasses	1 Gal.	80
Perennials	1 Gal.	250
Annuals (garden veg. NIC)		

Seeding
All disturbed and regarded areas to be seeded, raked in and mulched. There are two types of restored seeded areas. 'Uplands', around new buildings and parking and 'Lowlands', areas in and adjacent to existing and modified drainages to be improved and restored.

Upland seed mix, native var. TBD	Approx. 1.0 Acres
Lowland seed mix, native var. TBD	Approx. 0.5 Acres

TBK

Placitas Co-Housing 3/16/2016

Landscape Plant List -- Preliminary, revision 1

tbk t barnabas kane & associates LANDSCAPE ARCHITECTURE

KEY
B Butterfly
H Hummingbird
E Edible landscape
NF Non-food, usable product

LARGE

	CODE	BOTANICAL NAME	COMMON NAME	DS	SIZE	DESC.	BLOOM/FOLIAGE
	Abco	*Abies concolor*	White fir	35'	8-12' BB	50x30	Fol - Silver/Blue, E
B	Acgr	*Acer grandidentatum*	Bigtooth maple	20'	15 gal	30x25'	Fa Fol - Red, yel, or
	Acne	*Acer negundo L.*	Box elder				
	Jude	*Acer negundo L.*	Alligator juniper	25'	B&B	45x30'	Fol - Bluish/gn, E
E		*Morus microphylla*	Texas mulberry Arizona mulberry				
B	Pipo	*Pinus ponderosa*	Ponderosa pine	25'	B&B	100x30'	E
B	Plwr	*Platanus wrightii*	Arizona Sycamore	35'	15 gal	40x40'	
	Poan	*Populus angustifolia*	Narrowleaf cottonwood	35'	15 gal	60x40'	
	Quaz	*Quercus arizonica*	Arizona white oak	20'	15 gal	35x35'	
	Quem	*Quercus emoryi*	Emory oak	20'	15 gal	50x35'	
	Rops	*Robinia psuedoacacia*	Black locust	20'	15 gal	25x35'	
	Alju	*Albizia julibrissin*	Silk tree, mimosa	25'	15 gal	35x20'	Sp - pinkish
	Amal	*Amelanchier alnifolia*	Saskatoon serviceberry	10'	15 gal	12'x12'	Sp - White
	Cabi	*Catalpa bignonioides*	Common catalpa	25'	15gal	35x30'	Sp, Su - White w/Purple
	Cuar	*Cupressus arizonica*	Arizona cypress	20'	15 gal	40x20'	Fol - Blue Green
	Juvi	*Juniperus virginiana 'Cupressifolia'*	Hillspire juniper	12'	15 gal	20x12'	E
	Poan	*Populus angustifolia*	Narrowleaf cottonwood	35'	15 gal	60x40'	

MEDIUM TREE

	CODE	BOTANICAL NAME	COMMON NAME	DS	SIZE	DESC.	BLOOM/FOLIAGE
	Cere	*Celtis reticulata*	Netleaf Hackberry	20'	15 gal	30x25'	
	Ceoc	*Cercis occidentalis*	Western Redbud	10'	15 gal	12x12'	Sp - DeepPink
	Frve	*Fraxinus velutina*	Arizona Ash	30'	15 gal	30x35'	Fa Fol - Bright yel
	Juma	*Juglans major*	Arizona Walnut	30'	15 gal	35x30	Fa Fol - yel
	Juvi	*Juniperus virginiana 'Cupressifoli*	Hillspire Juniper	12'	15 gal	20x12'	E
E B	Pied	*Pinus edulis*	Pinyon Pine	15'	B&B	25x20'	E
E	Pyca	*Pyrus calleryana 'Bradford'*	Bradford Pear	20'	15 gal	30x20'	Sp - wt, Fa Fol - Red/yel
E	Quga	*Quercus gambelii*	Gambel Oak	20'	15 gal	35x25'	Fa Fol - Golden yel
B	Saex	*Salix exidua*	Coyote Willow	10'	5 gal	12x12'	Native

FRUIT TREES

	CODE	BOTANICAL NAME	COMMON NAME	DS	SIZE	DESC.	BLOOM/FOLIAGE
E		*Malus domestica var.*	Apple				
E		*Prunus armeniaca var.*	Apricot				
E		*Prunus persica var.*	Peach				
E B	Prsp	*Prunus sp. var.*	Fruiting Plum	15'	15 gal	25x25'	Sp - wt or Pink
E		*Pyrus communis var.*	Pear				
	Lfr	*Lycium fremontii*	Wolfberry, tomatillo	6'	5 gal	6x6'	Sp - Lavender (Red Berries)

SHRUBS

	CODE	BOTANICAL NAME	COMMON NAME	DS	SIZE	DESC.	BLOOM/FOLIAGE
	Ap	*Agave parryi*	Century Plant	2'6"	1 gal	3x3'	Su - Golden yel
	Aut	*Amelanchier utahensis*	Utah Serviceberry	4'	5 gal	10x5'	Sp - wt, Fa Fol - yel
	Af	*Amorpha fruticosa*	False Indigo	4'6"	1 gal	6x5	Su - Violet, Fa Fol - yel
	Apa	*Arctostaphylos pungens*	Point leaf Manzanita	3'	5 gal	3x4'	Sp - wt (Red Bark)
NF	Atr	*Artemisia tridentata*	Big Sagebrush	5'	1 gal	6x6'	Fol - Silver, gn, Aromatic
	Aca	*Atriplex canescens*	Four-Wing Saltbush	4'x6'	1 gal	5x5'	Fol - Silver Green
	Bf	*Berberis fremontii*	Fremont Barberry	6'	5 gal	8x8'	Sp Fol - Yellow
B H	Bd	*Buddleia davidii*	Butterfly Bush	5'	5 gal	4x6'	Sp, Su, Fa - Varies
	Cg	*Caesalpinia gilliesii*	Bird of Paradise	7'	5 gal	8x8'	Su - yel w/Red
		Canadensis	Turpentine Bush				
	Ca	*Caragana arborescens*	Siberian Peashrub		5 gal		
	Cgr	*Ceanothus greggii*	Mountain Lilac	5'	Salv	6x6'	Sp - wt, Frag.
	Cln	*Ceratoides lantana*	Winterfat	1 gal			
	Cle	*Cercocarpus ledifolius*	Curl-leaf Mountain Mahogany	6'	5 gal	15x8'	Fa - White
	Cm	*Cercocarpus montanus*	Mountain Mahogany	6'	5 gal	12x8'	Fa - wt
E H	Csp	*Chaenomeles sp.*	Flowering Quince	5'	5 gal	6x6'	Sp - Pinkish/Red
	Cmi	*Chamaebatiaria millefolium*	Fernbush	4'6"	5 gal	6x6'	Su - wt
H	Chli	*Chilopsis linearis*	Desert Willow	20'	15 gal	20x20'	Sp, Su - Pink, Deep Pink
	Cme	*Chrysactinia mexicana*	Damianita	2'	1 gal	2x2'	Sp, Fa - Yellow
	Cn	*Chrysothamnus nauseosus*	Chamisa	8'	1 gal	6x10'	Su - yel
	Cst	*Cornus stolonifera*	Red-osier Dogwood	9'	1 gal	15'	Su, Fa - wt (Red Twig)
	Cmx	*Cowania mexicana*	Cliffrose	5'	5 gal	10x7'	Sp, Fa - Creamy, Fruit, Frag.
	Cy	*Cytisus purgans 'Spanish Gold'*	Spanish Gold Hardy Broom	5'	5 gal	4'x6'	Sp - Yellow
	Dw	*Dasylirion wheeleri*	Sotol (Desert Spoon)	4'	5 gal	3x4'	Su 10' Tall Golden Spike
	Ee	*Echinocereus engelmannii*	Strawberry Hedgehog	3'	1 gal	1x3'	Sp - Magenta
	Erwr	*Eriogonum wrightii*	Wright's buckwheat		1 gal		
E	Ev	*Ephedra viridis*	Mormon Tea	3'6"	1 gal	4x4'	Sp - yel
	Fp	*Fallugia paradoxa*	Apache Plume	6'	1 gal	6x8'	Sp, Fa, - wt (Pink Plume)
	Fn	*Forestiera neomexicana*	New Mexican Olive	6'	5 gal	8x8'	Fa- yel
	Gutie	*Gutierrezia sarothrae*	Broom's snakeweed				
	Gw	*Garrya wrightii*	Wright's Silk Tassel	6'	Salv	8x8'	Su - White Tassel (Blue Fruit)
	Hp	*Hesperaloe parviflora*	Red Yucca	4'	1 gal	4x4'	Sp, Su, Fa - Coral
B H	La	*Lavandula angustifolia*	English Lavender	2x6'	1 gal	3x3'	Su, Fa - Lavender
E	Lan	*Lycium andersonii*	Wolfberry	6'	5 gal	6x6'	Sp - lav (Red Berries)
B	Ma	*Mahonia aquifolium*	Oregon Grape	5'	5 gal	6x10'	Sp - yel (Blue Barries)
B	Mf	*Mahonia fendleri 'Berberis fendleri'*	Fendler's Mahonia	6'	5 gal	6x6'	Sp - yel (Red Barries)
E B	Mara	*Malus 'Radiant'*	Radiant Crabapple	15'	15 gal	20x20'	Sp - Deep Pink Bloom
E B	Masn	*Malus 'Snowdrift'*	Snowdrift Crabapple	15'	15 gal	20x20'	Sp - Single wt
B	Nm	*Nolina microcarpa*	Beargrass	4'6"	1 gal	4x5'	Su - yel/Tan
E	Oe	*Opuntia engelmannii*	Engelmann's Prickly Pear	4'	1 gal	5x5'	Sp - yel
		Ostrya knowltonii	Western hop hornbeam				
B	Pm	*Philadelphus microphyllus*	Little-Leaf Mock Orange	3'	1 gal	4x4'	Su - wt
B	Pf	*Potentilla fruticosa*	Shrubby Cinquefoil	3'	1 gal	26"c3'	Sp, Su, Fa - Y/O or W/O
E B	Prvi	*Prunus virginiana*	Chokecherry	15'	15 gal	25x25	Sp - wt, Fa Fol - Red/yel
	Pr	*Prunus var.*	Native plum				
	Qutu	*Quercus turbinella*	Scrub Live Oak	10'	15 gal	15x5'	Sp Fol - Golden Yellow, E
B	Rca	*Rhamnus californica*	California Buckthorn	8'	5 gal	15x15'	Red Fruit
B	Rcr	*Rhamnus crocea*	Hollyleaf Buckthorn	4'	5 gal	5x5'	Red Fruit
B	Rg	*Rhus glabra*	Smooth Sumac	7'	1 gal	10x10'	Fa Fol - Scarlet
B	Rt	*Rhus trilobata 'grow low'*	Squawbush grow low	7'	1 gal	7x10'	Fa Fol - or/Red/yel
E B H	Ra	*Ribes aureum*	Golden Currant	4'	1 gal	6x6'	Sp - yel (Spicy)
E B H	Rc	*Ribes cereum*	Wax Currant	5'	1 gal	6x6'	Sp - Creamy
	Rone	*Robinia neomericana*	New Mexico Locust		15 gal		
E B	Rw	*Rosa woodsii*	Wood's Rose	5'	1 gal	6x6'	Sp - Pink, Frag
E B	Ro	*Rosmarinus officinalis*	Rosemary	4'	1 gal	4x4'	All Year - ppl
E		*Rubus neomexicana*	New Mexican raspberry				
B H	Sg	*Salvia greggii*	Autumn Sage	3'	1 gal	3x3'	Sp, Fa - Red/Pink
E		*Sambucus neomexicana*	Blue elderberry				
NF		*Sapindus saponaria*	Western soapberry				
	Sa	*Symphoricarpos albus*	Snowberry	5'	1 gal	4x6'	Sp - wt (wt Berries)
B H	Sv	*Syringa vulgaris*	Common Lilac	6'	5 gal	12x10'	Sp, Fa Fol - Purple
E B	Vac	*Vitex agnus-castus*	Chaste Tree	10'	5 gal	12x12'	Su, Fa - lav
	Yan	*Yucca angustissima*	Narrowleaf Yucca	3'	5 gal	1'6"x3'	Su - wt
	Yb	*Yucca baccata*	Banana Yucca	3'	1 gal	3x3'	Sp - wt Frag.

FRUIT SHRUBS

	CODE	BOTANICAL NAME	COMMON NAME	DS	SIZE	DESC.	BLOOM/FOLIAGE
E	Rid	*Rubus idaeus*	Western Raspberry	1 gal			
E		*Chaenomeles lagenaria*	Flowering quince				
E	Rise	*Ribes var.*	Gooseberry				
E	Ra	*Ribes aureum*	Golden Currant	4'	1 gal	6x6'	Sp - Yellow (Spicy)
E		*Sultanina*	Thompson grape				
E		*Allium cepa*	Onion				

GROUNDCOVERS and VINES

	CODE	BOTANICAL NAME	COMMON NAME	DS	SIZE	DESC.	BLOOM/FOLIAGE
	Al	*Artemisia ladoviciana*	Prairie Sage	3'	1 gal	3x3'	Fol - Silver/wt
H	Cr	*Campsis radicans*	Trumpet Creeper	3'	1 gal	40' Vine	Sp, Su, Fa - or
H	Cl	*Clematis liguisticifolia*	Virgin's Bower	3'	1 gal	20' Vine	Su - wt
		Juniperus communis	Common juniper				
	Jn	*Jasminum nudiflorum*	Winter Jasmine	5'	1 gal	4x8'	Sp - Yellow
	Laz	*Lonicera arizonica*	Arizona Honeysuckle	4'	1 gal	1x4'	Sp, Su - reddish pink
	Mre	*Mahonia repens*	Creeping Oregon Grape	2'	1 gal	1x3'	Sp - yel
	Pq	*Parthenocissus quinquefolia*	Virginia Creeper	3'	1 gal	20' Vine	Fa - Red
	Pt	*Parthenocissus tricuspidata*	Boston Ivy	3'	1 gal	20' Vine	Fa - Red
	Pmy	*Physolystima myrsinites*	Mountain Lover	3'	1 gal	2x4'	Sp, Su - Red
	Pab	*Polygonum aubertii*	Silver Lace Vine	3'	1 gal	25' Vine	Sp, Fa - Creamy wt
		Sultanina	Thompson grape				
	Tc	*Teucrium chamaedrys*	Germander	2'x6"	1 gal	1x3'	Su - Pink, GC
E	Tp	*Thymus praecox arcticus*	Creeping Thyme	2'	1 gal	6x24"	Herb
	Va	*Vitis arizonica*	Canyon Grape	4'	1 gal	5x8	
	Vg	*Verbena gooddingii*	Gooddings Verbena	18"	1 gal	1x3'	Sp, Su, Fa - Lavender
	Vm	*Vinca minor*	Dwarf Periwinkle	24"	1 gal	1x3'	Sp, Fa - Purple

GRASSES

	CODE	BOTANICAL NAME	COMMON NAME	DS	SIZE	DESC.	BLOOM/FOLIAGE
	App	*Aristada purpurea*	Purple Three Awn	2'	1 gal	2x2'	Fol- Blue-gn, stems- ppl
	Bcu	*Bouteloua curtipendula*	Side-Oats Grama		Seed	2'6"x3"	
	Bg	*Bouteloua gracilis*	Blue Grama		Seed	3"	w/15" Flags
		Fesuta arizonica	Sheep fescue				
	Hse	*Helictrotrichon sempervirens*	Blue Oat Grass	12"	1 gal	3x3'	Fol - Blue/Gray
	Mc	*Muhlenbergia capillaris 'Regal Mist'*	Regal Mist Deergrass		1 gal	3x3'	Fol - Pinkish Red
	Mr	*Muhlenbergia rigens*	Deergrass		1 gal	4x4'	
	Oh	*Oryzopsis hymenoides*	Indian Ricegrass		Seed		
	Sai	*Sporobolus airoides*	Alkali Sacaton	3'	1 gal	3x3'	Fa- Pink fade to straw, Fol - yel

AQUATICS (optional)

	CODE	BOTANICAL NAME	COMMON NAME	DS	SIZE	DESC.	BLOOM/FOLIAGE
	Abild	*Abildgaardia*	Sedge				
	Ip	*Iris pseudacorus*	Blue flag iris				
		Equisetum var.	Horsetail				
E	Meaq	*Mentha aquatica*	Water mint				
E	Naof	*Nasturtium officinale*	Watercress				

PERENNIALS

	CODE	BOTANICAL NAME	COMMON NAME	DS	SIZE	DESC.	BLOOM/FOLIAGE
B	Am	*Achillea millefolium*	White Yarrow	12"	1 gal	2x1'	Sp, Su, Fa - wt
B H	A	*Agastache cana*	Texas Hummingbird Mint	24"	1 gal	2x2'	Fa - ppl Pink
H	Ar	*Alcea rosea*	Hollyhock	24"	1 gal	6x3'	Su - wt, Pink, Red
B H	Ac	*Aquilegia chrysantha*	Arizona Columbine	24'	1 gal	3x3'	Sp, Su, Fa - yel
B H	At	*Asclepias tuberosa*	Butterfly Weed	12"	1 gal	15x15"	Su, Fa - or
		Aster var.	Aster				
	Ct	*Cerastium tomentosum*	Snow-in-Summer	12"	1 gal	8"x3'	Su - wt, Fol - Gray
E		*Chaenomeles lagenaria*	Flowering quince				
	Dm	*Datura metaloides*	Sacred Datura	3'	1 gal	2x4'	Su, Fa - White (Poisonous)
B H	Ep	*Echinacea purpurea*	Purple Coneflower	2'	1 gal	3x2'	Su, Fa - ppl/Rose
B	Eu	*Eriogonum umbellatum*	Sulfur Buckwheat	18"	1 gal	12x12"	Su - yel
	Ec	*Eschscholzia californica*	California Poppy		Seed		Sp, Su, Fa - Golden or
B	Gg	*Gaillardia x grandiflora*	Blanketflower	18"	1 gal	2x2'	Su, Fa - yel w/Red
		Heuchera rubescens var. versicolor	Pink alumroot				
E	Lp	*Linum lewisii*	Blue Flax	18"	1 gal	12x18"	Sp, Fa - Blue
		Lupinis var.	Lupine				
		Mirabilis multiflora	Giant four o'clock				
B H	Ms	*Monarda sp.*	Bee Balm	18"	1 gal	2x2'	Su, Fa - Variety
		Morus nigra	Black mulberry				
H	Pe	*Penstemon eatonii*	Firecracker Penstemon	18"	1 gal	1x2'	Sp - Red
	Pfn	*Penstemon fendleri*	Fendler Penstemon	12"	1 gal	1x1	Sp, Su - Violet Blue
H	Pp	*Penstemon palmeri*	Palmer Penstemon	24"	1 gal	4x2'	Sp, Su - Pink Frag.
H	Ppa	*Penstemon parryi*	Parry's Penstemon	18"	1 gal	3x2'	Sp - Hot Pink
B H	Pps	*Penstemon pseudospectabillis*	Canyon Penstemon	18"	1 gal	3x2'	Sp - Fuchsia
	Pst	*Penstemon spectabilis*	Spectacular Penstemon	12"	1 gal	3x2'	Sp - ppl
H	Ps	*Penstemon strictus*	Rocky Mountain Penstemon	18"	1 gal	2x2'	Sp - ppl
	Rco	*Ratibida columnifera*	Mexican Hat	12"	1 gal	18x18"	Su, Fa - yel w/Red
	Sam	*Sphaeralcea ambigua*	Globe Mallow	3'	1 gal	3x3'	or
	Sb	*Stachys byzantina*	Lamb's Ears	18"	1 gal	12x18"	Fol - Sliver/gn
	Ziac	*Zinnia acerosa*	Desert zinnia				
		Mint var.	Mint var. Compfrey				

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PLACITAS SAGE COHOUSING

Placitas, NM

tbk t barnabas kane & associates ENVIRONMENTAL DESIGN

NOT FOR CONSTRUCTION

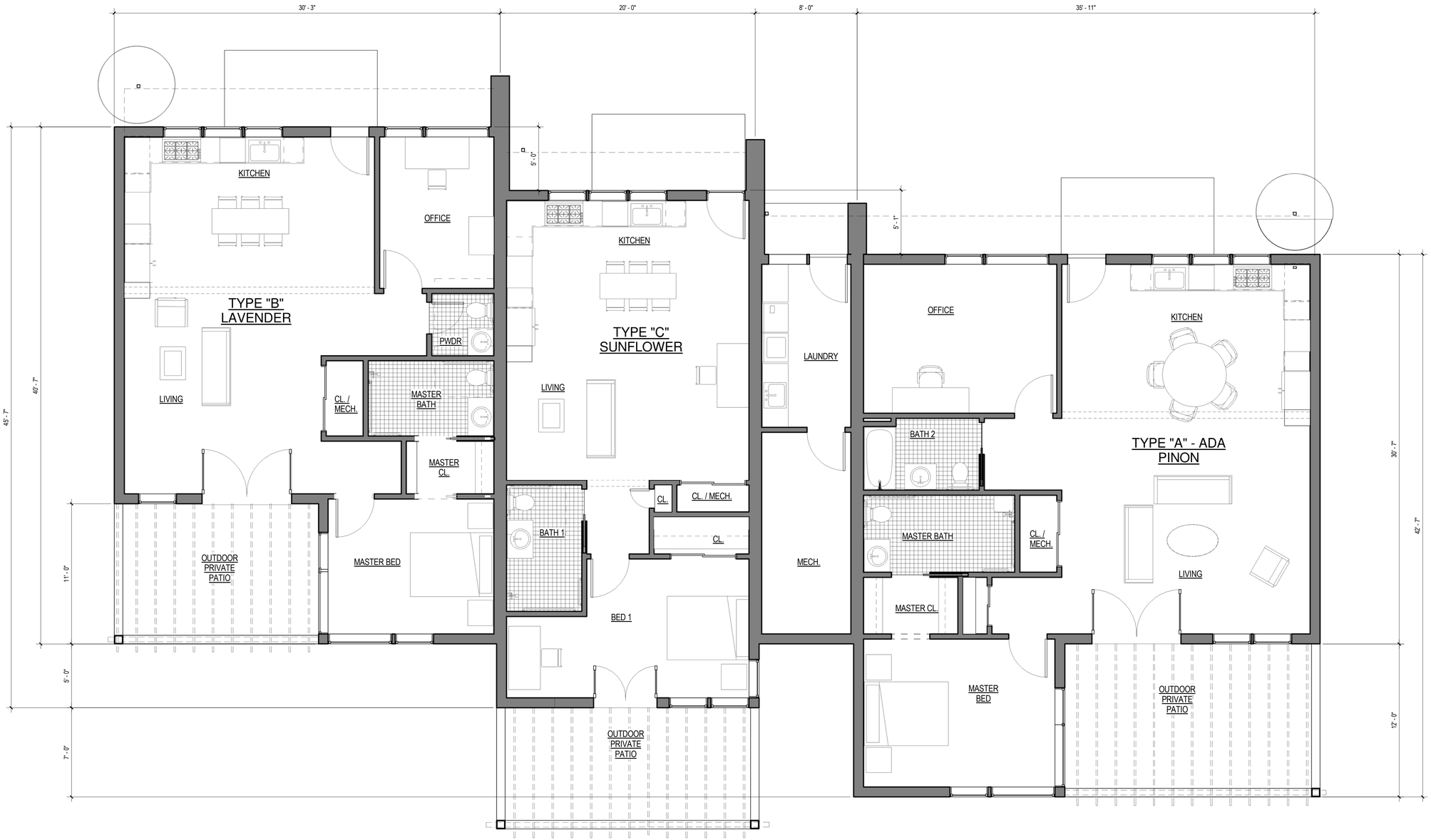
Full Size: 0" 1" 2"
Date: 4.6.2016
Project: 1312
Archive:
Plot Date: 4/7/2016 11:01:25 AM
Revisions:

Rev#	Date	Description

MASTER PLAN SUBMITTAL

LANDSCAPE NARRATIVE & PLANT LIST

SHT 12



1 TYPICAL TRIPLEX - FLOOR PLAN
1/4" = 1'-0"

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PLACITAS SAGE COHOUSING

Placitas, NM

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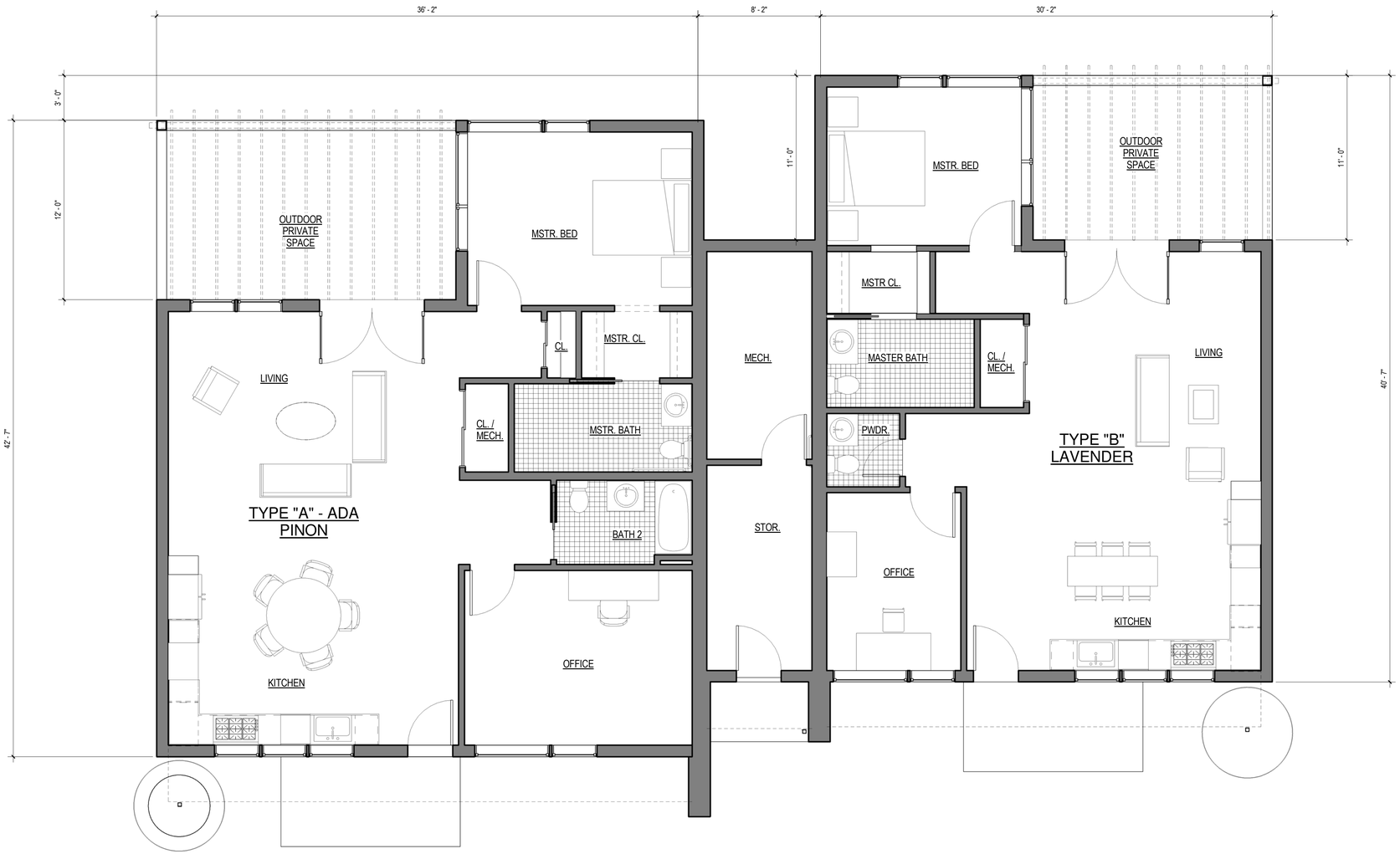
Archive:
Plot Date: 4/7/2016 11:01:28 AM
Revisions:

Rev#	Date	Description

MASTER PLAN
SUBMITTAL

TYPICAL TRIPLEX PLAN

SHT 13



1 TYPICAL DUPLEX - FLOOR PLAN
1/4" = 1'-0"

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PLACITAS SAGE COHOUSING

Placitas, NM

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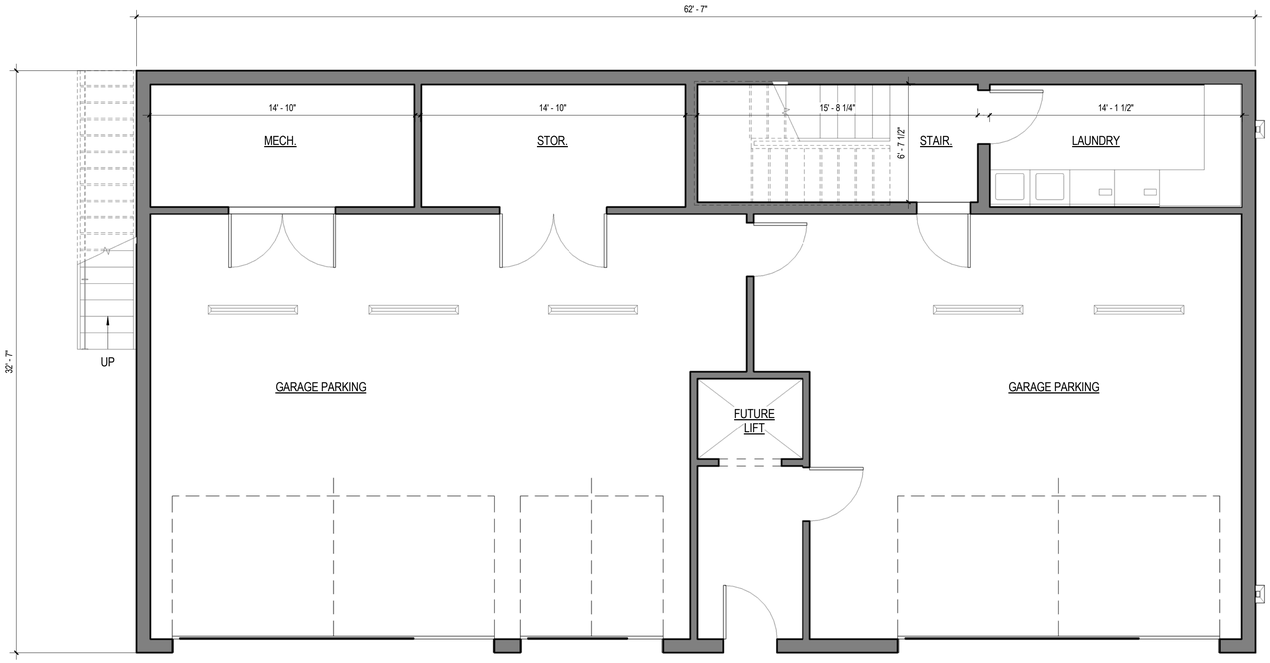
Full Size: 0" 1" 2"
Date: 4.6.2016
Project: 1312
Archive:
Plot Date: 4/7/2016 11:01:30 AM
Revisions:

Rev#	Date	Description

MASTER PLAN SUBMITTAL

TYPICAL DUPLEX PLAN

SHT 14



1 COMMUNITY CENTER - LOWER LEVEL PLAN
1/4" = 1'-0"

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PLACITAS SAGE COHOUSING

Placitas, NM

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Full Size: 0" 1" 2"

Date: 4.6.2016

Project: 1312

Archive:

Plot Date: 4/7/2016 11:01:33 AM

Revisions:

Rev#	Date	Description

MASTER PLAN SUBMITTAL

COMMUNITY CENTER LOWER LEVEL PLAN

SHT 15

1 COMMUNITY CENTER - MAIN LEVEL PLAN
1/4" = 1'-0"

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PLACITAS SAGE COHOUSING

Placitas, NM

NOT FOR CONSTRUCTION

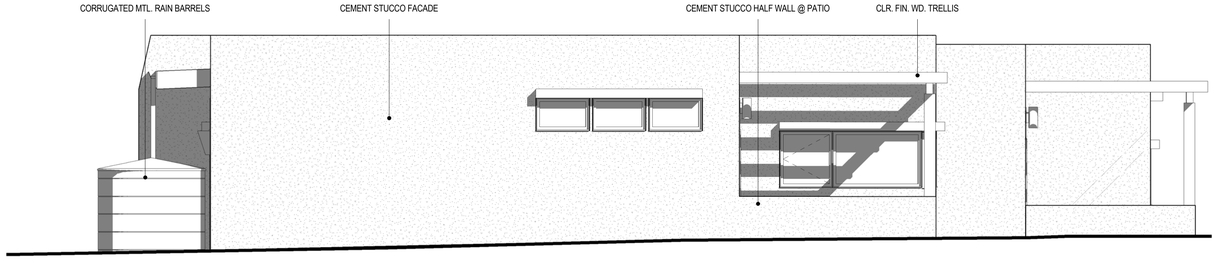
Full Size: 0" 1" 2"
Date: 4.6.2016
Project: 1312
Archive:
Plot Date: 4/7/2016 11:01:36 AM
Revisions:

Rev#	Date	Description

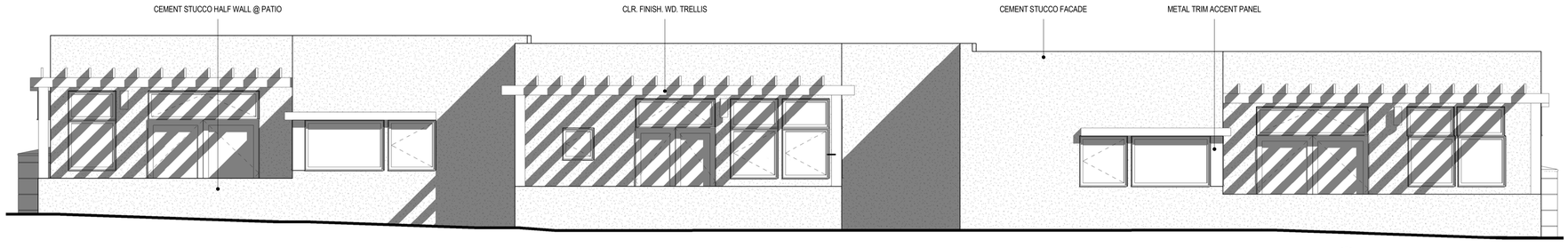
MASTER PLAN SUBMITTAL

COMMUNITY CENTER MAIN LEVEL PLAN

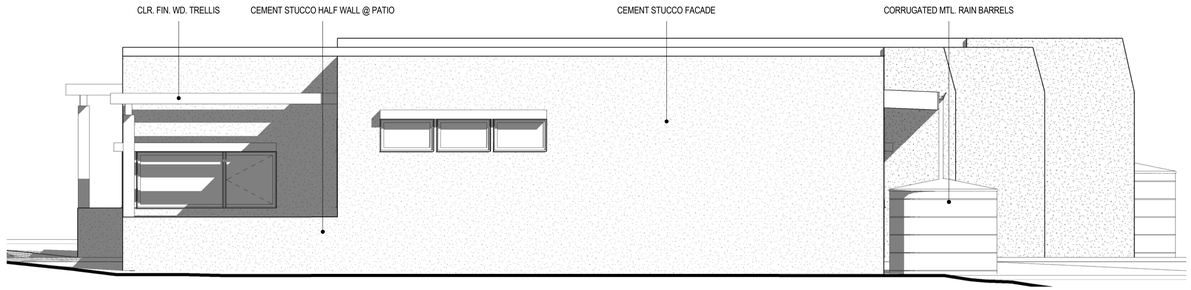
SHT 16



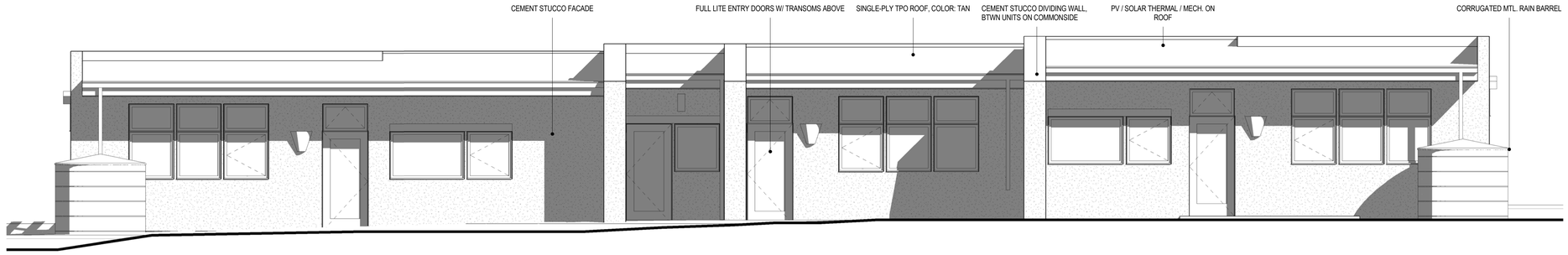
4 TYPICAL TRIPLEX - WEST
1/4" = 1'-0"



3 TYPICAL TRIPLEX - SOUTH
1/4" = 1'-0"



2 TYPICAL TRIPLEX - EAST
1/4" = 1'-0"



1 TYPICAL TRIPLEX - NORTH (COMMON SIDE)
1/4" = 1'-0"

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PLACITAS SAGE COHOUSING

Placitas, NM

NOT FOR CONSTRUCTION

Full Size: 0" 1" 2"

Date: 4.6.2016

Project: 1312

Archive:

Plot Date: 4/7/2016 11:01:45 AM

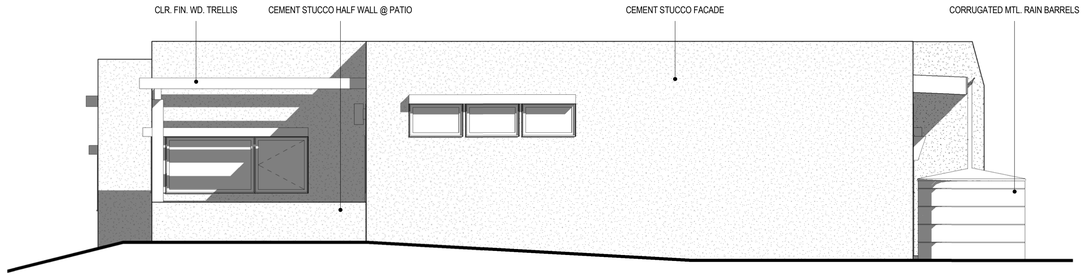
Revisions:

Rev#	Date	Description

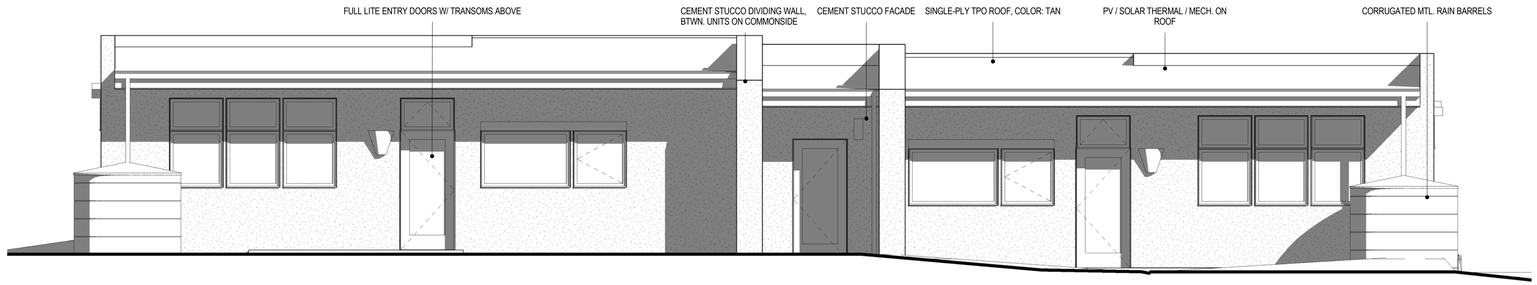
MASTER PLAN SUBMITTAL

TYPICAL TRIPLEX ELEVATIONS

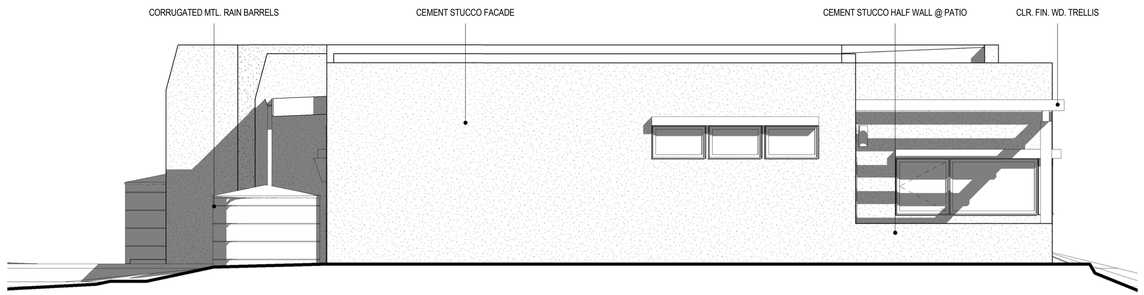
SHT 17



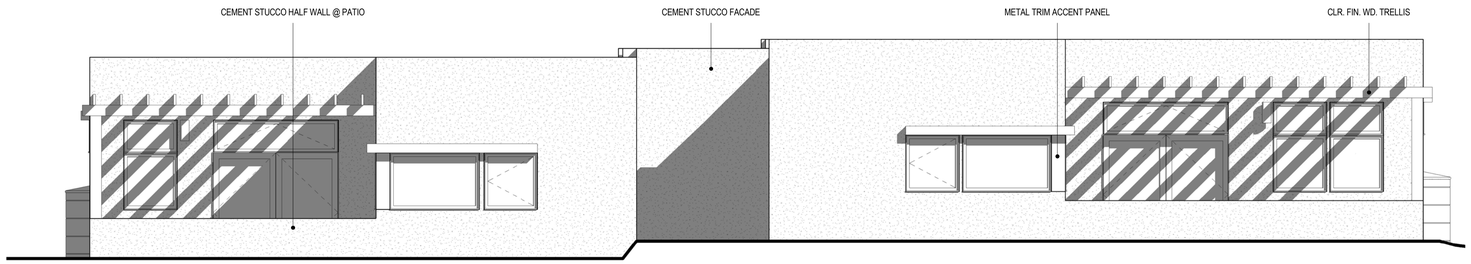
4 TYPICAL DUPLEX - WEST
1/4" = 1'-0"



3 TYPICAL DUPLEX - SOUTH (COMMONSIDE)
1/4" = 1'-0"



2 TYPICAL DUPLEX - EAST
1/4" = 1'-0"



1 TYPICAL DUPLEX - NORTH
1/4" = 1'-0"

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PLACITAS SAGE COHOUSING

Placitas, NM

NOT FOR CONSTRUCTION

Full Size: 0" 1" 2"

Date: 4.6.2016

Project: 1312

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Plot Date: 4/7/2016 11:01:55 AM

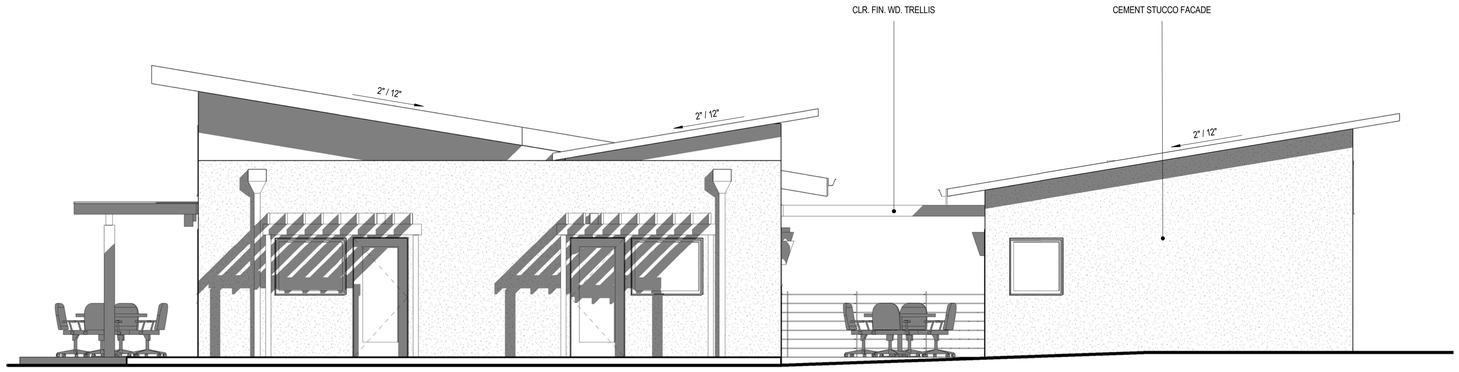
Revisions:

Rev#	Date	Description

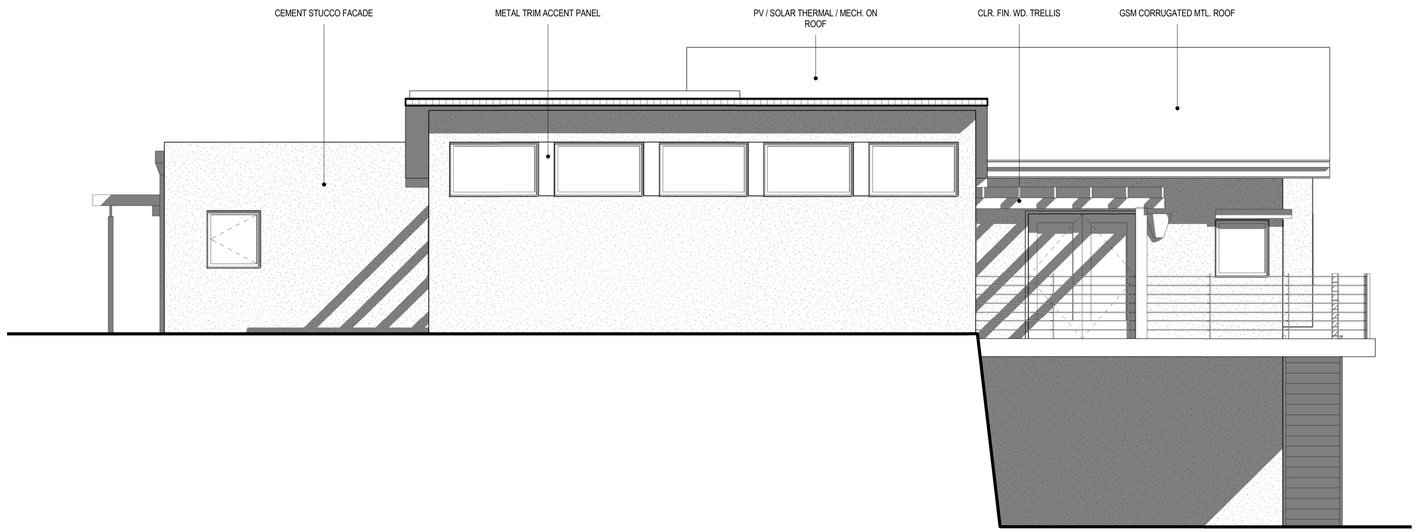
MASTER PLAN SUBMITTAL

TYPICAL DUPLEX ELEVATIONS

SHT 18



2 COMMUNITY CENTER ELEVATION - EAST
1/4" = 1'-0"



1 COMMUNITY CENTER ELEVATION - NORTH
1/4" = 1'-0"

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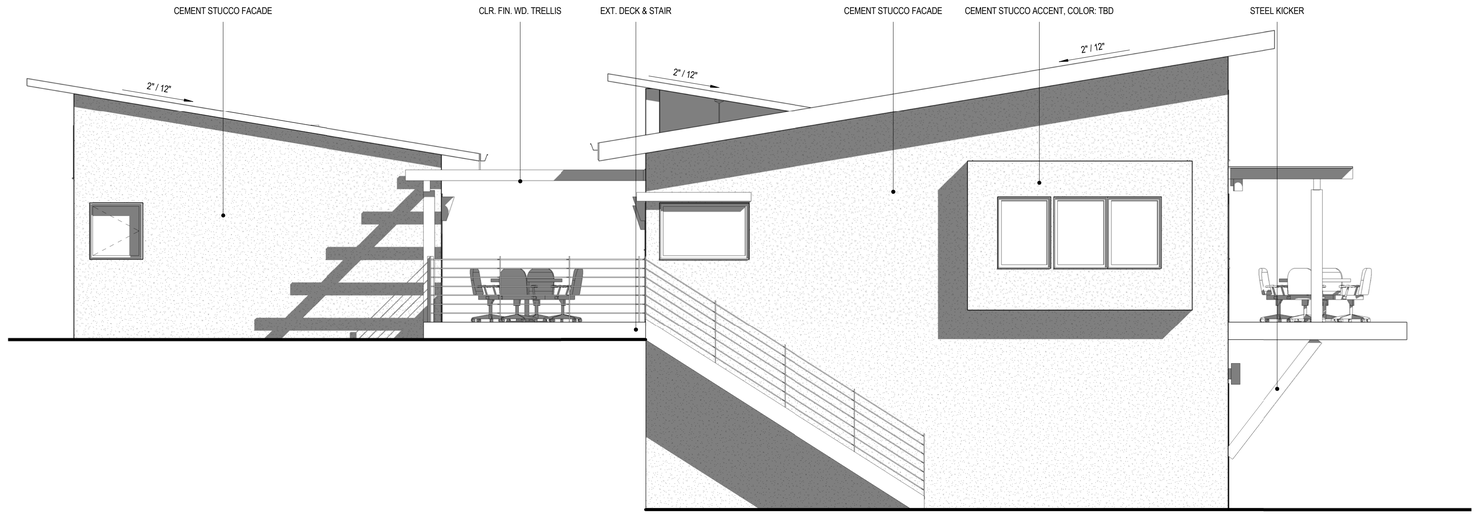
Rev#	Date	Description

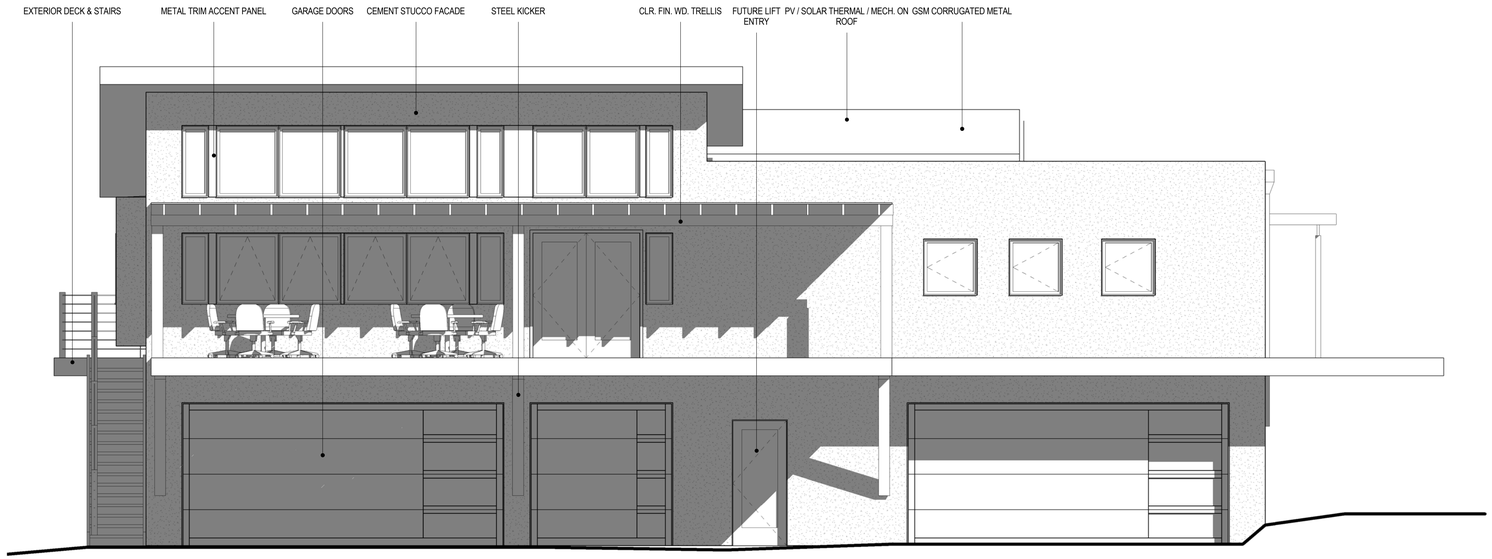
MASTER PLAN SUBMITTAL

COMMUNITY CENTER ELEVATIONS

SHT 19



2 COMMUNITY CENTER ELEVATION - WEST
1/4" = 1'-0"



1 COMMUNITY CENTER ELEVATION - SOUTH
1/4" = 1'-0"

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Plot Date: 4/7/2016 11:02:12 AM

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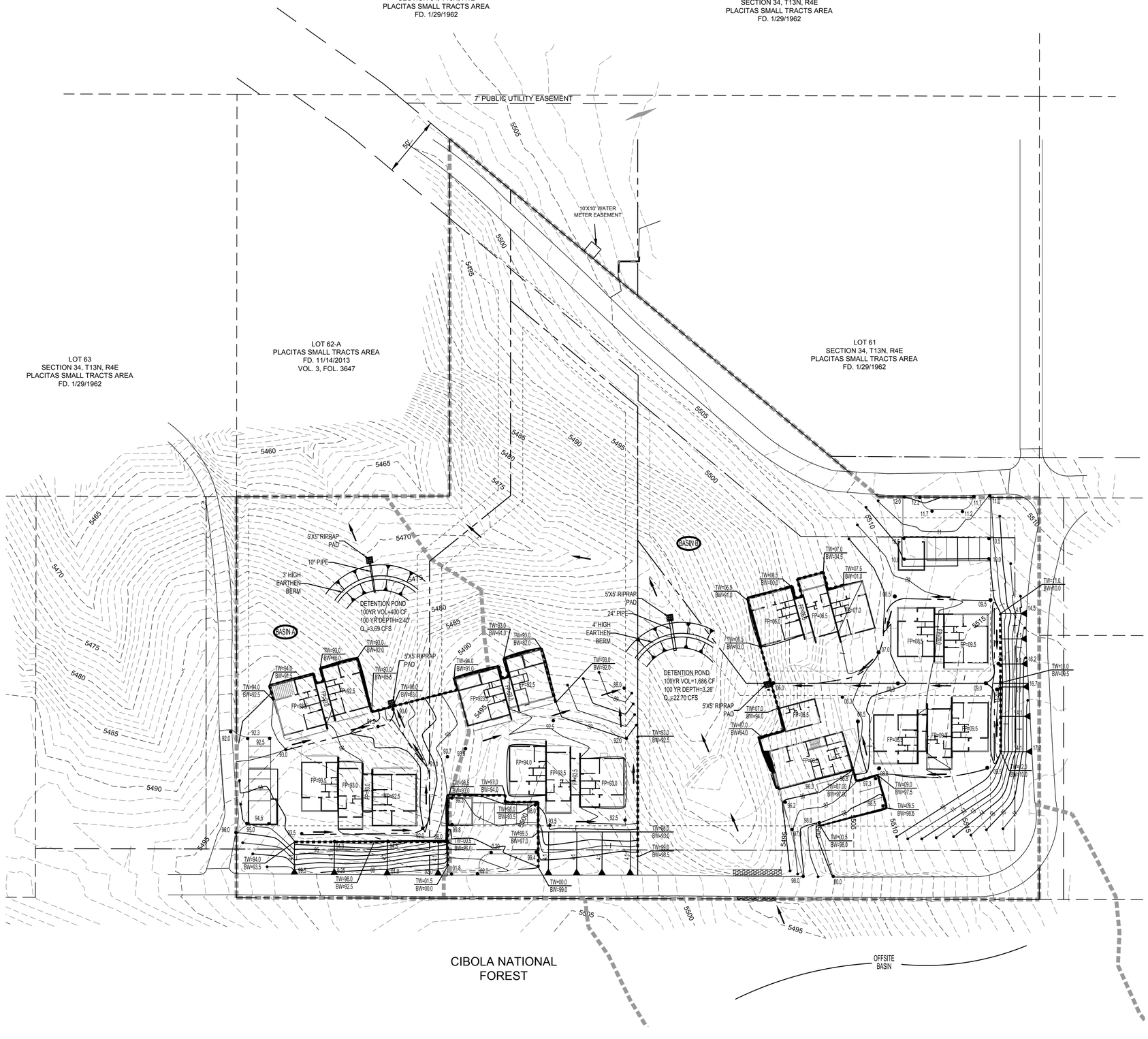
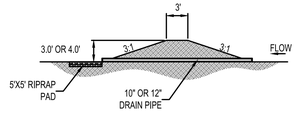
Rev#	Date	Description

MASTER PLAN SUBMITTAL

COMMUNITY CENTER ELEVATIONS CONT'D.

SHT 20

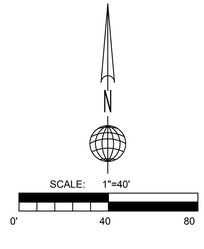




3' HIGH & 4' HIGH
EARTHN BERM DETAIL
NTS

LEGEND

- PROPOSED RETAINING WALL
- PROPOSED EARTHEN SWALE
- 95.00 PROPOSED SPOT ELEVATION
- PROPOSED FLOW DIRECTION
- PROPOSED SLOPE
- TW=95.00 / BW=93.00 TOP OF WALL ELEVATION / BOTTOM OF WALL ELEVATION



DRAINAGE PLAN:

LEGAL DESCRIPTION: LOTS 83-A, 83-B, 84, AND PARTS OF 61 AND 62-B;
PLACITAS SMALL TRACTS AREA

SITE AREA: 6.13 ACRES

EXISTING DRAINAGE CONDITIONS:

THE LOTS ARE LOCATED IN THE PLACITAS WEST AREA BETWEEN FOREST LANE AND RIDGE ROAD. THE LOTS GENERALLY DRAIN FROM SOUTHEAST TO NORTHWEST TO AN ARROYO THAT DRAINS NORTHWEST FROM THE PROPERTIES. A SMALL OFFSITE BASIN, ABOUT 3.1 ACRES, IS LOCATED IN FOREST SERVICE PROPERTY TO THE SOUTHEAST OF THE LOTS. RUNOFF FROM THIS SMALL OFFSTIE BASIN DRAINS ONTO THE PROPERTIES BY OVERTOPPING FOREST LANE AND CONTINUING IN THE ARROYO RUNNING THROUGH THE PROPERTIES. DURING A 100-YEAR, 24-HOUR STORM THE OFFSITE BASIN DISCHARGES 9.06 CFS INTO THE ARROYO.

AS REQUIRED IN APPENDIX A OF THE SANDOVAL COUNTY SUBDIVISION REGULATIONS FOR SOUTHEASTERN SANDOVAL COUNTY, THE DRAINAGE ANALYSIS FOR THIS SITE IS IN ACCORDANCE WITH SETION 22 OF THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL (DPM), ENTITLED "DRAINAGE, FLOOD CONTROL, AND EROSION CONTROL." FOR THIS PROJECT AN AHYMO HYDROLOGIC MODEL WAS DEVELOPED. THE DESIGN STORM USED FOR BOTH UNDEVELOPED AND DEVELOPED CONDITIONS IS THE 100-YEAR, 24-HOUR STORM EVENT FOR RUNOFF. THE 100-YEAR RAINFALL WAS OBTAINED USING THE NOAA ATLAS 14 VOLUME 1 VERSION 5 POINT PRECIPITATION FREQUENCY ESTIMATES FOR THE PROJECT LOCATION. THE 100-YEAR, 24-HOUR STORM IS 2.90 INCHES. DUE TO THE STEEP SLOPES IN THE PROJECT AREA UNDER EXISTING CONDITIONS THE LOTS ARE MODELED AS LAND TREATMENT C.

DEVELOPED DRAINAGE CONDITIONS:

THIS PROJECT INVOLVES THE CONSTRUCTION OF EIGHT SEPARATE BUILDINGS WITH SEVEN OF THE BUILDINGS HAVING A TOTAL OF 18 ONE-BEDROOM RESIDENTIAL UNITS AND ONE BUILDING FOR THE COMMUNITY CENTER. OTHER SITE IMPROVEMENTS INCLUDE PARKING AREAS, WALKING PATHS, AND LANDSCAPING. THE PROPERTIES ARE DIVIDED INTO TWO DRAINAGE BASINS. BASIN A INCLUDES THE WESTERN QUARTER OF THE SITE AND BASIN B INCLUDES THE EASTERN THREE-QUARTERS OF THE SITE. LID CONCEPTS ARE INCORPORATED IN THE MANAGEMENT OF STORM DRAINAGE. RUNOFF FROM THE IMPERVIOUS AREAS IS DIRECTED TOWARD THE CENTER LANDSCAPED AREA BETWEEN THE BUILDINGS. ALSO, THE MAJORITY OF THE ROOF RUNOFF FROM EACH RESIDENTIAL BUILDING IS CAPTURED IN 2 - 1000 GALLON CISTERNS. ONCE THE CISTERNS ARE AT CAPACITY, THE RUNOFF IS THEN DIRECTED TO THE LANDSCAPED AREA BETWEEN THE BUILDINGS.

IN BASIN A, THERE ARE A TOTAL OF 4-1000 GALLON CISTERNS THAT CAPTURE RUNOFF FROM THE BUILDING ROOF. THEREFORE, THE FIRST 535 CUBIC-FEET OF STORM WATER WILL BE STORED IN THE CISTERNS BEFORE THERE IS ANY RUNOFF IN THE DRAINAGE SWALES. RUNOFF FROM BASIN A IS CONVEYED IN SWALES WITHIN THE LANDSCAPE AREA BETWEEN THE BUILDINGS TO BE USED FOR WATER HARVESTING. PEAK RUNOFF IS DIRECTED TOWARD THE SMALL DRAINAGE SWALE SOUTH OF THE RETAINING WALL AND ONTO A RIPRAP PAD TO REDUCE EROSION. THE STORM WATER CONTINUES SOUTH TO A DETENTION PONDING AREA THAT IS INCORPORATED INTO THE DRAINAGE SWALE BY BUILDING A 3-FOOT HIGH EARTHEN BERM ACROSS THE SWALE. A 10-INCH PIPE IS LOCATED IN THE BERM TO ALLOW FOR WATER TO BE DETAINED IN THE PONDING AREA BEHIND THE BERM AND DISCHARGED AT A RATE THAT IS LESS THAN EXISTING. THE EXISTING RUNOFF FOR BASIN A IS 3.96 CFS DURING A 100-YEAR, 24-HOUR STORM. THE DETENTION POND HOLDS 400 CUBIC FEET OF STORM WATER AND DISCHARGES 3.69 CFS. THE 100-YEAR WATER SURFACE IS 2.40 FEET DEEP.

BASIN B INCLUDES AREAS EAST AND WEST OF THE ARROYO RUNNING THROUGH THE SITE. IN BASIN B, THERE ARE A TOTAL OF 10-1000 GALLON CISTERNS THAT CAPTURE RUNOFF FROM THE BUILDING ROOF. THEREFORE, THE FIRST 1,337 CUBIC-FEET OF STORM WATER WILL BE STORED IN THE CISTERNS BEFORE THERE IS ANY RUNOFF IN THE DRAINAGE SWALES. RUNOFF FROM BASIN B EAST OF THE ARROYO IS CONVEYED IN SWALES WITHIN THE LANDSCAPE AREA BETWEEN THE BUILDINGS TO BE USED FOR WATER HARVESTING. PEAK RUNOFF IS DIRECTED TOWARD THE ARROYO WEST OF THE RETAINING WALL AND ONTO A RIPRAP PAD TO REDUCE EROSION. RUNOFF FROM BASIN B WEST OF THE ARROYO IS CONVEYED IN SWALES WITHIN THE LANDSCAPE AREA BETWEEN THE BUILDINGS TO BE USED FOR WATER HARVESTING. THE STORM WATER FROM BOTH EAST AND WEST OF THE ARROYO CONTINUES TO A DETENTION PONDING AREA THAT IS INCORPORATED INTO THE ARROYO BY BUILDING A 4-FOOT HIGH EARTHEN BERM ACROSS THE ARROYO. A 24-INCH PIPE IS LOCATED IN THE BERM TO ALLOW FOR WATER TO BE DETAINED IN THE PONDING AREA BEHIND THE BERM AND DISCHARGED AT A RATE THAT IS LESS THAN EXISTING. THE EXISTING RUNOFF FOR BASIN B AND THE OFFSITE BASIN IS 23.20 CFS DURING A 100-YEAR, 24-HOUR STORM. THE DETENTION POND HOLDS 1,686 CUBIC FEET OF STORM WATER AND DISCHARGES 22.70 CFS. THE 100-YEAR WATER SURFACE IS 3.26 FEET DEEP.

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PLACITAS SAGE COHOUSING

Placitas, NM

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Full Size: 0" 1" 2"

Date: 03.17.2016

Project: Placitas Sage CoHousing

Archive:

Plot Date: 03.17.2016

Revisions:

Rev#	Date	Description

MASTER PLAN SUBMITTAL

Conceptual Grading & Drainage Plan

C100

LOT 59
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

LOT 60
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

7' PUBLIC UTILITY EASEMENT

10'X10' WATER
METER EASEMENT

LOT 63
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

LOT 62-A
PLACITAS SMALL TRACTS AREA
FD. 11/14/2013
VOL. 3, FOL. 3647

LOT 61
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

LOT 82-A
PLACITAS SMALL TRACTS AREA
FD. 6/24/1999
VOL. 3, FOL. 1876-B

DRAIN FIELD
SAS LINES
SAS LINE

CIBOLA NATIONAL
FOREST

LEGEND

- PROPOSED RETAINING WALL
- PROPOSED EARTHEN SWALE
- SEPTIC TANK
- WATER WELL LOCATION

NOTE:

1. ALL SEPTIC TANS 1530 GALLON INFILTRATOR SEPTIC TANKS
2. ALL DRAIN FIELDS 1500 SF EASY FLOW 1204V 220 LINEAL FEET

SCALE: 1"=40'

0' 40 80

NORTH

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PLACITAS SAGE COHOUSING

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Full Size: 0" 1" 2"

Date: 03.17.2016

Project: Placitas Sage CoHousing

Archive:

Plot Date: 03.17.2016

Revisions:

Rev#	Date	Description

MASTER PLAN SUBMITTAL

Conceptual Utility Plan

C101

LOT 59
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

LOT 60
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

7' PUBLIC UTILITY EASEMENT

50'

10'X10' WATER METER EASEMENT

LOT 63
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

LOT 62-A
PLACITAS SMALL TRACTS AREA
FD. 11/14/2013
VOL. 3, FOL. 3647

LOT 61
SECTION 34, T13N, R4E
PLACITAS SMALL TRACTS AREA
FD. 1/29/1962

RIDGE ROAD

14.40' PAVMENT

66' ROAD &
UTILITY EASEMENT

20'
P.U.E.

10' P.U.E.

FOREST LANE

RIDGE ROAD

20'
P.U.E.

PRIVATE DRIVE

20'
P.U.E.

20'
P.U.E.

20'
P.U.E.

20'
P.U.E.

FOREST LANE

25' ACCESS EASEMENT

10.35' PAVEMENT

17.17' PAVMENT

40' ROADWAY &
PUBLIC UTILITY EASEMENT

20'
P.U.E.

FOREST LANE

40' ROADWAY &
PUBLIC UTILITY EASEMENT

16.91' PAVEMENT

CIBOLA NATIONAL
FOREST

VICINITY MAP

Caddis Architecture, etc.
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PLACITAS SAGE COHOUSING

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Full Size: 0" 1" 2"

Date: 03.17.2016

Project: Placitas Sage CoHousing

Archive:

Plot Date: 03.17.2016

Revisions:

Rev#	Date	Description

SCALE: 1"=40'

0' 40 80

NORTH

MASTER PLAN SUBMITTAL

Conceptual Access Plan

C102