

Supporting a Tribal Housing Program Using GIS



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Housing Program Origins and Background



- HUD Homes
- AMIHA (All Mission Indian Housing Authority)
 - Helps provide low-income housing to Tribes in Southern California
 - Funded through HUD (US Department of Housing & Urban Development).
- Approximately 100 Homes built on Reservation between 1970's and 1990's in 7 Subdivisions.
- Very basic construction / Amenities
 - 2-5 bedrooms models
 - Carports
 - Later models have garages
 - Paved Streets
 - Surveyed Lots
 - Engineered Subdivisions
 - Water and Sewer
 - Provided Housing for struggling low income community





- Last subdivisions built under grants (Late 90s-Early 2000's)
 - IHBG (Indian Housing Block Grant)
 - NAHASDA (Native American Housing Assistance and Self Determination Act 1996)
 - Tribal Housing Department contracted Pence Construction to build developments
 - General Contracting Firm in Valley Center, CA
 - Jim McCaskey General Supervisor for projects
- AMIHA Funds still used
 - Mutual Help program maintains homes built under program
 - AMERIND home owner's insurance



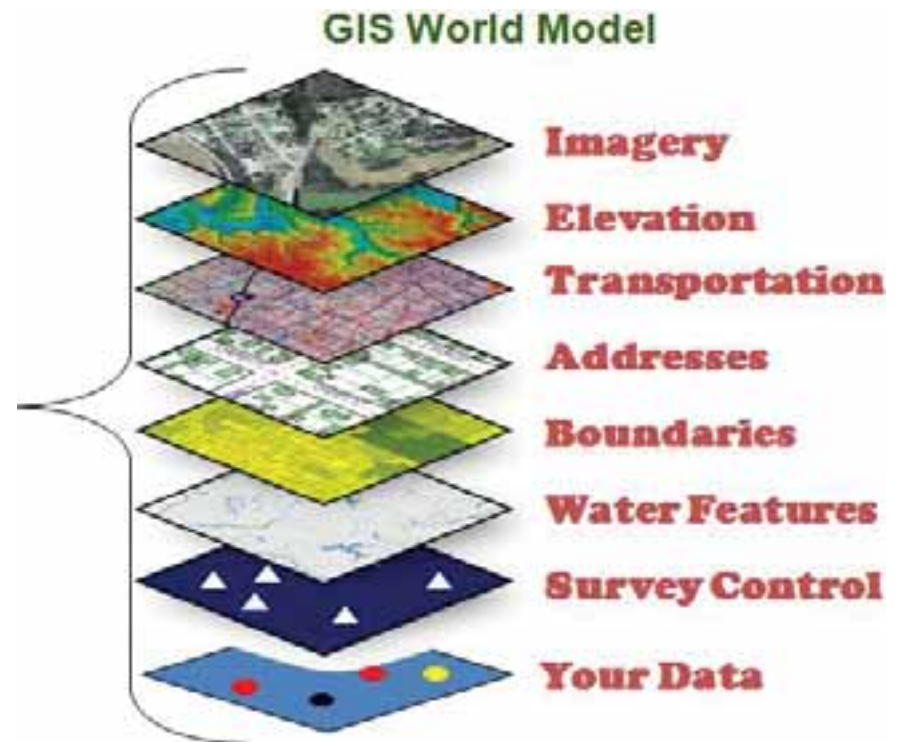
New Construction Program

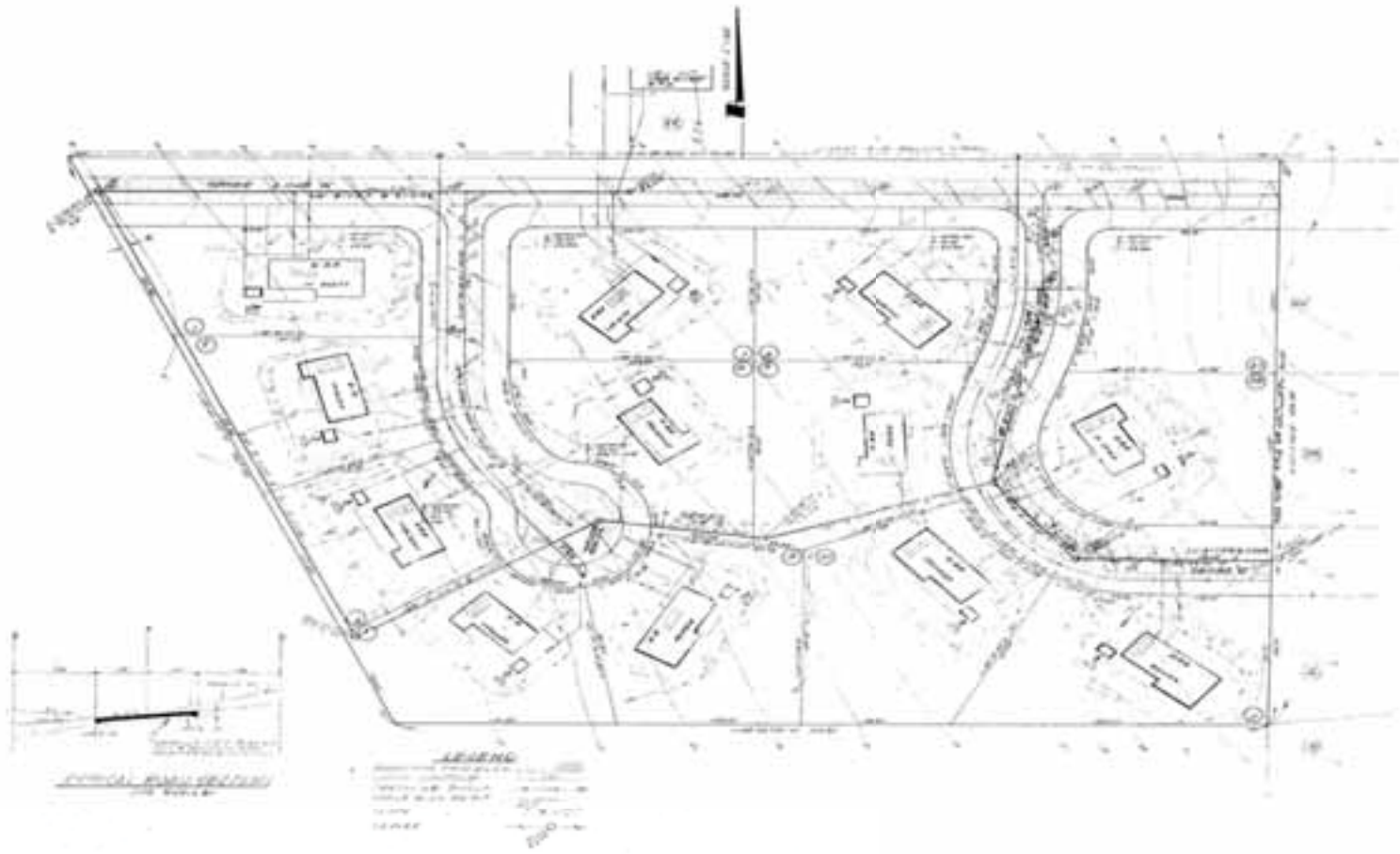
- Gaming introduced to Pala in 2000
- Pala Casino opened in 2001
- Pala Casino Spa and Resort opened in 2003
- With new funding sources Tribe decided to fund its own Housing program
 - Builds new homes
 - Safety and welfare homes
- Business Manager Andrew Moro took lead to head program
 - Designs homes
- Relationship with McCaskey maintained
- Entirely Tribally funded through low interest loan program
 - Covers construction costs
- Tribal Member owns land or has a Residential lease.
- Tribal Member does not have land
 - Given a Tribal Assignment on Tribal Trust land
 - Assignment given for the life of the individual or until returned to the Tribe.
 - Exceptions
 - Tribal Ordinances
 - Home not inheritable but request can be made to Tribe by decedent
 - All subdivision lots are assignments



GIS Background

- Tribe began using GIS in late 1990's under BIA-ESRI ELA
- Program initially funded through EPA Grants but quickly transitioned to Tribal funding with introduction of gaming.
- Tribal GIS Database compiled from survey records, CAD files, GPS, Aerial Imagery
 - Existing Water and Sewer
 - Elevation
 - 2ft & 5ft Contours
 - DEMs
 - Aerial Imagery
 - Land Base and Cadaster
 - Allotments/Land status provided by BIA
 - Existing assignment lots compiled from records
 - Building Footprints
 - Addresses
 - Streets
 - Home owner table
 - Fee to Trust
 - Provides a base view of Tribal Assets
 - Database evolved from simple shapefile to more robust SDE



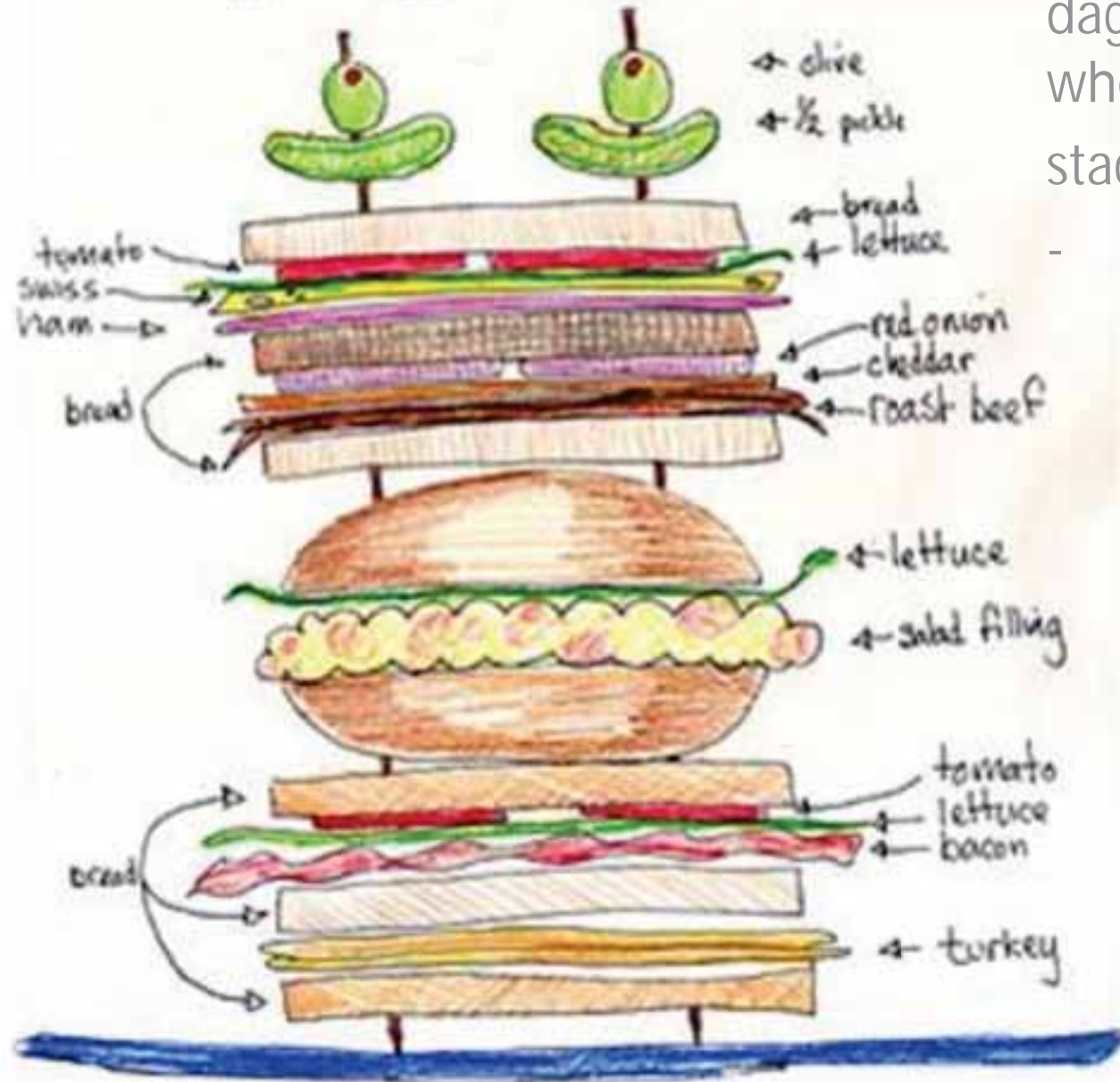


FENCING LOCATIONS





Dagwood



"GIS layers are like dagwoods; they are better when stacked."

- www.mymanatee.org

Roll of GIS in Housing Program –

1) Planning and Design

- Site Location

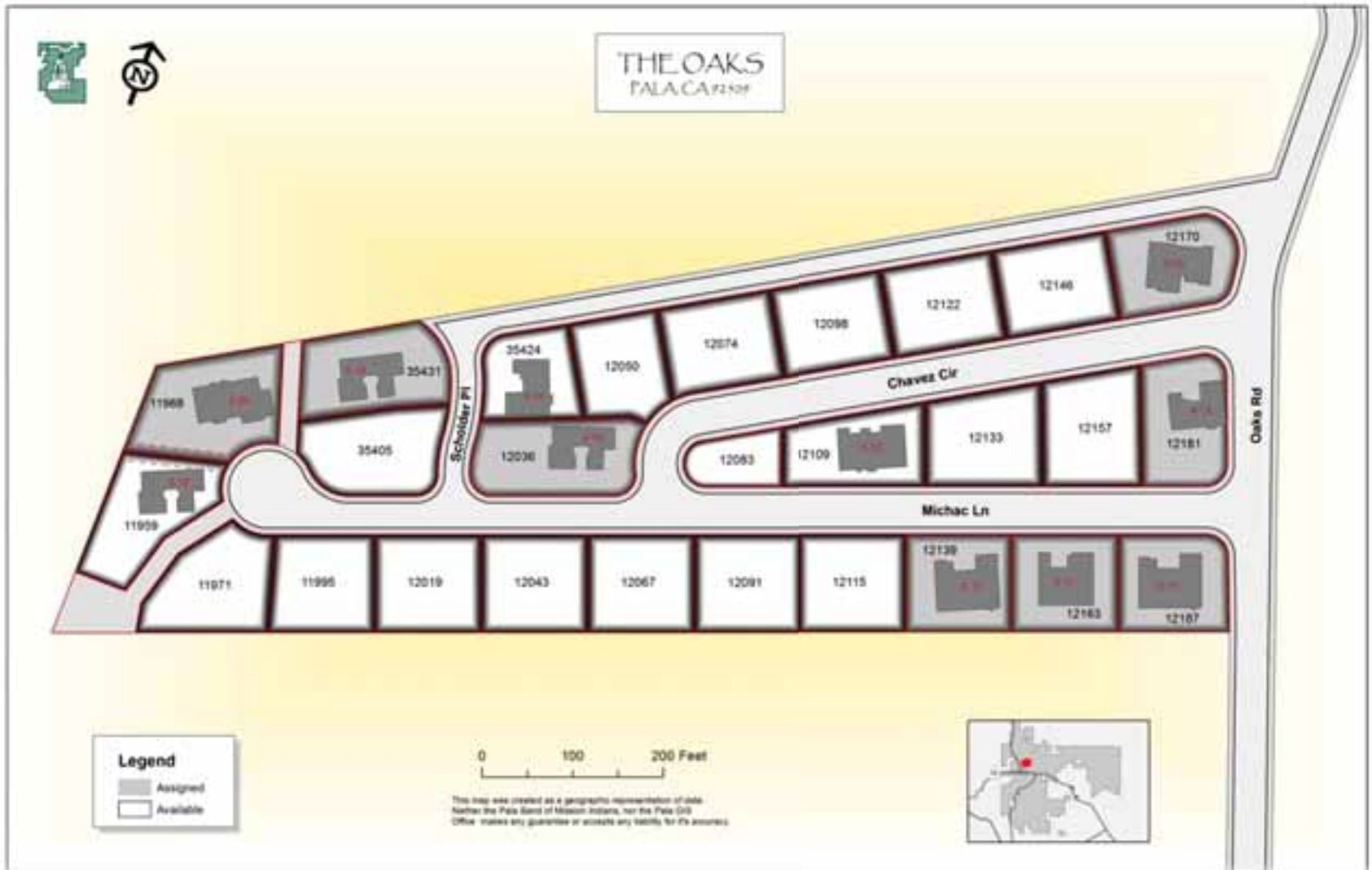
- Land status
- Suitability analysis
 - Sewer and Water feasibility
 - X,Y locations
 - Inverse elevations
 - Elevation and slope analysis
 - Cultural & environmental Analysis
 - Cultural/archaeological sites
 - Critical habitats

- Lot Design

- Scaled site maps assist in development lot configuration.
- Preliminary sketches converted to CAD format and sent to engineer/surveyor



2) Pre Construction



Subdivision maps shows lots still available



OAKS SUBDIVISION

Pala Business Office
39009 Pala-Temescal Road
PMB 00
Pala, CA 92069



607



616



617



614



602



608



606



610



619



620



622



609

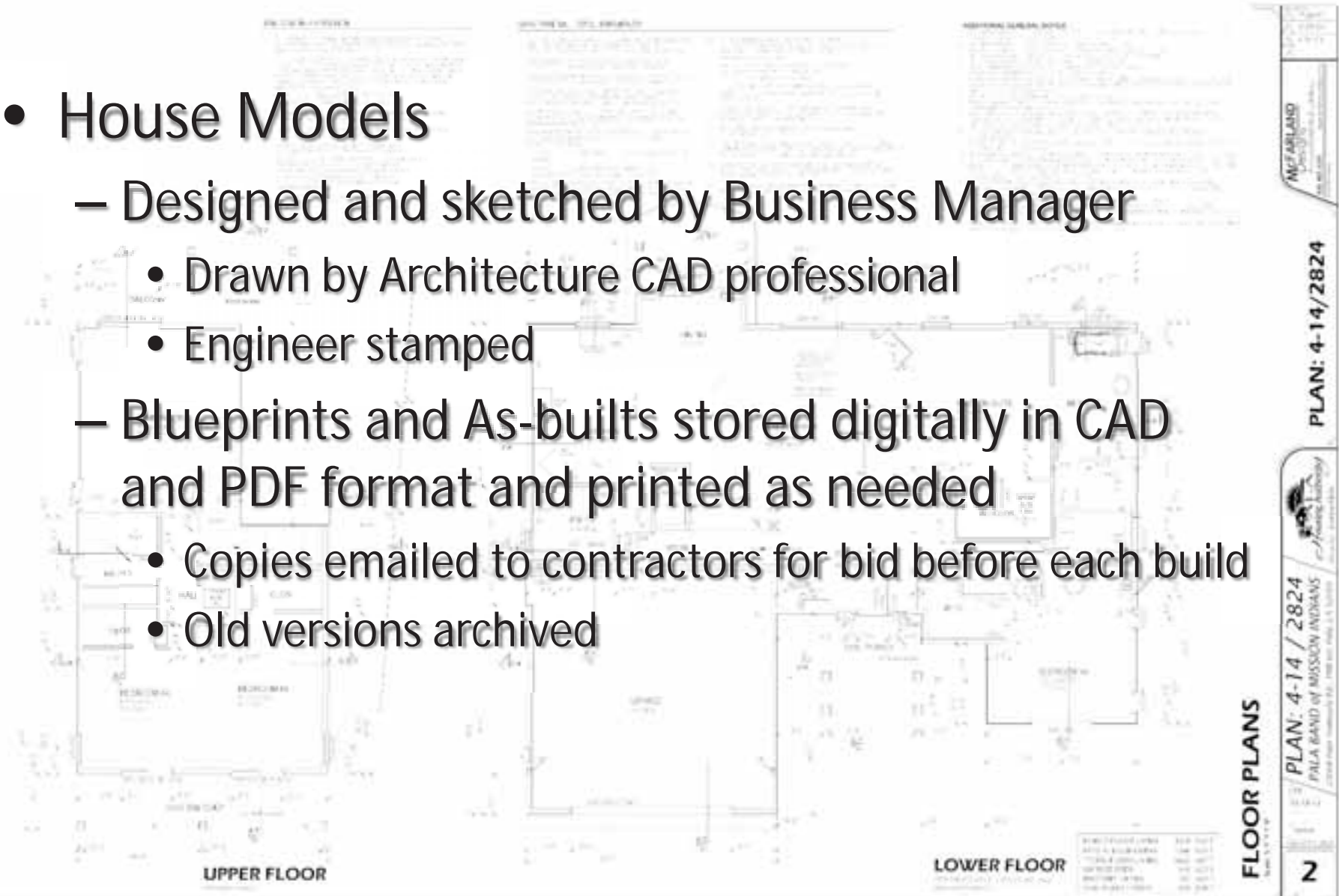
- House Models

- Designed and sketched by Business Manager

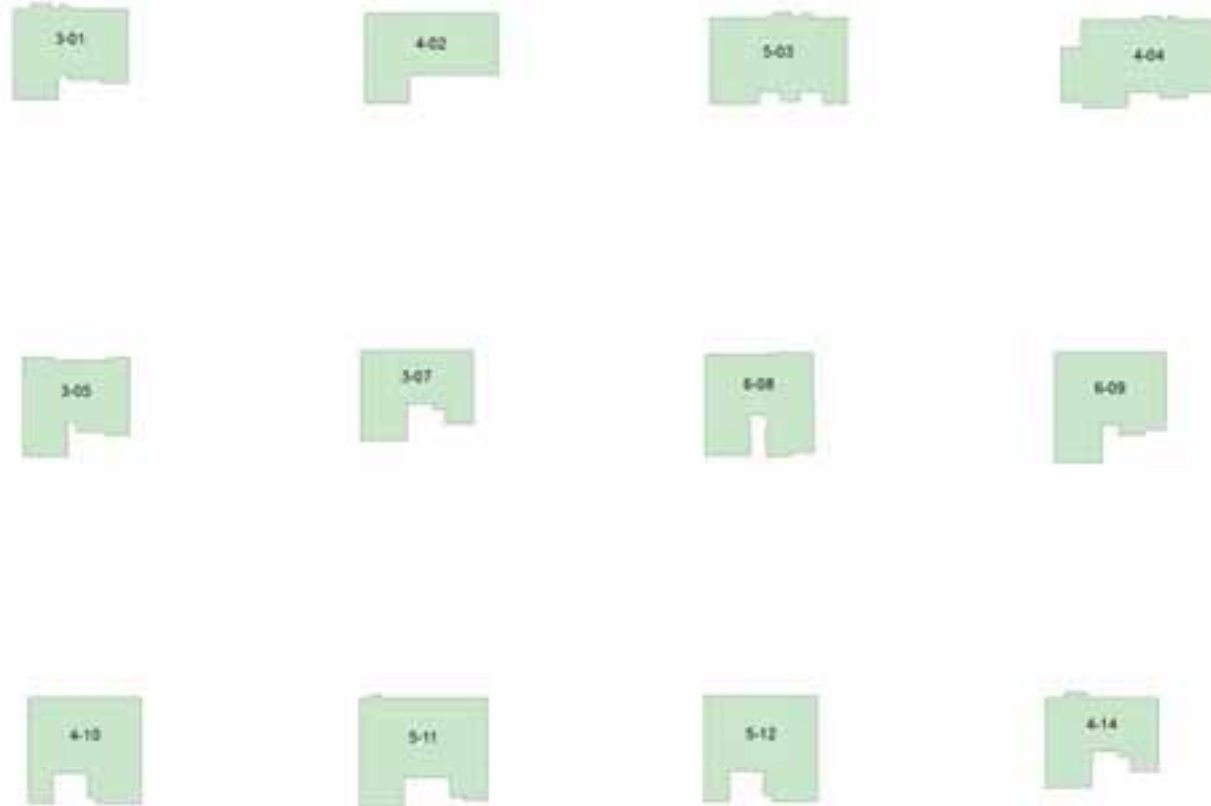
- Drawn by Architecture CAD professional
 - Engineer stamped

- Blueprints and As-builts stored digitally in CAD and PDF format and printed as needed

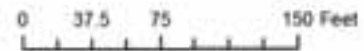
- Copies emailed to contractors for bid before each build
 - Old versions archived



Polygons of each model stored in SDE



1 inch = 75 feet



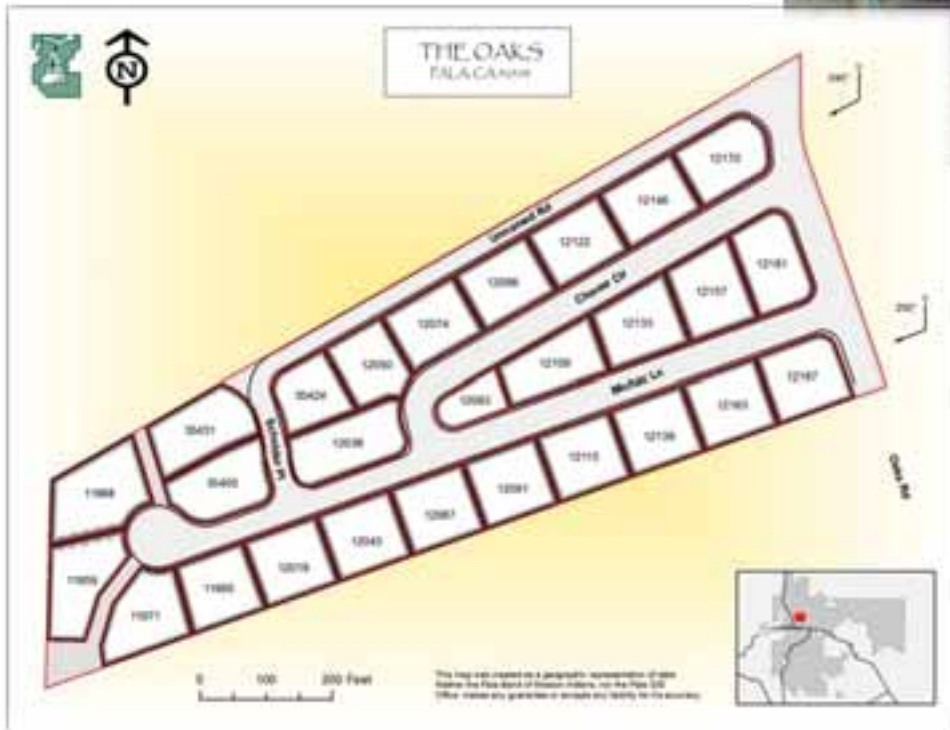
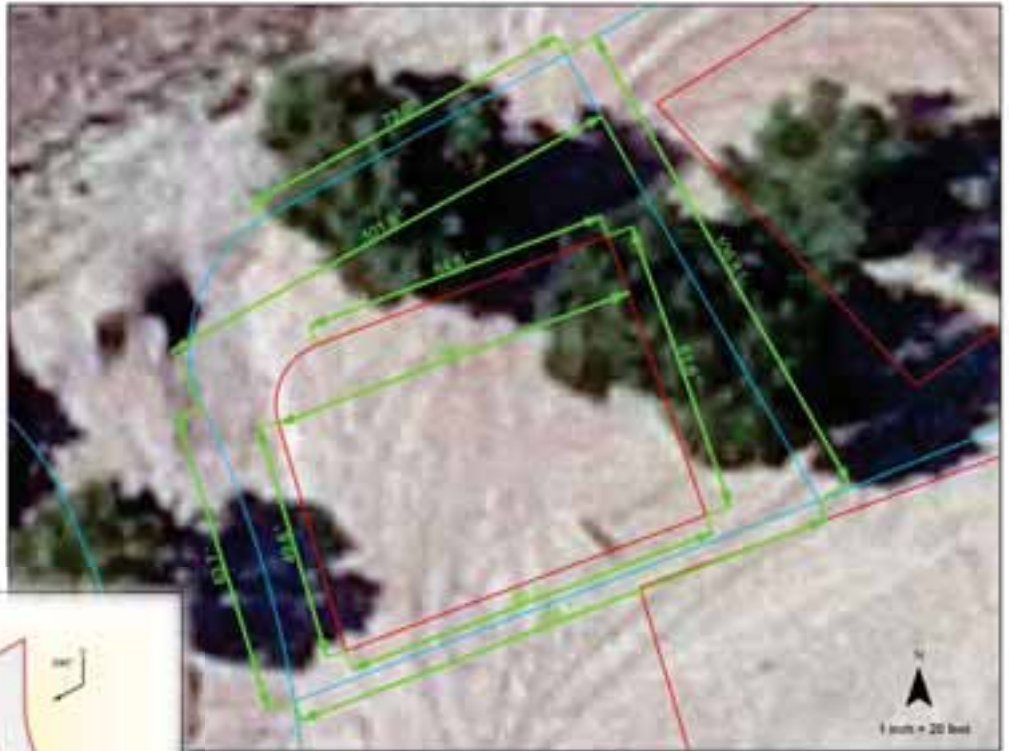
- Scaled Floor plan and Elevation graphics created in GIS Database

Floor Plan
Palo House Model 4-14



- House Placement

- Lot size and dimensions
- Location of over-excavated house pad

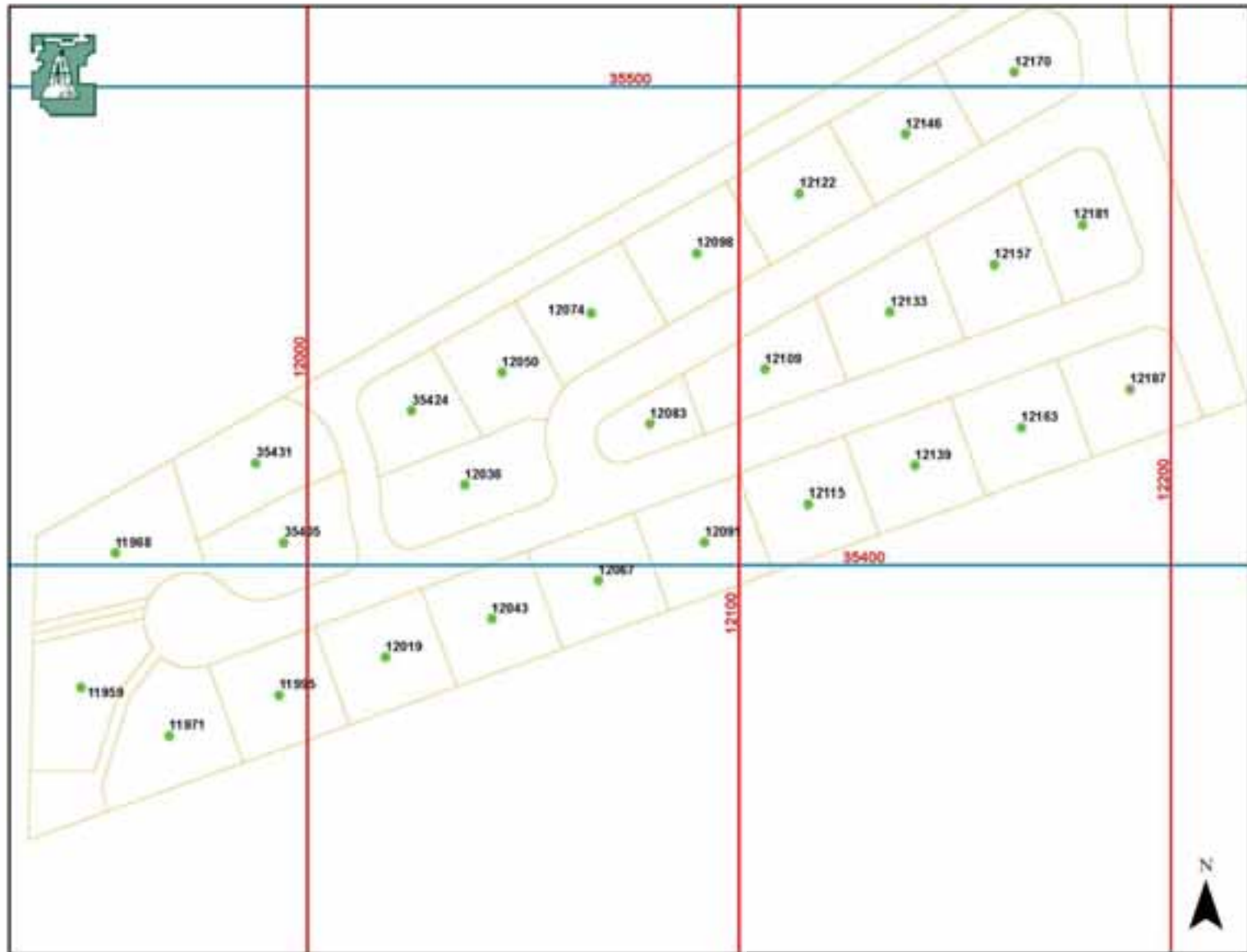


- Aspect and solar potential

- House Placement
 - Once the house is placed on the map, it's staked out using survey GPS
 - Foundation poured



- Address Assignment



- As-building

- House pads
- House locations
 - After slab pour
- Infrastructure
 - Water, sewer, storm drain, electric
 - Utility easements
 - Mains
 - Service connections
 - Laterals
 - Streets
 - Curbs
 - Pavement
 - Driveways

3) Construction



4) Post Construction

- Map final fence locations
- Maintain database



The end. Questions?

GIS ANALYST



What my friends think I do.



What my mom thinks I do.



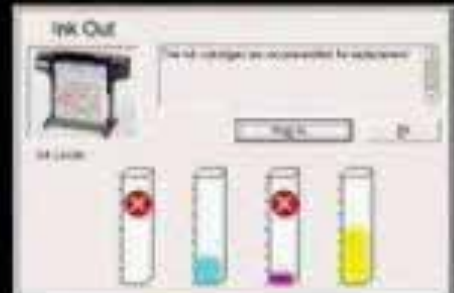
What society thinks I do.



What surveyors think I do.



What I think I do.



What I really do.