STAFF REPORT FOR THE PLANNING COMMISSION MEETING OF AUGUST 28, 2019

FILE NO: TSM-19-124 **AGENDA ITEM: E.4**

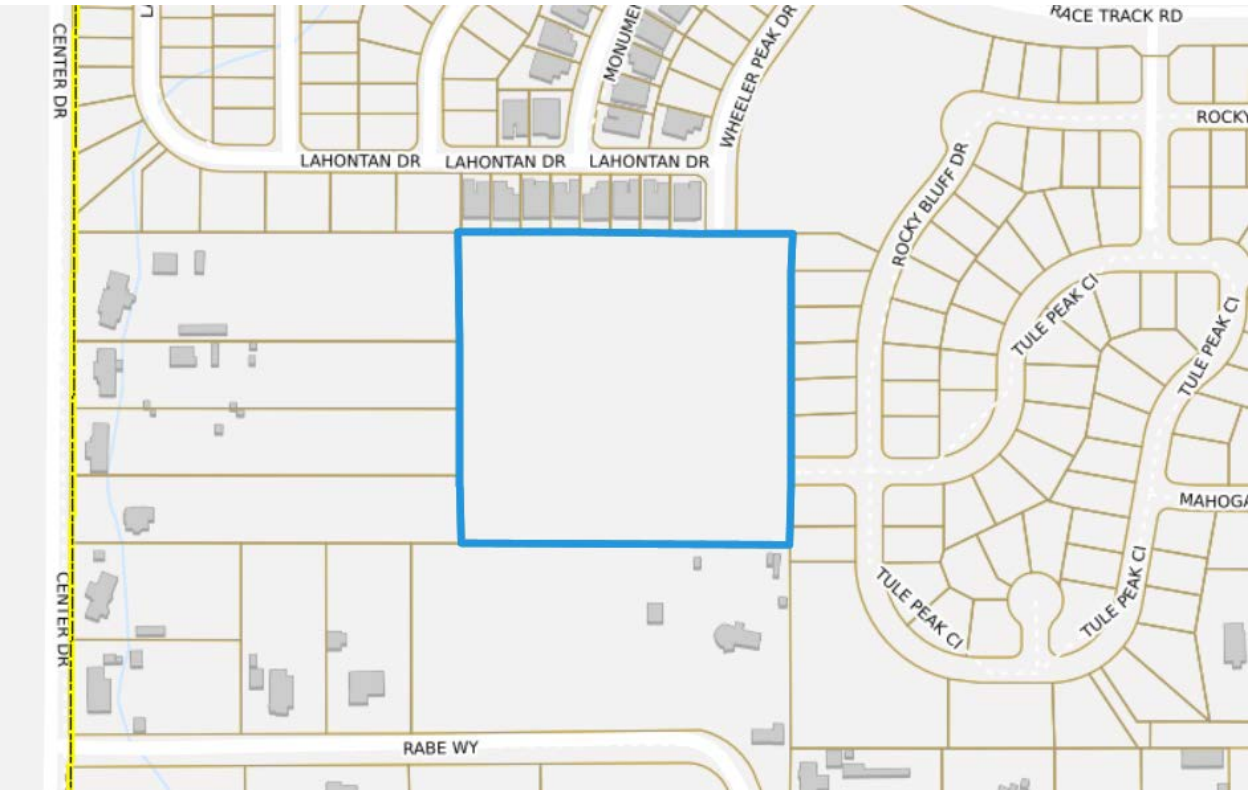
STAFF CONTACT: Heather Ferris, Associate Planner

AGENDA TITLE: For Possible Action: For Possible Action: Discussion and possible action regarding a Tentative Subdivision Map to create 29 single family lots within the Schulz Ranch Specific Plan Area on property zoned Single Family 6,000 – Schulz Ranch Specific Plan Area, located at the southern terminus of Wheeler Peak Drive, approximately 600 feet south of Racetrack Road and 750 feet east of Center Drive, APN 009-311-47. (Heather Ferris, hferris@carson.org).

Summary: *The applicant is proposing to subdivide a 7.94 acre parcel into 29 single family residential lots, with a minimum lot size of 6,600 sq. ft. and an average lot size of 9,465 sq. ft. Road access would be provided via Tule Peak Circle and Wheeler Peak Drive. The Board of Supervisors is authorized to approve a Tentative Subdivision Map. The Planning Commission makes a recommendation to the Board.*

RECOMMENDED MOTION: "I move to recommend to the Board of Supervisors approval of a Tentative Subdivision Map TSM-19-124, Schulz Ranch Phase 5, based on the findings and subject to the conditions of approval contained in the staff report."

VICINITY MAP:



RECOMMENDED CONDITIONS OF APPROVAL

The following are conditions of approval required per CCMC 18.02.105.5:

1. All final maps shall be in substantial accord with the approved tentative map.

2. Prior to submittal of any final map, the Development Engineering Department shall approve all on-site and off-site improvements. The applicant shall provide construction plans to the Development Engineering Department for all required on-site and off-site improvements, prior to any submittals for approval of a final map. The plan must adhere to the recommendations contained in the project soils and geotechnical report.

3. Lots not planned for immediate development shall be left undisturbed and mass grading and clearing of natural vegetation shall not be allowed. Any and all grading shall comply with City standards. A grading permit from the Nevada Division of Environmental Protection shall be obtained prior to any grading. Noncompliance with this provision shall cause a cease and desist order to halt all grading work.

4. All lot areas and lot widths shall meet the zoning requirements approved as part of this tentative map with the submittal of any final map.

5. With the submittal of any final maps, the applicant shall provide evidence to the Planning and Community Development Department from the Health and Fire Departments indicating the agencies' concerns or requirements have been satisfied. Said correspondence shall be included in the submittal package for any final maps and shall include approval by the Fire Department of all hydrant locations.

6. The following note shall be placed on all final maps stating:

   "These parcels are subject to Carson City's Growth Management Ordinance and all property owners shall comply with provisions of said ordinance."

7. Placement of all utilities, including AT&T Cablevision, shall be underground within the subdivision. Any existing overhead facilities shall be relocated prior to the submittal of a parcel map or preferably final maps.

8. The applicant must sign and return the Notice of Decision for conditions for approval within ten (10) days of receipt of notification after the Board of Supervisors meeting. If the Notice of Decision is not signed and returned within ten (10) days, then the item may be rescheduled for the next Planning Commission meeting for further consideration.

9. Hours of construction will be limited to 7:00 a.m. to 7:00 p.m., Monday through Friday, and 7:00 a.m. to 5:00 p.m. on Saturday and Sunday. If the hours of construction are not adhered to, the Carson City Building Department will issue a warning for the first violation, and upon a second violation, will have the ability to cause work at the site to cease immediately.

10. The applicant shall adhere to all City standards and requirements for water and sewer systems, grading and drainage, and street improvements.

11. The applicant shall obtain a dust control permit from the Nevada Division of Environmental Protection. The site grading must incorporate proper dust control and erosion control measures.

12. A detailed storm drainage analysis, water system analysis, and sewer system analysis shall be submitted to the Development Engineering Department prior to approval of a final map.

13. Prior to the recordation of the final map for any phase of the project, the improvements associated with the project must either be constructed and approved by Carson City, or the specific performance of said work secured, by providing the City with a proper surety in the amount of one hundred fifty percent (150%) of the engineer's estimate. In either case, upon acceptance of the improvements by the City, the developer shall provide the City with a proper surety in the amount of ten percent (10%) of the engineer's estimate to secure the developer's obligation to repair defects in workmanship and materials which appear in the work within one (1) year of acceptance by the City. Improvements associated with the Conditional Letter of Map Revision must be constructed and may not be secured for in lieu of construction.

14. A "will serve" letter from the water and wastewater utilities shall be provided to the Nevada Health Division prior to approval of a final map.

15. The District Attorney shall approve any CC&R's prior to recordation of the first final map.

Specific Conditions to be included in the Design of the Improvement Plans, to be met prior to approval of construction permit:

16. The proposed storm drain flows to the storm drain system of Schulz Ranch Phase 3. This system is under construction with a design revision that is still in review. No site improvement permit, including grading permits, may be issued prior to the design revision being approved with lawful access, and no final map may be recorded for this subdivision until the revised storm drain improvements are installed and accepted or an approved alternative means of storm drain conveyance is provided.

17. A separate mass grading permit will not be allowed. Grading must be permitted together with all other site improvements.

18. A swale must be constructed along the west property line to intercept and propagate storm drainage. This feature must be maintained by the home owners association. A drainage easement shall be provided per condition 24 below.

19. A traffic impact study must be provided with the site improvement permit application providing a full stop sign warrant analysis of the intersection of Race Track Road and Center Drive, and the intersection must be signed and striped if recommended by the study.

20. Fire hydrants must be provided at the end of the cul-de-sacs instead of flush assemblies.

21. The applicant shall incorporate “best management practices” into their construction documents and specifications to reduce the spread of noxious weeds.

22. The applicant shall install a 6 foot tall wood fence, matching Phase 1-4 of Schulz Ranch, along the common property line between Lot #29 and the Schulz Ranch Park. The property owner of Lot#29 shall maintain the fence in perpetuity.

Conditions to be Addressed with the Final Map

23. The street shown as "Chalk Bluff Drive" on the Tentative Subdivision Map must be accurately labeled as "Tule Peak Circle."

24. A drainage easement must be provided on the final map for the swale required along the west property line, the map must note that fencing across the swale is prohibited and that the home owners association or similar entity is responsible for maintenance of the swale.

25. The final map shall identify the location of Schulz Ranch Park and note that the property is intended for public use. The park is located north/northeast of the subject subdivision and adjacent to Lot #29.

26. The setbacks shall be called out on the final map.

27. The applicant shall provide the Community Development Department with a disclosure statement or similar instrument for review and approval. The document shall be recorded and provide for disclosure that properties in the vicinity are permitted to keep horses and other livestock and that there may be inconvenience or discomfort (e.g., noise, dust, and odors) that may arise from living in close proximity to such properties.

Other Conditions of Approval:

28. Prior to issuance any building permit, the applicant shall submit to the Planning Division for review and approval, a minimum of 3 distinctly different home models, consistent with Policy SR-SPA 3.1 of the Schulz Ranch Specific Plan.

29. Consistent with the Schulz Ranch Specific Plan Policy SR-SPA 3.6, homes on the buffer lots in the west and south of the subdivision shall be limited to single story.

30. Front yard landscaping and irrigation shall be provided by the developer. Prior to issuance of any building permit, the applicant shall submit to the Planning Division for review and approval, a minimum of 3 typical landscape schemes, consistent with Policy SR-SPA 3.5 of the Schulz Ranch Specific Plan.

LEGAL REQUIREMENTS: CCMC 17.05 (Tentative Maps); CCMC 17.07 (Findings); NRS 278.330;

MASTER PLAN DESIGNATION: Schulz Ranch Specific Plan Area; Medium Density Residential (MDR)

ZONING DISTRICT: Single Family-6000 square feet (SF6)

KEY ISSUES: Is the Tentative Map consistent with the Specific Plan? Does the proposal meet the Tentative Map requirements and other applicable requirements?

SURROUNDING ZONING AND LAND USE INFORMATION

NORTH:	Single Family 6,000-SPA/Single Family Residences & Park (Schulz Ranch Phase 1 and Phase 3)
SOUTH:	Single Family 1 acre/ Single Family Residence Family Residence
WEST:	Single Family 6,000& Single Family 1 acre/ Single Family Residences
EAST:	Single Family 6,000-SPA/Single Family Residences (Schulz Ranch Phase 3)

ENVIRONMENTAL INFORMATION:

FLOOD ZONE: Zone X (Area of Minimal Flood Hazard)
SLOPE/DRAINAGE: Generally flat
SEISMIC ZONE: Zone II- Moderate

SITE DEVELOPMENT INFORMATION:

SUBJECT SITE AREA:	7.94 acres
ZONING:	Single Family 6000-SPA
EXISTING LAND USE:	Vacant Land
TOTAL RESIDENTIAL LOTS:	29 single family lots
PROPOSED LOT SIZES:	6,600 square feet – 15,653 square feet
PROPOSED SETBACKS:	Setback consistent with the Schulz Ranch Specific Plan
PARKING REQUIRED:	Two spaces per dwelling unit
PROJECT PHASING:	Single Phase

SITE HISTORY:

November 3, 2005- ZMA-05-157, a zoning map amendment from Mobile Home One Acre and Single Family One Acre to Single Family 6,000 for the area subject to the Schulz Ranch Specific Plan.

October 20, 2005- TSM-05-144, a tentative map for a Common Open Space Development creating 521 single family detached units, known as Schulz Ranch.

May 19, 2005- MPA-05-044, a master plan amendment to establish the Schulz Ranch Specific Plan Area.

BACKGROUND:

The subject property is part of the Schulz Ranch Specific Plan and was included in the original approval of the Schulz Ranch subdivision, as Phase 5. The Schulz Ranch subdivision was approved in 2005 for a total of 521 units. Phase 5 included 25 lots ranging in size from 7,628 square feet to 15,327 square feet.

Two extensions were granted ultimately extending the approval of the map to August 21, 2011. Shortly after, the City and the developer entered into a Development Agreement (September 1, 2011) extending the expiration of the tentative map and outlining a Phasing Plan. In addition, the owners of Phase 5 of the original subdivision elected to no longer be a part of the project, thereby nullifying Phase 5 of the project and reducing the total number of units to be developed to 496 (the 1st amendment reduced the total units again to 424).

While the subject parcel is included in the Schulz Ranch Specific Plan Area, the parcel is no longer part of the larger Schulz Ranch Common Open Space Development approved in 2005 and is not subject to the Development Agreement.

DISCUSSION:

The subject parcel is currently undeveloped and bordered on the north and east by Phase 1 and Phase 3 of the Schulz Ranch Common Open Space development, a 5.81 acre parcel zoned Single Family 1 acre to the south, and 4 parcels ranging in size from 2 acres to 3.25 acres on the west (zoned Single Family 1 acre and Single Family 6,000).

The proposed Tentative Subdivision Map proposes the division of 7.94 acres into 29 single family residential lots ranging in size from 6,600 square feet to 15,653 square feet. Development will be consistent with the Schulz Ranch Specific Plan by providing varied streetscapes; larger buffer lots along the southern and western-most property lines; and increased setbacks for buffer lots. Access is proposed from Tule Peak Circle and Wheeler Peak Drive, existing roads within the adjacent Schulz Ranch development.

The Planning Commission conducts a public hearing and advises the Board of Supervisors if the proposed tentative map is consistent with the provisions of the Municipal Code and NRS 278.320.

PUBLIC COMMENTS: Public notices were mailed to 108 property owners within 600 feet of the subject site pursuant to the provisions of NRS and CCMC for the Tentative Subdivision Map application. As of the completion of this staff report, staff has received five letters expressing concerns and opposition to the project. The concerns include impacts to views, traffic, drainage, fencing along common property lines, impacts to existing wells, and stubbing out for sewer and water. Any additional written comments that are received after this report is completed will be submitted prior to or at the Planning Commission meeting on August 28, 2019 depending upon their submittal date to the Planning Division.

OTHER CITY DEPARTMENT OR OUTSIDE AGENCY COMMENTS: The following comments were received from City departments. Recommendations have been incorporated into the recommended conditions of approval, where applicable.

ENGINEERING DIVISION:

Engineering Recommendation:

The Engineering Division has no preference or objection to the tentative map request and offers the following conditions of approval:

- The proposed storm drain flows to the storm drain system of Schulz Ranch Phase 3. This system is under construction with a design revision that is still in review. No site improvement permit, including grading permits, may be issued prior to the design revision being approved with lawful access, and no final map may be recorded for this subdivision until the revised storm drain improvements are installed and accepted, or an approved alternative means of storm drain conveyance is provided.
- A separate mass grading permit will not be allowed. Grading must be permitted together with all other site improvements.
- A swale must be constructed along the west property line to intercept and propagate storm drainage. This feature must be maintained by the home owners association. A drainage easement must be provided for this feature on the final map, the map must

note that fencing across the swale is prohibited, and must note that the home owners association is responsible for maintenance of the swale.
- The street shown as “Chalk Bluff Drive” needs to be renamed “Tule Peak Circle”.
- A traffic impact study must be provided with the site improvement permit application providing a full stop sign warrant analysis of the intersection of Race Track Road and Center Drive, and the intersection must be signed and striped if recommended by the study.
- Fire hydrants must be provided at the end of the cul-de-sacs instead of flush assemblies.

Findings:

The Engineering Division has reviewed the application within our areas of purview relative to adopted standards and practices and to the provisions of CCMC 17.07.005. The following Tentative Map Findings by the Engineering Division are based on approval of the above conditions of approval:

1. *Environmental and health laws and regulations concerning water and air pollution, the disposal of solid waste, facilities to supply water, community or public sewage disposal and, where applicable, individual systems for sewage disposal.*

The existing infrastructure has been found sufficient to supply the water and sanitary sewer needs of the subdivision, and the City has the capacity to meet the water and sewer demand.

2. *The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision.*

The City has sufficient system capacity and water rights to meet the required water allocation for the subdivision.

3. *The availability and accessibility of utilities.*

Water and sanitary sewer utilities are available and accessible.

4. *The availability and accessibility of public services such as schools, police protection, transportation, recreation and parks.*

The road network necessary for the subdivision is available and accessible. A proposed condition of approval will ensure the intersections operate safely.

5. *Access to public lands. Any proposed subdivision that is adjacent to public lands shall incorporate public access to those lands or provide an acceptable alternative.*

Development engineering has no comment on this finding.

6. *Conformity with the zoning ordinance and land use element of the city's master plan.*

Development engineering has no comment on this finding.

7. *General conformity with the city's master plan for streets and highways.*

The development is in conformance with the city’s engineering related master plans.

8. *The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision*.

The existing infrastructure is sufficient to meet the additional demand imposed by the subdivision.

9. *The physical characteristics of the land such as flood plains, earthquake faults, slope and soil.*

There are no site conditions that require mitigation.

10. *The recommendations and comments of those entities reviewing the subdivision request pursuant to NRS 278.330 thru 278.348, inclusive.*

Development engineering has no comment on this finding.

11. *The availability and accessibility of fire protection including, but not limited to, the availability and accessibility of water and services for the prevention and containment of fires including fires in wild lands.*

The subdivision has sufficient secondary access, and sufficient fire water flows.

12. *Recreation and trail easements*.

Development engineering has no comment on this finding.

These comments are based on the tentative map plans and reports submitted. All applicable code requirements will apply whether mentioned in this letter or not.

FIRE DEPARTMENT:

1. Project must comply with the current edition of the International Fire Code and northern Nevada fire code amendments as adopted by Carson City.

2. Project must comply with the current edition of the International Wildland-Urban Interface code and northern Nevada wildland urban interface amendments as adopted by Carson City.

PARKS, RECREATION & OPEN SPACE:

1. Chapter 7 in the UPMP provides the City's sidewalk policies and implementation strategies for pedestrian connectivity within the development and to the City's existing sidewalk system in the Schulz Ranch Subdivision and to Schulz Ranch Park. The design for the project's sidewalk system, including pedestrian cross walks must be approved by Development Engineering and the Parks, Recreation & Open Space Department.

2. The development will be subject to the collection of Residential Construction Tax (RCT), compliant with the Nevada Revised Statutes and Carson City Municipal Code (CCMC 15.60).

3. The applicant will be required to incorporate "best management practices" into their construction documents and specifications to reduce the spread of noxious weeds. The

Parks, Recreation & Open Space Department is willing to assist the applicant with this aspect of their project.

4. The applicant needs to make the following changes to their final map. Identify the location of Schulz Ranch Park and note that the property is intended for public use. The park is located north/northeast of the Phase 5 subdivision and is adjacent to Lot #29.

5. It is the responsibility of the applicant to install a 6' tall wood fence (matching Phase 1 – 4 subdivision fences) along the property line between Lot #29 and Schulz Ranch Park and require the property owner to maintain the fence into perpetuity.

SCHOOL DISTRICT

For every 100 new homes, we expect about 30 new students. With most of the schools now at capacity, and limited capital funding for new facilities, we are concerned, as we cannot rezone our way out of the problem. We are doing our utmost to prepare for growth within our means.

TENTATIVE MAP FINDINGS: Staff recommends approval of the Tentative Subdivision Map based on the findings below, pursuant to CCMC 17.05 (Tentative Maps); 17.07 (Findings) and NRS 278.349, subject to the recommended conditions of approval, and further substantiated by the applicant's written justification. In making findings for approval, the Planning Commission and Board of Supervisors must consider:

1. Environmental and health laws and regulations concerning water and air pollution, the disposal of solid waste, facilities to supply water, community or public sewage disposal and, where applicable, individual systems for sewage disposal.

The proposed Tentative Subdivision Map will comply with all applicable environmental and health laws and regulations concerning water and air pollution, disposal of solid waste, supply of water, and sewage disposal. Sewer and water infrastructure are in the area and the existing infrastructure and capacity is sufficient to supply the water and sanitary sewer needs of the subdivision.

2. The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision.

City staff has reviewed the project and has determined that the water system has sufficient capacity and water rights to meet the required water allocation for the subdivision.

3. The availability and accessibility of utilities.

All utilities are available in the area to serve this development.

4. The availability and accessibility of public services such as schools, police protection, transportation, recreation and parks.

The project is located adjacent to Phase 1 and Phase 3 of Schulz Ranch which is served by existing schools, sheriff, transportation facilities, and parks. The School District remains concerned about capacity and has advised that for every 100 new homes, it expects about 30 new students. With most of the schools now at capacity, and limited capital funding for new facilities, it is concerned as it cannot "rezone" its way out of the problem. The school district has advised that it is doing its utmost to prepare for growth

within its means. The proposed subdivision will not overburden police protection. There are parks provided within the Schulz Ranch subdivision which serve the area. The road network necessary for the subdivision is available and accessible. Staff has also included a condition of approval requiring a traffic impact study be provided with the site improvement permit application providing a full stop sign warrant analysis for the intersection of Race Track Road and Center Drive. The condition also requires the developer to implement any mitigation that result from the analysis.

5. Access to public lands. Any proposed subdivision that is adjacent to public lands shall incorporate public access to those lands or provide an acceptable alternative.

The proposed subdivision is located within a developing area of Carson City. There is a public park located immediately north of the subject property. Access will be provided via sidewalks which are included as part of the project.

6. Conformity with the zoning ordinance and land use element of the City's Master Plan.

Primary uses in this land use area include single family homes. The proposed subdivision is consistent with the Single Family 6,000 zoning and the Master Plan designation of Medium Density Residential (MDR). Additionally, the project will be consistent with the Schulz Ranch Specific Plan as demonstrated below:

SR-SPA 1.1—Master Plan and Zoning Designation: Parcel A shall be designated Medium Density Residential (4 to 10 dwelling units per acre) on the Master Plan Land Use Map. Parcel A shall be zoned Single Family 6000 (SF6) on the official zoning map of Carson City only upon approval of a tentative map for the property on which the race track facilities are located. Development of Parcel A will be by subdivision, planned unit development, or common open space subdivision encouraging a development with varying lot sizes.

The subject property is zoned Single Family 6000 and has a Master Plan designation of Medium Density Residential. The proposed subdivision will result in the creation of 29 single family residential lots ranging in size from approximately 6,600 square feet to just over 15,000 square feet.

SR-SPA 1.2—Variety of Lot Sizes and Setbacks: A variety of lot sizes shall be provided to allow for a gradual transition in density between existing 1-acre lots and the more urban development pattern permitted and to encourage a diversity of housing types. To accomplish this, the following standards shall apply:

- **Lots may range from 2,500 square feet to 1-acre in size;**
- **Subdivisions within Parcel A shall provide a minimum of three distinctly different neighborhoods with different lot sizes;**
- **Smaller lots shall generally be located in the northwest portion of Area A to provide a transition to larger lots adjacent to existing one-acre residential lots.**
- **A variety of setbacks is encouraged.**
    - **Where larger buffer lots are required on the perimeter of Parcel A, setbacks from parcels in Area B shall be a minimum of 30 feet, whether front or rear yards. Opposite yards from those facing**

Area B may be a minimum of 20 feet. Side yards on such lots shall be a minimum of 10 feet.

- **Where lots are 4,500 square feet or larger, minimum setbacks are as follows: Front and rear yards: 15 feet; side yards: 5 feet. A 20 foot driveway shall be provided from the property line to the face of the garage.**
- **Where lots are smaller than 4,500 square feet, setbacks may either conform to the standards for lots 4,500 square feet or larger or alternative setbacks may be determined with the tentative map submittal.**
- **Corner lots shall be larger, as necessary, to allow adequate vehicle and pedestrian sight distance. Driveways, fences and on-street parking shall not interfere with vehicle and pedestrian sight distances.**

For the purposes of satisfying the above standards, a distinctly different lot size shall vary by a minimum of 500 square feet from other lot sizes provided. Larger lots may be used around the perimeter as a transition.
SR

The developer proposes a range in parcel sizes from approximately 6,600 square feet to just over 15,000 square feet. The larger lots will be located along the south and west adjacent to the existing 1+ acre parcels, located outside of the Schulz Ranch Specific Plan Area. As proposed and consistent with this policy, the larger buffer lots will maintain the following minimum setbacks:

Rear- 30'
Front- 20'
Side- 10'

The interior lots will also meet the minimum setbacks required by this policy. As proposed the interior lot setbacks will be:

Rear- 15'
Side- 5'
Street Side- 10'
Front- 15' with 20' to the face of the garage

SR-SPA 1.4—Disclosure of Adjacent Uses: The sale of homes within Area A shall include a disclosure that properties in the vicinity are permitted to keep horses and other livestock and the property may impacted by odors, dust, noise and other affects associated with the keeping of livestock.

As conditioned a disclosure will be recorded consistent with this policy.

SR-SPA 2.1—Interconnected Street Network: An interconnected system of streets shall be established to provide efficient on and off-site connections, disperse traffic, and accommodate a variety of modes of transportation including motor vehicles, bicycles, and pedestrians. Developing isolated neighborhood street networks that only serve small segments of a particular development or the SPA is strongly discouraged. All local residential streets shall provide both sides on-street parking.

Consistent with this policy, the project will be connecting to the existing roadway system. The project proposes two connections to existing streets within the existing Schulz

Ranch Common Open Space Development and internal streets will allow for parking on both sides.

SR-SPA 2.3—Pedestrian and Bicycle Connections: A system of pedestrian and bicycle connections shall be provided as specified on the City's adopted Unified Pathways Master Plan to establish visual and physical connections to and between the following:

- **Any sidewalks, trails, or walkways on adjacent properties that extend to the boundaries shared within the development;**
- **Any adjacent public park, open space, or civic use including but not limited to schools and public recreation facilities;**
- **Edmonds Sports Complex;**
- **Stewart Facility;**
- **Clear Creek Corridor;**
- **Bigelow Drive and Center Drive;**
- **Future City Recreation Center;**
- **V&T right-of-way along the Carson River;**
- **North Douglas County Specific Plan open space areas.**

The proposed sidewalks will connect with the existing sidewalks within the Schulz Ranch Common Open Space development and provide connectivity to the park and trail amenities within the Schulz Ranch Specific Plan Area.

SR-SPA 3.1—Varied Streetscapes: To promote more interesting streetscapes and offer consumers a wider choice of housing styles, a variety of home models shall be provided. The accomplish this, the following standards shall apply:

- **Subdivisions with 150 or more units shall provide a minimum of four distinctly different homes models.**
- **Subdivisions with less than 150 units shall provide a minimum of 3 distinctly different homes models.**

For the purposes of satisfying the above standard, each model home elevation shall distinctly differ from other home elevations in a minimum of three of the following areas:

- **The placement of all windows and doors on the front façade elevation.**
- **The use of different materials on the front facade elevation.**
- **Substantial variation in the location and/or proportion of garages and garage doors.**
    - **The width of the front façade elevation must differ more than two feet.**
    - **Variation in the location and proportion of front porches.**
    - **Substantial variations in roof-lines and/or in the angle of roof runs. Use of roof dormers.**
    - **A variation of building types, i.e., ranch, two-story, and split level.**
    - **Window shapes that are substantially different.**
    - **Use of different roof materials.**
    - **Other distinct design variations approved by the City.**
- **Additionally, new residential structures on lots 70 feet or wider shall use a minimum of three of the following techniques and new residential structures on lots narrower than 70 feet shall use a minimum of two of the**

following techniques to reduce the prominence of garages, promote pedestrian activity and create visual diversity in the neighborhood:

- **House forward – Living areas that extend a minimum of five feet in front of the garage face.**
- **Front porches – A 60 square foot or larger covered front porch that extends a minimum of 6 feet in front of the living area.**
- **Courtyards – A 60 square foot or larger front yard courtyard with a hard finished floor surface (concrete, wood, brick, pavers, etc.) and walls not exceeding three feet in height, extending a minimum of three feet in front of the garage face.**
- **Varied front setback – Front setbacks of adjacent homes on the same side of the street vary by a minimum of three feet.**
- **Garage orientation – Garage doors that do not face the street (i.e. provide side loaded garages) with front elevations of garages that are architecturally consistent with the living area front elevation.**
- **Reduced garage width – Garages that do not exceed 40% of the front elevation.**
- **Enhanced landscaping – On lots narrower than 70 feet, a minimum of one additional 2-inch caliper tree is provided in the front yard. On lots 70 feet or wider, a minimum of two additional 2-inch caliper trees are provided in the front yard. In addition, the entire front yard area is landscaped and irrigated. A maximum 10% of the front yard landscaping may consist of empty shrub beds with landscape fabric and irrigation to provide homebuyers with landscape options. Bare dirt shall be prohibited in front yards.**
- **Front door path – A three foot or wider path that is physically separated from the driveway is provided from the sidewalk to the front door.**
- **Structure articulation – A minimum of four separate roof planes are incorporated within the front elevation and the front elevation contains a minimum of two wall planes that are offset by a minimum of three feet.**

As conditioned, the project will meet this requirement. Staff has incorporated a condition of approval requiring the applicant to submit to the Planning Division for review and approval, a minimum of 3 distinctly different home models consistent with this policy, prior to issuance of any building permits.

SR-SPA 3.3—Development Compatibility: A transition in development intensity shall be provided between urban residential uses and rural residential uses. Transitions may be accomplished through the use of open space buffers, larger lot sizes, or a combination of these methods.

The developer proposes a range in parcel sizes from approximately 6,600 square feet to just over 15,000 square feet. Consistent with the policy, the larger lots will be located along the south and west adjacent to the existing 1+ acre parcels, located outside of the Schulz Ranch Specific Plan Area.

SR-SPA 3.5—Front Yard Landscaping: Front yard landscaping and irrigation shall be provided by the developer(s) of each subdivision. Landscaping shall include a minimum of two trees (1-1/2 inch caliper deciduous or five foot high evergreen) and 12 five gallon mix of evergreen and deciduous shrubs. Evergreen trees shall be planted a minimum of 20 feet from back of sidewalks. Turf and/or groundcover

areas shall also be provided in the landscape alternatives. A minimum of three typical landscape schemes for each neighborhood shall be provided with development approval.

As conditioned, the project will meet this requirement. Staff has incorporated a condition of approval requiring the applicant to submit to the Planning Division for review and approval, a minimum of 3 typical landscape schemes consistent with this policy, prior to issuance of any building permits.

SR-SPA 3.6—Buffer Lots: Lots abutting existing residential parcels at the perimeter of Area A shall be created as generally depicted in the conceptual plan identified with this document and shall be limited to the development of one-story homes.

The developer proposes a range in parcel sizes from approximately 6,600 square feet to just over 15,000 square feet. Consistent with the policy, the larger lots will be located along the south and west adjacent to the existing 1+ acre parcels, located outside of the Schulz Ranch Specific Plan Area.

7. General conformity with the City's Master plan for streets and highways.

Subject to compliance with the proposed conditions of approval, the proposed subdivision conforms to the City's master plan for streets.

8. The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision.

The proposed tentative map will take access from Tule Peak Circle and Wheeler Peak Drive, within the existing Schulz Ranch Development. The existing infrastructure is sufficient to meet the additional demand imposed by the subdivision. Two new cul-de-sac roads are proposed to serve the interior of the subdivision. As noted in finding 4 above, staff has also included a condition of approval requiring a traffic impact study be provided with the site improvement permit application providing a full stop sign warrant analysis for the intersection of Race Track Road and Center Drive. The condition also requires the developer to implement any mitigation that result from the analysis.

9. The physical characteristics of the land such as flood plains, earthquake faults, slope and soil.

A conceptual drainage study and a geotechnical report were submitted with the application. There are no specific physical characteristics of the subject property that require mitigation.

10. The recommendations and comments of those entities reviewing the subdivision request pursuant to NRS 278.330 thru 278.348, inclusive.

The proposed tentative map has been routed to the Nevada Department of Environmental Protection and the Nevada Division of Water Resources. The Division of Water Resources has requested that a Will Serve letter from Carson City Public Works and a final mylar map of the proposed project be presented to the State Engineer for approval and signed through his office prior to development. Public Works has indicated there is sufficient sewer capacity to serve the project.

11. The availability and accessibility of fire protection including, but not limited to, the availability and accessibility of water and services for the prevention and containment of fires including fires in wild lands.

The Fire Department has reviewed the proposed subdivision. As proposed, sufficient access is provided through the adjacent Schulz Ranch development. Sufficient fire water flows will also be provided. The Fire Department has noted in their comments that the proposed subdivision is located in the Wildland-Urban Interface and is required to comply with the current edition of the International Wildland-Urban Interface code and the Northern Nevada Wildland-Urban Interface amendments as adopted by Carson City.

12. Recreation and trail easements.

The original Schulz Ranch Common Open Space development includes parks and pathways intended to serve the project area. The parks will be located via the sidewalk system which this project will be required to connect to. The project is subject to the collection of the Residential Construction Tax which goes towards parks and recreational facilities in Carson City.

Attachments

Public Comment-
- Letter from Jo Ann and John Marquez
- Letter from Pete and Theresa Bachstadt
- Email from Maren Murph
- Email from Charlie and Cathrena Deyhle
- Email from Jan Nyssen

Application TSM-19-124

August 11, 2019

Carson City Planning Commission

To whom it may concern

Regarding Tentative Subdivision Map File No. (TSM-19-124)

I am the property owner that lives at 1366 Rocky Bluff Dr. Our home is the 2nd house south of the park. We wanted to purchase a lot that had west views of the mountains. Lennar called us when one became available that would accommodate our model " The Shire ". We were informed that because of the view there would be an additional fee of ten thousand dollars for this premium lot. We were also informed that the undeveloped property behind our rear fence would not be developed in our lifetime (were in our mid eighties) as this was major concern for us. Now its come to our attention that they will build additional homes that would effect our view of those beautiful mountains from our back yard. I am strongly opposed to this as you can understand and hope there will be consideration for the eight homes whose views will be effected if this happens. We will attend this meeting Aug. 28th and hope for a resolution that is satisfying to all concerned.

Respectfully,

John and JoAnn Marquez
775-515-4167

TSM-19-124 09 311-47

1. Will there be a separate fence as on the E. side 09-311-12?
2. 09-311-12 ground is aprox. 2' higher than 09-311-47. How much higher will they be bringing the grade up at their S property line?
3. The static level in my well is about 30 ft. It used to be 10'. Will that be effected?
4. What is the chance of getting our sewer and water stub, as per the easement, into the SE corner of 09-311-12 without tributes? *

ADDITIONAL COMMENTS: to be included

I realize that everyone supposedly is entitled to do with his property as he pleases but that is NOT always true for many reasons.

*We are the 4th title holders of this 5.81 ac. piece of the original Schulz patent to this homestead. 09-311-20 was deeded to Martha Rabe's nephew in 69 with a survey and a deed including a 5' easement on the N property line running E. from the Schulz Ditch to the E. perimeter of 09-311-12 for access to surface water rights from a weir in Fugi Park, Doc. #49312 Bk 87/P127. Martha Rabe was a Schulz who married a Rabe. I did extensive research on this property as we bought it for the water right and were the only ones wanting them. The neighbors didn't want us to have them.

We had intended to also try a land split recently and were REGULATED out of that by the new unaccountable Bureaucratic Administrative Law by a potential $14,000 bill for an abundance of crap, of no benefit to us, that Carson City wanted up front in cash plus a change of parcel # that would have tripled our property taxes, according to Dave Dawley, and eventually be forced to install a completely new aeriated $80,000 sewer system on the slightest of provocation as well. Shame on somebody.

On 13 July, 2007 Doc.#370731, we dedicated a drainage easement for the benefit of Schulz Ranch and the City. It now contains a connection through the fence to 2 manholes, a 30" pipe running S with 2 access gates. We are still paying the taxes on the real estate. (See page 2, 1b). The S/W never happened due to a default and delay of the project.

The earth has the same amount of water now, as it had at its inception in one form or another. What it does NOT have is the same amount of a filtering system to keep it potable which also needs some time and space to function as designed.

Its not just the roads, parking lots and irrevocable pollution involved, but the number of buildings being placed on the surface that help block the overtaxed filtering system; as demonstrated by the flooding in recent years in the eastern half of our country and the farm land in the San Joaquin Valley in CA. What about Flint Mich. and more recently, Newark, NJ? Other Countries in the world are doing their part as well.

Between Douglas and Carson Co.'s we probably have at least 5000 more housing units in the works with little employment to support them. This one is only 29 units+.

The prevailing factor here is of course our prevailing addiction to currency and kicking cans down the road. How long did it take for all the police cruiser's to get repainted and stop the talk about "the war on drugs" when marijuana came along?

Are we building a "new ghost town in the old west"?
How will the new residents pay for all the new taxes?
What do Planning Commissions" plan to do with all their newly acquired Real Estate?
When will the American taxpayer be given some consideration?
When will the cans stop getting kicked down the road and some NO's appear like we were subject to?

We reserve the right to make additional remarks if we feel it necessary.

Pete/Theresa Bachstadt- 775-400-6027 / POB 768, CC, NV 89702
8/13/2019

R.P.T.T. $ -0-0-

Joint Tenancy Deed

This Indenture made the twentieth day of June one thousand nine hundred and sixty nine

Between Martha R. Rabe, of Ormsby County, Nevada,

the party of the first part,

and Jack Salinger and Diane S. Salinger, of Ormsby County, Nevada, whose address is 407 Adaline St., Carson City, Nev. P.O. Box 143 the parties of the second part,

Witnesseth: That the said party of the first part, in consideration of the sum of TEN DOLLARS ($10.00) ~~dollars~~, lawful money of the United States of America, to her in hand paid by the said parties of the second part, the receipt whereof is hereby acknowledged, does by these presents grant, bargain, and sell unto the said parties of the second part, in joint tenancy and to the survivor of them, and to the heirs and assigns of such survivor forever, all

that certain ~~lot~~ parcel of land situate in the County of Ormsby, State of Nevada and bounded and described as follows, to-wit:

Commencing at a point shown as a Government Brass Cap 1/16 section corner as shown on the Record of Survey map of the John Robert Schulz Estate as filed in the County Recorder's Office under No. 49300, Carson City, Nevada, and further identified as being N. 0°13'04"E. a distance of 175.35 feet from the Southwest corner of Parcel 5 of the aforesaid Record of Survey Map; thence N. 0°14'04"E. a distance of 25.00 feet to the True Poing of Beginning; said point being also on the North line of Rabe Way; thence N. 0°14'04"E. a distance of 352.23 feet to a point, said point being also the Northwest corner of said Parcel 5; thence N. 89°43'14"E. a distance of 620.36 feet to a point; thence S. 0°48'56"E. a distance of 346.37 feet to a point on the North line of the aforesaid Rabe Way; thence along said North line S. 89°11'04"W. a distance of 626.78 feet to the True Poing of Beginning, and containing an area of 5.000 Acres, more or less.

Subject to an easement for Utility Use Purposes 5.0 feet in width and running along the entire Northerly and Easterly sides of the above described parcel.

Together with water and water rights in the amount of twenty-six percent (26%) of one-seventh (1/7) of the applicable allocations of the flow of Clear Creek and ditch and ditch rights formerly appurtenant to the John Robert Schulz Estate as recited in Document No. 49312 as recorded.

Together with the tenements, hereditaments, and appurtenances thereunto belonging or appertaining, and the reversion and reversions, remainder and remainders, rents, issues, and profits thereof.

To Have and to Hold the said premises, together with the appurtenances, unto the said parties of the second part, as joint tenants, and not as tenants in common, with right of survivorship, and to the heirs and assigns of such survivor forever.

In Witness Whereof, the said party of the first part, has executed this conveyance the day and year first above written.

Signed and Delivered in the Presence of

Martha R. Rabe

Dorothy A. Herman

DOROTHY A. HERMAN
Notary Public — State of Nevada
Ormsby County
MY COMMISSION EXPIRES APRIL 8, 1973

BOOK 87 PAGE 127

Carlisle Form No. 463—DEED—BARGAIN AND SALE IN JOINT TENANCY—Short Form.

April 26, 2007

Mr. and Mrs. Bachstadt
1190 Rabe Way
Carson City, NV 89701

RE: PROPERTY FOR CITY STORM DRAIN

Dear Mr. and Mrs. Bachstadt,

I want to thank you once again for your time discussing with me our Schulz Ranch development and specifically our storm drain system.

To reduce the potential for flooding, Carson City has required us to install a City owned and maintained storm drain system throughout our development, which is then proposed to run across your property, through Coffey Drive, and into a drainage facility adjacent to Coffey Drive. With the installation of this storm drain system, an integral part of the City's flood control system is completed with private funding.

Prior to installing this proposed storm drain system, we need City approval of the construction drawings, and we need to obtain a Carson City right of way, or easement, for that portion of storm drain which is not already within a City right of way.

As we have discussed, that portion of storm drain pipe proposed to cross your property, is required to be within a City right of way or City easement. We have discussed our wish to acquire, on behalf of Carson City, a storm drain easement across a portion of your property. You have made it clear to us that it is your desire to sell property needed for this storm drain rather than grant an easement.

You have stated that your property is comprised of two legal descriptions, a northern legal description consisting of approximately 5.62 acres and a southern legal description consisting of approximately 0.19 acres.

It is our understanding that you would like to sell and grant to the Carson City the southerly 0.19-acre piece of property. For clarification purposes, the northern boundary of this property runs in an east-west direction and is approximately 11' south of the southern side of your existing shed.

In addition to the grant of property, you will need to grant a small easement to Carson City over a portion of your 5.62-acre piece of property, immediately adjacent to the southeast corner of your shed. The attached sketch labeled Exhibit A shows the

10345 Professional Circle, Suite 100, Reno, NV 89521 • Phone: 775-825-7733 • Fax: 775-825-7735
LENNAR.COM

property you wish to sell and the location of the storm drain easement you would need to grant to Carson City.

Based on the above, we would like to hereby make a formal offer to you, as follows:

1) You will dedicate to Carson City your southerly 0.19-acre piece of property, as shown on the attached Exhibit A.
2) You will dedicate to Carson City a small storm drain easement over a portion of your 5.62-acre piece of property, as shown on the attached Exhibit A.
3) We will install at our sole cost and expense a fence along the common boundary of the 5.62-acre parcel and the 0.19-acre parcel. We will install at our own cost and expense a City access gate along that portion of fence coincident with the proposed storm drain easement. This gate will be used for City access for maintenance only. We will remove that portion of existing chain link fence along your eastern boundary coincident with the proposed storm drain easement, and install a City access gate, all at our own cost and expense. This gate will be used for City access for maintenance only. Fencing and gates as shown on the attached Exhibit B
4) We will prepare all legal documents, including the grant deed and easement deed, at our own cost and expense. We will pay on your behalf any property transfer taxes as required. We will pay all title fees, if any.
5) On behalf of the City, we will pay you a total of $17,500 as compensation for both the grant of property to Carson City and the grant of easement to Carson City. We are offering more than what we feel the assessed value would be (based on your tax roll) in an effort to show our gratefulness for your willingness to work with us.

You can tentatively agree to the above terms by signing on the line below, and returning this document to my attention. Please note that this letter is not a binding contract. Upon your return of this letter, signed by you, we will arrange to prepare and complete an agreement to formalize these terms. The agreement will include a grant deed in a form similar to that as in Exhibit C attached, and an easement deed in a form similar to that as in Exhibit D attached.

I look forward to working with you to complete this transaction. Should you have any questions, please feel free to call me at 775-745-2030.

Sincerely,

Christopher Froehlich
Assistant Project Manager

I tentatively agree to the above terms and desire to have Lennar move forward with a formal agreement

_____ _____

(signature) (date)

10345 Professional Circle, Suite 100, Reno, NV 89521 • Phone: 775-825-7733 • Fax: 775-825-7735
LENNAR.COM

May 03, 2007

Pete & Theresa Bachstadt
1190 Rabe Way
Carson City, NV. 89701

Dear Mr. & Mrs. Bachstadt;

I represent Schulz Ranch Developers, LLC, the owners of the Schulz Ranch Property located along the East side of Center Drive, North of your property. I am writing to you today in regards to the Schulz Irrigation Ditch, which carries a percentage of the Clear Creek flow. This ditch has historically entered the Schulz Ranch property at the North, has run southerly through the property, and has exited on the South side of the property approximately 150' East of Center Drive onto the property located at 7051 Center Drive. This letter is being sent to you and all other parties that we feel might have rights to irrigation water from the Schulz irrigation ditch. Although we have performed extensive research through the Nevada State Water Engineer as to persons with ownership rights to this Clear Creek irrigation flow, our results on authentic ownership rights have come up inconclusive.

As a courteous neighbor, we would like to inform you of Schulz Ranch Developer's intentions as to the ultimate condition of the ditch and irrigation flow after development of the Schulz Ranch property. As approved by Carson City, our project plans to significantly alter the grade and land use along the current course of the ditch within Schulz Ranch. The City recognizing this, has tentatively agreed to the design and installation of a pipe to have the ability to carry the irrigation flow through our property and to its historical outlet location at the south side of our property.

During our site development, the sluice gate located within Fugi Park, which controls the amount of flow from Clear Creek into the Schulz Irrigation Ditch, and which is currently 90% closed and allowing only a nuisance amount of water into the ditch, will be closed completely by us. After site development and installation of the irrigation ditch replacement pipe through our site, it is our intention to not personally reopen the sluice gate.

When we took title to the Schulz Ranch property, we recognized that a former operation on the property prevented water from continuously flowing in the ditch across the Schulz Ranch property and to any downstream properties. We have no knowledge of how long this water transmission has been interrupted. In addition, we have no way of knowing if water has ever run across your property through a downstream continuation of this ditch, during your occupancy of your property. However, due to the conditions of approval imposed upon us, and at the advice of the State of Nevada Division of Water Resources, we are moving forward with a plan to install

the irrigation ditch pipe replacement, which will have the ability to at least allow the water to flow across our property unobstructed and outlet at its historical location as mentioned above.

Downstream of our property, we are unsure of the historical ditch alignment, and whose properties it runs through or ran through. We also have no knowledge as to any improvements or alterations that may have been performed to the original ditch on the various downstream properties. Therefore, once this pipe is installed, and should the sluice gate be opened, we have no knowledge as to whether or not irrigation water will run to or across your property. If the original ditch ran across or through your property, we strongly suggest that you examine your property and make sure it is prepared to receive and have the ability to convey the irrigation flow.

Lastly, and to restate an earlier comment, once the replacement irrigation pipe is installed, we do not intend to reopen the sluice gate and allow water through the ditch. We will send a follow up letter to you when the irrigation ditch replacement pipe is operative. If you feel you have ditch rights, and you choose to open the sluice gate, we will not be responsible for any nuisance flows or flooding that may occur to any properties that are not equipped to carry the flows.

As this is a complex matter, we would welcome any comments you might have. Please feel free to contact me at any of the following numbers: (775) 789-3213 or (775) 745-2030. Thank you very much for your time.

Most Sincerely,

Mr. Chris Froehlich
Schulz Ranch Developers, LLC
10345 Professional Circle
Reno. NV. 89521

APN: 09-311-12

RECORDED AT THE REQUEST OF
Schulz Ranch
2007 AUG -8 PM 3:20
FILE NO. 370731
ALAN GLOVER
CARSON CITY RECORDER
FEE $ DEP

Recording Requested by and when recorded return to:

Schulz Ranch Developers, LLC
c/o Lennar Reno, LLC
10345 Professional Circle, Suite 100
Reno, Nevada 89521

AGREEMENT FOR DEDICATION OF EASEMENT AND FOR ACCESS, CONSTRUCTION, MAINTENANCE AND DRAINAGE EASEMENTS

THIS AGREEMENT FOR DEDICATION OF EASEMENT AND FOR ACCESS, CONSTRUCTION, MAINTENANCE AND DRAINAGE EASEMENTS is made and entered into this 13th day of July, 2007, by and among Schulz Ranch Developers, LLC, a Delaware limited liability company ("Schulz Ranch"), Elmer P. Bachstadt and Theresa M. Bachstadt, as Trustees of the Elmer & Teresa Bachstadt Trust (the "Bachstadt Trust"), and Elmer P. Bachstadt and Theresa M. Bachstadt, as Trustees of the Carson/Eagle Valley Humane Trust (the "Humane Trust," and collectively with the Bachstadt Trust, "Bachstadt") (the "Agreement"). Schulz Ranch and Bachstadt are collectively referred to herein as the "Parties."

RECITALS

A. Schulz Ranch is the owner of that certain real property consisting of total of 88.40± acres located in Carson City, Nevada, as more particularly described on Exhibit A and depicted on Exhibit A-1, both attached hereto and incorporated herein by reference (the "Schulz Ranch Property"). Schulz Ranch plans to develop a residential community on the Schulz Ranch Property (the "Schulz Ranch Project"), and to construct the facilities necessary or appropriate to serve the Schulz Ranch Project, including, without limitation, a drainage system as more fully described herein.

B. Bachstadt is the owner of that certain real property consisting of a total of 5.81± acres located in Carson City, Nevada, as more particularly described on Exhibit B and depicted on Exhibit B-1, both attached hereto and incorporated herein by reference (the "Bachstadt Property").

C. In connection with the Schulz Ranch Project, Schulz Ranch is required to construct and install certain facilities, and any improvements thereto, for the drainage of the

Schulz Ranch Property, which facilities and improvements are more fully depicted on Exhibit C attached hereto and incorporated herein by reference (the "Drainage System").

D. To promote the growth of Carson City, Nevada (the "City"), Bachstadt desires to dedicate and to grant certain easements to the City across, through, over and under a portion of the Bachstadt Property, as more fully described on Exhibit D and depicted on Exhibit D-1, both attached hereto and incorporated by reference (the "Easement Area"), for the purpose of the construction, maintenance, improvement and operation of public stormwater facilities.

E. To facilitate the development of the Schulz Ranch Property, Schulz Ranch desires to purchase and Bachstadt desires to convey certain temporary easements across, through, over and under the Easement Area for the purpose of constructing and maintaining the Drainage System, and for the drainage of the Schulz Ranch Property by way of the Drainage System.

NOW, THEREFORE, for the consideration described more fully in Section 1 below and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. Consideration. In consideration of the Offer of Dedication and Easements, both as defined and more fully described below, and the other terms, conditions, agreements and obligations of Bachstadt contained herein, Schulz Ranch shall:

(a) upon Bachstadt's full execution and delivery hereof and the full execution and delivery of any documents or agreements reasonably required by Schulz Ranch in connection herewith, pay to Bachstadt the amount of seventeen thousand US dollars ($17,000), payable by cashier's check, certified check or wire transfer of funds to accounts specified by Bachstadt;

(b) construct, within a reasonable time after the full execution and delivery hereof and no earlier than the construction of similar lines on the Schulz Ranch Property, an extension of the water and sewer lines, which water and sewer lines are more fully depicted on Exhibit E attached hereto and incorporated herein by reference (the "Lines"), across the Schulz Ranch Property to a point of connection on the border of the Bachstadt Property, which point of connection is more fully depicted on Exhibit F attached hereto and incorporated herein by reference (the "Connection Point"). Notwithstanding the foregoing, (i) the construction contemplated by this Section 1(b) shall be limited solely to the construction of the Lines across the Schulz Ranch Property to the Connection Point, and (ii) Schulz Ranch shall not be responsible for and shall not pay any costs, expenses or fees incurred in connection with or related to, and Bachstadt shall take all actions necessary to duly accomplish, (A) the connection of the Lines to the public water system, or (B) the extension of the Lines from the Connection Point onto or under the Bachstadt Property. Upon the completion of the construction contemplated hereunder, Schulz Ranch shall have no further obligation with respect to the Lines and does not warrant or guarantee the Lines in any manner.

(c) construct, within a reasonable time after the full execution and delivery hereof, a removable six-foot by six-foot panel of chain-link fence, as more fully depicted on Exhibit G attached hereto and incorporated herein by reference (the "Fence"), upon the portion of the Bachstadt Property more fully depicted on Exhibit H attached hereto and incorporated herein by reference (the "Fence Area").

(d) perform, within a reasonable time after the full execution and delivery hereof and no earlier than the performance of grading upon the Schulz Ranch Property, the grading upon the Bachstadt Property more fully described on Exhibit I (the "Grading"). Notwithstanding anything contained herein to the contrary, the Grading performed hereunder shall not exceed an aggregate cost to Schulz Ranch of five thousand dollars ($5,000.00). Upon the completion of the Grading, Schulz Ranch shall have no further obligation with respect to the Grading and does not warrant or guarantee the Grading in any manner.

2. Dedication to the City. Concurrently with the execution hereof, Bachstadt shall fully execute and deliver to Schulz Ranch, and Schulz Ranch, within a reasonable time, shall deliver to the City, the Dedication of Easement for Public Stormwater Facilities, in substantially the form attached hereto as Exhibit J and incorporated herein by reference (the "Offer of Dedication"), relating to the construction, maintenance, improvement and operation of public stormwater facilities, across, over, through and under a portion of the Bachstadt Property, as more fully described in the Offer of Dedication.

3. Easements.

(a) Access, Construction and Maintenance Easement. Bachstadt hereby grants to Schulz Ranch, and its successors, assigns, employees, agents, and contractors, a temporary easement across, through, over and under the Easement Area for the purpose of constructing, installing, maintaining, repairing, and improving the Drainage System and performing the construction contemplated hereby (the "Access, Construction and Maintenance Easement"). The Access, Construction and Maintenance Easement shall terminate upon the acceptance by the City of the Offer of Dedication, and the grant to Schulz Ranch, in writing, by the City of the rights hereunder granted to Schulz Ranch by the Access, Construction and Maintenance Easement. Upon such acceptance and grant, Schulz Ranch shall record in the Official Records of Carson City, Nevada, a document terminating the Access, Construction and Maintenance Easement.

(b) Drainage Easement. Bachstadt hereby grants to Schulz Ranch, and its successors and assigns, a temporary easement across, through, over and under the Easement Area for the purpose of draining and discharging, but only by way of the Drainage System, storm, surface, and nuisance waters from the Schulz Ranch Property (the "Drainage Easement", and collectively with the Access, Construction and Maintenance Easement, the "Easements"). The Drainage Easement shall terminate upon the acceptance by the City of the Offer of Dedication, and the grant to Schulz Ranch, in writing, by the City of rights substantially similar to those granted to Schulz Ranch under the Drainage Easement. Upon such acceptance and grant, Schulz

Ranch shall record in the Official Records of Carson City, Nevada, a document terminating the Drainage Easement.

(c) Benefits and Burdens of the Easements. The burden of the Easements shall run with the Bachstadt Property and the benefits hereof shall run with the Schulz Ranch Property. The benefits and burdens hereof shall inure to and be binding on each Party's successors and assigns.

(d) Conveyance of Easements. Even though the Easements are intended to run with the land, in the event that the City does not accept the Offer of Dedication, Schulz Ranch shall offer the Easements and Drainage System for dedication to another appropriate governmental entity or utility provider, or shall convey the Easements and Drainage System to an association formed under Chapter 116 of the Nevada Revised Statutes (an "Association"), for the purpose, among other purposes, of maintaining the Easements and Drainage System for the benefit of the Schulz Ranch Property and the general public. Upon acceptance of such offer of dedication or upon conveyance to an Association, the benefits of the Easements granted hereby shall run to such government entity, utility provider or Association, and their successors and assigns.

4. Representations and Warranties.

(a) Bachstadt's Representations and Warranties. Bachstadt hereby represents, warrants and covenants to Schulz Ranch that:

(i) This Agreement has been or shall be duly authorized, executed and delivered by Bachstadt, is the legal, valid and binding obligation of Bachstadt, enforceable in accordance with its respective terms (except to the extent that such enforcement may be limited by applicable bankruptcy or other laws or principles relating to the limitation of rights of contracting parties generally);

(ii) Bachstadt is the legal owner of the Bachstadt Property, and has all necessary authority to enter into this Agreement and to perform their obligations hereunder; and,

(iii) Bachstadt has good and marketable title of record to the Bachstadt Property, and there are no encroachments, easements, or rights-of-way on, across, through, over or under the Bachstadt Property, or any part thereof, except as shown in the Official Records of Carson City, Nevada.

(b) Schulz Ranch's Representations and Warranties. Schulz Ranch hereby represents, warrants and covenants to Bachstadt that Schulz Ranch is a limited liability company duly organized and validly existing under the laws of the State of Delaware and has full power and authority to consummate this transaction. This Agreement and all other documents delivered by Schulz Ranch to Bachstadt in connection with this transaction that have been executed by Schulz Ranch have been or shall be duly authorized, executed and delivered by Schulz Ranch,

are the legal, valid and binding obligations of Schulz Ranch, enforceable in accordance with their respective terms (except to the extent that such enforcement may be limited by applicable bankruptcy or other laws or principles relating to the limitation of rights of contracting parties generally).

5. Miscellaneous.

(a) Construction on the Bachstadt Property. Schulz Ranch, or its successors and assigns, shall reconstruct and restore, within thirty (30) days after completion of any construction or maintenance performed in connection with the Easements granted hereunder, the Bachstadt Property to a condition substantially similar to that which existed prior to the commencement of such construction.

(b) Grading of the Schulz Ranch Property. Schulz Ranch shall grade the portion of the Schulz Ranch Property adjacent to the easternmost boundary of the Bachstadt Property in accordance with the Grading Plans for the Schulz Ranch Project submitted to and approved by the City.

(c) Indemnification. Schulz Ranch shall and hereby does indemnify and hold Bachstadt harmless of and from any and all liabilities, claims, demands, and expenses of any kind or nature, other than a liability, claim, demand, or expense caused by or attributable to Bachstadt, arising from or related to the Easements, and all expenses related thereto, including, without limitation, court costs and attorney's fees. Bachstadt shall and hereby does indemnify and hold Schulz Ranch harmless of and from any and all liabilities, claims, demands, and expenses of any kind or nature, other than a liability, claim, demand, or expense caused by or attributable to Schulz Ranch, arising from or related to the Bachstadt Property, and all expenses related thereto, including, without limitation, court costs and attorney's fees.

(d) Liens. Schulz Ranch will not directly or indirectly create, or permit to be created or remain, and will discharge promptly (not to exceed thirty (30) days from demand by any other Party), any lien, encumbrance or charge upon the Easement Area and arising from the actions of Schulz Ranch in connection with the Easements. Schulz Ranch may contest any obligation to a lienholder provided that it first releases any liens by posting a surety bond pursuant to Section 108.2423 of the Nevada Revised Statutes.

(e) Amendment. This document may only be amended by a document executed by the Parties (or their successors and assigns) and duly recorded in the Offices of the Recorder, Carson City, Nevada.

(f) Governing Law. This Agreement shall be governed by and construed in accordance with the substantive and procedural laws of the State of Nevada.

(g) Attorney's Fees. Should either Schulz Ranch or Bachstadt employ an attorney or attorneys to enforce any of the terms and conditions hereof, or to protect any right,

title, or interest created or evidenced hereby, the non-prevailing party in any action pursued in courts of competent jurisdiction shall pay to the prevailing party all reasonable costs, damages, and expenses, including attorneys' fees, expended or incurred by the prevailing party.

(h) Counterparts. This Agreement may be executed in counterparts. Each counterpart of this Agreement shall constitute an original, and all such counterparts taken together shall constitute one and the same agreement.

[Signatures appear on the following page]

[Signature Page to Agreement for Access, Construction and Maintenance and for Drainage Easements]

IN WITNESS WHEREOF, the undersigned have affixed their signatures hereto as of the date first set forth above.

SCHULZ RANCH DEVELOPERS, LLC

By: LENNAR RENO, LLC, its Managing Member

By: _____

Its: Vice President

ELMER P. BACHSTADT, as Trustee of the Elmer & Theresa Bachstadt Trust and as Trustee of the Carson/Eagle Valley Humane Trust

_____

THERESA M. BACHSTADT, as Trustee of the Elmer & Theresa Bachstadt Trust and as Trustee of the Carson/Eagle Valley Humane Trust

_____

STATE OF NEVADA)
)
COUNTY OF WASHOE)

This instrument was acknowledged before me on the 13th day of July, 2007, by DARRIN ENDART as Vice President of Lennar Reno, LLC, as Managing Member of Schulz Ranch Developers, LLC.

CHRIS FROEHLICH
Notary Public, State of Nevada
Appointment No. 07-3103-2
My Appt. Expires Jun 8, 2011

Notary Public

STATE OF NEVADA)
)
COUNTY OF WASHOE)

This instrument was acknowledged before me on the 13th day of July, 2007, by Elmer P. Bachstadt, as Trustee of the Elmer & Theresa Bachstadt Trust and as Trustee of the Carson/Eagle Valley Humane Trust.

CHRIS FROEHLICH
Notary Public, State of Nevada
Appointment No. 07-3103-2
My Appt. Expires Jun 8, 2011

Notary Public

STATE OF NEVADA)
)
COUNTY OF WASHOE)

This instrument was acknowledged before me on the 13th day of July, 2007, by Theresa M. Bachstadt, as Trustee of the Elmer & Theresa Bachstadt Trust and as Trustee of the Carson/Eagle Valley Humane Trust.

CHRIS FROEHLICH
Notary Public, State of Nevada
Appointment No. 07-3103-2
My Appt. Expires Jun 8, 2011

Notary Public

EXHIBIT "A"

SCHULZ RANCH DEVELOPERS, LLC
90.90 Acres

(Parcel 1 of Parcel Map 2657)
APN 009-311-63

All that certain real property situated within a portion of the East Half (E ½) of Section Five (5), Township Fourteen (14) North, Range Twenty (20) East, Mount Diablo Meridian, being more particularly described as follows:

Parcel 1, as shown on that "1ST Parcel Map for Schulz Ranch Developers, LLC and Reynen & Bardis (Carson), LLC", filed in the office of the Carson City Recorder June 27, 2007, as Parcel Map No. 2657, in Book 10, Page 2657, File No. 369098, Official Records of Carson City, Nevada.

(Parcel 3 of parcel Map 2657)
APN 009-311-66

All that certain real property situated within a portion of the East Half (E ½) of Section Five (5), Township Fourteen (14) North, Range Twenty (20) East, Mount Diablo Meridian, being more particularly described as follows:

Parcel 3, as shown on that "1ST Parcel Map for Schulz Ranch Developers, LLC and Reynen & Bardis (Carson), LLC", filed in the office of the Carson City Recorder June 27, 2007, as Parcel Map No. 2657, in Book 10, Page 2657, File No. 369098, Official Records of Carson City, Nevada.

(Parcel 4 of parcel Map 2657)
APN 009-311-65

All that certain real property situated within a portion of the East Half (E ½) of Section Five (5), Township Fourteen (14) North, Range Twenty (20) East, Mount Diablo Meridian, being more particularly described as follows:

Parcel 4, as shown on that "1ST Parcel Map for Schulz Ranch Developers, LLC and Reynen & Bardis (Carson), LLC", filed in the office of the Carson City Recorder June 27, 2007, as Parcel Map No. 2657, in Book 10, Page 2657, File No. 369098, Official Records of Carson City, Nevada.

EXHIBIT "A" (con't.)

CONTAINING: 90.90 acres of land, more or less.

Illustration attached hereto and incorporated herein by reference.

SURVEYOR'S CERTIFICATE

I hereby certify that the attached easement description was prepared by me or under my direct supervision and is accurate to the best of my knowledge and belief.

David F. Hanrion
Nevada PLS 16949
For and on behalf of
Manhard CONSULTING
9850 DOUBLE R BLVD, SUITE 101
RENO, NEVADA 89521
(775) 746-3500

370731

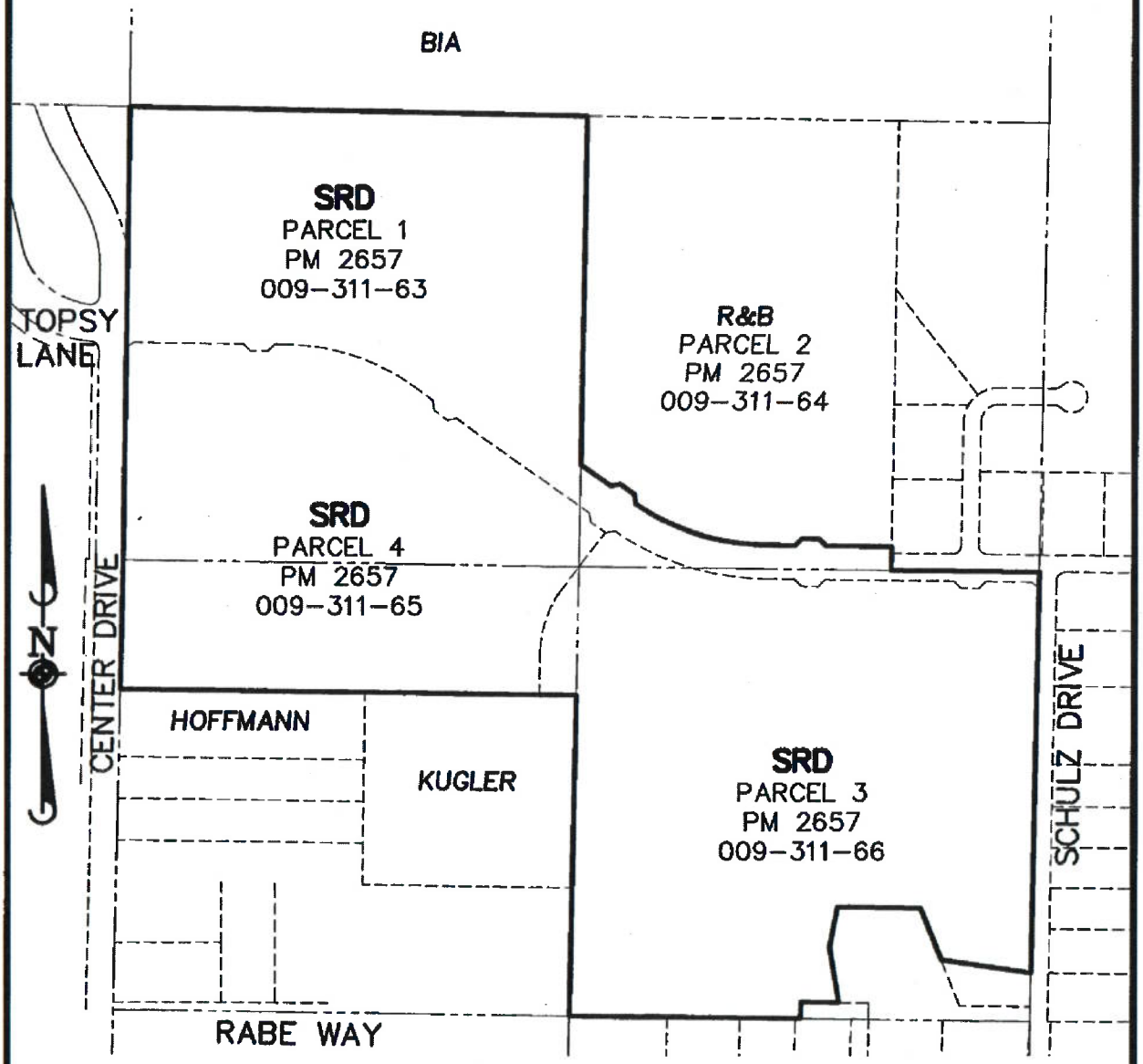
ILLUSTRATION FOR

SCHULZ RANCH DEVELOPMENT

CARSON CITY, NEVADA

90.90± ACRES

EXHIBIT "A-1"



SCHULZ RANCH PROPERTY	CARSON CITY, NEVADA	EXHIBIT "A-1"

PROJ MGR. DFH
DRAWN BY. DFH
DATE. 7/18/2007
SCALE. 1" = 500'

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SHEET 1 OF 1

6794 LENCCN

370731

EXHIBIT "B"

ELMER P. and THERESA M. BACHSTADT
15.18 Acres

APN 009-311-12

All that certain real property situated within a portion of the Northwest (NW¼) of the Southeast Quarter (SE¼) of Section Five (5), Township Fourteen (14) North, Range Twenty (20) East, Mount Diablo Meridian, being more particularly described as follows:

Parcel 1

Commencing at the Northeast Corner of Parcel No. 5 of the John Robert Schulz Estate as shown on the Record of Survey, File Number 49300, said Northeast Corner being also the True Point of Beginning;

Thence South 00°08'34" West, a distance of 377.52 feet to a point;

Thence South 89°48'56" West, a distance of 99.04 feet to a point on a curve;

Thence from a tangent bearing of North 47°03'02" West on a curve to the left through a delta angle of 43°45'54", whose radius is 125 feet and having an arc length of 95.48 feet to the end of the curve;

Thence South 89°11'04" West, a distance of 506.42 feet to a point;

Thence North 00°48'56" East, a distance of 346.37 feet to a point;

Thence North 89°43'14" East, a distance of 701.10 feet to the True Point of Beginning.

Parcel 2

Commencing at the Northeast Corner of Parcel No. 5 of the John Robert Schulz Estate as shown on the Record of Survey, File Number 49300; Thence South 00°08'34" West, a distance of 377.52 feet to the True Point of Beginning;

Thence South 00°11'04" East, a distance of 205.82 feet to a point marking the beginning of a curve;

Thence from a tangent bearing of North 85°35'33" West on a curve to the right through a delta angle of 62°16'37", whose radius is 35 feet and having an arc length of 38.04 feet to the end of the curve;

Thence North 23°18'56" West, a distance of 99.69 feet to the beginning of a curve;

Thence on a curve to the left through a delta angle of 23°44'06", whose radius is 125 feet and having an arc length of 51.78 feet to a point;

EXHIBIT "B" (con't.)

Thence North 89°48'56" East, a distance of 99.04 feet to the True Point of Beginning.

CONTAINING: 5.81 acres of land, more or less.

Illustration attached hereto and incorporated herein by reference.

SURVEYOR'S CERTIFICATE

I hereby certify that the attached descriptions were taken verbatim from that Instrument recorded October 17, 1983, Book 351, Page 230, as File No. 22029, recorded in the Official Records of Carson City, State of Nevada, and the descriptions do not represent a survey nor were they verified for accuracy.

David F. Hanrion
Nevada PLS 16949
For and on behalf of
Manhard CONSULTING
9850 DOUBLE R BLVD, SUITE 101
RENO, NEVADA 89521
(775) 746-3500

370731

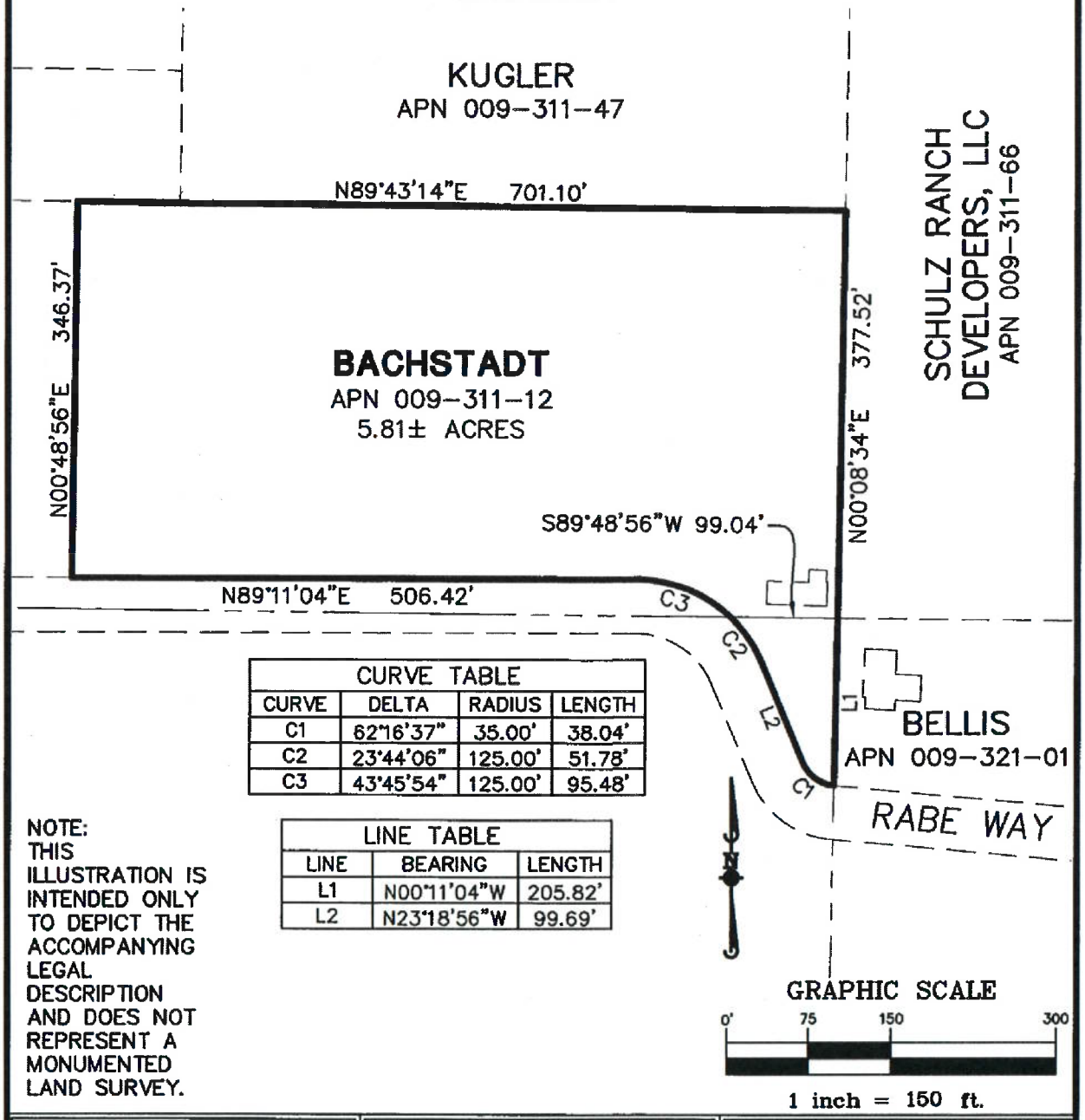
ILLUSTRATION FOR

EXHIBIT B–1

DEPICTING PROPERTY:

APN 009–311–12

BACHSTADT



CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	62°16'37"	35.00'	38.04'
C2	23°44'06"	125.00'	51.78'
C3	43°45'54"	125.00'	95.48'

LINE TABLE		
LINE	BEARING	LENGTH
L1	N00°11'04"W	205.82'
L2	N23°18'56"W	99.69'

NOTE:
THIS ILLUSTRATION IS INTENDED ONLY TO DEPICT THE ACCOMPANYING LEGAL DESCRIPTION AND DOES NOT REPRESENT A MONUMENTED LAND SURVEY.

GRAPHIC SCALE

0' 75 150 300

1 inch = 150 ft.

BACHSTADT PROPERTY	CARSON CITY, NEVADA	EXHIBIT B-1

PROJ MGR. DFH
DRAWN BY. DFH
DATE 7/18/2007
SCALE 1" = 150'

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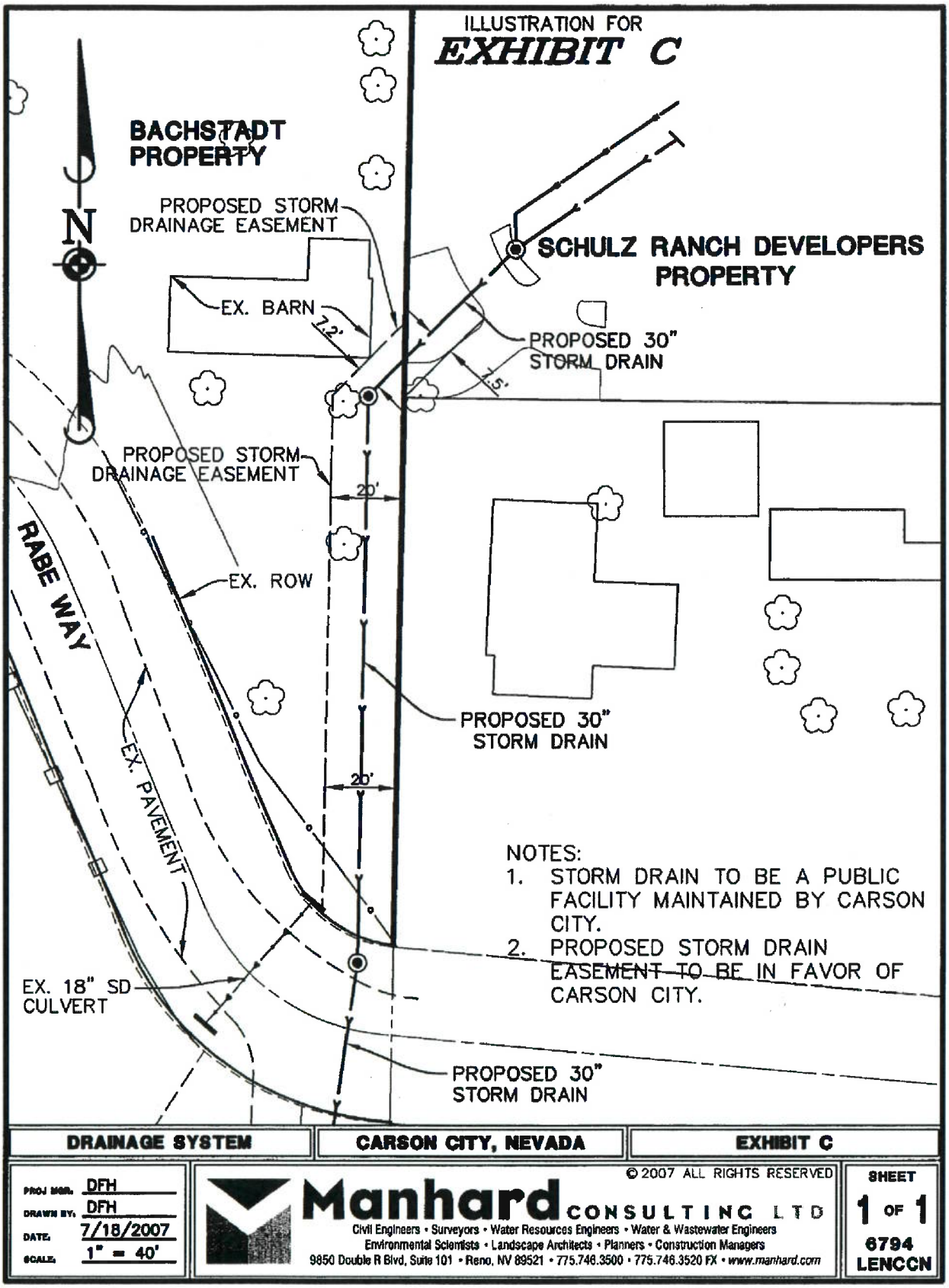
SHEET 1 OF 1

6794 LENCCN

370731



DRAINAGE SYSTEM	CARSON CITY, NEVADA	EXHIBIT C

PROJ MGR. DFH
DRAWN BY: DFH
DATE: 7/18/2007
SCALE: 1" = 40'

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SHEET 1 OF 1
6794
LENCCN

370731

EXHIBIT "D"

LEGAL DESCRIPTION

EASEMENT
AFFECTING APN 009-311-12 (Parcel 1 & 2)

The following describes a parcel of land situate within the Southwest Quarter (SW¼) of the Southeast Quarter (SE¼) and the Northwest Quarter (NW¼) of the Southeast Quarter (SE¼) of Section Five (5), Township Fourteen (14) North, Range Twenty (20) East, Mount Diablo Meridian, City of Carson, County of Carson, State of Nevada, described as follows:

BEGINNING at the Northeast corner of the Southwest Quarter (SW¼) of the Southeast Quarter (SE¼) of Section Five (5), Township Fourteen (14) North, Range Twenty (20) East, Mount Diablo Meridian, from which the East Quarter (E¼) corner of said Section Five (5) bears North 45°49'55" East, a distance of 1874.82 feet; Thence along the Easterly line of the Southwest Quarter (SW¼) of the Southeast Quarter (SE¼) of said Section Five (5), South 01°04'51" West, a distance of 154.93 feet to the Northerly right-of-way line of Rabe Way;

Thence following the Northerly right-of-way line of said Rabe Way, Northwesterly along the arc of a non-tangent curve to the right having an arc length of 21.96 feet and a radius of 35.00 feet, through a central angle of 35°56'48", whose chord bears North 66°43'33" West, a distance of 21.60 feet;

Thence leaving the Northerly right-of-way line of said Rabe Way, North 01°04'51" East, a distance of 147.01 feet;

Thence North 44°18'46" East, a distance of 29.20 feet to the Easterly line of the Northwest Quarter (NW¼) of the Southeast Quarter (SE¼) of said Section Five (5);

Thence along the Easterly line of the Northwest Quarter (NW¼) of the Southeast Quarter (SE¼) of said Section Five (5) South 01°04'51" West, a distance of 21.52 feet to the **POINT OF BEGINNING**.

CONTAINING: 3,259 square feet of land, more or less.

Illustration attached hereto and incorporated herein by reference.

BASIS OF BEARINGS: Nevada State Plane Coordinate System, West Zone, NAD 27 Carson City Modified.

370731

EXHIBIT "D" (con't.)

SURVEYOR'S CERTIFICATE

I hereby certify that the attached easement description was prepared by me or under my direct supervision and is accurate to the best of my knowledge and belief.

David F. Hanrion
Nevada PLS 16949
For and on behalf of
Manhard CONSULTING
9850 DOUBLE R BLVD, SUITE 101
RENO, NEVADA 89521
(775) 743-3500

370731

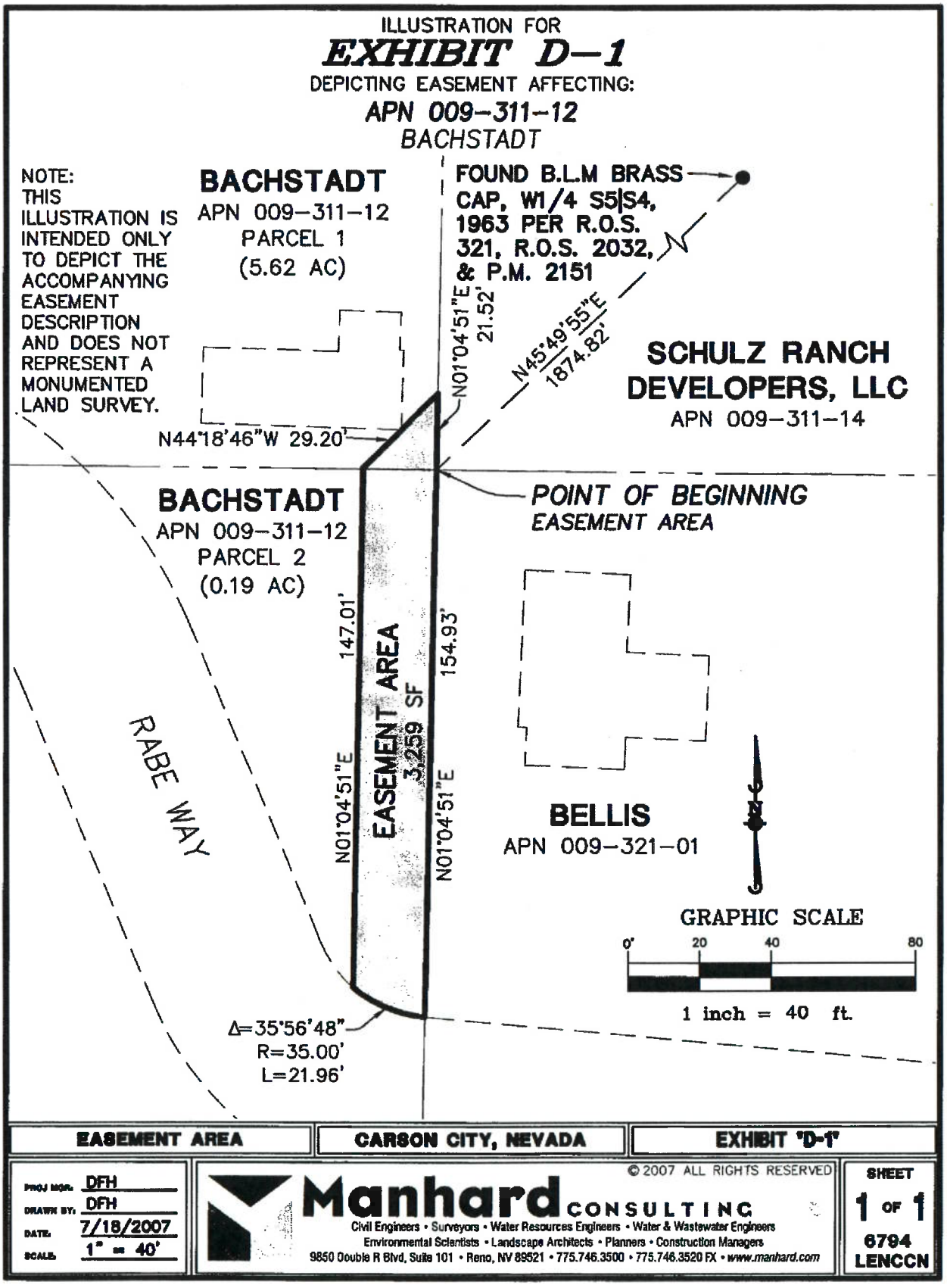
ILLUSTRATION FOR

EXHIBIT D–1

DEPICTING EASEMENT AFFECTING:

APN 009–311–12

BACHSTADT



EASEMENT AREA	CARSON CITY, NEVADA	EXHIBIT "D-1"

PROJ MGR. DFH
DRAWN BY. DFH
DATE. 7/18/2007
SCALE. 1" = 40'

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6794
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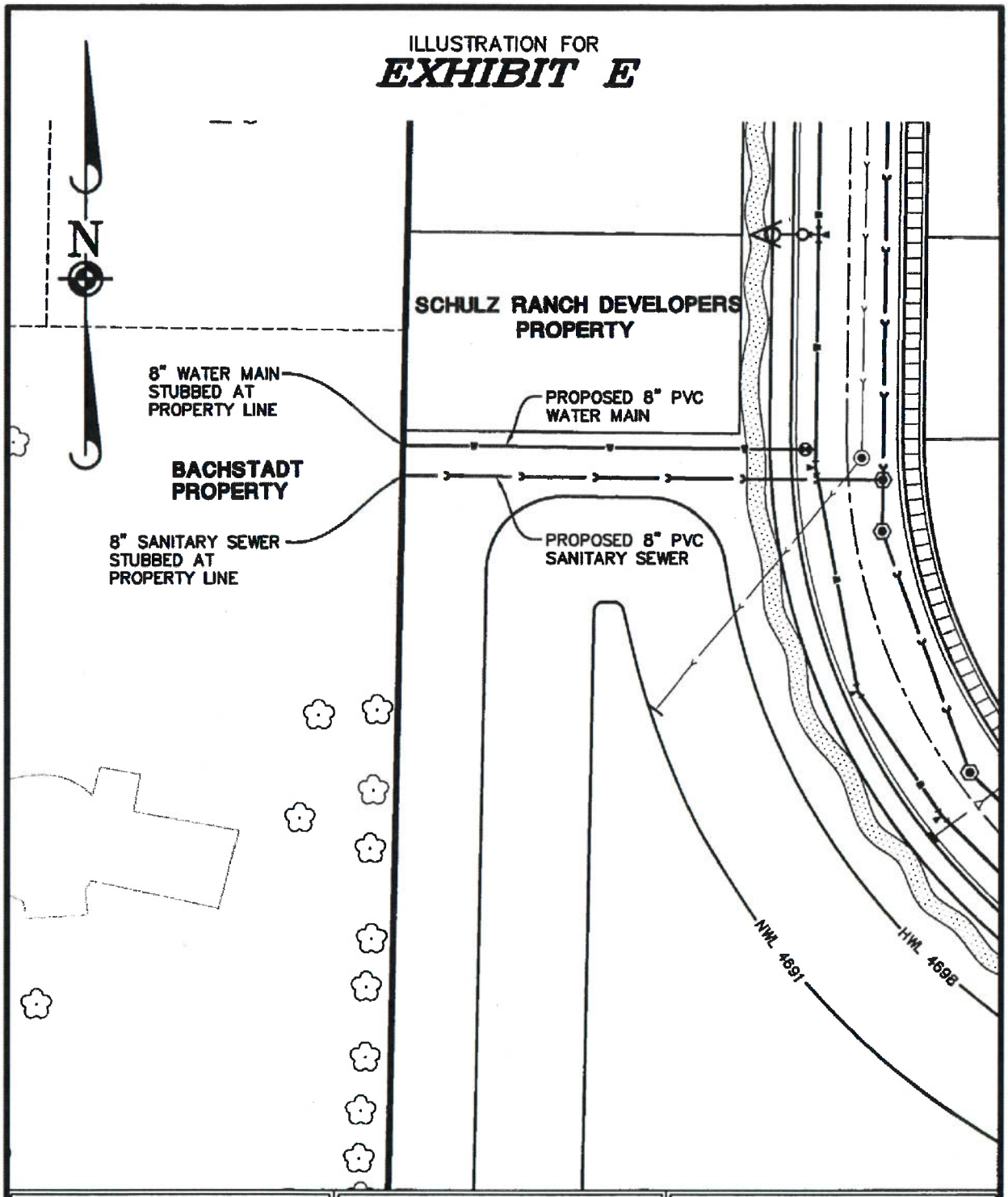
ILLUSTRATION FOR

EXHIBIT E



WATER AND SEWER LINES	CARSON CITY, NEVADA	EXHIBIT E

PROJ MGR: DFH
DRAWN BY: DFH
DATE: 7/18/2007
SCALE: 1" = 50'

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6794 LENCCN

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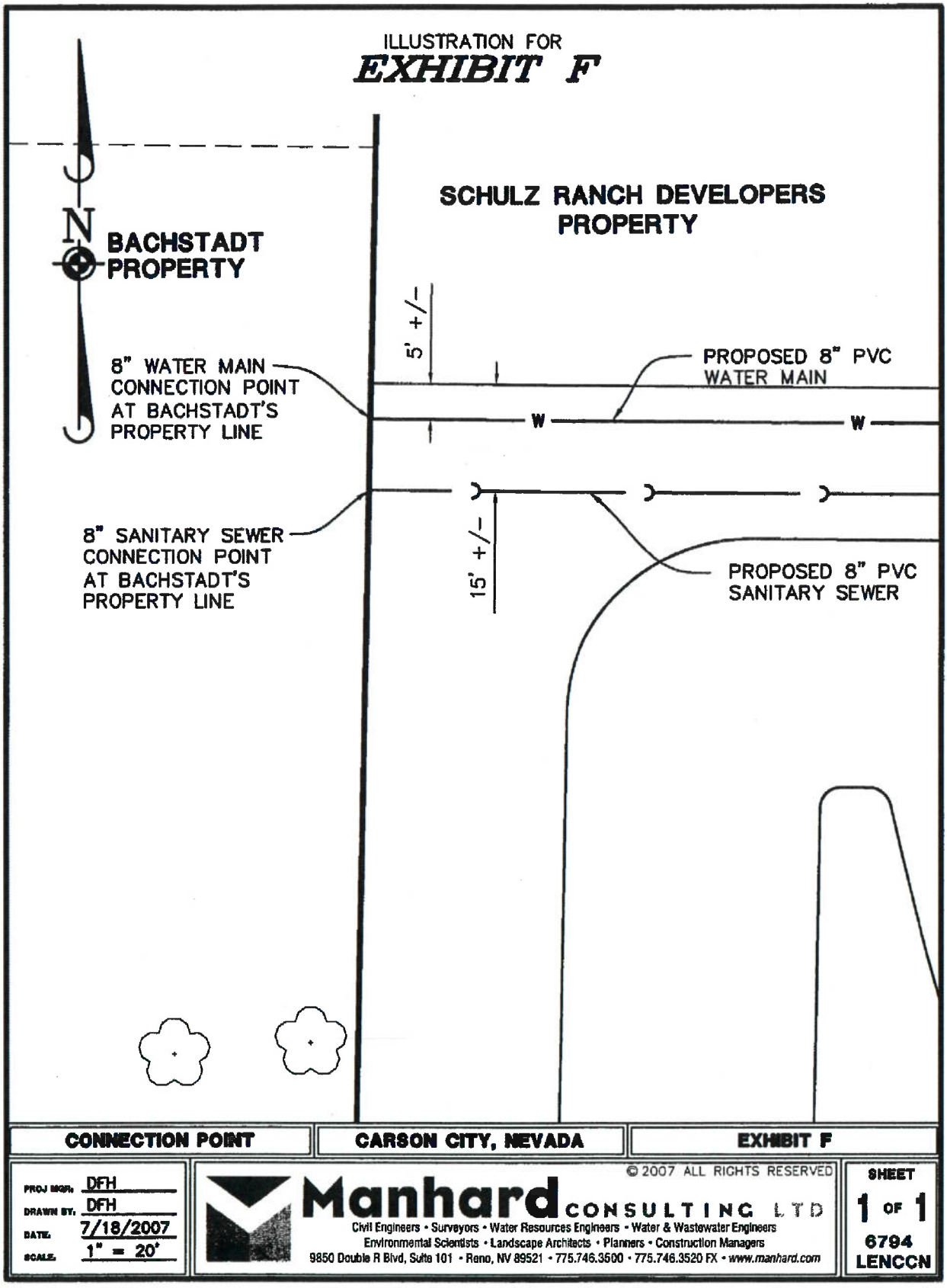
ILLUSTRATION FOR

EXHIBIT F



CONNECTION POINT	CARSON CITY, NEVADA	EXHIBIT F

PROJ MGR. DFH
DRAWN BY. DFH
DATE. 7/18/2007
SCALE. 1" = 20'

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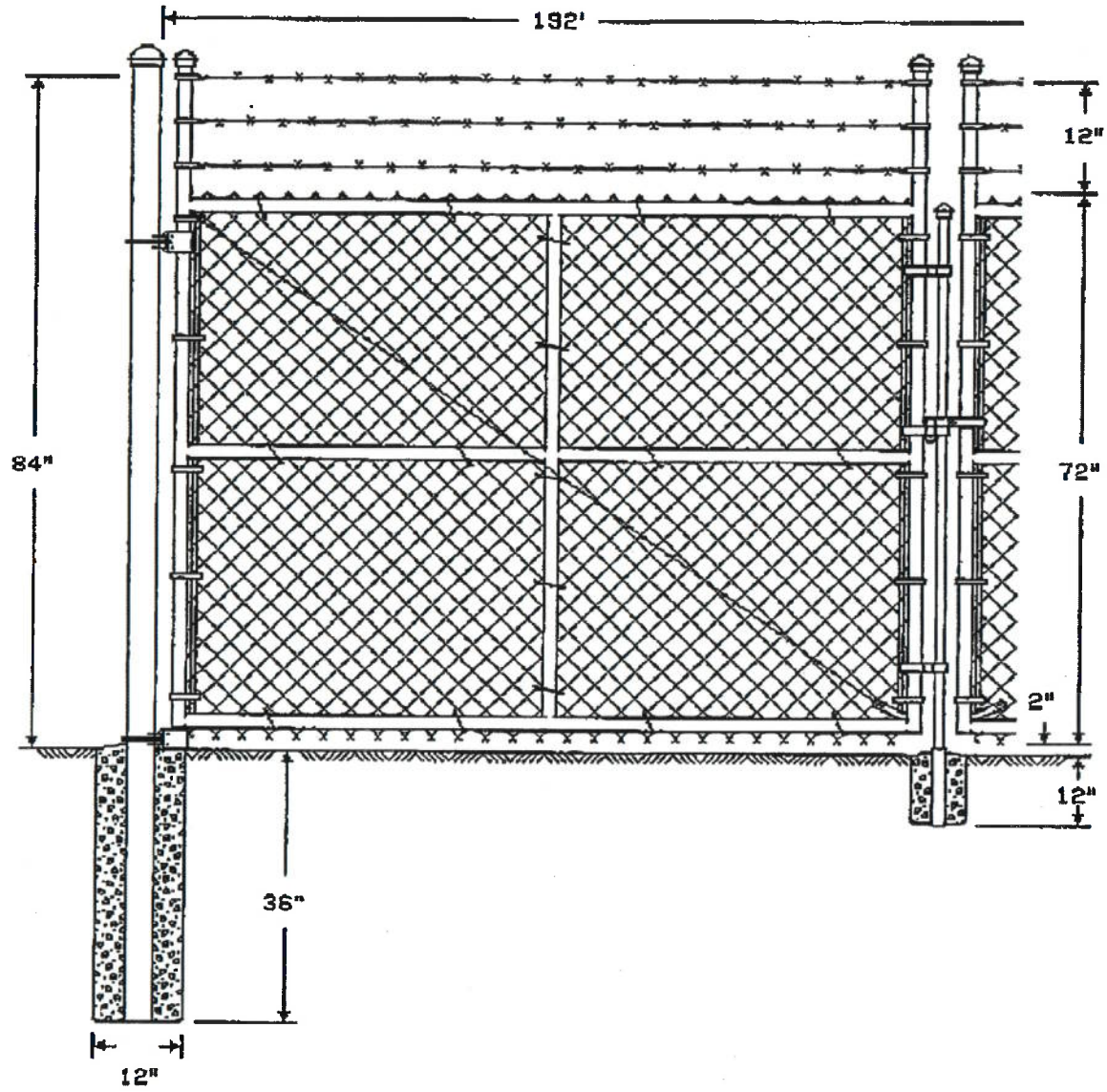
6794
LENCCN

370731

Exhibit G



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SPARKS, NV 89431
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LENNAR HOMES
1190 RABE DR CARSON CITY ,NEVADA

DRAWN BY: DG 08/03/07	SCALE:	PAGE:
REVISED: 08/03/07	FILE:	1 of 1

370731

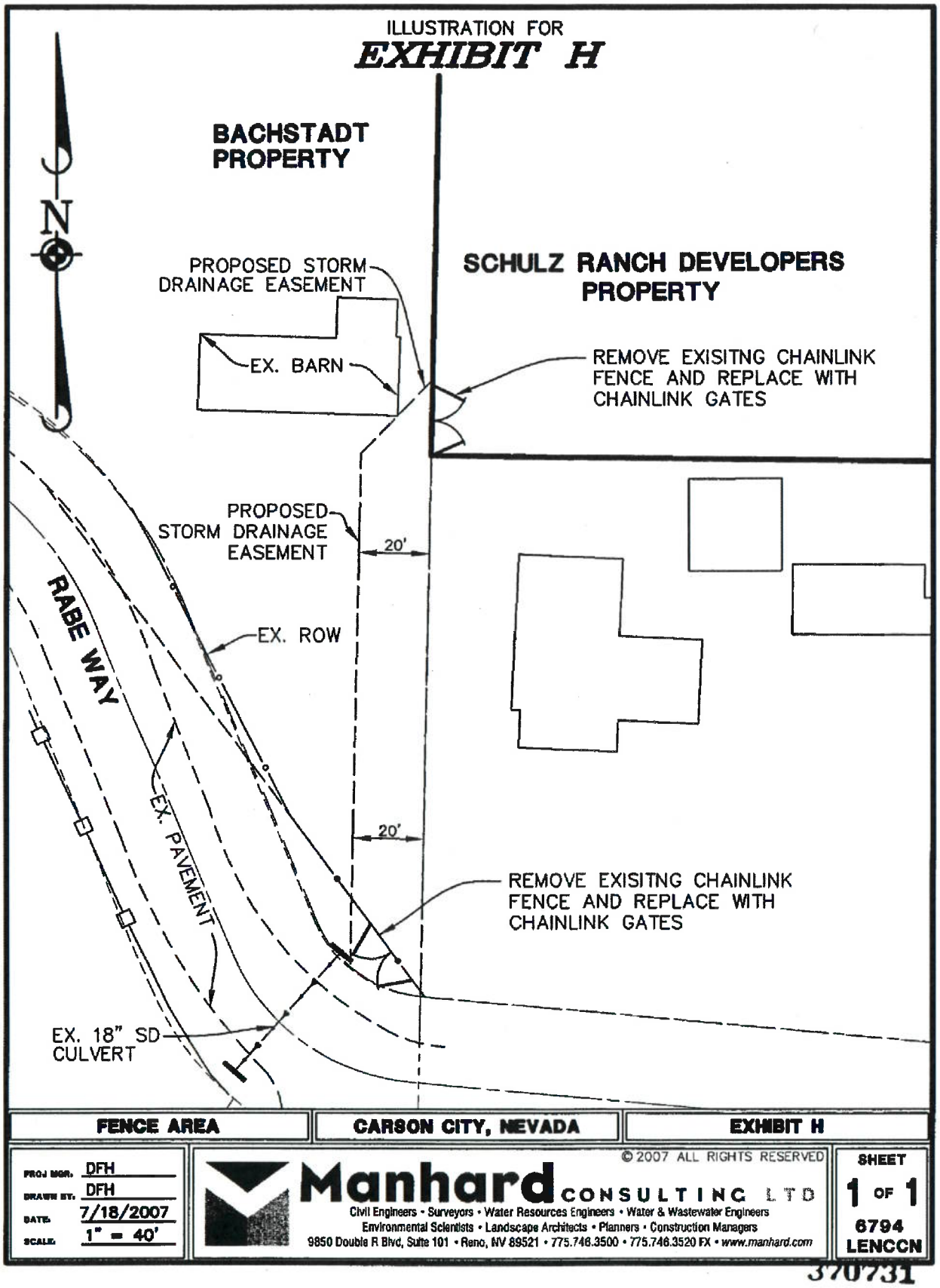
ILLUSTRATION FOR
EXHIBIT H
BACHSTADT PROPERTY
N
PROPOSED STORM DRAINAGE EASEMENT
SCHULZ RANCH DEVELOPERS PROPERTY
EX. BARN
REMOVE EXISITNG CHAINLINK FENCE AND REPLACE WITH CHAINLINK GATES
PROPOSED STORM DRAINAGE EASEMENT
20'
RABE WAY
EX. ROW
EX. PAVEMENT
20'
REMOVE EXISITNG CHAINLINK FENCE AND REPLACE WITH CHAINLINK GATES
EX. 18" SD CULVERT
FENCE AREA
CARSON CITY, NEVADA
EXHIBIT H
PROJ MGR. DFH
DRAWN BY. DFH
DATE. 7/18/2007
SCALE. 1" = 40'
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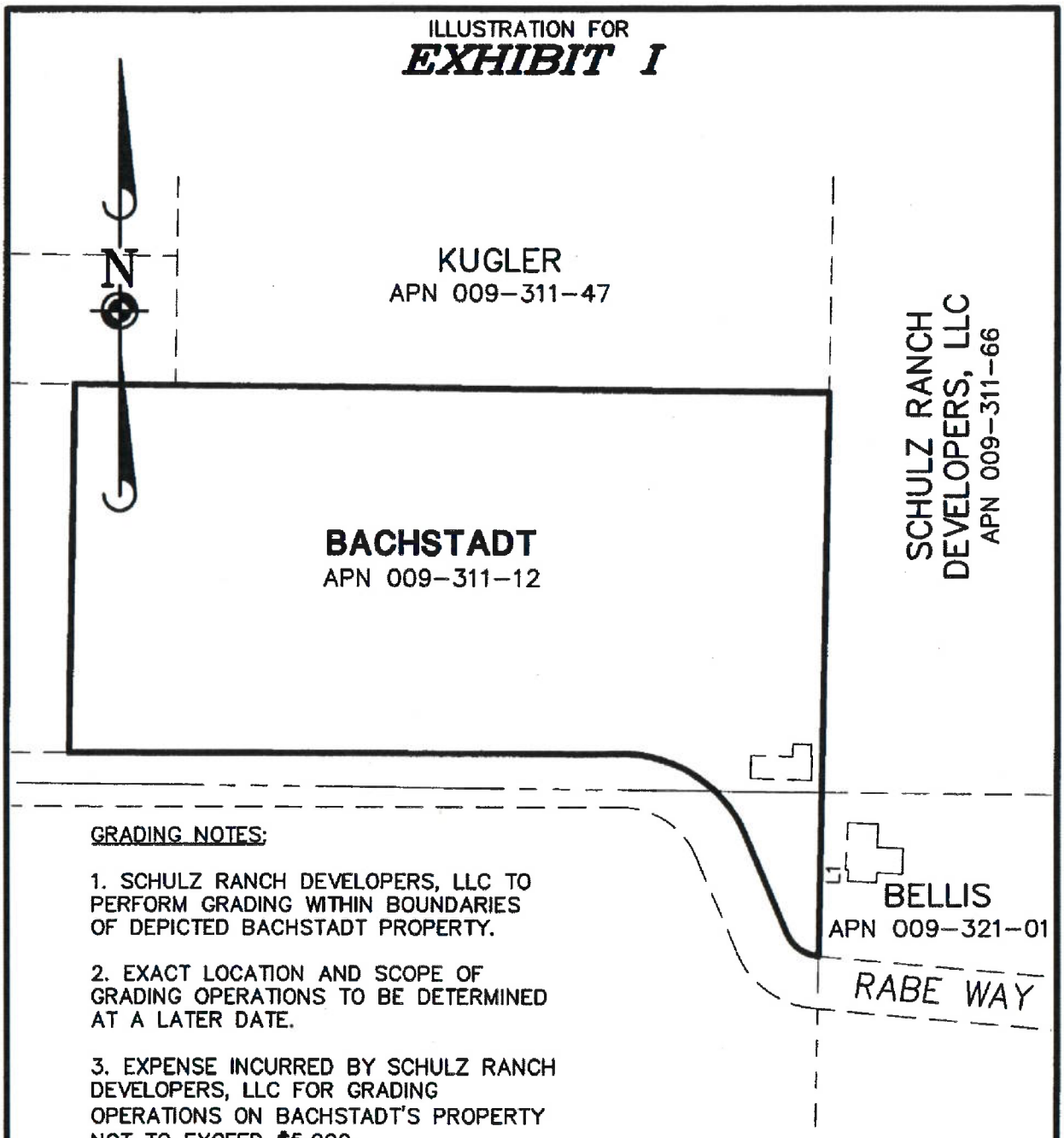
SHEET
1 OF 1
6794
LENCCN

370731

ILLUSTRATION FOR

EXHIBIT I



GRADING NOTES:

1. SCHULZ RANCH DEVELOPERS, LLC TO PERFORM GRADING WITHIN BOUNDARIES OF DEPICTED BACHSTADT PROPERTY.

2. EXACT LOCATION AND SCOPE OF GRADING OPERATIONS TO BE DETERMINED AT A LATER DATE.

3. EXPENSE INCURRED BY SCHULZ RANCH DEVELOPERS, LLC FOR GRADING OPERATIONS ON BACHSTADT'S PROPERTY NOT TO EXCEED $5,000.

GRADING IMPROVEMENTS	CARSON CITY, NEVADA	EXHIBIT I

PROJ MGR. DFH
DRAWN BY: DFH
DATE: 7/18/2007
SCALE: 1" = 150'

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370731

Exhibit J

APN #09-311-12

DEDICATION OF EASEMENT FOR PUBLIC STORMWATER FACILITIES

ENGINEER'S FILE NO. _____

FROM: ELMER P. BACHSTADT AND THERESA M. BACHSTADT, AS TRUSTEES OF THE ELMER & TERESA BACHSTADT TRUST, AND AS TRUSTEES OF THE CARSON/EAGLE VALLEY HUMANE TRUST

TO: CARSON CITY, A CONSOLIDATED MUNICIPALITY OF THE STATE OF NEVADA (THE "GRANTEE")

A PORTION OF THE EAST 1/2, SEC. 5, T. 14 N., R. 20 E., M. D. B.& M.

WE, THE UNDERSIGNED, HEREBY DEDICATE AN EASEMENT TO CARSON CITY, A POLITICAL SUBDIVISION OF THE STATE OF NEVADA, for the purpose of constructing, maintaining, improving and operating public stormwater facilities, across, over, through and under lands owned by us or in which we have vested interest, particularly described as follows, to wit:

SEE LEGAL DESCRIPTION ATTACHED HERETO AS EXHIBIT "A" AND SHOWN ON THE MAP ATTACHED HERETO AS EXHIBIT "B".

TOGETHER WITH, the tenements, hereditaments, appurtenances, reversions, remainders, rents, issues and profits thereof unto the said GRANTEE and to its assigns, forever.

THE UNDERSIGNED, in consideration of one dollar and other good and valuable consideration, does hereby relieve Carson City of all further obligations or claims on this account of the location, grade, maintenance or construction of the proposed public improvement.

[Signatures appear on the following page]

[Signature page to Dedication of Easement for Public Stormwater Facilities]

IN WITNESS WHEREOF: I have hereunto set my hand, this 13th day of July, 2007.

ELMER P. BACHSTADT, as Trustee of the Elmer & Theresa Bachstadt Trust and as Trustee of the Carson/Eagle Valley Humane Trust

THERESA M. BACHSTADT, as Trustee of the Elmer & Theresa Bachstadt Trust and as Trustee of the Carson/Eagle Valley Humane Trust

STATE OF NEVADA)
~~CARSON CITY~~) ss
County of Washoe

This instrument was acknowledged before me on the 13th day of July, 2007, by Elmer P. Bachstadt, as Trustee of the Elmer & Theresa Bachstadt Trust and the Carson/Eagle Valley Humane Trust.

CHRIS FROEHLICH
Notary Public, State of Nevada
Appointment No. 07-3103-2
My Appt. Expires Jun 8, 2011

Notary Public

STATE OF NEVADA)
~~CARSON CITY~~) ss
County of Washoe

This instrument was acknowledged before me on the 13th day of July, 2007, by Theresa M. Bachstadt, as Trustee of the Elmer & Theresa Bachstadt Trust and the Carson/Eagle Valley Humane Trust.

CHRIS FROEHLICH
Notary Public, State of Nevada
Appointment No. 07-3103-2
My Appt. Expires Jun 8, 2011

Notary Public

BOARD OF SUPERVISORS APPROVAL

This dedication is approved and accepted by the Carson City Board of Supervisors on this _____ day of _____, 200__.

_____ ATTEST:_____

MAYOR CITY CLERK

370731

EXHIBIT "A"

LEGAL DESCRIPTION

DEDICATION OF EASEMENT
AFFECTING APN 009-311-12 (Parcel 1 & 2)

The following describes a parcel of land situate within the Southwest Quarter (SW¼) of the Southeast Quarter (SE¼) and the Northwest Quarter (NW¼) of the Southeast Quarter (SE¼) of Section Five (5), Township Fourteen (14) North, Range Twenty (20) East, Mount Diablo Meridian, City of Carson, County of Carson, State of Nevada, described as follows:

BEGINNING at the Northeast corner of the Southwest Quarter (SW¼) of the Southeast Quarter (SE¼) of Section Five (5), Township Fourteen (14) North, Range Twenty (20) East, Mount Diablo Meridian, from which the East Quarter (E¼) corner of said Section Five (5) bears North 45°49'55" East, a distance of 1874.82 feet; Thence along the Easterly line of the Southwest Quarter (SW¼) of the Southeast Quarter (SE¼) of said Section Five (5), South 01°04'51" West, a distance of 154.93 feet to the Northerly right-of-way line of Rabe Way;

Thence following the Northerly right-of-way line of said Rabe Way, Northwesterly along the arc of a non-tangent curve to the right having an arc length of 21.96 feet and a radius of 35.00 feet, through a central angle of 35°56'48", whose chord bears North 66°43'33" West, a distance of 21.60 feet;

Thence leaving the Northerly right-of-way line of said Rabe Way, North 01°04'51" East, a distance of 147.01 feet;

Thence North 44°18'46" East, a distance of 29.20 feet to the Easterly line of the Northwest Quarter (NW¼) of the Southeast Quarter (SE¼) of said Section Five (5);

Thence along the Easterly line of the Northwest Quarter (NW¼) of the Southeast Quarter (SE¼) of said Section Five (5) South 01°04'51" West, a distance of 21.52 feet to the **POINT OF BEGINNING**.

CONTAINING: 3,259 square feet of land, more or less.

Illustration attached hereto and incorporated herein by reference.

BASIS OF BEARINGS: Nevada State Plane Coordinate System, West Zone, NAD 27 Carson City Modified.

370731

EXHIBIT "A" (con't.)

SURVEYOR'S CERTIFICATE

I hereby certify that the attached easement description was prepared by me or under my direct supervision and is accurate to the best of my knowledge and belief.

David F. Hanrion
Nevada PLS 16949
For and on behalf of
Manhard CONSULTING
9850 DOUBLE R BLVD, SUITE 101
RENO, NEVADA 89521
(775) 743-3500

370731

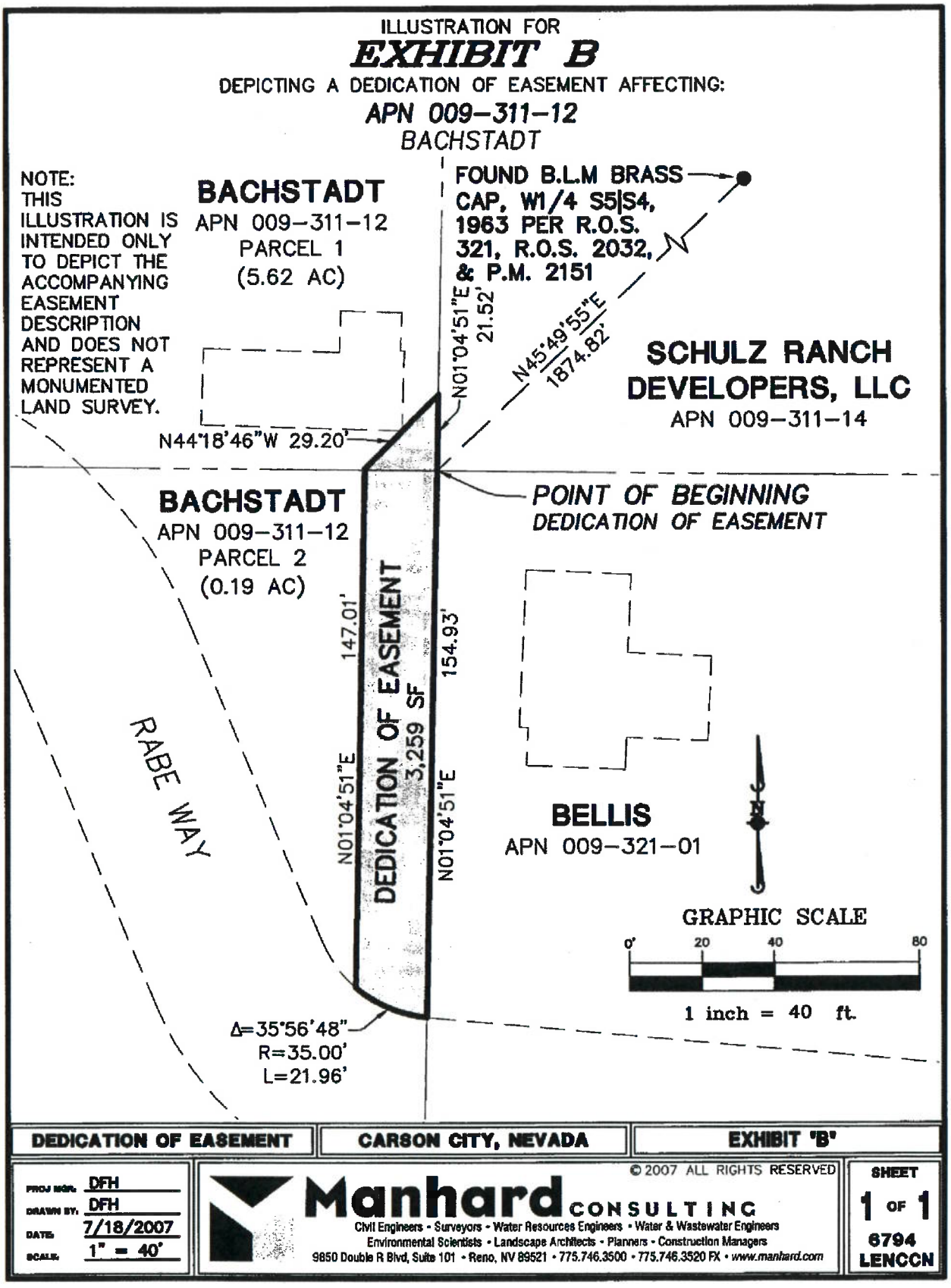
ILLUSTRATION FOR

EXHIBIT B

DEPICTING A DEDICATION OF EASEMENT AFFECTING:

APN 009-311-12

BACHSTADT



DEDICATION OF EASEMENT	CARSON CITY, NEVADA	EXHIBIT "B"

PROJ MGR: DFH
DRAWN BY: DFH
DATE: 7/18/2007
SCALE: 1" = 40'

Manhard CONSULTING
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SHEET 1 OF 1

6794 LENCCN

370731

APN 09-311-12

APN _____

APN _____

RECORDED AT THE REQUEST OF

CARSON CITY CLERK TO THE BOARD
2007 AUG 17 PM 4:08
371101
FILE NO. _____
ALAN GLOVER
CARSON CITY RECORDER
FEE $ N/C DEP _____

FOR RECORDER'S USE ONLY

Dedication of Easement for Public Storm Water Facilities
TITLE OF DOCUMENT

☒ I, the undersigned, hereby affirm that the attached document, including any exhibits, hereby submitted for recording does not contain the social security number of any person or persons. (NRS 239B.030)

☐ I, the undersigned, hereby affirm that the attached document, including any exhibits, hereby submitted for recording does contain the social security number of a person or persons as required by law. State specific law: _____

Katherine L McLaughlin
Signature

Katherine L. McLaughlin, Recording Secretary
Print Name & Title

WHEN RECORDED MAIL TO:

_____

CARSON CITY CLERK TO
THE BOARD

371101

_____

APN #09-311-12

DEDICATION OF EASEMENT FOR PUBLIC STORMWATER FACILITIES

ENGINEER'S FILE NO. _____

FROM: ELMER P. BACHSTADT AND THERESA M. BACHSTADT, AS TRUSTEES OF THE ELMER & TERESA BACHSTADT TRUST, AND AS TRUSTEES OF THE CARSON/EAGLE VALLEY HUMANE TRUST

TO: CARSON CITY, A CONSOLIDATED MUNICIPALITY OF THE STATE OF NEVADA (THE "GRANTEE")

A PORTION OF THE EAST 1/2, SEC. 5, T. 14 N., R. 20 E., M. D. B.& M.

WE, THE UNDERSIGNED, HEREBY DEDICATE AN EASEMENT TO CARSON CITY, A POLITICAL SUBDIVISION OF THE STATE OF NEVADA, for the purpose of constructing, maintaining, improving and operating public stormwater facilities, across, over, through and under lands owned by us or in which we have vested interest, particularly described as follows, to wit:

SEE LEGAL DESCRIPTION ATTACHED HERETO AS EXHIBIT "A" AND SHOWN ON THE MAP ATTACHED HERETO AS EXHIBIT "B".

TOGETHER WITH, the tenements, hereditaments, appurtenances, reversions, remainders, rents, issues and profits thereof unto the said GRANTEE and to its assigns, forever.

THE UNDERSIGNED, in consideration of one dollar and other good and valuable consideration, does hereby relieve Carson City of all further obligations or claims on this account of the location, grade, maintenance or construction of the proposed public improvement.

[Signatures appear on the following page]

371101

[Signature page to Dedication of Easement for Public Stormwater Facilities]

IN WITNESS WHEREOF: I have hereunto set my hand, this 13th day of July, 2007.

ELMER P. BACHSTADT, as Trustee of the Elmer & Theresa Bachstadt Trust and as Trustee of the Carson/Eagle Valley Humane Trust

THERESA M. BACHSTADT, as Trustee of the Elmer & Theresa Bachstadt Trust and as Trustee of the Carson/Eagle Valley Humane Trust

STATE OF NEVADA)
COUNTY OF WASHOE) ss

This instrument was acknowledged before me on the 13th day of July, 2007, by Elmer P. Bachstadt, as Trustee of the Elmer & Theresa Bachstadt Trust and the Carson/Eagle Valley Humane Trust.

CHRIS FROEHLICH
Notary Public, State of Nevada
Appointment No. 07-3103-2
My Appt. Expires Jun 8, 2011

Notary Public

STATE OF NEVADA)
COUNTY OF WASHOE) ss

This instrument was acknowledged before me on the 13th day of July, 2007, by Theresa M. Bachstadt, as Trustee of the Elmer & Theresa Bachstadt Trust and the Carson/Eagle Valley Humane Trust.

CHRIS FROEHLICH
Notary Public, State of Nevada
Appointment No. 07-3103-2
My Appt. Expires Jun 8, 2011

Notary Public

371101

BOARD OF SUPERVISORS APPROVAL

This dedication is approved and accepted by the Carson City Board of Supervisors on this 16th day of August, 2007.

Marv Teixeira
MAYOR

ATTEST: Katherine L. McLaughlin
CITY CLERK

Deputy for Katherine L. McLaughlin

371101

EXHIBIT "A"

LEGAL DESCRIPTION

DEDICATION OF EASEMENT
AFFECTING APN 009-311-12 (Parcel 1 & 2)

The following describes a parcel of land situate within the Southwest Quarter (SW¼) of the Southeast Quarter (SE¼) and the Northwest Quarter (NW¼) of the Southeast Quarter (SE¼) of Section Five (5), Township Fourteen (14) North, Range Twenty (20) East, Mount Diablo Meridian, City of Carson, County of Carson, State of Nevada, described as follows:

BEGINNING at the Northeast corner of the Southwest Quarter (SW¼) of the Southeast Quarter (SE¼) of Section Five (5), Township Fourteen (14) North, Range Twenty (20) East, Mount Diablo Meridian, from which the East Quarter (E¼) corner of said Section Five (5) bears North 45°49'55" East, a distance of 1874.82 feet; Thence along the Easterly line of the Southwest Quarter (SW¼) of the Southeast Quarter (SE¼) of said Section Five (5), South 01°04'51" West, a distance of 154.93 feet to the Northerly right-of-way line of Rabe Way;

Thence following the Northerly right-of-way line of said Rabe Way, Northwesterly along the arc of a non-tangent curve to the right having an arc length of 21.96 feet and a radius of 35.00 feet, through a central angle of 35°56'48", whose chord bears North 66°43'33" West, a distance of 21.60 feet;

Thence leaving the Northerly right-of-way line of said Rabe Way, North 01°04'51" East, a distance of 147.01 feet;

Thence North 44°18'46" East, a distance of 29.20 feet to the Easterly line of the Northwest Quarter (NW¼) of the Southeast Quarter (SE¼) of said Section Five (5);

Thence along the Easterly line of the Northwest Quarter (NW¼) of the Southeast Quarter (SE¼) of said Section Five (5) South 01°04'51" West, a distance of 21.52 feet to the **POINT OF BEGINNING**.

CONTAINING: 3,259 square feet of land, more or less.

Illustration attached hereto and incorporated herein by reference.

BASIS OF BEARINGS: Nevada State Plane Coordinate System, West Zone, NAD 27 Carson City Modified.

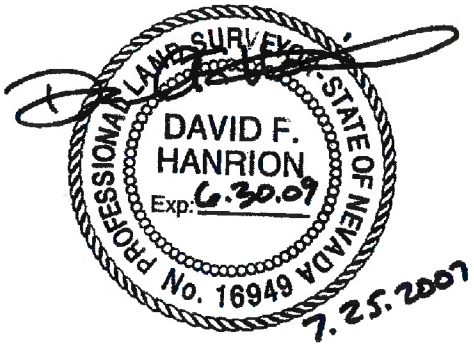
371101

EXHIBIT "A" (con't.)

SURVEYOR'S CERTIFICATE

I hereby certify that the attached easement description was prepared by me or under my direct supervision and is accurate to the best of my knowledge and belief.

David F. Hanrion
Nevada PLS 16949
For and on behalf of
Manhard CONSULTING
9850 DOUBLE R BLVD, SUITE 101
RENO, NEVADA 89521
(775) 743-3500



371101

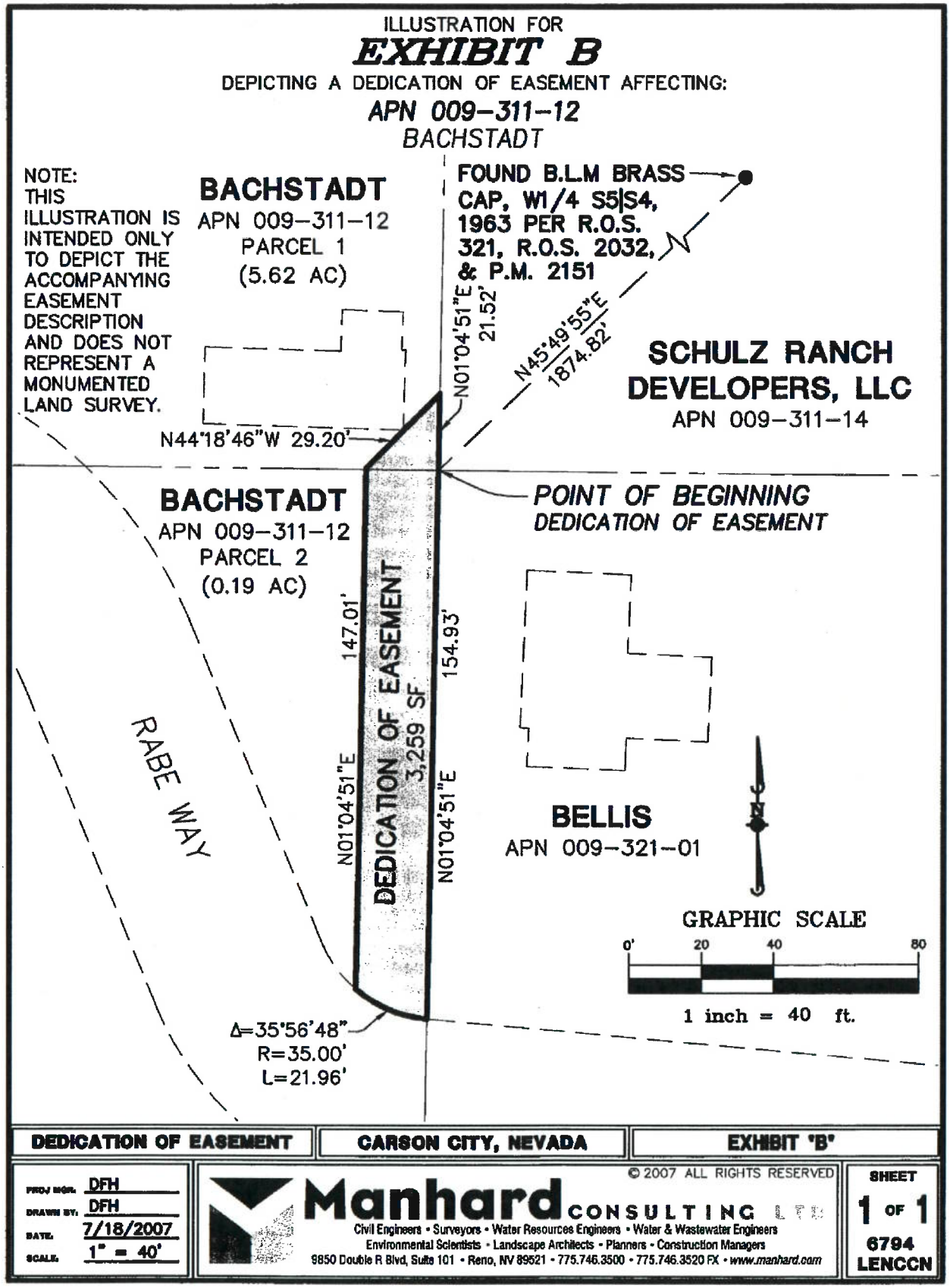
ILLUSTRATION FOR

EXHIBIT B

DEPICTING A DEDICATION OF EASEMENT AFFECTING:

APN 009-311-12

BACHSTADT



DEDICATION OF EASEMENT	CARSON CITY, NEVADA	EXHIBIT "B"

PROJ MGR. DFH
DRAWN BY: DFH
DATE: 7/18/2007
SCALE: 1" = 40'

Manhard CONSULTING LTD
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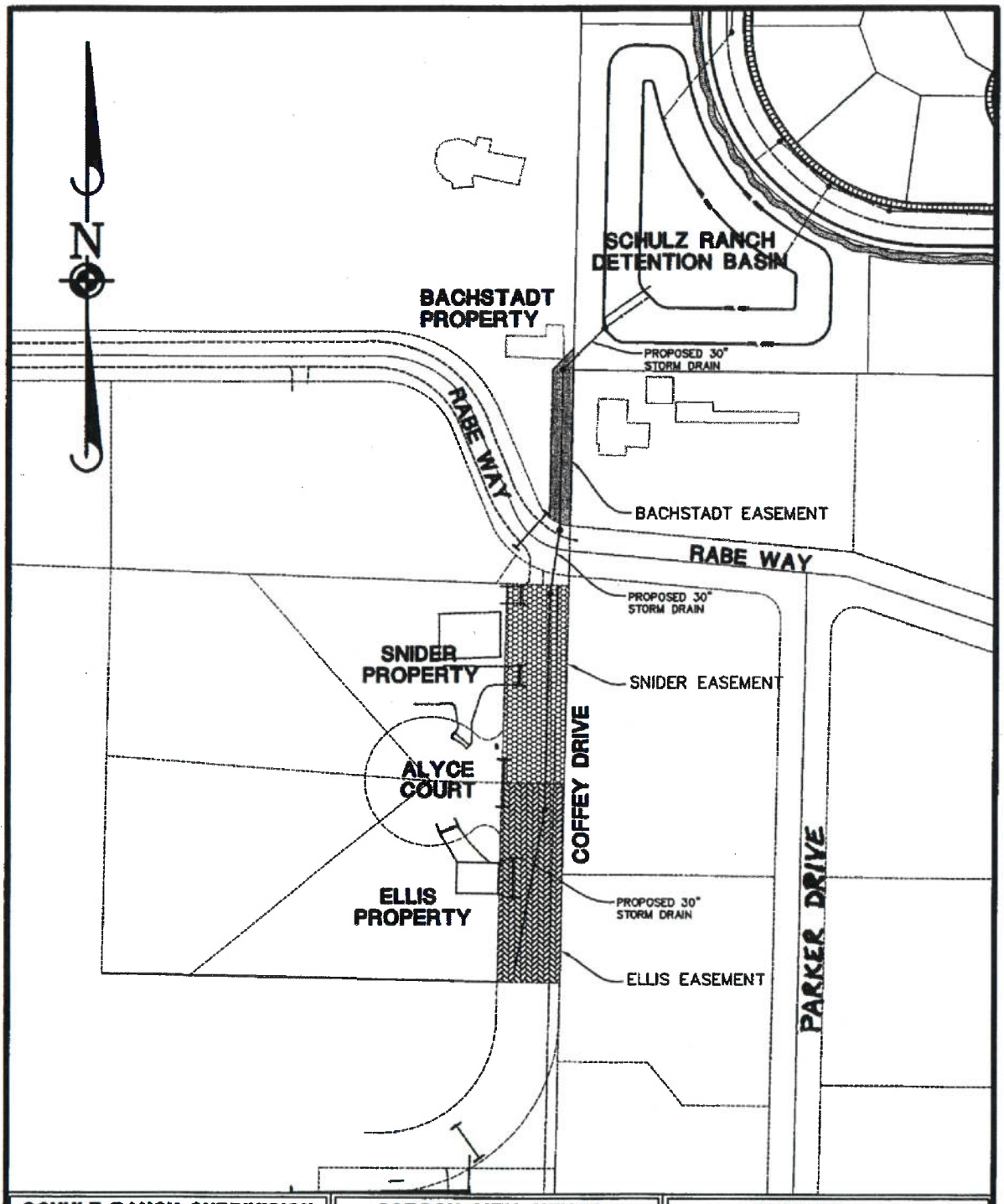
SHEET 1 OF 1

6794 LENCCN

371101



SCHULZ RANCH SUBDIVISION | **CARSON CITY, NEVADA** | **VICINITY MAP**

PROJ MGR. KPB
DRAWN BY: KPB
DATE: 8/2/07
SCALE: 1" = 150'

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SHEET 1 OF 1
6794 LENCCN

371101

WesternTitle
company, inc.
Since 1902

JULY 8, 2008

ELMER P. BACHSTADT
P.O. BOX 768
CARSON CITY, NV 89702

REGARDING: **17858FCL FIRST BANK///SCHULZ RANCH**

Dear Ladies and Gentlemen:

Enclosed herewith is a copy of the ***NOTICE OF TRUSTEE'S SALE*** on the above captioned foreclosure. The sale will be held on ***JULY 29, 2008, AT 11:00 A.M.*** at the front steps of :

Carson City Courthouse
885 E. Musser Street
Carson City, Nevada

If you have any questions regarding this sale, please feel free to contact me at 775-850-7176.

Sincerely,

Joy Taghiof
Foreclosure Officer

Enclosures

A. P. No. 009-311-65, 67 and 68
010-671-06, 07, 08, 09, 10, 11,
12, 13, 14 and 15.
No. 17858-FCL

When recorded mail to:
Western Title Company, Inc.
P.O. Box 3059
Reno, NV 89505

NOTICE OF TRUSTEE'S SALE

WHEREAS, FIRST BANK, a Missouri banking corporation, the owner and holder of that certain obligation secured by Construction Deed of Trust and Fixture Filing (with Assignment of Rents and Security Agreement)(Variable Rate)dated February 24, 2006, executed by SCHULZ RANCH DEVELOPERS, LLC., a Delaware limited liability company, Trustor, to TICOR TITLE OF NEVADA, INC., Trustee for FIRST BANK, a Missouri banking corporation, Beneficiary, which Deed of Trust was recorded February 28, 2006, as Document No. 350303, Official Records, Carson City, Nevada; and

WHEREAS, WESTERN TITLE COMPANY, INC., a Nevada corporation, was substituted as Trustee under said Deed of Trust in place and stead of TICOR TITLE OF NEVADA, INC., pursuant to a Substitution of Trustee recorded March 27, 2008 as Document No. 377708, Official Records, Carson City, Nevada; and

WHEREAS, default has been made by said Trustor in the payment of the debt evidenced by the Revolving Loan Promissory Note for which said Deed of Trust is security, and the said FIRST BANK, a Missouri banking corporation, did cause Notice of Default and Election To Sell under said Deed of Trust to be recorded on March 27, 2008, as Document No. 377709, Official Records, Carson City, Nevada; and

WHEREAS, FIRST BANK, a Missouri banking corporation, has made demand upon said Trustee that said Trustee proceed to sell the land and premises described in said Deed of Trust;

NOW, THEREFORE, pursuant to said demand, and in accordance with the terms and under the authority of said Deed of Trust, said WESTERN TITLE COMPANY, INC., a Nevada corporation, as such Trustee, does hereby give notice that on the **29th** day of **July, 2008**, at the hour of **11:00 o'clock A.M.** on said day, at the entrance of the Carson City Courthouse, located at 885 E. Musser Street, Carson City, Nevada, said Trustee will sell at public auction to the highest bidder, for current lawful money of the United States of America,

the County Recorder of Carson City, State of Nevada, on June 27, 2007, in Book 10 of Maps, page 2657 as Document No. 369098.

APN: 9-311-65

PARCEL 2:

Parcel 1B of the 2nd Parcel Map for SCHULZ RANCH DEVELOPERS, LLC, according
to the map thereof, filed in the office of the County Recorder of Carson City, State of Nevada, on August 3, 2007, in Book 10 of Maps, page 2664 as Document No. 370576.

APN: 9-311-67

PARCEL 3:

Parcel 1A of the 2nd Parcel Map for SCHULZ RANCH DEVELOPERS, LLC, according
to the map thereof, filed in the office of the County Recorder of Carson City, State of Nevada, on August 3, 2007, in Book 10 of Maps, page 2664 as Document No. 370576.

APN; 9-311-68

PARCEL 4:

Parcel 3B of the 3rd Parcel Map for SCHULZ RANCH DEVELOPERS, LLC, according to the map thereof, filed in the office of the County Recorder of Carson City, State of Nevada, on August 3, 2007, in Book 10 of Maps, page 2663 as Document No. 370575.

APN: 10-671-06

PARCEL 5:

Parcel 3A of the 3rd Parcel Map for SCHULZ RANCH DEVELOPERS, LLC, according to the map thereof filed in the office of the County Recorder of Carson City, State of Nevada, on August 3, 2007, in Book 10 of Maps, page 2663 as Document No. 370575.

APN: 10-671-07

PARCEL 6 :

PARCEL 11:

Parcel 2 of the 5th Parcel Map for SCHULZ RANCH DEVELOPERS, LLC, according to the map thereof filed in the office County Recorder of Carson City, State of Nevada, on August 21, 2007, in Book 10 of Maps, page 2667 as Document No. 371193.

APN: 10-671-13

PARCEL 12:

Parcel 3 of the 5th Parcel Map for SCHULZ RANCH DEVELOPERS, LLC, according to the map thereof, filed in the office of the County Recorder of Carson City, State of Nevada, on August 21,2007, in Book 10 of Maps, page 2667 as Document No. 371193.

APN: 10-671-14

PARCEL 13

Parcel 4 of the 5th Parcel Map for SCHULZ RANCH DEVELOPERS, LLC, according to the map thereof, filed in the office of the County Recorder of Carson City, State of Nevada, on August 21, 2007 in Book 10 of Maps, page 2667 as Document No. 371193.

APN: 10-671-15

TOGETHER WITH any and all buildings and other improvements now or hereafter erected on the Land including, without limitation, fixtures, attachments, appliances, equipment, machinery, and other personal property attached to such buildings and other improvements (the "Improvements"), all of which shall be deemed and construed to be a part of the real property;

TOGETHER WITH, all rents, issues, profits, damages, royalties, income and other benefits now or hereafter derived from the Land and the Improvements (collectively the "Rents"), subject to the terms and provisions of Article II of the Deed of trust with respect to all leases and subleases of the Land or Improvements now or hereafter existing or entered into, or portions thereof;

TOGETHER WITH all interests, estates or other claims, both in law and in equity, which Trustor now has or may hereafter acquire in the Land or the Improvements.

TOGETHER WITH all easements, rights-of-way and other rights now owned or hereafter acquired by Trustor used in connection with the Land or the Improvements or as a

(C) All of Trustor's present and future rights to receive payments of Money, services, or property, including, without limitation, rights to all deposits from tenants or purchasers of the Land or Improvements, rights to receive capital contributions or subscriptions from Trustor's partners or shareholders, amounts payable on account of the sale of partnership interests in Trustor or the capitol stock of the Trustor, accounts and other accounts receivable, deposit accounts, chattel paper, notes, drafts, contract rights, instruments, general intangibles, and principal interest and payments due on account of goods sold or leased, services rendered, loans made or credit extended, together with title to or interest in all agreements, documents, and instruments, evidencing, securing or guarantying the same;

(D) All of Trustor's right, title and interest in and to all other intangible property and rights relating to the Land, the Improvements, the personal property described in Paragraph (a) above or the operation, occupancy, or use thereof, including, without limitation, all governmental and non-governmental permits, licenses, and approvals relating to construction on or operation occupancy, or use of the Land or Improvements, all names under or by which the Land or Improvements may at any time be operated or known, all rights to carry on business under any such names, or any variant thereof, all trade names and trademarks relating in any way to the Land or Improvements, and all good will in any way relating to the Land or the Improvement.

(E) Trustor's right under all insurance policies covering the land, the Improvements, the Personal Property, and the other parts of the Trust Estate and any and all proceeds, loss, payments, and premium refunds payable regarding the same.

(F) All of Trustor's right, title and interest in and to all reserves, deferred payments, deposits, refunds, cost savings, and payments of any kind relating to the construction of any Improvements on the Land;

(G) All of Trustor's right, title and interest in and to all water stock relating to the Land;

(H) All of Trustor's right, title and interest in and to all causes of action, claims, compensation, and recoveries for any damage to, destruction of, or condemnation or taking of the Land, the Improvements, the Personal Property, or any other part of the Trust Estate, or for any conveyance in lieu thereof, whether direct or consequential, or for any damage or injury to the Land or Improvements, the Personal Property, or any other part of the Trust Estate, or for any loss or diminution in value of the Land, the Improvements, the Personal Property, or any other part of the Trust Estate;

(I) All of Trustor's right, title and interest in and to all architectural, structural, mechanical, and engineering plans and specifications prepared for construction of Improvements or extraction of minerals or gravel from the Land and all studies, data, and drawings related thereto; and also all contracts and agreements of the Trustor

The current outstanding principal balance is approximately $12,025,000.00, which is owed together with interest, late charges, advances, interest on advances, foreclosure fees and costs, and other expenses or costs not herein disclosed. The opening bid amount may be more or less then the outstanding principal balance as indicated.

The undersigned disclaims any liability for the accuracy of the above-described APN and principal balance. Verification of such information can be requested during normal business hours at the office of the Trustee, WESTERN TITLE COMPANY, INC., whose address is: 241 Ridge Street, Reno, Nevada, Telephone No. (775) 850-7176, or you may contact First Bank at 4301 MacArthur Blvd., 2nd Floor, Newport Beach, California 92660, Tel: 949-476-3255.

This property is sold as-is. Beneficiary is unable to validate the condition, defects or disclosure issues of said
property and Buyer shall waive the disclosure requirements under NRS 113.130 by purchasing at this sale.

DATED: 7-7, 2008.

WESTERN TITLE COMPANY, INC.
a Nevada corporation

By: _____
Joy M. Taghiof

Its: Foreclosure Officer

STATE OF NEVADA)
) ss
COUNTY OF WASHOE)

This instrument was acknowledged before me on 7-7, 2008, by JOY M. TAGHIOF as FORECLOSURE OFFICER of/for WESTERN TITLE COMPANY, INC., a Nevada corporation.

_____
Notary Public

DIANE PEREZ
Notary Public - State of Nevada
Appointment Recorded in Washoe County
No: 98-49401-2 - Expires November 18, 2010

NOTICE OF POSTPONEMENT OF SALE OF REAL PROPERTY UNDER FORECLOSURE NO. 17858 FCL

Whereas, JOY M. TAGHIOF for Western Title Company, Inc., a Nevada corporation, Trustee, by written Notice of Trustee's Sale of Real Property under that certain Deed of Trust dated February 24, 2006, executed by SCHULZ RANCH DEVELOPERS, LLC., a Delaware limited liability company, as Trustor, and recorded on February 28, 2006, as Document No. 350303 Official Records Carson City, duly provided notice that said Trustee under said Deed of Trust would sell at public auction to the highest bidder for cash, lawful money of the United States, on July 29, 2008 at 11:00 am at the front steps of Carson City Courthouse, 885 E. Musser Street, Carson City, Nevada, all of the interest conveyed to it by said Deed of Trust in and to all that certain real property situated in the State of Nevada, county of Washoe, more particularly described as follows:

A. P. No. 009-311-65, 67 and 68
010-671-06, 07, 08, 09, 10, 11,
12, 13, 14 and 15

or so much of said property as shall be necessary to be sold to provide a sum sufficient to pay the total amount secured by said Deed of Trust; and

Whereas, the said sale shall be postponed until the date hereinafter set forth;

NOW THEREFORE, Notice is hereby given that said sale above referred to was this day postponed by Trustee until August 14, 2008 at 11:00 a.m. of said day when it will take place as above stated.

Dated July 29, 2008.

By: _____
Joy M. Taghiof
Foreclosure Officer

From: Planning Department
To: Heather Ferris
Subject: FW: Tentative Subdivision Map, File No. TSM-19-124
Date: Monday, August 19, 2019 11:39:52 AM

-----Original Message-----
From: Maren Murph [mailto:marenmurph@icloud.com]
Sent: Monday, August 19, 2019 11:36 AM
To: Planning Department
Subject: Tentative Subdivision Map, File No. TSM-19-124

August 19, 2019

Carson City Planning Division
108 E. Proctor St.
Carson City, NV 89701

Re: Tentative Subdivision Map
File No. TSM-19-124
Subject Property: 009-311-47

Dear Commissioners:

This letter is in response to the notification received regarding proposed subdivision of the referenced parcel. As a homeowner bordering the property, I have several issues with this proposed development.

Before we purchased our home, we were informed by Lennar representatives that the parcel behind us was “too small for Lennar to be interested in”, that they wouldn’t develop it, and that if it ever was developed by someone else, access would have to be provided by the new developer, as Lennar wouldn’t allow access through their streets. We were told Chalk Bluff Drive would dead end right where it currently does. We selected and purchased our home, and paid a lot premium, based on the information given to us by Lennar. In good faith, we believed what we were told. I am extremely disappointed to find out that Lennar wasn’t truthful, and prioritizes profit over honesty.

Also, 29 new homes would significantly increase traffic in our neighborhood. Again, we selected the lot based on less traffic as well.

Another lot choice consideration was view to the west. New homes, specifically two-story homes, if they are to be built, would affect our view - again, important when we selected our lot.

Lastly, there is land adjacent to the south of our home; Lennar’s site plan indicates it will be a park. Currently, it is being used for water run off. However, it does not drain, and has become a mosquito-breeding area. Lennar has been notified several times, but nothing seems to get done that solves the problem. I think that Lennar should take care of their existing responsibilities instead of taking on a new project.

In summary, I am against the proposed subdivision and development of property 009-311-47.

Thank you for listening to all of the objections voiced; I trust that you will consider them all impartially.

Maren Murph
1674 Tule Peak Circle
Carson City, NV 89701

Acmam@surewest.net

Sent from my iPad

From:	Charlie Deyhle
To:	Heather Ferris; Planning Department; ccdey@aol.com
Subject:	Corrected Copy: Email Address - Regarding Tentative Subdivision Map: File No. (TSM-19-124) (APN 009-311-47)
Date:	Tuesday, August 20, 2019 11:42:46 AM

To: Carson City Planning Commission and Relevant Officers - and Heather Ferris

From: Charles & Cathrena Deyhle
1350 Rocky Bluff Drive
Carson City, NV 89701

E-mail: ccdey@aol.com
Home Phone: (775) 515-1212
Cell Phone: (609) 203-0144

Reference: Regarding Tentative Subdivision Map: File No. (TSM-19-124) (APN 009-311-47)

Dear Sirs and Madams,

My wife and I are the owners of the property noted above. Our house is the 3rd house south of Schulz Park on Rocky Bluff Drive. From the very beginning of our investment, we were informed by the developer, Lennar, that all structures in our Schulz Ranch neighborhood and surrounding area would be single story family residential structures, and that our view of the mountains to the West, which was a primary feature of selecting and purchasing our particular lot, at a premium, would remain reasonably unobstructed. We were told that the zoning would remain "Single Story Residential", and that we could rest assured that whatever was eventually to be built on the other side of our rear fence, (to the West), would have to comply with the "Single Story Zoning!"

Our neighborhood has been advised, by your recent letter, that there are now plans to build some 29 additional homes to the West of our property, whereby there is the potential of our losing some of our view of the mountains, for which we had selected our site and paid a premium fee to lock in our wonderful views. We are greatly concerned with your plans, and request some input on restricting the elevation and height of any structures in consideration, which may obstruct our views.

We are aware that the real estate tax structure in our new Schulz Ranch Community is among the highest in the City and surrounding areas. My relatives in the older parts of town pay real estate taxes that are a mere fraction of what we are assessed here in our new Schulz Ranch Development. Keeping the single story structure zoning and our associated wonderful mountain views, as investors, is an essential factor in our willingness to accept the higher tax structure in our Community for these views. As stakeholders in the community, home owners, tax payers and citizens, it is essential that we all have a say and input on what the City/Town considers and allows to be built in our backyards.

My Wife, Daughter, and I intend to attend the meeting scheduled for August 28, and expect to be heard before decisions are made, so that our interests will be considered and protected! As tax paying stake holders in our community, we expect the City Planning Department and related Directors and Officers will give us all ample opportunity to make our interests known, considered and protected!

Thank you for your kind consideration

Charles and Cathrena Deyhle

Email: ccdey@aol.com

Home Phone: (775) 515-1212
Cell Phone: (609) 203-0144

From:	Planning Department
To:	Heather Ferris
Subject:	FW: file number TSM-19-124
Date:	Wednesday, August 21, 2019 7:42:01 AM

From: Jan Nyssen [mailto:jnyssen@comcast.net]
Sent: Tuesday, August 20, 2019 9:03 PM
To: Planning Department
Subject: file number TSM-19-124

August 20, 2019

Carson City Planning Commission
108 E Proctor Street
Carson City Nv 89701

Planning Commissioners,

This letter is written in response to a notice of hearing to be held on August 28, 2019 regarding file number TSM-19-124; possible action regarding a tentative subdivision within Schulz Ranch, property # 009-311-47.

My husband and I recently purchased a Lennar home for our retirement which is directly adjacent to the proposed site.

Prior to our purchase we had many conversations with the Lennar representatives to voice our concerns about the property behind “our” lot. We were repeatedly told that neither they had any projects planned for that area nor were they were aware of any other projected plans for any building on the site (TSM-19-124). We were assured it had been held by a local family trust for many years for which it had been used as pastureland and would most likely remain as such.

With that being one of the motivating factors, we decided to make Carson City our home and community so we waited for such a lot to become available, each passing month we saw an increase in cost to the housing in the area but still we waited for this particular lot. When the lot finally became available, we were charged a “premium lot” price.

If Lennar is the builder, that only adds to our list of concerns. It is not our intention to “yelp” Lennar

but if you ask most of our neighbors they will tell you they have an unfinished “punch” list that Lennar has been lax and unable to complete within a timely fashion; in our case, it is four months and counting and still have outstanding issues.

There is a large pooling of water near our our property, we were originally told it would be a park. The water has become swampy and is now a breeding ground for mosquitos. The surrounding neighbors, even those not part of the Lennar community have complained and express their concerns over the health issues this presents.

We realize that construction brings extra jobs and monies to the area, but expansion also requires much thought and consideration on the impact and stress on existing communities and infrastructure. I do not believe Lennar could appropriately provide what is needed for additional homes and requirements.

Our concerns about the possibility of the development of the property include those of the increased demands to the infrastructure:

- increased traffic
- water demands
- water pressure
- proper drainage (which issues already exist)
- public space
- loss of natural habitat

We hope the City Planning Commission will consider how this could impact and burden the already existing community and deny the request to subdivide to add additional housing.

SCHULZ RANCH PHASE 5

TENTATIVE MAP

JULY 2019

Prepared For:

Krueger Family Trust

748 South Meadows Pkwy, suite A9- 337, Reno, 89521

Prepared By:

Manhard CONSULTING

241 Ridge Street, Suite 400 Reno, NV 89501

Table of Contents

List of Figures

Appendices

Tentative Map Application & Supporting Information
Copy of Conceptual Subdivision Map Letter
Master Plan Policy Checklist
Wet Stamped Tentative Map (24” x 36”)
Reduced Tentative Map (11” x 17”)
Conceptual Drainage Study
Geotechnical Report
Preliminary Sanitary Sewer Report
Water/Fire Hydrant Flow Letter

PROJECT LOCATION

The 7.94 acre project site (APN 009-311-47) is located at the southern terminus of Wheeler Peak Drive, south of Racetrack Road, east of Center Drive within the Schulz Ranch Specific Plan Area.

Figure 1: Project Location

Project Boundary

EXISTING CONDITIONS

The property has an existing Master Plan designation of Medium Density Residential (MDR) and is zoned Single Family 6000 – Specific Plan Area (SF6-SPA) (Schulz Ranch Specific Plan). The project area is undeveloped and is surrounded on all sides by single family residential development.

Figure 2: Surrounding Property Designations

Direction	Current Zoning	Master Plan	Current Land Use
North	SF6-SPA	MDR	Single Family Residential (Schulz Ranch)
East	SF6-SPA	MDR	Single Family Residential (Schulz Ranch)
South	SF1A	LDR	Single Family Residential
West	SF1A/SF6	MDR	Single Family Residential

Figure 3: Existing Master Plan Designation (Medium Density Residential – Schulz Ranch Specific Plan)

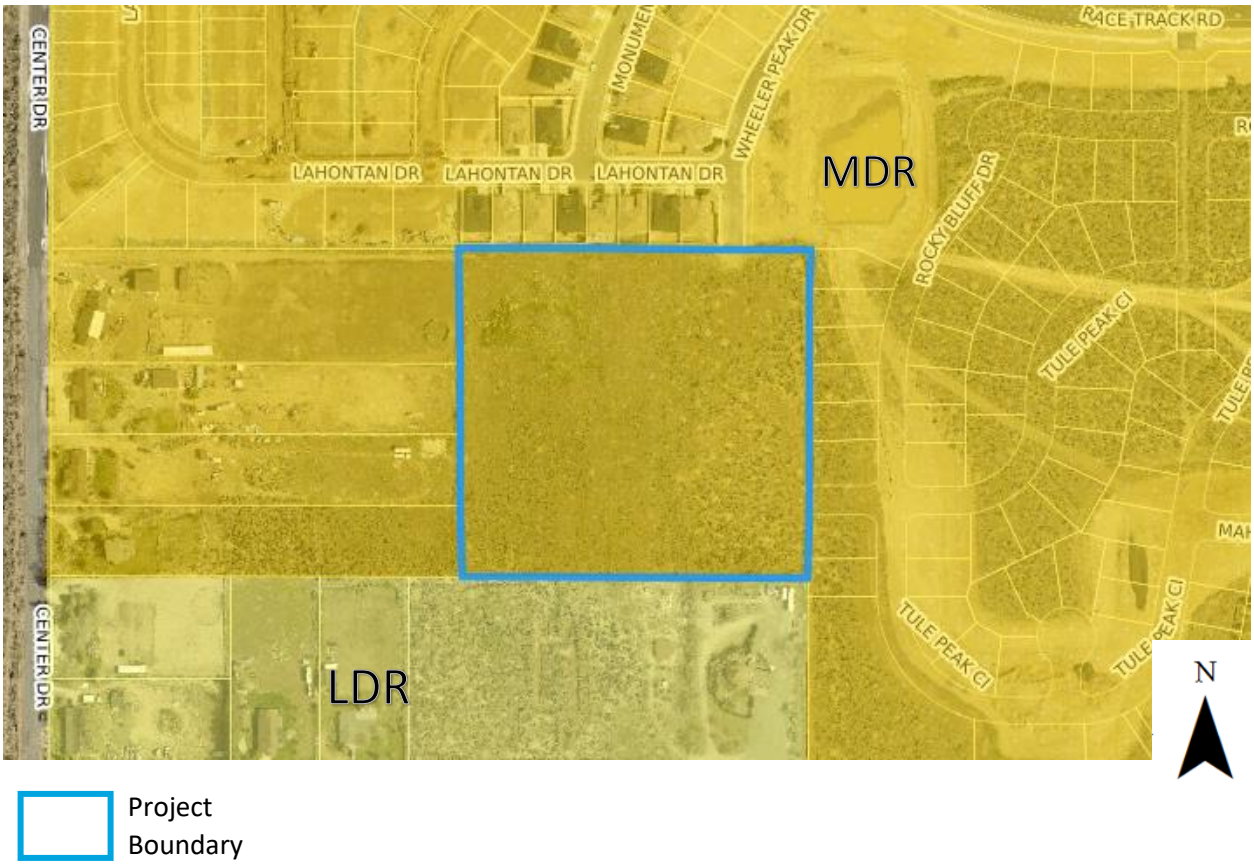
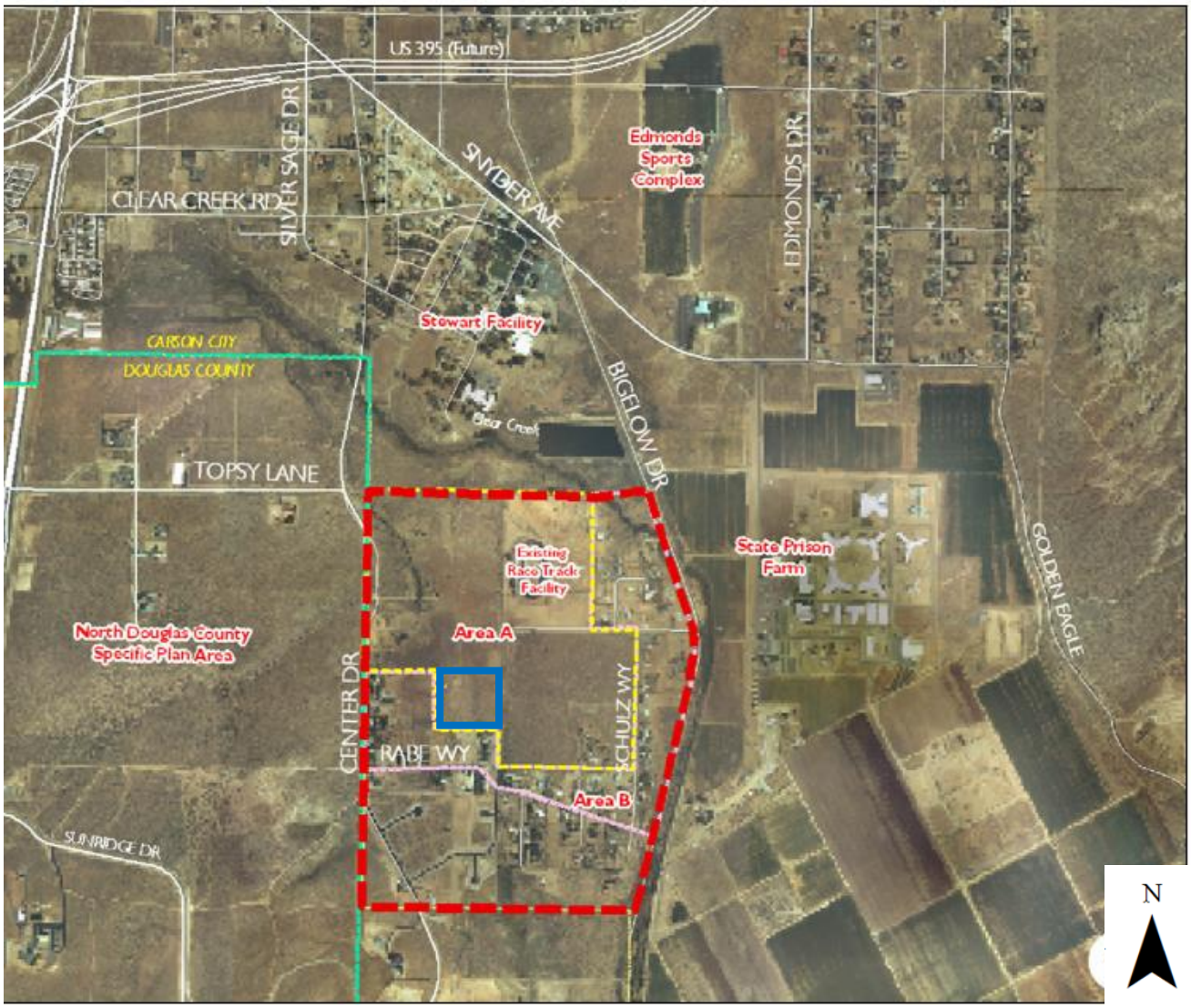


Figure 4: Existing Zoning Designation (Single Family 6,000– Specific Plan Area)

Project Boundary

Figure 5: Schulz Ranch Specific Plan Area



APPLICATION REQUEST

The enclosed application is a request for:

1. **A Tentative Subdivision Map to create 29 single family residential lots on a 7.94 acre site.**

PROJECT DESCRIPTION

Schulz Ranch Phase 5 is proposed as a single-family residential subdivision with 29 residential lots, with a minimum lot size of 6,600 sq. ft. and an average lot size of 9,465 sq. ft. A varied streetscape will be provided with a minimum of 3 distinctly different elevations in accordance with the Schulz Ranch Specific Plan. The homes are anticipated to be a mix of one-story and two-story buildings with 2 and 3 car garages. The project has been designed so that the primary entrance of each home fronts onto a public street, with driveway access.

As required by the Schulz Ranch Specific Plan, a transition in development intensity is provided to allow for a gradual transition in density between existing 1-acre lots south and west of the project area, and the more suburban pattern of the proposed development. The transition is accomplished through the placement of smaller lots on the interior, and larger buffer lots on the perimeter where adjacent to the SF1A parcels to the south and SF1A/SF6 parcels to the west.

Figure 6: Project Summary

Project Summary	
Total Area	+/- 7.94 acres
Total Number of Lots	29
Allowable Density	7.26 units/acre
Project Density	3.65 units/acre (29 units/7.94 acres)
Parking Required	58 (28 x 2 spaces per dwelling unit)
Parking Provided	58 minimum (off-street/garage)
Average Lot Size	9,465 sq. ft.

Figure 7: Site Photos

Looking southwest from Schulz Ranch Park and Wheeler Peak Drive

Looking southwest from the southern terminus of Wheeler Peak Drive

SPECIFIC PLAN DEVELOPMENT REQUIREMENTS

The proposed development will comply with the following Specific Plan Requirements.

Variety of Lot Sizes

Subdivisions within Parcel A shall provide a minimum of three distinctly different neighborhoods with different lot sizes; Smaller lots shall generally be located in the northwest portion of Area A to provide a transition to larger lots adjacent to existing one-acre residential lots. (SR-SPA 1.2)

Disclosure of Adjacent Uses

The sale of homes within Area A shall include a disclosure that properties in the vicinity are permitted to keep horses and other livestock and the property may impacted by odors, dust, noise and other affects associated with the keeping of livestock. (SR-SPA 1.4)

Varied Streetscape

To promote more interesting streetscapes and offer consumers a wider choice of housing styles, a variety of home models shall be provided. The accomplish this, the following standards shall apply: Subdivisions with less than 150 units shall provide a minimum of 3 distinctly different homes models. (SR-SPA 3.1)

Landscaping

Front yard landscaping and irrigation shall be provided by the developer. Landscaping will include a minimum of two trees (1-1/2 inch caliper deciduous or five foot high evergreen) and 12 five gallon mix of evergreen and deciduous shrubs. Evergreen trees will be planted a minimum of 20 feet from back of sidewalks. (SR-SPA 3.5)

Buffer Lots

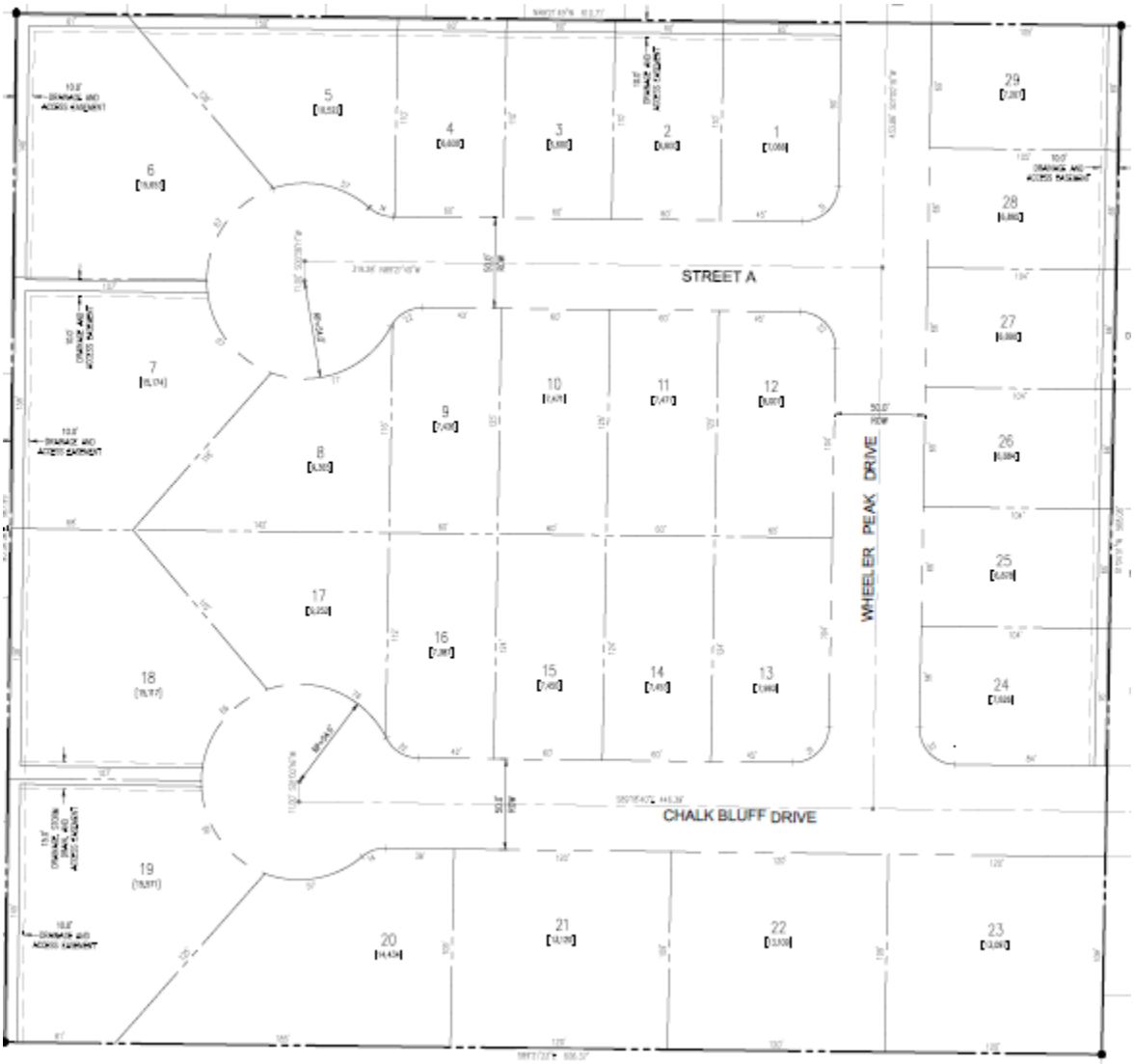
Lots abutting existing residential parcels to the south and west of the project will be limited to the development of one-story homes.

Lots abutting existing residential parcels at the perimeter of Area A shall be created as generally depicted in the conceptual plan identified with this document and shall be limited to the development of one-story homes. (SR-SPA 3.6)

Figure 7: Schulz Ranch Specific Plan Development Requirements

	Required	Provided
Density	Varies per Schulz Ranch Specific Plan; 1 unit per single family lot	3.65 units/acre (29 units/7.94 acres); 1 unit per single family lot
Lot Area	Varies per Schulz Ranch Specific Plan; lots may range from 2,500 sq. ft. to 1 acre	Lots range from 6,600 sq. ft. to 15,850 sq. ft.
Setbacks- Interior Lots	Front- 15', 20' to face of garage Side- 5' Street Side- allow adequate vehicle and pedestrian sight distance Rear- 15'	Front- 15', 20' to face of garage Side- 5' Street Side- 10' Rear- 15'
Setbacks- Buffer Lots	Front- 20' Side- 10' Street Side- allow adequate vehicle and pedestrian sight distance Rear- 30'	Front- 20' Side- 10' Street Side- N/A Rear- 30'
Height	26'	TBD
Parking	58 (29 x 2) 2 spaces per dwelling unit	58 minimum (Off-street/Garage)

Figure 8: Preliminary Site Plan (11” x 17” Site Plan provided in application package)

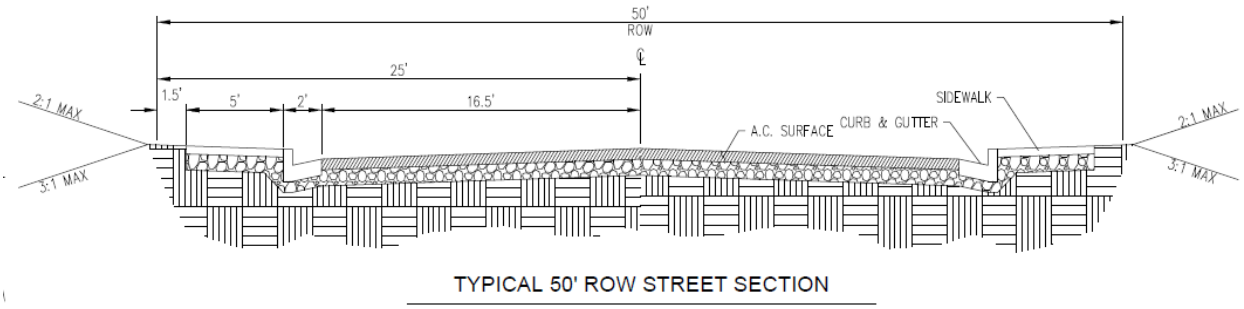


VEHICLE AND PEDESTRIAN ACCESS

Vehicular access to the site is provided from Chalk Bluff Drive and Wheeler Peak Drive, both of which are existing public streets that are proposed to be extended through the project. Pedestrian access will be provided throughout the project site through sidewalks, with a minimum width of 5’.

Within the project area, access is proposed with public streets. Carson City’s 50’ special urban street section will be utilized to align with existing streets throughout the Schulz Ranch Subdivision. As shown in Figure 9, the 50’ ROW street sections will include 5’ sidewalks on both sides of the street, on-street parking on both sides, curb and gutter, and two travel lanes.

Figure 9: Typical Street Sections



Parking

The off-street parking requirement is two spaces per dwelling, totaling 58 spaces (29 x 2). Off-street parking for each lot will be provided through two-car garages (58 spaces) and minimum 20' driveways (58 spaces; not counted towards the off-street parking requirement). In addition, there will be on-street parking on both sides of the street.

Figure 10: Parking Requirements

	Required	Provided
Parking	58 (29 x 2) 2 spaces per dwelling unit	58 minimum (Off-street/Garage)

UTILITIES AND PUBLIC SERVICES

Water

Carson City currently provides water service to the property. The proposed development will connect to the existing Carson City water main stub that is located along the eastern portion of Schulz Ranch Phase 3 just west of the intersection of Sugarloaf Peak Drive and Chalk Bluff Drive. Details are included in the Utility Plan. A Water System letter is included with details relating to Fire Hydrant Flow for the project.

Sewer

Carson City operates and maintains the City's sewer collection system and provides service to the site. This includes preventive and emergency maintenance, line replacement, line extensions and connection, development permitting and inspections. Sewage flow from the proposed 29 new units will be conveyed via public 8" diameter PVC SDR-35 sewer mains to the existing sanitary sewer stub located along the eastern portion of Schulz Ranch Phase 3 just west of the intersection of Sugarloaf Peak Drive and Chalk Bluff Drive. Details are included in the provided Preliminary Sewer Report and on the Utility Plan.

Solid Waste

Waste Management currently provides solid waste service and curbside recycling to the site. Carson City provides landfill, recycling, and hazardous waste services.

Hydrology

There are five (5) proposed drainage basins, a one (1) existing drainage basin for the development. The proposed development will provide a storm drain network that ties into an existing storm drain network that facilitates discharge to existing drainage facilities that were constructed with earlier phases of the Schulz Ranch Subdivision project.

MASTER PLAN POLICY CHECKLIST

The purpose of the Master Plan Policy Checklist is to provide a list of answers that address whether a development proposal is in conformance with the goals and objectives of the 2006 Carson City Master Plan that are related to this TPUD application. This project complies with the Master Plan and accomplishes the following objectives:

Chapter 3: A Balanced Land Use Pattern

1. It is consistent with the Master Plan Land Use Map in location and density. (1.1a)
2. It promotes growth within areas already served by community water and wastewater facilities as it is already served by existing infrastructure. (1.1b)
3. It meets the provisions of the Growth Management Ordinance. (1.1d, Municipal Code 18.12)
4. The builder, where feasible, will encourage the use of sustainable building materials and construction techniques to promote energy efficient, sustainable buildings. (1.1e)
5. The project site is not adjacent to State or Federal lands. (1.5b)
6. It is located to be adequately served by city services including fire and sheriff services and coordinated with the School District to ensure adequate provision of schools. (1.5d)
7. Friction Zones are not created. (2.1d)
8. It provides a variety of housing models and densities within the urbanized area appropriate to the development size, location, and surrounding neighborhood context. (2.2a, 9.1a)
9. It protects environmentally sensitive areas through proper setbacks, dedication, or other mechanisms in accordance with Carson City Municipal Code standards. (3.1b)
10. It is sited outside the primary floodplain (through the CLOMR-F process) and away from geologic hazards area. (3.3d,e)
11. It provides for levels of services consistent with the Land Use designation and adequate for the proposed development (Land Use table descriptions).
12. It meets the applicable policies of the Schulz Ranch Specific Plan Area. (Chapter 8)
13. Does not create land use conflicts, it provides for transition between the adjacent single family, attached single family residential, and multi-family residential neighborhoods and retail commercial development with appropriate buffers. (SR-SPA 3.6)

Chapter 5: Economic Vitality

1. The project provides a housing mix consistent with the labor force and non-labor force populations of the City. (BS-SPA 5.1j)

Chapter 6: Livable Neighborhoods and Activity Centers

1. Durable materials will be used in construction. (6.1a)
2. The project will promote variety and visual interest through the incorporation of building styles and colors, garage orientation, and other features in accordance with the Carson City Municipal Code (6.1b) (SR-SPA 3.1)
3. The project will provide variety and visual interest through the incorporation of well-articulated building facades, pedestrian-oriented streetscape, landscaping and other features consistent with the Development Standards. (6.1c) (SR-SPA 3.1)
4. It provides appropriate height, density, and setback transitions and connectivity to surrounding development to ensure compatibility with surrounding development for infill project in accordance with the Carson City Municipal Code. (6.2a, 9.3b, 9.4a) (SR-SPA 1.2)
5. The proposed project is compatible with the surrounding development of residential homes. (9.1a) (Schulz Ranch Specific Plan)
6. The proposed project is not spot zoned. (9.4b)

Chapter 7: A Connected City

1. The goals and policies contained in the City's Transportation, Transit, and Unified Pathway Master Plans are incorporated in this project as appropriate. (11.1a)

TENTATIVE SUBDIVISION MAP FINDINGS

In accordance with Carson City Municipal Code Section 17.07.005, this project has been designed to consider the following:

1. **Environmental and health laws and regulations concerning water and air pollution, the disposal of solid waste, facilities to supply water, community or public sewage disposal and, where applicable, individual systems for sewage disposal.**

   All environmental health laws and regulations regarding water, air pollution, and waste disposal will be incorporated into the proposed project.

2. **The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision.**

   Water will be provided by Carson City and conform to the applicable health standards and fulfill quantity requirements for residences.

3. **The availability and accessibility of utilities.**

   Public utilities are currently available to serve the proposed project.

4. **The availability and accessibility of public services such as schools, police protection, transportation, recreation and parks.**

   Educational services will be met by Carson City School District. Police services will be provided by the Carson City Sheriff's Department. The Regional Transportation Commission is responsible for transportation in and around the project area. Carson City Parks Department will provide recreational and parks services (in addition to the common open space and recreation area provided with the project).

5. **Access to public lands. Any proposed subdivision that is adjacent to public lands shall incorporate public access to those lands or provide an acceptable alternative.**

   N/A- The project site is not adjacent to public lands.

6. **Conformity with the zoning ordinance and land use element of the city's master plan.**

   The proposed project is in conformance with the existing Master Plan designation of Medium Density Residential and the existing zoning designation of Single Family 6000 – Specific Plan Area (SF6-SPA).

7. **General conformity with the city's master plan for streets and highways.**

   The proposed project is in conformance with the Carson City streets and highways master plan.

8. **The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision.**

   The proposed development is not large enough to trigger the need for a traffic study. The project proposes to create one new public street and to extend two existing public streets, Wheeler Peak Drive and Chalk Bluff Drive.

9. **The physical characteristics of the land such as flood plains, earthquake faults, slope and soil.**

   Topography can be described as relatively level and slopes generally toward the east. Vegetation consists of native shrubs and grasses with occasional scattered trees. The Carson Range, 5 miles west of the project site contains the Genoa Fault, a major north-trending fault dated 200 - 1000 years old. Maximum cuts are anticipated to be less than one (1) foot, and fill depths are anticipated to be less than six (6) feet.

   The site contains a FEMA flood zone X, area of minimal flood hazard. Hydrologic analyses were performed to determine the conceptual peak discharge for the 5-year and 100-year peak flow events. The site will be designed to accommodate peak flow events.

   A Geotechnical Investigation has been completed for this project and is attached. Exploration of the site identified a range from dense to very dense sand with limited amounts of silt, clay and gravel.

10. **The recommendations and comments of those entities reviewing the subdivision request pursuant to NRS 278.330 thru 278.348, inclusive.**

    All recommendations and comments provided during the review of this project, including review of the Conceptual Subdivision Map will be incorporated where applicable.

11. **The availability and accessibility of fire protection including, but not limited to, the availability and accessibility of water and services for the prevention and containment of fires including fires in wild lands.**

    The availability and accessibility of fire protection to the proposed residential units will be in compliance with Carson City Fire Department recommendations.

12. **Recreation and trail easements.**

    Recreation and trail easements are not applicable to this subdivision.

Carson City Planning Division
108 E. Proctor Street· Carson City NV 89701
Phone: (775) 887-2180 • E-mail: planning@carson.org

FOR OFFICE USE ONLY:

CCMC 17.06 and 17.07

FILE # TSM - -

TENTATIVE SUBDIVISION MAP

FEE*: $3,500.00 + noticing fee
*Due after application is deemed complete by staff

APPLICANT	PHONE #
Mark Krueger	
MAILING ADDRESS, CITY, STATE, ZIP	
5560 Longley Lane ste. 100 Reno, NV 89511	
EMAIL	
mkrueger@archcrestnv.com	
PROPERTY OWNER	PHONE #
KRUEGER FAMILY TRUST	
MAILING ADDRESS, CITY, STATE, ZIP	
748 SOUTH MEADOW PKWY #A9-337 RENO, NV 89521	
EMAIL	
mkrueger@archcrestnv.com	
APPLICANT AGENT/REPRESENTATIVE	PHONE #
Savannah Dukes, Manhard Consulting	775-321-6545
MAILING ADDRESS, CITY, STATE, ZIP	
241 Ridge Street Reno, NV 89501	
EMAIL	
sdukes@manhard.com	
Project's Assessor Parcel Number(s)	
009-311-47	
Project's Street Address	
Center Drive	
Nearest Major Cross Street(s)	
Wheeler Peak Drive	
Project's Master Plan Designation	
Medium Density Residential	
Project's Current Zoning	
Single Family 6,000 - SPA	

- ☐ **SUBMITTAL PACKET – 5 Complete Packets (1 Unbound Original and 4 Copies) including:**
  - Application Form including Applicant's Acknowledgment
  - ☐ Property Owner Affidavit
  - ☐ Copy of Conceptual Subdivision Map Letter
  - ☐ Detailed Written Project Description
  - ☐ Proposed Street Names
  - ☐ Master Plan Policy Checklist
  - ☐ Wet Stamped Tentative Map (24" x 36")
  - ☐ Reduced Tentative Map (11" x 17")
  - ☐ Conceptual Drainage Study
  - ☐ Geotechnical Report
  - ☐ Traffic Study (if applicable)
  - ☐ Documentation of Taxes Paid to Date
- ☐ **CD or USB DRIVE with complete application in PDF**
- ☐ **STATE AGENCY SUBMITTAL including:**
  - ☐ 2 Wet-stamped copies of Tentative Map (24" x 36")
  - ☐ Check made out to NDEP for $400.00 + $3/lot
  - ☐ Check made out to Division of Water Resources for $180.00 + $1/lot

Application Reviewed and Received By:

_____

Submittal Deadline: Refer to the Planning Commission application submittal schedule.

Note: Submittals must be of sufficient clarify and detail for all departments to adequately review the request. Additional information may be required.

Project Name
Schulz Ranch Phase 5

Total Project Area	Number of Lots	Smallest Parcel Size
7.94	29	6,600sf

Please provide a brief description of your proposed project below. Provide additional pages to describe your request in more detail.
A Tentative Map for 29 single family units on a 7.94 acre parcel.

NOTE: If your project is located within the Historic District or airport area, it may need to be scheduled before the Historic Resources Commission or the Airport Authority in addition to being scheduled for review by the Planning Commission. Planning staff can help you make this determination.

ACKNOWLEDGMENT OF APPLICANT: (a) I certify that the foregoing statements are true and correct to the best of my knowledge and belief; (b) I agree to fulfill all conditions established by the Board of Supervisors.

Mark Krueger, Trustee
Applicant's Signature

7-3-19
Date

PROPERTY OWNER'S AFFIDAVIT

I, Mark Krueger, Trustee, being duly deposed, do hereby affirm that I am the record owner of the
(Print Name)

subject property located at Center Drive, APN 009-311-47, Carson City, NV 89701, and that I have knowledge of, and I agree to, the
(Property Address and APN)

filing of this Tentative Subdivision Map application.

Mark Krueger, Trustee
Signature

748 South Meadows Parkway, Suite A9-337, Reno, NV 89521
Address

7-5-19
Date

Use additional page(s) if necessary for other names.

STATE OF NEVADA)
COUNTY Washoe)

On July 5th, 2019, personally appeared before me, a notary public, Mark Krueger, personally known (or proved) to me to be the person whose name is subscribed to the foregoing document and who acknowledged to me that he/she executed the foregoing document.

Saraj Lorenz
Notary Public

SARAJ LORENZ
Notary Public - State of Nevada
Appointment Recorded in Washoe County
No: 10-1383-2 - Expires Feb. 27, 2022

CARSON CITY
Capital of Nevada

Treasurer Home | Assessor Data Inquiry | Back to Last Page

Secured Tax Inquiry Detail for Parcel # 009-311-47

Property Location: CENTER DR
Billed to: BRUNI, ALDO DECEDENTS TRUST
% HILDEGARD C BRUNI, TRUSTEE
P O BOX 6929
STATELINE, NV 89449-3390

Tax Year: 2018-19
Roll #: 002412
District: 2.7
Tax Service:
Land Use Code: 120

Code Table

Outstanding Taxes:

Prior Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due

Current Year					**No Taxes Owing**
08/20/18	259.22		259.22	259.22	.00
10/01/18	258.00		258.00	258.00	.00
01/07/19	258.00		258.00	258.00	.00
03/04/19	258.00		258.00	258.00	.00
Totals:	**1,033.22**	**.00**	**1,033.22**	**1,033.22**	

Payment Cart | History

Additional Information

	2018-19	2017-18	2016-17	2015-16	2014-15
Tax Rate	3.5700	3.5700	3.5200	3.5200	3.5400
Tax Cap Percent	4.2	2.6	.2	3.2	3.0
Abatement Amount	484.92	526.56	462.67	290.05	

Carson City Planning Division
108 E. Proctor Street
Carson City, Nevada 89701
(775) 887-2180-Hearing Impaired:711
www.carson.org
www.carson.org/planning

June 4, 2019

Mark Kueger
5560 Longley Ln., Ste. 100
Reno, NV 89511

SITE INFORMATION:

Location:	End of Wheeler Peak Dr., Schulz Ranch Phase 5
APN:	009-311-47
Master Plan Designation:	Medium Density Residential
Zoning:	Single Family 6,000 (Schulz Ranch SPA)
Parcel size:	7.94 acres
Subject:	CSM-19-061

PROJECT DESCRIPTION: A Conceptual Subdivision Map to divide 7.94 acres into 29 parcels ranging in size from approximately 6,600 square feet to approximately 15,850 square feet.

The following is a summary of the staff comments based on the Conceptual Subdivision Map Review meeting held on May 21, 2019.

PLANNING DIVISION –
Contact Heather Ferris, Associate Planner, 775-283-7080

1. An application for a Tentative Subdivision Map must be submitted in accordance with the Carson City Municipal Code (CCMC) in order to subdivide the property as proposed on the Conceptual Map.

2. This project is located within the Schulz Ranch Specific Plan Area outlined in the City Master Plan. All requirements of the Schulz Ranch Specific Plan are required to be adhered to with this project. The Tentative Subdivision Map application must address all applicable requirements of the Specific Plan.

3. Per the Schulz Ranch Specific Plan, the buffer lots are required to allow only single story homes. This should be noted on the map.

4. The Conceptual Subdivision Map application information contains inconsistencies regarding the front and rear setbacks. Please be sure these inconsistencies are resolved with the Tentative Subdivision Map application.

ENGINEERING AND UTILITIES –
Contact Stephen Pottey, Project Manager, 775-283-7079

5. The street section must meet the requirements of Standard Detail C-5.1.8.1.

6. A stop sign warrant analysis will be required for the intersection of Center Drive and Race Track Rd. This must include a discussion of sight distance, crash history, traffic volumes, etc.

7. Any engineering work done on this project must be wet stamped and signed by an engineer licensed in Nevada. This will include site, grading, utility and erosion control plans as well as standard details.

8. All construction work must be to Carson City Development Standards (CCDS) and meet the requirements of the Carson City Standard Details.

9. Addresses for units will be provided during the building permit review process.

10. Fresh water must be used for dust control. Contact the Water Operations Supervisor at 775-283-7382 for more information.

11. A wet stamped water main analysis must be submitted in accordance with CCDS 15.3.1(a) to show that adequate pressure will be delivered to the meter and fire flows meet the minimum requirements of the Carson City Fire Department. Please contact Tom Grundy, P.E. at 775-283-7081 for fire flow test data.

12. A wet stamped sewer main analysis must be submitted that includes addressing the effect of flows on the existing City system. See section 15.3.2 of CCDS.

13. A private testing agreement will be necessary for the compaction and material testing in the street right of way. The form can be obtained through Carson City Permit Engineering.

14. An erosion control plan meeting section 13 of CCDS will be required in the plan set.

15. New electrical service must be underground.

16. A Technical Drainage Study meeting the requirements of section 14 of the Carson City Development Standards must be submitted with the permit and plans.

17. A Construction Stormwater Permit from the Nevada Division of Environmental Protection (NDEP) will be required for the construction of projects 1 acre or greater.

18. A Dust Control Permit from NDEP will be required for any project 5 acres or greater.

These comments are based on a very general site plan and do not indicate a complete review. All pertinent requirements of Nevada State Law, Carson City Code, and Carson City Development Standards will still apply whether mentioned in this letter or not.

FIRE DEPARTMENT –
Contact Dave Ruben, Fire Marshal, 775-283-7153

19. Project must comply with the currently adopted Carson City fire code and northern Nevada fire code amendments.

20. Cul-de-sac diameter to be 96' diameter.

21. Street width must be 20' minimum, excluding parking

22. Projects in the identified wildland urban interface area (WUI) of Carson City and must comply with the 2018 International WUI code and northern Nevada WUI amendments.

Parks, Recreation & Open Space Department-
Contact Vern Krahn, Senior Park Planner, 775-283-7343

23. Chapter 7 in the Unified Parkways Master Plan provides the City's sidewalk policies and implementation strategies for pedestrian connectivity within the development and to the City's existing sidewalk system in the Schulz Ranch Subdivision and Schulz Ranch Park. The design for the project's sidewalk system, including pedestrian cross walks must be approved by Development Engineering and the Parks, Recreation & Open Space Department.

24. The development will be subject to the collection of Residential Construction Tax (RCT), compliant with the Nevada Revised Statutes and Carson City Municipal Code (CCMC 15.60).

25. The applicant will be required to incorporate "best management practices" into their construction documents and specifications to reduce the spread of noxious weeds. The Parks, Recreation & Open Space Department is willing to assist the applicant with this aspect of their project.

Comments presented in this letter may not include all the requirements or conditions which may be placed on the project at the time of final review.

You may also note comments provided by various city staff at the conceptual review meeting that may not have been included in any written comments. If you have any questions, please feel free to contact me.

Sincerely,

Heather Ferris

Heather Ferris
Associate Planner
cc: CSM-19-061
Conceptual Map Review Committee

Master Plan Policy Checklist

Conceptual & Tentative Subdivisions, PUD's & Parcel Maps

PURPOSE

The purpose of a development checklist is to provide a list of questions that address whether a development proposal is in conformance with the goals and objectives of the 2006 Carson City Master Plan that are related to subdivisions of property. This checklist is designed for developers, staff, and decision-makers and is intended to be used as a guide only.

Development Name: Schulz Ranch Phase 5

Reviewed By: _____

Date of Review: _____

DEVELOPMENT CHECKLIST

The following five themes are those themes that appear in the Carson City Master Plan and which reflect the community's vision at a broad policy level. Each theme looks at how a proposed development can help achieve the goals of the Carson City Master Plan. A check mark indicates that the proposed development meets the applicable Master Plan policy. The Policy Number is indicated at the end of each policy statement summary. Refer to the Comprehensive Master Plan for complete policy language.

CHAPTER 3: A BALANCED LAND USE PATTERN

The Carson City Master Plan seeks to establish a balance of land uses within the community by providing employment opportunities, a diverse choice of housing, recreational opportunities, and retail services.

Is or does the proposed development:

- ☑ Consistent with the Master Plan Land Use Map in location and density?
- ☑ Meet the provisions of the Growth Management Ordinance (1.1d, Municipal Code 18.12)?
- ☑ Encourage the use of sustainable building materials and construction techniques to promote water and energy conservation (1.1e, f)?
- N/A ☐ Located in a priority infill development area (1.2a)?
- N/A ☐ Provide pathway connections and easements consistent with the adopted Unified Pathways Master Plan and maintain access to adjacent public lands (1.4a)?

N/A ☐ Encourage cluster development techniques, particularly at the urban interface with surrounding public lands, as appropriate, and protect distinctive site features (1.4b, c, 3.2a)?

N/A ☐ At adjacent county boundaries, coordinated with adjacent existing or planned development with regards to compatibility, access and amenities (1.5a)?

☑ Located to be adequately served by city services including fire and sheriff services, and coordinated with the School District to ensure the adequate provision of schools (1.5d)?

N/A ☐ In identified Mixed-Use areas, promote mixed-use development patterns as appropriate for the surrounding context consistent with the land use descriptions of the applicable Mixed-Use designation, and meet the intent of the Mixed-Use Evaluation Criteria (2.1b, 2.2b, 2.3b, Land Use Districts, Appendix C)?

☑ Provide a variety of housing models and densities within the urbanized area appropriate to the development size, location and surrounding neighborhood context (2.2a, 9.1a)?

☑ Protect environmentally sensitive areas through proper setbacks, dedication, or other mechanisms (3.1b)?

N/A ☐ If at the urban interface, provide multiple access points, maintain defensible space (for fires) and are constructed of fire resistant materials (3.3b)?

☑ Sited outside the primary floodplain and away from geologic hazard areas or follow the required setbacks or other mitigation measures (3.3d, e)?

☑ Provide for levels of services (i.e. water, sewer, road improvements, sidewalks, etc.) consistent with the Land Use designation and adequate for the proposed development (Land Use table descriptions)?

☑ If located within an identified Specific Plan Area (SPA), meet the applicable policies of that SPA (Land Use Map, Chapter 8)?

CHAPTER 4: EQUITABLE DISTRIBUTION OF RECREATIONAL OPPORTUNITIES

The Carson City Master Plan seeks to continue providing a diverse range of park and recreational opportunities to include facilities and programming for all ages and varying interests to serve both existing and future neighborhoods.

Is or does the proposed development:

N/A ☐ Provide park facilities commensurate with the demand created and consistent with the City's adopted standards (4.1b, c)?

N/A ☐ Consistent with the Open Space Master Plan and Carson River Master Plan (4.3a)?

CHAPTER 5: ECONOMIC VITALITY

The Carson City Master Plan seeks to maintain its strong diversified economic base by promoting principles which focus on retaining and enhancing the strong employment base, include a broader range of retail services in targeted areas, and include the roles of technology, tourism, recreational amenities, and other economic strengths vital to a successful community.

Is or does the proposed development:

N/A ☐ Incorporating public facilities and amenities that will improve residents' quality of life (5.5e)?

N/A ☐ Promote revitalization of the Downtown core (5.6a)?

N/A ☐ Incorporate additional housing in and around Downtown, including lofts, condominiums, duplexes, live-work units (5.6c)?

CHAPTER 6: LIVABLE NEIGHBORHOODS AND ACTIVITY CENTERS

The Carson City Master Plan seeks to promote safe, attractive and diverse neighborhoods, compact mixed-use activity centers, and a vibrant, pedestrian-friendly Downtown.

Is or does the proposed development:

☑ Promote variety and visual interest through the incorporation of varied lot sizes, building styles and colors, garage orientation and other features (6.1b)?

☑ Provide variety and visual interest through the incorporation of well-articulated building facades, clearly identified entrances and pedestrian connections, landscaping and other features consistent with the Development Standards (6.1c)?

☑ Provide appropriate height, density and setback transitions and connectivity to surrounding development to ensure compatibility with surrounding development for infill projects or adjacent to existing rural neighborhoods (6.2a, 9.3b 9.4a)?

N/A ☐ If located in an identified Mixed-Use Activity Center area, contain the appropriate mix, size and density of land uses consistent with the Mixed-Use district policies (7.1a, b)?

N/A ☐ If located Downtown:

- ☐ Integrate an appropriate mix and density of uses (8.1a, e)?
- ☐ Include buildings at the appropriate scale for the applicable Downtown Character Area (8.1b)?
- ☐ Incorporate appropriate public spaces, plazas and other amenities (8.1d)?

CHAPTER 7: A CONNECTED CITY

The Carson City Master Plan seeks promote a sense of community by linking its many neighborhoods, employment areas, activity centers, parks, recreational amenities and schools with an extensive system of interconnected roadways, multi-use pathways, bicycle facilities, and sidewalks.

Is or does the proposed development:

N/A ☐ Promote transit-supportive development patterns (e.g. mixed-use, pedestrian-oriented, higher density) along major travel corridors to facilitate future transit (11.2b)?

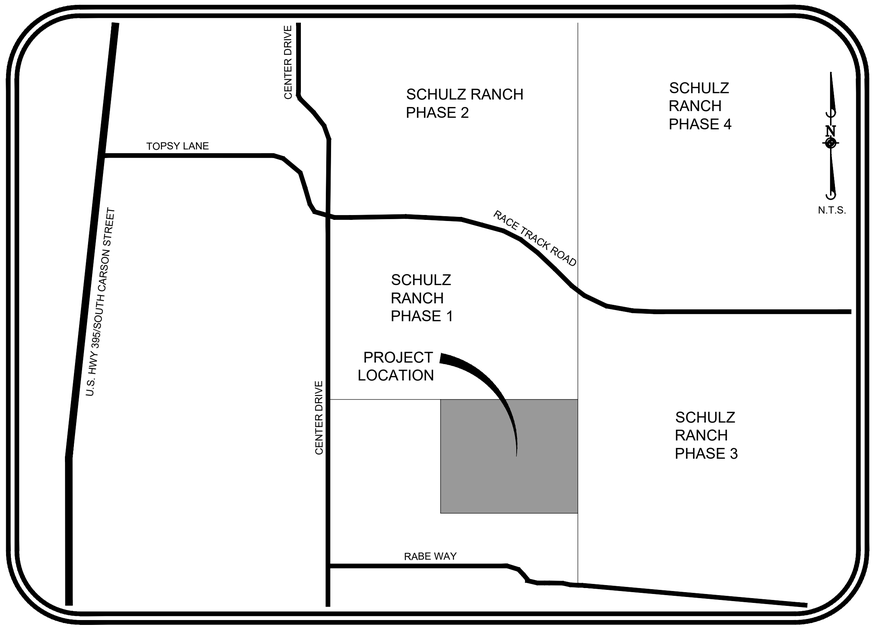
☑ Maintain and enhance roadway connections and networks consistent with the Transportation Master Plan (11.2c)?

☑ Provide appropriate pathways through the development and to surrounding lands, including parks and public lands, consistent with the Unified Pathways Master Plan (12.1a, c)?

TENTATIVE MAP
FOR
SCHULZ RANCH PHASE 5
CARSON CITY, NEVADA

ABBREVIATIONS

AGG.	AGGREGATE GRAVEL
B.A.M.	BIT. AGG. MIXTURE
B-B	BACK TO BACK
BC	BEGINNING OF CURB
BFC	BACK FACE OF CURB
BIT.	BITUMINOUS CONCRETE
BM	BENCHMARK
B.O.	BY OTHERS
B/P	BOTTOM OF PIPE
BVC	BEGINING OF VERTICAL CURVE
BW	BOTTOM OF WALL
CB	CATCH BASIN
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CNTRL	CONTROL
CONC.	CONCRETE
CY	CUBIC YARD
D	DITCH
DIA.	DIAMETER
DIP	DUCTILE IRON PIPE
DIWM	DUCTILE IRON WATER MAIN
DT	DRAIN TILE
EL	ELECTRIC
EC	END OF CURVE
E-E	EDGE TO EDGE
ELEV.	ELEVATION
EP	EDGE OF PAVEMENT
EVC	END OF VERTICAL CURVE
EX.	EXISTING
F-F	FACE TO FACE
FES	FLARED END SECTION
FF	FINISHED FLOOR
FL	FLOW LINE
FLG	FLANGE
FM	FORCE MAIN
FG	FINISH GRADE
GAS	GAS
GW	GUY WIRE
HDWL	HEADWALL
HH	HANDHOLE
HP	HIGH POINT
HWL	HIGH WATER LEVEL
HYD.	HYDRANT
INL	INLET
INV.	INVERT
I.E.	INVERT ELEVATION
IP	IRON PIPE
LP	LOW POINT
MAX.	MAXIMUM
MB	MAILBOX
MIN.	MINIMUM
MJ	MECHANICALLY RESTRAINED JOINT
NWL	NORMAL WATER LEVEL
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PO	PUSH ON
PP	POWER POLE
PROP.	PROPOSED
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
P	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT-OF-WAY
RR	RAILROAD
SS	SANITARY SEWER
SF	SQUARE FOOT
SHLD.	SHOULDER
SL	STREET LIGHT
SSMH	SANITARY SEWER MANHOLE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
STA.	STATION
SY	SQUARE YARDS
TBR	TO BE REMOVED
T	TELEPHONE
TC	TOP OF CURB
T/P	TOP OF PIPE
TW	TOP OF WALL
TRANS	TRANSFORMER
VB	VALVE BOX
VV	VALVE VAULT
WL	WATER LEVEL
WM	WATER MAIN



VICINITY MAP

INDEX OF SHEETS

PROJECT DATA

ASSESSOR'S PARCEL #:	009-311-47
TOTAL PROJECT AREA:	7.94 ACRES
LOT AREA:	6.30 ACRES
RIGHT-OF-WAY AREA:	1.64 ACRES
TOTAL LOTS:	29
MIN. LOT SIZE:	6,600 S.F.
MAX. LOT SIZE:	15,653 S.F.
AVERAGE LOT SIZE:	9,465 S.F.
EXISTING ZONING:	SF6-SPA
EXISTING MASTER PLAN DESIGNATION:	MDR
PROPOSED DENSITY:	3.65 UNITS/AC

UTILITY PROVIDERS

CABLE TV:	CHARTER SPECTRUM
ELECTRIC:	NV ENERGY
GAS:	SOUTHWEST GAS
SEWER:	CARSON CITY PUBLIC WORKS
SOLID WASTE:	CAPITOL SANITATION
TELEPHONE:	A.T.&T.
WATER:	CARSON CITY PUBLIC WORKS

OWNER/DEVELOPER
KRUEGER FAMILY TRUST
5560 LONGLEY LANE, SUITE 100
RENO, NV 89511
VOICE: (775) 232-4313
EMAIL: MKrueger@archcrestnv.com

CIVIL ENGINEER
MANHARD CONSULTING, L.T.D.
241 RIDGE ST., SUITE 400
RENO, NV 89521
CONTACT: DANIEL BIRCHFIELD
(775) 746-3500 PHONE
(775) 746-3520 FAX

LAND SURVEYOR
MANHARD CONSULTING, L.T.D.
241 RIDGE ST., SUITE 400
RENO, NV 89501
CONTACT: JERRY JUAREZ
(775) 746-3500 PHONE
(775) 746-3520 FAX

SOILS ENGINEER
WOOD RODGERS, INC.
1361 CORPORATE BLVD.
RENO, NEVADA 89502
(775) 823-4068 PHONE
(775) 823-4066 FAX

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BASIS OF BEARINGS

NEVADA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD27, CARSON CITY MODIFIED AS DETERMINED FROM G.P.S. OBSERVATIONS OF THE FOUND MONUMENTS "HILL" AND 230103L", USING THE GROUND COORDINATES AS PUBLISHED BY THE CITY OF CARSON. COMBINED GROUND TO GRID SCALE FACTOR: 0.9997992943. ALL DISTANCE SHOWN HEREON ARE GROUND DISTANCES. TO TRANSLATE FROM NAD27 TO NAD83/94 MOVE GRID COORDINATES NORTH 09°11'43" EAST A DISTANCE OF 13,294,177.17 FEET.

BASIS OF ELEVATION

ELEVATIONS ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), AS TAKEN THE "CARSON CITY MAPPING PROJECT CONTROL SURVEY 1998", AS PREPARED BY STANTEC CONSULTING INC. CONTROL POINT NO. 60, IDENTIFIED AS FOUND CONTROL POINT "HILL" PER CARSON CITY HORIZONTAL CONTROL NETWORK, WAS USED WITH A PUBLISHED ELEVATION OF 4770.37 FEET. CITY OF CARSON CONTROL POINT "HILL" IS A 1-1/2" ALUMINUM CAP STAMPED "HILL", APPROXIMATELY 245-FEET WEST AND 5 FEET NORTH OF THE INTERSECTION OF A DIRT ROAD AND CENTER ROAD.

LEGAL DESCRIPTION

A PARCEL OF LAND SITUATE WITHIN A PORTION OF THE NW QUARTER (¼) OF THE SE QUARTER (¼) OF SECTION FIVE (5) OF TOWNSHIP FOURTEEN (14) NORTH, RANGE TWENTY (20) EAST, MOUNT DIABLO MERIDIAN, COUNTY OF CARSON CITY, STATE OF NEVADA.

DATE | REVISION | DRAWN BY | CHECK BY

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SCHULZ RANCH PHASE 5
CARSON CITY, NEVADA
TITLE SHEET

PROFESSIONAL ENGINEER - STATE OF NEVADA
DANIEL C. BIRCHFIELD
Exp: 12-31-20
CIVIL
No. 20844

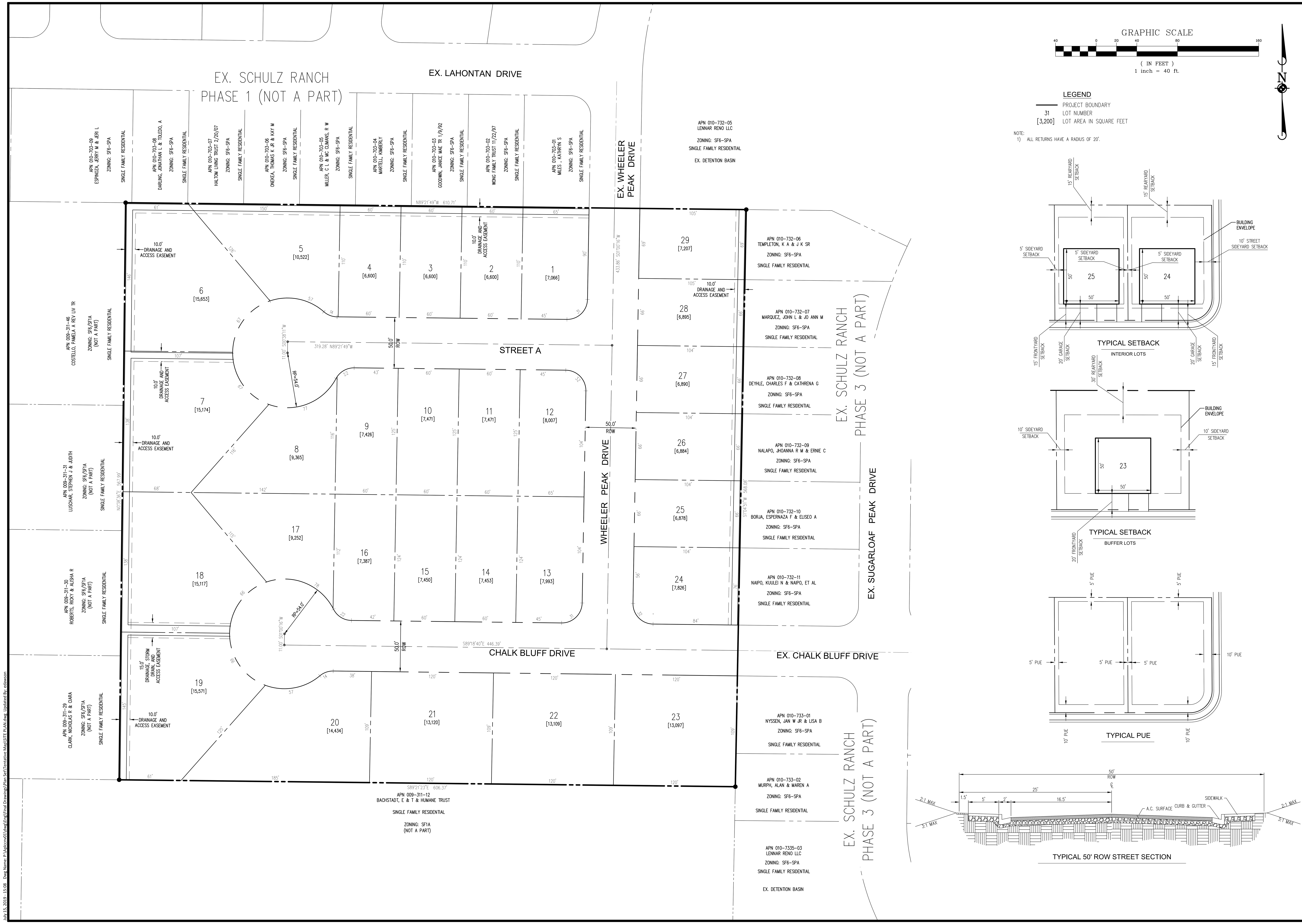
7/15/19

PROJ. MGR.:	DCB
PROJ. ASSOC.:	HED
DRAWN BY:	HED
DATE:	JUL 2019
SCALE:	AS SHOWN

SHEET 1 OF 5

APL.CCNV

TENTATIVE MAP



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SCHULZ RANCH PHASE 5

CARSON CITY, NEVADA

SITE PLAN

PROFESSIONAL ENGINEER - STATE OF NEVADA
DANIEL C. BIRCHFIELD
Exp: 12-31-20
CIVIL
No. 20844
7/15/19

PROJ. MGR.: DCB
PROJ. ASSOC.: HED
DRAWN BY: HED
DATE: JUL 2019
SCALE: AS SHOWN

SHEET 2 OF 5

APL.CCNV

TENTATIVE MAP

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NOTE:
1) ADD 4000 FEET TO ALL SPOT ELEVATIONS
2) THE PROJECT LIES WITHIN FLOOD ZONE X AS SHOWN ON FEMA PANEL 3200010207E. EFFECTIVE ON 01/20/2010

LEGEND

- STORM DRAIN W/ DIRECTION INDICATOR (DASHED IF EXISTING)
- MANHOLE (HOLLOW IF EXISTING)
- CATCH BASIN (HOLLOW IF EXISTING)
- A.C. PAVEMENT AREA
- CONCRETE AREA
- GRADE BREAK
- FG=706.2 PROPOSED LOT EXTERNAL FINISHED GRADE ELEVATION
- 4700 EXISTING CONTOUR LINE
- 45.0 EP PROPOSED ELEV. @ EDGE OF PAVEMENT
- 45.0 GB PROPOSED ELEV. @ GRADE BREAK
- 45.0 HP PROPOSED ELEV. @ HIGH POINT
- 45.0 LP PROPOSED ELEV. @ LOW POINT
- 45.0 FL PROPOSED ELEV. @ FLOW LINE
- 45.0 FG PROPOSED ELEV. @ FINISHED GRADE
- PROPOSED PEDESTRIAN RAMP
- CUT OR FILL SLOPE

N

EX. SCHULZ RANCH PHASE 1 (NOT A PART)

EX. LAHONTAN DRIVE

EX. WHEELER PEAK DRIVE

BANNER PEAK DRIVE

WHEELER PEAK DRIVE

CHALK BLUFF DRIVE

EX. CHALK BLUFF DRIVE

EX. SUGARLOAF PEAK DRIVE

EX. SCHULZ RANCH PHASE 3 (NOT A PART)

APN 010-703-09 ESPINOZA, JERRY M & JERI L

APN 010-703-08 DARLING, JONATHAN L & TOLEDO, A

APN 010-703-07 HALTOM LIVING TRUST 7/20/07

APN 010-703-06 ONDEKA, THOMAS K JR & KAY M

APN 010-703-05 MILLER, C L & MC CLIMANS, R W

APN 010-703-04 MARTELL, KIMBERLY

APN 010-703-03 GODOWN, JANICE MAE TR 1/9/92

APN 010-703-02 WONG FAMILY TRUST 11/22/97

APN 010-703-01 MILES J, KATHRYN S

APN 010-732-05 LENNAR RENO LLC
EX. DETENTION BASIN

APN 010-732-06 TEMPLETON, K A & J K SR

APN 010-732-07 MARQUEZ, JOHN L & JO ANN M

APN 010-732-08 DEYHLE, CHARLES F & CATHRENA G

APN 010-732-09 NALAPO, JHOANNA R M & ERNIE

APN 010-732-10 BORJA, ESPERNAZA F & ELISEO A

APN 010-732-11 NAIPO, KUULEI N & NAIPO, ET AL

APN 010-733-01 NYSSEN, JAN W JR & USA B

APN 010-733-02 MURPH, ALAN & MAREN A

APN 010-7335-03 LENNAR RENO LLC
EX. DETENTION BASIN

APN 009-311-31 LUSCHAR, STEPHEN J & JUDITH (NOT A PART)

APN 009-311-30 ROBERTS, RICKY & ALISHA R (NOT A PART)

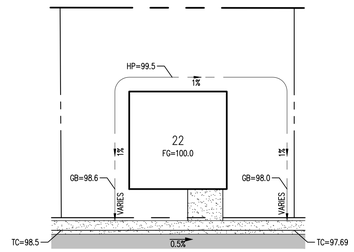
APN 009-311-29 CLARK, NICHOLAS R & CIARA (NOT A PART)

APN 009-311-4F COSTELLO, PAMELA A REV LIV TR (NOT A PART)

APN 009-311-12 BACHSTADT, E & T & HUMANE TRUST (NOT A PART)

1 FG=705.1 | 2 FG=705.7 | 3 FG=705.4 | 4 FG=705.1 | 5 FG=705.1 | 6 FG=704.6 | 7 FG=704.7 | 8 FG=705.5 | 9 FG=705.4 | 10 FG=705.8 | 11 FG=706.2 | 12 FG=706.2 | 13 FG=704.5 | 14 FG=704.9 | 15 FG=704.9 | 16 FG=704.9 | 17 FG=704.8 | 18 FG=703.4 | 19 FG=704.1 | 20 FG=704.6 | 21 FG=705.1 | 22 FG=704.8 | 23 FG=704.1 | 24 FG=704.4 | 25 FG=705.1 | 26 FG=705.8 | 27 FG=706.4 | 28 FG=706.7 | 29 FG=707.1

TYPICAL TYPE A INTERIOR LOT GRADING



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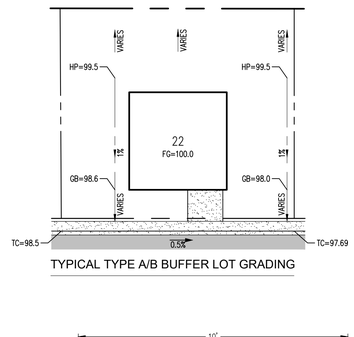

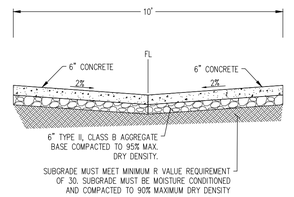

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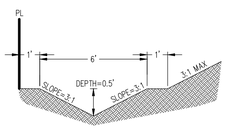

SECTION B - B

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SCHULZ RANCH PHASE 5

CARSON CITY, NEVADA

GRADING PLAN

PROFESSIONAL ENGINEER - STATE OF NEVADA
DANIEL C. BIRCHFIELD
Expr 12-31-20
CIVIL
No. 20844

7/15/19

PROJ. MGR.:	DCB
PROJ. ASSOC.:	HED
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SHEET 3 OF 5

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TENTATIVE MAP

July 15, 2019 - 15:10 Dwg Name: P:\Ajdocs\051\dwg\Eng\Final Drawings\Plan Set\Tentative Map\GRADING PLAN.dwg Updated By: edawson

EX. SCHULZ RANCH PHASE 1 (NOT A PART)

EX. LAHONTAN DRIVE

APN 010-703-09 ESPINOZA, JERRY M & JERI L

APN 010-703-08 DARLING, JONATHAN L & TOLEDO, A

APN 010-703-07 HALTOM LIVING TRUST 2/20/07

APN 010-703-06 ONEKEA, THOMAS K JR & KAY M

APN 010-703-05 MILLER, C L & MC CLIMANS, R W

APN 010-703-04 MARTELL, MARGERLY

APN 010-703-03 GOODMAN, JANICE MAE TR 1/9/92

APN 010-703-02 WONG FAMILY TRUST 11/22/97

APN 010-703-01 MILES , KATHRYN S

EX. CATCH BASIN

EXISTING 8" WATER MAIN

EXISTING STORM DRAIN MAIN

EX. CATCH BASIN

EX. WHEELER PEAK DRIVE

APN 010-732-05 LENNAR RENO LLC

EX. DETENTION BASIN

PROPOSED TYPE 3 CATCH BASIN

PROPOSED STORM DRAIN MANHOLE

PROPOSED SANITARY SEWER MANHOLE

CONNECT TO EX. 8" WATER MAIN

PROPOSED WATER MAIN

APN 009-311-46 COSTELLO, PAMELA A REV LIV TR (NOT A PART)

APN 010-732-06 TEMPLETON, K A & J K SR

APN 010-732-07 MARQUEZ, JOHN L & JO ANN M

APN 010-732-08 DEYHLE, CHARLES F & CATHRENA G

APN 010-732-09 NALAPO, JHOANNA R M & ERNIE C

APN 010-732-10 BORJA, ESPERNAZA F & ELISEO A

APN 010-732-11 NAIPO, KUULEI N & NAIPO, ET AL

PROPOSED STORM DRAIN MANHOLE

PROPOSED CATCH BASIN

PROPOSED SANITARY SEWER MANHOLE

BANNER PEAK DRIVE

PROPOSED WATER MAIN

PROPOSED STORM DRAIN MANHOLE

PROPOSED SANITARY SEWER MANHOLE

PROPOSED WATER MAIN

EX. WHEELER PEAK DRIVE

APN 009-311-31 LUSCHAR, STEPHEN J & JUDITH (NOT A PART)

APN 009-311-30 ROBERTS, RICKY & ALISHA R (NOT A PART)

PROPOSED STORM DRAIN MANHOLE

PROPOSED CATCH BASIN

PROPOSED HEADWALL

PROPOSED SANITARY SEWER MANHOLE

CHALK BLUFF DRIVE

PROPOSED WATER MAIN

PROPOSED SANITARY SEWER MANHOLE

PROPOSED WATER MAIN

PROPOSED CATCH BASIN

PROPOSED STORM DRAIN MANHOLE

PROPOSED STORM DRAIN MANHOLE

APN 009-311-29 CLARK, NICHOLAS R & CIARA (NOT A PART)

APN 009-311-12 BACHSTADT, E & T & HUMANE TRUST (NOT A PART)

EX. SCHULZ RANCH PHASE 3 (NOT A PART)

EX. SUGARLOAF PEAK DRIVE

PROPOSED TYPE 3 CATCH BASIN

PROPOSED TIE-IN TO EXISTING 18" STORM DRAIN STUB

EX. CATCH BASIN

EXISTING STORM DRAIN MAIN

EXISTING SANITARY SEWER MAIN

EX. CHALK BLUFF DRIVE

EXISTING WATER MAIN

PROPOSED TIE-IN TO EXISTING 8" SANITARY SEWER STUB

CONNECT TO EX. 8" WATER MAIN

EX. CATCH BASIN

APN 010-733-01 NYSSEN, JAN W JR & LISA B

APN 010-733-02 MURPH, ALAN & MAREN A

APN 010-733-03 LENNAR RENO LLC

EX. DETENTION BASIN

EX. SCHULZ RANCH PHASE 3 (NOT A PART)

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

- SD — PROPOSED STORM DRAIN W/ DIRECTION
- SS — PROPOSED SANITARY SEWER W/ DIRECTION
- W — PROPOSED WATER MAIN (DASHED IF EXISTING)
- MANHOLE – STORM DRAIN (HOLLOW IF EXISTING)
- MANHOLE – SANITARY DRAIN (HOLLOW IF EXISTING)
- CATCH BASIN (HOLLOW IF EXISTING)
- PROJECT BOUNDARY
- 148 LOT NUMBER

N

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DATE | REVISION

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SCHULZ RANCH PHASE 5
CARSON CITY, NEVADA
UTILITY PLAN

DANIEL C. BIRCHFIELD
PROFESSIONAL ENGINEER – STATE OF NEVADA
Exp: 12-31-20
CIVIL
No. 20844
7/15/19

PROJ. MGR.:	DCB
PROJ. ASSOC.:	HED
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DATE:	JUL 2019
SCALE:	AS SHOWN

SHEET 4 OF 5

APL.CCNV

TENTATIVE MAP

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EX. SCHULZ RANCH PHASE 1
(NOT A PART)

EX. LAHONTAN DRIVE

EX. WHEELER PEAK DRIVE

BANNER PEAK DRIVE

WHEELER PEAK DRIVE

SUGARLOAF PEAK DRIVE

CHALK BLUFF DRIVE

EX. CHALK BLUFF DRIVE

EX. SCHULZ RANCH PHASE 3
(NOT A PART)

EX. SCHULZ RANCH PHASE 3
(NOT A PART)

EX. SCHULZ RANCH PHASE 3
(NOT A PART)

EX. CATCH BASIN
INLET PROTECTION (TYP.)
EXISTING 15" STORM DRAIN MAIN
EX. CATCH BASIN
PROPOSED TYPE 3 CATCH BASIN
CONSTRUCTION ENTRANCE
CONCRETE WASHOUT AREA
PROPOSED STORM DRAIN MANHOLE
INLET PROTECTION (TYP.)
PROPOSED CATCH BASIN
PROPOSED STORM DRAIN MANHOLE
SILT FENCE
PROPOSED CATCH BASIN
PROPOSED STORM DRAIN MANHOLE
INLET PROTECTION (TYP.)
PROPOSED HEADWALL
PROPOSED CATCH BASIN
PROPOSED STORM DRAIN MANHOLE
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PROPOSED TIE-IN TO EXISTING 18" STORM DRAIN STUB
EX. CATCH BASIN
INLET PROTECTION (TYP.)
EXISTING STORM DRAIN MAIN
CONSTRUCTION ENTRANCE
INLET PROTECTION (TYP.)
SILT FENCE

APN 010-732-09 ESPINOZA, JERRY M & JERI L
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APN 010-703-07 HALTOM LIVING TRUST 2/20/07
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APN 010-733-02 MURPH, ALAN & MAREN A
APN 010-7335-03 LENNAR RENO LLC
EX. DETENTION BASIN
APN 009-311-46 COSTELLO, PAMELA A REV LIV TR (NOT A PART)
APN 009-311-31 LUSCHAR, STEPHEN J & JUDITH (NOT A PART)
APN 009-311-30 ROBERTS, ROY JR & ALISIA R (NOT A PART)
APN 009-311-29 CLARK, NICHOLAS R & CIARA (NOT A PART)
APN 009-311-12 BACHSTADT, E & T & HUMANE TRUST (NOT A PART)

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

LEGEND
- PROPOSED STORM DRAIN W/ DIRECTION
- MANHOLE – STORM DRAIN (HOLLOW IF EXISTING)
- CATCH BASIN (HOLLOW IF EXISTING)
- PROJECT BOUNDARY
- 148 LOT NUMBER
- CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT AREA
- INLET PROTECTION
- SILT FENCE

N

DATE	REVISION	DRAWN BY	CHECK BY

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841 Ridge Street, Suite 400, Reno, NV 89501 ph:775.748.3500 fx:775.748.3590 manhard.com
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Construction Managers • Environmental Scientists • Landscape Architects • Planners

SCHULZ RANCH PHASE 5
CARSON CITY, NEVADA
EROSION CONTROL PLAN

DANIEL C. BIRCHFIELD
PROFESSIONAL ENGINEER – STATE OF NEVADA
Exp: 12-31-20
CIVIL
No. 20844
7/15/19

PROJ. MGR.:	DCB
PROJ. ASSOC.:	HED
DRAWN BY:	HED
DATE:	JUL 2019
SCALE:	AS SHOWN

SHEET 5 OF 5
APL.CCNV

TENTATIVE MAP

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Manhard CONSULTING LTD

CONCEPTUAL DRAINAGE STUDY

FOR

SCHULZ RANCH PHASE 5

APN: 009-311-47

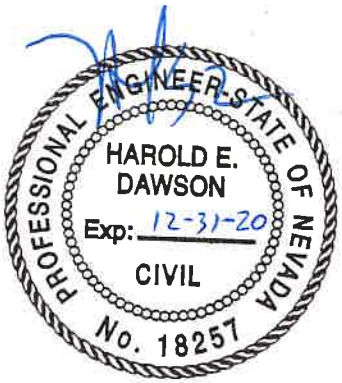
CARSON CITY, NEVADA 89706

Prepared for:

Krueger Family Trust
5560 Longley Lane, Suite 100
Reno, Nevada 89511

Prepared by:

Manhard Consulting Ltd.
241 Ridge Street, Suite 400
Reno, NV 89501



7-16-19

Project: APL.CCNV01

TABLE OF CONTENTS

I. INTRODUCTION

A. The following report is a Conceptual Drainage Study for Schulz Ranch Phase 5 dated July 2019.

B. The contact person for the preparation of this report is Harold E. Dawson, P.E. at Manhard Consulting, 775-746-3500.

C. The project description consists of construction of 29 single-family homes with associated roadways.

D. The existing Schulz Ranch Phase 5 parcel number is APN 009-311-47 and is 7.94 acres in size and slopes from the north to the south at approximately 2.0% within the confines of the proposed project site. The property lies within East ½ of Section 5, Township 14 North, Range 20 East, M.D.B. & M. in Carson City, Nevada. Currently, the parcel is undeveloped.

The subject property is currently zoned SF6 within Carson City and is adjacent to the existing Schulz Ranch Phases:

North: Developed Single Family Homes (Zoning: SF6)
South: Developed Single Family Home Parcel (Zoning: SF1A)
East: Developed Single Family Homes (Zoning: SF6)
West: Developed Single Family Home Parcels (Zoning: SF6)

E. Reference the included Vicinity Map (Figure #1).

II EXISTING AND PROPOSED HYDROLOGY

A. The intent of this hydrology study is to establish existing and proposed conditions for the proposed single-family home project. The detention basin and subsequent storm drain infrastructure constructed during Schulz Ranch Phase 1, 2, and 3 projects mitigates the created discharge from the Schulz Ranch Phase 5 proposed project.

There is a total of 1 existing drainage basin, 5 proposed drainage basins for the proposed project. Basins are represented by their boundary as well as existing and proposed conditions. Reference Figure 2 (Existing Hydrologic Conditions) and Figure 3 (Proposed Hydrologic Conditions) for a visual representation of existing and proposed.

The Rational Method was used to determine storm flow discharge. Data used for the Rational Method was derived from the following: NOAA Atlas 14 precipitation intensity values for a 10-minute time of concentration and Runoff curve numbers are from the 2009 Truckee Meadows Regional Drainage Manual.

The following is a description of each basin and its data characteristics. EX. represents the existing basin and P. represents the proposed basin.

BASINS EX-1 – The basin total 7.94 acres in size. A runoff coefficient of 0.20 was used for the 5-year storm event, and a runoff coefficient value of 0.50 was used for the 100-year storm event (based on undeveloped range area) for the existing conditions. Using a 10-minute time of concentration, the intensity value for the 5-year storm event is 1.42 inches/hour, and the intensity value for the 100-year storm event is 3.46 inches/hour, respectively. Discharge sheet flows across the proposed project site in the existing condition in a north to south direction at approximately 2%.

BASINS P-1 TO P-5 – The basins total 7.94 acres in size. A runoff coefficient of 0.50 was used for the 5-year storm event, and a runoff coefficient value of 0.65 was used for the 100-year storm event (based 1/4-acre Average Lot Size) for the proposed conditions. Using a 10-minute time of concentration, the intensity value for the 5-year storm event is 1.42 inches/hour, and the intensity value for the 100-year storm event is 3.46 inches/hour, respectively. Discharge flows along the proposed roads at a slope of 0.5% to 1.0% and enters the proposed storm drain network at various catch basin locations ending up in the existing detention basin located in the southwest corner of Schulz Ranch Phase 3. Residual discharge will be picked up in a concrete valley gutter at the rear of lots 6, 7, 18, and 19 and will be conveyed to an opening in the proposed storm drain network. Overflow areas have been provided at the low points. Local streets have

been calculated to determine they can provide conveyance of discharge in the 5-year and 100-year conditions. Reference Appendix A for street section information.

B. Below are the analyzed values for the existing and proposed 5-yr and 100-yr storm events.

CFS	AREA (acres)	EXISTING (5-YR)	EXISTING (100-YR)	PROPOSED (5-YR)	PROPOSED (100-YR)
EX-1	7.94	2.3	13.7		
P-1	2.99			2.1	6.7
P-2	2.08			1.5	4.7
P-3	0.69			0.5	1.6
P-4	1.34			1.0	3.0
P-5	0.94			0.7	2.1
TOTAL:		2.3	13.7	5.7	18.1

C. There are no existing drainage problems for the proposed project site.

D. Currently, the project site lies in a Zone X (area of minimal flood hazard).

III. PROPOSED DRAINAGE FACILITIES

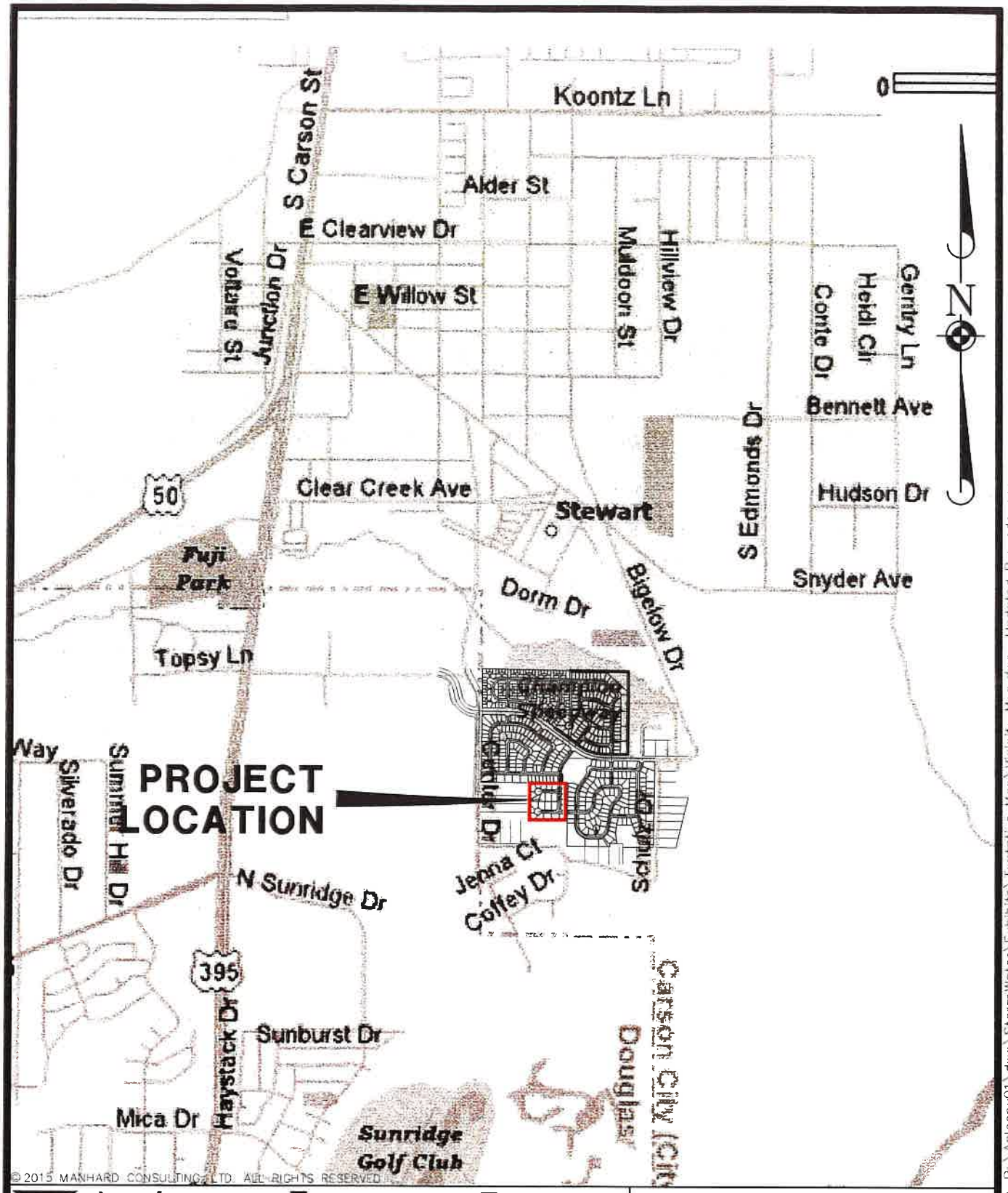
A. The proposed Schulz Ranch Phase 5 subdivision will provide a storm drain network that ties into an existing storm drain network that facilitates discharge to existing drainage facilities that were constructed with earlier phases of the Schulz Ranch Subdivision project. Please reference the following approved reports for reference: *Drainage Study Report for Schulz Ranch Subdivision Phase 1&2, dated June 2014,* by Manhard Consulting and *Final Drainage Study Report for Schulz Ranch Subdivision Phase 3, dated April 10, 2017,* by Manhard Consulting.

IV. CONCLUSIONS

A. This report has been prepared in compliance with Division 14 of the Title 18 Appendix - Carson City Development Standards.

B. This report is compliant with the most current FEMA standards. FEMA flood hazard designators have been labeled in the included Figures 2 and 3. Reference the included FEMA FIRMette from map #3200010207E included in Appendix A.

According to the analysis contained within this report, the proposed subdivision will not create any adverse impact to downstream facilities.



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SCHULZ RANCH PHASE 5
CARSON CITY, NV
VICINITY MAP

PROJ. MGR.:	DCB
DRAWN BY:	HED
DATE:	JUL 2019
SCALE:	N.T.S.

SHEET 1 OF 3
APLCCNV01

Dwg Name: P:\Aplccnv01\dwg\StormWater\Exhibits\Tentative Map\Vicinity Map.dwg Updated By: edawson 13:39

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND
FLOW DIRECTION –

N

EX. SCHULZ RANCH PHASE 1

EX. LAHONTAN DRIVE

EX. WHEELER PEAK DRIVE

EX. SUGARLOAF PEAK DRIVE

EX. CHALK BLUFF DRIVE

EX. SCHULZ RANCH PHASE 3

EX. DETENTION BASIN

APN 010-703-09 ESPINOZA, JERRY M & JOY L

APN 010-703-08 DARLING, JONATHAN L & TOLEDO, A

APN 010-703-07 HALTOM LIVING TRUST 7/20/07

APN 010-703-06 ONDEKEA, THOMAS K JR & KAY M

APN 010-703-05 MILLER, C L & MC CLIMANS, R W

APN 010-703-04 MARTELL, KIMBERLY

APN 010-703-03 GOODWIN, JANICE MAE TR 1/9/92

APN 010-703-02 WONG FAMILY TRUST 11/22/97

APN 010-703-01 MILES , KATHRYN S

APN 010-732-05 LENNAR RENO LLC

APN 010-732-06 TEMPLETON, K A & J K SR

APN 010-732-07 MARQUEZ, JOHN L & JO ANN M

APN 010-732-08 DEYHLE, CHARLES F & CATHRENA G

APN 010-732-09 NALAPO, JHOANNA R M & ERNIE C

APN 010-732-10 BORJA, ESPERNAZA F & ELISEO A

APN 010-732-11 NAIPO, KUULEI N & NAIPO, ET AL

APN 010-733-01 NYSSEN, JAN W JR & LISA B

APN 010-733-02 MURPH, ALAN & MAREN A

APN 010-7335-03 LENNAR RENO LLC

APN 009-311-46 COSTELLO, PAMELA A REV LIV TR

APN 009-311-31 LUSCHAR, STEPHEN J & JUDITH

APN 009-311-30 ROBERTS, RICKY & ALISHA R

APN 009-311-29 CLARK, NICHOLAS R & CIARA

APN 009-311-12 BACHSTADT, E & T & HUMANE TRUST

PROPERTY BOUNDARY

FEMA ZONE X

EX-1
AREA=7.94 AC
Q5=2.3 cfs
Q100=13.7 cfs

4708 4707 4706 4705 4704 4703 4702 4701 4700 4699 4698

5013

DATE	REVISION	DRAWN BY	CHECK BY

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SCHULZ RANCH PHASE 5

CARSON CITY, NEVADA

EXISTING HYDROLOGIC CONDITIONS

TENTATIVE MAP

PROJ. MGR.:	DCB
PROJ. ASSOC.:	HED
DRAWN BY:	HED
DATE:	JULY 2019
SCALE:	AS SHOWN

SHEET 2 OF 3

APL.CCNV

July 15, 2019 - 15:51 Dwg Name: P:\Apl\ccnv01\dwg\StormWater\Exhibits\Tentative Map\Existing Conditions.dwg Updated By: edawson

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND
FLOW DIRECTION –

N

EX. SCHULZ RANCH PHASE 1

EX. LAHONTAN DRIVE

EX. WHEELER PEAK DRIVE

APN 010-703-09 ESPINOZA, JERRY M & JERI L

APN 010-703-08 DARLING, JONATHAN L & TOLEDO, A

APN 010-703-07 HALTOM LIVING TRUST 7/20/07

APN 010-703-06 ONDEKA, THOMAS K JR & KAY M

APN 010-703-05 MILLER, C L & MC CLIMANS, R W

APN 010-703-04 MARTELL, KIMBERLY

APN 010-703-03 GOODWIN, JANICE MAE TR 1/9/92

APN 010-703-02 WONG FAMILY TRUST 11/22/97

APN 010-703-01 MILES , KATHRYN S

APN 010-732-05 LENNAR RENO LLC

EX. DETENTION BASIN

APN 009-311-46 COSTELLO, PAMELA A REV LIV TR

APN 009-311-31 LUSCHAR, STEPHEN J & JUDITH

APN 009-311-30 ROBERTS, RICKY & ALISHA R

APN 009-311-29 CLARK, NICHOLAS R & CIARA

PROPERTY BOUNDARY

FEMA ZONE X

P-1
AREA=2.99 AC
Q5=2.1 cfs
Q100=6.7 cfs

P-2
AREA=2.08 AC
Q5=1.5 cfs
Q100=4.7 cfs

P-3
AREA=0.69 AC
Q5=0.5 cfs
Q100=1.6 cfs

P-4
AREA=1.34 AC
Q5=1.0 cfs
Q100=3.0 cfs

P-5
AREA=0.94 AC
Q5=0.7 cfs
Q100=2.1 cfs

PROPOSED STORM DRAIN MANHOLE

PROPOSED CATCH BASIN

STREET A

WHEELER PEAK DRIVE

CHALK BLUFF DRIVE

EX. CHALK BLUFF DRIVE

EXISTING CATCH BASIN

SD

APN 010-732-06 TEMPLETON, K A & J K SR

APN 010-732-07 MARQUEZ, JOHN L & JO ANN M

APN 010-732-08 DEYHLE, CHARLES F & CATHRENA G

APN 010-732-09 NALAPO, JHOANNA R M & ERNIE C

APN 010-732-10 BORJA, ESPERNAZA F & ELISEO A

APN 010-732-11 NAIPO, KUULEI N & NAIPO, ET AL

APN 010-733-01 NYSSEN, JAN W JR & LISA B

APN 010-733-02 MURPH, ALAN & MAREN A

APN 010-7335-03 LENNAR RENO LLC

EX. DETENTION BASIN

EX. SUGARLOAF PEAK DRIVE

EX. SCHULZ RANCH PHASE 3

APN 009-311-12 BACHSTADT, E & T & HUMANE TRUST

DRAWN BY | CHECK BY

DATE | REVISION

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Construction Managers • Environmental Scientists • Landscape Architects • Planners

SCHULZ RANCH PHASE 5

CARSON CITY, NEVADA

PROPOSED HYDROLOGIC CONDITIONS

TENTATIVE MAP

PROJ. MGR.:	DCB
PROJ. ASSOC.:	HED
DRAWN BY:	HED
DATE:	JULY 2019
SCALE:	AS SHOWN

SHEET 3 OF 3

APL.CCNV

June 17, 2019 - 15:35 Dwg Name: P:\Active\051\dwg\StormWater\Exhibits\Tentative Map\Proposed Conditions.dwg Updated By: edawson

APPENDIX A

SUPPORTING CALCULATION DATA

RATIONAL METHOD DISCHARGE RESULTS

BASIN	RUNOFF COEFFICIENT (5-YEAR)	RUNOFF COEFFICIENT (100-YEAR)	INTENSITY (5-YEAR)	INTENSITY (100-YEAR)	AREA	Q5	Q100
EX-1	0.20	0.50	1.42	3.46	7.94	2.3	13.7
P-1	0.50	0.65	1.42	3.46	2.99	2.1	6.7
P-2	0.50	0.65	1.42	3.46	2.08	1.5	4.7
P-3	0.50	0.65	1.42	3.46	0.69	0.5	1.6
P-4	0.50	0.65	1.42	3.46	1.34	1.0	3.0
P-5	0.50	0.65	1.42	3.46	0.94	0.7	2.1

RATIONAL FORMULA METHOD
RUNOFF COEFFICIENTS

Land Use or Surface Characteristics	Aver. % Impervious Area	Runoff Coefficients 5-Year (C_5)	Runoff Coefficients 100-Year (C_{100})
Business/Commercial:			
Downtown Areas	85	.82	.85
Neighborhood Areas	70	.65	.80
Residential:			
(Average Lot Size)			
⅛ Acre or Less (Multi-Unit)	65	.60	.78
¼ Acre	38	.50	.65
⅛ Acre	30	.45	.60
½ Acre	25	.40	.55
1 Acre	20	.35	.50
Industrial:	72	.68	.82
Open Space:			
(Lawns, Parks, Golf Courses)	5	.05	.30
Undeveloped Areas:			
Range	0	.20	.50
Forest	0	.05	.30
Streets/Roads:			
Paved	100	.88	.93
Gravel	20	.25	.50
Drives/Walks:	95	.87	.90
Roof:	90	.85	.87

Notes:

1. Composite runoff coefficients shown for Residential, Industrial, and Business/Commercial Areas assume irrigated grass landscaping for all pervious areas. For development with landscaping other than irrigated grass, the designer must develop project specific composite runoff coefficients from the surface characteristics presented in this table.

NOAA Atlas 14, Volume 1, Version 5
Location name: Carson City, Nevada, USA*
Latitude: 39.1051°, Longitude: -119.7575°
Elevation: 4702.17 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.13 (0.972-1.32)	1.40 (1.22-1.66)	1.87 (1.61-2.22)	2.33 (1.98-2.75)	3.06 (2.53-3.62)	3.74 (3.00-4.46)	4.55 (3.52-5.47)	5.51 (4.09-6.76)	7.04 (4.93-8.82)	8.42 (5.62-10.7)
10-min	0.852 (0.738-1.01)	1.07 (0.924-1.27)	1.42 (1.22-1.69)	1.77 (1.51-2.09)	2.33 (1.93-2.77)	2.85 (2.28-3.40)	3.46 (2.68-4.17)	4.19 (3.11-5.14)	5.36 (3.75-6.71)	6.41 (4.27-8.17)
15-min	0.708 (0.612-0.832)	0.880 (0.768-1.04)	1.18 (1.01-1.40)	1.46 (1.25-1.73)	1.93 (1.59-2.28)	2.35 (1.88-2.81)	2.86 (2.21-3.44)	3.47 (2.57-4.25)	4.43 (3.10-5.54)	5.30 (3.53-6.75)
30-min	0.476 (0.412-0.562)	0.594 (0.516-0.704)	0.794 (0.682-0.938)	0.986 (0.840-1.16)	1.30 (1.07-1.54)	1.58 (1.27-1.89)	1.93 (1.49-2.32)	2.34 (1.73-2.86)	2.98 (2.09-3.73)	3.57 (2.38-4.55)
60-min	0.295 (0.255-0.347)	0.368 (0.320-0.435)	0.491 (0.422-0.581)	0.610 (0.520-0.721)	0.804 (0.663-0.951)	0.980 (0.785-1.17)	1.19 (0.922-1.44)	1.45 (1.07-1.77)	1.85 (1.29-2.31)	2.21 (1.47-2.81)
2-hr	0.203 (0.181-0.232)	0.252 (0.224-0.288)	0.320 (0.284-0.366)	0.382 (0.334-0.436)	0.475 (0.405-0.544)	0.557 (0.464-0.644)	0.650 (0.527-0.760)	0.762 (0.597-0.904)	0.951 (0.714-1.16)	1.13 (0.818-1.42)
3-hr	0.163 (0.146-0.182)	0.202 (0.183-0.228)	0.254 (0.227-0.285)	0.296 (0.262-0.332)	0.356 (0.310-0.401)	0.407 (0.348-0.463)	0.463 (0.388-0.533)	0.535 (0.439-0.626)	0.651 (0.518-0.782)	0.764 (0.591-0.956)
6-hr	0.113 (0.102-0.126)	0.141 (0.127-0.158)	0.176 (0.157-0.196)	0.203 (0.181-0.226)	0.239 (0.210-0.268)	0.268 (0.232-0.302)	0.297 (0.253-0.339)	0.330 (0.276-0.382)	0.379 (0.308-0.445)	0.421 (0.335-0.503)
12-hr	0.075 (0.067-0.084)	0.095 (0.084-0.106)	0.119 (0.106-0.134)	0.138 (0.122-0.155)	0.164 (0.143-0.185)	0.184 (0.159-0.209)	0.204 (0.174-0.235)	0.225 (0.188-0.262)	0.253 (0.205-0.300)	0.275 (0.219-0.331)
24-hr	0.050 (0.045-0.055)	0.062 (0.056-0.069)	0.078 (0.071-0.086)	0.091 (0.082-0.101)	0.109 (0.098-0.121)	0.123 (0.110-0.136)	0.138 (0.122-0.153)	0.153 (0.134-0.171)	0.174 (0.151-0.195)	0.190 (0.163-0.215)
2-day	0.030 (0.027-0.033)	0.037 (0.033-0.042)	0.047 (0.042-0.053)	0.055 (0.050-0.062)	0.067 (0.059-0.075)	0.076 (0.067-0.086)	0.086 (0.075-0.097)	0.096 (0.083-0.109)	0.109 (0.093-0.126)	0.120 (0.101-0.140)
3-day	0.022 (0.019-0.025)	0.027 (0.024-0.031)	0.035 (0.031-0.040)	0.041 (0.037-0.046)	0.050 (0.044-0.056)	0.057 (0.050-0.064)	0.064 (0.056-0.073)	0.072 (0.062-0.082)	0.083 (0.070-0.096)	0.092 (0.076-0.107)
4-day	0.018 (0.016-0.020)	0.022 (0.020-0.025)	0.029 (0.026-0.033)	0.034 (0.030-0.039)	0.041 (0.036-0.047)	0.047 (0.041-0.054)	0.054 (0.046-0.061)	0.060 (0.051-0.069)	0.070 (0.058-0.080)	0.077 (0.064-0.090)
7-day	0.012 (0.010-0.013)	0.015 (0.013-0.017)	0.019 (0.017-0.022)	0.023 (0.020-0.026)	0.027 (0.024-0.031)	0.031 (0.027-0.035)	0.035 (0.030-0.040)	0.039 (0.034-0.045)	0.045 (0.038-0.052)	0.050 (0.042-0.058)
10-day	0.009 (0.008-0.010)	0.012 (0.010-0.013)	0.015 (0.013-0.017)	0.018 (0.016-0.020)	0.021 (0.019-0.024)	0.024 (0.021-0.027)	0.027 (0.023-0.030)	0.030 (0.026-0.034)	0.034 (0.029-0.039)	0.037 (0.031-0.043)
20-day	0.006 (0.005-0.006)	0.007 (0.006-0.008)	0.009 (0.008-0.010)	0.011 (0.010-0.012)	0.013 (0.011-0.014)	0.014 (0.013-0.016)	0.016 (0.014-0.018)	0.017 (0.015-0.020)	0.019 (0.017-0.022)	0.021 (0.018-0.024)
30-day	0.004 (0.004-0.005)	0.005 (0.005-0.006)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.010 (0.008-0.011)	0.011 (0.009-0.012)	0.012 (0.010-0.013)	0.013 (0.011-0.015)	0.014 (0.012-0.016)	0.016 (0.013-0.018)
45-day	0.003 (0.003-0.004)	0.004 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.006-0.007)	0.007 (0.007-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.010)	0.010 (0.009-0.011)	0.011 (0.009-0.012)	0.011 (0.010-0.013)
60-day	0.003 (0.003-0.003)	0.004 (0.003-0.004)	0.005 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.006-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.010)	0.009 (0.008-0.010)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

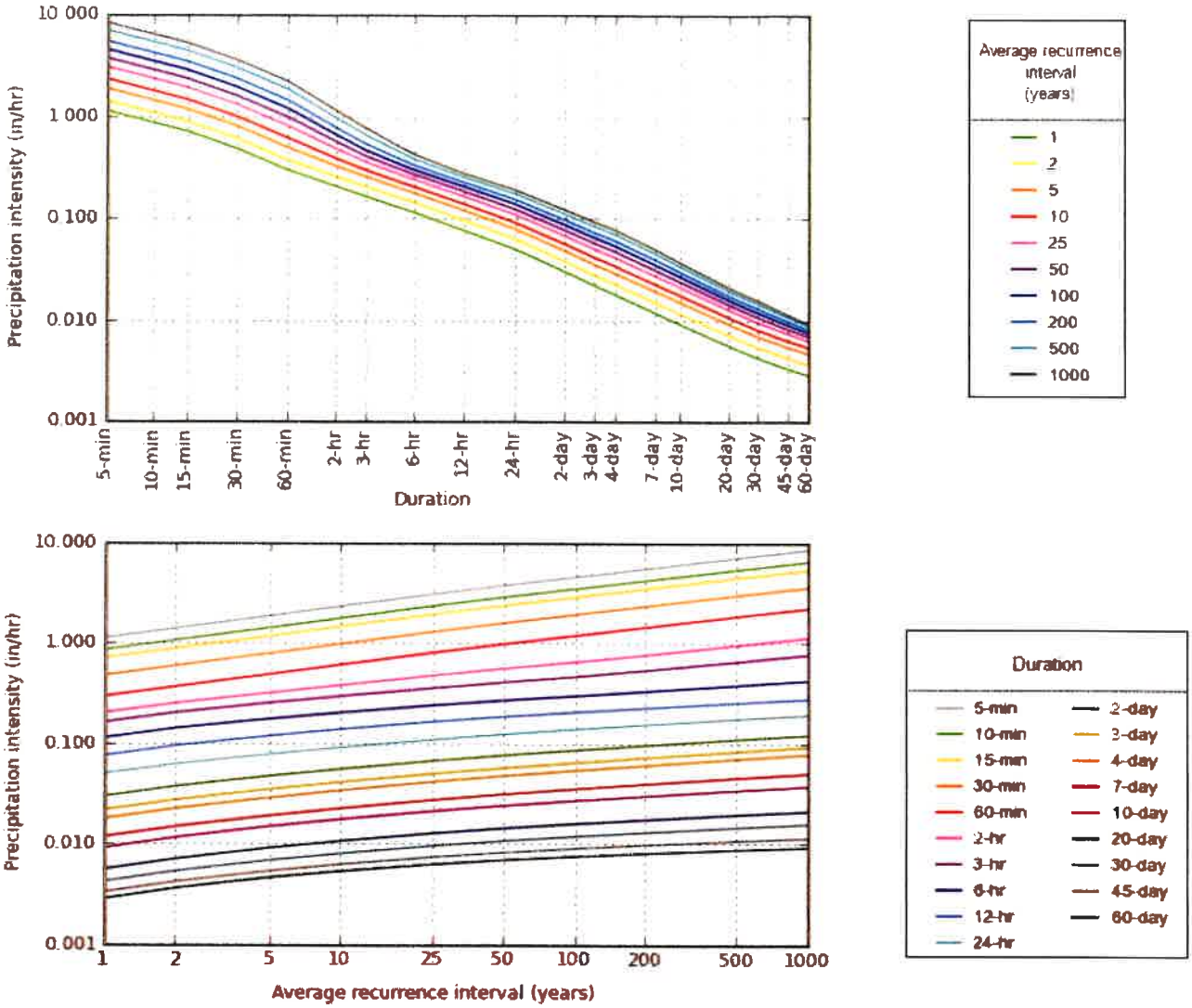
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 39.1051°, Longitude: -119.7575°



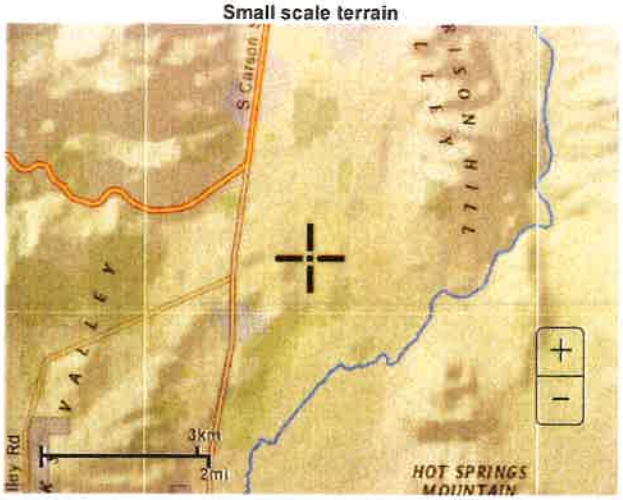
NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Mon Jun 17 17:03:01 2019

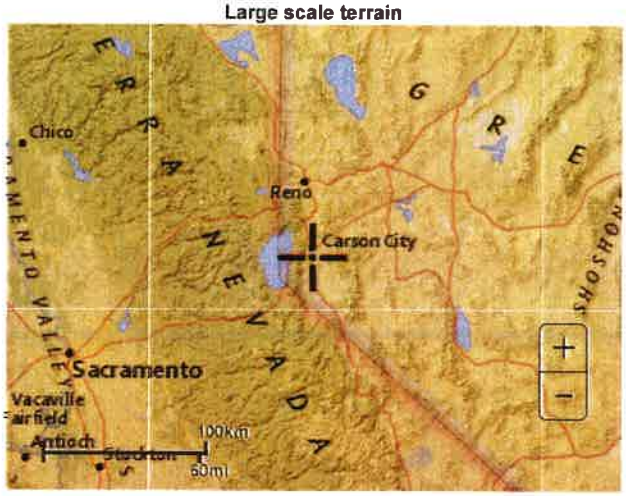
Back to Top

Maps & aerials

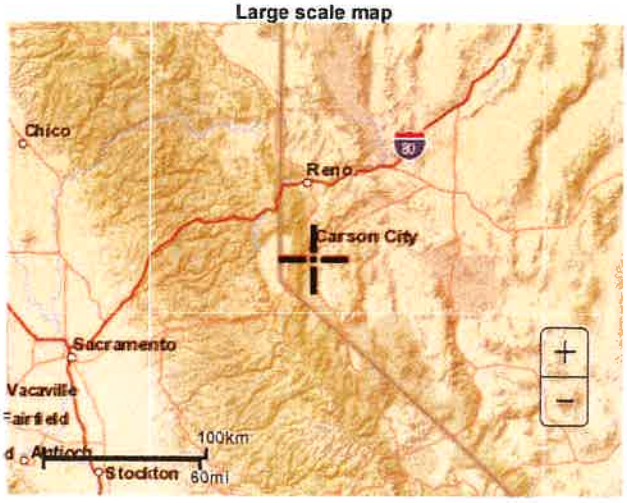
Small scale terrain



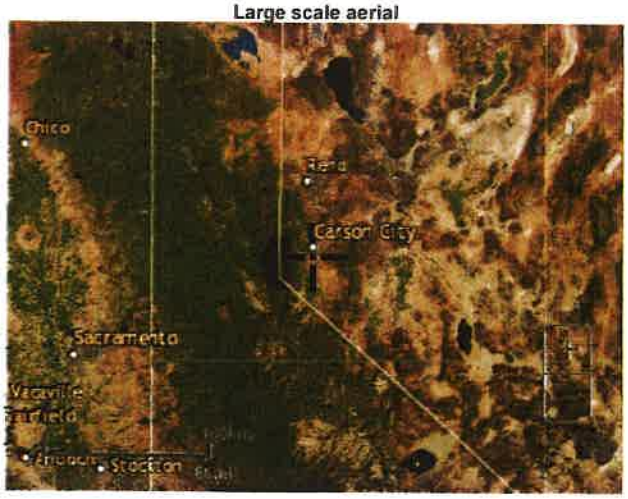
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

National Flood Hazard Layer FIRMette

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **6/17/2019 at 2:19:04 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Cross Section for 5-yr 50 ROW

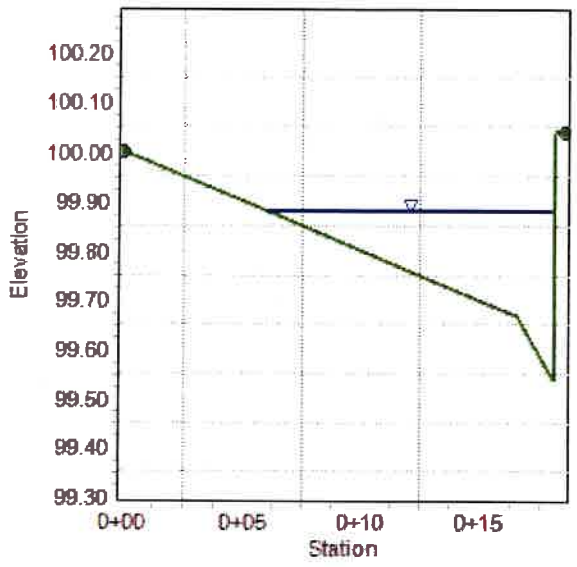
Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00500	ft/ft
Normal Depth	0.34	ft
Discharge	2.65	ft³/s

Cross Section Image



Worksheet for 5-yr 50 ROW

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00500	ft/ft
Normal Depth	0.34	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	100.00
0+16.50	99.67
0+18.00	99.54
0+18.08	100.04
0+18.50	100.04

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 100.00)	(0+18.50, 100.04)	0.015

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	2.65	ft^3/s
Elevation Range	99.54 to 100.04 ft	
Flow Area	1.52	ft^2
Wetted Perimeter	12.35	ft
Hydraulic Radius	0.12	ft
Top Width	12.05	ft
Normal Depth	0.34	ft
Critical Depth	0.33	ft

Worksheet for 5-yr 50 ROW

Results

Critical Slope		0.00688	ft/ft
Velocity		1.74	ft/s
Velocity Head		0.05	ft
Specific Energy		0.39	ft
Froude Number		0.86	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.34	ft
Critical Depth	0.33	ft
Channel Slope	0.00500	ft/ft
Critical Slope	0.00688	ft/ft

Cross Section for 100-yr 50 ROW

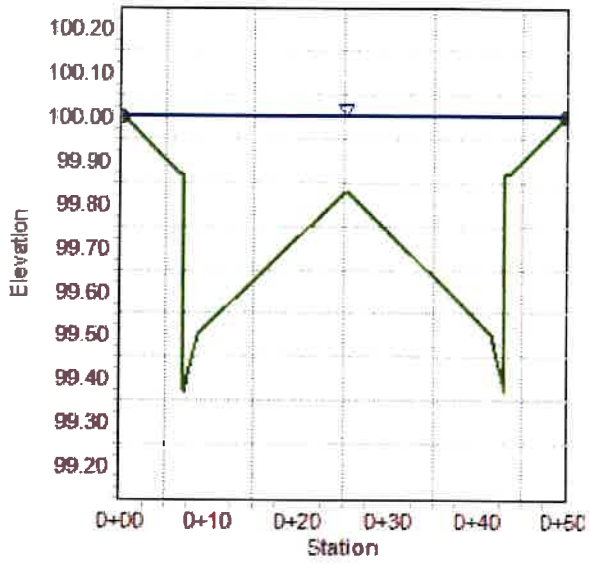
Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.01500	ft/ft
Normal Depth	0.63	ft
Discharge	69.86	ft^3/s

Cross Section Image



Worksheet for 100-yr 50 ROW

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.01500	ft/ft
Normal Depth	0.63	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	100.00
0+06.50	99.87
0+06.92	99.87
0+07.00	99.37
0+08.50	99.50
0+25.00	99.83
0+41.50	99.50
0+43.00	99.37
0+43.08	99.87
0+43.50	99.87
0+50.00	100.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 100.00)	(0+50.00, 100.00)	0.015

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	69.86	ft^3/s
Elevation Range	99.37 to 100.00 ft	

Worksheet for 100-yr 50 ROW

Results

Flow Area		13.77	ft²
Wetted Perimeter		50.87	ft
Hydraulic Radius		0.27	ft
Top Width		50.00	ft
Normal Depth		0.63	ft
Critical Depth		0.75	ft
Critical Slope		0.00461	ft/ft
Velocity		5.08	ft/s
Velocity Head		0.40	ft
Specific Energy		1.03	ft
Froude Number		1.71	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.63	ft
Critical Depth	0.75	ft
Channel Slope	0.01500	ft/ft
Critical Slope	0.00461	ft/ft

Geotechnical Update
Schulz Ranch Residential Subdivision
Carson City, Nevada

Mr. Dean Wingert
Schulz Ranch, LLC
333 E. Wetmore Road, Suite 250
Tucson, AZ 85705

Project No.: 3092.001

March 14, 2014

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
5440 Reno Corporate Drive Tel: 775.823.4068
Reno, NV 89511 Fax: 775.823.4066

WOOD RODGERS

March 14, 2014
Project No. 3092.001

Mr. Dean Wingert
Schulz Ranch, LLC
333 E. Wetmore Road, Suite 250
Tucson, AZ 85705

Re: Geotechnical Update
Schulz Ranch Residential Subdivision
Carson City, Nevada

Ref: Matrix Construction Services, *Geotechnical Investigation, Carson City Parcels,* prepared for Barker Coleman Construction, December 29, 2004

James Edward Engineering, *Geotechnical Investigation – Addendum #1,* prepared for Lennar-Reno, LLC, May 12, 2006

James Edward Engineering, *Geotechnical Investigation, Addendum #2, Carson City Parcels, Schulz Ranch,* prepared for Lennar Reno, dated July 28, 2006

Manhard Consulting, LTD, *Preliminary Grading Plan*, Schulz Ranch Subdivision – Phase I, dated November 2013

International Code Council, *2012 International Residential Code (IRC)*

2012 IRC Northern Nevada Amendments, Carson City

Dear Mr. Wingert:

We have reviewed the referenced geotechnical reports and preliminary grading plan for the proposed single-family residential development. This report is intended to bring the geotechnical documents current with the 2012 building code as adopted by Carson City Building Division, effective September 1, 2013. If not specifically addressed in this report, the preliminary geotechnical design recommendations presented in the referenced reports should be considered valid.

Single family residences are still planned for the development. Structures are anticipated to be one to two-stories, wood-framed with slab-on-grade flooring.

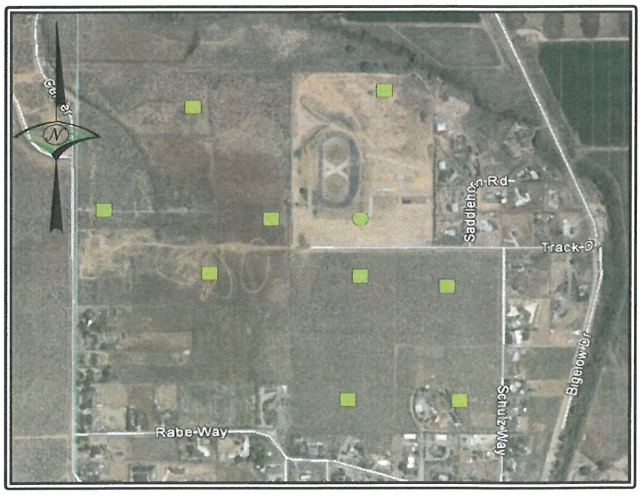


Figure 1 – Project Area with Previous Exploration Locations

SEISMIC PROVISIONS

Building codes have been updated since the latest report revision of July 28, 2006. Seismic design values can be determined based on representative latitude and longitude of 39.108 and 119.758, respectively, and Site Class D. As indicated in the 2012 Northern Nevada Amendments, Table R301.2(1), Seismic Design Category E has been established by Carson City for residential structures. The IRC

DISCUSSION AND RECOMMENDATIONS

Review of aerial photos from October 2006 to August 2012 suggests that little to no activity of geotechnical significance has occurred on the property. The existing racetrack still remains to be abandoned. Trees and vegetation will still require removal prior to grading. Based on the current grading plans the bulk of the cuts and fills will be limited to 5 feet which is consistent with the earlier reports.

Civil improvements shall be constructed in accordance with the Standard Specifications for Public Works Construction. The Carson City Standard Details for Public Works Construction were updated July 12, 2012. The minimum structural pavement section for local roadways is 3 inches of plantmix bituminous pavement capping 6 inches of compacted (95% minimum of ASTM D 1557) Type 2, Class B aggregate base. Although this section can readily support automobile traffic, main access roads in to and out of the development should incorporate a minimum pavement section incorporating 4 inches of plantmix bituminous pavement to allow for the impact of construction traffic.

We appreciate the opportunity to prepare this geotechnical update for you; and we are available to provide additional geotechnical services as needed. Please contact our office should you have any related questions or comments.

Sincerely,

WOOD RODGERS, INCORPORATED

PROFESSIONAL ENGINEER - STATE OF NEVADA
MISCHELLE J. SMITH
EXP: 6-30-14
CIVIL
No. 6972

Mischelle J. Smith, PE
RE Number 6972
Expires 6/30/14

Blake Carter, PE
RE Number 22331
Expires 12/31/14

APPENDIX A

GEOTECHNICAL INVESTIGATION
CARSON CITY PARCELS
SCHULZ RANCH
EAST ½ SECTION 5, T14N, R20E, MDB&M
CARSON CITY, NEVADA

PREPARED FOR:

Mr. Chris Froehlich
LENNAR-RENO, LLC
10315 Professional Circle, Ste. 110
Reno, Nevada 89511

July 2006

JAMES EDWARD ENGINEERING
INCORPORATED

July 28, 2006
Project Number: 1110.01

Mr. Chris Froehlich
LENNAR-RENO, LLC
10315 Professional Circle, Ste 110
Reno, Nevada 89521

RE: GEOTECHNICAL INVESTIGATION – ADDENDUM #2
CARSON CITY PARCELS – SCHULZ RANCH

Dear Mr. Froehlich:

This letter presents Addendum #2 for the referenced project. Half street improvements to Center Street are to be constructed with the development of the Schulz Ranch. This addendum presents design recommendations for those improvements. Except where specifically modified or addressed in this addendum, the opinions and recommendations put forth in our original report apply.

All work performed with the widening of Center Street shall be in accordance with the current edition of the Standard Specifications for Public Works Construction. For the purposes of this report, Center Street has been assumed to be classified as a rural collector. Based on the test pit logs TP-1 and TP-3 advanced with our original investigation the subgrade support soils are anticipated to consist of silty sand to silty sand with some gravel with approximately 20 percent low plasticity fines. R-value tests conducted for the evaluation of the Bigelow Drive improvements on comparable soils, resulted in R-Values on the order of 60.

The minimum structural section for a Rural-Collector in Carson City specifies 3-inches of asphaltic concrete with a chip seal capping 6-inches of aggregate base. Because Center Street will also facilitate construction traffic associated with the development, we recommend increasing the minimum section to 4-inches of Type 2 asphaltic concrete.

The edge of the existing pavement shall be saw-cut to the lines indicated on the plans and the existing pavement removed. If desired, the existing pavement can be broken or pulverized and incorporated into shoulder material in lieu of exporting from the site. The in-place soils shall be removed to at least 10 inches below finished design grade to accommodate the recommended structural section. The soils immediately beneath an existing structural pavement section can be wet due to moisture migrating up from the underlying soils and pumping subgrade, if encountered, shall be scarified and allowed to dry or stabilized utilizing rock-fill. Other recommendations can be provided for subgrade stabilization if site conditions during construction warrant. Subgrade outside of the existing pavement shall be prepared in accordance with the requirements of our original geotechnical report. The exposed subgrade and any subsequent fills shall be compacted to not less than 90 percent of the soil's maximum dry density. Any fills required to bring roadbed to grade, shall be granular (i.e. less than 30 percent minus # 200, and a maximum plasticity index of 15) and exhibit a minimum R-Value of 45. Once the roadbed has been prepared, the 6-inch layer of Type 2, Class B aggregate base may be placed and compacted to not less than 95 percent of the soil's maximum dry density in accordance with ASTM D 1557. Prior to paving, a tack coat shall be applied to the saw-cut edge of the existing pavement.

We wish to thank you for the opportunity to provide you with our services, and look forward to working with you during construction.

Sincerely,

JAMES EDWARD ENGINEERING
I N C O R P O R A T E D

James G. Smith, PE
President

Mischelle J. Smith, PE
Engineering Manager
RE Number 6972
Expires 6-30-08

JGS:MJS:jm

May 12, 2006
Project Number: 1110.01

Mr. Chris Froehlich
LENNAR-RENO, LLC
10315 Professional Circle, Ste 110
Reno, Nevada 89521

RE: GEOTECHNICAL INVESTIGATION – ADDENDUM #1
CARSON CITY PARCELS

Dear Mr. Froehlich:

This letter presents Addendum #1 for the referenced project. Slab-on-grade, in lieu of raised floor construction, is being planned. Based on this change, our original recommendations addressing crawl space moisture are no longer applicable. Surface drainage must still be maintained as per our original report.

Seismic design parameters were originally formulated in accordance with the requirements of the 1997 UBC. In case the 2003 IBC has been adopted by Carson City, the seismic design parameters are being updated. The site is defined as a Site Class D (stiff soil profile) listed in Table 1615.1. Based on the average latitude and longitude of the site, the mapped spectral response accelerations for the 0.2 seconds (S_s) and 1 second (S_1) periods are 1.77 and 0.74 respectively (USGS Earthquake Hazards Program). Based on these mapped spectral response accelerations, the Site Coefficients F_a and F_v, as a function of site class, are 1.0 and 1.5, respectively.

Once design grades are known for each phase, we should be provided the opportunity to provide a geotechnical review to evaluate the need for additional exploration and/or testing and to modify design considerations as applicable.

We wish to thank you for the opportunity to provide you with our services, and look forward to working with you during construction.

Sincerely,

JAMES EDWARD ENGINEERING
INCORPORATED

James G. Smith, PE
President

Mischelle J. Smith, PE
Engineering Manager
RE Number 6972
Expires 6-30-06

PROFESSIONAL ENGINEER-STATE OF NEVADA
MISCHELLE J. SMITH
Exp. 06-30-06
CIVIL
No. 6972

JGS:MJS:jm

MATRIX CONSTRUCTION SERVICES
INCORPORATED

December 29, 2004
Project Number: 1110.01

BARKER COLEMAN CONSTRUCTION
c/o Mr. Karl Matzoll, P.E.
MATRIX ENGINEERING & CONSULTING INC.
4741 Caughlin Parkway, Suite 1B
Reno, Nevada 89509

RE: GEOTECHNICAL INVESTIGATION
CARSON CITY PARCELS

Dear Mr. Matzoll:

Matrix Construction Services, Inc. is pleased to present the results of our geotechnical investigation for the referenced development to be constructed in Carson City, Nevada.

The soil profile encountered generally consists medium dense to dense blends of silt and sand with some clay. These granular soils should provide suitable foundation and subgrade support for the planned improvements. In addition, an exploratory boring was advanced to evaluate the liquefaction potential of the underlying soils. The soils encountered below the groundwater table were dense to very dense sands and silty sands that because of their in-place consistency these soils are not considered liquefiable.

The following report presents our findings and provides geotechnical recommendations for design and construction of the project as currently planned. Once design grades are known for each phase, we should be provided the opportunity to provide a geotechnical review to evaluate the need for additional exploration and/or testing and to modify design considerations as applicable.

We wish to thank you for the opportunity to provide you with our services, and look forward to working with you during construction.

Sincerely,

MATRIX CONSTRUCTION SERVICES
INCORPORATED

James G. Smith, PE
President

Mischelle J. Smith, PE
Project Engineer
RE Number 6972
Expires 6-30-06

PROFESSIONAL ENGINEER-STATE OF NEVADA
MISCHELLE J. SMITH
Exp. 06-30-06
CIVIL
No. 6972

JGS:MJS:ag

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9475 Double R Blvd. • Space #B-7 • Reno, Nevada 89521 • (775) 828.1866 • Fax (775) 828.1871

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GEOTECHNICAL INVESTIGATION
CARSON CITY PARCELS
EAST ½ SECTION 5, T14N, R20E, MDB&M
CARSON CITY, NEVADA

INTRODUCTION

Presented herein are the results of Matrix Construction Services' geotechnical exploration, laboratory testing, and associated geotechnical design recommendations for the proposed Carson City residential development. These recommendations are based on surface and subsurface conditions encountered in our explorations, our laboratory testing program, and on details of the proposed project as described in this report. The objectives of this study were to:

1. Determine general soil and ground water conditions pertaining to preliminary design of the proposed subdivision.

2. Provide preliminary recommendations for design and construction of the project, as related to these geotechnical conditions.

The area covered by this report is shown on Plate A-1 (Site Plan & Approximate Exploration Locations) in Appendix A. Our study included field exploration, laboratory testing, and engineering analyses to identify the physical and mechanical properties of the various on-site materials. Results of our field exploration and testing programs are included in this report and form the basis for all conclusions and recommendations.

PROJECT DESCRIPTION AND SITE CONDITIONS

The planned project will create a varied residential development with associated public and private improvements. A park area will also be incorporated into the overall design.

Although not yet finalized, preliminary concepts for the development provide for a balance of cut and fills with little or no required import. Cuts and fills assumed for this investigation range from 1 to 6 feet. All street improvements will be dedicated to Carson City. Underground utilities will be provided by a variety of public and private companies.

The project is located in Carson City, Nevada, and occupies much of the eastern ½ of Section 5, Township 14 North, Range 20 East, MDB&M. The total development area is comprised of 6 parcels and encompasses an area of approximately 120 acres. Some of the parcels have been previously occupied and/or developed. A portion of the development area is also occupied by the Tahoe Carson Speedway. Associated subsurface improvements such as wells, septic systems, etc. are also likely present. Septic systems are typically located and properly removed during construction when design grades are known and equipment is readily available to address the issue.

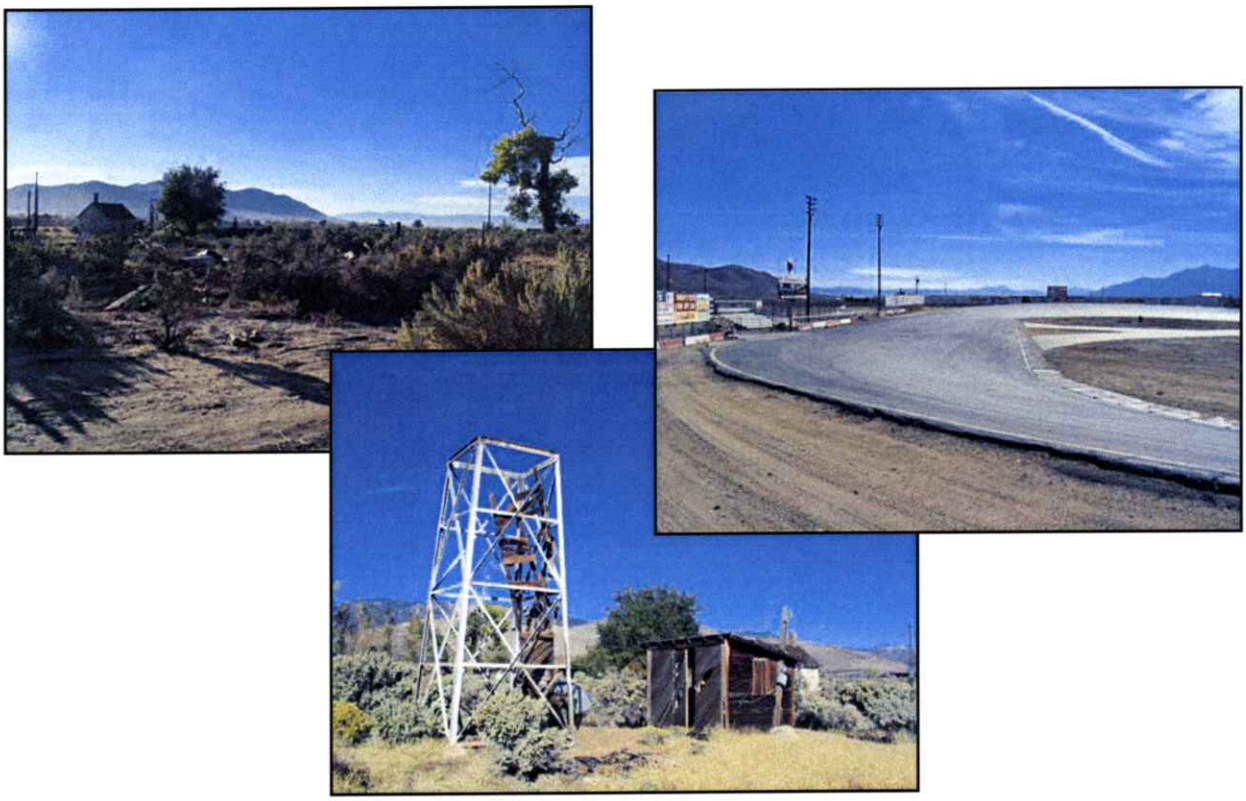

FIGURE 1 – Photos showing existing development.

The site is relatively level and slopes generally toward the east. The area is largely dependent on water from the Carson River which heads on the east slope of the Sierra Nevada in California and flows east. Vegetation mostly consist of native shrubs and grasses with occasional scattered trees.

EXPLORATION

The project was explored in October 2004 by excavating a series of 9 test pits using a Case 580 D backhoe. The approximate locations of the test pits are shown on Plate A-1 – Site Plan and Approximate Exploration Locations. The maximum depth of test pit advance was 10 feet below the existing ground surface. Bulk samples for index testing were collected from the trench walls at specific depths in each soil horizon.

One boring was advanced to a depth of 41 ½ feet by mud rotary drilling methods consisting of advancing a 3⅞-inch mud rotary bit with a water/bentonite drilling fluid and a truck-mounted CME 55 soil sampling drill rig. The rotary bit decreases sample disturbance at the bottom of the borehole and the drilling fluid prevents sloughing of the borehole sidewalls. The in-situ soils were sampled every 2 ½ feet using a standard 2-inch O.D. split-spoon sampler driven by a standard 140-pound drive hammer with a 30-inch drop. The number of blows to drive the sampler the final 12 inches of an 18 inch penetration, Standard Penetration Test (SPT) - ASTM D 1586, into undisturbed soil is an indication of the density and consistency of the material.

Matrix Construction Services' personnel examined and classified all soils in the field in general accordance with ASTM D 2488 (Description and Identification of Soils). During exploration, representative bulk samples were placed in sealed plastic bags and returned to our Reno, Nevada laboratory for testing. Additional soil classifications, as well as verification of the field classifications, were subsequently performed in accordance with ASTM 2487 (Unified Soil Classification System [USCS]) upon completion of laboratory testing as described below in the **Laboratory Testing** section. Logs of the test boring and test pits are presented as Plate A-2. A USCS chart has been included as Plate A-4 - Graphic Soils Classification Chart.

LABORATORY TESTING

All soil testing performed in the Matrix Construction Services' laboratory is conducted in accordance with the standards and methods described in Volume 4.08 (Soil and Rock; Dimension Stone; Geosynthetics) of the ASTM Standards.

Samples of significant soil types were analyzed to determine their in-situ moisture contents (ASTM D 2216), grain size distributions (ASTM D 422), and plasticity indices (ASTM D 4318). Results of these tests are shown on Plate B-1 - Index Test Results. The test results were used to classify the soils according the USCS (ASTM D 2487) and to verify the field logs, which were then updated.

GEOLOGIC AND GENERAL SOIL AND GROUNDWATER CONDITIONS

The geologic units associated with the project consist of older flood-plain deposits of the Carson River and Alluvial-plain deposits of Clear Creek. These units are relatively young (i.e. < 7,000 years old) and typically consist of complexly blended, poorly sorted sands and gravels. Based on our explorations, the soils at the site typically consist of dense to very dense sand with limited amounts of silt, clay, and gravel.

Within the test pits, the moisture content of the in-place soils ranged from dry to slightly moist. Groundwater was measured at 24 feet in Test Boring, B-1, on October 22, 2004. Based on the project's current design plans, the groundwater lies at a depth that should not adversely impact the planned development.

The Carson City area lies within the western Great Basin along the eastern side of the Sierra Nevada Mountains. The eastern slope of the Sierra Nevada is complex and irregular, and the physiographic and structural break between the Sierra Nevada and the Basin and Range province is gradual. The eastern slope of the Sierra Nevada Mountains is cut by a number of major north-trending normal faults delineating north-trending ranges which provides a level of continuity within the Cenozoic structure between the Sierra Nevada and the desert ranges to the East. Four major fault-block ranges of this type are present in this area, the closest of which is the Carson Range which forms the western boundary of the Carson Valley and is approximately 5 miles west of the site. Several smaller fault scarps, less than 3000 years old, which bound and transect the Quaternary alluvial deposits in the area, are within ½ to 2 miles of the development area. The Genoa Fault scarp forms the demarcation between the igneous and metavolcanic rocks of the Carson Range and the associated Alluvial Fan Deposits of the Carson Range. The range is horstlike and is flanked by impressive fault scarps. The Genoa Fault has been dated as 200 to 1000 years old and consists of fault segments, generally between 1 and 2 miles long and forms a zigzag pattern.

SEISMIC HAZARDS AND DESIGN COEFFICIENTS

As designated by the Carson City Building Department, the site is considered to be within UBC Seismic Zone 3. Because of the close proximity to and potential magnitude of movement associated with the Genoa Fault, UBC near source factors apply. In accordance with the 1997 UBC guidelines, there are 6 different soil profile type amplification factors ranging from an S_A to

an S_F. The soil profile type amplification factors are based on two criteria: density (for soils based on SPT blow count data) or hardness (for bedrock sites), and soil and/or bedrock classification. These two criteria have to be determined to a depth of 100 feet below the ground surface. However, UBC allows the use of a default soil type of S_D, if the soil profile to a depth of 100-feet is not characterized. It is our opinion that a default soil profile type amplification factor of S_D is appropriate to use in the structural designs associated with the development. Table 1 summarizes seismic design criteria for the development area.

TABLE 1 – SEISMIC DESIGN COEFFICIENTS

UBC Seismic Zone*	3
Seismic Source Type**	B
Soil Profile Type	S_D
Seismic Zone Factor - Z	0.30
Seismic Coefficient - C_a	0.36
Seismic Coefficient – C_v	0.54
Near Source Factor - N_a	1.1
Near Source Factor - N_v	1.2

*Per Carson City Building Department
** *Earthquake Occurrence in the Reno-Carson City Urban Corridor*, Nevada Bureau of Mines and Geology, Seismological Research Letters, Volume 68, Number 3, May/June 1997

Although present to the south and northwest of the parcels, no mapped faults trend through the property. The Earthquake Hazards Map for the Genoa Quadrangle, places the development area within Zone II regarding shaking and potential hazard. Zone II represents moderate severity and may be subject to liquefaction. Liquefaction is a loss of soil shear strength that can occur during a seismic event, as cyclic shear stresses cause excessive pore pressure between the soil grains.

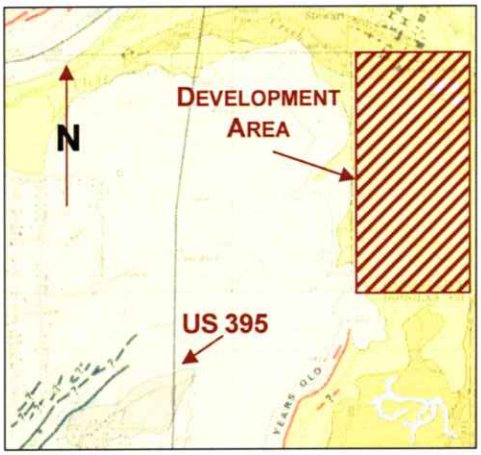

FIGURE 2 – Seismic Hazards Map of Development Area

This phenomenon is generally limited to clean sands and silty sands (up to 35 percent non-plastic fines) lying below the ground water table and exhibiting low relative densities. The higher the ground acceleration and the longer that shaking caused by a seismic event occurs, the more likely liquefaction will take place.

A test boring was advanced to a depth of 41 ½ feet to obtain data for the evaluation of the liquefaction potential associated with the site. In general, the soil profile encountered can be characterized as dense, granular soils exhibiting 10 to 20 percent low plasticity fines. Since free water was encountered at a depth of 24 feet and the consistency of the in-place soils typically ranged from dense to very dense, liquefaction analysis indicates that the soils would not liquefy during the design event. The boring profile and associated evaluation variables are presented in Appendix B of this report.

In Nevada, there is no specific policy which requires structures be designed to resist liquefaction. These designs tend to be very costly and are usually limited to structures associated with a public safety function such as hospitals, police stations, fire stations, etc. It should also be noted that in addition to the depth to groundwater and the competency of the overlying soils, any displacement that could occur in isolated lenses, would be mitigated by the overburden.

DISCUSSION AND RECOMMENDATIONS

GENERAL INFORMATION

For purposes of this project, the following definitions shall be utilized:

- Fine-grained soil is defined as soil with more than 40 percent by weight passing the number 200 sieve and a plasticity index lower than 15.
- Clay soil is defined as soil with more than 30 percent passing the number 200 sieve and a plasticity index greater than 15.
- Granular soil is defined as soil not meeting the above criteria with a particle sizing of less than 6-inches.

The recommendations provided herein, particularly under **Site Preparation, Grading and Filling, Foundations, Site Drainage** and **Construction Observation and Testing Services** are intended to reduce risks of structural distress related to consolidation or expansion of native soils and/or structural fills. These recommendations, along with proper design and construction

of the planned structure(s) and associated improvements, work together as a system to improve overall performance. If any aspect of this system is ignored or poorly implemented, the performance of the project will suffer.

Any evaluation of the site for the presence of surface or subsurface hazardous substances is beyond the scope of this study. When suspected hazardous substances are encountered during routine geotechnical investigations, they are noted in the exploration logs and reported to the client. No such substances were identified during our exploration.

The test pits were excavated by backhoe at the locations shown on the site plan. All test pits were backfilled upon completion of the field portion of our study. The backfill was compacted to the extent possible with the equipment on hand. However, the backfill was not compacted to the requirements presented herein under Grading and Filling. If structures, concrete flatwork, pavement, utilities or other improvements are to be located in the vicinity of any of the test pits, the backfill should be removed and re-compacted in accordance with the requirements contained in the soils report. Failure to properly compact backfill could result in excessive settlement of improvements located over test pits.

Structural areas referred to in this report include all areas of buildings, concrete slabs, asphalt pavements, as well as pads for any minor structures. All compaction requirements presented in this report are relative to ASTM D 1557[1].

SITE PREPARATION

All vegetation and topsoil is to be stripped and grubbed from structural areas. A stripping depth of 0.2 to 0.3 feet is anticipated. The entire root bulb should be removed as part of any tree removal at the project site. Tree roots greater than 2 inches in diameter shall be removed when present within 2 feet of structural subgrade. Strippings could be placed in backyard non-structural fill areas at least 5 feet away from the structure footprint. Concentration of the vegetation must be avoided since placing large sagebrush in concentrated layers could lead to excessive settlement and subsequent surface depressions.

Existing wells must be abandoned by a contractor licensed to perform those services in the State of Nevada. Regulations, well logs, and links to the Nevada database are available at

[1] • Relative compaction refers to the ratio (percentage of the in-place density of a soil divided by the same soil's maximum dry density) as determined by the ASTM D 1557 laboratory test procedure. Optimum moisture content is the corresponding moisture content of the same soil at its maximum dry density.

http://water.nv.gov/ and can be readily searched by Section, Township, and Range. Septic tanks can be electronically located or leach fields located during construction using grading equipment. Proof rolling the development area with large construction equipment, such as a fully loaded water truck or large loader with a fully loaded bucket may show excessive deflection or rutting when over leach lines. Leach fields may become apparent once septic tanks are located, the due to the direction of the septic tank outlet pipe. All septic systems must be completely removed below structural areas and replaced with structural fill to reduce the settlement risks associated with constructing over these improvements. A discovery program should be included in the project specifications to ensure methods are employed to delineate and locate existing subsurface features.

All areas to receive structural fill or structural loading should be densified to a minimum depth of 8-inches to at least 90 percent relative compaction in accordance with ASTM D 1557. It is recommended that soils have moisture contents of plus or minus 3 percent of optimum moisture (ASTM D1557) prior to densification. Higher moisture contents will be acceptable if the soil horizon is stable and density can be achieved in subsequent structural fill lifts. Scarification and moisture conditioning may be required to achieve the required soil moisture content recommendations.

After the densification process, a firm, stable surface should be produced. Unstable soils due to excessive moisture content from excessive construction watering, precipitation, or irrigation, may be encountered and should be scarified and allowed to dry, over-excavated and replaced with structural fill, or stabilized with a geotextile or an imported rock fill. Foundations can bear directly on native soils (granular or fine-grained) or structural fill. The explorations performed for this investigation were for the formulation of preliminary design recommendations. A design level geotechnical review, and possibly additional exploration, will be required for the different phases of development once design grades and concepts are finalized.

GRADING AND FILLING

Structural fill is defined as any material placed below structural elements, including; foundations, concrete slabs-on-grade, pavements, or any structure that derives support from the underlying soil. All structural fill should be free of organic matter or other deleterious material. On-site granular and fine-grained soils can be used as structural fill. If imported structural fill is required, it should meet the requirements of Table 2.

TABLE 2 - GUIDELINE SPECIFICATION FOR IMPORTED STRUCTURAL FILL		
Sieve Size	**Percent by Weight Passing**	
6 Inch	100	
¾ Inch	70 – 100	
No. 40	15 – 70	
No. 200	10 – 40	
Percent Passing No. 200 Sieve	**MAXIMUM LIQUID LIMIT**	**Maximum Plastic Index**
10 – 20	40	15
21 – 40	35	10

Adjustments to the recommended limits presented in Table 2 can be provided to allow the use of other granular, non-expansive material, including rock fills. Any such adjustments must be made and approved by the geotechnical engineer, in writing, prior to importing fill to the site. Rock fills must consist of a 12-inch-minus, well-graded soil, placed and compacted in maximum 15-inch thick lifts. A soil fill or 3-inch minus rock fill is normally used for the final 12 inches of pad fills to facilitate fine grading and utility trenching.

Structural fill should be placed in maximum 12-inch thick (loose) level lifts or layers and densified to at least 90 percent relative compaction where fill thickness is less than 5 feet. The degree of compaction should be increased to 95 percent where the fill thickness below design subgrade exceeds 5 feet. The required moisture content of the soils prior to densification depends on the soil type and the moisture-density relationship test results (ASTM D1557). However, soils should have moisture contents of at least plus or minus 3 percent of optimum moisture (ASTM D1557). Higher moisture contents are acceptable if the soil lifts are stable and required relative compaction can be attained in the soil lift and subsequent soil lifts.

The exterior face of any embankment should be constructed with an inclination of no steeper than 2H:1V. The surface of the slope should be compacted to the same percent compaction as the body of the fill. This may be accomplished by compacting the surface of the embankment as it is constructed or by overbuilding the fill and cutting back to its compacted core. However, the cut away material should be placed and compacted as outlined above rather than left at the base of the slope.

FOUNDATIONS

It is our understanding that spread footings will be utilized for this project. Provided the foundation soils have been prepared in accordance with the recommendations of this report, the bearing pressures presented in Table 3 can be utilized for design.

TABLE 3 – ALLOWABLE FOUNDATION BEARING PRESSURES

Loading Conditions	Maximum Soil Net Allowable Bearing Pressures[1] (pounds per square foot)
Dead Loads plus full time live loads	2,000
Dead Loads plus live loads, plus transient wind, or seismic loads.	2,700

NOTES:
1. The net allowable bearing pressure is that pressure at the base of the footing in excess of the adjacent overburden pressure.

For frost protection, footings should all be set at least two feet below adjacent outside or unheated interior finish grades. Footings not located within frost prone areas should be placed at least 12 inches below surrounding ground or slab level for confinement. Regardless of loading, individual pad foundations and continuous spread foundations should be at least 18 and 12 inches wide, respectively, or as required by code.

Lateral loads, such as wind or seismic, may be resisted by passive soil pressure and friction on the bottom of the footing. The recommended coefficient of base friction is 0.40, and has been reduced by a factor of 1.5 on the ultimate soil strength. Design values for active and passive equivalent fluid pressures are 35 and 350 pounds per square foot per foot of depth, respectively. In designing for passive pressure, the upper one-foot of the soil profile should not be included unless confined by a concrete slab, or pavement. These design values are based on spread footings bearing on native granular soils, native fine-grained soils, or structural fill and backfilled with structural fill.

If loose, soft, wet, or disturbed soils are encountered at the foundation subgrade, these soils should be removed to expose suitable foundation soils, and the resulting over-excavation backfilled with compacted structural fill. The base of all excavations should be dry and free of loose materials at the time of concrete placement.

Total settlement for the structures is anticipated to be on the order of ½ inch, or less. Differential settlement between foundations with similar loads and sizes is anticipated to be ½ of the total settlement.

TRENCHING AND EXCAVATION

Temporary trenches with near vertical sidewalls should be relatively stable to a depth of approximately five feet. Excavations to greater depths will require shoring or laying back of sidewalls to maintain adequate stability. Regulations amended in Part 1926, Volume 54, Number 209 of the Federal Register (Table B-1, October 31, 1989) require that the temporary sidewall slopes be no greater than those presented in Table 4.

TABLE 4 - MAXIMUM ALLOWABLE TEMPORARY SLOPES

Soil or Rock Type	Maximum Allowable Slopes[1] For Deep Excavations Less Than 20 Feet Deep[2]	
Stable Rock	Vertical	(90 degrees)
Type A[3]	3H:4V	(53 degrees)
Type B	1H:1V	(45 degrees)
Type C	3H:2V	(34 degrees)

NOTES:
1. Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.
2. Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.
3. A short-term (open 24 hours or less) maximum allowable slope of 1H:2V (63 degrees) is allowed in excavations in Type A soil that are 12 feet or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet in depth shall be 3H:4V (53 degrees).

Based on the results of our exploration, it is our opinion that the bulk of the site soils appear to be predominately Type C, although variations will exist. All trenching should be performed and stabilized in accordance with local, state, and OSHA standards. Bank stability remains the responsibility of the contractor, who is present at the site, able to observe changes in ground conditions, and has control over personnel and equipment.

SLOPE STABILITY AND EROSION CONTROL

Stability of cut and filled surfaces involves two separate aspects. The first concerns true slope stability related to mass wasting, landslides or the enmasse downward movement of soil or rock. Cut and fill slopes, with gradients of 2H:1V (horizontal to vertical) or flatter, are suitable for the project soils.

The second aspect of stability involves erosion potential and is dependent on numerous factors involving grain size distribution, cohesion, moisture content, slope angle and the velocity of the water or wind on the ground surface. Erosion protection should be in accordance with the requirements of Carson City.

Temporary (during construction) and permanent (after construction) erosion control will be required for all disturbed areas. The contractor shall prevent dust from being generated during construction in compliance with all applicable city, county, state and federal regulations, and shall submit an acceptable dust control plan to the Carson City District Health Department prior to starting site preparation or earthwork. The project specifications should include an indemnification by the contractor of the owner and engineer for any dust generation during the construction period. The owner will be responsible for mitigation of dust after his acceptance of the project.

SITE DRAINAGE

Adequate surface drainage must be constructed and maintained away from the structures. The permanent finish slopes away from the structure should be sufficient to allow water to drain away quickly from and prevent any ponding of water adjacent to the structure. The US Department of Housing and Urban Development (HUD) recommends the site grading address the following:

- Allow for drainage of surface water away from buildings and directed off-site
- Minimize earth settlement problems
- Avoid concentrating runoff onto neighboring properties where erosion or other damage will be caused
- Minimize erosion

In addition, the 2003 International Building Code notes that "unless otherwise recommended by a registered design professional, the ground immediately adjacent to the foundation shall be sloped away from the building at a slope of not less than one unit vertical in 20 units horizontal (5 percent slope) for a minimum distance of 10 feet measured perpendicular to the face of the wall or an approved alternate method of diverting water away from foundations shall be used."

A system of roof gutters and downspouts is recommended to collect roof drainage and direct it away from the foundations. Any changes to the finished grades, which modify the design

slopes in any way, will adversely impact the drainage and aggravate surface and crawl space ponding.

Crawl space moisture is commonly associated with raised floor construction. Introduction of this moisture is due to several sources including, but not limited to: excessive landscape irrigation, poor site drainage, excessive precipitation, or leakage pools, ponds, irrigation lines, etc. In addition, it is common for water to seep into fill material, perch on the native or compacted soils, travel along the surface of the native or compacted soils, and daylight where the cut/fill line is exposed. This perched water can daylight in any number of locations such as slope faces, roadway subgrade, and crawl spaces.

Foundation, stemwall, and general backfill should be considered as structural fill and should be densified to at least 90 percent relative compaction in accordance with the requirements given in the Grading and Filling section of this report. Compacting the backfill material decreases permeability and reduces the amount of irrigation and storm water available to enter under floor areas. This will also assist in reducing earth settlement and minimizing erosion as required by HUD's drainage requirements. Random density testing could be provided during final grading to help verify that compactive effort is being applied to the backfill. Failure to adequately compact the backfill can lead to localized surface and crawlspace ponding.

One proactive alternative is to collect moisture via drainage swales excavated along the interior of the perimeter footing and sloped to the sewer lateral and gravel bed the lateral from the crawl space to the sewer main. The trench should start out a minimum depth of 3 inches below footing grade and slope to the sewer lateral at approximately 1 percent, and should be backfilled with drain rock. Once the swales are constructed, the entire crawl space should be covered with a moisture barrier (visqueen sheeting). Refer to Appendix C for a construction detail of the proposed drainage swale alternative.

Crawl space drainage systems are not a guarantee against sporadic wetting caused by large storms, unusually large and/or rapid snowmelt or plumbing leaks. The purpose of a crawl space drainage system is to reduce the amount of moisture that accumulates in the crawl space under normal conditions and to drain the moisture caused by an unusual condition within a few days or possibly weeks. Positive crawl space drainage does not insure that soils

are dry, only that ponding water is not normally present. As with other design features of the residence, maintenance is required.

Moist to wet soils are normal in crawl spaces, particularly in the vicinity of the perimeter footings. Any perceived harmful effects from this moisture are usually alleviated by the proper installation of a visqueen vapor retarder placed over the crawl space surface. Crawl space vents should be open all year to help facilitate the evaporation and reduction of moisture.

CONCRETE SLABS

A base course, compacted to not less than 90 percent, exhibiting a minimum R-value of 60 shall underlie private concrete slabs-on-grade. Type 2, Class B aggregate base is the preferred alternative. However, other material types such as decomposed granite, or native poorly graded sand with silt meeting the R-value requirement is acceptable within private improvements such as patios, private walks, and driveways. The base material should be 6 inches beneath driveways and 4 inches beneath private flatwork. All dedicated and public easement improvements shall be constructed in accordance with the Standard Specifications for Public Works Construction as adopted by Carson City.

The 1997 UBC requires concrete exposed to deicing salts meet the requirements summarized in Table 5 and may be considered for private flatwork.

TABLE 5 – MINIMUM CONCRETE REQUIREMENT FOR CONCRETE EXPOSED TO DEICING SALTS

Use	Exposure		Cement[3]	Coarse Aggregate Size (in)[1,3]	Minimum Sacks of Cement/ Yard[3]	Min 28 Day Compressive Strength (psi)[3]	Maximum Water/ Cement Ratio[3]	Maximum Slump (in)[3]	Entrained Air (%)[3]
Exterior[2] – Curbs, Gutters, Walks and Driveways	De-Icing Salts	Severe Weathering Region	Type II-V or Type II with Flyash	-	6.0	4500	0.45	4	6 min
	Recommended		**Type II-V**	**# 67**	**6.0**	**4500**	**0.45**	**4**	**6 min**

[1] Aggregate size may be adjusted providing the contractor can acceptably demonstrate his ability to work and finish the product, and all other requirements are met.
[2] Fibers may be added to increase durability.
[3] Requires the project structural engineer's approval

All concrete placement and curing should be performed in accordance with procedures outlined by the American Concrete Institute. Special considerations should be given to concrete placed and cured during hot or cold weather conditions. Proper control joints and reinforcing should be provided to minimize any damage resulting from shrinkage.

ASPHALTIC CONCRETE

The minimum structural section for roadways in Carson City is 3 inches of asphaltic concrete on 6 inches of Type 2, Class B aggregate base overlying a prepared subgrade. Based on our preliminary test data, the site soils will likely exhibit R-Values in the range of 30 to 60, and the minimum structural section is expected to be satisfactory for the residential streets and access roads. R-Value testing and formulation of a structural design section should be a part of the design level geotechnical report.

All roadway construction shall be in accordance with the approved plans and the Standard Specifications for Public Works Construction. Roadway subgrade shall be prepared in accordance with the requirements of this report. AC-20P oil is recommended for use in the pavement mat. The Contractor should submit a pavement mix design to the Owner, for approval, at least 5 working days prior to paving. When pavement is placed directly adjacent to concrete flatwork, the finish compacted grade of the pavement be at least ¼ to ⅜ of an inch higher than the edge of adjacent concrete surface. This is to allow adequate compaction of the pavement without damaging the concrete.

CONSTRUCTION OBSERVATION AND TESTING SERVICES

Matrix Construction Services should provide testing and observation services during site preparation, grading, over-excavation, fill placement, and paving. These observations would allow us to document that the geotechnical conditions are as anticipated and that the contractor's work meets with the criteria in the approved plans and specifications. In addition, random testing of driveway subgrade, stemwall backfill, and material testing of foundations, stemwalls, and private concrete can be provided as an additional level of quality assurance for the developer.

STANDARD LIMITATION CLAUSE

This report has been prepared in accordance with generally accepted local geotechnical practices. The analyses and recommendations submitted are based upon field exploration performed at the locations shown on Plate A-1 – Site Plan of this report. This report does not reflect soils variations that may become evident during the construction period, at which time re-evaluation of the recommendations may be necessary. We recommend our firm be retained to perform construction observation in all phases of the project related to geotechnical factors to document compliance with our recommendations. The owner/project manger is responsible for distribution of this geotechnical report to all designers and contractors whose work is related to geotechnical factors.

All plans and specifications should be reviewed by the design engineer responsible for this geotechnical report, to determine if they have been completed in accordance with the recommendations contained in this report, prior to submitting to the building department for review. It is the owner's/project manager responsibility to provide the plans and specifications to the engineer.

Water level readings were made on the date shown on Plate A-2 – Log of Borings/Test Pits of this report. Fluctuations in the water table may occur due to rainfall, temperature, seasonal runoff or adjacent irrigation practices. However, except in the instance of the installation of deep services, groundwater was encountered at a level well below that which is anticipated to affect construction.

This report has been prepared to provide information allowing the architect and engineer to design the project. The owner/project manager is responsible for distribution of this report to all designers and contractors whose work is affected by geotechnical aspects. In the event of changes in the design, location, or ownership of the project after presentation of this report, our recommendations should be reviewed and possibly modified by the geotechnical engineer. If the geotechnical engineer is not accorded the privilege of making this recommended review, he can assume no responsibility for misinterpretation or misapplication of his recommendations or their validity in the event changes have been made in the original design concept without his prior review. The engineer makes no other warranties, either expressed or implied, as to the professional advice provided under the terms of this agreement and included in this report.

REFERENCES

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The Asphalt Institute, 1991, *Thickness Design - Asphalt Pavements for Highways and Streets*, Manual Series No. 1 (MS-1).

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Sowers, George, F., 1979, *Introductory Soil Mechanics and Foundations: Geotechnical Engineering*

Standard Specifications for Public Works Construction, 1996 (Washoe County, Sparks-Reno, Carson City, Yerington, Nevada).

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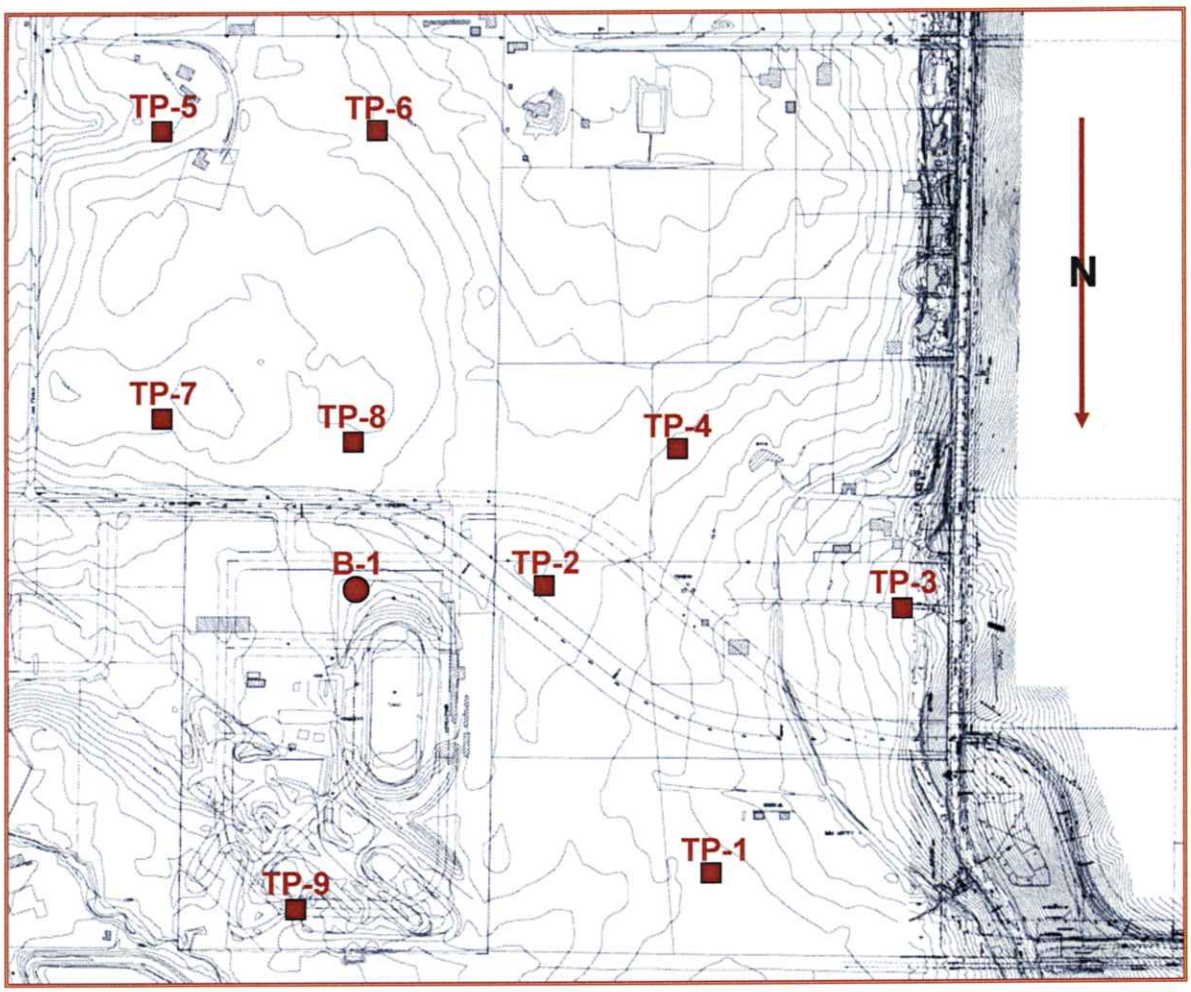
APPENDIX A



SITE PLAN AND APPROXIMATE TEST HOLE LOCATIONS

CARSON CITY PARCELS
EAST ½ SECTION 5, T14N, R20E, MDB&M
1110.01
Plate A-1

Matrix Construction Services, Inc.
9475 Double R Boulevard, Suite 7
Reno, Nevada 89521
Ph 775.828.1866 Fax 775.825.1871

LOG OF TEST PIT NO. 1

PROJECT NAME:	BC Carson City
LOCATION:	See Site Plan
DATE:	10/13/2004

PROJECT NUMBER:	1110.01
SURFACE ELEVATION:	~ 4709'
EXPLORATION EQUIPMENT:	Case 580 D

Depth in Feet	Unified Soil Classification	Graphical Log	Sample	Sample Type	Sample No.	Moisture	Visual Description	Pocket Penetrometer (tsf)	Moisture Content (% of Dry Weight)	Laboratory Tests
1							0 – 9' – Silty Sand with minor gravel (SM) – loose to medium dense, moist, brown/orange, with light vegetation, difficult excavation starting @ 7 feet			
2										
				B	1				9.1	A,B
3										
4										
	SM			B	2	M			10.6	A,B
5										
6										
7										
8										
9										

No Free Water Encountered
Bottom of Test Pit @ 9 Feet

GROUNDWATER & SOIL MOISTURE				
	Depth	Hour	Date	D - DRY
▽	NE		10/13/2004	M - MOIST
▼				W - WET
NE- No Free Water Encountered				V-VERY MOIST
				S- SLIGHTLY MOIST

SAMPLE TYPE	
A - Drill Cuttings	B - Bulk Sample
C - CME Sample	R - Rotary Cuttings
S- 2" O.D. 1.38" I.D. Tube Sample	
U- 3" O.D. 2.42 " I.D. Tube Sample	
T- 3" O.D. Thin-Walled Shelby Tube	

LABORATORY TESTS	
A-	Atterberg Limits
B-	Grain Size Distribution
C-	Consolidation
MD-	Moisture/Density
DS -	Direct Shear

MATRIX CONSTRUCTION SERVICES
INCORPORATED
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Reno, Nevada 8950[illegible]
Phone 775.828.1866 Fax 775.828.1871

Plate
A-2

LOG OF TEST PIT NO. 2

PROJECT NAME:	BC Carson City	PROJECT NUMBER:	1110.01
LOCATION:	See Site Plan	SURFACE ELEVATION:	~ 4706'
DATE:	10/13/2004	EXPLORATION EQUIPMENT:	Case 580 D

Depth in Feet	Unified Soil Classification	Graphical Log	Sample	Sample Type	Sample No.	Moisture	Visual Description	Pocket Penetrometer (tsf)	Moisture Content (% of Dry Weight)	Laboratory Tests
1–10	SM			B	3	M	0 – 10' – Silty Sand with minor gravel (SM) – loose to dense, moist, brown, with light vegetation			

No Free Water Encountered
Bottom of Test Pit @ 10 Feet

GROUNDWATER & SOIL MOISTURE				
	Depth	Hour	Date	
▽	NE		10/13/2004	
▼				
NE- No Free Water Encountered				

GROUNDWATER & SOIL MOISTURE	
D - DRY	
M - MOIST	
W - WET	
V-VERY MOIST	
S- SLIGHTLY MOIST	

SAMPLE TYPE	
A - Drill Cuttings	B - Bulk Sample
C - CME Sample	R - Rotary Cuttings
S- 2" O.D. 1.38" I.D. Tube Sample	
U- 3" O.D. 2.42 " I.D. Tube Sample	
T- 3" O.D. Thin-Walled Shelby Tube	

LABORATORY TESTS	
A- Atterberg Limits	
B- Grain Size Distribution	
C- Consolidation	
MD- Moisture/Density	
DS - Direct Shear	

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Plate
A-2

LOG OF TEST PIT NO. 3

PROJECT NAME:	BC Carson City
LOCATION:	See Site Plan
DATE:	10/13/2004

PROJECT NUMBER:	1110.01
SURFACE ELEVATION:	~ 4728'
EXPLORATION EQUIPMENT:	Case 580 D

Depth in Feet	Unified Soil Classification	Graphical Log	Sample	Sample Type	Sample No.	Moisture	Visual Description	Pocket Penetrometer (tsf)	Moisture Content (% of Dry Weight)	Laboratory Tests
1	SM			B	4	D	0 – 9 ½' – Silty Sand with occasional gravel and cobbles (SM) – loose to dense, dry, brown, heavy sage roots to 1 foot			
2										
3										
4										
5										
6										
7										
8										
9										

No Free Water Encountered
Bottom of Test Pit @ 9 ½ Feet

GROUNDWATER & SOIL MOISTURE				
	Depth	Hour	Date	D - DRY
▽	NE		10/13/2004	M - MOIST
▼				W - WET
NE- No Free Water Encountered				V-VERY MOIST
				S- SLIGHTLY MOIST

SAMPLE TYPE	
A - Drill Cuttings	B - Bulk Sample
C - CME Sample	R - Rotary Cuttings
S- 2" O.D. 1.38" I.D. Tube Sample	
U- 3" O.D. 2.42 " I.D. Tube Sample	
T- 3" O.D. Thin-Walled Shelby Tube	

LABORATORY TESTS
A- Atterberg Limits
B- Grain Size Distribution
C- Consolidation
MD- Moisture/Density
DS - Direct Shear

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Plate
A-2

LOG OF TEST PIT NO. 4

PROJECT NAME:	BC Carson City
LOCATION:	See Site Plan
DATE:	10/13/2004

PROJECT NUMBER:	1110.01
SURFACE ELEVATION:	~ 4706'
EXPLORATION EQUIPMENT:	Case 580 D

Depth in Feet	Unified Soil Classification	Graphical Log	Sample	Sample Type	Sample No.	Moisture	Visual Description	Pocket Penetrometer (tsf)	Moisture Content (% of Dry Weight)	Laboratory Tests
1	SC					D/M	0 – 6' – Clayey Sand with occasional gravel (SC) – dense, dry to moist, brown, stripped of vegetation			
2										
3										
4				B	5				12.0	A,B
5										
6	SP					M	6 – 10' – Sand with Silt (SP) – very dense, moist, orange brown			
7										
8										
9										
10							Bottom of Test Pit @ 10 Feet No Free Water Encountered			

GROUNDWATER & SOIL MOISTURE				
	Depth	Hour	Date	D - DRY
▽	NE		10/13/2004	M - MOIST
▼				W - WET
NE- No Free Water Encountered				V-VERY MOIST
				S- SLIGHTLY MOIST

SAMPLE TYPE	
A - Drill Cuttings	B - Bulk Sample
C - CME Sample	R - Rotary Cuttings
S- 2" O.D. 1.38" I.D. Tube Sample	
U- 3" O.D. 2.42 " I.D. Tube Sample	
T- 3" O.D. Thin-Walled Shelby Tube	

LABORATORY TESTS	
A-	Atterberg Limits
B-	Grain Size Distribution
C-	Consolidation
MD-	Moisture/Density
DS -	Direct Shear

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Plate
A-2

LOG OF TEST PIT NO. 5

PROJECT NAME:	BC Carson City
LOCATION:	See Site Plan
DATE:	10/13/2004

PROJECT NUMBER:	1110.01
SURFACE ELEVATION:	~ 4700'
EXPLORATION EQUIPMENT:	Case 580 D

Depth in Feet	Unified Soil Classification	Graphical Log	Sample	Sample Type	Sample No.	Moisture	Visual Description	Pocket Penetrometer (tsf)	Moisture Content (% of Dry Weight)	Laboratory Tests
1–5	SM					D	0 – 6' – Silty Sand (SM) – loose, dry, brown			
6–10	SC/SP					D	6 – 10' – Clayey Sand with occasional gravel (SC/SP) – dense, dry, brown			

No Free Water Encountered
Bottom of Test Pit @ 10 Feet

GROUNDWATER & SOIL MOISTURE				
	Depth	Hour	Date	D - DRY
▽	NE		10/13/2004	M - MOIST
▼				W - WET
NE- No Free Water Encountered				V-VERY MOIST
				S- SLIGHTLY MOIST

SAMPLE TYPE	
A - Drill Cuttings	B - Bulk Sample
C - CME Sample	R - Rotary Cuttings
S- 2" O.D. 1.38" I.D. Tube Sample	
U- 3" O.D. 2.42 " I.D. Tube Sample	
T- 3" O.D. Thin-Walled Shelby Tube	

LABORATORY TESTS	
A-	Atterberg Limits
B-	Grain Size Distribution
C-	Consolidation
MD-	Moisture/Density
DS -	Direct Shear

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Reno, Nevada 8950
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Plate
A-2

LOG OF TEST PIT NO. 6

PROJECT NAME:	BC Carson City
LOCATION:	See Site Plan
DATE:	10/13/2004

PROJECT NUMBER:	1110.01
SURFACE ELEVATION:	~ 4704'
EXPLORATION EQUIPMENT:	Case 580 D

Depth in Feet	Unified Soil Classification	Graphical Log	Sample	Sample Type	Sample No.	Moisture	Visual Description	Pocket Penetrometer (tsf)	Moisture Content (% of Dry Weight)	Laboratory Tests
1	SM					D	0 – 1' – Silty Sand (SM) – loose, dry, brown			
2	SC					D	1 – 4 ½' – Clayey Sand with occasional gravel (SC) – very dense, dry, brown			
5	SP			B	6	D/M	4 ½ - 10' – Sand with Clay (SP) – dense, dry to moist, brown		3.3	A.B
10							No Free Water Encountered Bottom of Test Pit @ 10 Feet			

GROUNDWATER & SOIL MOISTURE				
	Depth	Hour	Date	D - DRY
▽	NE		10/13/2004	M - MOIST
▼				W - WET
NE- No Free Water Encountered				V-VERY MOIST
				S- SLIGHTLY MOIST

SAMPLE TYPE	
A - Drill Cuttings	B - Bulk Sample
C - CME Sample	R - Rotary Cuttings
S- 2" O.D. 1.38" I.D. Tube Sample	
U- 3" O.D. 2.42 " I.D. Tube Sample	
T- 3" O.D. Thin-Walled Shelby Tube	

LABORATORY TESTS	
A-	Atterberg Limits
B-	Grain Size Distribution
C-	Consolidation
MD-	Moisture/Density
DS -	Direct Shear

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Plate
A-2

LOG OF TEST PIT NO. 7

PROJECT NAME:	BC Carson City	PROJECT NUMBER:	1110.01
LOCATION:	See Site Plan	SURFACE ELEVATION:	~ 4709'
DATE:	10/13/2004	EXPLORATION EQUIPMENT:	Case 580 D

Depth in Feet	Unified Soil Classification	Graphical Log	Sample	Sample Type	Sample No.	Moisture	Visual Description	Pocket Penetrometer (tsf)	Moisture Content (% of Dry Weight)	Laboratory Tests
1	SM					D	0 – 1' – Silty Sand (SM) – loose, dry, brown			
2	SC					D	1 – 4' – Clayey Sand with occasional gravel (SC) – very dense, dry, brown			
3										
4	SP					D	4 – 5' – Sand with Clay (SP) – dense, dry to moist, orange			
5							Bottom of Test Pit @ 5 Feet No Free Water Encountered			

GROUNDWATER & SOIL MOISTURE				
	Depth	Hour	Date	D - DRY
▽	NE		10/13/2004	M - MOIST
▼				W - WET
NE- No Free Water Encountered				V-VERY MOIST
				S- SLIGHTLY MOIST

SAMPLE TYPE	
A - Drill Cuttings	B - Bulk Sample
C - CME Sample	R - Rotary Cuttings
S- 2" O.D. 1.38" I.D. Tube Sample	
U- 3" O.D. 2.42 " I.D. Tube Sample	
T- 3" O.D. Thin-Walled Shelby Tube	

LABORATORY TESTS
A- Atterberg Limits
B- Grain Size Distribution
C- Consolidation
MD- Moisture/Density
DS - Direct Shear

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Plate
A-2

LOG OF TEST PIT NO. 8

PROJECT NAME:	BC Carson City
LOCATION:	See Site Plan
DATE:	10/13/2004

PROJECT NUMBER:	1110.01
SURFACE ELEVATION:	~ 4708'
EXPLORATION EQUIPMENT:	Case 580 D

Depth in Feet	Unified Soil Classification	Graphical Log	Sample	Sample Type	Sample No.	Moisture	Visual Description	Pocket Penetrometer (tsf)	Moisture Content (% of Dry Weight)	Laboratory Tests
1	SM					D	0 – 1' – Silty Sand (SM) – loose, dry, brown			
2	SC					D	1 – 2 ½' – Clayey Sand with occasional gravel (SC) – very dense, dry, brown/orange			
				B	7				2.1	A,B
3	SP					D/M	2 ½ - 9 ½' – Sand with Clay (SP) – dense, dry to moist, brown/orange			
4										
5										
6										
7										
8										
9										

No Free Water Encountered
Bottom of Test Pit @ 9 ½ Feet

GROUNDWATER & SOIL MOISTURE				
	Depth	Hour	Date	D - DRY
▽	NE		10/13/2004	M - MOIST
▼				W - WET
NE- No Free Water Encountered				V-VERY MOIST
				S- SLIGHTLY MOIST

SAMPLE TYPE	
A - Drill Cuttings	B - Bulk Sample
C - CME Sample	R - Rotary Cuttings
S- 2" O.D. 1.38" I.D. Tube Sample	
U- 3" O.D. 2.42 " I.D. Tube Sample	
T- 3" O.D. Thin-Walled Shelby Tube	

LABORATORY TESTS	
A-	Atterberg Limits
B-	Grain Size Distribution
C-	Consolidation
MD-	Moisture/Density
DS -	Direct Shear

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Plate
A-2

LOG OF TEST PIT NO. 9

PROJECT NAME:	BC Carson City
LOCATION:	See Site Plan
DATE:	10/13/2004

PROJECT NUMBER:	1110.01
SURFACE ELEVATION:	~ 4694'
EXPLORATION EQUIPMENT:	Case 580 D

Depth in Feet	Unified Soil Classification	Graphical Log	Sample	Sample Type	Sample No.	Moisture	Visual Description	Pocket Penetrometer (tsf)	Moisture Content (% of Dry Weight)	Laboratory Tests
1	SM					D	0 – 2' – Silty Sand with gravel (SM) – FILL, medium dense, dry, brown			
2	SP					D/M	2 – 6' – Sand with Clay (SP) – medium dense, dry to moist, brown with minor debris			
3				B	8					
4										
5										
6	SM					M	6 – 9' – Silty Sand with gravel (SM) – dense, moist, orange, density increased with depth			
7										
8										
9										

Bottom of Test Pit @ 9 Feet
No Free Water Encountered

GROUNDWATER & SOIL MOISTURE				
	Depth	Hour	Date	D - DRY
▽	NE		10/13/2004	M - MOIST
▼				W - WET
NE- No Free Water Encountered				V-VERY MOIST
				S- SLIGHTLY MOIST

SAMPLE TYPE	
A - Drill Cuttings	B - Bulk Sample
C - CME Sample	R - Rotary Cuttings
S- 2" O.D. 1.38" I.D. Tube Sample	
U- 3" O.D. 2.42 " I.D. Tube Sample	
T- 3" O.D. Thin-Walled Shelby Tube	

LABORATORY TESTS	
A-	Atterberg Limits
B-	Grain Size Distribution
C-	Consolidation
MD-	Moisture/Density
DS -	Direct Shear

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Plate
A-2

LOG OF BORING NO. 1

PROJECT NAME:	Carson City Parcels	PROJECT NUMBER:	1110.01
LOCATION:	See Site Plan	SURFACE ELEVATION:	~ 4706'
DATE:	10/27/2004	EXPLORATION EQUIPMENT:	CME 55

Depth in Feet	Unified Soil Classification	Graphical Log	Sample	Sample Type	Blows per Foot	Sample No.	Moisture	Visual Description	Pocket Penetrometer (tsf)	Moisture Content (% of Dry Weight)	Laboratory Tests
0	SM			S	30		D/M	0 - 14' Silty Sand (SM) with Clay - medium dense to dense, dry to moist, brown			
				S	18						
5				S	28						
				S	+50			Very dense			
10				S	60						
15	SC			S	61		M/W	14 - 23' Clayey Sand (SC) with Silt - very dense, moist to wet, brown			
20				S	41			Clay content increases			
▼ 25	SM/SP			S	71		M/W	23 - 41 ½' Silty Sand (SM/SP) with some Clay - very dense, moist to wet			
								Drilling Rate - 6 minutes/foot			
30				S	54			Drilling Rate - 5 minutes/foot			
35				S	50						
41				S	56			Bottom of Boring @ 41 ½ Feet Free Water Encountered @ 24 Feet			

GROUNDWATER & SOIL MOISTURE				
	Depth	Hour	Date	D - DRY
▽				M - MOIST
▼	24'		10/27/2004	W - WET
NE- No Free Water Encountered				V-VERY MOIST
				S- SLIGHTLY MOIST

SAMPLE TYPE	
A - Drill Cuttings	B - Bulk Sample
C - CME Sample	R - Rotary Cuttings
S- 2" O.D. 1.38" I.D. Tube Sample	
U- 3" O.D. 2.42 " I.D. Tube Sample	
T- 3" O.D. Thin-Walled Shelby Tube	

LABORATORY TESTS	
A-	Atterberg Limits
B-	Grain Size Distribution
C-	Consolidation
MD-	Moisture/Density
DS -	Direct Shear

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Reno, Nevada 8952'
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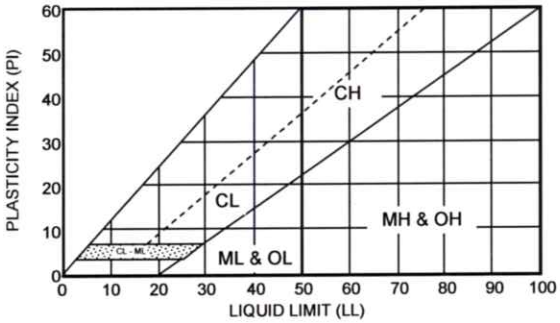
Plate
B-1

MAJOR DIVISION					TYPICAL NAMES
COARSED-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVEL MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE OR NO FINES		GW	WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
				GP	POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES		GM	SILTY GRAVELS, SILTY GRAVELS WITH SAND
				GC	CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SAND MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE OR NO FINES		SW	WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
				SP	POORLY GRADED SAND WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES		SM	SILTY SANDS WITH OR WITHOUT GRAVEL
				SC	CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILT AND CLAY LIQUID LIMIT 50% OR LESS			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
				OL	ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILT AND CLAY LIQUID LIMIT GREATER THAN 50%			MH	INORGANIC SILTS, MICACEOUS OR DIATAMACEOUS FINE SANDY OR SILTY SOLID, ELASTIC SILTS
				CH	INORGANIC CLAYS OR HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC SILTS OR CLAYS MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS



CONSISTENCY		RELATIVE DENSITY	
SILTS & CLAYS	SPT BLOW* COUNTS (N)	SANDS & GRAVELS	SPT BLOW* COUNTS (N)
VERY SOFT	0 - 2	VERY LOOSE	0 - 4
SOFT	3 - 4	LOOSE	5 - 10
MEDIUM STIFF	5 - 8	MEDIUM DENSE	11 - 30
STIFF	9 - 15	DENSE	31 - 50
VERY STIFF	16 - 30	VERY DENSE	50 +
HARD	30 +		

* The Standard Penetration Resistance (N) In blows per foot is obtained by the ASTM D1585 procedure using 2" O.D., 1 3/8" I.D. samplers.

DESCRIPTION OF ESTIMATED PERCENTAGES OF GRAVEL, SAND, AND FINES	
TRACE	Particles are present but est. < 5%
FEW	5% - 10%
LITTLE	15% - 20%
SOME	30% - 45%
MOSTLY	50% - 100%

NOTE: Percentages are presented within soil description for soil horizon with laboratory tested soil samples.

DEFINITIONS OF SOIL FRACTIONS	
SOIL COMPONENT	PARTICLE SIZE RANGE
COBBLES	ABOVE 3 INCHES
GRAVEL	3 IN. TO NO. 4 SIEVE
COARSE GRAVEL	3 IN. TO 3/4 IN.
FINE GRAVEL	3/4 IN. TO NO. 4 SIEVE
SAND	NO. 4 TO NO. 200
COARSE SAND	NO. 4 TO NO. 10
MEDIUM SAND	NO. 10 TO NO. 40
FINE SAND	NO. 40 TO NO. 200
FINES (SILT OR CLAY)	MINUS NO. 200 SIEVE

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UNIFIED SOIL CLASSIFICATION AND KEY TO SOIL DESCRIPTION

Project: Carson City Parcels
Project No: 1110.01
Plate: A - 4

SUMMARY OF TEST RESULTS

CARSON CITY PARCELS

Sample	TP-1	TP-1	TP-4	TP-6	TP-8
Depth (ft)	2 - 3'	4 - 5'	4 - 5'	5 - 6'	2 - 3'
Sample No.	1	2	5	6	7
Sieve Size					
2"					
1 1/2"					
1"		100			
3/4"		97	100		
1/2"		96	93	100	
3/8"	100	96	84	99	100
# 4	99	95	61	95	98
# 10	95	91	44	84	83
# 40	68	67	21	42	38
# 100	37	35	11	15	14
# 200	20.6	18.1	6.8	6.3	7.4
% Moisture	9.1	10.6	12.0	3.3	2.1
Liquid Limit	-	-	-	-	-
Plasticity Index	Non-Plastic	Non-Plastic	Non-Plastic	Non-Plastic	Non-Plastic
Classification	SM	SM	SM	SM	SM

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LABORATORY TEST RESULTS

Project No.:	1110.01
Date:	12/27/2004
Plate No:	A-3

Manhard CONSULTING LTD

PRELIMINARY SEWER REPORT

FOR

SCHULZ RANCH PHASE 5

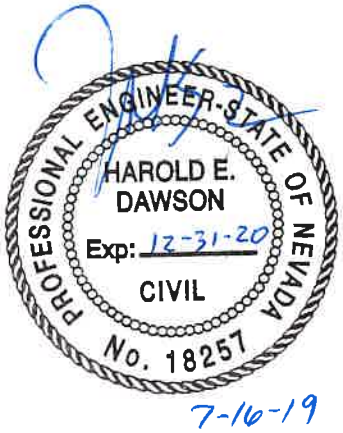
CARSON CITY, NEVADA

Prepared for:

Krueger Family Trust
5560 Longley Lane, Suite 100
Reno, Nevada 89511

Prepared by:

Manhard Consulting Ltd.
9850 Double R Boulevard
Suite 101
Reno, Nevada 89521



Project: APL.CCNV01

Date: July 2019

Table of Contents

Appendices

Figures

1 INTRODUCTION

1.1 Purpose of Analysis

This report represents a detailed analysis of the proposed sanitary sewer system for Schulz Ranch Phase 5. The purpose of this analysis is to establish peak flow rates and evaluate proposed sanitary sewer sizes for the subject property.

1.2 Project Location and Description

The proposed Schulz Ranch Phase 5 development is approximately 7.94 acres in size and located in the southern portion of Carson City, east of Center Drive, within the existing Schulz Ranch development. The proposed project site is situated within the East ½ of Section 5, Township 14 North, and Range 20 East of the Mount Diablo Meridian (refer to Figure 1, Vicinity Map). The project site is within the existing parcel 009-311-47. Currently the parcel is undeveloped.

Figure 2, the Sewer Display Map, illustrates the location and orientation of the project and its proposed lots and roadway locations.

1.3 Project Description

The Schulz Ranch Phase 5 development is a proposed subdivision which consists of 29 single-family residential units. The project site is currently zoned SF6.

2 PROPOSED ALIGNMENT AND QUANTITY OF SERVICE

2.1 Project Wastewater Collection System

Sewage flow from Schulz Ranch Phase 5 will be conveyed via public 8" diameter PVC SDR-35 sewer mains to the existing sanitary sewer stub located along the eastern portion of Schulz Ranch Phase 3 just west of the intersection of Sugarloaf Peak Drive and Chalk Bluff Drive. All of the mains in the proposed subdivision are located within the rights-of-way of the local roadways. The proposed sizes and locations of the sanitary sewers can be found on the *Sanitary Sewer Plan*, which is included in this report.

The minimum slopes within this development are 0.50%, and the maximum proposed slope used within this development is 0.79%. The slope has been checked to ensure that it is within the Carson City required half full velocity of 2 fps and 10 fps during the peak flow condition.

2.2 Estimated Peak Sewage Flows

Calculations for the design of the sewer system were performed in accordance with Chapter 10, Section 11.243 of the Recommended Standards for Wastewater Facilities (10-State Standards), 2014 Edition and Division 15, Section 15.3.2 of the Carson City Development Standards and Carson City's Sewer System Master Plan Update, July 2017, by Atkins. According to analysis, the actual per capita flow was 148 gal/cap/day with a peaking factor ranging from 1.5 – 6.0 in wet weather conditions. Table 1 in the 10-State Standards suggests using a peaking factor of 2.5 based on the population of Carson City, Nevada. For this

analysis, the flow factors used in the calculations are 2.5 capita per dwelling unit for a single-family residential lot and 150 gal/cap/day to calculate average daily flow. A peaking factor of 2.5 is then applied to the daily average flow to compute the peak flow used in the design of the sanitary sewer. Complete peak flow calculations for Schulz Ranch Phase 5 are included within this report. The following table summarizes the results of the calculations of the peak daily flows for the residential subdivision:

Units	Capita/DU	GPD/ Capita	Peaking Factor	Peak Flow (gpd)	Peak Flow (cfs)
29	2.5	150	2.5	27,188	0.04
			Total	**27,188**	**0.04**

2.3 Proposed Sewer Mains

Basic normal depth calculations for the proposed 8-inch sewer mains were done using open-channel pipe flow theory, the Manning's Formula, and *Bentley FlowMaster® V8i®* (*FlowMaster*) software. A Manning's Coefficient of 0.013 (assuming PVC pipe material) was used in all of these calculations. The *FlowMaster* worksheets that demonstrate these calculations are included within this report (Appendix A).

Per Carson City Development Standards, sewer mains are considered at capacity when peak flow is at d/D=0.50 for sewer mains that are 15" or less in diameter (Div. 15, Section 15.3.2.a.). In addition, the minimum velocity of 2 fps and the maximum velocity of 10 fps are required design conditions (Div 15, Section 15.3.2.e.). The *FlowMaster* calculations included within this report demonstrate that the various velocities of PVC sewer pipe at a d/D of 50% at the minimum and maximum slopes mentioned above are within the requirements for Carson City. The velocity of an 8-inch sewer main is 2.45 fps for a minimum pipe slope of 0.50%. All of the calculated velocities described above are within the Carson City required ranged of 2 fps to 10 fps. These velocity calculations can be found in the *FlowMaster* calculations included within this report.

In addition to evaluating the sewer velocities within this development, this report also analyzes maximum capacity within the proposed sewer pipes. As described above, the peak flow within the sewer main must remain at or below a normal depth of 50%. As shown in the *FlowMaster* calculations included within this report, an 8-inch PVC sewer at 0.50% can convey 276,116 gpd (0.43 cfs) at a maximum depth of 50%. Therefore, the contribution by the proposed Schulz Ranch Phase 5 will be less than the 50% full capacity requirement, and the contribution will be 27,188 gpd (0.04 cfs), which is less than the maximum allowed capacity of an 8-inch sewer. The size and locations of the proposed sanitary sewers mentioned above can be found on the *Sanitary Sewer Plan*, which is included in this report.

3 CONCLUSION

The 8-inch sanitary sewer mains proposed herein will adequately serve the project as planned. The attached *FlowMaster* worksheet calculates the maximum capacity of the proposed 8-inch sewer mains at a minimum slope of 0.50% in accordance with the requirements of Carson City. The 8-inch sewer main at 0.50% has a capacity of 276,116 gpd (0.43 cfs) at a maximum depth of 50%, which will be able to adequately serve Schulz Ranch Phase 5.

The proposed sanitary sewerage system within this report for the Schulz Ranch Phase 5 development has adequate capacity to carry the subject property's peak sewage flow in conformance with the guidelines outlined in the Carson City Development Standards and the Recommended Standards for Wastewater Facilities (10-State Standards), 2014, and the Sewer System Master Plan Update, July 2017, by Atkins.

SANITARY SEWER CALCULATIONS FOR SCHULZ RANCH PHASE 5

The following calculations were performed in accordance with Chapter 10, Section 11.243 of the Recommended Standards for Wastewater Facilities, 2014 ed. (Ten-States Standards), Carson City Development Standards, and the Sewer System Master Plan Update, July 2017, by Atkins:

2.5 capita/dwelling unit
150 gal/capita/day

The site will consist of 29 dwelling units; therefore, the following equations are used:

Average flow = num. of dwellings * capita/dwelling * GPCD

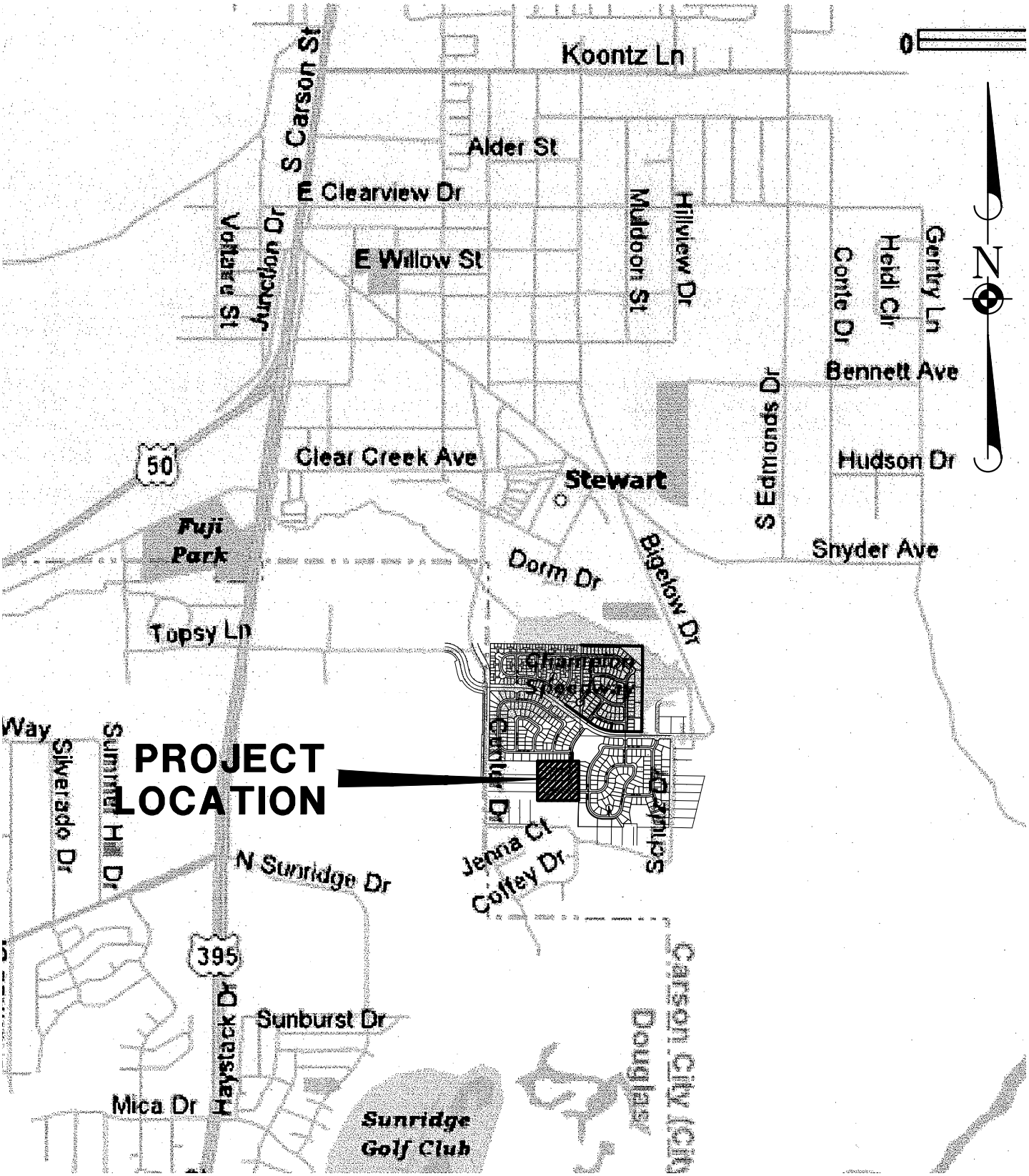
Average flow = 29 * 2.5 * 150 = 10,875 gpd = 0.02 cfs

Peak flow = Average flow * peaking factor

Peaking Factor = $(18 + P^{1/2}) / (4+P^{1/2})$ where P = population in thousands (or use value off Table 1 based on population). The maximum peaking factor is 4.2 according to Table 1 in the 10-State Standards. Based on the population of Carson City, Nevada, a peaking factor of 2.5 is acceptable.

Peak flow = 10,875 * 2.5 = 27,188 gpd = 0.04 cfs

The design shall be for the peak flow; therefore, the design flow is 0.04 cfs.



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Construction Managers · Environmental Scientists · Landscape Architects · Planners

SCHULZ RANCH PHASE 5

CARSON CITY, NV

VICINITY MAP

PROJ. MGR.:	DCB
DRAWN BY:	HED
DATE:	JUL 2019
SCALE:	N.T.S.

SHEET
EXHIBIT 1
APL.CCNV01

15:17 Dwg Name: P:\Apl\conv01\Documents\Sanitary Sewer Reports\Exhibits\Vicinity Map.dwg Updated By: edawson

EX. LAHONTAN DRIVE

EX. SCHULZ RANCH PHASE 1

EX. WHEELER PEAK DRIVE

APN 010-732-05
LENNAR RENO LLC
EX. DETENTION BASIN

APN 010-732-06
TEMPLETON, K A & J K SR

APN 010-732-07
MARQUEZ, JOHN L & JO ANN M

APN 010-732-08
DEVOLF, CHARLES F & CATHRENA G

APN 010-732-09
NALAPO, JHOANNA R M & ERNE C

APN 010-732-10
BORJA, ESPERNAZA F & ELISEO A

APN 010-732-11
NAIPO, KUULEI N & NAIPO, ET AL

APN 010-733-01
NYSSEN, JAN W JR & LISA B

APN 010-733-02
MURPH, ALAN & MAREN A

APN 010-7335-03
LENNAR RENO LLC
EX. DETENTION BASIN

EX. SCHULZ RANCH PHASE 3

APN 010-732-09
ESPINOZA, JOSE M & JER L

APN 010-703-08
DUMLING, JONATHAN L & TOLEDO, A

APN 010-703-07
HALTOM LIVING TRUST 2/20/07

APN 010-703-06
ONEAL, THOMAS K JR & KAY M

APN 010-703-05
MILLER, C L & MC CLIMANS, R W

APN 010-703-04
MAXFIELD, MARBERLY

APN 010-703-03
GOODWIN, JANICE MAE TR 1/9/92

APN 010-703-02
WONG FAMILY TRUST 11/22/97

APN 010-703-01
MILES, , KATHRYN S

APN 009-311-46
COSTELLO, PAMELA A REV LIV TR

APN 009-311-31
LUSCHAR, STEPHEN J & JUDITH

APN 009-311-30
ROBISPS, RICKY & ALISHA R

APN 009-311-29
CLARK, NICHOLAS R & CIARA

APN 009-311-12
BACHSTADT, E & T & HUMANE TRUST

STREET A

CHALK BLUFF DRIVE

EX. CHALK BLUFF DRIVE

EX. SUGARLOAF PEAK DRIVE

PROPOSED SANITARY SEWER MANHOLE

PROPOSED TIE-IN TO EXISTING 8" SANITARY SEWER STUB

EXISTING SANITARY SEWER MAIN

SS

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

SS PROPOSED SANITARY SEWER W/ DIRECTION

MANHOLE – SANITARY DRAIN (HOLLOW IF EXISTING)

PROJECT BOUNDARY

148 LOT NUMBER

N

DRAWN BY | CHECK BY

REVISION

DATE

Manhard CONSULTING LTD
841 Ridge Street, Suite 400, Reno, NV 89501 ph:775.748.3500 fx:775.748.3580 manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

SCHULZ RANCH PHASE 5
CARSON CITY, NEVADA
SEWER DISPLAY MAP

PROJ. MGR.:	DCB
PROJ. ASSOC.:	HED
DRAWN BY:	HED
DATE:	JUL 2019
SCALE:	AS SHOWN

SHEET 2 OF 2

APL.CCNV

July 2, 2019 - 14:53 Dwg Name: P:\Apldcrod\1\Documents\Sanitary Sewer Reports\Exhibits\Sewer Plan Exhibit.dwg Updated By: edawson

APPENDIX A

FlowMaster Flow Data

Worksheet for 8" Sewer at 0.50%

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00500	ft/ft
Normal Depth	4.00	in
Diameter	8.00	in

Results

Discharge	276116.36	gal/day
Flow Area	0.17	ft²
Wetted Perimeter	1.05	ft
Hydraulic Radius	2.00	in
Top Width	0.67	ft
Critical Depth	3.66	in
Percent Full	50.0	%
Critical Slope	0.00680	ft/ft
Velocity	2.45	ft/s
Velocity Head	0.09	ft
Specific Energy	0.43	ft
Froude Number	0.84	
Maximum Discharge	0.92	ft³/s
Discharge Full	0.85	ft³/s
Slope Full	0.00125	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	in
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	in
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	50.00	%
Downstream Velocity	Infinity	ft/s

Worksheet for 8" Sewer at 0.50%

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	4.00	in
Critical Depth	3.66	in
Channel Slope	0.00500	ft/ft
Critical Slope	0.00680	ft/ft

Manhard CONSULTING

Civil Engineering
Surveying
Water Resources Management
Construction Management
Landscape Architecture
Land Planning

July 2, 2019

Steven Pottey, P.E.
Carson City Engineering Department
108 E. Proctor Street
Carson City, NV 89701

RE: TENTATIVE MAP WATER LETTER FOR SHULZ RANCH PHASE 5

Mr. Pottey,

The following letter discusses the current conditions of the existing Schulz Ranch water system from the perspective of fire hydrant flow testing performed on June 11, 2019, in two locations adjacent to the proposed Schulz Ranch Phase 5 project. The first fire flow test was performed near the intersection of Wheeler Peak Drive and Lahontan Drive near the northern entrance to the proposed Schulz Ranch Phase 5 subdivision. The second test was performed near the intersection of Tule Peak Circle and Chalk Bluff Drive near the eastern entrance to the proposed Schulz Ranch Phase 5 subdivision. The two fire flow tests display results that meet the maximum/minimum requirements set forth by NAC 445A.6711. The fire flow testing was performed by Carson City Public Works and the results are attached at the end of this letter. Existing 8-inch water stubs were left on Wheeler Peak Drive and Chalk Bluff Drive to service the proposed Schulz Ranch Phase 5 project. The two existing connections will loop the water for the proposed Schulz Ranch Phase 5 subdivision. Based on the fire flow test results, we have determined that the 29 lots for the proposed Schulz Ranch Phase 5 subdivision will have adequate pressures during the final plans design. During the final plans stage for the Schulz Ranch Phase 5 project, an in-depth analysis of the proposed water system will be provided.

Please contact me at (775)-321-6522 if there are any questions or comments.

Sincerely,

MANHARD CONSULTING, LTD.

Daniel Birchfield, P.E.
Project Manager

PROFESSIONAL ENGINEER-STATE OF NEVADA
DANIEL C. BIRCHFIELD
Exp: 12/31/20
CIVIL
No. 20844
7/2/19

Fire Flow Test Data Sheet

Location of Test (Street and Cross Street): Wheeler Peak and Lahonton Dr.

Address Nearest Residual Hydrant: 1149 Lahonton Dr

Test Date: 6/11/2019 Test Time: 0935

Testing Personnel: KA, JR, AM

Pressure Zone: 4880 Main Size: 8"

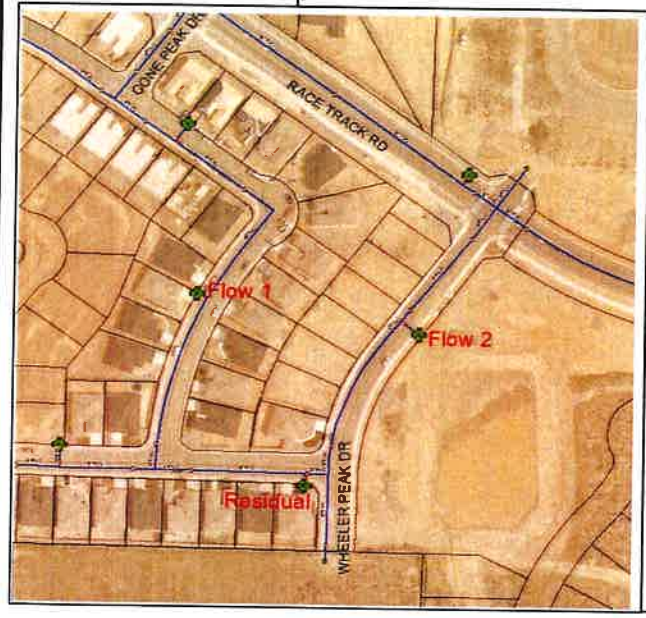
Comments:

Test Results:

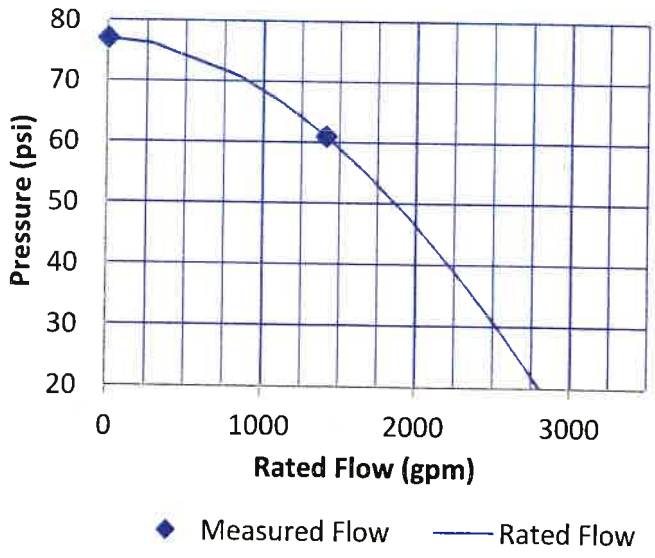
Residual Hydrant	
Static:	77 psi
Residual:	61 psi
Pressure Drop:	16 psi
	21 %

Flow Hydrant(s)	Hydrant Tester	Pitot Pressure (psi)	Discharge Diameter (in)	Outlet Coeff. (c)	Pitot Flow (gpm)
Flow 1	HM1	20	2	1.307	698
Flow 2	HM2	21	2	1.307	715
Flow 3					
				Total	1413

Area Map



Rated Flow



Rated Pressure (for Rated Capacity Calculation) 20 psi

Rated Capacity at 20 psi residual pressure. 2,800 gpm

Based on NFPA 291 - 2016 Edition and APWA Manual 17 - Fourth Edition

Pursuant to NFPA 291, fire flow test data over five years old should not be used.

Hydrant OBJECTID: 13295 FD Runbook Page: 334X00

Data Sheet File Name: WheelerPeak-Lahonton.pdf

Fire Flow Test Data Sheet

Location of Test (Street and Cross Street): Tule Peak Cr and Chalk Bluff Dr

Address Nearest Residual Hydrant: 1689 Tule Peak Circle

Test Date: 6/11/2019 Test Time: 0959

Testing Personnel: KA, JR, AM

Pressure Zone: 4880 Main Size: 8"

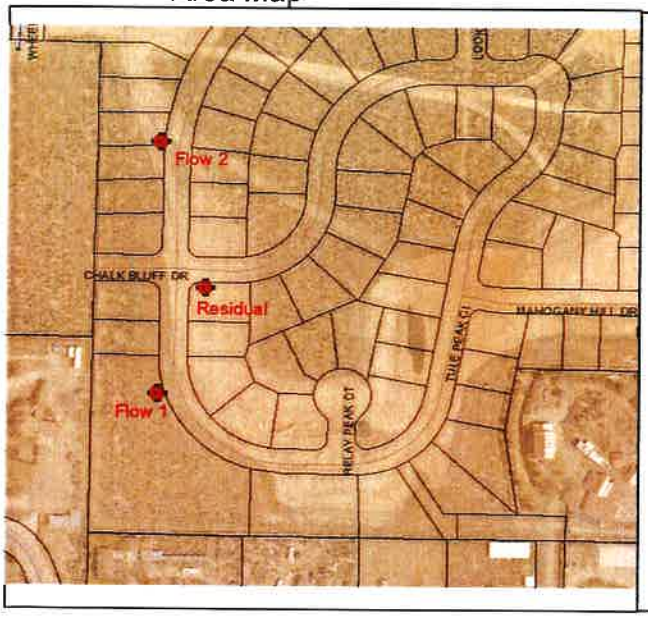
Comments:

Test Results:

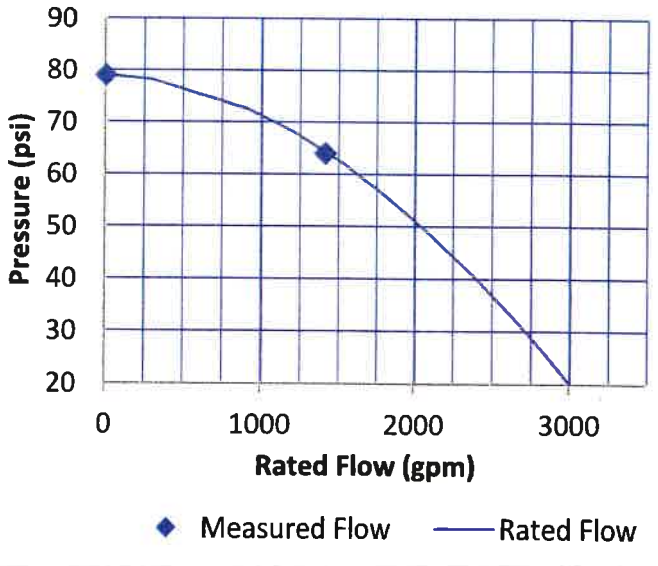
Residual Hydrant	
Static:	79 psi
Residual:	64 psi
Pressure Drop:	15 psi
	19 %

Flow Hydrant(s)	Hydrant Tester	Pitot Pressure (psi)	Discharge Diameter (in)	Outlet Coeff. (c)	Pitot Flow (gpm)
Flow 1	HM1	20	2	1.307	698
Flow 2	HM2	21	2	1.307	715
Flow 3					
				Total	1413

Area Map



Rated Flow



Rated Pressure (for Rated Capacity Calculation) 20 psi

Rated Capacity at 20 psi residual pressure. 3,000 gpm

Based on NFPA 291 - 2016 Edition and APWA Manual 17 - Fourth Edition

Pursuant to NFPA 291, fire flow test data over five years old should not be used.

Hydrant OBJECTID: N/A FD Runbook Page: 334X00

Data Sheet File Name: TulePeak-ChalkBluff.pdf