SNEDEN STREET IMPROVEMENTS PROJECT

DRAFT

MITIGATED NEGATIVE DECLARATION AND INITIAL STUDY

CITY OF BISHOP, INYO COUNTY, CA

PREPARED FOR:
City of Bishop (Lead Agency)
Department of Public Works
377 West Line Street
Bishop, CA 93514
Phone Number
Contact: Mr. David Grah, P.E., Director
(760) 873-8458

PREPARED BY:
TIERRA Environmental Services
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February 10, 2009

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SECTION 1
INTRODUCTION

1.1 PURPOSE

The purpose of the proposed project is to address the issues of deteriorated pavement, poor drainage, deteriorated curb and gutter, substandard or lack of sidewalk, curb returns not accessible to the disabled, and needed replacement and upgrades to utility infrastructure along Sneden Street, from South Street to Line Street. The existing sidewalk does not meet City of Bishop (City) standards and is not continuous. Parking, drainage, and pavement conditions present mobility problems for pedestrians, disabled persons, and bicyclists. Utility infrastructure replacement and upgrades are necessary to ensure safe and reliable water and sewer service to the community.

1.2 PROJECT LOCATION

The project is located in Inyo County in the City of Bishop, California (*Figures 1 and 2*). The project area is in the NE ¼ of the NE ¼ of Section 7, T.7S, R.33E, Mount Diablo Baseline and Meridian (MDB&M), in the southeastern portion of the City (*Figure 3*). Specifically, the project site consists of the right-of-way for Sneden Street, from South Street to Line Street (*Figure 4*). The proposed project area of potential effect (APE) may also extend short distances within the rights-of-way on cross streets (Line Street, Short Street, Clarke Street, and South Street). The proposed project is located at an elevation of approximately 4,144 feet above mean sea level (AMSL).

1.3 PROJECT DESCRIPTION

The proposed project would occur within the Sneden Street right-of-way and short distances within the rights-of-way of cross streets. Street improvements would be occur primarily along Sneden Street while the APE located within rights-of-way of cross streets (Line Street, Short Street, Clarke Street, and South Street) would provide for construction staging areas, match grades and meet other construction design consistency needs. Construction staging areas would be located in close proximity to the project and located on existing public-owned property(ies) outside of the rights-of-way to the maximum extent possible.

Several fences along Sneden Street have been constructed and in some cases this fencing extends into the right-of-way. Fencing may need to be removed as a result of the proposed project if they are not permitted to be located within the City's right-of-way. Relocation would be the responsibility of the property owner. Property owners would receive notice that fences be moved by a specified date.

Street improvements would be constructed to conform to City standards to the maximum extent possible. Improvement widths would be limited in some areas due to the available right-of-way width and would therefore be constructed to less than City standards in those respective areas.

The proposed project consists of the following components along Sneden Street:

- Remove and replace pavement 40 feet wide;
- Improve roadway grade to provide proper drainage;
- Remove existing curb, deteriorated curb and gutter, and gutter on poor grade and replace with curb and gutter meeting current city street standards (to the extent possible within the right-of-way);
- Construct concrete cross gutters at intersections with East South Street, Clarke Street, Short Street, and East Line Street;
- Construct continuous Americans with Disabilities Act (ADA) compliant sidewalks. The sidewalk on the east side of the street is to meet the residential standard (in most areas) of five feet of sidewalk with five feet of parkway while the sidewalk on the west side of the street is to meet the commercial standard (in most areas) of a ten-foot wide sidewalk;
- Construct ADA compliant curb ramps;
- Remove six trees that conflict with the proposed sidewalk improvements;
- Provide replacement trees to property owners that comply with the City's approved Street Tree list (at time of construction);
- Improve intersections with East South Street, Clarke Street, and Short Street as necessary to address drainage problems and grade issues; and
- Consider bulb-outs at intersections to provide enhanced pedestrian refuge, traffic calming, and context sensitive elements; and
- Replace and upgrade water and sewer utility infrastructure to ensure safe and reliable water and sewer service to the community.

All components of the project are anticipated to be completed in one phase.

1.4 PROJECT PROPONENT

City of Bishop, Department of Public Works
377 West Line Street
Bishop, California 93514
Telephone: 760-873-8458
Contact: David B. Grah, Director of Public Works

1.5 INTENDED USES OF THIS DOCUMENT

The City of Bishop will use this Environmental Initial Study to identify any potential environmental constraints associated with the proposed improvement of pavement, sidewalks, curbs, and gutters along Sneden Street, between East South Street and East Line Street, and to solicit input regarding the

project from agencies and the general public. This Environmental Initial Study will also be used in support of a Mitigated Negative Declaration when considering the approval of the Sneden Street Improvements Project.

1.6 GENERAL PLAN DESIGNATION

The project is proposed within the Sneden Street right-of-way and extending short distances within the rights-of-way on cross streets (Line Street, Short Street, Clarke Street, and South Street). The east side of Sneden Street is designated for Medium High Density Residential (10-22 dwelling units (DU)/acre) development, while the west side of Sneden Street is designated for General Commercial development.

1.7 ZONING CLASSIFICATION

The project is proposed within the Sneden Street right-of-way and extending short distances within the rights-of-way on cross streets (Line Street, Short Street, Clarke Street, and South Street). The east side of Sneden Street is zoned as Medium High Density Residential (10-22 DU/acre) development, while the west side of Sneden Street is designated for General Commercial development.

1.8 ENVIRONMENTAL SETTING AND SURROUNDING LAND USES

The City of Bishop is located in Inyo County at the northern end of Owens Valley. The City covers an area of approximately 1.8 square miles and has a population of approximately 3,575 (U.S. Census 2000). The population is expected to remain relatively steady as the City is surrounded by a combination of Native American and public lands. The City of Bishop was incorporated in 1903 and the oldest residential properties along Sneden Street were constructed in the early 1900's. The commercial properties are much newer.

The Owens River, which is located east of the City of Bishop, flows to the south down the valley. The City is surrounded by the Sierra Nevada mountain range to the west and the White Mountains to the east.

Bishop is located within the rain shadow of the Sierra Nevada. The warmest month of the year is July with an average maximum temperature of approximately 98 degrees Fahrenheit. Temperature variations between night and day are over 40 degrees during the summer and over 30 degrees during the winter. The annual average precipitation in the City is 5 inches. The wettest month of the year is February with an average rainfall of 1 inch.

Over time, some curbs and some sidewalks have been constructed along Sneden Street. Much of the existing sidewalk, however, does not meet current City standards or Americans with Disabilities Act (ADA) standards. Large trees are growing in several locations of the right-of-way intended for sidewalks. These trees are in many cases quite old and provide much shade during summer months.

Many of these trees also have roots that have damaged curb, pavement, sewers, and other improvements and impede street drainage (*Figure 5*).

Surrounding land uses include residential to the immediate north, a vacant lot to the south, residential to the east, and commercial to the west.

1.9 OTHER AGENCY APPROVAL

- The proposed project does not require approval from any other public agencies.

Environmental Factors That Could Result in a Potentially Significant Impact		
The environmental factors listed below are not checked because the proposed project would not result in a "potentially significant impact" as indicated by the preceding checklist and supported by substantial evidence provided in this document.		
☒ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Geology/Soils
☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities/Services Systems	☐ Mandatory Findings of Significance	

Environmental Determination

On the basis of this initial evaluation:

☐ I find that the proposed project could not have a significant effect on the environment, and a **Negative Declaration** will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. **A Mitigated Negative Declaration** will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an **Environmental Impact Report** is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measure based on the earlier analysis as described on attached sheets. An **Environmental Impact Report** is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **Negative Declaration** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **Negative Declaration**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signed: _____ Date: February 10, 2009

Brooke E. Peterson, AICP
Principal Planner
TIERRA Environmental Services

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where they are available for review.

    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

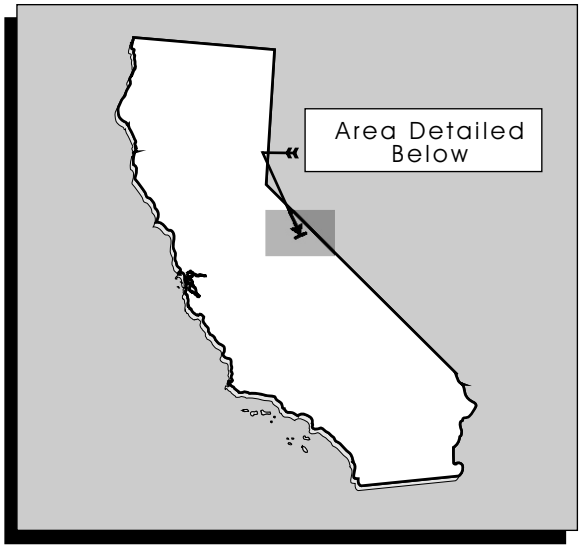
7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

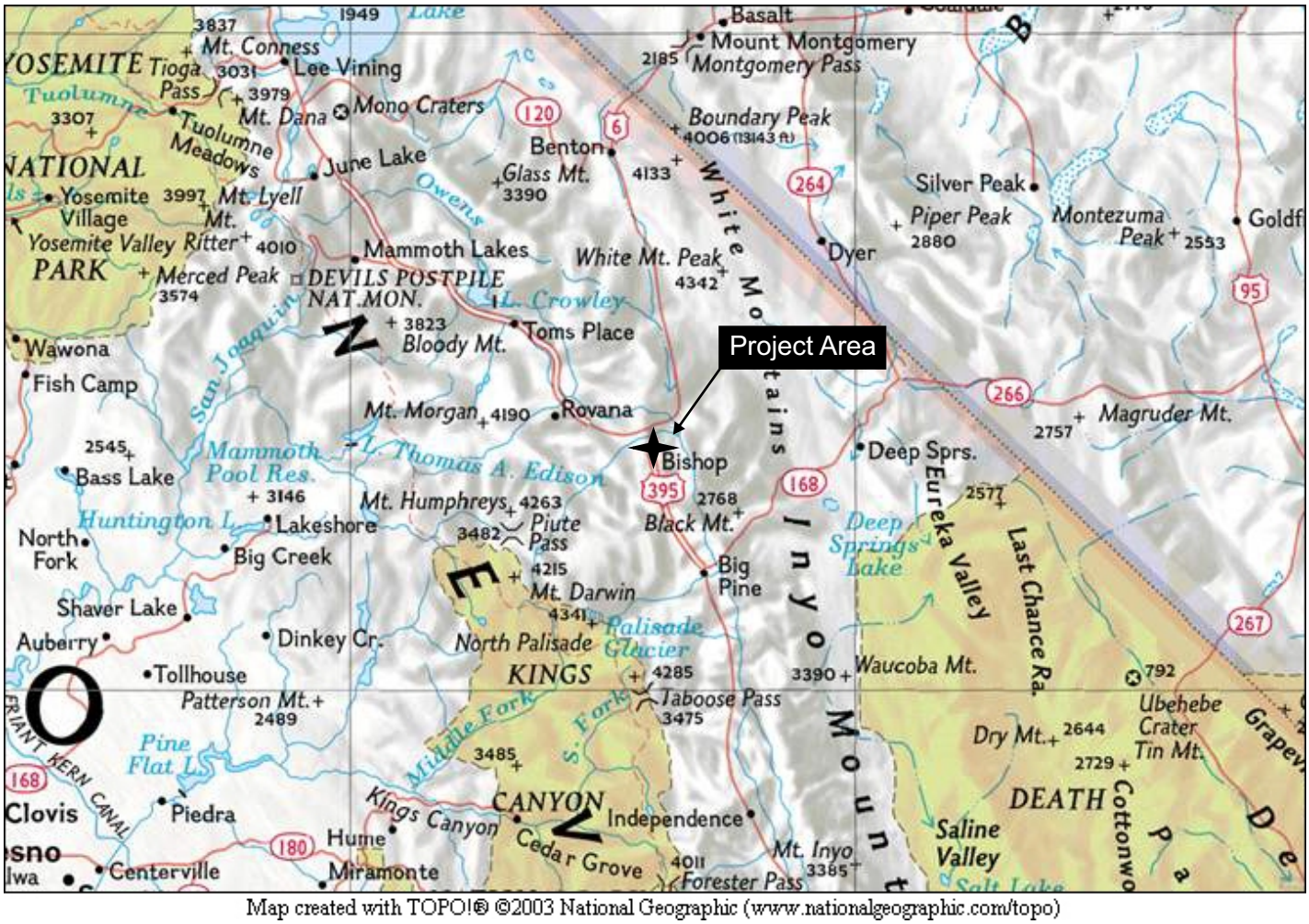
8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a. The significance criteria or threshold, if any, used to evaluate each question; and

   b. The mitigation measure identified, if any, to reduce the impact to less than significance.





Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

Elevations shown are in measurements of meters

Figure 1
Regional Location Map

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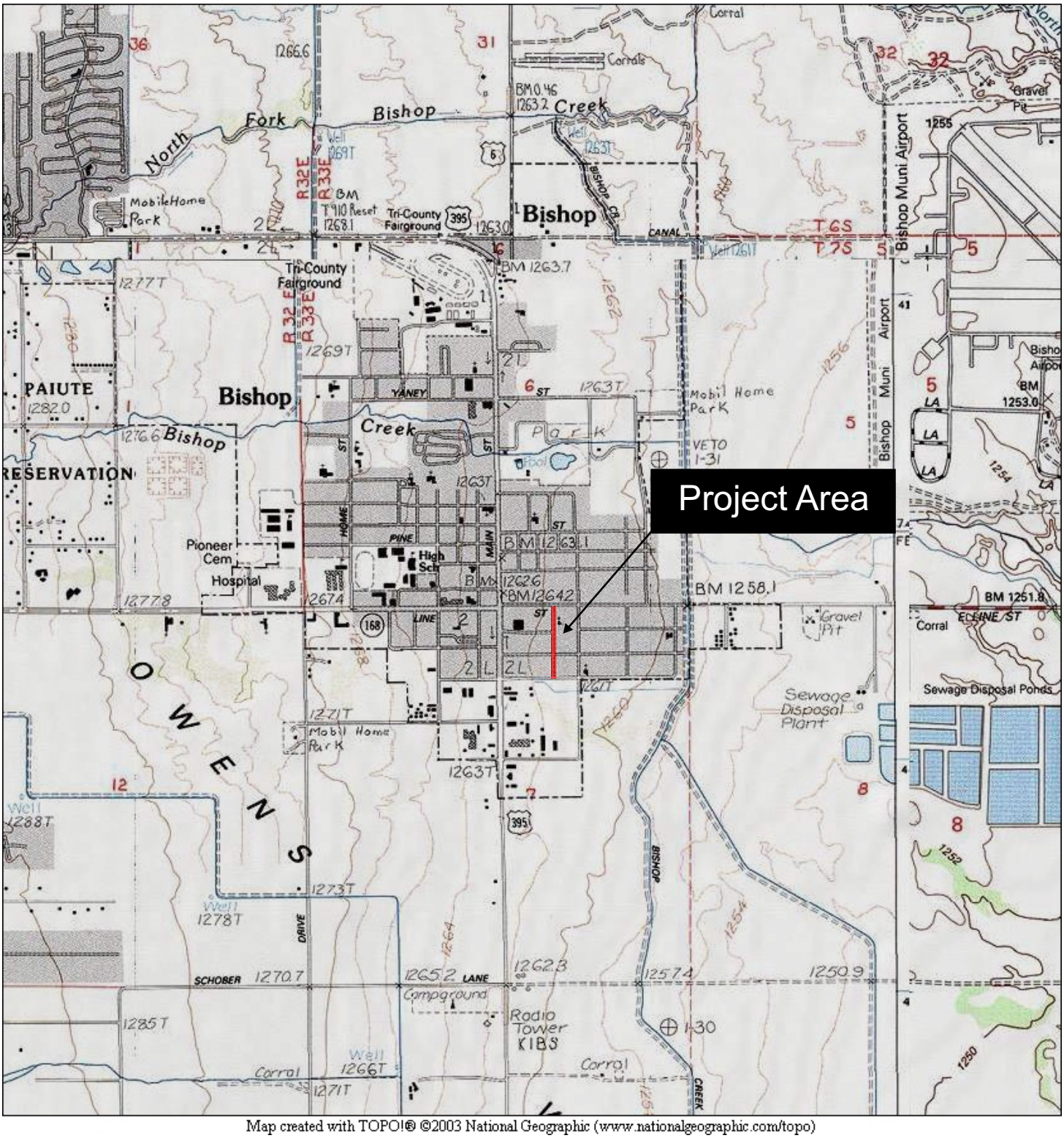

Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

USGS Bishop 7.5' Quadrangle

Elevations shown are in measurements of meters

Figure 2
Project Location Map

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0 1000 2000
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Source: Google Maps 2009

Figure 3
Project Location Aerial

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Figure 4
Sneden Street Improvements Project Alignment

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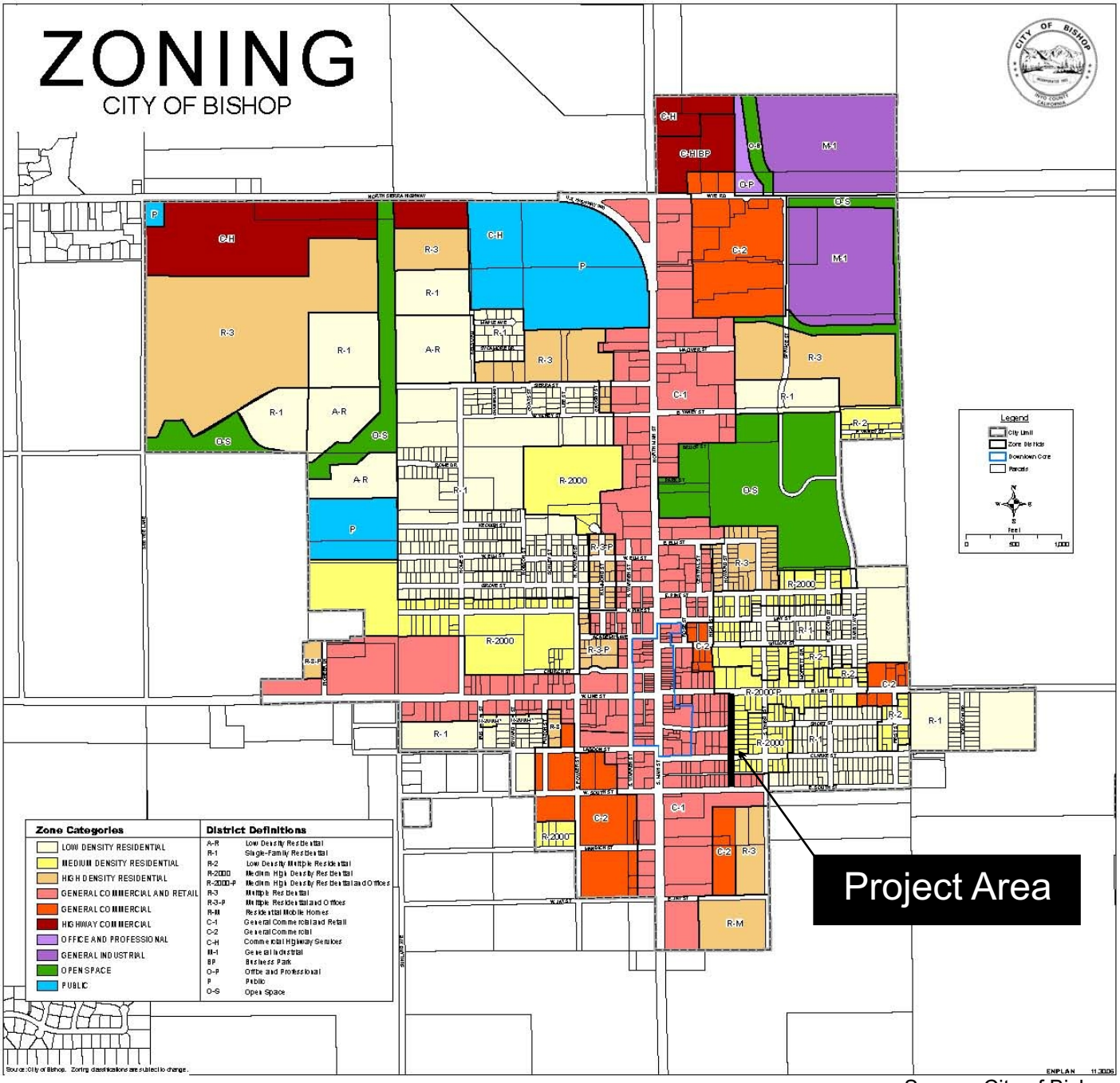

Source: City of Bishop

Figure 5
City of Bishop Zoning Map

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Intersection of Sneden Street and Clarke Street, Looking Southeast

Intersection of Sneden Street and Clarke Street, Looking South

Figure 6. Site Photos - Existing Sneden Street Conditions

SECTION 2
ENVIRONMENTAL CHECKLIST

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
1. Aesthetics *Would the project:*				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	☐	☒	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
2. Agriculture Resources *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.* *Would the project:*				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒
3. Air Quality *Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.* *Would the project:*				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
4. Biological Resources *Would the project:*				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
5. Cultural Resources *Would the project:*				

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
6. Geology and Soils *Would the project:*				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
7. Hazards and Hazardous Materials *Would the project:*				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located within one-quarter mile of a facility that might reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste?	☐	☐	☒	☐
e) Be located on a site of a current or former hazardous waste disposal site or solid waste disposal site unless wastes have been removed from the former disposal site; or 2) that could release a hazardous substance as identified by the State Department of Health Services in a current list adopted pursuant to Section 25356 for removal or remedial action pursuant to Chapter 6.8 of Division 20 of the Health and Safety Code?	☐	☐	☐	☒
f) Be located on land that is, or can be made, sufficiently free of hazardous materials so as to be suitable for development and use as a school?	☐	☐	☐	☒
g) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
h) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
i) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
j) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
8. Hydrology and Water Quality *Would the project:*				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
9. Land Use and Planning *Would the project:*				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural communities conservation plan?	☐	☐	☐	☒
10. Mineral Resources *Would the project:*				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
11. Noise *Would the project result in:*				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
12. Population and Housing *Would the project:*				
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
13. Public Services *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*				
a) Fire Protection?	☐	☐	☐	☒
b) Police Protection?	☐	☐	☐	☒
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒
14. Recreation				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒
15. Transportation/Traffic *Would the project:*				
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
16. Utilities and Service Systems *Would the project:*				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
17. Mandatory Findings of Significance				

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☐	☒
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

SECTION 3
DISCUSSION OF ENVIRONMENTAL EVALUATION

3.1 AESTHETICS

Sneden Street is lined with older homes and newer commercial buildings, including self-storage units at the southern end of the alignment and a heating and air conditioning business at the north end of the alignment. Several large trees are located within or immediately adjacent to the street right-of-way. These trees provide extensive shade in some areas. Some of these trees however, have also caused extensive damage to sidewalks, curbs, gutters, and street paving as well as water and sewer infrastructure.

The proposed project would require the removal of six trees along the east side of Sneden Street, between Short Street and East Line Street. The trees to be removed include one elm tree at the northeast corner of East South Street and Sneden Street and five elm trees on the east side of Sneden Street, just south of East Line Street. The loss of these trees would be considered a negative aesthetic impact.

Sidewalk construction would conform to City of Bishop (City) standards for residential streets in most places and would include a five-foot wide planter strip between the curb and sidewalk in front of residential properties and a 10-foot wide sidewalk with no planter strip in front of commercial properties. Some widths may vary due to varying right-of-way width. Irrigation would be installed in constructed planter strips. The planter strips may be landscaped by the adjacent property owners and this landscaping may include trees selected from the City's list of approved trees. In some areas, where practical and desirable to adjacent residents and property owners, "bulb-outs" would be constructed that increase the planter space up to 13 feet. These bulb-out locations could provide adequate space for planting larger replacement trees.

Almost all project construction would be within the City's right-of-way. The construction would impact few adjacent properties. The construction of new sidewalks, curbs, and gutters, combined with the repaving of Sneden Street, is expected to improve the aesthetics of the street and neighborhood. Therefore, with mitigation included for the loss of mature street trees, the impacts to aesthetics as a result of the proposed Sneden Street Improvements Project would be less than significant.

Mitigation Measure

- **Aes M-1.** Three replacement trees will be provided to each property owner for each tree removed. Replacement trees should be planted in conformance with the City of Bishop's approved Street Tree list current at time of construction.

3.2 AGRICULTURAL RESOURCES

The project proposes the improvement of pavement, curbs, gutters, and sidewalks within an existing public right-of-way within the City of Bishop. There are no agricultural lands or land uses within or adjacent to the project site, there is no Prime Farmland, and there is no land under a Williamson Act contract. Therefore, impacts to agricultural resources as a result of the Sneden Street Improvements Project would be less than significant.

3.3 AIR QUALITY

Air quality within the City of Bishop and surrounding Inyo County is monitored and regulated by the Great Basin Unified Air Pollution Control District. Inyo County is listed as attainment (i.e., within allowable limits) for the following criteria pollutants: ozone; carbon monoxide; nitrogen dioxide; sulfur dioxide; sulfates; hydrogen sulfide; and vinyl chloride. Inyo County is listed as non-attainment for the state standard for PM-10 air emissions, which include chemical emissions and other inhalable particulate matter with an aerodynamic diameter of less than 10 microns.

The proposed project would not generate long-term traffic or result in long-term impacts to air quality. Air quality impacts resulting from the project would be limited to temporary emissions from construction equipment used to construct the proposed street improvements. The air quality impacts associated with the Sneden Street improvements would occur for a period of approximately two months. The short duration of the proposed construction, combined with existing regulations regarding motor vehicle fuels and emissions, would result in potential air quality impacts being well within what is expected from construction projects within the air basin and well below any state or federal significance criteria. The improvement of sidewalks and compliance with ADA is likely to increase pedestrian traffic which may reduce the number of vehicle trips traveled and associated emissions and thereby improve air quality.

The proposed project does not include the use of any materials or construction techniques that would result in odors that would be objectionable to the general public.

PM-10 emissions during construction would be controlled through the implementation of Best Management Practices (BMPs) to limit PM-10 emission such as regular use of a water truck to keep potential dust-producing surfaces damp.

In the short term, removal of mature trees would decrease the amount of carbon dioxide absorbed and the amount of oxygen released by trees along Sneden Street. This may be partially offset by increased pedestrian and bicycle traffic along the street following construction. Further, three replacement trees would be provided for every tree removed. The absorption of carbon dioxide and production of oxygen by these trees would increase over time. Therefore, impacts to air quality as a result of the Sneden Street Improvements Project would be less than significant.

3.4 BIOLOGICAL RESOURCES

The proposed project area would occur within the Sneden Street right-of-way and a short distance in the rights-of-way of intersecting streets (Line Street, Short Street, Clarke Street, and South Street). This includes existing paved streets and adjacent sidewalks or disturbed vegetation. No critical habitat or special status species, sensitive species, or species of special concern have been identified along Sneden Street. Biological resources within the Sneden Street right-of-way are limited to street trees and lawn areas used for landscaping. Nesting birds protected by the Migratory Bird Treaty Act may nest in the six trees that are to be cut down. It is possible that the tree removal associated with the street improvements may result in impacts to nesting birds. This would be considered a significant impact and mitigation would be required.

Two special status wildlife species have a low potential for occurring in the project area. These species are the silver-haired bat (no state or federal listing) and the spotted bat, a California Department of Fish and Game (CDFG) species of concern. Both bat species are designated as medium priority species by the Western Bat Working Group (WBWG 2005), which specifies that closer evaluation, research, and conservation actions of both the species and possible threats in warranted (WBWG 20005). These species could be located in trees and up to seven mature trees would be removed as a result of the proposed project. Removal of the trees could have a significant impact on individual bats if bats are found roosting in the trees. However, Sneden Street is not ideal habitat for these bats, therefore removal of non-native trees is not anticipated to have a significant impact on bat habitat. However, mitigation would be required to ensure impacts to sensitive bat species as a result of the proposed project are below a level of significance.

The City of Bishop General Plan Area does not include habitat, natural community, or other conservation plans. Therefore, no conflicts could occur.

Therefore, with mitigation included for potential impacts to nesting birds and sensitive bat species, impacts to biological resources as a result of the Sneden Street Improvements Project would be less than significant.

Mitigation Measures

The following mitigation measures would reduce potential impacts however to biological resources to below a level of significance:

Bio M-1. All tree removal would be conducted prior to March 15 or after August 30 (outside the bird-breeding and bat-roosting season) to avoid potential impacts to nesting birds and roosting bats; **OR**

Bio M-2. A pre-construction survey (within seven days of tree removal) shall be conducted by a qualified biologist to determine the presence or absence of active bird nests within or adjacent to the project site. The purpose of the survey is to avoid impacts to nesting birds. If no breeding or nesting activities of birds protected by the Migratory Bird Treaty Act within 100 feet of the proposed work area is found, tree removal may proceed during the nesting season (March 15-September 30). A biological monitor shall conduct a survey for species/nesting birds of the site and vicinity on a weekly basis to ensure that specimens do not appear onsite during tree removal and that all activities are restricted tot he authorized project impact area. If breeding or nesting activity is confirmed, work within 100 feet of the active nest shall be delayed until the young birds have fledged and left the nest.

Bio M-3. A pre-construction survey (within 30 days of tree removal) shall be conducted by a qualified biologist to determine the presence or absence of roosting sensitive bat species within or adjacent to the project site. The purpose of the survey is to avoid impacts to sensitive bat species. If no roosting activities of sensitive bat species within the proposed work area are found, tree removal may proceed during the roosting period (June 1 – July 31). If roosting activity is confirmed, trees shall not be removed during the roosting period.

3.5 CULTURAL RESOURCES

The project area would occur within Sneden Street right-of-way and a short distance within the rights-of-way on cross streets. A TIERRA archaeologist inspected the Sneden Street right-of-way and determined that no intact cultural resources are likely to be present or have been previously recorded. All excavation would occur in previously disturbed areas. However, since the time when previous excavation of the area last occurred is unknown, there is a remote potential to unearth undiscovered cultural resources. Implementation of mitigation would reduce potential impacts to cultural resources to a level below significance.

There are several older homes and aging sidewalks located along the Sneden Street right-of-way. Some structures or sidewalk materials may qualify as historic resources. All excavation would occur

in previously disturbed areas. It is possible however, that the required grading and excavation may result in disturbance of historic resources. This would be considered a significant impact and mitigation would be required.

However, with mitigation included, impacts to cultural resources as a result of the Sneden Street Improvements Project would be less than significant.

Mitigation Measures

The following mitigation measure would reduce potential impacts however to cultural resources to below a level of significance:

Cultural M-1. If cultural resources are encountered during excavation or site preparation, such work shall be halted immediately in the area of discovery and the construction manager shall immediately notify the City of Bishop Public Works Director of the discovery. The City shall be required to retain the services of a qualified archaeologist for the purpose of evaluating, recording, protecting, or curating the discovery as appropriate. The archaeologist shall prepare a Cultural Resources Management Plan that outlines the findings and mitigation methods of curation and/or protection of the resources in accordance with the state and federal regulations.

Cultural M-2. A pre-construction survey of the project area and vicinity shall be conducted by a qualified archaeologist to determine the presence of historic resources within or adjacent to the project site. The purpose of the survey is to avoid impacts to historic resources. If historic resources are found within the proposed work area, a resource preservation program to mitigate impacts shall be prepared by the archaeologist and approved by the City, then carried out using professional historian methods.

3.6 GEOLOGY AND SOILS

A Natural Resources Conservation Service (NRCS) soil survey for soils within the Sneden Street right-of-way indicates that soils consist of Dehy loam, 0 to 2 percent slopes. These soils are not considered to be expansive and are suitable for the subgrade of roadways and the installation of utility pipelines.

The proposed project would require grading of the native soils and the placement of base materials beneath the sidewalks and pavement. Pavement will be recycled and used as base materials to the

maximum extent possible. There are no geologic hazards or conditions that would prevent the safe installation or maintenance of the proposed street and sidewalk improvements.

The Bishop area is located in Seismic Zone 4. Sneden Street is not located within an Alquist-Priolo Special Studies Zone. No special measures are required to address potential seismic activity in the area during construction. Therefore, impacts to geology and soils as a result of the Sneden Street Improvements Project would be less than significant.

3.7 HAZARDS AND HAZARDOUS MATERIALS

The construction and use of the Sneden Street improvements would not pose any significant hazard to the public or the environment. In fact, a long-term benefit of the project is to provide improved sidewalks, pavement, and drainage facilities along Sneden Street. Construction of the project would involve the short-term use of hazardous materials such as diesel fuel, coolant, hydraulic fluid, and grease for the construction equipment. These materials and hazards, however, are not substantially different from the existing conditions. Refueling and equipment maintenance would be conducted off-site or within a contained area so as to avoid soil contamination on the project site. No long-term use of hazardous materials is foreseeable as a result of the project.

A site inspection of the Sneden Street right-of-way and review of adjacent land uses did not identify any potential sources of hazards or hazardous materials, with the exception of an auto repair business at the south end of the street. There was no evidence of the improper use, storage, or disposal of hazardous materials within the Sneden Street right-of-way at this location. Therefore, impacts to hazards or hazardous materials as a result of the Sneden Street Improvements Project would be less than significant.

3.8 HYDROLOGY AND WATER QUALITY

The project site is nearly level and the potential for erosion is low. In fact, collecting or "ponding" of water on Sneden Street is the greatest water-related issue within the Sneden Street right-of-way. The proposed project would improve drainage and provide storm water treatment. The selected contractor would employ BMPs for the containment of construction related materials. Therefore, impacts to hydrology and water quality as a result of the Sneden Street Improvements Project would be less than significant.

3.9 LAND USE AND PLANNING

The entire Sneden Street and intersecting streets rights-of-way is owned by the City of Bishop. City street rights-of-way are not zoned. The east side of Sneden Street is designated for Medium High Density Residential (10-22 DU/acre) development, while the west side of Sneden Street is designated

for General Commercial development. All proposed improvements are consistent with existing and proposed land uses in the area. Irrigation would be installed in the public right-of-way to provide for landscaping. Landscaping in the public right-of-way would be completed by the adjacent property owners and would be recommended to be implemented according to the City's Standards for Landscaping Within the Rights of Way (*current at time of construction*). Therefore, impacts to land use or planning as a result of the Sneden Street Improvements Project would be less than significant.

3.10 MINERAL RESOURCES

There are no recoverable minerals present within the existing Sneden Street right-of-way. The project site is located within a residential and commercial area of a city where mineral extraction would not be appropriate. There are no known minerals of economic value within the Sneden Street right-of-way. In addition, the City would allow for the use of recycled pavement in the structural portion of the project and would thereby decrease the need for extraction of off-site mineral resources. Therefore, impacts to mineral resources as a result of the Sneden Street Improvements Project would be less than significant.

3.11 NOISE

The City of Bishop Municipal Code defines noise as "load, unnecessary, or unusual." The proposed project would result in temporary noise associated with the demolition of existing pavement and sidewalks and the grading and paving of the street, and construction of new sidewalks, curbs, gutters, and water and sewer lines. However, the construction noise would be variable, temporary, and short-term in nature (approximately 45 days) and construction would be limited to 7:00 a.m. – 7:00 p.m. and the noise would not be excessive. Therefore, impacts to noise as a result of the Sneden Street Improvements Project would be less than significant.

3.12 POPULATION AND HOUSING

The proposed project would improve existing pavement, curbs, gutters, and sidewalks within the Sneden Street right-of-way. No existing housing would be lost and no new housing would be constructed as a direct or indirect effect of the proposed project. There would also not be a division of an established community. Therefore, impacts on the population of Bishop or the housing opportunities within the City of Bishop as a result of the Sneden Street Improvements Project would be less than significant.

3.13 PUBLIC SERVICES

The proposed project would improve the City of Bishop's street system and, with the exception of the removal and disposal of construction debris, would not require any other public services. Solid waste

including demolition materials and construction debris would be transported to Bishop-Sunland Landfill (Landfill). The Landfill does have capacity to accept the additional waste but deposit loads would need to comply with the Landfill's daily tonnage limit. The City would allow for the use of recycled pavement the structural sections of the project however, which would reduce the amount of disposal materials deposited at the landfill. Therefore, impacts to public services as a result of the Sneden Street Improvements Project would be less than significant.

3.14 RECREATION

There are no recreation areas or facilities located along Sneden Street, other than the existing substandard and incomplete sidewalks that may be used for walking and jogging. The proposed project would improve the sidewalks and would allow for improved access by all citizens, particularly disabled persons. Therefore, the proposed project would improve the opportunities for recreation and impacts to recreation as a result of the Sneden Street Improvements Project would be less than significant.

3.15 TRANSPORTATION/TRAFFIC

The proposed project would enhance the City's transportation system, including pedestrian and bicycle travel. Construction of the project would result in short-term impacts to traffic flow on Sneden Street during construction. However, a traffic control plan would be implemented that would safely direct pedestrian, bicycle, and motor vehicle traffic around the construction site. There would also be a short-term loss of on street parking during construction. Therefore, with the implementation of the traffic control plan, impacts to transportation and traffic as a result of the Sneden Street Improvements Project would be less than significant. The long-term impact to transportation and traffic would be positive.

3.16 UTILITIES AND SERVICE SYSTEMS

The proposed Sneden Street Improvements Project includes improvements to existing water, sewer, and drainage facilities within the Sneden Street right-of-way. In addition, the relocation of some overhead and underground private utilities such as power, phone, and cable is anticipated. The relocation of utilities is to improve existing operations and accessibility for future maintenance and to provide for access ramps required for ADA compliance. Therefore, impacts to utilities and service systems as a result of the Sneden Street Improvements Project would be less than significant.

3.17 MANDATORY FINDINGS OF SIGNIFICANCE

Project impacts would be mostly short-term and minor. Temporary impacts would be limited to aesthetics related to removal of trees, and air quality, noise, and traffic related to project construction. The proposed project would not result in any potential permanent impacts. The proposed project would not cause any potential impacts to the environment that could result in a mandatory finding of significance.

SECTION 4
REFERENCES

Bishop, City of

2007 Website – http://www.ca-bishop.us/PublicWorks/CityofBishopPublicWorks.htm

1993 General Plan for the City of Bishop. http://www.ca-bishop.us/PublicWorks/Planning/GeneralPlan/CoverthroughIntroduction.pedf. Accessed July 2008 and January 2009.

1993 City of Bishop Standards for Landscaping Within the Public Rights of Way

2006 Zoning Map, November 30

Grah, David.

Personal communications with Brooke Peterson of Tierra Environmental Services. February 2, 2009.

MACTEC Engineering and Consulting, Inc.

2006 MacIver Street Improvement Project Initial Study. December.

Natural Resources Conservation Service (NRCS)

2008 http://websoilsurvey.nrcs.usda.gov

Nolte Engineering

2007 West Pine Street Improvements Geotechnical Report

2008 30% Draft Plan and Profile Drawings – City of Bishop Street Improvement Plans, Sneden Street.

Sierra Geotechnical Services Inc.

2008 Pavement Design and Earthwork and Grading Recommendations, Sneden Street

USGS

Bishop Topographic Map

APPENDIX A - PAVEMENT DESIGN AND EARTHWORK AND GRADING RECOMMENDATIONS

SIERRA GEOTECHNICAL SERVICES INC.

August 18, 2008 Project No. 3.30861

Nolte Associates, Inc.
15070 Avenue of Science, Suite 100
San Diego, CA 92128-3412

Attention: Mr. Scott Vinton

Subject: **PAVEMENT DESIGN AND EARTHWORK AND GRADING RECOMMENDATIONS**
Bishop Roadway Projects – *SNEDEN SDB044SN-07-SIER*
Inyo County, California

Dear Mr. Vinton:

In accordance with our Proposal for Geotechnical Services dated September 24, 2007, we herein submit pavement design and earthwork and grading recommendations for the proposed Sneden Street improvement project (Figure 1).

The pavement sections and recommendations are provided based upon the results of a subsurface field investigation and laboratory testing which included: field mapping, excavation and logging of four exploratory test pits excavated within the alignment of the existing road, in-place moisture and density testing, and laboratory testing of representative soil samples obtained during the field investigation.

Construction/reconstruction of the proposed roadway is feasible form a geotechnical standpoint. No geologic hazards were observed. Site soils are generally granular but do include some silt. Unsuitable surficial soils were encountered to depths up to approximately 14" and will require removal prior to fill placement. Groundwater seepage was not encountered.

P.O. BOX 5024 • MAMMOTH LAKES, CA 93546 • (760) 934-3992 • FAX (760) 934-8832
214 W. LINE STREET, SUITE E • BISHOP, CA 93514 • (760) 873-4273 • FAX (760) 873-8024

The following table includes descriptions of the USCS soil types, R-values, recommended removals of unsuitable soils, and recommended pavement sections.

Location	USCS Soil Types	R -Values	Recommended Removal Depth	Recommend Pavement Section – AC over Class II Base
STA 11+00	SM	52.2	14"	3"/4"*
STA 11+00	SM	52.2	14"	4"/4"**
STA 16+75	SM	84.6	12"	3"/4"*
STA 16+75	SM	84.6	12"	3"/4"**

**Pavement section based upon a minimum Traffic Index of 6*
*** Pavement section based upon a minimum Traffic Index of 7*

Detailed plans for construction and grading are currently not available. SGSI should review grading and plans prior to construction in order to assure that they are in conformance with this report; some of the geotechnical recommendations contained herein may need to be revised after reviewing.

The conclusions and recommendations presented herein are considered site specific and should not be extrapolated to other areas or used for other projects

We appreciate the opportunity to be of service to you. Should you have any questions regarding this report, please do not hesitate to contact us.

Respectfully,

SIERRA GEOTECHNICAL SERVICES, INC.

Thomas A. Platz
President
PE C41039

REGISTERED PROFESSIONAL ENGINEER
THOMAS A. PLATZ
No C 41039
Exp 3/31/00
CIVIL
STATE OF CALIFORNIA

Joseph A. Adler
Principal Geologist
CEG 2198

(2) Addressee

PURPOSE AND SCOPE

The scope of this investigation included a review of stereoscopic aerial photographs, readily available published and unpublished geologic literature, a subsurface field investigation, laboratory testing of representative soil samples obtained during our field investigation, geologic and geotechnical evaluation and analysis of the collected field and laboratory data, and preparation of this report presenting the results of our findings, conclusions, geotechnical recommendations and construction considerations for the proposed project.

The field investigation was performed on April 17th, 2008, and included the excavation of four test pits within the proposed construction areas. A geologist from our office logged the excavations as they were advanced. In-place densities and bulk samples of the soils encountered were obtained during the field investigation. Approximate locations of the exploratory test pits are shown on the Subsurface Location Plan (Figure 2). Details of the laboratory testing are presented in Appendix B.

PROPOSED DEVELOPMENT

It is our understanding that the proposed improvements will include the replacement of the existing pavement, replacement of curb and gutter, replacement of non ADA compliant sidewalks, construction of concrete cross gutters, and intersection improvements.

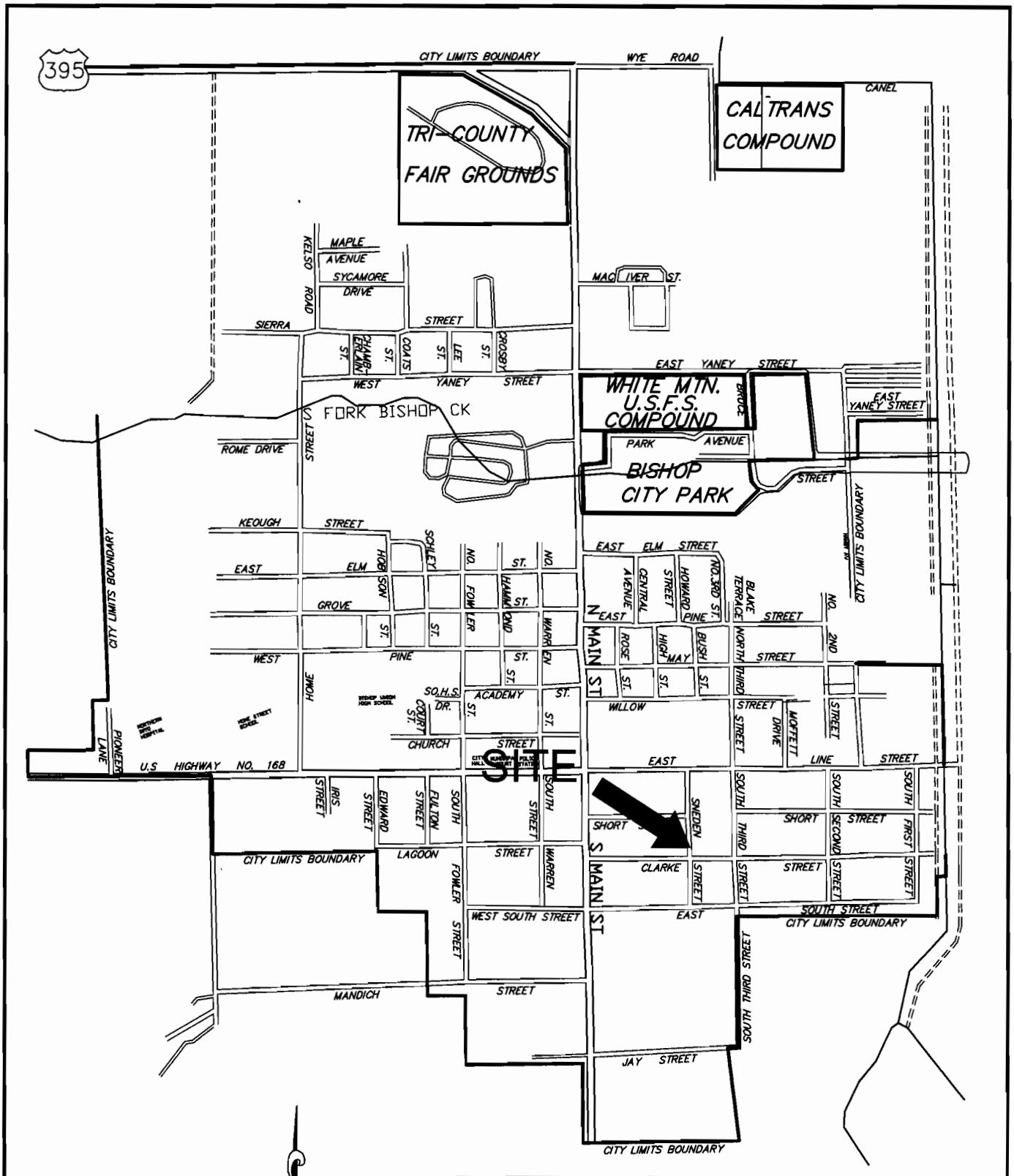
Grading will likely include minor cuts and fills as well as shallow removals of unsuitable soils. As previously noted, this project is in the design process and detailed plans for construction are currently not available. SGSI should review grading plans prior to construction in order to assure that they will be in conformance with our recommendations.

AERIAL PHOTOGRAPHIC REVIEW

Prior to our field investigation, we reviewed aerial photographs to assist in our evaluation of geomorphic features that could be indicative of geologic hazards within the site area. Details from the earliest available photographs did not show any evidence of lineations, scarps, or other ground-surface fault, or landslide related features.

SUBSURFACE CONDITIONS

As observed during our investigation two general soil types underlie the site consisting of fill - decomposed granitic soil (DG), and Alluvium. Logs of the subsurface conditions



PROJECT:	***VICINITY MAP*** *SNEDEN STREET*
SCALE: *N.T.S*	DATE: *8/2008*
DRAWING:	DRAWN BY: *JAA*
JOB NO.: *3.30861*	FIGURE: *FIGURE 1*

Sierra Geotechnical Services

encountered in exploratory test pits are provided in Appendix A. Generalized descriptions of the materials encountered during this investigation follow.

Fill (Decomposed Granitic Soil - DG)

Fill soils were encountered in all test pits to an approximate maximum depth of 14" below existing grade. In general, the fill consisted of a reddish-brown, damp, dense, silty, fine to coarse SAND (Unified Soil Classification Symbol: SP-SM). This material should be removed from within roadway and structural areas (or to within 3-feet of edge of pavement if no sidewalks or other structures are anticipated) during grading. This material is suitable for use as fill below the road provided it is "conditioned" in accordance with the earthwork recommendations contained herein.

Alluvium

Alluvial deposits were encountered within all the test pits below the DG. Where encountered the alluvium generally consisted of a dark brown to gray, medium-dense, moist, silty, very fine to coarse grained SAND. The total thickness of the alluvium was not determined during this investigation. The alluvium is suitable for both fill and structural support provided the recommendations contained herein are adhered to during site development.

Groundwater

Groundwater seepage was not encountered during this field investigation. Note: the depths to groundwater reflect site conditions at the time of this investigation. Groundwater conditions often fluctuate seasonally, and the depths recorded may not necessarily be reflective of groundwater elevations during construction. If groundwater and/or saturated soils are encountered during site grading, excavations within the removal areas will need to be stabilized prior to fill placement. Once removals are complete clean crushed aggregate or cobble should be placed within the excavation to at least 6-inches above the high water line. The aggregate areas should then be covered by a filter fabric (Mirafi 140 or equivalent), prior to soil fill placement.

CONCLUSIONS

Reconstruction of the proposed road is feasible from a geotechnical standpoint, provided the following conclusions and recommendations contained herein are accounted for and incorporated into the new design and construction.

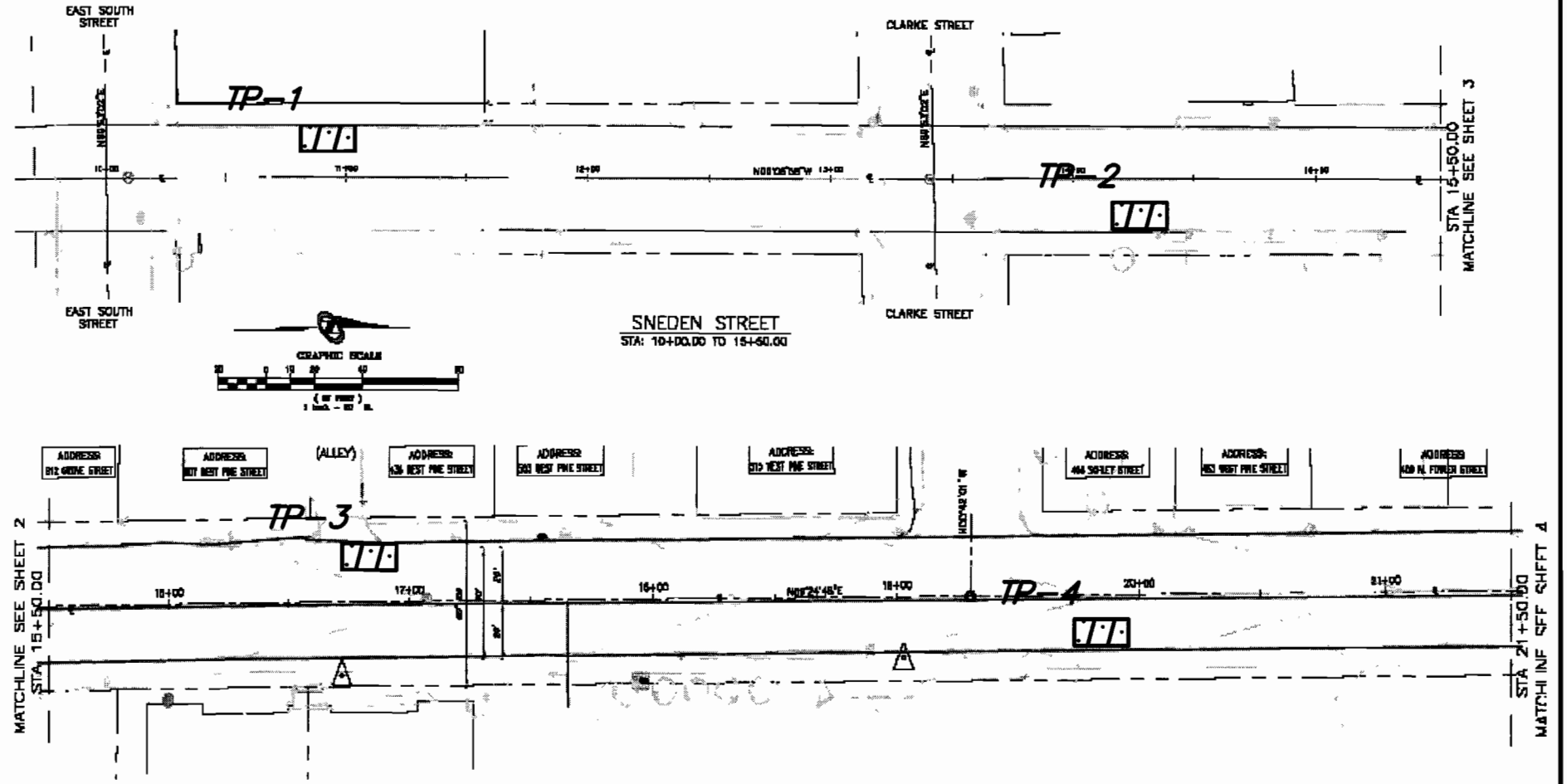
- Evidence of past soil failures, or landslides, or active faulting on the site was not encountered.
- Site soils encountered during our field investigation generally consist of sands, and silts.
- Groundwater was not encountered during our investigation.
- Fill deposits up to approximately 14" below grade are considered unsuitable for the support of new fill or structural loads. Remedial grading consisting of overexcavation and compaction is recommended. Remedial grading recommendations are provided herein.
- Excavations will be achievable using standard earthmoving equipment.

PRELIMINARY PAVEMENT RECOMMENDATIONS

For planning purposes SGSI recommends removal and compaction as well as pavement sections for the following roadways

Location	USCS Soil Types	R -Values	Recommended Removal Depth	Recommend Pavement Section – AC over Class II Base
STA 11+00	SM	52.2	14"	3"/4"*
STA 11+00	SM	52.2	14"	4"/4"**
STA 16+75	SM	84.6	12"	3"/4"*
STA 16+75	SM	84.6	12"	3"/4"**

**Pavement section based upon a minimum Traffic Index of 7*
*** Pavement section based upon a minimum Traffic Index of 6*



LEGEND

TP-1 TO TP-4

APPROXIMATE LOCATION OF EXPLORATORY TEST PIT

PROJECT: SUBSURFACE LOCATION MAP SNEDEN STREETS	
	DATE: 8/2008
DRAWING: FIG2DWG	DRAWN BY: JAA
JOB NO: 3.30861	FIGURE: FIGURE 2

The pavement sections were designed for the assumed traffic loading and environmental conditions. Based upon our experience, environmental conditions such as freeze-thaw and thermal cracking will most likely govern the life of the pavement. Therefore, a 3-inch AC section is the minimum recommended.

The upper 12-inches of subgrade material along with the Class II Aggregate Base and the Asphaltic concrete shall be compacted to a minimum of 95-percent of the materials maximum dry density as determined by ASTM D-1557.

We recommend that any sidewalks, curbs and/or gutters be designed by a civil engineer or structural engineer. For any proposed sidewalks, and curbs and gutters, a minimum 4-inch paving section of reinforced concrete (minimum 3,000 psi) may be used. Minimum reinforcement shall consist of welded-wire mesh. We suggest control joints, at appropriate intervals, as determined Inyo County Standards and the project civil or structural engineer, be considered.

If pavement areas are adjacent to heavily watered landscape areas, some deterioration of the subgrade load bearing capacity may result. We recommend some measures of moisture control (such as deepened curbs or other moisture barrier materials) be provided to prevent the subgrade soils from becoming saturated.

EARTHWORK AND GRADING SPECIFICATIONS EARTHWORK

Earthwork should be conducted in accordance with applicable grading ordinances, the current California Building Code, and the recommendations of this letter. The following recommendations are provided regarding specific aspects of the proposed earthwork construction. These recommendations should be considered subject to revision based on field conditions observed by the geotechnical consultant during construction.

Geotechnical Consultant of Record

Prior to commencement of work, the owner shall employ the Geotechnical Consultant of Record. The Geotechnical Consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of grading or construction.

During grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required. Subsurface areas to be geotechnically observed, mapped, elevations recorded, and/or tested include natural ground, after it has been cleared for receiving fill but before it has been placed, bottoms of all "remedial removal areas, all key bottoms, and benches made on sloping ground to receive fill.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to determine the attained level of compaction. The Geotechnical Consultant shall provide the test results to the owner and the contractor on a routine and frequent basis.

The Earthwork Contractor

The Earthwork Contractor shall be solely responsible for performing the grading in accordance with the plans and specifications. The Earthwork Contractor shall review and accept the plans, geotechnical report(s) and these Specifications prior to the commencement of grading. The Earthwork Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant unsatisfactory conditions, such as unstable soil, improper moisture condition, inadequate compaction, adverse weather, etc… are resulting in a quality of work less than required in these Specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified.

Site Preparation

General: Site preparation includes removal of deleterious materials, unsuitable materials, and existing improvements from areas where new improvements or new fills are planned. Deleterious materials, which include vegetation, trash, and debris, should be removed from the site and legally disposed of off-site. Unsuitable materials include

loose or disturbed soils, undocumented fills, contaminated soils, or other unsuitable materials. The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1-percent of organic materials (by volume). No fill lift shall contain more than 5-percent of organic matter. Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant etc…) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fine and/or imprisonment and shall not be allowed.

Any existing subsurface utilities that are to be abandoned should be removed and the trenches backfilled and compacted. If necessary, abandoned pipelines may be filled with grout or slurry cement as recommended by, and under the observation of, the Geotechnical Consultant.

Excavation

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths included within this report are estimates only. **The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading.** Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

In addition to removals and overexcavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured, or otherwise unsuitable ground shall be overexcavated to competent ground as evaluated by the Geotechnical Consultant during grading.

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

Fill Compaction and Compaction

All fill should be relatively free of organics, any oversized rock (greater than 6-inches in diameter) and any deleterious materials. Any import soils shall be tested for suitability in advance by the project Geotechnical Engineer. Earth fill material shall not contain more than 1-percent of organic materials (by volume). No fill lift shall contain more than 5-percent of organic matter. Nesting of the organic materials shall not be allowed.

After making the recommended removals and prior to fill placement, the exposed ground surface should be scarified to a depth of approximately 12-inches, moisture conditioned as necessary, and compacted to at least 95-percent of the maximum dry density obtained using ASTM 1557 as a guideline. The upper 12-inches of subgrade material along with the Class II Aggregate Base and the Asphaltic concrete shall also be compacted to a minimum of 95-percent of the materials maximum dry density.

All fill and backfill to be placed in association with the proposed construction should be accomplished at slightly over optimum moisture content using equipment that is capable of producing a uniformly compacted product throughout the entire fill lift. Fill materials at less than optimum moisture should have water added and the fill mixed to result in material that is uniformly above optimum moisture content. Fill materials that are too wet can be aerated by blading or other satisfactory methods until the moisture content is as required. The wet soils may be mixed with drier materials in order to achieve an acceptable moisture content.

The fill and backfill should be placed in horizontal lifts at a thickness appropriate for equipment spreading, mixing, and compacting the material, but generally should not exceed eight inches in thickness. No fill soils shall be placed during unfavorable weather conditions. When work is interrupted by rains or snow, fill operations shall not be resumed until the field tests by the geotechnical engineer indicate that the moisture content and density of the fill are as previously specified.

Utility Trench Backfill

Exterior trenches, paralleling a footing and extending below a 1:1 plane projected from the outside bottom edge of the footing, shall be compacted to a minimum of 95-percent per ASTM 1557. All trenches in structural areas and under concrete flatwork shall be compacted to a minimum of 95-percent per ASTM 1557. All trenches in non-structural areas shall be compacted to a minimum of 85-percent per ASTM 1557.

All material used for backfill shall be approved by the Geotechnical Engineer prior to placement. All bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1-foot over the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum of 95-percent of maximum from 1-foot above the top of the conduit to the surface.

Lift thickness of backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

Regulations of the governing agency may supersede the above, and all trench excavations should conform to all applicable safety codes. The Contractor shall follow all OSHA and Cal/OSHA requirements for safety of trench excavations.

Temporary Excavations

All excavations should comply with the requirements of the California Construction and General Industry Safety Orders and the Occupational Safety and Health Act and other public agencies having jurisdiction.

LIMITATIONS

This report has been prepared for the sole use and benefit of our client. The conclusions of this report pertain only to the site investigated. The intent of the report is to advise our client of the geologic and geotechnical recommendations relative to the future development of the proposed project. It should be understood that the consulting provided and the contents of this report are not perfect. Any errors or omissions noted by any party reviewing this report, and/or any other geotechnical aspects of the project, should be reported to this office in a timely fashion. The client is the only party intended by this office to directly receive this advice. Unauthorized use of or reliance on this report constitutes an agreement to defend and indemnify Sierra Geotechnical Services Incorporated from and against any liability, which may arise as a result of such use or reliance, regardless of any fault, negligence, or strict liability of Sierra Geotechnical Services Incorporated.

Conclusions and recommendations presented herein are based upon the evaluation of technical information gathered, experience, and professional judgment. Other consultants could arrive at different conclusions and recommendations. Final decisions on matters presented are the responsibility of the client and/or the governing agencies. No warranties in any respect are made as to the performance of the project.

The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings within this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

APPENDIX A

EXPLORATORY TEST PIT LOGS

A field investigation was performed on April 17th, 2008 that included the excavation of four exploratory test pits with a Case backhoe equipped with a 24-inch bucket, and hand labor. A geologist from our office logged the excavations as they were advanced. Logs of the exploratory test pits are presented herein. The approximate locations of the exploratory test pits are shown on the Subsurface Location Map (Figure 2).

In-place nuclear density tests and bulk samples of the soils encountered were obtained during the field investigation. Results of the in-place nuclear density tests are presented on the logs of the exploratory test pits. Details of the laboratory testing are presented in Appendix B.

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Appendix A

TEST PIT LOGS

JOB NO: 3.30861 **PROJECT:** Sneden Street
DATE: 4/17/2008 **LOGGED BY:** P. Stone
LOC: W. side of road @ STA 11+00

TEST PIT	DEPTH (FT)	USCS SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
1	0 - 8"					**Asphalt** 2" relatively recent overlay on top of older 2" and 4" sections.
	8 - 14"	SP-SM				**Fill** Reddish-brown, damp, dense, silty, fine to coarse SAND (DG).
	14 - 30"	SM				**Alluvium** Dark brown, moist, medium dense, silty, very fine to medium SAND.
						Total depth = 30". No groundwater encountered. Backfilled 4/17/2008.

JOB NO: 3.30861 **PROJECT:** Sneden Street
DATE: 4/17/2008 **LOGGED BY:** P. Stone
LOC: E. side of road @ STA 14+25

TEST PIT	DEPTH (FT)	USCS SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
2	0 - 5"					**Asphalt** 1 3/4" relatively recent overlay on top of older 2" and 1 1/4" sections.
	5 - 9"	SP-SM				**Fill** Reddish-brown, damp, dense, silty, fine to coarse SAND (DG).
	9 - 17"	SM	12"	8.9	122.1	**Alluvium** Dark brown, moist, medium dense, silty, very fine to medium SAND.
	17 - 23"	SM				Gray, moist, medium dense, silty, fine to coarse SAND.
						Total depth = 23". No groundwater encountered. Backfilled 4/17/2008.

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Appendix A

TEST PIT LOGS

JOB NO: 3.30861 **PROJECT:** Sneden Street
DATE: 4/17/2008 **LOGGED BY:** P. Stone
LOC: NW corner Intersection @ STA 16+75

TEST PIT	DEPTH (FT)	USCS SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
3	0 -6"					**Asphalt** 2" relatively recent overlay on top of older 4" section.
	6 - 8"	SP-SM	6"	9.7	118.1	**Fill** Reddish-brown, damp, dense, silty, fine to coarse SAND (DG).
	8 - 24"	SM	12"	11.4	108.6	**Alluvium** Dark gray, moist, medium dense, silty, very fine to medium SAND.
						Total depth = 24". No groundwater encountered. Backfilled 4/17/2008.

JOB NO: 3.30861 **PROJECT:** Sneden Street
DATE: 4/17/2008 **LOGGED BY:** P. Stone
LOC: E. side of road @ STA 19+80

TEST PIT	DEPTH (FT)	USCS SYMBOL	SAMPLE DEPTH	PERCENT MOISTURE	DRY DENSITY (pcf)	DESCRIPTION
4	0 - 4"					**Asphalt** 1" relatively recent overlay on top of older 2" and 1" sections.
	4 - 12"	SP-SM				**Fill** Reddish-brown, damp, dense, silty, fine to coarse SAND (DG).
	12 - 22"	SM	12	5.1	121.3	**Alluvium** Dark gray, moist, medium dense, silty, very fine to medium SAND.
						Total depth = 22". No groundwater encountered. Backfilled 4/17/2008.

APPENDIX B

LABORATORY TESTING

Laboratory tests were performed on representative test samples to provide a basis for development of design parameters. Soil materials were classified according to the Unified Soil Classification standards. Selected samples were tested for the following parameters: classification and grain size, maximum dry density, and R-value. The results of our laboratory testing along with summaries of the testing procedures are presented herein.

LABORATORY TESTING

Classification or Grain Size Tests: Typical materials were subjected to mechanical grain-size analysis by sieving from U.S. Standard brass screens (ASTM Test Method C136). The data was evaluated in determining the classification of the materials. The grain-size distribution curves are presented in the test data and the Unified Soil Classification (USCS) is presented in both the test data and the boring and/or trench logs.

Maximum Density Tests: The maximum dry density and optimum moisture content of typical materials were determined in accordance with ASTM Test Method D1557. The results of these tests are presented in the table below:

Sample Location	Sample Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
TP-1 @ 14-30"	Dark brown, silty very fine to medium SAND	114.8	12.8
TP-3 @ 8-24"	Dark gray, silty very fine to medium SAND	124.1	10.0

Moisture and Density Determination Tests: In-place moisture content and density determinations were obtained from within the test pits using a nuclear density gauge. The results of these tests are presented in the boring log.

"R"-Value: The resistance "R"-value was determined ASTM D2844. The graphically determined "R"-value at exudation pressure of 300 psi is summarized in the table below:

Sample Location	Sample Description	R-Value
TP-1 @ 14-30"	Dark brown, silty very fine to medium SAND	52.2
TP-3 @ 8-24"	Dark gray, silty very fine to medium SAND	84.6

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SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES

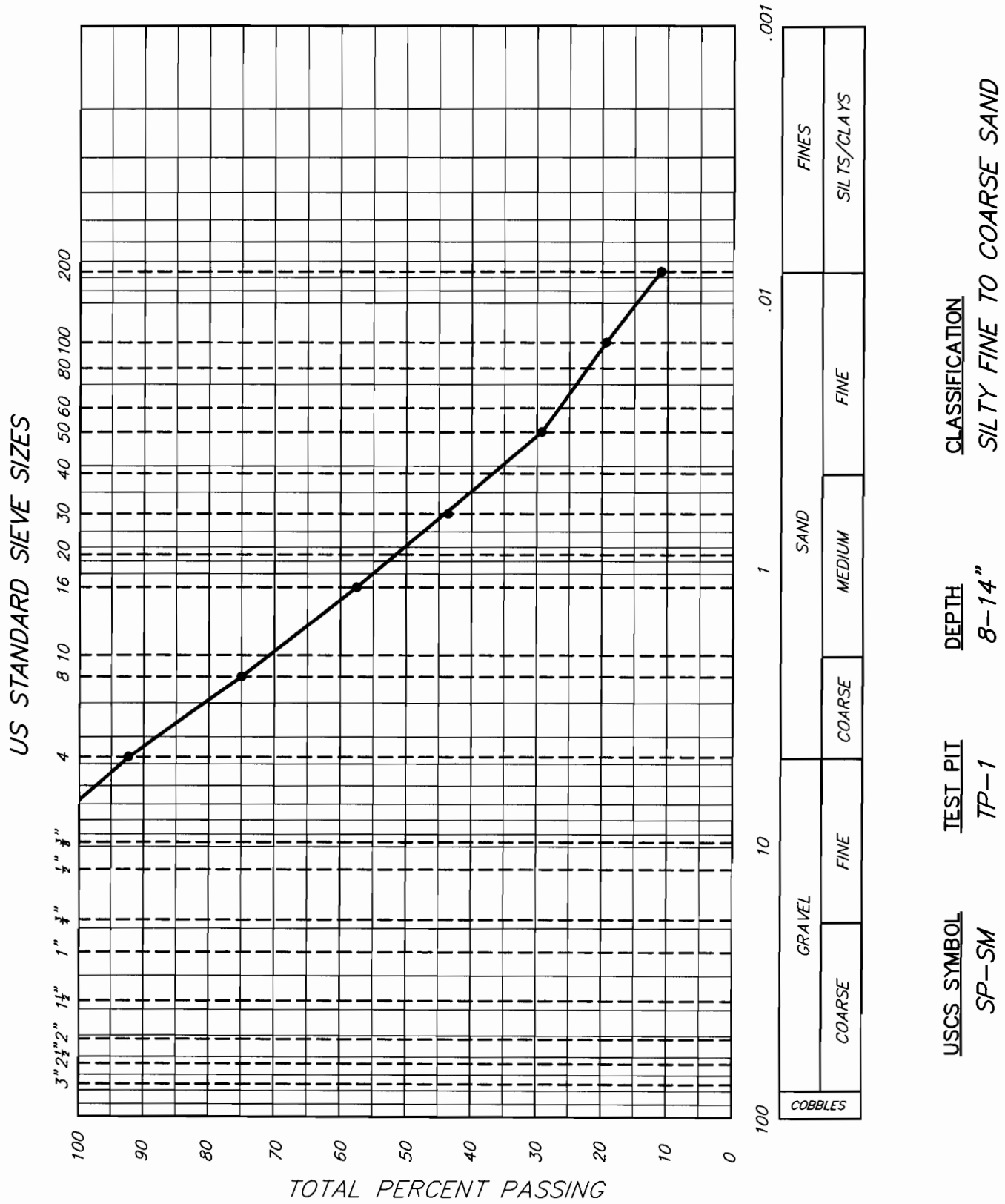
Per ASTM C136

Project:	Sneden Street	*Job No.:*	3.30861
Client:	Triad/Holmes Associates	*Tested by:*	PS
Sampled by:	PS	*Delivered by:*	PS
Sample Date/time:	4/17/2008	*Delivered Date/time:*	
Sample Location:	TP # 1 @ 8-14"'	*Test Date:*	5/9/2008
Description:	Silty, fine to coarse SAND (SP-SM)		

Dry Sample Total Weight (g): 607			*#4 Minus Dry Wt. (g):*						*% Passing by Dry Weight:*	
Sieve Size			**Fine Wt. Ret.**	**% Ret.**	**% Pass.**	**Coarse Wt. Ret.**	**% Ret.**	**% Pass.**	**Coarse + Fine**	**Specified**
Inches	**mm**	**Mesh**								
2.0	50.0	2"								
1.5	37.5	11/2"								
1.0	25.0	1"								
0.750	19.0	3/4"								
0.500	12.7	1/2"								
0.250	6.3	1/4"								
0.187	4.75	#4	44	8	92					
0.0937	2.36	#8	102	17	75					
0.0469	1.18	#16	109	18	57					
		#20								
0.0234	0.60	#30	86	14	43					
		#40								
0.0117	0.30	#50	87	14	29					
		#80								
0.0059	0.15	#100	63	10	19					
0.0029	0.075	#200	50	8	11					
PAN			66	11	0					
TOTAL			607							

Remarks: Wash Sieve

SGSI



GRNSIZE.DWG

Sierra Geotechnical Services

PROJECT

SNEDEN STREET
NOLTE ASSOCIATES

GRAIN SIZE DISTRIBUTION

DATE	6/2008
PLOTTED BY	JAA
JOB NO.	3.30861
PLATE NO.	

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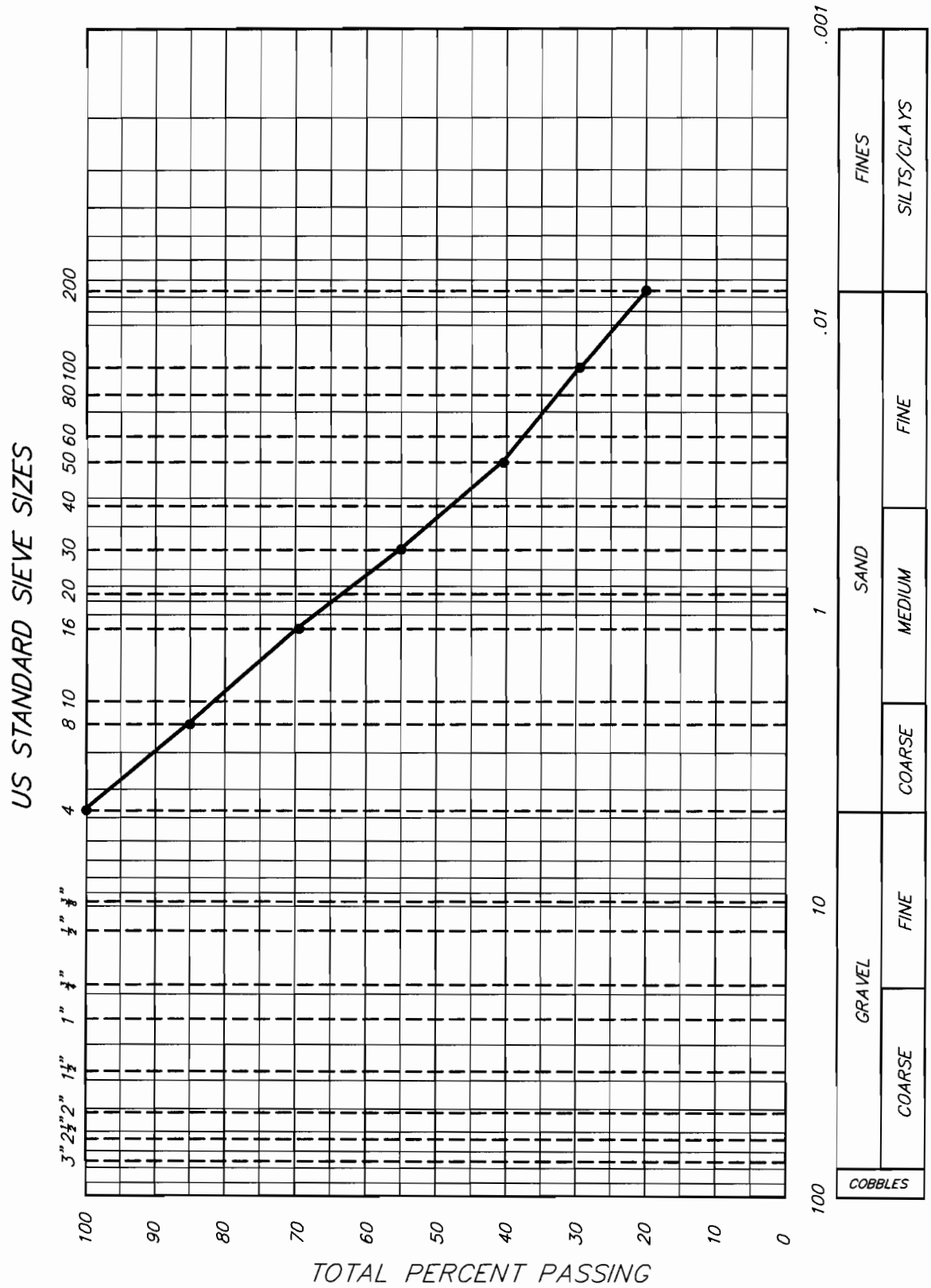
SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES

Per ASTM C136

Project:	Sneden Street	*Job No.:*	3.30861
Client:	Triad/Holmes Associates	*Tested by:*	PS
Sampled by:	PS	*Delivered by:*	PS
Sample Date/time:	4/17/2008	*Delivered Date/time:*	
Sample Location:	TP # 2 @ 9-17"	*Test Date:*	5/9/2008
Description:	Silty, very fine to medium SAND (SM)		

Dry Sample Total Weight (g) 422			*#4 Minus Dry Wt. (g):*					*% Passing by Dry Weight:*		
Sieve Size			**Fine Wt. Ret.**	**% Ret.**	**% Pass.**	**Coarse Wt. Ret.**	**% Ret.**	**% Pass.**	**Coarse + Fine**	**Specified**
Inches	**mm**	**Mesh**								
2.0	50.0	2"								
1.5	37.5	11/2"								
1.0	25.0	1"								
0.750	19.0	3/4"								
0.500	12.7	1/2"								
0.250	6.3	1/4"								
0.187	4.75	#4	0	0	100					
0.0937	2.36	#8	64	15	85					
0.0469	1.18	#16	68	16	69					
		#20								
0.0234	0.60	#30	60	14	55					
		#40								
0.0117	0.30	#50	61	14	41					
		#80								
0.0059	0.15	#100	49	12	29					
0.0029	0.075	#200	37	9	20					
PAN			83	20	0					
TOTAL										

Remarks: Wash Sieve



USCS GROUP
SM

TEST PIT
TP-2

DEPTH
9-17"

CLASSIFICATION
SILTY, VERY FINE TO MEDIUM GRAINED SAND

GRNSIZE.DWG

Sierra Geotechnical Services

PROJECT

SNEDEN STREETS

NOLTE ASSOCIATES

GRAIN SIZE DISTRIBUTION

DATE	6/2008
PLOTTED BY	JAA
JOB NO.	3.30861
PLATE NO.	

Sierra Geotechnical Services

MAXIMUM DENSITY CURVE

PER ASTM TEST METHOD 1557-00 AND CTM 231-01

JOB NUMBER: 3.30861 DATE: 4/25/2008

PROJECT: SNEDEN STREET

SAMPLED BY: PS TESTED BY: PS

EXCAVATION: TP-1 DEPTH (FT.): 14-30"

SOIL CLASSIFICATION: SM

DESIGNATION: ALLUVIUM

TEST #	1	2	3	4	5
WEIGHT OF SOIL AND MOLD	6292	6338	6292		
WEIGHT OF MOLD	4381	4381	4381		
NET WET WEIGHT OF SOIL	1911	1957	1911		
WET DENSITY LBS./CU.FT.	126.4	129.4	126.4		
DRY DENSITY LBS./CU.FT.	113.4	113.6	108.8		
MOISTURE DETERMINATION					
WET WEIGHT SOIL	466	493	487		
TARE (WT. OF PAN)					
DRY WEIGHT SOIL	418	433	419		
WEIGHT OF MOISTURE	48	60	68		
PERCENT MOISTURE	11.5	13.9	16.2		

DRY WEIGHT - POUNDS PER CUBIC FOOT

145 140 135 130 125 120 115 110 105 100 95 90 85 80

0 5 10 15 20 25 30 35 40 45

2.20 2.30 2.40 2.50 2.60 2.70 2.80

MOISTURE - % OF DRY WEIGHT

ROCK CORRECTION

A	TOTAL SAMPLE WEIGHT	
B	+ 3/4" WT. IN AIR (gm)	
C	+ 3/4" WT. IN WATER (gm)	
D	+ 3/4" VOLUME (cc) (B-C)	
E	% + 3/4" 100(B/A)	
F	% - 3/4" (100-E)	
G	DENSITY OF + 3/4" (B/D)	
H	% + 3/4" / DENSITY OF + 3/4"	
I	% - 3/4" / DENSITY OF - 3/4"	
J	SUM OF H AND I	
K	ADJUSTED DENSITY gm/cc (100/J)	

RESULTS

MOLD VOLUME:

SIEVE USED:

MAX. DENSITY (LBS./FT³): 114.8

OPT. MOISTURE (% DRY WT.): 12.8

CALCULATIONS

1:

2:

3:

4:

5:

Maxdense.dwg - 7/2003

Sierra Geotechnical Services

MAXIMUM DENSITY CURVE

PER ASTM TEST METHOD 1557-00 AND CTM 231-01

JOB NUMBER: 3.30861 DATE: 4/25/2008

PROJECT: SNEDEN STREET

SAMPLED BY: PS TESTED BY: PS

EXCAVATION: TP-3 DEPTH (FT.): 8-24"

SOIL CLASSIFICATION: SM

DESIGNATION: ALLUVIUM

TEST #	1	2	3	4	5
WEIGHT OF SOIL AND MOLD	6288	6415	6429		
WEIGHT OF MOLD	4381	4381	4381		
NET WET WEIGHT OF SOIL	1907	2034	2048		
WET DENSITY LBS./CU.FT.	126.1	134.5	135.5		
DRY DENSITY LBS./CU.FT.	119.6	123.4	121.1		
MOISTURE DETERMINATION					
WET WEIGHT SOIL	484	459	488		
TARE (WT. OF PAN)					
DRY WEIGHT SOIL	459	421	436		
WEIGHT OF MOISTURE	25	38	52		
PERCENT MOISTURE	5.4	9.0	11.9		

DRY WEIGHT - POUNDS PER CUBIC FOOT

145 140 135 130 125 120 115 110 105 100 95 90 85 80

0 5 10 15 20 25 30 35 40 45

2.20 2.30 2.40 2.50 2.60 2.70 2.80

MOISTURE - % OF DRY WEIGHT

ROCK CORRECTION

A	TOTAL SAMPLE WEIGHT	
B	+ 3/4" WT. IN AIR (gm)	
C	+ 3/4" WT. IN WATER (gm)	
D	+ 3/4" VOLUME (cc) (B-C)	
E	% + 3/4" 100(B/A)	
F	% - 3/4" (100-E)	
G	DENSITY OF + 3/4" (B/D)	
H	% + 3/4" / DENSITY OF + 3/4"	
I	% - 3/4" / DENSITY OF - 3/4"	
J	SUM OF H AND I	
K	ADJUSTED DENSITY gm/cc (100/J)	

RESULTS

MOLD VOLUME:

SIEVE USED:

MAX. DENSITY (LBS./FT³): 124.1

OPT. MOISTURE (% DRY WT.): 10.0

CALCULATIONS

1:

2:

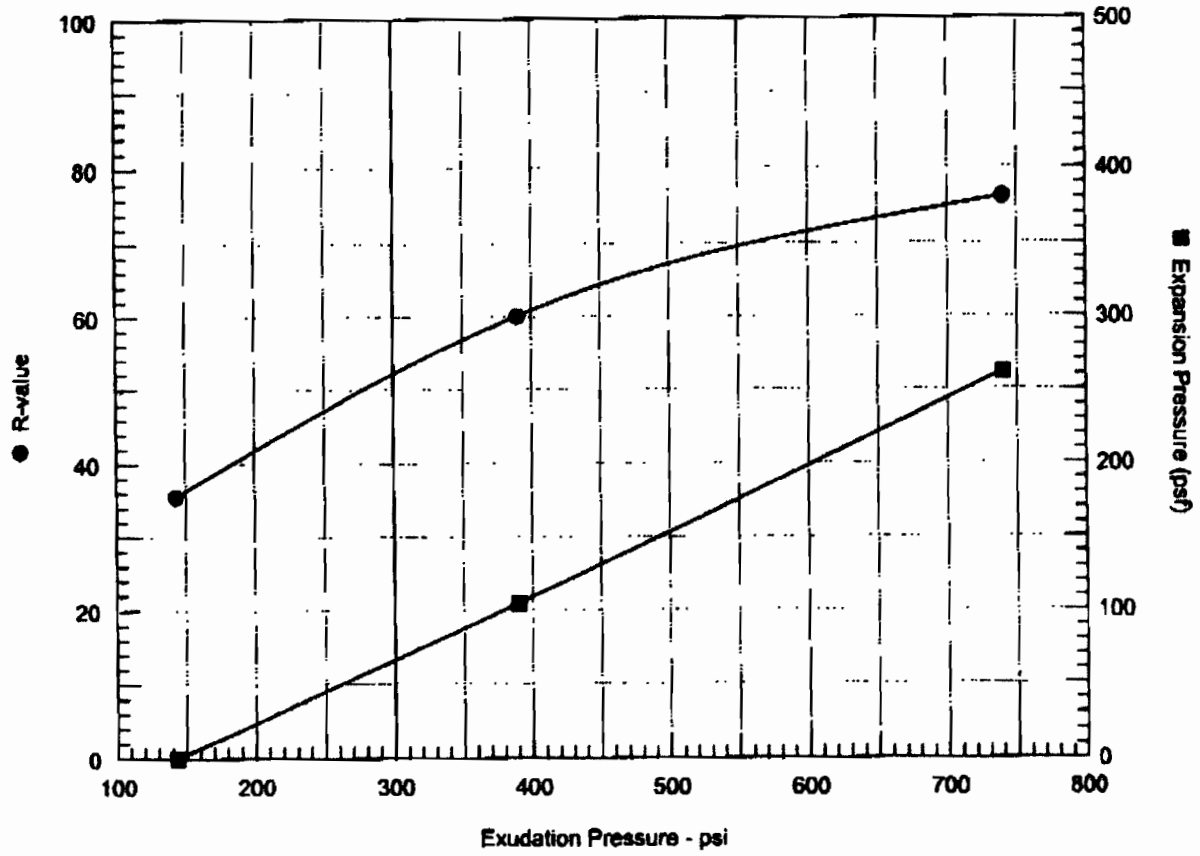
3:

4:

5:

Maxdense.dwg - 7/2003

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	110	111.0	16.8	0	93	2.55	143	35.6	35.6
2	285	112.8	15.5	105	56	2.50	390	60.1	60.1
3	350	111.9	14.1	262	34	2.49	740	76.1	76.1

Test Results	Material Description
R-value at 300 psi exudation pressure = 52.2 **Exp. pressure at 300 psi exudation pressure** = 66 psf	Brown silty sand (SM)

Project No.: 4437.07-I
Project:Sierra Geotechnical Services
Location: Native; Sneden Street, Test Pit 1
Sample Number: 08-183 **Depth**: 14"-30"
Date: 6/20/2008

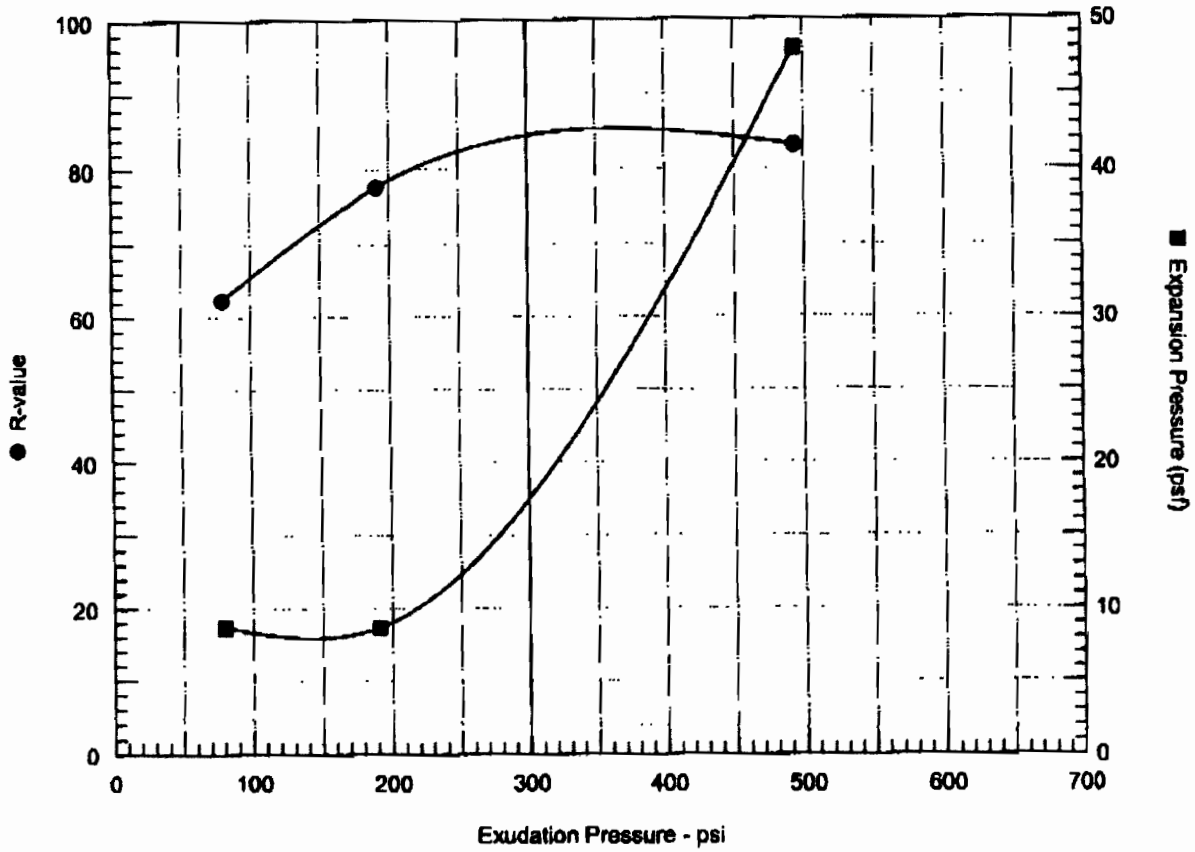
Tested by:
Checked by:
Remarks:
Nolte Job# 3.30861

R-VALUE TEST REPORT

PEZONELLA ASSOCIATES, INC.

Plate ____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D 2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	124.5	9.2	48	18	2.42	493	84.1	83.3
2	350	121.8	11.5	9	44	2.41	80	64.4	62.3
3	350	123.9	10.2	9	25	2.42	191	78.8	77.7

Test Results	Material Description
R-value at 300 psi exudation pressure = 84.6 **Exp. pressure at 300 psi exudation pressure** = 17 psf	Brown silty sand (SM)

Project No.: 4437.07-1
Project: Sierra Geotechnical Services
Location: Native; Sneden Street, Test Pit 3
Sample Number: 08-187 **Depth:** 8"-24"
Date: 6/20/2008

Tested by:
Checked by:
Remarks:
Nolte Job# 3.30861

R-VALUE TEST REPORT

PEZONELLA ASSOCIATES, INC.

Plate ____