Attachment A

Operations, Processes, Materials and Equipment Details

RoofScreen

347 Coral Street, Santa Cruz, CA 95060 • www.roofscreen.com
PHONE 831.421.9230

March 3, 2020

RE: Operations, processes, materials and equipment.

In the proposed 16,000 sf. Pre-engineered metal building at 668 Murphys Grade Rd., RoofScreen intends to manufacture, assemble, and ship metal components using the following materials, processes and equipment:

1. Materials used
    a. Mild hot rolled steel, sheet, bar, tubes, angles, etc.
    b. Pre-galvanized sheet metal.
    c. 304 stainless steel sheets.
    d. Aluminum sheet, bar, tubes, angles, etc.
    e. Extruded aluminum shapes.
    f. Pre-galvanized mechanical tubing.
2. Processes
    a. Laser cutting of metal flat sheets.
    b. Waterjet cutting of metal sheets.
    c. Mechanical shearing of metal sheets.
    d. Forming/bending of metal parts.
    e. Band saw cutting of metal shapes.
    f. Drilling of metal parts.
    g. CNC milling of metal parts.
    h. Welding of metal parts.
    i. Assembly of metal formed parts.
    j. Packaging/shipping of metal parts.
3. Chemicals and Hazardous Materials
    a. We will not be using or storing any chemicals or hazardous materials other than incidental items (spray paint cans, WD40, cleaning solvents, etc.) in small containers which will be stored in an approved flammable storage cabinet.
4. Fuels
    a. The only fuels on premises will be propane tanks for our forklifts. Extra tanks will be stored in an approved storage cage outside of the building.
5. Equipment used
    a. Laser Cutting Machine
        i. Trumpf TruLaser 1030 Fiber L88.
        ii. Nitrogen used as shielding gas.
        iii. Nitrogen will be stored in dewars provided by Airgas company. Proper placards will be placed on the building noting chemical of concern.
    b. Press Brakes
        i. Trumpf TruBend 5130 (10’) Press Brake.
        ii. Trumpf TruBend 7036 (40”) Press Brake.

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iii. No heat, chemicals or coolants used.

c. Metal Shear
   i. LVD 10’ shear.
   ii. No heat, chemicals or coolants used.
d. Band Saw
   i. W.F. Wells F-1620A-CNC.
   ii. Uses Lenox Band-Ade coolant.
e. Water Jet Machine
   i. Omax 55100.
   ii. Most of our cutting will be done on the Fiber Laser, so this machine is not expected to be used every day.
   iii. We project about 20 gallons of fresh water used per day when machine is being used.
   iv. Wastewater and waste abrasive (crushed garnet) does not contain toxins or chemicals.
   v. Our current operation in Santa Cruz is allowed by the sanitation department to let the water into the sewer.
   vi. If letting the water into the sewer is prohibited, there are alternatives including recycling and evaporators that can be considered.
   vii. Waste abrasive material is captured in a settling tank and can be hauled away. In Santa Cruz, we take it to a local concrete plant and they mix it with their concrete. It could also be disposed of in the landfill, if allowed.
f. CNC Vertical Machining Center
   i. Fadal VMC 4020.
   ii. Uses Lenox Band-Ade coolant.
g. Robotic and Portable Welders
   i. Only Gas Metal Arc Welding (GMAW) and Gs Tungsten Arc Welding (GTAW) technologies will be employed.
   ii. Storage of shielding gasses will be minimal and stored securely outside.
   iii. All welding to be conducted on spark arresting downdraft tables behind protective curtains.
   iv. No oxy-fuel equipment used.
   v. OSHA compliant fume extraction.
h. Self-Piercing Riveter
   i. Henrob G 7-125 FF.
   ii. No heat, chemicals or coolants used.
i. Drill Press
   i. No heat, chemicals or coolants used.
j. Air Compressors (2)
   i. Atlas Copco G7-125-FF, 10 HP, 71-gallon tank.

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Angels Camp Welding Operations Description

Although important to our fabrication process, welding will represent a limited role in our fabrication intentions. The large bulk of our operations will involve fiber laser cutting, metal bending, steel tube cutting and parts assembly.

Welding will be done using no reactive gases. We will not be using any oxy-fuel equipment with their attendant flammable gases.

We will be using one stationary robotic welding station and two mobile units. Only Gas Metal Arc Welding (GMAW) and Gs Tungsten Arc Welding (GTAW) technology will be used. Any storage of shielding gases will be minimal and will be situated in a secure location exterior to the main building.

All welding will be conducted on spark arresting downdraft tables and behind protective curtains to minimize ignition risk and possible human safety concerns. Additionally, welding locations will be isolated from any possible flammable material.

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name: Band-Ade®
CAS Number: Mixture
Product Use: Metalworking Fluid
Company Information: Lenox Tools
301 Chestnut Street
East Longmeadow, MA 01028
Emergency Contact: CHEMTREC (U.S. and Canada) 1800-424-9300
CHEMTREC (Outside the U.S.) 1-703-527-0585
Technical Contact: 1-800-642-0010
MSDS Revision Date: March 20th, 2013
MSDS Supercedes Date: July 19th, 2006
MSDS Creation Date: July 15th, 2003

2. Composition / Information on Ingredients (Typical Values)

HAZARDOUS INGREDIENTS	CAS NO.	WT %	ACGIH(TLV)	OSHA(PEL)†	Carcinogen
None	-	-	-	-	No

NE = Not Established
This product is not considered to be a carcinogen by the IARC, ACGIH, NTP, or OSHA

3. Hazard Identification

Emergency Overview: Health injuries are not known or expected under normal use. Product may cause eye or skin irritation with predisposed personnel. Inhalation of vapor or mist may cause irritation. Prolonged or repeated exposure increases the risk.

Potential short term health effects:

Routes of Exposure: Skin, Inhalation, Ingestion
Eyes: Contact with eyes may cause irritation.
Skin: Prolonged and/or repeated skin contact may result in mild irritation or redness.

Inhalation:	Avoid breathing vapors or mists of this product. Product may cause irritation of the respiratory tract.
Ingestion:	No significant adverse effects are expected upon ingestion of the product. Small amounts (a tablespoonful) swallowed during normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury.
Target organs:	Not established.
Chronic effects:	Not established.
Main symptoms:	May cause eye/skin irritation. Inhalation of vapors may cause irritation of the respiratory system in very susceptible persons.
Potential environmental effects:	This material is not expected to be harmful to aquatic life. No special environmental safety measures are required.

4. First Aid Measures

General advice:	No hazards which require special first aid measures. In case of contact with substance, wipe from skin immediately; flush skin or eyes with running water for at least 20 minutes. If you feel unwell, seek medical advice (show the label where possible).
First Aid Procedures	
Eye contact:	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.
Skin contact:	Wash affected area with mild soap and water.
Inhalation:	Remove to fresh air. No specific treatment is necessary since this material is not likely to be hazardous by inhalation. Call a physician if symptoms develop or persist.
Ingestion:	Drink water as a precaution. No need for first aid is anticipated if material is swallowed. If ingestion of a large amount does occur, seek medical attention.
Notes to physician:	Treat symptomatically.

5. Fire Fighting Measures

Flash Point:	Not Applicable
Extinguishing Media:	Small Fires: Dry chemical, CO_2, water spray, regular foam. Large Fires: Water spray, fog, regular foam.
Special Fire	

Fighting Procedures:	Fire-fighters should wear appropriate protective equipment and wear approved self-contained breathing apparatus if fumes are present.
Unusual Fire & Explosion Hazards:	None known. Not to be used on Magnesium.

6. Accidental Release Measures

Evacuation procedures:	Isolate area. Keep unnecessary personnel away. Persons not wearing appropriate protective equipment should be excluded from area of spill until clean-up has been completed.
Containment procedures:	Stop leak if you can do so without risk. Dike the spilled material, where this is possible.
Personal precautions:	Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Environmental precautions:	No special environmental precautions required.
Methods for cleaning up:	Attempt to reclaim the free product, if this is possible. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Spill or leak procedure:	Not established.

7. Handling and Storage

Handling:	Keep this product from heat, sparks, or open flame. Do not mix this product with fluids which contain NITRITES/NITRATES. Avoid prolonged or repeated skin contact with this material. Avoid breathing vapors or mists of this product. Wash hands after handling and before eating. Flood lubricant for industrial use only. Store at temperatures between 50 °F and 100 °F. Protect from freezing. If frozen, thaw to room temperature and agitate.
Storage:	No special storage conditions required. Use care in handling/storage. Keep container closed when not in use.
Special packaging materials:	Not established.
Further information:	Not established.

8. Exposure Controls / Personal Protection

Personal protective equipment

Respiratory protection:	No personal respiratory protective equipment normally required. In case of insufficient ventilation wear suitable respiratory equipment.
Hand protection	Wear appropriate chemical resistant gloves.
Eye protection:	Wear safety glasses with side shields. If splashes are likely to occur, wear: face-shield
Skin and body protection:	Normal work clothing (long sleeved shirts and long pants) is recommended. Wear safety shoes.
General:	Avoid contact with skin and eyes. Wear suitable protective equipment.
Control parameters:	Not established.
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls:	Ventilation in area, safety shower, eyewash area.
Engineering measures	
To reduce exposure:	Provide adequate ventilation. Ventilation should effectively remove and prevent buildup of any vapor/mist/fume/dust generated from the handling of this product.

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9. Physical and Chemical Properties

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Form:	Liquid
Color:	Amber
Odor:	Petroleum
Appearance:	Clear to slight haze
Water Solubility:	Forms Emulsion
Boiling Point:	> 200ºF
pH @ 5%:	8.8 – 9.5
Specific Gravity:	0.90 – 1.00
Vapor Pressure:	Not Established
VOC's:	Not Established
Vapor Density:	Not Established
Evaporation Rate:	Not Established
Viscosity:	Not Established
Melting Point:	Non Applicable

The above data is typical values and does not constitute as specifications.

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10. Chemical Stability and Reactivity Information

Stability:	Stable under normal conditions
Conditions to avoid:	Not determined
Hazardous decomposition products:	Oxides of Carbon and Nitrogen
Hazardous Polymerization:	Will not occur
Incompatibility:	Normally un-reactive but avoid strong oxidizing agents, nitrates, nitrites, and strong acids.

11. Toxicological Information

Acute toxicity:	No data available for this product
Routes of Exposure:	Inhalation, Ingestion, Skin contact, Eye contact
Carcinogenicity:	Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA
Epidemiology:	No data available for this product.
Neurotoxicity:	No data available for this product
Teratogenicity:	No data available for this product
Mutagenicity:	No data available to indicate product or any components present at > 0.1% are mutagenic or genotoxic.
Further information:	This product has no known adverse effect on human health.
Reproductive Toxicity:	No data available to indicate product or any components present at > 0.1% may cause reproductive toxicity.
Chronic Toxicity:	No data available to indicate product or any components present at > 1.0% are chronic health hazards.

12. Ecological Information

Ecotoxicity:	This material is not expected to be harmful to aquatic life.
Environmental effects:	Ecological injuries are not known or expected under normal use. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence / degradability:	Not established.
Bioaccumulation:	Not established.
Aquatic toxicity:	Ecological injuries are not known or expected under normal use.
Partition coefficient:	Not established.

13. Disposal Consideration

Waste Codes: Waste codes should be assigned by the user based on the application for which the product was used.

Disposal instructions: This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b) (4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations

Waste from residues / Unused products: Dispose of in accordance with local regulations.

Contaminated packaging: Do not re-use empty containers.

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14. Transportation Information

U.S. DOT classification: Not regulated
General: Not regulated as dangerous goods.
TDG classification: Not regulated as dangerous goods.
U.S. DOT Bulk: Not regulated
U.S. DOT Non-Bulk: Not regulated
ICAO / IATA: Not regulated

Health	Flammability	Reactivity	PPE
0	0	0	A

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15. Regulatory Information

US Federal Regulations

U.S. EPA TSCA Inventory List: All Components are on the TSCA list
OSHA 29 CFR 1910.1200: This product is NOT a "Hazardous Chemical" as defined by the OSHA
OSHA 29 CFR 1910.119: This material is not known to be hazardous by the OSHA highly hazardous process safety standard.
CERCLA/SARA: No components are listed on the CERCLA/SARA hazardous substance lists.

Inventory Status

Canadian Inventory (DSL): In Compliance

Canadian Inventory (NDSL): In Compliance
U.S.A. and Puerto Rico (TSCA): In Compliance
China Inventory (CCS): In Compliance
Europe Inventory (EINECS): In Compliance
Europe Inventory (ELINCS): In Compliance

State Regulation

California Prop. 65: This product does not contain a chemical known to the state of California to cause cancer, birth defects, or other reproductive harm.

U.S. Massachusetts RTK:
U.S. Pennsylvania RTK:
U.S. Rhode Island RTK:

EPA Regulations

CERCLA 302.4 Lists:
Of Hazardous Substances:

SARA Title III (313):

SARA Title III (311/312):

WHIMIS:
WHMIS Classification:

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16. Other Information

While this material is furnished in good faith, no warranty expressed or implied of merchantability fitness or otherwise is made as to the product described above. This material is offered for your consideration and Lenox or U.S. Fluids Inc. including its divisions, affiliates and subsidiaries, shall not in any event be liable for special, incidental or consequential damages in connection with its publication. Likewise, no statement made herein shall be construed as a permission or recommendation for use of any product in a manner that might infringe existing patents. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release. The information contained herein has been developed based upon current available scientific data. New information may be developed from time to time which may render the conclusions of this report obsolete. Therefore, no warranty is extended as to the applicability of this information to the user's intended purpose or for the consequences of its misuse.

For Technical Information
Primary Contact:

LENOX Technical Support
301 Chestnut St
East Longmeadow, MA 01028
1-800-642-0010

TRUMPF TECHNICAL QUOTATION 0203-20-14

Picture serves as example. Actual product may look different.

Solid State Flat Sheet Laser Cutting Machine

TruLaser 1030 fiber L88

TRUMPF Laser Technology for Sheet Metal and Plate Processing

Prepared By:	**Mark Bronski**
Date Prepared:	**February 3, 2020**
Prepared for:	**Lad Wallace** **Roofscreen Manufacturing** **347 Coral Street** **Santa Cruz, California 95060**
Submitted by:	**Larry Johnson,** TRUMPF Regional Manager **Derek Walker,** Sterling Fabrication Technology

Lad Wallace
Roofscreen Manufacturing
347 Coral Street
Santa Cruz, California 95060

Dear Lad,

Thank you for your interest in TRUMPF laser technology! In response to your request we are pleased to provide the following quotation for a TruLaser 1030 fiber laser cutting center.

The TruLaser 1030 fiber is TRUMPF's laser cutting system designed to meet the increasing challenges facing today's manufacturing. The TruLaser 1030 fiber combines a rugged drive system and machine construction coupled to a TRUMPF diode pumped solid state laser resonator, to provide a cost effective and productive laser cutting system with a minimal footprint. As with all TRUMPF laser cutting centers, the TruLaser 1030 fiber is feature packed yet simple to operate.

It is most important for us that you benefit from your TruLaser 1030 fiber every day and in every step you are using it. Using TRUMPF accessories and Services is the key to attain the full potential of your new TRUMPF machine and will ensure a maximum uptime, low operating cost and maintain its high capital value. We bundle these products under the category **TruServices**. TRUMPF knows it is our duty to develop and continuously improve TruServices to ensure your competitive advantage for the whole time you use your new machine. This is why in addition to your new TruLaser 1030 fiber we also include superior Services such as Consumables, Training, Installation and our TRUMPF warranty.

As the largest laser manufacturer in the world, and the largest manufacturer of fabrication equipment in the United States, TRUMPF is positioned to offer innovative machines of very high reliability and quality. TRUMPF has been in business for over 95 years and spends approximately 10% of its revenues on research and develop programs that result in continued enhancements of existing products along with innovative new technologies to solve tomorrow's fabrication needs.

While our unique fabrication machines set themselves apart from our competitors' products through their design and productivity, the company also distinguishes itself through dedication to customer training and support. More than 3,000 students pass through our USA customer training center each year, learning to program, operate and maintain their TRUMPF products. We are also constantly expanding our service group, keeping ahead of our installation base. Our dedication to continual innovation and customer support has helped the TRUMPF Group to exceed $4.5 billion in sales worldwide.

If you have not already had the opportunity to experience our 435,000 square foot manufacturing facility in Farmington, CT, we would like to offer you a visit. Meeting the people of TRUMPF while getting a firsthand look at our facility, our products and our lean manufacturing operations will open your eyes to the TRUMPF philosophy. Contact your local TRUMPF sales person to arrange a visit.

Thank you once again for considering TRUMPF!

Mark Bronski
Product Manager Laser Machines

TRUMPF Inc.
111 Hyde Road
Farmington, CT 06032
Telephone: 860-255-6000
Fax: 860-255-6420
Email: info@us.trumpf.com
Web: www.us.trumpf.com

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1. Quotation

TRUMPF TruLaser 1030 fiber:

- Machine base and 3-axis flying optic positioning system
- 120" x 60" working area
- TruDisk 2001 solid state resonator with 100µm beam delivery fiber
- WINDOWS Embedded 7 based machine controller
- Machine color blue/white

Standard Equipment:

- Full enclosure safety system
- Automatic pallet changer with safety light barrier - lengthwise installation
- Universal single cutting head
- ControlLine automatic height regulation
- PierceLine piercing monitoring
- FocusLine fully programmable focus
- NitroLine high pressure cutting package
- Oil spray device
- Dust extraction / filtration unit
- Laser chiller
- Status stack light
- Preparation for LiftMaster or LiftMaster Compact

Standard TruServices included with the TruLaser 1030 fiber:

- Consumables: A TRUMPF starter kit is included to cover the initial operation of the machine.
- Training (Machine): 2 students for a 4 day operator course at TRUMPF's facility in Farmington, CT, 2 students for a 2 day advanced application training course at TRUMPF's facility in Farmington, CT, and 1 day of operators review after installation.
- Training (Software): 1 student for a 5 day programming course at TRUMPF's facility in Farmington, CT with the purchase of TruTops Boost Software.
- Software Maintenance: 1 year of software maintenance with the purchase of TruTops.
- Installation: Installation, Start-up and Instruction, Network installation via Teleservice
- Warranty: 1 year warranty
- Technical remote support: A Remote service agreement will start automatically after the end of the warranty period and continuously renew

Finance: TRUMPF offers a variety of financing options. Please contact your sales representative.

Validity: This offer and prices quoted herein are valid for orders placed within a maximum period of sixty (60) days from the date of the quote. This offer also is only valid for delivery to facilities located in the United States, Canada and Mexico.

TOTAL PRICE: $000 USD

F.O.B. Farmington, CT

2. TruLaser 1030 fiber Description

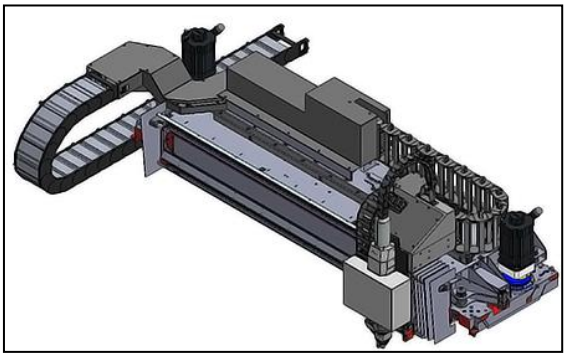
2.1 Standard configuration TruLaser 1030 fiber

Picture serves as an example. Actual product may look different.

2.2 Standard Features

2.2.1 Machine

- **Closed machine frame:** High-precision, hardened guideways for attaining high acceleration rates and accuracies. The frame's inherent rigidity eliminates vibrations when directions are changed.
- **Motion unit for high precision processing:** Optimal processing speed and precision is achieved through the light-weight yet rigid laser-welded motion unit which positions the cutting head over the sheet. The motion unit is fully supported on both sides. Dual drives coupled to backlash free rack and pinion drive, position the cutting unit. The drives feature maintenance-free direct servo drives in the X-direction and direct linear drives in the Y and Z-direction.

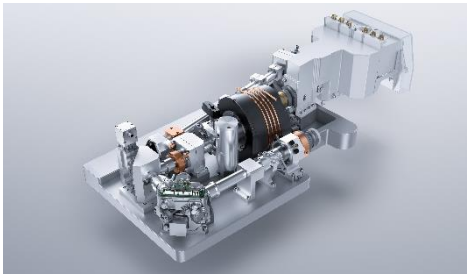


- **Integrated cabinet:** An integrated cabinet on the left-hand side of the machine door offers space for documents, consumables and other items

- **Chiller:** The laser and the drive motors are cooled in separate cooling cycles. The high efficiency of the TruDisk has reduced the requirements needed to cool the laser.
- **Automatic pallet changer - lengthwise installation:** The pallets allow easy access from three sides. They can be loaded and unloaded while the program is running and as soon as the program has finished, the pallet change occurs automatically. The automatic pallet changer is secured by light barriers.
- **Integrated electrical cabinets with interior lighting:** The electrical cabinets are integrated into the machine, which makes the layout compact and saves floor space.
- **Slag drawers:** Slag and small parts are collected in pull-out containers located beneath the work area.
- **Power supply for TruDisk by the machine:** The machine supplies the TruDisk solid state laser with energy. Therefore the whole system only needs 1 energy supply.
- **Work area lighting:** Optimum illumination of the entire work area with rugged industrial fluorescent tubes. The switch is integrated in the control panel.
- **Positioning laser diode:** Provides an optical aid when shifting the zero point to a random start point on the sheet.
- **Enclosed beam delivery via fiber optic cable:** The fiber optic cable delivers the laser light from the beam source to the cutting unit. The TRUMPF fiber optic cable is not a wear part.
- **PierceLine:** A sensor monitors the piercing process enabling higher cutting productivity by decreasing the piercing time by up to 60%.
- **FocusLine:** Assures the focus position remains virtually constant across the entire work area and permits program-controlled focus adjustments to different material types and thicknesses. This enables maximum speeds across the entire material range without manual setup.
- **NitroLine:** High pressure nitrogen serves as the cutting gas for burr-free, non-oxidized cut edges when processing stainless steel and aluminum alloys.
- **PlasmaLine:** A plasma sensing system that results in high quality parts, less wear and greater process reliability when working with thick stainless steel, aluminum and mild steel.
- **Microweld:** Small welding spots keep the finished part attached to the scrap skeleton. Programmed interactively in the TruTops programming system.
- **Programmable cutting gas pressure:** Whether cutting with oxygen, nitrogen or compressed air, the cutting program regulates the valve and adjusts the pressure based on the material and sheet thickness.
- **Copper and brass cutting package:** The cutting package includes cutting data for copper and brass using nitrogen or oxygen as the cutting gas. This enables a stable processing of copper and brass with TRUMPF cutting data.
- **Compressed air cutting:** In addition to oxygen and nitrogen, it is also possible to use compressed air as the cutting gas. This application, dependent on the laser power and type of material, can be used in a sheet thickness range of 1 to 3 mm. Filtered compressed air is used for cutting. This influences the roughness and the cut quality.

- **Oil spray device:** Precisely targeted oil spray at piercing points prevents cratering on thick mild steel. This increases process reliability in an environmentally friendly manner, while also reducing the need for refinishing or touch-up work.
- **Automatic nozzle cleaning:** The nozzle is automatically cleaned by means of a brush plate via programmable cleaning cycles.
- **Transport and assembly device:** Non-returnable transport and assembly device.
- **Preparation for LiftMaster Standard or LiftMaster Compact:** Allows field retrofit of LiftMaster Standard or LiftMaster Compact up to 3 years from the delivery date of the machine.
- **Status stack light:** Visualization of machine operating condition.

2.2.2 TRUMPF Lasers

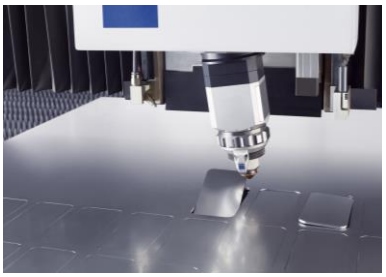


- **External solid state TruDisk 2001 laser:** The TruDisk 2001 laser is a 2kW diode-pumped disk laser with a 1.03 µm wavelength. The high efficiency of the pump diodes, manufactured by TRUMPF, excite the TruDisk solid-state laser for exceptional beam quality and reduced energy consumption. The beam is delivered by a 100 µm laser light cable which provides the unique ability to create a LaserNetwork. With this, a single laser source can be used by additional operations, such as a laser welding cell.
- **Stimulation via pump diodes:** Pump diodes manufactured by TRUMPF excite the TruDisk solid state laser.
- **1 fiber optic cable according to standard layout (external):** The optical laser cable guides the laser light from the beam source to the machine.
- **Laser power control:** Regulates the laser power based on the feedrate. This greatly improves the quality at corners in thin sheets.

2.2.3 Cutting Head

- **Universal cutting unit:** The universal cutting unit for solid state laser machines performs the beam forming process. All sheet thicknesses can be cut with this universal cutting unit.
- **Protection glass to avoid lens contamination:** A protection glass prevents contamination of the lens.
- **ControlLine:** The capacitive height regulation and process regulation keeps the distance between the nozzle and sheet constant during the cutting process, even in cases of uneven sheets. This prevents collisions between the cutting head and work piece.

- **Complete collision protection of the cutting unit:** a feature of the cutting head utilized on all TRUMPF laser machines is complete protection from damage to the cutting unit during a collision. The mechanism allows for full protection without the required replacement of hardware at a predetermined break point.



2.2.4 Control

- **Control Sinumerik 840D SL:** Open control, TRUMPF-developed user interface based on the Sinumerik 840D SL. Key feature: Simplified the operator's activities.
- **Fast post production:** The post production module makes it possible to produce individual parts from an existing program once again.
- **Automatic shutdown:** The machine assumes "Standby mode" after a specified time period; this is ideal for machine operation after the end of a shift or in unattended operation, reducing operating costs and providing extra capacity.
- **Easy, intuitive touch control with 18.5" TFT screen:** The well-arranged and simple menu structure of the intuitive colored screen enables easy entry and change-over into the control. Dialogue-guided menu architecture minimizes the time for loading the geometry up to the finished part. Various operating levels for beginners and experienced users guarantee a menu illustration which is easy to understand and can adjust all relevant parameters.
- **Integrated technology and cutting data:** All cutting data is stored in table form. Laser tables regulate program-controlled parameters, such as cutting gas and pressure, as well as other processing parameters.
- **FastLine:** Optimizes the complete cutting process and helps to create a maximum profitability. Furthermore, it reduces slag spillings on the sheet surface during the piercing process.
- **AdjustLine:** Increased material tolerance function that simplifies cutting of low quality material.

  Offers two options:
  - Dynamic Level enhances machine dynamics for faster processing. This may reduce contour accuracy.
  - Accuracy Level enhances contour accuracy. This may reduce machine dynamics.
- **FlyLine:** The cutting head travels at high speeds over the entire sheet line by line. The control system cuts all the contour sections in the respective beam path. This reduces the time spent on traversing and positioning, especially when cutting perforated grids. FlyLine may be used on materials up to 1 mm thick.
- **Smart Service:** Contact can be established directly with the TRUMPF Service Department via a broadband internet connection. Swift reaction is therefore possible and machine downtimes can be minimized. Data security is assured by means of passwords.
  Requirements**:** Broadband internet connection
- **Condition Guide:** Traffic lights indicate the status of major elements which might influence the machine’s cutting ability. If needed, the Condition Guide will recommend the appropriate actions to the machine operator. Trend diagrams of the monitored properties simplify predicting when an intervention might be necessary and allow for more efficient planning of maintenance work. As a result, unplanned machine downtime is reduced.

2.2.5 Data Transmission

- **RJ45 network connection and a USB interface:** The maximum cable length for RJ45 connection is 100 meters and 170 meters for BNC connection the individual components.
- **Central Link:** Universal data interface for the integration of the machine into the networked production facility. It enables the transfer of machine data to web applications, web platforms (e.g. AXOOM) and to local systems (using OPC UA standard).

2.2.6 Safety

- **CE label:** The machine complies with the essential safety and health regulations as stipulated in EC Machinery Directive and EC EMC Directive and if applicable Pressure Equipment Directive and is delivered with CE marking.
- **Multi-chamber extraction system:** The extraction system guarantees maximum suction power in the currently active suction chamber.
- **Compact dust extractor:** When intended materials are cut with a laser, only dust and no harmful gases occur. With the compact dust extractor, the dust is exhausted and filtered. Coarse and fine particles are collected in separate containers. A continuous purge cycle ensures that the filter performs at full capacity. The dust extractor is equipped with a spark trap. The compact dust extractor is equipped with a fire-smothering system that smothers the fire and in doing so minimizes its impact.

  Under the Technical Regulations for Hazardous Substances (TRGS) 560 in Germany, a special permit is required for routing the exhaust air from the compact dust extractor back to the working area when processing stainless steel with chromium and nickel as alloying constituents. Normally, the exhaust air must be vented to outdoors. Similar regulations apply in many other countries and must be strictly observed by the user. Outside Germany, the user of the machine must observe the local regulations on exhaust air routing in force in his country.
- **Machine enclosure with certified windows:** Windows in the front door enable a better insight into the inside of the machine. The material is impenetrable for 1µm laser radiation.
- **Machine roof:** The machine roof ensures maximum laser safety.
- **OSHA Statement:** TRUMPF hereby states that, to the best of its knowledge and belief, this machine complies with those sections of the Occupational Safety and Health Act of 1970 as amended (OSHA, Code of Federal Regulations, Title 29, Chapter XVII), which provide standards for occupational noise exposure, pinch point guarding and marking of physical hazards.

  This statement does not cover "Point of Operation" guarding due to the general-purpose nature of this machine. Warning plates will be provided and mounted on the machine where hazard exists. Due to the general and, therefore, subjective nature of the OSHA regulations, TRUMPF does not certify that all third persons necessarily will concur with statements of compliance.

2.2.7 Documentation

- TRUMPF provides two complete sets of documentation (one printed version and one CD) covering the basic machine and the control system. Optional extra sets of documentation are available.
- Electrical schematics supplied by TRUMPF will be written in IEC format. Machines built by TRUMPF for delivery in North America will conform to JIC electrical standards

2.2.8 Acceptance

- **Standard Acceptance:** Machine acceptance will consist of producing TRUMPF's standard acceptance part which checks all aspects of machine performance against quoted specifications. This acceptance test will be performed at the customer's location, if requested. Any additional tests must be mutually agreed upon and specified in the purchase order.
- **Single Source Service Responsibility:** TRUMPF's highly trained service engineers handle all machine, laser and control related service.

2.2.9 TruServices

Only TRUMPF Accessories and Services will ensure the highest productivity, a maximum uptime, low operating cost and maintain your TruLaser 1030 fiber's high capital value. Therefore, we include a set of Services such as Consumables, Training, Installation, a standard warranty and Technical Remote Support.

- **Consumables:** This machine is delivered with a TRUMPF Starter Kit of long lasting Consumables to fully utilize the potential of your machine and laser. It includes 16 packs of standard nozzles (2 of each size from 0.8mm to 4mm), as well as 1 ceramic, 3 protective glasses, 1 filter cartridge, 1 cleaning set and more.
- **Training (Machine)*:** An operator training course for 2 students will ensure your operators are educated with the latest knowledge about this machine. Operators will learn proper machine operation, set-up and maintenance (Duration: 4 work days, TRUMPF Training Center, Farmington CT). Additionally, TRUMPF provides a 2 day advanced applications training for 2 students at TRUMPF's facility and 1 day of operators review after installation.
- **Training (Software)*:** A programming training course for 1 student is included when purchasing TruTops Boost Software with this machine. This training incorporates proper techniques for machine functions. (Duration: 5 work days, TRUMPF Training Center, Farmington CT)
- **Software Maintenance:** When purchasing TruTops Software with the machine, 1 year maintenance is included covering all Telephone Service calls and Software Updates during that time.
- **Installation:** Installation, Start-up and Instruction, Network installation via Teleservice
- **Warranty:** 1 year warranty
- **Technical Remote:** A Remote service agreement will start automatically after the end of the warranty period and continuously renew. It covers 24/7 remote support via phone or via the TRUMPF Visual Assistance platform for smart glasses and other mobile devices for a price of $000 annually.

*The training classes offered within this quote agreement are available for up to one year from the installation date of the machine. The instructional language for all classes provided at the TRUMPF Training Center in Farmington, Connecticut is English unless special provisions are discussed.

2.2.10 TRUMPF Finance

- **TRUMPF Finance** offers flexible programs which enable the acquisition of TRUMPF machines with attractive payment options. Contact your local sales representative for additional information.

2.3 Additional Options with Purchase of Laser Machine

2.3.1 Machine Options

- **External TruDisk 3001 Laser:** The TruDisk 3001 provides 3kW of laser power to increase the overall productivity of the TruLaser 1030 fiber machine
- **External TruDisk 4001 Laser with BrightLine fiber.** The TruDisk 4001 provides 4kW of laser power to increase the overall productivity of the TruLaser 1030 fiber machine.
  - BrightLine fiber is the revolution in solid-state laser cutting. Due to an adaptive beam mode of the TruDisk laser, the following benefits are achieved:
  - high edge quality in thick sheets
  - thicker maximum sheet thickness in a number of materials
  - easy separation of parts from skeleton
- **External TruDisk 6001 Laser with BrightLine fiber.** The TruDisk 6001 provides 6kW of laser power to increase the overall productivity of the TruLaser 1030 fiber machine.
  - BrightLine fiber is the revolution in solid-state laser cutting. Due to an adaptive beam mode of the TruDisk laser, the following benefits are achieved:
  - high edge quality in thick sheets
  - thicker maximum sheet thickness in a number of materials
  - easy separation of parts from skeleton
- **Ability to retrofit 2nd laser output:** The TruDisk solid-state laser is equipped with the basic components for LaserNetworking. Thus, up to 1 further laser output can be retrofitted at a later time.

- **2nd laser output:** The TruDisk is able to network to multiple users and supplies laser light to a second TRUMPF Machine or laser welding cell. The laser is equipped with 2 laser outputs.
- **Extension of the fiber optic cable:** Between Laser and machine, the fiber cable can be extended by 10m. This allows for an installation of the laser source according to the customer's location preference. The customer is responsible for all structural measures.

- **Automatic Nozzle Changer:** The nozzle changer is designed with a 21-nozzle capacity to maximize productivity and minimize set up times.. The nozzles are automatically removed from the laser cutting head and replaced with different ones. Nozzles may also be reused once they have already been changed out for a different nozzle. The nozzle changer can be used in the following scenarios:

  - Changeover to different material thicknesses
  - Changes of materials.
  - Nozzle changes controlled by a program to prevent worn-out nozzles from being used.
  - Other applications which necessitate nozzle replacement

- **DetectLine:**
  Precision sheet edge sensing: DetectLine is an extremely precise optical measuring system which can measure loaded sheets based on the contours and determine the position accurately. Laser cutting of the sheet can then proceed with the highest precision.

  Automatic focus position correction: An optimally adjusted focus position at the machine is needed for perfect cut quality and process reliability to be achieved. Until now, the focus position was determined and set manually. DetectLine automates this process. Contours are cut in a small sheet at different focus settings. The camera system detects the kerf width and sends the control a possible correction value for the focus position. Potential errors in the manual setting are eliminated.

- **Dot Matrix Code:** The dot matrix code option enables quick and reliable parts labeling with a standardized industrial code. Parts with different sheet thickness values and material types can be marked. The code content is defined manually during programming. Material types with optimal surface properties are needed for sufficient code/sheet contrast. TruTops software is required to use this option.

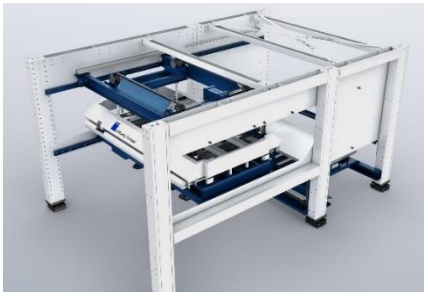
- **Integrated video camera for process monitoring:** The camera, which is located inside of the machine, delivers a video stream of the first 8 ft. of the working area at a steep angle. This enables a good view to the cutting process and the addition of the option Drop&Cut. Single pictures can be transmitted to a preselected folder in the network. (max. 2 cameras possible)
- **Additional cutting gas connection (max. 2 additional):** Additional input port for connecting desired cutting assist gas (O_2/N_2 mix, Argon, etc.) No cutting technology data is provided.
- **Drop&Cut:** Fast and efficient usage of the remainder of sheets for the post-production of parts. The integrated video camera transfers a live view of the metal sheet to the control panel. The operator can select any parts from the active program and place them directly on the sheet to be cut. The integrated video camera for process monitoring is included with this option.
- **Storage Bay Interface:** Required for connection of machine to storage system.
- **Wireless Operation Point:** The machine is able to communicate with mobile devices (iPad) through a secured wireless network with the Wireless Operation Point. This interface allows the use of machine Apps, such as the MobileControl
- **MobileControl App:** The MobileControl App transfers the control panel of the machine to your iPad. This gives the operator the ability to easily control and operate machines from a variety of locations, in addition to the control panel on the machine.

- **TruTops Monitor:** Monitor the status of your machines and optimize your production. Immediate information via e-mail or SMS if your machine stops, and evaluation of machine data. Mobile access is available with the TruTops Fab App for remote functionality.

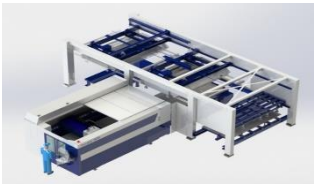
2.3.2 Automation

Scan the following QR code or click here for more information regarding the automation options for the TruLaser 1030 fiber.

- **LiftMaster:** Covers a broad variety of functions because of the variety of setup options, ranging from simple loading and unloading processes to pallet handling and part removal. The basic module is the suction frame. It contains both suction cups, for the transportation of the unprocessed sheet, and rake arms for conveying cut sheets. With the integrated sorting function, the LiftMaster can also separate finished parts from the scrap skeleton and set them down.
- **LiftMaster Compact:** Extremely fast and compact loading and unloading unit in the TRUMPF portfolio. The dynamic and variable automation solution is particularly attractive for fast sheet processing times, regardless of whether with or without storage connection. It requires little space and saves time and money with its short cycle time of 90 seconds. The LiftMaster Compact can be expanded to a complete processing cell with a TruStore or PartMaster sorting station.



- **LiftMaster Compact Linear:** Adds an additional unloading portal to the LiftMaster Compact. This facilitates the design of a highly flexible manufacturing cell with a linear flow of material. Processed sheets can be unloaded directly onto a variety of solutions (PartMaster, dual carts, pallets, etc.)



- **PartMaster in LMC:** Allows for easy and ergonomic removal of finished parts and scrap skeletons manually. The modular conveyor unit transports cut parts and sheets up to 0.63 in. thick automatically to a sorting station next to the machine
- **PartMaster Standalone**

3. Pricing

TruLaser 1030 fiber	**Standard machine with no additional options**

3.1 Options

Laser options	**Integrated TruDisk 3001 solid state laser with 1 fiber optic cable laser output**
	Integrated TruDisk 4001 solid state laser with 1 fiber optic cable laser output. Includes BrightLine fiber
	Integrated TruDisk 6001 solid state laser with 1 fiber optic cable laser output. Includes BrightLine fiber
	Ability to retrofit 2nd laser output
	2nd laser output
Machine options	**Automatic Nozzle Changer**
	DetectLine
	Integrated video camera for process monitoring (max. 2)
	Drop&Cut Package (incl. integrated video camera)
	Dot Matrix Code
	Additional cutting gas connection (max. 2 additional)
	Wireless Operation Point and Mobile Control App
	TruTops Monitor
Automation	**LiftMaster Standard**
	LiftMaster Compact
	LiftMaster Compact Linear
	PartMaster in LMC
	PartMaster standalone
Training	Additional operator training
	Additional advanced application training
	Additional TruTops programming training
	Maintenance training
Warranty	Warranty extension by one year (incl. preventative maintenance visit) - max. extension by two years possible
	Additional preventive maintenance visit
Technical Remote Support	Remote service agreement

Service Agreements

In order to achieve the long and reliable life TRUMPF machines are designed to provide, regular quality maintenance is recommended. This results in more uptime and higher machine resale value for you. With three types of agreements available we want you to get the most out of your TRUMPF machine and would like to help you take care of it. All plans are valid for up to 1 year after the standard warranty has expired and may be purchased for up to 4 additional years. Prices shown are only valid with the purchase of the machine.

Standard plan: Includes 24/7 technical remote support via phone or TRUMPF Visual Assistance platform, a 10% discount on Consumables, 10% discount on replacement parts and 2 sessions of preventive maintenance per year, each performed by TRUMPF certified technicians. All travel expenses included. (4 add. years max)

Premium plan: Includes contents of Standard plan and in addition, 10 work days or 3 missions of onsite service. All travel expenses included. (4 add. years max)

Premium Plus plan: Includes contents of Premium plan and in addition, a replacement part allowance of $50,000. (4 add. years max)

ART remote support

We also encourage you to take advantage of our Augmented Reality technology (ART) that provides a virtual means of supporting you faster and more practical in an industrial environment. Instead of waiting for a technician in case of a machine incident, you will receive instructions via smart glasses, so that you can perform a repair quicker yourself. Therefore, we included unlimited augmented reality sessions in all of our service agreements.

Smart Glasses

Machine Tools

TruTool TSC 100 Slat Cleaner: Uses a unique process to thoroughly clean the slag that accumulates on slats from normal day-to-day use. Using teeth to remove the slag instead of rollers, it cleans the sides of the slats as well as the hard-to-reach spaces in between. The slat cleaner design enables easy, one-man operation and automatically adjusts to accommodate different slat thicknesses.

Additional Training and Consulting

Sheet Metal Design course (1 student, Duration 3 days): Design smarter and cut your costs significantly, with the Sheet Metal Design Course. This class, led by our most experienced trainers and engineers, is intended for engineers, designers, and programmers involved in the designing and/or machining process of their sheet metal parts who would like to rethink the whole design process. In this course, your employees will learn how to streamline the design process and make full use of sheet metal knowledge to design better parts and replace and/or make improvements to current manufacturing processes in a faster and cost-efficient manner.

TruTops Boost Design Programming (webinar): this course is designed for customers who wish to learn design in TruTops Boost without having to travel to TRUMPF. The goal of the course is to provide students with the core knowledge and skills to successfully draw 2D or 3D parts.

2D Laser Applications Boot Camp (2 days at customer site):
Customers will receive basic classroom training, programming training and operator training by a TRUMPF laser applications engineer. Customers will receive the following benefits from this training course:

- Increase programmer and operator knowledge of machine functions and capabilities
- Boost overall machine productivity
- Improve cut part quality

Establish relationship with TRUMPF applications engineers.

3.2 Software and Programming

TruTops Boost Software: All-in-one design and programming solution that works consistently across different technologies. It covers every order processing step, from 3D components to finished NC programs for bending, punching and laser programs. The result is an integrated software with connected intelligence for the ideal interaction between software and machine. The TruTops Boost standard software package includes the following:

- One license of TruTops Boost including one machine package for your TruLaser 1030 fiber
- Training for one student for 5 days at TRUMPF in Farmington, CT
- Service maintenance contract for a period of 12 months including unlimited telephone support and regular software updates and service packs

TruTops Boost Programming System	**TruTops Boost Core for TruLaser 1030 fiber** **TruTops Boost Core for TruLaser 1030 fiber with automation**
	For Existing users of TruTops Boost with Valid software maintenance contract: TruTops Boost Machine Package for TruLaser 1030 fiber TruLaser 1030 fiber with automation
Additional TruTops Boost Options	**Data Exchange Package for 3D CAD models:** Read and write: VDA-FS (VDA), Parasolid (X_T, X_B, XMT_TXT, XMT_BIN) Read: CATIA V4 (MODEL, EXP, CATPart , CATProduct, CGR), Inventor (IPT, IAM), NX (PRT), Pro/E (PRT, ASM, XPR, XAS), SolidEdge (par, psm, asm), Solidworks (SLDPRT, SLDASM)
	Assembly Importer: Automated dissolving of assemblies in single parts in all supported file formats and automatic transfer into HomeZone (parts management)**.**

Interface Package Catia V5: Supports direct import and export of the file format CATIA V5 (MODEL, EXP, CATpart, CATproduct, CGR)

Additional Core (license) of TruTops Boost :

- Machine package(s) from the first core included
- Current Software maintenance contract required / follows first Core validity

Training not included

Switch-Over from TruTops Classic to TruTops Boost

Existing users of TruTops Laser, TruTops Punch or TruTops Bend:
Please contact trutops@us.trumpf.com or call +1(860) 255 6390 to ask your Sales Representative how to receive beneficial switch-over (update) pricing from TruTops"Classic" to TruTops Boost.

Metamation: The Metamation Laser software (MetaCAM-L) is a one stop CAD/CAM software solution for any make or model of a Laser Machine. The Metamation standard laser software package includes the following:

- One floating license of software
- One machine-specific postprocessor
- DXF, DWG, Importer
- Rectangular Nesting, Free Geometry Nesting and Common line cutting.
- One Year of MetaCAM Laser Software Maintenance Support
- Training for 2 users at TRUMPF in Farmington, CT

Metamation Programming System

Metamation license for TruLaser 1030 fiber
Metamation license for TruLaser 1030 fiber with automation

Additional MetaCAM-L License:
(Same Configuration as 1st License – No Training Included)

Additional Machine Post Processor without automation - For TRUMPF and Other OEM Machine manufacturers (for Amada, Bystronic, Mitsubishi, Mazak etc) *check with sales@metamation.com for your machine support

Additional Machine Post Processor with automation - For TRUMPF and Other OEM Machine manufacturers (for Amada, Bystronic, Mitsubishi, Mazak etc) *check with sales@metamation.com for your machine support

3.3 Consumable Parts Kit

Yearly Consumable Parts Standard Kit:

To ensure success with a new TRUMPF laser cutting machine, a consumable parts kit that includes nozzles, ceramics and protective glasses for your TruLaser 1030 fiber is recommended. This kit is designed to fulfill your consumable requirements for approximately one year of running 1 to 2 shifts per day.

The Yearly Consumable Parts Standard Kit includes:

Type of Material	Diameter [mm]	Quantity	
Ceramics		3	
Protective Glass		15	
EAA (Standard Nozzle)	0.8	5	Select 11 packs of any sizes Each pack Incl. 5 nozzles
EAA "	1.0	5	
EAA "	1.2	5	
EAA "	1.4	5	
EAA "	1.7	5	
EAA "	2.0	5	
EAA "	2.3	5	
EAA "	2.7	5	

EAA (Standard): Excellent cut quality in every processing direction thanks to direction-independent gas flow. Cutting gas consumption minimized due to precise geometries and strict production tolerances. Great cutting results thanks to minimal spray adhesion on the nozzle surface

For specific cutting processes, we offer additional packages of nozzles that can only be purchased in addition to the standard package

- **Slim Nozzles**

Type of Material	Diameter [mm]	Quantity	
EAB (Slim Nozzle)	0.8	5	Select 5 pcs of any size Each pack incl. 5 nozzles
EAB (Slim Nozzle)	1.0	5	
EAB (Slim Nozzle)	1.2	5	
EAB (Slim Nozzle)	1.4	5	
EAB (Slim Nozzle)	1.7	5	
EAB (Slim Nozzle)	2.0	5	
EAB (Slim Nozzle)	2.3	5	
EAB (Slim Nozzle)	2.7	5	

EAB (Slim): The slim nozzle allows for closer nesting on the sheet metal thereby saving up to 10% on material

- **BrightLine Nozzles** (may be purchased when using a TruDisk 4001 only)

Type of Material	Diameter [mm]	Quantity	
EAK (BrightLine)	1.7	1	Select 4 pcs of any size
EAK "	2.0	1	
EAK "	2.5	1	
EAK "	2.5	1	
EAK "	3.0	1	
EAK "	4.0	1	
EAK "	6.0	1	
EAK "	7.5	1	
EAK "	9.0	1	
EAK "	9.5	1	

EAK (BrightLine): Very good results in sheet metal thanks to improved surface roughness.

To view the consumable kit options or to make your selection of nozzles, please request the Consumables Kit Form from your sales rep. If any of the kits above are purchased with the machine, this form is to be submitted with the purchase order.

Generic consumable parts can have adverse effects on the performance of the TRUMPF laser cutting machine. Lower quality nozzles have imperfections that can lead to poor and costly assist gas flow. Non-centered orifices lead to loss of cut in multiple directions. Lower quality threads can easily cross thread and lead to improper contact of the ControlLine height regulation system resulting in running errors and loss of cut.
Generic protective glasses are not made to TRUMPF OEM specifications. This can adversely affect cutting quality and functionality of the cutting unit.

Using certified TRUMPF consumable parts during warranty period provides optimal process performance and reliability.

4. TruLaser 1030 fiber Technical Specifications

Machine	**Working range:**		
	X axis	120 in.	(3000 mm)
	Y axis	60 in.	(1500 mm)
	Z axis	4.5 in.	(115 mm)
	Maximum workpiece weight:	1920 lb	(900 kg)
	Speeds:		
	Simultaneous (X and Y)	5512 in/min	(140 m/min)
	Accuracy:[1)]		
	Smallest programmable increment	0.00004 in.	(0.001 mm)
	Positioning accuracy (Pa)	0.002 in.	(0.05 mm)
	Repeatability (Ps)	0.0012 in.	(0.03 mm)
Laser	**TRUMPF solid-state laser:**		
	TruDisk 2001 (programmable in steps of 1%)	2000 W	
	TruDisk 3001 (programmable in steps of 1%)	3000 W	
	TruDisk 4001 (programmable in steps of 1%)	4000 W	
	TruDisk 6001 (programmable in steps of 1%)	6000 W	
	Maximum sheet thicknesses:		
	Mild steel (O_2):		
	TruDisk 2001	0.63 in.	(16 mm)
	TruDisk 3001	0.80 in.	(20 mm)
	TruDisk 4001	1.00 in.	(25.4 mm)
	TruDisk 6001	1.00 in.	(25.4 mm)
	Stainless steel (N_2):		
	TruDisk 2001	0.31 in.	(8 mm)
	TruDisk 3001	0.60 in.	(15 mm)
	TruDisk 4001	0.80 in.	(20 mm)
	TruDisk 6001	1.00 in.	(25.4 mm)
	Aluminum (N_2):		
	TruDisk 2001	0.20 in.	(6 mm)
	TruDisk 3001	0.60 in.	(15 mm)
	TruDisk 4001	0.80 in.	(20 mm)
	TruDisk 6001	1.00 in.	(25.4 mm)
	Copper (O_2):		
	TruDisk 2001	0.12 in.	(3 mm)
	TruDisk 3001	0.25 in.	(6 mm)
	TruDisk 4001	0.31 in.	(8 mm)
	TruDisk 6001	0.39 in.	(10 mm)

The attainable accuracy refers to the entire working length. The accuracy specification refers to VDI/DGQ 3441 and is approved at the production plant.

Brass (N_2):		
TruDisk 2001	0.12 in.	(3 mm)
TruDisk 3001	0.25 in.	(6 mm)
TruDisk 4001	0.31 in.	(8 mm)
TruDisk 6001	0.39 in.	(10 mm)
Consumption values:		
Cutting gas: O_2, N_2	dependent on application	
Electrical consumption values (incl. chiller)		
TruDisk 3001	6 - 23 kW	
TruDisk 4001	6 - 28 kW	
TruDisk 6001	6 - 38 kW	
Dimensions and weights	19,482 lbs	

5. TRUMPF INC. TERMS AND CONDITIONS OF SALE FOR EQUIPMENT AND AUTOMATION

This Agreement governs the sale of commercial off-the-shelf and commercial items products from Seller's product lines (hereinafter referred to as "Goods" or "Equipment"). Seller makes all quotations and accepts orders for such Goods/Equipment only on the terms and conditions stated herein ("Terms of Sale"):

1. ORDER ACCEPTANCE: All orders are subject to acceptance only at Seller's facility in Farmington, Connecticut. These Terms of Sale shall be deemed accepted by Buyer upon Seller's receipt of Purchase Order from Buyer. No condition stated by Buyer shall be binding upon Seller if in conflict with, inconsistent with or in addition to the Terms of Sale, unless expressly accepted in a writing signed by Seller. In the event of conflict or differences in the terms or conditions of Buyer's Purchase Order and the Terms of Sale herein, the Terms of Sale shall govern.

2. PRICES: All prices are: (a) Seller's current prices and are subject to change without notice at any time prior to acceptance of Buyer's order; (b) subject to all federal, state and local taxes upon the production, sale or shipment of the Goods sold hereunder, now or hereafter becoming effective, and if not included in the invoice, such amount may be invoiced later, and Buyer shall pay all such taxes.

3. SHIPMENTS:

(A) Domestic: All orders are FOB (UCC) Seller's plant in Farmington, Connecticut (or such warehousing facilities as Seller may establish).

(B) International: All prices are in US Dollars and are, at Seller's election, FCA (Incoterms 2010) Farmington, CT or DAT (Incoterms 2010) Port of Entry.

(C) All freight charges, insurance premiums, duties and taxes are the responsibility of the Buyer.

4. PAYMENT: 20% deposit with purchase order, 40% prior to shipment, 40% Net 30 Days from Installation Completion. Title to the Goods shall pass to the Buyer only upon receipt of final and full payment of the Goods by Supplier, from Buyer. ALL PAYMENT TERMS ARE SUBJECT TO SELLER'S CREDIT APPROVAL.

5. DELIVERY: The scheduled shipment date is an estimate and is subject to filling prior orders and delays caused by strikes, accidents, shortages, acts of civil authority or other causes beyond Seller's control. Buyer's acceptance of delivery time from the shipper shall constitute a waiver of any claim for delay.

6. INSTALLATION AND PRODUCT ACCEPTANCE:

(A) Preparation of Installation Site: Upon acceptance by Seller of any Purchase Order hereunder, Seller shall provide Buyer with a Pre-Installation Manual setting out requirements for site preparation at the installation site. Buyer is responsible for preparing the installation site as set out in the Pre-Installation Manual, for providing all utilities within rated parameters as stated in the Pre-Installation Manual, and for inspecting, rigging and placement of the Goods at the installation site.

(B) Inspection Upon Delivery: Upon arrival of the Goods at the installation site, the Goods shall be inspected for shortages and damage in transit by authorized personnel of both Seller and Buyer. Buyer shall notify Seller in writing of any such claims within ten (10) days after Buyer discovers or

should reasonably have discovered facts upon which the claim is based, but in no event more than thirty (30) days after Installation Completion under subsection C below. Failure of the Buyer to give written notice of a claim within the time-period or in the form specified above shall be deemed to be a waiver of such claim. If any repairs are made by unauthorized personnel, Seller reserves the right to withhold warranty support and to charge Buyer per then current time and material rates for services provided if Seller determines that the root cause of a defect requiring service was caused by a third party vendor supplied product or service.

(C) Acceptance Testing and Acceptance: Notwithstanding prior inspection or testing, payment, or passage of title, all Goods shall be subject to final acceptance testing ("Final Acceptance Testing") after installation at the installation site to validate performance against Seller's quoted Technical Specifications. Final Acceptance Testing will be performed by Seller's operator and consist of (i) Seller's standard acceptance-test procedure which checks all aspects of Goods performance against Seller's quoted Technical Specification and (ii) any additional tests that are mutually agreed upon and specified in the purchase order or statement of work referencing these Terms and Conditions. Upon successful completion of the Final Acceptance Testing, the Goods shall be accepted, and Buyer shall sign and deliver to Seller the Seller's acceptance certificate ("Installation Completion"). Notwithstanding the foregoing, the Goods including any software shall be deemed accepted and the written acceptance form certifying Installation Completion shall be deemed executed by Buyer upon the earlier of either of the following two conditions; (x) in the event the Goods are placed into production by Buyer at the Installation Site; or (y) no later than 6 months after the date of delivery as determined by the terms of shipment.

7. EQUIPMENT WARRANTY: Except as otherwise provided in this Section 7, any Goods sold hereunder which (1) at the Installation Site, (2) have been properly installed and maintained by authorized persons, and (3) have been operated within the limits of rated and normal usage, are warranted to conform to Seller's quoted Technical Specifications and to be free of defects in material and workmanship, as determined by Seller's inspection, for a period of one year, or any purchased extended period, coming into effect upon Installation Completion. The terms of this warranty do not apply to any Goods which have a life, under normal usages, that is inherently less than one year. Product demonstrations, test parts, time studies, production estimates and other such particulars furnished to Buyer are only Seller's estimate and do not create a warranty. Within the warranty period, Seller will repair or replace without cost to Buyer any product or parts covered by the warranty which Seller finds to be defective in material or workmanship, provided that the Buyer gives the Seller prompt notice. This shall be the sole and exclusive remedy of the Buyer under this warranty.

Services under this warranty are provided during normal business hours and using standard freight delivery. Services and delivery may be otherwise provided dependent upon availability and will be invoiced at TRUMPF Service rates in accordance with TRUMPF Service policies and practices, which are incorporated by reference herein.

Seller shall not be liable under any warranty or other obligation if the alleged defect in the Goods does not exist or the defect or defective performance is caused in whole or in part by Buyer's or any third party's misuse, neglect, modifications or additions, the use of non-TRUMPF spare parts or consumables, unauthorized attempts to repair, or by accident or other hazard outside Seller's control. Use of a non-TRUMPF spare part shall void the warranty if the TRUMPF spare part is available under the warranty free of charge. The warranty described herein is granted only to the original purchaser of the Goods and original purchaser's specified end-user and is non-transferrable.

DISCLAIMER OF OTHER WARRANTIES: THE WARRANTY DESCRIBED IN THIS PARAGRAPH 7 IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED,

INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE EXCLUDED.

8. EQUIPMENT DATA SERVICES: Seller's Equipment is self-monitoring and collects and stores in its control unit Equipment Data recording certain performance metrics of the Equipment. On Equipment configured for Seller's Cloud Connect services, Equipment Data is collected in real time via Seller's secure service portal. Buyers of Equipment utilizing Cloud Connect active equipment monitoring shall receive enhanced Cloud Connect notification and technician scheduling throughout the Equipment warranty period and during any period in which the Buyer maintains a Seller Service Agreement providing for notification and reporting services. Seller reserves the right to add and remove services from Cloud Connect offerings at Seller's sole discretion.

"Equipment Data" means any data, metadata, logs or other information generated by the operation of Seller Equipment or embedded Software, but does not include personally identifiable information nor any information entered into the Software or the Equipment by Buyer's employees, agents, or end-users, except to the extent portions of such information appears in anonymized or aggregated form or in automated logs or similar records through the normal operation of the Software. Equipment end user can isolate inputs of personal and proprietary data from monitoring by following the technical table procedures set forth in the Software and Operators Manuals.

(A) Opt-Out Rights. Cloud Connect active equipment monitoring service is activated during installation. The Equipment end user can opt out of active machine monitoring by following the procedures set forth in the Software and Operators Manuals. End users who exercise this opt out option shall not receive Cloud Connect enhanced services, may experience limitations on machine functions or systems integrations that rely on information processed through Cloud Connect or automated data communications, or may be subject to surcharges increasing costs for contracted services.

(B) Data Security. Seller shall use the same care in protecting the integrity and security of Equipment Data as it uses to preserve the integrity and security of Seller's other proprietary information, but in no event less than reasonable care. Seller uses Equipment Data for delivery of Goods and Services under warranty and service agreements, and anonymized data points derived from Equipment Data in product research and development.

(C) Ownership of Equipment Data. Seller owns all rights, titles and interest in Equipment Data, and all data derived therefrom and reserves to itself all lawful uses thereof. Seller hereby grants Buyer a perpetual, non-exclusive, royalty-free license to use, reproduce and store the Equipment Data solely for the purpose of, and to the extent required in, operating the Goods, transferable only in conjunction with and as part of the transfer of ownership of the Goods to a new end user.

(D) CLOUD CONNECT SERVICES AS IS WARRANTY. SELLER'S CLOUD CONNECT SERVICES ARE PROVIDED 'AS IS' WITH NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION 1) ANY WARRANTY CONCERNING THE AVAILABILITY, ACCURACY OR CONTENT OF THE INFORMATION, OR 2) ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICLUAR PURPOSE.

9. WORK PLACE SAFETY, INDEMNIFICATIONS.

(A) Product Liability: With respect to all Goods or materials provided under this Agreement that are Seller's standard product or made to Seller's design or specifications, Seller shall, subject to the limitations of liability governing this Agreement, defend and indemnify Buyer against all third party

claims and liability required to be paid by Buyer to the extent arising out of defective materials, workmanship or design by Seller.

(B) Infringement/Malware: Seller shall engage in commercially reasonable efforts to monitor the Goods supplied hereunder for infringement of third party intellectual property and the presence of viruses or other malicious code. TRUMPF represents that (i) the Goods are not known to infringe, violate or misappropriate any intellectual property right(s) of third parties; (ii) that TRUMPF has all of the rights, permits, licenses and authority known to be necessary to perform its obligations hereunder; and (iii) the Goods, including any software and the media it is delivered on, have been scanned for and been found to be free from viruses and other malicious code. Seller shall, subject to the limitations of liability governing this Agreement, defend and indemnify Buyer against all third party claims and liability required to be paid by Buyer to the extent arising out of Seller's negligence or malfeasance in monitoring the Goods as provided herein or in making the foregoing representations.

(C) Workplace Practices: It is the responsibility of Buyer to know, understand and comply with the work and safety laws and regulations in effect and governing Buyer's use of the Goods provided hereunder. Buyer agrees that after installation of the Goods provided hereunder, the Goods and all persons other than Seller personnel operating or maintaining such Goods will be deemed under Buyer's exclusive control. To the extent governing law requires inspections, reviews, records keeping and/or after-purchase modifications to the Goods, it is the responsibility of the Buyer to arrange for and comply with such requirements and any associated costs are the sole responsibility of the Buyer. Subject to the limitation of liability governing this Agreement, Buyer shall indemnify Seller against all third-party claims and liability required to be paid by Seller to the extent arising out of (a) any modifications, including but not limited to repairs, made in the Goods by or on behalf of Buyer by persons or parties other than Seller, and/or (b) the Buyer's negligent use of the Goods, including but not limited to use in production with any of the Product safety functions disabled, obstructed or circumvented.

(D) Notice; Consent to Settlement: It is a condition of indemnification or defense under this Section 9 that in the event that any third party asserts a claim or liability with respect to any matter for which a Party is entitled to indemnification hereunder, the indemnified Party gives prompt written notice to the indemnifying Party of such claim or liability. No settlement of an indemnified claim shall require an admission of liability or impose an affirmative obligation on a Party hereto, including an obligation to indemnify, without the written consent of the Party so affected. Consent shall not be unreasonably withheld.

(E) Insurance: Each Party shall maintain comprehensive liability insurance coverage in an amount not less than one million dollars per occurrence with coverage of the other Party as an additional insured. Upon request, a Party shall provide the other Party with a certificate of insurance evidencing this coverage.

(F) Excluded Limitations: The above indemnifications shall not be limited by the availability of insurance coverage to the indemnifying party, or by any protection afforded the indemnifying party under the Workers' Compensation Acts, Disability Acts or other employee benefits acts.

10. LIMITATION OF LIABILITY. NEITHER PARTY'S LIABILITY ON ANY INDEMNIFICATION OR ANY CLAIM OF ANY KIND, UNDER ANY THEORY, AT LAW OR IN EQUITY, INCLUDING NEGLIGENCE OR STRICT LIABILITY, FOR ANY LOSS OR DAMAGE ARISING OUT OF, CONNECTED WITH, OR RESULTING FROM THE PERFORMANCE OR BREACH OF THE TERMS HEREOF, OR FROM THE DESIGN, MANUFACTURE, SALE, DELIVERY, RESALE,

INSTALLATION, TECHNICAL DIRECTION OF INSTALLATION, INSPECTION, MODIFICATION, REPAIR, OPERATION OR USE OF ANY SERVICE, GOOD OR PART THEREOF SHALL IN ANY CASE EXCEED THE PRICE ALLOCABLE TO THE SERVICE, GOOD OR PART THEREOF WHICH GIVES RISE TO THE CLAIM. IN NO EVENT SHALL EITHER PARTY HAVE ANY LIABILITY FOR ANY INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES ARISING OUT OF OR IN CONNECTION WITH A BREACH OF THE CONTRACT SALE OR ANY OTHER DUTY OF THAT PARTY WITH RESPECT TO THE GOODS OR SERVICES OR THIS AGREEMENT, INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOST PROFITS, LOST SALES OR INJURY TO PERSONS OR PROPERTY EVEN IF THE PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES.

11. LIMITATION OF ACTIONS: No action for breach of any term of this contract of sale or any other duty of Seller with respect to these Goods may be commenced more than one (1) year after Installation Completion.

12. CHANGES, CANCELLATION: Any changes to the scope of the Goods and Services under this Agreement must be agreed in a writing executed by both Parties. Orders may not be canceled except by written notice received by Seller prior to shipment. A restocking charge of ten percent of the selling price will be applied for the cancellation of standard items. Charges for the cancellation of special items will be based on non-recoverable expenses accruing to the order sustained by Seller plus ten percent of the selling price. Either Party may cancel an existing order without penalty or decline future orders under the Agreement in the event of (a) a change of control of, or (b) a bankruptcy of the other Party.

13. INTELLECTUAL PROPERTY RIGHTS. The Goods sold hereunder are of Seller's proprietary design offered in configurations and only with such modification as is customarily available to all buyers in the marketplace without significantly altering the Good's function or processes. The Goods do not incorporate or embody Buyer's intellectual property, or any technology developed by Buyer or specifically for Buyer. Buyer acquires no greater interest in the Goods or the intellectual property embodied in the Goods than those rights of use, maintenance and resale as customarily accompany the purchase of off-the-shelf tangible goods. All Seller intellectual property including but not limited to patents, trademarks, trade names, trade secrets, and all modifications and derivatives thereof, are and shall remain the sole and exclusive property of Seller.

14. DESIGN CHANGES: Acceptance of Purchase Order by Seller determines product version for delivery. The designs and specification of all Goods sold may be subject to subsequent change by Seller without notice and, in the event of any such changes, Seller will have no obligation whatsoever to make similar changes in Goods previously ordered.

15. RESERVATION OF SECURITY INTEREST; RISK OF LOSS: Seller hereby reserves and Buyer hereby grants a security interest in the Goods (and the proceeds thereof) as security for the payment of the unpaid balance of the purchase price and Buyer's performance of its other obligations hereunder. Buyer will execute and deliver to Seller such Uniform Commercial Code financing statements as Seller shall request to perfect such security interest. The security interest hereunder shall terminate upon Buyers payment in full of the purchase price of Goods and Services, and the respective taxes.

The risk of loss passes to Buyer upon delivery of the Goods to the carrier. Insurance against loss or damage to the Goods during shipment is the responsibility of Buyer. Until the entire purchase

price for the Goods is paid in full, Buyer will keep the Goods insured against loss or damage by fire and other risks and hazards included with so-called “extended coverage” insurance, in an amount at least equal to such purchase price. Losses under such insurance shall be made payable to Seller and any payments under such insurance shall be paid to Seller and applied to the unpaid balance of the purchase price. Upon request, Buyer will furnish Seller with copies of the policies of such insurance and each renewal thereof

16. NONPAYMENT OF PURCHASE PRICE: STORAGE AND COLLECTION COSTS: If Buyer shall not pay the full purchase price within 30 days from the date of Installation Completion of the Goods; Buyer will pay Seller thereafter an additional one and one-half percent (1-1/2%) per month on the unpaid balance of the purchase price until paid in full. Such charge shall be added to and become an additional part of the purchase price for the Goods. Buyer also will pay all storage costs for the Goods after the scheduled delivery date as well as all costs of collection incurred by Seller in collecting the purchase price for the Goods and enforcing its security interest in the Goods, including, without limitation, reasonable attorneys’ fees and expenses incurred by Seller.

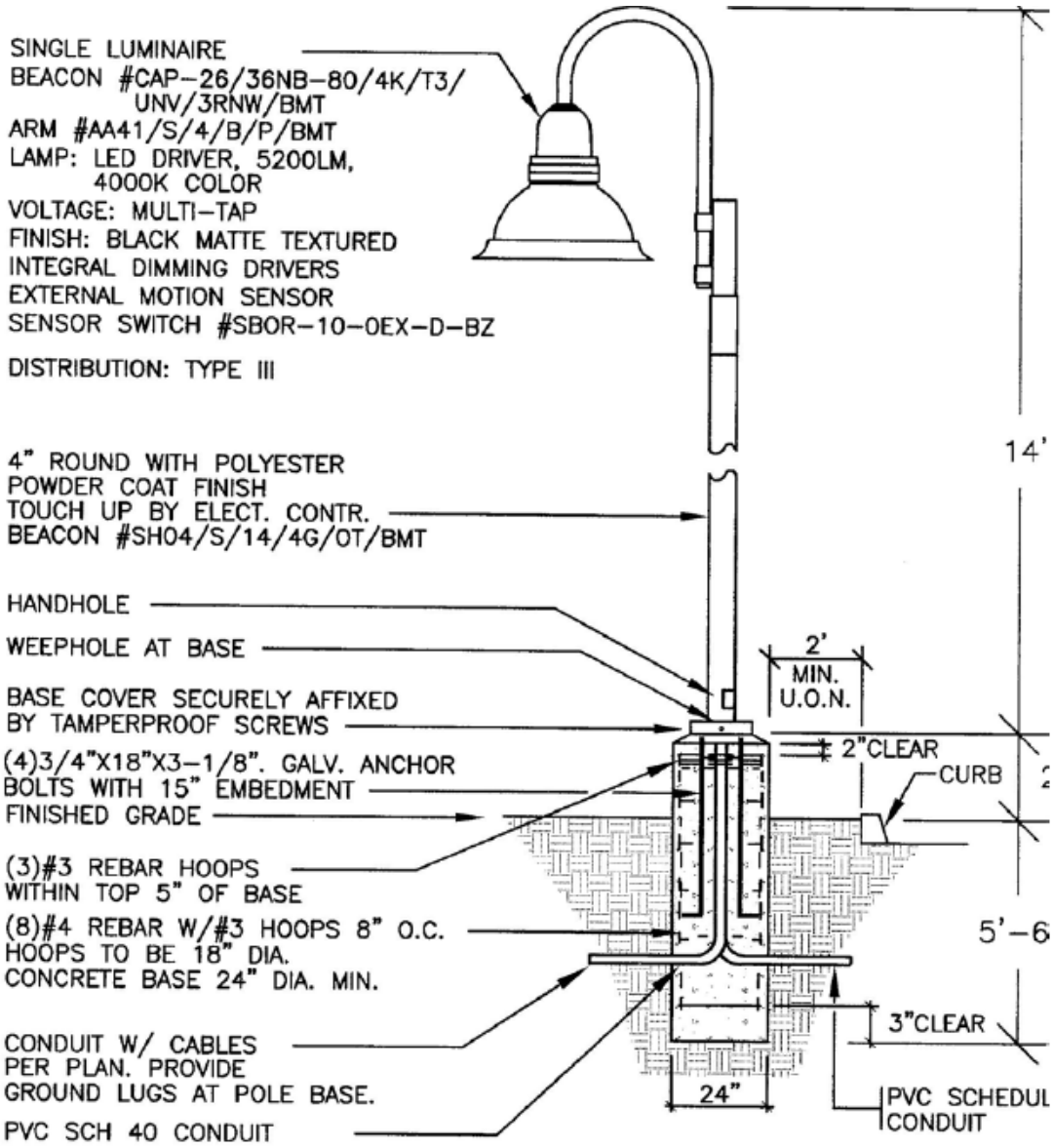
17. GOVERNING LAW: The validity, interpretation and performance of this contract for sale shall be governed by the laws of the State of Connecticut. The United Nations Convention on Contracts for the International Sale of Goods is expressly disclaimed by the Parties with respect to this Agreement and the transactions contemplated hereby.

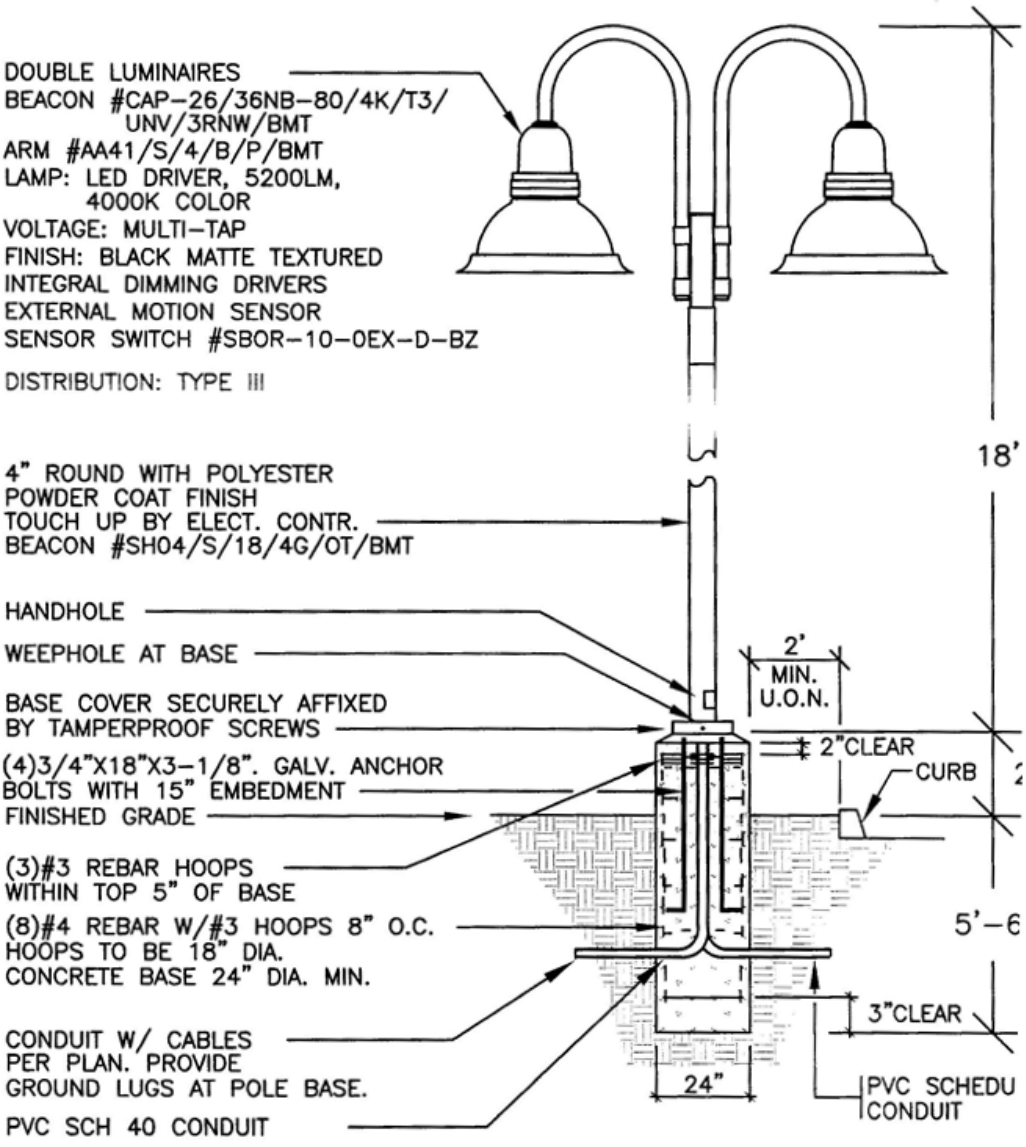
18. ENTIRE AGREEMENT: This Agreement constitutes the entire agreement between the Parties pertaining to the subject matter hereof, and supersedes all prior agreements, understandings, negotiations and discussions, whether oral or written, of the Parties pertaining to the subject matter hereof.

Attachment B

Recommended Lighting

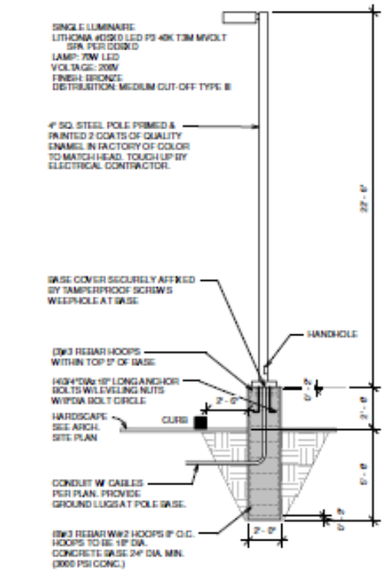
& Photometric Study


SINGLE LUMINAIRE
BEACON #CAP-26/36NB-80/4K/T3/
UNV/3RNW/BMT
ARM #AA41/S/4/B/P/BMT
LAMP: LED DRIVER, 5200LM,
4000K COLOR
VOLTAGE: MULTI-TAP
FINISH: BLACK MATTE TEXTURED
INTEGRAL DIMMING DRIVERS
EXTERNAL MOTION SENSOR
SENSOR SWITCH #SBOR-10-OEX-D-BZ
DISTRIBUTION: TYPE III
4" ROUND WITH POLYESTER
POWDER COAT FINISH
TOUCH UP BY ELECT. CONTR.
BEACON #SH04/S/14/4G/OT/BMT
HANDHOLE
WEEPHOLE AT BASE
BASE COVER SECURELY AFFIXED
BY TAMPERPROOF SCREWS
(4)3/4"X18"X3-1/8". GALV. ANCHOR
BOLTS WITH 15" EMBEDMENT
FINISHED GRADE
(3)#3 REBAR HOOPS
WITHIN TOP 5" OF BASE
(8)#4 REBAR W/#3 HOOPS 8" O.C.
HOOPS TO BE 18" DIA.
CONCRETE BASE 24" DIA. MIN.
CONDUIT W/ CABLES
PER PLAN. PROVIDE
GROUND LUGS AT POLE BASE.
PVC SCH 40 CONDUIT
14'
2'
MIN.
U.O.N.
2"CLEAR
CURB
5'-6
3"CLEAR
24"
PVC SCHEDUL
CONDUIT

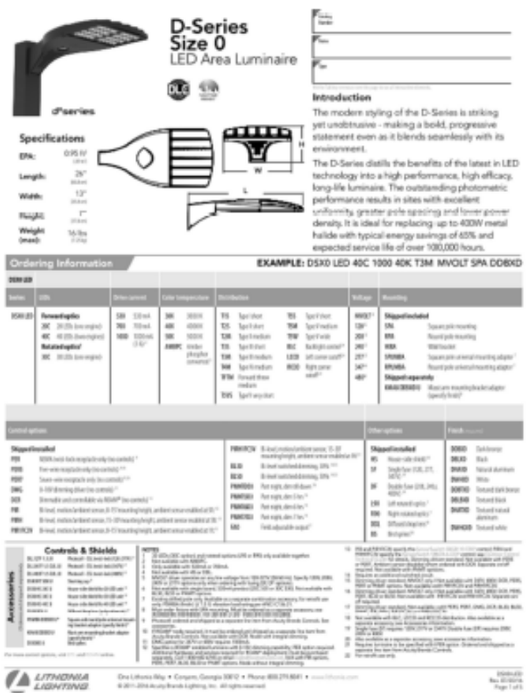

DOUBLE LUMINAIRES
BEACON #CAP-26/36NB-80/4K/T3/
UNV/3RNW/BMT
ARM #AA41/S/4/B/P/BMT
LAMP: LED DRIVER, 5200LM,
4000K COLOR
VOLTAGE: MULTI-TAP
FINISH: BLACK MATTE TEXTURED
INTEGRAL DIMMING DRIVERS
EXTERNAL MOTION SENSOR
SENSOR SWITCH #SBOR-10-0EX-D-BZ
DISTRIBUTION: TYPE III
18'
4" ROUND WITH POLYESTER
POWDER COAT FINISH
TOUCH UP BY ELECT. CONTR.
BEACON #SH04/S/18/4G/OT/BMT
HANDHOLE
WEEPHOLE AT BASE
BASE COVER SECURELY AFFIXED
BY TAMPERPROOF SCREWS
(4)3/4"X18"X3-1/8". GALV. ANCHOR
BOLTS WITH 15" EMBEDMENT
FINISHED GRADE
(3)#3 REBAR HOOPS
WITHIN TOP 5" OF BASE
(8)#4 REBAR W/#3 HOOPS 8" O.C.
HOOPS TO BE 18" DIA.
CONCRETE BASE 24" DIA. MIN.
CONDUIT W/ CABLES
PER PLAN. PROVIDE
GROUND LUGS AT POLE BASE.
PVC SCH 40 CONDUIT
2'
MIN.
U.O.N.
2"CLEAR
CURB
5'-6
3"CLEAR
24"
PVC SCHEDU
CONDUIT

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	1.9 fc	3.4 fc	0.0 fc	N/A	N/A

1 **PHOTOMETRIC STUDY**
SCALE: 1" = 40'-0"



2 **LIGHT STANDARD RAISED BASE1**
SCALE: 1/4" = 1'-0"



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Angels Camp (3812015))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Agelaius tricolor tricolored blackbird	G2G3 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	1,200 1,602	955 S:3	0	0	0	0	0	3	0	3	3	0	0
Antrozous pallidus pallid bat	G5 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	1,440 1,440	420 S:1	0	0	0	0	0	1	1	0	1	0	0
Cryptantha spithamaea Red Hills cryptantha	G2 S2	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive	1,800 1,800	6 S:1	0	0	0	0	0	1	1	0	1	0	0
Diplacus pulchellus yellow-lip pansy monkeyflower	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive		78 S:1	0	0	0	0	0	1	1	0	1	0	0
Eryngium pinnatisectum Tuolumne button-celery	G2 S2	None None	Rare Plant Rank - 1B.2	1,215 1,440	30 S:2	0	2	0	0	0	0	0	2	2	0	0
Monadenia mormonum buttoni Button's Sierra sideband	G2T1 S1S2	None None		1,520 1,520	5 S:1	0	0	0	0	0	1	1	0	1	0	0
Navarretia paradoxiclara Patterson's navarretia	G2 S2	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive	1,420 1,420	11 S:1	0	0	0	0	0	1	1	0	1	0	0

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Consultation Code: 08ESMF00-2020-SLI-2186
Event Code: 08ESMF00-2020-E-06707
Project Name: Roofscreen

June 15, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-2186

Event Code: 08ESMF00-2020-E-06707

Project Name: Roofscreen

Project Type: DEVELOPMENT

Project Description: Light Industrial

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.081929452726364N120.54733998020912W

Counties: Calaveras, CA

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

U.S. Fish and Wildlife Service
National Wetlands Inventory

RoofScreen Wetlands Map

June 15, 2020

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Tree Inventory

RoofScreen Native Oak Tree Removal

Tree #	Tree Type	Circumference (inches)	TDBH (inches)
1	Blue oak	46	14.6
2	Live oak (triple trunk)	90	28.6
3	Live oak (sapling)	17	5.4
4	Live oak	51.5	16.4
5	Live oak (sapling)	21	6.7
6	Blue oak	35.5	11.3
7	Blue oak	28	8.9
8	Live oak (two trunk)	58.5	18.6
9	Live oak (two trunk)	60.0	19.1
10	Blue oak	37	11.8
11	Blue oak	25	7.9
12	Blue oak	57	18.1
13	Blue oak	80	25.5
14	Blue oak	17	5.4
15	Blue oak	18	5.7
16	Blue oak	18	5.7
17	Blue oak	52	16.6
18	Blue oak	42	13.4
19	Live oak	50	15.9
20	Live oak (two trunks fused)	82	26.1
21	Blue oak	52	16.6
22	Blue oak (double)	46.5	14.8
23	Blue oak	23.5	7.5
24	Blue oak	37	11.8
25	Blue oak	39	12.4
26	Blue oak	45	14.3
27	Blue oak	54.5	17.3
28	Blue oak	72	22.9
29	Blue oak	22	7.0
30	Blue oak	59	18.8
31	Blue oak	43	13.7
32	Blue oak	61	19.4
33	Blue oak	90.5	28.8
34	Blue oak	116	36.9
35	Blue oak	26	8.3
36	Blue oak	19.5	6.2
37	Blue oak	23	7.3
~~38~~/a/	~~Valley oak~~	~~13~~	0.0
39	Live oak	19.5	6.2
40	Blue oak	48	15.3
41	Blue oak	43	13.7
42	Blue oak	28.5	9.1
43	Blue oak/Valley oak	43	13.7

Tree #	Tree Type	Circumference (inches)	TDBH (inches)
44	Blue oak	26	8.3
45	Blue oak	25	7.9
~~46~~/a/	~~Blue oak~~	~~15~~	0.0
~~47~~/a/	~~Blue oak~~	~~14.5~~	0.0
~~48~~/a/	~~Blue oak~~	~~13.5~~	0.0
49	Blue oak	117.5	37.5
50	Valley oak	82	26.1
51	Blue oak	33	10.5
52	Blue oak	21	6.7
53	Blue oak	20	6.4
54	Blue oak	18.5	5.9
55	Blue oak	35	11.1
56	Blue oak	41	13.1
			737.2

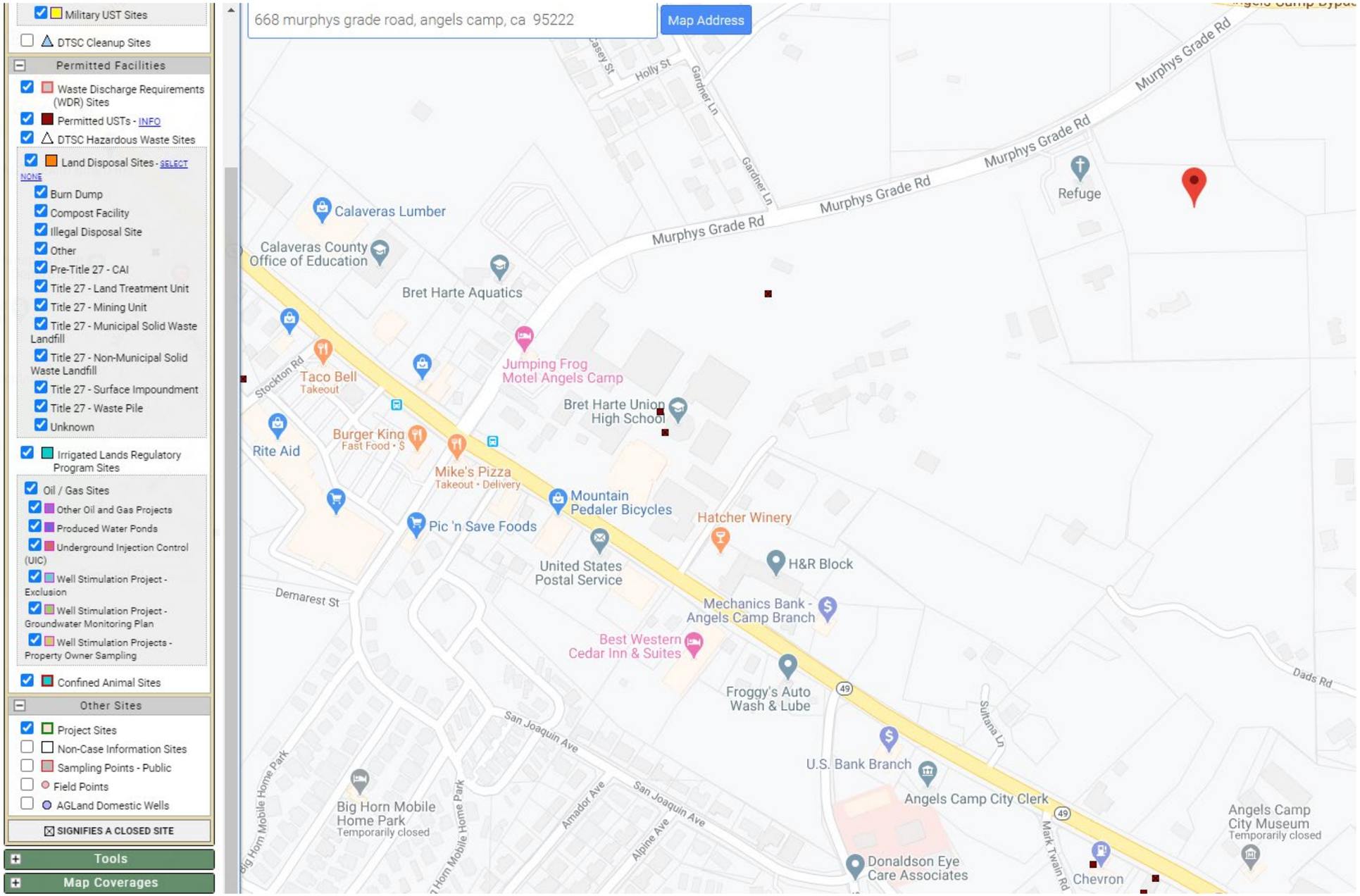
/a/ 4 trees do not meet the minimum 5” dbh threshold

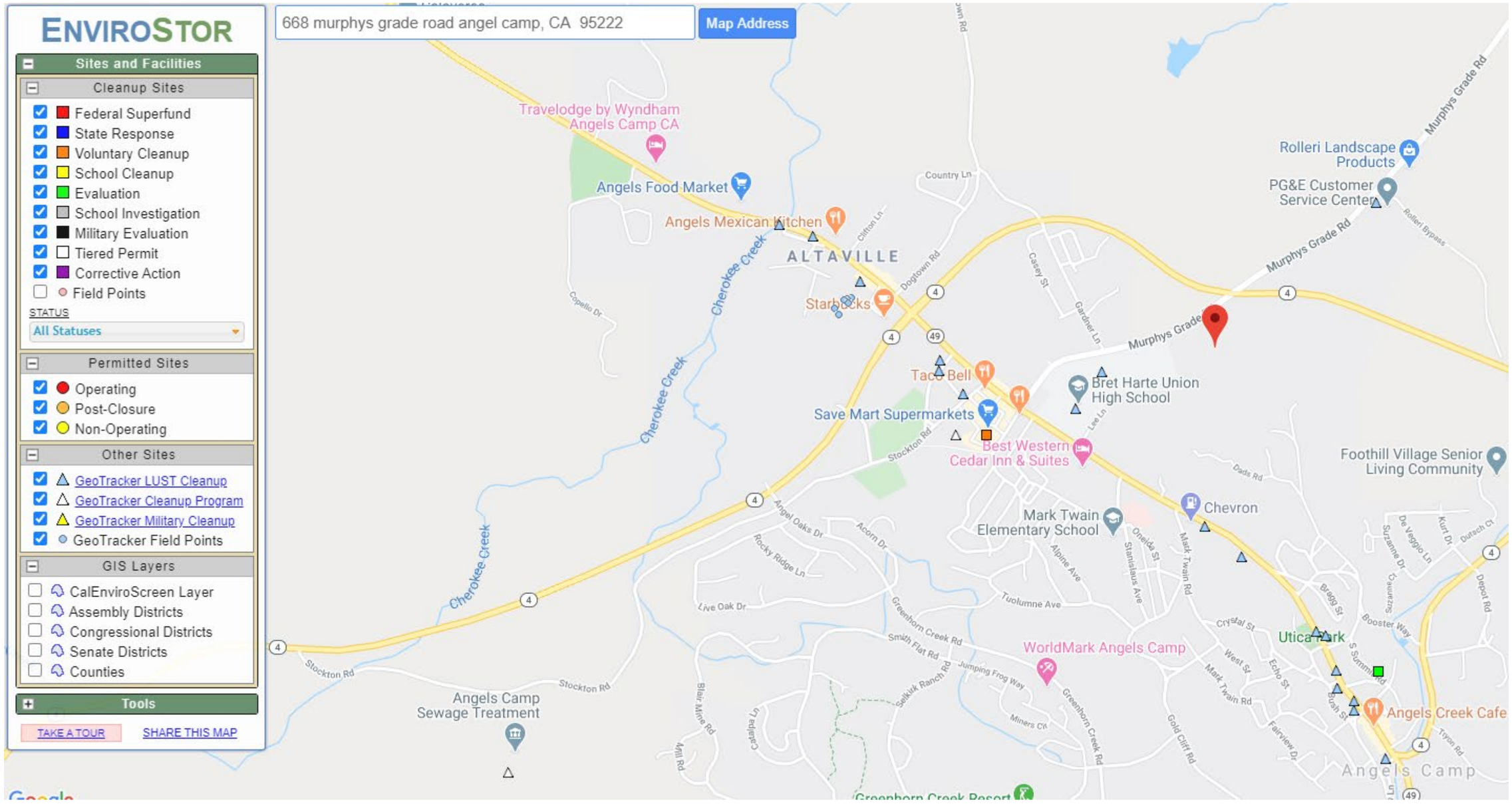
737.2 inches = 61.4 feet

Tree Species	dbh"
Quercus wislizenii (QW)	14
QW	9
Quercus lobata (QL)	48
QW	24
QW	18
QW	24
QW (multi)	42
QW	20
QW	16
QW	9
QW	28
QW	10
QW	12
QW	18
QW	14
QL	16
QW	12
QW	9
QL	14
QW	10
Quercus douglasiana (QD)	10
QW	10
QW	14
QD	12
QW	12
QD	16
QW	20
QW	12
QD	18
QW	22
QW	10
QW	12
QW	18
QL	24
QW	28
QW	10
QW	12
QW	16
QW	12
QW	12
QW	12
QW	10
QD	12
QW	10
QD	12
QW	10

QL	28
QD	12
QW	10
QD	10
QW	12
QW	10
QW	10
QD	12
QD	10
QW (multi)	22
QW	12
QD	28
QW	12
QW	16
QW	12
	949

ATTACHMENT D: Hazardous Materials




ENVIROSTOR
Sites and Facilities
Cleanup Sites
Federal Superfund
State Response
Voluntary Cleanup
School Cleanup
Evaluation
School Investigation
Military Evaluation
Tiered Permit
Corrective Action
Field Points
STATUS
All Statuses
Permitted Sites
Operating
Post-Closure
Non-Operating
Other Sites
GeoTracker LUST Cleanup
GeoTracker Cleanup Program
GeoTracker Military Cleanup
GeoTracker Field Points
GIS Layers
CalEnviroScreen Layer
Assembly Districts
Congressional Districts
Senate Districts
Counties
Tools
TAKE A TOUR
SHARE THIS MAP
668 murphys grade road angel camp, CA 95222
Map Address
Travelodge by Wyndham Angels Camp CA
Angels Food Market
Angels Mexican Kitchen
ALTAVILLE
Starbucks
Taco Bell
Save Mart Supermarkets
Best Western Cedar Inn & Suites
Rolleri Landscape Products
PG&E Customer Service Center
Murphys Grade Rd
Bret Harte Union High School
Foothill Village Senior Living Community
Chevron
Mark Twain Elementary School
WorldMark Angels Camp
Utica Park
Angels Creek Cafe
Angels Camp
Angels Camp Sewage Treatment
Greenhorn Creek Resort
Cherokee Creek
Stockton Rd
Dogtown Rd
Country Ln
Clifton Ln
Copello Dr
Casey St
Gardner Ln
Lee Ln
Rolleri Bypass
Angel Oaks Dr
Acorn Dr
Rocky Ridge Ln
Live Oak Dr
Greenhorn Creek Rd
Smith Flat Rd
Selkirk Ranch Rd
Jumping Frog Way
Miners Ck
Blair Mine Rd
Mill Rd
Cepelka Ln
Alpine Ave
Tuolumne Ave
Stanislaus Ave
Oneida St
Mark Twain Rd
Crystal St
West St
Echo St
Bush St
Braggs St
Booster Way
S Summit Rd
Suzanne Dr
De Veggio Ln
Kurt Dr
Dutsch Ct
Depot Rd
Tyron Rd
Fairview Dr
Gold Cliff Rd
Dads Rd

TRI

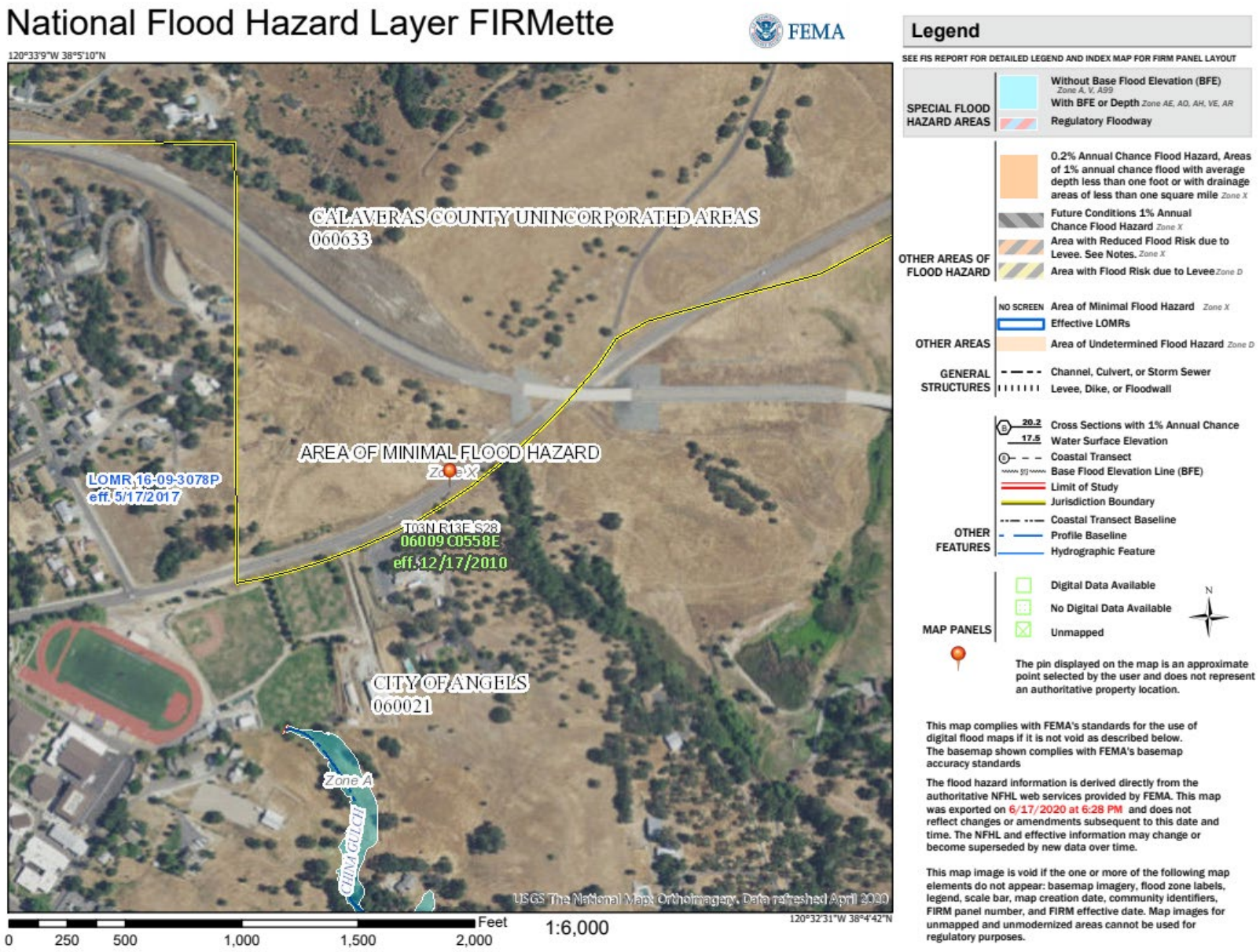
<< Return

Search Parameters: 1
TRI facility information searched
ZIP Code: 95222
Location Address: P.O. Box 667
City Name: Angels Camp
County Name: CA
State Abbreviation: CA

Results are based on data extracted on APR-08-2020

No Results found.

ATTACHMENT E: FEMA FIRM Map



KD Anderson & Associates, Inc.
Transportation Engineers

January 10, 2020

Mr. Lad Wallace
BRUCE FAMILY TRUST
347 Coral Street
Santa Cruz, CA 95060

RE: TRAFFIC IMPACT ASSESSMENT FOR ROOFSCREEN'S FACILITY ON MURPHY'S GRADE ROAD, ANGELS CAMP, CALIFORNIA.

Dear Mr. Wallace:

Thank you for contacting our firm regarding RoofScreen's proposed facility in Angels Camp, California. As we have discussed, the project proposes roughly 26.4 ksf of buildings and will employ 15 people at 668 Murphy's Grade Road. While the City of Angels has determined that the project's traffic impacts are unlikely to be significant, City staff has asked for a focused assessment of the project's access in order to respond to Calaveras County concerns. This letter summarizes our assessment of the potential traffic impacts associated with this project.

Background Information

Murphy's Grade Road. Murphy's Grade Road is a two lane Collector roadway that connects SR 49 with the Arnold / Murphy's areas off of SR 4 to the east of Angels Camp. Murphy's Grade Road also provides access to parking lots serving Bret Harte High School. In the area of the project site Murphy's Grade Road is a two-lane rural road with limited graveled shoulders. The 2007 Regional Transportation Plan indicates that in 2002 Murphy's Grade Road carried 3,600 ADT near SR 49 and 2,000 ADT in the area towards its intersection with SR 4. A new 24-hr traffic count conducted for this study near the project site indicated a volume of 2,971 vehicles per day. Of that total the higher hourly volumes occurred before and after the school day, with 294 vehicles per hour (vph) from 7:30 to 8:30 a.m. and 284 vph in the period from 3:00 to 4:00 p.m. The peak hourly volume in one direction was 191 vph in the a.m. peak hour.

Regulatory Policies. Local agencies adopt minimum Level of Service standards for their facilities. The City of Angels General Plan policy 3A.e indicates that Local roads and Collector streets should operate at LOS C but that the intersection of Collector and Arterial streets are permitted to operate at LOS D.

The City may allow exceptions to these LOS standards subject to findings that improvements or other measures required to achieve the LOS standards established herein are unacceptable. In allowing an exception to the LOS standard, the city shall consider the following:

a. Number of hours per day that the intersection or roadway segment would operate at conditions worse than the adopted standard.
b. The ability of the required improvement to significantly reduce peak hour delay and improve traffic operations.
c. Right-of-way needs versus the physical impacts on surrounding properties.
d. Visual effects of the required improvement on the community's identify and character.
e. Environmental impacts including air quality and noise impacts.
f. Construction and right-of-way acquisition costs.
g. Impacts on general safety.
h. Impacts of the required construction phasing and traffic flows.
i. Impacts on quality of life as perceived by residents.
j. Geographical, environmental, social or economic factors.
k. Ability to equitably fund needed improvements.
l. Importance of proposed improvements in relation to other road needs given limited resources.

Exceptions to the standards will only be allowed after all reasonable measures and options are explored, including alternative forms of transportation.

The Calaveras County General Plan, 2019 (GP) and its Draft EIR, 2018 (GPEIR) present the most current information regarding traffic operating conditions in the vicinity of the proposed project. The County GP notes that the minimum acceptable Level of Service is LOS C outside of Community areas and LOS D within Community areas (Policy C 2.2). The County GP notes that Murphy's Grade Road is a Major Collector with two travel lanes (Figure CIR-1). The capacity / Level of Service on two-lane roads is linked to the available passing sight distance. The DEIR notes that Murphy's Grade Road could carry 280 vehicles per hour (vph) per direction at LOS C and 655 vph at LOS D (Table 4.13-2) and that the roadway operates at LOS D today (Figure 4.13-2). The GPEIR identifies future improvements (Figure 4.13-4) and notes that Murphy's Grade Road could be widened to add passing lanes in the future.

The GPEIR identified future traffic conditions. The GPEIR indicates that Murphy's Grade Road will continue to operate at LOS D in the "Market Level Year 2035" conditions.

Project Description

The RoofScreen facility will total 26,400 sf of industrial building space. The site will employ 15 persons. On a weekly basis no more than 6 to 8 tractor-trailer combinations will visit the site along with 2 to 3 flatbed trucks. The facility will take access to Murphy's Grade Road via an existing common driveway with Refuge Christian Preschool (refer to site plan).

Trip Generation. The amount of vehicular traffic associated with the facility can be estimated based on the operating information noted above and from trip generation rates published by the Institute of Transportation Engineers (ITE). As noted in Table 1, rates are available for manufacturing facilities based on the number of employees and on the building size measure in 1,000 sf.

TABLE 1
TRIP GENERATION RATES

Code	Description	Unit	Quantity	Daily	AM Peak Hour	PM Peak Hour
140	Manufacturing	1,000 sf	1	3.93	0.62	0.67
		employee	1	2.47	0.37	0.33
Source Trip Generation Manual, 10th Edition						

Table 2 presents our estimate of the daily and peak hour trip generation associated with the facility based on typical ITE rates. As shown, assuming the average between the two parameters the facility could generate 71 daily trips (1/2 in and 1/2 outbound) with perhaps 11 to 12 trips generated in the morning and evening peak hours.

It is our opinion that based on the proponents operational expectations, the forecasts based on ITE data represent a reasonable estimate for peak hour traffic, but the daily estimate should be viewed as a very conservative (i.e., "worst case") estimate for daily traffic.

TABLE 2
PROJECT TRIP GENERATION FORECAST

Code	Description	Unit	Quantity	Daily	AM Peak Hour	PM Peak Hour
140	Manufacturing	1,000 sf	26.4	104	16	18
		employee	15	37	6	5
		Average		71	11	12

Evaluation. The relative impacts of the project were evaluated from the standpoints of roadway capacity and safety.

Capacity Analysis. The City of Angels does not have adopted standards for individual roadway capacity and Level of Service. As noted earlier, the Calaveras County RTP and GPEIR assumes the roadway could carry up to 280 vph per direction without exceeding LOS C. The current westbound volume at the site access is 191 vph in the a.m. peak hour, and roughly 90 vph could

be added without exceeding LOS C. Even if all project peak hour traffic was added in that direction, the LOS C threshold would not be exceeded.

Alternatively, the volume of traffic added by the project to intersections in Angels Camp west of the site would be too small to have an appreciable effect on traffic conditions in that area. Based on these considerations the projects impact is not significant from the standpoint of roadway capacity and Level of Service.

Access Evaluation Criteria. The adequacy of site access has been determined based on consideration of the standards and guidelines typically employed by Angels Camp, Calaveras County and the California Department of Transportation (Caltrans). These criteria include:

- Minimum stopping sight distance for motorists turning from the site onto Murphy's Grade Road.
- Minimum sight distance for motorists turning left into the project from Murphy's Grade Road.
- Need for a separate left turn lane on O'Byrnes Ferry Road at the site access.

The standards accepted for both agencies for minimum sight distance at the project access are presented in the Caltrans *Highway Design Manual* (HDM). The primary evaluation parameter for private driveways is the availability of "**Minimum Safe Stopping Distance**" (MSSD). This criterion is documented in Table 201.1 of the Highway Design Manual and suggests the minimum sight distance that must be available for a motorist to perceive a hazard in the road and come to a stop. The required sight distance varies based on the speed of travel as noted in Table 3.

TABLE 3
SIGHT DISTANCE GUIDELINES

Speed	Minimum Stopping Sight Distance (HDM Table 201.1	Left Turn Sight Distance AASHTO Table 9-7
25	150	-
30	200	-
35	250	285
40	300	325
45	360	365
50	430	405
55	500	445
60	580	490

A second criteria applies to vehicles turning left into the site from Murphy's Grade Road. Left turning drivers need sufficient sight distance to decide when to turn left across the opposing lane.

Applicable guidelines are presented in the American Association of State Transportation and Highway Officials (AASHTO) publication *A Policy on Geometric Design of Highways and Streets, 2018 (AASHTO Policy)*. The applicable sight distance requirements at various speeds are also presented in Table 1.

Access Sight Distance. The available sight distance at the project driveway's location was evaluated following the methods contained in the HDM. An exiting driver's eye was assumed to be 15 feet from the edge of the travel way. The available distance was determined and compared to the applicable guideline. Looking right to the east, the view would be clear through the SR 4 viaduct if the brush growing along the edge of the roadway within the line of sight was removed. With that maintenance a southbound vehicle comes into view when it is more than 600 feet away. This distance satisfies the MSSD requirements at 60 mph. Looking left, an eastbound vehicle becomes visible as it comes around the curve about 600 feet away, and this distance satisfies the MSSD for 60 mph. A westbound motorist planning to turn into the site will have a view of southbound traffic as he approaches the driveway, and at the driveway a driver turning left can see a southbound vehicle coming around the hillside when it is 420 feet away. This distance meets AASTO guidelines for 50 mph. The view would, however, be greater from the higher driver location within a truck cab.

The adequacy of available sight distance is predicated on the speed of traffic in this area. The speed limit in the City is 25 mph, but a prima facie limit of 55 is in effect beyond the high school. As the speeds accommodated by the available sight distance at the access exceed the prevailing speed, the sight distance at the project's driveway is adequate.

Left Turn Lane Channelization. Left turn lanes can be appropriate on two-lane road to preserve roadway capacity and to reduce the potential for collisions, and the need for a separate left turn lane at this location was considered based on review of the precedent for turn lanes elsewhere on Murphy's Grade Road, sight distance and traffic volumes.

Today left turn lanes at private driveways are limited along Murphy's Grade Road in Calaveras County. In the City left turn lanes are provided at the access to Bret Harte H.S.'s parking lots. However, no left turn lane exists at any other public street intersection or private driveway from that point to the community of Murphy's. As turn lanes have only been installed at major locations, there is no justification for a turn lane at this access based on the City or County's standard practice.

Left turn lanes can be needed when the view of approaching motorists intending to turn left is limited and sight distance is inadequate. In this case the sight distance satisfies applicable standards, and a turn lane is not needed for that reason.

The need for separate left turn channelization has also been considered based on the volume of background traffic and the number of left turns occurring at an intersection. In this case the number of left turns is likely to be very low. The AASHTO Policy has historically included volume guidelines for left turn lanes. The AASHTO Policy's 2004 and 2011 Editions employed procedures and thresholds which clearly indicated that a left turn lane was not needed at this location.

The AASHTO Policy's 2018 edition takes an alternative approach which suggests that there are benefits to left turn lanes when the number of turning vehicles is very low. The new guidelines suggest a left turn lane be considered for turning volumes as low as 5 vph, however, as noted in the accompanying text.

The volume-based guidelines or warrants presented below indicate situations where a left-turn lane may be desirable, not necessarily where a left turn lane is definitely needed.

Based on its location and low trip generation it is unlikely the project could generate five inbound left turns even under the conservative assumptions made herein. Given the lack of precedent for separate left turn lanes elsewhere on Murphy's Grade Road, the adequacy of sight distance and the limited traffic volume, in our opinion a left turn lane is not needed at this location.

Truck Turns. The project access will need to accommodate the turning requirements of full size trucks-trailer combinations. While the amount of truck traffic does not justify acceleration and deceleration lanes, the final access design will need to accommodate the turning requirements of large trucks without leaving the pavements or encroaching into opposing lanes.

Conclusion

The City of Angels has made a finding that the project has no significant traffic impact. Based on consideration applicable City and County General Plan Level of Service policies and review of identified safety criteria, we also conclude that the project has no significant impact.

Thank you again for contacting our firm. Please feel free to contact me if you have any question or need more information.

Sincerely yours,

KD Anderson & Associates, Inc.

Kenneth D. Anderson, P.E.,
President

Attachments

Prepared by National Data & Surveying Services

VOLUME

Murphys Grade Rd @ SR 4 Undercrossing

Day: Thursday
Date: 12/5/2019

City: Angels Camp
Project #: CA19_7469_001

DAILY TOTALS	NB	SB	EB	WB	Total
	1,511	1,460	0	0	2,971

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	2		0						2		12:00	24		33						57	
00:15	2		2						4		12:15	28		34						62	
00:30	0		1						1		12:30	18		25						43	
00:45	1	5	0	3					1	8	12:45	33	103	29	121					62	224
01:00	0		1						1		13:00	23		20						43	
01:15	0		1						1		13:15	30		23						53	
01:30	0		0						0		13:30	30		34						64	
01:45	1	1	0	2					1	3	13:45	35	118	19	96					54	214
02:00	0		0						0		14:00	38		27						65	
02:15	0		0						0		14:15	24		28						52	
02:30	1		1						2		14:30	43		28						71	
02:45	1	2	0	1					1	3	14:45	24	129	44	127					68	256
03:00	0		0						0		15:00	49		31						80	
03:15	0		1						1		15:15	35		29						64	
03:30	1		1						2		15:30	27		40						67	
03:45	0	1	2	4					2	5	15:45	37	148	36	136					73	284
04:00	8		1						9		16:00	41		26						67	
04:15	0		4						4		16:15	31		19						50	
04:30	1		4						5		16:30	40		19						59	
04:45	3	12	5	14					8	26	16:45	32	144	33	97					65	241
05:00	1		3						4		17:00	46		28						74	
05:15	2		5						7		17:15	29		33						62	
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05:45	8	18	4	20					12	38	17:45	25	130	20	96					45	226
06:00	7		9						16		18:00	20		7						27	
06:15	13		10						23		18:15	12		7						19	
06:30	22		8						30		18:30	11		3						14	
06:45	34	76	14	41					48	117	18:45	14	57	11	28					25	85
07:00	11		23						34		19:00	10		6						16	
07:15	18		37						55		19:15	9		9						18	
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07:45	36	85	62	191					98	276	19:45	6	31	3	21					9	52
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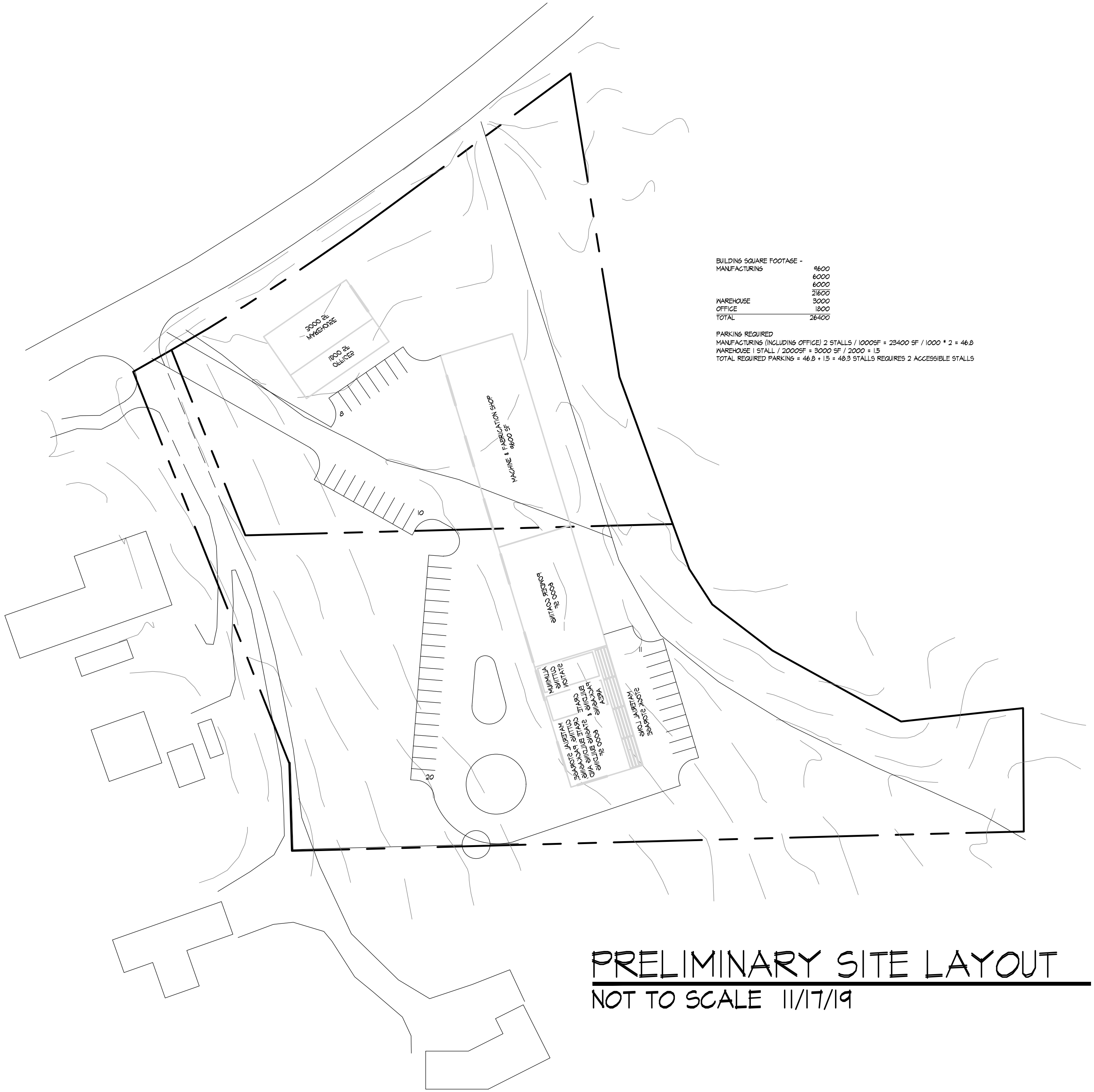
08:45	28	95	37	117					65	212	20:45	6	30	1	23					7	53
09:00	19		21						40		21:00	10		12						22	
09:15	26		26						52		21:15	10		2						12	
09:30	27		28						55		21:30	7		6						13	
09:45	16	88	20	95					36	183	21:45	7	34	4	24					11	58
10:00	17		22						39		22:00	5		3						8	
10:15	21		19						40		22:15	3		3						6	
10:30	13		20						33		22:30	2		1						3	
10:45	23	74	24	85					47	159	22:45	3	13	1	8					4	21
11:00	17		29						46		23:00	6		1						7	
11:15	23		28						51		23:15	3		3						6	
11:30	33		21						54		23:30	4		3						7	
11:45	29	102	23	101					52	203	23:45	2	15	2	9					4	24
TOTALS		559		674						1233	TOTALS		952		786						1738
SPLIT %		45.3%		54.7%						41.5%	SPLIT %		54.8%		45.2%						58.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	1,511	1,460	0	0	2,971

AM Peak Hour	11:30	07:30			07:30	PM Peak Hour	14:30	14:45			15:00
AM Pk Volume	114	192			294	PM Pk Volume	151	144			284
Pk Hr Factor	0.864	0.696			0.750	Pk Hr Factor	0.770	0.818			0.888
7 - 9 Volume	180	308	0	0	488	4 - 6 Volume	274	193	0	0	467
7 - 9 Peak Hour	07:15	07:30			07:30	4 - 6 Peak Hour	16:15	16:30			16:30
7 - 9 Pk Volume	104	192	0	0	294	4 - 6 Pk Volume	149	113	0	0	260
Pk Hr Factor	0.722	0.696	0.000	0.000	0.750	Pk Hr Factor	0.810	0.856	0.000	0.000	0.878



BUILDING SQUARE FOOTAGE -	
MANUFACTURING	9600
	6000
	6000
	21600
WAREHOUSE	3000
OFFICE	1800
TOTAL	26400

PARKING REQUIRED
MANUFACTURING (INCLUDING OFFICE) 2 STALLS / 1000SF = 23400 SF / 1000 * 2 = 46.8
WAREHOUSE 1 STALL / 2000SF = 3000 SF / 2000 = 1.5
TOTAL REQUIRED PARKING = 46.8 + 1.5 = 48.3 STALLS REQUIRES 2 ACCESSIBLE STALLS

PRELIMINARY SITE LAYOUT

NOT TO SCALE 11/17/19

KD Anderson & Associates, Inc.
Transportation Engineers

March 2, 2020

Mr. Lad Wallace
BRUCE FAMILY TRUST
347 Coral Street
Santa Cruz, CA 95060

RE: TRUCK ROUTES FOR ROOFSCREEN'S FACILITY ON MURPHY'S GRADE ROAD, ANGELS CAMP, CALIFORNIA.

Dear Mr. Wallace:

Thank you for contacting our firm regarding RoofScreen's proposed facility in Angels Camp, California. As we have discussed, the project proposes roughly 26.4 ksf of buildings and will employ 15 people at 668 Murphy's Grade Road.

Caltrans District 10 have asked about the adequacy of the SR 49 / Murphy's Grade Road intersection for truck traveling to and from your site. To respond we plotted the paths of Cal Legal truck moving onto and off of Murphy's Grade Road at the intersection. These plots are attached.

It is clear from this information that a Cal Legal truck can turn left from southbound SR 49 and go out Murphy's Grade Road to the site and that the truck can also turn left from Murphy's Grade Road onto SR 49 towards Sonora. However, the corresponding right turns are not possible.

Measures to accommodate these truck turns would likely involve moving the corners back. However, rather than tearing up the intersection, trucks could be directed to go "around the horn" using the SR 4 bypass to get to a position to make the appliable turn. For example, as noted in the attached map, if a truck was arriving from the south on SR 49 the driver would turn onto old SR 4, catch the bypass and follow it to the north SR 4 intersection on 49 and then come in that way. Similarly, a truck interested in heading north on SR 49 would instead turn left towards old SR 4 and follow the bypass to the North SR 49 / SR 4 intersection.

I understand from previous work that improvements to the SR 49 / Murphy's Grade Road intersection are in the City fee program. Thus, the developer will pay his fair share to eventually correcting this deficiency by paying the fees. I expect that the City just needs to condition the developer to instruct his truckers to follow the correct route.

Thank you again for contacting our firm. Please feel free to contact me if you have any question or need more information.

Sincerely yours,

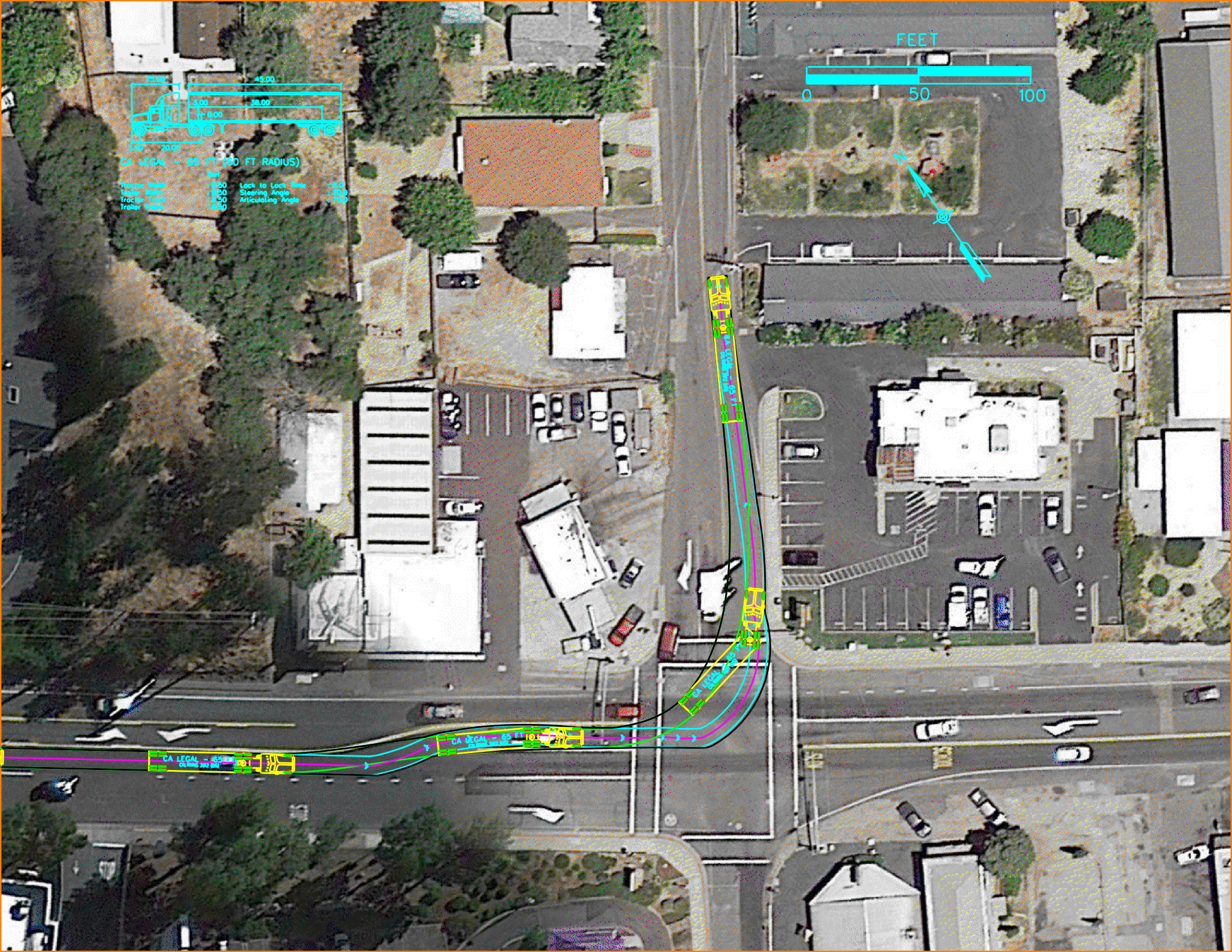
KD Anderson & Associates, Inc.

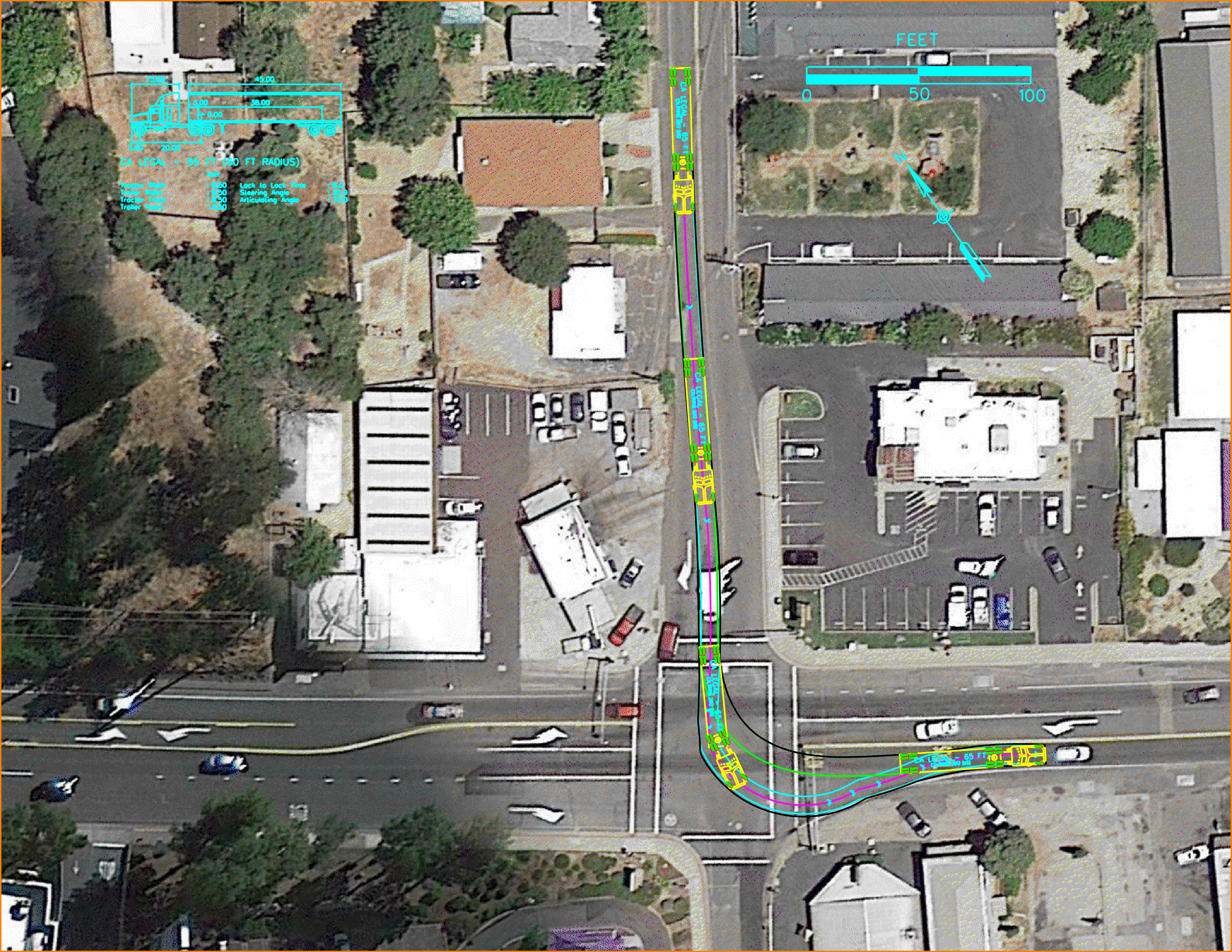
Kenneth D. Anderson, P.E.,
President

Attachments: Truck turns, map

RoofScreen Assessment.ltr

KDA


FEET
0
50
100
CA LEGAL – 65 FT (50 FT RADIUS)
Feet
Tractor Width : 8.50
Trailer Width : 8.50
Tractor Track : 8.50
Trailer Track : 8.50
Lock to Lock Time : 6.0
Steering Angle : 20.0
Articulating Angle : 70.0
45.00
38.00
20.00


FEET
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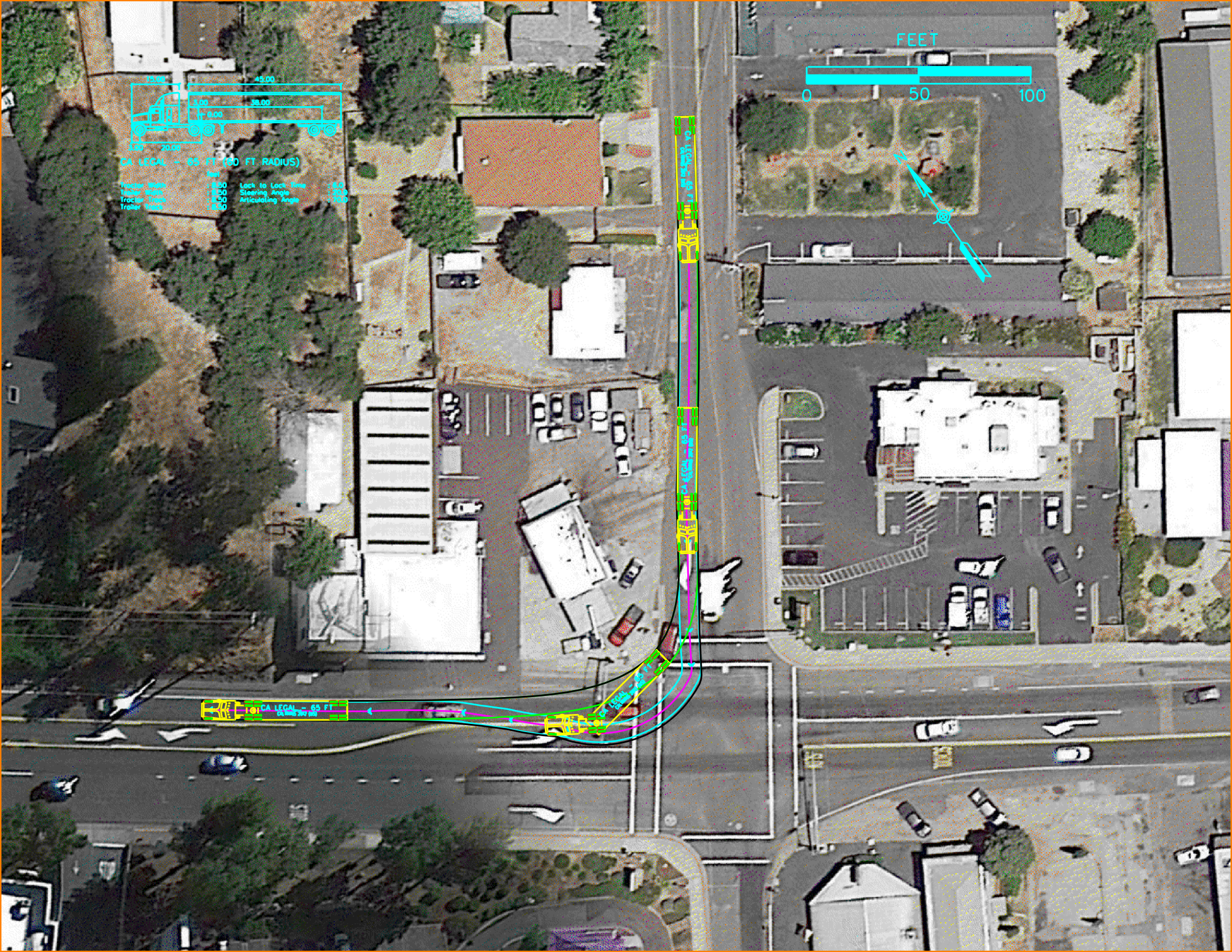
20.00
CA LEGAL - 65 FT (60 FT RADIUS)
feet
Tractor Width : 8.50
Trailer Width : 8.50
Tractor Track : 8.50
Trailer Track : 8.50
Lock to Lock Time : 6.0
Steering Angle : 20.9
Articulating Angle : 70.0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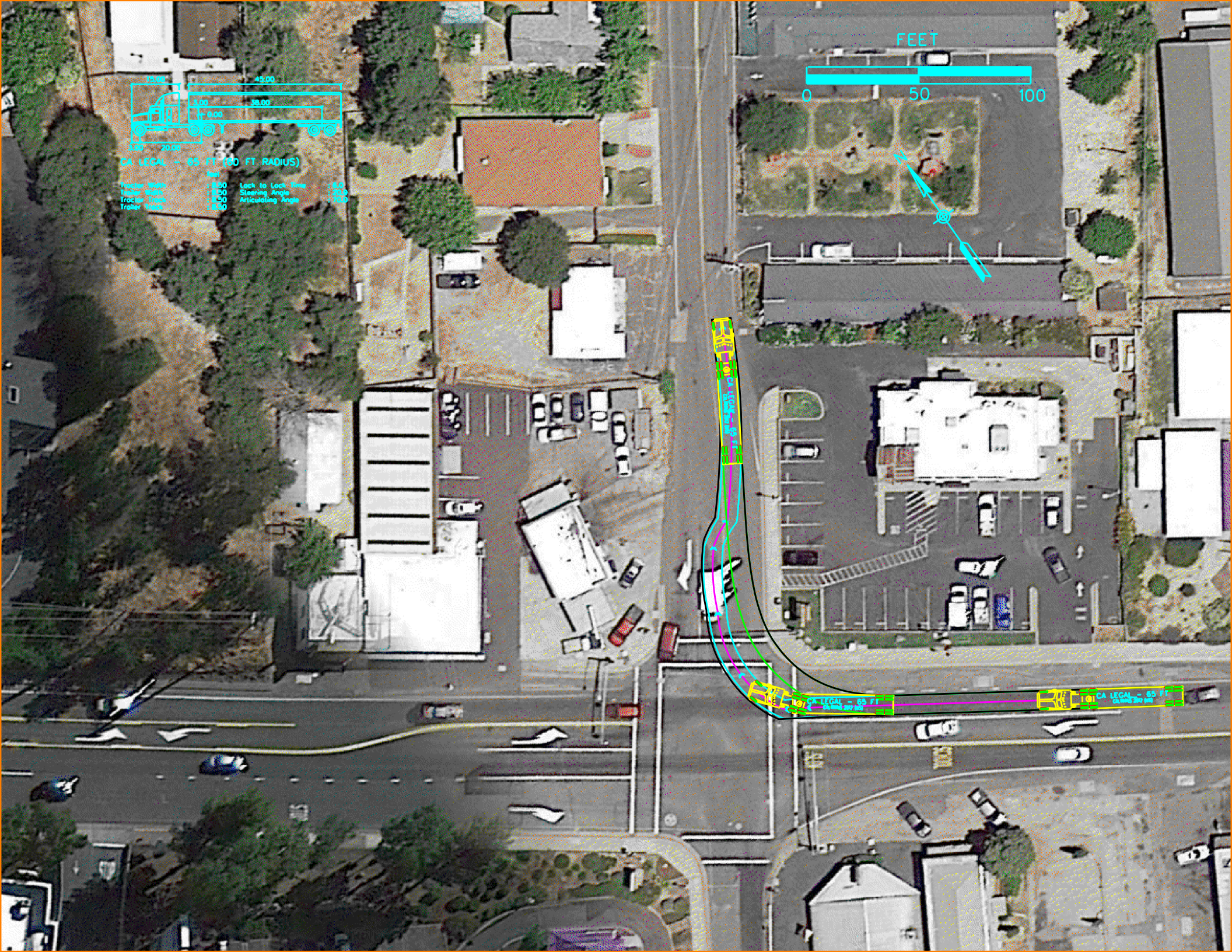
CA LEGAL – 65 FT (50 FT RADIUS)
Lock to Lock Time
Steering Angle
Articulating Angle
CA LEGAL – 65 FT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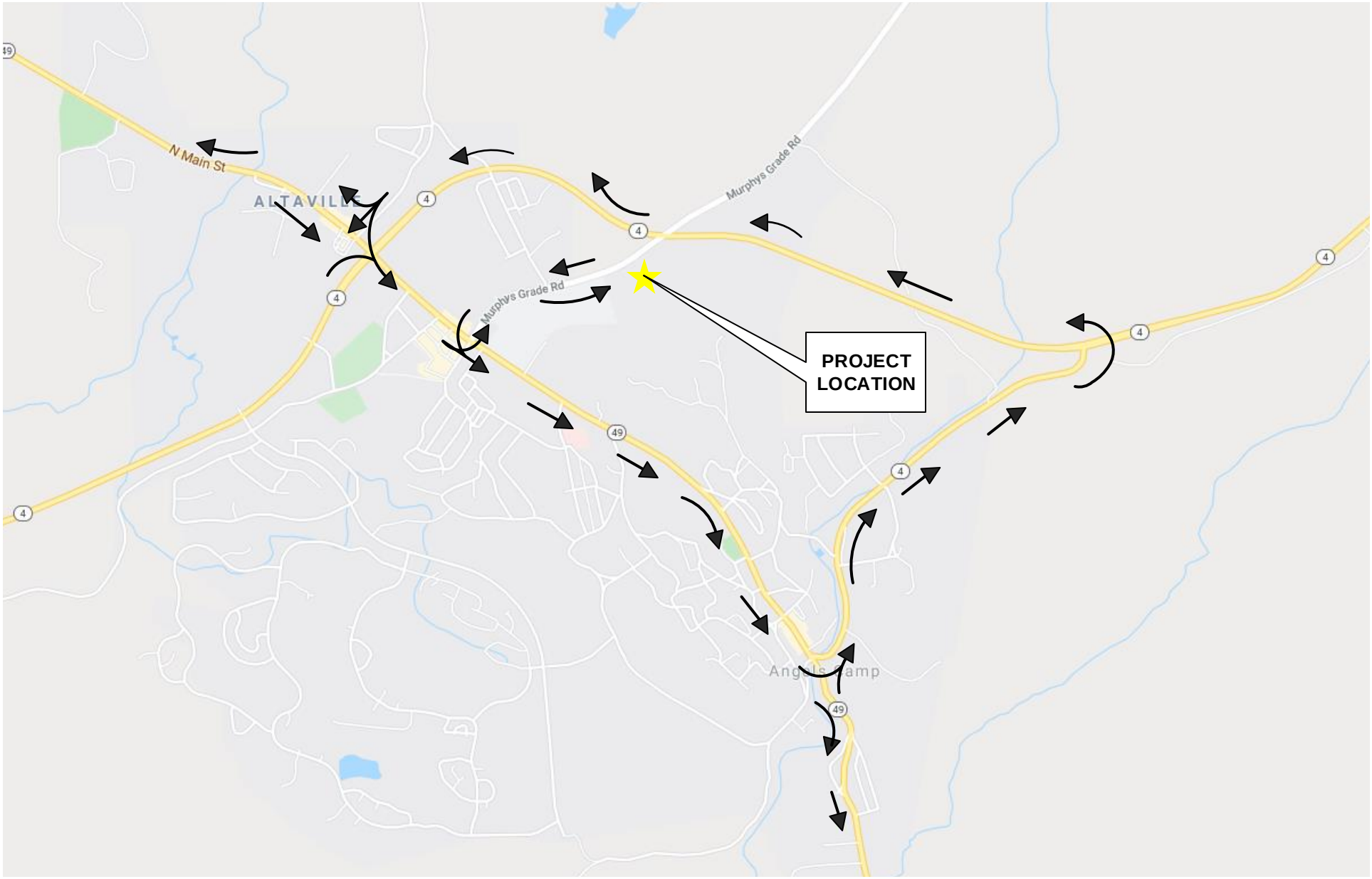
CA LEGAL - 65 FT (50 FT RADIUS)
Unit
Tractor Width : 8.50
Trailer Width : 8.50
Tractor Track : 8.50
Trailer Track : 8.50
Lock to Lock Time : 6.0
Steering Angle : 20.0
Articulating Angle : 70.0
45.00
38.00
8.00
20.00
CA LEGAL - 65 FT
CA LEGAL - 65 FT



TRUCK ROUTES NEEDED TO ACCOUNT FOR SR 49
AND MURPHYS GRADE RD TURN LIMITATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

1170-01 RA 3/2/2020

figure 1

From: Amy Augustine
To: "Tonze, Gregoria@DOT"; Schrader, Kevin@DOT
Cc: Amber Collins; "Melissa Eads"
Subject: Roofscreen Truck Turns
Date: Wednesday, April 22, 2020 11:50:33 AM
Attachments: Existing with Aerial Combined.pdf
image001.png
image002.png

Hi Gregoria and Kevin:

Hoping that the attached and the following resolves the truck-turning issue at Murphys Grade Road/SR 49 to avoid any further delays in sending the environmental document for the RoofScreen Project to the State Clearinghouse. The City feels that this new information provides a high level of confidence that the proposed truck turn can be accommodated. Your concurrence would be greatly appreciated. Please call me if you have any questions or need additional information.

Attached is a refined version of truck turn movements at the Murphys Grade Road/SR 49 intersection and following is input from the City Engineer (Dewberry/Drake Hagland).

RE: Truck Turn Question from Murphys grade road

RM Ramirez, Miguel <MRamirez@Dewberry.com>
To Amy Augustine
Cc Maxwell, Jennifer; Neilon, Rebecca

Reply | Reply All | Forward | ...
Wed 4/22/2020 10:18 AM

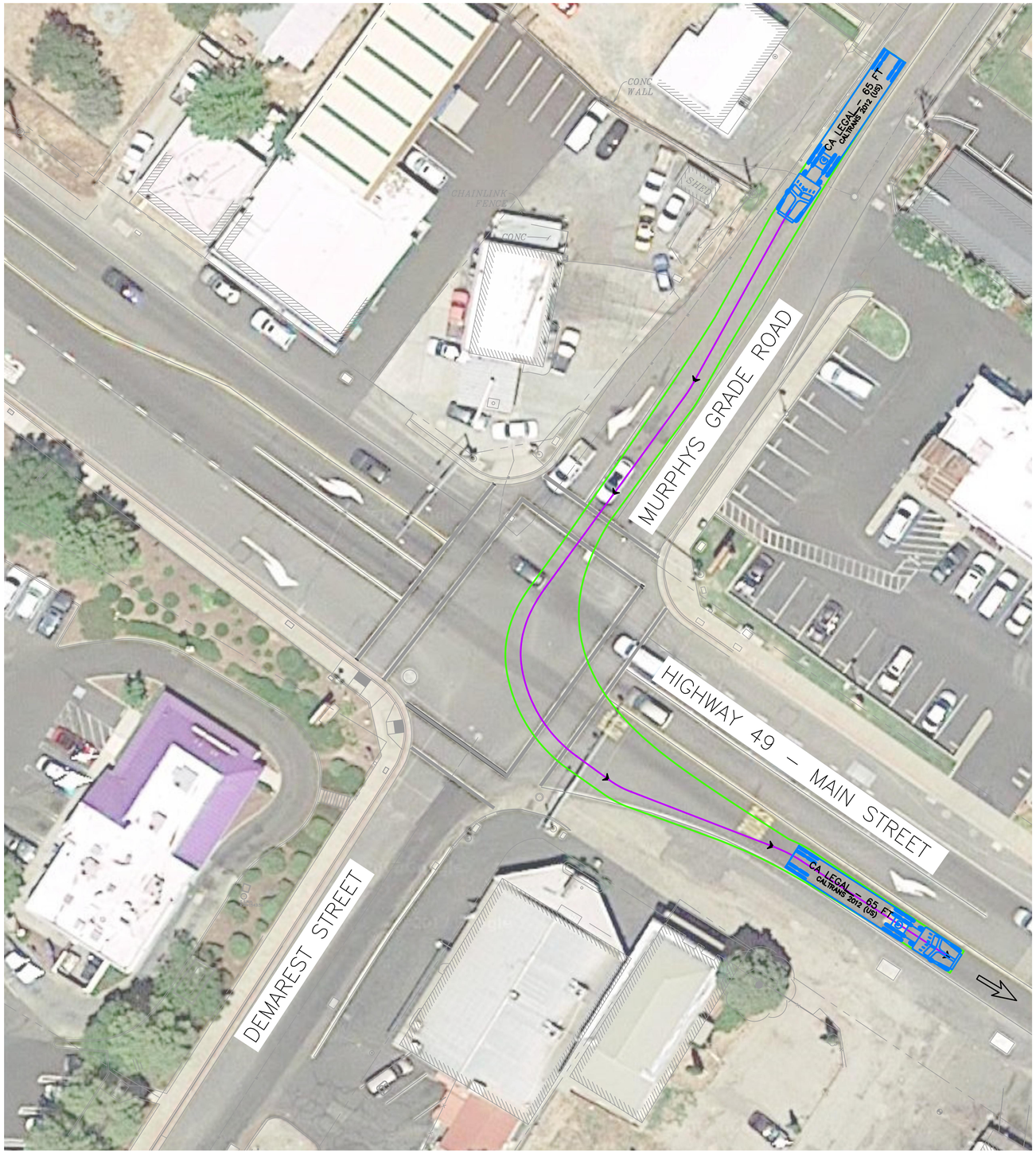
Good morning Amy,

Thanks for clarifying a bit more with regards to the "dip" in front of Mike's Pizza. Like Rebecca mentioned, our project is not doing any improvements inside of the Caltrans Right of Way and this "dip" is located inside of the Caltrans Right of Way.

To help expand a bit more on this item, based on the updated truck turns, it appears that a CA-Legal truck can make a left turn from Murphys Grade to southbound SR49 in the existing conditions. The truck turns show that trucks would be hugging the existing white stripe without having to off track into the "dip" which is just outside of the white stripe. See pictures below:

Miguel A. Ramirez, PE
Project Manager
Dewberry | Drake Haglan
11060 White Rock Road, Suite 200 | Rancho Cordova, CA 95670
Main Office: 916.363.4210 | Direct Dial: 916.822.3968
Email: mramirez@dewberry.com
www.dewberry.com

Amy Augustine, AICP
Augustine Planning Associates, Inc.
270 S. Barretta, Suite C
P.O. Box 3117
Sonora, CA 95370
(209) 532-7376
(209) 743-2323 (cell)
tuolandplanner@gmail.com



LEGEND

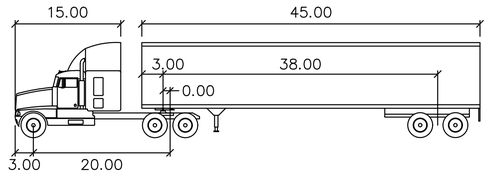
VEHICLE BODY ENVELOPE

CENTER PATH

DIRECTION OF TRAVEL

CA LEGAL – 65 FT

DESIGN VEHICLE

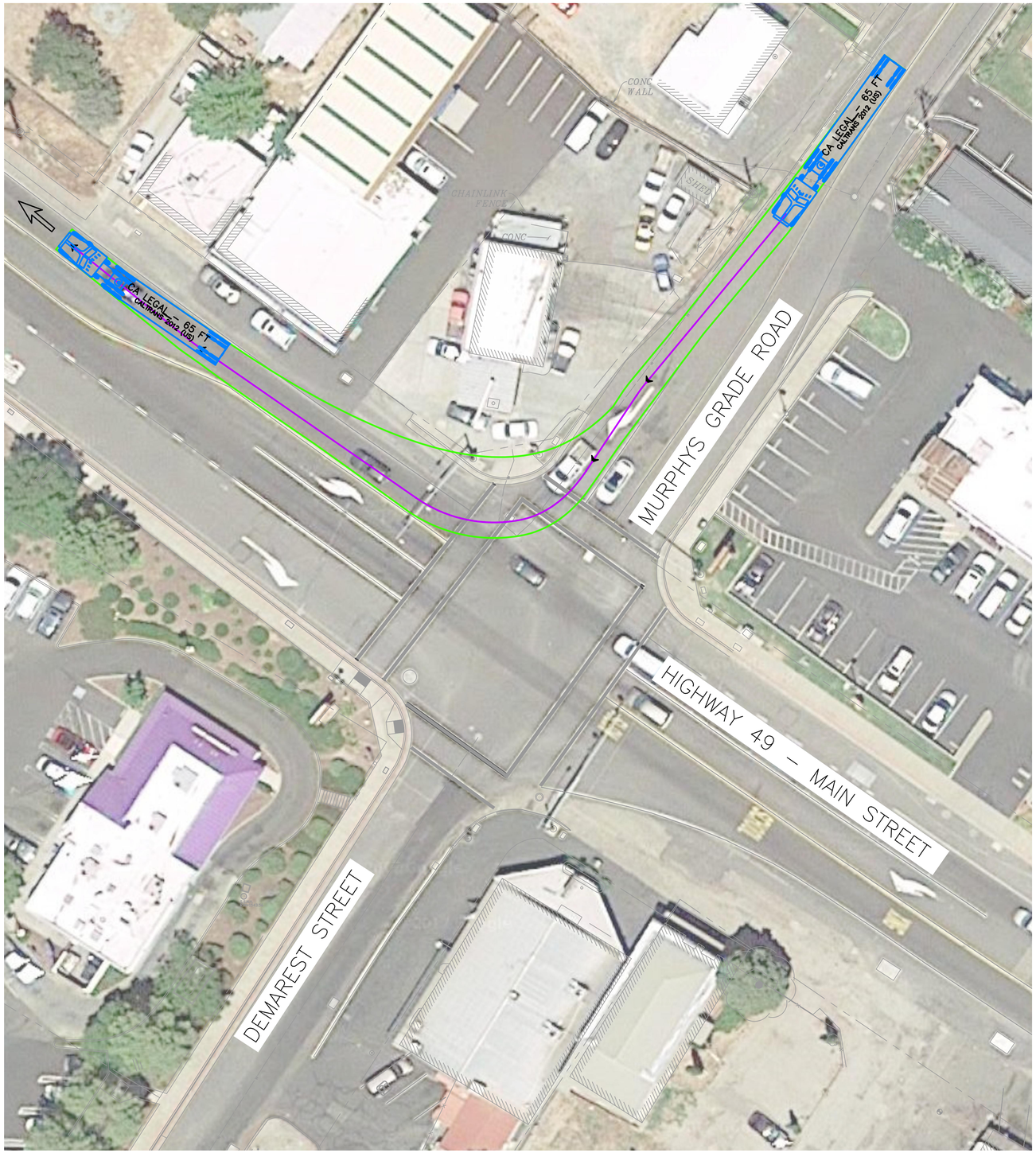


CA LEGAL – 65 FT

feet

Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.3
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

MURHPYS GRADE ROAD
EXISTING TRUCK TURN EXHIBIT



LEGEND

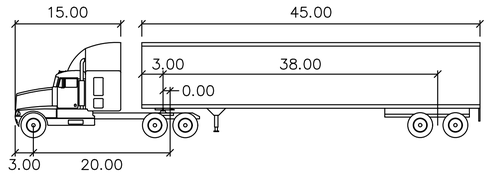
VEHICLE BODY ENVELOPE

CENTER PATH

DIRECTION OF TRAVEL

CA LEGAL – 65 FT

DESIGN VEHICLE



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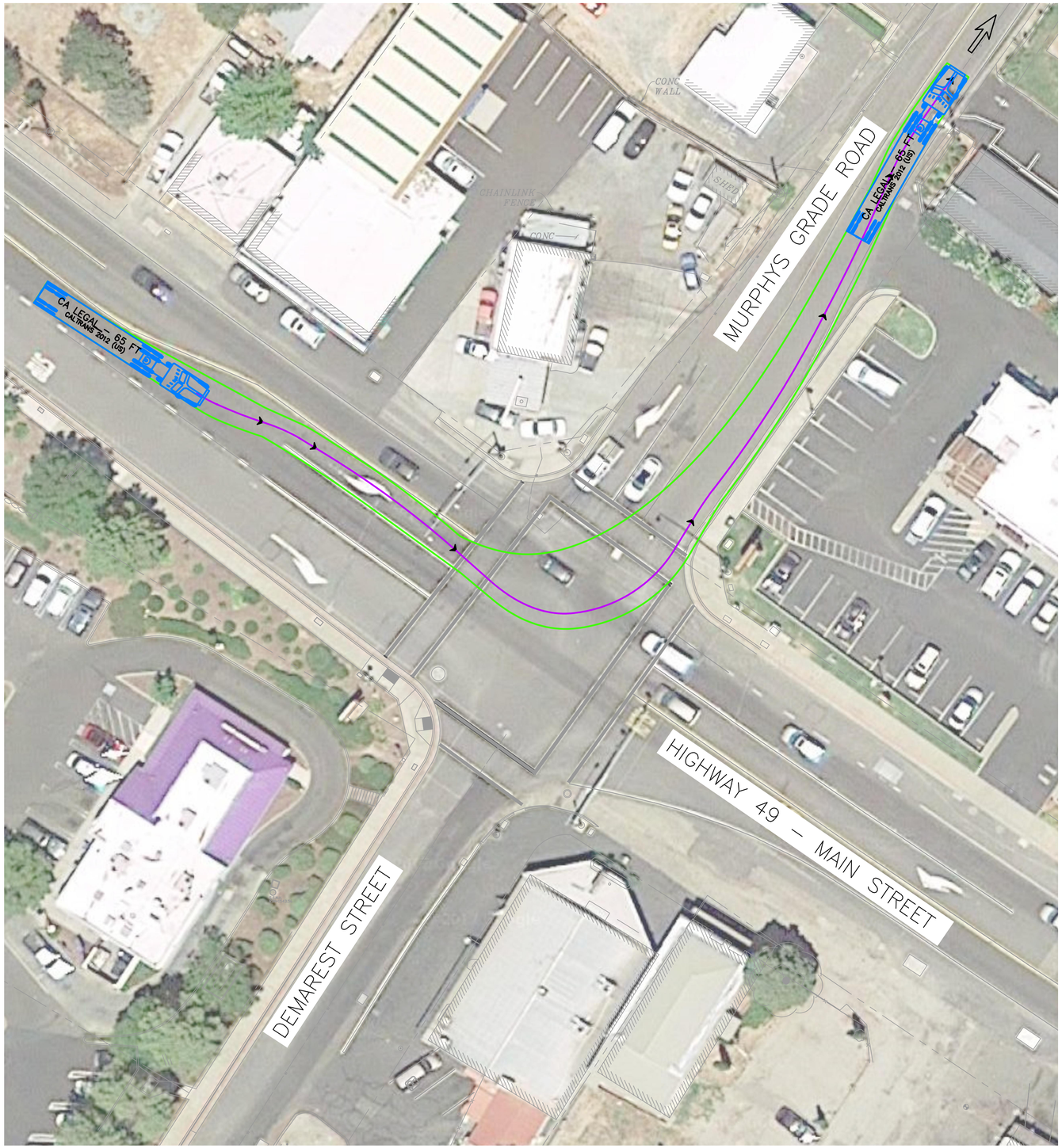
MURHPYS GRADE ROAD
EXISTING TRUCK TURN EXHIBIT



LEGEND

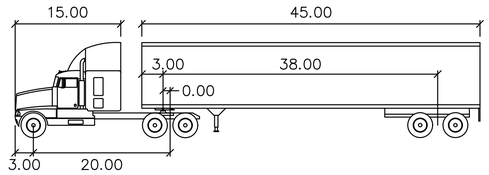
VEHICLE BODY ENVELOPE

CENTER PATH

DIRECTION OF TRAVEL

CA LEGAL – 65 FT

DESIGN VEHICLE



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MURHPYS GRADE ROAD
EXISTING TRUCK TURN EXHIBIT

LEGEND

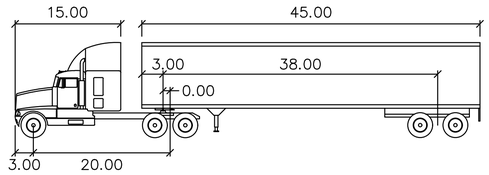
VEHICLE BODY ENVELOPE

CENTER PATH

DIRECTION OF TRAVEL

CA LEGAL – 65 FT

DESIGN VEHICLE



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Trailer Track	: 8.50		

MURHPYS GRADE ROAD
EXISTING TRUCK TURN EXHIBIT

KD Anderson & Associates, Inc.
Transportation Engineers

May 19, 2020

Ms. Amy Augustine
CITY OF ANGELS CAMPS
P.O. Box 667
Angels Camp, CA 95222

RE: TRAFFIC ACESSS ASSESSMENT FOR ROOFSCREEN'S FACILITY ON MURPHY'S GRADE ROAD, ANGELS CAMP, CALIFORNIA.

Dear Ms. Augustine:

As requested, I have reviewed Caltrans District 10's May 15, 2020 letter regarding the Roofscreen project. As we have discussed, the project proposes roughly 26.4 ksf of buildings and will employ 15 people at 668 Murphy's Grade Road. We understand from the project application that on a weekly basis, an average of 6-8 tractor trailer combinations will visit the site and 2-3 flatbed trucks. This traffic will pass through the SR 49 / Murphy's Grade Road intersection on its way to and from the site.

Caltrans District 10 has asked about the adequacy of the SR 49 / Murphy's Grade Road intersection for truck traveling to and from the site. To respond we plotted the paths of Cal Legal truck moving onto and off of Murphy's Grade Road at the intersection. It was clear from this information that a Cal Legal truck can turn left from southbound SR 49 and go out Murphy's Grade Road to the site and that the truck can also turn left from Murphy's Grade Road onto SR 49 towards Sonora. However, the corresponding right turns are not possible. Site traffic will be conditioned to follow routes that do not require those right turns. This information was directed to Caltrans and reviewed by Dewberry / Drake Haglan, the engineer working on an improvement project at the intersection.

As noted in the May 15, 2020 letter District 10 has determined that the path of a truck making a left turn from Murphy's Grade Road onto southbound SR 49 could encroach into the shoulder area on the southwestern corner of the intersection (i.e., "hugging" the existing striped line). As noted by Caltrans, if the shoulder area (i.e., the dip"), is not improved beyond current conditions to match the same roadway thickness, greater deterioration of pavement within the dip will continue.

To address this issue we recommend that the Roofscreen project proponents contribute to the cost of maintenance in this area. Review of the area suggests that if an overlap was to be installed 2,000 to 2,250 square feet of shoulder – roadway area may be involved. Assuming a unit cost of $3 to $4 per square foot, the cost could be in the range of $7,500. A condition of approval could be:

Prior to issuance of a certificate of occupancy, the project proponent shall pay $7,500 to the City to offset impacts to pavement result from added truck traffic at the Murphys Grade Road / SR 49 intersection. The monies shall be maintained in a separate account by the City (or placed on account with Caltrans if acceptable to Caltrans) for use by Caltrans for pavement maintenance at the Murphys Grade Road / SR 49 intersection when requested by Caltrans.

Thank you again for contacting our firm. Please feel free to contact me if you have any question or need more information.

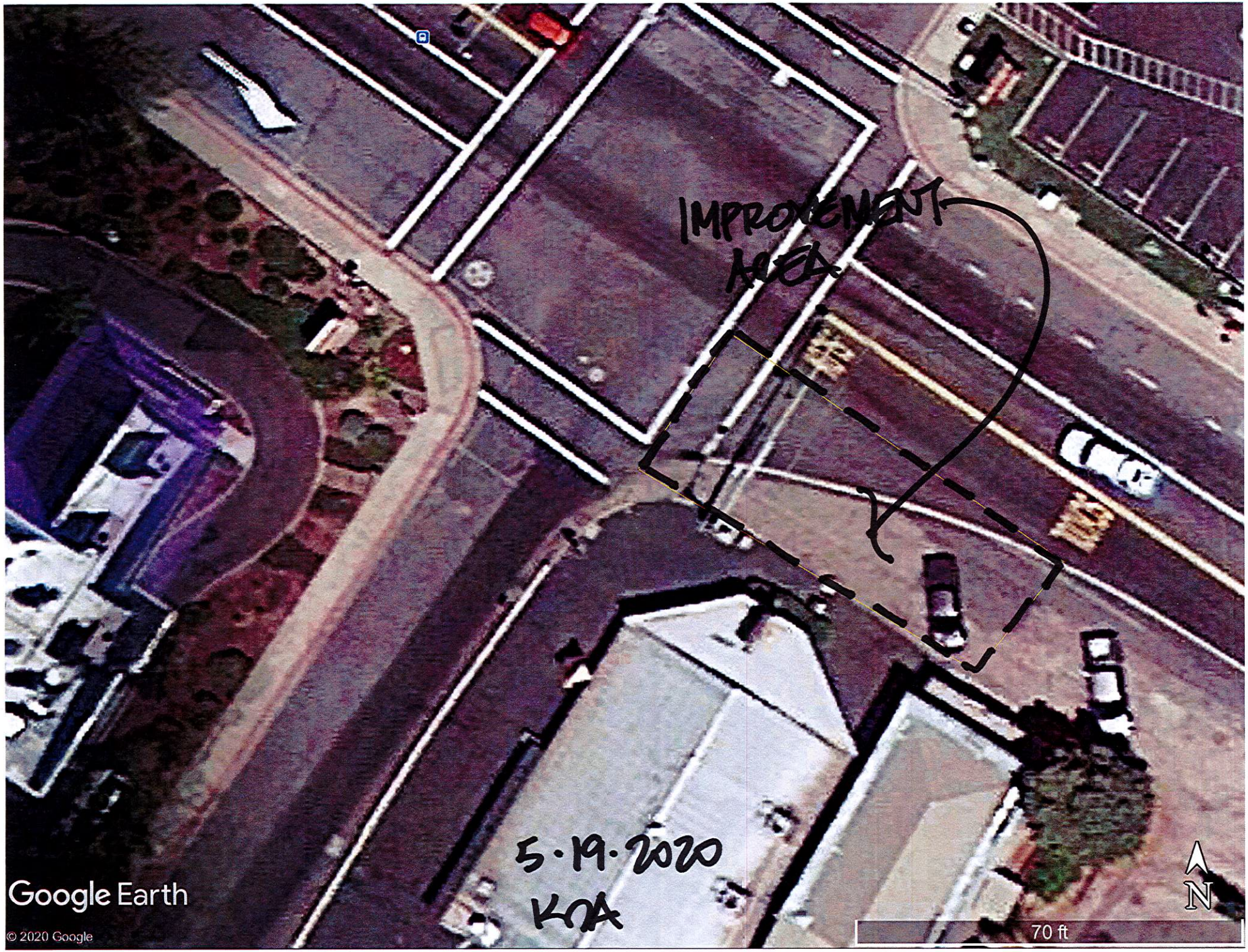
Sincerely yours,

KD Anderson & Associates, Inc.

Kenneth D. Anderson, P.E.,
President

Attachments: map of improvements area

KDA


IMPROVEMENT AREA
5.19.2020
KOA
Google Earth
© 2020 Google
70 ft
N

Attachment G – Mitigation Measures

NOTE: Mitigation measures identified in the Initial Study are included here. Mitigation monitoring provisions will be finalized in the table in conjunction with preparing Response to Comments for the Public Hearing Draft of the environmental document. A partial list of project conditions of approval in addition to mitigation measures are included (follows footnotes).

Mitigation Monitoring and Reporting Plan *RoofScreen – Angels Camp, CA* *DRAFT IS/MND June 17, 2020*							
Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
Aesthetics							
AES-1	**AES-1: Pole Light Design** A revised lighting plan incorporating an alternative pole light design consistent with the rural setting will be submitted to the Planning Department for review and approval. Examples of appropriate designs (e.g., bell pendant) are found at the Mark Twain Medical Center on Stanislaus Avenue (See **Attachment B**). **AES-1 Mitigation Monitoring** A revised lighting plan shall be submitted to the Planning Department for review and approval prior to issuance of a building permit. The measure is the responsibility of the Project Contractor.						

AES-2	**Mitigation Measure AES-2: Oak Tree Protection Area** An oak tree protection area (**Figure 1**) is established to encompass a minimum distance encompassing the driplines of native oaks along the eastern parcel boundary in association with the intermittent drainage. Where feasible, 1-1/2 times the dripline shall be protected. Vegetation within the Oak Tree Protection Area shall comply with the following: a) Prior to site disturbance (i.e. issuance of a grading or building permit, vegetation removal, whichever occurs first); applicant shall erect environmentally sensitive area (ESA) exclusionary fencing (e.g., orange safety fencing) encompassing, at a minimum, the driplines of all native oaks to be retained on site and, where feasible, a distance of 1-1/2 times the dripline of oaks to be protected. Fencing shall remain in place until issuance of an occupancy permit unless otherwise authorized by the City Planner. b) No equipment or materials will be parked or stored within the oak tree protection area. c) No fill shall be stored or occur within the oak tree protection area. d) No soil disturbances shall occur within the oak tree protection area unless otherwise provided herein. e) If the applicant requires encroachment into the oak tree protection area, the Applicant shall hire a qualified arborist, approved by the City and at applicant's expense, to consult with the City and contractor to identify methods for undertaking activities within the driplines if necessary while ensuring the long-term survival of the oaks (e.g., boring rather than trenching for utilities). The City has the discretion to waive requirements for an arborist where construction methods will comply with those identified in the publication: *Protecting Trees During and After Construction* - UC Cooperative Extension in the opinion of the City Planner. Where the Project Proponent may disagree with the recommendations of the arborist, the City Planner's determination shall prevail. f) Utility or other trenching or soil disturbances (including fill) within the tree protection zone is prohibited unless no other feasible alternative exists. If unavoidable, work shall be accomplished under the supervision and per the recommendations of the project arborist. g) No grading or grade changes will occur in the oak tree protection area. If unavoidable, work shall be accomplished under the supervision and per the recommendations of the project arborist. h) Irrigated landscaping shall not be installed within the oak tree protection area. i) Tree trimming, grass cutting, shrub removal as necessary to separate fuels and maintain wildland fire safety is permitted within the Oak Tree Protection Zone. **Mitigation Monitoring AES-2**. Prior to commencing site disturbance, the City Planner shall verify that all ESA fencing has been installed in compliance with this condition. The preservation of oaks in the oak protection area will be implemented throughout Project construction and the life of the Project. The measure is the responsibility of the Project Proponent and contractor. Compensation in accordance with the City's Oak Tree and Heritage Tree ordinance is required for encroachments into driplines of oaks in the oak tree protection area where such encroachment is likely to result in shortening the lifespan of the tree.						
	Mitigation Measure AES-3: Vegetation Management for Wildland Fire Protection Throughout the life of the project, on site vegetation throughout the entire project site (i.e., including natural vegetation areas) shall be maintained as necessary to reduce wildland fire hazard. The landowner shall be responsible for cutting grasses to below 4" in height,						

Mitigation Monitoring and Reporting Plan *RoofScreen – Angels Camp, CA* *DRAFT IS/MND June 17, 2020*							
Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
	trimming tree branches, removing dead and dying vegetation as necessary to separate ladder fuels, and other measures as deemed necessary by the City Fire Marshall. **Mitigation Monitoring AES-3**: **Vegetation Management for Wildland Fire Protection** A Notice of Action will be recorded for this project to notify future landowners of this requirement.						

Mitigation Monitoring and Reporting Plan RoofScreen – Angels Camp, CA DRAFT IS/MND June 17, 2020							
Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
	Mitigation Measure AES-4: Utility Screening Throughout the life of the project, all electrical infrastructure, communications equipment, generators, mechanical devices, trash and recycling areas, HVAC equipment and other elevated support facilities shall be screened from view of adjacent landowners and public rights-of-way using landscaping, lattice, architectural features or similar screening. Prior to installing new appurtenances not previously approved on site, the Project Proponent shall submit design details to the Community Development Department for review and approval. **Mitigation Monitoring AES-4**. . A Notice of Action will be recorded for this project to notify future landowners of this requirement.						
	Mitigation Measure AES-5. Signage Lighting / Size / Location Prior to sign installing signage, a final sign plan shall be submitted to the Planning Department for review and approval. If interior lit, the sign shall be designed to avoid glare onto Murphys Grade Road and adjoining parcels. The sign shall not exceed 8 feet in height. Signage shall be located outside of the Murphys Grade Road right-of-way and shall not hinder site distance. Total signage for the project, including detached signage, shall not exceed 90 square feet. **Mitigation Monitoring AES-5**. A Sign Permit shall be secured from the Community Development prior to installing any signage on site. Should the sign create glare hindering traffic along Murphys Grade Road in the opinion of the CHP or City of Angels PD, the sign shall be altered to be externally lit.						
	Mitigation Measure: AES-6 Site Lighting Throughout the life of the project: all exterior lighting will be shielded, aimed downward. **Mitigation Monitoring AES-6:** The measure is the responsibility of the Project Proponent. A Notice of Action will be recorded for this project to notify future landowners of this requirement.						
Air Quality							

Mitigation Monitoring and Reporting Plan RoofScreen – Angels Camp, CA DRAFT IS/MND June 17, 2020							
Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
AQ-1	**Mitigation Measure AQ-1: Dust Control** Throughout project construction, including demolition, site clearing, grading and associated activities, the Project Proponent and Construction Contractor shall be responsible for dust abatement including: A. A water truck shall be present on the construction site throughout construction activities and shall be available for use on all working days when natural precipitation does not provide adequate moisture for complete dust control. Said watering device shall be used to spray water on the site at the end of each day and at all other intervals, as need dictates, to control dust. All fugitive dust emissions caused by land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled using application of water. B. All material excavated and stockpiled onsite and/or graded shall be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. C. All land clearing, grading, earth moving, or excavation activities shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph. D. All material transported off-site shall be either sufficiently watered or securely covered to prevent public nuisance and/or visible dust plumes. E. Vehicular traffic speeds on unpaved surfaces shall not exceed 10 miles per hour. **Mitigation Monitoring AQ-1:** The required mitigation measure will be implemented throughout Project construction. The measure, which is the responsibility of the Project Proponent, shall be included on the construction plans.		Throughout Project construction – include on construction plans	Throughout Project construction	Project Proponent		
AQ-2	**Mitigation Measure AQ-2: Open Burning** Alternatives to open burning of vegetative material will be used during vegetation clearing and grubbing activities, unless otherwise deemed infeasible by the CCAPCD. Suitable alternatives include chipping, mulching, or conversion to biomass fuel. **Mitigation Monitoring AQ-2:** The required mitigation measure will be implemented during clearing and grubbing. The measure is the responsibility of the Project Proponent.						

Mitigation Monitoring and Reporting Plan RoofScreen – Angels Camp, CA DRAFT IS/MND June 17, 2020							
Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
AQ-3	**Mitigation Measure AQ-3 Authority to Construct/Operate Permit** Prior to issuance of a grading permit, the applicant shall obtain an authority to Construct Permit or confirmation that one is not required from the Calaveras County Air Pollution Control District. Prior to issuance of a final occupancy permit, the applicant shall obtain a Permit to Operate or confirmation that one is not required from the Calaveras County Air Pollution Control District. **Mitigation Monitoring AQ-3:** The required mitigation measure will be implemented prior to issuance of a grading permit (for construction) and prior to issuance of a final occupancy permit (for operations). The measure is the responsibility of the Project Proponent.						
AQ-4	**Mitigation Measure AQ-4: Equipment Emissions** Throughout Project construction and throughout the life of the project, the Project Proponent shall be responsible for equipment emissions including: A. Ensuring that all construction equipment and vehicles are properly tuned and maintained and that low-sulfur fuel is used in all construction equipment as provided in California Code of Regulations (CCR) Title 17, Section 93114 (Compliance with Caltrans' Standard Specifications, Section 14-9). B. Heavy-duty diesel-powered construction equipment is prohibited from idling for more than five minutes during periods when the equipment is not in use. C. Grid (electrical) power shall be used (as opposed to diesel generators) for job site power needs where feasible during construction. **Mitigation Monitoring AQ-4:** The required mitigation measure will be implemented throughout Project construction and throughout the life of the project. The measure is the responsibility of the Project Proponent.						
AQ-5	**Mitigation Measure AQ-5: OSHA Compliant fume extractor** Project design shall incorporate an OSHA compliant fume extractor. The fume extractor shall be present throughout the life of the project so long as fumes are produced by the manufacturing process. **Mitigation Monitoring AQ-5:** The required mitigation measure shall be installed prior to issuance of a certification of occupancy and will be implemented throughout the life of the project so long as fumes are generated. The measure is the responsibility of the Project Proponent.						
Biological Resources							

Mitigation Monitoring and Reporting Plan RoofScreen – Angels Camp, CA DRAFT IS/MND June 17, 2020							
Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
BIO-1	**Avoidance and Minimization Measure BIO-1: Preconstruction Surveys Birds** Prior to construction occurring between February 1st and August 30th (e.g., staging, excavation, ground disturbance, or vegetation removal) a preconstruction survey for nesting birds will be conducted by a qualified biologist in accordance with the CDFW guidelines and a no-disturbance buffer will be established, if necessary. If equipment staging, site preparation, vegetation removal, grading, excavation or other project-related construction activities are scheduled during the avian nesting season (generally February 1 through August 30), a focused survey for active nests would be conducted by a qualified biologist within 15 days prior to the beginning of project-related activities. Surveys shall be conducted in all suitable habitat in the BSA. If an active nest is found, the bird shall be identified to species and the approximate distance from the closest work site to the nest estimated. No additional measures need be implemented if active nests are more than the following distances from the nearest work site: (a) 300± feet for raptors; or (b) 75± feet for other non-special-status bird species. Disturbance of active nests shall be avoided to the extent possible until it is determined that nesting is complete, and the young have fledged. For species protected under the California Fish and Game Code (CFGC), if active nests are closer than those distances to the nearest work site and there is the potential for bird disturbance, CDFW will be contacted for approval to work within 300± feet of raptors, or 75± feet of other non-special-status bird species. **Mitigation Monitoring BIO-1**: The required mitigation measure will be incorporated into the project bid package and contract. Surveys will occur within 15 days of commencing construction that occurs between February 1st and August 30th. The measure is the responsibility of the construction contractor and project biologist.						

Mitigation Monitoring and Reporting Plan *RoofScreen – Angels Camp, CA* *DRAFT IS/MND June 17, 2020*							
Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
BIO-2	**Avoidance and Minimization Measure BIO-2: Preconstruction Surveys Suitable Special Status Bat Roosting (or Nursery) Areas & Provisions for Protection, if Identified** • 15 days or less before commencing ground-disturbing activities between April and September of the construction year, a qualified biologist will survey snags, trees, rock crevices and other suitable cavities (i.e., the rhyolite cliffs in the cut bank along the northern end of the creek) and structures in the area for special status roosting bat colonies or bat nurseries. An evening survey shall be conducted. • If special status bats are not found and there is no evidence of special status bat use, construction may proceed. If special status bats are found or evidence of use by special status bats is present, CDFW shall be consulted for guidance on measures to avoid or minimize disturbance to the colony or nursery. Consideration will be given to existing conditions surrounding the occupation site (e.g., existing noise and vibrations). Subject to CDFW approval, measures may include, but are not limited to, establishing construction buffers from bat occupation sites and excluding bats from roosts before construction begins. If nurseries for special status bats are discovered, no work will occur within buffer areas until all young are self-sufficient and have left the nursery. **Mitigation Monitoring BIO-2:** The required mitigation measure will be incorporated into the project bid package and contract. Surveys will occur within 15 days of commencing construction that occurs between April and September. The measure is the responsibility of the construction contractor and Project biologist.						
BIO-3	**Avoidance and Minimization Measure BIO-3: Hours of Construction.** Project construction shall be limited to 7:00 a.m. to 7:00 p.m. unless an emergency situation exists. **Mitigation Monitoring BIO-3**: The required mitigation measure will be implemented throughout Project construction. The measure is the responsibility of the construction contractor.						

Mitigation Monitoring and Reporting Plan *RoofScreen – Angels Camp, CA* *DRAFT IS/MND June 17, 2020*							
Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
BIO-4	**Avoidance and Minimization Measure BIO-4: Avoid Inadvertent Animal Trapping During Construction** To avoid inadvertently trapping special status or common animal species during construction, all excavated steep-walled holes or trenches more than two feet deep shall be covered at the end of each working day with plywood or similar material, or provided with one or more escape ramps constructed of earth fill or wooden planks, or equivalent, at each end of the trench. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a tapped animal is discovered, the contractor shall place an escape ramp or other appropriate structure to allow the animal to escape. Alternatively, the contractor shall contact the project biologist or California Department of Fish and Wildlife for assistance. Similarly, stored pipes or other materials providing potential cover for animals will be inspected prior to installation or use to ensure that they are unoccupied. **Mitigation Monitoring BIO-4**: The required mitigation measure will be implemented throughout project construction. The measure is the responsibility of the construction contractor.						
BIO-5	**Avoidance and Minimization Measure BIO-5: Food and Trash Disposal During Construction** All food and food-related trash will be enclosed in sealed trash containers at the end of each workday and removed completely from the construction site every day to avoid attracting wildlife. **Mitigation Monitoring BIO-5:** The required mitigation measure will be implemented throughout project construction. The measure is the responsibility of the construction contractor.						

Mitigation Monitoring and Reporting Plan *RoofScreen – Angels Camp, CA* *DRAFT IS/MND June 17, 2020*							
Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
BIO-6	**Avoidance and Minimization Measure BIO-6: Environmental Awareness Training** Construction bid packages and contractual requirements shall include a requirement for tail-gate training by the project's designated qualified biologist and cultural resource professionals. All contractors involved in site development and environmental specialists will attend a mandatory Environmental Awareness Training prior to any site disturbances. The program will address proper implementation of minimization and avoidance measures contained herein including, but not limited to: • Nesting birds • Avoiding inadvertent animal trapping • Site maintenance • Controlling invasive species • Handling leaks and spills • Fencing environmentally sensitive areas • Native Oak Tree Protection measures (avoiding driplines, no equipment or materials storage in driplines, avoid cutting oak roots, avoid equipment damage to limbs, trunks, and roots of oaks trees; do not attach signs, ropes, cables or other items to trees) • Cultural resources training to inform construction personnel of the types of cultural resources they may encounter, the laws protecting those resources, and the standard protocols to be implemented. • Hazardous materials response **Mitigation Monitoring BIO-6**: The required mitigation measure will be implemented throughout project construction. The Project Biologist (or Project Archaeologist) shall have the authority to stop work or remove any construction worker on site that has not completed training. The measure is the responsibility of the construction contractor.						

Mitigation Monitoring and Reporting Plan RoofScreen – Angels Camp, CA DRAFT IS/MND June 17, 2020							
Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
BIO-7	**Avoidance and Minimization Measure BIO-7: Erosion Control Plan/Best Management Practices (BMPs) to Protect Water Quality (Including NOI/NPDES/SWPPP)** • The Contractor shall prepare an Erosion Control Plan for implementation for any construction to take place between October 15 and May 15 of any year. In the absence of such an approved plan, all construction shall cease on or before October 15, except that necessary to implement erosion control measures. • Submit to the State Water Resources Control Board Storm Water Permitting Unit, a Notice of Intent (NOI) to obtain coverage under the General Construction Activity Storm Water Permit - California's National Pollution Discharge Elimination System (NPDES) general permit for construction related storm water discharges for the disturbance of one acre or more. Disturbances of less than one acre may also require an NOI for coverage under the NPDES General Permit for construction-related storm water discharge and the State Water Resources Control Board Permitting Unit shall be contacted for determination of permit requirements. Commercial and Industrial developments may require an NOI even if less than one acre is to be disturbed. Obtain coverage or an exemption from these requirements. [Federal Water Pollution Control Act, Section 401, California Clean Water Act]. The permit may include preparation of a Stormwater Pollution Prevention Plan (SWPPP). **Mitigation Monitoring BIO-7**: The required mitigation measure will be incorporated into the project bid package and contract. Erosion control plan to be completed prior to October 15th. NOI/NPDES to be secured prior to ground disturbance. Implemented and maintained throughout project construction. The measure is the responsibility of the construction contractor.						
BIO-8	**Avoidance and Minimization Measure BIO-8: Install Barrier /Silt Fencing to Protect Water Quality** Prior to implementing staging, construction, or ground disturbing activities: Install temporary silt fencing, fiber rolls, or equivalent erosion and sediment control devices as necessary to protect water quality. Silt fencing or other materials, as required, will be installed consistent with the applicable water quality requirements specified in the Project's Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Plan (WPCP). Fencing or other erosion control materials or devices shall be shown on the final construction documents. These areas will be monitored by the project manager throughout construction. **Mitigation Monitoring BIO-8**: The required mitigation measure will be implemented prior to ground disturbance and maintained throughout project construction. The measure is the responsibility of the construction contractor. Proper implementation of the preceding is expected to minimize or avoid impacts to water quality to a level of less than significant.						

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Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
BIO-9	**Mitigation Measure BIO-9: Oak Tree and Heritage Tree Preservation Ordinance** Prior to issuance of an occupancy permit, the Project Proponent shall provide one or a combination of the following to mitigate for the removal of 52 native oak trees of 9" Diameter at Breast Height or greater in size (400 inches TDBH) in accordance with Angels Municipal Code Chapter 17.64: a) Re-plant on-site native oak trees of the same or similar genus as those removed at a ratio of two trees for every one native oak 9" TDBH or greater in size removed. Replacement plantings shall be a minimum 15-gallon size. Subject to approval by the City Planner, up to 20% of the oak trees replanted may be non-native or ornamental oaks as approved by the Planning Commission [e.g., *Quercus Shumardii* or similar]; and/or b) Pay a fee to the City in an amount established pursuant to Chapter 17.64 Guidelines based on 400 TDBH (inches) of native oak trees removed. The total fee shall be 400 X the retail cost of a 15-gallon native oak tree. For the purposes of this calculation, the fee shall be based on the retail cost of a 15-gallon interior live oak. c) If a combination of replanting and fee payments are used, fees shall be estimated based on the percentage of trees planted on site versus the percentage of trees remaining to be planted. For example, if 10 native oak trees are planted on site (9.6% of the 104 trees required to be planted on site), then the total oak tree mitigation fee calculated under paragraph be will be reduced by 9.6% of the required 400 TDBH (400 - 38.4 = 361.6 TDBH). **Mitigation Monitoring BIO-9**. The required mitigation measure will be implemented prior to issuance of an occupancy permit (or Prior to Site Disturbance at the option of the Project Proponent per **Mitigation Measure BIO-10**). The measure is the responsibility of the Project Proponent.						
BIO-10	**Mitigation Measure AES-2 (BIO-10): Oak Tree Protection Area**						
BIO-11/c/	**Mitigation Measure BIO-11 Encroachment within Dripline of Oaks** Encroachment within the dripline of the oaks within the oak tree protection area (Figure 1) may be approved by the City Planner where such encroachment is determined unlikely to threaten the long-term survival of the oak. Said determinations will be guided by the publication: *Protecting Trees During and After Construction* (UC Cooperative Extension) included in footnote /c/. Encroachment more than one-half the distance of the dripline of the tree may require consultation with a qualified arborist, as approved by the City, and at the expense of the project proponent. **Mitigation Monitoring BIO-11**. The required mitigation measure will be included in the bid packet/contractor agreement and implemented throughout Project construction and the life of the Project. The measure is the responsibility of the Project Contractor.						

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Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
BIO-12	**Avoidance and Minimization Measure BIO-12: Minimize the Spread of Invasive Plant Species** Throughout project construction: • All hay, straw, hay bales, straw bales, seed, mulch or other material used for erosion control on the project site shall be free of noxious weed[1] seeds and propagules (Food and Agriculture Code Sections 6305, 6341 and 6461). • All equipment brought to the project site shall be thoroughly cleaned of all dirt and vegetation prior to entering the site to prevent importing noxious weeds and shall be cleaned of all dirt and vegetation prior to exiting the site to prevent exporting noxious weeds. (Food and Agriculture Code Section 5401). All material brought to the site, including rock, gravel, road base, sand, and topsoil, shall be free of noxious weeds7F[2] and propagules. (Food and Agriculture Code Sections 6305, 6341 and 6461). **Mitigation Monitoring BIO-12**: The required mitigation measure will be incorporated into the project bid package and contract and implemented throughout project construction. The measure is the responsibility of the construction contractor.						
Cultural Resources							
CULT-1	**Avoidance and Minimization Measure CULT-1 (BIO-6): Environmental Awareness Training**						

[1] Noxious weeds are as defined in Title 3, Division 4, Chapter 6, Section 4500 of the California Code of Regulations and the California Quarantine Policy – Weeds (Food and Agriculture Code, Sections 6305, 6341, and 6461).
[2] Ibid.

CULT -2	**Mitigation Measure CULT-2: Unanticipated Cultural Resource Discoveries** If a cultural resource is discovered during construction activities, the construction contractor shall comply with the following provisions: A. The person discovering the cultural resource shall notify the project's designated qualified cultural resource professional by telephone within 4 hours of the discovery or the next working day if the department is closed. B. When the cultural resource is located outside the area of disturbance, the project's designated qualified cultural resource professional shall be allowed to photodocument and record the resource and construction activities may continue during this process. The area of disturbance is defined to include grading and vegetation removal areas and/or access roads or processing areas plus 100 feet. C. When the cultural resource is located within the area of disturbance, all activities that may impact the resource shall cease immediately upon discovery of the resource. All activity that does not affect the cultural resource as determined by site's designated qualified cultural resource professional may continue. The project's designated qualified cultural resource professional shall be allowed to conduct an evaluative survey to evaluate the significance of the cultural resource. D. When the cultural resource is determined to be not significant, the project's designated qualified cultural resource professional shall be allowed to photodocument and record the resource. Construction activities may resume after authorization from the project's designated qualified professional. E. When a resource is determined to be significant, the resource shall be avoided with said resource having boundaries established around its perimeter by the project's designated qualified cultural resource professional or a cultural resource management plan shall be prepared by the project's designated qualified professional to establish measures formulated and implemented in accordance with Sections 21083.2 and 21084.1 of the California Environmental Quality Act (CEQA) to address the effects of construction on the resource. The project's designated qualified cultural resource professional shall be allowed to photodocument and record the resource. Construction activities may resume after authorization from the project's designated qualified cultural resource professional. All further activity authorized by this permit shall comply with the cultural resources management plan. For the purposes of implementing this measure, a "qualified cultural resource professional" is an individual (e.g., historian or archaeologist) meeting the Secretary of the Interior's Qualification Standards. A "cultural resource" is any building, structure, object, site, district, or other item of cultural, social, religious, economic, political, scientific, agricultural, educational, military, engineering or architectural significance to the citizens of Stanislaus County, the State of California, or the nation which is 50 years of age or older or has been listed on or is eligible for listing on the National Register of Historic Places, the California Register of Cultural Resources, or any local register. Examples of prehistoric resources may include: stone tools and manufacturing debris; milling equipment such as bedrock mortars, portable mortars, and pestles; darkened or stained soils (midden) that may contain dietary remains such as shell and bone; as well as human remains. Historic resources may include: burial plots; structural foundations; mining spoils piles and prospecting pits; cabin pads; and trash scatters consisting of cans with soldered seams or tops, bottles, cut (square) nails, and ceramics. **Mitigation Monitoring CULT-2:** The required mitigation measure will be implemented throughout project construction. The measure is the responsibility of the Project						

Mitigation Measure Reference	Mitigation Measure	Limits, Performance Standards	Timing	Frequency	Responsible Entity (RE)	Initial	Date
	proponent/Contractor with input from the project's designated qualified cultural resource professional, if necessary.						
CULT-3	**Mitigation Measure CULT-3: Human Remains** If human remains, burial, cremation of other mortuary feature are uncovered during construction activities; upon discovery, secure the location, do not touch or remove remains and associated artifacts; do not remove associated spoils or go through them; document the location and keep notes of activity and correspondence. All work within 100 feet of the discovery shall stop until the County Coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission to obtain the Most Likely Descendent (MLD) and follow state law (PRC 5097.9 et seq. and Health and Safety Code 7050.5(c)-7054.1 and 8100 et seq.). No further work or disturbance shall occur within 100 feet until all of the preceding actions, as applicable to the discovery, are implemented and completed. Preserve associated spoils without further disturbance, do not touch or remove remains or associated artifacts, document the location and maintain notes of activity and correspondence. Preservation *in situ* is the preferred treatment of human remains and associated burial artifacts. [Public Resources Code Sections 5097.94, 5097.98 and Health and Safety Code Section 7050.5(c) and Section 15064.5 of the California Code of Regulations implementing the California Public Resources Code, Sections 21000-21177] **Mitigation Monitoring CULT-3:** The required mitigation measure will be implemented throughout project construction. The measure is the responsibility of the Project Proponent/contractor.						
CULT-4	**Mitigation Measure CULT-4: Project Scope Changes** If the project develops beyond the scope and project description as described herein, further archaeological study and an addendum to this study may be required. **Mitigation Monitoring CULT-4:** The required mitigation will be assessed pre-construction during plan reviews and throughout project construction by site visits conducted by cultural resource monitoring. The measure is the responsibility of the Project Proponent/Contractor.						
Energy							

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Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
Energy-1	**Mitigation Measure ENERGY-1: Construction Equipment.** To the extent feasible, the following measures shall be incorporated into Project design and construction: • Properly tune and maintain construction equipment and vehicles. • On-site idling of construction equipment shall be minimized (no more than five minutes maximum). • Biodiesel shall be used as an alternative fuel diesel for at least 15 percent of the construction vehicles/equipment used if there is a biodiesel station within five miles of the Project site. **Mitigation Monitoring ENERGY-1:** The required mitigation measure will be implemented throughout Project construction. The measure is the responsibility of the Project proponent/construction contractor.						
Geology and Soils							
GEO-1	**Avoidance and Minimization Measure GEO-1 (BIO-7): Erosion Control Plan/Best Management Practices (BMPs) to Protect Water Quality (Including NOI/NPDES/SWPPP)**						
GEO-2	**Avoidance and Minimization Measure GEO-1 (BIO-7): Erosion Control Plan/Best Management Practices (BMPs) to Protect Water Quality (Including NOI/NPDES/SWPPP)**						
GEO-3	**Avoidance and Minimization Measure GEO-3 Geotechnical Study** Prior to issuance of a grading permit, the applicant shall prepare and submit a geotechnical investigation per the 2019 CBC, Section 1803 prepared by a licensed civil engineer registered in California. The study will address the potential effects of existing mining structures on the proposed stability of on-site soils. The plan shall be reviewed and approved by the City Engineer and, as applicable, the City's Chief Building Official. **Mitigation Monitoring GEO-3:** The required mitigation measure will be implemented prior to issuance of a grading permit. The measure is the responsibility of the Project proponent/construction contractor and subject to review and approval by the City Engineer and Chief Building Official.						

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Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
GEO-4	**Mitigation Measure GEO-4: Paleontological Resources** If paleontological resources are encountered during Project construction and no paleontological monitor is present, all ground disturbing activities within 50 feet of the find shall be redirected to other areas until a qualified paleontologist (as determined by the Project's qualified cultural resource professional) can be contacted to evaluate the find and make recommendations. If determined significant pursuant to CEQA and Project activities cannot avoid the paleontological resources, a paleontological evaluation and monitoring plan shall be implemented. Adverse impacts to significant paleontological resources shall be mitigated, which may include monitoring, data recovery and analysis, a final report, and the curation of all fossil material to a paleontological repository, museum, or academic institution, as appropriate. Upon completion of Project ground-disturbing activities, a report documenting methods, findings, and recommendations shall be prepared and submitted to the paleontological repository. **Mitigation Monitoring GEO-4:** The required mitigation measure will be implemented throughout Project construction. The measure is the responsibility of the construction contractor and qualified paleontologist.						
Greenhouse Gases							
GHG-1	**Mitigation Measure GHG-1:** The Project shall: A. Exceed the California Energy Code requirements by 15 percent based on the 2008 Energy Efficiency Standards requirements or as may be amended, through the installation of energy efficient design, lighting, appliances, or solar photovoltaic panels that provide 15 percent or more of the project's energy needs B. Prohibit fuel oil as a heating source; C. Provide dedicated and accessible recycling and green waste bins with instructions/education program explaining how to use the bins, what can go into each bin, and the importance of recycling; and D. Provide designated parking for any combination of low-emitting, fuel efficient and carpool/vanpool vehicles at 10 percent of the total spaces, consistent with the 2010 California Green Building Standards Code Tier 1 measure (Table A5.106.5.1.1) – or as may be amended. Based on the submitted site design, it is anticipated that up to 4 parking spaces will be designated in accordance with this requirement. **Mitigation Monitoring GHG-1:** The required mitigation will be assessed during plan reviews submitted to the Planning and Building Department. The measure is the responsibility of the Project Proponent as reviewed by the City building and planning inspectors.						
HAZARDS & HAZARDOUS MATERIALS, TRANSPORTATION							
HAZ-1	MM HAZ-01 (MM BIO-6): Environmental Awareness Training						

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Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
HAZ-2	**MM HAZ-02: Spill Prevention Plan** Prior to site disturbance, prepare a spill response plan to address the appropriate methods for containing accidental spills of toxic materials (e.g., engine oils). **Mitigation Monitoring HAZ-02:** The required mitigation measure will be implemented throughout Project construction. The measure is the responsibility of the construction contractor.						
HAZ-3	**Mitigation Measure HAZ-03 (AES-3): Vegetation Management for Wildland Fire Protection**						
HYDROLOGY AND WATER QUALITY							
HYDRO-1	**HYDRO-1 (MM BIO-7): Erosion Control & Best Management Practices (BMPs) to Protect Water Quality (Including NOI/NPDES/SWPPP)**						
HYDRO-2	**HYDRO-2 (MM BIO-8): Silt/Barrier fencing**						
HYDRO-3	**HYDRO-3 (MM BIO-6): Environmental Awareness Training**						
HYDRO-4	**HYDRO-4 (MM HAZ-02): Spill Prevention Plan**						
HYDRO-5	**Mitigation Measure: HYDRO-5 Drainage Study** Prior to site disturbance, the project proponent will submit, for City Staff approval, a detailed drainage study with drainage plans including drainage calculations for peak flows to determine potential runoff and ensure that drainage detention basins are adequately sized to collect stormwater runoff as necessary to achieve no net increase in stormwater runoff onto adjacent properties. **Mitigation Monitoring HYDRO-5:** The required mitigation measure will be implemented prior to initiating site disturbance. The measure is the responsibility of the Project Proponent						
NOISE							
NOISE-1	**Mitigation Measure NOISE-1 (MM BIO-3): Hours of Construction.**						
Noise-2	**Mitigation Measure Noise-2 (MM AQ-3): Authority to Construct/Permit to Operate**						
Noise-3	**Mitigation Measure Noise-3 (MM AQ-4): Equipment Emissions**						
Noise-4/a/	**Mitigation Measure Noise-4 Comply with General Plan Noise Standards** The project shall comply with the exterior noise exposure level standards in the category of "Conditionally Acceptable" and based on the allowable land uses within the zoning district of the receiving property as contained in the City of Angels General Plan 2020 Implementation Measure 5.A.a/Figure 5-1 for noise levels as measured at the receiving parcel boundary and as those standards may be amended through adoption of a City Noise Ordinance. **Mitigation Monitoring Noise-4:** A Notice of Action will be recorded for this project to notify future landowners of these requirements.						

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Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
PUBLIC SERVICES							
PS-1	**Mitigation Measure PS-1: Community Services Impact Mitigation Fee** Prior to issuance of a Building Permit, the applicant shall pay the applicable City Services Impact Mitigation Fee unless the applicant enters into an agreement with the City to defer payments until issuance of a Certificate of Occupancy or as otherwise permitted by ordinance. **Mitigation Monitoring PS-1:** The measure shall be implemented prior to issuance of a building permit, except as otherwise provided. The measure is the responsibility of the applicant.						
Transportation							
TRAN-1/b/	***Mitigation Measure TRAN-1 Roofscreen Truck Route*** Cal Legal trucks traveling to and from RoofScreen shall follow the attached truck route. Specifically, truck turns at Murphys Grade Road and SR 49 shall use a left in/left out only route in accordance with the attached. **Mitigation Monitoring TRAN-1 Truck Route** Prior to occupancy: a) A sign will be posted in the truck delivery bay notifying delivery trucks of the adopted truck route. b) A sign will be posted at the project driveway intersection with Murphys Grade Road (MGR) reminding trucks traveling towards Lodi/Sacramento to turn left at the MGR/SR 49 intersection (aka Right Turns prohibited ahead at MGR/SR 49). Signage shall be reviewed and approved by the City Engineer prior to installation. c) Throughout the life of the project, the truck route shall be included with all material orders placed by RoofScreen to direct trucks traveling to RoofScreen. d) A Notice of Action will be recorded for this project to notify future landowners of these requirements.						
TRAN-2	***Mitigation Measure TRAN-2: Pavement Management*** *Prior to issuance of a certificate of occupancy, the project proponent shall pay $7,500 to the City to offset impacts to pavement resulting from added truck traffic at the Murphys grade Road/ SR 49 intersection. The monies shall be maintained in a separate account by the City (or placed on account with Caltrans if acceptable to Caltrans) for use by Caltrans for pavement maintenance at the Murphys Grade Road/SR 49 intersection when requested by Caltrans.* **Mitigation Monitoring TRAN-2: Pavement Management** The mitigation payment shall be paid prior to issuance of a certificate of occupancy and maintained in a separate account. Payment is the responsibility of the project proponent. Oversight of the mitigation account is the responsibility of the City and, if acceptable to Caltrans, by Caltrans.						

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Mitigation Measure Reference	*Mitigation Measure*	*Limits, Performance Standards*	*Timing*	*Frequency*	*Responsible Entity (RE)*	*Initial*	*Date*
TRAN-3	***Mitigation Measure TRAN-3: TIMF*** Prior to issuance of a building permit, or, subject to a separate agreement, prior to issuance of an occupancy permit, the project proponents shall pay the applicable City of Angels Traffic Impact Mitigation Fee. **Mitigation Monitoring TRAN -3** Payment is required prior to issuance of a building permit, or (subject to an agreement approved by the City Council), prior to issuance of an occupancy permit. The mitigation is the responsibility of the applicant.						
Tribal Cultural Resources							
TCR-1	**Mitigation Measure TCR-1: SEE Mitigation Measure BIO-1: Environmental Awareness Training**						
TCR-2	**Mitigation Measure TCR-2: SEE Mitigation Measure CULT-2: Unanticipated Cultural Resource Discoveries**						
TCR-3	**Mitigation Measure TCR-3: SEE Mitigation Measure CULT-3: Human Remains**						
TCR-4	**Mitigation Measure TCR-4:** Prior to issuance of a Grading Permit, the applicants shall contact the Calaveras Band of MiWuk and arrange to have a Native American monitor present during initial site grading. **Mitigation Monitoring TCR-4** The mitigation measure will occur prior to issuance of a Grading Permit. The project contractor is responsible for contacting the Calaveras Band of MiWuks to arrange for a monitor. Payments or contracting between the parties, if it occurs, is the responsibility of the contractor and Native American monitor.						
Wildfire							
Wildfire-1	**Mitigation Measure Wildfire-01 (AES-3): Vegetation Management for Wildland Fire Protection**						

/a/ City Noise Standards

Figure 5-1 : Exterior Community Noise Exposure Levels- L_{dn} or CNEL, (in Decibels, dB)

Land Use Category	55	60	65	70	75	80
Residential low-density, single-family, duplex, mobile homes	Normally Acceptable	Conditionally Acceptable		Normally Unacceptable		Clearly Unacceptable
Residential multi-family	Normally Acceptable		Conditionally Acceptable	Normally Unacceptable		Clearly Unacceptable
Transient lodging, motels, hotels	Normally Acceptable		Conditionally Acceptable	Normally Unacceptable		Clearly Unacceptable
Schools, libraries, churches, hospitals, nursing homes	Normally Acceptable		Conditionally Acceptable	Normally Unacceptable		Clearly Unacceptable
Auditoriums, concert halls, amphitheaters (during use)	Conditionally Acceptable			Clearly Unacceptable		
Sports arena, outdoor spectator sports (during use)	Conditionally Acceptable			Clearly Unacceptable		
Playgrounds, neighborhood parks	Normally Acceptable			Normally Unacceptable		Clearly Unacceptable
Golf courses, riding stables, water recreation, cemeteries	Normally Acceptable			Normally Unacceptable		Clearly Unacceptable
Office buildings, business, commercial and professional	Normally Acceptable			Conditionally Acceptable		Normally Unacceptable
Industrial, manufacturing, utilities, agriculture	Normally Acceptable			Conditionally Acceptable		Normally Unacceptable

Figure 5-1 Key:

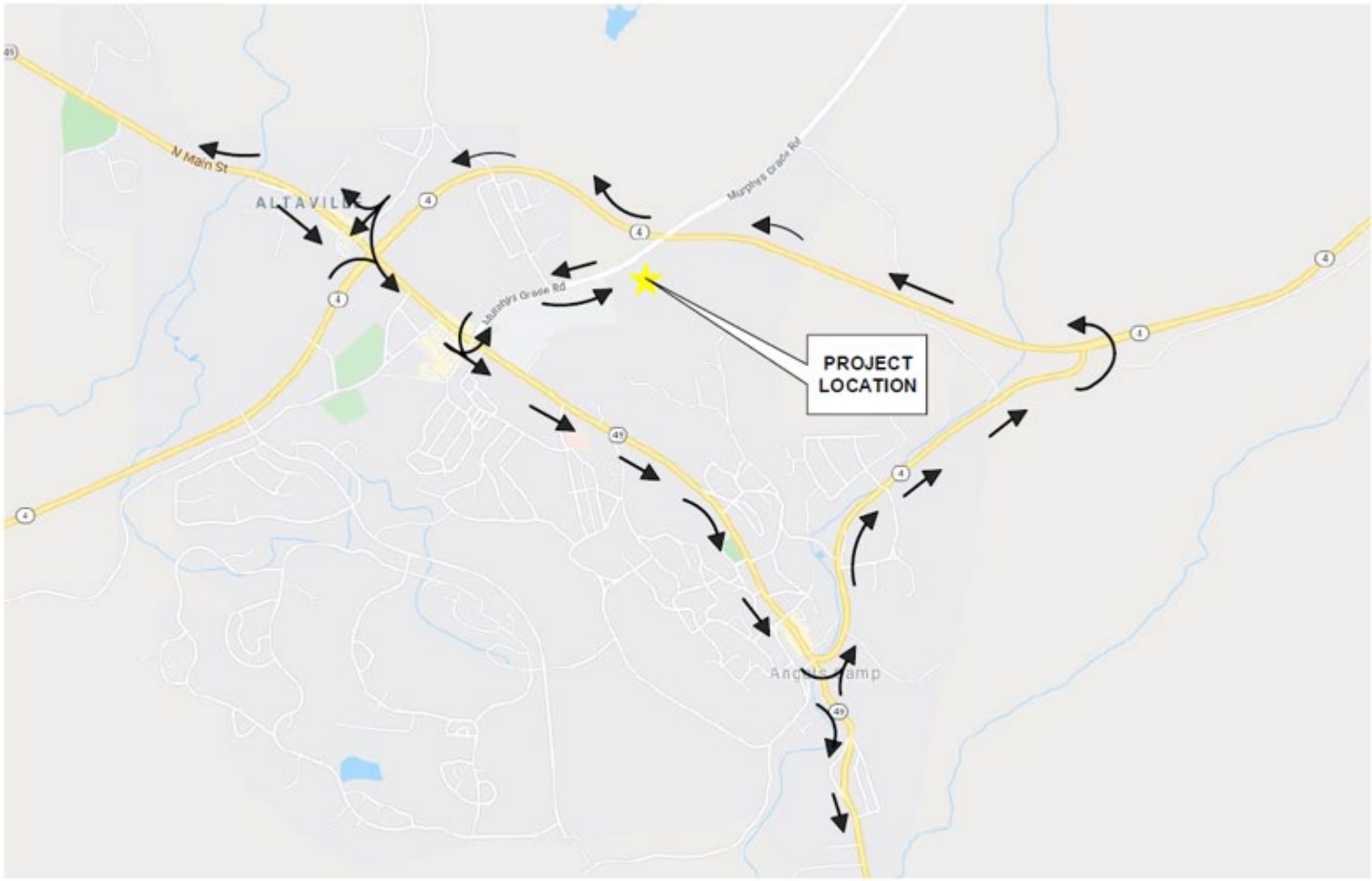
Normally Acceptable:
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable:
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional Construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable:
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable:
New construction or development should generally not be undertaken.

/b/ Truck Route



TRUCK ROUTES NEEDED TO ACCOUNT FOR SR 49
AND MURPHYS GRADE RD TURN LIMITATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

/c/

Additional Resources

Living Among the Oaks, UC ANR Pub #21538

Vineyards in an Oak Landscape, UC ANR Pub #21577

Guidelines for Managing California's Hardwood Rangelands, UC ANR Pub #3368

UC Integrated Hardwood Range Management Program:
http://danr.ucop.edu/ihrmp/

Protecting Trees From Construction Damage: A Homeowner's Guide. University of Minnesota Cooperative Extension Service:
http://www.extension.umn.edu/distribution/housingandclothing/DK6135.html

Native oaks contribute to property values by enhancing appearance, reducing noise, cutting energy costs, screening unsightly views, and attracting songbirds and other wildlife.

Unfortunately, oaks meant to be part of a permanent landscape can be damaged during construction or mismanaged after construction.

Planning, coordination, and actively protecting oaks can reduce damage and save the trouble and expense of treating or removing injured trees.

UC Cooperative Extension
Tuolumne County
2 S. Green Street
Sonora, CA 95370
http://cetuolumne.ucdavis.edu

Phone: 209-533-5695
Fax: 209-532-8978
E-mail: cetuolumne@ucdavis.edu

ALICE B. ADDICOTT

Valley oak, *(Quercus lobata).*
This tall, spreading deciduous oak was once an important member of the Central Valley's riparian forests. From Shasta County to Los Angeles County, it is still a conspicuous oak in the hardwood range, in valley bottoms and on deep alluvial soils.

Blue oak, *(Quercus douglasii).*
This deciduous oak is the dominant oak of the hardwood range from Shasta County to Kern County. Where it shares its range with the valley oak, blue oak generally occupies the more shallow soils, steeper slopes, and upland sites.

GERI HULSE-STEPHENS

Interior live oak *(Quercus wislizeni).*
This evergreen oak is widely distributed in California from Siskiyou County south into Baja California. It is abundant in the Sierra Nevada foothills and in the coast ranges occupies the higher, drier, or more inland sites than the coast live oak. Interior live oak is found in more heavily wooded sites than the blue oak. In chaparral habitats or other dry locations, it develops a shrubby form.

Protecting Trees During and After Construction

Information for builders and owners on preserving oak trees as part of residential and commercial landscapes

INSIDE:
What trees need to survive and grow.

Planning to preserve valuable trees.

Protecting trees during and after grading, trenching, filling, paving, and other construction activities.

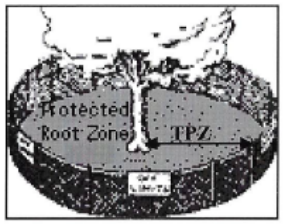
UNIVERSITY OF CALIFORNIA
COOPERATIVE EXTENSION
TUOLUMNE COUNTY

s

What trees need to survive

Our Mediterranean climate naturally limits oak diseases. Native oaks are well adapted to the cool wet winters and hot dry summers. But they are very susceptible to changes within the Tree Protection Zone (TPZ), including irrigation, compaction, trenching, filling, etc.

Tree Protection Zone
Root systems should be protected to at least half again the distance from the trunk to the edge of the canopy (dripline). The TPZ can be calculated:



DBH (inches) x 1.5 = TPZ (feet)

DBH (diameter breast height) is the trunk diameter 4.5 feet above the ground. A 20-inch oak would have a TPZ of 30 feet from the tree base to the TPZ edge. For immature trees TPZ can be reduced to one foot per inch DBH.

Planning to protect trees

Before planning to remove any trees, contact the Community Development Department (533-5633) to find out about regulations that might apply to your property.

Inventory of trees
Map the location, species, and condition of trees and use as a basis for planning construction.

Select which trees to save
Visualize how each tree fits into the future landscape.

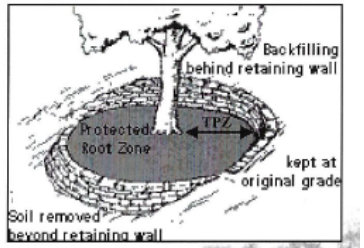
Planning and commitment
Develop a landscape protection agreement with contractors. Install temporary fencing around the TPZ. Photodocument the site before work begins.

Monitoring and inspection
Visit the site often and inform workers of any problems. Begin repairing any damage immediately.

Neighboring projects
Be aware of construction on adjacent properties. Workers need permission to use your property for access, parking, materials storage, etc.— all of which can damage oaks.

Preventing and mitigating damage

Our rolling foothill landscape is very attractive and offers many beautiful building sites. For actual building, however, the steep topography can be challenging. Although building to fit the landscape is a very attractive idea and well-planned projects keep grading to a minimum, most projects require considerable earth moving for driveways, parking areas, and building sites. The following activities can damage existing oaks if they encroach on the TPZ. If the guidelines offered here cannot be followed to protect a tree, consider removing the tree.

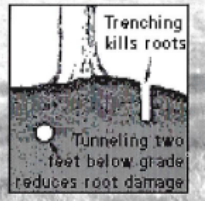


Grading—Protect the TPZ with retaining walls
Changing the land surface, whether excavating (cutting) or filling soil within the TPZ, damages roots and can begin the slow death of native oaks. Excavating destroys roots and can expose them to damage and disease. Fill reduces access to air and can trap water, which destroys roots through suffocation and disease. Burying the base of trees leads to rot. When grade changes around trees are necessary, the TPZ can be protected with wells for fill areas and retaining walls for cut areas.

Drainage—Don't change the amount of water flowing into the TPZ
Changing the land surface and the way water flows on a building site can increase or decrease the amount of water reaching the root zone. Avoid drainage changes that move additional water toward oak trees or reroute natural runoff they may depend on.

Compaction—Protect the TPZ from traffic and materials storage
Trees need natural soil conditions with abundant pore spaces for roots to absorb air and water. Compaction from vehicle parking, construction equipment, storage of materials or topsoil, and even excessive foot traffic impedes the movement of air, water, and nutrients in the soil and leads to declining tree health or even death. Protect the TPZ — keep it natural and undisturbed.

Paving—Use porous materials to protect the TPZ from traffic
Asphalt or concrete also impede movement of air, water, and nutrients and have many of the same effects as compaction. Porous materials, like brick with sand joints, gravel, bark, or wood chips, make excellent ground coverings that allow passage of air and water while they protect the soil from compaction. No disturbance or covering of any kind should be used within six feet of the base.



Trenching—Use conduits and coordinate installation of utility lines
Trenching to place water, gas, and electrical lines can cut off and destroy a large proportion of a tree's root system. If utility lines must pass within the TPZ, tunneling conduits through the soil, instead of trenching, minimizes root damage. If trenching is unavoidable, coordinate to have all utilities lines placed together in one trench.

Beyond the root zone—Consider effects of large cut and fill slopes on surface and subsurface water
Cut and fill areas outside the TPZ can still impact oaks. Fill can cause water to pond within the TPZ and large cutslopes cause subsoils to dry more rapidly. Anything that changes the environment of mature trees can threaten survival.

Long-term management—Establish "natural areas" within TPZ without irrigation or fertilization
For landscaping under oaks, use native or other drought-tolerant plants that don't require irrigation or other special care.

Sources: Living Among the Oaks, UCANR pub #21538,Protecting Trees from Construction Damage, Univ. of Minnesota Extension Service.

Conditions of Project Approval

(Partial List – includes only those identified in the IS/MND)

Condition of Project Approval
Landscaping: Power lines and telecommunications lines
Installation of new overhead power or telephone lines should, but are not required to, be undergrounded. Trees planted under new overhead power and/or telephone lines shall be a species which will not conflict with the overhead lines. If an amendment to the site's approved landscaping plan is required to accommodate this condition, the City Planner may approve those revisions. (AMC Chapter 17.63.080(A))

Condition of Project Approval
Landscaping/Screening 660 Murphys Grade Road
An amended landscaping plan shall be submitted that provides a screen between the home on 660 Murphys Grade and the project site where topography does not already provide a natural screen. A solid fence, landscaping, or similar, as approved by the City shall be included along the southern property line extending approximately 150 feet from the southwest parcel corner.

Condition of Project Approval
Landscape Screen – Retaining Walls and Trash Enclosures
Prior to issuance of a certificate of occupancy, the City Planner may require additional landscaping as necessary to break up expanses of retaining walls in excess of 8 feet in height where walls may be visible from Murphys Grade Road or the access driveway. Landscaping to break up walls generally will be in the form of vines.

Trash enclosures shall be screened.

Condition of Project Approval: Landscaping Maintenance/Site Distance
Prior to issuance of a certificate of occupancy, the Project Proponent shall submit a landscaping maintenance plan in compliance with AMC Section 17.63.070. The maintenance plan shall minimally include the following:

Throughout the life of the project:

a) Landscaping and native trees retained on site shall be maintained in a safe and healthy manner. Within the oak tree protection area, fire fuel load management may occur in accordance with California's defensible space laws, as they may be amended [Public Resources Code 4291 (e.g., limbing trees and separating ladder fuels)].

b) Dead or dying landscaping shall be replaced within thirty days of receiving notification from the Community Development Department unless an alternative timeline is established by the City to address drought or other extraordinary circumstances. The City may request bonding from the landowner to support re-planting when re-planting must be deferred.

c) Adequate site distance for pedestrians and vehicles on and off-site shall be established and maintained at the project's driveway intersection with Murphys Grade Road. The maintenance plan shall address maintaining landscaping at the project entrance that could obscure site distance—in particular all vegetation planted along the project frontage.

d) Maintaining natural vegetation to separate ladder fuels and provide a fire-safe site.

Failure to maintain landscaping in accordance with this measure is subject to the City's code enforcement provisions. A Notice of Action will be recorded for this project to notify future landowners of these requirements.

Condition of Project Approval
Paved Access. The project proponent is responsible for paving and maintaining the access driveway from the site's Murphys Grade Road encroachment to a distance of 20 feet past the southern edge of the entry drive into the site unless a longer distance is required by the City Engineer or Fire Department to maintain adequate access in accordance with City Standards.

Condition of Project Approval
Hazardous Materials Storage Plan Prior to issuance of a final occupancy permit, a hazardous materials storage plan shall be submitted for review and approval to the City Fire Department and will be implemented and updated throughout the life of the project.