Community Services Department

Planning and Building

SPECIAL USE PERMIT

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SPECIAL USE PERMIT FOR GRADING

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SPECIAL USE PERMIT FOR STABLES

(see page 12)

APPLICATION

Community Services Department
Planning and Building
1001 E. Ninth St., Bldg. A
Reno, NV 89512-2845

Telephone: 775.328.6100

Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

Project Information	**Staff Assigned Case No.:**

Project Name: 947 Tahoe Condominium

Project Description: The project involves the development of 40 new residential condominiums on an approximately two-acre site comprised of two legal lots of record.

Project Address: 941 and 947 Tahoe Boulevard (SR 28)

Project Area (acres or square feet): 2 acres

Project Location (with point of reference to major cross streets **AND** area locator):

Corner of Tahoe Blvd and Southwood Blvd

Assessor's Parcel No.(s):	Parcel Acreage:	Assessor's Parcel No.(s):	Parcel Acreage:
132-231-09	1.389		
132-231-10	0.598		

Indicate any previous Washoe County approvals associated with this application:
Case No.(s). SPW2-7-96

Applicant Information (attach additional sheets if necessary)

Property Owner:		**Professional Consultant:**	
Name: PALCAP FFIF TAHOE 1, LLC		Name: Feldman Thiel LLP	
Address: 940 Southwood Blvd		Address: P.O. Box 1309	
Incline Village, NV	Zip: 89451	Zephyr Cove, NV	Zip: 89448
Phone: 469.233.2260	Fax:	Phone: 775.580.7431	Fax:
Email: cbutler@palominocap.com		Email: kara@fmttahoe.com	
Cell: 214.269.3404	Other:	Cell: 530.545.3522	Other:
Contact Person: Chuck Butler		Contact Person: Kara Thiel	
Applicant/Developer:		**Other Persons to be Contacted:**	
Name: Same as Owner		Name:	
Address:		Address:	
	Zip:		Zip:
Phone:	Fax:	Phone:	Fax:
Email:		Email:	
Cell:	Other:	Cell:	Other:
Contact Person:		Contact Person:	

For Office Use Only

Date Received:	Initial:	Planning Area:	
County Commission District:		Master Plan Designation(s):	
CAB(s):		Regulatory Zoning(s):	

Property Owner Affidavit

Applicant Name: PALCAP FFIF TAHOE 1, LLC

The receipt of this application at the time of submittal does not guarantee the application complies with all requirements of the Washoe County Development Code, the Washoe County Master Plan or the applicable area plan, the applicable regulatory zoning, or that the application is deemed complete and will be processed.

STATE OF NEVADA)
)
COUNTY OF WASHOE)

I,_____,
(please print name)

being duly sworn, depose and say that I am the owner* of the property or properties involved in this application as listed below and that the foregoing statements and answers herein contained and the information herewith submitted are in all respects complete, true, and correct to the best of my knowledge and belief. I understand that no assurance or guarantee can be given by members of Planning and Building.

(A separate Affidavit must be provided by each property owner named in the title report.)

Assessor Parcel Number(s): 132-231-09 and 132-231-10

Printed Name_____

Signed_____

Address_____

_____

Subscribed and sworn to before me this _____ day of _____, _____.

(Notary Stamp)

_____
Notary Public in and for said county and state

My commission expires:_____

*Owner refers to the following: (Please mark appropriate box.)

- ❑ Owner
- ❑ Corporate Officer/Partner (Provide copy of record document indicating authority to sign.)
- ❑ Power of Attorney (Provide copy of Power of Attorney.)
- ❑ Owner Agent (Provide notarized letter from property owner giving legal authority to agent.)
- ❑ Property Agent (Provide copy of record document indicating authority to sign.)
- ❑ Letter from Government Agency with Stewardship

Special Use Permit Application
Supplemental Information

(All required information may be separately attached)

1. What is the project being requested?

Special Use Permit for a new 40-unit residential condominium project at 941-947 Tahoe Blvd in Incline Village. Multiple-family dwelling is a special use in the Incline Village Commercial Regulatory Zone of the Tahoe Area Plan in which the project is located.

2. Provide a site plan with all existing and proposed structures (e.g. new structures, roadway improvements, utilities, sanitation, water supply, drainage, parking, signs, etc.)

Enclosed.

3. What is the intended phasing schedule for the construction and completion of the project?

No phasing is proposed. Intended construction start is May 1, 2022.

4. What physical characteristics of your location and/or premises are especially suited to deal with the impacts and the intensity of your proposed use?

High capability soils (Class 6) are well-suited for development. The site is in a Town Center, fronted by an improved bike path and close to parks, schools, golf course and other services.

5. What are the anticipated beneficial aspects or affects your project will have on adjacent properties and the community?

The project will provide new, quality housing in an urban area served by recreation and commercial facilites. Condominiums will expand the variety of housing available in this area of Incline Village.

6. What are the anticipated negative impacts or affect your project will have on adjacent properties? How will you mitigate these impacts?

The only potential negative impacts would be to traffic. The project is anticipated to generate 174 new daily vehicle trips, a less than signficant impact as defined by TRPA. Payment of an air quality mitigation fee will offset that potential impact. See enclosed Traffic and Air Quality Analyses for the Project.

7. Provide specific information on landscaping, parking, type of signs and lighting, and all other code requirements pertinent to the type of use being purposed. Show and indicate these requirements on submitted drawings with the application.

See Sheet L1.0 for landscaping. 118 parking spaces (below structure) and bicycle parking are provided. No signage is proposed. Lighting complies with development standards

8. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that apply to the area subject to the special use permit request? (If so, please attach a copy.)

❑ Yes	■ No

9. Utilities:

a. Sewer Service	IVGID
b. Electrical Service	Nevada Energy
c. Telephone Service	AT&T
d. LPG or Natural Gas Service	Southwest Gas
e. Solid Waste Disposal Service	Waste Management
f. Cable Television Service	Spectrum
g. Water Service	IVGID

For most uses, Washoe County Code, Chapter 110, Article 422, Water and Sewer Resource Requirements, requires the dedication of water rights to Washoe County. Please indicate the type and quantity of water rights you have available should dedication be required.

h. Permit #		acre-feet per year	
i. Certificate #		acre-feet per year	
j. Surface Claim #		acre-feet per year	
k. Other #		acre-feet per year	

Title of those rights (as filed with the State Engineer in the Division of Water Resources of the Department of Conservation and Natural Resources).

10. Community Services (provided and nearest facility):

a. Fire Station	North Lake Tahoe Fire Protection District at 866 Oriole Way
b. Health Care Facility	Incline Village Community Hospital at 880 Alder Ave
c. Elementary School	Incline Elementary School at 915 Northwood Blvd
d. Middle School	Incline Middle School at 931 Southwood Blvd
e. High School	Incline High School at 499 Village Blvd
f. Parks	Incline Park at 939 Southwood Blvd
g. Library	Incline Village Library at 845 Alder Avenue
h. Citifare Bus Stop	TART Bus Stop HWY 28 AT NORTHWOODS 76 GAS STATION

Special Use Permit Application
for Grading
Supplemental Information

(All required information may be separately attached)

1. What is the purpose of the grading?

2. How many cubic yards of material are you proposing to excavate on site?

See Sheet L1.0 for landscaping. 118 parking spaces (below structure) and bicycle parking are provided. No signage is proposed. Lighting complies with development standards

3. How many square feet of surface of the property are you disturbing?

4. How many cubic yards of material are you exporting or importing? If none, how are you managing to balance the work on-site?

5. Is it possible to develop your property without surpassing the grading thresholds requiring a Special Use Permit? (Explain fully your answer.)

6. Has any portion of the grading shown on the plan been done previously? (If yes, explain the circumstances, the year the work was done, and who completed the work.)

7. Have you shown all areas on your site plan that are proposed to be disturbed by grading? (If no, explain your answer.)

8. Can the disturbed area be seen from off-site? If yes, from which directions and which properties or roadways?

9. Could neighboring properties also be served by the proposed access/grading requested (i.e. if you are creating a driveway, would it be used for access to additional neighboring properties)?

10. What is the slope (horizontal/vertical) of the cut and fill areas proposed to be? What methods will be used to prevent erosion until the revegetation is established?

11. Are you planning any berms?

Yes	No	If yes, how tall is the berm at its highest?

12. If your property slopes and you are leveling a pad for a building, are retaining walls going to be required? If so, how high will the walls be and what is their construction (i.e. rockery, concrete, timber, manufactured block)?

13. What are you proposing for visual mitigation of the work?

14. Will the grading proposed require removal of any trees? If so, what species, how many and of what size?

15. What type of revegetation seed mix are you planning to use and how many pounds per acre do you intend to broadcast? Will you use mulch and, if so, what type?

16. How are you providing temporary irrigation to the disturbed area?

17. Have you reviewed the revegetation plan with the Washoe Storey Conservation District? If yes, have you incorporated their suggestions?

18. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that may prohibit the requested grading?

Yes	No	If yes, please attach a copy.

Special Use Permit Application for Stables
Supplemental Information

(All required information may be separately attached)

1. What is the maximum number of horses to be boarded, both within stables and pastured?

See Sheet L1.0 for landscaping. 118 parking spaces (below structure) and bicycle parking are provided. No signage is proposed. Lighting complies with development standards

2. What is the maximum number of horses owned/maintained by the owner/operator of the project, both within stables and pastured?

3. List any ancillary or additional uses proposed (e.g., tack and saddle sales, feed sales, veterinary services, etc.). Only those items that are requested may be permitted.

4. If additional activities are proposed, including training, events, competition, trail rides, fox hunts, breaking, roping, etc., only those items that are requested may be permitted. Clearly describe the number of each of the above activities which may occur, how many times per year and the number of expected participants for each activity.

5. What currently developed portions of the property or existing structures are going to be used with this permit?

6. To what uses (e.g., restrooms, offices, managers living quarters, stable area, feed storage, etc.) will the barn be put and will the entire structure be allocated to those uses? (Provide floor plans with dimensions).

7. Where are the living quarters for the operators of the stables and where will employees reside?

8. How many improved parking spaces, both on-site and off-site, are available or will be provided? (Please indicate on site plan.) Have you provided for horse trailer turnarounds?

9. What are the planned hours of operation?

10. What improvements (e.g. new structures including the square footage, roadway/driveway improvements, utilities, sanitation, water supply, drainage, parking, signs, etc.) will have to be constructed or installed and what is the projected time frame for the completion of each?

11. What is the intended phasing schedule for the construction and completion of the project?

12. What physical characteristics of your location and/or premises are especially suited to deal with the impacts and the intensity of your proposed use?

High capability soils (Class 6) are well-suited for development. The site is in a Town Center, fronted by an improved bike path and close to parks, schools, golf course and other services.

13. What are the anticipated beneficial aspects or affects your project will have on adjacent properties and the community?

14. What are the adverse impacts upon the surrounding community (including traffic, noise, odors, dust, groundwater contamination, flies, rats, mice, etc.) and what will you do to minimize the anticipated negative impacts or effects your project will have on adjacent properties?

15. Please describe operational parameters and/or voluntary conditions of approval to be imposed on the administrative permit to address community impacts.

16. What types of landscaping (e.g. shrubs, trees, fencing, painting scheme, etc.) are proposed? (Please indicate location on site plan.)

17. What type of signs and lighting will be provided? On a separate sheet, show a depiction (height, width, construction materials, colors, illumination methods, lighting intensity, base landscaping, etc.) of each sign and the typical lighting standards. (Please indicate location of signs and lights on site plan.)

18. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that apply to the area subject to the administrative permit request? (If so, please attach a copy.)

❑ Yes	❑ No

19. Community Sewer

❑ Yes	❑ No

20. Community Water

❑ Yes	❑ No

GENERAL NOTES

1. STAGING AREAS ARE TO BE COORDINATED BETWEEN THE CONTRACTOR AND COUNTY AND APPROVED BY TRPA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE STAGING AREA, INCLUDING PLACEMENT AND MAINTENANCE OF BMPS, AS DESCRIBED IN NOTE NO. 2.
2. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL INSTALL TEMPORARY BMP MEASURES AT LOCATIONS WHERE NEEDED TO CONTROL EROSION AND WATER POLLUTION DURING THE CONSTRUCTION OF THE PROJECT. THE BMP MEASURES SHALL REMAIN IN PLACE AND SHALL BE MAINTAINED IN A FUNCTIONAL CONDITION FOR THE DURATION OF THE CONSTRUCTION. SILT FENCE IS REQUIRED AT ALL CROSS DRAIN OUTLETS. SILT FENCE WILL BE REQUIRED AT OTHER LOCATIONS AS SHOWN ON THE DRAWINGS OR STAKED IN THE FIELD BY THE COUNTY. ALL EROSION CONTROL MEASURES SHALL MEET OR EXCEED TRPA REQUIREMENTS.
3. ALL EXISTING VEGETATION SHALL BE PRESERVED UNLESS SPECIFICALLY IDENTIFIED BY THE COUNTY FOR REMOVAL. BMP'S TO PROTECT VEGETATION SHALL BE INSTALLED BY THE CONTRACTOR IF REQUIRED BY TRPA.
4. UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. WHERE EXCAVATION IS NECESSARY, THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (USA) AND ALL AFFECTED UTILITY COMPANIES TO LOCATE ALL BURIED UTILITIES AT LEAST 48 HOURS PRIOR TO EXCAVATION. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES FOR RELOCATION OF UTILITIES AS REQUIRED BY THE WORK. THE UTILITY COMPANIES WILL PERFORM ALL RELOCATION WORK AT NO COST TO THE CONTRACTOR, PROVIDED THAT NO DAMAGE TO UTILITIES HAS OCCURRED DUE TO CONTRACTOR NEGLIGENCE. EXISTING STORM DRAIN, GAS, WATER AND SEWER LOCATIONS, MATERIALS AND SIZE ARE BASED ON A SEARCH OF EXISTING RECORDS. WHENEVER CONNECTIONS TO OR CLEARANCE FROM STORM DRAIN PIPE IS REQUIRED, THE CONTRACTOR SHALL POTHOLE TO VERIFY THE LOCATION, SIZE AND MATERIAL OF THE PIPE PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOUND AND PRIOR TO CONDUCTING ANY RESOLUTION.
5. ASPHALT SHOULDER REPLACEMENT SHALL INCORPORATE A 4% ±1% CROSS SLOPE OR AS DIRECTED BY THE COUNTY BETWEEN THE SAWCUT AND THE NEW ROADSIDE TREATMENT. NEW ROADSIDE FLOW CONVEYANCES SHALL INCORPORATE SUCH GRADE AS NECESSARY TO MAINTAIN FLOW IN THE PRESENT DIRECTION, WITHOUT PONDING OR BREAKOUTS.
6. ANY DAMAGE DONE BY THE CONTRACTOR OR HIS SUBCONTRACTORS TO PRIVATE PROPERTY AND/OR OUTSIDE THE NOTED LIMITS OF WORK IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND/OR HIS SUBCONTRACTORS.
7. FOR TEMPORARY BMPs REFER TO SHEET D1.
8. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE PROJECT DRAWINGS, SPECIAL PROVISIONS, AND "STANDARD SPECIFICATIONS" FOR THIS PROJECT. THE "STANDARD SPECIFICATIONS" FOR THIS PROJECT SHALL BE THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2012, (REVISION 8 – 10/19/18) SPONSORED AND DISTRIBUTED BY REGIONAL TRANSPORTATION COMMISSION OF WASHOE COUNTY, CARSON CITY, CHURCHILL COUNTY, CITY OF SPARKS, CITY OF RENO, CITY OF YERINGTON AND WASHOE COUNTY, WHICH SHALL GOVERN ALL WORK TO BE DONE UNDER THIS CONTRACT, EXCEPT AS MAY BE MODIFIED BY THE PROJECT SPECIAL PROVISIONS. THE PROJECT SPECIAL PROVISIONS ARE MODIFICATIONS OR CLARIFICATIONS OF CONSTRUCTION MATERIALS, METHODS, AND EQUIPMENT FROM THE STANDARD SPECIFICATIONS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE GENERAL SAFETY DURING CONSTRUCTION AND ALL WORK SHALL CONFORM TO PERTINENT SAFETY REGULATIONS AND CODES. FENCE AND OR BARRICADE THE CONSTRUCTION AREA AS REQUIRED TO PROTECT ADJACENT SITES, VEHICULAR TRAFFIC AND PEDESTRIAN TRAFFIC. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF OSHA AND NRS CHAPTER 618 IN THE CONSTRUCTION PRACTICES FOR ALL EMPLOYEES DIRECTLY ENGAGED IN THE CONSTRUCTION OF THIS PROJECT.
10. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION AND SHORING PROCEDURES AND CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
11. INCORPORATE ADEQUATE DRAINAGE PROCEDURES DURING THE CONSTRUCTION PROCESS TO ELIMINATE EXCESSIVE PONDING AND/OR EROSION.
12. MAINTAIN THE SITE IN A NEAT AND ORDERLY MANNER THROUGHOUT THE CONSTRUCTION PROCESS. ALL MATERIALS SHALL BE STORED WITHIN APPROVED STAGING AREAS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL EXISTING SURVEY MONUMENTS AND SHALL REPLACE ANY MONUMENTS OBLITERATED OR DAMAGED DURING CONSTRUCTION AT HIS EXPENSE. REPLACEMENT SHALL BE PERFORMED BY A LICENSED PROFESSIONAL LAND SURVEYOR.
14. PROVIDE AND MAINTAIN ALL NECESSARY TRAFFIC CONTROL, THROUGHOUT CONSTRUCTION, IN ACCORDANCE WITH APPLICABLE PARTS OF STANDARD SPECIFICATIONS SECTION 332, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD, LATEST EDITION).
15. THE CONTRACTOR SHALL MAINTAIN TRAFFIC CONTROL IN STRICT ACCORDANCE WITH PLANS AND SPECIFICATIONS AT ALL TIMES. ROADS WITHIN THE PROJECT HAVE STEEP GRADES, CURVES AND LIMITED SIGHT DISTANCE. ALTERNATIVE ACCESS IS NOT AVAILABLE TO SOME AREAS WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL CONDUCT HIS/HER WORK TO MINIMIZE DISRUPTIONS IN NORMAL TRAFFIC PATTERNS AT ALL TIMES. IN AREAS WHERE ALTERNATE ACCESS IS NOT AVAILABLE, ROAD CLOSURES SHALL NOT BE MORE THAN 20 MINUTES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL ADJACENT PROPERTY OWNERS OF THE CONSTRUCTION ACTIVITY AND THE SCHEDULE OF SUCH ACTIVITIES. NOTIFICATION SHALL BE MADE IN WRITING AND HAND DELIVERED TO EACH RESIDENCE OR PLACE OF BUSINESS. ACCESS SHALL BE RESTORED AT THE END OF EACH WORK DAY.
16. FINE GRADING ELEVATIONS, SLOPES, AND OTHER ELEVATIONS NOT SHOWN SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD TO OBTAIN DRAINAGE IN THE DIRECTION AND TO THE DRAINAGE WAYS INDICATED. ALL GRADING ELEVATIONS SHALL BE APPROVED BY THE ENGINEER.
17. STANDARD WORK DAYS AND HOURS SHALL BE MONDAY THROUGH FRIDAY 7AM TO 7PM. SATURDAY MAY BE WORKED ON OCCASION ONLY TO MAKE UP FOR WEATHER DELAYS OR OTHER SCHEDULE DELAYS. NOISE GENERATING ACTIVITIES WILL BE LIMITED TO THE HOURS OF 8:00 AM TO 6:30 PM. NO CONSTRUCTION CAN OCCUR ON SUNDAYS.
18. NOISE SHALL BE REDUCED BY THE MANDATORY USE OF MUFFLERS ON ALL CONSTRUCTION VEHICLES AND EQUIPMENT. WHERE FEASIBLE, SOLENOIDAL PAVEMENT BREAKERS SHALL BE USED IN LIEU OF AIR POWERED JACK HAMMERS. NOISE GENERATING ACTIVITIES WILL BE LIMITED TO THE HOURS OF 8:00 AM TO 6:30 PM.
19. THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH ACCEPTED ENGINEERING PROCEDURES AND GUIDELINES, AND ARE IN SUBSTANTIAL COMPLIANCE WITH APPLICABLE STATUTES, COUNTY ORDINANCES OR STANDARDS. IN THE EVENT OF CONFLICT BETWEEN ANY PORTION OF THESE PLANS AND WASHOE COUNTY STANDARDS, THE STANDARDS SHALL APPLY AND THE ENGINEER SHALL BE CONTACTED IMMEDIATELY.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DAILY REMOVAL OF ALL CONSTRUCTION MATERIALS SPILLED ON PAVED STREETS, ONSITE AND OFFSITE.
21. THE CONTRACTOR SHALL PURSUE THE WORK IN A CONTINUOUS AND DILIGENT MANNER, CONFORMING TO ALL THE PERTINENT SAFETY REGULATIONS, TO ENSURE A TIMELY COMPLETION OF THE PROJECT.
22. THE CONTRACTOR SHALL NOTIFY ALL ENTITIES INVOLVED (PUBLIC AND PRIVATE) 48 HOURS PRIOR TO BEGINNING CONSTRUCTION, AND PROVIDE 48 HOURS PRIOR NOTICE FOR ALL SURVEYING AND INSPECTIONS DURING CONSTRUCTION.
23. ALL AREAS DISTURBED AND LEFT UNDEVELOPED FOR A PERIOD OF MORE THAN 14 DAYS SHALL BE STABILIZED BY THE APPLICTION OF AN APPROVED DUST PALLIATIVE AT THE COST OF THE CONTRACTOR.
24. NO CONSTRUCTION EQUIPMENT SHALL BE PARKED OR MATERIAL STORED ON CONCRETE OR ASPHALT SURFACES WITHOUT APPROVAL BY WASHOE COUNTY.
25. SHOULD ANY PREHISTORIC OR HISTORIC REMAINS/ARTIFACTS BE DISCOVERD DURING SITE DEVELOPMENT, WORK SHALL TEMPORARILY BE HALTED AT THE SPECIFIC SITE AND THE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, DIVISION OF HISTORIC PRESERVATION AND ARCHEOLOGY, SHALL BE NOTIFIED TO RECORD AND PHOTOGRAPH THE SITE. THE PERIOD OF TEMPORARY DELAY SHALL BE LIMITED TO A MAXIMUM OF TWO WORKING DAYS FROM THE DATE OF NOTIFICATION.
26. THE CONTRACTOR SHALL, AT ALL TIMES DURING CONSTRUCTION, PROTECT FROM DAMAGE EXISTING IMPROVEMENTS ON AND AROUND THE SITE, INCLUDING BUT NOT LIMITED TO, PAVEMENT, CURB & GUTTER, SIDEWALK, LANDSCAPING, SIGNAGE, STORM & SANITARY SEWERS, AND ALL UTILITIES. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE REPAIR OF ANY IMPROVEMENTS (EXISTING OR PROPOSED) DAMAGED THROUGHOUT THE COURSE OF CONSTRUCTION.
27. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AT ALL TIMES EMERGENCY ACCESS TO THE PROJECT SITE TO THE SATISFACTION OF THE FIRE DEPARTMENT. THE CONTRACTOR MUST NOTIFY THE SHERIFF'S DEPARTMENT AND FIRE DEPARTMENT DISPATCH DAILY ON ANY ROAD CLOSURES THAT MAY DISRUPT EMERGENCY RESPONSE.
28. THE CONTRACTOR SHALL ELIMINATE ALL MOSQUITO BREEDING PLACES WITHIN THE GRADED AREAS.
29. A GEOTECHNICAL REPORT HAS BEEN PREPARED FOR THIS PROJECT. REFERENCE "XXXX" BY: XXX. DATED: XXX.
30. THE CONTRACTOR SHALL COMPLY WITH TRPA IDLING RESTRICTIONS. NO DIESEL ENGINE IN A VEHICLE EXCEEDING 10,000 POUNDS GROSS VEHICLE WEIGHT OR A DIESEL ENGINE IN OFF-ROAD SELF-PROPELLED EQUIPMENT EXCEEDING 25 HORSEPOWER SHALL IDLE MORE THAN 15 MINUTES, WITH EXCEPTION PURSUANT TO NAC 445B.576.

TRUCKEE MEADOWS REGIONAL STORMWATER QUALITY MANAGEMENT PROGRAM

1. THE CONTRACTOR SHALL SUBMIT A COPY OF THEIR NOTICE OF INTENT (NOI) TO THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP) TO BE REGULATED UNDER STORMWATER GENERAL PERMIT NVR100000 AND SUBMIT A COPY OF THE RECEIPT FOR PAYMENT OF THE ANNUAL FEE OR THE LETTER OF AUTHORIZATION FROM NDEP TO THE ENGINEER. ONCE PAYMENT HAS BEEN RECEIVED BY NDEP, THE APPLICANT IS IMMEDIATELY COVERED UNDER THE STATE'S PERMIT. TO SUBMIT A NOTICE OF INTENT (NOI) CONTACT:

   NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
   BUREAU OF WATER POLLUTION CONTROL
   901 S. STEWART STREET, SUITE 4001
   CARSON CITY, NV 89701
   775-687-9418
2. BY SUBMITTING A COPY OF THE NOI AND THE RECEIPT OR AUTHORIZATION FROM NDEP, THE CONTRACTOR ACKNOWLEDGES THAT THE CONTRACTOR IS AWARE OF THE REQUIREMENTS SET FORTH IN THE STATE'S GENERAL PERMIT AND HAS DEVELOPED AND WILL IMPLEMENT A SITE SPECIFIC STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR FURTHER ACKNOWLEDGES THAT THE CONTRACTOR IS AWARE OF THE TRUCKEE MEADOWS CONSTRUCTION SITE BEST MANAGEMENT PRACTICES HANDBOOK AND THE REQUIRED PERFORMANCE STANDARDS SET FORTH IN SECTION 3.3 OF THE HANDBOOK. TO ENSURE COMPLIANCE WITH THESE PERFORMANCE STANDARDS, THE CONTRACTOR SHALL SUBMIT A COMPLETED PERFORMANCE STANDARDS COMPLIANCE CHECKLIST, INDICATING THE BMP'S THAT IMPLEMENT STANDARDS 1-12. IT IS RECOMMENDED THAT THE CONTRACTOR ALSO ATTACH A COPY OF THE CHECKLIST TO THEIR SWPPP.
3. THE CONTRACTOR AND/OR AUTHORIZED AGENTS SHALL EACH DAY INSPECT CONDITION AND REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATE IN, THE PUBLIC RIGHTS-OF-WAY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM DRAIN SYSTEM.
4. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE CONTRACTOR AND CONTRACTOR'S AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN WASHOE COUNTY CODE CHAPTER 110 ARTICLE 421 AND THE TRUCKEE MEADOWS CONSTRUCTION SITE BEST MANAGEMENT PRACTICES HANDBOOK.
5. TEMPORARY OR PERMANENT STABILIZATION PRACTICES SHALL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER SUBSTANTIAL CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS BEEN TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO STORM WATER GENERAL PERMIT NVR100000.
6. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMP'S AT LEAST WEEKLY, PRIOR TO ANY FORECASTED RAIN EVENT AND WITHIN 24 HOURS AFTER ANY ACTUAL RAIN EVENT. THE CONTRACTOR OR CONTRACTOR'S AGENT SHALL UPDATE OR MODIFY THE STORM WATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS FROZEN GROUND CONDITIONS OR SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO STORM WATER GENERAL PERMIT NVR100000.
7. ACCUMULATED SEDIMENT IN BMP'S SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORM WATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50% OR MORE.

UTILITIES:

1. UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. WHERE EXCAVATION IS NECESSARY, THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (USA) AND ALL AFFECTED UTILITY COMPANIES TO LOCATE ALL BURIED UTILITIES AT LEAST 48 HOURS PRIOR TO EXCAVATION. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES FOR RELOCATION OF UTILITIES AS REQUIRED BY THE WORK. THE UTILITY COMPANIES WILL PERFORM ALL RELOCATION WORK AT NO COST TO THE CONTRACTOR, PROVIDED THAT NO CONTRACTOR CAUSED DAMAGE TO UTILITIES HAS OCCURRED DUE TO CONTRACTOR NEGLIGENCE.
2. ALL UTILITIES IMPACTED BY IMPROVEMENTS SHALL BE RAISED, LOWERED, OR RELOCATED TO ACCOMMODATE THE CONSTRUCTION OF THOSE IMPROVEMENTS. CHANGES TO THE DESIGN OF IMPROVEMENTS AS A RESULT OF THESE UTILITY CONFLICTS MUST IMMEDIATELY BE REPORTED TO THE PROJECT ENGINEER, AND THE ALTERATION TO THE DESIGN MUST BE APPROVED BY THE PROJECT ENGINEER.
3. WATER LINE INSTALLATION NOTES:
   A. DISINFECTION AND COLIFORM TESTING PER AWWA C651-13.
   B. PRESSURE TESTING PER AWWA C600.
   C. ANY OPEN WATER LINES SHALL BE CAPPED AT THE END OF EACH DAY.
   D. ALL MATERIALS THAT COME IN CONTACT WITH THE WATER SYSTEM SHALL BE ANSI/NSF 61 CERTIFIED LEAD FREE.

SURVEY:

1. BASIS OF BEARING AND COORDINATES:
   NORTH AMERICAN DATUM OF 1983/1994 (NAD 83/94), NEVADA STATE PLANE WEST ZONE. AS DETERMINED WITH REAL TIME KINEMATIC (RTK) GPS OBSERVATIONS, OBSERVED ON JULY 23, 2021, USING TRIMBLE R8 RECEIVER WITH CORRECTIONS RECEIVED FROM TRIMBLE R8 BASE STATION OCCUPYING NEVADA DEPARTMENT OF TRANSPORTATION CONTROL POINT "1583003A". ALL DIMENSIONS AND COORDINATES SHOWN ARE U.S. SURVEY FOOT GRID DISTANCES.

   "1583003A" STATE PLANE GRID COORDINATES, NV WEST ZONE
   N – 14764350.80
   E – 2238247.57
2. BASIS OF ELEVATION:
   A FOUND MAG NAIL AT THE NORTH WEST CORNER OF 941 TAHOE BOULEVARD (APN: 132-231-09) AS SHOWN ON THE SITE PLAN PREPARED BY ARNETTE AND ASSOCIATES
   "MAG NAIL"
   ELEVATION – 6406.00'

LEGEND

PROPOSED FEATURES

SYMBOL	FEATURE
6400	MAJOR CONTOUR
6401	MINOR CONTOUR
	EDGE OF PAVEMENT
	SAWCUT
6"W	WATER LINE
	GATE VALVE
HYD	FIRE HYDRANT
4"SD	STORM DRAIN PIPE
	STORM DRAIN INLET
24"SD	INFILTRATION GALLERY
	FLOW LINE
	STORM DRAIN MANHOLE
4"FD	FOUNDATION DRAIN PIPE
8"SS	SANITARY SEWER PIPE
	SANITARY SEWER MANHOLE
2"G	GAS LINE
E	UNDERGROUND ELECTRIC
	FILTER FABRIC FENCE/SILT FENCE
X	CONSTRUCTION FENCING
	TREE PROTECTION FENCING
	FIBER ROLL
	INFILTRATION TRENCH
	PORTLAND CEMENT CONCRETE
	AC PAVEMENT
	REVEGETATION
0.20%	SLOPE INDICATORS
X	TREE REMOVAL

EXISTING FEATURES

SYMBOL	FEATURE
6400	MAJOR CONTOUR
	MINOR CONTOUR
	EDGE OF PAVEMENT
W	WATER LINE
SS	SANITARY SEWER PIPE
SD	STORM DRAIN PIPE
E	UNDERGROUND ELECTRIC
GAS	GAS LINE
OHU	OVERHEAD UTILITY
T	
U	UNDERGROUND UTILITY
	RIGHT-OF-WAY
	PROPERTY LINE
	SURVEY MONUMENT
S	SANITARY SEWER MANHOLE
D	STORM DRAIN MANHOLE
5040.60 EP	POINT ELEVATION W/DESCRIPTOR
	FIRE HYDRANT
	GATE VALVE
	LIGHT POLE
	AC PAVEMENT
22"P	TREE WITH DIA./TYPE

ABBREVIATIONS

NOT ALL ABBREVIATIONS LISTED ARE USED IN THESE PLANS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
A/G	ABOVE GROUND
@	AT
APPROX	APPROXIMATE
ASS'Y	ASSEMBLY
AVG	AVERAGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BEGIN CURVE
BMP	BEST MANAGEMENT PRACTICES
BOW	BACK OF WALK
BS	BOTTOM OF STAIRS
BSP	BLACK STEEL PIPE
BW	BOTTOM OF WALL
BVC	BEGIN VERTICAL CURVE
C&G	CURB AND GUTTER
CB	CATCH BASIN
CF	CUBIC FEET
CL	CENTERLINE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COMM	COMMUNICATION
CONC	CONCRETE
CONST	CONSTRUCT
CP	CONTROL POINT
CY	CUBIC YARD
° OR DEG	DEGREE(S)
DI	DROP INLET
ø OR DIA	DIAMETER
DI	DUCTILE IRON
DWG	DRAWING
DW OR DWY	DRIVEWAY
E	EAST, EASTING
EA	EACH
EASE	EASEMENT
EC	END OF CURVE
EG	EXISTING GRADE
ELEC	ELECTRIC
EP	EDGE OF PAVEMENT
EL	ELEVATION
EVC	END OF VERTICAL CURVE
EX	EXISTING
FCA	FLANGE COUPLING ADAPTER
FH	FIRE HYDRANT
FG	FINISH GRADE
FFC	FRONT FACE CURB
FES	FLARED END SECTION
FL	FLOWLINE
FLG	FLANGED
FT OR '	FOOT, FEET
FV	FLUSH VALVE
G	GAS
GV	GATE VALVE
GB	GRADE BREAK
GSP	GALVANIZED STEEL PIPE
HP	HIGH POINT
HOR	HORIZONTAL
HDPE	HIGH DENSITY POLYETHYLENE
HMAC	HOT MIXED ASPHALT CONCRETE
IE	INVERT ELEVATION
ID	INSIDE DIAMETER
IN OR "	INCH
INT	INTERSECTION
IRR	IRRIGATION
LT,L	LEFT
LEN	LENGTH
LF	LINEAR FEET
LP	LOW POINT
LS	LUMP SUM
MFGR	MANUFACTURER
MH	MANHOLE
MAX	MAXIMUM
MDD	MAXIMUM DRY DENSITY
MJ	MECHANICAL JOINT
MI	MILE
MIN	MINIMUM
MISC	MISCELLANEOUS
MVC	MIDDLE OF VERTICAL CURVE
N	NORTH, NORTHING
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
# OR NO	NUMBER
OC	ON CENTER
OG	ORIGINAL GRADE
OWS	OIL/WATER SEPARATOR
±	PLUS OR MINUS
PCC	PORTLAND CEMENT CONCRETE OR POINT OF COMPOUND CURVE
PE	PERMANENT EASEMENT
PL	PROPERTY LINE
POS	POSITIVE
PRC	POINT OF REVERSE CURVE
PSI	POUNDS PER SQUARE INCH
PT	POINT
PTC	PERMISSION TO CONSTRUCT
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REVEG	REVEGETATION
RT,R	RIGHT
R/W, ROW	RIGHT-OF-WAY
S	SLOPE, SOUTH
SCH	SCHEDULE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FOOT/FEET
SHT	SHEET
SSMH	SANITARY SEWER MANHOLE
SSCO	SANITARY SEWER CLEAN OUT
SS	SANITARY SEWER, STAINLESS STEEL
STA	STATION
STD	STANDARD
SW	SIDEWALK
SY	SQUARE YARD
TBC	TOP BACK OF CURB
TC	TOP OF CURB
TCE	TEMPORARY CONSTRUCTION EASEMENT
TS	TOP OF STAIRS
TW	TOP OF WALL
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC
UGT	UNDERGROUND TELEPHONE
U/G	UNDERGROUND
VC	VERTICAL CURVE
VG	VALLEY GUTTER
W	WATER
WL	WATER LINE
W	WEST
W/	WITH
WM	WATER METER

TRPA SUBMITTAL
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FOR REVIEW
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DATE: 09-13-2021

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PROFESSIONAL ENGINEER – STATE OF NEVADA
MICHAEL LEFRANCOIS
Exp.12/31/21
CIVIL
No.20115

947 TAHOE

OWNER

PALCAP FFIF TAHOE 1, LLC
940 SOUTHWOOD BLVD.
STE 101
INCLINE VILLAGE, NV
89451

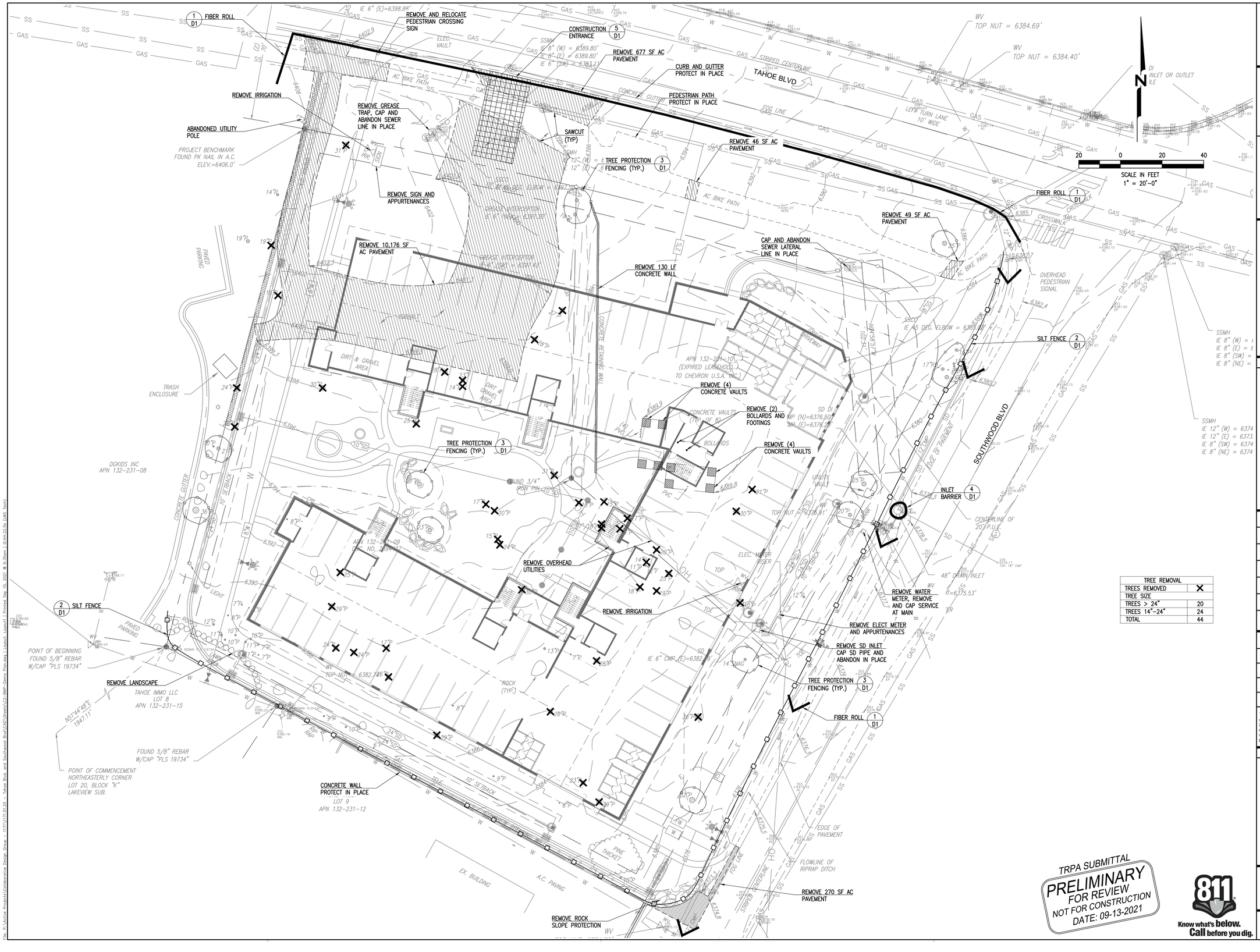
NO.	DATE	DESCRIPTION

PROJECT NO:	1171.01.25
DESIGNED BY:	KH
DRAWN BY:	KH
CHECKED BY: FH	DATE 09-09-2021
DATE:	09-13-2021

SHEET TITLE

NOTES, LEGEND, AND ABBREVIATIONS

DRAWING
C1



TREE REMOVAL	
TREES REMOVED	X
TREE SIZE	
TREES > 24"	20
TREES 14"-24"	24
TOTAL	44

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INCLINE VILLAGE, NV 89451

NO.	DATE	DESCRIPTION

PROJECT NO:	1171.01.25
DESIGNED BY:	KH
DRAWN BY:	KH
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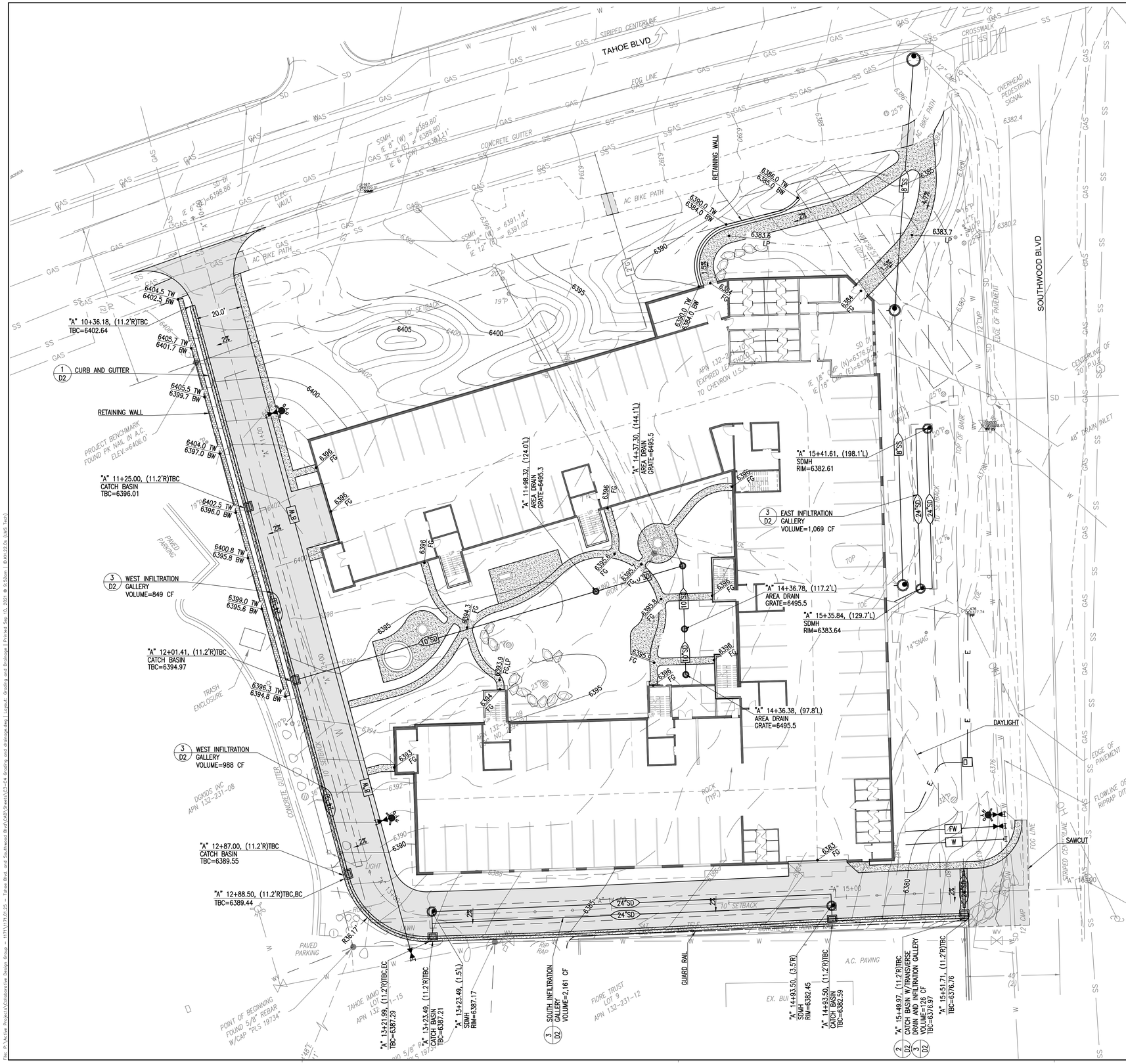
DATE:	09-13-2021

SHEET TITLE

BMP-DEMO PLAN

DRAWING

C2



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STE 101
INCLINE VILLAGE, NV
89451

NO.	DATE	DESCRIPTION

PROJECT NO:	1171.01.25
DESIGNED BY:	KH
DRAWN BY:	KH
CHECKED BY: FH	DATE 09-09-2021
DATE:	09-13-2021

SHEET TITLE

GRADING
AND
DRAINAGE

DRAWING

C3

SHEET 3 OF 8

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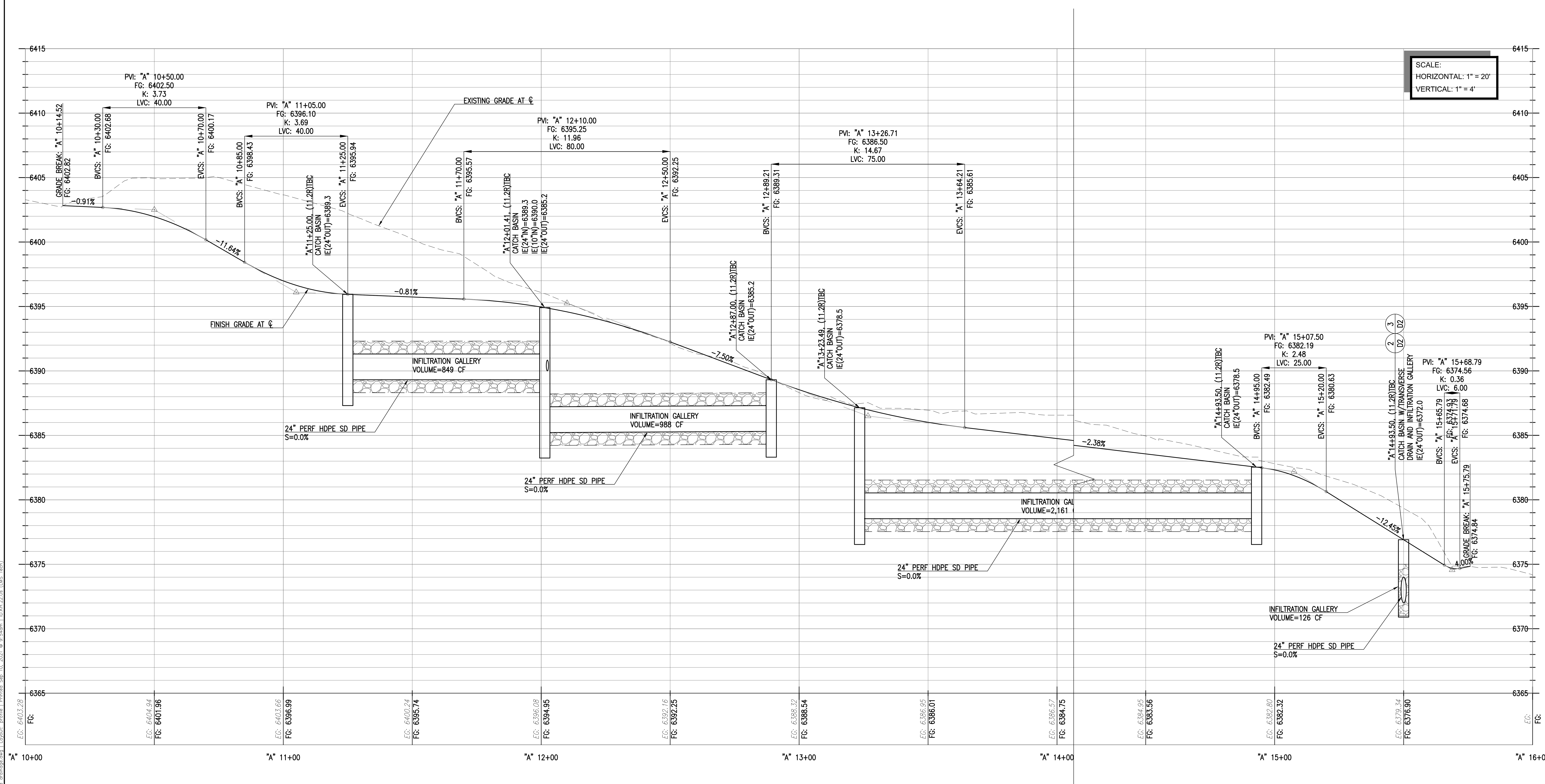

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INCLINE VILLAGE, NV 89451

NO.	DATE	DESCRIPTION

PROJECT NO: 1171.01.25
DESIGNED BY: KH
DRAWN BY: KH
CHECKED BY: FH DATE 09-09-2021
DATE: 09-13-2021

SHEET TITLE

DRIVEWAY ACCESS PROFILE

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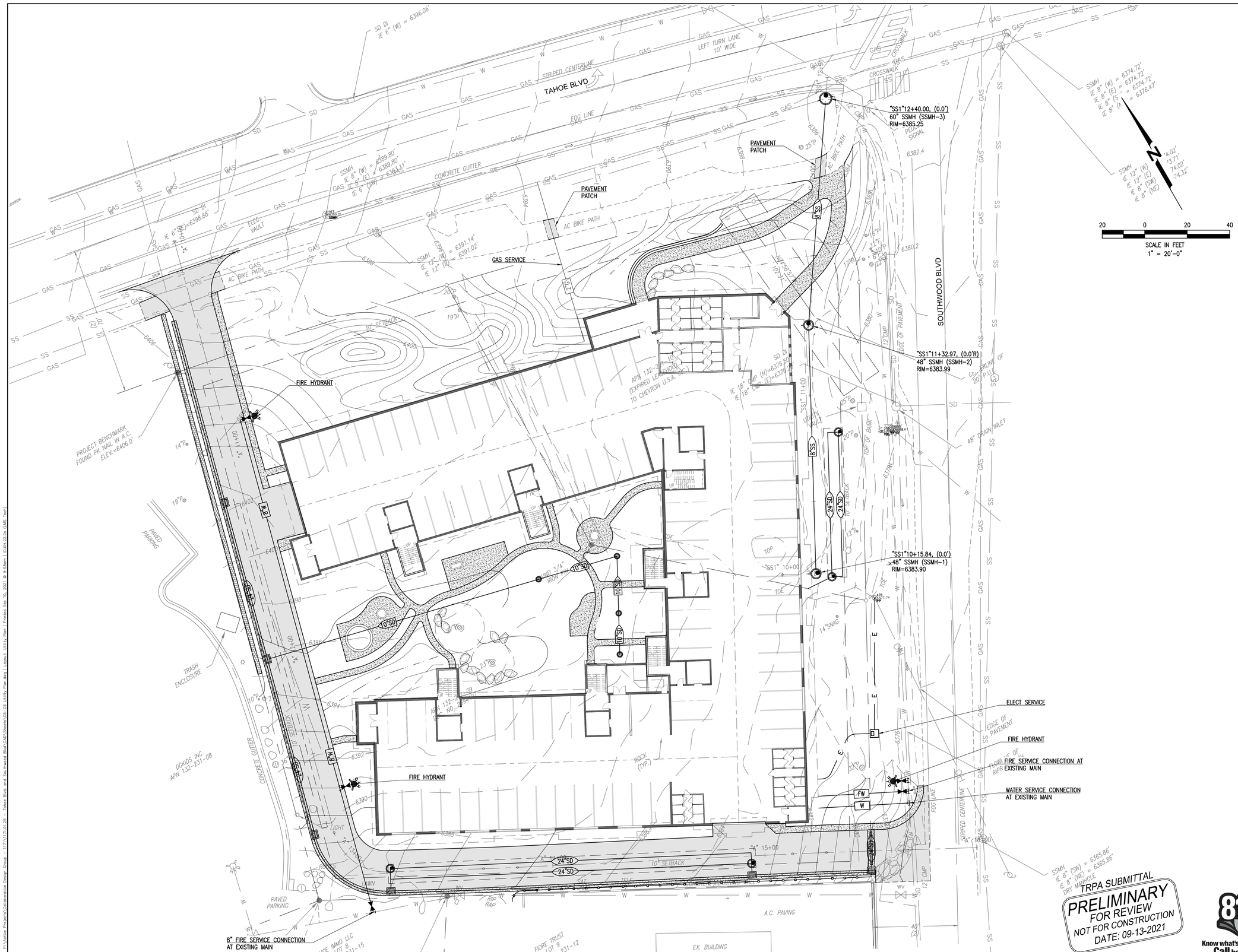
DRAWING
C4

SHEET 4 OF 8



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89451

NO.	DATE	DESCRIPTION

PROJECT NO:	1171.01.25
DESIGNED BY:	KH
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SHEET TITLE

UTILITY PLAN

DRAWING

C5

SHEET 5 OF 8

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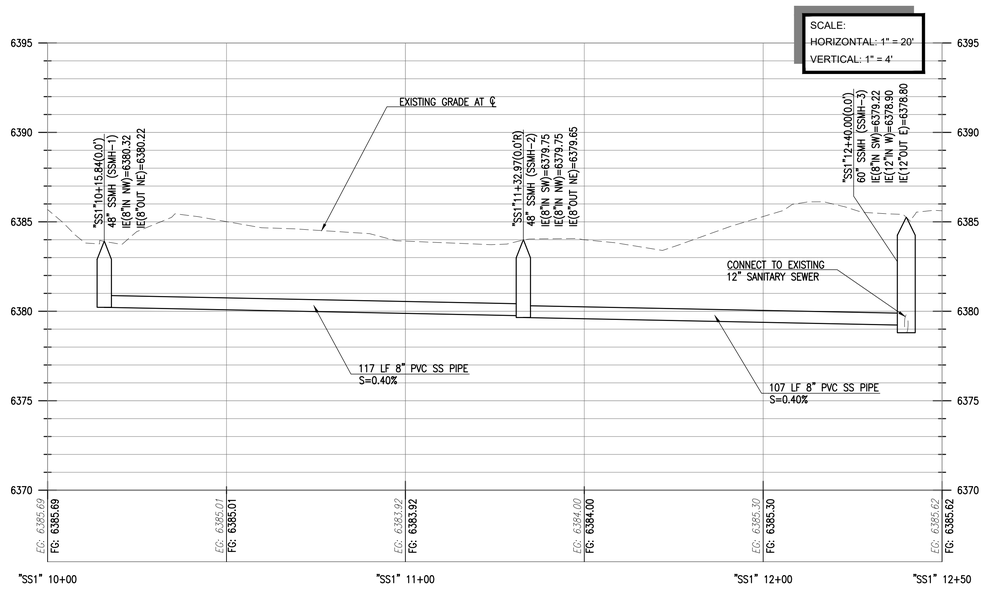

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89451

NO.	DATE	DESCRIPTION

PROJECT NO: 1171.01.25
DESIGNED BY: KH
DRAWN BY: KH
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DATE: 09-13-2021

SHEET TITLE

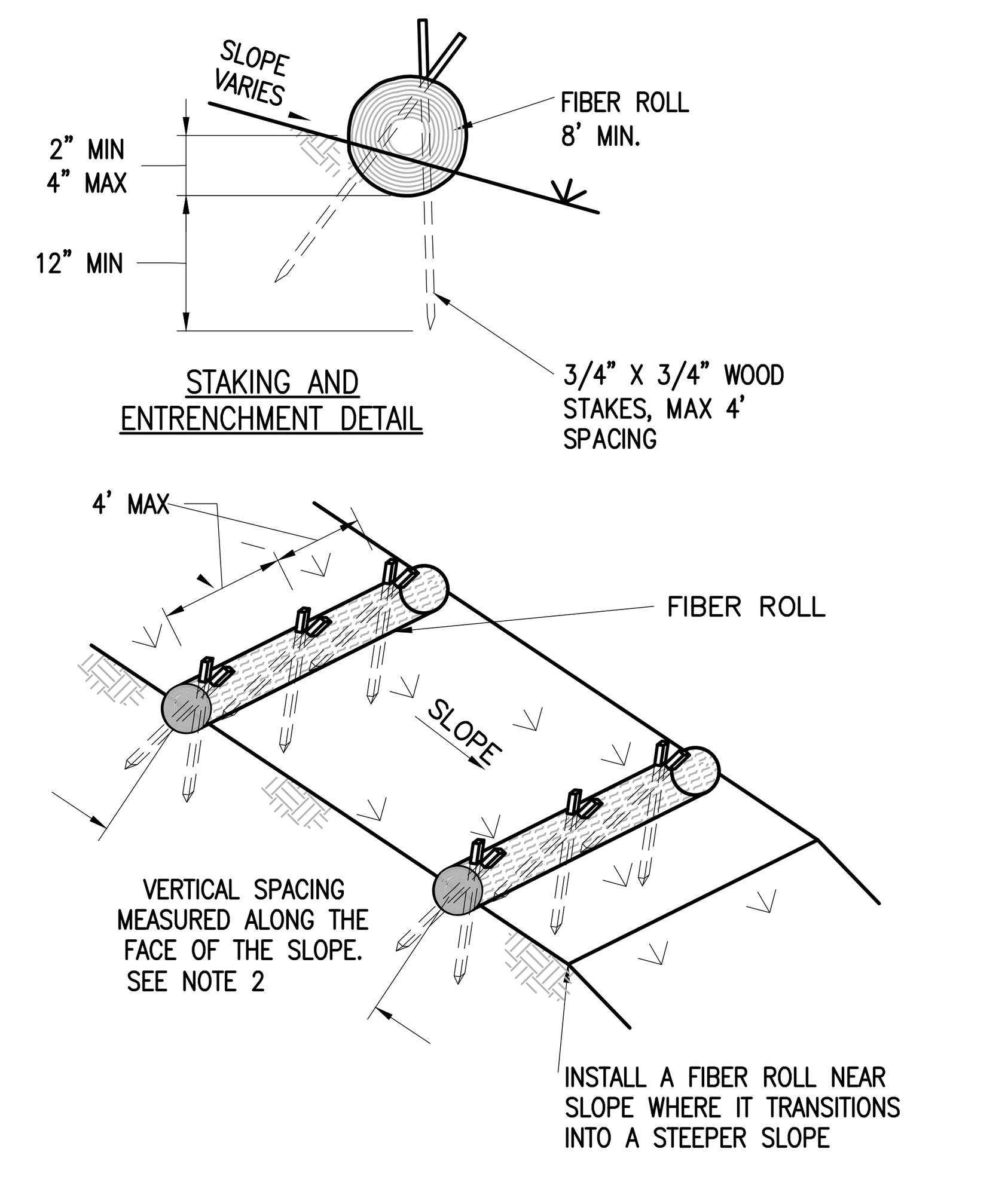
SANITARY
SEWER
PROFILE

DRAWING
C6

SHEET 6 OF 8

TEMPORARY EROSION, SEDIMENT, & POLLUTION CONTROL NOTES

1. THE CONTRACTOR SHALL IMPLEMENT CONSTRUCTION SITE BEST MANAGEMENT PRACTICES (BMPs) IN ACCORDANCE WITH THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THE TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL PLAN NOTES AND DETAILS INCLUDED IN THIS PLAN SET MAY BE INTEGRATED INTO THE PROJECT SWPPP.
2. GRADING, EXCAVATION, BACKFILLING AND CLEARING OF VEGETATION OR OTHER DISTURBANCE OF SOIL SHALL NOT OCCUR BETWEEN OCTOBER 15 AND MAY 1.
3. ALL CONSTRUCTION SITES SHALL BE WINTERIZED BY OCTOBER 15 TO REDUCE THE WATER QUALITY IMPACTS ASSOCIATED WITH WINTER WEATHER PER TRPA CODE CHAPTER 33.3.1.D.
4. THE PROJECT SITE AND ALL TEMPORARY BMPs SHALL BE INSPECTED BY QUALIFIED PERSONNEL BEFORE AND AFTER EACH STORM EVENT AND DAILY DURING CONSTRUCTION WORK.
5. THE CONTRACTOR SHALL MAINTAIN ALL TEMPORARY BMPS AT ALL TIMES.
6. DUST CONTROL
   a. DUST CONTROL MEASURES SHALL BE REQUIRED FOR ANY GRADING ACTIVITY CREATING SUBSTAT CONTROL MEASURES SHALL BE APPROVED BY TRPA.
   b. AT A MINIMUM THE CONTRACTOR SHALL PROVIDE A WATER TRUCK TO WATER AREAS AS NECESSARY TO CONTROL DUST.
   c. STOCKPILES AND LOOSE SOIL MOUNDS SHALL BE PROTECTED FROM WIND OR WATER EROSION BY BEING APPROPRIATELY PROTECTED OR COVERED WHEN CONSTRUCTION IS NOT IN ACTIVE PROGRESS OR WHEN REQUIRED BY TRPA OR THE SWPPP.
7. VEGETATION PROTECTION
   a. ALL TREES AND NATURAL VEGETATION SHALL NOT BE DISTURBED, INJURED OR REMOVED EXCEPT AS SPECIFICALLY CALLED FOR IN THIS PLAN SET AND TRPA CODE CHAPTER 33.6.
   b. TREES SHALL NOT BE USED FOR THE PURPOSE OF SIGN POSTS, TELEPHONE WIRES OR TEMPORARY POWER, BRACING FOR FORMS OR OTHER SIMILAR TYPES OF USES PER TRPA CODE CHAPTER 33.6.7.
   c. VEGETATION PROTECTION FENCING SHALL BE CONSTRUCTED WITH METAL POSTS, INDUSTRY STANDARD ORANGE MESH FENCING, AND AT LEAST 4 FEET TALL, UNLESS AN ALTERNATIVE METHOD IS APPROVED BY THE COUNTY OR TRPA.
8. EROSION CONTROL
   a. MINIMIZE DISTURBED AREAS AND PROTECT NATURAL FEATURES AND SOIL.
   b. PHASE CONSTRUCTION ACTIVITY WHEN FEASIBLE.
   c. CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT SITE.
   d. DISTURBED AREAS SHOULD BE STABILIZED AS SOON AS PRACTICABLE AFTER CONSTRUCTION ACTIVITIES AT THAT LOCATION HAVE CEASED.
   e. IF ROLLED EROSION CONTROL PRODUCTS ARE USED FOR SOIL STABILIZATION, INSTALLATION AND STAKING SHALL BE DONE ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
   f. NO VEHICLE OR HEAVY EQUIPMENT SHALL BE ALLOWED IN A STREAM ENVIRONMENT ZONE OR WET AREA EXCEPT AS AUTHORIZED BY TRPA.
   g. ONLY EQUIPMENT OF A SIZE AND TYPE THAT WILL DO THE LEAST AMOUNT OF DAMAGE, UNDER PREVAILING SITE CONDITIONS, AND CONSIDERING THE NATURE OF THE WORK TO BE PERFORMED, SHALL BE USED.
9. SEDIMENT CONTROL
   a. STORM DRAIN INLETS SHOULD BE PROTECTED AT ALL TIMES UTILIZING BMP – 12
   b. SILT FENCE BMP – 10 OR FIBER ROLLS BMP – 9 SHOULD BE USED AS PERIMETER CONTROLS FOR THE PROJECT SITE AS DIRECTED BY THE SWPPP OR THE COUNTY AND TRPA IN THE FIELD.
   c. EXCAVATED MATERIAL SHALL BE STORED UPGRADE FROM THE EXCAVATED AREA WHENEVER POSSIBLE. NO MATERIAL SHALL BE STORED IN ANY STREAM ENVIRONMENT ZONE OR WET AREA.
   d. CONTRACTOR SHALL PROVIDE CRUSHED ROCK OR RUMBLE BOARDS IN AREAS OF CONSTRUCTION SITE ACCESS AND EXITS.
   e. SOIL AND CONSTRUCTION MATERIAL SHALL NOT BE TRACKED OFF THE CONSTRUCTION SITE. GRADING OPERATIONS SHALL CEASE IN THE EVENT THAT A DANGER OF VIOLATING THIS CONDITION EXISTS.
   f. STREET SWEEPING SHALL BE PERFORMED AS NEEDED TO KEEP TRAVELED WAYS FREE OF SEDIMENT (TYPICALLY DAILY).
10. POLLUTION CONTROL
   a. NO WASHING OF VEHICLES OR HEAVY EQUIPMENT, INCLUDING CONCRETE MIXERS, SHALL BE PERMITTED ANYWHERE ON THE SUBJECT PROPERTY UNLESS AUTHORIZED BY TRPA IN WRITING.
   b. DISPOSAL OF ANY EXCAVATED OR WASTE MATERIAL (LIQUID OR SOLID) SHALL BE TO A SITE OUTSIDE THE TAHOE BASIN OR A LOCATION APPROVED BY TRPA IN WRITING.
   c. STAGING AREAS SHOULD BE CLEARLY DELINEATED BY THE CONTRACTOR AND APPROVED BY TRPA PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
   d. THE CONTRACTOR SHALL DEVELOP AND HAVE A SPILL PREVENTION AND RESPONSE PLAN WITH SPILL RESPONSE MATERIALS ONSITE AT ALL TIMES.
11. TEMPORARY BMPs SHALL BE INSTALLED AND MAINTAINED PRIOR TO EXCAVATION AND DURING ALL PHASES OF THE PROPOSED PROJECT.
12. PROJECT CONSTRUCTION SHALL BE PHASED TO MINIMIZE THE AMOUNT OF DISTURBED SOILS EXISTING AT ONE TIME. ADDITIONALLY ALL NEW AND EXISTING CONVEYANCE AND TREATMENT FACILITIES SHALL BE FITTED WITH TEMPORARY BMPs TO PREVENT THE TRANSPORT OF SEDIMENT DURING STORM EVENTS DURING CONSTRUCTION.
13. TEMPORARY EROSION CONTROL DEVICES SHALL BE PLACED EVERY 500 FEET MINIMUM IN EXCAVATED TRENCHES AND DITCHES. WHERE PRACTICAL, TEMPORARY EROSION CONTROL DEVICES SHALL BE PLACED EVERY 100 FEET. TEMPORARY EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL SITE IS STABILIZED.
14. TEMPORARY BMPs SHOWN ON THE PLANS DO NOT FULFILL ALL REQUIREMENTS OF THE SWPPP. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE TEMPORARY BMPs ARE INSTALLED IN ALL AREAS NECESSARY TO COMPLY WITH THE SWPPP, NDEP, AND TRPA PERMITS.



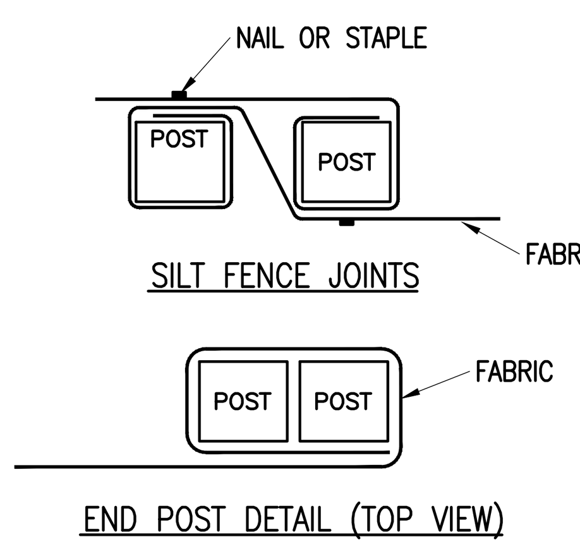
NOTES:

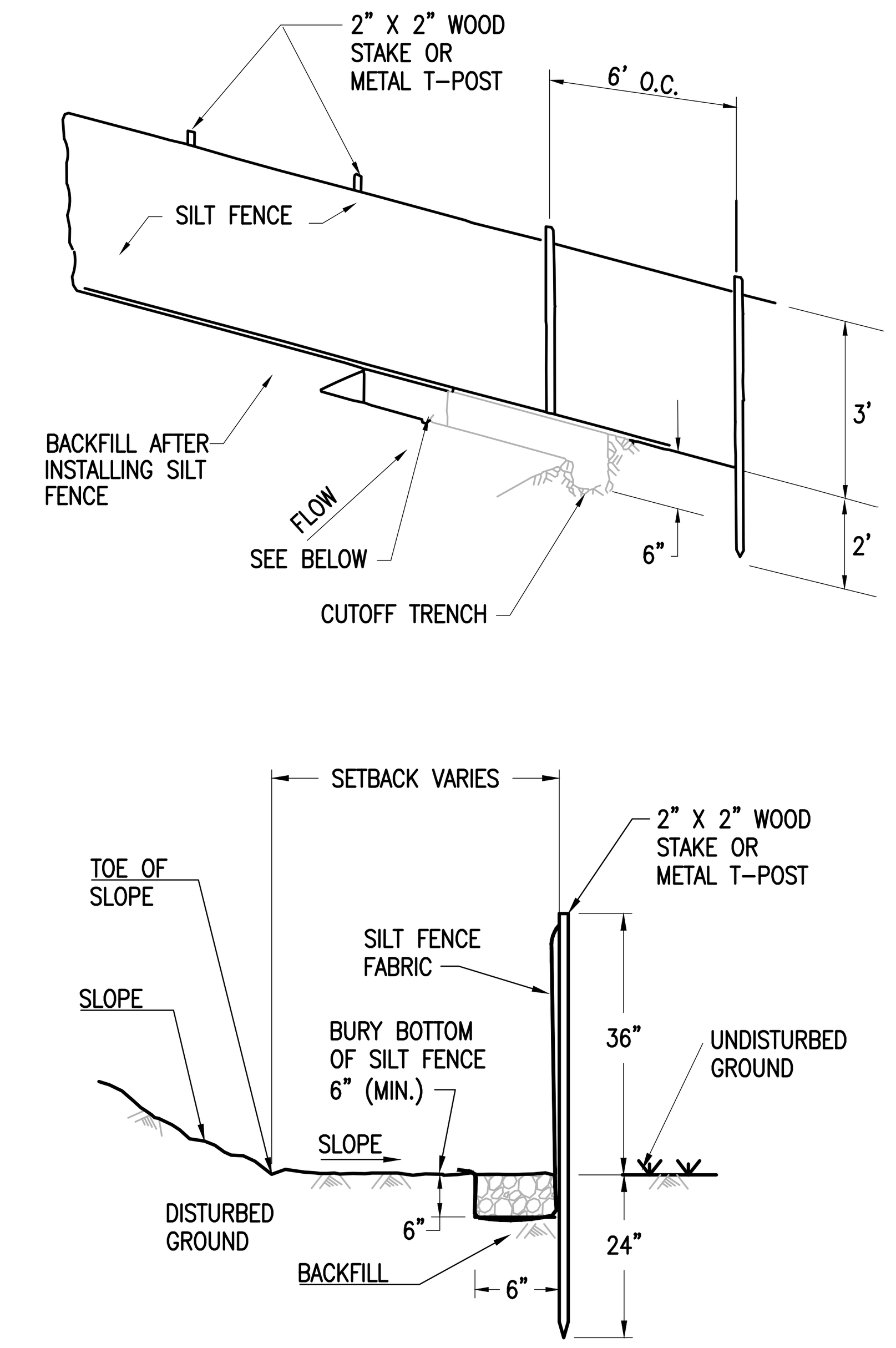
1. FIBER ROLLS SHOULD CONSIST OF STRAW, FLAX, WOOD EXCELSIOR OR COCONUT FIBERS BOUND IN A TIGHT TUBULAR ROLL.
2. LOCATE FIBER ROLLS ON LEVEL CONTOURS SPACED AS FOLLOWS:
   - SLOPE INCLINATION OF 4:1 (H:V) OR FLATTER: FIBER ROLLS SHOULD BE PLACED AT A MAXIMUM INTERVAL OF 20 FT.
   - SLOPE INCLINATION BETWEEN 4:1 AND 2:1 (H:V): FIBER ROLLS SHOULD BE PLACED AT A MAXIMUM INTERVAL OF 15 FT.
   - SLOPE INCLINATION OF 2:1 (H:V) OR GREATER: FIBER ROLLS SHOULD BE PLACED AT A MAXIMUM INTERVAL OF 10 FT.
3. TURN THE ENDS OF THE FIBER ROLL UP SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE ROLL.
4. IF MORE THAN ONE FIBER ROLL IS PLACED IN A ROW, THE ROLLS SHOULD BE OVERLAPPED, NOT ABUTTED.
5. FIBER ROLLS MAY BE USED FOR DRAINAGE INLET PROTECTION IF PROPERLY ANCHORED.
6. SEDIMENT SHOULD BE REMOVED WHEN SEDIMENT ACCUMULATION REACHES ONE-HALF THE SEDIMENT STORAGE DEPTH.

1/D1 FIBER ROLL (BMP-9)
NTS

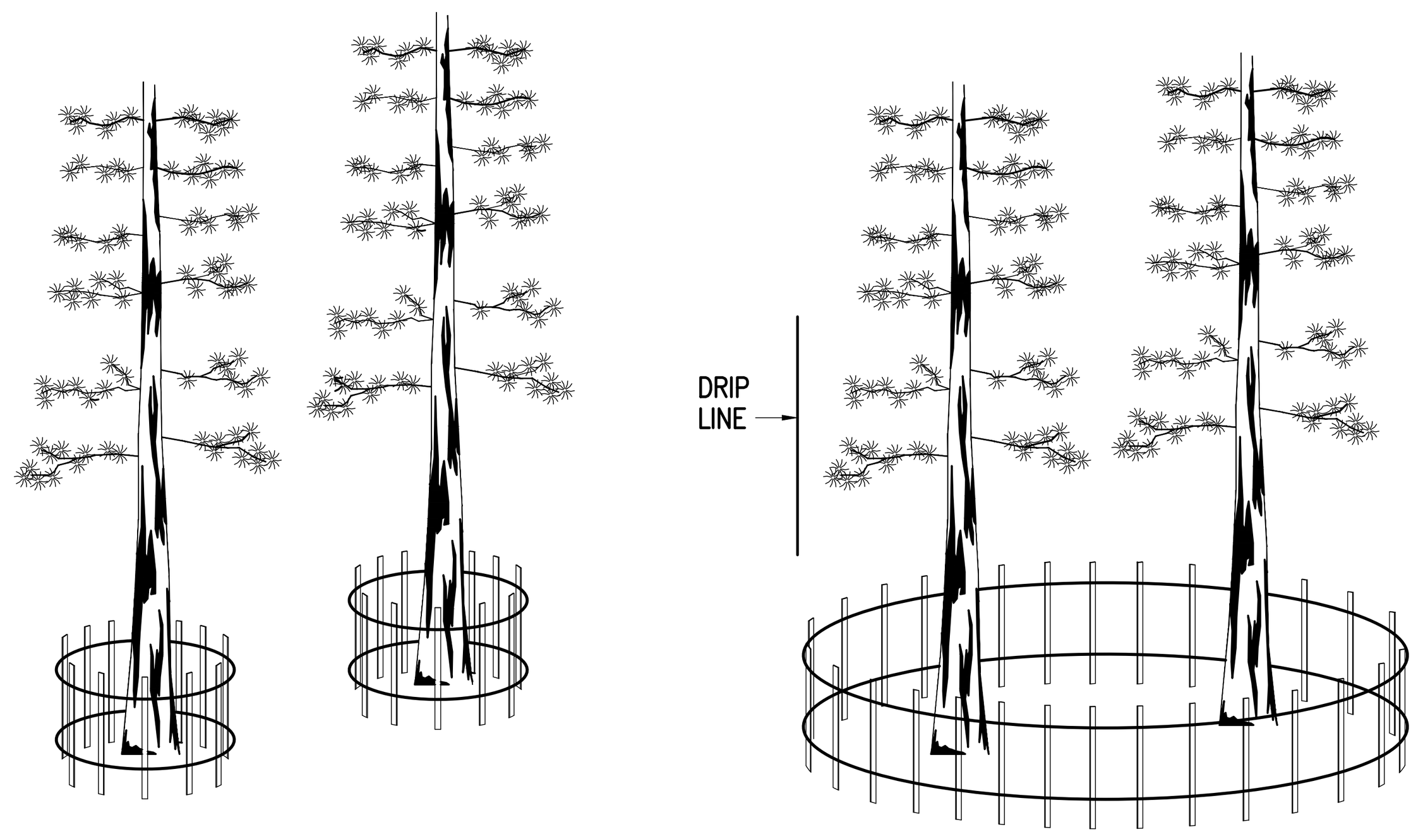
NOTES:

1. SITE CONSIDERATIONS
   a. DO NOT USE IN STREAMS, CHANNELS, DRAIN INLETS, OR ANYWHERE FLOW IS CONCENTRATED. DO NOT USE TO DIVERT FLOW.
   b. MAXIMUM SLOPE LENGTH BEHIND FENCE LINE SHOULD NOT BE LONGER THAN 200'.
   c. MAXIMUM SLOPE STEEPNESS BEHIND FENCE LINE SHOULD NOT BE STEEPER THAN 1:1.
   d. WHERE POSSIBLE, MINIMUM LENGTH FROM TOE OF SLOPE TO FENCE SHOULD BE 6'-8'
2. FABRIC
   a. SILT FENCE FABRIC SHOULD BE WOVEN POLYPROPYLENE WITH A MINIMUM WIDTH OF 48" AND A MINIMUM TENSILE STRENGTH OF 100 LB FORCE.
   b. THE FABRIC SHOULD CONFORM TO THE REQUIREMENTS IN ASTM DESIGNATION D4632 AND SHOULD HAVE AN INTEGRAL REINFORCEMENT LAYER. THE REINFORCEMENT LAYER SHOULD BE A POLYPROPYLENE, OR EQUIVALENT, NET PROVIDED BY THE MANUFACTURER.
   c. THE PERMITIVITY OF THE FABRIC SHOULD BE BETWEEN 0.1 SEC-1 AND 0.15 SEC-1 IN CONFORMANCE WITH THE REQUIREMENTS IN THE ASTM DESIGNATION D4491.
3. POSTS AND STAPLES OR WIRE
   a. POST SHALL BE A MINIMUM OF 2" X 2" WOOD STAKES OF COMMERCIAL QUALITY LUMBER OR EQUIVALENT STRENGTH METAL T-POST OR GREATER.
   b. STAPLES USED TO FASTEN THE FENCE FABRIC TO THE STAKES SHOULD NOT BE LESS THAN 1.75" LONG AND SHOULD BE FABRICATED FROM 15 GAUGE OR HEAVIER WIRE. PLASTIC WIRE TIES AND/OR STEEL BALING WIRE (9 GAUGE OR HEAVIER) MAY BE SUBSTITUTED. NOT LESS THAN 4 STAPLES/TIES SHALL BE USED IN EACH STAKE.
4. INSTALLATION
   a. EXCAVATE TRENCH A MIMIMUM OF 6" X 6" ALONG THE ENTIRE LENGTH OF THE FENCE LINE.
   b. STAKES SHALL BE SPACED AT 6'-0" MAXIMUM AND SHALL BE POSITIONED ON DOWNSTREAM SIDE OF FENCE.
   c. THE LAST 8' OF FENCE SHALL BE TURNED UPSLOPE.
   d. CONNECTION/JOINING OF SILT FENCES SHALL BE COMPLETED BY TIGHTLY OVERLAPPING THE ENDS OF THE ROLLS A MINIMUM OF 12" OR BY OVERLAPPING THE END POSTS AND SECURING THE TWO POSTS TOGETHER TIGHTLY.
   e. BOTTOM OF SILT FENCE SHOULD BE KEYED IN 12".
   f. DO NOT INSTALL PERPENDICULAR TO ANY SLOPE OR ANY CONTOUR LINE.
5. MAINTENANCE
   a. SILT FENCES SHOULD BE LEFT IN PLACE, REGULARLY INSPECTED, AND MAINTAINED UNTIL THE UPSTREAM AREA IS PERMANENTLY STABILIZED.
   b. SEDIMENT SHOULD BE REMOVED BEFORE THE SEDIMENT ACCUMULATION REACHES ONE-THIRD OF THE BARRIER HEIGHT.





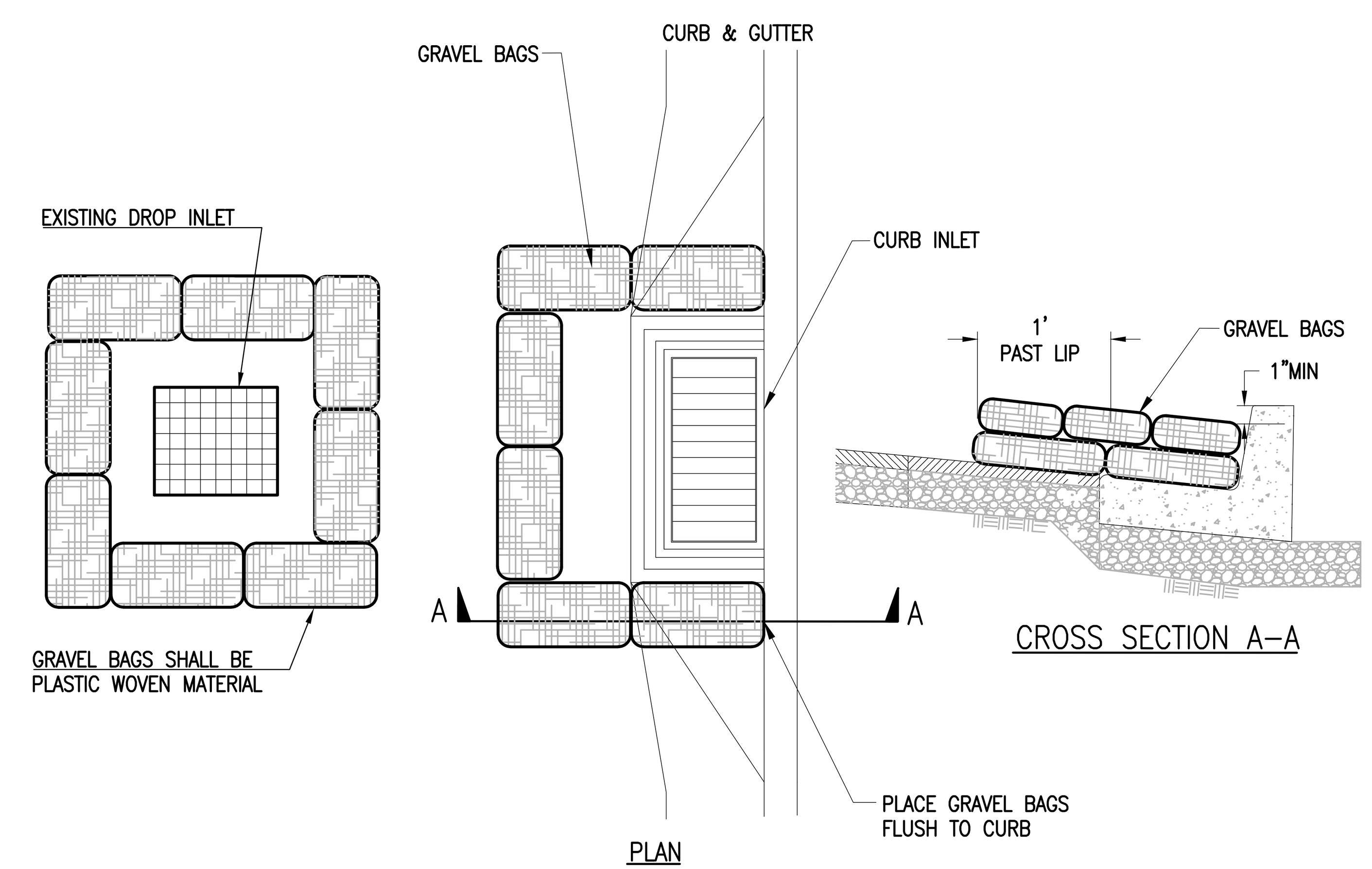
2/D1 SILT FENCE (BMP-10)
NTS



NOTES:

1. FENCING OF VEGETATION PROTECTION AREAS AND "NON-APPROVED" CONSTRUCTION AREAS SHALL BE AT LEAST 48 INCHES HIGH AND SHALL BE CONSTRUCTED OF METAL POSTS AND ORANGE CONSTRUCTION FENCING AT LEAST 48 INCHES HIGH.
2. NO MATERIAL OR EQUIPMENT SHALL ENTER OR BE PLACED IN THE AREAS PROTECTED BY FENCING OR OUTSIDE THE APPROVED CONSTRUCTION AREA WITHOUT PRIOR APPROVAL FROM THE COUNTY. FENCES SHALL NOT BE MOVED WITHOUT PRIOR APPROVAL.
3. TREE PROTECTION FENCING SHOWN ON PLANS IS NOT TO SCALE.

3/D1 TREE PROTECTION/ CONSTRUCTION FENCING (BMP-8)
NTS



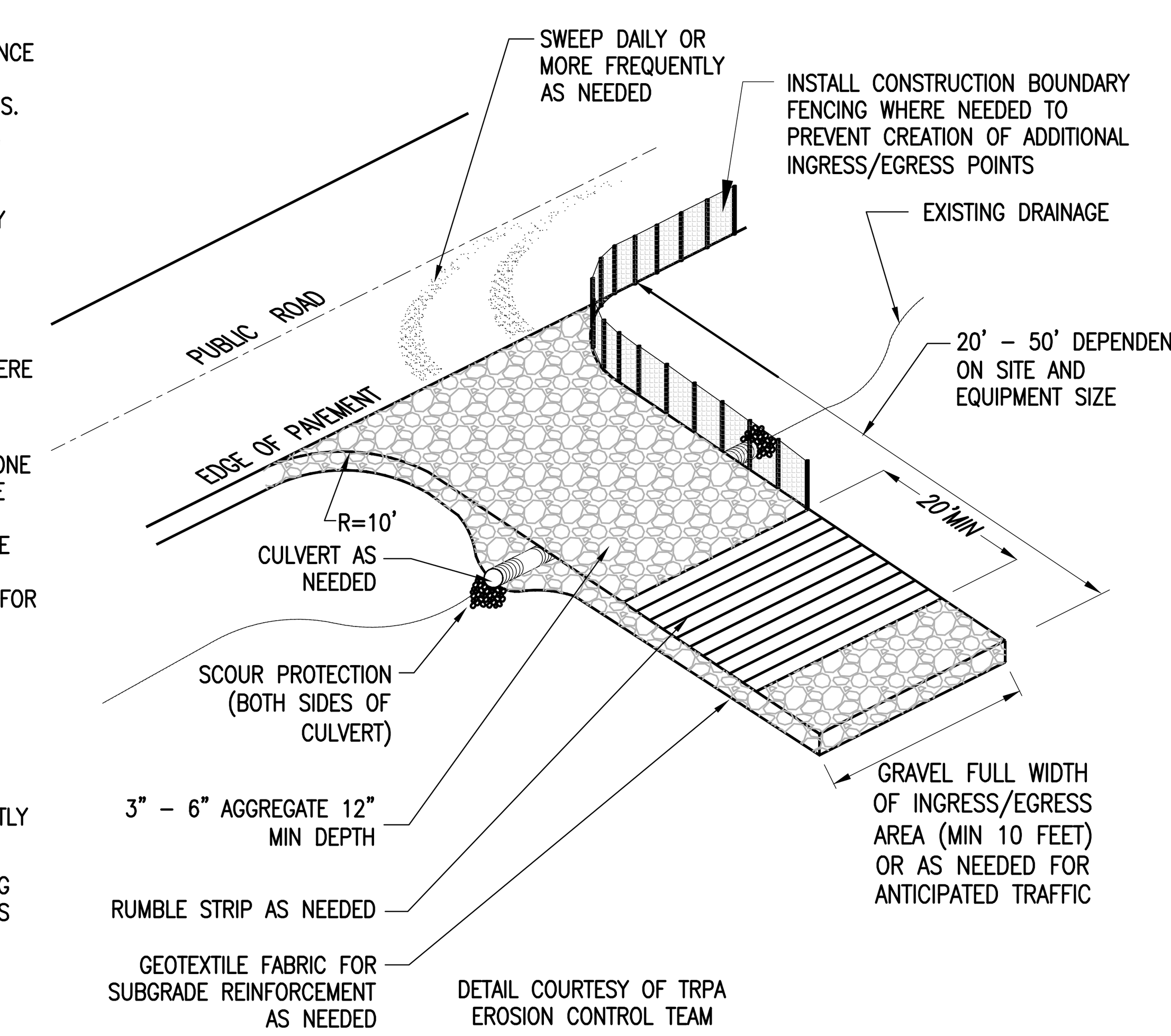
NOTES:

1. GRAVEL BAG CONFIGURATION SHOWN SHALL BE USED FOR PAVED OR UNPAVED AREAS WITH SLOPES LESS THAN 5%. IF TWO LAYERS OF GRAVEL BAGS ARE INSTALLED, PROVIDE GAPS AS FOLLOWS:
   a. LEAVE GAP OF ONE BAG DIRECTLY IN FRONT OF THE DROP INLET FOR DROP INLETS LOCATED IN A SUMP.
   b. LEAVE GAP OF ONE BAG ON THE UPSLOPE SIDE FOR AREAS WITH SLOPES GREATER THAN 2% BUT LESS THAN 5%.
2. GRAVEL BAGS SHALL BE FILLED WITH CLEAN, WASHED ¾" GRAVEL OR EQUIVALENT.
3. DAMAGED GRAVEL BAGS SHALL BE REPLACED PROMPTLY.
4. GRAVEL BAG BERM HEIGHT SHALL EQUAL 5" OR 8" MIMIMUM DEPENDENT ON CURB HEIGHT. MAINTAIN 1" MIN FROM TOP OF GRAVEL BAG TO TOP OF CURB.

4/D1 GRAVEL BAG CURB INLET SEDIMENT BARRIER (BMP-12)
NTS

NOTES:

1. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE USED AT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS.
2. THE AGGREGATE SHALL BE 3" - 6" CRUSHED ROCK.
3. THE ENTRANCE SHALL BE PROPERLY GRADED TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
4. THE ENTRANCE SHALL BE CONSTRUCTED ON LEVEL GROUND, WHERE FEASIBLE, AND LOCATED WHERE PERMANENT DRIVEWAY OR PARKING AREAS ARE PLANNED.
5. TOP DRESSING WITH ADDITIONAL STONE SHALL BE PROVIDED WHEN SURFACE VOIDS ARE NO LONGER VISIBLE OR WHEN THERE IS FREQUENT OFF-SITE TRACKING. FREQUENT OFF-SITE TRACKING MAY INDICATE THE NEED FOR GRAVEL REPLACEMENT.
6. CONTRACTOR TO MAINTAIN CONSTRUCTION ENTRANCE AT ALL TIMES.
7. ALL SEDIMENT DEPOSITS ON PAVED ROADWAYS SHALL BE SWEPT AND REMOVED DAILY OR MORE FREQUENTLY AS NEEDED.
8. LIMIT CONSTRUCTION TRAFFIC DURING WET WEATHER OR WHEN THE SITE IS SATURATED, MUDDY OR COVERED IN SNOW.
9. LIMIT SPEEDS OF INGRESS/EGRESS VEHICLES TO 5 MPH OR LESS.
10. GEOTEXTILE & ROCK SHALL BE REMOVED AT COMPLETION OF CONSTRUCTION.
11. ALL AREAS DISTURBED BY THE CONTRACTOR AND NOT OTHERWISE STABILIZED SHALL BE RESTORED WITH VEGETATION TO THE SATISFACTION OF THE COUNTY.



5/D1 CONSTRUCTION ENTRANCE
NTS

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PROFESSIONAL ENGINEER - STATE OF NEVADA
MICHAEL LEFRANCOIS
Exp.12/31/21
CIVIL
No.20115

947 TAHOE

OWNER

PALCAP FFIF TAHOE 1, LLC
940 SOUTHWOOD BLVD. STE 101
INCLINE VILLAGE, NV 89451

NO.	DATE	DESCRIPTION

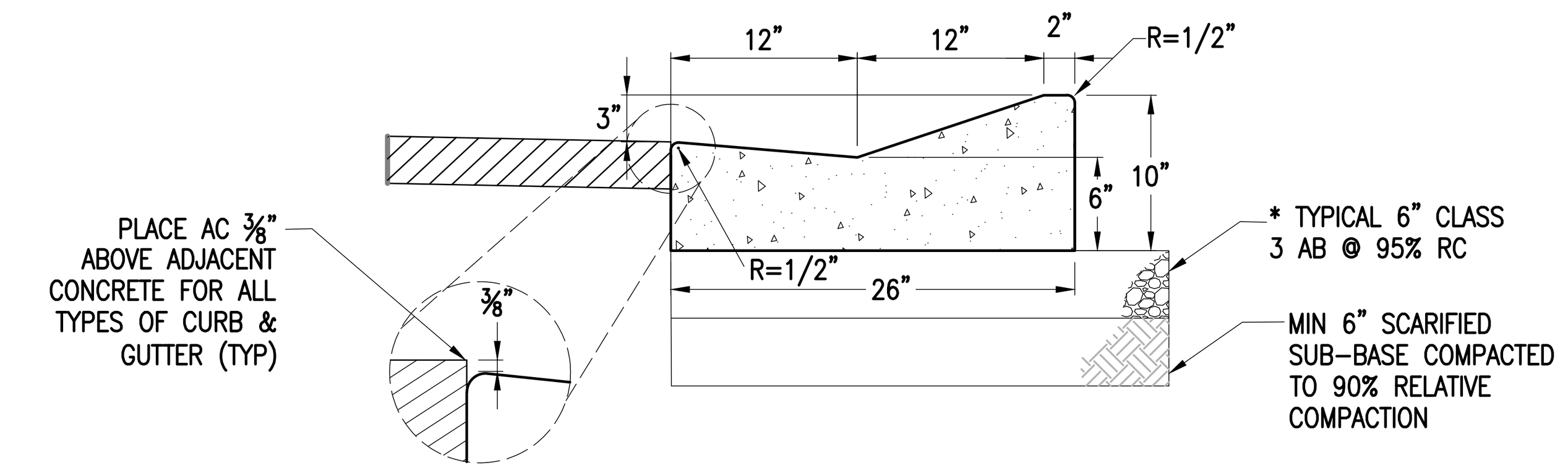
PROJECT NO:	1171.01.25
DESIGNED BY:	KH
DRAWN BY:	KH
CHECKED BY: FH	DATE 09-09-2021
DATE:	09-13-2021

SHEET TITLE

BMP DETAILS

DRAWING

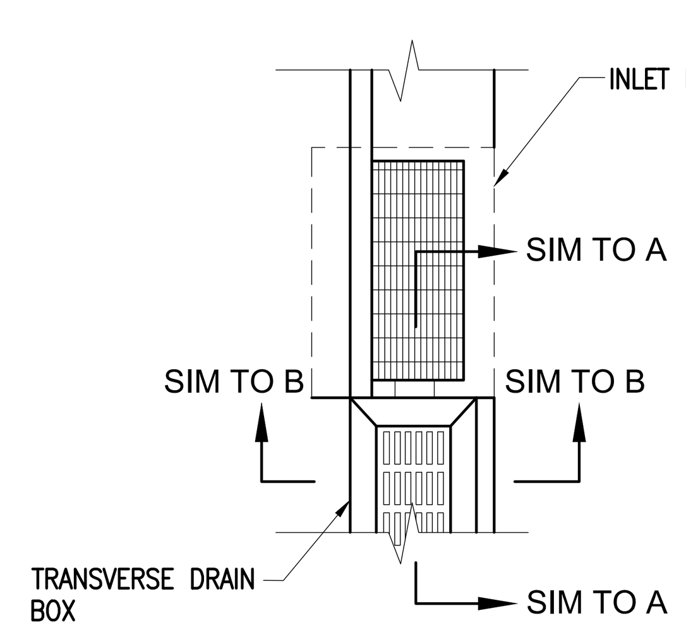
D1



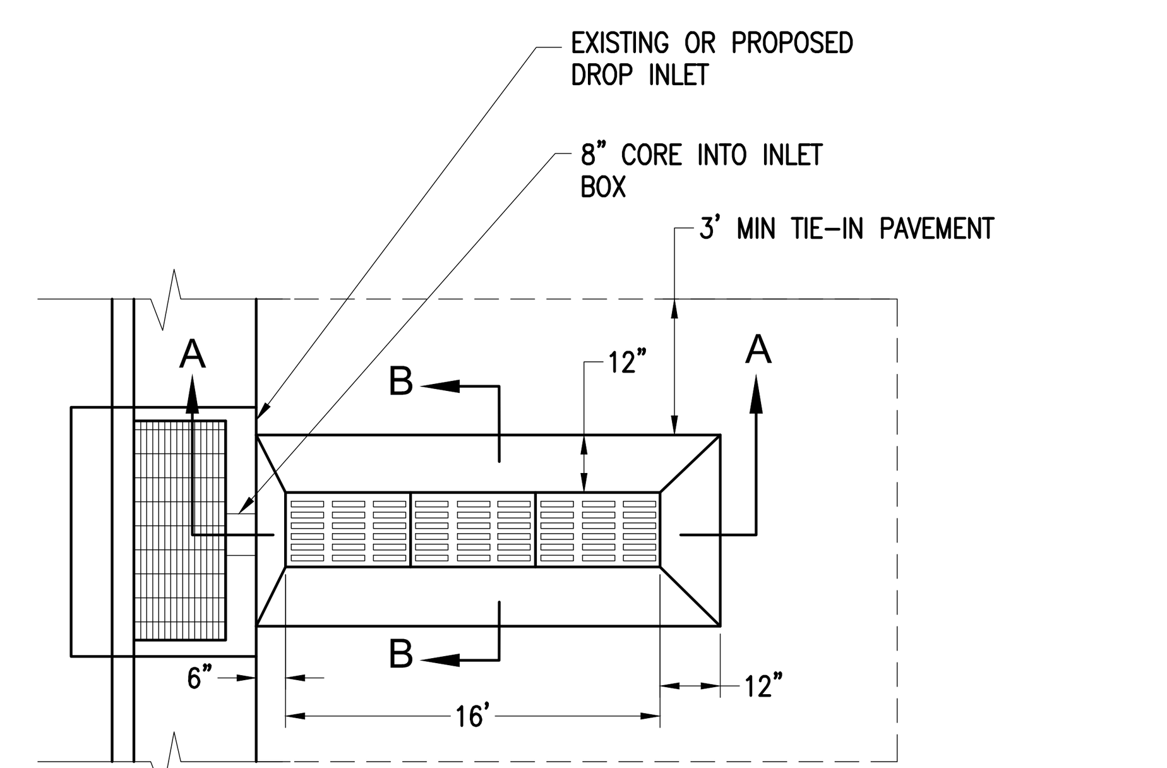
NOTES:

1. ALL BASE MATERIAL SHALL BE COMPACTED AND TESTED BY THE CITY OR BY A THIRD PARTY INSPECTOR AT THE CITY'S DISCRETION PRIOR TO CONCRETE POUR. NOTIFY THE CITY AT LEAST 24 HRS PRIOR TO POUR.
2. CONTRACTOR SHALL CONTACT INSPECTOR FOR SCHEDULING CURB STRINGLINE INSPECTION AT LEAST 24 HRS PRIOR TO CONCRETE POUR.
3. ALL FLOWLINES SHALL BE WATER TESTED BEFORE ACCEPTANCE FOR PAYMENT. CONTRACTOR SHALL CONTACT INSPECTOR TO SCHEDULE WATER TESTING.
4. LOCATE 2" DEEP TRANSVERSE SCORES AT 10' INTERVALS IN CURB AND GUTTERS. INSTALL EXPANSION JOINTS AT ALL COLD JOINTS.
5. (2) #5x12" DOWELS ARE REQUIRED AT ALL COLD JOINTS, INCLUDING WHERE NEW CURB AND GUTTER IS TO MEET EXISTING. DOWELS SHALL BE GREASED AND INSTALLED INTO THE CURED CONCRETE CURB AND GUTTER, CENTERED VERTICALLY AND 3" OFF OF EACH SIDE.
6. NO WASHOUT OF TRUCKS AND/OR EQUIPMENT WILL BE ALLOWED ON SITE UNLESS A BASIN IS PROVIDED AND APPROVED BY THE INSPECTOR.
7. CONTRACTOR MUST TRENCH PLATE ALL DRIVEWAYS FOR 72 HOURS AFTER CONCRETE POUR.
8. CITY HAS THE RIGHT TO REJECT CURB FOR NON-CONFORMANCE AND/OR POST CONSTRUCTION DAMAGE.
9. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY BMPS, AC CUTS AND REPLACEMENT, REVEGETATION AND ALL OTHER INCIDENTALS ASSOCIATED WITH CURB INSTALLATION.

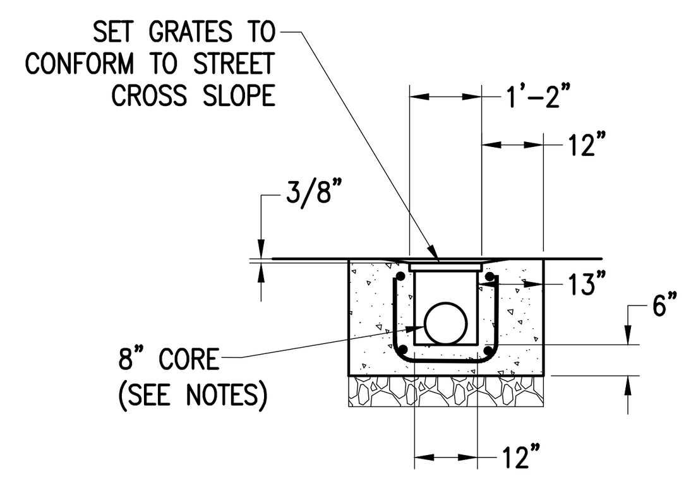
1/D2 CURB AND GUTTER
NTS



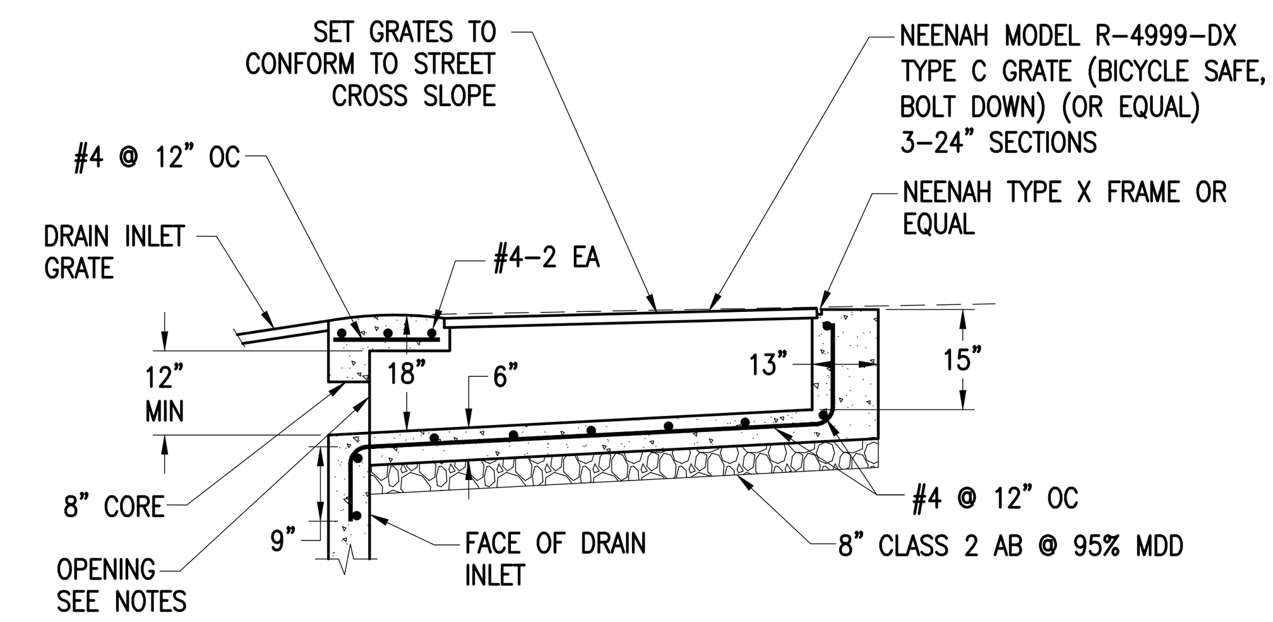
SIDE ENTRANCE PLAN VIEW



FRONT ENTRANCE PLAN VIEW



SECTION B–B

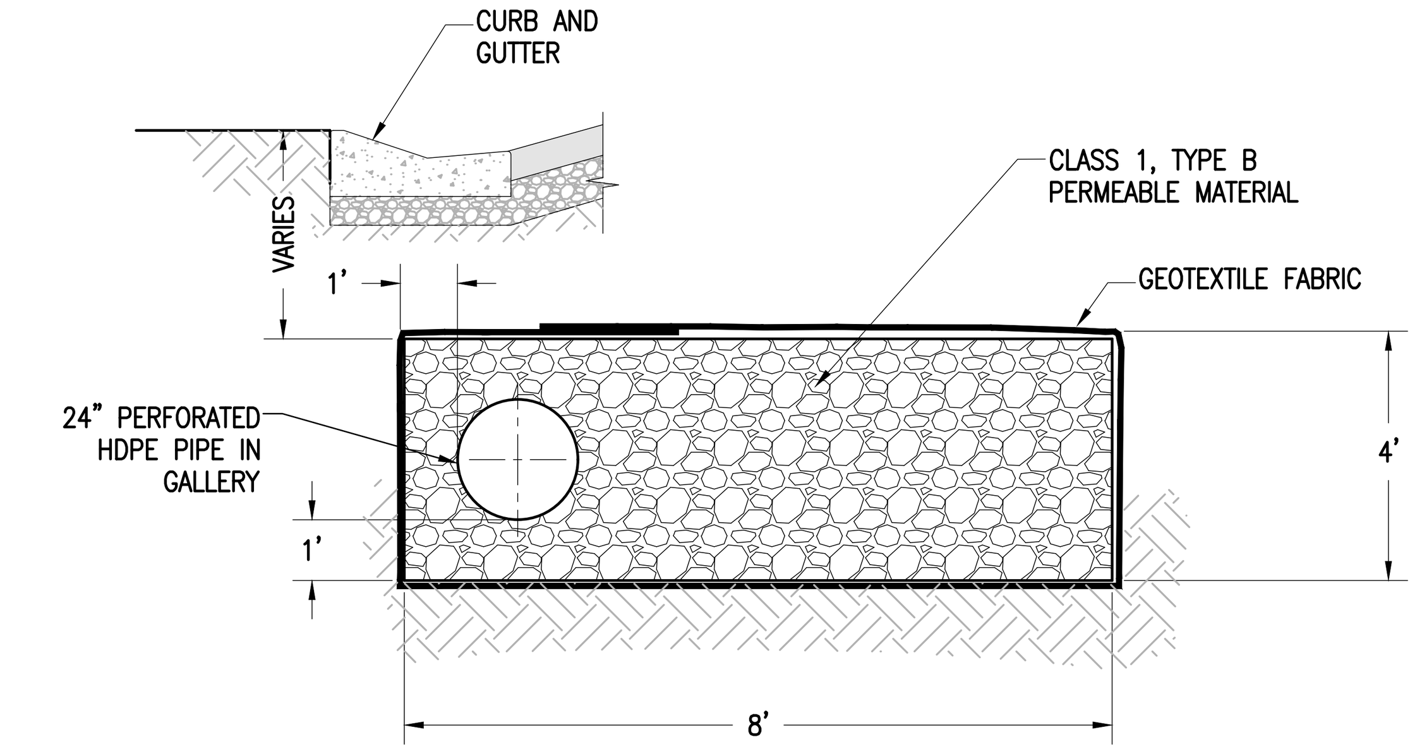


SECTION A–A
TIE IN TO NEW DRAIN INLET SHOWN

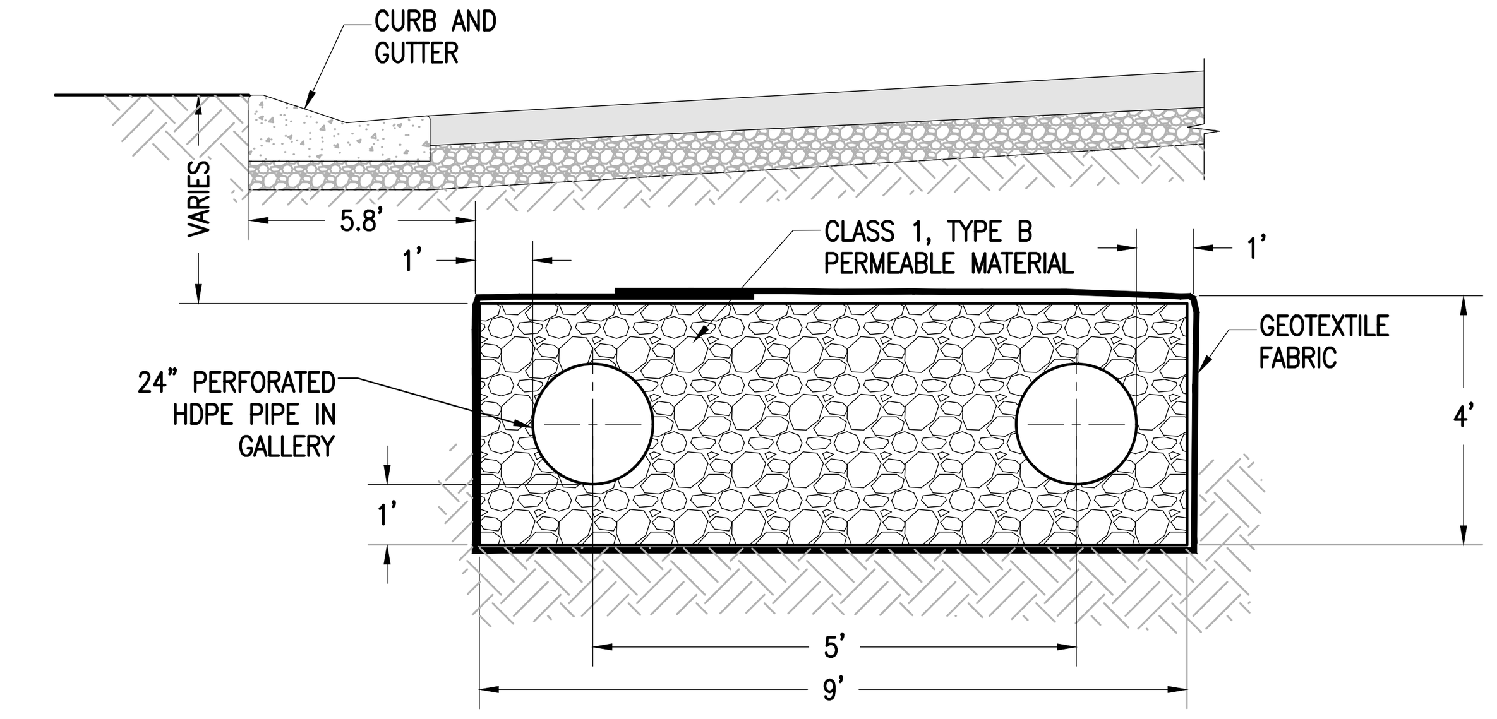
NOTES:

1. WHEN INSTALLING TRANSVERSE DRAIN ON EXISTING INLET. DRILL AND EPOXY #4 x5" (TOP) AND #4x12" (SIDE AND BOTTOM) DOWELS 3" INTO EXISTING INLET BOX @ 5" O.C. TIE TO HORIZONTAL TRANSVERSE DRAIN REBAR.

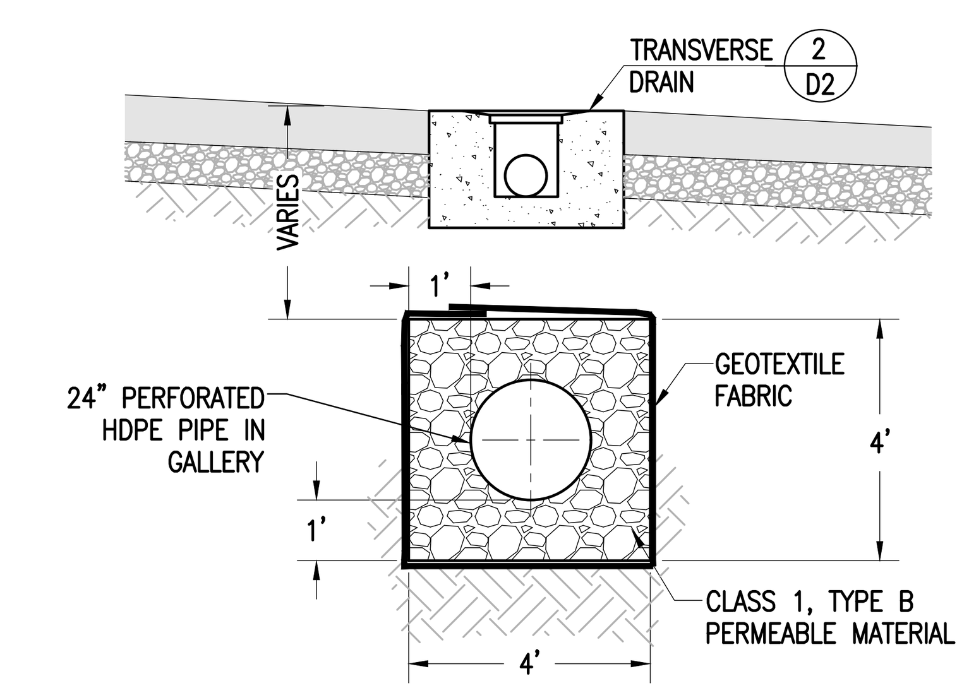
2/D2 TRANSVERSE DRAIN
NTS



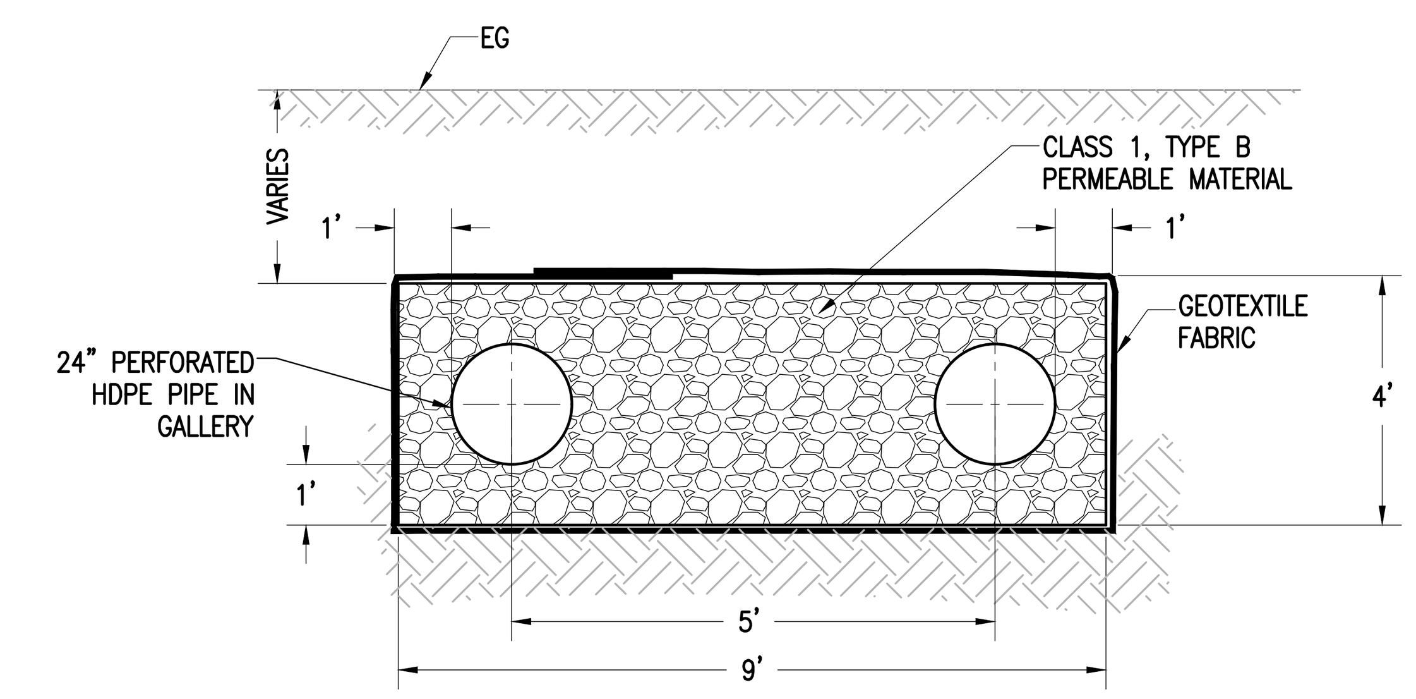
WEST INFILTRATION GALLERY



SOUTH INFILTRATION GALLERY



INFILTRATION GALLERY AT TRANSVERSE DRAIN



EAST INFILTRATION GALLERY

3/D2 INFILTRATION GALLERY
NTS

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SHEET TITLE

DETAILS

DRAWING

D2

SHEET 8 OF 8

947 TAHOE

SHEET INDEX

CIVIL:

LANDSCAPE:

ARCHITECTURAL:

COLLABORATIVE
DESIGN
STUDIO architecture of experience and place

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WASHOE COUNTY

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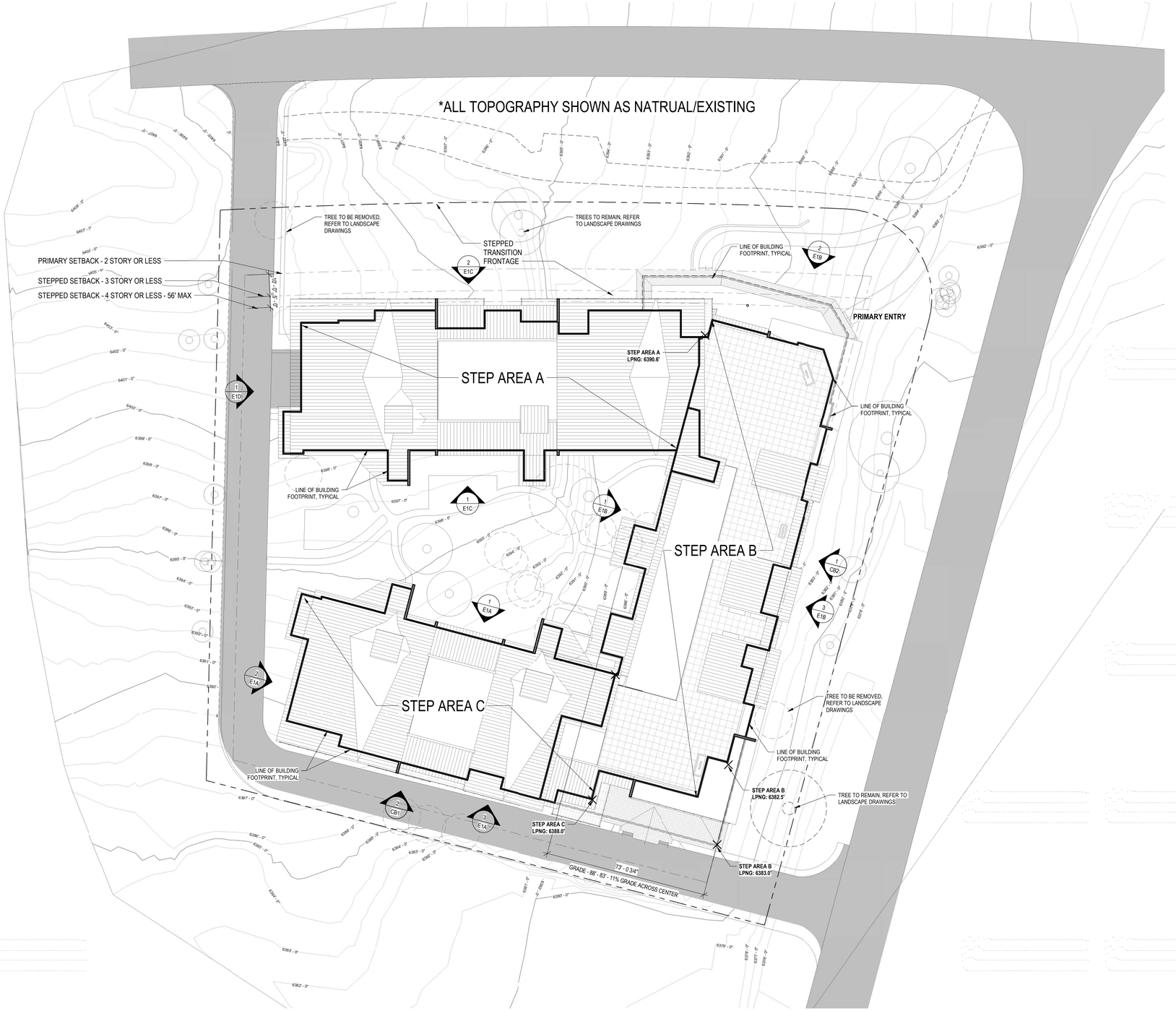
09-13-2021



GENERAL SHEET NOTES

1. SEE GENERAL NOTES APPLICABLE TO ENTIRE PROJECT IN THE A.0 SERIES OF DRAWINGS AT THE FRONT OF THIS SET
2. DO NOT SCALE DRAWINGS. DIMENSIONS TAKE PRECEDENCE, AND LARGER SCALE DETAILS TAKE PRECEDENCE OVER SMALLER SCALE DETAILS.
3. SEE SHEET A0.4 FOR ALL INTERIOR WALL TYPES.
4. ALL INTERIOR WALLS TO EXTEND TO UNDERSIDE OF STRUCTURE ABOVE U.N.O.
5. NOTES ARE TYPICAL. NOT ALL ELEMENTS IN DRAWINGS ARE NOTED.

SHEET NOTES

1. ALL TOPOGRAPHY SHOWN AS NATURAL / EXISTING.

ARCHITECTURAL SITE PLAN

1" = 20'-0"

STEP MATRIX

	STEP A	STEP B	STEP C
L.P.N.G	6390' - 6"	6383' - 0"	6388' - 0"
MAX. HEIGHT FROM L.P.N.G	6446' - 6"	6439' - 0"	6444' - 0"
PROPOSED HEIGHT FROM L.P.N.G	6446' - 6"	6439' - 0"	6444' - 0"
ALLOWABLE HEIGHT	56' - 0"	56' - 0"	56' - 0"
PROPOSED HEIGHT	56' - 0"	56' - 0"	56' - 0"
ALLOWABLE STORIES ABOVE GRADE	4	4	4
PROPOSED STORIES ABOVE GRADE	4	4	4

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ARCHITECTURAL SITE PLAN

AGENCY STAMP

TA1.00

OVERALL BASEMENT FLOOR PLAN 1

1/16" = 1'-0"

GENERAL SHEET NOTES

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SHEET NOTES

1. NOTES

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TRPA OVERALL BASEMENT FLOOR PLAN

AGENCY STAMP

TA2.00

OVERALL FIRST FLOOR PLAN
1/16" = 1'-0"

GENERAL SHEET NOTES

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SHEET NOTES

1. NOTES

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TRPA OVERALL 1ST FLOOR PLAN

AGENCY STAMP

TA2.01

OVERALL SECOND FLOOR PLAN

1/16" = 1'-0"

1

GENERAL SHEET NOTES

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SHEET NOTES

1. NOTES

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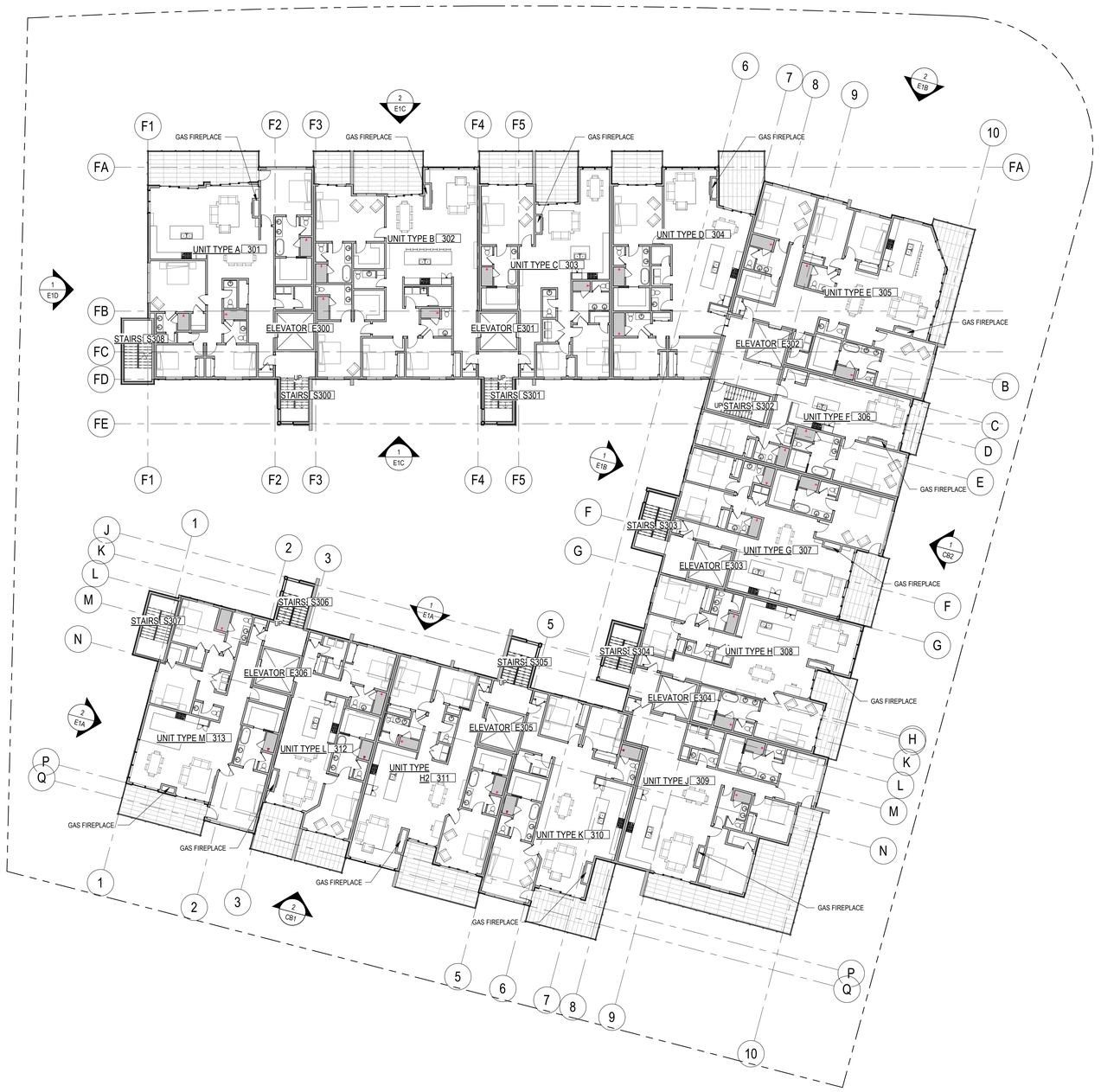
TRPA OVERALL 2ND FLOOR PLAN

AGENCY STAMP

TA2.02



OVERALL THIRD FLOOR PLAN

1/16" = 1'-0"

GENERAL SHEET NOTES

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SHEET NOTES

1. NOTES

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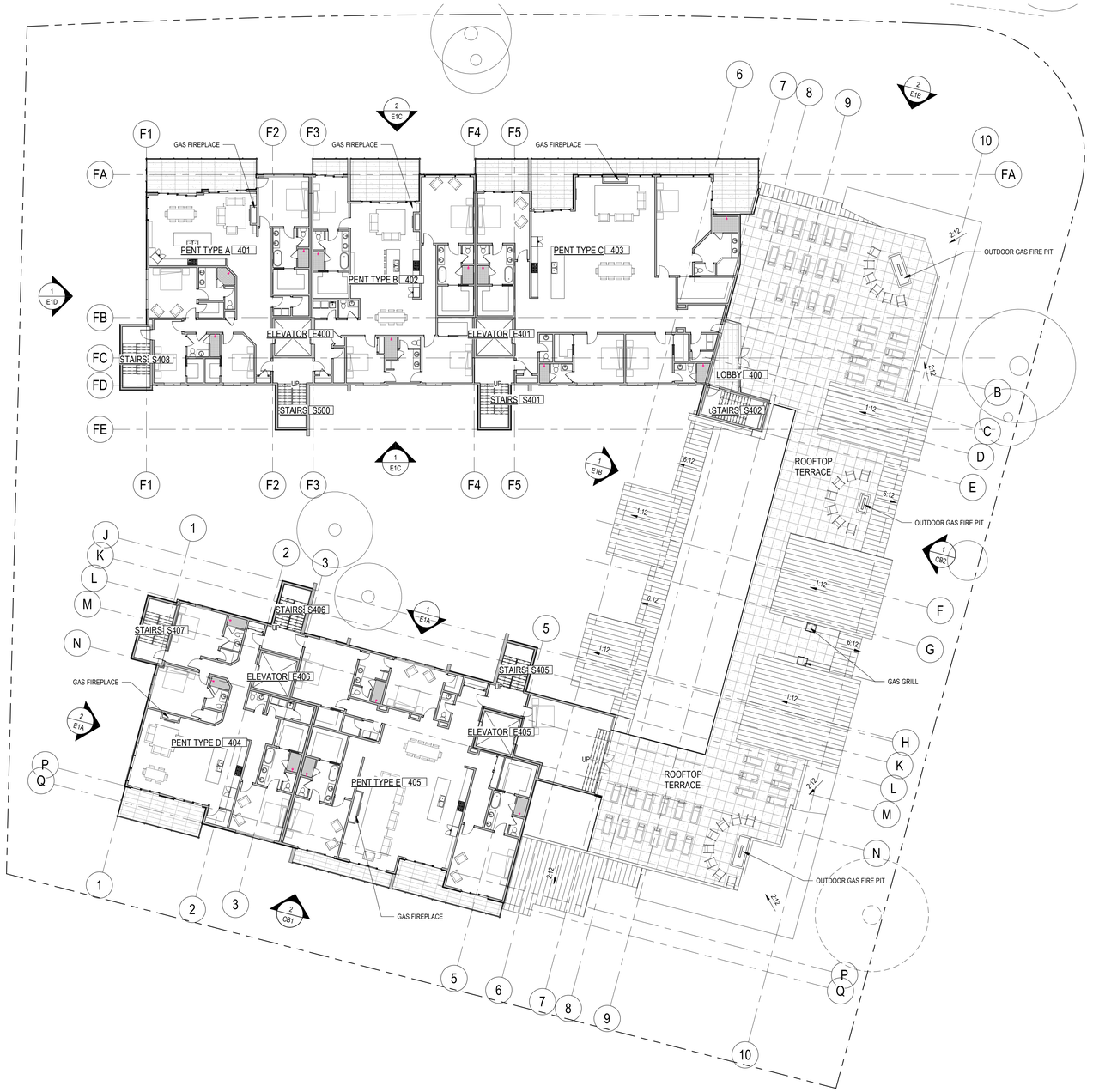
TRPA OVERALL 3RD FLOOR PLAN

AGENCY STAMP

TA2.03



OVERALL FORTH FLOOR PLAN

1/16" = 1'-0"

GENERAL SHEET NOTES

1. SEE GENERAL NOTES APPLICABLE TO ENTIRE PROJECT IN THE A.0 SERIES OF DRAWINGS AT THE FRONT OF THIS SET
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SHEET NOTES

1. NOTES

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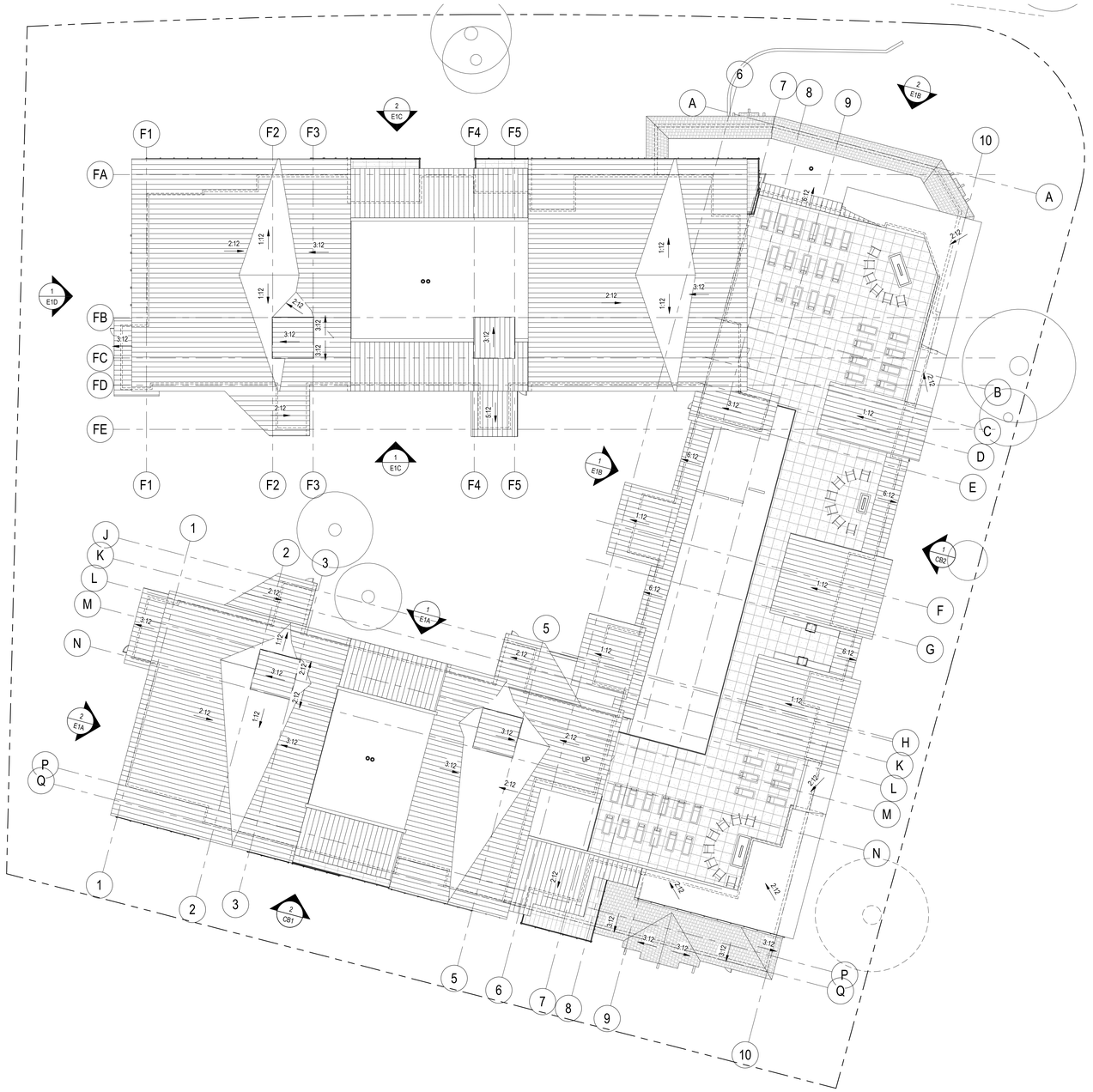
TRPA OVERALL 4TH FLOOR PLAN

AGENCY STAMP

TA2.04



OVERALL ROOF PLAN
1/16" = 1'-0"

1

GENERAL SHEET NOTES

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SHEET NOTES

1. NOTES

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TRPA OVERALL ROOF PLAN

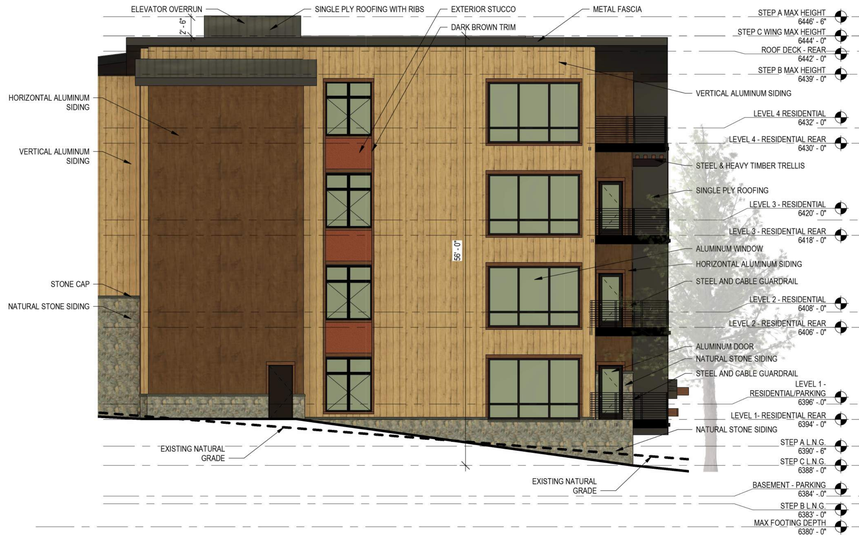
AGENCY STAMP

TA2.05

BOTTOM WING SOUTH ELEVATION TRPA
1/8" = 1'-0"

3

STEP AREA C



BOTTOM WING WEST ELEVATION TRPA
1/8" = 1'-0"

2

BOTTOM WING NORTH ELEVATION TRPA
1/8" = 1'-0"

1

STEP MATRIX

	STEP A	STEP B	STEP C
L.P.N.G	6390' - 6"	6383' - 0"	6388' - 0"
MAX. HEIGHT FROM L.P.N.G	6446' - 6"	6439' - 0"	6444' - 0"
PROPOSED HEIGHT FROM L.P.N.G	6446' - 6"	6439' - 0"	6444' - 0"
ALLOWABLE HEIGHT	56' - 0"	56' - 0"	56' - 0"
PROPOSED HEIGHT	56' - 0"	56' - 0"	56' - 0"
ALLOWABLE STORIES ABOVE GRADE	4	4	4
PROPOSED STORIES ABOVE GRADE	4	4	4

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TRPA ELEVATIONS

AGENCY STAMP

E1A

SIDE WING EAST ELEVATION TRPA

1/8" = 1'-0"

3

STEP AREA B

SIDE WING NORTH ELEVATION TRPA

1/8" = 1'-0"

2

SIDE WING WEST ELEVATION TRPA

1/8" = 1'-0"

1

STEP MATRIX

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TRPA ELEVATIONS

AGENCY STAMP

E1B

TOP WING NORTH ELEVATION TRPA

1/8" = 1'-0"

2

STEP AREA A

TOP WING SOUTH ELEVATION TRPA

1/8" = 1'-0"

1

STEP MATRIX

	STEP A	STEP B	STEP C
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PROPOSED HEIGHT FROM L.P.N.G	6446' - 6"	6439' - 0"	6444' - 0"
ALLOWABLE HEIGHT	56' - 0"	56' - 0"	56' - 0"
PROPOSED HEIGHT	56' - 0"	56' - 0"	56' - 0"
ALLOWABLE STORIES ABOVE GRADE	4	4	4
PROPOSED STORIES ABOVE GRADE	4	4	4

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NOT FOR CONSTRUCTION

947 TAHOE

A.P.N. 132-231-09
INCLINE VILLAGE, NV 89451
WASHOE COUNTY

JOB NO.: 202104
DATE: 09-13-2021
REVISIONS:

TRPA SUBMISSION

TRPA ELEVATIONS

AGENCY STAMP

E1C

TOP WING WEST ELEVATION TRPA 1

1/8" = 1'-0"

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947 TAHOE

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TRPA ELEVATIONS

AGENCY STAMP

E1D

ELEVATION COLOR BOARD

TRPA SUBMITTAL
SEPTEMBER 13, 2021

DARK GREY
SINGLE PLY

RUST RED
EXTERIOR STUCCO

LONGBOARD DARK
KNOTTY PINE

DARK BRONZE
ALUMINUM FRAME

NATURAL
STONE

DARK GREY
SLATE ROOFING

DARK GREY
SINGLE PLY

LONGBOARD DARK
KNOTTY PINE

LONGBOARD DARK
NATIONAL WALNUT

RUST RED
EXTERIOR STUCCO

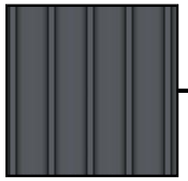
DARK BRONZE
ALUMINUM FRAME

NATURAL
STONE

ELEVATION COLOR BOARD

TRPA SUBMITTAL
SEPTEMBER 13, 2021

DARK GREY
SINGLE PLY



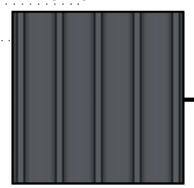
DARK BRONZE
ALUMINUM FRAME

LONGBOARD DARK
KNOTTY PINE

LONGBOARD DARK
NATIONAL WALNUT

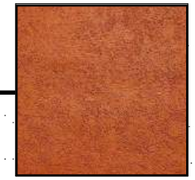
DARK GREY
SLATE ROOFING

DARK GREY
SINGLE PLY



LONGBOARD DARK
NATIONAL WALNUT

RUST RED
EXTERIOR STUCCO



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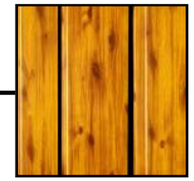
KNOTTY PINE



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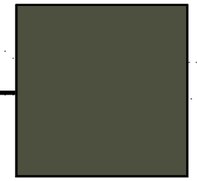
ALUMINUM FRAME



DARK BROWN
WOOD TRIM

NATURAL
STONE

Incline Residential Tahoe/Southwood Traffic and Air Quality Study

Prepared for

Greenwood Homes
940 Southood Blvd #101
Incline Village, NV 89451

Prepared by

LSC Transportation Consultants, Inc.
2690 Lake Forest Road, Ste. C
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530-583-4053

July 1, 2021

TRANSPORTATION CONSULTANTS, INC.

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Chapter 1
Introduction

The Incline Village Residential project is located on the southwest corner of SR 28 (Tahoe Boulevard) and Southwood Boulevard in Incline Village, Nevada. The project would consist of 40 multi-family townhomes. The site location is shown in Figure 1.

The purpose of this report is to present an analysis of the traffic and air quality impacts associated with the proposed project. Initially, existing traffic conditions near the proposed site are discussed. The proposed land uses associated with the project are then assessed in terms of the generation of new traffic. An appropriate distribution of traffic onto the adjacent roadway system is then identified. Using this distribution pattern, the forecasted generated trips are assigned to the nearby roadway system to identify the impact on intersection Level of Service (LOS). In addition, the following areas of impact are evaluated:

1. Site access conditions and driveway spacing
2. Traffic signal warrant
3. Regional Vehicle Miles Traveled (VMT) Analysis
4. Air quality impacts

Figure 1
Incline Village Residential - Site Location

Chapter 2
Existing Conditions

The following discussion presents information regarding existing transportation conditions in the study area.

ROADWAY CHARACTERISTICS

The project site is served by the following existing roadways:

State Route 28 (Tahoe Boulevard) is the primary highway serving Lake Tahoe's north shore. It is a two-lane roadway that runs through Incline Village, Nevada from Tahoe City, California to US 50. To the west of Incline Village, State Highway 28 terminates at the junction of State Route 89 in Tahoe City, California. To the east, the highway turns south and continues along the east shore of Lake Tahoe and ends at US 50. Within Incline Village itself, State Highway 28 is designated as Tahoe Boulevard, with a posted speed limit of 35 miles per hour. The section between Village Boulevard and the eastern Northwood Boulevard/Southwood Boulevard intersection contains a center two-way left turn lane; other sections generally provide one lane in each direction, with turn lanes at major intersections.

Village Boulevard is a two-lane roadway that intersects SR 28 and provides access to primarily residential neighborhoods to the south, and residential neighborhoods as well as government offices to the north. The posted speed limit is 25 miles per hour.

Northwood Boulevard and Southwood Boulevard are two-lane roadways forming a loop roadway around the central Incline Village area. This loop is designated as Southwood Boulevard to the south of SR 28 and Northwood Boulevard to the north of SR 28. To the west of Village Boulevard, the two boulevards meet at a signalized intersection with SR 28. To the east of Village Boulevard, both meet at an unsignalized intersection with SR 28, controlled by stop signs on the Boulevard approaches to the highway. The posted speed limit is 25 miles per hour.

EXISTING TRAFFIC VOLUMES

This study is based on typical summer traffic conditions. PM turning-movement counts were conducted by LSC staff at the SR 28/Northwood Blvd/Southwood Blvd study intersection from 3:30 PM to 5:30 PM on Thursday, June 3, 2021. PM turning-movement counts were conducted by LSC at the SR 28/Village Blvd study intersection from 3:30 PM to 5:30 PM on Wednesday, June 2, 2021. Nevada Department of Transportation (NDOT) monthly variation was analyzed at the permanent location SR 28 (Tahoe Blvd) 915 feet north of Lakeshore Drive/Pinion Drive. In 2019, July was determined to be the peak month. The volumes from our counts were increased using a growth factor of 1.2 to adjust the counts to peak month conditions. The resulting 'existing no project' peak-hour traffic volumes are shown in Table 1.

Table 1: Incline Village Residential - Peak Hour Intersection Traffic Volumes

Intersection	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
Existing No Project													
SR 28/Village Blvd	113	267	86	131	185	73	93	479	104	109	458	120	2218
SR 28/Site Access	0	0	0	0	0	0	0	717	0	0	622	0	1339
SR 28/Southwood Blvd/Northwood Blvd (East	22	21	63	29	15	39	44	611	63	40	561	27	1533
Southwood Blvd/Site Access	0	105	0	0	118	0	0	0	0	0	0	0	223
Project Net Impact													
SR 28/Village Blvd	0	0	0	0	0	0	0	3	0	0	2	0	5
SR 28/Site Access	0	0	0	0	0	0	0	5	0	0	3	0	8
SR 28/Southwood Blvd/Northwood Blvd (East	3	0	1	0	1	0	0	0	5	2	0	0	12
Southwood Blvd/Site Access	1	0	0	0	0	8	4	0	1	0	0	0	14
Existing Plus Project													
SR 28/Village Blvd	113	267	86	131	185	73	93	482	104	109	460	120	2223
SR 28/Site Access	0	0	0	0	0	0	0	722	0	0	625	0	1347
SR 28/Southwood Blvd/Northwood Blvd (East	25	21	64	29	16	39	44	611	68	42	561	27	1545
Southwood Blvd/Site Access	1	105	0	0	118	8	4	0	1	0	0	0	237

Source: LSC Transportation Consultants, Inc.

EXISTING TRANSIT CONDITIONS

Transit services in the North Shore area are provided through the Tahoe Truckee Area Regional Transportation (TART). The bus service in this area is the TART Mainline. The Mainline Route travels the western shore of Lake Tahoe from Tahoma to the north shore at Incline Village. It operates between 6:00 AM and 9:30 PM, providing one run per hour. Existing bus stops are conveniently located along SR 28 at Christmas Tree Village, Raley's, and Northwood Blvd and on Southwood Blvd at the Incline State Park within the vicinity of the project site.

In the summer of 2021, a pilot "microtransit" transit service is being operated, marketed as TART Connect. It provides free rides for passengers making app requests from 8 AM to Midnight 7 days a week. Three zones are being operated, including an Incline Village / Crystal Bay zone that encompasses the project site.

EXISTING BICYCLE AND PEDESTRIAN CONDITIONS

Bicycle Facilities

Bicycle paths, bicycle routes and bicycle lanes are provided in the vicinity of the project. A Class I bikeway (multipurpose walking and bicycling path) can be found along Village Blvd from College Drive south to Lake Shore Blvd and along the entirety of Lake Shore Blvd. A bikeway is also located starting at the eastern Southwood Blvd/SR 28 intersection that loops around clockwise and ends on Northwood Blvd at the Incline Elementary School. Class II bikeways (bike lanes) can be found along SR 28 from the western Lake Shore Blvd intersection to the eastern Lake Shore Blvd intersection.

Pedestrian Facilities

Within the vicinity of the site, multipurpose walking and bike paths are provided along SR 28 and Southwood Blvd. The SR 28/Northwood Blvd/Southwood Blvd intersection has pedestrian crosswalks on all four sides of the intersection as well as a Rectangular Rapid-Flashing Beacon (RRFB) in the East and West directions. Another RRFB is placed along SR 28 in front of the Raley's driveway. At the SR 28/Village Blvd intersection, crosswalks can be found on the west, east and south approaches of the signalized intersection.

Overall Non-Auto Access

In summary, the site is served by relatively good transit and bicycle/pedestrian access opportunities. The location near major trip generators (such as shopping) also makes the site relatively conducive to non-auto travel. Specific non-auto reductions are discussed in Chapter 3.

EXISTING AIR QUALITY CONDITIONS

Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment.

Regional Setting

Several important factors determine local and regional air quality, with the most critical being the quantity, type, and location of pollution sources. Climatic conditions, such as wind speed and direction, temperature gradients, and inversions and precipitation interact with the physical features of the landscape to determine the movement and dispersion of air pollutants.

Climate

The Lake Tahoe Air Basin is surrounded by various mountain ranges within the Sierra Nevada. The Tahoe Basin's climate is cool and dry in the summer and cold and wet in the winter. Temperatures can vary from a daily mean of 60 degrees Fahrenheit (15.6 degrees Celsius) in the summer to about 20 degrees Fahrenheit (-6.7 degrees Celsius) in the winter. Diurnal temperature ranges combine to form characteristics that affect air quality on a daily and seasonal basis. Temperature inversions with the region are generally caused by nighttime cooling of the land surface, which occurs at a faster rate than the cooling of the overlying air. These inversions can trap air pollutants near their source by limiting vertical mixing. These conditions occur most frequently in the winter.

The enclosed nature of the basin and the large diurnal temperature range combine to form specific air basin characteristics that affect air pollution concentrations on a daily and seasonal basis. Relevant to the present discussion are the issues of mixing height and temperature inversions. The "mixing height" is the height or thickness of the air blanket available for dispersion of airborne pollutants emitted near the ground surface.

Normally, air temperature decreases with an increase in elevation. When a "temperature inversion" occurs, however, temperatures within a layer of air increase with height. The two issues are related in that the presence of a temperature inversion reduces or lowers the mixing height normally available, thereby lessening the dispersion potential for pollutants in the air basin.

Inversions will trap pollutants near their emission source by precluding vertical mixing processes from dispersing the pollutants. Consequently, potential for high pollutant concentrations is greatest during strong, persistent, low-level radiation inversion conditions, which generally occur in the Lake Tahoe region during the winter months.

In the Lake Tahoe Air Basin, inversions are generally caused by nocturnal radiational cooling of the land surface, which occurs at a rate slower than the cooling of the overlying air. During summer months, the morning inversion is broken up by strong surface heating, usually by 9:00 AM to 10:45 AM. Thus, by early morning, mixing heights have typically increased to over 5,000 feet with strong vertical mixing. By mid-evening, the inversion slowly begins to form again, peaking during the early morning.

During winter months, surface heating is less pronounced, and the morning inversion may persist until noon (~50% of the time) or later. Consequently, the Lake Tahoe Basin exhibits a high potential for air pollution during the early morning hours, especially during the winter.

Standards and Thresholds

Federal, state, and regional standards exist for ambient air quality in the Tahoe Basin. The air quality plan element of the integrated regional transportation plan focuses on the need for air quality control strategies. The various federal, State of Nevada, and TRPA standards are listed in Table 2.

Table 2: Applicable Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standards		Nevada Standards	TRPA Standards
		Primary	Secondary	Concentration	Concentration
Ozone (O_3)	1 Hour	No Standard	No Standard	No Standard	0.08 ppm
	8 Hour	0.070 ppm	Same as Primary	0.070 ppm	No Standard
Carbon Monoxide (CO)	1 Hour	35 ppm	No Standard	35 ppm	No Standard
	8 Hour	9 ppm	No Standard	9 ppm below 5000' 6 ppm above 5000'	6 ppm
Nitrogen Dioxide (NO_2)	1 Year	53 ppb	Same as Primary	53 ppb	Maintain NO_x emissions at or below 1981 levels
	1 Hour	100 ppb	No Standard	100 ppb	No Standard
Sulfur Dioxide (SO_2)	1 Year	No Standard	No Standard	0.030 ppm	No Standard
	24 Hour	No Standard	No Standard	0.14 ppm	No Standard
	3 Hour	No Standard	0.5 ppm	0.5 ppm	No Standard
	1 Hour	75 ppb	No Standard	75 ppb	No Standard
Particulate Matter (PM_{10})	1 Year	No Standard	No Standard	No Standard	50 $\mu g/m^3$ in the portion of the region within Nevada
	24 Hour	150 $\mu g/m^3$	Same as Primary	150 $\mu g/m^3$	150 $\mu g/m^3$ in the portion of the region within Nevada
Fine Particulate Matter ($PM_{2.5}$)	1 Year	12 $\mu g/m^3$	15 $\mu g/m^3$	12 $\mu g/m^3$	15 $\mu g/m^3$ in the portion of the region within Nevada
	24 Hour	35 $\mu g/m^3$	Same as Primary	35 $\mu g/m^3$	35 $\mu g/m^3$
Sulfates	24 Hour	No Standard	No Standard	No Standard	No Standard
Lead	Rolling 3-month average	0.15 $\mu g/m^3$	Same as Primary	0.15 $\mu g/m^3$	No Standard
Hydrogen Sulfide	1 Hour	No Standard	No Standard	0.08 ppm	No Standard
Vinyl Chloride	24 Hour	No Standard	No Standard		No Standard
Visibility Reducing Particles	8 Hour (Observation)	No Standard	No Standard	No Standard	Regional 97 mi (156 km), 50% of the year 71 mi (115 km), 90% of the year Sub-regional 48 mi (78 km), 50% of the year 19 mi (31 km), 90% of the year

Source: NAAQS Table, United States Environmental Protection Agency (accessed June 2021)
Source: NAC 445B.22097 State standards of quality for ambient air (NRS 445B.210), Nevada Administrative Code (accessed June 2021)
Source: TRPA Regional Plan, Attachment 1: Resolution 82-11 Exhibit A, admended May 23, 2018

Attainment Designations

Air quality in most areas of the Lake Tahoe Air Basin is good. As shown in Table 3, the Lake Tahoe Air Basin met all of the federal and state standards. The region was in non-attainment on the California side of the TRPA PM10 standard which is based on 2015 data (the most recent data available) but was shown as attainment on the Nevada side.

Table 3: Lake Tahoe Air Basin Attainment Designations

Pollutant	Federal	Nevada	TRPA
Ozone	Unclassified/Attainment	Unclassified/Attainment	Attainment
Carbon Monoxide	Unclassified/Attainment	Unclassified/Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified/Attainment	Unclassified/Attainment	–
Particulate Matter (PM10)	Unclassified/Attainment	Unclassified/Attainment	Attainment[1]
Particulate Matter (PM2.5)	Unclassified/Attainment	Unclassified/Attainment	Attainment
Lead	Unclassified/Attainment	Unclassified/Attainment	–
Hydrogen Sulfide	–	Unclassified/Attainment	–
Visibility Reducing Particles	–	–	Attainment

[1]Attainment on Nevada side but non-attainment on California side.

Source: U.S. EPA, June 2021.

Source: Tahoe Regional Planning Agency (TRPA) Threshold Evaluation Report, 2015.

Source: Area Designations Maps / State and National, California Air Resources Board, December 2018.

Chapter 3
Trip Generation, Distribution, and Assignment

TRIP GENERATION

The first step in the analysis of future traffic impacts is to prepare an estimate of the number of trips generated by the existing site and the proposed project. Trip generation is the evaluation of the number of vehicle-trips that will either have an origin or destination at the project site. Daily Vehicle-Trip Ends (DVTE) and Peak Hour Vehicle-Trip Ends (PHVTE) need to be determined in order to analyze the potential impacts from the proposed project.

Full Buildout includes construction of the 40 multi-family units. The trip generation analysis for the proposed project land uses is summarized in Table 4.

Standard daily trip generation rates are provided in the Tahoe Regional Planning Agency's (TRPA) *Trip Table* (TRPA, 2020) and peak-hour rates are provided in the Institute of Transportation Engineers (ITE) *Trip Generation, 10th Edition Manual* (ITE, 2017). These standard rates are shown in Table 4.

Reduction for Non-Auto Trips

Non-auto trips, such as trips made to/from the site via bike, walking or transit, reduce the number of vehicle trips generated by the project. *2018 Summer TRPA Travel Mode Share Survey* data was reviewed. Data from the surveys conducted at locations at Incline Village near the Raley's and at the Incline Village Recreation Center. Based on responses from this group (with 60 data points), the non-automotive trip percentage was approximately 40 percent. Due to the project's location relative to commercial and shopping as well as the high school, the connecting bike and pedestrian paths, the nearby employment locations, a reduction of 20 percent non-auto travel is applied to the residential units. The non-auto reduction is less than that found at the commercial center (40 percent) due to the home to work trips and home to recreation trips which were not reflected in the commercial center area.

Trip Generation at Site Driveways

Multiplying the land use quantities by the trip rates and applying reductions for non-auto trips yields the vehicle trips generated at the site driveways for proposed project conditions. As shown in Table 4, the proposed land uses are forecasted to generate a total of approximately 174 one-way daily vehicle trips (DVTE) at the site driveways on a weekday, including 14 PM peak-hour vehicle-trips (9 inbound plus 5 outbound).

Table 4: Incline Village Residential - Trip Generation

Description	Quantity	Units	ITE Land Use Category	ITE Land Use Code	Trip Generation Rates [1]				Reduction for Non-Auto Access	Vehicle Trips at Site Driveways			
					Daily	PM Peak Hour				Daily	PM Peak Hour		
						In	Out	Total			In	Out	Total
Multi Family Residence	40	DU	Multi Family Housing (Mid-Rise)	221	5.44	Fitted Curve			20%	174	9	5	14

DU= Dwelling Unit

Note 1: TRPA daily rates follow ITE for these land uses. ITE Peak hour rate.

Source: LSC Transportation Consultants, Inc., Tahoe Regional Planning Agency (TRPA) Trip Table, and Institute of Transportation Engineers Trip Generation (10th Edition)

TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of site-generated trips is defined based upon the following:

1. The site's location relative to complementary land uses and regional access points.
2. The observed pattern of existing traffic movements.
3. The location of site parking. The majority of parking spaces (86 out of the total of 118) are proposed in the lower level accessed from Southwood Boulevard while 32 are accessed from SR 28. In addition, all of the units have elevator access from the lower level, while only 11 have direct access from the upper level. As a result, the majority of trips will be to/from the lower level accessed by Southwood Boulevard.

Trip distribution patterns for vehicle trips made to/from the project are estimated and the results are shown in Table 5.

Table 5: Incline Village Residential - Trip Distribution

To/From	Percent
South on Southwood Blvd	15%
North on Northwood Blvd	10%
East on SR 28	20%
SR 28 Between Village and Northwood/Southwood	20%
West on SR 28	35%
Total	100%

Source: LSC Transportation Consultants, Inc.

The site-generated traffic volumes are assigned through the study intersections by applying the distribution percentages to the peak-hour vehicle trips. The resulting PM peak-hour traffic volumes estimated to be generated by the full buildout of the project are shown in Table 1. The project-generated peak-hour intersection turning movement volumes are then added to the 'no-project' volumes, yielding the 'existing with project' peak-hour intersection traffic volumes presented in Table 1.

LEVEL OF SERVICE

LOS is a quantitative and qualitative measure of traffic conditions on isolated sections of roadway or intersections. LOS ranges from "A" (with no congestion) to "F" (where the system fails with gridlock or stop-and-go conditions prevailing). Detailed LOS definitions are included in Appendix A. As is the standard for traffic engineering analyses, intersection LOS is analyzed based upon the procedures presented in the *Highway Capacity Manual* (Federal Highways Administration, 2016) using the Synchro software application (Version 10.3, Trafficware). The LOS calculations are contained in Appendix B for further reference.

LOS Standards

TRPA LOS Standards

The LOS standards for the Lake Tahoe Basin, established by the Tahoe Regional Planning Agency (TRPA), are set forth in the 2019 Regional Transportation Plan with the intent that the Region's highway system and signalized intersections during peak periods shall not exceed the following:

1. LOS C on rural scenic/recreational roads,
2. LOS D in rural developed areas,
3. LOS D on urban roads, or
4. LOS D for signalized intersections - LOS E may be acceptable during peak periods not to exceed four hours per day.

The Regional Transportation Plan Mobility 2035 (TMPO/TRPA, 2012) also states that: "These vehicle LOS standards may be exceeded when provisions for multimodal amenities and/ or services (such as transit, bicycling, and walking facilities) are adequate to provide mobility for users at a level that is proportional to the project-generated traffic in relation to overall traffic conditions on affected roadways." (pp. 2 – 10). While the Tahoe Regional Planning Compact looks to "reduce the dependency on the private automobile", there are currently no adopted requirements or standards regarding the quality of service of other travel modes (i.e. transit, biking, or walking) that could potentially reduce the demand on the roadway system.

The TRPA does not have a specific adopted standard for unsignalized intersections.

Washoe County LOS Standards

The LOS standards for Washoe County are set forth in the 2050 Regional Transportation Plan with the intent that roadway facilities do not exceed the following:

1. LOS D for all regional roadway facilities projected to carry less than 27,000 ADT at the latest RTP horizon
2. LOS E for all regional roadway facilities projected to carry 27,000 or more ADT at the latest RTP horizon

3. LOS F for:
    a. 4th St/Prater Way – Evans Avenue to 15th St
    b. Plumas St – Plumb Ln to California Ave
    c. Rock Blvd – Glendale Ave to Victorian Ave
    d. Virginia St – Kietzke Ln to S McCarran Blvd
    e. Virginia St – Plumb Ln to Liberty St & 8th St to 17th St
    f. Sun Valley Blvd – 2nd Ave to 5th Ave
    g. Intersection of N Virginia St and Interstate 80 ramps

Existing Year Intersection Level of Service

As shown in Table 6, all study intersections currently attain the LOS thresholds during the existing year condition without the project with the exception of SR 28/Southwood Blvd/Northwood Blvd. The stop-controlled intersection of SR 28/Southwood Blvd/Northwood Blvd currently operates at LOS F.

With implementation of the proposed project the new site driveways intersecting SR 28 and Southwood Blvd will operate at an acceptable LOS A. The intersection of SR 28/Southwood Blvd/Northwood Blvd will remain at an unacceptable LOS F with a small increase in delay.

Table 6: Incline Village Residential - Existing Intersection LOS Summary

			PM Existing No Project		PM Existing Plus Project	
Intersection	Control Type	LOS Threshold	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
SR 28/Village Blvd	Signalized	D	15.1	B	15.1	B
SR 28/Site Access	TWSC	D	0.0	A	0.0	A
SR 28/ Southwood Blvd/ Northwood Blvd (East)	TWSC	D	**99.7**	**F**	**105.4**	**F**
Southwood Blvd/Site Access	TWSC	D	0.0	A	9.7	A

BOLD text indicates that LOS standard is exceeded.

TWSC = Two-Way Stop-Control; AWSC = All-Way Stop-Control

NOTE 1: Level of service for signalized intersections is reported for the total intersection.

NOTE 2: Level of service for roundabouts and other unsignalized intersections is reported for the worst movement.

Source: LSC Transportation Consultants, Inc.

Chapter 5
Transportation Impacts

The project would generate approximately 147 new daily one-way vehicle trips and 14 PM peak-hour vehicle trips (9 inbound plus 5 outbound) at the site access driveway. The following areas of transportation impacts are evaluated in this section:

- Analysis of the Need for a New Traffic Signal
- Intersection Level of Service (LOS)
- Site Access Plans
- Vehicle Miles Traveled (VMT)

TRAFFIC SIGNAL WARRANT ANALYSIS

NDOT has established a series of "warrants" to define conditions in which a traffic signal should be provided. This is to ensure that signals are only provided in locations where the benefit outweighs the impacts of a signal (notably, the increase in traffic delays along the major roadway). The need for a new traffic signal at the stop-controlled SR 28/Northwood Blvd/Southwood Blvd (east) is evaluated using the procedure discussed in NDOT *Access Management System and Standards* (November 2017), which relies on the warrants for a traffic signal as defined in the Manual on Uniform Traffic Control Devices (MUTCD).

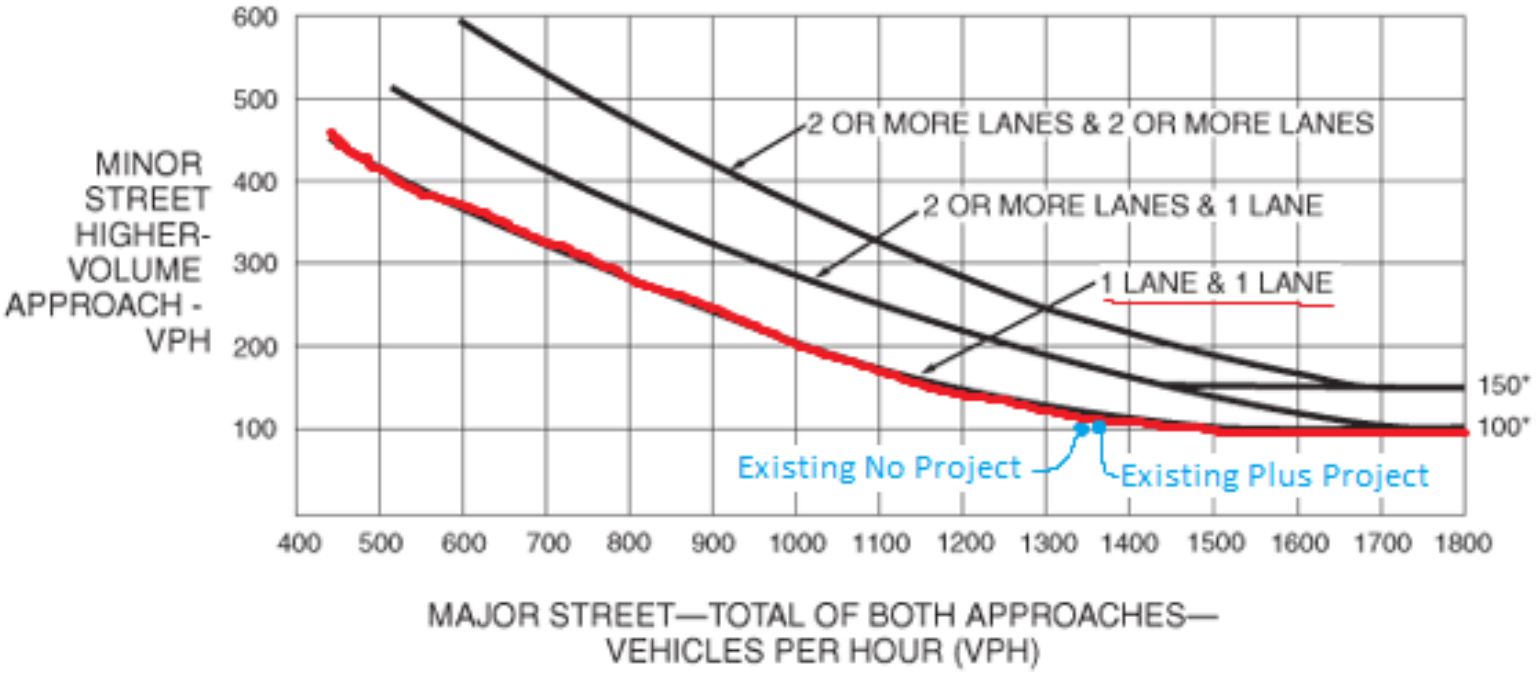
The MUTCD provides a series of 8 individual warrants, addressing traffic volumes in various periods, pedestrian conditions, safety conditions and other specific factor. Of these warrants, the first to be met in typical conditions (such as at this location) is the "peak hour warrant." This warrant is based on the volume per hour of the major street (total of both approaches) and the volume per hour on the minor street higher volume approach. These volumes are plotted in a chart; if the plotted value is higher than the specified curve, the location meets the peak-hour warrant. As shown in Figure 2, the existing-plus-project volumes fall below the curve, indicating that a traffic signal is not warranted without or with the project.

INTERSECTION LEVEL OF SERVICE (LOS)

The site driveway intersections and SR 28/Village operate at an acceptable LOS with the project. As such, no LOS mitigation is required for these intersections.

SR 28/Northwood Blvd/Southwood Blvd (East) operates at an unacceptable LOS F both with and without the project. Even though a traffic signal would improve LOS, it is not warranted at this location. Additionally, a roundabout would also improve LOS to acceptable levels. While a warrant system specific to roundabouts has not been developed, the signal warrants typically are used as a guideline, which would indicate that a roundabout is not warranted. A roundabout at this location would be an extensive and expensive project, particularly given the grades. In addition, drivers exiting the project onto Southwood and wishing to head west on SR 28 have the option, if they see a long northbound queue at the highway intersection, to make a right turn and access the highway via Village Boulevard. This tends to limit the increase in delays. Another factor is that the proposed project's traffic would only increase total

Figure 2 - Peak Hour Warrant



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

volumes through the 28/Northwood/ Southwood intersection by 0.8 percent. Given these factors, requiring installation of a roundabout would not be appropriate.

Another option for improving access would be to expand the northbound Southwood approach at SR 28 from the existing one-lane configuration. At present, drivers wishing to make a northbound right-turn movement are often behind drivers making the more difficult northbound through or northbound left movements. To evaluate the overall delay (measured in total vehicle-hours of delay) with an additional lane, LOS was evaluated assuming the additional lanes as shown in Table 7. This indicates the following:

- At present, northbound drivers in the peak hour experience a total of 1.99 vehicle-hours of delay.
- The additional traffic generated by the proposed project, with the existing single-lane northbound approach, would increase delay to 2.44 vehicle-hours (a 23 percent increase)
- If a right turn lane is provided (shared left/through and separate right turn lanes), total delay would be 1.54 vehicle-hours of delay, or a 22 percent reduction from current delays.
- Alternatively, if a separate left turn lane is provided along with a shared through/right lane, total delay would be 1.27 vehicle-hours or 36 percent below existing levels.

Table 7: SR 28/Northwood Blvd/Southwood Blvd Northbound Approach Delay with Additional Lanes

Scenario	Northbound Lane Configuration	Northbound Volume by Movement			Northbound Delay by Movement (sec)			Vehicle Hours of Delay	% Change From Existing
		Left	Through	Right	NBL	NBT	NBR		
Existing No Project	LTR	25	21	64	67.8			1.99	--
Existing Plus Project	LTR	25	21	64	80.3			2.44	23%
Existing Plus Project	LT, R	25	21	64	101.7	101.7	14.7	1.54	-22%
Existing Plus Project	L, TR	25	21	64	87.7	28.2	28.2	1.27	-36%

Source: LSC Transportation Consultants, Inc.

As the right-of-way of Southwood Boulevard is 80 feet in width, this widening can occur within the existing right-of-way. It is therefore recommended that a separate northbound left-turn lane be provided.

SITE ACCESS PLANS

First, driver sight distance conditions are evaluated at the site access points. Next, the proposed driveway spacing along SR28 is evaluated along with the operation of the two-way left-turn lane (TWLTL) along SR 28.

Driver Sight Distance

Driver sight distance was evaluated at the proposed access intersections. According to the *NDOT Road Design Guide* (2019), there are two types of sight distance standards that should be met at driveways or intersections for low-speed facilities (44 MPH or Less): stopping sight distance and intersection sight distance. Intersection sight distance requirements are meant to ensure that adequate time is provided for

the waiting driver at an unsignalized intersection or driveway to either cross all lanes of through traffic, cross the near lanes and turn left, or turn right, without requiring through traffic to radically alter their speed. Intersection sight distance requirements are based upon the need for a driver to discern a gap of up to 7.5 seconds in oncoming traffic to safely choose an adequate gap. The design intersection sight distance requirements are set forth in Table 9-7 of *A Policy on Geometric Design of Highways and Streets* (AASHTO Green Book, 2018).

Stopping sight distance is the distance an oncoming driver on the major roadway needs to perceive an object in the travel lane (such as a turning vehicle), react to the object, and come to a safe stop. Stopping sight distance requirement are set forth in the AASHTO Green Book.

LSC staff visited the site and determined the proposed driveways are expected to provide adequate driver stopping sight distance. For intersection sight distance, the Southwood site access is adequate so long as the final landscaping plans do not hinder the intersection sight distance.

For the SR 28 site access driveway, sight distance to the east is adequate, however due to a curvature in the road, sight distance looking west is not adequate. There is currently 360 feet of intersection sight distance available at the driveway while 441 feet are required to provide driver decision sight distance. Since the two driveways are connected within the site it is recommended left-turns out of the site driveway on SR 28 not be allowed. A 'no left turn' sign should be installed at the site access driveway on SR 28. In addition, a sign facing drivers exiting the upper parking area stating "No Left Turn onto SR 28" should be installed.

Driveway Spacing

The proposed driveway spacing along SR 28 and Southwood Blvd was reviewed. On the north side of the highway, the proposed driveway is about 75 feet west of the Incline Village Sales Company driveway and about 190 feet east of the outbound driveway for the Third Creek Townhomes. On the south side of the highway, the proposed driveway is approximately 90 feet east of the driveway for the Pine Ridge Plaza and approximately 450 feet west of the SR 28/Northwood Blvd/Southwood Blvd intersection. According to the Washoe County Master Plan, the minimum allowable distance between driveways is 200 feet from other driveways on roadways with a posted speed between 35-40 mph. Therefore, the driveway on SR 28 does not have adequate spacing. Although the proposed driveway spacing is not ideal, turning movement volumes are relatively low and the left turn prohibition discussed above also reduces possible conflicts. There is therefore low potential that this would result in an undue safety issue, considering the very low volume of turning movement vehicles.

Site Access Summary

In summary, a review of the site access plans indicates the following:

1. Driver sight distance is acceptable on Southwood Boulevard points so long as the final landscaping plans provide at least 440 feet of corner sight distance.

2. Due to curvature in the road, there is not adequate driver sight distance for the driveway on SR 28. Therefore a 'no left turn' sign is recommended at this location on the northbound approach

3. Although the proposed driveway spacing does not meet City standards, there is low potential that this would result in an undue safety issue.

VEHICLE MILES TRAVELED (VMT)

VMT analysis was conducted based on TRPA's *"Project Impact Analysis Update: Project Impact Assessment and Air Quality Mitigation Fee Framework"* (TRPA March 16, 2021). This project is located in Project Impact Assessment Zone 69. The current project impact assessment process, based on daily vehicle trip ends (DVTE) identifies projects that produce less than 200 DVTE as having an insignificant effect and so not requiring additional analysis." Because the project has less than the 200 DVTE requirement, the project is considered to have an insignificant effect. VMT is calculated but does not have to be considered against the standard of significance.

The projects VMT is calculated as the 'zone VMT per capita' multiplied by the 'zone persons per household' multiplied by the number of proposed units. In addition, because the development is within a ½ mile of a town center, a 20% reduction is applied to the VMT calculation. As shown in Table 8, the resulting VMT from the residential units would total 670 vehicle miles.

Table 8: Incline Village Residential - VMT Analysis

Trip Type	Town Center Factor	Zone VMT per Capita[1]	Zone Persons per Household	Number of Proposed Units	Average Annual Daily VMT
Residential	0.80	9.24	2.27	40	670

Note 1: TRPA zone VMT per Capita for PIA zone 69

Source: LSC Transportation Consultants, Inc.

CONCLUSIONS

- The project is forecasted to generate a total of approximately 174 one-way daily vehicle trips (DVTE) at the site driveways on a weekday, including 14 PM peak-hour vehicle-trips (9 inbound plus 5 outbound).
- The LOS at both site access driveways and SR 28/Village Blvd would remain acceptable with the project. The LOS at the SR 28/Northwood Blvd/Southwood Blvd intersection does not meet LOS standards without the project, which would be exacerbated by the proposed project. A review of improvement options indicates that total delay can be reduced from existing delays on the key northbound approach by providing a separate northbound left-turn lane. While delays exceeding the LOS standard will still occur, this will be an overall improvement from existing conditions.
- The proposed site access driveway on SR 28 does not meet the county standards to be offset by at least 200 feet. The safety issue associated with conflicting use of the center turn lane is not considered to be excessive.

- The proposed driveway on Southwood Boulevard is expected to provide adequate driver sight distance so long as the final landscaping plans do not hinder the corner sight distance. Sight distance at the driveway on SR 28 is not adequate. Since the two driveways are connected within the site it is recommended left-turns out of the site driveway on SR 28 not be allowed. Driver can then either use the internal driveway to exit onto Southwood Boulevard, or make a right turn onto SR 28 and turn onto Southwood or Northwood Boulevard to head west.
- The project is exempt from a full VMT analysis and will generate about 670 total VMT.

APPENDIX A

LOS DESCRIPTION

DESCRIPTIONS OF LEVELS OF SERVICE

The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level of service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with level of service A representing the best operating conditions and level of service F the worst.

Level of Service Definitions

In general, the various levels of service are defined as follows for uninterrupted flow facilities:

- **Level of service A** represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.

- **Level of service B** is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.

- **Level of service C** is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.

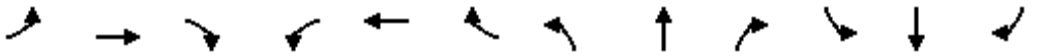
- **Level of Service D** represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.

- **Level of service E** represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to “give way” to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

- **Level of service F** is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level of service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and level of service F is an appropriate designation for such points.

APPENDIX B

LOS Calculations



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	479	104	109	458	120	113	267	86	131	185	73
Future Volume (veh/h)	93	479	104	109	458	120	113	267	86	131	185	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	521	113	118	498	130	123	290	93	142	201	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	300	707	153	298	679	177	415	493	158	336	465	183
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	798	1489	323	793	1430	373	1099	1357	435	1000	1278	502
Grp Volume(v), veh/h	101	0	634	118	0	628	123	0	383	142	0	280
Grp Sat Flow(s),veh/h/ln	798	0	1812	793	0	1803	1099	0	1792	1000	0	1780
Q Serve(g_s), s	5.8	0.0	14.0	7.0	0.0	13.9	4.7	0.0	8.6	6.6	0.0	5.9
Cycle Q Clear(g_c), s	19.7	0.0	14.0	21.0	0.0	13.9	10.6	0.0	8.6	15.2	0.0	5.9
Prop In Lane	1.00		0.18	1.00		0.21	1.00		0.24	1.00		0.28
Lane Grp Cap(c), veh/h	300	0	860	298	0	856	415	0	652	336	0	647
V/C Ratio(X)	0.34	0.00	0.74	0.40	0.00	0.73	0.30	0.00	0.59	0.42	0.00	0.43
Avail Cap(c_a), veh/h	308	0	879	306	0	874	415	0	652	336	0	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	0.0	10.5	19.0	0.0	10.5	15.9	0.0	12.7	18.9	0.0	11.9
Incr Delay (d2), s/veh	0.7	0.0	3.2	0.9	0.0	3.2	1.8	0.0	3.9	0.8	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	4.8	1.2	0.0	4.7	1.3	0.0	3.7	1.5	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	0.0	13.7	19.8	0.0	13.6	17.7	0.0	16.6	19.7	0.0	12.3
LnGrp LOS	B	A	B	B	A	B	B	A	B	B	A	B
Approach Vol, veh/h		735			746			506			422	
Approach Delay, s/veh		14.5			14.6			16.9			14.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.0		27.5		22.0		27.5				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		18.0		24.0		18.0		24.0				
Max Q Clear Time (g_c+I1), s		12.6		21.7		17.2		23.0				
Green Ext Time (p_c), s		1.4		1.1		0.2		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			15.1									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	717	0	0	622	0	0
Future Vol, veh/h	717	0	0	622	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	779	0	0	676	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	779	0	1455	779
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	676	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	838	-	143	396
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	505	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	838	-	143	396
Mov Cap-2 Maneuver	-	-	-	-	143	-
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	505	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	838	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	611	63	40	561	27	22	21	63	29	15	39
Future Vol, veh/h	44	611	63	40	561	27	22	21	63	29	15	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	664	68	43	610	29	24	23	68	32	16	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	639	0	0	732	0	0	1534	1519	698	1551	1539	625
Stage 1	-	-	-	-	-	-	794	794	-	711	711	-
Stage 2	-	-	-	-	-	-	740	725	-	840	828	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	945	-	-	873	-	-	95	119	440	92	116	485
Stage 1	-	-	-	-	-	-	381	400	-	424	436	-
Stage 2	-	-	-	-	-	-	409	430	-	360	386	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	945	-	-	873	-	-	71	107	440	60	105	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	71	107	-	60	105	-
Stage 1	-	-	-	-	-	-	362	380	-	402	415	-
Stage 2	-	-	-	-	-	-	341	409	-	271	366	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.6	67.8	99.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	163	945	-	-	873	-	-	117
HCM Lane V/C Ratio	0.707	0.051	-	-	0.05	-	-	0.771
HCM Control Delay (s)	67.8	9	-	-	9.3	-	-	99.7
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	4.2	0.2	-	-	0.2	-	-	4.4

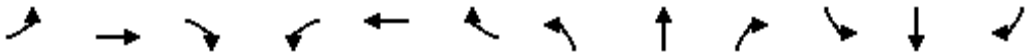
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	105	118	0
Future Vol, veh/h	0	0	0	105	118	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	114	128	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	242	128	128	0	-	0
Stage 1	128	-	-	-	-	-
Stage 2	114	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	746	922	1458	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	746	922	1458	-	-	-
Mov Cap-2 Maneuver	746	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	911	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1458	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	482	104	109	460	120	113	267	86	131	185	73
Future Volume (veh/h)	93	482	104	109	460	120	113	267	86	131	185	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	524	113	118	500	130	123	290	93	142	201	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	300	709	153	297	681	177	414	493	158	335	464	182
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	796	1491	322	791	1431	372	1099	1357	435	1000	1278	502
Grp Volume(v), veh/h	101	0	637	118	0	630	123	0	383	142	0	280
Grp Sat Flow(s),veh/h/ln	796	0	1812	791	0	1803	1099	0	1792	1000	0	1780
Q Serve(g_s), s	5.8	0.0	14.1	7.0	0.0	14.0	4.7	0.0	8.6	6.6	0.0	5.9
Cycle Q Clear(g_c), s	19.8	0.0	14.1	21.1	0.0	14.0	10.6	0.0	8.6	15.2	0.0	5.9
Prop In Lane	1.00		0.18	1.00		0.21	1.00		0.24	1.00		0.28
Lane Grp Cap(c), veh/h	300	0	862	297	0	857	414	0	651	335	0	646
V/C Ratio(X)	0.34	0.00	0.74	0.40	0.00	0.73	0.30	0.00	0.59	0.42	0.00	0.43
Avail Cap(c_a), veh/h	307	0	878	303	0	873	414	0	651	335	0	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	0.0	10.5	19.1	0.0	10.5	15.9	0.0	12.8	19.0	0.0	11.9
Incr Delay (d2), s/veh	0.7	0.0	3.3	0.9	0.0	3.2	1.8	0.0	3.9	0.8	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	4.8	1.2	0.0	4.7	1.3	0.0	3.7	1.5	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	0.0	13.8	19.9	0.0	13.7	17.8	0.0	16.7	19.8	0.0	12.4
LnGrp LOS	B	A	B	B	A	B	B	A	B	B	A	B
Approach Vol, veh/h		738			748			506			422	
Approach Delay, s/veh		14.5			14.7			16.9			14.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.0		27.6		22.0		27.6				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		18.0		24.0		18.0		24.0				
Max Q Clear Time (g_c+I1), s		12.6		21.8		17.2		23.1				
Green Ext Time (p_c), s		1.4		1.1		0.2		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			15.1									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	717	722	0	625	0	0
Future Vol, veh/h	717	722	0	625	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	779	785	0	679	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1564	0	1851	1172
Stage 1	-	-	-	-	1172	-
Stage 2	-	-	-	-	679	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	422	-	82	234
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	504	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	422	-	82	234
Mov Cap-2 Maneuver	-	-	-	-	82	-
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	504	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	422	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	11.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	611	68	42	561	27	25	21	64	29	16	39
Future Vol, veh/h	44	611	68	42	561	27	25	21	64	29	16	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	664	74	46	610	29	27	23	70	32	17	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	639	0	0	738	0	0	1543	1528	701	1561	1551	625
Stage 1	-	-	-	-	-	-	797	797	-	717	717	-
Stage 2	-	-	-	-	-	-	746	731	-	844	834	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	945	-	-	868	-	-	94	117	439	91	114	485
Stage 1	-	-	-	-	-	-	380	399	-	421	434	-
Stage 2	-	-	-	-	-	-	405	427	-	358	383	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	945	-	-	868	-	-	69	105	439	59	102	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	69	105	-	59	102	-
Stage 1	-	-	-	-	-	-	361	379	-	400	411	-
Stage 2	-	-	-	-	-	-	335	404	-	269	363	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.6	80.3	105.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	155	945	-	-	868	-	-	115
HCM Lane V/C Ratio	0.771	0.051	-	-	0.053	-	-	0.794
HCM Control Delay (s)	80.3	9	-	-	9.4	-	-	105.4
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	4.8	0.2	-	-	0.2	-	-	4.6

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	1	1	105	118	8
Future Vol, veh/h	4	1	1	105	118	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	1	1	114	128	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	249	133	137	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	739	916	1447	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	909	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	738	916	1447	-	-	-
Mov Cap-2 Maneuver	738	-	-	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1447	-	768	-	-
HCM Lane V/C Ratio	0.001	-	0.007	-	-
HCM Control Delay (s)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	611	68	42	561	27	25	21	64	29	16	39
Future Vol, veh/h	44	611	68	42	561	27	25	21	64	29	16	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	664	74	46	610	29	27	23	70	32	17	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	639	0	0	738	0	0	1543	1528	701	1561	1551	625
Stage 1	-	-	-	-	-	-	797	797	-	717	717	-
Stage 2	-	-	-	-	-	-	746	731	-	844	834	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	945	-	-	868	-	-	94	117	439	91	114	485
Stage 1	-	-	-	-	-	-	380	399	-	421	434	-
Stage 2	-	-	-	-	-	-	405	427	-	358	383	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	945	-	-	868	-	-	69	105	439	59	102	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	69	105	-	59	102	-
Stage 1	-	-	-	-	-	-	361	379	-	400	411	-
Stage 2	-	-	-	-	-	-	335	404	-	269	363	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.6	51.1	105.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	82	439	945	-	-	868	-	-	115
HCM Lane V/C Ratio	0.61	0.158	0.051	-	-	0.053	-	-	0.794
HCM Control Delay (s)	101.7	14.7	9	-	-	9.4	-	-	105.4
HCM Lane LOS	F	B	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	2.8	0.6	0.2	-	-	0.2	-	-	4.6

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	611	68	42	561	27	25	21	64	29	16	39
Future Vol, veh/h	44	611	68	42	561	27	25	21	64	29	16	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	664	74	46	610	29	27	23	70	32	17	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	639	0	0	738	0	0	1543	1528	701	1561	1551	625
Stage 1	-	-	-	-	-	-	797	797	-	717	717	-
Stage 2	-	-	-	-	-	-	746	731	-	844	834	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	945	-	-	868	-	-	94	117	439	91	114	485
Stage 1	-	-	-	-	-	-	380	399	-	421	434	-
Stage 2	-	-	-	-	-	-	405	427	-	358	383	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	945	-	-	868	-	-	69	105	439	59	102	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	69	105	-	59	102	-
Stage 1	-	-	-	-	-	-	361	379	-	400	411	-
Stage 2	-	-	-	-	-	-	335	404	-	269	363	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.6	41.7	105.4
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	69	246	945	-	-	868	-	-	115
HCM Lane V/C Ratio	0.394	0.376	0.051	-	-	0.053	-	-	0.794
HCM Control Delay (s)	87.7	28.2	9	-	-	9.4	-	-	105.4
HCM Lane LOS	F	D	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	1.5	1.7	0.2	-	-	0.2	-	-	4.6

SITE COVERAGE LEGEND:

- Walkway/Patio Coverage
- Roadway Coverage
- Building Coverage
- Wall Coverage

COVERAGE CALCULATIONS - CLASS 6

Category	Square Footage
Combined Land Area	86,562
Allowable Coverage (70%)	60,593
Walkway/Patio Coverage	4,408
Road Coverage	11,903
Building Coverage	38,520
Wall Coverage	64
Total Proposed Coverage	54,895
Existing Banked Coverage	34,411
Total Coverage to be Acquired and Transferred	20,484

NORTH

0 10' 20' 40'
ORIGINAL SCALE: 1"=20'-00"

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A.P.N. 132-213-09
INCLINE VILLAGE, NV 89451
WASHOE COUNTY

JOB NO.: 6682
DATE: 09-13-2021
REVISIONS:

TRPA PERMIT SUBMITTAL

Coverage Plan

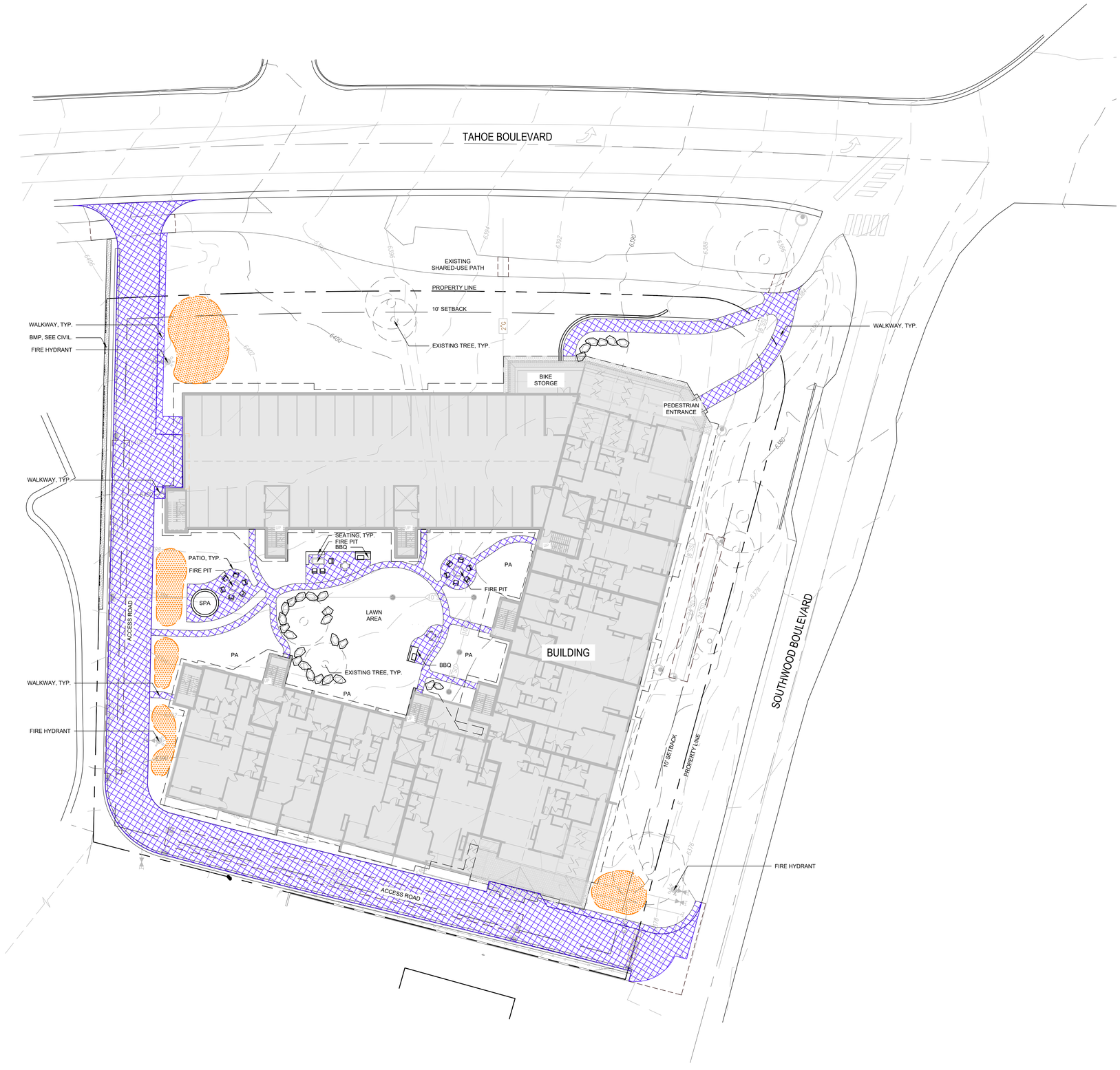
AGENCY STAMP

LG-1.0

SNOW MANAGEMENT LEGEND:

Snow Storage

Snow Removal



NORTH

0 10' 20' 40'

ORIGINAL SCALE: 1"=20'-00"

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WASHOE COUNTY

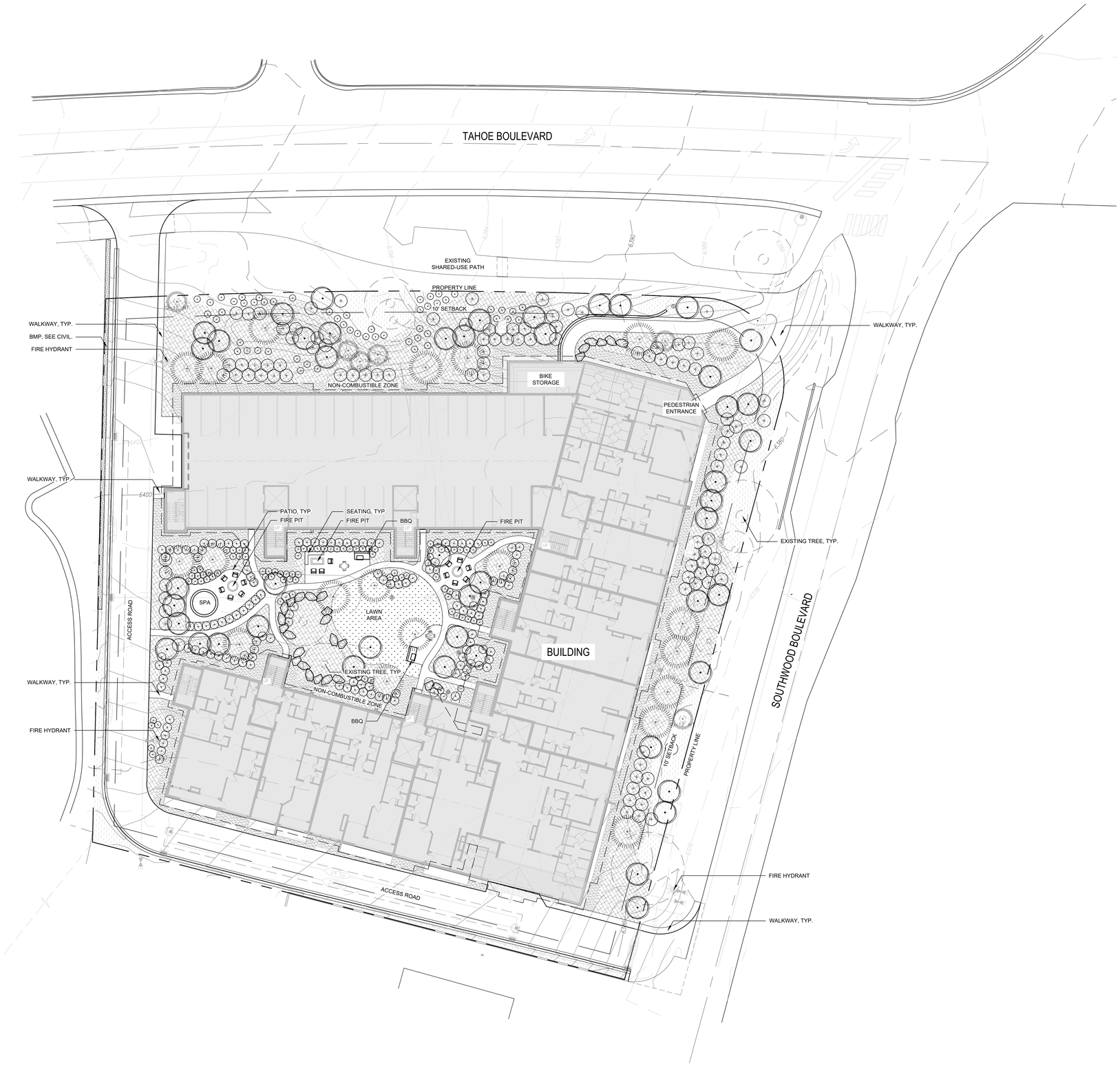
JOB NO.: 6682
DATE: 09-13-2021
REVISIONS:

TRPA PERMIT SUBMITTAL

Snow Management Plan

AGENCY STAMP

LG-2.0



PLANT LIST

ABBR.	BOTANICAL NAME	COMMON NAME	TYPE	SPACING
	EVERGREEN TREES			
PJ-15	*Pinus jeffreyi*	Jeffrey Pine	15' Tall	See Plan
PP-15	*Pinus ponderosa*	Ponderosa Pine	15' Tall	See Plan
CC-10	*Calocedrus decurrens*	Incense Cedar	10' Tall	See Plan
	DECIDUOUS TREES			
AP-2	*Acer palmatum*	Japanese Maple	2" cal.	See Plan
AG-2	*Amelanchier canadensis 'Glen Form'*	Serviceberry	2" cal.	See Plan
PT-2	*Populus tremuloides*	Quaking Aspen	2" cal.	See Plan
PT-1.5	*Populus tremuloides*	Quaking Aspen	1.5" cal.	See Plan
	SHRUBS			
CF	*Cornus stolonifera*	Red Osier Dogwood	5 gal.	48" O.C.
PO	*Physocarpus opulifolius 'Seward'*	Summer Wine Ninebark	5 gal.	36" O.C.
PM	*Pinus mugo mugo*	Mugo Pine	9 gal.	36" O.C.
PF	*Potentilla fruticosa 'Abbotswood'*	Abbotswood Potentilla	5 gal.	36" O.C.
SP	*Salix purpurea 'Nana'*	Dwarf Artic Willow	5 gal.	48" O.C.
SB	*Spiraea X 'bumalda 'Anthony Waterer'*	Anthony Waterer Spirea	5 gal.	48" O.C.
SC	*Symphoricarpos x chenaultii 'Hancock'*	Creeping Snowberry	1 gal.	24" O.C.
	PERENNIALS / GROUNDCOVERS			
AM	*Achillea millefolium*	Moonshine Yarrow	1 gal.	24" O.C.
NF	*Nepeta X faassenii 'Walker's Low'*	Catmint 'Walker's Low'	1 gal.	24" O.C.
DC	*Deschampsia cespitosa*	Tufted Hair Grass	1 gal.	24" O.C.
HS	*Helictotrichon sempervirens*	Blue Oat Grass	1 gal.	24" O.C.
	NATIVE GRASS MIX			
	Bouteloua gracilis	Blue Grama Grass	1 gal.	24" O.C.
	Deschampsia cespitosa	Tufted Hair Grass	1 gal.	24" O.C.
	Elymus glaucus	Blue Wildrye	1 gal.	24" O.C.
	Elymus triticoides	Creeping Wildrye	1 gal.	24" O.C.
	Poa ampla	Big Bluegrass	1 gal.	24" O.C.

PLANTING LEGEND

- PROPOSED EVERGREEN TREE
- PROPOSED DECIDUOUS TREE
- PROPOSED LARGE SHRUB
- PROPOSED MEDIUM SHRUB
- PROPOSED SMALL SHRUB
- PROPOSED PERENNIAL/GROUNDCOVER PLANTING
- PROPOSED TURF
- PROPOSED NATIVE GRASS MIX
- PROPOSED ROCK MULCH

LANDSCAPE PLANTING NOTES

1. Refer to Civil Engineer's utility and grading and drainage plans as required. If actual site conditions vary from what is shown on the plans, contact the Landscape Architect for direction as to how to proceed.
2. Verify locations of pertinent site improvements installed under other sections. If any part of this plan cannot be followed due to site conditions, contact Landscape Architect for instructions prior to commencing work.
3. Exact locations of plant materials shall be approved by the Landscape Architect in the field prior to installation. Stake or otherwise layout all proposed planting for review. Landscape Architect reserves the right to adjust plants to exact location in field.
4. Verify plant counts and square footages. Quantities are provided as Owner information only. If quantities on plant list differ from graphic indications, then graphics shall prevail. If graphics are inconclusive contact Landscape Architect for clarification.
5. Perform excavation in vicinity of underground utilities and existing tree/plant driplines with care and if necessary, by hand. The Contractor bears full responsibility for this work and disruption or damage to utilities and existing trees/plants shall be repaired or replaced immediately at no expense to the Owner.
6. Trees/plants shall bear same relation to finished grade as it bore to existing in place of growth. However, at no point shall it be less than 1 inch above adjacent finish grade.
7. Trees shall be planted a minimum of 10 feet from face of building and a minimum of 4 feet from edge of pavement, except as approved by Landscape Architect.
8. Shrubs shall be planted a minimum of 3 feet from face of building and a minimum of 12 inches from edge of pavement, except as approved by Landscape Architect.
9. All other plants (perennials, grasses, groundcover, annuals) shall be planted a minimum of 12 inches from face of building and a minimum of 6 inches from edge of pavement, except as approved by Landscape Architect.
10. Provide matching forms and sizes for plant materials within each species and size designated on the drawings.
11. Prune newly planted trees only as directed by Landscape Architect.
12. Finish grades of planting areas and lawns shall be flush and meet smoothly and evenly with adjacent paving, providing positive drainage. Shovel V-cut edges shall be provided at planting area transitions to adjacent pavement as indicated to allow for mulch installation.
13. Provide specified edging as divider between planting beds and drip edge.

IRRIGATION NOTE

A combination of adapted native, drought resistant plant material and an efficient irrigation system is proposed for the project. An automatic controller with multiple functions will be used to operate different pressure zones and moderate the rates of application of water on a zone by zone basis. Rain sensors will monitor the operation of the system and shut it off during natural rain events. Drip irrigators around trees, shrubs, and perennials will be used to eliminate evaporation loses. Overhead sprinklers will only be used for turf areas. Plant species have been grouped with similar water requirements on common zones to match precipitation heads and emitters.

NORTH

0 10' 20' 40'

ORIGINAL SCALE: 1"=20'-00"

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NOT FOR CONSTRUCTION

947 Tahoe

A.P.N. 132-213-09
INCLINE VILLAGE, NV 89451
WASHOE COUNTY

JOB NO.: 6682
DATE: 09-13-2021
REVISIONS:

TRPA PERMIT SUBMITTAL

Planting Plan

AGENCY STAMP

L1.0

NCE Collaboration. Commitment. Confidence.℠

MEMORANDUM

Date:	**9/7/2021**
To:	**Collaborative Design Studio**
From:	**Mary Horvath, PE**
Subject:	**947 Tahoe Boulevard Proposed Infiltration Facilities**

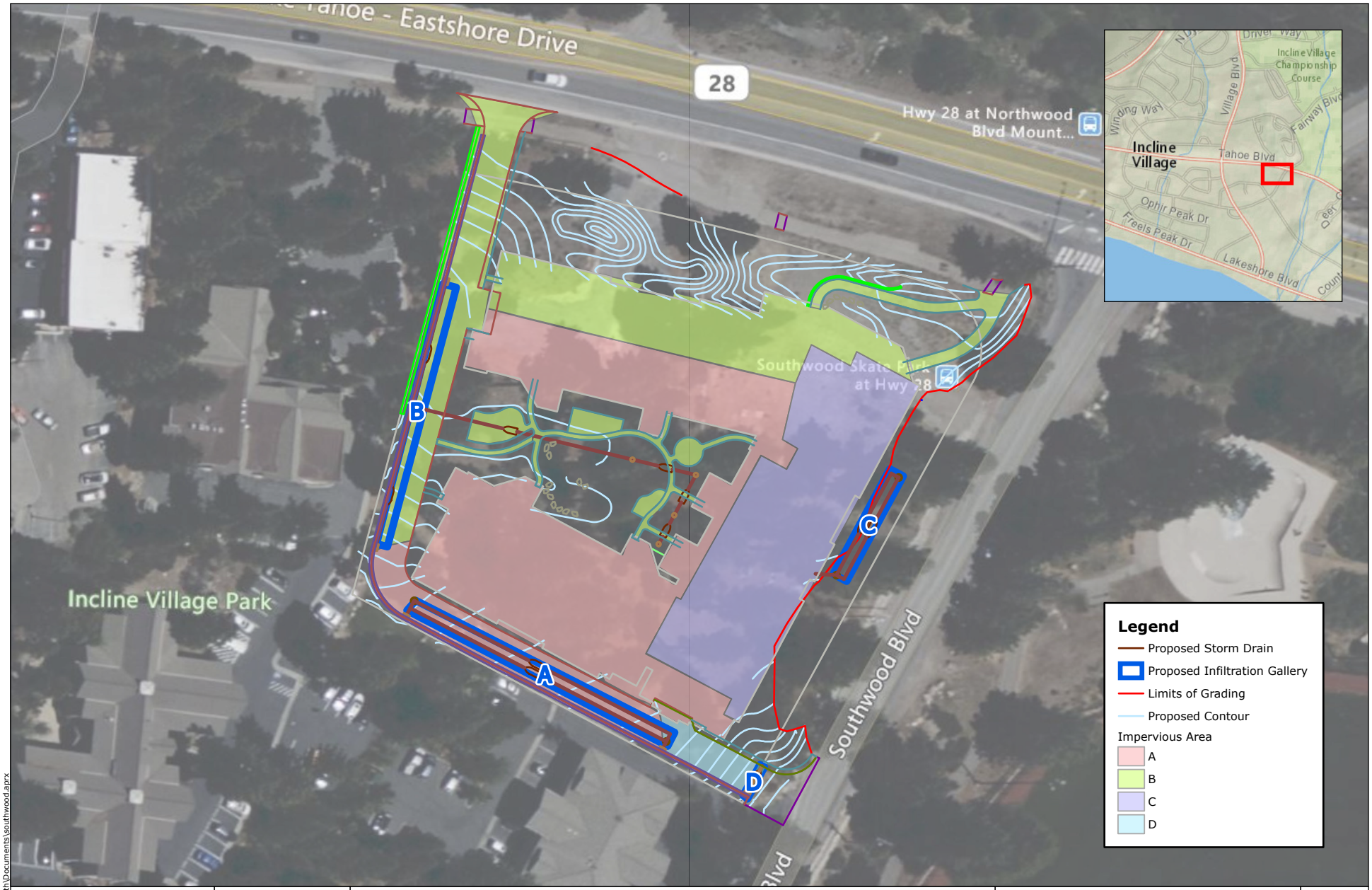
The 947 Tahoe Boulevard development is going to include approximately 58,640 square feet of impervious area which will generate a volume of 4,886 cubic feet of runoff in the 20-year, 1-hour storm event (1-inch of precipitation depth). The preliminary design includes underground storage/infiltration with a total treatment capacity of approximately 7,000 cubic feet. The infiltration facilities will be 24" High Density Polyethylene (HDPE) perforated pipe within drain rock galleries that will lie beneath the driveways and landscaped portions of the site.

Figure 1 shows the preliminary drainage of the site to four infiltration galleries:

- A – within the southern driveway (South)
- B – within the western driveway (West)
- C - within the landscaped portion of the site along the eastern boundary (East)
- D – a small cross-road trench at the eastern exit of the site

The TRPA BMP Calculation Spreadsheet is attached showing the volume of runoff compared to the volume of the proposed infiltration galleries.

Reno, NV
1885 S. Arlington Ave., Suite 111
Reno, NV 89509
(775) 329-4955



NCE	N	947 Tahoe Boulevard Proposed Infiltration Facilities	1 in. = 80 ft. 0 40 80 ft.			FIGURE 1
SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED	
Bing Aerial Basemap	1171.01.25	mhorvath	09/07/2021	-	-	

Document Path: C:\Users\MHorvath\Documents\southwood.aprx

BMP Calculation Spreadsheet

Estimated Soil Erosion Savings of 584.7 pounds per year by doing your BMPs.

Soil erosion is estimated by the treatement volume multiplied by a 250 mg/l concentration plus contributions of source control and deck treatments calculated with the USLE.

Property Address: 937 TAHOE BLVD

(Start here) APN: 132-231-08 APN lookup

Date: 8/18/21

Designed By: MCH

	MAP DATA	ON-SITE DEPTHS
Water Table:	>5ft	
Restriction:	None noted	
Max. Depth of Install:	67 in.	

Map Unit: 7141

Total Drain Rock Quantity (yd^3) 365.0

Total Runoff (ft^3) 4886.8 **Amount Treated** 4886.8

Total Excavation (yd^3) 518.5

Contributing Surface	A	B	C	D										Total			Total
# of Stories	0	0	0	0													
Length (ft.)																	
Width (ft.)																	
Area (ft2)	25494	18431	13445	1272													
Area (ft^2)	25494	18431	13445	1272	0	0	0	0	0	0	0	0	0		0	0	
Runoff (ft^3)	**2124.5**	**1535.9**	**1120.4**	**106.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
Treatment Label:	A	B	C	D													
Length (ft.)	170.0	160.0	70.0	20.0													
Width (in.)	108	96	108	36													
Depth (in.)	48	48	48	48													
On-Site Ksat ($^{in}/_{hr}$)																	
mapped Ksat ($^{in}/_{hr}$)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Prefab Void Space (%)	100%	100%	100%	100%													
Average Void Space (%)	42%	37%	37%	37%													
Effective Volume (yd^3)	226.7	189.6	93.3	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Treatment Capacity (ft^3)	**3226.3**	**2453.7**	**1202.5**	**126.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
Drain Rock Quantity (yd^3)	219.1	94.8	46.7	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	0.0	0.0	**0.0**
Excess Runoff (ft^3)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			**0.0**			**0.0**
Excess Capacity (ft^3)	**1101.8**	**917.8**	**82.1**	**20.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			**0.0**			**0.0**

Contributing Surface			Total				Total				Total					Total
# of Stories																
Length (ft.)																
Width (ft.)																
Area (ft2)																
Area (ft^2)	0	0		0	0	0		0	0	0		0	0	0	0	
Runoff (ft^3)	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
Treatment Label:																
Length (ft.)																
Width (in.)																
Depth (in.)																
On-Site Ksat ($^{in}/_{hr}$)																
mapped Ksat ($^{in}/_{hr}$)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
Prefab Void Space (%)																
Average Void Space (%)																
Effective Volume (yd^3)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Treatment Capacity (ft^3)	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
Drain Rock Quantity (yd^3)	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	0.0	**0.0**
Excess Runoff (ft^3)			**0.0**				**0.0**				**0.0**					**0.0**
Excess Capacity (ft^3)			**0.0**				**0.0**				**0.0**					**0.0**

Basin

	2:1 (rock lined or vegetated)				5:1 (mowable)			
Contributing Surface								
Length (ft.)								
Width (ft.)								
Area (ft2)								
Area (ft^2)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Runoff (ft^3)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Treatment Label:								
Top Length (ft.)								
Top Width (ft.)								
Depth (in.)								
Bottom Length (ft.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bottom Width (ft.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Volume (yd^3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
On-Site Ksat								
Mapped Ksat	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**
Treatment Capacity (ft^3)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Excess Runoff (ft^3)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Excess Capacity (ft^3)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Notes

Deck Treatments

Deck Label			
Area (ft2)			
Slope (%)			
Slope Length (ft)			
Gravel Treatment Length (ft.)			
Gravel Treatment Width (ft.)			
Additional Treatment See			
Drain Rock Quantity (yd^3)			

Source Control Treatments

Area Label					
Area (ft2)					
Slope (%)					
Slope Length (ft)					
% Cover					
% Canopy					
Treatment					
Drain Rock Quantity (yd3)					

Reviewer Comments

Sheet: 1
of: 1
template 1/5/2021

United States Department of Agriculture NRCS Natural Resources Conservation Service

This worksheet is intended to provide an estimate of proper dimensions of infiltration structures and represents no guarantee of the adequacy of overall system design.

Reno Tahoe Geo Associates, Inc.

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July 1, 2021
Project No. 21073.001

Mr. Kevin Hanna
PAL CAP FIFF Tahoe I, LLC
940 Southwood Boulevard, Suite 101
Incline Village, Nevada 89451
Email: kevin@greenwood-homes.com

Subject: **Geotechnical Assessment**
Southwood Condominiums
941 and 947 Tahoe Boulevard
Incline Village, Washoe County, Nevada 89451
APN's: 132-231-09 and 132-231-10

Dear Mr. Hanna:

This report presents the results of Reno Tahoe Geo Associates' (RTGA's) geotechnical assessment for a proposed 5-story condominium building to be located on two adjoining parcels at 941 Tahoe Boulevard and 947 Tahoe Boulevard in Incline Village, Washoe County, Nevada (APN's: 132-231-09 and 132-231-10). This report provides the information required by Washoe County. The project location is shown on Plate 1.

A limited subsurface field investigation was included in this geotechnical assessment. Therefore, it is important that RTGA be involved during grading and construction to confirm that the site conditions are as anticipated and to make any necessary revisions to our recommendations.

PROJECT DESCRIPTION

The proposed project site is composed of two adjoining irregularly shaped parcels totaling 1.987 acres located at 941 Tahoe Boulevard and 947 Tahoe Boulevard (corner parcel), Incline Village, Washoe County, Nevada. The parcels are bounded to the north by Tahoe Boulevard, to the east by Southwood Boulevard, and to the south and west by developed privately owned parcels. Access is by existing paved and gravel private driveways from Tahoe Boulevard and Southwood Boulevard. A site plan

including the existing property lines and the proposed condominium building footprint is presented on Plate 1.

The two parcels are currently undeveloped, unoccupied, and without above ground structures. The corner lot, 947 Tahoe Boulevard, was formerly occupied by a Chevron gas station. 941 Tahoe Boulevard is located on the south and west sides of 947 Tahoe Boulevard and formerly had a building used as a restaurant located in the north-central portion of the parcel near Tahoe Boulevard. The southern portion of this parcel does not appear to have undergone any historic development. An approximately 4-foot high retaining wall located on the west edge of the corner lot along its north-south property line. The formerly developed portions of each parcel are approximately level and the levelled portion of 947 Tahoe Boulevard is approximately 8 feet lower than the levelled portion of the western parcel. From Tahoe Boulevard, the combined parcels slope from approximately 6,406 feet at the northwest corner to 6,379 feet at the southeast corner where they meet Southwood Boulevard, resulting in an overall site slope of approximately 7 percent to the southeast.

We understand that a new, 5-story condominium complex with covered parking will be constructed with anticipated cuts of up to 20 feet and fills on the order of 8 feet or less. E-mail correspondence indicates the complex will be supported on concrete slab with a concrete and steel structure. Structural loads were not available at the time of this report and were assumed for the purposes of this proposal. Estimated vertical structural loads are not expected to exceed 50 kips at isolated columns and 2 kips to 4 kips per linear foot along continuous wall foundations for long-term loading conditions. Once plans are made available, we may need to modify our recommendations if the actual construction scope differs.

REFERENCES

The following information was provided to RTGA in the course of this investigation and serves as the basis of our understanding of the project type and scope.

- Topographic Survey, Arnett & Associates, Inc., 941 & 7 947 Tahoe Boulevard, Washoe County, Nevada, October 30, 2020.

- ALTA/NSPS Land Title Survey, 941 & 7 947 Tahoe Boulevard, Washoe County, Nevada, October 30, 2020.

The following published and unpublished references were also reviewed during preparation of this report.

- ASCE, 2019, ASCE 7 Hazard Tool, accessed June 2021;
- Natural Resources Conservation Service (NRCS) *Web Soil Survey in Google Earth*, accessed June, 2021;
- *Washoe County Real Property Assessment Data,* Washoe County website accessed June 2021;
- Saucedo, George J. 2005, *Geologic Map of the Lake Tahoe Basin*, *California and Nevada*, California Geological Survey;
- United State Geologic Survey (USGS), Quaternary Fault and Fold Database of the United States, (http://earthquake.usgs.gov/hazards/qfaults/), accessed August 2020.

We also reviewed nearby projects and our previous experience in the project area in developing these recommendations.

FIELD EXPLORATION

Our selection of field exploration locations was based on the anticipated project layout and site access. The subsurface exploration consisted of three test pits and a shear-wave velocity survey, which were located in the field by visual sighting and/or measuring from existing features at the site. The exploration locations shown on Plate 1 should be considered accurate only to the degree implied by the methods used.

Refraction Microtremor Survey (ReMi)

A Refraction Microtremor (ReMi) geophysical array was utilized to obtain shear-wave velocity measurements to determine the Seismic Design Category and estimate the depth to competent bedrock. ReMi provides a means to obtain a basic subsurface profile in an essentially continuous profile without physical investigations across the explored location. The results of the ReMi survey are presented both as a one-dimensional vertical profile and a two-dimensional transect on Plate 2.

Test Pit Excavation

Three test pits were excavated using a Link-Belt 145 X 2 excavator. Our engineer visually classified soils encountered in the test pit according to the Unified Soil Classification System (USCS) and obtained bulk samples for further identification and laboratory testing. Soil conditions encountered are presented on the test pit logs on Plates 3 through 5. A description of the USCS used to identify the site soils and a test pit log legend are presented on Plate 6.

After the test pits were completed, they were backfilled with excavated soil using the equipment on site. Backfill was loosely placed and not compacted to the requirements typically specified for engineered fill. Structures, slabs supported on grade, or pavements located over these areas may experience excessive settlement. Removal and re-compaction of test pit backfill may be required prior to construction of improvements over this area.

LABORATORY TESTING

Laboratory tests were performed on selected samples to aid in soil classification and to evaluate physical properties of the soils, which may affect the geotechnical aspects of project design and construction. Gradation analysis and plasticity index (Atterberg Limits) was performed for a sample of site soils. Laboratory test results can be found on the test pit logs (Plates 3 through 5) and on Plates 7 and 8 at the end of this report. In addition, one soil sample of sandy lean clay collected from 12 feet depth in TP-01 was submitted for soil corrosivity analysis. Results of laboratory testing for this sample will be reported under separate cover when they are received.

SOIL AND GEOLOGIC CONDITIONS

According to Saucedo et al. (2005), the site is underlain by unnamed gravels, sand, and alluvium of Pliocene and/or Pleistocene age. Based on published information by NRCS and site observation, the native soils have been categorized as Inville gravelly coarse sandy loam, 2 to 9 percent slopes, stony, and within the hydrologic soil group A. The soil is well drained, with a saturated permeability of 2 to 6 inches per hour. According to Saucedo et al. (2005), the site is underlain by undivided glacial outwash deposits of Holocene or Pleistocene age.

Based on test pit excavations, laboratory analysis of soil samples, and the seismic survey conducted at the site, the subsurface conditions consist of greater than 15 feet thickness of silty gravel with sand,

cobbles, and boulders, over highly-weathered bedrock. Sandy lean clay was logged between 11 and 13 feet depth in test pit TP-1. Clayey sand with gravel was encountered below 13 feet in test pit TP- 1.

The upper portion of bedrock, if encountered, may consist of intermixed weathered and permeable zones with harder boulder or zones where jointing is widely spaced. The bedrock typically transmits infiltrated water vertically to joint systems to sills or geologic contacts at depth, and rarely have springs or surface runoff. Boulders and bedrock may exhibit variations in density and hardness within the planned excavation.

The weighted average soil shear-wave velocity measured in the upper 100 feet of the soil horizon is 1,385 feet per second (fps) based on the ReMi measurement. Based on the shear-wave velocity profile, the soil at the ground surface is dense (material shear-wave velocities of about 800 fps to 1,000 fps). The ReMi data suggests that soft to hard rock (material greater than 1,200 fps to 2,800 fps shear-wave velocity) is present at approximately 16 to 26 feet in depth. Very hard excavation conditions may be present at shallow depths. The contractor should anticipate shallow large boulders and possibly bedrock in excavations.

No groundwater was observed in the test pits.

Seismicity and Faulting

Lake Tahoe lies within an area with moderate to high potential for strong ground shaking from large earthquakes (moment magnitude 7 or larger) in northern Nevada and California. Ground shaking can result in secondary seismic hazards such as liquefaction, seismic settlement, differential compaction, seismically induced slope instability, and rock falls. None of these hazards are present in this site due to dense soils, moderate slopes, and absence of tall rock outcrops or surface boulders. Due to the high potential for strong ground shaking from earthquakes, all structures should be designed for seismic loads in accordance with the most recently adopted International Building Code/International Residential Code.

Saucedo et al. (2005) and the USGS Fault and Fold Database indicate the nearest fault is the Incline Village Fault approximately 7,400 feet west, (Saucedo, 2005). This fault zone is assigned as a Class A Fault of undifferentiated Quaternary Age. Based on review of the above-referenced published sources, no evidence was found that would indicate the presence of active faults trending through the subject property. No portion of any active Holocene age faulting is known to cross the site at this time, nor has any direct evidence of on-site faulting been observed in the field during the subsurface exploration of this project. No additional fault studies or fault setback requirements are needed for the subject parcel.

RECOMMENDATIONS AND DISCUSSION

From a geotechnical engineering standpoint, the site may be developed as a condominium structure as planned. Based upon our review of the above-referenced material, we have developed the following conclusions. These conclusions may change if additional information becomes available or the design is changed. *Please note, it is recommended that the soil and rock conditions presented in this report be verified during construction by the project geotechnical engineer*.

- The presence of shallow boulders is expected to be a significant constraint which will result in additional costs and difficulties during construction. No other soil or groundwater constraints were observed which will preclude the development as planned.
- Soils are a loose to medium dense silty sand with varying gravel, cobble, and boulder content. Boulders greater than 6 feet diameter were encountered in test pit TP-1 and smaller boulders were found to be common in the subsurface across the site. The contractor should anticipate boulders during excavation of the planned subgrade parking area, footings, and trenches.
- In most cases, native soils, if screened to <6 inches, are suitable for reuse as structural fill under structural areas or floor slabs. This excludes clayey soils such as those found below 11 feet depth in TP-1. Native soil is suitable for subgrade below footings or slabs if in a relatively undisturbed state. The Contractor may choose to use onsite material in structural areas but should be made aware that these soils may prove difficult to moisture condition and compact. It will be far easier to backfill narrow excavations, such as between building walls and excavations, with drain rock, aggregate base, or other readily specified compactable materials.

- Imported structural fill, if required, should consist of granular material nearly free of organic debris, with a liquid limit of less than 35, a plasticity index less than 12, 100 percent passing the 4-inch sieve, and less than 30 percent passing the No. 200 sieve. All imported fill materials should be approved by the project Soils Engineer prior to being transported to the site.

- Fill should be uniformly moisture conditioned to within 2 percent of optimum moisture content and placed in layers of 8 inches or less in loose thickness. Each lift should then be compacted with appropriate compaction equipment to achieve at least 90 percent relative compaction*, unless specified otherwise. No fill material should be placed, spread, or rolled while it is frozen, thawing, or during unfavorable weather conditions.

- Fills with more than 30 percent of particles greater than ¾-inch diameter and composed of durable stone or rock fragments, including drain rock and, likely, native materials, are not applicable to conventional compaction testing and is considered "rock fill". These materials should be uniformly moisture conditioned to above optimum moisture content and placed in thin layers not exceeding one foot in loose thickness. They should be compacted with a minimum of five passes with a large sheepsfoot compactor, such as Caterpillar 825, a large excavator with a compaction wheel, or a minimum of five passes with hand held compaction equipment in trenches or other small excavations. Compaction shall continue until no further densification or change in volume is noted. Any fill material within this category should be placed only under continuous observation and approval of the soil engineer. It is also noted that other types and sizes of compaction equipment may require thinner lifts of material.

- The 2018 International Building Code or International Residential Code should be implemented for the project seismic design. A Site Class C, per the IBC, is applicable for site soils due to the proximity of bedrock to the surface. For design purposes, the seismic criteria in the following table should be implemented.

* Wherever referenced in this report, relative compaction should be determined by comparing to the maximum density and optimum moisture content determination in accordance with ASTM D1557 Test Method for compaction curves.

SEISMIC DESIGN CRITERIA USING ASCE 7-16 *SOUTHWOOD CONDOMINIUM PROJECT, INCLINE VILLAGE, NEVADA*	
Approximate Latitude of Site	39.24874
Approximate Longitude of Site	-119.947296
Spectral Response Acceleration at Short Period (0.2 second), S_s	1.805 g
Spectral Response Acceleration at 1-Second Period, S_1	0.618 g
Site Class Selected for this Site	C
Site Coefficient, F_a	1.2
Site Coefficient, F_v	1.4
Site Spectral Response Acceleration at Short Period, S_{MS}	2.166 g
Site Spectral Response Acceleration at Long Period, S_{M1}	0.866 g
Design Spectral Acceleration Parameters, S_{DS}	1.44
Design Response Spectrum, S_{D1}	0.58
Peak Ground Acceleration (PGA)	0.77 g

- We recommend that all foundations be bottomed at a minimum depth of 24 inches below the existing ground surface. This depth will provide adequate foundation support and protect against shallow ground loosening due to frost heave.
- Foundations bottomed at least 2 feet below the final ground surface may be designed for an allowable bearing pressure of 3,000 psf, assuming a minimum footing width of 12 inches. Bearing capacity can be increased by 500 psf for each foot of increase in thickness up to 4,500 psf. Footings at greater than 10 feet depth can be designed for an allowable bearing pressure of 6,000 psf where they are on bedrock.
- The allowable bearing pressure may be increased by one-third for total loading conditions, including wind and seismic forces. For balanced backfill, the allowable bearing pressure is a net value; therefore, the weight of the foundation which extends below grade and the overlying backfill may be neglected when computing dead loads.
- Total settlement of an individual foundation will vary depending on the plan dimensions of the foundation and the actual load supported. Based upon anticipated foundation dimensions and loads, we estimate that total post-construction settlement of footings designed and

constructed in accordance with the recommendations of this report will be ½-inch. Differential settlement between similarly loaded, adjacent footings is expected to be ¼-inch, provided footings are founded on similar materials (e.g., all on native soil). Settlement of all foundations is expected to occur rapidly, generally during the construction time frame for the building. Improvements supported on non-structural fill may experience larger settlements.

- **All footing excavations should be observed by the project Soils Engineer** prior to placing reinforcing steel for concrete to verify the underlying soil conditions and recommendations contained herein are implemented during construction.
- Excavations from the surface to 15 or more feet below surface are likely to encounter boulders with intervening soil filled voids. Soil and altered rock temporary excavations may potentially be in the range of 1H:1V to 1.5H:1V. Slopes to 1H:3V feet may be generally stable below this depth, provided chain link netting is used to prevent loosening of boulders. However, RTGA should closely observe excavations below the bedrock surface to verify that loose or over-steepened zones are not present which could allow rock wedges or boulders to slide into the excavation. Steeper excavations can be implemented if required, but will generally require either soil-nail and shotcrete facing in soil and weathered bedrock, or spot nailing of bedrock blocks and wedges in intact bedrock (without shotcrete)
- If required, rock anchors or soil nails may be needed to stabilize unstable areas within the excavation wall. Rock anchors or soil nails commonly used in the area are hollow bars with 1½-inch outer diameter fitted with a drill bit of 3 to 3½-inches diameter. Soil nails are typically drilled 5 feet or more into the bedrock surface. Neat cement grout is pumped through the hollow center of the bar and create a 3½-inch-diameter annulus of grout around the bar back to the surface. For design of soil nails the ultimate grout to soil/bedrock interface is expected to be approximately 30 psi in soil to 60 psi for depths greater than 5 feet into the bedrock surface (FHA, 2005).
- Soil nail walls in theory could be used for permanent support of the uphill side of the excavation, however practically the excavation will not be neat and the excavation line will likely vary widely outside of the building line due to uneven rock joints and fractures. Careful consideration would be required for drainage and removal of groundwater seepage behind the shotcrete face so that it does not affect interior building components.

- If required, subterranean structures and retaining walls, including foundations, should be designed to resist the lateral earth pressure exerted by the retained, compacted backfill plus any additional lateral force that will be applied to the wall due to surface loads placed at or near the wall. The table below presents a list of soil design parameters for these structures.

TABLE 2 - LATERAL EARTH PRESSURES

Earth Pressure	Equivalent Fluid Density (pcf)
Active Pressure	
Retained Slope = Level to 4H:1V	30
Retained Slope = 4H:1V to 2H:1V	40
At-Rest Pressure	
Rigidly Restrained	60
Seismic Active	
Retained Slope = Level to 4H:1V	60
Retained Slope = 4H:1V to 2H:1V	80
Allowable Passive Pressure	
Retained Slope = Level	350
Allowable Coefficient of Friction	0.45

- Surcharge loads behind walls are not factored into the recommended equivalent fluid pressures. Any anticipated surcharge load should be factored into the design in addition to the above-mentioned pressures.
- The active pressure can be used for flexible walls with a potential to dislocate. At-rest pressure should be used for building walls or restrained walls. The seismic active pressure is applicable for the earthquake condition for both at-rest and active walls.
- The values do not include hydrostatic pressures that might be caused by collected runoff water trapped behind the structure. Accordingly, wall backfill should be free draining and provisions should be made to collect and dispose of excess water that may accumulate behind earth retaining structures.
- Adequate drainage of backfill in the form of subdrains should be provided at the base of exterior walls (preferably below the joint between wall and footing) to collect and dispose of

excess water which can accumulate behind the retaining structures. The subdrain should be placed in the drain rock and be enveloped in filter fabric as shown on Plate 9. Drain rock should be densified to a non-yielding condition by placing in lifts and compacting in a manner which does not damage the waterproofing material or structurally damage the wall. Dripline trenches or surface drains should not be connected to the exterior foundation drain.

- Heavy compaction equipment or other loads which may result in lateral pressures higher than those recommended above should not be allowed within proximity to the wall, unless planned for in the structural design.
- Where retaining walls will enclose useable interior space or floors below grade, the wall should be waterproofed. Waterproofing material should consist of rubberized asphalt, polymer-modified asphalt, butyl rubber, or other approved materials capable of bridging nonstructural cracks. Joints in the membrane should be lapped and sealed in accordance with the manufacturer's recommendations. Extra attention should be paid to concrete cold joints between the wall and footing. A manufactured water-stop or key should be placed at all cold joints.
- The drain system should discharge into a properly designed infiltration trench, storm drain system, or other approved exterior location. Filter fabric (Mirafi 140N or approved alternate) should separate the drain rock from overlying fill materials to prevent sand or fines from migrating into the drain rock.
- Due to the potential for water seepage and moisture migration through concrete slab-on-grade floor and to reduce the potential for build-up of hydrostatic pressure, we recommend a drain system be constructed under slab-on-grade floors. In general, the under-slab drain system should consist of 3-inch-diameter (minimum) perforated pipe placed in at least 8-inches of drain rock and spaced at a maximum 24 feet apart. The subgrade should slope toward the perforated drainpipes and the pipes should have at least a one-percent slope.
- Crawl spaces must be built with permanent drainage, including sloped interior surfaces and/or a perimeter drain trench filled with drain rock. Positive drainage should be provided from all portions of the crawlspace to the lowest part of the crawlspace, and then under or through the perimeter footing to discharge down gradient from the structure and exterior flatwork. The

discharge should be into a properly designed infiltration trench, the storm drain system, or other approved exterior location.

- Radon is a naturally occurring, dense, odorless gas that is generated from radioactive degradation of uranium in granitic rocks decaying into isotopes which can contribute to lung cancer. Active or passive radon venting of below-grade spaces should be considered, including crawlspaces, to reduce potential for radon to diffuse into living spaces. The subfloor perforated pipe vent system under the slab-on-grade floor can be considered for passive radon mitigation.
- Finished grades should be sloped to prevent ponding of water and to direct surface water away from foundations. Impervious surfaces adjacent to the building foundation should slope away from the building at a minimum 5 percent gradient for at least 5 feet. The dripline trench should not be in direct communication with the foundation drain layer.

LIMITATIONS

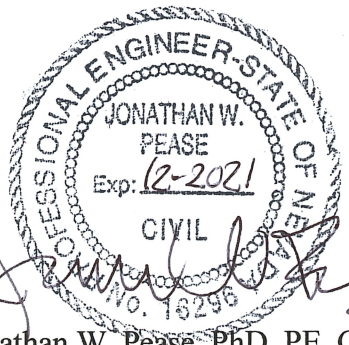
This report has been prepared for design purposes for specific application to the currently proposed project in accordance with the generally accepted standards of practice at the time the report was written. If the scope of the proposed construction changes from those described, our recommendations should be reviewed by us and may require modification. No warranty, express or implied, is made.

All parties to the project including the designer, contractor, subcontractors, etc., should be made aware of this report in its entirety. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

CLOSURE

We trust the report provides you with the information you require. If there are any questions, please contact our office.

Sincerely,
Reno Tahoe Geo Associates, Inc.



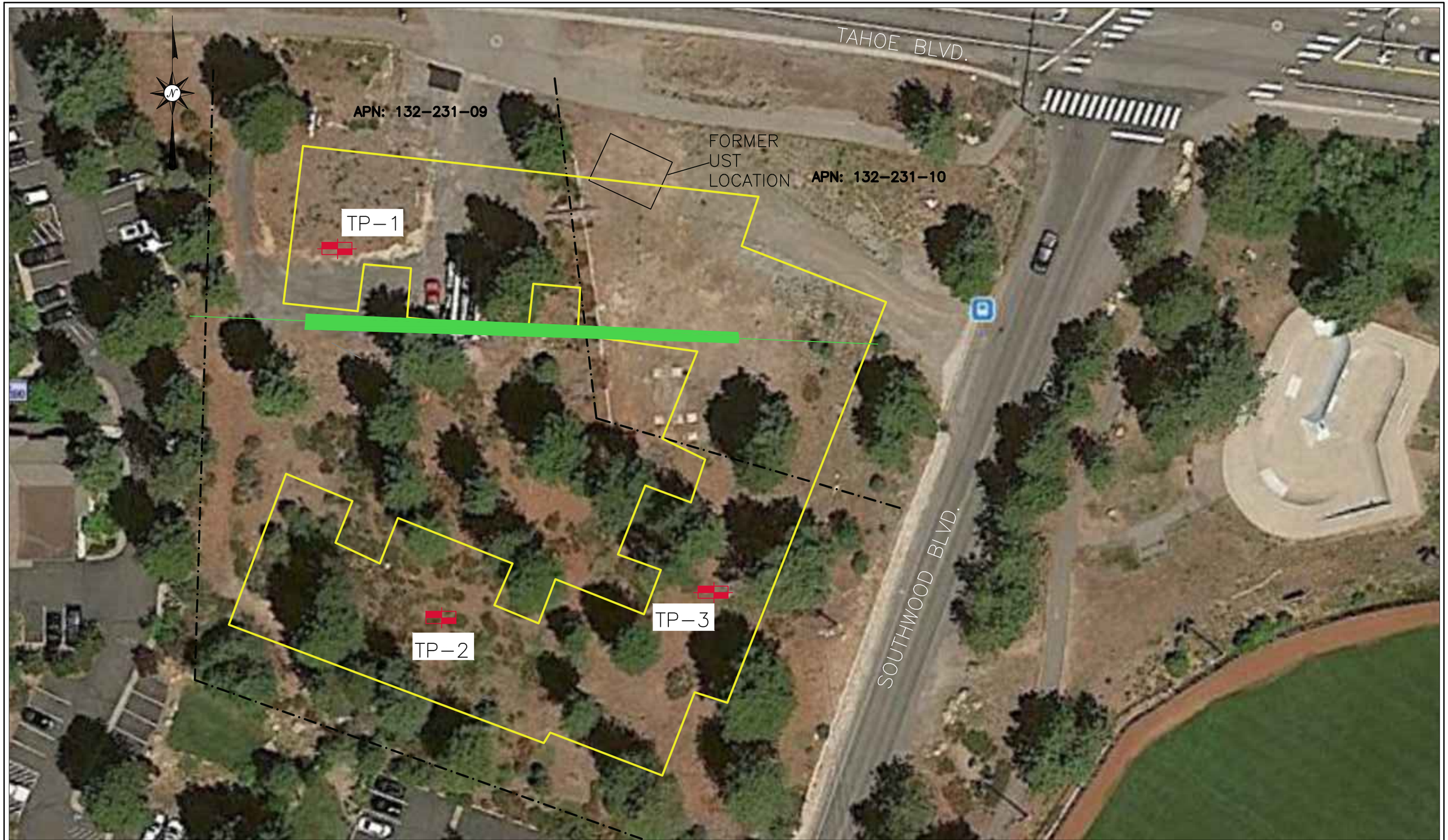
6-30-21

Shane Mulvaney
Senior Geologist

Jonathan W. Pease, PhD, PE, GE
Principal Engineer NV 16296

Plates:
- Plate 1 - Site Map
- Plate 2 - ReMi 1D & 2D Results
- Plate 3 - Log of Test Pit TP-1
- Plate 4 - Log of Test Pit TP-2
- Plate 5 - Log of Test Pit TP-3
- Plate 6 - Soil Classification Chart
- Plate 7 - Grain Size Analysis
- Plate 8 - Atterberg Limits
- Plate 9 - Typical Back of Wall Drain

PLATES



Test Pit Location

Approximate Parcel Boundary

Approximate Building Outline

ReMi Profile – Thick Portion of Line Shows Extent of 2-D Profile

0 50 100

SCALE: 1"= 50'

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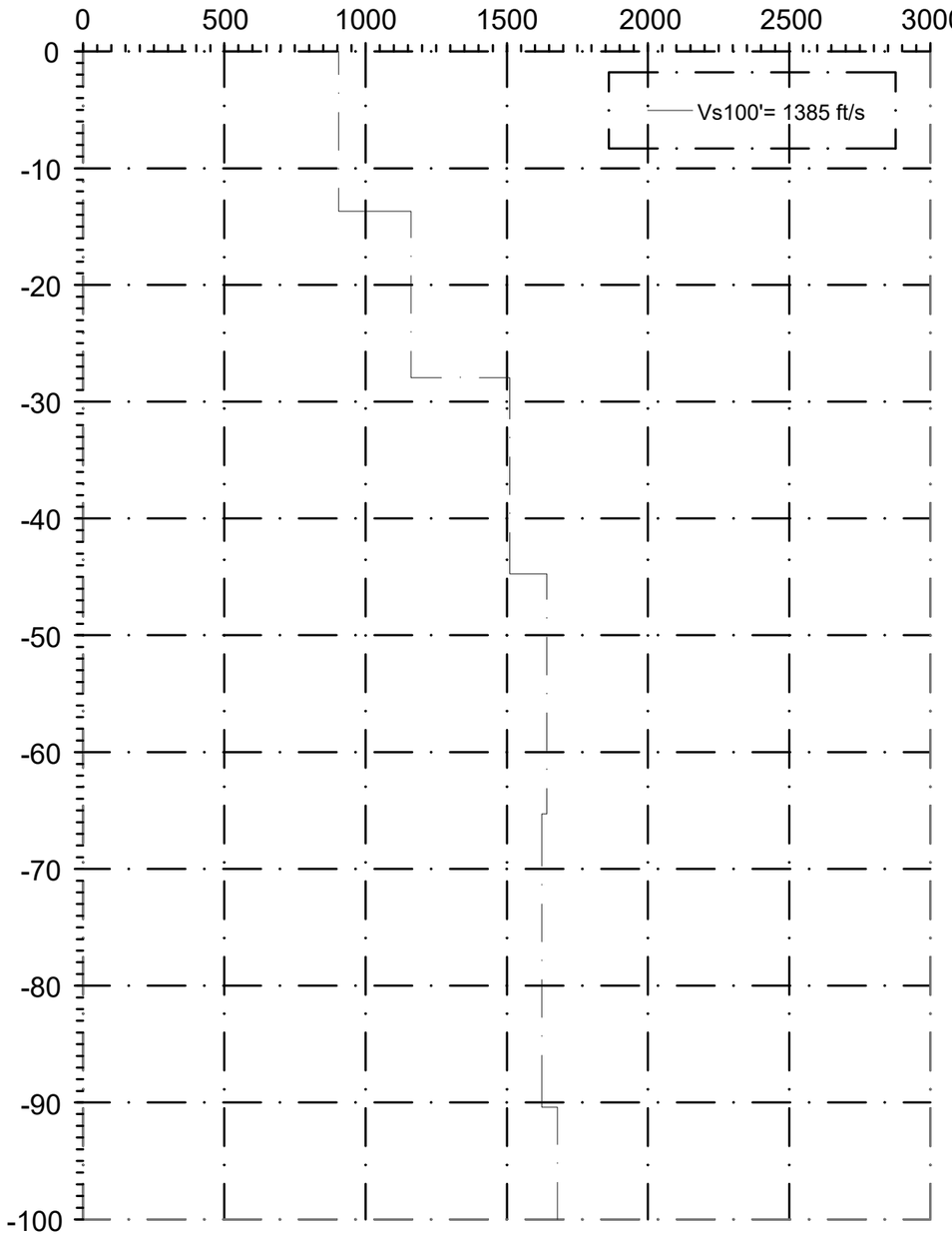
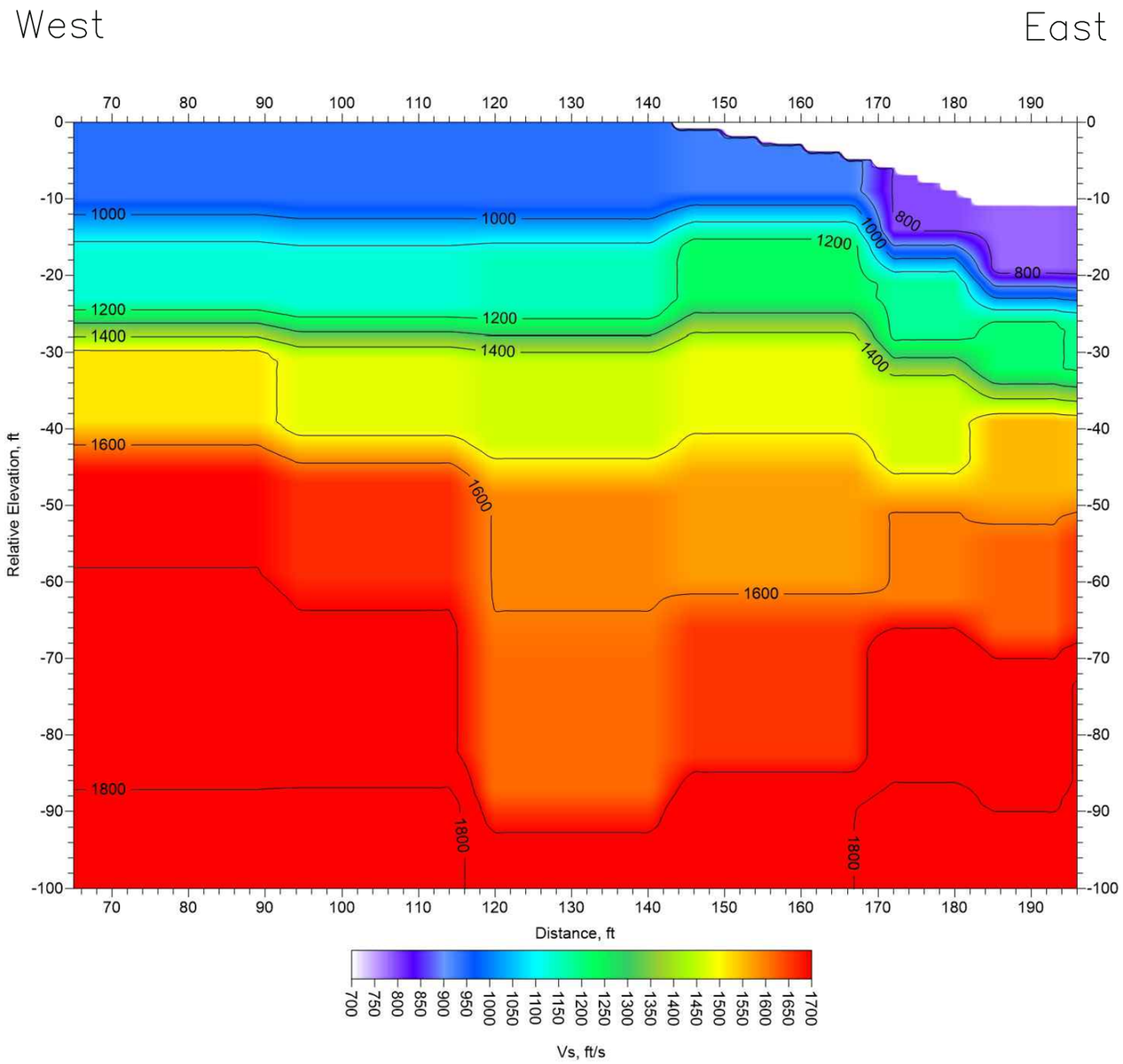
SITE MAP

GEOTECHNICAL ASSESSMENT
SOUTHWOOD CONDOMINIUMS
INCLINE VILLAGE

WASHOE COUNTY CALIFORNIA

PLATE 1





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REMI LINE RESULTS

GEOTECHNICAL ASSESSMENT
SOUTHWOOD CONDOMINIUM PROJECT
INCLINE VILLAGE

WASHOECOUNTY NEVADA

PLATE
2

LOG OF TEST PIT TP-1

LOCATION NORTHWEST QUADRANT OF SITE

EQUIPMENT LINK-BELT 145 X 4

ELEVATION _____ DATE 6/10/21

LABORATORY TESTS	FIELD BLOWS /6in	BLOWS/FT	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DEPTH (ft)	SAMPLE	
					0		**LIGHT GRAY SILTY SAND (SM)** Pine duff overlying silty sand (decomposed granite) fill. (10YR 7/1) (est.15% G/ 55% S/ 30% F)
					2		**DARK YELLOWISH BROWN SILTY SAND WITH BOULDERS AND COBBLES (SM)** Dry to slightly moist, loose, fine to coarse angular to subrounded gravel, non-plastic silt in fine to coarse granitic sand. 20% angular to subrounded cobbles and 20% subangular to subrounded boulders to 3 feet size. Abundant roots. (10YR 3/4) (est.20% G/ 60% S/ 20% F)
					4		**BROWNISH YELLOW SILTY SAND WITH BOULDERS AND COBBLES (SM)** Dry to slightly moist, loose to medium dense, fine to coarse angular to subrounded gravel, non-plastic silt in fine to coarse granitic sand. 20% angular to subrounded cobbles and 20% subangular to subrounded boulders to 6+ feet size. Abundant roots. (10YR 6/8) (est.30% G/ 50% S/ 20% F)
					6		
					8		**LIGHT GRAY** Single boulder of indeterminate size. Hard, lenticular granite mass. Difficult to excavate. (10YR 7/1)
					10		**BROWNISH YELLOW SILTY SAND WITH BOULDERS AND COBBLES (SM)** Slightly moist, loose, fine to coarse angular to subrounded gravel, non-plastic silt in fine to coarse granitic sand. 20% angular to subrounded cobbles and 20% subangular to subrounded boulders to 3 feet size. (10YR 6/8) (est.30% G/ 50% S/ 20% F)
SA, Percent Passing #200 =51% Liquid Limit = 35 Plasticity Index = 14					12		**YELLOWISH BROWN LEAN CLAY (CL)** Slightly moist to moist, fine sand in soft to firm, low plasticity clay. Grey (5Y 5/5) and dark yellowish brown (10YR 4/6) mottling. (10YR 5/8)
					14		**STRONG BROWN SILTY, CLAYEY SAND (SC-SM)** Moist, loose, thin low to medium plasticity clay and non-plastic silt layers in fine to coarse sand. Fine to medium subangular to subrounded gravel. (7.5YR 5/6) (est.20% G/ 50% S/ 30% F)
					16		TERMINATED @ 15' No Free Water Observed

)

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LOG OF TEST PIT TP-1

GEOTECHNICAL ASSESSMENT
SOUTHWOOD CONDOMINIUMS
INCLINE VILLAGE

WASHOE COUNTY NEVADA

PLATE 3

1 LOG LETTER SIZE SOUTHWOOD CONDOS.GPJ MED DATA TEMPLATE 2015A.GDT 7/1/21

LOG OF TEST PIT TP-2

LOCATION SOUTHWEST QUADRANT OF SITE

EQUIPMENT LINK-BELT 145 X 4

ELEVATION _____ DATE 6/10/21

LABORATORY TESTS	FIELD BLOWS /6in	BLOWS/FT	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DEPTH (ft)	SAMPLE	
					0		**DARK REDDISH BROWN SILTY SAND (SM)** Dry, loose, angular to subrounded gravel, non-plastic silt, in fine to coarse sand. Pine duff overlying topsoil. (2.5YR 3/4) (est.15% G/ 60% S/ 25% F)
					2		**DARK YELLOWISH BROWN SILTY SAND WITH COBBLES AND BOULDERS (SM)** Dry to slightly moist, loose matrix, fine to coarse angular to subrounded gravel, non-plastic silt in fine to coarse granitic sand. 25% angular to subrounded cobbles and 20% subangular to subrounded boulders to 3 feet size. Abundant roots. (10YR 4/6) (est.20% G/ 60% S/ 20% F)
					4		
					6		
					8		**YELLOWISH BROWN SILTY SAND WITH COBBLES AND BOULDERS (SM)** Dry to slightly moist, loose matrix, fine to coarse angular to subrounded gravel, non-plastic silt in fine to coarse granitic sand. 30% angular to subrounded cobbles and 5% subangular to angular boulders to 3 feet size. (10YR 5/6) (est.25% G/ 55% S/ 20% F)
					10		
					12		TERMINATED @ 13' No Free Water Observed
					14		
					16		

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LOG OF TEST PIT TP-2

GEOTECHNICAL ASSESSMENT
SOUTHWOOD CONDOMINIUMS
INCLINE VILLAGE
WASHOE COUNTY NEVADA

PLATE 4

1 LOG LETTER SIZE SOUTHWOOD CONDOS.GPJ MED DATA TEMPLATE 2015A.GDT 7/1/21

LOG OF TEST PIT TP-3

LOCATION SOUTHEAST QUADRANT OF SITE

EQUIPMENT LINK-BELT 145 X 4

ELEVATION _____ DATE 6/10/21

LABORATORY TESTS	FIELD BLOWS /6in	BLOWS/FT	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DEPTH (ft)	SAMPLE	
					0		**DARK REDDISH BROWN SILTY SAND (SM)** Dry, loose, angular to subrounded gravel, non-plastic silt, in fine to coarse sand. Pine duff overlying topsoil. Scattered surficial boulders to 5 feet size. (2.5YR 3/4) (est.15% G/ 55% S/ 30% F)
					2		**DARK YELLOWISH BROWN SILTY SAND WITH COBBLES AND BOULDERS (SM)** Dry, loose, fine to coarse angular to subrounded gravel, non-plastic silt, fine to coarse granitic sand. Estimate 15% angular to subrounded cobbles. Common boulders to 3 feet size. (10YR 4/4) (est.15% G/ 65% S/ 20% F)
					4		grades yellowish brown
					6		**YELLOWISH RED SILTY SAND (SM)** Slightly moist, loose to medium dense, non-plastic silt in fine sand. Some dark yellowish brown (10YR 4/6) mottling. Minor angular to subrounded gravel. (5YR 5/8) (est.10% G/ 65% S/ 25% F)
					8		**GRAY / LIGHT OLIVE GRAY SILTY SAND (SM)** Dry, medium dense to dense, non-plastic silt in fine to coarse sand. Some angular to subangular cobbles and boulders. Excavator refusal at 9'. (5Y 6/1) (est.20% G/ 60% S/ 20% F)
					10		TERMINATED @ 9' No Free Water Observed
					12		
					14		
					16		

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LOG OF TEST PIT TP-3

GEOTECHNICAL ASSESSMENT
SOUTHWOOD CONDOMINIUMS
INCLINE VILLAGE
WASHOE COUNTY NEVADA

PLATE 5

UNIFIED SOIL CLASSIFICATION CHART

MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS	GRAVELS More than half coarse fraction is larger than No.4 sieve size	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL–SAND–SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL–SAND–SILT MIXTURES
	SANDS More than half coarse fraction is smaller than No.4 sieve size	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, POORLY GRADED SAND–SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND–SILT MIXTURE
FINE GRAINED SOILS	SILTS AND CLAYS Liquid limit less than 50		ML	INORGANIC SILTS & VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS Liquid limit greater than 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS
ROCK				COBBLES/BOULDERS
				GRANITIC BEDROCK
				VOLCANIC BEDROCK

KEY TO TEST DATA

				Shear Strength, psf	Confining Pressure, psf	
LL	–	Liquid Limit (in %)	Tx	320	(2600)	Unconsolidated Undrained Triaxial
PL	–	Plastic Limit (in %)	TxCU	320	(2600)	Consolidated Undrained Triaxial
Gs	–	Specific Gravity	UC	2000		Unconfined Compression
SA	–	Sieve Analysis				Friction Angle; Cohesion, psf
Consol	–	Consolidation	DS	36°	400	Consolidated Drained Direct Shear

SAMPLE DESIGNATION

- STANDARD PENETRATION TEST SAMPLE
- 2½" OD MODIFIED CALIFORNIA SAMPLE
- 3" OD MODIFIED CALIFORNIA SAMPLE
- SHELBY TUBE SAMPLE
- AUGER CUTTINGS SAMPLE
- LOCATION OF ROCK CORING
- OTHER "UNDISTURBED" SAMPLE
- OTHER BULK OR CLASSIFICATION SAMPLE

KEY TO SYMBOLS

▽ OBSERVED WATER LEVEL

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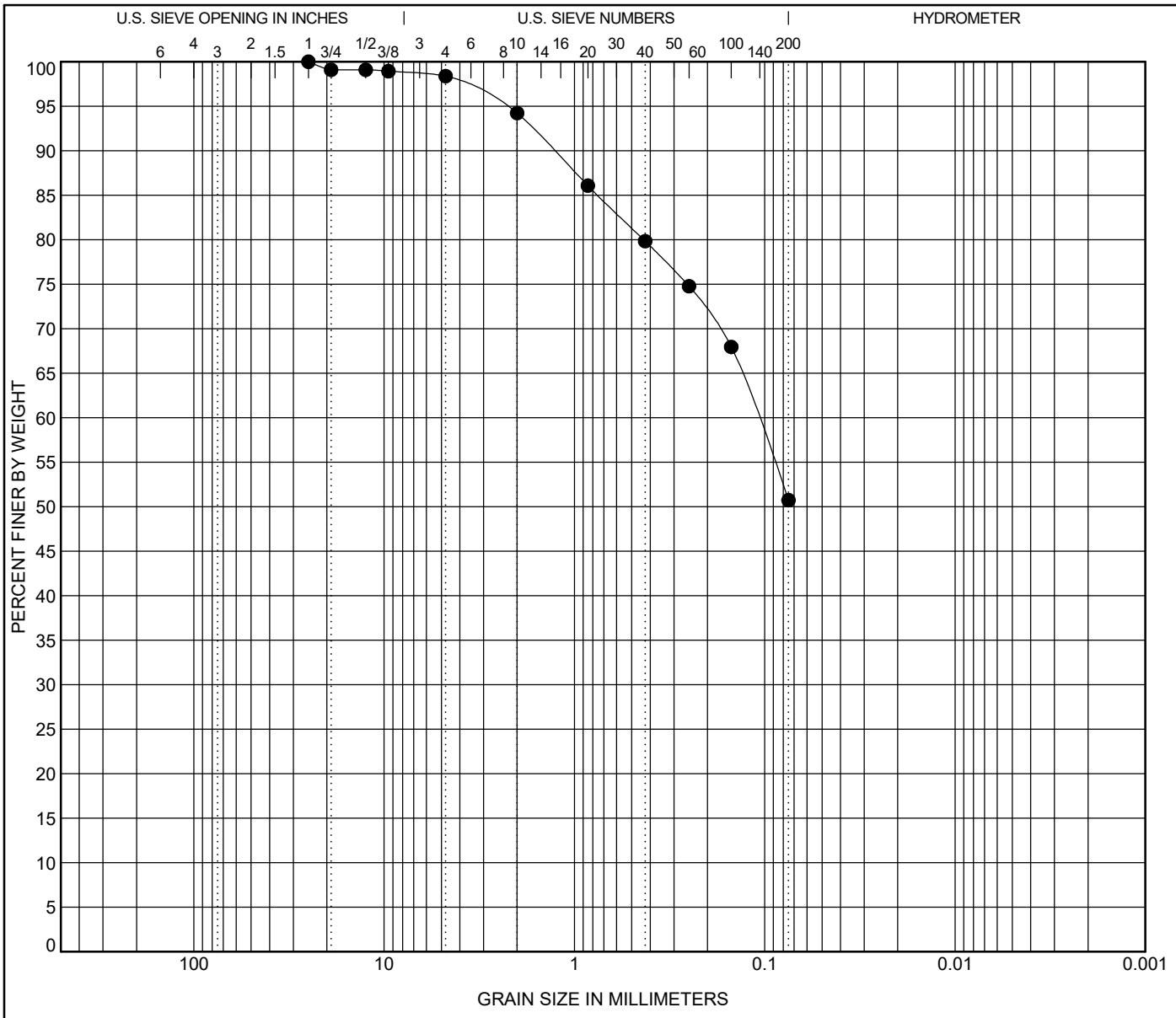
SOIL CLASSIFICATION CHART

GEOTECHNICAL ASSESSMENT
SOUTHWOOD CONDOMINIUMS
INCLINE VILLAGE

WASHOE COUNTY NEVADA

PLATE 6



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	**TP-1C**	**11.0**	**SANDY LEAN CLAY(CL)**	**35**	**21**	**14**		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**TP-1C**	**11.0**	**25**	**0.109**			**1.6**	**47.6**	**50.7**	

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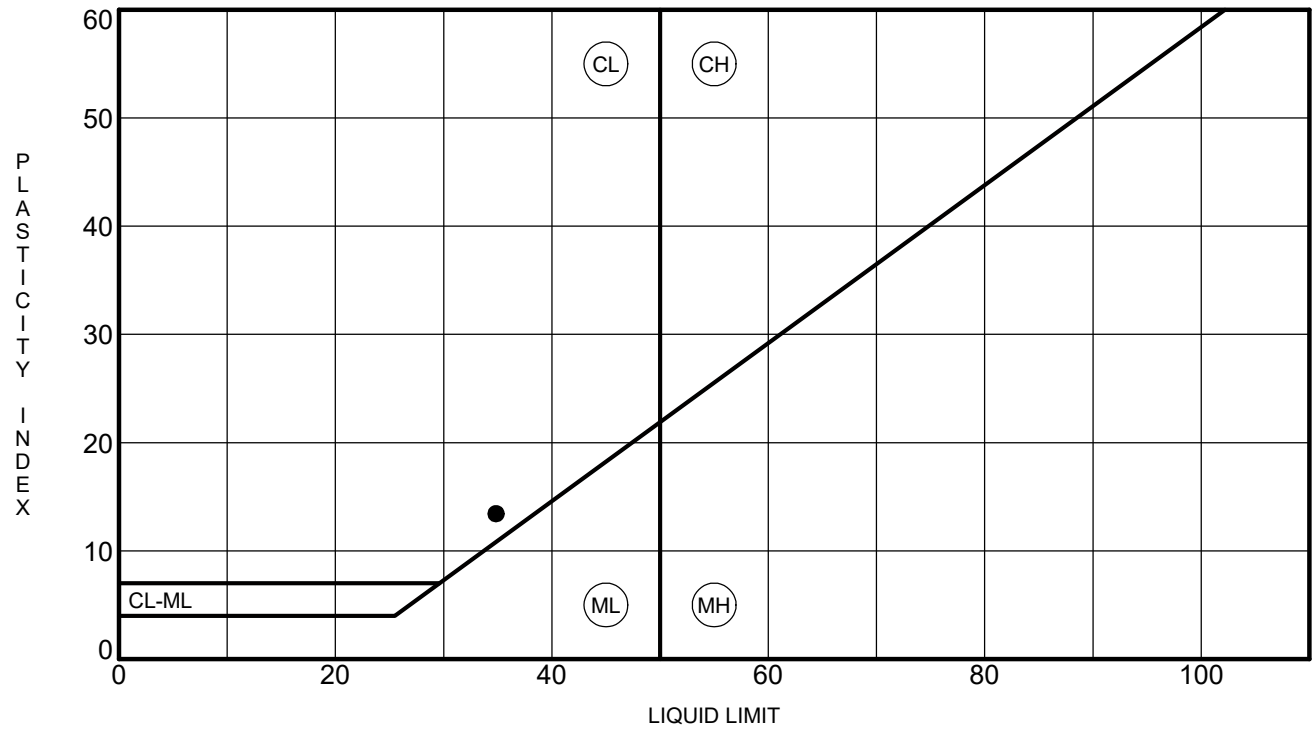
GRAIN SIZE ANALYSIS

GEOTECHNICAL ASSESSMENT
SOUTHWOOD CONDOMINIUMS
INCLINE VILLAGE

WASHOE COUNTY NEVADA

PLATE 7

GRAIN SIZE GEOTECH.GPJ MED DATA TEMPLATE 2015A.GDT 6/18/21



	Specimen Identification		LL	PL	PI	Fines	Classification
●	**TP-1C**	**11.0**	**35**	**21**	**14**	**51**	**SANDY LEAN CLAY(CL)**

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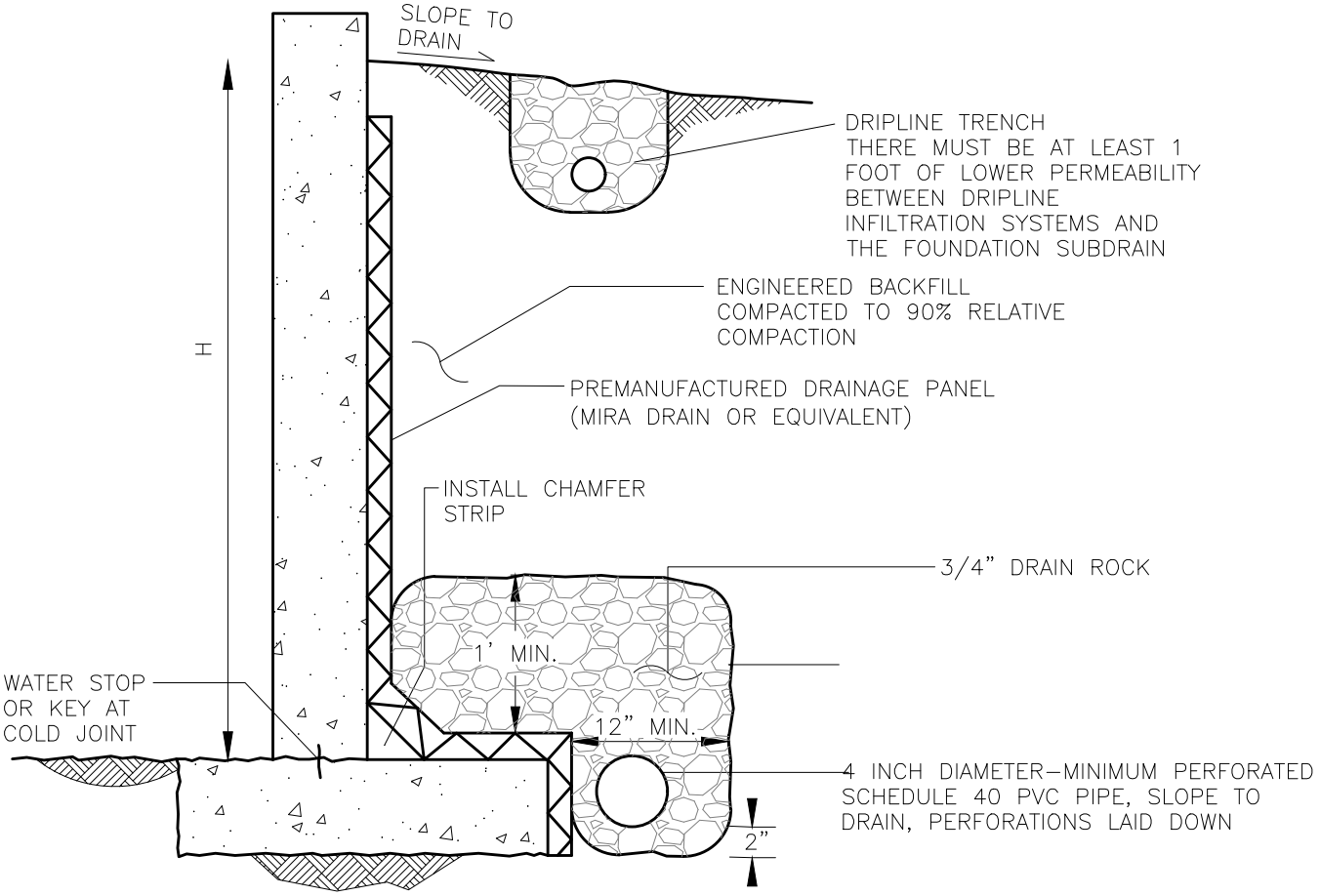
ATTERBERG LIMITS

GEOTECHNICAL ASSESSMENT
SOUTHWOOD CONDOMINIUMS
INCLINE VILLAGE

WASHOE COUNTY NEVADA

PLATE 8



NOT TO SCALE

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TYPICAL BACK OF WALL DRAIN

GEOTECHNICAL ASSESSMENT
SOUTHWOOD CONDOMINIUMS
INCLINE VILLAGE

WASHOE COUNTY NEVADA

PLATE 9