



Broadband Feasibility Study

Appendix C: Public Policy – Templates and Examples

Port of Walla Walla, WA

Prepared by: Magellan Advisors
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A. Sample General Plan Communications Policies (Mono County)

Proposed Mono County General Plan Communication Policies

I. ISSUES / OPPORTUNITIES / CONSTRAINTS

Communications

1. Telecommunications infrastructure and services are critical components for long-term growth and sustainability for the County, as they provide the basic resources necessary for businesses to operate and add to the quality of life for residents. Increasingly, business success is tied to online accessibility, including e-commerce solutions, discoverability, and the overall necessity of high-quality broadband capable of high speeds with symmetric up and down transfer rates. Of equal importance is broadband to residents for access to online education, research, employment, health care, and government resources.
2. Historically, Mono County has suffered from a lack of quality broadband due to our rural nature and low population with dispersed community areas. With the installation of Digital 395 (see III.C. Definitions for more information) in 2013, however, capacity issues will be resolved and new opportunities will arise.
3. With the rapid advances in mobile device technology, both providers and subscribers are increasingly looking to mobile solutions to help fill communication gaps and provide alternatives to typical fixed deployments. While the mobile alternatives are extremely valuable at fulfilling their role, they are not a panacea for solving broadband issues throughout the county.
4. The primary issues with the mobile broadband solution are the data caps that are placed on customers, the overall cost of the service, and the typical requirement of a long-term contract in order to receive the service. While these are hurdles typically overcome by those looking to utilize this technology as a secondary method for accessing the Internet, for those who are looking at it as their primary, they may be insurmountable.
5. For the most part, some form of cellular coverage exists in almost every community; however, it is carrier dependent. AT&T and Verizon are the two main carriers, whose coverage models overlap, but do not provide the same coverage in all of the same areas. In addition to some communities not having cellular service, there are significant sections of our primary highway corridors without coverage, which poses safety concerns and convenience issues for travelers.
6. With Digital 395, cellular coverage throughout the county may improve as new sites are developed and existing sites improved with upgraded technology that adopts a fiber-fed backhaul. This development pattern is important, and should be considered strategically and implemented thoughtfully in order to meet goals and objectives while adhering to policies and parameters.
7. Within the context of non-mobile broadband technology, Mono County continues to struggle with the basic aspects of accessibility, reliability, and adoption. These three aspects are closely related to each other, as the region as a whole has been starved of quality Internet until very recently. Where service is accessible (mainly in the major community areas), the reliability and usability of that service has not always been great

enough to motivate everyone to adopt. Coupled with the demographics of the region (a mix of income levels, education, age, and ethnicities), a portion of the population still does not use the Internet.

8. Outside of the Town of Mammoth Lakes and the community of June Lake, most communities do not have more than one Internet Service Provider. For the most part, smaller communities are serviced by a single fixed wireless provider (Schat.net), leaving only one other small, wireline provider (Escape Broadband) to compete with the bigger companies offering wireline service – Suddenlink and Verizon.

9. Due to limited competition, the market in each community has been dominated by a single (non-mobile) carrier, which limits consumer choice, stifles competition, and does not afford redundancy. In addition, business use of Internet is limited to residential grade service plans, with only a small number of T1 type connections, or similar higher speed service offerings. In general, this has not only resulted in those businesses being confined to Mammoth or June Lake, but also made it difficult or financially impractical for businesses to get higher speeds or symmetric service offerings.

10. A high priority is placed on broadband market development, and the engagement of Mono County in the regional deployment of this critical infrastructure. Participation in local, regional, statewide, and federal efforts that are aimed at the improved diffusion of broadband and communications technology is an important part of achieving the goals and objectives.

II. DEFINITIONS

Communications

1. Digital 395: A 583-mile long Middle Mile fiber optic project between Carson City, NV and Barstow, CA. This project was jointly funded by the U.S. Department of Commerce under the American Recovery and Reinvestment Act of 2009 (ARRA), and a ratepayer fund dedicated to broadband development known as the California Advanced Services Fund which is administered by the California Public Utilities Commission.

2. California Broadband Cooperative: A not-for-profit telephone cooperative that will serve as the long-term owner and operator of the Digital 395 network.

3. Praxis Associates, Inc.: A recognized California-based fiber optic development firm responsible for securing the funding and serving as the lead on the design, management, and construction of the Digital 395 project.

4. Middle Mile: In utilities and telecommunication networks, this is the core portion of the infrastructure that provides the high-capacity, long-haul routes from points of origin for service to local service providers and smaller distribution networks.

5. Last Mile: In utilities and telecommunication networks, this is the local network that delivers service to consumers, as developed and carried out by Internet Service Providers (ISPs).

6. Anchor: As it relates to Digital 395, these are government, education and medical facilities, and service provider points of interconnect where services are provided by Digital 395.

7. Node: As it relates to Digital 395, these are locations along the fiber route where hardware is located that amplifies signal in the fiber, routes traffic on the network, and provides points of interconnect.
8. Fiber Access Point (FAP): Typically located in underground vaults, these are points of access to fibers broken out from the Digital 395 backbone for the purpose of providing a point of interconnect for future middle or last mile services.
9. Network Interface Device (NID): A piece of technology installed at anchors where the Digital 395 network is terminated and can be interfaced with a local network.
10. Mobile Wireless: A general term used to describe broadband service that is offered typically by cellular carriers via 3G, 4G, LTE or similar types of networks to smartphones, tablets, and other mobile technology.
11. Fixed Wireless: A term used to describe broadband service that is offered by an Internet Service Provider via wireless infrastructure that is installed on premise and aimed at a repeater site.
12. Wireline: A general term that is used to describe a connection to the Internet which is provided via hardwire, as in the case of DSL, Cable, or Fiber based technologies.

II. POLICIES

Communications

Broadband Distribution and Quality of Service

Goal 1. Facilitate the distribution of the best broadband service possible, to as many users within community areas and key transportation corridors as possible, in a timely and cost effective manner that minimizes impacts to visual and natural resources.

Objective 1.A. Work with providers to deliver the best service possible to Mono County residents, businesses, and visitors.

Policy 1.A.1. Providers shall develop new infrastructure projects using the best available technology that meets or exceeds current industry standards and is consistent with Goal 2.

Action 1.A.1.a. Providers shall meet or exceed standards set by the California Advanced Services Fund (CASF) for 'Served' communities.¹

Action 1.A.1.b. Encourage new infrastructure projects to use high-capacity wireline solutions (such as Fiber-to-the-Premise). Providers should demonstrate

¹ California Advanced Services Fund is a division of the California Public Utilities Commission (CPUC) and is responsible for increasing broadband adoption in hard to reach areas of California. More information at <http://www.cpuc.ca.gov/PUC/Telco/Information+for+providing+service/CASF/index.htm>.

a justification for alternative technologies requirements when wireline is impractical.

Policy 1.A.2. Providers shall develop and deliver services that improve accessibility to high quality broadband while protecting consumers and ensuring fair and equal access to those utilizing services within the County.

Action 1.A.2.a. Ensure Internet Service Providers (ISPs) possess a current Business License, and be current on all applicable Franchise Licenses, taxes, and fee payments.

Action 1.A.2.b. ISPs shall furnish and uphold Customer Service Standards that provide privacy protection, clear service and billing procedures, reliability, or a similar service level agreement, and means by which to contest service not meeting said standards.

Action 1.A.2.c. The County should work with providers to establish and maintain consumer awareness information and materials. Periodically review and publish information on local providers based on service standards, including but not limited to coverage area, speeds, etc.

Objective 1.B. Deploy broadband to as many community areas and key transportation corridors as possible, and pursue additional providers to increase competition, and improve quality of service.

Policy 1.B.1. Work with providers and other entities to develop projects that deliver broadband service to all communities.

Action 1.B.1.a. Establish and maintain a list of high priority communities that can be referred to when providers are looking to build new projects.

Action 1.B.1.b. Actively seek out providers and other reasonable alternatives to establish broadband service in unserved communities throughout the County.

Action 1.B.1.c. Coordinate and work with Eastern Sierra Connect Regional Broadband Consortium (ESCRBC) and other entities to locate funding opportunities for providers interested in building projects in 'unserved' and 'underserved' communities.

Action 1.B.1.d. Pursue additional providers or other reasonable alternatives to improve the quality of service, competition, and reliability in communities throughout the County.

Action 1.B.1.e. Look for opportunities to establish access to broadband in other rural or outlying areas for the purpose of enhancing Health & Safety or Economic Development purposes where traditional approaches or solutions are impractical.

Policy 1.B.2. Establish free WiFi in public spaces including County buildings, parks, community centers, and in commercial corridors in community areas.

Action 1.B.2.a. Provide free WiFi for public use in County offices and facilities.

Action 1.B.2.b. Work with service providers to establish free WiFi in commercial corridors and other public areas to support and promote local businesses.

Action 1.B.2.c. Limit speeds on public WiFi networks so as not to compete with residential or business connections offered by local service providers.

Design and Placement of Communications Infrastructure

Goal 2. Ensure deployment and implementation minimizes impacts to visual and natural resources. Provide development standards for communication infrastructure located throughout the County.

Objective 2.A. Minimize the impact on the environment and scenic resources of communications projects and infrastructure.

Policy 2.A.1. Providers shall utilize distribution practices that cause the least amount of long-term/significant environmental and visual impacts, including the use of design and screening tactics (also see Mono County Design Guidelines).

Action 2.A.1.a. Projects shall comply with requirements in Chapter 11, Section 11.010, of the Land Use Element.

Action 2.A.1.b. To support utilization of existing infrastructure and co-location, the County should maintain a database of existing communications infrastructure that can be referenced when evaluating projects and prior to permitting, and that is available to providers.

Action 2.A.1.c. Encourage placement of towers outside of community areas.

Policy 2.A.2. Underground existing overhead infrastructure when possible.

Action 2.A.2.a. Seek and utilize Rule 20, grant funds, public-private partnerships, or other creative funding opportunities, such as loans or mortgages, to underground infrastructure.

Action 2.A.2.b. Utilize a community-based public planning process to help identify and prioritize future undergrounding projects; review area plans for existing community direction.

Action 2.A.2.c. Establish an inventory and set of priorities for each community for future undergrounding projects based on areas of high preference or priority, as driven by public safety, reliability, community benefit (commercial cores, downtowns, etc.), or visual blight issues.

Action 2.A.2.d. Maintain an inventory of all underground districts and past funded projects in the County.

Policy 2.A.3. Utilize existing permit review procedures, such as the Land Development Technical Advisory Committee, to ensure project compliance and engage interested County departments, including Information Technology (IT), and other stakeholders.

Objective 2.B. Develop and manage underground infrastructure as 'basic infrastructure' that adheres to standards, is available for public use, and is managed as an asset in line with other public property.

Policy 2.B.1. Underground infrastructure shall be installed in accordance with standards specified in Chapter 11, 11.010, regarding placement, material, and method, and should adhere to other best practices.

Action 2.B.1.a. Conduit in public streets should be placed a minimum depth of three feet.

Action 2.B.1.b. Conduit installed for the purposes of Middle-Mile or long-haul routes, or that is installed in major streets or arterials should be the equivalent minimum of 4" in diameter.

Action 2.B.1.c. Conduit installed for the purposes of Last-Mile or distribution routes should be a minimum of 1½" in diameter.

Action 2.B.1.d. Conduit should be installed at the intersection of streets that is the equivalent of at least 4" in diameter and made accessible via vaults or similar appropriate means.

Action 2.B.1.e. Encourage the use of microduct or similar technology in conduit installations so as to segregate providers.

Action 2.B.1.f. A reasonable amount of space shall be retained by the owner of the underground infrastructure for the purpose of their potential future use.

Action 3.B.1.g. Allow developers who install conduit to recover their costs through renting or leasing space in conduit at a fair and competitive price until the point that the cost of installation is paid off.

Strategic Planning For Communications Infrastructure

Goal 3. Plan for the improvement and expansion of the communications infrastructure network by seeking cost-effective and efficient solutions.

Objective 3.A. Utilize County property and rights-of-way, or other public spaces and resources, for communication sites or infrastructure.

Policy 3.A.1. The County shall provide sites or space for communication facilities, including cabinet structures, pedestals, antennas, etc. where appropriate and feasible.

Action 3.A.1.a. Develop and maintain an inventory of viable sites, permissible uses, associated costs, power and backhaul access, and other relevant information on County property and rights-of-way.

Action 3.A.1.b. Consolidate and co-locate facilities on County property or rights-of-way without interfering with County infrastructure, and design new facilities and projects taking into consideration future communication infrastructure.

Action 3.A.1.c. Review locations of Digital 395 Fiber Access Points (FAPs) within County Rights of Way and determine how providers may utilize or access FAP and install necessary infrastructure in Right of Way.

Policy 3.A.2. Projects conducted on County property, including rights-of-way, shall follow a 'Dig Once' objective.

Action 3.A.2.a Install conduit in public streets during construction/re-construction for future communications infrastructure use.

Action 3.A.2.b. Accommodate construction of conduit laterals leading to private property for potential future use.

Policy 3.A.3. Interested parties shall be notified of any opportunity for installing additional conduit or infrastructure in open trenches in County right-of-way.

Action 3.A.3.a. Look for opportunities to place new conduit through joint utility trenches.

Action 3.A.3.b. Require formal notification of utilities and interested parties of a joint trench opportunity prior to issuance of permit for construction work.

Action 3.A.3.c. Require installation of secondary or tertiary conduit whenever new conduit is being installed in public Rights of Way to accommodate future use/growth.

Policy 3.A.4. Underground infrastructure in County rights-of-way shall be accessible and remain available for use by qualified providers.

Action 3.A.4.a. Accept offers of dedication for underground infrastructure from private developers and maintain conduit in the public's interest.

Action 3.A.4.b. Work with special districts, quasi-public entities, or third-party companies and vendors for long-term ownership or management of underground conduit, so long as the infrastructure remains available to the public at a fair price and in an open and competitive manner.

Policy 3.A.5. Leverage existing broadband infrastructure, including Digital 395, before constructing new infrastructure.

Action 3.A.5.a. Lease existing bandwidth, dark fiber, or conduit space from California Broadband Cooperative when network routes parallel Digital 395 infrastructure.

Policy 3.A.6. Collaborate with public land managers and other agencies to provide infrastructure locations consistent with Mono County's policies and regulations.

Action 3.A.6.a. Encourage use of public land for site location and pursue opportunities with federal agencies, special districts, or local agencies.

Action 3.A.6.b. Work with land management agencies to ensure knowledge and understanding of future development plans, County General Plan policies

and guidelines, and find opportunities to synchronize policies and objectives between entities.

Objective 3.B. Design communication infrastructure for future use into County projects.

Policy 3.B.1. Communication projects shall be added to the County Comprehensive Capital Facilities Plan for consideration through the established process for prioritization and funding.

Policy 3.B.2. The County shall consider communications conduit as a standard aspect of a street and shall take advantage of opportunities to install infrastructure when appropriate.

Action 3.B.2.a. Conduit shall be incorporated in the design and cost estimate phases of new street, sidewalk, or other related transportation projects.

Action 3.B.2.b. Establish dedicated revenue account(s) to be funded through leases or rents of County property for communications infrastructure, and to be made available for future conduit development and maintenance projects.

Action 3.B.2.c. When funding is not available for conduit, look for alternative sources including grants, special districts, public-private partnerships, private funding, or improvement district(s) in advance of actual construction effort.

Objective 3.C. Evaluate opportunities and establish a plan for future communications infrastructure needs and development opportunities.

Policy 3.C.1. Utilize existing committees, such as the Collaborative Planning Team, to coordinate and review communication development projects in neighboring jurisdictions or with a regional perspective.

Action 3.C.1.a. Work to develop a common set of standards and protocols for permitting, design, etc. that ensure consistency for providers and ensure the best delivery of service to our constituents.

Action 3.C.1.b. Evaluate Capital Improvement Plans (CIPs) for potential integration of broadband/communication projects.

Policy 3.C.i2. Work with the private sector to identify future projects.

Action 3.C.2.a. Work with cellular providers and third party tower developers to gain an understanding of future development intentions.

Objective 3.D. Develop and maintain a comprehensive inventory of communications, and related infrastructure for planning purposes.

Policy 3.D.1. The County shall establish and maintain a GIS database containing information and data on existing infrastructure. (Basic infrastructure information is also located in the Master Environmental Assessment [MEA]).

Action 3.D.1.a. Develop and maintain an inventory of communication infrastructure, capacity, and relevant characteristics for underground conduit,

cell tower sites, and other facilities, with a focus on County properties and rights-of-way.

Action 3.D.1.b. Develop and maintain a list of priority “unserved” and “underserved” areas throughout Mono County in need of broadband and engage Last-Mile Providers with the intent of developing projects in those areas.

Action 3.D.1.c. Develop and maintain an inventory of cell phone coverage gaps, shadow areas, and potential locations (when/if identified).

Action 3.D.1.d. Catalog potential projects and future development plans in a GIS database for internal reference purposes and planning efforts.

Action 3.D.1.e. Acquire maps, data, and other relevant information from special districts and service districts throughout the County who provide service to local residents.

Action 3.D.1.f. Inventory and develop a publicly accessible dataset that contains the best known locations for infrastructure that may be used by future providers, as well as public sites anticipated to be problematic.

Objective 3.E. Improve and expand the communications network to meet critical public needs, improve government services, and support vibrant communities and local economies.

Policy 3.E.1. Leverage Digital 395 and other broadband and communications resources to improve public safety.

Action 3.E.1.a. Implement an Emergency Services Network using Digital 395 that connects the satellite facilities of emergency services personnel within Mono County, as well as surrounding jurisdictions with the intent of improving the exchange of information between all parties.

Action 3.E.1.b. Utilize the Emergency Services Network to improve Enhanced 911 services by coordinating information shared between dispatch and responders.

Policy 3.E.2. Improve cellular coverage area and establish redundant communications in communities.

Action 3.E.2.a. Direct future providers to key transportation corridors and community areas without cellular service due to coverage gaps or shadow areas. (See Action 3.D.1.c.)

Policy 3.E.3. Utilize Digital 395 and technology as a whole to improve government accountability and accessibility, improve efficiency, and reduce environmental and fiscal impacts.

Action 3.E.3.a. Develop and/or promote use of video conferencing, virtual meetings, a ride-share program, and other methods to reduce trips between County offices and to non-County locations.

Action 3.E.3.b. Budget for, install, and make available video conferencing equipment at County locations, such as community centers, libraries, and satellite offices.

Action 3.E.3.c. Utilize mobile data terminals or other similar computing devices to provide service to customers in the field.

Action 3.E.3.d. Explore and utilize paperless approaches for meetings, public information, and publication of reports, etc.

Action 3.E.3.e. Develop policies and guidelines for County staff to work remotely or telecommute when appropriate.

Action 3.E.3.f. Utilize the Internet, including websites, emails, and other similar communication vehicles to disseminate information to constituents and the general public.

Action 3.E.3.g. Provide access to public meetings via the Internet, "Public, Education, and Government (PEG) Access Channels", or other similar communication vehicles.

Policy 3.E.4. Develop a broadband economic development strategy for Mono County.

Action 3.E.4.a. Develop information and products including marketing collateral, white papers, case studies, and other relevant materials that can assist with the promotion of technology-focused business in Mono County.

Action 3.E.4.b. Develop a strategic outreach and marketing plan utilizing the developed materials and targeting technology focused businesses.

Action 3.E.4.c. Promote telecommuting as a viable method allowing visitors to stay in the region longer and work remotely, and attract new permanent residents to relocate to the area and work from Mono County.

Action 3.E.4.d. Promote workforce development and educational opportunities to train local residents and stakeholders about benefits and uses of technology, focused on the expansion of existing business and development of new business ventures.

Action 3.E.4.e. Utilize the broadband network to attract new businesses and promote business development.

Policy 3.E.5. Perform a business opportunity analysis study.

Action 3.E.5.a. Evaluate locations in the County that would be viable for various types and sizes of new technology businesses.

Action 3.E.5.b. Evaluate issues, opportunities, and constraints pertaining to business development in various locations of the County.

Action 3.E.5.c. Consider changes to policies that may hinder or otherwise complicate development of technology or green business development, including waiving of permit or licensing fees.

Action 3.E.5.d. Evaluate broadband adoption and digital literacy programs and initiatives to support business retention and expansion.

Objective 3.F. Build support and funding for improving and expanding the communication infrastructure system through collaboration.

Policy 3.F.1. Support programs and initiatives that improve broadband adoption and digital literacy.

Action 3.F.1.a. Work with regional broadband consortia, state and national initiatives, and local service providers to offer broadband to low-income, at-risk, and under-/un- served populations.

Policy 3.F.2. Leverage and support the California Broadband Cooperative, Eastern Sierra Connect Regional Broadband Consortium, and other similar not-for-profit broadband organizations to help achieve County goals and objectives.

Action 3.F.2.a. Maintain a County seat on the Eastern Sierra Connect Regional Broadband Consortium and maintain the County's interest in regional broadband development and adoption programs.

Action 3.F.2.b. Appoint a non-elected representative to the Board of Directors for the California Broadband Cooperative.

Policy 3.F.3. Seek grants and other funding opportunities for communication infrastructure projects consistent with these General Plan Policies.

B. Sample Development Standards (Mono County)

DEVELOPMENT STANDARDS

Chapter 11 – Utilities

Sections:

- 11.010 Placement of Utility Infrastructure**
- 11.020 Alternative Energy Systems**

11.010 Placement of Utility Infrastructure.

A. Exemption for Regulated Public Utilities.

The provisions of this section shall not apply to distribution and transmission lines owned and operated as part of the statewide electrical network regulated by the California Public Utilities Commission (PUC). The authority for this exemption is set forth in the California Constitution, Article XII, Section 8, which vests exclusive regulatory authority over the distribution and transmission lines of these utilities in the California Public Utilities Commission. However, the County shall work with the PUC and applicant to cooperatively meet the standards set forth in Section F.

B. Uses Permitted.

Underground facilities for the distribution of gas, water, sewer, telephone, television, communications and electricity shall be allowed in all designations.

C. Definitions.

For the purposes of this section, the following definitions shall apply:

"Individual development" means an individual development project, such as a single-family residence and/or Accessory Dwelling Unit, a garage, a single commercial use, one apartment building, or similar uses. It does not mean a subdivision, land division, condominium development, or development of more than one detached unit at the same time.

"Overhead utility lines" means utility distribution lines and service laterals that are installed above ground, either overhead, in an above ground conduit, or in some other manner.

"Subdivision" means the division of any unit or units of improved or unimproved land as further defined in Section 02.1520 and the Mono County Subdivision Ordinance.

"Utility" means gas, water, sewer, telephone, television, communications and electricity.

"Wireline" is a general term that is used to describe a connection to the Internet which is provided via hardware, as in the case of DSL, Cable, or Fiber based technologies.

D. Utility Distribution Lines to Individual Development.

Utility distribution lines to an individual development shall be installed underground, unless the applicant has obtained a Director Review Permit with Notice for overhead installation, in the manner specified in Chapter 31, Director Review Processing. For projects that require a use permit, the application for overhead utility lines shall be processed as part of the use permit application.

Prior to considering issuance of a permit, planning staff shall work with the applicant to site and design the project in a manner that avoids or minimizes the use of overhead lines, and that avoids or minimizes the impacts of overhead lines. Consideration should be given to combining lines and co-locating with other applicable facilities whenever possible.

In granting a permit for overhead utility lines, the Community Development Director (Director) or the Planning Commission (Commission) shall make one of the following findings, in addition to the required Director Review or Use Permit findings:

1. The overhead line placement will not significantly disrupt the visual character of the area. In making this determination, the Director or the Commission shall consider the following:
 - a. In areas without a number of existing overhead lines in the immediate vicinity, would overhead lines create the potential for a significant cumulative visual impact; i.e., would allowing an overhead line be likely to result in future requests for additional overhead lines in the area? If so, it may be determined that an overhead line will have a significant impact on the visual character of the area.
 - b. Does the topography or vegetation in the area effectively screen the proposed lines? If so, then an additional line may not significantly disrupt the visual character of the area.
 - c. Are there other potential alignments that would have less visual impact?
 - d. Does the project reduce the overall number of overhead lines and poles in the area; are the lines co-located with existing facilities; and/or do design features such as height of lines, size, color, reflectivity, tension in line, or other features reduce visual impacts? If so, it may be determined that an overhead line will not have a significant impact on the visual character of the area.

The Director or the Commission may consider additional information pertaining to the visual character of the area which is deemed relevant to the application.

2. The placement of utility lines above ground is environmentally preferable to underground placement. In making this determination, the Director or the Commission shall consider the following:

- a. Will underground placement disturb an environmentally sensitive area, including but not limited to the following: cultural resource sites, significant wildlife habitat or use areas, riparian or wetland areas, or shallow groundwater? If so, above-ground placement may be preferable.
- b. Will overhead placement cause impacts to sensitive species, such as the Bi-State Distinct Population Segment of Greater Sage-Grouse, or other environmental impacts? If so, above-ground placement may not be preferable, or perch deterrents and other mitigations may be required (see sage-grouse policies in C/OS).
- c. Will underground placement require disturbance of a waterway, including perennial, intermittent and seasonal streams? If so, above-ground placement may be preferable.
- d. Will underground placement increase the utility line's exposure to environmental hazards, such as flood hazards, fault hazards or liquefaction? If so, above-ground placement may be preferable.
- e. Are there other potential alignments that would avoid potential environmental impacts?

The Director or the Commission may consider additional information pertaining to the environmental sensitivity of the area which is deemed relevant to the application.

3. The installation of underground utilities would create an unreasonable financial hardship on the applicant due to the unique physical characteristics of the property. In making this determination, the Director or the Commission shall consider the following:
 - a. Is the cost of the line to be installed excessive?
 - b. Will the installation of underground utilities require trenching under a stream bed?
 - c. Will the installation of underground utilities require unreasonable trenching or blasting through rock?
 - d. Are there alternate alignments that would eliminate or significantly lessen the financial hardship?

The Director or the Commission may consider other site specific financial hardships deemed relevant to the application.

4. The exclusive purpose of the overhead line is to serve an agricultural operation.

For the purposes of this section, agricultural operations are defined as use of the land for the production of food and fiber, including the growing of crops

and grazing of livestock. Above-ground utility lines may be permitted for agricultural uses such as pumps and similar uses.

E. Utility Distribution Lines for Subdivisions.

Utility distribution lines for all subdivisions and land divisions shall be installed underground, unless a specific hardship can be demonstrated (see # 3 above). If a specific hardship can be demonstrated, overhead installation may be allowed subject to approval of a variance (see Ch. 33, Variance Processing).

Subdivisions may be required to underground the feeder distribution line to the subdivision. An assessment district, or a similar mechanism, may be established for this purpose as a condition of the tract map approval.

F. Utility Distribution Lines for All Other Communication Infrastructure

All other types of utility distribution lines shall be installed underground, unless the applicant has obtained a Director Review Permit with Notice for overhead installation, in the manner specified in Chapter 31, Director Review Processing. For projects that require a use permit, the application for overhead utility lines shall be processed as part of the use permit application. Projects located in the County right-of-way shall also require an encroachment permit from the Public Works Department.

Prior to considering issuance of a permit, planning staff shall work with the applicant to site and design the project in a manner that avoids or minimizes the use of overhead lines, and that avoids or minimizes the impacts of overhead lines. Consideration should be given to combining lines and co-locating with other applicable facilities whenever possible. If overhead installation is necessary, all of the findings in Section 11.010D 1-4 shall be evaluated to provide justification. In addition, the following requirements shall be applied:

1. Within Scenic Highway corridors, a variance (see Ch. 33, Variance Processing) and/or deviation authorization from the California PUC is required prior to approval of overhead construction.
2. In County rights-of-way other than Scenic Highway corridors, a use permit must be obtained prior to allowing overhead construction.

G. Use Permit.

Other utility (municipal, private, and if applicable, public utilities not regulated by the PUC) distribution lines, transmission lines and corridors, towers, electrical substations, repeater stations, pumping stations, and uses accessory thereto, including microwave facilities, may be allowed in all districts subject to first securing a use permit, in the manner specified in Chapter 32, Use Permit Processing.

H. Exceptions.

In the event that any regulations of the Public Utilities Commission or any other agency of the state with jurisdiction over utilities conflicts with the provisions of land use designations and the land development regulations, the regulations of the state shall apply, to the extent that the same are conflicting.

I. Locational Requirements.

Whether or not a utility is subject to any permitting requirements as delineated in subsections A to G, above, all new utility distribution lines, transmission lines, corridors, rights of way, towers, electrical substations, repeater stations, pumping stations, cell/communication towers and uses accessory thereto, including microwave facilities, shall comply with the policies of this General Plan and applicable area or specific plans.

J. Cellular and Wireless Towers

Towers erected for the purposes of providing communications through wireless or cellular technologies are permitted in all land use designations subject to a use permit. These towers shall exhibit substantial compliance with the following, unless such substantial compliance would result in an effective prohibition of the provision of wireless communication facilities, or in unreasonable discrimination against a provider of wireless communication facilities, as defined in the Telecommunications Act of 1996:

1. Visual mitigations strategies included in the Mono County Design Guidelines.
2. Cellular and wireless towers shall bond for the reclamation of the site in the event that the infrastructure has not been utilized for a period of three years. Infrastructure shall be removed within one year of abandonment.
3. Towers shall be sited only when there is an identified service provider who has proved a need for the facility.
4. Facilities shall be co-located to minimize the number of towers, and new sites shall include capacity for additional providers to utilize the facility.
5. New sites shall reference the County's inventory of shadow areas and coverage gaps, when available, and provide coverage maps/data demonstrating a reduction in areas without coverage.
6. Height shall be mitigated by locating towers on high ground but below ridgelines or hill tops. Heights greater than 60' may be allowed in Public Facilities (PF) Land Use Designations subject to the following use permit finding, but in no case shall the height exceed 80':
 - a. The additional height shall not result in substantial detrimental effects on the enjoyment and use of surrounding properties.

In addition, at least one of the two following findings must be made in the use permit, and in no case shall additional height be granted above the minimum necessary to provide for the finding:

- b. The increased tower height is necessary to provide line-of-sight and service coverage that significantly reduces shadow areas and coverage gaps as demonstrated by coverage maps/data, and/or

- c. The increased tower height is necessary to support multiple carriers on one tower with adequate line-of-sight and service coverage as demonstrated by coverage maps/data.
- 7. Perch deterrents and other sensitive species mitigations shall be required consistent with C/OS policies.
- 8. Cell tower operators shall be required to verify compliance with the FCC's RF Emission Standards.
- K. Installation of Conduit and Wireline Infrastructure

Conduit and wireline for the purposes of providing communications infrastructure are permitted in all land use designations, and shall be installed underground and co-located with existing facilities or utilize existing wireline unless a Director Review Permit or Use Permit has been obtained. Projects located in the County right-of-way shall also require an encroachment permit from the Public Works Department. New conduit and wireline infrastructure shall be subject to the following requirements in addition to the applicable permit:

 - 1. Evidence of need for new conduit or wireline infrastructure shall be demonstrated. Applicants should reference the County's communication infrastructure database, when available.
 - 2. New conduit in the County right-of-way shall contain tracer wire, or be mapped with GPS, or have accurate georeferenced as-built digital drawings, or be otherwise locatable using standard devices or means. Data must be submitted to the County at completion of construction.
 - 3. New wireline infrastructure shall be placed in existing underground conduit before installing new conduit or overhead lines. Overhead lines shall be subject to Section F.
 - 4. All new, large-scale, commercial underground infrastructure shall be filed with the Underground Service Alert (USA).
 - 5. Sites shall be reclaimed and all infrastructure removed within 180 days of abandonment or cessation of use.
- L. Commercial Communication Infrastructure on Private Property

A Director Review Permit (Ch. 31, Director Review Processing) must be secured prior to locating commercial communication infrastructure on private property for reasons other than personal consumption by the property residents.

C. Sample Telecommunications Infrastructure Improvement Ordinance (Santa Cruz County)

**ORDINANCE ADDING CHAPTER 12.25 TO SANTA CRUZ COUNTY CODE
RELATING TO TELECOMMUNICATIONS INFRASTRUCTURE IMPROVEMENTS**

The Board of Supervisors of the County of Santa Cruz ordains as follows:

SECTION I

Chapter 12.25 of the Santa Cruz County Code is enacted to read as follows:

TELECOMMUNICATIONS INFRASTRUCTURE IMPROVEMENT ORDINANCE

Sections:

- 12.25.010 Purpose and Findings.**
- 12.25.015 Definitions.**
- 12.25.020 Telecommunications Infrastructure Improvement.**
- 12.25.025 Implementation.**
- 12.25.030 Exemptions.**
- 12.25.035 Enforcement.**
- 12.25.040 Violations.**
- 12.25.045 Severability.**
- 12.25.050 Effective Date.**
- 12.25.055 No Conflict with Federal or State Law.**
- 12.25.060 Preemption.**

12.25.010 Findings and intent.

A. It is the intent of the County of Santa Cruz, in enacting Chapter 12.25, to streamline and simplify the process of installing and upgrading telecommunications equipment throughout the County, and to encourage improvement and modernization of telecommunications infrastructure.

B. Access to modern telecommunications infrastructure is vital for communication, education and economic development.

C. It is the desire of the County to foster a fair and level playing field for all market competitors that does not disadvantage or advantage one service provider or technology over another.

D. The County seeks to promote widespread access to the most technologically advanced telecommunications services for all County residents and businesses in a nondiscriminatory manner regardless of socioeconomic status.

E. It is the responsibility of the County to protect and control access to public rights-of-way.

F. The County has a duty to ensure that all service providers utilizing County property, facilities or rights-of-way comply with all applicable state and local health, safety and other laws.

G. It is consistent with the County's goals and values to encourage investment in telecommunications infrastructure to help close the digital divide. 0590

H. It is necessary to update County policies and practices to recognize the authority of the California Public Utilities Commission as established in state and federal statutes.

I. It is the desire of the County to assess fees sufficient to recover the actual costs of providing services but not to discourage improvement of necessary infrastructure.

12.25.015 Definitions.

A. For the purposes of this Chapter, the following definitions apply:

1. "Telecommunications" refers to data, voice, video or other information provided by wire, fiber optic cable or other technology.
2. "Facilities" and "Infrastructure" refers to wires, cables, conduit, switches, transmission equipment or other equipment for use in transmitting or processing telecommunications services or for providing support or connection to such equipment.
3. "Rights-of-way" refers to the area upon or adjacent to any County-owned road, highway or rail line or along or across any of the waters or lands owned or controlled by the County.
4. "Service providers" refers to any person, company, corporation or other entity providing data, voice, cable, video or other information services by wire, fiber optic cable or other technology.
5. "Excavation" refers to any process which removes material from the ground through digging, drilling, boring or other activity for the purpose of installing utilities, infrastructure or other structures or equipment.
6. "Conduit" refers to a tube, duct or other device or structure designed for enclosing telecommunication wires or cables.
7. "Reconstruction" refers to any project which repairs or replaces fifty percent or more of an existing road, highway or rail line.

12.25.020 Telecommunications Infrastructure Improvement

In recognition of the need to provide local residents and businesses within the community with the infrastructure required to meet their telecommunications needs, all construction, reconstruction or repaving of a County right-of-way will include provisions for the installation of telecommunications cable, conduit and other related equipment wherever practical and feasible. Where appropriate, telecommunications infrastructure shall be installed in or adjacent to County rights-of-way in conformance with current County standards. County staff will work with contractors to identify most cost-effective approach consistent with County requirements. If a project includes excavation in or adjacent to a County right-of-way, installation of or upgrades to telecommunications cable, conduit or other infrastructure will be included as needed. All installations shall conform to the size, shape, location and other specifications as determined by the Director of Public Works.

12.25.025 Implementation.

No less than 60 days before this ordinance takes effect, the County of Santa Cruz shall e-mail, fax, mail or deliver a copy of it to all telecommunications service providers and other affected entities doing business within the unincorporated County of Santa Cruz.

12.25.030 Exemptions.

A. The Director of Public Works, or the director's designee, may exempt projects from the requirements of this chapter where compliance is found to be not practical or feasible. Requests for an exemption shall be in writing, and the Director's or the director's designee's decision shall be final.

B. An exemption application shall include all information necessary for the Director of Public Works or the director's designee to make a decision, including but not limited to documentation showing factual support for the requested exemption.

C. The Director of Public Works or director's designee may approve the exemption application in whole or in part, with or without conditions.

12.25.035 Enforcement.

Enforcement of this ordinance shall be as follows:

A. The Director of Public Works, or designee, shall have primary responsibility for enforcement of this ordinance and shall have authority to issue citations for violation of this chapter. The Director, or designee, is authorized to establish regulations or administrative procedures to ensure compliance with this chapter.

B. A person or entity violating or failing to comply with any of the requirements of this chapter shall be guilty of an infraction.

C. The County of Santa Cruz may seek legal, injunctive, or any other relief to enforce the provisions of this chapter and any regulation or administrative procedure authorized by it.

D. The remedies and penalties provided in this chapter are cumulative and not exclusive of one another.

E. The Director of Public Works or designee may inspect the premises of any construction, reconstruction, repaving or excavation project to verify compliance with this ordinance.

12.25.040 Violations.

Violations of this ordinance shall be enforced as follows:

Violation of this chapter is hereby declared to be a public nuisance. Any violation described in the preceding paragraph shall be subject to abatement by the County of Santa Cruz, as well as any other remedies that may be permitted by law for public nuisances, and may be enforced by injunction, upon a showing of violation.

12.25.045 Severability.

If any word, phrase, sentence, part, section, subsection, or other portion of this chapter, or any application thereof to any person or circumstance is declared void, unconstitutional, or invalid for any reason, then such word, phrase, sentence, part, section, subsection, or other portion, or the proscribed application thereof, shall be severable, and the remaining provisions of this chapter, and all applications thereof, not having been declared void, unconstitutional or invalid, shall remain in full force and effect. The County of Santa

Cruz hereby declares that it would have passed this title, and each section, subsection, sentence, clause, and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases had been declared invalid or unconstitutional. 0592

12.25.050 Effective Date.

This ordinance shall become effective three (3) months after the date of final passage by the County of Santa Cruz Board of Supervisors.

12.25.055 No Conflict with Federal or State Law.

Nothing in this ordinance shall be interpreted or applied so as to create any requirement, power, or duty in conflict with any Federal or State law.

12.25.060 Preemption.

The provisions of this chapter shall be null and void if State or Federal legislation, or administrative regulation, takes effect with the same or substantially similar provisions as contained in this chapter. The Board of Supervisors shall determine whether or not identical or substantially similar statewide legislation has been enacted or regulations issued.

SECTION II

This ordinance shall take effect and be in force six months from the date of adoption.

PASSED AND ADOPTED this _____ of _____, 20____, by the Board of Supervisors of the County of Santa Cruz by the following vote:

AYES: SUPERVISORS
NOES: SUPERVISORS
ABSENT: SUPERVISORS
ABSTAIN: SUPERVISORS

Chairperson of the Board of Supervisors

Attest: _____
Clerk of the Board

APPROVED AS TO FORM:



Office of County Counsel

Telecommunications Ordinance.doc

D. Sample Joint Trenching Agreement

EXHIBIT D

JOINT TRENCH AGREEMENT

THIS JOINT BUILD AGREEMENT ("Agreement"), effective the ____ day of _____, 200____, is made by and between _____, a _____ corporation with an office at _____ ("Lead Company"), and _____, a _____ corporation with an office at _____ ("Participant").

WHEREAS, each party intends to install, construct, own and operate underground conduit facilities ("Facilities") in connection with each party's respective operations; and

WHEREAS, to minimize the costs of constructing separate trenches and Facilities, the parties are willing to jointly construct such trenches and Facilities and to share the costs of such construction in accordance with the terms and conditions set forth herein;

NOW, THEREFORE, in consideration of the mutual covenants, terms, conditions and obligations contained herein, and intending to be legally bound hereby, the parties hereby agree as follows:

1. **Certain Definitions.** For purposes of this Agreement, the following terms are defined as follows. This is not intended as an exhaustive list of all defined terms used in this Agreement.

- (i) "Acceptance Testing" shall have the meaning attributed to it in Section 4(F).
- (ii) "Access Point" shall mean an opening, individually owned by a particular party, in the Joint Build by which the party may enter for the purpose of installing and maintaining Facilities (i.e. manhole or handhole).
- (iii) "Affiliate" shall mean any Person controlling, controlled by, or under common control with another Person.
- (iv) "Authorizations" shall have the meaning attributed to it in Section 3.
- (v) "Completion Notice" shall have the meaning attributed to it in Section 4(F).
- (vi) "Conduit" shall mean a structure containing one or more Innerducts.
- (vii) "Innerduct" shall mean a single enclosed raceway acceptable for communications cables.
- (viii) "Drawings" shall have the meaning attributed to it in Section 4(A).
- (ix) "Facilities" shall mean Innerducts, Conduits, Access Points and associated equipment, devices and hardware that are supplied by, or installed or designed for, a particular party.
- (x) "Governmental Authority" shall mean any federal, state or local government, or any agency or instrumentality thereof, having competent jurisdiction over the Facilities, the Joint Build or the parties hereto.

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(xi) "Joint Build" shall mean a trench and any combination of poles, Ducts, Conduits, Access Points, manholes, vaults and other Facilities to be constructed hereunder pursuant to the Scope of Work.

(xii) "Lead Company" shall mean the party who is responsible for managing the Work for the Joint Build.

(xiii) "Participant" shall mean a party other than Lead Company who is responsible for paying its portion of the Project Costs in consideration for its participation in the Joint Build and ownership rights in a certain defined portion of said Joint Build.

(xiv) "Person" shall mean an individual, association, partnership, corporation, or other legally recognized entity.

(xv) "Project Costs" shall mean all labor, transportation, supervision, materials and other direct costs associated with the Work relating to the Joint Build, other than the costs which will be borne entirely by one party pursuant to this Agreement or the Scope of Work.

(xvi) "Scope of Work" means the written description of the Work and the respective responsibilities of Lead Company and Participant. The Scope of Work as specified on Exhibit A is incorporated herein and becomes, upon execution by the parties hereto, a part of this Agreement.

(xvii) "Specifications" shall have the meaning attributed to it in Section 4(F).

(xviii) "Work" shall mean all necessary installation, management, engineering, placement, make-ready and preparatory work required for the construction of the Joint Build.

2. Order of Precedence of Contract Documents. In the event of a conflict or inconsistency between this Agreement and the terms set forth in the Scope of Work, the terms of the Scope of Work shall prevail.

3. Governmental Authorities. Each party agrees to comply with all applicable laws, rules, and regulations relating to the installation, maintenance and use of its Facilities. Each party will file the necessary applications and take all further action required in order to obtain, prior to the commencement of construction under the Scope of Work, all rights, easements, licenses, permits, approvals, agreements and other authorizations required by any Governmental Authority and any other third party agreements necessary to complete the Work contemplated by this Agreement and to occupy and use the right-of-way occupied by the Facilities constructed hereunder (collectively "Authorizations"). Each party shall provide written evidence of such Authorizations to the other party upon request.

4. Prosecution of Work.

(A) Approval of Drawings and Costs; Execution of Scope of Work. Prior to the commencement of Work on the Joint Build, Lead Company shall provide Participant with a copy of the engineering drawings it intends to use when it commences the Work ("Drawings") and the cost breakdown of Participant's share of the Project Costs. Participant shall have twenty (20) business days after receipt of the Drawings and the cost breakdown to either accept or reject the Drawings or the cost breakdown by delivery of a written notice (reasonably detailed, in the case of a rejection) to Lead Company. In the event Participant rejects the Drawings or the cost breakdown, Lead Company shall

EXHIBIT D

promptly resolve any objection or deficiency to the reasonable satisfaction of Participant. If the parties cannot reach an agreement on the Drawings or the cost breakdown, Participant may terminate this Agreement as provided in Section 14, whereupon Participant shall reimburse Lead Company for the reasonable costs it incurred that arose out of Participant's agreement to participate in the Joint Build. If Participant fails to reject the Drawings or the cost breakdown within such twenty (20) day period, the Drawings and the cost breakdown shall be deemed acceptable by Participant and Lead Company shall proceed with the Work. Within thirty (30) days after Participant's acceptance of the Drawings and the cost breakdown, Lead Company shall prepare the Scope of Work, which Lead Company and Participant shall execute within ten (10) days thereafter.

(B) Management of the Work. Upon acceptance of the Drawings, Lead Company shall be responsible for all Work thereunder, including the hiring and management of any contractor and subcontractors and the acquisition of all required construction permits. Lead Company shall provide Participant with a copy of all construction permits it obtains. Lead Company shall perform such Work in a good and workmanlike manner and in accordance with the specifications of this Agreement, the Scope of Work, the Occupational Safety and Health Act, the National Electrical Safety Code, the National Electrical Code, applicable industry standards, and laws and regulations of applicable Governmental Authorities. Lead Company and Participant shall timely pay each invoice it receives from Lead Company's contractor, subcontractors and material suppliers who supplied the labor and/or materials for the Work. Furthermore, Participant shall reimburse Lead Company for all costs of removing any liens placed on the Joint Build (including reasonable attorneys' fees and costs) which arise from non-payment or late payment to subcontractors or suppliers due to failure of Participant to make timely payments hereunder. Lead Company shall be solely responsible for removing any liens which arise from its failure to make timely payments in any other instance. Upon the commencement of the Work, Lead Company shall designate an authorized representative in connection with the Work, and shall prepare and provide to Participant a construction schedule and progress report from time-to-time, but not less than once every thirty (30) days. Participant shall have the right, but not the obligation, to inspect the Work from time-to-time prior to its completion, subject to the restrictions and consent of any Governmental Authority or other third party which owns or controls the real property rights-of-way upon which the relevant portion of the Joint Build is constructed.

(C) Project Costs. The Project Costs will be shared by the parties in the manner set forth in the Scope of Work.

(D) Management Fee. Participant shall pay to Lead Company a fee in the amount of ___% of Participant's share of Project Costs to cover Lead Company's costs for managing and supervising the Work for the Joint Build in accordance with the terms of the Scope of Work.

(E) Materials. Except as otherwise set forth in the Scope of Work (Exhibit A), each party shall arrange for the purchase and delivery of its materials required for the construction of the Joint Build as set forth in the Scope of Work. All materials supplied shall comply with the agreed upon specifications.

(F) Acceptance Testing. The Joint Build shall meet the technical specifications ("Specifications") set forth in Exhibit A, the Scope of Work. Upon completion of the Joint Build, Lead Company shall perform testing on the Joint Build to determine whether it complies with these Specifications ("Acceptance Testing"). Lead Company shall provide Participant with five (5) days prior written notice of the date and time of the Acceptance Testing and Participant shall have the right, but not the obligation, to be present for observation of the Acceptance Testing. When Lead Company reasonably determines that the Joint Build is installed and operating substantially in conformity with the

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Specifications set forth in the Scope of Work, Lead Company shall provide written notice of the same to Participant ("Completion Notice"). Upon receipt of a Completion Notice, Participant may inspect the Work performed by Lead Company and shall have thirty (30) days to either accept or reject the Completion Notice by delivery of written notice to Lead Company, specifying, if rejected, its grounds for such rejection. In the event Participant rejects the Completion Notice, Lead Company shall correct any such deficiencies on the Joint Trench Build as soon as practicable and a retest shall be performed. Upon completion of such retest, Lead Company shall provide another Completion Notice to Participant. The foregoing procedure shall apply again and successively thereafter until Lead Company has remedied all deficiencies in the Work. If Participant fails to reject a Completion Notice within the thirty (30) day period, the Work shall be deemed accepted by Participant, and Lead Company shall have no further liability related to Acceptance Testing of such Joint Build.

(G) Location of Joint Build. The specific location of the Joint Build shall be as designated in the Scope of Work (Exhibit A). Lead Company shall provide Participant with "as-builts" in a mutually acceptable electronic format that depict the construction and location of the Joint Build, within ninety (90) days after acceptance of the Completion Notice.

(H) Changes. In the event that a party seeks changes in, additions to, or deletions from the Work and/or the Scope of Work, the party seeking changes, additions or deletions shall promptly notify the other party in writing of (i) the proposed changes, additions or deletions; (ii) the estimated cost of the proposed changes, additions or deletions; (iii) the effect of the proposed changes, additions or deletions upon the scheduled completion of the Work; (iv) whether additional Authorizations are required as a result of the proposed changes, additions or deletions; and (v) the effect of the proposed changes, additions or deletions upon the other party's share of Project Costs. If both parties agree to the proposed changes, additions or deletions, the Lead Company shall promptly proceed with the performance of the Work as so modified. The Project Costs and time for performance of the Work shall be equitably adjusted as necessary to reflect the impact of the agreed upon changes, additions or deletions on the Work and/or the Scope of Work.

5. Ownership. All Facilities installed and designated for Participant as set forth in the Scope of Work shall be and remain the property of the Lead Company; provided that upon the payment by Participant of its share of the Project Costs, said Facilities shall become the property of Participant. After acceptance of the Completion Notice, each party shall take all necessary precautions to protect the other party's Facilities from any physical damage and to keep such Facilities in the same manner as such party protects its own Facilities.

6. Maintenance and Restoration.

(A) General. After completion and acceptance of the Joint Build, each party shall be responsible for performing (at its own cost) all maintenance and repairs of its Facilities. Such maintenance and repairs shall be performed in a good and workmanlike manner, in accordance with the specifications of this Agreement, the Scope of Work, the National Electrical Safety Code, the National Electrical Code, applicable industry standards, and regulations of applicable Governmental Authorities.

(B) Access. Subject to any limitations contained in the Scope of Work, each party shall have access to its Facilities on a 24-hours per day, 7-days per week basis as necessary for the proper maintenance and/or restoration thereof; provided, however, such access shall be coordinated with the other party. Before beginning any non-emergency, inspections or scheduled maintenance, each party shall give the other at least twenty-four (24) hours advance notice. Notwithstanding the foregoing, following acceptance, each party shall have unlimited access to its individually owned Access Points as

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designated in the Scope of Work, without the requirement of prior notice to the other party. If both parties require simultaneous access to the Joint Build, then the parties shall reasonably and equitably coordinate such access.

(C) Emergency Maintenance. Subject to any limitations contained in the Scope of Work, in the event of an emergency, each party shall have the right to perform maintenance and/or restoration of its Facilities and such party shall use its best efforts to notify the other party as soon as practicable of such efforts. If both parties require simultaneous access to the Joint Build, then the parties shall reasonably and equitably coordinate such access in a manner that will accommodate the needs of both parties.

(D) Damages. Each party shall indemnify and hold harmless the other party for any losses, costs or damages to such other party's property (including, without limitation, its Facilities) arising from the indemnifying party's negligence or intentional misconduct in its maintenance or restoration efforts.

7. Relocation. In the event that a Governmental Authority requires the transfer, rearrangement or relocation of any portion of the Joint Build, the parties shall each pay their pro rata share (proportionate to their percentage of ownership of the Joint Build or portion thereof to be relocated) for all reasonable costs of the transfer, rearrangement or relocation. The parties shall use their best efforts to identify an alternate location for the Joint Build. In the event the parties are unable to agree on a suitable alternate location for the Joint Build, then either party may terminate this Agreement with respect to such Joint Build (or portion thereof) and shall promptly remove its Facilities located therein.

8. Representations and Warranties. Each party represents and warrants that it has full right and authority, including any requisite corporate authority, to perform its respective obligations under this Agreement; the execution of this Agreement is not violative of its charter, by-laws or any law, regulation or agreement by which it is bound or to which it is subject; no litigation or governmental proceeding (other than the Authorizations required by any Governmental Authority to occupy and use the locations and rights-of-way for the Facilities constructed herein) is pending or threatened in writing which might have a material adverse effect on this Agreement, the transaction contemplated by this Agreement or the rights of the parties hereunder. Each party further warrants that it shall carry out its obligations hereunder in a professional and workmanlike manner. Except for the foregoing and except as otherwise provided in the Agreement, neither party makes any warranty to the other, and each party expressly disclaims all further warranties, including without limitation, the implied warranties of merchantability or fitness for purpose.

9. Taxes. Each party shall pay its pro rata share of any present or future taxes, fees, charges or assessments which Lead Company is required or obligated to pay by reason of the construction or ownership of the Joint Build or the installation, operation or maintenance of the Facilities. After acceptance, each party shall be responsible for any taxes imposed by a Governmental Authority relating to such party's respective Facilities.

10. Term. This Agreement shall become effective as of the date written above and, if not earlier terminated in accordance with the provisions hereof, shall remain in effect until acceptance of the Completion Notice by Participant.

11. Billing and Payment. All undisputed amounts due Lead Company or its contractor under this Agreement shall be paid by Participant within forty-five (45) days following receipt of invoices

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along with a detailed accounting of such amounts. If any undisputed amount is not paid to within such period, Participant shall be required to pay a late charge of one and one-half percent (1½%) per month times the amount unpaid or, if that late charge is unlawful, the maximum rate permitted by law. Participant must identify and explain in detail its dispute with any invoice item within forty-five (45) days of the receipt of such invoice. The parties shall proceed in an amicable manner to resolve such dispute for at least thirty (30) days, after which either party shall have the right to seek redress of such dispute by other legally available means. In no event shall either party be entitled to bill the other party more frequently than once each month for any amounts due under this Agreement. The foregoing payment provisions apply to any amounts Lead Company owes Participant pursuant to applicable provisions of this Agreement. With the final payment of its share of the Project Costs, Participant shall receive final lien waivers from all contractors and suppliers performing work and/or providing materials to the Joint Build. If the lien law applicable to the Joint Build or portion thereof provides for delivery of lien releases following payment, then Lead Company shall deliver same to Participant within two (2) business days after the time period for delivery required by such law.

(A) Payment Default. Undisputed amounts owed to Lead Company or Lead Company's contractor not paid within forty-five (45) days of receipt of an invoice may be deemed in default ("Payment Default") by Lead Company at its sole discretion, upon written notice to Participant. Any such Payment Default may, at Lead Company's sole discretion, be grounds for termination of this Agreement by Lead Company. In case of such termination, Lead Company shall automatically assume ownership of all Joint Build property and materials, including, without limitation, any Facilities supplied by Participant, and Participant shall have no right of reimbursement, refund or compensation for such assumption whatsoever. Such right of assumption is in addition to, and in no way limits, Lead Company's other available rights at law or in equity, arising from or related to the Payment Default by Participant.

(B) Costs. In the event of a Payment Default, and in addition to its rights set forth above, Lead Company and Lead Company's contractor shall be entitled to recover from Participant its reasonable costs of collection, including reasonable attorneys' fees and court costs.

12. Indemnification. Except to the extent such claims are caused by the negligence of a party indemnified hereunder, each party ("Indemnitor") shall defend, indemnify and hold harmless the other party ("Indemnitee") from and against and shall pay all losses, damages, liabilities, penalties, fines, assessments, claims and actions, and all related expenses (including reasonable attorneys' fees and expenses and the costs of litigation) by reason of injury or death to any person, damage to any property or any other occurrence arising out of, resulting from or in any manner caused by or related to: (i) the negligence or intentional misconduct of the Indemnitor in the installation, maintenance, operation, presence, use or removal of any Facilities; (ii) infringement of copyright, libel, slander, or unauthorized use of information arising out of, resulting from or in any manner caused by the operation or use of Indemnitor's Facilities; (iii) Indemnitor's failure to secure necessary Authorizations from any applicable Governmental Authority and any necessary rights-of-way from owners of property; or (iv) infringement of patents with respect to the manufacture, use and operation of Indemnitor's Facilities. Any party seeking indemnification hereunder ("Indemnitee") shall promptly notify the other party ("Indemnitor") of the nature and amount of such claim and the Indemnitee shall consult with the Indemnitor respecting the defense and satisfaction of such claim, including the selection of and direction to legal counsel, and the Indemnitee shall not pay or settle any such claim without the prior written consent of the Indemnitor, which consent shall not be unreasonably withheld. To the extent such limitation is legally enforceable, in no event shall either party be liable for any punitive, consequential, incidental, special damages or lost profits incurred or alleged to have been incurred by anyone.

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13. Insurance. During the term of this Agreement, each party shall obtain and maintain, and shall require any of its permitted subcontractors to obtain and maintain, the following insurance, naming the other party as an additional insured: (i) Commercial General Liability insurance with minimum limits of: \$2,000,000 general aggregate limit; \$1,000,000 each occurrence sub-limit for all bodily injury or property damage incurred in any one occurrence; \$1,000,000 each occurrence sub-limit for personal injury and advertising; \$2,000,000 products/completed operations aggregate limit, with a \$1,000,000 each occurrence sub-limit for products/completed operations; (ii) worker's compensation insurance in amounts required by applicable law and employer's liability insurance with minimum limits of \$100,000 for bodily injury-each accident, \$500,000 for bodily injury by disease-policy limits and \$100,000 for bodily injury by disease-each employee; (iii) and automobile liability insurance covering death or injury to any person or persons, or damage to property arising from the operation of vehicles or equipment, with limits of not less than \$1,000,000 combined single limits per occurrence, which coverage shall extend to all owned, hired and non-owned vehicles.

(A) Self-insurance. Both parties expressly acknowledge that a party shall be deemed to be in compliance with the provisions of this Section if it maintains an approved self-insurance program providing for a retention of up to \$ [insert dollar amount].

(B) Certificates. Unless otherwise agreed, all insurance policies shall be obtained and maintained with companies rated B+-VII or better by Best's Key Rating Guide and each party shall, upon request, provide the other party with an insurance certificate confirming compliance with the requirements of this Section 13. Such certificates shall provide for thirty (30) days' advance written notice to the other party for any cancellation, material change, reduction of coverage or non-renewal.

(C) Liability. The obtaining and maintaining of insurance coverage in accordance with this Section 13 shall not be construed as in any way limiting or eliminating a negligent (or intentionally wrongful) party's liability to indemnify the other party in accordance with the applicable provisions of this Agreement for losses suffered by such other party.

14. Termination. In the event a party fails to observe or perform any of the material terms and provisions of this Agreement and such failure continues for a period of thirty (30) days after written notice from the other party (or such longer period as may be necessary if such failure cannot reasonably be cured within such 30 day period, provided that such party promptly and diligently undertakes efforts to bring about such cure and thereafter proceeds, in good faith, to cure such failure; which in no event shall exceed sixty (60) days) ("Default"), the non-defaulting party may, in addition to any and all other remedies allowed by law, terminate this Agreement in its entirety. Upon termination of this Agreement for Default, Lead Company shall continue to complete the Work to a reasonable stopping point, and each party shall pay for its pro rata share of the Project Costs and management fees through the completion of such Work. The right of termination described in this provision is in addition to, and does not in any way limit or eliminate, the right of termination for a Payment Default as provided in Section 11 above.

15. Condemnation. Upon receipt of a formal notice of condemnation or other taking by eminent domain, each party shall notify the other party immediately of any such proceeding that is threatened or filed against any portion of the Joint Build. In the event and to the extent of any condemnation or other taking by eminent domain of all or any part of the Joint Build, or any property or rights relating thereto, then the proceeds thereof shall be apportioned on a pro rata basis as set forth in the Scope of Work.

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16. Waiver of Compliance. Failure of either party to enforce or insist upon compliance with any of the terms or conditions of this Agreement shall not constitute a waiver or relinquishment of any such terms or conditions. To the contrary, the same shall remain at all times in full force and effect.

17. Limitations. Except as set forth in this Agreement, nothing shall in any way restrict, modify, or alter either party's absolute right to lease, sell, dispose of or utilize, in its sole discretion, its Facilities which are subject to this Agreement. The party leasing, selling or disposing of its Facilities shall either (i) include the maintenance and restoration language in paragraph 6 of this Agreement in any agreement to lease, sell or dispose of the Facilities or (ii) make such lease, sale or disposal specifically subject to such provisions.

18. Assignment. Neither Party may assign or otherwise transfer this Agreement or its duties and obligations contained in this Agreement without the prior written consent of the other, which consent shall not be unreasonably withheld or delayed; provided, however, neither party shall be required to obtain the consent of the other for any corporate reorganization, assignment or transfer of this Agreement or the rights herein granted to any Affiliate, any purchaser of all or substantially all of the assets of such party, or any person with which or into which such party may merge or consolidate. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective permitted successors and assigns.

19. Sublease. Nothing shall in any way restrict, modify, or alter either party's right to lease, sublease, license, sell, dispose of or utilize, in its sole discretion, its Facilities which are subject to this Agreement. All sublessees and licensees shall use the Facilities in a manner consistent with this Agreement and the agreement between such party and the proposed subtenant or licensee (which agreement is hereinafter referred to as the "Lease", the said subtenant or licensee being hereinafter referred to as "Lessee") shall in all respects be subject to the terms and conditions of this Agreement. For purposes of this Agreement, all acts and omissions of the Lessee shall be deemed acts and omissions of the party who owns or controls such Facilities. Notwithstanding the foregoing, the rights of the parties to grant Leases shall be subject to the restrictions, contractual or otherwise, imposed by any Governmental Authority or other third party which owns or controls the real property rights of way upon which the relevant portion of the Joint Build is constructed.

20. Notices. All notices shall be in writing and shall be delivered by certified mail return receipt requested or any other generally accepted delivery system that is capable of providing proof of delivery. Any such notice shall be deemed effective on the date of receipt. All notices shall be addressed to the parties as specified below:

If to _____: Address & Contact

If to _____: Address & Contact

A party may change the above addresses to which notices are sent by giving written notice of such change to the other party in accordance with the provisions of this Section 20.

21. Severability. In the event that any term or provision of this Agreement is declared to be illegal, invalid or unconstitutional, then that provision shall be deemed to be deleted from this Agreement and have no force or effect and this Agreement shall thereafter continue in full force and effect, as modified.

EXHIBIT D

22. Confidentiality. Both parties hereby agree that if either party provides confidential or proprietary information to the other party ("Proprietary Information"), such Proprietary Information shall be held in confidence, and the receiving party shall afford such Proprietary Information the same care and protection as it affords generally to its own confidential and proprietary information (which in any case shall be not less than reasonable care) in order to avoid disclosure to or unauthorized use by any third party. The parties acknowledge and agree that all information disclosed by either party to the other in writing in connection with or pursuant to this Agreement shall be deemed to be Proprietary Information.

(A) All Proprietary Information, unless otherwise specified in writing, shall remain the property of the disclosing party, shall be used by the receiving party only for the intended purpose, and such written Proprietary Information, including all copies thereof, shall be returned to the disclosing party or destroyed after the receiving party's need for it has expired or upon the request of the disclosing party. Proprietary Information shall not be reproduced except to the extent necessary to accomplish the purpose and intent of this Agreement, or as otherwise permitted in writing by the disclosing party.

(B) This provision shall not apply to any Proprietary Information which (i) becomes publicly available other than through the disclosing party; (ii) is required to be disclosed by a governmental or judicial law, order, rule or regulation; (iii) is independently developed by the receiving party; or (iv) becomes available to the receiving party without restriction from a third party.

(C) Either party may disclose Proprietary Information to its employees, agents, lenders, funding partners and legal and financial advisors and providers to the extent necessary or appropriate in connection with the negotiation or performance of this Agreement or in obtaining financing, provided that each such party is notified of the confidential and proprietary nature of such Proprietary Information and is subject to or agrees to be bound by similar restrictions on its use and disclosure.

(D) Neither party shall issue any public announcement or press release relating to the execution of this Agreement without the prior approval of the other party.

(E) In the event either party shall be required to disclose all or any part of this Agreement in, or attach all or any part of this Agreement to, any regulatory filing or statement, each party agrees to discuss and work cooperatively, in good faith, with the other party, to protect, to the extent possible, those items or matters that the other party deems confidential and that may, in accordance with applicable laws, be deleted therefrom. The confidentiality provisions of this Article shall survive expiration or termination of this Agreement.

23. Joint Work Product. This Agreement is the joint work product of the parties hereto; accordingly, in the event of ambiguity no presumption shall be imposed against any party by reason of document preparation.

24. Force Majeure. Neither party shall be liable to the other for any failure of performance under this Agreement due to causes beyond its control (except for the fulfillment of payment obligations as set forth herein), including, but not limited to: acts of God; fire, flood or other catastrophes; adverse weather conditions; material or facility shortages or unavailability not resulting from such party's failure to timely place orders therefor; lack of transportation; the imposition of any governmental codes, ordinances, laws, rules, regulations or restrictions; national emergencies; insurrections; riots, wars; or strikes, lock-outs, work stoppages or other labor difficulties; provided however, that the party unable to perform its obligations shall promptly notify the other party in writing of such delay and said time period shall be extended for only the actual amount of time said party is so delayed. An act or omission shall

EXHIBIT D

not be deemed to be "beyond its control" if committed, omitted or caused by such party, or its employees, officers, agents or affiliates, or by any corporation or other business entity that holds a controlling interest in said party, whether held directly or indirectly.

25. Public Relations. This Agreement shall not be construed as granting to either party the right to use any trademarks, service marks or trade names of the other party, or otherwise refer to the other party in any marketing, promotional or advertising materials or activities. Without limiting the generality of the foregoing, neither party shall disclose (i) the terms of this Agreement, (ii) the existence of a particular Joint Build or any contractual relationship between the parties, or (iii) issue any publication or press release relating directly or indirectly to (i) or (ii) above without the other party's prior written consent.

26. Dispute Resolution.

(A) Any controversy or claim, whether based on contract, tort or other legal theory (including, but not limited to, any claim of fraud or misrepresentation) ("Claims"), arising out of or related to this Agreement, or any Scope of Work, or its breach shall be resolved in accordance with the dispute resolution procedure contained in this Section 26 and the then current rules of the American Arbitration Association, unless the parties agree in writing otherwise.

(B) The disputing party shall give written notice to the other party of any and all Claims as soon as possible after the event giving rise to such Claim. Pending the final resolution of any Claim, Lead Company shall continue to proceed with the performance of the contract in accordance with its terms pending resolution of the dispute. In such event, Participant shall continue to pay Lead Company in accordance with this Agreement for undisputed amounts.

(C) Either party may submit the matter to mediation with a professional mediation service selected by mutual agreement of the parties. Good faith mediation is a condition precedent to arbitration. Persons with authority to resolve the dispute shall be present at the mediation. Unless the parties agree otherwise, the mediation shall take place in the city in which the Facilities involved in the Claim are located. Such mediation shall be conducted in accordance with the Voluntary Construction Mediation Rules of the American Arbitration Association, unless the parties agree in writing otherwise.

(D) If the parties do not resolve the dispute through mediation or if 90 days have passed since the parties submitted the dispute to mediation and the parties are not in active negotiations, either party may submit the dispute to arbitration. If the parties cannot agree on an arbitration service, such service shall be provided pursuant to the American Arbitration Association Construction Industry Arbitration Rules. The award may be confirmed and enforced in any court of competent jurisdiction. Unless the parties agree otherwise, the arbitration shall occur in _____, California.

(E) The parties shall each bear the expenses of their share of the dispute resolution process. The costs of mediation and arbitration, including the fees and expenses of the mediator and arbitrator, shall be paid equally by the parties. Each party shall bear the cost of preparing and presenting its case, including its own attorney fees, expert witness fees, and travel-related expenses.

(F) The parties agree that neither an arbitrator nor a judge shall have the power or authority to make any award that provides for punitive, exemplary or other types of damages that are waived or prohibited by this Agreement. The parties expressly waive all punitive damages and other damages waived in this Agreement.

EXHIBIT D

27. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of California, exclusive of its choice of law provisions.

28. Survival. Any and all provisions of this Agreement which, by their nature, would reasonably be expected to be complied with or performed after the expiration or termination of this Agreement, including, without limitation, the maintenance obligations set forth in Section 6 hereof, shall survive and be enforceable after the expiration or termination of this Agreement.

29. Entire Agreement. This Agreement and the Scope of Work contains the entire agreement between the parties and supersedes all prior oral or written agreements with respect to the subject matter hereof. This Agreement may not be amended or modified except by a written instrument executed by the parties hereto.

30. No Partnership. The parties acknowledge and agree that this Agreement does not create a partnership between, or a joint venture of, the parties.

31. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original and all of which together shall constitute one agreement.

EXHIBIT D

IN WITNESS WHEREOF, the parties hereto have caused their duly authorized officers to execute this Agreement as of the date set forth above.

Company Name:

By: _____

(Print Name)

Title: _____

Date Signed: _____

Company Name:

By: _____

(Print Name)

Title: _____

Date Signed: _____

EXHIBIT D

SCOPE OF WORK

_____ (Project Name) _____

This Scope of Work is entered into this ____ day of _____, 20____, by and between _____, a _____ corporation (“_____”) and _____, a _____ corporation (“_____”) as an addendum to the Joint Build Agreement dated _____, 20____. Upon execution by the parties hereto, this Scope of Work shall be attached to and become a part of the Joint Build Agreement. In the event of a conflict or inconsistency between this Scope of Work and the terms set forth in the Joint Build Agreement, the terms of this Scope of Work shall in all cases prevail. All capitalized terms not otherwise defined in this Scope of Work shall have the meaning set forth in the Joint Build Agreement.

1. Project Description:

- 1.1 _____ shall be Lead Company and _____ shall be Participant (hereinafter collectively “the Parties”).
- 1.2 The “Project” consists of engineering and construction of a Joint Build of approximately _____ linear feet, in the proposed route and (if applicable) consisting of the various components thereof (such components being referred to herein as “Segments”), all as described in Exhibit A hereto (“Route Description & Route Map”). Unless otherwise agreed between the Parties, all underground Segments of the Project shall be constructed in accordance with the trench detail set forth in the engineering/construction drawings that (a) already have been completed and referenced in Exhibit A hereto and copies of which have been provided to each Party and each Party acknowledges receipt thereof, or (b) when completed and agreed to by the Parties, shall be provided to each Party. Lead Company’s and Participant’s manholes/handholes will be placed along all underground Segments of the Project in locations to be agreed upon between the Parties, which locations shall be noted in the agreed upon engineering/construction drawings. Manholes/handholes will be placed for each party as needed. Placement of fiber optic cable is not included in this Scope of Work and each party is individually responsible for the placement of fiber optic cables. Prior to installation, Lead Company and Participant will agree to material specifications.
- 1.3 In the event that any investigation, site monitoring, containment, cleanup, removal, restoration or other remedial work of any kind or nature is reasonably necessary or desirable under any applicable local, State or governmental or non-governmental entity or person because of, or in connection with the discovery of historical artifacts within the Project; or the current or future presence, suspected presence, release or suspected release of a hazardous substance in or into the air, soil, groundwater, surface water, soil, at, on, about, under or within the Project (or any portion thereof), the Lead Company shall immediately stop the Work and promptly inform Participant of the findings. Work will not continue until a remedial plan has been agreed to in writing by Lead Company and Participant.
- 1.4 Each Party acknowledges and agrees that the proposed route as set forth in Exhibit A hereto is subject to a change due to Force Majeure as provided in the Agreement. When any party discovers that such a change is required, such party will immediately notify the

EXHIBIT D

other party. Notwithstanding anything to the contrary contained in the Agreement, to the extent any such change is required to a particular Segment, immediately after becoming aware thereof, the Parties shall negotiate in good faith to reach agreement as to a mutually acceptable change to the affected Segment(s). If no agreement can be reached within thirty (30) days after the commencement of such negotiations, then at any time thereafter, unless and until the parties reach agreement on such change, either Party may terminate its participation in the affected Segment at a reasonable and mutually agreed upon physical point adjacent to such Segment or within such Segment and shall pay to the other non-terminating Party the terminating party's share of all Project Costs incurred as of the date of such termination with respect to the terminated Segment, plus the terminating Party's share of demobilization and restoration costs incurred as a result of such termination.

- 1.5 Lead Company will provide field engineers to inspect the entire Project while under construction. Participant will be entitled to conduct field inspections where applicable. If Participant chooses to conduct field surveys, Participant must follow all safety regulations set by any Governmental Authority and all safety regulations set by the sub-contracting company on site.
2. Construction Schedule:
 - 2.1 Lead Company will complete construction of the Project with all work required to be performed under this Scope of Work by the dates set forth in Exhibit B ("Construction Schedule"). However, the Construction Schedule shall be suspended and extended to the extent necessary by reason of Force Majeure as provided in the Agreement, or by Paragraph 1.3 as set forth above in this Scope of Work. For purposes of this Paragraph, a "working" day shall be defined as Monday through Friday with the exception of recognized holidays.
 - 2.2 At the start of the Project, Lead Company will notify Participant within 7 days of the project kick-off meeting so that Participant can arrange for an inspector to attend.
 - 2.3 Lead Company shall provide Participant with an overall project schedule identifying critical path items (i.e. engineering, permitting and construction) every two weeks.
 - 2.4 If by reason of Force Majeure as provided in the Agreement or Paragraph 1.3 in this Scope of Work, the date of completion set forth in the Construction Schedule will be delayed, or is reasonably likely to be delayed for more than thirty (30) days after such completion date, the Parties shall immediately after becoming aware thereof negotiate in good faith to reach agreement as to a mutually acceptable course of action to mitigate the impact of such delay on the Project. If no agreement can be reached within thirty (30) days after the commencement of such negotiations, then at any time thereafter, unless and until the parties reach agreement on such course of action, either Party may terminate this Scope of Work at a reasonable and mutually agreed upon point in time and location within the affected Segment(s) and pay to the non-terminating Party the terminating Party's share of all Project Costs incurred as of the date of such termination, plus the terminating Party's share of demobilization and restoration costs incurred as a result of such termination.
3. Project Costs:

EXHIBIT D

- 3.1 Project costs shall be allocated and paid as set forth in Exhibit D ("Cost Sharing Basis").
- 3.2 Estimated Project costs for each Party (including material costs) are as set forth in Exhibit E ("Estimated Costs").
- 3.3 In the event that Participant fails to timely pay any amounts owed to Lead Company or Lead Company's contractor under this Scope of Work, Lead Company shall retain ownership of Participant's Conduit pursuant to Paragraph 5 of the Joint Build Agreement. Once Participant pays the amounts due under to this Scope of Work (plus the amounts due under a settlement agreed to by both parties in writing of disputed amounts, if applicable), Participant shall receive title to Participant's Conduit.
- 3.4 In the event that Lead Company and Participant agree to allow additional party(ies) to participate in any Segment of the Project, the costs will be allocated among Participant, Lead Company and such other party(ies) in such manner as set forth in Exhibit D.
- 3.5 If at any time during the construction, circumstances arise that are beyond the control of either of the Parties that result in a cost increase of more than ten percent (10%) of the estimated Project Costs, the Parties shall confer and attempt in good faith to determine by mutual agreement whether to terminate construction or modify the construction plans. If no agreement can be reached, either party may terminate this Scope of Work at a reasonable and mutually agreed upon point. The terminating Party shall pay to the other Party the terminating Party's share of all Project Costs incurred as of the date of such termination, plus the terminating Party's share of demobilization and restoration costs incurred as a result of such termination.
4. Specifications:
- 4.1 Lead Company's current (as of the date of this Scope of Work) Outside Plant Specifications, a copy of which has previously been provided to Participant, are incorporated herein by this reference and the Work performed hereunder shall be in compliance therewith, except to the extent such Specifications are modified by this Scope of Work as depicted in Exhibit C ("Supplemental Specifications").
5. Points of Contact/Escalation Procedures:

	Lead Company	Participant
First Level		
Second Level		

IN WITNESS WHEREOF, the parties hereto have executed this Scope of Work on the day and year written above.

EXHIBIT D

By: _____

Title: _____

Date: _____

By: _____

Title: _____

Date: _____

EXHIBIT D

EXHIBIT A

To Scope of Work

(Name of Project)

ROUTE DESCRIPTION & ROUTE MAP

Route description to include Participant's # and size of ducts, length of route, estimated # of manholes, manhole arrangement in the header.

Describe route with linear feet on each street, which is tied to Construction schedule.

Attach map

EXHIBIT D

EXHIBIT B
Scope of Work
(Name of Project)

CONSTRUCTION SCHEDULE

Segment	Length	Begin	End
	(Miles)	Construction	Construction

EXHIBIT D

EXHIBIT C
To Scope of Work
(Name of Project)

SUPPLEMENTAL SPECIFICATIONS

1. Lead Company shall ensure that Contractor will obtain all necessary permits before proceeding with construction.
2. Lead Company shall ensure that all manholes/handholes will be free of debris, adequately sealed, and covers shall be secured as required by their manufacturer.
3. Participant has arranged for delivery of its materials as follows:

4. Lead Company shall provide one (1) floppy disk or CD-ROM of as-builts in the current format utilized by the Lead Company for as-builts.
5. Manhole Specifications/Requirements
6. [IF APPLICABLE:] Lead Company shall ensure that Contractor warrants that all Work to be furnished under this Agreement shall conform in all respects to the requirements of the Agreement or this Scope of Work; are free from any defects in workmanship; and are free of defects causing caving or sinking of the trench or the paving for a period of two (2) years following acceptance of the Work.

EXHIBIT D
To Scope of Work
(Name of Project)

COST SHARING BASIS

This Exhibit sets forth the Cost Sharing Basis between the parties.

TERM	DEFINITION	COMPENSATION
Materials	This line item includes all direct materials required for underground construction. Example materials include conduit, quad duct, duct plugs, manholes, handholes, innerduct, HDPE, and steel pipe (bridge attachments). Bridge attachment material will be prorated since a single hanger may be used for multiple conduits.	Each participant to pay 100% of the cost of all Materials used for its respective conduit system(s).
Indirect Costs	This line item includes all costs incurred by the Lead Company's general contractor that are not Underground Labor and Common Materials as defined below. Examples of Indirect Costs include, but are not limited to, engineering, permitting, generation of as-builts, and inspection services.	Each participant to share equally in these costs based on the number of total participants for the total footage of participation.
Underground Labor & Common Materials	This line item includes all direct labor to install Materials. Examples of labor that are part of this include trenching, boring, bridge attachments, placing conduit, restoration, manholes/handhole placement. Common materials include bore casings, bridge attachment hardware, trench tape, etc.	Each participant to pay percentage based on the Equity Cost Sharing Formula set forth in this Exhibit.
General Contractor's Fee	This line item covers costs for Lead Company's general contractor's General and Administrative expenses and mark-up. This includes, but is not limited to the allocation of the general contractor's corporate overhead and is apportioned to the build as a percentage cost.	Each participant to pay percentage based on the Equity Cost Sharing Formula set forth in this Exhibit.
Lead Company Management Fee	This line item is the Lead Company's management fee. This management fee covers cost of capital, oversight, bonds and insurance required for the Lead Company by jurisdictional authorities, staff to write and administer contracts and management costs. The management fee applies to all costs	The percentage of this fee to be indicated in each Joint Build Agreement and to be paid by each participant company as noted.

EXHIBIT D

	set forth in this Exhibit except for materials provided by the Participant.	
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Equity Cost Sharing Formula:

Each participant pays its pro rata share of the cost of Underground Labor and Common Materials based on the number of conduit for that participant and the size of the conduit.

EXHIBIT D

EXHIBIT E
To Scope of Work
(Name of Project)

PROJECT COST ESTIMATE

(TO BE ATTACHED AS EXCEL SPREADSHEET)

EXHIBIT D

JOINT TRENCH AGREEMENT

THIS JOINT BUILD AGREEMENT ("Agreement"), effective the ____ day of _____, 200____, is made by and between _____, a _____ corporation with an office at _____ ("Lead Company"), and _____, a _____ corporation with an office at _____ ("Participant").

WHEREAS, each party intends to install, construct, own and operate underground conduit facilities ("Facilities") in connection with each party's respective operations; and

WHEREAS, to minimize the costs of constructing separate trenches and Facilities, the parties are willing to jointly construct such trenches and Facilities and to share the costs of such construction in accordance with the terms and conditions set forth herein;

NOW, THEREFORE, in consideration of the mutual covenants, terms, conditions and obligations contained herein, and intending to be legally bound hereby, the parties hereby agree as follows:

1. **Certain Definitions.** For purposes of this Agreement, the following terms are defined as follows. This is not intended as an exhaustive list of all defined terms used in this Agreement.

- (i) "Acceptance Testing" shall have the meaning attributed to it in Section 4(F).
- (ii) "Access Point" shall mean an opening, individually owned by a particular party, in the Joint Build by which the party may enter for the purpose of installing and maintaining Facilities (i.e. manhole or handhole).
- (iii) "Affiliate" shall mean any Person controlling, controlled by, or under common control with another Person.
- (iv) "Authorizations" shall have the meaning attributed to it in Section 3.
- (v) "Completion Notice" shall have the meaning attributed to it in Section 4(F).
- (vi) "Conduit" shall mean a structure containing one or more Innerducts.
- (vii) "Innerduct" shall mean a single enclosed raceway acceptable for communications cables.
- (viii) "Drawings" shall have the meaning attributed to it in Section 4(A).
- (ix) "Facilities" shall mean Innerducts, Conduits, Access Points and associated equipment, devices and hardware that are supplied by, or installed or designed for, a particular party.
- (x) "Governmental Authority" shall mean any federal, state or local government, or any agency or instrumentality thereof, having competent jurisdiction over the Facilities, the Joint Build or the parties hereto.

E. Sample Engineering OSP Standards

<INSERT CLIENT NAME> OSP Standards

Communication Conduit for Fiber Optics

Scope of Standard

These guidelines identify and define the <INSERT CLIENT NAME> requirements and policies for designing and installing telecommunications infrastructure and substructure at all <INSERT CLIENT NAME> facilities and within the <INSERT CLIENT NAME> limits and rights-of-ways. Use of, and compliance with these guidelines is mandatory for architects, engineers, and installation contractors working on <INSERT CLIENT NAME> projects.

Design Guidelines

- A. The <INSERT CLIENT NAME> Infrastructure Standard is based upon the code requirements and telecommunications industry standards contained in the following guidelines. These guidelines will not duplicate the information contained in those references, except where necessary to provide guidance, clarification or direction.
- B. In instances where several technical alternatives may be available to provide a design solution, these guidelines will identify the preferred solution to meet <INSERT CLIENT NAME> needs. However, each facility and project is unique. Design for new construction will differ from design for retrofit of existing facilities. These guidelines will differentiate certain design approaches and solutions to be applied to new construction versus existing facilities, and different types of <INSERT CLIENT NAME> facilities. However, designers and installers shall always use sound engineering judgment in order to comply with the requirements of the codes and standards identified in this section.
- C. Designs will include, but not be limited to, all man-hole, hand-holds, conduits, roads, bridges, railway crossings, railways, buildings, utility poles, traffic light structures, traffic control boxes, other utilities structures, both existing and planned (new) that are pertinent to the construction of the fiber path.
- D. As-builts will be provided in paper 8.5" x 14" format with all construction notes and geo-spatially correct measurements (verified by GPS), as well as digitally in AutoCAD 2008 or earlier and projected in the coordinate system <ENTER SPECIFIC COORDINATE SYSTEM INFORMATION>. Scale should be 1ft. x 1 ft. As-builts will include cadastral boundaries to include right of ways and planimetric boundaries

that includes edge of pavement. <INSERT CLIENT NAME> base map can be provided upon request. As-builts shall be provided to designated City representative, incorporating any changes made during or after construction. Final As-builts shall be completed only once all Fiber-Optic cables in said project have been fully installed and tested and tests have been accepted by designated City representative prior to project closeout.

Reference Standards

- A. Adherence to, and compliance with, the codes and standards referenced, and the <INSERT CLIENT NAME>'s unique requirements and design solutions identified in the manual, is mandatory. Requests to deviate from the industry standards and design solutions prescribed in these guidelines may be submitted, on a case-by-case basis, to the <INSERT CLIENT NAME> Engineer for review and approval. No deviation from the requirements of the National Electrical Code will be allowed.
- B. Architects, Consultants, and Contractors shall always reference the most recent standards available. Most references listed below can be purchased directly from the individual standards organization, or from:

Global Engineering Documents
15 Inverness Way East
Englewood, CO 80112-5776
Telephone: (800) 854-7179 (303) 397-7956
Fax: (303) 397-2740
<http://www.global.ihs.com>

Codes, Standards, References, and Applicability

Design, Build Firm to follow all standards, references and technical special provisions referenced below.

- A. **NATIONAL ELECTRICAL CODE, NFPA 70**
The National Fire Protection Association has acted as the sponsor of the National Electrical Code (NEC) since 1911. The original Code was developed in 1897 as a result of the united efforts of various insurance, electrical, architectural, and allied interests. The purpose of the NEC is the practical safeguarding of persons and property from hazards arising from the use of electricity. The NEC provides the minimum code requirements for electrical safety. In telecommunications distribution design, the NEC must be used in concert with the ANSI/EIA/TIA standards identified below, which are intended to insure the performance of the telecommunications infrastructure.
- B. **ANSI/TIA/EIA STANDARDS**
The Telecommunications Industry Association/Electronics Industry Association (TIA/EIA) engineering standards and publications are

designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers. The standards facilitate interchangeability and improvement of products and assist the purchaser in selecting and obtaining the proper product for his or her particular need.

The TIA/EIA Standards are updated every five years. Due to the rapid changes in the telecommunications and electronics industries, TIA/EIA publishes periodic Telecommunications Systems Bulletins (TSB), which provides additional guidance on certain technical issues that must be addressed prior to the next scheduled revision of the standards. The information contained in TSBs is usually incorporated into the applicable standard during the next standards revision. Standards and publications are adopted by TIA/EIA in accordance with American National Standards Institute (ANSI) patent policy. The TIA web site is: <http://www.tiaonline.org/>

C. FIBER OPTIC TEST STANDARDS, TIA/EIA-526 (SERIES)

The TIA/EIA-455 series, together with its addenda, provides uniform test procedures for testing the fiber optic components intended for, or forming a part of, optical communications and data transmission systems. This series contains standard test procedures for optical fibers, cables, transducers, and connecting and terminating devices.

D. CABLING STANDARD, ANSI/TIA/EIA-568 (SERIES)

The ANSI/TIA/EIA-568-A series, together with its addenda is the Commercial Building Telecommunications Cabling Standard. This standard defines a generic telecommunications wiring system for commercial buildings that will support a multiproduct, multivendor environment. It also provides direction for the design of telecommunications products for commercial enterprise.

The purpose of the standard is to enable planning and installation of building wiring with little knowledge of the telecommunications products that subsequently will be installed. Installation of wiring systems during building construction or renovation is significantly less expensive and less disruptive than after the building is occupied. TIA/EIA-568-A series establishes performance and technical criteria for various wiring system configurations for interfacing and connecting their respective elements.

E. GROUNDING AND BONDING, ANSI/TIA/EIA-607 (SERIES)

The ANSI/TIA/EIA-606 (series) is the Commercial Building, Grounding and Bonding Requirements for Telecommunications. The National Electrical Code (NEC) provides grounding, bonding, and electrical protection requirements to ensure life safety. Modern telecommunications systems require an effective grounding infrastructure to insure optimum performance of the wide variety of electronic information transport

systems that may be used throughout the life of a building. The grounding and bonding requirements of this standard are additional technical requirements for telecommunications that are beyond the scope of the NEC. These standards are intended to work in concert with the cabling topology specified in ANSI/TIA/EIA-568-A series, and installed in the pathways and spaces designed in accordance with ANSI/TIA/EIA-569-A.

F. CUSTOMER OWNED OUTSIDE PLANT (OSP), ANSI/TIA/EIA-758

The ANSI/TIA/EIA-758 provides industry standards for the design and construction of customer owned OSP infrastructure. Unless specified otherwise in the <INSERT CLIENT NAME>, standard OSP designed and constructed at all <INSERT CLIENT NAME> facilities will be in compliance with ANSI/TIA/EIA-758.

G. TRANSMISSION PERFORMANCE SPECIFICATIONS, TIA/EIA BULLETIN TSB67

TSB67 is the Transmission Performance Specification for Field Testing of Unshielded Twisted- Pair (UTP) Cabling Systems. This bulletin specifies the electrical characteristics and performance requirements of field test instruments, test methods, and the minimum transmission requirements for UTP cabling. All testing of horizontal distribution cabling at <INSERT CLIENT NAME> facilities will be performed with a TSB67 Level II test instrument.

H. ADDITIONAL HORIZONTAL CABLING PRACTICES FOR OPEN OFFICES, TIA/EIA BULLETIN TSB75

This document specifies optional practices for open office environments, for any horizontal telecommunications cabling recognized in TIA/EIA-568. It specifies optional cabling schemes and topologies for horizontal cabling routed through modular office furniture or movable partitions, which are frequently reconfigured

I. LOCAL AREA NETWORK ETHERNET STANDARD, IEEE 802.3 (SERIES)

<INSERT CLIENT NAME> utilizes the Ethernet LAN protocol at all facilities. All <INSERT CLIENT NAME> infrastructures must be designed to support the Institute of Electrical and Electronic Engineers (IEEE) Ethernet 802.3 standards, which define protocols and signaling technologies. All newly installed cabling must support 1000BaseX Gigabit Ethernet protocol based on the IEEE 802.3z standard.

J. THE BICSI TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL

The Building Industry Consulting Service International, Inc. (BICSI) is a Telecommunications Association whose mission is to provide state-of-the-art telecommunications knowledge to the industry, resulting in good service to the end user. BICSI develops and publishes the Telecommunications Distribution Methods Manual (TDMM). The TDMM is

not a code or standard. The TDMM is an extensive volume of information on the various aspects of telecommunications systems and telecommunications distribution. The TDMM provides discussions and examples of various engineering methods and design solutions that can be selected and employed in order to meet the requirements of the NEC and ANSI/TIA/EIA standards. Designers and installers are encouraged to use the TDMM as an engineering tool, within the constraints of the unique requirements of the <INSERT CLIENT NAME> Infrastructure Standards.

- K. **CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)** Refer to the current standard for CALTRANS Intelligent Transportation Systems, Technical Special Provisions for Fiber Optic Cable and Interconnect;
- L. **INTERNATIONAL TELECOMMUNICATIONS UNION - (ITU-T 652 Categories A, B, C, D)** Refer to the international standard on Fiber Optic Cable covering “reduced-water-peak”, “low-water-peak” and “full spectrum fiber”. Material deployed in the project shall be ITU-T 652.D full spectrum compliant such as Corning SMF-28e for full compatibility and interoperability with legacy fiber, while providing low Polarization Mode Dispersion (PMD).

Definitions

Fiber Optic Cable: A cable that contains individual glass fibers, designed for the transmission of digital information, using light pulses.

All Dielectric Self Support (ADSS) Cable: A cable designed and constructed with non-metallic components, that is designed for aerial applications and does not require a separate cable messenger.

Loose Tube Cable: A cable designed and constructed with non-metallic components, which is designed for underground applications. These are “dry” cables using water swellable powders to protect against water penetration.

OTDR: Optical Time Domain Reflectometer. A device used for characterizing a fiber, wherein an optical pulse is transmitted through the fiber and the resulting backscatter and reflections are measured as a function of time.

Single-mode Fiber: An optical fiber with a small core diameter, in which only a single mode of light is capable of propagation. All Single-mode glass employed on project shall meet or exceed .35/.25dB/km optical attenuation and Polarization Mode Dispersion: ≤ 0.5 ps / km

Multi-mode Fiber: An optical fiber whose core diameter is large compared with the optical wavelength and which, consequently, a large number of light modes are capable of propagation.

Splicing: A permanent junction between optical fiber splices. May be thermally fused or mechanically applied.

Minimum Bend Radius: The minimum radius a fiber may be bent before optical losses are induced.

Guidelines for Designing Underground Fiber Optic Cable Routes

Governing California Department of Transportation (CALTRANS) Indexes and regulations should be used as well as all applicable codes in force.

Conduit Placement

The conduit shall be placed at an offset from the roadway that meets the governing MDT regulations and indexes while still staying within the ROW. If this cannot be accomplished please raise issue to the <INSERT CLIENT NAME> Project Engineer or liaison.

Depth (Minimum / Maximum)

The conduit used as the primary carrier of the fiber optic cable should be buried no greater than 42." and no less than 36." beneath grade except where code requires otherwise or directed in writing by the Project Engineer on behalf of the <INSERT CLIENT NAME>.

Grade away from Buildings/Structures

The conduit shall be placed in such a way to as to maintain a gradual grade down away from buildings and other major structures.

Conduit type/ Inner Duct type

Standard placement shall be of quantity (2), 2" ID HDPE conduit direct buried/trenched/bored as appropriate to the construction needs (Color Orange and Blue). If specified an outer conduit shall be of the HDPE type, of suitable strength per the governing MDT indexes for the location of work. Conduit shall be 6" I.D. in size with quantity (2), 2" ID HDPE conduits (Color Orange and Blue)

All conduits and inner ducts should be cleared and cleaned prior to capping.

Conduit Turns & Transitions

All conduit turns shall be made with 45-degree bends or sweeps. At no time shall 90-degree bends be utilized in the outside plant arena, unless it is an already existing conduit, and approved by the <INSERT CLIENT NAME>.

Exceptions may be made to this rule for work inside of buildings.

Trace Wire

A minimum #12 AWG trace wire should be placed along with all conduits put in place. This trace wire should maintain continuity from end station to end station. Where possible it is okay to use vaults/hand holes for joining the trace wire, while

keeping these joints visible and out of the way of the fiber cable. Where not possible please use the small hand hole for joining the trace wire.

Marker Poles

Easily visible, marked, 6' fiber optic marker poles should be placed above the conduit at all major transitions to said conduit (turns greater than 25 degrees, etc.), where applicable. Please get marking poles approved by the <INSERT CLIENT NAME> prior to installation/purchase.

Conduit Entering Hand Holes/Man Holes

All conduits should be stubbed up underneath the bottom of each manhole/hand hole leaving at least 8" but no more than 12" of visible conduit exposed. Conduit and inner ducts should be capped until use, after use they should be plugged appropriately to maintain the integrity of the conduit/inner duct from dirt and water.

Locate Information

As an as-built information gathering job, all splice points, vaults/hand hole/manhole/conduit turns of 45 degrees or greater should receive a GPS coordinate that is marked and labeled back onto the as-built drawings.

Building Entrances

All building entrances should be checked and approved with the <INSERT CLIENT NAME> Project Engineer or liaison. Preference is given in the following order (but dictated by the facility itself) utilizing existing conduit to enter the building, core drilling and bringing conduit up through the floor, bringing conduit up the outside of a facility, attaching a pull box to the exterior of said building and entering through the wall of the building.

Box Sizing

Please confirm with the <INSERT CLIENT NAME> your selection of boxes and box sizes PRIOR to utilization of said boxes in quote or design. All boxes utilized MUST meet the MDT applicable indexes and be on the MDT approved equipment list. The following sizes are to be used wherever possible:

- 16x22x18." (straight wall)
- 16x22x30." (flared wall)
- 17x30x18." (flared wall)
- 24x36x30." (flared wall)
- 30x60x36." (flared wall)

Please get all boxes approved during the design phase and prior to purchasing/installation of said boxes. All box lids shall have a Logo embedded on them. This logo is to be provided by the <INSERT CLIENT NAME>.

Guidelines for Installing Conduit

Depth (Minimum / Maximum)

The conduit used as the primary carrier of the fiber optic cable should be buried no greater than 42" and no less than 36" beneath grade except where code requires otherwise or directed in writing by the Project Engineer on behalf of the <INSERT CLIENT NAME>.

Reel Placement

Have the reel set adjacent to the manhole and use a fiber optic manhole pulling block assembly.

Conduit type/ Inner Duct type

Standard placement shall be of quantity (2), 2" ID HDPE conduits (Color Orange and Blue), direct buried/trenched/bored as appropriate to the construction needs.

If specified an outer conduit shall be of the HDPE type, of suitable strength per the governing MDT indexes for the location of work. Conduit shall be 6" I.D. in size with quantity (2), 2" ID HDPE conduits (Color Orange and Blue).

All conduits and inner ducts should be cleared and cleaned prior to capping.

Guidelines for Installing/Pulling Underground Fiber Optic Cable

Bend Radius

The main risk of damage to the fiber optic cable is by overlooking the minimum-bending radius. It is important to know that the damage occurs more easily when the cable is bent under tension, so when the installation is in process be sure to allow for at least the minimum bending radius. The number of 90-degree turns on a pull shall not exceed four (4).

Reel Placement

Have the reel set adjacent to the manhole and use a fiber optic manhole pulling block assembly from Sherman & Reilly (or similar).

Cable Slack

Please coil 150 feet of cable at transition points, termination points, and every 1500 feet.

Splices

All splice locations will be designated by the <INSERT CLIENT NAME>.

Strength

The fibers in the cable will shatter under considerable impact, pressure or if pulling tensions exceed 600 LB, although from the outside of the cable this will not be apparent. With fiber optic cable the jacket of the cable and the Kevlar layer directly beneath give the cable its strength so please be sure to note and repair all nicks and cuts.

Installation

When installing use a swivel eye for pulling the fiber optic cable and conduit system.

Precautions

Please review the manufacturer's installation instructions prior to commencing with the installation. If any questions arise during installation please refer to the manufacturer's installation instructions, or notify the Project Engineer.

Testing

Perform OTDR test on each fiber in the installed cable, to verify the parameters of each fiber meet the system design criteria. Power meter tests should also be performed. All test results should be provided to the <INSERT CLIENT NAME> Project Engineer in PDF format.

Safety

Contractor to provide proper work zone safety through an approved site-specific MOT (Maintenance of Traffic) plan.

Contractor to ensure that all personnel working in the field adhere to all PPE (Personnel Protection Equipment) requirements needed for the particular job location at all times.

Contractor to conduct pre-work safety briefings with workers prior to starting work each day/shift in the field. This briefing should be conducted by supervisor/manager in the field. All safety briefings should be logged in paper and this log easily accessible by <INSERT CLIENT NAME> personnel in the field.

Locating Fiber Optic Cables

<INSERT CALIFORNIA SPECIFIC STATE LOCATE REQUIREMENTS>

The DigAlert office will contact the <INSERT CLIENT NAME> locating contractor requiring locates of our facilities.

Aiding the locators, please install a #12 gauge wire. Pull #12 gauge wire in with the fiber cable for the underground conduit systems.

Terminate the ends of the #12 gauge wire in a handhold box. This box can be used by the locating contractor.