3.0 PROJECT DESCRIPTION

3.1 INTRODUCTION

Metromedia Fiber Network Services, Inc. (also referred to as Metromedia or MFNS), a communications and information services company, is applying to the California Public Utilities Commission (CPUC) for a modification of its existing Certificate of Public Convenience and Necessity (CPCN), granted by the CPUC on July 24, 1998, authorizing it to install fiber optic cable networks to provide telecommunications services in California. The CPCN granted to Metromedia in July 1998 authorized it to operate as a facilities-based carrier of inter-Local Access and Transport Area (LATA)[1] and intra-LATA telecommunications services in California as a non-dominant interexchange carrier.

Metromedia seeks CPUC approval to install conduit and related facilities, in selected locations, to create fiber optic networks to serve the California metropolitan areas of the San Francisco Bay Area and the Los Angeles Basin. The project reviewed in this Negative Declaration (ND) consists of (1) the installation by Metromedia of new conduit through which Metromedia will pull fiber optic cable; (2) the repair or replacement of existing conduit through which Metromedia will pull fiber optic cable; and (3) the construction of ancillary facilities such as point of presence (POP) sites, which would be constructed by Metromedia at locations along the cable routes.[2]

The subsequent chapters focus on the portion of the networks that constitute the project. A glossary of terms and acronyms is presented in Chapter 12.

This chapter introduces the project and describes the project location, route segments, and facilities. Descriptions of non-project facilities, the construction of which is authorized by Metromedia's existing CPCN, are also given to provide a more complete picture of how Metromedia's networks would function.

This chapter also describes the project design and approaches to construction proposed for network installation, the project management structure, environmental goals and training, construction workforce and schedule, project impact issues, and a summary of the regulatory environment. A summary of mitigation measures proposed by Metromedia and already incorporated into the project closes the chapter.

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1 By order of the Modified Final Judgment for the divestiture of the Bell Operating Companies by AT&T Corporation, service or market areas named Local Access and Transport Areas (LATAs) were established as subdivisions of the Bell service/market area; California was divided into 11 LATAs.

2 The installation of fiber optic cable, which occurs after the fiber optic conduit has been installed, is not included as part of the proposed project; cable installation is covered under Metromedia's existing CPCN.

3.1.1 Overview of Metromedia's Proposed Fiber Optic Networks

Metromedia Fiber Network Services proposes to establish fiber optic networks to serve the greater metropolitan areas of San Francisco (Figure 3-1) and Los Angeles (Figure 3-2). As previously noted, the networks would incorporate both project and non-project facilities. The San Francisco Bay Area Network would serve a number of communities in six counties and the Los Angeles Basin Network would include numerous communities in two counties. A brief description of the route segments is included in this subsection, and a detailed description is presented in Chapter 4, Project Route Description. Metromedia's fiber optic networks would incorporate both newly installed and existing conduit to carry the fiber optic cable.

Most of the new conduit that is needed for Metromedia's fiber optic networks would be installed by Metromedia. However, in some cases, conduit installation would be made by another entity, such as PG&E, Pacific Bell, GTE, or Level 3, acting either alone or as the lead in a joint build with Metromedia.

The existing conduit that Metromedia would utilize has been installed by other entities such as Pacific Bell / GTE or PG&E, although in some locations the conduit has been damaged or is otherwise inadequate and, therefore, must be repaired or replaced. Repair or replacement of the inadequate sections of the existing conduit would be undertaken by the conduit owner, by Metromedia, or as a joint build. After necessary repairs or replacements have been made to the existing conduit, Metromedia would place fiber optic cable in the conduit.

The project includes the installation of new conduit for which Metromedia is solely or primarily responsible, the repair or replacement of existing conduit for which Metromedia is solely or primarily responsible, and the construction of Type II and III POPs[3].

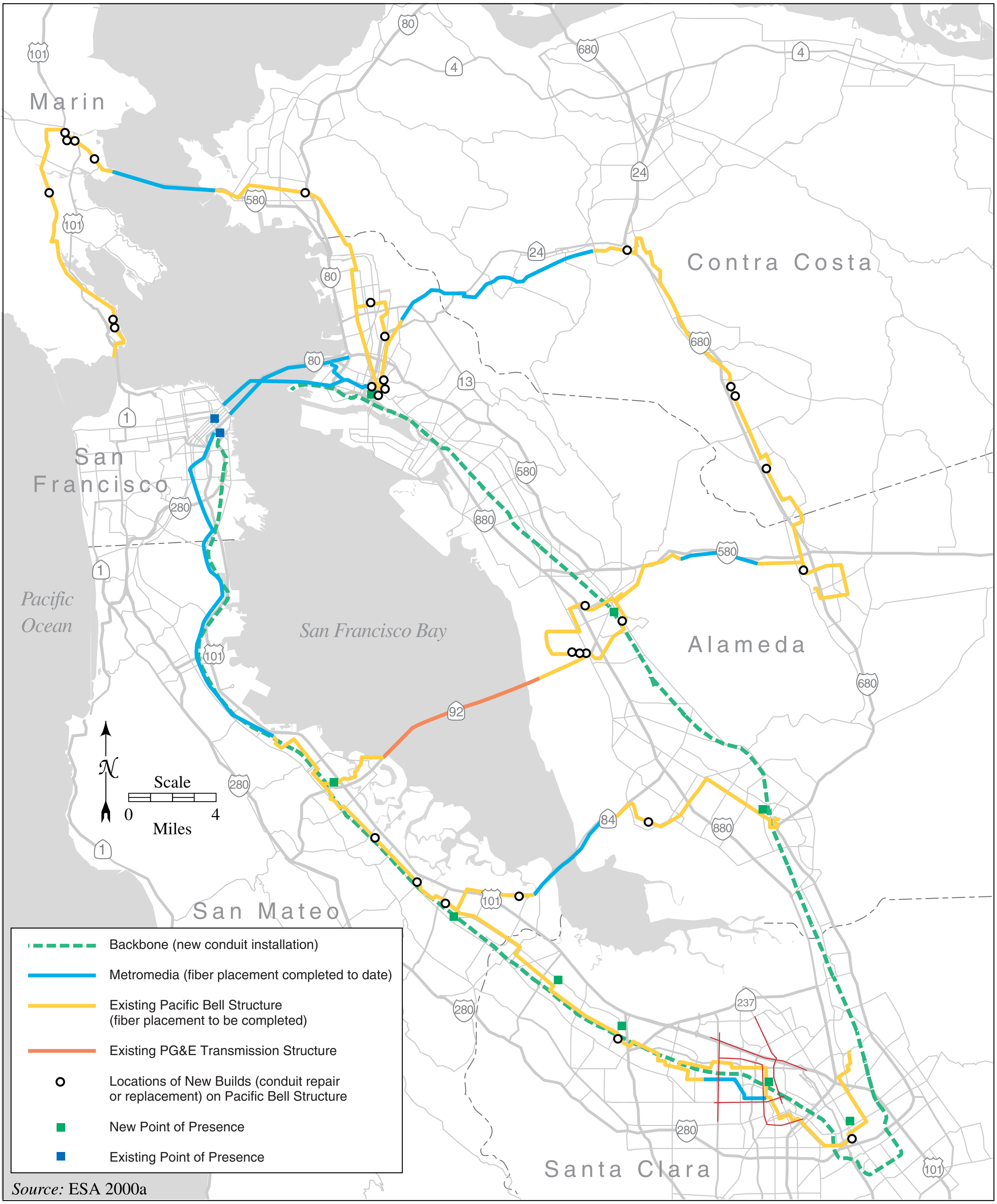
Metromedia's metropolitan area networks would connect major office buildings, central offices, as well as major industrial parks and business centers in the surrounding areas. A description of the fiber optic network facilities that support the functioning of Metromedia's networks is provided below in this chapter. Metromedia's networks would enable technologically sophisticated organizations to implement the latest applications available in the evolving data communications and Internet markets.

For informational purposes, all routes of the fiber optic networks to be operated by Metromedia are briefly described in this chapter. The description includes not only routes that would be newly installed by Metromedia, but also routes that consist mostly of existing conduit. To reiterate, the only sections of the routes that are included in the project being

[3] The glossary provided in Chapter 8 includes definitions of technical terms; a description of network facilities is provided later in this chapter.

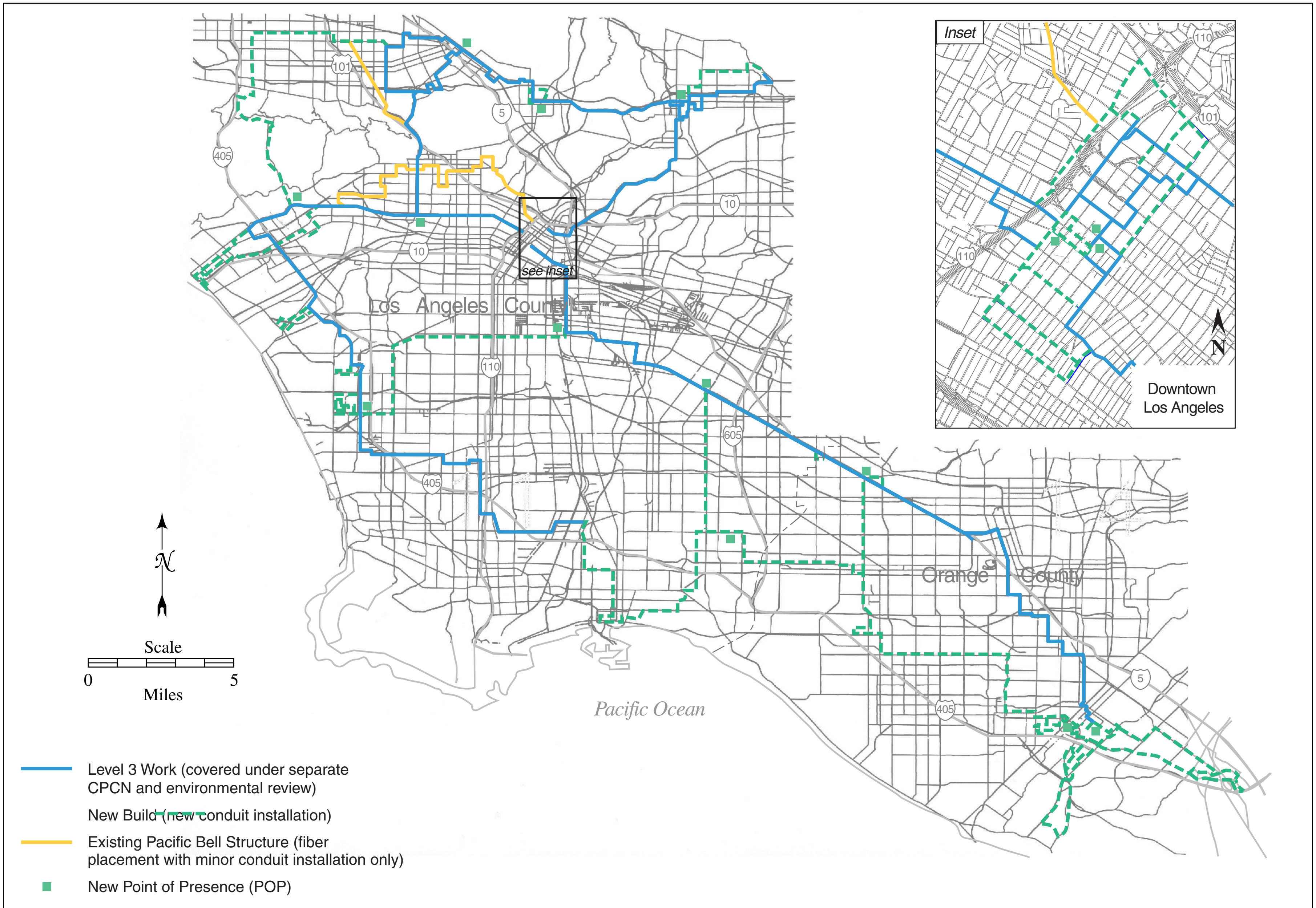
proposed for review in this ND are those segments for which Metromedia would have the sole or primary responsibility to install, repair, or replace conduit.

It is likely in the future that Metromedia will develop fiber optic loops (route segments that connect to backbone segments) that will connect to the proposed network to service individual or groups of customers. Where known, these loops are analyzed in this ND. The impacts associated with these loops would be the same as those for the project. Therefore, the mitigation measures proposed as a part of the project and identified in this ND (see Chapter 6, Environmental Impacts and Mitigation Measures) would avoid or reduce to insignificance the impacts associated with the future construction of these loops. Metromedia would apply the mitigations and the Mitigation Monitoring and Reporting Program (MMRP) included in this project to those new loops if and when they are constructed.



Source: ESA 2000a

Figure 3-1. Location of Metromedia's San Francisco Bay Area Network



Source: ESA 2000a

Figure 3-2. Location of Metromedia's Los Angeles Basin Network

3.1.2 Route Segments

The San Francisco Bay Area and Los Angeles Basin networks have been divided into segments for analysis in this document. The project routes and segments are described in detail in Chapter 4, Project Route Description. An overview of the network segments is presented below.

3.1.2.1 San Francisco Bay Area Network

The San Francisco Bay Area Network would include fiber optic cable route segments located within the county boundaries of San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, and Marin, and would pass through the communities included on Table 4-2 and Table 4-4 in Chapter 4, Project Route Description. Metromedia's fiber optic network in the San Francisco Bay Area would include both newly installed and existing conduit routes. The newly installed segments would encircle the San Francisco Bay along railroad rights-of-way to form the "backbone" network. In fiber optic network terms, a backbone is the fiber optic cable that is the framework for the network. Users of the fiber optic network are connected to the backbone by means of short local segments. For the San Francisco Bay Area Network, two backbones are proposed; these would consist of the following:

- The East Bay Backbone Segment, which would extend along the Union Pacific Railroad right-of-way in the East Bay from Luther Junction in San Jose to Beach Street in Oakland, is also divided into two segments, the Northern East Bay Segment (Oakland to Hayward) and the Southern East Bay Segment (Hayward to San Jose).
- The Peninsula Backbone Segment, which would extend along the Caltrain right-of-way from 4th Street and Berry Street in San Francisco south along the San Francisco Peninsula to Luther Junction in San Jose, is divided into the Northern Peninsula Segment (San Francisco to Redwood City) and the Southern Peninsula Segment (Redwood City to San Jose).

The conduit for these backbone segments would be installed by Metromedia and therefore they are included as part of the project reviewed in this document.

In addition to the backbone segments, Metromedia's San Francisco Bay Area Network would use Pacific Bell conduit, located in public roadway rights-of-way, to augment the backbone segments and provide fiber optic service to northern and eastern regions of the Bay Area. The Pacific Bell conduit, which is also known as the Pacific Bell structure, includes the following six segments that would be included in the Metromedia network:

- The Marin County Segment, extending from Oakland north to Richmond, crossing the San Francisco Bay along the Richmond–San Rafael Bridge to San Rafael, then south to San Francisco along the Golden Gate Bridge.
- The Oakland Segment in downtown Oakland.

- The Walnut Creek Segment, extending northeast from Oakland to Walnut Creek, southeast to Dublin, and then circling west to Hayward
- The Hayward Segment in downtown Hayward.
- The Dumbarton Crossing Segment, from Menlo Park across the San Francisco Bay via the Dumbarton Bridge to Fremont.
- The Peninsula Segment, which approximately parallels the Peninsula Backbone route along the Caltrain right-of-way.

Some sections of the Pacific Bell conduit require repair or replacement. The repair or replacement work on these routes would be performed by Metromedia, Pacific Bell, or as a joint build. Only the conduit repaired or replaced by Metromedia, solely or as the lead entity, is included as part of the project. These sections and their location are described in Chapter 4.

Distribution routes would branch out from the backbone segments and Pacific Bell structure segments to serve one or more businesses or communities.

3.1.2.2 Los Angeles Basin Network

The Los Angeles Basin Network would include fiber optic cable route segments located within both Los Angeles and Orange Counties, and would pass through the communities indicated in Table 4-6 in Chapter 4, Project Route Description.

Metromedia's fiber optic network in the Los Angeles Basin would include newly installed and existing conduit routes. The newly installed conduit would be installed underground within public roadway rights-of-way. The Los Angeles Basin Network would include backbone and distribution segments that would form several interconnecting routes linking the Los Angeles Basin from Van Nuys on the north to as far south as Corona Del Mar and Newport Beach, and from Santa Monica on the west to Pasadena on the northeast and Irvine on the southeast. For purposes of this ND, the network would consist of the following 18 segments:

- Burbank Local Segment
- Pasadena Local Segment
- Santa Monica Local Segment
- Glendale Local Segment
- Century City Local Segment
- Santa Monica to Burbank Segment

- Hollywood Local Segment[4]
- Marina Del Rey Local Segment
- Los Angeles International Airport (LAX)/Florence Segment
- LAX Segment
- El Segundo Segment
- Long Beach/Downey Segment
- Cypress/Buena Park Segment
- Fashion Island Segment
- Carson/Costa Mesa Segment
- Irvine Segment
- Costa Mesa Segment
- Downtown Los Angeles Segment

In addition, Metromedia would pull fiber through a series of segments in the Los Angeles Basin which would be built by Level 3, having a total length of approximately 161 miles (see Figure 3-2). While these segments would be part of the overall Metromedia network, those routes are not subject to environmental review in this application because the conduit would be constructed by another company.

3.1.3 The Proposed Project

The project includes (1) the installation of new conduit for which Metromedia is solely or primarily responsible, (2) the repair or replacement of existing conduit for which Metromedia is solely or primarily responsible, and (3) the construction of ancillary facilities: Type II and III POPs.

Metromedia's project would involve the underground installation of approximately 113 miles of conduit for fiber optic cable in the San Francisco Bay Area and approximately 193 miles in the Los Angeles Basin. The San Francisco Bay Area Network to be constructed by Metromedia would be located mostly along Union Pacific and Caltrain railroad rights-of-way, with some minor construction to install conduit within public roadway rights-of-way to repair or replace sections of existing facilities that are damaged or otherwise inadequate. For the San Francisco Bay Area Network, Metromedia would also construct structures to house equipment at locations on private property close to network routes. Metromedia would pull fiber optic cable through approximately 200 miles of Pacific Bell conduit for the San Francisco

[4] The Hollywood segment would utilize existing Pacific Bell structures, which may have sections of conduit needing repair or replacement. However, at this time, it is not known which sections of this segment would be replaced by Metromedia. Therefore, for the purpose of this ND, this segment would be treated as if the entire segment were a new build.

Bay Area Network. For the Los Angeles Basin Network, most of the construction by Metromedia would occur in existing roadways. Metromedia would pull fiber optic cable through approximately 38 miles of Pacific Bell/GTE conduit and approximately 161 miles of Level 3 conduit for the Los Angeles Basin Network. A description of the function and location of these network facilities is provided in the next subsection.

As indicated previously in this chapter, Metromedia proposes to construct virtually all of the project along several linear routes in the two metropolitan areas within existing previously disturbed rights-of-way, i.e., rights-of-way of railroads and public roadways. A small portion of the construction, including portions of the fiber optic conduit and POP facilities, would occur outside disturbed rights-of-way.

Metromedia's fiber optic cable system would consist of underground and aboveground facilities. Metromedia would construct conduit and utility access vaults used for fiber optic cable installation underground. POPs would be above-ground facilities, and are described in section 3.1.4.3. No aboveground antennas or tower structures would be constructed as part of the project.

Metromedia proposes to install underground conduit in the San Francisco Bay Area and Los Angeles Basin networks. The conduit provides protection from both physical and environmental damage. For underground installation, conduit protects the cable from shifting rocks, rodents, and/or damage from hand shovels. Cable in underground conduit is easy to replace or upgrade. Old cable can be pulled out of the conduit and replaced with new cable without extensive and expensive digging. The conduit is typically 1.25 inches in diameter and made of polyvinyl chloride (PVC), high-density polyethylene (HDPE), or steel.

The fiber optic cable inserted into the conduit would consist of bundled glass optical fibers wrapped in thin plastic sheathing. Each conduit can accommodate one fiber optic cable composed of up to 864 fibers and 1.0 inch in diameter. Smaller fiber optic cables measuring approximately 0.75 to 0.89 inch in diameter are composed of approximately 144 to 432 glass fibers. The 864-fiber cable is also known as a "trunk." Metromedia's networks would include such trunks.

3.1.4 Fiber Optic Network Facilities

Metromedia's fiber optic networks would include a number of elements in addition to fiber optic cable and conduit. These additional elements are described in this subsection.

3.1.4.1 Manholes, Handholes, Pull Boxes, and Assist Points

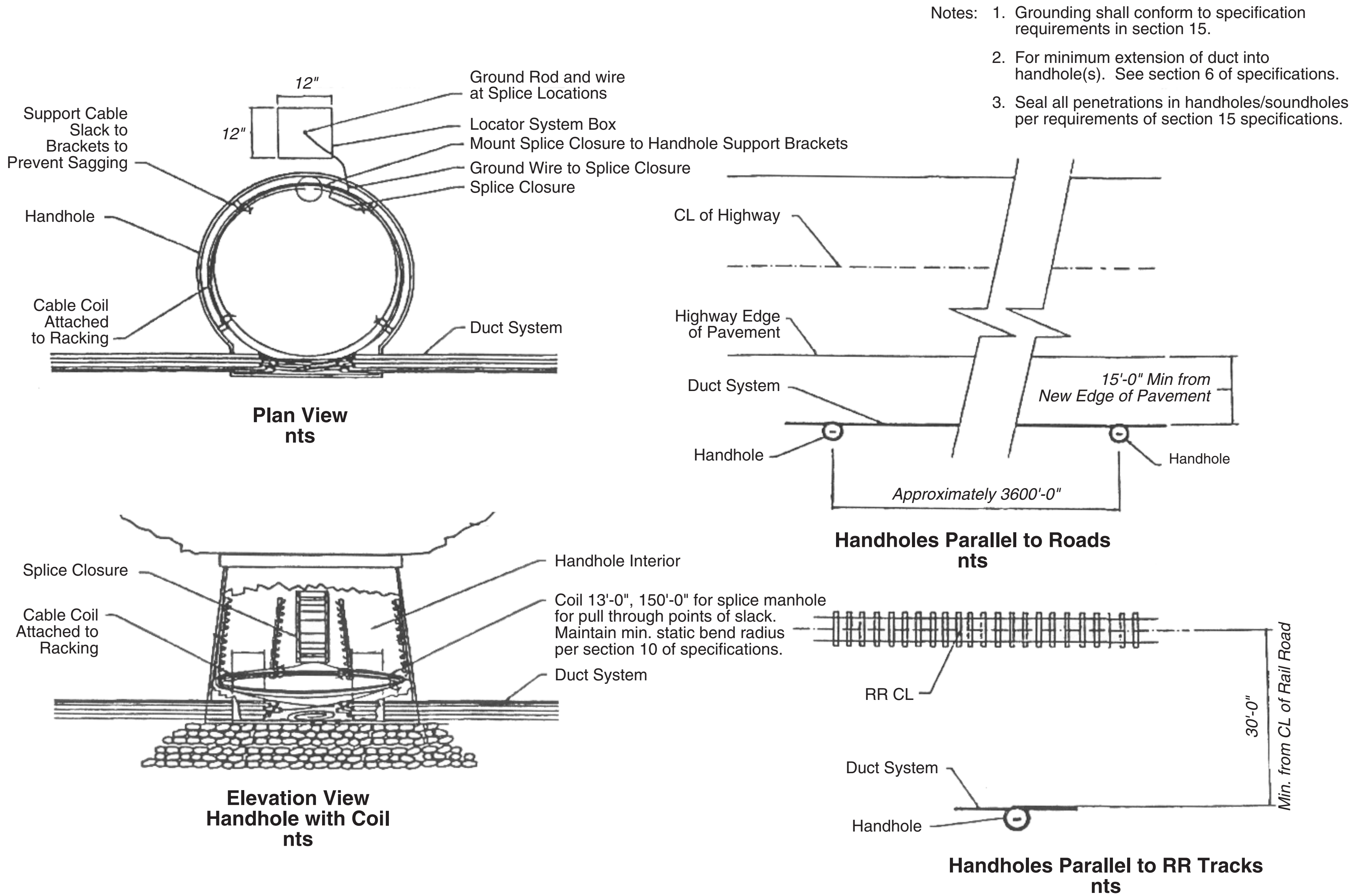
Manholes and handholes, also referred to as "utility access vaults," are points of access to underground fiber optic cable.

Manholes provide access to underground fiber optic cable beneath traveled surface streets and have street-level lids (concrete or iron). Metromedia's manholes would be fiberglass boxes measuring from 4 feet deep by 6 feet wide by 6 feet long, to 4 feet deep by 5 feet wide by 5 feet long. In a manhole, a carrier can connect to the fiber optic cable for distribution to customer locations. Manholes are also used for splicing sections of cable.

Handholes provide access to underground fiber optic cable that has been installed in areas other than traveled surface streets. Metromedia's handholes are fiberglass boxes measuring approximately 36 inches wide, 24 inches long by 36 inches deep. Handholes are only used to splice two sections of fiber optic cable.

Manholes and handholes (see Figure 3-3) would usually be placed at intervals of approximately 500 to 1,500 feet to allow installation and splicing of fiber optic cable. These access points would also serve as points for future access to the fiber optic cable for maintenance, repairs, or future installations.

In addition to manholes and handholes, there are several other types of access points to install fiber optic cable. For the Metromedia project, "pull boxes" are another term for manholes. "Assist points" are manholes where, during the installation of cable, cable is pulled from the existing manhole and spooled onto a large spool, the spooled cable is then fed back into the manhole.



Source: ESA 2000a

Figure 3-3. Handhole Details

3.1.4.2 Cable Markers

Cable markers provide aboveground indication of the location of underground fiber optic cable. A variety of cable markers are available. A typical cable marker that could be used for the project is illustrated in Figure 3-4. This marker has a U-channel metal signpost topped by a 9-inch-by-12-inch metal warning sign. Another type of sign is an orange-colored PVC pipe marked with a warning that buried cable is below. The primary purpose of the cable marker is to warn would-be diggers of the presence of an underground cable.

Typically, cable markers stand 5 to 6 feet above ground along the cable route. A marker is installed at all locations where the cable route changes direction and at manhole and handhole locations. They are also placed at both sides of roadways or railroads where the cable passes beneath the right-of-way. The maximum distance between cable markers in metropolitan areas is 500 feet; the maximum distance between markers in non-metropolitan areas or along railroad rights-of-way is 1,000 feet. The markers are placed so that they can be seen from the route of the cable and are generally installed perpendicular to the direction of the cable route.

As further protection against damage by diggers, two cable marking tapes are buried with the conduit during the backfill process. The first tape is placed 3 inches above the conduit, and the second tape is placed 12 inches below grade. Cable marking tape is usually made of a durable plastic and bears a cautionary message similar to that illustrated in Figure 3-4.

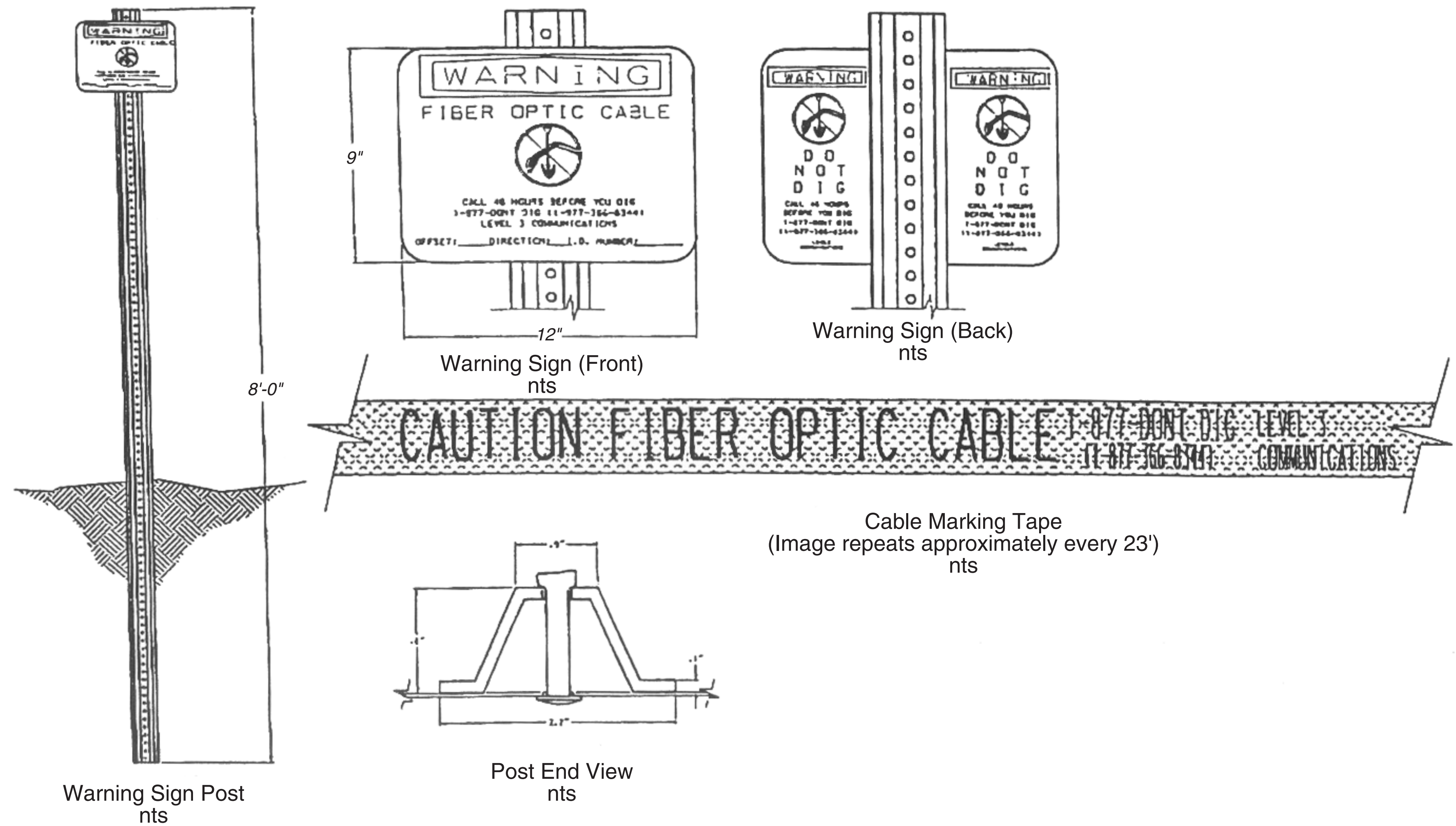
3.1.4.3 Points of Presence

Points of presence (POPs) are facilities located within newly constructed or existing structures or buildings where rerouting and other fiber optic network functions occur. Metromedia's network would include three types of POPs — Types I, II, and III — although only Type II and III POPS would be constructed as part of the project. Type I POPs would be the largest POP followed by Type II POPs, and Type III POPs would be the smallest POPs.

A Type I POP would be the primary point of reference for Metromedia in each market area. Metromedia's network would include one Type I POP in each metropolitan area (San Francisco and Los Angles); these facilities have already been constructed and, although not included as part of the project, are described here to show how the networks would function. The Type I POP would be approximately 10,000 to 15,000 square feet and would be staffed by engineering and operational personnel. The Type I POP would be designed to house fiber ring support equipment and test equipment for local and long-haul fiber routes. The facility would have a battery and generator power back-up system. Additionally, systems for heating, ventilating, and air conditioning equipment (HVAC), fire suppression, and building security would be required at each location.

A Type II POP would provide redundancy for the Type I POP. This facility would not be staffed on a full-time basis, but routine maintenance activities would be conducted from the

Type II facility. The Type II POP would be approximately 4,000 to 7,000 square feet and would be designed to house fiber ring support and testing equipment. The facility would have



Source: ESA 2000a

Figure 3-4. Warning Sign Detail

battery- and generator-powered back-up systems. Additionally, HVAC, fire suppression, and building security systems would be required at each location.

A Type III POP would allow fiber distribution and/or interconnections between Metromedia fiber rings. This facility would not be staffed. The Type III POP would be approximately 1,000 to 2,000 square feet and designed to house fiber testing equipment. The facility would have a battery back-up system. Additionally, HVAC, fire suppression and building security systems would be required at each location.

Under its existing CPCN, Metromedia has constructed and is operating one Type I POP and one Type III POP within the City of San Francisco. Accordingly, these two POPs are not being included as part of the project.

Metromedia would construct one Type II POP and eight Type III POPs for the San Francisco Bay Area Network (Figure 3-1; Table 4-3). Five of the Type III POPs would have back-up generators. Seven of the nine POPs would be constructed as stand-alone structures, while two would be located in existing buildings. The proposed San Francisco Bay Area Type II POP would be located within an existing building and would not have a back-up generator.

Metromedia would construct four Type II POPs and eleven Type III POPs for the Los Angeles Basin Network (Figure 3-2; Table 4-7). The Type II POPs in the Los Angeles network would have back-up generators and all of the Los Angeles Basin Network POPs would be situated in existing buildings. The locations of these POPs are determined based on the engineering constraints, distance to specific current and future fiber optic customers, and infrastructure.

3.1.4.4 Central Office

A Central Office is a local exchange carrier facility into which fiber optic cables terminate to access the telephone company's subscribers who are within the particular Central Office's service area. The fiber optic cable terminates into fiber distribution frames, where the light signal is converted into a signal that can be used by telephone company switching equipment. Central offices, which are owned and operated by companies other than Metromedia, are the primary occupants of the buildings that house them. No central offices are included as part of the project.

3.2 PROJECT DESIGN AND APPROACHES TO CONSTRUCTION

This section describes Metromedia's project design and construction methods, and also identifies how mitigation of potential project impacts has been incorporated to avoid or minimize such impacts. In addition, Metromedia has agreed to adopt and incorporate into the project design the additional mitigation measures identified in Chapter 6, Environmental Impacts and Mitigation Measures. The construction process for installation of new underground conduit typically involves the sequences described in the following sections.

3.2.1 Right-of-Way Preparation

Railroad, utility, and pipeline companies, as well as roadways, have permanent rights-of-way that vary in width. For Metromedia's network installation in these areas, all construction and restoration activities would generally be confined to the existing disturbed rights-of-way, i.e., railroad and roadway right-of-way corridors and their access roads. In some instances, POPs may be comprised of structures located outside these existing rights-of-way on private property owned by Metromedia; for such POP facilities, the construction corridor would be 20 to 40 feet wide. However, in areas with sensitive resources, as described in Chapter 6 or identified by environmental monitors (described later in this chapter), the work zone would be limited to the existing disturbance zone.

3.2.2 Construction Methods for Conduit Installation

For the backbone alignment, Metromedia would install fiber optic conduit along railroad rights-of-way using the open trenching method. Directional boring would be used for intersections with public roadways and natural features where minimal disturbance is desirable or required, such as streams, sensitive biological habitat, or cultural resources. Locations are identified in Chapter 6 where minimal disturbance is desirable or required; criteria for determining other such locations are also provided in Chapter 6. Other approaches to avoiding environmental impacts are also discussed later in this chapter.

The construction method used to repair or replace damaged or inadequate sections of the existing conduit would depend on the conduit's location, but would be either open trenching or directional boring. After the conduit repair or replacement is completed, Metromedia would pull cable through the conduit (section 3.2.7).

For either open trenching or directional boring, excavation would not commence until all existing underground utilities and environmentally sensitive areas have been identified and appropriately marked.

3.2.2.1 Open Trenching

Typical open trenching details are shown in Figure 3-5. Trenching typically involves a rubber-tired backhoe or an excavator. The trench width would be approximately 12 inches greater than the conduit diameter, but may vary depending on the underground facilities that may be encountered. Trenches would be 4 to 5 feet deep. The construction zone would be approximately 20 to 40 feet wide where no sensitive environmental resources are present. For new fiber optic conduit installation along railroad rights-of-way, the conduits would be laid within the trench on sand bedding a minimum 6-inch thickness. For new fiber optic conduit installation along roadway rights-of-way, the conduit would be placed on native soil. Typically, no more than 1,000 feet of trench would be exposed by a crew at any time during construction, and trenches would be filled at the end of each day. The bottom of the trench would be backfilled with well-graded granular material, free of organics and deleterious material, having no particle larger than 0.75-inch in size and no more than 5 percent by weight passing the #200 sieve. The remaining depth of the trench would be backfilled and compacted with either native soil or imported material in 5-inch layers using suitable equipment. Any excess excavated materials remaining after the trench is refilled would be transported to an appropriate facility. A warning tape would be installed 12 inches below grade at all excavations and a second tape would be placed 3 inches above all direct buried conduit during the backfill process. Finally, the disturbed areas would be returned to their original or better condition.

If conditions do not allow for small isolated areas such as handholes or assist points to be backfilled at the end of each day, appropriate safety, erosion, and wildlife control features would be installed. These measures are described in Chapter 6. The conduit construction corridors would be confined within the existing rights-of-way.

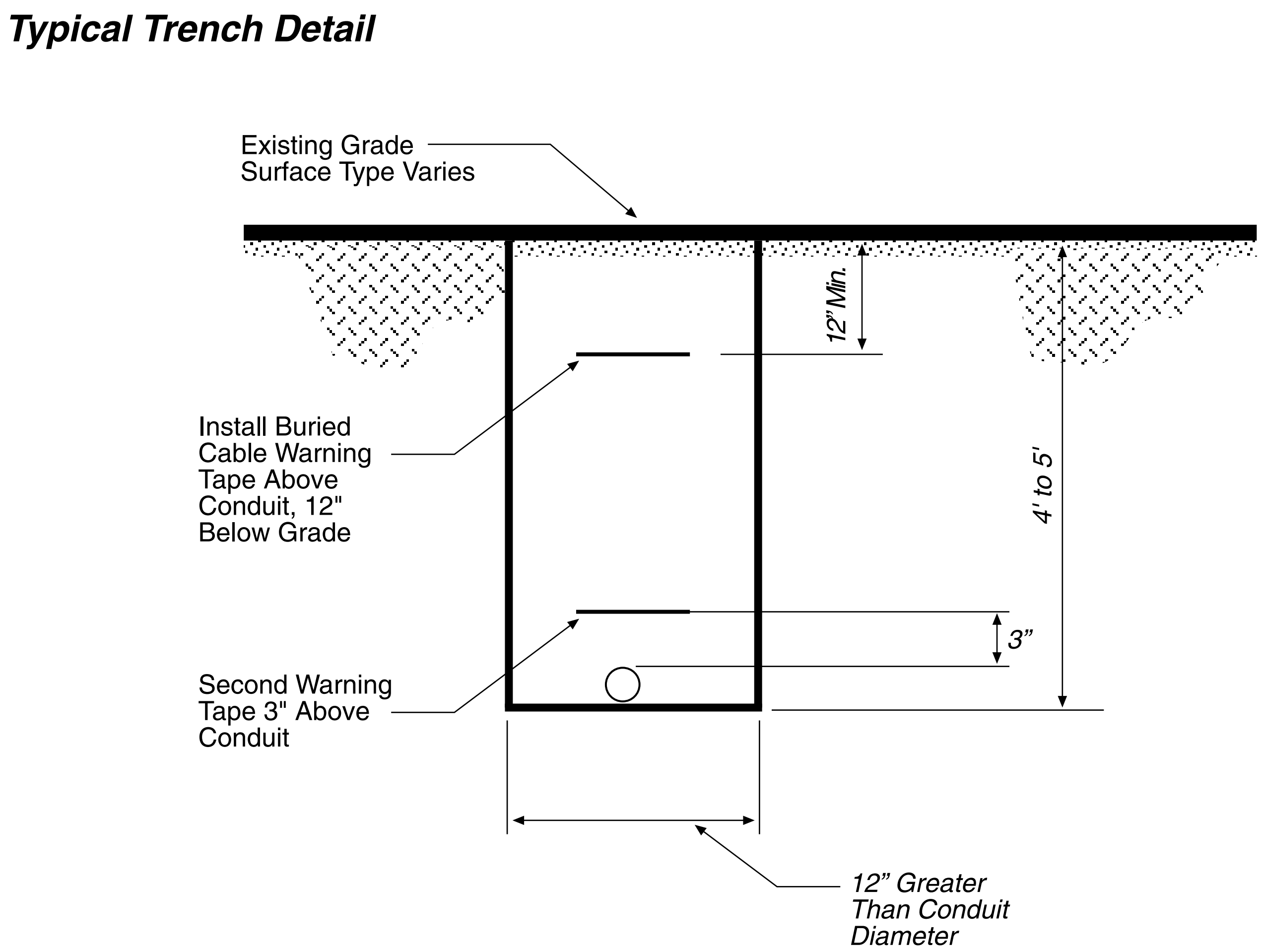
3.2.2.2 Directional Boring

Where the route encounters environmentally sensitive areas, culturally and/or archeologically important sites, or streams, rivers and wetlands, where using another method would have significantly adverse effects, Metromedia would use directional boring. (Alternatively, Metromedia may cross streams by attaching conduit to an existing bridge.) Directional boring involves the placement of conduit under the environmentally sensitive areas such that the surface grade is not disturbed (see Figure 3-6).

The approximate width of the work area for bored stream crossings would be 150 by 100 feet for large stream crossings and 100 by 50 feet for smaller stream crossings. The work areas would be located outside the stream area. No in-water trenching is proposed in flowing streams with sensitive resources located at the crossing or downstream of it. Directional bore lengths can vary from 100 feet to more than 2,000 feet, depending on the type of equipment used. To complete a bore, a work area would be established on each side of the crossing. For river, stream, and wetland crossings, the work areas would be located at least 25 feet from the bank or edge of the wetland resource. One work area contains the “pilot hole” and drilling equipment. The second work area contains the “receiving hole” where the drill bit emerges. A surface-operated drilling device is angled into the ground from the surface at the pilot hole and directed to its destination using a radio-controlled mole that contains a cutter head. Personnel directing the mole control its depth and direction of excavation. Handholes are installed to connect the conduit from the adjacent construction to the bored conduit. Boring results in the installation of the conduit at a depth not less than 42 inches below the finished grade. No bore would be excavated less than 5 feet from the edge of a paved state or county roadway or from the edge of a driveway. Drilling equipment most suitable for site-specific conditions would be used for each bore. Silt fences, strawbales, and other erosion control measures would be installed around these work areas, consistent with the Storm Water Pollution Prevention Plan (SWPPP) provided in Appendix C.

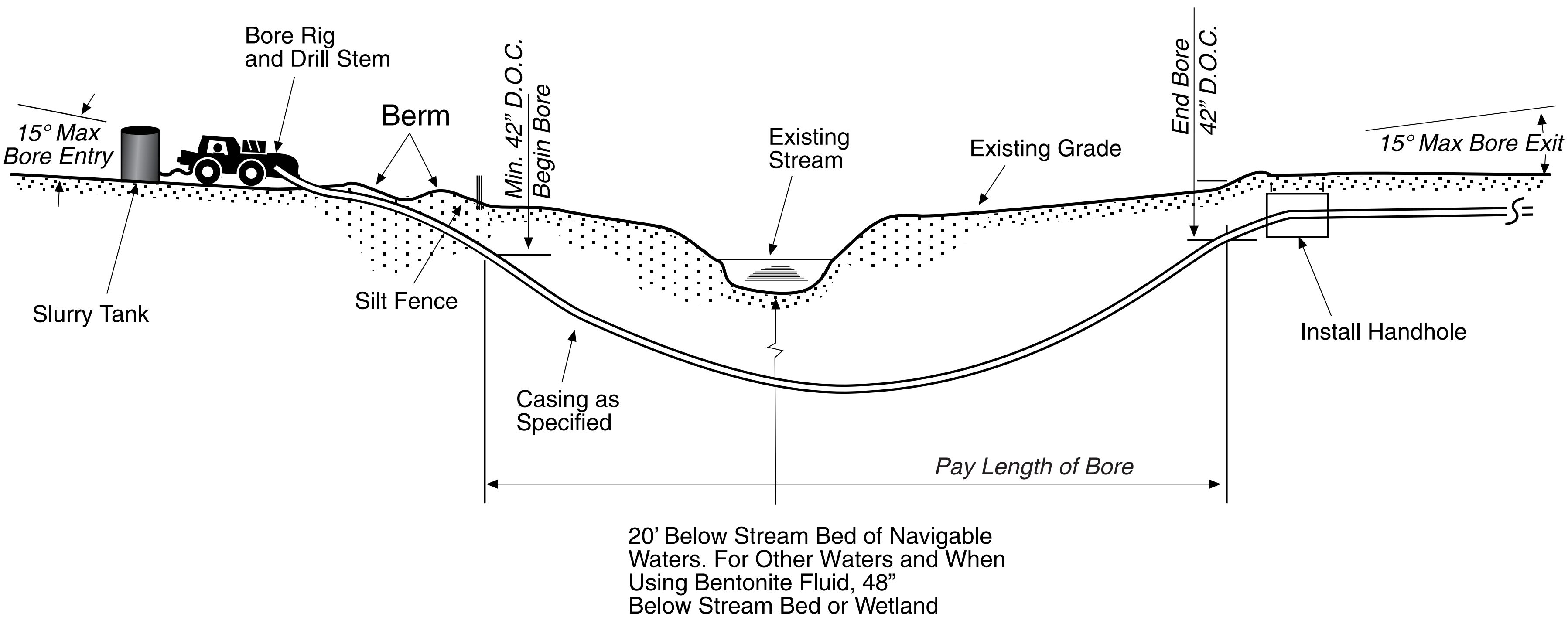
During the typical boring process, a bentonite slurry is pumped through the bore hole to help lubricate the drill bit, carry drill cuttings to the surface, and prevent the bore tunnel from collapsing. Bentonite is known for its hydrophilic characteristics and is a naturally occurring Wyoming clay. The Material Safety Data Sheet (MSDS) for bentonite is provided in Appendix D. The slurry is typically pumped through the bore hole, collected at the surface, passed through machinery to remove the bore cuttings, and then recirculated through the borehole. The slurry is typically stored in tanks at the drill site when not in use. After the bore is completed, any excess slurry remaining is removed from the site and either reused by the drilling contractor or disposed at an appropriate facility.

Although it is highly unlikely, the drilling slurry can escape the borehole through fissures or cracks in the soil and reach the ground surface. Every effort is made to complete directional bores at sufficient depths so as to prevent bentonite releases. For relatively short or simple bores, the drilling contractor often determines the appropriate bore depth based on site-specific



Source: ESA 2000a

Figure 3-5. Trench Detail



Source: ESA 2000a

Figure 3-6. Typical Directional Bore under Streams and Navigable Waterways

conditions and professional experience. The SWPPP included in Appendix C presents a discussion of various slurry containment measures that would be implemented as appropriate.

3.2.3 Installation of Access Points to Connect Innerduct Segments

Handholes/manholes are installed to provide access to the cable at splice points or as needed for future maintenance of the cable. Generally, road shoulders or other easily accessible areas are the preferred locations for handholes. Manholes are typically used when the cable is installed under city streets or other urban/developed areas. Manholes would also be used to provide access to fiber optic cable installed along railroad rights-of-way. Both handhole and manhole lids would be visible at the surface. Metromedia would locate handholes and manholes along the routes so as to avoid sensitive biological and archeological resources.

3.2.4 Backfilling and Compacting

After placing the fiber optic conduit in open trenches, Metromedia would use approved backfill material as described under Open Trenching (section 3.2.2.1), , to refill the excavation, following Metromedia specifications regarding cable warning tape placement, layering, moisture, compaction, and weather conditions. Proper compaction of subsurface soil serves as an erosion-control measure. Uncompacted trench furrows are susceptible to trench settlement and to subsurface erosion through the migration of surface and subsurface water, both of which are prevented by proper compaction of the subsurface material and compliance with task specifications provided by Metromedia to contractors and inspected by contract compliance inspectors and spread supervisors, as described later in this chapter.

3.2.5 Verification of Conduit Continuity

After the conduit is in place, a mandrill is passed through the conduit to verify that it is continuous. Difficulty in passing the mandrill may result from a build up of mud in the line from the construction process, rather than an actual discontinuity in the line, and a pressure wash would be used to clear the conduit of any residual mud or debris.

3.2.6 Surface Restoration

Metromedia would perform site clean-up and surface restoration immediately following conduit and cable installation. Clean-up includes removing debris and spoils and restoring original surfacing and contours.

3.2.7 Fiber Optic Cable Installation

After the conduit is in place and tested, fiber optic cable is installed in it. In general, Metromedia contractors would install fiber optic cable into conduit by using a powered pulling winch and hydraulic powered assist wheels. A pull line is attached to a plug that is pushed through the conduit by air pressure. When the plug emerges at the end of the conduit section or access point, the pull line is attached to the fiber optic cable. The pull line is then pulled back though the conduit section, threading the cable through the conduit as it returns to the point of entry. A maximum pulling force of 600 pounds or as specified by the manufacturer would be applied to the lubricated cable using a pulling swivel break away rated at the required force. The cable would be spliced in splice cases located in handholes or manholes with sufficient slack allowed. The splices would be made with a profile alignment fusion splicing machine and protected by heat shrink tubing. The process would be carried out in accordance with the Fiber Optic Cable Splicing, Testing and Acceptance Procedures outlined in Appendix E. If needed, surface restoration would be performed after fiber optic cable installation.

3.2.8 Splicing of Cable Ends at Access Points

Splicing of sections of fiber optic cable at access points would be conducted consistent with Metromedia specifications regarding equipment, personnel training, procedures, and testing. Appropriate lengths of excess (slack loop) fiber optic cable would be left at all splice locations to allow for cable expansion and contraction due to temperature and future splicing as may be necessary. Repairs to newly installed cable, with attendant disruption of rights-of-way, can be avoided through compliance with Metromedia specifications, standards, and procedures.

3.2.9 Construction Check-Up, Repairs, Site Restoration, and Correction of Deficits

The Clean-up and Restoration Crew, which includes an environmental monitor, confirms repairs and restoration performed by the cable installation crews and performs final clean-up. This crew also restores pre-installation contours, installs erosion control measures, and restores areas that may be affected adjacent to riparian corridors.[5]

3.3 CONSTRUCTION EQUIPMENT AND WORKFORCE

This subsection outlines the types of crews, typical size of each crew (although the actual number of crew personnel could vary depending on the type of work to be done and the prevailing conditions at the time of construction), and equipment associated with the construction process. The crew and equipment for each process is called a "spread." Based on its experience with previous similar fiber optic installation projects and to expedite construction, Metromedia anticipates hiring multiple contractors for each network. The contractors selected by Metromedia would determine the most efficient methods for completing the work within the parameters specified by Metromedia.

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[5] As described in section 6.4, Biology, no impacts within riparian corridors would be anticipated due to the project.

3.3.1 Construction Preparation

3.3.1.1 Clear and Grub Spread for Open Trenching

Clear and Grub Crew. This crew, typically two people, would include an environmental monitor. The Clear and Grub Crew would prepare the rights-of-way for construction by placing temporary gates, clearing vegetation where necessary, and repairing erosion problems.

Equipment: Tractor with brush hog

3.3.2 Trenching and Conduit Installation

3.3.2.1 Directional Drill Spread for Boring

Directional Drill Crew. This crew, typically six to eight people, would perform directional drilling to install conduit. Its functions would include digging the hole where directional drilling would be initiated, drilling under sensitive areas, pulling back conduit, and restoring construction areas to their original condition. This crew would ensure that any directional drilling spoils are transported to an appropriate facility for disposal.

Equipment: Water truck, vacuum trailer, drilling machine, rubber tired backhoe, bobcat or mini excavator.

3.3.2.2 Dirt Trench Spread for Open Trenching

Dirt Trench Crew. This crew, typically eight people, would dig the open trench in non-paved alignments such as railroad rights-of-way. The crew would excavate the trench for the conduit, install conduit, install handholes and/or manholes at appropriate intervals, refill the trench, compact trench fill, and restore the surface. Most of the excavated dirt would be used to refill the excavation; any dirt trench spoils would be transported to an appropriate facility for disposal.

Equipment: Backhoe, tractor, and trencher.

3.3.2.3 Street Trench Spread for Open Trenching

Street Trench Crew. This crew, typically 10 people, would be responsible for open trenching in roadway rights-of-way. The crew would excavate the trench, install the conduit on native soil, install manholes and/or handholes at appropriate intervals, refill the trench, compact trench fill, and repave the roadway surface. Most of the excavated dirt would be used to refill the excavation; any street trench spoils such as paving materials would be returned to the asphalt manufacturer or transported to an appropriate facility for disposal.

Equipment: Two rubber tired backhoes, tilt deck dump truck, repaving spread, paving machine, roller, windrow elevator, and grinder.

3.3.3 Cable Installation

3.3.3.1 Cable Installation Spread for Pulling Cable in Existing Conduit

Cable Pulling Crew. This crew, typically eight people, would place fiber optic cable in the conduit. This crew would insert a cable-pulling line into the conduit, attach the line to the optic fiber cable, and pull the cable through the conduit. The cable would be spliced by the crew at manholes and/or handholes as needed.

Equipment: 2-ton truck, 1-ton truck (winch truck), fiber trailer, three capstan intermediate assist.

3.3.4 Clean-up and Restoration

3.3.4.1 Clean-Up and Restoration Spread for Post-Construction Quality Control

Clean-Up and Restoration Crew. Typically consists of two people, including one environmental monitor. This crew would confirm repairs and restoration performed by trenching and cable installation crews and, if needed, would perform final clean-up of the rights-of-way, restore pre-installation ground contours, install erosion protection measures (e.g., erosion control blankets), and restore areas that may be affected adjacent to riparian corridors.

Equipment: 1-ton pickup truck.

3.4 ENVIRONMENTAL TRAINING AND AWARENESS

Education through training and awareness programs would be an integral part of the project. All levels of construction and field management personnel would be informed about environmental protection and the seriousness of non-compliance, and made aware of the project's environmental goals. Training would be provided at the engineering and contractor levels. Appropriate personnel from the CPUC and other regulatory agencies may be invited to attend the training sessions.

3.4.1 Project Environmental Goals

Metromedia has developed the following environmental goals for the project:

- Completely avoid permanent alteration of wetlands and waters of the United States by project design.
- Avoid or minimize temporary construction-related activities in sensitive resource areas, such as biological or cultural resources, to the extent practicable by selecting a

route through previously disturbed habitats and by boring under highly sensitive resources.

- Where complete avoidance of construction-related disturbance to sensitive resource areas is not practical or feasible, minimize the effects of the project in those areas through construction timing, implementation of environmentally sensitive construction practices, training and education, and compliance monitoring.
- Refrain from constructing new access roads, either temporary or permanent.

3.4.2 Metromedia and Its Consultant Team

Metromedia and its consultant team include contract compliance inspectors, environmental resource coordinators, biologists, archeologists, resource personnel, and spread superintendents and supervisors. Training seminars led by project managers and qualified biologists and archeologists would be held prior to construction to explain and educate construction supervisors and managers about the following: comprehension of resource maps prepared as part of this ND, interpretation of construction drawings, the construction process as it relates to required mitigation measures, roles and responsibilities, project management structure and contacts, the need for and importance of resource avoidance and protection, and resource protection staking methods.

All contract compliance inspectors would also complete an inspector training class. These classes would cover issues such as interpretation of resource maps and construction drawings, roles and responsibilities, site safety, and the environmental issues previously discussed.

3.4.2.1 Construction Management Structure

Metromedia has extensive experience constructing fiber optic networks, with more than 3.6 million fiber miles in place throughout North America and Europe. For the project, Metromedia draws on its experience to provide an appropriate management structure, adequate training of field personnel, and an environmental training program, and to respond to changing circumstances. Metromedia has designed a field management structure to oversee the construction process for each project network. A Mitigation Monitoring and Reporting Plan (MMRP; see Appendix F) is intended to ensure that Metromedia would completely avoid or minimize potential project effects. In addition, Metromedia would hold training classes for the contractor and construction crews to cover issues such as environmental protection, proper management of stormwater runoff, safety, and spill prevention and response.

The field management structure established for each project route would include personnel to perform contract compliance, engineering, environmental, and construction management tasks, such as contract compliance inspectors, spread superintendents and supervisors, environmental resource coordinators, and biological and archeological support. The roles and responsibilities of each on-site representative, which would be clearly established and communicated during the training program, are summarized below.

Contract Compliance Inspectors

Each construction crew would have contract compliance inspectors assigned to observe its work. Where crews are working in the same area, one inspector may monitor more than one crew. The inspector would monitor environmental resource concerns and confirm implementation of erosion protection measures. The contract compliance inspector would have training on environmental issues that could be encountered during the construction project and would have immediate access to qualified archeologists, paleontologists, and biologists as needed.

Spread Superintendent

The Metromedia contractor and spread superintendent would be on site to make field decisions, address engineering questions, and coordinate with permitting agencies. The spread superintendent would have both overall responsibility to make on-site decisions and direct reporting responsibilities to the Metromedia project manager for contract compliance. The spread superintendent would also have the authority to shut down construction operations in case of emergencies, environmental non-compliance, safety issues, or disputes with the construction contractor.

Spread Supervisor

A Metromedia spread supervisor would be on site for each contractor to oversee individual contract compliance inspectors and work with the contractor to resolve issues arising in the field. The spread supervisor would report directly to the spread superintendent and also perform most administrative duties. The spread supervisor would communicate on a daily basis all construction activities related to safety, compliance, and administration.

Environmental Resource Coordinator

An environmental resource coordinator would be assigned to each project segment. The environmental resource coordinator would work with the contract compliance inspector, biologists, archeologists, agencies, and engineering and construction representatives to resolve issues and coordinate resource avoidance and protection. To help monitor the implementation of the resource protection measures, the environmental resource coordinator would periodically patrol the construction site (while maintaining contact with the contract compliance inspector, spread superintendents, and spread supervisors).

Biological and Archeological Resource Monitors

Qualified biologists and archeologists would locate sensitive resources identified during field surveys conducted for this ND, stake them in the field, locate them on the construction drawings, and identify the necessary protection methods for the contractor. Where their presence is needed and as required in this document or as a condition of required permits, archaeologists and biologists would also be on site during construction. In addition and as necessary, Metromedia's retained archaeologists and biologists would coordinate with monitors from the CPUC and any other appropriate agencies. Other resource monitors would be available, as may be necessary and appropriate (e.g., Native American and paleontological monitors).

3.4.3 Contractor's Team

Each contractor's team would include the job superintendent, crew forepersons, and crewmembers. Training and education would take place in several formats, beginning with the pre-construction meetings and ending with training classes just prior to construction activities.

3.4.3.1 Pre-Construction Meetings

Metromedia would meet with each contractor before any work begins on the project to reinforce the need for and importance of complying with environmental resource avoidance and protection measures.

Metromedia would explain the following issues related to environmental protection at pre-construction meetings: resource mapping and interpretation of construction drawings, construction process as it relates to required mitigation measures, project management structure and contacts, roles and responsibilities, the need for and importance of resource avoidance and protection, and resource protection staking methods.

3.4.3.2 Field Meetings – Contractor, Job Superintendents, and Forepersons

Contract compliance inspectors, spread superintendents and supervisors, and environmental coordinators would conduct regular meetings with the contractors' superintendents and forepersons to coordinate construction and mitigation processes.

3.4.3.3 Contractor Crew Members

Each contractor's forepersons would be required to transmit to individual crew members information discussed in pre-construction meetings through tailgate meetings in the field attended by superintendents and forepersons. Tailgate meetings would be attended by contract compliance inspectors and the assigned environmental resource coordinator, and would be held on a weekly basis to discuss safety issues. Environmental issues would be included and discussed in these meetings.

3.4.4 Sequence of Environmental Monitoring and Compliance Activities

Mitigation and monitoring activities associated with construction would proceed in accordance with the following sequence:

1. Identify all sensitive resources, construction methods, and avoidance measures or mitigation measures on the construction drawings, based on information in this document, with CPUC approval.
2. Acquire permits and approvals from governing agencies, as outlined in this document.
3. Prepare traffic control plans, based on state and local requirements and as described in sections 5.15 and 6.15, Transportation and Traffic, in this document.
4. Stake and flag resources as stipulated in the environmental documentation and from results of field surveys conducted for each project route.
5. Prepare the rights-of-way and install sedimentation control measures where needed.
6. Continue to ensure compliance with environmental goals and perform environmental monitoring during installation of conduit and fiber optic cable and construction of associated facilities.
7. Restore the rights-of-way and install erosion control measures.
8. Apply seed and mulch as specified in the SWPPPs and reclamation plans.
9. Monitor erosion control.
10. Monitor success of mitigation.

3.5 CONSTRUCTION SCHEDULE

Construction of the fiber optic cable networks is scheduled to start on or about August 14, 2000, or as soon as possible following receipt of all necessary authorizations from the CPUC and other applicable governing agencies. For the San Francisco Bay Area Network, construction would be scheduled to be complete within 4 months of commencement; for the Los Angeles Basin Network, construction would be scheduled to be complete within 6 months of commencement. Prior to the start of construction, Metromedia would acquire all permits and approvals and would provide copies to the CPUC, if required.

Construction on some segments of the project routes may be subject to various scheduling windows, i.e., time of day or year, to accommodate access constraints, such as roadway rush hours or railroad train passage, or to avoid undesirable environmental effects, such as disruption of the breeding season of a sensitive species. Actual schedules and the sequence of segment construction may be revised in response to environmental constraints (seasonal work windows, biological, archeological) or the permit process. Typical rates of progress for installation of conduit using open trenching and directional drilling construction methods are presented in Table 3-1.

Table 3-1. Typical Progress Rates by Construction Method and Site Condition

Crew and Site Condition	*Typical Daily Progress (feet)*
Metropolitan Street Trenching	85
Industrial Street Trenching	200
Residential Street Trenching	200
Dirt Trenching	2,600
Directional Drilling	300
Source: Personal Communication, R. Erich 2000.	

3.6 REGULATORY ENVIRONMENT

The proposed project route crosses many jurisdictions and, thus, requires consultation, approvals, and permits from various federal, state, and local agencies. The project is subject to state and federal regulations to minimize effects. The following is a list of regulations that Metromedia anticipates would apply to the proposed project:

- Section 402 of the Clean Water Act requires that a National Pollution Discharge Elimination System (NPDES) certification be obtained from the applicable regional water quality control board (RWQCB) before construction of a project that may disturb 5 or more acres of land.
- Section 404 of the Clean Water Act requires the issuance of an individual or nationwide permit from the U.S. Army Corps of Engineers before discharging backfill into the waters of the United States, including wetlands.
- Section 7 of the Federal Endangered Species Act requires consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service regarding measures to avoid harm to plant, fish, and wildlife species that are federally listed as threatened or endangered species for all federal projects.
- Section 106 of the National Historic Preservation Act requires examination of cultural resources before various federal agencies can provide permits under their jurisdiction. Section 106 establishes requirements and protocols for pre-construction cultural resource surveys and mitigation of impacts on cultural resources.
- Section 1603 of California Fish and Game Code requires a streambed alteration agreement from the California Department of Fish and Game (CDFG) before any action is taken that would obstruct or divert the flow or alter the channel of designated drainages, rivers, streams, and lakes. Potential impacts must be mitigated.

- California State Lands Commission requires an easement (Public Resources Code 6301) for state lands crossed by the route below the ordinary high-water mark of tidal waters and below the low-water mark of nontidal waterways.
- Several state regulations protect certain types of flora and fauna, including the California Endangered Species Act of 1984, the California Native Plant Protection Act of 1977, and sections of the California Fish and Game Code.
- The San Francisco Bay Area and Los Angeles Basin networks would involve installation and use of back-up generators at some of the POPs. These generators represent new stationary emissions sources subject to regulation by the regional air quality management district. In the San Francisco Bay Area, the Bay Area Air Quality Management District excludes back-up generators from permit requirements, although it still requests notification that the generators would be installed. In the Los Angeles Basin, the South Coast Air Quality Management District (SCAQMD) has no such exclusion for back-up generators, and thus Metromedia would be required to secure permits to construct and permits to operate from the SCAQMD for the generators that would be used in connection with the Los Angeles Basin Network.
- The San Francisco Bay Conservation and Development Commission (BCDC) regulates the San Francisco Bay and the band of its shoreline that extends inland 100 feet. A permit is required from BCDC for all work within San Francisco Bay and the shoreline band area.
- No permits directly related to noise would be required for project construction or operation. However, local noise ordinance standards would apply to construction activities and to long-term operation of stationary equipment, such as that included in POP facilities.
- For the seven locations within the San Francisco Bay Area where POP facilities would be constructed, Metromedia would be required by each applicable local jurisdiction to meet a number of requirements. Building permits would be required to construct equipment structures. A special permit from the local fire department may be required for POP facilities that include fuel storage tanks larger than 60-gallon capacity. Local jurisdictions may also impose landscaping standards and perform architectural review for structures. One local jurisdiction requires photosimulation of the POP facility.
- Metromedia would acquire encroachment permits for work within public roadway and railroad rights-of-way. For state highways, encroachment permits from Caltrans would be required. For local roads, Metromedia would acquire encroachment permits from appropriate local jurisdictions. For work within railroad rights-of-way, Metromedia has already secured authorization from the appropriate railroad company and governmental agency.

The following are not expected to apply to the project:

- Section 10 of the Endangered Species Act requires the issuance of an incidental take permit before any public or private action may be taken that may potentially harm, harass, injure, kill, capture, collect, or otherwise hurt (i.e., take) any individual of an endangered or threatened species. The permit requires preparation and implementation of a habitat conservation plan that would offset the take of individuals, which may occur as an incidental effect of the project, by providing for the overall preservation of their species through the specific mitigation measures.

3.7 PROJECT IMPACT ISSUES AND MITIGATION MEASURES INCORPORATED INTO THE OVERALL PROJECT DESIGN AND APPROACH TO CONSTRUCTION

This section summarizes the potential impacts of the project, which, as noted, would follow public roads and railroad rights-of-way, and describes the mitigation measures that have been incorporated into the project design and approach to construction. Detailed discussions of project impact issues and mitigation measures are presented in Chapter 6, Environmental Impacts and Mitigation Measures.

3.7.1 Specific Project Environmental Impacts and Mitigation

3.7.1.1 Aesthetics

The project would entail construction of project facilities, including installation of fiber optic conduit and construction of POPs, in urban and suburban areas. Potential temporary minor changes to existing visual resources could occur during project construction.

Mitigation Measures

To ensure that visual impacts would be avoided or minimized to a less-than-significant level, Metromedia would:

(1) Include maintaining orderly staging and construction areas as part of the responsibilities of appropriate crews, supervisors, superintendents, and monitors.

(2) Identify and comply with local regulations and requirements concerning architectural design and landscaping.[6]

(3) Design project facilities to be unobtrusive and to not conflict with the character of the surrounding setting. Restoration of conduit installation sites to pre-construction conditions, as much as is feasible, is part of the project design.

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[6] Compliance with applicable local regulations, plans, and policies would also ensure avoiding or minimizing visual impacts in areas that are included in State Scenic Highway corridors, as discussed in section 6.1.

3.7.1.2 Air Quality

Two aspects of the project would have potential air quality impacts: (1) construction and installation of the cable and conduit along the project routes would result in temporary air quality impacts, and (2) back-up generators installed at some of the POP sites would emit air pollutants.

Mitigation Measures

Mitigation of temporary construction impacts on air quality would consist of implementation of Bay Area Air Quality Management District (BAAQMD) recommended dust abatement measures for the San Francisco Bay Area Network and implementation of similar types of measures for the Los Angeles Basin Network as required under the South Coast Air Quality Management District's (SCAQMD's) Rule 403. For the Los Angeles Basin Network, construction-related mitigation would include additional measures to reduce emissions of ozone precursors from use of construction equipment. For the back-up generators at POP sites, Metromedia would notify the BAAQMD concerning the proposed generators associated with the San Francisco Bay Area Network and would obtain the necessary permits from the SCAQMD concerning the proposed generators associated with the Los Angeles Basin Network. Further details of these measures are provided in section 6.3.

3.7.1.3 Biological Resources

The fiber optic cable system route would cross streams, rivers, canals, and other drainages (waters of the U.S.) that are subject to permit review by federal, state, and local agencies. Many of these drainages support wetlands, which are considered sensitive habitat, although by design the project avoids direct impacts on wetlands. In addition, some portions of the fiber optic cable route are located adjacent to sensitive biological resource areas, such as marshes and large stands of trees, including nesting habitat for special status wildlife (e.g., threatened, endangered, or otherwise protected by statute).

Mitigation Measures

All sensitive resources along each of the project route segments, including biological and cultural resources, sensitive stream crossings, and wetlands, have been identified during field studies. These resources will be staked and flagged in the field and marked on construction drawings before construction, and are specifically addressed and documented in this ND. All sensitive resources would be identified and documented for the CPUC and other regulatory agencies at the permitting stage and prior to construction. Sensitive resources would be avoided by minor rerouting of the cable route within the disturbed right-of-way; boring under the resource; attaching the conduit to an existing bridge, where applicable or trenching during a time of year when sensitivity is low. Conduit would be bored under streams (that could support threatened or endangered species or other resources of special value) or attached to bridges. In most cases, no construction activities would be conducted within the limits of the stream. Metromedia would acquire any permits and authorizations required by federal, state, regional, and local jurisdictions to construct near areas with sensitive biological resources.

3.7.1.4 Cultural Resources

Metromedia would construct the project routes and associated facilities in areas that have some level of sensitivity for cultural resources, particularly buried prehistoric and historic sites. The majority of recorded cultural resources within the area of potential effect are ill-defined and exist in both disturbed and relatively undisturbed contexts. Based on previous excavation within the project area and varying levels of archaeological testing, the subsurface excavation required for the conduit and associated POP facilities may impact existing prehistoric and/or historic resources. Although the full extent of these impacts are uncertain at this time, as discussed in section 6.5, specific areas have been identified as sensitive and would require archeological and Native American monitoring. Overall, the nature of the potential impacts could include disturbing buried prehistoric and historic archaeological sites that are known to exist or may exist within the areas noted as sensitive. The level of impact may vary from insignificant within a specific site area that has been previously disturbed or was a marginal site, to highly significant in areas that contain human remains, sacred objects, or sites of important historical value. Additionally, a portion of the proposed POP sites will be located in existing buildings. At this time, for the Los Angeles Basin Network the exact locations of these existing buildings are not known. Although Metromedia would attempt not to locate POPs within historic structures, the potential exists that these buildings could potentially have a historic value.

Mitigation Measures

Metromedia would conduct mitigation monitoring in areas that have been identified as archaeologically or paleontologically sensitive during construction through use of a project archaeologist. When resources are encountered, they would be tested and evaluated for their significance and avoidance measures would be proposed and implemented. For the Los Angeles Basin Network, Metromedia would not locate POPs within historic structures or buildings over 45 years old that have potential to be historic structures. If it is unavoidable that a historic structure is proposed for use, the potential impact would be evaluated and all measures required by the State Office of Historic Preservation would be adhered to.

3.7.1.5 Hazards and Hazardous Materials

The project would not require long-term storage, treatment, disposal, or transport of significant quantities of hazardous materials; however, small quantities of hazardous materials would be stored, used, and handled during construction. These small quantities would be below reporting requirements for hazardous materials business plans and would not be considered to pose public health and safety hazards through release of emissions or risk of upset. During construction activities, contaminated soil or groundwater, or (in the Los

Angeles Basin) methane or hydrogen sulfide gas may be encountered. If encountered, these materials may need to be managed as hazardous wastes.

Mitigation Measures

Metromedia would ensure proper labeling, storage, handling, and use of hazardous materials in accordance with best management practices and the Occupational Safety and Health Administration's HAZWOPER requirements. A list search of known state and federal hazardous wastes sites and leaking underground tanks with 1,000 feet of the construction corridor would be performed to identify high risk areas prior to construction. Additionally, Metromedia would prepare a Health and Safety Plan prior to construction that would define contingencies for handling hazardous materials if encountered.

3.7.1.6 Land Use

Local jurisdictions have regulations, plans, and policies concerning uses within their purview.

Mitigation Measures

Prior to installation of fiber optic conduit or construction of POP facilities, Metromedia would identify and comply with applicable local plans, policies, and regulations, including obtaining necessary local zoning permits and meeting conditions for approval prior to commencing construction activities associated with the installation of conduit and construction of POP facilities.

3.7.1.7 Noise

Two aspects of the project would have potential noise impacts: (1) construction and installation of the cable and conduit along the proposed project routes would result in temporary noise impacts, and (2) air conditioning units and back-up generators installed at some of the proposed POP sites would result in long-term noise impacts.

Mitigation Measures

The temporary impacts associated with project construction would be mitigated through compliance with local standards related to hours and days when noisy construction activities can occur and, where applicable, compliance with local standards related to noise from individual types of construction equipment.

The long-term impacts associated with operation of equipment at some of the POP sites would be mitigated through implementation of sites-specific measures, such as reorienting the air conditioning units away from sensitive uses and installation of "quiet" generators (i.e., with design features that provide greater noise reduction than can be achieved with only a standard muffler).

3.7.1.8 Traffic

The project routes would follow numerous existing public roads and would therefore temporarily disrupt traffic flow during project construction.

Mitigation Measures

Metromedia would obtain all necessary local and state road encroachment permits, and railroad encroachment permits, prior to construction and would comply with all the applicable conditions of approval. As deemed necessary by the governing jurisdiction, the road encroachment permits may require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. In cooperation with affected jurisdictions, Metromedia would develop and implement specific traffic control plans for installation activities within public road rights-of-way to reduce construction-related effects on traffic and circulation patterns during the construction period.

3.7.2 General Construction Practice Mitigation Measures

Metromedia would implement mitigation measures to ensure that the project would not result in impacts greater than allowed by the permitting agencies, consistent with the project's stated environmental goals and policies. These measures include, but would not necessarily be limited to, the following:

Pre-construction surveys to ensure no sensitive species are active in or immediately adjacent to specific route segments.

- Selection of alternative routes for conduit to avoid identified sensitive resources.
- Environmental education programs provided to construction workers prior to initiation of work.
- Use of alternative construction methods to avoid sensitive resources.
- Biological monitoring during construction in sensitive biological resource areas, including stream crossings and potential nesting habitat, and other measures to protect threatened or endangered species.
- Exclusion fencing to isolate construction areas from sensitive species habitat.

Metromedia would assume responsibility for implementing mitigation measures identified in this document and other measures as determined by the appropriate permitting agencies and as a result of the CEQA review process, including comments by the CPUC, designated cultural resources representatives, and responsible agencies such as the Department of Fish and Game, Bay Area Conservation and Development Commission, State Lands Commission, Caltrans, U.S. Army Corps of Engineers, and regional water quality control boards.

3.7.2.1 Work Scheduling

Construction activities would be scheduled so as not to interfere with the reproductive cycles of sensitive plant and animal species, or with other time-sensitive issues such as crop planting or harvesting, and peak-hour travel, among others. Seasons or months during the year when construction work should be conducted would be included, where applicable, in construction specifications.

3.7.2.2 Work in Wet Weather

Work in wet weather would proceed with the concurrence of the environmental resource coordinator and the biological and archaeological monitors.

3.7.2.3 Erosion Control Techniques

Both temporary and permanent erosion control measures would be incorporated into the construction process. Temporary erosion control measures would be used to correct conditions that may develop during construction that were unforeseen during project design. Erosion control measures for ditch slopes, newly graded surfaces, and other surfaces subject to soil erosion and meriting slope protection would be implemented consistent with Metromedia specifications and would include the following:

- Placement of hay bales to construct dams in ditches;
- Shaping, fertilizing and seeding soil surface;
- Soil stabilization matting for swales and ditches;
- Silt barrier fencing at the toes of slopes, in ditches, or as directed by the construction manager;
- Stabilizing construction entrances as needed to prevent incursion of sediment onto public rights-of-way; and
- Riprap slope protection at the entry and exit of culvert pipe.

Implementation of soil erosion control measures would protect water quality from run-off and prevent or minimize erosion.

3.7.2.4 Staging Areas

Staging areas are locations where equipment and supplies are gathered and stored, or where preparations for directional boring are made. No new staging areas for equipment would be established in undisturbed areas or on public lands. All staging areas would be located on private lands. No access roads would be constructed.

3.7.2.5 Clean-Up and Restoration

After installation of conduit, each construction site is checked for compliance and the quality of site restoration. All deficits noted would be corrected or reported to the appropriate supervisor.

3.7.2.6 Storm Water Pollution Prevention Plan

As required by the San Francisco Bay Regional Water Quality Control Board and the Los Angles Regional Water Control Board and in accordance with National Pollutant Discharge Elimination System (NPDES) regulations, a Storm Water Pollution Prevention Plan (SWPPP) would be developed and a notice of intent to construct submitted to the respective control boards. The SWPPP would be completed prior to construction and would identify the activities that could cause pollutant discharge (including sediment) during storms and the best management practices that would be employed to control pollutant discharge. Construction techniques would be identified to reduce the potential for runoff, including minimizing site disturbance, controlling water flow over construction sites, stabilizing bare soil, and ensuring proper site clean-up. Additionally, each SWPPP would specify the erosion and sedimentation control measures to be implemented, such as silt fences, terraces, water bars, baffle boards, and seeding and mulching. Water quality protection measures would be included for all directional drilling activities to eliminate potential discharge of drilling fluids. (See Appendix C for the SWPPPs.)

Each SWPPP would also specify spill prevention measures, identify the types of materials used for equipment operation (mainly vehicle fluids such as fuel and hydraulic fluids), and identify measures to prevent or clean-up hazardous material and waste spills. Emergency procedures for responding to spills would also be identified. Each SWPPP would be included in construction specifications for each specific route segment.