



General Conditions for All Utilities

May 2022

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General Conditions

1. General Conditions for Private Work, Mainline Extension Agreements

1.1. Release for Construction

Before release for construction of any work to be done under a Mainline Extension Agreement (“MEA”), the plans shall be approved and signed by the Kirkwood Meadows Public Utility District (“KMPUD” or “District”); the MEA shall be signed by the MEA Applicant and KMPUD; all necessary deposits and fees shall be paid; approved insurance shall be received; all required easements and permits shall be submitted and accepted by KMPUD; and a faithful performance guarantee for facilities to be constructed within the public right of way or within existing easements shall be given to KMPUD. Original ink signatures are required on all appropriate sheets of approved plans.

Any work done prior to release for construction may be rejected by KMPUD. Kirkwood Meadows Public Utility District signatures on plans are only valid for two years from the date of signature, unless approved in writing and in advance of expiration.

1.2. Standards

All electric, propane, water wastewater (“utility”) facilities to be accepted for ownership and maintenance by the District, including but not limited to utility main and service lines, transformers, valves and all miscellaneous appurtenances, shall conform to the latest revision of these Standard Design and Construction Specifications for Utility Systems (“Specifications”) and be designed for a minimum fifty (50) year lifespan. The MEA Applicant (“Applicant”), and the Applicant’s Developer, Engineer, Contractor and/or Architects shall be responsible for obtaining all necessary information, requirements, bid and complete the work as shown on the approved plans.

All contractor’s working on KMPUD facilities shall possess the following classification or type of contractor’s license issued by the Contractors State License Board: Class A, California.

1.3. Insurance

The Applicant or the Applicant’s Contractor shall carry insurance as outlined in the MEA. The insurance shall specifically name KMPUD, its directors, officers, and employees as additional insured.

Before work is commenced, the Applicant or its Contractor shall furnish KMPUD with certificates of insurance as satisfactory proof that he carries worker’s compensation insurance as required by law and liability insurance in compliance with the MEA requirements.

1.4. Notification

The Contractor shall establish one single point of contact for the duration of design and another for the duration of construction and shall provide the necessary contact information to KMPUD prior to construction. The approved point of contact may not be changed without KMPUD approval.

The Contractor shall properly notify the KMPUD Inspector, and describe the type and timeline of work planned:

- 1) Seven (7) days prior to:
 - a. Commencement of the pre-construction meeting.
 - b. Any required specialty inspection.
- 2) Two (2) full business days prior to:
 - a. Commencement of utility or KMPUD facility work.
 - b. Excavating within twenty feet (20') of any existing KMPUD facilities.
 - c. Restarting non-continuous work.
 - d. Each and every day that work shall be performed on or near KMPUD facilities.

The Contractor shall notify all other public agencies affected by the proposed construction, shall obtain and pay all costs for any and all required permits.

1.5. Inspection

The KMPUD Inspector may be reached at (209) 258-4444. One or more inspectors may be assigned by KMPUD to observe any and/or all of the work. The KMPUD Inspector(s) may inspect any part of the work and/or materials and shall have full authority to accept or reject said work or materials. The KMPUD shall have full authority to accept or release Contractor of the obligation to conduct comprehensive inspections or the work, to furnish acceptable materials, perform acceptable work and to provide adequate safety precautions.

The Applicant shall pay the required plan review and inspection fees and deposits (if required) as determined by the KMPUD prior to review of application, submittals, plans, or scheduling of meetings or inspections. The plan review and inspection fee includes plan review, site visits and inspections. Applicant will be billed actual costs incurred by the District for their project. Deposits may be utilized up to fifty percent (50%) with the remaining fifty percent (50%) held until completion of the project and either applied to the remaining balance due or refunded back to applicant.

1.6. Pre-construction Meeting

A pre-construction meeting shall be conducted by the Contractor prior to starting construction. The KMPUD General Manager and inspector(s) shall be invited, with proper notification, to the pre-construction meeting.

Prior to the Pre-Construction meeting, the applicant shall provide two (2) full size and two (2) half size copies of the fully signed and approved plan set to KMPUD. KMPUD will not attend the Pre-Construction meeting or perform any inspection, nor will work be allowed to proceed, until the aforementioned copies of approved plans have been provided.

1.7. Work Hours

Normal work hours shall be between 7:00 A.M. and 3:30 P.M. excluding Saturdays, Sundays and holidays. No work shall be accomplished during hours or on days other than specified above, unless approved in advance by the District. Inspections requested by or made necessary as a result of actions of the Contractor on Saturdays, Sundays or holidays must be scheduled with the District Inspector and approved in writing by the District. The Contractor shall bear all fees or expenses of the District's personnel and inspection services created by extraordinary work hours including standby time and overtime. The District maintains no requirement to approve, inspect or allow work at night, after normal working hours, on weekends, holidays or during closures. The District reserves the right to require work and shutdowns be performed at night, after normal working hours, on weekends, holidays or during closures.

KMPUD enforces an annual deadline for construction activities of October 15th. After this deadline and through snowmelt, which varies from year to year, new excavation for KMPUD utilities is suspended, all existing KMPUD utility trenches must be backfilled in accordance with KMPUD Standards, and all underground KMPUD utility installations are suspended for the winter season.

1.8. Existing Utility Location

For location of existing utility lines, including electric, propane, water and wastewater, the Contractor or any subcontractor on a project shall notify USA North. (Underground Service Alert) at (800) 642-2444 or usanorth811.org forty-eight (48) hours before performing any excavation.

Proper location of existing utility lines and appurtenances is the Contractor's responsibility. All costs for utility location shall be paid for by the Contractor. The utility locating shall be completed prior to starting construction by the Contractor. Only KMPUD approved locating methodologies shall be used, including Electromagnetic Line Locating (EMLL), Magnetic Detection (Metal Detecting), Ground Penetrating Radar (GPR), Acoustic Pipe Locating, Hydro or Vacuum Excavation, and Potholing. No other means of line location shall be utilized to verify the location of buried utility lines. Dowsing, witching, or divining rods of any sort, material, shape, or known by any other name, shall not be used to locate buried utility lines. Any utilities found having been marked using non-approved methods shall be deemed inaccurate, at which time, all construction shall cease immediately and may not resume until all utilities have been marked by approved methods.

1.9. Staking

The Contractor shall provide stakes for line and grade for all utility line installation.

1.10. Soils Compaction Testing

KMPUD shall require soils compaction testing, and the Contractor, as appropriate, shall pay KMPUD's costs associated with such testing. Geotechnical testing shall be performed by qualified personnel, retained by the Contractor, subject to approval by the District in writing in advance of the work. For all failed tests, the lift being tested shall be

removed, recompacted and retested per original specifications. The Contractor shall pay the costs of any work and testing, along with all rework and retesting of work not conforming to the specifications.

Density of soil will be determined in place by the sand cone method, ASTM D 1556 or by nuclear methods, ASTM D 2922 and D 3017. Compaction tests will be performed as directed by the KMPUD Inspector. At a minimum, one test shall be performed per lift, per 100 linear feet (100 LF) of pipe. Laboratory moisture-density relations of soils will be determined per ASTM D 1557. Relative density of cohesionless soils will be determined per ASTM D 4253 and D 4254. Backfill materials will be sampled per ASTM D 75. No tests shall fall below the specified relative compaction.

1.11. Pre-commissioning Testing

The Contractor shall provide all labor and materials required for pre-commissioning testing of all utilities as detailed in the Specifications. All testing shall be done under the direct supervision of KMPUD. KMPUD personnel shall collect all required test samples. KMPUD personnel shall perform any electric hot work and operate any valves or appurtenances as required for pre-commissioning testing.

1.12. Submittals

Contractor shall furnish two (2) paper copies, an electronic PDF copy and electronic copies of all original file types (CAD, Word, Excel, Project, WaterCAD, etc.) of plans and submittals for approval by KMPUD for all plans or any materials and/or installations not covered and/or specified in the Technical Provisions or detailed on the plans and as required by KMPUD. Each submittal shall be named, numbered and submitted separately for each item or manufacturer.

1.13. Construction Water

Any and all water to be used shall be arranged through KMPUD's Customer Service Department (209) 258-4444. All construction water charges shall be paid prior to acceptance of the job.

All fire hydrants are to be utilized only for the purpose of fire protection and system analysis. Any attempt to utilize water from a hydrant or service connection or other appurtenance without an KMPUD approved water meter and KMPUD approval will result in punishment under California Penal Code Section 490 or 625, or under Kirkwood Meadows PUD Policy 230 or 620.

1.14. Record Drawings (As-Builts)

The Contractor shall maintain and make available to the KMPUD Inspector on the jobsite one complete approved plan set. After each portion of the work is installed, the Contractor shall record all deviations from the original design shown in the drawings either by additional sketches or red ink thereon. Upon completion of the job, the Contractor shall survey all as-built utility locations. The Contractor shall deliver the field record set and a corrected as-built drawing set, based on the surveyed locations, to the KMPUD for review. After KMPUD approval, the electronic survey files, electronic CAD files, electronic PDF file of the as-built drawings shall be provided to KMPUD.

1.15. Acceptance

KMPUD assumes no obligation for maintenance of the facilities included in an Agreement until such time as they are formally accepted in writing by KMPUD. Any costs incurred by KMPUD due to emergency or other repairs prior to final acceptance by KMPUD shall be billed to, and paid by, the MEA Applicant.

The system shall not be accepted, and utility service shall not be initiated until all conditions contained within the Agreement are satisfied, As-Built Record Drawings have been received and KMPUD has provided a Certificate of Acceptance.

2. Plan Sheet Requirements

2.1. Drawing Size and Scale

All improvement plans shall be prepared on reproducible sheets twenty-two inches by thirty-four inches (22" x 34") or twenty-four inches by thirty-six inches (24" x 36"). Scales: Horizontal one inch equals twenty feet, forty feet or fifty feet (1" = 20', 40' or 50'); Vertical one inch equals two feet, four feet or five feet (1" = 2', 4' or 5'). The scales selected shall be that which is appropriate for the sheet and provides clarity within the drawing.

2.2. Drafting Standards

All line and lettering work must be clear and legible.

Each sheet within the set of drawings shall have a title block showing the sheet title, number, date, scale and the Applicant Engineer's name, address, phone number, revision block and California Professional Engineer's Stamp with wet ink signature and registration number.

2.3. Title Sheet

A title sheet shall be prepared showing the following:

- Subdivision map, parcel map or other project boundaries as applicable
- Location Map
- Index of Sheets & Sheet Listing. Sheet index shall show a layout of all plan and profile sheets on an overall plan. Sheet index may be incorporated on the wastewater line layout sheet.
- Legend of symbols
- Title Block
- Signature Block for the Kirkwood Meadows Public Utility District Authorized Agent and County(ies) as applicable. The title sheet and subsequent revised drawing sheets shall also have approved signature blocks. The approval block(s) with all necessary wet signatures shall be signed before any construction occurs. Any changes to the plans after initial approval shall be shown as revisions and shall be approved by KMPUD.
- Applicant's name, address and phone number

2.4. Electric, Propane, Water and Wastewater Line Layout Sheet

The electric, propane, water and wastewater systems shall be shown on an overall plan layout with a scale of one inch equals one hundred feet (1" = 100'). This layout shall show wire and conduit size, proposed and existing transformers, pipe size, proposed and existing valving, proposed and existing appurtenances, boundary lines, property lines, lot numbers, street names, section lines and corners and all easements. This layout must be incorporated into the improvement plans and may be shown on the title sheet if desired. Care must be taken to make sure the scale and orientation are correct since the layout sheets are used to generate District master utility system maps.

2.5. Plan Details

The following details shall be shown on Plans submitted for approval.

2.5.1. Right of Way

Right of way lines, the boundaries of lots fronting on the street, utility easements, section lines and corners, land grant lines and temporary construction easements, both existing and proposed, shall be shown on the plans. All right of way and easement lines shall be properly dimensioned.

The Applicant shall provide a minimum twenty feet (20') non-exclusive recordable easement, ten feet (10') on both sides of all utility lines and all sides of appurtenances, to the District for all utility lines and appurtenances installed outside a public right of way. The location of the easement and easement language shall be approved by the District. The project will not be accepted, nor service provided until the District receives the easements, and they are recorded.

2.5.2. Contours and Elevations

Existing contours or supporting elevations, and the limits of grading, cuts and fills with finished elevations shall be shown on the plans. Profiles and benchmarks shall be surveyed at minimum two feet (2') intervals for commercial applicants or subdivisions and USGS elevations at minimum five feet (5') intervals for single residential lot applications.

2.5.3. Plan View

The plans shall show stationing, size and types of electric conductor, transformers, conduit and pipes, pressure class (PC) or pressure rating (PR) of pipes, pipe slope, degree of pipe angles, valves, BOVs, flushing inlets, CAVRV's, services, and all other appurtenances. Service lateral size shall be indicated for all utilities.

2.5.4. Profile View

The plans shall show the corresponding profiles of all existing and proposed ground elevations, roadway centerlines, drainage ditches, and utilities within twenty feet (20') of proposed or existing District facilities, including storm drain lines and laterals, cable and telephone. All profiles of proposed improvements shall show invert elevations, grades, vertical curves, other vertical alignment data and other utilities.

The profile of electric lines should show the total length of conduit in lineal feet (LF), size and type of conductor, all fixtures such as transformers and pull boxes, depth of cover and stationing.

The profile of propane lines should show total length of pipe in lineal feet (LF), size, type, pressure rating, all fixtures such as valves, depth of cover, and stationing.

The profile of wastewater lines should show total length of pipe in lineal feet (LF), size, type, pressure rating, all fixtures such as CAVRV's, valves, pipe slope, depth of cover and stationing.

The profile of water lines should show total length of pipe in lineal feet (LF), size, type, pressure rating, all fixtures such as BOVs, AVRVs, fire hydrants, valves, pipe slope, depth of cover, and stationing.

2.5.5. Other Utilities

The plans shall show all existing or proposed utilities within twenty feet (20') of proposed or existing District facilities, including storm drain lines and laterals, cable and telephone. Where elevations of these utilities may be established, they shall be shown. The plans shall indicate minimum horizontal and vertical clearances where applicable.

2.5.6. Meter and Infrastructure Protection

The plans shall show proposed meter protection for electric and propane meters. Meter protection shall comply with KMPUD Ordinance 21-01 (or any successor Ordinance) and Standard Drawings KMG010 and KMG011.

The plans shall show physical protection for utility meters and infrastructure, including bollards or barrier posts as required.

2.6. Project Submittals

At the time an Applicant requests a MEA from KMPUD, the applicant shall pay the required plan check and inspection deposit as determined by the KMPUD. Prior to the Pre-Construction meeting, the applicant shall provide two (2) full size and one (1) half size copies of the fully signed set of plans to KMPUD. KMPUD will not attend the Pre-Construction meeting or perform any inspection, nor will work be allowed to proceed, until the aforementioned copies of approved plans have been provided, the MEA is recorded and the KMPUD provides authorization to commence construction.

Construction Requirements

3. Concrete Work

3.1. Scope

Concrete work includes the construction of all manholes, vaults, encasement, and other concrete items completed with reinforcement steel as detailed and specified on the plans.

3.2. Materials

All concrete work and materials shall conform to the requirements of California Department of Transportation "Standard Specifications", latest revision, Sections 52 and 90 and applicable items under Sections 51 and 73, except as modified herein or on the plans.

All concrete shall be Class B, Type II with a three-quarter inch ($\frac{3}{4}$ ") aggregate and a maximum four-inch (4") slump, unless otherwise noted on the plans. Concrete shall be a minimum of three thousand (3,000) psi, and four thousand (4,000) psi in areas subject to vehicle traffic. Concrete admixtures shall not be used without prior written approval of KMPUD.

3.3. Execution

The District shall be notified a minimum of seventy-two (72) hours prior to concrete placement. The maximum allowable combined transit and holding time before concrete placement shall be two (2) hours.

The surface finish shall be as shown on the plans or as directed by the KMPUD Inspector. All newly placed concrete shall be cured as directed by the KMPUD Inspector.

4. Earthwork

4.1. Scope

This work shall consist of: performing all operations necessary to excavate earth and rock or other material, of whatever nature, including removing water, regardless of character and subsurface conditions necessary for the construction of the project facilities; placing backfill for all project facilities, including site grading, structures, transmission piping, electrical underground conduit, ditch and channel excavation, culverts, minor concrete structures, roadwork; removing and replacing unsuitable material; placing embankment material for all required project facilities; other earthwork shown on the plans and indicated in the Specifications including excavating and backfilling all structures, trenches and depressions resulting from the removal of obstructions, removing and replacing unsuitable material.

4.2. Trench Excavation

Trench excavation shall include the removal of all materials or obstructions of any nature, except as otherwise specified to be protected; the installation and removal of all sheeting and bracing and the control of water, necessary to construct the work as shown. Unless otherwise indicated on the drawings or permitted by the KMPUD, excavation shall be

open cut. Trenching machines may be used except where their use will result in damage to existing facilities or where hand trenching is required to prevent damage to trees, tree roots or other utilities.

Excavate the trench to the lines and grades shown in the drawings with allowance for pipe thickness, sheeting and shoring if used, and for pipe base or special bedding. If the trench is excavated below the required grade, refill any part of the trench excavated below the grade at no additional cost to the District with pea gravel or imported sand. Place the refilling material over the full width of trench in compacted layers not exceeding eight inches (8") deep to the established grade with allowance for the pipe base or special bedding.

All paving shall be saw cut to a neat line, which is wider than the trench wall. Where concrete paving is encountered it shall be saw cut to a minimum of six inches (6") wider than the trench at each trench wall.

4.3. Trench Width

Maximum trench width at the top of the trench shall be as shown on the Standard Drawings for the designated type bedding.

Trenches shall meet OSHA requirements.

4.4. Special Foundation Bedding Treatment

Whenever the bottom of the trench is soft, yielding or, in the opinion of the KMPUD Inspector, otherwise unsuitable as a foundation for the pipe, the unsuitable material shall be removed to a depth such that when replaced with bedding material or three quarters of an inch (¾") minus drain rock, it will provide a stable and satisfactory foundation. Whenever the trench bottom is in rocky material, the trench shall be excavated to six inches (6") below the flow line and backfilled with bedding material as specified.

4.5. Trench Backfill

Pipe shall be bedded and backfilled uniformly throughout its length. The specified bedding shall be placed to give the required minimum thickness after placing the pipe and shall be compacted to give a uniform surface for laying the pipe.

Pipe shall not bear on bells, couplings or joints. The trench shall be excavated at these locations as necessary to provide at least two inches (2") of bedding material below the bell, coupling or joint. No permanent wedging and/or blocking of pipe shall be permitted. Care shall be taken when compacting the material around the bells, couplings or joints.

In connection with these Specifications, tests shall be made in accordance with the Caltrans Standard Specifications, and these requirements:

<u>Tests</u>	<u>ASTM</u>	<u>Test method No. California</u>
Sieve Analysis	D1557	201 & 202

In trenches placed in easements, which are not in traveled road rights-of-way, backfill shall be compacted to mound so that drainage to the trench shall not occur. Upon request, a sample and gradation report shall be given to the District for all imported trench backfill material for District review and approval.

4.5.1. Bedding Backfill

Bedding Backfill shall be the material placed between the top of the bedding and twelve inches (12") above the top of the pipe. Bedding Backfill shall conform to one of the following:

A. Sand – Well graded clean sand conforming to the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
#4	75-100
#30	12-60
#100	5-20
#200	0-10

B. Aggregate Base – Shall be acceptable for pipe bedding and backfill for utility mainlines

C. Plug and Drain Material - When a plug and drain system has been approved by KMPUD and the County, pipe zone material shall be Caltrans Standard permeable material designed for the specific condition.

Three-eighths inch (3/8") or one half inch (1/2") river run pea gravel, or three quarter inch (3/4") minus crushed clean rock shall be used as bedding and backfill in areas with groundwater.

4.5.2. Intermediate Backfill

Intermediate backfill is the backfill from twelve inches (12") above the top of pipe to the subgrade for travelled areas, or to top of grade for travelled areas.

Intermediate backfill shall conform to one of the following:

A. Imported or Native Material - Backfill where in unpaved section shall be free from organic matter, debris, and rocks larger than six inches (6") in diameter or length. The District shall be the sole judge of conformance of backfill material to this specification.

<u>Sieve Size</u>	<u>Percent Passing</u>
6"	100
3"	50
#4	35-50
#30	20-50
#200	0-9

B. Aggregate Base - Backfill where in paved roadway section shall be three quarter inch (3/4") minus aggregate base or approved alternative material with a sand equivalent of 30 minimum and durability index of not less than 35. All material shall generally conform to the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
3/4"	90-100
#4	35-60
#30	20-30
#200	2-9

4.5.3. Compaction

Backfill shall be completed within the shortest possible time so that the construction area or road can be opened to traffic. If for any reason construction of the pipeline or appurtenances thereto is delayed, the District may require that the trench be backfilled and such areas or streets opened to traffic. Bedding backfill and intermediate backfill shall be compacted to a density as shown on the standard drawings. Backfill shall be placed in layers not exceeding eight (8) inches (unless otherwise noted) and compacted by an approved method.

The location and depth of all compaction tests shall be determined by the KMPUD Inspector. If a test fails, the area shall be reworked and retested to the satisfaction of the District and until passing test are achieved. Contractor shall pay all costs associated with testing. Jetting of backfill shall not be permitted.

4.5.3.1. Bedding Backfill Compaction

After completion of the trench excavation and proper preparation of the foundation, six inches of bedding material shall be placed on the trench bottom for support under the pipe. Bell holes shall be dug to provide adequate clearance between the pipe bell and the bedding material. All pipe shall be installed in such a manner as to insure full and even support of the pipe barrel over its entire length. After the pipe is adjusted for line and grade and the joint is made, the remainder of the pipe bedding shall be placed to the limits as shown on the drawings. All bedding material shall be compacted ninety percent (90%) as measured by ASTM Method D-1557, prior to placement of subsequent backfill.

Bedding backfill shall be brought to optimum moisture content and shall be placed by hand in layers not exceeding three inches in thickness to the centerline (springline) of the pipe and each layer shall be solidly tamped with the proper tools so as not to injure, damage, or disturb the pipe. Backfilling shall be carried on simultaneously on each side of the pipe to assure proper protection of the pipe. Under no circumstances shall sharp, heavy pieces of materials be allowed to be dropped directly onto the pipe or the tamped material around the pipe.

Each lift shall be "walked in" and supplemented by slicing with a shovel to ensure that all voids around the pipe have been completely filled. Mechanical compaction with hand-controlled, power-operated units (air tampers, vibrating tampers or other hand-controlled tools), as approved, shall be used for compaction of pipe zone, provided such mechanical means do not to damage the pipe, joints, or pipe protective equipment.

4.5.3.2. Intermediate Backfill Compaction

The remaining portion of the trench shall be backfilled, compacted and/or consolidated by approved methods to obtain a ninety percent (90%) compaction as measured by ASTM D-1557. Bituminous pavement, concrete, rock, or other lumpy material shall not be used in the backfill without approval from KMPUD. Material of perishable, organic matter, spongy or otherwise improper nature, shall not be used.

When backfill is placed mechanically, the backfill material shall be pushed onto the slope of the backfill previously placed and allowed to slide down into the trench. The contractor shall not push backfill into the trench in such a way as to permit free fall of the material until at least eighteen (18) inches of cover is provided over the top of the pipe. Under no circumstances shall sharp, heavy pieces of materials be allowed to be dropped directly onto the pipe or the tamped material around the pipe. Backfill shall be placed in layers not exceeding eight (8) inches and compacted by an approved method.

Compacting equipment including wackers and turtles shall be used until all backfill (bedding and intermediate) has been compacted.

If hydro-hammer is used for compaction of overlying materials, at least four feet of backfill must be placed over the top of pipe prior to its use. This is required to insure that the pipe is not damaged.

4.6. Embankment Construction

Embankment shall be constructed of excavated or imported material that is free from organic matter, roots, debris, rocks larger than three inches (3") in the greatest dimension, and shall not have more than fourteen percent (14%) of the rocks larger than one and a half inches (1½"), and shall have these properties:

Maximum Plasticity Index: 15

Maximum Percent Passing the No 200 Sieve: 50

Placement and compaction of embankment material shall be in conformance with Caltrans Standard Specifications Sections 19-6.

4.7. Structural Backfill

Backfill around structures shall be select import or native earth if it is suitable for compaction. This backfill material shall consist of clean sandy material with one hundred percent (100%) passing a three quarter inch (¾") sieve and shall be clean and free from

vegetative matter and other deleterious substances and shall be of such a nature that it can be compacted readily under watering to form a firm, stable base.

5. Clearing, Grubbing and Stripping

5.1. General

This section describes the work included in clearing, grubbing, stripping and otherwise preparing the project site for construction operations.

5.1.1. Clearing

Remove and dispose of shrubs, brush, limbs and other vegetative growth. Remove all evidence of their presence from the surface including sticks and branches greater than two inches (2") in diameter or thickness. Remove and dispose of trash piles, rubbish and fencing. Protect trees, shrubs, vegetative growth and fencing which are not designated for removal.

5.1.2. Grubbing

Remove and dispose of wood or root matter below the ground surface remaining after clearing, including stumps, trunks, roots or root systems greater than two inches (2") in diameter or thickness, to a depth of twelve inches (12").

5.1.3. Stripping

Remove and dispose of all organic sod, top soil, grass and grass roots, and other objectionable material remaining after clearing and grubbing from the areas designated to be stripped.

5.2. Materials

5.2.1. Trees and Shrubbery

Existing trees, shrubbery and other vegetative material may not be shown on the plans. Inspect the site as to the nature, location, size and extent of vegetative material to be removed or preserved, as specified herein. Preserve trees that are specifically shown on the plans as designated to be preserved.

5.2.2. Preservation of Trees, Shrubs and Other Plant Material

All plant materials (trees, shrubbery and plants) beyond the limits of clearing and grubbing shall be saved and protected from damage resulting from the work. No filling, excavating, trenching or stockpiling of materials will be permitted within the drip line of these plant materials. To prevent soil compaction within the drip line area, no equipment shall be permitted with this area.

When trees are close together, restrict entry to drip line area by fencing. In areas where no fence is erected, the trunks of all trees two inches (2") or greater in diameter shall be protected by encircling the trunk entirely with boards held securely by twelve (12) gage wire and staples. This protection shall extend from ground level to a height of six feet (6').

5.3. Execution

4.1.1. Clearing and Grubbing Limits

All excavation areas associated with new pipelines, structure, slabs and special areas shown on plans shall be cleared and grubbed.

5.3.1. Disposal of Clearing and Grubbing Debris

Do not burn combustible materials. Remove all cleared and grubbed material from the worksite and dispose of in accordance with all local laws, codes and ordinances.

5.3.2. Areas to be Stripped

All excavation areas associated with new pipelines, structures, slabs and special areas shown on plans shall be stripped.

5.3.3. Disposal of Strippings

Remove all stripped material and dispose offsite.

6. Equipment, Piping and Materials Demolition

6.1. General

Perform demolition, removal, abandonment, and relocation work specified and indicated in the drawings. Prepare remaining surfaces to receive new scheduled and specified materials and finishes or finish to match adjacent surfaces if no additional work is scheduled or indicated.

6.2. Existing Piping

Shut off or disconnect utilities affecting demolition work. Schedule shutdowns with the KMPUD; notify the KMPUD ten working days in advance of any shutdown that is required to perform the work. The KMPUD will perform electric hot work and open/close valves on piping and appurtenances as required for the shutdowns.

6.3. Plugging Abandoned Piping

Plug pipes of all sizes to be abandoned by placing a three-foot (3') long concrete or non-shrink grout plug in the open ends.

6.4. Removal of Existing Asbestos Cement Pipe

If the existing pipeline to be removed is asbestos cement pipe, remove the pipe to the limits shown in the drawings and dispose.

Removal procedures shall be in accordance with OSHA 29 CFR 1926.1101, Class II, and California CCR Title 8, Division I, Chapter 4, Subchapter 4, Article 4, Section 1529.

Excavate the sections of pipe to be removed. Determine the airborne concentrations of asbestos to which employees may be exposed during removal operations per 29CFR 1926.1101, Appendices A and B. If the measured asbestos concentrations exceed the permissible exposure limit (PEL), provide temporary enclosures with ventilation systems, respiratory protection, wetting methods, or other procedures complying with 29 CFR 1926.1101.

Cover or seal the sections of pipe removed to prevent asbestos from becoming airborne during pipe removal and transportation operations.

6.5. Demolition

Existing transformers, structures, boxes, pipes, pavements, curbs, and other items are to be removed, altered, salvaged, and disposed of as indicated in the drawings. Remove and dispose of all portions of these items which interfere with project construction.

Remove and dispose offsite facilities to be demolished in their entirety including belowground footings, foundations, and other associated appurtenances, as shown in the drawings or as specified herein. Backfill and compact all site areas disturbed by demolition work with earth backfill material in accordance with standards of the local county having jurisdiction or Section 19-3.02 of the State Standard Specifications.

Perform the work in a manner that will not damage parts of the structure not intended to be removed. If, in the opinion of the KMPUD Inspector, the method of demolition used may endanger or damage parts of the structure or affect the satisfactory operation of the facilities, promptly change the method when so notified by the KMPUD Inspector.