

Engineering Solutions Method and Procedure

OSP Handbook Invoicing

Purpose	The purpose of this document is to provide guidance to Engineering Operations (where applicable), and Vendors on OSP Bid-Units, Call-Outs, Maintenance Restoration, and Reporting and Documentation of the design and construction of buried and underground (UG) facilities and the associated carrying plant.
Personnel Affected	This method affects all Outside Plant Engineering, Construction and Vendor personnel.
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Superseded Documents	Outside Plant Handbook MCI 046 302 3802 – Sec 12, Sec 15, Sec 18
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**Regulatory
Compliance**

Not Applicable

**Related
Documents**

[OSP Handbook General Guidelines](#)
[OSP Handbook Aerial Plant](#)
[OSP Handbook Buried and Underground \(UG\) Plant](#)
[OSP Handbook Project Design and As-Built Procedures](#)
[OSP Handbook Splicing Preparations](#)
[OSP Handbook Cable/Equipment/Material Specifications](#)
[OSP Handbook Safety Regulations](#)
[OSP Handbook Subaqueous Plant / Bridge and Fixed Structure Attachments](#)
[OSP Handbook Project Design and As-Built Procedures](#)

**Related
Training**

Not Applicable

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1.0 Verizon Employee Compliance

1.1 Verizon Code of Conduct and Company Policy Compliance

All Verizon employees are required to understand and adhere to the Verizon Code of Conduct and all Company policies.

The Code of Conduct and Company policies are in place to govern the conduct of employees and the conduct between employees, customers, competitors and the numerous business providers, including suppliers, vendors, contractors and agents.

Employees may never violate the Verizon Code of Conduct or any Company policy.

1.2 Customer Proprietary Network Information (CPNI) Compliance Policy

The CPNI policy describes and governs the permissible uses and disclosures of Customer Proprietary Network Information (CPNI).

The policy is applicable to customers of all Verizon Wireline organizations, consumer, small business, medium business, large business, government and online accounts. The policy governs activities where CPNI data is used internally, provided to a Customer, shared among affiliates or disclosed to a third party.

It is each employee's responsibility to understand and comply with the CPNI policy along with the Verizon Code of Conduct and all other Company policies.

2.0 Task Codes

2.1 General

The link below defines task codes across the wireline areas. Task codes are components of a project that define the work to be done. The task code prices the project and in turn enables the project to be charged.

Verizon employees utilize task codes and vendors utilize Contract Administrative System (CAS) codes. Every CAS code has a task code "parent". Each CAS code in a vendor contract will reflect the negotiated price between Contract Administration and the Vendor.

Invoicing varies across the Verizon footprint, when in doubt reach out to your sponsor or responsible Verizon Manager.

For More information, refer to *Task Coding Consolidation / Standardization*, at:

https://knowledge.verizon.com/vzknowledge/documentUrl.portal?docName=VZK_1411179

A **BID-UNIT** is an Outside Plant Construction (OSPC) work operation that directly corresponds to payment items under the Verizon OSPC unit price contract. A single bid-unit may include different types of OSPC activities.

A **CALL-OUT** is an annotated rectangular symbol found on the OSPC drawings and used to define the locations, types and quantities of required OSPC activity. Each call-out refers directly to a bid-unit and thereby links the OSPC drawings to specifications in the Outside Plant Handbook.

The following activities, definitions, and requirements are standard for all Verizon Out Side Plant Construction. They apply to all bid-units defined here or added to specific contracts.

The Contractor will be responsible for all complaints resulting from performance of the construction contract and will rectify all deficiencies for a period of one year from the date of acceptance.

ALL unit prices include the cost of seed, mulch, hay, hydra-mulch, water, gravel, soil, and sand. These materials are required by Verizon or any corresponding jurisdictional body to restore right-of-way back to its original condition.

The Contractor will be responsible for all repairs to and restoration of private and/or public property damage caused during construction.

All Contractor provided (i.e., non-Verizon provided) materials will be new and of a type and size approved by Verizon.

The Contractor will be responsible for maintaining adequate supplies of all materials.

Transportation of equipment, material, and labor to the work site from the Contractor's cable and material storage site is the responsibility of the Contractor.

The Contractor will place Verizon marker warning tape above all trenched and underground plant 12 inches below the existing grade.

The Contractor will provide and place barricades around open pits and trenches. No excavation will be permitted to remain open overnight. Barricades will have flashing lights. Barricade tape (not Verizon marker tape) will be used to rope off the excavation area.

All temporarily excavated material will be handled and if necessary stored at an offsite location, by Contractor, in accordance with all Federal, State and local requirements.

The Contractor will be responsible for the handling and monitoring of all asbestos material in accordance with all Federal, State and local requirements.

The Contractor will be responsible for researching local environmental conditions. No modifications to unit prices will be permitted because of geology or geography. All work will be performed, regardless of soil or rock conditions.

The Contractor will be responsible for backfilling with clean fill material, tamping, and compacting all work sites to all Federal, State, local and ROW owner requirements.

The Contractor will be responsible for DAILY work site cleanup. This includes placement of marker posts and signs and removal of empty reels.

The Contractor will be responsible for the disposal of all waste materials using methods that satisfy Verizon, local permitting agencies, and railroad regulations. No burning of materials is permitted on the right-of-way or at the job site.

All measurements will be taken with a Verizon approved measuring device (measuring wheel or non-metallic measuring tape).

All equipment and labor needed to perform each work activity will be provided by the Contractor. The Contractor is responsible for providing the type of equipment best suited for a given environment (i.e., swamp conditions).

The Contractor will place, and be compensated for, all buried plant with the specified minimum cover. Additional cover will be permitted, but will be at the Contractor's expense.

All right-of-way clearing is included in all buried, underground, and aerial placement.

The Contractor is responsible for satisfying all Verizon, railroad, and local permitting agency requirements and laws with regard to construction, fences, culverts, flagmen, cleanup and other safety measures. Any and all required traffic control will also be the Contractor's responsibility.

All unit prices will include removing and replacing Other Common Carrier (OCC) marker post signs at no additional cost to Verizon.

All unit prices will include the removal and replacement of down guys at no additional cost to Verizon.

Handhole placement will include any additional opening or exposure required to properly install conduit(s) and cable at no additional cost to Verizon.

Example: Installation of conduit(s) in the side of a handhole at a repeater site, junction, or terminal.

All buried fiber cable will be afforded some measure of encasement protection. Where route surveys indicate that underground rodents may endanger survival of the cable, the diameter of the HDPE will be 2.375 inch O.D.

2.2 CALL-OUTS

Call-outs pertaining to cable placement and buried cable markers will be placed on cable side of track, street, pipeline, etc., whenever possible. Any other call-outs not pertaining to cable placement (i.e., stations of poles, railroad equipment, bridges, etc.) will be placed on opposite side of track, street, pipeline, etc., from cable.

1. Station
2. Location
3. Bid-Unit number and minimum cover
4. Quantity linear footage/square footage, size of manhole/handhole, size of pull/splice box, dimension of wall, height/class/type of pole
5. Typical drawing number and typical detail reference

6. Plant accounting code
7. Specified conduit, handhole/manhole no., specified purpose and material, bridge number and railroad station, material, and pole number.

2.3 Bid-Units Summary

Number Category	Bid-Unit #	Bid-Unit Description	Unit of Measure
100	110	Jack and dry bore conduit(s)	Linear foot
200	210	Place conduit	Linear foot
	211	Place Split Conduit	Linear foot
	211A	Place Split Conduit W/Trench	Linear foot
	212	Place high density polyethylene	(No longer used, for reference only)
	213	Rock adder	Linear foot
	214	Slurry backfill adder	Linear foot
	215	Expose conduit	Linear foot
	216	Expose conduit and relocate	Linear foot
	217	Expose conduit and replace/substitute	Linear foot / ea.
	218	Expose and remove conduit	Linear foot
	219	Expose and remove conduit (abandoned)	Linear foot
	220	Concrete encase	Linear foot
	221	Remove concrete encasement	Linear foot
	222	Remove concrete cap	Linear foot
	240	Place handhole	Each
	244	Remove existing handhole	Each
	245	Relocate handhole	Each
	246	Replace/substitute handhole	Each
	247	Excavate splice pit	Each
	250	Place manhole	Each
	252	Remove existing manhole	Each
	255	Relocate precast manhole	Each
	256	Replace/substitute precast manhole	Each
	260	Construct wall	Each
	270	Remove and restore asphalt	Square foot
	280	Remove and restore concrete	Square foot
	281	Remove and restore sidewalk	Square foot
	282	Remove and restore curbing	Linear foot
300	310	Attach conduit to wall or structure	Linear foot
	315	Detach conduit from wall or structure	Linear foot
	320	Core bore	By inch

Number Category	Bid-Unit #	Bid-Unit Description	Unit of Measure
	330	Attach pull/splice box to wall or structure	Each
400	410	Place cable	Linear foot
	411	Pull through duct (innerduct)	Linear foot
	415	Remove cable from conduit	Linear foot
	420	Reposition active cable slack	Linear foot
500	510	Direct bury cable	Linear foot
	515	Expose direct buried cable	Linear foot
	516	Expose direct buried cable and relocate	Linear foot
	517	Remove and dispose of cable	Linear foot
	520	Place aerial cable	Linear foot
	521	Tree trimming	Lump sum
	525	Relocate aerial cable	Linear foot
	526	De-lash aerial cable	Linear foot
	527	Re-lash aerial cable	Linear foot
	528	Remove aerial cable	Linear foot
	530	Place pole/push brace	Each
	535	Remove pole/push brace	Each
600	610	Jetting conduit	T and M
	620	Embedment plow	Linear foot
	630	Directional bore	Linear foot
	631	Rock Adder Directional Bore Rock Bit	Linear foot
	632	Rock Adder Directional Bore Down Hole Motor	Linear foot
700	710	Place buried cable markers and signs/MCI water crossing signs	Each
	711	Place isolator/protection system at existing handholes/manholes	Each
	712	Remove buried cable marker post/hardware	Each
	714	Remove concrete buried cable marker post	Each

2.4 Bid-Units

The following bid-units are provided to describe completely each standard work activity. Given certain circumstances on Projects, an existing bid-unit may augment via “Addendum” bid-unit in the specific Project Statement of Work. Each bid-unit has a corresponding call out. All work activities include the general responsibilities noted in Section 2.1. All materials shall conform to Verizon specifications.

2.4.1 110 Jack and Dry Bore Conduit(s)

This unit shall include all time, equipment, material and material handling to jack and dry bore the specified size/type/number of conduit(s)/innerduct(s) at the specified minimum cover as shown on the construction drawings and permits. Associated work operations such as excavating bore pits, shoring and de-watering also are included in this item. Also included are all time, equipment, material and material handling required to place smaller conduit(s) inside the bored conduit(s).

Note: *The innerduct(s) will be placed at the time that conduit extensions or runs are placed, but included in the jack and bore price.*

Payment for jack and bores will be made only for the length specified on the construction drawings or as approved by Verizon. At the Contractor's convenience, a larger size and/or length of casing may be placed, but at no additional cost to Verizon. Should the Contractor elect to bore at a depth greater than that specified on the construction drawings or permit due to obstructions, he may do so at no additional cost to Verizon. Extensions of pipe or conduit placed from the bore and/or receive pits to the right-of-way line or fence line are NOT included in this unit. Extensions will be paid for as specified in the following paragraph. This unit shall include temporary sealing or capping of the conduit(s) and sealing around the innerducts when placed, using Verizon-approved material (Foam). Permanent sealing will be with Jack Moon style plugs and sleeves. If applicable, all bore casings that house a smaller diameter conduit shall require the voids located between the casing and smaller conduit to be grouted within 12 inches of each end. The Contractor will be responsible for all unsuccessful jack and bore attempts. All unsuccessful jack and bore attempts will be filled with concrete.

2.4.2 210 Place Conduit

This unit shall include all time, equipment, material and material handling to properly install the specified size/type/number of conduit(s)/innerduct(s) at the specified minimum cover as shown on the construction drawings. This unit shall include temporary sealing or capping of the conduit(s) and sealing around the innerduct(s) when placed, using Verizon-approved material (Foam). Permanent sealing will be with Jack Moon style plugs and sleeves. Payments for bore extension conduit will be made only for the length specified on the construction drawings. In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include the placement of Verizon buried cable warning marker tape 12 inches below the final grade. This unit will include the placement of a trace-wire inside the conduit pulled in WITH and outside the innerducts. This unit shall include mandreling, placement of a Verizon-approved innerduct(s) or pull-line in each conduit, (including bores and bore extensions), as shown on the construction drawings. This unit shall include all fence work, including temporary removal and restoration. This unit shall include all right-of-way clearing necessary to properly install conduit(s) and the proper removal or disposal of railroad

ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and to Verizon's satisfaction.

This unit shall include the removal of all empty reel(s) from the right-of-way immediately after the reel(s) are emptied. This unit shall include all sweeps, innerduct, HDPE, adapter(s) and conduit necessary to return to grade. All materials to be removed shall be disposed of at an approved dump facility in the area as designated by the local governing authority. No payment will be made for this unit until all innerducts, associated buried cable marker(s)/steel post(s) and hardware have been placed.

2.4.3 211 Place Split Conduit only

This unit shall include all time, equipment, material and material handling to properly install the specified size/type/number of split conduit(s)/innerduct(s) at the specified minimum cover as shown on the construction drawings.

Note: *This unit does not include hand or machine-trenching or rock sawing used to place conduit(s) at a specified minimum cover when used in conjunction with Bid-Units #515 EXPOSE DIRECT BURIED CABLE OR #516 EXPOSE DIRECT BURIED CABLE AND RELOCATE.*

This unit shall include temporary sealing or capping of conduit(s) and sealing around the innerduct(s) when placed, using Verizon approved material, (Foam). Permanent sealing will be with JackMoon style plugs and sleeves. Payments for bore extension conduit will be made only for the length specified on the construction drawings.

2.4.4 211A Place Split Conduit with trench

This unit shall include all time, equipment, material and material handling to properly install the specified size/type/number of split conduit(s)/innerduct(s) at the specified minimum cover as shown on the construction drawings. This unit shall include temporary sealing or capping of the conduit(s) and sealing around the innerduct(s) when placed, using Verizon-approved material (Foam). Permanent sealing will be with Jack Moon style plugs and sleeves. Payments for bore extension conduit will be made only for the length specified on the construction drawings.

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include:

- Typical de-watering
- Shoring
- Back filling
- Compaction tamping
- Restoration.

Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted.

Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis. This unit shall include the placement of Verizon buried cable warning marker tape 12 inches below the final grade.

This unit will include the placement of a trace-wire either (1) twelve inches above the conduit containing the dielectric cable, or (2) inside the conduit (pulled in with and outside the innerducts). This unit shall include mandreling, placement of a Verizon-approved innerduct(s) or pull-line in each conduit, (including bores and bore extensions), as shown on the construction drawings. This unit shall include all fence work, including temporary removal and restoration.

This unit shall include all right-of-way clearing necessary to properly install conduit(s) and the proper removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and to Verizon's satisfaction. This unit shall include the removal of all empty reel(s) from the right-of-way immediately after the reel(s) are emptied. This unit shall include all sweeps, innerduct, HDPE, adapter(s) and conduit necessary to return to grade. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority. No payment will be made for this unit until all innerducts, associated buried cable marker(s)/steel post(s) and hardware have been placed.

2.4.5 212 Place High Density Polyethylene (For Reference Only)

This unit shall include all time, equipment, material and material handling required to properly install the specified size/number of High Density Polyethylene Conduits (HDPE) at the specified minimum cover as shown on the construction drawings. This unit shall include all hand and machine-trenching, pre-ripping and plowing required to maintain the specified minimum cover. This unit shall include all tunneling under, cutting through and repairing or replacing any culverts as necessary to properly install the HDPE.

Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. This unit shall include the placement of Verizon buried cable warning marker tape 12 inches below final grade. This unit will include the placement of a trace-wire either (1) twelve inches above the HDPE containing the dielectric cable, or (2) inside the conduit (pulled in WITH and outside the innerducts). This unit shall include all fence work, including temporary removal, restoration, tunneling under, cutting through and repairing, as required.

This unit shall include removing and replacing down guys as required. This unit shall include all right-of-way clearing necessary to properly install HDPE and the proper removal and disposal of railroad ties, tie-butts, trees, brush, stumps and other debris as required of the railroad, right-of-way owners, authorized jurisdictional permitting agencies and Verizon's satisfaction. This unit shall include the removal and replacement of Other Common Carriers (OCC) and all public utility marker post signs when required.

This unit shall include the removal of all empty reel(s) from the right-of-way immediately after the reel(s) are emptied and disassembly and loading of all returnable reel(s) to the supplier. All materials to be removed shall be disposed of at a “recognized dump facility” in the area as designated by the local governing authority. No payment will be made for this unit until all associated buried cable marker(s)/steel post(s) and hardware have been placed.

2.4.6 213 Rock Adder

This unit shall include all time, equipment, material and material handling to utilize the proper rock excavating equipment (i.e., jack hammer, hoe ram, rock cutting) to complete the required work operation. Rock excavation will be paid in conjunction with other Conduit Placing Bid-Unit(s) when rock is defined as areas where:

A Truckhoe Excavator equivalent to or larger than a 215 CAT, equipped with a rock bucket, is incapable of excavating to the minimum specified depth. A pre-rip tractor, capable of delivering a minimum of 55,000 lb. drawbar pull at 1.2 MPH forward speed, is incapable of ripping, after three attempts, at the specified minimum depth.

If the Contractor does not supply a unit price for this item, Verizon will assume any rock encountered will be removed at the Contractors expense. This unit shall include furnishing and placing clean backfill materials. All waste and/or abandoned materials to be removed shall be disposed of at an approved dump facility in the area as designated by the local governing authority, and is also included in this unit price. Verizon Representative will have final authority on all disputes on rock definition.

2.4.7 214 Slurry Backfill Adder

This unit shall include all time, equipment, material and material handling to backfill the excavated trench in its entirety with a sand mix slurry as shown on the construction detail drawings. This unit shall include the removal and disposal of all excavated spoilage materials at an approved dump facility” in the area or as designated by the local governing authority.

2.4.8 215 Expose Conduit

This unit shall include all time, equipment, material and material handling to properly expose by pothole/side exposure method, the specified size/type/number of conduit(s)/innerduct(s) and split HDPE at the specified minimum cover as shown on the construction drawings.

Note: *Split HDPE refers to a split protective duct placed in conjunction with the buried cable.*

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through

which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include the placement of Verizon buried cable warning tape 12 inches below the final grade. This unit shall include all fence work, including temporary removal, restoration and replacement. This unit shall include all right-of-way clearing necessary to properly expose conduit(s) and the proper removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and to Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority. This unit shall not apply to exposing conduit for verifying location, protection or verification. This unit will only apply to specific locations designated by Verizon.

2.4.9 216 Expose Conduit and Relocate

This unit shall include all time, equipment, material and material handling to properly expose by pothole/side exposure method, and relocate the specified size/type/number of conduit(s)/innerduct(s) and split HDPE, to a new alignment and/or depth as shown on the construction drawings.

Note: *Split HDPE refers to a split protective duct placed in conjunction with the buried cable.*

This unit shall include all hand and machine trenching necessary to provide additional depth and/or excavation requirements to relocate the specified number of conduit(s)/innerduct(s) to the new alignment and/or depth as shown on the construction drawings. This unit shall include the ring cutting of the existing conduit(s)/innerduct(s), (housing an active fiber cable), and the removal of a specified section of conduit(s)/innerduct(s) to perform the work operation. (No torching permitted).

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include the placement of Verizon buried cable warning marker tape 12 inches below the final grade. This unit shall include all right-of-way clearing necessary to properly expose and relocate conduit(s) and the proper removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.4.10 217 Expose Conduit and Replace/Substitute

This unit shall include all time, equipment, material and material handling to properly expose by pothole/side exposure method and replace/substitute, the specified size/type/number of conduit(s)/innerduct(s) and split HDPE, at the specified minimum cover as shown on the construction drawings.

Note: *Split HDPE refers to a split protective duct placed in conjunction with the buried cable.*

This unit shall include the ring cutting of the existing conduit(s)/innerduct(s), (housing an active fiber cable), and the removal of a specified section of conduit(s)/innerduct(s) to perform the work operation. (No torching permitted). In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include the placement of Verizon buried cable warning marker tape 12 inches below the final grade. This unit shall include placement of a Verizon-approved innerduct(s) or pull-line in each conduit (including bores and bore extensions), or as shown on the construction drawings. This unit shall include all fence work, including temporary removal and restoration. This unit shall include all right-of-way clearing necessary to properly expose conduit(s) and the proper removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.4.11 218 Expose and Remove Conduit

This unit shall include all time, equipment, material and material handling to properly expose by pothole/side exposure method, the specified size/type/number of conduit(s)/innerduct(s) and split HDPE at the specified minimum cover as shown on the construction drawings.

Note: *Split HDPE refers to a split protective duct placed in conjunction with the buried cable.*

This unit shall include the ring cutting of the existing conduit(s)/innerduct(s) (housing an active fiber cable) and the removal of a specified section of conduit(s)/innerduct(s) to perform the work operation. (No torching permitted).

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through

which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include all fence work, including temporary removal, restoration and replacement. This unit shall include all right-of-way clearing necessary to properly expose conduit(s) and the removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and to Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.5 219 Expose and Remove Conduit (Abandoned)

This unit shall include all time, equipment, material and material handling to expose and remove the specified size/type/number of abandoned conduit(s)/innerduct(s) and split HDPE at the specified minimum cover as shown on the construction drawings.

Note: *Split HDPE refers to a split protective duct placed in conjunction with the buried cable.*

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include all fence work, including temporary removal, restoration and replacement. This unit shall include all right-of-way clearing necessary to properly expose conduit(s) and the removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and to Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.5.1 220 Concrete Encase

This unit shall include all time, equipment, material and material handling to encase in a minimum of 2000 PSI concrete, containing no aggregate larger than 3/4 inch, or as otherwise indicated on the detail drawing(s), the specified size/type/number of conduit(s) at the specified minimum cover as shown on the construction drawings.

This unit shall include the installation of conduit duct spacers as necessary to provide stability and consistent duct separation as shown on the Verizon construction detail. This unit shall include the placement of Verizon buried cable warning marker tape placed 12 inches below final grade.

2.5.2 221 Remove Concrete Encasement

This unit shall include all time, equipment, material and material handling to safely remove and dispose of a specified size of concrete encasement containing the specified size/type/number of conduit(s) and innerduct(s), at the specified cover as shown on the construction drawings.

Note: *Exposure of the concrete encasement to perform the work operation is payable under the specified Expose Conduit Bid-Unit's (#215, #216, #217 or #218) as shown on the construction drawings.*

This unit shall require the Contractor to utilize "Extreme Caution" during the removal work operation. All waste and/or abandoned materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.5.3 222 Remove Concrete Cap

This unit shall include all time, equipment, material and material handling to safely remove and dispose of a specified size of concrete cap containing the specified size/type/number of conduit(s) and innerduct(s), at the specified minimum cover as shown on the construction drawings.

Note: *Exposure of the concrete cap to perform the work operation is payable under the specified Expose Conduit Bid-Unit's (#215, #216, #217 or #218) as shown on the construction drawings*

This unit shall require the Contractor to utilize "Extreme Caution" during the removal work operation. All waste and/or abandoned materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.5.4 240 Place Handhole

This unit shall include all time, equipment, material (except that provided by Verizon), and material handling to properly install a handhole as per Verizon typical drawings. This unit shall include placement of 12 inches of washed, crushed stone (3/4 inch grade) at the base of the excavation. This unit shall include the placement of an 8 foot long copper clad 5/8 inch ground rod, 15 feet of #6 AWG ground wire, ground rod clamp, surge arrestor handhole (buried), HDPE and Isolator/Protection system as per Verizon specifications at each splice handhole as required. This unit shall include, unless otherwise stipulated by the drawings, that all Verizon handholes will be buried with 12 to 18 inches of cover at final grade.

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include all necessary excavation and re-compaction to fulfill contractual obligations for re-entry into the handhole after initial placement. (This applies to buried handholes only.) This unit shall include all right-of-way clearing necessary to properly install the handhole and the proper removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and Verizon's satisfaction.

All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority. No payment for this unit will be made until a Verizon buried cable marker/steel post and associated hardware have been placed at the handhole location.

2.5.5 244 Remove Existing Handhole

This unit shall include all time, equipment, material and material handling to properly remove an existing handhole and grounding hardware as shown on the construction drawings. In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material around the handhole shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include any necessary removal and restoration of existing concrete/asphalt. This unit shall include transferring existing cable slack from the location to a new location as shown on the construction drawings. This unit shall include any required modifications to the structure to safely allow its removal. (No torching permitted). This unit shall include the removal and disposal of existing buried cable marker post(s)/hardware at the handhole as shown on the construction drawings. This unit shall include all fence work, including temporary removal, restoration and replacement. This unit shall include all right-of-way clearing necessary to properly expose handhole/cable/conduit and the removal or disposal of the old handhole, railroad ties, tie-butts, trees, brush stumps and all other debris as required of the railroad, right-of-way owners, authorized jurisdictional permitting agencies and Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.5.6 245 Relocate Handhole

This unit shall include all time, equipment, material (except that provided by Verizon) and material handling to properly relocate a handhole as shown on the construction drawings. This unit shall include relocation of an 8 foot long copper clad 5/8 inch ground rod, 15 feet of #6 AWG ground wire, ground rod clamp, surge arrester handhole (buried), HDPE and Isolator/Protection system as per Verizon specifications at each SPLICE HANDHOLE as required.

This unit includes placement of 12 inches of washed, crushed stone (3/4-inch grade) at the base of the excavation. This unit shall include, unless otherwise stipulated by the drawings, that all Verizon handholes will be buried with 12 to 18 inches of cover at final grade. In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done.

Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis. This unit shall include transferring existing cable slack from the location to the new handhole location. This unit shall include all right-of-way clearing necessary to properly expose and relocate the handhole and the proper removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and to Verizon's satisfaction. This unit shall include all necessary excavation and re-compaction as required to fulfill contractual obligations for re-entry into the handhole after initial placement. (This item applies to buried handholes only.)

This unit shall include saw cutting the bottom of the handhole (if required) per Verizon specifications. (No torching permitted). This unit shall include pre-mixing and placing Sacrete in the bottom of the handhole to repair the opening created by the saw cutting operation. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority. No payment for this unit will be made until a Verizon buried cable marker/steel post and associated hardware have been placed at the handhole location.

2.5.7 246 Replace/Substitute Handhole

This unit shall include all time, equipment, material (except that provided by Verizon) and material handling to properly replace/substitute a handhole as shown on the construction drawings. This unit shall include the placement of an 8 foot long copper clad 5/8-inch ground rod, 15 feet of #6 AWG ground wire, ground rod clamp, surge arrestor handhole (buried), HDPE and Isolator/Protection system as per Verizon specifications at each splice handhole, as required. This unit shall include placement of 12 inches of washed, crushed stone (3/4-inch grade) at the base of the excavation. This unit shall include, unless otherwise stipulated by the drawings, that all Verizon handholes will be buried with 12 to 18 inches of cover at final grade.

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis. This unit shall include all necessary excavation

and re-compaction as required to fulfill contractual obligations for re-entry into the handhole after initial placement. (This item applies to buried handholes only.)

This unit shall include all right-of-way clearing necessary to properly expose cable/conduit and proper removal or disposal of the old handhole, railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and to Verizon's satisfaction. This unit shall include saw cutting the bottom of the handhole (if required) per Verizon specifications. (No torching permitted). This unit shall include pre-mixing and placing Sacrete in the bottom of the handhole to repair the opening created by the saw cutting operation. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority. No payment for this unit will be made until a Verizon buried cable marker/steel post and associated hardware have been placed at the handhole location.

2.5.8 247 Excavate Splice Pit

This unit shall include all time, equipment, material and material handling to properly excavate a splice pit as per Verizon typical drawing. See Figure 2-1 and Figure 2-2 for details on shoring of splice pit. In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts. The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include all right-of-way clearing necessary to properly excavate the splice pit and the proper removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and to Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.5.9 250 Place Manhole

This unit shall include all time, equipment, material and material handling (except materials provided by Verizon) to properly install a manhole, frame, cover and any associated racking, steps, ladder hardware and grouting as per the Verizon typical drawing. This unit shall include the placement of an 8-foot long copper clad 5/8 inch ground rod, 15 feet of #6 AWG ground wire, ground rod clamp, and isolator/protection system as per Verizon specifications at each splice manhole as required. This unit shall include placement of 12 inches of washed, crushed stone (3/4-inch grade) at the base of the excavation.

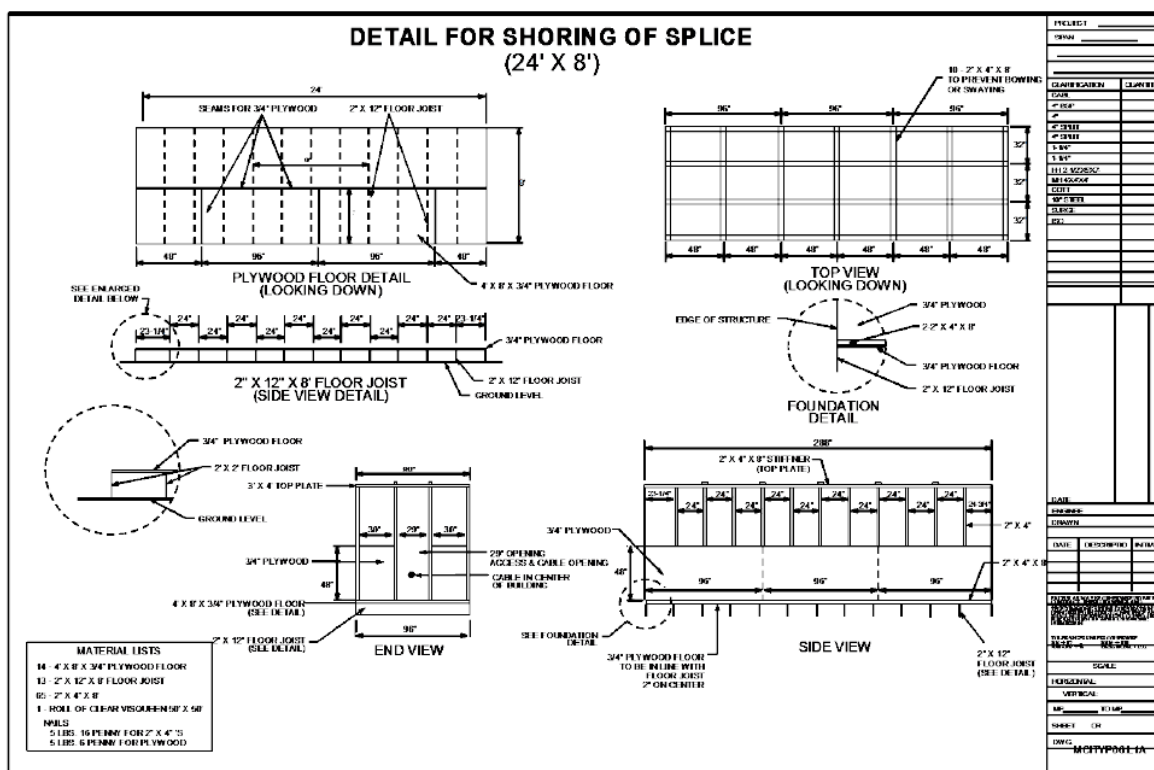
In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include:

- Typical de-watering,

- Shoring,
- Back filling,
- Compaction tamping
- Restoration.

Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include any necessary removal and restoration of concrete/asphalt required to properly install the manhole to the satisfaction of jurisdictional permitting authority(s), railroad and Verizon. This unit shall include all right-of-way clearing necessary to properly expose cable/conduit and the removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required of the railroad, right-of-way owners, authorized jurisdictional permitting agencies and Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.



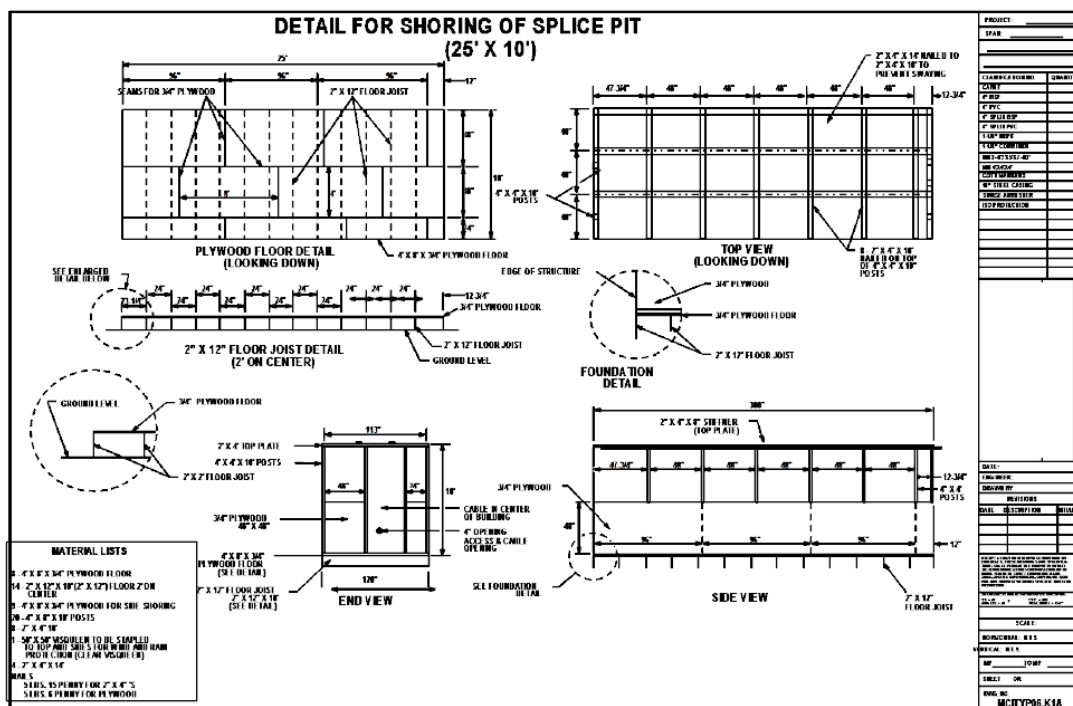


Figure 2-2 Detail for Shoring of Splice Pit (25' x 10')

2.6 252 Remove Existing Manhole

This unit shall include all time, equipment, material and material handling to properly remove an existing manhole, frame, cover, any associated racking, steps, ladder hardware and grounding hardware as shown on the construction drawings.

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, importing and placing back filling material, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include any necessary removal and restoration of concrete/asphalt. This unit shall include transferring existing cable slack from the location to the new manhole/handhole location as shown on the construction drawings. This unit shall include any required modifications to the structure to safely allow its removal. (No torching permitted). This unit shall include all fence work, including temporary removal, restoration and replacement. This unit shall include all right-of-way clearing necessary to properly expose manhole/cable/conduit and the removal or disposal of the old manhole, railroad ties, tie-butts, trees, brush

stumps, and all other debris as required of the railroad, right-of-way owners, authorized jurisdictional permitting agencies and Verizon's satisfaction.

All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.6.1 255 Relocate Precast Manhole

This unit shall include all time, equipment, material and material handling (except materials provided by Verizon) to properly relocate a precast manhole, frame, cover and any associated racking, steps, ladder hardware, grouting and grounding hardware as per Verizon specifications at each splice manhole as required. This unit shall include placement of 12 inches of washed, crushed stone (3/4-inch grade) at the base of the excavation.

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include:

- Typical de-watering,
- Shoring,
- Back filling,
- Compaction tamping
- Restoration.

Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include any necessary removal and restoration of concrete/asphalt required to properly install the manhole to the satisfaction of jurisdictional permitting authority(s), railroad, and Verizon.

This unit shall include the placement and/or relocation of an 8 foot long copper clad 1/2-inch ground rod, 25 feet of #6 AWG ground wire, ground rod clamp, and isolator/protection system as per Verizon specifications at each splice manhole as required.

This unit shall include transferring existing cable slack from the location to the new manhole location.

This unit shall include any right-of-way clearing necessary to properly expose cable/conduit and the removal or disposal of the old manhole, railroad ties, tie-butts, trees, brush, stumps and all other debris as required of the railroad, right-of-way owners, authorized jurisdictional permitting agencies and Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.6.2 256 Replace/Substitute Precast Manhole

This unit shall include all time, equipment, material and material handling (except materials provided by Verizon) to properly replace/substitute manhole, frame, cover, any associated racking, steps, ladder

hardware, grouting and grounding hardware per the typical drawing. This unit shall include placement of 12 inches of washed, crushed stone (3/4-inch grade) at the base of the excavation.

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include; typical de-watering, shoring, back filling, compaction tamping and restoration. Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include any necessary removal and restoration of concrete/asphalt required to properly replace/substitute the manhole to the satisfaction of jurisdictional permitting authority(s), railroad and Verizon. This unit shall include the placement and/or relocation of an 8 foot long copper clad 1/2-inch ground rod, 25 feet of #6 AWG ground wire, ground rod clamp, and isolator/protection system as per Verizon specifications at each splice manhole as required. This unit shall include any right-of-way clearing necessary to properly expose cable/conduit and the removal or disposal of the old manhole, railroad ties, tie-butts, trees, brush, stumps and all other debris as required of the railroad, right-of-way owners, authorized jurisdictional permitting agencies and Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.6.3 260 Construct Retaining Wall

This unit shall include all time, equipment, material and material handling to construct a specified retaining wall of dimension and material as shown on the construction drawings.

2.6.4 270 Remove and Restore Asphalt

This unit shall include all time, equipment, material and material handling to saw cut, remove and restore asphalt, surface mix, sub-base, gravel base, striping paint, curbs, gutters and speed bumps as detailed on the construction plans or as required on permits. The Contractor's price includes any stone or gravel needed and compaction tamping.

Note: *The initial cut into the existing asphalt is to be made with Verizon-approved asphalt removal equipment (i.e., asphalt saw) to minimize restoration efforts.*

All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority. This unit shall be paid on a sq. ft. basis regardless of asphalt thickness. The new asphalt will match the material being replaced.

2.6.5 280 Remove and Restore Concrete

This unit shall include all time, equipment, material and material handling to saw cut, remove and restore concrete, including sub-base, gravel base, reinforcement steel, striping paint, curbs, gutters and speed bumps as detailed on the construction plans or as required on permits. The Contractor's price includes any stone or gravel needed and compaction tamping. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

Note: *The initial cut into the existing sidewalk is to be made with Verizon-approved concrete removal equipment (i.e., concrete saw) to minimize restoration efforts.*

This unit shall be paid on a sq. ft. basis regardless of concrete thickness. The new concrete will match the material being replaced.

2.6.6 281 Remove and Restore Sidewalk

This unit shall include all time, equipment, material and material handling to saw cut, remove and restore sidewalk, sub-base, gravel base, reinforcement steel as detailed on the construction plans or as required on permits. The Contractor's price includes any stone or gravel needed and compaction tamping.

Note: *The initial cut into the existing sidewalk is to be made with Verizon-approved concrete removal equipment (i.e., concrete saw) to minimize restoration efforts.*

All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority. This unit shall be paid on a sq. ft. basis regardless of sidewalk thickness. The new sidewalk will match the material being replaced.

2.6.7 282 Remove and Restore Curbing

This unit shall include all time, equipment, material and material handling to saw cut, remove and restore curbing, including sub-base, gravel base, reinforcement steel, as detailed on the construction plans or as required on permits. The Contractor's price includes any stone or gravel needed and compaction tamping. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.6.8 310 Attach Conduit to Wall or Structure

This unit shall include all time, equipment, material and material handling to attach a specified size/type/number of conduit(s)/innerduct(s) to a wall or structure. This unit shall include all innerducts or HDPE equipped with pull ropes, attachment hardware and attachment clamps placed at maximum intervals of ten feet or as specified on the construction detail drawings. This unit shall include all expansion joints with a minimum 8 inch travel, placed at maximum intervals of 100 to 150 feet or as specified on the construction detail drawings. Payment for this bid-unit will be from grade to grade on all bridge attachments, unless otherwise specified on the construction drawings. All sweeps, adapters and conduit necessary to return to grade will be paid under Bid-Unit 210 Place Conduit.

2.6.9 315 Detach Conduit from Wall or Structure

This unit shall include all time, equipment, material and material handling to detach a specified size/type/number of conduit(s)/innerduct(s) from a wall or structure. This unit shall include the ring cutting of the conduit(s)/innerduct(s) for the removal of a specified section as shown on the construction drawings. (No torching permitted). This unit shall include the removal and disposal of all abandoned hardware and attachment clamps and proper repairs to the wall structure as shown on the construction drawings. All materials to be removed shall be disposed of at a “recognized dump facility” in the area as designated by the local governing authority.

2.6.10 320 Core Bore

This unit shall include all time, equipment, material and material handling to core bore any manholes, bridge sides or head walls, building floors/walls, and to insert Schedule 40 GRC or GSP sleeve, cut flush with the surface of the wall or floor, and epoxy-grouted into the finish of the concrete structure(s).

2.6.11 330 Attach Pull/Splice Box to Wall or Structure

This unit shall include all time, equipment, material and material handling to install and attach a specified size of pull/splice box to a wall or structure as shown on the construction detail drawings. The pull/splice box shall be supplied by the Contractor and will be of a type and size approved by Verizon.

2.6.12 410 Pull Cable

This unit shall include all time, equipment, figure eighting, material and material handling to pull cable(s) in any size duct, and to seal all conduit(s)/innerduct(s) with Verizon-approved materials (Foam). Permanent sealing will be with JackMoon style plugs and sleeves.

Note: All ducts inside terminal, junction, or repeater sites will be sealed by Verizon splicers. This procedure requires coordination with the splicing department to eliminate open conduit(s)/innerduct(s).

This unit shall include all time, equipment, material and material handling required to locate, access and re-compaction of all handholes or manholes involved in the project. This unit shall include coiling (walleye coil method if applicable) 20 meters of cable in all pull-through handholes/manholes. Sufficient cable must be pulled at all repeater, terminal and junction buildings to ensure that 20 meters of cable is left in the handhole/manhole; sufficient cable is available to enter the repeater, terminal or junction building to reach the Lightwave Distribution frame; and 10 meters is available to terminate or splice at the Splice Termination Box (STB). This unit shall include the use of split grips in the raceway to secure cable. Excess duct length may be trimmed back as necessary.

Note: Special situations may require that additional cable lengths be left in the handhole/manhole if requested by the Verizon Construction Manager.

The Contractor will be responsible for the verification of joint protection and sequential readings, and for pulling the cable into repeaters, junctions and terminals.

Fiber cable reel testing may protect the contractor from taking responsibility of damage to cable during shipment. At the discretion of the contractor an OTDR unidirectional test will be conducted to determine dB loss per kilometer, length of fiber, continuity of all fibers and any fiber anomalies. Verizon accepts the factory test of the cable and does not test it until it is placed. The integrity of the cable is the responsibility of the contractor from the time of delivery until cable placement is complete. All fiber cable will be OTDR tested by Verizon immediately after the cable has been placed. The test results will be recorded on 3.5" floppy diskette or CD and sent to the Verizon Construction Manager. The unit shall include the removal of cable reel(s) from the right-of-way immediately after the reel(s) are emptied. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority. This unit shall be paid on the surveyed length of conduit run regardless of the actual quantity installed.

2.6.13 411 Pull Innerduct

This unit shall include all time, equipment, material and material handling to pull the specified size/type/number of innerduct(s), equipped with a Verizon-approved pull rope, into any size duct, as shown on the construction drawings. This unit shall include all time, equipment and material required to seal all conduit(s)/innerduct(s) with Verizon-approved material (Foam). Permanent sealing will be with JackMoon style plugs and sleeves. This unit shall include locating, accessing and re-compacting of all handhole(s) or manhole(s) to properly pull innerduct(s) through conduit. This unit shall include leaving a sufficient length of innerduct(s) extending into each handhole/manhole to allow for contraction of innerduct(s) which may occur as a result of pulling operation.

Eighteen inches of innerduct should remain inside handhole/manhole after the pulling operation. This unit shall include the removal of innerduct reel(s) from the right-of-way immediately after the reel(s) are emptied. All materials to be removed shall be disposed of at an approved dump facility in the area as designated by the local governing authority. This unit shall be paid on the surveyed length of duct run regardless of the actual quantity installed.

2.6.14 415 Remove Cable from Conduit

This unit shall include all time, equipment, figure eighting, material, and material handling required to remove a cable from existing conduit(s)/innerduct(s), and replacing with a Verizon-approved pull rope, as shown on the construction drawings. This unit shall include placing the cable on a take up reel, 54-60 inches, of good sound condition, (Contractor provided) and all shipping and handling charges incurred transporting the reel to the specified Verizon location. This unit shall include sealing all vacated conduit(s) and innerduct(s) with Verizon approved material (Foam). This unit shall include locating/accessing and re-compaction of the buried handhole(s)/manhole(s) to properly remove the cable from the conduit. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority. This unit shall be paid on the surveyed length of cable run regardless of the actual length.

2.6.15 420 Reposition Active Cable Slack

This unit shall include all time, equipment, material and material handling to reposition a specified amount of existing (operational) fiber optic cable slack from a specified existing location to another location as shown on the construction drawings. This unit shall include locating/accessing and re-compaction of the buried handhole(s)/manhole(s) to properly perform the work operation. If applicable, this unit shall include exposing the buried conduit/innerduct(s), ring cutting the conduit/innerduct(s) and the repair to the conduit(s)/innerduct(s), backfilling, compaction tamping and restoration at various locations along the route to assist the fiber cable(s) during the repositioning of active cable slack operation. (No torching permitted).

This unit shall include all right-of-way clearing necessary to properly expose cable/conduit and the removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, and/or authorized jurisdictional permitting agencies and to Verizon's satisfaction. This includes the removal and restoral of any existing concrete encasement/cap and disposal of the debris from the job site. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority. This unit shall be paid per location regardless of the actual length.

2.6.16 510 Direct Bury Cable

This unit shall include all time, equipment, material, figure-eighting and material handling required to properly install the specified number of cable(s) and split HDPE at the specified minimum cover as shown on the construction drawings.

Note: *Split HDPE refers to a split protective duct placed in conjunction with the buried cable.*

This unit shall include all hand and machine-trenching, pre-ripping, plowing and rock sawing required to maintain the specified minimum cover. This unit shall include tunneling under, cutting through, and repairing or replacing any culverts and/or fences as necessary to properly install the cable. This unit shall also include the placement of a Schedule 30, 4-inch snap lock split duct or Schedule 40 split GIP/BSP at all utility crossings, culverts and underground obstructions. This unit shall include the placement of Verizon buried cable warning marker tape 12 inches below final grade. This unit shall include all fence work, including temporary removal, restoration and replacement. This unit shall include removing and replacing down guys when required.

This unit shall include coiling 20 meters of cable in all pull-through handholes/manholes. Sufficient cable must be pulled at all repeater, terminal and junction buildings to ensure that 20 meters of cable is left in the handhole/manhole; sufficient cable is available to enter the repeater, terminal or junction building to reach the Lightwave Distribution frame; and 10 meters is available to terminate or splice at the Splice Termination Box (STB).

Note: *Special situations may require that additional cable lengths be left in the handhole/manhole if requested by the Verizon Construction Manager.*

This unit shall include all right-of-way clearing necessary to properly install cable(s)/conduit(s) and proper removal and disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required of the railroad, right-of-way owners, authorized jurisdictional permitting agencies and Verizon's satisfaction. This unit shall also include the removal and replacement of OCC (Other Common Carriers) and all public utility marker post signs when required. This unit shall include the removal of cable reel(s) from the right-of-way immediately after the reel(s) are emptied. The Contractor will test all fiber cable reels with OTDR upon receipt of reel. All fiber cable will be OTDR tested immediately after the cable has been placed. The results will be recorded and sent to the Verizon Construction Manager. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority. No payment will be made for this unit until all associated buried cable marker(s)/steel post(s) and hardware have been placed. This unit shall be paid on the surveyed length of cable run regardless of the actual length.

2.6.17 515 Expose Direct Buried Cable

This unit shall include all time, equipment, material and material handling required to properly expose by vacuum pothole, hand dig or pothole side exposure method the specified number of cable(s) as shown on the construction drawings. This unit will include pot-holing not to exceed 50-ft intervals. This unit shall include tunneling under, cutting through, and repairing or replacing any culverts and/or fences if necessary to properly expose the cable. This unit shall include the placement of Verizon buried cable warning marker tape, placed 12 inches below final grade.

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include:

- Typical de-watering,
- Shoring,
- Back filling,
- Compaction tamping
- Restoration.

Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis.

This unit shall include all right-of-way clearing necessary to properly expose cable/conduit and proper removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required by the railroad, right-of-way owners, authorized jurisdictional permitting agencies and Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by

the local governing authority. This unit shall be paid for only specific Verizon locations, does not include routine crossings.

2.6.18 516 Expose Direct Buried Cable and Relocate

This unit shall include all time, equipment, material and material handling required to properly expose by vacuum pothole or hand dig method, and relocate, the specified number of cable(s) to a new alignment and/or specified minimum depth as shown on the construction drawings. This unit will include pot-holing not to exceed 50-ft intervals. This unit shall include all hand and machine trenching, and all necessary rock sawing to provide additional depth and/or excavation requirements to relocate the specified number of cables to the new alignment and/or specified minimum depth as shown on the construction drawings. This unit shall include tunneling under, cutting through, and repairing or replacing any culverts and/or fences if necessary to properly expose and relocate the cable. This unit shall include the placement of Verizon buried cable warning marker tape, placed 12 inches below final grade.

In accordance with all Federal, State, local, O.S.H.A., permitting agency and ROW requirements, this unit shall include:

- Typical de-watering,
- Shoring,
- Back filling,
- Compaction tamping
- Restoration.

Backfill material shall consist of clean fill placed in maximum of 6 to 12 inch lifts above the conduit(s). The method of compaction and the equipment used shall be appropriate for the material to be compacted. Relative compaction shall be 95 percent standard density or as required by the local governing agency through which the work is being done. Typical de-watering is defined as utilization up to a three-inch Mud pump. Major de-watering to be handled on a case by case basis. This unit shall include coiling of all slack cable in pull-through handholes and at splice handholes. This unit shall include all right-of-way clearing necessary to properly expose and relocate cable/conduit and proper removal or disposal of railroad ties, tie-butts, trees, brush, stumps and all other debris as required of the railroad, right-of-way owners, authorized jurisdictional permitting agencies and Verizon's satisfaction. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.6.19 517 Remove and Dispose of Cable

This unit shall include all time, equipment, material and material handling necessary to remove and dispose of abandoned cable(s) as specified on the construction drawings. This unit shall include restoring grade to original or better condition. All materials to be removed shall be disposed of at a "recognized dump facility" in the area as designated by the local governing authority.

2.6.20 520 Place Aerial Cable

This unit shall include all time, equipment, material and material handling to place anchors, guys, strand, and associated hardware, tree guards, extension arms, and Verizon-supplied cable at the tension and height specified on the construction plans and to perform grounding of the strand at 1/4-mile intervals. This unit shall include all time, equipment and material to place Verizon-supplied aerial warning tags at all poles and to place Schedule 40 galvanized U-guard risers at all dip poles, with all necessary U-guard to conduit adapter hardware. U-guards must be placed from the conduit adapter (a minimum of one foot below surrounding ground level) to a height two feet below the cable attachment point.

This unit shall include the installation of all sweeps and guy guards. This unit shall include all fence work, including temporary removal and restoration. The Contractor is required to provide sufficient rollers and pull-line to place at least 5 km of cable in a single pull. Rollers will be spaced at maximum intervals of 35 feet. This unit shall include double lashing of cable or HDPE. This unit shall include the removal of all empty reel(s) from the right-of-way immediately after the reel(s) is emptied.

Fiber cable reel testing may protect the contractor from taking responsibility of damage to cable during shipment. At the discretion of the contractor an OTDR unidirectional test will be conducted to determine dB loss per kilometer, length of fiber, continuity of all fibers and any fiber anomalies. Verizon accepts the factory test of the cable and does not test it until it is placed. The integrity of the cable is the responsibility of the contractor from the time of delivery until cable placement is complete. All fiber cable will be OTDR tested by Verizon immediately after the cable has been placed. The test results will be recorded on 3.5" floppy diskette or CD and sent to the Verizon Construction Manager. All materials to be removed shall be disposed of at an approved dump facility in the area as designated by the local governing authority. This unit shall be paid on the surveyed length of cable run regardless of the actual length.

2.6.21 521 Tree Trimming

This unit shall include all time, equipment and material for trimming trees to maintain at least 10 feet, or other specified, clearance radius around the aerial cable and strand. All tree trimming debris will be hauled away or disposed of, in accordance with Verizon, railroad and local permitting agency requirements, by the Contractor.

2.6.22 525 Relocate Aerial Cable

This unit shall include all time, equipment, material and material handling to relocate aerial cable, anchors, guys, strand and associated hardware, tree guards, and extension arms at the tension and height or location specified on the construction plans and to perform grounding of the strand at 1/4-mile intervals. This bid-unit shall include all de-lashing and re-lashing along with the installation of new strand if required.

This unit includes all time, equipment and material to relocate Verizon-supplied aerial cable warning tags at all poles and to place schedule 40 galvanized U-guard risers at all dip poles with all necessary U-guard to conduit adapter a minimum of one foot below grade to a height two feet below the cable attachment point. This unit includes the installation of all sweeps and guy guards. This unit shall include all fence work, including temporary removal, restoration and replacement. This unit shall include the removal of all empty reels and/or hardware immediately after the reel(s) is emptied and the hardware removed. All materials to

be removed shall be disposed of at a “recognized dump facility” in the area as designated by the local governing authority.

2.6.23 526 De-lash Aerial Cable

This unit shall include all time, equipment, material and material handling required to de-lash aerial cable(s) from strand as shown on the construction drawings. This unit shall include removal of all associated hardware and tree guards necessary to perform the work operations as shown on the construction drawings. All materials to be removed shall be disposed of at a “recognized dump facility” in the area as designated by the local governing authority.

2.6.24 527 Re-lash Aerial Cable

This unit shall include all time, equipment, material and material handling required to relash aerial cable(s) to strand as shown on the construction drawings. This unit shall include all time, equipment and material necessary to replace all associated hardware, tree guards, extension arms, anchors and guys necessary to perform the work as shown on the construction drawings.

2.6.25 528 Remove Aerial Cable

This unit shall include all time, equipment, material and material handling necessary to remove aerial cable(s) and to dispose of or salvage of the cable as shown on the construction drawings. This unit shall include removal of aerial strand, guys, anchors, associated hardware, tree guards and extension arms unless noted otherwise on the construction drawings. This unit shall include the placement of any required guys, anchors, associated hardware, schedule 40 galvanized U-guard risers, tree guards and extension arms to properly secure the remaining aerial strand and cable prior to, during and after this work operation. This unit shall include placing the cable on a take up reel (Contractor provided) and all shipping and handling charges incurred transporting the reel to the specified local Verizon location. All materials to be removed shall be disposed of at a “recognized dump facility” in the area as designated by the local governing authority.

2.6.26 530 Place Pole/Push Brace

This unit shall include all time, equipment, material and material handling to place pole(s) and push brace(s) as shown on the construction drawings. This unit shall include retrieving and transporting the pole from the pole yard to the work area, excavating the hole to the proper depth, setting and aligning the pole, tamping, disposing of any excess dirt and grounding (by specified methods).

2.6.27 535 Remove Pole/Push Brace

This unit shall include all time, equipment, material and material handling necessary to remove pole(s) and push brace(s) as shown on the construction drawings. This unit shall include the disposal or salvage of the pole and all shipping and handling charges incurred transporting the pole from the work site to a location

specified by Verizon. This unit shall include the proper filling, tamping and restoration of the void left by the removal of the pole. All materials to be removed shall be disposed of at a “recognized dump facility” in the area as designated by the local governing authority.

2.6.28 610 Jetting Conduit

This unit shall include all time, equipment, material and material handling for jetting and placing a specified size/type/number of conduit(s)/innerduct(s) equipped with a Verizon-approved pull-line, at the specified minimum cover (or depth if specified by the appropriate local permitting agency). Shotcrete special mix (cloth bag only) is to be laid over the conduit in jetted trenches at maximum five foot intervals (or as specified) before trenches are closed.

This unit shall include placement of rip rap, as specified, on the shore portion of the activity. This unit includes the removal and proper disposal of any drilling fluids as well as empty reels in accordance with Verizon and other responsible jurisdictional body regulations. All materials to be removed shall be disposed of at a “recognized dump facility” in the area as designated by the local governing authority. No payment will be made for this unit until all conduits and associated hardware have been placed.

2.6.29 620 Embedment Plow

This unit shall include all time, equipment, material and material handling to properly install the specified number of cable(s) and/or conduit(s) with the specified minimum cover as shown on construction drawings.

2.6.30 630 Directional Bore

This unit shall include all time, equipment, material and material handling to directional bore the specified size, type and number of conduit(s), drill pipe or casing(s), equipped with an Verizon-approved pull line and/or equipped with the specified number of Verizon-approved innerduct(s) or conduit(s) to the specified depth and distance as shown on the detailed construction drawings. The Contractor will be responsible for all unsuccessful bore attempts. All unsuccessful bore attempts will be filled with concrete. Refer to Directional Bore regarding pre-construction Bore Plan requirements. This unit shall include temporary sealing or capping of the conduit(s) and sealing around the innerducts when placed, using Verizon approved material (Foam). Permanent sealing will be with Jack Moon style plugs and sleeves. If applicable, all bore casings that house a smaller diameter conduit shall require the voids located between the casing and smaller conduit to be grouted within 12 inches of each end.

This unit shall include (when boring requires the use of drilling fluid, such as bentonite) no discharge or site runoff of excess material into storm or sanitary sewer systems etc. No discharge or site runoff will be allowed. All types of Guidance Systems will be included in the unit price. This unit shall include fluid tank capacities shall be sized to hold excess drilling fluid including special drilling fluids without spillage. Entry points shall be totally enclosed with an earthen dam or by a fabricated containment vessel and equipped with a sump pump to reclaim or discharge tank.

This unit shall include the removal and proper disposal of any drilling fluids in accordance with the appropriate jurisdictional body regulations. This unit shall include the Contractor providing Verizon with detailed as-built drawings indicating the final bore plan and profile alignments beneath the specified obstruction (i.e., river, road, creek, etc.). No payment shall be made for services rendered prior to receiving the as-built documentation as indicated above. All materials to be removed shall be disposed of at an approved dump facility in the area as designated by the local governing authority.

2.6.31 631 Rock Adder Directional Bore Rock bit

This unit applies only when steering capabilities cannot be maintained with a normal drill bit through subsurface rock formations. The general guideline for the payment of this unit is:

- If a rock bit is attached and it takes twenty minutes or more to drill a 10' drill stem, with adequate pressure, then this unit will apply.

The Verizon representative will have final say in any dispute over rock definition.

2.6.32 632 Rock Adder Directional Bore Down Hole motor

This unit applies only when steering capabilities cannot be maintained with a rock drill bit through subsurface rock formations. This unit will only be used after written approval, as a part of the daily production report, from the Verizon representative is acquired. The general guideline for the payment of this unit is:

- Payment for this unit will be on a per foot basis, for the length of the bore that the motor is attached, unless the Verizon representative advises differently.

The Verizon representative will have final say in any dispute over rock definition or payment of this unit.

2.6.33 710 Place Buried Cable Markers and Signs/Verizon Water Crossing Signs

This unit shall include all time and equipment to place buried cable marker(s)/steel post(s) and associated hardware, as per Verizon specifications. Buried cable marker(s)/steel post(s) will be placed immediately after HDPE, cable, handholes and/or manhole installation. Verizon personnel will be responsible for stenciling the signs. Buried cable marker(s)/steel post(s) and stenciling kits will be furnished by Verizon.

This unit includes all time and equipment to place Verizon water crossing signs. One at each side of the crossing, visible from center of crossing.

2.6.34 711 Place Isolator/Protection System at Existing Handholes/Manholes

This unit shall include all time, equipment, material and material handling for the placement of an 8-foot long copper clad 5/8-inch ground rod, 15 feet of #6 AWG ground wire, ground rod clamp, surge arrestor handhole (buried), and cadd welding, HDPE and isolator/protection system as per Verizon specifications. This unit shall include locating/accessing and re-compaction of the buried handhole to perform the work operation.

Verizon will provide Isolator/Protector, grounding, warning signs and stenciling kits. Verizon personnel will be responsible for stenciling the signs.

2.6.35 712 Remove Buried Cable Marker Post/Hardware

This unit shall include all time, equipment, material and material handling to remove and dispose of a specified buried cable marker post/hardware as shown on the construction drawings. This unit shall include the disposal of the material at a “recognized dump facility” in the area as designated by the local governing authority. If operations request salvage of any reusable post/hardware, Contractor shall deliver the materials to the local operations facilities as per Verizon Restoration and Upgrades Statement of Work.

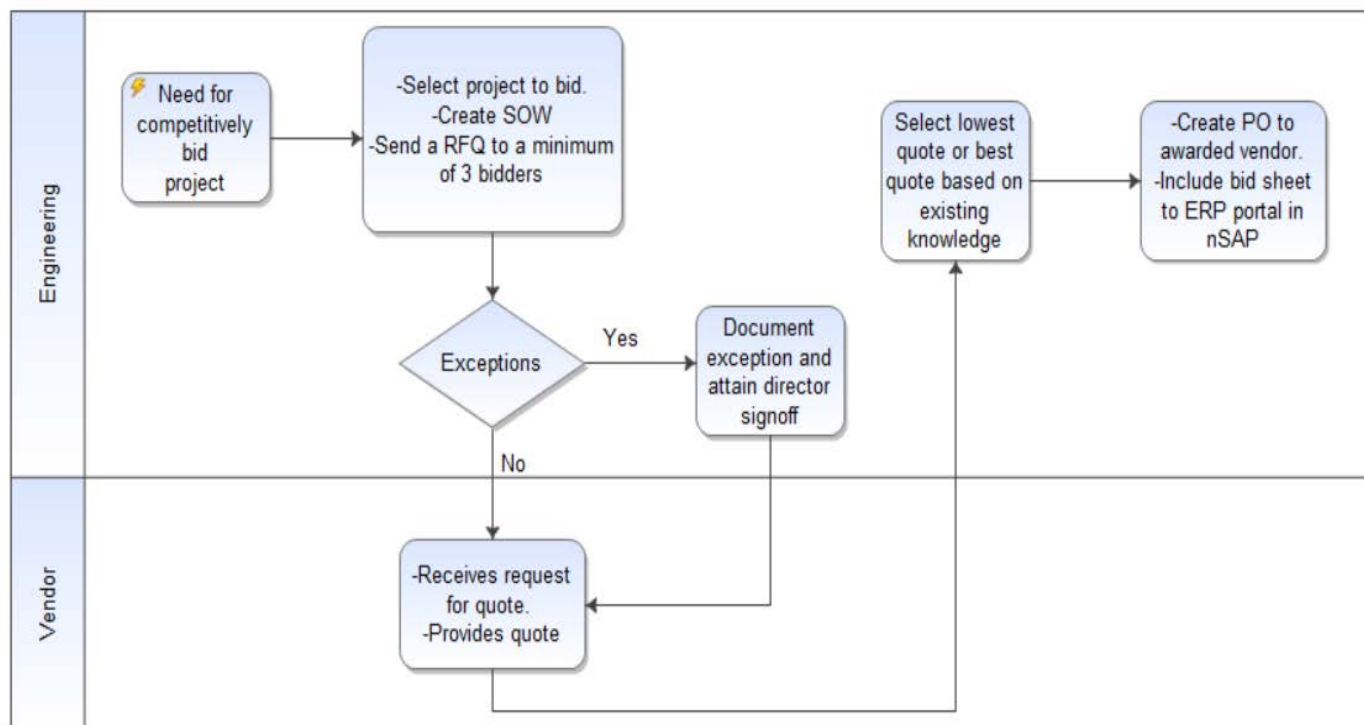
2.6.36 714 Remove Concrete Buried Cable Marker Post

This unit shall include all time, equipment, material and material handling to remove and dispose of a specified concrete buried cable marker post/hardware as shown on the construction drawings. This unit shall include the disposal of the material at a “recognized dump facility” in the area as designated by the local governing authority. If operations request salvage of any reusable concrete marker post, Contractor shall deliver the materials to the local operations facilities as per Verizon Restoration and Upgrades Statement of Work.

3.0 Competitive Bidding Process

3.1 Process Flow Chart

This Section creates a standard for competitive quotes less than 500k. It is required to solicit at least a minimum of 3 Quotes.



3.2 Competitive Pricing Parameters Process

Engineering will develop an estimate for a project using their best judgement and appropriate engineering tools.

Engineering is encouraged to solicit quotes from multiple approved vendors on all projects when appropriate. Engineering is required to have at least 1 quote from an approved vendor for projects under 50k.

Engineering will be required to solicit multiple quotes from vendors for projects estimated to be between \$50,000 and \$500,000. A minimum of 3 vendor quotes must be solicited.

Quotes will be submitted via the NSAP Shopping Cart (SC) process, with attached quote analysis, vendor recommendation, image of signed statement of work, contractor invoicing instructions recorded in the project file.

The Project File is to be maintained by Engineering.

Engineering management will approve, or disapprove with comments as needed, during shopping cart (ERP nSAP) approval process.

Procurement will review the shopping cart and the recommended vendor selection
If they are in agreement, Procurement will approve the SC and issue a Purchase Order (PO) and notify Engineering by e-mail.

Engineering will notify successful vendor to expect a PO, and Engineering will remind the vendor that the PO is required prior to starting work.

If procurement disagrees with vendor recommendation, Procurement will notify Engineering by email.
Procurement and OSPC must jointly agree on all project awards (escalate as necessary)

Engineering will notify and thank unsuccessful Suppliers for submitting quotes and encourage them to submit future quotes with improved pricing

All supplier lists, quotes and pricing is confidential. None of the information is to be shared with Suppliers or outside of Verizon.

For more information, refer to *Competitive Bidding Process*, at:

https://knowledge.verizon.com/vzknowledge/documentUrl.portal?doctype=VZK_DOCUMENT&docName=VZK_2270074&xDocFileType=Document

4.0 PAR Module

This section will outline the requirements for Project Activity Request (PAR) tracking and assigning via vBuild. The vBuild PAR Module will be the standard tool to track and assign Engineering and Operations requests to external vendors.

The action of creating a PAR & Unit Sheet will establish a financial commitment against the project in vSAP. The user must ensure that the project is properly funded to support the activities of the PAR. The financial commitment will be removed once the PAR process is completed and the activities are invoiced.

For More information, refer to *vBuild Project Activity Request (PAR) Engineering/Operations*, at:
https://knowledge.verizon.com/vzknowledge/documentUrl.portal?dDoctype=VZK_DOCUMENT&docName=VZK_041406&xDocFileType=Document

For More information, refer to *vBuild PAR (Project Activity Request) Engineering*, at:
https://knowledge.verizon.com/vzknowledge/documentUrl.portal?dDoctype=VZK_DOCUMENT&docName=VZK_034229&xDocFileType=Document

For More information, refer to *vBuild PAR (Project Activity Request) Engineering*, at:
https://knowledge.verizon.com/vzknowledge/documentUrl.portal?dDoctype=VZK_DOCUMENT&docName=VZK_376519&xDocFileType=Document

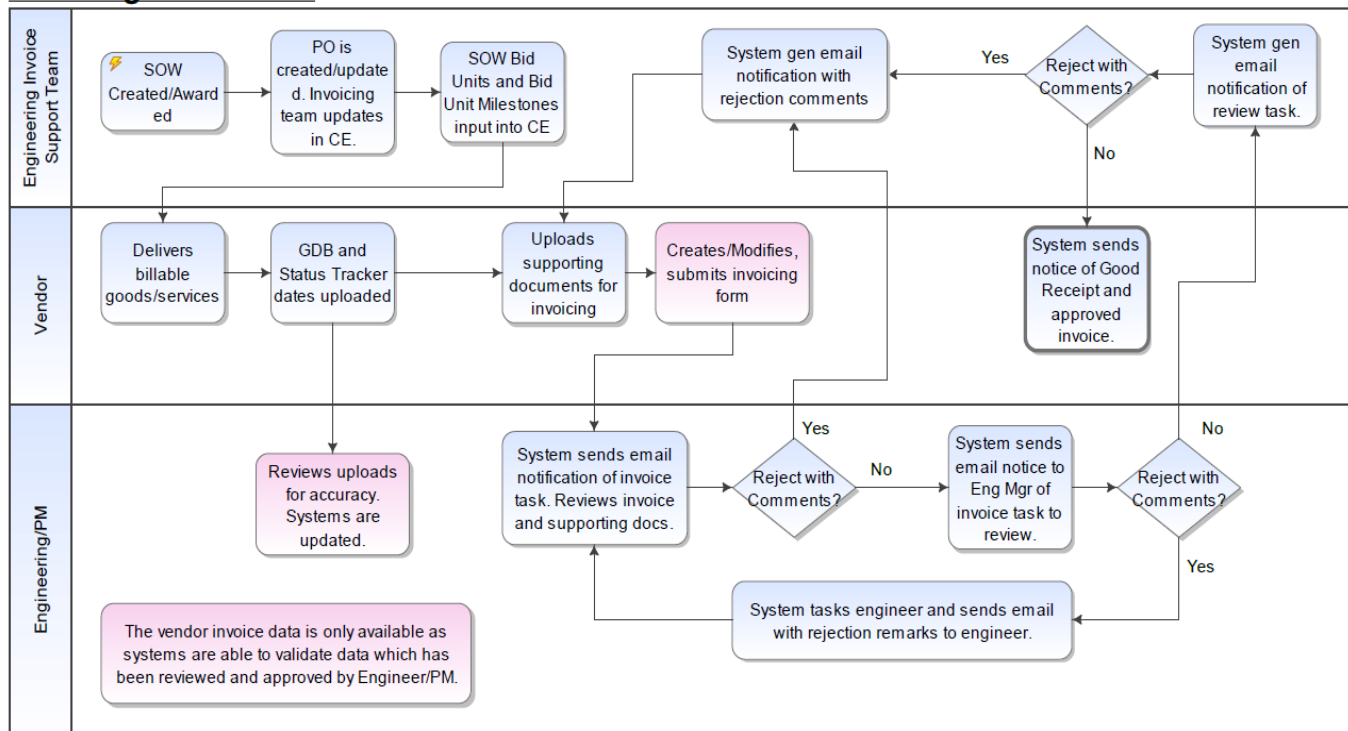
For More information, refer to *Project Activity Request (PAR) RVA*, at:
https://knowledge.verizon.com/vzknowledge/documentUrl.portal?dDoctype=VZK_DOCUMENT&docName=VZK_034228&xDocFileType=Document

5.0 One Fiber (1F) Vendor Invoicing Engineer Approval Guide

5.1 Process Flow Chart

This process flow depicts the important components which enable automated invoicing for 1F vendors. This process flow is also used to show the current manual processes which are under development to enhance automation.

Invoicing Automation



For More information, refer to *One Fiber Vendor Invoicing Engineer Approval Guide*, at:

https://knowledge.verizon.com/vzknowledge/documentUrl.portal?dDoctype=VZK_DOCUMENT&docName=VZK_2248936&xDocFileType=Document

For More information, refer to *Project Activity Request (PAR) RVA*, at:

https://knowledge.verizon.com/vzknowledge/documentUrl.portal?dDoctype=VZK_DOCUMENT&docName=VZK_034228&xDocFileType=Document

6.0 CoFEE One Access – In Franchise

The purpose of this section is to outline the end to end process of creating, designing and reconciling an OSP Engineering Work Order (EWO) and Network Fulfillment ID (NFID) in CoFEE for Engineering. CoFEE (CoE, Converged Front End Engine) for Engineering will be the single entry point for work requests coming into the Engineering organization. COFEE will provide single user interface (UI) and provides orchestration and task management for engineering business processes. It also establishes SLAs for task and business processes as well as provides a single network fulfillment ID (NFID) to associate and track end to end processes, sub-processes, and their respective milestones.

Version 1.0 of this document outlines the process of creating an Engineering Work Order (EWO) and NFID in the Project Initiation module of CoFEE and creating the project budget using the Budget Tab in the NF

Tree. This document will be updated as additional functionality in the end to end lifecycle of a EWO is added to CoFEE.

For More information concerning *CoFEE One Access – In Franchise*, refer to link below:

https://knowledge.verizon.com/vzknowledge/documentUrl.portal?dDoctype=VZK_DOCUMENT&docName=VZK_1938398&xDocFileType=Document

7.0 Damaged Cable Sheath

If the cable sheath is damaged, the Verizon Supervisor will be notified immediately and the cable will be inspected.

Warning: *DO NOT CUT THE CABLE! The Verizon Supervisor is the only person who may authorize cutting a cable.*

8.0 Acronyms

A list of acronyms and their associated definitions can be found on the VzKnowledge website located here:

<https://knowledge.verizon.com/vzknowledge/glossary.portal>.