



PCLS Lakewood Interim Library

SITE BID SET – ADDENDUM NUMBER 4

ISSUED: August 25, 2023

This Addendum supersedes and supplements all portions of the Site Bid Set dated August 4, 2023, with which it concerns. The Addendum becomes part of the Contract Documents upon issuance. Receipt of the addendum must be acknowledged on bid for bid to be considered valid.

This Addendum includes the following Sections and Attachments:

Section 1: Bid Document Clarifications, Revisions, and Additions

Section 2: Bidder Questions

Attachments: C103r2, AS000r2, AS451r2

Revised specification section 002010 Bidders Checklist

New specification section 004322 Unit Prices Form

SECTION 1: Bid Document Clarifications, Revisions, and Additions

Clarification: Extent of new concrete sidewalk was previously modified in Addendum 3. See attached revised civil plan C103r2 reflecting extent of new concrete sidewalk.

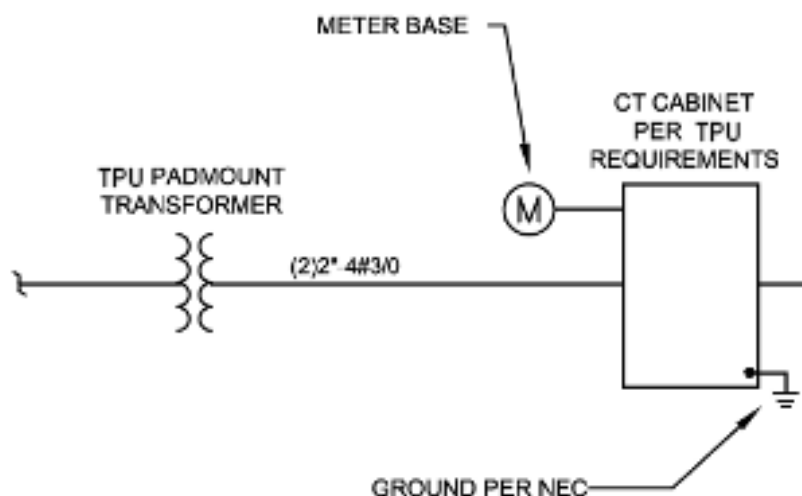
Addition: Tacoma Public Utilities has been contacted by the building manufacturer/installer but has not yet given requirements for the transformer and electrical infrastructure from the city to the building. Bidders are to include the following for bid:

1/ **Base bid** to include the installation of Tacoma Power pad mount transformer as well as required concrete vault and pad at location shown in revised site plans. Cost of actual transformer and vault, once determined, will be added to the contract via change order if required. No markups will be permitted on transformer or vault cost.

2/ **Base bid** to include Installation of (2) underground conduits with all associated wiring and elbows to connect transformer to CT cabinet and meter base on exterior of building per



attached one line diagram. Final connections from transformer to CT cabinet and meter base are to be included in base bid. Modular Building contractor will pull from CT cabinet to main distribution panel.



3/ **Unit price** has been added to bid form for contractor to price cost per linear foot to run 4" conduit underground as a raceway from location determined by PSE to location of pad-mounted transformer. Conduit is to have pull-strings installed for wires to be added.

4/ **Unit Prices Form** Specification Section 004322 has been included with this addendum and must be completed and returned as part of the bid package.

SECTION 2: Bidder Questions

Question: On plan sheet L101, it shows an area on the south end of property to have a Bioswale Seed Mix installed. In the soil preparation and planting specifications, there is no mention for the use of bioretention soil. However, on plant sheet C402, detail 1, there is a "Typical Bioretention" detail showing an 18" depth of bioretention soil media. Please clarify soil type and depths to be used in the bioretention area.

Answer: C402 is correct in calling out the depth and preparation of bioretention soil media. See attached revision to specification section 32 91 113 defining soil type.

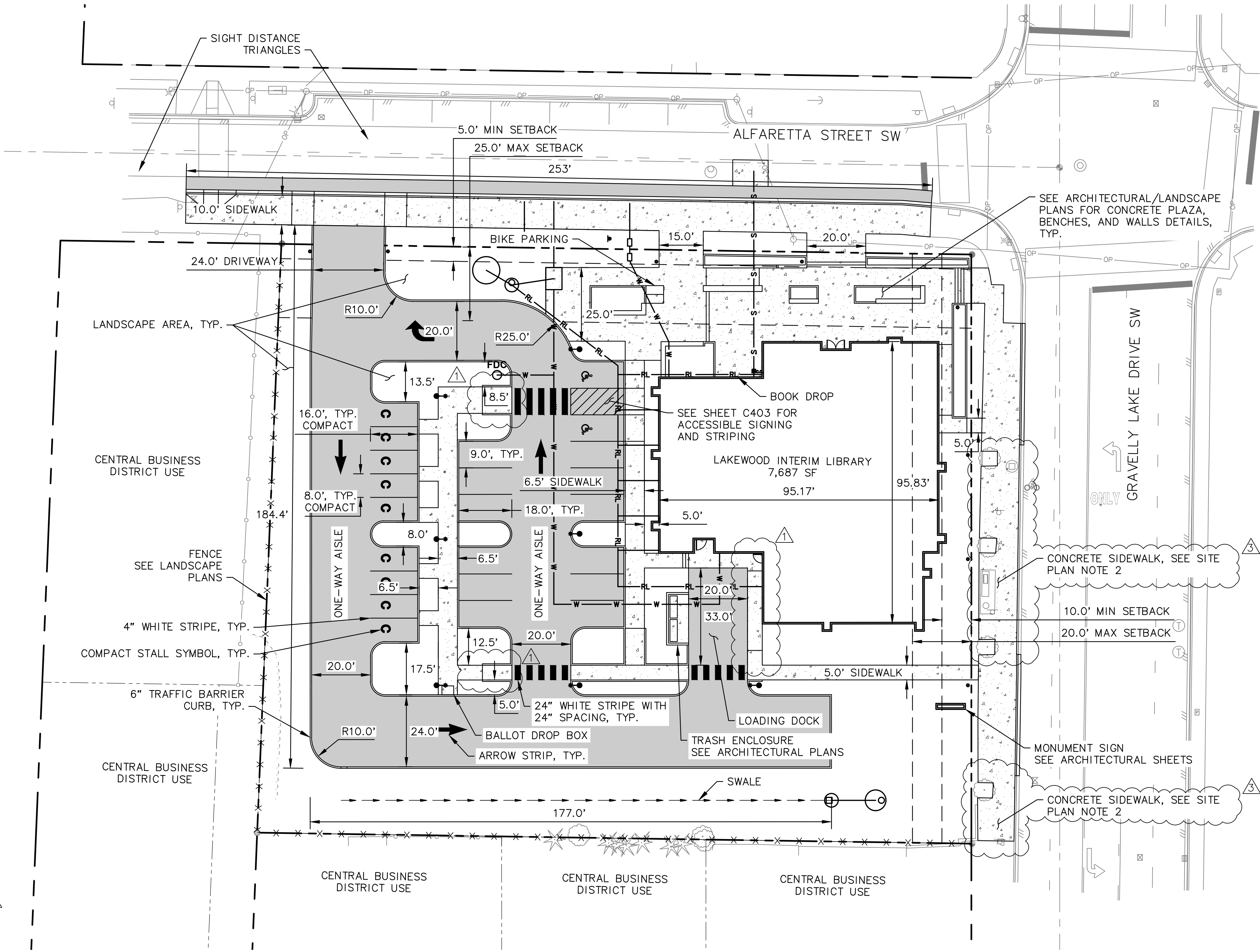
END OF ADDENDUM NUMBER 3

ROADWAY STANDARD NOTES:

1. ALL WORK IN CITY RIGHT-OF-WAY REQUIRES A RIGHT-OF-WAY PERMIT FROM THE CITY OF LAKEWOOD. PRIOR TO ANY WORK COMMENCING, THE GENERAL CONTRACTOR SHALL ARRANGE FOR A PRECONSTRUCTION MEETING TO BE ATTENDED BY ALL MAJOR CONTRACTORS, REPRESENTATIVES OF INVOLVED UTILITIES, AND THE CITY OF LAKEWOOD. CONTACT THE CITY OF LAKEWOOD PUBLIC WORKS ENGINEERING DEPARTMENT TO SCHEDULE THE MEETING. THE CONTRACTOR IS RESPONSIBLE TO HAVE THEIR SET OF PLANS AT THE MEETING.
2. FOR WORK IN CITY RIGHT-OF-WAY, INSPECTIONS ARE REQUIRED AT THE FOLLOWING CONSTRUCTION STAGES:
 - 2.1. INSPECTION NO. 1: CLEARING AND GRUBBING, EMBANKMENT AND EXCAVATION, UNDERGROUND DRAINAGE, WHEN TRENCHING AND PLACEMENT OF PIPE ARE COMPLETE BUT PRIOR TO COVER OR TEMPORARY WATER DETENTION/RETENTION AND SILTATION CONTROL.
 - 2.2. INSPECTION NO. 2: GENERAL ROADWAY, WHEN THE DRAINAGE SYSTEM, UNDERGROUND UTILITIES, AND GRADING TO SUITABLE SUBGRADE ARE COMPLETE, INCLUDING GRAVEL BALLAST IF REQUIRED.
 - 2.3. INSPECTION NO. 3: GENERAL ROADWAY, WHEN THE CRUSHED GRAVEL SURFACING HAS BEEN PLACED.
 - 2.4. INSPECTION NO. 4: GENERAL ROADWAY, WHILE THE PAVING IS IN PROGRESS.
 - 2.5. INSPECTION NO. 5: OVERALL ROADWAY, AFTER PAVING, CLEANING OF DRAINAGE SYSTEM AND ALL NECESSARY CLEANUP, STRIPING, BUTTONING, MONUMENTS, AND ALL DELINEATION WORK.
3. MONUMENTS SHALL BE INSTALLED AT ALL STREET INTERSECTIONS, AT ANGLE POINTS, AND POINTS OF CURVATURE IN EACH STREET. ALL BOUNDARY MONUMENTS.
4. SIGNAGE AND TRAFFIC CONTROL DEVICES ARE SAFETY ITEMS AND SHALL BE INSTALLED PRIOR TO ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY. ALL SIGNAGE SHALL BE IN ACCORDANCE WITH THE MUTCD.
5. SIDEWALKS, DRIVEWAYS, AND OTHER IMPROVEMENTS IDENTIFIED IN THE PRELIMINARY PLAT APPROVAL SHALL BE INSTALLED PRIOR TO FINAL PLAT APPROVAL UNLESS A FINANCIAL GUARANTEE HAS BEEN GRANTED FOR THE INSTALLATION OF SAID IMPROVEMENTS.
6. PRIOR TO ANY SIGN OR STRIPING INSTALLATION OR REMOVAL, THE CONTRACTOR SHALL CONTACT THE CITY TO ARRANGE FOR AN ON-SITE MEETING TO DISCUSS PLACEMENT AND UNIFORMITY.
7. NEW OR REVISED STOP SIGNS, YIELD SIGNS, AND TRAFFIC SIGNALS SHALL BE ADVANCE-WARNED USING THE PROCEDURE OUTLINED IN THE MUTCD. ADVANCE WARNING SIGNS AND FLAGS SHALL BE MAINTAINED BY INSTALLER FOR 30 DAYS AND THEN REMOVED.

SITE PLAN NOTES:

1. ALL RADII IS 5' FROM THE FACE OF CURB UNLESS OTHERWISE NOTED.
2. REPLACE EXISTING ASPHALT SIDEWALK WITH CONCRETE SIDEWALK SECTION THAT CONSISTS OF 4" PORTLAND CEMENT CONCRETE (PCC) OVER 2" CRUSHED SURFACING BASE COURSE, AND 14" GRAVEL BASE.



SITE PLAN
SCALE: GRAPHIC



architecture
design
preservation

159 western avenue west, suite 486
seattle, washington 98119
office 206 775-8668

www.buildingwork.design

PROJECT

**LAKEWOOD INTERIM
LIBRARY**

LOCATION

**10202 Gravelly Lake Dr SW
Lakewood WA 98499**

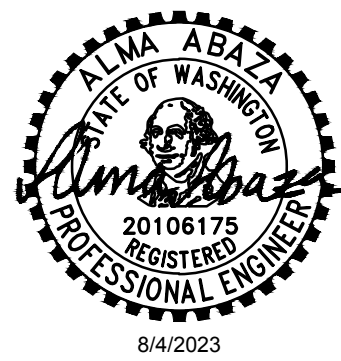
PREPARED FOR

**PIERCE COUNTY
LIBRARY SYSTEM**

REVISION DATE NAME

1	8/11/23	ADDENDUM 1
3	8/25/23	ADDENDUM 4

PROFESSIONAL STAMP



SITE PLAN

8/4/2023

SITE BID SET

C103

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8569 REGISTERED ARCHITECT
Matthew C. Aalf
MATTHEW C. AALF
STATE OF WASHINGTON

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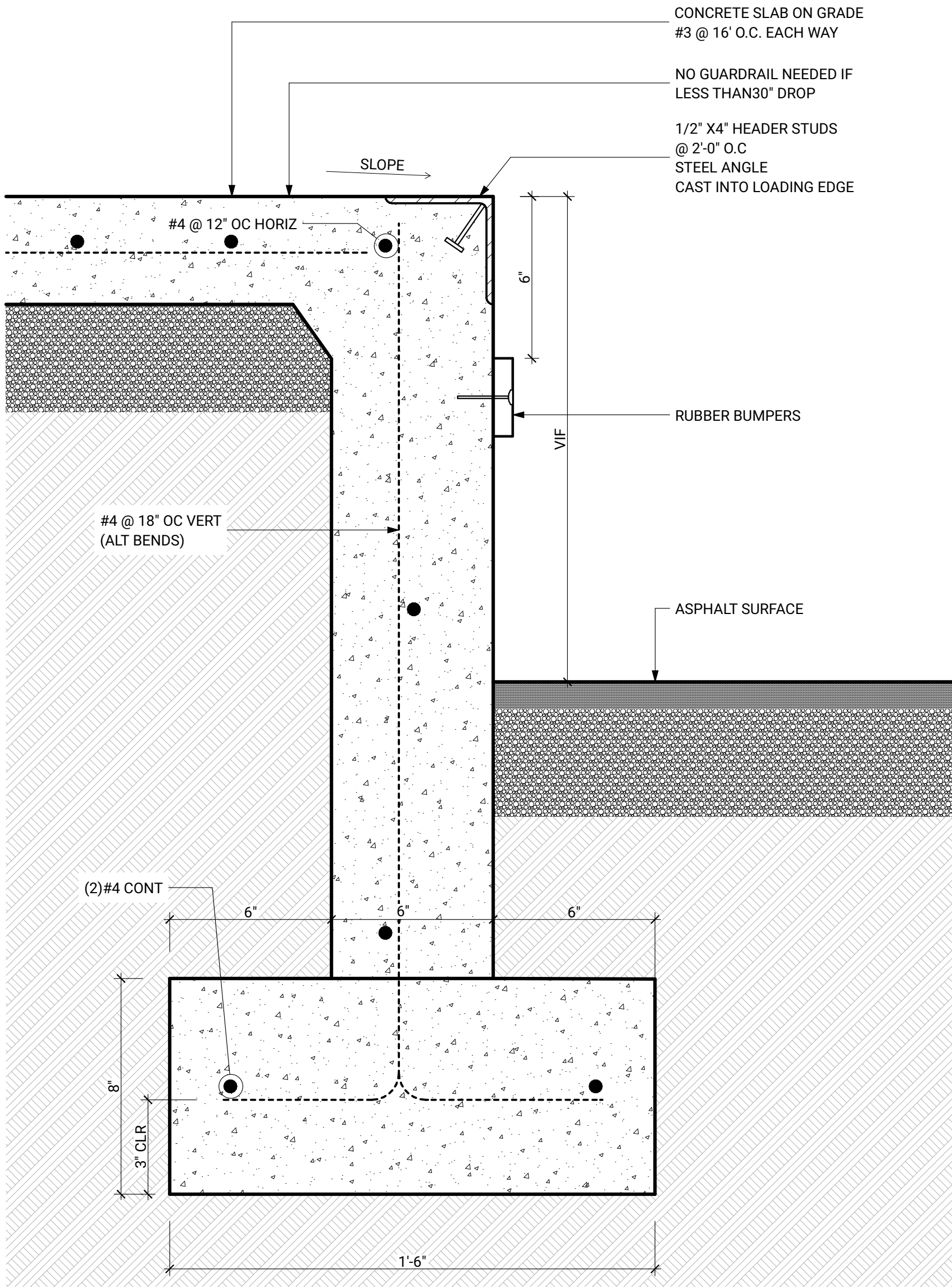
SCALE: 3/32" = 1'-0"

FLOOR PLAN GRAPHIC LEGEND

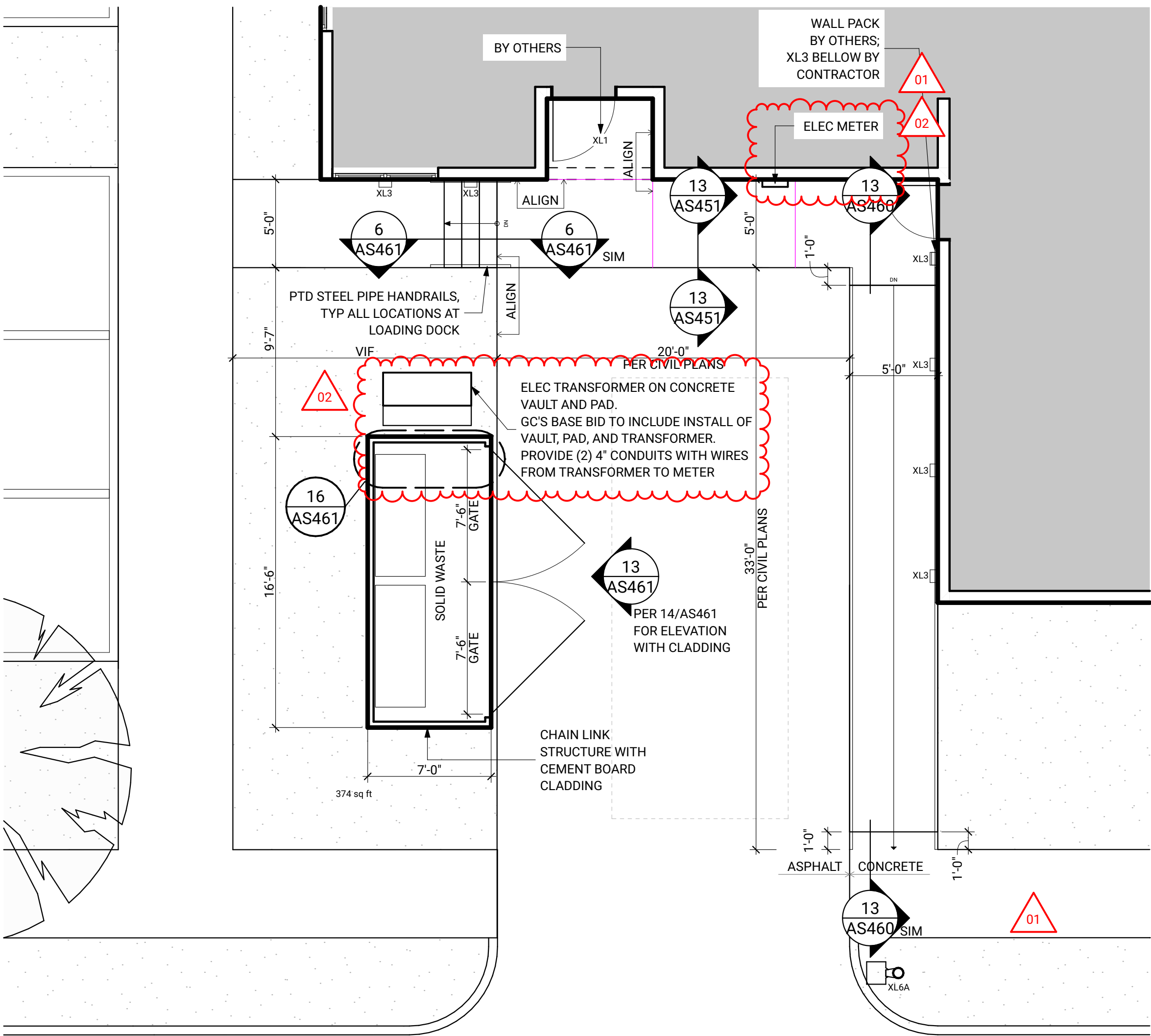
- BY OTHERS
- NEW CONSTRUCTION
- SAWCUT CONTROL JOINT

PLAN NOTES

- SEE SHEET G001 FOR GENERAL NOTES
- DIMS ARE TO FACE OF FINISH UNLESS NOTED OTHERWISE
- ALL FLOOR LEVELS DENOTE TOP OF FLOOR FINISH, U.N.O.
- ALL HANDRAILS ARE PTD STEEL PIPE, OTHERWISE NOTED IN THE ENLARGED PLANS
- SEQUENCE OF CONSTRUCTION IS TO BE COORDINATED WITH OWNER AND PREFABRICATED BUILDING MANUFACTURER. UTILITY STUB-INS, FOOTINGS, FOUNDATION WALLS, AND ALL OTHER ELEMENTS REQUIRED FOR DELIVERY AND INSTALLATION OF PREFABRICATED BUILDING TO BE CONSTRUCTED FIRST. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY COMPLETED SITEWORK OUTSIDE OF THE BUILDING FOOTPRINT DURING PREFABRICATED BUILDING INSTALLATION.



13
AS451
SECTION AT LOADING DOCK
SCALE: 3" = 1'-0"



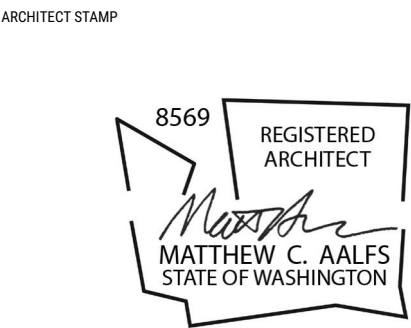
9
AS451
LOADING DOCK ENLARGED PLAN
SCALE: 3/16" = 1'-0"

PROJECT
LAKEWOOD INTERIM
LIBRARY

LOCATION
10202 Gravelly Lake Dr SW
Lakewood WA 98499

PREPARED FOR
PIERCE COUNTY
LIBRARY SYSTEM

REVISION	DATE	NAME
01	8/11/23	ADDENDUM 1
02	8/25/23	ADDENDUM 4



LOADING DOCK ENLARGED
PLAN
08/04/2023

SITE BID SET

AS451

SECTION 002010 - BIDDER'S CHECKLIST

1. REQUIRED FORMS FOR BID

The Bidder shall submit the following forms, which must be executed in full and submitted with the proposal.

- a. Form of Proposal, fully filled out and signed by authorized individual and notarized. (use Form in Section 003000)
- b. Bid Guaranty Bond or Bid Deposit (refer to Section 004100)
- c. Unit Prices Form (refer to section 004322)
- d. Statement of Bidder's Qualifications (refer to Section 004513)
- e. Non-Collusion Certificate (refer to Section 004519)

2. PRE-AWARD BIDDER INFORMATION

Bidder shall submit the following form:

- a. Pre-Award Bidder Information (refer to Section 001100)

3. AGREEMENT FORMS

The following forms are to be executed and the following Certificates of Insurance are to be provided after the Contract is awarded and prior to Notice to Proceed.

- a. Payment and Performance Bond
- b. Certificate of Insurance
- c. Certificate of Builders Risk
 - i. "All Risk" Insurance

END OF SECTION 002010

PART 1 - GENERAL

1.1 BID INFORMATION

- A . Bidder: _____.
- B . Prime Contract: Lakewood Interim Library Site Development
- C . Owner: Pierce County Library System
- D . Architect: BuildingWork

1.2 BID FORM SUPPLEMENT

- A . This form is required to be attached to the Bid Form.
- B . The undersigned Bidder proposes the amounts below be added to or deducted from the Contract Sum on performance and measurement of the individual items of Work[and for adjustment of the quantity given in the Unit-Price Allowance for the actual measurement of individual items of the Work].
- C . If the unit price does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

1.3 UNIT PRICES

- A . Unit-Price No. 1: Installation of additional underground conduit to support TPU work as described in Addendum 4.
 - 1. _____ dollars (\$_____) per Linear Foot

1.4 SUBMISSION OF BID SUPPLEMENT

- A . Respectfully submitted this ____ day of _____, 2023.
- B . Submitted By: _____(Insert name of bidding firm or corporation).
- C . Authorized Signature: _____(Handwritten signature).
- D . Signed By: _____(Type or print name).
- E . Title: _____(Owner/Partner/President/Vice President).

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

1 - GENERAL

1.1 SUMMARY

- A. Furnish labor, material and equipment required for weed removal, placement and amendment of soil for areas to be planted, and the establishment of finish grades as shown on the Drawings and as specified herein.
- B. Coordinate work with installation of other site work including earthwork, irrigation, seeding, and planting.
- C. Related sections include the following:
 - 1. Division 01 Section "Temporary Tree and Plant Protection," for protecting trees remaining on-site that are affected by site operations.
 - 2. Division 31 Section "Earth Moving" for preparation of subgrades prior to placement of topsoil and planting soils specified in this section.
 - 3. Division 32 Section "Plants" for planting placement of amended topsoil backfill.

1.2 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of amended topsoil soil.
- B. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil
- C. Amended Topsoil: Native or imported topsoil or surface soil modified with soil amendments and fertilizers.
- D. Noxious Weed or Noxious Weed Seed: Any weed listed in the current edition of the King County Noxious Weed list as a class A, B, or C noxious weed, whether or not control is required
- E. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.
- F. Topsoil: See Part 2 – Products.
- G. Soil Ripping: Loosening the soil by dragging a ripping shank or chisel thru the soil to the depths and spacing specified, and further defined in this specification.
- H. Soil Tilling: Loosening the surface of the soil to the depths specified with a rotary tine tilling machine, roto tiller, (or spade tiller), and further defined in this specification.

1.3 SUBMITTALS

- A. Product Data: For the following:
 - 1. Fertilizers, including application rates.
 - 2. Soil Amendments.
 - 3. Herbicides.
- B. Samples for Verification: For the following:
 - 1. 1/2 cubic foot compost.
 - 2. 1/2 cubic foot of each imported topsoil. Furnish one sample from each site from which soil is to be furnished.
 - 3. Retain soil and compost submittals on site in sealed, accessible container for comparison to delivered soils.
- C. Product Certificates: For each type of manufactured product, signed by product manufacturer, and complying with the following:
 - 1. Manufacturer's certified analysis for standard products.
 - 2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
- D. Qualification Data: For testing agencies.
- E. Material Test Reports: Date of testing on all reports shall be a maximum of 90 days prior to the date of submittal for review.
 - 1. Soil Fertility and Agricultural Suitability Analyses and Recommendations Reports for the following:
 - a. Existing on-site topsoil: From three typical locations as selected by Owner's Representative, minimum 30 days prior to beginning soil preparation work.
 - b. Imported topsoil: Minimum 30 days prior to beginning soil preparation work.
 - c. Amended topsoil: Provide soil analyses and results for soil samples taken from 3 typical locations as selected by Owner's Representative, minimum 7 days after soil preparation work has been completed and prior to installing plants.
 - 2. Compost Analysis: Provide analysis for one representative sample of compost minimum 30 days prior to compost being delivered to Project Site.
 - 3. Compost Maturity: Provide results of Compost Maturity Test when submitting Compost Analysis Report and sample.
 - 4. Soil Compaction Test: Provide results of soil compaction tests minimum of 7 days prior to planting and seeding.
- F. Delivery Slips: Provide delivery slips for each load of delivered material as proof of shipment of specified materials.
- G. Soil Placement Map: Contractor shall provide a plan showing placed location of each load of delivered soil, referenced to delivery slips.

1.4 QUALITY ASSURANCE

- A. Soil Fertility and Agricultural Suitability-Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
 - 1. Acceptable Soil Testing Laboratories are:
 - a. Western Laboratories, Inc, (800) 658-3858.
- B. Soil Analyses: Furnish soil analyses by a qualified soil-testing laboratory stating:
 - 1. Soil Composition: USDA particle size analysis indicating percentages of sand, silt and clay, and percent organic matter.
 - 2. Macro and micro nutrient fertility tests as determined by pH, salinity, nitrate nitrogen, ammonium nitrogen, phosphate phosphorous potassium, calcium, magnesium, soluble copper, zinc, manganese, iron, saturation extract boron and sodium analyses.
 - 3. Sodium Absorption Ratio (SAR).
 - 4. A Cover Letter shall be provided summarizing existing soil conditions and the Laboratory's recommendations.
 - 5. Recommendations by the soil testing lab for fertilizer and soil amendments in pounds per 1,000 square foot or tons per acre, as necessary to correct soil deficiencies.
 - 6. Noxious Weed Germination Test: a minimum of one 36 inch square by 3 inch deep soil sample for each topsoil source considered for use on the project. Place soil in tray with adequate drainage layer beneath, keep soil moist (not saturated) for 7 days in a temperature controlled greenhouse environment, provide photos and written report summarizing germination results.
- C. Compost Testing Laboratory Qualifications: An independent laboratory, with the experience and capability to conduct the testing indicated following U.S. Composting Council Seal of Testing Assurance (STA) procedures, or equivalent.
- D. Compost Analysis: Provide documentation from supplier that compost has reached a monitored temperature of 140 degrees Fahrenheit for at least one week. Engage an independent soil testing laboratory to test representative sample(s) of compost and furnish compost analysis report for the following parameters:
 - 1. Percent organic matter, percent moisture, percent inerts (foreign matter), pH, soluble salts, and particle size.
 - 2. Nutrient content, including: Nitrogen (N), Phosphorus (P), Potassium (K), Calcium (Ca), and Magnesium (Mg) and Sulfur (S).

3. Trace Metals, including: Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni), and Zinc (Zn).
4. Maturity Indicator. Provide bio-assay results. Provide Carbon-Nitrogen ratio.
5. Stability Indicator: Provide respiration test results.

- E. Request inspection and allow observation by Owner's Representative of prepared soils before planting.
- F. Soil Compaction Testing: Furnish soil compaction standard tests per ASTM 698. Request inspection and allow observation by Owner's Representative of prepared soils before planting.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver packaged materials in manufacturer's unopened containers fully identified by name, brand, type, weight and analysis.
- B. Store and handle packaged materials to prevent damage and intrusion of foreign matter.
- C. Store stockpiled topsoil in area designated by Owner's Representative. Provide erosion control measures for stockpiled topsoil on site to prevent contamination of the soil. Refer to Division 31 Section "Earth Moving" for control of dust and erosion.

1.6 SOIL AMENDMENT BID QUANTITIES

- A. Bid quantities and types of soil amendments shall be based upon those listed in this Section. Types of amendments required and quantities shall be adjusted as necessary based upon actual results of soil fertility and agricultural suitability analyses and recommendations for on-site topsoils.
- B. Amount per 6-inch lift of topsoil over 1000 square-feet of landscape area:
1. 25 lbs. Gypsum (Calcium sulfate)
 2. 35 lbs. Calcium carbonate limestone 'Calpril'
 3. 35 lbs. Dolomite limestone 'Dolpril'
 4. 8 lbs. Treble superphosphate (0-45-0)
 5. 3 lbs. Ammonium nitrate
 6. 4 ozs. Zinc sulfate
 7. 8 ozs. Manganese sulfate
 8. 1 oz. Laundry Borax
 9. 6 cu-yds Compost

1.7 SITE CONDITIONS

- A. Topsoil placement and soil preparation shall not take place during periods where saturated soil or surface water is present in work areas.

- B. Work shall not take place when temperature is less than 32 degrees Fahrenheit, or when frozen soil exists on site.

1.8 COORDINATION

- A. Coordinate soil preparation with Division 31 Section "Earth Moving" such that topsoil, soil amendments and fertilizers are incorporated into ground fill areas in specified lifts and to specified depths below finish grade for planting and lawn areas. Topsoils shall be amended per recommendations of the Soils Testing Laboratory.
- B. Coordinate soil preparation with timing and procedures for installation of related site work including irrigation, seeding, and planting.

PART 2 - PRODUCTS

2.1 TOPSOIL

- A. Topsoil Definition: ASTM D 5268; natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles, conforming to USDA classification for Loam or Sandy Loam; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1 inches in any dimension; and free of weeds, roots, and other deleterious materials, with the following physical properties:
 - 1. Organic Matter: 6 percent minimum to 10 percent maximum.
 - 2. Sodium Adsorption Ratio (SAR): less than 6.0.
 - 3. Saturation Extract concentration for Boron: less than 1.0
 - 4. pH range of from 6.5 to 7.5 (Saturation Extract Conductivity: less than 4.0 dS/m @ 25 degrees Celsius as determined in a saturation extract.
 - 5. Non-soil components: less than 1 percent by volume.
 - 6. Heavy metal concentrations: below the USDA per year load limit.
 - 7. Minimal weed seed.
 - a. If regenerative noxious weeds are present in the soil, all resultant growth including roots shall be removed throughout one-year period after acceptance of work at no additional cost to Owner.
- B. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth. Ensure no contamination of the soils occurs during earthwork and grading, and that the soil remains friable and free of debris.
 - 1. Import Topsoil: Supplement on-site topsoil with imported or manufactured topsoil from off-site sources when quantities are insufficient. Import topsoil is subject to approval and shall conform to USDA soil texture class "Loam" certification by Soil Testing Analysis, no more than 12 months prior to delivery to the site. Obtain

topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs or marshes.

- a. Provide one of the following as Import Topsoil:
 - 1) Cedar Grove, 3-Way Topsoil, (877) 764-5748
 - 2) Pacific Topsoils, Inc., 3-Way Topsoil, (425) 337-2700

2.2 BIORETENTION SOIL MIX

A. The bioretention soil media (BSM) shall meet the following standards:

1. Must contain 60-65% mineral aggregate component by volume as specified below and a 35-40% compost component by volume as specified below.
2. Have organic matter content of 5-8% by weight.
3. Have a cation exchange capacity (CEC) ≥ 5 milliequivalents/100 g dry soil. BSM meeting the above specifications do not have to be tested for CEC value; it is assumed the CEC value is met.

B. The mineral aggregate component shall meet the following standards:

1. Have a maximum of 5% fines with an ideal range between 2-4% fines using ASTM D422.
2. Be well graded. According to ASTM D 2487-98, well graded sand should have the following gradation coefficients:
 - a. Coefficient of Uniformity ($C_u = D_{60}/D_{10}$) equal to or greater than 4, and
 - b. Coefficient of Curvature, $C_c = \left(\frac{(D_{30})^2}{D_{60} \times D_{10}} \right)$, equal to or greater than 1 and less than or equal to 3.
3. The gradation in Table 1: Bioretention Soil Mix Aggregate Component Gradation is considered to be well graded.

Table 1: Bioretention Soil Mix Aggregate Component Gradation	
Aggregate Component (60% by Volume)	
Sieve Size	Percent Passing
3/8"	100
#4	95-100
#10	75-90
#40	25-40
#100	4-10
#200	2-5

2.3 INORGANIC SOIL AMENDMENTS

- A. Dolomitic Lime: Natural, agricultural limestone (calcium and magnesium carbonate) containing a minimum of 20 percent calcium and 11 percent magnesium and as follows:
 - 1. Screen Analysis: 100 percent passing through No.30 sieve; 70 percent passing through No. 100 sieve; and minimum 30 percent passing through No.325 sieve.
 - 2. Provide lime in form of granulated, prilled, dolomitic limestone, 'DoloPril' by Pacific Calcium, Inc., (877) 571-3555, or equal.
- B. Calcitic Lime: Natural, agricultural limestone (calcium carbonate) containing a minimum of 36 percent calcium and as follows:
 - 1. Screen Analysis: minimum of 100 percent passing through No. 10 sieve and a minimum of 80 percent passing through No. 100 sieve.
 - 2. Provide lime in form of granulated, prilled, limestone, 'CalPril' by Pacific Calcium, Inc., (877) 571-3555, or equal.
- C. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum of 99 percent passing through No. 6 sieve and a maximum of 10 percent passing through No. 40 sieve.
- D. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- E. Aluminum Sulfate: Commercial grade, unadulterated.
- F. Gypsum: Agricultural gypsum; minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 sieve.
- G. Sand: Clean washed river sand, free of calcium, chlorides and other deleterious substances.

2.4 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-decomposed, commercially manufactured, stable, and weed-free organic matter, no food waste shall be a part of the compost. pH range of 5.5 to 7.5; 100 percent passing through 1/2-inch sieve; soluble salt content of 2.5 to 7.5 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and shall conform as follows:
 - 1. Tested, at minimum, every six months for noxious weeds.

2. Organic matter source (feedstock): Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
3. Organic Matter Content: 50 to 70 percent of dry weight as determined by ash method.
4. Moisture Content: 40 to 55 percent by weight
5. Free of refuse (less than 1 percent by dry weight), plastics, contaminants or any material toxic to plant growth.
6. Processed to meet U.S. Composting Council's Seal of Testing Assurance (STA) Program, or equivalent.
7. Carbon to Nitrogen Ratio: 30 to 1 or lower.
8. Composted for a minimum of 120 days and reach a monitored temperature of 140 degrees Fahrenheit for at least one week.
9. Available Products and Suppliers:
 - a. Cedar Grove Composting., Compost , phone (877) 764-5748.
 - b. Pacific Topsoils, Inc., Compost, phone (425) 337-2700
 - c. Or approved equal.

2.5 FERTILIZER

- A. Fertilizer composition and rate to be determined based upon soil analysis. For bidding purposes, assume: 10 Nitrogen (N), 10 Phosphorus (P), 10 Potassium (K), 5 Sulfur (S) applied at a rate of 10 pounds per 1000 square feet in all planting beds and seeded areas.
- B. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and [10] [20 percent phosphoric acid.
- C. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- D. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent of urea formaldehyde, phosphorous, and potassium in the following composition:
 1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.
- E. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium derived from natural organic and inorganic sources in the following composition:
 1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

2.6 MISCELLANEOUS PRODUCTS

- A. Post-Emergent Herbicide: Select one of the following: "Glyphogan Plus" by Mana, "Envoy Plus" by Valent, "Crossbow" by Dow AgroSciences, "Landmaster BW" by Agri Star or approved equal.
- B. Pre-Emergent Herbicide: "Ronstar-G" by Bayer, "Dimension EC," by Dow AgroSciences or equal. Products containing either pendimethalin or DCPA are prohibited.
- C. Contact Herbicide for controlling nutsedges: "SedgeHammer" by Gowan.

PART 3 - EXECUTION

3.1 EXAMINATION OF SITE CONDITIONS

- A. Examine for site conditions that will adversely affect execution, permanence, quality of work, and survival of plant material and grasses.
- B. Identify areas to receive planting and lawn on site.
- C. Verify that subgrades and slopes of lawn and planting areas are acceptable to Owner's Representative prior to commencing work of this Section.
- D. Should the Contractor find any discrepancies between the Drawings and the physical conditions, inform the Owner's Representative immediately for clarification.
- E. Begin Work required under this Section only after conditions are satisfactory.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, and existing lawns and exterior plants from damage caused by soil preparation operations.
- B. Prepare soils at a time when moisture conditions will permit proper cultivation.
- C. Remove stones over 1-inch diameter, sticks, roots, mortar, concrete, rubbish, debris, and all materials harmful to plant life, and legally dispose of them off Owner's property.
- D. Remove or spray as required to eradicate noxious weed growth and roots.
 - 1. Achieve complete removal or kill of all weeds within all areas receiving new plantings and lawn areas.
 - 2. In planting beds, kill achieved by working soil is permissible for annual non-noxious broad-leaf type weeds.
 - 3. Apply post-emergent herbicide over all areas of weed or grass growth within landscaped area to eradicate weed growth and roots. Apply in two applications at manufacturer's maximum recommended rate, as follows:
 - a. First application: Apply 7 days prior to performing soil preparation.

- b. Second application (to kill new vegetation): Apply after soil preparation has been completed and minimum of 48 hours prior to planting.
 - c. Observe manufacturer's recommended period prior to working in treated areas.
- 4. Apply contact herbicide directly onto foliage of nutsedges. In areas of established lawn grasses infested with nutsedge, apply herbicide by wicking. Do not spray.
- E. Locate and securely mark or flag irrigation sprinkler heads, area drains, catch basins, clean outs, manholes, valve boxes, and other site improvements not extending above finish grade.
- F. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, in accordance with Division 31

3.3 SOIL PREPARATION FOR PLANTING AREAS

- A. This article pertains to planting areas as shown on the Drawings where mass plantings of trees, shrubs and ground cover plants are scheduled.
- B. Excavate 24 inch deep by 12 inch wide pits for percolation testing where planting areas occur in soils compacted due to construction traffic, materials staging, stockpiles exceeding 72 inch height and areas of soil surcharging. Prepare a minimum of ten (10) test pits in locations selected by the Owner's Representative representing the full range of planting areas on site.
 - 1. Fill holes to the top with water and let stand for 1 hour minimum.
 - 2. Refill hole to top with water and measure total depth.
 - 3. Allow hole to drain for 2 to 3 hours and measure total depth of water.
 - 4. If soil drains at a rate of less than 2 inches per hour prepare subgrades in accordance with procedures for poor draining soils.
- C. Planting area subgrade preparation:
 - 1. Prepare subgrades as per detail 4 on sheet L102 in the bid drawing set.
 - 2. In areas of poor draining soils prepare subgrades by excavating and removing soil, rock and other construction material to 24 inches minimum below finish grade. Cross-rip subgrades to depth of 6 inches prior to placing topsoil. Retest percolation and modify subgrade until 2 inches per hour percolation is obtained. Adjust quantity and depth of placed topsoil as necessary to achieve finished grade as shown on plans.
 - 3. See Division 31 Section "Earth Moving" for excavation and preparation of subgrades.
- D. Planting beds and seeded areas: Place 8 inches of topsoil, compost, soil amendments, and fertilizers as recommended in Agricultural Soil Suitability Report per 1,000 square feet and rototill thoroughly to a depth of 4 inches. Compost shall constitute 5% of the amended soil. Place remainder of topsoil, compost, soil amendments, and/or fertilizers as recommended in Agricultural Soil Suitability Report per 1,000 square feet and rototill thoroughly to a depth of 8 inches, allowing for compaction, natural settlement, and depth of specified mulch.
- E. Concrete Planters: Place 8 inches of topsoil, compost, soil amendments, and fertilizers as recommended in Agricultural Soil Suitability Report per 1,000 square feet and rototill thoroughly to a depth of 4 inches. Compost shall constitute 5% of the amended soil. Place the remainder 4 inches of topsoil, compost, soil amendments, and fertilizers as

recommended in Agricultural Soil Suitability Report per 1,000 square feet and rototill thoroughly to a depth of 4 inches, allowing for compaction, natural settlement, and depth of specified mulch.

1. It is the Contractor's option to set up a facility on-site for the preparation and amendment of topsoils, instead of preparing and amending the topsoils in place as indicated in the paragraph above.
2. Set up facility in location as directed by Owner's Representative.

- F. Water lightly and allow planting mix to settle. Add additional material at mixture indicated in paragraph above to bring soil level to grades shown on the Drawings with allowance at pavement edges for mulch placement. Provide compaction to 80 percent maximum relative density or as indicated in Division 31 Section "Earth Moving."
- G. Meet lines, grades and elevations shown, after light rolling and natural settlement. Fine grade shrub and ground cover areas to smooth even surface with loose, uniformly fine texture. Rake and drag shrub and ground cover areas to remove ridges and fill depressions to obtain firmness and finish grades preparatory to receiving planting.
- H. Remove stones over 1/2-inch in any dimension and sticks, roots, rubbish and other extraneous matter.

3.4 SOIL PREPARATION FOR PLANTING PITS OF TREES

- A. This article pertains to tree planting when occurring on an individual basis.
1. Backfill Mix: Prepare backfill mix and place in planting pits as specified in Division 32 Section "Plants."
 2. Grade smooth to elevations shown.

3.5 SOIL PREPARATION UNDER EXISTING TREES

- A. Remove vegetation not indicated to remain beneath canopy of existing trees. Take care not to disturb roots of existing trees.
- B. Lightly rake areas and add amended topsoil to meet proposed grades.

3.6 FINE GRADING

- A. Finish grade after full settlement including mulch, shall be 1 inch below tops of curbs, walks, or existing grades in shrub areas and 3/4 inch lower in lawn areas.
- B. Slope all areas to prevent puddling and drain surface water toward catch basins, drains, curbs, or off-site as shown on Drawings.
- C. Soil in all areas shall be thoroughly settled, with a smooth surface free of humps and hollows, and shall be firm enough to resist undesirable impressions when stepped upon.
- D. Use levels, screens, drags, or any other equipment necessary to establish and verify grades and surfaces.
- E. Finish grade lawn, grass and planting areas to smooth, even surface with loose, uniformly fine texture.

- F. Notify Owner's Representative 36 hours in advance to review fine grading of lawn, grass and planting areas. Finish grades shall be prepared to the satisfaction of the Owner's Representative prior to planting.
- G. See Division 32 Section "Plants," for mulch placement.

3.7 CLEAN-UP

- A. Clean up excess materials and debris from project site upon completion of work or sooner if directed by the Owner's Representative.
- B. Leave in neat and tidy condition daily.

3.8 DISPOSAL

- A. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION