



UNIVERSITY OF
SOUTH CAROLINA

Project Manual
USC Summer Sod Replacement

Project # CP50003020

April 15, 2016

USC Facilities Design & Construction

743 Greene Street

Columbia, SC 29208

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Project Number: CP50003020

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SE-311 INVITATION FOR MINOR CONSTRUCTION QUOTES

PROJECT NAME: USC Summer Sod Replacement

PROJECT NUMBER: CP50003020

PROJECT LOCATION: USC Columbia Campus

BID SECURITY REQUIRED? Yes No

PERFORMANCE BOND REQUIRED? Yes No

PAYMENT BOND REQUIRED? Yes No

CONSTRUCTION COST RANGE: \$ 20,000-\$30,000

DESCRIPTION OF PROJECT: Soil preparation and sod installation at two locations on USC Campus. Small and minority business participation is encouraged. Bidders are responsible for obtaining all information including all updates from the purchasing website <http://purchasing.sc.edu>.

BIDDING DOCUMENTS/PLANS MAY BE OBTAINED FROM: <http://purchasing.sc.edu> (See Facilities/Construction.)

PLAN DEPOSIT AMOUNT: \$ 0.00 IS DEPOSIT REFUNDABLE Yes No N/A

Bidders must obtain Bidding Documents/Plans from the above listed source(s) to be listed as an official plan holder. Only those Bidding Documents/Plans obtained from the above listed source(s) are official. Bidders rely on copies of Bidding Documents/Plans obtained from any other source at their own risk.

IN ADDITION TO THE ABOVE OFFICIAL SOURCE(S), BIDDING DOCUMENTS/PLANS ARE ALSO AVAILABLE AT:
N/A

All questions & correspondence concerning this Invitation shall be addressed to the A/E.

A/E NAME: Emily Jones

A/E CONTACT: USC Facilities Design & Construction

A/E ADDRESS: Street/PO Box: 743 Greene Street

City: Columbia State: SC ZIP: 29208-

EMAIL: efjones@fmc.sc.edu

TELEPHONE: 803-777-7592 FAX: 803-777-8739

AGENCY: University of South Carolina

AGENCY PROJECT COORDINATOR: Aimee B. Rish

ADDRESS: Street/PO Box: 743 Greene Street

City: Columbia State: SC ZIP: 29208-

EMAIL: arish@fmc.sc.edu

TELEPHONE: 803-777-2261 FAX: 803-777-7334

PRE-QUOTE CONFERENCE: Yes No MANDATORY ATTENDANCE: Yes No

PRE-QUOTE DATE: 5/31/2016 TIME: 10:00AM PLACE: 1705 College St.; Conf Room 550; Cola SC 29201

QUOTE CLOSING DATE: 6/7/2016 TIME: 2:00 PM PLACE: 743 Greene St; Columbia SC 29208 Conf Rm 053

QUOTE DELIVERY ADDRESSES:

HAND-DELIVERY:

Attn: Aimee Rish "Bid Enclosed"

743 Greene Street

Columbia, SC 29208

MAIL SERVICE:

Attn: Aimee Rish "Bid Enclosed"

743 Greene Street

Columbia, SC 29208

APPROVED BY: _____ DATE: _____

(Agency Project Coordinator)

SE-331 QUOTE FORM

Quotes shall be submitted only on SE-331.

QUOTE SUBMITTED BY: _____
(Offeror's Name)

QUOTE SUBMITTED TO: USC Facilities
(Owner's Name)

FOR: PROJECT NAME: USC Summer Sod Replacement
PROJECT NUMBER: CP500003020

OFFER

- In response to the Invitation for Minor Construction Quotes, and in compliance with the Instructions to Bidders for the above-named Project, the undersigned **OFFEROR** proposes and agrees, if this Quote is accepted, to enter into a Contract with the Owner in the form included in the Solicitation Documents, and to perform all Work as specified or indicated in the Solicitation Documents, for the prices and within the time frames indicated in the Solicitation and in accordance with the other terms and conditions stated.
- Pursuant to Section 11-35-3030(1) of the SC Code of Laws, as amended, **OFFEROR** has submitted Bid Security as follows in the amount and form required by the Solicitation Documents:

Bid Bond with Power of Attorney Electronic Bid Bond Cashier's Check

(Bidder check one)

- OFFEROR** acknowledges the receipt of the following Addenda to the Solicitation documents and has incorporated the effects of said Addenda into its Quote (Bidder, check only boxes that apply.):

ADDENDA: #1 #2 #3 #4 #5

- OFFEROR** agrees that this Quote, including all bid alternates, if any, may not be revoked or withdrawn after the opening of quotes, and shall remain open for acceptance for a period of **60** Days following the Quote Date, or for such longer period of time that **OFFEROR** may agree to in writing upon request of the Owner.
- OFFEROR** agrees that from the compensation to be paid, the Owner shall retain as Liquidated Damages the amount of \$ 100.00 for each calendar day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted Contract Time for Substantial Completion, as provided in the Contract Documents.
- OFFEROR** herewith submits its offer to provide all labor, materials, equipment, tools of trades and labor, accessories, appliances, warranties and guarantees, and to pay all royalties, fee, permits, licenses and applicable taxes necessary to complete the following items of construction work:

6.1 BASE QUOTE \$ _____
(enter BASE QUOTE in figures only)

6.1.1 ALTERNATE NO. 1 \$ _____ to be ADDED / DEDUCTED from BASE QUOTE.
(circle one)

6.1.2 ALTERNATE NO. 2 \$ _____ to be ADDED / DEDUCTED from BASE QUOTE.
(circle one)

SC Contractor's License Number: _____
 Classification(s) & Limits: _____
 Address: _____

 Telephone/Fax _____
 E-mail _____

This Quote is hereby submitted on behalf of the Offeror named above.
 BY: _____
 (Signature of Offeror's Representative)

 (Print or Type Name of Offeror's Representative)
 TITLE: _____

USC Summer Sod Replacement
Attachment to SE-331

UNIT PRICES

BIDDER offers for the Agency's consideration and use, the following UNIT PRICES. The UNIT PRICES offered by BIDDER indicate the amount to be added to or deducted from the CONTRACT SUM for each item-unit combination. UNIT PRICES include all costs to the Agency, including those for materials, labor, equipment, tools of trades and labor, fees, taxes, insurance, bonding, overhead, profit, etc. The Agency reserved the right to include or not to include any of the following UNIT PRICES in the Contract and to negotiate UNIT PRICES with BIDDER.

<u>ITEM</u>	<u>Unit of Measure</u>	<u>ADD</u>	<u>DEDUCT</u>
<u>Empire Zoysia Sod (or equal)</u>	<u>1 sq. ft.</u>	<u> </u>	<u> </u>
<u>Zeon Zoysia Sod (or equal)</u>	<u>1 sq. ft.</u>	<u> </u>	<u> </u>
<u>St. Augustine Sod</u>	<u>1 sq. ft.</u>	<u> </u>	<u> </u>

USC SUPPLEMENTAL GENERAL CONDITIONS FOR CONSTRUCTION PROJECTS

WORK AREAS

1. The Contractor shall maintain the job site in a safe manner at all times. This includes (but is not limited to) the provision and/or maintenance of lighting, fencing, barricades around obstructions, and safety and directional signage.
2. Contractor's employees shall take all reasonable means not to interrupt the flow of student traffic in building corridors, lobbies, stairs and exterior walks. All necessary and reasonable safety precautions shall be taken to prevent injury to building occupants while transporting materials and equipment through the work area. Providing safe, accessible, plywood-shielded pedestrian ways around construction may be required if a suitable alternative route is not available.
3. At the beginning of the project, the USC Project Manager will establish the Contractor's lay-down area. This area will also be used for the Contractor's work vehicles. The lay-down area will be clearly identified to the contractor by the Project Manager, with a sketch or drawing provided to USC Parking Services. In turn, Parking Services will mark off this area with a sign containing the project name, Project Manager's name, Contractor name and contact number, and end date. Where this area is subject to foot traffic, protective barriers will be provided as specified by the Project Manager. The area will be maintained in a neat and orderly fashion.
4. Work vehicles parked in the lay down area (or designated parking areas) will be clearly marked and display a USC-furnished placard for identification. No personal vehicles will be allowed in this area, or in any areas surrounding the construction site. Personal vehicles must be parked in the perimeter parking lots or garages. Temporary parking permits can be obtained at the Contractor's expense at the USC Parking Office located in the Pendleton Street parking garage. Refer to the CAMPUS VEHICLE EXPECTATIONS (below) for additional information.
5. Contractor is responsible for removal of all debris from the site, and is required to provide the necessary dumpsters which will be emptied on a regular basis. Construction waste must not be placed in University dumpsters. The construction site must be thoroughly cleaned with all trash picked up and properly disposed of on a daily basis and the site must be left in a safe and sanitary condition each day. The University will inspect job sites regularly and will fine any contractor found to be in violation of this requirement an amount of up to \$1,000 per violation.
6. The Contractor shall be responsible for erosion and sediment control measures where ground disturbances are made.

PROJECT FENCING

7. All construction projects with exterior impacts shall have construction fencing at the perimeter. Fencing shall be 6' chain link with black or green privacy fabric (80-90% blockage). For fence panels with footed stands, sandbag weights shall be placed on the inside of the fence. Ripped sandbags shall be replaced immediately.
8. For projects with long fencing runs and/or high profile locations, decorative USC banners shall be used on top of privacy fabric; banners should be used at a ratio of one banner for every five fence panels. USC Project Manager will make arrangements for banner delivery for Contractor to hang.
9. The use of plastic safety fencing is discouraged and shall only be used on a temporary basis (less than four weeks) where absolutely necessary. Safety fencing shall be a neon yellow-green, high-

visibility fencing equal to 'Kryptonight' by Tenax. Safety fencing shall be erected and maintained in a neat and orderly fashion throughout the project.

10. Vehicles and all other equipment shall be contained within a fenced area if they are on site for more than 3 consecutive calendar days.

BEHAVIOR

11. Fraternalization between Contractor's employees and USC students, faculty or staff is strictly prohibited.
12. USC will not tolerate rude, abusive or degrading behavior on the job site. Heckling and cat-calling directed toward students, faculty or staff or any other person on USC property is strictly prohibited. Any contractor whose employees violate this requirement will be assessed a fine of up to \$500 per violation.
13. Contractor's employees must adhere to the University's policy of maintaining a drug-free and tobacco-free campus.

HAZARDOUS MATERIALS & SAFETY COMPLIANCE

14. A USC Permit to Work must be signed prior to any work being performed by the general contractor or sub-contractor(s).
15. The contractor will comply with all regulations set forth by OSHA and SCDHEC. Contractor must also adhere to USC's internal policies and procedures (available by request). Upon request, the contractor will submit all Safety Programs and Certificates of Insurance to the University for review.
16. Contractor must notify the University immediately upon the discovery of suspect material which may contain asbestos or other such hazardous materials. These materials must not be disturbed until approved by the USC Project Manager.
17. In the event of an OSHA inspection, the Contractor shall immediately call the Facilities Call Center, 803-777-4217, and report that an OSHA inspector is on site. An employee from USC's Safety Unit will arrive to assist in the inspection.

LANDSCAPE & TREE PROTECTION

18. In conjunction with the construction documents, the USC Arborist shall direct methods to minimize damage to campus trees. Tree protection fencing is required to protect existing trees and other landscape features to be affected by a construction project. The location of this fence will be evaluated for each situation with the USC Arborist, Landscape Architect and Project Manager. Tree protection fencing may be required along access routes as well as within the project area itself. Fence locations may have to be reset throughout the course of the project.
19. The tree protection fence shall be 6' high chain link fence with 80-90% privacy screening unless otherwise approved by USC Arborist and/or Landscape Architect. If the tree protection fence is completely within a screened jobsite fence perimeter, privacy fabric is not required. In-ground fence posts are preferred in most situations for greater protection. If utility or pavement conflicts are present, fence panels in footed stands are acceptable. See attached detail for typical tree protection fencing.
20. No entry, vehicle parking, or materials storage will be allowed inside the tree protection zone. A 4"

layer of mulch shall be placed over the tree protection area to maintain moisture in the root zone.

21. Where it is necessary to cross walks, tree root zones (i.e., under canopy) or lawns the following protective measures shall be taken:
 - a. For single loads up to 9,000 lbs., a 3/4" minimum plywood base shall be placed over 4" of mulch.
 - b. For single loads over 9,000 lbs., two layers of 3/4" plywood shall be placed over 4" of mulch.
 - c. Plywood sheets shall be replaced as they deteriorate or delaminate with exposure.
 - d. For projects requiring heavier loads, a construction entry road consisting of 10' X 16' oak logging mats on 12" coarse, chipped, hardwood base. Mulch and logging mats shall be supplemented throughout the project to keep matting structurally functional.
22. Damage to any trees during construction shall be assessed by the USC Arborist, who will stipulate what action will be taken for remediation of damage. The cost of any and all remediation will be assumed by the contractor at no additional cost to the project. Compensation for damages may be assessed up to \$500 per caliper inch of tree (up to 8") and \$500 per inch of diameter at breast height (for trees over 8").
23. Damage to trunks and limbs, as well as disturbance of the root zone under the dripline of tree, including compaction of soil, cutting or filling, or storage of materials, shall qualify as damage and subject to remediation.
24. Any damage to existing pavements or landscaping (including lawn areas and irrigation) will be remediated before final payment is made.

TEMPORARY FACILITIES

25. Contractor will be responsible for providing its own temporary toilet facilities, unless prior arrangements are made with the USC Project Manager.
26. Use of USC communications facilities (telephones, computers, etc.) by the Contractor is prohibited, unless prior arrangements are made with the USC Project Manager.

CAMPUS KEYS

27. Contractor must sign a Contractor Key Receipt/Return form before any keys are issued. Keys must be returned immediately upon the completion of the work. The Contractor will bear the cost of any re-keying necessary due to the loss of or failure to return keys.

WELDING

28. A welding (hot work) permit must be issued by the University Fire Marshall before any welding can begin inside a building. The USC Project Manager will coordinate.

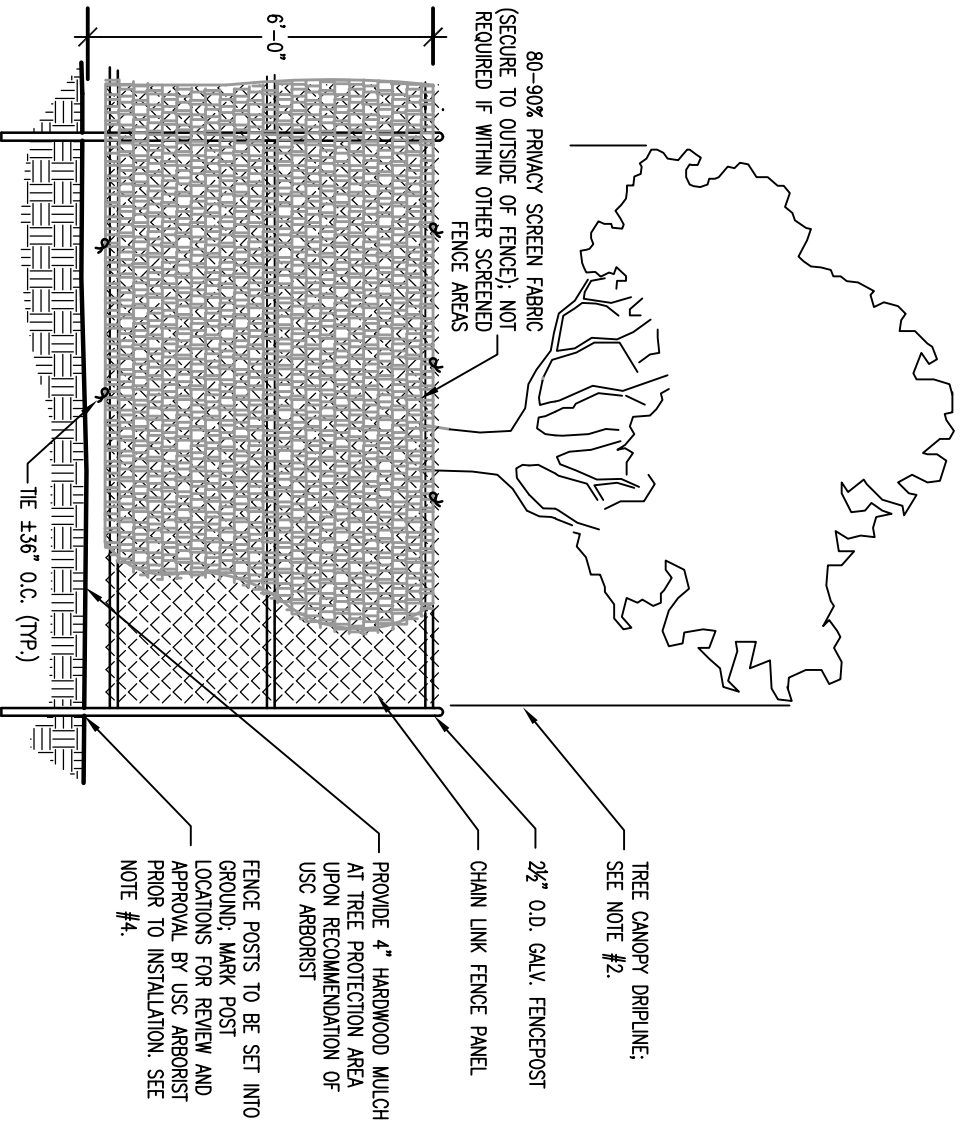
PROJECT EVALUATION & CLOSE-OUT

29. For all projects over \$100,000, including IDCs, a Contractor Performance Evaluation (SE 397) will be reviewed with the GC at the beginning of the project and a copy given to the GC. At the end of the project the form will be completed by the USC Project Manager and a Construction Performance rating will be established.
30. Contractor must provide all O&M manuals, as-built drawings, and training of USC personnel on new equipment, controls, etc. prior to Substantial Completion. Final payment will not be made until

this is completed.

CAMPUS VEHICLE EXPECTATIONS

31. Personal vehicles must be parked in the perimeter parking lots or garages. Temporary parking permits can be obtained at the Contractor's expense at the USC Parking Office located in the Pendleton Street parking garage.
32. All motorized vehicle traffic on USC walkways and landscape areas must be approved by the USC Project Manager and Parking Division, have a USC parking placard, and be parked within the approved laydown area. Violators may be subject to ticketing, towing and fines.
33. All motorized vehicles that leak or drip liquids are prohibited from traveling or parking on walks or landscaped areas.
34. Drivers of equipment or motor vehicles that damage university hardscape or landscape will be held responsible for damages and restoration expense.
35. All vehicles parked on landscape, hardscape, or in the process of service delivery, must display adequate safety devices, i.e. flashing lights, cones, signage, etc.
36. All drivers of equipment and vehicles shall be respectful of University landscape, equipment, structures, fixtures and signage.
37. All incidents of property damage shall be reported to Parking Services or the Work Management Center.



TREE CANOPY DRIPLINE:
SEE NOTE #2.

2½" O.D. GALV. FENCEPOST

CHAIN LINK FENCE PANEL

PROVIDE 4" HARDWOOD MULCH AT TREE PROTECTION AREA UPON RECOMMENDATION OF USC ARBORIST

FENCE POSTS TO BE SET INTO GROUND; MARK POST LOCATIONS FOR REVIEW AND APPROVAL BY USC ARBORIST PRIOR TO INSTALLATION. SEE NOTE #4.

NOTES:

1. PROVIDE PROTECTION FENCING FOR ALL TREES WITHIN AREA OF DISTURBANCE AND CONSTRUCTION ACCESS.
2. PROTECTION FENCING SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
3. PROTECTION FENCING TO BE PLACED AT THE OUTSIDE OF THE CANOPY DRIPLINE, OR AT A DISTANCE OF ONE FOOT PER ONE INCH OF TREE DIAMETER, MEASURED AT BREAST HEIGHT, WHICHEVER IS LARGER, UNLESS OTHERWISE INDICATED ON LANDSCAPE PLAN OR APPROVED BY UNIVERSITY ARBORIST.
4. IN-GROUND POSTS ARE STANDARD. IF EXISTING ROOTS, UTILITIES OR PAVEMENT PRECLUDE USE OF IN-GROUND POSTS, FOOTED STANDS ARE ACCEPTABLE. SAND BAGS SHALL BE PLACED ON THE INSIDE OF FENCE.
5. DAMAGE TO ANY TREES DURING CONSTRUCTION SHALL BE ASSESSED BY UNIVERSITY ARBORIST AND THE UNIVERSITY ARBORIST SHALL STIPULATE WHAT ACTION WILL BE TAKEN FOR REMEDIATION OF DAMAGE. THE COST OF ANY AND ALL REMEDIATION WILL BE ASSUMED BY CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
6. DISTURBANCE OF ROOT ZONE UNDER DRIPLINE OF TREE, INCLUDING COMPACTION OF SOIL, CUTTING OR FILLING OR STORAGE OF MATERIALS SHALL QUALIFY AS DAMAGE AND SUBJECT TO REMEDIATION.

TREE PROTECTION FENCING (IN-GROUND) WITH SCREENING

NO SCALE REVISED 8.28.14

Project Name: USC Summer Sod Replacement
Project Number: CP500003020

University of South Carolina

CONTRACTOR'S ONE YEAR GUARANTEE

STATE OF _____

COUNTY OF _____

WE _____
as Contractor on the above-named project, do hereby guarantee that all work executed under the requirements of the Contract Documents shall be free from defects due to faulty materials and /or workmanship for a period of one (1) year from date of acceptance of the work by the Owner and/or Architect/Engineer; and hereby agree to remedy defects due to faulty materials and/or workmanship, and pay for any damage resulting wherefrom, at no cost to the Owner, provided; however, that the following are excluded from this guarantee;

Defects or failures resulting from abuse by Owner.

Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion.

[Name of Contracting Firm]

*By _____

Title _____

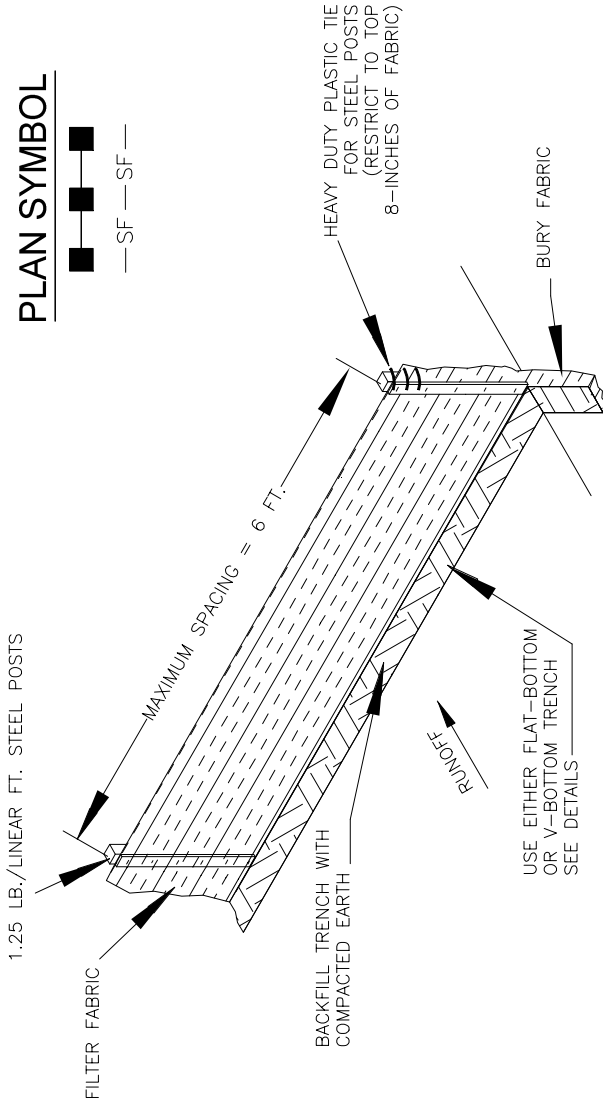
*Must be executed by an office of the Contracting Firm.

SWORN TO before me this
_____ day of _____, 2____ (seal)

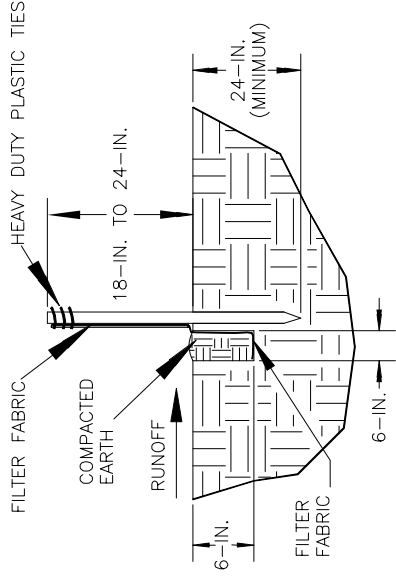
_____ State

My commission expires _____

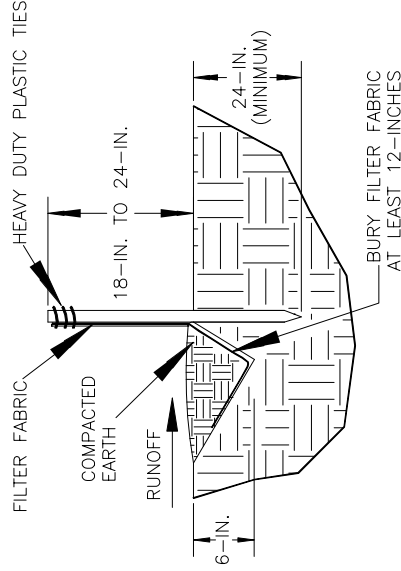
SILT FENCE INSTALLATION



FLAT-BOTTOM TRENCH DETAIL



V-SHAPED TRENCH DETAIL



SILT FENCE — GENERAL NOTES

- Do not place silt fence across channels or in other areas subject to concentrated flows. Silt fence should not be used as a velocity control BMP. Concentrated flows are any flows greater than 0.5 cfs.
- Maximum sheet or overland flow path length to the silt fence shall be 100-feet.
- Maximum slope steepness (normal [perpendicular] to the fence line) shall be 2:1.
- Silt fence joints, when necessary, shall be completed by one of the following options:
 - Wrap each fabric together at a support post with both ends fastened to the post, with a 1-foot minimum overlap;
 - Overlap silt fence by installing 3-feet passed the support post to which the new silt fence roll is attached. Attach old roll to new roll with heavy-duty plastic ties; or,
 - Overlap entire width of each silt fence roll from one support post to the next support post.
- Attach filter fabric to the steel posts using heavy-duty plastic ties that are evenly spaced within the top 8-inches of the fabric.
- Install the silt fence perpendicular to the direction of the stormwater flow and place the silt fence the proper distance from the toe of steep slopes to provide sediment storage and access for maintenance and cleanout.
- Install Silt Fence Checks (Tie-Backs) every 50-100 feet, dependent on slope, along silt fence that is installed with slope and where concentrated flows are expected or are documented along the proposed/installed silt fence.

South Carolina Department of Health and Environmental Control

SILT FENCE

STANDARD DRAWING NO. SC-03 Page 1 of 2

NOT TO SCALE

FEBRUARY 2014
DATE

SILT FENCE — POST REQUIREMENTS

1. Silt fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics.
 - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
 - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
 - Weigh 1.25 pounds per foot (\pm 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Steel posts may need to have a metal soil stabilization plate welded near the bottom when installed along steep slopes or installed in loose soils. The plate should have a minimum cross section of 17-square inches and be composed of 15 gauge steel, at a minimum. The metal soil stabilization plate should be completely buried.
4. Install posts to a minimum of 24-inches. A minimum height of 1- to 2-inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
5. Post spacing shall be at a maximum of 6-feet on center.

SILT FENCE — FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
 - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
 - Free of any treatment or coating which might adversely alter its physical properties after installation;
 - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
 - Have a minimum width of 36-inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24-inches above the ground.

SILT FENCE — INSPECTION & MAINTENANCE

1. The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the silt fence, or where the fence has sagged or collapsed due to runoff overtopping the silt fence. Install checks/tie-backs and/or reinstall silt fence, as necessary.
7. Check for tears within the silt fence, areas where silt fence has begun to decompose, and for any other circumstance that may render the silt fence ineffective. Removed damaged silt fence and reinstall new silt fence immediately.
8. Silt fence should be removed within 30 days after final stabilization is achieved and once it is removed, the resulting disturbed area shall be permanently stabilized.

South Carolina Department of Health and Environmental Control

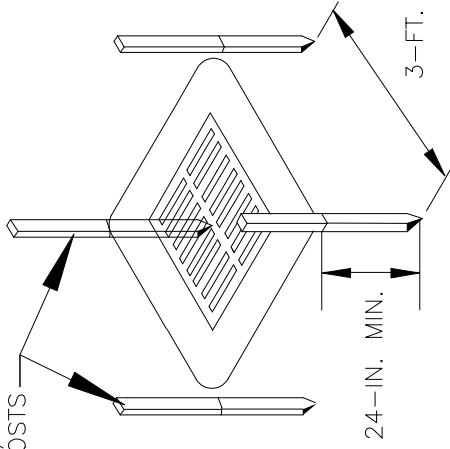
SILT FENCE

STANDARD DRAWING NO. SC-03 PAGE 2 of 2

GENERAL NOTES

FEBRUARY 2014
DATE

1.25 LB./LINEAR FT.
STEEL POSTS



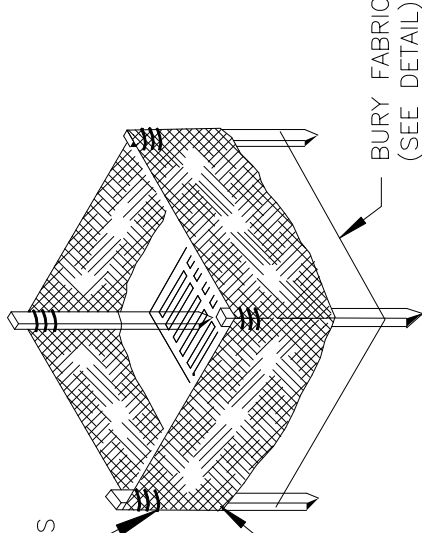
POST INSTALLATION DETAIL

ATTACH FILTER FABRIC TO
POSTS WITH HEAVY DUTY PLASTIC TIES
ALONG TOP 8-INCHES OF FABRIC.

FOLD FABRIC TO OVERLAP
1 FOOT AND SECURE
TO POSTS WITH HEAVY DUTY
PLASTIC TIES

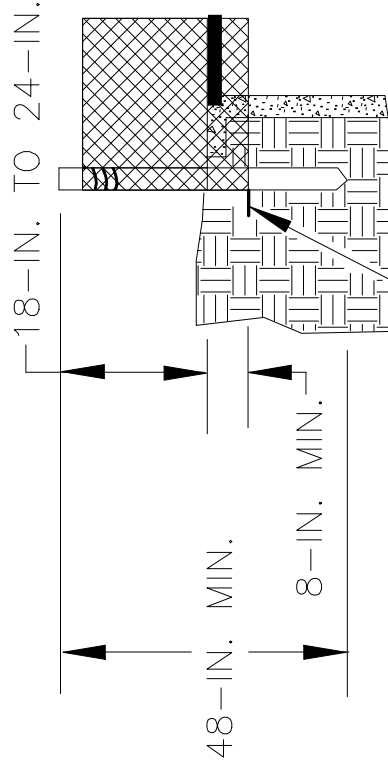
3-FT. MAX. SPACING

24-IN. MIN.



FILTER FABRIC INSTALLATION
DETAIL

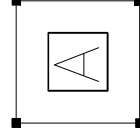
BURY FABRIC
(SEE DETAIL)



BURY & TRENCH MINIMUM
OF 12-INCHES OF FILTER FABRIC

FILTER FABRIC BURIAL DETAIL

PLAN SYMBOL



South Carolina Department of
Health and Environmental Control

Type A

FILTER FABRIC INLET PROTECTION

STANDARD DRAWING NO. SC-07 PAGE 1 of 2

FEBRUARY 2014
DATE

NOT TO SCALE

TYPE A – FILTER FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
 - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
 - Free of any treatment or coating which might adversely alter its physical properties after installation;
 - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
 - Have a minimum width of 36–inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12–inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24–inches above the ground.

TYPE A – POST REQUIREMENTS

1. Silt Fence posts must be 48–inch long steel posts that meet, at a minimum, the following physical characteristics.
 - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
 - Include a standard "T" section with a nominal face width of 1.38–inches and a nominal "T" length of 1.48–inches.
 - Weigh 1.25 pounds per foot (\pm 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Install posts to a minimum of 24–inches. A minimum height of 1– to 2– inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
4. Post spacing shall be at a maximum of 3–feet on center.

TYPE A – INSPECTION & MAINTENANCE

1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of inlet protection shall be conducted once every calendar week and, as recommended, within 24–hours after each rainfall event that produces 1/2–inch or more of precipitation.
3. Attention to sediment accumulations along the filter fabric is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the filter fabric. When a sump is installed in front of the fabric, sediment should be removed when it fills approximately 1/3 the depth of the sump.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the filter fabric, or where the fabric has sagged or collapsed due to runoff overtopping the inlet protection.
7. Check for tears within the filter fabric, areas where fabric has begun to decompose, and for any other circumstance that may render the inlet protection ineffective. Removed damaged fabric and reinstall new filter fabric immediately.
8. Inlet protection structures should be removed after all the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

South Carolina Department of Health and Environmental Control

Type A

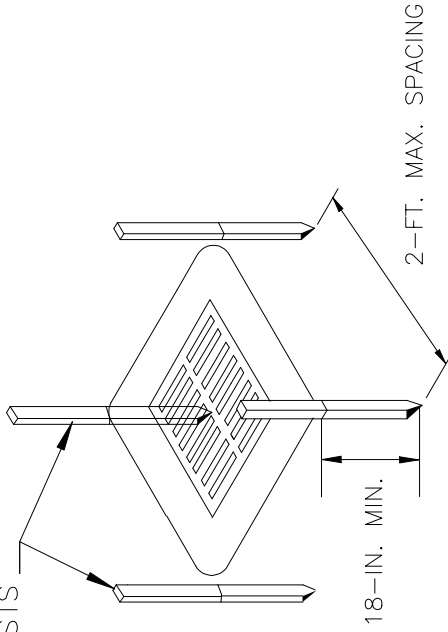
FILTER FABRIC INLET PROTECTION

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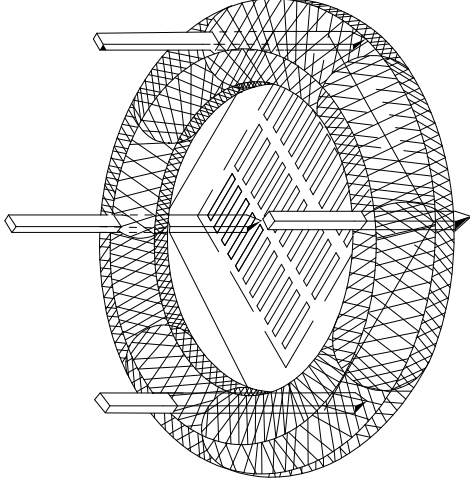
GENERAL NOTES

FEBRUARY 2014
DATE

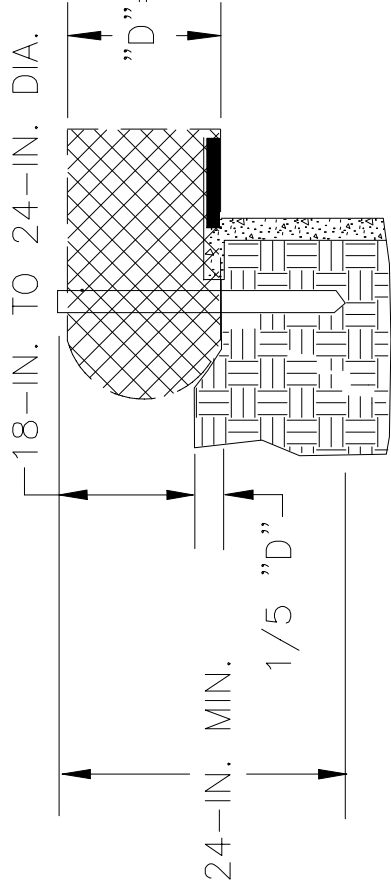
2" x 2" WOOD STAKES
or 1.25 #/FT
STEEL POSTS



POST INSTALLATION DETAIL

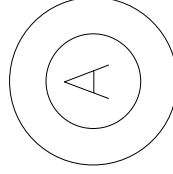


SEDIMENT TUBE INSTALLATION
DETAIL



SEDIMENT TUBE BURIAL DETAIL

PLAN SYMBOL



**South Carolina Department of
Health and Environmental Control**

Type A
SEDIMENT TUBE INLET PROTECTION

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TYPE A – SEDIMENT TUBE INLET PROTECTION GENERAL NOTES

1. Sediment tubes are elongated tubes of compacted geotextiles, curled excelsior wood, natural coconut fiber, or hardwood mulch. Straw, pine needle, and leaf mulch-filled sediment tubes are not permitted.
2. The outer netting of the sediment tube should consist of seamless, high-density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high-density polyethylene non-degradable material.
3. Sediment tube diameters shall range from 18-inches to 24-inches. Sediment tubes with smaller diameters are prohibited when used as inlet protection.
4. Curled excelsior wood, or natural coconut products that are rolled up to create a sediment tube are not allowed.
5. Sediment tubes should be staked using wooden oak stakes (2-inch X 2-inch) or steel posts (standard "U" or "T" sections with a minimum weight of 1.25 pounds per foot) at a minimum of 48-inches in length placed on 2-foot centers.
6. Install all sediment tubes to ensure that no gaps exist between the soil and the bottom of the tube. Manufacturer's recommendations should always be consulted before installation.
7. The ends of adjacent sediment tubes should be overlapped 6-inches to prevent flow and sediment from passing through the field joint.
8. Sediment tubes should not be stacked on top of one another.
9. Each sediment tube should be installed in a trench with a depth equal to 1/5 the diameter of the sediment tube.
10. Install stakes at a diagonal facing incoming runoff.

INSPECTION & MAINTENANCE

1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of sediment tube inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations in front of the sediment tube is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the sediment tube. When a sump is installed in front of the inlet protection, sediment shall be removed when it fills approximately 1/3 the depth of the sump.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Large debris, trash, and leaves should be removed from in front of tubes when found.
7. Inlet protection structures should be removed after the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

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Type A

SEDIMENT TUBE INLET PROTECTION

STANDARD DRAWING NO. SC-07A PAGE 2 of 2

NOT TO SCALE

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DOCUMENT 000115 - LIST OF DRAWING SHEETS

1.1 LIST OF DRAWINGS

- A. Drawings: Drawings consist of the Contract Drawings and other drawings listed on the Table of Contents page of the separately bound drawing set titled **USC Summer Sod Replacement Project Manual**, dated April 15, 2016, as modified by subsequent Addenda and Contract modifications.
- B. List of Drawings: Drawings consist of the following Contract Drawings and other drawings of type indicated:
 - L-1 General Site Map
 - L-2 Site Plan: Horseshoe
 - L-3 Site Plan: Davis Field

END OF DOCUMENT 000115

USC Summer Sod Replacement 2016

The scope of this project includes site preparation and the installation of sod at the two locations at USC, the Horseshoe and Davis Field (See Sheet L-1). The approximate square footage to be installed is 27,700 SF (see Site Plans, Sheet L-2 & L-3). Sod quantities are provided for general reference. The Contractor shall be responsible for final ordering of sod quantities based on areas prepped. The Contractor shall provide unit prices per square foot of each type of sod, to be used for adjusting the final quantities to be ordered.

The project is anticipated to start on or around June 1, 2016 and be completed in 15 calendar days. The contractor shall coordinate the project schedule with any adjacent projects, including other construction projects, and other University events and requirements.

The Owner (being University of South Carolina, and responsible party being Facilities Landscape Department) will be responsible for the following prior to and during the construction:

Prior: Spray herbicide as needed to eliminate perennial weed and grass populations.

Prior: Locate utilities and irrigation heads and valves and have them marked and flagged. Adjust any irrigation heads as needed.

Prior: Provide soil tests results.

Prior/During: Define and prepare new tree bed lines and remove mulch, soil, roots and stumps from those areas.

During: Once sod is installed will assure new sod is watered in.

The Contractor shall take appropriate measures to protect all walkways, site furniture, trees, catch basins/drain inlets, and other existing elements in the area.

The Contractor shall take appropriate measures to keep worksite clean and safe on a daily basis especially at the end of a workday. Pathways shall remain accessible overnight and during the weekends.

Products

Topsoil shall be ASTM D topsoil, with a pH range of 5.5 to 7, a minimum of 4% organic material; free from stones 1" or larger in any dimension, and other extraneous materials harmful to plant growth.

USGA Rootzone Sand shall meet the following Grain Size Distribution (ASTM C136-95A). Contractor shall supply particle size analysis from a testing laboratory as a submittal.

<u>Sieve Size</u>	<u>% Retained on Sieve</u>
2.00 mm	<3%
1-2 mm	10% max
0.5 -1 mm	45% max
.25 -.5 mm	35% - 75%
.15 -.25 mm	15% max
.05 - .15 mm	5% max

Sod shall be well-rooted, at least 98% pure, completely free of noxious weeds and grasses. It shall be mowed to a height not to exceed two (2) inches before lifting, and shall be a uniform thickness, with not over 1-1/4" or less than 1" of soil. Sod shall be approved by the Owner before planting. Contractor shall provide 1 roll of sod for inspection and approval. Turfgrass sod shall come from same farm for each section labeled on the Site Plans.

Horseshoe Site:

- 2,100 SF Sod to be 'Zeon' Zoysia (or equal as approved by Owner prior to bid)
- 7,600 SF Sod to be 'Empire' Zoysia (or equal as approved by Owner prior to bid))
- 1,500 SF to be St. Augustine

Davis Field Site:

- 16,500 sf 'Empire Zoysia (or equal as approved by Owner prior to bid)

Inspection of turfgrass sod by the Owner may be made at the growing site, but such inspection will not preclude rejection after delivery to the job site. Any turfgrass sod so rejected shall be removed from the site immediately and replaced with acceptable turfgrass sod. Inspection of turfgrass sod shall include conformity to quantity, specified nomenclature, and health requirements.

Delivery and off-loading of sod shall be approved by owner and owner shall be present at time of delivery.

Contractor and Owner shall agree on the site for delivery.

Site Preparation

The contractor shall prevent any erosion or sediment loss from the turf areas onto adjacent pavements, storm drain structures, or other site features. The contractor shall erect silt fencing or staked sediment tubes along pavement edges, at the downhill side of any turf area being prepared, and/or around any storm drain inlets, as directed by the Owner.

The Contractor shall till and/or Harley-rake the soil to a depth of two (2) inches, and furnish and apply soil amendments as needed to address low spots and achieve proper grades. Soil amendments shall consist of USGA Rootzone Sand.

The Contractor shall grade the area to allow proper drainage. Allow for settlement of prepared grade. Roll prepared areas with a sod roller to provide a lightly compacted planting bed to receive the sod.

The Contractor shall remove trash, sticks and stones of two (2) inches or more.

The Contractor shall cultivate no closer than 12 inches from brick walkways.

The Contractor shall notify owner upon cultivation of soil if foreign objects, utilities, old construction debris, large roots or stumps, or other artifacts are located.

The Contractor shall supply and incorporate into the soil any amendments such as limestone per soil tests.

Any undulations or irregularities in the surface resulting from liming, fertilizing or other causes shall be leveled prior to turfgrass sod installation.

Areas damaged by run-off or erosion shall be reconstructed and all grades reestablished by the Contractor prior to sod installation.

Contractor will notify owner upon nearing completion of graded area in order to schedule sod delivery and installation and receive satisfactory approval from owner for the graded area so as to keep the project moving in a timely manner.

Installation of Sod

Turfgrass sod shall be delivered, installed and watered in on the same day. Leftover pallets of sod at the end of the workday will not be accepted for installation on the following day.

Turfgrass sod shall be installed on moist soil, not dry or powdery.

Turfgrass sod shall be installed in straight lines, with subsequent rows placed parallel to, and tightly against, each other. Any lateral joints shall be staggered to promote more uniform growth and strength. All joints are to be butted tight in order to prevent voids. At Owner's direction, joints shall be sanded.

Any netting shall be removed from the sod prior to installation.

Contractor shall roll sod to eliminate air pockets and provide firm contact with the soil.

Contractor shall keep owner informed upon completion of installed area and owner will assure new sod is watered in. Owner shall be responsible for watering installed sod during and after project.

Clean-up

Any soil, sand, debris, or similar material which has been brought onto paved areas within or outside of the project area by hauling operations or otherwise shall be removed promptly, keeping these areas clean at all times. Upon completion of the sodding, all excess soil, stones, debris shall be removed from the site.

The Contractor shall be responsible for the removal of any unused sod/pallets at the completion of the job. Surplus sod shall be made available to the Owner, but if surplus sod cannot be readily used, the Contractor shall remove it at no additional cost to the Owner.

The Contractor shall be responsible for the repair of any damage caused by his activities or those of his subcontractors within or outside of the project area, such as the storage of topsoil or other materials, operation of equipment, or other usage. Such repair operations shall include any re-grading, sodding or other work necessary to restore damaged work or areas to an acceptable condition.

Acceptance: Acceptance of the installed turfgrass sod shall be on a daily basis within 14 hours of completion of an area or section, unless otherwise specified.

DISCLAIMER: The landscape contractor shall not be held liable for damages to turfgrass sod caused by acts of God or vandalism.

GUARANTEE: The landscape contractor shall guarantee work covered by this specification.