

COWBOY CARWASH

3601 SW HOLLYWOOD DRIVE
LEE'S SUMMIT, MO 64082

MASS GRADING PLANS

RELEASED FOR CONSTRUCTION
As Noted on Plan Review
Development Services Department
Lee's Summit, Missouri
09/05/2024











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The Professional Engineer's seal affixed to this sheet indicates that the named Engineer has prepared or directed the preparation of the material shown only on this sheet. Other drawings and documents not exhibiting this seal shall not be considered prepared by or the responsibility of the undersigned.

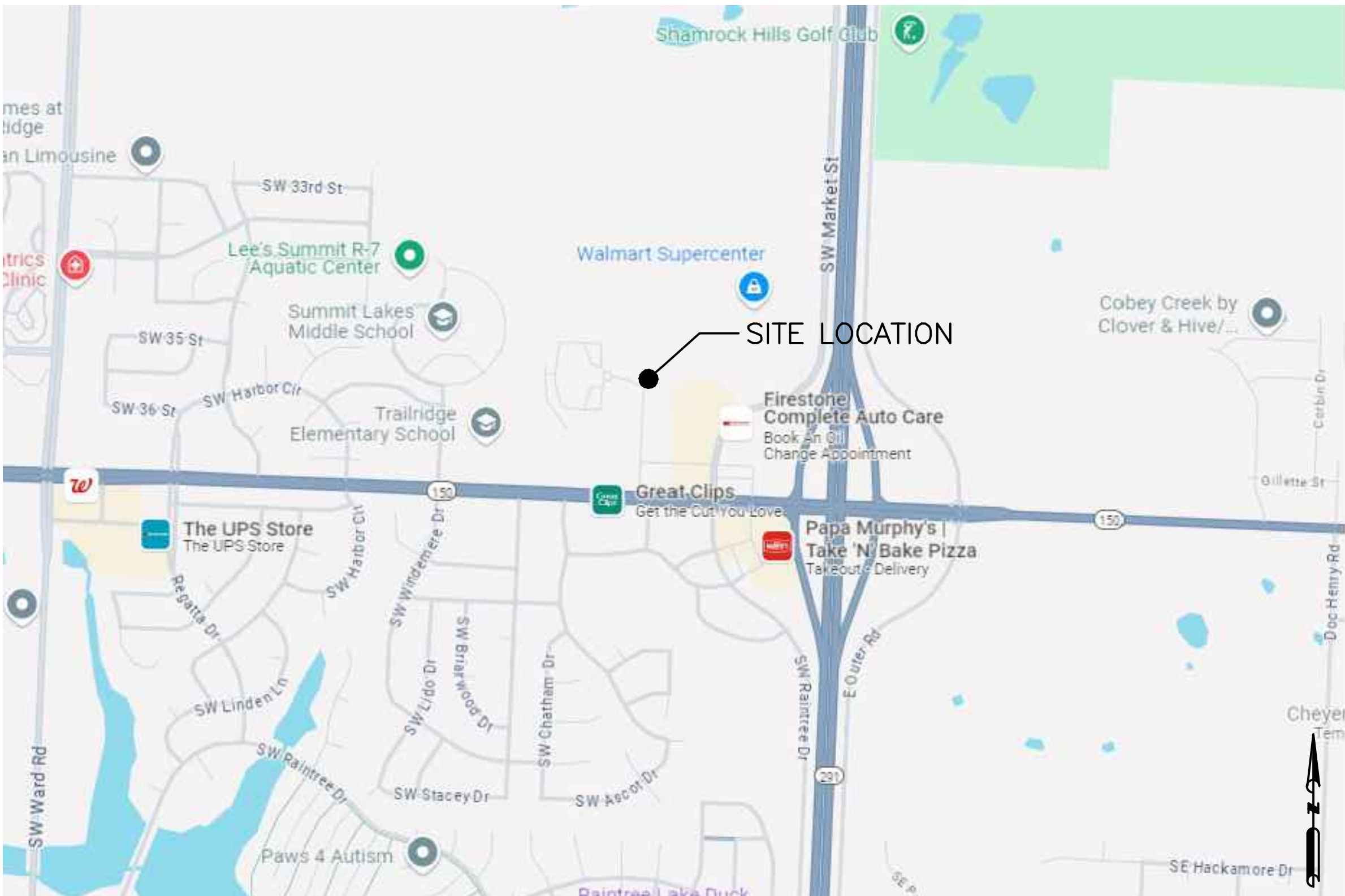
LEGEND:

-  BENCH MARK
-  ETP ELECTRIC TRANSFORMER PAD
-  FH FIRE HYDRANT
-  MS METAL SIGN
-  PP POWER POLE
-  SSMH SANITARY MANHOLE
-  STMH STORM MANHOLE
-  TEP TELEPHONE PEDESTAL
-  WV WATER VALVE

BENCH MARK

BM#1 - ELEV=1028.13
A SQUARE CUT IN THE CENTER FRONT FACE OF A CURB INLET LOCATED AT THE NORTHWEST CORNER OF THE INTERSECTION OF SUMMITCREST DRIVE AND HOLLYWOOD DRIVE

BM#2 - ELEV=1018.09
A SQUARE CU IN THE CENTER FRONT FACE OF A CURB INLET LOCATED EAST OF THE EXISTING ENTRANCE OF 210 NW 150 HWY, BEING ALSO NORTHWEST OF THE NORTH ENTRANCE OF HAWKINS COMMERCIAL LOT 1, CURRENTLY ARBY'S



LOCATION MAP
NTS

SHEET INDEX	
C0-01	COVER SHEET
C1-01	SPECIFICATIONS
C2-02	MASS GRADING PLAN
C2-04	S.W.P.P.P.
C3-01	TYPICAL DETAILS

PROJECT REVISION:

NO.	DATE	DESCRIPTION
1	08-22-24	FOR REVIEW
2	09-03-24	CITY COMMENTS
3	09-04-24	CITY COMMENTS

3601 SW Hollywood Dr.
Lee's Summit, MO 64082

DATE: 08-22-24
DRAFTED BY: KB
APPRVD. BY: MB

SHEET TITLE:
Cover Sheet

SHEET NUMBER:
C0-01

PROJECT NO: 22-752

PRSITE20243891

SITE CLEARING

- A. PROJECT CONDITIONS: Traffic: Conduct site-clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from the governing City. Protection of Existing Improvements: Provide protection necessary to prevent damage to existing improvements to remain in place. Protect improvements on adjoining properties and on Owner's property. Restore damaged improvements to their original condition, as acceptable to property owners. Dust Control: Contractor shall contain particulate debris generated by his work activities from polluting the atmosphere or waterways. Blasting will not be permitted.
- B. EXISTING SERVICES: General: Indicated locations are approximate; determine exact locations before commencing Work. Arrange and pay for disconnecting, removing, capping, and plugging utility services. Notify affected utility companies in advance and obtain approval before starting this Work. Place markers to indicate location of disconnected services. Identify service lines and capping locations on Project Record Documents. Protect all existing utilities shown to remain and those not shown.
- C. SITE CLEARING: General: Except as otherwise indicated on the plans, remove trees, shrubs, grass, and other vegetation, bollards, retaining walls, fences, other improvements, or obstructions, as required, to permit installation of new construction. Removal includes digging out and off-site disposal of stumps and roots. Cut minor roots indicated to remain in a clean and proper manner where such roots and branches obstruct installation of new construction. Topsoil: Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4 inches (100 mm). Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects over 2 inches (50 mm) in diameter, and without weeds, roots, and other objectionable material. Strip topsoil and remove from site the excess that will not be used for landscaping. Clearing and Grubbing: Clear site of trees, shrubs, and other vegetation, except for those indicated to be left standing. Completely remove stumps, roots, and other debris protruding through ground surface. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated. Place fill material in horizontal layers not exceeding 8 inches loose depth, and thoroughly compact each layer according to Section "EARTHWORK." All organic or other deleterious materials shall be removed from the project site prior to construction. Areas containing such material shall be over-excavated and reconstructed with engineered fill according to the requirements of Section "EARTHWORK." Removal of existing subgrade and below-grade improvements as indicated and as necessary to facilitate new construction. Removing abandoned underground piping or conduits interfering with construction is included under this Section. Remove sections of concrete pavement, concrete sidewalks, concrete aprons, or granite curb to the nearest joint when they are adjacent to those to remain.
- D. DISPOSAL OF WASTE MATERIALS: Burning on Owner's Property: Burning is not permitted on Owner's property. Removal from Owner's Property: Remove waste materials from Owner's property and dispose of legally.
- E. ENVIRONMENTAL PROTECTION: Prevent debris, soil erosion, pollutants and all other unacceptable material from entering the storm / sanitary sewer system. Prevent dust, smoke or other air borne material from polluting the atmosphere.
- F. MONUMENT PROTECTION: Monuments, benchmarks and other reference features bounding this project shall be protected. Should these be disturbed in any manner, the Contractor shall have them replaced as approved by the Owner with no additional cost to the Owner.

EARTHWORK

- A. DEFINITIONS: Excavation consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations. The loose Course between the subgrade and base course in a paving system or the layer placed between the subgrade and surface of a pavement or walk. Base Course: The layer placed between the subbase and surface pavement in a paving system. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of pore water. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the Engineer. Unauthorized excavation, as well as remedial work directed by the Engineer, shall be at the Contractor's expense. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.
- B. QUALITY ASSURANCE: Codes and Standards: Perform earthwork complying with requirements of the current IDOT Standard Specifications. Testing and Inspection Service: Coordinate timing and scheduling of all earthwork activity with Owner's geotechnical consultant who will perform soil testing and inspection service for quality control testing during earthwork operations. Preinstallation Conference: Before commencing earthwork, meet with representatives of the governing authorities, Owner, Engineer, Geotechnical Engineer, independent testing agency, and other concerned parties to review earthwork procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least 3 working days prior to convening conference. Record discussions and agreements and furnish a copy to each participant.
- C. PROJECT CONDITIONS: Existing Utilities: Do not interrupt existing utilities serving adjacent buildings except when permitted in writing by the Owner and Engineer and then only after acceptable temporary utility services have been provided. Provide a minimum 48-hours' notice to the Engineer and Owner, and receive written notice to proceed before interrupting any utility. Contact utility-locator service for area where Project is located before excavating.
- D. SOIL MATERIALS: Provide approved borrow soil materials, free of contaminants, from off-site when sufficient soil materials on-site are not available from excavations. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT. Subbase and Base Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand, ASTM D 2940, with at least 95 percent passing a 1-1/2 inch sieve and not more than 8 percent passing a No. 200 sieve. Bedding Material: Subbase or base materials with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve. Drainage Fill: Washed, evenly graded mixture of crushed stone or crushed gravel, ASTM D 448, coarse size 57, with 100 percent passing a 1-1/2 inch sieve and not more than 5 percent passing a No. 8 sieve. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2 inch (38-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.
- E. ACCESSORIES: Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6-inches wide and 4 mils thick minimum, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30-inches deep. Tape Colors: Provide tape colors to utilities as follows: Red: Electric; Yellow: Gas, oil, steam, and dangerous materials; Orange: Telephone and other communications; Blue: Water systems; Green: Sewer systems.
- F. PREPARATION: Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties, walkways, and sewer systems.
- G. DEWATERING: Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
- H. EXCAVATION: Do not use explosives. Unclassified Excavation: Excavation to subgrade elevations regardless of the character of surface and subsurface conditions encountered, including rock, soil materials, and obstructions. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials, at no additional cost to the Owner.
- I. STABILITY OF EXCAVATIONS: Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.
- J. EXCAVATION FOR STRUCTURES: Excavate to indicated elevations and dimensions within a tolerance of plus or minus 0.1 feet. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspection. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
- K. EXCAVATION FOR WALKS AND PAVEMENTS: Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades.
- L. EXCAVATION FOR UTILITY TRENCHES: Excavate trenches to indicated slopes, lines, depths, and invert elevations. Beyond building perimeter, excavate trenches to allow installation of top pipe below frost line. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove stones and sharp objects and smooth point loading. For pipes or conduits less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill. Where encountering rock or another unyielding bearing surface, carry trench excavation 6 inches below invert elevation to receive bedding course.
- M. APPROVAL OF SUBGRADE: Notify Engineer and Owner's Geotechnical consultant when excavations have reached required subgrade. When Owner's Geotechnical Engineer determines that unforeseen unsatisfactory soil beneath subgrade is present, continue excavation and replace with compacted backfill or fill material as directed. Unforeseen additional excavation and replacement material will be paid according to the Contract provisions for changes in Work. Proof roll subgrade with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof roll wet or saturated subgrades. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Engineer.
- N. UNAUTHORIZED EXCAVATION: Fill unauthorized excavation under footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position when acceptable to the Engineer. Fill unauthorized excavations under other construction as directed by the Engineer. Where indicated widths of utility trenches are exceeded, provide stronger pipe, or special installation procedures, as required by the Engineer.
- O. STORAGE OF SOIL MATERIALS: Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust. Stockpile soil materials away from edge of excavations.
- P. BACKFILL: Backfill excavations promptly, but not before completing the following: Acceptance of construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation. Surveying locations of underground utilities for record documents. Testing, inspecting, and approval of underground utilities. Concrete formwork removal. Removal of trash and debris from excavation.
- Q. UTILITY TRENCH BACKFILL: Place and compact bedding course on rock and other unyielding bearing surfaces and to fill unauthorized excavations. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Concrete backfill trenches that carry below or pass under footings and that are excavated within 18 inches of footings. Place concrete to level of bottom of footings. Place and compact initial backfill of satisfactory soil material or subbase material, free of particles larger than 1 inch to a depth of 12 inches over the utility pipe or conduit. Backfill trenches beneath pavement with granular backfill to pavement base course. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system. Coordinate backfilling with utilities testing. Place and compact final backfill of satisfactory soil material to final subgrade. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.
- R. FILL: Preparation: Remove vegetation, topsoil, debris, wet, and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills. Plow strip or break up sloped surfaces steeper than 1 vertical to 4 horizontal to fill with existing soil. Remove and replace, or scarify and air-dry or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to depth required, pulverize, moisture-condition, or aerate soil and recompact to required density. Place fill material in layers to required elevations for each location listed below: Under grass, use satisfactory excavated or borrow soil material. Under walks and pavements, use subbase material, base material, satisfactory excavated material, or borrow soil material. Under steps and ramps, use subbase material. Under footings, use engineered fill.
- S. MOISTURE CONTROL: Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain ice or frost. Remove and replace, or scarify and air-dry satisfactory soil material that is too wet to compact to specified density. Stockpile or spread and dry removed wet satisfactory soil material.
- T. COMPACTION: Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum dry density according to ASTM D 1557: Under structures and pavements, compact the top 12 inches below subgrade and each layer of backfill or fill material at 95 percent maximum dry density. Under walkways, compact the top 6 inches below subgrade and each layer of backfill or fill material at 92 percent maximum dry density. Under lawn or unpaved areas, compact the top 6 inches below subgrade and each layer of backfill or fill material at 90 percent maximum dry density.
- U. GRADING: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated. Provide a smooth transition between existing adjacent grades and new grades. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances: Lawn or Unpaved Areas: Plus or minus 0.2 inches. Walks: Plus or minus 1.2 inches. Pavements: Plus or minus 1/2 inch.

- V. FIELD QUALITY CONTROL: Testing Agency Services: Allow Owner's testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements. Owner's testing agency may perform the following tests: Perform field in-place density tests according to ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2937 (drive cylinder method), as applicable. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gauges according to ASTM D 3017. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gauges at beginning of work, on each different type of material encountered, and at intervals as directed by the Engineer. Footing Subgrade: At footing subgrades, perform at least one test of each soil stratum to verify design-bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of each subgrade with related tested strata when acceptable to the Engineer. Paved Areas: At subgrade and at each compacted fill and backfill layer, perform at least one field in-place density test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests. Trench Backfill: In each compacted initial and final backfill layer, perform at least one field in-place density test for each 150 feet or less of trench, but no fewer than two tests. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required density is obtained.
- W. PROTECTION: Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions. Scarify or remove and replace material to depth directed by the Engineer; reshape and recompact at optimum moisture content to the required density. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.
- X. DISPOSAL OF SURPLUS AND WASTE MATERIALS Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

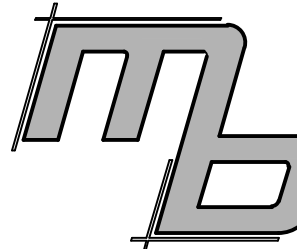
LAWN SEEDING

- A. Provide all equipment, materials, and labor to prepare seed bed and plant seeded bed in new and existing disturbed lawn areas as shown on drawings.
- B. Submittals: Seeding schedule: Submit seeding schedule before beginning of construction. Show coordination of normal planting times with construction schedule, and other related work.
- C. The seasons for seeding of lawn areas shall be from March 1 to May 15 and August 15 to October 15. The actual seeding of lawns shall be done, however, only during periods within this season which are normal for such work as determined by weather conditions and by accepted practice in the locality of the project and which are approved by the Architect. Only upon written instructions by the Architect may planting begin earlier or continue later than the dates specified.
- D. Dormant season seeding of slope areas is acceptable in areas designated by the Owner or Architect. Dormant season seeding to be done in conjunction with installation of erosion control blankets.
- E. The preparation of lawn areas to be seeded may begin as soon as the area is designated by the Owner or Architect.
- F. Commercial Fertilizer: shall meet the following requirements:
1. Shall be a complete fertilizer containing in available form by weight a minimum of 10% nitrogen, 10% phosphoric acid and 10% potash; a minimum of 50 of the nitrogen to be derived from natural organic material in a slow release form, and of a neutral character.
 2. The fertilizer shall be delivered to the site in the original unopened containers which shall bear the manufacturer's guaranteed statement of analysis. Fertilizer shall be stored in a weatherproof place in such a manner that it shall be kept dry and its effectiveness will not be impaired.
- G. Grass seed shall be fresh, clean, new-crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. Provide seed mixture composed of grass species and proportions as specified. Mixture cannot contain more than .05% weed or crop seed, nor more than 3% inert matter. Seed must be furnished and delivered premixed in the proportions specified below.
- H. Grass seed shall be composed of the following varieties which shall be mixed in the proportions and shall test at the minimum percentage of purity and germination specified:
- | | | | |
|---|------------|--------|-------------|
| 1. Kentucky 31 Fescue mix (for use in non-irrigated turf areas) | | | |
| Scientific Name | Proportion | | |
| and Common Name | By Weight | Purity | Germination |
| Festuca elatior | 85% | 98% | 90% |
| "Kentucky 31" | | | |
| Kentucky 31 Fescue | | | |
| Lolium perenne | 10% | 98% | 90% |
| "Manhattan" | | | |
| Manhattan Ryegrass | | | |
| Poa pratensis | 5% | 98% | 85% |
| Kentucky Bluegrass V.N.S. | | | |
2. Weed seed content shall not exceed 0.25 of 1%.
- I. Straw: Shall be threshed straw of hay, oats, wheat, barley, or rye, not chopped in short lengths.
- J. Repair any eroded areas and make minor grading adjustments to provide good drainage and to meet all walks and paved surfaces.
- K. Spread agricultural limestone over all areas to be seeded at the rate of 50 lbs. per 1000 s.f. (2178 lbs. per acre.) with an approved vehicular spreader.
- L. Spread fertilizer over all areas to be seeded at the rate of 15 lbs. per 1000 s.f. (654 lbs. per acre) with an approved spreader. Do not apply fertilizer in dormant season seeding areas.
- M. Disc and harrow or otherwise cultivate all areas thoroughly in at least two directions to thoroughly mix the above fertilizers into the soil to a depth of four (4) inches.
- N. After cultivating, hard rake area to remove clods, rocks (over 1" in largest dimension), weeds roots and debris. Perform grading and shaping refinements to bring surface to true uniform planes free from irregularities and to provide drainage and proper slope to catch basins.
- O. With topsoil in semi-dry condition, roll lawn planting areas in two directions at approximately right angles with water ballast roller weighing 100 to 300 lbs. according to soil type.
- P. Sow grass seed by mechanical spreaders of approved type, doing the work in two operations at right angles to each other.
- Q. Seeding shall be at the following rate:
- | | |
|---|--|
| 1. Kentucky 31 Fescue mix shall be seeded at the rate of 12 lbs. per 1000 sq.ft. (523 lbs. per acre). | |
|---|--|
- R. Roll the seeded areas to firmly bed the seed and then spread straw on the seeded areas at the rate of two and a half (2 1/2) tons (dry weight) per acre. It shall be spread evenly and without damage to the seeded area.
- S. During seeding work, keep pavements clean and work area in an orderly condition. Upon completion of work, clean area of all debris, superfluous materials and equipment and remove them from the premises.
- T. Protect seeding work. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged seeding work as directed.
- U. Maintenance shall begin immediately after seeding. Water regularly to keep lawn areas moist to maximize germination and maintain optimum growth and survival. Contractor is responsible to obtain necessary permits and pay fees associated with watering.
- V. Maintain seeded areas by watering, fertilizing, removing weeds, mowing, trimming and reseeding as necessary, for a smooth, uniform, acceptable stand of established lawn, free of eroded or bare areas. Maintain lawn areas until final acceptance, but not less than 60 calendar days. Mowing of seeded lawn is the responsibility of the Contractor until final acceptance. The first mowing will not be attempted until the lawn is 4 inches high and thick enough to receive its first mowing.
- W. The Contractor shall guarantee the production of a close stand of the specified species of lawn grass. After grass has started, repeatedly reseed areas and part of areas which fail to show uniform stands of grass until all areas are covered with a satisfactory growth of grass. All repairs and reseeding are to be done as part of this Contract and at no extra cost to the Owners.
- X. When seed work is completed, including maintenance, Architect will, upon request, make an on-site evaluation to determine acceptability.

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As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

09/05/2024



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MB Engineering, Inc. Missouri Authority No.
E-2015041468

The Professional Engineer's seal affixed to this sheet indicates that the named Engineer has prepared, directed the preparation of the material shown only on this sheet. Other drawings and documents not exhibiting this seal shall not be considered prepared by or the responsibility of the undersigned.

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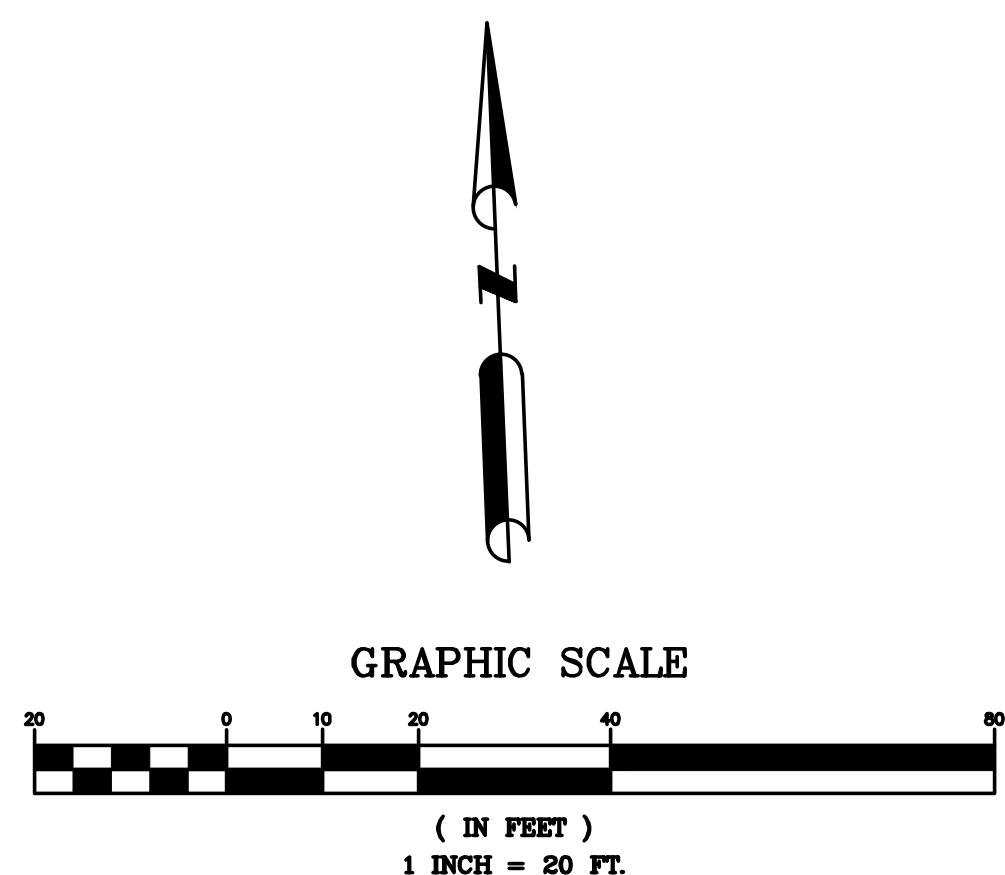
SHEET TITLE:
Specifications

SHEET NUMBER:

C1-01

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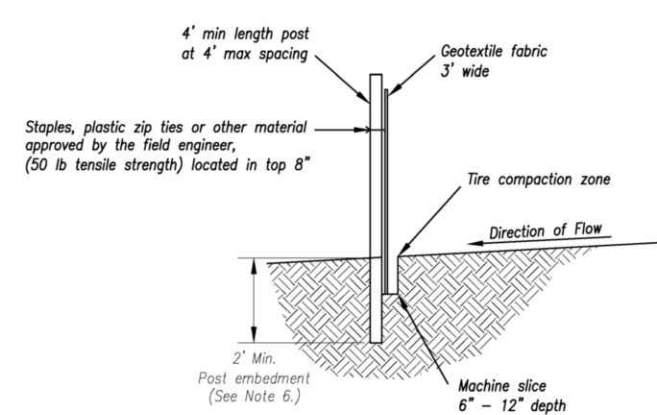
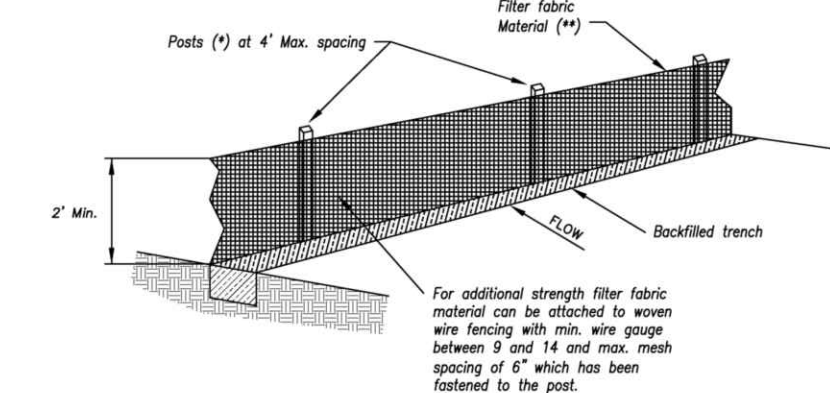
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Notes:

- In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
- Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
- Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
- Attach fabric to upstream side of post.
- Install posts a minimum of 2' into the ground.
- Trenching will only be allowed for small or difficult installation, where slicing machine cannot be reasonably used.

Maintenance:

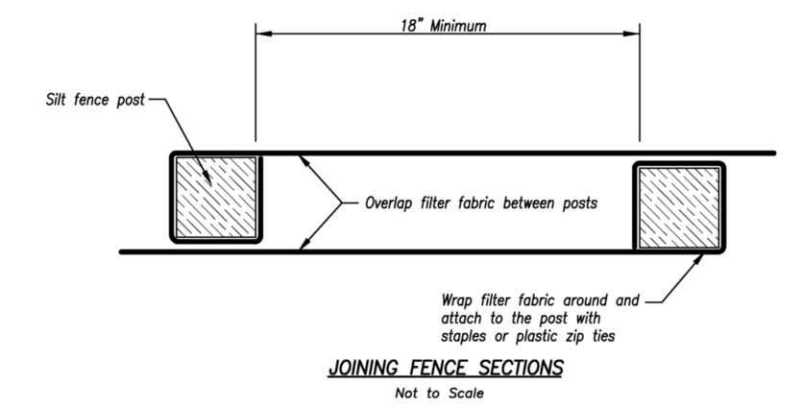
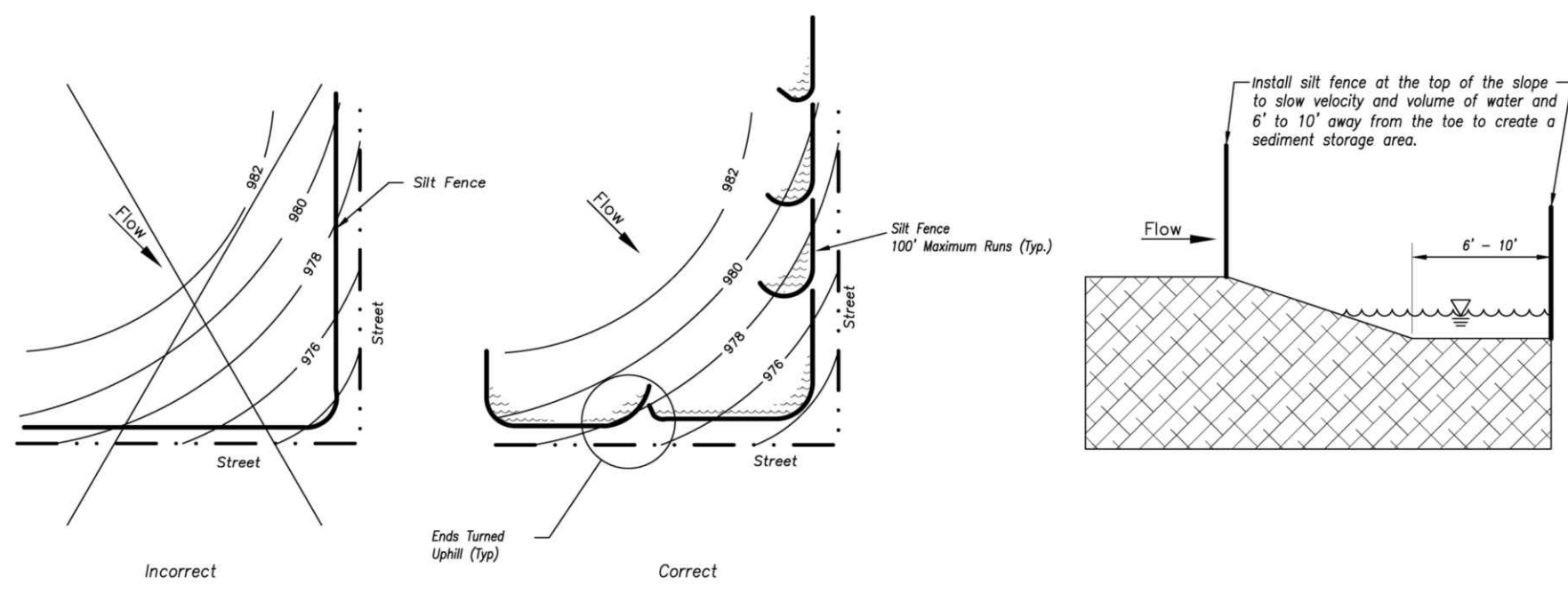
- Remove and dispose of sediment deposits when the deposit approaches $\frac{1}{2}$ the height of silt fence.
- Repair as necessary to maintain function and structure.



- (*) POSTS
- MIN. LENGTH 4'
 - HARDWOOD 1 3/4" x 1 3/4"
 - NO.2 SOUTHERN PINE 2 3/4" x 2 3/4"
 - STEEL 1.33 LB/FT

(**) - Geotextile Fabric shall meet the requirements of AASHTO M288

SILT FENCE DETAILS
Not to Scale



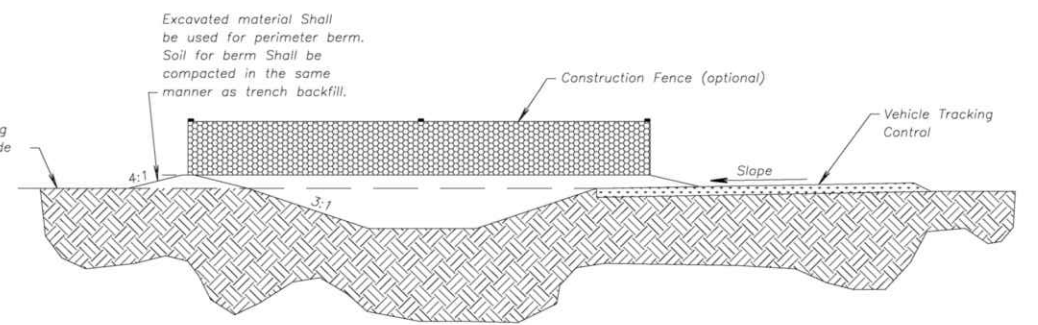
AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
STANDARD DRAWING NUMBER ESC-03
ADOPTED: 10/24/2016

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

- Notes for Concrete Washout:
- Concrete washout areas shall be installed prior to any concrete placement on site.
 - Concrete washout areas shall include a flat subsurface pit sized relative to the amount of concrete to be placed on site. The slopes leading out of the subsurface pit shall be 3:1. The vehicle tracking post shall be sloped towards the concrete washout area.
 - Vehicle tracking control is required at the access point to all concrete washout areas.
 - Signs shall be placed at the construction site entrance, washout area, and wherever necessary to clearly indicate the location(s) of the concrete washout area(s) to operators of concrete truck and pump rigs.
 - A one-piece impervious liner may be required along the bottom and sides of the subsurface pit in sandy or gravelly soils.

Maintenance for Concrete Washout:

- Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
- Concrete washout areas shall be enlarged as necessary to maintain capacity for washed concrete.
- Concrete washout areas washed places of concrete and all other debris in the subsurface pit shall be transported from the job site after each concrete placement.
- Concrete washout areas shall remain in place until all concrete for the project is placed.
- When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and topped, any disturbed areas associated with the installation, maintenance, and/or removal of the concrete washout areas shall be stabilized.



CONCRETE WASHOUT

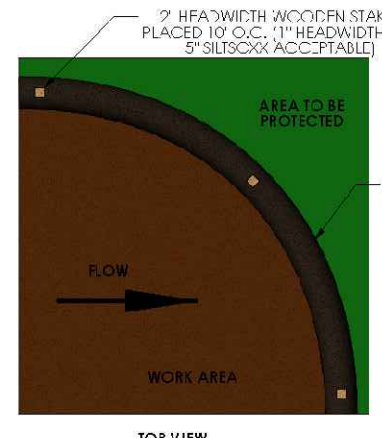
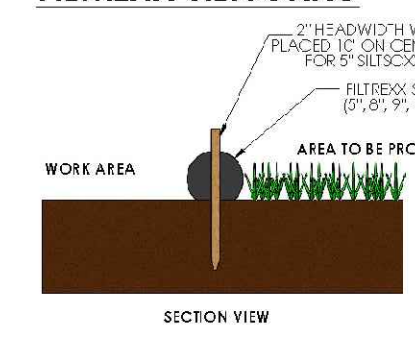
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Kansas City Metro Chapter
STANDARD DRAWING NUMBER ESC-01
ADOPTED: 10/24/2016

filtrex
SUSTAINABLE TECHNOLOGIES

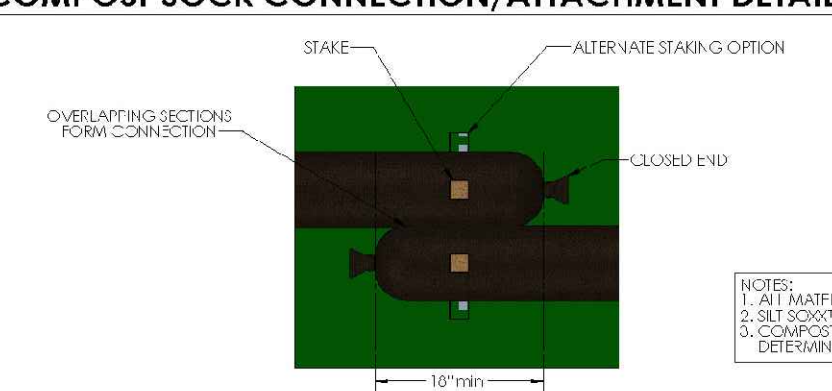
INSTALLATION

- Perimeter control (Filtrex SiltSox®/Sox) will be placed at locations indicated on plans and in a manner as directed by the Engineer or Manufacturer.
- Perimeter control should be installed parallel to the base of the slope or other disturbed area. In challenging conditions (i.e., 2:1 slopes), a second perimeter control shall be constructed at the top of the slope, or staking may be increased.
- Effective Sox height in the field should be as follows: 5" diameter Sox = 4' high; 8" diameter Sox = 5.5' high; 12" diameter Sox = 9.5' high; 18" diameter Sox = 14.5' high; 24" diameter Sox = 19' high.
- Stakes should be installed through the middle of the perimeter control on 10 ft (3m) centers, using nominal 2 in (50mm) by 2 in (50mm) by 3 ft (1m) wooden stakes. 5" diameter Sox may use 1" (25 mm) x 1" (25 mm) x 18" (45.7 mm) wooden stakes. In the event staking is not possible, i.e., when perimeter control is used on highly compacted soils or impervious surfaces, sand bags (or equivalent) may be used to stabilize Sox, as long as effective height is not compromised. On impervious surfaces, concrete blocks (or equivalent) may be used behind the perimeter control to help stabilize during rainfall/runoff events.
- Alternatively, stakes may be installed directly behind the Sox at a 90-degree angle to level ground (regardless of slope angle), where stakes are in direct contact with the downslope side of Sox. If high runoff or sediment accumulation is expected, staking through the Sox may be required.

FILTREX SILT SOX®



COMPOST SOCK CONNECTION/ATTACHMENT DETAIL



Refer to Design Specification for complete application, design, installation, maintenance, and removal documentation.

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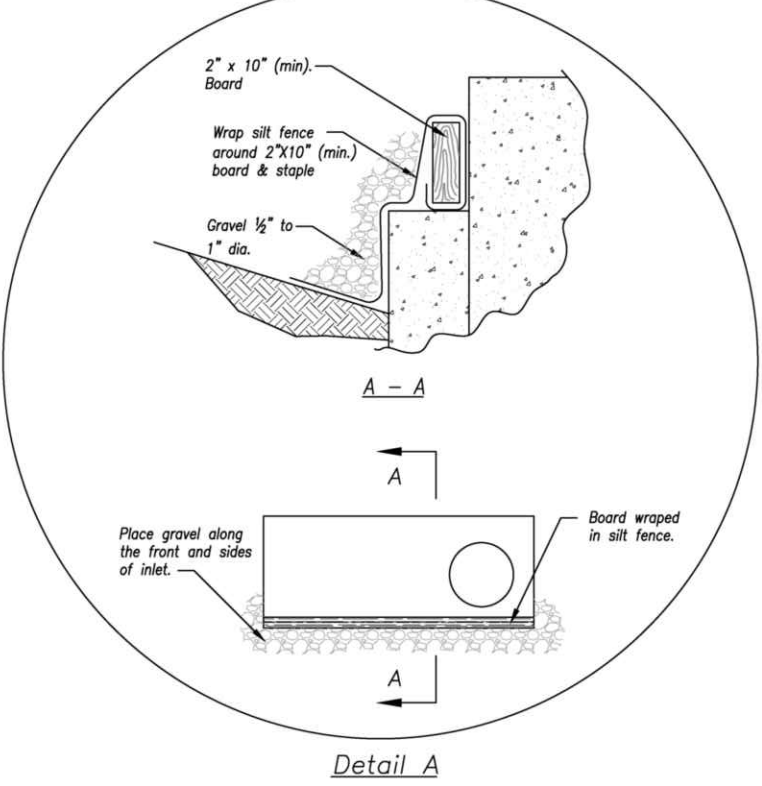
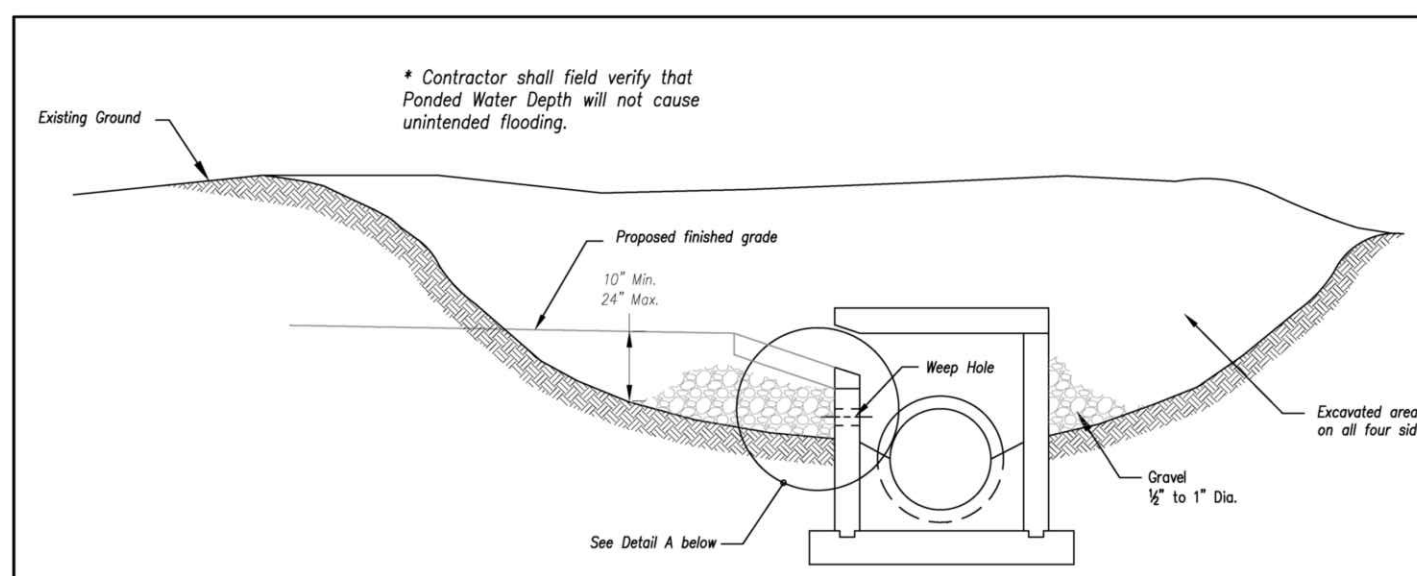
INSTALLATION SPECIFICATION

PERIMETER CONTROL - Compost Filter Sock

- Staking depth for sand and silt loam soils shall be 12 in (300mm), and 8 in (200mm) for clay soils.
- Straighten or position the Sox as needed on the ground, ensuring there is good ground contact and no void spaces under the Sox.
- Do not drag Sox across rough surfaces. If dragging across a rough surface is necessary, place a barrier such as plastic or a tarp under Sox to prevent tearing.
- Loose compost may be backfilled along the upslope side of the perimeter control, filling the seam between the soil surface and the device, improving filtration and sediment retention.
- If the perimeter control is to be left as a permanent filter or part of the natural landscape, it may be seeded at time of installation for establishment of permanent vegetation. The Engineer will specify seed requirements.

MAINTENANCE & DISPOSAL

- The contractor shall remove sediment at the base of the upslope side of the perimeter when accumulation has reached 1/2 of the effective height of the sock, or as directed by the Engineer. Alternatively, a new perimeter control sock can be placed on top of and slightly behind the original one creating more sediment storage capacity without soil disturbance.
- Perimeter control shall be maintained until disturbed area above the device has been permanently stabilized and construction activity has ceased.
- The FilterMedia will be dispersed on site once disturbed area has been permanently stabilized, construction activity has ceased, or as determined by the Engineer.



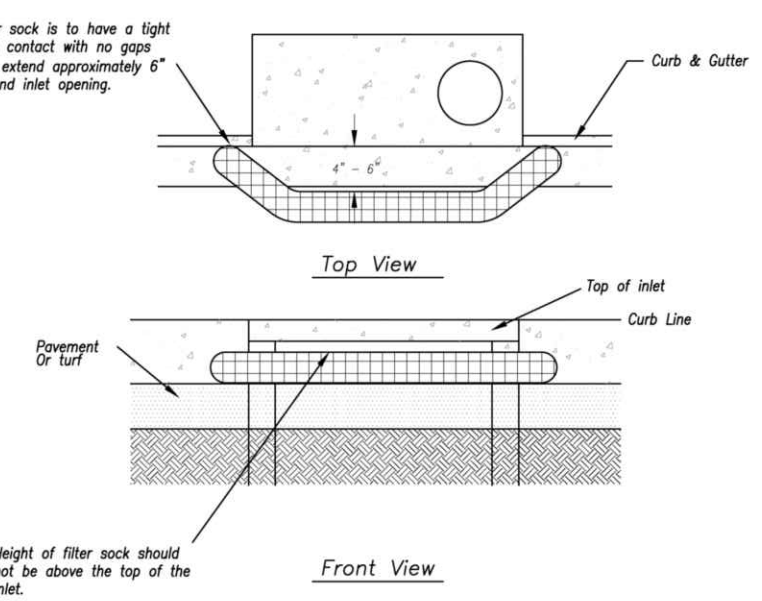
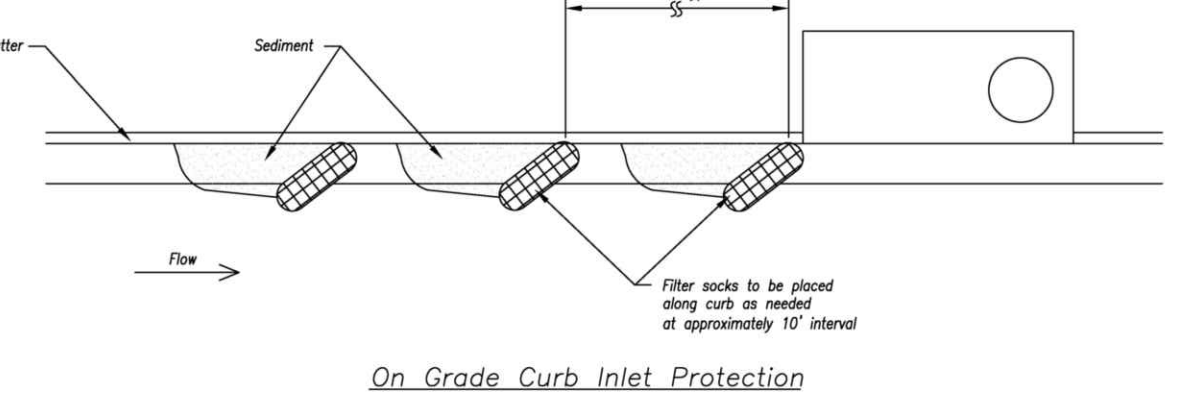
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

Notes:

- Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2' x 10' (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
- When inlet is completed and curb poured, filter socks or approved equal should be used (Late Stage Curb Inlet). Street utilities are not approved for curb inlet use.
- Contractor to field verify ponding water shall not create a traffic hazard.

Maintenance:

- Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
- Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
- Repair or replace as necessary to maintain function and integrity of installation.



Sump Inlet Sediment Filter

LATE STAGE CURB INLET
(After Pouring Curb and Inlet Throat)

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