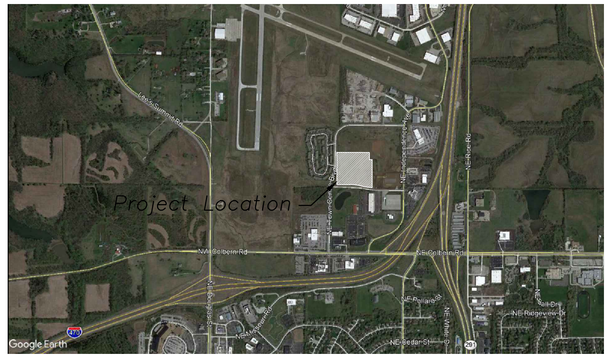
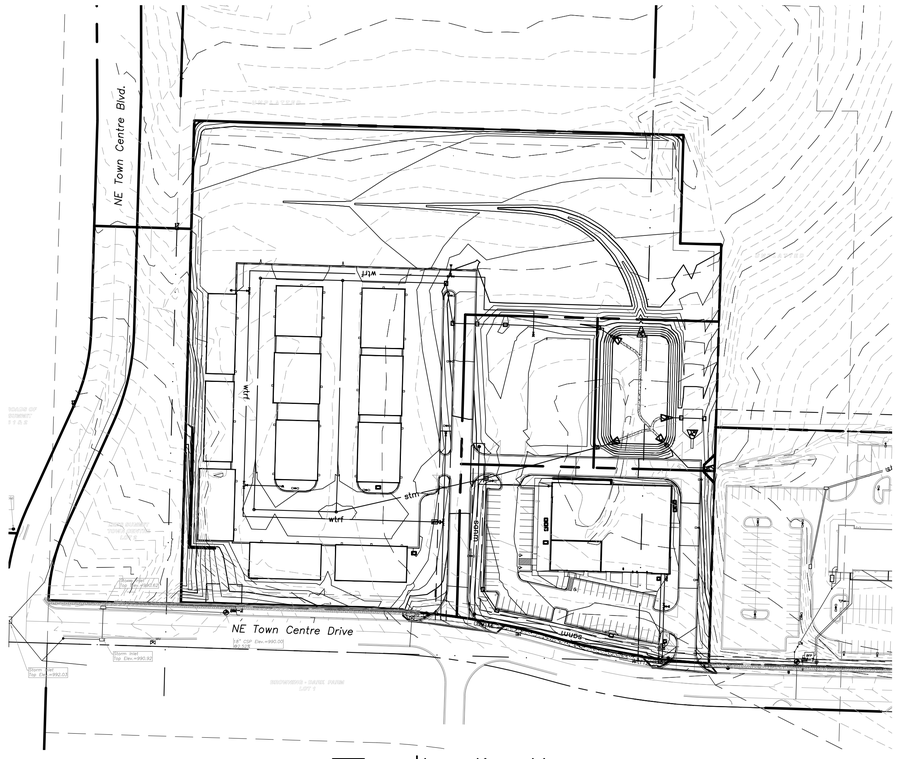
Mass Grading Plans
for
Town Centre Lot 1

Section 29, Township 48 North, Range 31 West
City of Lee's Summit, Jackson County, MIssouri



north 2 Vicinity Map
scale: 1"=150'
0 75 150 300



north 1 Location Map
scale: 1"=100'
0 50 100 200

Utility Contacts

Sanitary – City of Lee's Summit	(816) 969–1900
Water – City of Lee's Summit	(816) 969–1900
Storm Sewer – City of Lee's Summit	(816) 969–1800
Electric – Evergy	(888) 471–5275
Gas – Spire	(816) 756–5252
Telephone – AT&T	(800) 464–7928
Cable – Spectrum	(816) 358–8833

Local Benchmarks:

BM–1: (Sanitary Sewer Manhole, Center of Lid)
Elevation: 1006.88'
N: 1013449.78
E: 2826933.88
BM–2: (Storm Sewer Curb Inlet, Center of Lid)
Elevation: 994.34'
N: 1013518.71
E: 2826136.03

MISSOURI ONE CALL SYSTEM, INC. 1–800–344–7483 STOP–CALL BEFORE YOU DIG!

Floodplain Note:

The site lies entirely with "Zone X", areas determined to be outside the 0.2% annual chance floodplain as depicted on the FEMA Flood Insurance Rate Map (FIRM) no. 29095C0430G, Revision Date: January 20, 2017.

Property Legend

- right of way
- property lines
- easements
- setbacks

Grading Legend

- existing minor contour
- existing major contour
- proposed minor contour
- proposed major contour

Utility Legend

- existing
- proposed

Linetypes

- sanm — sanitary main
- sans — sanitary service
- storm sewer (existing)
- storm sewer (solid wall, proposed)
- stm — storm sewer (solid wall, proposed)
- storm sewer (perforated, proposed)
- wtrm — water main
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- wtrd — water service (domestic)
- wtri — water service (irrigation)
- gasm — natural gas main
- gass — natural gas service schematic
- elpu — underground primary electric
- elsu — underground secondary electric
- elpo — overhead electric
- datu — underground cable/phone/data
- datsu — underground cable/phone/data service
- fence–chainlink
- fence–wood
- fence–barbed wire
- treeline

Symbols

- (S) sanitary manhole
- co service cleanout
- fmv force main release valve
- rectangular structure
- circular structure
- fire hydrant
- wv water valve
- (M) water meter
- BFP backflow preventer
- natural gas meter
- T service transformer (pad mount)
- S primary switch gear
- light pole
- C cable/phone/data junction box
- street light
- pedestrian street light
- electric pole
- guy wire
- end section

General Notes

- All work within the road right–of–way shall conform to the technical specifications and design criteria for public improvement projects of the city of Lee's Summit, MIssouri.
- Erosion Control shall be per the Erosion and Sediment Control Program Manual of the City of Lee's Summit, MIssouri.
- All work and materials shall be subject to inspection and approval by the owner or the owner's representative. Any change or deviation from these plans must be authorized by the owner or the owner's representative.
- All traffic control in connection with construction in the right–of–way shall be in conformance with the Manual of Uniform Traffic Control Devices.
- The contractor shall be required to provide a stabilized construction entrance to prevent mud from being deposited onto adjacent roads.
- The contractor shall be responsible for obtaining all required permits, paying all fees, and otherwise complying with all applicable regulations governing the project.
- The contractor shall protect from damage or injury all property including survey monuments, property markers, benchmarks, etc. Items damaged shall be reset by a professional land surveyor licensed in the state of Missouri, at the contractor's expense.
- The contractor shall be responsible for the restoration of the right–of–way and for damaged improvements such as curbs, sidewalks, street light and traffic signal junction boxes, traffic signal loop lead–ins, signal poles, etc. Damaged improvements shall be repaired in conformance with the latest city standards and to the city's satisfaction.
- The contractor shall sod all disturbed areas within the public street right–of–way.
- Paving shall conform to the soils report, and these drawings, any identified discrepancies shall be brought to the attention of the engineer.
- Contractor shall provide 48–hour notification to the city engineering division to schedule all required inspections.
- All concrete for public improvements shall comply with the Standards and Specifications of the Kansas City Metropolitan Materials Board (KCMMB). Structural concrete shall be 5,000 psi and nonstructural concrete shall be 4,000 psi.
- A right–of–way work permit and/or street excavations permit shall be obtained by the contractor to complete all utility work within the public street right–of–way.
- Field survey identified no evidence suggesting presence of any active, inactive or capped oil and/or gas wells on the property.

Sheet Index

Civil Engineer:

Davidson Architecture & Engineering, LLC
Mr. Paul A. Miller, P.E.
4301 Indian Creek Pkwy.
Overland Park, KS 66207
Phone: (913) 451–9390
Email: Paul@davidsonae.com

Owner Information

WHD Management, LLC
Josh Wilson
PO Box 1059
Lee's Summit, MO 6406
Phone: (816) 935–5019
Email: jjwilson801213@gmail.com

Utility Notes

- Boundary information, existing utilities and topographic features shown are based on information supplied by owner, surveyor, and others.
- The existing utility locations shown on these plans are approximate and may not include all utility lines present. The contractor shall be responsible to make One Call and coordinate field location of all existing underground utilities prior to beginning excavation/construction activities.
- The contractor shall be responsible for any damage to any utilities or their structures during excavation/construction activities.
- The contractor shall coordinate and be responsible for connection fees, system development fees, taxes, etc. for all main connections and/or extensions with and from the city and/or respective utility unless otherwise coordinated with the Owner. All utility services for this project shall be coordinated with respective utility company by contractor.
- The contractor shall be responsible for adjusting all at–grade utilities such as manhole covers, valve box covers, etc. to finish grade, whether specifically indicated in these plans or not.
- Utilities shown on the plan with specific elevations and/or structure locations are SUE quality level "B", ie: storm sewer, sanitary sewer, water hydrants & valves, utility poles, etc. All other existing utility information shown is SUE quality level "D", primarily retracement of one–call and city records.

Americans with Disabilities Act (ADA) Notes:

- The running and cross slopes for all sidewalks, accessible paths, ramps, designated parking stalls, etc., shall be in compliance with latest Federal ADA guidelines, in addition to any accessibility standards adopted by the governing municipality. Prior to installation/construction, if any discrepancies are found within the plans, the Engineer shall be notified.
- All ADA parking areas shall have NO slopes greater than 2% in any direction.

Legal description:

Lot 1, Lee's Summit Town Centre, Lot 1 & Lot 2, A Subdivision In Lee's Summit, Jackson County, Missouri. Containing 505,722.67 sq. ft. or 11.61 acres more or less.

davidson
architecture&engineering
4301 Indian Creek Parkway
Overland Park, KS 66207
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fax: 913.451.9391
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Davidson Architecture & Engineering, LLC
License # 2010029713

STATE OF MISSOURI · PAUL A. MILLER · NUMBER E–28140 · REGISTERED PROFESSIONAL ENGINEER
01/20/2022
Paul A. Miller
License # E–28140

a new development for
Town Centre Lot 1
520 NE Town Centre Drive
Lee's Summit, Missouri

date
01.20.2022
drawn by
JMP
checked by
PAM
revisions

sheet number
C1.0
drawing type
Permit
project number
20231

General Notes:

- The Contractor shall be responsible for obtaining all required permits, paying all fees, and otherwise complying with all applicable regulations governing the project.
- All materials, workmanship, and construction shall meet or exceed the city standards. Where there is conflict between these plans and standards, the higher quality standard as determined by the engineer shall apply. All work shall be inspected and approved by contractor.
- All work and materials shall be subject to inspection and approval by the owner or the owner's representative. Any change or deviation from these plans must be authorized in writing by the owner or the owner's representative prior to work being completed.
- The work associated with and based on these plans, shall be subject to the requirements of, and conform to, the Municipal Code of Lee's Summit, Missouri, and the standards and specifications in current use. The standards, specifications, details, and procedures sub-referenced therein are hereby incorporated by reference.
- Lineal foot measurements shown on the plans are horizontal measurements, not slope measurements. All payments shall be made on horizontal measurements.
- No geological information is shown in these plans.
- Prior to commencement of work, the contractor shall notify all utility companies which have facilities in the near vicinity of the construction to be performed.
- All waste material resulting from the project shall be disposed of off-site in an approved landfill. All excavation shall be unclassified. No separate payment will be made for rock excavation. Contractor is responsible for all haul off material.
- The Contractor shall be required to provide a stabilized construction entrance to prevent mud from being deposited onto adjacent roads.
- All mud, dirt, and debris tracked onto the parking lot or any roadway shall be removed immediately by the contractor.
- The Contractor shall be responsible for keeping the public streets in the vicinity of the job site clean and free of rocks, soil and debris. Streets and/or parking areas will be scraped and swept on a daily basis by the general contractor.
- The Contractor shall protect from damage all survey monuments, property markers, benchmarks, etc. Items damaged shall be reset by a professional land surveyor licensed in the state of Missouri, at the contractor's expense.
- Paving shall conform to the minimum design standards as required by the city and these drawings. If a geotechnical report is provided for the project, the greater pavement requirement between the city's minimum design standards and the geotechnical report shall be used.
- The Contractor shall contact the City's Development Services Engineering Inspectors 48 hours prior to any land disturbance work at (816) 969-1200.
- All concrete for public improvements shall comply with the city standards and specifications. If no city standards and specifications are provided, then the contractor shall comply with the standards and specifications of the Kansas City Metropolitan Materials Board (KCMMB) unless otherwise noted. Structural concrete shall be 5,000 psi and nonstructural concrete shall be 4,000 psi.
- The contractor shall be responsible for the restoration of the right-of-way and for damaged improvements such as curbs, sidewalks, street light and traffic signal junction boxes, traffic signal loop lead-ins, signal poles, etc (offsite and onsite). Damaged improvements shall be repaired in conformance with the latest city standards and to the city's satisfaction.
- All work within the road right-of-way shall conform to the technical specifications and design criteria for public improvement projects of the city of Lee's Summit, Missouri A right-of-way work permit and/or street excavations permit shall be obtained by the contractor if required to complete all work within the public right-of-way.
- All traffic control in connection with construction in the right-of-way shall be in conformance with the Manual of Uniform Traffic Control Devices and/or the jurisdictional authority. It is the contractor's responsibility to obtain a traffic control permit if required.
- All waste materials, trash and construction debris shall be collected and stored in dumpsters. No construction waste shall be buried on site. All hazardous waste materials will be disposed of in the manner specified by local, state and federal regulations. Site personnel shall be instructed in these practices, and the construction manager shall be responsible for seeing that these practices are followed.
- Recommendations made by the geotechnical engineer, to be retained by the owner, and contained in the geotechnical report shall govern project conditions unless noted otherwise. Paving shall conform to the the greater pavement requirement between the city's minimum design standards and the recommendations made in the geotechnical report.
- The Contractor shall grade areas to provide positive drainage.
- The contractor shall be responsible for the coordination of work between suppliers and subcontractors involved in the project, including staging of construction details.
- All disturbed areas shall be maintained for dust control. Sprinkling tank trucks shall be available at all times & used on on-site disturbed areas, and other areas where dust becomes a problem as a result of construction activity.
- Nothing indicated on these drawings shall relieve the contractor from complying with appropriate safety regulations.

Utility Notes:

- Boundary information, existing utilities and topographic features shown are based on information supplied by owner, surveyor, and others.
- The existing utility locations shown on these plans are approximate and may not include all utility lines present. The contractor shall be responsible to contract "One Call" and coordinate field location of all existing underground utilities prior to beginning excavation/construction activities.
- The contractor shall be responsible for any damage to any utilities or their structures during excavation/construction activities. Utilities include but are not limited to a service such as electricity, communication, water, public transportation (including traffic signals), storm systems, and items provided by a public utility.
- The contractor shall coordinate and be responsible for connection fees, system development fees, taxes, etc. for all main connections and/or extensions with and from the city and/or respective utility unless otherwise coordinated with the Owner. All utility services for this project shall be coordinated with respective utility company by contractor.
- The contractor shall be responsible for adjusting all at-grade utilities such as manhole covers, valve box covers, etc. to finish grade, whether specifically indicated in these plans or not.
- Utilities shown on the plan with specific elevations and/or structure locations are SUE quality level "B", ie: storm sewer, sanitary sewer, water hydrants & valves, utility poles, etc. All other existing utility information shown is SUE quality level "D", primarily retracement of one-call and city records.
- Refer to mechanical, electrical, and plumbing (MEP) plans for utility service sizes and exact locations. Refer to site electric plans for electric construction details.
- Provide temporary support for existing utility lines that are encountered during construction until backfilling is complete.
- Backfill all utility trenches according to the most recent edition of the jurisdictional standards.
- All utilities shall be brought within 5' of the building to connect to plumbing contractors work unless otherwise specified.
- The Contractor shall adjust all utility fixtures, manholes and inlets to finished grade as required.
- The Contractor shall maintain 18'' minimum vertical clearance between storm sewer and sanitary sewer pipes and 18'' minimum vertical clearance between sanitary sewer and water main unless otherwise specified.
- Contractor shall prevent entry of mud, dirt, debris, and other material into new and existing storm sewer systems. Should any contamination occur during construction, the contractor shall clean at contractor's expense. Upon completition of all storm sewer improvements, all new and existing pipe and structures shall be cleaned out.
- Electrical, lighting, and data conduit layout shown is for graphical purposes only. See MEP plans for more detail.
- The Contractor shall provide all temporary power, process, and utility service bypasses and connections as required.

Erosion Control Notes:

- The installation of the silt fencing, the maintenance of the drainage swales, and the construction of the stabilized entrance shall be completed prior to any clearing and grading of any portions of the site. Disturbed portions of the site where construction activities have permanently ceased shall be stabilized with permanent seeding no later than 14 days after the last construction activity, refer to SWPPP. Roadway swales shall be stabilized with Erosion Control Devices. Once construction activity ceases permanently in an area, that area shall be stabilized with permanent seed and mulch. Only after the entire site has been stabilized, the silt fencing shall be removed.
- The general contractor, or designated Erosion Control Contractor, shall be responsible for construction and maintenance of erosion control devices and practices. The contractor shall be responsible for implementation of, and ensuring compliance of, the project Storm Water Pollution Prevention Plan (SWPPP), a copy of which shall be obtained from the Design Engineer. The SWPPP shall be maintained on site per NPDES requirements and shall be available for review at any time, by any authorized Federal, State, or local review official, as well as the Design Engineer. The general contractor, or designated Erosion Control Contractor, shall also be responsible for ensuring compliance with, and paying any fees associated with, the State of Missouri General Permit for Stormwater Runoff associated with construction activities, a copy of which shall be maintained in the aforementioned SWPPP.
- This project shall be constructed in compliance with the land disturbance permit, and conform to the standards and specifications of the city of Lee's Summit, Missouri, prior to any land disturbance changes.
- Erosion and any sedimentation from work on this site shall be contained on the site and not allowed to collect on any offsite areas or in waterways. Waterways include both natural and man-made open ditches, streams, storm drains, lakes and ponds. Refer to erosion control plans for more information.
- The contractor shall be responsible to control downstream erosion and siltation during all phases of construction. Erosion Control work and procedures shall be in place prior to beginning excavation/construction activities. To ensure progressive stabilization of disturbed earth, Erosion control devices shall be staged, installed and maintained throughout land disturbance activities as directed in the drawings, project manual and in accordance with all federal, state and local standards until the site is stabilized.
- The contractor shall implement and maintain Erosion Control Devices as shown in the drawings and project manual before, and at all times during the construction of this project. Any modifications to the devices due to construction or changed conditions shall be complied with as required or as directed by the city of Lee's Summit, Missouri.
- The contractor shall be responsible for installation and maintenance of all Erosion Control Devices. This includes providing berms, silt fence, or other means to prevent erosion from reaching the right of way and offsite boundaries. In the event the prevention measures are not effective, the contractor shall remove any debris and erosion, restoring the right of way to original or better condition.
- Contractor is to provide erosion protection for all storm sewer inlets.
- If any of the Erosion Control Devices on the site are deemed inadequate or ineffective, the city of Lee's Summit, Missouri has the right to require additional Erosion Control measures at the expense of the general contractor.
- If any pump-driven dewatering is needed, it shall be discharged though a filter bag over a well-vegetated area. The pump must discharge at a non-erosive velocity. If necessary, an approved energy dissipater may be used.
- Permanent BMP's for any disturbed land area shall be completed by the general contractor within 5 calendar days after final grading or the final earth change has been completed. When it is not possible to permanently stabilize a disturbed area after land disturbance activity ceases, temporary Erosion control devices shall be implemented immediately. All temporary Erosion Control Devices shall be maintained until permanent BMP devices are implemented. All permanent BMP's will be implemented and established before a certificate of compliance is issued.
- Strip topsoil only from those areas that will be disturbed by excavation, filling, road building, or compaction by equipment. Refer to the geotechnical report for depths of stripping. Put sediment basins, diversions, and other controls into place before stripping.
- When topsoiling, maintain needed erosion control practices such as diversions, grade stabilization structures, berm, dikes, level spreaders, waterways and sediment basins.
- Grades on the areas to be topsoiled which have been previously established shall be maintained.
- Bonding – Immediately prior to dumping and spreading of topsoil, loosen the subgrade by discing or scarifying to a depth of at least 4", to permit bonding of the topsoil and subsoil.
- The general contractor shall inspect the Erosion Control Devices once every 14 days under any circumstances, within 24 hours of rainfall, and daily during a prolonged rain event unless otherwise noted in the SWPPP or by the jurisdictional authority. A log of inspection report shall be maintained and accessible in accordance with National Pollution Discharge Elimination System (NPDES) requirements. Any required maintenance shall be provided within 72 hours.
- Install silt fence, inlet filters, and other Erosion Control Devices as indicated in the drawings, per APWA and authority regulations, and at additional affected areas as necessary. Build-up of sediment shall be removed promptly per authorities regulations. If silt fence decomposes or becomes ineffective prior to the end of expected usable life and the barrier is still required, the silt fence shall be replaced promptly. Sediment shall be removed from sediment traps or basins when design capacity has been reduced to 50%. Contractor shall flare the ends of the silt fence uphill in order to temporarily impound runoff.
- Earthen berms shall be regularly inspected, and inspected after each rainfall event. Repairs to earthen berms shall be made immediately. If the earthen berm shows signs of erosion, and it is determined that material must be added to fix the berm, the material shall be properly placed, compacted and reseeded. The berm shall be reseeded and stabilized, as needed, to maintain its soundness whether or not there has been any rainfall.
- Drainage swales shall be inspected regularly and after every rainfall event. Repairs to drainage swales shall be made immediately. If the flow channel and/or outlets show signs of deficiency, the damaged area(s) shall be restabilized and reseeded, as needed, to prevent further damage. If additional measures are needed to eliminate issues, contractor shall notify the engineer for possible modifications.
- Refer to the jurisdictional authority for temporary gravel construction entrance details. If not specified, refer to APWA standards. The entrance and exit areas of the project shall be cleared of all vegetation, roots, and other objectionable material. The gravel shall be placed to the proper dimensions and graded to a smooth and even slope. Construction entrance drainage shall be provided to carry water to a sediment trap or other suitable outlet.

Stockpiling Notes:

- Select stockpile location to avoid slopes and natural drainageways, avoiding traffic routes. On large sites, re-spreading is easier and more economical where topsoil is stockpiled in small piles located near areas where they will be used.
- Sediment Barriers – Use sediment fences or other barriers where necessary to retain sediment.
- Temporary Seeding – Protect topsoil stockpiles by temporarily seeding as soon as possible, not to exceed 14 days, weather permitting, after the formation of the stockpile.
- Permanent Vegetation – If stockpiles will not be used within 12 months, they must be stabilized with permanent vegetation to control erosion and weed growth.
- All stockpiled soils shall be maintained in such a way as to prevent erosion from leaving the site. Silt fence must be installed around the perimeter of the stockpile.

Seeding Notes:

- Seeding shall be as follows unless otherwise stated in the landscape plans.
- Annual rye grass, wheat, or oats should be used for temporary seeding. Apply rye grass at 120lbs. per acre, wheat or oats at 100lbs. per acre.
- A mixture of 65% kentucky bluegrass and 35% chewing fescue or creeping red fescue should be used for permanent seeding. Apply the mixture at 2lbs. per 1000ft^2.
- Seedbed preparation-Install necessary mechanical erosion and sedimentation control practices before seeding, and complete grading according to the approved plan. Lime and fertilizer needs should be determined by soil test. Apply the lime and fertilizer evenly and incorporate into the top 4"-6" of soil by discing or other suitable means.
- All seeding shall be performed during favorable weather conditions and only during normal and accepted planting seasons when satisfactory growing conditions exist. The planting operations shall not be performed during times of extreme drought, when ground is frozen or during times of other unfavorable climatic conditions unless otherwise approved by owner's representative. The contractor assumes full and complete responsibility for all such plantings and operations.
- Seed should be labeled in accordance with U.S. Department of Agriculture rules and regulations under the federal seed act and comply with the requirements of the Missouri seed law. Labels contain important information on seed purity, germination, and presence of weeds. Weed seed should not exceed 1.0% by weight of the mixture.
- Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder, or hydroseeder. Small grains should be planted no more than 1" deep, and grasses and legumes no more than ½".
- Generally, a permanent stand of vegetation cannot be determined to be fully established until soil cover has been maintained for one full year from planting. Inspect seeded areas for failure and make necessary repairs and re-seedings within the same season, if possible.
- The Contractor shall seed all disturbed areas unless otherwise noted by landscape plans. Immediately after seeding, mulch all seeded areas with unweathered small grain straw, spread uniformly at the rate of 1-2 tons per acre or 100lbs (2-3 bales) per 1000ft^2. The mulch should be anchored with disc type mulch anchoring tool or other means as approved by the jurisdictional authority. Mulch matting may be used in lieu of loose mulch.
- The Contractor shall sod all disturbed areas within the public street right-of-way. Refer to city and state standards for proper installation.

Demolition Notes:

- At the site, the Contractor shall maintain the required documents for immediate review, included but not limited to: Site Safety Plan, Demolition Permits, Street Closure Permits, Contract Documents, Demolition Plans, Salvage Verification Forms, SWPPP Etc.
- The Contractor shall notify all utility companies for field verification and disconnection of utilities prior to any work. Coordination is required for both temporary and permanent utility services that serve the site including, but not limited to: water lines, power, telephone, cable, storm sewer, sanitary sewer with the city and/or respective utility.
- The Contractor is specifically cautioned that the locations and/or elevation of existing utilities as shown on these plans are based on records of the various utility companies, and where possible, measurements taken in the field. The information is not to be relied on as being exact or complete. Contractor shall contact One Call utility information service for utility locates. The Contractor must call the appropriate utility companies at least 72 hours before any excavation to request exact field location of utilities. The Contractor shall also coordinate and allow access for utility companies to perform any disconnection or relocation activities. It shall be the responsibility of the Contractor to relocate all existing utilities which conflict with the proposed improvements shown on the plans.
- Remaining building structures and remaining utility services shall be protected from damage. Damage to any existing features to remain will be replaced at the Contractor's expense.
- Areas disturbed during demolition shall be thoroughly evaluated by the geotechnical engineer responsible for site preparation prior to placement of structural fill. All disturbed soils shall be undercut prior to placement of structural fill, per the geotechnical recommendations. Contractor shall notify the geotechnical engineer at least 72 hours prior to placement of structural fill.
- Excavations created by the removal of any existing utility lines that extend below design grades shall be cut wide enough to allow use of heavy construction equipment to compact the fill. Base of the excavations shall be thoroughly evaluated by the geotechnical engineer prior to placement of fill. If existing utilities are to be left in-place, existing trench backfill shall be evaluated in accordance with the recommendations of evaluation of existing fill.
- The Contractor shall be responsible for obtaining all Federal, State, and local permits, obtaining all inspections, and shall conform to all governing codes and regulations required to perform necessary abatement during demolition, should hazardous materials be encountered.
- Contractor is responsible for legally disposing of all materials and associated cost of interim storage facilities.
- For tree & stump removal, the Contractor shall remove all root systems from the site not designated to be saved. Materials disturbed during removal of stumps shall be undercut and replaced with structural fill. A zone of desiccated soils may exist in the vicinity of the trees. The desiccated soils have a higher swell potential and shall be undercut and replaced with structural fill.
- No construction waste shall be buried on site. All hazardous waste materials will be disposed of in the manner specified by local, state and federal regulations.

Retaining Wall Notes:

- Site retaining wall improvements shall be designed by a licensed professional engineer retained by the contractor. The wall engineer and contractor shall satisfy themselves of the conditions of the surrounding site features and any interactions with the proposed improvements.
- Retaining wall design drawings and specifications shall be provided to the owner and owner's representative for review and approval. All retaining wall designs shall be signed and sealed by a registered Professional Engineer licensed in the state of Missouri. Design services shall be included in retaining wall pricing.
- Refer to Retaining Wall drawings for wall information. Civil plan set shall only be used for general location and spot elevations.
- The Contractor is responsible for coordinating all inspections, certifications, permits, fees and close out of the wall unless otherwise determined. Contractor shall notify wall design engineer for final inspection. Contractor shall include in construction cost for all of the above items related to the installation of the retaining wall.
- Any wall shown is a schematic representation of the proposed walls. The spot elevations denoting retaining walls are provided on the site grading plan.
- If the wall is greater than 30'' and is in an accessible area, guard rails are required per code.

Americans with Disabilities Act (ADA) Notes:

- The running and cross slopes for all sidewalks, accessible paths, ramps, designated parking stalls, etc., shall be in compliance with latest Federal ADA guidelines, in addition to any accessibility standards adopted by the governing municipality. Prior to installation/construction, if any discrepancies are found within the plans, the Engineer shall be notified.
- All ADA parking areas shall have NO slopes greater than 2% in any direction.

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a new development for
Town Centre Lot 1
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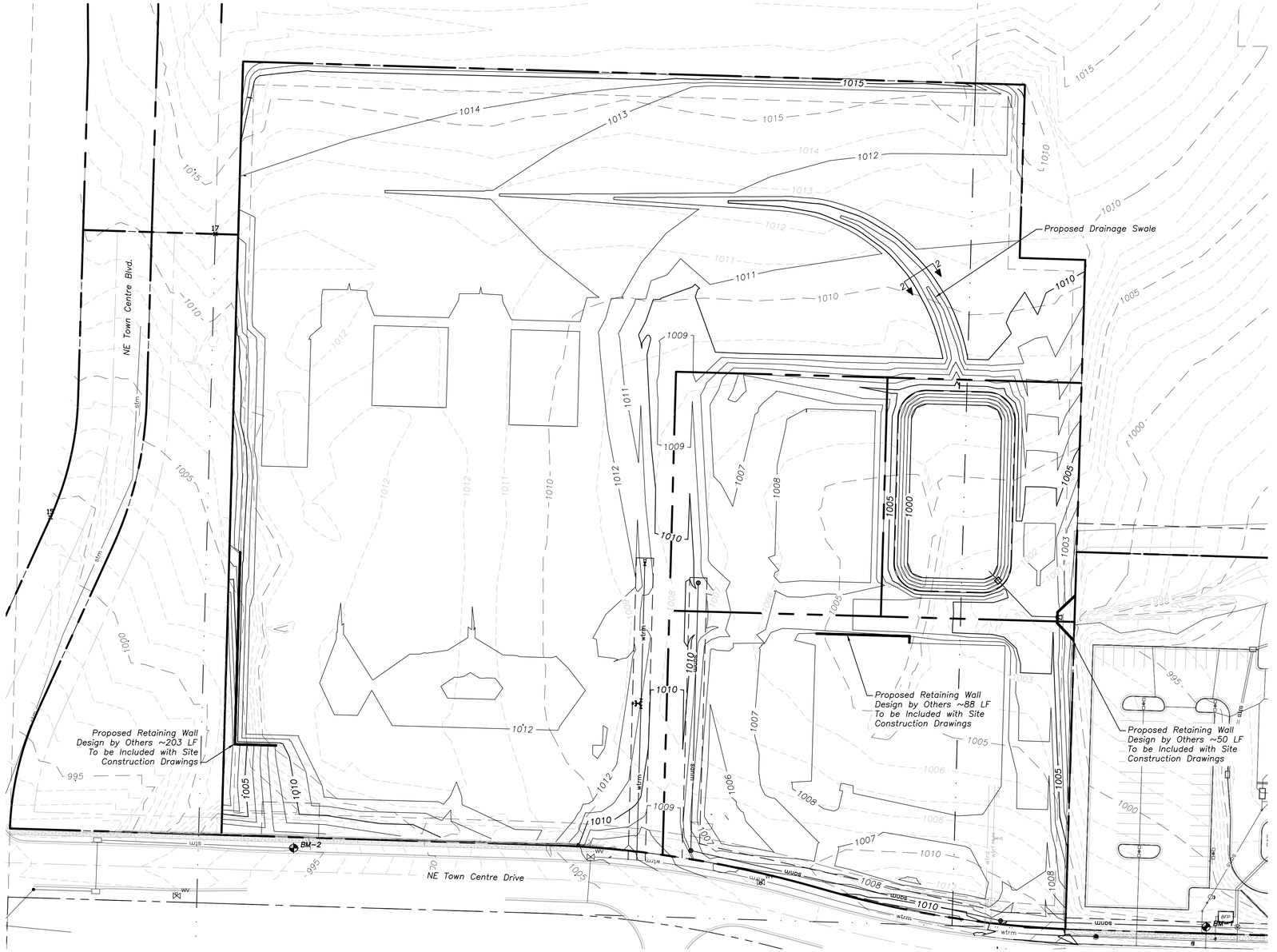
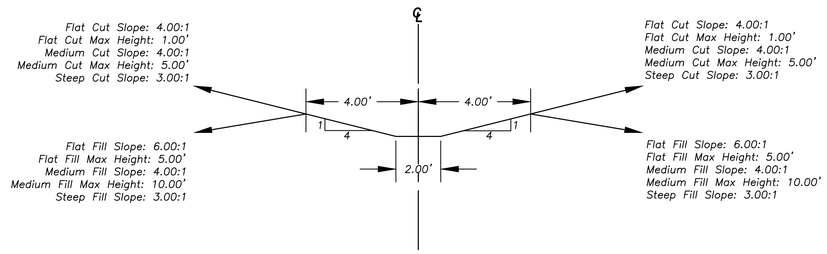
- C — cable/phone/data junction box
- street light
- pedestrian street light
- electric pole
- guy wire
- end section



1 Grading Plan
scale: 1"=50'
0 25 50 100



2 Drainage Swale Cross-Section
not to scale

MISSOURI ONE CALL SYSTEM, INC.
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STOP-CALL BEFORE YOU DIG!

a new development for Town Centre Lot 1

520 NE Town Centre Drive
Lee's Summit, Missouri

date
01.20.2022
drawn by
JMP
checked by
PAM
revisions

sheet number
C2.1
drawing type
Permit
project number
20231

Local Benchmarks:

BM-1: (Sanitary Sewer Manhole, Center of Lid)
Elevation: 1006.88'
N: 1013449.78
E: 2826933.88

BM-2: (Storm Sewer Curb Inlet, Center of Lid)
Elevation: 994.34'
N: 1013518.71
E: 2826136.03

Grading Legend

- existing minor contour
- existing major contour
- proposed minor contour
- proposed major contour

Utility Legend

- existing
- proposed

Linetypes

- sanm — sanitary main
- sans — sanitary service
- storm sewer (existing)
- storm sewer (solid wall, proposed)
- stm — storm sewer (solid wall, proposed)
- storm sewer (perforated, proposed)
- wtrm — water main
- wtrf — water service (fire)
- wtrd — water service (domestic)
- wtri — water service (irrigation)
- gasm — natural gas main
- gass — gass — natural gas service schematic
- elpu — underground primary electric
- elsu — underground secondary electric
- elpo — overhead electric
- datu — underground cable/phone/data
- datsu — underground cable/phone/data service
- fence-chainlink
- fence-wood
- fence-barbed wire
- treeline

Symbols

- sanitary manhole
- co — service cleanout
- fmv — force main release valve
- rectangular structure
- circular structure
- fire hydrant
- wv — water valve
- water meter
- BFP — backflow preventer
- g — natural gas meter
- T — service transformer (pad mount)
- S — primary switch gear
- light pole
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- street light
- pedestrian street light
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Erosion Control Legend

- Phase I Silt fence
- Phase I Inlet protection
- limits of disturbance
- construction entrance
- rock check dam
- topsoil stockpile area
- concrete washout area

Property Legend

- right of way
- property lines
- easements
- setbacks

Note:

Contractor to construct stormwater management facilities, specifically those features related to detention, prior to any land disturbance of the site and prior to the construction of any other site development work as not to effect downstream neighbors with undetained stormwater discharge.

north

1 Phase I: Erosion Control Plan

scale: 1"=50'

0 25 50 100

Erosion and Sediment Control Staging Chart

	Project Stage	Description	Remove after Stage:	Notes:
Phase I	A - Prior to Land Disturbance	Inlet Protection	F	Install inlet protection on existing area inlets. See detail ESC-06 on Sheet C4.1.
		Temporary Construction Entrance and Staging Area	E	Install per ESC-01 detail on Sheet C4.1
		Perimeter Sediment Fence	F	Install per city of Lee's Summit standard. See detail ESC-03 on Sheet C4.1.
Phase II	B - Construct Sediment Basin	Phase II area Storm Pipe Inlet & Outlet Protection within Proposed Sediment Basin	N/A	At time of sediment basin construction, install stabilized buffer and utilize skimmer at sediment basin outlet structure. See detail ESC-12 on Sheet C4.1.
	C - Mass Grading	Concrete Washout	E	Remove only when graded areas have permanent stabilization established.
		Stockpile Topsoil	E	Install sediment fence a minimum of 5' beyond toe of slope for all stockpile areas.
		Phase II Sediment Fence	F	Install as needed for intermediate sediment control during mass grading
		Remove Existing Pond	N/A	Reference Soil Stabilization notes on Sheet C2.2 for recommended stabilization procedures
	D - Storm Sewer Installation	Phase II Area and Curb Inlets Protection	F	Install sediment fence around all area inlets and open junction boxes. Install excavated area and throat protection on all curb inlets. See detail ECS-07 on Sheet C4.1.
		Temporary Stabilization	N/A	Seed and mulch future development area. Temporarily stabilize with hydromulch if out of seeding season.
Building Phase	E - Construction of Detention Pond, Building, and Pavements	Convert Sediment Basin to Detention Pond	N/A	Install inlet/outlet storm structures. Grade Detention Area per Construction Drawings.
		Phase II Area and Curb Inlets Protection	F	Following installation of storm structures and curb and gutter, install inlet filter bag. See detail ECS-07 on Sheet C4.1
		Sediment Log/Wattle	F	To be placed at back of curb and installed per manufacturer instructions.
	F - Final Grading & Stabilization	Establish Perennial Vegetation and landscaping per landscape plan. Install Native Vegetation in designated areas using approved seed mix.	N/A	Redistribute topsoil and seed and mulch all disturbed areas. Sod right-of-way. Stabilization complete when 100% of disturbed area is established with perennial vegetation with a density of 70%. All plantings shall be during approved planting season. Planting shall be per approved landscape plan.

Soil Stabilization Notes (From Geotechnical Report by PSI Project No. 03382230):

The presence of shallow groundwater and potentially moisture sensitive shallow soils will increase the difficulty of site grading. PSI has been involved with projects in this region where these soils can undergo a loss of stability during wetter portions of the year. PSI anticipates that the soils at their current moisture levels will become easily disturbed if subjected to conventional rubber tire or narrow track-type equipment resulting in a loss of strength and characteristic "pumping". Soils that become disturbed would need to be excavated and replaced; however, this remedial excavation may expose progressively wetter soils with depth, thus compounding the condition. Thus, a normal approach to subgrade preparation may not be possible. In the event these conditions are observed, PSI recommends that the following remediation procedures be considered to further stabilize wet/soft areas if typical surface moisture conditioning/disking/recompacting methods are not affective.

1. Track in 3 to 5-inch minus well-graded crushed limestone or similar material into the failing areas to attempt to bridge the soft zones. These materials should be placed in loose lifts of no more than 10 inches and tracked in with a loaded rubber tire truck or beat in with a backhoe bucket. Once the areas are stabilized onsite soils then be placed to the recommended low volume change material subgrade elevation for pavements. If for some reason areas do not stabilize with 1 to 2 lifts of stone, a layer of grid or fabric may need to be incorporated into those areas at that time, followed by additional lifts of stone consisting of ¾ inch minus materials (AB-3).

2. A second option would be to place geo grid similar to Tensar BX1100 and then place new granular fill similar to ¾-inch minus material in compacted lifts. The grid should extend at least 10 feet past the perimeter of the failing areas and should be overlapped according to the manufactures requirements. If the area does not stabilize by the second lift of ¾ inch minus material an additional layer of grid should then be placed and the process should be repeated until it is stabilized.

PSI recommends a test section be performed to verify the selected remediation method.

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STATE OF MISSOURI PAUL A. MILLER NUMBER E-28140 REGISTERED PROFESSIONAL ENGINEER
01/20/2022
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- Phase I Silt fence
- Phase I Inlet protection
- Phase II Silt fence
- Phase II Inlet protection
- limits of disturbance
- construction entrance
- rock check dam
- topsoil stockpile area
- concrete washout area
- temporary seeding

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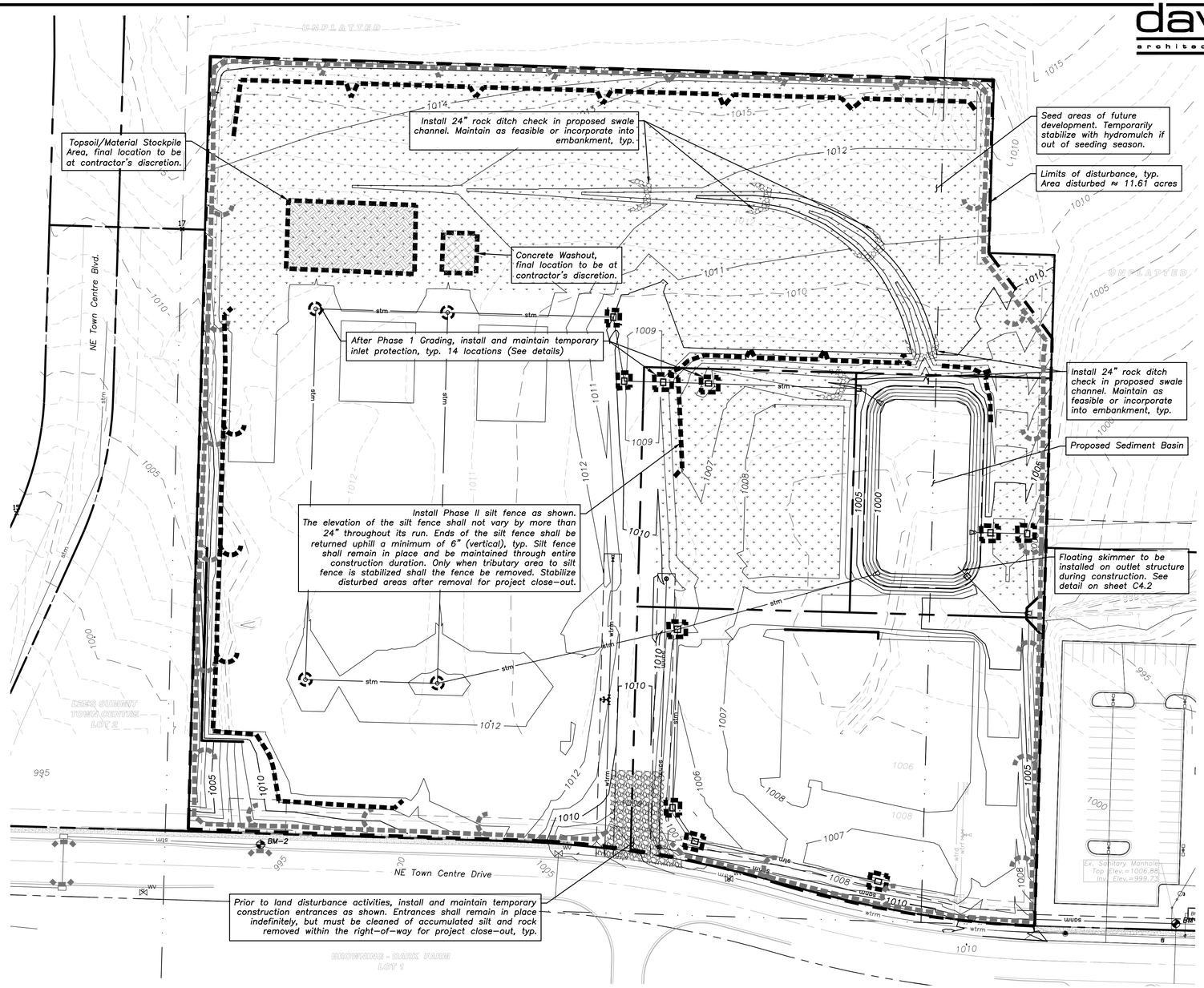

north

1 Phase II: Erosion Control Plan

scale: 1"=50'

0 25 50 100

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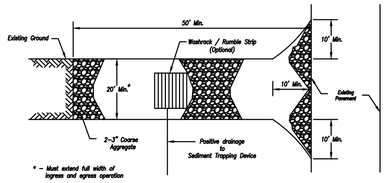
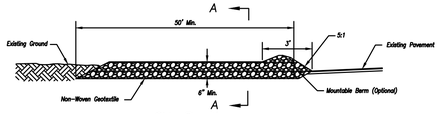
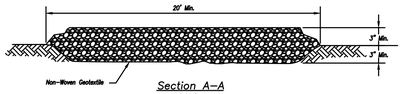


* – Must extend full width of ingress and egress operation

Plan View
Not to Scale



Side Elevation
Not to Scale



Section A–A
Not to Scale

Notes for Construction Entrance:

1. Avoid locating on steep slopes, at curves on public roads, or downhill of disturbed area.
2. Remove all vegetation and other unsuitable material from the foundation area, grade, and crown for positive drainage.
3. If slope towards the public road exceeds 2%, construct a 6– to 8–inch high ridge with 3H:1V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
4. Install pipe under the entrance if needed to maintain drainage ditches along public roads.
5. Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.
6. Divert all surface runoff and drainage from the entrance to a sediment control device.
7. If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

Maintenance for Construction Entrance:

1. Reshape entrance as needed to maintain function and integrity of installation. Top dress with clean aggregate as needed.

CONSTRUCTION ENTRANCE

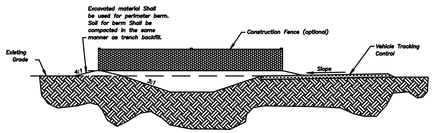
Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control; Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

Notes for Concrete Washout:

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

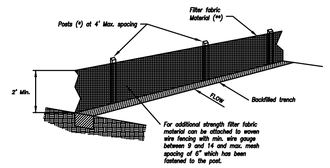
Maintenance for Concrete Washout:

1. Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
2. Concrete washout areas shall be enlarged as necessary to maintain capacity for wasted concrete.
3. Concrete washout water, wasted pieces of concrete and all other debris in the subsurface pit shall be transported from the job site in a water–tight container and disposed of properly.
4. Concrete washout areas shall remain in place until all concrete for the project is placed.
5. When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and topsoil, any disturbed areas associated with the installation, maintenance, and/or removal of the concrete washout areas shall be stabilized.



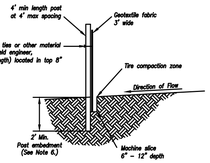
CONCRETE WASHOUT

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter APWA
KANSAS CITY METRO CHAPTER
CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT
STANDARD DRAWING NUMBER ESC-01
ADOPTED: 10/24/2016



(*) POSTS
- MIN. LENGTH 4'
- HARDWOOD 1 ½" x 1 ½"
- NO.2 SOUTHERN PINE 2 ½" x 2 ½"
- STEEL 1.33 LB/FT

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



SILT FENCE DETAILS
Not to Scale

Notes:

1. In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
2. 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).
3. Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
4. Attach fabric to upstream side of post.
5. Install posts a minimum of 2' into the ground.
6. Trenching will only be allowed for small or difficult installation, where slicing machine cannot be reasonably used.

Maintenance:

1. Remove and dispose of sediment deposits when the deposit approaches ½ the height of silt fence.
2. Repair as necessary to maintain function and structure.

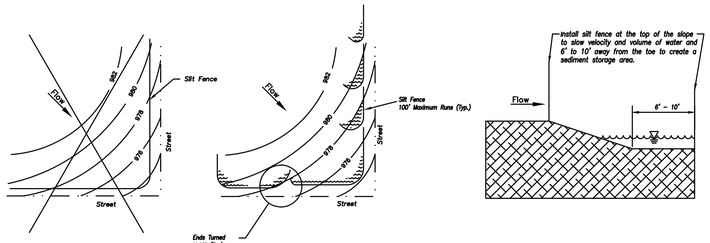
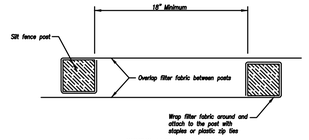


Figure A

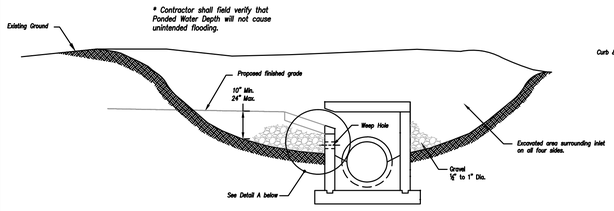


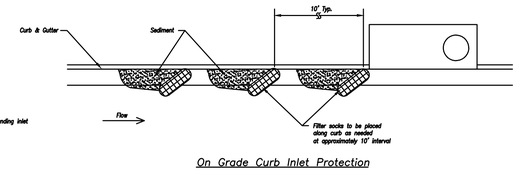
JOINING FENCE SECTIONS
Not to Scale

SILT FENCE LAYOUT
Not to Scale

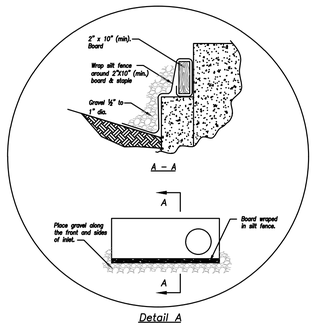
Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter APWA
KANSAS CITY METRO CHAPTER
SILT FENCE
STANDARD DRAWING NUMBER ESC-03
ADOPTED: 10/24/2016





On Grade Curb Inlet Protection



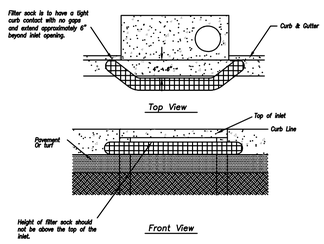
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

Notes:

1. 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).
2. When inlet is completed and curb poured, filter socks or approved equal should be used (Late Stage Curb Inlet). Straw wattles are not approved for curb inlet use.
3. Contractor to field verify ponding water shall not create a traffic hazard.

Maintenance:

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

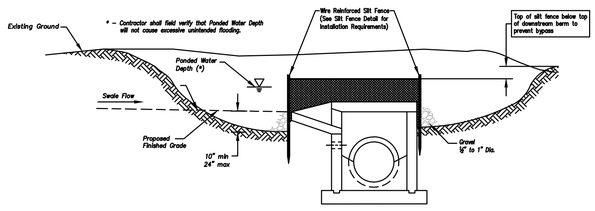


Sump Inlet Sediment Filter

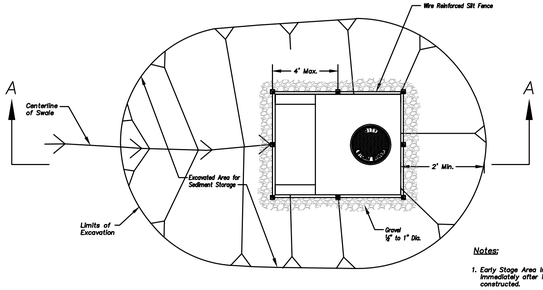
LATE STAGE CURB INLET
(After Pouring Curb and Inlet Throat)

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

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter APWA
KANSAS CITY METRO CHAPTER
CURB INLET PROTECTION
STANDARD DRAWING NUMBER ESC-06
ADOPTED: 10/24/2016



Section A–A
Not to Scale

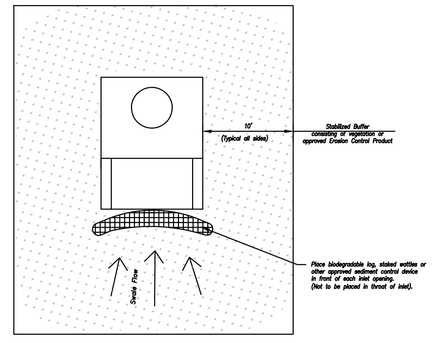


Plan
Not to Scale

EARLY STAGE AREA INLET
(All open boxes and inlets not at final grade)

Notes:

1. Early Stage Area Inlet Sediment Barrier to be installed immediately after inlet or junction box is constructed.
2. Silt fence shall remain in place until excavated area is removed and Late Stage Area Inlet is being installed.
3. Backfill excavated area ONLY after final grading of the site. Stabilization of the site is to immediately follow.
4. Wire reinforced silt fence may be used in place of silt fence attached to wood frame.



Plan
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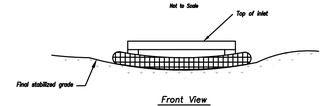

Front View

LATE STAGE AREA INLET
(Area inlets at final grade and existing inlets)

Maintenance:

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

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

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KANSAS CITY METRO CHAPTER
AREA INLET AND JUNCTION BOX PROTECTION
STANDARD DRAWING NUMBER ESC-07
ADOPTED: 10/24/2016

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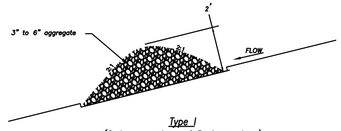
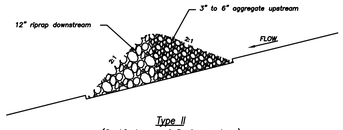


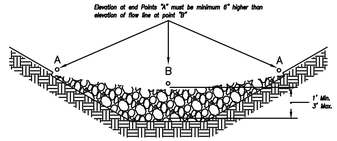
Type I
(2 Acres or less of Drainage Area)
Not to Scale



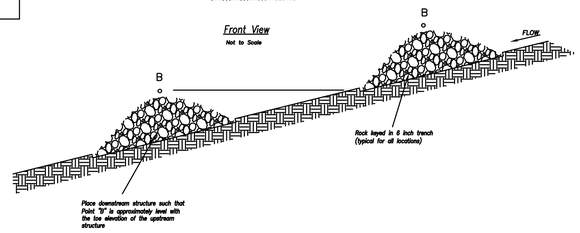
Type II
(2–10 Acres of Drainage Area)
Not to Scale

ROCK DITCH CHECK

Temporary Rock Ditch Check Spacing	
Ditch Centerline Slope (%)	Spacing Interval (Feet)
5.0	60
6.0	50
7.0	43
8.0	38
9.0	33
10.0	29
Note: Use this spacing only for Rock Ditch Checks.	

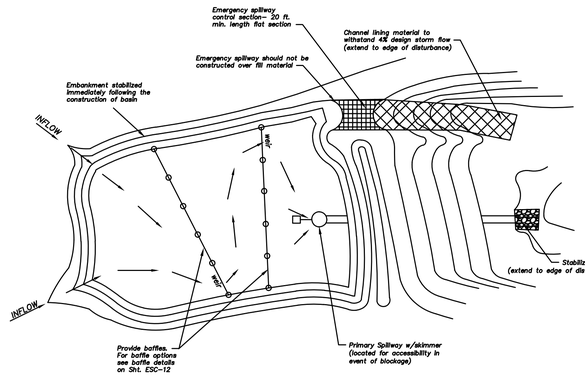


Front View
Not to Scale



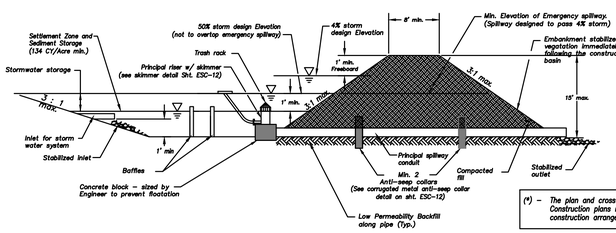
Spacing Between Check Dams (all types)
Not to Scale

AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER	
ROCK DITCH CHECKS	STANDARD DRAWING NUMBER ESC-10	ADOPTED: 10/24/2016



Plan View (*)
Not to Scale

Sediment Basin Design Summary (**)				
Design Item	Basin #1	Basin #2	Units	Notes
Site Data:				
Tributary Drainage Area to Pond			Acres	
50% (2 yr) Design Flow			cfs	
4% (25 yr) Design Flow			cfs	
Pond Data:				
Minimum Sediment Storage Volume			cu yd	134 cy/acre required minimum
Provided Sediment Storage Volume			cu yd	
Bottom Elevation			Ft	
Sediment Cleanout Elevation			Ft	Elevation equal to 20% of original design volume
Top of Riser Elevation			Ft	Top of dry storage volume
Emergency Spillway Elevation			Ft	at or above 0–2 elevation. 1.0 ft min above principal spillway
Top of Dam Elevation			Ft	1.0 ft min above 0–25 elevation
Basin Shape Data:				
A = Area at Normal Pool			SF	
L = Length of Flow Path			Ft	
We = Effective Width = A/L			Ft	
Length to Width Ratio = L/We				
Principal Spillway Data:				
Riser Pipe dia			in	15" min. Size for 2 year flow minimum
Barrel Pipe dia			in	15" min. Size for 2 year flow minimum
Concrete Base size for Riser Pipe			CY	Size to prevent flotation. 1.25 safety factor required
Skimmer Size				Designer to provide specific details and calculations per application to dewater in 48 to 72 hours
Emergency Spillway Data:				
Design Depth in Spillway			ft	
Design Velocity in Spillway			ft/sec	
Lining Material				Designer to provide specific details and calculations per application
(**) – Required on all Sediment Basin Plan Sheets				



Cross Section (*)
Not to Scale

(*) – The plan and cross section are schematic in nature. Construction plans must provide specific site construction arrangements.

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

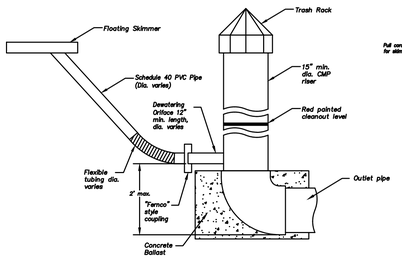
Sediment Basin Notes:

1. Interior baffles shall be provided to reduce short–circuiting of the basin. See Sht. ESC–12 for approved baffle options.
2. Emergency spillways to be located in a non–fill location when feasible and shall be lined with a non–erodible material such as Riprap or Turf Reinforcement Mat.
3. When directed, sediment basins shall be fenced using construction fence or other material for safety reasons and include warning signs, reading: "Danger – KEEP OUT".

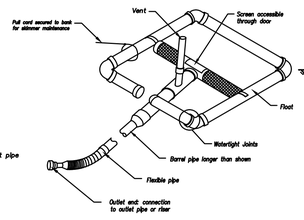
Maintenance:

1. Check temporary sediment basins after periods of significant runoff.
2. Remove sediment and restore the basin to its original dimensions when sediment accumulates to 20% of the storage capacity.
3. Immediately repair any erosion damage to the embankment and outlets.
4. Repair and/or replace baffles as necessary to maintain function and integrity of installation.
5. Keep outlet, skimmer and pool area free of all trash and other debris.

AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER	
SEDIMENT BASIN	STANDARD DRAWING NUMBER ESC-11	ADOPTED: 10/24/2016

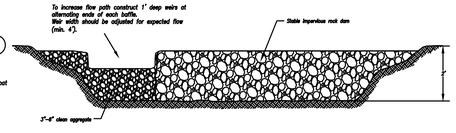


PRINCIPAL SPILLWAY DETAIL

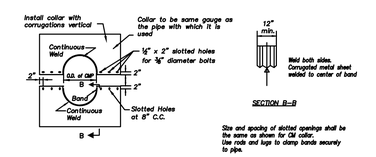


SKIMMER DETAIL (Typ.) *

* Designer to provide specific details per application (e.g. pipe sizes, screen sizes, perforation, etc.) as required.

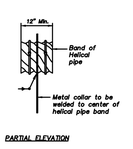


Option A – Rock with Weir

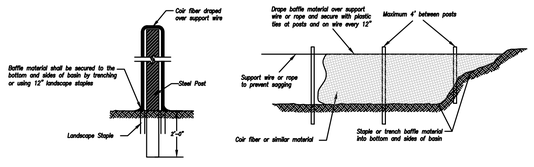


SECTION B–B

Size and spacing of slotted openings shall be the same as shown for CM collar. Use rods and lugs to clamp bands securely to pipe.

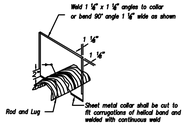


PARTIAL ELEVATION

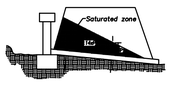


Option B – Coir Fiber Material

BAFFLE DETAILS
Not to Scale



ISOMETRIC VIEW



ANTI–SEEPAGE COLLAR LOCATIONS

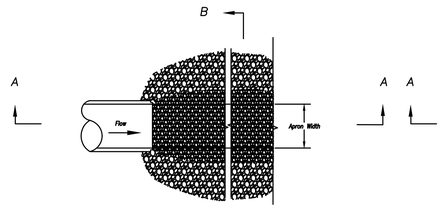
CORRUGATED METAL ANTI–SEEPAGE COLLAR DETAIL
Not to Scale

Anti–Seepage Collar Notes:

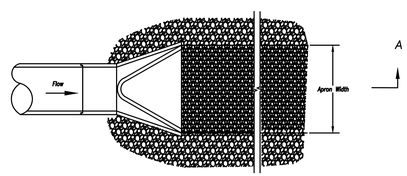
1. Connections between the anti–seepage collar and the barrel must be watertight.
2. P = projection distance. Sized as required to achieve at least a 10% increase in seepage length.
3. 14P = Max. spacing between collars.
4. Collars shall generally be placed in the middle third of the embankment, and within the saturated zone.
5. All materials to be in accordance with construction material specifications.
6. When specified on the plans, coating of collars shall be in accordance with construction material specifications.
7. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
8. The lap between the two half sections and between the pipe and connecting band shall be caulked with asphalt mastic at the time of installation.
9. Each collar shall be furnished with two (2) 1/2" diameter rods with standard tank lugs for connecting the collars to the pipe.
10. For bands and collars, modification of the details shown may be used providing equal water tightness is maintained and detailed drawings are Submitted and approved by the Engineer prior to delivery.
11. Two other types of anti–seep collars are:
    a. Corrugated metal, similar to above, except shop welded to a 4 ft. section of the pipe and connected to the pipe with connecting bands.
    b. Concrete, 6 inches thick, formed around the pipe with #3 rebar spaced 15".

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

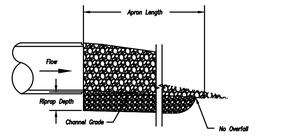
AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER	
SEDIMENT BASIN – DETAILS	STANDARD DRAWING NUMBER ESC-12	ADOPTED: 10/24/2016



Plan View
Not to Scale



Plan View
Not to Scale



Section A–A
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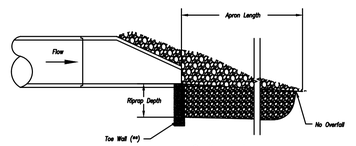
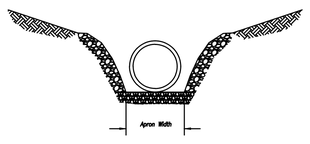


Section A–A
Not to Scale

OUTLET PROTECTION WITH END SECTION



Section B–B
Not to Scale

OUTLET PROTECTION W/O END SECTION

Notes:

1. Rock all sides steeper than 3:1.
2. Stabilize all disturbed areas downstream of outlet to the limits of disturbance.
3. Alternative outlet protection and slope stabilization measures may be used with approval by the Engineer.
4. Install riprap apron so that it is no higher than flowline of pipe.
5. Reference APWA Specification 2650 for rock type, size, and placement.

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

AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER	
OUTLET PROTECTION	STANDARD DRAWING NUMBER ESC-14	ADOPTED: 10/24/2016

a new development for
Town Centre Lot 1
520 NE Town Centre Drive
Lee's Summit, Missouri

date
01.20.2022
drawn by
JMP
checked by
PAM
revisions

sheet number
C4.2
drawing type
Permit
project number
20231