

SECTION 1

Delegation Statements & Contractor Certifications

Delegation Statement(s) for applicable personnel will be located in this section. Contractor Certification Statements will also be kept here that contain contact information for those responsible for specific activities on the project.

Delegation of Authority

I, _____, hereby designate the person(s) or specifically described position(s) below to be a duly authorized representative(s) for the purpose of overseeing compliance with environmental requirements, including the Missouri State Operating Permit, at Presidential Park Third Plat.

Duly Authorized Representative:

Name or Position: _____

Company: _____

Address: _____

Phone: _____

Email: _____

By signing the certification below, I certify that I meet the signing requirements J.5.a of the Missouri State Operating Permit, 40 CFR 122.22 and 10 CSR 20-6.010 for this project.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Permittee Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

Contractor/Subcontractor Certification

Project Name: _____

Permit Number: _____

Project Owner: _____

As a contractor/subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review upon request.

Each subcontractor engaged in activities at the construction site that could impact stormwater should be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the project named above:

Service Provided: _____

Company Name: _____

Address: _____

Telephone: _____

Representative: _____

Title: _____

Signature: _____

Date: _____

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SECTION 3

SWPPP Narrative

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1.0. PROJECT CONTACT INFORMATION

Parties directly related to the compliance of the site are listed below. Any blank contacts were not known at the time of SWPPP creation and should be filled in when contractors are assigned.

Owner/Operator
M-III Longview, LLC
Corey Walker
4220 Shawnee Mission
Parkway, STE 200B
Fairway, KS 66205
816.285.3872
corey.walker@platformv.com

General Contractor

SWPPP Preparer
Olsson
Stephen Saylor
1301 Burlington, Suite 100
North Kansas City, MO 64116
816.361.1177
ssaylor@olsson.com

SWPPP Inspections

Best Management Practices (BMP) Installation

BMP Maintenance

Should any of the above personnel change, tables will be updated and noted on the Amendment Log found in Section 7 and additional Contractor Certification Sheets will be added to Section 1 of this SWPPP.

2.0. INTRODUCTION AND DEFINITIONS

This document was created to comply with the Missouri State Operating Permit (MO-RA) in compliance with the Missouri Clean Water Law (Chapter 644 R.S. Mo. as amended) and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress). Relevant local ordinances are incorporated in Section 8 of this SWPPP. Permit language incorporated into this document will be denoted by *italics*.

The purpose of the SWPPP is to ensure the design, implementation, management, and maintenance of best management practices (BMPs) in order to prevent sediment and other pollutants in stormwater discharges associated with the land disturbance activities; compliance with the Missouri Water Quality Standards; and compliance with the terms and conditions of the general permit.

2.1. ACRONYMS

AST.....	aboveground storage tank
BMP	best management practice
MDNR.....	Missouri Department of Natural Resources
ESA	environmental site assessment
ESC	erosion and sediment control
MO-RA.....	Missouri State Operating Permit
MS4	municipal separate storm sewer system
NRC.....	National Response Center
REC	recognized environmental condition
SPCC.....	spill prevention control and countermeasures plan
SVOC	semivolatile organic compound
SWPPP.....	stormwater pollution prevention plan
TMDL.....	total maximum daily load
TOC	total organic carbon
VOC.....	volatile organic compound

2.2. DEFINITIONS

Department

The Missouri Department of Natural Resources

Duly Authorized Representative

The representative authorized by the permittee. The duly authorized representative is responsible for the overall operation of the facility from which the discharge occurs. The authorization is made in writing by the permittee and is submitted to the director.

Permit

Missouri State Operating Permit (MO-RA)

Signatory Requirements

All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified (MDNR 2017).

- Signatory for a corporation: an individual having responsibility for the overall operation of the regulated facility or activity, such as the plant manager, or by an individual having overall responsibility for environmental matters at the facility.
- Signatory for a partnership or sole proprietorship: a general partner or the proprietor, respectively.
- Signatory for a municipal, state, federal, or other public facility: either a principal executive officer or an individual having overall responsibility for environmental matters at the facility.

Documents submitted to the MDNR should be certified by the following statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

3.0. SITE DESCRIPTION

Project Name: Old Longview Lake Dam and Spillway Improvements

Project Location: SW Pergola View and SW Coachlight Drive, Lee's Summit, MO

Total project area: 58.52 Ac.

Area to be disturbed: 26.05 Ac.

Anticipated start date: April 2019

Anticipated end date: July 2019

Past use: Portions of the site have been used by Old Longview.

Historic Preservation Information: N/A

Endangered Species Information: Though the Gray Bat (*myotis grisescens*), Indiana Bat (*myotis sodalist*), and Northern Long-eared Bat (*myotis septentrionalis*) were noted in the USACE permit, no critical habitats are expected to be located within the project limits

Existing conditions: Old Longview Lake is surrounded by trees, grass, residential housing, and a garden. An access path to the lake will be built west of the lake.

Description of Construction Activity: Phases of this project include mobilization, clearing and grubbing, dam demolition, installation of erosion control devices, mass grading, utility installation, and final site stabilization.

Table 1. Anticipated Sequence of Construction.

Location of nearby or on-site surface waters: Longview Lake is 575' away from Old Longview Lake.

Table 2. Outfalls.

#	Type	Location	Drainage Area
1	Dam Overflow	38°53'52.71" N -94°26'55.87" E	207 Ac.

Receiving Waters: Longview Lake.

4.0. EROSION AND SEDIMENT CONTROLS

Temporary BMPs used during active construction of the project will be listed below. Specific erosion and sediment control requirements found in the permit are also located here and should be addressed in the erosion and sediment control (ESC) plan sheets located in Section 5 of this SWPPP.

Table 3. Anticipated BMPs.

BMP		BMP	
Site Preparation		Sediment Control	
SWPPP Sign	<input type="checkbox"/>	Silt fence	<input checked="" type="checkbox"/>
Construction exit	<input checked="" type="checkbox"/>	Inlet protection	<input checked="" type="checkbox"/>
Wash rack	<input type="checkbox"/>	Diversion berm	<input checked="" type="checkbox"/>
Temporary stream crossing	<input type="checkbox"/>	Mulch berm	<input type="checkbox"/>
Surface roughening	<input type="checkbox"/>	Outlet protection	<input type="checkbox"/>
Tree protection	<input type="checkbox"/>	Check dam	<input type="checkbox"/>
Erosion Control		Sediment trap	<input type="checkbox"/>
Dust control	<input type="checkbox"/>	Sediment basin	<input type="checkbox"/>
Mulch	<input type="checkbox"/>	Pollution Prevention	
Erosion control blankets	<input checked="" type="checkbox"/>	Stockpile	<input type="checkbox"/>
Temporary seeding	<input type="checkbox"/>	Concrete washout	<input type="checkbox"/>
Permanent seeding	<input type="checkbox"/>	Solid waste management	<input type="checkbox"/>
Hydroseeding	<input type="checkbox"/>	Sanitary waste management	<input type="checkbox"/>
Sodding	<input type="checkbox"/>	Material staging areas	<input type="checkbox"/>
Slope protection	<input type="checkbox"/>		<input type="checkbox"/>

Specification and detail sheets can be found in Section 6 of this SWPPP.

During construction, if additional BMPs not listed in Table 3 are required, the SWPPP will be amended. The BMP specification and detail sheets of the new BMPs should be added to Section 6 of this SWPPP, the locations noted on the BMP Tracking Map located in Section 5, and the change noted in the Log of Amendments located in Section 7 of this SWPPP.

4.1. EROSION AND SEDIMENT CONTROL DESIGN REQUIREMENTS

ESC plans for the project can be found in Section 5 of this SWPPP. Excerpts of these plans will be used as the basis of the BMP Tracking Map located in Section 5 of this SWPPP.

Ensure the design, installation and maintenance of effective erosion and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed and maintained to:

- a. Control stormwater volume and velocity within the site to minimize soil erosion;*
- b. Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;*
- c. Minimize the amount of soil exposed during construction activity;*
- d. Minimize the disturbance of steep slopes;*
- e. Minimize sediment discharges from the site. Design, install and maintain erosion and sediment controls that address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle size expected to be present on the site;*
- f. Provide and maintain natural buffers around surface waters as detailed in 8.f (of the permit), direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration and filtering, unless infeasible; and*
- g. Minimize soil compaction and, unless infeasible, preserve topsoil.*
- h. Capture or treat a 2-year, 24-hour storm event. A 2-year, 24-hour storm event shall be determined for the project location using the National Oceanic and Atmospheric Administration's National Weather Service Atlas 14 which can be located at <http://hdsc.nws.noaa.gov/hdsc/pfds/> (MDNR 2017).*

4.2. TREE AND VEGETATION PRESERVATION

Areas where existing trees and vegetation are preserved on-site can be found on the ESC plan sheets located in Section 5 of this SWPPP.

4.3. NATURAL BUFFERS

When applicable, natural buffers will be identified on the ESC plans located in Section 5 of this SWPPP.

For surface waters of the state, defined as "all waters within the jurisdiction of this state, including all rivers, streams, lakes and other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased or otherwise controlled by a single person or by two or more persons jointly or as tenants in common, located on or adjacent to the site, the permittee must:

- a. Provide and maintain a 50-foot undisturbed natural buffer;*

- b. *Provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer; or*
- c. *If infeasible to provide and maintain an undisturbed natural buffer of any size, implement erosion and sediment controls to achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.*
- d. *Where you are retaining a buffer of any size, the buffer should be measured perpendicularly from any of the following points, whichever is further landward from the water:*
 - a. *The ordinary high water mark of the water body, defined as the line on the shore established by fluctuations of the water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris; or*
 - b. *The edge of the stream or river bank, bluff, or cliff, whichever is applicable (MDNR 2017).*

4.4. STABILIZATION REQUIREMENTS

The permit requires specific stabilization schedules depending on activity level and slope characteristics.

Table 4. Stabilization Requirements.

Situation	Stabilization Requirement
Soil-disturbing activities that have temporarily ceased on any portion of the site and will not resume for more than 14 calendar days.	Construct BMPs to establish interim stabilization; stabilization must be initiated immediately and completed within 14 calendar days. *
Soil-disturbing activities that have permanently ceased.	Final stabilization of disturbed areas must be initiated immediately and completed within 14 calendar days. *
Slopes with a greater than 3:1 ratio or slopes greater than 3% and greater than 150 feet in length.	Establish interim stabilization within 7 days of ceasing operations.

**Allowances to the 14-day completion period for temporary and final stabilization may be made because of weather and equipment malfunctions. The use of the allowances shall be documented in the SWPPP (MDNR 2017) and can be found in Section 5 of this SWPPP.*

5.0. STORMWATER MANAGEMENT CONTROLS

When applicable, permanent stormwater management BMPs will be listed and described here. Design specifications and details can be found in Section 6 of this SWPPP if applicable. These BMPs will remain in place to provide for stormwater management after construction has completed and the permit terminated.

Table 5. Post Construction Stormwater Management BMPs.

Type	Location	Receiving Water	Area Treated

6.0. POLLUTION PREVENTION AND SPILL REPORTING

Good housekeeping practices shall be maintained at all times to keep waste from entering waters of the state. Below are lists of prohibited discharges, authorized non-stormwater discharges, and potential pollutants that will likely be on-site during construction. Suggested BMPs to help resolve potential discharges from non-stormwater discharges as well as potential pollutants are discussed.

6.1. PROHIBITED DISCHARGES

- *Any hazardous material, oil, lubricant, solid waste or other non-naturally occurring substance from the site, including fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;*
- *Soaps or solvents used in vehicle and equipment washing;*
- *Hazardous substances or petroleum products from an on-site spill or handling and disposal practices;*
- *Wash and/or rinse waters from concrete mixing equipment including ready mix concrete trucks, unless managed by an appropriate control. Any such pollutants must be adequately treated and addressed in the SWPPP, and cannot be discharged to waters of the state;*
- *Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;*
- *Domestic wastewaters, including gray waters; or*
- *Industrial stormwater runoff (MDNR 2017).*

6.2. AUTHORIZED NON-STORMWATER DISCHARGES

The below signified discharges are anticipated to occur on-site.

- ☐ *De-watering activities if there are no contaminants other than sediment present in discharge, and the discharge is treated as specified in Section C.8.m of the permit*
- ☐ *Flushing water hydrants and potable water lines*
- ☐ *Water only (i.e., without detergents and additives) rinsing of streets and buildings*
- ☒ *Site watering to establish vegetation*

Potential BMPs used for authorized non-stormwater discharges:

Dewatering activities if there are no contaminants other than sediment present in discharge, and the discharge is treated as specified in Section C.8.m of the permit

Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls. Estimations of the volume of water discharged from these dewatering activities can be recorded in Section 5 of this SWPPP.

Dewatering of sediment-laden water should be discharged to a temporary or permanent sediment basin when possible, so the sediment may be allowed to settle out of suspension. If basins will be used, the existing water level should be inspected and drawn down if necessary.

Dewatering bags may also be used to filter sediment out of the water. They should be placed on a level surface away from slopes to prevent scouring, and water should ideally flow to a vegetated area toward perimeter controls. Premanufactured dewatering bags should be installed and maintained per manufacturer's recommendations.

Flushing water hydrants and potable water lines

Waters from hydrants and waterline flushing can be erosive and can lead to perimeter controls being overwhelmed. These waters should ideally be directed to clean, paved streets where water may enter the storm sewer system. On projects where this is not possible, diffusers should be used to prevent erosive water velocities, and flush water should be directed to relatively flat, vegetated portions of the project or to temporary or permanent basins.

Water only (i.e., without detergents and additives) rinsing of streets and buildings

Streets should be inspected to confirm sediment and spills have been removed before they are rinsed with water. Inlet protections should remain in place, so water may be filtered before leaving the site.

Stabilization typically occurs before buildings are washed down. Washwater should be directed to stabilized areas or perimeter controls. Water that escapes through paved surfaces should be treated by inlet protections before leaving the site.

Site watering to establish vegetation

Efforts should be taken to time watering activities that are intended to help establish vegetation so watering does not occur prior to or during precipitation. Areas should be watered only in amounts necessary for vegetation to establish or thrive. Irrigated areas should be monitored for overwatering and, if identified, amounts and timing of watering should be adjusted.

6.3. POTENTIAL POLLUTANTS

Potential pollutant sources that are anticipated to be on-site during the project can be found in the table below.

Table 6. Anticipated Potential Pollutants.

The below listed suggested BMPs are meant as initial examples and should be adjusted as site conditions necessitate different BMPs. The table should be amended should additional pollutants and BMPs be utilized onsite that were not originally anticipated.

Material/Activity	Potential Pollutants	Suggested BMPs
Concrete Curing Substances	Sediment, metals, hydrocarbons	Provide secondary containment in preparation and cleanup areas.

		<p>Leftover curing substances should to be removed from the site or disposed of in a designated washout bin or pit designed to contain curing substances.</p> <p>Do not use materials during or directly prior to an anticipated rain event, and ensure excess materials are stored in a covered area to minimize contact with stormwater.</p> <p>Curing compounds should not be washed into a gutter, onto the ground, or into a storm drain inlet.</p>
Concrete Washwater and Masonry Washwater	pH, heavy metals, silica	<p>Concrete washwater will be controlled /contained at a designated location on-site such as a leak-proof container or settling basin of adequate size.</p> <p>Refer to Concrete Washout Specification located in Section 6 of this SWPPP for proper design criteria and use of concrete washout area.</p> <p>The concrete washout area should be cleaned out when it has reached 75% capacity, and dried concrete material should be disposed of in accordance with state and local regulations.</p>
Detergents	pH, chlorine, surfactant	<p>Use of detergents on-site should be discouraged.</p> <p>Washing of vehicles or equipment that requires the use of detergents should occur off-site.</p>
Drywall and Joint Compound	Vinyl acetate, acetaldehyde, calcium sulfate dehydrate, formaldehyde, silica	<p>Drywall and joint compound will be used on the interior of structures.</p> <p>Ideally these materials should be stored inside the structure out of contact of stormwater.</p> <p>If storage inside the structure is not practical, the materials should be placed in a storage container, contractor vehicle, or trailer or otherwise covered to minimize contact with stormwater.</p> <p>Waste products can be disposed of with construction debris as soon as possible and should not be allowed to accumulate on lots.</p>
Fertilizers	Nutrients	<p>Fertilizers can be kept on-site in amounts necessary for immediate use.</p> <p>In the event fertilizers must remain on-site longer, they should be stored in a covered area to minimize contact with precipitation.</p> <p>Refer to the manufacturer's recommendations for application and disposal.</p> <p>Do not over apply or apply before an anticipated runoff-producing rain event.</p>
Form Release Oil	Petroleum hydrocarbons	<p>Do not remove the original product label from container.</p> <p>Store containers in a covered area or in contractor vehicles to minimize contact with stormwater.</p> <p>Follow the manufacturer's recommended usage instructions.</p>

		<p>Do not use before or during any precipitation event.</p> <p>Use all of the product before disposing of the container and only place in a waste receptacle designated to receive this type of waste.</p>
		<p>If aboveground storage tanks (ASTs) are required, locations will be tracked on the SWPPP map.</p> <p>A separate spill prevention containment and countermeasure (SPCC) plan will be developed should one or more of the following be present on-site:</p> <ul style="list-style-type: none"> • A single AST for oil with 660 gallons or more capacity • Two or more ASTs with an aggregate of 1,320 gallons or more capacity (include storage vessels stored above ground with a capacity of 55 gallons or more with the aggregate total capacity) • Belowground oil storage vessels of 42,000 gallons or more <p>Smaller fuel containers and gas-powered equipment should be kept in secondary containment vessels to prevent spills or leaks during fueling and operation. Small gas cans can be kept in the back of trucks when not in use.</p> <p>Drip pans should be used for parked vehicles where leaks have been identified.</p> <p>Soil stained with fuel or other petroleum products should be removed and disposed of in compliance with federal, state, and local requirements.</p>
Fuels and Oils	Petroleum hydrocarbons and distillates	
Grease / Lubricants	Petroleum hydrocarbons	<p>If grease is to be stored on-site, it should be stored in a covered location to minimize contact with stormwater.</p> <p>The application of lubricants should be conducted off-site or in an area with sufficient secondary containment measures to contain any leaks or spills.</p> <p>Lubricants should not be applied in rain or on exposed areas of machinery when precipitation is expected.</p>
Glue / Adhesives	Organic aromatic compounds, semivolatile organic compounds (SVOC)	<p>Glue and adhesives may be used on-site for construction in interior work.</p> <p>Adhesives should be stored in covered areas and out of contact of precipitation.</p> <p>Materials will be used and disposed of in accordance with manufacturers recommendations.</p> <p>Exterior adhesives should not be applied during or immediately before anticipated precipitation events.</p>
Landscape Materials	Nutrients, sediment, pH	<p>Landscape materials include—but are not limited to—items such as topsoil, compost, mulch, polymers, gypsum, and lime.</p>

		<p>If the materials are to be stored on-site they should be stored in a covered area or covered with plastic sheeting, tarps, or similar products to minimize contact with stormwater.</p> <p>Soil amendments should not be used before anticipated runoff producing rain events.</p>
Material Storage	Solid waste, hydrocarbons, nutrients, sediment, hazardous materials	<p>As necessary and as space on the project allows, material storage areas should be dedicated on-site.</p> <p>The number of access points to the material storage area should be limited, and materials should be stored away from drainage courses and low areas.</p> <p>Hazardous materials should be stored in containers or structures or otherwise covered to minimize contact with stormwater. Secondary containment should be provided for the area not only to contain spills but also to limit multiple access points.</p>
Paint	pH, ethylene glycol, titanium oxide, volatile organic compounds (VOC)	<p>Paint washwater should be properly contained on-site in a designated area and handled similarly to concrete washwater.</p> <p>Used materials (i.e., soiled brushes, rollers, sprayers) and dried latex paint should be disposed of in appropriate waste receptacles, preferably off-site.</p> <p>Unused quantities of paint should be removed from site by trades and not disposed of on-site.</p> <p>Any quantities stored on-site should be stored in covered areas to minimize contact with stormwater.</p>
Pesticides, Herbicides	Organophosphates, carbamates, triazines, chloroacetanilides, salts, heavy metals	<p>Pesticides and herbicides should be used and disposed of per manufacturer's recommendations. Avoid overapplying products and avoid applying products before anticipated runoff-producing storm events.</p> <p>Storage of pesticides and herbicides on-site should be discouraged. Should storage on-site be required, items should be stored in covered areas to minimize contact with precipitation and stormwater.</p> <p>Spilled material should be promptly cleaned up per manufacturer's recommendations.</p>
Refrigerants	Various -fluoroethanes and -fluoromethanes	<p>Refrigerants will be used in heating, ventilation, and air-conditioning (HVAC) systems in built structures on-site. Refrigerants should not be stored on-site other than the volume needed for the HVAC systems.</p> <p>Refrigerants will be handled and disposed of by properly trained technicians.</p>
Sanitary Waste	Bacteria, viruses, parasites	<p>Sanitary stations should be located where accidental discharge cannot flow to storm drains, gutters, surface waters, or conveyance channels.</p>

		<p>Locate stations on a level, permeable surface, away from drainage courses and low areas. These stations should not be located on streets, sidewalks, or on top of inlets.</p> <p>Stations will be inspected and maintained by a qualified person at frequent and regular intervals to assure cleanliness and proper operation.</p>
Sediment / Total Suspended Solids	Turbidity, nutrients	<p>Surface water impairments caused by sediment and total suspended solids will have a higher risk of occurring in areas where soils have been disturbed for construction activities.</p> <p>Temporary controls are described in this SWPPP to control and contain this potential pollutant during land-disturbing activities of the project.</p> <p>Vegetation (temporary or permanent stabilization) is a very efficient BMP for controlling sediment and should be used whenever possible.</p>
Solid Waste	Floatable and blowable trash and debris	<p>Solid waste created from construction activities (including but not limited to scrap building material, product/material shipping waste, food containers, and cups) should be properly contained on-site and removed frequently from the site for disposal.</p> <p>Dumpsters should to be emptied at regular intervals and as needed during times of high activity on the site.</p> <p>Efforts should be taken to minimize exposure of solids wastes generated on the site to stormwater.</p>
Solvents	VOC, SVOC	<p>If solvents are stored on-site, they should be stored in a covered and secured area to prevent spills and minimize contact with stormwater.</p> <p>The materials will be used and disposed of per manufacturer's recommendations and federal, state, and local regulations.</p>
Stains, Stucco, and Associated Materials	Ethylene glycol, SVOC, VOC, silica, pH	<p>Secondary containment should be provided in mixing and cleanup areas.</p> <p>Leftover materials should be removed from the site or disposed of in an area designated to receive this type of waste.</p> <p>Do not use materials during a precipitation event, and ensure all excess materials are stored in a covered area to minimize contact with stormwater.</p> <p>Materials should not be washed into a gutter, on the ground, or into a storm drain inlet. If washing on-site, consider using a designated containment bin or pit for washwater.</p>
Vehicle Washing, Wheel Washwater	Sediment, petroleum hydrocarbons, heavy metals	<p>If vehicle washing and/or wheel washing is to occur on-site, it should be done in designated areas where washwater can collect in a basin or alternative control.</p> <p>Use of detergents should be discouraged.</p>

Washing on paved surfaces should be discouraged unless water can be sufficiently treated before leaving the site.

6.4. NONREPORTABLE SPILL PROTOCOL

Most spills can be cleaned up following manufacturer's recommendations. Absorbent materials, sealable containers, plastic bags, and shovels/brooms are suggested as minimum spill response items that should be available at this location.

- Check for hazards (flammable material, noxious fumes). If flammable liquid, turn off engines and nearby electrical equipment. If serious hazards are present, leave the area and call 911.
- Make sure the spill area is safe to enter and that it does not pose an immediate threat to health or safety of any person.
- Stop the spill source.
- Call co-workers and supervisor for assistance and to make them aware of the spill and potential dangers.
- If possible, stop the spill from entering drains (use absorbent or other material as necessary).
- Stop spill from spreading (use absorbent or other material).
- If spilled material has entered a storm sewer, contact the locality at the below number.
- Clean up spilled material according to manufacturer's specifications. For liquid spills, use absorbent material and do not flush the contaminated area with water.
- Properly dispose of cleaning materials and used absorbent material according to manufacturer specifications.

6.5. REPORTABLE SPILLS

Requirements for reporting spills of hazardous materials and typical site pollutants and spill report documentations can be found in Section 9 of this SWPPP.

Release of a hazardous substance must be reported to the department in accordance with 10 CSR 24-3.010. A record of each reportable spill shall be retained with the Stormwater Pollution Prevention Plan (SWPPP) and made available to the department upon request. The department may also require the submittal of a written or electronic report detailing measures taken to clean up the spill within five (5) days of the spill. Such a report must include the type of material spilled, volume, date of spill, date clean-up was completed, clean-up method, and final disposal method. If the spill occurs outside normal business hours, or if the permit holder cannot reach regional office staff for any reason, the permit holder is instructed to report the spill to the department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. Leaving a message on a department staff member voice-mail does not satisfy this reporting requirement (MDNR 2017).

Table 7. (City/County Entity Name for Spill Reporting) Contact.

Name/Position	Contact Number
311 Action Center	311 or 816-513-1313

Report to:	Contact Number
Kansas City Regional Office 500 NE Colbern Road Lee's Summit, MO 64086-4710	816.251.0700
MDNR 24-Hour Spill Response	573.634.2436
National Response Center (NRC)	800.424.8802

7.0. SWPPP IMPLEMENTATION

7.1. PUBLIC NOTIFICATION

The locations of the site posting will be noted on the site BMP Tracking Map located in Section 5 of this SWPPP. The location will be updated should the posting move.

The permittee shall post a copy of the public notification sign described by the Department at the main entrance to the site. The public notification sign must be visible from the public road that provides access to the site's main entrance. An alternate location is acceptable provided the public can see it and it is noted in the SWPPP. The public notification sign must remain posted at the site until the permit has been terminated (MDNR 2017).

7.2. INSPECTIONS

Site inspections should be conducted by qualified personnel at the frequency indicated below. Site inspection reports can be stored in Section 12 of this SWPPP unless otherwise noted.

The permittee (or a representative of the permittee) shall conduct regularly scheduled inspections. These inspections shall be conducted by a qualified person, one who is responsible for environmental matters at the site, or a person trained by and directly supervised by the person responsible for environmental matters at the site. For disturbed areas that have not been finally stabilized, all installed BMPs and other pollution control measures shall be inspected for proper installation, operation and maintenance. All stormwater outfalls shall be inspected for evidence of erosion or sediment deposition. When practicable the receiving stream shall also be inspected for 50 feet downstream of the outfall. Any structural or maintenance problems shall be noted in an inspection report and corrected as soon as possible but no more than seven calendar days after the inspection. All BMPs must be inspected in accordance to one of the two schedules listed below, and any changes to the frequency of inspections, including switching between the options listed below, must be documented in the SWPPP:

- ☐ *At least once every seven calendar days and within 48 hours after any storm event equal to or greater than a 2-year, 24-hour storm has ceased during a normal work day and within 72 hours if the rain event ceases during a non-work day such as a weekend or holiday;*
or
- ☐ *Once every 14 calendar days and within 24 hours of the occurrence of a storm event of 0.25 inches of precipitation or greater, or the occurrence of runoff from snowmelt. To determine a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on site, or obtain the storm event information from a weather station for your location.*
 - a. Inspections are only required during the project's normal working hours.*
 - b. You must conduct an inspection within 24 hours once a storm event has produced 0.25 inches within a 24 hour period, even if the storm event is still continuing.*

- c. *If you have elected to inspect every 14 calendar days and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm (MDNR 2017).*

7.3. CORRECTIVE ACTIONS

Structural or maintenance problems with BMPs used in this project and noted as a result of an inspection shall be corrected as soon as possible but no more than seven calendar days after the inspection.

7.4. MODIFICATION AND AMENDMENTS

Modifications and amendments to the SWPPP can be tracked in Section 7 of this SWPPP. Below are minimum guidelines for when the SWPPP should be updated.

The permittee shall amend the SWPPP at a minimum whenever the:

- a. *Design, operation, or maintenance of BMPs is changed;*
- b. *Design of the construction project is changed that could significantly affect the quality of the stormwater discharges;*
- c. *Permittee's inspections indicate deficiencies in the SWPPP or any BMP;*
- d. *Department notifies the permittee in writing of deficiencies in the SWPPP;*
- e. *SWPPP is determined to be ineffective in minimizing or controlling erosion and sedimentation (e.g., there is visual evidence of excessive site erosion or excessive sediment deposits in streams or lakes); and/or*
- f. *Department determines violations of water quality standards may occur or have occurred (MDNR 2017).*

7.5. TRANSFER OF OWNERSHIP

As necessary, permit transfers or records of sale should be placed in Section 2 of this SWPPP.

If the permittee sells any portion of the permitted site to a developer for commercial, industrial, or residential use, this land remains a part of the common sale and the new owner must obtain a permit prior to conducting any land disturbance activity. Therefore, the original permittee must amend the SWPPP to show that the property has been sold and therefore no longer under the original permit coverage.

If the entire tract is sold to a single entity, then this permit shall be terminated when the new owner obtains a new land disturbance permit for the site (MDNR 2017).

7.6. TERMINATION OF PERMIT

When the project is completed and has reached final stabilization, a copy of the notice of termination and confirmation from the MDNR should be placed in Section 14 of this SWPPP.

This permit may be terminated when the project is stabilized. The project is considered to be stabilized when perennial vegetation, pavement, buildings, or structures using permanent materials cover all areas that have been disturbed. With respect to areas that have been vegetated, vegetation cover shall be at least 70% over 100% of the site. In order to terminate the permit, the permittee shall notify the Department by submitting Form H Request for Termination of a General Permit (MDNR 2017).

7.7. RECORDS

When the project is complete, and the notice of termination has been accepted by the MDNR, records should be removed from the site and retained.

The permittee shall retain copies of this general permit, the SWPPP and all amendments for the site named in the State Operating Permit, results of any monitoring and analysis and all site inspection records required by this general permit. The records shall be accessible during normal business hours. The records shall be retained for a period of at least three years from the date of the Letter of Termination.

The permittee shall provide a copy of the SWPPP to the Department, USEPA, or any local agency or government representative if they request a copy in the performance of their official duties.

The permittee shall provide a copy of the SWPPP to those who are responsible for installation, operation, or maintenance of any BMP. The permittee, their representative, and/or the contractor(s) responsible for installation, operation and maintenance of the BMPs shall have a current copy of the SWPPP with them when on the project site (MDNR 2017).

8.0. REFERENCES

California Stormwater Quality Association. (November 2009). *Stormwater Best Management Practice Handbook Portal: Construction*. Retrieved from <http://www.buenapark.com/home/showdocument?id=2557>.

Missouri Department of Natural Resources. (February 2017). *Missouri State Operating Permit*. Retrieved from <https://dnr.mo.gov/env/wpp/permits/issued/docs/RA000000.pdf>.

Missouri Department of Natural Resources, ABC's of BMP's LLC and Shockey Consulting Services. (January 2011). *Protecting Water Quality: A field guide to erosion, sediment and stormwater best management practices for development sites in Missouri and Kansas*. Retrieved from <https://dnr.mo.gov/env/wpp/wpcp-guide/docs/wpcp-guide.pdf>.

United States Environmental Protection Agency. (May 2007). *Developing Your Stormwater Pollution Prevention Plan, A Guide for Construction Sites*. Retrieved from https://www.epa.gov/sites/production/files/2015-10/documents/sw_swppp_guide.pdf.

Virginia Department of Environmental Quality. (July 2014). *Single Family Residence Common Plan of Development or Sale Stormwater Pollution Prevention Plan Template*. Retrieved from <http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPpermits/ConstructionGeneralPermit.aspx>.

SECTION 4

Location/Topographical Map(s), FIRM Maps & Soils Maps

This section contains:

- Required Location, Vicinity and Topographical Maps (if needed)
- FIRM Maps
- Soils Maps if needed

Fred Arbana: Golf Course

SW View Fligh Dr

SW Longview Rd

SW 3rd St

SW Longview Rd

SW Kesler Dr

SW Longview Rd

PROJECT LOCATION

SW County Park Rd

SW Arena St

SW Redbuck Circle

SW 9th Terrace

SW Pergola View

SW Coachlight Dr

SW Sampson Rd

SW Sampson Rd

SW Ellis Dr

SW Argyle St

SW Ford Dr

SW Logoz Dr

SW Anitquity Dr

NW Thoreau Dr

NW Morton Dr

SW Mur Dr

SW Lewis Dr

SW Gray Ln

SW Saddlewood Dr

SW Gentry Ln

SW Bridlewood Dr

SW Derby Dr

SW Winters

SW W

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USER: ssaylor

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SCALE: 1" = 1000'

OLSSON - CIVIL ENGINEERING
MISSOURI CERTIFICATE OF AUTHORITY # 001592

PROJECT NO: 017-0305

DRAWN BY: SMS

DATE: 4/29/2019

OLD LONGVIEW LAKE
LEE'S SUMMIT, MO
AERIAL MAP

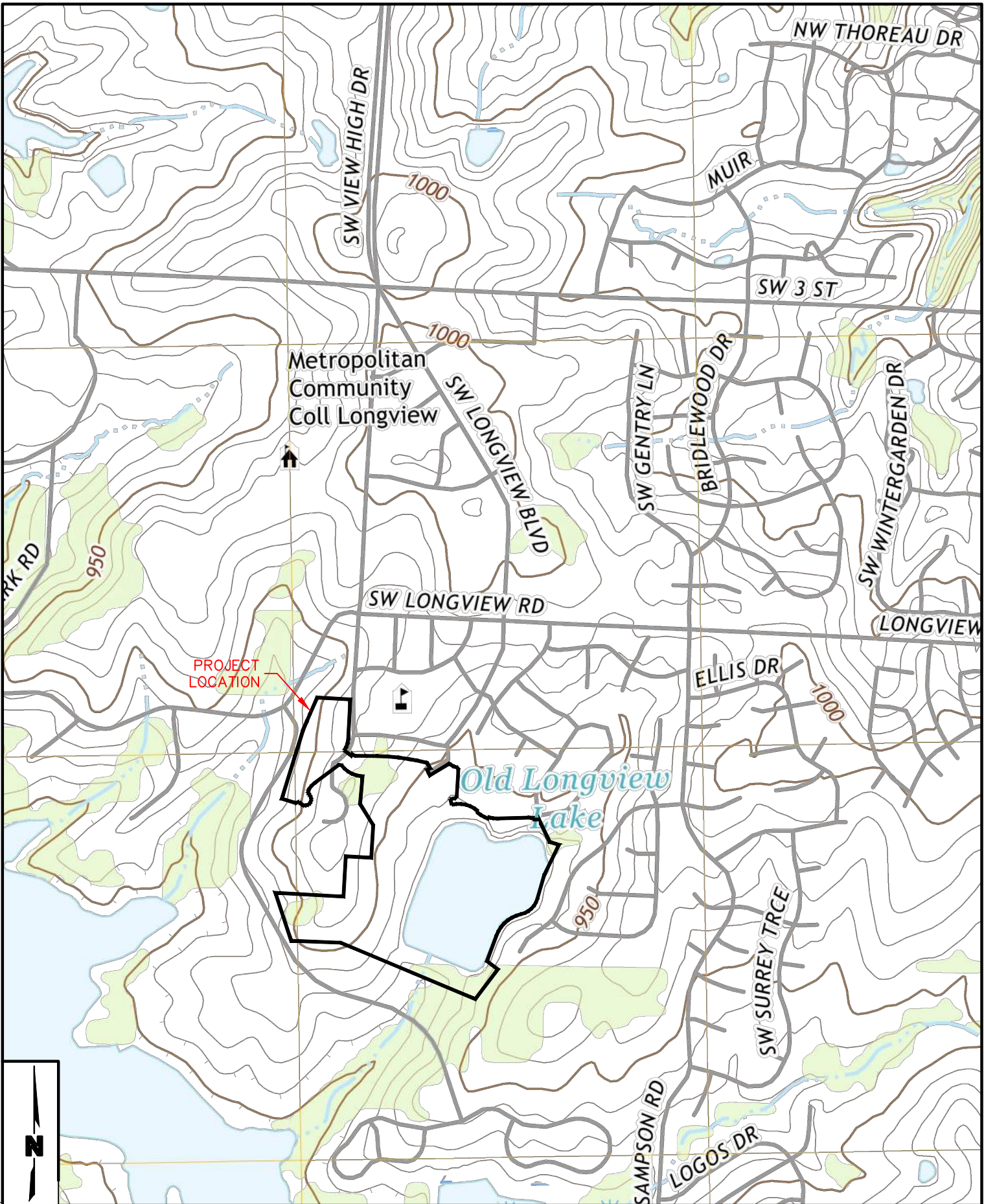
olsson

1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
FAX 816.361.1888

EXHIBIT

1

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OLSSON - CIVIL ENGINEERING
MISSOURI CERTIFICATE OF AUTHORITY # 001692

PROJECT NO:	017-0305
DRAWN BY:	SMS
DATE:	4/29/2019

OLD LONGVIEW LAKE
LEE'S SUMMIT, MO
AERIAL MAP

olsson

1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
FAX 816.361.1888

EXHIBIT
2



SCALE: 1" = 1000'

PROJECT NO: 017-0305
 DRAWN BY: SMS
 DATE: 4/29/2019

OLD LONGVIEW LAKE
 LEE'S SUMMIT, MO
 AERIAL MAP

olsson

OLSSON - CIVIL ENGINEERING
 MISSOURI CERTIFICATE OF AUTHORITY # 001592

1301 Burlington Street
 North Kansas City, MO 64116
 TEL 816.361.1177
 FAX 816.361.1888

EXHIBIT

3

SECTION 5

BMP Tracking Map & Land Disturbance Tracking Log




















































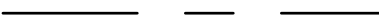

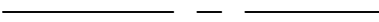



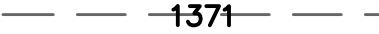
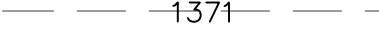
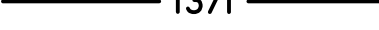



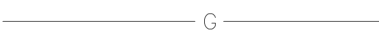

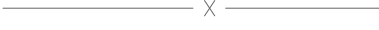

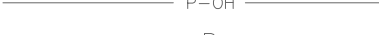


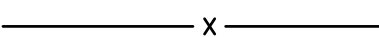
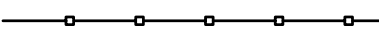




This section contains:

- Erosion and Sediment Control Plan sheet experts
- Post Construction Stormwater Management Plan sheets if applicable
- BMP Tracking Map (Working SWPPP Map)
 - Record of Land Disturbance, Stabilization and BMP installation and removal
 - Record of Dewatering Activities (e.g. dates and estimated volume of water discharged)

Grading, Stabilization and Dewatering Activities Log

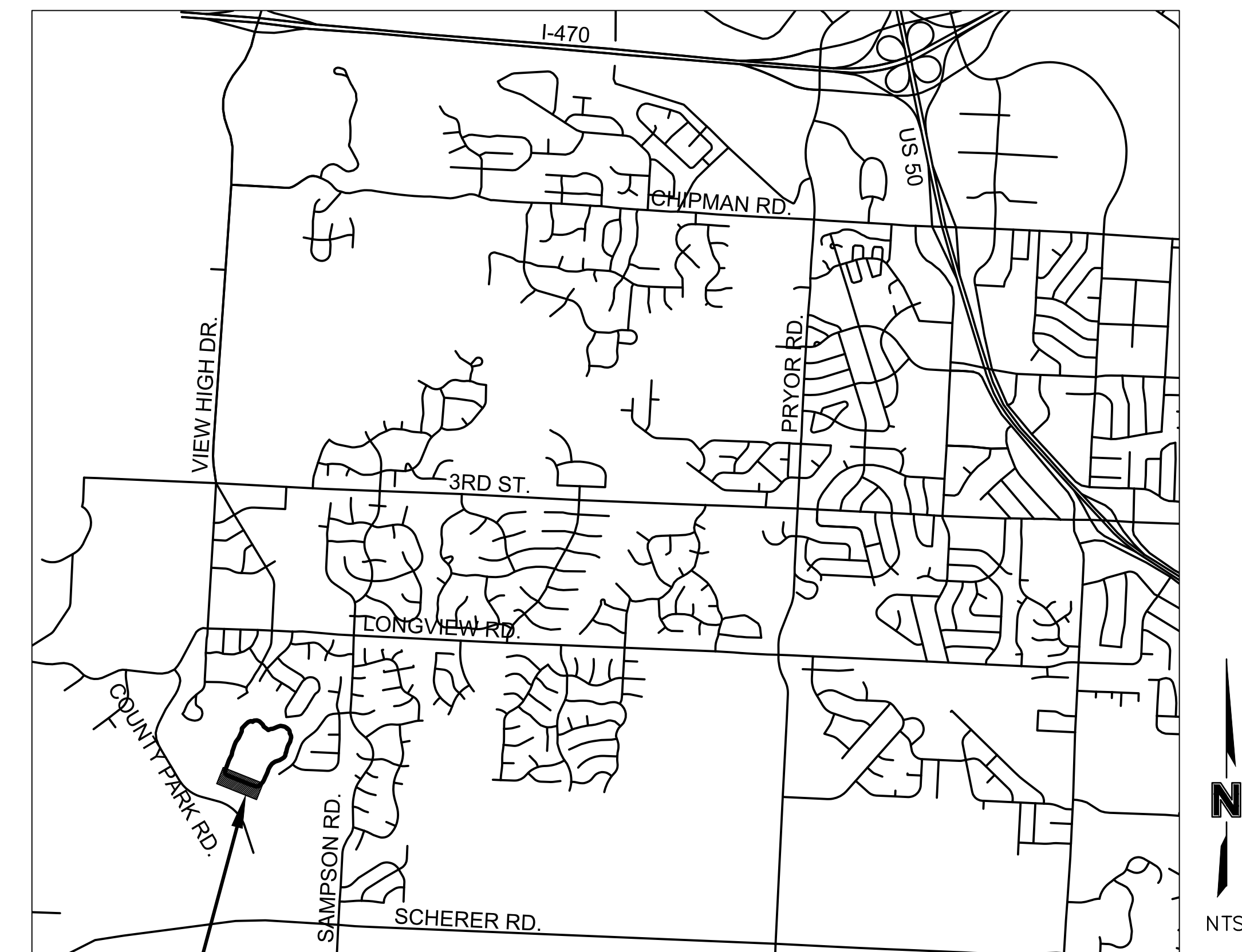
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LEGEND

- | | | | |
|---|----------------------------|---|---------------------|
|  | TRAFFIC SIGNAL BOX |  | GAS METER |
|  | TRAFFIC SIGNAL MANHOLE |  | GAS RISER |
|  | TRAFFIC SIGNAL POLE W/ ARM |  | GAS MANHOLE |
|  | TRAFFIC SIGNAL POLE |  | GAS REGULATOR |
|  | TRAFFIC SIGNAL CONTROL BOX |  | TELEVISION PEDESTAL |
|  | TRAFFIC SIGNAL PEDESTAL |  | FIBER BOX |
|  | ELECTRIC MANHOLE |  | FIBER PEDESTAL |
|  | ELECTRIC METER |  | CABLE BOX |
|  | ELECTRIC RISER |  | CABLE VAULT |
|  | ELECTRIC BOX |  | TELEPHONE PEDESTAL |
|  | ELECTRIC CABINET |  | STORM MANHOLE |
|  | ELECTRIC JUNCTION BOX |  | STORM GRATE |
|  | SPRINKLER HEAD |  | SANITARY MANHOLE |
|  | SPRINKLER CONTROL VALVE |  | YARD LIGHT |
|  | WATER METER PIT |  | LIGHT POLE |
|  | FIRE HYDRANT |  | POWER POLE |
|  | WATER METER |  | POWER POLE W/ LIGHT |
|  | WATER VALVE |  | GUY WIRE |
|  | FLAG POLE |  | STUMP |
|  | SIGN |  | BUSH |
|  | BOLLARD |  | EVERGREEN TREE |
|  | WOOD POST |  | DECIDUOUS TREE |
|  | STEEL POST |  | TREE TO BE REMOVED |
|  | COLUMN | | |
|  | BORE HOLE | | |
|  | SURVEY CONTROL POINT | | |
|  | SURVEY BENCHMARK | | |
|  | SURVEY TEMPORARY BENCHMARK | | |
-
- | | |
|---|---------------------------------|
|  | SECTION LINE |
|  | PROPERTY LINE |
|  | CENTER LINE |
|  | PROPOSED ROW LINE |
|  | EXISTING ROW LINE |
|  | UTILITY EASEMENT |
|  | EXISTING CONTOUR |
|  | PROPOSED MINOR CONTOUR |
|  | PROPOSED MAJOR CONTOUR |
|  | EXISTING TELEPHONE LINE |
|  | EXISTING SANITARY LINE |
|  | EXISTING STORM LINE |
|  | EXISTING GAS LINE |
|  | EXISTING WATER LINE |
|  | EXISTING CHAIN LINK FENCE |
|  | EXISTING WOOD PRIVACY FENCE |
|  | EXISTING OVERHEAD ELECTRIC |
|  | EXISTING PIPE LINE |
|  | CONSTRUCTION LIMITS |
|  | TEMPORARY CONSTRUCTION EASEMENT |
|  | PROPOSED CHAIN LINK FENCE |
|  | PROPOSED WOOD PRIVACY FENCE |
|  | EXISTING TREELINE |
|  | PROPOSED HANDRAIL |
|  | PROPOSED STORM SEWER ID |

FINAL PLANS FOR OLD LONGVIEW LAKE DAM & SPILLWAY IMPROVEMENTS

LOCATED IN THE SW QTR. SECTION 10, TOWNSHIP 47N, RANGE 32W
AND THE NW QTR. SECTION 15, TOWNSHIP 47N, RANGE 32W
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



PROJECT- LOCATION

UTILITY SERVICE NUMBERS

NAME: LEE'S SUMMIT PUBLIC WORKS
PHONE: 816-969-1800

NAME: LEE'S SUMMIT WATER & SERVICES
DEPARTMENT
PHONE: 816-969-1940

NAME: MISSOURI GAS ENERGY
PHONE: 816-756-5252

NAME: AT&T
PHONE: 800-286-8313

NAME: KCP&L
PHONE: 816-471-5275

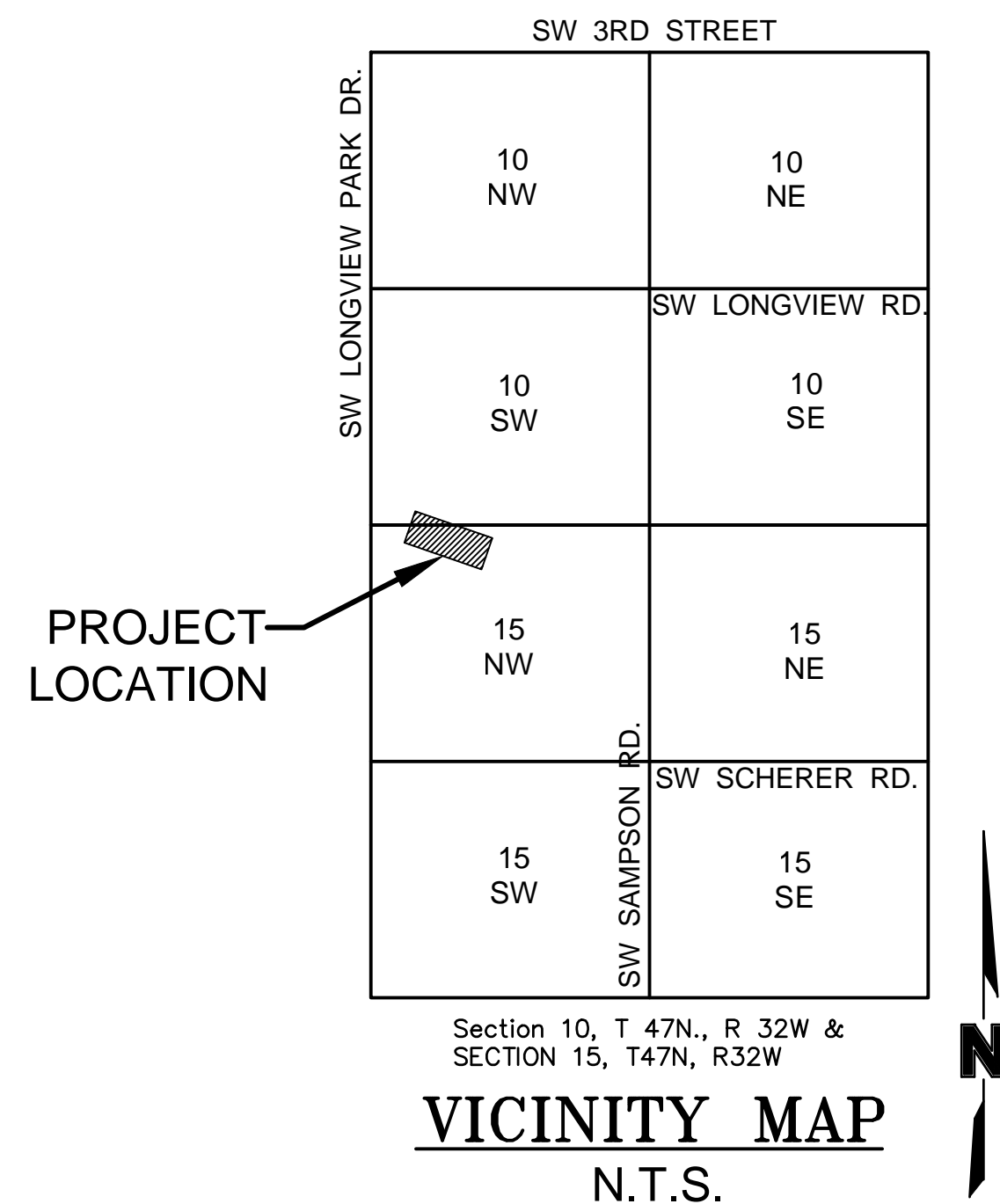
NAME: TIME WARNER CABLE:
816-358-5360

NAME: GOOGLE FIBER
PHONE: 877-454-6959



1-800-DIG-RITE or 811
www.mo1call.com

THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL LINES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL "1-800-DIG-RITE", AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING GRADING ACTIVITIES. !!STOP!! CALL BEFORE YOU DIG!!



INDEX OF SHEETS	
Sheet Number	Sheet Title
1	TITLE SHEET
2	GENERAL NOTES AND SUMMARY OF QUANTITIES
3	GENERAL LAYOUT PLAN
4	DRAINAGE AREA MAP
5	DAM PLAN & PROFILE
6	DAM CROSS SECTIONS
7	DAM CROSS SECTIONS
8	DAM CROSS SECTIONS
9	DAM CROSS SECTIONS
10	CHANNEL PLAN & PROFILE
11	CHANNEL CROSS SECTIONS
12	CHANNEL CROSS SECTIONS
13	CONCRETE CHANNEL DETAIL
14	ENERGY DISSIPATION BASIN
15	OVERALL GRADING PLAN
16	LAKE SEDIMENT REMOVAL PLAN
17	SEDIMENT FOREBAY PLAN
18	SEDIMENT REMOVAL EROSION CONTROL PLAN
19	SURFACE RESTORATION AND EROSION CONTROL PLAN
20	EROSION CONTROL DETAILS
21	EROSION CONTROL DETAILS

PREPARED & SUBMITTED BY:
OLSSON ASSOCIATES
7301 W. 133RD STREET, SUITE 200
OVERLAND PARK, KANSAS 66213

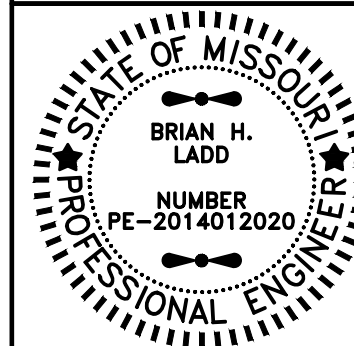
BRIAN H. LADD, P.E.

DATE _____

I CERTIFY THESE PLANS WERE PREPARED BY ME
OR UNDER MY IMMEDIATE PERSONAL SUPERVISION.

Olsson

7301 West 133rd Street, Suite 200
Overland Park, KS 66213-4750
TEL 913.381.1170 www.olsson.com

[illegible]

TITLE SHEET

OLD LONGVIEW LAKE DAM & SPILLWAY IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

drawn by: _____ KTI
checked by: _____ BHI
approved by: _____ BM
QA/QC by: _____ CP
project no.: _____ 017-030
drawing no.: _____
date: _____ 04.04.2019

SHEET
1 OF 21

- GENERAL NOTES:
1. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE LEE'S SUMMIT, MISSOURI DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813. WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.
 2. ALL MANHOLES, CATCH BASINS, UTILITY VALVES, AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED.
 3. ALL SIGNS (I.E. STREET NAME AND STOP SIGNS) SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF LEE'S SUMMIT, DESIGN AND CONSTRUCTION MANUAL, PRIOR TO SUBSTANTIAL COMPLETION. .
 4. THE ASPHALTIC CONCRETE SURFACES ON ALL PERMITTED STREETS SHALL BE VIRGIN MATERIAL.
 5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL DOWNSTREAM EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION. EROSION CONTROL PLANS AND PROCEDURES SHALL BE IN PLACE PRIOR TO ANY EXCAVATION.
 6. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES.
 7. CONTRACTOR SHALL PROVIDE EARTHWORK AND MATERIAL TESTING TO COMPLY WITH THE STANDARD SPECIFICATIONS OF THE PUBLIC WORKS DEPARTMENT OR AS REQUIRED BY THE CITY'S FIELD REPRESENTATIVE.

- SITE DISTURBANCE NOTES:
1. THE INTENT OF THIS EROSION CONTROL PLAN IS TO ASSIST THE CONTRACTOR IN HIS RESPONSIBILITY TO PROVIDE ALL MATERIALS, TOOLS, EQUIPMENT AND LABOR NECESSARY TO CONTROL EROSION, SILTATION AND DISCHARGES OF SOIL MATERIAL (SEDIMENT) INTO DOWNSTREAM SYSTEMS OR RECEIVING CHANNELS. THIS SHALL BE REQUIRED DURING ALL PHASES OF CONSTRUCTION AND UNTIL SUITABLE GROUND COVER IS ESTABLISHED FOR ALL DISTURBED AREAS. IF ANY METHOD OF CONTROL FAILS, THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY, SO THAT THE OWNER OR HIS AGENT CAN REVIEW THE CONTRACTOR'S PROPOSED METHOD OF REPAIR.
 - THIS PLAN INDICATES THE CRITICAL AREA(S) OF CONCERN AND THESE AREA(S) WILL BE CONTROLLED AS A MINIMUM. THE CONTROL MAY CONSIST OF TEMPORARY CONTROL MEASURES AS SHOWN ON THE PLANS OR ORDERED BY THE OWNER DURING THE LIFE OF THE CONTRACT TO CONTROL EROSION OR WATER POLLUTION, THROUGH THE USE OF BERMS, DIKES, DAMS, SEDIMENT BASINS, FIBER MATS, NETTING, GRAVEL, MULCHES, GRASSES, SLOPE DRAINS, DIVERSION SWALES OR OTHER EROSION CONTROL DEVICES OR METHODS. THE OWNER HAS THE AUTHORITY TO LIMIT THE SURFACE AREA OF ERODIBLE EARTH MATERIAL EXPOSED BY THE CONSTRUCTION OPERATIONS AND TO DIRECT THE CONTRACTOR TO PROVIDE IMMEDIATE PERMANENT OR TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT STREAMS OR OTHER WATER COURSES, LAKES, PONDS, OR OTHER AREAS OF WATER IMPOUNDMENT OR CONVEYANCES.
 - THE TEMPORARY POLLUTION CONTROL PROVISIONS CONTAINED HEREIN SHALL BE COORDINATED WITH ANY PERMANENT EROSION CONTROL FEATURES SPECIFIED ELSEWHERE IN THE CONTRACT TO THE EXTENT PRACTICAL TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS EROSION CONTROL THROUGHOUT THE CONSTRUCTION AND POST CONSTRUCTION PERIOD.
2. THIS SEDIMENTATION CONTROL PLAN MAKES USE OF THE FOLLOWING APPLICATIONS:
 - ___ PRESERVATION OF EXISTING VEGETATION
 - ☒ SEDIMENT BARRIERS
 - ☒ SEDIMENT TRAPS
 - ___ INLET PROTECTION
 - ___ OUTLET PROTECTION
 - ___ SOIL RETAINING SYSTEMS
 - ___ SLOPE DRAINS
 - ☒ SUBSURFACE DRAINS
- PHYSICAL DESCRIPTION OF EACH SPECIFIC SEDIMENT CONTROL DEVICE TO BE UTILIZED IS CALLED OUT ON THE PLANS WITH INSTALLATION PROCEDURES, CONSTRUCTION SPECIFICATIONS AND MAINTENANCE ARRANGEMENT AS CALLED FOR ON THE DETAIL SHEET. IN ADDITION TO THE MEASURES SPECIFIED, THE FOLLOWING GENERAL PRACTICES SHALL BE ADHERED TO WHEN APPLICABLE.
- A) CLEARING AND GRUBBING WITHIN 50' OF A DEFINED DRAINAGE COURSE SHOULD BE AVOIDED WHEN POSSIBLE. WHERE CHANGES TO A DEFINED DRAINAGE COURSE OCCUR, WORK SHOULD BE DELAYED UNTIL ALL MATERIALS AND EQUIPMENT NECESSARY TO PROTECT AND COMPLETE THE DRAINAGE CHANGE ARE ON SITE. CHANGES SHALL BE COMPLETED AS QUICKLY AS POSSIBLE ONCE THE WORK HAS BEEN INITIATED. THE AREA IMPACTED BY THE CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR PROTECTED FROM EROSION AS SOON AS POSSIBLE, AREAS WITHIN 50' OF A DEFINED DRAINAGE WAYS SHOULD BE RECONTOURED AS NEEDED OR OTHERWISE PROTECTED WITHIN FIVE (5) WORKING DAYS AFTER GRADING HAS CEASED.
 - B) WHERE SOIL DISTURBING ACTIVITIES CEASE IN AN AREA FOR MORE THAN 14 DAYS, THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE EROSION CONTROL MEASURES. IF THE SLOPE OF THE AREA IS GREATER THAN 3:1 OR IF THE SLOPE IS GREATER THAN 3% AND GREATER THAN 150 FEET IN LENGTH, THEN THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE EROSION CONTROL MEASURES IF ACTIVITIES CEASE FOR MORE THAN SEVEN (7) DAYS.
 - C) EXISTING VEGETATION SHALL BE PRESERVED TO THE EXTENT AND WHERE PRACTICAL. IN NO CASE SHALL DISTURBED AREAS REMAIN WITHOUT VEGETATIVE GROUND COVER FOR A PERIOD IN EXCESS OF 60 DAYS.
 - D) ADDITIONAL SITE MANAGEMENT PRACTICES WHICH SHALL BE ADHERED TO DURING THE CONSTRUCTION PROCESS SHALL INCLUDE:
 - SOLID AND HAZARDOUS WASTE MANAGEMENT INCLUDING PROVIDING TRASH CONTAINERS AND REGULAR SITE CLEAN UP FOR PROPER DISPOSAL OF SOLID WASTE SUCH AS BUILDING MATERIAL, PRODUCT/MATERIAL SHIPPING WASTE, FOOD CONTAINERS AND CUPS, AND PROVIDING CONTAINERS FOR THE PROPER DISPOSAL OF WASTE PAINTS SOLVENTS, AND CLEANING COMPOUNDS.
 - PROVISIONS OF PORTABLE TOILETS FOR PROPER DISPOSAL OF SANITARY SEWAGE.
 - STORAGE OF CONSTRUCTION MATERIALS AWAY FROM DRAINAGE COURSES AND LOW AREAS.
 - INSTALLATION OF CONTAINMENT BERMS AND USE OF DRIP PANS AT PETROLEUM PRODUCT AND LIQUID STORAGE TANKS AND CONTAINERS.
 3. ALL DISTURBED AREAS SHALL BE SEEDED, FERTILIZED AND MULCHED, OR SODDED, IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS ADOPTED BY THE REVIEWING GOVERNING AGENCY AND GOOD ENGINEERING PRACTICES. THIS SHALL BE COMPLETED WITHIN FOURTEEN (14) DAYS AFTER COMPLETING THE WORK, IN ANY AREA. IF THIS IS OUTSIDE OF THE SEEDING PERIOD, SILT BARRIERS OR OTHER SIMILARLY EFFECTIVE MEASURES SHALL BE PROVIDED UNTIL SUCH TIME THAT THE AREAS CAN BE SEEDED.
 4. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO ALL CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY THE REVIEWING GOVERNING AGENCY. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING ALL ADDITIONAL STANDARDS, SPECIFICATIONS OR REQUIREMENTS WHICH ARE REQUIRED BY GOVERNING AGENCIES (INCLUDING LOCAL, STATE AND FEDERAL AUTHORITIES) HAVING JURISDICTION OVER THE WORK PROPOSED BY THESE CONSTRUCTION DRAWINGS.
 5. ALL EROSION CONTROL MEASURES, TEMPORARY OR PERMANENT, REQUIRE MAINTENANCE TO PRESERVE THEIR EFFECTIVENESS. ALL EROSION CONTROL DEVICES SHALL BE INSPECTED IMMEDIATELY AFTER EACH HEAVY RAINSTORM AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHOULD BE MADE IMMEDIATELY. ALL COSTS ASSOCIATED WITH THE REPAIR WORK INCLUDING RELATED INCIDENTALS WILL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE INCLUDED IN THE CONTRACTOR'S BID FOR THE PROPOSED WORK.

SUMMARY OF QUANTITIES			
1	ITEM	QUANTITY	UNIT
2	Clearing & Grubbing	1	LS
3	Erosion Control	1	LS
4	Concrete Channel	390	SY
5	Forebay Concrete	430	SY
6	Weir Wall	1	EA
7	Toe Wall	2	EA
8	KDOT 1/4 Ton Riprap	1281	SY
9	MODOT Type 3 Ditch Liner	377	SY
10	Propex Pyramat 25	3666	SY
11	Propex Landlok S2	3118	SY
12	Seeding	0.85	AC
13	4" Lateral Drain	370	LF
14	Estimated Non-shrink Grout	2.32	CY
15	Sediment Depth Markers	1	EA
16	Stone Outlets	45	CY
17	Structural Dam Cut	491	CY
18	Structural Dam Fill	3597	CY
19	Lake Sediment Removal Cut	56,382	CY
20	Lake Sediment Removal Fill	0	CY
21	Sediment Forebays Cut	531	CY
22	Sediment Forebays Fill	47	CY

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PROFESSIONAL ENGINEER
BRIAN H. LADD
NUMBER
FE-2014012020

GENERAL NOTES AND SUMMARY OF QUANTITIES

OLD LONGVIEW LAKE
DAM & SPILLWAY IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

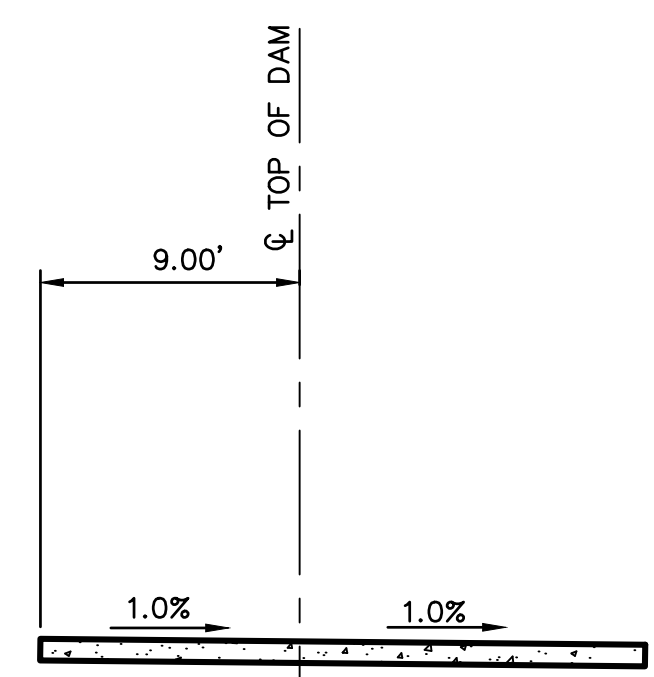
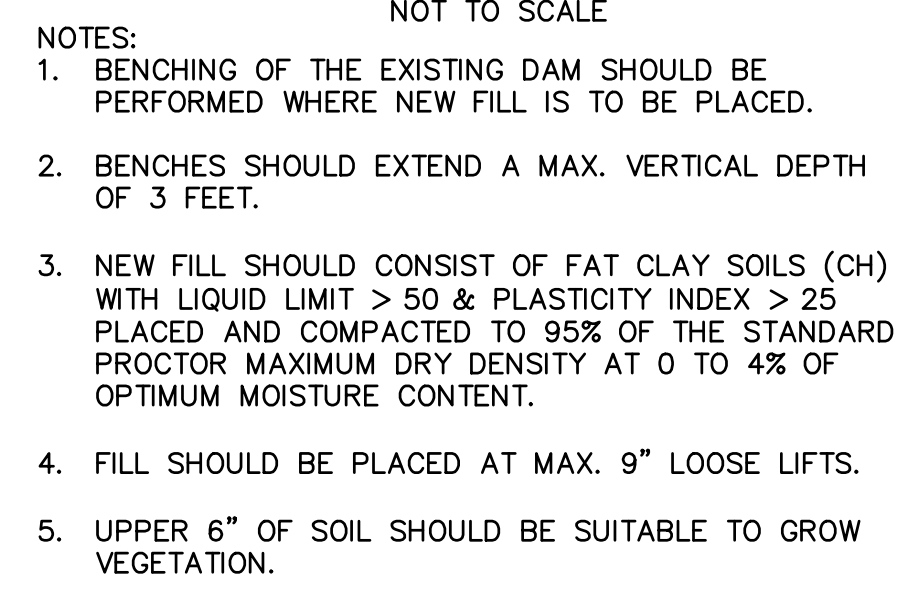
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project no.: _____ 017-0305
drawing no.: _____
date: _____ 04.04.2019

2019

REVISIONS

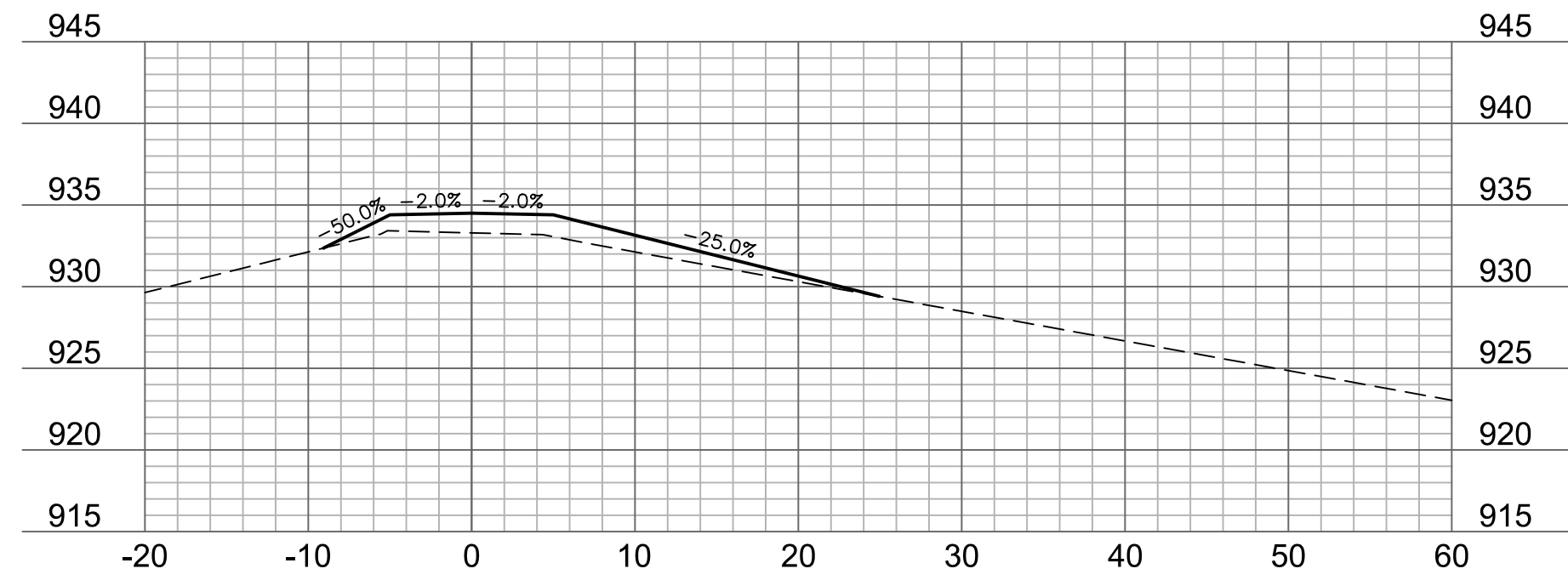
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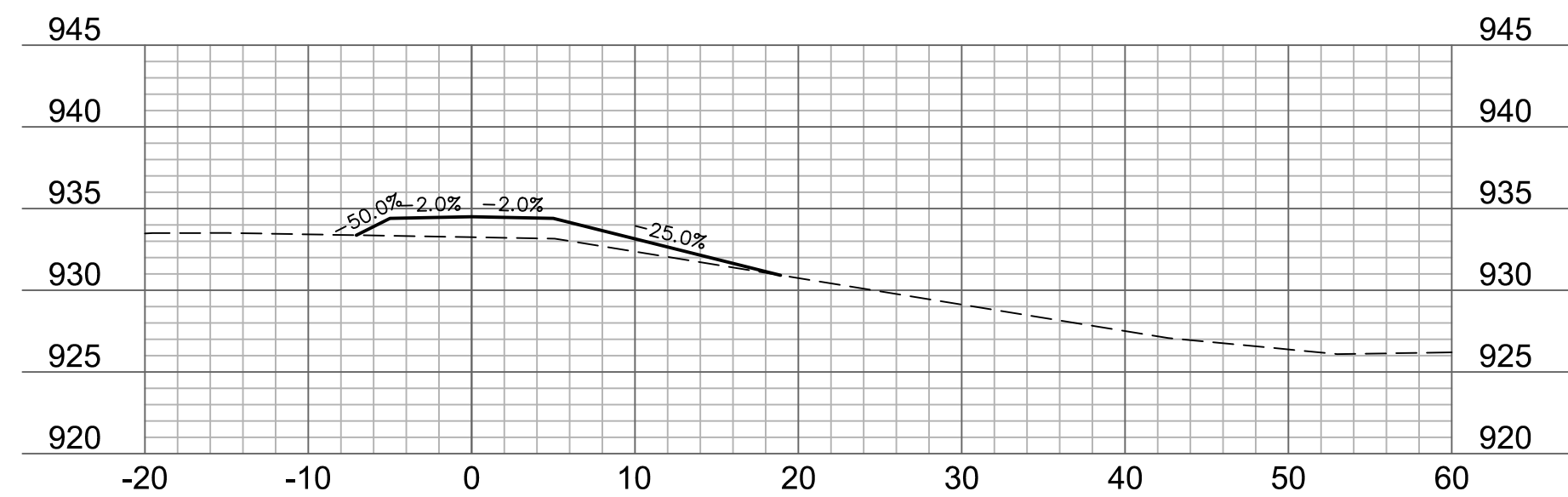


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SEE BLOWUP OF CONCRETE
CHANNEL

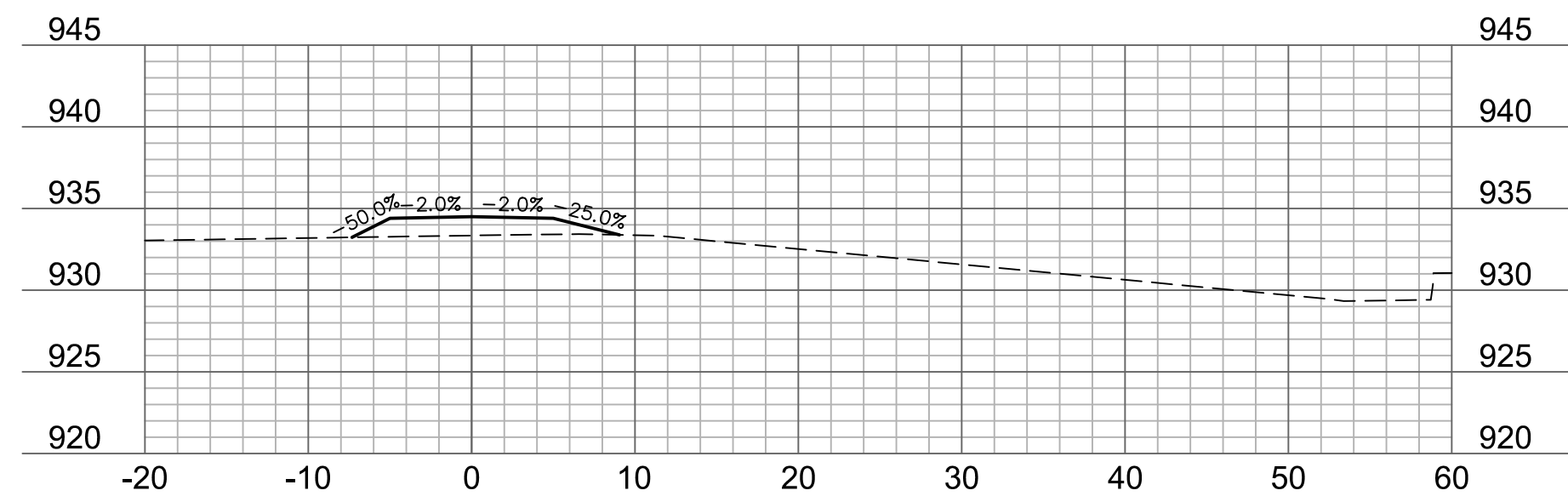
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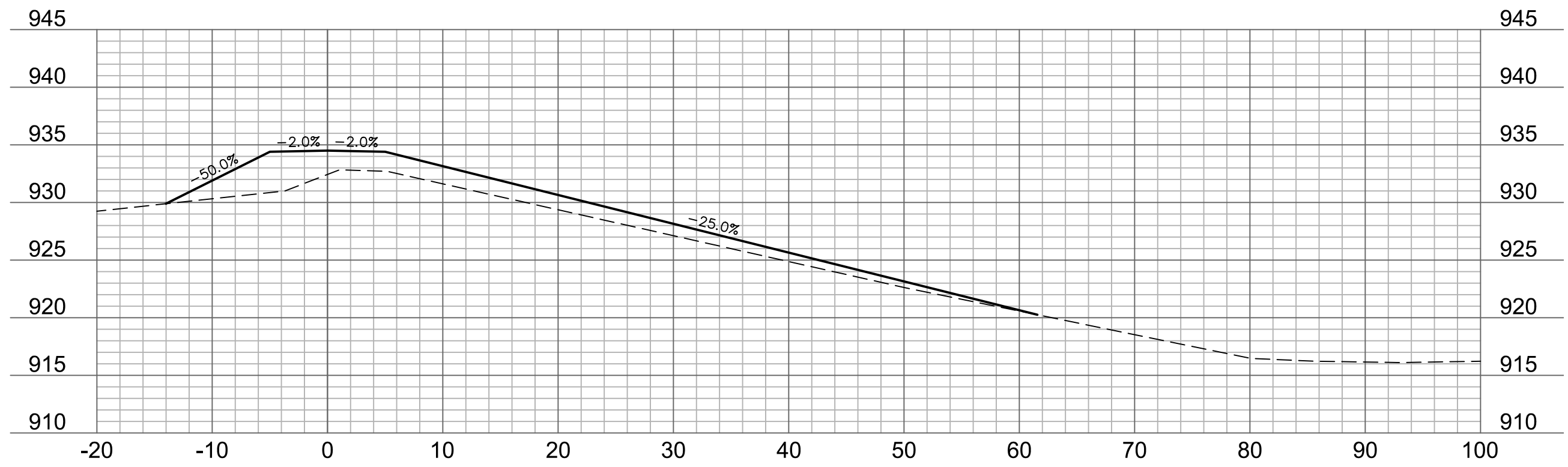
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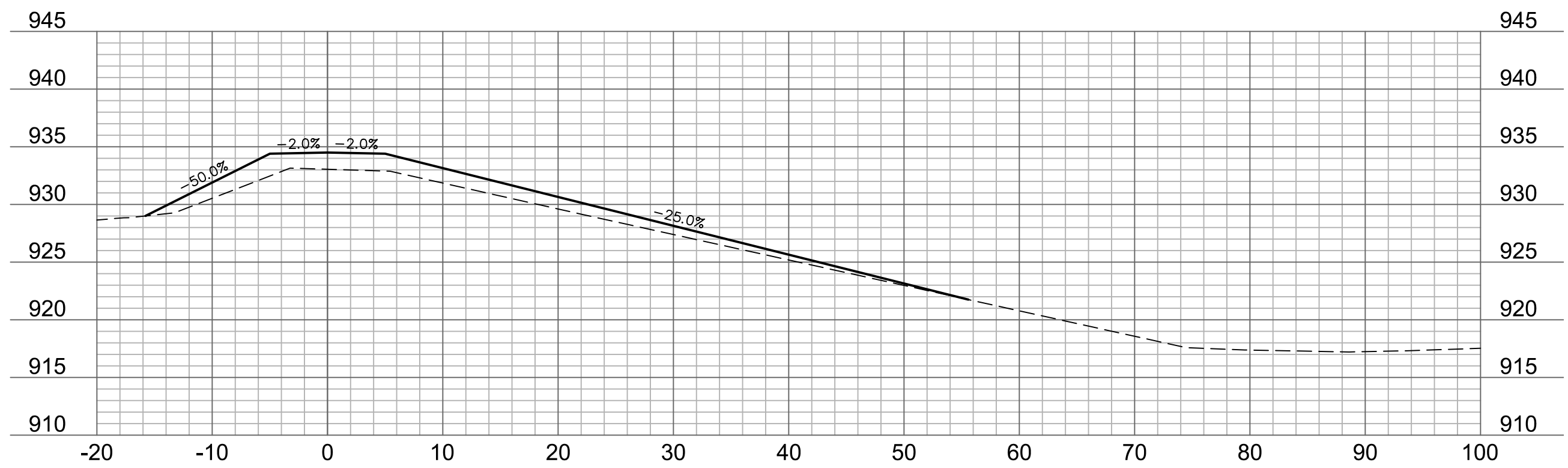
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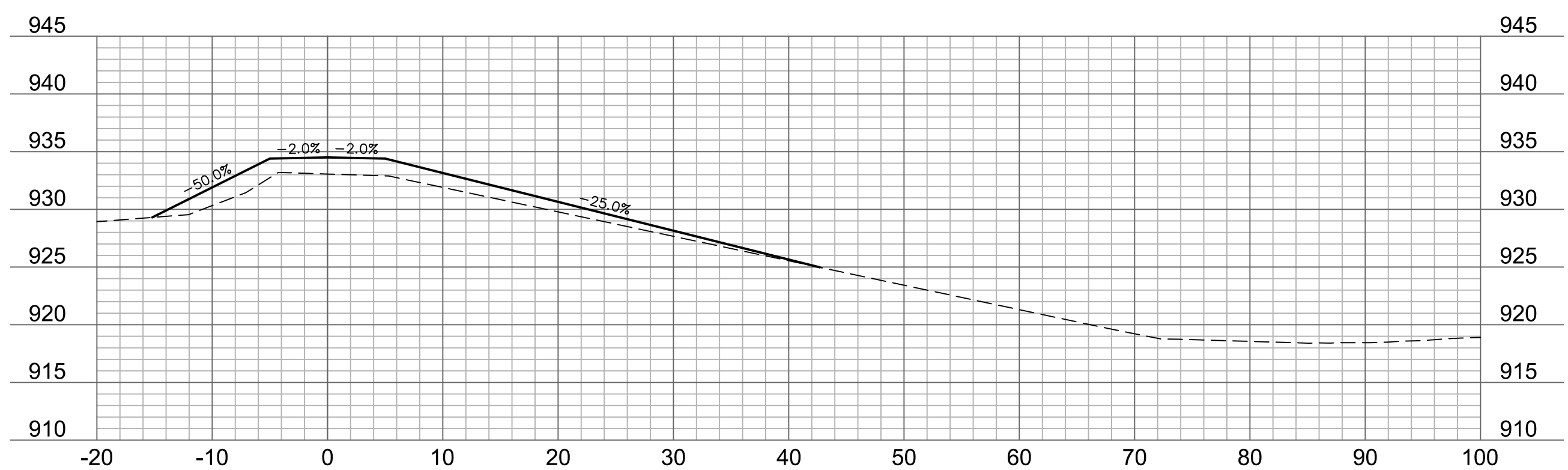
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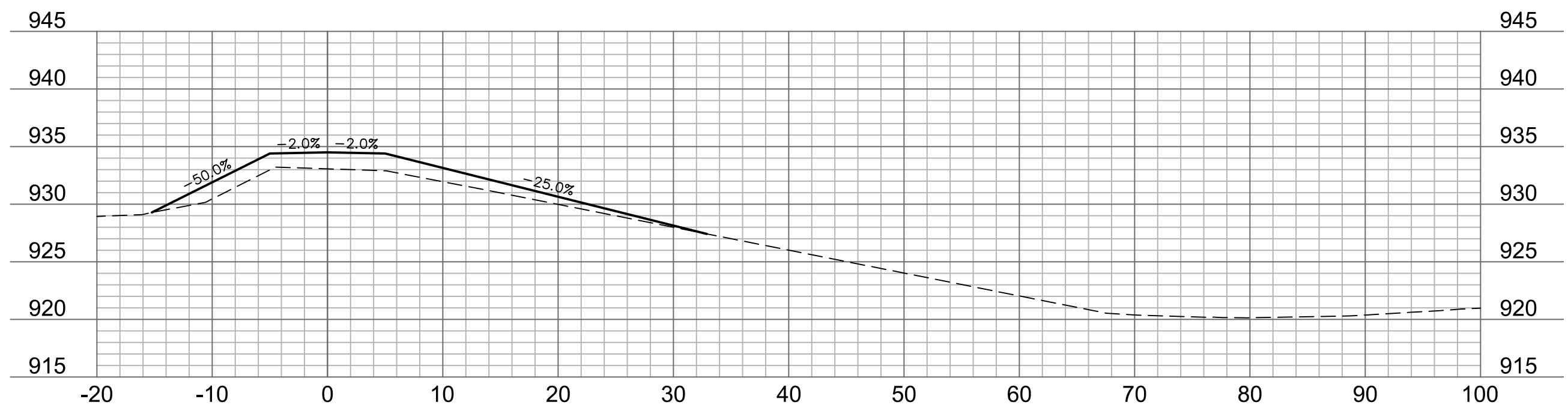
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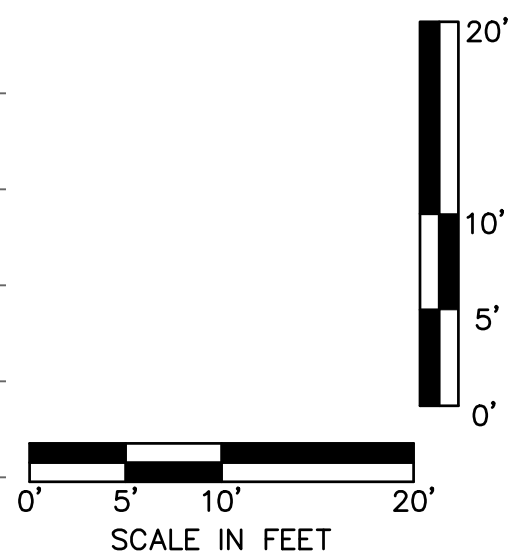
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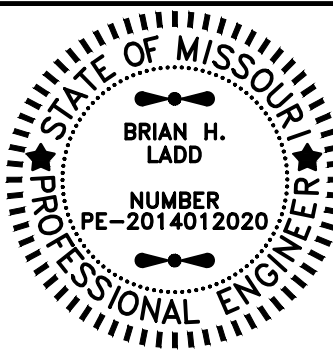


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DAM CROSS SECTIONS

OLD LONGVIEW LAKE DAM & SPILLWAY IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

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checked by: _____ BHI
approved by: _____ BM
QA/QC by: _____ CP
project no.: _____ 017-030
drawing no.: _____
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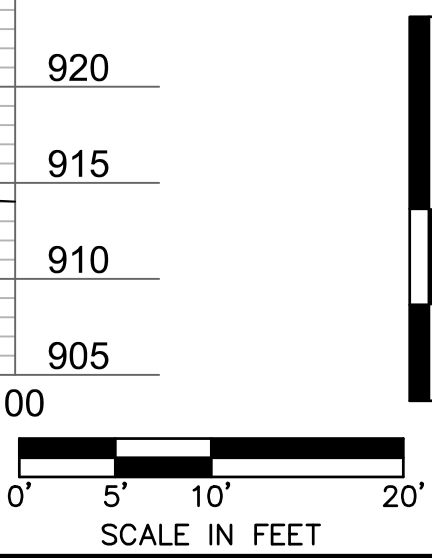
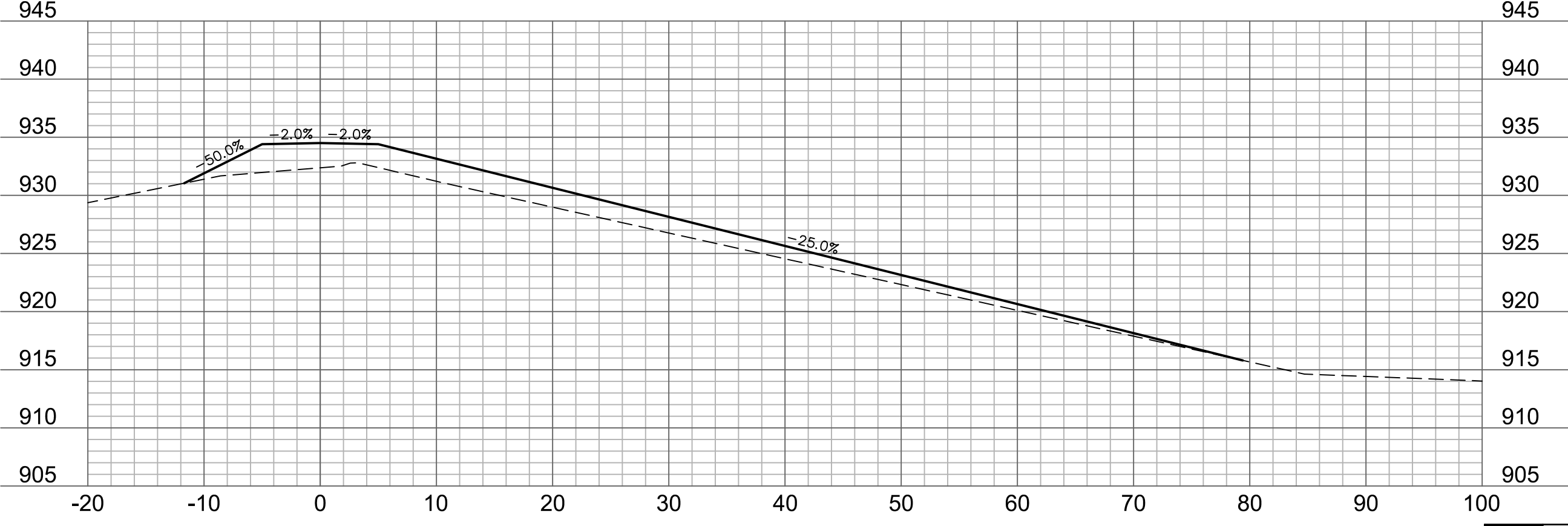
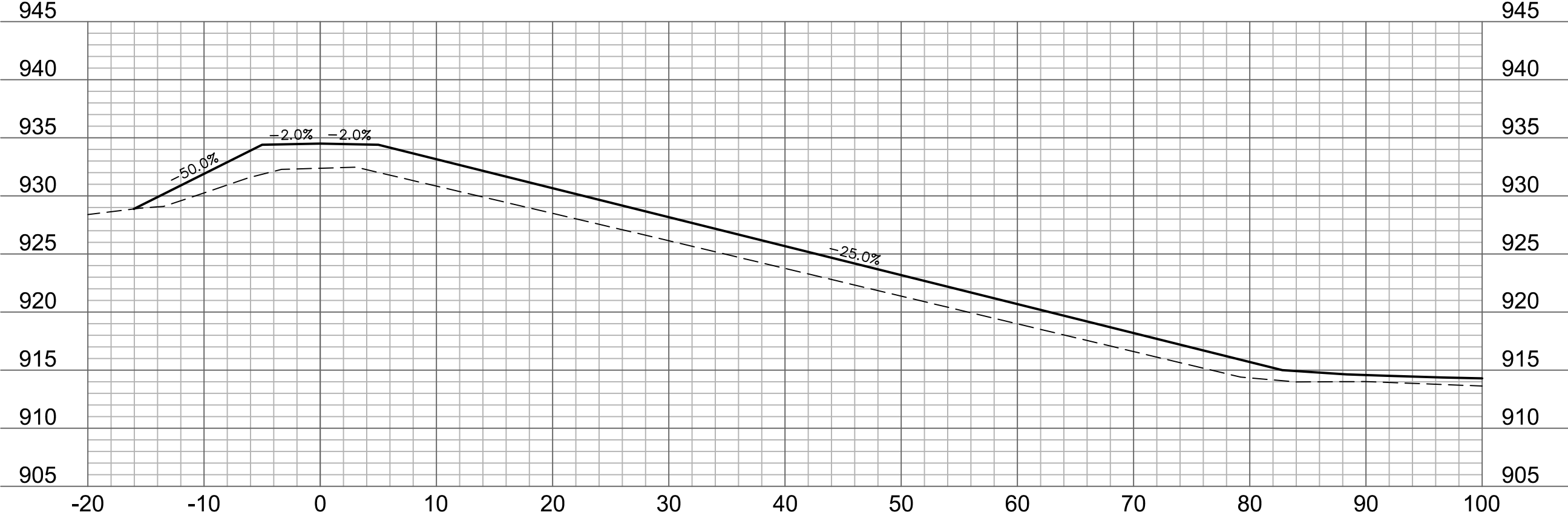
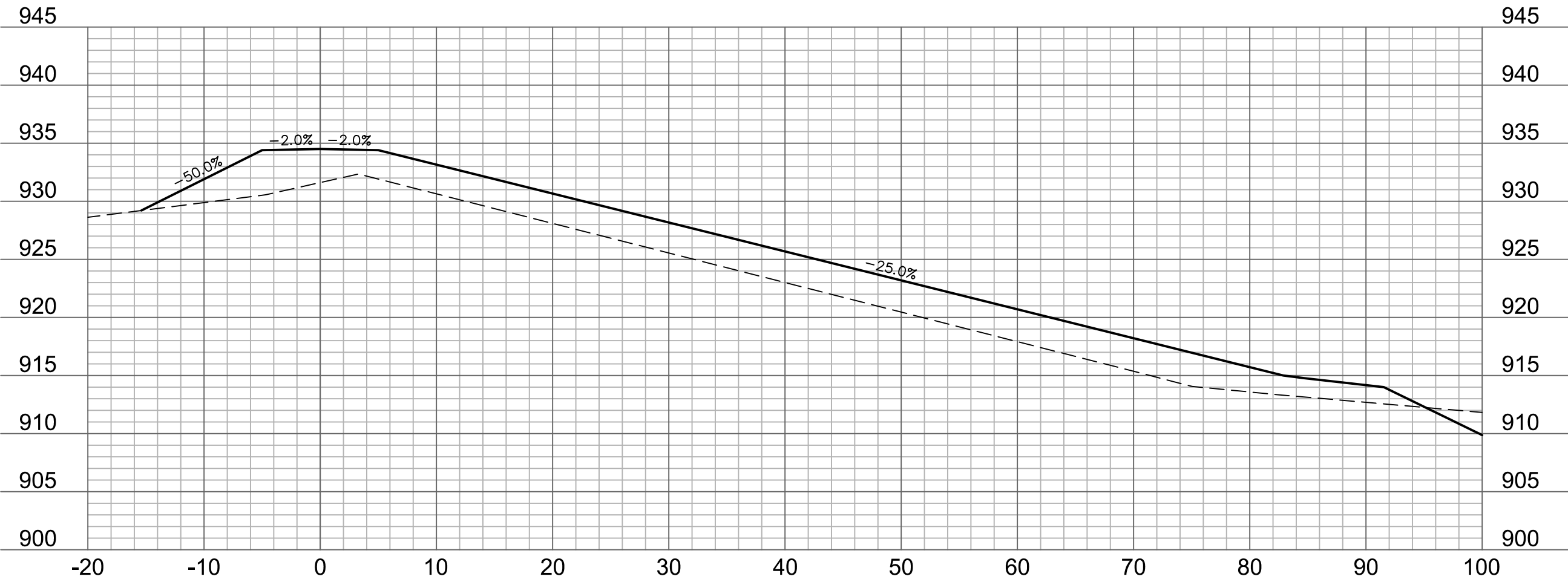
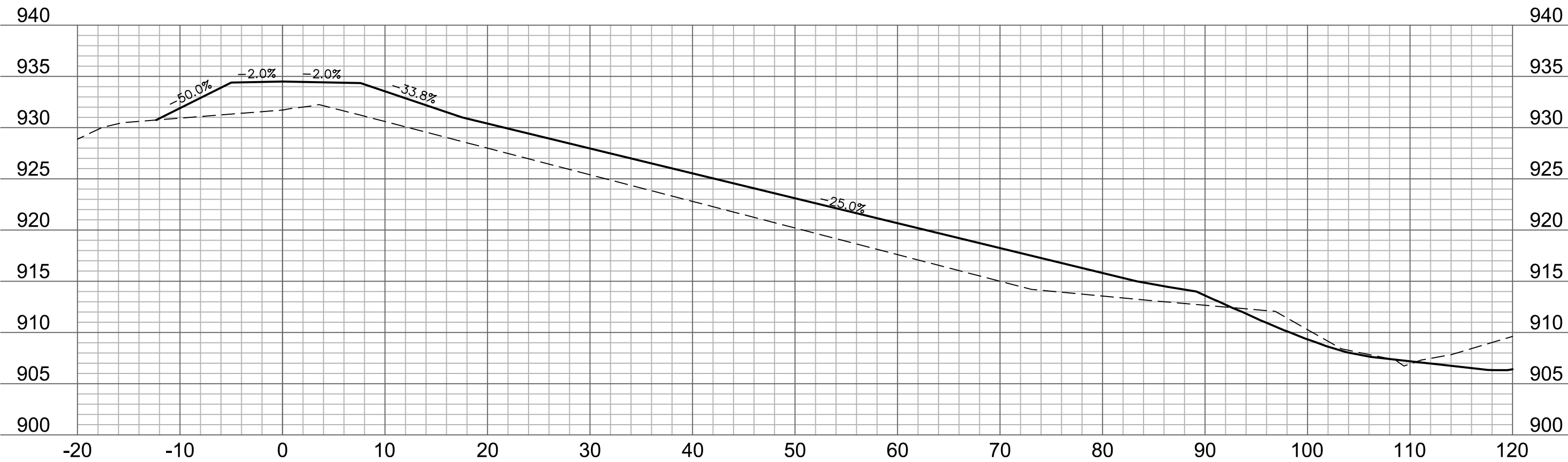
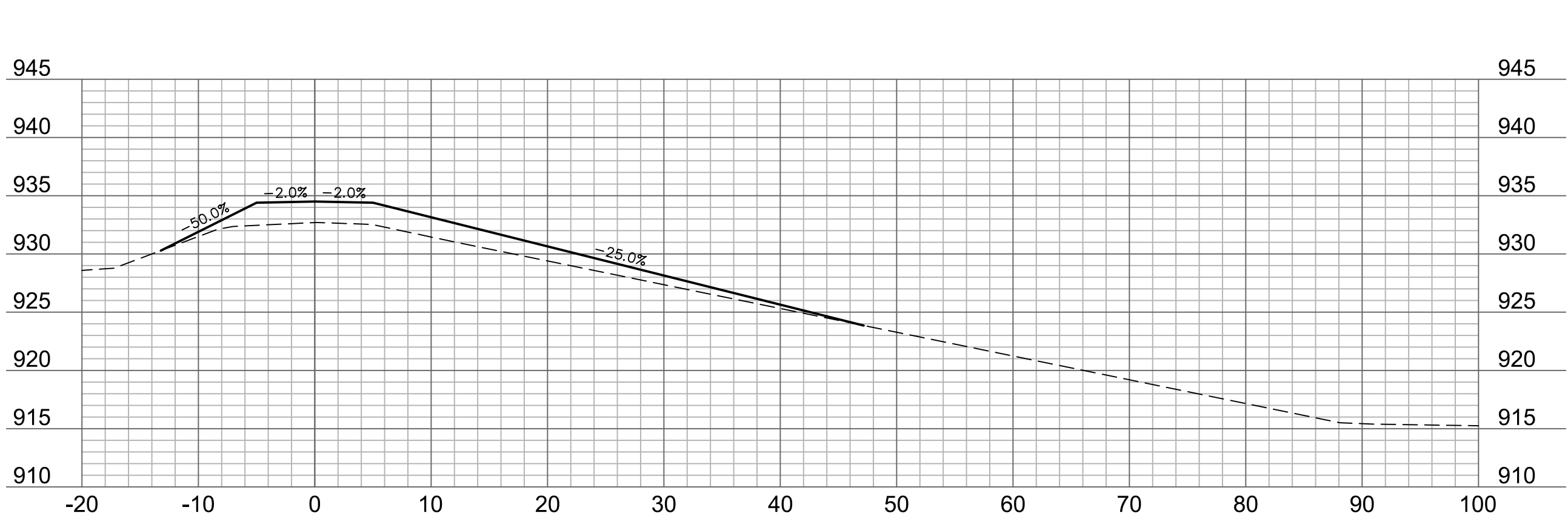
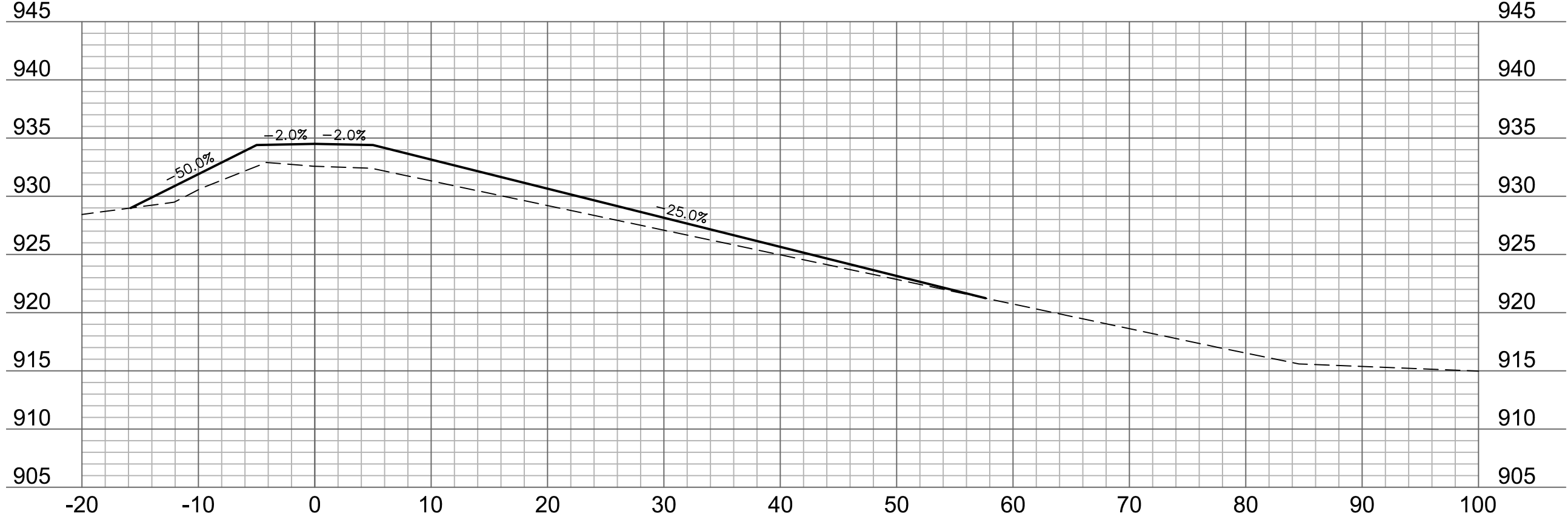
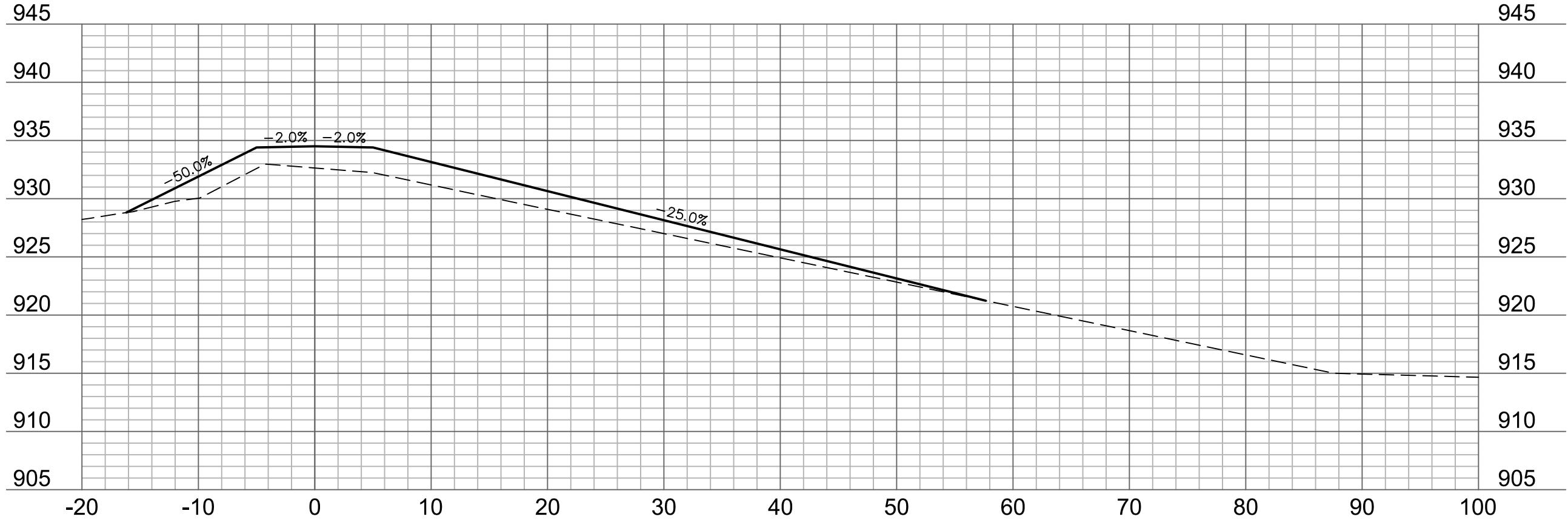
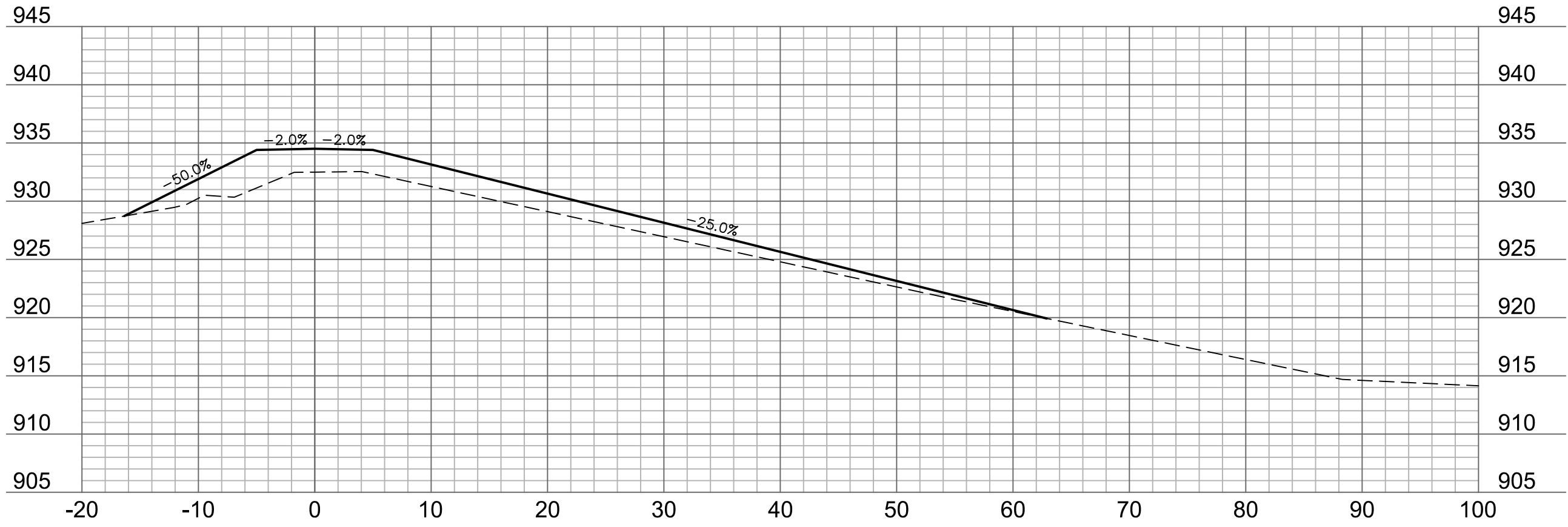
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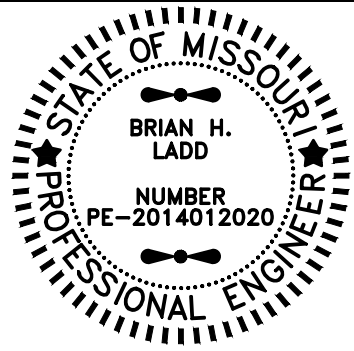
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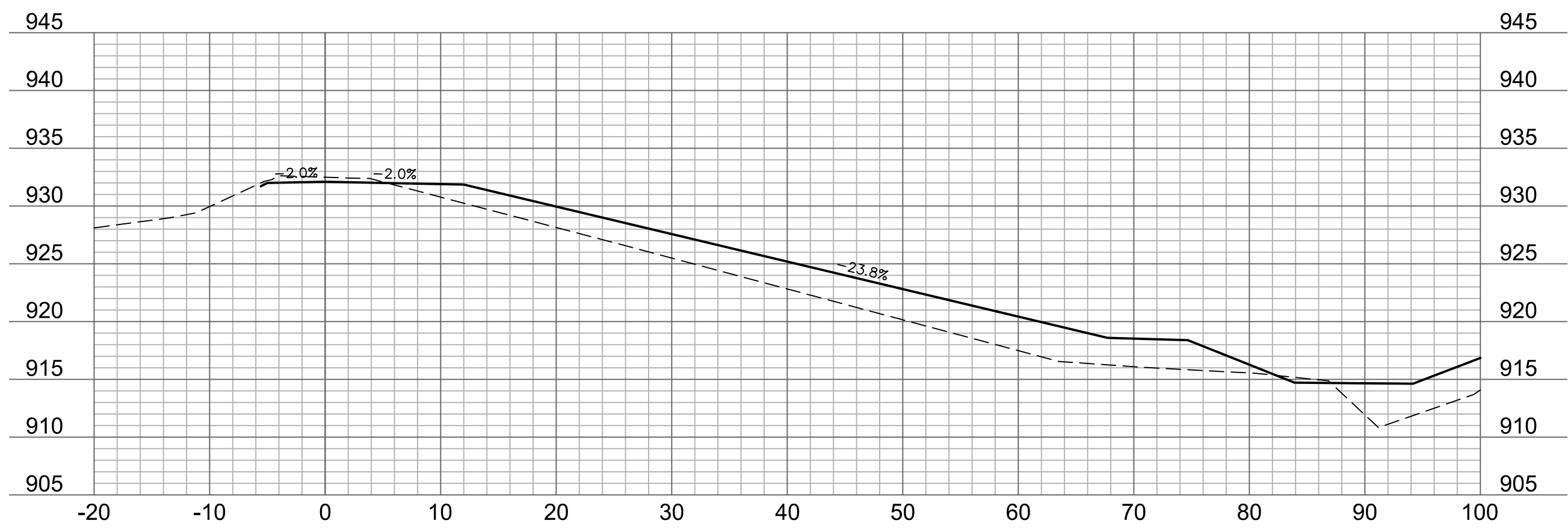
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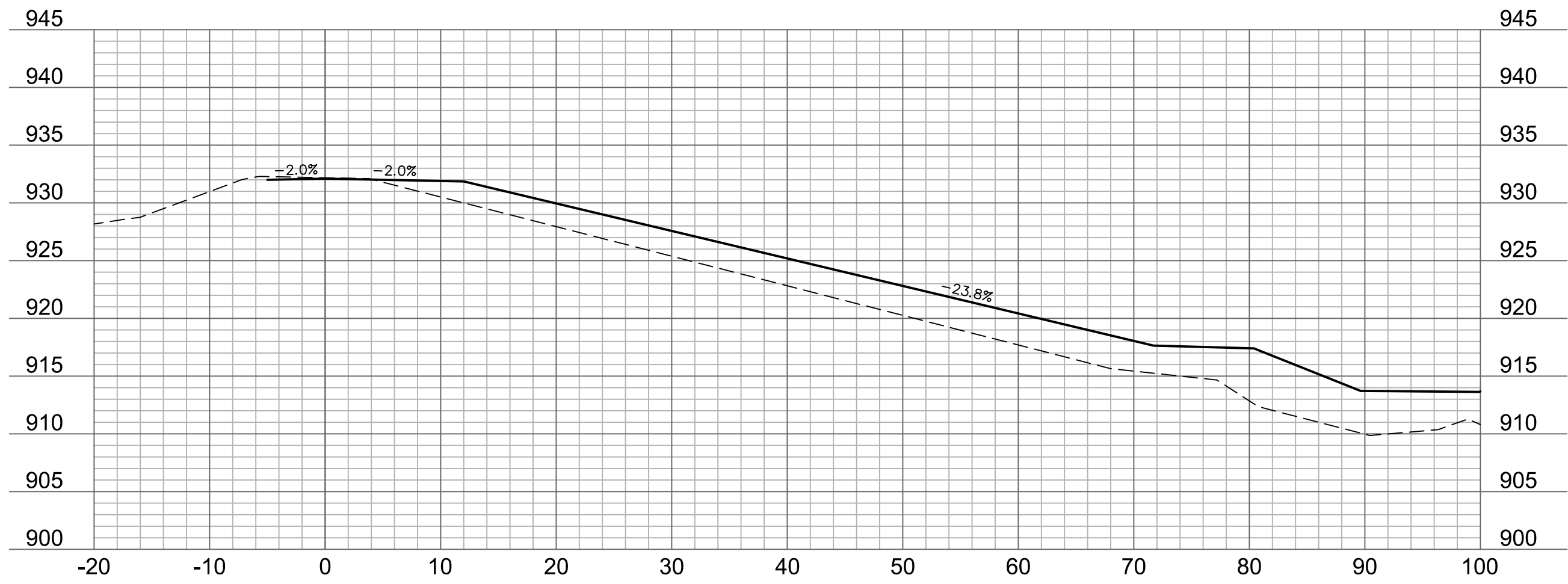
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drawing no.: _____
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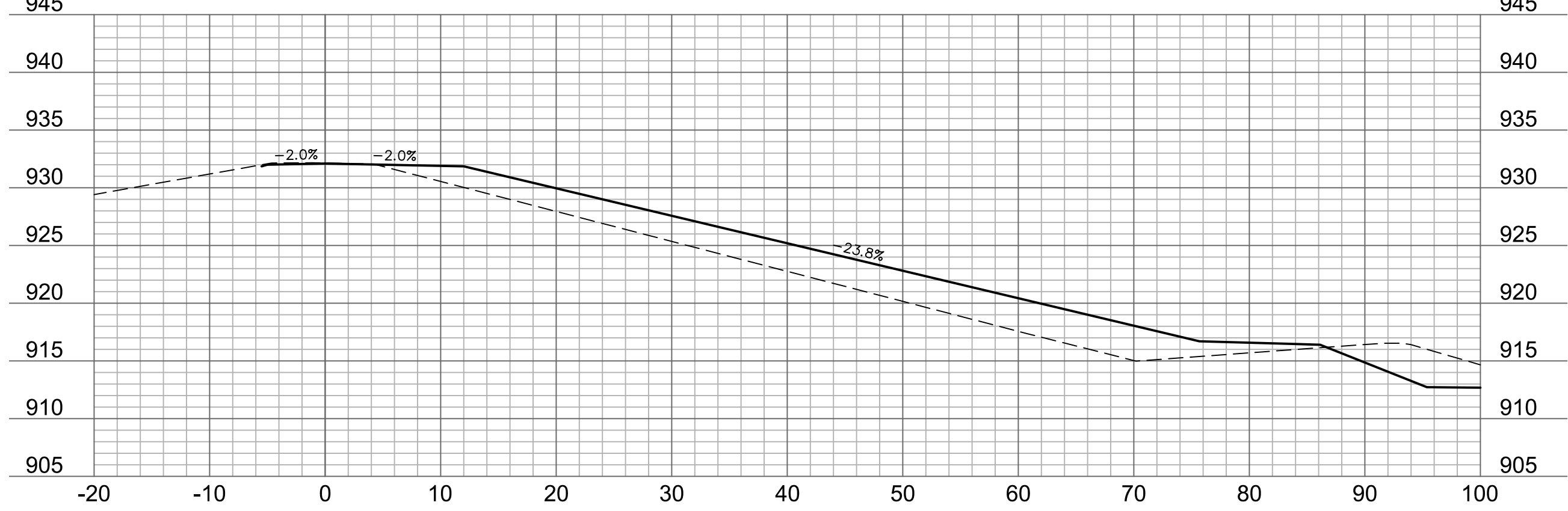
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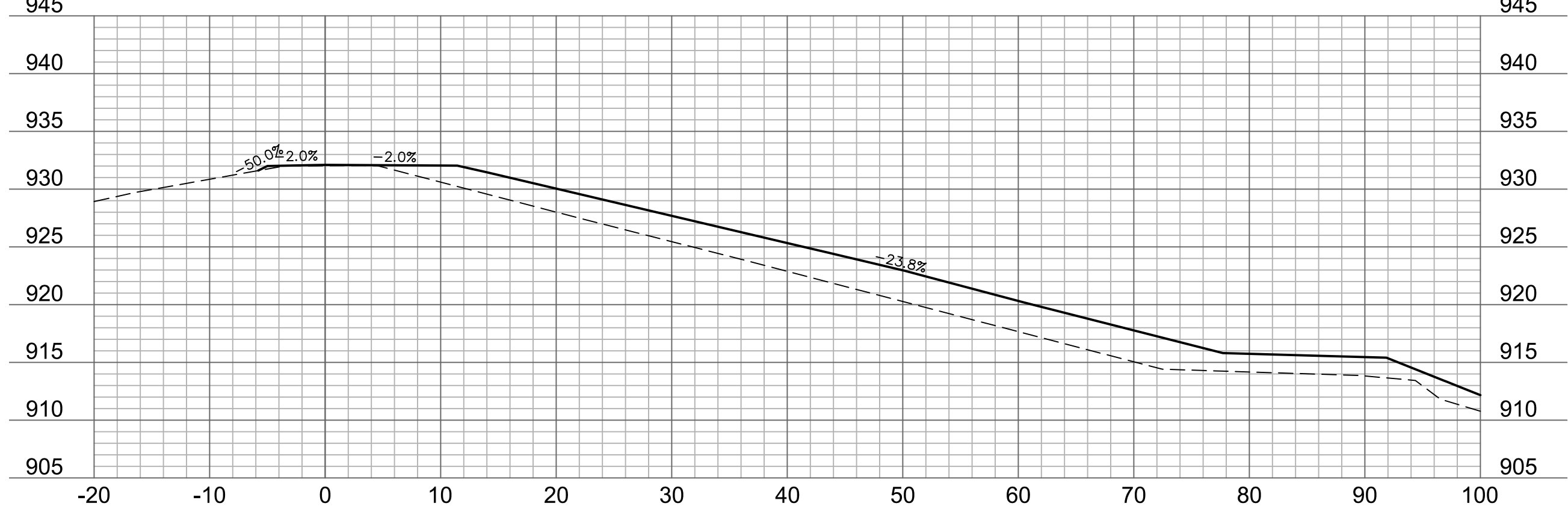
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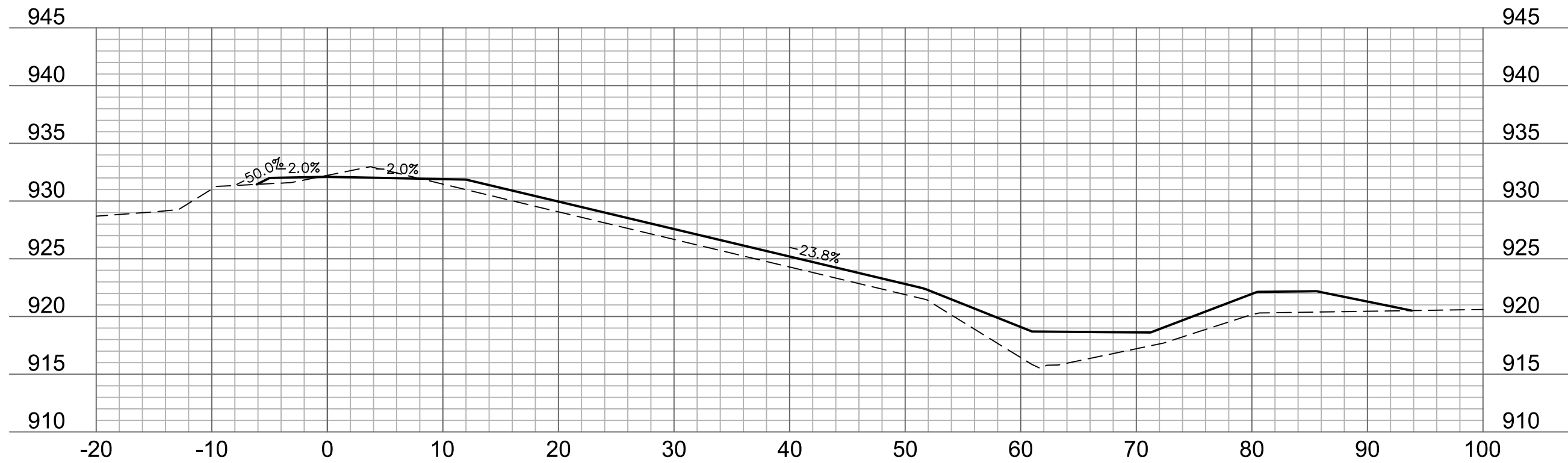
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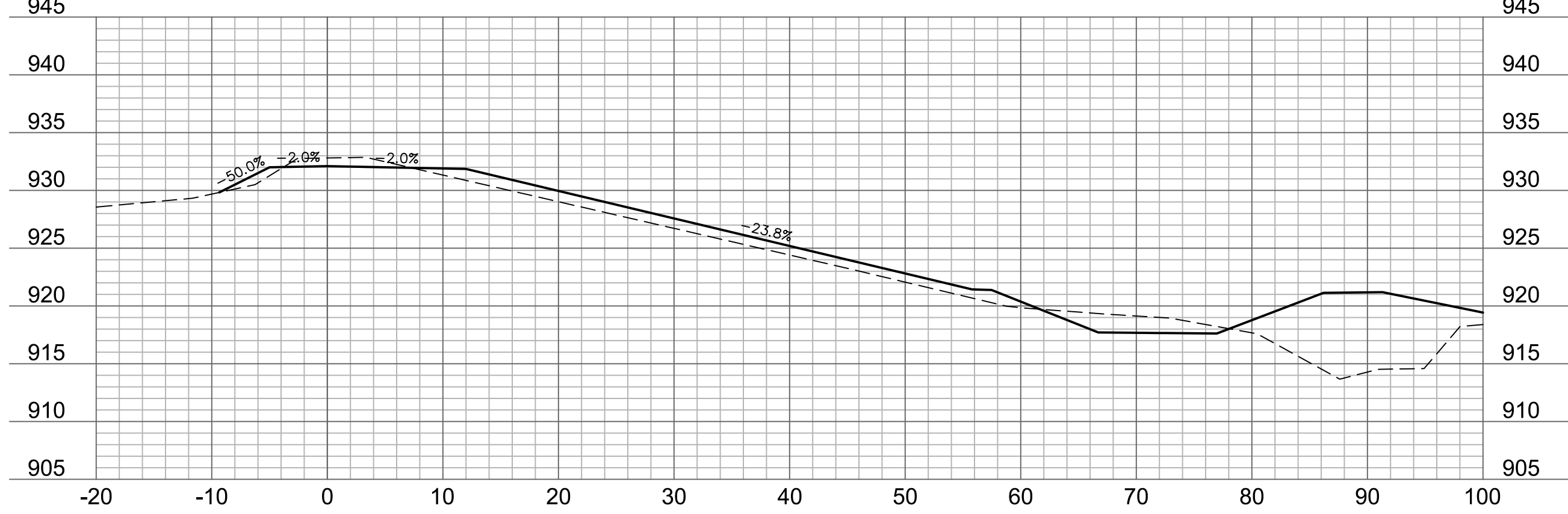
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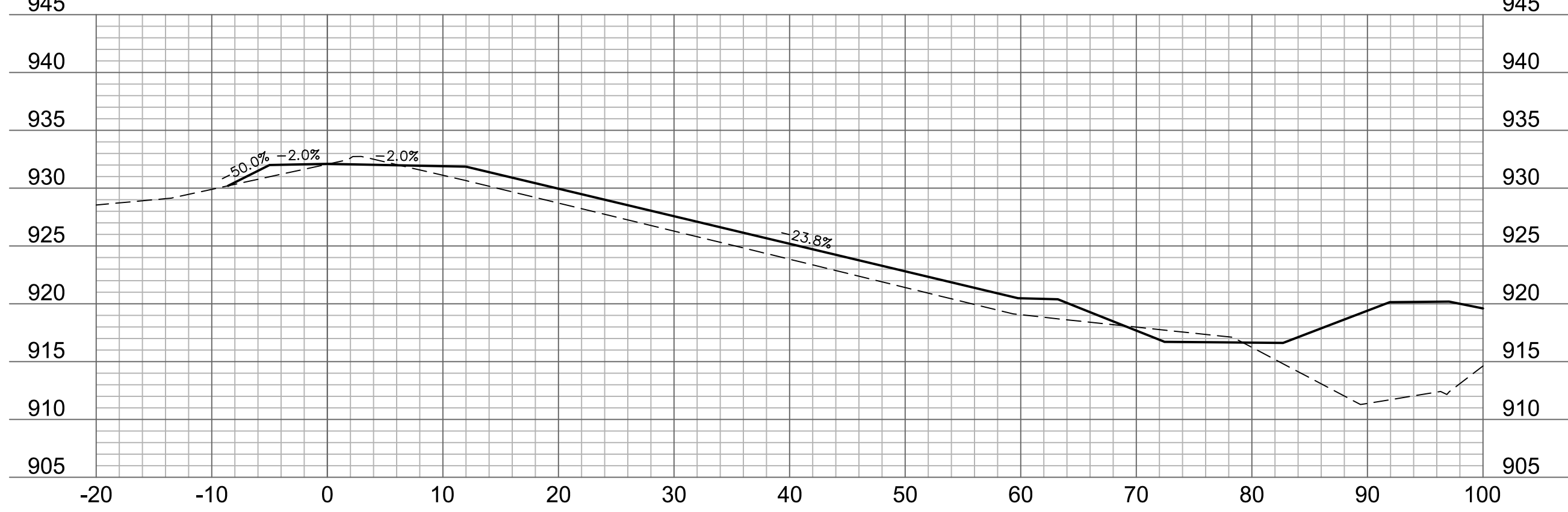
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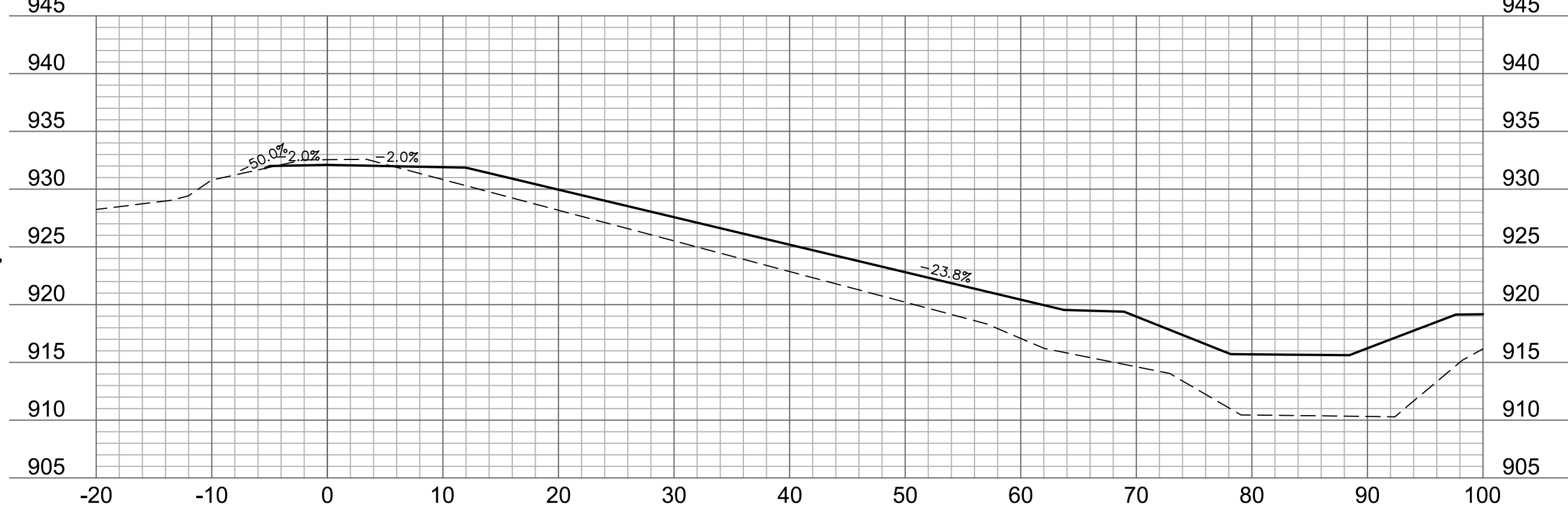
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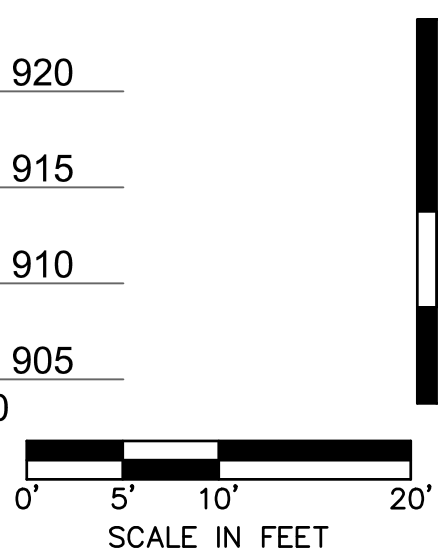
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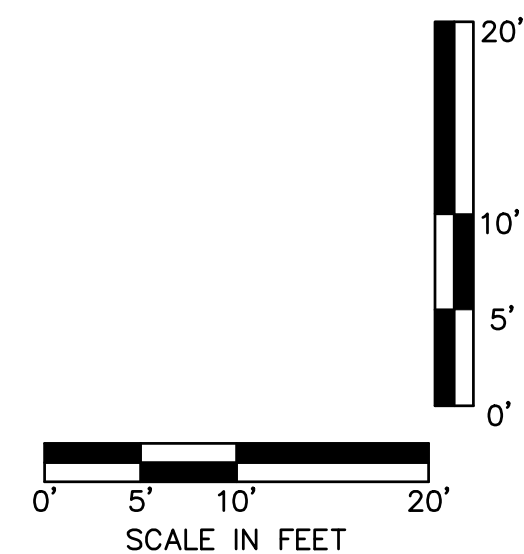
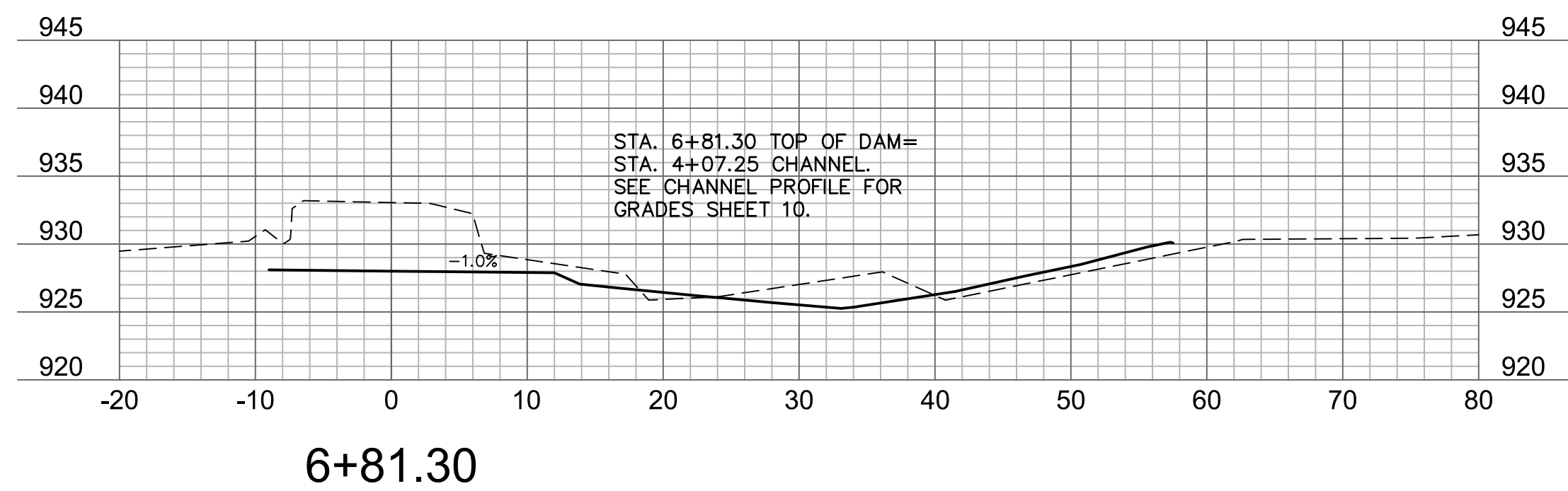
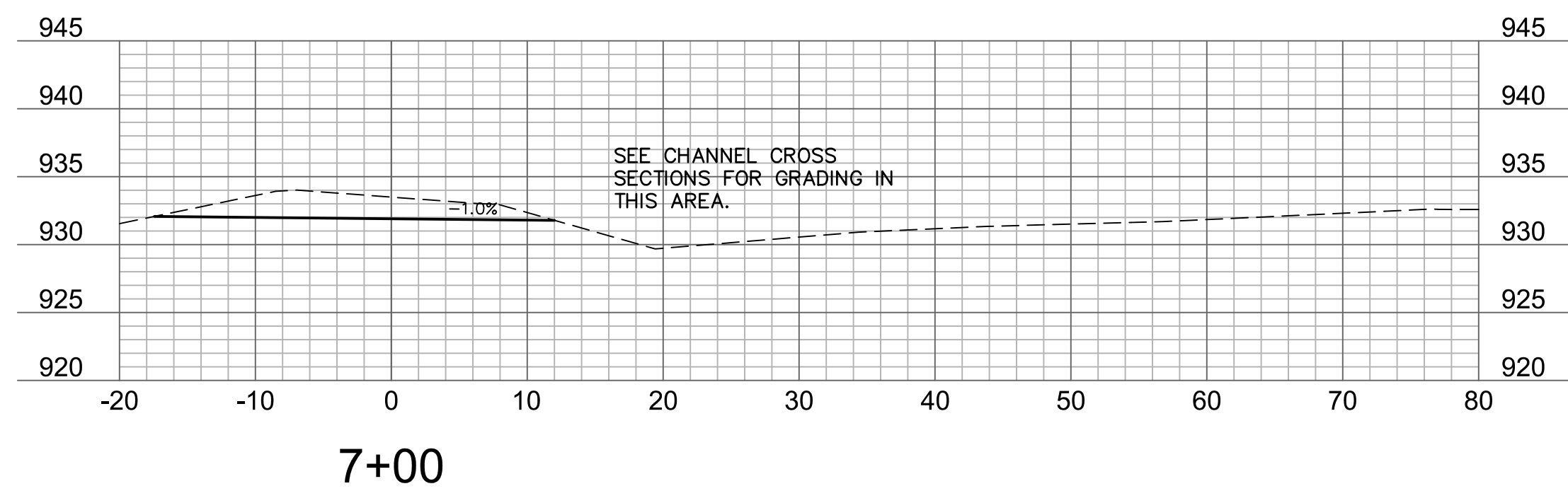
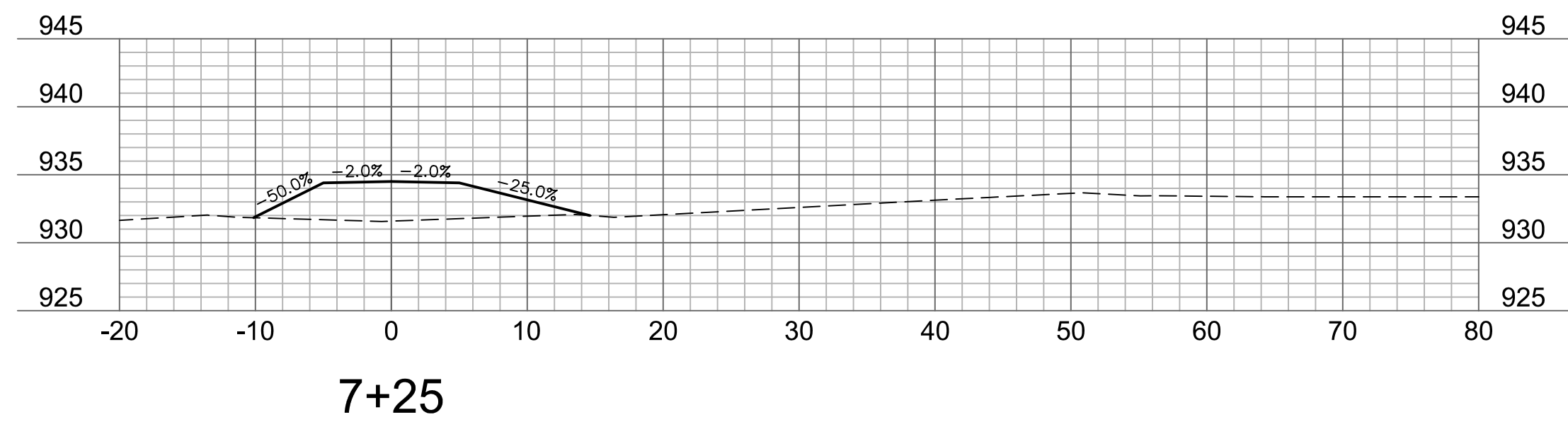
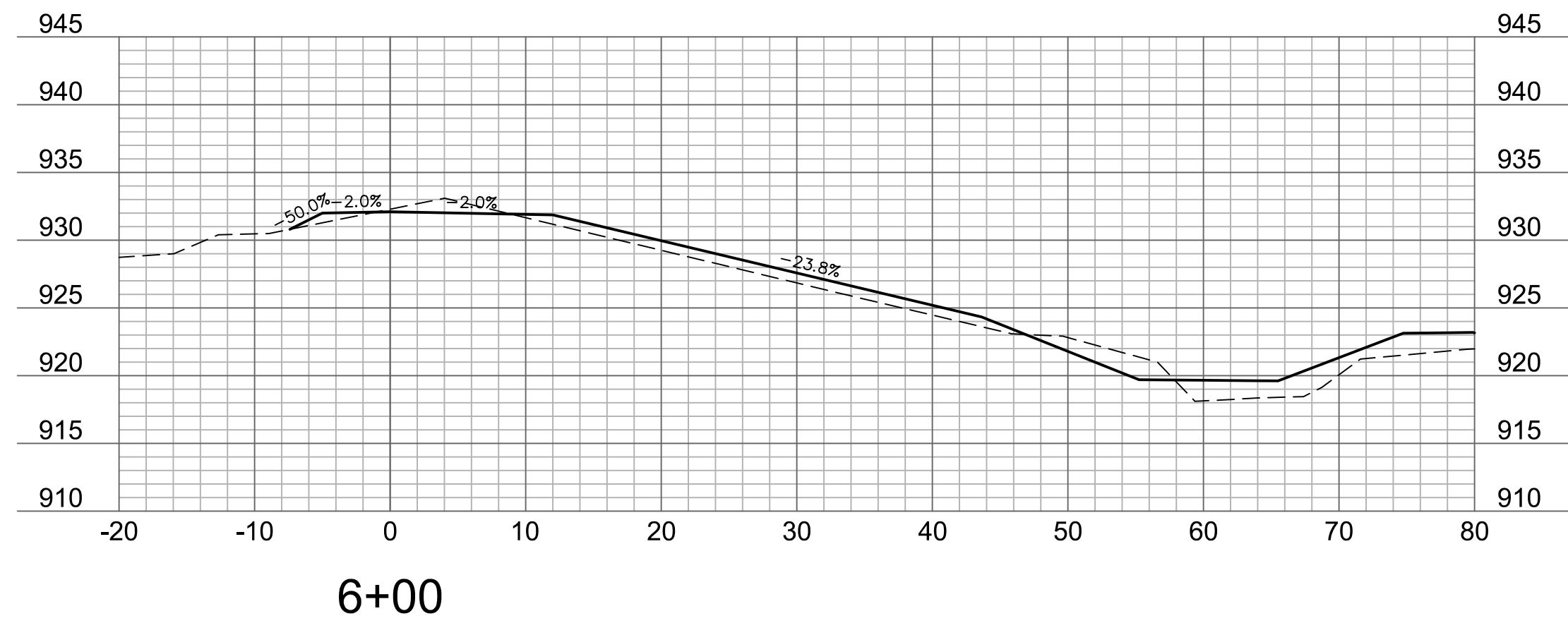
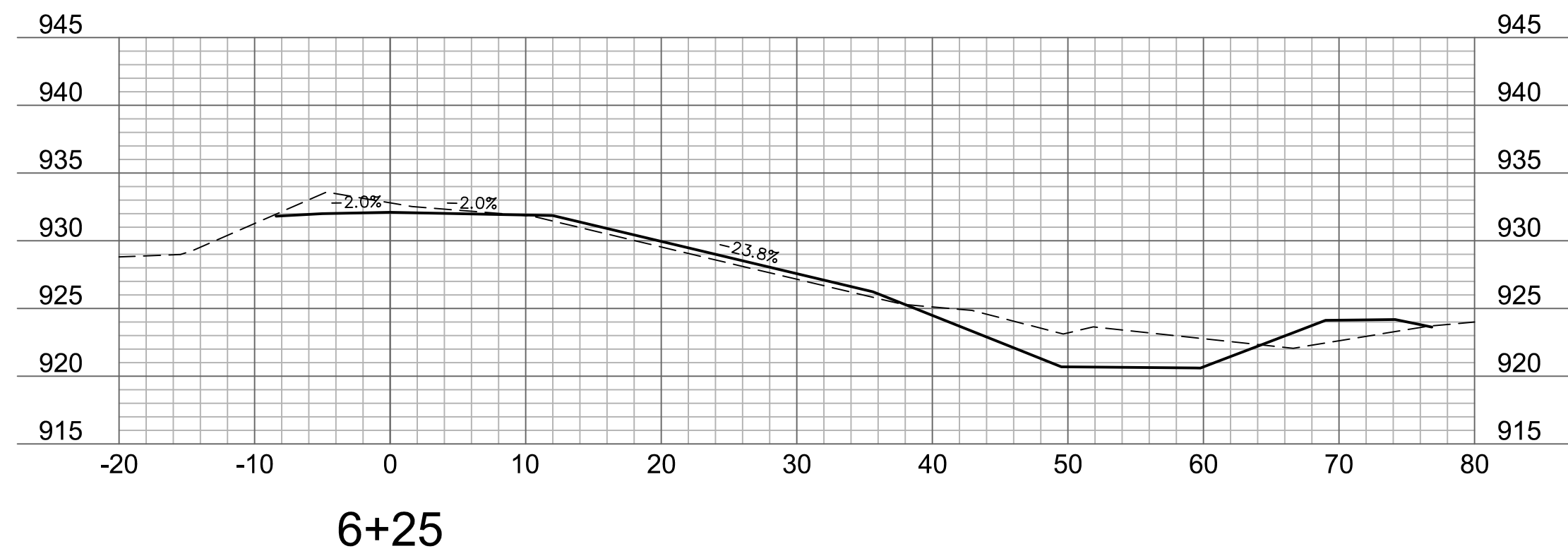
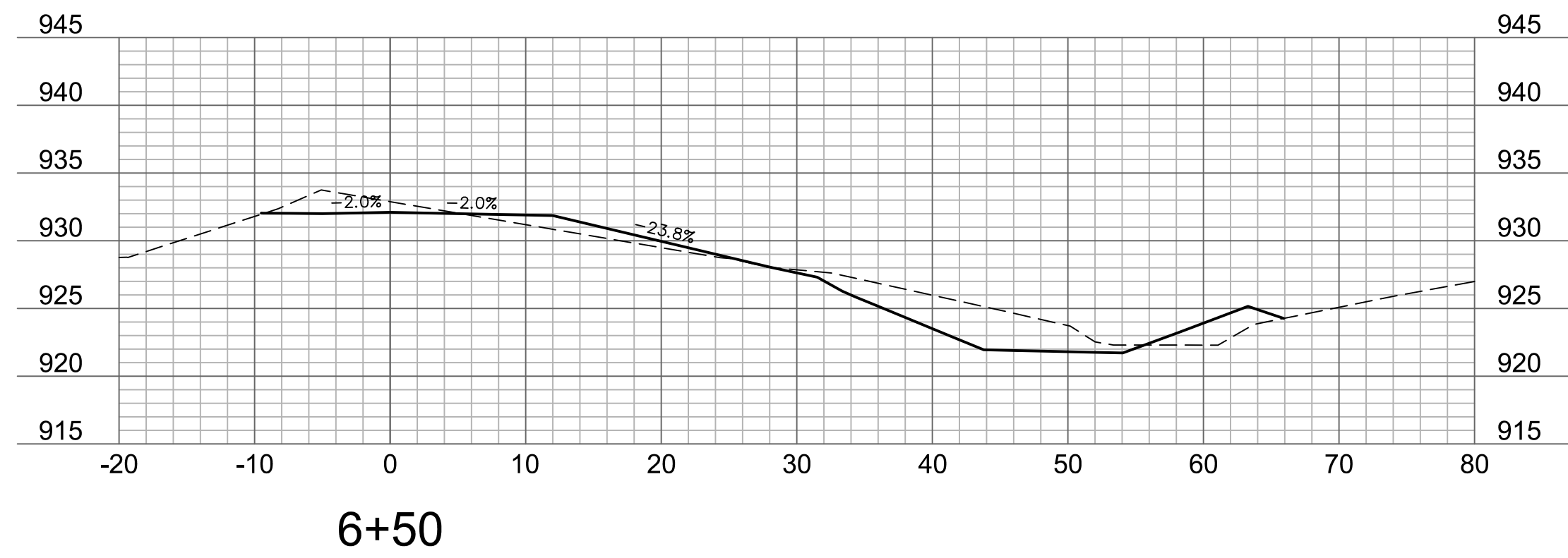
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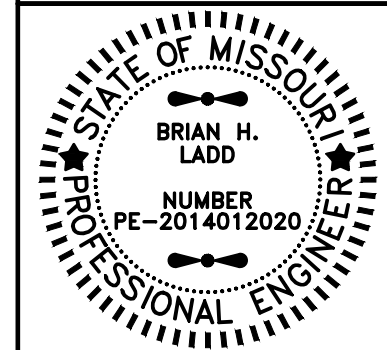
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	OLD LONGVIEW LAKE DAM & SPILLWAY IMPROVEMENTS					
LEE'S SUMMIT, MISSOURI		2019	REVISIONS			

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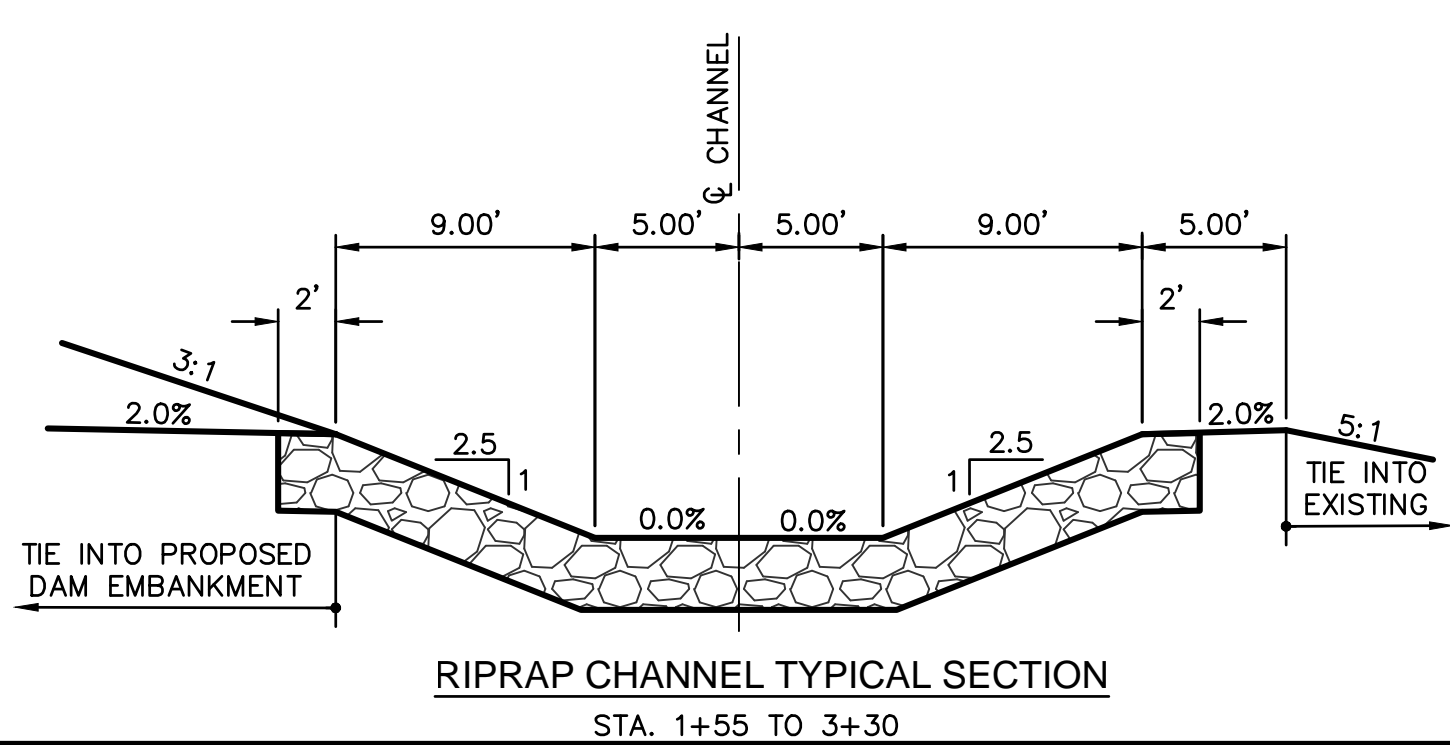
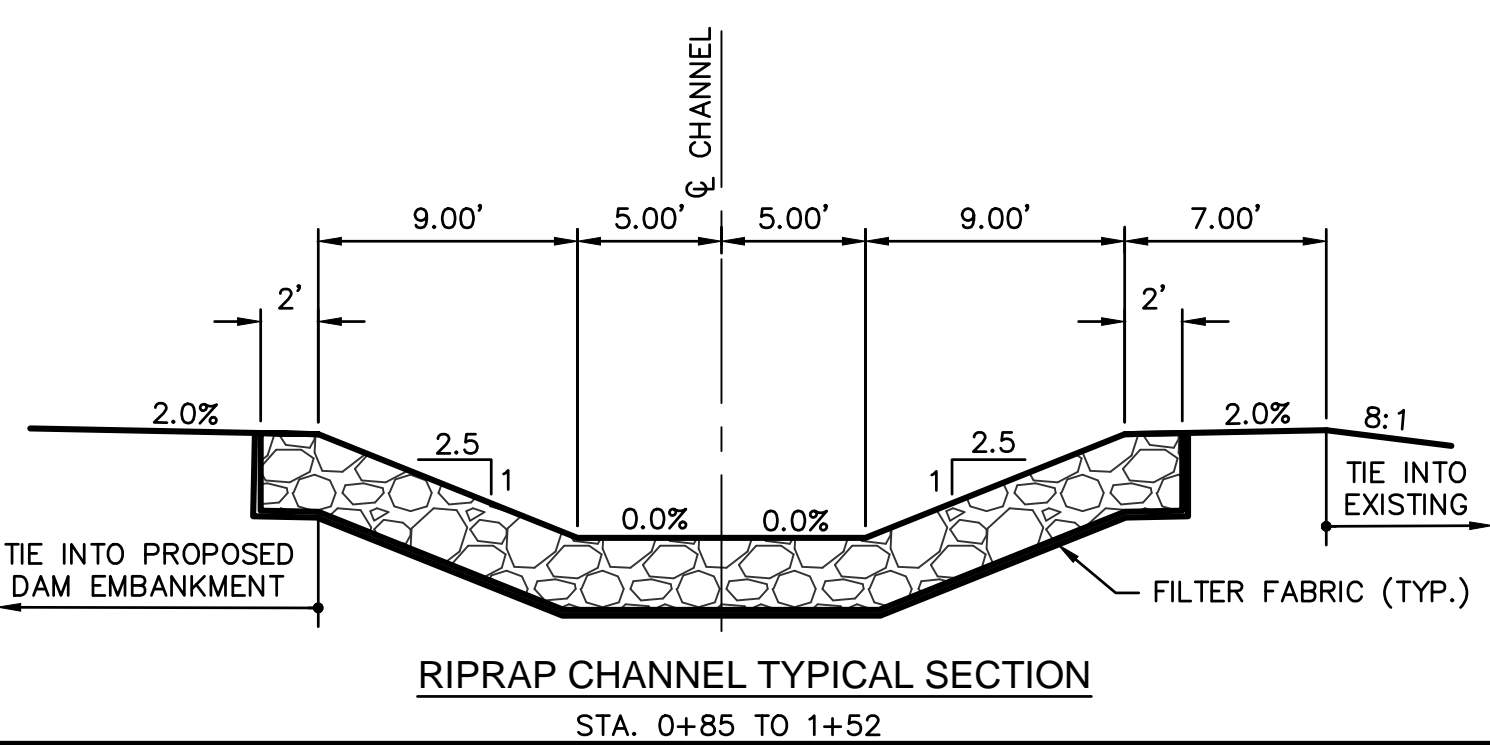
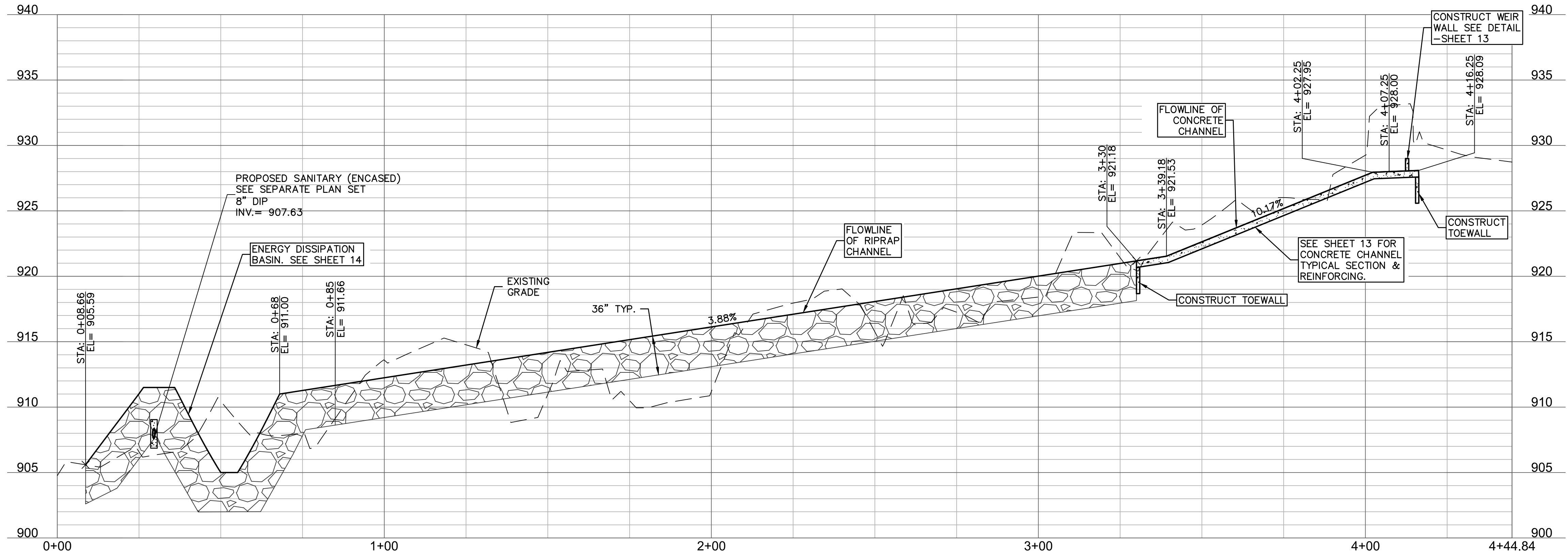
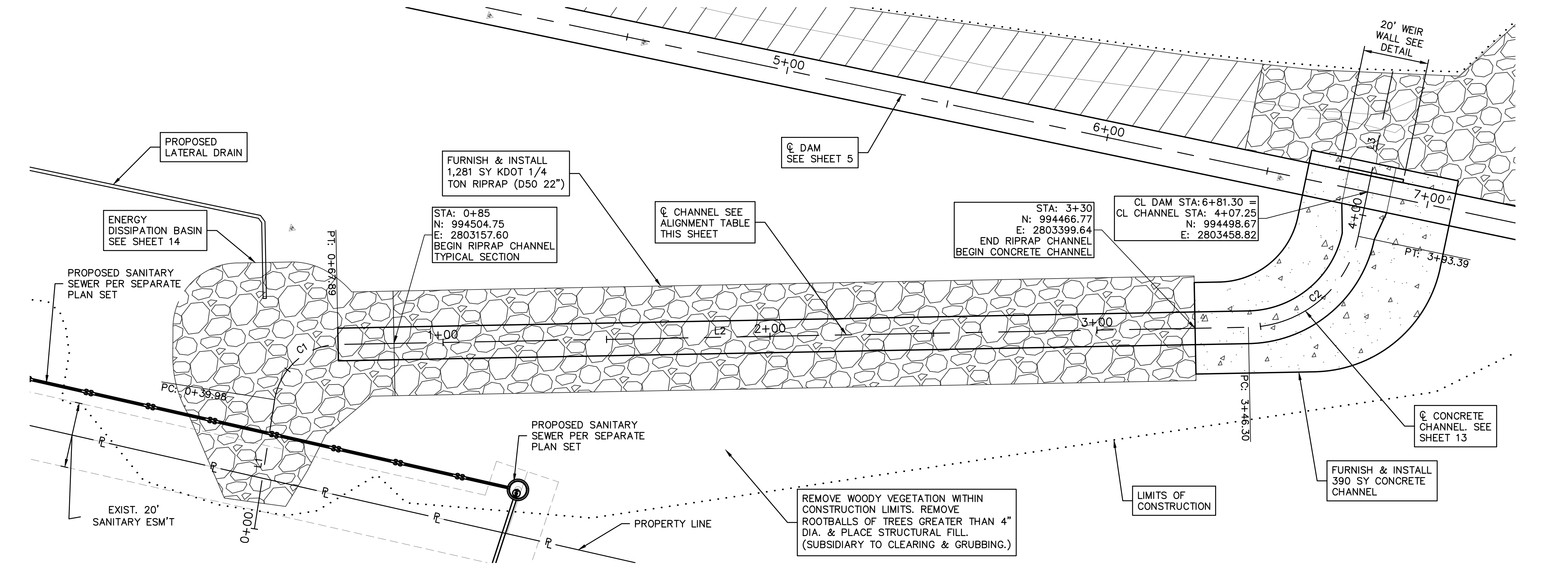
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DAM CROSS SECTIONS	
OLD LONGVIEW LAKE DAM & SPILLWAY IMPROVEMENTS	
LEE'S SUMMIT, MISSOURI	2019

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drawing no.: _____
date: _____ 04.04.2019

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CL CHANNEL ALIGNMENT TABLE									
ID #	STATION RANGE	START COORD.	END COORD.	PI STATION	PI START COORD.	PI END COORD.	LINE/CHORD LENGTH (FT)	LINE/CHORD BEARING	RADIUS (FT)
L1	0+00 0+39.98	N: 994456.32 E: 2803105.72	N: 994494.13 E: 2803118.69				39.98	N18°56'08"E	
C1	PC 0+39.98 PT 0+67.89	N: 994494.13 E: 2803118.69	PT N: 994507.40 E: 2803140.71	0+56.75	N: 994510.00 E: 2803124.13	N: 994510.00 E: 2803124.13	25.71	N58°55'34"E	20.00
L2	0+67.89 3+46.30	N: 994507.40 E: 2803140.71	N: 994464.25 E: 2803415.75				278.41	S81°05'01"E	
C2	PC 3+46.30 PT 3+93.39	N: 994464.25 E: 2803415.75	PT N: 994485.81 E: 2803453.67	3+74.19	N: 994459.92 E: 2803443.30	N: 994459.92 E: 2803443.30	43.62	N60°22'21"E	35.00
L3	3+93.39 4+44.84	N: 994485.81 E: 2803453.67	N: 994533.57 E: 2803472.80				51.45	N21°49'43"E	



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BRIAN H. LADD
NUMBER
E-2014012020
PROFESSIONAL ENGINEER

REV.	NO.	DATE	REVISIONS DESCRIPTION	BY

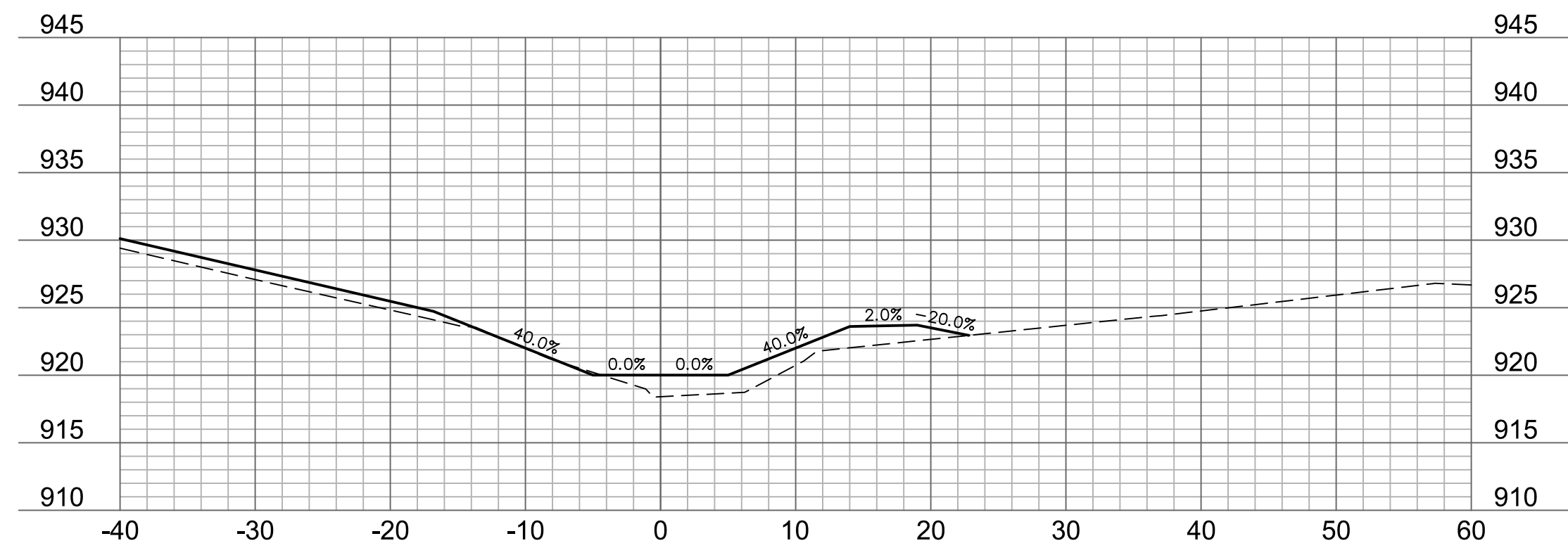
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OLD LONGVIEW LAKE
DAM & SPILLWAY IMPROVEMENTS
LEE'S SUMMIT, MISSOURI

2019

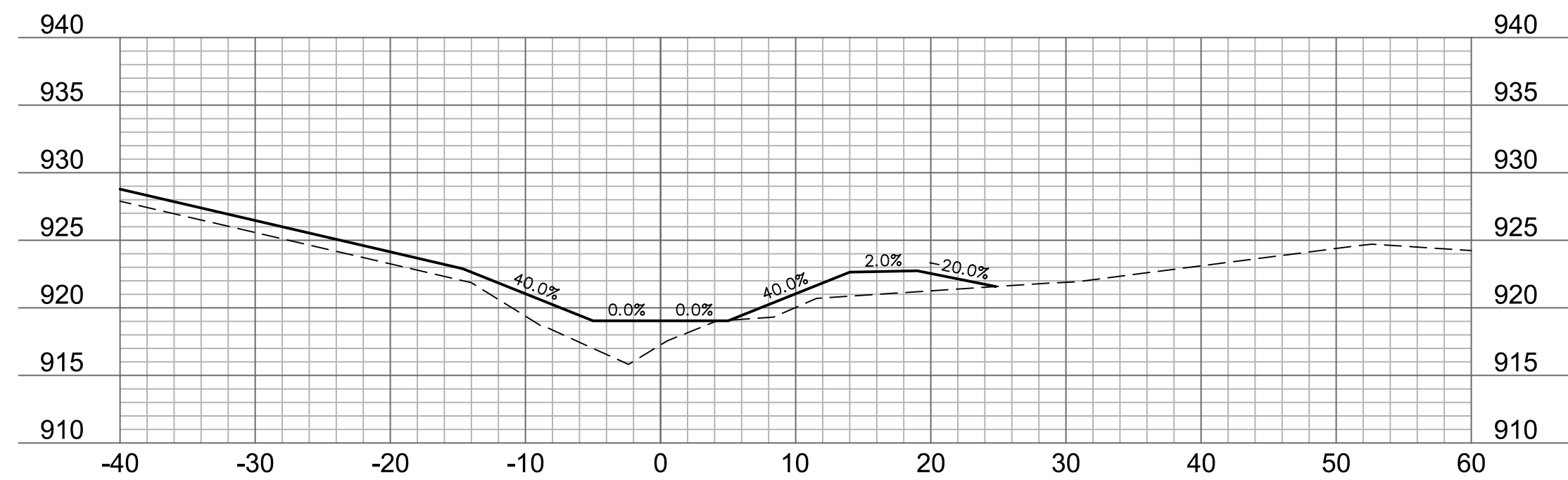
drawn by: KTF
checked by: BHL
approved by: BML
QA/QC by: CPL
project no.: 017-0305
drawing no.:
date: 04.04.2019

SHEET
10 OF 21

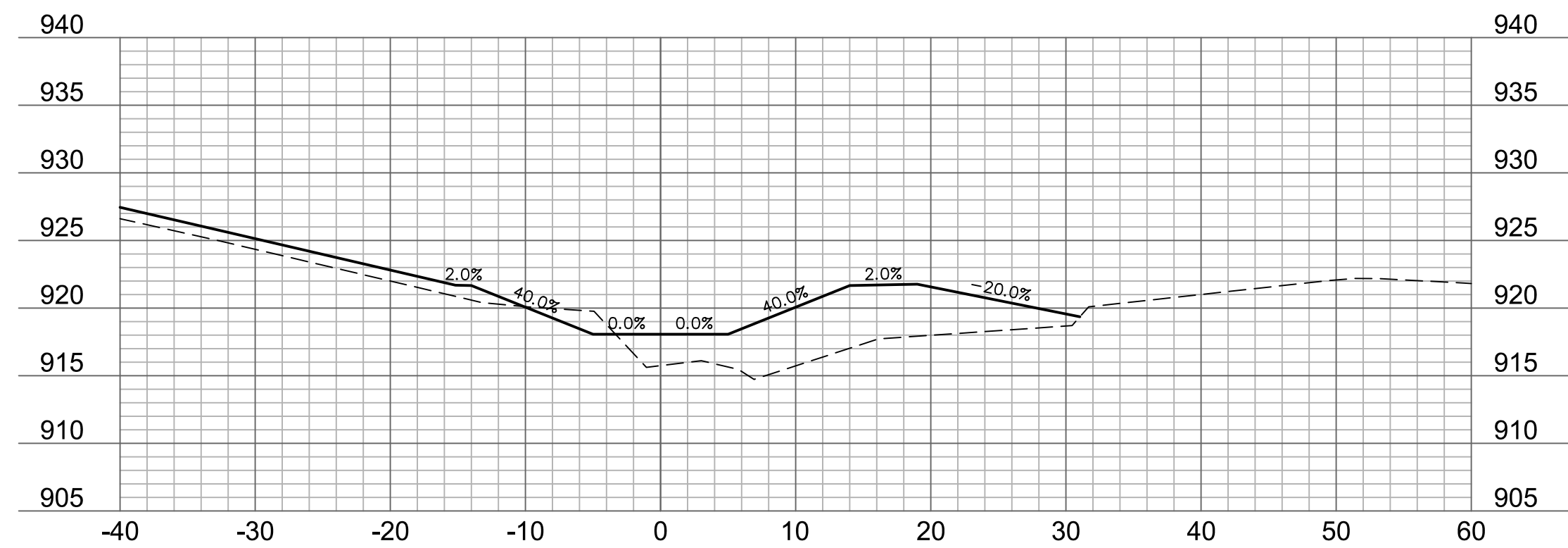
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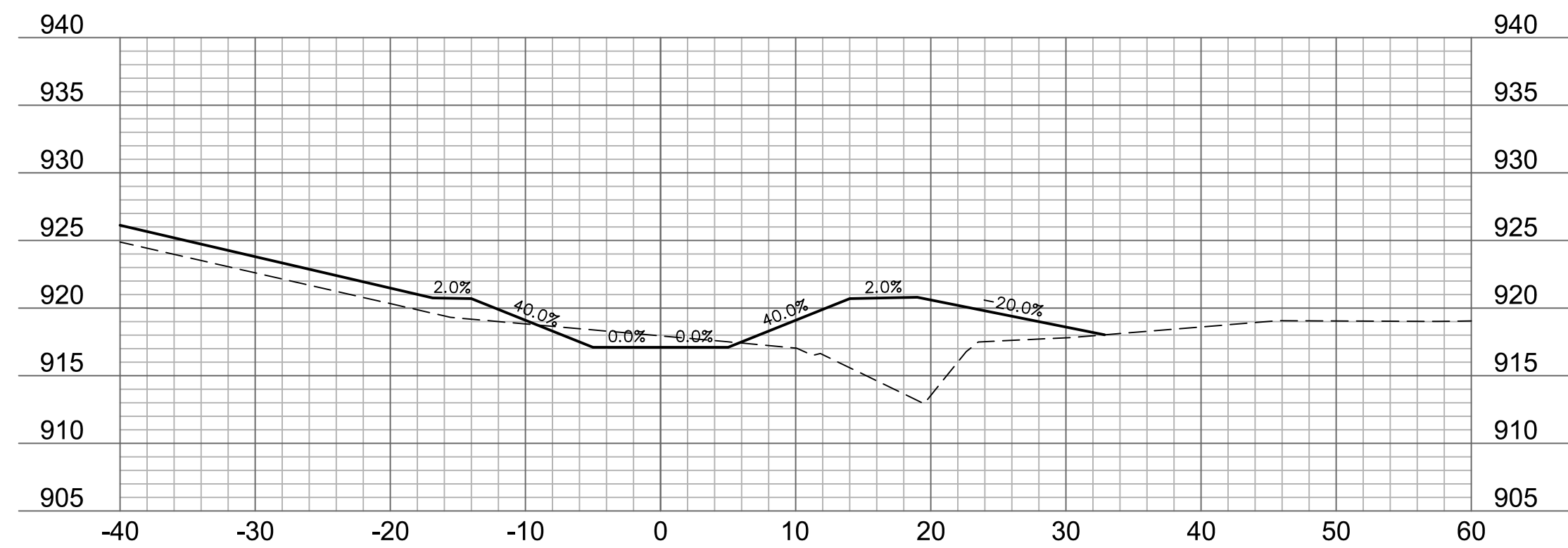
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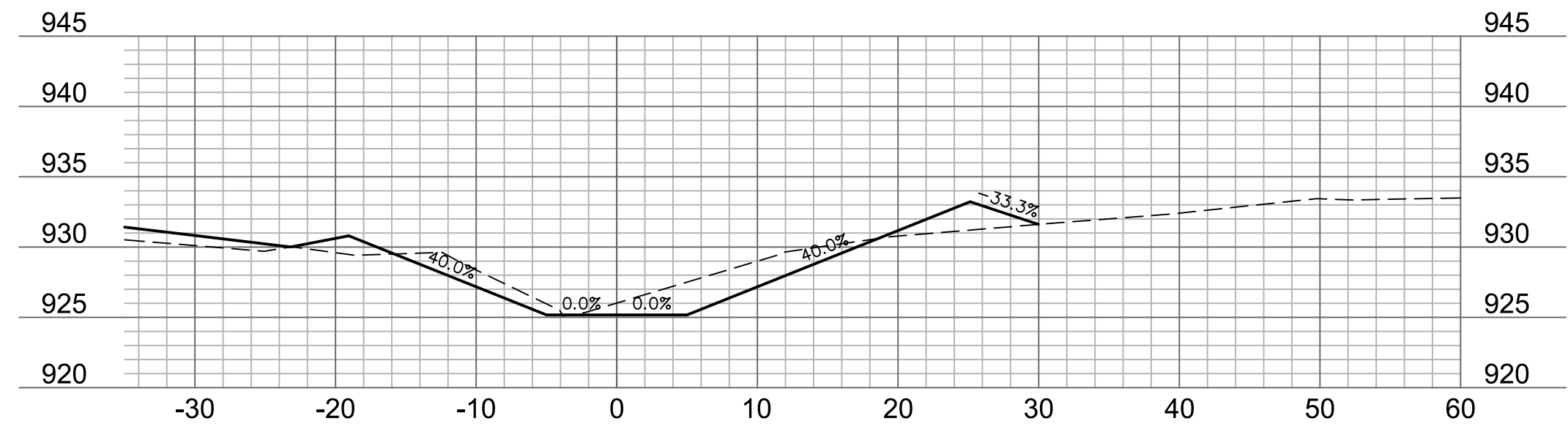
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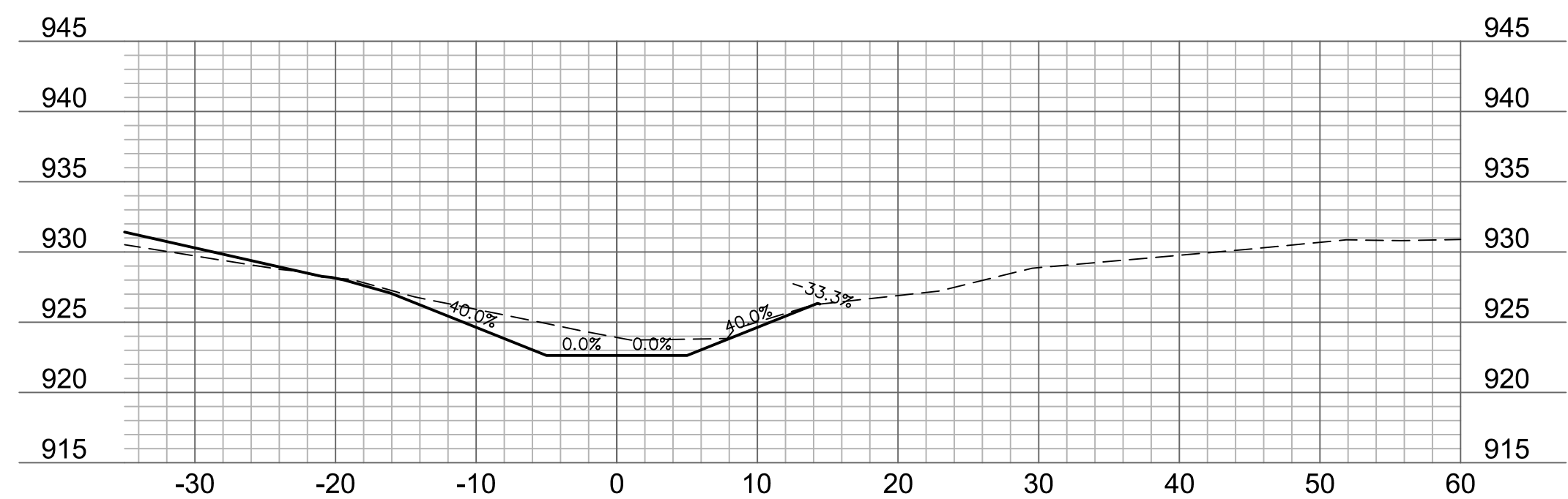
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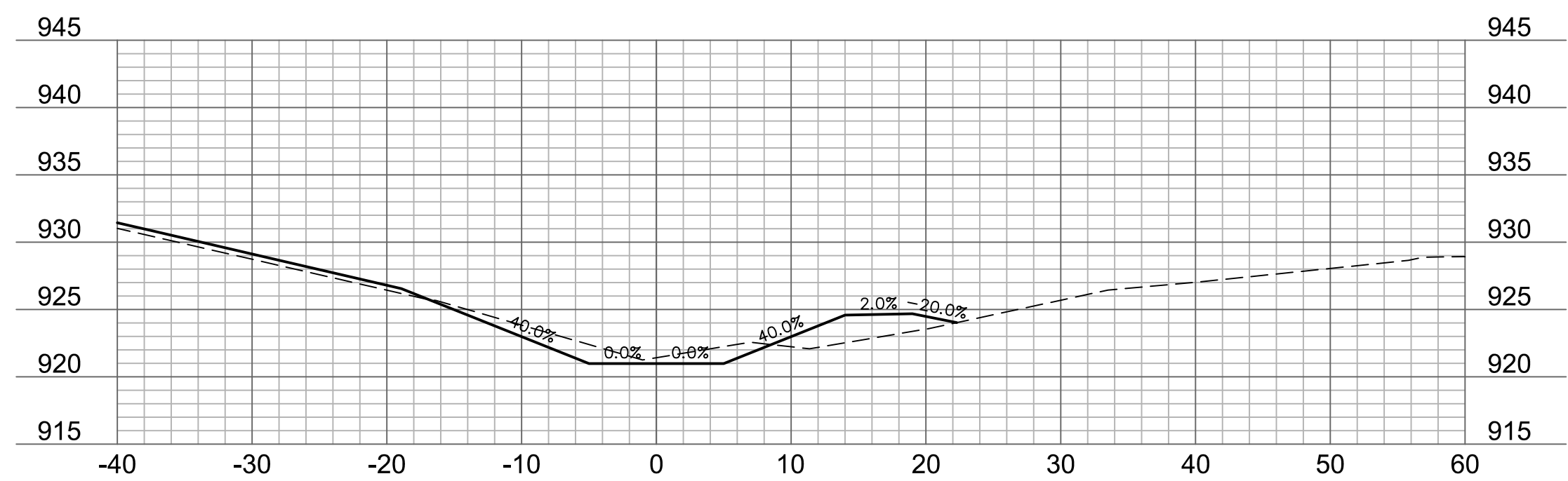
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3+75



3+50



3+25

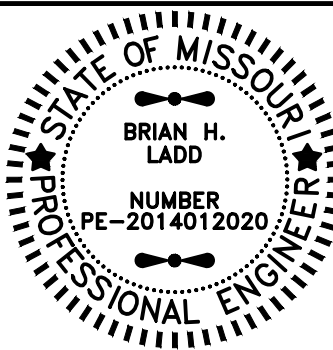


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CHANNEL CROSS SECTIONS

OLD LONGVIEW LAKE DAM & SPILLWAY IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

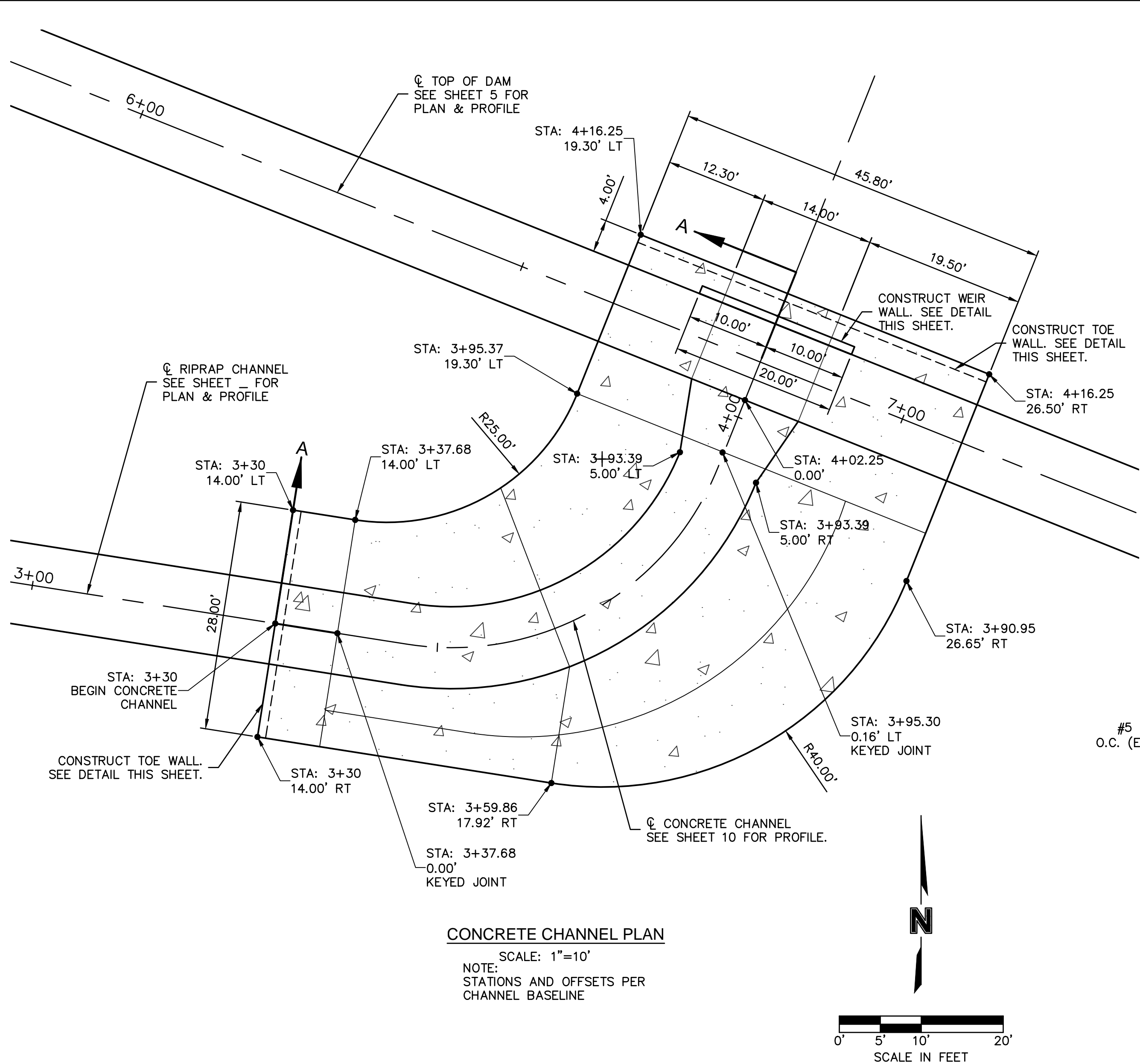
2019

drawn by: _____ KTF
checked by: _____ BHL
approved by: _____ BMJ
QA/QC by: _____ CPJ
project no.: _____ 017-0305
drawing no.: _____
date: _____ 04.04.2019

SHEET
12 OF 21

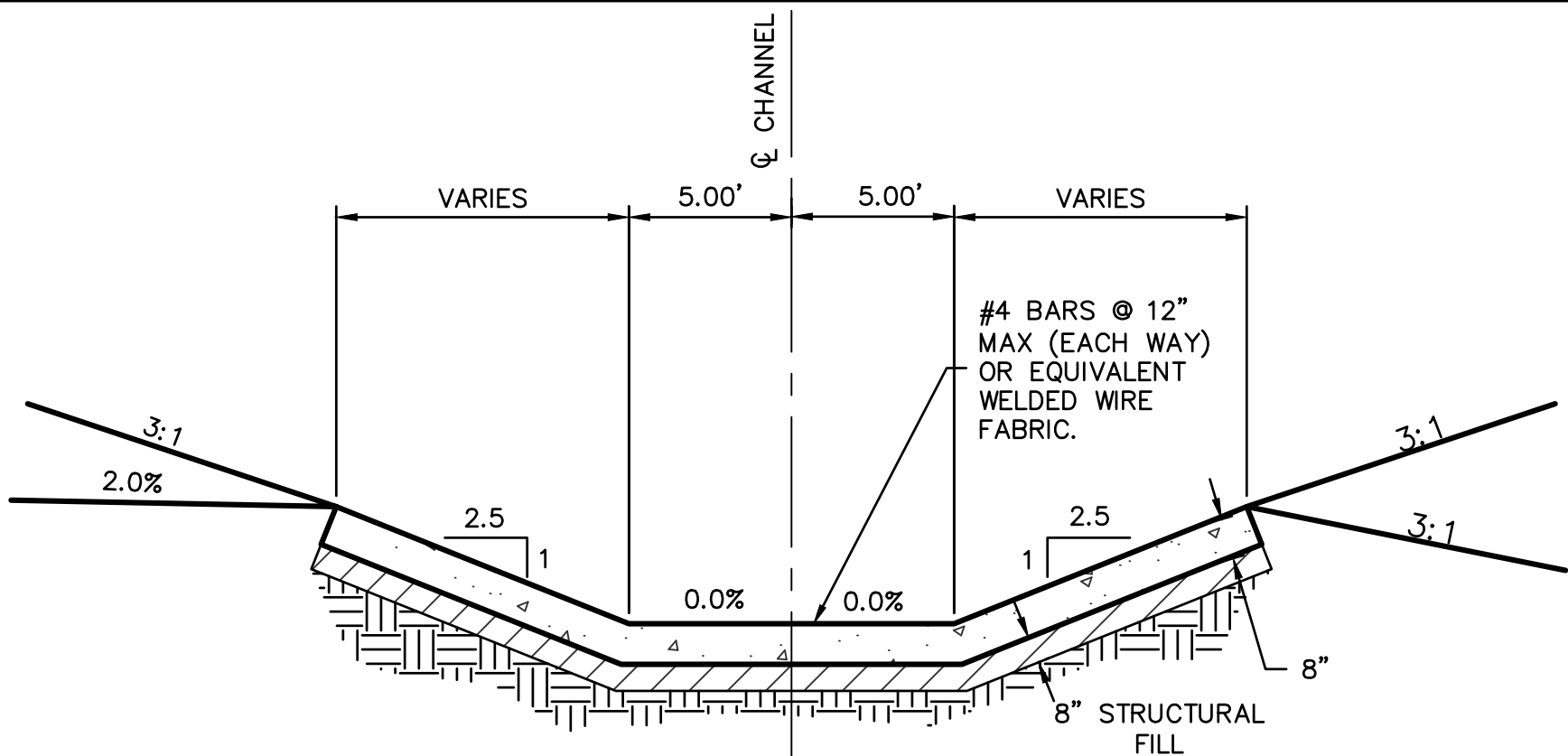
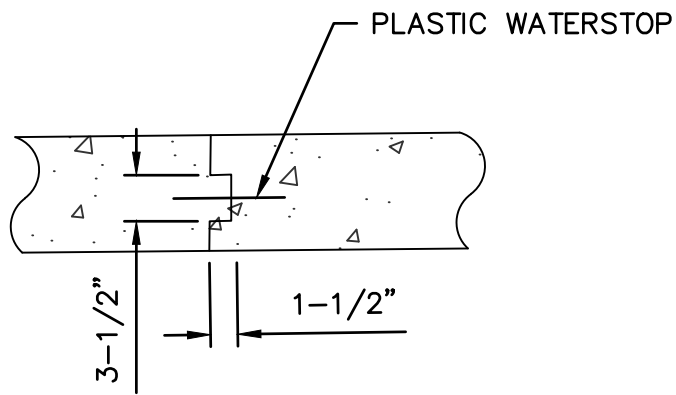
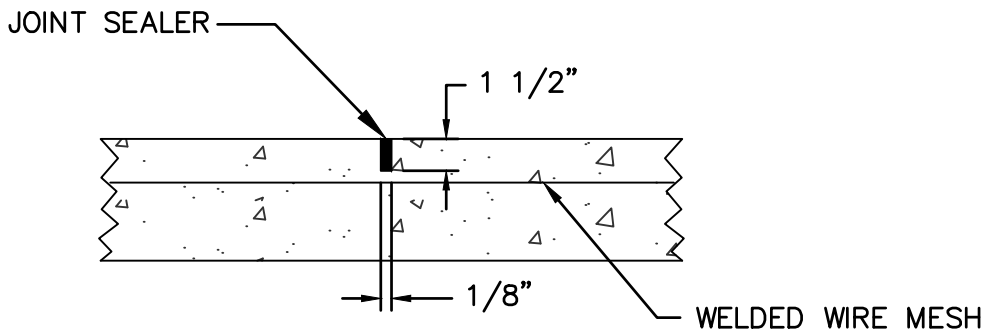
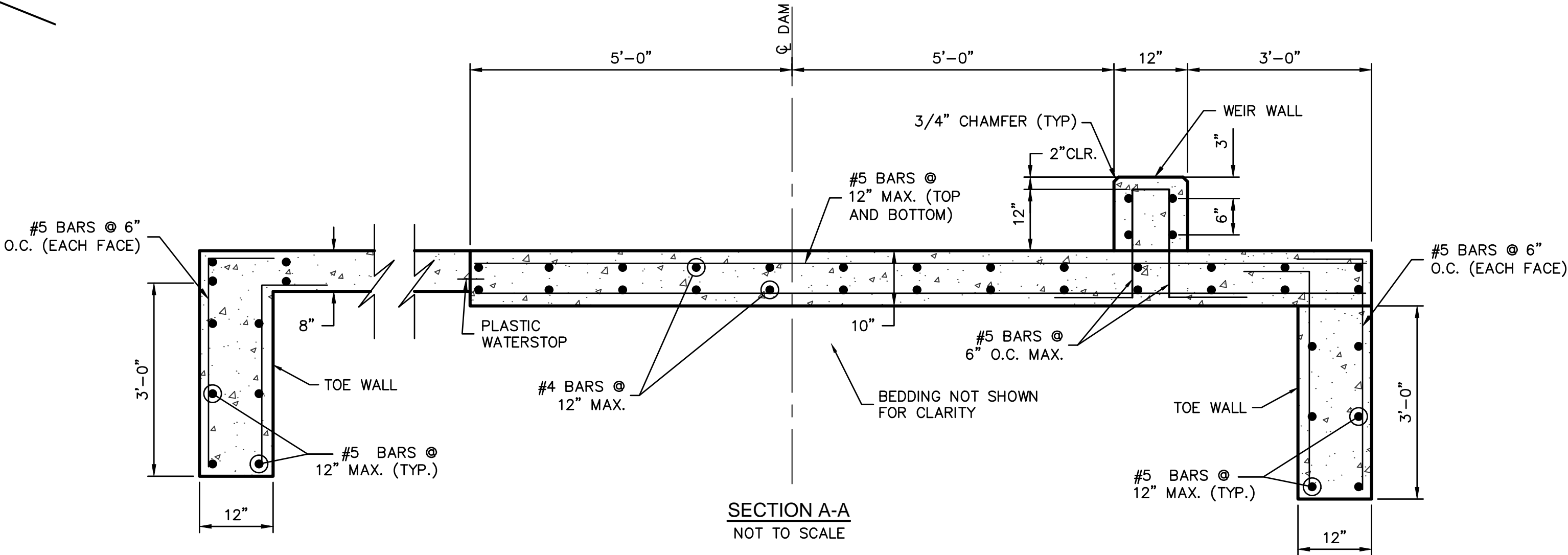
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DATE: Apr 04, 2019 1:18pm
XREFS: w_phase_70305 w_tblk_70305



CONCRETE DITCH LINING NOTES

1. EXPANSION JOINTS SHALL BE PLACED WHERE DITCH LINER ABUTS ANOTHER STRUCTURE, AT 250' CTRS. MAXIMUM, AND AT POINTS OF CURVATURE. TRANSVERSE CONTRACTION JOINTS SHALL BE PLACED AT 10' INTERVALS. IF A POUR IS DELAYED 30 MINUTES OR MORE A TRANSVERSE CONSTRUCTION JOINT SHALL BE SUBSTITUTED FOR A CONTRACTION JOINT AND EXCESS CONCRETE WASTED.
2. DITCH LINER CONSTRUCTION TO BE MINIMUM 8" KCMMB4K CONCRETE.
3. LONGITUDINAL CONSTRUCTION JOINTS SHALL BE PLACED AS SHOWN WHEN WIDTH IS GREATER THAN 10'. DISTANCE BETWEEN JOINTS SHALL NOT EXCEED 10'.
4. ALL CONCRETE USED IN THIS WORK SHALL MEET THE REQUIREMENTS OF THE LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
5. ALL DIMENSIONS RELATIVE TO REINFORCING STEEL ARE TO CENTERLINE OF BARS. 2" CLEARANCE SHALL BE PROVIDED THROUGHOUT UNLESS NOTED OTHERWISE. TOLERANCE OF $\pm \frac{1}{8}"$ SHALL BE PERMITTED.
6. ALL CONCRETE CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENT OF STANDARD SPECIFICATIONS FOR STATE ROAD AND BRIDGE CONSTRUCTION, MISSOURI DEPARTMENT OF TRANSPORTATION, LATEST EDITION, EXCEPT AS MODIFIED IN LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
7. ALL REINFORCING STEEL SHALL BE SUPPORTED ON FABRICATED STEEL BAR SUPPORTS @ 3'-0" MAXIMUM SPACING.
8. DO NOT SCALE THESE DRAWINGS FOR DIMENSIONS OR CLEARANCES. ANY QUESTIONS REGARDING DIMENSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.
9. ALL CONTRACTION JOINTS SHALL BE SEALED WITH A NON-EXTRUDING JOINT SEALER.



NOTE:
PRIOR TO INSTALLATION OF CONCRETE CHANNEL, SUBBASE
SHALL BE CLEARED OF ANY STONE AND SURFACE DEBRIS.

GENERAL NOTES:

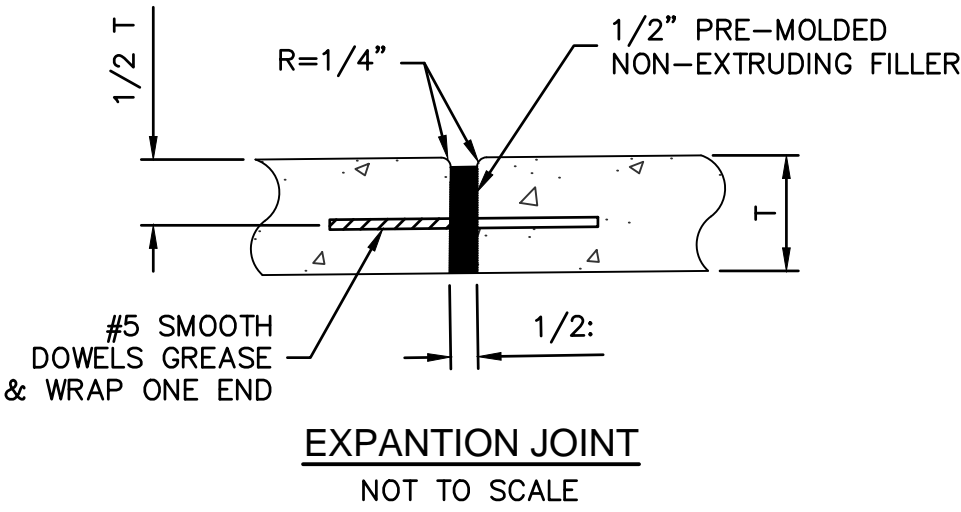
DESIGN CRITERIA: U.S. CORPS OF ENGINEERS STRUCTURAL DESIGN OF CONCRETE LINED FLOOD CONTROL CHANNELS, 1995.

MATERIALS:
CONCRETE, F'C = 4,000 PSI (MIN)
REINFORCING, F_y = 60,000 PSI

BENDS IN REINFORCING SHALL CONFORM TO CRSI MANUAL OF STANDARD PRACTICE.

MINIMUM CLEAR COVER SHALL BE 2" UNLESS OTHERWISE SHOWN.

CONSTRUCTION JOINTS SHALL BE SEALED WITH AN APPROVED PLASTIC JOINT WATERSTOP AND JOINT SEALANT.



NOTES:

1. JOINTS SHALL BE PLACED AT ALL P.C.'s, P.T.'s AND TRANSITIONS.
2. SMOOTH BARS SHALL BE 24" LONG
3. DOWEL BARS SHALL BE LEVEL WHEN PLACED.

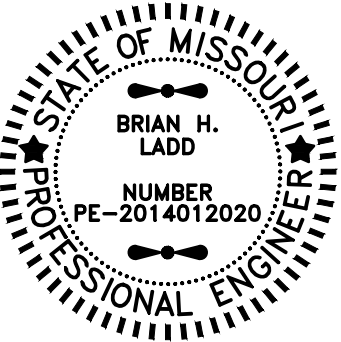
CONCRETE CHANNEL DETAIL

OLD LONGVIEW LAKE
DAM & SPILLWAY IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

drawn by: KTF
checked by: BHL
approved by: BML
QA/QC by: CPL
project no.: 017-0305
drawing no.:
date: 04.04.2019

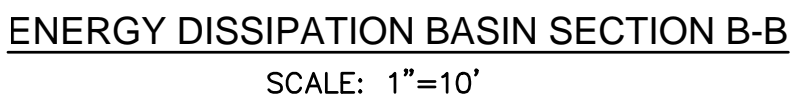
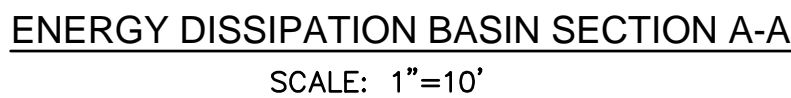
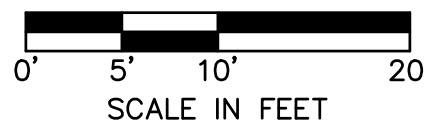
SHEET
13 OF 21



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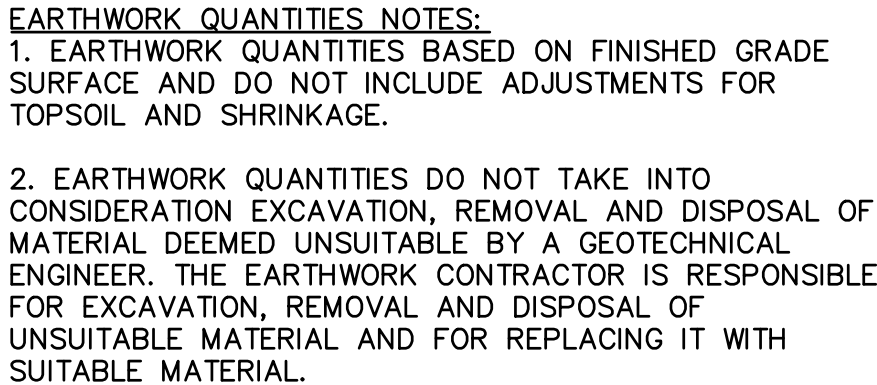
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Plans\Sheets\WTRS\DWG\GENERAL\W_BASIN_70305.dwg



SHEET
14 OF 21

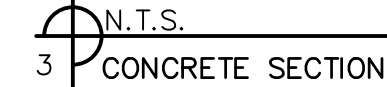
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


SHEET
15 OF 21

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1:19pm

Location	Area Impervious	Required Volume		Provided Volume	Bottom of Forebay	Top of Forebay	Depth of Forebay
	(acres)	Min. (cf)	Max. (cf)	(cf)			(ft)



	PROPOSED STONE RIPRAP
	PROPOSED TRM (PRYAMAT 25)
	PROPOSED CONCRETE



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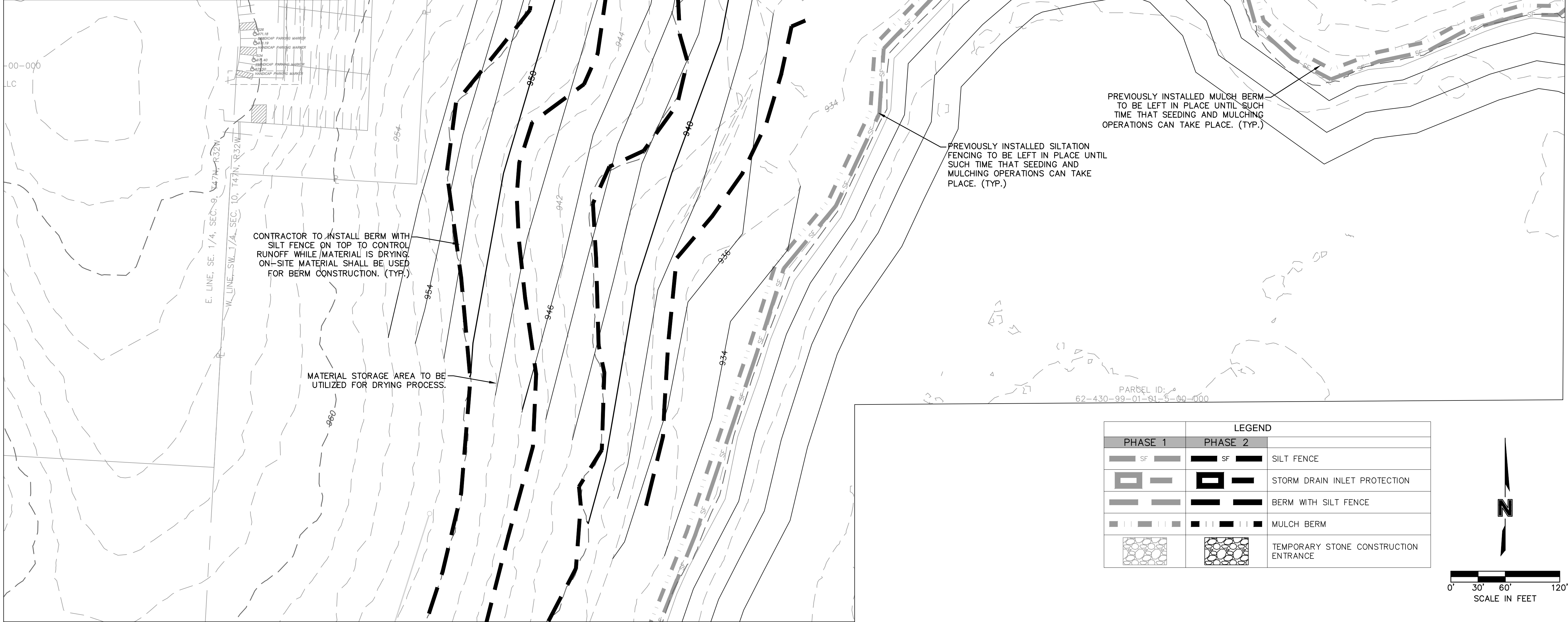
GENERAL NOTES:

SEED & MULCH NOTES:
SEEDING SHALL BE DONE BEFORE THE PROPOSED SEEDBED BECOMES ERODED, CRUSTED OVER, OR DRIED OUT AND SHALL NOT BE DONE WHEN THE GROUND IS FROZEN, OR COVERED WITH SNOW. THE SEED SHALL COMPLY WITH THE REQUIREMENTS OF THE MISSOURI SEED LAW AND THE FEDERAL SEED ACT. ALSO, IT SHALL CONTAIN NO SEED OF ANY PLANT ON THE FEDERAL NOXIOUS WEED LIST. OTHER WEED SEED SHALL NOT EXCEED ONE PERCENT BY WEIGHT OF MIX.

SEED & FERTILIZER RATE:
MIX I - RYE GRASS / BLUE GRASS -----100 LBS. PER ACRE
MIX II - TALL FESCUE / BLUE GRASS -----195 LBS. PER ACRE
LIME -----2000 LBS. PER ACRE (50 LBS. PER 1000 SQ. FT.)
FERTILIZER -----800 TO 1200 LBS. PER ACRE (25 LBS. PER 1000 SQ. FT.)

DURING THE DATES DECEMBER 15TH THROUGH MAY 31 ALL LIME, FERTILIZER, SEED, AND MULCH SHALL BE APPLIED TO FINISHED SLOPES OF DISTURBED AREAS. DURING THE MONTHS OF JUNE, JULY, OCTOBER, AND NOVEMBER 1ST THROUGH DECEMBER 15TH, LIME, FERTILIZER, SEED, AND MULCH SHALL BE APPLIED AT THE FOLLOWING RATES:
LIME - 100 % OF SPECIFIED QUANTITY
FERTILIZER - 75 % OF THE SPECIFIED QUANTITY
SEED - 50 % OF THE SPECIFIED QUANTITY
MULCH - 100 % OF THE SPECIFIED QUANTITY
MULCH SHALL BE VEGETATIVE TYPE, CEREAL STRAW FROM STALKS OF OATS, RYE, OR BARLEY, OR APPROVED EQUAL. THE STRAW SHALL BE FREE OF PROHIBITED WEED SEED AND RELATIVELY FREE OF ALL OTHER NOXIOUS AND UNDESIRABLE SEED. MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE, (70 TO 90 LBS. PER 1000 SQ. FT.). MULCH SHALL BE EMBEDDED BY A MULCH ANCHORING TOOL OR DISK TYPE ROLLER HAVING FLAT SERRATED DISKS SPACED NOT MORE THAN 10 INCHES APART AND CLEANING SCRAPERS SHALL BE PROVIDED.

THE SITE DISTURBANCE PLANS INDICATES THE FINAL PLACEMENT OF EROSION CONTROL DEVICES. THE CONTRACTOR(S) MAY PROCEED WITH THE CONSTRUCTION PRIOR TO THE FINAL PLACEMENT OF THESE DEVICES BY PROVIDING ADDITIONAL DEVICES TO CONTROL EROSION ON THEIR ITEMS OF WORK. THESE DEVICES SHALL BE MAINTAINED UNTIL THE FINAL DEVICES ARE IN PLACE.



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STATE OF MISSOURI
BRIAN H. LADD
NUMBER
FE-2014012020
PROFESSIONAL ENGINEER

SEDIMENT REMOVAL EROSION CONTROL PLAN

OLD LONGVIEW LAKE
DAM & SPILLWAY IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

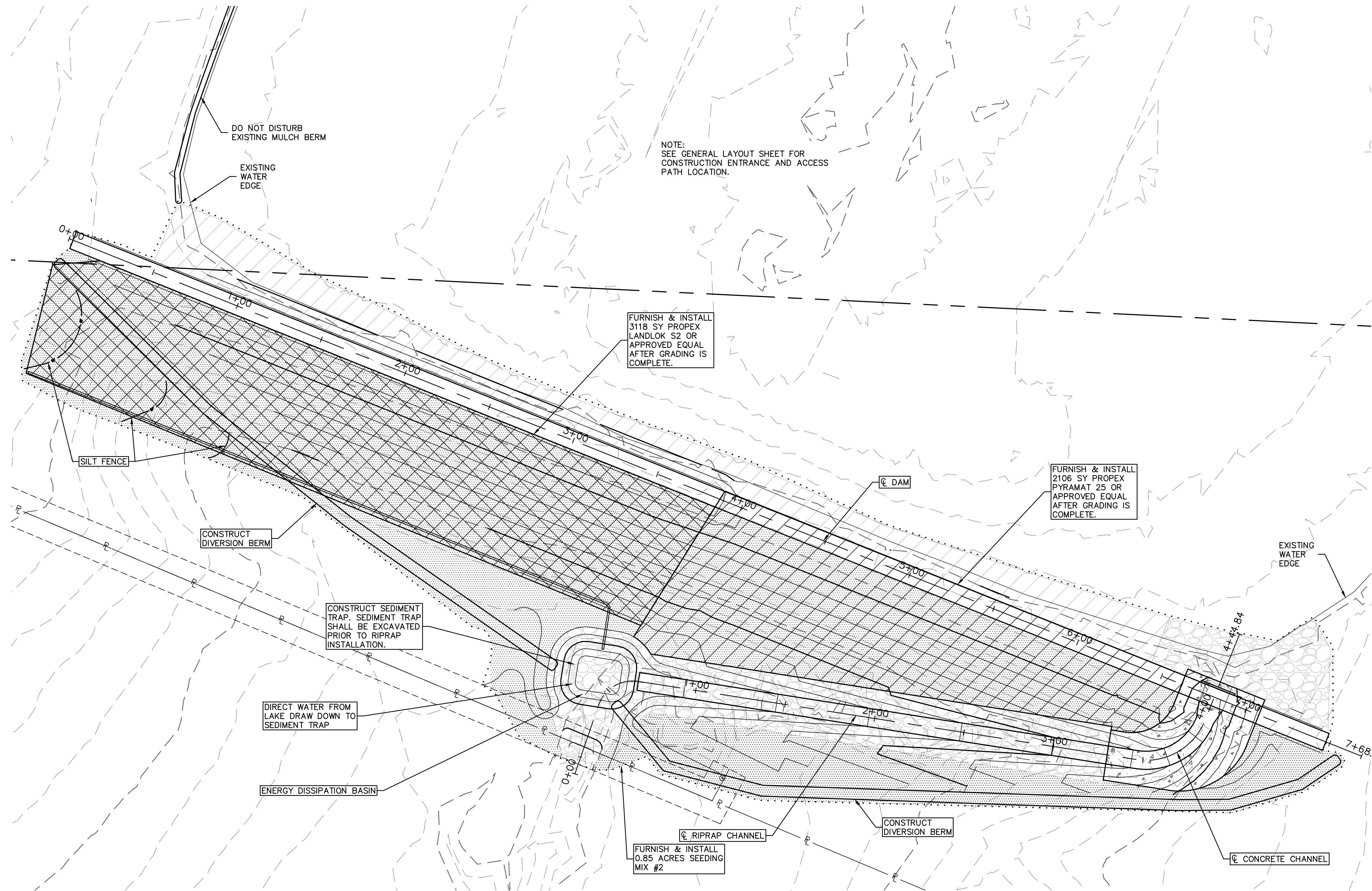
REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

drawn by: KTF
checked by: BHL
approved by: BML
QA/QC by: CPL
project no.: 017-0305
drawing no.:
date: 04.04.2019

SHEET
18 OF 21

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LEGEND

-
- EXISTING CONTOUR
- PROPOSED RIPRAP
- SEEDING
- DIVERSION BERM
- SILT FENCE

NOTE:
SEE GENERAL LAYOUT SHEET FOR
CONSTRUCTION ENTRANCE AND ACCESS
PATH LOCATION.

FURNISH & INSTALL
3118 SY PROPEX
LANDLOK S2 OR
APPROVED EQUAL
AFTER GRADING IS
COMPLETE.

FURNISH & INSTALL
2106 SY PROPEX
PYRAMAT 25 OR
APPROVED EQUAL
AFTER GRADING IS
COMPLETE.

CONSTRUCT SEDIMENT TRAP. SEDIMENT TRAP SHALL BE EXCAVATED PRIOR TO RIPRAP INSTALLATION.

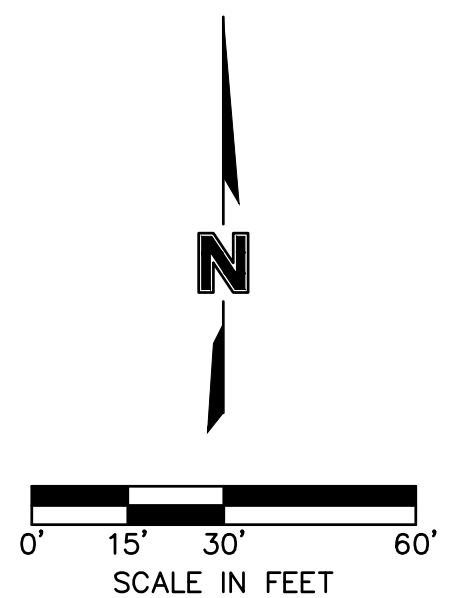
DIRECT WATER FROM
LAKE DRAW DOWN TO
SEDIMENT TRAP

ENERGY DISSIPATION BASIN

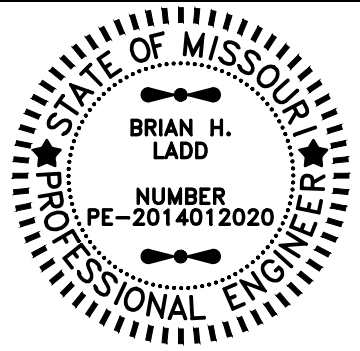
FURNISH & INSTALL 0.85 ACRES SEEDING MIX #2	
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CONSTRUCT
DIVERSION BERM

④ CONCRETE CHANNEL



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SURFACE RESTORATION AND EROSION CONTROL PLAN

OLD LONGVIEW LAKE DAM & SPILLWAY IMPROVEMENTS

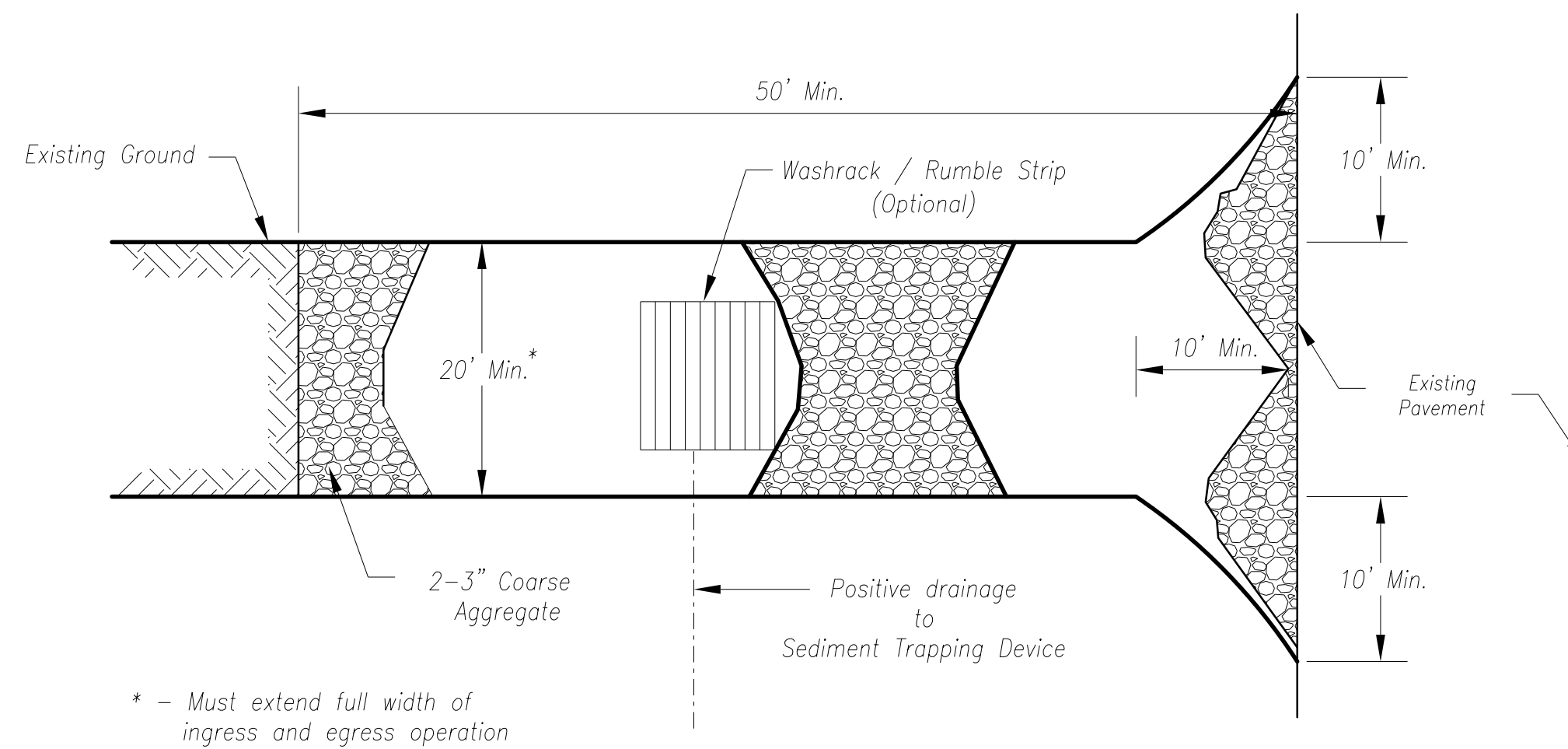
LEE'S SUMMIT, MISSOURI	2019
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drawn by: _____ KTF
checked by: _____ BHL
approved by: _____ BMJ
QA/QC by: _____ CPJ
project no.: _____ 017-0305
drawing no.: _____
date: _____ 04.04.2019

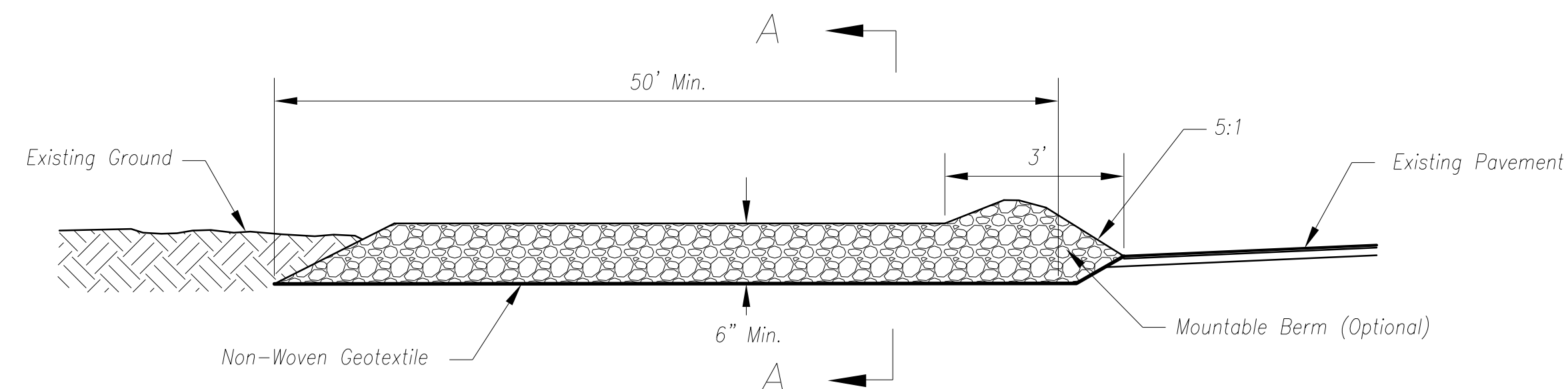
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19 OF 21

SECTION 6

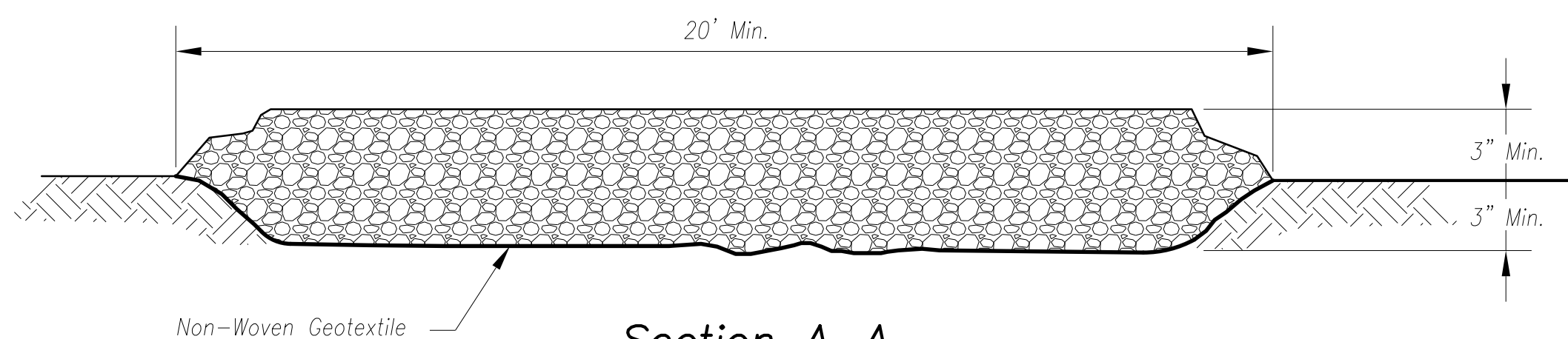
BMP Specification & Detail Sheets



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.

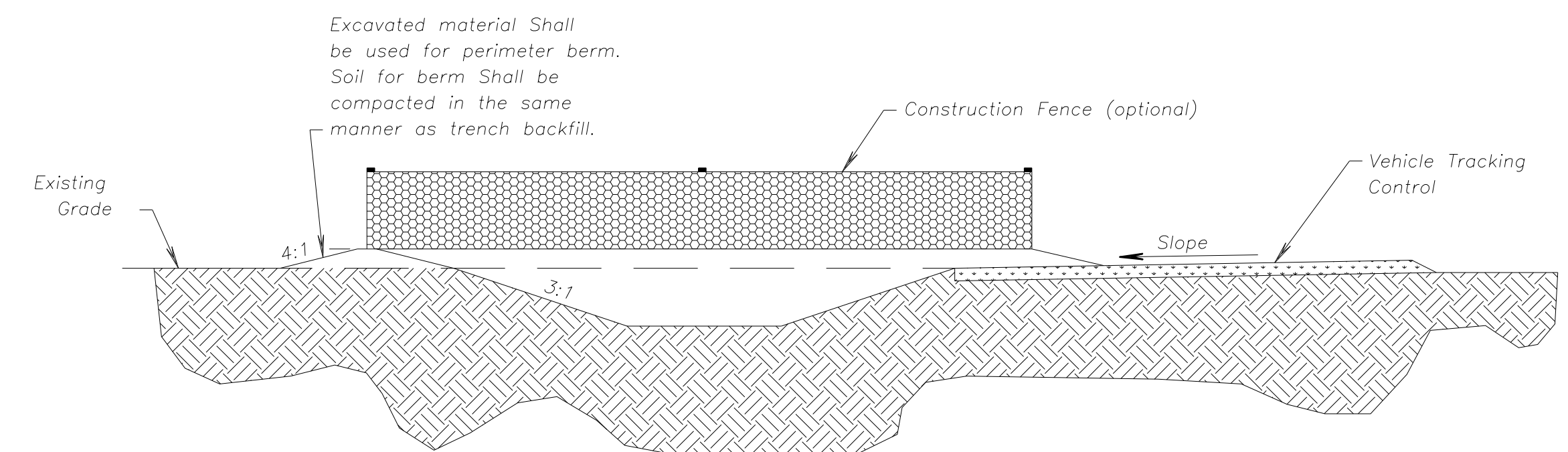
CONSTRUCTION ENTRANCE

Notes for Concrete Washout:

1. Concrete washout areas shall be installed prior to any concrete placement on site.
2. Concrete washout area 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 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.

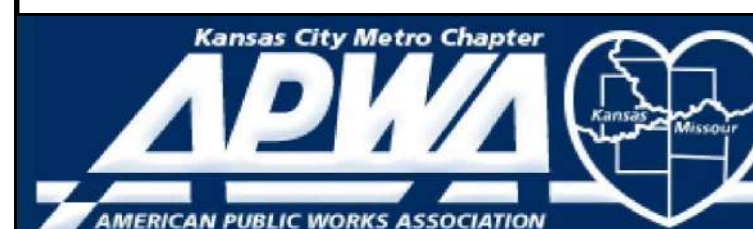
Maintenance for Concrete Washout:

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



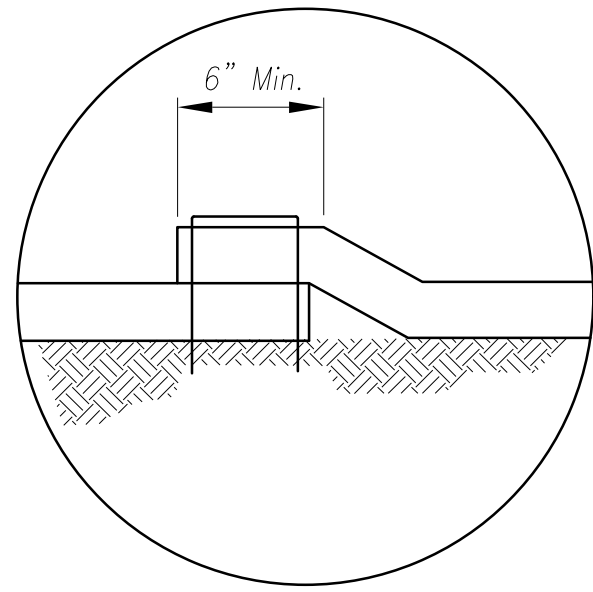
KANSAS CITY
METRO CHAPTER

CONSTRUCTION ENTRANCE
AND CONCRETE WASHOUT

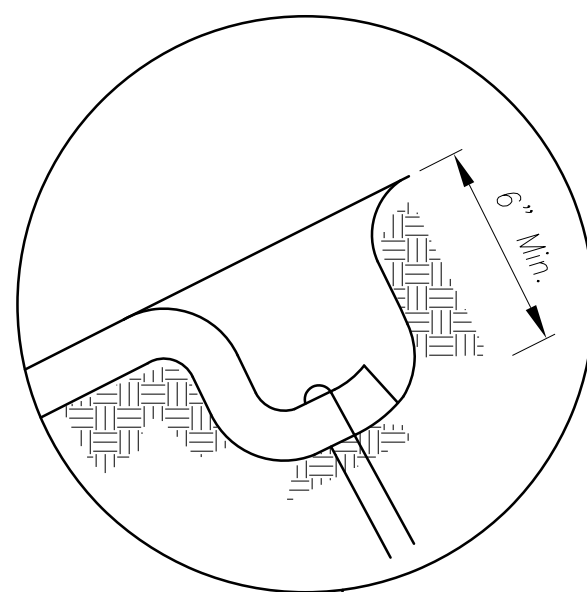
STANDARD DRAWING
NUMBER ESC-01
ADOPTED:
10/24/2016

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.

Longitudinal Seam



Anchor Slot



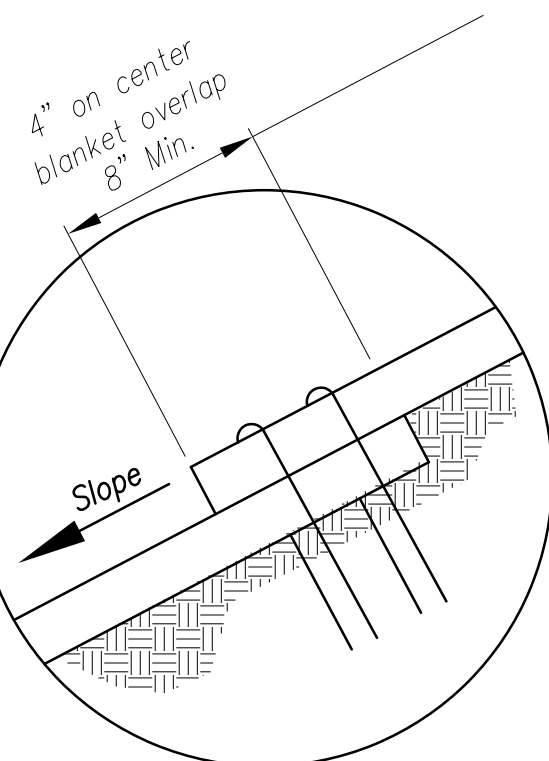
General Notes:

1. APWA Specifications 2150 and Design Guidance 5100 shall be referenced to select type of blanket or mat to be used.
2. Typical anchors and pattern/spacing shall be installed according to the manufacturers instructions.
3. LONGITUDINAL SEAMS: The edges of the blanket or mat should overlap each other a minimum of 6 inches, with anchors catching the edges of both blankets.

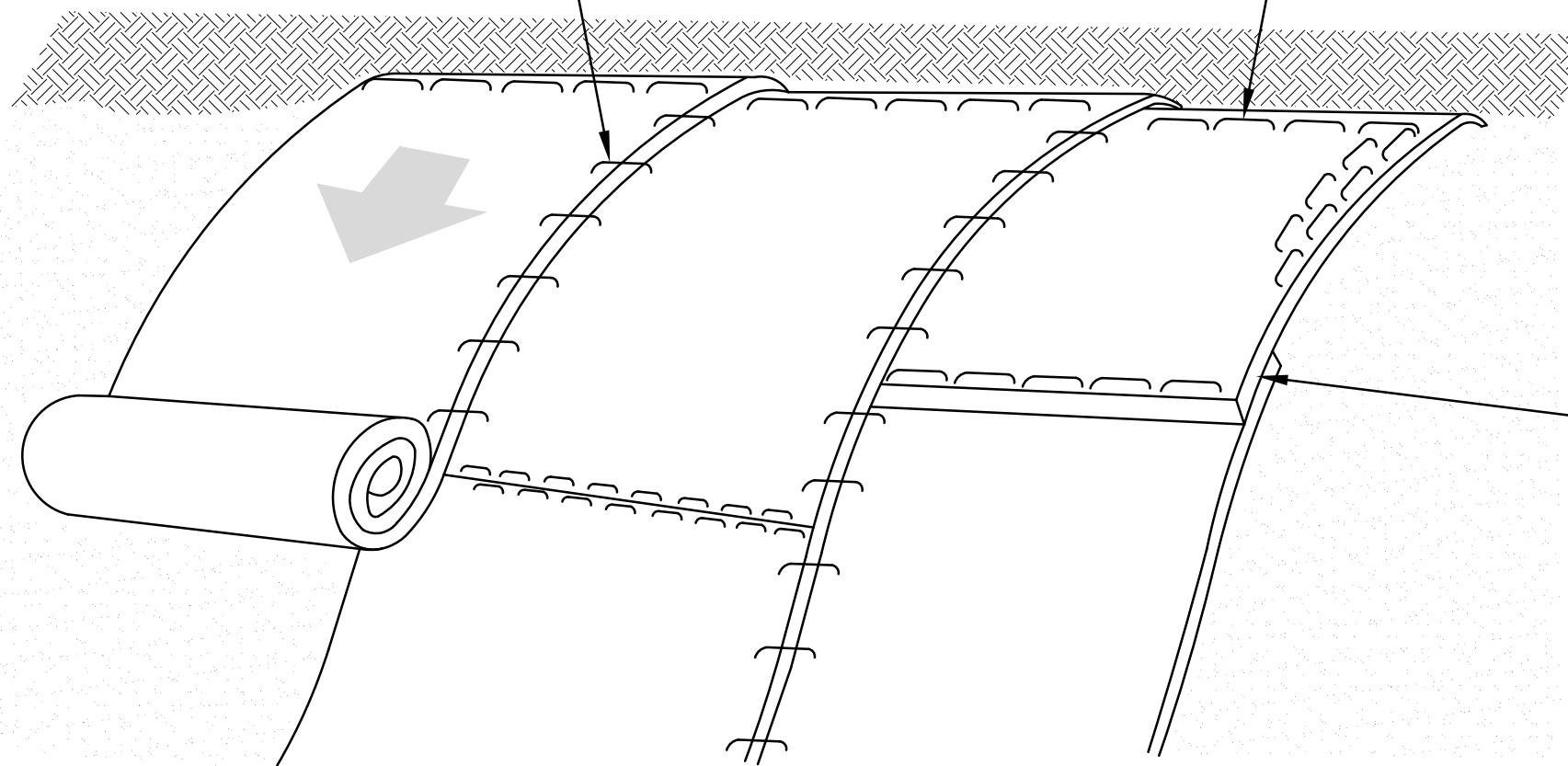
Maintenance:

1. Torn or degraded product shall be repaired or replaced, unless such degradation is within the functional longevity specified by the manufacturer.
2. Edges or seams that are loose or frayed shall be secured.

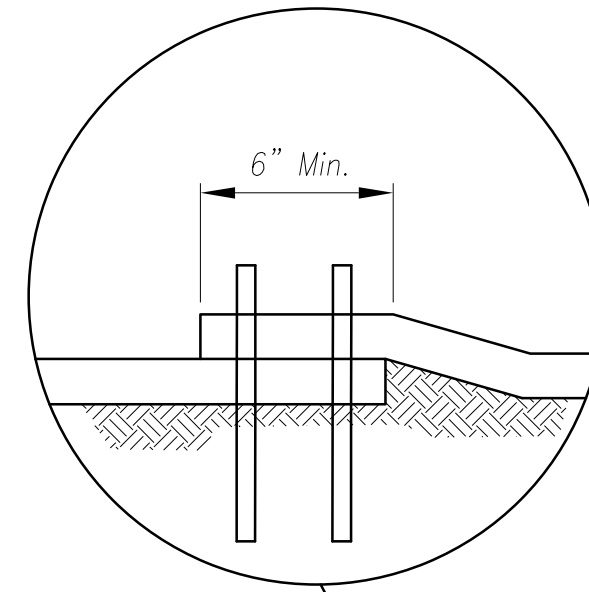
Splice Seam



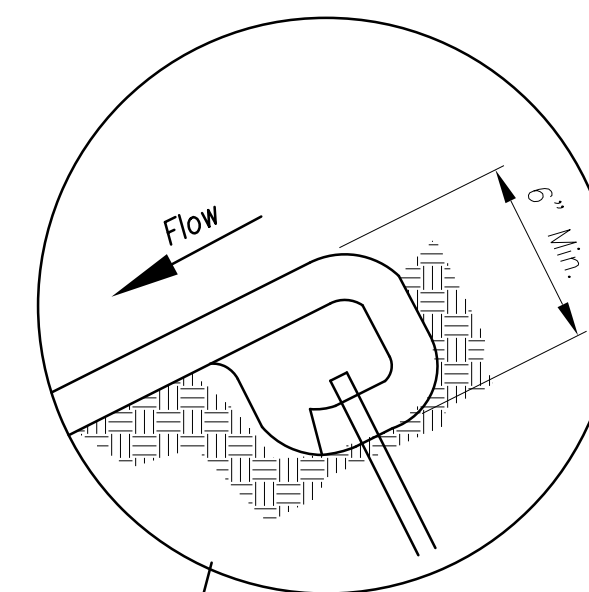
Installation on Slopes



Longitudinal Seam



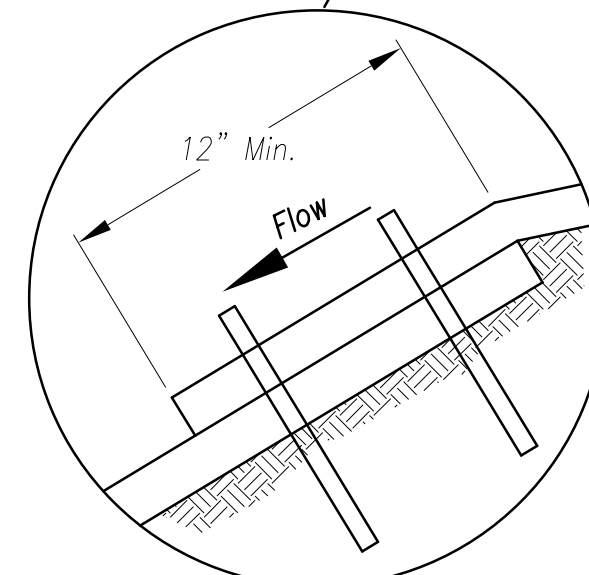
Anchor Fold



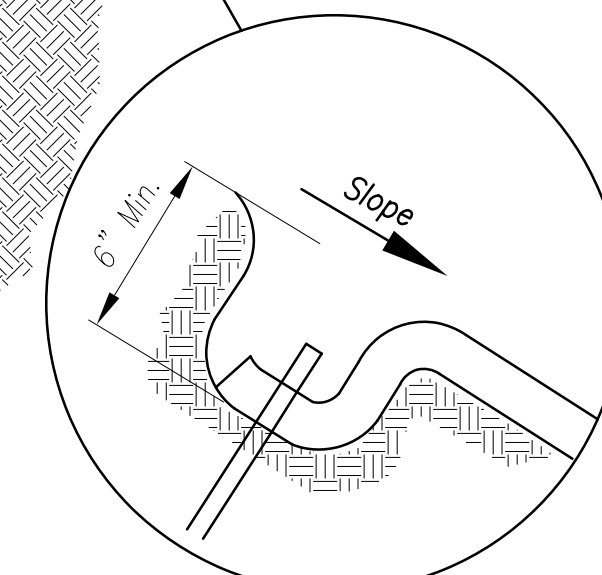
Notes for Installation in Channels:

1. Erosion Control Blankets and TRMs shall be laid in the direction of the flow, with the first course at the centerline of channel, where applicable. In order for the mat to be in contact with the soil, lay the mat loosely, avoiding stretching.
2. ANCHOR FOLD: The top of the mat should be folded under, buried and secured with wood or other approved anchors placed 6 inches apart. The top edge of the mat should be buried in a slot 6 inches wide x 6 inches deep, anchored in the bottom of the slot, backfilled, and the mat folded over the top as shown in detail.
3. SPLICE SEAM: When splices are necessary, overlap end a minimum of 12 inches in direction of water flow. Stagger splice seams.
4. CHECK SLOTS: Establish check slots transverse to slope every 30 feet. The slots should be 6 inches wide x 6 inches deep. The mat shall be cut to a length 12 inches beyond the slot. The top of the downstream mat shall be slotted in, secured and buried similar to the edge anchor fold. The upstream mat shall then cover the slot and be anchored as shown.
5. EDGE ANCHORS: Lay outside edge of mat into trench at top of the slope and anchor.
6. TERMINUS: The bottom edge of the mat shall be anchored.

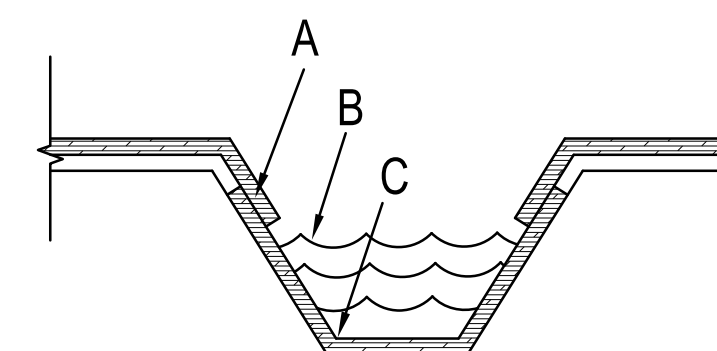
Splice Seam



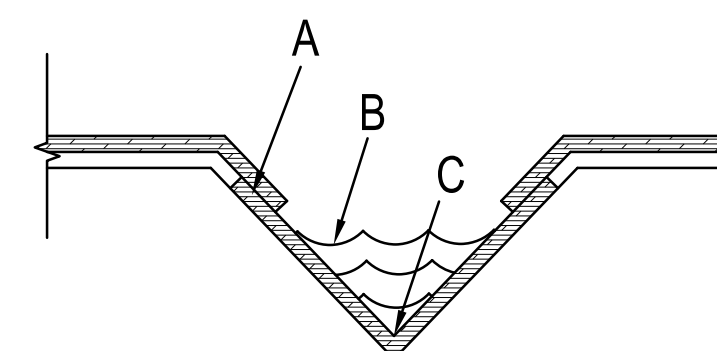
Edge Anchor



Trapezoidal Channel



V Channel

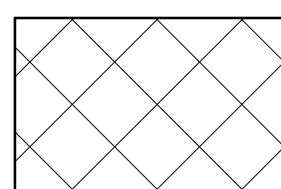


Critical Points:

- A – Overlaps and seams;
- B – Projected water line;
- C – Channel bottom / side slope vertices;

Notes for Installation on Slopes:

1. Erosion Control Blankets and TRMs shall be laid in the direction of the slope. In order for blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.
2. ANCHOR SLOTS: The top of the blanket should be "slotted in" at the top of the slope and anchored in place with anchors 6 inches apart. The slots should be 6 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.
3. SPLICE SEAM: When splices are necessary, overlap end a minimum of 8 inches in direction of water flow. Stagger splice seams.
4. TERMINAL FOLD: The bottom edge of the blanket shall be turned under a minimum of 4 inches, then anchored in place with anchors 9 inches apart.



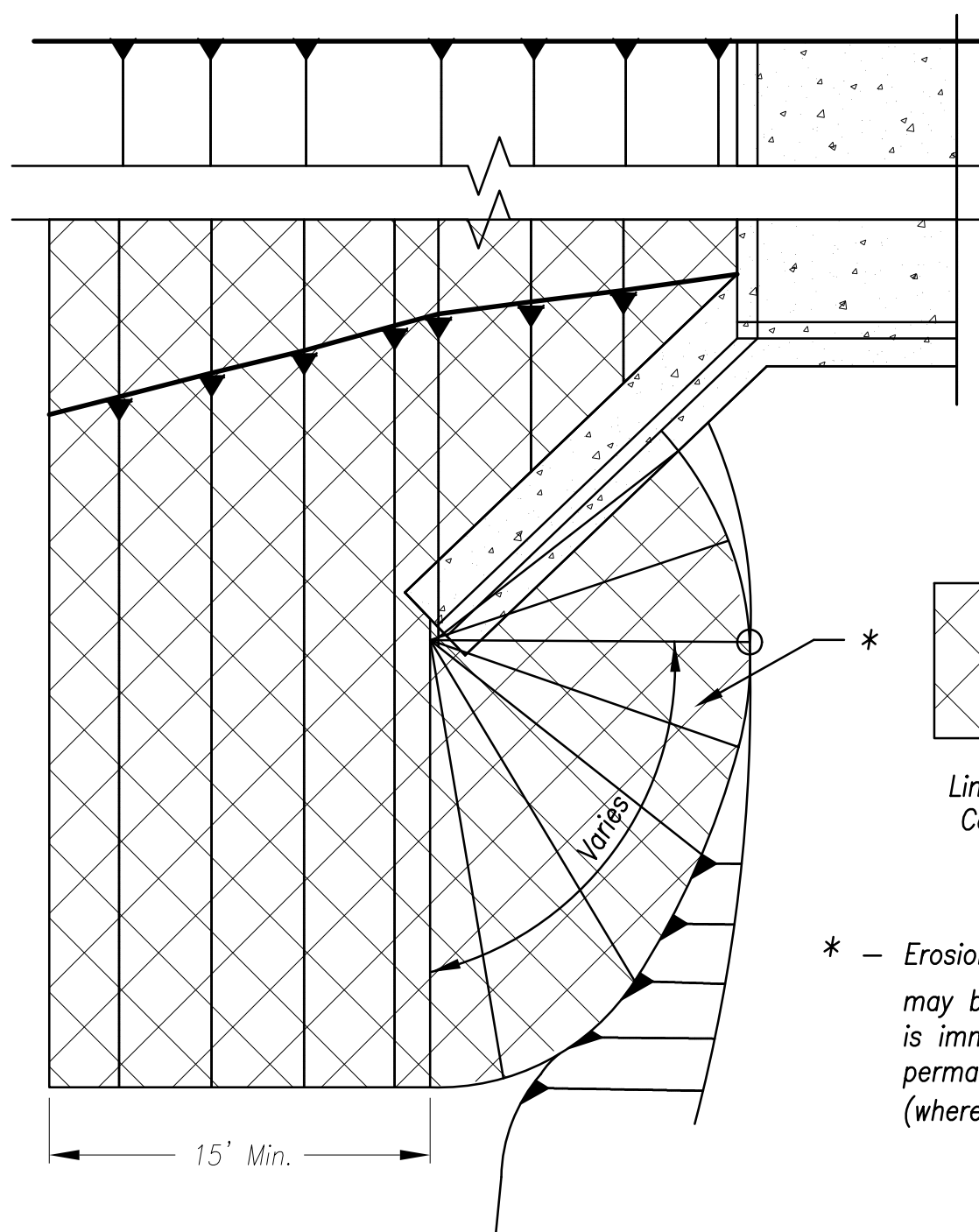
Limits of Erosion Control Blanket

- * – Erosion Control Blanket or TRM may be omitted if the area is immediately covered by permanent slope protection (where directed by the plans)

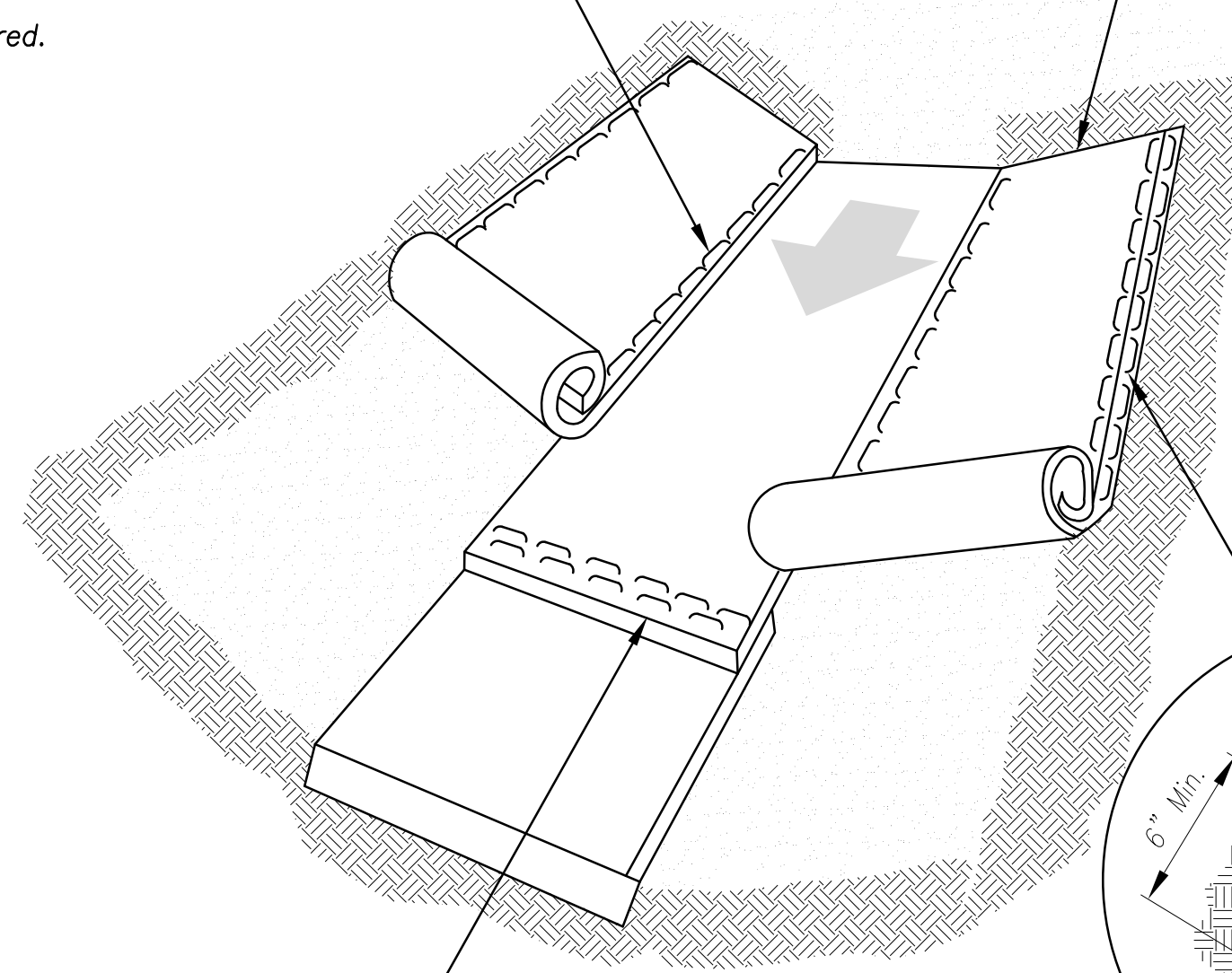
Partial Box Culvert Plan

Not to Scale

Installation Around Culvert Slope



Installation in Channels



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

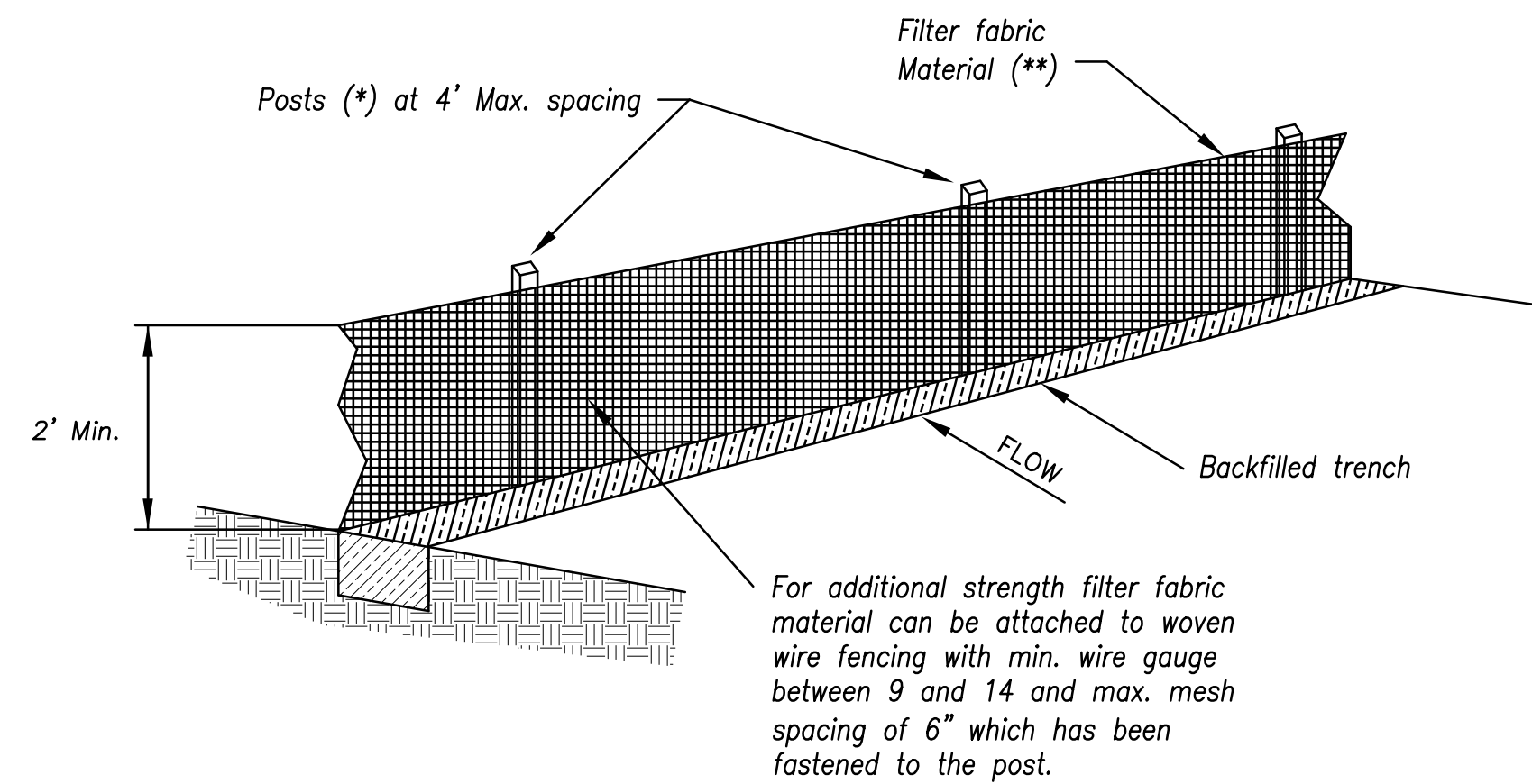
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KANSAS CITY
METRO CHAPTER

EROSION CONTROL BLANKETS
AND TURF REINFORCEMENT MATS

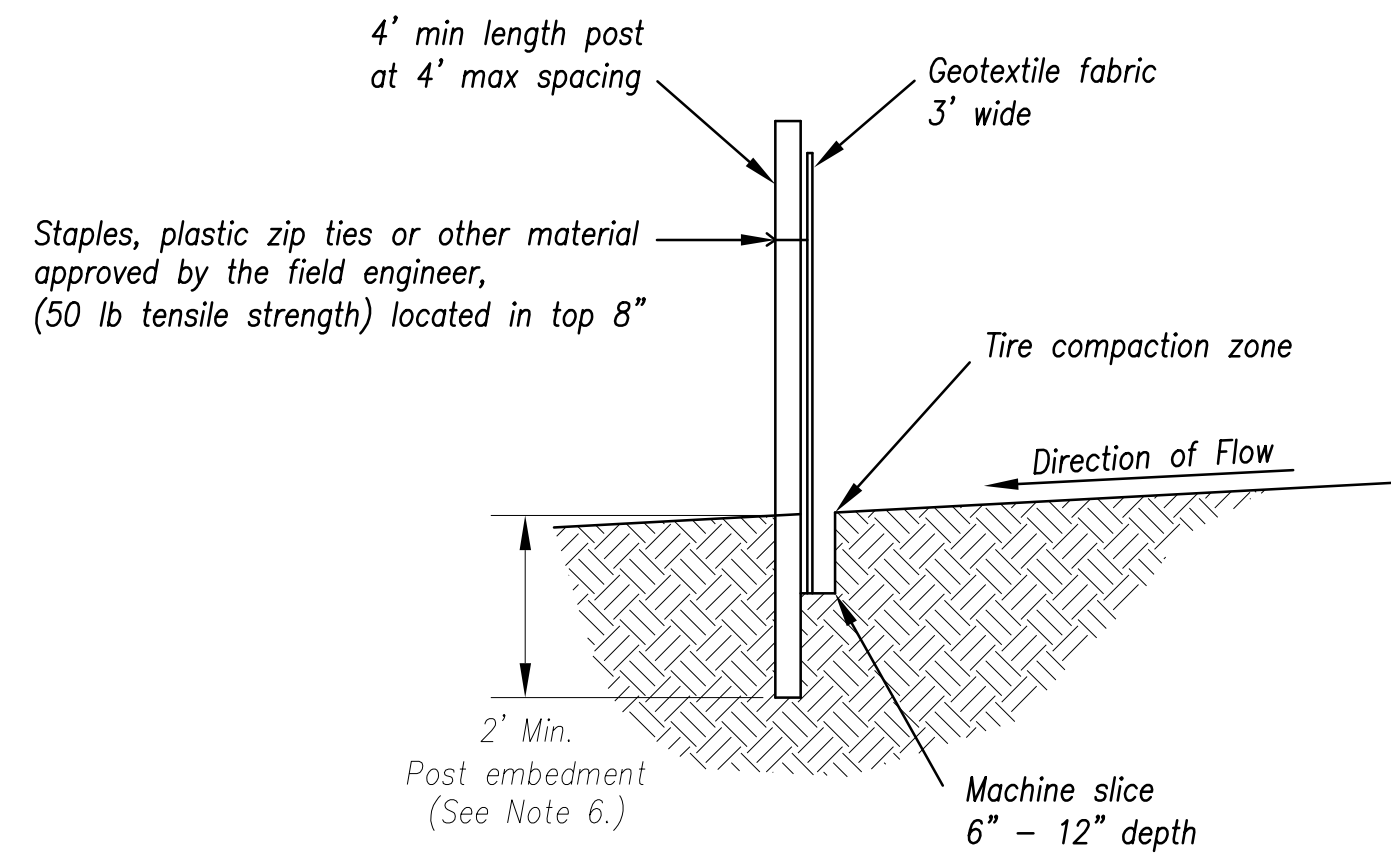
STANDARD DRAWING
NUMBER ESC-02
ADOPTED:
10/24/2016



- (*) POSTS
- MIN. LENGTH 4'
 - HARDWOOD 1 $\frac{3}{16}$ " x 1 $\frac{3}{16}$ "
 - NO.2 SOUTHERN PINE 2 $\frac{5}{8}$ " x 2 $\frac{5}{8}$ "
 - 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 $\frac{1}{3}$ the height of silt fence.
2. Repair as necessary to maintain function and structure.

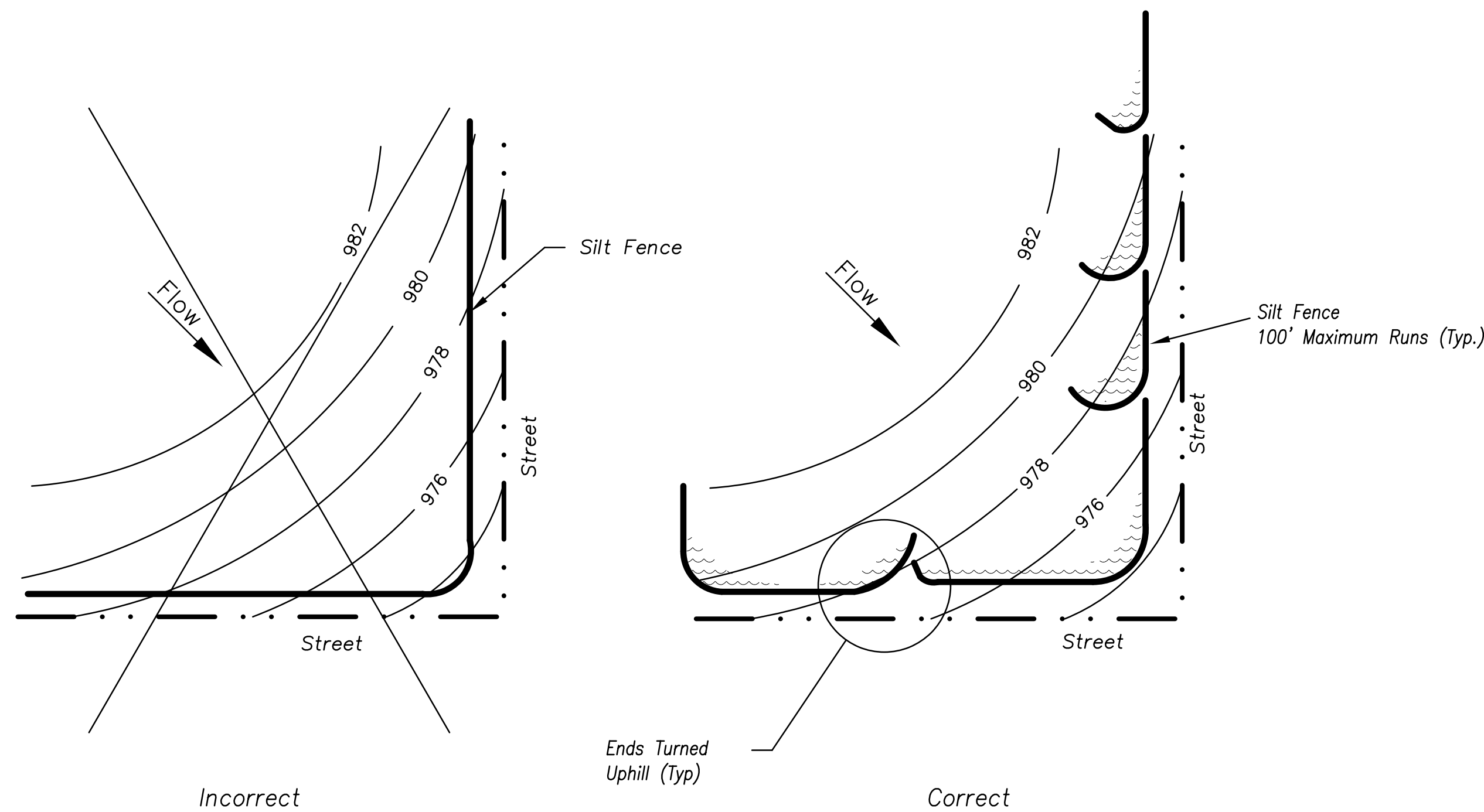
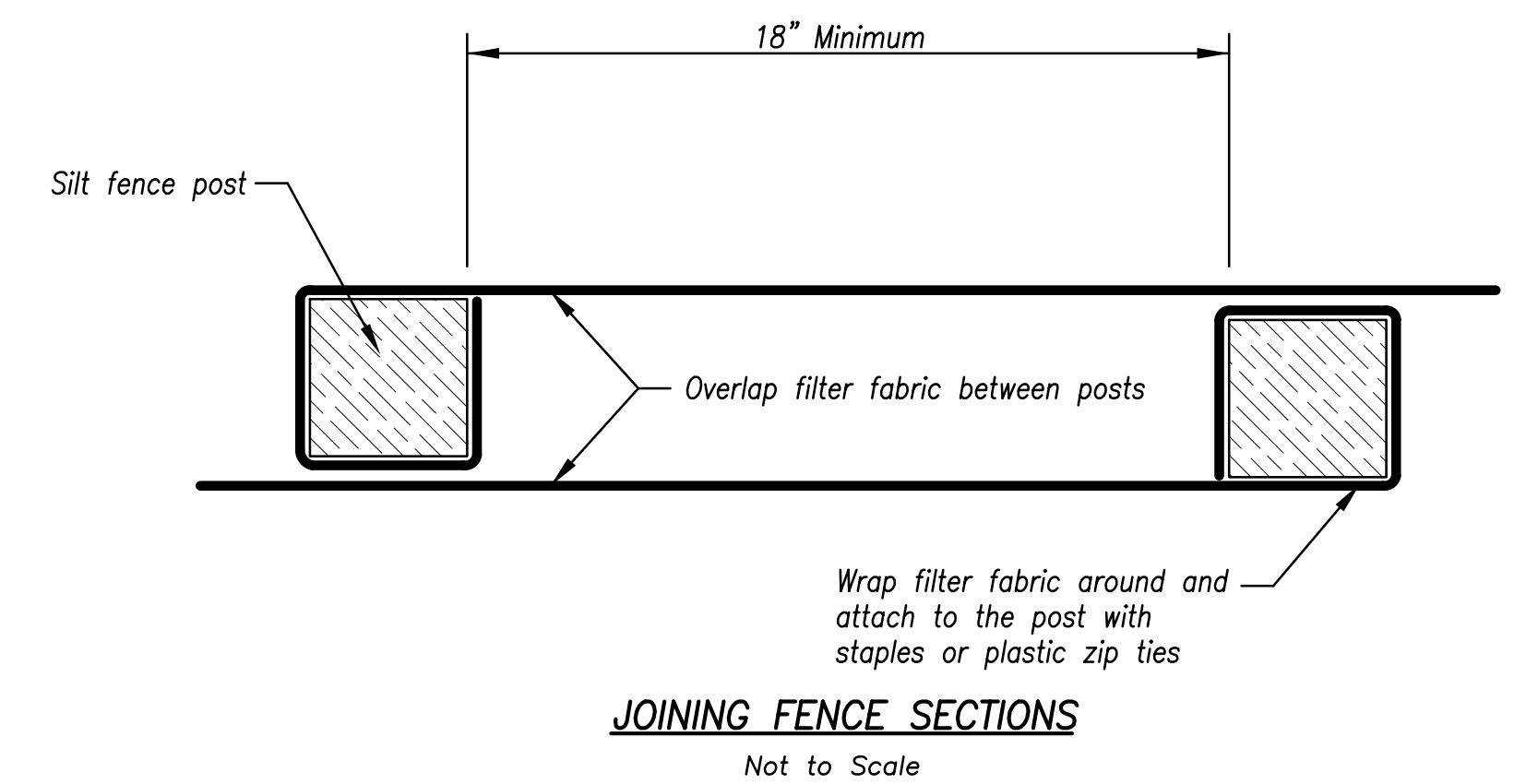
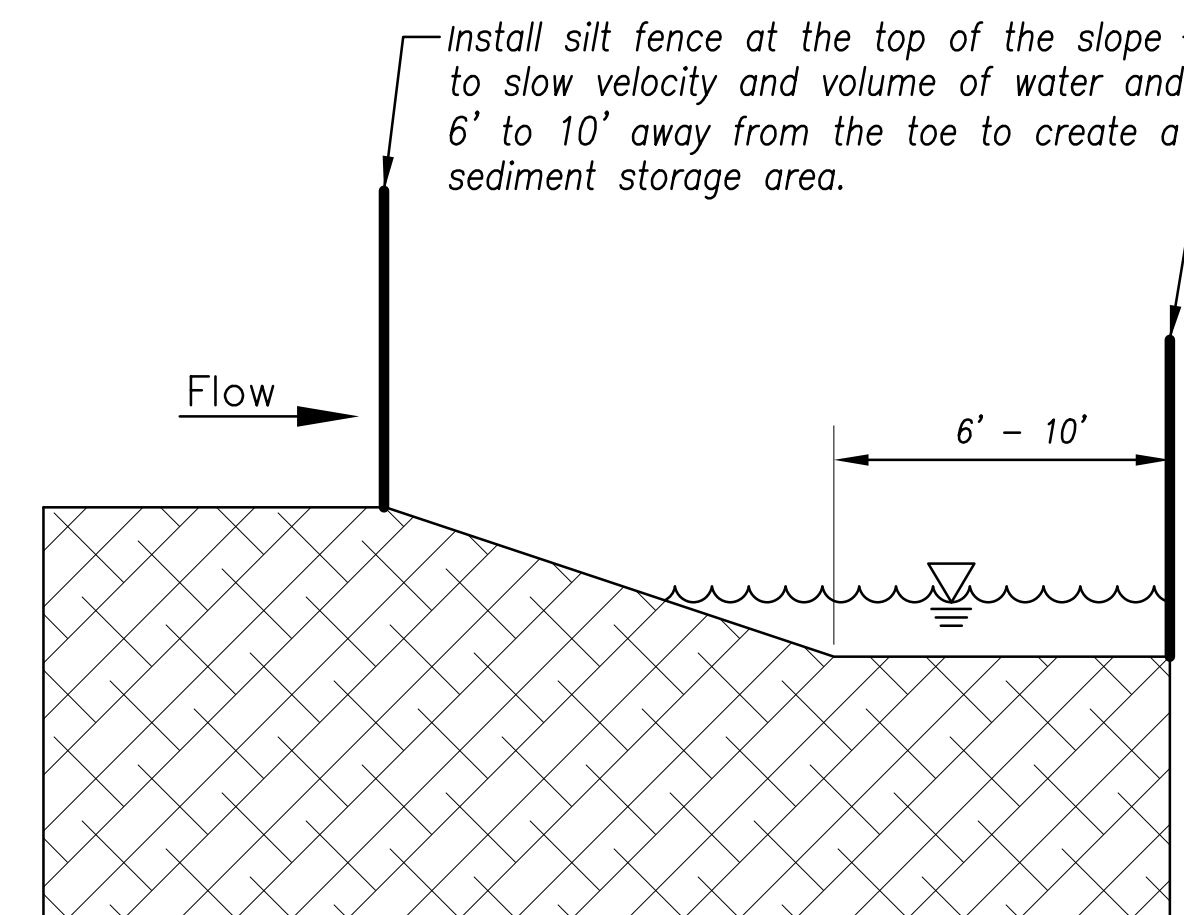


Figure A

SILT FENCE LAYOUT
Not to Scale



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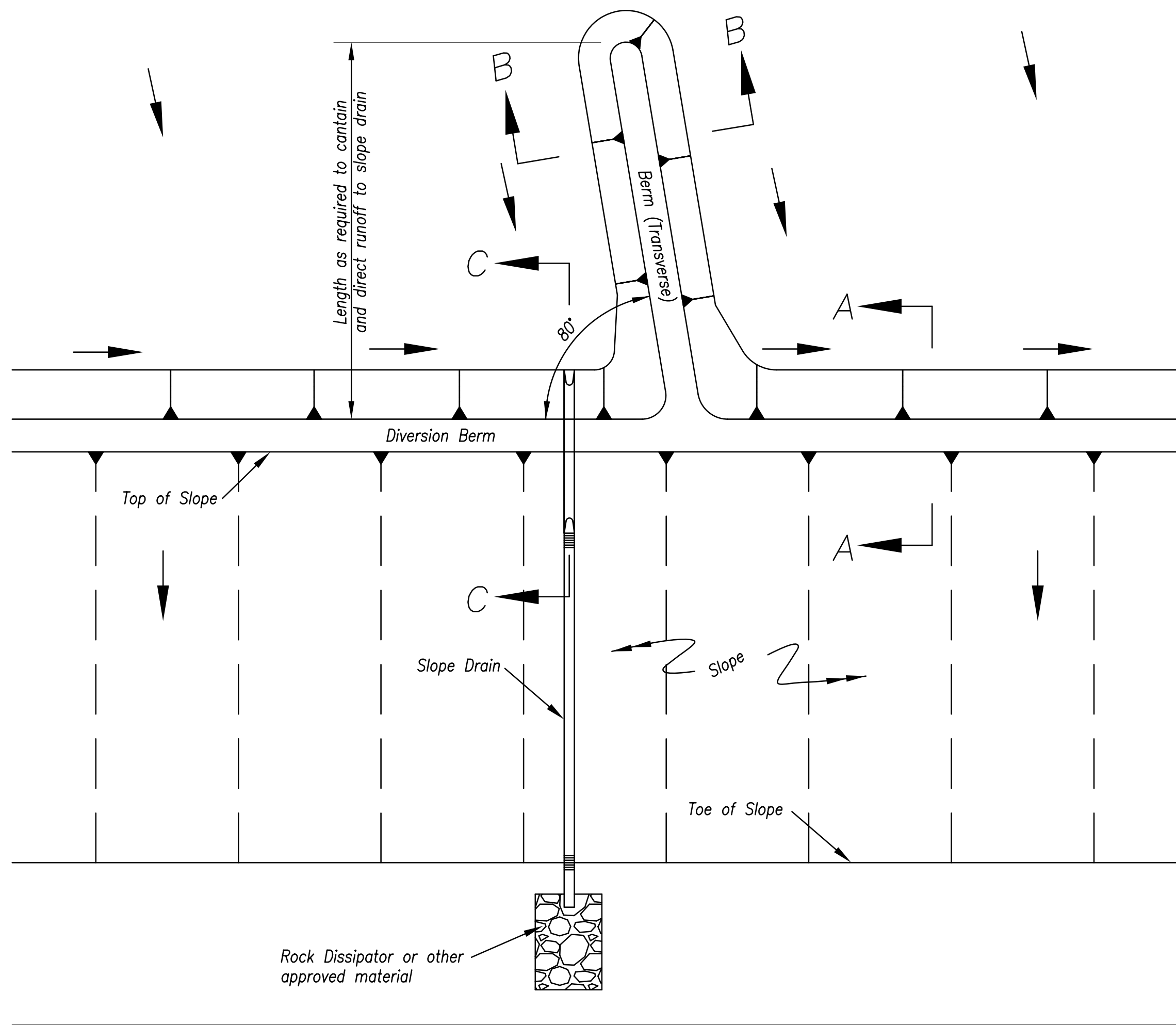


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METRO CHAPTER

SILT FENCE

STANDARD DRAWING
NUMBER ESC-03
ADOPTED:
10/24/2016

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



**TYPICAL PLAN VIEW OF DIVERSION BERM
AND SLOPE DRAIN**

Notes for Diversion Berm:

1. Slope drains are optional, but may be required by the engineer if the berm is at the top of a steep slope.
2. Diversion berms must be installed as a first step in the land-disturbing activity and must be functional prior to upslope land disturbance.
3. The berm should be adequately compacted to prevent failure.
4. Temporary or permanent seeding and mulch shall be applied to the berm immediately following its construction.
5. Place the berm so to minimize damages by construction operations and traffic.
6. The berm must discharge to a temporary sediment trap or stabilized area.
7. All trees, brush, stumps, obstructions and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of diversion.
8. The diversion shall be excavated or shaped to line, grade and cross-section as required to meet the criteria specified herein, free of irregularities which will impede flow.
9. Fills shall be compacted as needed to prevent unequal settlement that would cause damage in the completed diversion. Fill shall be composed of soil which is free from excessive organic debris, rocks or other objectionable materials.

Maintenance:

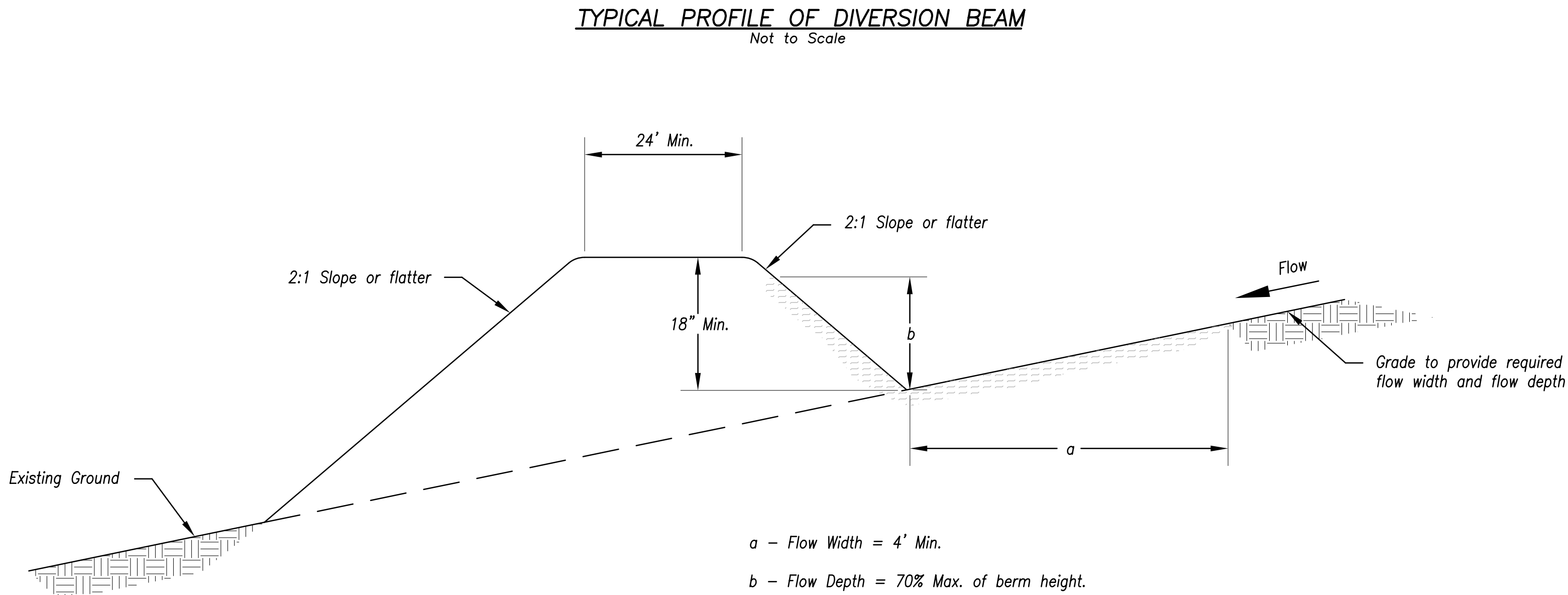
1. Berm shall be reshaped, compacted, and stabilized as necessary to maintain its function.
2. Breaches in the berm shall be repaired immediately.

Notes for Slope Drain:

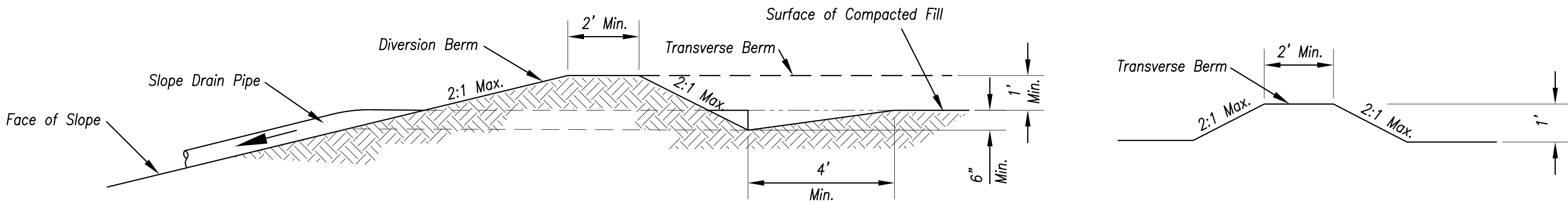
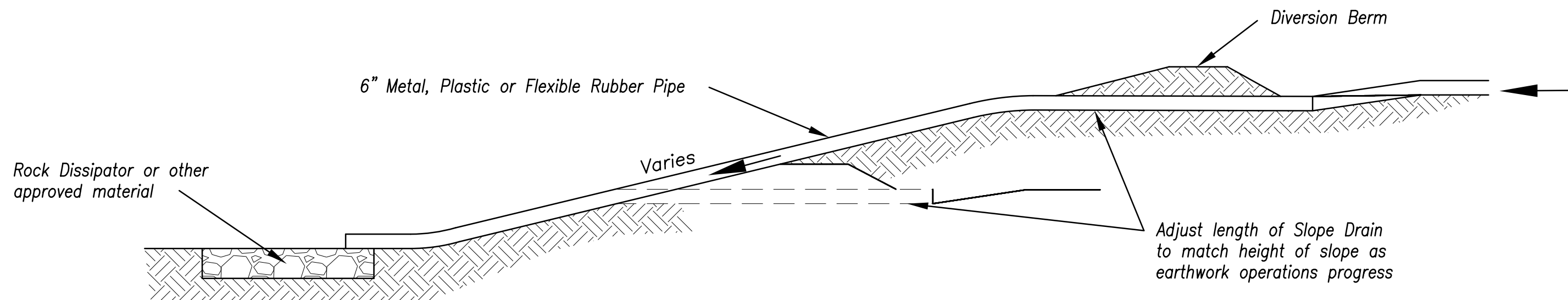
1. Slope Drain and Diversion Berm may be used on either project foreslopes or project backslopes.
2. Discharge of Slope Drains shall be into stabilized ditch or area, or into Sediment Basin.
3. Pipe shall be secured in place as approved by Engineer.

Maintenance:

1. Accumulation of any visible sediment at the inlet and outlet shall be removed promptly.
2. Outlet conditions shall be repaired if scour is observed. Leaking or damaged section of pipe shall be repaired immediately.
3. Barriers directing water to the inlet shall be monitored for continuity and effectiveness.



TYPICAL PROFILE OF DIVERSION BERM



Section C-C

Section B-B

TYPICAL PROFILE OF DIVERSION BERM WITH SLOPE DRAIN

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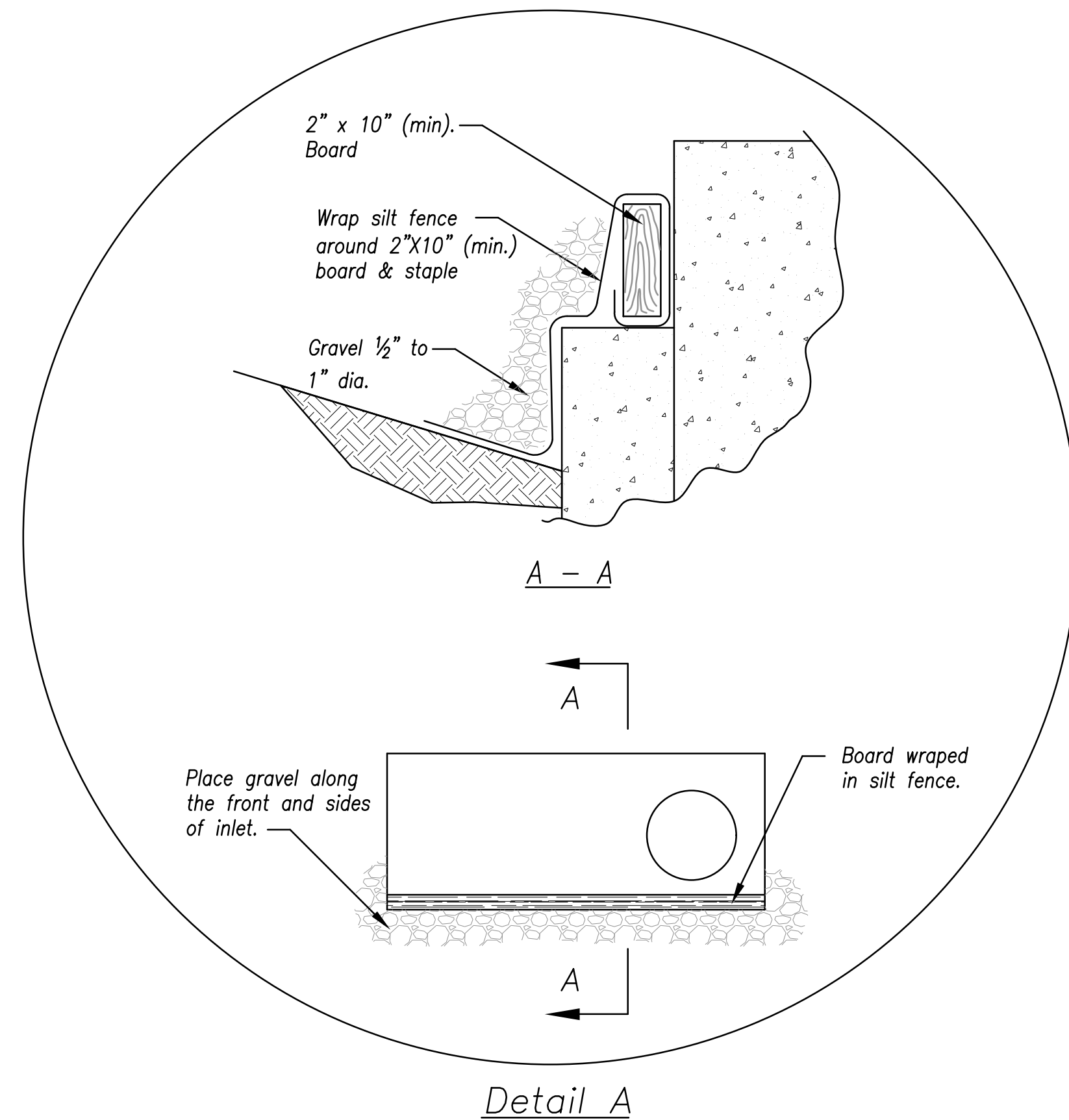
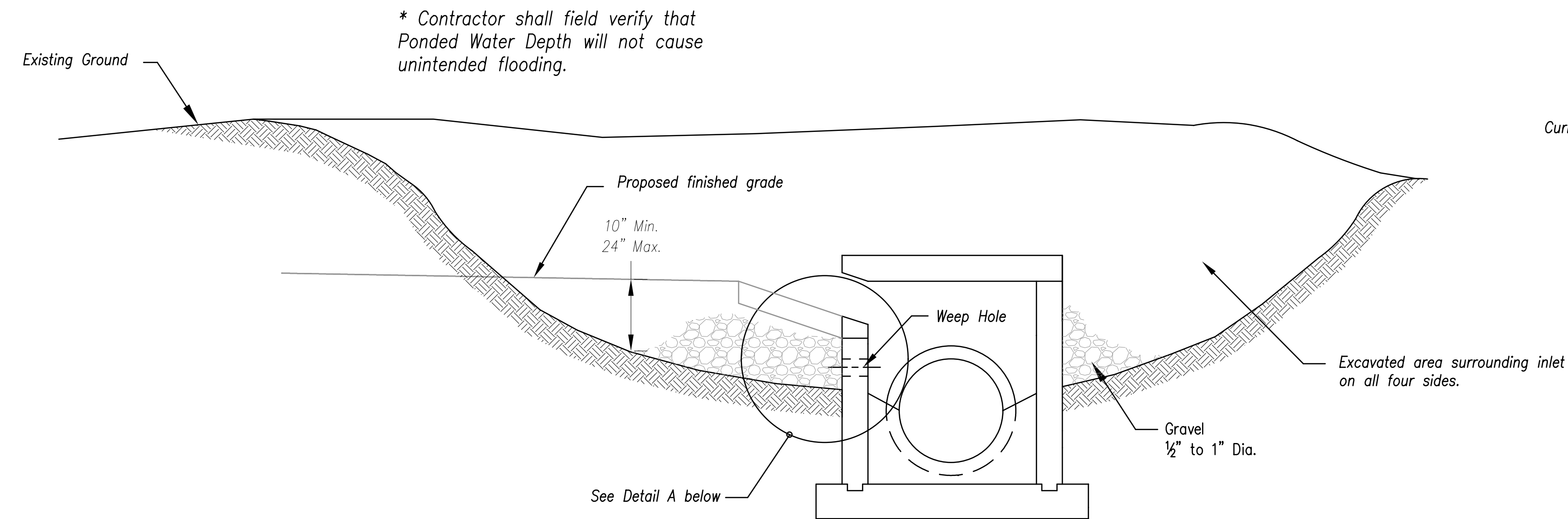


**KANSAS CITY
METRO CHAPTER**

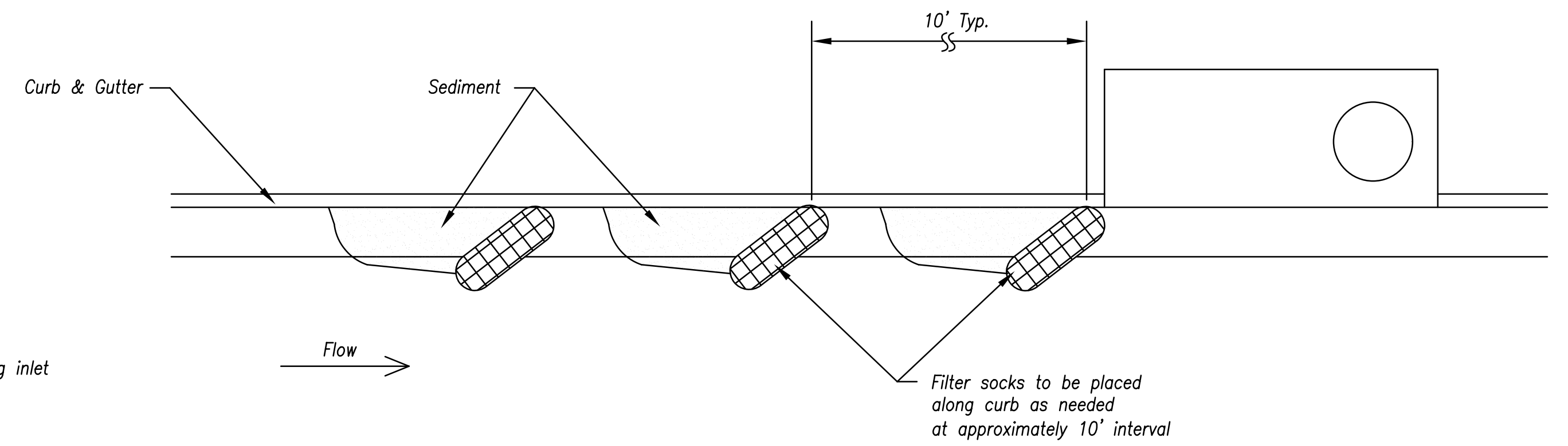
**DIVERSION BERMS AND
SLOPE DRAINS**

**STANDARD DRAWING
NUMBER ESC-05
ADOPTED:
10/24/2016**

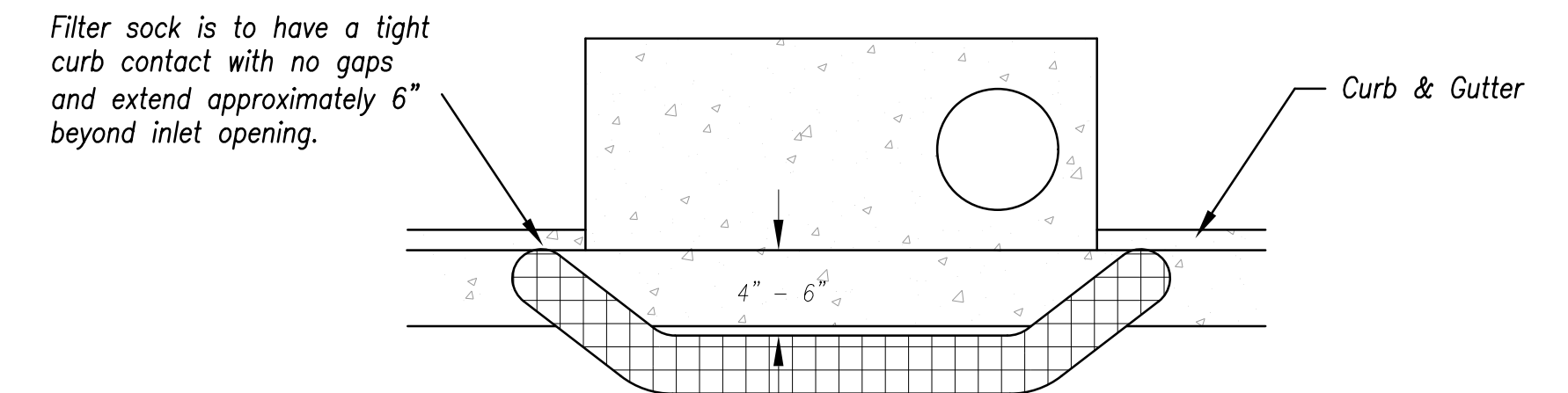
Modified from 2015 Overland Park Standard Details
for Erosion and Sediment Control.



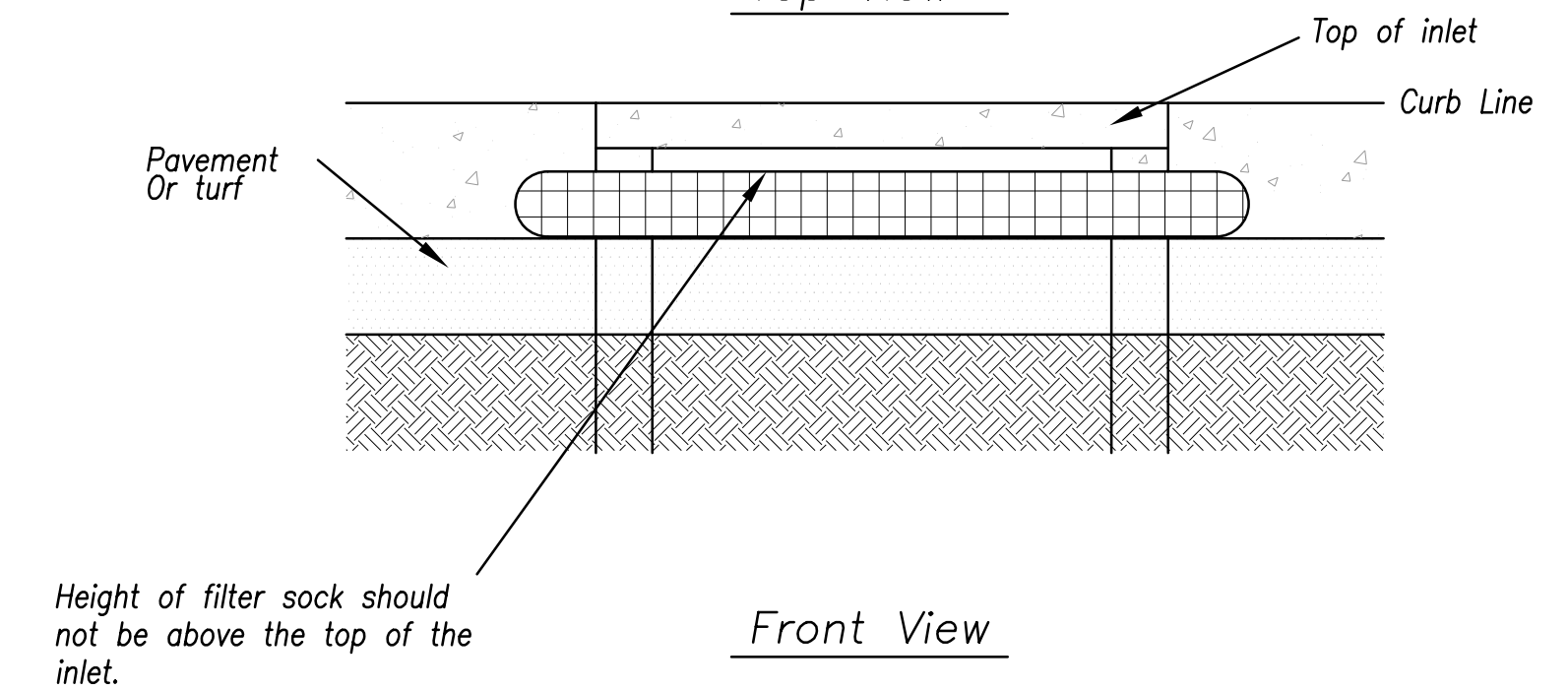
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)



On Grade Curb Inlet Protection



Top View



Front View

Sump Inlet Sediment Filter

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.

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

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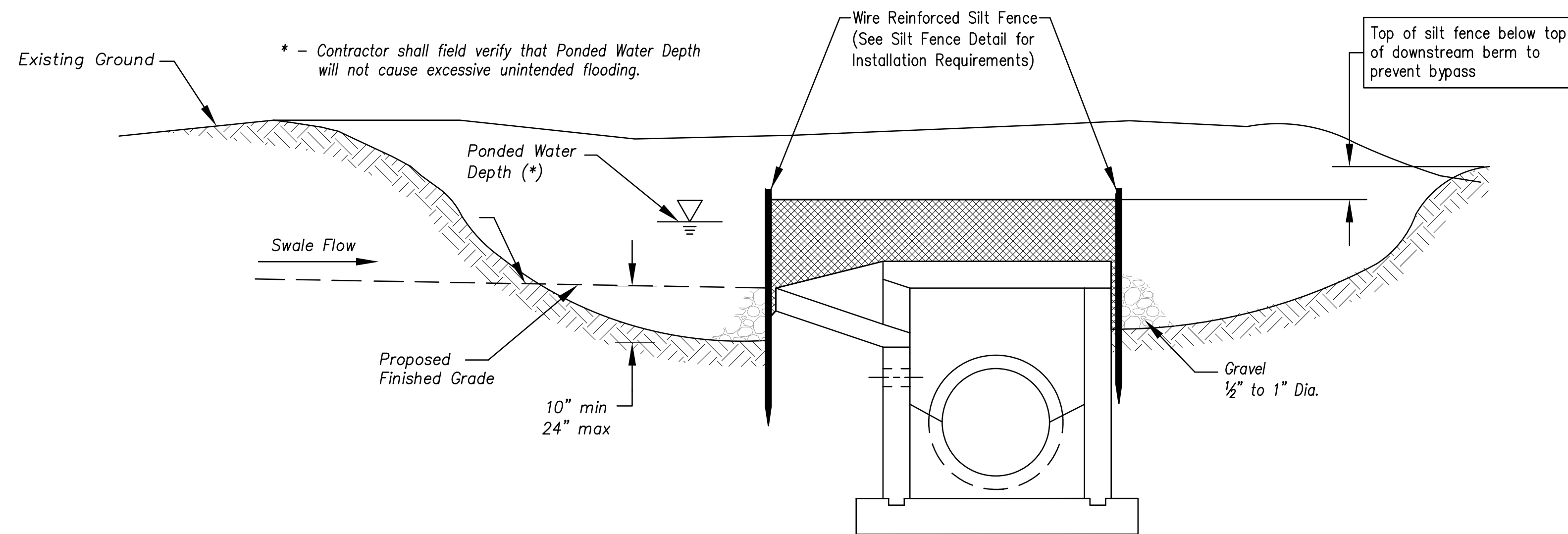


KANSAS CITY
METRO CHAPTER

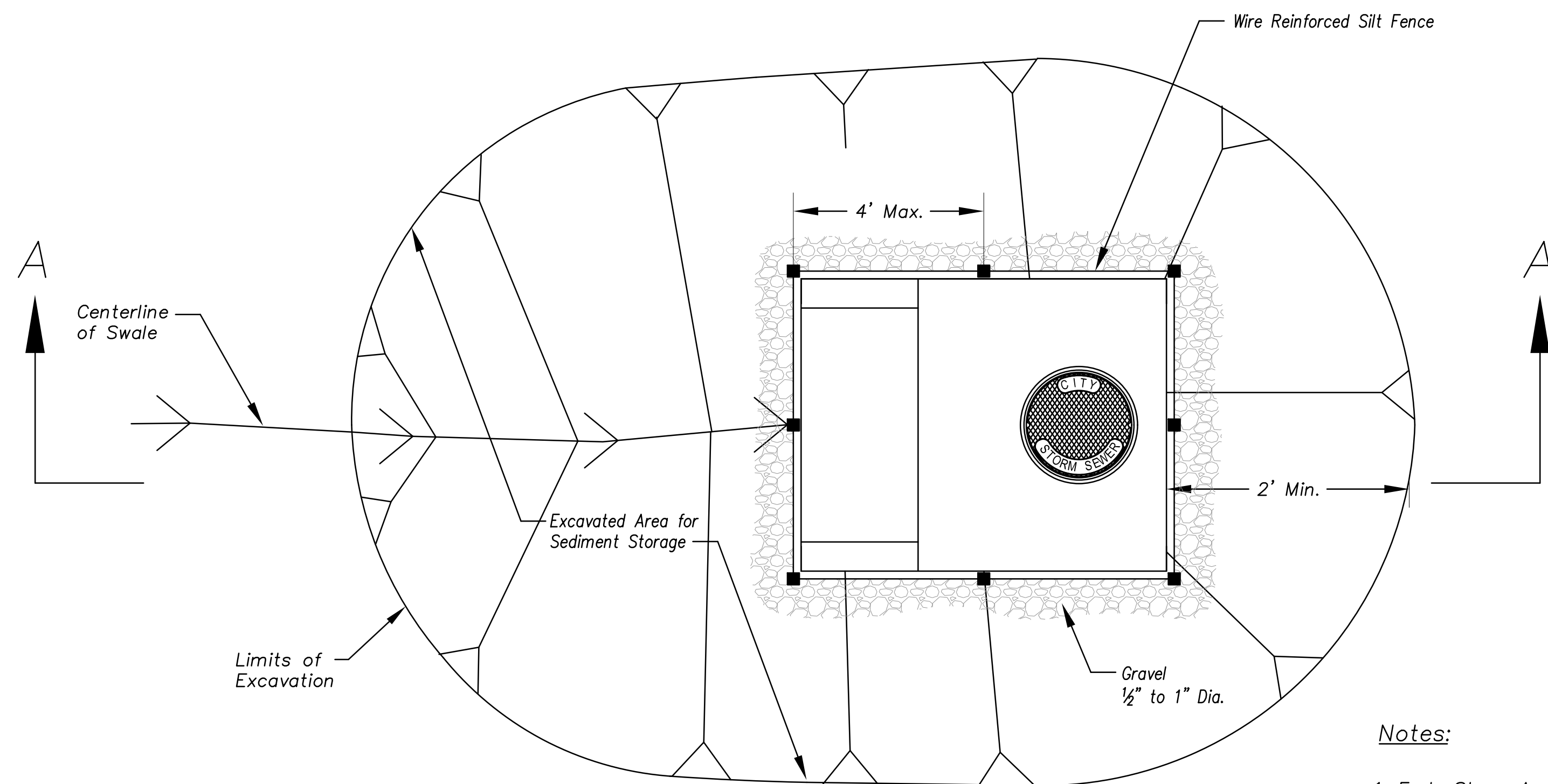
CURB INLET PROTECTION

STANDARD DRAWING
NUMBER ESC-06
ADOPTED:
10/24/2016

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



Section A-A
Not to Scale

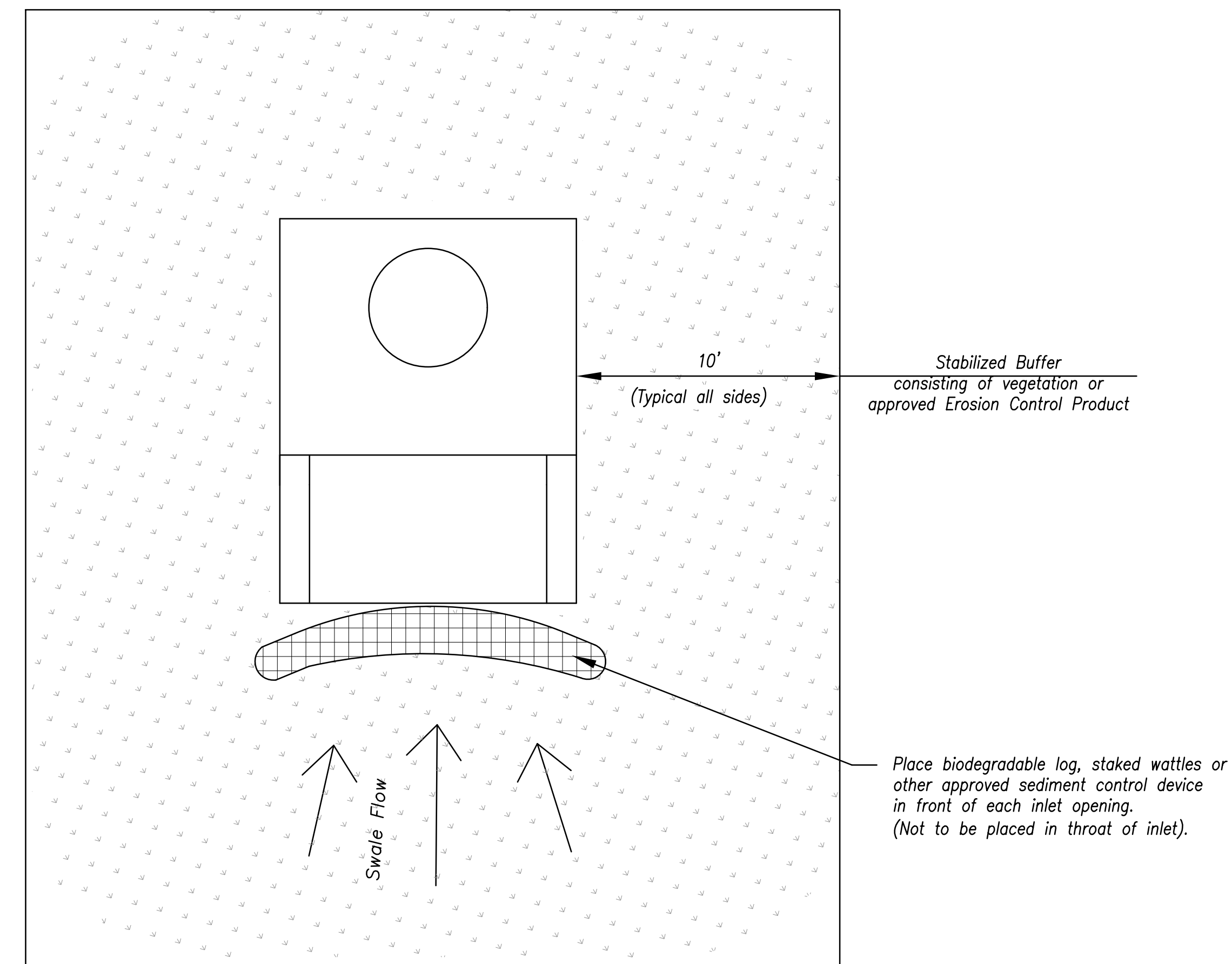


Plan
Not to Scale

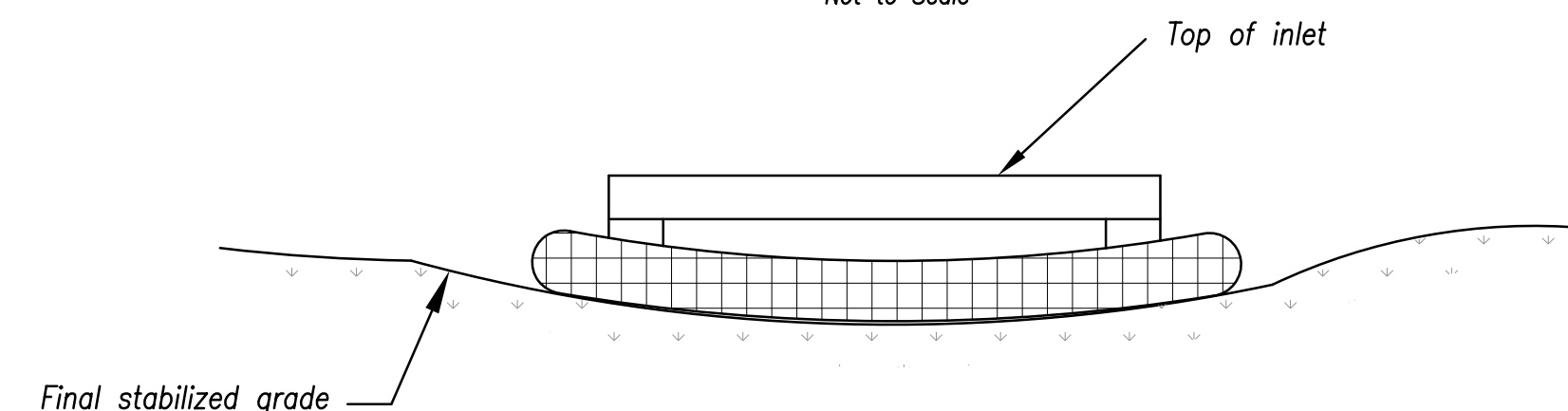
EARLY STAGE AREA INLET
(All open boxes and inlets not at final grade)

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
Not to Scale



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.

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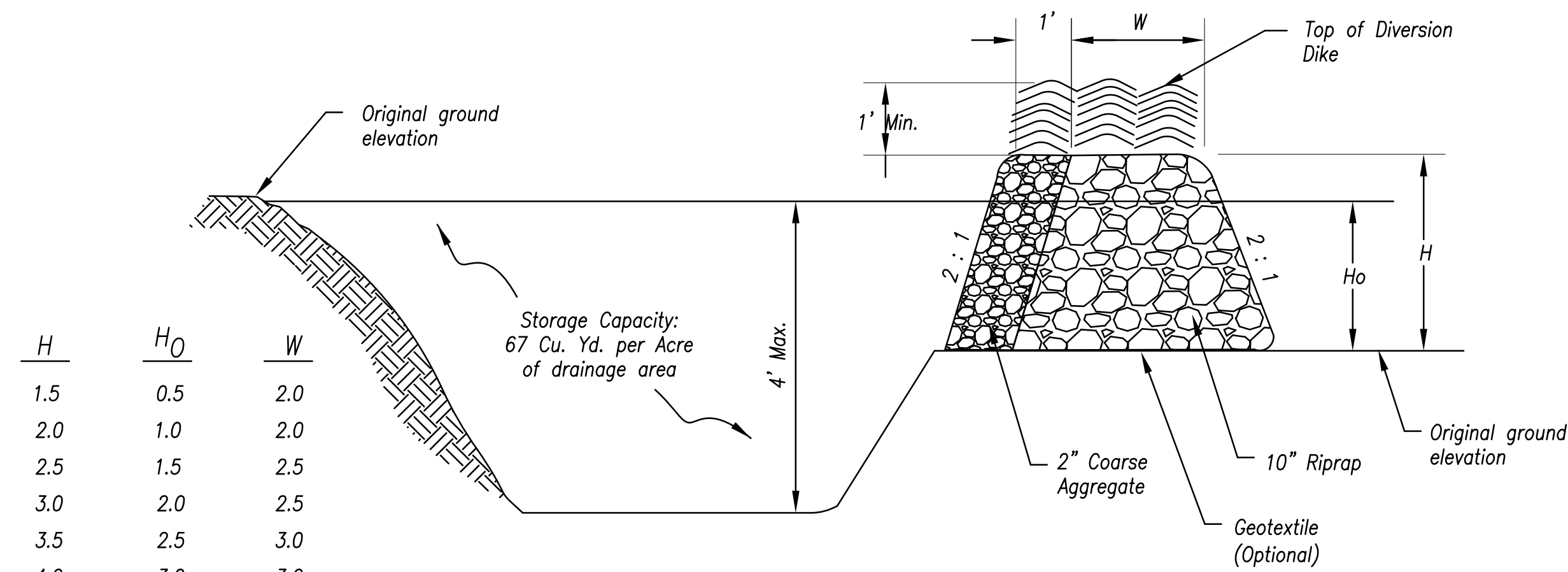


**KANSAS CITY
METRO CHAPTER**

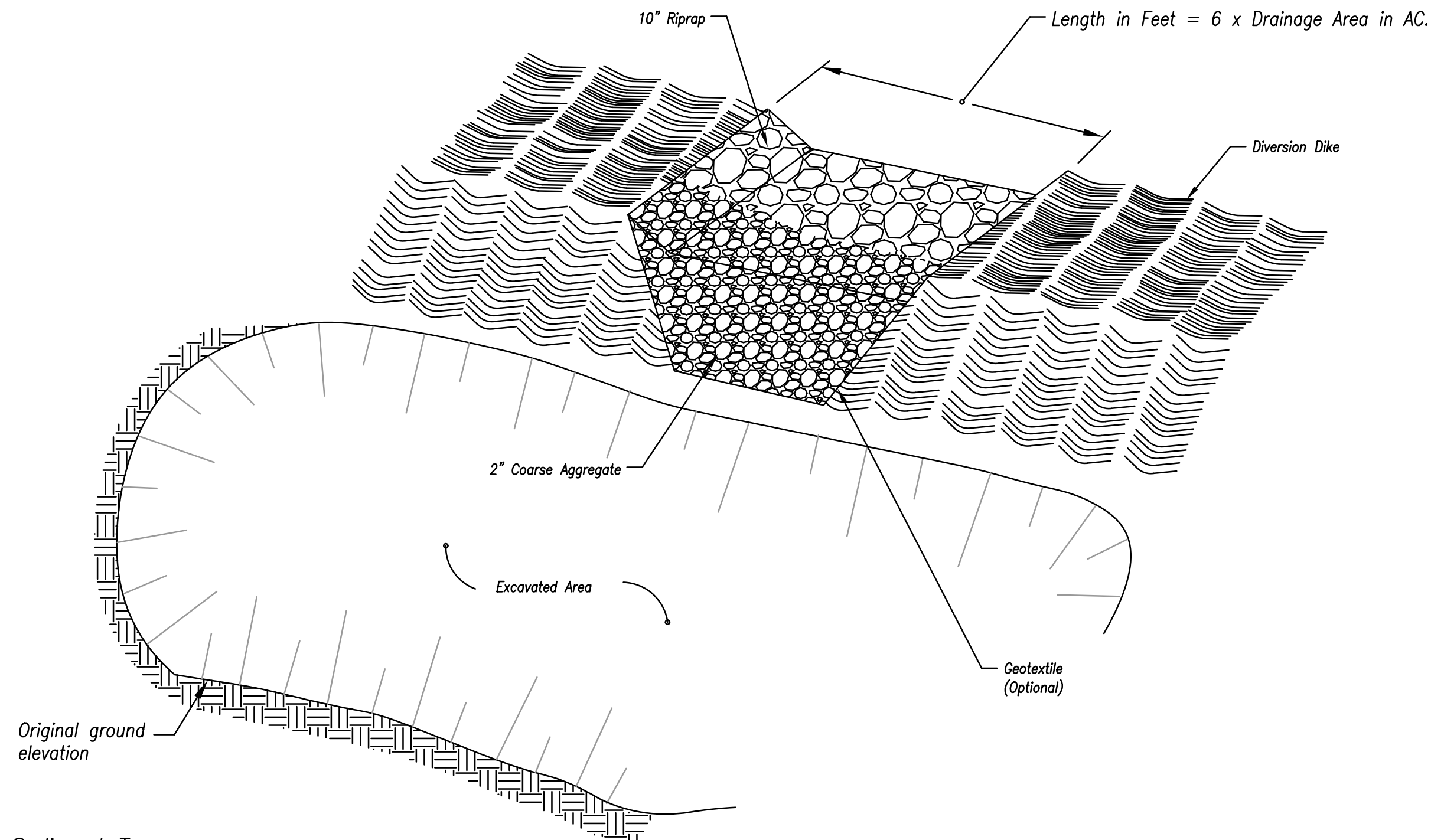
**AREA INLET AND
JUNCTION BOX PROTECTION**

**STANDARD DRAWING
NUMBER ESC-07
ADOPTED:
10/24/2016**

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



(*) Cross Section of Outlet
Not to Scale



(*) Perspective View of Outlet
Not to Scale

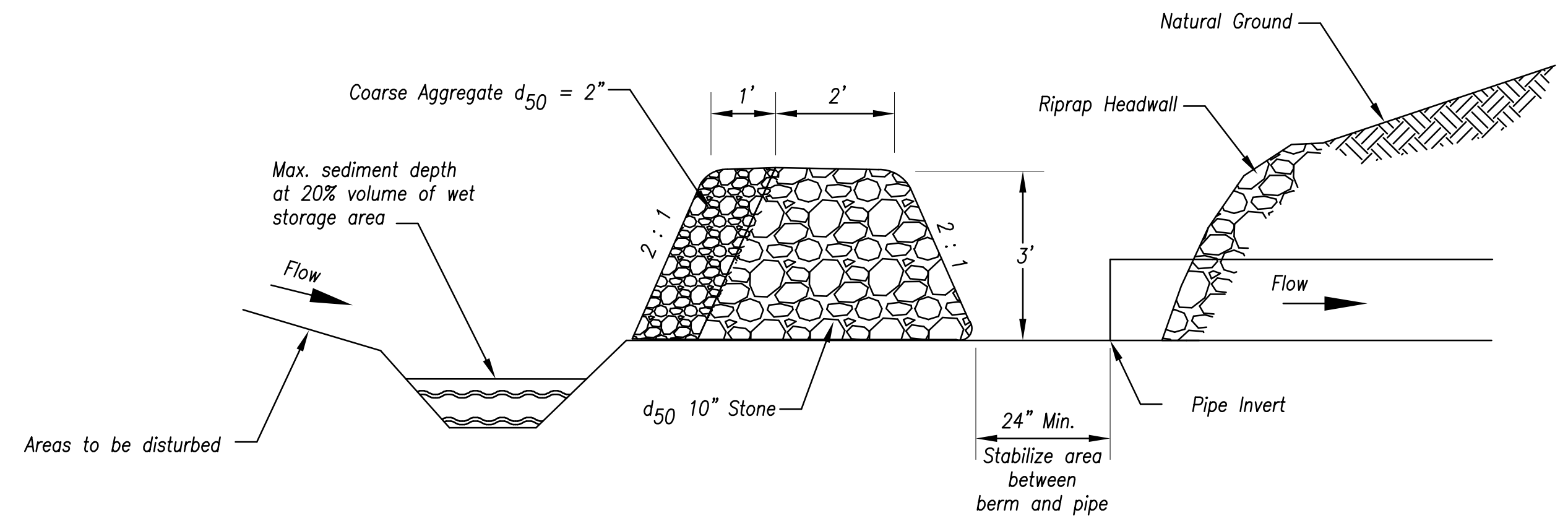
Notes for Sediment Trap:

1. The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat.
2. Fill material for the embankment shall be free of roots or other woody vegetation, organic material, large stones, and other objectionable material. The embankment should be compacted in 6-inch layers by traversing with construction equipment.
3. The earthen embankment shall be stabilized immediately after installation.
4. Construction operations shall be carried out to minimize erosion and water pollution.
5. The structure shall be removed and the area stabilized when the upslope drainage area has been stabilized.
6. All cut and fill slopes shall be 2H : 1V or flatter, except for excavated, wet storage areas which may be at a maximum 1H : 1V grade.

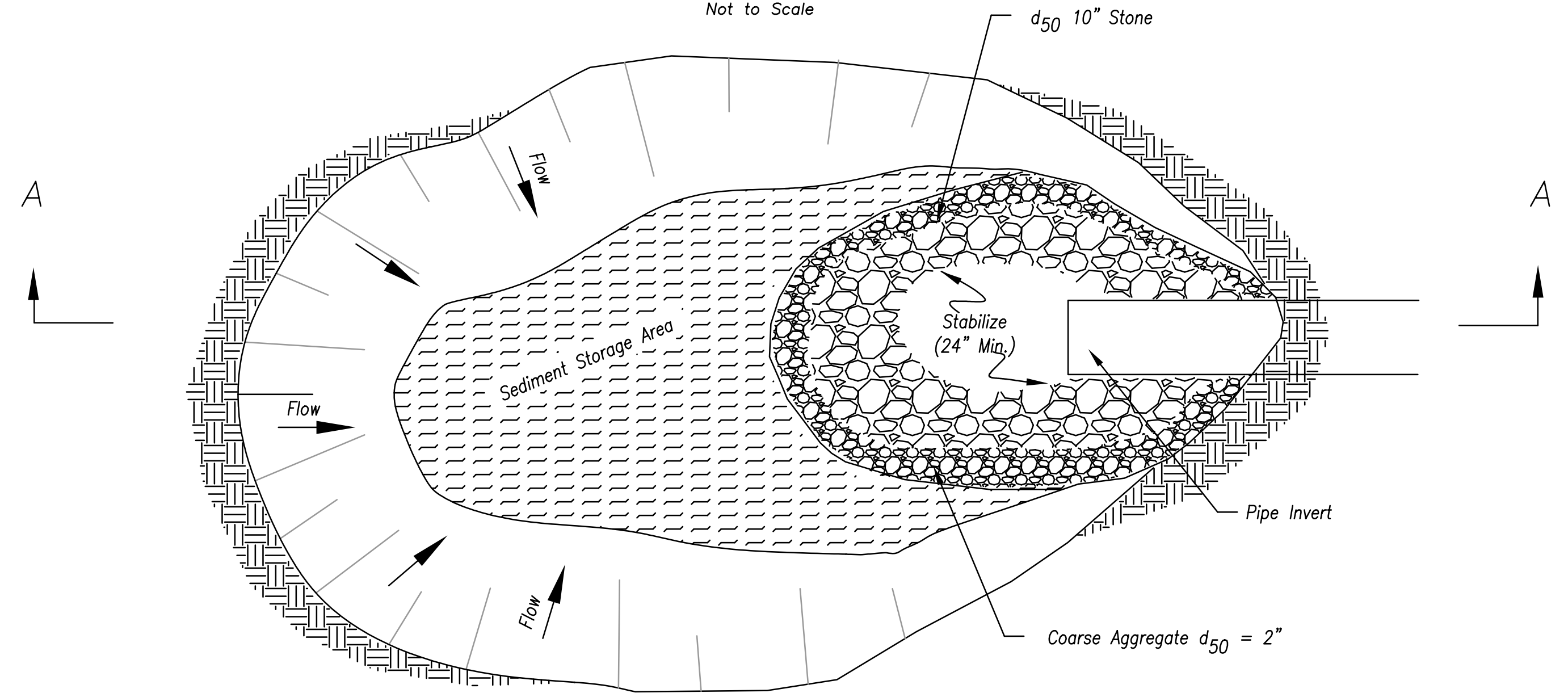
Maintenance for Sediment Trap:

1. Check sediment traps after periods of significant runoff.
2. Remove sediment and restore the trap to its original dimensions when sediment accumulates to 20% of the storage capacity.
3. Immediately repair any erosion damage to the embankment and outlet.
4. Keep outlet and pool area free of all trash and other debris.

SEDIMENT TRAP



Section A-A
Not to Scale



Plan View
Not to Scale

Notes for Sediment Trap at Culvert Opening:


1. The inlet protection device shall be constructed in a manner that will facilitate clean-out and disposal of trapped sediment and minimize interference with construction activities.
2. The inlet protection devices shall be constructed in such manner that any resultant ponding stormwater will not cause excessive inconvenience or damage to adjacent areas or structures.
3. Geometry of the design will be a horseshoe shape around the culvert inlet.
4. The toe of the riprap shall be no closer than 24" from the culvert opening to provide an acceptable emergency outlet for flows from larger storm events.
5. Storage requirements equivalent to that of temporary sediment trap.
6. 67 C.Y./Acre wet storage below base of stone.
7. 67 C.Y./Acre dry storage from base of stone to top of stone berm.

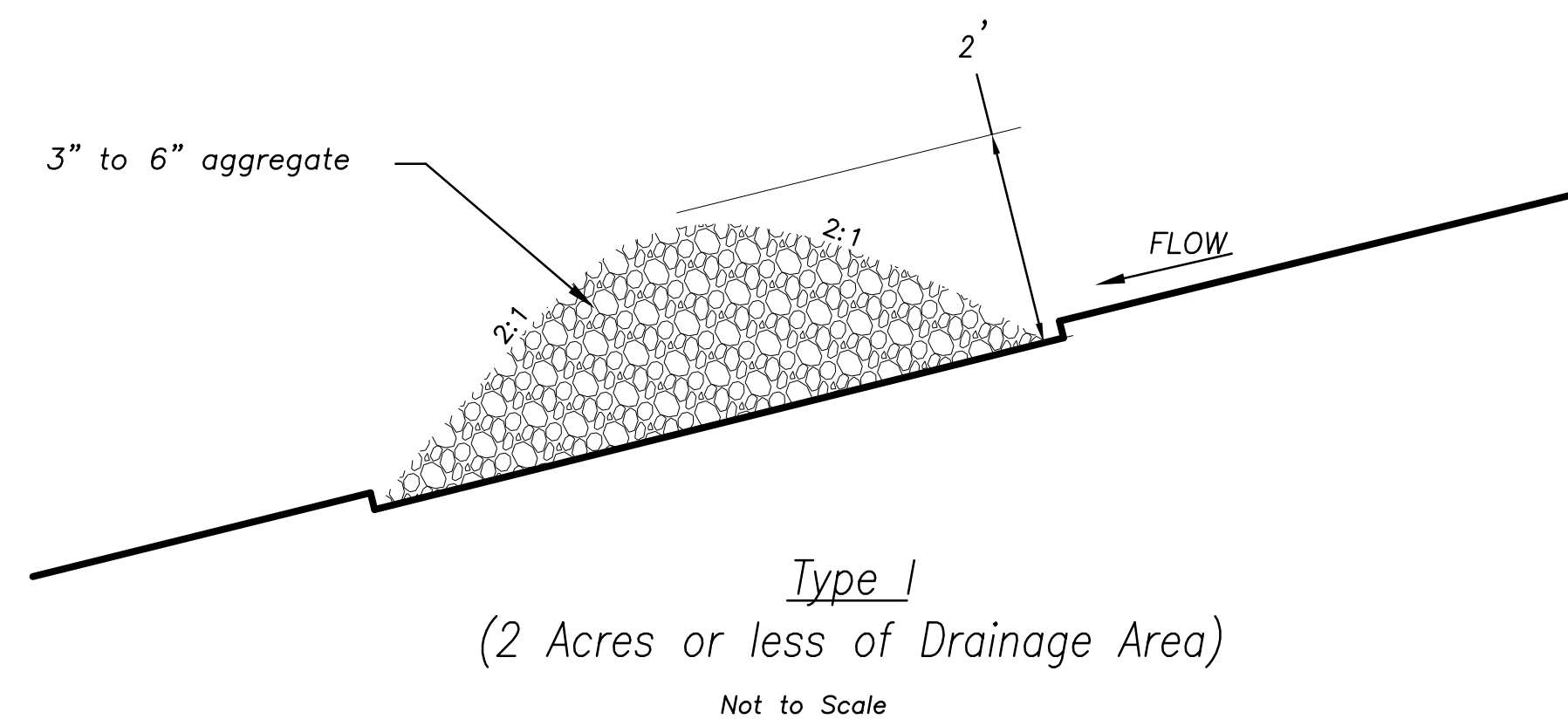
Maintenance for Sediment Trap at Culvert Opening:

1. Check sediment traps after periods of significant runoff.
2. Remove sediment and restore the trap to its original dimensions when sediment accumulates to 20% of the storage capacity.
3. Immediately repair any erosion damage to the embankment and outlet.
4. Keep outlet and pool area free of all trash and other debris.

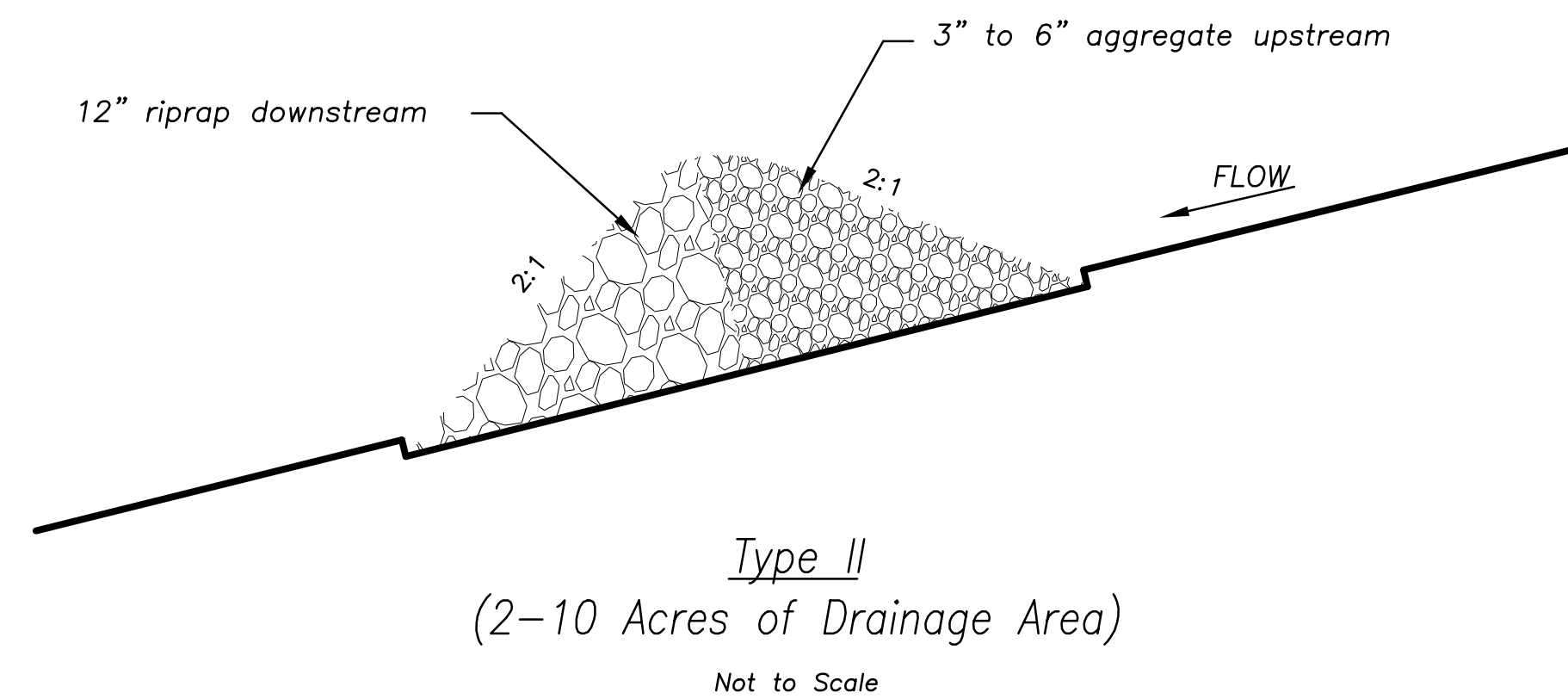
SEDIMENT TRAP AT CULVERT OPENING

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

AMERICAN PUBLIC WORKS ASSOCIATION	
	KANSAS CITY METRO CHAPTER
SEDIMENT TRAPS	STANDARD DRAWING NUMBER ESC-08 ADOPTED: 10/24/2016



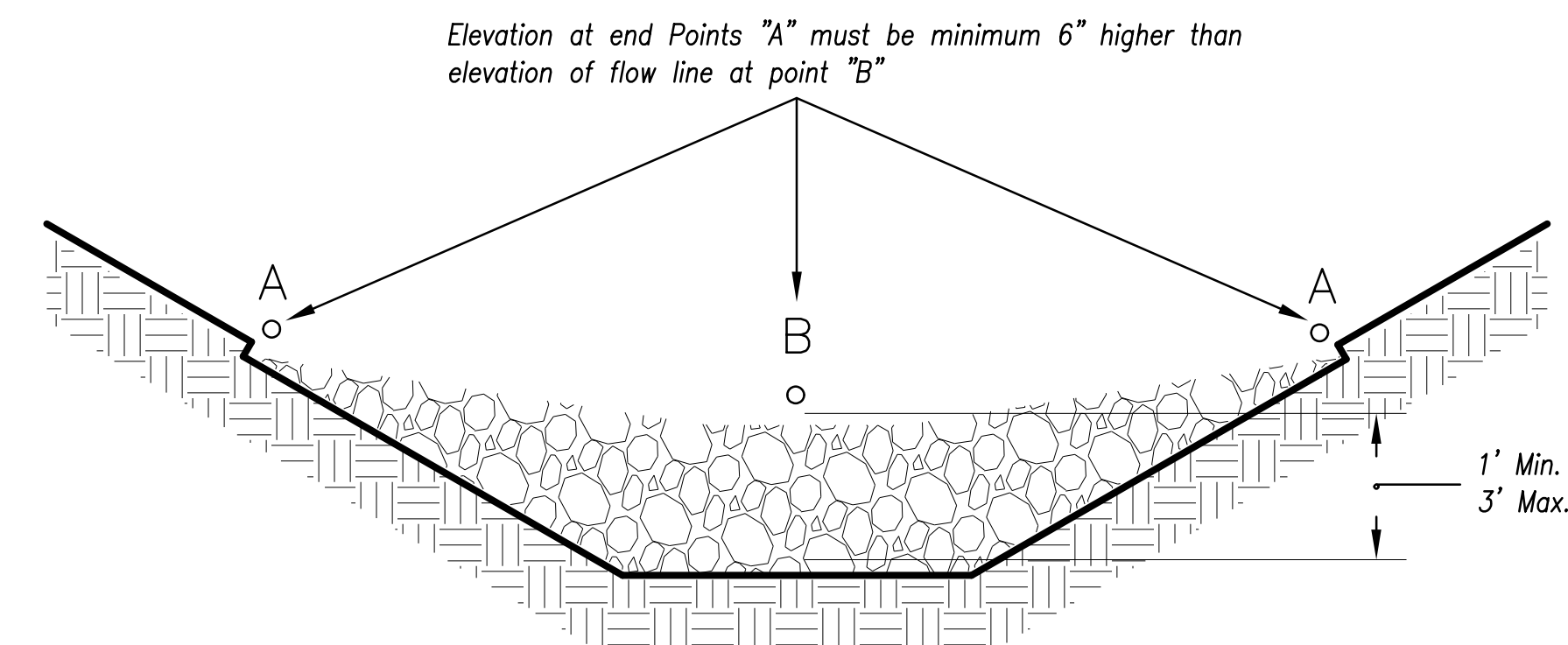
Type I
(2 Acres or less of Drainage Area)
Not to Scale



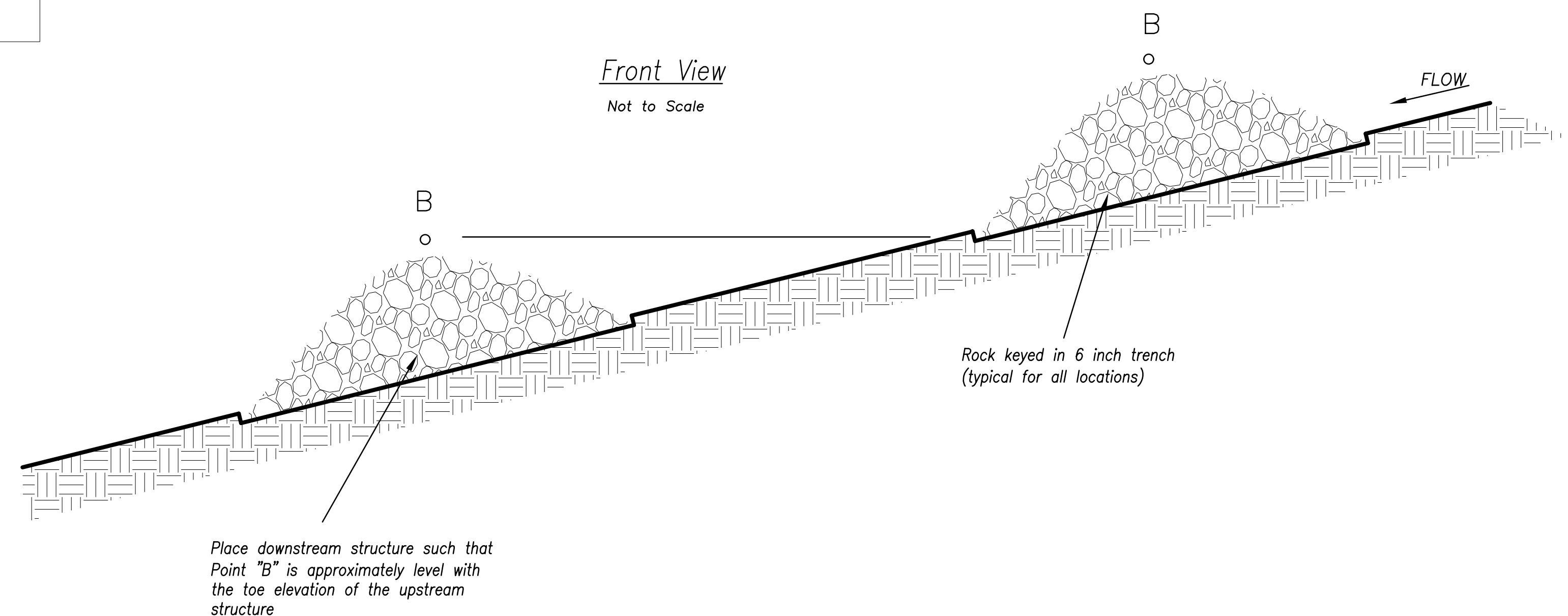
Type II
(2–10 Acres of Drainage Area)
Not to Scale

ROCK DITCH CHECK

<u>Temporary Rock Ditch Check Spacing</u>	
Ditch Centerline Slope (%)	Spacing Interval (Feet)
5.0	60
6.0	50
7.0	43
8.0	36
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


Notes:

1. Rock check dams shall be used only for drainage areas less than 10 acres unless approved by the City Engineer.
2. Use rock checks only in situations where the ditch slope exceeds 6%.

Maintenance:

1. Remove and dispose of sediment deposits when the deposit approaches ½ the height of the ditch check.
2. Replace and reshape as necessary to maintain function and integrity of installation.

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

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

DIVISION II
CONSTRUCTION AND MATERIAL SPECIFICATIONS

SECTION 2150 EROSION AND SEDIMENT CONTROL

Approved and Adopted this 15th day of February, 2017

Kansas City Metropolitan Chapter
American Public Works Association

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SECTION 2151 GENERAL REQUIREMENTS

2151.1 Summary: This section describes general requirements to prevent or minimize the pollution of rivers, streams, lakes, and wetlands caused by runoff from the construction zone. Such pollution includes sediment that may migrate offsite through the action of wind, water, or traffic, as well as chemical spills or other refuse from the site.

2151.2 Contractor's Responsibility: The Contractor shall take measures to prevent or minimize the transport of sediment or pollutants from the project limits or into bodies of water that are intended for protection, in accordance with the plans, the requirements of applicable permits and regulations, and best available management practices.

2151.3 Compliance with NPDES Permits: The Owner will obtain a National Pollutant Discharge Elimination System (NPDES) permit and other similar local water pollution control permits as required. Where such permits are required, the Owner will provide the Contractor with a Stormwater Pollution Prevention Plan (SWPPP) which has been prepared by the Engineer or other qualified professional. The Contractor shall comply with all requirements of such permits and the SWPPP, and shall enforce compliance with such requirements by all Subcontractors. The Contractor shall complete the required certification forms for coverage under the relevant permit and shall notify all Subcontractors in writing of the requirements of the SWPPP, obligate them under contract to comply, and enforce compliance during the work.

2151.4 Projects Not Requiring a Permit: If neither NPDES permit nor other local water pollution control permits are required for a project, the Engineer may waive certain documentation and record-keeping provisions of this specification. The Contractor is required to comply with all other provisions in this specification and is required to install such measures for erosion and pollution control as may be called for in the plan or ordered by the Engineer.

2151.5 Stormwater Pollution Prevention Plan (SWPPP): The Stormwater Pollution Prevention Plan (SWPPP) outlines methods and controls to be used to prevent stormwater pollution from the construction activities.

The SWPPP will generally consist of the following elements: (a) a site description; (b) a site map or plan sheets showing areas of soil disturbance, an outline of areas which will not be disturbed, and a drainage area map; (c) plan sheets, tables, or other schedules detailing the location of major structural and non-structural controls and areas where stabilization practices are expected to occur; (d) a description of erosion and sediment controls to be used; (e) a description of any permanent stormwater management features which are incorporated into the project; (f) a description of other controls related to waste disposal practices; (g) a description of the timing, during the construction, of when the measures will be implemented and removed; and (h) a description of maintenance procedures for control measures identified in the plan.

Where multiple agencies have jurisdiction over erosion and sediment control, the SWPPP will be prepared to satisfy the requirements of each. The use of the term "Stormwater Pollution Prevention Plan" or "SWPPP" is not intended to limit its content to the provisions of any single permit program or jurisdiction, and this specification shall have the same meaning regardless of whether the applicable plans are referred to as a "SWPPP," "erosion control plan," "erosion and sediment control plan," "temporary water pollution control plan," or other equivalent term.

All elements of the project bid documents relating to erosion and pollution control are considered part of the SWPPP, either by direct inclusion or by reference, including plan sheets,

specifications, special provisions, quantity tabulations, bid sheets, and contract documents. A copy of all NPDES and other water pollution related permits and permit applications are also part of the SWPPP. This APWA specification is an integral part of the SWPPP.

2151.6 Contractor Amendments to the SWPPP: Prior to beginning work, the Contractor shall review the SWPPP in detail and provide the Engineer with written recommendations for amendments to improve the effectiveness of the SWPPP or to bring it into better alignment with the Contractor's intended method of operations. The Contractor shall also advise the Engineer of any omissions or deficiencies they find in the SWPPP. During the progress of the job, the Contractor shall continue to monitor the effectiveness and performance of the control measures used and propose additional amendments as needed. No amendment shall be incorporated unless approved by the Engineer, and a log of such amendments shall be made by the Contractor. When required by the permit or state law, such amendments shall be developed and prepared under the supervision of a qualified professional as defined in said permit or law. A copy of the SWPPP and all amendments shall be retained by the Contractor onsite and ready for inspection without notice.

2151.7 Contractor Schedule: In addition, the Contractor shall also provide the Engineer with a detailed schedule of their work prior to beginning, which shall include information on the expected timing, duration, and sequencing of erosion and sediment control measures and overall job completion and phasing. Once approved, such schedule shall become a part of the SWPPP, and changes to the schedule shall require amendment to the SWPPP.

2151.8 Alternate Methods or Materials: The Contractor may propose alternative methods or materials for any of the specific erosion and sediment controls given in the SWPPP, provided that such methods provide equal or improved measures of control, as determined by the Engineer. The Contractor shall submit any documentation required by the Engineer to evaluate the alternative. If agreed to by the Engineer (and subject to state or other permitting agency approval if applicable), payment for such alternate method shall be handled in accordance with the applicable provisions of the Contract for changes in work.

2151.9 Superintendent Training Required: The Contractor's resident superintendent shall have no less than 8 hours of formal training on erosion and sediment control within the last 24 months. Such training shall include the principles of erosion and sediment control, technical information on typical and/or innovative controls, and the contents of these specifications and related Standard Drawings and Design Criteria. The training shall be taught primarily by a registered professional engineer or other professional who is considered by the applicable regulatory agencies to be qualified to prepare a SWPPP. Documentation of training shall be submitted to the Engineer upon request, prior to beginning work.

2151.10 Duration of Contractor's Responsibility: The Contractor is responsible for water pollution control and permit compliance from the issuance of Notice to Proceed until final completion of the work and during any subsequent maintenance bond period. The notice of termination will not be submitted by the Owner until all permit requirements are met, which includes the requirement that final stabilization be achieved on 100% of the site. Vegetation shall achieve a density of at least 70% of full turf to be considered acceptable as final stabilization.

2151.11 Installation of Controls: The Contractor shall obey all requirements for chemical and waste controls specified in Section 2152. Contractor shall provide all specific erosion and sediment controls required by the SWPPP in accordance with the requirements of Section 2153

and 2154. If the SWPPP calls out items or controls not included in this specification, refer to the project special provisions and plans for requirements. Controls shall be installed prior to disturbance in an area, unless otherwise indicated in the plans.

2151.12 Maintenance: The Contractor shall maintain the integrity of the temporary erosion and sediment control devices as long as they are in place and necessary. Devices not functioning properly shall be corrected or replaced. Accumulated sediments shall be removed promptly as detailed in Section 2154.

2151.13 Removal: Control measures shall be completely removed from the site when they are no longer needed, unless they are approved by the Engineer to remain in place for permanent stabilization or biodegradation (i.e. erosion control blankets).

2151.14 Inspections: The Contractor shall inspect the construction site within twenty-four hours of the end of a storm which results in precipitation of 0.5 inches or greater, during both active and inactive phases. In addition, regular inspections shall be made weekly during active phases of construction. During inactive phases (such as winter when construction activity has temporarily ceased), an inspection of the site condition shall be made no less than once every 14 days. All installed practices shall be checked for proper installation, operation, and maintenance. Locations where stormwater runoff leaves the site shall be inspected for evidence of erosion or sediment deposition. Deficiencies shall be noted in a report of the inspection and corrected within seven calendar days of the inspection.

A report of each inspection is to be made within 24 hours of the inspection and shall contain the following minimum information: inspector's name, date of inspection, observations relative to the effectiveness of the practices, actions taken or necessary to correct deficiencies, a listing of areas where construction operations have permanently or temporarily stopped, observations at stormwater discharge locations, and any other item required of an inspection by the applicable permits. The inspection report shall be signed by the person performing the inspection. Site inspection reports shall be maintained onsite with the SWPPP or the SWPPP shall contain written documentation of the off-site records storage location.

2151.15 Records: The Contractor shall maintain all permit required records during the job and shall transmit all necessary records to the Engineer at the completion of the work, including all Contractor and Subcontractor certifications and site inspection records, as well as other records requested by the Engineer.

2151.16 Site Access for Inspections: The Contractor shall allow authorized representatives of federal, state, or local agencies having jurisdiction of this permit, upon presentation of proper credentials, to enter the site where construction activities are located, to obtain samples of any discharge water, to have access to and copy at reasonable times, any records which shall be kept, and to inspect any facilities or equipment.

2151.17 Maximum Areas of Disturbance at One Time: The surface area of erodible earth material exposed by site operations shall be limited by the Engineer according to the Contractor's capability and progress in keeping with the approved schedule. Existing vegetation shall be preserved or retained as long as practical and the time period for soil areas to be without permanent surface or vegetative cover shall be minimized. The maximum surface area of erodible earth exposed at one time shall not exceed ten (10) acres unless approved in writing by the Engineer or otherwise provided for in the plans. The Contractor shall pay close attention to the grading and disturbance limits indicated on the plan or authorized by the Engineer.

2151.18 Measures Where Construction has Ceased: Soil stabilizing erosion control measures as detailed in Sections 2153 shall be implemented within 14 calendar days after construction activities have temporarily or permanently ceased on any portion of the site. Exceptions to this requirement are as follows: (a) if implementation of erosion controls is precluded by snow cover, such measures shall be taken as soon as practical after snowmelt, or (b) a waiver to this requirement is justified and approved by the Engineer in writing, in which case a specific deadline for installing erosion controls shall be established.

2151.19 Duration Limits for Select Activities: For certain items of work, the plans or standard sequences may contain specific time limits for the maximum duration of exposure, typically stated as "Item A construction shall have a maximum exposure time of X days." Where such limits are specified, the time shall be measured from the date in which stabilized ground cover is first disturbed in the work area until the specified construction is complete and permanent or temporary stabilization shown on the Plans is applied. Contractor shall be responsible for documenting the elapsed time on all such work, typically by noting the time in their inspection logs, taking time-stamped photographs, and/or by marking the area with a wooden stake documenting beginning and ending dates. The Engineer may grant extensions of time requested by the Contractor when justified and suitable interim stabilization measures are provided.

2151.20 Construction near Rivers, Streams, and Waterbodies: Construction operations in or near rivers, streams, and other water impoundments shall be restricted to those areas essential for construction. Unless otherwise provided for in the plans, a minimum 50 feet buffer of undisturbed vegetation shall be maintained between construction operations and defined drainage courses. Where such buffers are not provided, work shall not be initiated until all materials and equipment necessary to complete the work are on site and such operations shall be completed as quickly as possible once the work has begun. When no longer required, all falsework, pilings, temporary crossings, and other obstructions shall be promptly removed. Stream crossings shall be limited to those detailed in the plans or as approved by the Engineer.

2151.21 Culverts, Ditches and Storm Sewers: Construction of major elements of the proposed storm sewer or other drainage systems shall be coordinated to minimize the duration of time over which stormwater would run through temporary, erodible channels. Unless otherwise indicated on the plans, construction of the major elements of this system shall be among the first activities on the project. Once begun, construction shall proceed expeditiously to completion, including placement of all final headwalls, end structures, rip-rap and other end treatments. Temporary or permanent ditches which are graded on the project shall either be stabilized or have temporary sediment controls installed within seven (7) days of their grading.

2151.22 Methods of Measurement: No separate measurements will be made for the general requirements covered by this Section.

2151.23 Basis of Payment: Compliance with the general requirements of this section will not be paid separately, but shall be subsidiary to other items listed in the contract. (Note: Some Owner's may elect to pay for Administration of erosion control requirements as a separate line item. Consult the contract and job special provisions if that is the case.

SECTION 2152 CHEMICAL AND WASTE CONTROLS

2152.1 Summary: This section describes specific requirements to control non-sediment related pollutant discharges from chemicals and wastes from the site, including requirements for chemical handling, spill prevention, spill response, and waste disposal.

2152.2 Solid, Liquid, and Hazardous Wastes: All trash shall be placed in dumpsters or trash barrels provided by the Contractor and accumulated trash shall be hauled offsite and properly disposed. Floating debris found in any waterbody on or immediately adjacent to construction shall be removed immediately, regardless of source. Hazardous wastes shall be stored, transported offsite, and disposed of properly.

2152.3 Sanitary Wastes: Sanitary facilities shall be made available and their use enforced by the Contractor.

2152.4 Leak Prevention: All equipment used onsite shall be free of leaks, receive regular preventative maintenance, and be inspected daily to reduce chance of leakage. No fueling, servicing, maintenance, or repair of equipment shall be done within 50 feet of a stream, drainage way, lake, storm sewer manhole or other water body. Onsite fuel tanks shall be in good condition, free of leaks or drips, painted brightly for visibility, and monitored daily. All fuel tanks, including mobile trailers, shall be protected by a secondary containment system or earthen berm sized to contain 110% of the full tank volume.

2152.5 Concrete Washout: Concrete wash or rinse water from concrete mixing equipment, tools and/or ready-mix trucks, tools, etc., shall not be discharged into or be allowed to run directly into any existing water body or storm inlet. One or more locations for concrete wash out shall be designated on site and installed in accordance with the Standard Drawings.

2152.6 Chemical Handling and Storage: Chemicals or materials capable of causing pollution shall only be stored onsite in their original container. Materials stored outside shall be in closed and sealed water-proof containers and located outside of drainage ways or areas subject to flooding. Manufacturer's data regarding proper use and storage, potential impacts to the environment if released, spill response, and federally-defined reportable quantities for spill reporting shall be maintained by the field superintendent onsite at all times. Locks and other means to prevent or reduce vandalism shall be used.

2152.7 Herbicides, Pesticides and Fertilizers: Herbicides, pesticides and fertilizers used as part of the work shall be applied only in accordance with manufacturer recommendations. Direct spray into water bodies is prohibited. Such chemicals shall not be used if rain is forecast within 24 hours, unless they are approved for wet weather application.

2152.8 Spill Clean-up and Management: If it is safe to do so, Contractor shall stop the source of any spills or leaks and shall contain spills immediately with an appropriate device, earthen berm, sawdust, sand, kitty litter, rags or other absorbents. Manufacturer recommendations shall be followed. Leaks from broken hoses shall be immediately contained with hose clamps, plugs, or drained into leak-proof containers. Contractor shall have the tools, equipment, and supplies necessary for spill response onsite at all times and ready for immediate use. Contractor personnel shall be trained to properly respond immediately to a leak or spill. All spills shall be cleaned up and disposed of in accordance with applicable federal, state, and local regulations. Local hazardous materials response units shall be called if assistance is needed in stopping or containing the spill.

2152.9 Spill Reporting: All spills in excess of reportable quantities shall be reported to the appropriate federal, state, and local agencies within 24 hours of their occurrence. The Contractor shall maintain a listing of all such agencies onsite within the SWPPP and in easy reference for onsite personnel. Spills that pose an immediate threat to public safety or contamination of a water body shall be reported immediately to designated first response authorities. A current listing of applicable phone numbers for the jurisdiction shall be placed at the front of the SWPPP and posted conspicuously on the jobsite.

2152.10 Methods of Measurement: No separate measurements will be made for the requirements covered by this Section.

2152.11 Basis of Payment: Compliance with the requirements of this section will not be paid separately, but shall be subsidiary to other items listed in the contract.

SECTION 2153 EROSION CONTROLS

2151.1 Referenced Standards:

The following standards are referenced directly in this section. The latest version of these standards shall be used.

APWA, Kansas City Metropolitan Chapter (KC-APWA):

Standard Drawings, Division III of Standard Specifications and Design Criteria

Erosion Control Technology Council (ECTC):

Standard Specification for Rolled Erosion Control Products (RECPs).

Kansas Department of Transportation (KDOT):

Standard Specifications for State Road & Bridge Construction, 2015 Edition or later including all latest errata and adopted Special Provisions, as well as associated Standard Drawings.

Missouri Department of Transportation (MoDOT):

Missouri Standard Specifications for Highway Construction, 2011 edition or later including all supplemental specifications, as well as associated Standard Plans.

Texas Department of Transportation (TxDOT):

Approved Products List (APL) for Erosion Control. Based on testing and standards cited in the report "TXDOT / TTI Hydraulics, Sedimentation and Erosion Control Laboratory: Field Performance Testing of Selected Erosion Control Products".

US Composting Council (USCC):

STA – Seal of Testing Assurance Program; and TMECC - Test Methods for the Examination of Composting and Compost. Information available online at www.compostingcouncil.org.

2153.2 Summary: This section describes specific requirements for installation and maintenance of temporary measures to stabilize onsite soils and prevent erosion during construction.

2153.3 Materials: Materials used for erosion controls shall meet the requirements of the following subsections. Unless otherwise specified herein, the Contractor shall submit, for each material used, a certification prepared by the manufacturer which states that the materials meet all the requirements of this specification. The manufacturer shall also provide supporting documentation and testing results to validate this certification, if requested by the Engineer. Manufacturer's instructions for installation of materials (when applicable) shall be available onsite whenever work is occurring and a copy shall be submitted to the Engineer upon request.

2153.4 Permanent Seeding and Sodding: Final stabilization with vegetation by either permanent seeding or sodding is the most effective form of erosion control and shall be achieved as early in the construction process as possible.

- A. Materials, Construction Requirements and Maintenance:** Permanent seeding or sodding shall be provided as specified in Section 2400 of these Standard Specifications.

Contractor shall schedule work so that permanent seeding is conducted as early as practical in the construction process. Multiple mobilizations of seeding or sodding operations shall be expected.

- B. Out-of-Season Special Provision:** The Engineer may request that permanent seeding be conducted anytime between April 16 and August 14 and/or that sodding be conducted anytime between June 1 and September 1, even though such dates are outside the standard seasons established in Section 2400. If agreed to by the Contractor, then the Contractor shall conduct such seeding or sodding and shall be responsible for the establishment of a vigorous and healthy seed or sod cover. The Contractor will be paid, however, for all watering necessary during the period that falls outside the standard season.
- C. Measurement and Payment:** Shall be as specified in Section 2400. If out-of-season seeding or sodding has been authorized, then "Out of Season Watering" will be measured by the 1,000-gallon unit applied and paid for at the contract unit price.

2153.5 Temporary Seeding: Interim stabilization with annual vegetation to provide temporary cover to minimize erosion. This item only covers seeding installed by conventional drilling.

- A. Materials:** Seed and equipment used for temporary seeding shall meet all the criteria given for permanent seeding in Section 2400 of these Standard Specifications. Fertilizer is not required.

Mulch used for temporary seeding shall meet the same requirements as "mulch cover" in subsection 2153.6. Mulch is required unless erosion control blankets are being used instead.

The following seed mixtures and planting rates shall be used:

1. Type "TR" Seed: This mixture will normally be used when temporary seeding is conducted between February 15 and May 31, or between September 1 and October 31. The seed mixture will be as follows:

Kind of Seed	Minimum Pure	Rate of
	Live Seed (%)	Pure Live Seed
		(lbs per Acre)
Annual Rye Grass	83	90

2. Type "TM" Seed: This mixture will normally be used when temporary seeding requires heat tolerance, typically for planting anytime between May 1 and August 15. (Volunteer millet is aesthetically objectionable in turf grass lawns; therefore, some jurisdictions may restrict use of this mix. Confirm local requirements before use.) The seed mixture will be as follows:

Kind of Seed	Minimum Pure	Rate of
	Live Seed (%)	Pure Live Seed
		(Lbs per Acre)
Millet	77	65

3. Type "TW" Seed: This mixture will normally be used when temporary seeding requires cold tolerance, typically for planting anytime between September 15 and November 30. The seed mixture will be as follows:

Kind of Seed	Minimum Pure Live Seed (%)	Rate of Pure Live Seed (Lbs per Acre)
Winter Wheat	83	120

- B. **Construction Requirements:** Preparation, planting and all other construction requirements for temporary seeding shall be as specified for permanent seeding in Section 2400, except as modified herein. Temporary seeding shall be drilled (see 2153.8 for hydraulic application of temporary seed). Prior to application, the soil shall be tilled to a depth of at least 2 inches and gullies, depressions, and large clods eliminated. Roller compaction of the seedbed is not required. Within 24 hours of seeding, mulch or erosion control blankets shall be applied. When mulch is used, it shall be applied in accordance with the same requirements given for "Mulch Cover" in subsection 2153.6. When erosion control blankets are used, they shall be installed in accordance with the requirements in subsection 2153.9. The Contractor shall initially water all areas of temporary seeding at least one-quarter inch as soon as the mulch is laid. Additional watering may be necessary for plant germination and adequate growth to provide cover. Contractor shall schedule work so as to provide temporary seeding as early as practical in the construction process. Contractor shall maintain a readiness to perform temporary seeding frequently during the progress of the project. No more than 7 calendar days shall elapse between the Engineer's request for temporary seeding and its application. Multiple mobilizations to seed areas as construction progresses shall be expected.
- C. **Maintenance:** Mulch shall be replaced or repaired as needed during germination and early growth. Bare spots shall be patched, by hand seeding if necessary. Vehicle and personnel traffic shall be minimized in areas seeded.
- D. **Measurement and Payment:** "Temporary Seeding" will be measured per acre or hundredth part thereof and paid for at the contract unit price. No differentiation shall be made for type of temporary seed used. Mulch and watering shall not be measured or paid for separately on any temporary seeding, but all such costs shall be subsidiary to the item. Erosion control blankets, when used, will be measured and paid separately as "Erosion Control Blanket."

2153.6 Mulch Cover: Mulch applied without seeding to protect the soil surface from raindrop impact and reduce wind erosion and dust. Mulch Cover (without seed) is generally used when ground cover is required and temporary or permanent seeding is not feasible.

- A. **Materials:** Mulch shall be vegetative type only, consisting of cereal straw from stalks of oats, rye, wheat or barley and shall be free of prohibited and noxious weed seeds.
- B. **Construction:** Prior to applying mulch, the soil shall be tilled to a depth of 2 inches to eliminate hard crust and allow rainwater intercepted by mulch to infiltrate the soil. Gullies, depressions, and large clods shall be eliminated.

Mulch shall be applied at the rate of 1.5 tons/acre (3,000 lbs/acre) and be anchored into the soil a minimum depth of 3 inches by use of a heavy disc harrow, set nearly straight, or a similar approved tool. Discs of the anchoring tool shall be set approximately 9

inches apart. Anchoring shall be accomplished by not more than two passes of the tool. If approved by the Engineer, a tackifier may be applied to the mulch to anchor it instead of using the disc harrow.

- C. Maintenance:** Mulch cover shall be replaced or repaired as needed. Bare spots shall be filled in, by hand if necessary. Vehicle and personnel traffic shall be minimized in areas mulched.
- D. Measurement and Payment:** "Mulch Cover" will be measured per acre or hundredth part thereof and paid for at the contract unit price. Mulch is not measured and paid separately when laid down in conjunction with seeding operations.

2153.7 Hydrocover (Standard): Hydraulic application of a standardized mixture of fiber mulch, tackifier, and temporary seed to provide temporary cover.

A. Materials:

1. **Fiber Mulch:** Fiber mulch shall be a manufactured, pre-packaged, biodegradable material. The material supplied shall be meet the requirements of ECTC's Standard Specification for Hydraulic Erosion Control Products (HECPs) (version 2.4 dated April 2, 2014) for Type 3 products, having a functional longevity of 3 months, a maximum uninterrupted slope length of 50 feet, and applied to a slope that is flatter than 3:1. In addition, the material shall also be listed on the TxDOT Approved Products List for Erosion Control under the category "Mulches 4:1 or Flatter Slopes" and specified for use on "Clay or Tighter Soils".
2. **Tackifier:** Shall be food-grade hydrolyzed guar gum powder or alternate material as specified by the manufacturer. It shall be mixed with the cellulose fibers based on the manufacturer's recommendations.
3. **Water:** Shall be clean, potable water mixed at a rate suitable for the equipment being used and as recommended by the manufacturer.
4. **Seed:** Shall be Type TR, TM or TW seed as specified in Section 2153.5 and appropriate for the season. Seed shall be mixed to provide no less than the seeding rate per acre given in that section.
5. **Fertilizer:** Not required unless specified by the Engineer

- B. Construction Requirements:** The fiber mulch shall be added to the hydraulic seeder along with proportionate amounts of seed, tackifier, and water in accordance with the manufacturer's recommendation. It shall be applied to make a uniform coverage of the soil surface. Prior to application, the soil shall be tilled to a depth of at least 2 inches and smoothed to eliminate gullies, depressions, or large clods. The Standard Mix Hydrocover mix shall not be used on any slope steeper than 4:1. Contact the engineer for alternate specifications to be used on steeper slopes if there is a discrepancy.

Hydrocover shall be applied at a minimum rate of 2,000 pounds dry weight of fiber per acre (0.41 pounds per square yard), unless otherwise specified by the manufacturer. Once applied, the area shall be allowed to dry and vehicle and personnel traffic shall be

kept off the stabilized area. Water shall be applied as needed for seed germination and plant growth. The hydrocover operation shall be accomplished with hydraulic sprayers suitable for spreading and projecting the mixture and fitted with the appropriate nozzle tips. Sprayers shall be mechanically mixed or jet agitated.

Contractor shall maintain a readiness to provide hydrocover frequently during the progress of the project. No more than 7 calendar days may elapse between the Engineer's request for hydrocover and its application. Multiple mobilizations of hydrocover operations shall be expected.

- C. Maintenance:** Areas which are disturbed by construction shall be patched with additional application of slurry at the next available mobilization of equipment at no additional cost. Small areas of poor coverage may be stabilized through erosion control blankets, mulch for cover, straw wattle protection or other measures, at no additional cost.
- D. Measurement and Payment:** "Hydrocover (Standard)" will be measured per acre or hundredth part thereof and paid for at the contract unit price. No payment will be made for applications made outside the area intended for coverage.

2153.8 Hydrocover (Specialty Mix): Hydraulic application of specialized mixtures of fiber mulch, tackifiers, seed and other additives to provide temporary cover. Such specialized mixtures may provide for steeper slopes, more robust protection, longer durability, or enhanced vegetative growth, as compared to the Standard Mix.

- A. Materials:** When specialty mixtures are used, the particular mix design and ingredient requirements shall be given in the plans or special provisions. Such specialty mixtures may include additives for improved seed germination, mixtures of special polymer tackifiers and heavier rates of cellulose fiber or other cross-linking organic fibers to produce a more continuous cover (i.e. "Bonded Fiber Matrix"), or mixtures that contain polyacrylamides that chemically stabilize the underlying soils (i.e. "Stabilized Fiber Matrix"). Seed and additives shall conform to the requirements of standard hydrocover, except as modified in the plans, special provisions or by the manufacturer's recommendations for the specialty mix.
- B. Construction and Maintenance Requirements:** All construction and maintenance requirements shall be the same as for standard hydrocover, except as modified by the plans or the manufacturer's recommendation for the specialty mix. Equipment for specialty mixes shall conform to manufacturer's recommendations.
- C. Measurement and Payment:** "Hydrocover (Named Specialty Mix)" will be measured per acre or hundredth part thereof and paid for at the contract unit price. No payment will be made for applications made outside the area intended for coverage.

2153.9 Erosion Control Blankets (including Turf Reinforcing Mats): Blankets or mats of natural, synthetic, or composite materials that can be rolled onto bare earth and anchored in place to provide temporary or permanent cover and/or to stabilize bare earth or channels subject to overland or concentrated surface flow. This item of work includes the use of Turf Reinforcing Mats.

- A. Materials:** Erosion control blankets of the class and type specified in the contract shall be a "Rolled Erosion Control Product" as defined by the ECTC Standard Specification. Further, the material shall be listed in the current TxDOT Approved Products List for Erosion Control. Blankets are categorized by expected use and application, as follows:

Class 1: For use as Cover and Slope Protection from overland flow:

- Type A: On slopes 1:3 or flatter with clay soils.
Type B: On slopes 1:3 or flatter with sandy soils.
Type C: On slopes steeper than 1:3 with clay soils.
Type D: On slopes steeper than 1:3 with sandy soils.

Class 2: For use as Flexible Channel Liner under concentrated flow:

- Type E. For shear stresses below 2 lb/sq. ft.
Type F. For shear stresses below 4 lb/sq. ft.
Type G. For shear stresses below 6 lbs/sq. ft.
Type H. For shear stresses below 8 lb/ sq. ft.

Materials supplied for Type A, B, C, D, E and F blankets shall have a minimum expected longevity of 12 months, unless otherwise stated on the plans or approved by the Engineer. Materials supplied for Type G and H shall have a longevity of greater than 5 years. Materials for Type H shall be 100% synthetic. Expected longevity shall be evaluated based on the manufacturer's data.

- B. Construction Requirements:** The Contractor shall install erosion control blankets in the locations shown in the plans and in accordance with the Standard Drawings and manufacturer's recommendations.
- C. Maintenance:** Maintain blankets in accordance with the Standard Drawings and manufacturer's recommendations.
- D. Measurement and Payment:** "Erosion Control Blanket (Named Type)" will be measured per square yard of sloped surface area covered by the completed mat and paid for at the contract unit price for the given type. Excess blanket used for overlap at seams, anchoring, waste, repairs, etc. will not be included in the measurement. When blankets are used in conjunction with permanent or temporary seeding, erosion control blanket will be paid for at the contract unit price and the seeding operation shall be paid separately.

2153.10 Compost Cover: Organic compost applied with or without seeding to protect the soil surface from raindrop impact, absorb stormwater, facilitate vegetation growth and reduce wind erosion and dust.

- A. Materials:** *(Note: The material requirements in this subsection do not apply for compost filter berms and compost filter socks, and are described more fully in Sections 2154.10 and 2154.11.)*

All compost shall be mature, sanitized, well-composted organic matter free of identifiable feedstock constituents and offensive odors. Compost shall have been produced by the aerobic decomposition of organic material. Organic material sources may include leaves and yard trimmings, paper fiber, wood, bark, biosolids, food scraps, composted manures, or combinations of these products. Biosolids compost shall comply with the

Standards for Class A biosolids outlined in 40 Code of Federal Regulations (CFR) Part 503. The compost shall be free of any refuse, contaminants, and any material toxic to plant growth. Compost must not be derived from mixed municipal solid waste. Compost shall comply with all applicable state and federal regulations regarding production and distribution.

All compost material supplied shall be certified through one of the following programs:

- A. The USCC STA Program through a certified supplier, and wherein all testing procedures follow the USCC TMECC manual.
- B. The KDOT Specification found at Section 2105 for Soil Compost Materials, wherein all testing procedures are in accordance with the requirement listed there. Under this specification, however, compost sources from the State of Missouri are not excluded, provided that such sources are in compliance with Missouri regulations, satisfy the material and testing requirements found in the KDOT specification, and are otherwise found to be suitable by the Engineer.

Before delivering of the compost, the supplier shall provide a copy of the lab analysis and certifications as outlined for the applicable program. The supplier shall also document the feedstocks and sources used in the compost to be supplied.

- B. **Construction:** Prior to applying compost, the soil shall be tilled to a depth of 2 inches to eliminate hard crust and allow rainwater intercepted by the compost cover to infiltrate into the soil. Gullies, depressions, and large clods shall be eliminated.

Compost shall be applied to a depth of 1.5 to 2 inches when alone or 1 to 1.5 inches when used in conjunction with seeding operations. Compost shall be uniformly applied using an approved spreader unit, which may include mechanical or pneumatic (blower) devices. Compost shall extend at least 3 feet beyond the shoulder of any slope to ensure that runoff does not flow under the cover. Once applied, the compost shall be thoroughly watered to improve settling.

- C. **Maintenance:** Compost shall be replaced or repaired as needed. Bare spots shall be filled in, by hand if necessary. Vehicle and personnel traffic shall be minimized in areas covered.
- D. **Measurement and Payment:** "Compost Cover" will be measured per cubic yard of compost in the vehicle at the point of delivery to the project. When compost cover is used in conjunction with permanent or temporary seeding, compost cover will be paid at the contract unit price and the seeding operation shall be paid separately. The unit price for compost cover will include any deductions for standard mulching that is no longer required.

2153.11 Surface Roughening: Any rough graded slope that is not yet ready for seeding or other treatment and which will not be disturbed by ongoing construction for a period of 7 days or more shall be roughened by grooving, tracking, disking, or ripping it with a disc, tiller, spring harrow or other suitable implement. Such grooves shall be located traverse to the slope face and shall not be less than 3 inches deep nor spaced more than 15 inches apart. The requirement to roughen slopes by tracking or grooving shall apply to all slopes steeper than 6:1

horizontal to vertical. No measurement or payment shall be made for this item, but it shall be subsidiary to the earthwork.

2153.12 Dust Control: Contractor shall take effective measures to prevent blowing dust. Adequate moisture content shall be maintained in all exposed soils by application of water or other approved dust suppressant. Areas to be subsequently paved may be treated with asphalt emulsion. When dust produced by operations such as sand blasting, concrete grinding, and sawing of concrete or masonry would create a public nuisance, they shall be performed under a water spray or an alternate construction method shall be used. No measurement or payment shall be made for this item, but it shall be subsidiary to other work.

2153.13 Method of Measurement: Erosion controls will be measured in the manner specified in each applicable subsection.

2153.14 Basis of Payment: Erosion controls will be paid for at the contract unit price specified in each applicable subsection.

SECTION 2154 SEDIMENT CONTROLS AND DIVERSIONS

2154.1 Referenced Standards:

The following standards are referenced directly in this section. The latest version of these standards shall be used.

AASHTO:

M 288 - Geotextile Specification for Highway Applications

APWA, Kansas City Metropolitan Chapter (KC-APWA):

Standard Drawings, Division III of Standard Specifications and Design Criteria

ASTM:

D 3786 - Test Method for Hydraulic Bursting Strength of Textile Fabrics – Diaphragm Bursting Strength Tester Method

D 4355 - Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Type Apparatus

Kansas Department of Transportation (KDOT):

Standard Specifications for State Road & Bridge Construction, 2015 Edition or later including all latest errata and adopted Special Provisions, as well as associated Standard Drawings.

Missouri Department of Transportation (MoDOT):

Missouri Standard Specifications for Highway Construction, 2011 edition or later including all supplemental specifications, as well as associated Standard Plans.

2154.2 Summary: This section describes specific requirements for installation and maintenance of temporary measures to detain, filter, or cause settlement of sediment from runoff, as well as measures used to temporarily direct or divert runoff onsite or at the site perimeter.

2154.3 Materials: Materials used for sediment controls and diversions shall meet the requirements of the following subsections. Unless otherwise specified herein, the Contractor shall submit a certification prepared by the manufacturer for each material used which states that the materials meet all the requirements of this specification. The manufacturer shall also provide supporting documentation and testing results to validate this certification, if requested by the Engineer. Manufacturer's instructions for installation of materials (when applicable) will be available onsite whenever work is occurring and a copy shall be submitted to the Engineer upon request.

2154.4 Sediment Removal and Disposal: Removal of accumulated, settled sediment from behind barriers, traps, or within basins.

A. Materials: Not applicable.

B. Construction Requirements: Accumulated sediment shall be removed when it exceeds the volumes specified for any particular measure or would otherwise impede the proper operation of control measures. Sediments removed shall be mixed with other onsite materials and incorporated into project fills, spread loosely across the site, or

hauled offsite as necessary. Sediments shall not form an identifiable layer or seam in any fill. Sediments hauled offsite shall be dewatered first or hauled in a water tight truck. Sediments shall be located and compacted in a way which minimizes the likelihood of being resuspended in future rainfalls. Removal shall be by machine or hand work, whichever is most feasible.

C. Maintenance: Not applicable.

D. Measurement and Payment: Sediment removal is not measured or paid separately, but shall be subsidiary the other items in the contract. The proper and timely use of erosion controls will help reduce the quantity of sediment that must otherwise be cleaned out of downstream controls.

2154.5 Silt Fence: A temporary barrier of synthetic fabric embedded in the ground and supported by posts used to divert water or to maintain a trap for settlement.

A. Materials, Construction Requirements and Maintenance: Refer to the Standard Drawings.

B. Measurement and Payment: Silt fence will be measured by the linear foot and will be paid for at the contract unit price for "Silt Fence" Initial excavation of depressions on the upstream side of silt fence to create added storage shall be subsidiary.

2154.6 Straw Bales: Straw bales shall not be used.

2154.7 Rock Ditch Checks: Small temporary stone ditch checks used to form protect ditches with larger flows.

A. Materials: Rock shall be a clean aggregate free of deleterious substances, including earth, chert, cracks, seams, soapstone, shale or other easily disintegrated materials. Rock shall come from a primary run and be screened to remove the easily separated fines. It shall meet the gradation requirements below for the nominal size specified:

2-inch Rock: Fifty percent (50%) by weight of the particles shall be larger than 1.5 inches in diameter and none shall be larger than 4 inches. Total aggregate and fines smaller than ½ inch shall not exceed 2 % by weight.

4-inch Rock: Fifty percent (50%) by weight of the particles shall be larger than 4 inches in diameter and none shall be larger than 9 inches. Total aggregate and fines smaller than 1" shall not exceed 2 % by weight.

6-inch Rock: Fifty percent (50%) by weight of the particles shall be larger than 6 inches in diameter and none shall be larger than 12 inches. Total aggregate and fines smaller than 1" shall not exceed 2 % by weight.

The Engineer may approve modifications to these gradations to accommodate readily available stockpiles from local quarries.

B. Construction Requirements: See Standard Drawings.

- C. **Maintenance:** See Standard Drawings.
- D. **Measurement and Payment:** "Rock Ditch Checks (Named Rock Size)" will be measured per ton or tenth part thereof, as placed, and paid for at the contract unit price for the nominal size of rock indicated. Initial excavation of depressions on the upstream side of rock barriers to create added storage shall be subsidiary.

2154.8 Synthetic Sediment Barriers (Type): Any one of various proprietary ditch checks, primarily composed of synthetic materials, that can be used instead of the other measures specified herein to control velocities and erosion in ditches or swales.

- A. **Materials:** Materials for any given Type of Synthetic Sediment Barrier shall be as called out in the plans or Standard Drawings. In addition, this category may also include those measures called out as "Synthetic Sediment Barrier" in KDOT Specification Sections 902 and 2114 or those called out as "Alternate Ditch Checks" in MoDOT Specification 806.
- B. **Construction Requirements:** Install Synthetic Sediment Barrier's in accordance with manufacturer instructions. Pay particular attention to anchoring, protection of channel underneath, and to conditions at the ends to avoid bypassing.
- C. **Maintenance:** Remove silt when it accumulates to 20% of the height of the barrier or when the accumulation prevents the proper operation of the ditch check, whichever is less. If units are damaged or dislodged during the sediment removal process, repair and re-establish continuity.
- D. **Measurement and Payment:** "Synthetic Sediment Barriers (Type) " will be measured per linear foot and paid for at the contract unit price. Underlying erosion control blanket or geotextiles shall be subsidiary. If no specific type is given, then all such measures allowed for the job will be paid for at a uniform price.

2154.9 Biodegradable Logs (or Wattles): Circular tubes of netting filled with straw or other biodegradable fibers and used as a small height barrier for diversion of water or settlement.

- A. **Materials:** Biodegradable logs are manufactured using a variety of filler materials. For this specification, the following two classes of filler are specified:

Class A: Rice or wheat straw fibers Fiber material shall be certified as weed free in accordance with state standards. Fibers shall have an average length greater than 3 inches. Type A wattles shall have a durability in the field of no less than 3 months. Type A wattles shall be specified with dimensions and minimum weights of 9-inch diameter (1.7 lbs./lin ft.); 12-inch diameter (2.5 lbs/lin. ft.) or 20-inch diameter (3.5 lbs/lin. Ft.)

Class B: Excelsior wood fibers, coconut fiber (i.e. coir), jute, or other longer-lasting biodegradable materials. Such materials shall be free of deleterious substances, compacted tightly, and shown to have an in-field durability of 6-months or greater. Class B wattles shall be specified with dimensions 9-inch diameter, 12-inch diameter, or 20-inch diameter.

Containment netting shall be jute or light-weight plastic. The entire wattle unit shall be sufficiently durable to withstand weather, construction, and installation conditions for no less than the life of the filler material (see above), including multiple movements and

reinstallations. Wood posts of sufficient strength withstand installation and weather shall be used for anchoring.

- B. Construction Requirements:** Biodegradable logs shall be located as shown on the plans or directed by the Engineer. Individual units shall be installed in accordance with manufacturer's recommendations and the Standard Drawings.
- C. Maintenance:** Maintain as called out in the Standard Drawings.
- D. Measurement and Payment:** "Biodegradable Logs (Size and Class)" will be measured per linear foot and paid for at the contract unit price. When used without other qualifier, the phrase "Straw Wattle" shall be considered equivalent to a 9-inch Class A Biodegradable Log.

2154.10 Compost Filter Berm: A berm or dike of compost placed to trap pollutants and filter runoff from small areas of overland flow.

- A. Materials:** Compost to be used in filter berms shall meet the following requirements:

<u>Parameter</u>	<u>Range</u>
pH	5.0-8.5
Moisture Content	<60%
Organic Matter Content	>25% of dry weight
Particle Size	99% < 2", 30%-50% < 3/8"

- B. Construction Requirements:** Compost filter berms shall be constructed using specially designed pneumatic equipment (blowers) and a berm shaping device, or other equipment as approved by the Engineer. If a blower is used, compost shall be blown directly at the soil surface to help settle, compact and shape the berm. The berm shall be formed in a trapezoidal shape, having a typical dimension of 3 feet wide at the base and 1.5 feet high. Position the berm around designated soil areas and parallel to the contour. The ends of the berm shall be pointed up slope such that the bottom elevation at each end is higher than the top elevation throughout most of the slope, so as to prevent water from flowing around the end of the berms.
- C. Maintenance:** Berms shall be reshaped and compost added as necessary to maintain their function and dimensions. Breaches in the berm shall be repaired promptly. Compost may be added by hand and tamped in place. Unless otherwise directed by the final landscape plans or by the Engineer, removal of the compost berm shall be made by spreading the compost in a thin layer over adjacent planted areas.
- D. Measurement and Payment:** "Compost Filter Berm" will be measured per linear foot and paid for at the contract unit price.

2154.11 Compost Filter Sock: A compost filter encased in a geotextile tube that serves a similar purpose to compost filter berms, particularly in areas with more concentrated overland runoff.

- A. Materials:** Compost to be used in filter socks shall meet the respective requirements for compost specified in Section 2154.10 for Filter Berms.

Tubes used for compost filter socks shall be produced from a 5 mil thick continuous HDPE or polypropylene filament, woven into a tubular mesh netting material, with openings in the knitted mesh 1/8 in (3 mm) to 3/8 in (10 mm). Tubes shall have a diameter of either 8, 12, or 18 inches, as specified. The 12-inch tubes are for general use, the 8-inch tubes are typically for flat slopes, and the 18 inch tubes are typically for steep slope protection and minor check dams.

Stakes for securing filter socks shall be hardwood with a 2" by 2" nominal dimension. Steel or other non-biodegradable stakes shall not be used.

- B. Construction Requirements:** Compost filter socks shall be constructed on site or delivered to the jobsite. When assembled on site, the sock shall be filled using a pneumatic blower. The sock shall be formed continuously for the length needed, up to 200 feet long. When multiple socks are needed, the end of one sock shall be pulled over the second to create a "sleeved" overlap. Once overlapped, the second section is filled with compost to create a seamless unit. Once placed, the filter sock will settle into an oval shape. Trenching is not required. Existing soil in the vicinity of the filter sock shall remain undisturbed to the extent practical. The sock shall be anchored by driving stakes through the center of the filter sock at 10 foot intervals, at all sleeved overlaps, and at each end. Where an adjustable section of filter sock is necessary (such as to permit dry weather vehicle access), the stakes may be placed on the downhill side of the sock rather than through it. Filter socks may be seeded.
- C. Maintenance:** Compost filter socks shall be inspected to ensure the sock material is intact and to determine if runoff is bypassing or undermining the units. Additional filter socks may be stacked as needed. Breaches in the line shall be repaired promptly. Unless otherwise directed by the final landscape plans or by the Engineer, removal of the compost sock shall be made by spreading the compost in a thin layer over adjacent planted areas. The HDPE or polypropylene sock shall be sliced open longitudinally to release the compost and the sock disposed of.
- D. Measurement and Payment:** "Compost Filter Sock (Named Diameter)" will be measured per linear foot and paid for at the contract unit price for the nominal diameter indicated.

2154.12 Diversion Berms: Earthen berms temporarily graded and compacted to provide a diversion of overland flow. Can be used in conjunction with slope drains at the top of slopes to prevent sheet flow down the slope face.

- A. Materials, Construction and Maintenance:** Refer to the Standard Drawings.
- B. Measurement and Payment:** "Diversion Berms" will be measured per linear foot and paid for at the contract unit price. Such payment shall be full compensation for berm installation, maintenance, removal and any other work noted on the plans.

2154.13 Slope Drain: A flexible tubing or conduit used to convey concentrated water from the top of a slope down to the toe and thereby preventing erosion over the slope face.

- A. **Materials, Construction and Maintenance:** Refer to the Standard Drawings.
- B. **Measurement and Payment:** "Temporary Slope Drain" will be measured per linear foot and paid for at the contract unit price. Such payment shall include installation of outlet protection.

2154.14 Inlet Protection: Any one of a variety of devices or procedures used to allow water to enter an stormwater inlet while filtering or temporarily impeding the flow sufficiently to reduce the quantity of sediment carried.

- A. **Materials:** When used, biodegradable logs, compost filter socks, synthetic sediment barriers, silt fence, or rock ditch checks shall meet the material requirements given by other items of this specification. All other material specifications are as shown in the Standard Details or on the plans. Straw wattles are not allowed for curb inlet protection. Unless otherwise restricted in the plans, the Contractor may also use any applicable inlet protection system allowed by KDOT Specification 902 and 2114 and the Standard Drawings or pre-approved materials list under the category "Temporary Inlet Sediment Barriers (if in Kansas); or any applicable inlet protection system allowed by MoDOT Specification 806 and Standard Plans under the category "Inlet Checks" (if in Missouri).
- B. **Construction Requirements:** Use the inlet protection systems shown on the plan, as appropriate. Provide the given system in accordance with the Standard Drawings. Alternate inlet protection methods may be approved or specified by the Engineer. The appropriate details for a given inlet will change during the progress of the job and adjustments shall be made as inlet construction progresses. Each inlet shall be protected continuously from initial construction until final stabilization. The ultimate test of acceptability is performance in preventing the migration of sediments through the inlet.

When surrounding conditions are such that protection of the inlet would lead to an increased risk of flooding of adjacent structures or produce a hazard to motorists, the barriers shall be adjusted or eliminated to avoid such impacts. In those cases, extra attention shall be paid to minimize the degree of sediment carried in the flow that reaches the inlet.

The general cases of inlet protection and the performance expected from each are as follows:

1. All Inlets at Sump Conditions: Inlets at sump conditions shall remain accessible for flow at all times. Small barriers, depressions and/or filters are used to screen larger sediments and initiate settlement of the water prior to it entering the inlet by creating a ponding zone. Generally, stormwater will enter the inlet via weir flow over the top of the barrier. Such water is generally the least-sediment laden as it is decanted from the top of the ponded area.
2. Street Inlets on Grade: On-grade inlet shall be converted into a localized sump condition by installing a barrier downstream and around the inlet of sufficient height to produce ponding and prevent bypass, while a barrier, depression, and/or filter in front of the inlet induces settlement of solids. Bypassing of water

at the on-grade inlet shall not be allowed and the inlet shall remain open to accept flow without causing excessive flooding.

3. **Selected Inlets Closed to Flow:** In select locations, the plans may designate certain inlets as "closed to flow." In those situations, the objective is to provide sufficient blockage of permanent and temporary openings to prevent entry of stormwater into the inlet. Such locations will be clearly indicated on the plans, and the closed condition for flow may be designated for only a portion of the construction period. The Contractor shall notify the Engineer if they believe that the closure of such inlets would result in an increased risk of flooding or downstream erosion, and such concerns shall be resolved before closing an inlet to flow.

- C. **Maintenance:** Sediment shall be removed from each inlet after every rainfall event that exceeds 1/2" or which results in a visible accumulation of sediment. Particular attention shall be paid to prevent blockage of inlets or cases where resuspension of captured sediment is likely. Specific maintenance issues unique to each inlet protection type shall be addressed as outlined in the Standard Drawings.
- D. **Measurement and Payment:** "Inlet Protection" will be measured per each inlet protected and paid for at the contract unit price. Each inlet will be measured only one time for the duration of the project regardless of the number of phases or protection methods used to protect a single inlet. Unless otherwise specified in the plans or contract documents, inlet protection at all locations will be paid at the same unit price.

2154.15 Construction Entrance: A stabilized layer of large aggregate and other features, located in areas of high traffic and at the construction entrance and exit, intended to remove mud and silt embedded in tires, to prevent tracking sediments off the site.

- A. **Materials, Construction and Maintenance:** See Standard Drawings.
- D. **Measurement and Payment:** "Construction Entrance" will be measured by the square yard and paid for at the contract unit price. All other features required for the entrance shall be subsidiary.

2154.16 Sediment Trap: A temporary reservoir and embankment with a stone outlet that is constructed across a drainage way to intercept sediment-laden runoff and provide retention time sufficient to settle out a majority of solids. Used for smaller watersheds where the engineered outlet works of a sediment basin are not required.

- A. **Materials:** See Standard Drawings.
- B. **Construction Requirements:** See Standard Drawings. The construction of the sediment trap shall be carried out in a manner such that it does not result in sediment problems downstream. The embankment of the sediment trap shall be stabilized with temporary or permanent vegetation immediately after installation.
- C. **Maintenance:** See Standard Drawings.

- D. Measurement and Payment:** "Sediment Traps" shall be measured per each trap constructed and paid for at the contract unit price. Unless otherwise specified in the plans or contract documents, each trap shall be paid for at the same unit price.

2154.17 Sediment Basin: A temporary reservoir and embankment with engineered outlet works that is constructed across a drainageway to intercept sediment-laden runoff from large areas and provide retention time sufficient to settle out a majority of solids.

- A. Materials:** See Standard Drawings.
- B. Construction Requirements:** See Standard Drawings. Where the plans indicate that a temporary sediment basin is to be converted into a permanent basin, pond, or other stormwater facility, the construction, use, and removal or alterations shall be coordinated to result in a final facility that is operational in the time frame specified in the plans and which causes a minimum amount of disruption to the sitework, downstream channel, or future facility and minimizes the amount of rework needed. The construction of the sediment basin shall be carried out in a manner such that it does not result in sediment problems downstream. The embankment and emergency spillway of the sediment basin shall be stabilized with temporary or permanent vegetation immediately after installation of the basin.
- C. Maintenance:** See Standard Drawings.
- D. Measurement and Payment:** "Sediment Basin" shall be lump sum, and no measurement for payment of any item will be made. If multiple basins are used on a project, then this item shall be lump sum for all basins collectively, unless the bidding list designates individual locations.

Eighty percent (80%) of the lump sum payment shall be made once the basin is complete, in-place and operational. The final twenty percent (20%) shall be made when the basin is removed. Such payment shall be full compensation for clearing, grubbing, grading, spillway installation, stabilization, maintenance, removal, and any other work noted on the plans, including installation of outlet protection. Routine removal of sediment shall be subsidiary

If the basin indicated on the plans is to be converted at the end of construction into a permanent pond, basin, or other stormwater facility, then this item shall include payment only for the incremental costs associated with its use as a temporary basin. Permanent embankments, excavations, spillways, or other appurtenances that are constructed will be handled by the other appropriate items of the Contract for the permanent facility.

2154.18 Temporary Stream Crossings: A temporary culvert constructed in a creek, river, or stream to allow construction access and crossing.

- A. Materials:** See Standard Drawings.
- B. Construction Requirements:** See Standard Drawings. Culvert sizing, number, and orientation shall be as dictated in the plans. Care shall be taken to ensure that the stream crossing does not cause inadvertent flooding of adjacent homes, buildings, or other structures. Concerns about adequacy of culvert sizing shall be brought to the

immediate attention of the Engineer and no installation made until such concerns are resolved.

C. Maintenance: See Standard Drawings.

D. Measurement and Payment: "Temporary Stream Crossing" shall be lump sum and such payment shall be full compensation for installation, maintenance, removal and any other work noted on the plans. If multiple crossings are used on a project, then this item shall be lump sum for all crossings collectively, unless the bidding list designates locations individually.

Eighty percent (80%) of the lump sum payment shall be made once the crossing is complete, in-place and operational. The final twenty percent (20%) shall be made when the crossing is removed.

2154.19 Diversion Channels: A temporary channel excavated and stabilized to divert flow from a stream around a culvert or other in-stream structure being constructed, so as to avoid excessive erosion in the construction zone.

A. Materials: See Standard Drawings.

B. Construction Requirements: See Standard Drawings. Diversions of streams shall only be allowed if covered by the plans and approved permits for the project. Such construction, stabilization, and restoration will conform the plans and Standard Drawings. Concerns about adequacy of culvert sizing shall be brought to the immediate attention of the Engineer and no installation made until such concerns are resolved.

C. Maintenance: See Standard Drawings.

D. Measurement and Payment: "Diversion Channels" shall be lump sum and such payment shall be full compensation for installation, maintenance, removal and any other work noted on the plans. If multiple crossings are used on a project, then this item shall be lump sum for all diversions collectively, unless the bidding list designates locations individually.

Eighty percent (80%) of the lump sum payment shall be made once the diversion is complete, in-place and operational. The final twenty percent (20%) shall be made when the crossing is removed.

2154.20 Turbidity Curtains: Floating barriers of synthetic fabric curtain suspended in the water and held in a vertical position, used in lakes and perennial rivers to slow, contain or direct the flow from disturbed areas allowing solids to settle out before spreading into the surrounding water.

A. Materials: All components shall conform to the requirements given for the specific turbidity curtain system specified in the plans.

B. Construction Requirements: Shall conform to the manufacturer's recommendations for the curtain system specified in the plans, plus such additional requirements as may be listed in the plans. A manufacturer's representative shall be onsite during installation of the system.

- C. Maintenance:** Anchor lines shall be kept secure and properly positioned. Fabric, cable, and other appurtenances shall be repaired immediately as needed and in accordance with manufacturer's instructions.
- D. Measurement and Payment:** "Turbidity Curtain" will be measured by the linear foot and paid for at the contract unit price.

2154.21 Dewatering Filter: A device for filtering sediments from water that is discharged during pumping or dewatering activities.

- A. Materials:** Dewatering filters shall be constructed of materials as shown on the Standard Plans. Proprietary devices that provide equal or better performance than filters in the Standard Plans may be approved by the Engineer.
- B. Construction Requirements:** Dewatering filters shall be used whenever sediment-laden effluent is discharged from pumps used during construction for dewatering or other activities. For proprietary devices, the manufacturer's recommendations shall be followed.
- C. Maintenance:** Filters shall be cleaned or replaced as necessary to maintain filtration capacity.
- D. Measurement and Payment:** No measurement or payment will be made for "Dewatering Filters," but the use of such devices shall be subsidiary to the dewatering activity or other items of the contract. Removal of sediments from dewatering devices shall also be subsidiary.

2154.22 Method of Measurement: Sediment controls and diversions will be measured in the manner specified in each applicable subsection.

2154.23 Basis of Payment: Sediment controls and diversions will be paid for as specified in each applicable subsection.

SECTION 2155 SCHEDULING AND STANDARD SEQUENCES

It is intended that future editions of this specification will contain guidelines and requirements for scheduling and standard sequences of work in order to minimize the duration of exposure and potential for sediment discharge. This section has been reserved for that purpose.

SECTION 2156 MEASUREMENTS AND PAYMENTS

2156.1 Summary: This section includes the method of measurement and the basis of payment, for furnishing all labor, equipment, tools and materials and for the performance of all related work necessary to complete any work covered in Section 2150. Unless otherwise indicated, the maintenance, repair, removal and disposal of all temporary measures shall be subsidiary to the initial installation.

2156.2 General: Unless specifically altered by the Contract Special Provisions, the methods of measurement and payment shall be as specified in each section herein, and as listed in the Proposal.

2156.3 Measurement: The Engineer or his representative will measure the work for payment. The method of measurement and computations used in determination of quantities of work performed will be those methods generally recognized as conforming to good engineering practice.

2156.4 Items not listed in the Proposal: There shall be no measurement or separate payment for any item of work not specifically identified and listed in the Proposal and all costs pertaining thereto shall be included in the contract unit prices for other items which are listed in the Proposal.

2156.5 Measurement and Payment Summary Table

Item Description	Ref. Section	Method of Measurement	Basis of Payment
General Requirements	2151	No measurement	Subsidiary to other items
Chemical and Waste Controls	2152	No measurement	Subsidiary to other items
Permanent Seeding or Sodding	2153.4	See Section 2400	See Section 2400
Out of Season Watering	2153.4	1,000 gallon unit	Unit Bid Price
Temporary Seeding	2153.5	0.01 acre	Unit Bid Price
Mulch Cover	2153.6	0.01 acre	Unit Bid Price
Hydrocover (Standard)	2153.7	1.0 lbs dry-weight of fiber	Unit Bid Price
Hydrocover (Named Specialty Mix)	2153.8	1.0 lbs dry-weight of fiber	Unit Bid Price
Erosion Control Blanket (Named Type)	2153.9	1.0 sq. yd.	Unit Bid Price
Compost Cover	2153.10	1.0 cu. yd.	Unit Bid Price
Surface Roughening	2153.11	No measurement	Subsidiary to earthwork items
Dust Control	2153.12	No measurement	Subsidiary to other items
Sediment Removal	2154.4	No measurement	Subsidiary to other items
Silt Fence	2154.5	1.0 lin. ft.	Unit Bid Price
Rock Barrier (Named Size)	2154.7	0.1 ton	Unit Bid Price
Open-Flow Ditch Check (Type)	2154.8	1.0 lin. ft.	Unit Bid Price
Biodegradable Logs (Size and Class)	2154.9	1.0 lin. ft.	Unit Bid Price
Compost Filter Berm	2154.10	1.0 lin. ft.	Unit Bid Price
Compost Filter Sock (Named Diameter)	2154.11	1.0 lin. ft.	Unit Bid Price
Diversion Berm	2154.12	1.0 lin. ft.	Unit Bid Price
Slope Drain	2154.13	1.0 lin. ft.	Unit Bid Price

Measurement and Payment Summary Table (continued)

Item Description	Ref. Section	Method of Measurement	Basis of Payment
Inlet Protection	2154.14	Each inlet	Unit Bid Price
Construction Entrance	2154.15	1.0 sq. yd.	Unit Bid Price
Sediment Trap	2154.16	Each trap	Unit Bid Price
Sediment Basin	2154.17	No measurement	Lump Sum
Temporary Stream Crossing	2154.18	No measurement	Lump Sum
Diversion Channels	2154.19	No measurement	Lump Sum
Turbidity Curtain	2154.20	1.0 lin. ft.	Unit Bid Price
Dewatering Filter	2154.21	No measurement	Subsidiary to other items

SECTION 7

Log of Amendments

The permittee shall amend the SWPPP at a minimum whenever the:

- a. Design, operation, or maintenance of BMPs is changed;*
- b. Design of the construction project is changed that could significantly affect the quality of the stormwater discharges;*
- c. Permittee's inspections indicate deficiencies in the SWPPP or any BMP;*
- d. Department notifies the permittee in writing of deficiencies in the SWPPP;*
- e. SWPPP is determined to be ineffective in minimizing or controlling erosion and sedimentation (e.g., there is visual evidence of excessive site erosion or excessive sediment deposits in streams or lakes); and/or*
- f. Department determines violations of water quality standards may occur or have occurred.*

SWPPP Amendment Log

[illegible]

SWPPP Amendment Log

[illegible]

SWPPP Amendment Log

[illegible]

SECTION 8

Local Regulations & Additional Permits

Local Ordinances will be located here for reference only. Additional permits (i.e. 404, NWP, grading permits if required, etc.) will be located here for reference only.



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, KANSAS CITY DISTRICT
635 FEDERAL BUILDING
601 E. 12TH STREET
KANSAS CITY, MISSOURI 64106-2824

April 4, 2019

Regulatory Branch
(NWK-2017-01663)
(Jackson, MO NWP 3 and 27)

Mr. John Kahl, P.E.
Terra Technologies, Inc.
6240 West 135th Street, Suite 100
Overland Park, Kansas 66223

Dear Mr. Kahl:

This letter is in response to the application you submitted, on behalf of Platform Ventures, for repairs, rehabilitation, dredging, and the construction of a stormwater detention basin for Old Longview Lake. The application was received on July 16, 2018. The project is located in Sections 10 and 15, Township 47 North, Range 32 West, City of Lee's Summit, Jackson County, Missouri.

We have reviewed the information furnished and have determined that your project is authorized by nationwide permit (NWP) 3, **Maintenance and (NWP) 27, Aquatic Habitat Restoration and Enhancement** provided you ensure that the conditions listed in the enclosed copy of excerpts from the January 6, 2017 Federal Register, Issuance of Nationwide Permits, are met. You must also comply with the Kansas City District Regional NWP Conditions posted at:

<http://www.nwk.usace.army.mil/Missions/RegulatoryBranch/NationWidePermits.aspx>

The Missouri Department of Natural Resources has certified that this NWP will not violate existing state water quality standards provided you comply with the conditions included in their attached certification document. All conditions included in the water quality certification become conditions of the NWP authorization. Please review all conditions associated with this NWP. If you have any questions concerning state water quality standards or compliance issues with the associated certification conditions, please contact the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102-0176. You may also contact the office at 573-526-3589 or by email at wpssc401cert@dnr.mo.gov.

General condition 30 requires you to sign and submit the enclosed "Compliance Certification" within 30 days of completing the authorized activity or the completion of the implementation of any required compensatory mitigation.

This NWP verification is valid until March 18, 2022. Should your project plans change or if your activity is not complete within the specified verification term, you must contact this office for another permit determination. Although the Corps has verified your project would meet the terms and conditions of a nationwide permit, other Federal, state and/or local permits may be required. You should verify this yourself.

In addition to the general conditions of this permit verification, the following special conditions apply to this permit:

1. If the construction of designated and hardened haul roads must be constructed to move dredged materials within the site you must contact our office for further consultation under Section 106 of the National Historic Preservation Act.

2. Operations on the site must be controlled to protect and avoid impacts to all historic structures listed on the National Register for the Longview Farm property.

Please be aware that the endangered Indiana bat (*Myotis sodalis*) and the threatened Northern long-eared bat (*Myotis septentrionalis*) may be present within your project area. To “not adversely affect” the listed species, the permittee must avoid cutting and clearing trees within the project area during the bats’ active season of March 31 – November 1. If you anticipate timber clearing outside these dates, please contact the Corps of Engineers, Regulatory Branch, for further consultation with the United States Fish and Wildlife Service.

We are interested in your thoughts and opinions concerning your experience with the Kansas City District, Corps of Engineers Regulatory Program. Please feel free to complete our Customer Service Survey form on our website at: http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. You may also call and request a paper copy of the survey which you may complete and return to us by mail.

Mr. Brian Donahue reviewed the information furnished and made this determination. If you have any questions concerning this matter, please feel free to contact him at (816) 389-3703. Please reference Permit No. NWK-2017-1663 in all comments and/or inquiries relating to this project.

Enclosures

cc (electronically w/o enclosures):

Environmental Protection Agency,
Watershed Planning and Implementation Branch
U.S. Fish and Wildlife Service, Columbia, Missouri
Missouri Department of Natural Resources,
Water Protection Program
State Historic Preservation Office
Missouri Department of Conservation



US Army Corps
of Engineers
Kansas City District

Nationwide Permit No. 3 Maintenance.

(a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. This NWP also authorizes the removal of previously authorized structures or fills. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project. This NWP also authorizes the removal of accumulated sediment and debris within, and in the immediate vicinity of, the structure or fill. This NWP also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

(b) This NWP also authorizes the removal of accumulated sediments and debris outside the immediate vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.). The removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend farther than 200 feet in any direction from the structure. This 200 foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall and intake structures. All dredged or excavated materials must be deposited and retained in an area that has no waters of the United States unless otherwise specifically approved by the district engineer under separate authorization.

(c) This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After conducting the maintenance activity, temporary fills must be removed in their



US Army Corps
of Engineers
Kansas City District

entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

(d) This NWP does not authorize maintenance dredging for the primary purpose of navigation. This NWP does not authorize beach restoration. This NWP does not authorize new stream channelization or stream relocation projects.

Notification: For activities authorized by paragraph (b) of this NWP, the permittee must submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 32). The pre-construction notification must include information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals. (Authorities: Section 10 of the Rivers and Harbors Act of 1899 and section 404 of the Clean Water Act (Sections 10 and 404))

Note: This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act section 404(f) exemption for maintenance.



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Nationwide Permit No. 27
Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

Activities in waters of the United States associated with the restoration, enhancement, and establishment of tidal and non-tidal wetlands and riparian areas, the restoration and enhancement of non-tidal streams and other non-tidal open waters, and the rehabilitation or enhancement of tidal streams, tidal wetlands, and tidal open waters, provided those activities result in net increases in aquatic resource functions and services.

To be authorized by this NWP, the aquatic habitat restoration, enhancement, or establishment activity must be planned, designed, and implemented so that it results in aquatic habitat that resembles an ecological reference. An ecological reference may be based on the characteristics of an intact aquatic habitat or riparian area of the same type that exists in the region. An ecological reference may be based on a conceptual model developed from regional ecological knowledge of the target aquatic habitat type or riparian area.

To the extent that a Corps permit is required, activities authorized by this NWP include, but are not limited to: the removal of accumulated sediments; the installation, removal, and maintenance of small water control structures, dikes, and berms, as well as discharges of dredged or fill material to restore appropriate stream channel configurations after small water control structures, dikes, and berms, are removed; the installation of current deflectors; the enhancement, rehabilitation, or re-establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to enhance, rehabilitate, or re-establish stream meanders; the removal of stream barriers, such as undersized culverts, fords, and grade control structures; the backfilling of artificial channels; the removal of existing drainage structures, such as drain tiles, and the filling, blocking, or reshaping of drainage ditches to restore wetland hydrology; the installation of structures or fills necessary to restore or enhance wetland or stream hydrology; the construction of small nesting islands; the construction of open water areas; the construction of oyster habitat over unvegetated bottom in tidal waters; shellfish seeding; activities needed to reestablish vegetation, including plowing or disking for seed bed preparation and the planting of appropriate wetland species; re-establishment of submerged aquatic vegetation in areas where those plant communities previously existed; re-establishment of tidal wetlands in tidal waters where those wetlands previously existed; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species should be planted at the site.

This NWP authorizes the relocation of non-tidal waters, including non-tidal wetlands and streams, on the project site provided there are net increases in aquatic resource functions and services.

Except for the relocation of non-tidal waters on the project site, this NWP does not authorize the conversion of a stream or natural wetlands to another aquatic habitat type (e.g., the



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conversion of a stream to wetland or vice versa) or uplands. Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type. This NWP does not authorize stream channelization. This NWP does not authorize the relocation of tidal waters or the conversion of tidal waters, including tidal wetlands, to other aquatic uses, such as the conversion of tidal wetlands into open water impoundments.

Compensatory mitigation is not required for activities authorized by this NWP since these activities must result in net increases in aquatic resource functions and services.

Reversion. For enhancement, restoration, and establishment activities conducted: (1) In accordance with the terms and conditions of a binding stream or wetland enhancement or restoration agreement, or a wetland establishment agreement, between the landowner and the U.S. Fish and Wildlife Service (FWS), the Natural Resources Conservation Service (NRCS), the Farm Service Agency (FSA), the National Marine Fisheries Service (NMFS), the National Ocean Service (NOS), U.S. Forest Service (USFS), or their designated state cooperating agencies; (2) as voluntary wetland restoration, enhancement, and establishment actions documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or (3) on reclaimed surface coal mine lands, in accordance with a Surface Mining Control and Reclamation Act permit issued by the Office of Surface Mining Reclamation and Enforcement (OSMRE) or the applicable state agency, this NWP also authorizes any future discharge of dredged or fill material associated with the reversion of the area to its documented prior condition and use (i.e., prior to the restoration, enhancement, or establishment activities). The reversion must occur within five years after expiration of a limited term wetland restoration or establishment agreement or permit, and is authorized in these circumstances even if the discharge occurs after this NWP expires. The five-year reversion limit does not apply to agreements without time limits reached between the landowner and the FWS, NRCS, FSA, NMFS, NOS, USFS, or an appropriate state cooperating agency. This NWP also authorizes discharges of dredged or fill material in waters of the United States for the reversion of wetlands that were restored, enhanced, or established on prior-converted cropland or on uplands, in accordance with a binding agreement between the landowner and NRCS, FSA, FWS, or their designated state cooperating agencies (even though the restoration, enhancement, or establishment activity did not require a section 404 permit). The prior condition will be documented in the original agreement or permit, and the determination of return to prior conditions will be made by the Federal agency or appropriate state agency executing the agreement or permit. Before conducting any reversion activity the permittee or the appropriate Federal or state agency must notify the district engineer and include the documentation of the prior condition. Once an area has reverted to its prior physical condition, it will be subject to whatever the Corps Regulatory requirements are applicable to that type of land at the time. The requirement that the activity results in a net increase in aquatic resource functions and services does not apply to reversion activities meeting the above conditions. Except for the activities described above, this NWP does not authorize any future discharge of dredged or fill material



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associated with the reversion of the area to its prior condition. In such cases a separate permit would be required for any reversion.

Reporting. For those activities that do not require pre-construction notification, the permittee must submit to the district engineer a copy of: (1) The binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement, or a project description, including project plans and location map; (2) the NRCS or USDA Technical Service Provider documentation for the voluntary stream enhancement or restoration action or wetland restoration, enhancement, or establishment action; or (3) the SMCRA permit issued by OSMRE or the applicable state agency. The report must also include information on baseline ecological conditions on the project site, such as a delineation of wetlands, streams, and/or other aquatic habitats. These documents must be submitted to the district engineer at least 30 days prior to commencing activities in waters of the United States authorized by this NWP.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing any activity (see general condition 32), except for the following activities:

(1) Activities conducted on non-Federal public lands and private lands, in accordance with the terms and conditions of a binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement between the landowner and the FWS, NRCS, FSA, NMFS, NOS, USFS or their designated state cooperating agencies;

(2) Voluntary stream or wetland restoration or enhancement action, or wetland establishment action, documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or

(3) The reclamation of surface coal mine lands, in accordance with an SMCRA permit issued by the OSMRE or the applicable state agency.

However, the permittee must submit a copy of the appropriate documentation to the district engineer to fulfill the reporting requirement. (Authorities: Sections 10 and 404)

Note: This NWP can be used to authorize compensatory mitigation projects, including mitigation banks and in-lieu fee projects. However, this NWP does not authorize the reversion of an area used for a compensatory mitigation project to its prior condition, since compensatory mitigation is generally intended to be permanent.

Excerpts from the January 6, 2017 Federal Register Nationwide Permit General Conditions

1. Navigation.

(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements.

No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas.

Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas.

Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds.

No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material.

No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes.

No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments.

If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows.

To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains.

The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment.

Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls.

Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills.

Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance.

Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project.

The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers.

(a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

17. Tribal Rights.

No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species.

(a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate

documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWP.

(e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA

section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.nmfs.noaa.gov/pr/species/esa/> respectively.

19. Migratory Birds and Bald and Golden Eagles.

The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether “incidental take” permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties.

(a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include

background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts.

If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or

remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters.

Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation.

The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures.

To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality.

Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to

ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management.

In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions.

The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits.

The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications.

If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. Compliance Certification.

Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States.

If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed activity;
- (3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided

results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form

must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings of waters of the United States to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects. For those NWPs that have a waivable 300 linear foot limit for losses of intermittent and ephemeral stream bed and a 1/2-acre limit (i.e., NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52), the loss of intermittent and ephemeral stream bed, plus any other losses of jurisdictional waters and wetlands, cannot exceed 1/2-acre.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

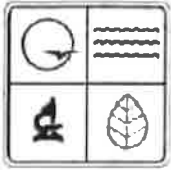
3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters (e.g., streams). The district

engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31, or to evaluate PCNs for activities authorized by NWPs 21, 49, and 50), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

E. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).



Missouri Department of Natural Resources

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION 2017 GENERAL AND SPECIFIC CONDITIONS

Water Protection Program

03/2017

Division of Environmental Quality Acting Director: Steve Feeler

PUB02235

Consistent with Section 401 of the Clean Water Act, these precertified conditions are designed to ensure activities carried out under Nationwide Permits (NWP) authorized by the U.S. Army Corps of Engineers (USACE) do not violate Missouri Water Quality Standards at 10 CSR 20-7.031, resulting in permanent damage to habitat, increased turbidity, reduced bank and channel stability or impacts to the biological and chemical integrity of the waters. Where applicable, these conditions are in addition to, not a replacement for, any federal requirements or conditions.

The conditions outlined in this document apply to those authorized projects where the applicant has chosen to accept these conditions instead of pursuing an individual Clean Water Act Section 401 Water Quality Certification (WQC) for the following NWPs:

- Only General Conditions apply to projects authorized by NWPs 5, 7, 15, 18, 23, 25, 27, 29, 30, 31, 36, 39, 40, 43, 45, and 46.
- Both General and Specific Conditions apply to projects authorized by NWPs 3, 4, 6, 7, 12, 13, 14, 16, 19, 20, 22, 33, 41, 42, 53 and 54.

Alternatively, an applicant may apply for individual WQC if they do not wish to accept the conditions outlined in this document.

Projects authorized by NWPs 17, 21, 32, 34, 37, 38, 44, 48, 49, 50, 51 and 52 require individual WQC by the Department of Natural Resources.

NWPs 1, 2, 8, 9, 10, 11, 28 and 35 authorize projects under Section 10 of the Rivers and Harbors Act of 1899 only. An activity needing only a Section 10 permit may require a WQC if that activity can reasonably be expected to result in any discharge either during construction or operation of the facility. Thus, if the agency determines the activity is likely to result in a discharge during construction or operation, the Department of Natural Resources has the discretion to require a WQC for a Section 10 activity. The USACE will advise a Section 10 permit applicant that they may need a WQC if there is a reasonable expectation that a discharge will occur either during the construction or operation of the project.

Pursuant to Chapter 644.037, RSMo, the Department of Natural Resources shall certify without conditions NWPs as they apply to impacts on wetlands in Missouri.

Pursuant to Chapter 644.038, RSMo, the Department of Natural Resources certifies all NWPs for impacts in all waters of the state without the above-stated or any other conditions for the construction of highways and bridges approved by the Missouri Highway and Transportation Commission. The Memorandum of Understanding of 2016 and any subsequent modifications between the two agencies outline the requirements by which the Missouri Department of Transportation will design and construct projects in order to protect the water quality of waters of the state.

GENERAL CONDITIONS

1. NWPs shall not allow the filling of jurisdictional springs such as those associated with a water body's point of origin or located in a streambed.
2. Acquisition of NWPs and the attendant WQCs shall not be construed or interpreted to imply the requirements for other permits are replaced or superseded, including Clean Water Act Section 402 National Pollutant Discharge Elimination System Permits for land disturbance or return water from material deposition. Permits or any other requirements shall remain in effect. Applicants with questions are encouraged to contact the Department of Natural Resources' regional office in the project area. A regional office map with contact information can be located at www.dnr.mo.gov/regions/regions.htm.

3. Care shall be taken to keep machinery out of the water way as much as possible. If work in the water way is unavoidable, it shall be performed in a way that minimizes the duration and amount of any disturbance to banks, substrate and vegetation to prevent increases in turbidity. Fuel, oil and other petroleum products, equipment, construction materials and any solid waste shall not be stored below the ordinary high water mark at any time or in the adjacent flood-prone areas beyond normal working hours. All precautions shall be taken to avoid the release of wastes or fuel to streams and other adjacent waters as a result of this operation.
 4. Petroleum products spilled into any water or on the banks where the material may enter waters of the state shall be immediately cleaned up and disposed of properly. Any such spills of petroleum shall be reported as soon as possible, but no later than 24 hours after discovery to the Department of Natural Resources' Environmental Emergency Response number at 573-634-2436 or website at <http://dnr.mo.gov/env/esp/esp-eer.htm>.
 5. Only clean, nonpolluting fill shall be used. The following materials are not suitable where contact with water is expected such as for bank stabilization, and shall not be used due to their potential to cause violations of the general and numeric criteria of the Water Quality Standards:
 - a. Earthen fill, gravel, broken concrete where the material does not meet the specifications stated in the "Missouri Nationwide Permit Regional Conditions" (updated link based on 2017 regional condition revisions) and fragmented asphalt, since these materials are usually not substantial enough to withstand erosive flows.
 - b. Concrete with exposed rebar.
 - c. Tires, vehicles or vehicle bodies, construction or demolition debris are solid waste and are excluded from placement in the waters of the state.
 - d. Liquid concrete, including grouted riprap, if not placed as part of an engineered structure.
 - e. Any material containing chemicals that would result in violation of water quality standards.
 6. Clearing of vegetation and trees shall be the minimum necessary to accomplish the activity except for the removal of invasive or noxious species and placement of ecologically beneficial practices. A vegetated riparian buffer strip shall be maintained during all stages of the project, including post-construction, from the high bank on either side of the jurisdictional channel to protect water quality and to provide for long-term stability of the stream channel, unless physical barriers prevent such a corridor. For purposes of these NWP, lack of ownership or control of any portion of the riparian buffer strip may be considered a legitimate and discretionary cause to waive this requirement on that portion.
 7. An individual WQC is required for any NWP issued on a water that is:
 - a. Listed for a sediment-related impairment, aquatic habitat alteration or unknown impairment as listed in the most current Water Quality Report (Section 305(b) Report) at <http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm>; or
 - b. Located in or occur within two miles upstream of a designated outstanding state or national resource water as found in 10 CSR 20-7.031, Tables D and E at <http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-7a.pdf>.
- The Department of Natural Resources' geospatial data is available upon request, and all published data is available on the Missouri Spatial Data Information Services website at msdis.missouri.edu/. Additional information to identify the project location, including stream reaches with listed impairments or special water designations, may be obtained from the Department of Natural Resources' Water Protection Program at 573-522-4502.
8. Discharge to designated metropolitan no-discharge streams is prohibited, except as specifically permitted under the Water Quality Standards, 10 CSR 20-7.031, and non-contaminated stormwater flows. No water contaminant except uncontaminated cooling water, permitted stormwater discharges in compliance with permit conditions, and excess wet-weather bypass discharges not interfering with beneficial uses should be discharged to the watersheds of streams listed in 10 CSR 20-7.031, Table F at <http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-7a.pdf>.
 9. A stream's pattern, profile and dimension, including but not limited to sinuosity, slope and channel width, shall be maintained as much as practicable. Streambed gradient shall not be adversely impacted during project construction. No project shall accelerate bed or bank erosion.
 10. NWPs authorized by the USACE for which the district engineer waives the impact limit related to linear feet (LF) or width shall require notification to the Department of Natural Resources. The Department of Natural Resources shall respond within 15 calendar days whether or not individual WQC would be required. This is applicable to NWPs 13, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52 and 54.

11. Proposed projects authorized by the USACE and containing a waiver of any "Missouri Nationwide Permit Regional Condition," except Regional Conditions 2, 3 and 7, shall require an individual WQC by the state.
12. Representatives from the Department of Natural Resources shall be allowed upon request on the project property, which includes the site(s) where the authorized activity takes place and any associated compensatory mitigation site(s), to inspect the authorized activity and mitigation efforts as deemed necessary by the Department of Natural Resources to ensure compliance with WQC conditions and water quality standards. The applicant or their consultant shall submit any requested information deemed necessary by the Department of Natural Resources to ensure compliance with WQC conditions.
13. After avoidance and minimization for the project, all unavoidable, adverse impacts shall be mitigated appropriately based on type and extent of impact.
 - a. Mitigation for loss of aquatic resources shall be in conformance with the currently approved "Missouri Stream Mitigation Method" and/or other mitigation guidance approved for use in Missouri. Mitigation guidance documents can be located online at www.nwk.usace.army.mil/Missions/RegulatoryBranch/StateofMissouri.
 - b. Mitigation shall be within the state of Missouri.
 - c. The applicant shall comply with the higher value of compensatory mitigation required by either the Department of Natural Resources or the USACE, but not both unless explicitly noted.
 - d. Stream impacts shall require compensatory mitigation with only in-stream or riparian corridor credits, unless the Department of Natural Resources agrees to an alternative.
14. Antidegradation requirements dictate all appropriate and reasonable Best Management Practices related to erosion and sediment control, project stabilization and prevention of water quality degradation are applied and maintained; for example, preserving vegetation, streambank stability and basic drainage. Best Management Practices shall be properly installed prior to conducting authorized activities and maintained, repaired and/or replaced as needed during all phases of the project to limit the amount of discharge of water contaminants to waters of the state. The project shall not involve more than normal stormwater or incidental loading of sediment caused by project activities so as to comply with Missouri's general water quality criteria [10 CSR 20-7.031(4); Page 15 at <http://www.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-7a.pdf>].
15. Channelization of streams is not allowed under this precertification:
 - a. Channelization includes but is not limited to reducing the length of the channel, widening the channel for increased water storage or flow, and/or construction of hard structures which concentrate flow.
 - b. Bank stabilization activities along one bank of a stream are permitted, including but not limited to, bank sloping and riprapping.
 - c. The redirection of flow by excavation of the opposite bank or a streambed is considered a channel modification and is prohibited.
16. No new or expanded wet stormwater retention basins or similar impoundment structures may be constructed unless they are located off-channel. In-channel dry stormwater detention basins are allowable if the stream channel is either temporarily or not adversely affected by the basin.
17. Any waste concrete or concrete rinsate shall be disposed of in a manner that does not result in any discharge to the jurisdictional waterways.

SPECIFIC CONDITIONS

18. Nationwide Permit 3 Maintenance
 - a. Silt, sediment and debris removal shall be limited to a maximum of 100 LF upstream and 100 LF downstream of structures.
 - b. During dewatering, water shall not be returned directly to the water way but shall be pumped upland and filtered through an appropriate treatment device as prescribed in any existing separate permit authorizing the discharge of return water. If, however, instream flow is 1 cubic foot per second (cfs) or greater and the return rate is set at 1 cfs or less, return may be made directly to the stream.
19. Nationwide Permit 4 Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities
Any inorganic or extraneous debris such as may be found on Christmas trees shall be removed to qualify as clean, nonpolluting fill.

20. Nationwide Permit 6 Survey Activities
Water, fines and excavated materials displaced by activities such as borings, shall not be returned directly to the water way, but shall be pumped upland and filtered through an appropriate treatment device as prescribed in any existing separate permit authorizing the discharge of return water.
21. Nationwide Permit 7 Outfall Structures and Associated Intake Structures
WQC does not replace or negate the need to obtain any required state permits under the Missouri Clean Water Law (Chapter 644, RSMo) for construction of wastewater treatment facility components including outfall structures; permits to release wastewater effluents; or for the construction of components related to public water supplies including intake structures as may be required by the Missouri Safe Drinking Water Law (Chapter 640, RSMo).
22. Nationwide Permit 12 Utility Line Activities
- For utility crossings that must disturb a water body, work shall be conducted in such a manner as to seal off the work area from flow and minimize sediment transport.
 - Material resulting from activity may not be temporarily side-cast into waters of the state for more than one month.
 - Directional boring to avoid impacts to waters of the state is recommended.
 - Drilling mud and/or other materials shall not be discharged into waters of the state. Best Management Practices shall be implemented to prevent possible discharges from reaching waters of the state. In the event materials are inadvertently discharged to waters of the state, notification to the Department of Natural Resources is required within 24 hours by calling 573-522-4502. Restoration of the impacted water(s) may be required.
 - Utility line crossings shall be placed as close to perpendicular as possible, and be limited to a maximum crossing length of no more than one and one-half times the width of the stream.
 - New utilities lines, when considering the project as a whole, which (1) Cross more than one jurisdictional water resulting in greater than 500 LF and/or 0.50 acre of impact to jurisdictional waters as a project total, and (2) Travel through more than two county jurisdictions or more than one state jurisdiction shall be viewed as a whole project in the WQC process and require individual WQC of all crossings, except crossings utilizing directional boring.
23. Nationwide Permit 13 Bank Stabilization
Innovative stabilization approaches require consultation with the Department of Natural Resources prior to approval and may require an individual WQC. The permittee shall invite the USACE and the Department of Natural Resources as well as the other state and federal resource agencies to examine innovative approaches.
24. Nationwide Permit 14 Linear Transportation Projects
- The permittee must propose and employ measures to mitigate the removal of impounded sediment (e.g., sand, gravel) in the unstable area upstream of a proposed project to prevent it from being transported downstream and/or construct a notched weir to slow the release of impounded sediment from upstream of the proposed project. Accumulated gravel may be allowed to naturally deposit into downstream plunge pool voids. Consultation with a hydrologist or other scientist is recommended if the amount of accumulated unconsolidated gravel exceeds the volume of plunge pool voids.
 - Where this NWP is used to authorize bridge and culvert structures, stream channel work is limited to a maximum of 100 feet upstream and a maximum of 100 feet downstream of the bridge or culvert. For purposes of this condition, a channel modification is any activity that alters the width, depth, length and/or sinuosity of a water way.
25. Nationwide Permit 16 Return Water from Upland Contained Disposal Areas
These activities could have specific tasks or processes involved which may require the acquisition of separate general or site specific permits. All applicants shall contact the Department of Natural Resources' Water Protection Program at 573-522-4502 to determine any specific requirements which may or may not require an individual WQC.
26. Nationwide Permit 19 Minor Dredging
These activities could have specific tasks or processes involved which may require the acquisition of separate general or site specific permits. All applicants shall contact the Department of Natural Resources' Water Protection Program at 573-522-4502 to determine any specific requirements which may or may not require an individual WQC.
27. Nationwide Permit 20 Response Operations for Oil and Hazardous Substances
- These activities could have specific tasks or processes involved which may require the acquisition of separate general or site specific permits. All applicants shall contact the Department of Natural Resources' Water Protection Program at 573-522-4502 to determine any specific requirements which may or may not require an individual WQC.
 - Oil and hazardous substance releases are to be reported to the Department of Natural Resources' Environmental Emergency Response number at 573-634-2436. Continue to report updates with regard to the containment and cleanup of releases.

28. Nationwide Permit 22 Removal of Vessels

Use of this NWP in Missouri is limited to removal actions only and shall not be used for any disposal of vessel.

29. Nationwide Permit 33 Temporary Construction, Access and Dewatering

- a. The use of this NWP shall be limited to impacts of six months or less in duration.
- b. Any removal of accumulated sediment (e.g., sand, gravel) upstream of a proposed project shall be limited to the quantity necessary to relieve any obstruction or to protect downstream habitat. The permittee must propose and employ measures to mitigate the removal of impounded sediment in the unstable area upstream of a proposed project to prevent it from being transported downstream and/or construct a notched weir to slow the release of impounded sediment from upstream of the proposed project.

30. Nationwide Permit 41 Reshaping Existing Drainage Ditches

- a. Material from the reshaping activities shall not be side-cast into any jurisdictional waters.
- b. Removal of vegetation shall be the minimum necessary to conduct approved activity except for the removal of invasive or noxious species. The Department of Natural Resources encourages deep-rooted vegetation to be maintained on at least one side of the water way to protect water quality; for example, leaving trees on the west side to prevent temperature exceedances in the water way.

31. Nationwide Permit 42 Recreational Facilities

The vegetated riparian buffer strip to be maintained from the high bank on either side of the jurisdictional channel may be used in part for the construction of public recreational trails, including those constructed to standards set by the Americans with Disabilities Act (ADA).

32. Nationwide Permit 53 Removal of Low-Head Dams

- a. The permittee must propose and employ measures to mitigate the removal of impounded sediment (e.g., sand, gravel) in the unstable area upstream of a proposed project to prevent it from being transported downstream and/or construct a notched weir to slow the release of impounded sediment from upstream of the proposed project. Accumulated gravel may be allowed to naturally deposit into downstream plunge pool voids. Consultation with a hydrologist or other scientist is recommended if the amount of accumulated unconsolidated gravel exceeds the volume of plunge pool voids.
- b. Stream channel work is limited to a maximum of 100 feet upstream and a maximum of 100 feet downstream of the dam.
- c. Restoration of the stream channel to its former, natural state is authorized. Individual WQC is required for non-natural channel modifications. For purposes of this condition, a channel modification is any activity that alters the width, depth, length and/or sinuosity of a water way.

33. Nationwide Permit 54 Living Shorelines

Innovative stabilization approaches require consultation with the Department of Natural Resources prior to approval and may require an individual WQC. Invite the USACE and the Department of Natural Resources as well as the other state and federal resource agencies to examine innovative approaches.

Applications for WQC should be sent to the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176, or electronically to wpsc401cert@dnr.mo.gov. A complete application consists of the application submitted to the USACE as well as additional information necessary for a complete review of the project. This may include but is not limited to topographical maps, locational maps, engineering plans, project diagrams and where applicable mitigation plans [Section 644.026.26, RSMo and 10 CSR 20-6.060(5)].

An issued WQC becomes part of and expires with the Section 404 and/or Section 10 permit unless explicitly stated in the WQC. Consultation with the Department of Natural Resources is required should the permit require modification. Not all permit modifications require the WQC to be modified or reissued. For example when a permit expiration date is extended or the permit is reissued and there are no changes to the original project or water quality standards, the WQC may remain valid for that project.

The Department of Natural Resources encourages, but does not require the permittee to consider environmentally-friendly design techniques to include stormwater management strategies that maintain or restore the original site hydrology through infiltration, evaporation or reuse of stormwater. Designs might include creating vegetated swales or rain gardens, or using porous pavement. More information can be found at these websites: www.epa.gov/owow/NPS/lid/ and www.lid-stormwater.net/lid_techniques.htm.

The Department of Natural Resources encourages the use of native vegetation to protect impacted areas from future water quality concerns. Native vegetation has evolved with Missouri's geology, climate and wildlife to occur within a region as a result of natural processes rather than human intervention. For areas where direct impacts to streams are to be avoided, the Department of Natural Resources recommends a minimum riparian buffer strip width of 50 feet as measured from top of bank.

The following publication provides guidance on how to protect water quality through Best Management Practices on project sites. For more information, please read: "Protecting Water Quality: A field guide to erosion, sediment and stormwater best management practices for development sites in Missouri and Kansas" dated January 2011 and located online at <http://dnr.mo.gov/env/wpp/wpcp-guide.htm>.

To help determine if a proposed activity could encounter species or sites of conservation concern within or near a project, including those that have not been recorded, the applicant is encouraged to visit:

- Missouri Department of Conservation's "Natural Heritage Review" website at <https://naturalheritagereview.mdc.mo.gov/>, and
- U.S. Fish and Wildlife Service's "Information, Planning and Conservation" website at <http://ecos.fws.gov/ipac/>.

If the proposed project encounters and will potentially affect a species of concern, please report it to the Missouri Department of Conservation and the U.S. Fish and Wildlife Service.

For more information
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
wpsc401cert@dnr.mo.gov
800-361-4827 or 573-522-4502
<http://www.dnr.mo.gov/env/wpp>

COMPLIANCE CERTIFICATION

General condition 30 of this Nationwide Permit requires that you submit a signed certification regarding the completed work and any required mitigation. This certification page satisfies this condition if it is provided to the Kansas City District at the address shown at the bottom of this page within 30 days of completing the authorized activity or the completion of the implementation of any required compensatory mitigation.

APPLICATION NUMBER: NWK-2017-1663

APPLICANT: Platform Ventures
4220 Shawnee Mission Parkway, Suite 200B
Fairway, Kansas 66205

PROJECT LOCATION: Sections 10 and 15, Township 47 North, Range 32 West, City of Lee's Summit, Jackson County, Missouri.

- a. I certify that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions.
- b. I certify that any required mitigation was completed in accordance with the permit conditions.
- c. Your signature below, as permittee, indicates that you have completed the authorized project as certified in paragraphs a and b above.

(PERMITTEE)

(DATE)

Return this certification to:

U.S. Army Corps of Engineers
Kansas City District, ODR
601 East 12th Street, Suite 402
Kansas City, MO 64106-2824

SECTION 9

Spill Response

This section contains Missouri Code of State Regulations as they pertain to hazardous substances and emergency response. Contained within are:

Division 24 - Hazardous Substance Emergency Response Office

-10 CSR 24-1.010 - Organization

-10 CSR 24-2.010 - Definitions

-10 CSR 24-3.010 - Emergency Notification Procedures

Spill Report Forms

Rules of
Department of Natural Resources
Division 24—Hazardous Substance
Emergency Response Office
Chapter 1—Organization

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**Title 10—DEPARTMENT OF
NATURAL RESOURCES
Division 24—Hazardous Substance
Emergency Response Office
Chapter 1—Organization**

10 CSR 24-1.010 General Organization

PURPOSE: This rule explains the organization and responsibilities of the Hazardous Substance Emergency Response Office. Also explained is how to obtain additional information regarding these activities and where to make submittals to this office.

(1) The Department of Natural Resources is authorized under sections 260.500–260.550, RSMo to administer the state’s Hazardous Substance Emergency Response Office. The director of the Department of Natural Resources appoints a director and staff who provide day-to-day operation of the Hazardous Substance Emergency Response Office.

(A) Among its operations, the Hazardous Substance Emergency Response Office performs the following administrative and technical functions: develop and adopt rules relating to hazardous substance emergencies; develop and update the state Hazardous Substance Emergency Response plan in cooperation with other state agencies and other affected persons; respond to, investigate, document and take action regarding hazardous substance emergencies in accordance with sections 260.500–260.550, RSMo; provide technical assistance to other state agencies, to political subdivisions of the state and to other persons upon request for the prevention, control and response to hazardous substance emergencies; enter into agreements with state, local and federal agencies and with other persons as necessary to develop and implement the Hazardous Substance Emergency Response Plan and to implement sections 260.500–260.550, RSMo; monitor the statewide telephone used to notify Missouri whenever a hazardous substance emergency occurs; notify appropriate agencies of hazardous substance emergencies; and cooperate with appropriate units of government and other persons to prevent the occurrence and improve response to hazardous substance emergencies.

(B) Requests for copies of rules, reports of incident investigations, technical information and assistance and any other submissions are to be made to the department’s Hazardous Substance Emergency Response Office, Environmental Services Program, P.O. Box 176, Jefferson City, MO 65102. The telephone number during office hours is (573) 526-

3348. For emergencies, the Hazardous Substance Emergency Response Office can be contacted any time at (573) 634-2436.

(2) Information.

(A) The mailing address for the Hazardous Substance Emergency Response Office is: Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102.

(B) The Hazardous Substance Emergency Response Office files, except trade secrets as provided for in section 260.550, RSMo, are public information and are located at 2710 West Main Street, Jefferson City, MO 65109.

(C) Anyone wishing to review information in the Hazardous Substance Emergency Response Office files is requested to make an appointment by calling (573) 526-3348. There is no fee for reviewing file information. There is a copying fee if copies of file information are made, and it must be paid by check, money order or exact change.

(D) Any request for information shall be in writing. All requests for information shall be available during normal business hours for inspection by the public.

(E) Nonemergency information can be obtained by contacting the department at the post office box listed previously or by calling (573) 526-3348.

(F) The number to contact the department for emergency release notifications under section 260.505, RSMo is (573) 634-2436. This is for emergencies only.

*AUTHORITY: section 260.520, RSMo (Supp. 1995). * Original rule filed Nov. 30, 1983, effective April 12, 1984. Emergency amendment filed Dec. 2, 1992, effective Jan. 1, 1993, expired April 20, 1993. Amended: Filed Oct. 5, 1992, effective April 8, 1993. Amended: Filed June 14, 1994, effective Jan. 29, 1995. Amended: Filed July 22, 1996, effective Feb. 28, 1997.*

**Original authority 1983, amended 1993, 1995.*

Rules of
Department of Natural Resources
Division 24—Hazardous Substance
Emergency Response Office
Chapter 2—Definitions

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**Title 10—DEPARTMENT OF
NATURAL RESOURCES
Division 24—Hazardous Substance
Emergency Response Office
Chapter 2—Definitions**

10 CSR 24-2.010 Definitions

PURPOSE: This rule provides definitions for terms used in 10 CSR 24.

PUBLISHER'S NOTE: The secretary of state has determined that the publication of the entire text of the material which is incorporated by reference as a portion of this rule would be unduly cumbersome or expensive. Therefore, the material which is so incorporated is on file with the agency who filed this rule, and with the Office of the Secretary of State. Any interested person may view this material at either agency's headquarters or the same will be made available at the Office of the Secretary of State at a cost not to exceed actual cost of copy reproduction. The entire text of the rule is printed here. This note refers only to the incorporated by reference material.

(1) Administrator—the administrator of the United States Environmental Protection Agency.

(2) Cleanup—all actions necessary to contain, collect, control, identify, analyze, cleanup, treat, disperse, remove or dispose of a hazardous substance.

(3) Cleanup costs—all costs incurred by the state or any of its political subdivisions or their agents or by any other person participating with the approval of the Department of Natural Resources in the prevention or mitigation of damages from a hazardous substance emergency or the cleanup of a hazardous substance involved in a hazardous substance emergency.

(4) Department—the Department of Natural Resources.

(5) Director—director of the Department of Natural Resources.

(6) Extremely hazardous substance—a substance listed under 40 CFR part 355 by the administrator.

(7) Hazardous substance—any substance or mixture of substances that presents a danger to the public health or safety or the environment and includes:

(A) Any hazardous waste identified or listed by the department under sections 260.350–260.430, RSMo;

(B) Any element, compound, mixture, solution or substance designated pursuant to Sections 101(14) and 102 of the Comprehensive Environment Response, Compensation and Liability Act (CERCLA) of 1980 or designated pursuant to section 304 of the Federal Emergency Planning and Community Right-to-Know Act of 1986; and

(C) Any hazardous material designated by the secretary of the United States Department of Transportation under the Hazardous Materials Transportation Act.

(8) Hazardous substance emergency and emergency involving a hazardous substance—

(A) Any release of hazardous substances or extremely hazardous substances in quantities equal to or in excess of those determined pursuant to section 101(14) or 102 of the CERCLA of 1980 or section 304 of the Federal Emergency Planning and Community Right-to-Know Act of 1986;;

(B) Any release of petroleum including crude oil or any fraction, natural gas, natural gas liquids, liquefied natural gas or synthetic gas usable for fuel (or mixture of natural gas and synthetic gas) in excess of fifty (50) gallons for liquids or three hundred (300) cubic feet for gases;

(C) Any release of a hazardous waste which is reportable under sections 260.350–260.430, RSMo;

(D) Any release of a hazardous substance which requires immediate notice under 49 CFR part 171; and

(E) The department shall promulgate rules identifying the substances and the quantities of substances which, if released, constitute a hazardous substance emergency.

(9) Hazardous Substance Emergency Response Plan—the plan, as specified in section 260.505, RSMo, developed and maintained by the Missouri Department of Natural Resources for response to hazardous substance emergencies.

(10) Local Emergency Planning Committee (LEPC) or committee—the people appointed by the Missouri Emergency Response Commission (MERC) for the purpose of improving hazardous chemical safety and preparedness.

(11) Local government—any county, township, municipal corporation, school district

or other governmental body of equivalent rank.

(12) Person—any individual, partnership, copartnership, firm, company, public or private corporation, association, joint stock company, trust, estate, political subdivision or any agency, board, department or bureau of the state or federal government or any other legal entity which is recognized by law as the subject of rights and duties.

(13) Person having control over a hazardous substance—any person producing, handling, storing, transporting, refining or disposing of a hazardous substance when a hazardous substance emergency occurs, including bailees, carriers and any other person in control of a hazardous substance when a hazardous substance emergency occurs, whether they own the hazardous substance or are operating under a lease, contract or other agreement with the legal owner.

(14) Release—any threatened or real emission, discharge, spillage, leakage, pumping, pouring, emptying or dumping of a substance into or onto the land, air or waters of the state unless done in compliance with the conditions of a federal or state permit, unless the substance is confined and is expected to stay confined to property owned, leased or otherwise controlled by the person having control over the substance or unless, in the case of pesticides, application is done in accordance with the product label.

(15) State of Missouri Basic Emergency Operations Plan—the state plan, its annexes and appendices as developed or maintained by the state emergency management agency for response to natural and man-made disasters in this state.

(16) Waters of the state—all rivers, streams, lakes and other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased or otherwise controlled by a single person or by two (2) or more persons jointly or as tenants in common and include waters of the United States lying within the state.

AUTHORITY: section 260.520, RSMo Supp. 1993. Original rule filed Nov. 30, 1983, effective April 12, 1984. Emergency amendment filed Dec. 2, 1992, effective Jan. 1, 1993, expired April 30, 1993. Amended: Filed Oct. 5, 1992, effective April 8, 1993.*



Amended: Filed June 14, 1994, effective Jan. 29, 1995.

**Original authority: 260.520, RSMo 1983, amended 1993.*

Rules of
Department of Natural Resources
Division 24—Hazardous Substance Emergency
Response Office
Chapter 3—Emergency Notification Procedures

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**Title 10—DEPARTMENT OF
NATURAL RESOURCES
Division 24—Hazardous Substance
Emergency Response Office
Chapter 3—Emergency Notification
Procedures**

**10 CSR 24-3.010 Notification Procedures
for Hazardous Substance Emergencies and
for Emergency Notification of Releases of
Hazardous Substances and Extremely Haz-
ardous Substances**

PURPOSE: This rule establishes a statewide emergency telephone number to notify Missouri whenever a hazardous substance emergency occurs and specifies the requirements for emergency notification and follow-up written notices in the event of a hazardous substance emergency, the release of a reportable quantity of a hazardous substance and the release of a reportable quantity of an extremely hazardous substance.

PUBLISHER'S NOTE: The publication of the full text of the material that the adopting agency has incorporated by reference in this rule would be unduly cumbersome or expensive. Therefore, the full text of that material will be made available to any interested person at both the Office of the Secretary of State and the office of the adopting agency, pursuant to section 536.031.4, RSMo. Such material will be provided at the cost established by state law.

(1) Any person having control over a hazardous substance shall contact Missouri by telephone at (573) 634-2436 or the National Response Center at (800) 424-8802 at the earliest practical moment upon discovery of an emergency involving a hazardous substance under his/her control. Information to be provided to Missouri to the best ability of the person having control over the hazardous substance includes: substance(s) involved, an indication of whether the substance is an extremely hazardous substance; the medium or media into which the release occurred; any known or anticipated acute or chronic health risks associated with the release and, where appropriate, advice regarding medical attention necessary for exposed individuals; proper precautions to take as a result of the release, including evacuation; amount of the substance(s) released or in danger of being released; location of the hazardous substance emergency and directions to the site; names, addresses and phone numbers of persons that may have information on the substances involved; when the hazardous substance emergency occurred, duration of the release

and when it was discovered; actions taken to cleanup the hazardous substance and to end the hazardous substance emergency and when those actions will be taken; and any other pertinent information requested by Missouri, or as specified in the Missouri hazardous waste management commission regulations at 10 CSR 25-7.264(2)(D) and (E) and 10 CSR 25-7.265(2)(D) and (E). Federal reporting requirements for releases of hazardous substances can be found in 40 CFR parts 302 and 355. In addition, state reporting requirements contained in 11 CSR 40-4.030 reference these regulations, and require that certain information be provided to Local Emergency Planning Committees (LEPCs) for reportable releases of hazardous substances and extremely hazardous substances.

(2) The person monitoring the statewide emergency telephone shall notify appropriate agencies of the hazardous substance emergency as designated in the Hazardous Substance Emergency Response Plan.

(3) Upon request, written follow-up notifications are required for releases of hazardous substances and extremely hazardous substances as listed in 40 CFR parts 302 and 355. If requested, the person having control of the hazardous substance or extremely hazardous substance shall provide a written follow-up emergency notice (or notices, as more information becomes available) to the department setting forth and updating the information with respect to—

- (A) Information required in section (1);
- (B) Actions taken to respond to and contain the release;
- (C) Any known or anticipated acute or chronic health risks associated with the release; and
- (D) Where appropriate, advice regarding medical attention necessary for exposed individuals.

(4) If requested, a written report shall be provided to the department for any other hazardous substance emergency. The requested reports shall contain the information as specified in sections (1) and (3) of this rule and any other pertinent information as requested by the department. In addition, state reporting requirements in 11 CSR 40-4.030 require that written follow-up reports be provided to the Department of Public Safety and appropriate LEPCs for any reportable releases of hazardous substances or extremely hazardous substances.

*AUTHORITY: section 260.520, RSMo (Supp. 1995). * Original rule filed Nov. 30, 1983, effective April 12, 1984. Emergency amend-*

ment filed Dec. 2, 1992, effective Jan. 1, 1993, expired April 30, 1993. Amended: Filed Oct. 5, 1992, effective April 8, 1993. Amended: Filed June 14, 1994, effective Jan. 29, 1995. Amended: Filed July 22, 1996, effective Feb. 28, 1997.

**Original authority 1983, amended 1993, 1995.*

Spill Report Form

For spills of reportable quantities that impact soil, surface water or ground water call MDNR 24-hour Environmental Emergency Response at 573-634-2436.

Site: _____ Primary Contractor: _____

Date: _____ Incident Date: _____

Complete for any type of petroleum product or hazardous materials / waste spill or incident. If the spill is of reportable quantity, report must be submitted within five (5) business days.

Keep a copy of this report with the SWPPP Log.

Person Reporting Spill or Incident	
Name	Address
Organization	
Title	
Telephone	
Email	Signature

Type of Spill:
Common Name of Spilled Substance
Estimated Quantity Spilled
Estimated Concentration
Date and Duration of Spill
Date Clean Up Completed

SPILL TO LAND	SPILL TO WATER BODY
Name of site:	Name of water body:
Street address:	Location of discharge
City	Description of area from which spilled material may reach:
County:	

Actions Taken:

To contain spill:

To clean up spill:

To remove/dispose of spilled substance and cleanup material:

To prevent reoccurrence:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Person responsible for managing spill response:

Name	Signature
Phone	Email

Spill Report Form

For spills of reportable quantities that impact soil, surface water or ground water call MDNR 24-hour Environmental Emergency Response at 573-634-2436.

Site: _____ Primary Contractor: _____

Date: _____ Incident Date: _____

Complete for any type of petroleum product or hazardous materials / waste spill or incident. If the spill is of reportable quantity, report must be submitted within five (5) business days.

Keep a copy of this report with the SWPPP Log.

Person Reporting Spill or Incident	
Name	Address
Organization	
Title	
Telephone	
Email	Signature

Type of Spill:
Common Name of Spilled Substance
Estimated Quantity Spilled
Estimated Concentration
Date and Duration of Spill
Date Clean Up Completed

SPILL TO LAND	SPILL TO WATER BODY
Name of site:	Name of water body:
Street address:	Location of discharge
City	Description of area from which spilled material may reach:
County:	

Actions Taken:

To contain spill:

To clean up spill:

To remove/dispose of spilled substance and cleanup material:

To prevent reoccurrence:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Person responsible for managing spill response:

Name	Signature
Phone	Email

Spill Report Form

For spills of reportable quantities that impact soil, surface water or ground water call MDNR 24-hour Environmental Emergency Response at 573-634-2436.

Site: _____ Primary Contractor: _____

Date: _____ Incident Date: _____

Complete for any type of petroleum product or hazardous materials / waste spill or incident. If the spill is of reportable quantity, report must be submitted within five (5) business days.

Keep a copy of this report with the SWPPP Log.

Person Reporting Spill or Incident	
Name	Address
Organization	
Title	
Telephone	
Email	Signature

Type of Spill:
Common Name of Spilled Substance
Estimated Quantity Spilled
Estimated Concentration
Date and Duration of Spill
Date Clean Up Completed

SPILL TO LAND	SPILL TO WATER BODY
Name of site:	Name of water body:
Street address:	Location of discharge
City	Description of area from which spilled material may reach:
County:	

Actions Taken:

To contain spill:

To clean up spill:

To remove/dispose of spilled substance and cleanup material:

To prevent reoccurrence:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Person responsible for managing spill response:

Name	Signature
Phone	Email

Spill Report Form

For spills of reportable quantities that impact soil, surface water or ground water call MDNR 24-hour Environmental Emergency Response at 573-634-2436.

Site: _____ Primary Contractor: _____

Date: _____ Incident Date: _____

Complete for any type of petroleum product or hazardous materials / waste spill or incident. If the spill is of reportable quantity, report must be submitted within five (5) business days.

Keep a copy of this report with the SWPPP Log.

Person Reporting Spill or Incident	
Name	Address
Organization	
Title	
Telephone	
Email	Signature

Type of Spill:
Common Name of Spilled Substance
Estimated Quantity Spilled
Estimated Concentration
Date and Duration of Spill
Date Clean Up Completed

SPILL TO LAND	SPILL TO WATER BODY
Name of site:	Name of water body:
Street address:	Location of discharge
City	Description of area from which spilled material may reach:
County:	

Actions Taken:

To contain spill:

To clean up spill:

To remove/dispose of spilled substance and cleanup material:

To prevent reoccurrence:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Person responsible for managing spill response:

Name	Signature
Phone	Email

Spill Report Form

For spills of reportable quantities that impact soil, surface water or ground water call MDNR 24-hour Environmental Emergency Response at 573-634-2436.

Site: _____ Primary Contractor: _____

Date: _____ Incident Date: _____

Complete for any type of petroleum product or hazardous materials / waste spill or incident. If the spill is of reportable quantity, report must be submitted within five (5) business days.

Keep a copy of this report with the SWPPP Log.

Person Reporting Spill or Incident	
Name	Address
Organization	
Title	
Telephone	
Email	Signature

Type of Spill:
Common Name of Spilled Substance
Estimated Quantity Spilled
Estimated Concentration
Date and Duration of Spill
Date Clean Up Completed

SPILL TO LAND	SPILL TO WATER BODY
Name of site:	Name of water body:
Street address:	Location of discharge
City	Description of area from which spilled material may reach:
County:	

Actions Taken:

To contain spill:

To clean up spill:

To remove/dispose of spilled substance and cleanup material:

To prevent reoccurrence:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Person responsible for managing spill response:

Name	Signature
Phone	Email

SECTION 10

Endangered Species Documentation

Endangered species are listed and addressed for this project in the USACE permit. Please refer to Section 8.

SECTION 11

Historic Preservation Documentation

Documentation for historic preservation is not required for SWPPPs in the state of Missouri and is not included.

SECTION 12

Inspection Reports

- Log of Inspections
- Inspection Reports
- Inspector Credentials

Log of Inspections

[illegible][illegible]

Log of Inspections

[illegible][illegible]

Stormwater Construction Site Inspection Report

General Information			
Project Name		Date of Inspection	
Permit Number		Time of Inspection	
Inspector's Name(s)		Inspector's Title	
Inspector's Contact Information			
Describe present phase of construction			
Type of Inspection: <input type="checkbox"/> Routine <input type="checkbox"/> Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, provide:			
Storm Start Date:		Approximate Amount of Precipitation (in):	
Weather at time of this inspection?			
<input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds <input type="checkbox"/> Other: _____ Temperature: _____			
Were any discharges noted at the time of inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, describe:			

BMP Effectiveness
Were BMPs operating effectively during inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No
If no, does SWPPP need to be amended?
List any non-effective BMPs in the corrective action log on the next page.
List any amendments to the SWPPP that were identified as being necessary during inspection:

Areas Where Land Disturbance Operations Have Permanently or Temporarily Stopped		

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print name and title: _____

Signature: _____ Date: _____

#	BMP Location	Corrective Action Needed	Date Corrected	Corrective Actions Taken

Stormwater Construction Site Inspection Report

General Information			
Project Name		Date of Inspection	
Permit Number		Time of Inspection	
Inspector's Name(s)		Inspector's Title	
Inspector's Contact Information			
Describe present phase of construction			
Type of Inspection: <input type="checkbox"/> Routine <input type="checkbox"/> Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, provide:			
Storm Start Date:		Approximate Amount of Precipitation (in):	
Weather at time of this inspection?			
<input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds <input type="checkbox"/> Other: _____ Temperature: _____			
Were any discharges noted at the time of inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, describe:			

BMP Effectiveness
Were BMPs operating effectively during inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No
If no, does SWPPP need to be amended?
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Signature: _____ **Date:** _____

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Stormwater Construction Site Inspection Report

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SECTION 13

Regulatory Correspondence

Pertinent correspondence from regulatory agencies relating to this project can be located here.

SECTION 14

Notice of Termination

This section should contain the completed Notice of Termination for the project that can be accessed through the Missouri Gateway for Environmental Management at <https://dnr.mo.gov/mogem/>.

Documentation of acceptance from the DNR should also be kept here and all documents must be retained for 3 years after the date of NOT acceptance.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
REQUEST FOR TERMINATION OF OPERATING PERMIT
(REPLACES TERMINATION FORMS H AND J)

FOR OFFICE USE ONLY

DATE RECEIVED

IF A FACILITY OR SITE HAS BEEN SOLD, BUT PERMITTED ACTIVITIES HAVE NOT CEASED, A TRANSFER OF OWNERSHIP FORM (MO 780-1517) MUST BE COMPLETED RATHER THAN A TERMINATION FORM.

ALL APPLICABLE SECTIONS OF THIS FORM MUST BE COMPLETED.

1. FACILITY INFORMATION

PERMIT NUMBER		COUNTY	
NAME OF FACILITY			
PHYSICAL ADDRESS		CITY	STATE ZIP CODE
FACILITY CONTACT NAME	FACILITY CONTACT TELEPHONE NUMBER	FACILITY CONTACT EMAIL	

2. OWNER

NAME		TELEPHONE NUMBER WITH AREA CODE	
ADDRESS		CITY	STATE ZIP CODE
EMAIL			

3. CONTINUING AUTHORITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
ADDRESS		CITY	STATE ZIP CODE
EMAIL			

4. REASON FOR TERMINATION REQUEST (CHECK ONE)

- ☐ Permitted activities have ceased, or facility is closed (must select facility type in section five and attach photographs or any other supporting documents as required)
- ☐ General Permit MO-G _____ or MO-R _____ has been issued and covers all regulated activities
- ☐ Site specific permit MO- _____ has been issued and covers all regulated activities
- ☐ Facility has obtained a "No Exposure" certification, MO-NX _____
- ☐ Industrial activity (SIC Code # _____) is not regulated
- ☐ For CAFOs, facility size is unregulated (Class II and smaller operations only)
- ☐ Other (Specify)

5. FACILITY TYPE (CHECK ONE FACILITY TYPE, COMPLETE ONLY IF PERMITTED ACTIVITY HAS CEASED OR FACILITY HAS CLOSED)

- ☐ For land disturbance sites, the area is stabilized; perennial vegetation, pavement, buildings, or other permanent structures cover all areas that have been disturbed; no further land disturbance activities are planned; all building construction (commercial or residential) is completed; temporary best management practices are removed, and construction equipment is removed. With respect to areas that have been vegetated, vegetation cover shall be at least 70 percent over 100 percent of the site not covered in impervious material. Attach photographs showing stabilized areas.
- ☐ For wastewater treatment plants, the treatment plant is removed and sludge was removed and properly disposed of, and a closure plan in accordance with [10 CSR 20-6.010\(12\)](#) or [10 CSR 20-6.015\(5\)](#) was approved and implemented. Attach documentation required by the approved closure plan and photographs of the closed area. See facility closure fact sheet at dnr.mo.gov/pubs/pub2568.htm for more information on closure requirements for wastewater treatment plants.
- ☐ For industrial facilities, regulated activities have ceased, no "significant materials" remain on site, and disturbed areas are properly stabilized and/or vegetated. The area is stabilized when perennial vegetation, pavement, buildings, or structures using permanent materials cover all areas that have been disturbed. Vegetation cover shall be at least 70 percent over 100 percent of the site not covered in impervious material. Attach applicable closure documents and photographs of the closed area that demonstrate no permitted activities or materials remain.
- ☐ For quarries or sand and gravel operations, submit documentation of release from the department's Land Reclamation Program.
- ☐ For landfills, official closure has been received from department's Solid Waste Management Program (SWMP); cap is vegetated as required by SWMP; and any additional industrial activities are permitted appropriately (i.e. transfer stations, mulching operations, land disturbance, etc.). Attach official SWMP closure letter and permit numbers of any continuing active industrial or land disturbance activities.
- ☐ For CAFOs
- ☐ Class I CAFOs must properly close lagoons and waste storage structures per a closure plan in accordance with [10 CSR 20-6.300\(6\)](#) and approved by the department. Please attach photographs of closed lagoons. Also attach any additional information which supports closure of facility.
- ☐ Class II CAFOs must close waste storage structures in accordance with [10 CSR 20-6.300\(6\)\(B\)](#), or shall continue to maintain all storage structures so there is no discharge to waters of the state. Attach photographs of closed or re-purposed lagoons, or an explanation of "no discharge" methods. Also attach any additional information that supports closure of facility.

6. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)

TELEPHONE NUMBER WITH AREA CODE

SIGNATURE

DATE SIGNED

7. MAIL COMPLETED COPY TO:

For Site Specific (MO-), Abandoned Mine And Land Reclamation (MO-G05), Land Disturbance By County Or City (MO-R100), Pesticide Application (MO-G87), Sewer Extension Construction (MO-GC) and CAFO (MO-G01, MO-GS1) Permit Terminations:

Missouri Department of Natural Resources
Water Protection Program
Water Pollution Control Branch
Attn: Operating Permits Section
P.O. Box 176
Jefferson City, MO 65102-0176

For General Permit Terminations (MO-G or MO-R):

Send to the appropriate regional office.
Regional office is determined based on the county where the facility is physically located.

To determine the correct regional office for the permitted facility, please see dnr.mo.gov/regions/