



WEST SIDE WOODS SUBDIVISION EROSION CONTROL PLAN

PREPARED FOR:

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EXHIBITS

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Erosion Control Plan for West Side Woods Subdivision

1.0 SUBDIVISION OVERVIEW

1.1 PROJECT DESCRIPTION AND LOCATION

The West Side Woods Subdivision is located on the west side of Helena south of Highway 12. More specifically, the subdivision is located in the south ½ of Section 23 and the north ½ of Section 26, Township 10 North, Range 4 West, P.M.M., Lewis and Clark County, Montana. The West Side Woods Subdivision is proposed to be developed in four phases for full buildout. This Erosion Control Plan summarizes the Best Management Practices (BMPs) that will be utilized during the development of the subdivision to minimize storm water pollution.

Each of the four phases will utilize specific BMPs to manage storm water pollution. Erosion control exhibits for all phases are included with this report that show the number of lots that will be developed for each phase.

1.2 TOPOGRAPHY

The project area is primarily covered by vegetation in the form of native grasses. According to the Montana Natural Heritage Map Viewer, the primary land cover within the project area is classified as Rocky Mountain Lower Montane, Foothill, and Valley Grassland. The topography is generally hilly with many small peaks and valleys and the site generally slopes to the northeast towards Tenmile Creek, located north of Highway 12, approximately 0.25 mile from the West Side Woods Subdivision. Storm water runoff currently flows northeast via a combination of overland sheet flow and concentrated flow within small ephemeral drainages.

1.3 EROSION CONTROL

1.3.1 Best Management Practices

During construction, best management practices (BMPs) such as silt fences, diversion ditches, vehicle track pads, concrete washout areas, sediment traps, and other erosion control measures will be utilized to control storm water pollution from entering/leaving the site. Within each phase of the subdivision development there will be sub phases of construction. These will primarily be clearing and grubbing, excavation and site grading, utility installation, final grading, road construction, vertical construction, and permanent erosion control facilities. Each sub phase will have BMPs tailored to the specific site disturbance and type of construction activity occurring. BMPs will have to be frequently inspected, maintained, and moved to accommodate the active construction activity. Table 1 shows each sub phase and which BMPs will be utilized during that specific phase of construction.

Table 1. BMP Utilization by Phase & Subphase

BMP	Clearing & Grubbing	Excavation & Site Grading	Utility Installation	Final Grading	Road Construction	Vertical Construction	Permanent Erosion Control Facilities
Surface Roughening	X	X	X	X	X	X	
Silt Fence	X	X	X	X	X	X	
Minimizing Ground Disturbance	X	X	X	X	X	X	
Concrete Washout Area					X	X	
Staging and Material Storage	X	X	X	X	X	X	
Drainage Ditch	X	X	X	X	X	X	
Sediment Trap		X	X	X	X	X	
Vegetative Buffer	X	X	X	X	X	X	
Vehicle Track Pad	X	X	X	X			
Stormwater Ponds	X	X	X	X			X
Straw Mulch	X						
Street Sweeping					X	X	

The following BMPs will be used for erosion control.

- Surface roughening should be utilized to prevent channelized flow on steep slopes that have been disturbed. This is an easy application that can be used throughout the site in a relatively short timeframe.
- Straw mulch should be used as a temporary erosion control measure. It is typically used for stockpiles or loose soil areas that need quick erosion control. It can be easily applied and should be frequently inspected and maintained/replaced.
- Diversion ditches will be primarily used to control run-on, runoff, or in areas of concentrated flow. Ditches should be lined or should have velocity check dams to reduce erosion within the ditch.
- Minimizing ground disturbance will help with potential storm water pollution. Wherever possible, the contractor shall minimize ground disturbance and plan construction activities in a way as to limit disturbances.
- Preservation of existing vegetation should be used to create a buffer between disturbed areas and the perimeter of the subdivision to reduce sediment from leaving or entering the site.

The following BMPs will be used for sediment control.

- Silt fences will primarily be used as a perimeter control to prevent sediment laden water from leaving or entering the subdivision. Silt fences will impound the water, allow sediment to settle, and then the treated water will wick through the fabric.
- Vehicle track pads will be used at all points of ingress/egress to limit vehicle tracking mud and sediment off-site.
- Once roads have been constructed, street sweeping will be utilized frequently to reduce sediment pollution from roadways.

In addition to the BMPs described above and shown in Table 1, administrative controls will be used throughout the project to help minimize pollution from storm water. Concrete washout areas will be used during road and vertical construction and will be placed at each egress point for concrete trucks to use prior to leaving the site. These washout areas will be lined and will have silt fences function as a perimeter control in case of overtopping. A laydown area will be utilized for each phase of development and will be used for material storage, stockpiling, worker toilets and other facilities (offices, etc.), dumpsters/waste receptacles, and any fueling operations (if needed). Other administrative controls will include dust control using watering trucks, construction fencing for areas that should not be accessible to the public or are unsafe, and spill prevention and response procedures and spill kits should they be needed.

1.3.2 BMP Installation

All BMPs should be installed in accordance with the Montana Department of Environmental Quality's BMP Field Guide, the Montana Department of Transportation's Erosion and Sediment Control BMP Manual, City of Helena storm water regulations, or to manufacturer recommendations.

1.3.3 Inspections and Maintenance

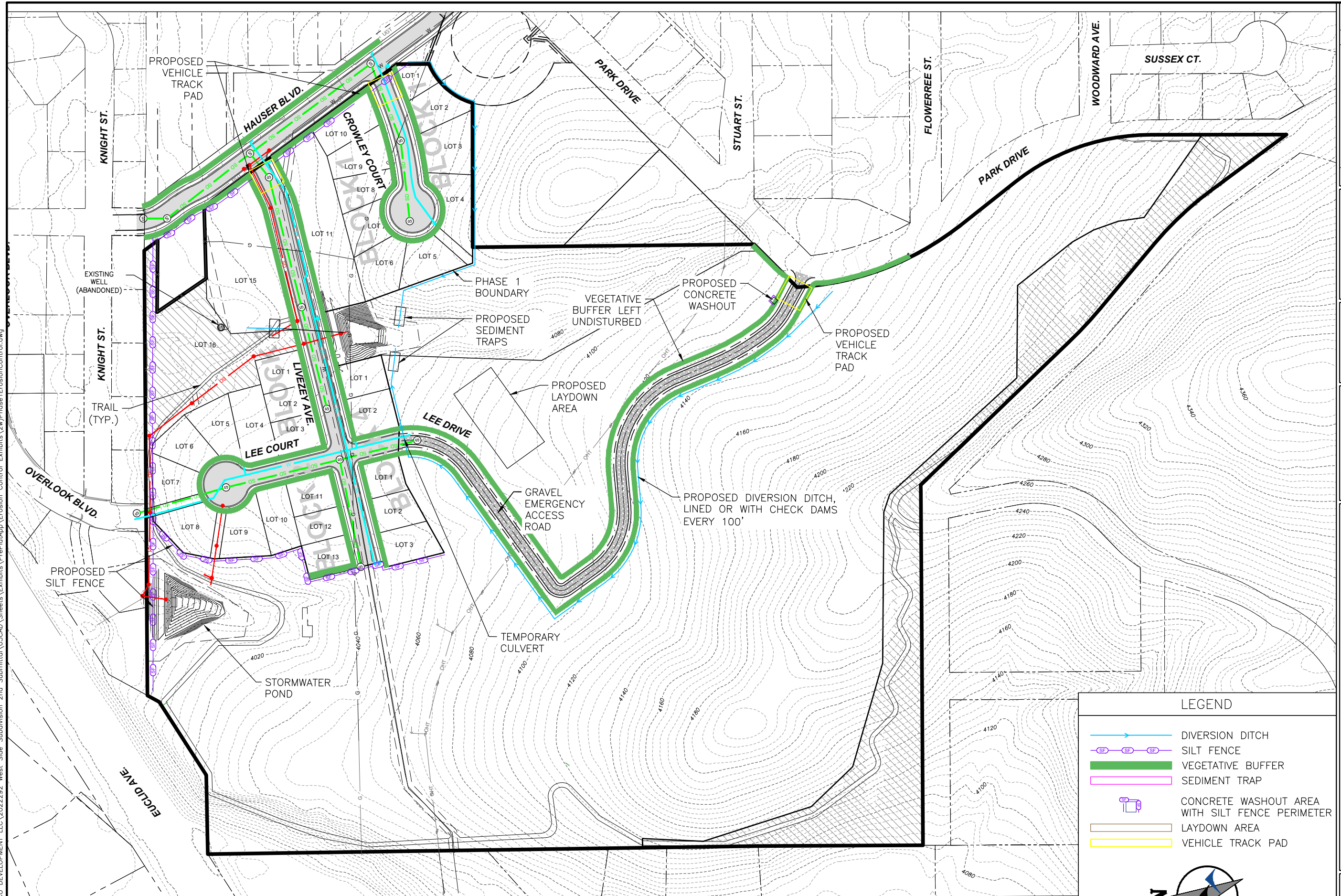
Inspections shall be conducted on one of two schedules during construction. Inspection schedules can be:

1. Once every 7 calendar days.
2. Once every 14 calendar days, and a post-storm event inspection within 24 hours of the end of a rainfall event of 0.25 inches or greater, and/or within 24 hours of runoff from snowmelt.

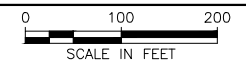
Once construction activities are complete, inspection schedules can be moved to monthly if the site is stabilized. Inspections shall include general information such as date, time and weather conditions at time of inspection, a log of construction activities occurring at the time of inspection, BMPs installed on-site, BMP maintenance and corrective actions needed, and whether any storm water discharges have occurred. Each inspection must be conducted and certified by a certified SWPPP Administrator.

EXHIBITS

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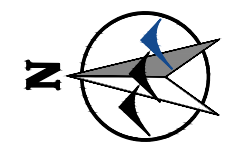


EROSION CONTROL PLAN - PHASE 1



LEGEND

	DIVERSION DITCH
	SILT FENCE
	VEGETATIVE BUFFER
	SEDIMENT TRAP
	CONCRETE WASHOUT AREA WITH SILT FENCE PERIMETER
	LAYDOWN AREA
	VEHICLE TRACK PAD



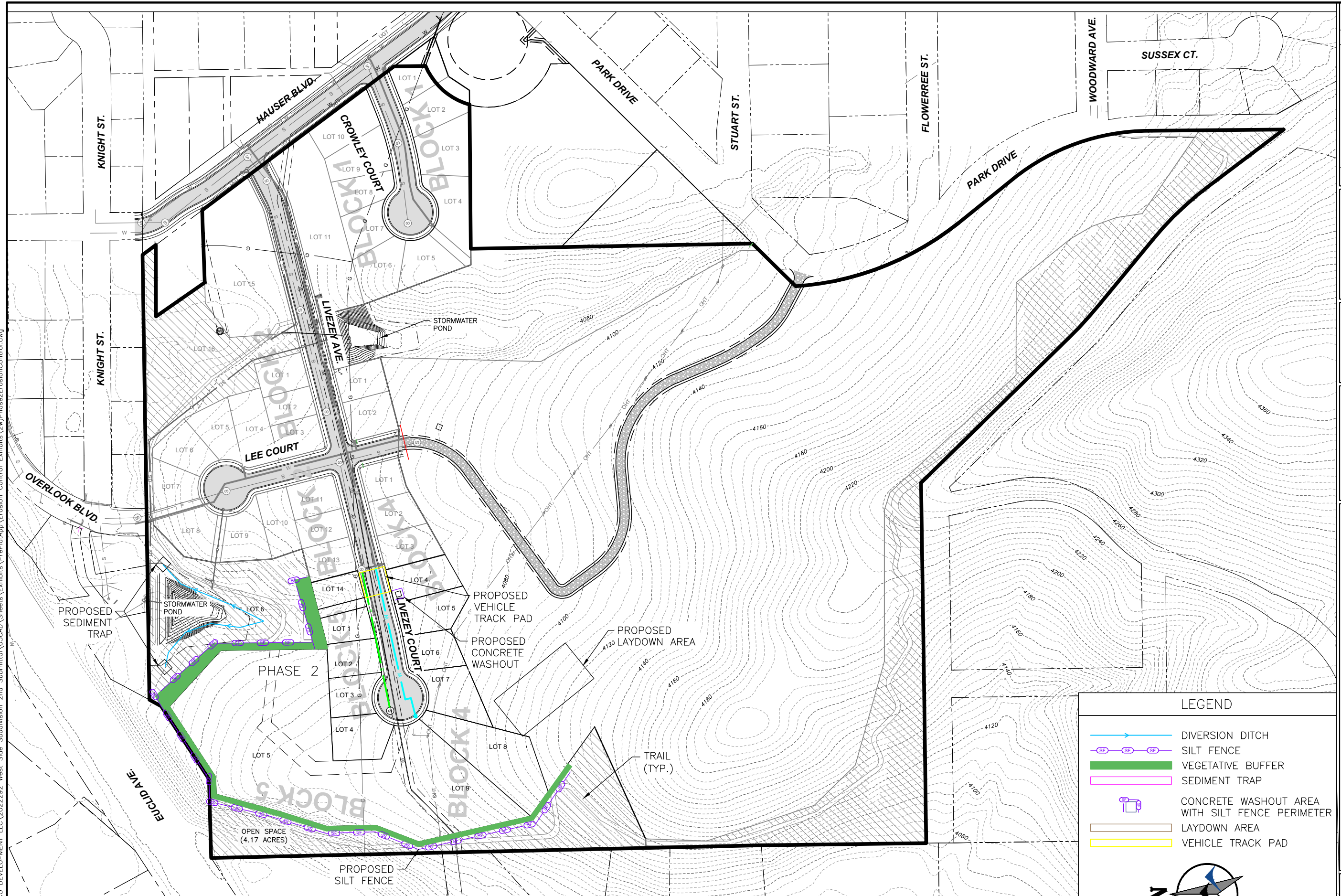
NO.	REVISION DESCRIPTION	BY	DATE

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DESIGNED: JMF
DRAWN: DCT
CHECKED: DDP
APPROVED: JMF
DATE: AUGUST 17, 2022

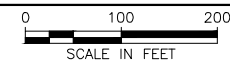
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 PHASE 1 EROSION CONTROL PLAN

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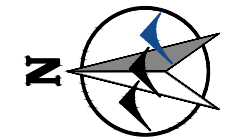


EROSION CONTROL PLAN - PHASE 2



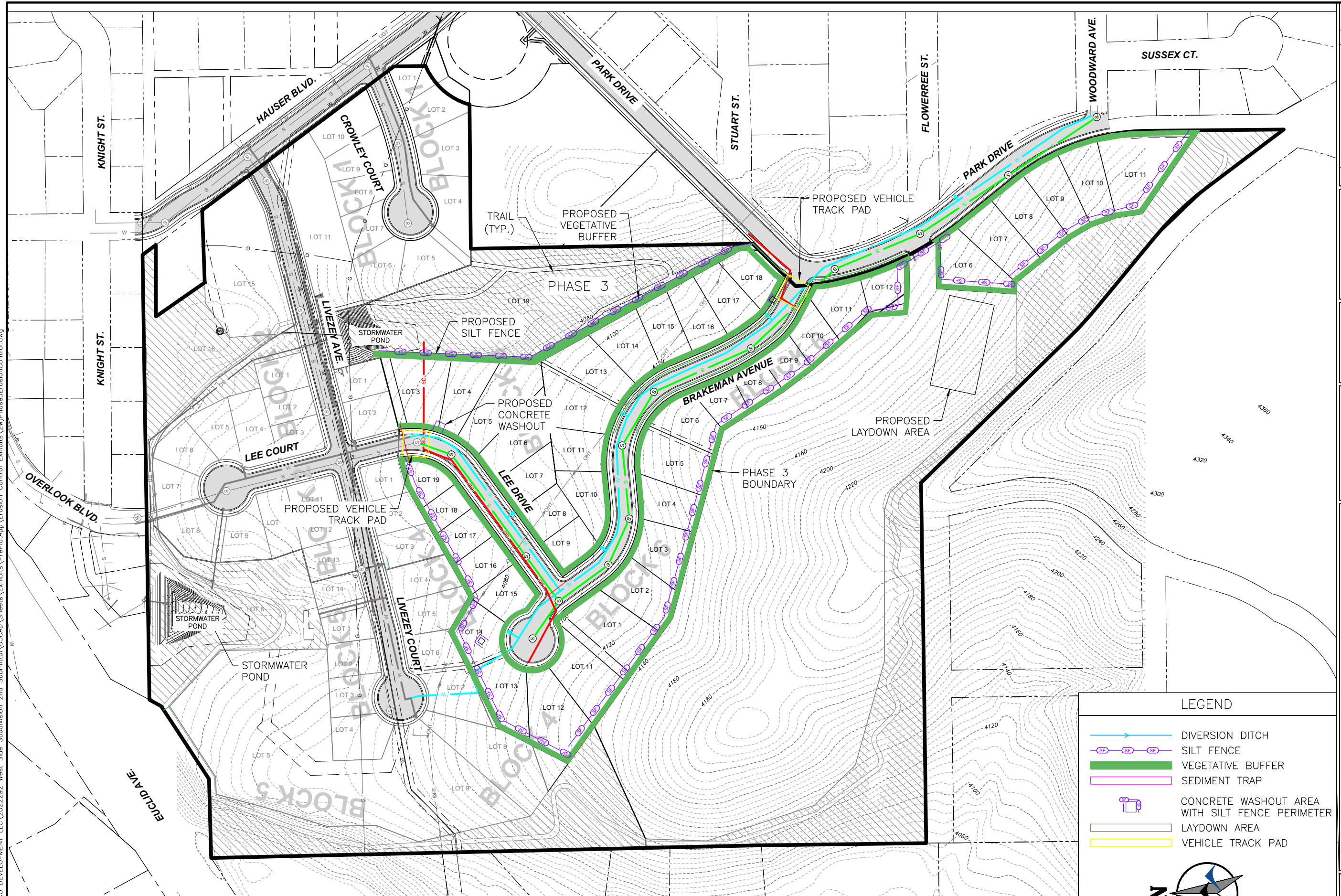
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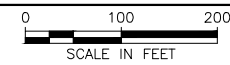


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1					
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ECO DEVELOPMENT, LLC WEST SIDE WOODS MAJOR SUBDIVISION PHASE 2 EROSION CONTROL PLAN					
SHEET NO. <b style="font-size: 2em;">2 OF 4					

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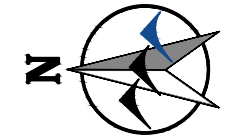


EROSION CONTROL PLAN - PHASE 3



LEGEND

	DIVERSION DITCH
	SILT FENCE
	VEGETATIVE BUFFER
	SEDIMENT TRAP
	CONCRETE WASHOUT AREA WITH SILT FENCE PERIMETER
	LAYDOWN AREA
	VEHICLE TRACK PAD



NO.	REVISION DESCRIPTION	BY	DATE

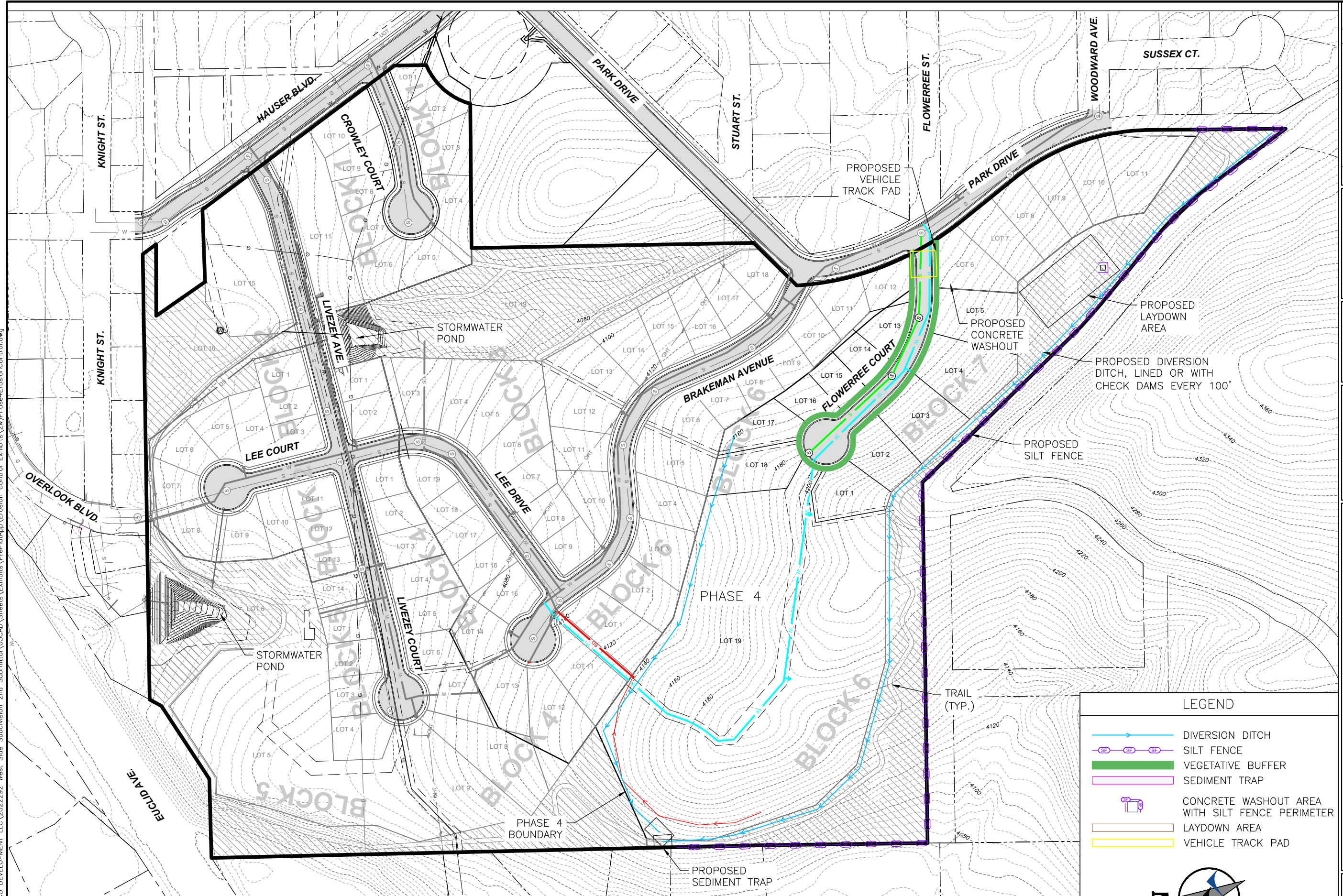
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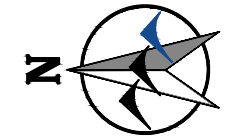
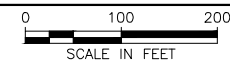
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EROSION CONTROL PLAN - PHASE 4



LEGEND	
	DIVERSION DITCH
	SILT FENCE
	VEGETATIVE BUFFER
	SEDIMENT TRAP
	CONCRETE WASHOUT AREA WITH SILT FENCE PERIMETER
	LAYDOWN AREA
	VEHICLE TRACK PAD

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 PHASE 4 EROSION CONTROL PLAN