



Construction Stormwater General Permit (CSWGP)

Stormwater Pollution Prevention Plan (SWPPP)

for
Mukilteo 5th Street

Prepared for:
Department of Ecology
Northwest Region Office, Shoreline

Permittee / Owner	Developer	Operator / Contractor
City of Mukilteo	N/A	TBD

Mukilteo, WA

Certified Erosion and Sediment Control Lead (CESCL)

Name	Organization	Contact Phone Number
TBD	TBD	TBD

SWPPP Prepared By

Name	Organization	Contact Phone Number
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SWPPP Preparation Date

06 / 22 / 2022

Project Construction Dates

Activity / Phase	Start Date	End Date
Pedestrian & Bicycle Facility Improvements	TBD	TBD

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List of Acronyms and Abbreviations

Acronym / Abbreviation	Explanation
303(d)	Section of the Clean Water Act pertaining to Impaired Waterbodies
BFO	Bellingham Field Office of the Department of Ecology
BMP(s)	Best Management Practice(s)
CESCL	Certified Erosion and Sediment Control Lead
CO₂	Carbon Dioxide
CRO	Central Regional Office of the Department of Ecology
CSWGP	Construction Stormwater General Permit
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ERO	Eastern Regional Office of the Department of Ecology
ERTS	Environmental Report Tracking System
ESC	Erosion and Sediment Control
GULD	General Use Level Designation
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
NWRO	Northwest Regional Office of the Department of Ecology
pH	Power of Hydrogen
RCW	Revised Code of Washington
SPCC	Spill Prevention, Control, and Countermeasure
su	Standard Units
SWMMEW	Stormwater Management Manual for Eastern Washington
SWMMWW	Stormwater Management Manual for Western Washington
SWPPP	Stormwater Pollution Prevention Plan
TESC	Temporary Erosion and Sediment Control
SWRO	Southwest Regional Office of the Department of Ecology
TMDL	Total Maximum Daily Load
VFO	Vancouver Field Office of the Department of Ecology
WAC	Washington Administrative Code
WSDOT	Washington Department of Transportation
WWHM	Western Washington Hydrology Model

Project Information (1.0)

Project/Site Name: Mukilteo 5th Street

Street/Location: Located on 5th Street between Licoln Ave. and Mukilteo Ln.

City: Mukilteo State: WA Zip code: 98275

Subdivision: N/A

Receiving waterbody: Puget Sound

The project proposes to improve access modes along 5th St/Mukilteo Blvd by adding bicycle and pedestrian facilities

Existing Conditions (1.1)

Total acreage: 8.1 acre

Disturbed acreage: 1.0 acre

Existing structures: Catch basins, storm drains

Landscape topography: 0-17% slopes

Drainage patterns: Runoff is collected by existing catch basins or ditches and storm drains along 5th Street/ Mukilteo Boulevard.

Existing Vegetation: Trees, grass

Critical Areas (wetlands, streams, high erosion risk, steep or difficult to stabilize slopes):
Landslide hazard areas

List of known impairments for 303(d) listed or Total Maximum Daily Load (TMDL) for the receiving waterbody: There are no known or suspected containants associated with the site.

Table 1 includes a list of suspected and/or known contaminants associated with the construction activity.

Table 1 – Summary of Site Pollutant Constituents

Constituent (Pollutant)	Location	Depth	Concentration
N/A			

Proposed Construction Activities (1.2)

Description of site development (example: subdivision):

Site development shall consist of widening and paving of 5th street. This will include replacement of existing sidewalks, asphalt, utilities and various drainage aspects as well as installing new various aspects like a drainage detention vault and a retaining wall.

Description of construction activities (example: site preparation, demolition, excavation):

Construction activities include site preparation, applying temporary erosion control measures, installing new drainage, grading, paving, and installation of a retaining wall.

Description of site drainage including flow from and onto adjacent properties. Must be consistent with Site Map in Appendix A:

The proposed flow patterns will maintain existing flow paths. The runoff is collected by a system of existing and proposed catch basins and ditches and conveyed via storm pipes. The water quality treatment volume, treated first with the modular wetland system, will be conveyed to the detention vault. Existing outfall locations will be maintained as shown on the TDA Overview Plan in Appendix A.

Description of final stabilization (example: extent of revegetation, paving, landscaping):

Final Stabilization includes paving and landscaping disturbed areas.

Contaminated Site Information:

Proposed activities regarding contaminated soils or groundwater (example: on-site treatment system, authorized sanitary sewer discharge):

No contaminated soils or groundwater are anticipated during construction.

Construction Stormwater Best Management Practices (BMPs) (2.0)

The SWPPP is a living document reflecting current conditions and changes throughout the life of the project. These changes may be informal (i.e. hand-written notes and deletions). Update the SWPPP when the CESCL has noted a deficiency in BMPs or deviation from original design.

The 13 Elements (2.1)

In order to protect adjacent properties and reduce the area of soil exposed to construction, the limits of construction and trees that are to be preserved within the construction area will be clearly marked before land-disturbing activities begin. The following BMPs will be applied for marking clearing limits:

1. Marking of Sawcut Limits
2. Silt Fence

The location of sawcut and silt fence limits will be marked in the TESC Plans (See Appendix A)

List and describe BMPs: Silt Fence (C233)

Installation Schedules: First Order of Work

Inspection and Maintenance plan: As Needed

Responsible Staff: TBD

Element 2: Establish Construction Access (2.1.2)

The existing paved roadway will be used for construction access. No additional BMPs are needed.

List and describe BMPs: N/A

Element 3: Control Flow Rates (2.1.3)

Construction activities may result in increased flow rates downstream of the project. Straw wattles will be provided along the downstream boundary of disturbed areas to control flow rates.

Will you construct stormwater retention and/or detention facilities?

Yes No

Will you use permanent infiltration ponds or other low impact development (example: rain gardens, bio-retention, porous pavement) to control flow during construction?

Yes No

List and describe BMPs: Straw Wattles (C235)

Installation Schedules: First Order of Work

Inspection and Maintenance plan: As Needed

Responsible Staff: TBD

Element 4: Install Sediment Controls (2.1.4)

Construction activities may result in increased sediment discharges from the site. To counter this, Straw Wattles and Silt Fences will be installed. Straw Wattles and Silt Fences will be placed alongside the downstream boundary of the project area as well as downstream of construction activities to prevent sediment from leaving the project site.

List and describe BMPs: Straw Wattles (C235)

Silt Fence (C233)

Installation Schedules: First Order of Work

Inspection and Maintenance plan: As Needed

Responsible Staff: TBD

Element 5: Stabilize Soils (2.1.5)

West of the Cascade Mountains Crest

Season	Dates	Number of Days Soils Can be Left Exposed
During the Dry Season	May 1 – September 30	7 days
During the Wet Season	October 1 – April 30	2 days

Soils must be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.

Anticipated project dates: Start date: TBD End date: TBD

Will you construct during the wet season?

Yes No

List and describe BMPs: Plastic Covering (C123)

Installation Schedules: During Construction

Inspection and Maintenance plan: As Needed

Responsible Staff: TBD

Element 6: Protect Slopes (2.1.6)

There are no steep slopes within working limits. Existing slopes are not susceptible to erosion so no BMP is proposed for slope protection.

Will steep slopes be present at the site during construction?

Yes No

List and describe BMPs: N/A

Element 7: Protect Drain Inlets (2.1.7)

All catch basins made operable during construction and within 500 feet downstream of the project site shall be protected to prevent unfiltered water from entering the stormwater conveyance system. Grate inlets will be protected using catch basin filters.

List and describe BMPs: Storm Drain Inlet Protection (C220)

Installation Schedules: First Order of Work

Inspection and Maintenance plan: Inspected weekly at a minimum and daily during storm events. Clean and replace inlet protection devices when sediment has filled one-third of the available storage or as specified by the manufacturer.

Responsible Staff: TBD

Element 8: Stabilize Channels and Outlets (2.1.8)

Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches, will be installed at the outlets of all conveyance systems.

There will not be significant increases to runoff at outfalls during the proposed construction activities or disturbance to any outfalls. Outfall protection and channel stabilization are not needed.

List and describe BMPs: N/A

Element 9: Control Pollutants (2.1.9)

The following pollutants are anticipated to be present on-site:

Table 2 – Pollutants

Pollutant (and source, if applicable)
Petrochemicals from construction equipment
Waste materials and demolition debris

Demolished roadway elements and cleared and grubbed materials will be removed from the site by truck.

Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, sediments, chemicals, or any other toxic materials are allowed to enter or leach into waters of the State.

List and describe BMPs: Spill Prevention and Control Measures

Installation Schedules: During Construction

Inspection and Maintenance plan: N/A

Responsible Staff: TBD

Will maintenance, fueling, and/or repair of heavy equipment and vehicles occur on-site?

Yes No

Vehicles, construction equipment, and/or petroleum product storage/dispensing:

- All vehicles, equipment, and petroleum product storage/dispensing areas will be inspected regularly to detect any leaks or spills, and to identify maintenance needs to prevent leaks or spills.
- On-site fueling tanks and petroleum product storage containers shall include secondary containment with a capacity of 110% of the combined capacity of the contents within the secondary containment.
- Spill prevention measures, such as drip pans, will be used when conducting maintenance and repair of vehicles or equipment.

- In order to perform emergency repairs on site, temporary plastic will be placed beneath and, if raining, over the vehicle.
- Contaminated surfaces shall be cleaned immediately following any discharge or spill incident.

Will wheel wash or tire bath system BMPs be used during construction?

Yes No

Will pH-modifying sources be present on-site?

Yes No

Table 3 – pH-Modifying Sources

	None
	Bulk cement
	Cement kiln dust
	Fly ash
	Other cementitious materials
X	New concrete washing or curing waters
X	Waste streams generated from concrete grinding and sawing
	Exposed aggregate processes
	Dewatering concrete vaults
X	Concrete pumping and mixer washout waters
	Recycled concrete
	Other (i.e. calcium lignosulfate) [please describe]

List and describe BMPs: Sawcutting and Surfacing Pollution Prevention (C152)

Installation Schedules: During Construction

Inspection and Maintenance plan: As Needed

Responsible Staff: TBD

Concrete trucks must not be washed out onto the ground, or into storm drains, open ditches, streets, or streams. Excess concrete must not be dumped on-site, except in designated concrete washout areas with appropriate BMPs installed.

Element 10: Control Dewatering (2.1.10)

Utility trench dewatering if required will be collected in a portable tank then treated and tested on-site before being discharged into receiving waters.

Table 4 – Dewatering BMPs

	Infiltration
	Transport off-site in a vehicle (vacuum truck for legal disposal)
X	Ecology-approved on-site chemical treatment or other suitable treatment technologies
	Sanitary or combined sewer discharge with local sewer district approval (last resort)
	Use of sedimentation bag with discharge to ditch or swale (small volumes of localized dewatering)

List and describe BMPs: TBD

Element 11: Maintain BMPs (2.1.11)

All temporary and permanent Erosion and Sediment Control (ESC) BMPs shall be maintained and repaired as needed to ensure continued performance of their intended function.

Maintenance and repair shall be conducted in accordance with each particular BMP specification (see *Volume II of the SWMMWW* or *Chapter 7 of the SWMMEW*).

Visual monitoring of all BMPs installed at the site will be conducted at least once every calendar week and within 24 hours of any stormwater or non-stormwater discharge from the site. If the site becomes inactive and is temporarily stabilized, the inspection frequency may be reduced to once every calendar month.

All temporary ESC BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed.

Trapped sediment shall be stabilized on-site or removed. Disturbed soil resulting from removal of either BMPs or vegetation shall be permanently stabilized.

Additionally, protection must be provided for all BMPs installed for the permanent control of stormwater from sediment and compaction. BMPs that are to remain in place following completion of construction shall be examined and restored to full operating condition. If sediment enters these BMPs during construction, the sediment shall be removed and the facility shall be returned to conditions specified in the construction documents.

Element 12: Manage the Project (2.1.12)

The project will be managed based on the following principles:

- Projects will be phased to the maximum extent practicable and seasonal work limitations will be taken into account.
- Inspection and monitoring:
 - Inspection, maintenance and repair of all BMPs will occur as needed to ensure performance of their intended function.
 - Site inspections and monitoring will be conducted in accordance with Special Condition S4 of the CSWGP. Sampling locations are indicated on the [Site Map](#). Sampling station(s) are located in accordance with applicable requirements of the CSWGP.
- Maintain an updated SWPPP.
 - The SWPPP will be updated, maintained, and implemented in accordance with Special Conditions S3, S4, and S9 of the CSWGP.

As site work progresses the SWPPP will be modified routinely to reflect changing site conditions. The SWPPP will be reviewed monthly to ensure the content is current.

Table 5 – Management

X	Design the project to fit the existing topography, soils, and drainage patterns
X	Emphasize erosion control rather than sediment control
X	Minimize the extent and duration of the area exposed
X	Keep runoff velocities low
X	Retain sediment on-site
X	Thoroughly monitor site and maintain all ESC measures
X	Schedule major earthwork during the dry season
	Other (please describe)

Element 13: Protect Low Impact Development (LID) BMPs (2.1.13)

N/A

There are no existing LID BMPs on the project

Pollution Prevention Team (3.0)

Table 7 – Team Information

Title	Name(s)	Phone Number
Certified Erosion and Sediment Control Lead (CESCL)	[Insert Name]	[Insert Number]
Resident Engineer		
Emergency Ecology Contact		
Emergency Permittee/ Owner Contact		
Non-Emergency Owner Contact		
Monitoring Personnel		
Ecology Regional Office	[Insert Regional Office]	[Insert General Number]

Monitoring and Sampling Requirements (4.0)

Monitoring includes visual inspection, sampling for water quality parameters of concern, and documentation of the inspection and sampling findings in a site log book. A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Stormwater sampling data

The site log book must be maintained on-site within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

Numeric effluent limits may be required for certain discharges to 303(d) listed waterbodies. See CSWGP Special Condition S8 and Section 5 of this template.

Site Inspection (4.1)

Site inspections will be conducted at least once every calendar week and within 24 hours following any discharge from the site. For sites that are temporarily stabilized and inactive, the required frequency is reduced to once per calendar month.

The discharge point(s) are indicated on the Site Map (see Appendix A) and in accordance with the applicable requirements of the CSWGP.

Stormwater Quality Sampling (4.2)

Turbidity Sampling (4.2.1)

Requirements include calibrated turbidity meter or transparency tube to sample site discharges for compliance with the CSWGP. Sampling will be conducted at all discharge points at least once per calendar week.

Method for sampling turbidity:

Table 8 – Turbidity Sampling Method

X	Turbidity Meter/Turbidimeter (required for disturbances 5 acres or greater in size)
	Transparency Tube (option for disturbances less than 1 acre and up to 5 acres in size)

The benchmark for turbidity value is 25 nephelometric turbidity units (NTU) and a transparency less than 33 centimeters.

If the discharge's turbidity is 26 to 249 NTU or the transparency is less than 33 cm but equal to or greater than 6 cm, the following steps will be conducted:

1. Review the SWPPP for compliance with Special Condition S9. Make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.

2. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
3. Document BMP implementation and maintenance in the site log book.

If the turbidity exceeds 250 NTU or the transparency is 6 cm or less at any time, the following steps will be conducted:

1. Telephone or submit an electronic report to the applicable Ecology Region's Environmental Report Tracking System (ERTS) within 24 hours.
<https://www.ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue>
 - Central Region (Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima): (509) 575-2490
 - Eastern Region (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman): (509) 329-3400
 - Northwest Region (King, Kitsap, Island, San Juan, Skagit, Snohomish, Whatcom): (425) 649-7000
 - Southwest Region (Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum,): (360) 407-6300
2. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period
3. Document BMP implementation and maintenance in the site log book.
4. Continue to sample discharges daily until one of the following is true:
 - Turbidity is 25 NTU (or lower).
 - Transparency is 33 cm (or greater).
 - Compliance with the water quality limit for turbidity is achieved.
 - 1 - 5 NTU over background turbidity, if background is less than 50 NTU
 - 1% - 10% over background turbidity, if background is 50 NTU or greater
 - The discharge stops or is eliminated.

pH Sampling (4.2.2)

pH monitoring is required for “Significant concrete work” (i.e. greater than 1000 cubic yards poured concrete or recycled concrete over the life of the project). The use of engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD] or fly ash) also requires pH monitoring.

For significant concrete work, pH sampling will start the first day concrete is poured and continue until it is cured, typically three (3) weeks after the last pour.

For engineered soils and recycled concrete, pH sampling begins when engineered soils or recycled concrete are first exposed to precipitation and continues until the area is fully stabilized.

If the measured pH is 8.5 or greater, the following measures will be taken:

1. Prevent high pH water from entering storm sewer systems or surface water.
2. Adjust or neutralize the high pH water to the range of 6.5 to 8.5 su using appropriate technology such as carbon dioxide (CO₂) sparging (liquid or dry ice).
3. Written approval will be obtained from Ecology prior to the use of chemical treatment other than CO₂ sparging or dry ice.

Method for sampling pH: N/A

Table 8 – pH Sampling Method

	pH meter
	pH test kit
	Wide range pH indicator paper

**Discharges to 303(d) or Total Maximum Daily Load (TMDL)
Waterbodies (5.0)**

303(d) Listed Waterbodies (5.1)

Is the receiving water 303(d) (Category 5) listed for turbidity, fine sediment, phosphorus, or pH?

Yes No

Reporting and Record Keeping (6.0)

Record Keeping (6.1)

Site Log Book (6.1.1)

A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Sample logs

Records Retention (6.1.2)

Records will be retained during the life of the project and for a minimum of three (3) years following the termination of permit coverage in accordance with Special Condition S5.C of the CSWGP.

Permit documentation to be retained on-site:

- CSWGP
- Permit Coverage Letter
- SWPPP
- Site Log Book

Permit documentation will be provided within 14 days of receipt of a written request from Ecology. A copy of the SWPPP or access to the SWPPP will be provided to the public when requested in writing in accordance with Special Condition S5.G.2.b of the CSWGP.

Updating the SWPPP (6.1.3)

The SWPPP will be modified if:

- Found ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site.
- There is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

The SWPPP will be modified within seven (7) days if inspection(s) or investigation(s) determine additional or modified BMPs are necessary for compliance. An updated timeline for BMP implementation will be prepared.

Reporting (6.2)

Discharge Monitoring Reports (6.2.1)

Cumulative soil disturbance is less than one (1) acre; therefore, Discharge Monitoring Reports (DMRs) will not be submitted to Ecology because water quality sampling is not being conducted at the site.

Notification of Noncompliance (6.2.2)

If any of the terms and conditions of the permit is not met, and the resulting noncompliance may cause a threat to human health or the environment, the following actions will be taken:

1. Ecology will be notified within 24-hours of the failure to comply by calling the applicable Regional office ERTS phone number (Regional office numbers listed below).
2. Immediate action will be taken to prevent the discharge/pollution or otherwise stop or correct the noncompliance. If applicable, sampling and analysis of any noncompliance will be repeated immediately and the results submitted to Ecology within five (5) days of becoming aware of the violation.
3. A detailed written report describing the noncompliance will be submitted to Ecology within five (5) days, unless requested earlier by Ecology.

Anytime turbidity sampling indicates turbidity is 250 NTUs or greater, or water transparency is 6 cm or less, the Ecology Regional office will be notified by phone within 24 hours of analysis as required by Special Condition S5.A of the CSWGP.

- Central Region at (509) 575-2490 for Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, or Yakima County
- Eastern Region at (509) 329-3400 for Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, or Whitman County
- Northwest Region at (425) 649-7000 for Island, King, Kitsap, San Juan, Skagit, Snohomish, or Whatcom County
- Southwest Region at (360) 407-6300 for Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, or Wahkiakum

Include the following information:

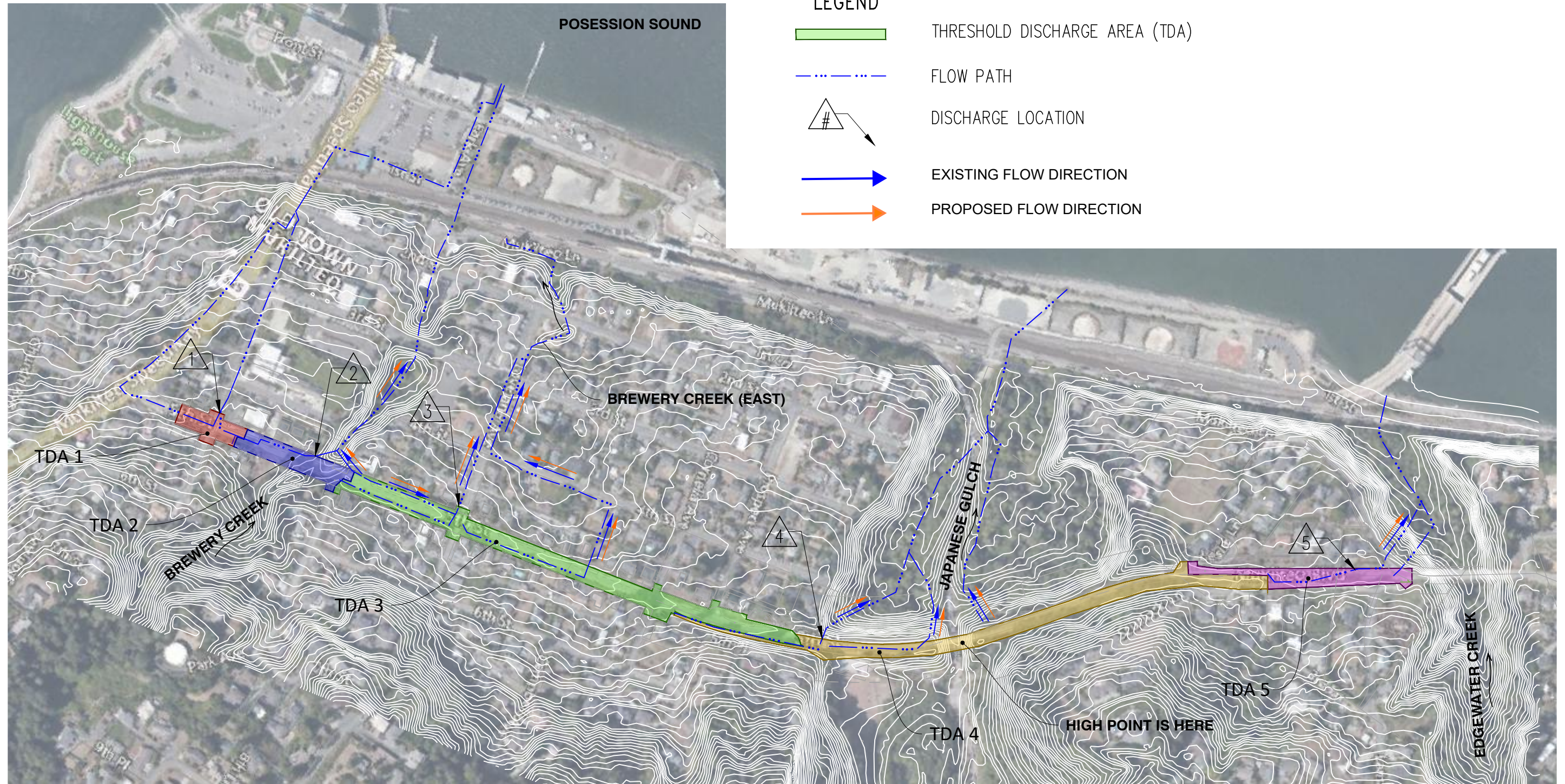
1. Your name and / Phone number
2. Permit number

3. City / County of project
4. Sample results
5. Date / Time of call
6. Date / Time of sample
7. Project name

In accordance with Special Condition S4.D.5.b of the CSWGP, the Ecology Regional office will be notified if chemical treatment other than CO₂ sparging is planned for adjustment of high pH water.

Appendix A

Site Plans

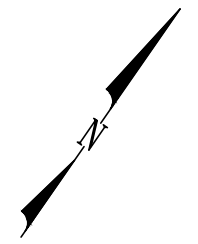
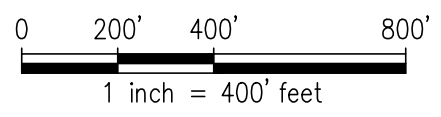


LEGEND

- THRESHOLD DISCHARGE AREA (TDA)
- FLOW PATH
- DISCHARGE LOCATION
- EXISTING FLOW DIRECTION
- PROPOSED FLOW DIRECTION

TDA OVERVIEW

TDA	RECEIVING WATER BODY
1	POSESSION SOUND
2	BREWERY CREEK
3	BREWERY CREEK (EAST)
4	JAPANESE GULCH
5	EDGEWATER CREEK



<p>Project Title 5TH STREET PEDESTRIAN IMPROVEMENTS</p> <p>Client CITY OF MUKILTEO</p>	<p>Drawing Title TDA OVERVIEW MAP</p> <p>kpff 1601 5th Avenue, Suite 1600 Seattle, WA 98101 206.622.5822 www.kpff.com</p>	<p>ASI/RFI/CSK Number</p> <hr/> <p>Drawing Reference</p> <p>Scale</p> <hr/> <p>Date</p> <p>Drawn/Ck'd By CHA</p>
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 christineh
 Apr 11, 2022 - 3:42pm

EROSION AND SEDIMENT CONTROL NOTES

1. APPROVAL OF THIS EROSION/SEDIMENT CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES).
2. THE IMPLEMENTATION OF THIS ESC PLAN AND CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC BMPS IS THE RESPONSIBILITY OF THE APPLICANT UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
3. CLEARLY FLAG THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THE SITE PREP PLAN IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT FOR THE DURATION OF CONSTRUCTION.
4. CONSTRUCT THE ESC BMPS SHOWN ON THIS PLAN IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESC BMPS SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, UPGRADE THESE ESC BMPS AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.
6. THE APPLICANT SHALL INSPECT THE ESC BMPS DAILY AND MAINTAIN THEM AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. INSPECT AND MAINTAIN THE ESC BMPS ON INACTIVE SITE A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT (I.E. 24-HOUR STORM EVENT WITH A 10-YR OR GREATER RECURRANCE INTERVAL).
8. AT NO TIME SHALL THE SEDIMENT EXCEED 60-PERCENT OF THE SUMP DEPTH OR HAVE LESS THAN 6-INCHES OF CLEARANCE FROM SEDIMENT SURFACE TO THE INVERT OF THE LOWEST PIPE. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.
9. CLEARED AND EXPOSED SLOPES SHALL BE STABILIZED AND COVERED BY A PLASTIC COVERING IF LEFT EXPOSED FOR MORE THAN 7 DAYS DURING THE DRY SEASON (MAY 1 - SEPTEMBER 30) OR MORE THAN 2 DAYS DURING THE WET SEASON (OCTOBER 1 - APRIL 30).

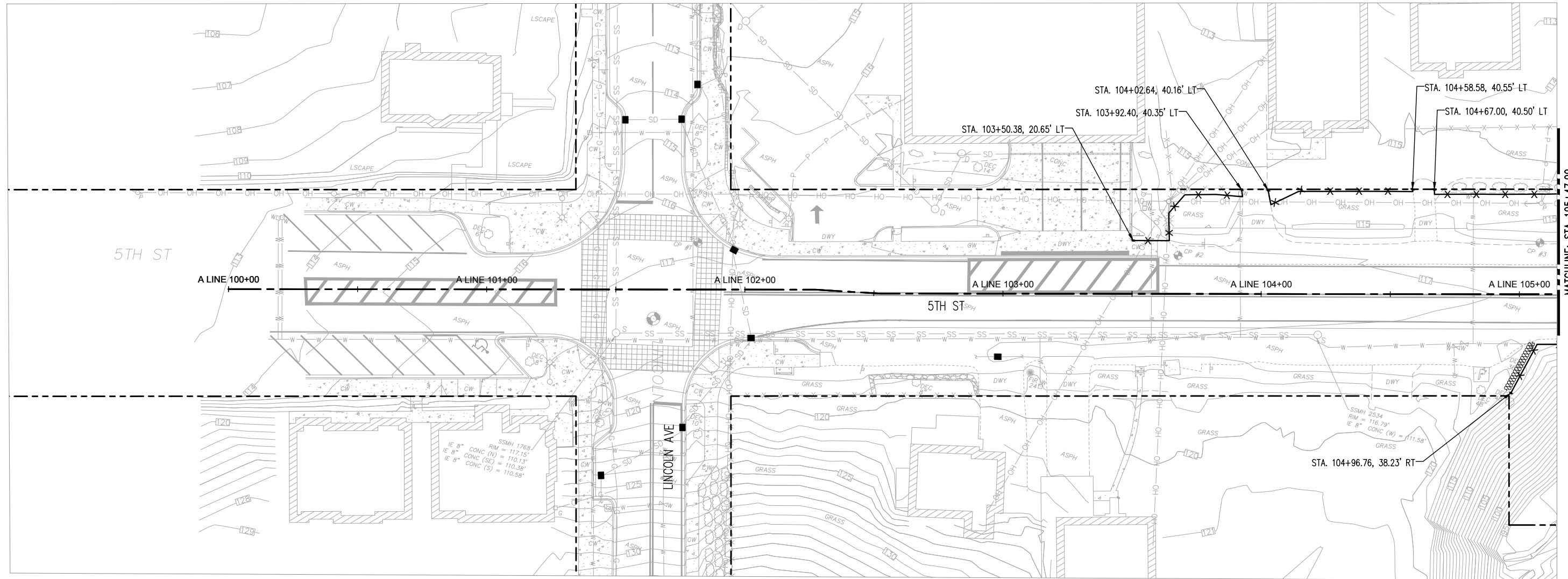
Z:\2000001-2009999\2000722 Mukilteo 5th St Bicycle & Pedestrian\CADD\Sheets\MATH - ECN.dwg

michely

Jul 14, 2022 - 1:22pm

NOT FOR CONSTRUCTION - 60 PERCENT

					DRAWN BY MRV CHECKED BY JMM DATE 04/2022 J O B No. :2000722	DESIGNED BY TCG APPROVED BY R.JL S C A L E: 1" = 20'	 1601 5th Avenue, Suite 1600 Seattle, WA 98101 206.622.5822 www.kpff.com		MUKILTEO 5TH ST BICYCLE & PEDESTRIAN MUKILTEO, WA EROSION AND SEDIMENT CONTROL NOTES	SHT. 1 OF 10 ECN01
NO.	DATE	BY	CHD.	APPR.	REVISION					

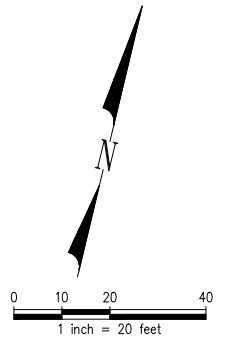


LEGEND

- RIGHT-OF-WAY
- X-X- SILT FENCE
- ▩ STRAW WATTLES
- INLET PROTECTION

GENERAL NOTES

1. PROTECT OPEN SLOPES WITH PLASTIC COVERING CONFORMING TO BMP C123 PER SWMMWW
2. INLET PROTECTION MUST CONFORM TO BMP C220 PER SWMMWW
3. SILT FENCE MUST CONFORM TO BMP C233 PER SWMMWW
4. WATTLES MUST CONFORM TO BMP C235 PER SWMMWW



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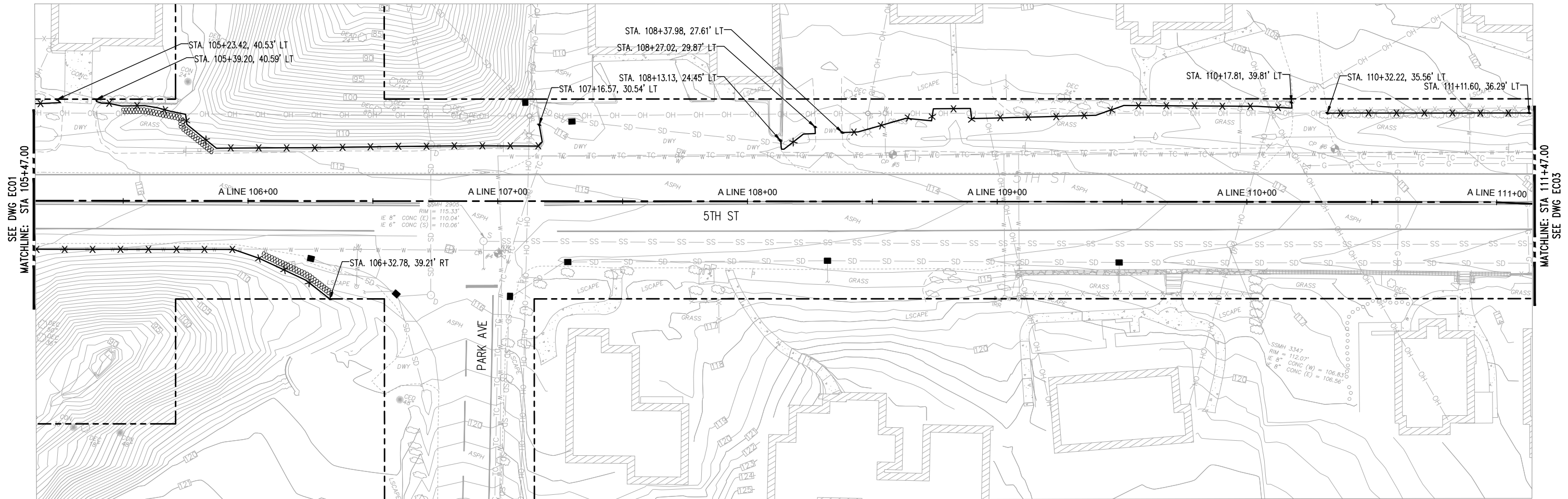
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MUKILTEO, WA**

EROSION AND SEDIMENT CONTROL PLAN



SEE DWG EC01
MATCHLINE: STA 105+47.00

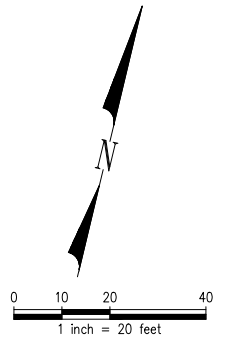
MATCHLINE: STA 111+47.00
SEE DWG EC03

LEGEND

- RIGHT-OF-WAY
- X X SILT FENCE
- STRAW WATTLES
- INLET PROTECTION

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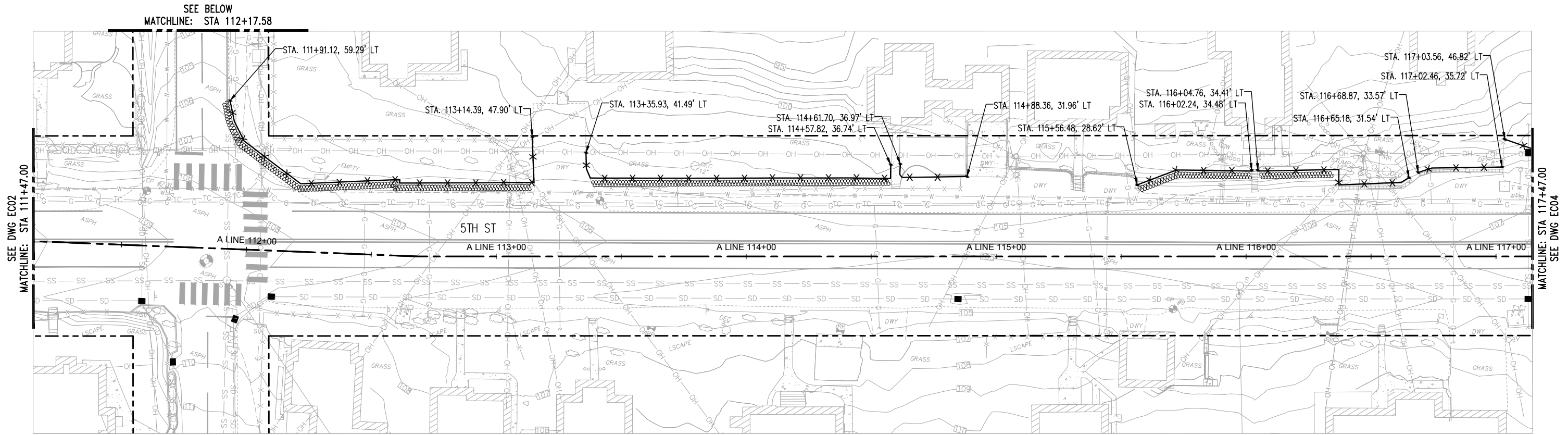


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EROSION AND SEDIMENT CONTROL PLAN

SHT. 3 OF 10
EC02

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michaels
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SEE DWG EC02
MATCHLINE: STA 111+47.00

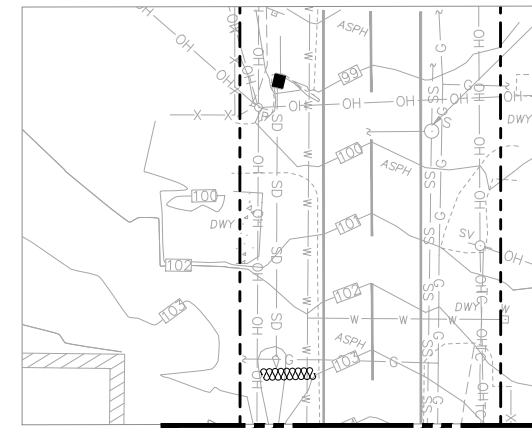
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SEE DWG EC04

LEGEND

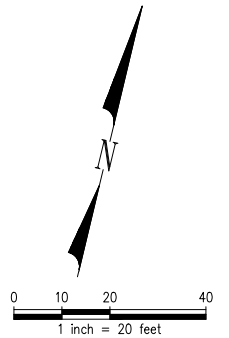
- RIGHT-OF-WAY
- X X SILT FENCE
- ~~~~~ STRAW WATTLES
- INLET PROTECTION

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MATCHLINE: STA 112+17.58
SEE ABOVE



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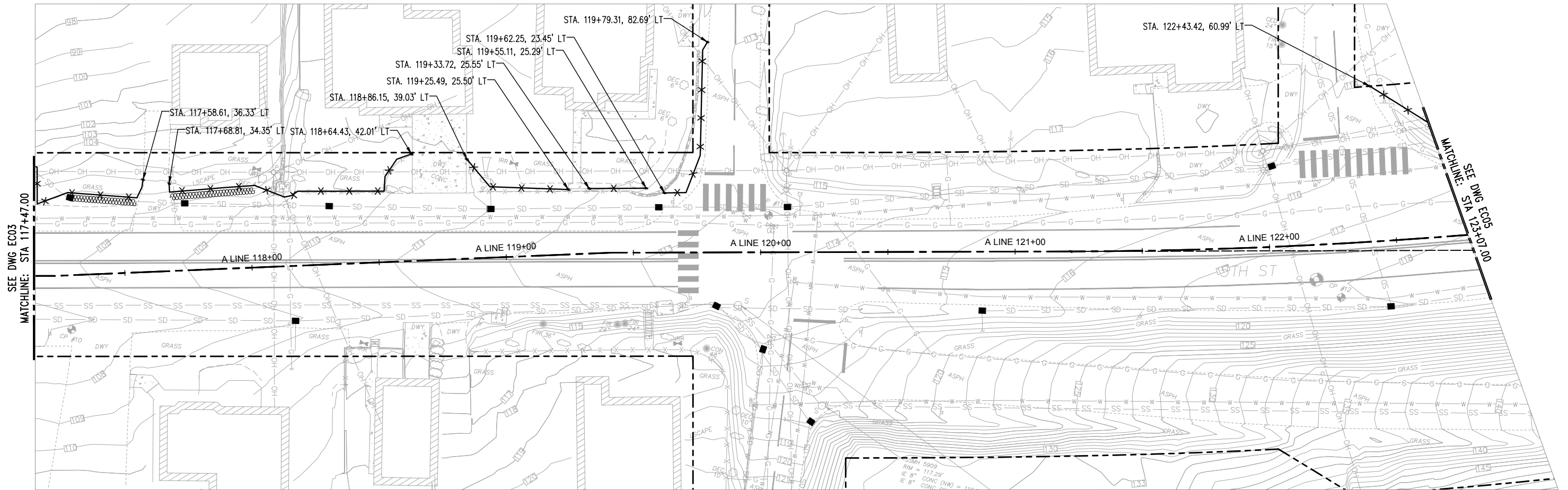
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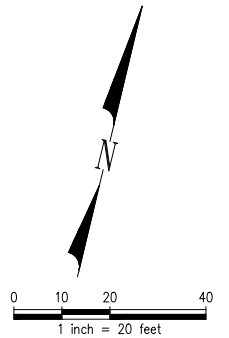


LEGEND

- RIGHT-OF-WAY
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michalev

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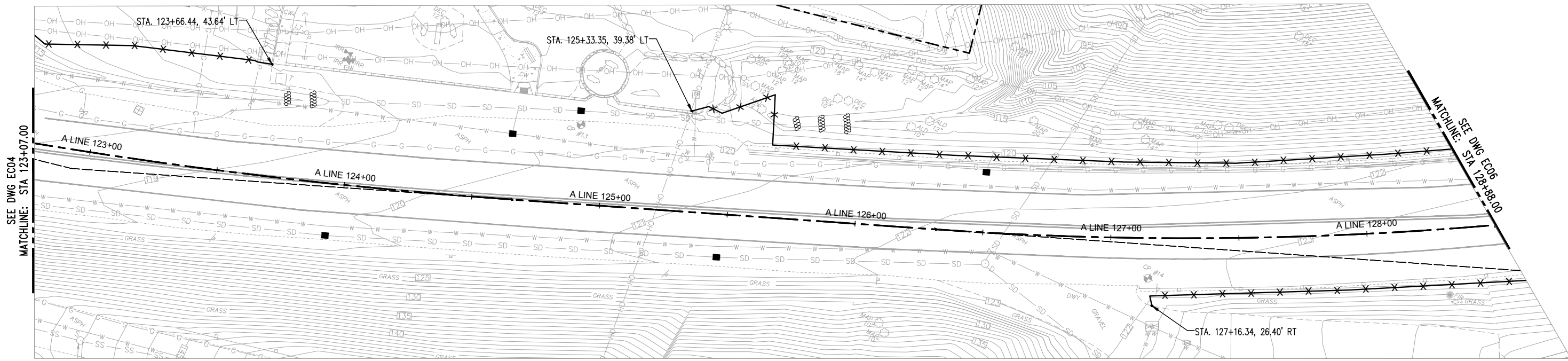
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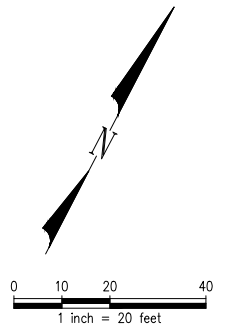


LEGEND

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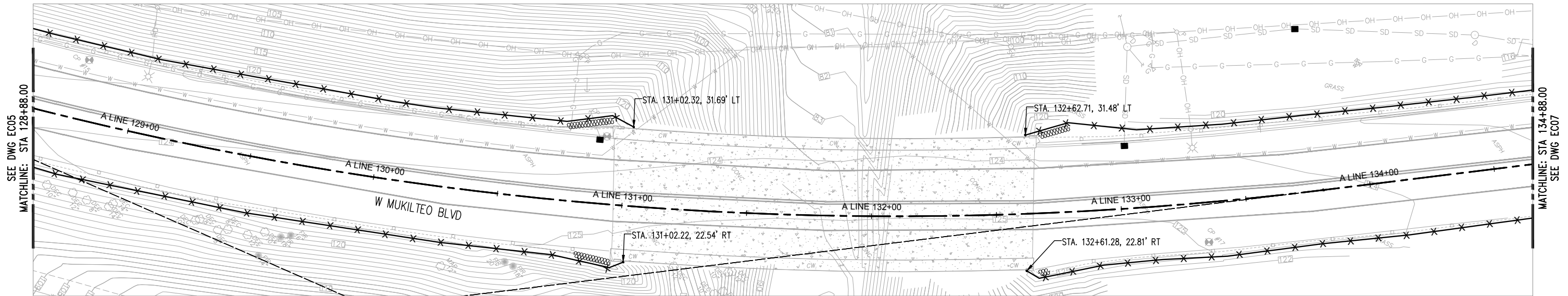
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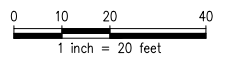
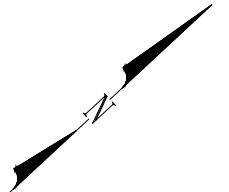


LEGEND

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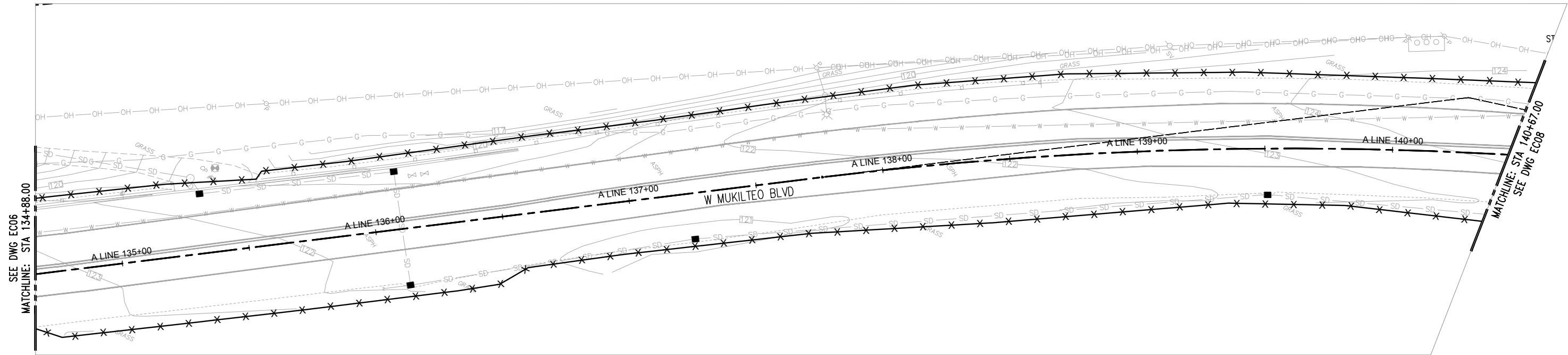
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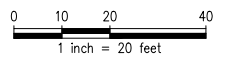
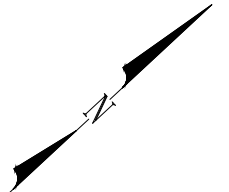


LEGEND

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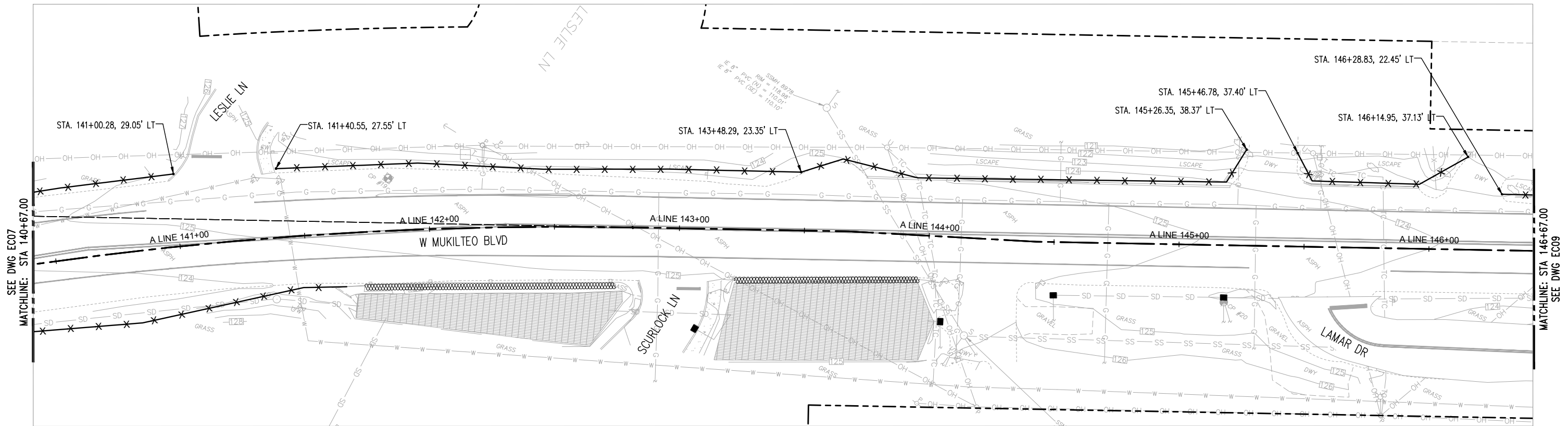


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EROSION AND SEDIMENT CONTROL PLAN

SHT. 8 OF 10

EC07



SEE DWG EC07
MATCHLINE: STA 140+67.00

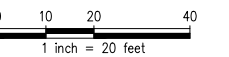
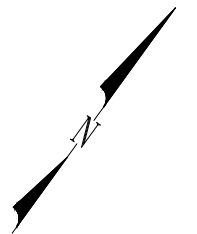
MATCHLINE: STA 146+67.00
SEE DWG EC09

LEGEND

- RIGHT-OF-WAY
- X-X- SILT FENCE
- ▩ STRAW WATTLES
- INLET PROTECTION

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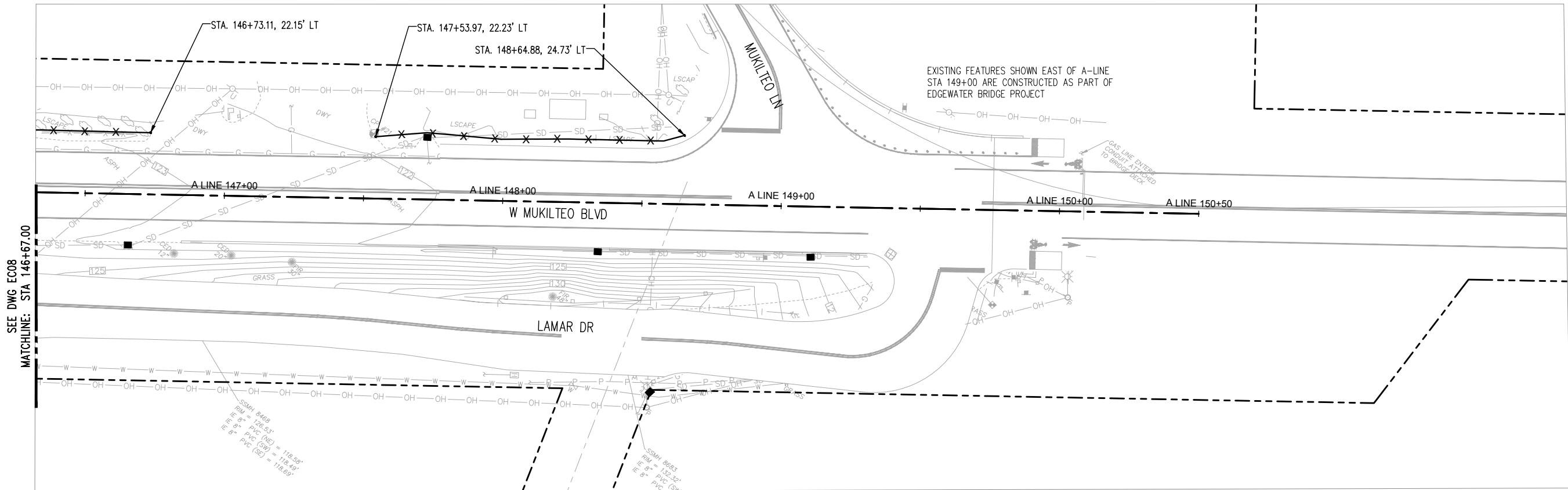
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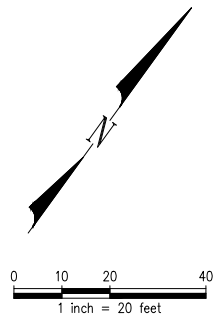


LEGEND

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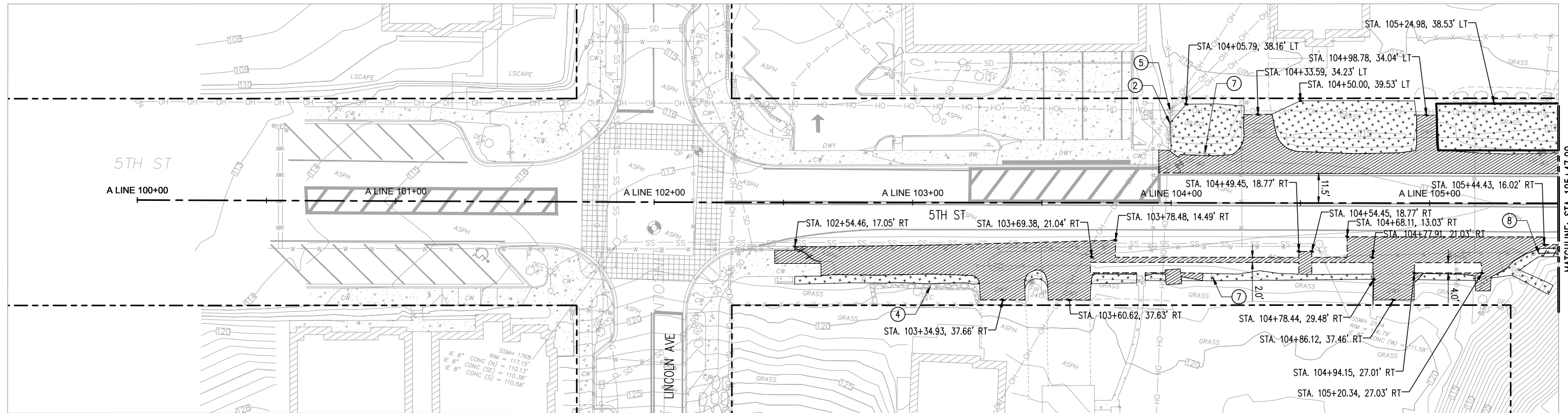
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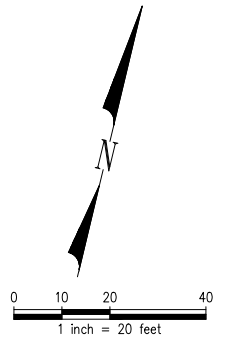
- RIGHT-OF-WAY
- - - - SAWCUT
- /// REMOVE CURB OR CURB AND GUTTER
- //// REMOVE STRUCTURE OR OBSTRUCTION NOTED
- ▨ ROADWAY EXCAVATION INCL. HAUL
- ▤ CLEARING AND GRUBBING

CONSTRUCTION NOTES

- ① REMOVE FENCE
- ② REMOVE LUMINAIRE
- ③ REMOVE CEMENT CONCRETE STAIRS
- ④ PROTECT EX. WALL
- ⑤ PROTECT EX. POWER POLE
- ⑥ PROTECT EX. FENCE
- ⑦ REMOVE EX. SIGN
- ⑧ REMOVE GUARDRAIL

GENERAL NOTES

1. FOR DRAINAGE REMOVAL, ADJUSTMENTS, AND RELOCATES, SEE DRAINAGE PLANS
2. TREE REMOVAL IS INCLUDED IN CLEARING AND GRUBBING
3. ALL UTILITY CASTINGS TO BE PROTECTED IN PLACE
4. TRIMMING EXISTING VEGETATION WITHIN THE PUBLIC ROW AS NEEDED TO PERFORM WORK IS ACCEPTABLE WITH PRIOR APPROVAL OF THE RESIDENT ENGINEER
5. EXISTING OVERHEAD UTILITY WIRES EXIST WITHIN THE PROJECT CORRIDOR
6. ALL PAVEMENT, SIDEWALK, CURB REMOVALS, AND SAWCUTTING TO BE PAID AS "ROADWAY EXCAVATION INCL. HAUL"



NOT FOR CONSTRUCTION

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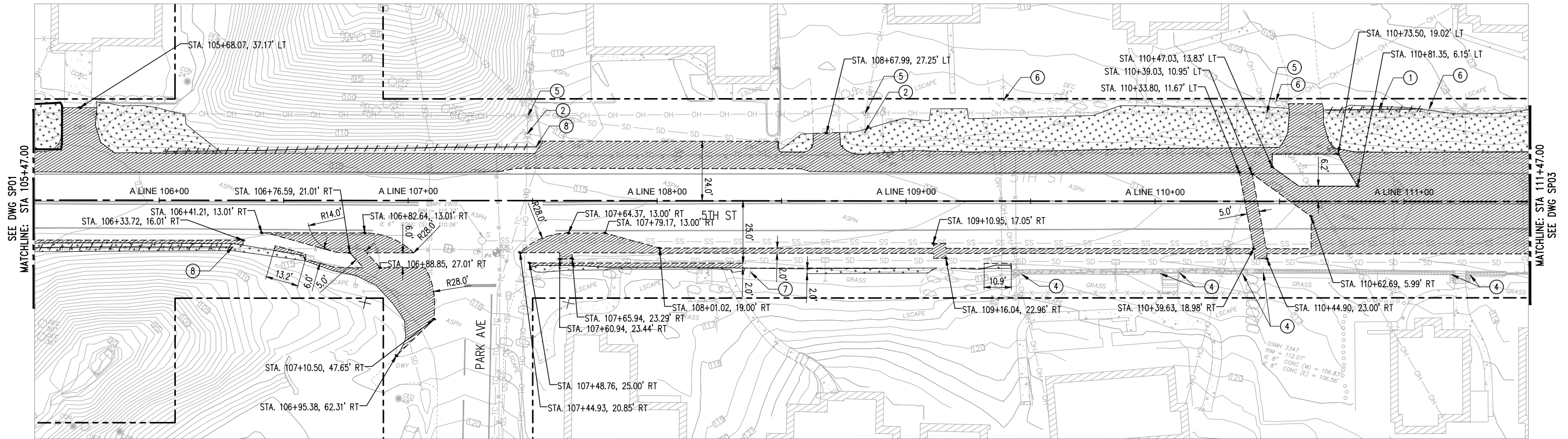
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MUKILTEO, WA

SITE PREPARATION PLAN

SHT. --- OF 98

SP01

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Apr 11, 2022 - 6:52pm
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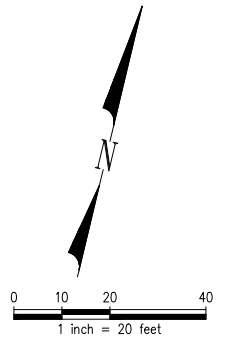
- RIGHT-OF-WAY
- - - SAWCUT
- /// REMOVE CURB OR CURB AND GUTTER
- //// REMOVE STRUCTURE OR OBSTRUCTION NOTED
- [Hatched Box] ROADWAY EXCAVATION INCL. HAUL
- [Stippled Box] CLEARING AND GRUBBING

CONSTRUCTION NOTES

- 1 REMOVE FENCE
- 2 REMOVE LUMINAIRE
- 3 REMOVE CEMENT CONCRETE STAIRS
- 4 PROTECT EX. WALL
- 5 PROTECT EX. POWER POLE
- 6 PROTECT EX. FENCE
- 7 REMOVE EX. SIGN
- 8 REMOVE GUARDRAIL

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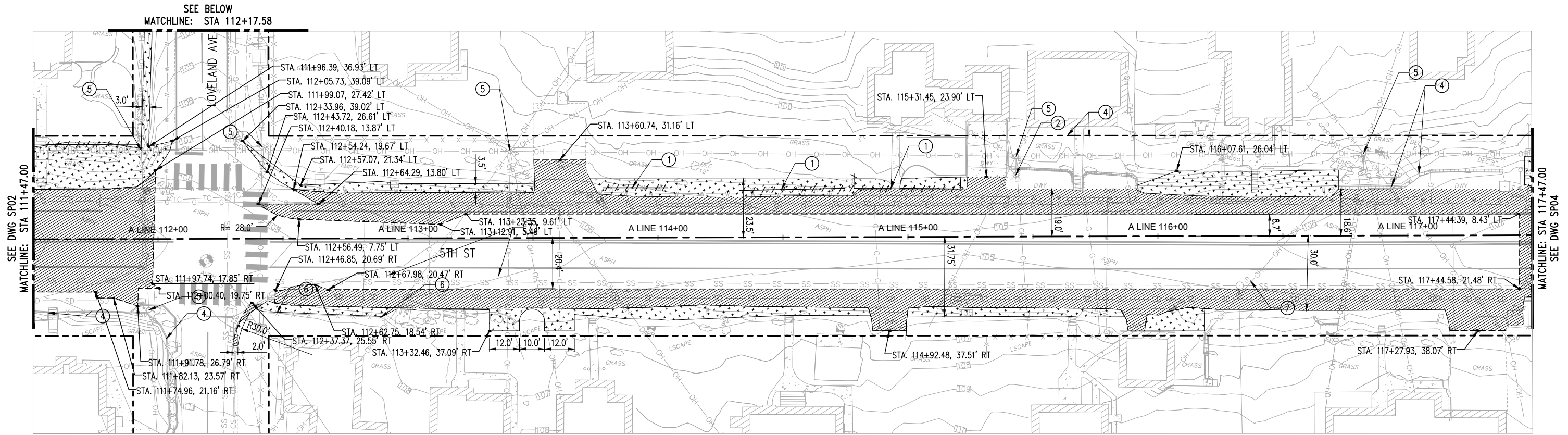
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SITE PREPARATION PLAN

SHT. --- OF 98

SP02

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SEE DWG SP02
MATCHLINE: STA 111+47.00

MATCHLINE: STA 117+47.00
SEE DWG SP04

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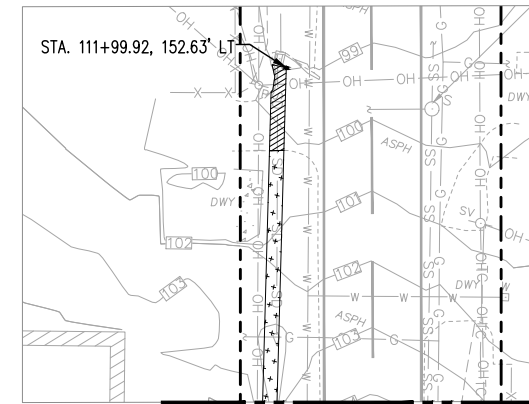
- RIGHT-OF-WAY
- - - SAWCUT
- /// REMOVE CURB OR CURB AND GUTTER
- ++++ REMOVE STRUCTURE OR OBSTRUCTION NOTED
- [Hatched Box] ROADWAY EXCAVATION INCL. HAUL
- [Dotted Box] CLEARING AND GRUBBING

CONSTRUCTION NOTES

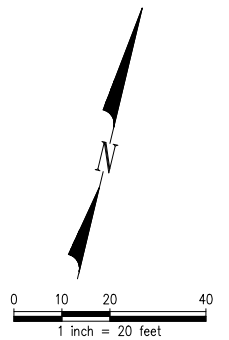
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4. TRIMMING EXISTING VEGETATION WITHIN THE PUBLIC ROW AS NEEDED TO PERFORM WORK IS ACCEPTABLE WITH PRIOR APPROVAL OF THE RESIDENT ENGINEER
5. EXISTING OVERHEAD UTILITY WIRES EXIST WITHIN THE PROJECT CORRIDOR
6. ALL PAVEMENT, SIDEWALK, CURB REMOVALS, AND SAWCUTTING TO BE PAID AS "ROADWAY EXCAVATION INCL. HAUL"



MATCHLINE: STA 112+17.58
SEE ABOVE



NOT FOR CONSTRUCTION

Z:\2000001-2009999\200722 Mukilteo 5th St Bicycle & Pedestrian\CADD\Sheets\M5TH - SP.dwg

Apr 11, 2022 - 6:52pm

NO.	DATE	BY	CHD.	APPR.	REVISION

DRAWN BY MRV	DESIGNED BY TCG
CHECKED BY JMM	APPROVED BY R.JL
DATE 04/2022	
JOB No.: 2000722	

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SCALE:
1" = 20'

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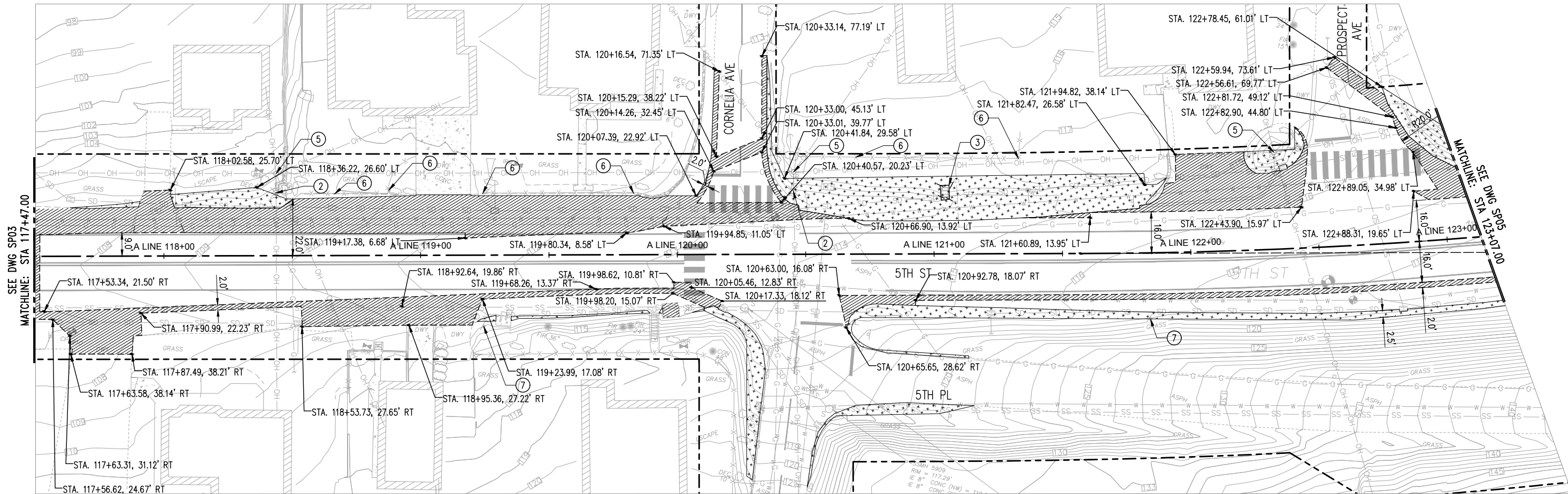


MUKILTEO 5TH ST BICYCLE & PEDESTRIAN
MUKILTEO, WA

SITE PREPARATION PLAN

SHT. --- OF 98

SP03



LEGEND

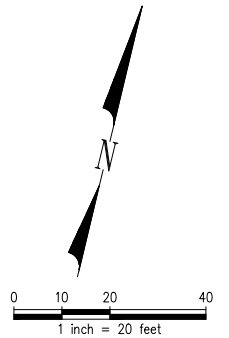
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- /// REMOVE CURB OR CURB AND GUTTER
- //// REMOVE STRUCTURE OR OBSTRUCTION NOTED
- [Hatched Box] ROADWAY EXCAVATION INCL. HAUL
- [Dotted Box] CLEARING AND GRUBBING

CONSTRUCTION NOTES

- ① REMOVE FENCE
- ② REMOVE LUMINAIRE
- ③ REMOVE CEMENT CONCRETE STAIRS
- ④ PROTECT EX. WALL
- ⑤ PROTECT EX. POWER POLE
- ⑥ PROTECT EX. FENCE
- ⑦ REMOVE EX. SIGN
- ⑧ REMOVE GUARDRAIL

GENERAL NOTES

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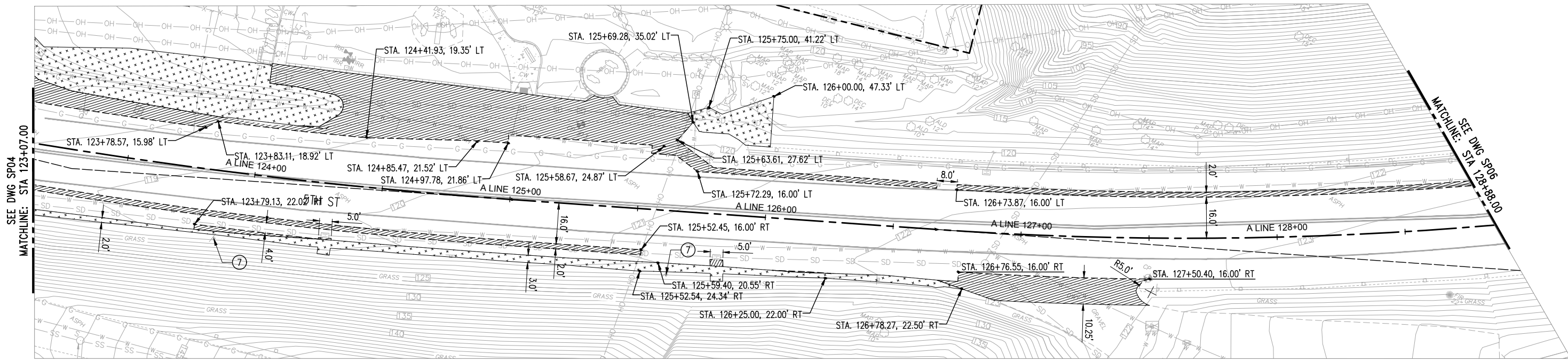
MUKILTEO 5TH ST BICYCLE & PEDESTRIAN
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SHT. --- OF 98

SP04

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timg
Apr 11, 2022 - 6:52pm



SEE DWG SP04
MATCHLINE: STA 123+07.00

MATCHLINE: SEE DWG SP06
STA 128+88.00

LEGEND

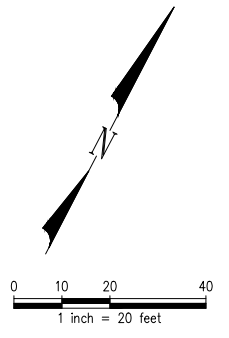
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- REMOVE STRUCTURE OR OBSTRUCTION NOTED
- ▨ ROADWAY EXCAVATION INCL. HAUL
- ▤ CLEARING AND GRUBBING

CONSTRUCTION NOTES

- ① REMOVE FENCE
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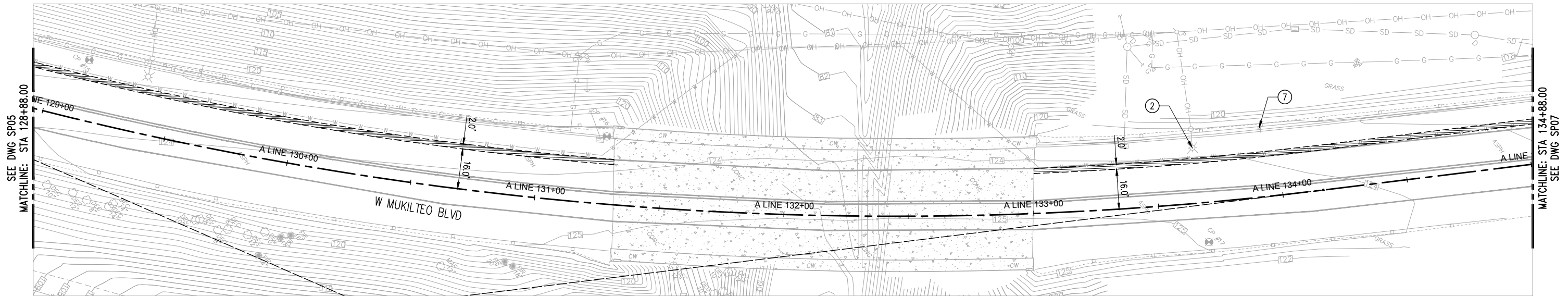
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SP05

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LEGEND

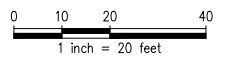
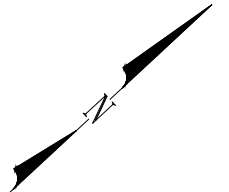
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- /// REMOVE CURB OR CURB AND GUTTER
- //// REMOVE STRUCTURE OR OBSTRUCTION NOTED
- ▨ ROADWAY EXCAVATION INCL. HAUL
- ▤ CLEARING AND GRUBBING

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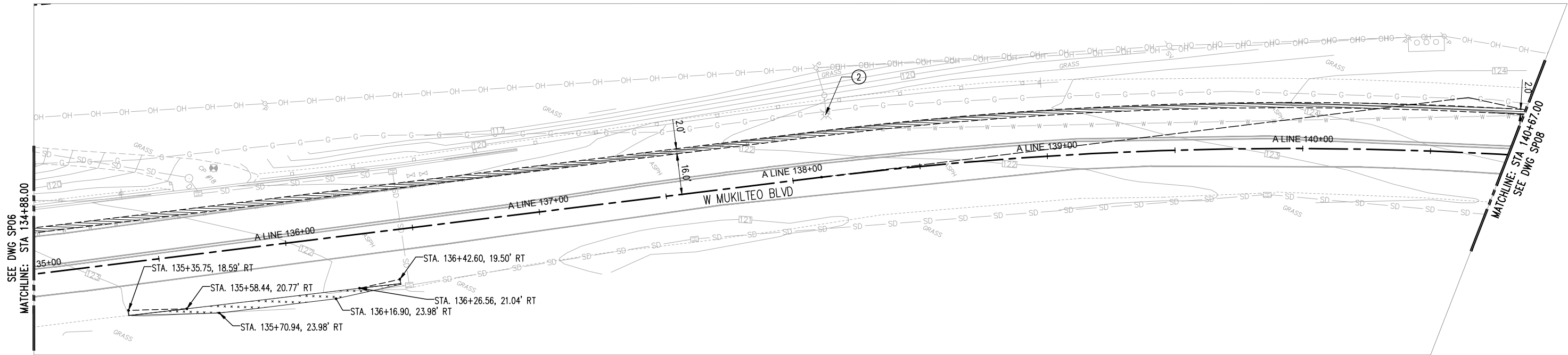
MUKILTEO 5TH ST BICYCLE & PEDESTRIAN
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SITE PREPARATION PLAN

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SP06

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Apr 11, 2022 - 6:52pm
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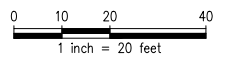
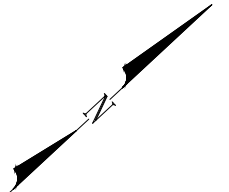
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- SAWCUT
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- REMOVE STRUCTURE OR OBSTRUCTION NOTED
- ROADWAY EXCAVATION INCL. HAUL
- CLEARING AND GRUBBING

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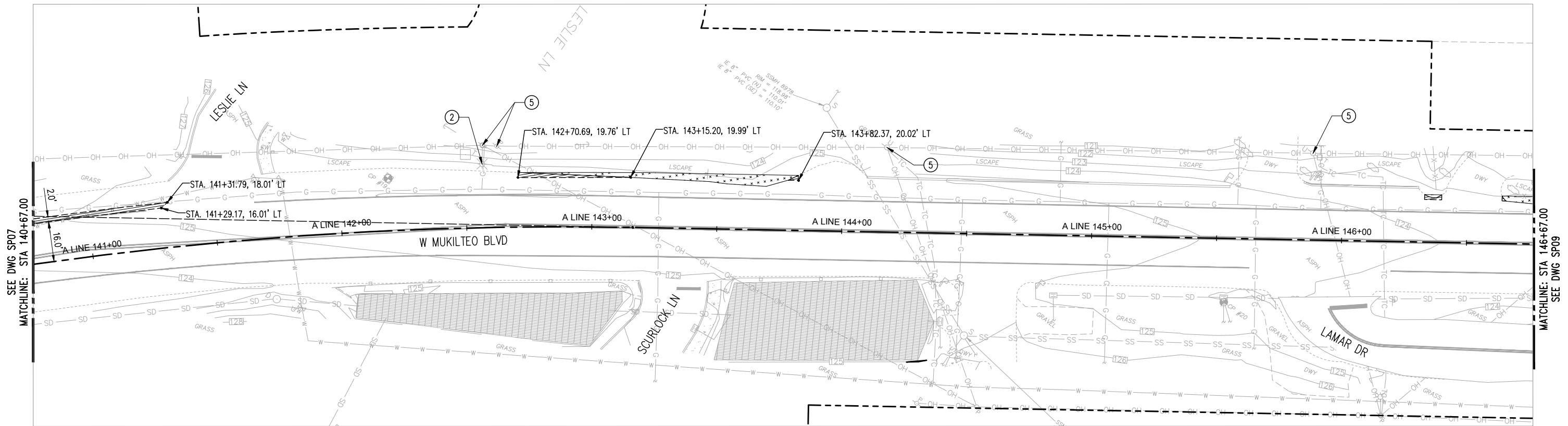
MUKILTEO 5TH ST BICYCLE & PEDESTRIAN
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SITE PREPARATION PLAN

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SP07

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Apr 11, 2022 - 6:52pm



LEGEND

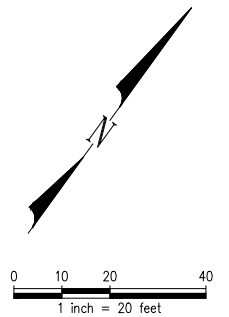
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- SAWCUT
- REMOVE CURB OR CURB AND GUTTER
- REMOVE STRUCTURE OR OBSTRUCTION NOTED
- ROADWAY EXCAVATION INCL. HAUL
- CLEARING AND GRUBBING

CONSTRUCTION NOTES

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- 2 REMOVE LUMINAIRE
- 3 REMOVE CEMENT CONCRETE STAIRS
- 4 PROTECT EX. WALL
- 5 PROTECT EX. POWER POLE
- 6 PROTECT EX. FENCE
- 7 REMOVE EX. SIGN
- 8 REMOVE GUARDRAIL

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S C A L E:
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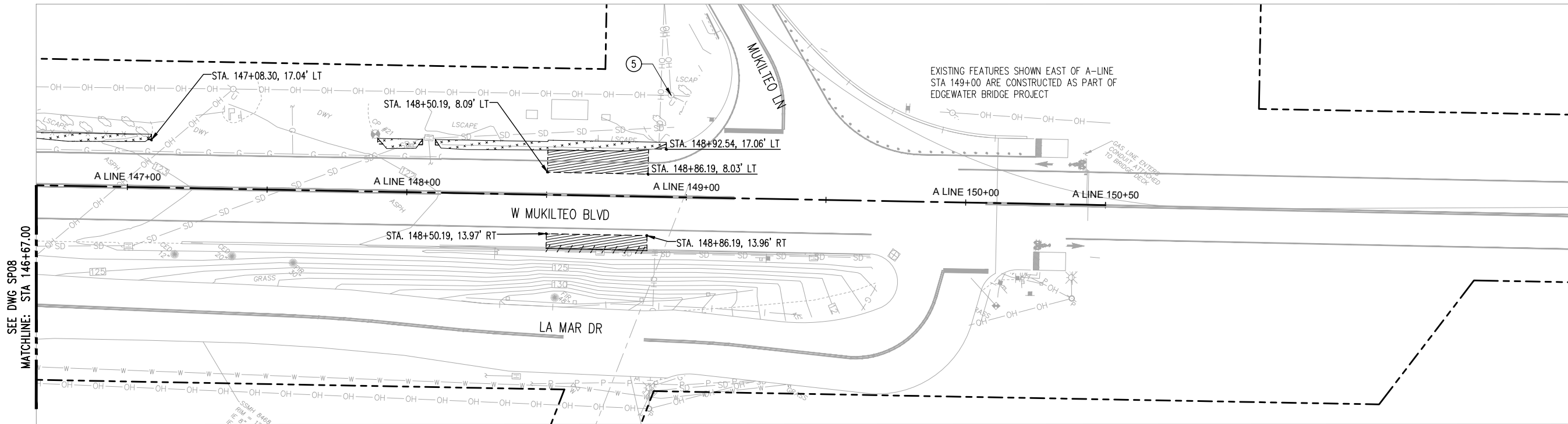


MUKILTEO 5TH ST BICYCLE & PEDESTRIAN
MUKILTEO, WA

SITE PREPARATION PLAN

SHT. --- OF 98

SP08



LEGEND

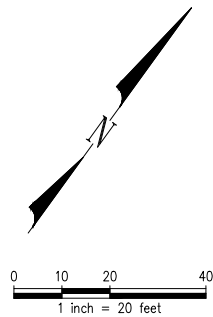
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- ▨ ROADWAY EXCAVATION INCL. HAUL
- ▩ CLEARING AND GRUBBING

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SCALE:
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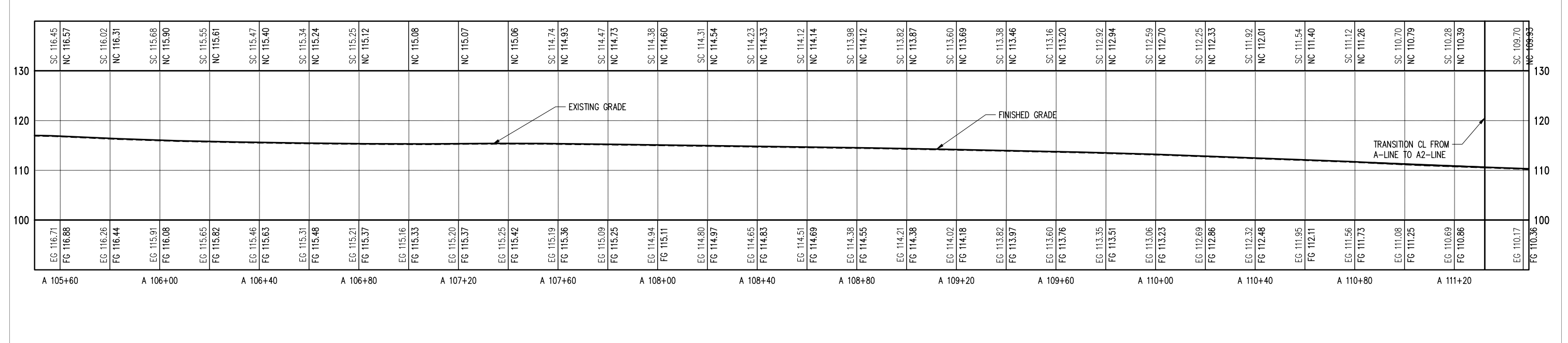
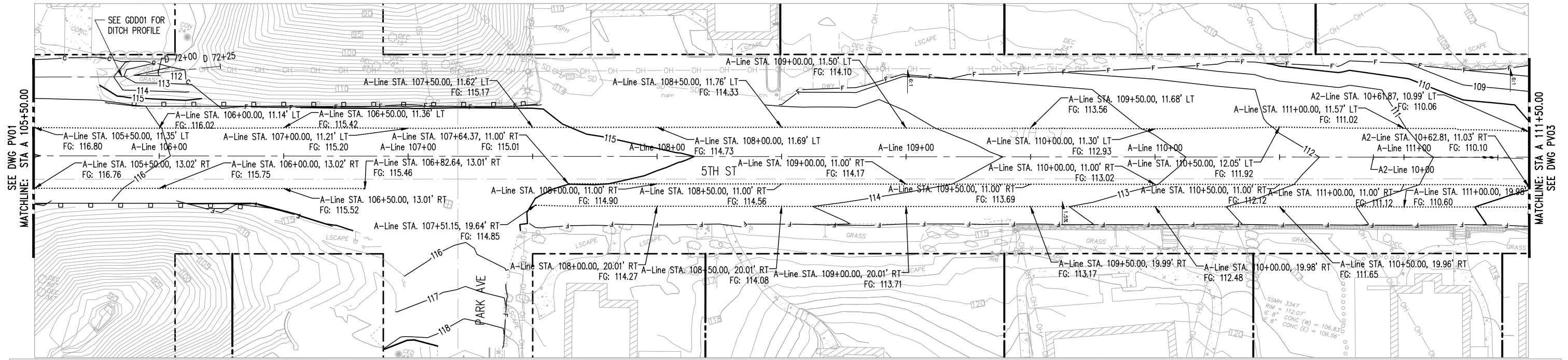
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SITE PREPARATION PLAN

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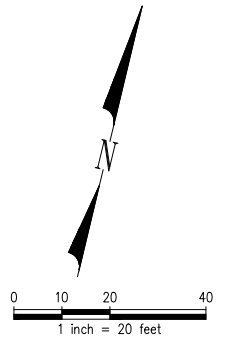
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S4 T28N R4E W.M.



LEGEND
 GRADE BREAK LINE (GB)

NOTES
 1. SEE PAVING PLANS FOR PAVING LIMITS



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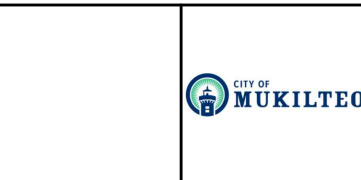
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DRAWN BY: MRV
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 S C A L E:
 1" = 20'

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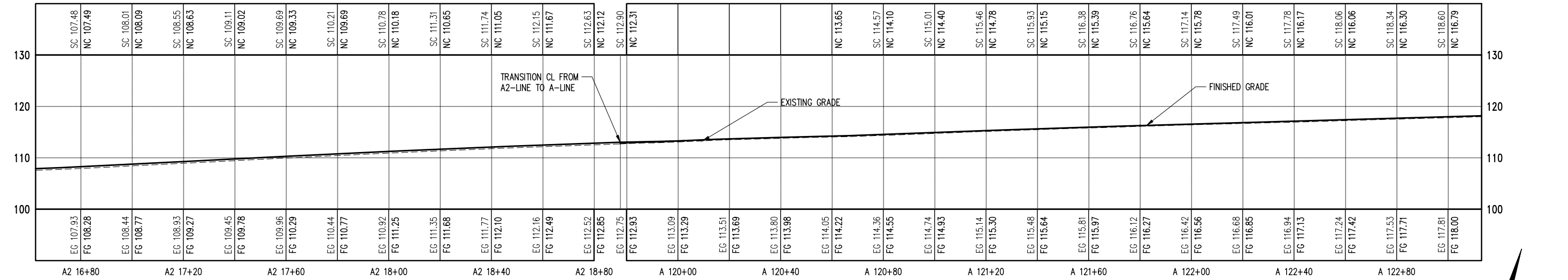
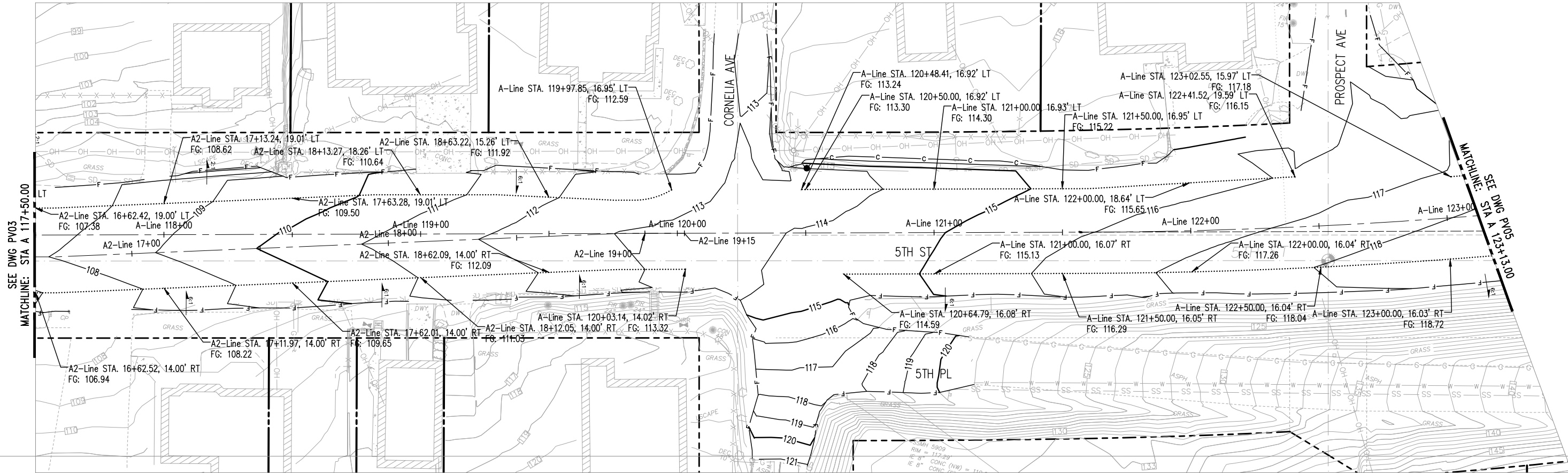
MUKILTEO 5TH ST BICYCLE & PEDESTRIAN
 MUKILTEO, WA

GRADING PLAN

SHT. --- OF 98
GD02

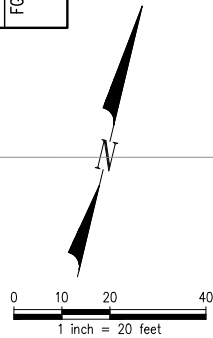
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S4 T28N R4E W.M.



LEGEND
 GRADE BREAK LINE (GB)

NOTES
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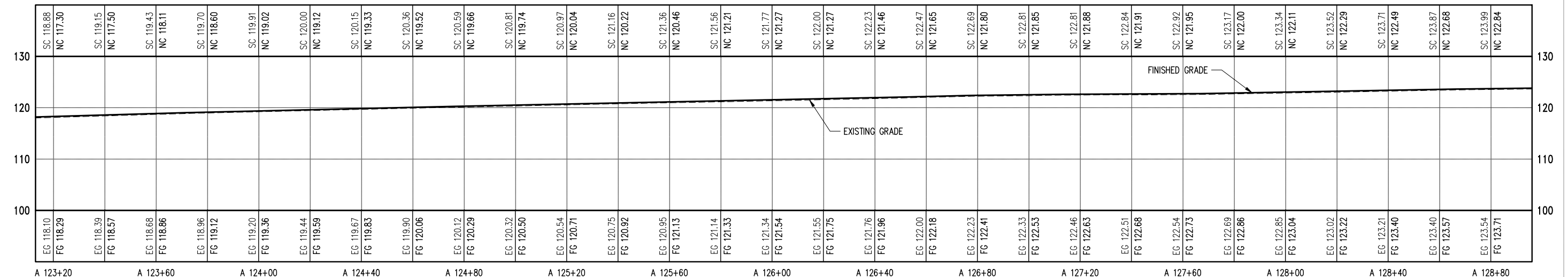
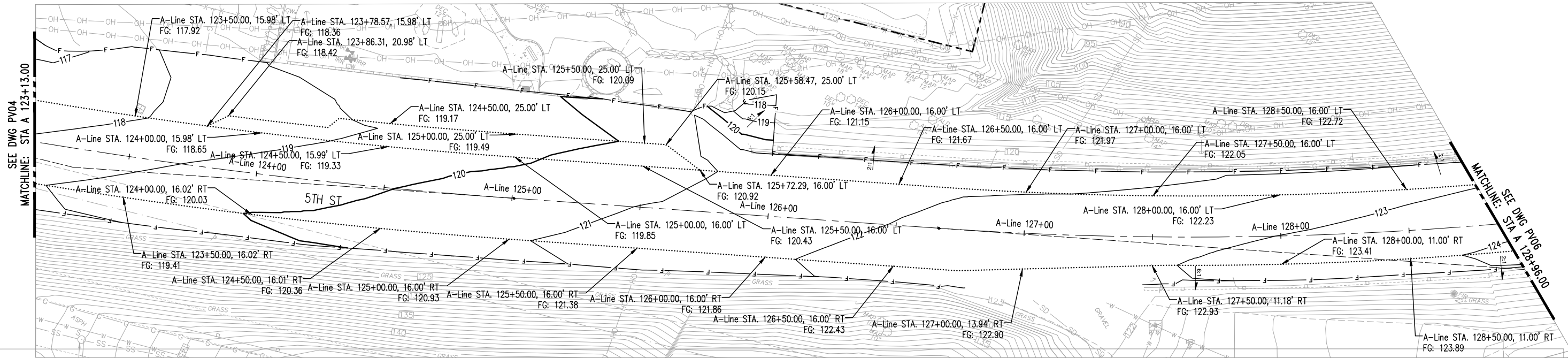


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NO. DATE BY CHD. APPR. REVISION					S C A L E: 1" = 20'		GRADING PLAN		GD04					

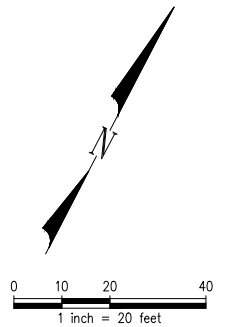
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S4 T28N R4E W.M.



LEGEND
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SCALE:
 1" = 20'



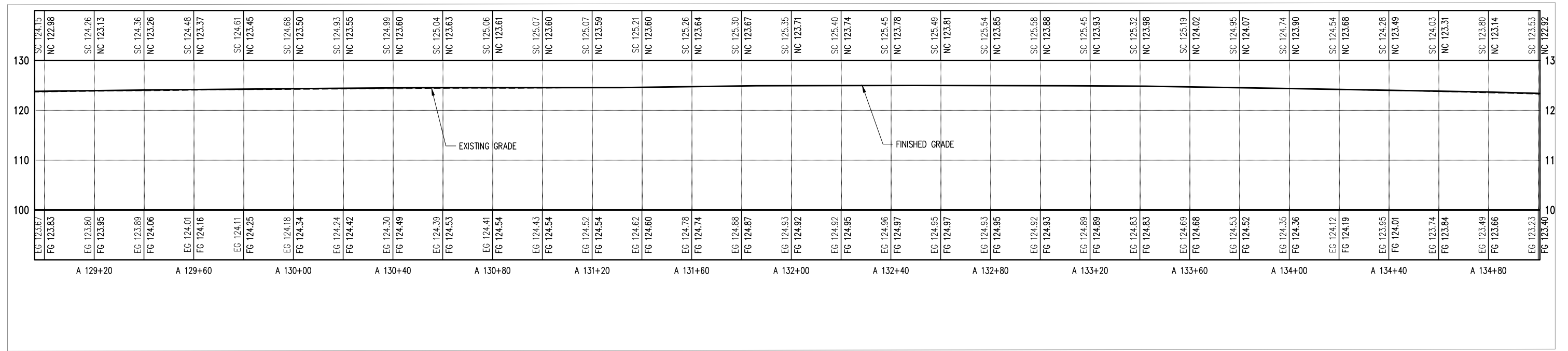
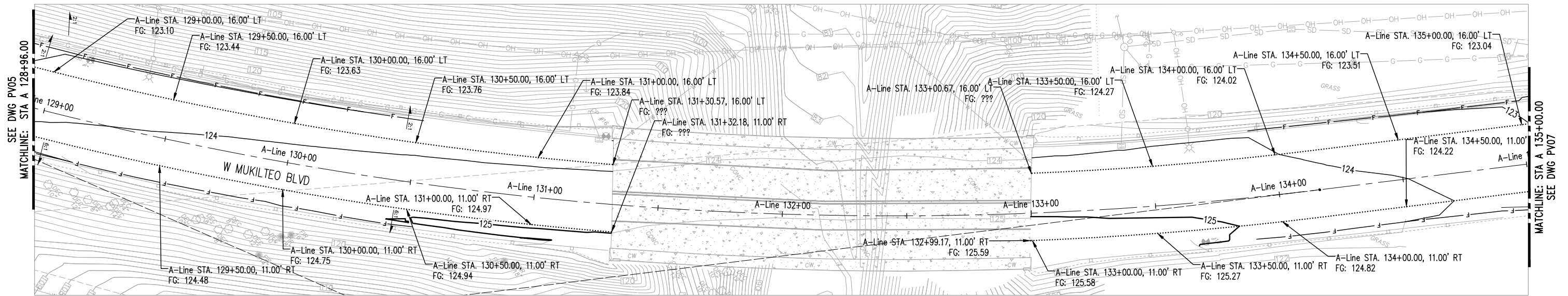
MUKILTEO 5TH ST BICYCLE & PEDESTRIAN
 MUKILTEO, WA

GRADING PLAN

SHT. --- OF 98

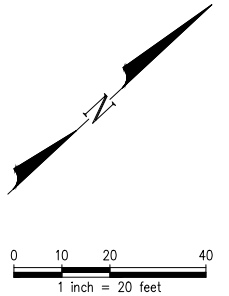
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LEGEND
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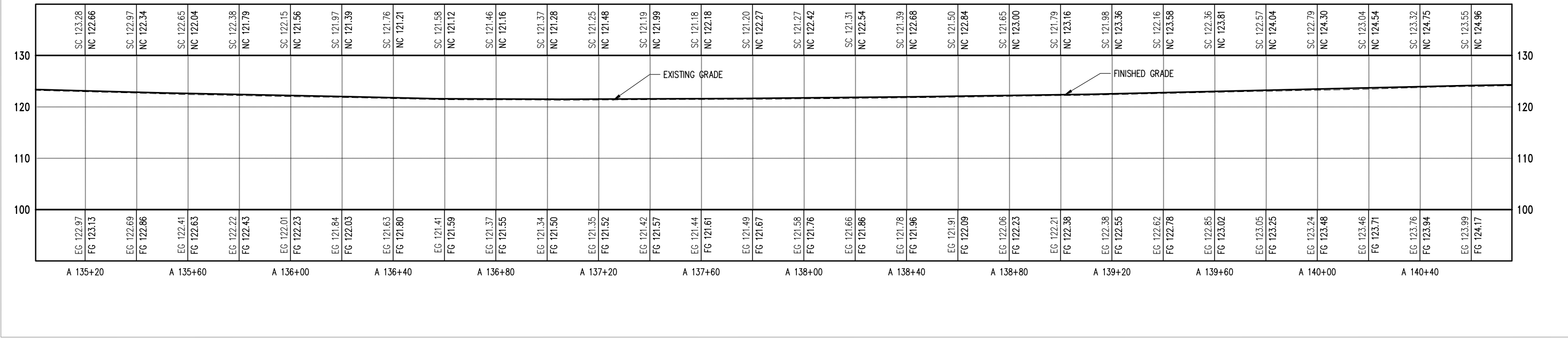
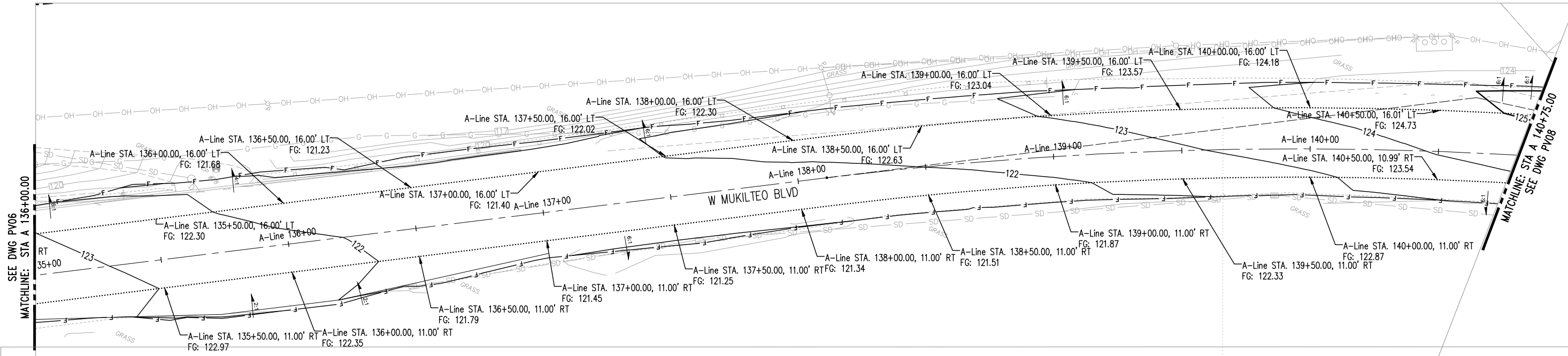
MUKILTEO 5TH ST BICYCLE & PEDESTRIAN
 MUKILTEO, WA

GRADING PLAN

SHT. --- OF 98

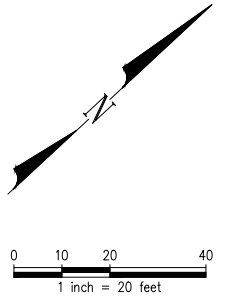
GD06

Apr 11, 2022 - 7:10pm
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LEGEND
 GRADE BREAK LINE (GB)

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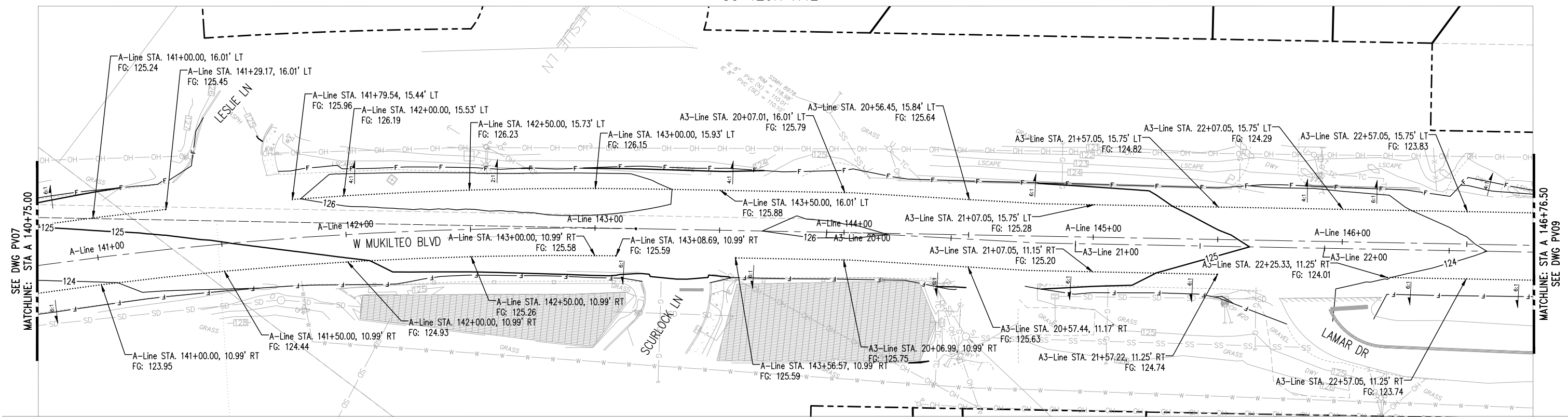


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DRAWN BY: MRV CHECKED BY: JMM DATE: 04/2022 J O B No.: 2000722					DESIGNED BY: TCG APPROVED BY: RJL DATE: 04/2022		CALL TWO BUSINESS DAYS BEFORE YOU DIG 1-800-424-5555	1601 5th Avenue, Suite 1600 Seattle, WA 98101 206.622.5822 www.kpff.com	CITY OF MUKILTEO	MUKILTEO 5TH ST BICYCLE & PEDESTRIAN MUKILTEO, WA		SHT. --- OF 98
NO. DATE BY CHD. APPR. REVISION					S C A L E: 1" = 20'					GRADING PLAN		GD07

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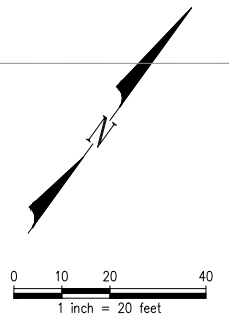
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NOTES
 1. SEE PAVING PLANS FOR PAVING LIMITS



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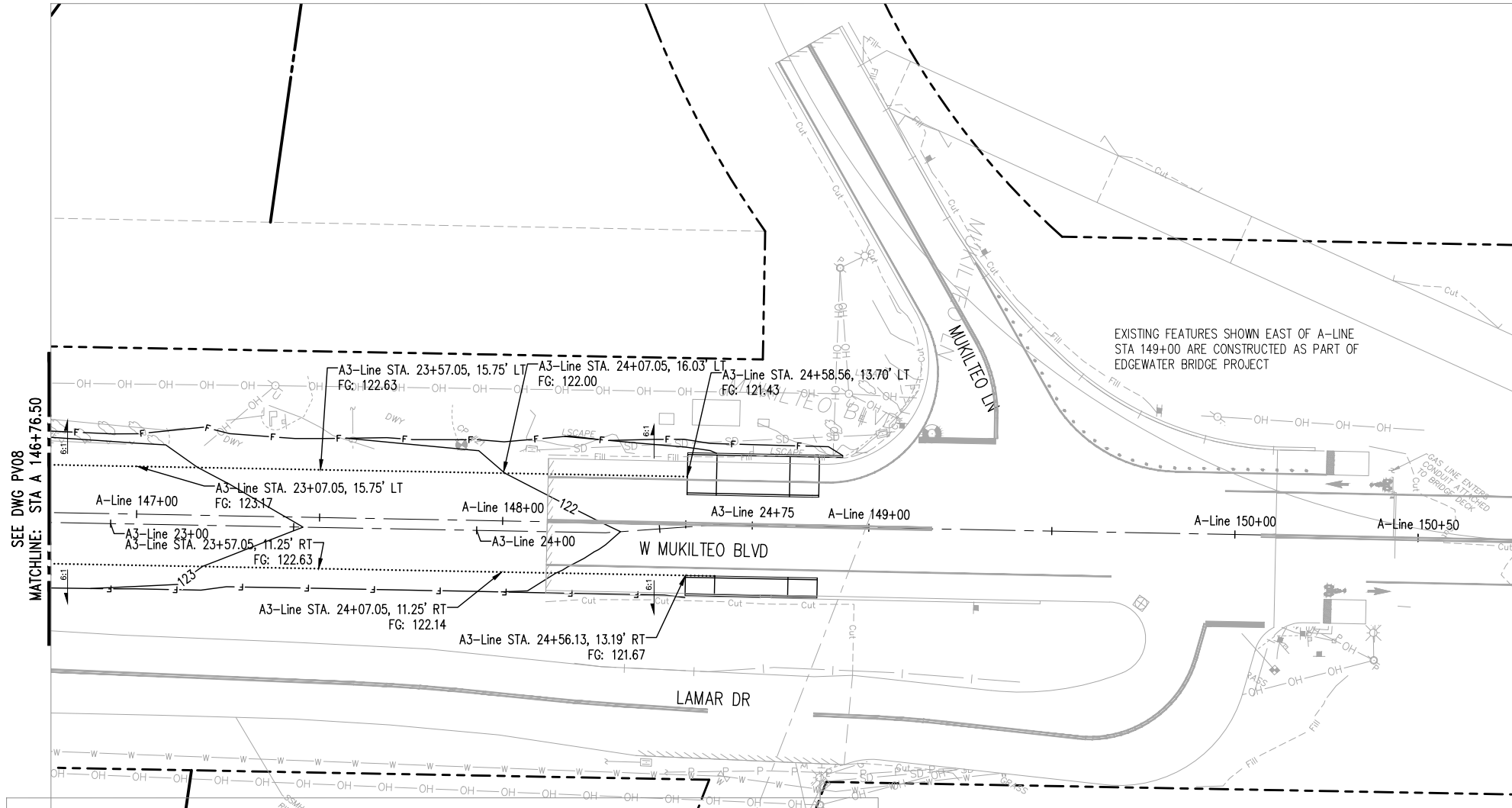
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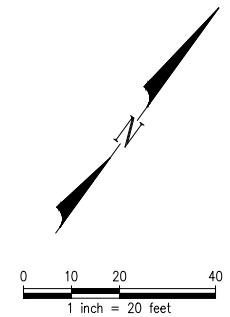
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NOTES

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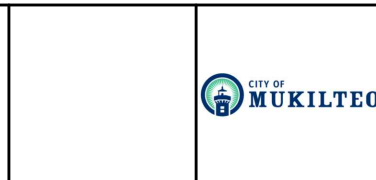
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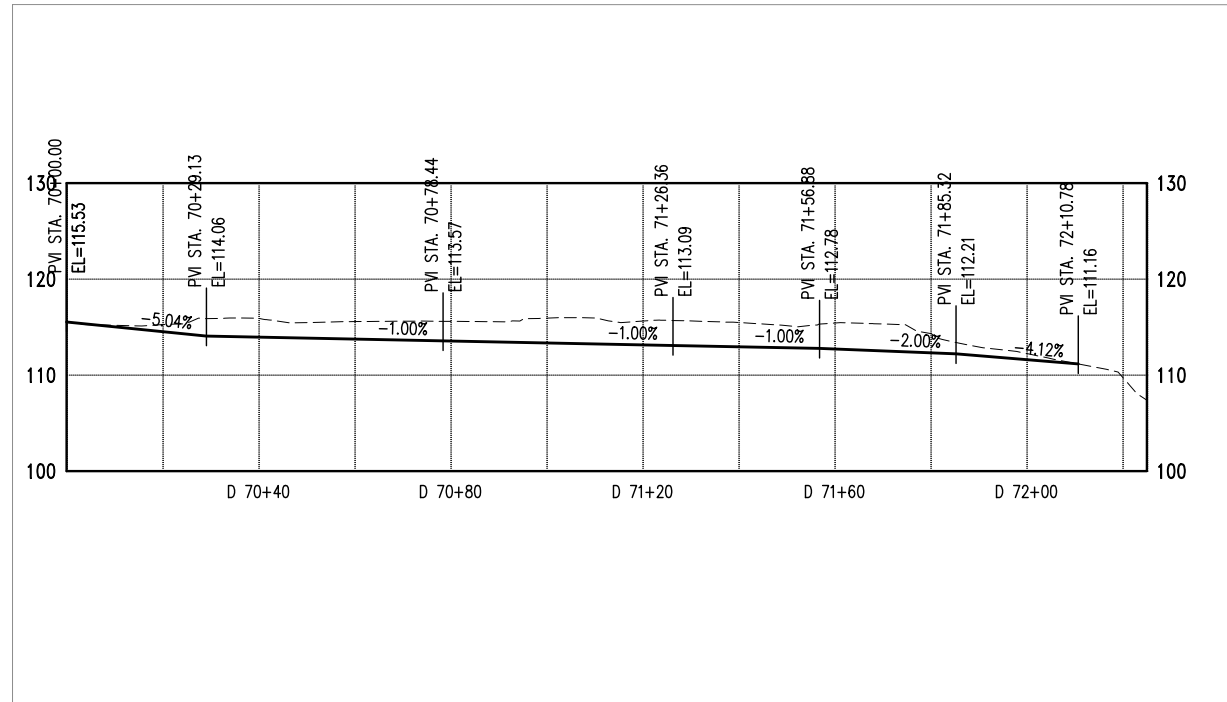
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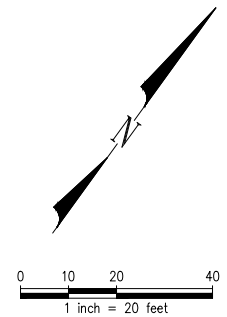
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Appendix B

BMP Specifications

BMP C123: Plastic Covering

Purpose

Plastic covering provides immediate, short-term erosion protection to slopes and disturbed areas.

Conditions of Use

Plastic covering may be used on disturbed areas that require cover measures for less than 30 days, except as stated below.

- Plastic is particularly useful for protecting cut and fill slopes and stockpiles. However, the relatively rapid breakdown of most polyethylene sheeting makes it unsuitable for applications greater than six months.
- Due to rapid runoff caused by plastic covering, do not use this method upslope of areas that might be adversely impacted by concentrated runoff. Such areas include steep and/or unstable slopes.
- Plastic sheeting may result in increased runoff volumes and velocities, requiring additional on-site measures to counteract the increases. Creating a trough with wattles or other material can convey clean water away from these areas.
- To prevent undercutting, trench and backfill rolled plastic covering products.
- Although the plastic material is inexpensive to purchase, the cost of installation, maintenance, removal, and disposal add to the total costs of this BMP.
- Whenever plastic is used to protect slopes, install water collection measures at the base of the slope. These measures include plastic-covered berms, channels, and pipes used to convey clean rainwater away from bare soil and disturbed areas. Do not mix clean runoff from a plastic covered slope with dirty runoff from a project.
- Other uses for plastic include:
 - Temporary ditch liner.
 - Pond liner in temporary sediment pond.
 - Liner for bermed temporary fuel storage area if plastic is not reactive to the type of fuel being stored.
 - Emergency slope protection during heavy rains.
 - Temporary drainpipe (“elephant trunk”) used to direct water.

Design and Installation Specifications

- Plastic slope cover must be installed as follows:
 1. Run plastic up and down the slope, not across the slope.
 2. Plastic may be installed perpendicular to a slope if the slope length is less than 10 feet.

3. Provide a minimum of 8-inch overlap at the seams.
 4. On long or wide slopes, or slopes subject to wind, tape all seams.
 5. Place plastic into a small (12-inch wide by 6-inch deep) slot trench at the top of the slope and backfill with soil to keep water from flowing underneath.
 6. Place sand filled burlap or geotextile bags every 3 to 6 feet along seams and tie them together with twine to hold them in place.
 7. Inspect plastic for rips, tears, and open seams regularly and repair immediately. This prevents high velocity runoff from contacting bare soil, which causes extreme erosion.
 8. Sandbags may be lowered into place tied to ropes. However, all sandbags must be staked in place.
- Plastic sheeting shall have a minimum thickness of 0.06 millimeters.
 - If erosion at the toe of a slope is likely, a gravel berm, riprap, or other suitable protection shall be installed at the toe of the slope in order to reduce the velocity of runoff.

Maintenance Standards

- Torn sheets must be replaced and open seams repaired.
- Completely remove and replace the plastic if it begins to deteriorate due to ultraviolet radiation.
- Completely remove plastic when no longer needed.
- Dispose of old tires used to weight down plastic sheeting appropriately.

Approved as Functionally Equivalent

Ecology has approved products as able to meet the requirements of this BMP. The products did not pass through the Technology Assessment Protocol – Ecology (TAPE) process. Local jurisdictions may choose not to accept these products, or may require additional testing prior to consideration for local use. Products that Ecology has approved as functionally equivalent are available for review on Ecology's website at:

<https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies>

BMP C124: Sodding

Purpose

The purpose of sodding is to establish turf for immediate erosion protection and to stabilize drainage paths where concentrated overland flow will occur.

thickness is 2 feet.

- For outlets at the base of steep slope pipes (pipe slope greater than 10 percent), use an engineered energy dissipator.
- Filter fabric or erosion control blankets should always be used under riprap to prevent scour and channel erosion. See [BMP C122: Nets and Blankets](#).
- Bank stabilization, bioengineering, and habitat features may be required for disturbed areas. This work may require a Hydraulic Project Approval (HPA) from the Washington State Department of Fish and Wildlife. See [I-2.11 Hydraulic Project Approvals](#).

Maintenance Standards

- Inspect and repair as needed.
- Add rock as needed to maintain the intended function.
- Clean energy dissipator if sediment builds up.

BMP C220: Inlet Protection

Purpose

Inlet protection prevents coarse sediment from entering drainage systems prior to permanent stabilization of the disturbed area.

Conditions of Use

Use inlet protection at inlets that are operational before permanent stabilization of the disturbed areas that contribute runoff to the inlet. Provide protection for all storm drain inlets downslope and within 500 feet of a disturbed or construction area, unless those inlets are preceded by a sediment trapping BMP.

Also consider inlet protection for lawn and yard drains on new home construction. These small and numerous drains coupled with lack of gutters can add significant amounts of sediment into the roof drain system. If possible, delay installing lawn and yard drains until just before landscaping, or cap these drains to prevent sediment from entering the system until completion of landscaping. Provide 18-inches of sod around each finished lawn and yard drain.

[Table II-3.10: Storm Drain Inlet Protection](#) lists several options for inlet protection. All of the methods for inlet protection tend to plug and require a high frequency of maintenance. Limit contributing drainage areas for an individual inlet to one acre or less. If possible, provide emergency overflows with additional end-of-pipe treatment where stormwater ponding would cause a hazard.

Table II-3.10: Storm Drain Inlet Protection

Type of Inlet Protection	Emergency Overflow	Applicable for Paved/ Earthen Surfaces	Conditions of Use
Drop Inlet Protection			
Excavated drop inlet protection	Yes, temporary flooding may occur	Earthen	Applicable for heavy flows. Easy to maintain. Large area requirement: 30'x30'/acre
Block and gravel drop inlet protection	Yes	Paved or Earthen	Applicable for heavy concentrated flows. Will not pond.
Gravel and wire drop inlet protection	No	Paved or Earthen	Applicable for heavy concentrated flows. Will pond. Can withstand traffic.
Catch basin filters	Yes	Paved or Earthen	Frequent maintenance required.
Curb Inlet Protection			
Curb inlet protection with wooden weir	Small capacity overflow	Paved	Used for sturdy, more compact installation.
Block and gravel curb inlet protection	Yes	Paved	Sturdy, but limited filtration.
Culvert Inlet Protection			
Culvert inlet sediment trap	N/A	N/A	18 month expected life.

Design and Installation Specifications

Excavated Drop Inlet Protection

Excavated drop inlet protection consists of an excavated impoundment around the storm drain inlet. Sediment settles out of the stormwater prior to entering the storm drain. Design and installation specifications for excavated drop inlet protection include:

- Provide a depth of 1-2 ft as measured from the crest of the inlet structure.
- Slope sides of excavation should be no steeper than 2H:1V.
- Minimum volume of excavation is 35 cubic yards.
- Shape the excavation to fit the site, with the longest dimension oriented toward the longest inflow area.
- Install provisions for draining to prevent standing water.
- Clear the area of all debris.

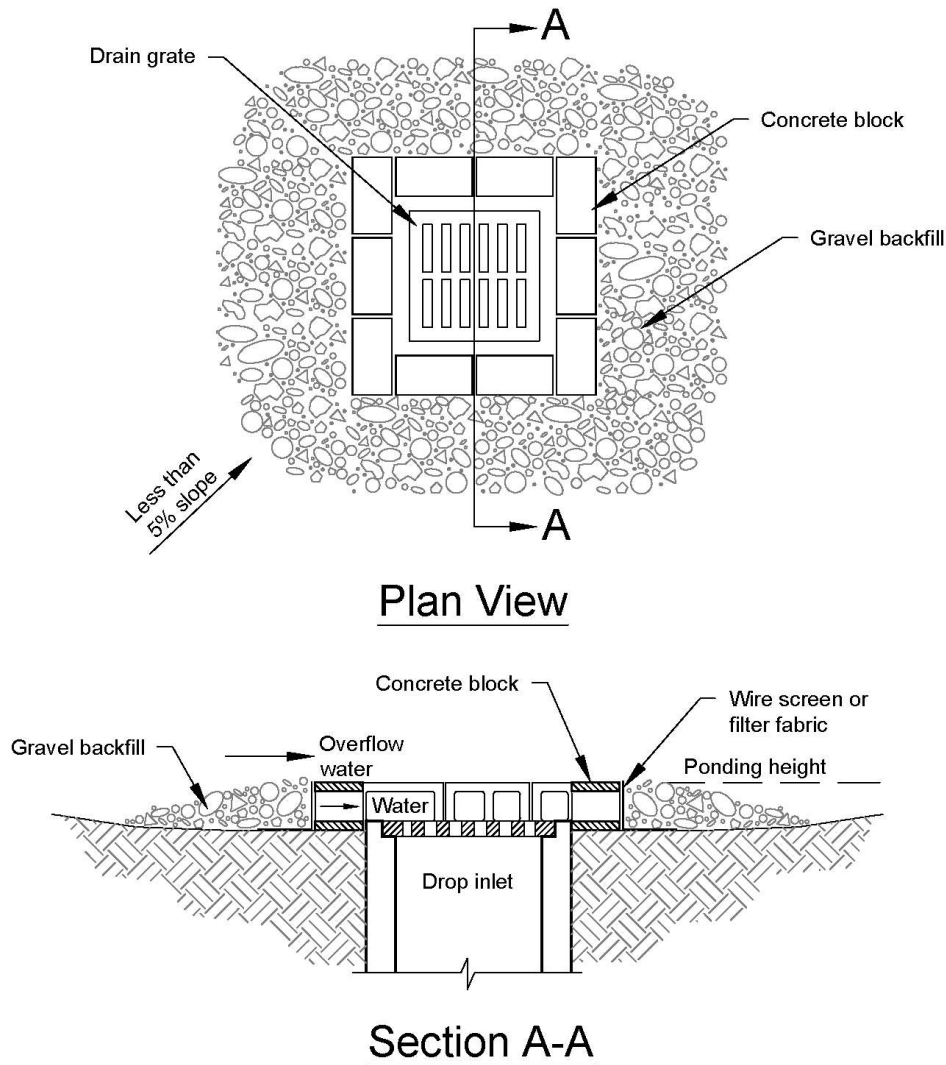
- Grade the approach to the inlet uniformly.
- Drill weep holes into the side of the inlet.
- Protect weep holes with screen wire and washed aggregate.
- Seal weep holes when removing structure and stabilizing area.
- Build a temporary dike, if necessary, to the down slope side of the structure to prevent bypass flow.

Block and Gravel Filter

A block and gravel filter is a barrier formed around the inlet with standard concrete blocks and gravel. See [Figure II-3.17: Block and Gravel Filter](#). Design and installation specifications for block gravel filters include:

- Provide a height of 1 to 2 feet above the inlet.
- Recess the first row of blocks 2-inches into the ground for stability.
- Support subsequent courses by placing a pressure treated wood 2x4 through the block opening.
- Do not use mortar.
- Lay some blocks in the bottom row on their side to allow for dewatering the pool.
- Place hardware cloth or comparable wire mesh with ½-inch openings over all block openings.
- Place gravel to just below the top of blocks on slopes of 2H:1V or flatter.
- An alternative design is a gravel berm surrounding the inlet, as follows:
 - Provide a slope of 3H:1V on the upstream side of the berm.
 - Provide a slope of 2H:1V on the downstream side of the berm.
 - Provide a 1-foot wide level stone area between the gravel berm and the inlet.
 - Use stones 3 inches in diameter or larger on the upstream slope of the berm.
 - Use gravel ½- to ¾-inch at a minimum thickness of 1-foot on the downstream slope of the berm.

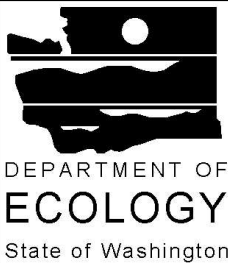
Figure II-3.17: Block and Gravel Filter



Notes:

1. Drop inlet sediment barriers are to be used for small, nearly level drainage areas. (less than 5%)
2. Excavate a basin of sufficient size adjacent to the drop inlet.
3. The top of the structure (ponding height) must be well below the ground elevation downslope to prevent runoff from bypassing the inlet. A temporary dike may be necessary on the downslope side of the structure.

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Block and Gravel Filter

Revised June 2016

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Gravel and Wire Mesh Filter

Gravel and wire mesh filters are gravel barriers placed over the top of the inlet. This method does not provide an overflow. Design and installation specifications for gravel and wire mesh filters include:

- Use a hardware cloth or comparable wire mesh with ½-inch openings.
 - Place wire mesh over the drop inlet so that the wire extends a minimum of 1-foot beyond each side of the inlet structure.
 - Overlap the strips if more than one strip of mesh is necessary.
- Place coarse aggregate over the wire mesh.
 - Provide at least a 12-inch depth of aggregate over the entire inlet opening and extend at least 18-inches on all sides.

Catch Basin Filters

Catch basin filters are designed by manufacturers for construction sites. The limited sediment storage capacity increases the amount of inspection and maintenance required, which may be daily for heavy sediment loads. To reduce maintenance requirements, combine a catch basin filter with another type of inlet protection. This type of inlet protection provides flow bypass without overflow and therefore may be a better method for inlets located along active rights-of-way. Design and installation specifications for catch basin filters include:

- Provides 5 cubic feet of storage.
- Requires dewatering provisions.
- Provides a high-flow bypass that will not clog under normal use at a construction site.
- Insert the catch basin filter in the catch basin just below the grating.

Curb Inlet Protection with Wooden Weir

Curb inlet protection with wooden weir is an option that consists of a barrier formed around a curb inlet with a wooden frame and gravel. Design and installation specifications for curb inlet protection with wooden weirs include:

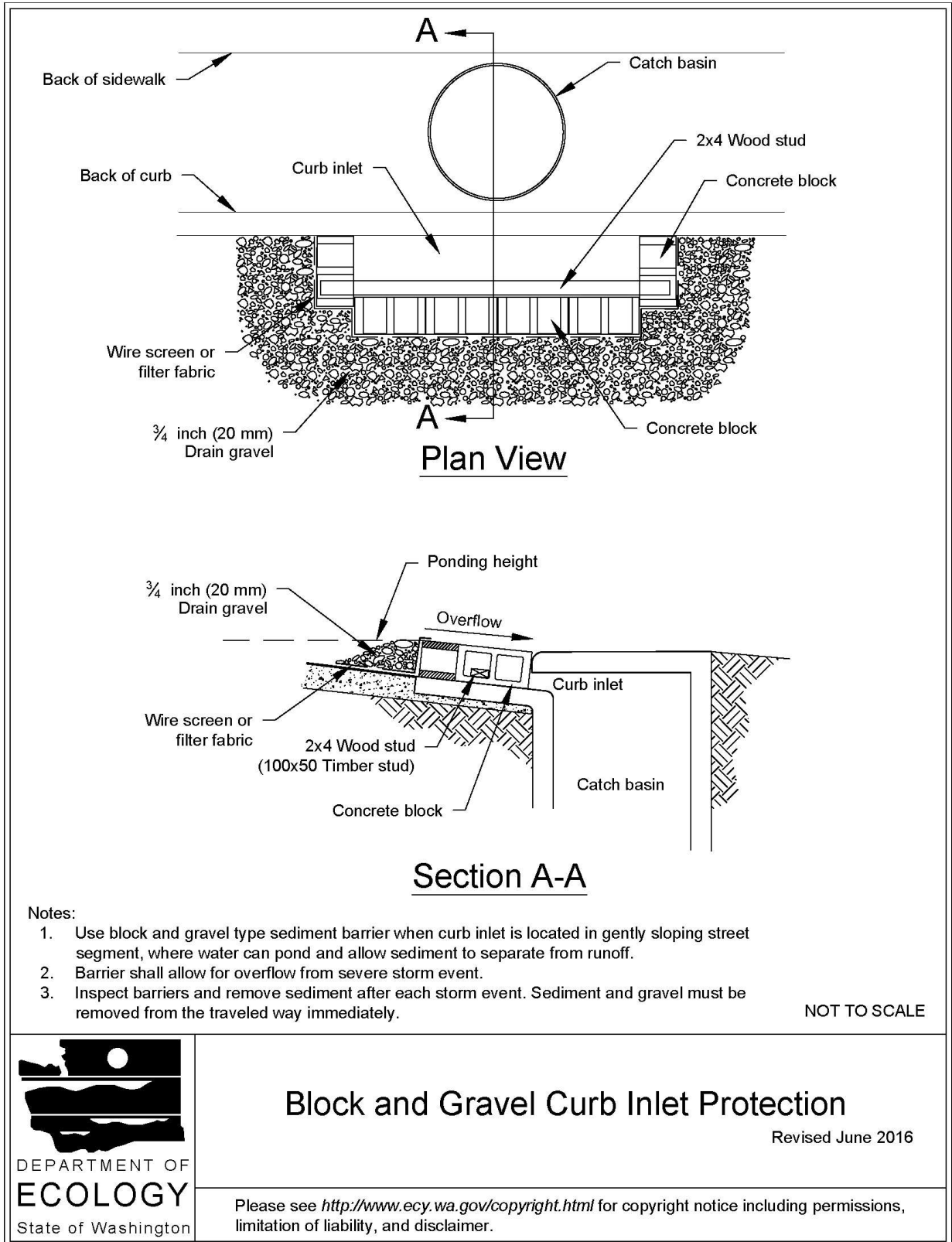
- Use wire mesh with ½-inch openings.
- Use extra strength filter cloth.
- Construct a frame.
- Attach the wire and filter fabric to the frame.
- Pile coarse washed aggregate against the wire and fabric.
- Place weight on the frame anchors.

Block and Gravel Curb Inlet Protection

Block and gravel curb inlet protection is a barrier formed around a curb inlet with concrete blocks and gravel. See [Figure II-3.18: Block and Gravel Curb Inlet Protection](#). Design and installation specifications for block and gravel curb inlet protection include:

- Use wire mesh with ½-inch openings.
- Place two concrete blocks on their sides abutting the curb at either side of the inlet opening. These are spacer blocks.
- Place a 2x4 stud through the outer holes of each spacer block to align the front blocks.
- Place blocks on their sides across the front of the inlet and abutting the spacer blocks.
- Place wire mesh over the outside vertical face.
- Pile coarse aggregate against the wire to the top of the barrier.

Figure II-3.18: Block and Gravel Curb Inlet Protection

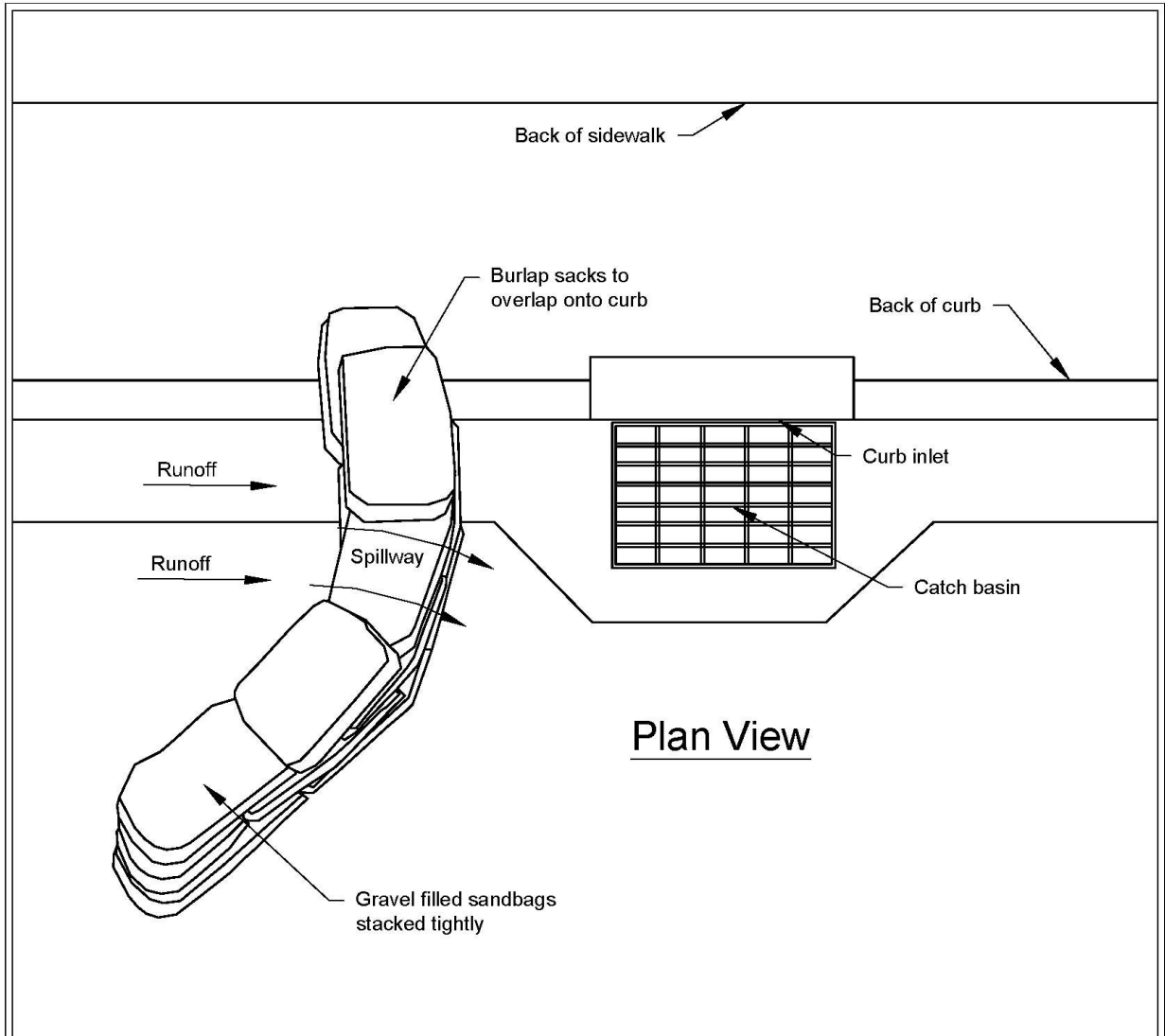


Curb and Gutter Sediment Barrier

Curb and gutter sediment barrier is a sandbag or rock berm (riprap and aggregate) 3 feet high and 3 feet wide in a horseshoe shape. See [Figure II-3.19: Curb and Gutter Barrier](#). Design and installation specifications for curb and gutter sediment barrier include:

- Construct a horseshoe shaped berm, faced with coarse aggregate if using riprap, 3 feet high and 3 feet wide, at least 2 feet from the inlet.
- Construct a horseshoe shaped sedimentation trap on the upstream side of the berm. Size the trap to sediment trap standards for protecting a culvert inlet.

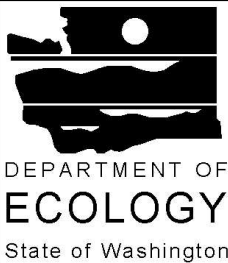
Figure II-3.19: Curb and Gutter Barrier



Notes:

1. Place curb type sediment barriers on gently sloping street segments, where water can pond and allow sediment to separate from runoff.
2. Sandbags of either burlap or woven 'geotextile' fabric, are filled with gravel, layered and packed tightly.
3. Leave a one sandbag gap in the top row to provide a spillway for overflow.
4. Inspect barriers and remove sediment after each storm event. Sediment and gravel must be removed from the traveled way immediately.

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Curb and Gutter Barrier

Revised June 2016

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Maintenance Standards

- Inspect all forms of inlet protection frequently, especially after storm events. Clean and replace clogged catch basin filters. For rock and gravel filters, pull away the rocks from the inlet and clean or replace. An alternative approach would be to use the clogged rock as fill and put fresh rock around the inlet.
- Do not wash sediment into storm drains while cleaning. Spread all excavated material evenly over the surrounding land area or stockpile and stabilize as appropriate.

Approved as Functionally Equivalent

Ecology has approved products as able to meet the requirements of this BMP. The products did not pass through the Technology Assessment Protocol – Ecology (TAPE) process. Local jurisdictions may choose not to accept these products, or may require additional testing prior to consideration for local use. Products that Ecology has approved as functionally equivalent are available for review on Ecology’s website at:

<https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies>

BMP C231: Brush Barrier

Purpose

The purpose of brush barriers is to reduce the transport of coarse sediment from a construction site by providing a temporary physical barrier to sediment and reducing the runoff velocities of overland flow.

Conditions of Use

- Brush barriers may be used downslope of disturbed areas that are less than one-quarter acre.
- Brush barriers are not intended to treat concentrated flows, nor are they intended to treat substantial amounts of overland flow. Any concentrated flows must be directed to a sediment trapping BMP. The only circumstance in which overland flow can be treated solely by a brush barrier, rather than by a sediment trapping BMP, is when the area draining to the barrier is small.
- Brush barriers should only be installed on contours.

Design and Installation Specifications

- Height: 2 feet (minimum) to 5 feet (maximum).
- Width: 5 feet at base (minimum) to 15 feet (maximum).
- Filter fabric (geotextile) may be anchored over the brush berm to enhance the filtration ability of the barrier. Ten-ounce burlap is an adequate alternative to filter fabric.

BMP C233: Silt Fence

Purpose

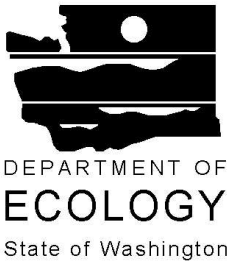
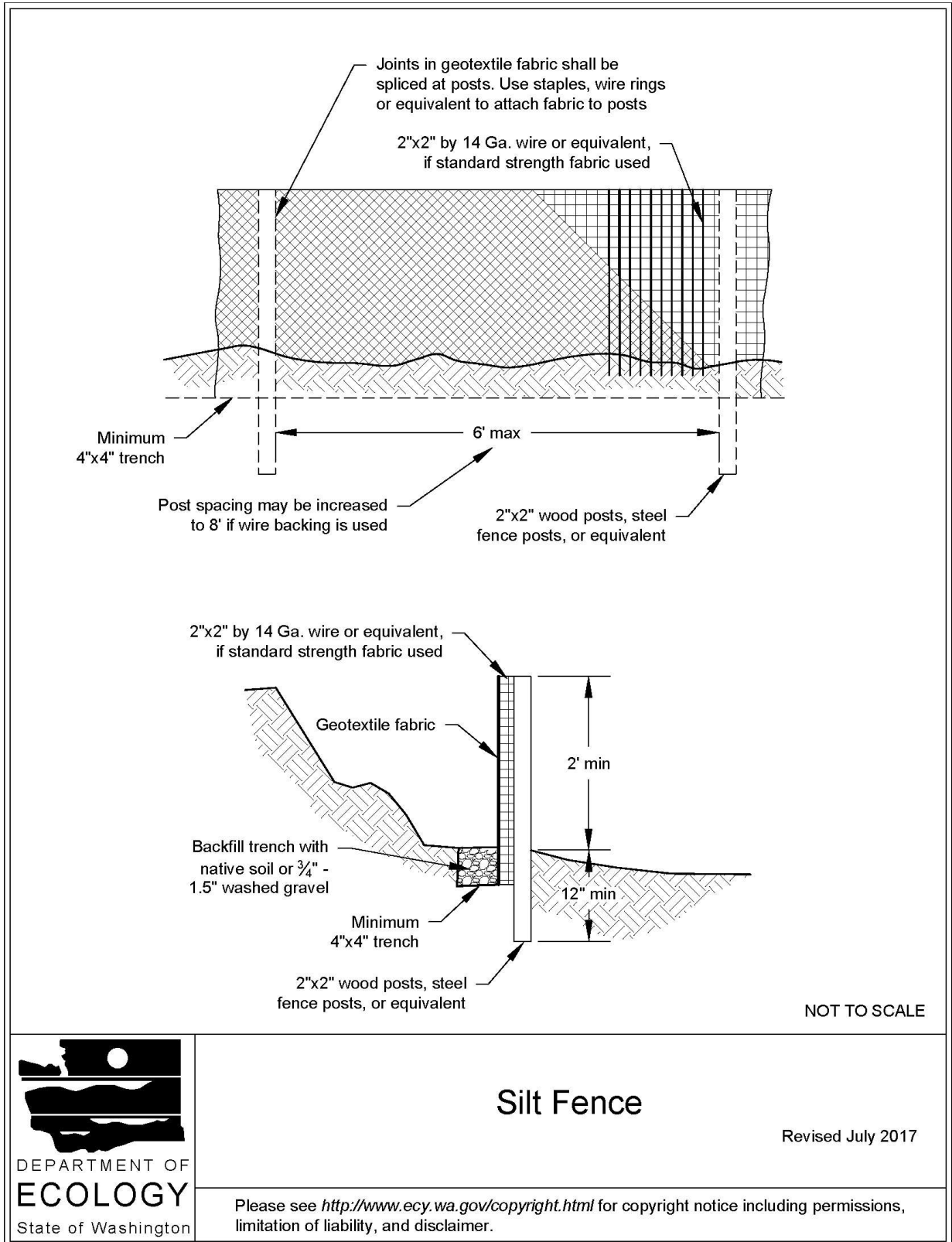
Silt fence reduces the transport of coarse sediment from a construction site by providing a temporary physical barrier to sediment and reducing the runoff velocities of overland flow.

Conditions of Use

Silt fence may be used downslope of all disturbed areas.

- Silt fence shall prevent sediment carried by runoff from going beneath, through, or over the top of the silt fence, but shall allow the water to pass through the fence.
- Silt fence is not intended to treat concentrated flows, nor is it intended to treat substantial amounts of overland flow. Convey any concentrated flows through the drainage system to a sediment trapping BMP.
- Do not construct silt fences in streams or use in V-shaped ditches. Silt fences do not provide an adequate method of silt control for anything deeper than sheet or overland flow.

Figure II-3.22: Silt Fence



Silt Fence

Revised July 2017

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Design and Installation Specifications

- Use in combination with other construction stormwater BMPs.
- Maximum slope steepness (perpendicular to the silt fence line) 1H:1V.
- Maximum sheet or overland flow path length to the silt fence of 100 feet.
- Do not allow flows greater than 0.5 cfs.
- Use geotextile fabric that meets the following standards. All geotextile properties listed below are minimum average roll values (i.e., the test result for any sampled roll in a lot shall meet or exceed the values shown in [Table II-3.11: Geotextile Fabric Standards for Silt Fence](#)):

Table II-3.11: Geotextile Fabric Standards for Silt Fence

Geotextile Property	Minimum Average Roll Value
Polymeric Mesh AOS (ASTM D4751)	0.60 mm maximum for slit film woven (#30 sieve). 0.30 mm maximum for all other geotextile types (#50 sieve). 0.15 mm minimum for all fabric types (#100 sieve).
Water Permittivity (ASTM D4491)	0.02 sec ⁻¹ minimum
Grab Tensile Strength (ASTM D4632)	180 lbs. Minimum for extra strength fabric. 100 lbs minimum for standard strength fabric.
Grab Tensile Strength (ASTM D4632)	30% maximum
Ultraviolet Resistance (ASTM D4355)	70% minimum

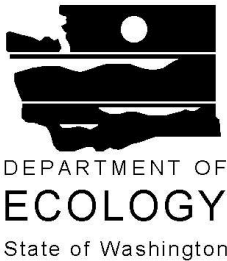
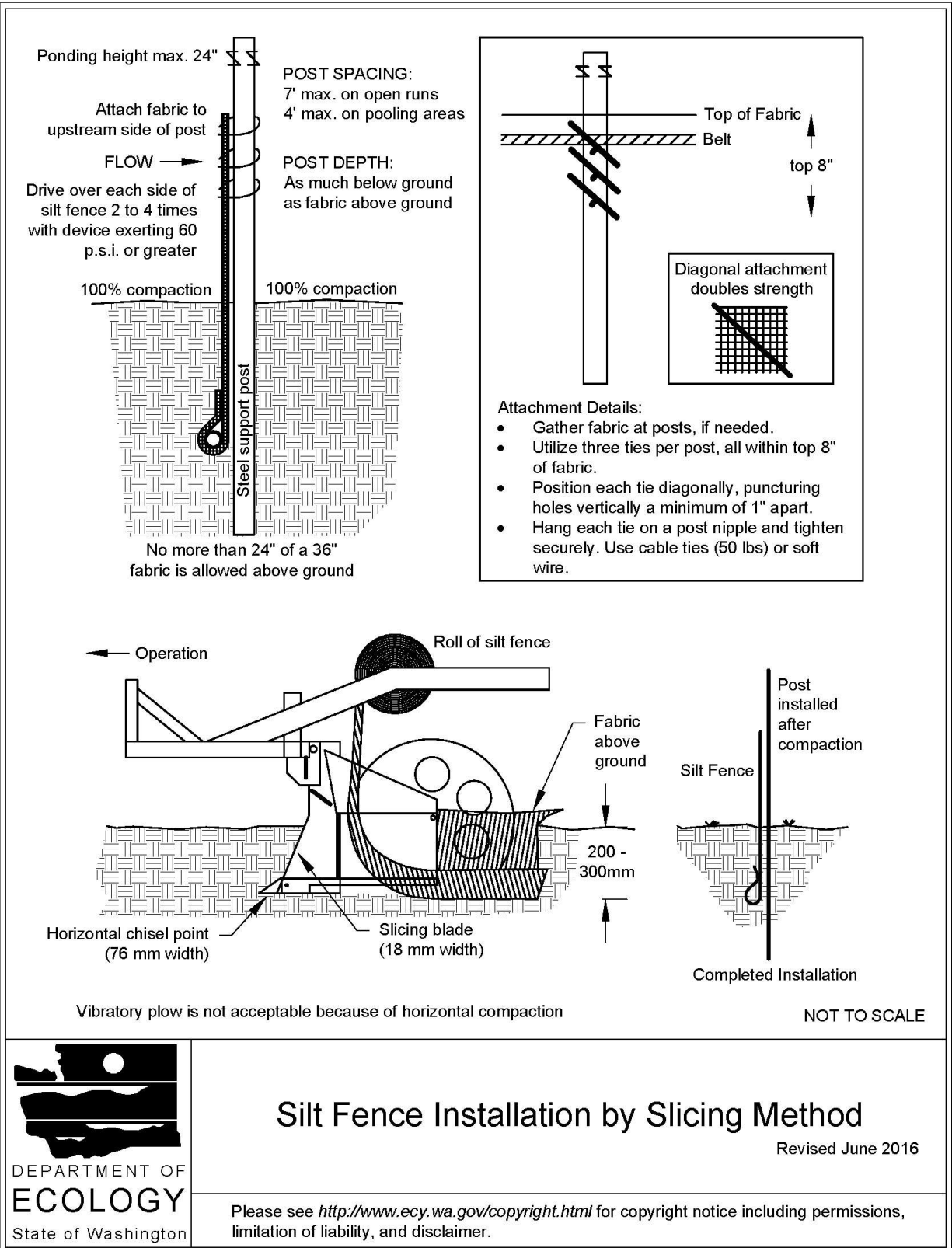
- Support standard strength geotextiles with wire mesh, chicken wire, 2-inch x 2-inch wire, safety fence, or jute mesh to increase the strength of the geotextile. Silt fence materials are available that have synthetic mesh backing attached.
- Silt fence material shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0°F to 120°F.
- One-hundred percent biodegradable silt fence is available that is strong, long lasting, and can be left in place after the project is completed, if permitted by the local jurisdiction.
- Refer to [Figure II-3.22: Silt Fence](#) for standard silt fence details. Include the following Standard Notes for silt fence on construction plans and specifications:
 1. The Contractor shall install and maintain temporary silt fences at the locations shown in the Plans.
 2. Construct silt fences in areas of clearing, grading, or drainage prior to starting those activities.

3. The silt fence shall have a 2-foot min. and a 2½-foot max. height above the original ground surface.
4. The geotextile fabric shall be sewn together at the point of manufacture to form fabric lengths as required. Locate all sewn seams at support posts. Alternatively, two sections of silt fence can be overlapped, provided that the overlap is long enough and that the adjacent silt fence sections are close enough together to prevent silt laden water from escaping through the fence at the overlap.
5. Attach the geotextile fabric on the up-slope side of the posts and secure with staples, wire, or in accordance with the manufacturer's recommendations. Attach the geotextile fabric to the posts in a manner that reduces the potential for tearing.
6. Support the geotextile fabric with wire or plastic mesh, dependent on the properties of the geotextile selected for use. If wire or plastic mesh is used, fasten the mesh securely to the up-slope side of the posts with the geotextile fabric up-slope of the mesh.
7. Mesh support, if used, shall consist of steel wire with a maximum mesh spacing of 2-inches, or a prefabricated polymeric mesh. The strength of the wire or polymeric mesh shall be equivalent to or greater than 180 lbs. grab tensile strength. The polymeric mesh must be as resistant to the same level of ultraviolet radiation as the geotextile fabric it supports.
8. Bury the bottom of the geotextile fabric 4-inches min. below the ground surface. Backfill and tamp soil in place over the buried portion of the geotextile fabric, so that no flow can pass beneath the silt fence and scouring cannot occur. When wire or polymeric back-up support mesh is used, the wire or polymeric mesh shall extend into the ground 3-inches min.
9. Drive or place the silt fence posts into the ground 18-inches min. A 12-inch min. depth is allowed if topsoil or other soft subgrade soil is not present and 18-inches cannot be reached. Increase fence post min. depths by 6 inches if the fence is located on slopes of 3H:1V or steeper and the slope is perpendicular to the fence. If required post depths cannot be obtained, the posts shall be adequately secured by bracing or guying to prevent overturning of the fence due to sediment loading.
10. Use wood, steel or equivalent posts. The spacing of the support posts shall be a maximum of 6-feet. Posts shall consist of either:
 - Wood with minimum dimensions of 2 inches by 2 inches by 3 feet. Wood shall be free of defects such as knots, splits, or gouges.
 - No. 6 steel rebar or larger.
 - ASTM A 120 steel pipe with a minimum diameter of 1-inch.
 - U, T, L, or C shape steel posts with a minimum weight of 1.35 lbs./ft.
 - Other steel posts having equivalent strength and bending resistance to the post sizes listed above.
11. Locate silt fences on contour as much as possible, except at the ends of the fence,

where the fence shall be turned uphill such that the silt fence captures the runoff water and prevents water from flowing around the end of the fence.

12. If the fence must cross contours, with the exception of the ends of the fence, place check dams perpendicular to the back of the fence to minimize concentrated flow and erosion. The slope of the fence line where contours must be crossed shall not be steeper than 3H:1V.
 - Check dams shall be approximately 1-foot deep at the back of the fence. Check dams shall be continued perpendicular to the fence at the same elevation until the top of the check dam intercepts the ground surface behind the fence.
 - Check dams shall consist of crushed surfacing base course, gravel backfill for walls, or shoulder ballast. Check dams shall be located every 10 feet along the fence where the fence must cross contours.
- Refer to [Figure II-3.23: Silt Fence Installation by Slicing Method](#) for slicing method details. The following are specifications for silt fence installation using the slicing method:
 1. The base of both end posts must be at least 2- to 4-inches above the top of the geotextile fabric on the middle posts for ditch checks to drain properly. Use a hand level or string level, if necessary, to mark base points before installation.
 2. Install posts 3- to 4-feet apart in critical retention areas and 6- to 7-feet apart in standard applications.
 3. Install posts 24-inches deep on the downstream side of the silt fence, and as close as possible to the geotextile fabric, enabling posts to support the geotextile fabric from upstream water pressure.
 4. Install posts with the nipples facing away from the geotextile fabric.
 5. Attach the geotextile fabric to each post with three ties, all spaced within the top 8-inches of the fabric. Attach each tie diagonally 45 degrees through the fabric, with each puncture at least 1-inch vertically apart. Each tie should be positioned to hang on a post nipple when tightening to prevent sagging.
 6. Wrap approximately 6-inches of the geotextile fabric around the end posts and secure with 3 ties.
 7. No more than 24-inches of a 36-inch geotextile fabric is allowed above ground level.
 8. Compact the soil immediately next to the geotextile fabric with the front wheel of the tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first and then each side twice for a total of four trips. Check and correct the silt fence installation for any deviation before compaction. Use a flat-bladed shovel to tuck the fabric deeper into the ground if necessary.

Figure II-3.23: Silt Fence Installation by Slicing Method



Silt Fence Installation by Slicing Method

Revised June 2016

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Maintenance Standards

- Repair any damage immediately.
- Intercept and convey all evident concentrated flows uphill of the silt fence to a sediment trapping BMP.
- Check the uphill side of the silt fence for signs of the fence clogging and acting as a barrier to flow and then causing channelization of flows parallel to the fence. If this occurs, replace the fence and remove the trapped sediment.
- Remove sediment deposits when the deposit reaches approximately one-third the height of the silt fence, or install a second silt fence.
- Replace geotextile fabric that has deteriorated due to ultraviolet breakdown.

BMP C234: Vegetated Strip

Purpose

Vegetated strips reduce the transport of coarse sediment from a construction site by providing a physical barrier to sediment and reducing the runoff velocities of overland flow.

Conditions of Use

- Vegetated strips may be used downslope of all disturbed areas.
- Vegetated strips are not intended to treat concentrated flows, nor are they intended to treat substantial amounts of overland flow. Any concentrated flows must be conveyed through the drainage system to [BMP C241: Sediment Pond \(Temporary\)](#) or other sediment trapping BMP. The only circumstance in which overland flow can be treated solely by a vegetated strip, rather than by a sediment trapping BMP, is when the following criteria are met (see [Table II-3.12: Contributing Drainage Area for Vegetated Strips](#)):

Table II-3.12: Contributing Drainage Area for Vegetated Strips

Average Contributing Area Slope	Average Contributing Area Percent Slope	Max Contributing area Flowpath Length
1.5H : 1V or flatter	67% or flatter	100 feet
2H : 1V or flatter	50% or flatter	115 feet
4H : 1V or flatter	25% or flatter	150 feet
6H : 1V or flatter	16.7% or flatter	200 feet
10H : 1V or flatter	10% or flatter	250 feet

Design and Installation Specifications

- The vegetated strip shall consist of a continuous strip of dense vegetation with topsoil for a minimum of a 25-foot length along the flowpath. Grass-covered, landscaped areas are generally not adequate because the volume of sediment overwhelms the grass. Ideally, vegetated strips shall consist of undisturbed native growth with a well-developed soil that allows for infiltration of runoff.
- The slope within the vegetated strip shall not exceed 4H:1V.
- The uphill boundary of the vegetated strip shall be delineated with clearing limits.

Maintenance Standards

- Any areas damaged by erosion or construction activity shall be seeded immediately and protected by mulch.
- If more than 5 feet of the original vegetated strip width has had vegetation removed or is being eroded, sod must be installed.
- If there are indications that concentrated flows are traveling across the vegetated strip, stormwater runoff controls must be installed to reduce the flows entering the vegetated strip, or additional perimeter protection must be installed.

BMP C235: Wattles

Purpose

Wattles are temporary erosion and sediment control barriers consisting of straw, compost, or other material that is wrapped in netting made of natural plant fiber or similar encasing material. They reduce the velocity and can spread the flow of rill and sheet runoff, and can capture and retain sediment.

Conditions of Use

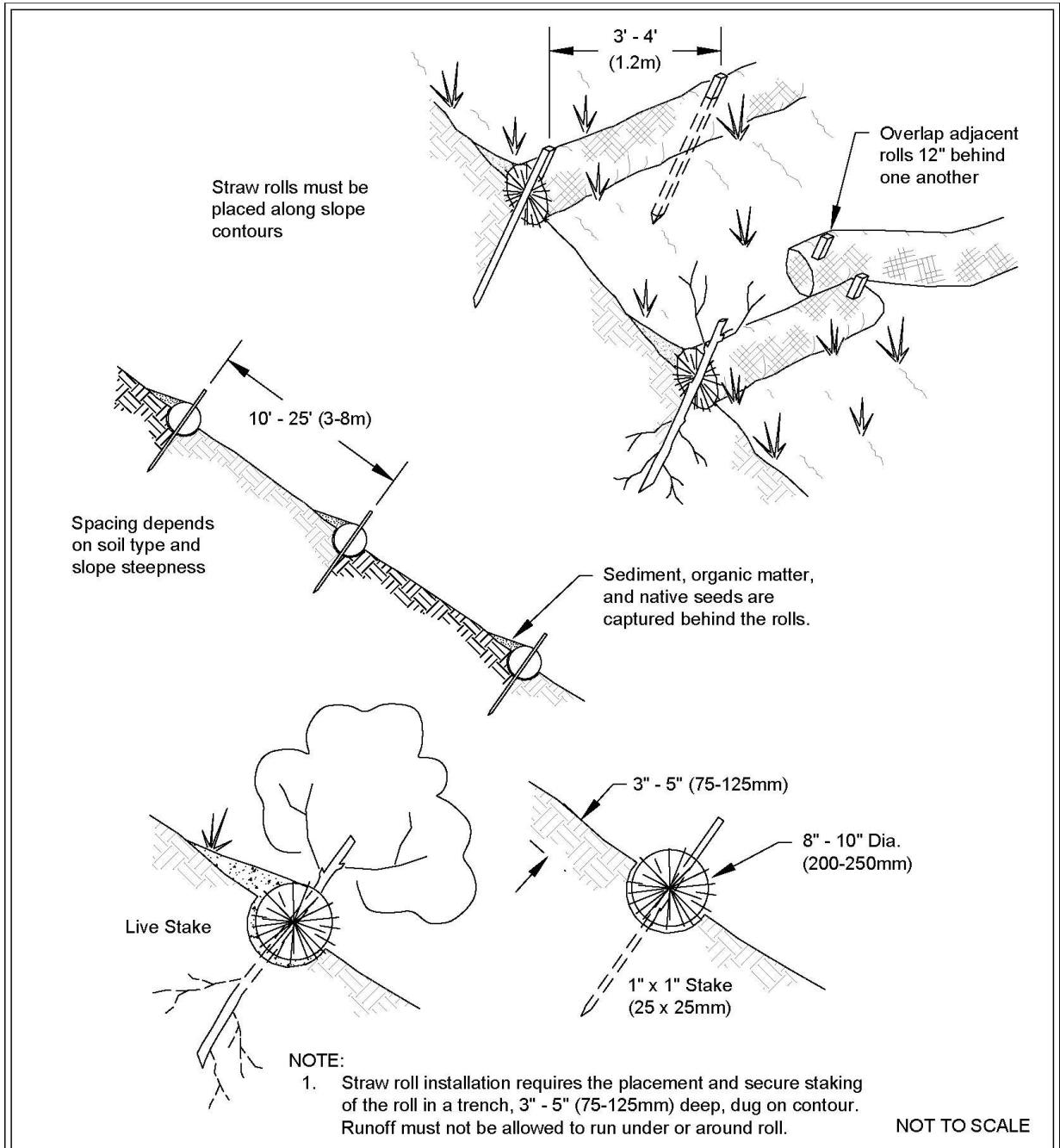
- Wattles shall consist of cylinders of plant material such as weed-free straw, coir, wood chips, excelsior, or wood fiber or shavings encased within netting made of natural plant fibers unaltered by synthetic materials.
- Use wattles:
 - In disturbed areas that require immediate erosion protection.
 - On exposed soils during the period of short construction delays, or over winter months.
 - On slopes requiring stabilization until permanent vegetation can be established.
- The material used dictates the effectiveness period of the wattle. Generally, wattles are effective for one to two seasons.

- Prevent rilling beneath wattles by entrenching and overlapping wattles to prevent water from passing between them.

Design Criteria

- See [Figure II-3.24: Wattles](#) for typical construction details.
- Wattles are typically 8 to 10 inches in diameter and 25 to 30 feet in length.
- Install wattles perpendicular to the flow direction and parallel to the slope contour.
- Place wattles in shallow trenches, staked along the contour of disturbed or newly constructed slopes. Dig narrow trenches across the slope (on contour) to a depth of 3- to 5-inches on clay soils and soils with gradual slopes. On loose soils, steep slopes, and areas with high rainfall, the trenches should be dug to a depth of 5- to 7- inches, or 1/2 to 2/3 of the thickness of the wattle.
- Start building trenches and installing wattles from the base of the slope and work up. Spread excavated material evenly along the uphill slope and compact it using hand tamping or other methods.
- Construct trenches at intervals of 10- to 25-feet depending on the steepness of the slope, soil type, and rainfall. The steeper the slope the closer together the trenches.
- Install the wattles snugly into the trenches and overlap the ends of adjacent wattles 12 inches behind one another.
- Install stakes at each end of the wattle, and at 4-foot centers along entire length of wattle.
- If required, install pilot holes for the stakes using a straight bar to drive holes through the wattle and into the soil.
- Wooden stakes should be approximately 0.75 x 0.75 x 24 inches min. Willow cuttings or 3/8-inch rebar can also be used for stakes.
- Stakes should be driven through the middle of the wattle, leaving 2 to 3 inches of the stake protruding above the wattle.

Figure II-3.24: Wattles



Wattles

Revised December 2016

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Maintenance Standards

- Wattles may require maintenance to ensure they are in contact with soil and thoroughly entrenched, especially after significant rainfall on steep sandy soils.
- Inspect the slope after significant storms and repair any areas where wattles are not tightly abutted or water has scoured beneath the wattles.

Approved as Functionally Equivalent

Ecology has approved products as able to meet the requirements of this BMP. The products did not pass through the Technology Assessment Protocol – Ecology (TAPE) process. Local jurisdictions may choose not to accept these products, or may require additional testing prior to consideration for local use. Products that Ecology has approved as functionally equivalent are available for review on Ecology’s website at:

<https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies>

BMP C236: Vegetative Filtration

Purpose

Vegetative filtration as a BMP is used in conjunction with detention storage in the form of portable tanks or [BMP C241: Sediment Pond \(Temporary\)](#), [BMP C206: Level Spreader](#), and a pumping system with surface intake. Vegetative filtration improves turbidity levels of stormwater discharges by filtering runoff through existing vegetation where undisturbed forest floor duff layer or established lawn with thatch layer are present. Vegetative filtration can also be used to infiltrate dewatering waste from foundations, vaults, and trenches as long as runoff does not occur.

Conditions of Use

- For every five acres of disturbed soil use one acre of grass field, farm pasture, or wooded area. Reduce or increase this area depending on project size, ground water table height, and other site conditions.
- Wetlands shall not be used for vegetative filtration.
- Do not use this BMP in areas with a high ground water table, or in areas that will have a high seasonal ground water table during the use of this BMP.
- This BMP may be less effective on soils that prevent the infiltration of the water, such as hard till.
- Using other effective source control measures throughout a construction site will prevent the generation of additional highly turbid water and may reduce the time period or area need for this BMP.
- Stop distributing water into the vegetated filtration area if standing water or erosion results.

Appendix C

Site Inspection Form

Construction Stormwater Site Inspection Form

Project Name _____ **Permit #** _____ **Inspection Date** _____ **Time** _____

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
 Print Name: _____

Approximate rainfall amount since the last inspection (in inches): _____

Approximate rainfall amount in the last 24 hours (in inches): _____

Current Weather Clear Cloudy Mist Rain Wind Fog

A. Type of inspection: Weekly Post Storm Event Other

B. Phase of Active Construction (check all that apply):

Pre Construction/installation of erosion/sediment controls	<input type="checkbox"/>	Clearing/Demo/Grading	<input type="checkbox"/>	Infrastructure/storm/roads	<input type="checkbox"/>
Concrete pours	<input type="checkbox"/>	Vertical Construction/buildings	<input type="checkbox"/>	Utilities	<input type="checkbox"/>
Offsite improvements	<input type="checkbox"/>	Site temporary stabilized	<input type="checkbox"/>	Final stabilization	<input type="checkbox"/>

C. Questions:

- | | | | | |
|--|-----|-----|----|-----|
| 1. Were all areas of construction and discharge points inspected? | Yes | ___ | No | ___ |
| 2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen | Yes | ___ | No | ___ |
| 3. Was a water quality sample taken during inspection? (<i>refer to permit conditions S4 & S5</i>) | Yes | ___ | No | ___ |
| 4. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?* | Yes | ___ | No | ___ |
| 5. If yes to #4 was it reported to Ecology? | Yes | ___ | No | ___ |
| 6. Is pH sampling required? pH range required is 6.5 to 8.5. | Yes | ___ | No | ___ |

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: _____ Date: _____

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

Construction Stormwater Site Inspection Form

D. Check the observed status of all items. Provide "Action Required" details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)						
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?						
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.						
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?						
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?						
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).						
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.						
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.						
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?						

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?						
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?						
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?						
	Is off-site storm water managed separately from stormwater generated on the site?						
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?						
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?						
7 Drain Inlets	Storm drain inlets made operable during construction are protected.						
	Are existing storm drains within the influence of the project protected?						
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?						
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?						
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?						
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?						
	Has secondary containment been provided capable of containing 110% of the volume?						
	Were contaminated surfaces cleaned immediately after a spill incident?						
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?						

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.						
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.						
	Dewatering has been done to an approved source and in compliance with the SWPPP.						
	Were there any clean non turbid dewatering discharges?						
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?						
12 Manage the Project	Has the project been phased to the maximum degree practicable?						
	Has regular inspection, monitoring and maintenance been performed as required by the permit?						
	Has the SWPPP been updated, implemented and records maintained?						
13 Protect LID	Is all Bioretention and Rain Garden Facilities protected from sedimentation with appropriate BMPs?						
	Is the Bioretention and Rain Garden protected against over compaction of construction equipment and foot traffic to retain its infiltration capabilities?						
	Permeable pavements are clean and free of sediment and sediment laden-water runoff. Muddy construction equipment has not been on the base material or pavement.						
	Have soiled permeable pavements been cleaned of sediments and pass infiltration test as required by stormwater manual methodology?						
	Heavy equipment has been kept off existing soils under LID facilities to retain infiltration rate.						

E. Check all areas that have been inspected. ✓

All in place BMPs All disturbed soils All concrete wash out area All material storage areas
 All discharge locations All equipment storage areas All construction entrances/exits

Construction Stormwater Site Inspection Form

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) _____ (Signature) _____ Date: _____

Title/Qualification of Inspector: _____