



SITE IMPROVEMENT PERMIT APPLICATION

Liberty Lake Planning, Engineering & Building Services
 22710 E Country Vista Drive, Liberty Lake, WA 99019
 Phone: (509) 755-6726 Fax: (509) 755-6713
 Website: www.libertylakewa.gov
 Email: permitcenter@libertylakewa.gov

- New Commercial / Industrial Multi-Family Residential Residential Other: MASS GRADING

Along with this application please provide the following:

- o One electronic copy of drawings / plans with supporting documents
- o Any applicable plumbing, mechanical, fire, and right of way permit applications

All businesses which perform work in the City must have a current Business License. If the business is located outside the City, the license must have a City of Liberty Lake Endorsement.

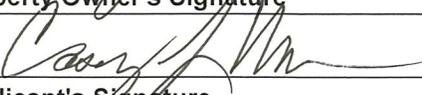
CHECK ONE BOX BELOW TO INDICATE WHO THE APPLICANT IS

<input checked="" type="checkbox"/> Owner's Name: MTK MANAGEMENT, LLC ET AL	
Email: CASEYM@LEGACYLW.COM	Phone: 509-590-8383
Address: PO BOX 935	City, State, Zip: OTIS ORCHARDS, WA 99027
<input type="checkbox"/> Contractor's Company and Contact Name: TBD	
Email:	Phone:
Address:	City, State, Zip:
WA State Contractor License:	Contractor UBI Number:
<input type="checkbox"/> Architect's Name: N/A	
Email:	Phone:
Address:	City, State, Zip:
Civil Engineer's Name: WHIPPLE CONSULTING ENGINEERS	
Email: RANDRADE@WHIPPLECE.COM	Phone: 509-893-2617
Address: 21 S PINES ROAD	City, State, Zip: SPOKANE VALLEY, WA 99206
Project Contact's Name: CASEY MASON	
Email: CASEYM@LEGACYLW.COM	Phone: 509-590-8383

Site Specific Information		
Project Address: PARCEL NO.: 55211.9189	Estimated Value of Project: \$1.6 Million	
Project Description: (Please indicate if you are applying for grading permit <u>only</u> . Grading permits allow only for the removal of vegetation and general leveling/pad creation- no forms may be placed. If applying for other site improvements, please describe in detail the scope of work.)		
THIS APPLICATION IS FOR A GRADING PERMIT ONLY. CIVIL PLANS ARE SHOWING A MASS GRADING PROPOSAL IN ORDER TO GET THE SITE MORE READY FOR FURTHER CONSTRUCTION ACTIVITIES.		
# of cubic yards removed: 392000	# of cubic yards added: 360000	# of cubic yards moved on site: 752000
# of parking spaces: N/A	# of ADA parking spaces: N/A	
Special Inspections Required?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If Yes, please provide the Statement of Special Inspections document)	
Are there existing structures on the property?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	What is the current property size? 93.02 <input checked="" type="checkbox"/> acres <input type="checkbox"/> sq ft
Is the property within a 100-year flood plan?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is the property within 250 feet of a shoreline? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are there wetlands within 200 feet?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is there evidence of fill or excavation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are there slopes greater than 30% on the property (30 ft. rise in 100 ft.)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (%)	Are critical or hazardous materials used or stored on site? (If Yes, please provide list of materials) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Required Signatures

BY SIGNING BELOW, I ACKNOWLEDGE THAT A MINIMUM OF 24 HRS. NOTICE IS REQUIRED FOR ALL INSPECTION REQUESTS

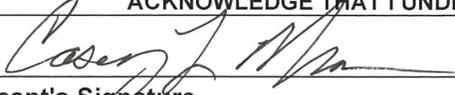
	CASEY MASON	10-18-24
Property Owner's Signature	Printed Name	Date
	CASEY MASON	10-18-24
Applicant's Signature	Printed Name	Date

Permit Issuance Option

Would you like to receive your permit / approved plans via email? Yes No
 (If yes, please complete the portion below. Once review of your application is complete, we will contact you for credit card payment via phone.)

The permit becomes null and void if work or construction authorized by the permit is not commenced within 180 days of issuance or if construction or work is suspended or abandoned for a period of 180 days at any time after work is commenced, unless an extension is granted. Issuance of this permit does not give the authority to violate any federal, state, or local laws or ordinances, or the building code regulating construction. Separate permits (building, plumbing, mechanical, sewer, water connection, electrical, etc.) may be required for work performed on this site. Additional permits /plans may be required prior to Certificate of Occupancy issuance. Contact SRCAA at 509-477-4727 and/or visit www.spokanecleanair.org to ensure compliance with air quality regulations. The applicant shall be responsible for obtaining additional permits/approvals from affected agencies. By checking the box below, I certify that I have read and understand all of the conditions contained herein and I have the authority to sign on behalf of the applicant. Additionally, I certify that my signature included on the permit, if done by electronic means, provides the same understanding and authority as if I had signed the permit in person or writing.

BY SIGNING BELOW, I GIVE MY PERMISSION FOR USE OF MY ELECTRONIC SIGNATURE ON THE PERMIT AND I ACKNOWLEDGE THAT I UNDERSTAND AND AGREE TO THE TERMS DESCRIBED ABOVE.

	CASEY MASON	10-18-24
Applicant's Signature	Printed Name	Date

BUILDING INFORMATION (PLANNING, ENGINEERING & BUILDING SERVICES OFFICE USE ONLY)

DOCUMENTS RECEIVED AND APPROVAL STATUS:
 (check if received/applicable, circle once approved)

<input type="checkbox"/> Drainage Report	APPROVED	<input type="checkbox"/> Site Plan	APPROVED
<input type="checkbox"/> Topographical Survey of Existing Conditions	APPROVED	<input type="checkbox"/> Site Lighting Photometric Analysis Plan	APPROVED
<input type="checkbox"/> Grading Plan	APPROVED	<input type="checkbox"/> Details Meet City Detail Standards	APPROVED
<input type="checkbox"/> Storm Water Plan	APPROVED	<input type="checkbox"/> Parking Space Count Meets Code	APPROVED
<input type="checkbox"/> Utility Plan	APPROVED	<input type="checkbox"/> Landscaping Meets Code	APPROVED

PROJECT VALUE:

Notes and Conditions

MASS GRADING PLANS

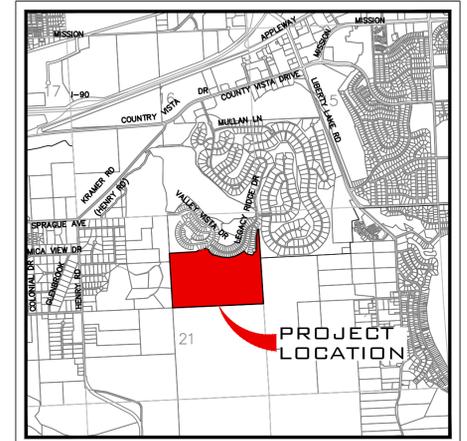
LEGACY PHASE "F"

VALLEY VISTA DRIVE

LIBERTY LAKE, WASHINGTON

NE 1/4 OF SEC. 21, T. 25 N., R. 45 E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
 CALL TWO BUSINESS DAYS BEFORE YOU DIG



VICINITY MAP

LEGEND

EXISTING	DESCRIPTION	PROPOSED
---	ROADWAY CENTER LINE	---
---	RIGHT OF WAY LINE	---
---	PROPERTY LINE	---
---	EASEMENT LINE	---
---	FENCE	---
---	CURB	---
---	PAVEMENT	---
---	GRAVEL	---
---	CONCRETE BUILDINGS & STRUCTURES	---
---	MONUMENT	---
---	SEWER	---
---	SANITARY SEWER	---
---	MANHOLE	---
---	CLEANOUT	---
---	SEWER SERVICE	---
---	WATER	---
---	WATER LINE	---
---	VALVE	---
---	FIRE HYDRANT SERVICE	---
---	WATER METER	---
---	BLOWOFF	---
---	AIR VACUUM RELIEF STATION	---
---	DRAINAGE	---
---	DRAINAGE LINE	---
---	MANHOLE	---
---	DRYWELL	---
---	CATCH BASIN	---
---	DITCH	---
---	GAS	---
---	GAS LINE	---
---	VALVE	---
---	METER	---
---	TELE-POWER	---
---	BURIED TELEPHONE	---
---	POWER OR TELEPHONE POLE	---
---	BURIED POWER	---
---	TRANSFORMER PAD	---
---	TELEPHONE RISER	---
---	TELEPHONE VAULT	---
---	OVERHEAD POWER	---
---	GUY ANCHOR	---
---	POWER VAULT	---
---	LIGHT POLE	---



INDEX TO PLAN SHEETS

CO.0	COVER SHEET
CO.1	GENERAL NOTES
C1.0	TOPOGRAPHIC SURVEY
C2.0	SWPPP CONTROL PLAN
C2.1	SWPPP NOTES
C2.2	SWPPP BMP'S
C2.3	SWPPP BMP'S
C4.0	GRADING PLAN
C4.1	VALLEY VISTA DRIVE PROFILE

ABBREVIATIONS

ACT. LEN.	ACTUAL LENGTH	MH	MANHOLE
BCR	BEGINNING OF CURVE RADIUS	MCR	MIDDLE OF CURVE RADIUS
BDRY.	BOUNDARY	PC	POINT OF CURVATURE
CO.	SEWER CLEANOUT	PET.	PETROLEUM
CSTC	CRUSHED SURFACE	PI	POINT OF INTERSECTION
CT.	COURT	PRC	POINT OF REVERSE CURVE
DIA.	DIAMETER	PT	POINT OF TANGENCY
ECR	END OF CURVE RADIUS	RIM EL	RIM ELEVATION
EXIST.	EXISTING	RD	ROAD
G	GRADE	RT.	RIGHT
GB	GRADE BREAK	SI	STREET INTERSECTION
FT./FT.	FEET PER FOOT	SS	SANITARY SEWER
HYD.	HYDRANT	STA.	STATION
I.E.	INVERT ELEVATION	STA. LEN.	STATION LENGTH
LN.	LANE	TG	TOP OF GRATE
LT.	LEFT	TC	TOP OF CURB

COVER PLAN

SCALE: 1" = 200'

SEWER / WATER
 LIBERTY LAKE SEW&WAT DIST. 1
 22510 E MISSION AVENUE
 LIBERTY LAKE, WA 99019
 PHONE: 922-5443
 CONTACT: BIJAY ADAMS

FIRE DEPARTMENT
 SPOKANE VALLEY FIRE DEPT.
 10319 E SPRAGUE AVE.
 SPOKANE VALLEY, WA 99019
 PHONE: 928-1700
 CONTACT: TRACI HARVEY

STREETS
 CITY OF LIBERTY LAKE
 22710 E COUNTRY VISTA DR
 LIBERTY LAKE, WA 99019
 PHONE: 755-6730
 CONTACT: LUKE MICHELS

BLDG. & PLANNING
 CITY OF LIBERTY LAKE
 22710 E COUNTRY VISTA DR
 LIBERTY LAKE, WA 99019
 PHONE: 755-6708
 CONTACT: LISA KEY

OWNER
 MTK MANAGEMENT, LLC ET AL
 PO BOX 935
 OTIS ORCHARDS, WA 99027
 PHONE: 509-590-8383
 CONTACT: CASEY MASON

HEALTH
 SPOKANE REGIONAL HEALTH
 1101 WEST COLLEGE AVE. #402
 SPOKANE, WA 99260
 PHONE: 324-1578
 CONTACT: PAUL SAVAGE

POWER / GAS
 AVISTA UTILITIES
 1411 EAST MISSION AVENUE
 SPOKANE, WASHINGTON 99220
 PHONE: 495-8610
 CONTACT: KEN CARLSON

TELEPHONE
 CENTURY LINK
 904 NORTH COLUMBUS
 SPOKANE, WASHINGTON, 99202
 PHONE: 623-0304
 CONTACT: DEBORAH GEIST

CABLE
 COMCAST BROADBAND
 1717 EAST BUCKEYE
 SPOKANE, WASHINGTON, 99207
 PHONE: 755-4717
 CONTACT: BRYAN RICHARDSON

SOLID WASTE
 WASTE MANAGEMENT
 PHONE: 1-800-909-4458

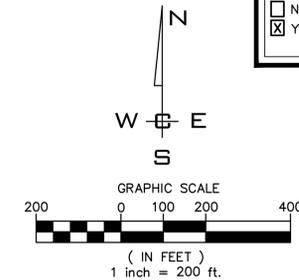
LANDSCAPE
 WHIPPLE CONSULTING ENGINEERS
 21 SOUTH PINES ROAD
 SPOKANE VALLEY, WA 99206
 PHONE: 893-2617
 CONTACT: SUSAN MOSS, PLA

SURVEYOR
 WHIPPLE CONSULTING ENGINEERS
 21 SOUTH PINES ROAD
 SPOKANE VALLEY, WA 99206
 PHONE: 893-2617
 CONTACT: BRETT GRIFFITH, P.L.S.

ENGINEERING
 WHIPPLE CONSULTING ENGINEERS
 21 SOUTH PINES ROAD
 SPOKANE VALLEY, WA 99206
 PHONE: 893-2617
 CONTACT: TODD WHIPPLE, P.E.

HAUL NOTE:
 ALL EXCESS MATERIAL TO REMAIN
 ONSITE. NO HAUL OFF OF MATERIAL IS
 PROPOSED.

GEOTECH REPORT
 AVAILABILITY
 NO, OWNER DEFERRED
 YES, PROVIDED BY ALLWEST
 DATED 09/06/24



10/17/24

NAVD - 88
 THE MARK IS A WSDOT BRASS DISK SET
 IN A CONCRETE MONUMENT AT
 GROUND LEVEL WITH AN ELEV. 2070.160
 AND DESIGNATION OF GP32090-49

NO.	DATE	BY	REVISIONS
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
 HORIZONTAL:
 1" = 200'
 VERTICAL:
 N/A

PROJ #: 24-3776
DATE: 10/17/24
DRAWN: RMA
REVIEWED: TRW

<input checked="" type="checkbox"/>	CIVIL
<input type="checkbox"/>	STRUCTURAL
<input type="checkbox"/>	SURVEYING
<input type="checkbox"/>	TRAFFIC
<input type="checkbox"/>	PLANNING
<input type="checkbox"/>	LANDSCAPE
<input type="checkbox"/>	OTHER

WCE
 WHIPPLE CONSULTING ENGINEERS
 21 S PINES ROAD
 SPOKANE VALLEY, WA 99206
 PH: 509-893-2617 FAX: 509-926-0227

LEGACY PHASE 'F' MASS GRADING
COVER SHEET
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

SHEET
CO.0
 JOB NUMBER
24-3776

WCE GENERAL NOTES

- ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF SITE IMPROVEMENTS SHALL MEET OR EXCEED THE WSDOT /APWA STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION CURRENT EDITION AS MODIFIED BY THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE CITY OF LIBERTY LAKE REGULATIONS AND OTHER APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND THE SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE HIGHER QUALITY STANDARD SHALL APPLY. ALL WORK WITHIN PUBLIC R.O.W. OR EASEMENTS SHALL BE INSPECTED AND APPROVED BY THE CITY OF LIBERTY LAKE INSPECTOR. INSPECTION SERVICES AND CONSTRUCTION CERTIFICATION TO BE PROVIDED BY DESIGNEE OF PROJECT SPONSOR/OWNER.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM ALL APPLICABLE AGENCIES. THE CONTRACTOR SHALL NOTIFY THE CITY OF LIBERTY LAKE INSPECTOR AT LEAST 48 HOURS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS.
- THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE CITY OF LIBERTY LAKE AND ALL UTILITY COMPANIES WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION, TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION, AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE.
- THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND ONE (1) COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB ON-SITE AT ALL TIMES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO: EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.
- IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
- ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD, UNLESS SPECIFICALLY STATED OTHERWISE.
- FOR WORK AFFECTING PUBLIC ROADWAYS OR IF REQUIRED BY THE CITY OF LIBERTY LAKE, THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL AND PHASING PLAN IN ACCORDANCE WITH M.U.T.C.D. FOR APPROVAL. PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN OR AFFECTING THE RIGHT-OF-WAY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY SAID PLANS. PRIOR TO INSTALLATION, A PRECONSTRUCTION CONFERENCE SHALL BE HELD WITH THE CITY OF LIBERTY LAKE.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED OR RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.
- PER AGENCY STANDARDS THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING RECORD INFORMATION ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE AND AVAILABLE TO THE CITY OF LIBERTY LAKE INSPECTOR AT ALL TIMES.
- DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. FOR ADDITIONAL INFORMATION CONTACT THE ENGINEER FOR CLARIFICATION AND NOTE ON THE RECORD DRAWINGS.
- ALL EROSION AND SEDIMENT CONTROL (E.S.C.) MEASURES SHALL BE INSTALLED AT THE LIMITS OF CONSTRUCTION PRIOR TO GROUND DISTURBING ACTIVITY. ALL E.S.C. MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS ARE STABILIZED WITH HARD SURFACE OR LANDSCAPING.
- THE CONTRACTOR SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF WATER LINES AND DRY UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL UTILITY RELOCATIONS CONSISTENT WITH THE CONTRACTORS SCHEDULE FOR THIS PROJECT, WHETHER SHOWN OR NOT SHOWN, AS IT RELATES TO THE CONSTRUCTION ACTIVITIES CONTEMPLATED IN THESE PLANS.
- ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY IS SUBJECT TO THE JURISDICTION OF THE CITY OF LIBERTY LAKE ENGINEERING DEPARTMENT STANDARD DETAILS AND SPECIFICATIONS.
- ALL CONSTRUCTION OPERATIONS, INCLUDING THE WARMING UP, REPAIR, ARRIVAL, DEPARTURE OR RUNNING OF TRUCKS, EARTH MOVING EQUIPMENT, CONSTRUCTION EQUIPMENT AND ANY OTHER ASSOCIATED EQUIPMENT SHALL GENERALLY BE LIMITED TO THE TIME PERIOD APPROVED BY THE CITY OF LIBERTY LAKE.
- BASED ON REQUIREMENTS FROM CITY OF LIBERTY LAKE, THE ENGINEER OR HIS DESIGNEE SHALL PERFORM MATERIALS TESTING AND QUALITY CONTROL ON THE PROJECT AND SHALL SUBMIT COPIES OF DAILY REPORTS, TEST REPORTS, PROJECT CERTIFICATION AND RECORD DRAWINGS TO CITY OF LIBERTY LAKE ENGINEER.
- NO REVISIONS SHALL BE MADE TO THESE PLANS WITHOUT APPROVAL OF THE CITY OF LIBERTY LAKE ENGINEERS AND NOTIFICATION OF THE ENGINEER OF RECORD.
- ON-SITE GRADING SHALL BE IN ACCORDANCE WITH THE APPROVED GRADING PLAN AND E.S.C. PLAN. ANY IMPORT OR EXPORT OF MATERIAL SHALL BE FROM A PREAPPROVED SOURCE/DESTINATION AND COORDINATED WITH THE CITY OF LIBERTY LAKE DEPARTMENT OF BUILDING AND PLANNING AT 509-755-6700. GRADING ON THIS SITE OR ANY OTHER SITE MUST COMPLY WITH ALL DEVELOPMENT REGULATIONS INCLUDING, BUT NOT LIMITED TO, GRADING PERMITS, S.E.P.A. REVIEW, TIMBER HARVEST PERMITS, CRITICAL AREAS, FLOOD PLAINS, DESIGNATED DRAINAGE WAYS, ETC.
- THE CONTRACTOR IS CAUTIONED THAT IT IS THE UNDERSTANDING OF THE OWNER AND THE ENGINEER THAT SHOULD A CONFLICT OR DISCREPANCY IN THESE PLANS, SPECIFICATIONS, GENERAL NOTES OR PLANS E.T.A.L. DETERMINED TO BE PART OF THE OVERALL PROJECT, INCLUDING BUT NOT LIMITED TO THE ARCHITECTURAL PLANS, MECHANICAL PLANS, ELECTRICAL PLANS, LANDSCAPE PLANS, GENERAL SPECIAL PROVISIONS, ETC., THAT WITHOUT WRITTEN CLARIFICATION FROM THE ENGINEER, OWNER OR OTHER PROFESSIONAL, DURING THE BIDDING PROCESS, THAT IN ALL INSTANCES THE CONTRACTOR WILL BE REQUIRED TO BID THE HIGHER STANDARD. FAILURE TO DO SO MAY RESULT IN THE HIGHER STANDARD BEING REQUIRED BY THE OWNER, ENGINEER OR OTHER PROFESSIONAL WITH NO CHANGE IN VALUE TO THE CONTRACT VIA CHANGE ORDER OR OTHER MECHANISM.
- CONSTRUCTION OF EVERY DRYWELL, INCLUDING FABRIC AND DRAINROCK, SHALL BE OBSERVED BY THE ON-SITE INSPECTOR TO CONFIRM THAT IT MEETS THE DESIGN DETAILS AND SPECIFICATIONS. DRYWELLS NOT OBSERVED SHALL HAVE THEIR PERFORMANCE VERIFIED BY A FULL-SCALE DRYWELL TEST.
- DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ANY AND ALL INCONSISTENCIES BETWEEN THESE PLANS AND CONSTRUCTION STAKING. CONTRACTOR ASSUMES RESPONSIBILITY TO CONSTRUCT TO THESE PLANS IN LIEU OF FIELD STAKING. SHOULD INCONSISTENCIES BE APPARENT THE CONTRACTOR SHALL CONTACT THE ENGINEER, OWNER, AND SURVEYOR TO RECTIFY THE DISCREPANCY PRIOR TO CONSTRUCTION EFFORT BEING APPLIED.
- FAIR HOUSING ACT - SAFE HARBORS FOR COMPLIANCE

WHIPPLE CONSULTING ENGINEERS, INC. FOR THE PROJECT CONTAINED WITHIN THESE PLANS HAS USED THE FOLLOWING SAFE HARBOR FOR ADA ACCESSIBILITY FOR THOSE ISSUES CONSIDERED SITE DEVELOPMENT ISSUES.

ICC/ANSI A117.1 (2003), ALONG WITH THE FAIR HOUSING ACT, HUD'S FAIR HOUSING ACT REGULATIONS, AND GUIDELINES.
- ALL FIRE LINES MUST BE INSTALLED BY AN APPROVED LEVEL "U" CONTRACTOR OR A LEVEL 3 FIRE PROTECTION CONTRACTOR. SEPARATE PERMITS MUST BE DRAWN THROUGH LOCAL JURISDICTION FOR ALL UNDERGROUND FIRE LINES TO INCLUDE SPRINKLER AND FIRE HYDRANT WATER LINES. THESE UNDERGROUND LINES MAY REQUIRE A LEVEL 3 OR 'U' LICENSE DEPENDING ON INSTALLATION.
- CONTRACTOR IS NOTIFIED THAT SOME OR ALL OF THE PAVEMENT CUTS TO INSTALL DRY UTILITIES, SEWER, WATER, STORM OR OTHER TIE-INS SHALL BE COORDINATED WITH THE CITY OF LIBERTY LAKE AS SPECIFIC PAVEMENT CUT POLICIES MAY BE IN EFFECT THAT ARE NOT NOTED ON THE PLANS.
- THE CONTRACTOR IS NOTED THAT IT IS NOT THE OWNERS, ENGINEERS, CITY'S NOR THE INSPECTION AND TESTING COMPANY'S (THE PARTIES) RESPONSIBILITY TO ANTICIPATE WHEN CONSTRUCTED ELEMENTS WILL BE READY FOR INSPECTION AND TESTING. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL PARTIES THAT CERTAIN CONSTRUCTED ELEMENTS ARE BEING INSTALLED AND ON WHAT DATE THEY WILL BE INSTALLED. IF SUCH FAILURE TO NOTIFY THEN RESULTS IN LACK OF INSPECTIONS AND TESTING SERVICES FOR CERTAIN ELEMENTS, THE CONTRACTOR SHOULD NOT EXPECT THAT THIS LACK OF INSPECTION AND TESTING WILL RESULT IN THE BLANKET APPROVAL OF SUCH ITEM. THE CONTRACTOR IS NOTIFIED THAT SUBSEQUENT REMOVAL AND RECONSTRUCTION OF SUCH ELEMENTS IS TO BE BORNE BY THE CONTRACTOR AND OR THEIR SUB-CONTRACTOR PROVIDING THE SERVICE AND THE INSTALLATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE SURE THAT ALL PARTIES ARE ADEQUATELY NOTIFIED, NOTIFICATION WILL BE BY TWO MEANS FOR EACH REQUEST/OCCURRENCE THE ACCEPTABLE MEANS ARE AS FOLLOWS, EMAIL, TEXT, FAX OR PHONE, NOTIFICATION SHALL INCLUDE ELEMENT, DATE AND CONSTRUCTION START TIME. EXCESSIVE STANDBY TIME ON THE PART OF THE PARTIES MAY RESULT IN A BACK CHARGE TO THE CONTRACTOR.

NE 1/4, SEC. 21, T. 25N., R. 45E., W.M.

WCE GRADING NOTES

- CONTOURS AND / OR ELEVATIONS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY.
- ALL DISTURBED AREAS THAT ARE SUBSURFACE OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE SEEDED, FERTILIZED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
- IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
- UNLESS OTHERWISE SHOWN, NO PROPOSED SLOPE SHALL EXCEED THREE (3) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
- IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPPING OPERATIONS ARE COMPLETE.
- SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS THAT DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB, GUTTER, AND UTILITIES.
- BENCHMARK VERIFICATION: CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCH MARK'S, BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
- ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
- GRADES WITHIN ASPHALT PARKING AREAS SHALL BE CONSTRUCTED TO WITHIN 0.10 FEET OF THE DESIGN GRADE. HOWEVER, THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE IN ALL PAVEMENT AREAS AND ALONG ALL CURBS. ALL CURBS SHALL BE BUILT IN ACCORDANCE TO THE PLAN. CURBS OR PAVEMENT AREAS WHICH DO NOT PROVIDE PROPER DRAINAGE MUST BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- SPOT ELEVATIONS REPRESENT FLOW LINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
- WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT OR CONCRETE PAVEMENT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY THE GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT THE APPROVAL OF THE ENGINEER.
- THE EARTHWORK FOR ALL BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL BUILDING PLANS AND SPECIFICATIONS.
- PRE CAST STRUCTURES MAY BE USED AT CONTRACTORS OPTION.
- EXISTING DRAINAGE STRUCTURES TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
- EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT INTERVALS.
- IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
- CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
- CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
- TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY PROVIDED BY THE OWNER. IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR REVIEW.
- ALL SUBSURFACE AREA DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. (CONTRACTOR SHALL PLACE SOD OR HYDROSEED DISTURBED AREAS IN ACCORDANCE WITH CITY/COUNTY SPECIFICATIONS AND MAINTAINED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.) HYDROSEED WITH TACKIFIER OVER A CORDUROY SLOPE MAY BE ACCEPTABLE, THE SITE GEOTECHNICAL ENGINEER MUST BE CONSULTED.
- CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND SITE SHALL BE CONSTRUCTED TO SAME.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITIES AND NOTIFYING THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING CONSTRUCTION.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- ENGINEER SHALL BE NOTIFIED WHEN 'CURBING STRING LINE' HAS BEEN SET, PRIOR TO CURBING BEING INSTALLED.
- ALL DRYWELLS TO BE INSTALLED TO HAVE (1') ONE OF VERTICAL ADJUSTMENT.
- ENGINEERING OR THE OWNER'S INSPECTION REPRESENTATIVE SHALL BE ON SITE, AND SHALL COLLECT TRUCK TICKETS FOR DRYWELL ROCK, AND SOIL.
- ALL PIPE SHALL BE INSTALLED WITH EITHER A SAND COLLAR, KOR-N-SEAL OR APPROVED EQUIVALENT.

WCE STORM DRAINAGE NOTES

- SEE STREET PLAN AND PROFILE SHEETS FOR DRYWELL AND CATCH BASIN TYPES AND LOCATIONS.
 - SWALE/PONDS SHALL BE CONSTRUCTED PER THE REQUIREMENTS OF THESE DRAWINGS INCLUDING GRADING, SOD, AND DRYWELL INSTALLATION. ALL SWALES/PONDS WITH IN TRACTS SHALL INCLUDE AN IRRIGATION SYSTEM, ALL IRRIGATION SHALL CONFORM TO CITY OF LIBERTY LAKE SWALE/POND IRRIGATION SYSTEM GUIDELINES.
 - ALL SWALES/PONDS SHOWN SHALL BE ROUGH GRADED PRIOR TO PAVING OF ADJACENT ROADWAY.
 - CONTRACTOR SHALL PROVIDE CITY OF LIBERTY LAKE WITH AS-BUILT IRRIGATION PLANS UPON COMPLETION OF ALL SWALE/POND CONSTRUCTION.
 - INSTALL "AMOCO" #4545 FILTER FABRIC (OR APPROVED EQUAL) BETWEEN THE NATIVE SOIL AND WASHED DRAIN ROCK, FOR ALL DRYWELLS. SEE CITY OF LIBERTY LAKE STANDARD SHEET B-1g FOR INSTALLATION LOCATIONS.
 - ALL SWALES/PONDS WITHIN THE RIGHT-OF-WAY, IN THE AREA ASSOCIATED WITH THE PROJECT, SHALL BE COMPLETED DURING THE CONSTRUCTION OF THE ROADWAY. THE CONTRACTOR SHALL PERFORM THE SWALE/POND GRADE WORK, INSTALL THE IRRIGATION SYSTEM, AND PLACE THE SOD WITHIN THE SWALES/PONDS FOLLOWING THE ROAD PAVING WORK.
 - THE CONTRACTOR SHALL MAKE AN EFFORT TO PROTECT ALL DRAINAGE STRUCTURES FROM BEING CONTAMINATED WITH SILT BY INSTALLING FILTER FABRIC UNDER THE LID FOR AT LEAST 6 WEEKS, OR UNTIL THE ESTABLISHMENT OF GRASS AND/OR OTHER SITE CONSTRUCTION WORK HAS ENDED. IN THE EVENT THAT SILT OR OTHER DELETERIOUS MATERIAL IS ALLOWED TO ENTER THE DRYWELL OR CATCH BASIN THE CONTRACTOR WILL BE REQUIRED TO CLEAN THE DRYWELL OR CATCH BASIN OUT TO THE SATISFACTION OF THE CERTIFYING ENGINEER.
 - ALL LANDSCAPE AREAS (INCLUDING SWALES/PONDS) ARE TO BE IRRIGATED BY AN AUTOMATIC IRRIGATION SYSTEM SHALL BE INSTALLED BY OR UNDER THE DIRECTION OF THE LANDSCAPE CONTRACTOR. THE IRRIGATION SYSTEM SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES (90 DAY GUARANTEE). AN APPROVED BACKFLOW DEVICE SHALL BE INSTALLED TO PREVENT WATER FOR GOING BACK INTO THE WATER SUPPLY.
 - THE FLOOR OF ALL GRASSED PERCOLATION AREAS (GPA) (SWALES/PONDS) INCLUDES THE LEVEL PORTION OF THE FLOOR OF THE SWALES, AND THE SIDE SLOPES OF THE SWALE UP TO THE GPA OVERFLOW ELEVATION OR TOP OF DRYWELL. THE SOIL LOCATED IN THE FLOOR OF THE GPA SWALE SHALL BE A MEDIUM TO WELL-DRAINING MATERIAL, WITH A MINIMUM INFILTRATION RATE OF 0.5 INCHES PER HOUR. THE ENGINEER SHALL PROVIDE A WRITTEN STATEMENT WHICH VERIFIES THAT ALL GPA SWALES CONFORM TO THIS REQUIREMENT. THIS WRITTEN STATEMENT SHALL BE SUBMITTED TO THE CITY OF LIBERTY LAKE ENGINEER'S OFFICE PRIOR TO INSTALLING FINISHED LANDSCAPING/SOD AND PRIOR TO FINAL ACCEPTANCE. THE SWALE FLOOR MATERIAL SHALL BE INSTALLED TO A NATIVE SOIL STRATUM WHICH ALSO MEETS OR EXCEEDS THIS MINIMUM PERCOLATION RATE OF 0.5 INCHES PER HOUR, OR AS APPROVED BY SITE GEOTECHNICAL ENGINEER.
 - WHEN TWO OR MORE CURB INLETS ARE USED, SET POND BOTTOM WITH RESPECT TO THE LOWEST CURB INLET GUTTER FLOWLINE ELEVATION.
 - THE TOP 12" OF SOIL FOR ALL SWALE/POND BOTTOMS SHALL CONSIST OF THOROUGHLY BLENDED MIX OF 50% COMPOST WITH 50% NATIVE SOILS, OR AS APPROVED BY SITE GEOTECHNICAL ENGINEER.
 - PER THE S.R.S.M. ALL SWALES/PONDS SHALL HAVE 12" OF TREATMENT SOIL WITH AN INFILTRATION RATE OF 0.5 INCHES/HOUR AND AVERAGE CATION EXCHANGE CAPACITY OF AT LEAST 15 MILLIQUIVLENTS/100 GRAMS OR AT LEAST 2% OF ORGANIC MATER BY WEIGHT. SEE TABLE 6-1, PG. 6-16 OF THE SPOKANE REGIONAL STORMWATER MANUAL, OR AS APPROVED BY SITE GEOTECHNICAL ENGINEER.
 - WARNING: THE USE OF SILTY LOAM IS PROHIBITED AS SWALE/PONDS BOTTOM MATERIAL.
 - ALL DRYWELLS TO HAVE 1' ONE VERTICAL FOOT OF ADJUSTMENT
 - THE ENGINEER SHALL BE ON SITE, AND SHALL COLLECT TRUCK TICKETS FOR THE DRYWELL ROCK AND SOIL.
- SLEEVING:** PROVIDE SLEEVING AS REQUIRED UNDER SIDEWALKS, PATHS, CURBING, PAVING, ETC. AS NEEDED FOR IRRIGATION ACCESS. ALL SLEEVING TO BE 4" PVC WITH AT LEAST 12" OF COVER (1) FOOT BELOW FINISH GRADE. THE OWNER/GENERAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING SLEEVING BEFORE CURBING, SIDEWALKS, PAVING, ETC. IS INSTALLED. PATCH ASPHALT AS NEEDED.
- LAWN AREAS:** LAWN AREAS ARE TO BE IRRIGATED WITH TORO POP-UP HEADS OR EQUIVALENT. (TEST SYSTEM BEFORE BACKFILLING).
- ADJUSTMENT:** AFTER INSTALLATION, ADJUST VALVES, HEADS, EMITTERS, ETC. TO PROVIDE UNIFORM COVERAGE AND TO MINIMIZE OVER SPRAY ON WALLS, FENCES, WALKS, DRIVES, ETC.
- WATER POWER SUPPLY:** THE OWNER/GENERAL CONTRACTOR IS TO SUPPLY WATER TAPS FOR HOOK-UP AND SUPPLY POWER FOR CONTROLLER.



WCE GENERAL STORMWATER NOTES

- PROVIDE FILTER FABRIC (AMOCO 4545 OR EQUAL) BETWEEN THE NATIVE SOIL AND THE WASHED DRAIN ROCK
- IF TWO OR MORE CURB INLETS ARE USED, SET POND BOTTOM WITH RESPECT TO THE LOWEST CURB INLET GUTTER FLOWLINE ELEVATION
- FOR ALL BIO_INFILTRATION SWALES AND PONDS, THE TOP 12 INCHES OF SOIL SHALL CONSIST OF A THOROUGHLY BLENDED MIX OF 50% COMPOST WITH 50% NATIVE SOILS.
- WARNING - THE USE OF SILTY LOAM IS PROHIBITED AS POND BOTTOM MATERIAL.
- PVC STORM PIPE ON THESE PLANS SHALL, AT A MINIMUM, BE ASTM D3034 INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- ALL STORM PIPES LINES LESS THAN THE MINIMUM 2% SIDE SLOPE MUST BE SURVEYED IN BY A PROFESSIONAL LICENSED SURVEYOR OF WASHINGTON STATE.
- AT A MINIMUM, BOTTOM OF POND AND NON-BERM AREAS OF POND SHALL BE PLANTED WITH NATIVE-TYPE GRASSES ACCLIMATED TO ARID CONDITIONS (DRYLAND GRASSES). SEE LANDSCAPE PLAN FOR MORE INFORMATION.
- ALL DRYWELLS TO BE INSTALLED TO HAVE (1') ONE VERTICAL FOOT OF ADJUSTMENT.
- INSPECTION ENGINEER SHALL BE ON SITE, AND SHALL COLLECT TRUCK TICKETS FOR DRYWELL ROCK, AND SOIL.
- STANDARD DENSITY SHALL BE IN ACCORDANCE WITH A.S.T.M. D-1557.
- TREATMENT SOIL SPECIFICATION**
THE TOP 18" OF SOIL FOR ALL L.I.D. POND BOTTOMS AND THE TOP 12" OF SOIL FOR ALL PGIS POND BOTTOMS SHALL CONSIST OF 40% COMPOST/60% MINERAL AGGREGATE; COMPOST CATION EXCHANGE CAPACITY (CEC) SHALL BE EQUAL TO OR GREATER THAN 5 MILLIEQUIVALENTS/100 GRAMS OF DRY SOIL; MINERAL AGGREGATE SHALL BE WELL-GRADED SAND PER ASTM D 2487-11 WITH COEFFICIENT OF UNIFORMITY CU = D60/D10 EQUAL TO OR GREATER THAN 4 AND COEFFICIENT OF CURVE CC = (D30)/D60 X D10 GREATER THAN OR EQUAL TO 1 AND LESS THAN OR EQUAL TO 3. A BIORETENTION SOIL MEDIA DATA SHEET SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AND SPOKANE COUNTY FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
11.1. MINERAL AGGREGATE GRADATION

SIEVE SIZE	PERCENT PASSING
3/8"	100
#4	95-100
#10	75-90
#40	25-40
#100	4-10
#200	2-5

SEEDING NOTE:

GRASS SEED: PROVIDE FRESH, CLEAN, NEW-CROP SEED COMPLYING WITH TOLERANCE OF PURITY AND GERMINATION ESTABLISHED BY THE OFFICIAL SEED ANALYSIS OF NORTH AMERICAN. PROVIDE SEED MIXTURE COMPOSED OF GRASS SPECIES AND PERCENTAGES AS FOLLOWS:
ELKA PERENNIAL RYE
DURAR HARD FESCUE
COVAR SHEEP/FESCUE
REUBENS CANADIAN BLUEGRASS
15 PERCENT
PROVIDE MIXTURE COMPOSED OF GRASS SEED AND FERTILIZER IN PERCENTAGES AS FOLLOWS:
90 LBS. PER ACRE
GRASS SEED: 16-16-16 TIMED RELEASE COMPOSITION,
FERTILIZER: 300 LBS. PER ACRE

ALL SEEDING OF SLOPES SHALL BE DONE IN ACCORDANCE WITH THE W.S.D.O.T. STANDARD SPECIFICATIONS, SECTION 8-01.



10/17/24

NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET
IN A CONCRETE MONUMENT AT
GROUND LEVEL WITH AN ELEV. 2070.160
AND DESIGNATION OF GP32090-49

A	NO	DATE	BY	RMA	ORIGINAL PREPARATION	REVISIONS

SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

PROJ #: 24-3776
DATE: 10/17/24
DRAWN: RMA
REVIEWED: TRW

<input checked="" type="checkbox"/>	CIVIL
<input type="checkbox"/>	STRUCTURAL
<input type="checkbox"/>	SURVEYING
<input type="checkbox"/>	TRAFFIC
<input type="checkbox"/>	PLANNING
<input type="checkbox"/>	LANDSCAPE
<input type="checkbox"/>	OTHER



**LEGACY PHASE 'F' MASS GRADING
GENERAL NOTES
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019**

**SHEET
CO.1**
**JOB NUMBER
24-3776**

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LEGEND

⊗	FIRE HYDRANT	○	TE POLE
⊕	WATER METER	□	TEL CABLE RISER
⊗	WATER VALVE	⊗	TEL-JBOX
■	WATER VALVE MARKER	⊗	TEL MANHOLE
⊗	WELL	⊗	UTILITY MANHOLE
○	WATER MANHOLE	⊕	UTILITY VAULT
⊗	SANITARY SEWER MANHOLE	□	JUNCTION BOX
○	SANITARY SEWER CLEANOUT	□	JUNCTION BOX SIGN
⊗	GAS MANHOLE	⊕	STREET LIGHT ASSEMBLY
⊗	GAS MANHOLE	⊕	LIGHT POLE
⊗	GAS VALVE	⊕	MAIL BOX
⊗	IRRIGATION CATCH BASIN	⊕	ROCK
□	IRRIGATION BOX	⊕	RIPRAP
⊗	IRRIGATION VALVE	⊕	SHRUB
⊗	CATCH BASIN	⊕	TREE (CONIFER)
⊗	DRAINAGE MANHOLE	⊕	TREE (DECIDUOUS)
⊗	DRYWELL	⊕	RUMBLE BARS
⊗	CATCH BASIN	⊕	TEST WELL
⊗	ELECTRIC METER	⊕	WETLAND FLAG
⊗	GUY WIRE	⊕	RR CROSSING SIGNAL
⊗	POWER POLE	⊕	GATE POST
⊗	POWER MANHOLE	⊕	BOLLARD
⊗	POWER VAULT		
⊗	POWER TRANSFORMER		

SURVEYORS NOTE:
 1. UTILITIES SHOWN HEREON ARE FROM VISIBLE SURFACE EVIDENCE COLLECTED BY SURVEY. INVESTIGATION INTO RECORDS HELD BY UTILITY PURVEYORS HAS NOT BEEN PERFORMED. LOCATES FOR UNDERGROUND UTILITIES WERE ORDERED AND ARE SHOWN ON THIS MAP.

THIS MAP CORRECTLY REPRESENTS A TOPOGRAPHIC SURVEY PERFORMED BY ME, OR UNDER MY DIRECTION, IN APRIL OF 2023 AT THE REQUEST OF THE OWNER.

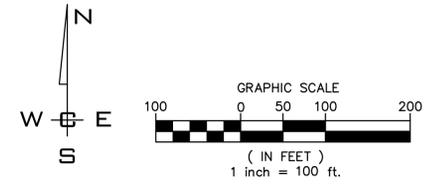
BRETT A. GRIFFITH, P.L.S.
 CERTIFICATE NO. 20123194
 10/17/2024

ABBREVIATIONS

ACT. LEN.	.....	ACTUAL LENGTH
BCR	.....	BEGINNING OF CURVE RADIUS
BDRY.	.....	BOUNDARY
CO	.....	SEWER CLEANOUT
CSTC	.....	CRUSHED SURFACE
	.....	TOP COURSE
CT	.....	COURT
DIA.	.....	DIAMETER
ECR	.....	END OF CURVE RADIUS
EXIST.	.....	EXISTING
G	.....	GRADE
GB	.....	GRADE BREAK
FT./FT.	.....	FEET PER FOOT
HYD.	.....	HYDRANT
I.E.	.....	INVERT ELEVATION
LN.	.....	LANE
LT.	.....	LEFT
MH	.....	MANHOLE
MCR	.....	MIDDLE OF CURVE RADIUS
PC	.....	POINT OF CURVATURE
PET.	.....	PETROLEUM
PI	.....	POINT OF INTERSECTION
PRC	.....	POINT OF REVERSE CURVE
PT	.....	POINT OF TANGENCY
RIM EL.	.....	RIM ELEVATION
RD	.....	ROAD
RT.	.....	RIGHT
SI	.....	STREET INTERSECTION
SS	.....	SANITARY SEWER
STA.	.....	STATION
STA. LEN.	.....	STATION LENGTH
TG	.....	TOP OF GRATE
TC	.....	TOP OF CURB

TOPOGRAPHIC SURVEY

SCALE: 1" = 100'



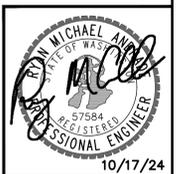
FOR REFERENCE ONLY

NO.	DATE	BY	REVISIONS
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:	PROJ #: 24-3776
HORIZONTAL:	DATE: 10/17/24
1" = 100'	DRAWN: RMA
VERTICAL:	REVIEWED: TRW
N/A	

WCE
 WHIPPLE CONSULTING ENGINEERS
 21 S. PINES ROAD
 SPOKANE VALLEY, WA 99206
 PH: 509-893-2617 FAX: 509-926-0227

LEGACY PHASE 'F' MASS GRADING
TOPOGRAPHIC SURVEY - FOR REF. ONLY
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019



SHEET	C1.0
JOB NUMBER	24-3776

P:\WCE_WORK\2024\WCE_PROJECTS\2024-3776\KINNEY - LEGACY RIDGE-FD\WG\3776-MASS GRADING PLANS.DWG PLOT DATE:10/17/24

WCE GENERAL NOTES

- ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF SITE IMPROVEMENTS SHALL MEET OR EXCEED THE WSDOT /APWA STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION CURRENT EDITION AS MODIFIED BY THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE CITY OF LIBERTY LAKE REGULATIONS AND OTHER APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND THE SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE HIGHER QUALITY STANDARD SHALL APPLY. ALL WORK WITHIN PUBLIC R.O.W. OR EASEMENTS SHALL BE INSPECTED AND APPROVED BY THE CITY OF LIBERTY LAKE INSPECTOR. INSPECTION SERVICES AND CONSTRUCTION CERTIFICATION TO BE PROVIDED BY DESIGNEE OF PROJECT SPONSOR/OWNER.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM ALL APPLICABLE AGENCIES. THE CONTRACTOR SHALL NOTIFY THE CITY OF LIBERTY LAKE INSPECTOR AT LEAST 48 HOURS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS.
- THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE CITY OF LIBERTY LAKE AND ALL UTILITY COMPANIES WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION, TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION, AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE.
- THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND ONE (1) COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB ON-SITE AT ALL TIMES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO: EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.
- IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
- ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD, UNLESS SPECIFICALLY STATED OTHERWISE.
- FOR WORK AFFECTING PUBLIC ROADWAYS OR IF REQUIRED BY THE CITY OF LIBERTY LAKE, THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL AND PHASING PLAN IN ACCORDANCE WITH M.U.T.C.D. FOR APPROVAL PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN OR AFFECTING THE RIGHT-OF-WAY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY SAID PLANS. PRIOR TO INSTALLATION, A PRECONSTRUCTION CONFERENCE SHALL BE HELD WITH THE CITY OF LIBERTY LAKE.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED OR RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.
- PER AGENCY STANDARDS THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING RECORD INFORMATION ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE AND AVAILABLE TO THE CITY OF LIBERTY LAKE INSPECTOR AT ALL TIMES.
- DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. FOR ADDITIONAL INFORMATION CONTACT THE ENGINEER FOR CLARIFICATION AND NOTE ON THE RECORD DRAWINGS.
- ALL EROSION AND SEDIMENT CONTROL (E.S.C.) MEASURES SHALL BE INSTALLED AT THE LIMITS OF CONSTRUCTION PRIOR TO GROUND DISTURBING ACTIVITY. ALL E.S.C. MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS ARE STABILIZED WITH HARD SURFACE OR LANDSCAPING.
- THE CONTRACTOR SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF WATER LINES AND DRY UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL UTILITY RELOCATIONS CONSISTENT WITH THE CONTRACTORS SCHEDULE FOR THIS PROJECT, WHETHER SHOWN OR NOT SHOWN, AS IT RELATES TO THE CONSTRUCTION ACTIVITIES CONTEMPLATED IN THESE PLANS.
- ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY IS SUBJECT TO THE JURISDICTION OF THE CITY OF LIBERTY LAKE ENGINEERING DEPARTMENT STANDARD DETAILS AND SPECIFICATIONS.
- ALL CONSTRUCTION OPERATIONS, INCLUDING THE WARMING UP, REPAIR, ARRIVAL, DEPARTURE OR RUNNING OF TRUCKS, EARTH MOVING EQUIPMENT, CONSTRUCTION EQUIPMENT AND ANY OTHER ASSOCIATED EQUIPMENT SHALL GENERALLY BE LIMITED TO THE TIME PERIOD APPROVED BY THE CITY OF LIBERTY LAKE ENGINEER.
- BASED ON REQUIREMENTS FROM CITY OF LIBERTY LAKE, THE ENGINEER OR HIS DESIGNEE SHALL PERFORM MATERIALS TESTING AND QUALITY CONTROL ON THE PROJECT AND SHALL SUBMIT COPIES OF DAILY REPORTS, TEST REPORTS, PROJECT CERTIFICATION AND RECORD DRAWINGS TO CITY OF LIBERTY LAKE ENGINEER.
- NO REVISIONS SHALL BE MADE TO THESE PLANS WITHOUT APPROVAL OF THE CITY OF LIBERTY LAKE ENGINEERS AND NOTIFICATION OF THE ENGINEER OF RECORD.
- ON-SITE GRADING SHALL BE IN ACCORDANCE WITH THE APPROVED GRADING PLAN AND E.S.C. PLAN. ANY IMPORT OR EXPORT OF MATERIAL SHALL BE FROM A PREAPPROVED SOURCE/DESTINATION AND COORDINATED WITH THE CITY OF LIBERTY LAKE DEPARTMENT OF BUILDING AND PLANNING AT CITY OF LIBERTY LAKE, 509-625-6300. GRADING ON THIS SITE OR ANY OTHER SITE MUST COMPLY WITH ALL DEVELOPMENT REGULATIONS INCLUDING, BUT NOT LIMITED TO, GRADING PERMITS, S.E.P.A. REVIEW, TIMBER HARVEST PERMITS, CRITICAL AREAS, FLOOD PLAINS, DESIGNATED DRAINAGE WAYS, ETC.
- THE CONTRACTOR IS CAUTIONED THAT IT IS THE UNDERSTANDING OF THE OWNER AND THE ENGINEER THAT SHOULD A CONFLICT OR DISCREPANCY IN THESE PLANS, SPECIFICATIONS, GENERAL NOTES OR PLANS ETC., DETERMINED TO BE PART OF THE OVERALL PROJECT, INCLUDING BUT NOT LIMITED TO THE ARCHITECTURAL PLANS, MECHANICAL PLANS, ELECTRICAL PLANS, LANDSCAPE PLANS, GENERAL SPECIAL PROVISIONS, ETC., THAT WITHOUT WRITTEN CLARIFICATION FROM THE ENGINEER, OWNER OR OTHER PROFESSIONAL, DURING THE BIDDING PROCESS, THAT IN ALL INSTANCES THE CONTRACTOR WILL BE REQUIRED TO BID THE HIGHER STANDARD. FAILURE TO DO SO MAY RESULT IN THE HIGHER STANDARD BEING REQUIRED BY THE OWNER, ENGINEER OR OTHER PROFESSIONAL WITH NO CHANGE IN VALUE TO THE CONTRACT VIA CHANGE ORDER OR OTHER MECHANISM.
- CONSTRUCTION OF EVERY DRYWELL, INCLUDING FABRIC AND DRAINROCK, SHALL BE OBSERVED BY THE ON-SITE INSPECTOR TO CONFIRM THAT IT MEETS THE DESIGN DETAILS AND SPECIFICATIONS. DRYWELLS NOT OBSERVED SHALL HAVE THEIR PERFORMANCE VERIFIED BY A FULL-SCALE DRYWELL TEST.
- DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ANY AND ALL INCONSISTENCIES BETWEEN THESE PLANS AND CONSTRUCTION STAKING. CONTRACTOR ASSUMES RESPONSIBILITY TO CONSTRUCT TO THESE PLANS IN LIEU OF FIELD STAKING. SHOULD INCONSISTENCIES BE APPARENT THE CONTRACTOR SHALL CONTACT THE ENGINEER, OWNER, AND SURVEYOR TO RECTIFY THE DISCREPANCY PRIOR TO CONSTRUCTION EFFORT BEING APPLIED.
- FAIR HOUSING ACT - SAFE HARBORS FOR COMPLIANCE
WHIPPLE CONSULTING ENGINEERS, INC. FOR THE PROJECT CONTAINED WITHIN THESE PLANS HAS USED THE FOLLOWING SAFE HARBOR FOR ADA ACCESSIBILITY FOR THOSE ISSUES CONSIDERED SITE DEVELOPMENT ISSUES.
ICC/ANSI A117.1 (2003), ALONG WITH THE FAIR HOUSING ACT, HUD'S FAIR HOUSING ACT REGULATIONS, AND GUIDELINES.
- ALL FIRE LINES MUST BE INSTALLED BY AN APPROVED LEVEL 'U' CONTRACTOR OR A LEVEL 3 FIRE PROTECTION CONTRACTOR.
- CONTRACTOR IS NOTIFIED THAT SOME OR ALL OF THE PAVEMENT CUTS TO INSTALL DRY UTILITIES, SEWER, WATER, STORM OR OTHER TIE-INS SHALL BE COORDINATED WITH THE CITY OF LIBERTY LAKE AS SPECIFIC PAVEMENT CUT POLICIES MAY BE IN EFFECT THAT ARE NOT NOTED ON THE PLANS
- THE CONTRACTOR IS NOTED THAT IT IS NOT THE OWNERS, ENGINEERS, CITY'S NOR THE INSPECTION AND TESTING COMPANY'S (THE PARTIES) RESPONSIBILITY TO ANTICIPATE WHEN CONSTRUCTED ELEMENTS WILL BE READY FOR INSPECTION AND TESTING. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL PARTIES THAT CERTAIN CONSTRUCTED ELEMENTS ARE BEING INSTALLED AND ON WHAT DATE THEY WILL BE INSTALLED. IF SUCH FAILURE TO NOTIFY THEN RESULTS IN LACK OF INSPECTIONS AND TESTING SERVICES FOR CERTAIN ELEMENTS, THE CONTRACTOR SHOULD NOT EXPECT THAT THIS LACK OF INSPECTION AND TESTING WILL RESULT IN THE BLANKET APPROVAL OF SUCH ITEM. THE CONTRACTOR IS NOTIFIED THAT SUBSEQUENT REMOVAL AND RECONSTRUCTION OF SUCH ELEMENTS IS TO BE BORNE BY THE CONTRACTOR AND OR THEIR SUB-CONTRACTOR PROVIDING THE SERVICE AND THE INSTALLATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE SURE THAT ALL PARTIES ARE ADEQUATELY NOTIFIED, NOTIFICATION WILL BE BY TWO MEANS FOR EACH REQUEST/OCCURRENCE THE ACCEPTABLE MEANS ARE AS FOLLOWS, EMAIL, TEXT, FAX OR PHONE, NOTIFICATION SHALL INCLUDE ELEMENT, DATE AND CONSTRUCTION START TIME. EXCESSIVE STANDBY TIME ON THE PART OF THE PARTIES MAY RESULT IN A BACK CHARGE TO THE CONTRACTOR.

NE 1/4, SEC. 21, T. 25 N., R. 45 E., W.M.

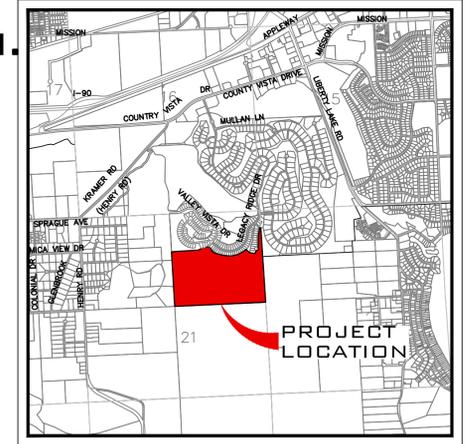
SWPPP/EROSION CONTROL PLAN

LEGACY PHASE "F" MASS GRADING

VALLEY VISTA DRIVE

LIBERTY LAKE, WASHINGTON

NE 1/4 OF SEC. 21, T. 25 N., R. 45 E., W.M.



VICINITY MAP

INDEX TO PLAN SHEETS

- C2.0** SWPPP CONTROL COVER SHEET
- C2.1** SWPPP NOTES
- C2.2** SWPPP BMP'S
- C2.3** SWPPP BMP'S

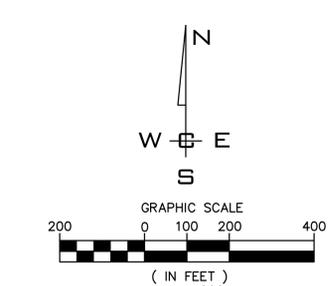
LEGEND

- STORM DRAINAGE POND - NO CONCRETE TRUCK WASHOUT AREA.
- BMP C233: SILT FENCE, SHEET C2.2.
- BMP C105: STABILIZED CONSTRUCTION ENTRY, SHEET C2.2
- BMP C220: STORM DRAIN INLET PROTECTION, SHEET C2.3.
- BMP C151: CONCRETE HANDLING - MAY ONLY TAKE PLACE ON UNCOMPACTED SUBGRADE AFTER ASPHALT REMOVAL, AND IN A NON-LANDSCAPED AREA. OTHERWISE ANY CONCRETE WASHOUT MUST BE OFF SITE. SHEET C2.3.
- LIMITS OF DISTURBANCE

SWPPP PLAN

SCALE: 1" = 200'

- SEWER / WATER**
LIBERTY LAKE SEW&WAT DIST. 1
22510 E MISSION AVENUE
LIBERTY LAKE, WA 99019
PHONE: 922-5443
CONTACT: BIJAY ADAMS
- FIRE DEPARTMENT**
SPOKANE VALLEY FIRE DEPT.
10319 E SPRAGUE AVE.
SPOKANE VALLEY, WA 99026
PHONE: 928-1700
CONTACT: TRACI HARVEY
- STREETS**
CITY OF LIBERTY LAKE
22710 E COUNTRY VISTA DR
LIBERTY LAKE, WA 99019
PHONE: 755-6730
CONTACT: LUKE MICHELS
- BLDG. & PLANNING**
CITY OF LIBERTY LAKE
22710 E COUNTRY VISTA DR
LIBERTY LAKE, WA 99019
PHONE: 755-6708
CONTACT: LISA KEY
- OWNER**
MTK MANAGEMENT, LLC ET AL
PO BOX 935
OTIS ORCHARDS, WA 99027
PHONE: 509-590-8383
CONTACT: CASEY MASON
- HEALTH**
SPOKANE REGIONAL HEALTH
1101 WEST COLLEGE AVE. #402
SPOKANE, WA 99260
PHONE: 324-1578
CONTACT: PAUL SAVAGE
- POWER / GAS**
AVISTA UTILITIES
1411 EAST MISSION AVENUE
SPOKANE, WASHINGTON 99220
PHONE: 495-8610
CONTACT: KEN CARLSON
- TELEPHONE**
CENTURY LINK
904 NORTH COLUMBUS
SPOKANE, WASHINGTON, 99202
PHONE: 825-0304
CONTACT: DEBORAH GEIST
- CABLE**
COMCAST BROADBAND
1717 EAST BUCKEYE
SPOKANE, WASHINGTON, 99207
PHONE: 755-4717
CONTACT: BRYAN RICHARDSON
- SOLID WASTE**
WASTE MANAGEMENT
PHONE: 1-800-909-4458
- LANDSCAPE**
WHIPPLE CONSULTING ENGINEERS
21 SOUTH PINES ROAD
SPOKANE VALLEY, WA 99206
PHONE: 893-2617
CONTACT: SUSAN MOSS, PLA
- SURVEYOR**
WHIPPLE CONSULTING ENGINEERS
21 SOUTH PINES ROAD
SPOKANE VALLEY, WA 99206
PHONE: 893-2617
CONTACT: BRETT GRIFFITH, P.L.S.
- ENGINEERING**
WHIPPLE CONSULTING ENGINEERS
21 SOUTH PINES ROAD
SPOKANE VALLEY, WA 99206
PHONE: 893-2617
CONTACT: TODD WHIPPLE, P.E.



NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET
IN A CONCRETE MONUMENT AT
GROUND LEVEL WITH AN ELEV. 2070.160
AND DESIGNATION OF GP32090-49

SCALE:															
HORIZONTAL:	1" = 200'														
VERTICAL:	N/A														
PROJ #:	24-3776														
DATE:	10/17/24														
DRAWN:	RMA														
REVIEWED:	TRW														
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<input checked="" type="checkbox"/>	CIVIL														
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<input type="checkbox"/>	LANDSCAPE														
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<p>WCE WHIPPLE CONSULTING ENGINEERS 21 S PINES ROAD SPOKANE VALLEY, WA 99206 PH: 509-893-2617 FAX: 509-926-0227</p>	
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LEGACY PHASE 'F' MASS GRADING
SWPPP COVER SHEET
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

SHEET	C2.0
JOB NUMBER	24-3776

10/17/24

BMP C233: SILT FENCE

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE: USE OF 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. SEE FIGURE 7.3.20 OF THE EASTERN WASHINGTON STORMWATER MANUAL OR DETAIL BELOW FOR DETAILS ON SILT FENCE CONSTRUCTION.

CONDITIONS OF USE: SILT FENCE MAY BE USED DOWNSLOPE OF ALL DISTURBED AREAS. SILT FENCE IS NOT INTENDED TO TREAT CONCENTRATED FLOWS, NOR IS IT INTENDED TO TREAT SUBSTANTIAL AMOUNTS OF OVERLAND FLOW. ANY CONCENTRATED FLOWS MUST BE CONVEYED THROUGH THE DRAINAGE SYSTEM TO A SEDIMENT POND. THE ONLY CIRCUMSTANCE IN WHICH OVERLAND FLOW CAN BE TREATED SOLELY BY A SILT FENCE, RATHER THAN BY A SEDIMENT POND, IS WHEN THE AREA DRAINING TO THE FENCE IS ONE ACRE OR LESS AND FLOW RATES ARE LESS THAN 0.5 CFS.

SILT FENCES SHOULD NOT BE CONSTRUCTED IN STREAMS OR USED IN V-SHAPED DITCHES. THEY ARE NOT AN ADEQUATE METHOD OF SILT CONTROL FOR ANYTHING DEEPER THAN SHEET OR OVERLAND FLOW.

DESIGN AND INSTALLATION: DRAINAGE AREA OF 1 ACRE OR LESS OR IN COMBINATION WITH SEDIMENT BASIN IN A LARGER SITE.

MAXIMUM SLOPE STEEPNESS (NORMAL OR PERPENDICULAR TO FENCE LINE) 1:1.

MAXIMUM SHEET OR OVERLAND FLOW PATH LENGTH TO THE FENCE OF 100 FEET.

NO FLOWS GREATER THAN 0.5 CFS.

THE GEOTEXTILE USED SHALL MEET THE FOLLOWING STANDARDS. ALL GEOTEXTILE PROPERTIES LISTED BELOW ARE MINIMUM AVERAGE ROLL VALUES.

POLYMERIC MESH AOS (ASTM D4751)	0.60MM MAX. FOR SLIT WOVENS (#30 SIEVE), 0.30MM MAX. FOR ALL OTHER GEOTEXTILE TYPES (#50 SIEVE), 0.15MM MAX. FOR ALL FABRIC TYPES (#100 SIEVE).
WATER PERMITTIVITY (ASTM D4491)	0.02/SEC MIN.
GRAB TENSILE STRENGTH (ASTM D4632)	180 LBS. MIN. FOR EXTRA STRENGTH FABRIC, 100 LBS. MIN. FOR STANDARD STRENGTH FABRIC
GRAB TENSILE ELONGATION (ASTM D4632)	30% MAX.
ULTRAVIOLET RESISTANCE (ASTM D4335)	70% MIN.

STANDARD STRENGTH FABRICS SHALL BE SUPPORTED WITH WIRE MESH, CHICKEN WIRE, 2-INCH X 2-INCH, SAFETY FENCE, OR JUST MESH TO INCREASE THE STRENGTH OF FABRIC. SILT FENCE MATERIALS ARE AVAILABLE THAT HAVE SYNTHETIC MESH BACKING ATTACHED.

FILTER FABRIC 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 0F. TO 120F.

100 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 LOCAL REGULATIONS.

CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY SILT FENCES AT THE LOCATIONS SHOWN IN THE PLANS. THE SILT FENCE SHALL BE CONSTRUCTED IN THE AREAS OF CLEARING, GRADING, OR DRAINAGE PRIOR TO STARTING THOSE ACTIVITIES. A SILT FENCE SHALL NOT BE CONSIDERED TEMPORARY IF THE SILT FENCE MUST OPERATE BEYOND THE LENGTH OF THE CONTRACT. THE SILT FENCE SHALL PREVENT SOIL CARRIED BY RUNOFF WATER FROM GOING BENEATH, THROUGH, OR OVER THE TOP OF THE SILT FENCE, BUT SHALL ALLOW WATER TO PASS THROUGH THE FENCE.

THE MINIMUM HEIGHT OF THE TOP OF SILT FENCE SHALL BE 2 FEET AND THE MAXIMUM SHALL BE 2.5 FEET ABOVE THE ORIGINAL GROUND SURFACE.

DESIGN AND INSTALLATION: (CONTINUED)

THE GEOTEXTILE SHALL BE SEWN TOGETHER AT THE POINT OF MANUFACTURE, OR AT AN APPROVED LOCATION AS DETERMINED BY THE ENGINEER, TO FORM GEOTEXTILE LENGTHS AS REQUIRED. ALL SEWN SEAMS SHALL BE LOCATED AT A SUPPORT POST. ALTERNATIVELY, TWO SECTIONS OF SILT FENCE CAN BE OVERLAPPED, PROVIDED THE CONTRACTOR CAN DEMONSTRATE, TO THE SATISFACTION OF THE ENGINEER, THAT THE OVERLAP IS LONG ENOUGH AND THAT THE ADJACENT FENCE SECTIONS ARE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP.

THE GEOTEXTILE SHALL BE ATTACHED ON THE UP-SLOPE SIDE OF THE POSTS AND SUPPORT SYSTEM WITH STAPLES, WIRE, OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE GEOTEXTILE SHALL BE ATTACHED IN A MANNER THAT REDUCES THE POTENTIAL FOR GEOTEXTILE TEARING AT THE STAPLES, WIRE, OR OTHER CONNECTION DEVICE. SILT FENCE BACKUP SUPPORT FOR THE GEOTEXTILE IN THE FORM OF A WIRE OF PLASTIC MESH IS DEPENDENT ON THE PROPERTIES OF THE GEOTEXTILE SELECTED FOR USE. IF WIRE OR PLASTIC BACK-UP MESH IS USED, THE MESH SHALL BE FASTENED SECURELY TO THE UP-SLOPE OF THE POSTS WITH THE GEOTEXTILE BEING UP-SLOPE OF THE MESH BACK SUPPORT.

THE GEOTEXTILE AT THE BOTTOM OF THE FENCE SHALL BE BURIED IN A TRENCH TO A MINIMUM DEPTH OF 4" BELOW THE GROUND SURFACE. THE TRENCH SHALL BE BACKFILLED AND THE SOIL TAMPED IN PLACE OVER THE BURIED PORTION OF THE GEOTEXTILE, SUCH THAT NO FLOW CAN PASS BENEATH THE FENCE AND SCOURING CAN NOT OCCUR. WHEN WIRE OR POLYMERIC BACK-UP SUPPORT MESH IS USED, THE WIRE OR POLYMERIC MESH SHALL EXTEND INTO THE TRENCH A MINIMUM OF 3".

THE FENCE POSTS SHALL BE PLACED OR DRIVEN A MIN. OF 18". A MIN. DEPTH OF 12" IS ALLOWED IF TOPSOIL OR OTHER SOFT SUBGRADE SOIL IS NOT PRESENT AND A MIN. DEPTH OF 18" CANNOT BE REACHED. FENCE POST DEPTHS SHALL BE INCREASED 6" IF THE FENCE IS LOCATED ON SLOPES PF 3:1 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.

SILT FENCES SHALL BE LOCATED 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.

IF THE FENCE MUST CROSS CONTOURS, WITH THE EXCEPTION OF THE END OF THE FENCE, GRAVEL CHECK DAMS PLACED PERPENDICULAR TO THE BACK OF THE FENCE SHALL BE USED TO MINIMIZE CONCENTRATED FLOW AND EROSION ALONG THE BACK OF THE FENCE. THE GRAVEL CHECK DAMS SHALL BE APPROXIMATELY 1' DEEP AT THE BACK OF THE FENCE. IT 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. THE GRAVEL CHECK DAMS SHALL CONSIST OF CRUSHED SURFACING TOP COURSE, GRAVEL BACKFILL FOR WALLS, OR SHOULDER BALLAST. THE GRAVEL CHECK DAMS SHALL BE LOCATED EVERY 10' ALONG THE FENCE WHERE THE FENCE MUST CROSS THE CONTOURS. THE SLOPE OF THE FENCE LINE WHERE THE CONTOURS MUST BE CROSSED SHALL NOT BE STEEPER THAN 3:1.

WOOD, STEEL OR EQUIVALENT POSTS SHALL BE USED. WOOD POSTS SHALL HAVE MINIMUM DIMENSIONS OF 2"x2"x3' MIN. LENGTH, AND SHALL BE FREE OF DEFECTS SUCH AS KNOTS, SPLITS, OR GOUGES. STEEL POSTS SHALL CONSIST OF EITHER SIZE NO. 6 REBAR OR LARGER, ASTM A 120 STEEL PIPE WITH A MIN. DIAMETER OR 1-INCH, U, T, L, OR C SHAPE STEEL POSTS WITH A MIN. WEIGHT OF 1.35 LBS./FT. OR OTHER STEEL POSTS HAVING EQUIVALENT STRENGTH AND BENDING RESISTANCE TO THE POST SIZES LISTED. THE SPACING OF THE SUPPORTS POSTS SHALL BE A MAXIMUM OF 6'.

FENCE BACK-UP SUPPORT, IF USED, SHALL CONSIST OF STEEL WIRE WITH A MAX. MESH SPACING OF 2', OR A PREFABRICATED POLYMERIC MESH. THE STRENGTH OF WIRE OR POLYMERIC MESH SHALL BE EQUIVALENT TO OR GREATER THAN 180 LBS. GRAB TENSILE STRENGTH. THE POLYMERIC MESH MUST BE AS RESISTANT TO ULTRAVIOLET RADIATION AS THE GEOTEXTILE IT SUPPORTS.

SILT FENCE INSTALLATION USING THE SLICING METHOD SPECIFICATION DETAILS FOLLOW.

THE BASE OF BOTH END POSTS MUST BE AT LEAST 2-4" ABOVE THE TOP OF THE SILT FENCE 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.

INSTALL POSTS 3-4' APART IN CRITICAL RETENTION AREAS, AND 6-7' APART IN STANDARD APPLICATIONS.

INSTALL POSTS 24" DEEP ON THE DOWNSTREAM SIDE OF THE SILT FENCE, AND AS CLOSE AS POSSIBLE TO THE FABRIC. ENABLING POSTS TO SUPPORT THE FABRIC FROM THE UPSTREAM WATER PRESSURE.

INSTALL POSTS WITH NIPPLES FACING AWAY FROM THE SILT FENCE FABRIC.

ATTACH THE FABRIC TO EACH POST WITH THREE TIES, ALL SPACED WITH THE TOP 8" OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1 INCH VERTICALLY APART, IN ADDITION, EACH TIE SHOULD BE POSITIONED TO HANG ON A POST NIPPLE WHEN TIGHTENING TO PREVENT SAGGING.

WRAP APPROXIMATELY 6 INCHES OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.

NO MORE THEN 24" OF A 36" FABRIC IS ALLOWED ABOVE GROUND LEVEL.

THE ROPE LOCK SYSTEM MUST BE USED IN ALL DITCH CHECK APPLICATIONS.

THE INSTALLATION SHOULD BE CHECKED AND CORRECTED FOR ANY DEVIATION BEFORE COMPACTION. USE A FLAT-BLADED SHOVEL TO TUCK FABRIC DEEPER INTO THE GROUND IF NECESSARY.

COMPACTION IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE WITH THE FRONT WHEEL OF A TRACTOR, SKID STEER, OR ROLLER EXERTING 60 PSI, COMPACT THE UPSTREAM SIDE FIRST AND THEN EACH SIDE TWICE FOR A TOTAL OF FOUR TRIPS

ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.

IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT POND.

IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF THE FLOWS PARALLEL TO THE FENCE, IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.

SEDIMENT DEPOSITS SHALL EITHER BE REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-THIRD THE HEIGHT OF THE SILT FENCE, OR A SECOND SILT FENCE INSTALLED.

IF THE FILTER FABRIC OR GEOTEXTILE HAS DETEIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.

BMP C105: STABILIZED CONSTRUCTION ENTRANCE

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE:

CONSTRUCTION ENTRANCES ARE STABILIZED TO REDUCE THE AMOUNT OF SEDIMENT TRANSPORTED ONTO PAVED ROADS BY VEHICLES OR EQUIPMENT BY CONSTRUCTING A STABILIZED PAD OF QUARRY SPALLS AT ENTRANCES TO CONSTRUCTION SITES.

CONDITIONS OF USE:

CONSTRUCTION ENTRANCES SHALL BE STABILIZED WHEREVER TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE AND TRAVELING ON PAVED ROADS OR OTHER PAVED AREAS WITHIN 1,000 FEET OF THE SITE.

ON LARGE COMMERCIAL, HIGHWAY, AND ROAD PROJECTS, THE DESIGNER AND OR CONTRACTOR SHOULD INCLUDE ENOUGH MATERIALS IN THE CONTRACT TO ALLOW FOR ADDITIONAL STABILIZED ENTRANCES NOT SHOWN IN THE INITIAL CONSTRUCTION SWPPP. IT IS DIFFICULT TO DETERMINE EXACTLY WHERE ACCESS TO THESE PROJECTS WILL TAKE PLACE; ADDITIONAL MATERIALS WILL ENABLE THE CONTRACTOR TO INSTALL THEM WHERE NEEDED.

DESIGN AND INSTALLATION: SEE FIGURE 7.3.2 OF THE EASTERN WATER STORMWATER MANAGEMENT MANUAL OR DETAIL BELOW.

THE SURFACE MATERIAL SHALL BE 4"-8" QUARRY SPALLS. SMALLER CRUSHED ROCK SUCH AS BASE COURSE MAY BE APPROPRIATE IN SOME SITUATIONS BUT, SINCE IT IS MORE LIKELY TO BE TRACKED OFF-SITE, MUST BE APPROVED BY THE LOCAL JURISDICTION.

A SEPARATION GEOTEXTILE SHALL BE PLACED UNDER THE SPALLS TO PREVENT FINE SEDIMENT FROM PUMPING UP INTO THE ROCK PAD. THE GEOTEXTILE SHALL MEET THE FOLLOWING STANDARDS:

GRAB TENSILE STRENGTH (ASTM D4751)	200 PSI MIN.
GRAB TENSILE ELONGATION (ASTM D4632)	30% MAX.
MULLEN BURST STRENGTH (ASTM D3786-80A)	400 PSI MIN.
AOS (ASTM D4751)	20-45 (U.S. STANDARD SIEVE SIZE)

IF SITE CONDITIONS DO NOT WARRANT THE USE OF GEOTEXTILE, IT IS NOT REQUIRED.

MAINTENANCE STANDARDS: IF QUARRY SPALLS (OR HOG FUEL) SHALL BE ADDED IF THE PAD IS NO LONGER IN ACCORDANCE WITH THE SPECIFICATIONS.

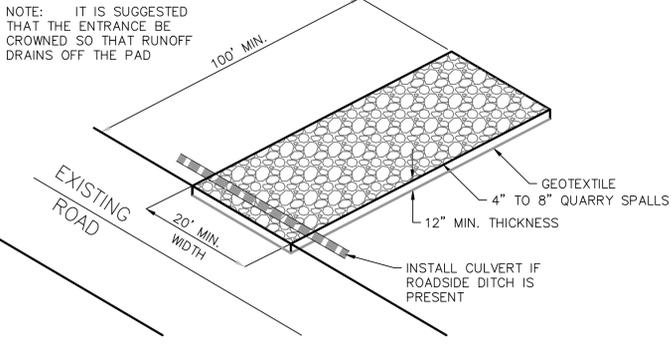
IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, THEN ALTERNATIVE MEASURES TO KEEP THE STREETS FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE STREET SWEEPING, AN INCREASE IN THE DIMENSIONS OF THE ENTRANCE, OR THE INSTALLATION OF A WHEEL WASH.

ANY SEDIMENT THAT IS TRACKED ONTO PAVEMENT SHALL BE REMOVED BY SHOVELING OR STREET SWEEPING. THE SEDIMENT COLLECTED BY SWEEPING SHALL BE REMOVED OR STABILIZED ON SITE. THE PAVEMENT SHALL NOT BE CLEANED BY WASHING DOWN THE STREET, EXCEPT WHEN SWEEPING IS INEFFECTIVE AND THERE IS A THREAT TO PUBLIC SAFETY. IF IT IS NECESSARY TO WASH THE STREETS, THE CONSTRUCTION OF A SMALL SUMP SHALL BE CONSIDERED. THE SEDIMENT WOULD THEN BE WASHED INTO THE SUMP WHERE IT CAN BE CONTROLLED.

ANY QUARRY SPALLS THAT ARE LOOSENED FROM THE PAD, WHICH END UP ON THE ROADWAY SHALL BE REMOVED IMMEDIATELY.

IF VEHICLES ARE ENTERING OR EXITING THE SITE AT POINTS OTHER THAN THE CONSTRUCTION ENTRANCE(S), FENCING (SEE BMPS C103 AND C104) SHALL BE INSTALLED TO CONTROL TRAFFIC.

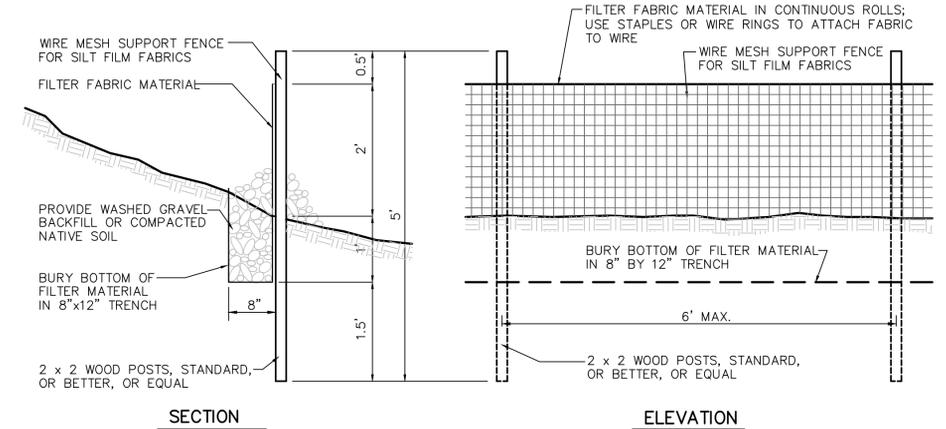
UPON PROJECT COMPLETION AND SITE STABILIZATION, ALL CONSTRUCTION ACCESSES INTENDED AS PERMANENT ACCESS FOR MAINTENANCE SHALL BE PERMANENTLY STABILIZED.



ROCK CONSTRUCTION ENTRY

NOT TO SCALE

2



SILT FENCE DETAIL

NOT TO SCALE

1

SCALE:		PROJ #:	24-3776
HORIZONTAL:		DATE:	10/17/24
N/A		DRAWN:	RMA
VERTICAL:		REVIEWED:	TRW
N/A			

A	10/17/24	RMA	ORIGINAL PREPARATION
NO.	DATE	BY	REVISIONS

WCE
WHIPPLE CONSULTING ENGINEERS
21 S. PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

LEGACY PHASE 'F' MASS GRADING SWPPP BMPs
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019

JOHN MICHAEL ANDERSON
STATE OF WA
REGISTERED PROFESSIONAL ENGINEER
57584
10/17/24

SHEET C2.2
JOB NUMBER
24-3776

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NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET
IN A CONCRETE MONUMENT AT
GROUND LEVEL WITH AN ELEV. 2070.160
AND DESIGNATION OF GP32090-49



BMP C220: STORM DRAIN INLET PROTECTION

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE: TO PREVENT COARSE SEDIMENT FROM ENTERING DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA

CONDITIONS OF USE: WHERE STORM DRAIN INLETS ARE TO BE MADE OPERATIONAL BEFORE PERMANENT STABILIZATION OF THE DISTURBED DRAINAGE AREA, PROTECTION SHOULD BE PROVIDED FOR ALL STORM DRAIN INLETS DOWNSLOPE AND WITHIN 500 FEET OF A DISTURBED OR CONSTRUCTION AREA, UNLESS THE RUNOFF THAT ENTERS THE CATCH BASIN WILL BE CONVEYED TO A SEDIMENT POND OR TRAP. INLET PROTECTION MAY BE USED ANYWHERE TO PROTECT THE DRAINAGE SYSTEM. IT IS LIKELY THAT THE DRAINAGE SYSTEM WILL REQUIRE CLEANING.

TABLE 7.3.9 (IN THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL) LISTS SEVERAL OPTIONS FOR INLET PROTECTION. ALL OF THE METHODS FOR STORM DRAIN INLET PROTECTION ARE PRONE TO PLUGGING AND REQUIRE A HIGH FREQUENCY OF MAINTENANCE. DRAINAGE AREAS SHOULD BE LIMITED TO 1 ACRE OR LESS. EMERGENCY OVERFLOWS MAY BE REQUIRED WHERE STORMWATER PONDING WOULD CAUSE A HAZARD. IF AN EMERGENCY OVERFLOW IS PROVIDED, ADDITIONAL END-OF-PIPE TREATMENT MAY BE REQUIRED.

DESIGN AND INSTALLATION: **EXCAVATED DROP INLET PROTECTION** – AN EXCAVATED IMPOUNDMENT AROUND THE STORM DRAIN. SEDIMENT SETTLES OUT OF THE STORMWATER PRIOR TO ENTERING THE STORM DRAIN.

- DEPTH 1–2 FT AS MEASURED FROM THE CREST OF THE INLET STRUCTURE.
- SIDE SLOPES OF EXCAVATION NO STEEPER THAT 2:1
- MINIMUM VOLUME OF EXCAVATION 35 CUBIC YARDS
- SHAPE THE BASIN TO FIT THE SITE WITH THE LONGEST DIMENSION ORIENTED TOWARD THE LONGEST INFLOW AREA.
- INSTALL PROVISIONS FOR DRAINING TO PREVENT STANDING WATER PROBLEMS.
- CLEAR THE AREA OF ALL DEBRIS.
- GRADE THE APPROACH TO THE INLET UNIFORMLY.
- DRILL WEEP HOLES INTO THE SIDES OF THE INLET.
- PROTECT WEEP HOLES WITH SCREEN WIRE AND WASHED AGGREGATE.
- SEAL WEEP HOLES WHEN REMOVING STRUCTURE AND STABILIZING AREA.
- IT MAY BE NECESSARY TO BUILD A TEMPORARY DIKE TO THE DOWN SLOPE STRUCTURE TO PREVENT BYPASS FLOW.

BLOCK AND GRAVEL FILTER – A BARRIER FORMED AROUND THE STORM DRAIN INLET WITH STANDARD CONCRETE BLOCKS AND GRAVEL. SEE FIGURE 4.15 IN THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL.

- HEIGHT 1–2 FT ABOVE THE INLET.
- RECESS THE FIRST ROW 2" INTO THE GROUND FOR STABILITY.
- SUPPORT SUBSEQUENT COURSES BY PLACING A 2X4 THROUGH THE BLOCK OPENING.
- DO NOT USE MORTAR.
- LAY SOME BLOCKS IN THE BOTTOM ROW ON THEIR SIDE FOR DEWATERING THE POOL.
- PLACE HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2" OPENINGS OVER ALL BLOCK OPENINGS.
- PLACE GRAVEL JUST BELOW THE TOP OF BLOCKS ON SLOPES 2:1 OR FLATTER.
- AN ALTERNATIVE DESIGN IN A GRAVEL DONUT.
- INLET SLOPE OF 3:1.
- OUTLET SLOPE OF 2:1.
- 1–FOOT WIDE LEVEL STONE AREA BETWEEN THE STRUCTURE AND THE INLET.
- INLET SLOPES STONES 3" IN DIAMETER OR LARGER.
- OUTLET SLOPE USE GRAVEL 1/2" TO 3/4" AT A MINIMUM THICKNESS OF 1 FOOT.

GRAVEL AND WIRE MESH INLET – A GRAVEL BARRIER PLACED OVER TOP OF THE INLET. THIS STRUCTURE DOES NOT PROVIDE AND OVERFLOW

- HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2" OPENINGS.
- COARSE AGGREGATE.
- HEIGHT 1–FOOT OR MORE, 18" WIDER THAN INLET ON ALL SIDES.
- PLACE WIRE MESH OVER THE DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1–FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE.
- IF MORE THAN ONE STRIP OF MESH IN NECESSARY, OVERLAP THE STRIPS.
- PLACE COARSE AGGREGATE OVER THE WIRE MESH.
- THE DEPTH OF THE GRAVEL SHOULD BE AT LEAST 12" OVER THE ENTIRE INLET OPENING AND EXTEND AT LEAST 18" ON ALL SIDES.

DESIGN AND INSTALLATION: CONTINUED

CATCH BASIN FILTERS – INSERTS SHOULD BE DESIGNED BY THE MANUFACTURER FOR USE AT CONSTRUCTION SITES. THE LIMITED SEDIMENT STORAGE CAPACITY INCREASES THE AMOUNT OF INSPECTION AND MAINTENANCE REQUIRED, WHICH MAY BE DAILY FOR HEAVY SEDIMENT LOADS. THE MAINTENANCE REQUIREMENTS CAN BE REDUCED BY COMBINING 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.

- 5 CUBIC FEET OF STORAGE
- DEWATERING PROVISIONS
- HIGH-FLOW BYPASS THAT WILL NOT CLOG UNDER NORMAL USE AT A CONSTRUCTION SITE.
- THE CATCH BASIN FILTER IS INSERTED IN THE CATCH BASIN JUST BELOW THE GRATING.

CURB INLET PROTECTION WITH WOODEN WEIR – BARRIER FORMED AROUND CURB INLET WITH A WOODEN FRAME AND GRAVEL.

- WIRE MESH WITH 1/2" OPENINGS.
- EXTRA STRENGTH FILTER FABRIC TO THE FRAME.
- PILE COARSE WASHED AGGREGATE AGAINST THE WIRE/FABRIC.
- PLACE WEIGHT ON FRAME ANCHORS.

BLOCK AND GRAVEL CURB INLET PROTECTION – BARRIER FORMED AROUND AN INLET WITH CONCRETE BLOCKS AND GRAVEL. SEE FIGURE 7.3.16 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL.

- WIRE MESH WITH 1/2" OPENINGS.
- PLACE 2 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 OUT 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.

CURB AND GUTTER SEDIMENT BARRIER – SANDBAG OR ROCK BERM (RIPRAP AND AGGREGATE) 3 FEET HIGH AND 3 FEET WIDE IN A HORSESHOE SHAPE. SEE FIGURE 7.3.17 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL.

- CONSTRUCT 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 OUTSIDE OF THE BERM SIZED TO SEDIMENT TRAP STANDARDS FOR PROTECTING A CULVERT INLET.
- CATCH BASIN FILTERS SHOULD BE INSPECTED FREQUENTLY, ESPECIALLY AFTER STORM EVENTS. IF THE INSERT BECOMES CLOGGED, IT SHOULD BE CLEANED OR REPLACED.
- FOR SYSTEMS USING STONE FILTERS: IF THE STONE FILTER BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY FROM THE INLET AND CLEANED OR REPLACED. SINCE CLEANING OF GRAVEL AT A CONSTRUCTION SITE MAY BE DIFFICULT, AN ALTERNATIVE APPROACH WOULD BE USED TO USE THE CLOGGED STONES FILL AND PUT FRESH STONE 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.

MAINTENANCE STANDARDS:

BMP C151: CONCRETE HANDLING

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE: CONCRETE WORK CAN GENERATE PROCESS WATER AND SLURRY THAT CONTAIN FINE PARTICLES AND HIGH PH, BOTH OF WHICH CAN VIOLATE WATER QUALITY STANDARDS IN THE RECEIVING WATER. THIS BMP IS INTENDED TO MINIMIZE AND ELIMINATE CONCRETE PROCESS WATER AND SLURRY FROM ENTERING WATERS OF THE STATE.

CONDITIONS OF USE: ANY TIME CONCRETE IS USED, THESE MANAGEMENT PRACTICES SHALL BE UTILIZED. CONCRETE CONSTRUCTION PROJECTS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- CURBS
- SIDEWALKS
- ROADS
- BRIDGES
- FOUNDATIONS
- FLOORS
- RUNWAYS

DESIGN AND INSTALLATION: CONCRETE TRUCK CHUTES, PUMPS, AND INTERNALS SHALL BE WASHED OUT ONLY INTO FORMED AREAS AWAITING INSTALLATION OF CONCRETE OR ASPHALT.

UNUSED CONCRETE REMAINING IN THE TRUCK AND PUMP SHALL BE RETURNED TO THE ORIGINATING BATCH PLANT FOR RECYCLING.

HAND TOOLS INCLUDING, BUT NOT LIMITED TO, SCREEDS, SHOVELS, RAKES, FLOATS, AND TROWELS SHALL BE WASHED OFF ONLY INTO FORMED AREAS AWAITING INSTALLATION OF CONCRETE OR ASPHALT.

EQUIPMENT THAT CANNOT BE EASILY MOVED, SUCH AS CONCRETE PAVERS, SHALL ONLY BE WASHED IN AREAS THAT DO NOT DIRECTLY DRAIN TO NATURAL OR CONSTRUCTED STORMWATER CONVEYANCES.

WASHDOWN FROM AREAS SUCH AS CONCRETE AGGREGATE DRIVEWAYS SHALL NOT DRAIN DIRECTLY TO NATURAL OR CONSTRUCTED STORMWATER CONVEYANCES.

WHEN NO FORMED AREAS ARE AVAILABLE, WASHWATER AND LEFTOVER PRODUCT SHALL BE CONTAINED IN A LINED CONTAINER. CONTAINED CONCRETE SHALL BE DISPOSED OF IN A MANNER THAT DOES NOT VIOLATE GROUNDWATER OR SURFACE WATER QUALITY STANDARDS.

MAINTENANCE STANDARDS: CONTAINERS SHALL BE CHECKED FOR HOLES IN THE LINER DAILY DURING CONCRETE POURS AND REPAIRED THE SAME DAY.

BMP C140: DUST CONTROL

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE: DUST CONTROL PREVENTS WIND TRANSPORT OF DUST FROM DISTURBED SOIL SURFACES ONTO ROADWAYS, DRAINAGE WAYS, AND SURFACE WATERS. WIND EROSION IS A SIGNIFICANT CAUSE OF SOIL MOVEMENT FROM CONSTRUCTION SITES IN EASTERN WASHINGTON. ALTHOUGH WIND EROSION CAN CONTRIBUTE TO WATER QUALITY IMPACTS, DUST CONTROL IS REGULATED IN SOME AREAS OF EASTERN WASHINGTON PRIMARILY THROUGH LOCAL AIR QUALITY AUTHORITIES. WHERE SUCH AN ENTITY EXISTS, CONTACT THE LOCAL AIR QUALITY AUTHORITY FOR APPROPRIATE AND REQUIRED BMPs FOR DUST CONTROL TO IMPLEMENT AT YOUR PROJECT SITE.

CONDITIONS OF USE: IN AREAS (INCLUDING ROADWAYS) SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST WHERE ON-SITE AND OFF-SITE IMPACTS TO ROADWAYS, DRAINAGE WAYS, SURFACE WATERS ARE LIKELY.

DESIGN AND INSTALLATION: CONTACT YOUR LOCAL AIR POLLUTION CONTROL AUTHORITY FOR GUIDANCE AND TRAINING ON OTHER DUST CONTROL MEASURES. COMPLIANCE WITH THE LOCAL AIR POLLUTION CONTROL AUTHORITY CONSTITUTES COMPLIANCE WITH THIS BMP.

WATER APPLIED TO CONSTRUCTION SITES FOR DUST CONTROL MUST NOT LEAVE THE SITE AS SURFACE RUNOFF.

SEE ALSO "TECHNIQUES FOR DUST PREVENTION AND SUPPRESSION," ECOLOGY PUBLICATION NUMBER 96-433, REVISED APRIL 2002.

TECHNIQUES THAT CAN BE USED FOR CONSTRUCTION PROJECTS INCLUDE:

VEGETATE OR MULCH AREAS THAT WILL NOT RECEIVE VEHICLE TRAFFIC. IN AREAS WHERE PLANTING, MULCHING, OR PAVING IS IMPRACTICAL, APPLY GRAVEL OR LANDSCAPING ROCK.

LIMIT DUST GENERATION BY CLEARING ONLY THOSE AREAS WHERE IMMEDIATE ACTIVITY WILL TAKE PLACE, LEAVING THE REMAINDER AREA(S) IN THE ORIGINAL CONDITION, IF STABLE. MAINTAIN THE ORIGINAL GROUND COVER AS LONG AS PRACTICAL.

CONSTRUCT NATURAL OR ARTIFICIAL WINDBREAKS OR WINDSCREENS. THESE MAY BE DESIGNED AS ENCLOSURES FOR SMALL DUST SOURCES.

SPRINKLE THE SITE WITH WATER UNTIL THE SURFACE IS WET. REPEAT AS NEEDED. TO PREVENT CARRYOUT OF MUD ONTO STREET, REFER TO STABILIZED CONSTRUCTION ENTRANCE (BMP C105).

IRRIGATION WATER CAN BE USED FOR DUST CONTROL. IRRIGATION SYSTEMS SHOULD BE INSTALLED AS A FIRST STEP ON SITES WHERE DUST CONTROL IS A CONCERN.

SPRAY EXPOSED SOIL AREAS WITH A DUST PALLIATIVE. FOLLOWING THE MANUFACTURER'S INSTRUCTIONS AND CAUTIONS REGARDING HANDLING AND APPLICATION, USED OIL IS PROHIBITED FROM USE AS A DUST SUPPRESSANT. LOCAL GOVERNMENTS MAY APPROVE OTHER DUST PALLIATIVES SUCH AS CALCIUM CHLORIDE OR PAM.

PAM (BMP C126) ADDED TO WATER AT A RATE OF 0.5LBS PER 1,000 GALLONS OF WATER PER ACRE AND APPLIED FROM A WATER TRUCK IS MORE EFFECTIVE THAN WATER ALONE. THE IS DUE TO THE INCREASED INFILTRATION OF WATER INTO THE SOIL AND REDUCED EVAPORATION. IN ADDITION, SMALL SOIL PARTICLES ARE BONDED TOGETHER AND ARE NOT AS EASILY TRANSPORTED BY WIND. ADDING PAM MAY ACTUALLY REDUCE THE QUANTITY OF WATER NEEDED FOR DUST CONTROL, ESPECIALLY IN EASTERN WASHINGTON, SINCE THE WHOLESALE COST OF PAM IS ABOUT \$4.00 PER POUND, THIS IS AN EXTREMELY COST-EFFECTIVE DUST CONTROL METHOD.

TECHNIQUES THAT CAN BE USED FOR UNPAVED ROADS AND LOTS INCLUDE:

LOWER SPEED LIMITS. HIGH VEHICLE SPEEDS INCREASES THE AMOUNT OF DUST STIRRED UP FROM UNPAVED ROADS AND LOTS.

UPGRADE ROAD SURFACE STRENGTH BY IMPROVING PARTICLE SIZE, SHAPE, AND MINERAL TYPES THAT MAKE UP THE SURFACE AND BASE MATERIALS.

ADD SURFACE GRAVEL TO REDUCE THE SOURCE OF DUST EMISSION. LIMIT THE AMOUNT OF FINE PARTICLES (THOSE SMALLER THAN .075 MILLIMETERS) TO 20 PERCENT.

USE GEOTEXTILE FABRIC TO INCREASE THE STRENGTH OF NEW ROADS OR ROADS UNDERGOING RECONSTRUCTION.

ENCOURAGE THE USE OF ALTERNATE, PAVED ROUTES, IF AVAILABLE.

RESTRICT USE BY TRACKED VEHICLES AND HEAVY TRUCKS TO PREVENT DAMAGE TO ROAD SURFACE AND BASE.

APPLY CHEMICAL DUST SUPPRESSANTS USING THE ADMIX METHOD, BLENDING THE PRODUCT WITH THE TOP FEW INCHES OF MATERIAL. SUPPRESSANTS MAY ALSO BE APPLIED AS SURFACE TREATMENTS.

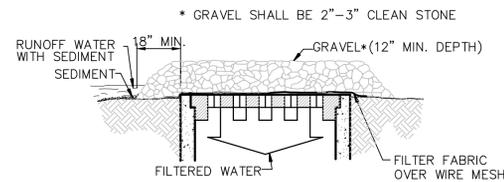
PAVE UNPAVED PERMANENT ROADS AND OTHER TRAFFICKED AREAS.

USE VACUUM STREET SWEEPERS.

REMOVED MUD AND OTHER DIRT PROMPTLY SO IT DOES NOT DRY AND THEN TURN INTO DUST.

LIMIT DUST-CAUSING WORK ON WINDY DAYS.

MAINTENANCE STANDARDS: REPAY AREA AS NECESSARY TO KEEP DUST TO A MINIMUM. WATER APPLIED TO CONSTRUCTION SITES FOR DUST CONTROL MUST NOT LEAVE THE SITE AS SURFACE RUNOFF.



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED ACRES.

GRAVEL AND WIRE MESH INLET SEDIMENT FILTER

NOT TO SCALE



SCALE:		PROJ #:	24-3776
HORIZONTAL:		DATE:	10/17/24
N/A		DRAWN:	RMA
VERTICAL:		REVIEWED:	TRW
N/A			
A	10/17/24	RMA	ORIGINAL PREPARATION
NO.	DATE	BY	REVISIONS

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LEGACY PHASE 'F' MASS GRADING SWPPP BMPs
VALLEY VISTA DR & LEGACY RIDGE DR LIBERTY LAKE, WA 99019

Michael Andrew
REGISTERED PROFESSIONAL ENGINEER
57584
10/17/24

SHEET C2.3

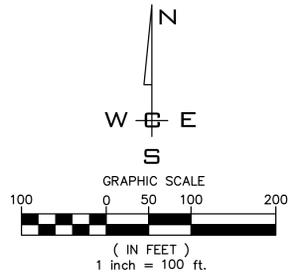
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NAVD - 88
THE MARK IS A WSDOT BRASS DISK SET
IN A CONCRETE MONUMENT AT
GROUND LEVEL WITH AN ELEV. 2070.160
AND DESIGNATION OF GP32090-49



GRADING QUANTITIES
 CUT: 392,000 CY
 FILL: 360,000 CY



GRADING PLAN
 SCALE: 1" = 100'

HAUL NOTE:
 ALL EXCESS MATERIAL TO REMAIN ONSITE. NO HAUL OFF OF MATERIAL IS PROPOSED.

NO.	DATE	BY	ORIGINAL PREPARATION	REVISIONS
A	10/17/24	RMA		

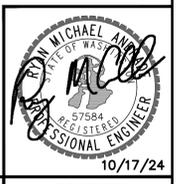
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DATE: 10/17/24
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- TRAFFIC
- PLANNING
- LANDSCAPE
- OTHER



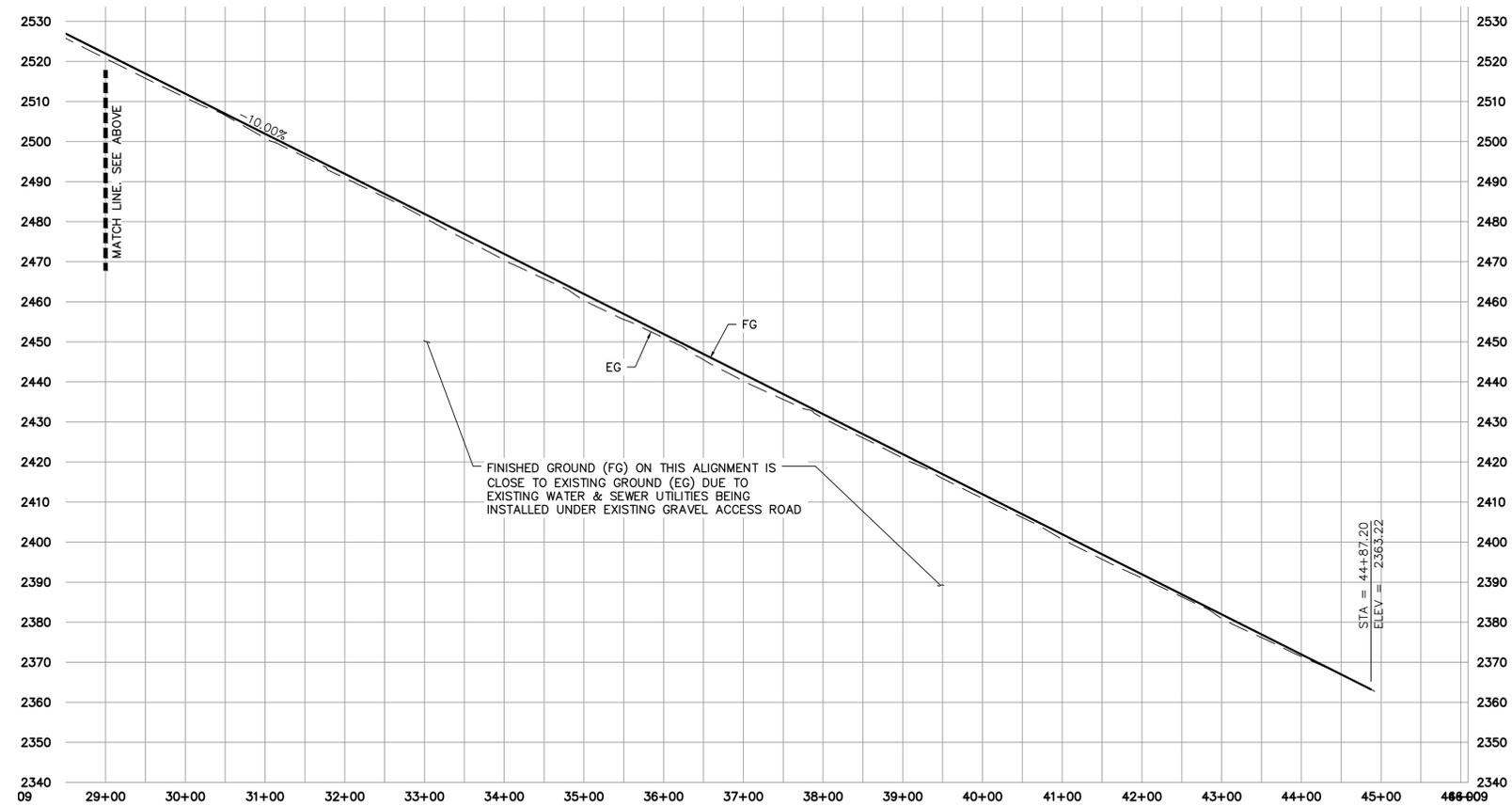
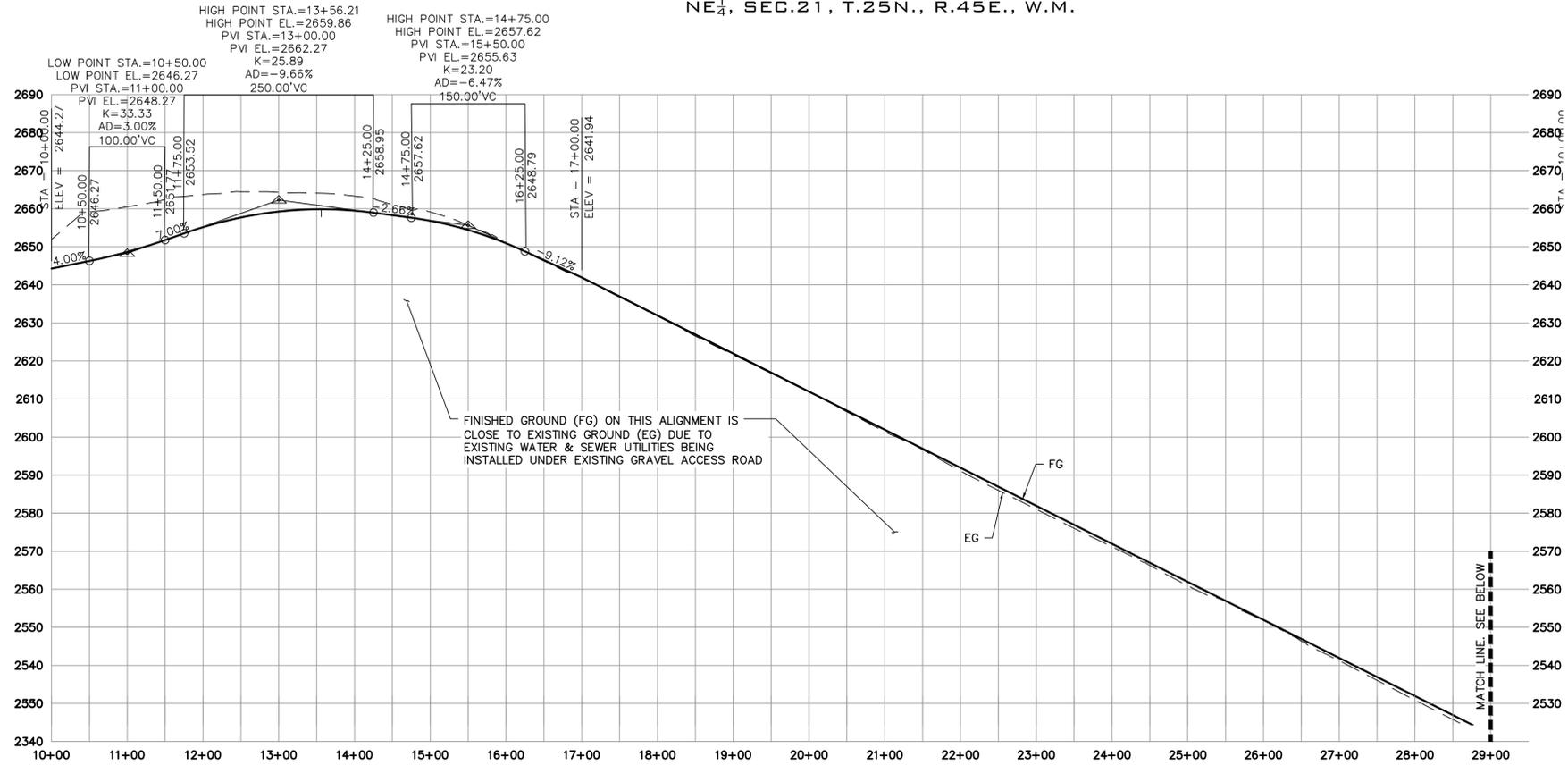
LEGACY PHASE 'F' MASS GRADING GRADING PLAN
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019



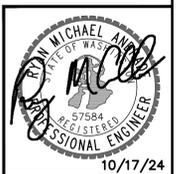
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NE 1/4, SEC. 21, T. 25N., R. 45E., W.M.



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NO.	DATE	BY	REVISIONS
A	10/17/24	RMA	ORIGINAL PREPARATION

SCALE:
HORIZONTAL:
1" = 100'
VERTICAL:
1" = 20'

PROJ #: 24-3776
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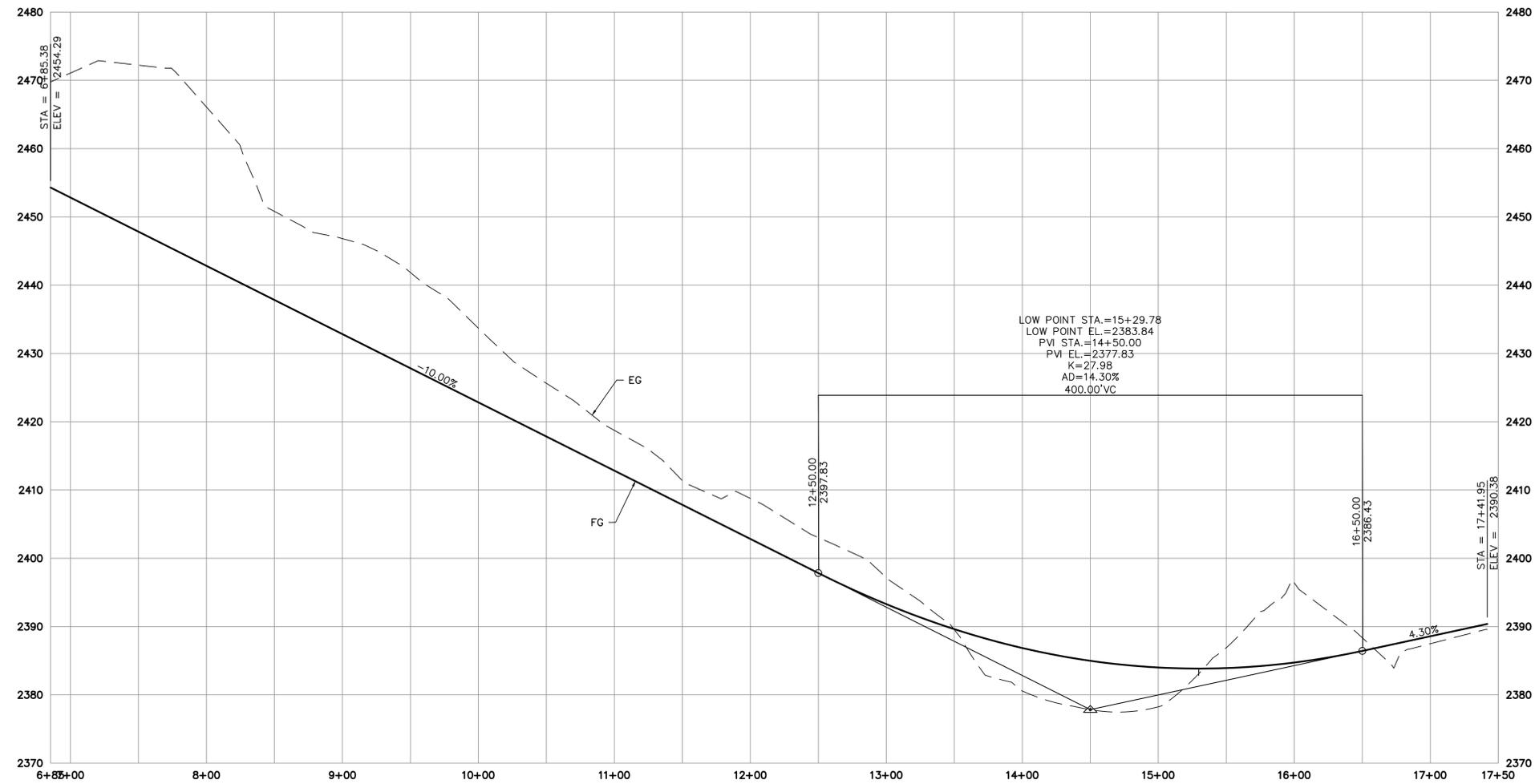
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- PLANNING
- LANDSCAPE
- OTHER



**LEGACY PHASE 'F' MASS GRADING
VALLEY VISTA DRIVE PROFILE
VALLEY VISTA DR & LEGACY RIDGE DR
LIBERTY LAKE, WA 99019**

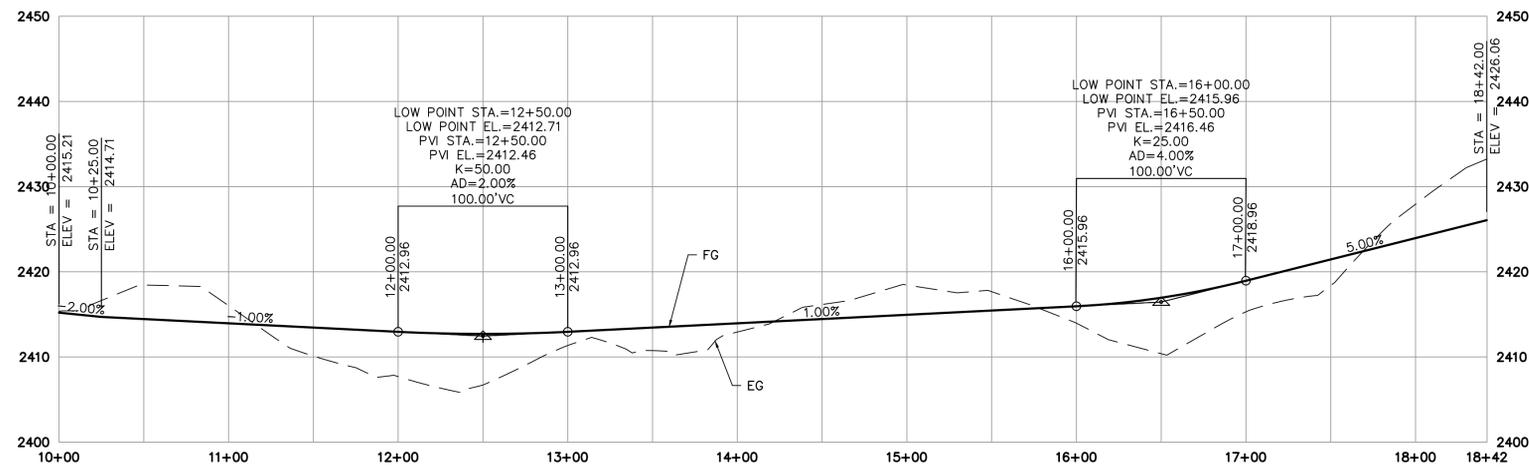
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ROAD A PROFILE

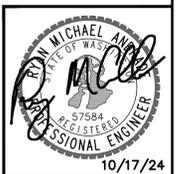
H SCALE: 1" = 50'
V SCALE: 1" = 10'



ROAD B PROFILE

H SCALE: 1" = 50'
V SCALE: 1" = 10'

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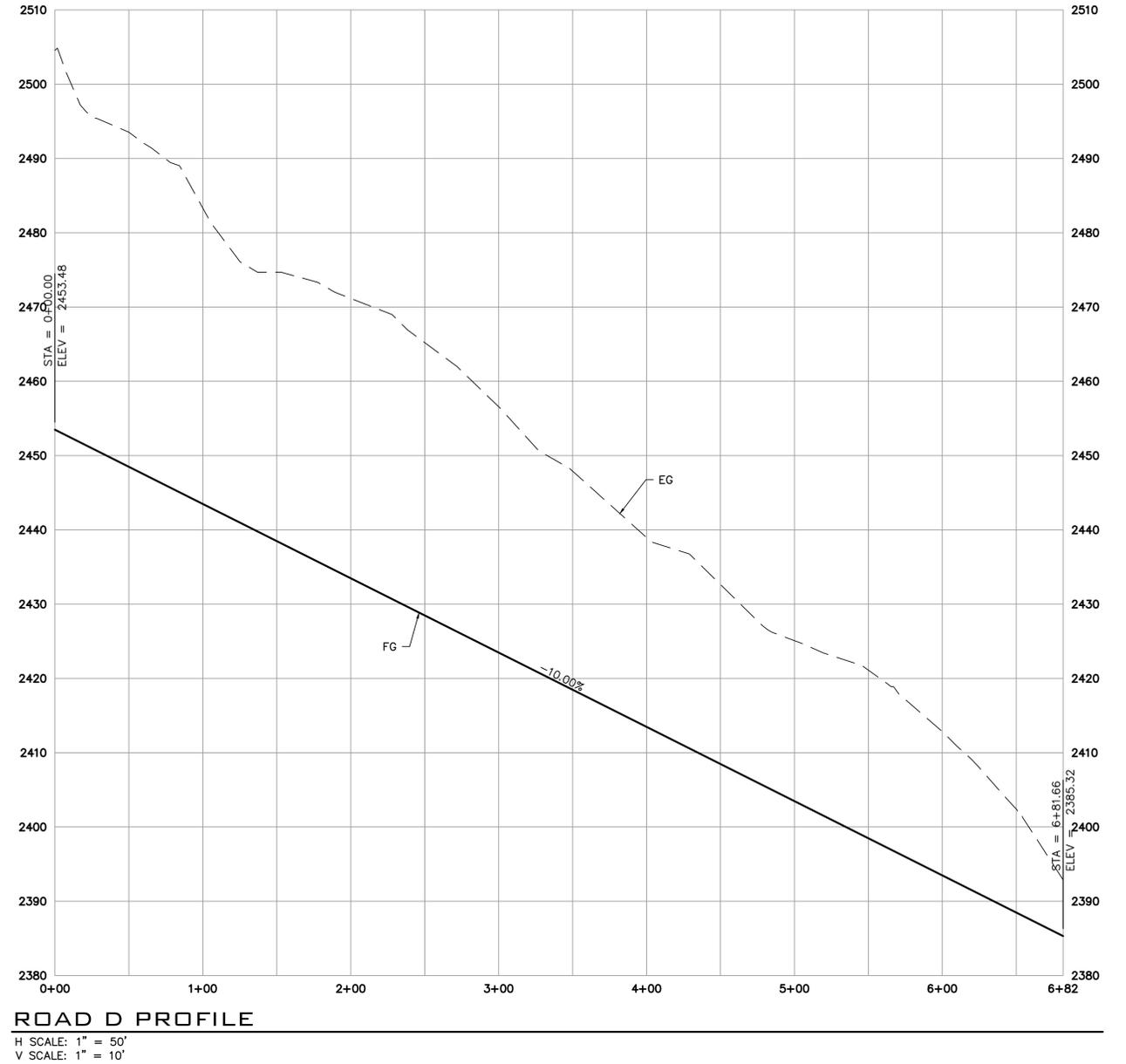
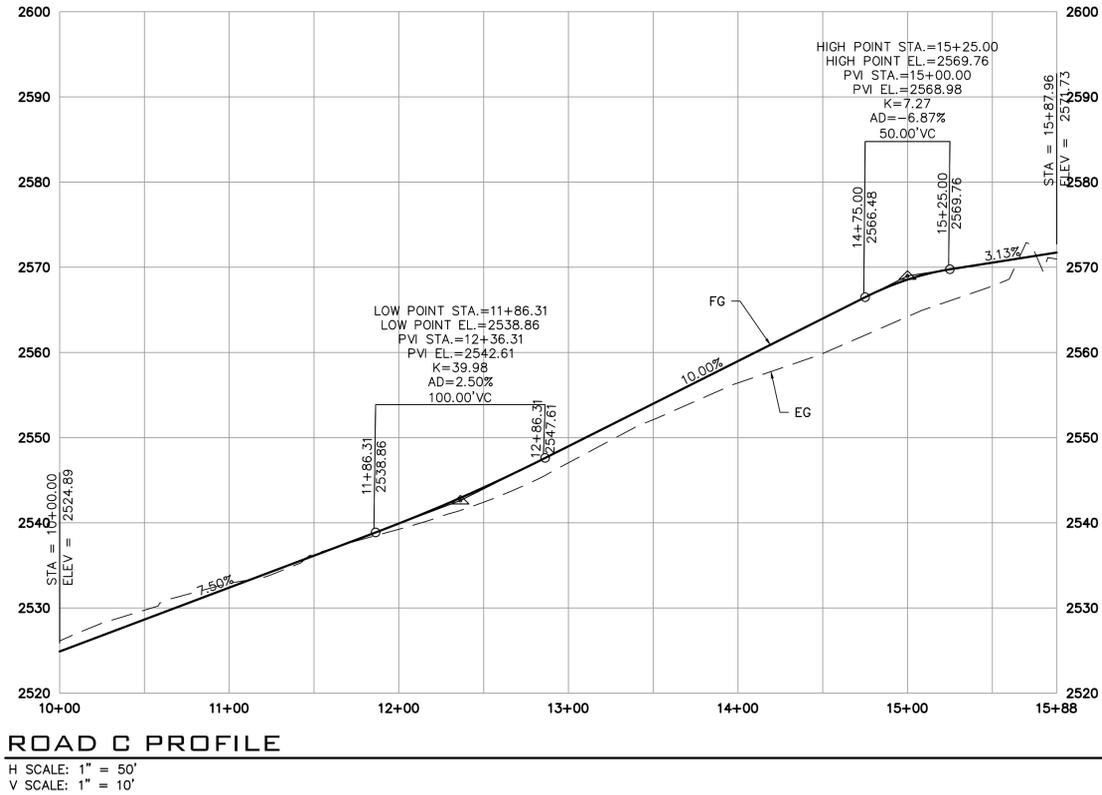
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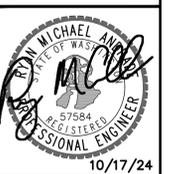
**LEGACY PHASE 'F' MASS GRADING
ROAD A & B PROFILES
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