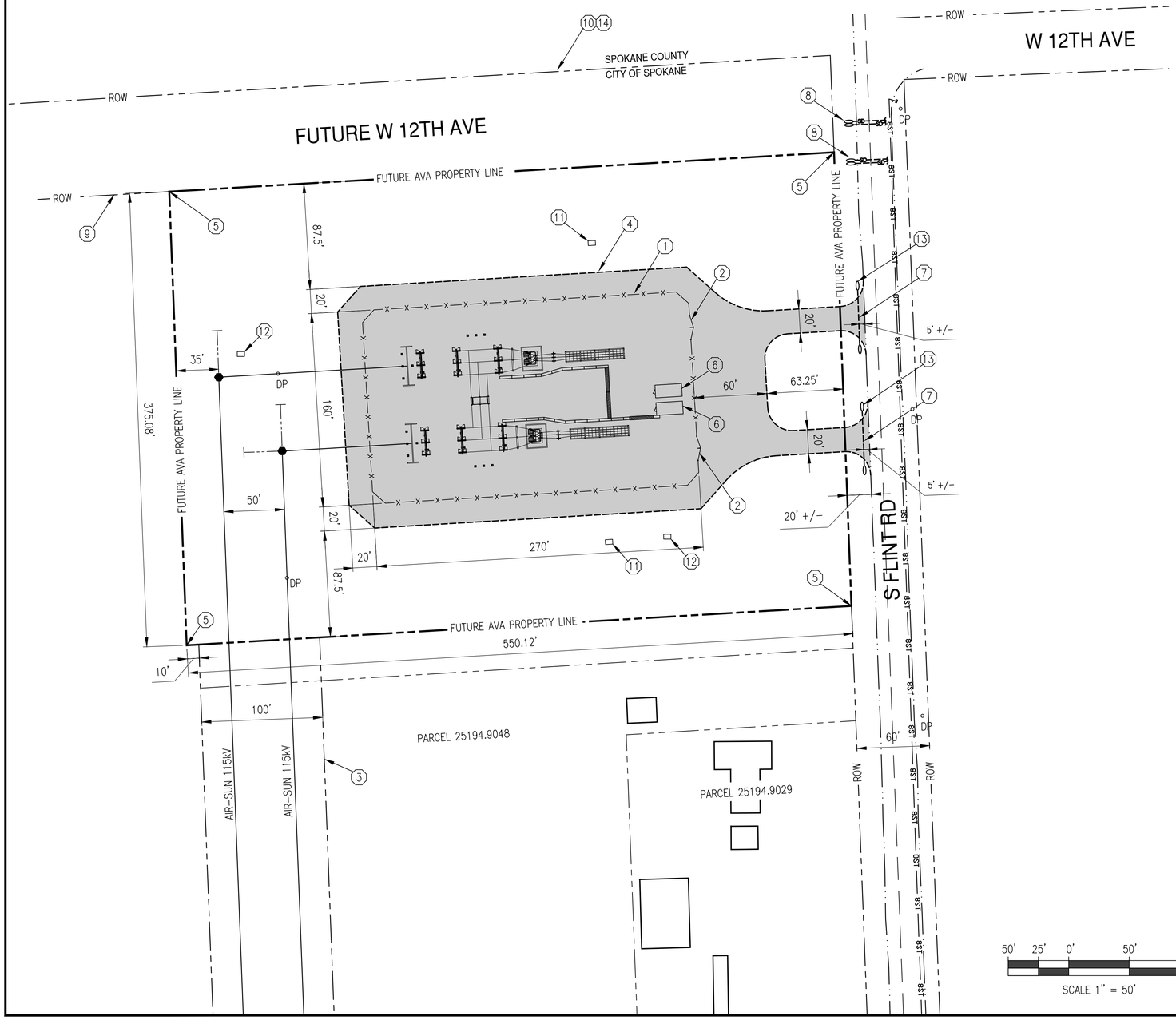
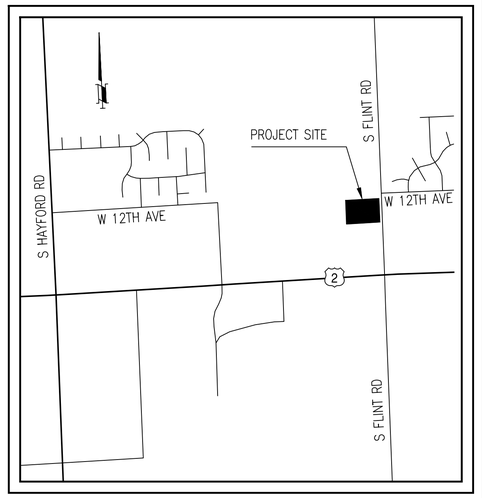
P-1000

S/2, SE/4 SEC 19, T25N, R42E WM
SPOKANE, WA



SITE DATA

ADDRESS:	9370 W US 2 HWY (FINAL ADDRESS TBD)
LEGAL DESCRIPTION:	S/2 OF SE/4 OF SEC 19, T25N, R42E WM
PARCEL NUMBER:	25194.9071 (FINAL PARCEL # TBD)
ZONING:	LIGHT INDUSTRIAL
FLOOD PLAIN:	NONE
CODE EDITION:	2012 NATIONAL ELECTRIC SAFETY CODE
PROPERTY AREA:	22.46 ACRES (4.74 ACRES FUTURE)
IMPERVIOUS AREA:	<1% TOTAL AREA
TALLEST STRUCTURE:	36-FT STEEL A-FRAME



VICINITY MAP
SCALE: NONE

GENERAL CONSTRUCTION NOTES:

1. THESE PLANS ARE FOR CONSTRUCTION OF THE SUBSTATION PAD AND GRADING. SEE AVISTA PLANS FOR DEVELOPMENT OF SUBSTATION EQUIPMENT AND STRUCTURES.
2. OFFSETS MEASURED FROM PROPERTY CORNERS.
3. CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL PER DEPARTMENT OF ECOLOGY, LOCAL CITY REQUIREMENTS AND THE STORM WATER POLLUTION PREVENTION (SWPP) PLAN REQUIREMENTS.
4. ALL DISTURBED AREAS OUTSIDE THE GRAVEL PAD ARE TO BE SEEDED WITH A NATIVE GRASS MIX PER LANDSCAPE PLAN.

KEYNOTES

1. 8' EXPANDED METAL FENCE W/ BARBED WIRE
2. 20' DOUBLE SWING DRIVE GATE
3. TRANSMISSION LINE EASEMENT
4. SUBSTATION GRAVEL PAD
5. PROPERTY CORNER
6. PREFABRICATED CONCRETE ENCLOSURE
7. PERMITTED APPROACH
8. EXISTING CULVERT
9. FUTURE 12TH AVE EASEMENT
10. CITY LIMITS
11. DISTRIBUTION VAULT
12. FIBER OPTIC VAULT
13. NEW CULVERT
14. EXISTING FENCE ON PL

LEGEND

DP	DISTRIBUTION POLE
CP	COMMUNICATION POLE
0/3	TRANSMISSION POLE – NEW
TP	TRANSMISSION POLE – EXISTING
FH	FIRE HYDRANT
V	COMM VAULT
TBM	TEMP BENCH MARK
27 / 34	SECTION QUARTER CORNER
	GUY ANCHOR
	6-FT CHAIN LINK FENCE
	8-FT SUBSTATION FENCE
8ST	GAS LINE
	EDGE OF PAVEMENT
	SECTION LINE
	RIGHT OF WAY
	AVISTA PROPERTY LINE

BRIAN JARED PARSONS
STATE OF WASHINGTON
53228
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

811
Know what's below.
Call before you dig.

NEW DRAWING

115kV SUBSTATION
FLINT ROAD - SPOKANE WASHINGTON
SITE PLAN

AVISTA CORP
SPOKANE, WASHINGTON

NO	DATE	REVISION	BY	CKD	AS BUILT
A	8-5-2021	RELEASED FOR PERMITTING	BJP		

1"=50'	8-5-21	APPROVED	
SCALE	DATE		
DESIGN PARSONS	CHECKED		
DRAWN	NOTED	DATE	
CHECKED	NOTED	SHT ___ OF ___	P-1000

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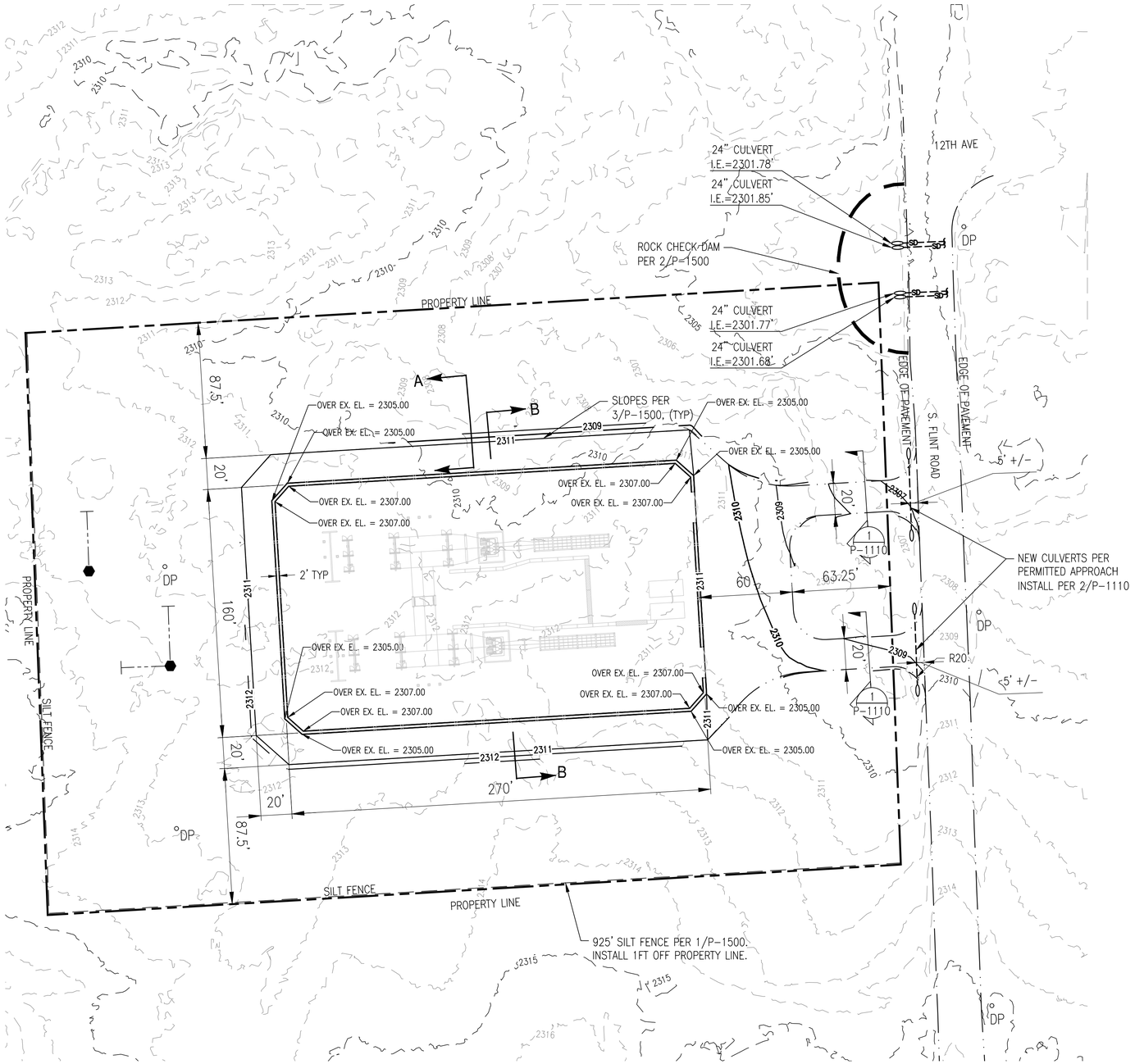

SE/4 SEC 19, T25N, R42E WM
SPOKANE COUNTY, WA

GRADING NOTES

1. SUBSTATION PAD AND AREAS OF FILL: GRUB AND STRIP ALL ORGANIC MATERIAL UNTIL UNDISTURBED NATIVE MATERIAL IS REACHED (12"+/−). STOCKPILE THE NATIVE TOPSOIL FOR USE ON SLOPES AND LANDSCAPING. TOPSOIL TO BE FREE OF ROOTS, WOODY ORGANIC MATTER, AND MAN−MADE DEBRIS. MAXIMUM DEPTH OF STOCKPILE TO BE 5 FEET ABOVE EXISTING GROUND. BACKFILL WITH APPROVED FILL, SEE GRADING SPECIFICATION.
2. CONTOURS AND SPOT ELEVATIONS SHOW FINAL GRADED ELEVATIONS. BLEND SIDE SLOPES TO EXISTING GROUND ELEVATION AT GRADING CORNERS. ALL CUTS AND FILLS SHALL BE SLOPED 1V:2.5H MAXIMUM UNLESS NOTED OTHERWISE ON GRADING PLAN.
3. BASIS OF VERTICAL CONTROL: TEMPORARY BENCH MARK SET AS PART OF AVISTA SURVEY − ELEVATION = 2311 FT (NAVD 88)
4. EXCAVATION SPOILS TO BE REMOVED AND DISPOSED OFF SITE IN A LEGAL MANNER OR CRUSHED AND REUSED AS FILL.
5. SEE SPECIFICATIONS FOR FILL MATERIAL REQUIREMENTS.
6. NATIVE SOILS AT FILL AREAS SHALL BE SCARIFIED AND ALLOWED TO DRY PRIOR TO COMPACTION. FILL AREA TO BE PROOF COMPACTED TO 95% ASTM D−1557 PRIOR TO PLACING FILL PER THE GEOTECHNICAL REPORT.
7. FILL SHALL BE PLACED IN NOT MORE THAN 8 INCH UNCOMPACTED LIFTS AND BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (MODIFIED PROCTOR). ALL CRUSHED ROCK ACCESS ROAD SURFACES SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY.
8. ALL COMPACTION SHALL BE DONE BY MECHANICAL MEANS.
9. CONTRACTOR SHALL CALL UTILITY LOCATE SERVICE PRIOR TO START OF CONSTRUCTION.

GRADING DATA

GRADING AREA:	1.6 ACRES
GRUBBING VOLUME:	3,000 CY
EXCAVATION VOLUME:	9,500 CY
EXCAVATION DEPTH:	4 FT MAX
EXCAVATION AT FENCE LINE:	6 FT MAX
FILL VOLUME:	8,400 CY
FILL DEPTH:	6 FT MAX

LEGEND

- HUB — AVISTA HUB & TACK
- DP — DISTRIBUTION POLE
- TP — TRANSMISSION POLE
- PROPERTY PIN
- NGS MONUMENT
- PHONE PEDESTAL
- GUY ANCHOR
- EXISTING 1' CONTOURS
- NEW 1' GRADED CONTOURS
- EXISTING 5' CONTOURS
- NEW 5' GRADED CONTOURS
- SECURITY FENCE

PROJECT CONTROL POINTS			
	EASTING	NORTHING	ELEVATION
CP001	TBD	TBD	TBD
CP002	TBD	TBD	TBD
CP003	TBD	TBD	TBD

GRID COORDINATES :: WASHINGTON STATE PLANE NORTH :: NAD83

BRIAN JARED PARSONS STATE OF WASHINGTON 53228 STRUCTURAL ENGINEER PROFESSIONAL ENGINEER

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NEW DRAWING

CONSTRUCTION DRAWING

NO	DATE	REVISION	BY	CKD	AS BUILT
A	8-6-21	PERMIT	DMC	BJP	

115 kV SUBSTATION
FLINT ROAD - SPOKANE, WA
GRADING PLAN AND EROSION CONTROL

AVISTA CORP
SPOKANE, WASHINGTON

1:40 SCALE	8-6-21 DATE	APPROVED
DESIGN PARSONS	CHECKED	
DRAWN	NOTED	DATE
CHECKED	NOTED	SHT ___ OF ___ FLN-P-1100

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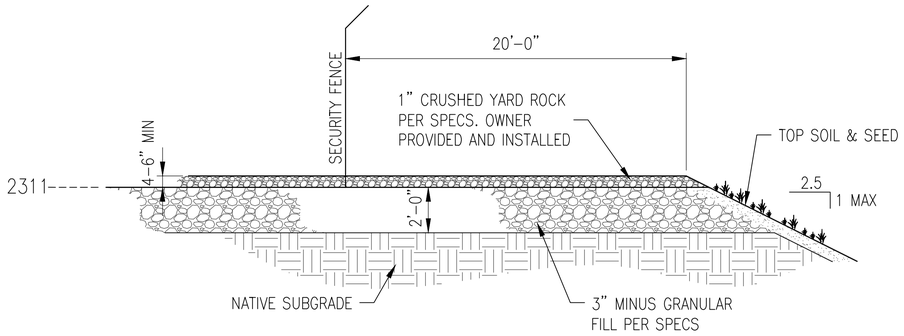
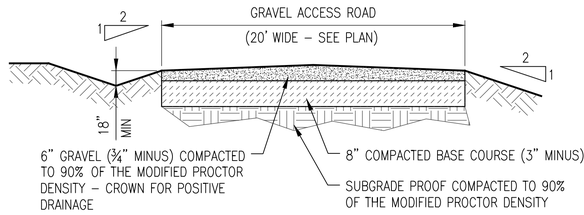
P-1110



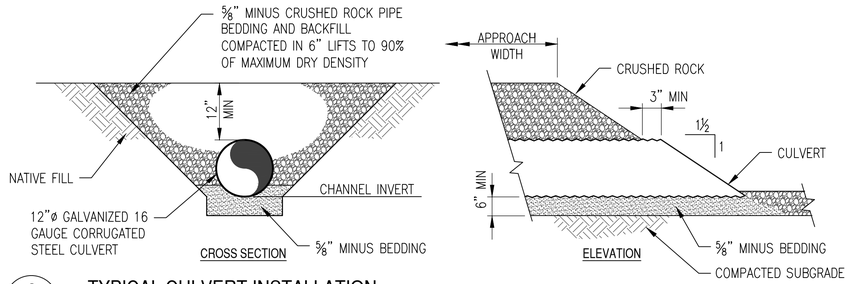
AA SECTION A-A: SUBSTATION PAD

SCALE: 1:40



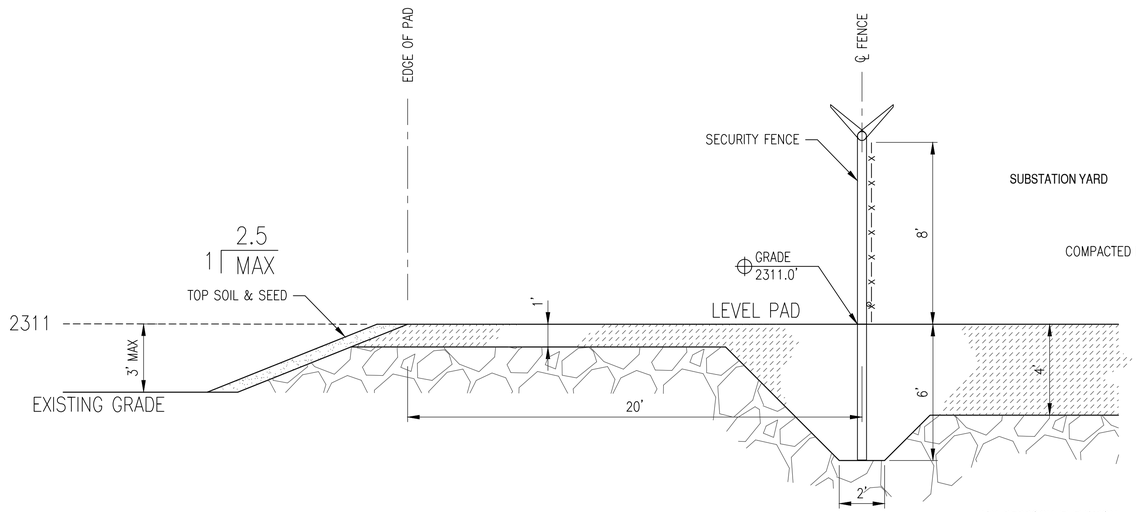
1 - TYPICAL ACCESS ROAD SECTION

NOT TO SCALE



2 - TYPICAL CULVERT INSTALLATION

NOT TO SCALE



BB SECTION B-B SUBSTATION PAD BASALT EXCAVATION LIMITS

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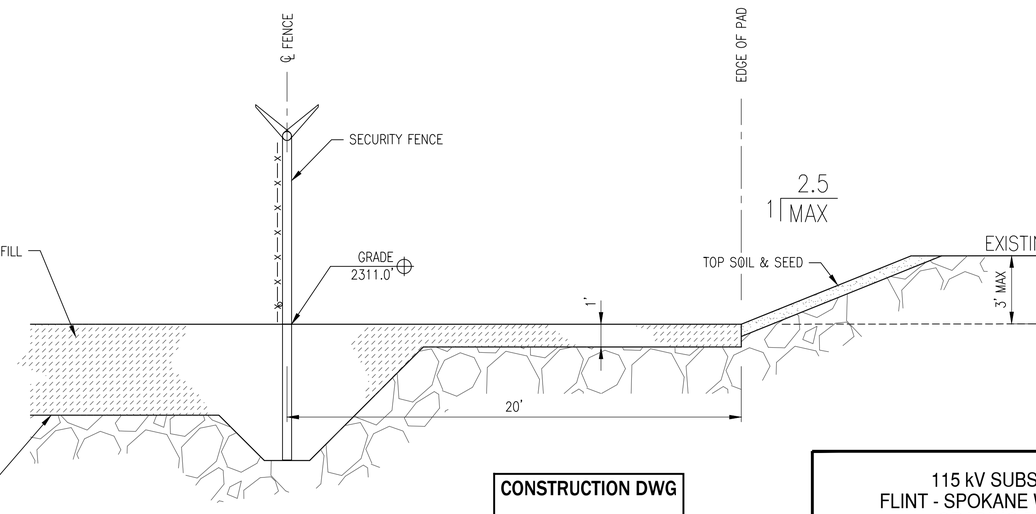

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CONSTRUCTION DWG

115 kV SUBSTATION
FLINT - SPOKANE WASHINGTON
GRADING DETAILS

AVISTA CORP
SPOKANE, WASHINGTON

BRIAN JARED PARSONS
STATE OF WASHINGTON
53228
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

NO	DATE	REVISION	BY	CKD	AS BUILT
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AS NOTED	8-5-21	APPROVED	
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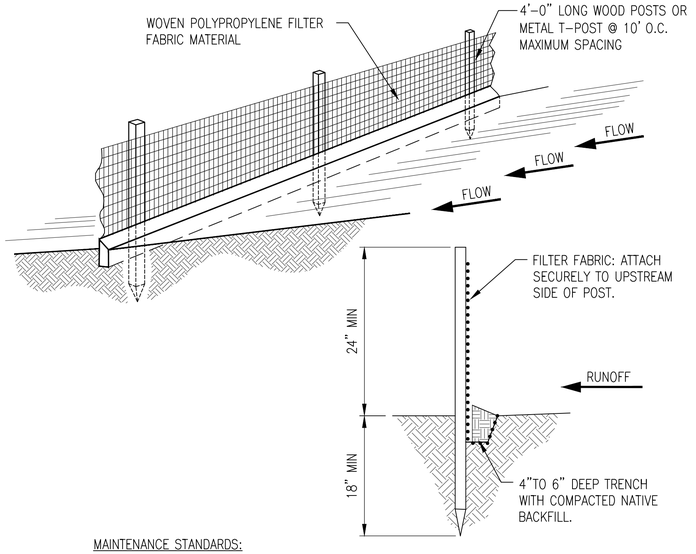
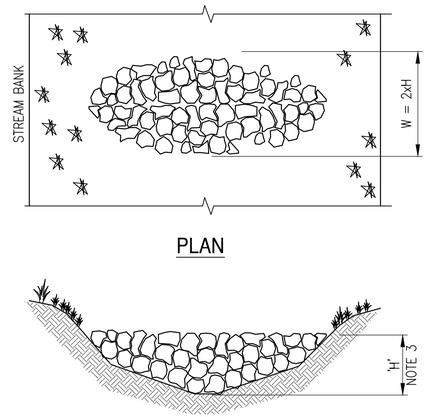


MAINTENANCE STANDARDS:

1. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT POND.
3. 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 FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
4. SEDIMENT DEPOSITS SHALL EITHER BE REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-THIRD THE HEIGHT OF THE SILT FENCE, OR A SECOND SILT FENCE SHALL BE INSTALLED.
5. IF THE FILTER FABRIC IS DAMAGED OR DETERIORATED, IT SHALL BE REPLACED IMMEDIATELY.

1 - EROSION CONTROL - SILT FENCE

NOT TO SCALE

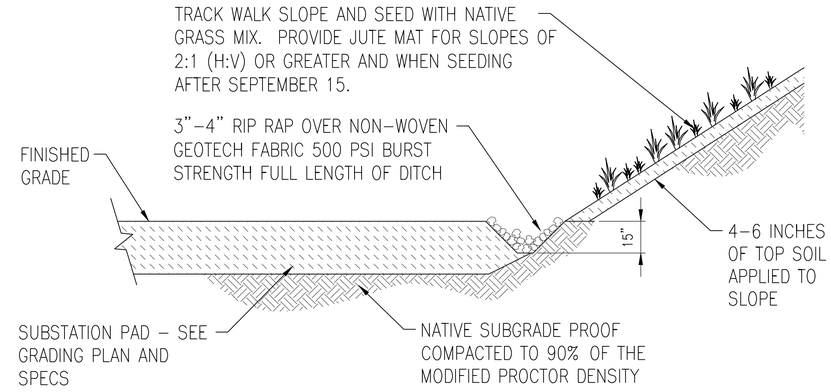


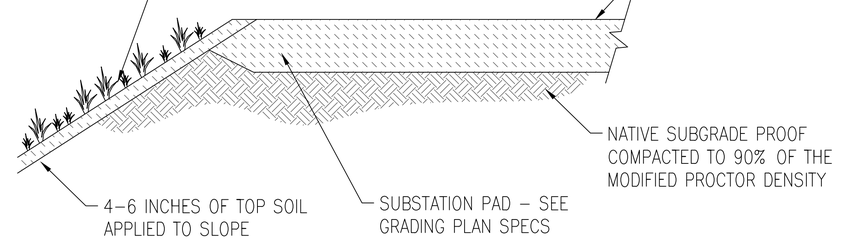
NOTES

1. USE ROCKS 3" TO 8" IN SIZE FOR CHECK DAM.
2. PLACE ROCKS SO DAM IS PERPENDICULAR TO THE FLOW. USE ROCKS OR FILTER FABRIC TO FILL ANY GAPS AND TAMP BACKFILL MATERIAL TO PREVENT EROSION OR FLOW AROUND DAM.
3. HEIGHT SHALL NOT EXCEED THE LESSER OF 18" OR ⅔ CHANNEL DEPTH AND THE WIDTH EQUAL TO 2x THE HEIGHT.
4. INSPECT AFTER EACH SIGNIFICANT STORM OR DAILY DURING PROLONGED RAIN EVENTS. MAINTAIN AND REPAIR AS NEEDED.

2 - EROSION CONTROL - ROCK CHECK DAM

NOT TO SCALE





3 - TYPICAL SLOPE STABILITY

NOT TO SCALE

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CONSTRUCTION DWG

BRIAN JARED PARSONS STATE OF WASHINGTON 53228 STRUCTURAL ENGINEER PROFESSIONAL ENGINEER

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A	8-5-2021	RELEASED FOR PERMITTING	BJP		

115 kV SUBSTATION
FLINT - SPOKANE WASHINGTON
EROSION CONTROL DETAILS

AVISTA CORP
SPOKANE, WASHINGTON

AS NOTED	8-5-21	APPROVED
SCALE	DATE	
DESIGN PARSONS	CHECKED	
DRAWN	NOTED	DATE
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31 10 00 CLEARING & GRUBBING

PART 1.0 -- GENERAL

1.1 WORK

A. These specifications are intended to cover the Work of clearing and grubbing of the Site in preparation for grading and earthwork operations.

B. The Contractor shall provide dust alleviation and control measures satisfactory to the local jurisdiction and the Avista Representative continuously during the course of the Work.

C. Surplus excavation material remaining upon completion of the Work shall be segregated as to type, and must be transported and disposed of off-site in a lawful manner.

1.2 REFERENCE MATERIAL

A. Codes and Standards: The following is not intended to be an exhaustive list and other standards may apply depending on the specific work being performed. In that event the contractor shall adhere to the governing standard.

1. ASTM D 1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil
2. ASTM D 2487 Standard Practice for Classification of Soils for Engineering Purposes
3. ASTM D 4318 Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils
4. ASTM D 4759 Standard Practice for Determining the Conformance of Geosynthetics

B. Reference Specifications:

1. Avista Specification 31 2000 Earthwork
2. Avista Specification 02 4000 Selected Demolition

1.3 DEFINITIONS

A. CLEARING: The removal and disposal of grass, brush, trees, stumps, roots, poles, rubbish, trash, and loose boulders of 3-foot diameter or larger from an area in preparation for earthwork. Clearing also included the removal and disposal of all obstructions such as fences, buildings, sidewalks and any other man-made structures that will interfere with the Earthwork.

B. GRUBBING: The removal and disposal of all objectionable matter defined under clearing which is embedded in the underlying soil. This includes but is not limited to foundations, retaining walls, manholes, catch basins, pipelines logs, roots and any other man made or natural structures that will interfere with the Earthwork.

1.4 DELIVERY, STORAGE & HANDLING

A. Import and export material shall be hauled using the most efficient methods for the site taking into account road conditions and restrictions.

B. Unless prior arrangements are made, material shall not be stockpiled onsite; export material shall be hauled off at the time of excavation and fill material shall be brought to site as needed.

C. It is the Contractors responsibility to obtain the necessary permits for disposal of all lead contaminated debris and asbestos.

1.5 SUBMITTALS

A. Utility Severance Certificates: Provide certificates of severance of utility services issued by the utility owners for review and record purposes.

PART 2.0 -- PRODUCTS

2.1 MATERIALS & EQUIPMENT

A. Contractor shall furnish all materials, tools, equipment, facilities, and services as required for performing site clearing, grubbing and other site preparation work.

PART 3.0 -- EXECUTION

3.1 PRESERVATION OF REFERENCE MARKERS

A. Record the locations and designation of survey markers and monuments prior to their removal. Provide three reference points for each survey marker and monument removed, established by a licensed civil engineer or land registered surveyor.

B. Store removed markers and monuments during demolition work, and replace them upon completion of the work. Re-establish survey markers and monuments in conformance with the recorded reference points. Forward to the Engineer a letter verifying re-establishment of survey markers and monuments, signed by a licensed civil engineer or registered land surveyor.

3.2 CLEARING & GRUBBING

A. Merchantable timber within the clearing limits will become the property of the Contractor, unless otherwise specified.

B. Perform clearing and grubbing as necessary to remove vegetation and objectionable material from the site. Clear the site within the limits indicated, and remove cleared materials and debris from the site. Unless otherwise indicated, clearing and grubbing shall include removing the top 6 inches of the existing ground soil. Coordinate with salvaging of topsoil as directed in Specification 31 2000 - Earthwork.

C. Remove stumps and roots completely in excavation areas. In areas that are to receive fill, stumps and roots shall be removed to a depth of not less than 6 feet below final grade. Where fill is more than 6 feet deep, cutoff trees, stump and brush to within 6 inches of existing ground level.

D. Do not start earthwork operations in areas where clearing and grubbing are not complete, except that stumps and large roots may be removed concurrently with excavation.

E. Where the work includes requirements for wood chip mulch, acceptable material from clearing and grubbing activities may be used to produce such mulch.

3.2 TREE BRANCHES

A. Remove tree branches overhanging trackways, roadways, and other designated areas of the site to within 20 feet of finish grade. Cut off branches neatly and close to the tree boles. Remove other branches as necessary to present a balanced appearance. Treat scars resulting from tree branch removal with a heavy coat of an approved asphaltic tree paint.

3.3 DEMOLITION/REMOVAL

A. Remove existing pavements, curbs, foundations, structures and site improvements that interfere with new construction and where demolition is not indicated.

B. Remove walls and masonry construction to a minimum depth of 2 feet below existing ground level in areas where such items do not interfere with new construction.

C. Slabs and footings shall be broken up and removed from the site. Concrete may not be used as backfill unless approved by the Avista Engineer.

3.4 DISPOSAL OF REMOVED MATERIALS AND DEBRIS

A. Dispose of removed materials, waste, trash, and debris in a safe, acceptable manner, in accordance with applicable laws and ordinances and as prescribed by authorities having jurisdiction.

B. Burying of trash and debris on the site will not be permitted.

C. Burning of trash and organic debris at the site may be permitted after review by Avista. If approved, burning shall be performed in a manner such that anything designated to remain on the property will not be jeopardized. Burning shall be done in accordance with all applicable laws and ordinances. The Contractor shall obtain all required burn permits.

D. Remove trash and debris from the site at frequent intervals so that its presence will not delay the progress of the Work or cause hazardous conditions for workers and the public.

E. Removed materials, waste, trash, and debris shall become the property of the Contractor and shall be removed from the property and disposed of in a legal manner. Location of disposal site and length of haul shall be the Contractor's responsibility.

3.5 BACKFILL

A. Backfill trenches and excavations resulting from the Work under this section in accordance with applicable requirements of Specification 32 1000 – Earthwork.

3.6 CLEANUP

A. Provide a clean and orderly site at all times.

B. Access Roads in and out of the site shall be swept or washed clean at least once per day or more often as conditions require.

* * * END SECTION * * *

31 20 00 EARTHWORK

PART 1.0 -- GENERAL

1.1 WORK

A. These specifications are intended to cover subgrade preparation, excavation and fill material used in grading and finishing a pad for the substation yard in accordance with the drawings and other specifications.

B. The Contractor shall provide dust alleviation and control measures satisfactory to the local jurisdiction and the Avista Representative continuously during the course of the Work.

C. Surplus excavation material remaining upon completion of the Work shall be segregated as to type, and must be transported and disposed of off-site in a lawful manner.

1.2 REFERENCE MATERIAL

A. Codes and Standards: The following is not intended to be an exhaustive list and other standards may apply depending on the specific work being performed. In that event the contractor shall adhere to the governing standard.

1. ASTM D 1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil
2. ASTM D 2487 Standard Practice for Classification of Soils for Engineering Purposes
3. ASTM D 4318 Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils
4. ASTM D 4759 Standard Practice for Determining the Conformance of Geosynthetics

B. Reference Specifications:

1. Avista Specification 31 1000 Clearing & Grubbing

1.3 DEFINITIONS

A. EXCAVATION: The removal of all material necessary to reach the required subgrade elevations indicated and the subsequent screening, sorting and disposal of that same material.

B. FILL: The methodical placement of defined material in lifts and compacted using accepted industry standards to finish grade elevations.

1. Ballast Fill: used over a large area in order to raise the elevation of the area to finished grade elevations.

2. Structural Fill: used in a relatively small area under or around footings and foundations or used for access roads and driveways.

3. Drainage Fill: used as noted on the drawings around drain pipes and under some floor slabs.

4. Drainage Backfill: used as noted on the drawings around drain pipes and culverts, behind retaining walls, and under some floor slabs.

C. PROOF ROLLING: used for testing the compaction and suitability of subgrade. Proof rolling shall be done with pneumatic-tired rolling equipment.

D. FRACTURED AGGREGATE: angular, rough, or broken surface of an aggregate particle created by crushing, or by other means. A face is considered a "fractured face" whenever one-half or more of the projected area, when viewed normal to that face, is fractured with sharp and well-defined edges: this excludes small nicks.

E. FULLY FRACTURED: when all surfaces of the aggregate are fractured faces.

1.4 DELIVERY, STORAGE & HANDLING

A. Import and export material shall be hauled using the most efficient methods for the site taking into account road conditions and restrictions.

B. Unless prior arrangements are made, material shall not be stockpiled onsite; export material shall be hauled off at the time of excavation and fill material shall be brought to site as needed.

PART 2.0 -- PRODUCTS

2.1 EXCAVATION MATERIAL

A. The volume of excavation material is calculated as the in situ volume of material to be removed and shall be measured in cubic yards.

2.2 FILL MATERIAL

A. The volume of fill material is calculated as the compacted fill needed to raise the subgrade elevation to the finished grade elevation. The measure of fill may be in cubic yards. If the supplier provides a unit weight of the fill material, then fill may be measured in tons.

B. Acceptable Soil Material: Acceptable soils are defined as those complying with ASTM D 2487 soil classification groups GW, GP, GM, SM, SW, and SP. Some CL and SC material may be used at the direction of the Engineer of Record.

C. Unacceptable Soil Material: Unacceptable soils are defined as those complying with ASTM D 2487 soil classification group GC, ML, MH, CH, OL, OG and PT.

D. The Contractor shall designate the proposed import sources in advance and shall, at the request of the Avista Representative, provide samples of fill material for evaluation and approval prior to procurement or placement. This sample is in addition to the required submittal in section 1.4

E. All fill material shall be free from organic materials, metals, ice, expansive clays or any other deleterious materials.

F. Ballast Fill: 3-inch minus material conforming to the following gradation (percentages are by weight). See Appendix for approved alternate gradations.

Sieve Size	Percent Passing*
3″	100
2″	75 - 90
1″	50 - 75
No. 4	25 - 45
No. 40	15 max
No. 100	10 max

*Deviations from this gradation may be permitted after review by the Project Engineer.

The Washington State Department of Transportation Ballast Fill Specification is an approved substitute for Avista Ballast fill. Substitution must be reviewed by Avista Engineer prior to approval for use.

WSDOT 2½" Ballast Material Spec 9-03.9(1)	
Sieve Size	**Percent Passing**
2½"	99-100
2"	65 - 100
1"	50 - 85
No. 4	26 - 44
No. 40	16 max
No.200	9.0 max
Dust Ration	2/3 max
Sand Equivalent	35 min.

G. Structural Fill: ¾-inch minus, angular to sub-angular crushed rock, conforming to the following gradation (percentages are by weight).

Sieve Size	Percent Passing*
¾"	100
½"	75 - 85
No. 4	25 - 50
No. 40	10 - 20
No. 200	0 - 7
% Fracture	75 min.

*Deviations from this gradation may be permitted after review by the Project Engineer.

H. Drainage Fill (or drain rock): washed, uniformly graded, rounded stone with 100% passing the 1½" sieve and 0% to 5% passing the No 4 sieve.

I. Drainage Backfill (or pea gravel): washed, uniformly graded, rounded stone with 100% passing the 1/2" sieve and 0% to 5% passing the No 4 sieve.

J. On Site Materials: fill material that is separated out of the excavation material for use as backfill. Use of onsite fill will be at the direction of the Avista Project Engineer.

K. Filter Fabric: Non-woven geotextile made from polylofins, polyesters or polyamides and with the following minimum properties (GEOTEX 401 or approved equal):

Property	Test Method	Min. Average Roll Value
Grab Tensile Strength (min)	ASTM D-4632	120 lbs
Elongation (max)	ASTM D-4632	50%
Puncture Resistance (min)	ASTM D-6241	310 lbs
Trapezoidal Tear (min)	ASTM D-4533	50 lbs
Apparent Opening Size (max)	ASTM D-4751	0.007" (No. 70 sieve)
UV Resistance (min)	ASTM D4355	70%

L. Structural Fabric: Woven geotextile made from polypropylene (GEOTEX 315ST or approved equal)

Property	Test Method	Average Roll Value
Grab Tensile Strength (min)	ASTM D-4632	250 lbs
Elongation (max)	ASTM D-4632	50%
Puncture Resistance (min)	ASTM D-6241	650 lbs
Trapezoidal Tear (min)	ASTM D-4533	75 lbs
Apparent Opening Size (max)	ASTM D-4751	0.024" (No. 30 sieve)
UV Resistance (min)	ASTM D4355	70%

PART 3.0 -- EXECUTION

3.1 PREPARATION

A. The Contractor shall be responsible to call for utility locates prior to any ground disturbance.

B. Clearing and Grubbing: refer to Avista specification 31 1000 Clearing & Grubbing.

C. Survey Work:

1. Set required lines and levels as required to accurately perform the grading work.
2. It is the Contractors responsibility to maintain all bench marks and other reference points. Survey monuments that are damaged or lost by grading operations shall be replaced at Contractor's expense.

3.2 PROTECTION OF EXISTING WORK

A. Protect existing structures, utilities, roads, sidewalks, paving, curbs and other facilities from damage caused by excavation, settlement, lateral movement, undermining, washout, and other hazards created by grading operations.

B. In areas where excavations must be carried to such depths that surcharge from streets, sidewalks, or earth pressure create hazardous conditions, provide sheet piling, shoring and bracing, or combinations thereof, as required to protect excavations. Remove shoring and bracing before backfilling is completed, but not before permanent supporting structure is in place.

3.3 EXCAVATION

A. Notify Avista representative if unexpected soil conditions are encountered.

B. Protect excavations by laying back sides on a maximum 1:1 slope or by other methods as required to prevent cave-ins and loose dirt from falling into excavations.

3.4 SUBGRADE CARE

A. The Contractor shall at all times maintain the subgrade surface in such condition as to readily drain effectively. Vehicular and equipment traffic shall be distributed across the prepared surface in such a manner as to prevent continual operation in one path. The Contractor shall repair any damage to the prepared subgrade.

B. Storage or stockpiling of heavy loads on the subgrade will not be permitted. Contractor shall use only approved storage areas.

C. Subgrade shall be scarified to a minimum depth of eight (8) inches, wetted or dried to an appropriate moisture content, compacted and proof rolled with appropriate compaction equipment. Proof rolling shall be observed by the Avista representative. Areas that 'pump' or 'rut' shall be over excavated, backfill and compacted as directed by the Project Engineer

D. Reconstruction of subgrade damaged by freezing temperatures, frost, rain, accumulated water, or other construction activities is the responsibility of the Contractor and shall be completed without compensation.

E. Finished subgrade shall be subject to the approval of the Avista Representative and no material or improvement shall be placed thereon until approval for same has been obtained.

3.5 GEOTEXTILE

A. Roll-out woven Geotextile in the most efficient direction. Rolls shall overlap not less than 12-inches along the long edge and not less than 18-inches along the short edge.

B. Spread Ballast fill in a 16-inch thick lift prior to initiating vibratory compaction and the placement of additional lifts. The initial lift shall be compacted prior to allowing rubber tired dump trucks onto the fill area.

3.6 FILL & COMPACTION

A. Spread fill material evenly over subgrade in uniform lifts not exceeding 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand operated equipment.

    1. Drainage fill may be placed in larger lifts unless directed otherwise in the drawings or by the Avista Representative. Drainage fill is not compacted.

B. Prior to compaction, bring fill to a uniform moisture content within 2% of optimum.

C. Compact soil material to the following percentage of the maximum dry density per ASTM D1557.

    1. Compact Ballast Fill in driveways and substation pad area and test by Proof Rolling with tandem axle truck loaded to legal capacity. Truck tires should not indent soils more than ¼-inch when properly compacted. Proof Roll the entire site, moving over one truck width each pass.
    2. At areas of lawn or landscaping: scarify and recompact existing subgrade and compact each lift of backfill by track walking.

D. Localized areas of structural fill – not exceeding 500 square feet – may be compacted with a portable vibratory plate compactor using lifts that do not exceed 4 inches in thickness.

E. Finished surface of the subgrade shall not vary more than 0.10 feet from the elevations called for on the plans or detail drawings when completed, and immediately prior to placement of roadway sections.

F. The maximum slope of any cut or fill transition shall not exceed 2.5:1 (horizontal : vertical).

3.7 EROSION CONTROL/BMPS

A. Contractor shall take the necessary precautions required, as described in drawings and scope or work, to place and maintain required erosion control Best Management Practices (BMPs). Contractor shall pay special attention to the maintenance requirements of the erosion control as listed on the Grading Plans and Details.

B. Erosion control BMPs are to remain in place until the site is determined to be stable by the Certified Erosion and Sediment Control Lead (CESCL). Contractor is responsible for the removal and proper disposal of the BMPs after site is determined to be stable.

3.8 DUST ALLEVIATION AND CONTROL

A. As required by the local jurisdiction in which the work is located the Contractor shall be responsible for and shall provide pollution and dust abatement and control measures continuously during the course of the work.

B. The Contractor is responsible to maintain the cleanliness of the public and paved roads outside the work site. Roads shall be kept clean and free from tracked soil by washing or sweeping as required.

* * * END SECTION * * *

32 92 19 - GRASS SEEDING

PART 1.0 -- GENERAL

1.1 WORK

A. These specifications are intended to cover the protection of natural and graded slopes from erosion and riling in accordance with the plans and other specifications.

B. The parts of this specification and the drawings shall be taken together to explain each other, and to make the two consistent. Any work or material which is not called for in these specifications but is shown on the drawings, or vice versa, shall be furnished the same as if it were both on the drawings and called for in the specification. Also, any material which has been omitted from the drawings but which is necessary to complete the work shall be furnished by the Contractor for the contract price stated in the proposal.

C. If the Contractor has any exceptions to these specifications, these exceptions must be made in writing and included in the formal quotation for the structures covered by these specifications.

D. Work that does not meet the requirements of this specification for location, finish or materials used is subject to be rejected and replaced at the Contractors expense.

1.2 DEFINITIONS

A. Hydroseeding: Slurry mixture of seed, wood fiber, fungicide, fertilizer and water applied to ground areas under pressure with hydraulic hydro-seeding equipment.

B. Hand Broadcast: scattering the seed uniformly over an area by means of a hand-held broadcast spreader.

1.3 DELIVERY, STORAGE & HANDLING

A. Seed: shall be kept in its original packaging and placed and stored in a cool dry place out of direct sunlight. Seed that gets wet, moldy or damaged during transit or storage is not acceptable for use.

1.4 SITE CONDITIONS

A. Grass seed shall not be placed if the ground is frozen or is likely to freeze within 21 days of planting. Nor shall it be placed after October 1 unless approved by the Avista Engineer.

PART 2.0 -- PRODUCTS

2.1 HYDROSEEDING MATERIAL AND EQUIPMENT

A. Mulch:

1. Composition: Green-colored, fibrous, 100 percent virgin wood fiber mulch containing no growth or germination-inhibiting factors.

2. Dispersion in Slurry: Mulch shall be manufactured in such a manner that after addition to and agitation in slurry tanks with fertilizer, seed, water and other approved additive, fibers in the material will become uniformly suspended to form homogeneous slurry.

3. Absorption Capacity: When hydraulically sprayed on the ground, mulch shall form a blotter-like ground cover impregnated uniformly with seed which will allow the absorption of moisture and rainfall to percolate to the underlying soil.

B. Seed: For the given site conditions, the seed mix shall meet the following or use and approved equivalent mix. Grass mixes shall always consist of grasses native to the area of planting.

1. Dry-land Grass Mix:

a. 30% Meadow Brome
20% Idaho Fescue
20% Slender Wheatgrass
20% Annual Rye
10% Sheep Fescue

2. Pasture Dry-land Grass Mix:

a. 30% Crested Wheatgrass
25% Intermediate Wheatgrass
20% Pubescent Wheatgrass
15% Siberian Wheatgrass
10% Alfalfa

3. Wetland Grass Mix:

a. 25% Creeping Foxtail
25% Alkali Bulrush
20% Alpine Timothy
15% American Sloughgrass
15% Hardstem Bulrush

A. Fertilizer: A complete fertilizer composed of natural organic material or derivatives containing 16 percent nitrogen, 6 percent phosphoric acid and 8 percent potash.

B. Water: Potable; Furnish and transport as required.

C. Hydroseeding Slurry Mix: Mixture shall be composed of the following proportions for each 1,000 square feet of coverage:

1.	Mulch	28	pounds
2.	Seed	10	pounds
3.	Fertilizer	11	pounds
4.	Water	40-60	gallons

2.2 HAND BROADCAST MATERIALS

D. Seed: Native dry-land grass mix. Apply at a rate of 20 pounds per acre.

E. Water: Potable, furnish and transport as required.

F. Mulch: Straw, certified noxious weed free and free from mold.

G. Jute Matting: Woven jute mesh.

PART 3.0– EXECUTION

3.1 HYDROSEEDING

A. Examination:

1. Verify that the areas to receive hydroseeding are clear of stones larger than 1½", weeds, debris and other extraneous material.

2. Verify that topsoil is in proper planting condition; track walked with straw wattles installed as required per the grading details.

B. Preparation: Apply water, as necessary, to bring soil to optimum moisture content for planting.

C. Slurry Mix: Contractor shall not permit the grass seed to remain more than 30 minutes in the slurry.

D. Application: Slurry mix shall be placed in a uniform mat at the recommended coverage keeping within designated areas. Slurry mix that has not been applied within 4 hours of mixing shall be discarded and removed from site.

E. Reseeding: Areas which fail to show a uniform stand of grass after 21 days shall be reseeded as part of the original contract.

F. Contractor shall apply water, as necessary, to ensure germination and growth of grass until grass is established.

3.2 HAND BROADCAST

G. Examination:

1. Verify that the areas to receive hydroseeding are clear of stones larger than 1½", weeds, debris and other extraneous material.

2. Verify that topsoil is in proper planting condition; track walked with straw wattles installed as required per the grading details.

H. Preparation: Apply water, as necessary, to bring soil to optimum moisture content for planting.

I. Application: Seed shall be spread uniformly at the recommended coverage keeping within the designated areas.

J. Broadcast seed shall be covered with a uniform layer of woven jute mat that is staked in place to prevent blow-off.

K. Reseeding: Areas which fail to show a uniform stand of grass after 21 days shall be reseeded as part of the original contract.

L. Contractor shall apply water, as necessary, to ensure germination and growth of grass until grass is established.

* * * END SECTION * * *