

KITTITAS COUNTY DEPARTMENT OF PUBLIC WORKS

GRADING PERMIT APPLICATION

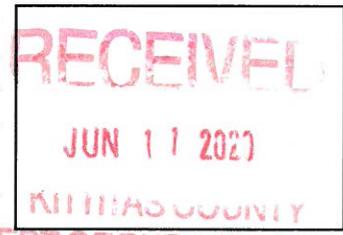
Application for: Grading Permit under 500 Cubic Yards \$505.00
 Grading Permit Over 500 Cubic Yards \$1,250.00

Payment Method: Cash
CK # 103253 Check

Owner Name Brown & Jackson Inc. / 4G Farms, LLC
Mailing Address 107 N Main St, Ellensburg, WA 98926

Permit # GP-20-00010

Phone Number 509-925-1564
Email Address brownandjackson107@gmail.com



Applicant Name Rikki Schmitt
Mailing Address 107 N Main St, Ellensburg, WA 98926

Phone Number 509-929-4785
Email Address rikkischmitt1@gmail.com

DATE STAMP

Engineer Name Nathaniel Nofziger
Engineer Firm Western Pacific Engineering & Survey
Mailing Address 1328 E Hunter Place, Moses Lake, WA 98837

Phone Number 509-765-1023
Email Address nnofziger@wpeinc.net

Tax Parcel Information

Situs Address: N/A - Near the Intersection of Parke Creek Road & Christensen Road
Map Number and Tax Parcel Number: 18-20-34000-001 and 295134
Property size: 197.92 (acres)

Project Details

1. **Is project within a Critical Area:**

No Floodplain No Habitat Conservation Areas
No Wetland No Geologic Hazardous Area

2. **Is project within 200' of a Shoreline of the State:** Yes No No

3. **Project Information:**

Maximum fill depth: 9.5 (feet) Maximum cut depth: 6.0 (feet)
Quantity of fill: 2860 (cubic yards) Quantity of excavation: 7094 (cubic yards)
Maximum fill slope: 3:1 (feet) Maximum cut slope: 3:1 (feet)

Categories

Components

- Structure
- Road
- Bridge / Culvert
- Levee
- Stream Bank / Channel
- Irrigation Structure
- Habitat Enhancement

- Excavation
- Fill
- Channelization
- Grading
- Clearing
- Mining and Dredging
- Drilling

Grading plan checklist:

- Easily reproducible scale on the plan of appropriate size depicting location and details of all cuts and all fills including depth and finished slopes of all cuts and all fills.
- General vicinity map of the area.
- North arrow.
- Subject property boundary lines, existing and proposed roads or driveways, easements, natural or manmade bodies of water and drainages, critical areas, shorelines, floodplains, and any existing or proposed structures, wells or septic systems on the site, and the distance between such features.
- Bodies of water, critical areas, structures, wells and septic systems on adjacent property and lying within 50 feet of the subject grading activity boundary that could be affected by the proposed grading operations.
- Maps drawn with contour intervals that adequately depict existing and proposed slopes for the proposal.
- Total quantities, in cubic yards, and type of cut and fill material, including on-site grading material, and imported material.
- Cross section drawings that include:
 - Maximum depth of fill and maximum height of cuts.
 - Existing and proposed buildings and their setbacks from cut or fill slopes.
 - Existing grades extending a minimum of twenty (20) feet beyond the scope of work.
 - Finished grades of cuts and fills extending a minimum of twenty (20) feet beyond the scope of work.
 - Retaining walls and the adjacent grade at least twenty (20) feet on either side of the wall(s).
 - Grades of all existing cut and fill areas expressed as a ratio of horizontal to vertical slope.
- The disposal site for excavated material. Offsite disposal may require a separate grading permit.
- The location of proposed erosion and sedimentation control measures showing compliance with the requirements of WDOE Stormwater Management Manual for Eastern Washington.
- Detailed plans of all surface and subsurface drainage devices, walls, cribbing, dams, berms, settling ponds, or other water or erosion control devices to be utilized as a part of the proposed work.
- Any recommendations included in an engineering geology or geotechnical assessment or report for grading or developing the property. If required, assessment and reports shall be completed in compliance with KCC 17A Critical Areas.

5. List all applicable local, state and federal permits and indicate whether they were issued, waived, denied or pending. Application for Coverage Under the General Permit for Biosolids Management has been submitted to the Washington State Department of Ecology.

6. Project description and additional project information (attach additional sheets if necessary): _____
The purpose of this project is to construct two storage ponds to hold biosolids until they are land applied once a year.

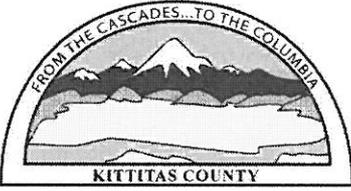
AUTHORIZATION

Application is hereby made for permit(s) to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. I hereby grant to the agencies to which this application is made, the right to enter the above-described location to inspect the proposed and or completed work.

All correspondence and notices will be transmitted to the Land Owner of Record and copies sent to the authorized agent, as applicable.

Signature of Authorized Agent:
(REQUIRED if indicated on application)

Date:



KITTITAS COUNTY
PUBLIC WORKS

Receipt Number: PW20-00226

411 N. Ruby Street, Suite 1
Ellensburg, WA 98926
509-962-7523 / <https://www.co.kittitas.wa.us/public->

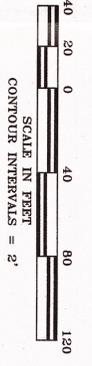
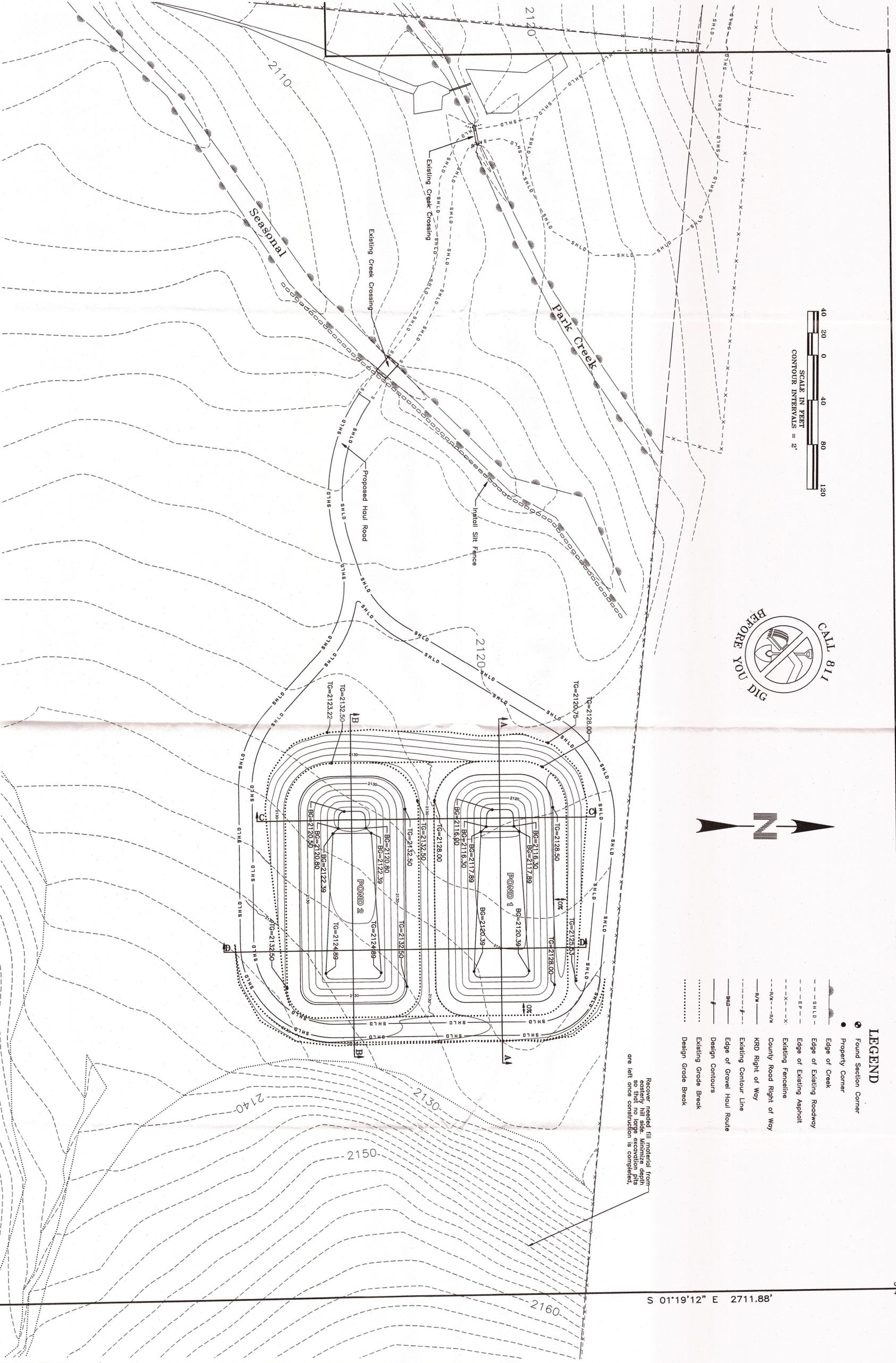
Payer/Payee: 4G FARMS LLC
107 N MAIN ST
ELLENSBURG WA 98926-3305

Cashier: CANDIE LEADER
Payment Type: CHECK (103253)

Date: 06/15/2020

GP-20-00010 Grading Over 500

<u>Fee Description</u>	<u>Fee Amount</u>	<u>Amount Paid</u>	<u>Fee Balance</u>
Grading Permit - 500 Yards or Over	\$1,250.00	\$1,250.00	\$0.00
GP-20-00010 TOTALS:	\$1,250.00	\$1,250.00	\$0.00
TOTAL PAID:		\$1,250.00	



- LEGEND**
- Found Section Corner
 - Property Corner
 - Edge of Creek
 - Edge of Existing Roadway
 - Edge of Existing Asphalt
 - Existing Fenceline
 - County Road Right of Way
 - RRD Right of Way
 - Existing Contour Line
 - Design Contours
 - Existing Grade Break
 - Design Grade Break

Recover needed fill material from nearby hill side. Minimize depth so that no large excavation pits are left once construction is completed.

N 89°02'01" E 1110.38'

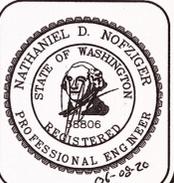
S 01°19'12" E 2711.88'

SHEET NO.
C1.2
201834

BROWN & JACKSON
2020 Storage Pond Project
Grading Plan
Kittitas County Washington

No.	Revision	Date	By

WESTERN PACIFIC
ENGINEERING & SURVEY
A TERRA DEVELOPMENT SERVICES CORPORATION
1328 E. Hunter Place, Moses Lake, Washington
T:(509)765-1023 F:(509)765-1298
Services in Washington and Idaho



Designed by NDN
Drawn by Tml/NDN
Checked by NDN
Project No. 20102
Date: April 2020
Scale:
Hor. 1" = 40'
Vert. 1" = N/A
Sec 34, T 18 N, R 20 E

GENERAL SPECIFICATIONS

Standard Specifications:
This pond design was intended for the construction of two seepage storage ponds located on Kittitas County tax parcel number 295133.

The Washington State Department of Transportation Standard Specifications for Road, Bridge, and Utility Construction, 2012 Edition, shall apply to the construction of these ponds. The contract documents shall be brought to the attention of the contractor by the engineer prior to construction. During the performance of the work, if the contractor shall be required to amend the contract plans, the contractor shall report it immediately in writing to the engineer and surveyor, Inc., and to the responsible agency's designated engineer. The Standard Specifications can be obtained at the following web sites:
<https://www.wsdot.wa.gov/Publications/Manuals/M41-10.htm>

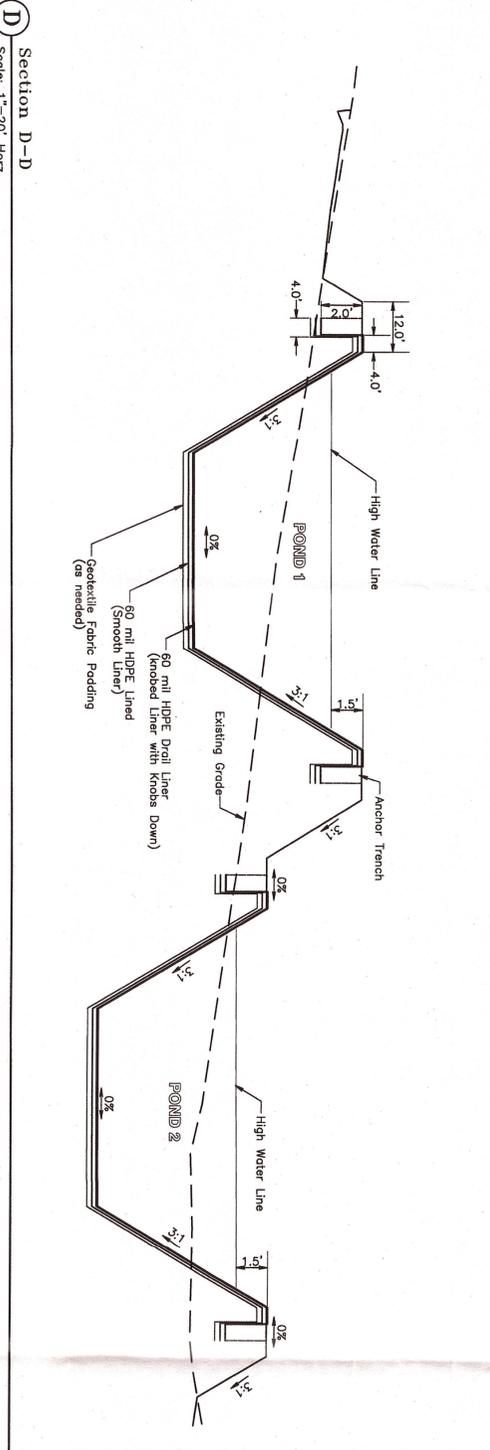
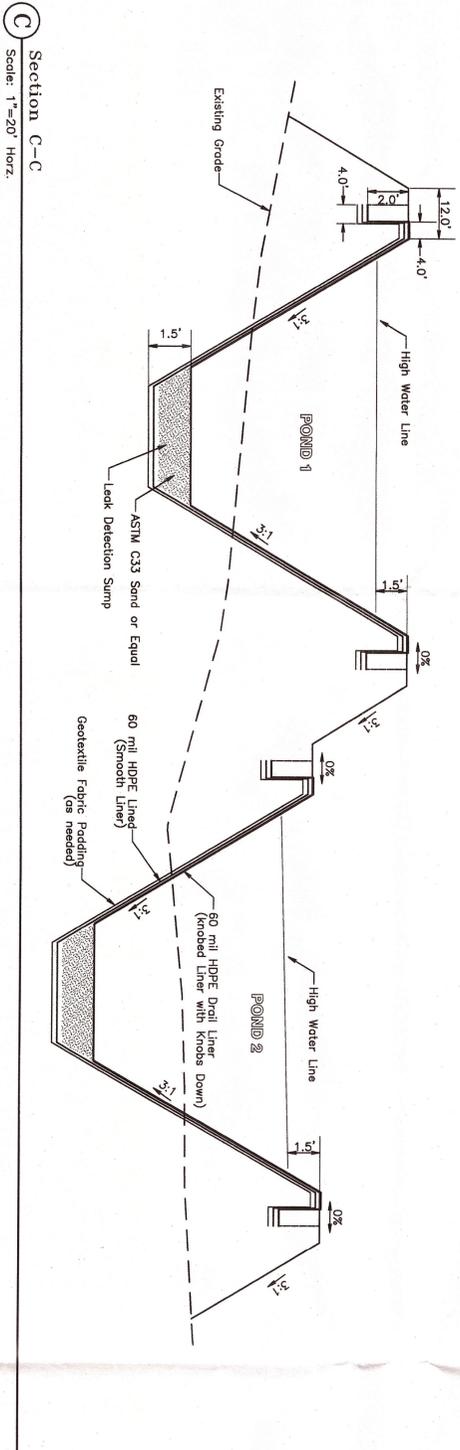
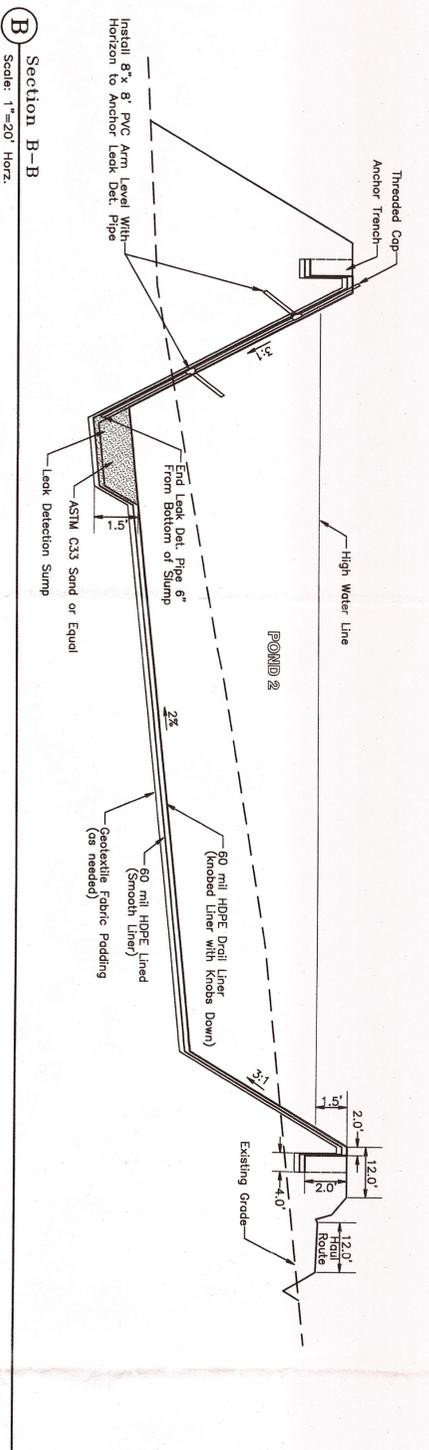
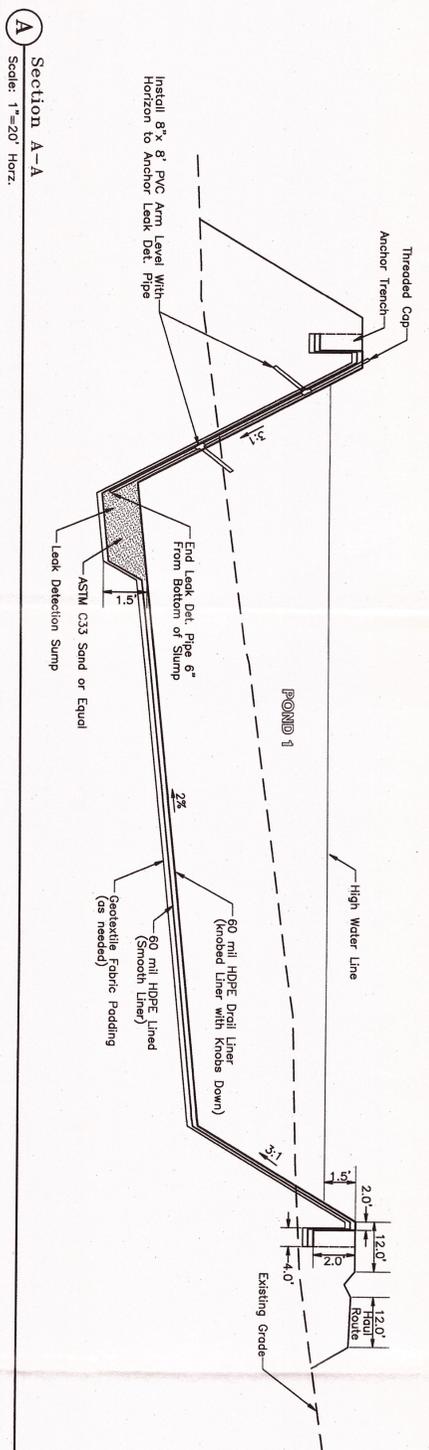
Special Provisions:
The following special provisions and responsible agency standards amend the Standard Specifications. The contractor shall do all work in accordance with the contract plans, these special provisions, responsible agency standards, and the Standard Specifications.
1-06.1 Approval of Materials:
Delete the first paragraph and replace with the following: The contractor shall submit a written list of all materials used in the project prior to construction. Submittals for all non-standard materials shall be reviewed and approved by the governing non-standard materials to the respective agencies. All materials shall be approved by the design engineer prior to the start of construction.

1-05.2(1) Sampling and Testing for Acceptance:
Modify the section as follows: The word Engineer or Project engineer shall refer to the owner and their designated inspector.
Special inspection shall be as follows, unless modified by the design engineer due to field conditions. Soil embankment shall be randomly tested for compaction with a minimum of three test per four feet of fill.
Inspection and testing of the liner shall be as listed in the Liner Specifications Section.

1-07.4 Laws to be Observed:
This section is supplemented by adding the following:
Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
1. All persons on the site or who may be affected by the work;
2. All the work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
3. Other property at site or adjacent thereto.
Contractor shall comply with all applicable laws and regulations related to the safety of persons or property including WISHA and OSHA regulations.

1-07.17 Utilities and Similar Facilities:
This section is supplemented by adding the following: The contractor shall be responsible for determining the location, depth, or all existing utilities prior to construction. Construction shall be based on the best-known records available and are subject to a degree of unknown variation. If conflict should occur, the contractor shall design revision from the engineer and design engineer shall be obtained prior to proceeding with construction. It is the contractor's responsibility to notify the engineer of any excavation, utility, or other work that may affect the utility arrangements. For construction of utilities shown on the contract plans and/or indicated in the contract document, with the serving utility, the contractor shall perform all work in the serving utility furnishes materials and/or installs some components, the contractor shall furnish and/or install all other items of work not provided by the utility that are necessary for a complete and functioning utility system.
1-08.0 Prosecution and Progress: Preliminary Matters:
This section is supplemented with the following: The contractor shall have and maintain on the job site during the performance of the work complete sets or copies of the following documents:
1. Contract plans which have been approved for construction by the responsible agencies;
2. Responsible agency standards applicable to the construction operations; and
3. One set of record drawings

All work shall be constructed according to the approved contract plans and standard specifications. Any deviation from the approved contract plans will require written record drawings. The contractor shall keep and maintain all the site and set of record drawings, configurations, and any other changes which may vary from the details represented on the original contract plans. When construction is complete, the record drawings shall be submitted to the design engineer for use in preparing permanent record drawings.
It is the responsibility of the contractor to obtain all necessary permits and pay all associated fees to perform the work required by these plans.

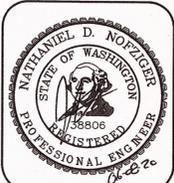


LINER NOTES

1. Geotextile Fabric Padding: Geotextile fabric shall be 602 gsm per yard and shall have a minimum grab tensile strength of 205 pounds.
2. Smooth Liner: Smooth liner shall be a 60 mil Smooth 60 mil HDPE liner. Liner shall have a minimum yield strength of 125 lb/in and shall have a minimum puncture resistance of 108 pounds.
3. Knobbed Liner: Knobbed liner shall be a 60 mil HDPE Drill Liner. Liner shall have a 0.13\"/>

BROWN & JACKSON
2020 Storage Pond Project
Pond Cross Sections

WESTERN PACIFIC
ENGINEERING & SURVEY
A TERRA DEVELOPMENT SERVICES CORPORATION
1328 E. Hunter Place, Moses Lake, Washington
T: (509) 765-1023 F: (509) 765-1298
Services in Washington and Idaho



Designed by: NDN
Drawn by: Tml/NDN
Checked by: NDN
Project No.: 20102
Date: April 2020
Scale: Hor. 1" = N/A
Vert. 1" = N/A
See 34, 1 18 N, R 20 E

SHEET NO.
C1.3
201834

GENERAL SPECIFICATIONS CONTINUED

1-09.0 Prosecution and Progress: Preliminary Matters: (Continued)

The contractor shall obtain and have available during the applicable response time agency standards at the job site during the related construction operations.

Prior to performing any work, the contractor shall contact and coordinate with the appropriate agency for approval by the respective utility entity.

2-01 Clearing, Grubbing and Roadside Cleanup:

The description shall be supplemented as follows: Clearing, grubbing, stripping and grubbing shall be performed earthwork shall be existing vegetation, debris, rubble, asphalt pavement, etc. shall be existing from the project area and disposed of at an approved waste site as required by the local health department. The current edition of the International Building Code, all slopes shall be a maximum of 3 horizontal to 1 vertical (3H:1V) unless otherwise noted on the contract plans.

2-03 Excavation and Embankment:

This section is revised and supplemented by the following: Prior to any excavation, including trenching, strip all organic topsoil and subgrade for embankments shall be prepared by stripping topsoil and then compacted to the required density. The contractor shall use a minimum compacted (proven) material shall be native soils less than 6" in greatest diameter.

Excavation - All materials and layers shall be placed and compacted to specified densities not exceeding eight inches in thickness. The contractor shall be responsible for importing and/or exporting all materials as required to comply with the approved contract plans.

Finished Surfaces - The contractor shall provide a finished surface on which to lay the geomembrane. The geomembrane shall be placed on a native soils between the embankment and the geotextile fabric. Loamy soils shall be 1/2" minus material.

2-03.3 (4)D Compaction and Moisture Control Tests:

Maximum density shall be determined by the ASTM D1557 test method for Modified Proctor. The contractor shall provide all necessary excavation, vibratory compaction equipment, and labor to facilitate the taking of compaction tests. The contractor shall provide all necessary test personnel. The contractor shall provide the agency an opportunity to be present during compaction testing. All compaction results shall be with referral to required maximum densities.

4-04.3 (B) Shading and Compaction:

Replace the first sentence of the first paragraph with the following: Immediately following spreading and final shaping, each layer of surface shall be compacted at least 95 percent of each layer of material determined by the control test or proposed compaction. Compaction shall not exceed 90 percent.

8-01 Erosion Control and Water Pollution Control:

Add the following to the Section: The contractor shall provide temporary ditching, sediment ponds, silt fencing, rock construction entrance and/or other measures to prevent erosion. The contractor shall take all necessary precautions to assure that silt-laden water does not enter existing and new filtration systems. All storm facilities shall be flushed and cleaned prior to final acceptance.

LINER SPECIFICATIONS

I. INTRODUCTION

Geosynthetic components of lining systems which are addressed in this manual and the specific documentation of the specific installation is required to substantiate this Quality Control Program.

II. HOPE/LLOPE GOMEMBRANE INSTALLATION

A. Earth Work

1. The general and/or earthwork contractor shall be responsible for preparing and maintaining the subgrade in a condition suitable for liner installation unless agreed otherwise.
2. Surfaces to be lined shall be smooth and free of debris, roots, and angular or sharp rocks to a depth of four (4) inches. All fill shall consist of well-graded material from some source larger than one (1) inch diameter or hard objects shall be allowed within the top four (4) inches of the subgrade. The surface shall be compacted in accordance with project specifications. The subgrade shall be prepared to permit the movement of vehicles and welding equipment over the surface without causing rutting or other harmful effects. The subgrade shall have no sudden sharp or abrupt changes in grade.
3. The earthwork contractor shall protect the subgrade from becoming too dry, flooding and freezing. Protection, after the approval by the contractor, shall be installed over the subgrade until the placement of the liner begins. Subgrade found to have cracks greater than 1/2" in width or depth or which exhibit the general contractor to remove these defects shall be removed by the general contractor.
4. Surface acceptance: Upon request, contractor will provide the acceptance with a written acceptance of area that contractor lined in a particular work shift. The responsibility of the earthwork contractor.

B. Crest Anchorage System

1. The anchor trench shall be excavated by the earthwork contractor to lines and widths shown on the design drawings prior to geomembrane placement.
2. Corners in the anchor trench shall be slightly rounded where the geomembrane enters the trench to minimize sharp bends in the liner.

C. Preparation for Geomembrane Deployment

1. Panel layout: Prior to liner deployment, layout drawings shall be produced to indicate the panel configuration and location of seams.
2. Identification: Each panel used shall be given a numeric ID. Identification shall also include the date of deployment and manufacturing roll number.
3. Field Panel Placement

1. Location: Contractor will attempt to install field panels at the location indicated on the layout drawing. The layout drawing will be modified at the completion of the project to reflect actual panel locations.
2. Weather Conditions: Geomembrane deployment shall not be done during any precipitation, or standing ponded water, or during high winds.
3. Method of Deployment: The method and equipment used to deploy the panels must not damage the geomembrane or the supporting subgrade surface.
4. No personnel working on the liner will smoke, wear shoes that can damage the geomembrane, or engage in actions which could result in damage to the geomembrane.

D. Field Panel Placement

1. Adequate temporary ballast and/or anchoring, (i.e. sandbags) which will not damage the geomembrane, will be placed to prevent uplift of the liner by wind.
2. The geomembrane will be deployed in a manner to minimize wrinkles.
3. Any damage to a panel of geomembrane will be repaired in accordance with Section IV. Any area of a panel seriously damaged from the work area shall be marked, repaired, and/or removed in accordance with Section IV of this document.
4. Equipment

E. Field Seaming

1. General Requirements:
 - a. Lay-out: In general, seams shall be oriented parallel to the slope whenever possible, horizontal seams should be located not less than five (5) feet from the toe of the slope. Each seam shall be numbered in a manner compatible with the panel layout drawing for documentation of seam testing results.
 - b. Personnel: All personnel performing seaming operations shall be trained in the use of the seaming equipment and shall be supervised by a foreman who will provide direct supervision of all personnel seaming to verify proper welding procedures are followed.
2. Equipment:

1. Fusion Welding: Fusion welded unit consists of placing a heated wedge between two sheets of geomembrane. The heated wedge is applied to the sheets from 600 degrees F to 800 degrees F. After the heated wedge is applied, the sheets are pressed together to form a continuous homogeneous fusion weld. The fusion welder is equipped with a temperature readout device which continuously monitors the temperature of the wedge.
2. Extrusion Fillet Welding: Extrusion welding consists of extruding a ribbon of molten resin along the edge of the geomembrane. The extruder is equipped with a temperature readout device which continuously monitors the temperature of the resin. The extruder is equipped with a temperature readout device which continuously monitors the temperature of the resin. The extruder is equipped with a temperature readout device which continuously monitors the temperature of the resin.

6. Seam Preparation:

1. Fusion Welding:
 - a. Overlap the panels approximately four (4) to six (6) inches.
 - b. Grind the overlap to a smooth finish and remove the excess clean material.
 - c. It is acceptable to grind the overlap at the weld seams the d. facilitate access to the seam.
2. Extrusion Welding:
 - a. Extrusion weld the panels to a minimum of three (3) inches.
 - b. Temporarily bond the panels to ensure the area is clean and free of debris.
 - c. Grind the overlap to a smooth finish and remove the excess clean material.
 - d. Grind seam overlap and weld with a grinder of grinding.
 - e. Purge the extruder prior to beginning the seam to remove all heat-degraded extrudate from the barrel.
 - f. Keep welding rod clean and dry.
 - g. Test Seams: Test seams shall be performed at the beginning of each seaming period or at least once each day. Six hours from the beginning of the seaming period, the seam shall be tested. The test shall be performed at the same conditions as actual seams.
 - h. Test Seam Length: The test seam shall be at least three feet long, made by joining 2 pieces of test 9" in width.
3. If any of the second set of samples fail, the machine shall not be accepted until the problem is corrected and 2 acceptable tests are achieved.
4. After completion of the test, the remaining portion of the test seam shall be tested. The test seam will be maintained until listing date. (Time lam on pm, machine I.D. number, operators initials, temperature control setting and test results).

5. Passing test results records shall be maintained on contractor's test report form.

6. If test samples are to act as destructive samples then the sample shall be marked, logged and saved.
7. General Seaming Procedures:
 1. Seaming shall extend past the outside edge of the containment area and continue to the edge to be placed in the anchor trench.
 2. While welding a seam, monitor and maintain the proper overlap.
 3. Inspect seam area to assure area is clean and free of moisture, dirt and debris of any kind.
 4. While welding a seam, monitor temperature gauges to assure proper settings are maintained and that the machine is operating properly.
8. Align wrinkles at the seam overlap to allow welding through a 5" wrinkle.
9. Fishmouths or wrinkles at seam overlaps that cannot be welded through shall be patched with an oval or round patch extending six inches beyond the cut in all directions.
10. All cross/butt seams between two rows of seams of the welder shall be patched back to prevent the seam from pulling apart. The patch shall be made of the same material as the seam area.
11. All T-joints shall have the overlap from the welder welder seam six (6) inches on either side of the seam and extrusion weld all of the area prepared by grinding.

SECTION III Seam Testing-Quality & Control-Geomembranes

A. Concept: Contractor installation crews will non-destructively test all field seams over their approved method. To verify the continuity and integrity of the seams.

B. Air Pressure Testing: The weld seam created by the fusion welding process is composed of two weld seams separated by an unwelded channel approximately 3/8" of an inch wide. This channel permits seams to be tested by inflating the weld channel with pressurized air. The test is performed by inflating the channel with pressurized air and observing the stability of the channel over time.

C. Equipment for air testing:

1. An air pump (manual or motor driven) capable of generating and sustaining a pressure of 30 PSI.
2. A rubber hose with fittings and connections.
3. A sharp hollow needle with a pressure gauge capable of reading and sustaining a pressure of 30 PSI.
4. Procedure for air testing:
 1. Seal both ends of the seam to be tested.
 2. Inflate the test channel to a pressure between 25 to 30 PSI, in accordance with the following schedule: close valve and allow time for the injected air to stabilize. Set the initial pressure to between 27 and 30 PSI. After five minutes of testing, the pressure drop shall be no less than 4psi.
 3. Observe and record the air pressure five minutes after the relaxing period ends. If loss of pressure exceeds the value above or if the pressure does not stabilize, locate the faulty area and repair.
 4. Upon completion of the pressure test the end of the seam opposite the pressure gauge is cut with a sharp knife. The pressure gauge will be observed after the discharge is corrected.
 5. Remove needle and seal resulting hole by extrusion welding.
5. Record test results on non-destructive test form.
6. The event of a non-complying air pressure test, the following procedure shall be followed:
 1. Check seam-end seals and retest seams.
 2. If non-compliance reoccurs, cut one inch samples from each end of the seam and additional samples at the distance specified.
 3. Perform destructive field seal test on the samples.
 4. If all samples pass destructive testing remove the overlap left by the wedge welder and perform an air pressure/soap test or vacuum test.
 5. If a leak is detected by the air pressure/soap or the vacuum test, repair by extrusion welding. Test repair by vacuum testing.
 6. If no leak is discovered by air pressure/soap testing, the seam will pass non-destructive testing.
 7. If no leak is discovered by vacuum testing, the seam will pass non-destructive testing.
 8. If one or more samples fail the peel test, additional samples will be taken.
 9. When two passing samples are located, the seam between these two locations will be considered non-complying and the entire length of extrusion weld.
 10. Test the entire length of the repaired seam by vacuum testing.
 11. Air Pressure/Soap Testing: This test is used when the seam fails the air pressure test. The test is performed by applying a soap solution to the seam length with a soap and water solution and visually examining high wind conditions. Note: This option is not recommended during high wind conditions.
 12. Equipment for Air Pressure/Soap Testing:
 1. The same equipment as the air pressure test.
 2. A soap solution and means to apply the solution.

Procedure for Air Pressure/Soap Testing:

1. Trim excess overlap material off at edge of seam.
2. Insert needle gauge assembly in opposite ends of the seam to be tested. The needle gauge assembly is constructed throughout the length of the seam to psi that pressure is continuous throughout the length of the seam.
3. Apply soap solution to the weld edge and visually examine for bubbles. Bubbles appear to the problem is with the inside track of secondary weld. This seam is acceptable providing it has passed peel tests.
4. Defect by extrusion welding and vacuum test the repair.

Vacuum Testing: This test is used when the geometry of the weld is such that it is impossible to locate the precise location of a defect believed to exist after air pressure testing.

Equipment for vacuum testing:

1. Vacuum box consisting of a rigid housing, a transparent viewing window, a soft neoprene gasket, a vacuum gauge, a vacuum pump, a pressure controller and pipe connections.
2. A rubber pressure/vacuum gauge to apply the solution.
3. Procedure for vacuum testing:
 - a. Apply soap solution to the area to be tested.
 - b. Place the vacuum box over the area and apply sufficient downward pressure to seal the box.
 - c. Ensure that a leak-tight seal is created.
 - d. For a period of not less than five seconds, observe the geomembrane through the viewing window for the presence of soap bubbles. If no bubbles appear after five seconds, turn off the motor and move overlap and repeat the process.
4. Procedure for non-complying test:
 1. Mark all areas where soap bubbles appear and repair the marked areas.
 2. Retest repaired areas.

Destructive Testing: The purpose of destructive testing is to determine and evaluate seam strength. These tests require direct sampling and thus subsequent patching of the seam is required. Sampling is held to a minimum to reduce the amount of repairs required.

Procedure for Destructive Testing:

1. Mark and cut out random samples of seam length. Additional test may be taken in areas of concern.
2. Other potential cause of faulty welds.

Sample Size:

- a) The sample should be twelve inches wide with a seam fourteen inches long centered on the seam. The sample should be cut from each end of the seam for field testing on a calibrated field tensiometer. 5 in peel and 5 in Shear.
- b) If field seal samples pass with FTB and the shear samples pass, it will be assumed the sample passes destructive testing. An additional portion of the sample to evaluate seam strength and confirm laboratory required.
- c) Procedure in the event of Destructive Test Failure:
 1. Cut additional field samples for testing a minimum of ten (10) feet either side of the test test these according to section 2. If the sample passes then reconstruct seam between the passing samples with the extrusion welder.
 2. Heat tack the overlap along the length of the seam to be reconstructed and extrusion weld.
 3. Vacuum test the extrusion weld.
 4. If either of the samples fails then additional samples are taken and tested with the above procedure until passing samples are found.
5. In the case of reconstructed seams exceeding 150 feet, a sample must be taken and pass destructive testing.
6. All destructive seam samples tested by Northwest Linings will be numbered and recorded on a destructive seam test form.

SECTION IV Defects and Repairs

1. Inspection
2. Repair Procedures: Any portion of the geomembrane showing a flaw, several methods exist for repairs, and the decision as to the appropriate method shall be made by the contractor's project superintendent. Methods available for repair:
 1. Patching - used to repair large holes, tears and destructive sample locations. All patches of patches shall be bounded, inches beyond the defect and all corners of patches shall be rounded.
 2. Grinding and welding - used to repair sections of extruded seams.
 3. Spot welding or seaming - used to repair small tears, pinholes or other minor localized flaws.
 4. Capping - used to repair lengths of failed extruded areas.
 5. Removal of a bad seam and replacement with a strip of new material seamed into place.
3. Verification of Repairs:
 1. Every repair shall be non-destructively tested using the methods described in this manual. Repairs which pass the non-destructive test shall be deemed adequate. Large repairs may require a destructive test. Repair test results shall be logged on a repair report form. The repair location shall be recorded on a repair drawing.



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 Services in Washington and Idaho

No.	Revision	Date	By

BROWN & JACKSON
 2020 Storage Pond Project
 Project Specifications
 Kittitas County
 Washington

SHEET NO. C1.4
 201834
 Designed by: NDN
 Drawn by: Tml/NDN
 Checked by: NDN
 Project No.: 20102
 Date: April 2020
 Scale:
 Hor. 1" = N/A
 Vert. 1" = N/A
 See 34, T 18 N, R 20 E