APPENDIX E
Chance Find Procedure
Archaeological Chance Find Procedure
Fraser Grain Terminal at Fraser Surrey Docks

Prepared for:

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January 9, 2019
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## LIST OF ACRONYMS AND ABBREVIATIONS

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<th>Definition</th>
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<tbody>
<tr>
<td>AD</td>
<td>Anno Domini</td>
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<tr>
<td>FGT</td>
<td>Fraser Grain Terminal</td>
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<tr>
<td>HCA</td>
<td>Heritage Conservation Act</td>
</tr>
<tr>
<td>m</td>
<td>Metre</td>
</tr>
<tr>
<td>PDA</td>
<td>Project Development Area</td>
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</table>
1.0 KEY CONTACTS

If archaeological or heritage resources are encountered during construction and/or ground altering activities, please contact the following persons under the conditions stated below. Please note that emails are NOT to be used for time sensitive discussions, only for follow up purposes.

**Site Supervisor/Project Manager and Environmental Monitor** – Contact if archaeological resources and/or ancestral/human remains are encountered:
- FGT, Tanya Hayes, Cell: 604-312-3212, Email: thayes@pandh.ca
- FWS (Contractor), Dale Rawn, Construction Supervisor, Cell: 604-219-8418
- Environmental Monitor, Hemmera, Lindsay McLean, Cell: 778-888-0218

**Project Archaeologist** – Contact if archaeological resources and/or (suspected) ancestral/human remains are encountered:
- Kleanza, Greg Morrissey, Cell: 604-563-5243, Email: greg@kleanza.com

**BC Archaeology Branch** – Contact for guidance if Project Archaeologist is unavailable.
- Reception, PH: 250-953-3334

**Local RCMP/Coroner** – Contact if Project Archaeologist is unreachable and (suspected) ancestral/human remains are encountered.
- RCMP, Non-emergency, PH: 604-599-0502
- BC Coroner Service, Metro Vancouver Region, Tiara Stiglich, PH: 604-660-7708
2.0 INTRODUCTION

The purpose of this Archaeological Chance find Procedure is to address the possibility of archaeological deposits becoming exposed during ground altering activities within the project development area (PDA) for the Fraser Grain Terminal during site preparation or construction. The PDA is located on land under the jurisdiction of the federal Vancouver Fraser Port Authority. This document provides protocols to follow if archaeological materials are inadvertently discovered, particularly appropriate protection and documentation.

Archaeological resources are non-renewable, very susceptible to disturbance, and finite in number. Archaeological sites are a valuable resource that are protected for their historical, cultural, scientific and educational value to the general public, local communities, and Indigenous groups. The regulatory context for archaeological resources is outlined in Section 8.0.

Potential disturbance to archaeological resources must be avoided or managed by Fraser Grain Terminal (FGT) partners, agents, and contractors undertaking FGT sponsored developments. The objectives of this ‘Archaeological Chance Find Procedure’ are to promote preservation of archaeological data while minimizing disruption of construction scheduling. All on-site personnel and contractors who may interact with soils having archaeological potential within the PDA shall be informed of the Archaeological Chance Find Procedure and have access to a copy while on site.

Developments that involve excavation, movement, or disturbance of soils have the potential to impact archaeological materials, if present. Activities such as road construction, land clearing, and excavation are all examples of activities that may adversely affect archaeological deposits. Even areas with previous development history, such as areas where fill has been placed during past development activities, may have intact archaeological deposits in native soil underlying the fill. Imported fill itself may contain disturbed and transported archaeological remains. Note that, as a result of an archaeological overview assessment of the Project site, excavations within areas of moderate to high archaeological potential which exceed the minimum 3 m depth of fill across the Project area are suspected to present archaeological risk. This Archaeological Chance Find Procedure is intended to be used in conjunction with the Project’s Construction Environmental Management Plan.

Additional contact information for appropriate designated individuals is provided in Appendix A. A record of contact form is included in Appendix B and the Chance Find Report Form is included as Appendix C.

3.0 INDIGENOUS CULTURAL HERITAGE

Indigenous cultural heritage is deeply connected to, but also extends beyond the tangible objects classified as ‘archaeological’ resources. Archaeological resources are culturally meaningful and connect community members to the past and represent a collective identity. These resources represent ways of knowing and generational knowledge passed on through the generations. Every Indigenous group manages their cultural heritage in a unique way, but always with respect for the past and future generations.
4.0 CHANCE FIND GUIDANCE AND PROCEDURE

Proper implementation of an Archaeological Chance Find Procedure may lead to discovery of archaeological and/or cultural heritage resources that were not identified in previous archaeological site investigations. As such, it is a valuable tool when properly implemented.

For the Archaeological Chance Find Procedure to be effectively implemented during construction, the site supervisor must ensure that all relevant on-site personnel understand the procedure and the importance of following it if cultural heritage resources are encountered. Additionally, training of field personnel on archaeological and cultural heritage resources that could be found on-site should be provided by the Project Archaeologist (Kleanza) and the Contractor’s environmental monitors. On-site presentation of these procedures is necessary for all staff performing ground disturbance, shall be completed by the Project Archaeologist and if feasible, in collaboration with affected/local Indigenous groups.

*Note that:*

- Chance Find Procedures are not useful unless someone on the Contractor’s team has thorough training to be able to identify archaeological resources.

  *If suspected archaeological and/or cultural materials and/or features (both intact and disturbed) are encountered, follow these steps:*

1. **Stop work** in the immediate vicinity of the suspected archaeological or cultural heritage materials and secure the area.

2. **Report** the discovery immediately to the following relevant persons:
   - **Site Supervisor/Project Manager:** FWS Site Supervisor, Dale Rawn, 604-219-8418
   - **Environmental Monitor:** Hemmera, Lindsay McLean, (778) 888-0218
   - **Project Archaeologist:** Kleanza, Greg Morrissey, Cell: (604) 563-5243, Email: greg@kleanza.com

   The site supervisor, environmental monitor or archaeologist will contact other entities as required. However, if Project Archaeologist is unavailable, contact:
   - BC Archaeology Branch Reception, PH: 250-953-3334

3. **Do not disturb** any suspected archaeological materials that are encountered. Do not move any soil from the vicinity of the site, including any spoil material.

4. **Record** where the find is located, either by flagging the site, by GPS or other location marking device and leave all materials in place.
5. The Project Archaeologist will:
   a. Visit the site as soon as possible and determine if an archaeological or cultural heritage site (intact or disturbed) is present,
   b. Coordinate communications with Indigenous groups and FGT to evaluate management options.
   c. Identify the potential significance of the materials and required mitigation. The BC Archaeology Branch will also be notified of the archaeological find and the Project Archaeologist will work with the Branch to determine permitting requirements.
   d. Consult with representatives of local Indigenous communities and appropriate government representatives to determine the appropriate course of action. If the significance of the archaeological materials is judged to be sufficient to warrant further action and the archaeological materials cannot be avoided.
5.0 PROCEDURE FOR REPORTING ANCESTRAL / HUMAN REMAINS (NOT OF FORENSIC CONCERN)

Ancestral/human remains are to be treated with the utmost respect no matter the state or context of the remains. *If ancestral/human remains are encountered and suspected to be of forensic concern, immediately contact the local police department or phone 911.*

Ancestral/human remains or bone that cannot be definitively determined to be non-human require immediate notification to the Project Archaeologist. The Project Archaeologist then must immediately notify all affected Indigenous communities. Ancestral/human remains are found in many contexts and may be scattered due to previous disturbances or found fully intact and associated with a mortuary context, such as burial mounds or in other contexts, such as in middens.

If you discover what you suspect may be possible ancestral/human remains (intact or disturbed):

1. *Stop all potentially damaging work within 50 m* of the site of potential ancestral/human/ancestral remains until they can be assessed by a professional archaeologist.
2. *Do not disturb* any possible ancestral/human remains that are encountered. Do not move soil from the vicinity of the remains, including adjacent spoil material. Cover the remains with a clean blanket and tarp, or something similar and limit access to the area.
3. *Report* the discovery immediately to the site supervisor and relevant persons:
   - **Site Supervisor/Project Manager:** Dale Rawn, Cell: 604-219-8418
   - **Environmental Monitor:** Hemmera, Lindsay McLean, Cell: 778.888.0218
   - **Project Archaeologist:** Kleanza, Greg Morrissey, Cell: 604-563-5243, Email: greg@kleanza.com
4. The Site Supervisor and the Project Archaeologist will advise on further action. If the above contacts are unreachable for direction, call the **RCMP Non-emergency line:** 604-599-0502.

Archaeologist Actions: The Project Archaeologist will immediately notify relevant Indigenous communities, and if appropriate, the local policing authority and the BC Coroners Service.

- An archaeologist or a representative who has specialized training in physical anthropology and representatives from all available local Indigenous communities will visit the site as soon as possible;
- If it is determined that the ancestral/human remains are archaeological in nature, discussions will take place to establish an appropriate procedure for handling of the remains;
- The BC Archaeology Branch will be notified of the archaeological find and the Project Archaeologist will work with the Branch to determine permitting requirements; and
If it is determined that the human remains are not archaeological in nature, the local policing authority and BC Coroners Service will provide further guidance.

Management Options: An appropriate protocol for handling ancestral/human remains requires consultation with Indigenous communities, many of whom have their own existing policies for taking care of ancestral/human remains. Any management options for found human remains will encompass Indigenous requirements as well as the Archaeology Branch’s Found Human Remains Policy. Please note that removal of ancestral/human remains and subsequent reburial may involve certain ceremonies or procedures that could delay Project activities and will require funding from the proponent.
6.0 ARCHAEOLOGICAL AND CULTURAL HERITAGE RESOURCES IN BC

More than 32,000 archaeological sites are currently recorded in BC with many more being added to the provincial inventory every year. For this reason, you will likely encounter an archaeological site during your lifetime - either knowingly or unknowingly. This Archaeological Chance Find Procedure has been established to increase awareness of this important resource and to assist in planning future developments.

Shorelines and adjacent areas have been highly utilised by Indigenous groups for thousands of years. The remnants of this occupation are represented in today’s landscape by a wide variety of site types, most of which are related to village or camping sites, resource gathering and production (such as fishing and hunting), tool making, and traditional ceremonial or ritual activities. Some sites that may be immediately visible to a non-archaeologist include shell and non-shell cultural deposits, or “middens”.

- Cultural shell deposits (“middens”), both intact and disturbed, are cultural accumulations of shells, stratified in white and grey layers, mixed with streaks of charcoal, ash, and other debris. Shell middens were also commonly used as human burial sites. Look for accumulations of layered, crushed, and whole shell possibly mixed with charcoal, black soil, greasy sediment and other food remains (i.e., fish bone)
- Non-shell midden, as above, cultural accumulations soil deposits, stratified in white and grey layers, mixed with streaks of charcoal, ash, and other debris, such as animal bone, charcoal, black soil, and other food remains (i.e., fish bone)

Photo Source: Kleanza Consulting Ltd.
Photo 1 Cultural shell deposit (“midden”)
Surface features such as cultural mounds, or depressions created by former habitations, earthen fortifications, rock cairns/petroforms (can be easily mistaken as rock piles) and hearths. Look for formations distinct from the landscape and unnaturally occurring rock formations.

Photo Source:  http://www.sliammonfirstnation.com/archaeology/fishing.html

Photo 2  Salmon and Herring Bone

Photo Source:  Kleanza Consulting Ltd.

Photo 3  Burial (rock) Cairn (Beacon Hill, Victoria BC)
Photo 4  Hearth (firepit) feature with fire-cracked rock

- Clam gardens, look for piles of boulders at the edges of beach areas, or rock walls and terraces

Photo Source:  http://janfast.blogspot.com/2017/05/newly-found-stone-age-hearths-from.html

Photo 5  Clam garden diagram

Photo Source:  https://clamgarden.com/clamgardens/constructing-clam-gardens/
• Fish traps and weirs. Fish weirs and traps are typically comprised of linear arrangements of wooden stakes interwoven with brush or mats to trap fish on the falling tide. Look for short stubs of small diameter branches in linear arrangements in the inter-tidal zone or along the river bank.


Photo 6 Clam garden rock walls


Photo 7 Intertidal Fish Trap
Tree Art and Culturally Modified Trees (CMT). Involves modification to the tree, commonly the removal of the inner and outer bark. Evident from scarring of the bark.

Photo Source: Kleanza Consulting Ltd.

Photo 8   Intertidal Fish Trap (Burrard Inlet, BC)

Photo Source: Personal photo, Golden Ears Park, BC – E. Powell

Photo 9   Tree Art and Culturally Modified Trees (CMT)
Artifacts that have become visible on the land surface owing to erosion or recent land altering activity. These may be produced in a variety of materials such as stone, bone, antler, wood, or shell. Look for obviously formed stone objects or pieces of stone that have been chipped and/or ground in a non-natural way. Bone and antler artifacts will exhibit obvious modification (i.e., cutting, shaping, incision, etc.).

Photo Source: Kleanza Consulting Ltd.

Photo 10   Culturally Modified Tree (stump)

Photo 11   Flaked stone spear points made from basalt and chert

Photo Source: https://archaeologyblog.treetimeservices.ca/tag/lithics/page/2/
Photo Source: Kleanza Consulting Ltd.

Photo 12  Fire cracked rock (FCR) – note sharp, angled breaks

Photo Source: Kleanza Consulting Ltd.

Photo 13  Worked Bone Artifacts
Photo Source: Kleanza Consulting Ltd.

Photo 14  Bone, Claw and Tooth Artifacts

Photo Source: Kleanza Consulting Ltd.

Photo 15  Shell Beads
Photo Source:  http://www.adsny.com/nyindian/roughstonearticles.html

Photo 16  Hand Mauls (Hammer Stones)

Photo Source:  https://oregonhistoryproject.org/articles/historical-records/sinker-stone-columbia-river/#.WVKgbOmQyUk

Photo 17  Fish Net Sinker Stone
- Waterlogged deposits or wet sites, which are locations containing organic artifacts (i.e., wood, bark, or plant fibre), that are preserved due to their presence in an anaerobic (oxygen free) environment. Look for fragmentary baskets, rope, carved wood implements (e.g., wedges), and similar objects eroding from intertidal silts and/or clay deposits.

**Photo Source:** Kleanza Consulting Ltd.

**Photo 18**  Cedar bark cordage found at a wet site

**Photo 19**  Preserved wood and stone tool

- Rock Art - Includes pictographs (paintings) and petroglyphs (carvings), often found on rock faces, not always in obvious locations – may be obscured by vegetation or rock overhangs.
Photo Source: http://www.sfu.ca/archaeology-old/museum/rockart/index.html

Photo 20 Petroglyphs


Photo 21 Pictograph
7.0 REPORTING

The individual reporting the Chance Find must fill out the Archaeological Chance Find Procedure Record of Contact found in Appendix B. The Project Archaeologist will complete the Archaeological Chance Find Report Form, Appendix C, and inform FGT of required Provincial Archaeological permits required (i.e. Site Alteration Permit). The required permits will identify appropriate mitigation and protection measures, including potential further assessment. The Project Archaeologist will also inform FGT when work may resume in the cordoned off area of the site.

8.0 LEGISLATION

In BC, the Heritage Conservation Act, RSBC 1996, c. 187 (HCA) automatically protects all archaeological sites that predate AD 1846 on Provincial Crown or private land. Burial sites and rock art sites are protected regardless of age (BCAPA 2012).

In Canada, archaeological materials or sites on federal lands and lands underwater are within the jurisdiction of the Parks Canada Agency (S.4(1) B) and the Parks Canada Agency Act, SC 1998, c. 31. Guidelines provided by the federal government pertaining to archaeological materials or sites include Parks Canada Guidelines for the Management of Archaeological Resources (2005), and Canada Research and Collection Permit Process (2017) as well as the Treasury Board’s Guide to the Management of Moveable Heritage Assets (2008). While provincial laws do not apply to federal lands, “Parks Canada refers to certain aspects for guidance as a matter of practicality” (Parks Canada 2005), and generally accepts as best practice the archaeological standards established by the BC Archaeology Branch. These include the Archaeological Impact Assessment Guidelines (FLNRO n.d.a).
9.0 REFERENCES


Tsleil-Waututh Nation Archaeological Chance Finds Management Guideline. n.d.
APPENDIX A
Contact Names and Telephone Numbers
<table>
<thead>
<tr>
<th>Agency</th>
<th>Name of Contact</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Supervisor</td>
<td>Dale Rawn, FWS</td>
<td>Cell: 604-219-8418</td>
</tr>
<tr>
<td>Fraser Grain Terminal</td>
<td>Tanya Hayes</td>
<td>Cell: 604-312-3212</td>
</tr>
<tr>
<td>Hemmera Envirochem Environmental Monitor</td>
<td>Lindsay McLean</td>
<td>Cell: 778-888-0218</td>
</tr>
<tr>
<td>Project Archaeologist, Kleanza Consulting</td>
<td>Greg Morrissey</td>
<td>Cell: 604-563-5243,</td>
</tr>
<tr>
<td>BC Archaeology Branch</td>
<td>Reception</td>
<td>250-953-3334</td>
</tr>
<tr>
<td>RCMP (Non-emergency)</td>
<td>Local Detachment</td>
<td>604-599-0502</td>
</tr>
<tr>
<td>BC Coroners Service, Metro Vancouver Region</td>
<td>Tiara Stiglich</td>
<td>604-660-7708</td>
</tr>
<tr>
<td>Musqueam Indian Band</td>
<td>Aviva Finkelstein (archaeologist)</td>
<td>Main Office: 604-263-3261</td>
</tr>
<tr>
<td>Semiahmoo First Nation</td>
<td>Main Office</td>
<td>604-536-3101</td>
</tr>
<tr>
<td>Seabird Island Band</td>
<td></td>
<td>604-796-2177</td>
</tr>
<tr>
<td>People of the River Referrals Office</td>
<td></td>
<td>604-824-2420</td>
</tr>
<tr>
<td>Stó:lō Nation</td>
<td></td>
<td>604-858-3366</td>
</tr>
<tr>
<td>Stó:lō Tribal Council</td>
<td></td>
<td>604-796-0627</td>
</tr>
<tr>
<td>Katzie First Nation</td>
<td></td>
<td>604-465-8961</td>
</tr>
<tr>
<td>Cowichan Tribes</td>
<td></td>
<td>250-748-3196</td>
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<td>Lyackson First Nation</td>
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<td>1-888-592-5766</td>
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<td>Penelakut Tribe</td>
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<td>Tsawwassen First Nation</td>
<td></td>
<td>604-943-2112</td>
</tr>
<tr>
<td>Tsleil-Waututh Nation</td>
<td>Evan Hardy, Archaeological Liaison</td>
<td>778-957-0545</td>
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APPENDIX B
Record of Contact
<table>
<thead>
<tr>
<th>Agency</th>
<th>Date and Time of Contact</th>
<th>Name of Person Contacted</th>
<th>Action</th>
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</tr>
</tbody>
</table>
APPENDIX C
Chance Find Report Form
Appendix C: CHANCE FIND REPORT FORM

Recorder’s Name/Affiliation: _____________________________________________________

Date: _______________________________________________________________________

Location of chance find (Location description, UTM coordinates, road, quarter section, depth below surface):
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

Photographs Taken (#s) (please include name/number or owner of camera):
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

Description of find:
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

Method used to mark and protect find:
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

Distribution:

☐ Contractor or Site Supervisor  ☐ Project Archaeologist  ☐ BC Archaeology Branch  ☐ R.C.M.P.  ☐ Local First Nation(s)
Sketch Map

ADDITIONAL NOTES:
APPENDIX F
Reportable Quantities
APPENDIX F – REPORTABLE LEVELS OF CERTAIN SUBSTANCES

In the event of an incident on-site, the first task is to ensure that all site personnel are safe, then follow the Containment and Clean-up strategy as outlined within the Plan. Determine the material spilled and quantity then reference the following table, Table A, for the reportable levels for various substances to the Provincial Emergency Coordination Centre (1-800-663-3456).

Table A  Reportable Levels for Certain Substances

<table>
<thead>
<tr>
<th>Item</th>
<th>Column 1 Substance Spilled</th>
<th>Column 2 Specified Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Class 1, Explosives as defined in section 2.9 of the Federal Regulations</td>
<td>Any quantity that could pose a danger to public safety or 50 kg</td>
</tr>
<tr>
<td>2</td>
<td>Class 2.1, Flammable Gases, other than natural gas, as defined in section 2.14 (a) of the Federal Regulations</td>
<td>10 kg</td>
</tr>
<tr>
<td>3</td>
<td>Class 2.2 Non-Flammable and Non-Toxic Gases as defined in section 2.14 (b) of the Federal Regulations</td>
<td>10 kg</td>
</tr>
<tr>
<td>4</td>
<td>Class 2.3, Toxic Gases as defined in section 2.14 (c) of the Federal Regulations</td>
<td>5 kg</td>
</tr>
<tr>
<td>5</td>
<td>Class 3, Flammable Liquids as defined in section 2.18 of the Federal Regulations</td>
<td>100 L</td>
</tr>
<tr>
<td>6</td>
<td>Class 4, Flammable Solids as defined in section 2.20 of the Federal Regulations</td>
<td>25 kg</td>
</tr>
<tr>
<td>7</td>
<td>Class 5.1, Oxidizing Substances as defined in section 2.24 (a) of the Federal Regulations</td>
<td>50 kg or 50 L</td>
</tr>
<tr>
<td>8</td>
<td>Class 5.2, Organic Peroxides as defined in section 2.24 (b) of the Federal Regulations</td>
<td>1 kg or 1 L</td>
</tr>
<tr>
<td>9</td>
<td>Class 6.1, Toxic Substances as defined in section 2.27 (a) of the Federal Regulations</td>
<td>5 kg or 5 L</td>
</tr>
<tr>
<td>10</td>
<td>Class 6.2, Infectious Substances as defined in section 2.27 (b) of the Federal Regulations</td>
<td>1 kg or 1 L, or less if the waste poses a danger to public safety or the environment</td>
</tr>
<tr>
<td>11</td>
<td>Class 7, Radioactive Materials as defined in section 2.37 of the Federal Regulations</td>
<td>Any quantity that could pose a danger to public safety and an emission level greater than the emission level established in section 20 of the &quot;Packaging and Transport of Nuclear Substances Regulations&quot;</td>
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<td>12</td>
<td>Class 8, Corrosives as defined in section 2.40 of the Federal Regulations</td>
<td>5 kg or 5 L</td>
</tr>
<tr>
<td>13</td>
<td>Class 9, Miscellaneous Products, Substances or Organisms as defined in section 2.43 of the Federal Regulations</td>
<td>25 kg or 25 L</td>
</tr>
<tr>
<td>14</td>
<td>waste containing dioxin as defined in section 1 of the Hazardous Waste Regulation</td>
<td>1 kg or 1 L, or less if the waste poses a danger to public safety or the environment</td>
</tr>
<tr>
<td>15</td>
<td>leachable toxic waste as defined in section 1 of the Hazardous Waste Regulation</td>
<td>25 kg or 25 L</td>
</tr>
<tr>
<td>Item</td>
<td>Substance Spilled</td>
<td>Specified Amount</td>
</tr>
<tr>
<td>------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>16</td>
<td>waste containing polycyclic aromatic hydrocarbons as defined in section 1 of the</td>
<td>5 kg or 5 L</td>
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<tr>
<td></td>
<td>hazardous Waste Regulation</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>waste asbestos as defined in section 1 of the Hazardous Waste Regulation</td>
<td>50 kg</td>
</tr>
<tr>
<td>18</td>
<td>waste oil as defined in section 1 of the Hazardous Waste Regulation</td>
<td>100 L</td>
</tr>
<tr>
<td>19</td>
<td>waste containing a pest control product as defined in section 1 of the Hazardous</td>
<td>5 kg or 5 L</td>
</tr>
<tr>
<td></td>
<td>Waste Regulation</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>PCB Wastes as defined in section 1 of the Hazardous Waste Regulation</td>
<td>25 kg or 25 L</td>
</tr>
<tr>
<td>21</td>
<td>waste containing tetrachloroethylene as defined in section 1 of the Hazardous</td>
<td>50 kg or 50 L</td>
</tr>
<tr>
<td></td>
<td>Waste Regulation</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>biomedical waste as defined in section 1 of the Hazardous Waste Regulation</td>
<td>1 kg or 1 L, or less if the waste</td>
</tr>
<tr>
<td></td>
<td></td>
<td>poses a danger to public safety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>or the environment</td>
</tr>
<tr>
<td>23</td>
<td>A hazardous waste as defined in section 1 of the Hazardous Waste Regulation and</td>
<td>25 kg or 25 L</td>
</tr>
<tr>
<td></td>
<td>not covered under items 1 – 22</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>A substance, not covered by items 1 to 23, that can cause pollution</td>
<td>200 kg or 200 L</td>
</tr>
<tr>
<td>25</td>
<td>Natural gas</td>
<td>10 kg, if there is a breakage in a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pipeline or fitting operated above</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 psi that results in a sudden</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and uncontrolled release of natural</td>
</tr>
</tbody>
</table>
APPENDIX G
Traffic Management Plan
Traffic Management Plan

Fraser Grain Terminal

Revision: 4.1
PER No.: 15-041
INTERNAL PROJECT No.: 08-18-069J

DATE: November 23, 2018

CLIENT: Parrish & Heimbecker, Limited

LOCATION: 11041 Elevator Rd, Surrey, BC
1.0 Introduction

The purpose of this Traffic Management Plan (TMP) is to describe the processes that will control the flow of traffic to and from the Fraser Grain Terminal (FGT) worksite during certain construction phases. FWS highest priority during the execution of this project is to protect the natural environment and the health and safety of the project personnel and the public in the vicinity of the site.

During certain phases of construction, additional traffic management plans will be created to augment or replace the current one, depending on the risks or activities involved. Revised or augmented plans will be submitted to VFPA for approval, prior to the future phases or scope being undertaken. This traffic management plan shall outline the various plans to inform the public, respond to incidents and manage traffic during the initial phase of site construction.

This scope of this plan covers all the activities listed in section 3.0 but does not cover the following construction activities or phases:

a) Rail road crossing at Robson Road,
b) New access road construction,
c) Access to site once the new access road is constructed,
d) Changes to the PARY yards.
e) Concrete pour of main bin slab (large volume pour requiring multiple trucks)

FWS will use on-site traffic control and signage to manage the entrance and egress of the trucks to and from site. Upon leaving site the traffic and trucks will be travelling on public roads and local traffic laws will be strictly followed. Appendix A identifies site access and layout.

2.0 Scope of Work

FGT is a new grain handling facility located on the Fraser River in Surrey, BC. The facility will trans-ship 3.5 million MT per year of grain products including wheat, barley, oil seeds, and pulses.

The FGT project will include the following new components:

- Semi-loop rail track and loading track connected to the adjacent PARY and crossing Robson Road near Elevator Road. This traffic management plan does not cover this work.
- Construction of a new loop track serving the new rail unloading building, plus a new spur serving the new rail/truck loading structure. This is the minimum change required to allow the FGT to function under current operating conditions.
- Extension and switch relocation of tracks in the PARY, to be completed post-construction of the initial plant construction. This traffic management plan does not cover this work.
- Rail unloading station and transfer tower with fully-enclosed conveying equipment and a built-in dust suppression system.
- Three (3) fixed tower shiploaders with telescoping spouts, each with dust-reducing features for vessel loading, replacing existing shiploader mobile conveyors. Each tower will be supported on steel piles in the foreshore and land-side shore area.
- 25 above-ground steel storage bins (20 x 3,500 MT, 4 x 400 MT and 1 x 710 MT).
- Ground densification for the silo and shiploader foundations using stone columns for densification. The foundation densification program for the silo area was developed to minimize potential movement of in-situ contamination plumes.
• Single integrated container, bulk truck, and rail loading structure.
• Container storage yard.
• An administration building and maintenance and sample storage building, two control rooms, electrical rooms and container preparation area with fabric rain cover.
• New access road from Robson Road. This traffic management plan does not cover this work.

The Traffic Management Plan involves the following construction and associated activities:

• Buildings (storage area, rail unloading building, transfer tower, container loading structure, railcar/truck loading structure, administration building, maintenance & sample storage building).
• Removal of existing concrete slab, pavement, Shed 4, electrical substation building and rail spur. Shed 4 requires demolition to make way for the proposed new rail. The demolition is covered under VFPA approval for the Direct Transfer Coal Facility and FGT will carry out this work on behalf of FSD under the existing approval (Project Permit Number 2012-072-1).
• Installation of services (water and sewer systems, mechanical and electrical).
• Installation of a shipping system (wharf, transfer system, and gallery).
• Road and rail line construction within the FGT property.

Construction activities include pile driving for the shipping system, pouring of concrete for building foundations, and erection of buildings and structures. Limited excavation will be required and is anticipated to require management and disposal of contaminated soil and groundwater as outlined in the CEMP.

3.0 Construction Stages

Construction is planned to start shortly after receipt of the Project Permit from the VFPA. Construction of the entire project is anticipated to take approximately 24 months from mobilization to commissioning. This traffic management plan will be in effect for approximately 12 months after receipt of the Project Permit. By this time, future phases or scopes will be ready to be undertaken and the Traffic Management Plan shall be submitted to VFPA for approval before starting these works.

Please note that the access road construction and main bin slab concrete pour will occur within the first 12 months, but these works will require further details added to the Traffic Management Plan. Once the details are developed, a revised plan will be submitted to the VFPA for approval before starting these works.

Construction works have been planned according to functional areas of the site such as storage, receiving, shipping, and container loading. Construction is anticipated to be sequenced as follows:

• Prepare for on-site construction:
  ▪ Mobilize to site
  ▪ Establish temp service & power

• Demolition:
  ▪ Demolition of Shed 4
  ▪ Demolition of Bekaert slab

• Main Project construction:
  ▪ Civil services

• Remove existing utilities
- Establish permanent storm sewer and interceptor
- Install underground services
- Roads and site development on the FGT site.
- Construction of new access road

- Main plant:
  - Densification
  - Receiving and unloading pit
  - Reclaim/transfer tunnel
  - Main storage silos
  - Piling for shipping and loadout
  - Steel bin erection
  - Structural steel erection
  - Plant electrical
  - Container/rail/truck loading – steel & equipment install

- Shiploader construction

- Rail loop construction
  - Clearing and vegetation management
  - Rail line install
  - Rail road crossing at Robson Road.
  - Extension and switch relocation of tracks in the PARY, to be completed post construction of the initial plant construction.

- Maintenance building construction

- Administration building construction
  - Foundation
  - Install pre-fabricated building
  - Final site work and paving

Note that construction sequencing described above may change slightly at FWS’ discretion to optimize construction schedule.

Hours of work for construction activities will be consistent with the port authority’s approved hours of construction: 7:00 a.m. to 8:00 p.m. Monday to Saturday. Any work outside of regular hours will require prior approval from Vancouver Fraser Port Authority and notifications will be conducted as per port authority requirements.
4.0 Public Information Plan

There are no changes or effects to public roads during this phase of construction. Public notification of traffic will occur according to the Communications Plan. Where there are activities that affect traffic in the area, an updated Traffic Management Plan will address any communication changes, if required.

5.0 Equipment Usage During Construction

Equipment types and quantities will vary through the construction process. The table attached as Appendix B outlines expected equipment usage through each stage.

One over width load is anticipated to be received on site in early 2019. This load shall undergo the BC Provincial Commercial Vehicle oversize load permit process in accordance with applicable regulations and final delivery routing to site shall be confirmed by FWS via the permitting process and the Traffic Management Plan shall be updated with relevant details.

6.0 Construction Traffic Volume

All transport of construction materials to and from the Site is anticipated to be truck-based. Equipment and supplies will be brought to the site, and any debris, wastes, and contaminated soil will be removed from site and disposed of at appropriately licensed facilities.

The main site access point will be Elevator Road via Robson Road and Tannery Road Interchange, with exiting trucks using the same access to then move onto the South Fraser Perimeter Road (SFPR). Trucks will follow the applicable laws and regulations regarding the loading and transport of their materials, (e.g., Transportation of Dangerous Goods Act), and any other applicable regulations.

Appendix A Shows Site access, parking and traffic routes during construction.

Based on the construction duration, construction traffic volumes for the project are estimated as follows.

For delivery trucks

- Total Work days = 6 days/week x 4 weeks/month x 24 months = 576 work days
- Average trucks /day = 8 trucks/day

Truck traffic is anticipated to be very heavy (about 50 trucks per day) during the large foundation concrete pours. The foundation concrete is split into five separate pour days, spread over a 125-day period starting in Q1 2019.

In addition to delivery trucks, worker vehicles will be accessing the FGT site. Parking spaces for worker vehicles (based on a vehicle occupancy of 1.5 people/vehicle) is shown in Appendix A. The estimate was further based on the following assumptions:

- Average attendance = 80 people
- Average vehicles = 53 vehicles
- Peak attendance = 160 people (approx. 2x average day attendance)
- Peak vehicles = 106 vehicles
7.0 Vehicle Routes and Movements

All vehicles will travel to and from site via the Tannery Road/SFPR interchange and along Robson Road to Elevator Road. No other public roads shall be designated as use for construction access, unless otherwise noted in the plan. Truck routes are further detailed in Appendix A attached. Most material for the site shall be coming via major highways, mostly Highway 1, 91, or 99 then Highway 17. Alternate routing shall be via 104 Ave to Tannery Road in case there are issues with Highway 17.

Traffic from North Vancouver shall arrive to site by travelling on Highway 1 then East 104 Ave and take Highway 17 towards to Tannery road access. Alternate routing to site shall be via 104 Ave westbound to Tannery Road.

Concrete supply location has not been finalized but we are working on finding a feasible solution that has the least impact to traffic. If the selection of the concrete supply location will use alternate routing than that mentioned above, the Traffic Management Plan will be updated and submitted to VFPA for approval before any work is undertaken.

To remove the potential for any traffic congestion on public roads adjacent to the site, a truck staging area will be established beside FWS’s site office and laydown area. This staging area will have capacity for four (4) semi-trucks to park if they are required to wait for loading or unloading.

FWS’ site office will be inset from the main site entrance. This will allow multiple trucks or visitors to enter the site at one time, park and sign in at FWS’s office without the need to stop on public roads.

There will be no need for any project traffic to stop or park along Robson Rd. or Elevator Rd. at any time.

A wheel wash station will be used by exiting vehicles that traveled on excavated surfaces on-site. Vehicles that have remained on finished surfaces will not pass through the wheel wash station.

8.0 Signage

Signage will be placed at the site entrance to identify the project site. Signage identifying there is a construction site access ahead shall be placed on Robson Road to notify traffic there is construction happening in the area.

FWS crew will review the site prior to mobilization and periodically thereafter to determine requirements for safety and informative signage, and their required locations on the site.

Signage will be provided directing all visitors to the site office on arrival to site, informing visitors of exclusion zones and areas of restricted access, and of PPE and safety requirements.

All signage will be erected before commencing site works and will remain in place until no longer required or on the completion of the scope of work.

9.0 Incident Reporting

Any incidents occurring on public roads involving subcontractors for the site will be reported in accordance with local laws and practices. Reporting will be the responsibility of the subcontractor.

Any incidents occurring on public roads involving FWS personnel or vehicles will be reported in accordance with local laws and practices, and reporting will be the responsibility of the FWS project manager.

Any incident occurring at the site access point, shall be investigated by FWS and information regarding the nature of the incident shall be communicated to Fraser Surrey Docks and VFPA Operations Centre via Andrew Smith, Project Manager.

Incidents occurring on the FWS construction site shall be investigated and documented internally, in accordance
with the FWS Site Specific HSE Management Plan.

10.0 Responsibilities

FWS personnel have developed this initial TMP to be in effect from the start of construction through winter 2019. It will be updated periodically to reflect changing scopes of work, and changing site conditions and updates submitted to VFPA for approval before new work is undertaken.

Key personnel and contact information are provided in the table to follow.

<table>
<thead>
<tr>
<th>Key Personnel</th>
<th>Role</th>
<th>Responsibility</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrew Smith</td>
<td>Project Manager</td>
<td>Review and approve TMP prior to its implementation Periodically audit the site</td>
<td>e: <a href="mailto:asmith@fwsgroup.com">asmith@fwsgroup.com</a> d: 204.928.8766</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to ensure compliance by all personnel and equipment</td>
<td></td>
</tr>
<tr>
<td>Dale Rawn</td>
<td>Construction Manager</td>
<td>Ensure all personnel, subtrades, delivery drivers are familiar with, and follow, the TMP</td>
<td>e: <a href="mailto:drawn@fwsgroup.com">drawn@fwsgroup.com</a> c: 604.219.8418</td>
</tr>
<tr>
<td>Jessica Wright</td>
<td>Site CSO</td>
<td>Assist in communicating and periodically evaluating/updating the TMP</td>
<td>e: <a href="mailto:jwright@fwsgroup.com">jwright@fwsgroup.com</a></td>
</tr>
</tbody>
</table>

FWS personnel will periodically re-evaluate TMP requirements using the Traffic Management checklist attached as Appendix C.

11.0 On-Site Loading and Receiving

FWS will use the methodologies described in this section for on-site loading and receiving activities.

- FWS will use predefined truck routes as detailed in Appendix A. This will be distributed to subcontractors prior to mobilizing trucks to site.
- The size of trucks will be chosen dependent on available space on site and road restrictions on the route.
- When the trucks arrive on site drivers will be required to check in with FWS personnel who will communicate approved routes, on-site hazards, and any changes in site conditions for regular drivers.
- A detailed traffic management plan will be developed specific to significant concrete pour activities to plan for concrete truck traffic.

12.0 On-Site Traffic Control

FWS will use on-site traffic control and signage to manage the entrance and egress of the trucks to and from site. Anticipated frequency and schedule of vehicle traffic will be discussed each day at the tailgate meeting.

Additional signage, delineators, and barricades will be placed as required on site to manage on-site travel.

An FWS worker will be assigned as the traffic control personnel each day and will be responsible for directing and
controlling traffic movement on site. A third-party flagger will not be required on the project.

13.0 Construction Parking

A designated area for all construction parking for pickups and light vehicles will be established adjacent to the existing site personnel parking area.

A separate area for staging of trucks and heavy equipment will be established on the south east of the site, as illustrated in Appendix A.

No vehicles or equipment will be staged over the Metro Vancouver water main at any time, and it will be kept free from any unnecessary loading.

Visitor and employee parking of vehicles shall be established and posted in a safe area of the site. During peak days of traffic, which should be limited to the main bin concrete pour days, additional vehicle parking shall be arranged on-site, in safe work areas that are available during that phase of work. There is adequate room on site for 106 vehicles, for the concrete pour days.

14.0 Risk Analysis

This section identifies possible risks associated with the transportation process and vehicle/equipment movement on site.

We identify and evaluate each risk using the following criteria:

- Type
- Probability
- Impact
- Risk location
- Control and mitigation strategy

The following table presents risks in the order they would be likely to occur.

<table>
<thead>
<tr>
<th>Risk ID</th>
<th>Activity</th>
<th>Risk Type</th>
<th>Probability</th>
<th>Impact</th>
<th>Location</th>
<th>Control and Mitigation Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Traveling to site</td>
<td>Traffic accident</td>
<td>Moderate</td>
<td>High</td>
<td>Public roads</td>
<td>Plan route</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Consider driving records in subtrade selection</td>
</tr>
<tr>
<td>2</td>
<td>Entering site</td>
<td>Collision or pedestrian strike</td>
<td>Moderate</td>
<td>High</td>
<td>Public roads</td>
<td>Follow traffic management plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Provide signage identifying site entrance</td>
</tr>
<tr>
<td>3</td>
<td>Entering/Exiting site</td>
<td>Project vehicles impacting flow of traffic outside of the work zone</td>
<td>Low</td>
<td>Moderate</td>
<td>Public roads</td>
<td>Allow ample space inside work zone for vehicles to enter, park safely, and access site office without having to stop on public roads.</td>
</tr>
<tr>
<td>4</td>
<td>On-site maneuvering</td>
<td>Strike of worker or collision with equipment</td>
<td>Moderate</td>
<td>High</td>
<td>Site</td>
<td>Follow on-site traffic management plan</td>
</tr>
</tbody>
</table>
Implement speed limit in work zone
Use delineators
Use spotters

<table>
<thead>
<tr>
<th></th>
<th>Exiting site</th>
<th>Collision or pedestrian strike</th>
<th>Moderate</th>
<th>High</th>
<th>Public roads</th>
<th>Provide stop sign at exit.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
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</tbody>
</table>

Additional risks may be identified as the project progresses. The above risk matrix should be considered organic in nature, and will evolve throughout the project. A traffic management checklist will be completed periodically by the site supervisor (Appendix C) and new control and mitigation measures will be implemented as required.
APPENDIX A – Site Access and Layout Figures
Figure 1: Primary Access to Site.
Figure 2: Wider Road Network in relation to Project
Figure 3- Road to RDM Enterprises for concrete/rebar recycling.
Figure 4: Traffic Routing and Site Signage during Concrete removal

ALL VISITORS MUST REPORT TO SITE OFFICE

STOP

NO UNAUTHORIZED VEHICLES PAST THIS POINT

STOP

CAUTION

TRUCKS CROSSING

FOR EMERGENCIES OR CONCERNS PLEASE CALL:

PARKING

STORAGE LAYDOWN AREA
APPENDIX B – Typical Equipment Usage
# Traffic Management Checklist

**Project:** Fraser Grain Terminal  
**Date:** __________________________

**Location:** 11041 Elevator Rd, Surrey BC  
**Completed by:** __________________________

<table>
<thead>
<tr>
<th>TRAFFIC MANAGEMENT CHECKLIST</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Are traffic concerns identified and counter-measures outlined on worksite JSAs or worker FLHAs?</td>
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<tr>
<td>2 Has the site supervisor signed the worker FLHAs?</td>
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<tr>
<td>3 Has a management plan or instructions been developed for the transport, delivery, and offloading of equipment and materials at the worksite?</td>
<td></td>
<td></td>
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<tr>
<td>4 Is there a requirement to routinely complete an inspection of all vehicles and mobile equipment before being mobilized to a worksite?</td>
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<tr>
<td>5 Are drivers aware of speed limits established for the worksite?</td>
<td></td>
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<tr>
<td>6 Are worksite roadways maintained throughout the project duration?</td>
<td></td>
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<td></td>
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<tr>
<td>7 Are designated walking areas for pedestrians separated from mobile equipment traffic?</td>
<td></td>
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<tr>
<td>8 Can workers access the worksite from temporary or permanent offices without crossing roadways?</td>
<td></td>
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<td></td>
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<tr>
<td>9 Has movement of material been minimized during peak traffic periods, either on public, private, or worksite roadways?</td>
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<td></td>
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</tr>
<tr>
<td>10 Is safe parking available at the worksite off roadways and walkways for both employees and contractors?</td>
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<tr>
<td>11 Have traffic patterns been assessed during peak traffic periods?</td>
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<tr>
<td>12 Have traffic schedules and emergency signs been posted prior to the start of work?</td>
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<tr>
<td>13 Have seasonal lanes changed in width (i.e., due to precipitation, freezing)? If so, has the roadway narrowed causing trucks to pass closer together (i.e., soft shoulders)?</td>
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<td></td>
<td>Question</td>
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<td>-------------------------------------------------------------------------</td>
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<td>---</td>
</tr>
<tr>
<td>14</td>
<td>Do roadways allow for adequate response times for emergency vehicles (i.e., fire, ambulance)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Is there sufficient lighting around roadways and specifically intersections at worksites?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Are speedbumps used as a measure to reduce speed in congested areas?</td>
<td></td>
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<tr>
<td>17</td>
<td>Are there underground or overhead utility crossings to be considered?</td>
<td></td>
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</tbody>
</table>

Any item marked NO requires a Corrective Action. Timeline for Corrective Actions to be in place: A = Immediately, B = 48 Hours, C = As soon as practicable

<table>
<thead>
<tr>
<th>'NO' (from above) = Corrective Action</th>
<th>A, B, or C</th>
<th>Assigned To</th>
<th>Due Date</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
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APPENDIX H
FWS Access Road Drawings