Construction Storm Water Pollution & Prevention Plan (SWPPP)

A SWPPP is a Living Document:
The document is meant to be updated as the project changes

Construction SWPPP

SWPPP Must Cover all aspects including all areas of surface disturbance:

Construction area,

Road and access,

Stockpiles,

Equipment Storage,

Parking Areas,

Etc.

Objective:

- Control or prevent erosion
- Protect surface water from sediment created from construction activities until vegetation has grown back

Contents of a SWPPP

www.seawayenergy.com/corporate_info.php

- Project Description
- Site Description
- Site Map of Development
- Signatory Certification
- Best Management Practices for Erosion and Sediment Control
- Other Best Management Practices
- Significant Materials
- Additional Owners and Operators
- Site Inspection Record
- Maintenance Activities & Log
- Who is Responsible for What

Project Description

Should include a schedule of events for the property

1. Initial Construction
2. Drilling
3. Completion / Re-completion
4. Operational Facility Construction
5. Temporary Stabilization
6. Placement of Erosion an Sediment Controls
7. Seeding
8. Final Stabilization

Best Management Practices (BMPs)

- Maintenance Activities
  - Maintain Equipment
  - Maintain BMPs
- Spill Prevention
  - Follow general spill prevention & clean-up practices
- Good Housekeeping

Best Management Practices (BMPs)

- Drain Berm Areas Properly (Storm Water Only)

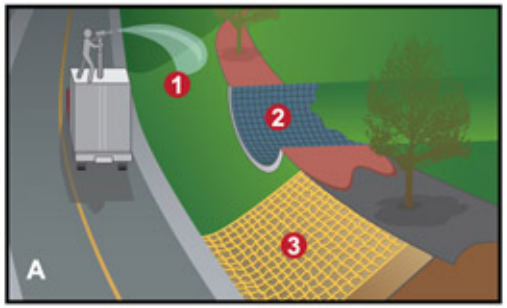
When draining storm water:

- Check for sheen
  - If no sheen and no production water, water may be drained or released
  - If sheen or production water present water must be disposed of properly
- Document
  - If sheen present
  - Approximate amount of water

Best Management Practices (BMPs)

- Sediment and Erosion Control
  - Identified on site diagram
  - Updated when change

OUR PRODUCTS



A

Matting

1. Hydromulch
2. Permanent Matting (TRM)
3. Erosion Blanket
   - Single, Double Sided Straw Matting
   - Straw Coconut Matting
   - Coconut Matting
   - Coir Mat
   - Eco Stakes
   - Staples

B

Posts & Stakes

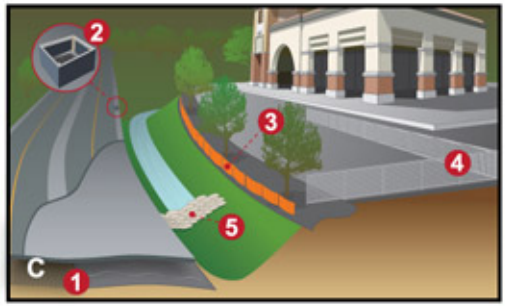
1. T-Posts (4ft, 5ft, 6ft)
   - Wood Stakes (3ft, 4ft)

Silt Fence

2. Silt Fence w/out Backing
   - Silt Fence w/ Backing

Sediment Tubes

3. Temporary Sediment Tubes
   - Coir Logs



C

Geotextile

1. Woven
   - Non-Woven

Misc

2. Inlet Protectors
3. Safety Fence / Tree Protection
4. Chain Link Fence
5. Sandbags
   - Pre-made Sandbags

D

Seed

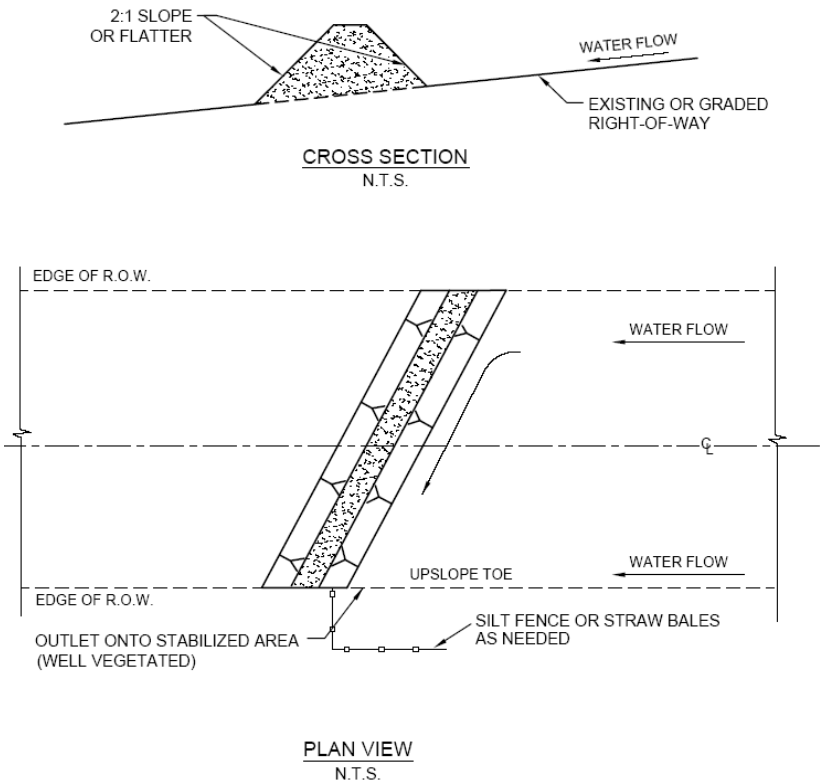
- Contractor Seed Mix
- Annual Rye Seed
- Straw
- Seasonal Temporary Mixes
- Fescue

Misc

- Floc Logs
- Dewatering Bags
- Erosion Eels

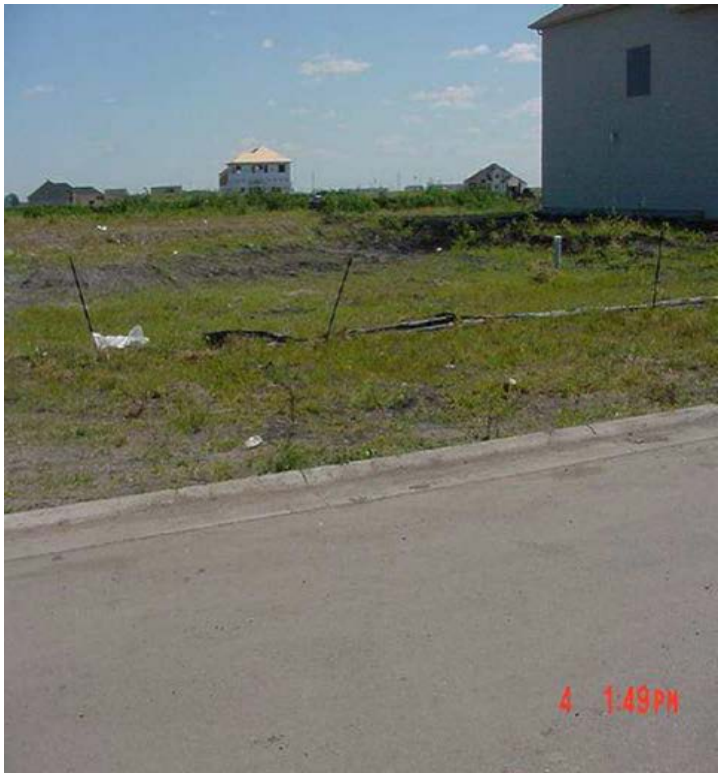
Sediment & Erosion Control

Silt Fencing or Earth Berms



- Berms diverts water & aids sedimentation
- Silt Fencing – Slows and lets water through while filtering sediment

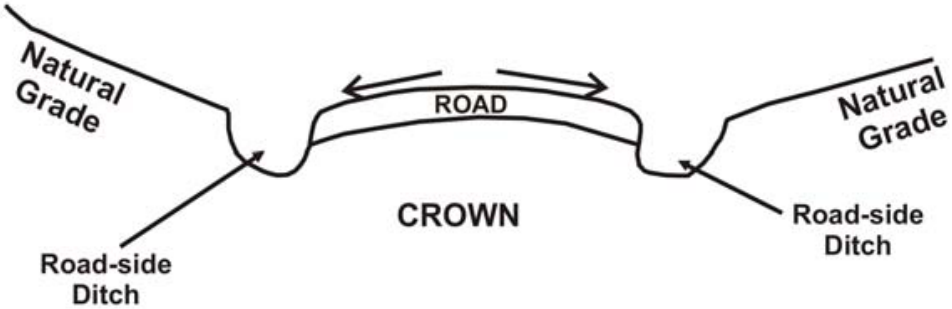
Vegetative Buffer



- Maintain vegetation around pad
- Vegetation acts as a filter and erosion control
- Minimum 20 feet wide

Sediment & Erosion Control

Road Surface Slope



Ditches should be maintained and vegetation in place to help prevent erosion

Culverts

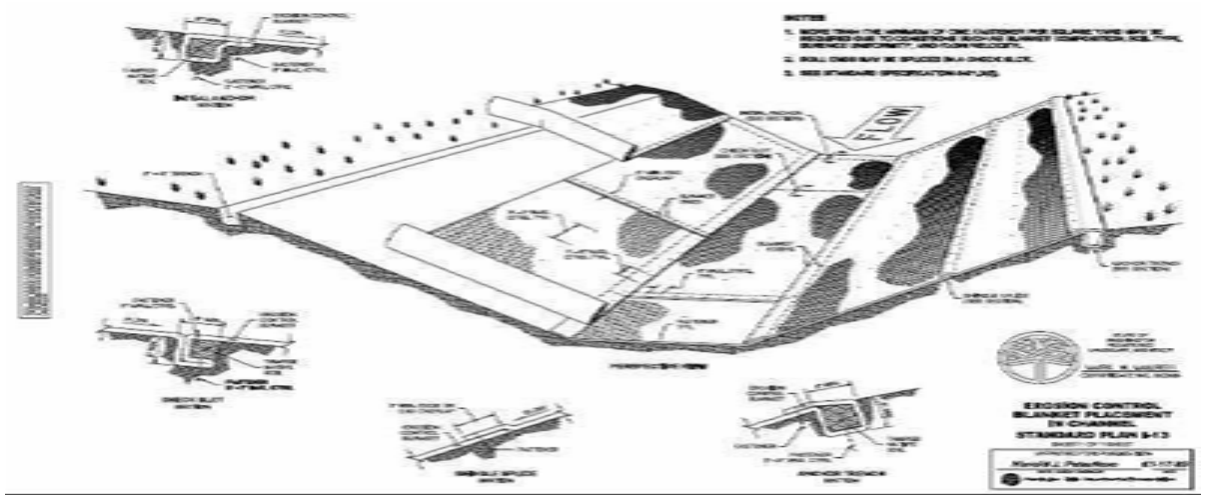
Culverts placed in drainage areas or where water is transported

Other BMPs

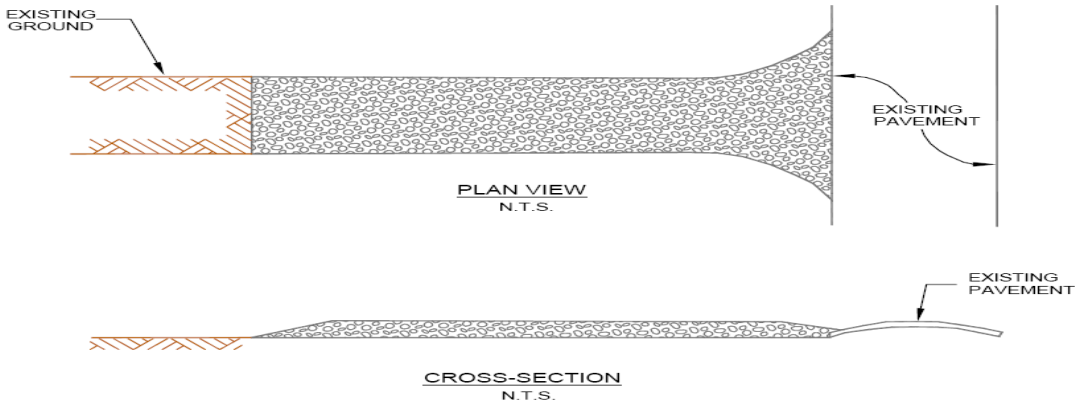
- **Mulch** – Straw disked into soil help stabilization
- **Erosion Control Blankets** – Netting material used for erosion control and stabilization
- **Hay Bales** - Temporary used as a filter
- **Silt Fencing** – Diversion & Filter
- **Sediment Traps** – Creating a low for water to flow into and let water to be absorbed and sediment to settle may require cleaning out at times
- **Diversion (Berms)** – Divert Water towards a sediment trap or filter
- **Rock Construction Entrances** - to prevent tracking of dirt especially onto hardtops or paved roads

Other BMPs

Mulch & Blankets

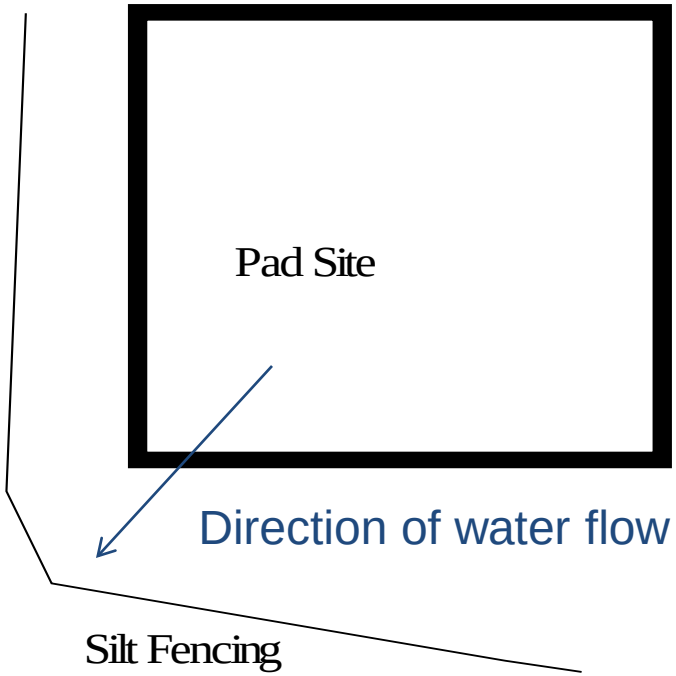


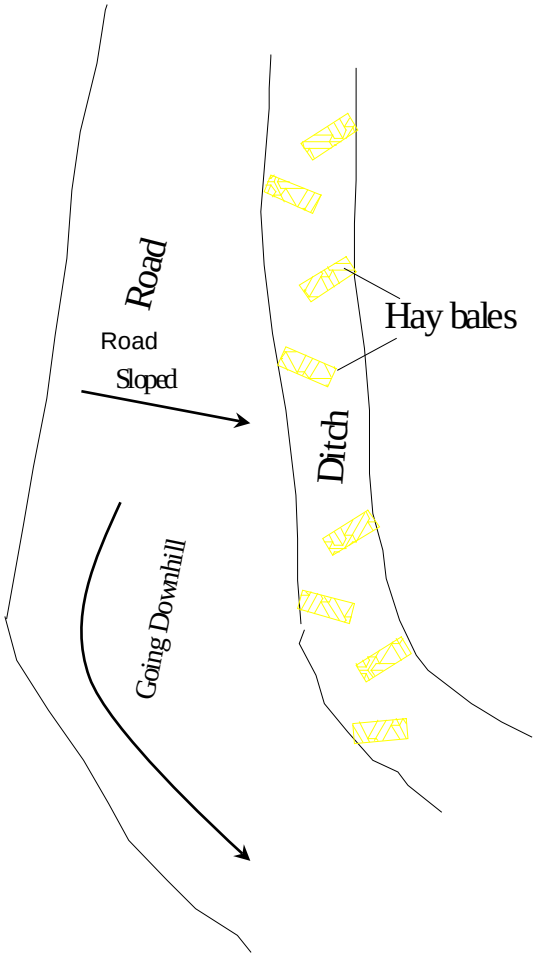
Construction Entrance



BMP Placement

- Slope road toward ditch
- Place silt fencing, hay bales, or rock berms downstream of bottom of pad
- If necessary place berms at top of pad.
- If ditch is on slope place hay bales, rock berms, or silt fencing as depicted to help slow water.





Construction Site Map

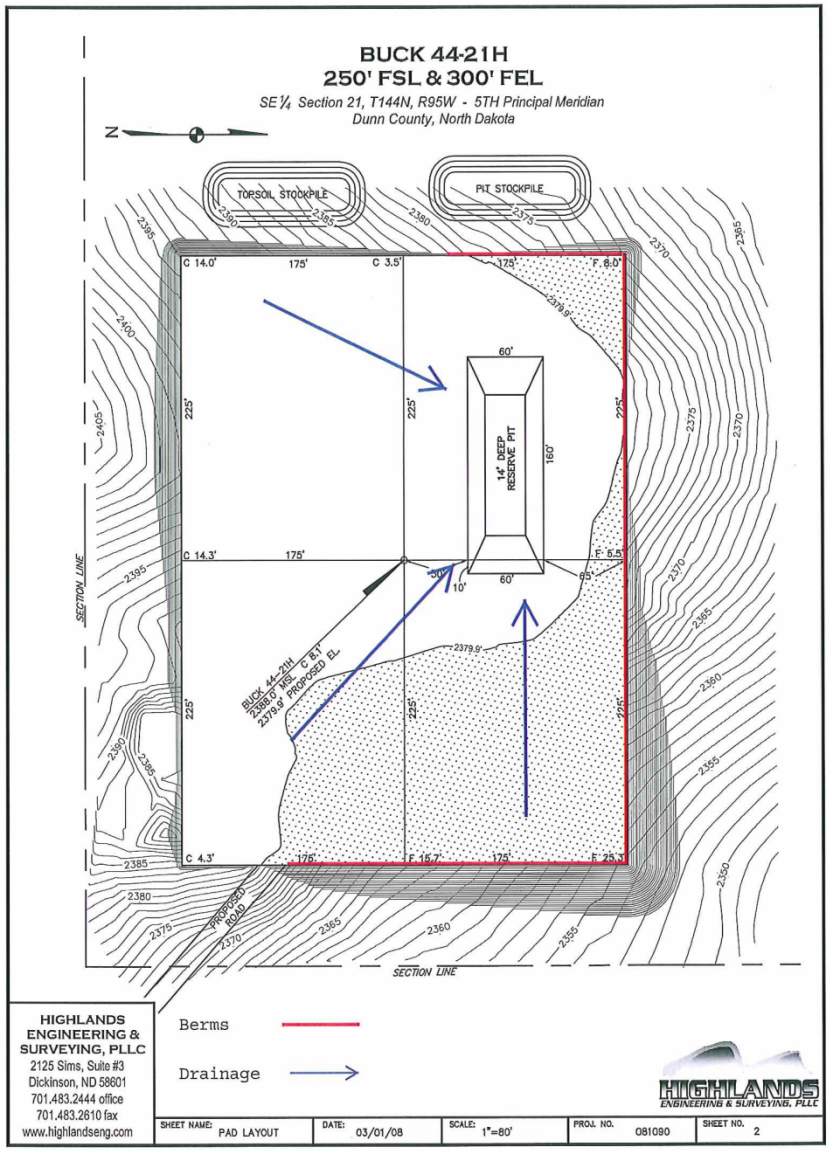
1. Construction site boundaries and area(s) of soil disturbance

2. The location of surface waters within construction area

3. The location of areas used for storage of building materials, soils, or waste materials

4. The locations of proposed and existing erosion and sediment controls and storm water conveyance systems

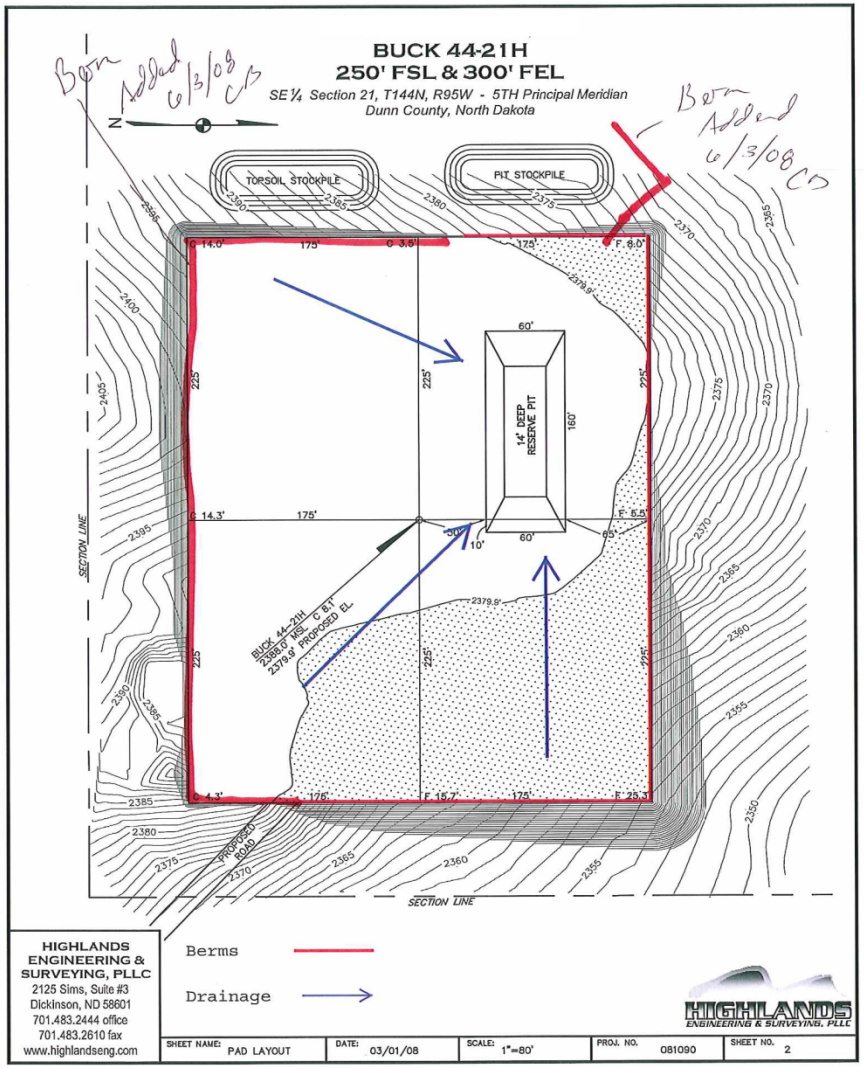
5. Storm water runoff/run on drainage patterns

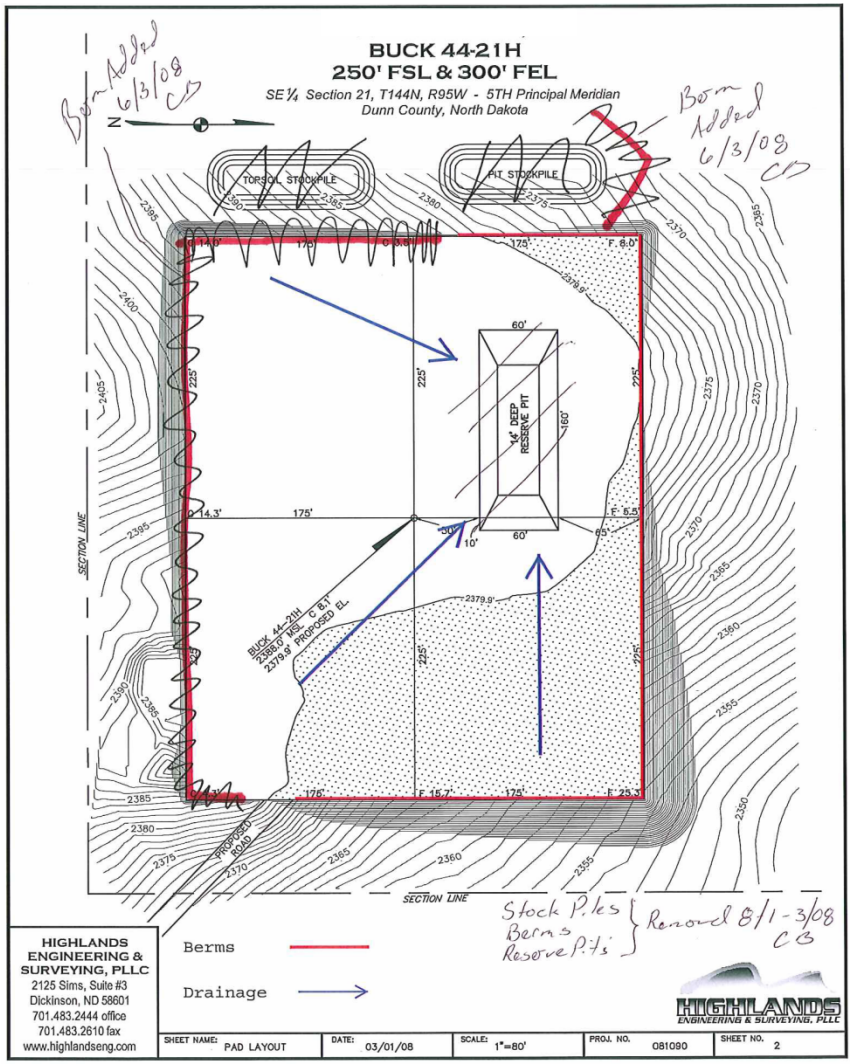


Keep up to Date

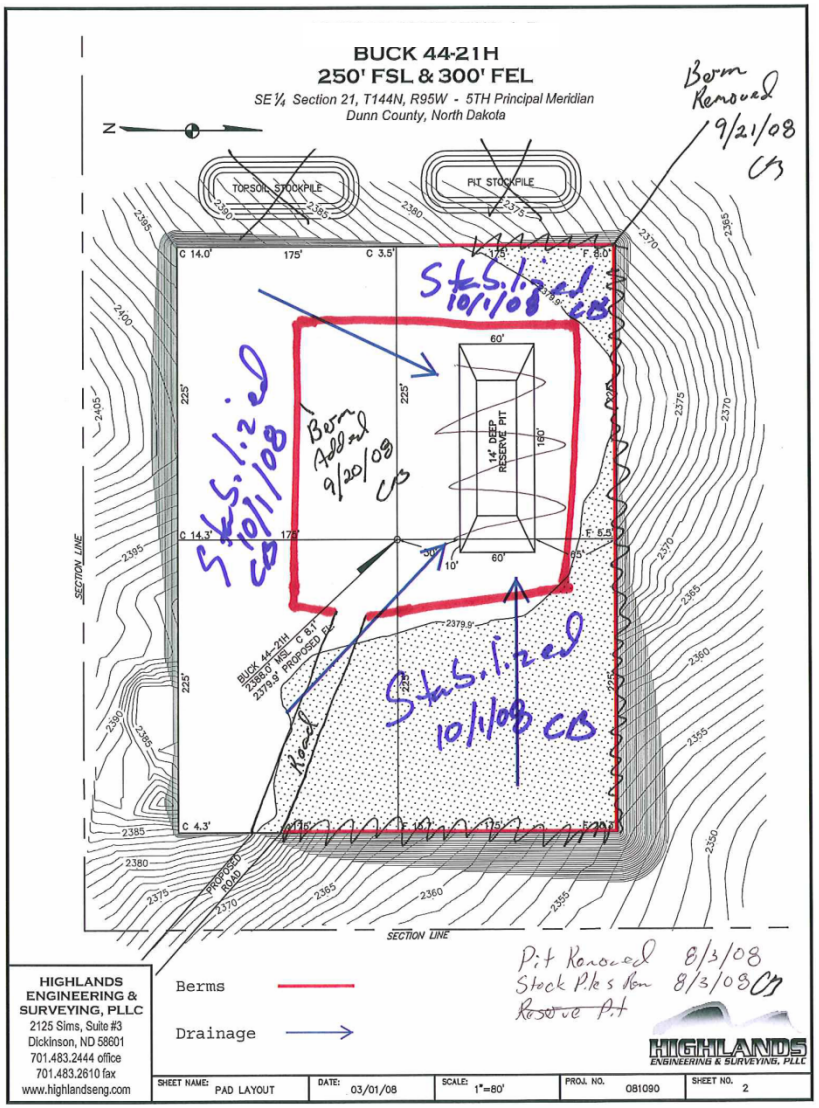
Do not be afraid to update drawings within the SWPPP as the project changes

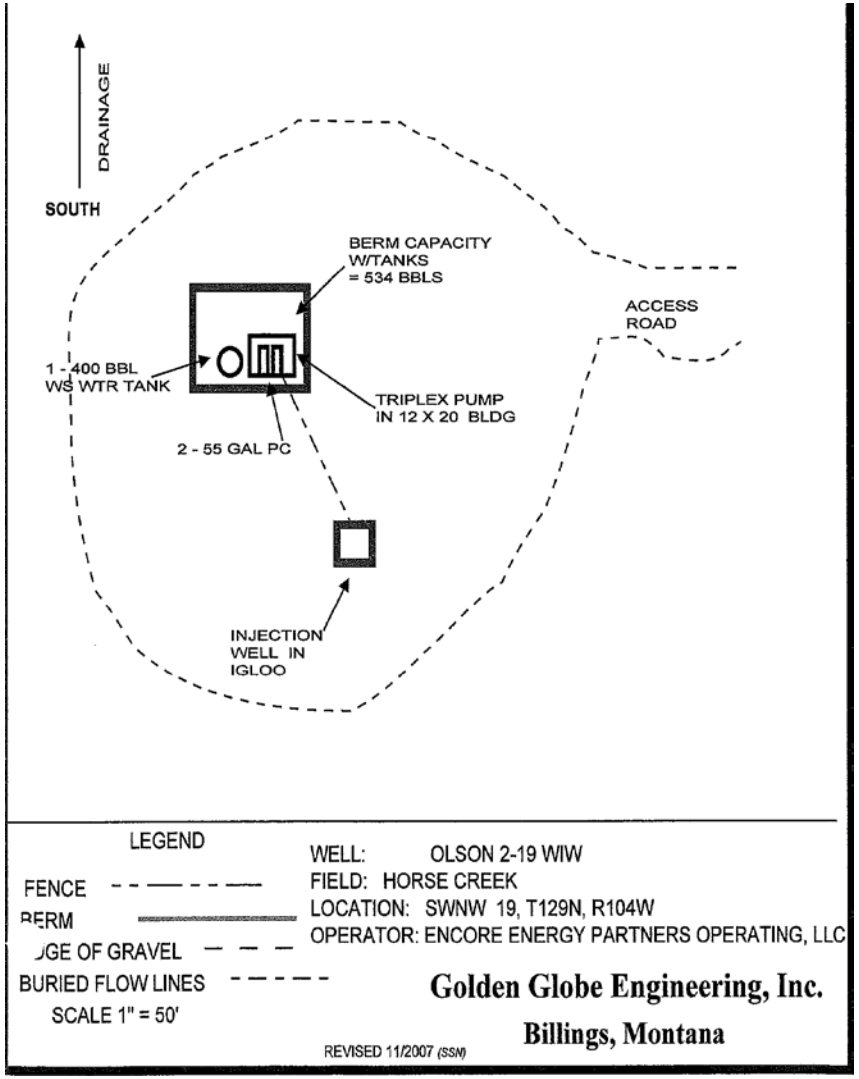
Date & Initial Changes



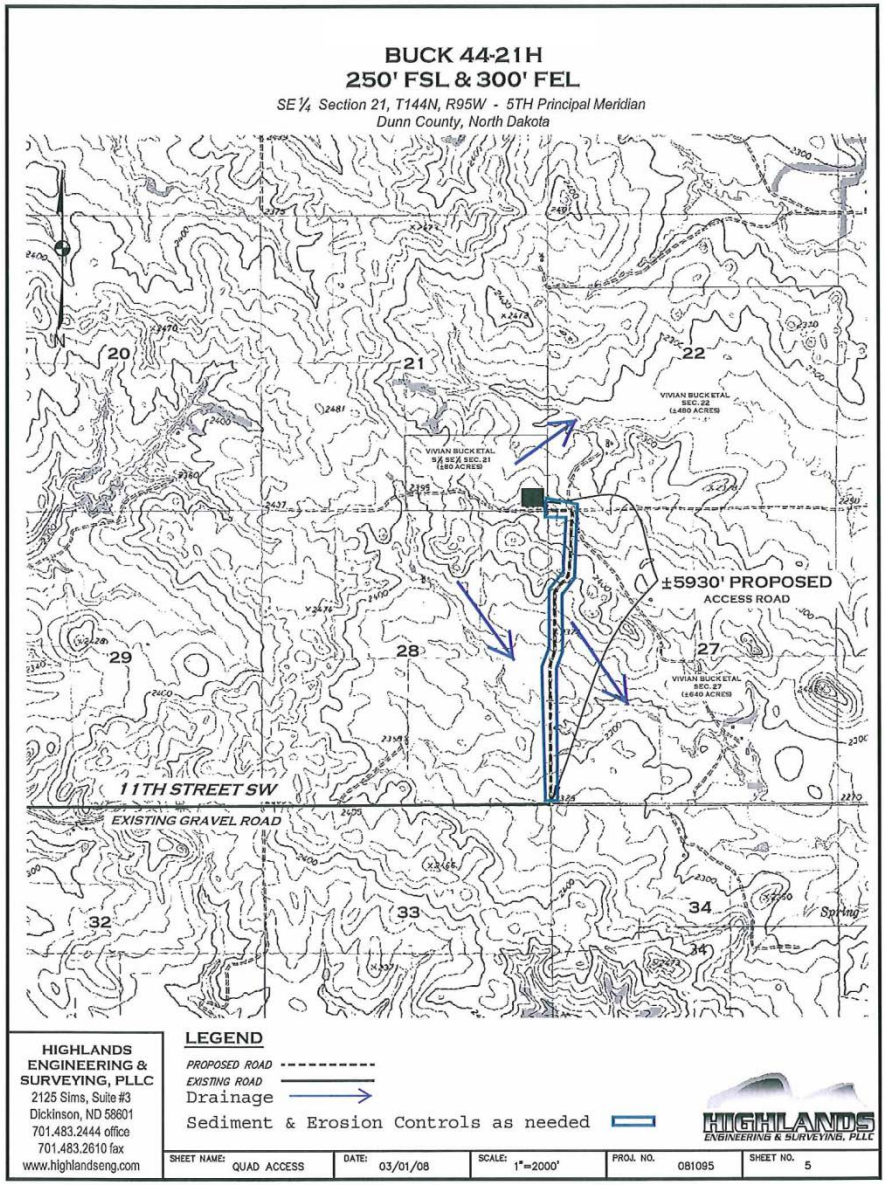


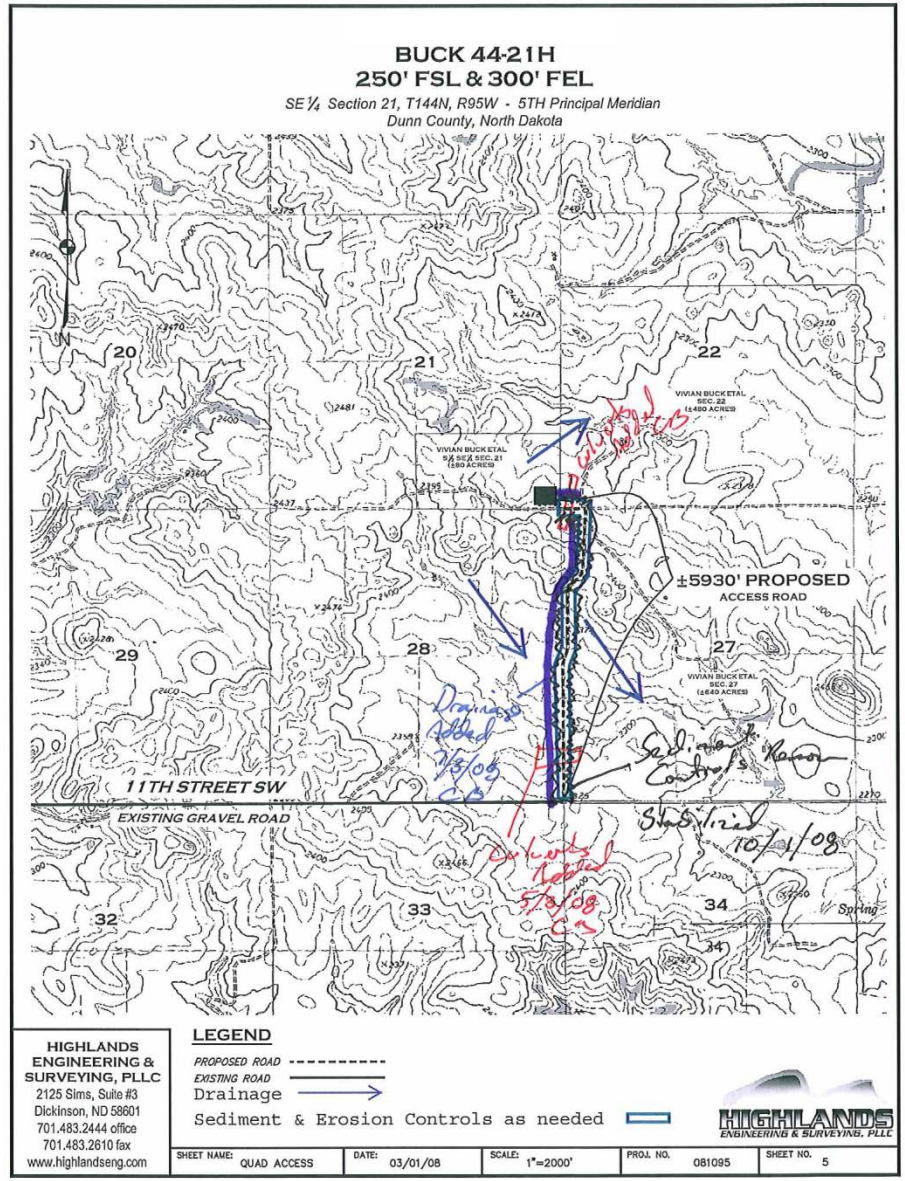
Keep up to Date





Kept Up-To-Date





Now try the SWPPP Drawing Exercise

Example of Revision Log

SWPPP Revision Documentation

The SWPPP should be revised and updated to address changes in site conditions, new or revised government regulations, and additional on-site storm water pollution controls.

All revisions to the SWPPP must be documented on the SWPPP Revision Record, which should include the information shown below. The authorized permittee representative, either the owner, a representative of the owner, or the operator, who approves the SWPPP should be an individual who has the ability to modify project plans and specifications related to the SWPPP. The initials of this representative attest that the SWPPP revision information is true and accurate.

Item Revised	Revision Made	Date	Initials

Inspections

- Performed
  - Usually Every 14 Days
  - Within 24 Hrs of ½ in rain fall or snow melt
    - Rainfall determined by on-site rain gauge or National Weather Service Precipitation Gauge Station located near site
  - Document adverse weather conditions that prevent inspection
- Performed until final stabilization of entire site and Notice of Termination filed
    - Final Stabilization: 70% Vegetative Cover and/or permanent controls in place to prevent soil erosion in all previously disturbed areas

Inspections

Observe Entire Site

- Stock piles
- Storage Areas
- Controls
- Equipment
- BMPs
- Vegetated Areas

Inspections Observe & Identify issues

- Condition of Sediment & Erosion Controls
- Condition of Vegetation
- Stains, Leaks & Spills
- House Keeping
- Storage of Equipment and Materials
- Signs of new disturbance

❖ **Follow-up:**

Make sure issues identified have been corrected

Activities to Log

- Tracks SWPPP related maintenance activities
- Spills & Clean-up
- Draining of berm areas
- Inspections
- Changes to SWPPP

❖ Entries should be dated & initialed

SWPPP Inspection & Activity Log

Facility - _____ Permit Number -_____

Instructions: Please fill out the Inspection & Activity Log information below for the permit number referenced above. See example below:

Time & Date	Name of Inspector	Date, Amount (inches), & Duration of Precipitation Event	Observations and actions taken: Document incidents such as erosion, sediment accumulation, spills, SWPP – related maintenance, remediation, etc.
Example: 2:00 pm 7/2/2002	Example: John Smith	Example: 7/1/2002, 2 inches of rain, 5 hours	Example: Up to 20 inches of sediment captured behind silt fence on western edge of property – sediment needs to be removed. Silt fence on northern side is OK. Noticed small oil leak from fuel tank.

Records

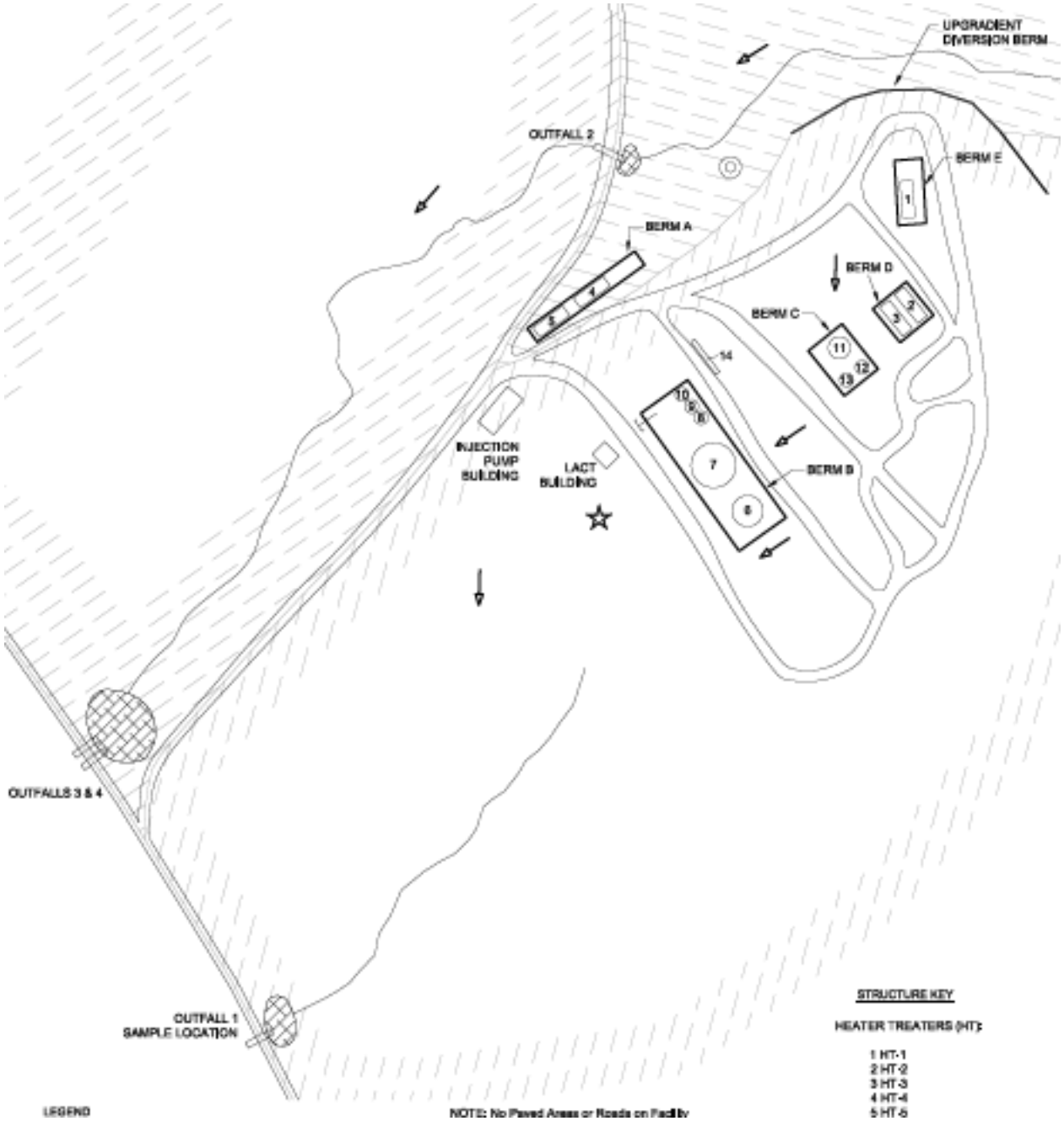
- All changes to site must be documented in SWPPP
  - Map
  - Log
- All SWPPP Inspections
- All SWPPP Maintenance Activities

- Maintained for 3 years after final stabilization

Summary

- Remember to update Site Map
- Inspections – 14 day or 24 hrs of rain or snow melt
- Maintain Controls and BMPs
- Maintain Records
- SWPPP must be maintained until Final Stabilization (70% cover)

❖ Take Photos for Comparison
  - Before Initial Construction
  - Final Stabilization
  - Can be used to prove final stabilization did occur if an unforeseen incident happens



Industrial SWPPPs

Plan for facilities that are already constructed and operating

Industrial SWPPP must be implemented

When discharges of storm water have come in contact with overburden, raw materials, wastes, or otherwise contaminated

Or

Reportable Spill which impacts Waters of the US during a storm event.

Industrial SWPPP Primary Difference

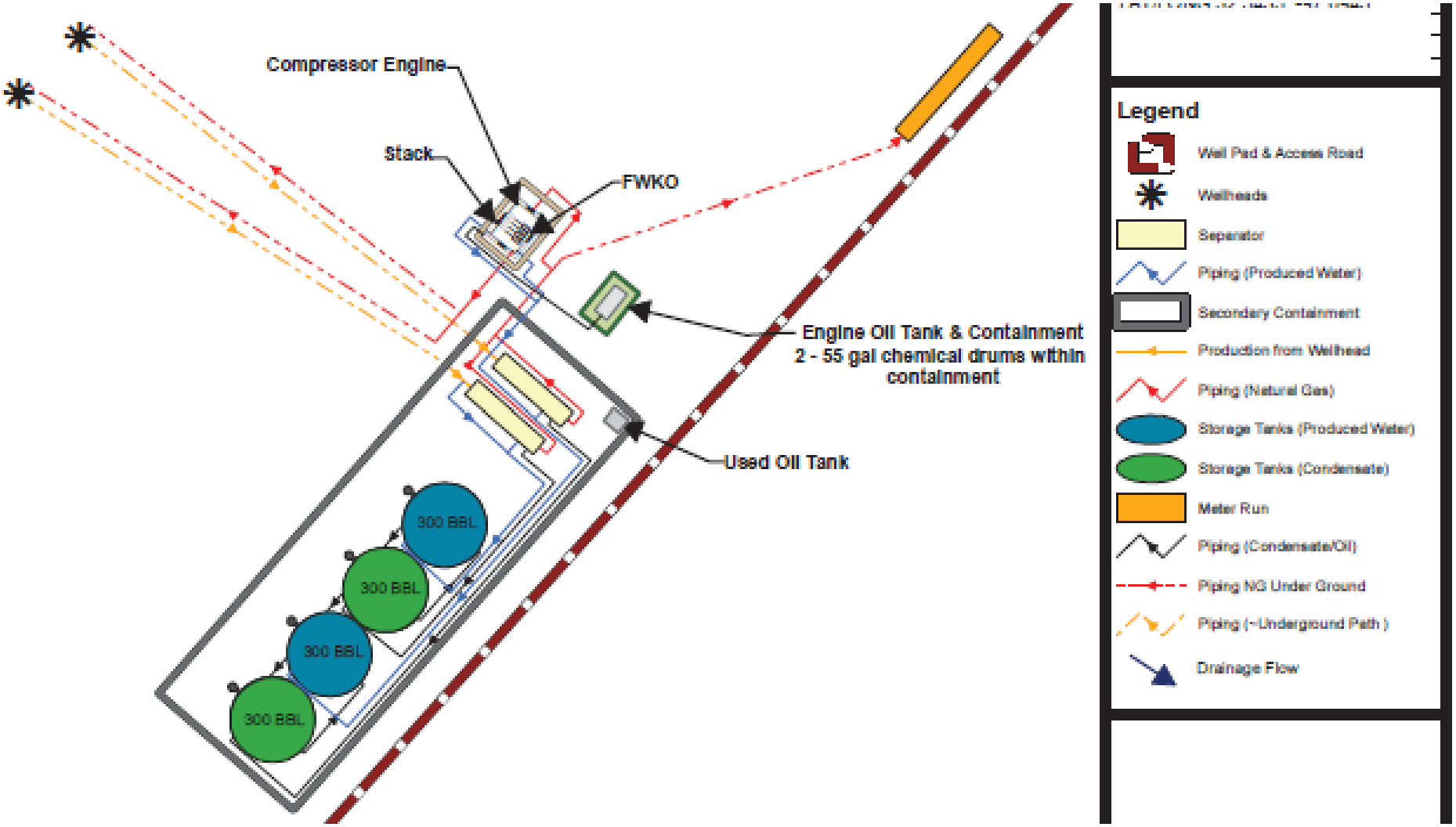
- Must include information on operations at the facility
- BMPs for operation identified
- Material Safety Data Sheets for all chemicals
- Flow – through diagram
- Storm water discharge sampling
- Regular reporting required to the state

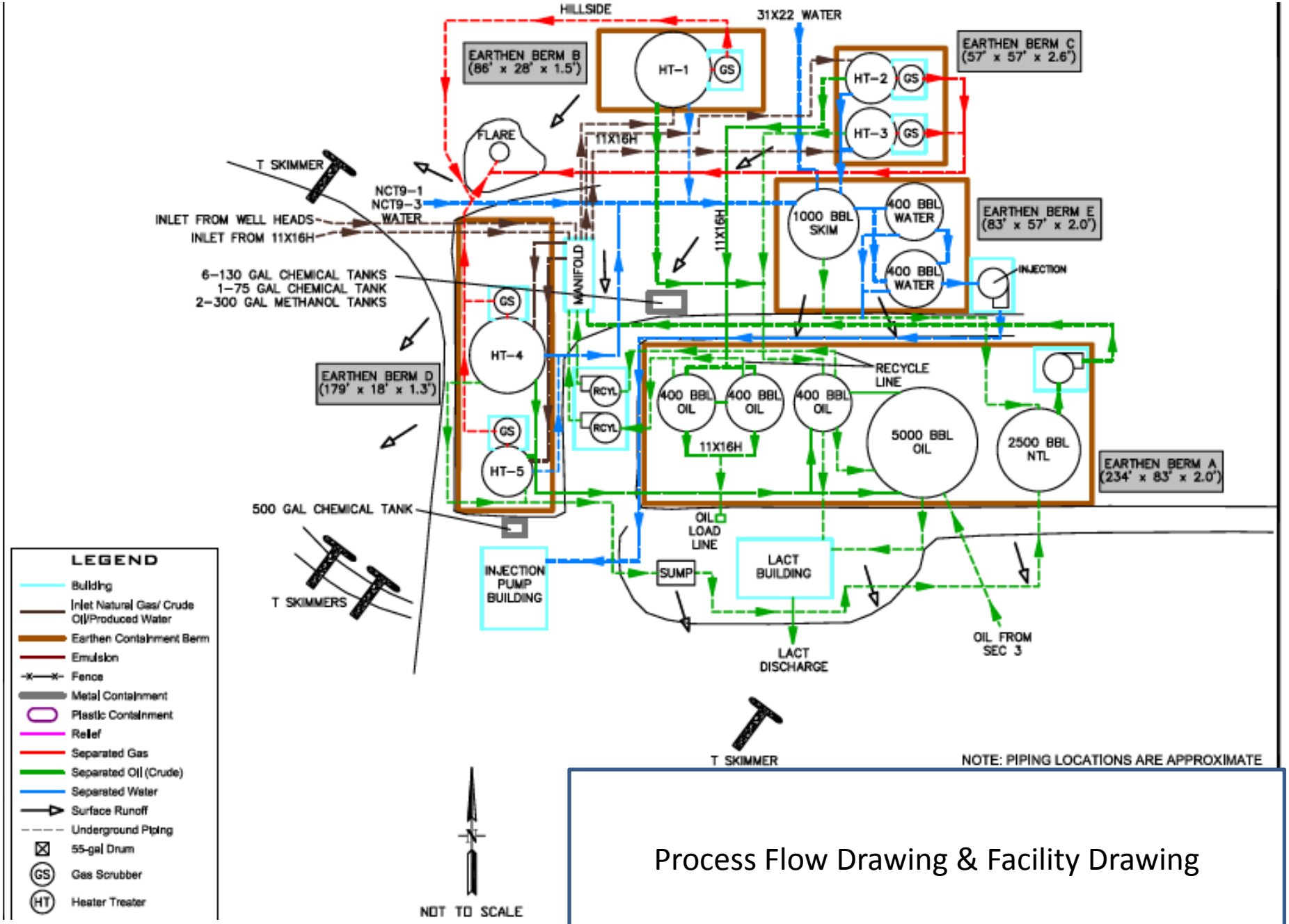
Stormwater discharges to the slot drain and is conveyed offsite through a valved pipe.

Some Additional BMPs

- Protect Environment from spills during maintenance activities
- Clean-up all spills immediately
- Keep exterior of equipment and containers clean of chemical and product residue
- Store unused equipment in a manner to prevent storm water contamination
- Provide & Maintain containment for chemical containers
- Maintain containment berms & storm water diversion berms
- Preventive maintenance on equipment performed within buildings or contaminated equipment covered when work not being performed and during storm events.

Process Flow Drawing





Process Flow Drawing & Facility Drawing

Permit Termination

Notification of Termination:

After three years of operating successfully under a Storm Water Pollution Prevention Plan, the permit for the facility may be terminated.

No more reportable spills

References

NDDH Construction Storm Water
http://www.health.state.nd.us/WQ/Storm/Construction/ConstructionHome.htm

IPAA Guidance Document: Reasonable And Prudent Practices For Stabilization (RAPPS) Of Oil And Gas Construction Sites Copyright 2004
http://www.ipaa.org/issues/hot_topics/RAPPS.pdf

Encore Master Storm Water Pollution Prevention Plan, State of North Dakota, State of Montana, & Sate of Wyoming

Montana Pollutant Discharge Elimination System, Permit # MTR100000

Wyoming Pollutant Discharge Elimination System, Permit # WYR10-0000 & Permit # WYR00-A000

North Dakota Pollutant Discharge Elimination System,
Permit # NDR10-0000

SWPPP is a Living Document