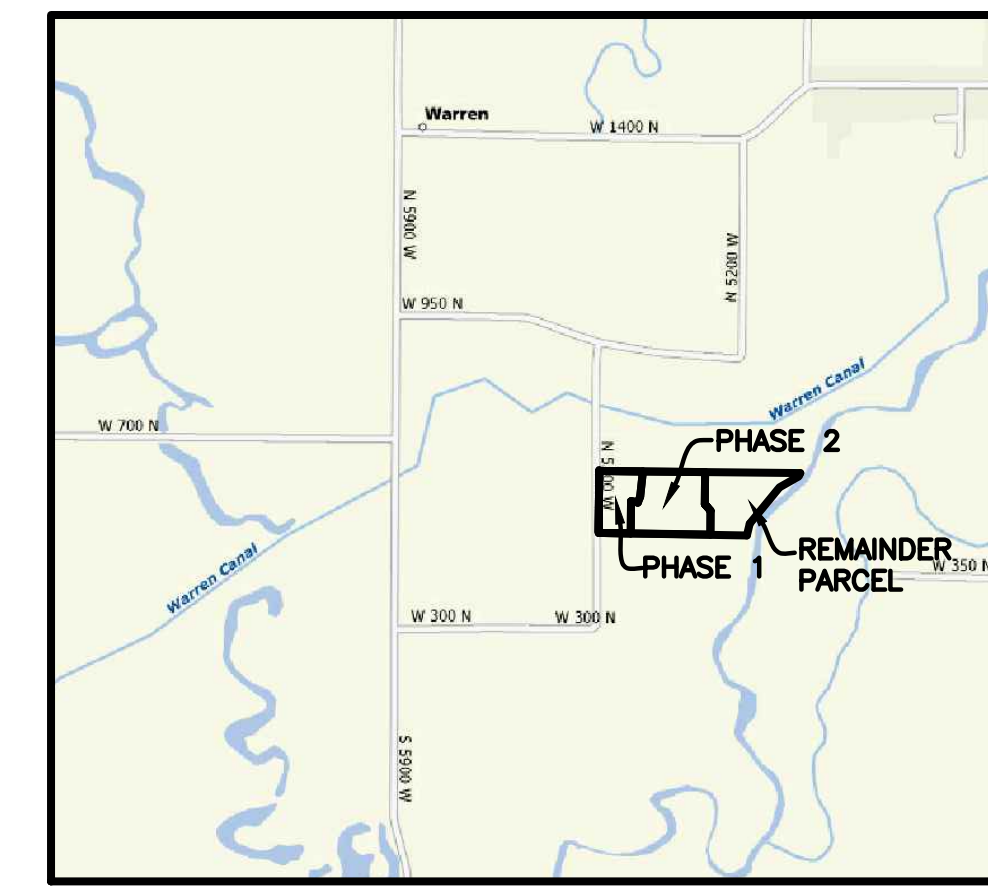


**Project Narrative/Notes/Revisions**

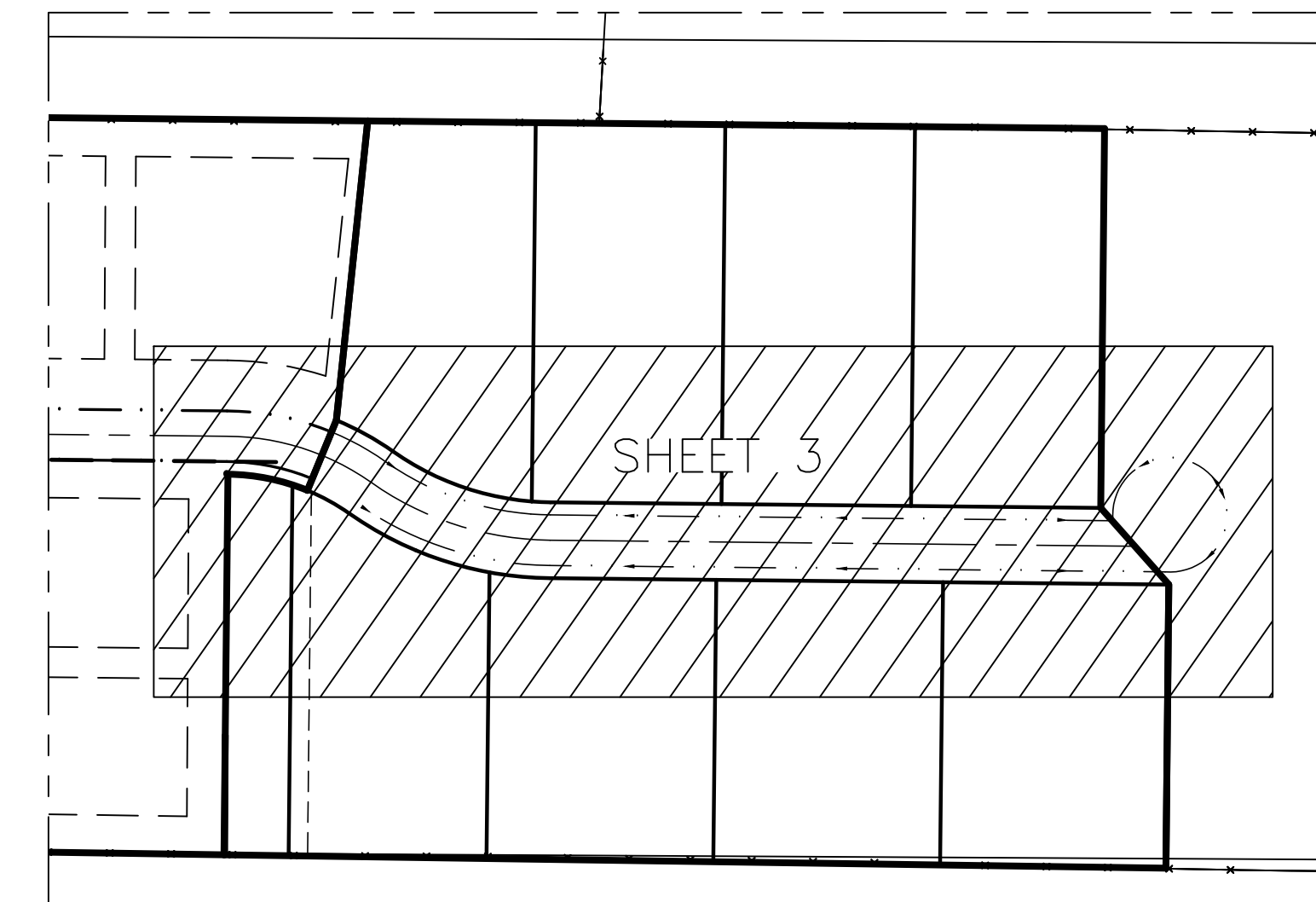
- 1) 12/15/16 CK - COMPLETED DESIGN FOR CLIENT & CITY REVIEW.
- 2) 10/29/18 NF - UPDATED DESIGN FOR CLIENT & CITY REVIEW.
- 3) 01/29/19 NF - REVISED PER CITY COMMENTS.

# Fenster Farm Subdivision Phase 2 Improvement Plans

WARREN, WEBER COUNTY, UTAH  
JANUARY, 2019



**Vicinity Map**  
NOT TO SCALE



**Sheet Index Key Map**  
NOT TO SCALE

**Sheet Index**

- Sheet 1 - Cover/Index Sheet
- Sheet 2 - Notes/Legend/Street Cross-Section
- Sheet 3 - 550 North Street 13+00.00 - 22+00.00
- Sheet 4 - Grading Plan
- Sheet 5 - Storm Water Pollution Prevention Plan Exhibit
- Sheet 6 - Storm Water Pollution Prevention Plan Details

**Survey Control Note:**

THE CONTRACTOR OR SURVEYOR SHALL BE RESPONSIBLE FOR FOLLOWING THE NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS (NSPS) MODEL STANDARDS FOR ANY SURVEYING OR CONSTRUCTION LAYOUT TO BE COMPLETED USING REEVE & ASSOCIATES, INC. SURVEY DATA OR CONSTRUCTION IMPROVEMENT PLANS. PRIOR TO PROCEEDING WITH CONSTRUCTION STAKING, THE SURVEYOR SHALL BE RESPONSIBLE FOR VERIFYING HORIZONTAL CONTROL FROM THE SURVEY MONUMENTS AND FOR VERIFYING ANY ADDITIONAL CONTROL POINTS SHOWN ON AN ALTA SURVEY, IMPROVEMENT PLAN, OR ANY ELECTRONIC DATA PROVIDED. THE SURVEYOR SHALL ALSO USE THE BENCHMARKS AS SHOWN ON THE PLAN, AND VERIFY THEM AGAINST NO LESS THAN FIVE (5) EXISTING HARD IMPROVEMENT ELEVATIONS INCLUDED ON THESE PLANS OR ON ELECTRONIC DATA PROVIDED. IF ANY DISCREPANCIES ARE ENCOUNTERED, THE SURVEYOR SHALL IMMEDIATELY NOTIFY REEVE & ASSOCIATES, INC. AND RESOLVE THE DISCREPANCIES BEFORE PROCEEDING WITH ANY CONSTRUCTION STAKING.

**Engineer's Notice To Contractors**

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED FROM AVAILABLE INFORMATION PROVIDED BY OTHERS. THE LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR, SO THAT ANY NECESSARY ADJUSTMENT CAN BE MADE IN ALIGNMENT AND/OR GRADE OF THE PROPOSED IMPROVEMENT. THE CONTRACTOR IS REQUIRED TO CONTACT THE UTILITY COMPANIES AND TAKE DUE PRECAUTIONARY MEASURE TO PROTECT ANY UTILITY LINES SHOWN, AND ANY OTHER LINES OBTAINED BY THE CONTRACTOR'S RESEARCH, AND OTHERS NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

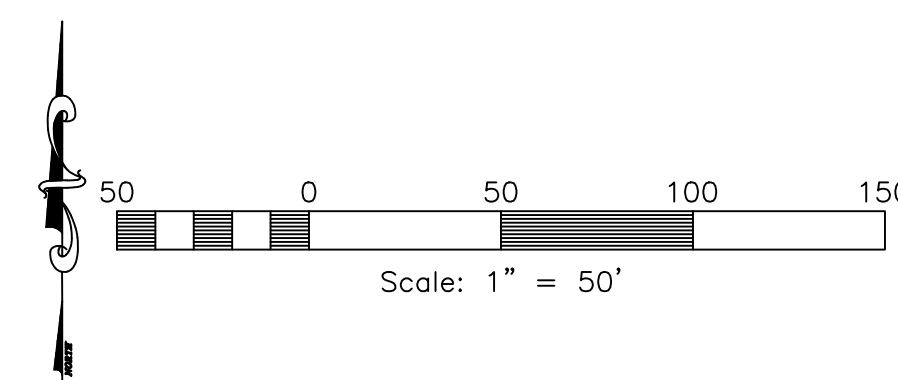
**Developer Contact:**

Allen Karras  
Century 21  
2609 N. Main  
Sunset, Utah 84015  
PH: (801) 564-0909

Blue Stakes Location Center

**Call: Toll Free  
1-800-662-4111**

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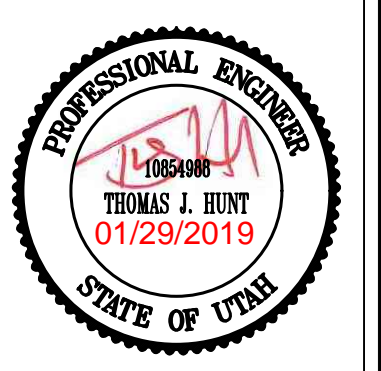
1/4/2016 | rfrickin | G:\1714\26-Fenster Farm\Improvements\Fenster Farms IMP Phase 2.dwg

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DATE	DESCRIPTION
10-29-18	NF Updated Design
01-29-19	NF City Comments

**Fenster Farms Subdivision  
Phase 2**  
WEST WARREN CITY, WEBER COUNTY, UTAH

**Cover/Index Sheet**

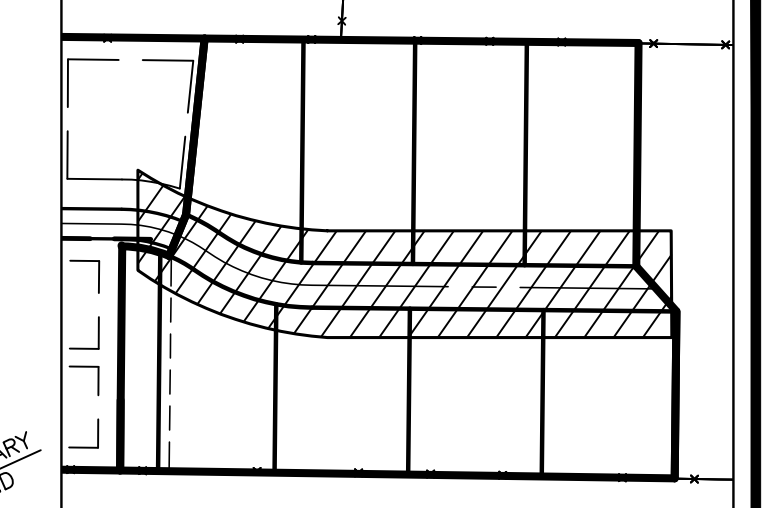


**Project Info.**

Engineer:	THOMAS J. HUNT
Drafter:	C. KINGSLEY
Begin Date:	DECEMBER 2016
Name:	FENSTER FARMS SUBDIVISION PHASE 2
Number:	1714-26

Sheet	<b>6</b>
<b>1</b>	Sheets

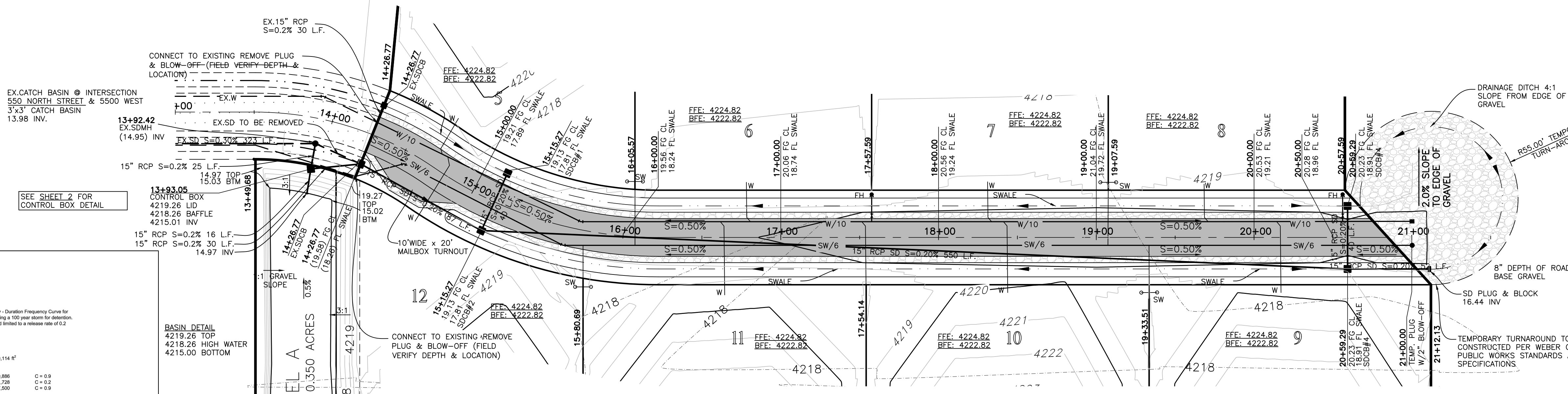




**Construction Notes:**

- 1) ALL CONSTRUCTION IS TO CONFORM TO THE STANDARD DRAWINGS AND SPECIFICATIONS OF WEBER COUNTY.
- CULINARY WATER**  
W/10 - 10" PVC C-900 CLASS 200 WATER
- STORM DRAIN**  
SD/15 - 15" RCP STORM DRAIN
- SECONDARY WATER**  
SW/6 - 6" PVC C-900 SECONDARY WATER LINE

NOTE: ROADSIDE DITCHES MUST BE PIPED WITH A 15" RCP



**Storm Runoff Calculations**  
Fenster Farms Phase 2 & Remainder  
1/15/2016

The following runoff calculations are based on the Rational - Intensity - Duration Frequency Curve for the Weber County area taken from the NOAA Atlas 14 database, using a 100 year storm for detention. Storm water runoff has been calculated for a fully developed site and limited to a release rate of 0.2 cfs/acre.

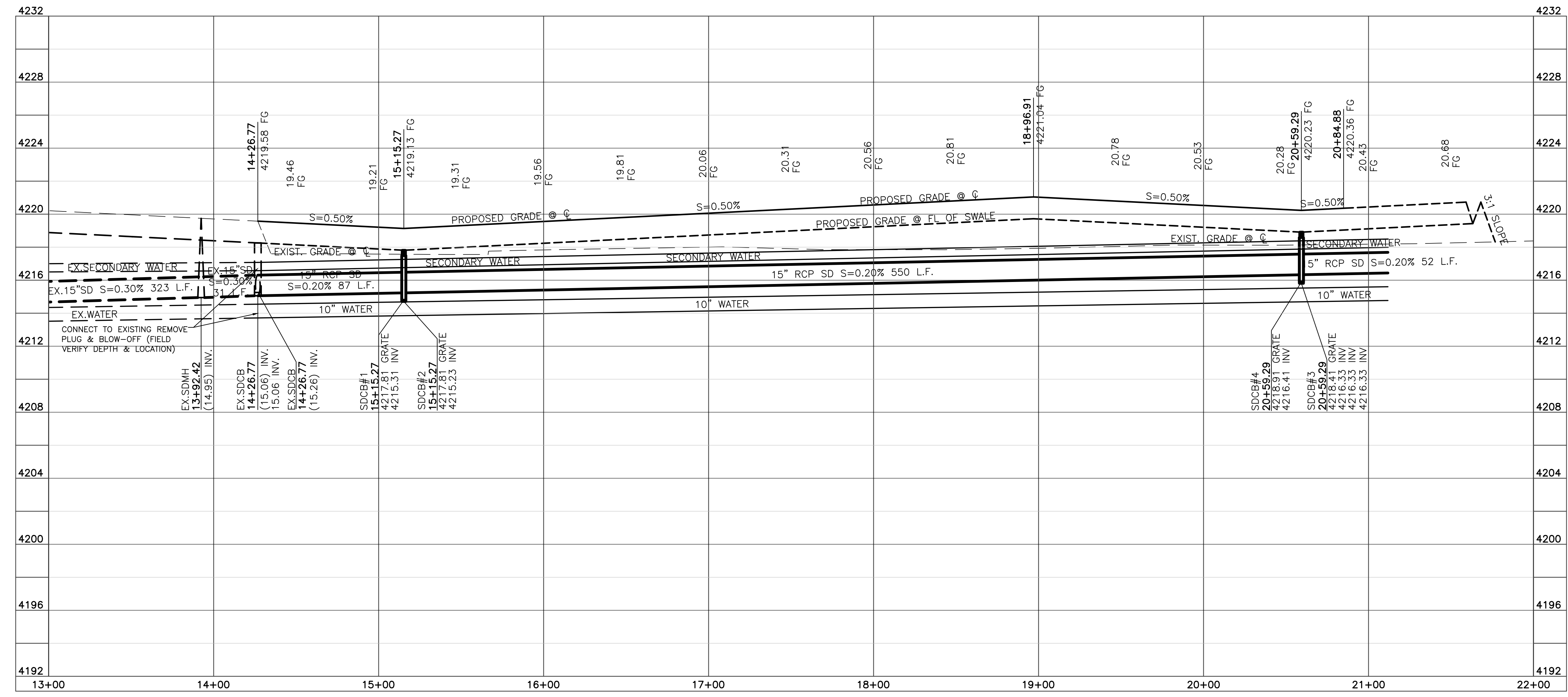
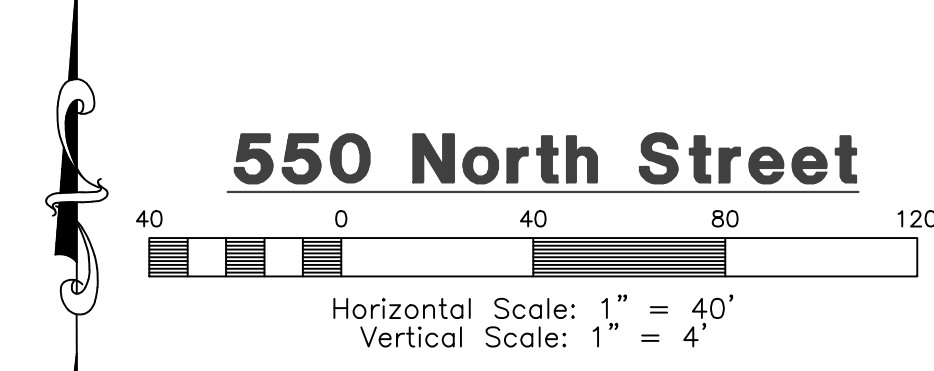
The calculations are as follows:

Drainage Area:	Total Area = 27.30 acre or 1,185,114 sq ft
Runoff Coefficients:	Paved Area 99.98% C = 0.9 Landscape Area 1,021,539 sq ft C = 0.2 Roof 67,500 sq ft C = 0.9
Weighted Runoff Coefficient:	C = 0.30
Time of Concentration:	Using Storm Water Run-Off "Overland Flow Time" To from Project Site = 30 minutes
Volume of Run-off for 100 year Storm Event:	C = 0.30 I = See Below A = 1189142.27 sq ft Q (cfs) = 2.73 cfs (0.1 cfs allowed per acre)
Time (min)	0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
Time (sec)	0 300 600 900 1200 1500 1800 2100 2400 2700 3000 3300 3600 3900 4200 4500 4800 5100 5400 5700 6000
I (in/hr)	0.00 0.30 0.60 0.90 1.20 1.50 1.80 2.10 2.40 2.70 3.00 3.30 3.60 3.90 4.20 4.50 4.80 5.10 5.40 5.70 6.00
Q (cfs)	0.00 0.81 1.62 2.43 3.24 4.05 4.86 5.67 6.48 7.29 8.10 8.91 9.72 10.53 11.34 12.15 12.96 13.77 14.58 15.39 16.20
Q (cfs) at 30 min	2.73
Total Required Detention Volume:	40,463 cu ft
Orifice Sizing:	Orifice = 7.33 inches

**SUMMARY:**  
The required storage volume is 40,463 cubic feet  
Orifice size is 7.33 inches

**STAGE STORAGE TABLE**

ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)	CONIC INC. VOL. (cu. ft.)	CONIC TOTAL VOL. (cu. ft.)
4,215.000	10,520.67	N/A	N/A	0.00	N/A	0.00
4,216.000	11,773.97	1.000	11147.32	11147.32	11141.45	11141.45
4,217.000	13,068.16	1.000	12421.07	23568.39	12415.44	23556.89
4,218.000	14,393.66	1.000	13730.91	37299.30	13725.57	37282.46
4,218.260	14,655.50	0.260	3776.39	41075.69	3776.34	41058.80
4,219.000	15,726.96	0.740	11241.51	52317.19	11239.18	52297.98



Blue Stakes Location Center  
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TEL: (801) 621-1000 FAX: (801) 621-2666 www.reeve-assoc.com

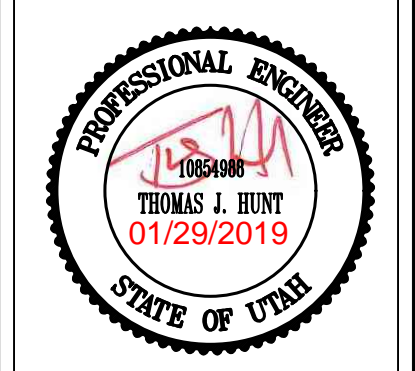
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**TRA**

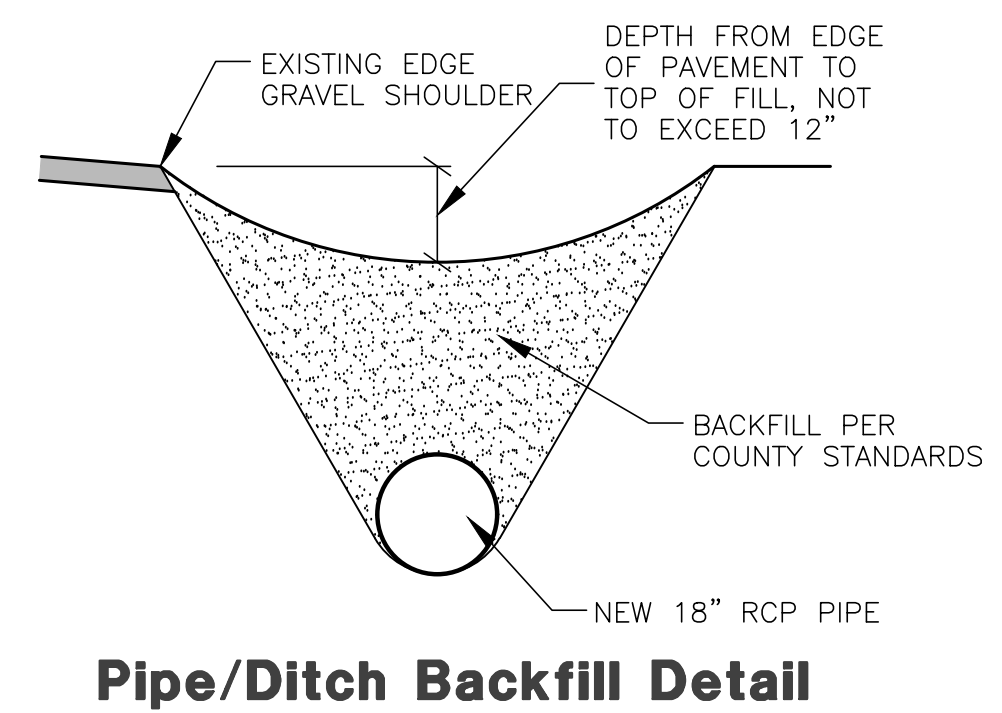
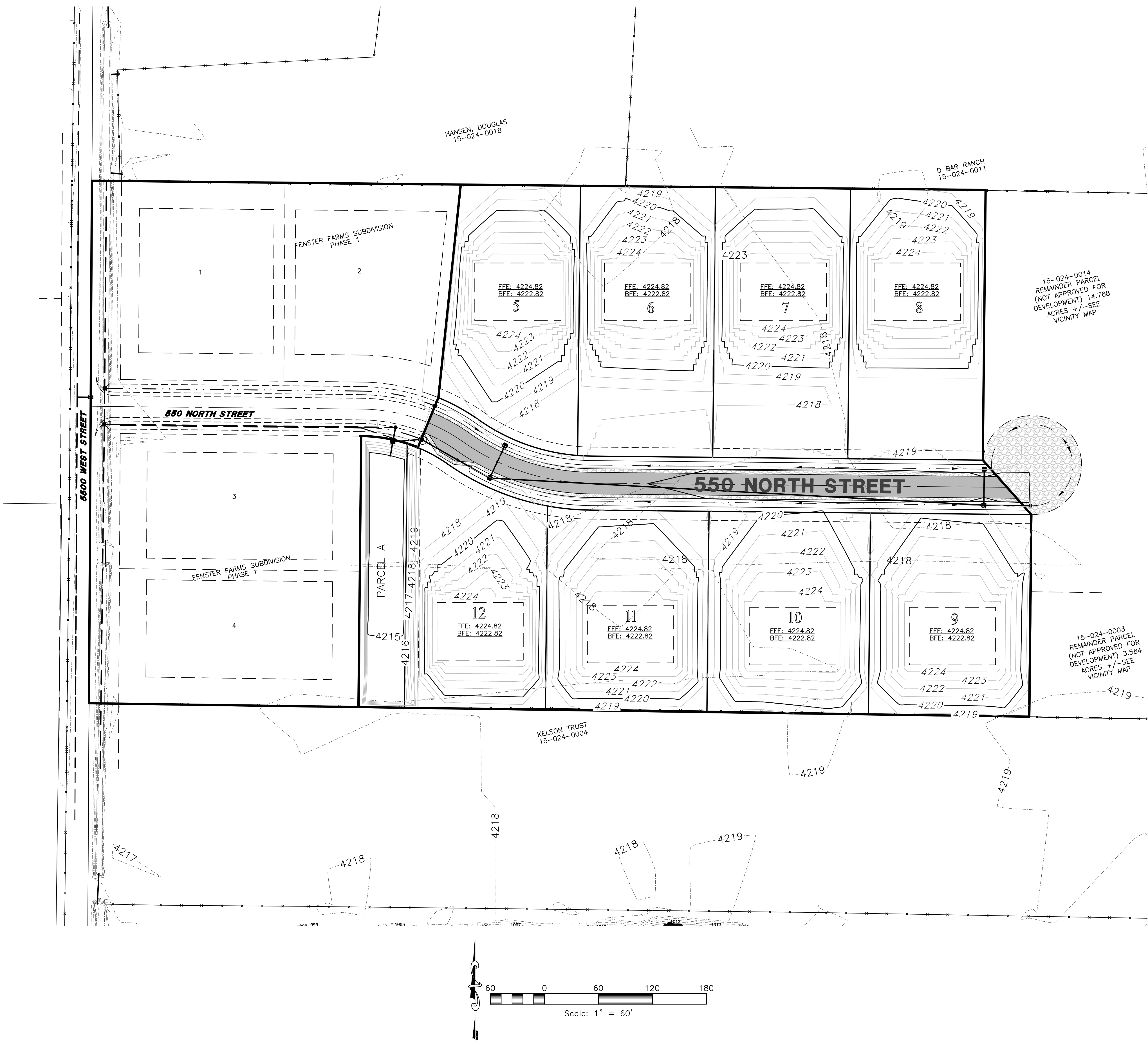
REVISIONS	DATE	DESCRIPTION
	10-29-18	18 NF Updated Design
	01-29-19	19 NF City Comments

**Fenster Farms Subdivision Phase 2**  
WEST WARREN CITY, WEBER COUNTY, UTAH

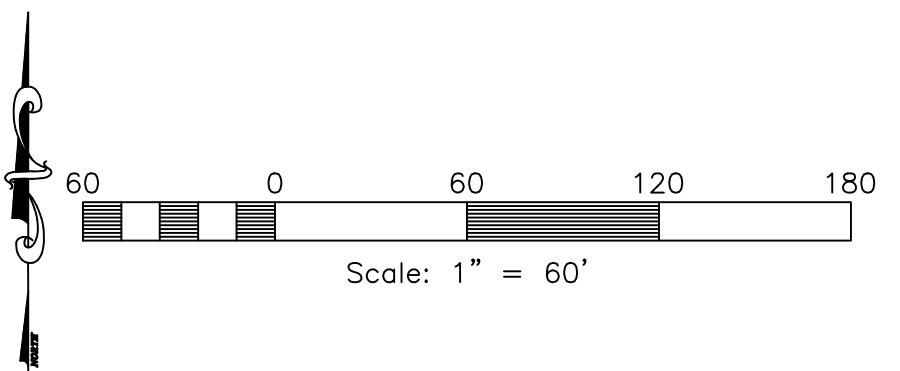
**550 North Street**  
13+00.00 - 22+00.00



**Project Info.**  
Engineer: THOMAS J. HUNT  
Drafted: C. KINGSLEY  
Begin Date: DECEMBER 2016  
Name: FENSTER FARMS SUBDIVISION PHASE 2  
Number: 1714-26



Pipe/Ditch Backfill Detail

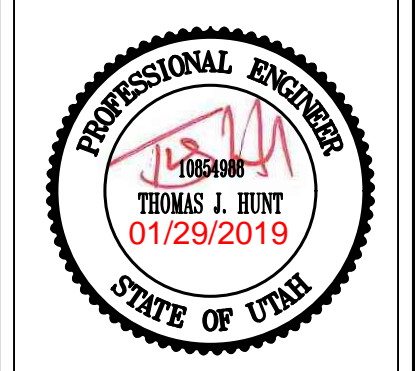


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REVISIONS	DATE	DESCRIPTION
	10-29-18	NF Updated Design
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**Fenster Farms Subdivision Phase 2**  
 WEST WARREN CITY, WEBER COUNTY, UTAH

**Grading Plan**



**Project Info.**

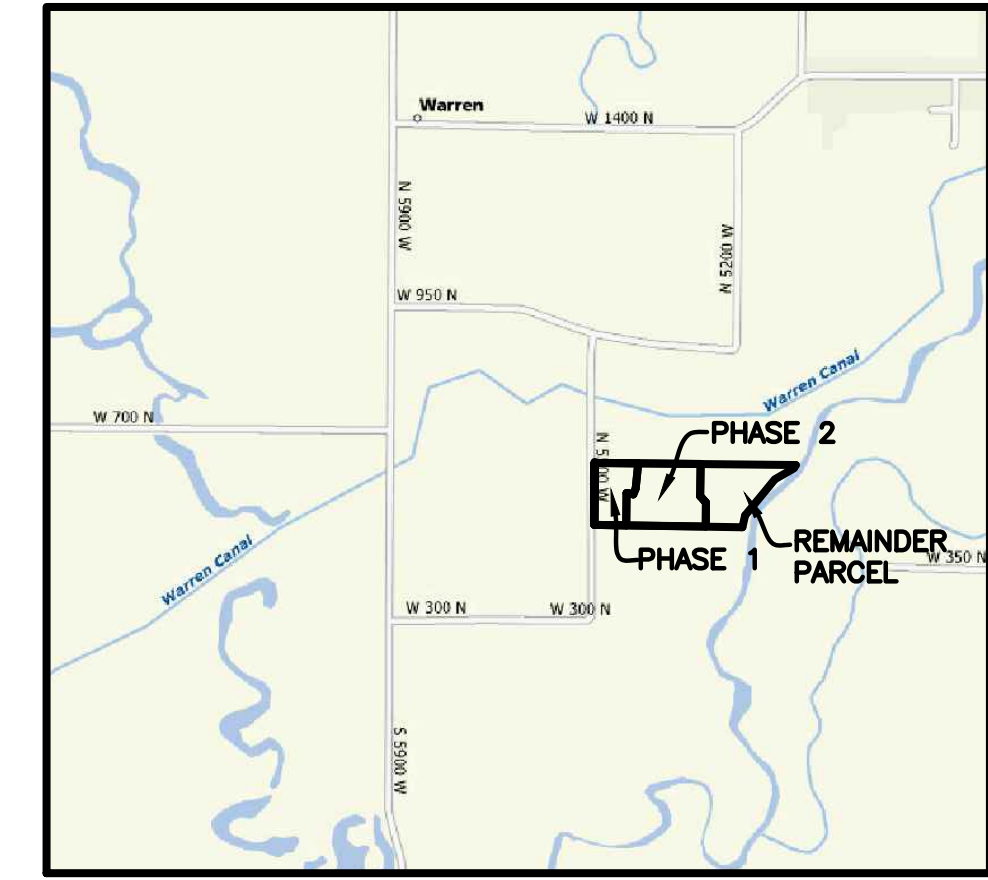
Engineer:	THOMAS J. HUNT
Drafter:	C. KINGSLEY
Begin Date:	DECEMBER 2016
Name:	FENSTER FARMS SUBDIVISION PHASE 2
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Sheet	<b>6</b>
<b>4</b>	Sheets

# Fenster Farms Subdivision Phase 2


## Storm Water Pollution Prevention Plan Exhibit

WARREN, WEBER COUNTY, UTAH  
JANUARY, 2019



Vicinity Map  
NOT TO SCALE

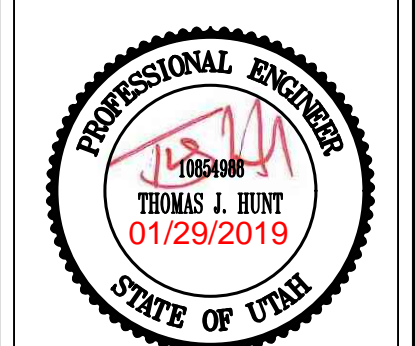
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REVISIONS	DATE	DESCRIPTION
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**Fenster Farms Subdivision  
Phase 2**  
WEST WARREN CITY, WEBER COUNTY, UTAH

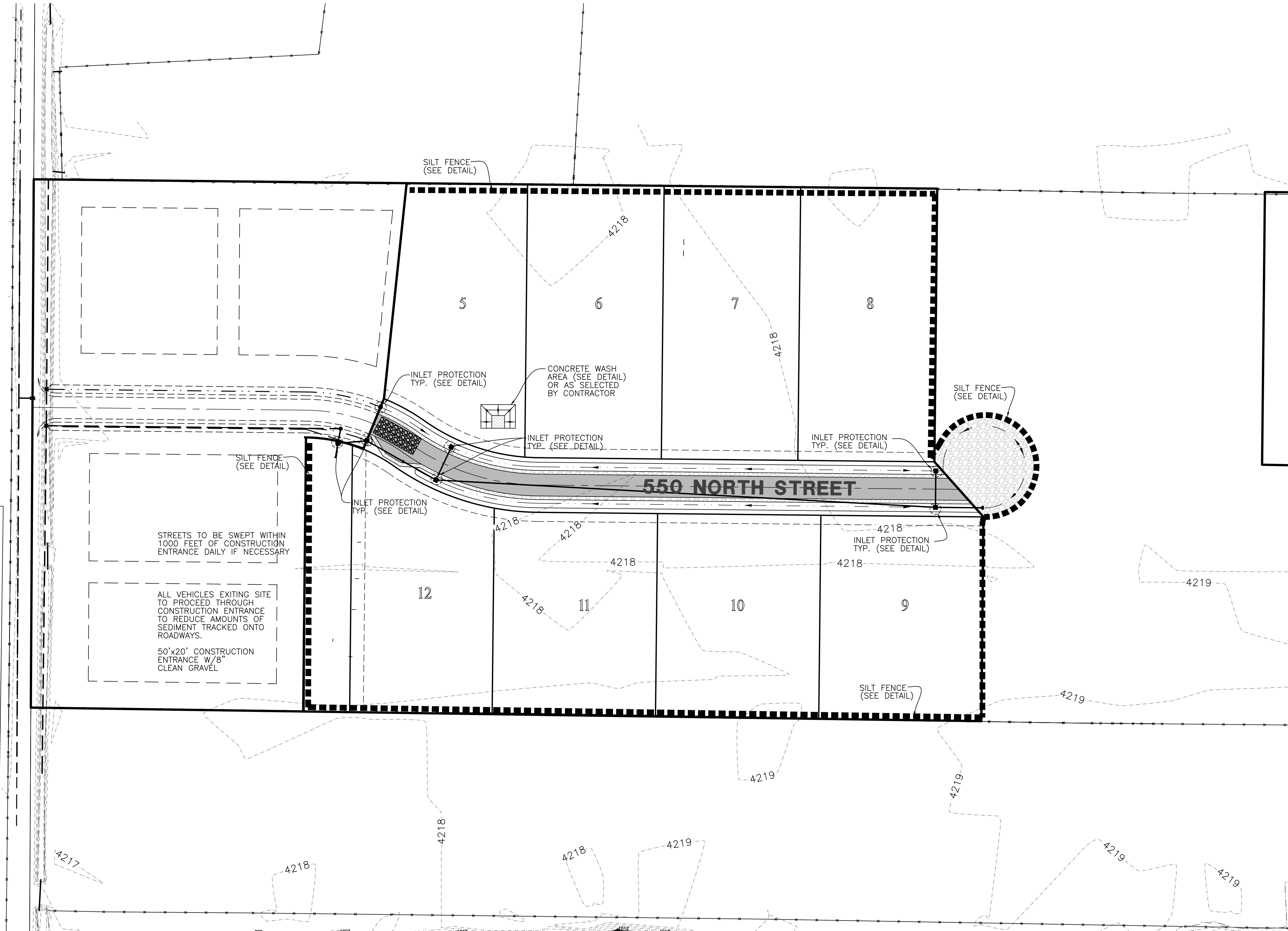
**Storm Water Pollution  
Prevention Plan Exhibit**



**Project Info.**

Engineer: THOMAS J. HUNT  
 Drafter: C. KINGSLEY  
 Begin Date: DECEMBER 2016  
 Name: FENSTER FARMS SUBDIVISION PHASE 2  
 Number: 1714-26

Sheet	6
<b>5</b>	Sheets



**Construction Activity Schedule**

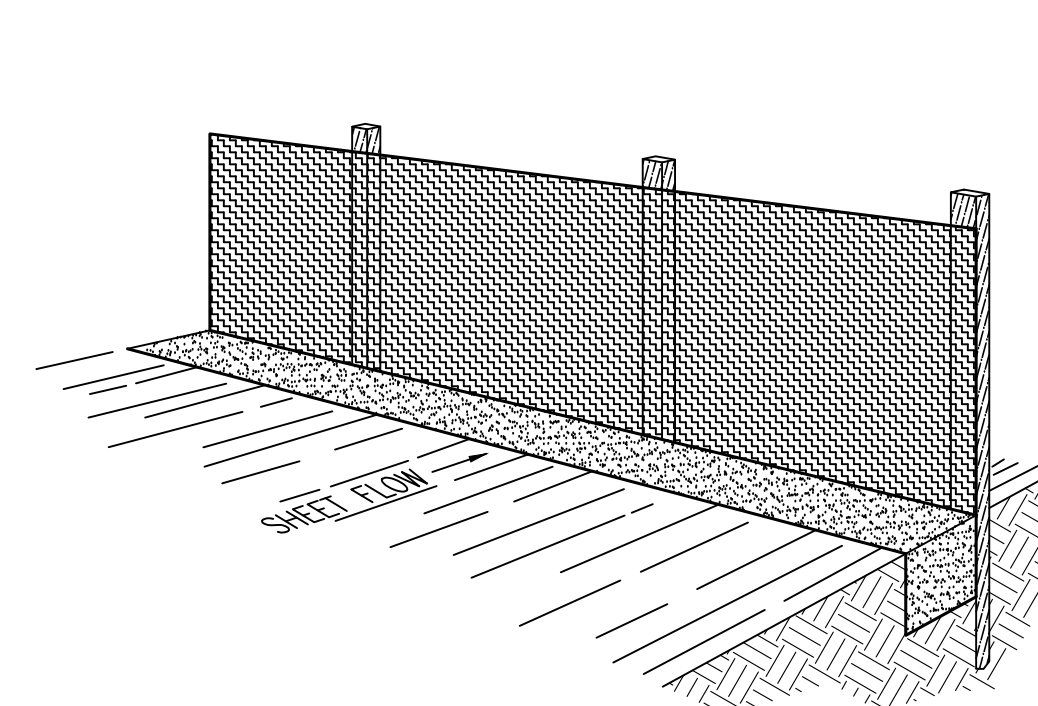
- PROJECT LOCATION.....WEST WARREN CITY, WEBER COUNTY, (UT)
- PROJECT BEGINNING DATE.....MARCH 2019
- BMP'S DEPLOYMENT DATE.....MARCH 2019
- STORM WATER MANAGEMENT CONTACT / INSPECTOR.....ALLEN KORRAS (801) 564-0909

SPECIFIC CONSTRUCTION SCHEDULE INCLUDING BMP CONSTRUCTION SCHEDULE TO BE INCLUDED WITH SWPPP BY OWNER/DEVELOPER

1/4/2016 | rfrickin | G:\1714\26-Fenster Farm\Improvements\Fenster Farms IMP Phase 2.dwg

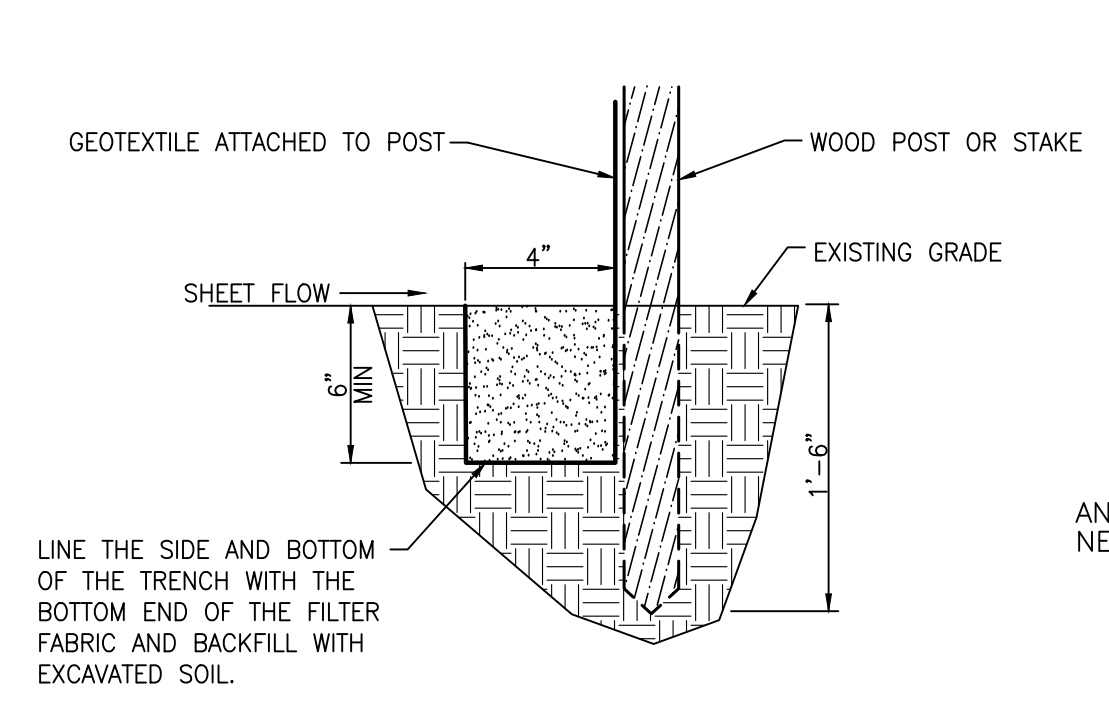
**Notes:**

- Describe all BMP's to protect storm water inlets:  
All storm water inlets to be protected by straw wattle barriers, or gravel bags (see detail).
- Describe BMP's to eliminate/reduce contamination of storm water from:
  - Equipment / building / concrete wash areas:  
To be performed in designated areas only and surrounded with silt fence barriers.
  - Soil contaminated by soil amendments:  
If any contaminants are found or generated, contact environmental engineer and contacts listed.
  - Areas of contaminated soil:  
If any contaminants are found or generated, contact environmental engineer and contacts listed.
  - Fueling area:  
To be performed in designated areas only and surrounded with silt fence.
  - Vehicle maintenance areas:  
To be performed in designated areas only and surrounded with silt fence.
  - Vehicle parking areas:  
To be performed in designated areas only and surrounded with silt fence.
  - Equipment storage areas:  
To be performed in designated areas only and surrounded with silt fence.
  - Materials storage areas:  
To be performed in designated areas only and surrounded with silt fence.
  - Waste containment areas:  
To be performed in designated areas only and surrounded with silt fence.
  - Service areas:  
To be performed in designated areas only and surrounded with silt fence.
- BMP's for wind erosion:  
Stockpiles and site as needed to be watered regularly to eliminate / control wind erosion
- Construction Vehicles and Equipment:
  - Maintenance
    - Keep vehicles and equipment clean, prevent excessive build-up of oil and grease.
    - Regularly inspect on-site vehicles and equipment for leaks, and repair immediately.
    - Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment on-site.
    - Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic, and transmission fluids.
  - Fueling
    - If fueling must occur on-site, use designated areas away from drainage.
    - Locate on-site fuel storage tanks within a bermed area designed to hold the tank volume.
    - Cover retention area with an impervious material and install in a manner to ensure that any spills will be contained in the retention area. To catch spills or leaks when removing or changing fluids.
    - Use drip pans for any oil or fluid changes.
  - Washing
    - Use as little water as possible to avoid installing erosion and sediment controls for the wash area.
    - If washing must occur on-site, use designated, bermed wash areas to prevent waste water discharge into storm water, creeks, rivers, and other water bodies.
    - Use phosphate-free, biodegradable soaps.
    - Do not permit steam cleaning on-site.
- Spill Prevention and Control
  - Minor Spills:  
Minor spills are those which are likely to be controlled by on-site personnel. After contacting local emergency response agencies, the following actions should occur upon discovery of a minor spill:
    - Contain the spread of the spill.
    - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (i.e. absorbent materials, cat litter, and / or rags).
    - If the spill occurs in dirt areas, immediately contain the spill by constructing an earth dike. Dig up and properly dispose of contaminated soil.
    - If the spill occurs during rain, cover the impacted area to avoid runoff.
    - Record all steps taken to report and contain spill.
  - Major Spills:  
On-site personnel should not attempt to control major spills until the appropriate and qualified emergency response staff have arrived at the site. For spills of federal reportable quantities, also notify the National Response Center at (800) 424-8802. A written report should be sent to all notified authorities. Failure to report major spills can result in significant fines and penalties.
- Post Roadway / Utility Construction
  - Maintain good housekeeping practices.
  - Enclose or cover building material storage areas.
  - Properly store materials such as paints and solvents.
  - Store dry and wet materials under cover, away from drainage areas.
  - Avoid mixing excess amounts of fresh concrete or cement on-site.
  - Perform washout of concrete trucks offsite or in designated areas only.
  - Do not wash out concrete trucks into storm drains, open ditches, streets or streams.
  - Do not place material or debris into streams, gutters or catch basins that stop or reduce the flow of runoff water.
  - All public streets and storm drain facilities shall be maintained free of building materials, mud and debris caused by grading or construction operations. Roads will be swept within 1000' of construction entrance daily, if necessary.
  - Install straw wattle around all inlets contained within the development and all others that receive runoff from the development.
- Erosion Control Plan Notes
  - The contractor will designate an emergency contact that can be reached 24 hours a day 7 days a week.
  - A stand-by crew for emergency work shall be available at all times during potential rain or snow runoff events. Necessary materials shall be available on site and stockpiled at convenient locations to facilitate rapid construction of emergency devices when rain or runoff is eminent.
  - Erosion control devices shown on the plans and approved for the project may not be removed without approval of the engineer of record. If devices are removed, no work may continue that have the potential of erosion without consulting the engineer of record. If deemed necessary erosion control should be reestablished before this work begins.
  - Graded areas adjacent to fill slopes located at the site perimeter must drain away from the top of the slope at the conclusion of each working day. This should be confirmed by survey or other means acceptable to the engineer of record.
  - All silt and debris shall be removed from all devices within 24 hours after each rain or runoff event.
  - Except as otherwise approved by the inspector, all removable protective devices shown shall be in place at the end of each working day and through weekends until removal of the system is approved.
  - All loose soil and debris, which may create a potential hazard to offsite property, shall be removed from the site as directed by the engineer of record of the governing agency.
  - The placement of additional devices to reduce erosion damage within the site is left to the discretion of the engineer of record.
  - Desilting basins may not be removed or made inoperable without the approval of the engineer of record and the governing agency.
  - Erosion control devices will be modified as need as the project progresses and plans of these changes submitted for approval by the engineer of record and the governing agency.
- Conduct a minimum of one inspection of the erosion and sediment controls every two weeks. Maintain documentation on site.
  - Part III.D.4 of general permit UTR300000 identifies the minimum inspection requirements.
  - Part II.D.4.C identifies the minimum inspection report requirements.
  - Failure to complete and/or document storm water inspections is a violation of part III.D.4 of Utah General Permit UTR 300000.



**Perspective View**

Figure 2



**Section**

**INSTALLATION**

The silt fence should be installed prior to major soil disturbances in the drainage area. The fence should be placed across the slope along a line of uniform elevation wherever flow of sediment is anticipated. Table 1 shows generally-recommended maximum slope lengths (slope spacing between fences) at various site grades for most silt fence applications.

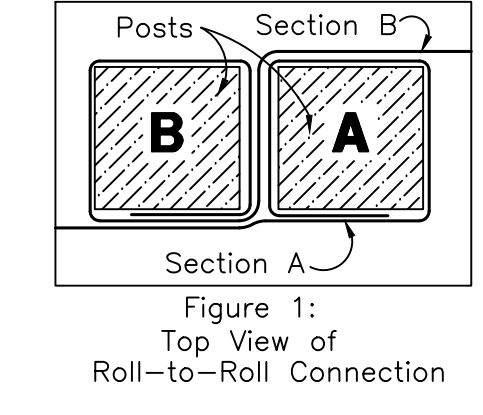
Slope Steepness (%)	Max. Slope Length (m)	Max. Slope Length (ft)
<2%	30.5m	100ft
2-5%	22.9m	75ft
5-10%	15.2m	50ft
10-20%	7.6m	25ft
>20%	4.5m	15ft

**PREFABRICATED SILT FENCE ROLLS**  
 \*Excavate a minimum 15.2cm x 15.2cm (6"x6") trench at the desired location.  
 \*Unroll the silt fence, positioning the post against the downstream wall of the trench.  
 \*Adjacent rolls of silt fence should be joined by nesting the end post of one fence into the other. Before nesting the end posts, rotate each post until the geotextile is wrapped completely around the post, then about the end posts to create a tight seal as shown in Figure 1.  
 \*Drive posts into the ground until the required fence height and/or anchorage depth is obtained.  
 \*Bury the loose geotextile at the bottom of the fence in the upstream trench and backfill with natural soil, tamping the backfill to provide good compaction and anchorage. Figure 2 illustrates a typical silt fence installation and anchor trench placement.

should generally be less than three (3) times the height of the fence.  
 \*If a steel or plastic mesh is required to reinforce the geotextile, it shall have a minimum mesh opening of 15.2cm (6").  
 \*Fasten the mesh to the upslope side of the posts using heavy duty wire staples, tie wires or hog strings. Extend the mesh into the bottom of the trench.  
 \*The geotextile shall then be stapled or wired to the posts. An extra 20-50cm (8-20") of geotextile shall extend into the trench.

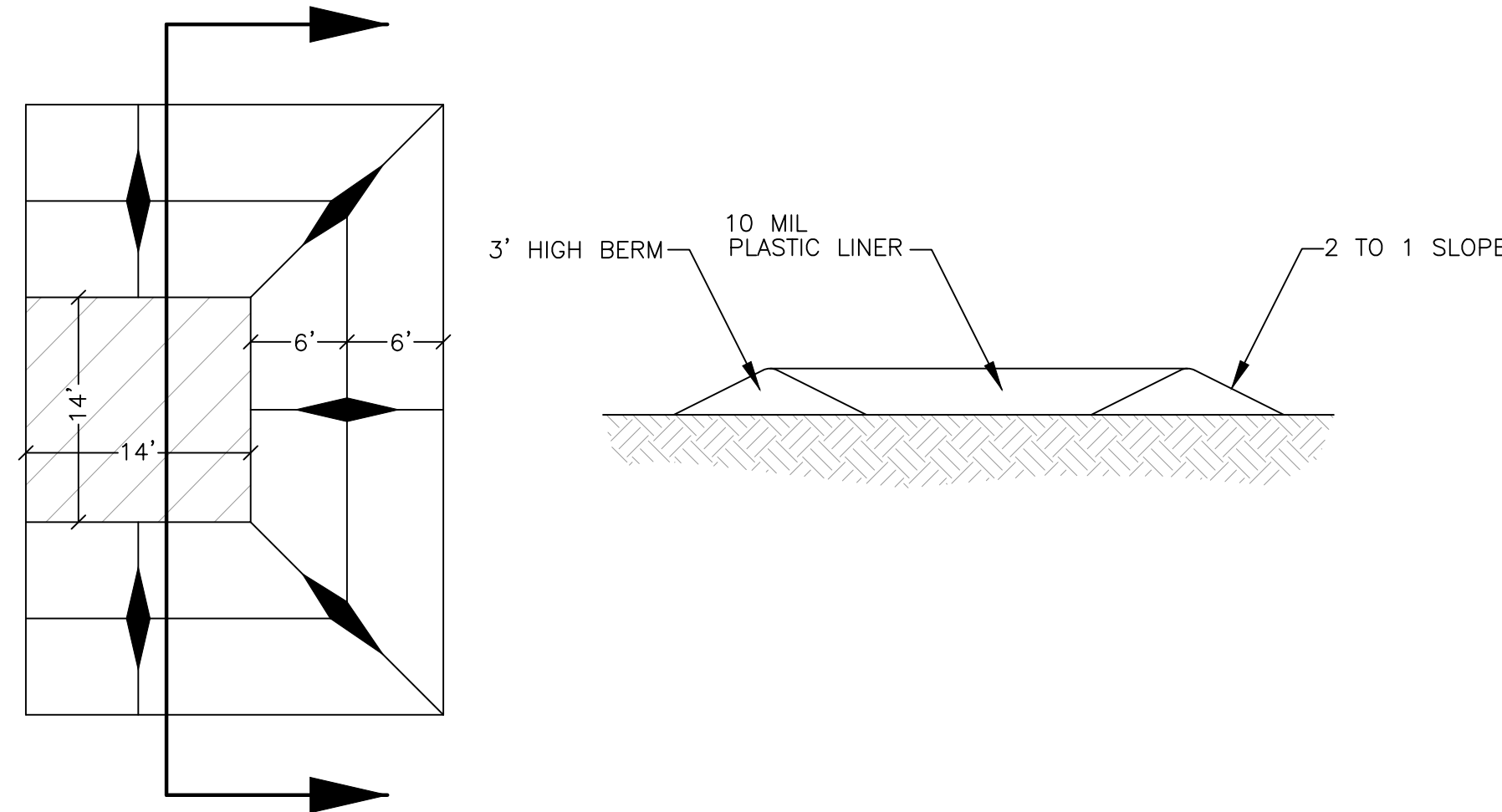
**INSPECTION**  
 \*Inspect the silt fence daily during periods of rainfall, immediately after significant rainfall event and weekly during periods of no rainfall. Make any repairs immediately.  
 \*When sediment deposits behind the silt fence are one-third of the fence height, remove and properly dispose of the silt accumulations. Avoid damage to the fabric during cleanout.

**REMOVAL**  
 \*Silt fence should not be removed until construction ceases and the upslope area has been properly stabilized and/or revegetated.



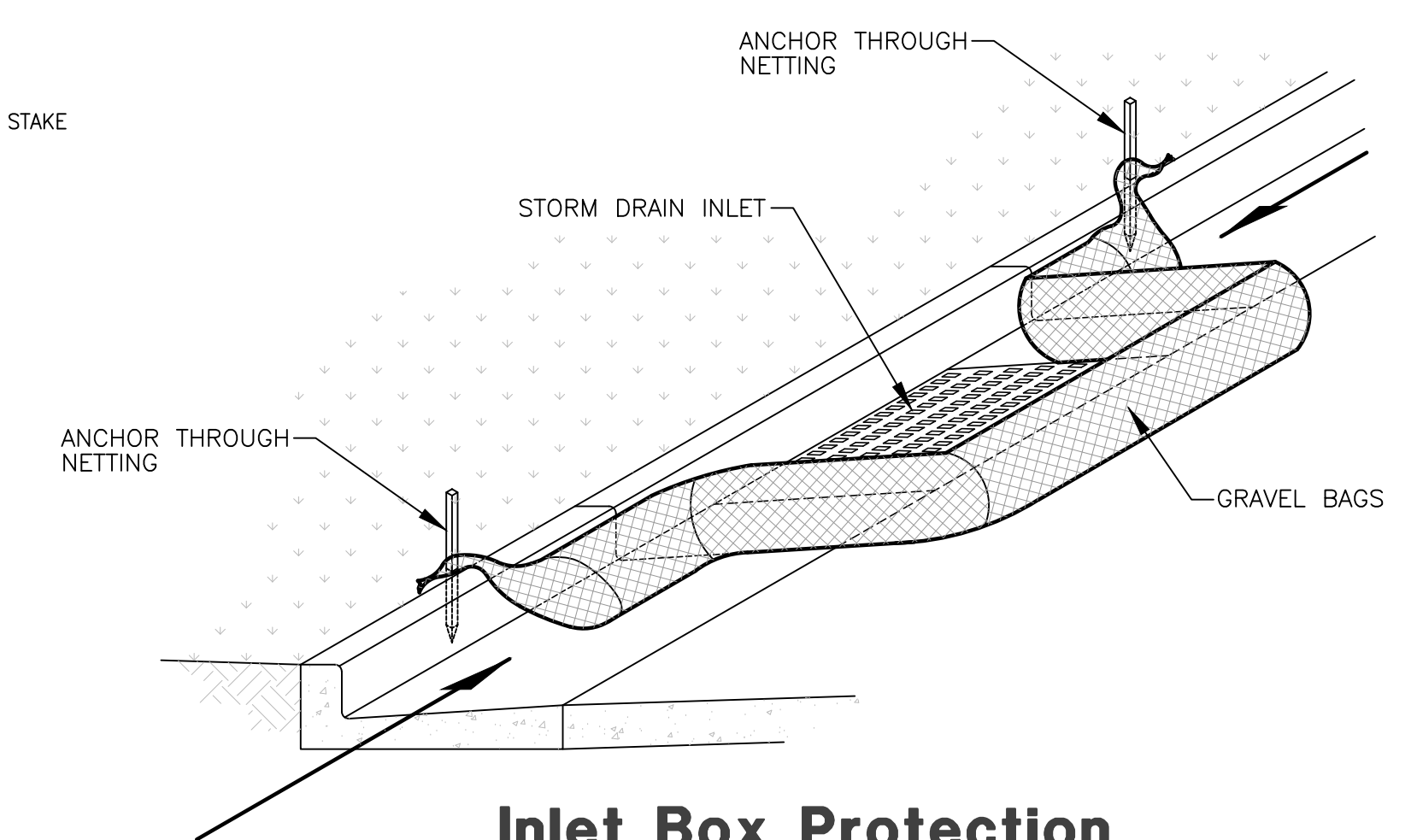
**Silt Fence Detail**

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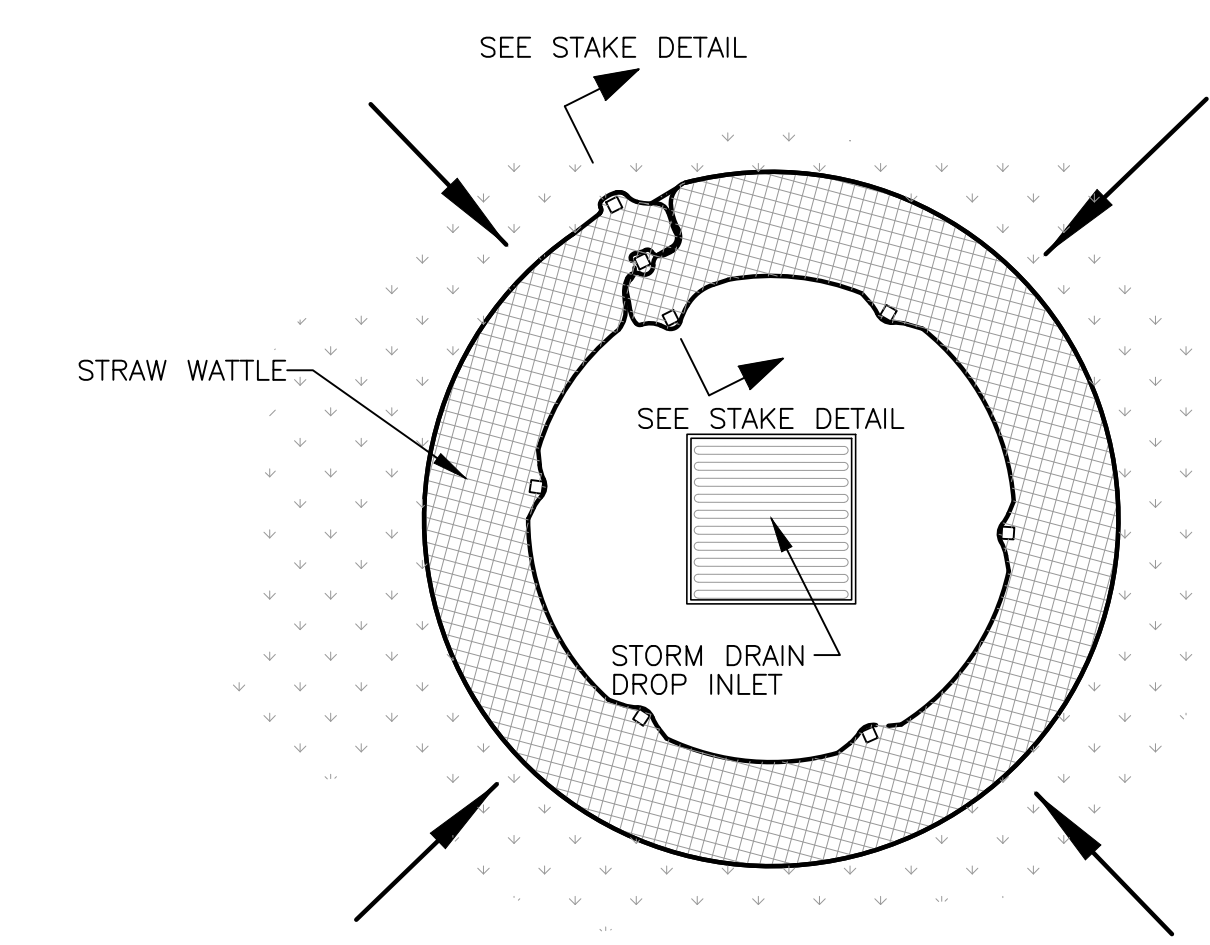


**Concrete Washout Area w/ 10 mil Plastic Liner**

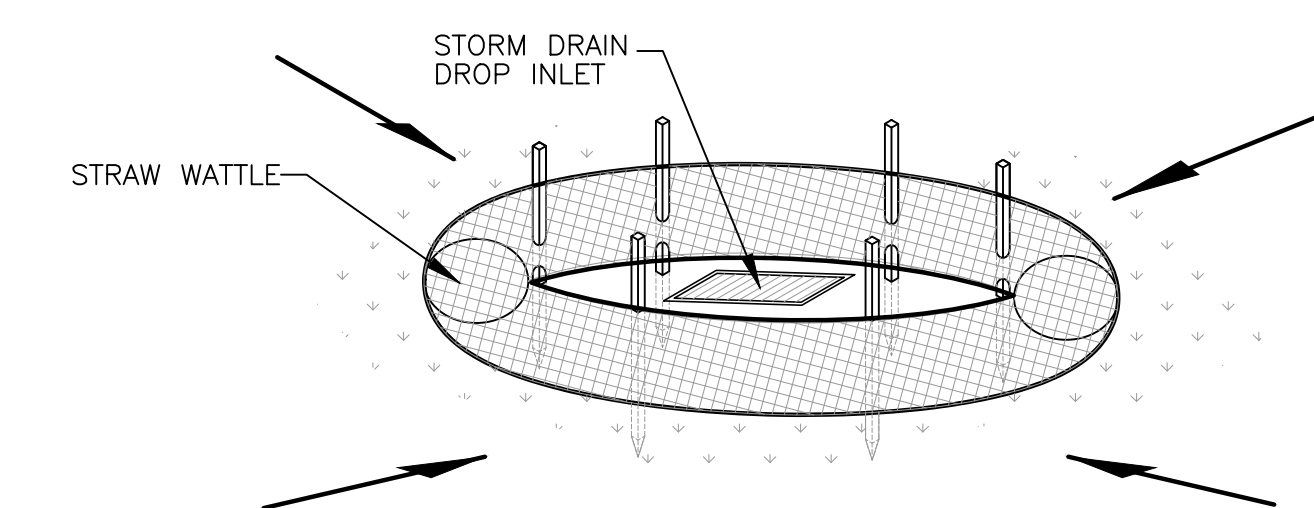
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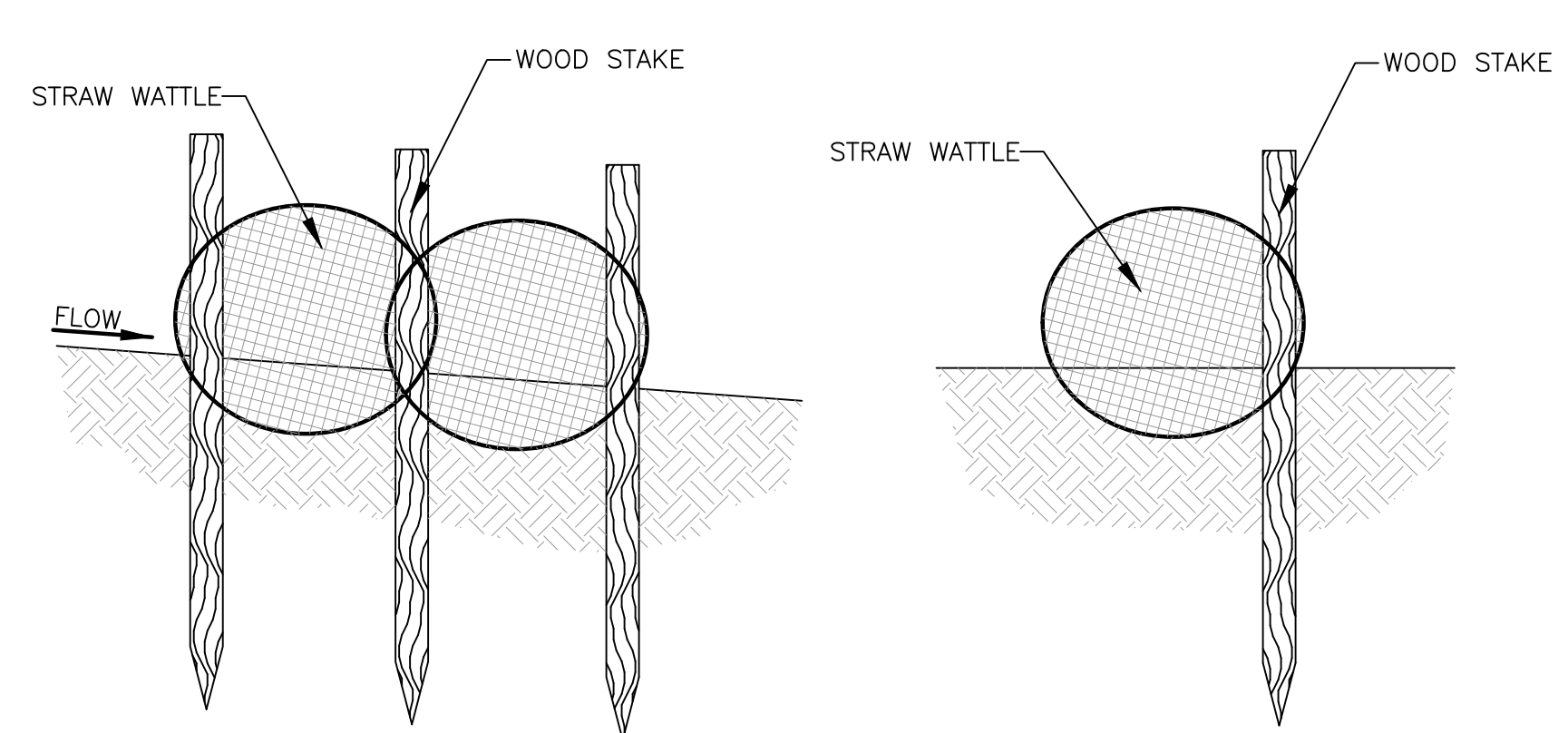
**Inlet Box Protection**



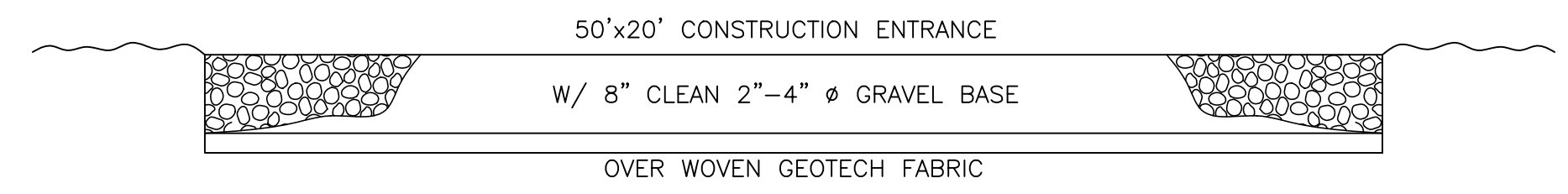
**Plan View**



**Drop Inlet Protection**



**Stake Detail**



**Cross Section 50' x 20' Construction Entrance**

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 TEL: (801) 621-1000 FAX: (801) 621-8866 www.reeve-assoc.com  
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REVISIONS	DATE	DESCRIPTION
10-29-18	18	Updated Design
01-29-19	19	City Comments

**Fenster Farms Subdivision Phase 2**  
 WEST WARREN CITY, WEBER COUNTY, UTAH  
**Storm Water Pollution Prevention Plan Details**

**PROFESSIONAL ENGINEER**  
 THOMAS J. HUNT  
 01/29/2019  
 STATE OF UTAH

**Project Info.**  
 Engineer: THOMAS J. HUNT  
 Drafter: C. KINGSLEY  
 Begin Date: DECEMBER 2016  
 Name: FENSTER FARMS SUBDIVISION PHASE 2  
 Number: 1714-26

Sheet **6** of 6  
 Sheets

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