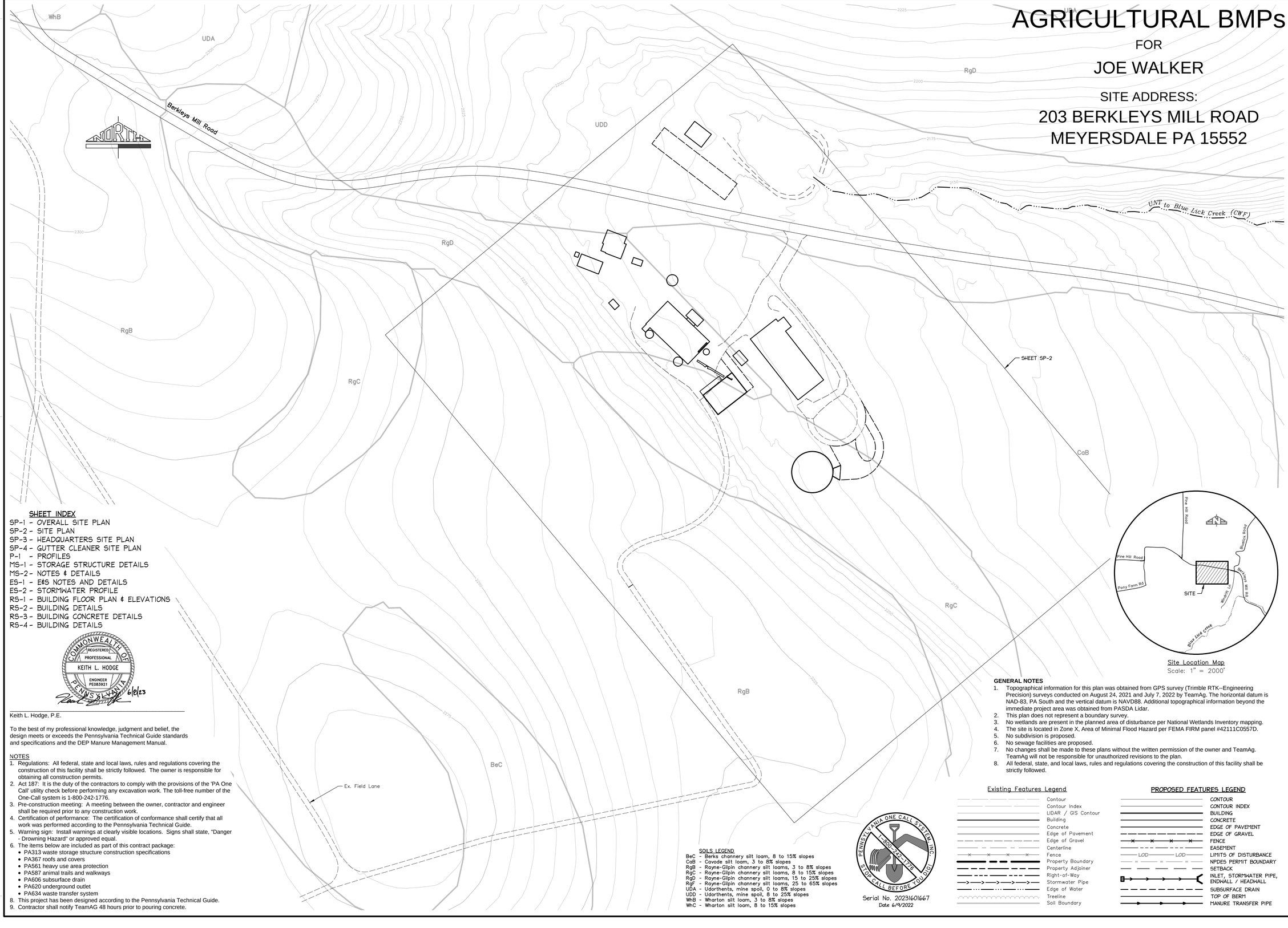
AGRICULTURAL BMPs

FOR

JOE WALKER

SITE ADDRESS:

203 BERKLEYS MILL ROAD
MEYERSDALE PA 15552



Site Location Map
Scale: 1" = 2000'

SHEET INDEX

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
KEITH L. HODGE
ENGINEER PE083921
6/6/23

Keith L. Hodge, P.E.

To the best of my professional knowledge, judgment and belief, the design meets or exceeds the Pennsylvania Technical Guide standards and specifications and the DEP Manure Management Manual.

NOTES

1. Regulations: All federal, state and local laws, rules and regulations covering the construction of this facility shall be strictly followed. The owner is responsible for obtaining all construction permits.
2. Act 187: It is the duty of the contractors to comply with the provisions of the 'PA One Call' utility check before performing any excavation work. The toll-free number of the One-Call system is 1-800-242-1776.
3. Pre-construction meeting: A meeting between the owner, contractor and engineer shall be required prior to any construction work.
4. Certification of performance: The certification of conformance shall certify that all work was performed according to the Pennsylvania Technical Guide.
5. Warning sign: Install warnings at clearly visible locations. Signs shall state, "Danger - Drowning Hazard" or approved equal.
6. The items below are included as part of this contract package:
   - PA313 waste storage structure construction specifications
   - PA367 roofs and covers
   - PA561 heavy use area protection
   - PA587 animal trails and walkways
   - PA606 subsurface drain
   - PA620 underground outlet
   - PA634 waste transfer system
8. This project has been designed according to the Pennsylvania Technical Guide.
9. Contractor shall notify TeamAG 48 hours prior to pouring concrete.

SOILS LEGEND

BeC - Berks channery silt loam, 8 to 15% slopes
CaB - Cavode silt loam, 3 to 8% slopes
RgB - Rayne-Gilpin channery silt loams, 3 to 8% slopes
RgC - Rayne-Gilpin channery silt loams, 8 to 15% slopes
RgD - Rayne-Gilpin channery silt loams, 15 to 25% slopes
RgF - Rayne-Gilpin channery silt loams, 25 to 65% slopes
UDA - Udorthents, mine spoil, 0 to 8% slopes
UDD - Udorthents, mine spoil, 8 to 25% slopes
WhB - Wharton silt loam, 3 to 8% slopes
WhC - Wharton silt loam, 8 to 15% slopes

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP CALL BEFORE YOU DIG!

Serial No. 20231601667
Date 6/9/2022

GENERAL NOTES

1. Topographical information for this plan was obtained from GPS survey (Trimble RTK--Engineering Precision) surveys conducted on August 24, 2021 and July 7, 2022 by TeamAg. The horizontal datum is NAD-83, PA South and the vertical datum is NAVD88. Additional topographical information beyond the immediate project area was obtained from PASDA Lidar.
2. This plan does not represent a boundary survey.
3. No wetlands are present in the planned area of disturbance per National Wetlands Inventory mapping.
4. The site is located in Zone X, Area of Minimal Flood Hazard per FEMA FIRM panel #42111C0557D.
5. No subdivision is proposed.
6. No sewage facilities are proposed.
7. No changes shall be made to these plans without the written permission of the owner and TeamAg. TeamAg will not be responsible for unauthorized revisions to the plan.
8. All federal, state, and local laws, rules and regulations covering the construction of this facility shall be strictly followed.

Existing Features Legend

- Contour
- Contour Index
- LIDAR / GIS Contour
- Building
- Concrete
- Edge of Pavement
- Edge of Gravel
- Centerline
- Fence
- Property Boundary
- Property Adjoiner
- Right-of-Way
- Stormwater Pipe
- Edge of Water
- Treeline
- Soil Boundary

PROPOSED FEATURES LEGEND

- CONTOUR
- CONTOUR INDEX
- BUILDING
- CONCRETE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- FENCE
- EASEMENT
- LIMITS OF DISTURBANCE (LOD)
- NPDES PERMIT BOUNDARY
- SETBACK
- INLET, STORMWATER PIPE, ENDWALL / HEADWALL
- SUBSURFACE DRAIN
- TOP OF BERM
- MANURE TRANSFER PIPE

REVISION | BY | DATE

PROJECT MANAGER
KEITH L. HODGE

DESIGN BY : KLH
DRAWN BY : KLH
DATE : 6/8/2023
PROJECT NO.: 2743-22-02

SEAL

TeamAg INC
120 LAKE STREET
EPHRATA, PA 17522
PHONE: 717-721-6795 FAX: 717-721-9275
www.TeamAginc.com TeamAg@TeamAginc.com

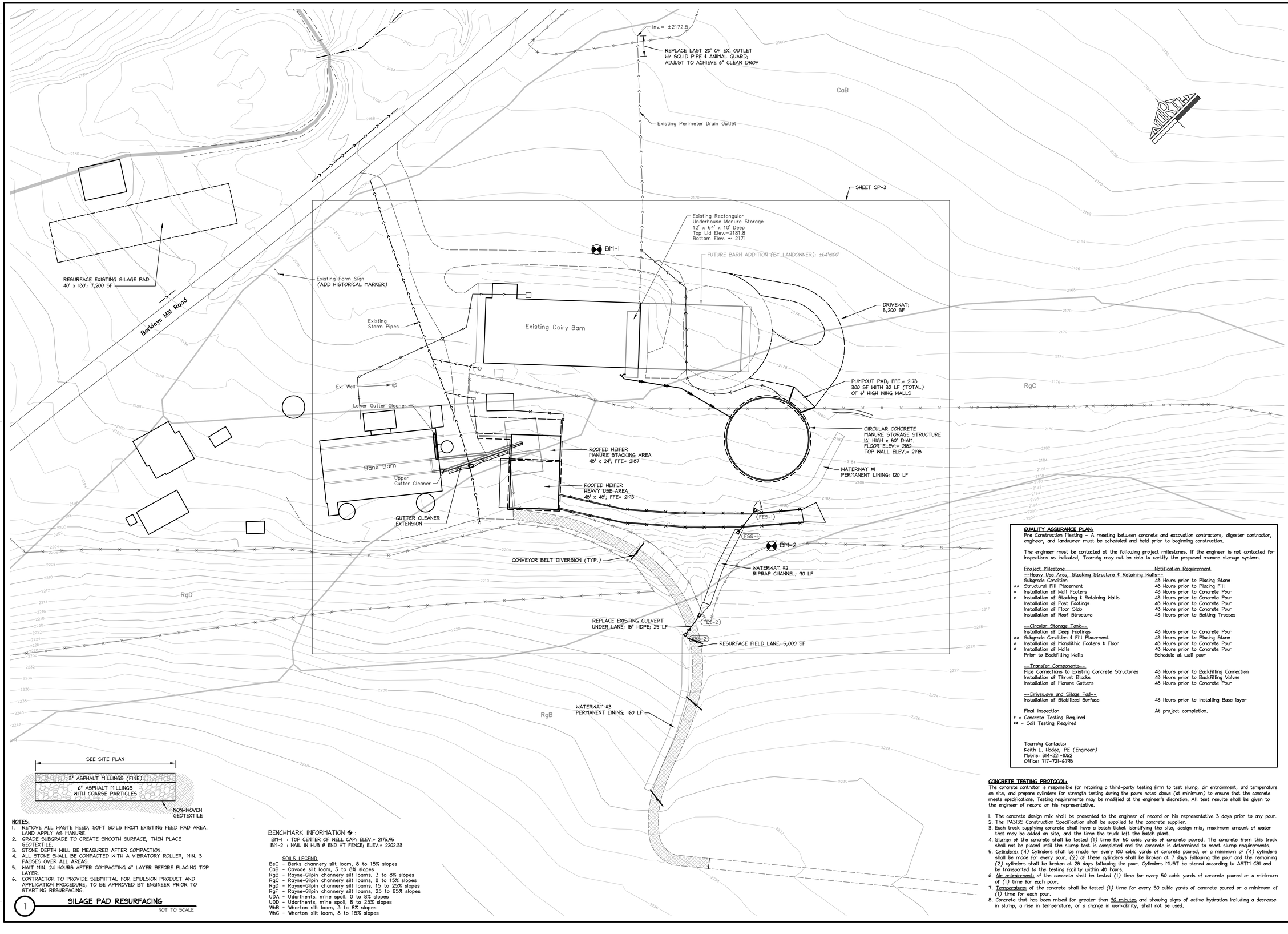
SCALE 1" = 80'
0' 80' 160' 240'

PROJECT TITLE
ACRICULTURAL BMPs
SUMMIT TOWNSHIP SOMERSET COUNTY

CLIENT
JOE WALKER
203 BERKLEYS MILL ROAD
MEYERSDALE, PA 15552
814-444-2736

OVERALL SITE PLAN

DRAWING : SP-1



NOTES:
1. REMOVE ALL WASTE FEED, SOFT SOILS FROM EXISTING FEED PAD AREA. LAND APPLY AS MANURE.
2. GRADE SUBGRADE TO CREATE SMOOTH SURFACE, THEN PLACE GEOTEXTILE.
3. STONE DEPTH WILL BE MEASURED AFTER COMPACTION.
4. ALL STONE SHALL BE COMPACTED WITH A VIBRATORY ROLLER, MIN. 3 PASSES OVER ALL AREAS.
5. WAIT MIN. 24 HOURS AFTER COMPACTING 6" LAYER BEFORE PLACING TOP LAYER.
6. CONTRACTOR TO PROVIDE SUBMITTAL FOR EMULSION PRODUCT AND APPLICATION PROCEDURE, TO BE APPROVED BY ENGINEER PRIOR TO STARTING RESURFACING.

1 **SILAGE PAD RESURFACING**
NOT TO SCALE

BENCHMARK INFORMATION ⚒ :
BM-1 : TOP CENTER OF WELL CAP; ELEV.= 2175.95
BM-2 : NAIL IN HUB @ END HT FENCE; ELEV.= 2202.33

SOILS LEGEND
BeC - Berks channery silt loam, 8 to 15% slopes
CaB - Cavode silt loam, 3 to 8% slopes
RgB - Rayne-Gilpin channery silt loams, 3 to 8% slopes
RgC - Rayne-Gilpin channery silt loams, 8 to 15% slopes
RgD - Rayne-Gilpin channery silt loams, 15 to 25% slopes
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UDA - Udorthents, mine spoil, 0 to 8% slopes
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WhB - Wharton silt loam, 3 to 8% slopes
WhC - Wharton silt loam, 8 to 15% slopes

QUALITY ASSURANCE PLAN:
Pre Construction Meeting - A meeting between concrete and excavation contractors, digester contractor, engineer, and landowner must be scheduled and held prior to beginning construction.

The engineer must be contacted at the following project milestones. If the engineer is not contacted for inspections as indicated, TeamAg may not be able to certify the proposed manure storage system.

Project Milestone	Notification Requirement
--Heavy Use Area, Stacking Structure & Retaining Walls--	
Subgrade Condition	48 Hours prior to Placing Stone
## Structural Fill Placement	48 Hours prior to Placing Fill
# Installation of Wall Footers	48 Hours prior to Concrete Pour
# Installation of Stacking & Retaining Walls	48 Hours prior to Concrete Pour
Installation of Post Footings	48 Hours prior to Concrete Pour
Installation of Floor Slab	48 Hours prior to Concrete Pour
Installation of Roof Structure	48 Hours prior to Setting Trusses
--Circular Storage Tank--	
Installation of Deep Footings	48 Hours prior to Concrete Pour
## Subgrade Condition & Fill Placement	48 Hours prior to Placing Stone
# Installation of Monolithic Footers & Floor	48 Hours prior to Concrete Pour
# Installation of Walls	48 Hours prior to Concrete Pour
Prior to Backfilling Walls	Schedule at wall pour
--Transfer Components--	
Pipe Connections to Existing Concrete Structures	48 Hours prior to Backfilling Connection
Installation of Thrust Blocks	48 Hours prior to Backfilling Valves
Installation of Manure Gutters	48 Hours prior to Concrete Pour
--Driveways and Silage Pad--	
Installation of Stabilized Surface	48 Hours prior to Installing Base layer
Final Inspection	At project completion.

= Concrete Testing Required
= Soil Testing Required

TeamAg Contacts:
Keith L. Hodge, PE (Engineer)
Mobile: 814-321-1062
Office: 717-721-6795

CONCRETE TESTING PROTOCOL:
The concrete contrator is responsible for retaining a third-party testing firm to test slump, air entrainment, and temperature on site, and prepare cylinders for strength testing during the pours noted above (at minimum) to ensure that the concrete meets specifications. Testing requirements may be modified at the engineer's discretion. All test results shall be given to the engineer of record or his representative.

1. The concrete design mix shall be presented to the engineer of record or his representative 3 days prior to any pour.
2. The PA1315 Construction Specification shall be supplied to the concrete supplier.
3. Each truck supplying concrete shall have a batch ticket identifying the site, design mix, maximum amount of water that may be added on site, and the time the truck left the batch plant.
4. Slump: of the concrete shall be tested (1) time for 50 cubic yards of concrete poured. The concrete from this truck shall not be placed until the slump test is completed and the concrete is determined to meet slump requirements.
5. Cylinders: (4) cylinders shall be made for every 100 cubic yards of concrete poured, or a minimum of (4) cylinders shall be made for every pour. (2) of these cylinders shall be broken at 7 days following the pour and the remaining (2) cylinders shall be broken at 28 days following the pour. Cylinders MUST be stored according to ASTM C31 and be transported to the testing facility within 48 hours.
6. Air entrainment: of the concrete shall be tested (1) time for every 50 cubic yards of concrete poured or a minimum of (1) time for each pour.
7. Temperature: of the concrete shall be tested (1) time for every 50 cubic yards of concrete poured or a minimum of (1) time for each pour.
8. Concrete that has been mixed for greater than 90 minutes and showing signs of active hydration including a decrease in slump, a rise in temperature, or a change in workability, shall not be used.

REVISION | BY | DATE

PROJECT MANAGER KEITH L. HODGE
DESIGN BY : KLH
DRAWN BY : KLH
DATE : 6/8/2023
PROJECT NO.: 2743-22-02

SEAL

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120 LAKE STREET
EPHRATA, PA 17522
PHONE: 717-721-6795 FAX: 717-721-9275
www.TeamAginc.com TeamAg@TeamAginc.com

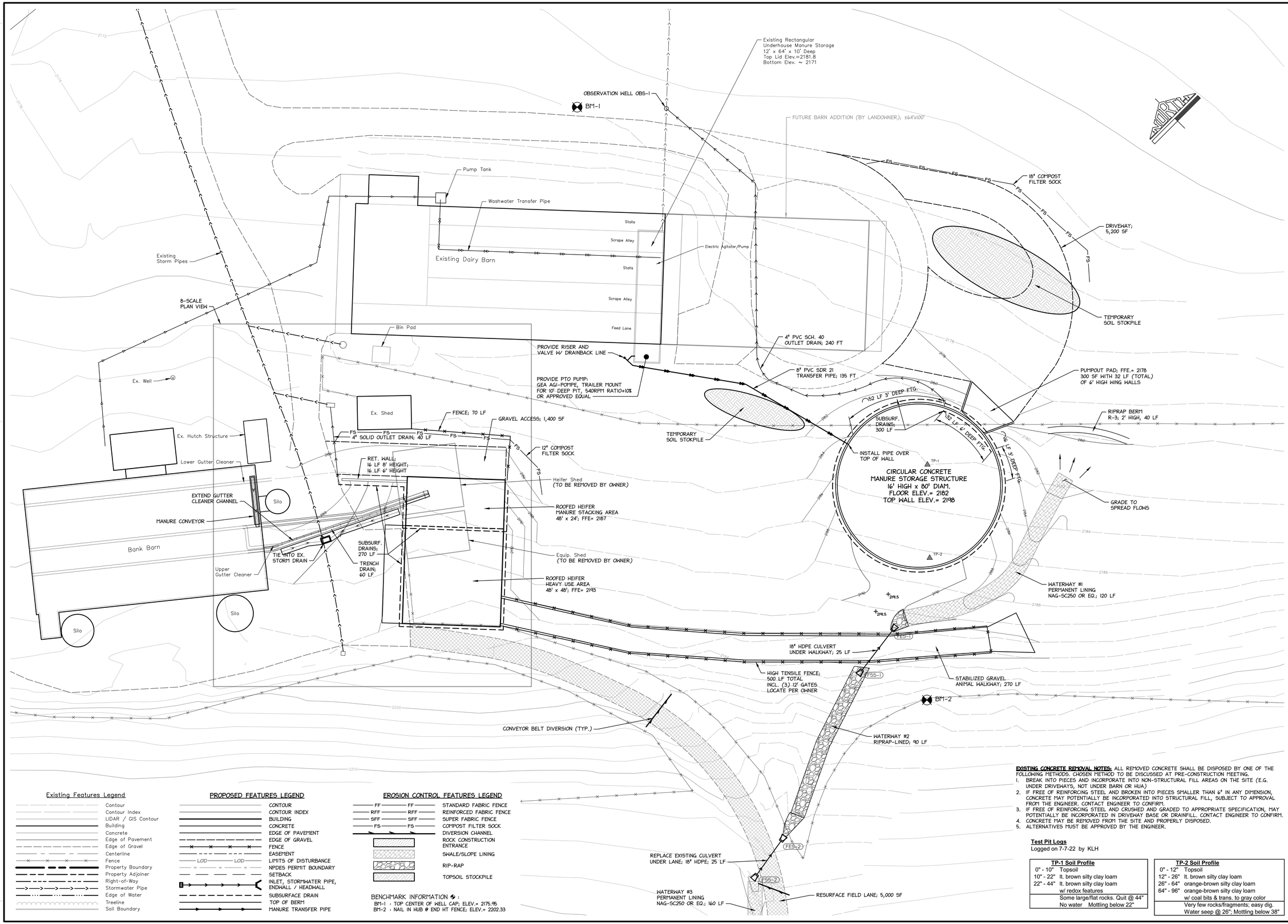
SCALE 1" = 40'
0' 40' 80' 120'

PROJECT TITLE
AGRICULTURAL BMPs
SUMMIT TOWNSHIP SOMERSET COUNTY

CLIENT
JOE WALKER
203 BERKLEYS MILL ROAD
MEYERSDALE, PA 15552
814-444-2736

SITE PLAN

DRAWING : SP-2



EXISTING CONCRETE REMOVAL NOTES: ALL REMOVED CONCRETE SHALL BE DISPOSED BY ONE OF THE FOLLOWING METHODS. CHOSEN METHOD TO BE DISCUSSED AT PRE-CONSTRUCTION MEETING.

1. BREAK INTO PIECES AND INCORPORATE INTO NON-STRUCTURAL FILL AREAS ON THE SITE (E.G. UNDER DRIVEWAYS, NOT UNDER BARN OR HUA)
2. IF FREE OF REINFORCING STEEL AND BROKEN INTO PIECES SMALLER THAN 6" IN ANY DIMENSION, CONCRETE MAY POTENTIALLY BE INCORPORATED INTO STRUCTURAL FILL, SUBJECT TO APPROVAL FROM THE ENGINEER. CONTACT ENGINEER TO CONFIRM.
3. IF FREE OF REINFORCING STEEL AND CRUSHED AND GRADED TO APPROPRIATE SPECIFICATION, MAY POTENTIALLY BE INCORPORATED IN DRIVEWAY BASE OR DRAINFILL. CONTACT ENGINEER TO CONFIRM.
4. CONCRETE MAY BE REMOVED FROM THE SITE AND PROPERLY DISPOSED.
5. ALTERNATIVES MUST BE APPROVED BY THE ENGINEER.

Test Pit Logs
Logged on 7-7-22 by KLH

TP-1 Soil Profile	
0" - 10"	Topsoil
10" - 22"	lt. brown silty clay loam
22" - 44"	lt. brown silty clay loam w/ redox features
	Some large/flat rocks. Quit @ 44"
	No water Mottling below 22"

TP-2 Soil Profile	
0" - 12"	Topsoil
12" - 26"	lt. brown silty clay loam
26" - 64"	orange-brown silty clay loam
64" - 96"	orange-brown silty clay loam w/ coal bits & trans. to gray color
	Very few rocks/fragments; easy dig. Water seep @ 26"; Mottling below 38"

Existing Features Legend

- Contour
- Contour Index
- LiDAR / GIS Contour
- Building
- Concrete
- Edge of Pavement
- Edge of Gravel
- Centerline
- Fence
- Property Boundary
- Property Adjoiner
- Right-of-Way
- Stormwater Pipe
- Edge of Water
- Treeline
- Soil Boundary

PROPOSED FEATURES LEGEND

- CONTOUR
- CONTOUR INDEX
- BUILDING
- CONCRETE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- FENCE
- EASEMENT
- LOD — LOD — LIMITS OF DISTURBANCE
- NPDES PERMIT BOUNDARY
- SETBACK
- INLET, STORMWATER PIPE, ENDWALL / HEADWALL
- SUBSURFACE DRAIN
- TOP OF BERM
- MANURE TRANSFER PIPE

EROSION CONTROL FEATURES LEGEND

- FF — FF — STANDARD FABRIC FENCE
- RFF — RFF — REINFORCED FABRIC FENCE
- SFF — SFF — SUPER FABRIC FENCE
- FS — FS — COMPOST FILTER SOCK
- DIVERSION CHANNEL
- ROCK CONSTRUCTION ENTRANCE
- SWALE/SLOPE LINING
- RIP-RAP
- TOPSOIL STOCKPILE

BENCHMARK INFORMATION :
BM-1 : TOP CENTER OF WELL CAP; ELEV.= 2175.95
BM-2 : NAIL IN HUB @ END HT FENCE; ELEV.= 2202.33

REVISION	BY	DATE

PROJECT MANAGER: KEITH L. HODGE
DESIGN BY : KLH
DRAWN BY : KLH
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SCALE 1" = 20'
0' 20' 40' 60'

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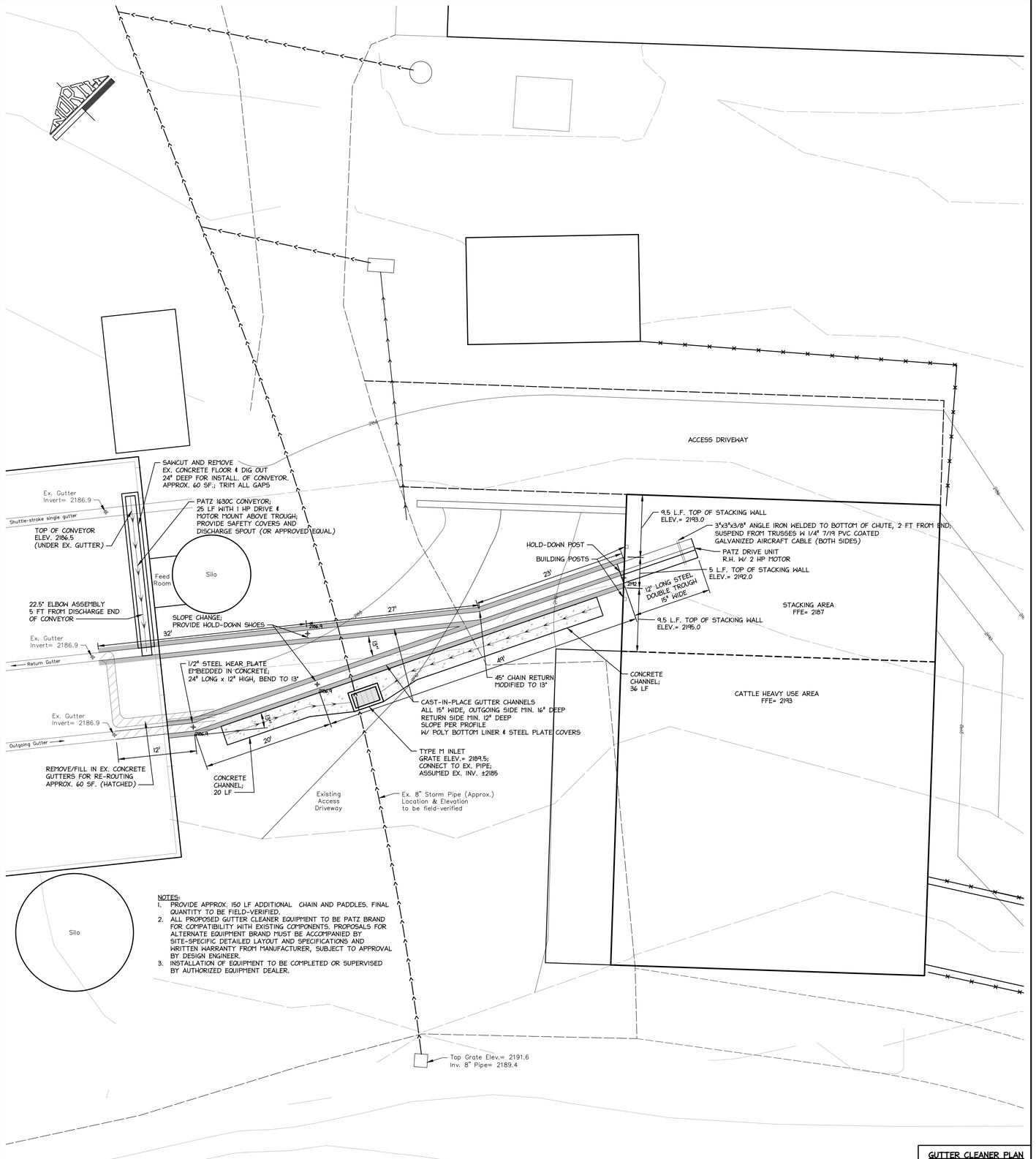
814-444-2736

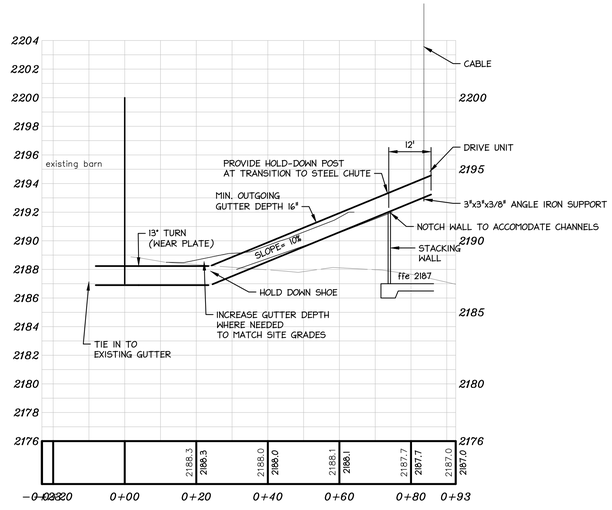
HEADQUARTERS SITE PLAN

DRAWING : SP-3

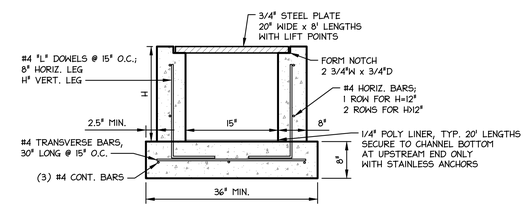


NOTES:
1. PROVIDE APPROX. 150 LF ADDITIONAL CHAIN AND PADDLES. FINAL QUANTITY TO BE FIELD-VERIFIED.
2. ALL PROPOSED GUTTER CLEANER EQUIPMENT TO BE PATZ BRAND FOR COMPATIBILITY WITH EXISTING COMPONENTS. PROPOSALS FOR ALTERNATE EQUIPMENT BRAND MUST BE ACCOMPANIED BY SITE-SPECIFIC DETAILED LAYOUT AND SPECIFICATIONS AND WRITTEN WARRANTY FROM MANUFACTURER, SUBJECT TO APPROVAL BY DESIGN ENGINEER.
3. INSTALLATION OF EQUIPMENT TO BE COMPLETED OR SUPERVISED BY AUTHORIZED EQUIPMENT DEALER.

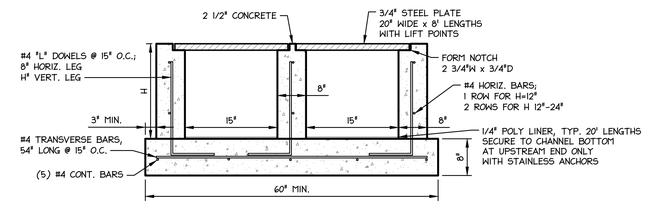
GUTTER CLEANER PLAN
SCALE: 1" = 8'



GUTTER CLEANER (OUTGOING SIDE)
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



SINGLE GUTTER - SECTION VIEW

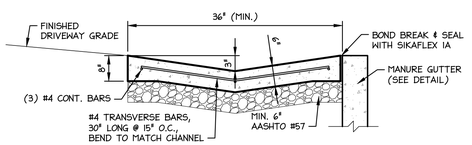


DOUBLE GUTTER - SECTION VIEW

GUTTER DEPTH "H":
1. MIN DEPTH ON OUTGOING GUTTER IS 16". MIN DEPTH ON RETURN GUTTER IS 12".
2. MAX DEPTH OF ALL GUTTER CHANNELS IS 24"
3. ADJUST DEPTH BETWEEN MIN/MAX AS NEEDED TO BLEND WITH ADJACENT GRADES.

CONSTRUCTION NOTES:
1. SEE PLAN VIEW FOR EXTENT OF SINGLE AND DOUBLE GUTTER SEGMENTS.
2. ALL GUTTER CHANNELS TO BE UNDERLAIN BY MIN. 3" OF AASHTO #57.
3. INSTALL CONTROL JOINTS IN FLOOR & CURBS AT MAX. 30' INTERVALS

1 **MANURE GUTTERS**
NOT TO SCALE



NOTES:
1. WIDEN AND TAPER CHANNEL TO TYPE M INLET AS SHOWN ON PLAN VIEW.
2. SLOPE PER PLAN VIEW, TOWARD INLET

2 **CONCRETE CHANNEL**
NOT TO SCALE

REVISION	BY	DATE

PROJECT MANAGER: **KEITH L. HODGE**
DESIGN BY : **KLH**
DRAWN BY : **KLH**
DATE : **6/8/2023**
PROJECT NO.: **2743-22-02**

SEAL

TeamAg INC
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www.TeamAginc.com TeamAg@TeamAginc.com

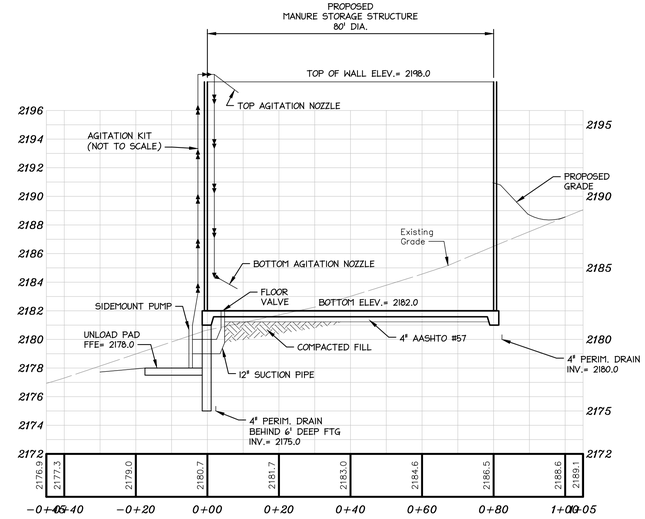
SCALE 1" = 8'
24" 16" 8" 0"

PROJECT TITLE
AGRICULTURAL BMPs
SUMMIT TOWNSHIP SOMERSET COUNTY

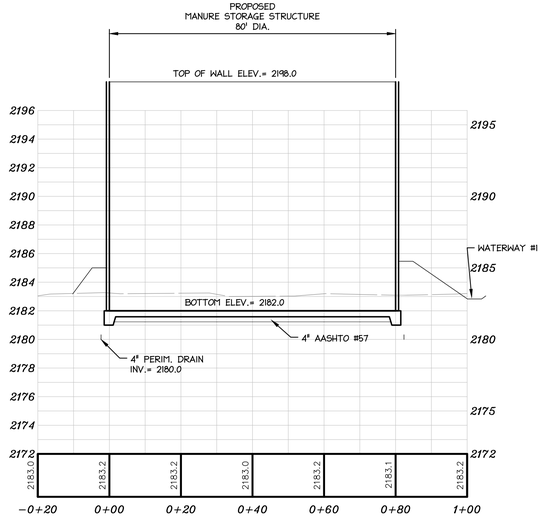
CLIENT
JOE WALKER
203 BERKLEYS MILL ROAD
METERSDALE, PA 15552
814-444-2736

GUTTER CLEANER SITE PLAN

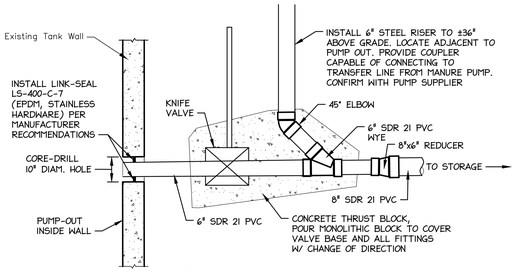
DRAWING : **SP-4**



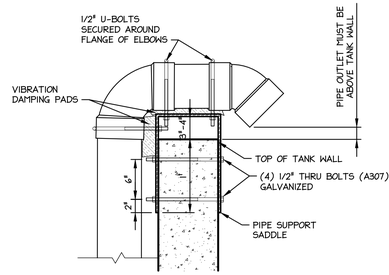
SECTION A–A
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



SECTION B–B
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

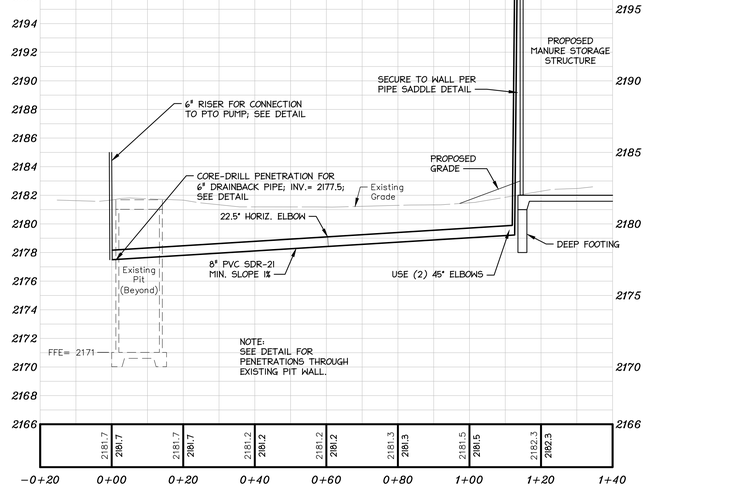


RISER AND DRAIN-BACK LINE AT EXISTING PIT PUMP-OUT
1 — NOT TO SCALE

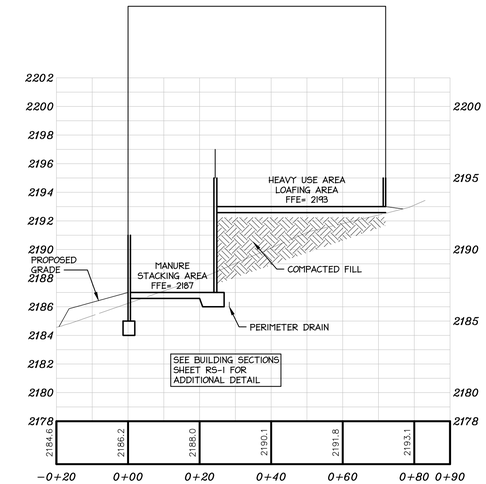


NOTES:
1. SADDLE TO BE ¼" STEEL.
2. EXPOSED PIPE OPENING MUST BE INSTALLED ENTIRELY ABOVE TANK WALL.
3. APPLY SIKAFLEX 1-A AT BOLT HEADS.
4. STRAP VERTICAL PIPE TO WALL IN AT LEAST THREE LOCATIONS BELOW SADDLE, ABOVE GRADE. PROVIDE VIBRATION DAMPING PAD AT STRAP LOCATIONS.

PIPE SUPPORT SADDLE
2 — NOT TO SCALE



SECTION C–C
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



SECTION D–D
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

REVISION | BY | DATE

PROJECT MANAGER: KEITH L. HODGE
DESIGN BY : KLH
DRAWN BY : KLH
DATE : 6/8/2023
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SCALE
AS NOTED

PROJECT TITLE
AGRICULTURAL BMPs
SOMERSET COUNTY
SUMMIT TOWNSHIP

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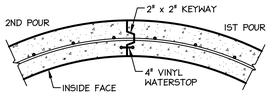
PROFILES

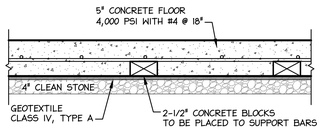
DRAWING : P-1



NOTE: SPLICE LENGTH AND OFFSET OF RING STEEL MUST BE MAINTAINED THROUGH JOINT

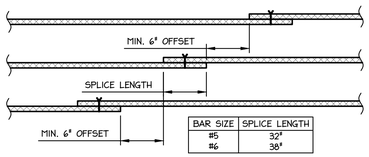
1 VERTICAL WALL JOINT IN CIRCULAR TANK

NOT TO SCALE



2 FLOOR / REINF 80' DIA. MANURE STORAGE STRUCTURE

NOT TO SCALE



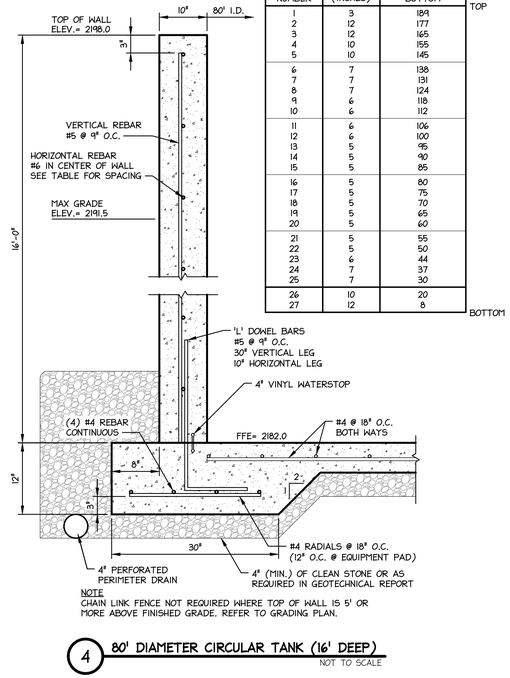
BAR SIZE	SPLICE LENGTH
#5	32"
#6	38"

3 SPLICE LENGTH AND OFFSET OF RING STEEL FOR CIRCULAR TANKS

NOT TO SCALE

HORIZONTAL STEEL SCHEDULE - WALL/RING

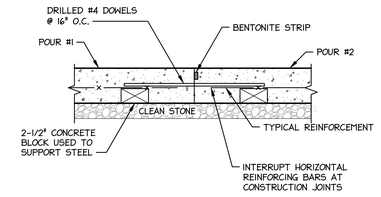
BAR NUMBER	SPACING (INCHES)	INCHES FROM BOTTOM	
1	3	189	TOP
2	12	177	
3	12	165	
4	10	155	
5	10	145	
6	7	138	
7	7	131	
8	7	124	
9	6	118	
10	6	112	
11	6	106	
12	6	100	
13	5	95	
14	5	90	
15	5	85	
16	5	80	
17	5	75	
18	5	70	
19	5	65	
20	5	60	
21	5	55	
22	5	50	
23	6	44	
24	7	37	
25	7	30	
26	10	20	
27	12	8	BOTTOM



NOTE
CHAIN LINK FENCE NOT REQUIRED WHERE TOP OF WALL IS 5' OR MORE ABOVE FINISHED GRADE. REFER TO GRADING PLAN.

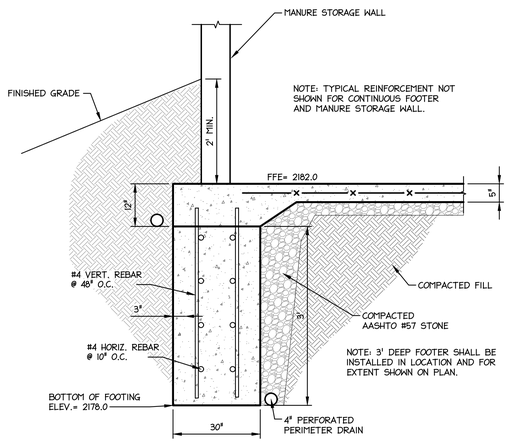
4 80' DIAMETER CIRCULAR TANK (16' DEEP)

NOT TO SCALE



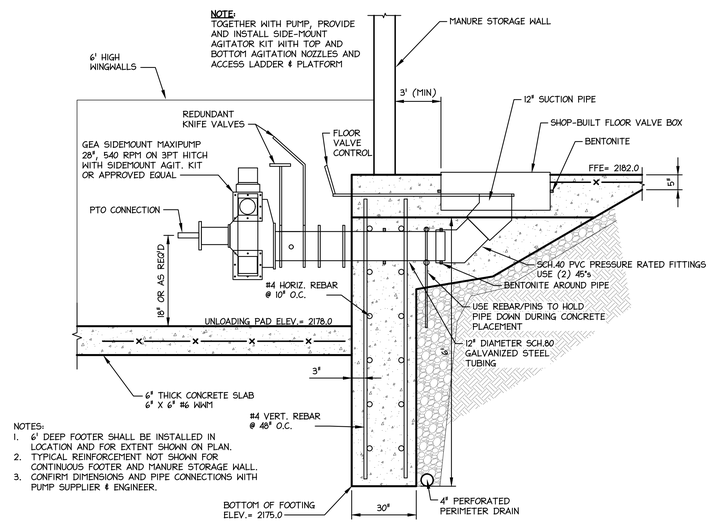
5 FLOOR CONSTRUCTION JOINT (IF NEEDED)

NOT TO SCALE



6 3' DEEP FOOTING DETAIL

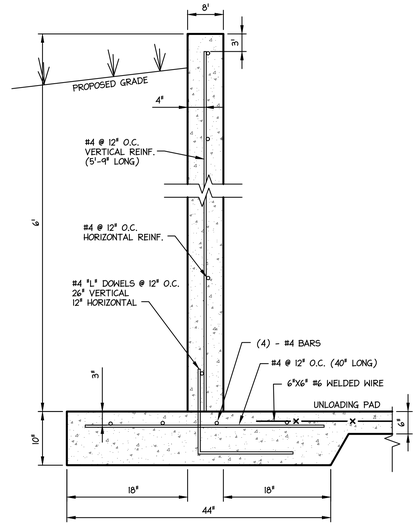
NOT TO SCALE



NOTES:
1. 6' DEEP FOOTER SHALL BE INSTALLED IN LOCATION AND FOR EXTENT SHOWN ON PLAN.
2. TYPICAL REINFORCEMENT NOT SHOWN FOR CONTINUOUS FOOTER AND MANURE STORAGE WALL.
3. CONFIRM DIMENSIONS AND PIPE CONNECTIONS WITH PUMP SUPPLIER & ENGINEER.

7 SIDEMOUNT PUMP AND 6' DEEP FOOTING DETAIL

NOT TO SCALE



8 6' HIGH WINGWALL AND UNLOADING PAD

NOT TO SCALE

REVISION	DATE	BY

PROJECT MANAGER
KEITH L. HODGE
DESIGN BY : KLH
DRAWN BY : KLH
DATE : 6/8/2023
PROJECT NO.: 2743-22-02

SEAL

TeamAg INC
120 LAKE STREET
EPHRATA, PA 17522
PHONE: 717-721-6795 FAX: 717-721-9275
www.TeamAginc.com TeamAg@TeamAginc.com

SCALE
AS NOTED

PROJECT TITLE
AGRICULTURAL BMPs
SOMERSET COUNTY
SUMMIT TOWNSHIP

CLIENT
JOE WALKER
203 BERKLEYS MILL ROAD
MEYERSDALE, PA 15552
814-444-2736

STORAGE STRUCTURE DETAILS

DRAWING : MS-1

SITE SPECIFIC CONSTRUCTION SPECIFICATIONS

GENERAL

1. A copy of these drawings and specifications, and a copy of the approved erosion control plan shall be on site during all phases of construction.
2. A pre-construction meeting between Owner, Contractors (general contractor, excavator, concrete contractor), and Engineer shall be required prior to any construction work.
3. It is the responsibility of the Contractor to implement all measures necessary to protect work-in-progress from environmental conditions such as temperature extremes, surface and ground water, frost action, etc.
4. All erosion and sediment control facilities and practices shall be installed and maintained in accordance with the E&S plan.
5. A professional geologist or geotechnical engineer shall be contacted upon the discovery of any sinkhole formation during construction of the manure storage system components.

CONCRETE STRUCTURE FOUNDATION, BACKFILL, AND FENCE

1. The excavated area for the circular manure storage structure must be closely observed during construction. Contractor must contact the engineer during excavation to arrange for inspection of the sub-base.
2. Foundations must be prepared in such a way that the structures are installed on uniform foundation. If any rock or unsuitable material such as large quantities of limestone or gravel is encountered, this material shall be removed and undercut to a depth of 2 feet below the finished bottom elevation and replaced with suitable clay/silt soil compacted in its place. Foundations consisting of bedrock with joints, fractures, or solution channels shall be treated or separation distance provided consisting of a minimum of 1 foot of impermeable soil between the floor slab and the bedrock or an alternative that will achieve equal protection. An alternative is to use a 15 mil plastic membrane. This liner shall be overlapped by 4' at the seams and underlain with a limestone sand to prevent puncturing. Clean crushed stone shall be on top of the plastic membrane to allow subsurface drainage to enter the perimeter drain and to give the structure a uniform foundation. While foundation is being prepared, contractor shall provide adequate drainage for foundation. After the foundation has been excavated and unsuitable material has been replaced with suitable material, it should be disked, watered and recompacted with a smooth vibratory roller.
3. A 4-inch layer of clean AASHTO #57 stone shall be placed on top of the foundation and compacted.
4. Provisions must be made to divert upslope water from excavated areas and to dewater the excavated areas until the structures are backfilled.
5. Backfilling of each structure may occur 14 days after the final wall pour, unless early backfilling is approved in writing by the engineer. Walls are to be inspected by the engineer or representative after form removal and prior to backfilling. Select best native material previously excavated from site for the 4 feet next to the walls from footing to surface. Avoid backfill containing large rocks, hard or frozen soil chunks, construction debris, or large amounts of clay. Grade backfill according the the grading plan provided in the drawings.
6. Compacted backfill should be placed in horizontal loose lifts not exceeding 8 inches. Compact each lift with minimum 3 passes of a vibratory roller where far from poured concrete walls. Vibratory rollers or other heavy equipment shall not operated near poured walls (within distance equal to current lift's height above bottom of wall).
7. Compacted backfill in areas inaccessible by a vibratory roller, or near any poured concrete walls (within distance equal to current lift's height above bottom of wall), should be placed in horizontal loose lifts not exceeding 6 inches. Compact thoroughly with plate tamper or similarly effective equipment weighing less than 1,000 pounds.
8. A safety cover is required at the reception pit to prevent unauthorized access. The floor design is provided in the project drawings.
   - 8.1. A safety cover may consist of pressure-treated lumber decking. Alternatives such as precast concrete, or other cover proposed by the contractor may be considered by the engineer. All pump access points and lids must be secured.
   - 8.2. Safety signs shall be placed around each structure as indicated in the project specifications.

STRUCTURAL FILL

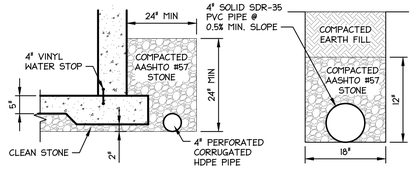
1. Remove topsoil and any soft or unsuitable underlying soils prior to structural fill placement.
2. The subgrade shall be inspected by the engineer or representative. Proofrolling of cut areas at subgrade elevation may be requested at the engineer's discretion.
3. All imported or on-site materials proposed for structural fill shall be approved by the engineer prior to placement. Material testing or additional quality assurance measures may be required at the engineer's discretion.
4. All structural fill and backfill shall be free of ice, snow, roots, sod, or any other organic matter, rubbish, slag, or other deleterious materials.
5. Rock fragments or broken concrete larger than 6" shall not be incorporated into the structural fill.
6. If soft or unstable subgrade materials are encountered beneath footing excavations, the unsuitable materials should be over-excavated and backfilled with AASHTO #57 coarse aggregate or other suitable structural fill derived from on-site or off-site sources approved by the engineer. Compaction of replacement material shall follow requirements (below) for placement and compaction of structural fill.
7. For structural fill materials:
   - 7.1. The excavating contractor shall be responsible for hiring a third-party testing firm to provide soil testing and observation of fill placement.
   - 7.2. Structural fill shall consist of clean soil classifying as GW, GP, SW, SP, SC, or CL under the Unified Soil Classification System (USCS).
   - 7.3. The maximum dry density, as determined by the Modified Proctor compaction test (ASTM D-1557), should be at least 110 pounds per cubic foot (pcf).
   - 7.4. Compacted structural fill/backfill should be placed in horizontal loose lifts not exceeding 6 inches. Compact each lift with minimum 3 passes of a vibratory roller where far from poured concrete walls. Vibratory rollers or other heavy equipment shall not operated near poured walls (within distance equal to current lift's height above bottom of wall).
   - 7.5. Compacted structural fill in areas inaccessible by a vibratory roller, or near any poured concrete walls (within distance equal to current lift's height above bottom of wall), should be placed in horizontal loose lifts not exceeding 6 inches. Compact thoroughly with wacker or similarly effective equipment.
   - 7.6. Unless otherwise noted, all fill/backfill shall be compacted to at least 95 percent of the maximum dry density for the material, as determined by the modified Proctor compaction test (ASTM D-1557).
   - 7.7. The moisture content of the material shall be within 2 percentage points of the optimum moisture content for the material as determined by the modified Proctor compaction test.
   - 7.8. The moisture content of structural fill material must be field verified by the engineer or representative during placement.
   - 7.9. Field density testing of structural fill and backfill shall be performed for each lift at a minimum frequency of once every 5,000 square feet, or 3 tests per lift, whichever is greater.

CONCRETE

1. Masonry Blocks or chairs (height as specified in construction details) shall be used to hold floor reinforcement in place during concrete placement. Blocks or chairs shall be placed at spacing equal to half the width of the welded wire fabric, or at a maximum spacing of 60" for rebar.
2. All concrete and reinforcing work shall conform to American Concrete Institute's "Standard Building Code Requirements for Reinforced Concrete, (ACI 318-99), and to the Pennsylvania NRCS PA313S Waste Storage Structure Construction Specification.
3. All concrete shall develop a minimum 28-day strength F'c of 4000 psi. All concrete shall have 3/4 inch maximum aggregate size and maximum water-cement ratio of 0.45. Slump shall be 3 to 6 inches (without superplasticizers, if any), unless otherwise noted. Superplasticizers (ASTM C494, Type F or G) may be added to concrete that has a 2 to 4 inch slump, and the slump shall not exceed 7 1/2 inches with the addition of a superplasticizer. All concrete shall be furnished with the proper admixture to obtain 6% +/- 1% air entrainment.
4. Concrete is to be mechanically vibrated. Cure concrete at air temperatures of 40° F to 90° F.
5. Procedures for cold weather concreting must be followed when, for more than 3 consecutive days, the following conditions exist: 1) the average daily air temperature is less than 40 °F and 2) the air temperature is less than 50 °F for more than half of any 24 hour period. All procedures for cold weather concreting must follow ACI 306 and be approved by the engineer.
6. Reinforcing steel to meet ASTM Specifications A-615, latest revision grade 60. All welded wire fabric shall meet A-185, latest revision.
7. When connecting two sections of vinyl waterstop, the ends must be heat welded or tied together and sealed with a watertight caulking.
8. All concrete shall be reinforced with the same steel as shown in similar sections unless specifically called out as "not reinforced".
9. Maximum variation from indicated reinforcing bar spacing is 1/12 of indicated spacing.
10. The following minimum concrete cover shall be provided for reinforcement unless otherwise noted: Where cast against earth - 3 inches. Walls and slabs (exposed to earth or weather) - 1-1/2 inches. Other - 2 inches. Maximum reduction in cover from formed and exposed surfaces is 1/4 inch, from earth surfaces 1/2 inch.
11. Place concrete in the forms in horizontal lifts of no more than 5 feet when a super plasticizer is used, and no more than 2 feet when a super plasticizer is not used. Do not allow the concrete to drop more than 12 feet when a super plasticizer is used, and no more than 4 feet when a super plasticizer is not used. Consolidate each lift by vibrating.
12. All concrete must be properly cured using curing compound applied at 1 gallon per 150 square feet. Curing compound shall meet ASTM C-309 and be sprayed on as soon as the concrete can be walked on (slabs) and immediately after all wall ties are parged both inside and outside (walls). Wall forms may be taken off 24 hours after the end of the pour if the temperature is above 50° F. Alternative curing methods must be approved by the engineer prior to implementation.

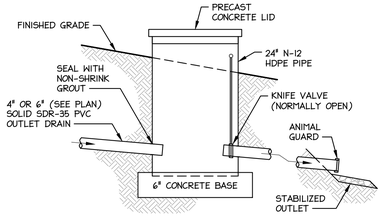
TRANSFER PIPES

1. Materials used shall be as specified on drawings. Substitutions may be allowed if the proposed material is presented to the engineer of record a minimum of 14 days prior to installation. Time spent researching substituted materials may be charged to the contractor.
2. Minimum trench width excavation, as shown on the plans, shall be observed. Backfill shall be as specified on drawings.
3. For pump transfer lines, all fittings shall be pressure rated to match or exceed that of the pipe specified.
4. Horizontal and vertical bends shall be limited to those shown on the plans. Additional cleanouts may be required if bends are installed that are not shown on the plans.
5. All gravity pipe & fittings labeled shall meet the full ASTM D3212 specification for joint integrity.
6. All above-ground transfer piping shall be protected from UV degradation, and shall be protected from freezing, if applicable. All above-ground piping shall be adequately supported and joint restraint shall be provided.

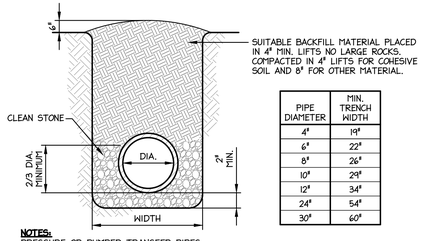


NOTE
FOOTER MAY BE POURED ON NATIVE SOIL WHEN THERE IS 3' CLEAN STONE UNDER SLAB IF 5' X 2' CHANNELS OF CLEAN STONE ARE PLACED UNDER FOOTER EVERY 40'

1 **PERIMETER DRAIN** NOT TO SCALE



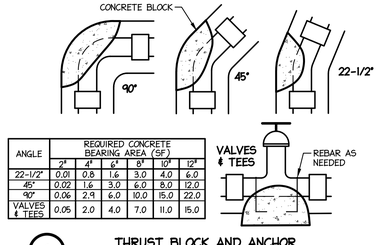
2 **OBSERVATION WELL - OBS-1** NOT TO SCALE



PIPE DIAMETER	MIN. TRENCH WIDTH
4"	19"
6"	22"
8"	26"
10"	29"
12"	34"
24"	54"
30"	60"

NOTES:
PRESSURE OR PUMPED TRANSFER PIPES
1. PIPE LENGTHS SHALL BE JOINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL PIPE SHALL BE INSTALLED WITH WATER TIGHT, PRESSURE RATED JOINTS.
2. ELBOWS OR BENDS IN THE PIPE ALIGNMENT GREATER THAN 5 DEGREES SHALL BE SUPPORTED BY THRUST BLOCKS, OR OTHER MECHANICAL THRUST RESTRAINTS.

5 **MANURE TRANSFER PIPES** NOT TO SCALE

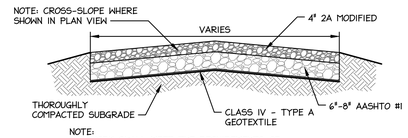


ANGLE	REQUIRED CONCRETE BEARING AREA (SF)					
	2"	4"	6"	8"	10"	12"
22-1/2°	0.01	0.8	1.6	3.0	4.0	6.0
45°	0.02	1.6	3.0	6.0	8.0	12.0
90°	0.06	2.9	6.0	10.0	15.0	22.0
VALVES & TEES	0.05	2.0	4.0	7.0	11.0	15.0

6 **THRUST BLOCK AND ANCHOR** NOT TO SCALE

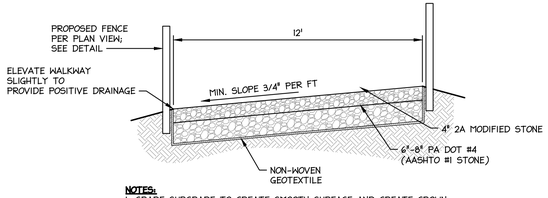
NOTES:
1. REMOVE ALL TOPSOIL, ORGANIC MATTER AND ANY DELETERIOUS MATERIAL PRIOR TO PLACING 2A MODIFIED.
2. ALTERNATIVE SURFACE MATERIAL MUST BE APPROVED BY ENGINEER PRIOR TO INSTALLATION.

3 **FIELD LANE RESURFACING** NOT TO SCALE



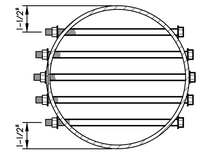
NOTE:
ALL WORK SHALL MEET THE REQUIREMENTS OF PADOT FORM 408, LATEST REVISION.

7 **TYPICAL DRIVEWAY AND GRAVEL AREA CROSS SECTION** NOT TO SCALE



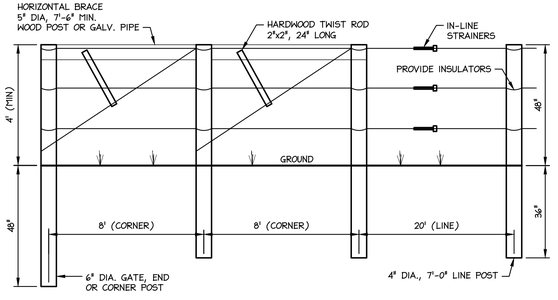
NOTES:
1. GRADE SUBGRADE TO CREATE SMOOTH SURFACE AND CREATE CROWN.
2. GEOTEXTILE SHALL MEET REQUIREMENTS IN CONSTRUCTION SPECIFICATION. PLACEMENT SHOULD ALLOW FOR 12 INCH OVERLAP BETWEEN PANELS.
3. STONE DEPTH WILL BE MEASURED AFTER COMPACTION.
4. ALL STONE SHALL BE COMPACTED WITH A VIBRATORY ROLLER.

8 **ANIMAL WALKWAY** NOT TO SCALE



NOTES:
1. USE 3/8" DIA. STAINLESS STEEL BOLTS WITH HEX NUTS AND WASHERS. AFTER INSTALLATION, STRIP THREADS TO PREVENT NUT FROM COMING LOOSE.
2. BOLTS TO BE PLACED APPROX. 1-1/2" FROM END OF PIPE OPENING.
3. FLAPPER-TYPE ANIMAL GUARD IS ACCEPTABLE.

4 **ANIMAL GUARD** NOT TO SCALE



NOTES:
1. FENCE HEIGHT FROM GROUND: 48 INCHES
2. NUMBER OF FENCE WIRES: 3
3. FENCE POSTS SHALL BE LOCUST, CEDAR, PRESSURE TREATED, OR CREOSOTE TREATED.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH PA ONE CALL UTILITY CHECK BEFORE DRIVING ANY POSTS (800-242-1776).
5. FENCE SHOULD BE INSTALLED IN ALL LOCATIONS SPECIFIED ON THE PLAN.
6. NUMBER OF WIRES AND OTHER SPECIFICATIONS CHANGE IF FENCE IS NOT ELECTRIFIED. CONTACT ENGINEER TO MAKE CHANGES.

CORNER OR GATE POSTS	6" DIA., 8'-0" MIN. LENGTH
LINE POSTS	4" DIA., 7'-0" MIN. LENGTH
WIRE	12.5 GAUGE HIGH-TENSILE WIRE, ELECTRIFIED CLASS 3 GALVANIZED, 180,000 PSI TENSILE STRENGTH WIRE. SPACING FROM GROUND TO TOP WIRE: 18", 30", 42" (48" POST) TENSION: 150 LBS EACH WIRE USE IN-LINE STRAINERS.
FASTENING	AT GATE, CORNER AND END BRACES, USE APPROPRIATE KNOTS OR CRIMPING SLEEVES OR WIRE ANCHOR THROUGH POSTS. STAPLE WIRES TO POSTS WITH 1-3/4" -9 GAUGE GALVANIZED STAPLES WITH SLASH CUT POINTS. DO NOT DRIVE STAPLES TIGHT IN LINE POSTS.
POST SPACING (LINE)	POST SPACING 20' MAX.

9 **HIGH-TENSILE ELECTRIC FENCE** NOT TO SCALE

REVISION | BY | DATE

PROJECT MANAGER: KEITH L. HODGE
DESIGN BY: KLH
DRAWN BY: KLH
DATE: 6/8/2023
PROJECT NO.: 2743-22-02

SEAL

TeamAg INC
120 LAKE STREET
EPHRATA, PA 17522
PHONE: 717-721-6795 FAX: 717-721-9275
www.TeamAginc.com TeamAg@TeamAginc.com

SCALE: AS NOTED

PROJECT TITLE
AGRICULTURAL BMPs
SOMERSET COUNTY
SUMMIT TOWNSHIP

CLIENT
JOE WALKER
203 BERKLEY'S MILL ROAD
MEYERSDALE, PA 15552
814-444-2736

NOTES & DETAILS

DRAWING: MS-2

GENERAL EROSION CONTROL NOTES

1. Erosion and sediment control measures must be in compliance with the Erosion and Sediment Control Program. The developer or its authorized representative will be responsible for the proper construction, stabilization, and maintenance of all erosion and sedimentation controls and related items included with the Erosion and Sedimentation Control Plan.
2. A copy of the Erosion and Sediment Control Plan must be posted at the construction site in accordance with state law.
3. Before grading or construction begins, the developer or its authorized representative is to construct and complete sediment control measures and devices as shown on the plans.
4. Should additional erosion or sedimentation occur during construction or should questions regarding the maintenance of control practices arise, contact TeamAg immediately for technical support. Should any measures contained within this plan prove incapable of adequately removing sediment from on-site flows prior to discharge or of stabilizing the surfaces involved, additional measures must be immediately implemented by the developer of its authorized representative to eliminate all such problems. TeamAg must be notified of any additional measures taken to abate the pollution of waters of the Commonwealth not shown on the plans. Stockpiles of wood chips, hay bales, crushed stone, and other mulches shall be held in readiness to deal immediately with emergency problems with erosion.
5. The developer or its authorized representative must develop and have approved by the Conservation District, a separate Erosion and Sedimentation Control Plan for each spoil, borrow or other work area not detailed in the approved plan whether within or outside of the construction limits.
6. The developer or its authorized representative shall be responsible for supervising debris disposal from other trades during all phases of construction. The developer or the authorized representative shall bear the expense of any clean-up operations initiated by the Engineer or Owner.
7. Driveways are to be graveled immediately after grading is completed and utilities are installed.
8. The developer or its authorized representative is responsible for the continued inspection, maintenance or repair of all erosion and sediment problems that might occur due to the development of this project, until the site is completely stabilized.
9. The developer or its authorized representative shall install silt fence or temporary diversion berms upslope of all watercourses as required to prevent sediment from entering the watercourses during construction.
10. Winter grading shall be avoided. Under no circumstance shall grading be done when the ground is frozen.
11. Silt fencing shall be used around material stockpiles, construction/earth disturbance areas.
12. All disturbed areas will be stabilized (covered with stone or revegetated) as soon as possible following grading or backfilling. Specifications for seeding are listed in the drawings.
13. During excavation, if sediment-laden water is encountered, a sediment filter bag ("dirt bag") shall be used.
14. Until the site is stabilized, all erosion and sedimentation controls must be maintained properly. Maintenance must include inspections of all erosion and sedimentation controls after each storm event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regarding, reseeding, remulching and renetting must be performed immediately. An extra supply of stone, seed, mulch and silt fence shall be kept on site for emergency purposes.

MAINTENANCE OF EROSION CONTROL FACILITIES

The General Contractor, or in the absence of a General Contractor, the Operator/Owner, shall be responsible for implementing and maintaining all Soil Erosion Controls. The Contractor shall, at the end of each week as well as with each rainfall, inspect all drainage and erosion control facilities to determine if they still function. Sediment should be removed when it reaches halfway up the silt-fence. Additional stone ballast shall be placed, if necessary, to control the tracking of mud by construction vehicles onto the adjacent roads.

If additional silt fence, silt traps, or swale diversions are necessary, they shall be provided as required. All changes must be reviewed by TeamAg Inc. Sediment deposited behind silt barriers and in the sediment trap shall be removed and incorporated into the final grading operations on the site. It is not to be taken off site.

GENERAL SEEDING NOTES

1. Any disturbed area on which activity has ceased and which will remain exposed must be seeded and mulched immediately. During non-germinating periods, mulch must be applied at the recommended rates. Disturbed areas which are not at finished grade and which will be redisturbed within 1 year may be seeded and mulched with a quick growing temporary seeding mixture and mulch. Disturbed areas which are either at finished grade or will not be redisturbed within one year must be seeded and mulched with a permanent seed mixture and mulch.
2. Diversions, channels, sedimentation basins sediment traps and stockpiles must be seeded and mulched immediately.
3. Hay or straw mulch must be applied at rates of at least 3.0 tons per acre. Mulch shall be anchored immediately after application. Mulch shall be held down by synthetic binders or mechanical means.

TEMPORARY SEEDING NOTES

Site preparation: Apply 1 ton/acre agricultural grade limestone and 10-10-10 fertilizer at a rate of 500 lbs./acre and work in where possible. Mulch seeded areas immediately after seeding.

PERMANENT SEEDING NOTES

Site preparation: Grade as necessary to bring the subgrade to a true, smooth slope parallel to and six inches below finished grade. Place topsoil over specified areas to a depth sufficiently greater than six inches so that after settlement and light rolling the complete work will conform to lines, grades, and elevations shown.

Apply 6 tons/acre agricultural grade limestone and 10-20-10 fertilizer at a rate of 1,000 lbs./acre or as per soil test. Limestone and fertilizer may not be required in agricultural fields.

Fertilizer and agricultural limestone shall be thoroughly incorporated into the soil by rototilling or other method to a minimum depth of four inches. The entire surface shall be done in two separate operations. The second seeding shall be done immediately after the first and at right angles to the first seeding and lightly raked into the soil. Mulch seeded areas immediately after seeding.

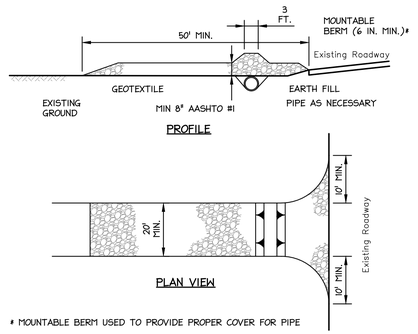
RECOMMENDED SEED MIXTURES

CONDITION	MIXTURE NUMBER	SPECIES	SEEDING RATES PURE LIVE SEED[1]
Temporary	1	Spring oats, or Annual ryegrass (spring or fall), or Winter wheat (fall), or Winter rye (fall)	64 10 90 56
Lawn area flatter than 3 to 1 and permanent swales[2]	1	Temporary mixture, plus	
	2	Tall fescue, or Fine fescue, or Kentucky bluegrass, plus Redtop, or Perennial ryegrass	60 35 25 3 15
Lawn area 3 to 1 and steeper	1	Temporary mixture, plus	
	3	Birdsfoot trefoil, plus Tall fescue	6 30

Adapted from PA DEP Erosion and Sediment Pollution Control Program Manual
(1) PLS is the product of the percentage of pure seed times percentage germination divided by 100.
(2) This mixture is suitable for frequent mowing. Do not cut shorter than 4 inches.

SEQUENCE OF CONSTRUCTION

1. Complete silage pad resurfacing.
2. Install filter sock downhill from earth disturbance activities and soil stockpiles per the plan.
3. Install runoff management features, including waterways, culverts, conveyor belt diversions and associated outlet protection, to direct upslope runoff around the main construction areas.
4. Excavate the manure storage and rough grade the site. Place excavated soil in designated fill areas. Compact appropriately per the construction specifications.
5. Place excess soil material in stockpiles where indicated on the plans.
6. Install circular manure storage structure. Backfill per plan at timing approved by attending engineer.
7. Place compacted fill, then install heavy use area floor and foundation walls, posts, manure stacking structure, and retaining walls. Install roof structure.
8. Install gutter cleaner channels and associated equipment.
9. Fine grade the lawn areas and seed or sod immediately with a perennial grass cover. Lawns shall be maintained on a regular basis and repaired, reseeded and mulched until stabilization is achieved.
10. After final site stabilization (i.e. 70% vegetative uniform cover) has been achieved, the temporary erosion and sedimentation controls must be removed. Areas disturbed during the removal of the controls shall be restabilized.



MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

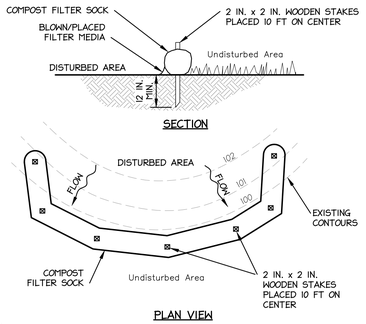
REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

1 STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE
(IF NEEDED)
NOT TO SCALE



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

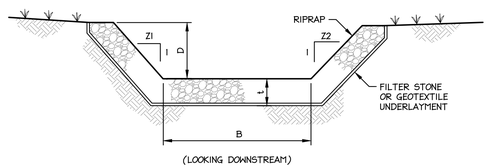
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

2 STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK
NOT TO SCALE



CHANNEL	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	RIPRAP GRADATION N (R-__)	RIPRAP DEPTH t (IN)	UNDER-LAYMENT	UNDER-LAYMENT THICKNESS
WATERWAY #2	ALL	3	2	2	2	R-4	18	AASHTO #3	6"

NOTES:

FILTER STONE UNDERLAYMENT FOR BED SLOPES ≥ 0.10 FT/FT (10 %) SHALL BE USED.

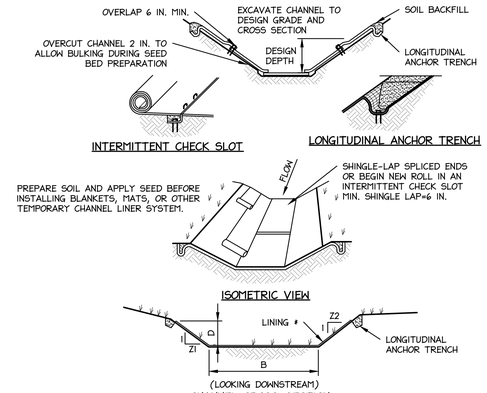
CHANNEL DIMENSIONS ARE FOR THE COMPLETED CHANNEL AFTER ROCK PLACEMENT. CHANNEL MUST BE OVER-EXCAVATED A SUFFICIENT AMOUNT TO ALLOW FOR THE VOLUME OF ROCK PLACED WITHIN THE CHANNEL WHILE PROVIDING THE SPECIFIED FINISHED DIMENSIONS.

CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE.

DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

THE MINIMUM ROCK THICKNESS (t) SHALL BE 1.5 TIMES THE MAX ROCK SIZE.

3 STANDARD CONSTRUCTION DETAIL #6-3
RIPRAP CHANNEL
NOT TO SCALE



SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

CHANNEL	STATIONS	GRADE (%)	TOP WIDTH T (FT.)	DEPTH D (FT.)	LINING #
WATERWAY #3	ALL	VARIES	10	1	NAG SC-250
WATERWAY #1	ALL	VARIES	13	1.50	NAG SC-250

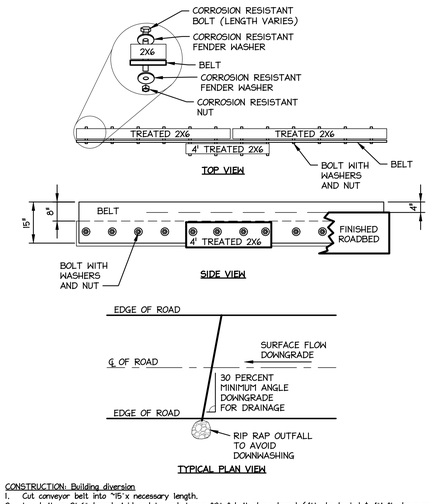
NOTES:

ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

4 STANDARD CONSTRUCTION DETAIL #6-1
VEGETATED CHANNEL
NOT TO SCALE



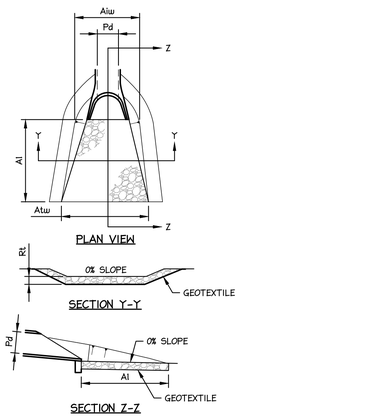
CONSTRUCTION: Building diversion

1. Cut conveyor belt into 15'x 4' necessary length.
2. Lay belt on 2'x6' boards laid end to end. Leave "8" of belt above board (4' to be buried & 4' left above road).
3. Starting at one end, drill holes through belt and lumber ("2' spacing) and secure with bolts and washers.
4. On diversions longer than 16', a lumber joint is necessary. Longer bolts should be used to attach a 4' piece of lumber on the opposite side of the belt at the joint

INSTALLATION: Installing diversion

1. Excavate a trench diagonally across the road
   a. Angle: Dig trench at min 30% angle to road.
   b. Fall: Minimum of 1% of continuous fall toward the outlet.
   c. Width: Wide enough trench to allow for compaction equipment beside the belt diversion (typically 15'-18').
   d. Depth: The trench should be deep enough to provide 3'-4' of cover over the top of the supporting 2'x 6'board.
2. Place the diversion against bottom edge of the trench, leaving "4' of the belt exposed above the final road surface.
3. Backfill the trench and compact with a tamper.
4. Place large stones at the end of the diversion to control erosion.
5. Mark the ends of the Conveyor Belt Diversion with reflective posts to avoid damage during future maintenance.

5 CONVEYOR BELT DIVERSION
NOT TO SCALE



OUTLET NO.	PIPE DIA. Pd (IN.)	RIPRAP SIZE	RIPRAP THICK. Rt (IN.)	APRON LENGTH Ai (FT.)	APRON INITIAL WIDTH Aiw (FT.)	APRON TERMINAL WIDTH Atw (FT.)
FES-1	18	R-5	24	12.00	3.00	12.00

NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

6 STANDARD CONSTRUCTION DETAIL #9-1
RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL
NOT TO SCALE

REVISION | BY | DATE

PROJECT MANAGER: KEITH L. HODGE
DESIGN BY : KLH
DRAWN BY : KLH
DATE : 6/8/2023
PROJECT NO.: 2743-22-02

SEAL

TeamAg INC
120 LAKE STREET
EPHRATA, PA 17522
PHONE: 717-721-6795 FAX: 717-721-9275
www.TeamAginc.com TeamAg@TeamAginc.com

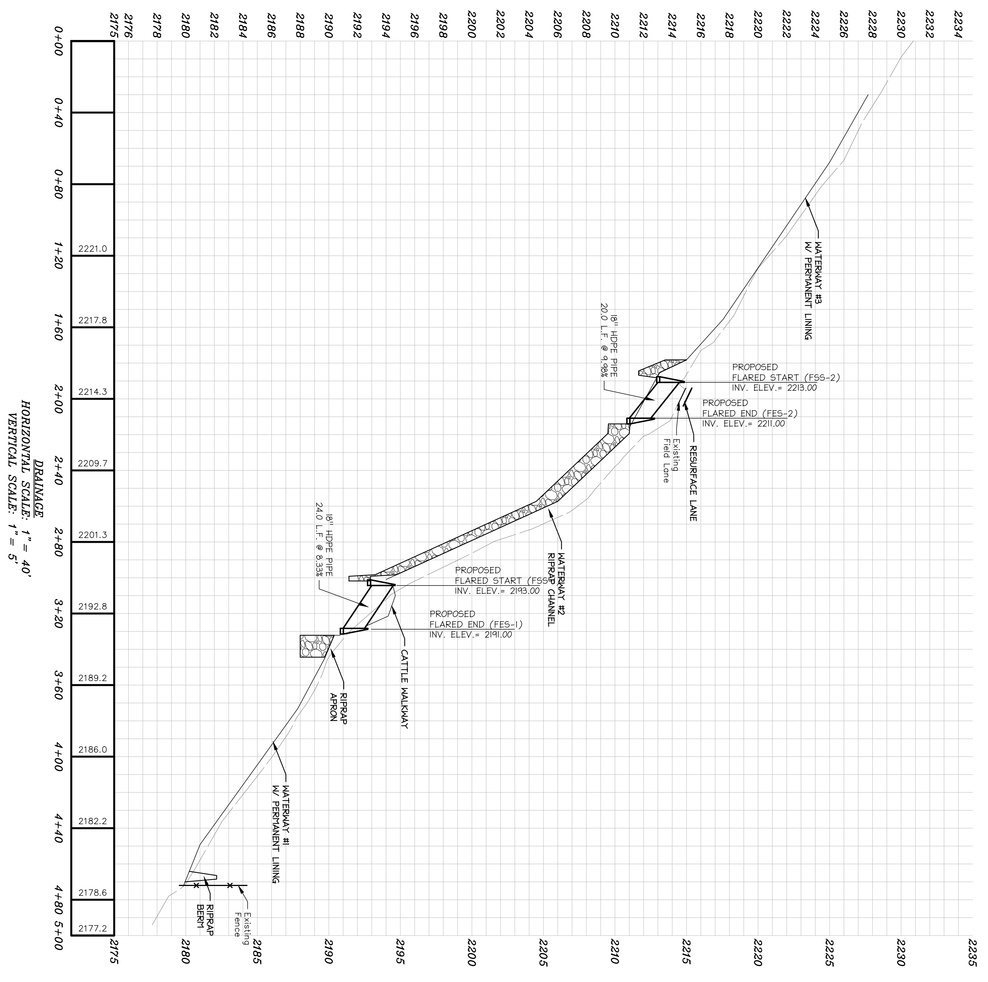
SCALE: AS NOTED

PROJECT TITLE
AGRICULTURAL BMPs
SOMERSET COUNTY
SUMMIT TOWNSHIP

CLIENT
JOE WALKER
203 BERKLEYS MILL ROAD
MEYERSDALE, PA 15552
814-444-2736

E&S NOTES AND DETAILS

DRAWING : ES-1



DRAWING : ES-2

STORMWATER PROFILE

PROJECT TITLE

AGRICULTURAL BMPs

SUMMIT TOWNSHIP SOMERSET COUNTY

CLIENT

JOE WALKER
203 BERKLEYS MILL ROAD
MEYERSDALE, PA 15552
814-444-2736

TeamAg INC
120 LAKE STREET
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SCALE
AS NOTED

SEAL

PROJECT MANAGER
KEITH L. HODGE

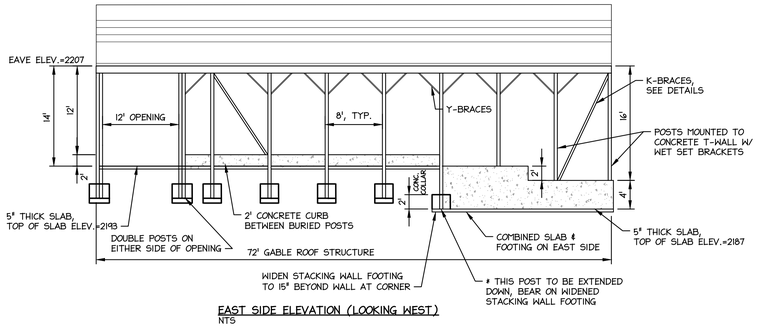
DESIGN BY : KLH

DRAWN BY : KLH

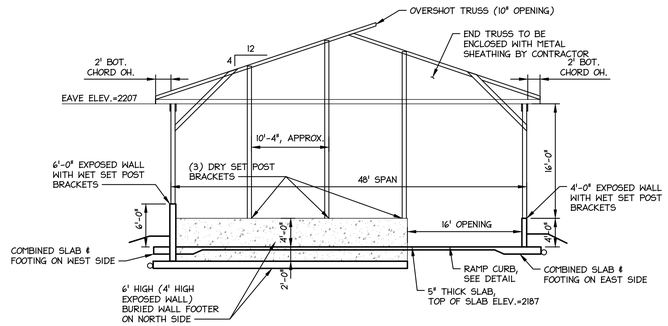
DATE : 6/8/2023

PROJECT NO.: 2743-22-02

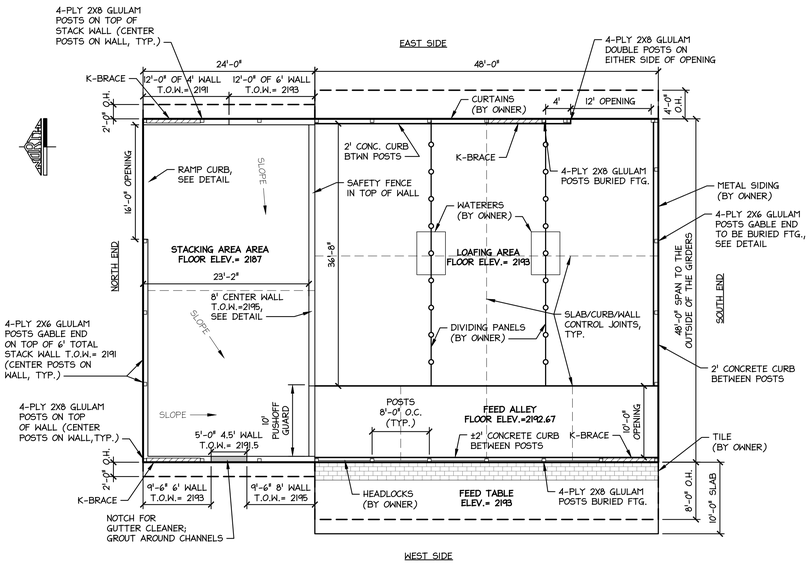
DATE	BY	REVISION



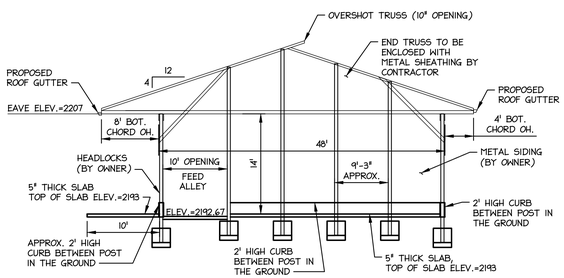
EAST SIDE ELEVATION (LOOKING WEST)
NTS



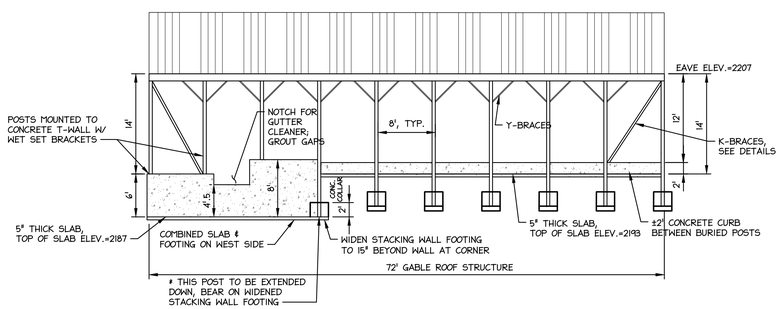
NORTH END ELEVATION (LOOKING NORTH)
NTS



HUA / STACKER STRUCTURE PLAN VIEW



SOUTH END ELEVATION (LOOKING NORTH)
NTS



WEST SIDE ELEVATION (LOOKING EAST)
NTS

NOTE: INSTALLATION OF HEADLOCKS OR RAIL BETWEEN POSTS AT FEED ALLEY (BY OWNER) MAY ALLOW FOR OMISSION OF K-BRACE AT SOUTHWEST CORNER. MUST BE APPROVED BY ENGINEER, PRIOR TO HEADLOCK INSTALLATION.

REVISION | BY | DATE

PROJECT MANAGER: KEITH L. HODGE
DESIGN BY : KLH
DRAWN BY : KLH
DATE : 6/8/2023
PROJECT NO.: 2743-22-02

SEAL

TeamAg INC
120 LAKE STREET
EPHRATA, PA 17522
PHONE: 717-721-6795 FAX: 717-721-9275
www.TeamAginc.com TeamAg@TeamAginc.com

SCALE: AS NOTED

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AGRICULTURAL BMPs
SOMERSET COUNTY
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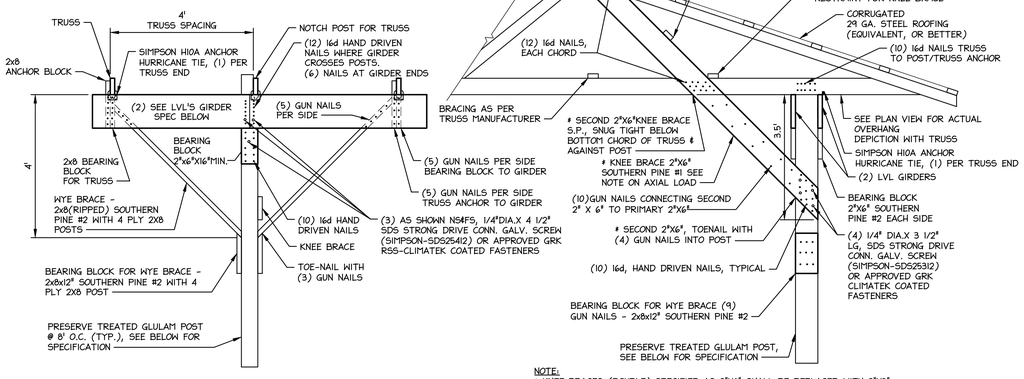
CLIENT
JOE WALKER
203 BERKLEYS MILL ROAD
MEYERSDALE, PA 15552
814-444-2736

BUILDING FLOOR PLAN & ELEVATIONS

DRAWING : RS-1

NOTE:
1. TRUSS SHALL BE DESIGNED FOR OPEN OR PARTIALLY ENCLOSED CONDITIONS. TO BE CERTIFIED TO TRUSS PLATE INSTITUTE (TPI) STANDARDS
2. TRUSS MANUFACTURER SHALL CONSIDER AN AXIAL FORCE IN KNEE BRACE (COMPRESSION OR TENSION) OF 2,300 LB. FOR WIND, ASCE 0.75 REDUCED IN COMBINATION WITH SNOW, AND 2,400 LB. AXIAL FORCE SNOW, ASCE 0.75 REDUCED IN COMBINATION WITH WIND. TOTAL REDUCED AXIAL LOAD = 4,700 LB (MAX. COMPRESSION)/3,400 LB (MAX. TENSION)
3. SEE TRUSS BRACING DETAILS-PLAN VIEW FOR ADDITIONAL SNOW DRIFT LOADING ON TRUSSES.
4. ALL GUN NAILS MUST BE GALVANIZED WITH A MINIMUM DIAMETER = 0.131" AND LENGTH = 3"
5. HAND DRIVEN 16d NAILS MUST BE GALVANIZED WITH A DIAMETER OF 0.162" AND A LENGTH OF 3.5".
6. ALL NAILS PENETRATING TREATED WOOD MUST BE RING OR SPIRAL SHANK ALL BOLTS AND WASHERS MUST BE GALVANIZED



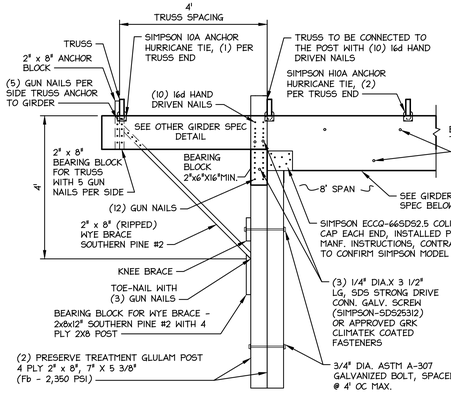
NOTE:
KNEE BRACES (DOUBLE) SPECIFIED AS 2"X6" SHALL BE REPLACED WITH 2"X8" DOUBLE KNEE BRACES AT THE 8' BOTTOM CHORD OVERHANG TRUSSES ON THE WEST SIDE ONLY

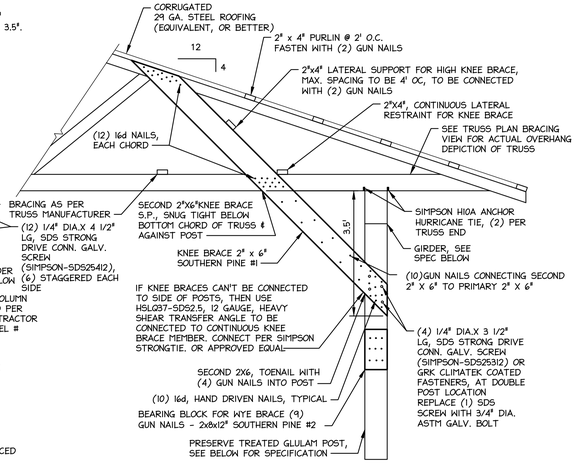
GIRDERS:
GIRDERS WITH 8' SPANS SHALL BE (2) 1 3/4" X 9 1/2" X 16' LVL'S, MINIMUM Fb = 2,600 psi, E = 2,000,000 psi.

POSTS:
POSTS SHALL BE 4 PLY, 2" X 8", 7" X 5 3/8", RIGID-PLY GLU-LAM, EQUIVALENT OR BETTER Fby-y = 2,350 psi, Fc = 2,150 psi, Ey-y = 1,700,000 psi
POSTS AT GABLE END WALLS SHALL BE 4 PLY, 2" X 6", 5 1/4" X 5 3/8", RIGID-PLY GLU-LAM, EQUIVALENT OR BETTER Fby-y = 2,350 psi, Fc = 2,150 psi, Ey-y = 1,700,000 psi

1 TYPICAL BRACING DETAIL FOR POST SPACING @ 8' OC
NOT TO SCALE

NOTE:
1. TRUSS SHALL BE DESIGNED FOR OPEN OR PARTIALLY ENCLOSED CONDITIONS. TO BE CERTIFIED TO TRUSS PLATE INSTITUTE (TPI) STANDARDS
2. TRUSS MANUFACTURER SHALL CONSIDER AN AXIAL FORCE IN KNEE BRACE (COMPRESSION OR TENSION) OF 2,400 LB. FOR WIND, ASCE 0.75 REDUCED IN COMBINATION WITH SNOW, AND 2,300 LB. AXIAL FORCE SNOW, ASCE 0.75 REDUCED IN COMBINATION WITH WIND. TOTAL REDUCED AXIAL LOAD = 4,700 LB (MAX. COMPRESSION)/3,400 LB (MAX. TENSION)
3. SEE TRUSS BRACING DETAILS-PLAN VIEW ON ANOTHER SHEET.
4. ALL GUN NAILS MUST BE GALVANIZED WITH A MINIMUM DIAMETER = 0.131" AND LENGTH = 3"
5. HAND DRIVEN 16d NAILS MUST BE GALVANIZED WITH A DIAMETER OF 0.162" AND A LENGTH OF 3.5".
6. ALL NAILS PENETRATING TREATED WOOD MUST BE RING OR SPIRAL SHANK ALL BOLTS AND WASHERS MUST BE GALVANIZED

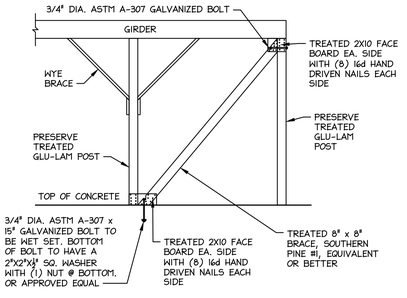




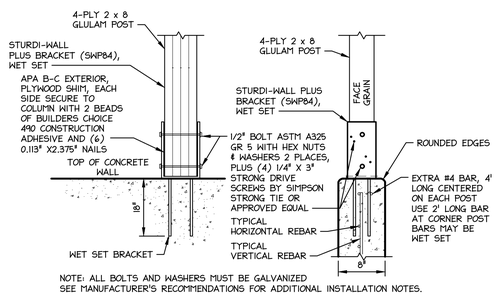
GIRDER:
GIRDER WITH 8' SPAN SHALL BE (3) 1 3/4" X 11 1/4" LVL'S, MINIMUM Fb = 2,600 psi, E = 2,000,000 psi. LVL'S TO BE BETWEEN THE POSTS.

POSTS:
POSTS SHALL BE 4 PLY, 2" X 8", 7" X 5 3/8", RIGID-PLY GLU-LAM, EQUIVALENT OR BETTER Fby-y = 2350 psi, Fc = 2150 psi, Ey-y = 1,700,000 psi

2 12' SPAN BRACING DETAIL (1 LOCATION ONLY)
NOT TO SCALE

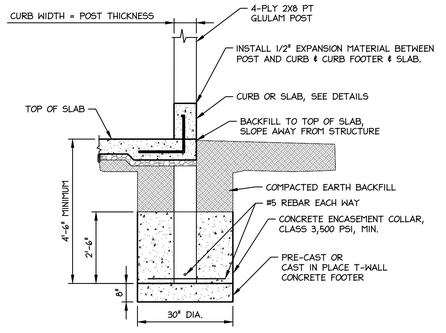


3 K-BRACE
NOT TO SCALE

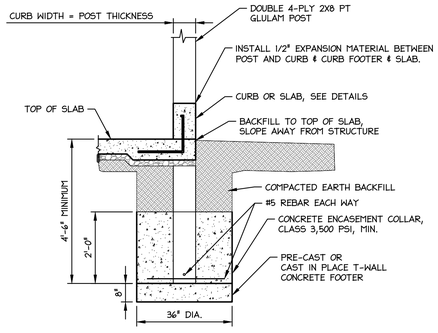


NOTE: ALL BOLTS AND WASHERS MUST BE GALVANIZED
SEE MANUFACTURER'S RECOMMENDATIONS FOR ADDITIONAL INSTALLATION NOTES.

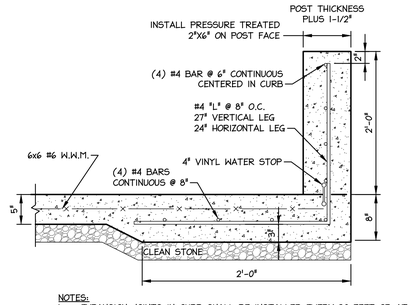
4 ROOFED STRUCTURE POST TO WALL CONNECTION
NOT TO SCALE



5 SINGLE BURIED POST FOOTERS FOR SPACING OF POSTS @ 4' & 8' O/C
NOT TO SCALE

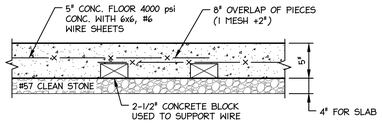


6 DOUBLE BURIED POST FOOTERS (2EA) FOR SPACING OF POSTS @ 12' SPAN
NOT TO SCALE

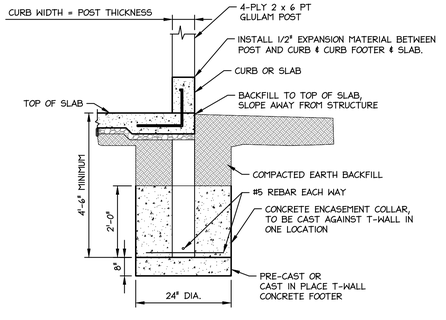


NOTES:
1. EXPANSION JOINTS IN CURB SHALL BE INSTALLED EVERY 30 FEET OR AT POSTS IN CURB.

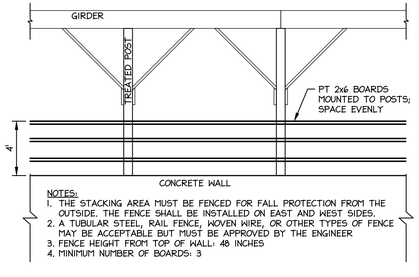
7 24" CONCRETE CURB
NOT TO SCALE



8 SLAB-ON-GRADE CONCRETE FLOOR
NOT TO SCALE



9 GABLE END WALL POSTS (4EA)
NOT TO SCALE



NOTES:
1. THE STACKING AREA MUST BE FENCED FOR FALL PROTECTION FROM THE OUTSIDE. THE FENCE SHALL BE INSTALLED ON EAST AND WEST SIDES.
2. A TUBULAR STEEL, RAIL FENCE, WOVEN WIRE, OR OTHER TYPES OF FENCE MAY BE ACCEPTABLE BUT MUST BE APPROVED BY THE ENGINEER
3. FENCE HEIGHT FROM TOP OF WALL: 48 INCHES
4. MINIMUM NUMBER OF BOARDS: 3

10 STACKING STRUCTURE BOARD FENCE
NOT TO SCALE

REVISION | BY | DATE

PROJECT MANAGER KEITH L. HODGE
DESIGN BY : KLH
DRAWN BY : KLH
DATE : 6/8/2023
PROJECT NO.: 2743-22-02

SEAL

TeamAg INC
120 LAKE STREET
EPHRATA, PA 17522
PHONE: 717-721-6795 FAX: 717-721-9275
www.TeamAginc.com TeamAg@TeamAginc.com

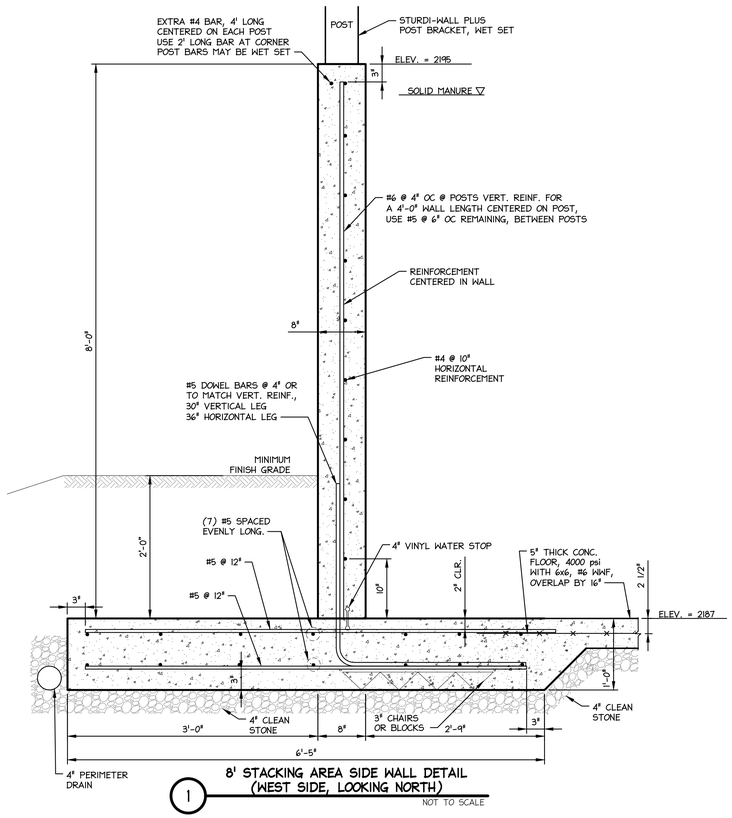
SCALE AS NOTED

PROJECT TITLE
AGRICULTURAL BMPs
SOMERSET COUNTY
SUMMIT TOWNSHIP

CLIENT
JOE WALKER
203 BERKLEYS MILL ROAD
MEYERSDALE, PA 15552
814-444-2736

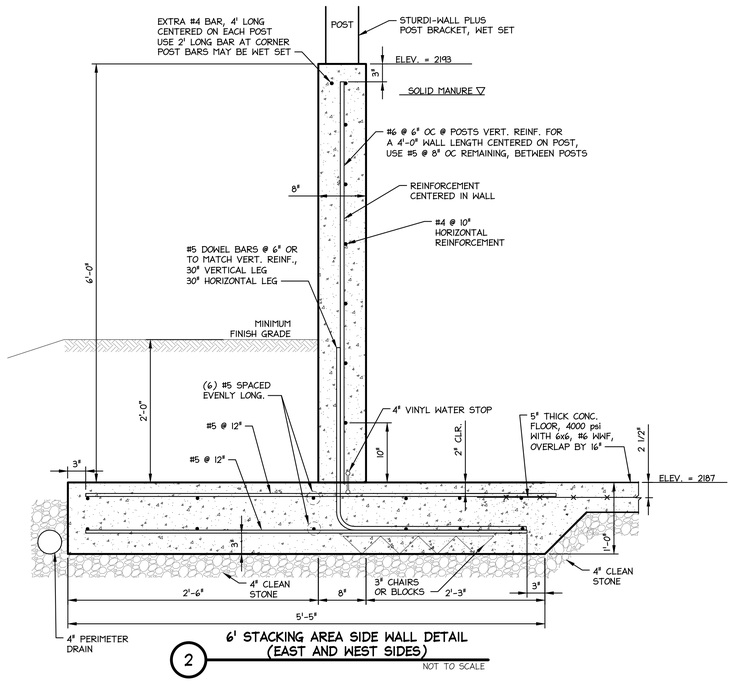
BUILDING DETAILS

DRAWING : RS-2



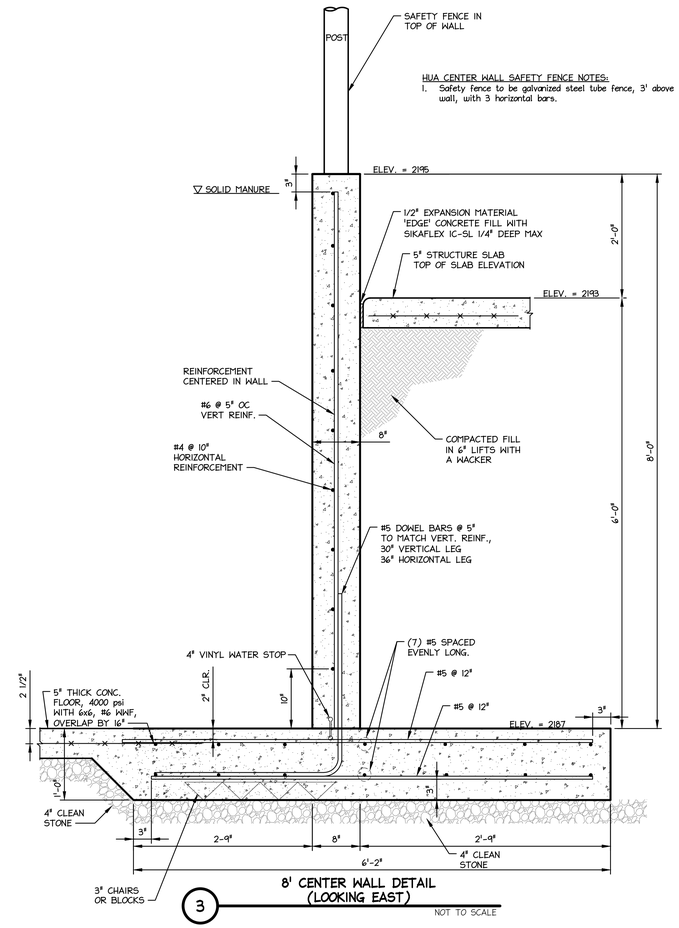
1 **8' STACKING AREA SIDE WALL DETAIL (WEST SIDE, LOOKING NORTH)**

NOT TO SCALE



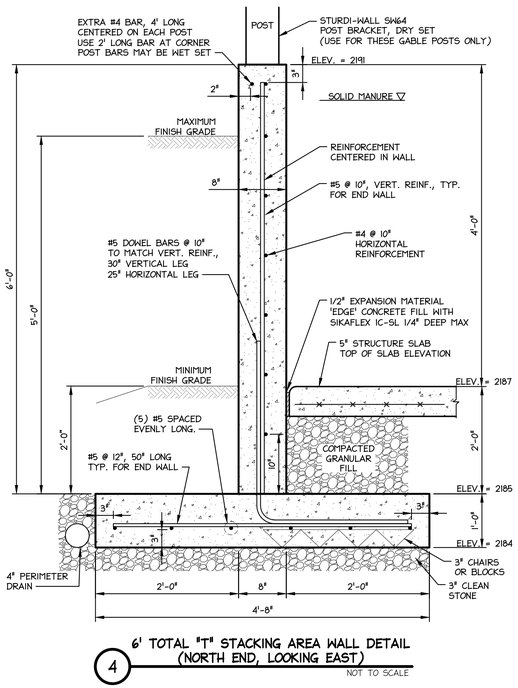
2 **6' STACKING AREA SIDE WALL DETAIL (EAST AND WEST SIDES)**

NOT TO SCALE



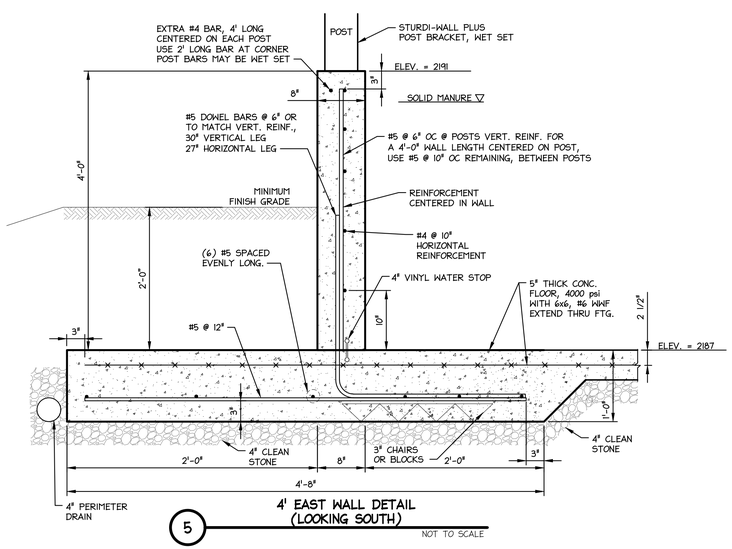
3 **8' CENTER WALL DETAIL (LOOKING EAST)**

NOT TO SCALE



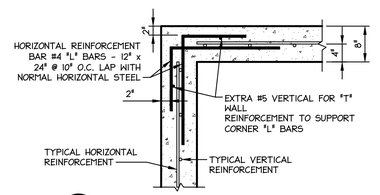
4 **6' TOTAL "T" STACKING AREA WALL DETAIL (NORTH END, LOOKING EAST)**

NOT TO SCALE



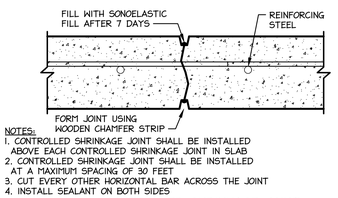
5 **4' EAST WALL DETAIL (LOOKING SOUTH)**

NOT TO SCALE



6 **CORNER STEEL PLAN VIEW**

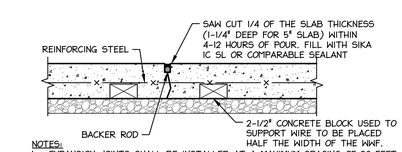
NOT TO SCALE



NOTES:
1. CONTROLLED SHRINKAGE JOINT SHALL BE INSTALLED ABOVE EACH CONTROLLED SHRINKAGE JOINT IN SLAB
2. CONTROLLED SHRINKAGE JOINT SHALL BE INSTALLED AT A MAXIMUM SPACING OF 30 FEET
3. CUT EVERY OTHER HORIZONTAL BAR ACROSS THE JOINT
4. INSTALL SEALANT ON BOTH SIDES

7 **CONTROLLED SHRINKAGE JOINT IN CURBS/WALLS**

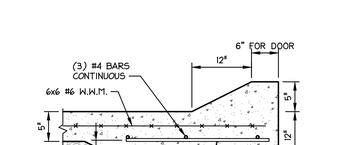
NOT TO SCALE



NOTES:
1. EXPANSION JOINTS SHALL BE INSTALLED AT A MAXIMUM SPACING OF 30 FEET OR NOTED OTHERWISE ON THE PLANS.
2. CUT 50% OF REINFORCEMENT DIRECTLY UNDER THE JOINT.
3. BACKER ROD SHALL BE A LARGER WIDTH THAN THE SAW CUT.
4. SEALANT DEPTH SHALL BE 1/4" OR SLIGHTLY LESS THAN JOINT WIDTH, WHICHEVER IS LESS.

8 **CONTROLLED SHRINKAGE JOINT IN SLAB**

NOT TO SCALE



9 **5" RAMP CURB**

NOT TO SCALE

REVISION | BY | DATE

PROJECT MANAGER **KEITH L. HODGE**
DESIGN BY : **KLH**
DRAWN BY : **KLH**
DATE : **6/8/2023**
PROJECT NO.: **2743-22-02**

SEAL

TeamAg INC
120 LAKE STREET
EPHRATA, PA 17522
PHONE: 717-721-6795 FAX: 717-721-9275
www.TeamAginc.com TeamAg@TeamAginc.com

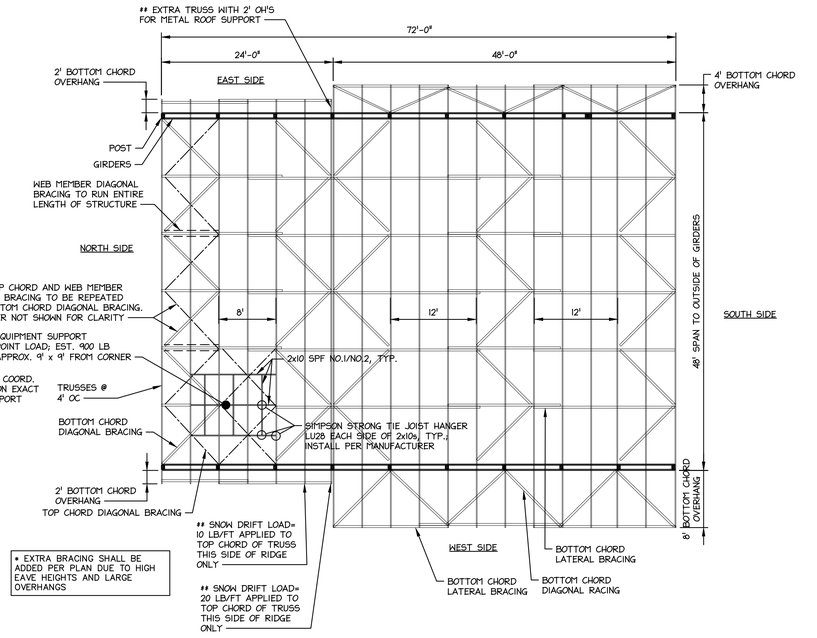
SCALE AS NOTED

PROJECT TITLE
AGRICULTURAL BMPs
SOMERSET COUNTY
SUMMIT TOWNSHIP

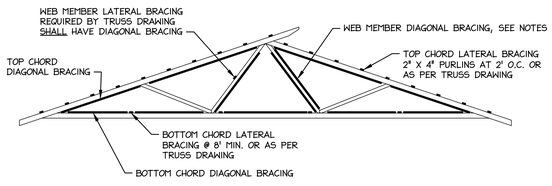
CLIENT
JOE WALKER
203 BERKLEYS MILL ROAD
MEYERSDALE, PA 15552
814-444-2736

BUILDING CONCRETE DETAILS

DRAWING : **RS-3**

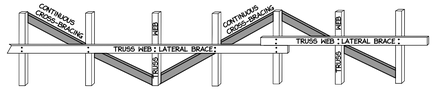


HUA/STACKING STRUCTURE TRUSS BRACING PLAN



NOTES:

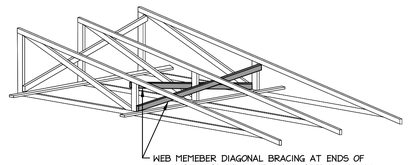
1. ROWS OF DIAGONAL BRACING SHALL BE PLACED AT INTERVALS OF NO MORE THAN 20' ALONG THE LENGTH OF THE BUILDING TO PROVIDE STABILITY AND TRANSFER THE FORCES FROM THE LATERAL RESTRAINT TO A LATERAL FORCE RESISTING SYSTEM.
2. WHERE TRUSS DRAWINGS REQUIRE WEB MEMBER LATERAL BRACING, WEB MEMBER DIAGONAL BRACING SHALL BE INSTALLED.
3. WHEN NO WEB MEMBER LATERAL BRACING IS REQUIRED, INSTALL DIAGONAL BRACING AT VERTICAL WEBS (WHEN POSSIBLE) AND AT OR NEAR BOTTOM CHORD LATERAL BRACING.
4. USE (2) 16D (0.135" X 3.5") NAILS AT EACH TRUSS/BRACE CONNECTION.
5. BOTTOM CHORD AND WEB LATERAL BRACING SHALL BE OVERLAPPED BY ONE TRUSS. BUTT JOINTS ARE NOT ALLOWED.
6. SEE "CHORD DIAGONAL BRACING" AND "CROSS BRACING" DRAWINGS FOR FURTHER DETAILS.
7. REFERENCE TRUSS DRAWINGS FOR ANY SPECIAL BRACING REQUIREMENTS.
8. REFERENCE BCSI GUIDES FOR FURTHER INFORMATION ON HANDLING, INSTALLING, AND BRACING TRUSSES.
9. TO BE CERTIFIED TO TRUSS PLATE INSTITUTE (TPI) STANDARDS.
10. TRUSS MANUFACTURER TO CONSIDER KNEE BRACE AXIAL FORCES AS SHOWN IN THE FRAMING/BRACING DETAILS ON ANOTHER DRAWING. TRUSS MANUFACTURER SHALL CONSIDER ADDITIVE SNOW DRIFT LOADING TO TOP CHORD AS LISTED ON THE PLANS FOR THE TRUSS DESIGN.
11. PROPER TEMPORARY BRACING OF ALL CONSTRUCTION WORK IN PROGRESS IS THE CONTRACTOR'S RESPONSIBILITY. CONTRACTOR SHALL TAKE EXTRA PRECAUTION TO TEMPORARILY BRACE THIS STRUCTURE DUE TO THE LARGE SPAN.
12. A P.E. SEALED TRUSS DESIGN MUST BE SUPPLIED TO THE ENGINEER BY THE CONTRACTOR.



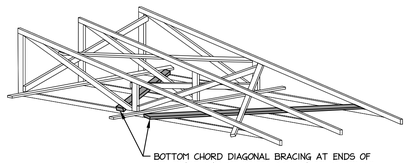
NOTES FOR TRUSSES / STRUCTURES:

1. WHERE TRUSS DRAWINGS REQUIRE WEB MEMBER LATERAL BRACING, WEB MEMBER DIAGONAL BRACING SHALL BE INSTALLED.
2. INSTALL CONTINUOUS DIAGONAL BRACING ON THE OPPOSITE SIDE OF THE TRUSS WEB MEMBER AS THE LATERAL BRACE.
3. THE DIAGONAL BRACING MUST RUN THE ENTIRE LENGTH OF THE BUILDING.
4. OTHER DIAGONAL BRACING OPTIONS MAY BE USED THAT WILL REQUIRE BLOCKING TO AVOID "FLEXING" THE BRACES OVER MEMBERS.
5. DIAGONAL CROSS-BRACING SHALL BE INSTALLED AT 45° OR LESS.
6. POSITION DIAGONAL BRACE IN CLOSE PROXIMITY TO LATERAL RESTRAIN AND ATTACH DIAGONAL BRACE AS CLOSE TO THE TOP AND BOTTOM CHORD AS POSSIBLE AND TO EACH WEB THAT IT CROSSES.

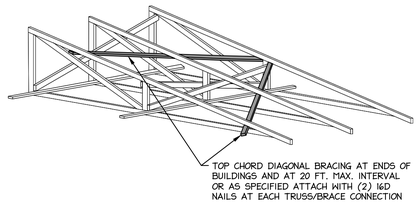
1 DIAGONAL WEB MEMBER BRACING FOR WEBS WITH REQUIRED LATERAL BRACING
NOT TO SCALE



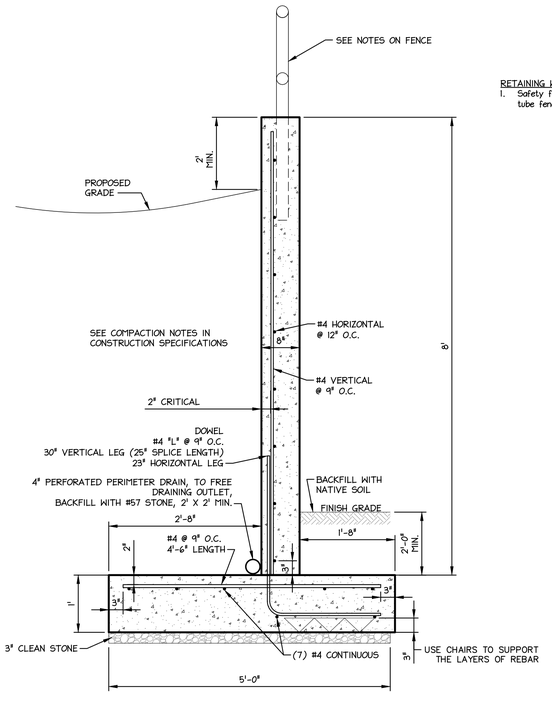
2 DIAGONAL WEB MEMEBER BRACING
NOT TO SCALE



3 BOTTOM CHORD DIAGONAL BRACING
NOT TO SCALE



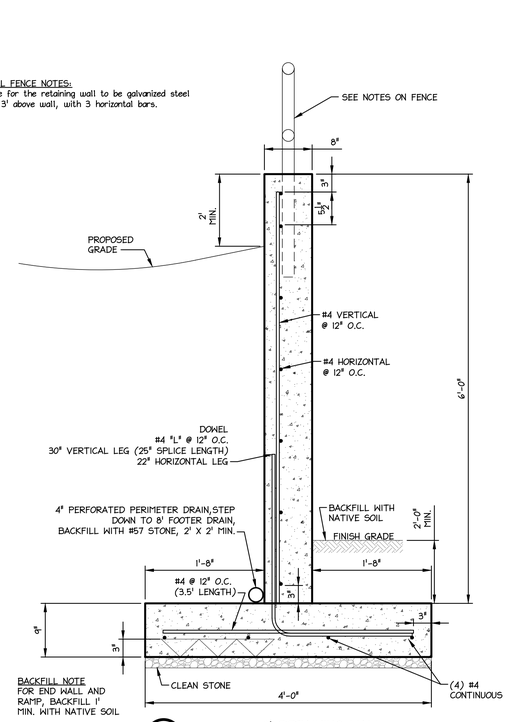
4 TOP CHORD DIAGONAL BRACING
NOT TO SCALE



5 8' RETAINING WALL
NOT TO SCALE

RETAINING WALL FENCE NOTES:

1. Safety fence for the retaining wall to be galvanized steel tube fence, 3' above wall, with 3 horizontal bars.



BACKFILL NOTE
FOR END WALL AND RAMP, BACKFILL 1' MIN. WITH NATIVE SOIL

6 6' RETAINING WALL
NOT TO SCALE

REVISION	BY	DATE

PROJECT MANAGER
KEITH L. HODGE
DESIGN BY : KLH
DRAWN BY : KLH
DATE : 6/8/2023
PROJECT NO.: 2743-22-02

SEAL

TeamAg INC
120 LAKE STREET
EPHRATA, PA 17522
PHONE: 717-721-6795 FAX: 717-721-9275
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SCALE
AS NOTED

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CLIENT
JOE WALKER
203 BERKLEY'S MILL ROAD
MEYERSDALE, PA 15552
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BRACING DETAILS

DRAWING : RS-4