

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER MICHAEL SHEAFFER
No. 78743
5/24/23

NRCS TAKES SAFETY VERY SERIOUSLY, HOWEVER, THE SAFETY COMMITMENT AND THE JOB SITE PRACTICES OF THE CONTRACTOR ARE BEYOND CONTROL OF NRCS. IT IS STRONGLY RECOMMENDED THAT SAFE WORKING CONDITIONS AND ACCIDENT PREVENTION PRACTICES BE THE TOP PRIORITY OF ANY JOB SITE. LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS SHOULD ALWAYS BE FOLLOWED TO HELP INSURE WORKER SAFETY. MAKE CERTAIN ALL EMPLOYEES KNOW THE SAFEST AND MOST PRODUCTIVE WAY OF CONSTRUCTING THE DESIGNED PRACTICES. EMERGENCY PROCEDURES SHOULD BE KNOWN BY ALL EMPLOYEES. DAILY MEETINGS HIGHLIGHTING SAFETY PROCEDURES ARE ALSO RECOMMENDED. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE A SAFE WORK ENVIRONMENT FOR THEIR EMPLOYEES.

1. CLEAR AND GRUB THE ENTIRE AREA WITHIN THE WORK LIMITS.
2. ALL FILL MATERIAL MUST NOT CONTAIN FROZEN MATERIAL, SOD, ROOTS, OR OTHER PERISHABLE MATERIAL, OR ROCK LARGER THAN EIGHT INCHES IN DIAMETER.
3. SIX INCHES TOPSOIL WILL BE INCORPORATED INTO THE EARTHFILL TO MEET THE NEAT LINES SHOWN ON THE TYPICAL SECTION.
4. ALL AREAS TOP-DRESSED WITH TOPSOIL AND DISTURBED DURING CONSTRUCTION WILL BE SEEDED ACCORDING TO NRCS CRITICAL AREA PLANTING SPECIFICATION.

[illegible]

1. *FAILURE TO CONSTRUCT THIS FACILITY IN ACCORDANCE WITH THE NRCS DESIGN OR AUTHORIZED MODIFICATIONS WILL RESULT IN WITHDRAWAL OF NRCS TECHNICAL AND FINANCIAL ASSISTANCE.*
2. *ALL FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS GOVERNING THE CONSTRUCTION OF THIS FACILITY SHALL BE STRICTLY FOLLOWED. THE OWNER OR OPERATOR IS RESPONSIBLE FOR OBTAINING ALL CONSTRUCTION PERMITS.*

3. A MEETING BETWEEN THE LANDOWNER, CONTRACTOR, AND NRCS REPRESENTATIVE SHALL BE REQUIRED PRIOR TO ANY EXCAVATION OR CONSTRUCTION WORK.
4. A COPY OF THE NRCS SPECIFICATIONS AND DRAWINGS SHALL BE ONSITE DURING ALL PHASES OF CONSTRUCTION. A COPY OF THE DRAWINGS SHALL BE PROVIDED TO THE TRUSS MANUFACTURE.
5. OSHA REGULATIONS SHALL BE FOLLOWED AT ALL TIMES.
6. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING ALL MEASURES NECESSARY TO PROTECT WORK IN PROGRESS FROM ENVIRONMENTAL CONDITIONS SUCH AS TEMPERATURE EXTREMES, SURFACE, AND GROUND WATER.
7. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL FIELD MEASUREMENTS SHOWN ON THE PLANS.
8. IN THE EVENT ROCK, UNSTABLE SOILS, OR SEEPS ARE ENCOUNTERED DURING EXCAVATION, WORK SHALL BE STOPPED AND THE NRCS SHALL DETERMINE HOW TO PROCEED.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE SECURITY OF THE JOB SITE UNTIL THE WORK HAS BEEN CERTIFIED BY THE NRCS.
10. CERTIFICATION OF CONFORMANCE SHALL CERTIFY THAT ALL WORK WAS PERFORMED TO THE NRCS SPECIFICATIONS.
11. THE OWNER IS RESPONSIBLE FOR ENSURING THAT ALL LIVESTOCK ARE REMOVED FROM THE WORK SITE AND THAT LIVESTOCK WILL REMAIN EXCLUDED FROM THE WORK SITE UNTIL THE PROJECT HAS BEEN THROUGH A FINAL CERTIFICATION AND APPROVED FOR USE. TEMPORARY LIVESTOCK CONFINEMENT/EXCLUSION FENCE MAY BE NEEDED TO ENSURE LIVESTOCK ARE NOT ABLE TO ENTER THE WORK SITE.


1. COVER SHEET
2. E&S PLANVIEW
3. E&S DETAILS
4. GENERAL CONSTRUCTION NOTES
5. CONCRETE NOTES
6. ROOF NOTES
7. PLANVIEW (60 SCALE)
8. PLANVIEW (30 SCALE)
9. A-A & B-B
10. C-C & D-D
11. DIVERSION PROFILE
12. CONCRETE JOINTS & PLANVIEW
13. LIQUID TIGHT JOINTS
14. 4' WALL DETAILS
15. 5' WALL DETAILS
16. 5' WALL CORNER DETAILS
17. POST TO WALL DETAILS
18. POST, GIRDER, & TRUSS LAYOUT.
19. DETAILS FOR TRUSS MFG.
20. GIRDER TO POST DETAILS
21. OPENING DETAILS
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23. WYE & KNEE BRACING DETAILS
24. K-BRACING DETAILS
25. ADDITIONAL BRACING DETAILS
26. CORD AND DIAGONAL BRACING
27. CROSS BRACING
28. UNDERGROUND OUTLET AND PERIMETER DRAIN DETAILS
29. GUTTERS
30. ADDITIONAL DETAILS
31. SAFETY FENCE DETAILS

Sheet 7 - Gravel to Concrete Access Road
Sheet 8 - Changed hatch to reflect label for Swale/Gravel to Concrete Access Road
Sheet 12 - Pen Layout Changes
Sheet 19 - Truss dimensions
Sheet 32 - Curb detail added

Designed	<i>BTO STD DWG</i>	Date	<i>1/20</i>
Drawn			
Checked	<i>RGD</i>		<i>8/20</i>

COVER SHEET
ALDRICH FARM
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United States
Department of
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Natural Resources
Conservation Service

File No

Drawing No.

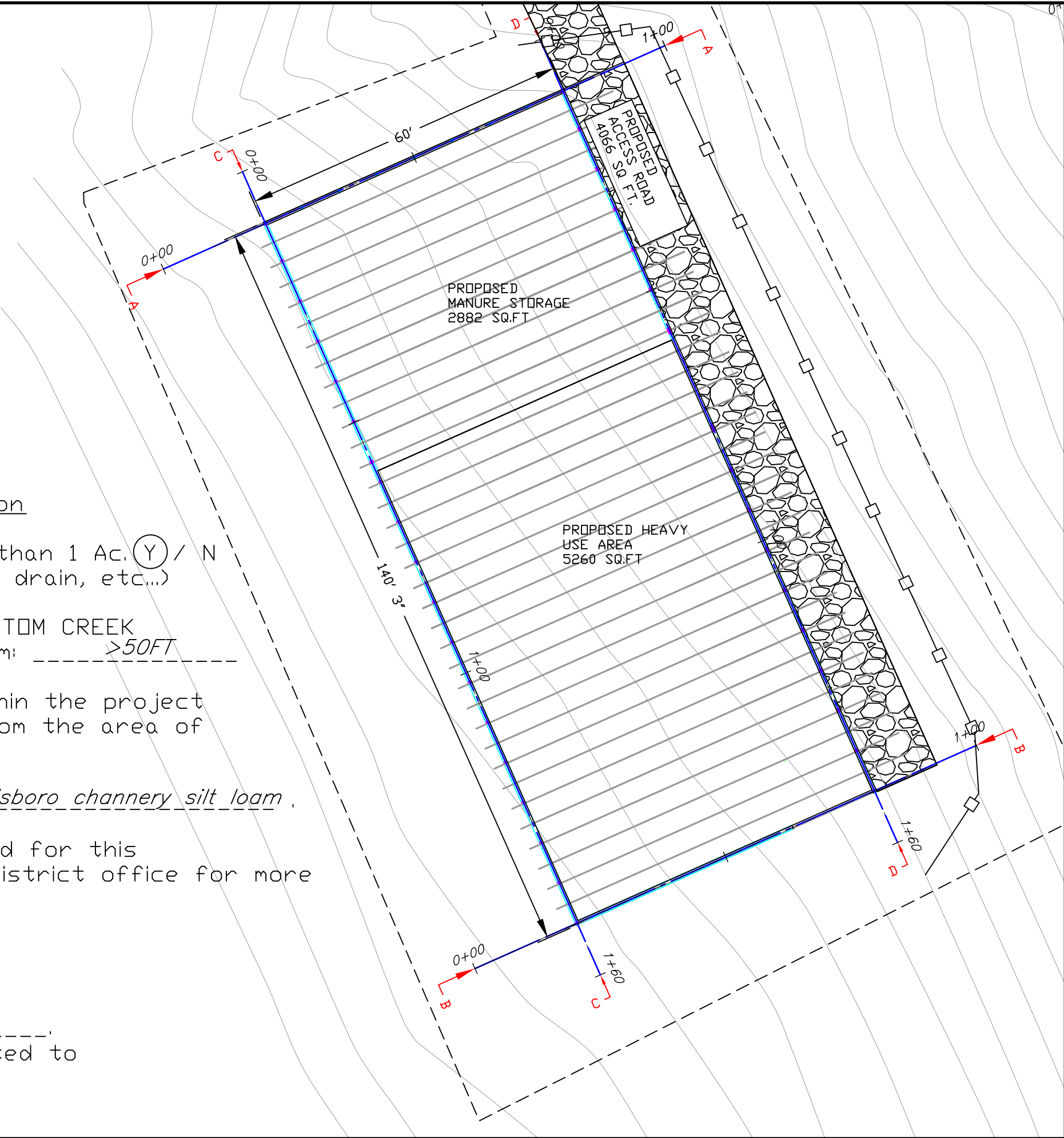
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General Site Permitting Information

- 1) Proposed area of disturbance is less than 1 Ac. (Y) / N
(Includes excavation, spoil pile, footer drain, etc...)
- 2) Name of Receiving Water Body: HOP BOTTOM CREEK
Distance from Work Area to stream: >50FT
- 3) Are there any apparent wet lands within the project work area and/or receiving runoff from the area of disturbance? Y / (N)
- 4) Soil type(s) in area of disturbance Wellsboro channery silt loam.
- 5) Are there any General Permits required for this project? Contact local conservation district office for more information.

Additional Notes:

Area of disturbance is 0.60AC.
Area of disturbance is not connected to the Waters of the Commonwealth.



DATE	DESIGNED	NZB	DRAWN	NZB	CHECKED	APPROVED

E&S PLANVIEW (20 SCALE)
ALDRICH FARM

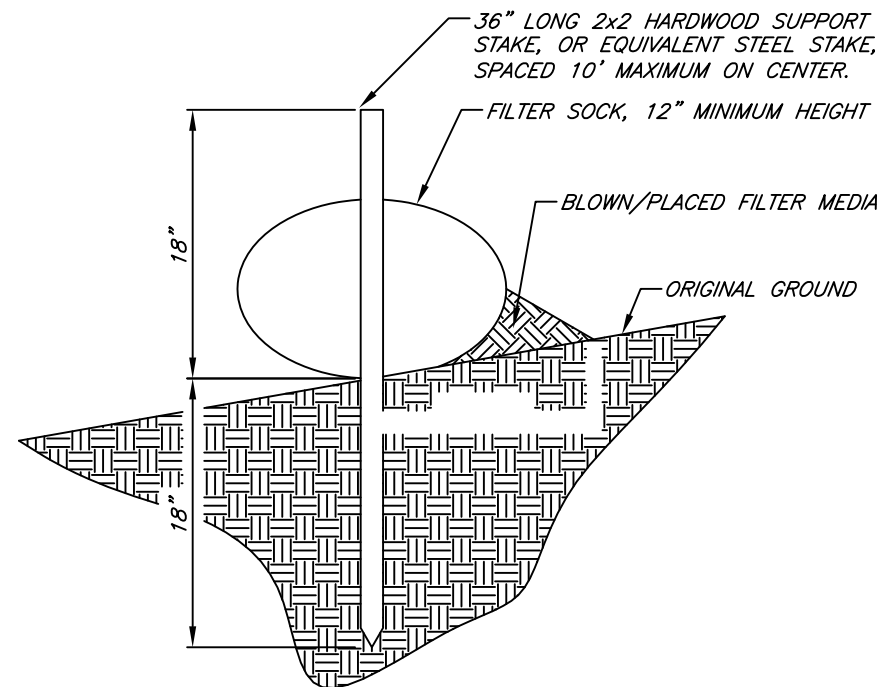
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E&S POLLUTION CONTROL PLAN AND FINAL SEEDING RECOMMENDATIONS



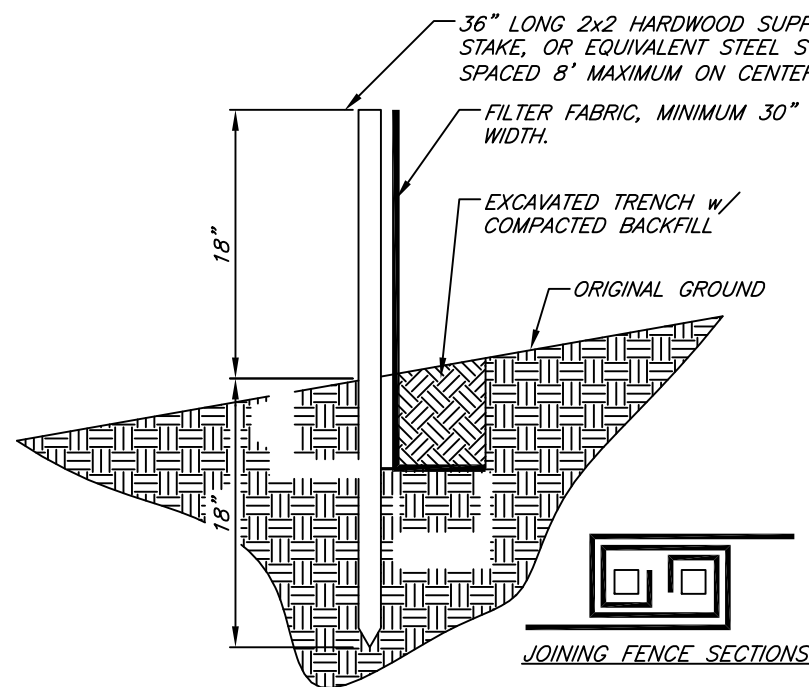
FILTER SOCK

NOTES:

1. FILTER SOCK SHALL BE INSTALLED DOWN SLOPE OF THE DISTURBED AREAS OF THE CONSTRUCTION SITE.
2. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
3. FILTER SOCK SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8' UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.
4. STAKES MAY BE INSTALLED IMMEDIATELY DOWN SLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
5. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVE GROUND HEIGHT OF THE SOCK.
6. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
7. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
8. 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.
9. ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.

Seeding Preparation

1. When grading is finished, apply lime and fertilizer in accordance with soil test recommendations.
2. If soil test results are not available, apply 4 ton per acre of agricultural grade limestone and fertilize at the rate of 1,000 lbs. Of 10-20-20 or equivalent per acre.
3. Lime and one-half (1/2) the amount of the fertilizer shall be incorporated 4 to 6 inches into the soil.
4. Work area with chisel plow or similar type equipment, making sure lime and fertilizer are worked well into the soil.
5. Follow with the balance of fertilizer and seed.



SILT FENCE

NOTES:

1. SILT FENCE SHALL BE INSTALLED DOWN SLOPE OF THE DISTURBED AREAS OF THE CONSTRUCTION SITE.
2. SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8' UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.
3. FENCE SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED FENCE SHALL BE REPAIRED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND REPLACED WITHIN 24 HOURS OF INSPECTION.
4. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.
5. ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.
6. FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

Seeding Recommendation

6. The seed mixture shall be the following or similar if approved by the NRCS representative.

Nurse Crop (required with every permanent seed application):

Oats	64 lbs/acre PLS
Wheat	90 lbs/acre PLS
Annual Rye	40 lbs/acre PLS
Permanent Stabilization:	
Perennial Rye	40 lbs/acre PLS
PLUS	
Tall Fescue	80 lbs/acre PLS

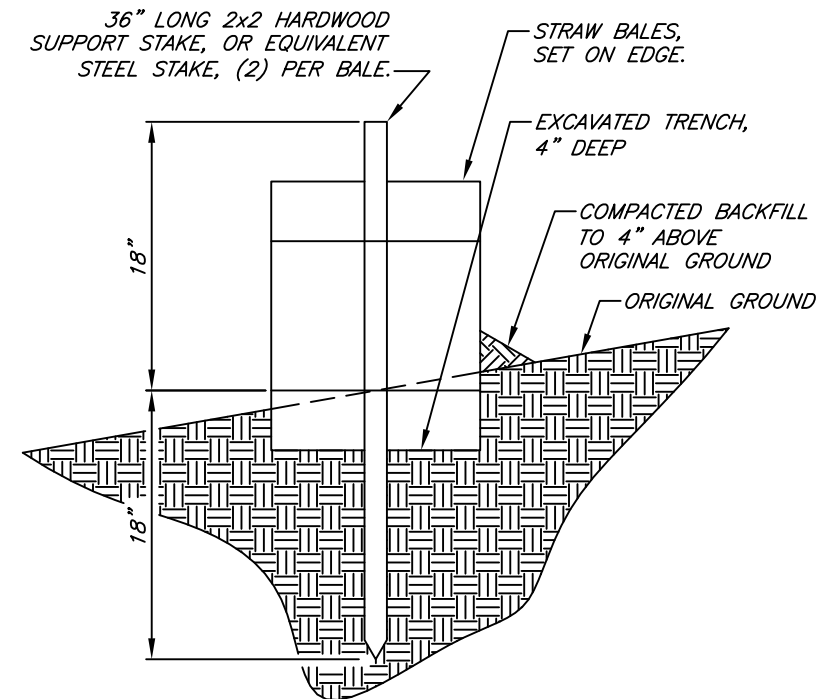
NOTE: This mixture is suitable for frequent mowing. Do not cut shorter than 4".

PLS means pure, live, seed. PLS is the product of the percentage of pure seed times percentage germination divided by 100. For example, to secure the actual planting rate for switchgrass, divide 12 lbs PLS by the PLS percentage shown on the seed tag. Thus, if the PLS content of a given seed lot is 35%, divide by .35 to obtain 34.4 lbs of seed, the amount of seed required to plant 1 acre.

If partial completion of any part of the project is accomplished, and this area will be disturbed again BUT not for a period of 20 days or more, those areas must be seeded with a TEMPORARY cover-seeding.

Temporary Seed and mulch will be applied at the following rates:

Annual Ryegrass	40 lbs/Acre
Winter Rye	3 Bu/Acre
Winter Wheat	3 Bu/Acre
Spring Oats	3 Bu/Acre



STRAW BALE BARRIER

NOTES:

1. STRAW BALES SHALL BE INSTALLED ACROSS SWALES, WATERWAYS, AND DIVERSIONS WHERE SEDIMENT LADEN RUNOFF COULD LEAVE THE CONSTRUCTION SITE.
2. STRAW BALE BARRIERS SHALL NOT BE USED FOR PROJECTS EXTENDING MORE THAN 3 MONTHS.
3. STRAW BALE BARRIERS SHALL BE PLACED AT EXISTING LEVEL GRADE WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES. THE FIRST STAKE OF EACH BALE SHALL BE ANGLED TOWARD THE ADJACENT BALE TO DRAW THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE TOP OF THE BALE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8' UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT.
4. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH ONE THIRD THE ABOVE GROUND HEIGHT OF THE BALE. DAMAGED OR DETERIORATED BALES SHALL BE REPLACED IMMEDIATELY UPON INSPECTION.
5. ANY SECTION OF THE STRAW BALE BARRIER WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACES WITH A ROCK FILTER OUTLET.
6. BALES SHALL BE REMOVED WHEN THE TRIBUTARY AREA HAS BEEN PERMANENTLY STABILIZED.

THIS EROSION AND SEDIMENTATION PLAN IS BASED ON THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE NUMBER 363-2134-008, MARCH 2012.

Planting Recommendation

Seed can be applied with a drill or broadcast seeder.

Band seeding is not permitted.

If broadcast, harrow or disk lightly to cover seed. Roll with cultipacker or similar roller in same direction as seeding. (Double drilling gives better distribution of seeding and helps to spread the water while plants are small. Drill first lengthwise and then crosswise (in a zig-zag pattern). Optimum planting time is early spring or mid summer.

7. As soon as seeding is finished, mulch with 3 Tons/Acre of hay or straw, making a layer 1 to 1.5 inches deep. Set disk straight and go over mulch to press straw into the soil.

Tackifiers can also be used for anchoring mulch.

E&S RECOMMENDATIONS

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DATE
DESIGNED NZB
DRAWN NZB
CHECKED
APPROVED

OWNER RESPONSIBILITIES
ACCESS

- 1. The owner is responsible for ensuring that all livestock are removed from the work site and that livestock will remain excluded from the work site until the project has received final certification and is approved for use.
- 2. The owner is to provide reasonable access to the work site.

EXCAVATION NOTES
GENERAL

- 1. No excavation shall begin until the excavator has complied with all PA One-Call requirements and any utility company responses.
- 2. All erosion and sedimentation practices shall be installed prior to beginning excavation.
- 3. OSHA standards shall be followed for all excavation.
- 4. Topsoil shall be stripped and stockpiled to be re-distributed when the project is complete.
- 5. All manure-laden soil shall be removed and spread according to the landowner's nutrient management plan.
- 6. The site shall be excavated until good, stable soil is encountered.
- 7. If seeps are encountered during excavation, provide clean 2B-stone backfill up to the seep elevation.
- 8. When hard material is encountered, over-excavate design subgrade by 1.0' and replace with a compacted impermeable layer (i.e. CL/ML) before installing bedding stone; consult with design engineer before doing so.
- 9. If rock-refusal is met before the design subgrade, changes in design elevations will require NRCS approval.
- 10. Excess material shall be disposed of as directed by the landowner and the NRCS inspector.
- 11. A uniform layer of 2B-stone (AASHTO #57), 3" thick shall be placed above subgrade to bed ALL concrete. Stone depth to be measure after compaction. Stone shall not be placed until earthen subgrade elevation and compaction is approved by NRCS inspector.
- 12. Allow 1' overlap between adjacent panels of geotextile where applicable.
- 13. The contractor is responsible for protecting the construction site until the work has been completed and certified by the design engineer. This includes dewatering the site as necessary, as well as preventing upslope runoff from entering the work area. It is strongly recommended that all planned diversions or swales be installed first and all perimeter drain outlets be installed before stone or concrete is placed, if possible.
- 14. Final grading shall provide positive drainage away from all structures. Swales shall be shaped as necessary along the heavy use area and manure storage to direct stormwater away from the structures.

EARTHFILL

- 1. Earthen backfill shall be placed in a manner that prevents damage to the structures and allows the structures to assume the loads from the earth backfill gradually and uniformly. The height of the earth backfill adjacent to the structure shall be increased at the same rate on all sides of the structure.
- 2. Backfill shall be placed in even, horizontal layers. If necessary, over-excavate to an approximately level surface and build subgrade in evenly compacted, horizontal lifts of specified thickness.
- 3. Backfill shall be placed at optimum moisture content. Backfilled material shall have enough moisture so that when formed into a ball, it will not break if struck sharply with a pencil. Backfilling newly poured walls may not begin until 14-days after the final concrete placement. Compact using the following equipment and lift thickness:
FOOTINGS AND STRUCTURE FLOOR:
-(3) passes of sheepsfoot or vibratory roller in 6-inch lifts
WITHIN 3 FEET OF WALLS:
-(3) passes by hand compactor or small, manually directed plate vibrator in 6-inch lifts
BEYOND 3 FEET OF WALLS:
-(3) passes by track equipment (>4,000 lbs) in 6-inch lifts
-(4) passes by rubber tired equipment in 6-inch lifts
-(3) passes of vibratory roller in 6-inch lifts
- 4. Avoid backfill containing rocks or clods greater than 3" diameter, debris, roots, frozen soil, or other unsuitable material as determined by the NRCS inspector.

PIPES

- 1. All pipes shall meet minimum material specifications:
 - 1.1. SCH 40 PVC shall meet ASTM-D1785
 - 1.2. SDR-35 shall meet ASTM-D3034
 - 1.3. Corrugated polyethylene tubing shall meet ASTM-F405
- 2. All fittings shall be pressure-rated, watertight and meet minimum material specifications of pipe.
- 3. Pipes shall be installed to specified depth and to minimum design grade.
- 4. Trenches for pipelines shall be free of rocks and sharp-edged materials. A supply of AASHTO #57 bedding, or other suitable granular material, shall be available to bed pipelines in unstable soils or as directed by NRCS inspectors.
- 5. Pipes shall be backfilled as shown on design details. Any pipe to be placed in a traffic area is to be bedded as per design details and backfilled to the surface with 2A modified or 2RC aggregate. Any pipe not specifically detailed may be backfilled with moist earth, free of large clods or rocks, and hand compacted in 6-inch lifts. DO NOT drive machinery over recently backfilled pipes. Mound backfill 10% of trench depth to allow for settlement.

Date	
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GENERAL CONSTRUCTION NOTES
ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA



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CONCRETE CONSTRUCTION NOTES

REINFORCEMENT

- 1. Reinforcing steel is to be Grade 60. Where 6"x6" w2.9xw2.9 (6 gage) is specified; the fabric shall be mats, not rolls, supported on steel chairs. NO CINDER OR CONCRETE BRICKS ARE PERMITTED. Support shall be often enough so reinforcement stays at the required location within the slab or footing. A 5' (MAX) chair spacing is required.
- 2. Form oil shall not be sprayed on any rebar, waterstops, or concrete.

CONCRETE

- 1. 4,000 psi 28-day compressive strength
- 2. MAXIMUM water-cement ratio 0.50
- 3. Air-content 5 to 7%, with air-entrainment
- 4. Max concrete temperature is 95°
- 5. Slump shall be 2 to 4 inches prior to addition of superplasticizing admixtures being added, 3 to 6 inches without use of superplasticizers.
- 6. Slump can be 7.5 inches MAX with the addition of superplasticizing admixtures.
- 7. Concrete admixtures shall met ASTM-C260 for air entrainment, and ASTM C494 Type A, D, F or G for water-reduction and set-retardation and Types C or E for non-corrosive accelerators.
- 8. Admixtures shall be included in the design mix. Follow dosages and recommendations of manufacturer.
- 9. The contractor(s) shall provide a design mix to the NRCS for approval prior to ordering concrete. All load tickets shall be provided to and approved by the inspector on site and shall reflect all materials and quantities including admixtures, amount of water (metered water and free moisture in the aggregate), and total size of the batch. The batch ticket must indicate the amount of water that may be added on-site while maintaining the design requirements or no water may be added.

10. Cementitious material may contain up to 20% SLAG in the mix.

PLACEMENT

- 1. Concrete shall only be placed in the presence of an NRCS inspector.
- 2. Placement during hot or cold weather will require a written plan in advance detailing concrete conditions, placement provisions, and a curing plan.
- 3. Concrete shall not be placed until the subgrade, forms, and steel reinforcements have been inspected and approved by the NRCS. Notification shall be given far enough in advance to provide time for inspection.
- 4. No water may be added after a superplasticizer.
- 5. Concrete shall be conveyed from the mixer to the forms as rapidly as practical by methods that will prevent segregation of the aggregates or loss of mortar. Concrete shall be placed within 1.5 hours after the introduction of cement to the aggregate unless an approved set-retarding admixture is used in the mix; during periods of hot weather, it may be necessary to reduce this time.
- 6. Concrete shall not be dropped more than 5 feet vertically. Superplasticized concrete shall not be dropped more than 12 feet vertically.
- 7. Formed walls shall be placed in 2' layers unless superplasticizer is used, in which case the maximum layer shall be 5'. Each layer shall be consolidated to ensure a good bond with the preceding layer.
- 8. Concrete shall be consolidated by vibrating immediately after placement and extend a minimum of 6" into the previously consolidated layer.
- 9. Concrete shall be worked into corners, angles, and all around reinforcement and embedded items in a manner that prevents segregation or the formation of "honeycombing".
- 10. Vibration shall not be used to make concrete flow.
- 11. If the surface of a previously placed layer of concrete has taken a set to the degree that it will not mix with the preceding layer when vibrated, the contractor shall discontinue placing concrete and form a construction joint to avoid a "cold joint". Vinyl waterstop and form material shall be on site prior to starting the placement of any concrete.
- 12. The landowner has the option of having grooves floated or cut into the structure floor(s) for added traction for animals and equipment. This decision will be conveyed to the contractor(s) during price solicitation.

CURING

- 1. Concrete shall be allowed to cure at least 24 hours prior to beginning form or reinforcement placement for adjacent construction.
- 2. No equipment shall be allowed on concrete slabs or floors until the concrete has cured for a minimum of 7 days. This includes any motorized material handling equipment, pallets of forms, etc. Skid loaders used for transporting concrete into forms shall not be allowed on slabs or floors for a minimum of 14 days.
- 3. Forms for walls shall not be removed for at least 24 hours after placing the concrete. If forms are removed in less than 7 days, the exposed concrete shall be sprayed with curing compound.
- 4. Curing compound shall be applied in a uniform layer over all surfaces requiring protection at a rate as designated by the manufacturer. Curing compound shall be reapplied if disturbed within 3 hours after being applied.
- 5. Walls shall be allowed to cure for a minimum of 7 days before installing "Drill set" post bracket anchors. Walls shall be allowed to cure for a minimum of 3 days before installing posts in/on "Wet set" brackets.
- 6. All wall ties, honey-combing, and air holes >¾" shall be parged with non-shrink grout.
- 7. Random cracking in the walls and floor shall be evaluated and determined if the concrete needs to be removed or repaired. Removal and repair shall be the responsibility of the contractor and at no increase in cost.
- 8. If major repairs are required, the contractor shall prepare a written repair plan with all materials and methods clearly stated and shall be approved by the NRCS engineer of authority before proceeding with the repair.

JOINTS

- 1. Before new concrete is placed on or against concrete that has set, the surface of construction joints shall be cleaned of all laitance and debris by high-pressure water cutting, washing and wire-brushing, or as approved by the engineer. The surface of the in-place concrete shall be cut to expose clean, sound aggregate, but not so deep to undercut the edges of the large aggregate. All construction joints shall be wetted for at least 1-hour prior to new placement and standing water shall be removed.
- 2. Slab control joints shall be saw-cut as soon as possible, but no later than 24 hours after placement of the concrete, at the intervals indicated on the drawings. All joints shall be water tight and as shown on the detail drawings. The saw-cuts shall be thoroughly cleaned and dried so the sealant and primer will bond to the concrete.
- 3. For the joints in the drawings that call for an elastomeric sealant, the sealant shall meet the requirements stated in the Construction Specification, included in this design package, and shall also meet the following: The sealant shall be Type S (Single Component), Class 25, and meet the requirement for Type I (Able to be immersed in liquid). Some sealants require a primer to be used before the sealant is applied; primers shall be used no matter if the joint is located in a "submerged" condition or not. It is recommended that the primer is supplied by the same manufacturer as the sealant, this will ensure that the sealant and primer are compatible.

~~4. TESTING REQUIREMENTS: The contractor is responsible for obtaining a 3rd party ACI-Certified Technician for field testing of concrete. The concrete plant cannot test their own concrete. Slump, air entrainment, and concrete temperature shall be taken to ensure the concrete meets NRCS requirements. (4) concrete test cylinders shall be taken every 50 cu.yds. (3) cylinders to be broken at 28 days and (1) cylinder to be saved for a 56 day break, if necessary. This shall be done for every 50 cu.yds sampled. Slump, air entrainment, and concrete temperature shall be recorded for every 50 cu.yds as well. All concrete for testing or making cylinders shall be taken from the discharge end of the pump truck. All test results shall be provided to the inspector. The ACI technician shall be present from start of concrete placement until the last concrete truck leaves the site.~~

5. SEE THE FOLLOWING NOTE FOR ALL OTHER CONCRETE.
The contractor is responsible for ensuring that the concrete meets the design requirements. The contractor shall test the concrete as needed; slump, air entrainment, concrete temperature, and cylinders. All concrete for testing or making cylinders shall be taken from the discharge end of the pump truck. The NRCS, PACD, or Conservation District inspector may test the concrete as they feel the need to do so. The contractor is not to rely on the inspector to provide the testing service.

Date

Designed

Drawn

Checked

Approved

CONCRETE CONSTRUCTION NOTES

ALDRICH FARMS

SUSQUEHANNA COUNTY, PENNSYLVANIA

United States

Department of

Agriculture

USDA

Natural Resources

Conservation Service

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Roof Structure Design & Construction Notes

- Trusses shall be used for this roof. Shop drawings shall be provided to the NRCS design engineer for approval prior to ordering the trusses and "PE" (Professional Engineer) sealed shop drawings shall be supplied by the Truss Plate Institute certified manufacturer at the time of truss delivery. (Truss and stringer configuration shown in the drawings is for illustration purposes only) NRCS does not design roof trusses.

* Make the truss designer aware of knee bracing being used.
- All nails shall have full heads; Clipped heads are not acceptable.
- All nails and bolts used with pressure treated wood shall be hot-dip galvanized nails that meet the minimum galvanized coating requirements for the most restrictive wood preservative treatment method. (i.e. CCA treated wood requires a minimum coating rating of G-90 however ACQ treated wood requires a coating rating of G-185. When the wood types are mixed, use the G-185 connectors. Consult with individual fastener, hardware manufacturer for recommendations)

CAUTION: New wood preservative treatment methods require special fasteners and connectors. All plates and fasteners used with ACQ, CBA or CA treatment formulas must conform to ASTM standards; ASTM A153 for Hot-dip fasteners, and A653 for Hot-dip connector and sheet products. This change increases the galvanized coating requirements to a designation of G-185. Stainless steel fasteners and connections may be used in place of Hot-dip galvanized products.
- Nails for general framing can be common, full head size 16d or larger, smooth nails. General framing includes purlins, diagonal braces, lateral braces, etc.
- Bolts, screws, or metal plate connectors may be used instead of nails. Such substitutions shall provide a connection of equal or greater strength and durability, according to the National Forest Products Association's (NFPA) National Design Specification. Alternate connectors must be approved by the design engineer.
- All wood in contact with the ground or manure shall be pressure treated as per American Wood Preserver's Association Standard (posts shall be treated to 0.6 #/cu.ft. and all other wood shall be treated to 0.4 #/cu.ft.)
- All structural members which includes; All wye and knee bracing, bearing blocks, truss support blocks, and girders/headers; (excluding microllam girders/headers) shall be Southern Yellow Pine or Douglas Fir-Larch No. 2 Grade (Surface dry, used at 19% maximum moisture content).
All secondary members such as permanent or continuous bracing shall be (SYP) Southern Pine No. 3, (SPF) Spruce-Pine-Fir No. 2 or better.
Purlins shall be SYP No. 2, SPF No. 2, or better if spaced at 2' centers
Purlins shall be SYP No. 3 or better if spaced at 1.5' centers
- Posts are to be 4-PLY & 5-PLY 2X8 GLU LAMINATED (As shown in the drawing) & pressure treated, #2 grade SYP (Southern Yellow Pine). Posts are to be fully pressure treated the entire height.

- Galvanized angle iron (1/4" thick x 3" wide both ways) can be installed on the corners of the posts at entrance locations. Other means of post protection may be used if approved by the design engineer.
- Knee and Wye bracing are required for the posts and girders as shown. Wye bracing is not required on the "West" load supporting wall. No Wye bracing shall be installed on the "inside" of the entrance locations.
- Permanent continuous lateral bracing is required, according to the truss MFG drawings. Continuous lateral bracing must be installed with staggered side by side overlap connections (no butt to butt connections).
The ends of the braces must extend fully past the truss and allow a 2-nail connection without using toenails.
- Permanent diagonal bracing is required at each end of the building and at intervals not to exceed what is shown in the drawings. All bracing shall be installed as Per the Truss Plate Institute BCSI-B3 and the detailed drawing.
- Roofing material shall be steel or aluminum. Steel shall be; galvanized steel, painted galvanized steel, or painted steel. Type of roofing to be discussed with landowner prior to bid solicitation. Steel roofing material shall be 29 gauge minimum. Aluminum roofing material shall have a minimum nominal thickness of .018 inches. Galvalume roofing is not permitted for use.
- Roof fasteners shall be a combination of zinc coated steel and neoprene washer. Double stitch the seams of the roof edges. Typical steel roof shall have fasteners on a 9" spacing on the purlins 24" on center.
- End trusses shall be faced with roofing material, as specified above. This shall be discussed with the landowner prior to bid solicitation.
- Ventilation shall be provided by an "Overshot" top chord of the truss, as shown in the drawings; a minimum of 14" opening is required for this structure.
- Bird Netting is required on the bottom chord of the truss.
- Girder Requirements:
1.75" x 9.25" LVL's: Moment Rating=6271 ft-lbs, Fb=2900 psi, Fv=320 psi, E=2.0x10⁶

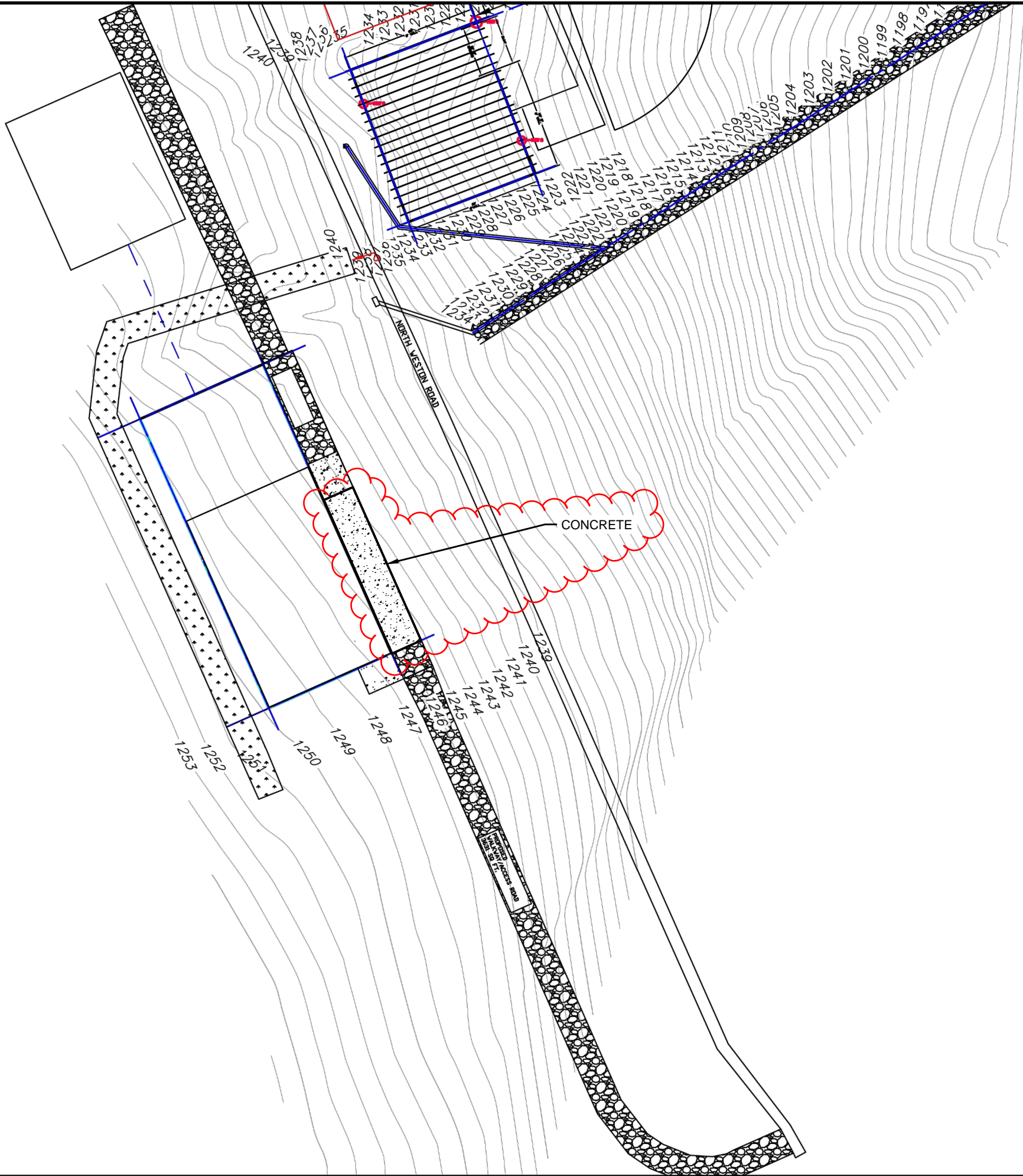
Header Requirements:
7" x 18" PSL: Moment Rating=87,325 ft-lbs, Fb=2900 psi, Fv=290 psi, E=2.0x10⁶
- The roof was designed to carry a combined loading of 40 psf, according to ASCE-7 (Most Conservative Combined Load Formula), on the entire roof surface. The roof was also designed for a uniform uplift of 14.5 psf under the entire roof. This roof is designed for (2) "enclosed" sides; major structural changes may be needed if the sides that are labeled as "open" are enclosed. Consult with the design engineer if additional enclosed sides are being considered.

Date	9/12
Designed	RCD
Drawn	RCD
Checked	
Approved by	

ROOF STRUCTURE DESIGN AND CONSTRUCTION NOTES
SUSQUEHANNA COUNTY
ALDRICH FARM



File No.	
Drawing No.	
Sheet	6 of 32



PLANVIEW (60 SCALE)
ALDRICH FARM

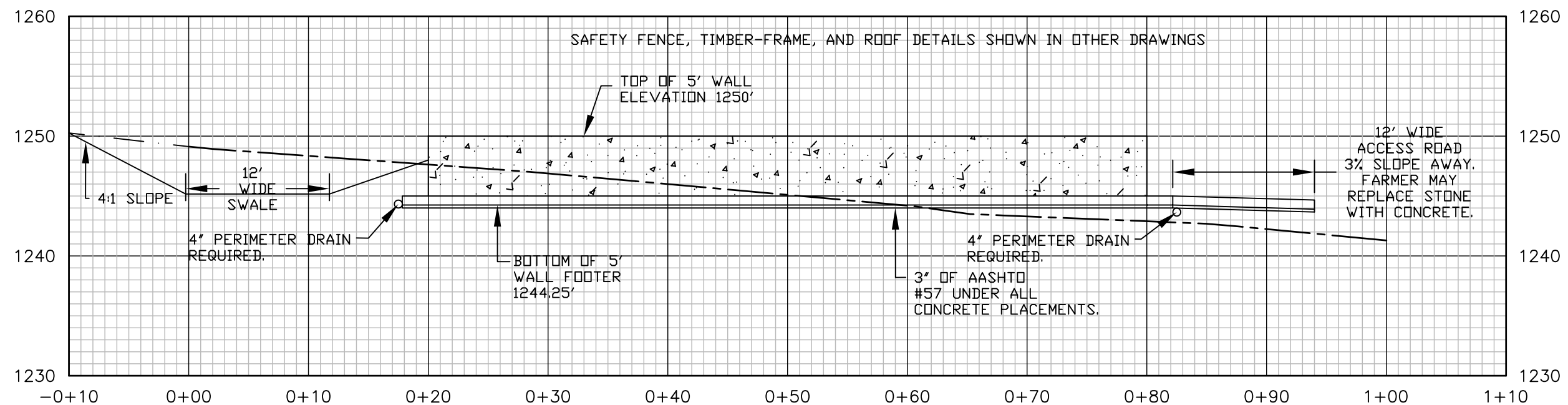


FILE NO.
PLANVIEW.DWG

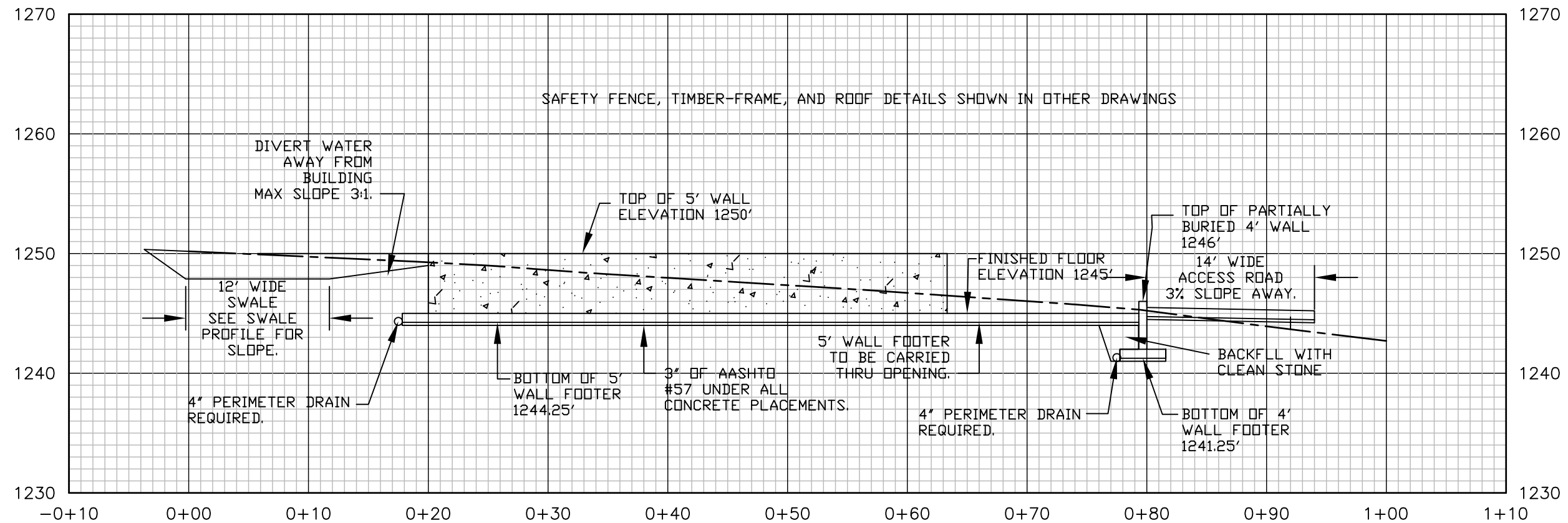
DRAWING NO.

SHEET 7 OF 32

DESIGNED	NZB	DATE
DRAWN	NZB	
CHECKED		
APPROVED		



A-A (1) PROFILE



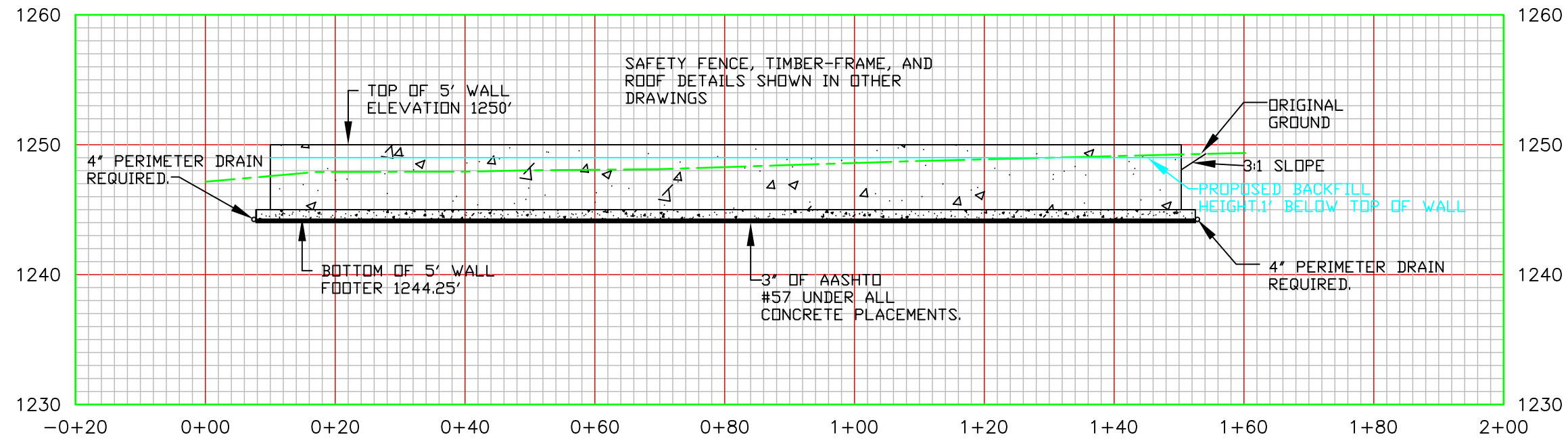
B-B (2) PROFILE

DATE	#	#	#	#
NZB	NZB	NZB	NZB	NZB
DESIGNED	DRAWN	CHECKED	APPROVED	

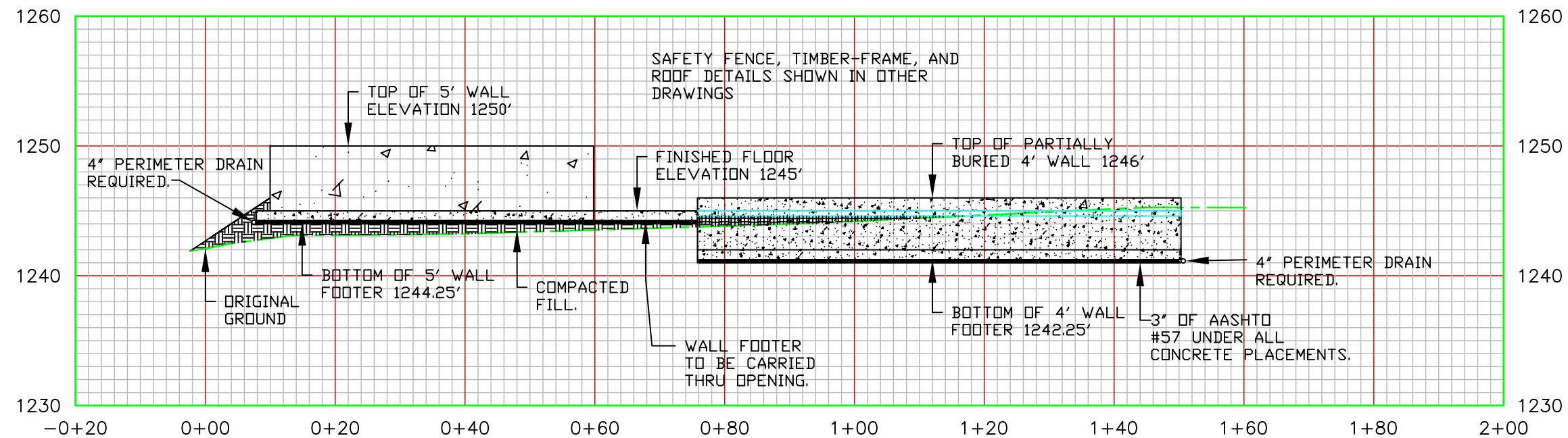
ALDRICH FARM 2
HUA & MANURE STORAGE
A-A(1) & B-B(2) PROFILE
SUSQUEHANNA COUNTY, PA



FILE NO.
DRAWING NO.
SHEET 9 OF 32



C-C (1) PROFILE



D-D (1) PROFILE

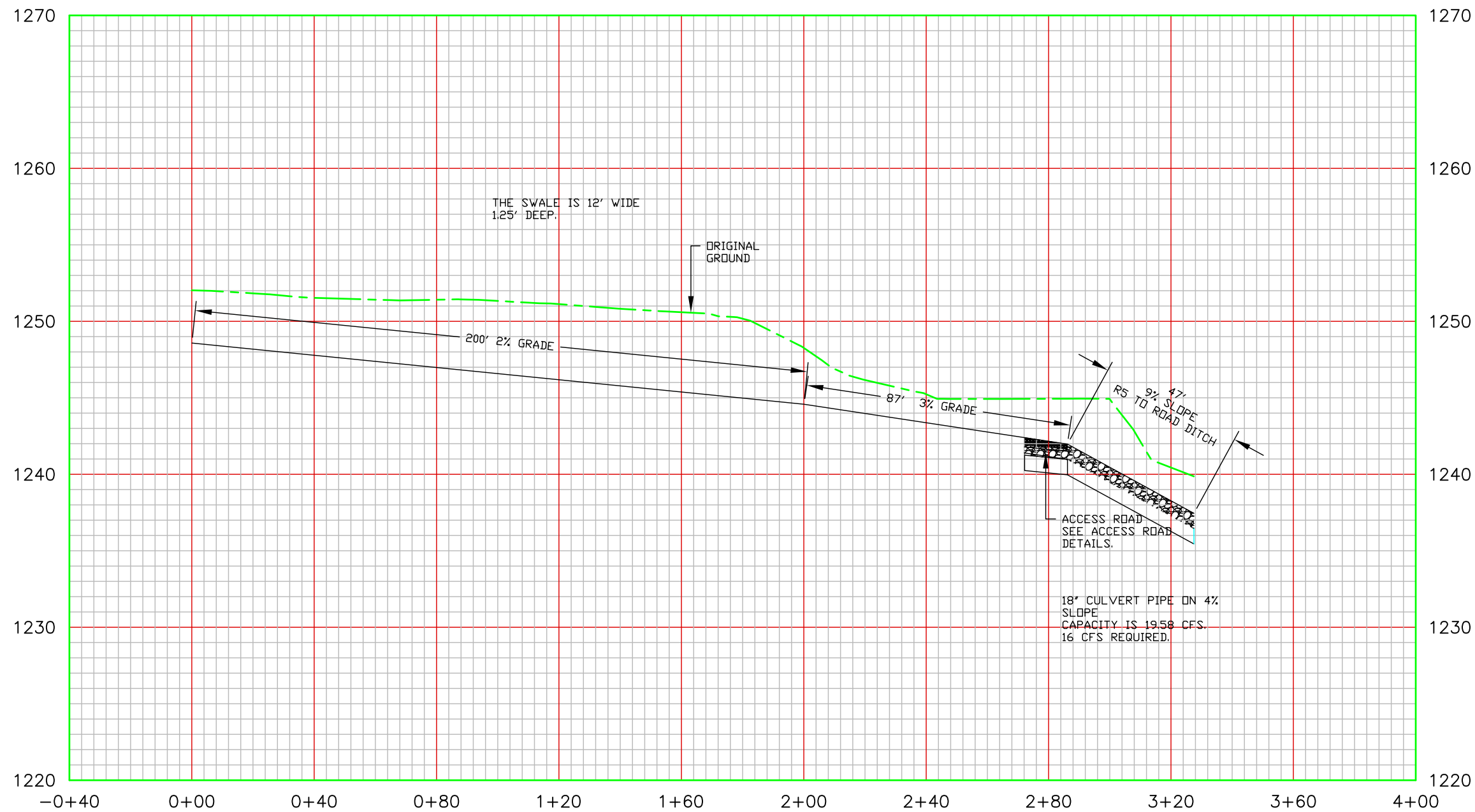
DATE	#
NZB	#
DESIGNED	
DRAWN	
CHECKED	
APPROVED	

ALDRICH FARM 2
HUA & MANURE STORAGE

C-C(1) & D-D(1) PROFILE
SUSQUEHANNA COUNTY, PA

United States
Department of
Agriculture
USDA
Natural Resources
Conservation Service

FILE NO.
DRAWING NO.
SHEET 10 OF 32



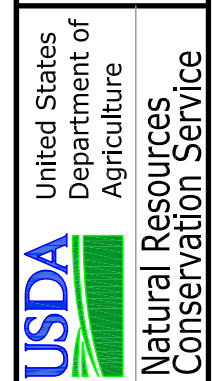
DIVERSION PROFILE

DESIGNED	NZB	DATE	#
DRAWN	NZB		#
CHECKED			
APPROVED			

ALDRICH FARM

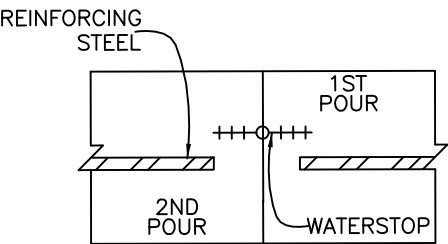
DIVERSION PROFILE

SUSQUEHANNA COUNTY, PA

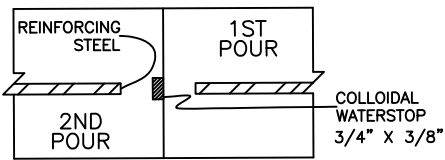


LIQUID TIGHT SLAB JOINTS
(NOT TO SCALE)

JOINT 1

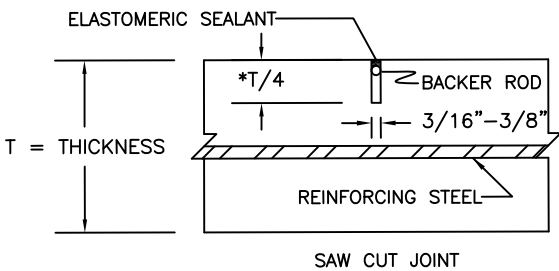


JOINT 2



CONSTRUCTION
CONTROL

JOINT 3



LIQUID TIGHT SLAB/FLOOR JOINTS

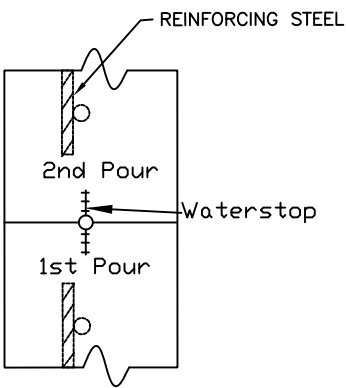
GENERAL NOTES:

1. BACKER ROD SHALL BE A LARGER WIDTH THAN THE WIDTH OF THE SAW CUT.
2. SAW CUT OR JOINT FORMER IS ACCEPTABLE FOR JOINT 2.
3. SEALANT DEPTH SHALL BE 1/4" OR SLIGHTLY LESS THAN JOINT WIDTH, WHICHEVER IS LESS.
4. CUT 50% OF THE REINFORCING STEEL DIRECTLY UNDER THE JOINT.

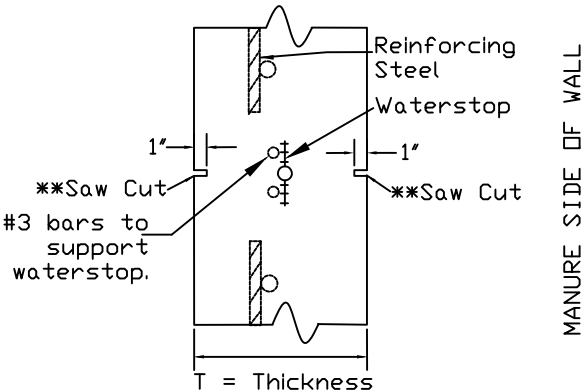
USE JOINT 1 OR 2 FOR TWO POURS AND JOINT 3 FOR CONTINUOUS POURS.

LIQUID TIGHT WALL JOINTS
(NOT TO SCALE)

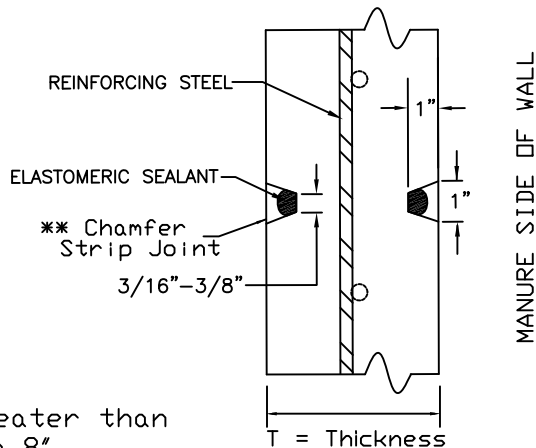
JOINT 4



JOINT 5



JOINT 6



* Saw cut need not be greater than 1" for walls thicker than 8".

** Joint former or chamfer strip optional, Backer Rod and Elastomeric sealant needed in a saw cut joint or if a joint former is used. Elastomeric sealant needed if a chamfer strip is used. Cut and/or joint former or chamfer shall be on both sides of wall and across the top.

LIQUID TIGHT WALL JOINTS

GENERAL NOTES:

1. BE SURE TO CUT EVERY OTHER HORIZONTAL REINFORCING STEEL REBAR DIRECTLY AT THE JOINT.
2. SEALANT DEPTH SHALL BE 1/4" OR SLIGHTLY LESS THAN JOINT WIDTH, WHICHEVER IS LESS.
3. USE JOINT 4 FOR TWO POURS AND JOINTS 5 OR 6 FOR CONTINUOUS POURS.

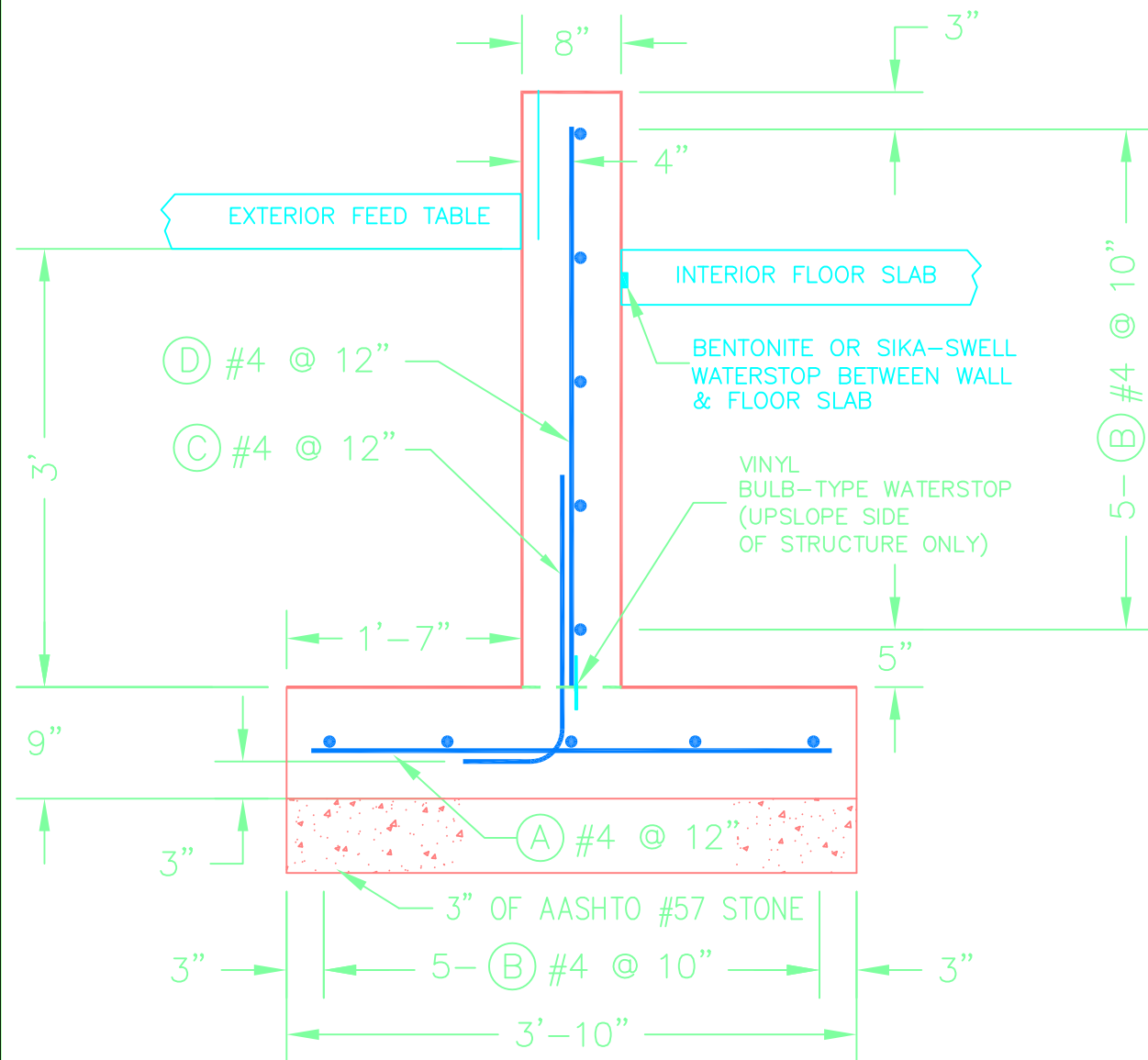
Date _____
Designed ETO STD DFC
Drawn _____
Checked _____
Approved by _____

CONCRETE JOINT OPTIONS
ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA



File No. _____
Drawing No. _____
Sheet 13 of 32

ROOF SUPPORT POSTS TO BE ANCHORED TO TOP OF WALL



CONCRETE (0.21 CU.YDS./LIN.FT.) _____ CU. YDS.
STEEL (20.67 FT./LIN. FT.) _____ FT.
STEEL (35.0 FT./CORNER) _____ FT.

- GENERAL DESIGN NOTES:

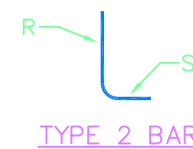
- DRAINAGE SHALL BE AWAY FROM THE WALL.
- THE MINIMUM TOP WIDTH OF THE BACKFILL AGAINST THE WALL SHALL BE EQUAL TO OR GREATER THAN THE BACKFILL HEIGHT.
- MAXIMUM FOOTING CONTACT PRESSURE IS 900 psf/ft.

DESIGN STRENGTHS: WORKING STRESS DESIGN

CONCRETE $f_c = 4,000$ psi STEEL $f_s = 24,000$ psi (GRADE 60)

WALL DESIGN LOADING: 313 STANDARD – LATERAL EARTH PRESSURE VALUES,
SEE SECTION IV OF THE FIELD OFFICE TECHNICAL GUIDE.

- MANURE LOAD INSIDE = 65 psf/ft.
- SOIL BACKFILL LOAD OUTSIDE = 60 psf/ft. AND 85 psf/ft.
- NO HORIZONTAL SURCHARGE ADDED.
- SOIL BACKFILL DENSITY = 110 pcf.
- WATER TABLE MUST BE BELOW THE FOOTING ELEVATION



MARK	SIZE	TYPE	R	S	LENGTH
A	4	STR	---	---	3'-6"
B	4	STR	---	---	
*C	4	2	2'-0"	9"	2'-9"
*D	4	STR	---	---	3'-9"
L	4	2	2'-0"	9"	2'-9"
L1	4	STR	---	---	3'-9"

* MARK C & D BARS MAY BE COMBINED TO AVOID SPLICE.
THEN MARK C BAR IS 4'-3" x 9".

NOTES:

1. FOR FROST PROTECTION, A 2-FOOT BACKFILL IS REQUIRED.
2. DIMENSIONS ARE TO THE REINFORCING BAR SURFACE.

ADAPTED AND MODIFIED FROM STANDARD DRAWING # PA-020D

Designed _____
Drawn BTO _____
Checked _____
Approved by _____

Date _____ 11/2018 _____

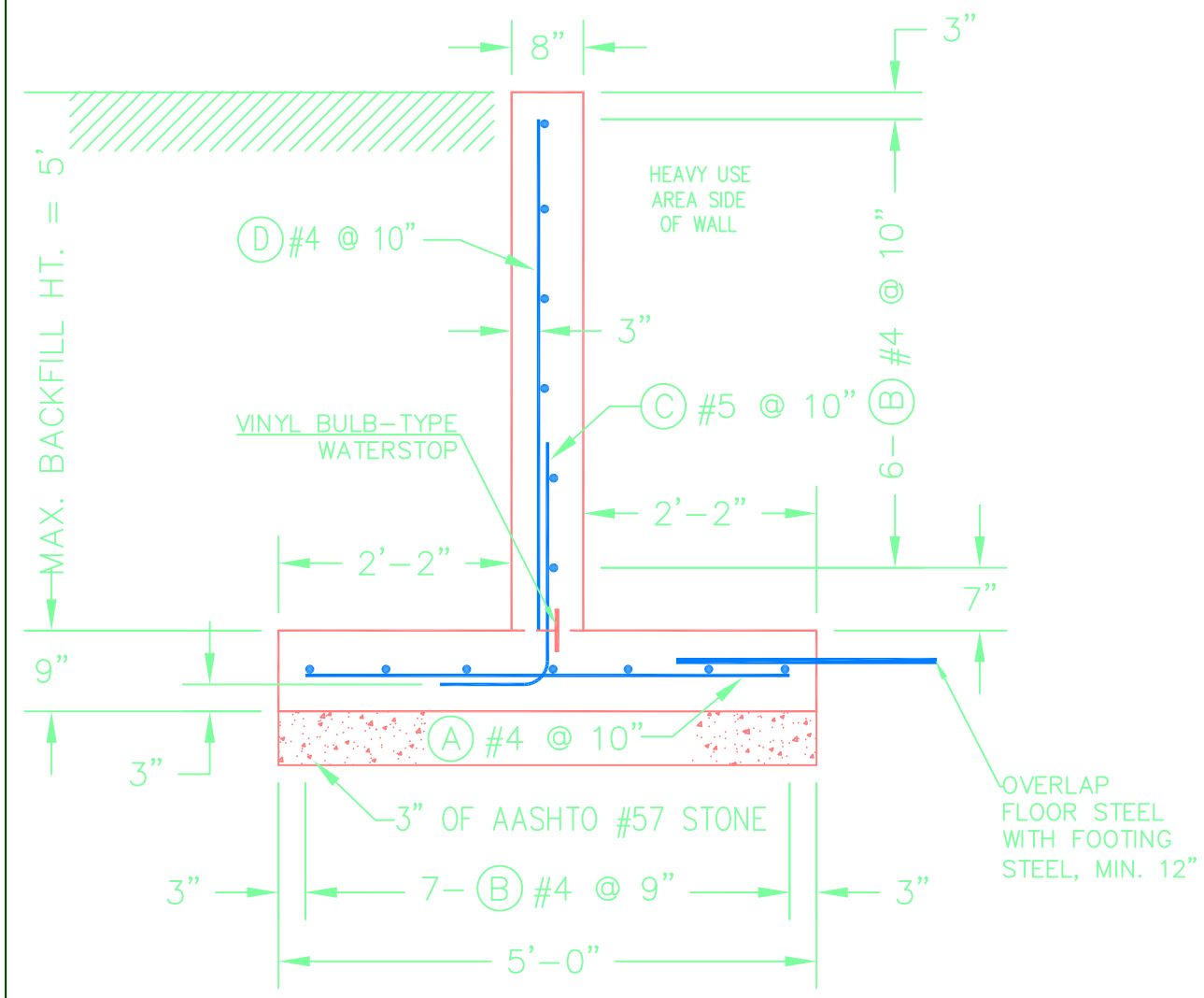
4' HIGH, T-WALL (W/O SURCHARGE)
ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA



File No.

Drawing No.

Sheet: 14 of 32



ESTIMATED QUANTITIES

CONCRETE (0.27 CU.YDS./LIN.FT.)	_____ CU. YDS.
STEEL #4 (25.0 FT./LIN. FT.)	_____ FT.
STEEL #5 (3.60 FT./LIN.FT.)	_____ FT.
STEEL (42.5 FT./CORNER)	_____ FT.

- CONCRETE WILL MEET PA 313 OR 561 SPECIFICATION REQUIREMENTS.
- MINIMUM SPLICE LENGTH FOR ALL #4 BARS IS 16".
- MINIMUM SPLICE LENGTH FOR ALL #5 BARS IS 17".
- STEEL QUANTITY DOES NOT INCLUDE SPLICE LENGTHS.
- REBAR SHALL BE GRADE 60.

GENERAL DESIGN NOTES:

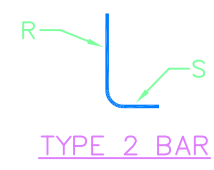
- DRAINAGE SHALL BE AWAY FROM THE WALL.
- THE MINIMUM TOP WIDTH OF THE BACKFILL AGAINST THE WALL SHALL BE EQUAL TO OR GREATER THAN THE BACKFILL HEIGHT.
- MAXIMUM FOOTING CONTACT PRESSURE IS 800 psf/ft.

DESIGN STRENGTHS: WORKING STRESS DESIGN

CONCRETE $f_c = 4,000$ psi STEEL $f_s = 24,000$ psi (GRADE 60)

WALL DESIGN LOADING: 313 STANDARD – LATERAL EARTH PRESSURE VALUES, SEE SECTION IV OF THE FIELD OFFICE TECHNICAL GUIDE.

- MANURE LOAD INSIDE = 65 psf/ft.
- SOIL BACKFILL LOAD OUTSIDE = 60 psf/ft. AND 85 psf/ft.
- NO HORIZONTAL SURCHARGE ADDED.
- SOIL BACKFILL DENSITY = 110 pcf.
- WATER TABLE MUST BE BELOW THE FOOTING ELEVATION



STEEL SCHEDULE

MARK	SIZE	TYPE	R	S	LENGTH
A	4	STR	---	---	4'-6"
B	4	STR	---	---	
C	5	2	2'-0"	1'-0"	3'-0"
D	4	STR	---	---	4'-9"
L	4	2	2'-0"	9"	2'-9"
L1	4	STR	---	---	4'-9"

NOTES:

1. FOR FROST PROTECTION, A 2-FOOT BACKFILL IS REQUIRED.
2. DIMENSIONS ARE TO THE REINFORCING BAR SURFACE.

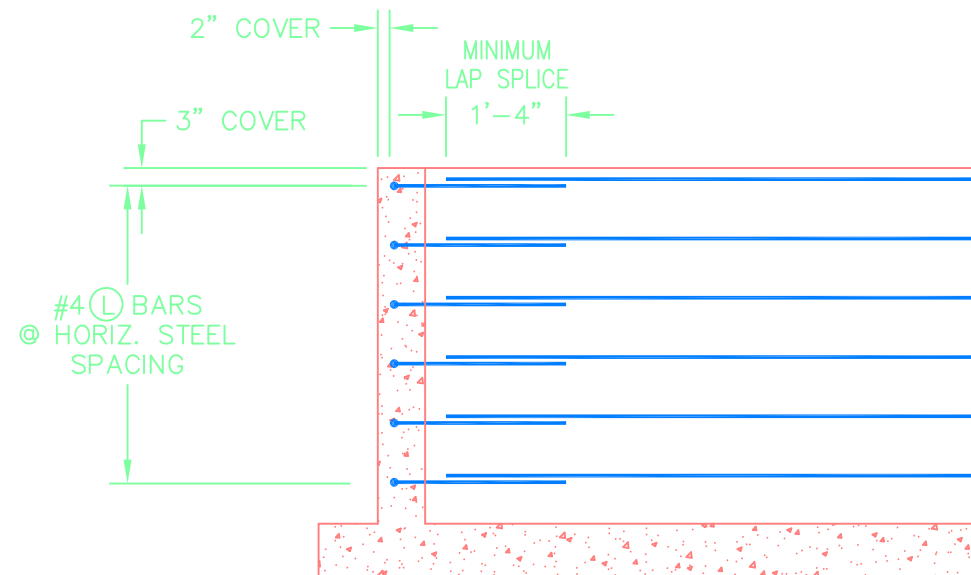
ADAPTED AND MODIFIED FROM STANDARD DRAWING # PA-021C

Date	11/2018
Designed	
Drawn	BTO
Checked	
Approved by	

5' HIGH, 8" THICK T-WALL (W/O SURCHARGE)
ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA



File No.	PA-021C
Drawing No.	PA-021C
Sheet	15 of 32



NOTES:

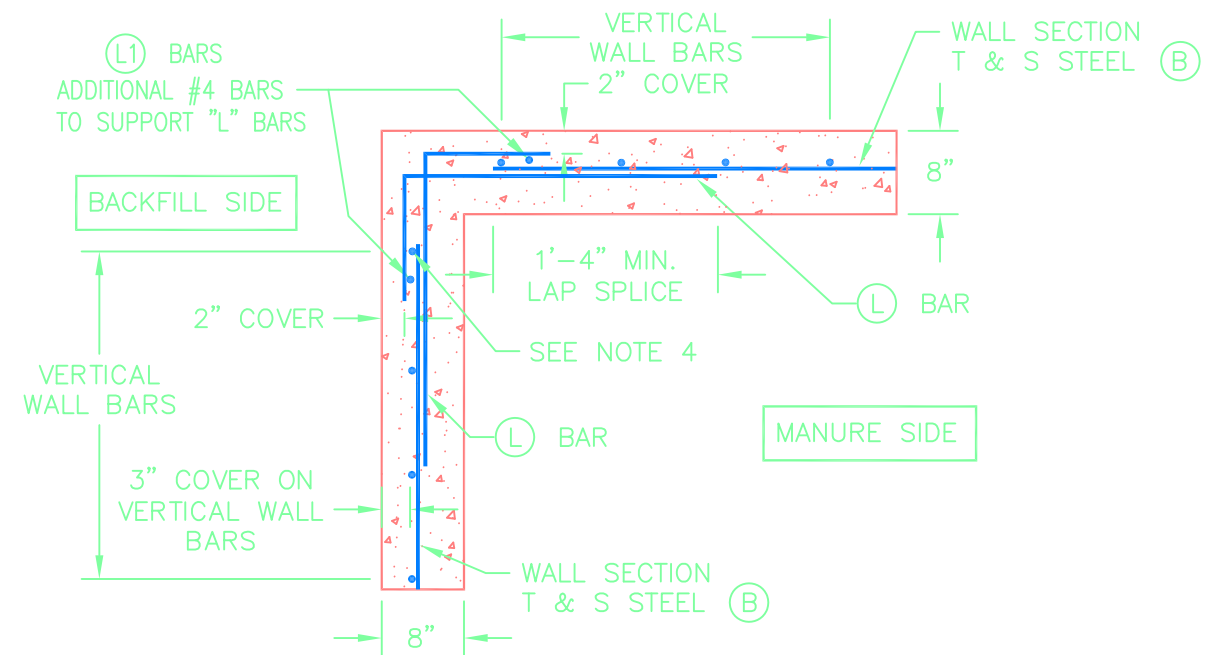
1. TIE LONG LEG OF MARK (L) CORNER BAR TO WALL SECTION T&S MARK (B) BAR AS SHOWN.
2. SHORT LEG OF MARK (L) BARS SHALL BE SUPPORTED WITH VERTICAL WALL SUPPORT BAR (L1).
3. 12 MARK (L) BARS PER CORNER. SEE APPROPRIATE WALL DRAWING FOR BAR DIMENSIONS AND QUANTITIES.
4. PLACE FIRST VERTICAL BAR (SEE PLAN VIEW) AT WALL CORNER, OR NO FARTHER THAN ONE-HALF THE VERTICAL BAR SPACING FROM THE CORNER.

ADAPTED AND MODIFIED FROM STANDARD DRAWING # PA-026A

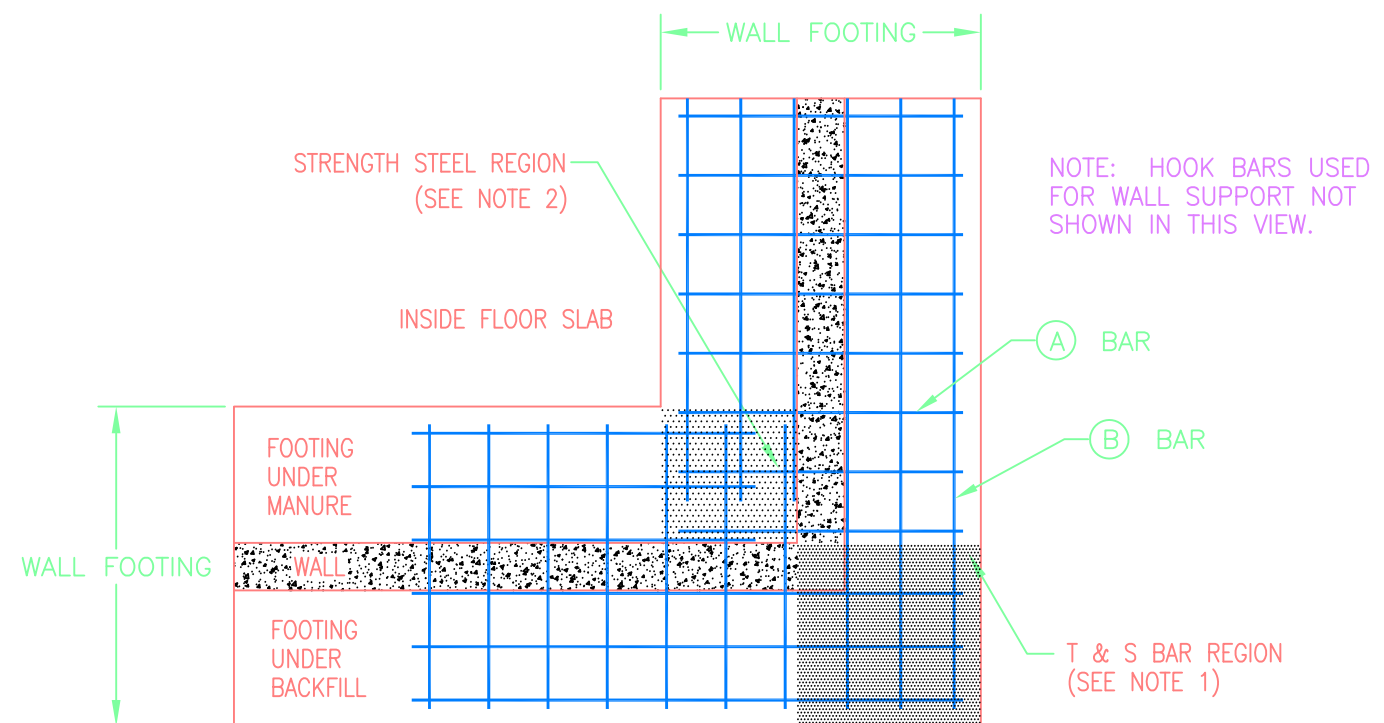
ADAPTED AND MODIFIED FROM STANDARD DRAWING # PA-023

NOTES FOR FOOTING STEEL PLACEMENT

- 1.) FOOTING TEMPERATURE AND SHRINKAGE STEEL (T&S) TO BE EXTENDED INTO THIS REGION FROM BOTH SIDES OF CORNER. REGION IS OUTSIDE EXTENSION OF WALLS INCLUDING WALL THICKNESS.
- 2.) STRENGTH STEEL IS EXTENDED INTO THIS REGION FROM BOTH SIDES OF CORNER. REGION IS INSIDE EXTENSION OF THE WALLS. FOOTING SLAB T&S STEEL OUTSIDE THE CORNER REGION TO LAP SPLICE WITH THE STRENGTH STEEL 16 INCHES.
- 3.) IN BOTH CORNER REGIONS, STRENGTH STEEL AND T&S STEEL WILL REQUIRE SWITCHING POSITIONS FROM TOP TO BOTTOM AND VICE VERSA.



PLAN VIEW
WALL CORNER DETAIL



SLAB FOOTING CORNER DETAIL

Date	11/2018
Designed	
Drawn	
Checked	BTO
Approved by	

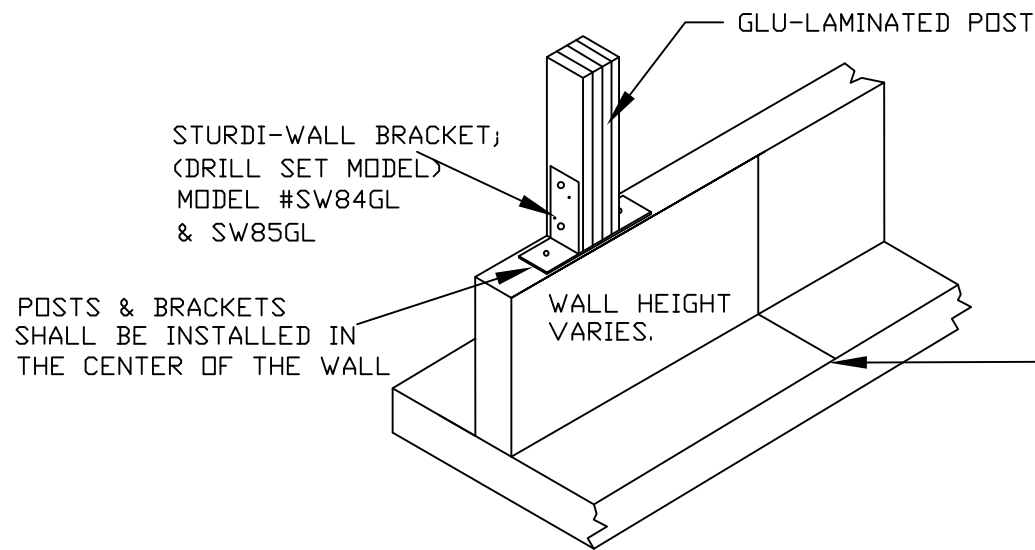
5' WALL CORNER DETAILS (W/O SURCHARGE)

ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA



File No.	
Drawing No.	
Sheet	16 of 32

POST ON WALL INSTALLATION
ALL SINGLE SPAN LOCATIONS



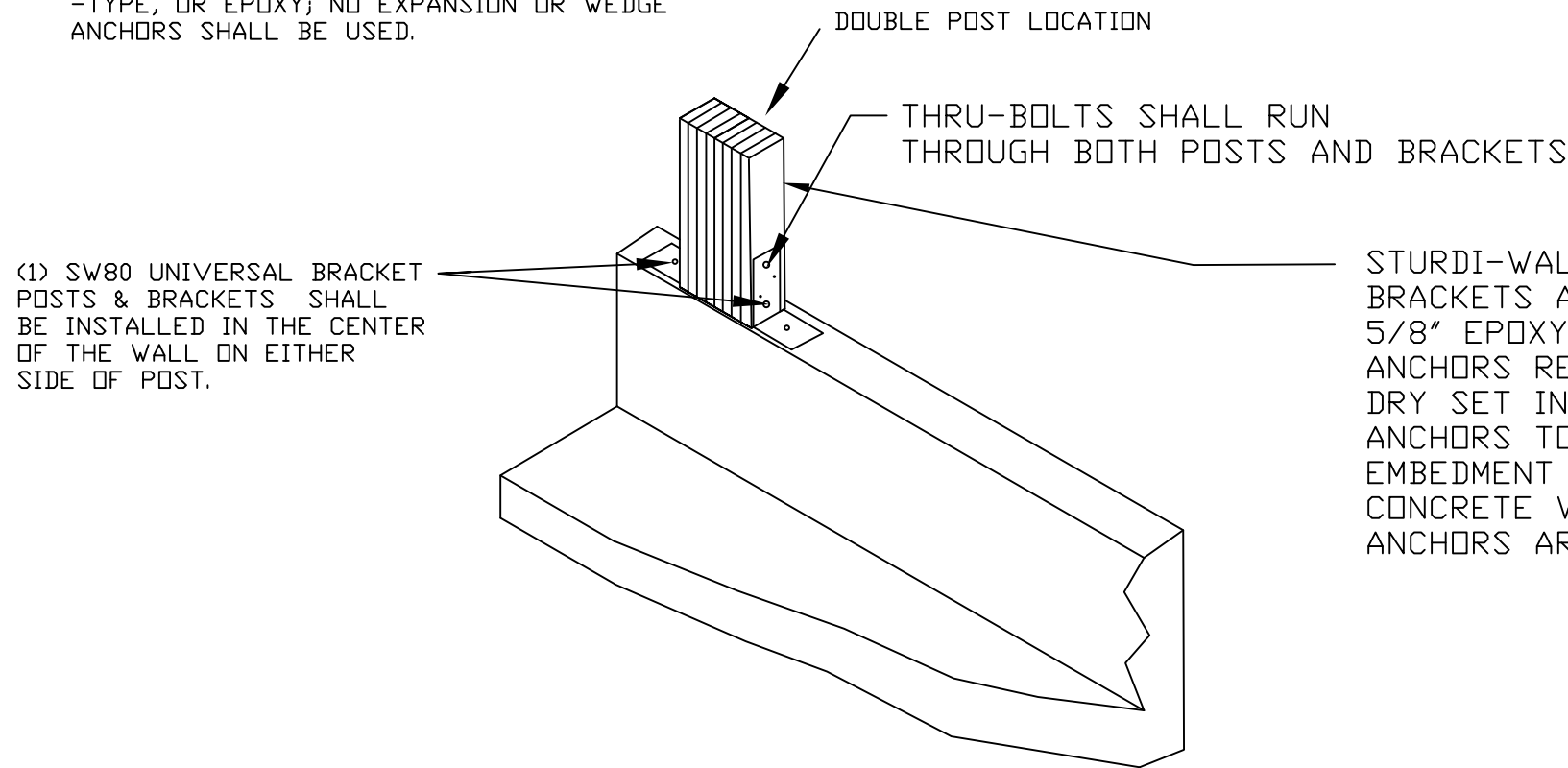
POST PLY'S TO BE PARALLEL
TO THE TRUSSES.

WALL/FLOOR CONTROL
JOINTS MAY LINE UP
WITH EACH OTHER.

WALL CONTROL JOINTS
SHALL NOT BE INSTALLED
AT POST LOCATIONS.

BRACKETS CAN BE PURCHASED
FROM: PERMA COLUMN EAST LLC
888-699-8875

WALLS SHALL BE ALLOWED TO
CURE FOR A MINIMUM OF 7 DAYS
BEFORE INSTALLING SCREW
ANCHORS
ALL ANCHORS INTO CONCRETE SHALL BE SCREW
-TYPE, OR EPOXY; NO EXPANSION OR WEDGE
ANCHORS SHALL BE USED.

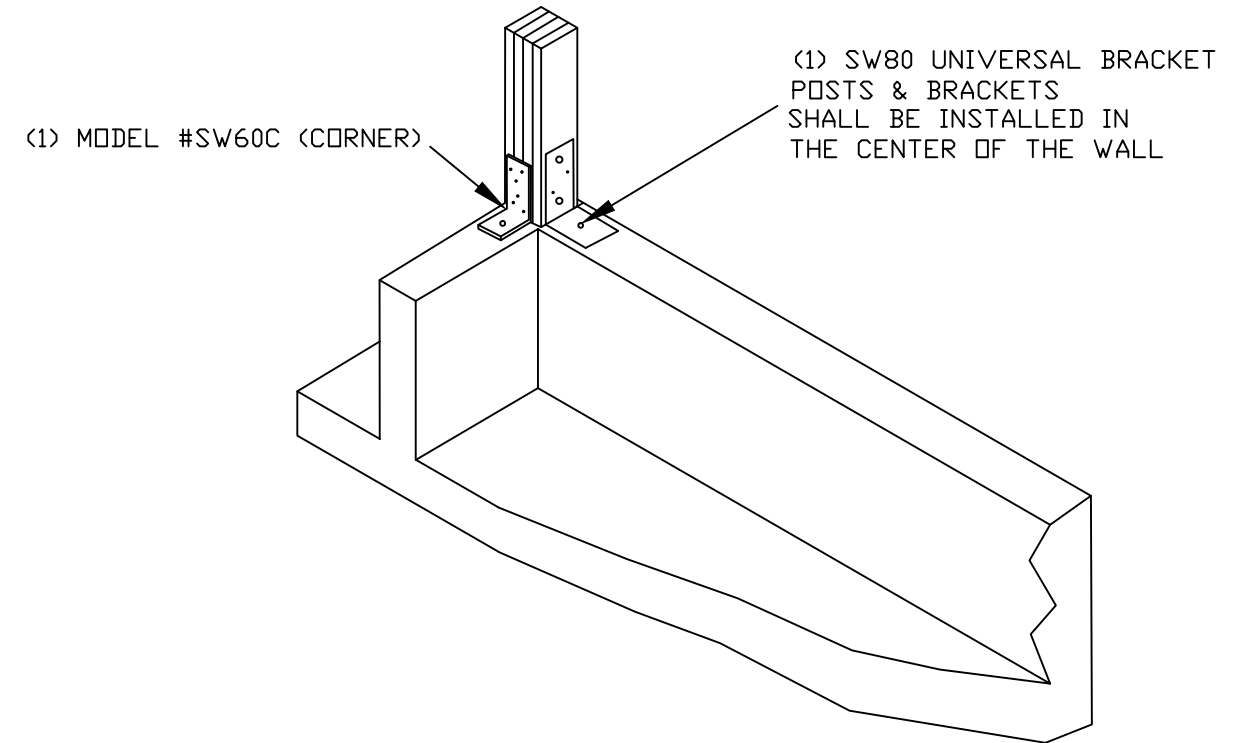


STURDI-WALL SW85GL DRY SET
BRACKETS ARE REQUIRED.
5/8" EPOXY OR SCREW TYPE
ANCHORS REQUIRED FOR
DRY SET INSTALLATION.
ANCHORS TO HAVE A MIN.
EMBEDMENT DEPTH OF 4.5" INTO
CONCRETE WALL. EXPANSION TYPE
ANCHORS ARE NOT ALLOWED.

4-PLY POSTS SHOWN BUT THERE ARE
BOTH 4-PLY & 5-PLY REQUIRED.

POST PLY'S TO RUN
PARALLEL WITH TRUSSES

POST ON WALL INSTALLATION CORNER POST LOCATIONS



ALDRICH FARM
MANURE STORAGE

1001 TO WALL DETAILS

11/17/2000

United States
Department of
Agriculture



**Natural Resources
Conservation Service**

FILE NO.

DRAWING NO.

SHEET 17 OF 32

DATE # _____

NZB

DESIGNED

#

97N

DRAWN

1

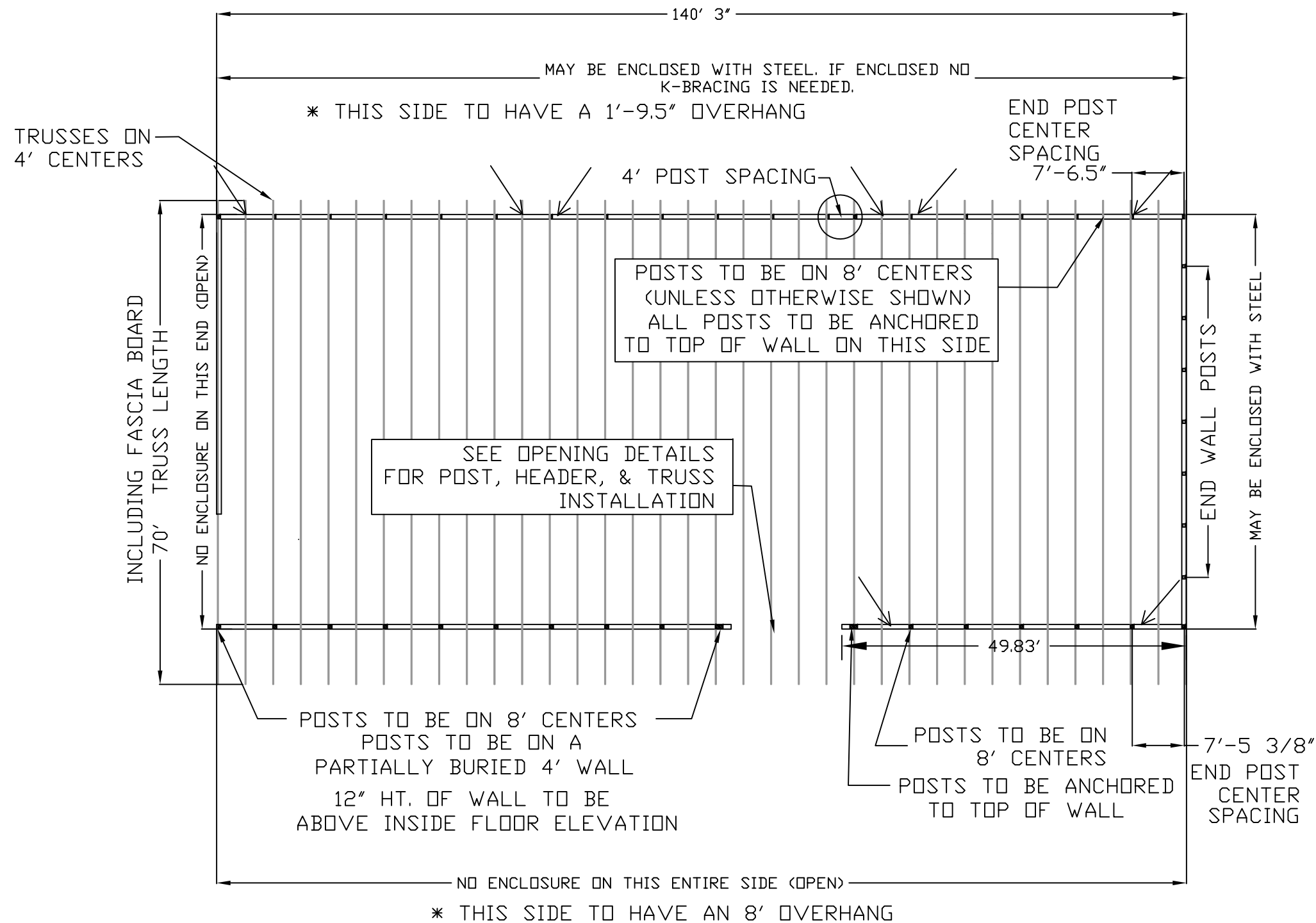
CHECKED

Year	Percentage
1990	10
1991	15
1992	25
1993	45
1994	55
1995	50

1111

APPROVED

SKETCH IS NOT TO SCALE



INSTALL 2X4 SPRUCE-PINE-FUR (SPF) #1/#2 GRADE GIRTS ON 18" SPACING, ON THE SIDES THAT WILL BE ENCLOSED WITH STEEL SHEATING. ATTACH STEEL SIDEWALL MATERIAL TO GIRTS. END WALL POSTS SHALL BE 4-PLY 2x6 GLU-LAM @ 8' MAX SPACING. END WALL POSTS SHALL EXTEND TO THE TOP CHORD OF THE GABLE END TRUSS. REVERSE DIRECTION OF PLY'S ON GABLE END WALL POSTS SO PLY'S FACE TOWARDS INSIDE OF BUILDING.

K-BRACE LOCATIONS
& DIRECTION OF INSTALLATION

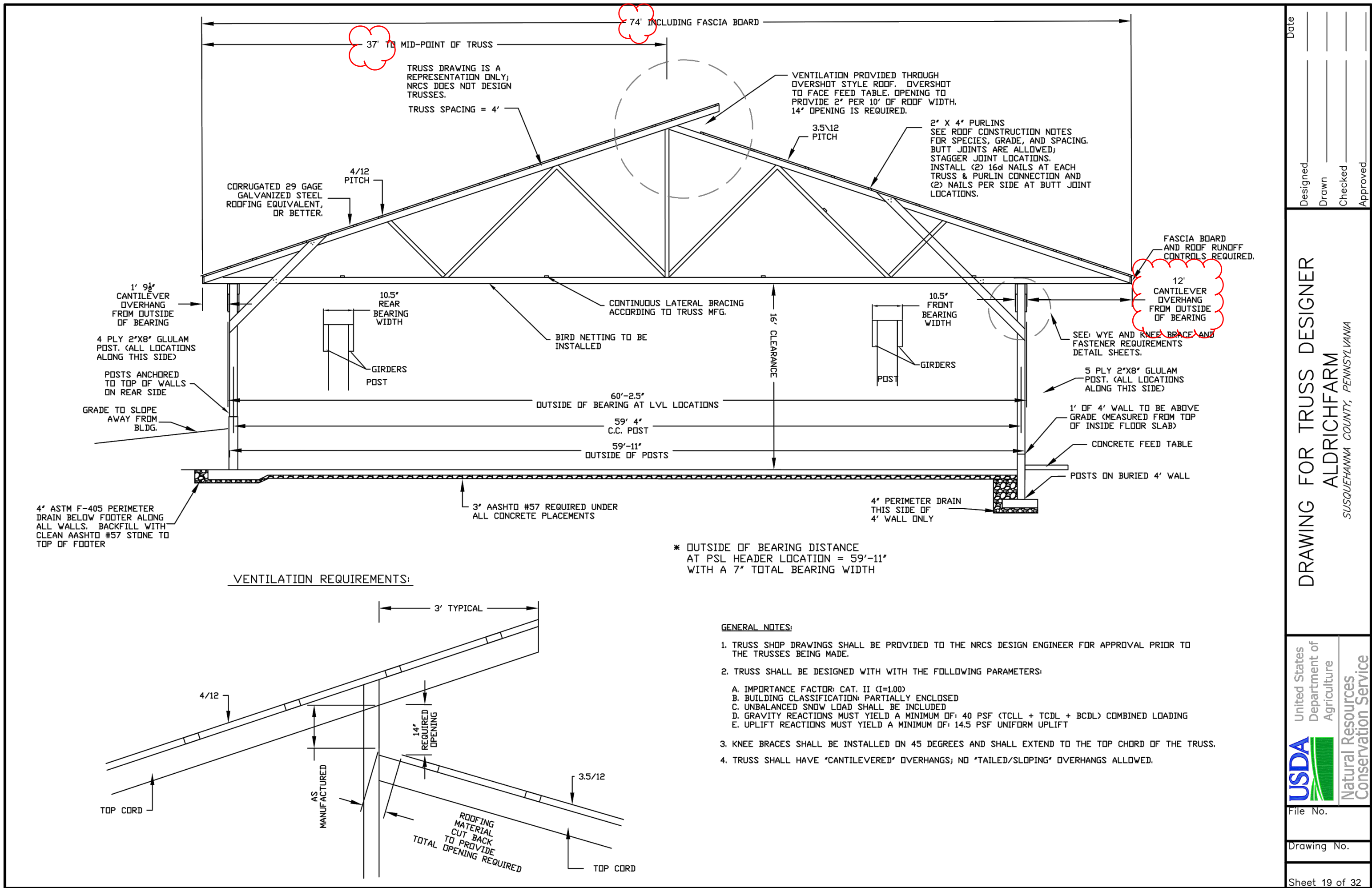
- ALL POSTS ON 1'-9.5" OVERHANG SIDE: 4-PLY 2x8 GLU-LAM
ALL POSTS ON 8' OVERHANG SIDE: 5-PLY 2x8 GLU-LAM
- PLYS TO BE INSTALLED PARALLEL WITH THE TRUSSES
 - ALL POSTS TO BE INSTALLED IN THE CENTER OF WALLS; NOT OFFSET
 - ALL POSTS TO BE NOTCHED 1.5" ONLY, FOR THE TRUSSES.
- ALL GIRDS (EXCEPT HEADER AT ENTRANCE):
1.75" X 9.25' LVLS
- ON EACH SIDE OF POST

DATE	#	#
NZB	NZB	NZB
DESIGNED	DRAWN	CHECKED
		APPROVED

ALDRICH FARM
HUA & MANURE STORAGE
POST, GIRDER, TRUSS LAYOUT
SUSQUEHANNA COUNTY, PA

United States
Department of
Agriculture
USDA
Natural Resources
Conservation Service

FILE NO.
DRAWING NO.
SHEET 18 OF 32



Date _____

Designed _____

Drawn _____

Checked _____

Approved _____

DRAWING FOR TRUSS DESIGNER

ALDRICH FARM

SUSQUEHANNA COUNTY, PENNSYLVANIA

United States
Department of
Agriculture

USDA

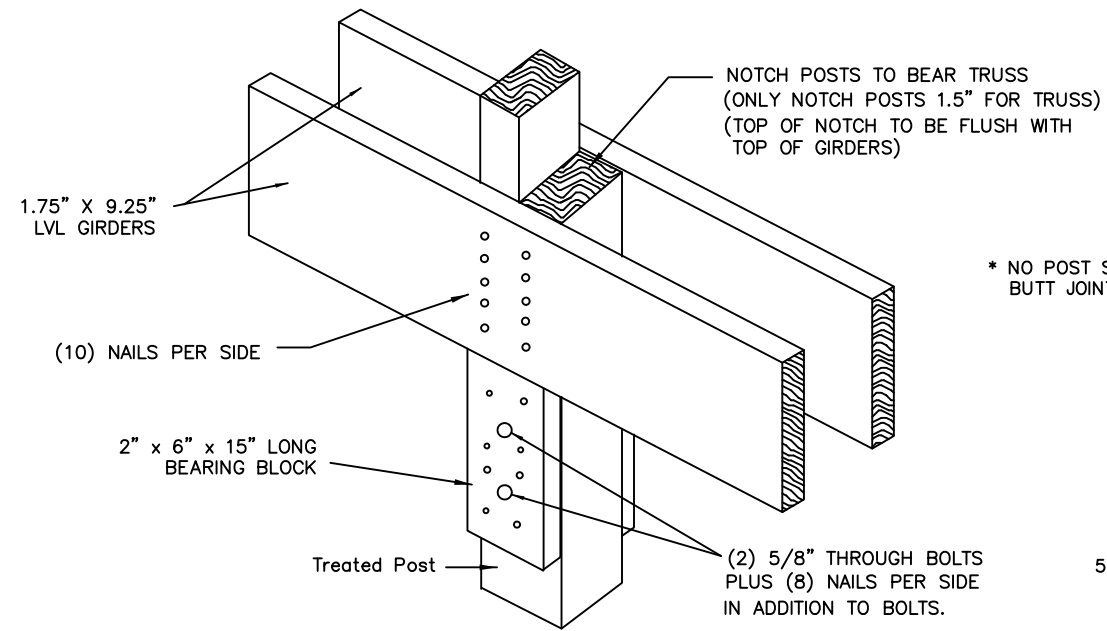
Natural Resources
Conservation Service

File No. _____

Drawing No. _____

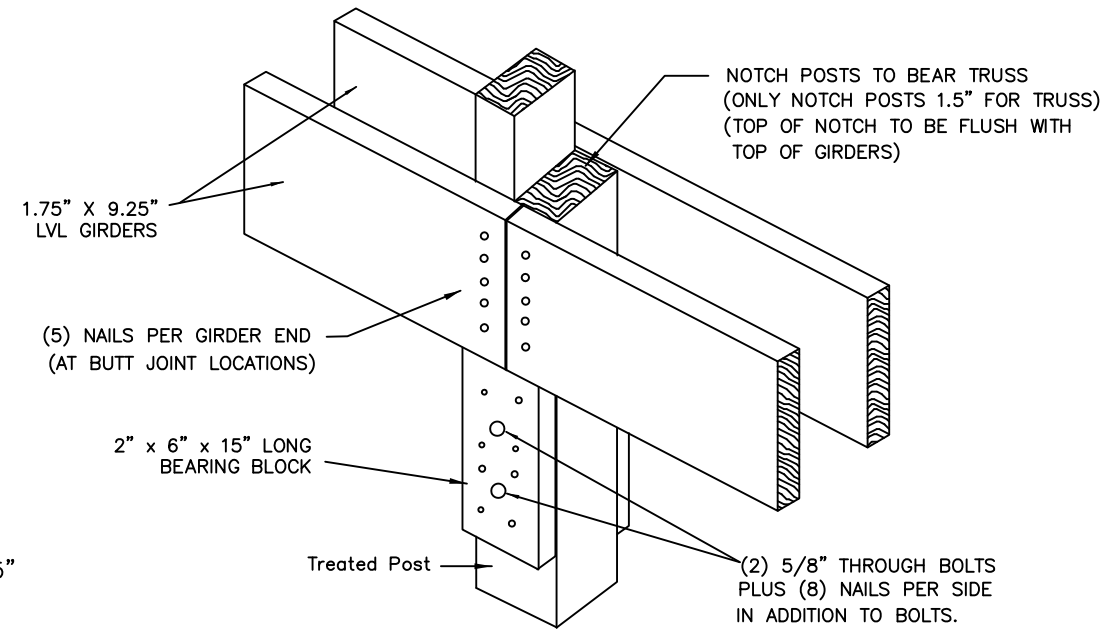
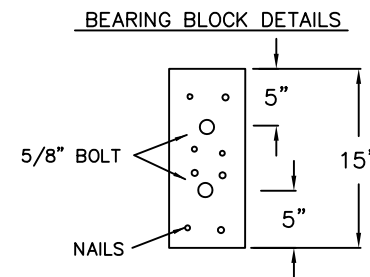
Sheet 19 of 32

FASTENER REQUIREMENTS AT GIRDER & POST CONNECTIONS



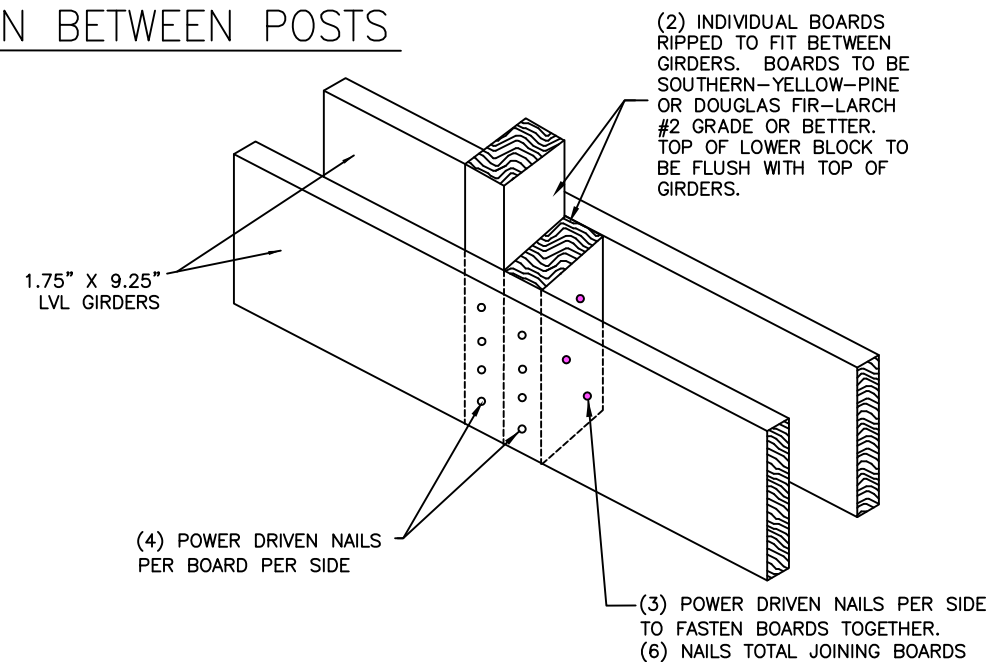
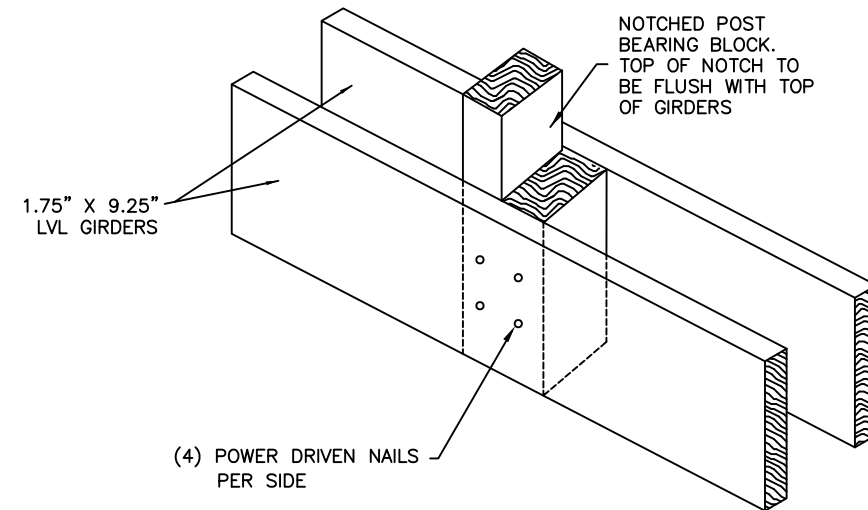
CONTINUOUS SPAN

* NO POST SHALL HAVE A GIRDER BUTT JOINT ON BOTH SIDES



NON-CONTINUOUS SPAN

OPTIONS FOR TRUSS CONNECTION BETWEEN POSTS



CONSTRUCTION NOTES

1. Bolts shall be installed in the middle of the girder and support block.
2. All nails shall be power driven: .131" Diameter x 3.25" Long (Min.).
3. LVL's need to be supported every 2' as per the LVL Manufacturer; A single block, ripped to fit, between the LVL's will suffice.
Install (4) power driven nails per side from LVL into the blocking.

Date	
Designed	
Drawn	
Checked	
Approved by	

FASTENER REQUIREMENTS AT GIRDER & POST CONNECTION
ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA

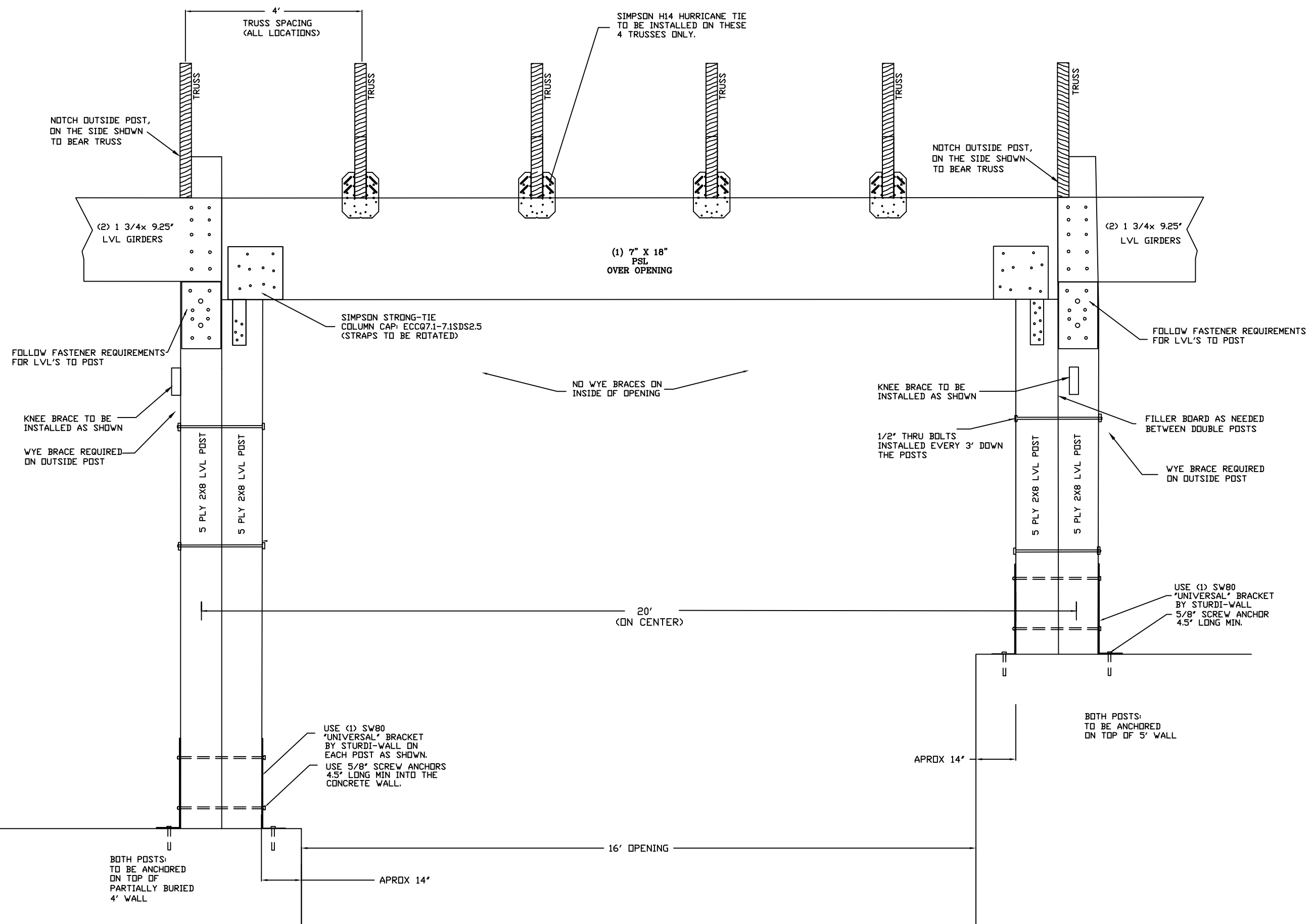


File No.

Drawing No.

Sheet 20 of 32

FASTENER REQUIREMENTS AT SIDE ENTRANCE LOCATION



Date _____

Designed _____

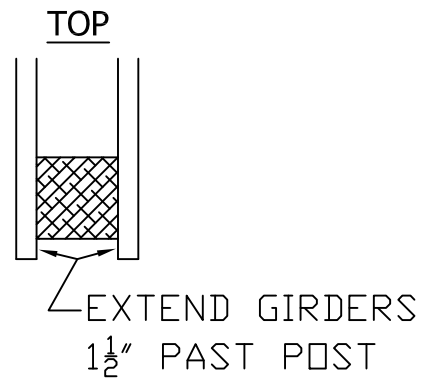
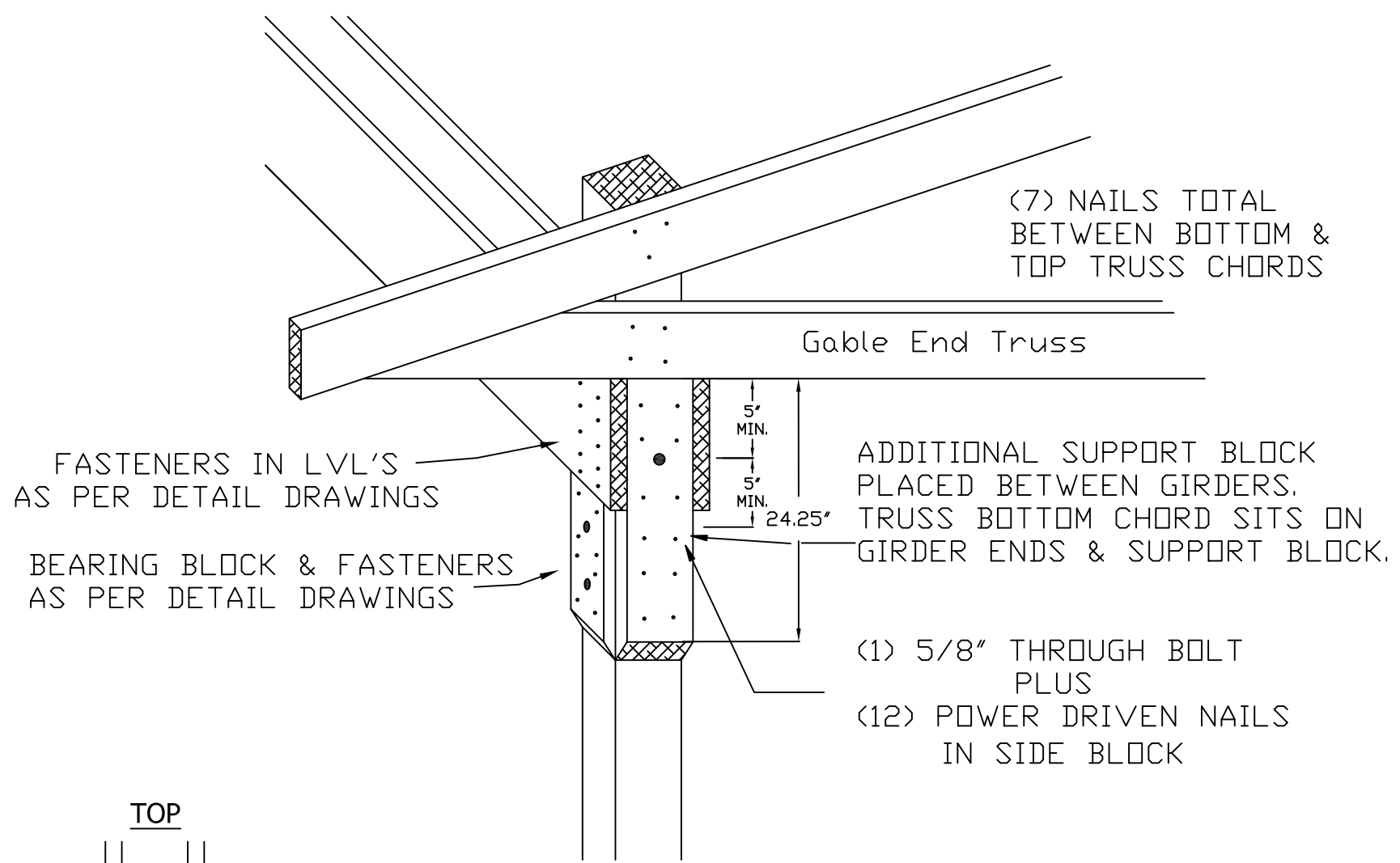
Drawn _____

Checked _____

Approved _____

OPENING DETAILS
ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA

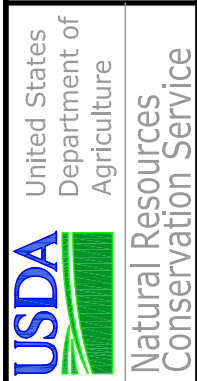
GIRDERS EXTENDED 1 1/2"
PAST END POST DETAIL



1. NAILS TO BE .131" X 3.25" LONG
2. BOLTS TO BE GALVANIZED OR STAINLESS STEEL. BOLT TO BE INSTALLED IN THE MIDDLE OF THE SUPPORT BLOCK.
3. SUPPORT BLOCK TO BE: SYP (SOUTHERN YELLOW PINE) OR DF (DOUGLAS FIR-LARCH).

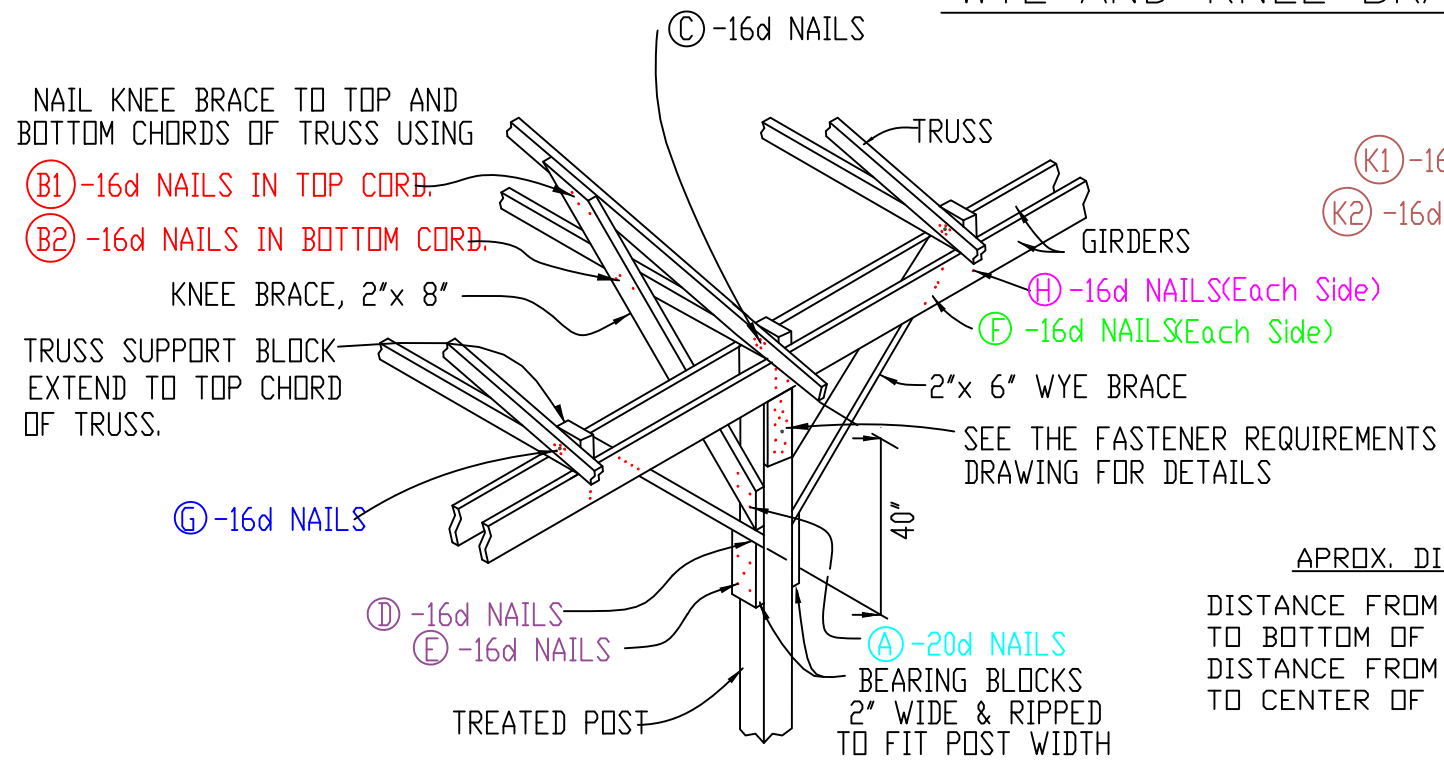
Date	_____
Designed	_____
Drawn	_____
Checked	_____
Approved	_____

END TRUSS ANCHORING DETAIL
ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA

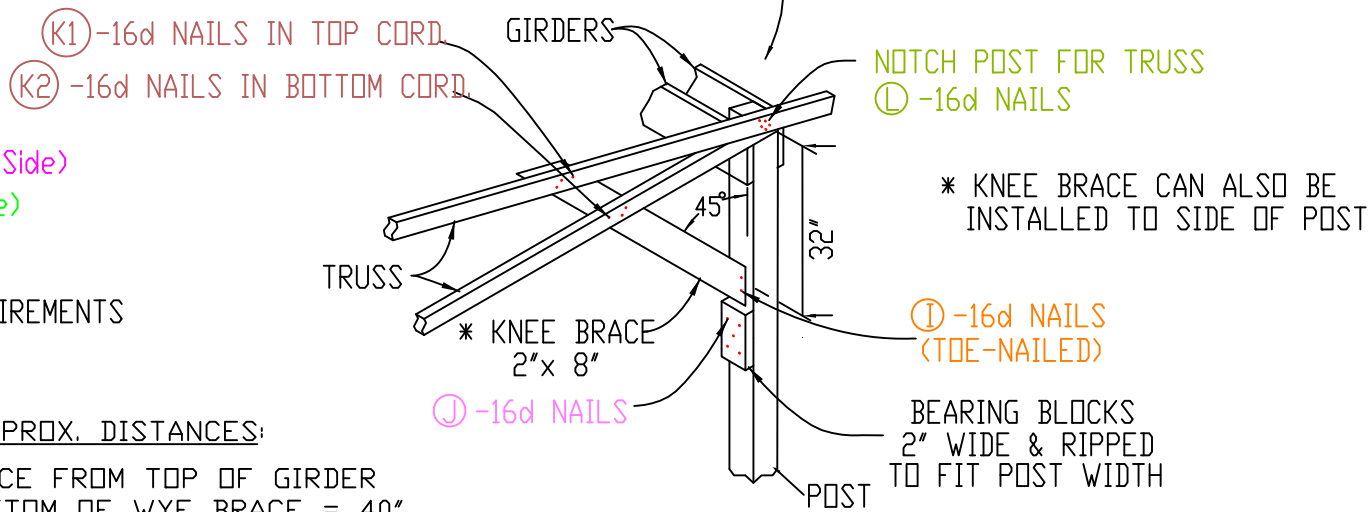


File No.	_____
Drawing No.	_____
Sheet	22 of 32

WYE AND KNEE BRACE DETAILS



GIRDER SUPPORT BLOCK IS REQUIRED BUT NOT SHOWN, FOR DRAWING CLARITY.



APPROX. DISTANCES:

DISTANCE FROM TOP OF GIRDER TO BOTTOM OF WYE BRACE = 40"
DISTANCE FROM TOP OF GIRDER TO CENTER OF KNEE BRACE = 32"

BRACING AT END OF BUILDING

TABLE 1

*NUMBER OF NAILS REQUIRED				
BASED ON THE "LENGTH" OF ROOF CONTRIBUTING TO THAT CONNECTION				
	JOINT	22.5' MAX (TRIBUTARY LENGTH)	27.5' MAX (TRIBUTARY LENGTH)	38' MAX (TRIBUTARY LENGTH)
Hand Driven 20d	A	6	8	9
Hand Driven 16d	B1	5	6	8
Hand Driven 16d	B2	5	6	8
Power Driven 16d	C	6	7	7
Power Driven 16d	D	2	3	4
Power Driven 16d	E	5	6	6
Power Driven 16d	F	4	5	5
Power Driven 16d	G	6	7	7
Power Driven 16d *See Note #3*	H	4	4	4
Power Driven 16d	I	2	3	3
Power Driven 16d	J	5	6	7
Hand Driven 16d	K1	5	6	8
Hand Driven 16d	K2	5	6	8
Power Driven 16d	L	6	7	7

BRACING DETAIL

NOTES:

1. Posts shall be notched to accommodate trusses. The notch shall be cut flush with the top of the girder so the trusses sit on the notch and on top of both girders equally. Only notch the post 1.5" for the truss. Notch the side of the post, not the center.
2. The truss support blocks at locations between posts can be notched sections of posts or 2x boards. Notches shall be cut and the block positioned in the same fashion as the notches in the posts (described above).
3. JOINT H; If two boards are used instead of a post section then each board shall have (4) nails per side. The boards shall also be nailed together with (6) nails. All nails for this connection can be Power Driven 16d. All blocks shall be either Southern Yellow Pine or Douglas Fir-Larch #2 or better.
4. Hurricane (Tie Down) Straps can also be used to anchor trusses to girders. There shall be a strap(s) installed to anchor the trusses to each girder. If this option is chosen, discuss with the design engineer in advance.
5. The wye and knee braces shall be installed at a 45 degree angle from the treated post. Install the wye braces after the trusses are set.
NO WYE BRACING IS REQUIRED ON THE ENCLOSED WALL SIDE.
6. Drill pilot holes as needed to prevent splitting. Nails in split holes do not count toward connection.
7. Nails in contact with pressure-treated wood shall be galvanized.

* THE 16d POWER DRIVEN NAILS ARE BASED ON 0.131 DIAMETER X 3.25" LONG

* THE 20d HAND DRIVEN NAILS ARE BASED ON 0.192 DIAMETER X 4" LONG

* THE 16d HAND DRIVEN NAILS ARE BASED ON 0.162 DIAMETER X 3.5" LONG

Date	1/2020
Designed	BTO STD DRAWING
Drawn	RGD
Checked	RGD
Approved	RGD

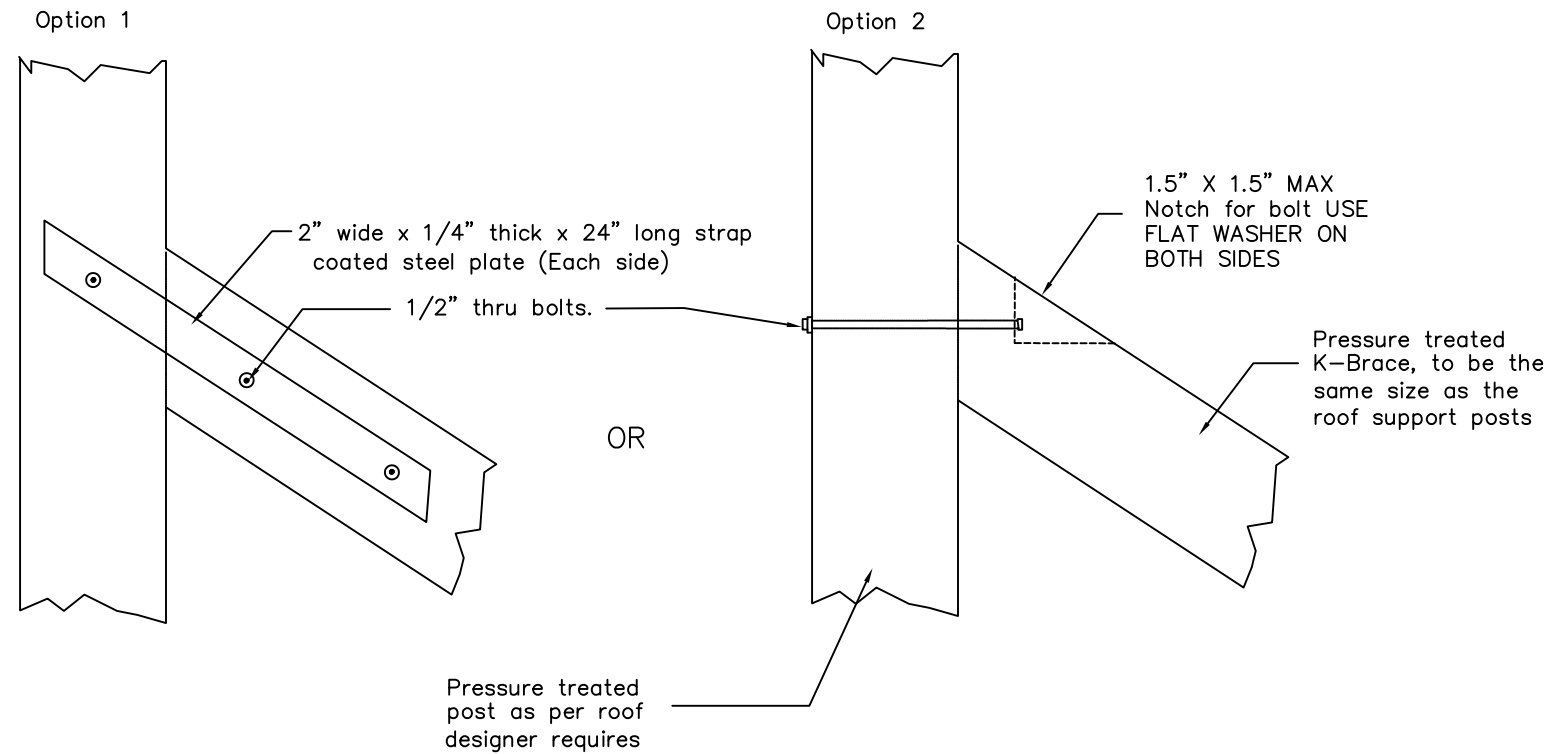
WYE & KNEE BRACE DETAILS
ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA



File No.
Drawing No.
Sheet 23 of 32

"K" BRACING DETAIL

(FOR POSTS ON TOP OF CONCRETE WALL)



TYPICAL "K" BRACE LOCATION

NOTES:

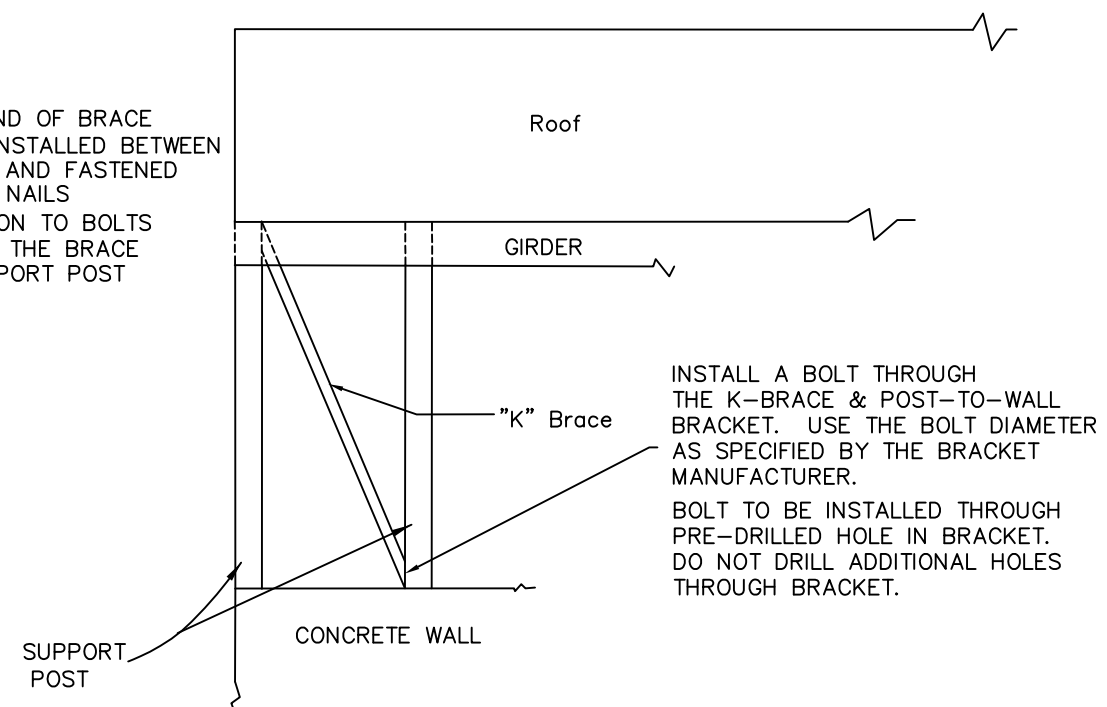
- 1). "K" bracing is needed when posts are anchored to top of walls.
- 2). Will need a "K" brace at the corners of the building.
A "K" brace should also be considered on both sides of openings.
- 3). Other "K" brace configurations may be used if approved by the designer.

** IF THE ENCLOSED SIDES ARE ENCLOSED WITH STEEL PANELS THEN "K" BRACES ARE NOT REQUIRED.
IF THE ENCLOSED SIDES ARE ENCLOSED WITH CURTAINS THEN "K" BRACES ARE REQUIRED.
IF ALL SIDES ARE LEFT OPEN THEN "K" BRACES ARE REQUIRED.

K-BRACE SHALL BE THE SAME SIZE AS THE SUPPORT POSTS. ORDER ENOUGH POSTS FOR K-BRACING.

"Not To Scale"

UPPER END OF BRACE CAN BE INSTALLED BETWEEN HEADERS AND FASTENED WITH 16d NAILS
IN ADDITION TO BOLTS THROUGH THE BRACE AND SUPPORT POST



K-BRACE DETAIL



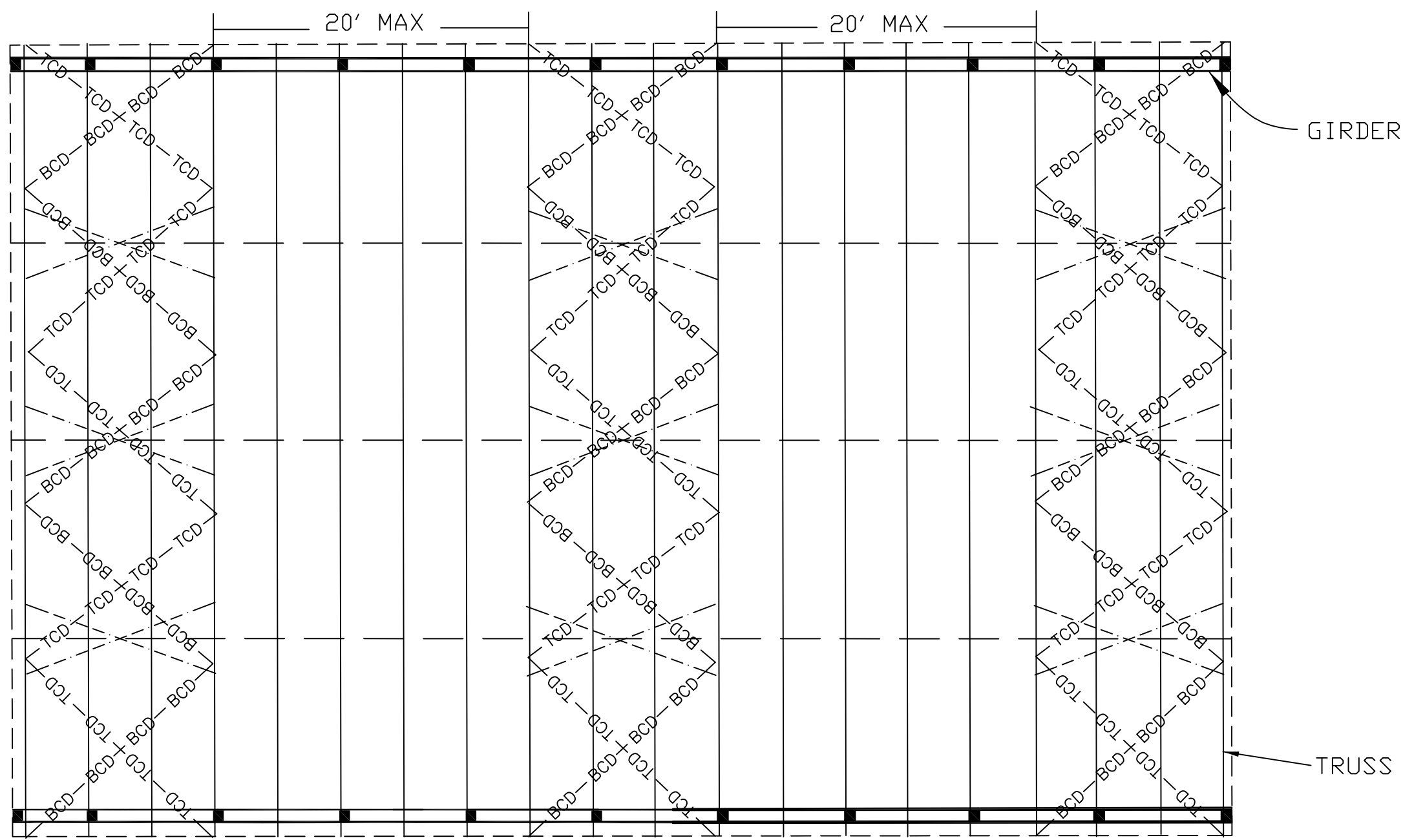
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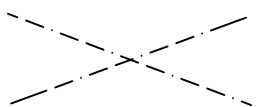
Drawing No.

Sheet 24 of 32

Designed: RCP
Drawn: RCP (REVISED)
Checked:
Approved by:

Date: 7/10
1/19



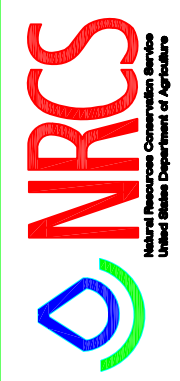
- — — CONTINUOUS LATERAL BRACING
AS PER TRUSS MFG. RECOMMENDATIONS
- TCD — TCD — TCD — TOP CHORD DIAGONAL BRACING
- BCD — BCD — BCD — BOTTOM CHORD DIAGONAL BRACING
-  WEB MEMBER CROSS BRACING

- NOTES:
1. CONTINUOUS LATERAL BRACING SHOWN IS FOR A VISUAL REPRESENTATION ONLY; CONTINUOUS LATERAL BRACING LOCATIONS & SPACING ARE REQUIRED BY THE TRUSS MFG & SHOWN ON THE TRUSS DESIGN DRAWING.
 2. ALL BRACING IS 2" X 4" GRADE MARKED LUMBER.
 3. ALL CONNECTIONS SHOULD BE MADE WITH 2 - 16d NAILS. 2-16d NAILS. NO BUTT JOINTS.

"DRAWING IS NOT TO SCALE"

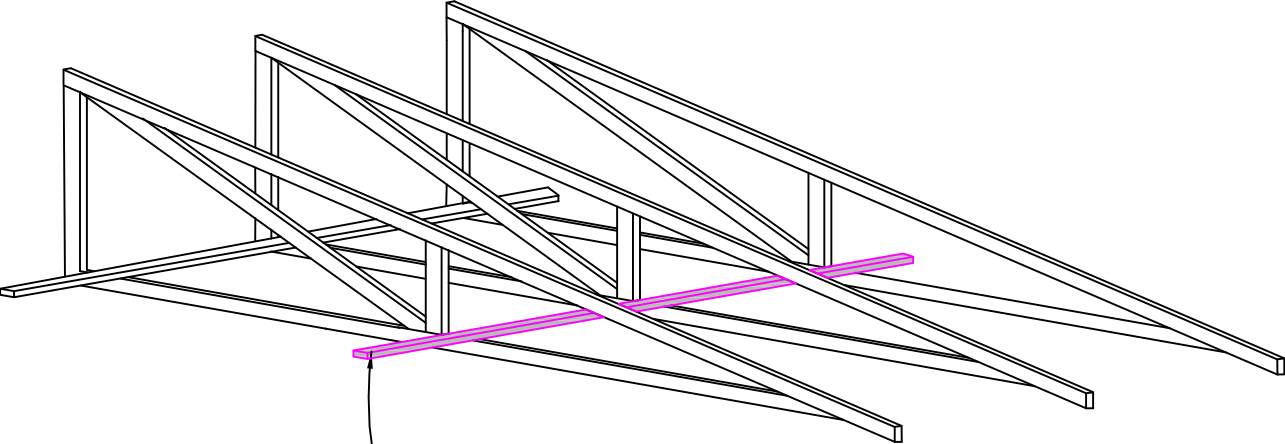
Date	7/10
Designed	RCD
Drawn	RCD
Checked	
Approved by	

ADDITIONAL BRACING REQUIREMENTS

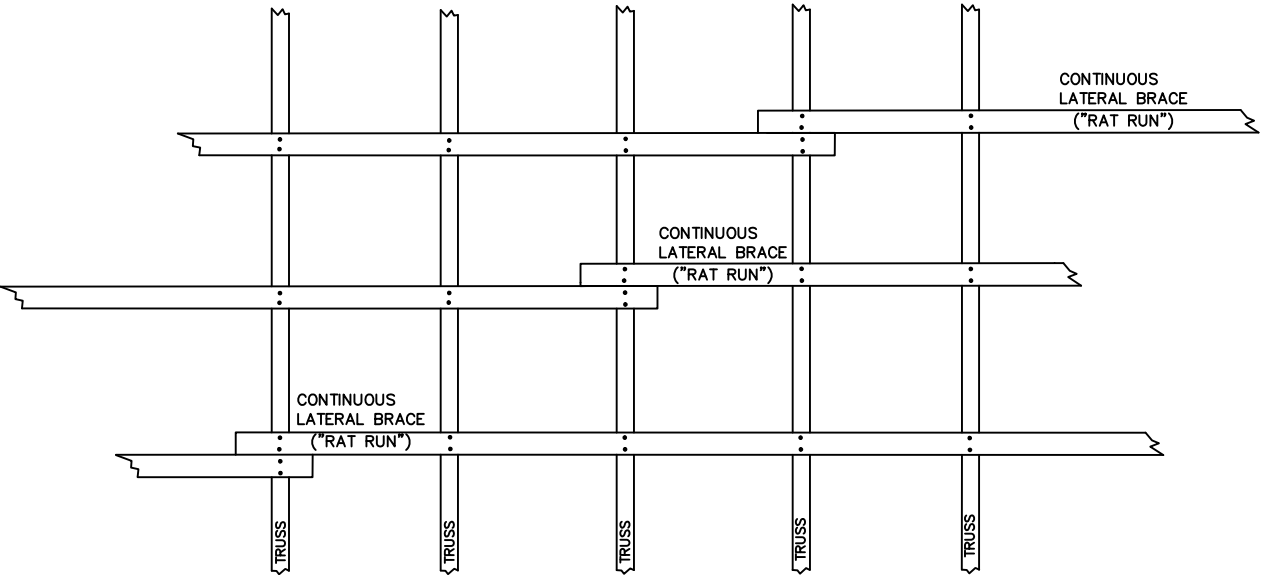


File No.	
Drawing No.	
Sheet	25 of 32

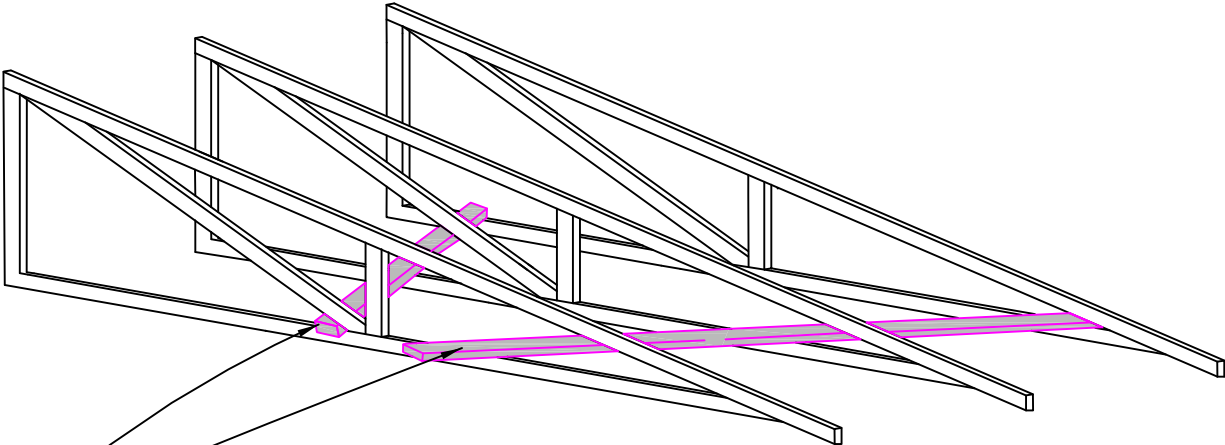
CORD AND DIAGONAL BRACING



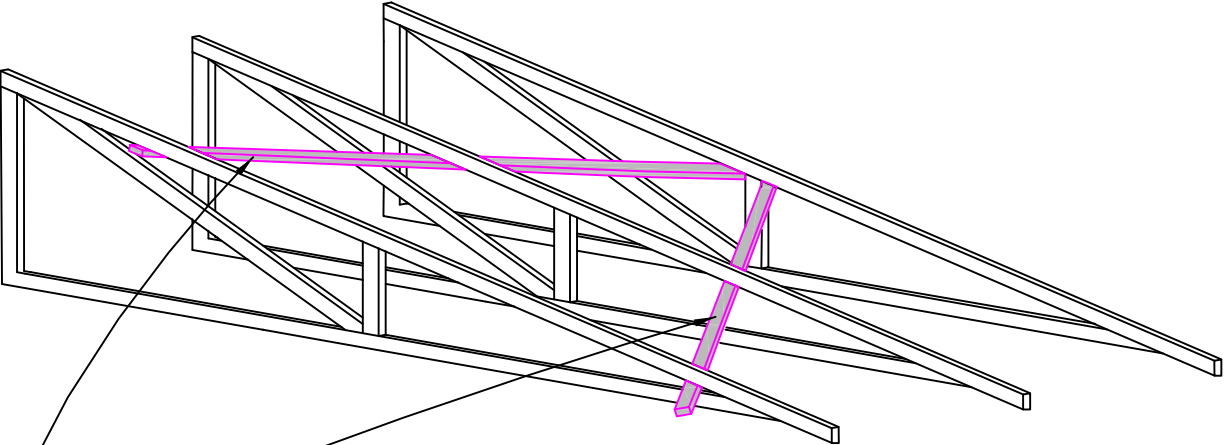
CONTINUOUS LATERAL BRACING ("RAT RUNS")
(2-16d NAILS @ EACH BRACE / TRUSS CONNECTION)



JOINTS IN CONTINUOUS LATERAL BRACES SHALL BE STAGGERED, SO THEY DO NOT LINE UP WITH THE NEXT TRUSS.
AT A JOINT, EACH BOARD SHALL EXTEND FULLY PAST THE TRUSS, TO ALLOW FOR A TWO NAIL CONNECTION.
THESE BRACES ARE AS PER TRUSS MFG. REQUIREMENTS, SHOWN ON THE TRUSS DESIGN.



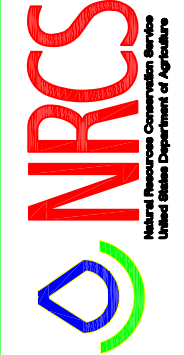
DIAGONAL BRACING ON TOP SIDE OF BOTTOM CHORD
AT LOCATIONS SHOWN IN DRAWINGS
(2-16d NAILS @ EACH BRACE TRUSS CONNECTION)



DIAGONAL BRACING ON BOTTOM SIDE OF TOP CHORD
AT LOCATIONS SHOWN IN DRAWINGS
(2-16d NAILS @ EACH BRACE TRUSS CONNECTION)

Date	_____
Designed	_____
Drawn	_____
Checked	_____
Approved by	_____

CORD AND DIAGONAL BRACING
ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA

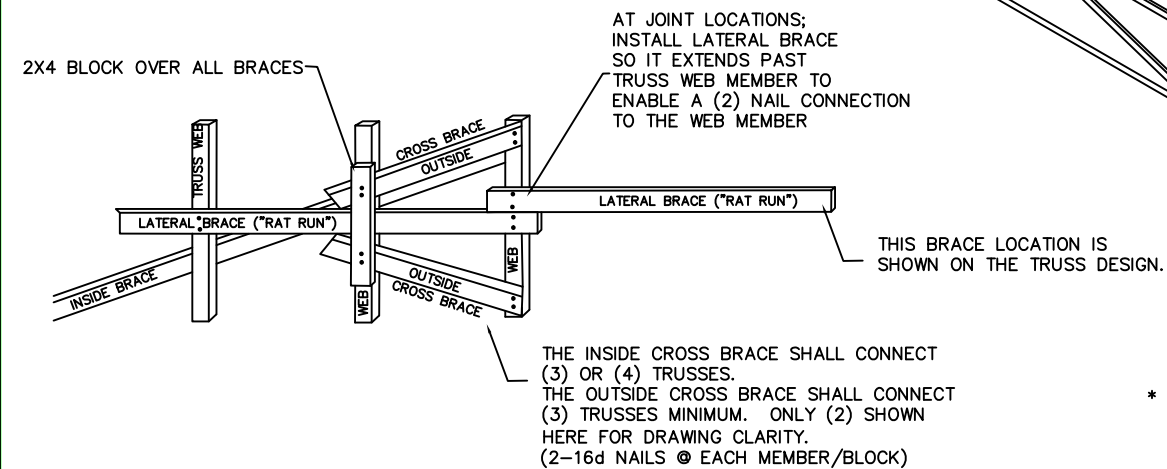


CROSS BRACING

TO BE INSTALLED AT INTERVALS NOT TO EXCEED 20'
ALONG CONTINUOUS LATERAL BRACING

CROSS BRACING IS REQUIRED ON TRUSS WEBS
THAT HAVE A CONTINUOUS LATERAL BRACE

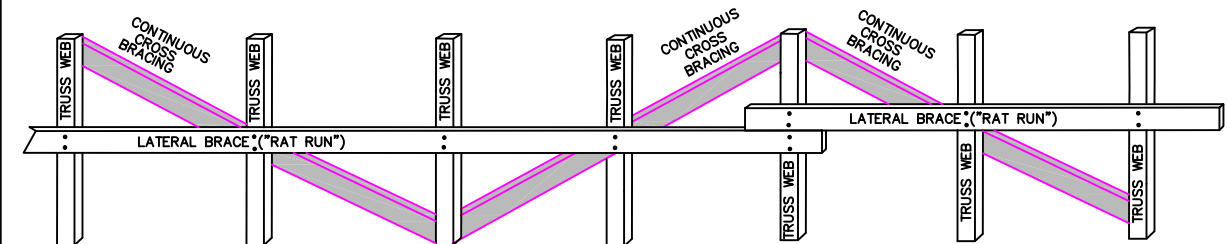
OPTION #1



* ALL CROSS BRACES SHALL BE
INSTALLED AT LESS THAN OR
EQUAL TO 45 DEGREE ANGLES

CROSS BRACING IS REQUIRED ON TRUSS WEBS
THAT HAVE A CONTINUOUS LATERAL BRACE

OPTION #3

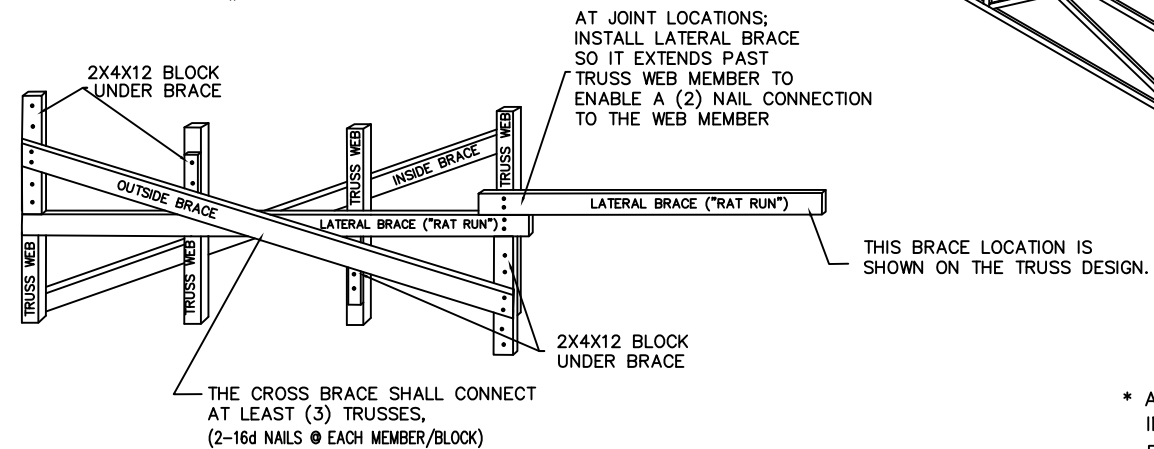


INSTALL "CONTINUOUS" CROSS BRACING
ON THE OPPOSITE SIDE OF THE TRUSS
WEB MEMBER AS THE LATERAL BRACE.
THE CROSS BRACING MUST RUN THE
ENTIRE LENGTH OF THE BUILDING
ON THOSE WEB MEMBERS WITH LATERAL
BRACING SPECIFIED IN THE TRUSS DESIGN
AND AT OTHER LOCATIONS DICTATED BY
THE BUILDING DESIGN ENGINEER.
(2-16d NAILS @ EACH MEMBER)

* ALL CROSS BRACES SHALL BE
INSTALLED AT LESS THAN OR
EQUAL TO 45 DEGREE ANGLES

CROSS BRACING IS REQUIRED ON TRUSS WEBS
THAT HAVE A CONTINUOUS LATERAL BRACE

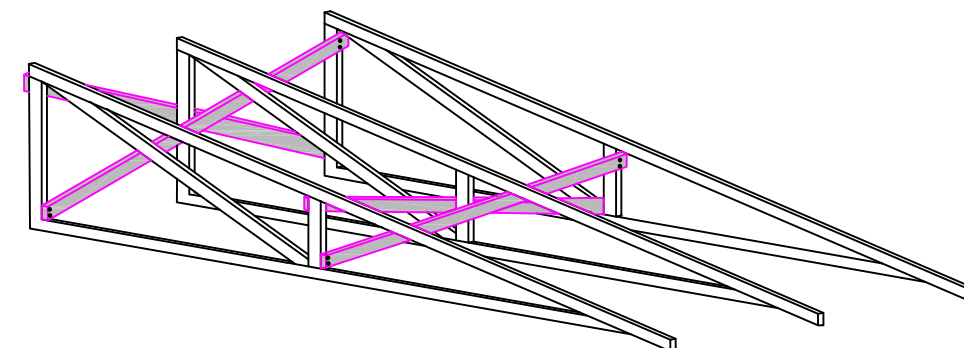
OPTION #2



* ALL CROSS BRACES SHALL BE
INSTALLED AT LESS THAN OR
EQUAL TO 45 DEGREE ANGLES

CROSS BRACING IS REQUIRED ON TRUSS WEBS
THAT DO NOT HAVE A CONTINUOUS LATERAL BRACE;
AT LOCATIONS SHOWN IN THE DRAWINGS.

OPTION #4



CROSS BRACING ON BOTH SIDES OF TRUSS WEBS
AT LOCATIONS SHOWN WHERE THERE IS NOT A
LATERAL BRACE ("RAT RUN") LOCATED ON A TRUSS
WEB MEMBER, DICTATED BY THE BUILDING DESIGN ENGINEER.
THE CROSS BRACE SHALL CONNECT
AT LEAST (3) TRUSSES,
(2-16d NAILS @ EACH MEMBER/BLOCK)

* ALL CROSS BRACES SHALL BE
INSTALLED AT LESS THAN OR
EQUAL TO 45 DEGREE ANGLES

Date _____
Designed _____
Drawn _____
Checked _____
Approved by _____

CROSS BRACING
ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA



File No. _____
Drawing No. _____
Sheet: 27 of 32

PERIMETER DRAIN
4" CPT (PERFORATED)
INSTALL ON .5% GRADE
RECOMMENDED TO SPLIT
THE SLOPE AT MIDPOINT
OF BUILDING

6" PVC SCH 40
MEETING ASTM D-1785
2% MIN GRADE

6" PVC SCH 40
MEETING ASTM D-1785
1% MIN GRADE

4" PVC SCH 40
MEETING ASTM D-1785
1% MIN GRADE
PERIMETER DRAIN

6" PVC SCH 40
MEETING ASTM D-1785
1% MIN GRADE
FROM HERE TO ROCK OUTLET

PERIMETER DRAIN
4" CPT (PERFORATED)

GUTTER SPLIT

GUTTER SPLIT

6" PVC SCH 40
MEETING ASTM D-1785
6% MIN GRADE

6" PVC SCH 40
MEETING ASTM D-1785
6% MIN GRADE

4" PVC SCH 40
MEETING ASTM D-1785
1% MIN GRADE
PERIMETER DRAIN

6" PVC SCH 40
MEETING ASTM D-1785
2% MIN GRADE

ROCK APRON REQUIRED
AT ALL OUTLETS.
APRONS TO BE R4 ROCK;
12" PLACEMENT THICKNESS
BEDDED WITH 6" OF
AASHTO #57 STONE.
APRON TO BE
4' WIDE X 6' LONG.

PERIMETER DRAIN & ROOF RUNOFF PIPES
CAN NOT BE TIED TOGETHER BUT CAN
BE INSTALLED IN THE SAME DITCH
(MUST OUTLET SEPARATELY INTO ROCK OUTLET)

A ROCK APRON IS REQUIRED AT ALL OUTLET LOCATIONS:
ROCK APRON TO BE 4' WIDE X 6' LONG.
APRON TO BE CONSTRUCTED
OF R-4 RIPRAP (MAX DIA = 12", AVG DIA = 6").
RIPRAP TO BE PLACED A MIN. OF 12" THICK.
6" OF AASHTO #57 BEDDING STONE IS REQUIRED UNDER
THE R-4 RIPRAP.

NOT TO SCALE

DATE	#	NZB	#	DESIGNED	DRAWN	CHECKED	APPROVED

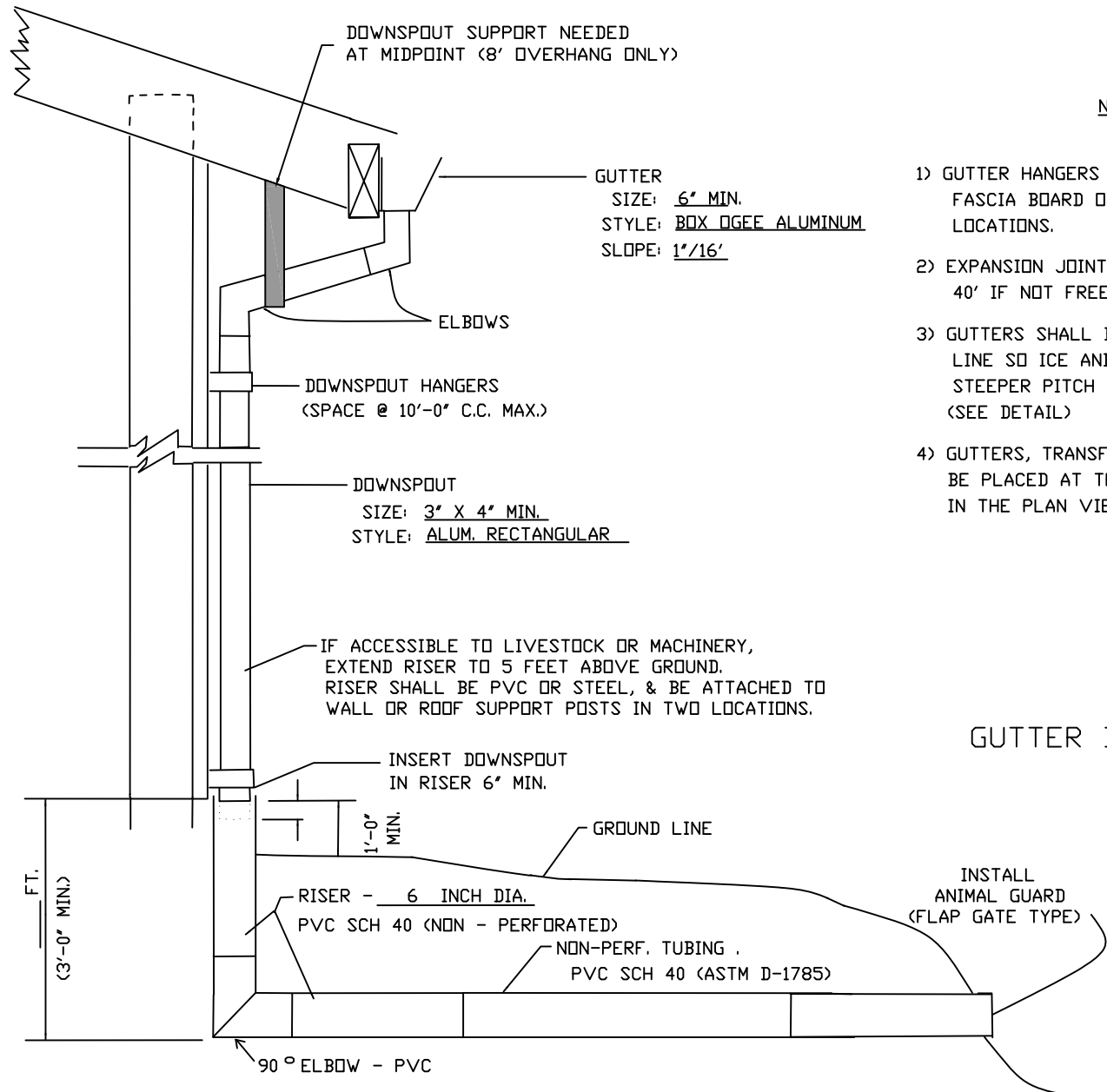
ALDRICH FARM
MANURE STORAGE

PIPE INFORMATION AND OUTLET PROTECTION

SUSQUEHANNA COUNTY, PA



FILE NO.
DRAWING NO.
SHEET 28 OF 32

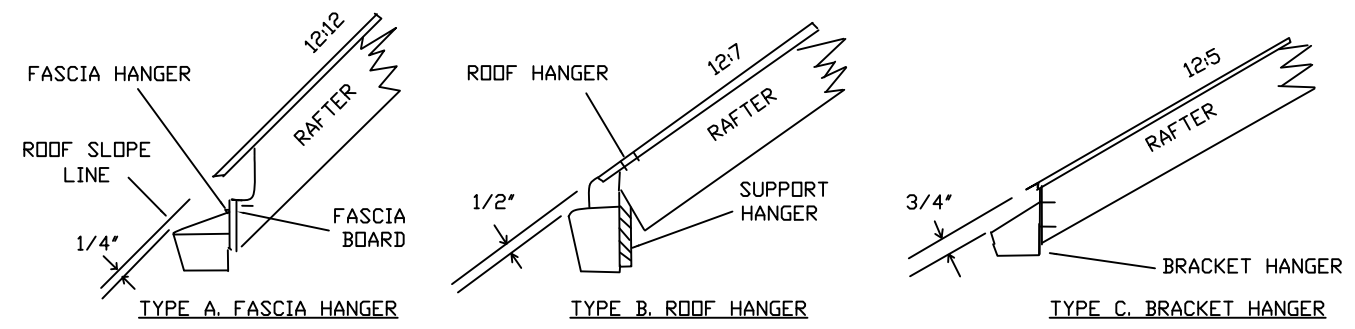
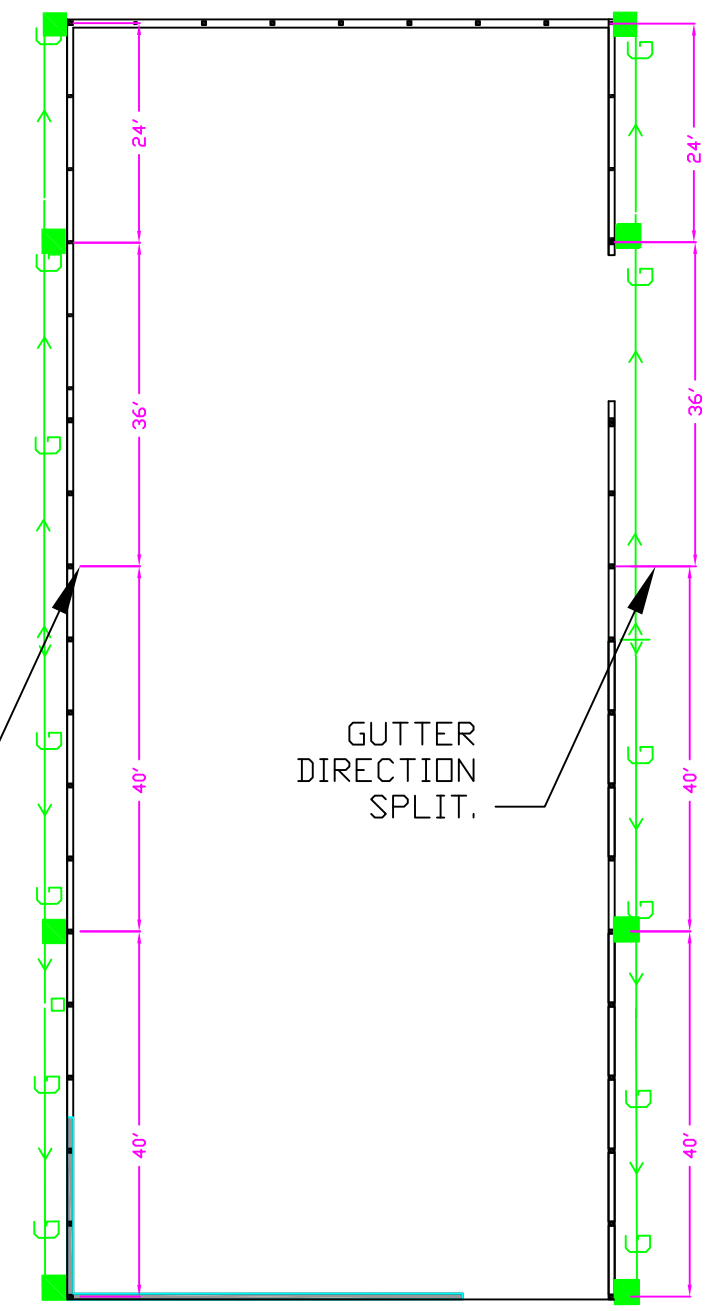


NOTES

- 1) GUTTER HANGERS SHALL BE NAILED TO FASCIA BOARD OR ROOF SHEATHING AT RAFTER LOCATIONS.
- 2) EXPANSION JOINTS SHALL BE INSTALLED EVERY 40' IF NOT FREE-FLOATING.
- 3) GUTTERS SHALL BE PLACED BELOW ROOF SLOPE LINE SO ICE AND SNOW CAN SLIDE CLEAR. STEEPER PITCH REQUIRES LESS CLEARANCE. (SEE DETAIL)
- 4) GUTTERS, TRANSFER LINES, AND OUTLETS SHALL BE PLACED AT THE MINIMUM SLOPES INDICATED IN THE PLAN VIEW.

GUTTER DIRECTION SPLIT.

GUTTER DIRECTION SPLIT.

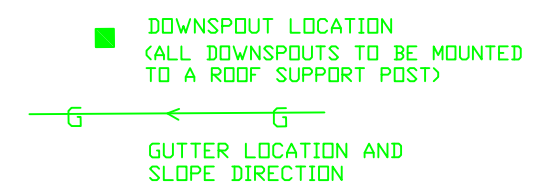


GUTTER HANGING DETAILS

(Clearances shown are guides for typical roof slopes, regardless of hanger type.)

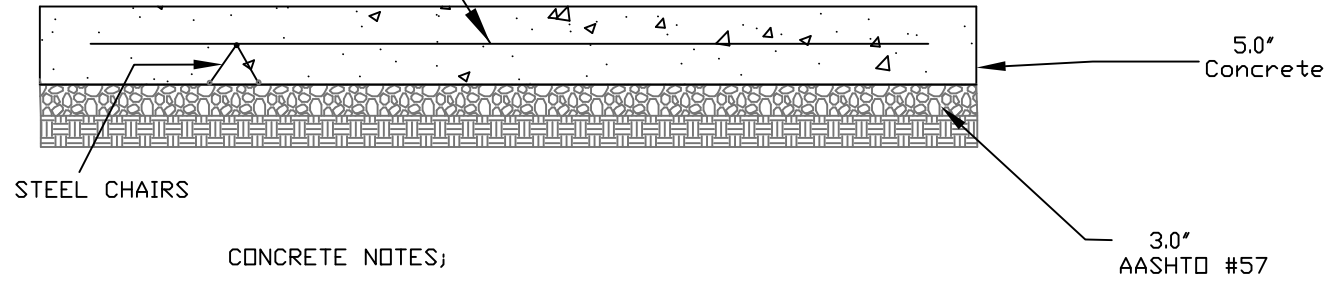
PLAN VIEW

NOT TO SCALE



REINFORCED CONCRETE DETAIL

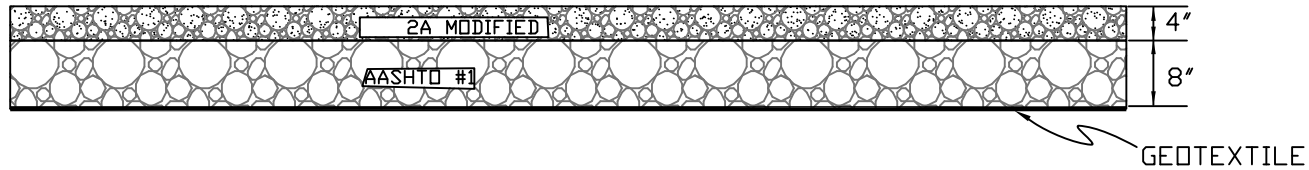
6" X 6"-W2.9 X W2.9
(6-GAUGE) WELDED
WIRE FABRIC, PLACED
2" FROM TOP OF SLAB.



CONCRETE NOTES;

1. CONCRETE SHALL BE 4000 PSI.
2. STEEL SHALL BE GRADE 60.

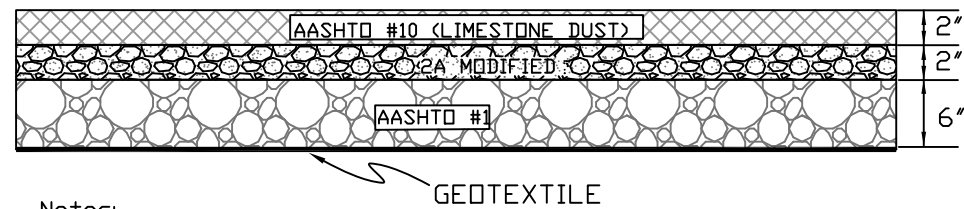
Access Road Detail (Typical)



Notes:

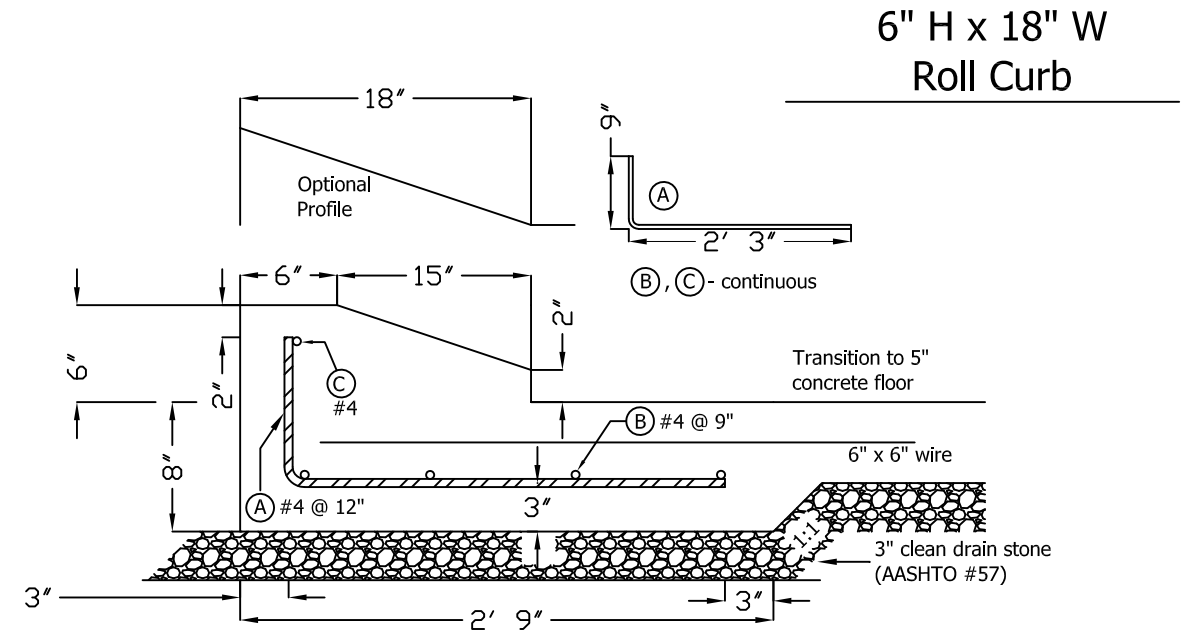
1. Geotextile shall be Class 2, Type A. Non-woven. Placement shall provide a one-foot (1') overlap between adjacent panels.
2. Stone depth shall be measured after compaction.
3. All stone shall be compacted with a smooth drum, vibratory roller.

Walkway Detail



Notes:

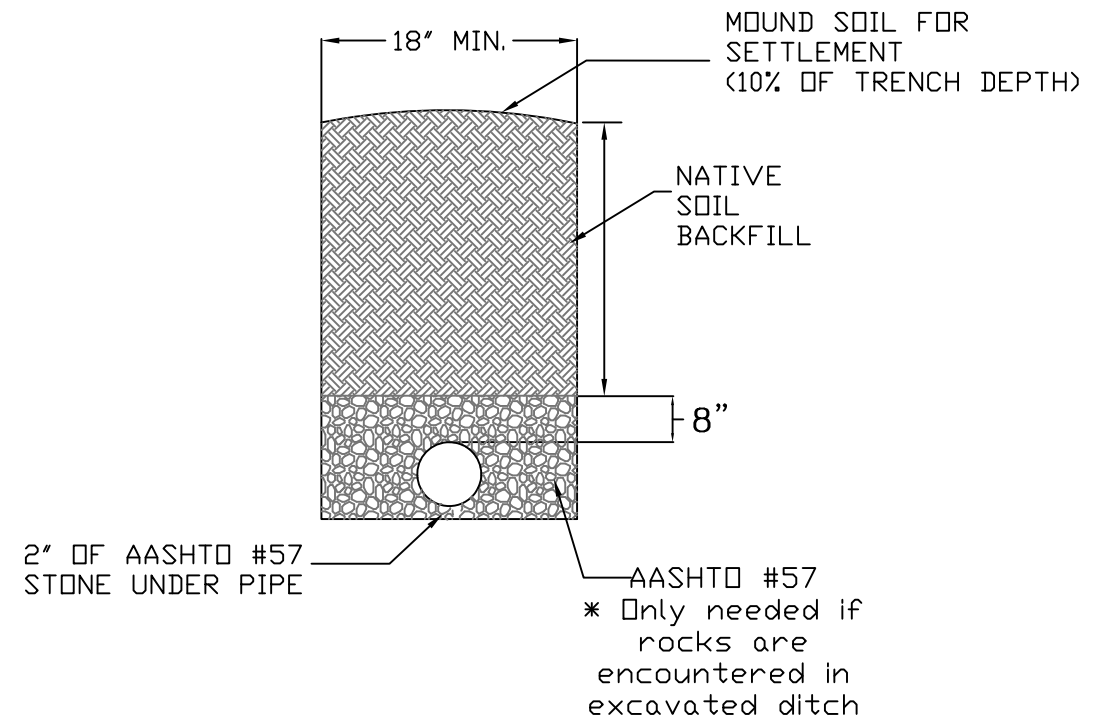
1. Geotextile shall be Class 2, Type A OR B. Non-woven Placement shall provide a one-foot (1') overlap between adjacent panels.
2. Stone depth shall be measured after compaction.
3. All stone shall be compacted with a smooth drum, vibratory roller.
4. Surface may be crowned or pitched at 1% in the direction of the existing surface slope.



NOTES:

- use all #4 reinforcing steel, Grade 60
- all 4,000 psi concrete
- minimum 15" splice on all #4 bars
- support footer steel on 3" chairs
- install during floor/footer concrete placement

PIPE INSTALLATION DETAIL



DETAILS
ALDRICH FARM
SUSQUEHANNA COUNTY, PENNSYLVANIA



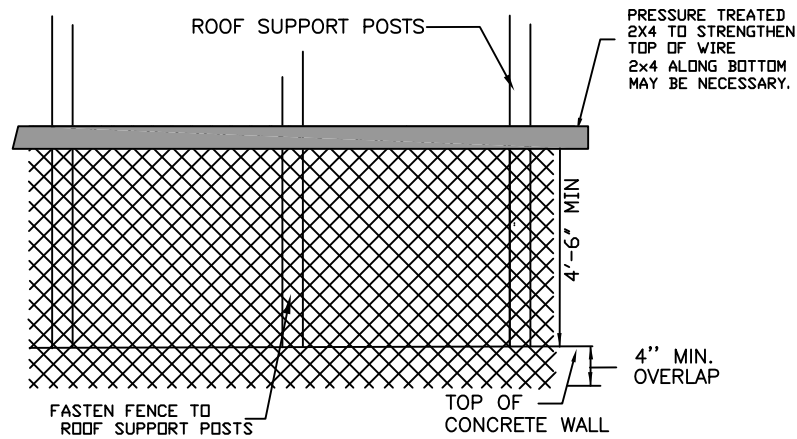
United States
Department of
Agriculture

Natural Resources
Conservation Service

File No.

Drawing No.

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* FENCE ONLY INTENDED TO EXCLUDE HUMANS FROM FALLING OFF OF WALL.

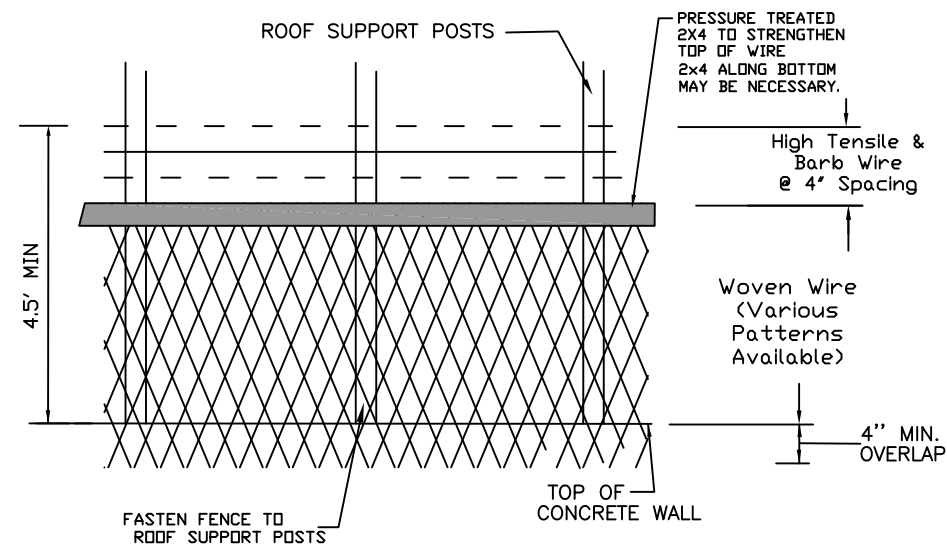
SAFETY FENCE OPTION #1

CONSTRUCTION NOTES

1. A TOP & BOTTOM RAIL MAY BE REQUIRED TO TIGHTEN FENCE ADEQUATELY.
2. ATTACH FABRIC TO OUTSIDE FACE OF ROOF SUPPORT POSTS & CONCRETE WALLS.
3. ALL WIRE FABRIC TO BE 9 GAUGE GALV. STEEL WITH ZINC COATING (ASTM A392 CLASS II) (2oz. per SF)
WIRE FABRIC TO BE 2" WOVEN MESH; MIN. TENSILE STRENGTH = 1290 LBS.

FENCE TENSION

FOR ALL OPTIONS:
FENCE MUST BE TIGHT ENOUGH SO THAT IT CAN NOT BE PULLED AWAY FROM THE SUPPORTS MORE THAN 4"



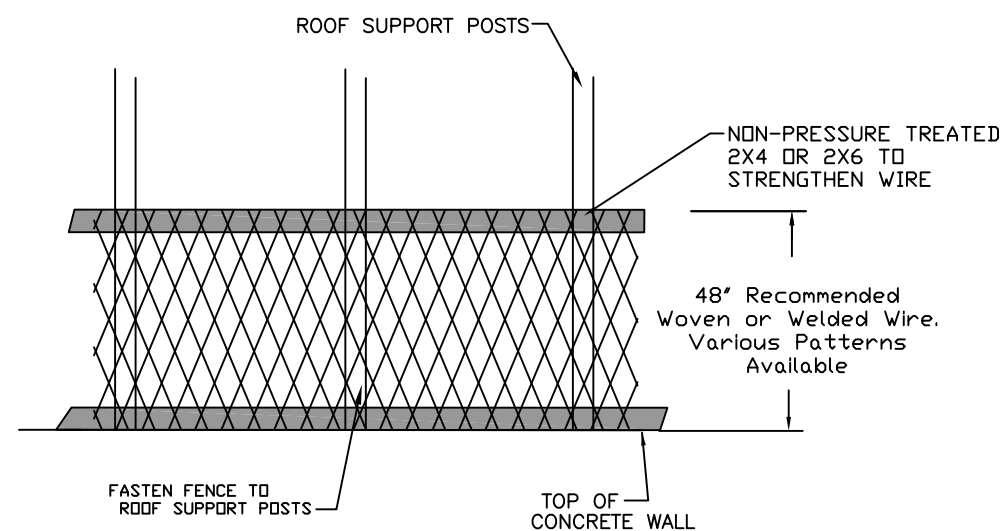
* FENCE ONLY INTENDED TO EXCLUDE HUMANS FROM FALLING OFF OF WALL.

SAFETY FENCE OPTION #2

CONSTRUCTION NOTES

WOVEN WIRE, 12.5 GAUGE MIN, AND GALVANIZED OPENINGS NOT TO EXCEED 4"x4".
(WELDED WIRE NOT ALLOWED)
PLUS
(1) BARBED WIRE AND (2) HIGH TENSILE WIRES @ 4" SPACING TO ACHIEVE MIN. FENCE HEIGHT.

1. A TOP & BOTTOM RAIL MAY BE REQUIRED TO TIGHTEN FENCE ADEQUATELY.
2. ATTACH FABRIC TO OUTSIDE FACE OF ROOF SUPPORT POSTS & CONCRETE WALLS.



OPTION FOR CATTLE FENCE ALONG THE INSIDE OF THE STORAGE WALLS

TO BE MOUNTED TO INSIDE OF ROOF SUPPORT POSTS

* THIS FENCE IS NOT REQUIRED BUT RECOMMENDED FOR KEEPING CATTLE AWAY FROM STEEL PANELS ON ENCLOSED SIDES & FROM THE PRESSURE TREATED WOOD USED ON THE STRUCTURE. FENCE IS RECOMMENDED WHEREEVER CATTLE WILL BE ON TOP OF MANURE STACK, LIKE IN THE STORAGE FACILITY.



DATE	#	#
NZB	NZB	NZB
DESIGNED	DRAWN	CHECKED
APPROVED		

ALDRICH FARM
MANURE STORAGE

FENCE OPTIONS FOR ABOVE WALLS
SUSQUEHANNA COUNTY, PA

United States
Department of
Agriculture
USDA
Natural Resources
Conservation Service

FILE NO.

DRAWING NO.

SHEET 31 OF 32

PA-038 Concrete curbs
Standard Drawings Folder

