

To: Cumberland Planning Board
From: Carla Nixon, Town Planner
Date: May 8, 2023
Subject: Planning Board Site Plan Review: Manure Barn at Springbrook Farm

1. Request/Project Description:

The Applicant is Jeffrey Storey of 168 Greely Road. The Applicant is requesting Planning Board Site Plan approval of a plan that consists of the construction of a 58' x 90' (5220 sf) manure barn on land owned by Kay Fowler, owner of Springbrook Farm. This barn will replace an older barn that will be demolished.

The parcel is located at 168 Greely Road, as shown on Tax Assessor Map R04, Lot 32 in the Rural Residential 1 (RR1) zoning district. The use is classified as Agriculture.

Chapter 229 – SITE PLAN REVIEW

SECTION 10: APPROVAL STANDARDS AND CRITERIA

The following criteria shall be used by the Planning Board in reviewing applications for site plan review and shall serve as minimum requirements for approval of the application. The application shall be approved unless the Planning Board determines that the applicant has failed to meet one or more of these standards. In all instances, the burden of proof shall be on the applicant who must produce evidence sufficient to warrant a finding that all applicable criteria have been met.

10.1 Utilization of the Site

Utilization of the Site - The plan for the development, including buildings, lots, and support facilities, must reflect the natural capabilities of the site to support development. Environmentally sensitive areas, including but not limited to, wetlands, steep slopes, floodplains, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, and sand and gravel aquifers must be maintained and preserved to the maximum extent. The development must include appropriate measures for protecting these resources, including but not limited to, modification of the proposed design of the site, timing of construction, and limiting the extent of excavation.

The entire property is currently being utilized for agriculture-related activities. The construction of a new 5200 sf manure barn will replace a similarly sized older barn that will be removed. There is minimal increase in impervious surface and no environmentally sensitive areas will be impacted.

Based on the above findings of fact, the Planning Board finds the standards of this section have been met.

10.2 Traffic, Circulation and Parking

10.2.1 Traffic Access and Parking

Vehicular access to and from the development must be safe and convenient.

10.2.1.1 Any driveway or proposed street must be designed so as to provide the minimum sight distance according to the Maine Department of Transportation standards, to the maximum extent possible.

10.2.1.2 Points of access and egress must be located to avoid hazardous conflicts with existing turning movements and traffic flows.

10.2.1.3 The grade of any proposed drive or street must be not more than +3% for a minimum of two (2) car lengths, or forty (40) feet, from the intersection.

10.2.1.4 The intersection of any access/egress drive or proposed street must function: (a) at a Level of Service D, or better, following development if the project will generate one thousand (1,000) or more vehicle trips per twenty-four (24) hour period; or (b) at a level which will allow safe access into and out of the project if less than one thousand (1,000) trips are generated.

10.2.1.5 Where a lot has frontage on two (2) or more streets, the primary access to and egress from the lot must be provided from the street where there is less potential for traffic congestion and for traffic and pedestrians hazards. Access from other streets may be allowed if it is safe and does not promote short cutting through the site.

10.2.1.6 Where it is necessary to safeguard against hazards to traffic and pedestrians and/ or to avoid traffic congestion, the applicant shall be responsible for providing turning lanes, traffic directional islands, and traffic controls within public streets.

10.2.1.7 Access ways must be designed and have sufficient capacity to avoid queuing of entering vehicles on any public street.

10.2.1.8 The following criteria must be used to limit the number of driveways serving a proposed project:

- a. No use which generates less than one hundred (1) vehicle trips per day shall have more than one (1) two-way driveway onto a single roadway. Such driveway must be no greater than thirty (30) feet wide.
- b. No use which generates one hundred (1) or more vehicle trips per day shall have more than two (2) points of entry from and two (2) points of egress to a single roadway. The

combined width of all access ways must not exceed sixty (60) feet.

10.2.2 Access way Location and Spacing

Access ways must meet the following standards:

10.2.2.1 Private entrance / exits must be located at least fifty (50) feet from the closest un-signalized intersection and one hundred fifty (150) feet from the closest signalized intersection, as measured from the point of tangency for the corner to the point of tangency for the access way. This requirement may be reduced if the shape of the site does not allow conformance with this standard.

10.2.2.2 Private access ways in or out of a development must be separated by a minimum of seventy-five (75) feet where possible.

10.2.3 Internal Vehicular Circulation

The layout of the site must provide for the safe movement of passenger, service, and emergency vehicles through the site.

10.2.3.1 Projects that will be served by delivery vehicles must provide a clear route for such vehicles with appropriate geometric design to allow turning and backing.

10.2.3.2 Clear routes of access must be provided and maintained for emergency vehicles to and around buildings and must be posted with appropriate signage (fire lane - no parking).

10.2.3.3 The layout and design of parking areas must provide for safe and convenient circulation of vehicles throughout the lot.

10.2.3.4 All roadways must be designed to harmonize with the topographic and natural features of the site insofar as practical by minimizing filling, grading, excavation, or other similar activities which result in unstable soil conditions and soil erosion, by fitting the development to the natural contour of the land and avoiding substantial areas of excessive grade and tree removal, and by retaining existing vegetation during construction. The road network must provide for vehicular, pedestrian, and cyclist safety, all season emergency access, snow storage, and delivery and collection services.

10.2.4 Parking Layout and Design

Off street parking must conform to the following standards:

10.2.4.1 Parking areas with more than two (2) parking spaces must be arranged so that it is not necessary for vehicles to back into the street.

10.2.4.2 All parking spaces, access drives, and impervious surfaces must be located at least fifteen (15) feet from any side or rear lot line, except where standards for buffer yards require a greater distance. No parking spaces or asphalt type surface shall be located within fifteen (15) feet of the front property line. Parking lots on adjoining lots may be connected by accessways not exceeding twenty-four (24) feet in width.

10.2.4.3 Parking stalls and aisle layout must conform to the following standards.

Parking Angle	Stall Width	Skew Width	Stall Depth	Aisle Width
90°	9'-0"		18'-0"	24'-0" 2-way
60°	8'-6"	10'-6"	18'-0"	16'-0" 1-way
45°	8'-6"	12'-9"	17'-6"	12'-0" 1-way
30°	8'-6"	17'-0"	17'-0"	12'-0" 1 way

10.2.4.4 In lots utilizing diagonal parking, the direction of proper traffic flow must be indicated by signs, pavement markings or other permanent indications and maintained as necessary.

10.2.4.5 Parking areas must be designed to permit each motor vehicle to proceed to and from the parking space provided for it without requiring the moving of any other motor vehicles.

10.2.4.6 Provisions must be made to restrict the "overhang" of parked vehicles when it might restrict traffic flow on adjacent through roads, restrict pedestrian or bicycle movement on adjacent walkways, or damage landscape materials.

The existing entrance from Greely Road will be used. No new parking is required or proposed.

Based on the above findings of fact, the Planning Board finds the standards of this section have been met.

10.2.5 Building and Parking Placement

10.2.5.1 The site design should avoid creating a building surrounded by a parking lot. Parking should be to the side and preferably in the back. In rural, uncongested areas buildings should be set well back from the road so as to conform to the rural character of the area. If the parking is in front, a generous, landscaped buffer between road and parking lot is to be provided. Unused areas should be kept natural, as field, forest, wetland, etc.

10.2.5.2 Where two or more buildings are proposed, the buildings should be grouped and linked with sidewalks; tree planting should be used to provide shade and break up the scale of the site. Parking areas should be separated from the building by a minimum of five (5) to ten (10) feet.

Plantings should be provided along the building edge, particularly where building facades consist of long or unbroken walls.

10.2.6 Pedestrian Circulation

The site plan must provide for a system of pedestrian ways within the development appropriate to the type and scale of development. This system must connect the major building entrances/ exits with parking areas and with existing sidewalks, if they exist or are planned in the vicinity of the project. The pedestrian network may be located either in the street right-of-way or outside of the right-of-way in open space or recreation areas. The system must be designed to link the project with residential, recreational, and commercial facilities, schools, bus stops, and existing sidewalks in the neighborhood or, when appropriate, to connect the amenities such as parks or open space on or adjacent to the site.

There will be no pedestrian traffic related to the new barn. The existing entrance from Greely Road and on-site parking will be used. Due to the use of the building, there is no need for pedestrian ways.

Based on the above findings of fact, the Planning Board finds the standards of this section have been met.

10.3 Stormwater Management and Erosion Control

10.3.1 Stormwater Management

Adequate provisions must be made for the collection and disposal of all stormwater that runs off proposed streets, parking areas, roofs, and other surfaces, through a stormwater drainage system and maintenance plan, which must not have adverse impacts on abutting or downstream properties.

10.3.1.1 To the extent possible, the plan must retain stormwater on the site using the natural features of the site.

10.3.1.2 Unless the discharge is directly to the ocean or major river segment, stormwater runoff systems must detain or retain water such that the rate of flow from the site after development does not exceed the predevelopment rate.

10.3.1.3 The applicant must demonstrate that on - and off-site downstream channel or system capacity is sufficient to carry the flow without adverse effects, including but not limited to, flooding and erosion of shoreland areas, or that he / she will be responsible for whatever improvements are needed to provide the required increase in capacity and / or mitigation.

10.3.1.4 All natural drainage ways must be preserved at their natural gradients and must not be filled or converted to a closed system unless approved as part of the site plan review.

10.3.1.5 The design of the stormwater drainage system must provide for the disposal of stormwater without damage to streets, adjacent properties, downstream properties, soils, and vegetation.

10.3.1.6 The design of the storm drainage systems must be fully cognizant of upstream runoff which must pass over or through the site to be developed and provide for this movement.

10.3.1.7 The biological and chemical properties of the receiving waters must not be degraded by the stormwater runoff from the development site. The use of oil and grease traps in manholes, the use of on-site vegetated waterways, and vegetated buffer strips along waterways and drainage swales, and the reduction in use of deicing salts and fertilizers may be required, especially where the development stormwater discharges into a gravel aquifer area or other water supply source, or a great pond.

10.3.2 Erosion Control

10.3.2.1 All building, site, and roadway designs and layouts must harmonize with existing topography and conserve desirable natural surroundings to the fullest extent possible, such that filling, excavation and earth moving activity must be kept to a minimum. Parking lots on sloped sites must be terraced to avoid undue cut and fill, and / or the need for retaining walls. Natural vegetation must be preserved and protected wherever possible.

10.3.2.2 Soil erosion and sedimentation of watercourses and water bodies must be minimized by an active program meeting the requirements of the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices, dated March 1991, and as amended from time to time.

The 5,200 square foot barn will replace a similarly sized existing barn. Best Management Practices erosion and sedimentation control measures will be utilized.

Based on the above findings of fact, the Planning Board finds the standards of this section have been met.

10.4 Water, Sewer, Utilities and Fire Protection

10.4.1 Water Supply Provisions

The development must be provided with a system of water supply that provides each use with an adequate supply of water. If the project is to be served by a public water supply, the applicant must secure and submit

a written statement from the supplier that the proposed water supply system conforms with its design and construction standards, will not result in an undue burden on the source of distribution system, and will be installed in a manner adequate to provide needed domestic and fire protection flows.

10.4.2 Sewage Disposal Provisions

The development must be provided with a method of disposing of sewage which is in compliance with the State Plumbing Code. If provisions are proposed for on-site waste disposal, all such systems must conform to the Subsurface Wastewater Disposal Rules.

10.4.3 Utilities

The development must be provided with electrical, telephone, and telecommunication service adequate to meet the anticipated use of the project. New utility lines and facilities must be screened from view to the extent feasible. If the service in the street or on adjoining lots is underground, the new service must be placed underground.

10.4.4 Fire Protection

The site design must comply with the Fire Protection Ordinance. The Fire Chief shall issue the applicant a "Certificate of Compliance" once the applicant has met the design requirement of the Town's Fire Protection Ordinance.

There is a well on site. Water from this well will provide water for the cows that will be housed in the barn. Fire protection will include a smoke/fire alarm and fire extinguisher. There is electrical service on site and the Applicant intends to connect to that service at a later time.

Based on the above findings of fact, the Planning Board finds the standards of this section have been met.

10.5 Water Protection

10.5.1 Groundwater Protection

The proposed site development and use must not adversely impact either the quality or quantity of groundwater available to abutting properties or to the public water supply systems. Applicants whose projects involve on-site water supply or sewage disposal systems with a capacity of two thousand (2,000) gallons per day or greater must demonstrate that the groundwater at the property line will comply, following development, with the standards for safe drinking water as established by the State of Maine.

The project will not involve on-site water supply or sewage disposal systems with a capacity of two thousand (2,000) gallons per day or greater.

Based on the above findings of fact, the Planning Board finds the standards of this section have been met.

10.5.2 Water Quality

All aspects of the project must be designed so that:

10.5.2.1 No person shall locate, store, discharge, or permit the discharge of any treated, untreated, or inadequately treated liquid, gaseous, or solid materials of such nature, quantity, obnoxious, toxicity, or temperature that may run off, seep, percolate, or wash into surface or groundwaters so as to contaminate, pollute, or harm such waters or cause nuisances, such as objectionable shore deposits, floating or submerged debris, oil or scum, color, odor, taste, or unsightliness or be harmful to human, animal, plant, or aquatic life.

10.5.2.2 All storage facilities for fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials, must meet the standards of the Maine Department of Environmental Protection and the State Fire Marshall's Office.

There will be no outdoor storage of environmentally harmful products.

10.5.3 Aquifer Protection

If the site is located within the Town Aquifer Protection Area, a positive finding by the Board that the proposed plan will not adversely affect the aquifer is required.

The site is not located within the Town Aquifer Protection Area.

10.6 Floodplain Management

If any portion of the site is located within a special flood hazard area as identified by the Federal Emergency Management Agency, all use and development of that portion of the site must be consistent with the Town's Floodplain management provisions.

The site is not located within a floodplain.

Based on the above finding of fact, the Planning Board finds the standards of this section have been met.

10.7 Historic and Archaeological Resources

If any portion of the site has been identified as containing historic or archaeological resources, the development must include appropriate measures for protecting these resources, including but not limited to, modification of the proposed design of the site, timing of construction, and limiting the extent of excavation.

The parcel has been fully utilized for farming and there are no obvious historic or archaeological resources on the site.

Based on the above finding of fact, the Planning Board finds the standards of this section have been met.

10.8 Exterior Lighting

The proposed development must have adequate exterior lighting to provide for its safe use during nighttime hours, if such use is contemplated. All exterior lighting must be designed and shielded to avoid undue glare, adverse impact on neighboring properties and rights - of way, and the unnecessary lighting of the night sky.

There will be no exterior lighting.

Based on the above findings of fact, the Planning Board finds the standards of this section have been met.

10.9 Buffering and Landscaping

10.9.1 Buffering of Adjacent Uses

The development must provide for the buffering of adjacent uses where there is a transition from one type of use to another use and for the screening of mechanical equipment and service and storage areas. The buffer may be provided by distance, landscaping, fencing, changes in grade, and / or a combination of these or other techniques.

10.9.2 Landscaping

Landscaping must be provided as part of site design. The landscape plan for the entire site must use landscape materials to integrate the various elements on site, preserve and enhance the particular identity of the site, and create a pleasing site character. The landscaping should define street edges, break up parking areas, soften the appearance of the development, and protect abutting properties.

The new barn replaces a similarly sized barn. There is no need for landscaping or buffering as the barn will not be visible from other homes or the road.

Based on the above findings of fact, the Planning Board finds the standards of this section

10.0 Noise

The development must control noise levels such that it will not create a nuisance for neighboring properties.

The proposed use of the building will not create noise that will be a nuisance for neighboring properties.

Based on the above findings of fact, the Planning Board finds the standards of this section have been met.

10.11 Storage of Materials

10.11.1 Exposed nonresidential storage areas, exposed machinery, and areas used for the storage or collection of discarded automobiles, auto parts, metals or other articles of salvage or refuse must have sufficient setbacks and screening (such as a stockade fence or a dense evergreen hedge) to provide a visual buffer sufficient to minimize their impact on abutting residential uses and users of public streets.

10.11.2 All dumpsters or similar large collection receptacles for trash or other wastes must be located on level surfaces which are paved or graveled. Where the dumpster or receptacle is located in a yard which abuts a residential or institutional use or a public street, it must be screened by fencing or landscaping.

10.11.3 Where a potential safety hazard to children is likely to arise, physical screening sufficient to deter small children from entering the premises must be provided and maintained in good condition.

There will be no outdoor storage of any kind.

Based on the above findings of fact, the Planning Board finds the standards of this section have been met.

10.12 Capacity of the Applicant

The applicant must demonstrate that he / she has the financial and technical capacity to carry out the project in accordance with this ordinance and the approved plan.

Technical Ability: *The applicant has been a life-long farmer and has utilized Candace Gilpatrick, P.E. to assist with the plan design.*

Financial Capacity: *The applicant intends to use grant funds in the amount of \$130,000 from the U.S. Dept. of Agriculture (USDA).*

Based on the above findings of fact, the Planning Board finds the standards of this section have been met.

Design and Performance Standards

The project is not subject to any Design Standards.

LIMITATION OF APPROVAL:

Construction of the improvements covered by any site plan approval must be substantially commenced within twelve (12) months of the date upon which the approval was granted. If construction has not been substantially commenced and substantially completed within the specified period, the approval shall be null and void. The applicant may request an extension of the approval deadline prior to expiration of the period. Such request must be in writing and must be made to the Planning Board. The Planning Board may grant up to two (2), six (6) month extensions to the periods if the approved plan conforms to the ordinances in effect at the time the extension is granted and any and all federal and state approvals and permits are current.

229-12 STANDARD CONDITION OF APPROVAL:

This approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted by the applicant. Any variation from the plans, proposals and supporting documents, except de minimus changes as so determined by the Town Planner which do not affect approval standards, is subject to review and approval of the Planning Board prior to implementation.

CONDITION OF APPROVAL

1. The Applicant shall obtain a building permit and, if needed, electrical and plumbing permits prior to construction.

SITE PLAN REVIEW
Town of Cumberland

Appendix C
Planning Board Site Plan Review Application

Applicant's name Spring Brook Farm, LLC
Applicant's address 168 Greely Rd
Cell phone 671-1632 Home phone _____ Office phone _____
Email Address JRStorey19@gmail.com
Project address Same
Project name Manure Storage Facility
Describe project see above
Number of employees N/A
Days and hours of operation 24/7
Project review and notice fee no fee
Name of representative Jeff Storey
Contact information: Cell: 671 1632 Office: _____

What is the applicant's interest in the property?

Own _____ Lease ☒ Purchase and sale agreement _____ (provide copy of document)
If you are not the owner, list owner's name, address and phone number Kay Fowler
671-3165

If you are not the owner, list owner's name, address and phone number 168 Greely Rd.

Boundary Survey ☒
Submitted? Yes _____ No _____

Are there any deed restrictions or easements? Yes _____ No ☒ If yes, provide information and show easement location on site plan.

Building Information

Are there existing buildings on the site? Yes ☒ No _____ Number: _____

Will they be removed? Yes ☒ No _____ (Note: A demolition permit is required 10 days prior to demolition.) old Barn demolished; new Barn Built

Will a new structure(s) be built on the site? Yes ☒ No _____

Describe: 58'x90' Barn

Number of new buildings 5520 sq. ft. 1

Square footage 5520 sq. ft.

Number of floor levels including basement 1

Buffering

Show any existing or proposed buffering measures for adjacent properties, e.g., plantings, fences.

Erosion Control

Has an erosion and sedimentation control plan been submitted? Yes _____ No _____ *B.M. P's to be used.*

Stormwater Management Plan

Provide stormwater information for both pre and post development of the site. Show location of any detention areas and/or culverts on the site plan.

Fire Protection

Location of nearest hydrant _____ Sprinklers? Yes _____ No ☒

Do you plan to have an alarm system? Yes _____ No ☒ Please contact the Fire/EMS Department at 829-4573 to discuss any Town or state requirements.

Trash

Will trash be stored inside _____ outside _____. If outside, will a dumpster be used? *n/A*
Yes _____ No _____. Show location on site plan and show type of screening proposed (e.g., fencing, plantings).

Technical Capacity

List and provide contact information for all consultants who worked on the project, for example: licensed land surveyor, licensed soils evaluator, professional engineer, attorney, etc.

Candace Bilpatrick, P.E.

Financial Capacity

Please indicate how project will be financed. If obtaining a bank loan, provide a letter from the bank *U.S.D A Grant \$130,000 K*

PLANNING BOARD SITE PLAN REVIEW
SUBMISSION CHECKLIST

FOR ALL PROJECTS:

Submission Requirement	Provide Location in Application Packet (e.g., plan sheet number, binder section, narrative	If requesting a waiver, indicate below:
<i>Example: Erosion Control</i>	<i>Plan Sheet E-1</i>	
General Information:		
Completed Site Plan Application Form		
Names and addresses of all consultants		
Narrative describing existing conditions and the proposed project		
Evidence of right, title or interest (deed, option, etc.)		
Names and Addresses of all property owners within 200 feet		
Boundaries of all contiguous property under control of owner		
Tax map and lot numbers		
Area of the parcel		
FEMA Floodplain designation & map #		
Zoning classification		
Evidence of technical and financial capability to carry out the project		
Boundary survey		
List of waiver requests on separate sheet with reason for request.		
Proposed solid waste disposal plan		
Existing Conditions Plan showing:		
Name, registration number and seal of person who prepared plan		
North arrow, date, scale, legend		
Area of the parcel		
Setbacks and building envelope		
Utilities, including sewer & water, culverts & drains, on-site sewage		
Location of any septic systems		
Location, names, widths of existing public or private streets ROW's		

Location and dimensions of all accessways and loading and unloading facilities		
Location and dimension of all existing and proposed pedestrian ways		
Location, dimension and # of spaces of proposed parking areas, including handicapped spaces		
Total floor area and ground coverage of each proposed building and structure		
Proposed sign location and sign lighting		
Proposed lighting location and details		
Covenants and deed restrictions proposed		
Snow storage location		
Solid waste storage location and fencing/buffering		
Location of all fire protection		
Location of all temporary & permanent monuments		
Street plans and profiles		

ADDITIONAL REQUIREMENTS FOR MAJOR SITE PLAN PROJECTS:

Submission Requirement	Provide Location in Application Packet (e.g., plan sheet number, binder section, narrative)	If requesting a waiver, indicate below:
High intensity soils survey		
Hydro geologic evaluation		
Traffic Study		
Market Study		
Location of proposed recreation areas (parks, playgrounds, other public areas)		
Location and type of outdoor furniture and features such as benches, fountains.		

Spring Brook barn to be demo on 5-13-23



Property Information

Property ID 0R04 0032 0000
Location 172 GREELY RD
Owner FOWLER GREGORY & KATHERINE

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

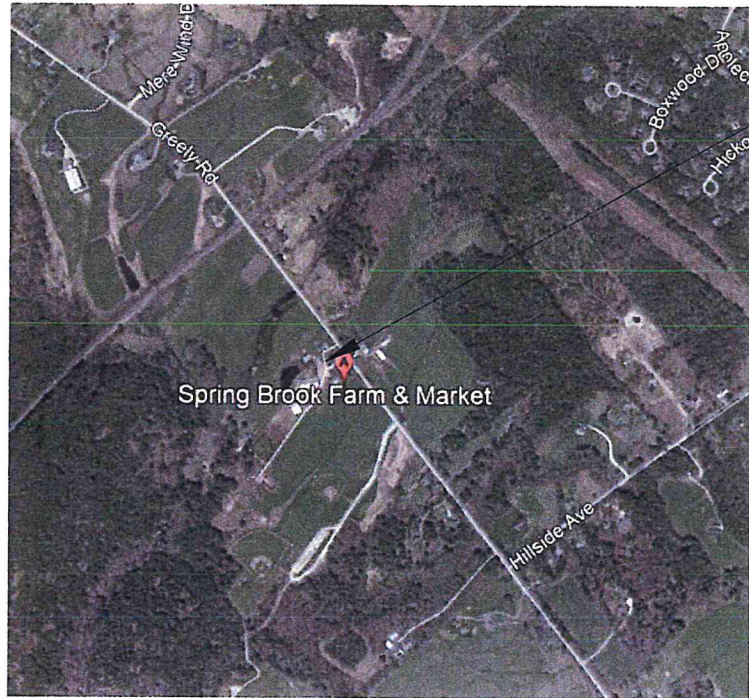
Town of Cumberland, ME makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 6/10/2020
Data updated monthly (see property record card)

Print map scale is approximate.
Critical layout or measurement
activities should not be done using
this resource.

PRACTICE: BEDDED PACK, HUA & WSF
ADDRESS: 168 GREELY RD, CUMBERLAND ME 04021
COUNTY: CUMBERLAND
NRCS OFFICE LOCATION: SCARABOROUGH
CONTACT PERSON: Dave Chiappetta
OFFICE PHONE: (207)-289-2808

LOCATION MAP



SITE



TRACT NUMBER: _____
DeLORME GAZETTEER: MAP: 5 GRID: D5

DESCRIPTION:

Bedded Pack, HUA, and manure storage for 45au of cow/calf operation
210 days Total Storage

As a recipient of Federal assistance to install this project, you have certain responsibilities. You are responsible for obtaining all regulatory permits and official project authorizations prior to construction.
You must allow access to the site by NRCS staff.
Construction shall not begin until NRCS provides signed final designs.
You must be represented at required preconstruction meeting between NRCS and contractor(s).
All O.S.H.A. requirements shall be met during construction.
Use Maine Department of Environmental Protection (DEP) - Erosion and Sediment Best Management Practices during construction.
Notify NRCS of construction progress to ensure required inspection of work.
You or your general contractor needs to ensure that plans are followed and if modifications are made, they are done with NRCS approval. Failure to do so will affect certification for cost share payment.

I/we have reviewed and do accept the attached plans. I/we agree to have this project constructed in accordance with these plans and specifications. Modifications to the final drawings, specifications, or special provisions during construction will require approval from the NRCS prior to installation.

Cooperator Signature: _____ Date: _____

NOTICE TO LANDOWNERS AND CONTRACTORS REGARDING UTILITIES

DIGSAFE FOR ME-MA-RI-VT 1-888-DIG-SAFE (1-888-344-7233)

No representation is made by the USDA Natural Resources Conservation Service as to the existence or non-existence of underground hazards. Prior to the start of construction the owners of the utilities must be notified of the pending construction. You will be liable for damages resulting from construction activities.

CONTRACTOR: _____
ADDRESS: _____
PHONE: _____

CIN	PRACTICE	DESIGN DIMENSIONS	AS-BUILT DIMENSIONS	APPROVED BY	DATE

DESIGNED BY: Candace Gilpatrick Date: 10/20
CHECKED BY: Lori Richter Date: 10/20
APPROVED BY: Candace Gilpatrick Date: 10/20
ENGINEER JOB CLASS: III

Designed	C. Gilpatrick	Date	09/20
Drawn	A. Cardona	Date	09/20
Checked	#	#	#
Approved	#	#	#

JEFF STOREY

CUMBERLAND, ME

CUMBERLAND, ME

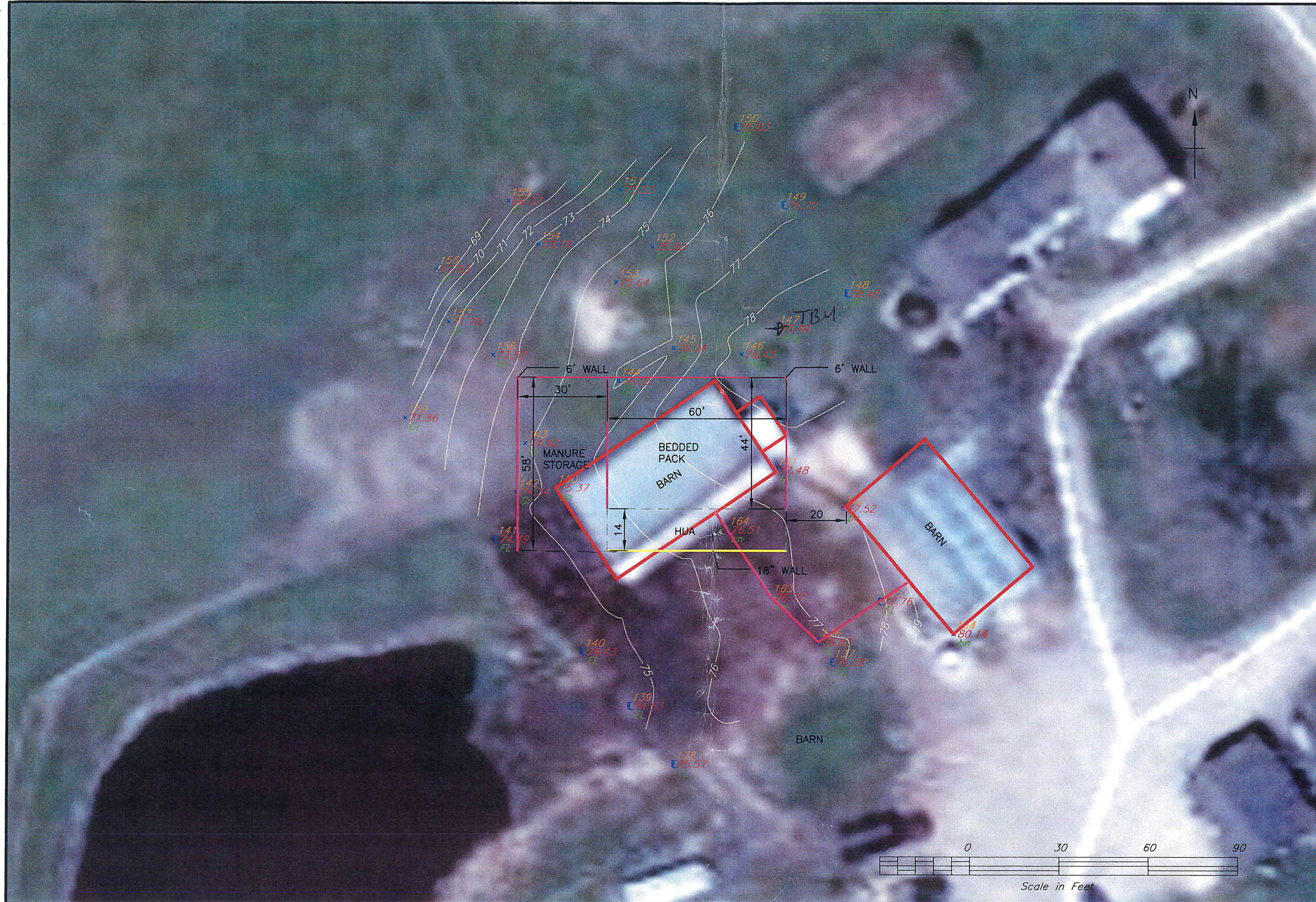
United States Department of Agriculture

Natural Resources Conservation Service

File No.

Drawing No.

1 of 12



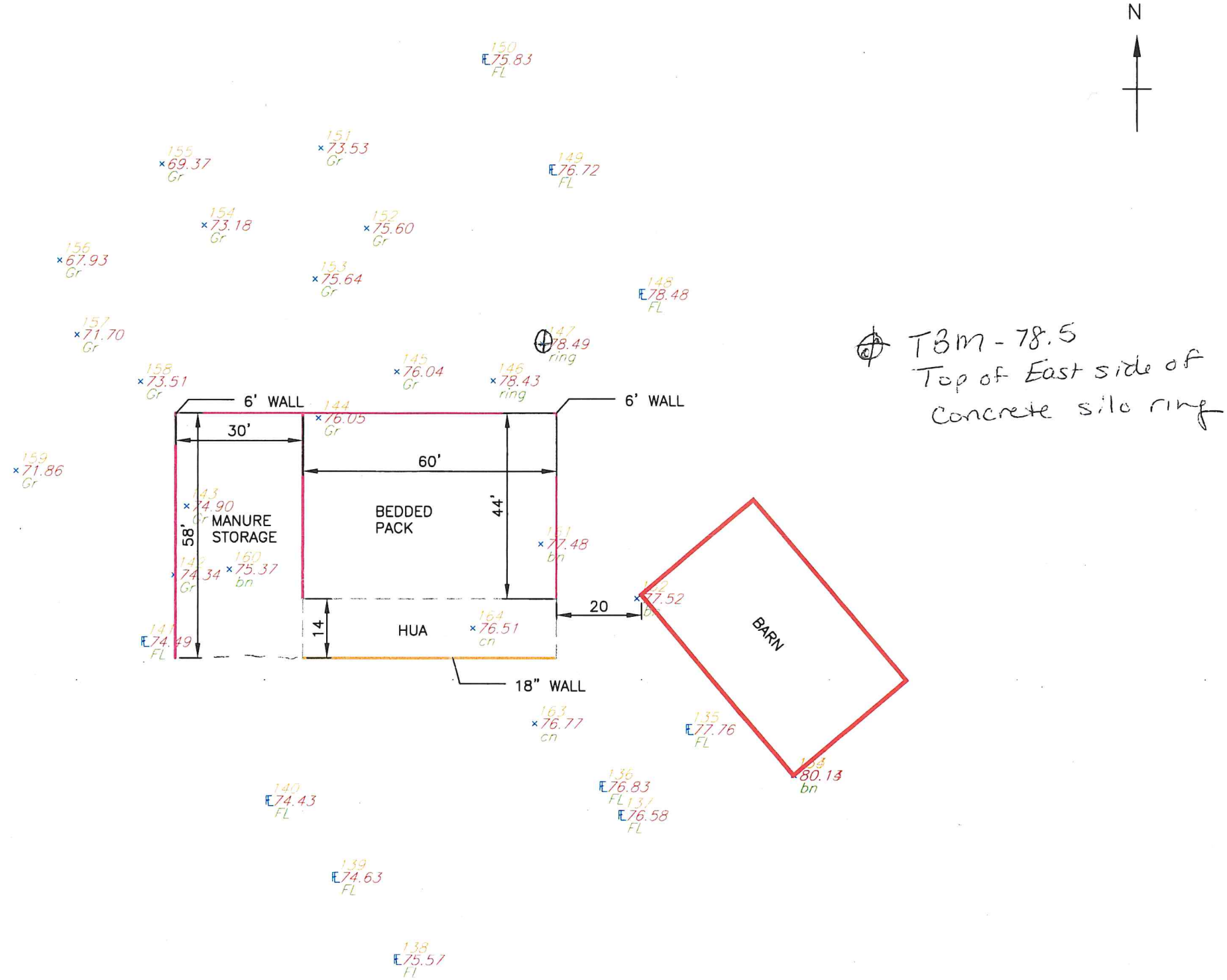
	File No.		Storey Plan View		Not Official.dwg	
	Drawing No.		---		---	
	9/30/20 3:38 PM		Sheet 2 of 12			

Jeff Storey
Barnyard Plan View

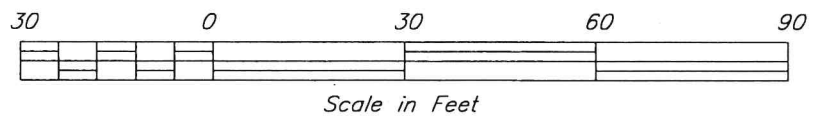
Town of Cumberland

Cumberland County, ME.

Designed	C. Gilpatric	Date	11/19
Drawn	B. Stuart	Date	11/19
Checked			
Approved			



TBM - 78.5
Top of East side of
Concrete silo ring



Designed C. Gilpatric		Date 11/19
Drawn B. Stuart		11/19
Checked		
Approved		

Jeff Storey
Barnyard Plan View

Town of Cumberland
Cumberland County, ME.

USDA

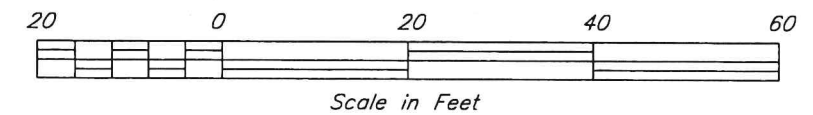
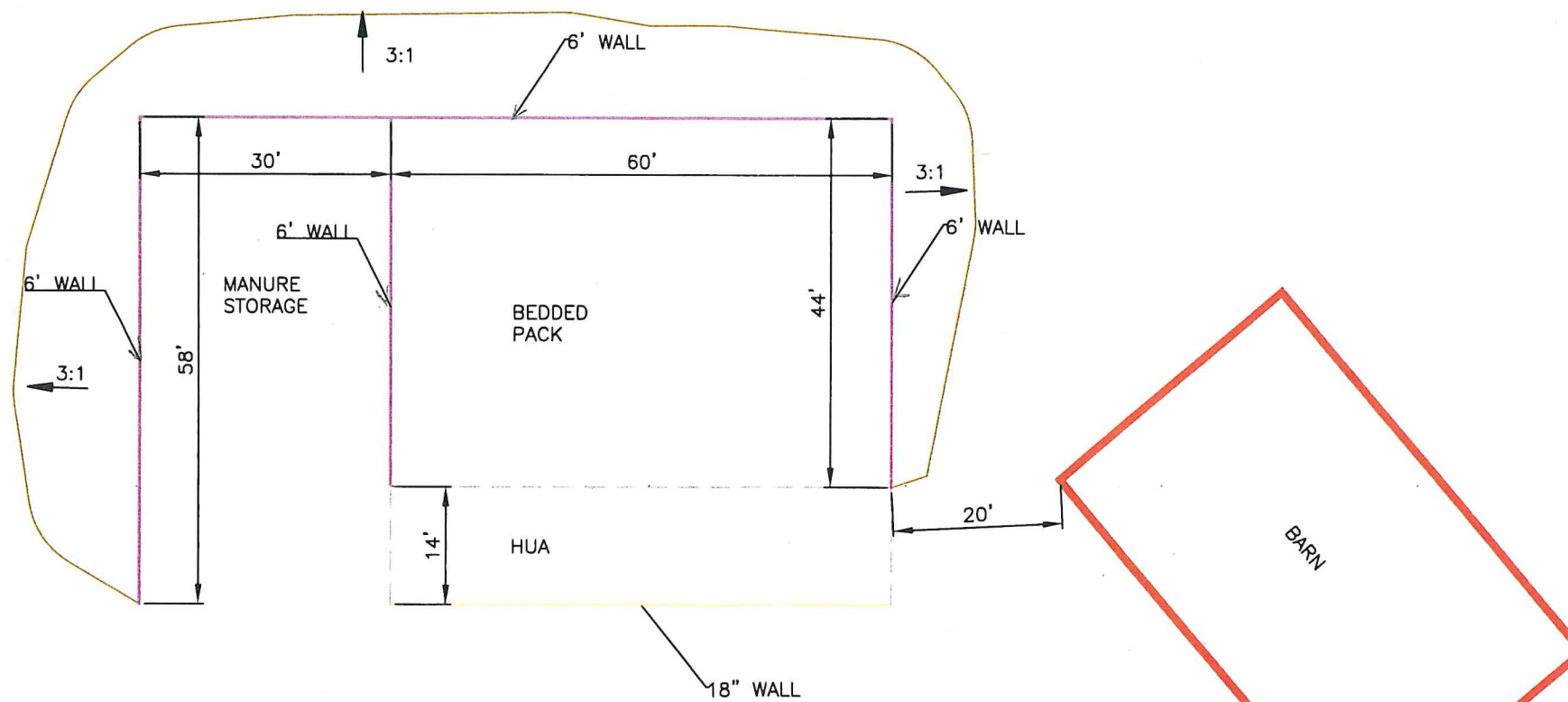
File No.
Storey Plan View
Not Official.dwg

Drawing No.

9/30/20 3:38 PM
Sheet 3 of 11

⊕ TBM 78.5
Top of concrete on east
side of old silo ring

Rough grade 75.5
Top of gravel under footer 76.17
Top of footer 77.0
Top of 6' wall 83.0
Top of gravel under slab 76.6
Top of slab 77.0
Top of feed lane 77.5
Top of backfill 79.0 minimum



 United States Department of Agriculture Natural Resources Conservation Service	File No.	Designed	C. Gilpatric	Date	11/19.
	Storey Plan View	Drawn	A. Cardona	11/19.	
	Not Official.dwg	Checked			
	Drawing No.				

Town of Cumberland County, Maine

JEFF STOREY
WSF & BDPK PLAIN VIEW

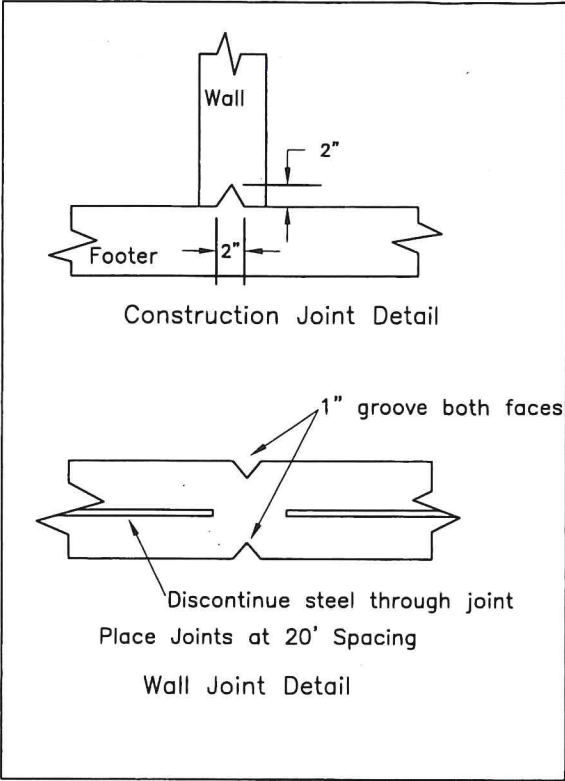
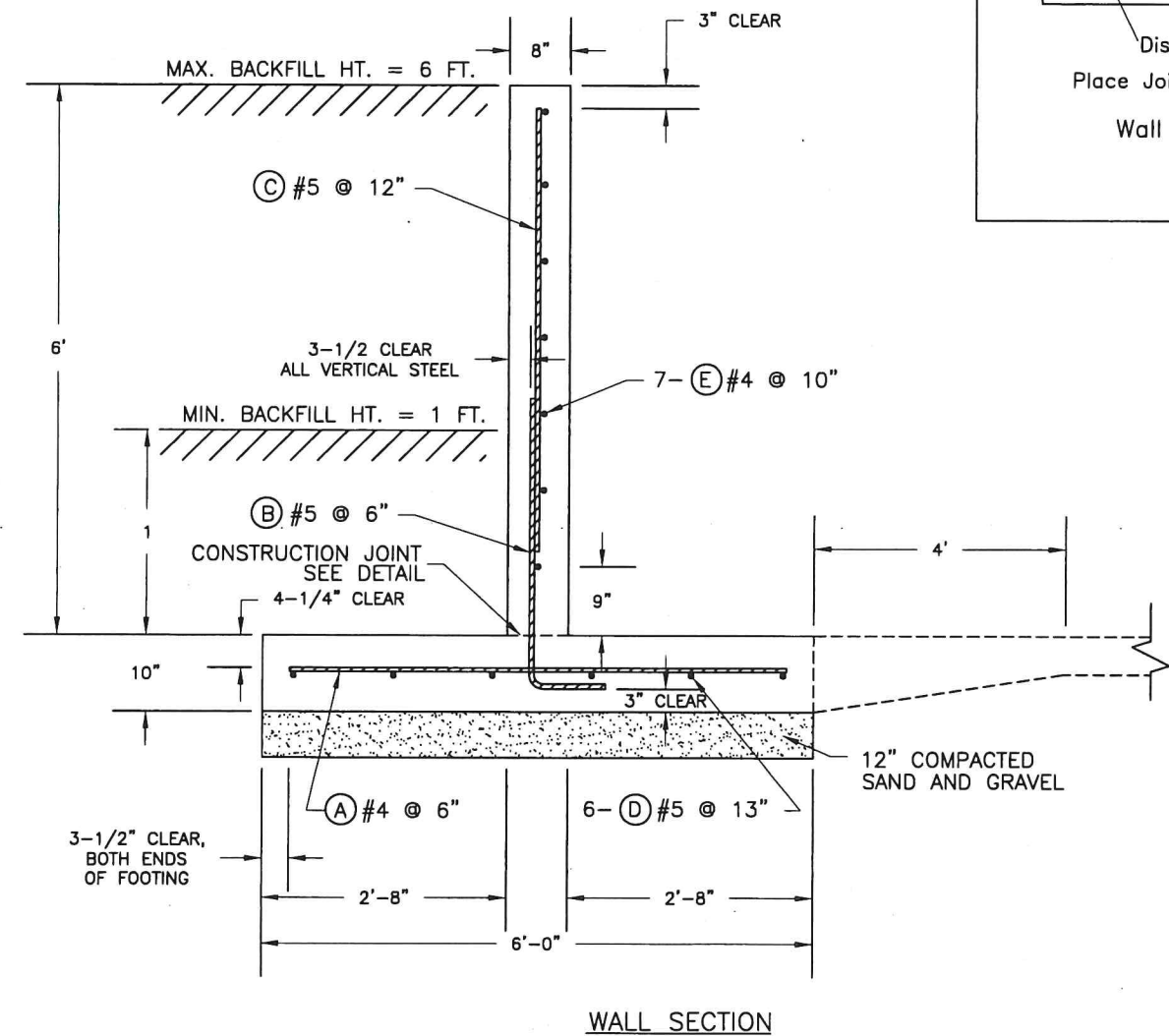
10/19/20 9:47 AM
Sheet 1 of 12

6' REINFORCED CONCRETE "T" WALL 1-6' BACKFILL EQUIPMENT ALLOWED ON BACKFILL

CONDITIONS OF USE

BACKFILL: 1 TO 6 FEET
MACHINERY LOADING CONDITIONS: EQUIPMENT ALLOWED ON SOIL NEXT TO WALL
CONCRETE STRENGTH: 3500 PSI
REBAR: GRADE 60

Use 2 ft minimum backfill



Concrete construction and related materials and equipment shall be in accordance with Maine Construction Specification 432, Structural concrete and Steel Reinforcement with the following exception; the concrete must have a minimum strength of 3500 psi at 28 days

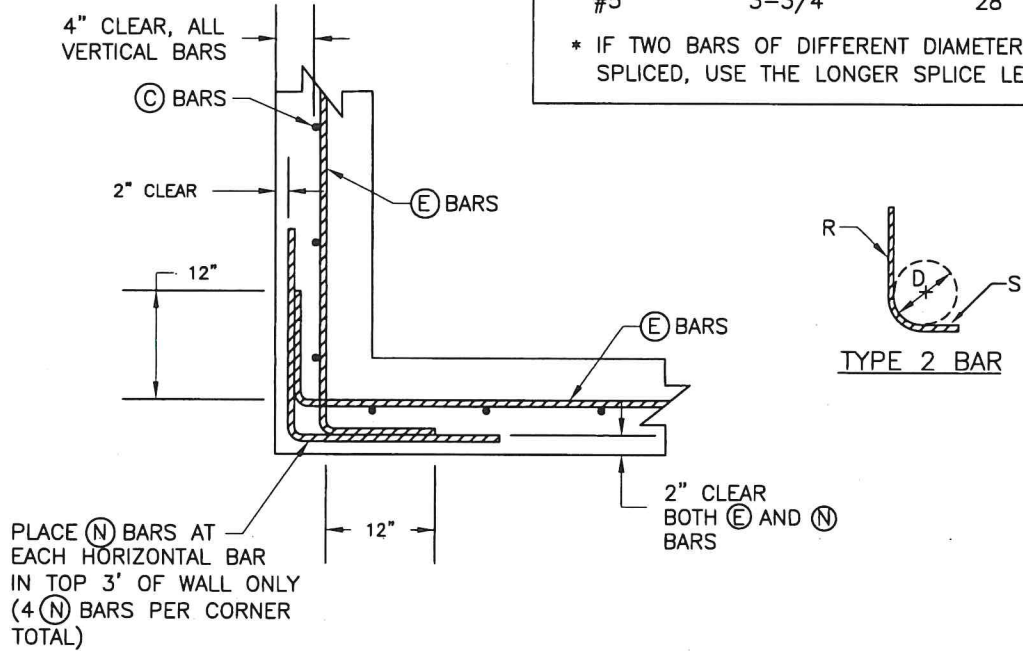
STEEL SCHEDULE (GRADE 60)

MARK	SIZE	TYPE	R	S	LENGTH
A	#4	STR	---	---	5'-5"
B	#5	2	3'-6"	10"	4'-4"
C	#5	STR	---	---	5'-2"
D	#5	STR	---	---	
E	#4	STR	---	---	
N	#4	2	2'-0"	2'-0"	4'-0"

STEEL DETAILS

BAR SIZE	BEND DIAMETER (D) INCHES	SPLICE LENGTH INCHES (MIN.) *
#4	3	22
#5	3-3/4	28

* IF TWO BARS OF DIFFERENT DIAMETER ARE SPLICED, USE THE LONGER SPLICE LENGTH.

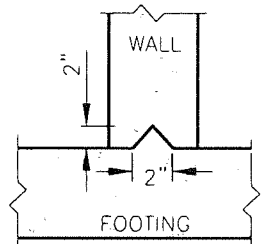


CORNER BAR SCHEMATIC
PLAN VIEW - TOP 3 FEET
OF WALL SHOWN

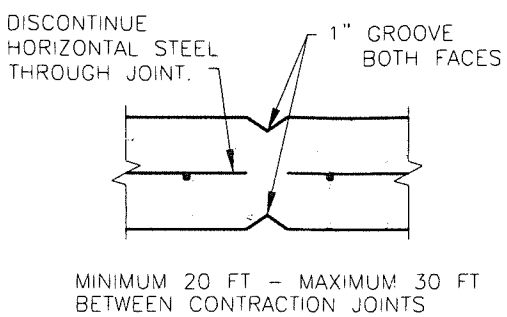
CORNER NOTES

1. PLACE FIRST VERTICAL BAR AT WALL CORNER OR NO FURTHER THAN ONE-HALF BAR SPACING FROM THE INSIDE CORNER.
2. HOOK CAN BE SEPARATE FROM (E) BARS, PROVIDED THAT MINIMUM LAP SPLICE OF 22" FOR #4 BARS IS MET.
3. SEE WALL SECTION FOR EXACT LOCATIONS OF (C) AND (E) BARS.

NOTES:
BASE OF WALL TO HAVE MIN. OF 12" GRAVEL FILL, SEE CONSTRUCTION SPEC. 423
CONCRETE SHALL CONFORM TO CONSTRUCTION SPECIFICATION 432.
CEMENT TYPE II
28 DAY STRENGTH - 3000 psi
AIR ENTRAINMENT - 5 TO 7 %
SLUMP - 3 TO 5 INCHES
REBAR TO BE COLD BENT.
CONCRETE TO BE KEPT MOIST FOR 7 DAYS OR UNTIL CURING COMPOUND IS APPLIED.
FORMS TO STAY ON FOR 24 HOURS



CONSTRUCTION JOINT DETAIL



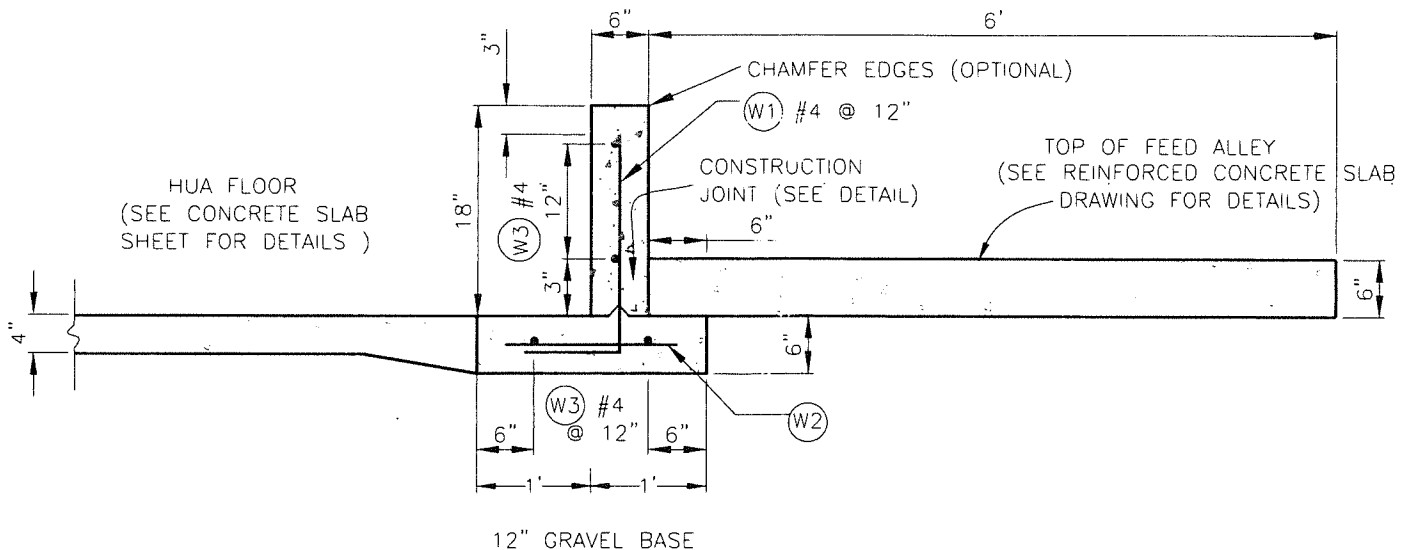
WALL JOINT DETAIL

STEEL SCHEDULE

MARK	SIZE	SPACING	LENGTH	TYPE	B	C
W1	#4	12"	29"	L	10"	19"
W2	#4	12"	18"	---	---	---
*W3	#4	12"	20'-0"	---	---	---
W4	#4	12"	6'-0"	L	3'	3'

*FIELD CUT AS NECESSARY

BAR LAP	BAR WEIGHTS
#4=22" MIN.	#4=0.668 #/LF



CROSS SECTION 18" WALL

NOT TO SCALE

STANDARDIZED DESIGNS MUST BE ADAPTED TO THE SPECIFIC SITE.

Date	
Designed	STANDARD
Drawn	
Checked	
Approved	

STOREY
18" Feed Wall

USDA
File No. 18 in Wall -FeedAlley.dwg
Drawing No. -----
9/30/20 8:54 AM Sheets 6 of 12

Developed By: J. Simon 9/1981

CONSTRUCTION NOTES

- All work will be done according to Maine NRCS Construction Specification 432, Structure Concrete and Steel Reinforcement.
- Subgrade material shall be well compacted.
- Rebar shall be tied to ensure a rigid mat. Mat shall be located 1.5–2 inches below finished surface of slab.
- Subgrade and reinforcing steel shall be approved prior to placing concrete. Forms shall be made available for inspection at least 24 hours prior to concrete placement. Failure to notify the NRCS prior to concrete placement may result in the project not meeting NRCS standards and specifications the the withdrawal of technical and financial assistance
- If fiber is approved, use polypropylene fiber at 1.5–2 pounds per cubic yard (0.1%–0.2% by volume).
- Concrete shall have minimum compressive strength of 3500 psi at 28 days.
- Concrete shall use Portland Cement Type II or Type IIA.
- Air-entrainment admixture 5–7% by volume. Slump 3–5 inches.
- Concrete temperature at time of placement shall be 55°F–75°F.
- Day air temperature at time of placement shall be between 40°F and 90°F.
- Mixed concrete shall not be in the truck more than 1.5 hours.
- Moisten ground and steel before placing concrete.
- All exposed surfaces of the concrete shall be accurately screeded to grade and then float finished, unless specified otherwise.
- Exposed concrete surfaces shall be kept moist for 7 days or until curing compound is applied.
- Joints shall be used on all slab jobs. See Joint Details.
- All O.S.H.A. requirements shall be met during construction.
- Any changes from design must be pre-approved by the NRCS.

☐ **NO STEEL OR FIBER REINFORCEMENT:**

Use contraction joints or construction joints. Space joints at 10' maximum each way.
Contraction Joint— Place a cut or tooled groove $\frac{1}{4}$ the thickness of the concrete slab.

☒ **STEEL OR FIBER REINFORCEMENT:**

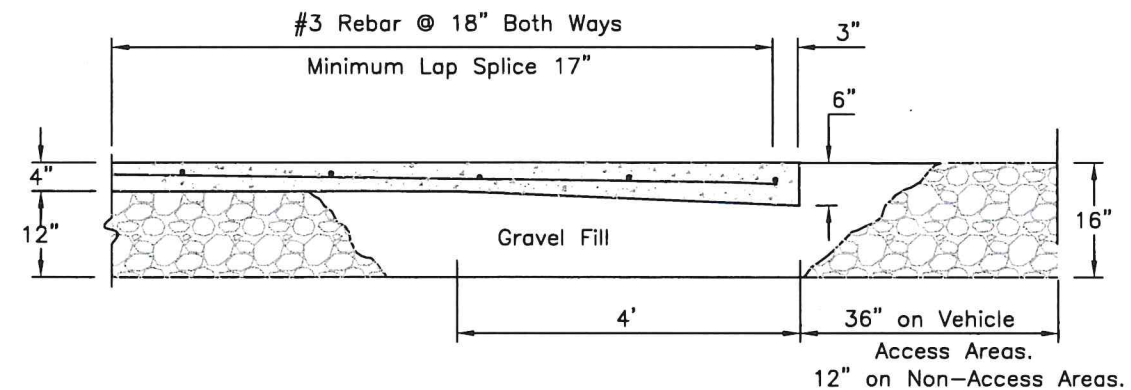
Use contraction joints and construction joints. Space joints at 25' maximum each way.
When rebar reinforcement is used, discontinue steel at joints. Stop steel 2" back at each side from joint.
Contraction Joint – Place a cut or tooled groove $\frac{1}{4}$ the thickness of the concrete slab.

Check required reinforcement:

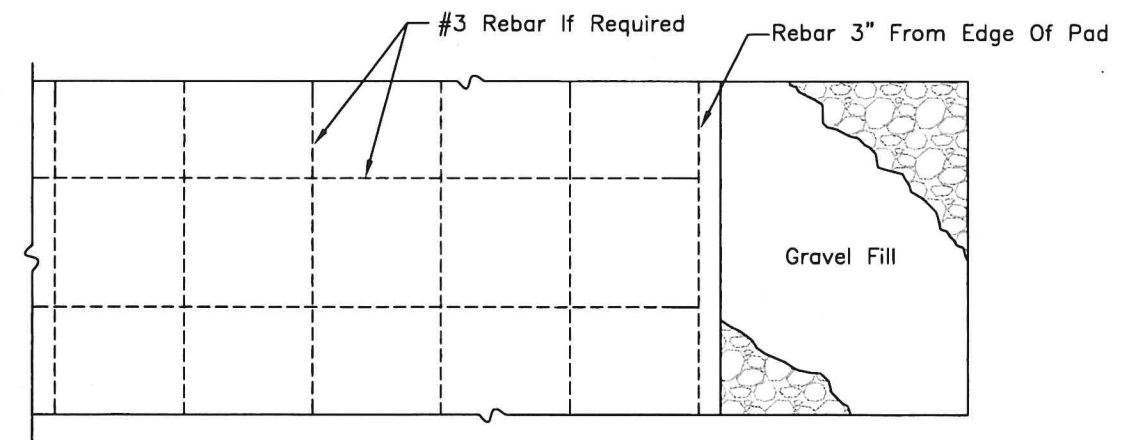
Reinforcing Joint Spacing	
<input type="checkbox"/> Plain concrete	10 Ft.
<input type="checkbox"/> #3 bars @ 18"	25 Ft.
<input type="checkbox"/> Fiber	25 Ft.
<input checked="" type="checkbox"/> Fiber or Steel—Land Owner's Choice	

Gravel Base Details:

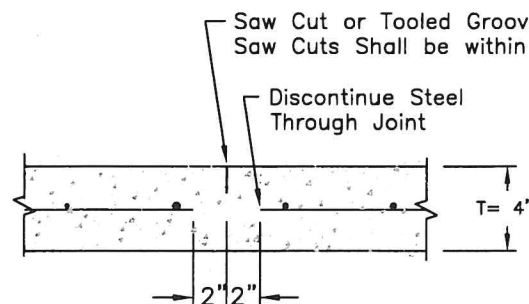
- Gravel base to be 12" thick unless otherwise specified
- Gravel to be free draining bank run gravel or crushed rock.
- Bottom 9" to have no rocks larger than 3"
- Top 3" to have no rocks larger than 1.5"
- No more than 5% may pass the #200 sieve



CROSS SECTION

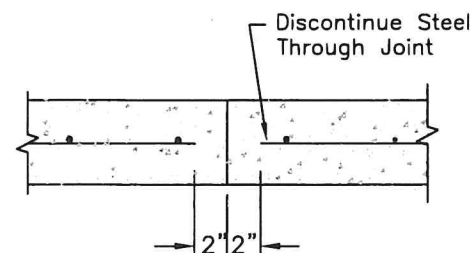


TOP VIEW



CONTRACTION JOINT

Spaced throughout continuous pour.



CONSTRUCTION JOINT

Placed between 2 separate pours.

* STANDARDIZED DESIGNS MUST BE ADAPTED TO THE SPECIFIC SITE.

NOT DRAWN TO SCALE

Date	10/18
Designed	C. Gilpatrick
Drawn	B. Stuart
Checked	
Approved	

CONCRETE SLAB DETAILS FOR NON-WATERTIGHT APPLICATIONS



File No.
Freeman Details
Non-Watertight
Slab.dwg
Drawing No.
ME-ENG-CSS

Roof Design –Storey Heavy Use Area, Bedded Pack, Manure Storage Structure

Cumberland, Maine

9/30/20

Structure – 58'x 90'. 6 foot concrete back wall with timber stud wall; 18 inch scrape wall with post and beam support; Dual pitched roof with majority of span pitching to the rear. Clearance of 14 ft minimum.

TRUSSES:

- 58 foot span, plus 2 foot eave and 6 foot cantilever over hang on feed alley
- Dual pitch – roughly 1/3 , 2/3 split with no slope flatter than 4:12.
- 2 foot on center spacing
- 100 mph wind; 60 psf ground snow: 42psf snow load + 5 psf dead = 47psf load
- DO NOT TOE NAIL. Trusses must be secured with truss anchors.
- Truss anchors to have (4) 10d nails per connection
- Truss knee braces (2x6) to have (8) 10d nails per connection OR (3) #9 or larger R4 GRK fasteners
- Additional bracing per truss manufacturers specifications

STUD WALLS ON BEDDED PACK AREA and MANURE STORAGE:

- 6 foot concrete wall 8 inch top width (see detail)
- 5/8" anchor bolt in concrete wall every 4 feet. Anchor bolt must pass through both sills and have a 2 inch diameter washer or equivalent to prevent wind up lift.
- 2x6 dimensioned S-P-F @ 24 inch spacing for studs
- 2x6 double sills (bottom one p.t. against concrete).
- 2x6 double plates
- Total studwall height 8 ft
- Cross bracing: 2"x4" S-P-F or 3/8" CDX plywood.
- DO NOT TOE NAIL. Stud wall must be secured with strapping or anchors..

POST SUPPORT WALL ALONG FEED WALL:

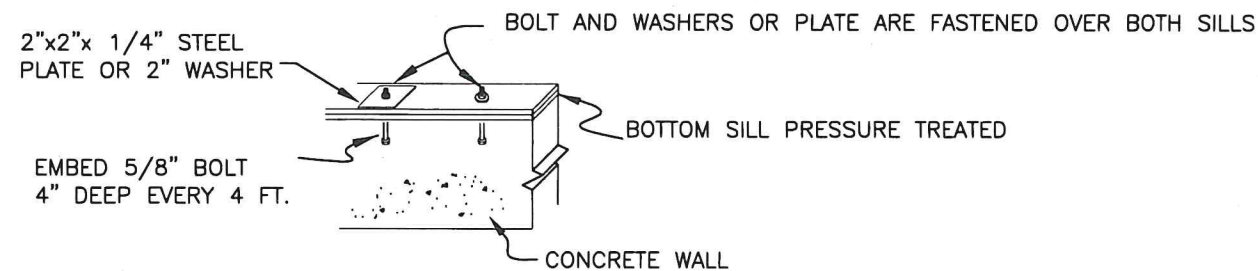
- 8x8 P.T. posts; 10' spacing and 12 foot length.
- Attach posts to concrete feed wall per anchor attachment detail.
- Attach posts to steel plate with (3) 5/8 inch bolts thru post into steel plate
- Attach steel plates to concrete with 1/2inch bolts – 2 at each connection point for a total of 4 per post – and with ¼ inch angle iron.
- Beam –Glulam capable of supporting 1750 lb/ft over 10 foot set span. 60 feet. Beams can be spliced at a 10' interval. (i.e. Versalam 2.0 3100 - 5.25"x9.5")
- Beam at opening for manure storage 30 foot span – Use I beam – W12x16
- Knee brace and cross brace post and beam.
- Attach beam to post with (8) 5/8 inch bolts thru 1inch plywood gussets. 4 bolts in beam, 4 in post

ROOF:

- Purlins - 2x4 flat at 24 inch spacing
- 29 gage steel roofing

SHEATHING:

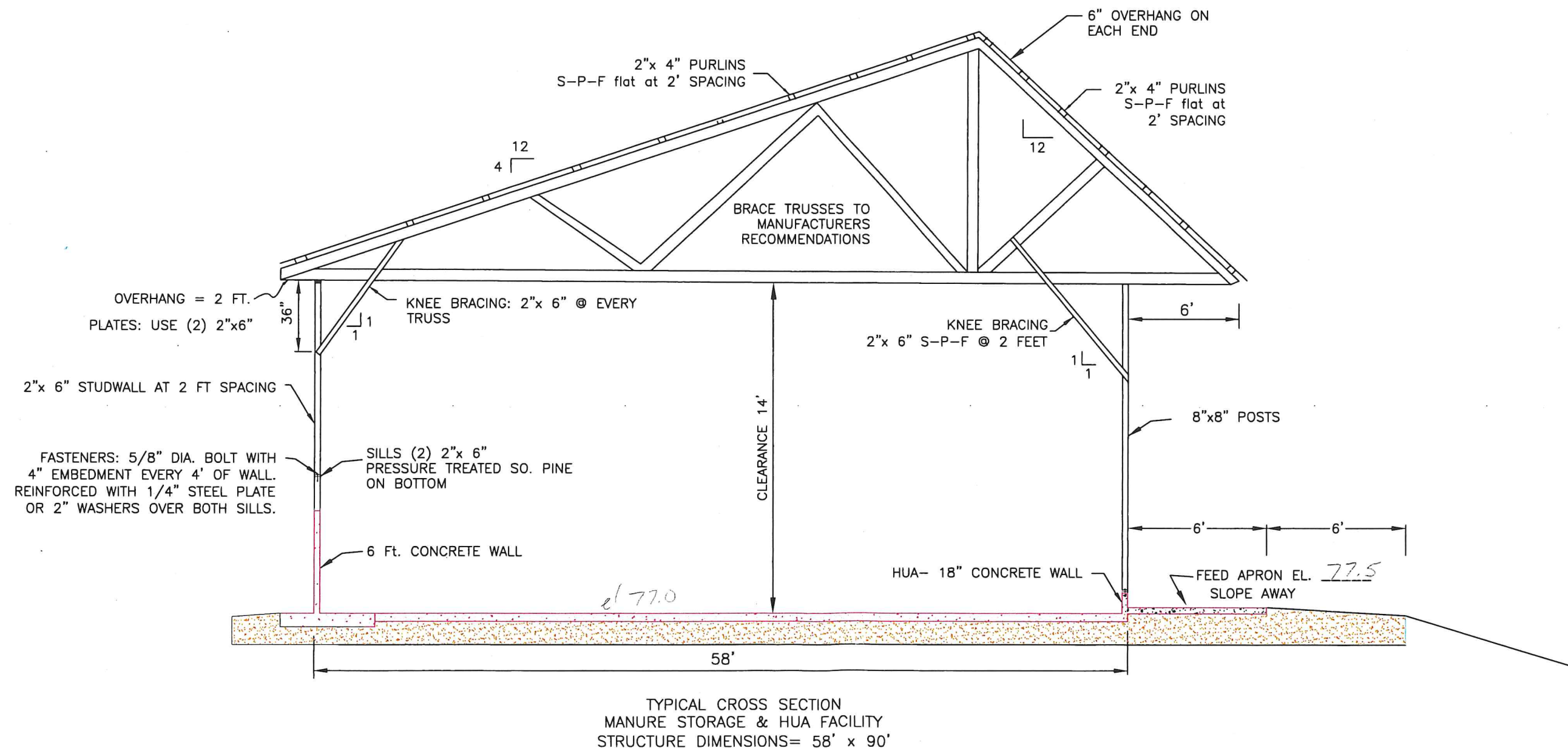
- Gable ends to be closed in with 1 inch pine boards or 3/8 inch plywood to protect trusses from weather. Keep eaves and peak open for good air flow. Strapped and metal siding is also acceptable.
- Gable ends to be closed in with 1 inch pine boards or 3/8 inch plywood to protect trusses from weather. Keep eaves and peak open for good air flow. Strapped and metal siding is also acceptable.



WALL/SILL FASTENING DETAILS

- DUAL PITCH TRUSSES MANUFACTURED FOR 42 PSF SNOW LOAD + 5 PSF DEAD AND 100 MPH WIND LOAD (20 PSF LAT & 24 PSF UP)
- TRUSSES AT 2 FOOT SPACING
- TRUSS ANCHORING: USE HURRICANE ANCHORS WITH 4) 10d NAILS, DUAL PITCH.
- BRACE TRUSSES TO MANUFACTURERS RECOMMENDATIONS
- NO TOE NAILING OF TRUSSES WILL BE ACCEPTED.
- CROSS BRACING: 2" x 4" S-P-F or CDX PLYWOOD
- CLOSE OPEN ENDS WITH 3/8" CDX PLYWOOD.
- KNEE BRACING LOAD ON TRUSS: 940 LBS. VERTICAL AND 600 LBS. HORIZONTAL
USE 2"x 6" S-P-F AT EVERY 2' ON EACH SIDE, USE (8) 10d NAILS OR (3) #9 R4 GRK FASTE

NOTE : ROUGH CUT HEMLOCK CAN BE USED IN PLACE OF ALL S-P-F BOARDS.



* SEE "TIMBER STRUCTURE LOADS, COMPONENTS, AND SPACING" SHEET FOR MORE DETAIL

Date _____

Designed C. Gilpatrick

Drawn B. Stuart

Checked _____

Approved _____

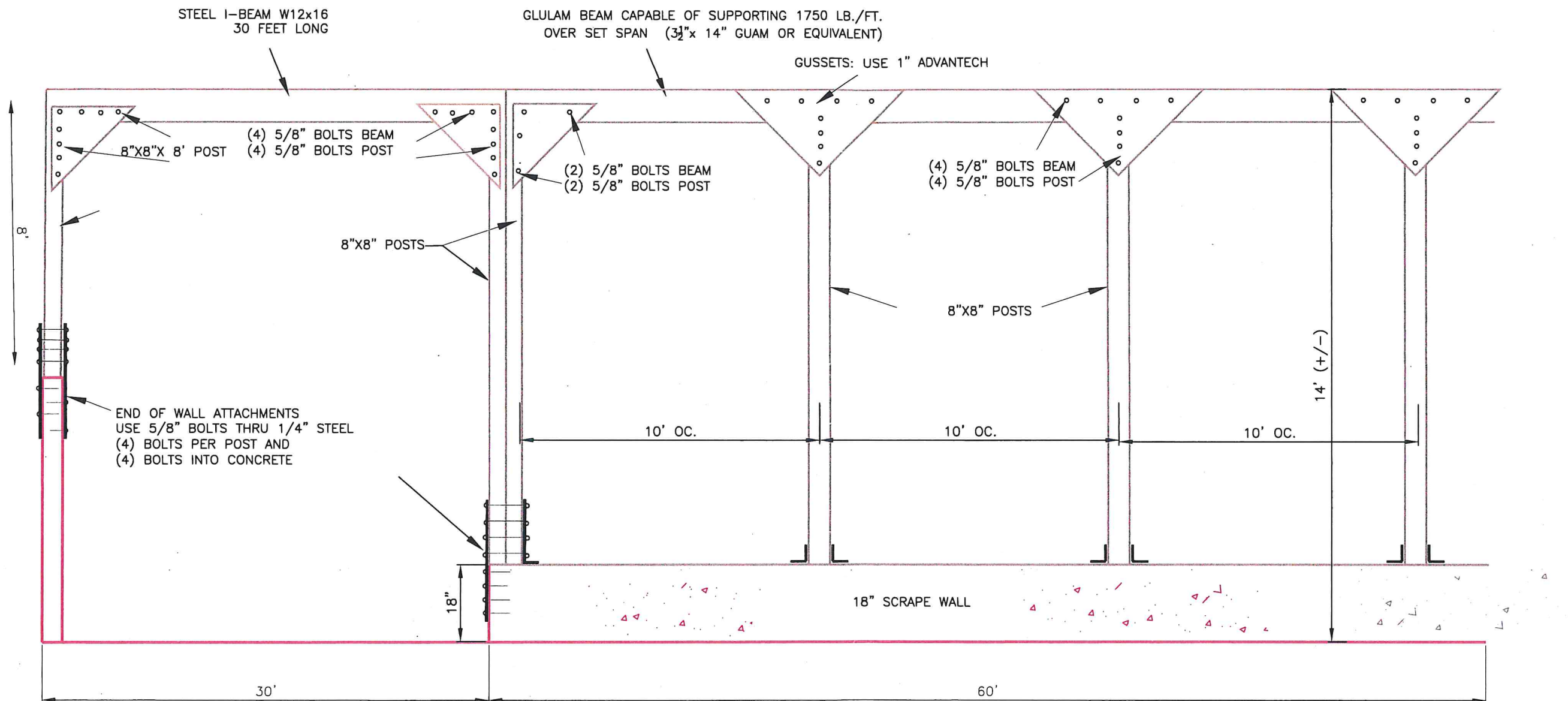
BEDDED PACK-ROOF DETAILS



File No.
Roofs PIP
Concrete
Walls dwg

Drawing No.

Sheet 9 of 12



Designed	C. Gilpatric	Date	4/18
Drawn	B. Stuart	Date	4/18
Checked			
Approved			

STOREY
FRONT VIEW DETAIL

Town of Cumberland

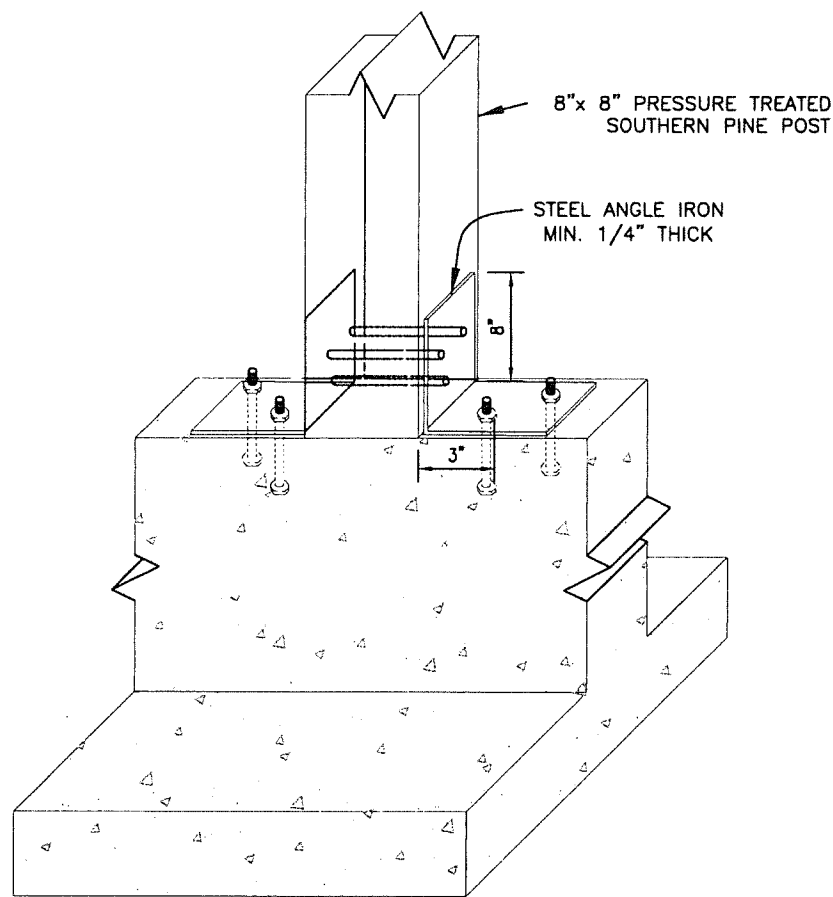
Cumberland County, ME.



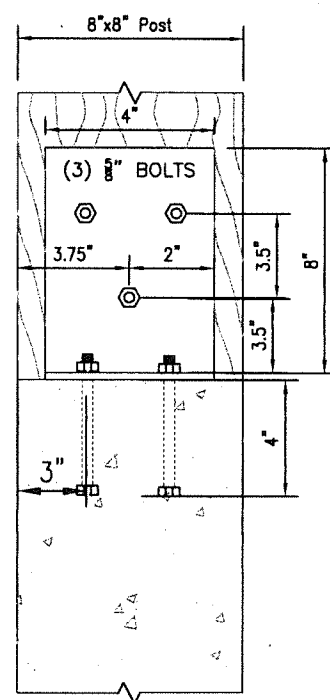
File No.
Post Beam
Wall.dwg

Drawing No.

10/1/20 4:22 PM
Sheet 10 of 12



ISOMETRIC VIEW

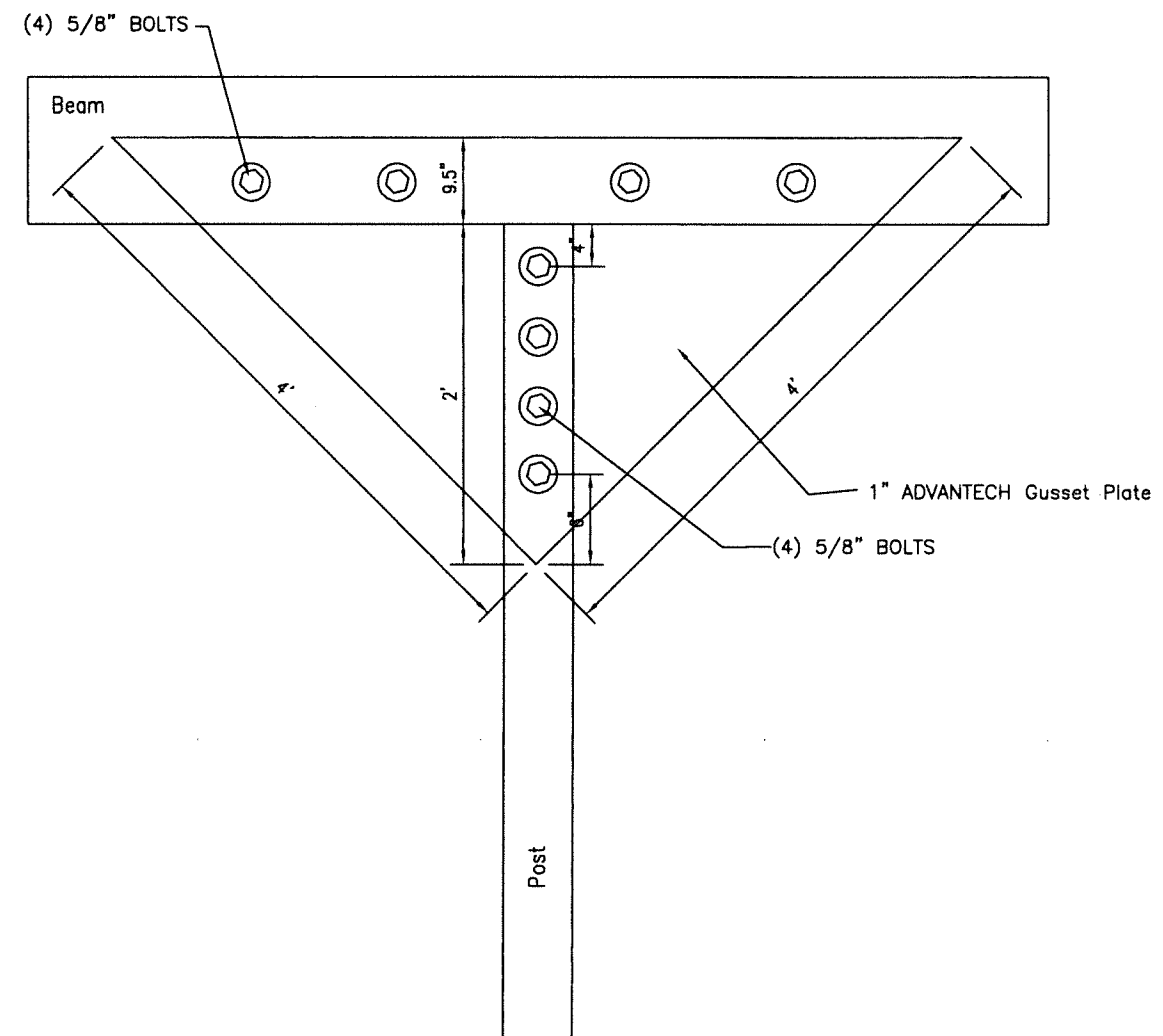


ATTACHMENT END VIEW

Notes:

- Bolts in wood to be 5/8 inch grade 5.
- Bolts in concrete to be 1/2 inch grade 5.
- Holes through steel and wood must be accurately drilled
- Steel to be 1/4 inch structural
- Bolts must be spaced according to drawing
- Steel must be anchored to concrete using anchors capable of resisting at least 4500lbs of withdraw force. Install anchors according to manufacture's recommendations
- Paint steel with an appropriate coating to resist corrosion. Paint all surfaces before instilling.

NOT TO SCALE



Notes:

- All bolts to be 5/8 inch. Use washers on both ends of bolts
- Bolts to be Grade 5
- Gusset plates to be 1 inch ADVANTECH. Place a gusset plate on each side of post and beam connection
- Bolts must go through the center of the post and maintain the edge distances shown in the drawing.
- Holes for bolts must be accurately drilled and properly sized for the fasteners used.

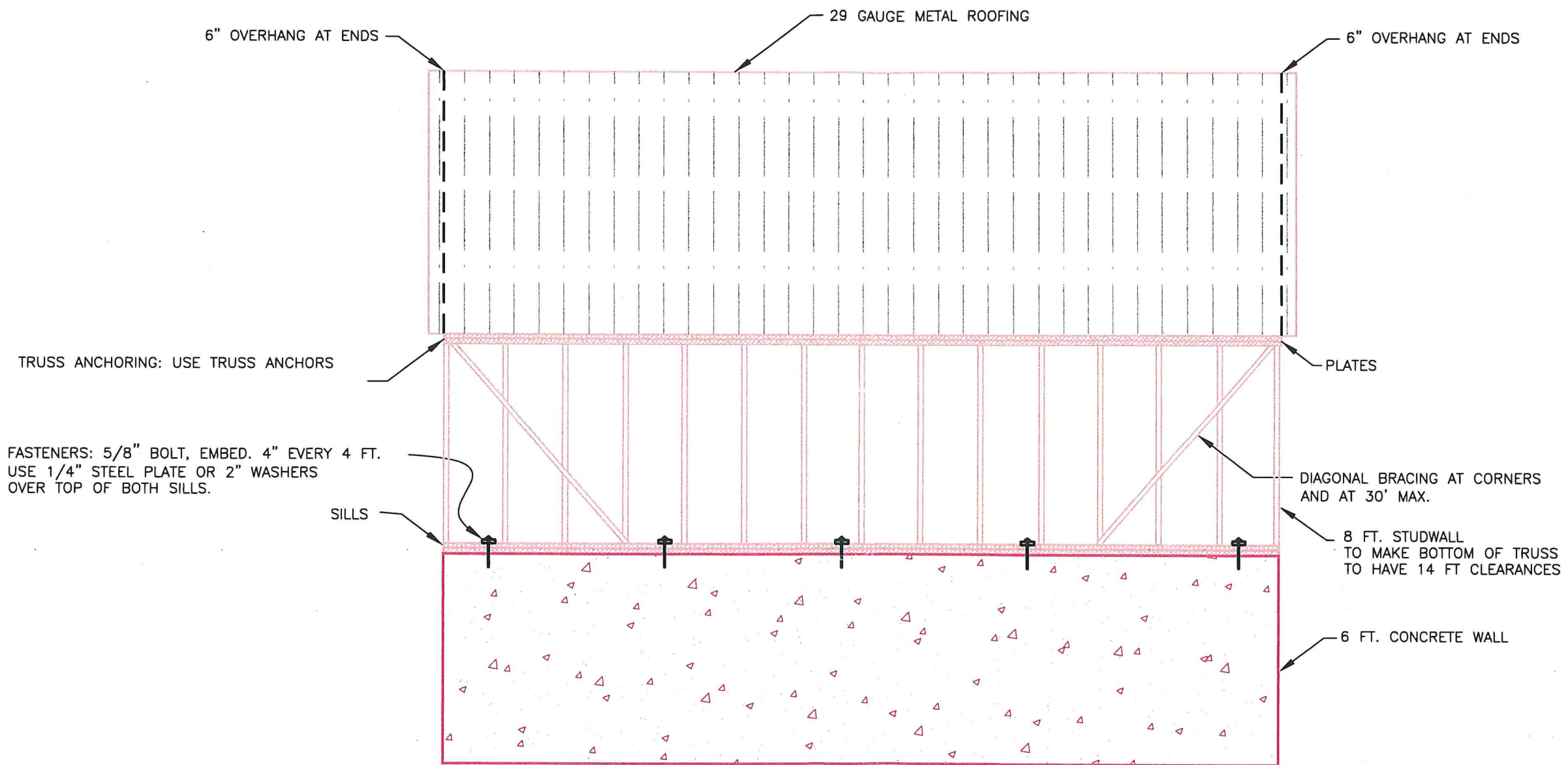
Heavy Use Area Roof Detail

AutoCAD .dwg name

Softdesk project

Drawing No.

Sheet # 11 of 12



Designed	C. Gilpatric	Date	9/20
Drawn	C. Gilpatric		9/20
Checked			
Approved			

STOREY
MANURE STORAGE/HUA FACILITY
SIDE VIEW

Cumberland County, ME

Cumberland

USDA
Natural Resources
Conservation Service

File No.
Roofs Side
View.dwg

Drawing No.

10/1/20 2:50 PM
Sheet 12 of 12