

PLOT SCALE - 1"=4000'

PLOTTED FROM - TRAB10200

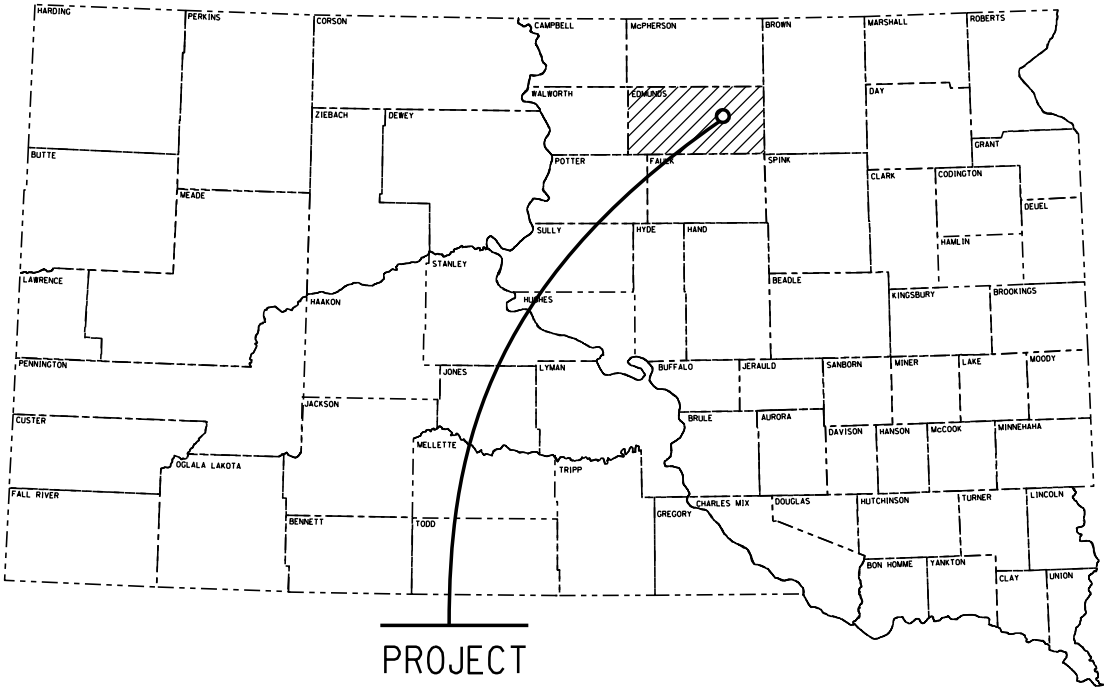
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
W.I.P. # 410A372
EDMUNDS COUNTY

ABRASIVE STORAGE BUILDING
OSE# T2217--10X/DEL
PCN i4M8

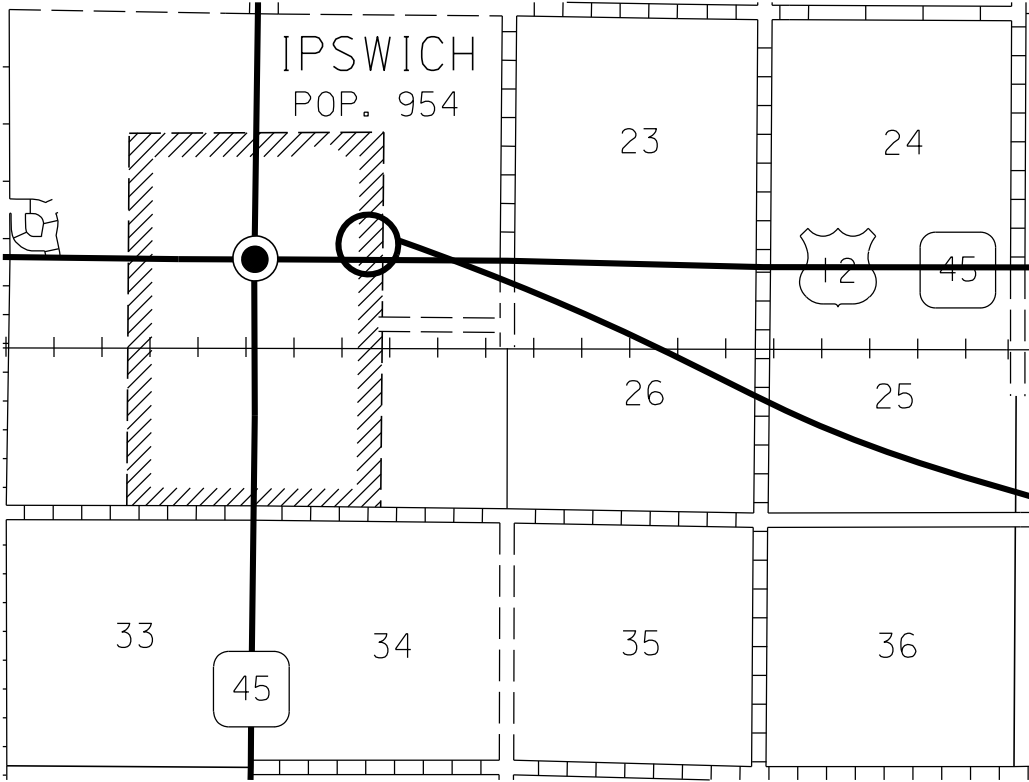
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	410A372	1	9
Plotting Date: 03/07/2017			

INDEX OF SHEETS

Sheet No. 1	Title Sheet and Layout Map
Sheet No. 2-4	Specifications and Plan Notes
Sheet No. 5-8	Building Detail Sheets
Sheet No. 9	Existing Precast Panel Detail

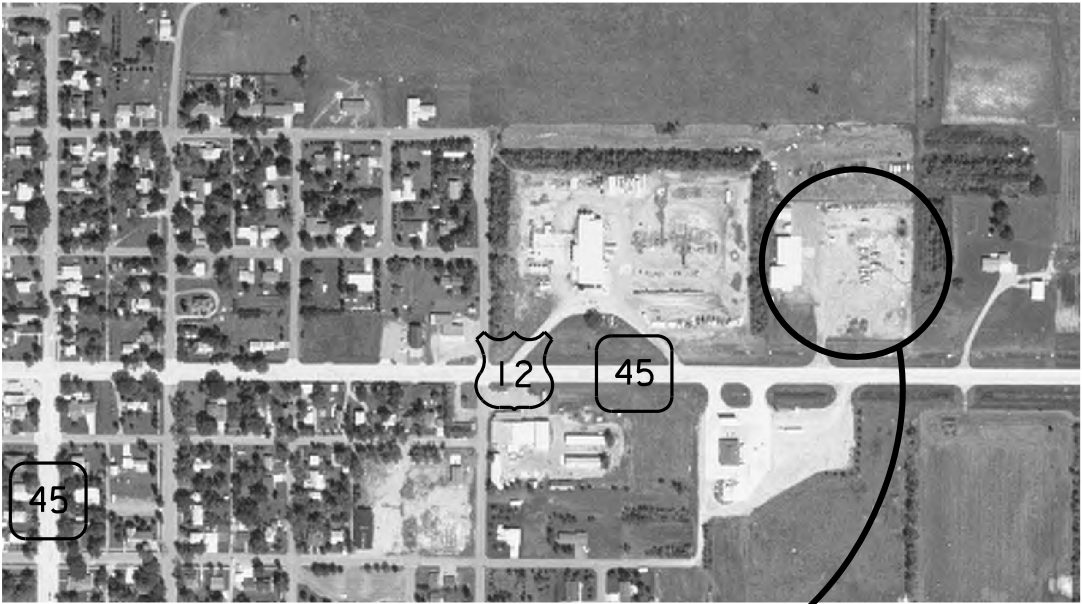


PROJECT



R 68 W

T 123 N



Project Location
SDDOT Ipswich
Maintenance Yard



PLOT NAME - 1

FILE - ... \PRJ\410A372\TITLE-SHEET.DGN

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the Public ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

PERMITS AND LICENSES

The Contractor shall obtain all necessary State and/or County and/or City Permits and/or Licenses in accordance with Section 7.2 of the Standard Specifications.

COMPLETION DATE

This building project has an overall completion date of September 29, 2017.

Failure to complete the building project by the overall completion date of September 29, 2017 shall result in liquidated damages as per Section 8.8 of the Specifications.

SCOPE OF WORK

This project consists of building a 54’ wide by 98’ long wood framed metal covered building around an in place precast concrete bunker structure used to store deicing salt. The individual column footings shall support the wood columns. The building shall be designed to have one open end.

GENERAL CONSTRUCTION NOTES

Storage areas for materials will be provided within close proximity to the building. Exact location will be discussed in greater detail at the Preconstruction meeting. The Contractor must keep the storage area in a neat and tidy condition. No material may be stored in front of buildings or otherwise interfere with normal operations of the SDDOT.

The Contractor shall protect the parking lot from damage during construction activities. The Contractor shall be responsible for any repairs required, at no cost to the State.

Once work starts on this project, work shall proceed in a continuous manner until the project is complete.

Work hours and access to the site will be discussed at the Preconstruction meeting.

The Contractor shall be responsible for backfilling any excavation required to construct the building column footings and walls.

The open end of the building (South side) shall have a minimum of 16 feet of unrestricted vertical clearance. The width of the opening at the open end shall be a minimum of 37 feet. This 37 feet minimum opening width allows for a wall adjacent to the side walls to help support the open end of the building.

The proposed building site will be prepared by SDDOT forces. The Contractor shall notify Phil Dwight, Aberdeen Area Engineer, 605-626-7898 at least two weeks prior to starting work to allow for site work to be completed.

Two of the existing precast concrete bunker panels will require saw cutting by the Contractor in a way that does not spall or damage the concrete. After the cutting has taken place the portion of remaining panels must be at right angles with the existing north-south walls (See Sheet #5). Cut bunker sections are to become property of the Contractor for his disposal.

The proposed building is to be constructed around the existing Abrasive Storage Building. SDDOT forces will have removed all the unnecessary precast concrete bunker panels and their components. Any additional removed materials shall become the property of the Contractor for his disposal. The Contractor shall visit the site to determine the extent of work required to construct the building.

BUILDING DESIGN

- A.

The wood frame building structural design shall conform to the requirements of International Building Code (IBC), 2012 Edition. Structural Design shall be provided by the Building Manufacturer and submitted plans shall be signed and sealed by an Engineer Licensed in the state of South Dakota.
1.

Dead Load of all building structural components furnished by Building Manufacturer.
2.

Ground Snow Load (pg) = 50 psf
3.

Wind

Wind Speed (3 second gust) = 105 mph

Wind Exposure Classification = C
4.

Collateral/Mechanical Dead Load = 0.0
on the frames & purlins. This load
is to be added to the bid Dead Load.
5.

Frost Depth = 40 inches
- B.

Building design shall comply with the following design requirements.
1.

Design of wood members shall be in accordance with formulas published in the latest Edition of the “National Design Specification for Wood Construction”.
2.

Trusses shall conform to Truss Plate Institute’s 2007 Edition of the “National Design Standard for Metal Plate Connected Wood Truss Construction”.
3.

Footings shall be designed based upon an allowable soil loading pressure of 2,000 psf.
- C.

Optional Perma-Column precast concrete columns.
1.

Use of these columns would forgo the need for treated columns, provided the top of the concrete of the Perma-Column is 1’ above grade.
2.

Perma-Columns are manufactured by Perma-Column and consist of 5’ precast concrete columns that keep wood columns out of the ground. They can be researched at the following link: <https://www.permacolumn.com/what-are-perma-columns>
3.

Use of the Perma-Column shall also require the installation of uplift anchors to resist lateral and vertical uplift forces.

MATERIALS AND FABRICATION

The roof framing shall be designed with the uses of wood trusses. All lumber used in the design of the trusses must be kiln dried and graded in accordance with the current grading rules. Design stresses allowed are those listed in the current additions of respective lumber association’s grading rules. The design of wood members must be in accordance with the formulas published in the latest Edition of the “National Design Specification for Wood Construction”. Light metal toothed connector plates and joint design must conform to the specifications as set out in the 2007 edition of Truss Plate Institute’s “National Design Standard for Metal Plate Connected Wood Truss Construction”. Connector plates shall be fabricated from ASTM 446, Grade A, No. 18 and No. 20 gauge steel sheets galvanized with G90 coating.

FOOTINGS

Design of the footings shall be submitted by the Contractor and approved by the Engineer.

Any required Base Course material must be furnished by the Contractor and shall conform to Section 882 of the Specifications.

Excavated material from the footing excavation shall become the property of the Contractor for his disposal.

MINIMUM REQUIREMENTS

Reinforcing Steel for Concrete:

ASTM A615 Grade 60.

#4 Epoxy Coated Reinforcing Bar.

Steel for Sides, Roof, & Trim:

Colored.

29 gauge thickness.

All steel to be screwed.

Minimum 80,000 psi tensile strength.

40 year paint warranty.

Color coated thickness 0.015 mils.

Base steel 0.0145 mils.

0.0015 mils thickness.

Grade E steel.

Paint thickness 0.0015 mils.

0.9 ounces galv. per sq. ft. (ASTM A653 - Coating Designation G90).

Concrete

4,000 psi Concrete.

Coarse aggregate shall be crushed ledge rock.

Lumber

Structural building columns shall be factory fabricated from minimum 3 ply 2" x 8" No. 1 or better southern yellow pine. Columns shall be full-length (un-spliced) nail laminated plys up through 20' with the middle ply to have short truss support block. Columns over 20' length shall be spliced (a minimum of 3' length) with reinforced metal truss plates pressed in place over splice on the outside laminate.

Outer plies of the columns shall be continuous and not have any splices.

Lumber to be treated in accordance with the latest edition American Wood Protection Association (AWPA).

Baseboards shall be pressure preservative treated with preservative chemical treatments and to retention levels per AWPA Use Category UC4A or better. They shall also be made of minimum No. 2 grade lumber and have 1/2" x 3/4" notch in top or tongue and groove.

Portions of wood columns below grade and less than 12 in. above grade must be protected with pressure preservative chemical treatments to retention levels for per AWPA Use Category UC4B or better.

Provide data for the wood-preservative treatment from chemical treatment manufacturer and certification by the treating plant that materials comply with requirements. Certification to indicate type of preservative used and the net amount of preservative retained.

Framing

Fabricated rafter frames shall be provided for overhang framing.

Wall Girts shall be 2" x 6" No. 2 SPF or No. 1 SYP as required by design at 2' maximum spacing.

Purlins and Truss Ties shall be 2" x 6" No. 2 SPF or No. 1 SYP as required by design dependent upon roof loading specification.

"T'd" 2" x 6"/2" X 4" No. 2 or better SPF from end wall column to first truss back shall be provided for wind bracing.

2" x 6"/2" X 4" No. 2 or better SPF shall be utilized around the opening.

Built-up No. 1 or better SYP headers as required to meet proper loading shall be provided for headers.

Trusses

Engineered pre-fabricated roof trusses.

Truss plates shall be galvanized.

Trusses shall be constructed of surfaced lumber, smooth and free of all cracks, checks, and blemishes.

Connectors

All Bolts, Nuts, Washers, Nails and Screws shall be hot dip galvanized or stainless steel.

Powder coated color matched screws to attach steel roofing and siding.

Miscellaneous

60' x 36" Clear or Soft White Polycarbonate eave lights, both sidewalls.

EXPLANATION OF BID

The submission of a bid is conclusive evidence that the Contractor has investigated and is satisfied as to the conditions to be encountered; the character, quality and scope of the proposed work; the quality and quantity of the materials to be furnished. The Technical Specification of the bid documents are intended as a minimum standard for certain portions of the work. If no technical Specification is referenced, then the Contractor shall provide, as a minimum, those items required by codes, standards and regulations of the industry associated with the work being performed. Unless all bids are rejected, the State will accept the lowest responsive and responsible bid.

The Bid for this project shall include:

1. Providing to the Owner three (3) complete sets of design documents for the project including:
 - A. Footing/Foundation Plan including details for required reinforcing steel based on the loading/reaction requirements of the building. An uplift anchor must be attached to the embedded post to aid in the resistance of lateral and vertical uplift forces.
 - B. Wall details including any additional permanent bracing required for corners and the open end of the building.

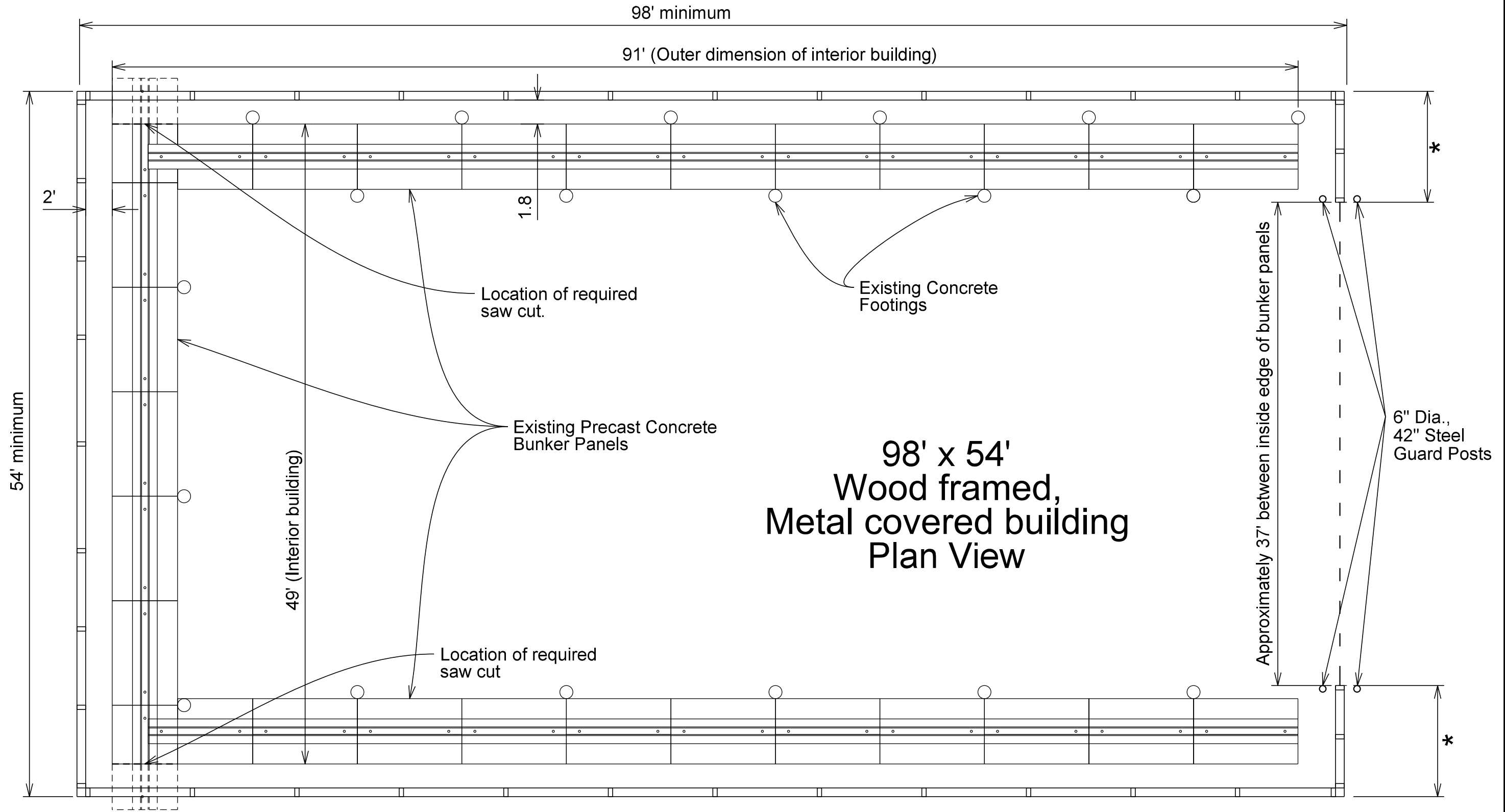
- C. Trusses including any permanent bracing required for the top chord, bottom chord and web member plane.
 - D. Building Plans shall include the method of attachment of the building walls to the columns/column footings and method of attachment of roof trusses to the walls.
 - E. Building Plans based on the Owners suggested floor plan and including details for all wall, roof, eaves, trim and moldings, flashings, fasteners, etc. The building shall be of wood frame type.
 - F. Standard Specifications for the proposed building which augments the specifications found in the bid documents. The specifications found in the bid documents shall be a minimum standard. The building shall have a minimum dimension of 54'W x 98'L, measured from outside of framing to outside of framing. Minimum building height shall be 16' door opening with 18' minimum height sidewalls.
 - G. In addition to complete plans, furnish design calculations and letter of design certification signed by a registered professional engineer licensed in the State of South Dakota.
 - H. Provide Owner with choice of manufacturers standard building colors from which the Owner will determine final building color choice.
2. Successful bidder shall allow for a ten (10) working day review and comment period by the South Dakota Department of Transportation to review items called for under Item #1 above. **Only complete sets of building plans will be reviewed.** Partial submittal of building plans, such as only submitting the trusses, will be returned to the Contractor.
 3. The contract price shall include all labor, material and equipment necessary to construct the Storage Shed as described herein. Include all concrete work associated with perimeter building footings/foundations.

WARRANTIES

The building vendor shall agree to repair, or at its discretion, to replace free of charge the building framework, roofing, or side panels if directly damaged by snow loads for a period of two (2) years. For a period of two (2) years the building vendor shall repair, or at its discretion replace, free of charge, the building framework, roofing, or side panels if directly damaged by wind loads, unless damage is caused by flying or falling objects. The building vendor shall repair, free of charge, any roof leaks due to defects in material or workmanship for a period of two (2) years. Any other building parts that are defective in materials or workmanship shall be repaired, or replaced at the vendor's discretion, for a period of one (1) year.

The paint system on the roofing, walls and trim shall be warrantied for 40 years against fading and chalking. The polycarbonate eave lights shall be warrantied for a period of 10 years against yellowing and damage due to hail. The Contractor shall provide the Engineer with proof of material warranties prior to construction.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	410A372	5	9
Plotting Date: 02/21/2017			



* Opening of building shall match the inside bunker panel sidewall.

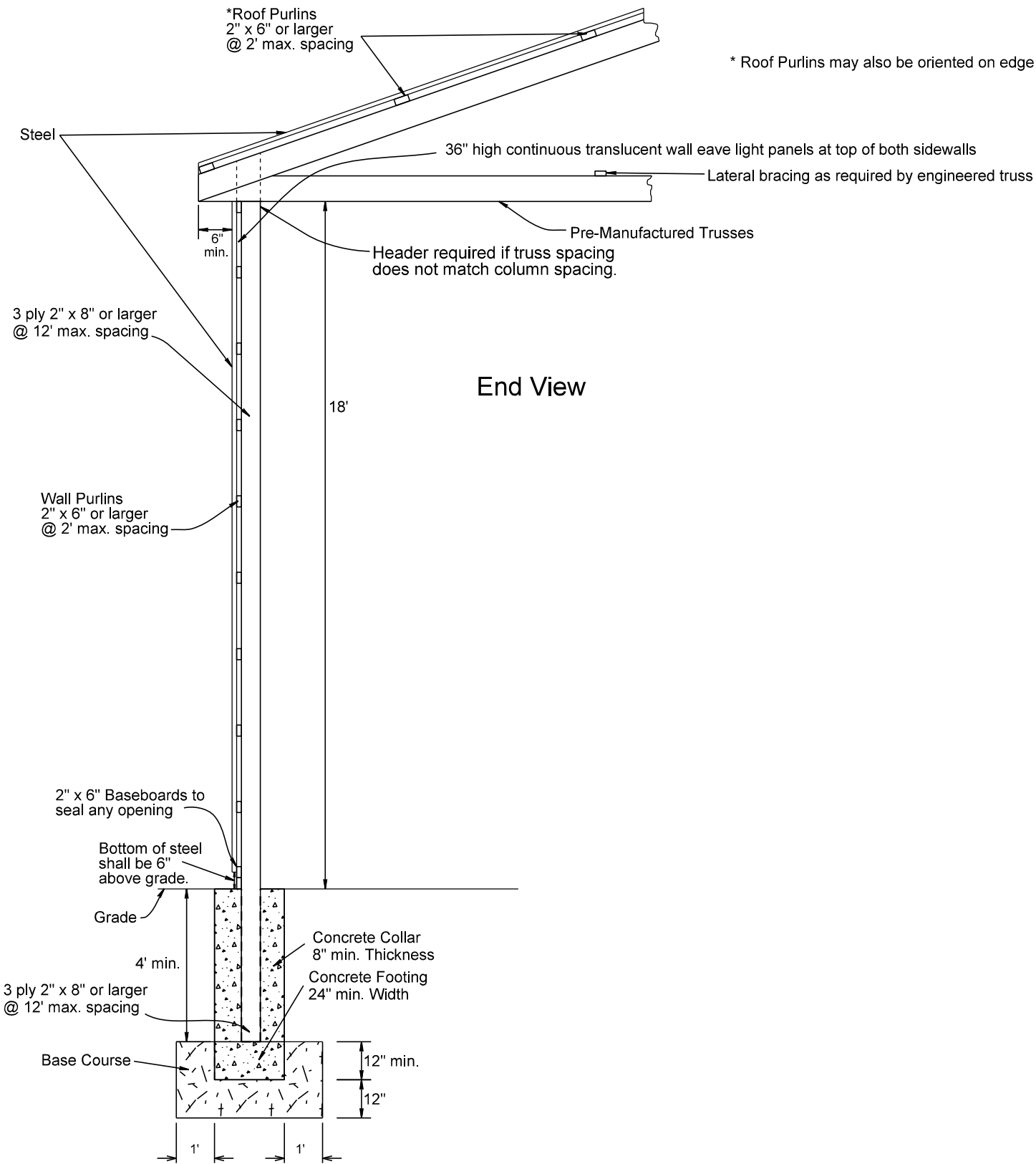
PLOT SCALE - 1/8" = 1'-0"

PLOTTED FROM - TRAB10200

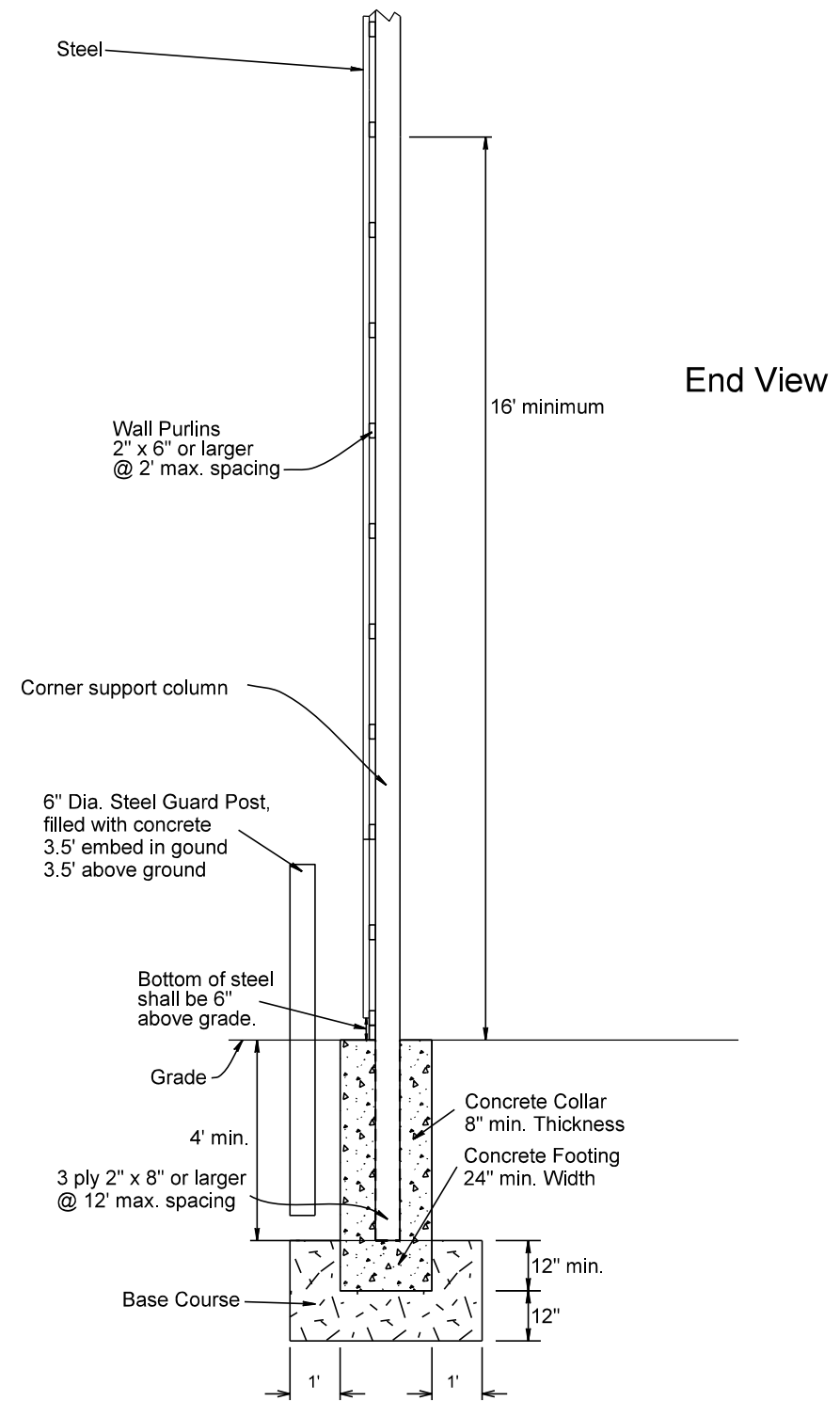
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	410A372	6	9
Plotting Date: 02/21/2017			

PLOT NAME - 3

FILE - ... \STRUCTURE FOR USE NEXT PROJECT AFTER SISSETON.DGN



SIDE WALL SECTION



OPEN END SECTION AT BUILDING OPENING

* This is a potential footing design. Actual footing design shall be as submitted by the Contractor & approved by the Engineer.

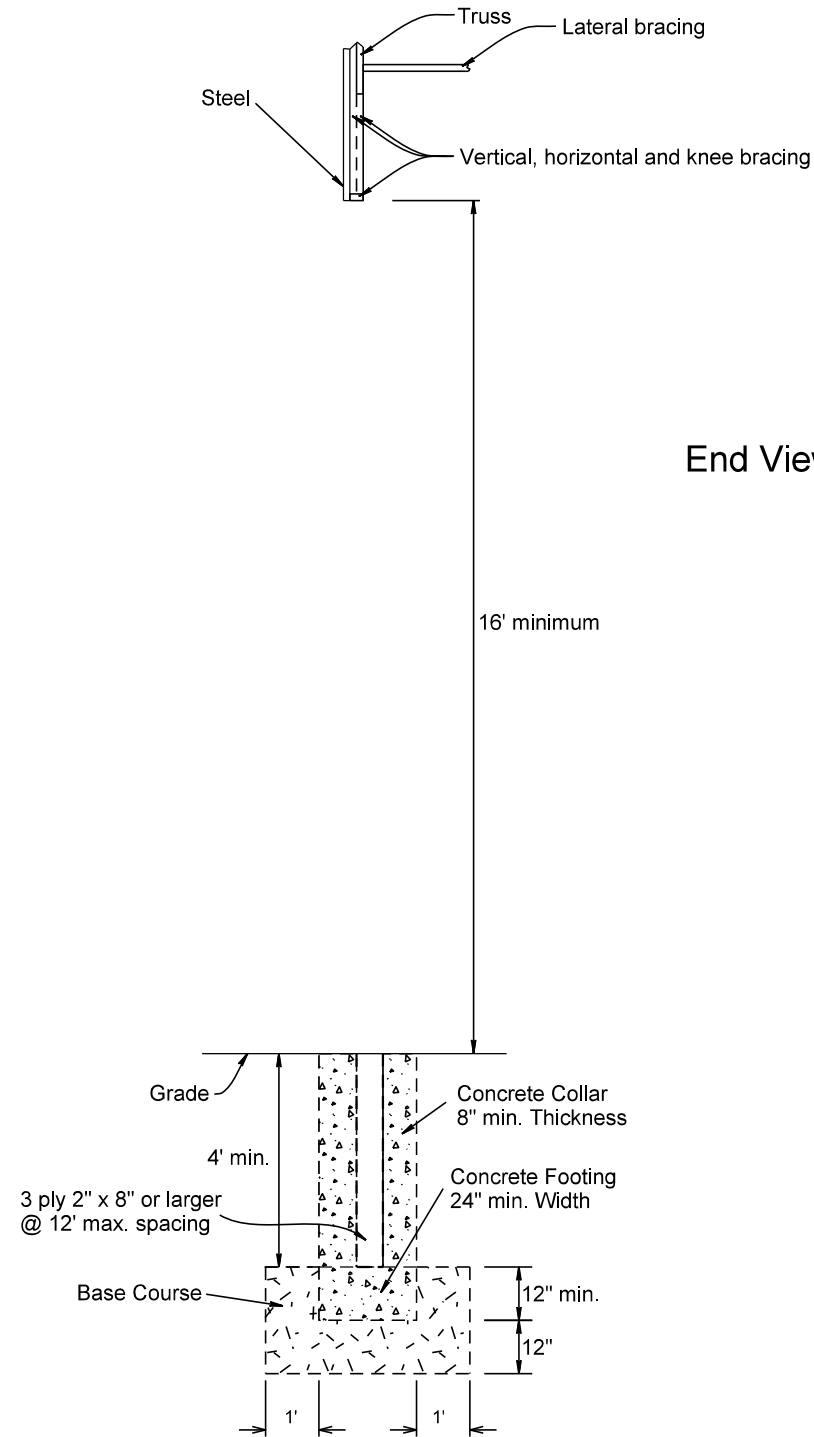
PLOT SCALE - 1/8" = 1'-0"

PLOTTED FROM - TRAB10200

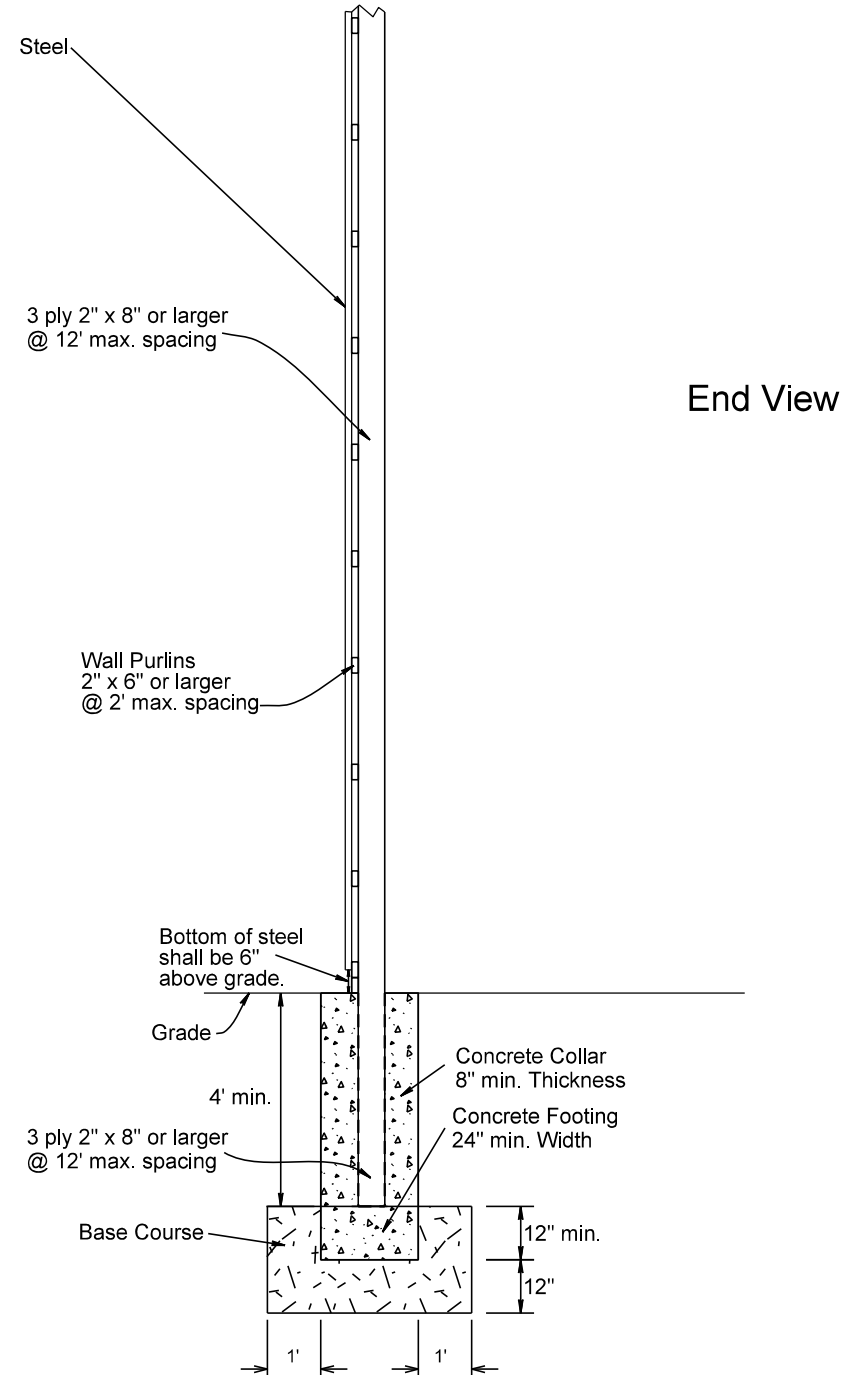
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	410A372	7	9
Plotting Date: 02/21/2017			

FILE - ... \STRUCTURE FOR USE NEXT PROJECT AFTER SISSETON.DGN

PLOT NAME - 2



OPEN END END SECTION

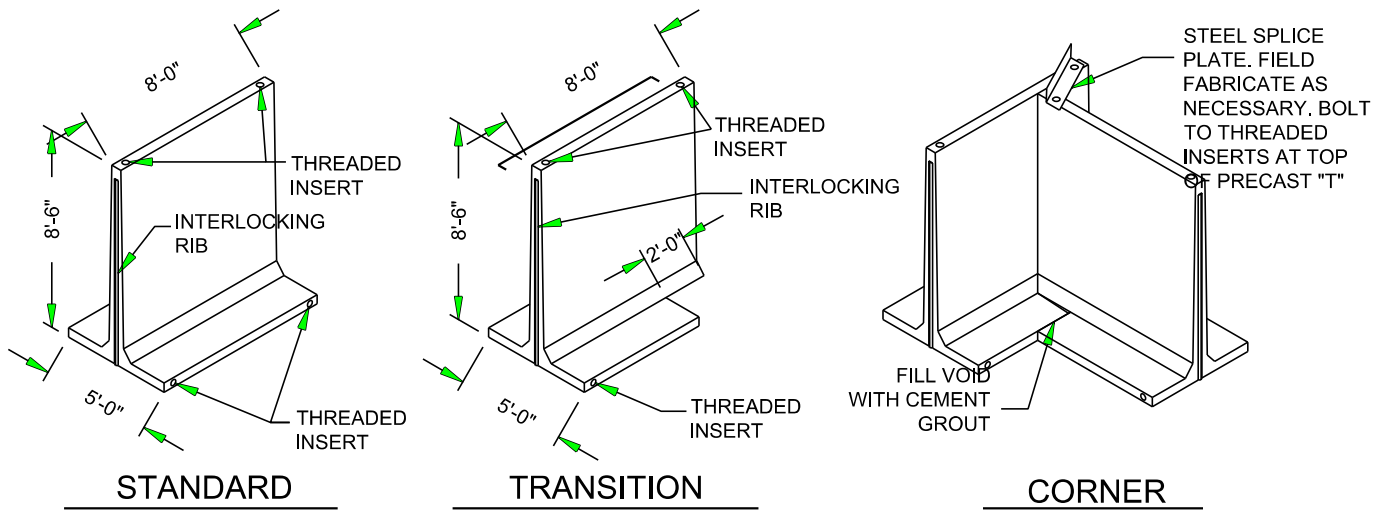


CLOSED END END SECTION

* This is a potential footing design. Actual footing design shall be as submitted by the Contractor & approved by the Engineer.

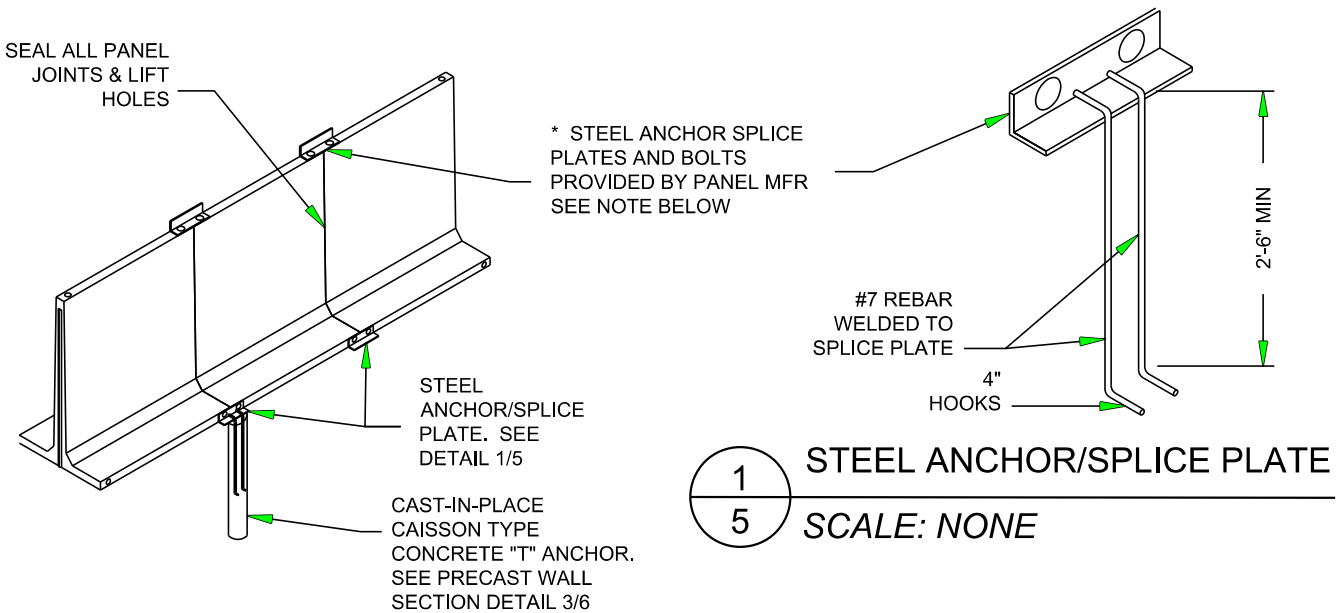
ORIGINAL CONSTRUCTION PLANS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	410A372	9	9
Plotting Date: 02/21/2017			



PRECAST CONCRETE "T" PANEL

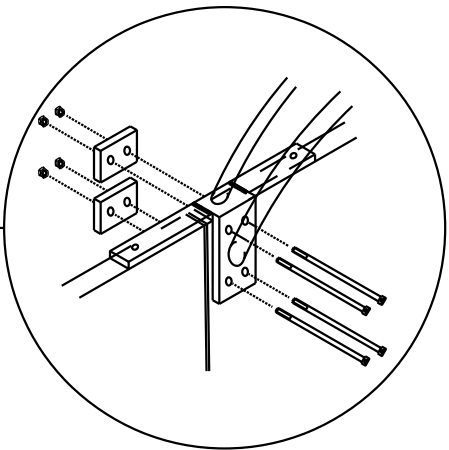
SCALE: NONE



* NOTE: WHERE STEEL ANGLE CONNECTION PLATES CONFLICT WITH TRUSS BASE PLATE, FIELD FABRICATE/WELD AS NECESSARY TO FIT CONNECTION PLATE TO TRUSS BASE PLATE.

TYPICAL "T" PANEL ASSEMBLY

SCALE: NONE



PLOT SCALE - 1:200

-PLOTTED FROM - TRAB10200

PLOT NAME - 6

FILE - ... \IPSWICH SHOP\STD PLATE(1).DGN