

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

WIP 410A368
ROBERTS COUNTY

56' X 90' STORAGE BUILDING

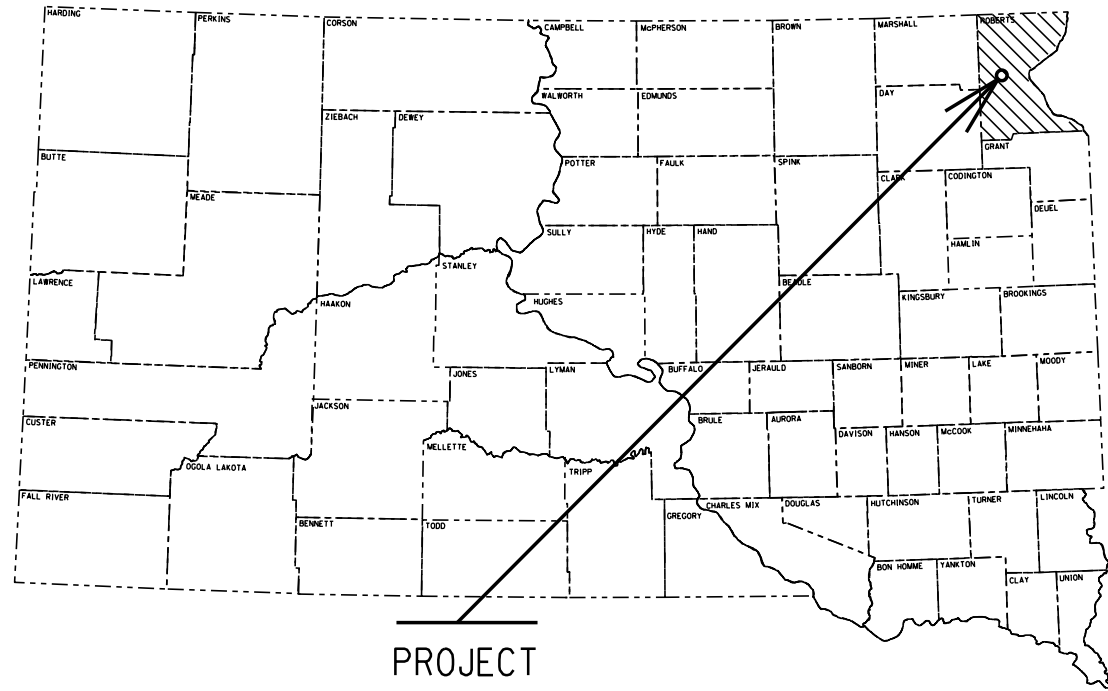
OSE# T2217--02X/DEL

| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|-----------------------|---------|-----------|--------------|
| | 410A368 | 1 | 10 |

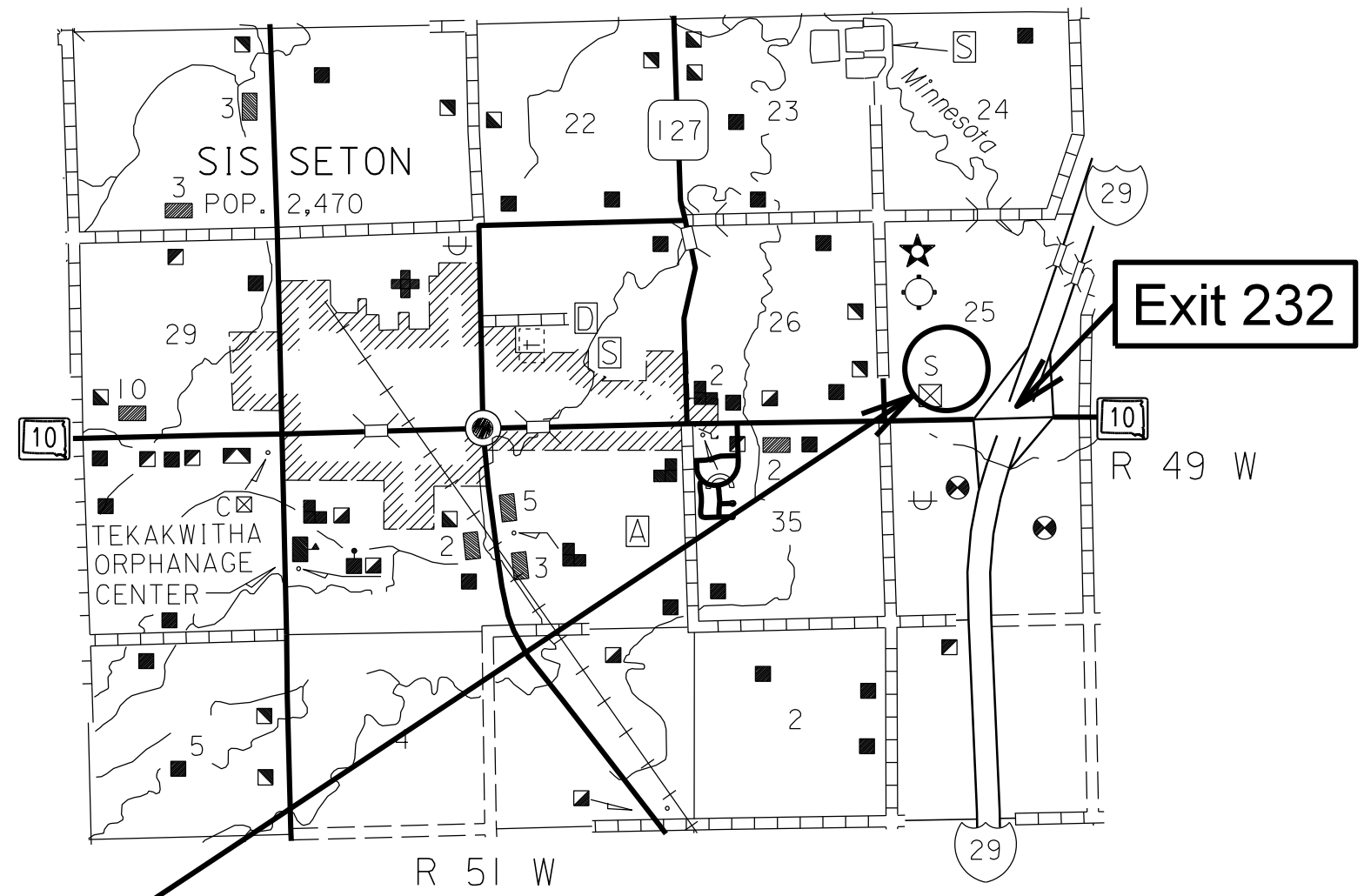
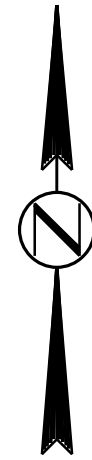
Plotting Date: 08/05/2016

INDEX OF SHEETS

- Sheet 1 Title Sheet and Layout Map
- Sheet 2 Environmental Commitments
- Sheets 3-4 Plan Notes
- Sheet 5 Site Plan and Subsurface Profile
- Sheets 6-9 Building Detail Drawings
- Sheet 10 Standard Plate



Project Location



PLOT SCALE - 1:4400

PLOTTED FROM - TRAB17882

PLOT NAME -

FILE - ... \PRJ\410A368\TITLE SHEET.DGN

| | | | |
|-----------------------------|---------|-------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
| | 410A368 | 2 | 10 |

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.

SCOPE OF WORK

This project consists of building a 56' wide by 90' long wood framed metal covered building atop a concrete wall foundation. The buildings intended use is to store deicing salt. The concrete wall foundation 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 foundation and walls. The SDDOT shall be responsible for placing any asphalt concrete surfacing inside the building.

Concrete sidewall of the building shall be constructed with a 3" steel conduit opening to allow electrical service line to enter building. Location of conduit shall be in the southeast corner of building as directed by the Engineer. Steel conduit shall be located 18" below grade and the ends of the conduit shall extend 1' on each side of the concrete sidewall.

The open end of the building (East 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 40 feet. This 40 feet minimum opening width allows for a concrete 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 Matt Brey, Watertown Area Engineer, 605-882-5166 at least two weeks prior to starting work to allow for site work to be completed.

The proposed building is to be constructed approximately 75' north of the former storage shed. SDDOT forces have removed all but the wood posts from the former storage shed. The Contractor shall remove the remaining posts from the storage shed. The wood posts are 8"x8" and embedded in the ground approximately 6 Ft. The upper 4 Ft of the wood post is encased in concrete. The Contractor shall remove the wood post and the concrete encasement. The posts are spaced at 5 Ft. The surface of the area around the post may be covered with asphalt pavement. SDDOT forces will backfill the post holes. All 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 remove the old posts.

The Contractor may chose Option 1 or Option 2, as shown in these plans for the building configuration.

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 lbs
 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.

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

The concrete footings shall be undercut 1' in depth and 1' wider than the width of the concrete footings. The undercut area shall be backfilled with Base Course. Compaction of the Base Course shall be to the satisfaction of the Engineer.

The Base Course material may be obtained from the SDDOT Sisseton Yard project site and may be used without further testing.

The furnish cost of the state material is \$8.00 per ton.

Excavated material from the footing excavation may be disposed of at the SDDOT Sisseton Yard. The Engineer shall direct the location where the material may be disposed of.

ELECTRICAL

A 120 Volt outlet shall be installed in the SE corner of the building, as indicated on the drawings. Outlet shall be located a minimum of 4' above grade.

A LED Exterior Wallpack Luminaire shall be mounted above the building entrance. The luminaire shall be centered above the open end of the building. The LED Exterior Wallpack Luminaire shall deliver 6,000 lumens. The LED Exterior Wallpack Luminaire shall be an e-conolight, 75WLED, Cool White catalog# E-WP11L07CZ.

All wiring within the buildings shall be installed in conduit.

Power for the outlet and lighting shall come from the blue cold storage shed located to the SE of the proposed building. The electrical service panel is located in the southwest corner of the blue cold storage building. The power line from the blue cold storage building to the proposed building shall be installed as per Standard Plate 635.76.

The straight line distance from the SW corner of the blue cold storage shed to the SE corner of the proposed storage shed is estimated at 225 Ft.

All work and materials to install the electrical service and lighting shall be included in the Lump Sum contract item, BUILDING, ELECTRICAL.

MINIMUM REQUIREMENTS

Reinforcing Steel for Concrete:

ASTM A615 Grade 60.
#4 Epoxy Coated Reinforcing Bar.
One row spaced @ 2' center to center, both horizontally and vertically in the foundation walls.
Three rows spaced 9" center to center and tied at 4' spacing in the footings.

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 pressure preservative treated.
Outer plies of the columns shall be continuous and not have any splices.
Pressure preservative treated skirt (splash) boards- minimum #2 grade lumber.
Dimensional (no Green) framing lumber- minimum Standard or #2 Graded (no utility or #3).
Any lumber in contact with concrete shall be pressure preservative treated.
Lumber to be treated in accordance with the latest Edition American Wood Protection Association (AWPA), Standard UC2 or higher.

Trusses

Engineered pre-fabricated roof trusses.
Truss plates shall be galvanized.

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 or 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.
 - B. 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. In addition to plans, furnish design calculations and letter of design certification signed by a registered professional engineer licensed in the State of South Dakota.
 - C. 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 56'W x 90'L, measured from outside of framing to outside of framing. Minimum building height shall be 16' door opening with 18' minimum height sidewalls.
 - D. Building Plans shall include the method of attachment of the building columns to the concrete foundation sidewalls.
 - E. 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.
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.

COMPLETION DATE

This building project has an overall completion date of November 12, 2016. There shall be an interim completion date of October 8, 2016 for the completion of all concrete work required for the building.

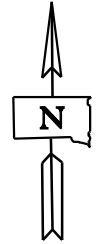
The Contractor shall allow the SDDOT 3 working days following completion of the concrete work and backfilling, prior to construction of the wood frame, to place the asphalt surfacing within the buildings perimeter.

Failure to complete all the concrete work by the interim completion date of October 8, 2016 shall result in liquidated damages of \$250 per calendar day.

Failure to complete the building project by the overall completion date of November 19, 2016 shall result in liquidated damages as per Section 8.8 of the Standard Specifications.

| | | | |
|----------|---------|-----------|--------------|
| STATE OF | PROJECT | SHEET NO. | TOTAL SHEETS |
| S.D. | 410A368 | 5 | 10 |

Plotting Date: 08/04/2016



The Geotechnical Engineering Activity has all of the boring logs and laboratory test results available for review at the Central Office in Pierre.

LEGEND

- Penetration Test
- ▽ Water
- Sample Zone

Penetration test holes are drilled with a 6⁵/₈ inch diameter hollow stem auger. Penetration tests are conducted by dropping a 140 pound hammer 30 inches to obtain 2 inch nominal diameter samples and to measure the resistance to penetration of the soil.

GROUND WATER ELEVATIONS
as of JULY 2016

| | |
|----|--------|
| F1 | 1148.5 |
| F2 | 1148.1 |

| | |
|----------------|------------|
| Hole Number | F1 |
| Station | NW Corner |
| Depth | 2.2 ft |
| Soil Color | Brown |
| Classification | Sandy Clay |
| Strength (Qu) | 5,486 psf |
| Dry Density | 112.9 pcf |
| Wet Density | 129.4 pcf |
| Moisture | 14.6 % |
| Pass No. 10 | 97.3 % |
| Pass No. 40 | 87.4 % |
| Pass No. 200 | 64.8 % |
| Sand Content | 32.5 % |
| Silt Content | 32.9 % |
| Clay Content | 31.9 % |

| | |
|----------------|-----------|
| Hole Number | F1 |
| Station | NW Corner |
| Depth | 4.5 ft |
| Soil Color | Dark Gray |
| Classification | Silt-Clay |
| Strength (Qu) | 6,374 psf |
| Dry Density | 95.1 pcf |
| Wet Density | 117.2 pcf |
| Moisture | 23.3 % |
| Pass No. 10 | 93.8 % |
| Pass No. 40 | 92.9 % |
| Pass No. 200 | 87.6 % |
| Sand Content | 6.2 % |
| Silt Content | 43.7 % |
| Clay Content | 43.9 % |

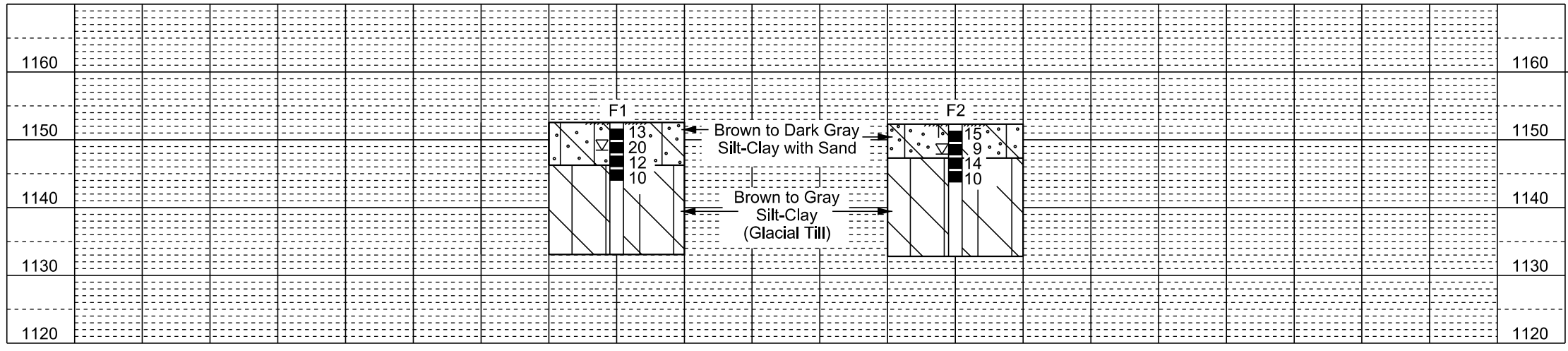
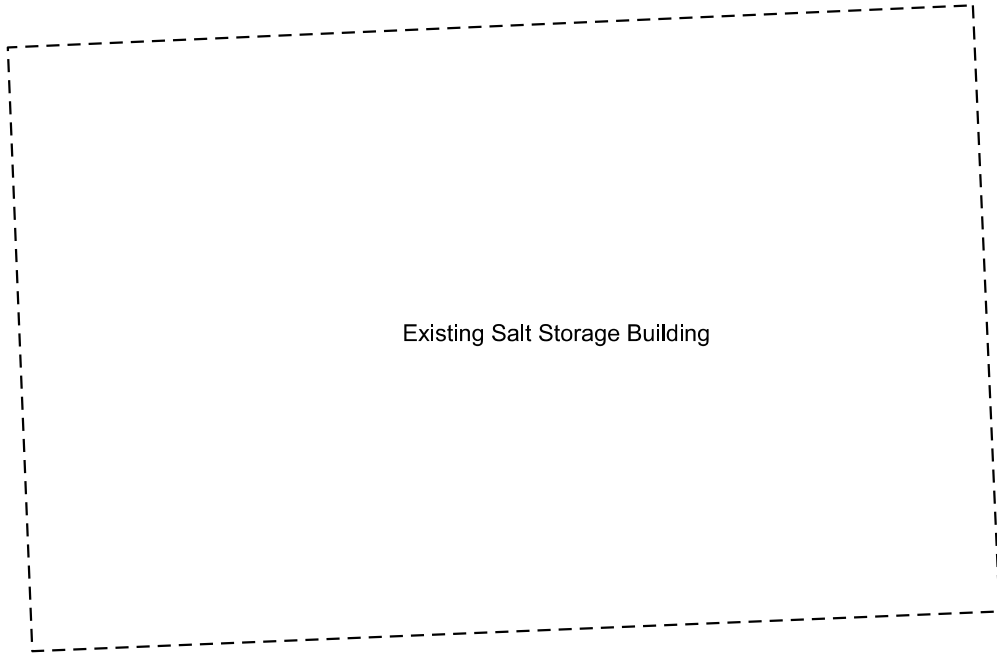
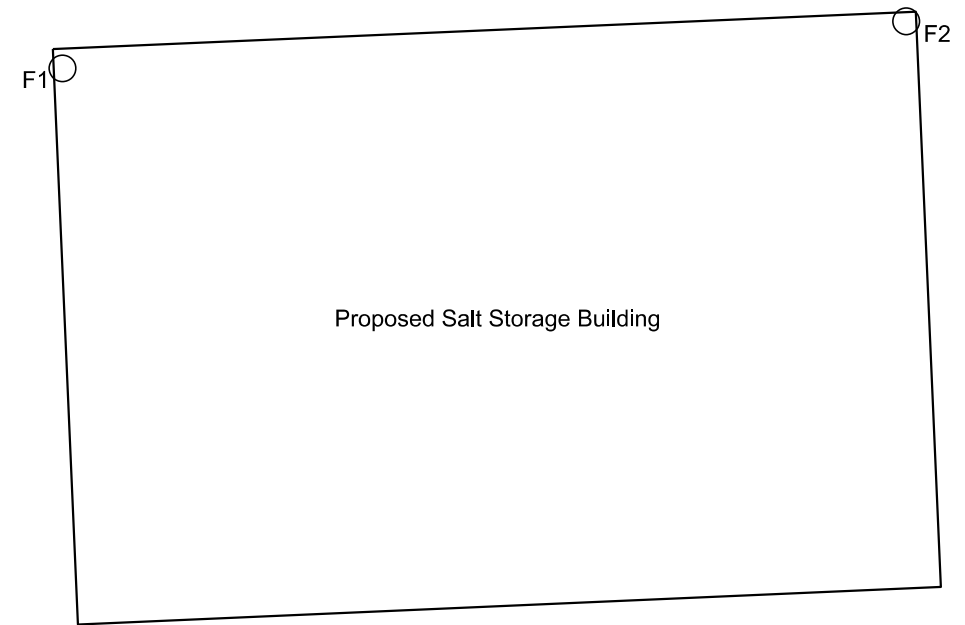
| | |
|----------------|------------|
| Hole Number | F2 |
| Station | NE Corner |
| Depth | 2.2 ft |
| Soil Color | Brown |
| Classification | Clay-Silt |
| Strength (Qu) | 12,900 psf |
| Dry Density | 117.9 pcf |
| Wet Density | 132.4 pcf |
| Moisture | 12.3 % |
| Pass No. 10 | 98.4 % |
| Pass No. 40 | 89.5 % |
| Pass No. 200 | 64.8 % |
| Sand Content | 33.6 % |
| Silt Content | 34.5 % |
| Clay Content | 30.3 % |

| | |
|----------------|------------|
| Hole Number | F2 |
| Station | NE Corner |
| Depth | 4.2 ft |
| Soil Color | Brown |
| Classification | Sandy Clay |
| Strength (Qu) | 1,822 psf |
| Dry Density | 95.5 pcf |
| Wet Density | 115.1 pcf |
| Moisture | 20.4 % |
| Pass No. 10 | 98.0 % |
| Pass No. 40 | 89.9 % |
| Pass No. 200 | 70.0 % |
| Sand Content | 28.1 % |
| Silt Content | 33.9 % |
| Clay Content | 36.1 % |

Sample Zone ■ 48 Blows Per Foot

Penetration Test results are listed as uncorrected "N" values. Blows over inches are listed if refusal is achieved, which is 50 blows within one 6 inch set.

12 to 24 inches of gravel surfacing and organic material overlies the proposed site.



410A368 ROBERTS COUNTY
PROPOSED SALT STORAGE BUILDING
SISSETON DOT YARD
SEC. 25 - T126N - R51W

SITE PLAN & SUBSURFACE PROFILE

| | | | |
|-------------|----------|------------|-----------------|
| DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED |
| | HK | JW | |
| | | | BRIDGE ENGINEER |

PLOT SCALE - 1"=20'

PLOTTED FROM - TRPR14466

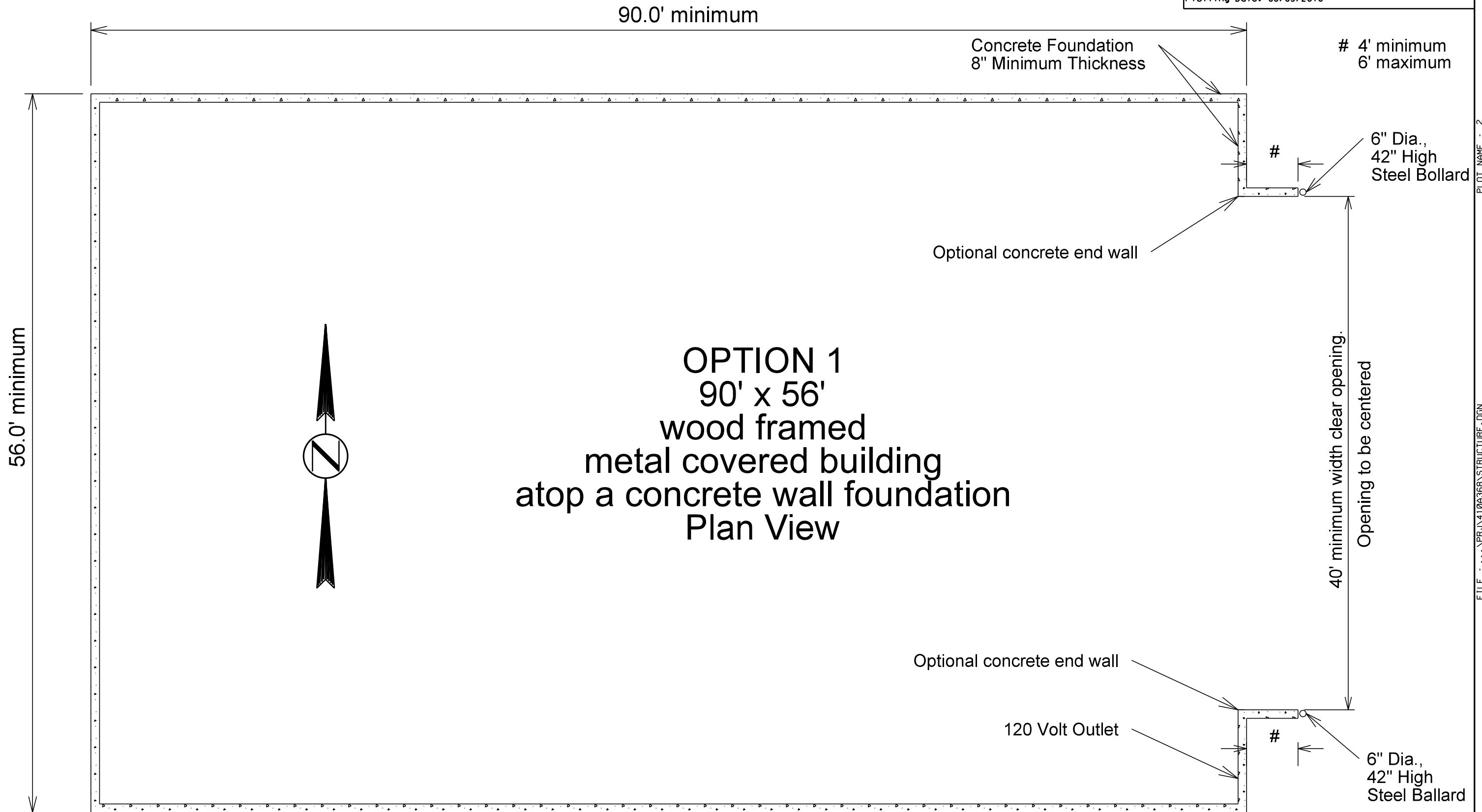
PLOT NAME - 1

FILE ... \ROBERTS_410A368.DGN

| | | | |
|-----------------------------|---------|--------------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
| | 410A368 | 6 | 10 |
| Plotting Date: 08/05/2016 | | | |

PLOT SCALE - 1:7.35

PLOT NAME - 2



PLOTTED FROM - TRAB17882

FILE - ... \PRJ\410A368\STRUCTURE.DGN

Grade Elevation and building location to be provided by the SDDOT. The Contractor shall be responsible for staking the building so that the building is square.

| | | | |
|-----------------------------|---------|--------------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
| | 410A368 | 7 | 10 |
| Plotting Date: 08/05/2016 | | | |

PLOT SCALE - 1:7.35

PLOTTED FROM - TRAB17882

PLOT NAME - 3

FILE - ... \PRJ\410A368\STRUCTURE.DGN

90.0' minimum

56.0' minimum

52' minimum width clear opening

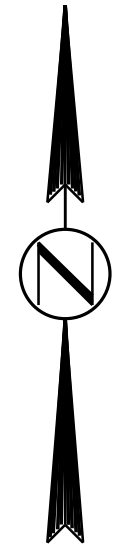
Concrete Foundation
8" Minimum Thickness

4' minimum
6' maximum

6" Dia.,
42" High
Steel Bollard

6" Dia.,
42" High
Steel Ballard

120 Volt Outlet



OPTION 2
90' x 56'
wood framed
metal covered building
atop a concrete wall foundation
Plan View

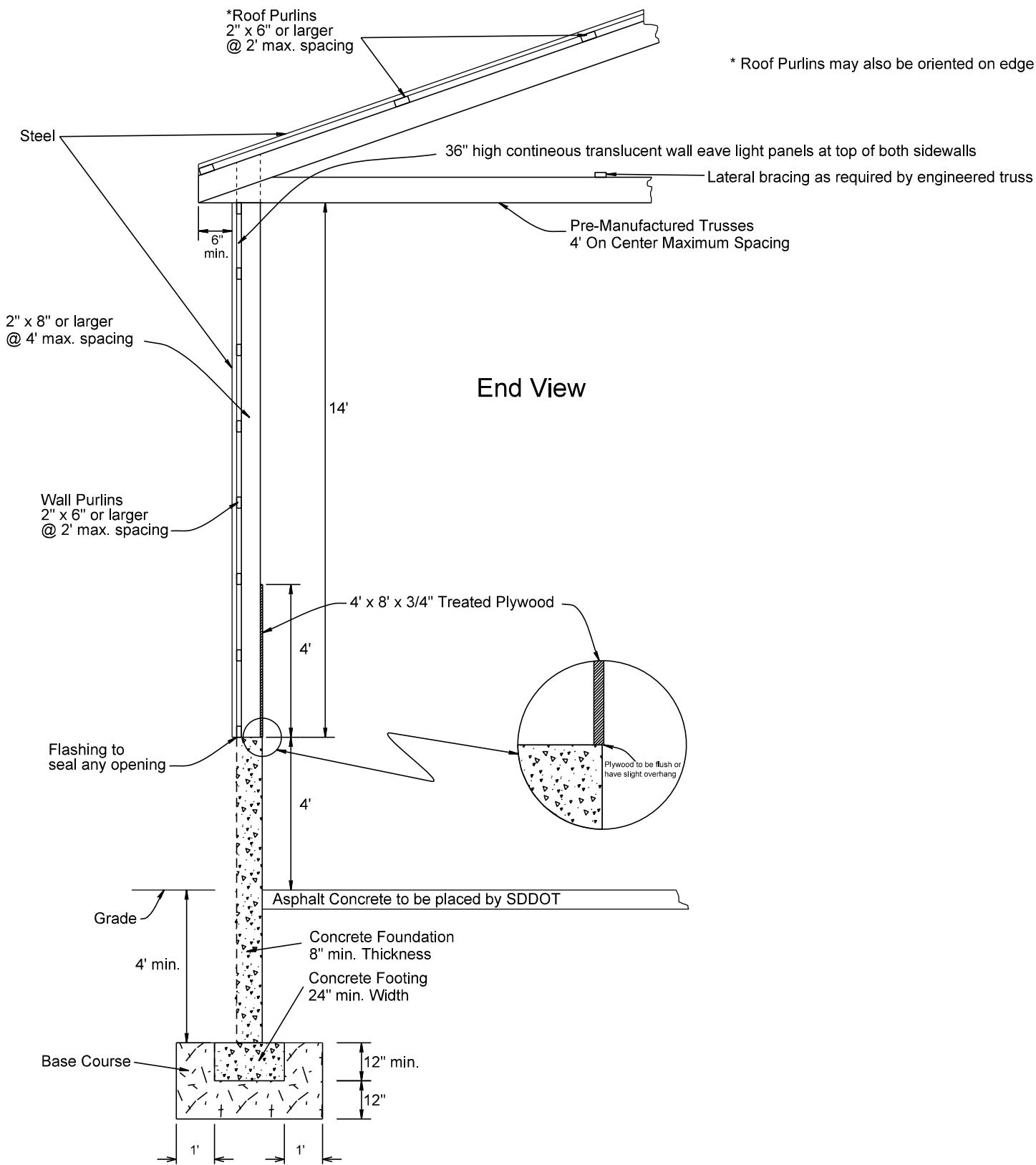
Grade Elevation and building location to be provided by the SDDOT. The Contractor shall be responsible for staking the building so that the building is square.

| | | | |
|-----------------------------|---------|--------------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
| | 410A368 | 8 | 10 |
| Plotting Date: 08/05/2016 | | | |

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

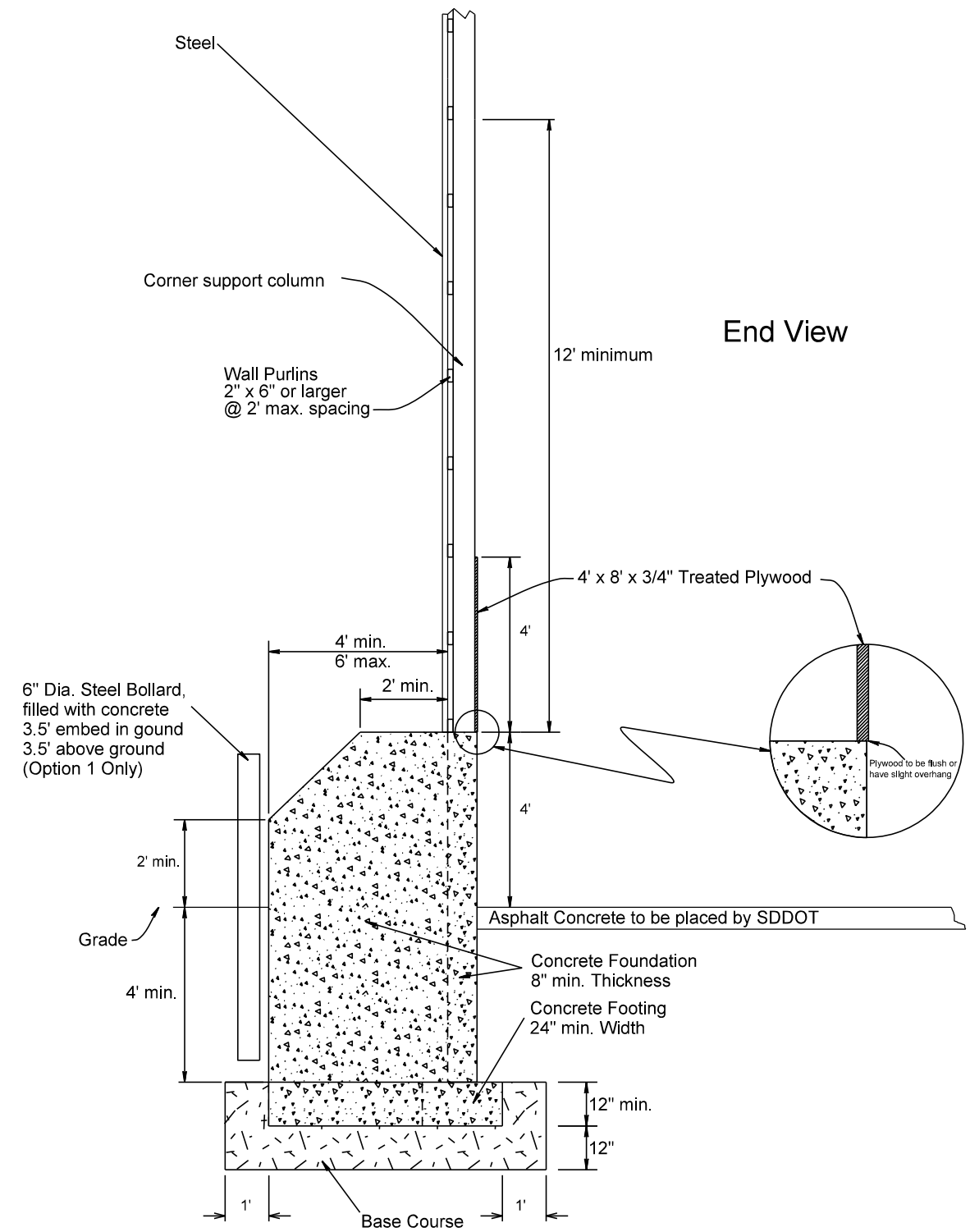
PLOT NAME - 4

FILE - ... \PRJ\410A368\STRUCTURE.DGN



**OPTION 1 AND 2
SIDE WALL SECTION**

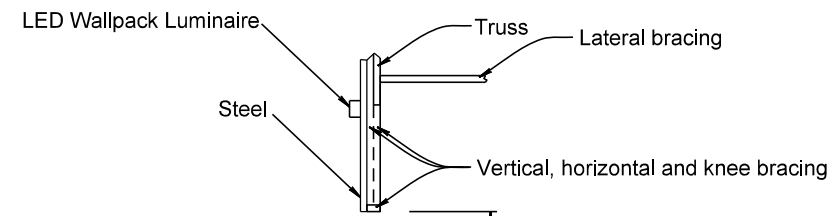
* Roof Purlins may also be oriented on edge or installed between trusses using hangers



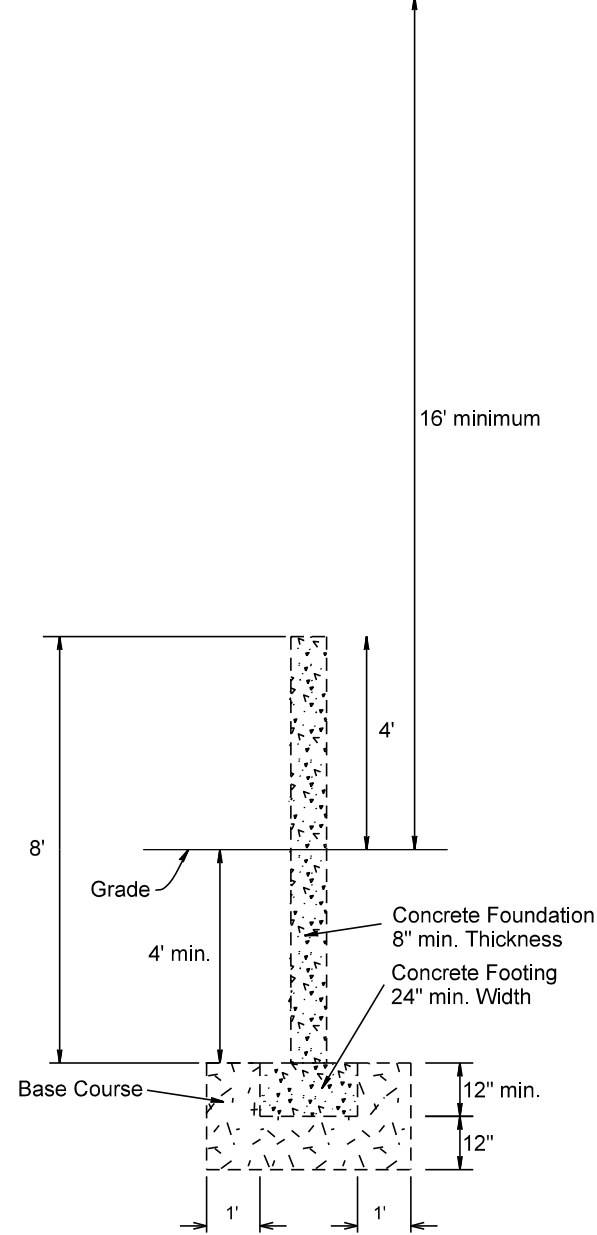
**OPTION 2
SIDE WALL SECTION
AT OPEN BUILDING END**

PLOTTED FROM - TRAB17882

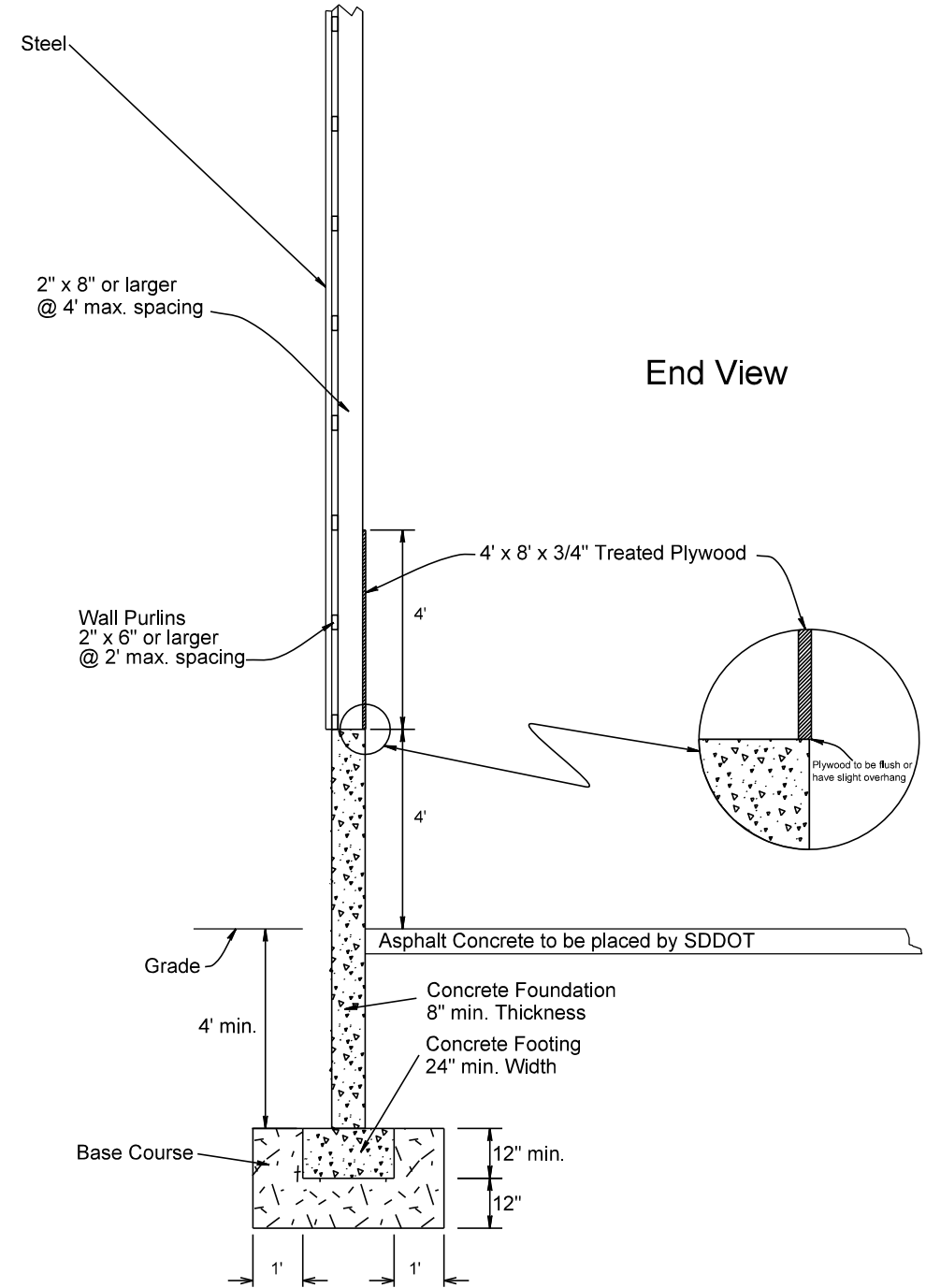
| | | | |
|-----------------------------|---------|--------------|-----------------|
| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
| | 410A368 | 9 | 10 |
| Plotting Date: 08/05/2016 | | | |



End View

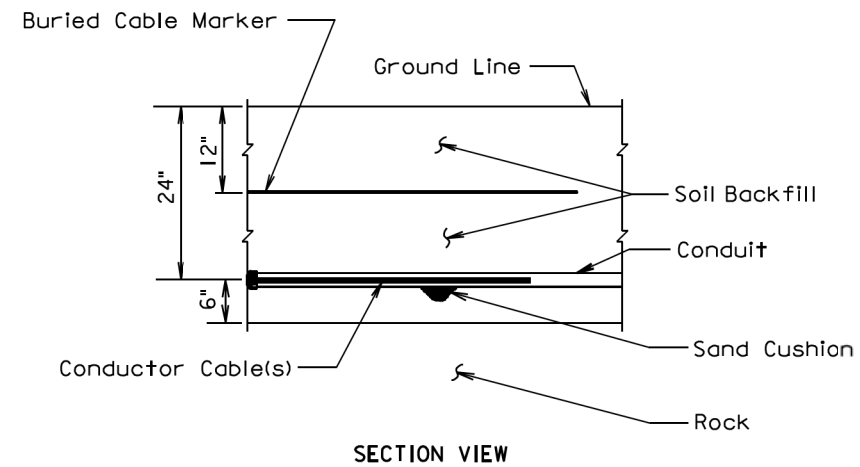
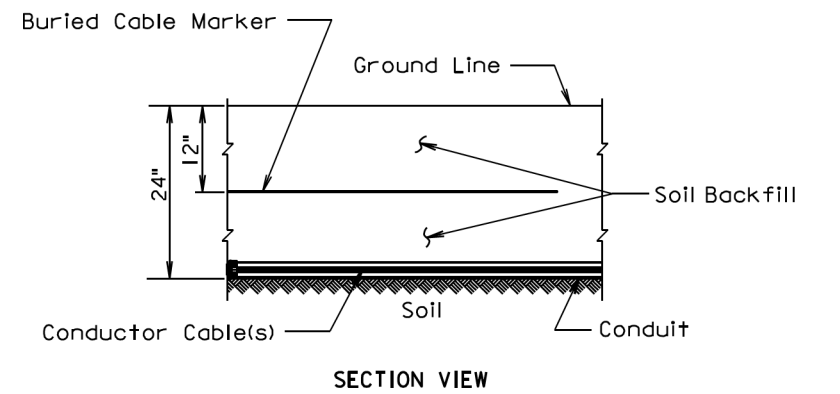


OPTION 1 AND 2
OPEN END
END SECTION



End View

OPTION 1 AND 2
CLOSED END
END SECTION



GENERAL NOTE:

The Buried Cable Marker shall be plastic, approximately 6" wide, and shall be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker shall have a life expectancy approximately equal to that of the conductor(s) beneath it. A phrase indicating the presence of a buried electric circuit below shall be printed in a contrasting color on the cable marker. The Buried Cable Marker shall be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker shall be incidental to the contract unit price per Foot for the bid item used for the electrical conductor.

March 31, 2000

| | | |
|----------------------------------|-----------------------------|-------------------------------|
| S D D O T | CONDUIT INSTALLATION | PLATE NUMBER 635.76 |
| | | Sheet 1 of 1 |

Published Date: 3rd Qtr. 2016