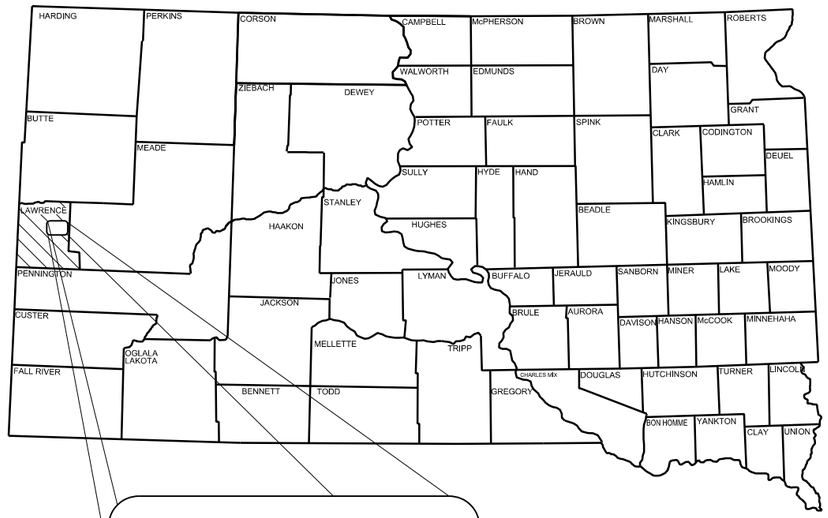


PROJECT LOCATION

200 feet East of
Laurel St on the Whitewood Service Road
over the RCPE Railroad

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

PROJECT BRF 6545(05)
CITY OF WHITEWOOD

STRUCTURE REMOVAL AND ROAD REALIGNMENT
Str. No. 41-211-100
PCN 08NQ

FOR BIDDING PURPOSES ONLY

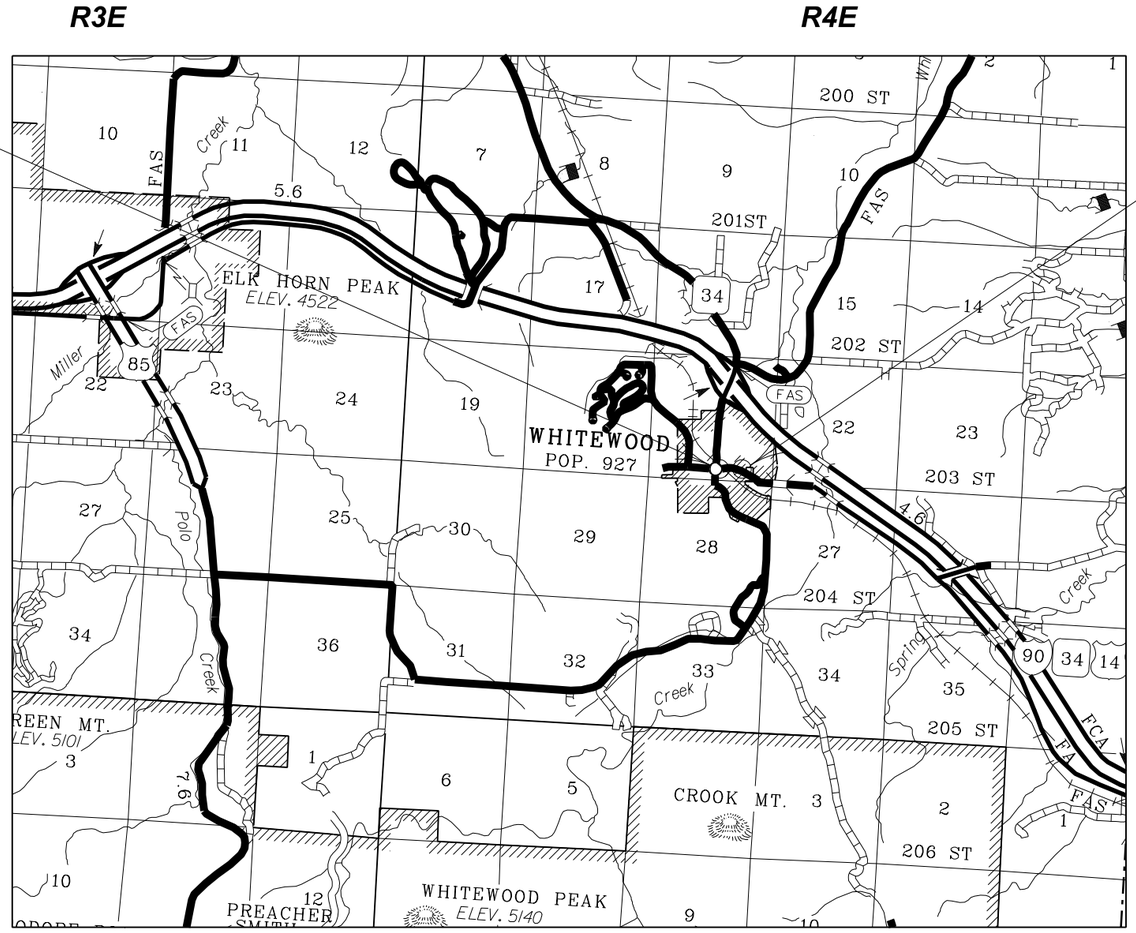
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	1	33

N

INDEX OF SHEETS

Begin Project BRF 6545(05)
At Sta. 7+62

End Project BRF 6545(05)
At Sta. 13+56



STORM WATER PERMIT DATA

None Required

Brosz ENGINEERING, INC.

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24

1

August 21, 2024

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6545(05)	2	33

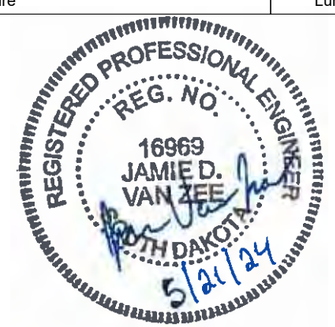
ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	0.047	Mile
009E3250	Miscellaneous Staking	0.047	Mile
009E3280	Slope Staking	0.047	Mile
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
100E0100	Clearing	Lump Sum	LS
* 110E0600	Remove Fence	305	Ft
110E1690	Remove Sediment	2.0	CuYd
120E0010	Unclassified Excavation	6,431	CuYd
230E0010	Placing Topsoil	216	CuYd
250E0020	Incidental Work, Grading	Lump Sum	LS
270E0040	Salvage and Stockpile Asphalt Mix and Granular Base Material	471.0	Ton
270E0110	Salvage and Stockpile Granular Material	101.5	Ton
* 620E0010	Type 1 Right-of-Way Fence	489	Ft
* 620E1020	2 Post Panel	6	Each
632E2535	Type 4 Object Marker	6	Each
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	215.5	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	12	Each
730E0210	Type F Permanent Seed Mixture	144	Lb
731E0200	Fertilizing	1.50	Ton
732E0100	Mulching	6.0	Ton
734E0154	12" Diameter Erosion Control Wattle	900	Ft
734E0602	Low Flow Silt Fence	250	Ft
734E0610	Mucking Silt Fence	18	CuYd
734E0620	Repair Silt Fence	63	Ft
997E0100	Ballast	18.3	Ton
998E0100	Railroad Protective Insurance	Lump Sum	LS

*** - Denotes Non-Participating**

STRUCTURE NO. 41-211-100 QUANTITIES:

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS



SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 edition and required provisions, supplemental specifications, and/or special provisions as included in the proposal.

The RCPE Public Project Manual, 2019 (PPM) can be downloaded through the SDDOT Bid Letting Contractors Sharepoint.

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified 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. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf >

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (DANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:
< https://sdleastwanted.sd.gov/maps/default.aspx >

< South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species: https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04 >

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will 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) will 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 Agriculture and Natural Resources.

The waste disposal site(s) will 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 Environmental Office and the Project Engineer.

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

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

COMMITMENT H: WASTE DISPOSAL SITE (CONTINUED)

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will 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) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic 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 a cultural resource review prior to scheduling the pre-construction meeting. 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 will arrange and pay for a record search and when necessary, a cultural resource survey. 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 if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in 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 will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. 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.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 150 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery 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 will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

COMMITMENT M: SECTION 4(f)/6(f) RESOURCES

COMMITMENT M1: SECTION 4(f) PROPERTY

A Section 4(f) Evaluation concluded there are no feasible and prudent alternatives to avoiding the Section 4(f) property located within the project.

Station	Section 4(f) Property
8+50 to 11+50	Historic Structure 41-211-100

Action Taken/Required:

The following measures are required to minimize harm to the above Section 4(f) property:

The removal and replacement of structure 41-211-100 has resulted in an Adverse Effect to historic properties. A Memorandum of Agreement was signed, and MOA stipulations must be fulfilled prior to construction. The SDDOT Environmental Office received a letter of fulfillment from SHPO on April 19, 2024, for MOA stipulations (I-III).

A programmatic Section 4(f) Evaluation for Use of Historic Bridge 41-211-100 was approved by FHWA.

COMMITMENT S: FIRE PREVENTION IN THE BLACK HILLS AREA

This project is located within the Black Hills Forest Fire Protection Boundary.

Action Taken/Required:

The Contractor will adhere to the “Special Provision for Fire Plan”.

CITY OF WHITEWOOD REQUIREMENTS

The City will be responsible for the following items without federal participation.

1. Right of way and temporary and permanent easements.
2. Coordination of any utility adjustments.
3. Furnish and install temporary and-or permanent fencing.
4. Remove silt fence in permanently seeded areas after vegetation is established.

RAILROAD GENERAL NOTES

1. Pipeline construction under Railroad will be done in accordance to Railroad Public Project Manual (PPM), last revised April 2019.
2. Temporary construction Clearance – Ensure falsework, bracing or forms have a minimum horizontal clearance of 12 feet measured perpendicular to the centerline of the nearest track.
3. Means and Methods – The Contractor must develop a detailed submission indicating the progression of work with specific times when tasks will be performed for work activities that are on or in the vicinity of the Railroad property. This submission may require a walkthrough at which time Railroad and/or the Representative will be present. Work will not be permitted to commence until the Contractor has provided Railroad with a satisfactory plan that the project will be undertaken without scheduling, performance, or safety related issues. Provide a listing of the anticipated equipment to be used, the location of all equipment to be used, and ensure a contingency plan of action is in place should a primary piece of equipment malfunction. All work in the vicinity of Railroad property that has the potential of affecting Railroad train operations must be submitted and approved by Railroad prior to work being performed. This submission will also include a detailed narrative discussing the coordination of project safety issues between Contractor, Railroad, and the Representative. The narrative will address project level coordination and day to day, specific work operations including crane and equipment operations, erection plans, and temporary works.
4. Erection Procedures, Excavation, and Shoring Procedures are required to be submitted to Railroad, or the Representative, in accordance with the PPM, last revised April 2019. The PPM should be referred to and complied with prior to the preparation of submissions, as it contains specific requirements that could impact the Contractor’s material selection and methods or operations for work near the railroad. Revisions to Contractor submissions may not be field approved. Any deviation(s) from a previously accepted plan including equipment substitutions will require a formal resubmission of the procedure for review and acceptance prior to performing any work. A Professional Engineer in the State of South Dakota must sign and seal the plans.
5. Construction Schedule – Submit a detailed construction schedule for the duration of the project clearly indicating the time periods while working on and around Railroad right-of-way. As the work progresses, this schedule will be updated and resubmitted as necessary to reflect changes in work sequence, duration, and method, etc.
6. Emergency Action Plan – Submit an emergency action plan indicating the location of the site, contact numbers, access to the site, instructions for emergency response, and location of the nearest hospitals. This plan should cover all items required in the event of an emergency at the site including fire suppression. Coordinate the Emergency Action Plan with the safety related discussion of the Means and Methods submission discussed above. The plan should also include a method to provide this information to each project worker for each day on site.
7. The Contractor must ensure that proper erosion control is implemented on and adjacent to Railroad right-of-way during construction. The Contractor must prevent silt and debris accumulation in the railroad roadbed, ditches, and other railroad facilities. The Contractor may be required to submit a detailed erosion control plan for review and acceptance by Railroad or their Representative prior to performing any work.

RAILROAD GENERAL NOTES (CONTINUED)

8. Contractor access will be limited to the immediate project area only. The Railroad right-of-way outside the project area may not be used for Contractor access to the project site and no temporary at-grade crossings will be allowed without written approval from Railroad.
9. The Contractor may not use Railroad right-of-way for storage of materials or equipment during construction without prior Railroad approval. The Railroad right-of-way must remain clear for railroad use at all times. Equipment may not be positioned to block the railroad access road, track area or any part of the Railroad right-of-way without prior Railroad approval.

GRADING OPERATIONS

Compaction of the roadway embankment material will be accomplished using the Ordinary Compaction Method.

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment minus Waste.

The estimated cubic yards of excavation and/or embankment required to construct outlet ditches, ditch blocks, and approaches are included in the earthwork balance notes on the profile sheets.

Special ditch grades and other sections of the roadway different than the typical section will be constructed to the limits shown on the cross sections.

UTILITIES

The Contractor will be aware that the existing utilities shown in the plans were surveyed prior to the design of the project and might have been relocated or replaced by a new utility facility prior to construction of this project, might be relocated or replaced by a new utility facility during the construction of this project, or might not require adjustment and may remain in its current location. The Contractor will contact each utility owner and confirm the status of all existing and new utility facilities. The utility contact information is provided elsewhere in the plans or bidding documents.

SD 1 Call: 1-800-781-7474

The City Public Works Engineer is DJ Werlinger 1-605-639-0393

Black Hills Energy
1251 Otter Rd.
Sturgis SD 57785
(605) 206-2967

Montana-Dakota Utilities Company
505 Heritage Drive
Spearfish, SD 57783
(605) 355-4058

City of Whitewood
1102 Custer Street
Whitewood, SD 57793
(605) 639-0393

Midcontinent Communications
537 Century Road
Rapid City, SD 57702
(605) 787-3935

CLEARING

Before clearing activities begin, the Contractor will contact the Engineer to determine the limits of clearing for the project. If the trees or shrubs that are supposed to remain within the limits of work are damaged or destroyed by the Contractor, the Contractor will replace them with the same size and type at the Contractor's expense.

SHRINKAGE

A shrinkage factor for embankment of plus 25% was used.

UNCLASSIFIED EXCAVATION

All excavation that must be performed to construct the new grade in conformance with the cross sections and plan details will be included in the contract unit price per cubic yard for "Unclassified Excavation".

The plans quantity for "Unclassified Excavation" as shown in the Estimate of Quantities will be the basis of payment for this item without further field measurement. If changes are necessary on construction, the altered quantities will be measured for payment.

TABLE OF UNCLASSIFIED EXCAVATION

Excavation (Mainline)	370
Excavation (Drainage Ditch)	5,540
Topsoil (Mainline)	29
Topsoil (Drainage Ditch)	187
Salvage and Stockpile Asphalt Mix and Granular Base Material (Mainline)	251
Salvage and Stockpile Granular Material (Drainage Ditch)	54
Total	6,431

INCIDENTAL WORK, GRADING

All costs involved in one call utility locations will be incidental to the contract lump sum price for "Incidental Work, Grading".

All signs not indicated for reset will be removed and stockpiled. Care will be taken when removing signs, posts, and gates so that minimal damage is done to them. Any salvage materials damaged will be replaced by the Contractor at no additional cost to the City or State. Salvage materials will become the property of the City of Whitewood Street Department and stockpiled as directed by the City. The Contractor will dispose of unsalvageable materials.

It will be the Contractor's responsibility to contact and to coordinate their work schedule with the City Street Department. The Public Works Supervisor is DJ Werlinger, 605-639-0393. Cost for this work will be incidental to the contract lump sum price for "Incidental Work, Grading".

The cost for water required for embankment and granular material will be incidental to the contract lump sum price for "Incidental Work, Grading".

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMES D.
VAN DEE
SOUTH DAKOTA
6-12-24

SALVAGE AND STOCKPILE ASPHALT MIX AND GRANULAR BASE MATERIAL

An estimated 471.0 tons (251 Cubic Yards) of asphalt mix and granular base material shown in the estimate of quantities will be salvaged from the bridge ends and stockpiled at a location provided by the City of Whitewood. The material will remain property of the City.

The quantity of salvage asphalt mix and granular base material may vary from the plans.

The rate of salvageable material is based on a 6 inch depth of granular base material and a 6 inch depth of asphalt mix on the West side and 12 inch depth of granular base and asphalt millings on the East side. The salvaged asphalt mix and granular base material are to be uniformly blended to the satisfaction of the Engineer prior to or during the stockpiling process.

Sawcut the asphalt full depth at Station 7+62.18. On the East end, remove the granular base and asphalt millings up to the shoulder of Whitewood Service Road. Do not damage or alter the shoulder from the existing typical shoulder section near this location on Whitewood Service Road.

SALVAGE AND STOCKPILE GRANULAR MATERIAL

An estimated 101.5 tons (54 Cubic Yards) of gravel surfacing shown in the estimate of quantities will be salvaged from the existing trail under the bridge for the drainage ditch and stockpiled offsite by the Contractor and satisfactory to the Engineer. The gravel surfacing will remain property of the City.

The quantity of gravel surfacing may vary from the plans. No adjustment will be made to the contract unit price for variations of the quantity of "Salvage and Stockpile Granular Material."

It is estimated there is a depth of 6 inches of gravel surfacing on the trail.

BALLAST

An estimated 18.3 tons of ballast is to be placed on backslope of the Drainage Ditch from approximately 100+50 thru 101+75. The ballast is required at graded areas within 15' from the centerline of railroad track. The ballast will be placed after the ditch subgrade has been shaped. The estimated quantity is based on a depth of 6". The ballast will be AREMA #4 or #4A Granite Ballast.

Screen Size	Passing	
	AREMA #4	AREMA #4A
2 ½"		100%
2"	100%	90-100%
1 ½"	90-100%	60-90%
1"	20-55%	10-35%
¾"	0-15%	0-10%
⅜"	0-5%	0-3%

TABLE OF FENCE QUANTITIES

Station	L/R	Right-of-Way Fence Type 1
101+23.25 to 103+99.27	L	279
101+23.25 to 102+87.40	L	210
	Totals:	489

Right-of-way fence will be constructed using alternate wood and steel posts.

BRACE PANELS FOR ROW FENCE

The E-Z Brace or an approved equal may be utilized as an alternate horizontal brace in the brace panels if approved by the Engineer. The E-Z Brace will be attached to each wood post utilizing two 5/16" x 3" lag screws. Holes of appropriate diameter, based on wood post condition, will be drilled before placement of lag screws. The following is the contact regarding the E-Z Brace:

Charlie Mack
Macksteel E-Z Braces
415 20th Ave. SE.
Watertown, SD 57201
605-882-2177

TRAFFIC CONTROL GENERAL NOTES

Existing guide, route, informational logo, regulatory, warning signs and delineation will be temporarily reset and maintained during construction as directed by the Engineer. Removing, relocating, salvaging, and resetting of the above items will be the responsibility of the Contractor.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the City or State.

If there is a discrepancy between the traffic control plans, standard plates and the MUTCD – whichever is more stringent will be used, as determined by the Engineer.

FLAGGING

Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

It is required that the flaggers be able to communicate with one another. If an emergency vehicle needs to pass through the project, the Contractor will be required to expedite traffic movement. All costs associated with this will be incidental to the contract unit price per hour for "Flagging".

TOPSOIL

The plans quantity for "Placing Topsoil" as shown in the Estimate of Quantities will be the basis of payment for this item without further field measurement. If changes are necessary on construction, the altered quantities will be measured for payment.

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum will consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier will provide certification of the fungal species claimed and the live propagule count. The inoculum will include a minimum 25% the fungal species *Rhizophagus intraradices*. The remaining 75% may include other endomycorrhizal fungal species.

All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed will be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

The mycorrhizal inoculum will be as shown below or an approved equal:

Product	Manufacturer
MycoApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 www.mycorrhizae.com
AM 120 Multi Species Blend	Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 www.reforest.com
LALRISE Prime and Max WP	Lallemand Specialties Inc. Milwaukee, WI Phone: 1-844-590-7781 www.lallemandplantcare.com

FERTILIZING

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P_2O_5) available phosphate, a minimum of 4% (K_2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer will be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer will have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer will also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The fertilizer will be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer's recommended method of application.

The all-natural slow release fertilizer will be as shown below or an approved equal:

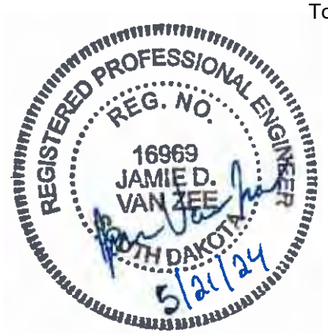
Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 www.sustane.com
Perfect Blend	Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 www.perfect-blend.com
Nature Safe	Nature Safe Fertilizers Irving, TX Phone: 1-605-759-5622 www.naturesafe.com

PERMANENT SEEDING

The areas to be seeded comprise of all newly graded areas within the project limits including the top of the abandoned roadway. All disturbed areas will be ripped prior to seed application.

Type F Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Green Needlegrass	Lodorm, AC Mallard Ecovar	4
Sideoats Grama	Butte, Pierre	3
Blue Grama	Bad River	2
Oats or Spring Wheat: April through May; Winter Wheat: August through November		56
	Total:	72



MULCHING (GRASS HAY OR STRAW)

An additional 2 tons of Grass Hay or Straw Mulch has been added to the Estimate of Quantities for temporary erosion control on areas determined by the Engineer during construction.

If the Contractor uses a no-till drill, mulch may be applied prior to seeding and the mulch can then be punched into the soil by the no-till drill. If the Contractor uses this process, the no-till drill seeding will be completed immediately following the mulch application and the mulch will be punched into the soil at a 3-inch depth.

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment will be installed at locations noted in the table and at locations determined by the Engineer during construction. Refer to Standard Plate 734.06 for details.

The Contractor will provide certification that the erosion control wattles do not contain noxious weed seeds.

Erosion control wattles may remain on the project to decompose.

An additional quantity of 12” Diameter Erosion Control Wattles has been added to the Estimate of Quantities for temporary erosion and sediment control in highway ditch channels and as an alternative to low flow or high flow silt fence at wetland areas adjacent to the highway.

The erosion control wattle provided will be from the approved product list. The approved product list for erosion control wattle may be viewed at the following internet site:

http://sddot.com/business/certification/products/Default.aspx

TABLE OF EROSION CONTROL WATTLE

Station	L/R	Diameter (Inch)	Location	Quantity (Ft)
7+60 to 8+60	LT	12	Edge of Excavation	100
7+60 to 8+60	RT	12	Edge of Excavation	100
11+00 to 14+00	LT	12	Edge of Excavation	180
12+00 to 14+00	RT	12	Edge of Excavation	450
			ADDITIONAL QUANTITY	70
			Total	900

REMOVE SEDIMENT

This work will consist of removing sediment collected by the temporary erosion and sediment control devices after a rainfall event.

Any sediment collected on the upstream side of the sediment control device that would render the sediment control device ineffective will be removed by the Contractor and blended back into the cut or fill of the graded area.

The Contractor and Engineer will inspect and maintain the sediment control devices once every week and within 24 hours after every rainfall event greater than 1/2”.

All costs for removing and disposing of sediment collected by the sediment control device will be incidental to the contract unit price per cubic yard for “Remove Sediment”.

LOW FLOW SILT FENCE

The low flow silt fence fabric provided will be from the approved product list. The approved product list for low flow silt fence may be viewed at the following internet site:

http://apps.sd.gov/HC60ApprovedProducts/main.aspx

Low flow silt fence will be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.04 for details.

The quantity of Low Flow Silt Fence in the Estimate of Quantities is for temporary sediment control.

TABLE OF LOW FLOW SILT FENCE

Station	L/R	Location	Quantity (Ft)
9+10	RT	Toe of Berm	80
11+00	RT	Toe of Berm	120
		Additional Quantity:	50
		Total:	250

CONSTRUCTION STAKING:

The control points are shown on the plan and profile sheet.

HORIZONTAL ALIGNMENT (MAINLINE)

Element	Curve Data	Station	Northing	Easting
POB		7+09.81	250132.35	1018904.28
POE		14+06.69	250144.00	1019601.06

HORIZONTAL ALIGNMENT (DRAINAGE DITCH)

Element	Curve Data	Station	Northing	Easting
POB		100+00.00	250199.31	1019155.95
POE		104+00.00	249969.81	1019483.57

TABLE OF CONSTRUCTION STAKING
(See Special Provision for Contractor Staking)

					Grade Staking								
Roadway and Description	Begin Station	End Station	Number of Lanes	Length (Ft)	Length (Mile)	Lane Factor	* Sets of Stakes	**Grade Staking Quantity (Mile)	Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)	Final Cross Section Survey Quantity (Mile)	Structure Staking Quantity (Each)
Drainage Ditch	100+50	103+00	1	250	0.047	1	1	0.047	0.047	0.047		
							Totals:	0.047	0.047	0.047		

* 1 = Blue Top Stakes Only (Subgrade for Gravel Surface)
2 = Blue Top and Paving Hub Stakes (Asphalt Concrete Pavement)

** Grade Staking Quantity = (Length) x (Lane Factor) x (Sets of Stakes)

TRAFFIC CONTROL

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	8	33

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R11-2	ROAD CLOSED	4	48" x 30"	10.0	40.0
W20-1	ROAD WORK AHEAD	7	48" x 48"	16.0	112.0
W20-3	ROAD CLOSED AHEAD	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	7	36" x 18"	4.5	31.5
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			215.5

NOTE:

See Standard Plate 634.01 and 634.28 for placement of all signs.

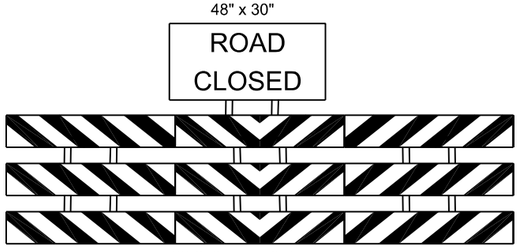
W20-1
48" x 48"

W20-3
48" x 48"

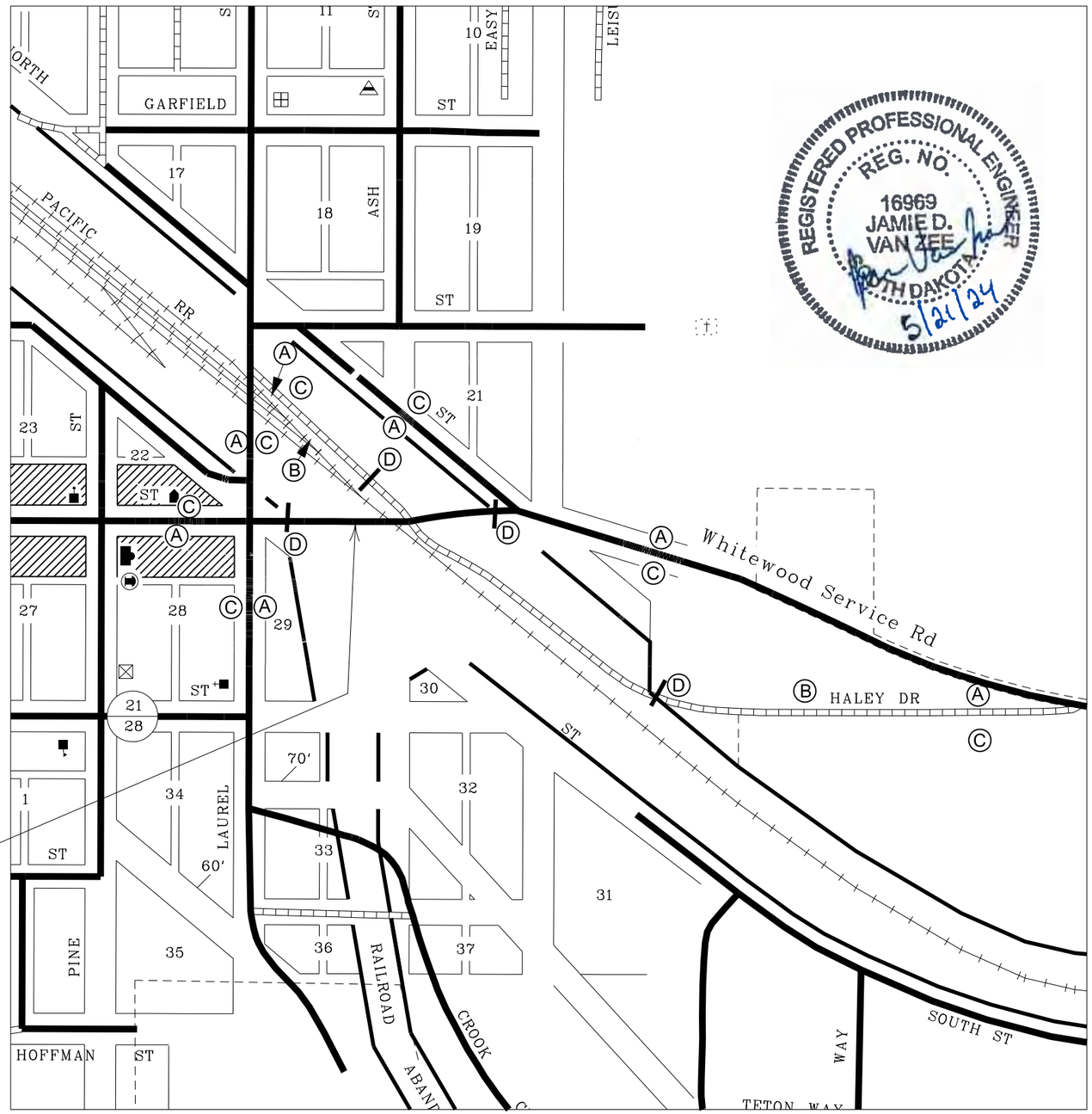
G20-2
36" x 18"

D

R11-2
48" x 30"



(3) 8'-0" Type 3 Barricades



REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24

EASEMENTS & EROSION CONTROL

FOR BIDDING PURPOSES ONLY

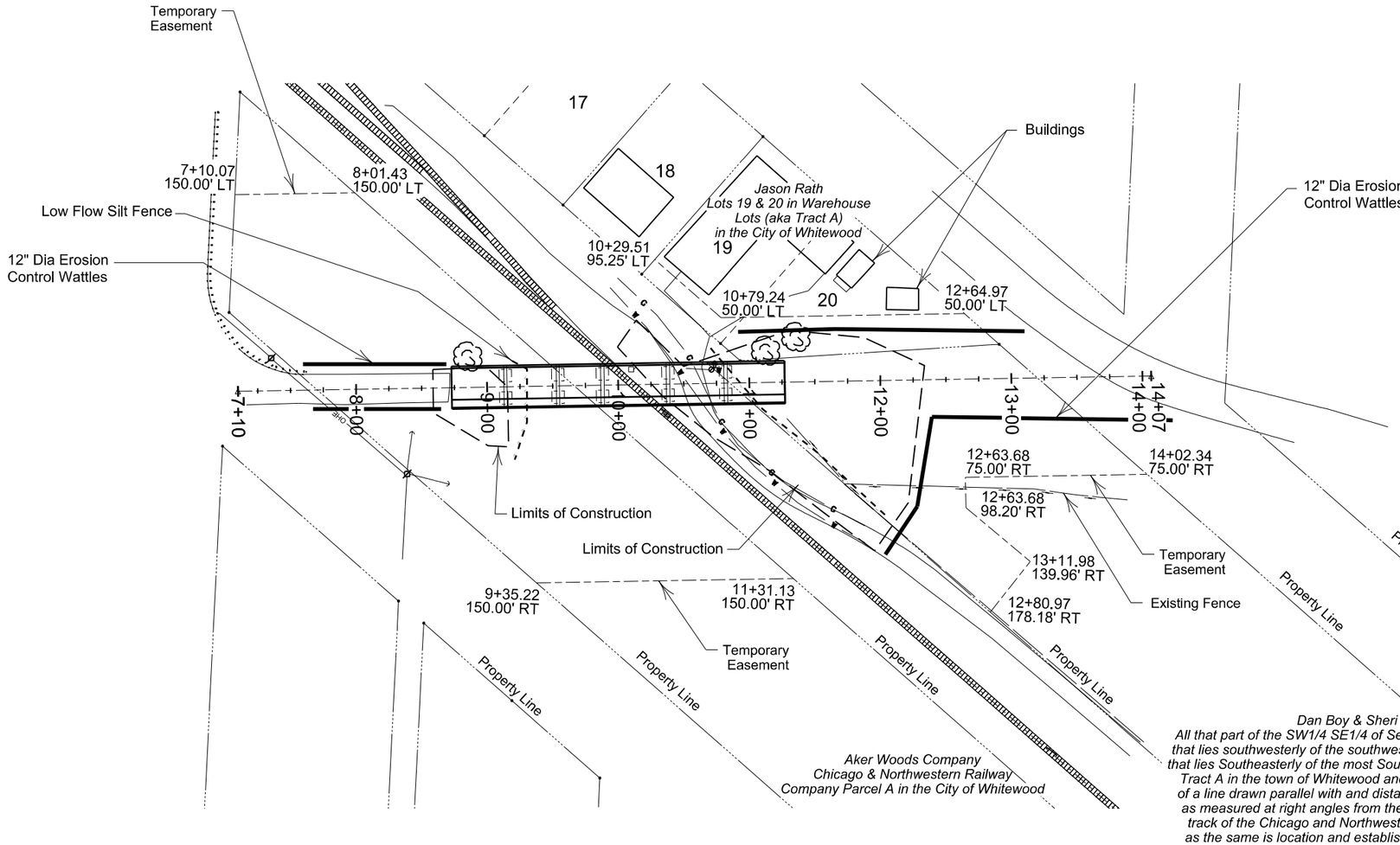
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	9	33

N

Scale: 1" = 100'

Temporary Easement
Sta 10+29.51 to 12+64.97 LT
Lots 19 & 20 in Warehouse Lots
(aka Tract A) in the city of Whitewood
0.16 Acres

Jason Rath



REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24

Temporary Easement
Sta 7+10.07 to 8+01.43 LT and 9+35.22 to 11+31.13 RT
Chicago & Northwestern Railway
Company Parcel A in the city of Whitewood
1.24 Acres

Aker Woods Company

Low Flow Silt Fence	LT	RT
9+10		80 Ft
11+00		120 Ft
Engineer's Discretion		50 Ft
Total		250 Ft

12" Dia Erosion Control Wattles	LT	RT
7+60 to 8+60	100 Ft	100 Ft
11+00 to 14+00	180 Ft	
12+00 to 14+00		450 Ft
Engineer's Discretion		70 Ft
Total		900 Ft

Erosion Control Legend

- Drainage Arrow
- Erosion Control Wattles
- Low Flow Silt Fence

Temporary Easement
Sta 10+67.95 to 14+02.34 RT
All that part of the SW1/4 SE1/4 of Section 21-T6N-R4E-BHM
that lies Southwesterly of the Southwesterly line of North Street,
that lies Southeasterly of the most Southeasterly line of Railroad
Tract A in the town of Whitewood and that lies Northeasterly
of a line drawn parallel with and distant 50 feet Northeasterly,
as measured at right angles from the center line of the main
track of the Chicago and Northwestern Railway Company
as the same is located and established across Section 21
0.66 Acres

Dan Boy & Sheri Boy

PLAN & PROFILE - MAINLINE

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	10	33

N

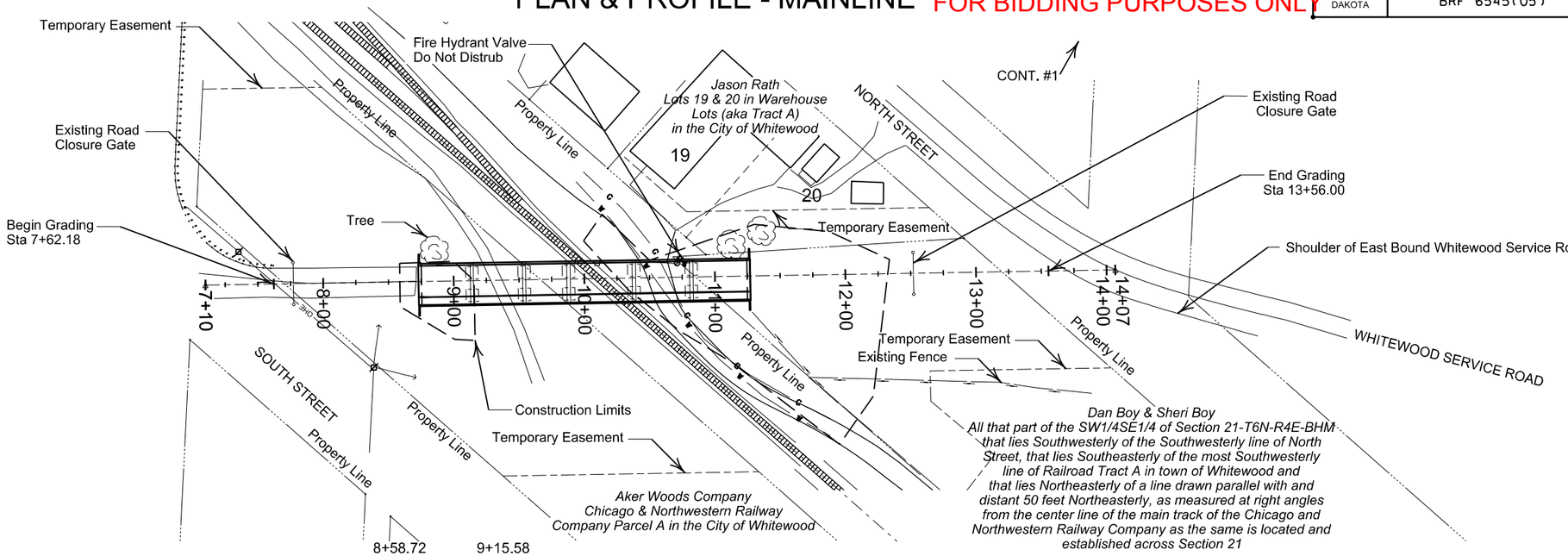
Scale: 1" = 100'

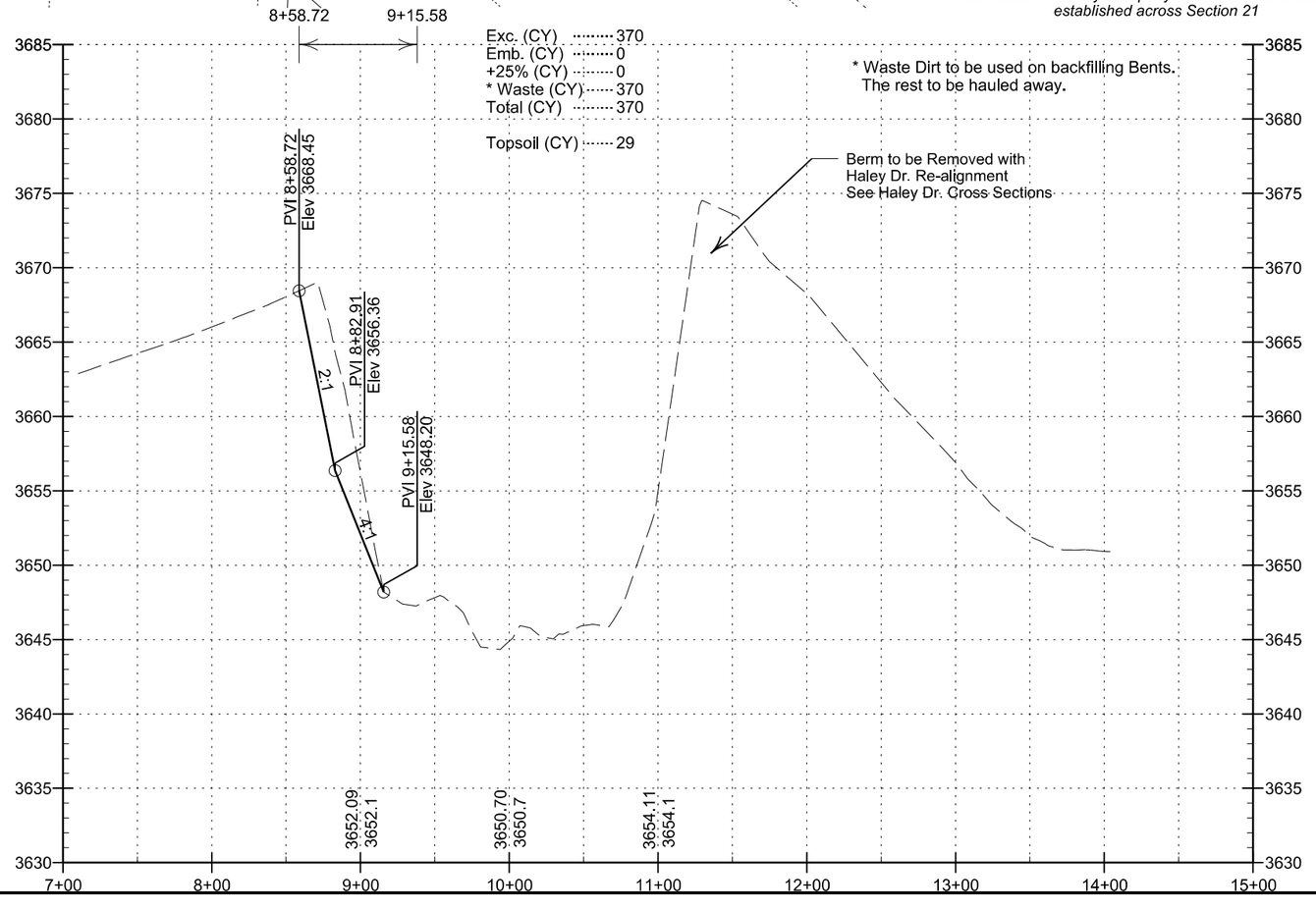
8+50 to 11+50 Lt & Rt
Clearing, Remove all of the
Trees in the Temporary Easement
as required. (Clearing)

10+00 Lt & Rt
Remove & Salvage Type 3 Object Marker
near the 4 Corners of existing Bridge, 4 Total
(Incidental Work, Grading)

8+73.00 to 11+27.00
Remove 254.0' Six span
Steel Girder with Concrete Deck
(Incidental Work, Structure)

7+75 & 12+50
Remove & Salvage Signs
Road Closed Signs and Gates
(Incidental Work, Grading)





CONTROL POINT #1
N = 250613.280
E = 1019671.820
Elev = 3657.590

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24

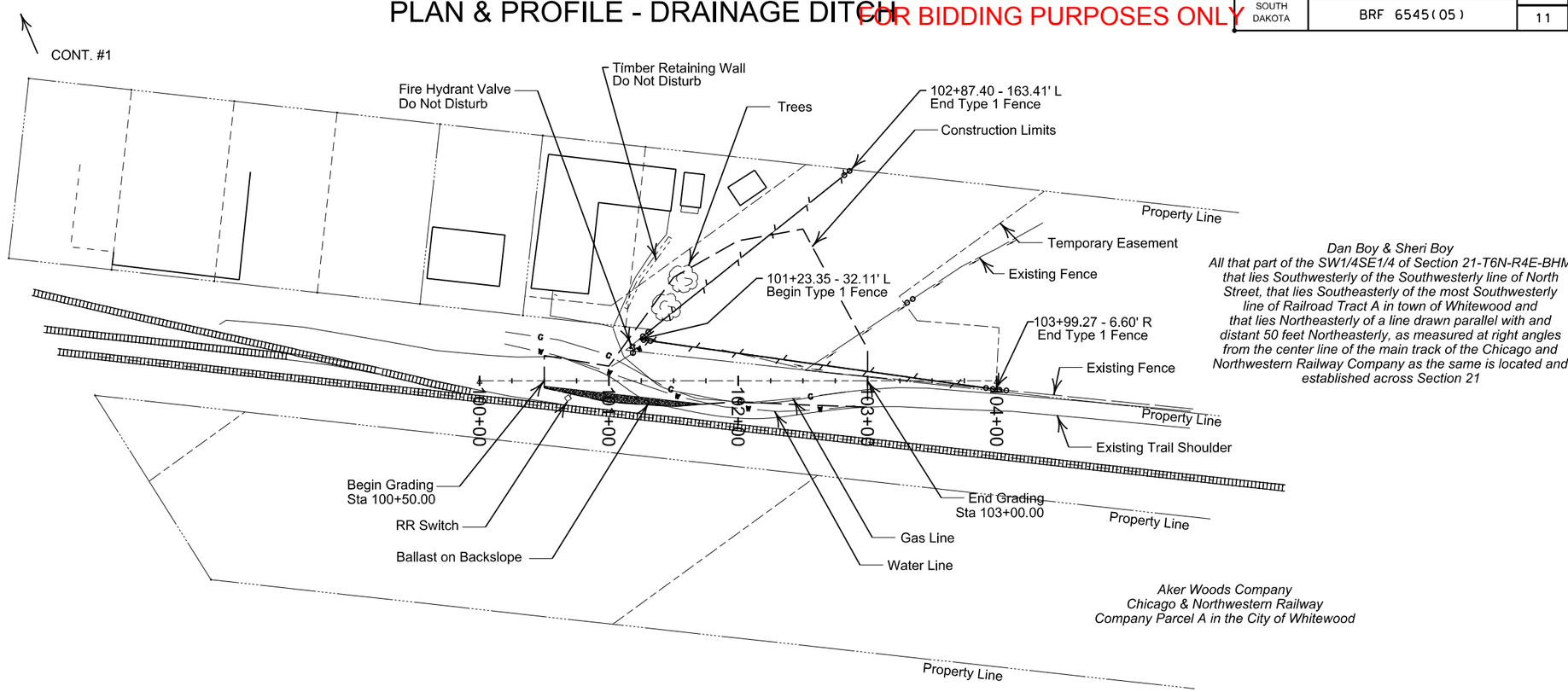
PLAN & PROFILE - DRAINAGE DITCH

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	11	33

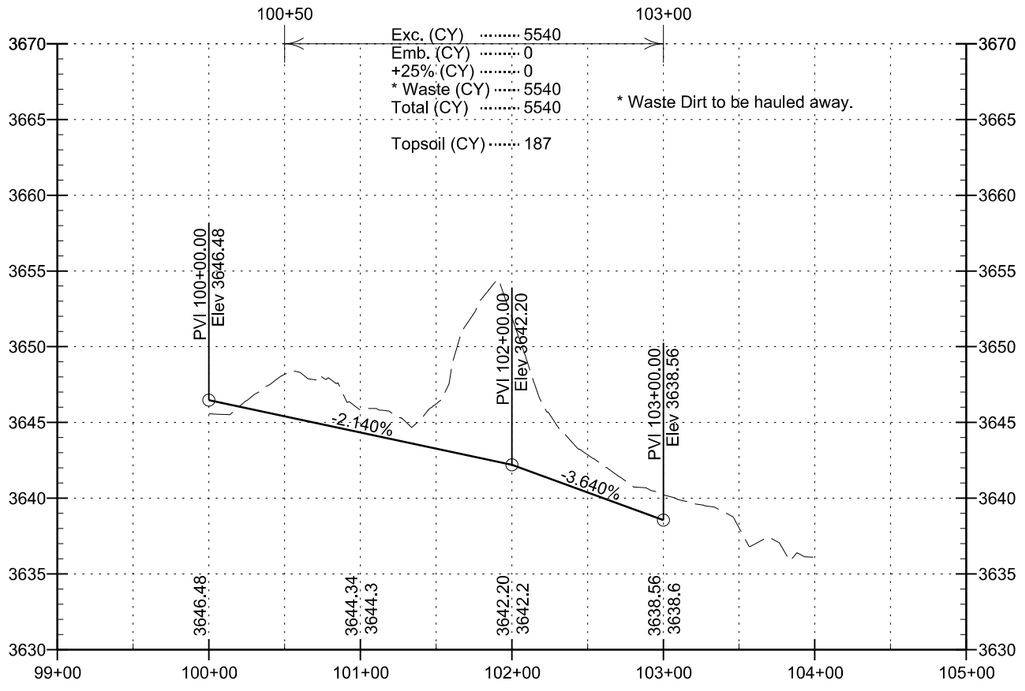
Scale: 1" = 100'

101+00 to 104+00 Lt
Remove all fence inside
Temporary Easement



Dan Boy & Sheri Boy
All that part of the SW1/4SE1/4 of Section 21-T6N-R4E-BHM that lies Southwesterly of the Southwesterly line of North Street, that lies Southeasterly of the most Southwesterly line of Railroad Tract A in town of Whitewood and that lies Northeasterly of a line drawn parallel with and distant 50 feet Northeasterly, as measured at right angles from the center line of the main track of the Chicago and Northwestern Railway Company as the same is located and established across Section 21

Aker Woods Company
Chicago & Northwestern Railway
Company Parcel A in the City of Whitewood



CONTROL POINT #1
N = 250613.280
E = 1019671.820
Elev = 3657.590

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24

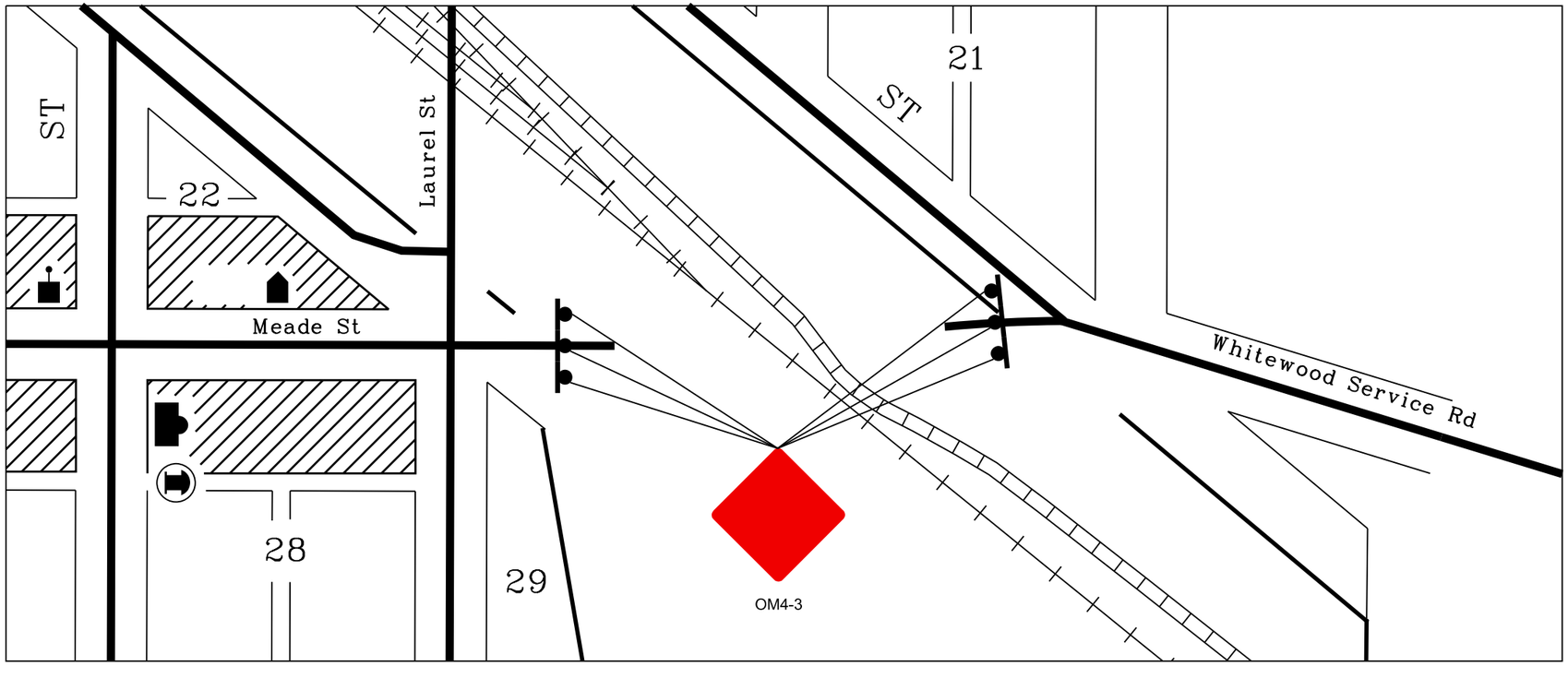
PERMANENT SIGNING

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	12	33

SIGN INSTALL	
STATION - OFFSET	**SIGN DESCRIPTION**
7+80.00 - 8.00' L	OM4-3
7+80.00	OM4-3
7+80.00 - 8.00' R	OM4-3
12+50.00 - 8.00' L	OM4-3
12+50.00	OM4-3
12+50.00 - 8.00' R	OM4-3

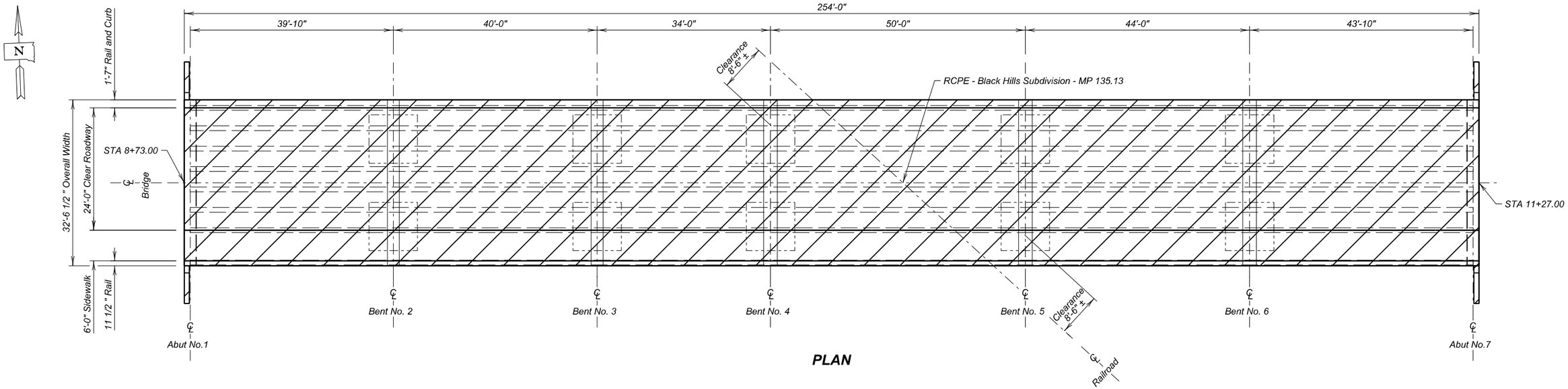
REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24



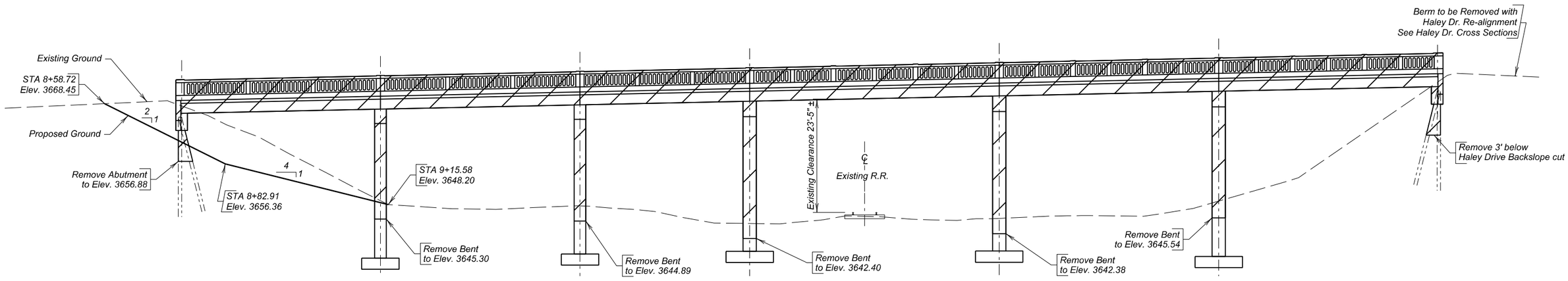
The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	13	33



PLAN



ELEVATION

INDEX OF BRIDGE SHEETS

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Incidental Work, Structure	LS	Lump Sum

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24

LAYOUT FOR REMOVAL

FOR

254'-0" STEEL GIRDER BRIDGE

OVER RCPE RAILROAD
STA 8+73.00 TO 11+27.00
STR. NO. 41-211-100
PCN 08NQ

SKEW 0°
SEC. 21, T6N, R4E

LAWRENCE CO.

S. D. DEPT. OF TRANSPORTATION

MAY 2024

1 OF 7

PLANS BY: BROSZ ENGINEERING INC.

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
J.V.	J.V.	D.C.	

FOR BIDDING PURPOSES ONLY

ESTIMATE OF STRUCTURE QUANTITIES:

ITEM	QUANTITY	UNIT
Incidental Work, Structure	Lump Sum	LS

INCIDENTAL WORK, STRUCTURE

1. In place is a 254' long, 6-span steel girder bridge with 24'-0" clear roadway. The superstructure consists of steel I-Beams supporting a reinforced concrete slab with concrete pigeonhole railing and a 6'-0" sidewalk. The deck has a 1 to 2 inch asphalt overlay. The substructure consists of 2 column reinforced concrete bents on concrete footings and reinforced concrete abutments.

2. Break down and remove the existing structure to 3 foot below finished groundline. All portions of the existing structure will be removed and disposed of by the Contractor on a site obtained by the Contractor and approved by the Engineer in accordance with the Environmental Commitments found elsewhere in these plans.

3. During demolition of the structure, efforts will be taken to prevent material from falling onto the railroad below. The Contractor will need to use a demolition debris shield meeting the requirements found in the Public Project Manual.

4. The foregoing is a general description of the in-place structure and should not be construed to be complete in all details. Before preparing the bid, it will be the responsibility of the Contractor to make a visual inspection of the structure to verify the extent of the work and materials involved.

5. Costs associated with the foregoing work will be incidental to the contract lump sum price for “Incidental Work, Structure”.

NOTICE – LEAD BASED PAINT

Be advised that the paint on the steel surfaces of the existing structure contains lead. The Contractor should plan operations accordingly and inform employees of the hazards of lead exposure.

RAILROAD INSURANCE

Prior to commencing any work on the structure, the contractor will provide proof of Railroad Insurance to the Engineer. Railroad Insurance may be purchased from Genesee & Wyoming Railroad Services, Inc.

Contact person is:

Crystal Galbraith
Manager – Real Estate
Genesee & Wyoming Railroad Services, Inc
13901 Sutton Park Drive South
Suite 270
Jacksonville, Fl 32224
(904) 596-7782
Crystal.galbreath@gwrr.com

COORDINATION WITH RAILROAD

1. During removal of the bridge, the Contractor will not interfere with the operating train movements. Construction activity must not take place within 25 ft. of the centerline of the track when train movements are occurring through the construction site and construction equipment will be removed from this zone prior to the arrival of the train. All shoring, debris, and rail protection materials will be removed to allow free movement of the train. See Special Provision for Working on Railroad Company Right-of-Way.

2. All procedures to assure protection of the rails and working schedules must be approved by Rapid City, Pierre, and Eastern (RCPE) Railroad a minimum of 30 calendar days prior to construction activities commencing on Railroad property.

3. The Contractor will take protective measures as are necessary to keep railway facilities, including track ballast free of sand, debris, and other foreign objects and materials resulting from operations. Any damage to railway facilities resulting from the Contractor’s operations will be repaired or replaced by the Railway and the cost of such repairs or replacement paid by the Contractor.

4. At other than public railroad crossings, the contractor must not move any equipment across Railway’s tracks until written permission has been granted. Should a “Temporary Crossing” need to be constructed, all costs for installation and removal of said crossing will be at the Contractor’s expense.

5. G&W flagging services will be required for all work within G&W right-of-way or any work that has a “potential to foul”.

6. All work performed on, above, or adjacent to railroad property will be in accordance with to the Public Project Manual, current edition. Work plans will be submitted for review to the Railroad for access, soil and water management, ballast protection, excavation and shoring, hoisting, demolition, and all other work that presents the potential to affect railroad property or operations. All work plans must be prepared and submitted to the Railroad in adherence with the Public Project Manual, Section 1.11 Construction Submission Criteria.

7. The Contractor will be required to reach out to G&W Real Estate for a ROE application and agreement for work to take place on the G&W ROW. ROE information can be found at https://www.gwrr.com/real_estate/accessing_property

Coordination and Railroad contact is through:

Don Smith
Director of Public Projects
Genesee and Wyoming Inc.
don.smith@gwrr.com

Paul Vidmar
Designated Public Project Manager
Benesch
pvidmar@benesch.com

DEMOLITION DEBRIS SHIELD

The following is from the Public Project Manual, Section 1.11 Construction Submission Criteria, page 15 regarding the demolition debris shield:

On Track or ground-level debris shiels (such as crane mats) are prohibited for use.

The demolition debris shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the structure. The demolition debris shield shall be erected from the underside of the bridge over the track area to catch all falling debris. The debris shield shall not be the primary means of debris containment.

- *The demolition debris shield design and supporting calculations, all signed and sealed by a professional engineer, shall be submitted for review and acceptance.*
- *The demolition debris shield shall have a minimum design load of 50 pounds per square foot (50 psf) plus the weight of the equipment, debris, personnel, and all other loads.*
- *The contractor shall verify the maximum particle size and quantity of the demolition debris generated during the procedure does not exceed the shield design loads. Shield design shall account for loads induced by particle impact: however, the demolition procedure shall be such that impact forces are minimized. The debris shield shall not be the primary means of debris containment.*
- *The contractor shall include installation/removal means and methods for the demolition debris shield as part of the proposed controlled demolition procedure submission.*
- *The demolition debris shield shall provide twenty-three feet (23’-0”) minimum vertical clearance or maintain the existing vertical clearance if the existing clearance is less than twenty-three feet (23’-0”).*
- *Horizontal clearance to the centerline of the track should not be reduced unless approved by the Railroad.*
- *The contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Railroad.*

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24

ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
254’- 0” STEEL GIRDER BRIDGE
Str. No. 41-211-100

MAY 2024 2 of 7

DESIGNED BY:	DRAWN BY:	CHECKED BY:	
JV	JV	DC	
BEI 2103184	PCN08NQ		BRIDGE ENGINEER

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	15	33

FED. ROAD DIST. NO.	STATE		FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	S.D.				

P.I. 9+00
El. 1012.50
V.C. 660

1'-0" | 40'-0" | 40'-0" | 34'-0" | 254'-0" | 50'-0" | 44'-0" | 44'-0" | 1'-0"

24'-0" Roadway | 6'-0" Sidewalk | Berm 5'-0"

Sta. 5+94 | Sta. 6+35 | Sta. 6+75 | Sta. 7+09 | Sta. 7+59 | Sta. 8+03 | Sta. 8+48 | Sta. 8+47

Sta. 6+55.8 | Sta. 7+51.1

Clearance at 15'-0" | 63°38' | Clearance 11'-5½" | 67°01' | Clearance 8'-7½" | 42°34' | Clearance 8'-6½" | 38°34'

Switch

Top of Slab @ ℄ Rdwy. El 998.73

℄ Rdwy. El 1000.24 | ℄ Rdwy. El 1001.50 | ℄ Rdwy. El 1002.37 | ℄ Rdwy. El 1003.31 | ℄ Rdwy. El 1003.82 | Top of Slab @ ℄ Rdwy. El 1004.01

℄ of Roadway
℄ of Substructure

Test Hole | Test Hole | Test Hole

℄ of Survey

Sta. 6+11.3 Highway Survey = Sta. 7+-- 8.3 R.R. Survey

Deadwood Spur-C.&N.W.

℄ of Relocation

Sta. 7+61.0 Highway Survey = Sta. 8+44.3 R.R. Survey (P.O.S.T.)

℄ on C. & N.W. R.R.

12'-0" | 2'-0" | 32'-6½" | 12'-0" | 6'-11½"

INDEX OF BRIDGE SHEETS:
Sht. 1 - General Drawing
Sht. 2 - Details of Superstructure
Sht. 3 - Details of Bents
Sht. 4 - Details of Seat
Sht. 5 - Details of Standard Sill
P-146-00-R

PLAN

El. Slab @ Curb 998.61 | El. 1000.12 | El. 1001.38 | El. 1002.25 | El. 1003.19 | El. 1003.70 | El. Slab @ Curb 1003.85

Seat El. 996.07 | Seat El. 997.57 | Seat El. 998.83 | Seat El. 999.45 | Seat El. 1000.38 | Seat El. 1001.14 | Seat El. 1001.33

Top of Berm El. 994.60 | Top of Berm El. 998.89

27'-0" | 32'-1⅞" | Min Clearance 20'-0" | El. T/R | 27'-0" | 32'-1⅞" | 27'-0" | 32'-3¾" | Clearance 25'-8"± at ℄ Rdwy. Sta. 7+51.1 | El. T/R 974.25 at ℄ Rdwy. | 2'-1" | 27'-0" | 32'-3¾" | 33' | 30'-0" | 35'-3¾" | 1½ / 1

8"WF @ 31# x 20'-0" | 8"WF @ 31# x 45'-0"

El. 965.42 | El. 966.68 | El. 971.16 Shale | El. 967.14 | El. 967.07 | El. 969.6 Shale | El. 967.6 Shale | El. 965.83

Ⓐ | ② | ③ | ④ | ⑤

ELEVATION

Note:
Where individual pile lengths used differ by not more than 8 feet from the length indicated by the plans, the contract bid price per lineal foot shall constitute full compensation:
For differences in individual pile length of more than 8 feet from the length indicated on the plans, the unit bid price shall be changed one cent per foot for each foot in excess of 8 feet.

Specification Note:
All materials and work shall conform to the 1935 A.A.S.H.O. Specifications and the 1935 Special Provisions where applicable; otherwise to the 1933 South Dakota Standard Specifications for Roads and Bridges.
Footings shall extend at least 1 foot into shale.
See Special Provisions for Construction of Standard Sills on Steel Piling, S.D.S.H.C., Issued December 15, 1935, Revised Feb. 1, 1936 and April 3, 1936

QUANTITIES

	Concrete C.Y.		Steel lbs.		Treated Wood Piling Lin. Ft.	Steel Piling lbs.	Lead lbs.	Excavation C.Y.		Incidental Work
	Class "A"	H.P.	Reinf.	Str.				Str.	Com.	
Superstr.	230.0	25.86	30,530	174,140			240			
Bents 2 & 3	57.6		11,515	2,560				235		
Bents 4, 5 & 6	124.0		28,700	3,540				200		
2 Sills	31.0	36	3,270	1,110				40		
16,120						16,120				
Totals	443.2	26.22	74,015	181,150		16,120	240	475		

*Incidental Work: Blast Protection - All exposed surfaces below deck within a strip 6'-0" wide directly over the ℄ of R.R. Tracks, shall be treated after erection as follows: Paint with three coats of Red Lead paint, alternating with three coats of fine sand blown or sprayed over the surface before the paint coat is allowed to dry. Each paint and sand coat shall be allowed to dry and surfaces carefully brushed to remove loose sand particles before successive coats are applied. Finish surfaces with two coats of Aluminum paint.

Rev. 10-12-36
Rev. 6-9-36

U.S.C.&G. B.M. # 24-1934 El. 979.49
Base R.R. Water Tank
B.M. No. 1 - El. 1000.00
S.E. Cor. of Step Bank bldg.

ORIGINAL CONSTRUCTION PLANS

GENERAL DRAWING

254'-0" OVERHEAD CROSSING

24'-0" ROADWAY 6'-0" SIDEWALK
OVER C. & N.W. R.R. SEC. 21 - T6N - R4E
STA. 5+94 TO STA. 8+48 WPGM 140
WHITEWOOD LAWRENCE COUNTY
SOUTH DAKOTA
STATE HIGHWAY COMMISSION
APRIL 1936 (3) OF (7) ~~15~~

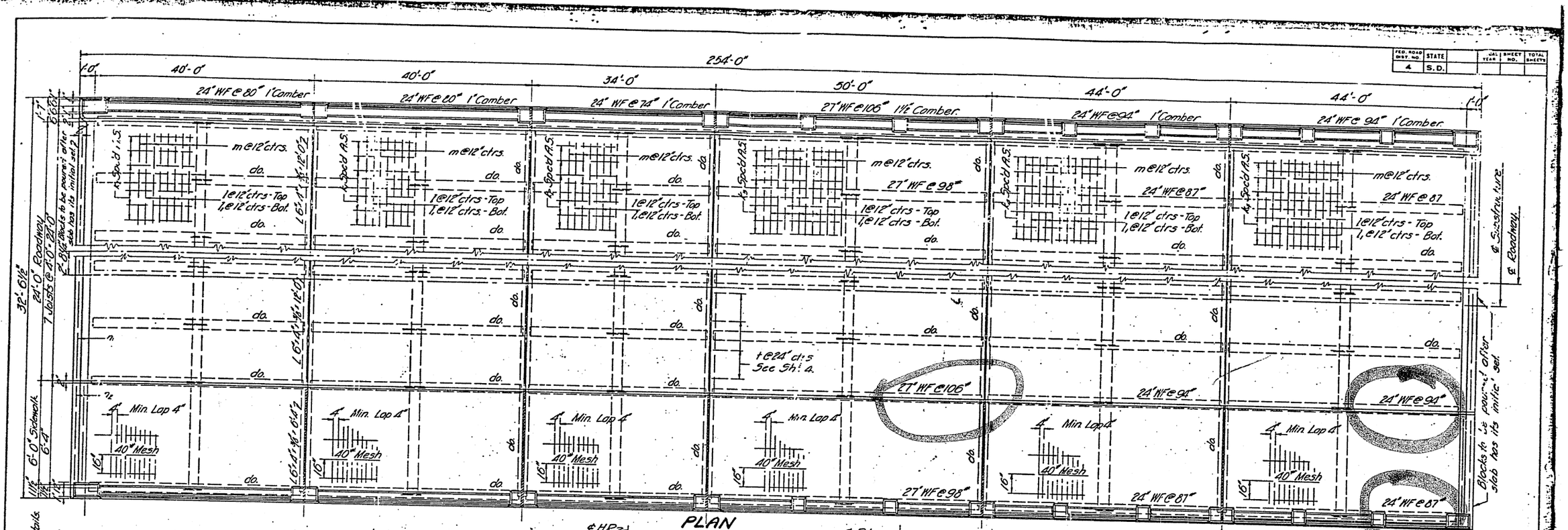
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	RMcL	[illegible]	BRIDGE ENGINEER

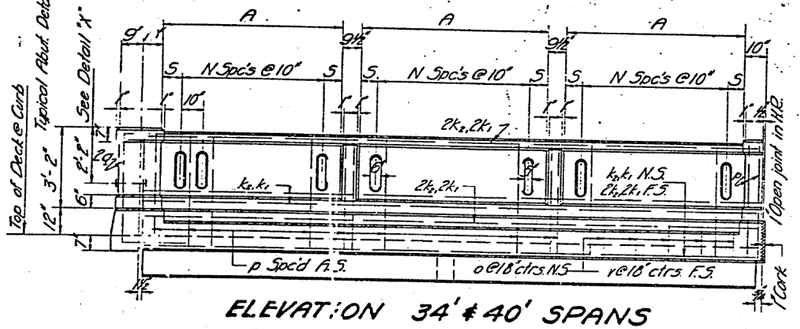
41-321

FOR BIDDING PURPOSES ONLY

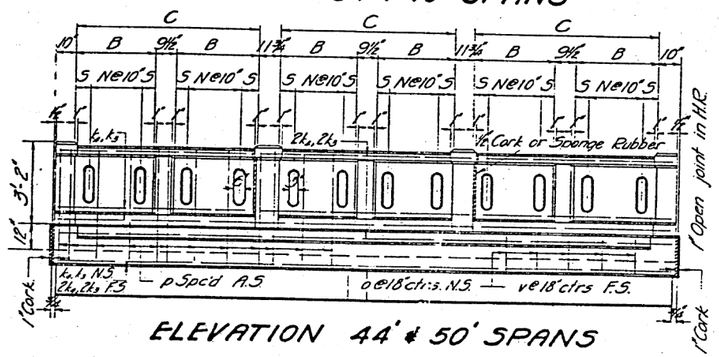
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	16	33

FED. ROAD DIST. NO.	STATE		CAL. YEAR	SHEET NO.	TOTAL SHEETS
4	S.D.				

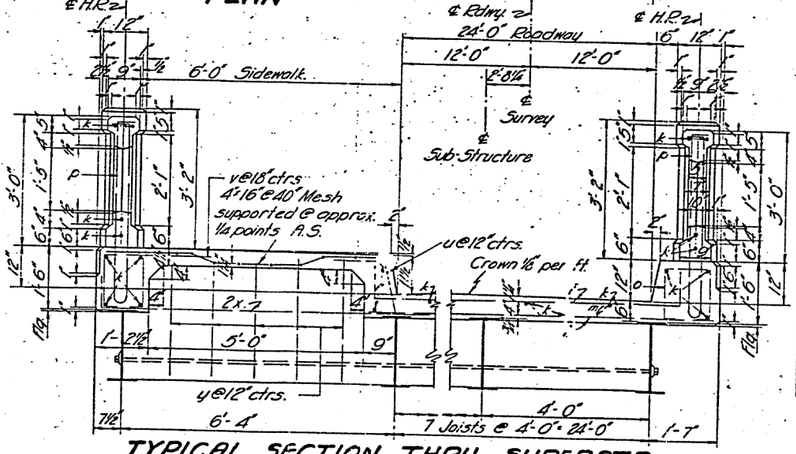




ELEVATION 34' & 40' SPANS

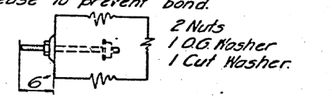


ELEVATION 44' & 50' SPANS



TYPICAL SECTION THRU SUPERSTR.

TABULAR DATA					
Span Ft.	A	B	C	S	N
34'-0"	10'-3"			6½"	11
40'-0"	12'-3			8½"	13
44'-0"		6'-4"	13'-5½"	8"	F.
50'-0"		7'-4"	15'-5½"	9"	;



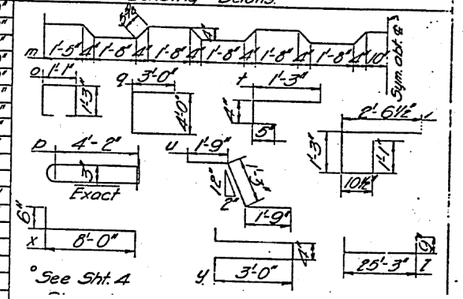
DETAIL X

REINFORCING SCHEDULE

Mk.	No	Sz.	Lgth.
k	70	1" ℄	39'-9"
k₂	35	1" ℄	37'-9"
k₃	35	1" ℄	49'-9"
k₄	70	1" ℄	43'-9"
*l	256	1" ℄	25'-9"
l	252	1" ℄	25'-9"
m	246	1" ℄	28'-6"
o	171	⅜" ℄	4'-3"
p	582	½" ℄	9'-6"
u	252	½" ℄	4'-9"
v	171	½" ℄	5'-9"
*x	24	½" ℄	8'-6"
*y	30	½" ℄	6'-9"
*q	120	⅝" ℄	2'-0"
*n	16	⅝" ℄	1'-6"
*n₁	2	⅝" ℄	23'-9"
*n₂	4	½" ℄	5'-3"
q	8	½" ℄	10'-0"

4 @ 16'-0" Mesh 1870 ft²

Bending Details.



ORIGINAL CONSTRUCTION PLANS

SUPERSTRUCTURE DETAILS

254'-0" OVERHEAD CROSSING

24'-0" ROADWAY 6'-0" SIDEWALK

OVER C. & N.W. R.R. SEC. 21 T6N R4E

STA. 5+94 TO 8+48 WPGM 140

WHITEWOOD LAWRENCE COUNTY

SOUTH DAKOTA

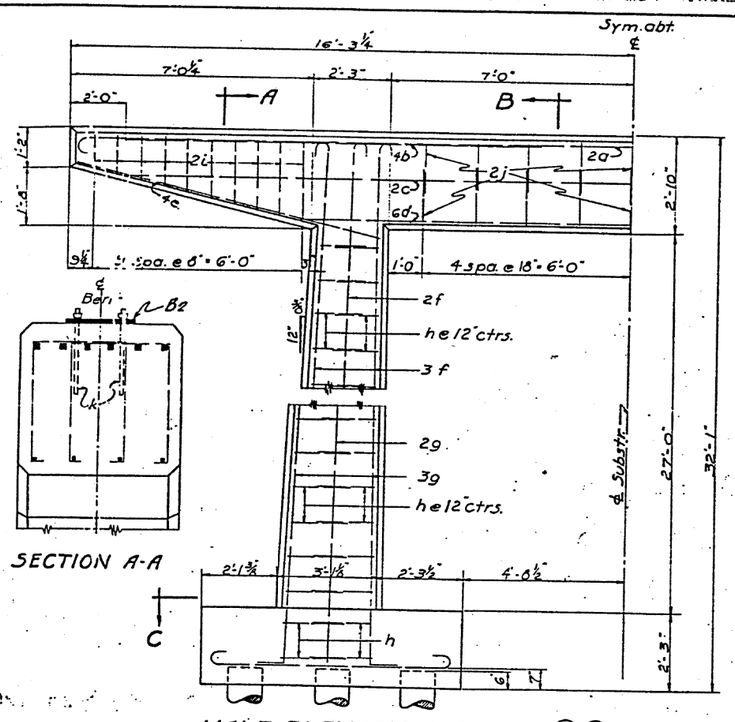
STATE HIGHWAY COMMISSION

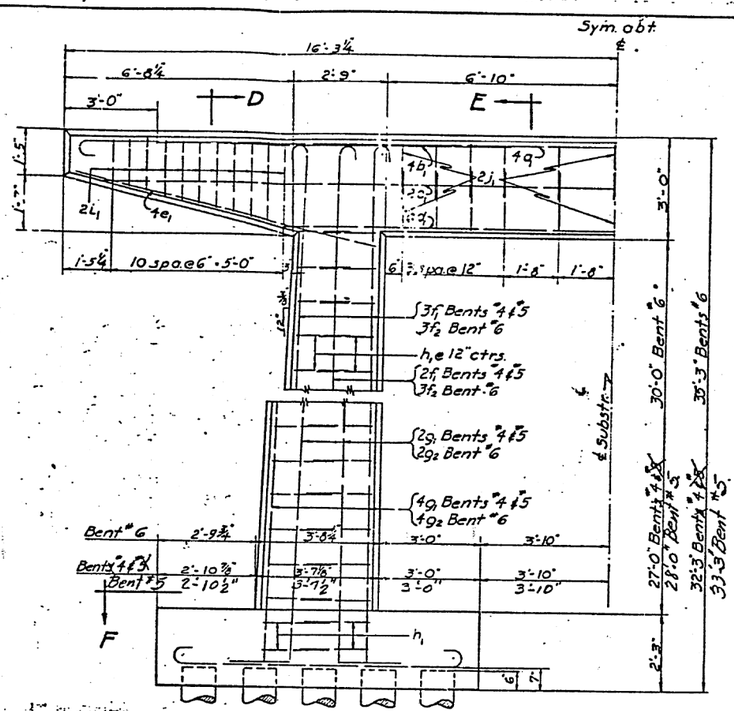
MAR. 1936 (4) OF (7)

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	[illegible]	[illegible]	

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	17	33

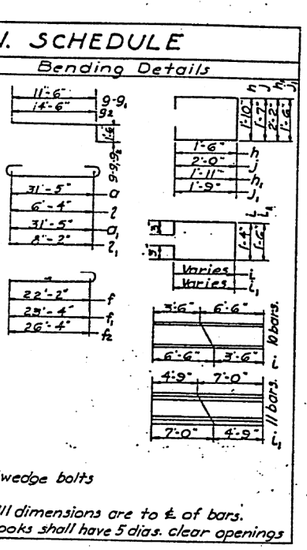
FED. ROAD DIST. NO.	STATE		FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	S.D.				





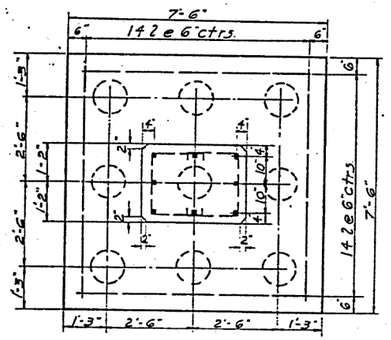
REIN. SCHEDULE

Mk	No.	Sz	Length	Bending Details
a	4	1¼"	34'-9"	
b	16	1¼"	11'-5"	
c	4	3¼"	29'-0"	
d	12	3¼"	18'-6"	
e	16	½"	5'-0"	
f	32	1"	23'-6"	
g	32	1⅛"	13'-0"	
h	232	¾"	5'-6"	
i	40	½"	10'-0"	
j	72	½"	6'-0"	
*k	64	¾"	1'-3"	
ℓ	112	1"	9'-0"	
a1	12	1¼"	34'-9"	
b1	24	1¼"	12'-6"	
c1	6	¾"	29'-0"	
d1	18	1"	19'-3"	
e1	24	¾"	6'-9"	
f1	32	1"	25'-0"	
g1	48	1⅛"	13'-5"	
h1	360	¾"	6'-9"	
L1	66	¾"	11'-9"	
j1	132	¾"	5'-9"	
*k1	64	¾"	1'-3"	
ℓ1	216	1⅛"	11'-5"	
f2	16	1"	28'-0"	
g2	24	1¼"	16'-0"	

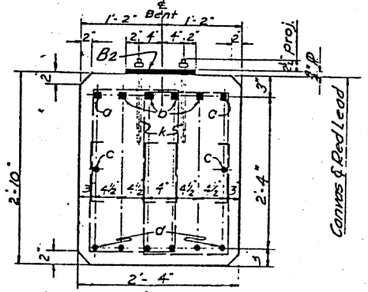


*Sweedge bolts

All dimensions are to ℄ of bars.
Hooks shall have 5 dias. clear openings

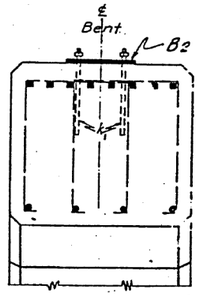


SECTIONAL PLAN C-C

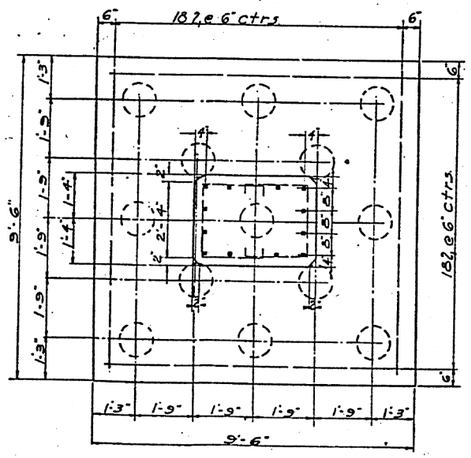


SECTION B-B

NOTE:—
Piling not used.
See Gen. Drwg.

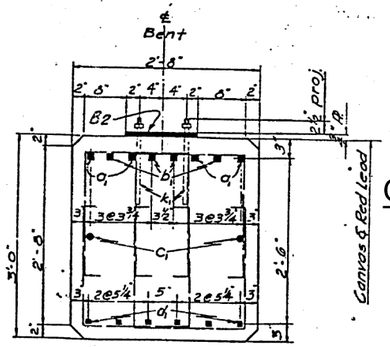


SECTION D-D



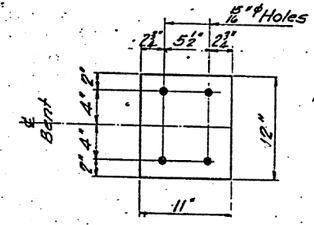
SECTIONAL PLAN F-F

NOTE:
For Anchor bolt, Plan & Seat Details See Sheet # 4.



SECTION E-E

See Anchor bolt plan for k bolts at Bents "4 & 5



Steel P. 11"×¾"×1'-0" - B2

DETAIL OF BEARING P.

ORIGINAL CONSTRUCTION PLANS

BENT DETAILS

254'-0" OVERHEAD CROSSING

24'-0" ROADWAY 6'-0" SIDEWALK

OVER C.& N.W. R.R. SEC. 21. T. 6 N. R. 4 E.

STA. 5+94 TO 8+48 WPGM 140

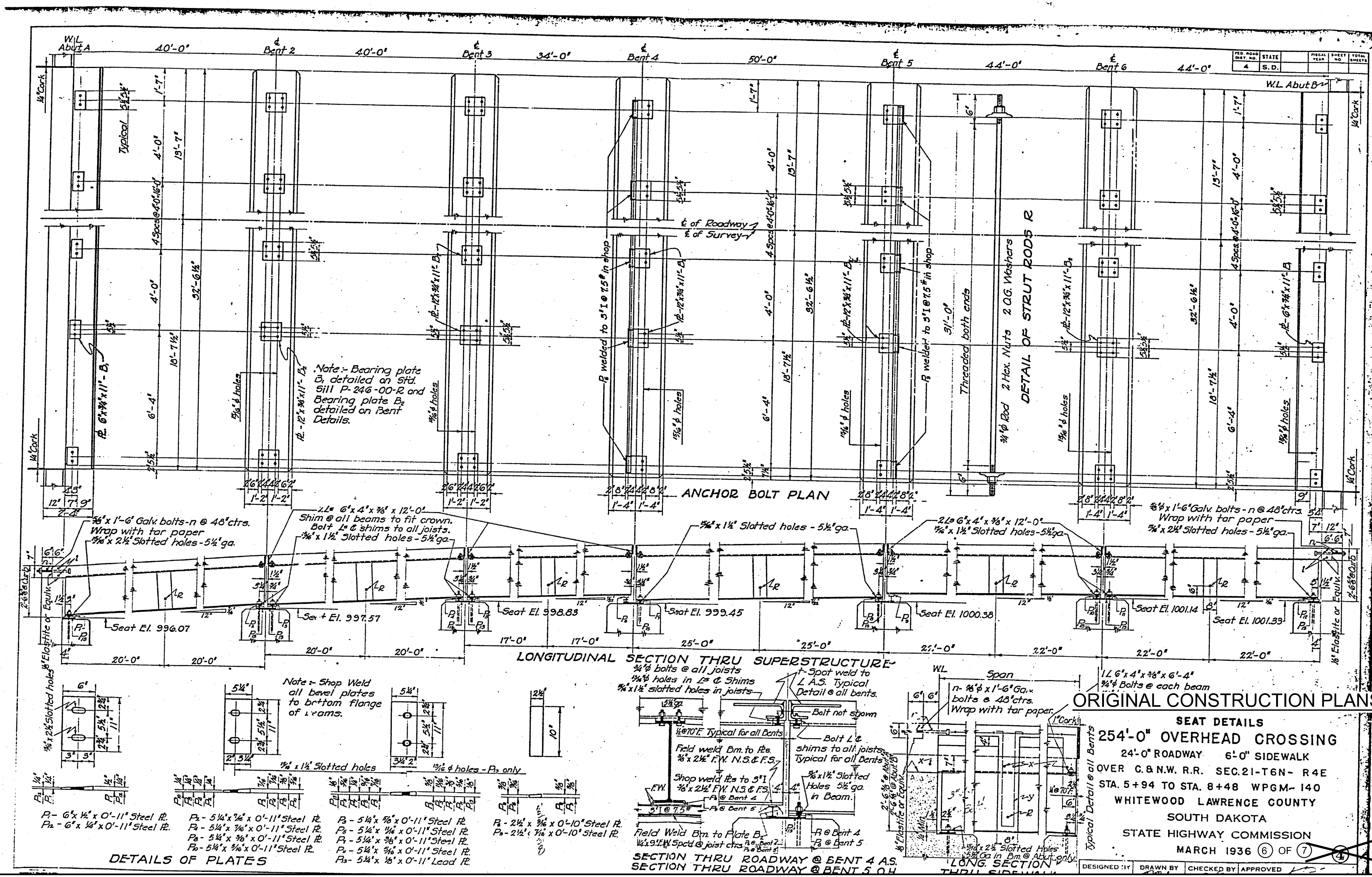
WHITEWOOD, LAWRENCE COUNTY

SOUTH DAKOTA

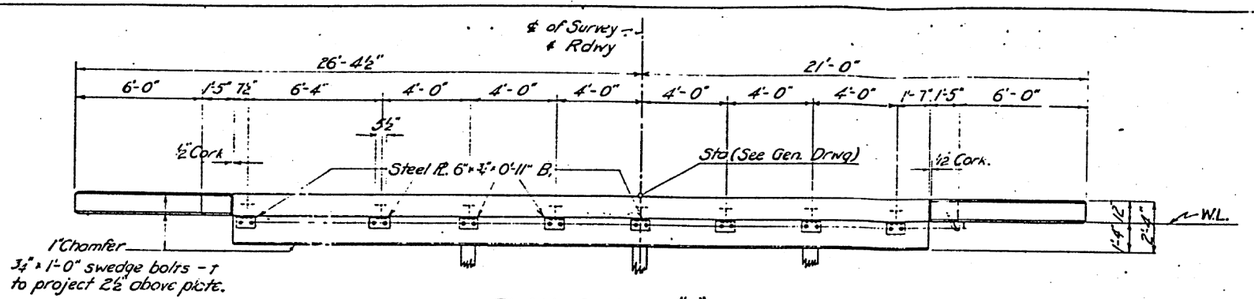
STATE HIGHWAY COMMISSION (5) OF (7)

MARCH 1936

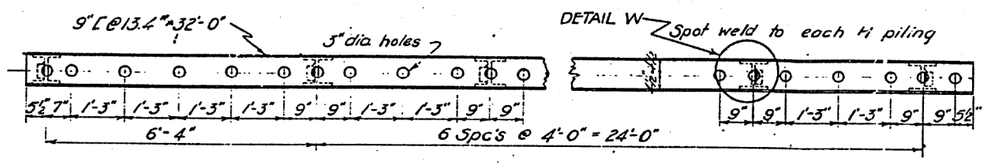
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED


W.L. Abut.A
Bent 2
Bent 3
Bent 4
Bent 5
Bent 6
W.L. Abut B
ANCHOR BOLT PLAN
℄ of Roadway
℄ of Survey
DETAIL OF STRUT RODS R
¾"φ Rod 2 Hex. Nuts 2 O.G. Washers Threaded both ends
Note:- Bearing plate B1 detailed on Std. Sill P-246-00-R and Bearing plate B2 detailed on Bent Details.
LONGITUDINAL SECTION THRU SUPERSTRUCTURE
Seat El. 996.07
Seat El. 997.57
Seat El. 998.83
Seat El. 999.45
Seat El. 1000.38
Seat El. 1001.14
Seat El. 1001.33
Note:- Shop Weld all bevel plates to bottom flange of beams.
DETAILS OF PLATES
SECTION THRU ROADWAY @ BENT 4 A.S.
SECTION THRU ROADWAY @ BENT 5 O.H.
LONG. SECTION THRU SIDEWALK
ORIGINAL CONSTRUCTION PLANS
SEAT DETAILS
254'-0" OVERHEAD CROSSING
24'-0" ROADWAY 6'-0" SIDEWALK
OVER C.&N.W. R.R. SEC.21-T6N-R4E
STA. 5+94 TO STA. 8+48 WPGM-140
WHITEWOOD LAWRENCE COUNTY
SOUTH DAKOTA
STATE HIGHWAY COMMISSION
MARCH 1936 6 OF 7
DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED

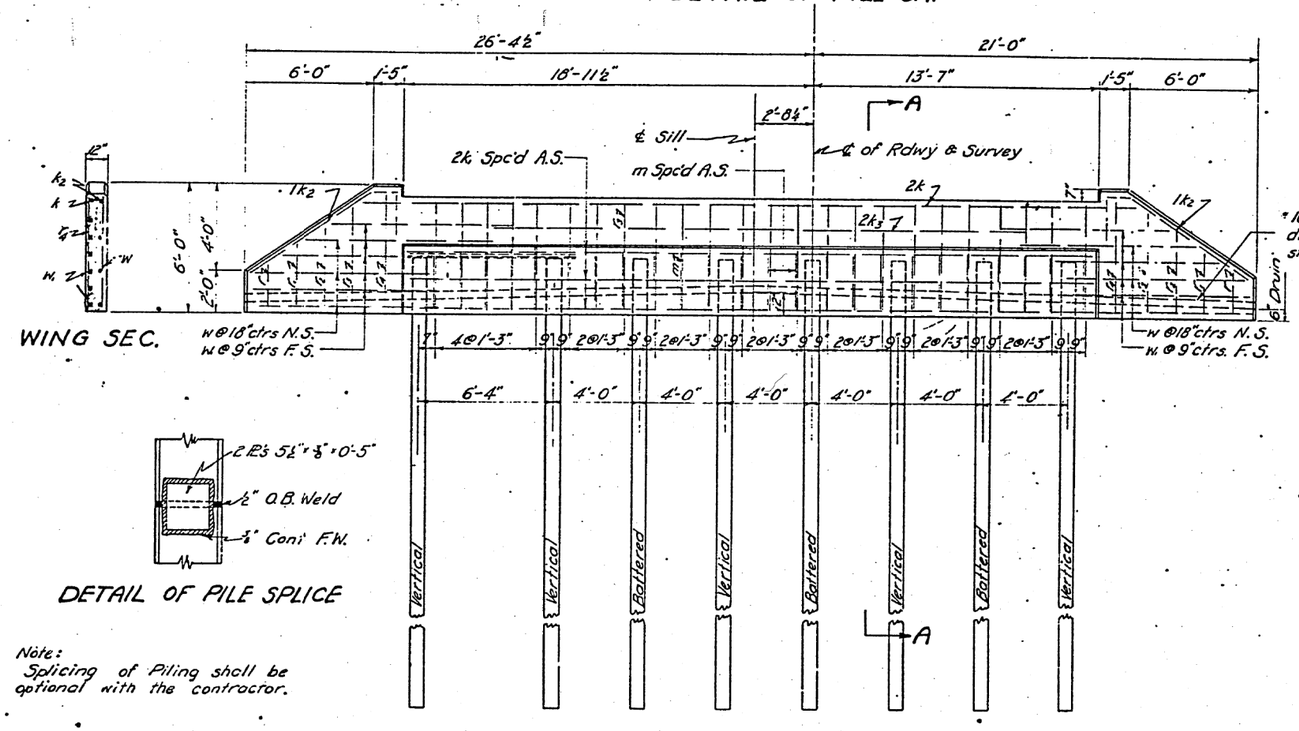
FED. ROAD DIST. NO.	STATE
4	S.D.



PLAN SILL NO."A" A.S.
PLAN SILL NO."B" O.H.



DETAIL OF PILE CAP

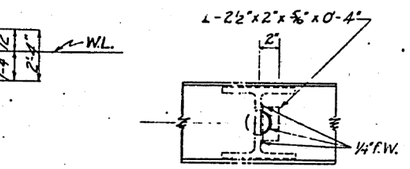


WING SEC.

DETAIL OF PILE SPLICE

Note:
Splicing of Piling shall be optional with the contractor.

ELEVATION SILL NO."A" A.S.
ELEVATION SILL NO."B" O.H.



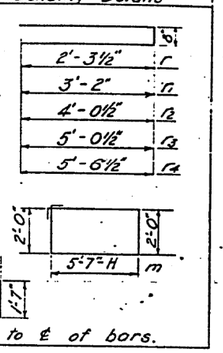
Tops of Piling shall be cut carefully on a horizontal plane
DETAIL W

Notes:
Piling shall develop a bearing capacity of 20 tons.
Cost of splice plates (if used) and welding rod shall be absorbed in the unit price bid for Steel Piling.
Cost of expansion material, copper drain, canvas and red lead shall be absorbed in the unit price bid for Cl "A" Concrete.
All welding shall conform to the recommendations of the American Welding Society.

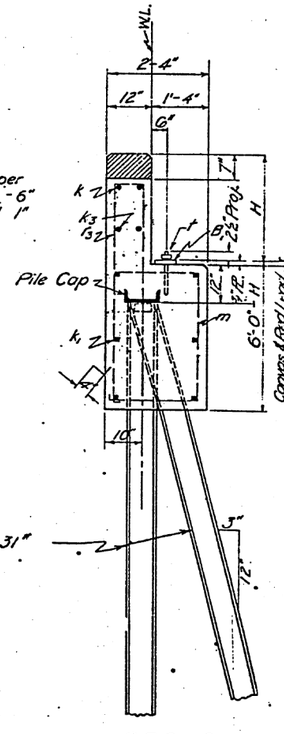
RF. SCHEDULE - ONE SILL

Mk.	No.	Sz.	Lgth.	Bending Details
k	2	⅜"	36'-9"	
k1	6	⅛"	32'-0"	
k2	2	½"	9'-9"	
r	2	½"	5'-3"	
r1	2	½"	7'-0"	
r2	2	½"	8'-9"	
r3	26	½"	10'-9	
r4	2	½"	11'-9"	
m	24	½"	15'-9"-2H	
w	6	½"	9'-3"	
w1	12	½"	9'-3"	
*f	16	¾"	1'-0"	
k3	2	½"	25'-0"	

*Swedge bolts.

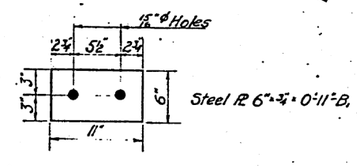


Dimensions are to ℄ of bars.



SEC. A-A

QUANTITIES - ONE SILL		
Cl. "A" Conc.	C.Y.	15.8
H.R. Conc.	C.Y.	.18
Reinf. Steel	lbs.	1630
Str. Steel	lbs.	555
Steel Piling	lbs.	



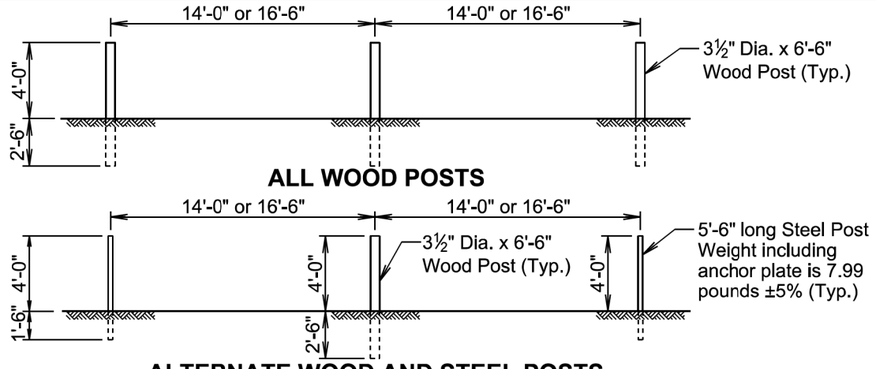
DETAIL OF BEARING PL.

ORIGINAL CONSTRUCTION PLANS

DETAILS OF
STANDARD SILL
24'-0" ROADWAY 0° SKEW 6'-0" SIDEWALK
SOUTH DAKOTA
STATE HIGHWAY COMMISSION
OCT. 1936 LL.=H15 (7) OF (7)

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	AKR	GHS	BRIDGE ENGINEER

P-246-00-R



TYPE OF FENCE		LINE POST SPACING	BARBED WIRE		WOVEN WIRE
TYPE	DESCRIPTION		WIRE GAGE	NUMBER AND SHAPE OF BARBS	STYLE OR DESIGN NO.
1	3 Barbed Wires	16'-6"	12½	2 Point Round	—
2	4 Barbed Wires	16'-6"	12½	2 Point Round	—
3	5 Barbed Wires	16'-6"	12½	2 Point Round	—
4	26" Woven Wire with 2 Barbed Wires	14'-0"	12½	2 Point Round	726-6-12½
5	26" Woven Wire with 4 Barbed Wires	14'-0"	12½	2 wires with 2 Pt. Rd. 2 wires with 4 Pt. Rd.	726-6-12½
6	32" Woven Wire with 3 Barbed Wires	14'-0"	12½	2 wires with 2 Pt. Rd. 1 wire with 4 Pt. Rd.	832-6-12½

GENERAL NOTES:

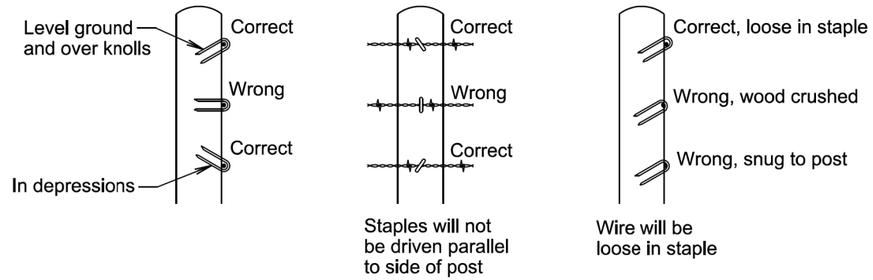
Fence types designated on the plans that are followed by the letter S will have smooth (barbless) wires.

When type 5S or 6S is designated the bottom wire may be barbed, smooth, or left off.

All degrees of curvature stated for fence are at centerline of roadway.

June 26, 2019

Published Date: 2024	***RIGHT-OF-WAY FENCE***	***PLATE NUMBER 620.01*** *Sheet 1 of 1*



STAPLE INSTALLATION

GENERAL NOTES:

The Right-of-Way fence will consist of barbed wire or a combination of woven wire and barbed wire. The barbed wire and/or woven wire will be fastened to all wood posts or fastened to alternating wood and steel posts. Only wood posts will be used for brace panels. Gates will be of the type designated in the plans or as otherwise directed by the Engineer. Fence will be constructed conforming to the details on the standard plates and in the plans unless otherwise directed by the Engineer.

Right-of-Way fence on Interstate Projects will be constructed one foot within the Interstate Right-of-Way lines except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

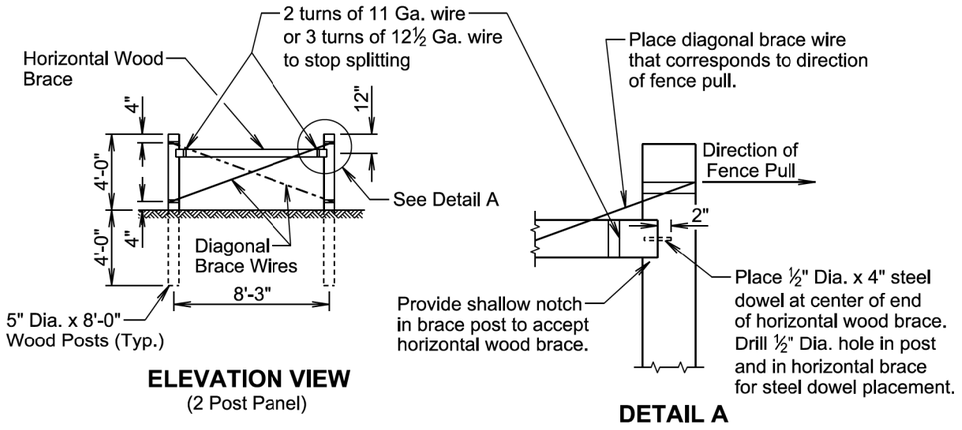
Right-of-Way fence other than on Interstate Projects will be constructed within one foot of the Right-of-Way on the Landowner's side except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

Barbs will be fabricated from zinc coated 14 ga. wire. Two point barbs will be wrapped twice around one main strand at four-inch spacings and the four point barbs will be interlocked and wrapped around both main strands at five-inch spacings.

The gages of wire and wood post lengths and sizes are the minimum acceptable unless otherwise specified in the plans. The tolerances for steel posts will be as stated in AASHTO M281. Woven wire will conform to design and specifications of ASTM A116 and barbed wire will conform to ASTM A121.

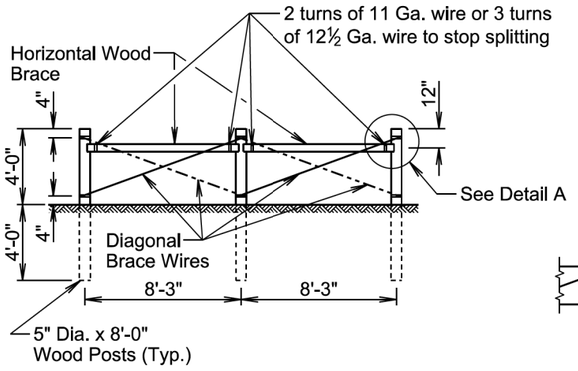
June 26, 2019

Published Date: 2024	***STAPLE INSTALLATION AND GENERAL RIGHT-OF-WAY FENCE NOTES***	***PLATE NUMBER 620.02*** *Sheet 1 of 1*

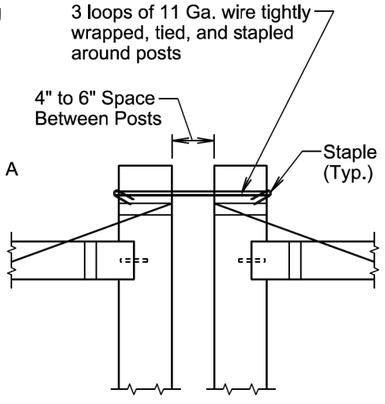


ELEVATION VIEW
(2 Post Panel)

DETAIL A



ELEVATION VIEW
(3 Post Panel)



DETAIL B

GENERAL NOTES:

Two Post Panels will be installed at least every 1320' between corners.

Two Post Panels will be installed at any sharp vertical angle crest points and as directed by the Engineer.

Horizontal wood braces will consist of 4" dia. x 8' wood posts or rough 4" x 4" x 8' timbers.

Diagonal brace wires will be fabricated with 4 strands of 9 Ga. galvanized wire twisted tight. The diagonal brace wires will be installed in accordance with the direction of the fence pull. Two diagonal brace wires are required if fence pull is in both directions.

January 22, 2023

Published Date: 2024	SDDOT	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
			Sheet 1 of 3

SPACING OF 2 POST PANELS WITHIN CURVES	
RADIUS OF CURVE	SPACING OF 2 POST PANEL
Greater than 1800 Ft.	** 1320'
Less than 1800 Ft.	** At P.C., P.T., and at every 1320' between P.C. and P.T.

** Fence lengths greater than 1320' and less than 2640' place 2 Post Panel approximately at midpoint.

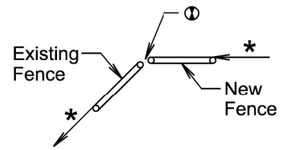
① See Detail B on Sheet 1 of 3.

GENERAL NOTE:

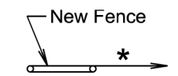
All degrees of curvature stated for fence are at centerline of roadway.

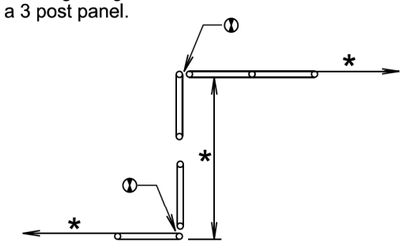
If fence length is less than 600' to next corner use a 2 post panel.

* If fence length is greater than 600' to next corner use a 3 post panel.

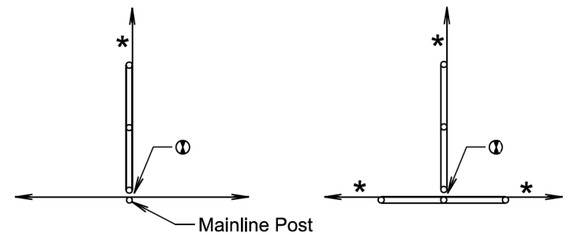


BEGIN OR END FENCE
(Where new fence ties into existing fence)

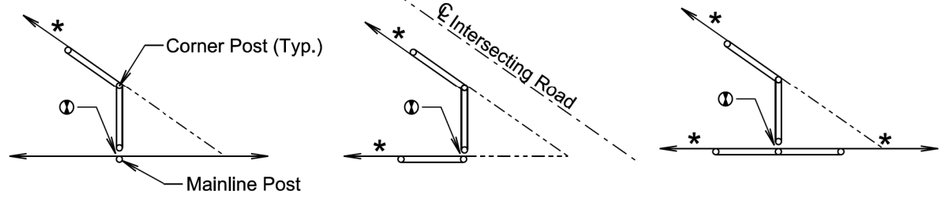




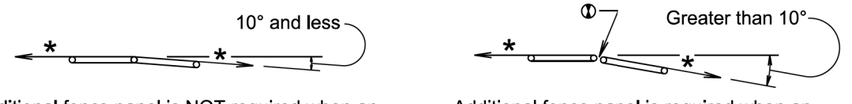
SHORT JOGS IN FENCE



CROSS FENCE



SHARP ANGLES IN CROSS FENCE



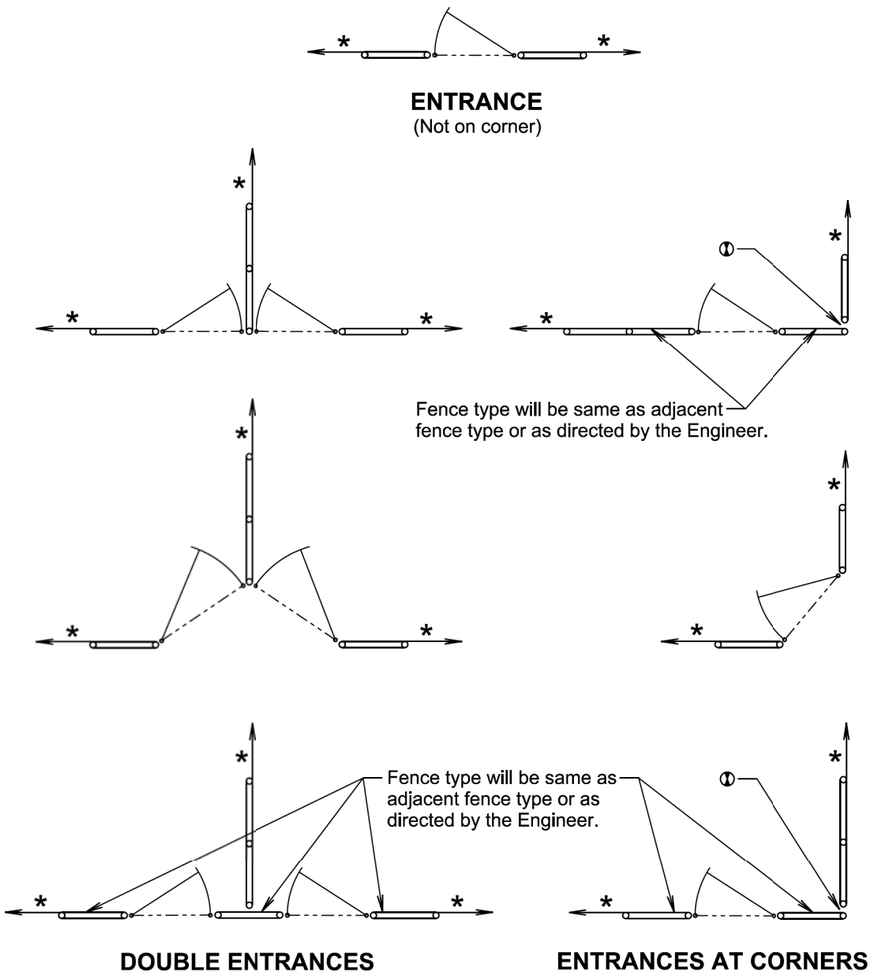
Additional fence panel is NOT required when an angle in the mainline fence is 10° and less.

Additional fence panel is required when an angle in the mainline fence is greater than 10°.

ANGLES IN MAINLINE FENCE

January 22, 2023

Published Date: 2024	SDDOT	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
			Sheet 2 of 3



* If fence length is less than 600' to next corner use a 2 post panel.
If fence length is greater than 600' to next corner use a 3 post panel.

① See Detail B on Sheet 1 of 3.

January 22, 2023

Published Date: 2024	SDDOT	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
			Sheet 3 of 3

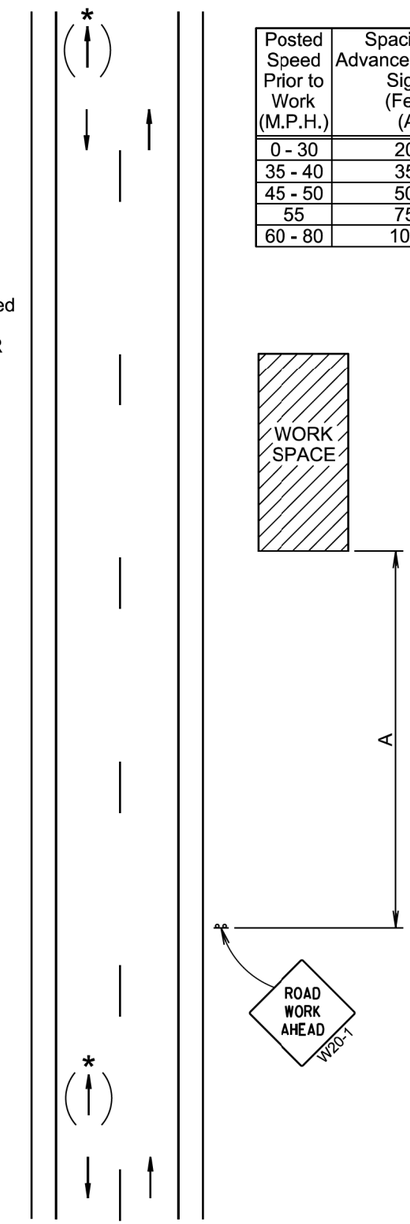
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated will be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

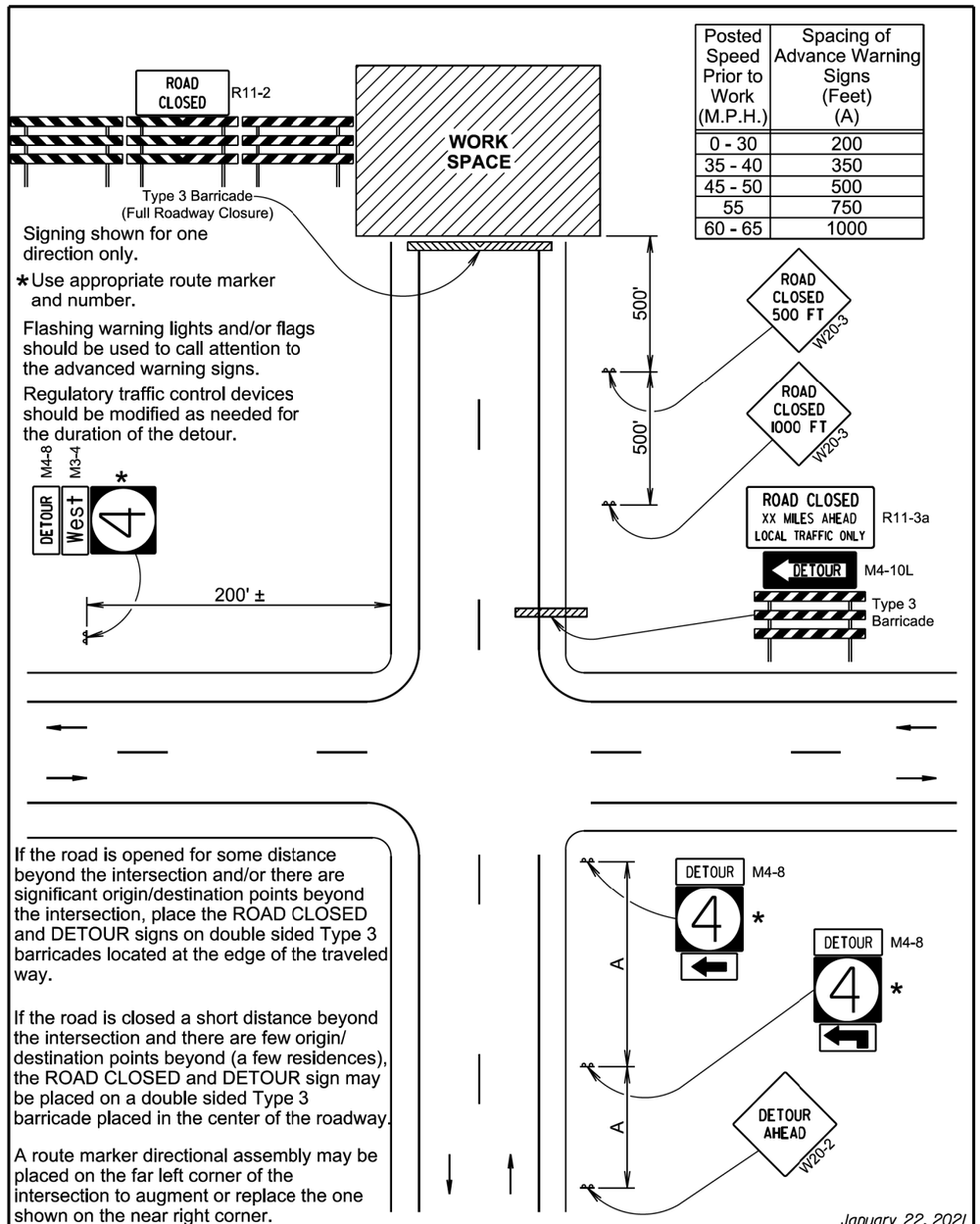
For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 80	1000

January 22, 2021

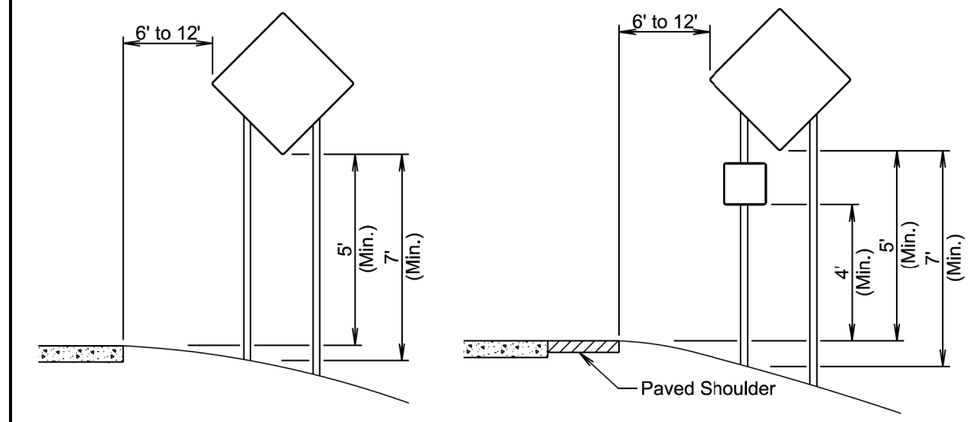
Published Date: 2024	SDDOT	WORK BEYOND THE SHOULDER	PLATE NUMBER 634.01
			Sheet 1 of 1

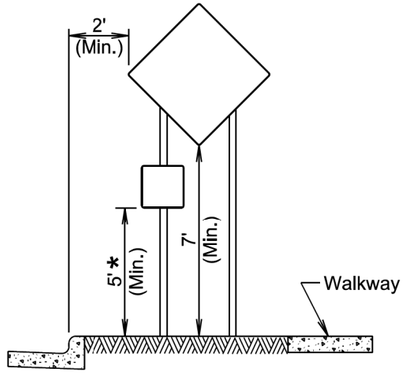


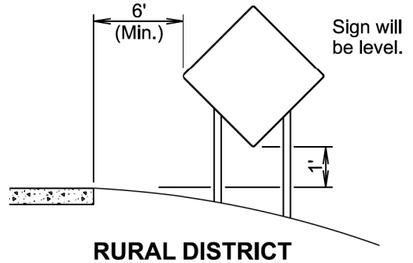
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000

January 22, 2021

Published Date: 2024	SDDOT	ROAD CLOSED WITH OFF-SITE DETOUR	PLATE NUMBER 634.29
			Sheet 1 of 1



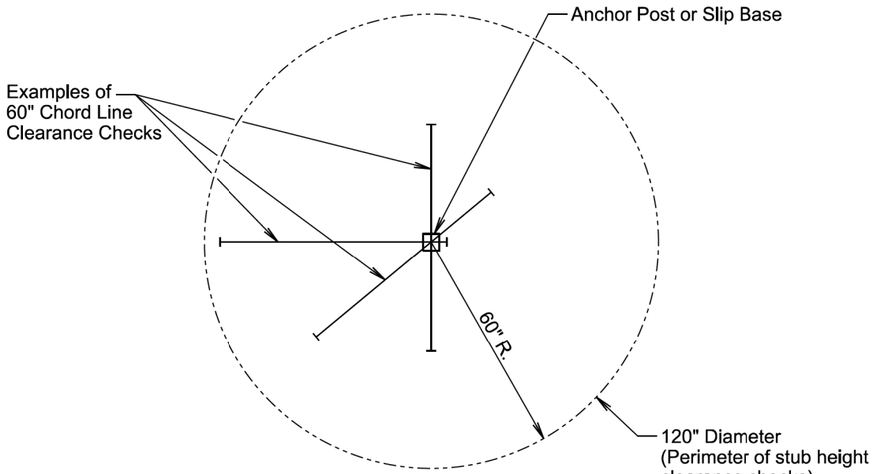




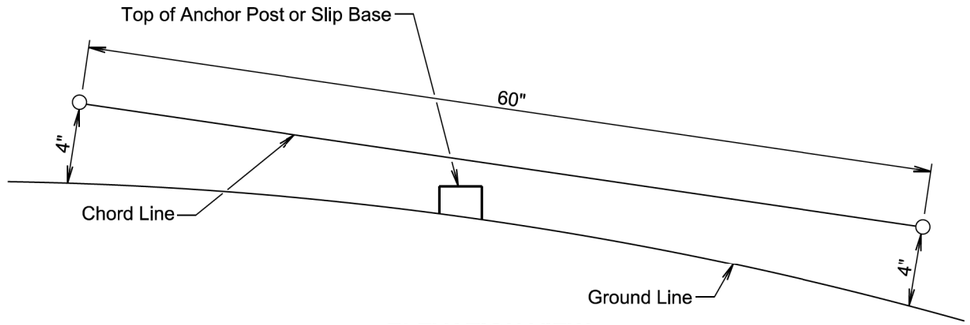
*If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2024	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

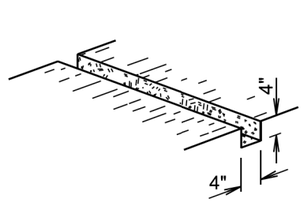
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

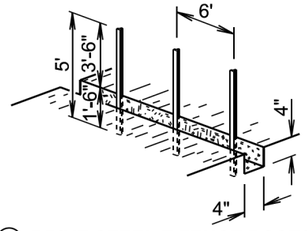
January 22, 2021

Published Date: 2024	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99 Sheet 1 of 1

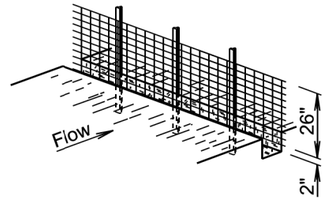
MANUAL LOW FLOW SILT FENCE INSTALLATION



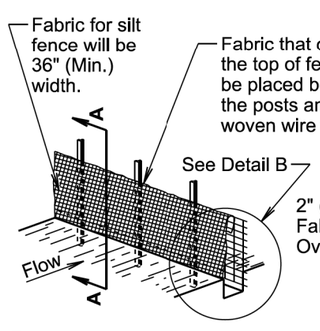
① **EXCAVATE TRENCH**



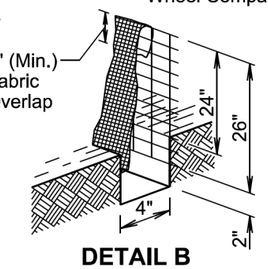
② **DRIVE STEEL T FENCE POSTS**



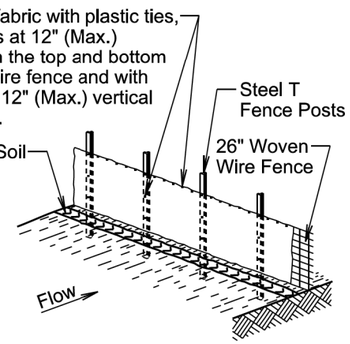
③ **ATTACH 26" WOVEN WIRE FENCE TO POSTS**



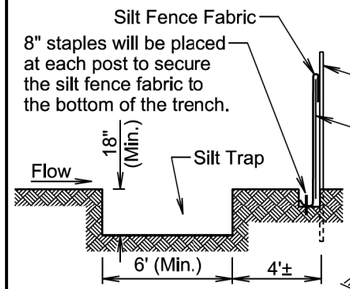
④ **ATTACH SILT FENCE FABRIC**



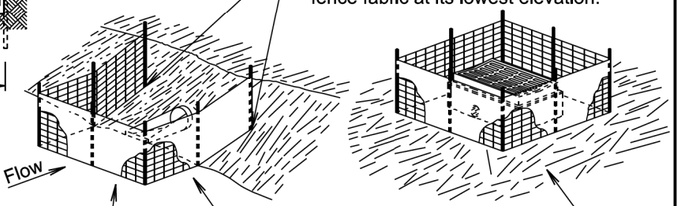
DETAIL B



⑤ **BACKFILL TRENCH AND WHEEL COMPACT SOIL**



SECTION A-A

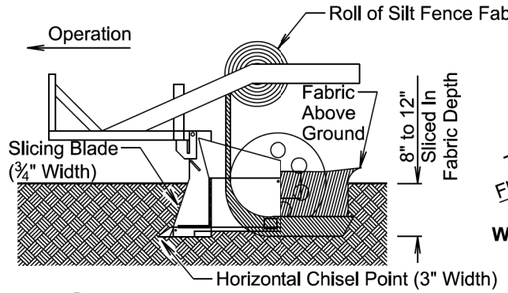


The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

February 14, 2020

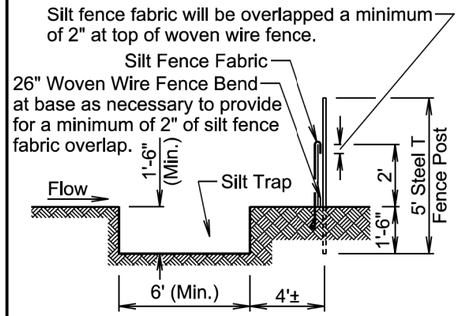
Published Date: 2024	SDDOT	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04 Sheet 1 of 2

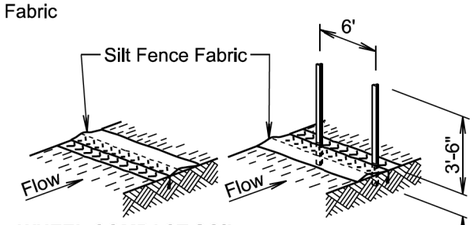
MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

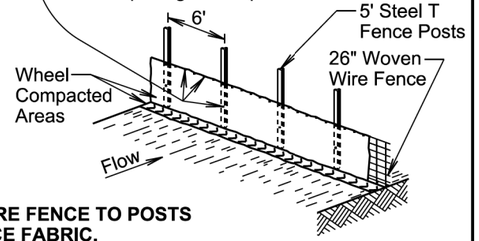
Silt fence fabric will be overlapped a minimum of 2" at top of woven wire fence.





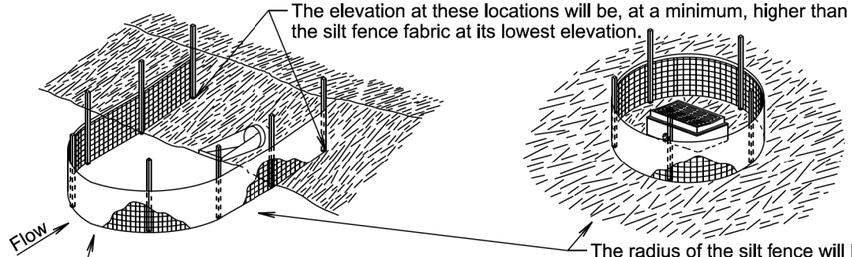
② WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.

Attach the silt fence fabric with plastic ties, wire ties, or hog rings at 12" (Max.) horizontal spacing on the top and bottom wires of the woven wire fence and with plastic or wire ties at 12" (Max.) vertical spacing on the posts.



③ ATTACH 26" WOVEN WIRE FENCE TO POSTS AND ATTACH SILT FENCE FABRIC.

The elevation at these locations will be, at a minimum, higher than the top of the silt fence fabric at its lowest elevation.



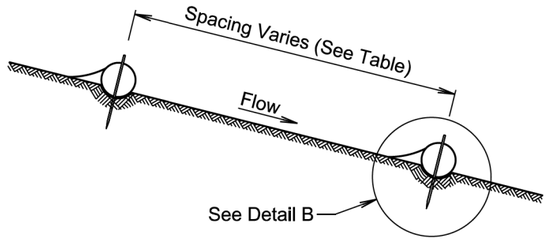
GENERAL NOTES:

A silt trap will be provided when specified by a plan note. All costs for constructing the silt trap will be incidental to the contract unit price per cubic yard for "Silt Trap".

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end will be provided on top of the extra length of silt fence fabric to prevent underflow.

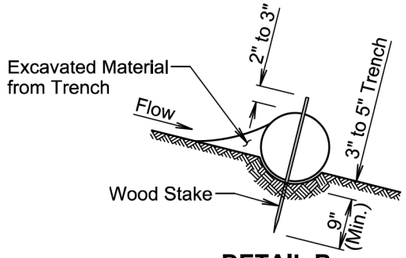
February 14, 2020

Published Date: 2024	SDDOT	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 2 of 2

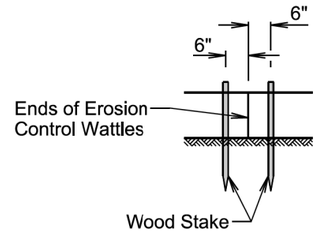


ELEVATION VIEW
(Cut or Fill Slope Installation)

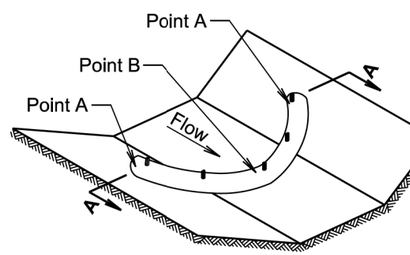
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft.)
1:1	10
2:1	20
3:1	30
4:1	40



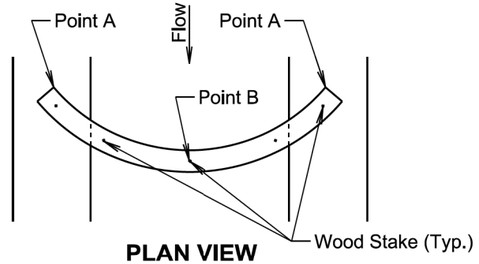
DETAIL B
(Typical of All Installations)



DETAIL C
(See General Notes)

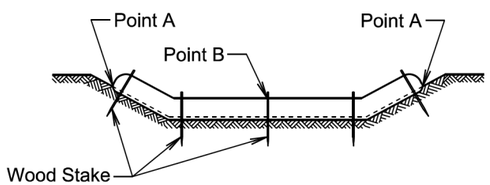


ISOMETRIC VIEW
(Ditch Installation)



PLAN VIEW
(Ditch Installation)

DITCH INSTALLATION	
Grade	Spacing (Ft.)
2%	150
3%	100
4%	75
5%	50



SECTION A-A

February 14, 2020

Published Date: 2024	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

GENERAL NOTES:

At cut or fill slope installations, wattles will be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor will dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes will be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes will be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles will be 3' to 4'.

Where installing running lengths of wattles, the Contractor will butt the second wattle tightly against the first and will not overlap the ends. See Detail C.

The Contractor and Engineer will inspect the erosion control wattles in accordance with the storm water permit. The Contractor will remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping will be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping will be incidental to the contract unit price per cubic yard for "Remove Sediment".

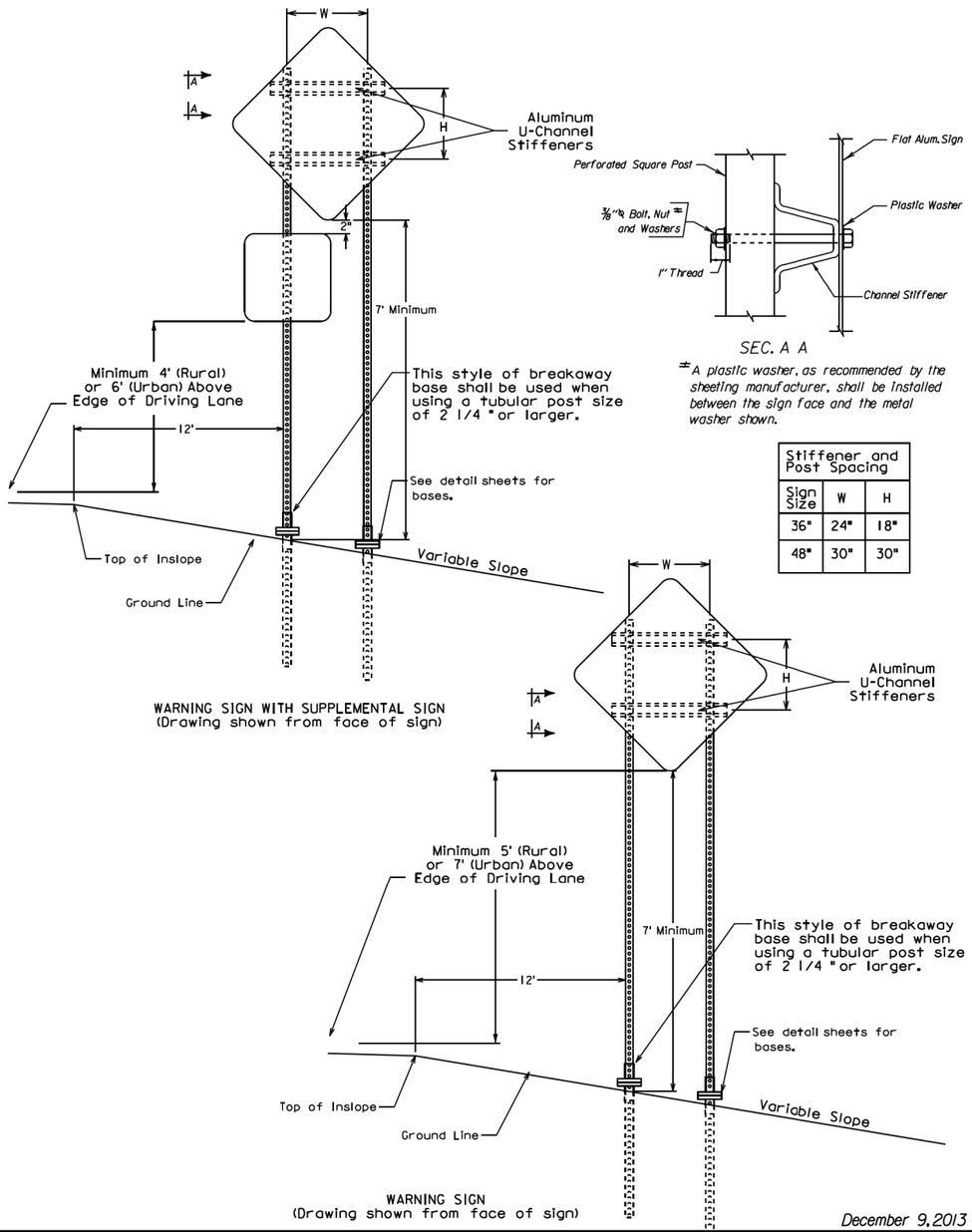
All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials will be incidental to the contract unit price per foot for the corresponding erosion control wattle contract item.

All costs for removing the erosion control wattle from the project including labor, equipment, and materials will be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

February 14, 2020

Published Date: 2024	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2

THIS SECTION INTENTIONALLY LEFT BLANK

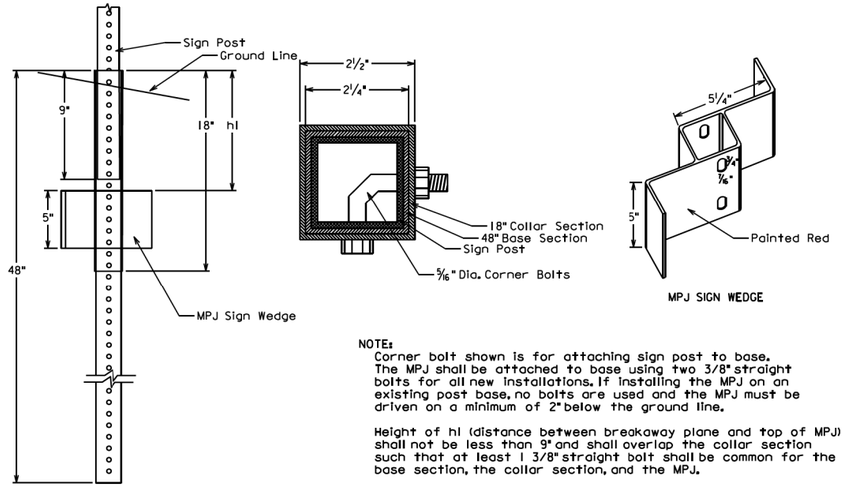


Stiffener and Post Spacing		
Sign Size	W	H
36"	24"	18"
48"	30"	30"

December 9, 2013

SDDOT	36" AND 48" WARNING SIGNS (Typical Sign and Stiffener Detail)	SPECIAL DETAIL L02
		Sheet 1 of 1

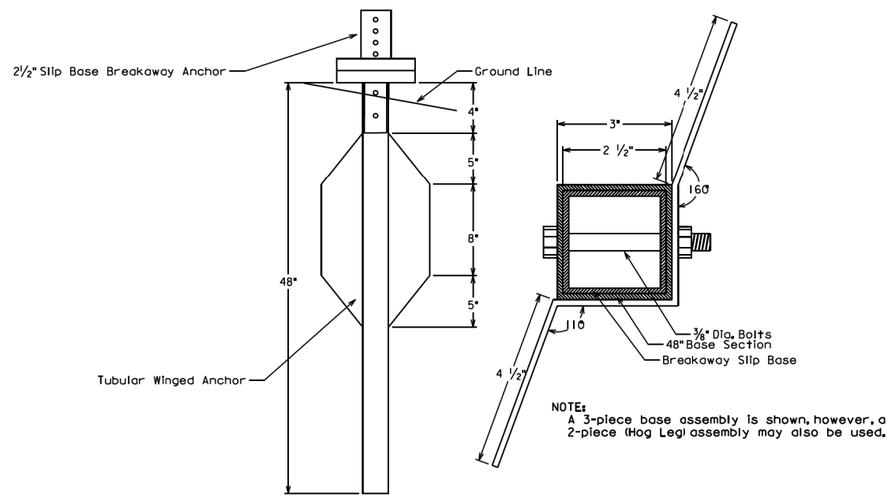
SIGN BASE DETAILS FOR A 2" SIGN POST



NOTE:
Corner bolt shown is for attaching sign post to base. The MPJ shall be attached to base using two 3/8" straight bolts for all new installations. If installing the MPJ on an existing post base, no bolts are used and the MPJ must be driven on a minimum of 2" below the ground line.

Height of hl (distance between breakaway plane and top of MPJ) shall not be less than 9" and shall overlap the collar section such that at least 1 3/8" straight bolt shall be common for the base section, the collar section, and the MPJ.

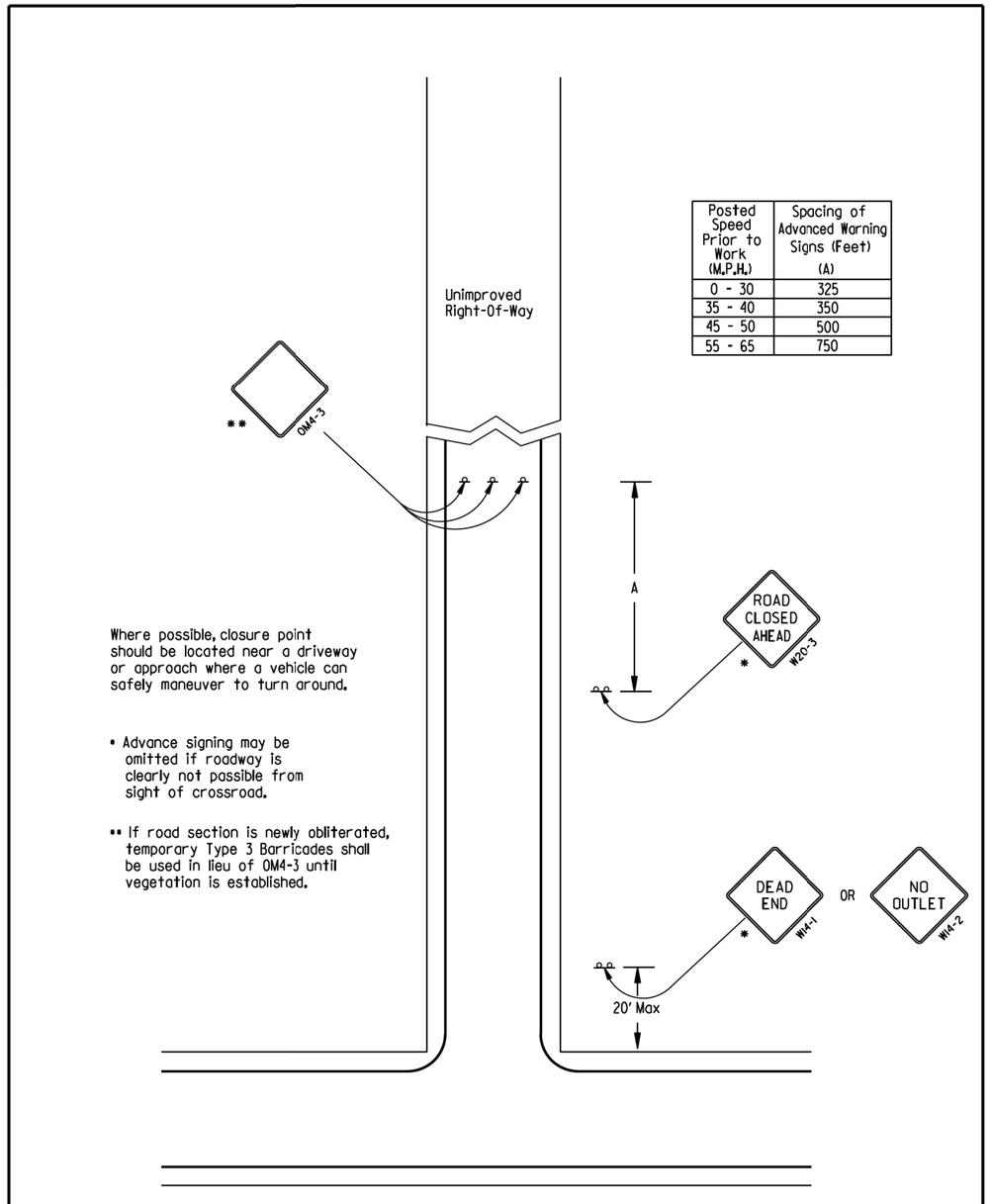
SIGN BASE DETAILS FOR A 2½" SIGN POST



NOTE:
A 3-piece base assembly is shown, however, a 2-piece (Hog Leg) assembly may also be used.

March 28, 2014

SDDOT	TUBULAR POST BASE DETAILS (Typical Soil Installation)	SPECIAL DETAIL L21
		Sheet 1 of 1



Posted Speed Prior to Work (M.P.H.)	Spacing of Advanced Warning Signs (Feet) (A)
0 - 30	325
35 - 40	350
45 - 50	500
55 - 65	750

Where possible, closure point should be located near a driveway or approach where a vehicle can safely maneuver to turn around.

- Advance signing may be omitted if roadway is clearly not passible from sight of crossroad.

** If road section is newly obliterated, temporary Type 3 Barricades shall be used in lieu of OM4-3 until vegetation is established.

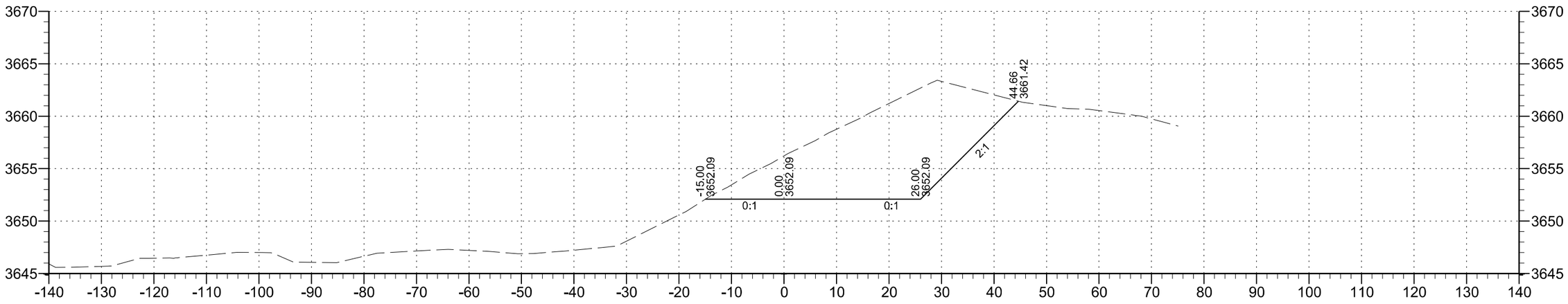
February 8, 2016

	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES ROAD CLOSED OBLITERATED OR UNIMPROVED ROADWAY	SPECIAL DETAIL L71 Sheet 1 of 1

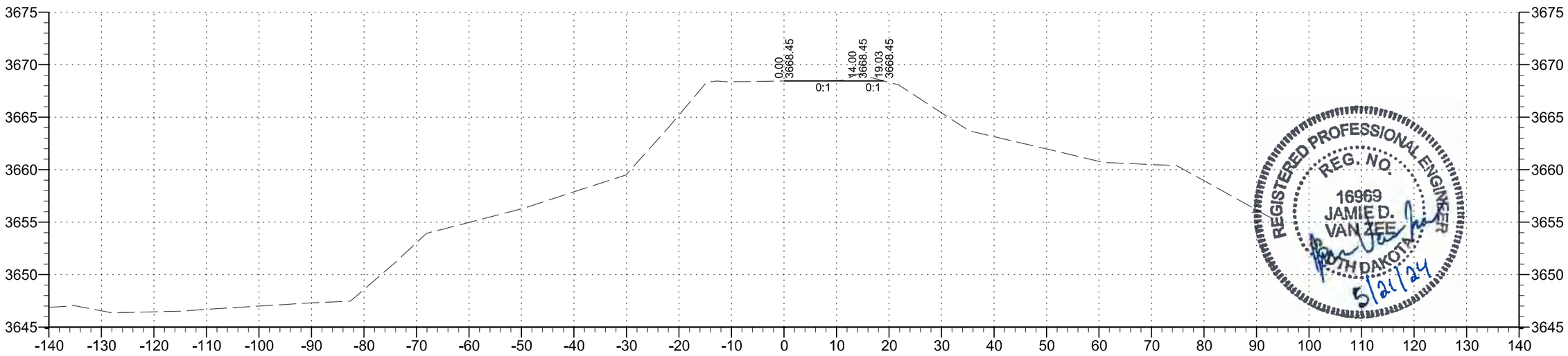
MAINLINE

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	29	33



9+00



8+59

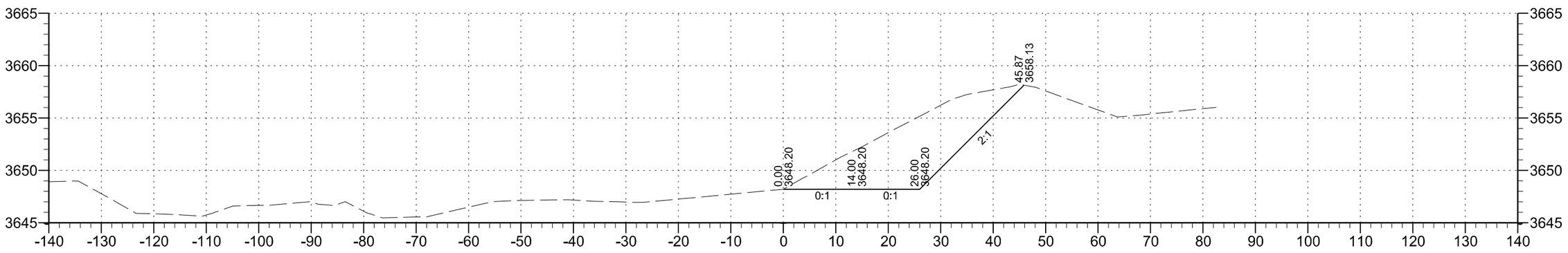
REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24

MAINLINE

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	30	33

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24

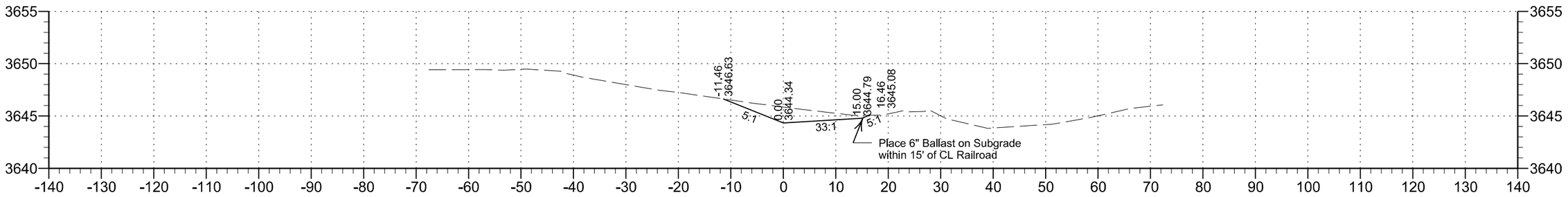


9+16

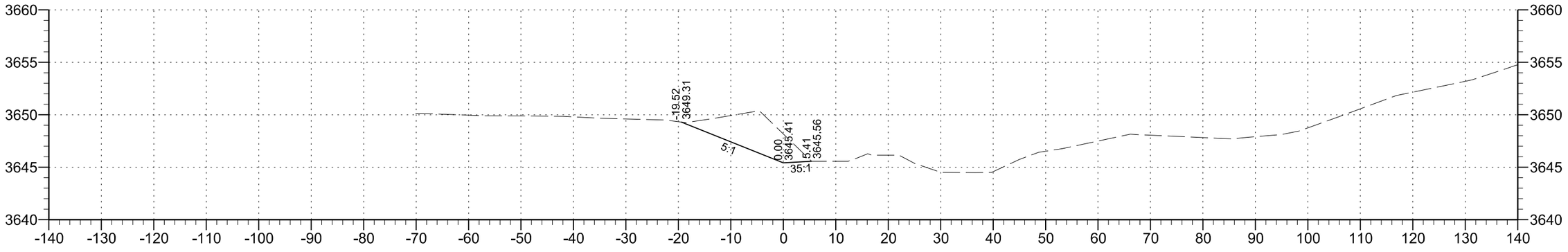
DRAINAGE DITCH

FOR BIDDING PURPOSES ONLY

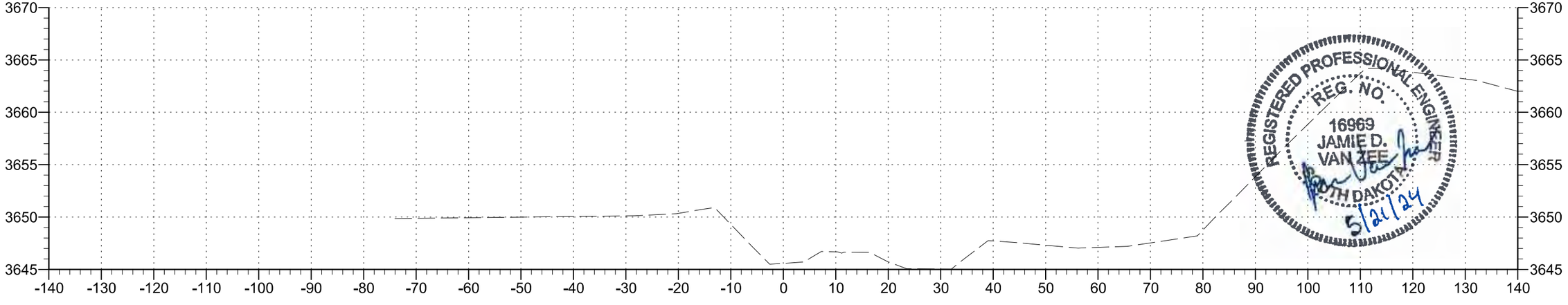
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	31	33



101+00



100+50



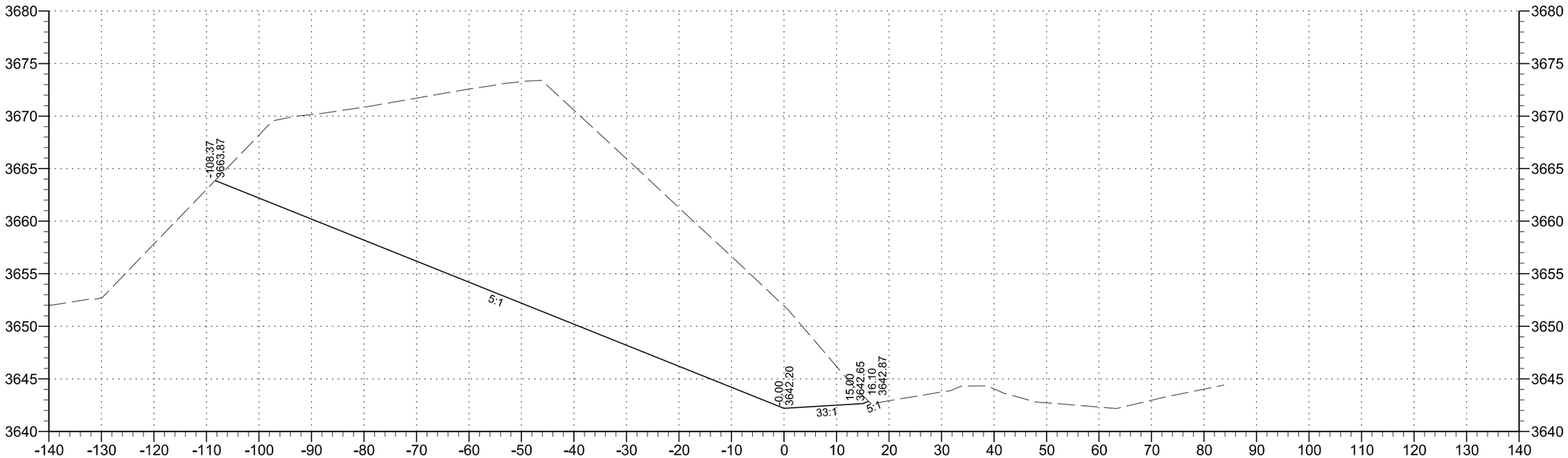
100+00

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24

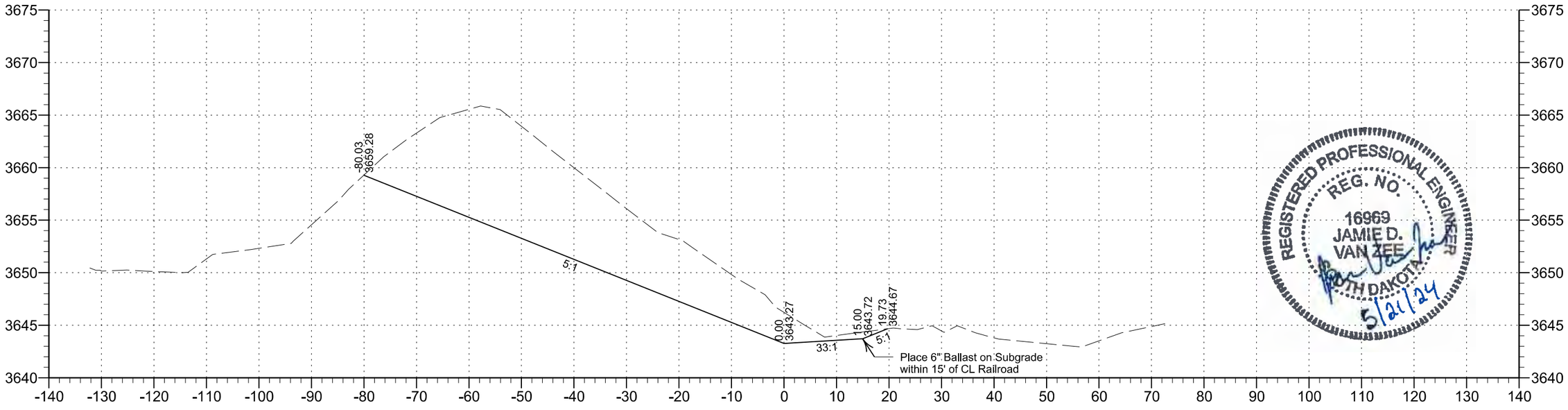
DRAINAGE DITCH

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	32	33



102+00



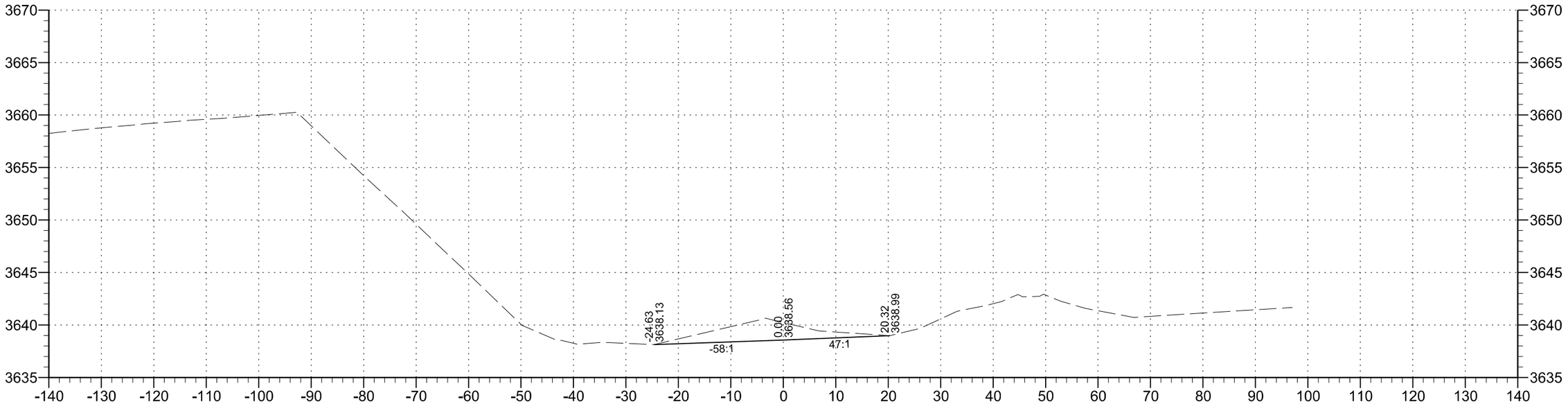
101+50

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24

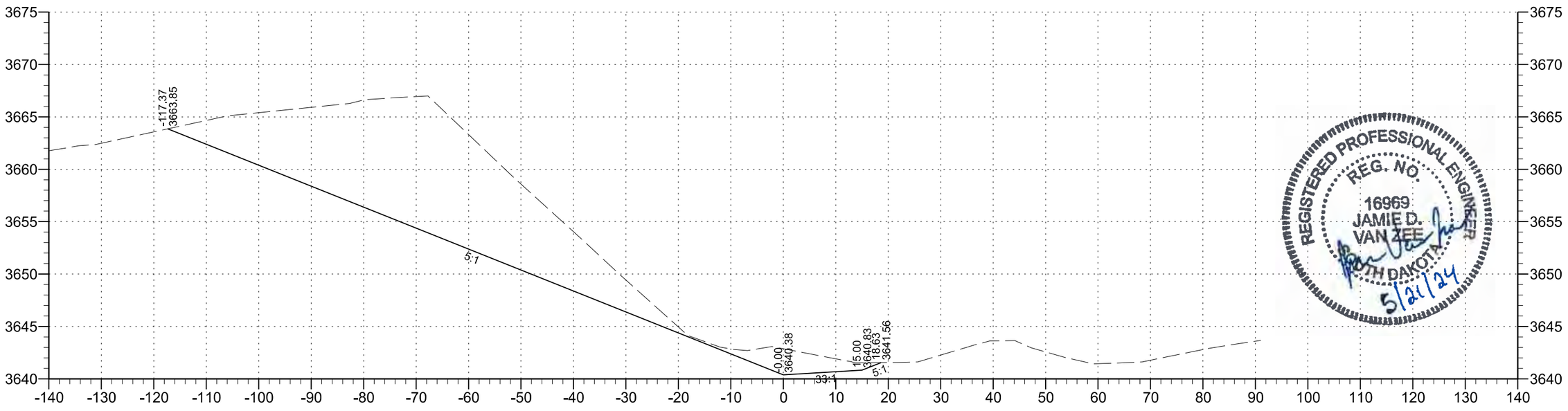
DRAINAGE DITCH

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6545(05)	33	33



103+00



102+50

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16969
JAMIE D.
VAN ZEE
SOUTH DAKOTA
5/21/24