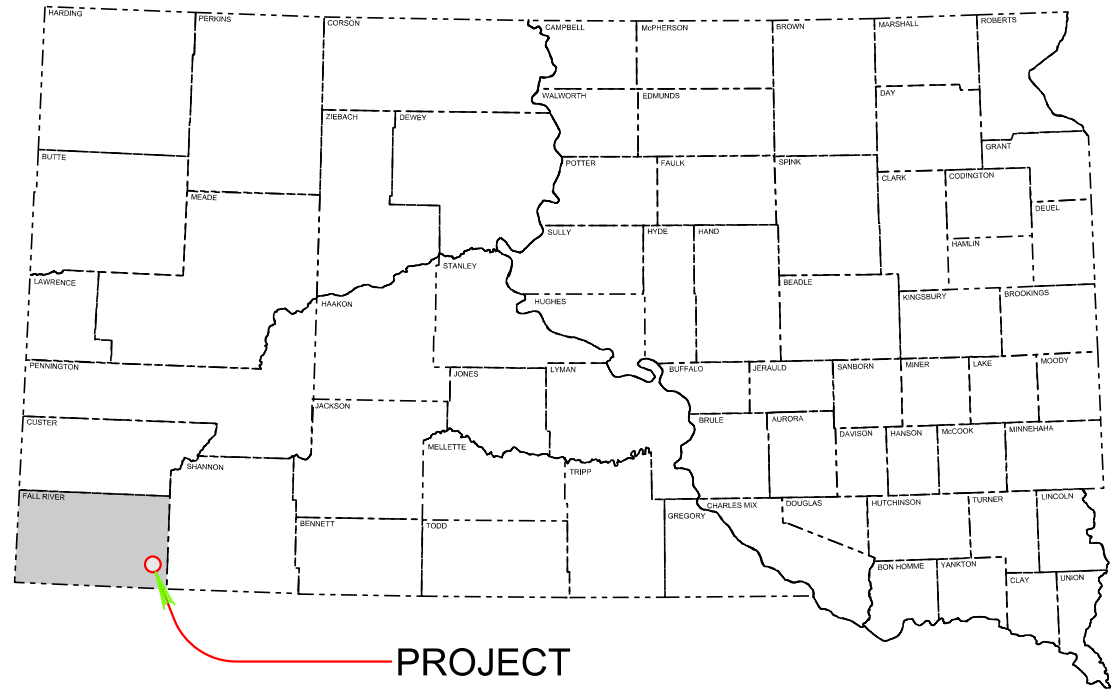


Plot Scale - 1:200

Plotted From - lrrc11610



PROJECT

PROJECT
PS 0018(130)62
MRM 62.6

DESIGN DESIGNATION

ADT (2013)	577
ADT (2033)	731
DHV	89
D	51 %
T DHV	7.2 %
T ADT	15.8 %
V	65 MPH

STORM WATER PERMIT

None Required

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT PS 0018(130)62
US HIGHWAY 18
FALL RIVER COUNTY

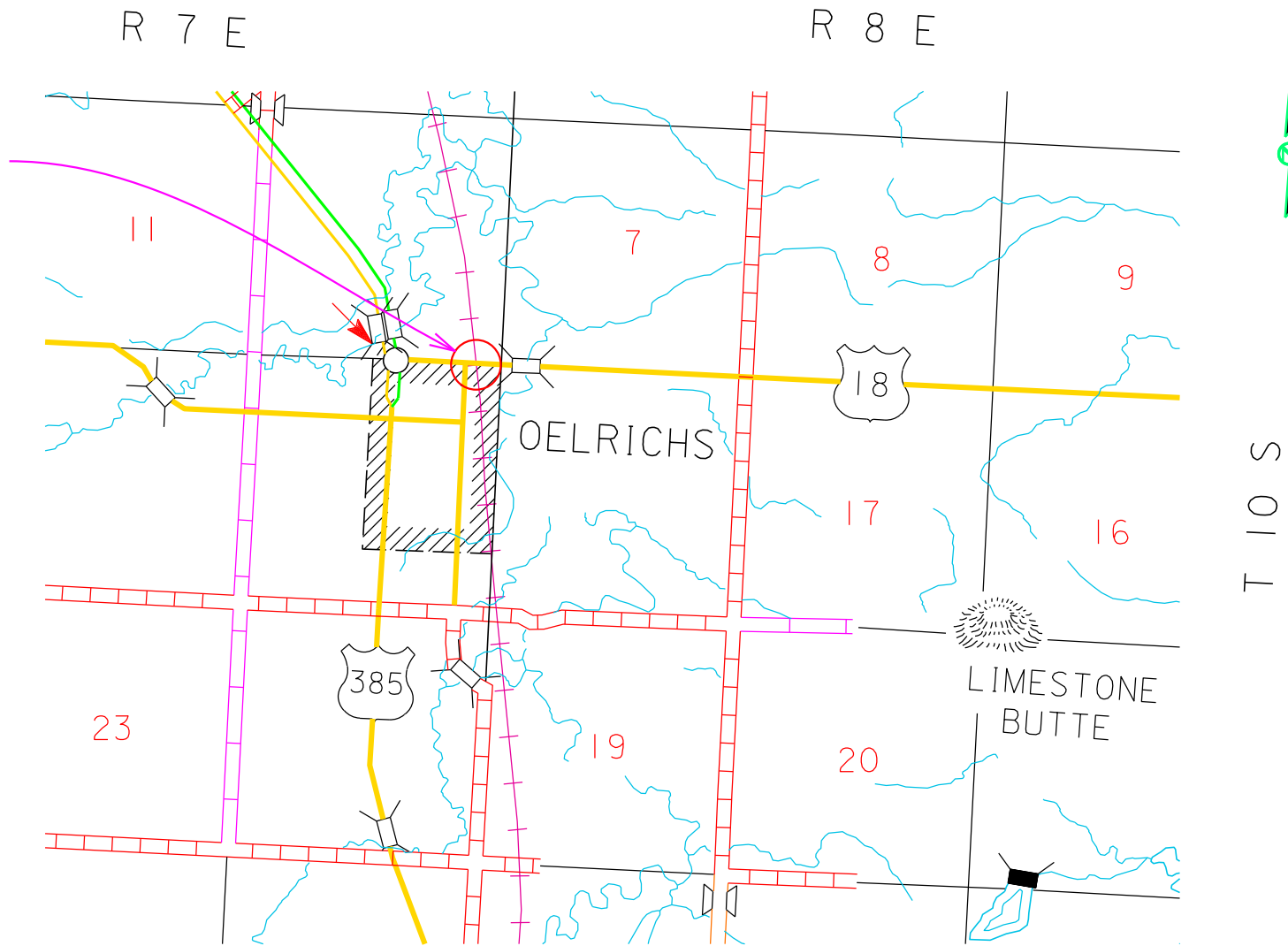
RAILROAD CROSSING REHABILITATION
PCN 00QM

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PS 0018(130)62	1	21

Plotting Date: 05/21/2014

INDEX OF SHEETS

1	General Layout W/Index
2	Estimate of Quantities and Environmental Commitments
3 - 6	General Notes & Tables
7	Typical Section
8	Traffic Control
9	Horizontal Alignment and Control Data Sheet
10	Topography Symbolology & Legend
11	Plan & Profile Sheet
12 - 15	Standard Plates
16 - 21	Cross Sections



ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PS 0018(130)62	2	21

ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
004E0030	Maintenance of Traffic Diversion(s)	Lump Sum	LS
004E0050	Remove Traffic Diversion(s)	Lump Sum	LS
009E0010	Mobilization	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	22.0	SqYd
110E7150	Remove Sign for Reset	1	Each
120E0600	Contractor Furnished Borrow	2,092	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
260E3010	Gravel Surfacing	159.5	Ton
320E1200	Asphalt Concrete Composite	6.0	Ton
632E3500	Reset Sign	1	Each
634E0100	Traffic Control	1,330	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0640	Temporary Pavement Marking	2,544	Ft
734E0010	Erosion Control	Lump Sum	LS
734E0154	12" Diameter Erosion Control Wattle	320	Ft
998E0100	Railroad Protective Insurance	Lump Sum	LS

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

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 C: WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment before entering South Dakota to reduce the risk of invasive species introduction into the project vicinity.

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 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 State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway 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:

- 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 State 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 State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".
- 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 designated option borrow 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: staging areas, borrow sites, waste disposal sites, and all material processing sites.

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 staging areas, borrow sites, waste disposal sites, or material processing sites 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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PS 0018(130)62	3	21

RAILROAD

The Contractor shall coordinate work with Railroad regarding any work to be done adjacent to the railroad tracks. The Railroad shall install a 32’ wood plank crossing across the traffic diversion. Construction of the traffic diversion will need to be coordinated with Chad Robb, Manager Utility & Surfacing, 605 - 515-3888, see “Special Provision Regarding Working on Railroad Company Right-or-Way”.

WORK DESCRIPTION

Wok on this project will proceed in accordance with the Sequence of Operations. Work on this project will consist of the following:

1. Construction of traffic diversion
2. Asphalt concrete pavement removal on both sides of the railroad crossing on US 18.
3. Placement of new asphalt concrete to match the new grade of the railroad crossing on US 18.
4. Removal of the traffic diversion.

SEQUENCE OF OPERATIONS

Prior to beginning work on the railroad crossing on US 18, the Contractor shall contact the Railroad. Traffic shall not be placed on the traffic diversion until Railroad is on site to begin crossing rehabilitation.

1. Construction of the traffic diversion and placement of surfacing on traffic diversion by the Contractor.
2. Installation of wood plank crossing by the Railroad.
3. Sign and place traffic on the traffic diversion by the Contractor.
4. Removal of asphalt pavement and shoulder on US 18 by the Contractor.
5. Installation of the new precast concrete panel crossing and rail by Railroad.
6. Placement of new pavement and shoulder on US 18, to commence within one working day upon the completion of the crossing installation by Railroad.
7. Reopen US 18 and remove traffic diversion upon completion of US 18 surfacing.

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment. The estimated quantity of Water for Embankment is 21 MGal. No separate payment will be made for the Water for Embankment and all costs associated shall be incidental to the contract unit price per cubic yard of “Contractor Furnished Borrow”.

UTILITIES

The Contractor shall be responsible for locating and protecting any utility that would conflict with any work. Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the contractor shall contact the project engineer to determine modifications that will be necessary to avoid utility impacts.

Any damage done to a utility will be the Contractor’s responsibility to repair.

TRAFFIC DIVERSION

The traffic diversion shall be constructed according to Section 4.4.A. of the Standard Specifications. Installation and removal of the traffic diversion shall meet all requirements as set forth in the South Dakota Surface Water Quality Standards.

The traffic diversion shall be constructed in accordance with the geometric layout shown in the plans. Any drainage needs shall be addressed by the Contractor. The Contractor will be responsible for sizing the temporary drainage structure for these crossings.

Costs to provide temporary drainage structures shall be incidental to the contract lump sum price for “Maintenance of Traffic Diversion(s)”.

The existing approach pipe may remain in place and fill may be placed over the pipe. The Contractor shall protect the pipe ends and provide protection from fill entering the pipe. If the pipe is damaged by the Contractor the damaged sections shall be replaced at no expense to the State, and to the satisfaction of the Engineer. Cost for protecting the pipe shall be incidental to the contract lump sum price for “Maintenance of Traffic Diversion(s)”.

The removed traffic diversion embankment shall be disposed of by the Contractor at a site approved by the Engineer. Cost to remove and dispose of the traffic diversion shall be incidental to the contract lump sum price for “Remove Traffic Diversion(s)”.

CONTRACTOR FURNISHED BORROW

The Contractor shall provide a suitable site for Contractor furnished borrow material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The borrow material shall be approved by the Engineer. The plans quantity for “Contractor Furnished Borrow” as shown in the Estimate of Quantities will be the basis of payment for this item.

Compaction of fill material shall be to the satisfaction of the Engineer. Restoration of the Contractor furnished borrow site shall be the responsibility of the Contractor.

The Contractor Furnished Borrow quantity shown includes the volume of embankment plus 30% for shrinkage. All costs for placing and shaping the Contractor Furnished Borrow for the traffic diversion shall be incidental to the contract unit price per cubic yard for “Contractor Furnished Borrow”.

ASPHALT CONCRETE PAVEMENT REMOVAL

The Contractor shall remove the existing asphalt pavement adjacent to the old railroad tracks as shown in the plans. The asphalt concrete shall be sawed full depth. This material shall be disposed of by the Contractor. All costs for sawing, removal and disposal of the existing asphalt concrete pavement shall be incidental to the contract unit price per square yard for “Remove Asphalt Concrete Pavement”. Removal and disposal of the existing concrete pavement shall be plans quantity and will not be adjusted unless directed by the Engineer.

SAWING EXISTING SURFACING

Where new asphalt concrete is placed adjacent to existing asphalt concrete the existing asphalt concrete shall be sawed full depth to a true line with a vertical face. No separate payment shall be made for sawing.

SURFACING THICKNESS DIMENSIONS

Plans tonnage will be applied even though the thickness may vary from that shown in the plans. At those locations where material must be placed to achieve a required elevation, plans tonnages may be varied to achieve the required elevation.

GRAVEL SURFACING

Granular material for the traffic diversion shall be furnished by the Contractor.

The Gravel Surfacing (approx. 4” thick) shall meet the requirements of Section 882 of the Standard Specifications.

Water for compaction shall be incidental to the contract unit price per ton for “Gravel Surfacing”. Compaction shall be to the satisfaction of the Engineer.

Upon removal of the traffic diversion the gravel surfacing shall become the property of the Contractor.

RESTORATION OF BASE COURSE

An inspection of the base course shall be made after removing asphalt concrete from each replacement area. Areas of excess moisture shall be dried to the satisfaction of the Engineer. Loose and excess material shall be removed. Each replacement area shall be leveled and compacted to the satisfaction of the Engineer.

If additional base course material is required, the Contractor shall furnish, place and compact base course to the satisfaction of the Engineer.

Cost for this work shall be incidental to the various replacement bid items.

ASPHALT CONCRETE COMPOSITE

Mineral aggregate for the Asphalt Concrete Composite shall conform to the requirements of the Standard Specifications for Class E, Type 1

All other requirements in the Standard Specifications for Asphalt Concrete Composite shall apply.

The asphalt binder used in the mixture shall be PG 64-22, PG 64-28 or PG 64-34 Asphalt Binder.

The Contractor shall place asphalt concrete composite (approx. 4” thick in two 2” lifts) in the areas between the new railroad tracks and the existing asphalt concrete pavement as shown in the plans.

REMOVE AND REPLACE TOPSOIL

Topsoil shall also be salvaged and stockpiled prior to constructing the traffic diversion. Limits of this work, depth of salvage, and stockpile location will be directed by the Engineer. Following completion of construction, topsoil shall be spread evenly over the disturbed areas.

The estimated amount of topsoil to be removed and replaced is 174 CuYd.

All cost associated with removing and replacing the topsoil along areas to be resurfaced shall be incidental to the lump sum price for “Remove and Replace Topsoil”.

EROSION CONTROL

The area disturbed as a result of work on this project shall be restored and/or reshaped to the satisfaction of the Engineer. All disturbed areas shall be seeded, fertilized, and mulched.

The contract lump sum price for Erosion Control shall include all material, equipment, and labor necessary to seed, mycorrhizal inoculum, fertilizer and mulch all areas disturbed by construction of this project. The Engineer, at the time of construction, shall determine limits of the Erosion Control work. The estimated area to be seeded is approximately 0.3 acre.

All permanent seed shall be planted in the topsoil at a depth of ¼” to ½”. Hand seeding devices approved by the Engineer will be allowed. All seed broadcast must be raked or dragged in (incorporated) within the top ¼” to ½” of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

The varieties listed for seed mixtures are preferred varieties.

Native harvest seed will be allowed.

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum shall 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 shall provide certification of the fungal species claimed and the live propagule count. The inoculum shall include the following fungal species:

<i>Glomus intraradices</i>	25%
<i>Glomus aggregatu</i>	25%
<i>Glomus mosseae</i>	25%
<i>Glomus etunicatum</i>	25%

All seed shall 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 shall be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

The mycorrhizal inoculum shall be from the list below or an approved equal:

Product

MycoApply

Manufacturer

Mycorrhizal Applications, Inc.
Grants Pass, OR
Phone: 1-866-476-7800
<http://www.mycorrhizae.com/>

FERTILIZING

The Contractor shall apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer shall have a minimum guaranteed analysis of 4-6-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 3.2%, a minimum of 6% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer shall 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 shall 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 shall 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 all-natural slow release fertilizer shall be applied according to the manufacturer’s application recommendations.

The application rate is 1,500 pounds per acre.

The all-natural slow release fertilizer shall be from the list below or an approved equal:

Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 http://www.sustane.com/

DRILLS

In addition to the drills specified in Section 730 of the Standard Specifications, other types of drills including no-till drills will be allowed as long as they have baffles, partitions, agitators, or augers which keep the seed distributed throughout the seed box and the seed is planted at a depth of ¼” to ½”.

PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways.

All permanent seed shall be planted in the topsoil at a depth of ¼” to ½”.

All seed broadcast must be raked or dragged in (incorporated) within the top ¼” to ½” of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

The varieties listed for seed mixtures are preferred varieties.

Native harvest seed will be allowed.

Type F Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Flintlock, Rodan, Rosana	7
Green Needlegrass	Lodorm	4
Sideoats Grama	Butte, Killdeer, Pierre, Trailway	3
Blue Grama	Bad River, Willis	2
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		26

MULCHING (GRASS HAY OR STRAW)

Bales with noxious weed contamination will be rejected and the Contractor will be required to remove the contaminated bales from the project.

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment shall 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 shall provide certification that the erosion control wattles do not contain noxious weed seeds.

Erosion control wattles shall 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.

The erosion control wattle provided shall 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)
3+15	R	12	Ditch channel bottom	30
4+40	R	12	Ditch channel bottom	30
5+05	R	12	Ditch channel bottom	30
6+80	R	12	Ditch channel bottom	30
Additional Quantity:				200
Total:				320

TRAFFIC CONTROL – GENERAL NOTES

1. Requests to deviate from the sequence of operations shall be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department’s intent for traffic control and sequencing of the work. An alternate sequence shall be submitted for review a minimum of one week prior to potential implementation.
2. Unless otherwise stated in these plans, no work will be allowed during hours of darkness. Hours of darkness are defined as ½ hour after sunset until ½ hour before sunrise.
3. Storage of vehicles and equipment shall be as near the right-of-way as possible. Contractor’s employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage of the vegetation, surfacing, embankment, delineators, and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.
4. Existing guide, route, informational logo, regulatory, and warning signs shall be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including but not limited to, traffic signal heads, delineation, and signing shall be the responsibility of the Contractor. Non-applicable signing and all traffic control devices shall be covered or removed during periods of inactivity. Periods of inactivity shall be defined as no work taking place for a period of more than 48 hours. The cost of removing or covering non-applicable signs shall be incidental to the contract lump sum price for “Traffic Control, Miscellaneous”.
5. Construction signing mounted on portable supports shall not be used for a duration of more than 3 days, unless approved by the Engineer. Construction signing that remains in the same location for more than 3 days shall be mounted on fixed location, ground mounted, breakaway supports.
6. The quantity of traffic control units paid for will be for the greatest number of installations per sign in place at any one time regardless of the number of set-ups on the project.
7. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.
8. All materials and equipment shall be stored a minimum distance of 30’ from the traveled way during nonworking hours.
9. The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

10. The Contractor shall be required to have a person available 24 hour/day, 7 days/week to maintain traffic control devices. The name and cellular telephone number of this individual shall be given to the Engineer at the preconstruction meeting.
11. The Contractor or designated traffic control subcontractor shall make night inspections at the initial set up of traffic control and every week thereafter to ensure the adequacy, legibility and reflectivity of each sign and device. A written summary of each inspection shall be given to the Engineer within 24 hours after completion of the inspection. The cost for the nighttime inspection work shall be incidental to the contract lump sum price for “Traffic Control, Miscellaneous”.
12. Vehicles working in traffic or alongside traffic shall be equipped with a flashing amber light visible from all directions. The amber light shall be mounted on the uppermost part of the Contractor’s vehicle. Lights must have peak intensity within the range of 40 to 400 candelas and must flash at 75 ± 15 flashes per minute. Vehicle flasher/hazard lights are not acceptable. All haul trucks shall be equipped with a second flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights shall be incidental to the various related contract bid items.
13. All construction operations shall be conducted in the general direction of traffic movement.
14. If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD – whichever is more stringent shall be used, as determined by the Engineer.
15. Temporary Road Markers (Tabs) shall be used for lane closure tapers or lane shift tapers and shall be installed at 5’ spacing. Tabs used for tapers and shifts will not be measured for payment. All costs associated to furnish, install, maintain (including replacement as required by the Engineer at no added cost to the Department), and remove all markers will be incidental to the contract lump sum price for “Traffic Control, Miscellaneous”.
16. Drums are required in all lane closure tapers.

INVENTORY OF TRAFFIC CONTROL DEVICES

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
R1-1	30" x 30"	STOP	2	21	42
R1-2	36" x 36"	YIELD	2	27	54
R11-2	48" x 30"	ROAD CLOSED	2	27	54
W1-3	48" x 48"	REVERSE TURN SIGN (LEFT OR RIGHT)	2	34	68
W1-4	48" x 48"	REVERSE CURVE SIGN (LEFT OR RIGHT)	4	34	136
W1-6	60" x 30"	ONE DIRECTION LARGE ARROW	3	30	90
W3-1	48" x 48"	STOP AHEAD (SYMBOL)	2	34	68
W8-6	48" x 48"	TRUCK CROSSING	1	34	34
W13-1P	30" x 30"	ADVISORY SPEED PLATE	6	21	126
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	2	34	68
W20-4	48" x 48"	ONE LANE ROAD ##### FT. OR AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	2	34	68
W21-5	48" x 48"	SHOULDER WORK	3	34	102
R15-1	48" x 9"	RAILROAD CROSSBUCK	2	19	38
*****		TYPE III BARRICADE - 8 FT. SINGLE SIDED	7	40	280
TOTAL UNITS					1330

TEMPORARY PAVEMENT MARKING

The existing pavement at each ent of the traffic diversion shall be temporarily striped according to the Traffic Diversion Layout. For informational purposes only there is an estimated 2400’ of yellow centerline and 24’ of 24” white stop bar. All costs associated with the temporary striping and removal of at the end of diversion use shall be incidental to the contract unit price per foot for “Temporary Pavement Marking”.

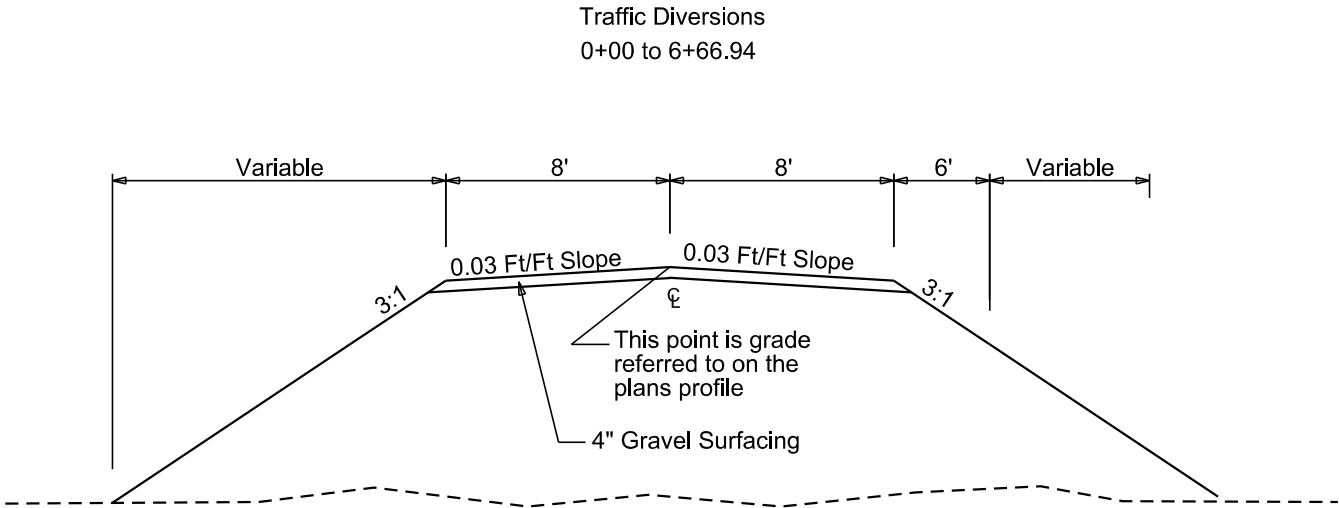
Plot Scale - 1:200

Plotted From - Itrc11610

TYPICAL GRADING SECTION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PS 0018(130)62	7	21

Plotting Date: 05/21/2014



1:200
Plot Scale -

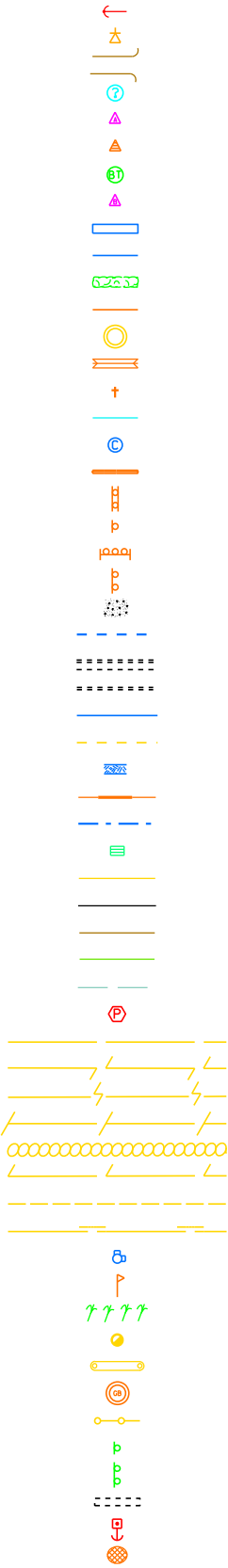
Plotted From -
Irrc11610

EXISTING TOPOGRAPHY SYMBOLOLOGY AND LEGEND

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PS 0018(130)62	8	21

Plotting Date: 05/21/2014

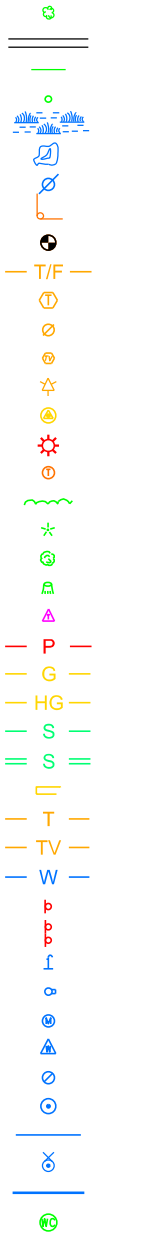
Anchor
Antenna
Approach
Assumed Corner
Azimuth Marker
BBQ Grill/ Fireplace
Bearing Tree
Bench Mark
Box Culvert
Bridge
Brush
Buildings
Bulk Tank
Cattle Guard
Cemetery
Centerline
Cistern
Clothes Line
Commercial Sign Double Face
Commercial Sign One Post
Commercial Sign Overhead
Commercial Sign Two Post
Concrete Symbol
Creek Edge
Curb/Gutter
Curb
Dam Grade/Dike/Levee
Deck Edge
Ditch Block
Doorway Threshold
Drainage Profile
Drop Inlet
Edge Of Asphalt
Edge Of Concrete
Edge Of Gravel
Edge Of Other
Edge Of Shoulder
Elec. Trans./Power Jct. Box
Fence Barbwire
Fence Chainlink
Fence Electric
Fence Misc.
Fence Rock
Fence Snow
Fence Wood
Fence Woven
Fire Hydrant
Flag Pole
Flower Bed
Gas Valve Or Meter
Gas Pump Island
Grain Bin
Guardrail
Guide Sign One Post
Guide Sign Two Post
Gutter
Guy Pole
Haystack



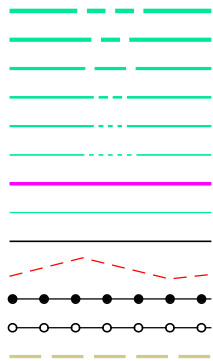
Hedge
Highway R.O.W. Marker
Interstate Close Gate
Iron Pin
Irrigation Ditch
Lake Edge
Lawn Sprinkler
Mailbox
Manhole Electric
Manhole Gas
Manhole Misc
Manhole Sanitary Sewer
Manhole Storm Sewer
Manhole Telephone
Manhole Water
Merry-Go-Round
Microwave Radio Tower
Misc. Line
Misc. Property Corner
Misc. Post
Overhang Or Encroachment
Overhead Utility Line
Parking Meter
Pipe With End Section
Pipe With Headwall
Pipe Without End Section
Playground Slide
Playground Swing
Power And Light Pole
Power And Telephone Pole
Power Meter
Power Pole
Power Pole And Transformer
Power Tower Structure
Propane Tank
Property Pipe
Property Pipe With Cap
Property Stone
Public Telephone
Railroad Crossing Signal
Railroad Milepost Marker
Railroad Profile
Railroad R.O.W. Marker
Railroad Signs
Railroad Switch
Railroad Track
Railroad Trestle
Rebar
Rebar With Cap
Reference Mark
Regulatory Sign One Post
Regulatory Sign Two Post
Retaining Wall
Riprap
River Edge
Rock And Wire Baskets
Rockpiles
Satellite Dish
Septic Tank



Shrub Tree
Sidewalk
Sign Face
Sign Post
Slough Or Marsh
Spring
Stream Gauge
Street Marker
Subsurface Utility Exploration Test Hole
Telephone Fiber Optics
Telephone Junction Box
Telephone Pole
Television Cable Jct Box
Television Tower
Test Wells/Bore Holes
Traffic Signal
Trash Barrel
Tree Belt
Tree Coniferous
Tree Deciduous
Tree Stumps
Triangulation Station
Underground Electric Line
Underground Gas Line
Underground High Pressure Gas Line
Underground Sanitary Sewer
Underground Storm Sewer
Underground Tank
Underground Telephone Line
Underground Television Cable
Underground Water Line
Warning Sign One Post
Warning Sign Two Post
Water Fountain
Water Hydrant
Water Meter
Water Tower
Water Valve
Water Well
Weir Rock
Windmill
Wingwall
Witness Corner



State and National Line
County Line
Section Line
Quarter Line
Sixteenth Line
Property Line
Construction Line
R. O. W. Line
New R. O. W. Line
Cut and Fill Limits
Control of Access
New Control of Access
Proposed ROW
(After Property Disposal)



1:200
Plot Scale -
Plotted From -

TRAFFIC DIVERSION LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PS 0018(130)62	9	21

Plotting Date: 05/21/2014

The channelizing devices shall be drums or type II barricades if traffic control must remain overnight or longer.

Flashing warning lights and/or flags may be used to call attention to the initial warning signs.

Vertical Panels shall be installed at 50' spacing on each side of the Traffic Diversion.

Pavement markings that are no longer applicable shall be removed or obliterated as soon as possible.

If the tangent distance along the temporary traffic diversion is short and the curvature is sharp, two LARGE ARROW signs may be required for the second reverse curve.

For the second reverse curve, when there is insufficient advance warning distance to place a Reverse Curve or Turn sign, Large Arrow signs shall be used on both curves.

If the traffic diversion is short and has sharp curves (30 mph or less), REVERSE TURN signs shall be used. In addition, LARGE ARROW signs may be desirable on sharp curves.

Where the temporary pavement and old pavement are different colors, the temporary pavement should start on the tangent of the existing pavement and end on the tangent of the existing pavement.

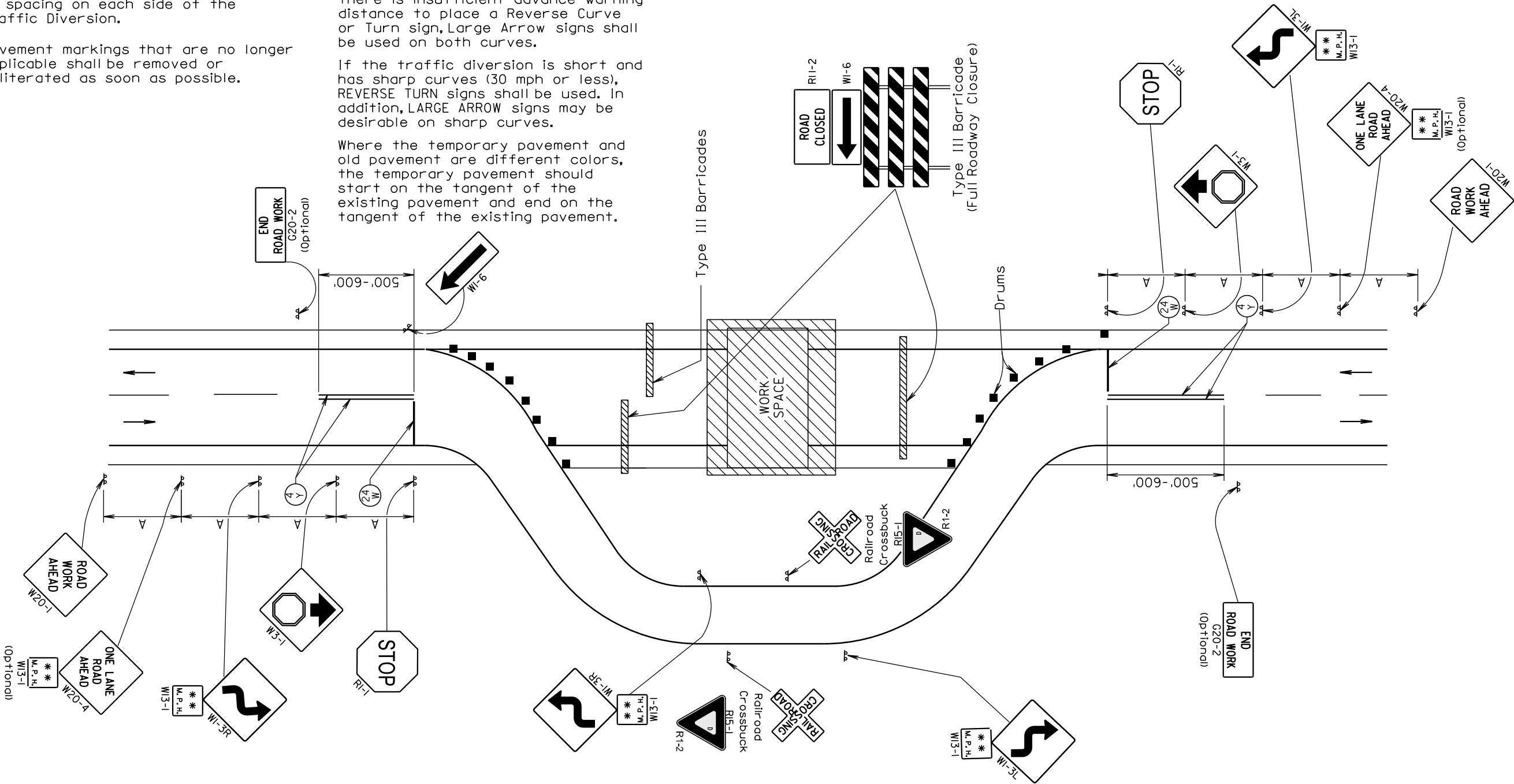
24" White Temporary Pavement Marking

4" Yellow Temporary Pavement Marking

Channelizing Device

** Need and safe speed to be determined at the site by the Highway Authority.

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



Plot Scale - 1:100

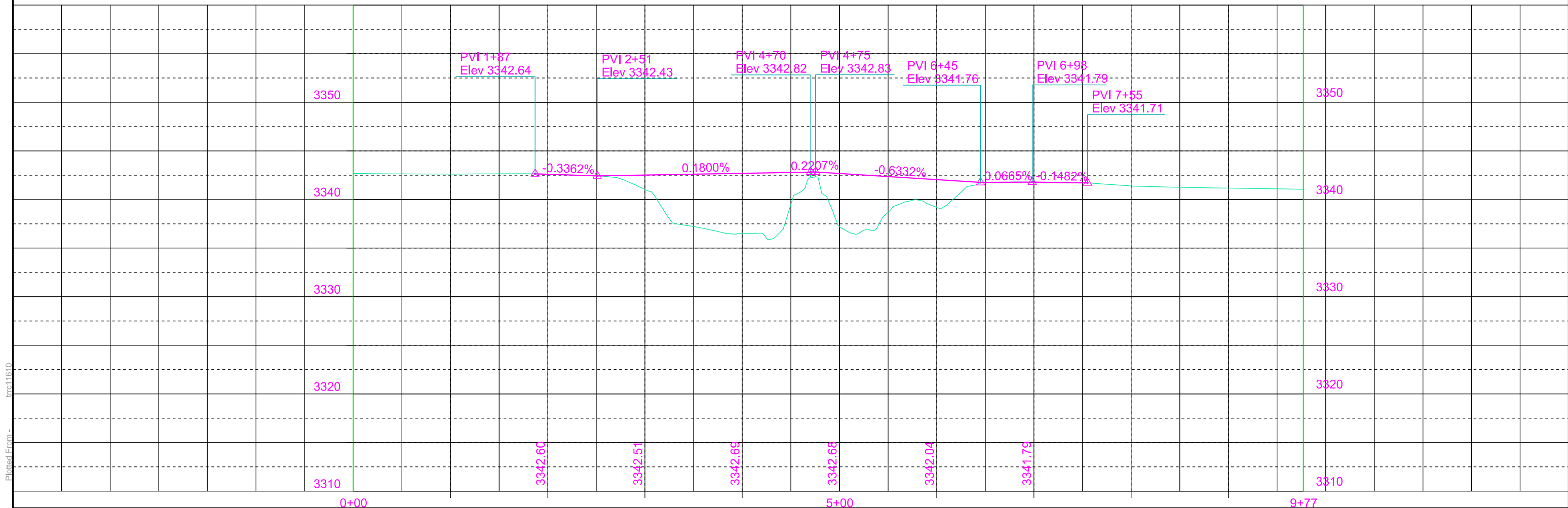
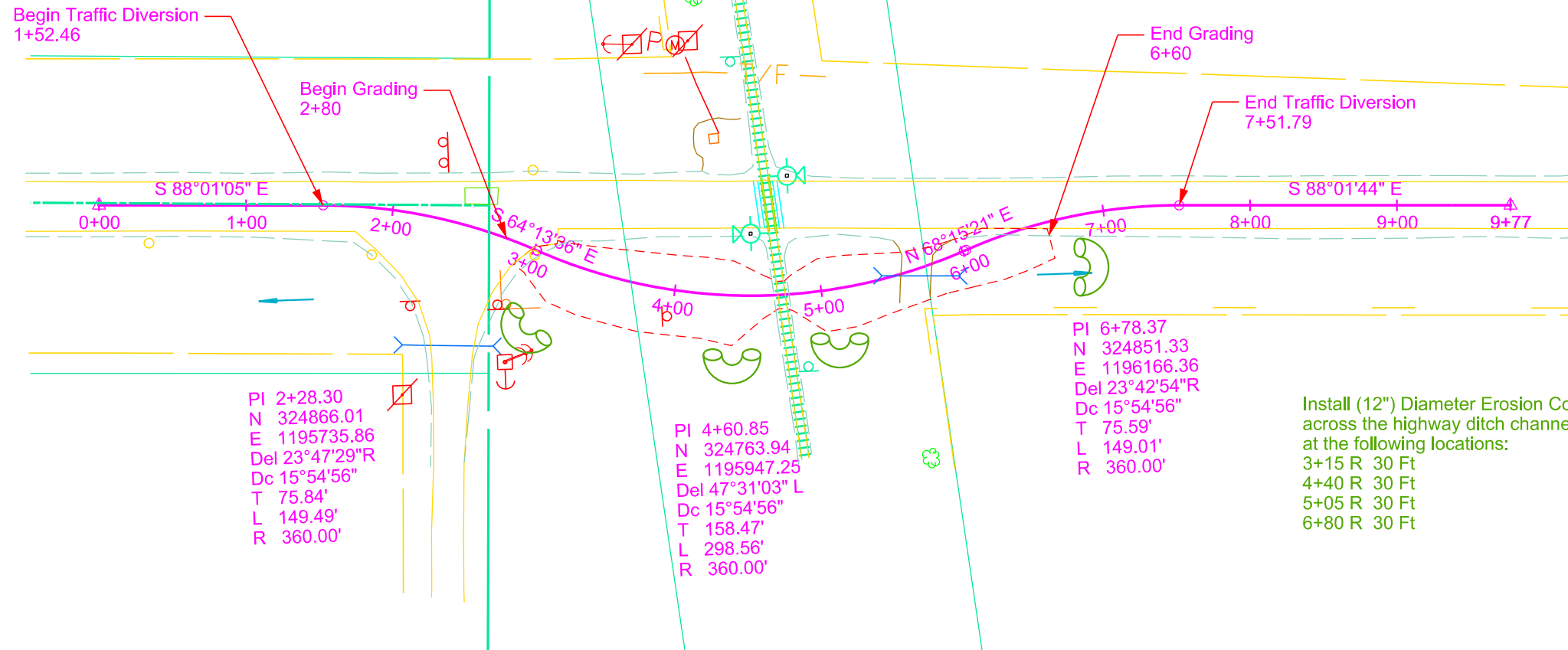
Plotted From - lrc11610

3+97 R
Remove sign for reset

3+97 R
Reset sign

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PS 0018(130)62	10	21

Plotting Date: 06/18/2014



File - ...lpj\Friv00QM\plant.dgn

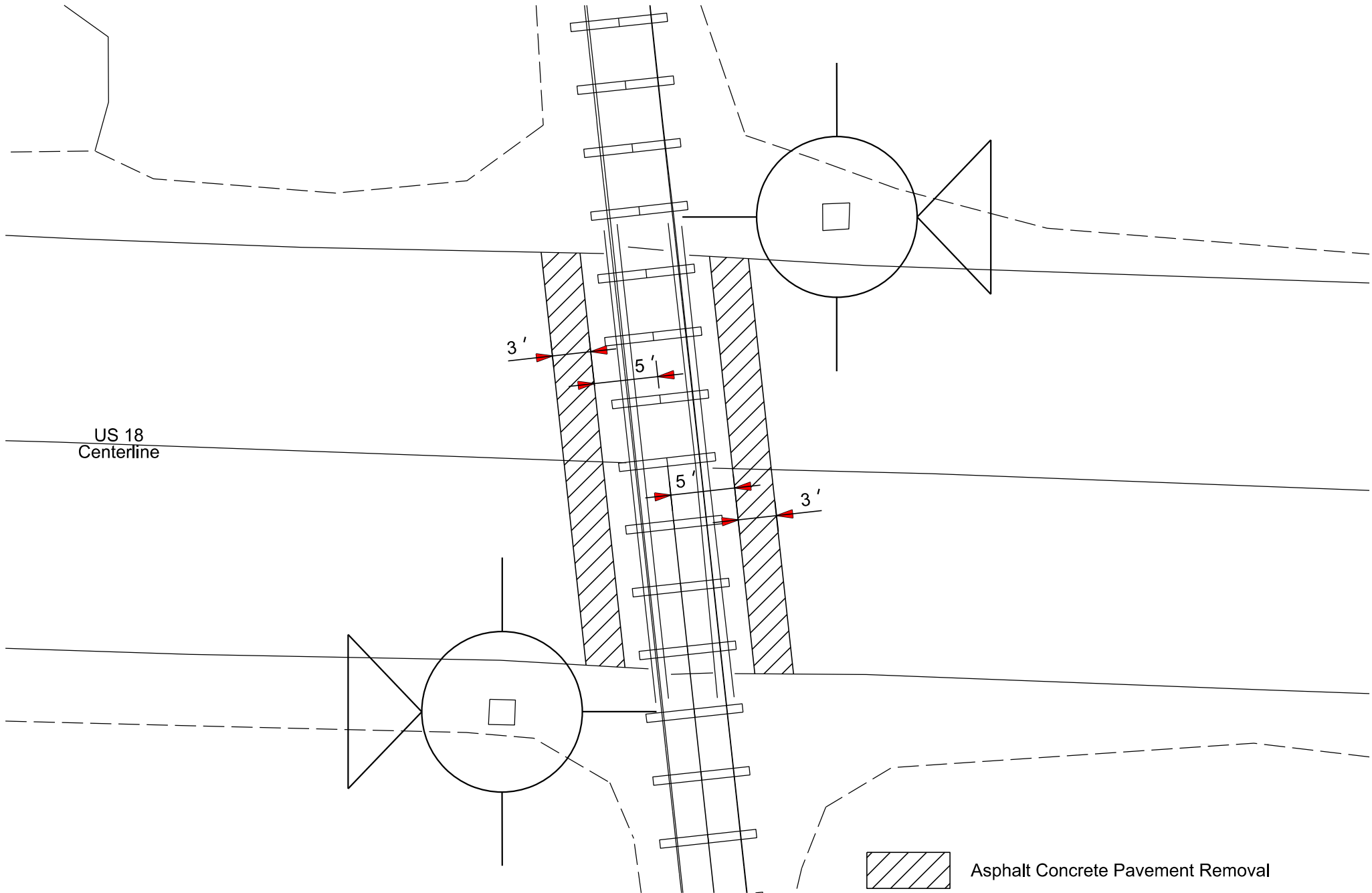
Plot Scale - 1:10

Plotted From - ttrc11610

Pavement Removal Detail

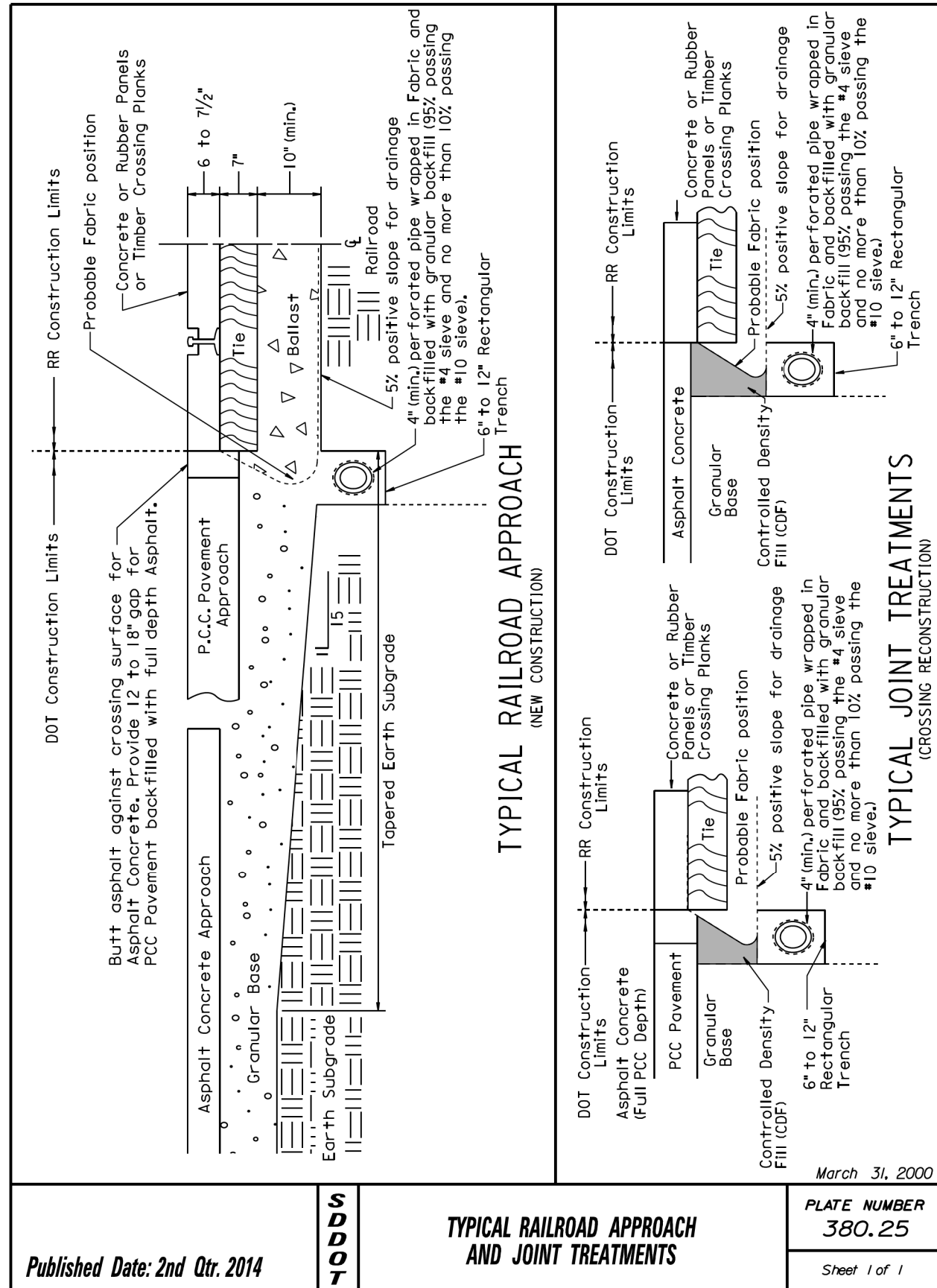
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PS 0018(130)62	11	21

Plotting Date: 05/21/2014



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PS 0018(130)62	12	21

Plotting Date: 05/21/2014



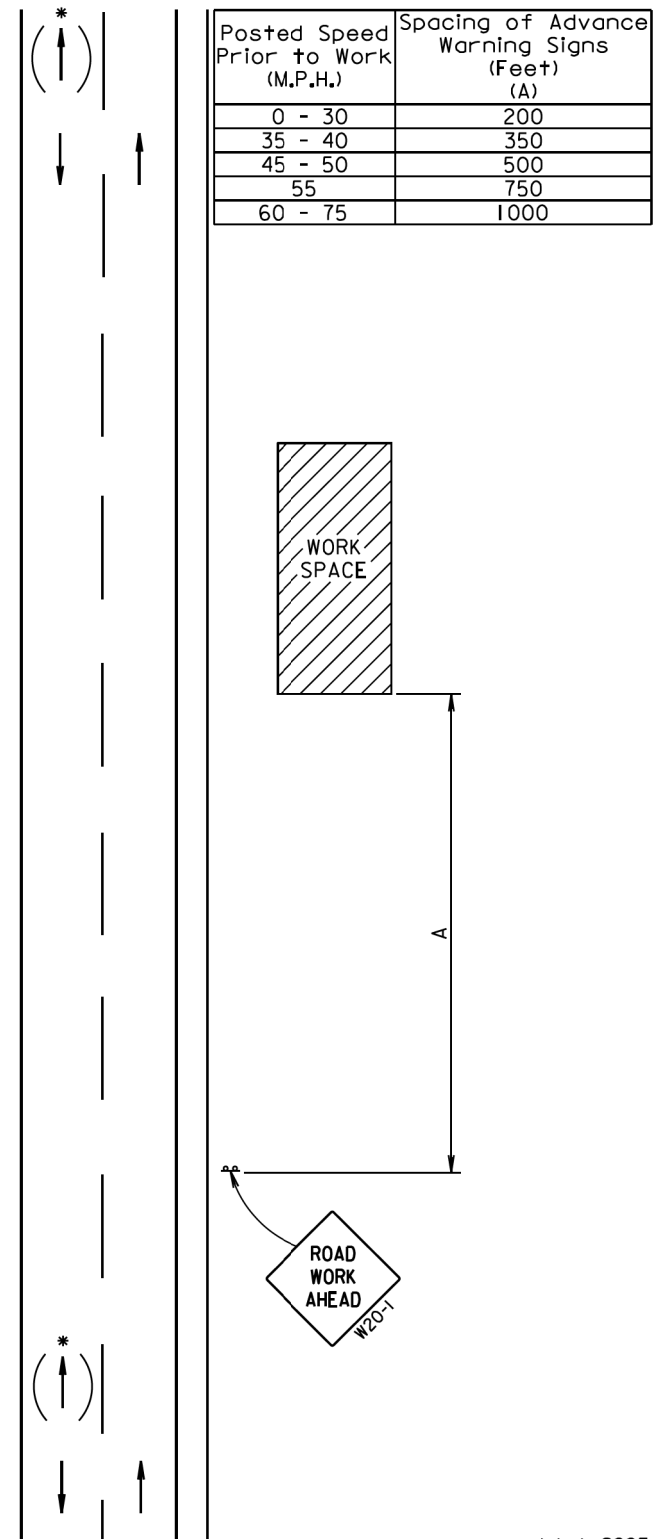
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated shall 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.



July 1, 2005

Published Date: 2nd Qtr. 2014	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES 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)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45 - 50	500	50
55	750	50
60 - 65	1000	50

- Flagger
- Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

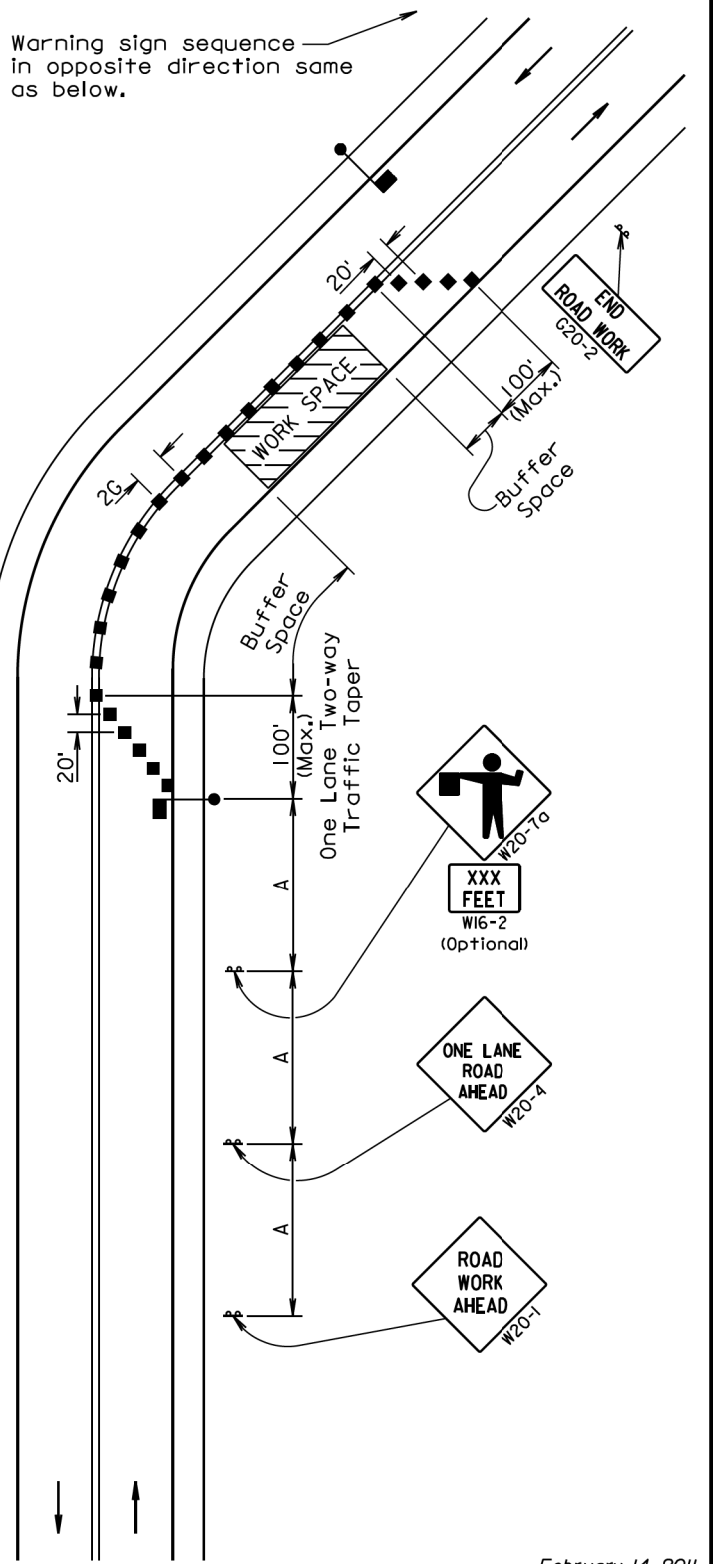
The channelizing devices shall be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

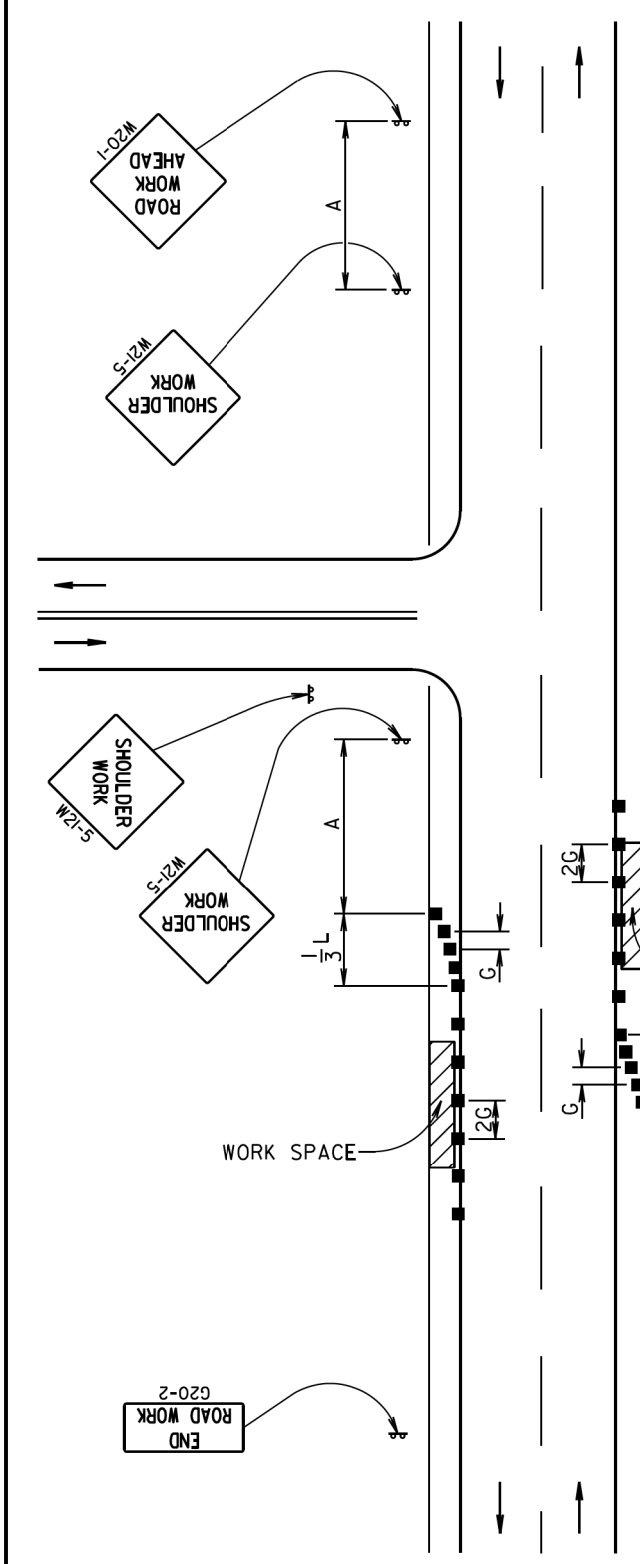
The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

Warning sign sequence in opposite direction same as below.



February 14, 2011

Published Date: 2nd Qtr. 2014	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
		Sheet 1 of 1	



February 14, 2011

Published Date: 2nd Qtr. 2014	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS	PLATE NUMBER 634.03
		Sheet 1 of 1	

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	100 - 200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

Channelizing Device



The channelizing devices shall be drums or 42" cones if traffic control must remain overnight or longer.

For short duration operations (1 hour or less) all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

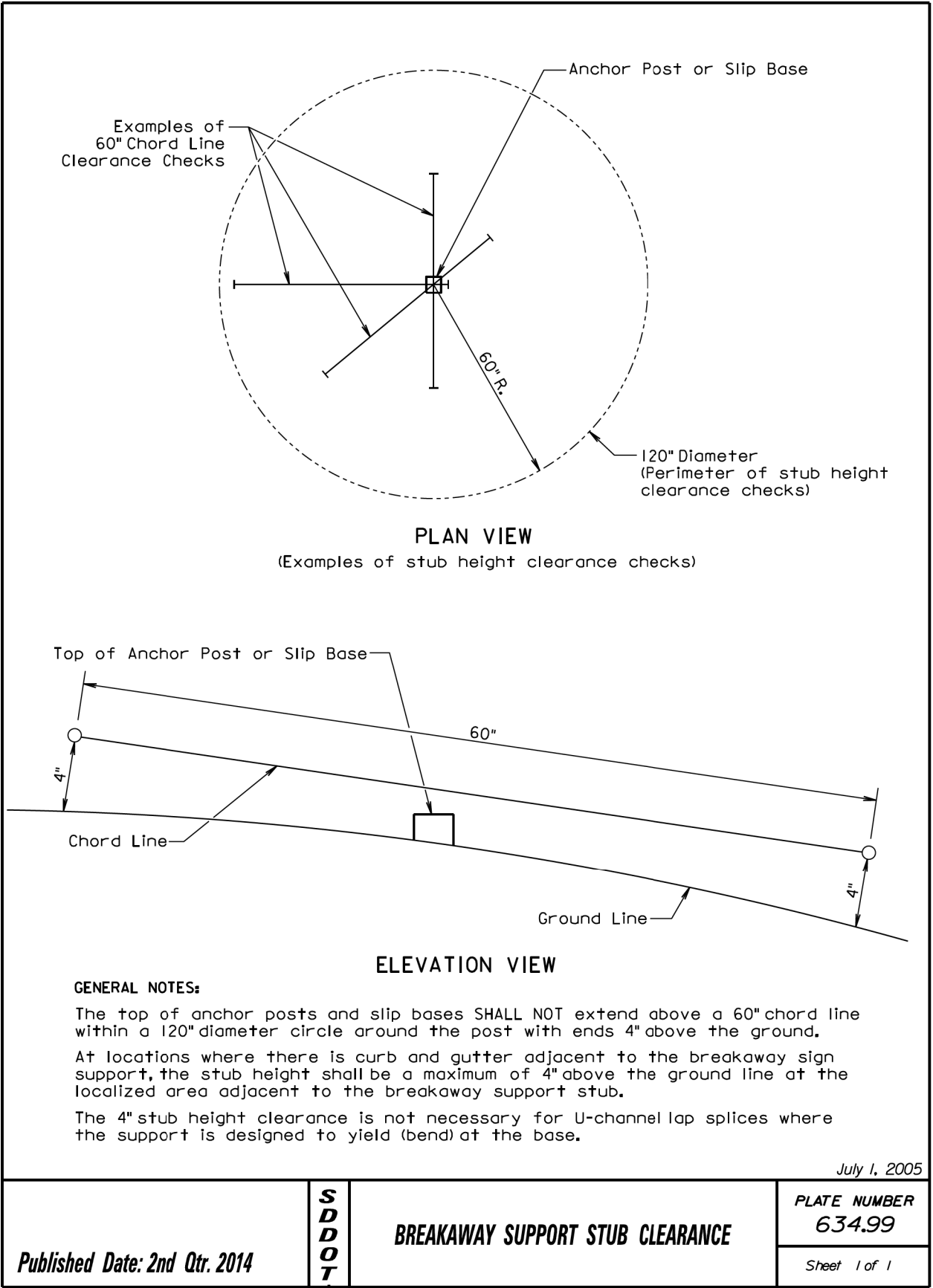
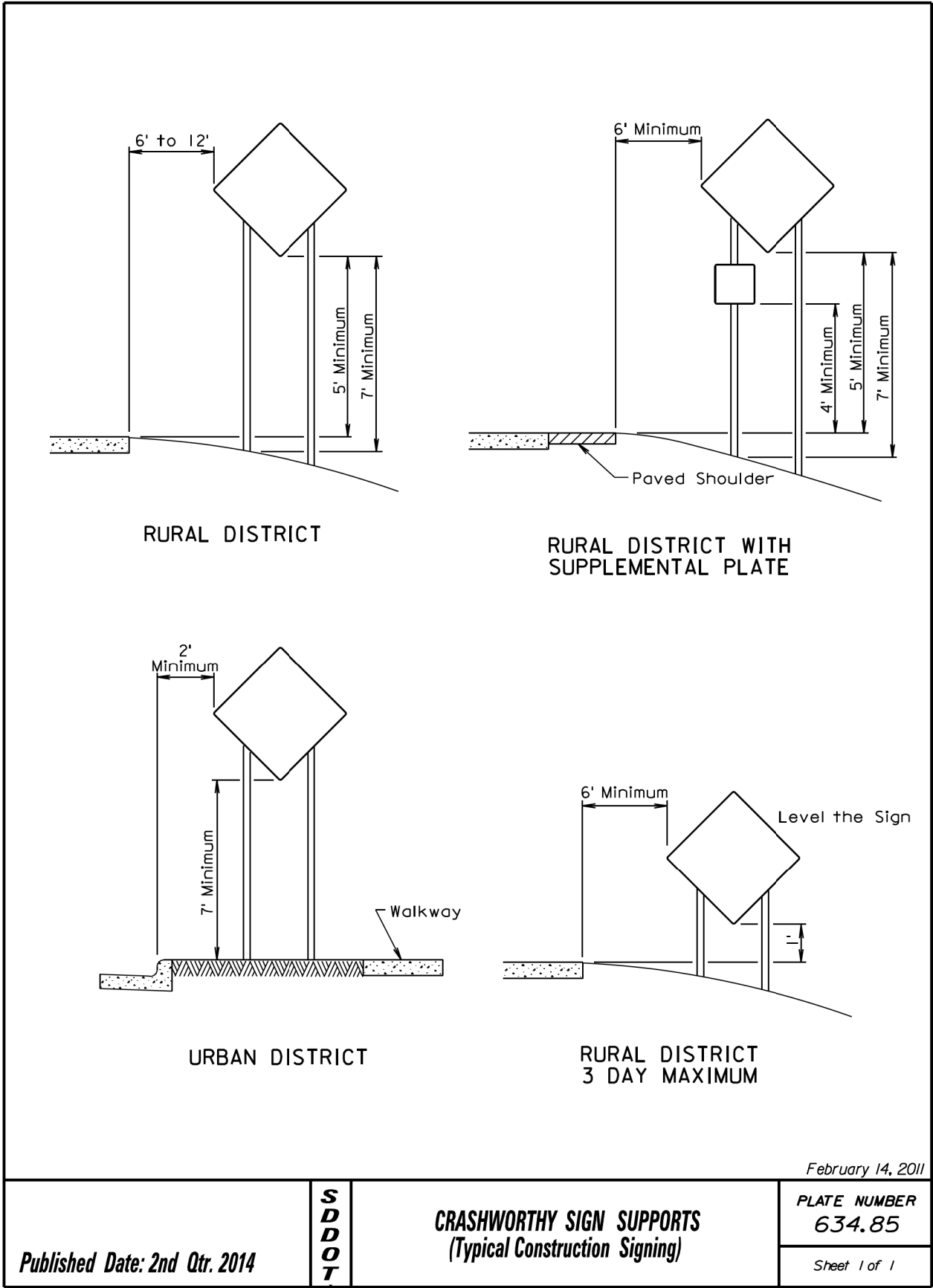
Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

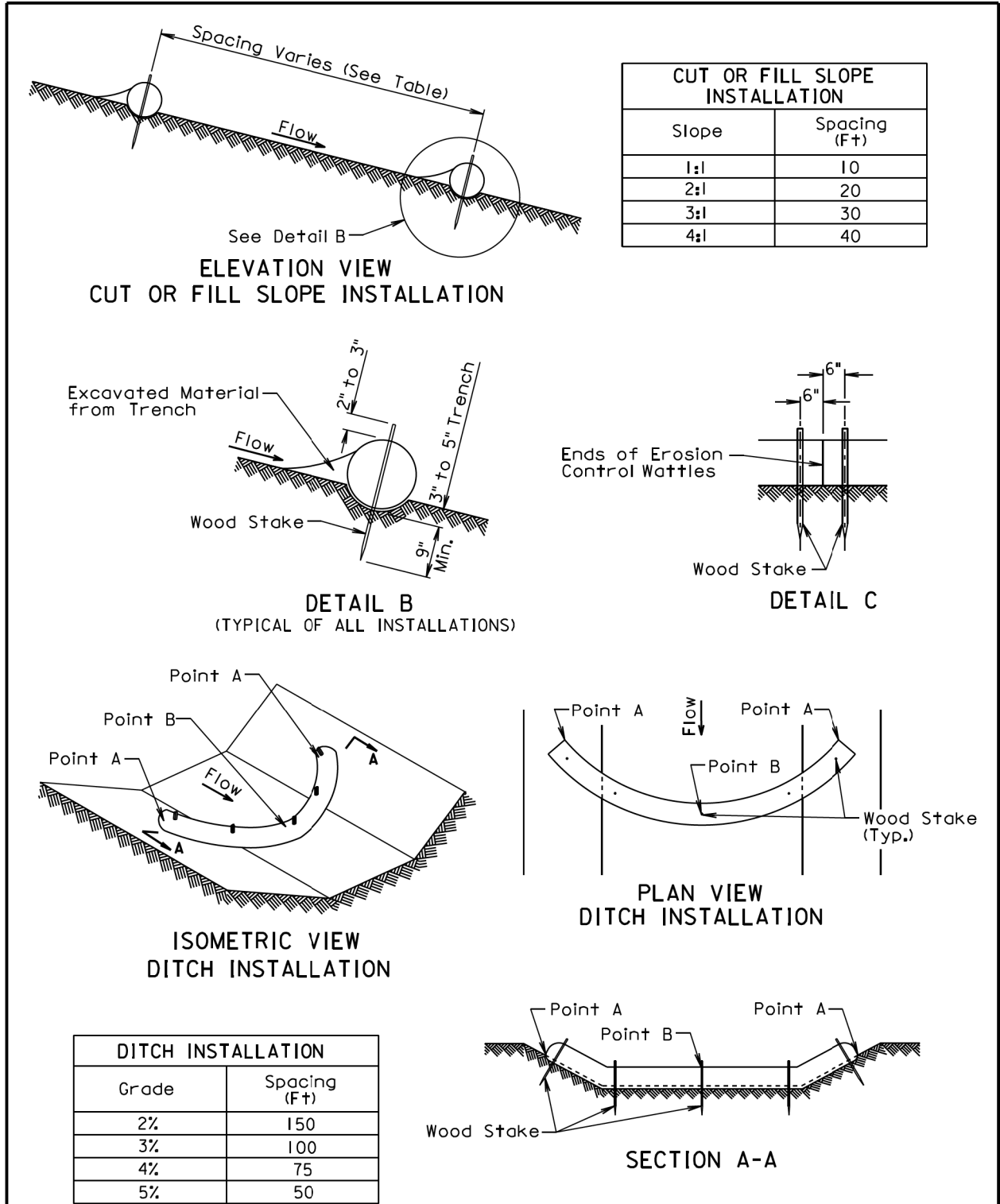
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PS 0018(130)62	14	21

Plotting Date: 05/21/2014



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PS 0018(130)62	15	21

Plotting Date: 05/21/2014



December 23, 2004

Published Date: 2nd Qtr. 2014	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

GENERAL NOTES:

At cut or fill slope installations, wattles shall 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 shall 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 shall 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 shall be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles shall be 3' to 4'.

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

The Contractor and Engineer shall inspect the erosion control wattles once every week and within 24 hours after every rainfall event greater than 1/2". The Contractor shall remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

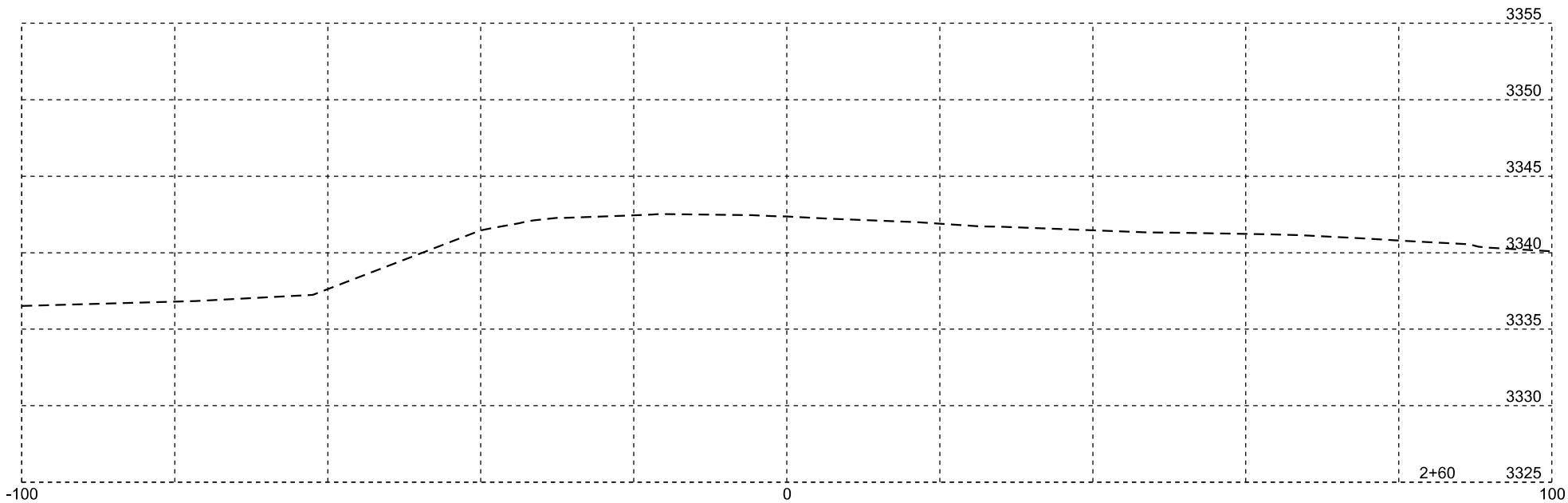
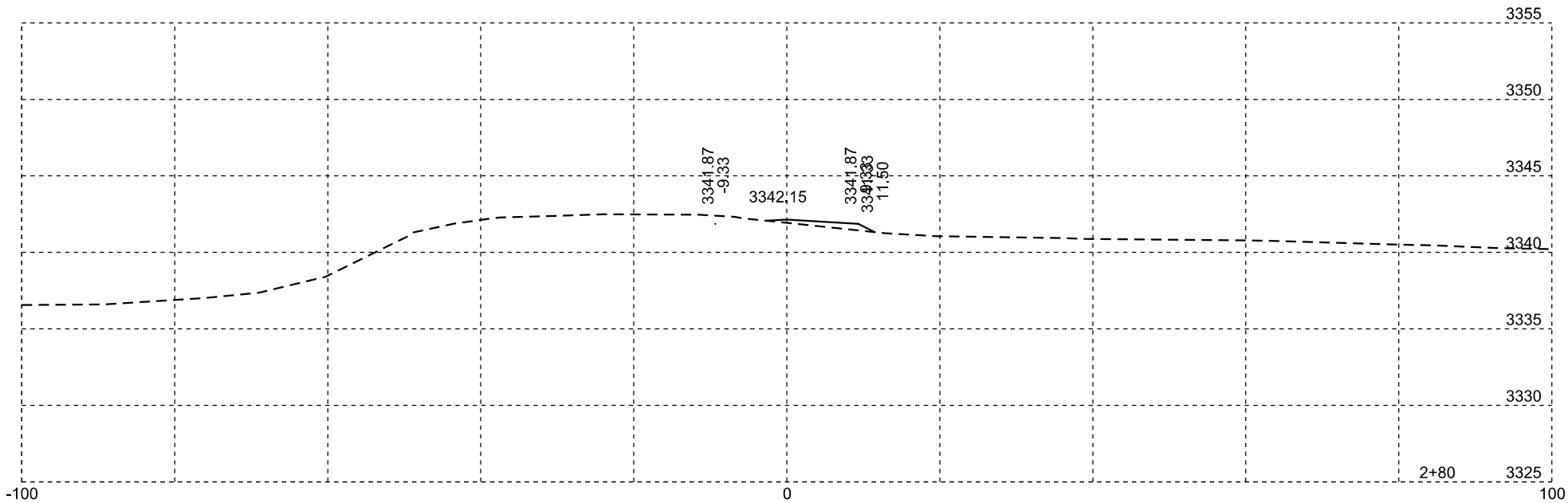
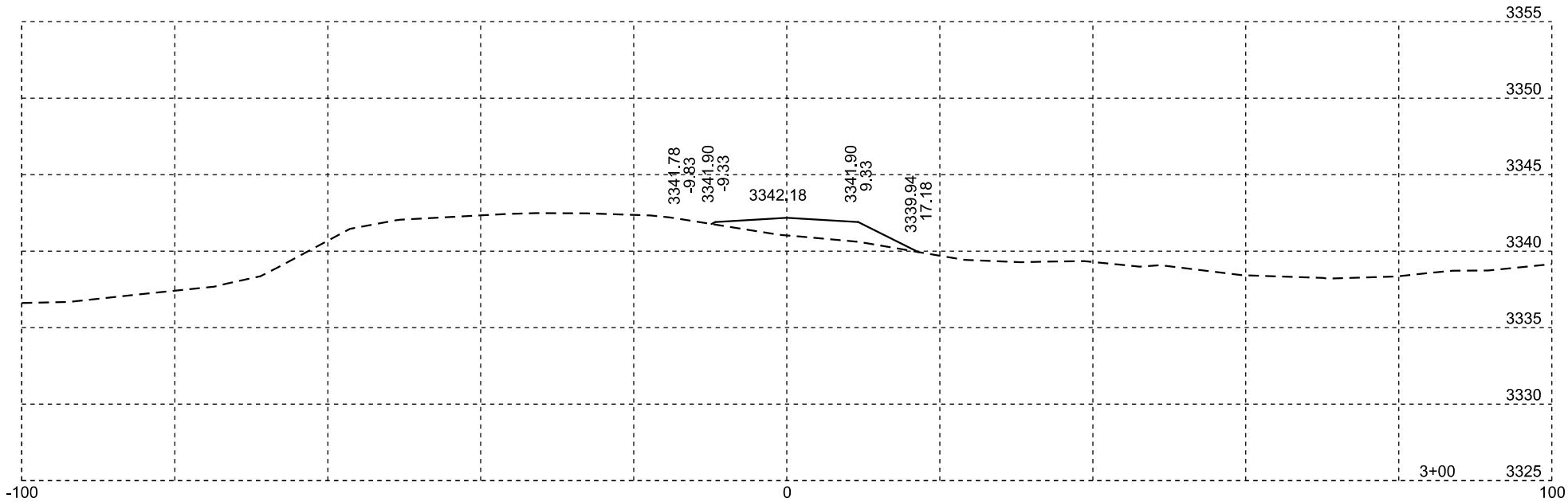
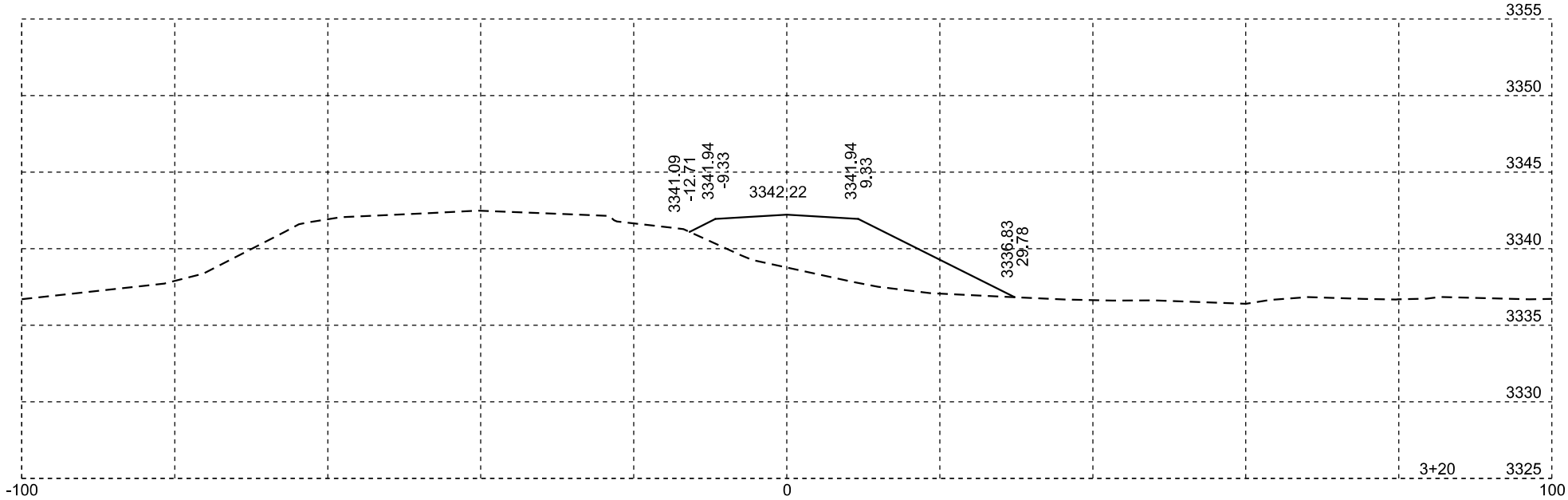
Sediment removal, disposal, or necessary shaping shall be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping shall be incidental to the contract unit price per cubic yard for "Remove Sediment".

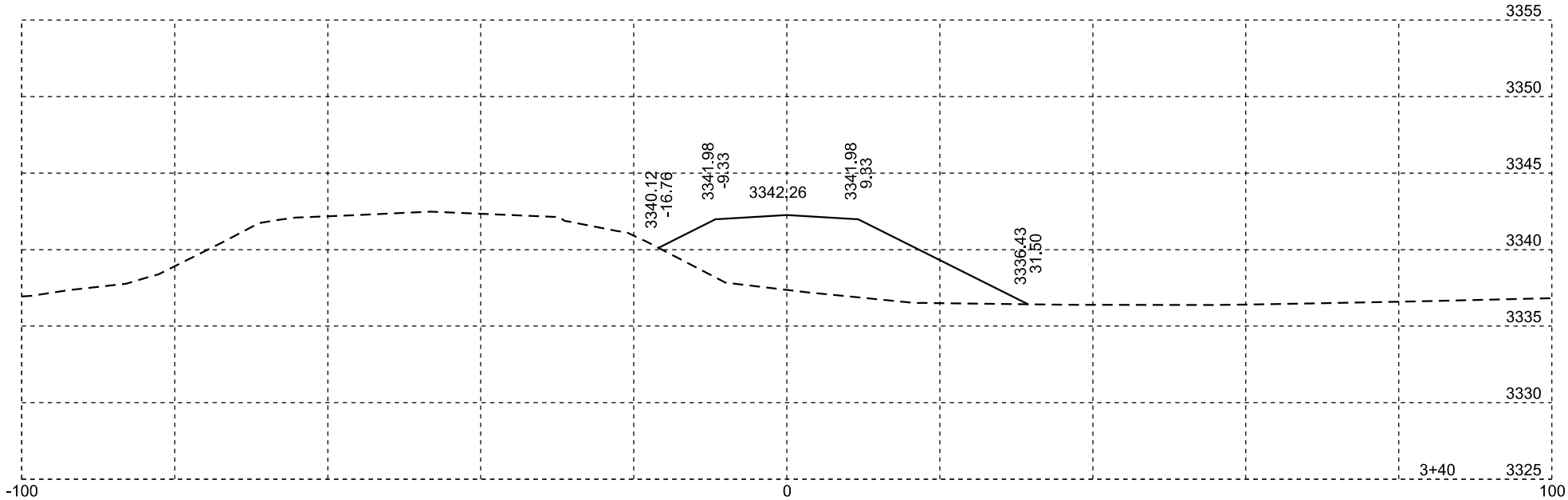
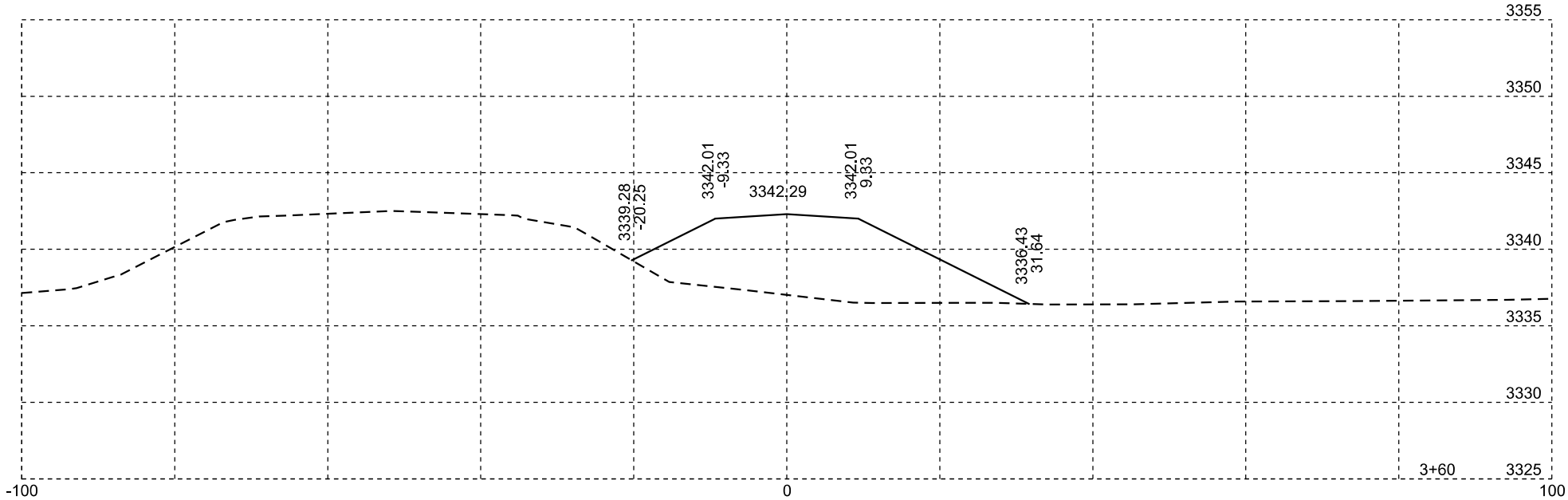
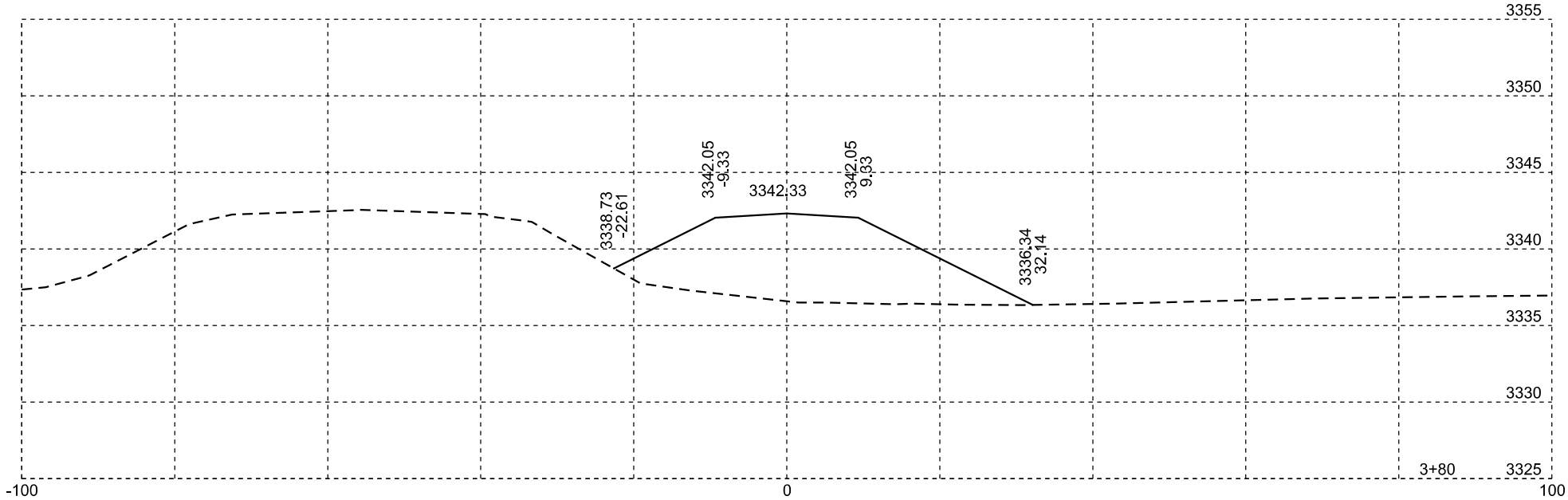
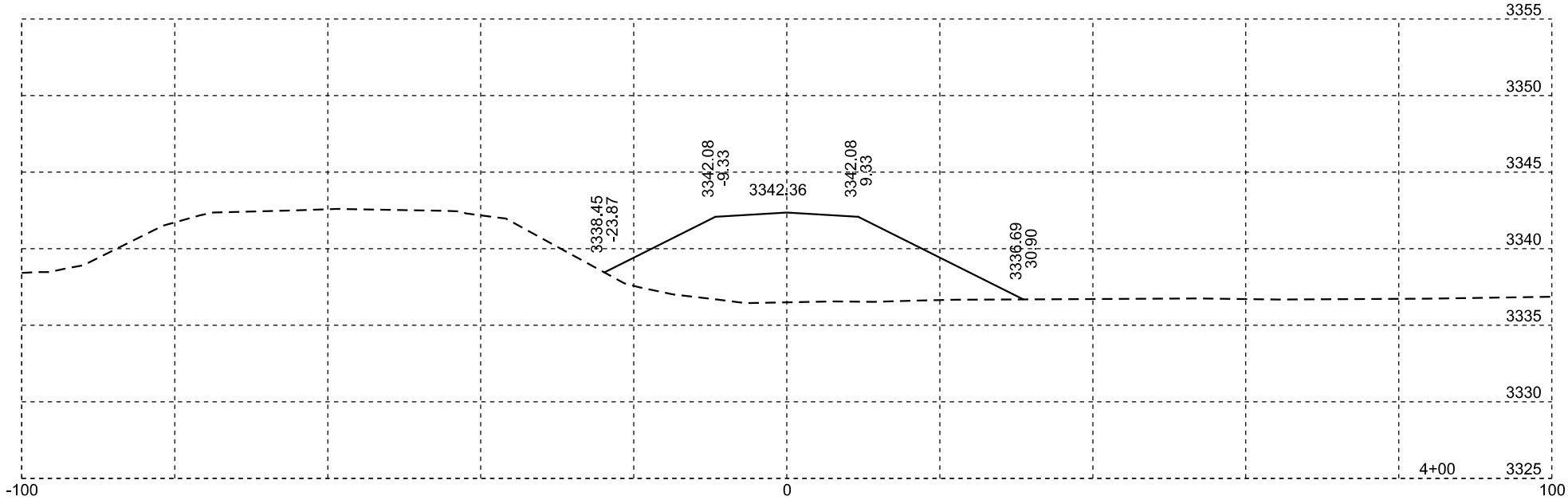
All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials shall be incidental to the contract unit price per foot for the corresponding erosion control wattle bid item.

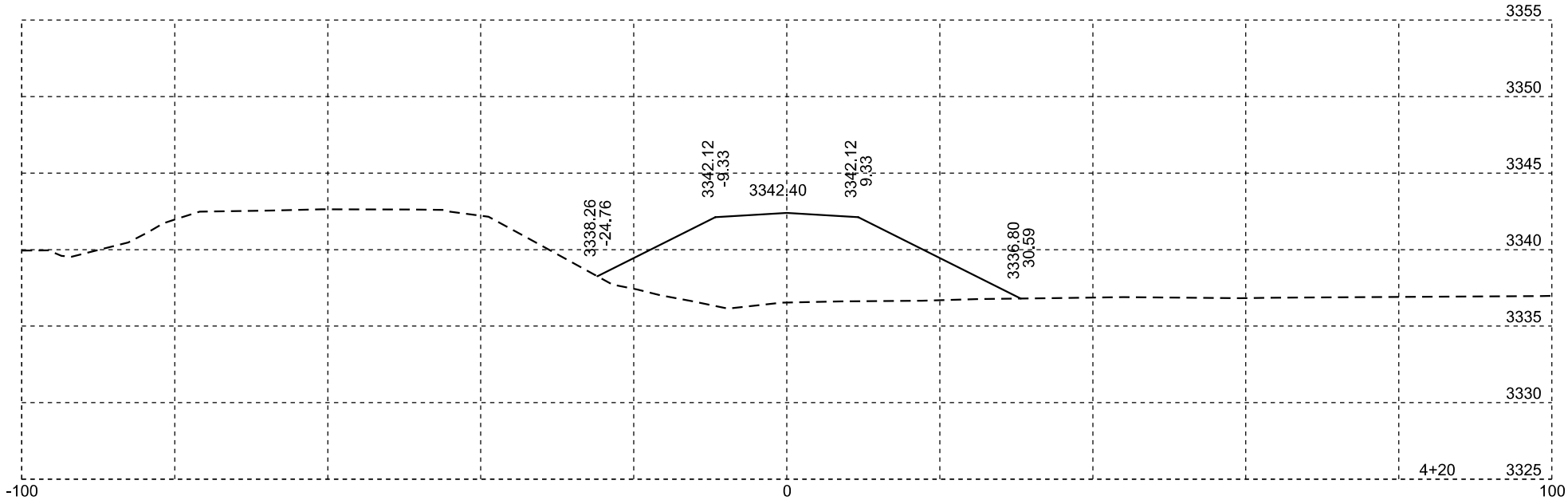
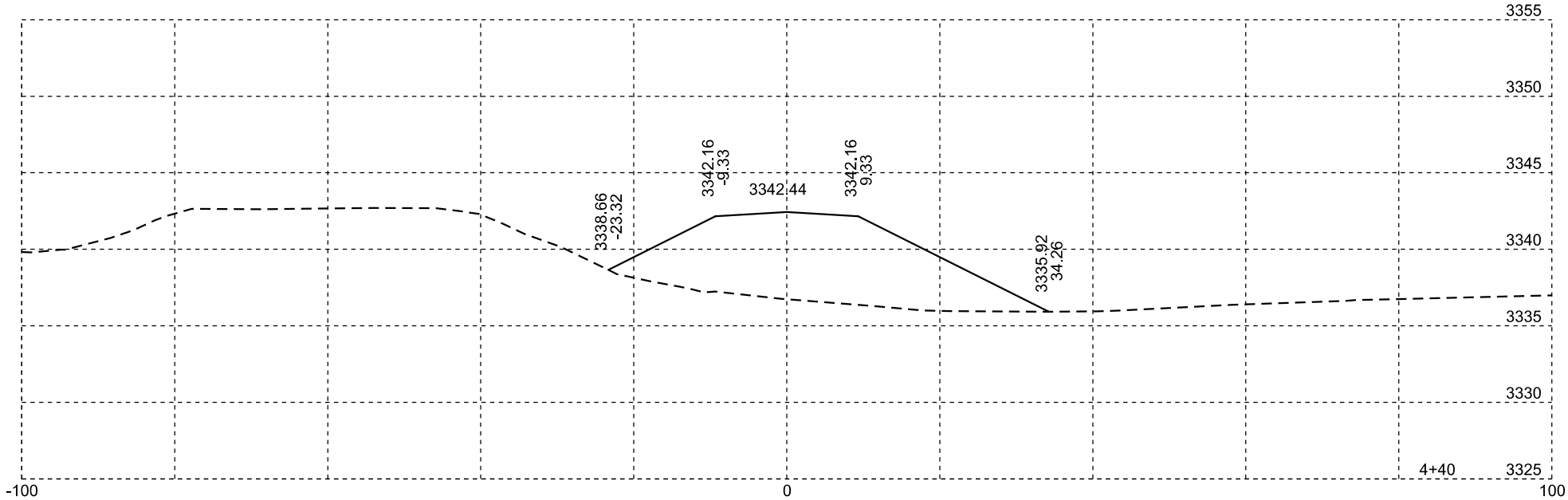
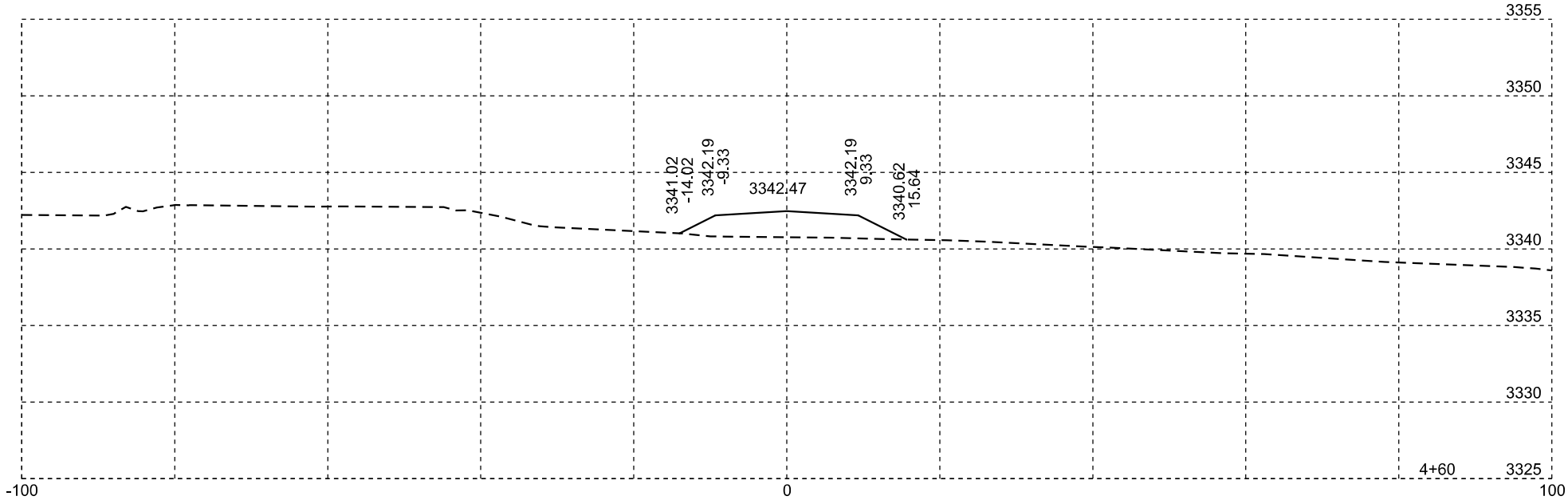
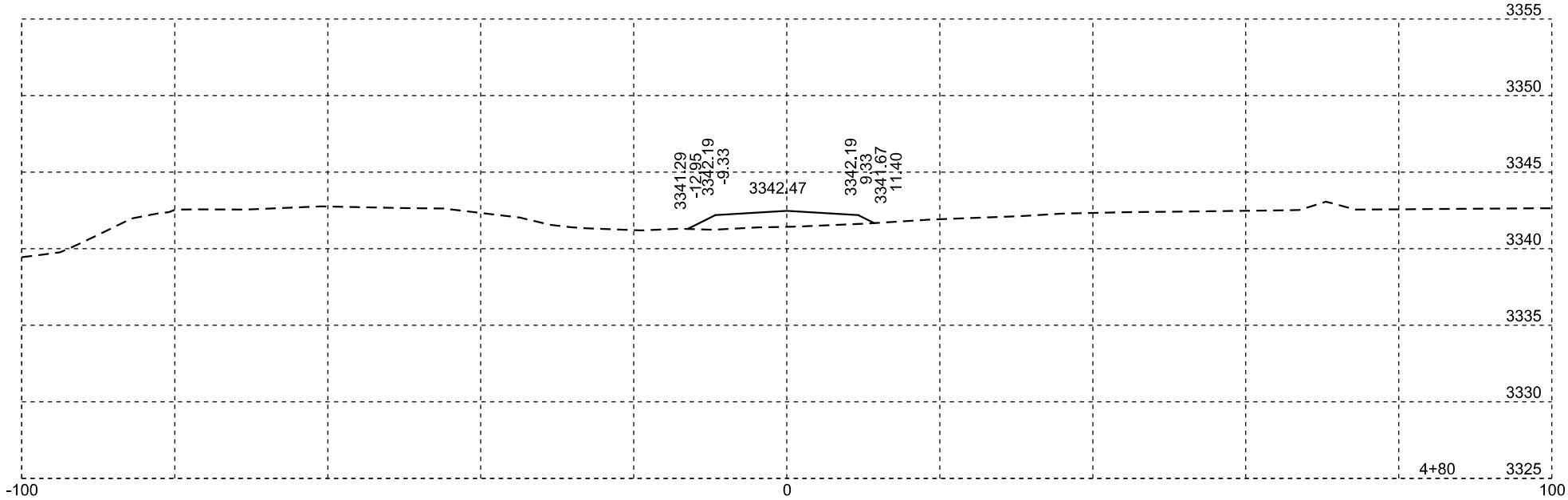
All costs for removing the erosion control wattle from the project including labor, equipment, and materials shall be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

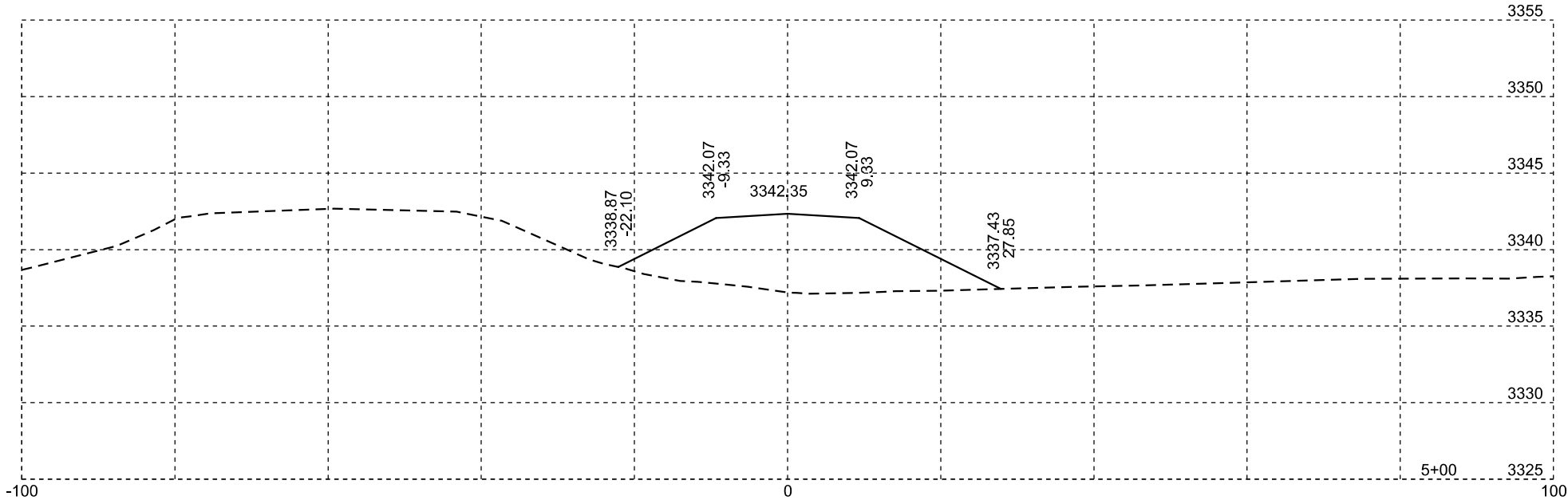
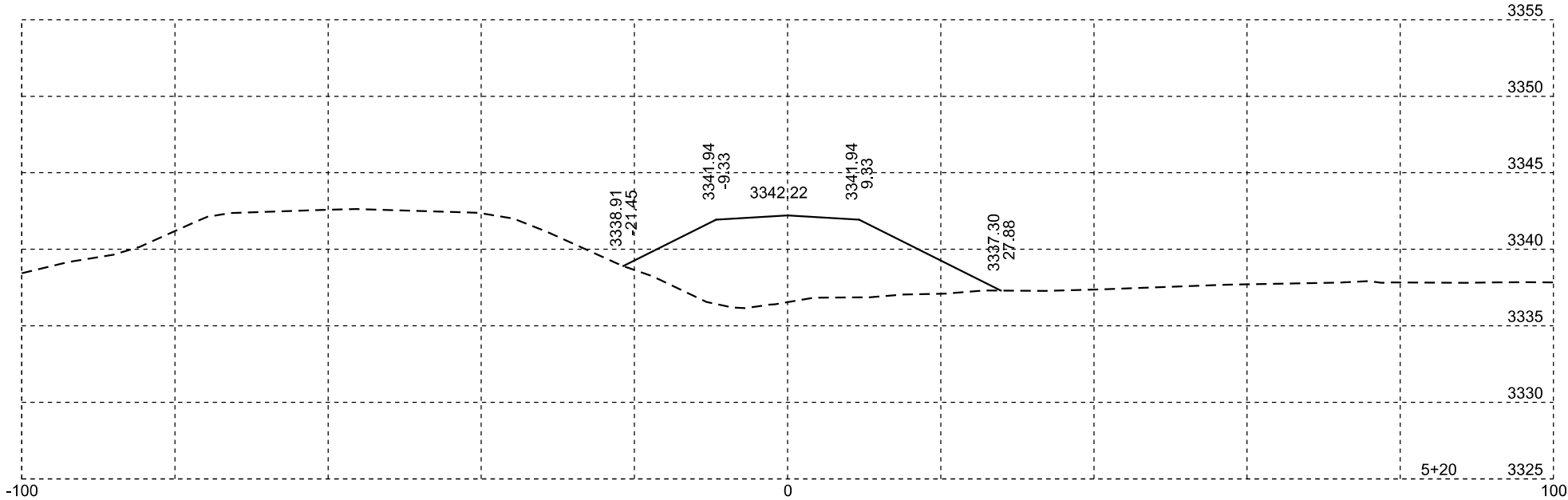
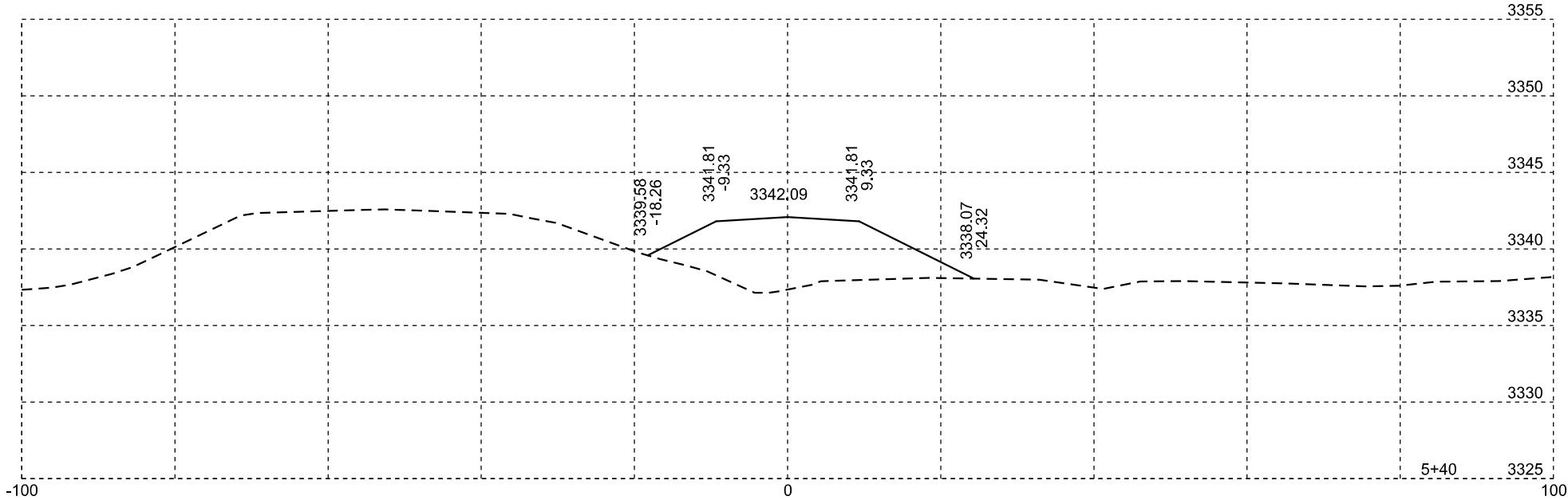
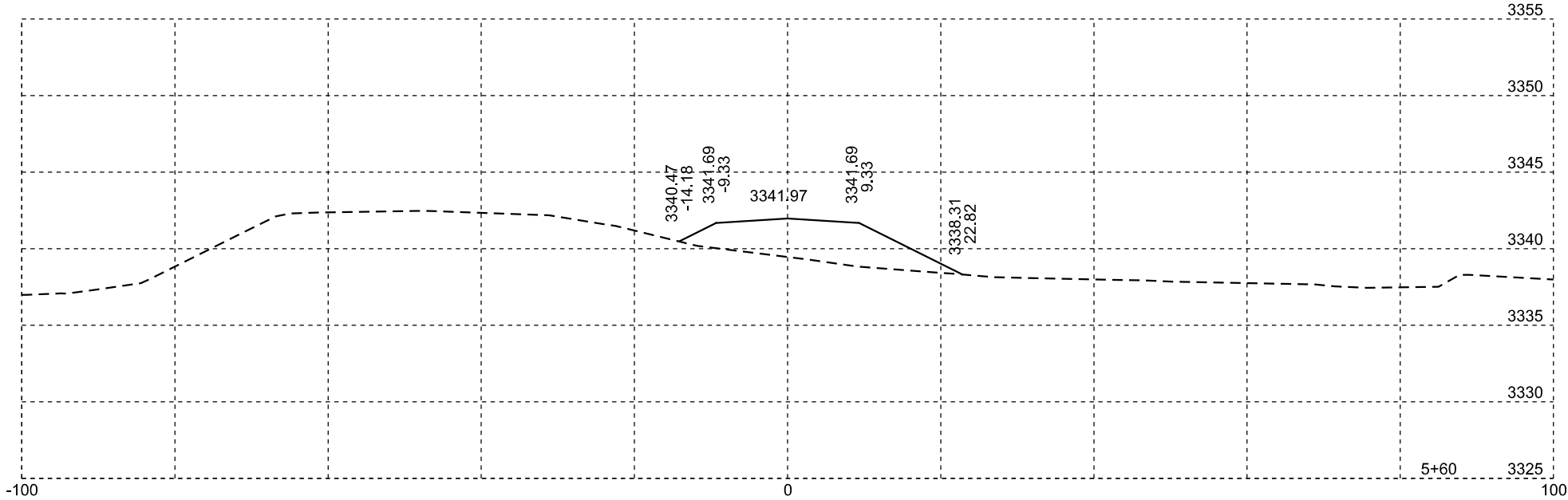
December 23, 2004

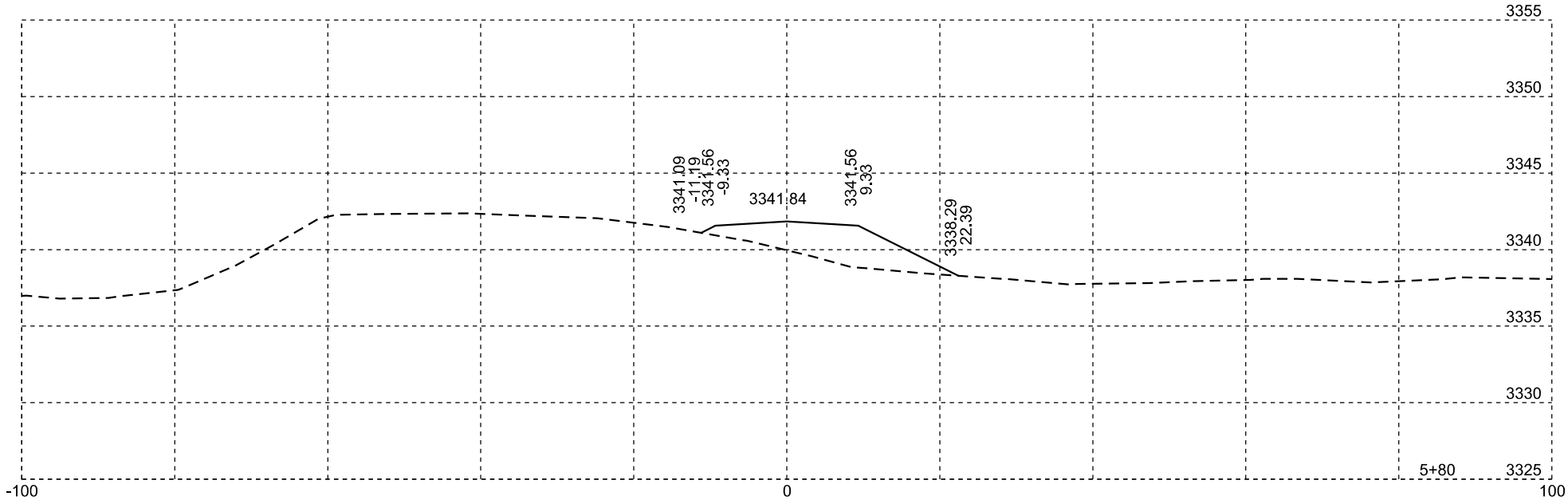
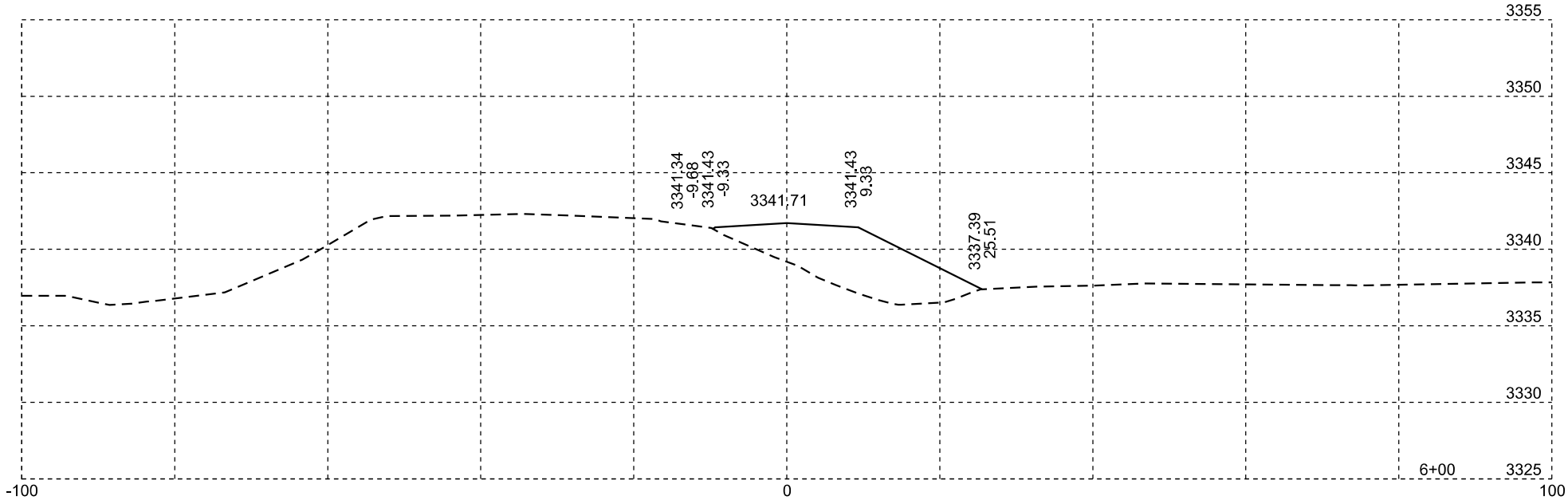
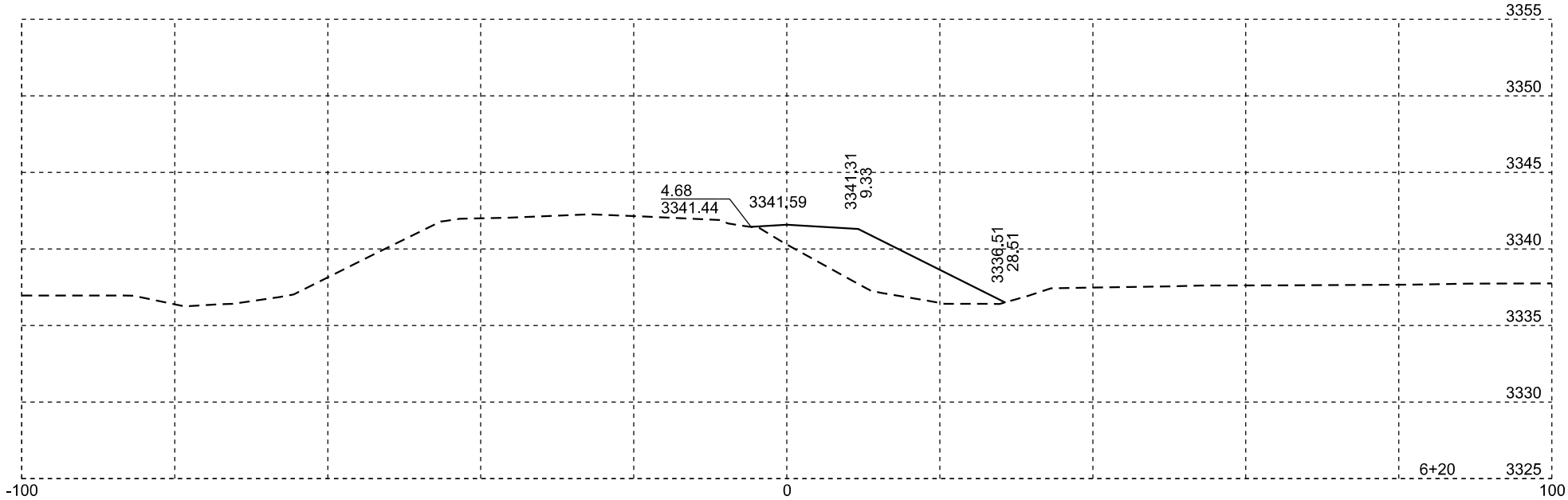
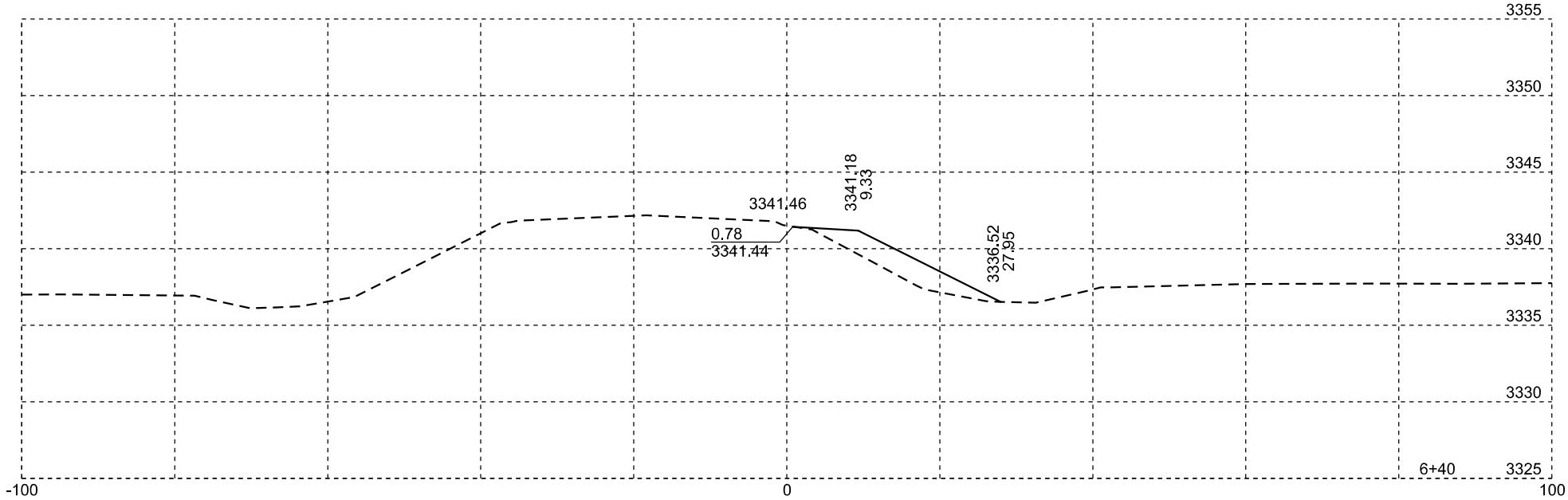
Published Date: 2nd Qtr. 2014	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2





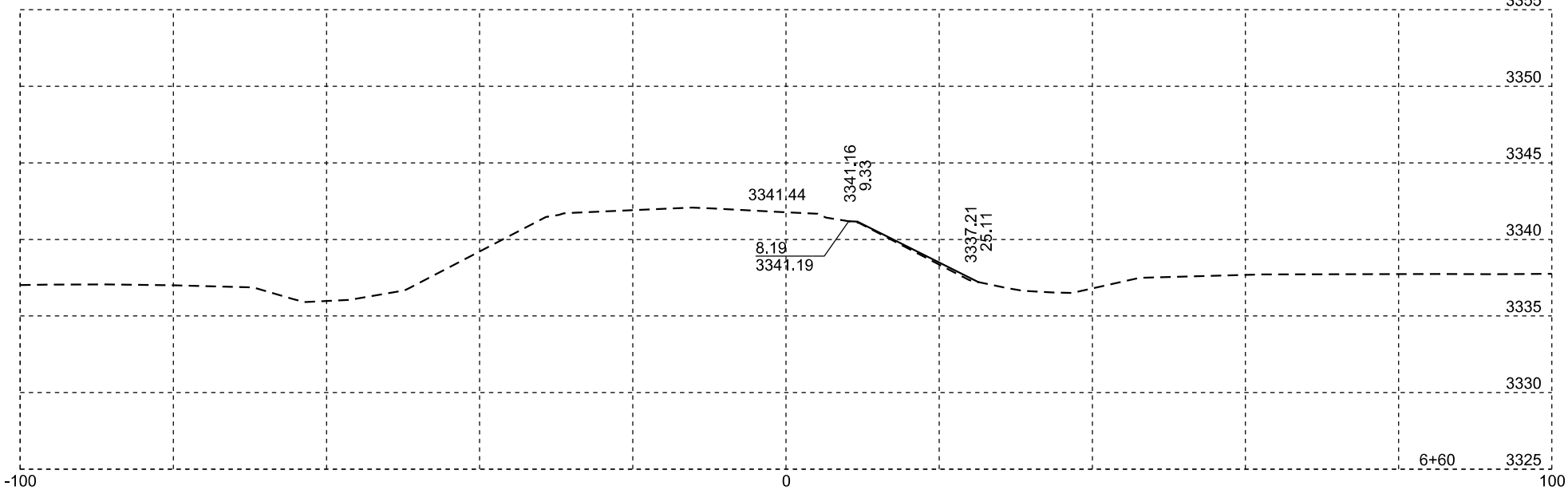
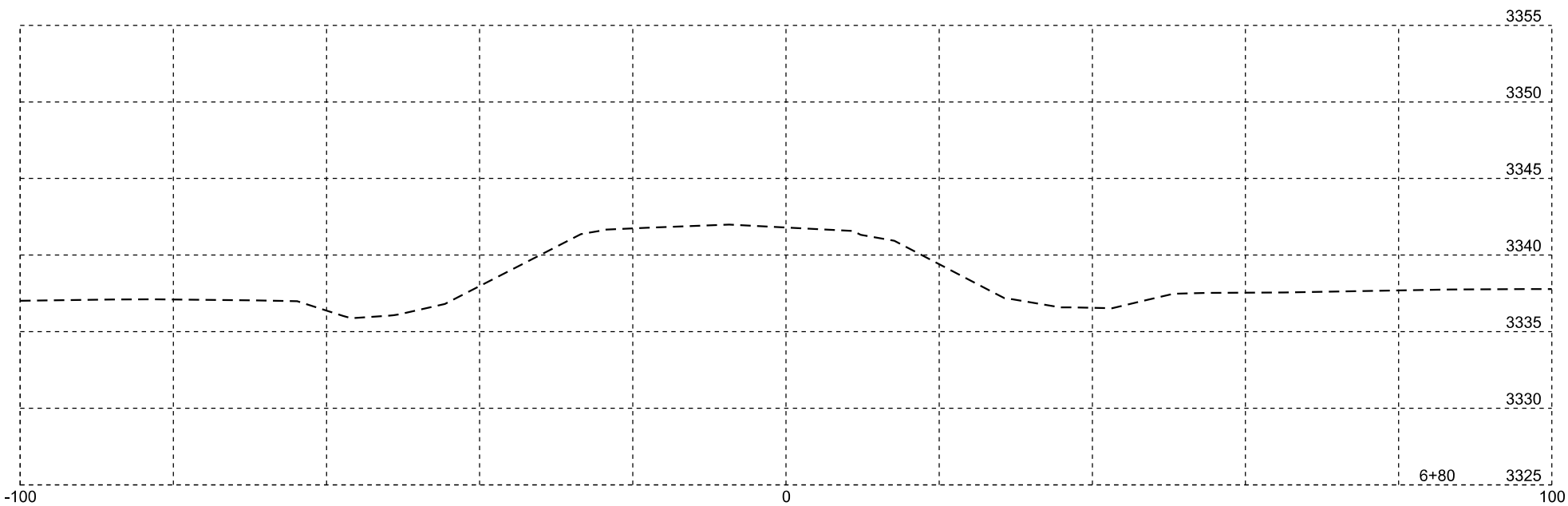






Plotting Date: 05/21/2014

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	PS 0018(130)62	20	21



Plotting Date: 05/21/2014

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	PS 0018(130)62	21	21