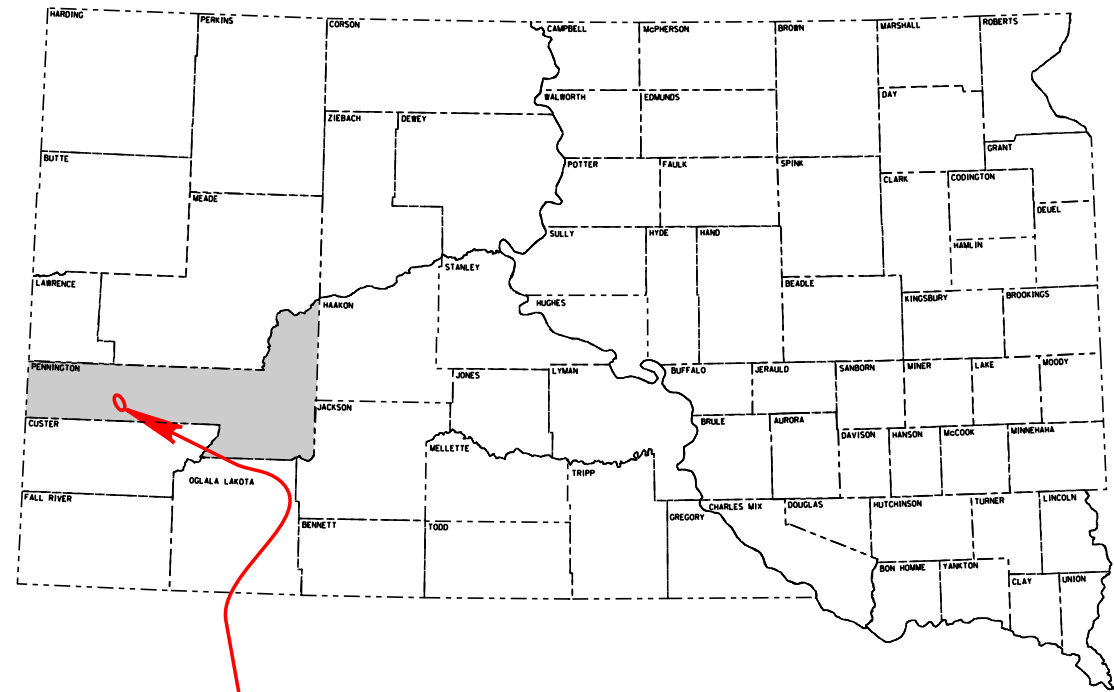


PLOT SCALE - 1:200

PLOTTED FROM - TRCU10202



PROJECT

DESIGN DESIGNATION

ADT (2016)	2023
ADT (2036)	3419
DHV	432
D	50%
T DHV	3.2%
T ADT	6.3%
V	45 mph

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

PROJECT 16A3-491
US HIGHWAY 16A
PENNINGTON COUNTY

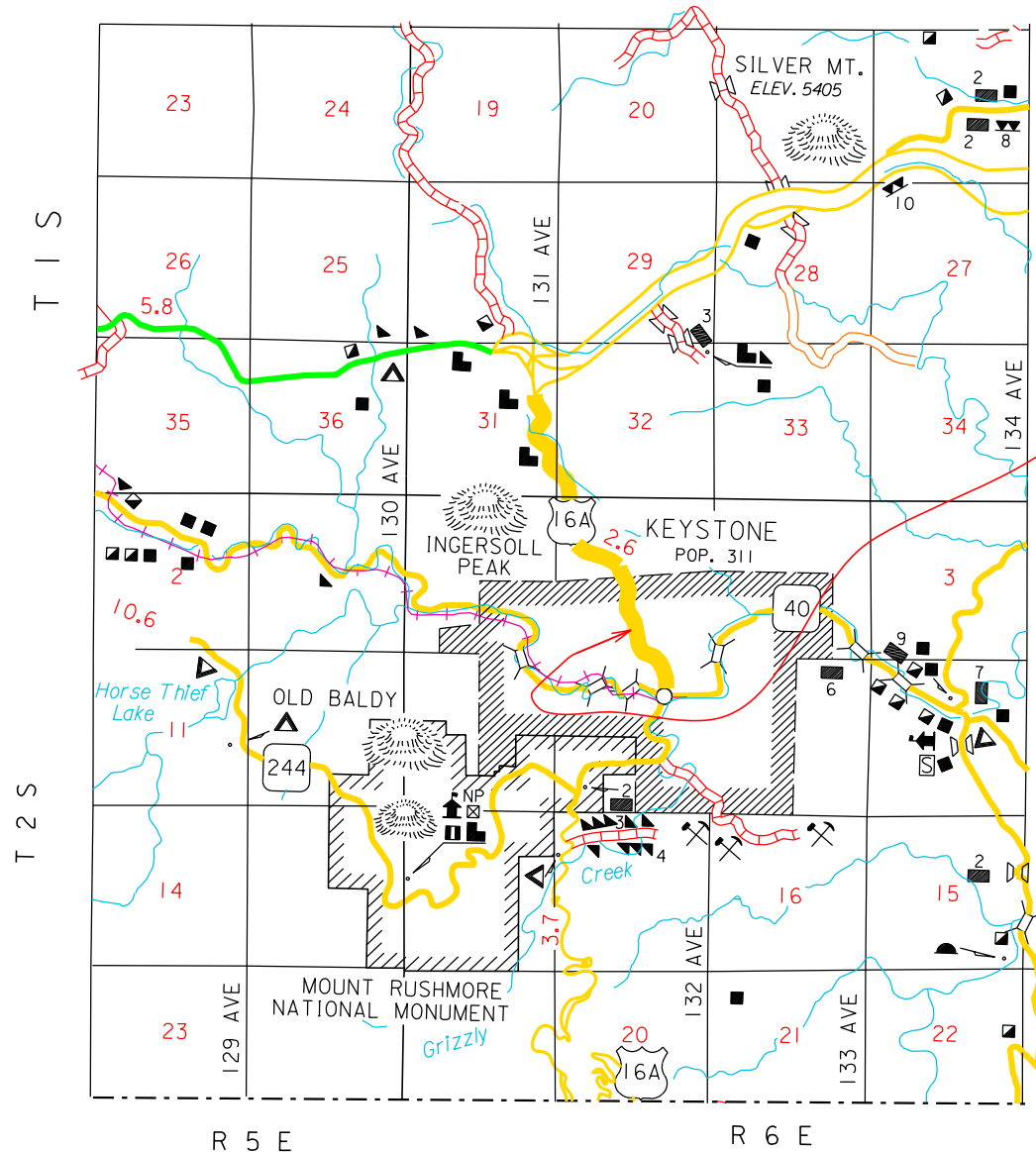
CURB & GUTTER, DROP INLETS, BANK AND CHANNEL
PROTECTION GABIONS,
AND MINOR SLOPE WORK

PCN 14LD

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	16A3 - 491	1	21
Plotting Date: 04/26/2017			
Revise Date: - -			
Initials:			

INDEX OF SHEETS

Sheet	1	Title Sheet
Sheet	2	Estimate of Quantities
Sheets	2 - 7	Plan Notes and Tables
Sheet	8	Traffic Control
Sheet	9	Typical Section
Sheet	10	Cross Sections
Sheet	11	Typical Gutter Section
Sheets	12 - 21	Standard Plates



PROJECT LOCATIONS
Stationing
Referenced from
Project F 1016(02)56
MRM 59.11 - MRM 59.46

PLOT NAME - 1

FILE - ... \PENN503N\DESIGN\TITLE.DGN

SHEET OF SHEETS

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	1	LS
110E1700	Remove Silt Fence	100	Ft
120E0010	Unclassified Excavation	165	CuYd
120E0600	Contractor Furnished Borrow Excavation	600	CuYd
230E0020	Contractor Furnished Topsoil	275	CuYd
250E0010	Incidental Work	1	LS
260E1010	Base Course	2.0	Ton
380E6110	Insert Steel Bar in PCC Pavement	450	Each
450E4759	18" CMP 16 Gauge, Furnish	72	Ft
450E4760	18" CMP, Install	72	Ft
450E5211	18" CMP Flared End, Furnish	4	Each
450E5212	18" CMP Flared End, Install	4	Each
462E0100	Class M6 Concrete	6.2	CuYd
480E0100	Reinforcing Steel	629	Lb
632E2510	Type 2 Object Marker Back to Back	4	Each
634E0010	Flagging	50.0	Hour
634E0110	Traffic Control Signs	201.0	SqFt
634E0120	Traffic Control, Miscellaneous	1	LS
634E0420	Type C Advance Warning Arrow Board	1	Each
650E1089	Modified Type F69 Concrete Curb and Gutter	1,200	Ft
670E1010	2' x 3' Type B Drop Inlet	4	Each
670E1200	Type B Frame and Grate Assembly	4	Each
670E5200	Special Frame and Grate Assembly	1	Each
720E1015	Bank and Channel Protection Gabion	36.0	CuYd
730E0210	Type F Permanent Seed Mixture	13	Lb
731E0100	Fertilizing	750	Lb
732E0200	Fiber Mulching	0.5	Ton
734E0604	High Flow Silt Fence	100	Ft
734E0610	Mucking Silt Fence	10	CuYd
734E0620	Repair Silt Fence	100	Ft
831E0110	Type B Drainage Fabric	60	SqYd

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 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 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.

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call 811 in State or (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

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.

WORK DESCRIPTION

Work on this project consists of installing curb and gutter, drop inlets, bank and channel protection gabions, and minor slope work on US Highway 16A from approximate MRM 57.00+0.096 to 59.11+0.084 (Keystone to the Keystone Wye)

UNCLASSIFIED EXCAVATION

Unclassified Excavation is provided on the project for removing excess material adjacent to the concrete surfacing, so that new curb and gutter can be installed in accordance with the typical sections. This excess material shall be installed behind the new curb and gutter and shall be graded to the satisfaction of the Engineer. The estimate of quantities provides 165 cubic yards of Unclassified Excavation for performing this work.

Plans quantity shall be the basis of payment for the Unclassified Excavation quantity. If changes are made in the field during construction, measurements shall be taken and the quantity shall be adjusted accordingly.

CONTRACTOR FURNISHED BORROW EXCAVATION

Station	L/R	Contractor Furnished Borrow Excavation (CUYD)
19+25 – 22+00	L	137.5
67+50 – 76+75	R	462.5

DROP INLETS

The drop inlets shall be covered throughout construction operations as necessary with an Engineer approved cover to provide safe travel for motorists and to prevent materials from entering the storm sewer system. All costs involved with the coverings and removing debris from the drop inlets shall be incidental to the contract unit prices for the components of the drop inlets.

The plan shown quantities of the drop inlet components such as Class M6 Concrete, Reinforcing Steel, and Type B Frame and Grate Assembly will be the basis of payment for these items.

If additions or reductions to the number of drop inlets are ordered by the Engineer, payment for the components required to construct the drop inlets will be made at the contract unit prices for the components of the drop inlets.

Drop Inlets shall be installed at the following locations:

Station	H	Pipe Diam.	Pipe Displacement Reduction	Class M6 Concrete	Reinforcing Steel	Frame & Grate Assembly
	(ft)	(in)	(Cu Yd)	(CuYd)	(Lb)	(Each)
21+85 L	6	18	0.032725	1.5473	157	1
22+00 L	6	18	0.032725	1.5473	157	1
76+15 R	6	18	0.032725	1.5473	157	1
76+33 R	6	18	0.032725	1.5473	157	1
			Totals =	6.1891	629	4

CORRUGATED METAL PIPE

All corrugated metal pipes 36” and smaller shall have 2-2/3 X 1/2 corrugations unless otherwise noted in the plans.

Corrugated Metal Pipe shall be installed at the following locations:

Station	L/R	Length (ft)	Diameter (in)
21+85	L	18	18
22+00	L	18	18
76+15	R	18	18
76+33	R	18	18

BANK AND CHANNEL PROTECTION GABION

Bank and Channel Protection Gabions shall be placed at the following locations:

Station	L/R	Gabion (Cu.Yd.)	Type B Drainage Fabric (Sq.Yd.)
21+85	L	9	15
22+00	L	9	15
76+15	R	9	15
76+33	R	9	15

BASE COURSE

Base Course shall be used as subgrade material under each drop inlet base. Included in the plan quantity is 12” of Base Course under each inlet location. All costs including furnishing, placing, and compacting the material shall be incidental to the contract unit price per ton for Base Course. Compaction shall be as directed by the Engineer.

Plans quantity shall be the basis of payment for the Base Course quantity. If changes are made in the field during construction, measurements shall be taken and the quantity shall be adjusted accordingly.

INSERT STEEL BAR IN PCC PAVEMENT

The Contactor shall install the steel bars (No. 5 deformed epoxy bar) into drilled holes in the existing concrete pavement. An epoxy resin adhesive must be used to anchor the steel bar in the drilled holes.

The steel bars shall be cut to the specified length by sawing and shall be free from burring or other deformations. Shearing will not be permitted.

A rigid frame or mechanical device will be required to guide the drill to ensure proper horizontal and vertical alignment of the steel bars in the drilled holes.

The No. 5 bars (to be inserted) shall be placed a minimum of 24” from the transverse contraction joints and on 48” centers. The No. 5 bars shall be placed on 30” centers for the F68 Modified Curb and Gutter.

The Contractor shall not place concrete until the epoxy has set enough to prevent steel bar movement.

Cost for the epoxy resin adhesive, No. 5 deformed bars, drilling holes, installing the steel bars into the drilled holes and all other items shall be incidental to the contract unit price per each for Insert Steel Bar in PCC Pavement.

MODIFIED TYPE F69 CONCRETE CURB AND GUTTER

There will be no distinction between straight or curved curb & gutter for bidding purposes.

The Contractor should note the Size and Increased Quantity of concrete that will be required to construct the Modified Type F69 curb and gutter. Reference the detail.

Sealing the joints as required per the Standard Plate shall be incidental to the Contract Unit Price per foot for the “Modified Type F69 Concrete Curb & Gutter.”

All costs for Modified Type F69 Concrete Curb and Gutter shall be incidental to the contract unit price per foot for FL68 Concrete Curb and Gutter.

Station		Station	L/R	Length
19+25	To	22+00	R	275
67+50	To	76+75	R	925

DROP INLET GRATES

Remove existing damaged drop inlet & grate and replace with new Type B grate at Station (10+75). All removed grates shall become the property of the Contractor. All costs associated with removing and replacing grates shall be incidental to the contract unit price per each for “Special Frame and Grate Assembly.”

TYPE 2 OBJECT MARKERS

All Type 2 Object Markers listed in these plans shall be used to mark pipe and box culverts throughout this project. All costs for materials, labor, and equipment necessary to furnish and install object markers shall be incidental to the contract unit price per each for Type 2 Object Marker Back to Back.

Only pipe and box culverts that fall within the 30-foot clear zone on this project shall be marked.

TRAFFIC CONTROL – GENERAL NOTES

Unless otherwise stated in these plans, no work will be allowed during hours of darkness.

Non-applicable traffic control devices shall be completely 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.

All materials and equipment shall be stored a minimum distance of 30’ from the traveled way during nonworking hours.

The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

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.

All construction operations shall be conducted in the general direction of traffic movement.

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.

Removing, relocating, covering, salvaging and resetting of permanent traffic control devices, including delineation shall be the responsibility of the Contractor. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

One lane of traffic shall be maintained each direction of travel throughout the project construction.

Work during non-daylight hours shall be subject to prior approval.

INVENTORY OF TRAFFIC CONTROL DEVICES

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
W21-5a	RIGHT SHOULDER CLOSED	2	48" x 48"	16.0	32.0
W21-5b	RIGHT SHOULDER CLOSED AHEAD	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			
		201.0			

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	16A3 - 491	3	21

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Advance Warning Arrow Board	1 Each

PERMANENT SEEDING

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, Kildeer, Pierre, Trailway	3
Blue Grama	Bad River, Willis	2
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		26

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:

Glomus intraradices	25%
Glomus aggregatu	25%
Glomus mosseae	25%
Glomus etunicatum	25%

All seed shall be inoculated 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 Type F Permanent Seed Mixture.

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. Fertilizing costs shall be included in the bid item “Permanent Seeding.”

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/

PLACING CONTRACTOR FURNISHED TOPSOIL

It is anticipated that a larger volume of topsoil will be needed for the new grade than can be salvaged from the existing grade. The Contractor will be required to furnish and place topsoil on areas as determined by the Engineer during construction.

All costs to furnish and place the topsoil shall be incidental to the contract unit price per cubic yard for “Placing Contractor Furnished Topsoil”.

STORM WATER POLLUTION PREVENTION PLAN CHECKLIST

(The numbers right of the title headings are **reference numbers** to the GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES

- ❖ **SITE DESCRIPTION (4.2 1)**
 - **Project Limits: See Title Sheet (4.2 1.b)**
 - **Project Description: See Title Sheet (4.2 1.a.)**
 - **Site Map(s): See Title Sheet and Plans (4.2 1.f. (1)-(6))**
 - **Major Soil Disturbing Activities** (check all that apply)
 - ☐ Clearing and grubbing
 - ☒ Excavation/borrow
 - ☒ Grading and shaping
 - ☒ Filling
 - ☐ Cutting and filling
 - ☐ Other (describe):
 - **Total Project Area 0.5 Acre (4.2 1.b.)**
 - **Total Area To Be Disturbed 0.5 Acre (4.2 1.b.)**
 - **Existing Vegetative Cover (70%)**
 - **Soil Properties:** AASHTO Classification A-4,A-6, A-3 or A-2-4 **(4.2 1. d.)**
 - **Name of Receiving Water Body/Bodies (4.2 1.e.)**

- ❖ **ORDER OF CONSTRUCTION ACTIVITIES (4.2 1.c.)**

(Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Initiation of final or temporary stabilization may exceed the 14-day limit if earth disturbing activities will be resumed within 21 days.)

 - **Install perimeter control where runoff sheets from the site.**
 - **Clearing and grubbing**
 - **Remove and stockpile topsoil.**
 - **Grading and earth disturbing activities.**
 - **Replace topsoil and seed disturb areas that will not be disturbed due to surfacing operations.**
 - **Complete final paving.**
 - **Replace topsoil and seed areas disturbed during paving operations.**

- ❖ **EROSION AND SEDIMENT CONTROLS (4.2 2.a.(1)(a)-(f))**

(Check all that apply)

 - **Stabilization Practices (See Detail Plan Sheets)**
 - ☐ Temporary Seeding (Cover Crop Seeding)
 - ☒ Permanent Seeding
 - ☐ Sodding
 - ☐ Planting (Woody Vegetation for Soil Stabilization)
 - ☐ Mulching (Grass Hay or Straw)
 - ☒ Hydraulic Mulch (Wood Fiber Mulch)
 - ☐ Soil Stabilizer
 - ☐ Bonded Fiber Matrix
 - ☐ Erosion Control Blankets or Mats
 - ☒ Vegetation Buffer Strips
 - ☐ Roughened Surface (e.g. tracking)
 - ☐ Dust Control
 - ☐ Other

- **Structural Temporary Erosion and Sediment Controls**
 - ☒ Silt Fence
 - ☐ Floating Silt Curtain
 - ☐ Straw Bale Check
 - ☐ Temporary Berm
 - ☐ Temporary Slope Drain
 - ☐ Straw Wattles or Rolls
 - ☐ Turf Reinforcement Mat
 - ☐ Rip Rap
 - ☒ Gabions
 - ☐ Rock Check Dams
 - ☐ Sediment Traps/Basins
 - ☐ Inlet Protection
 - ☐ Outlet Protection
 - ☐ Surface Inlet Protection (Area Drain)
 - ☐ Curb Inlet Protection
 - ☐ Stabilized Construction Entrances
 - ☐ Entrance/Exit Equipment Tire Wash
 - ☐ Interceptor Ditch
 - ☐ Concrete Washout Area
 - ☐ Temporary Diversion Channel
 - ☐ Work Platform
 - ☐ Temporary Water Barrier
 - ☐ Temporary Water Crossing
 - ☐ Other
- **Wetland Avoidance**

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes ☐ No ☒ If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.
- **Storm Water Management (4.2 2.b., (1) and (2))**

Storm water management will be handled by temporary controls outlined in “EROSION AND SEDIMENT CONTROLS” above, and any permanent controls needed to meet permanent storm water management needs in the post construction period. Permanent controls will be shown on the plans and noted as permanent.
- **Other Storm Water Controls (4.2 2.c., (1) and (2))**
 - **Waste Disposal**

All liquid waste materials will be collected and stored in sealed metal containers approved by the project engineer. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal, and notices stating proper practices will be posted in the field office. The general contractor's representative responsible for the conduct of work on the site will be responsible for seeing waste disposal procedures are followed.
 - **Hazardous Waste**

All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the individual designated as the contractor's on-site representative will be responsible for seeing that these practices are followed.
 - **Sanitary Waste**

Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units in a timely manner by a licensed waste management contractor or as required by any local regulations.

- ❖ **Maintenance and Inspection (4.2 3. and 4.2 4.)**
 - **Maintenance and Inspection Practices**
 - Inspections will be conducted at least one time per week and after a storm event of 0.50 inches or greater.
 - All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
 - Silt fence will be inspected for depth of sediment and for tears in order to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches ¹/₃ of the height of the silt fence.
 - Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
 - Check dams will be inspected for stability. Sediment will be removed when depth reaches ¹/₂ the height of the dam.
 - All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
 - Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
 - The SDDOT Project Engineer and contractor's site superintendent are responsible for inspections. Maintenance, repair activities are the responsibility of the contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

- ❖ **Non-Storm Water Discharges (3.0)**

The following non-storm water discharges are anticipated during the course of this project (check all that apply).

 - ☐ Discharges from water line flushing.
 - ☐ Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
 - ☐ Uncontaminated ground water associated with dewatering activities.

- ❖ **Materials Inventory (4.2. 2.c.(2))**

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the headings “EROSION AND SEDIMENT CONTROLS” and “SPILL PREVENTION” (check all that apply).

 - ☒ Concrete and Portland Cement
 - ☐ Detergents
 - ☐ Paints
 - ☒ Metals
 - ☐ Bituminous Materials
 - ☒ Petroleum Based Products
 - ☐ Cleaning Solvents
 - ☒ Wood
 - ☒ Cure
 - ☐ Texture
 - ☐ Chemical Fertilizers
 - ☐ Other

Spill Prevention (4.2 2.c.(2))

➤ Material Management

- Housekeeping
 - Only needed products will be stored on-site by the contractor.
 - Except for bulk materials the contractor will store all materials under cover and in appropriate containers.
 - Products must be stored in original containers and labeled.
 - Material mixing will be conducted in accordance with the manufacturer's recommendations.
 - When possible, all products will be completely used before properly disposing of the container off site.
 - The manufacturer's directions for disposal of materials and containers will be followed.
 - The contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
 - Dust generated will be controlled in an environmentally safe manner.
 - Vegetation areas not essential to the construction project will be preserved and maintained as noted on the plans.
- Hazardous Materials
 - Products will be kept in original containers unless the container is not resealable.
 - Original labels and material safety data sheets will be retained in a safe place to relay important product information.
 - If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
 - Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
 - Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any storm water system or storm water treatment system.
 - Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, and mixer washout waters will be collected on site and managed to prevent contamination of storm water runoff.

➤ Product Specific Practices (6.8)

- Petroleum Products

All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.
- Fertilizers

Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to storm water. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

- Paints

All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.
- Concrete Trucks

Contractors will provide designated truck washout areas on the site. These areas must be self contained and not connected to any storm water outlet of the site. Upon completion of construction washout areas will be properly stabilized.
- **Spill Control Practices (4.2 2 c.(2))**

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

 - For all hazardous materials stored on site, the manufacturer's recommended methods for spill clean up will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
 - Appropriate cleanup materials and equipment will be maintained by the contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for clean up purposes.
 - All spills will be cleaned immediately after discovery and the materials disposed of properly.
 - The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
 - After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
 - The contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator. The contractor is responsible for ensuring that the site superintendent has had appropriate training for hazardous materials handling, spill management, and cleanup.
- **Spill Response (4.2 2 c.(2))**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into storm water runoff and conveyance systems. If the release has impacted on-site storm water, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens storm water or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

 - The contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
 - If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
 - Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the contractor at the site.
 - If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to

- remove the material causing the sheen. The contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SD DENR.
 - Personnel with primary responsibility for spill response and clean up will receive training by the contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
 - Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

❖ **Spill Notification**

- In the event of a spill, the contractor's site superintendent will make the appropriate notification(s), consistent with the following procedures:
- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to DENR immediately **if any one of the following** conditions exists:
 - The discharge threatens or is in a position to threaten the waters of the state (surface water or ground water).
 - The discharge causes an immediate danger to human health or safety.
 - The discharge exceeds 25 gallons.
 - The discharge causes a sheen on surface water.
 - The discharge of any substance that exceeds the ground water quality standards of ARSD (Administrative Rules of South Dakota) chapter 74:54:01.
 - The discharge of any substance that exceeds the surface water quality standards of ARSD chapter 74:54:01.
 - The discharge of any substance that harms or threatens to harm wildlife or aquatic life.
 - The discharge of crude oil in field activities under SDCL (South Dakota Codified Laws) chapter 45-9 is greater than 1 barrel (42 gallons).

To report a release or spill, call DENR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central time). To report the release after hours, on weekends or holidays, call State Radio Communications at 605-773-3231. Reporting the release to DENR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, the responsible person must also contact local authorities to determine the local reporting requirements for releases. DENR recommends that spills also be reported to the National Response Center at (800) 424-8802.

❖ **Construction Changes (4.4)**

When changes are made to the construction project that will require alterations in the temporary erosion controls of the site, the Storm Water Pollution Prevention Plan (SWPPP) will be amended to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP plan (DOT 298) and drawings to reflect the needed changes. Copies of changes will be routed per DOT 298. Copies of forms and the SWPPP will be retained in a designated place for review over the course of the project.

CERTIFICATIONS

➤ **Certification of Compliance with Federal, State, and Local Regulations**

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

➤ **South Dakota Department of Transportation**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Authorized Signature (See the General Permit, Section 6.7.1.C.)

➤ **Prime Contractor**

This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments will be revised or maintained under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Signature

CONTACT INFORMATION

➤ **Contractor Information:**

- Prime Contractor Name:
- Contractor Contact Name:
- Address:
- Address:
- City: State: Zip:
- Office Phone: Field:
- Cell Phone: Fax:

➤ **Erosion Control Supervisor**

- Name:
- Address:
- Address:
- City: State: Zip:
- Office Phone: Field:
- Cell Phone: Fax:

➤ **SDDOT Project Engineer**

- Name:
- Business Address:
- Job Office Location:
- City: State: Zip:
- Office Phone: Field:
- Cell Phone: Fax:

➤ **SD DENR Contact Spill Reporting**

- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➤ **SD DENR Contact for Hazardous Materials.**

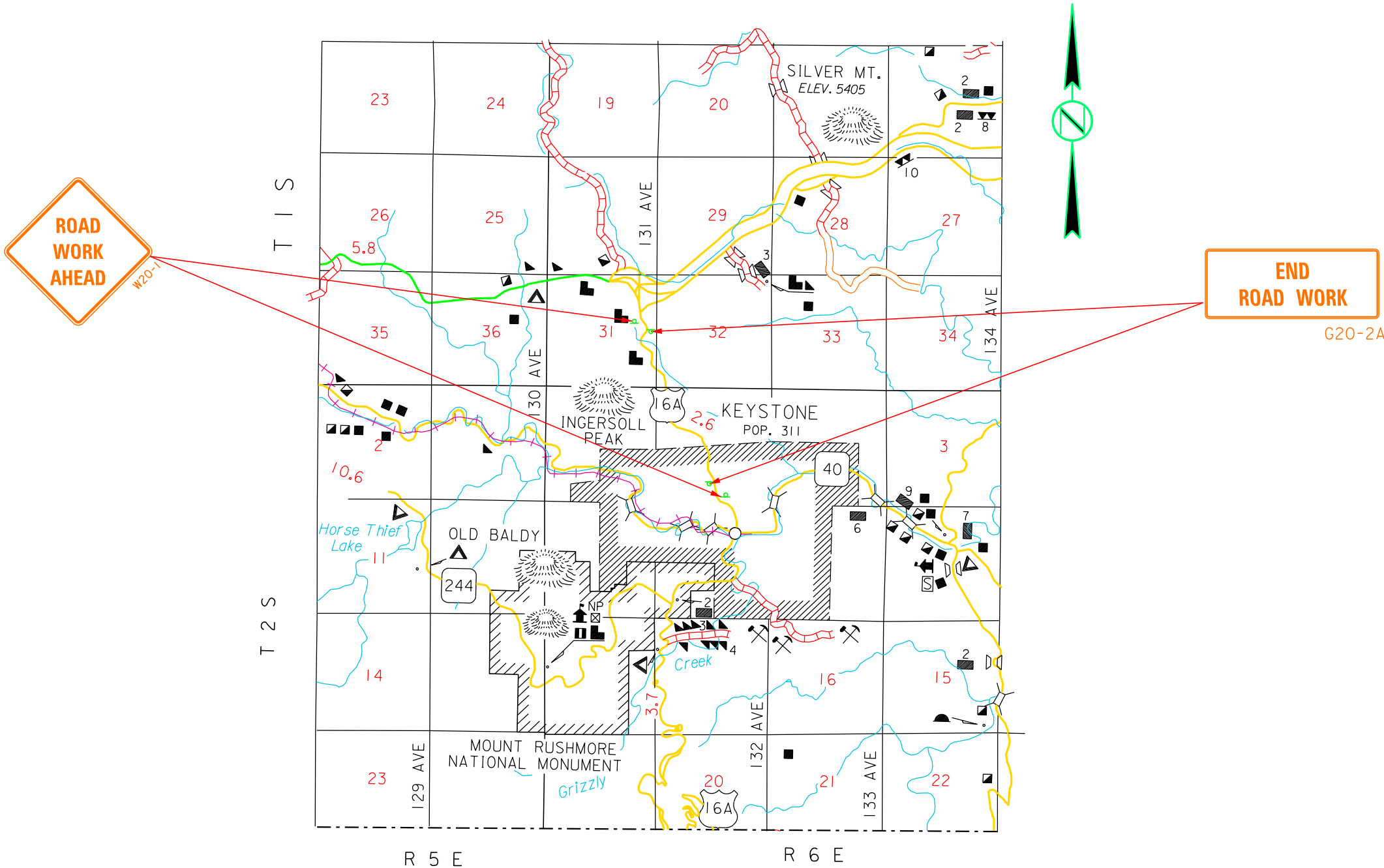
- (605) 773-3153

➤ **National Response Center Hotline**

- (800) 424-8802.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	16A3 - 491	8	21

FIXED LOCATION SIGNS



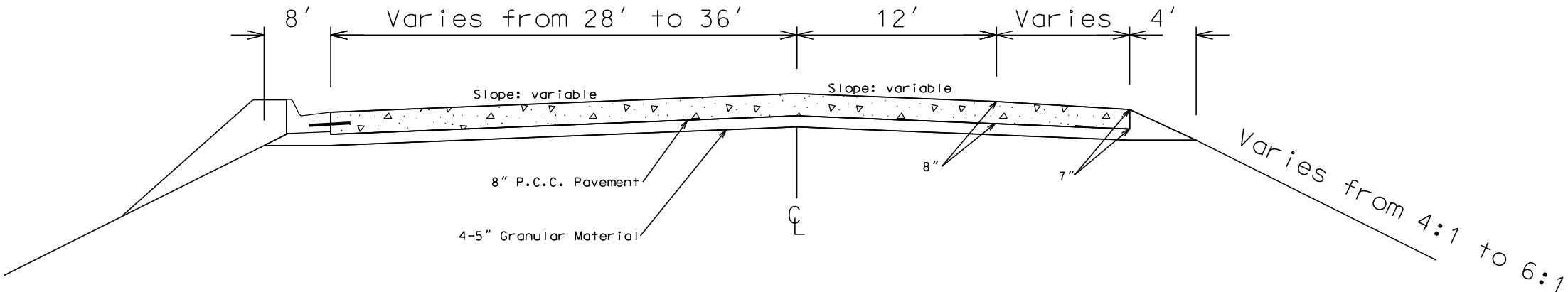
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PLOTTED FROM - IRCUI0202

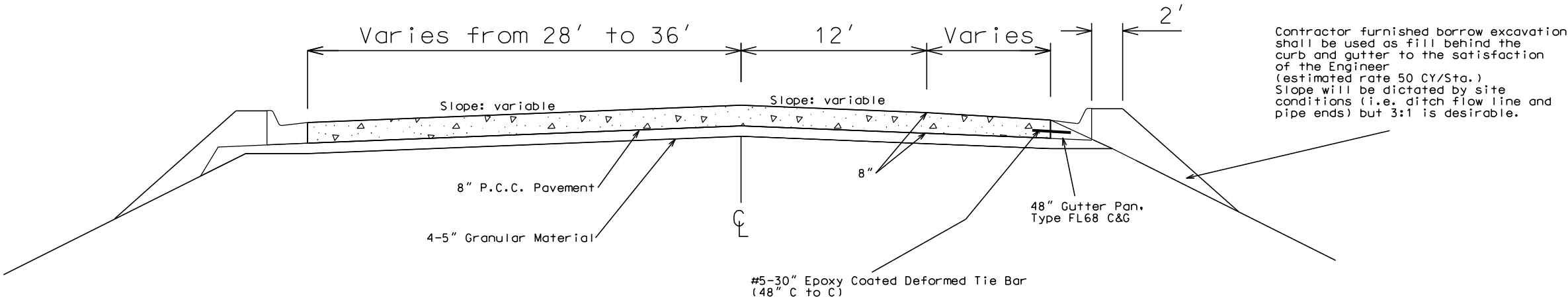
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	16A3 - 491	9	21
Plotting Date: 04/27/2017			
Revise Date: - -			
Initials:			

Typical Section

Existing Section
Station 10+75 - 82+00



Proposed Section



PLOT NAME - 1

FILE - ... \DOCUMENTS\141C - 14LDXTYP.DGN

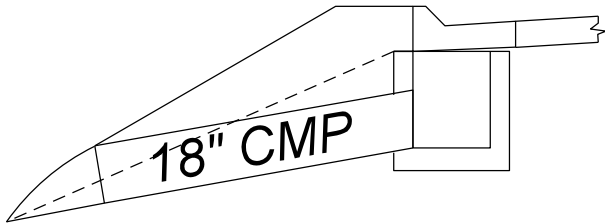
SHEET OF SHEETS

PLOT SCALE - 1:14,9063

PLOTTED FROM - IRCU10202

TYPICAL CROSS SECTION

21+85 - L
22+00 - L
76+25 - R
76+33 - R



- 21+85 - L -
Furnish and install Type B Frame & Grate
Furnish and install 18' of 18" CMP
Furnish and install Bank and Channel Protection Gabions - 9 Cubic Yards
- 22+00 - L -
Furnish and install Type B Frame & Grate
Furnish and install 18' of 18" CMP
Furnish and install Bank and Channel Protection Gabions - 9 Cubic Yards
- 76+15 - R -
Furnish and install Type B Frame & Grate
Furnish and install 18' of 18" CMP
Furnish and install Bank and Channel Protection Gabions - 9 Cubic Yards
- 76+33 - R -
Furnish and install Type B Frame & Grate
Furnish and install 18' of 18" CMP
Furnish and install Bank and Channel Protection Gabions - 9 Cubic Yards

Culverts shall have a minimum of 6" drop in elevation.
Culverts may be skewed to fit drainage and/or to provide the desired drop in elevation as directed by the Engineer.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	16A3 - 491	10	21
Plotting Date: 04/27/2017			
Revise Date: - -			
Initials:			

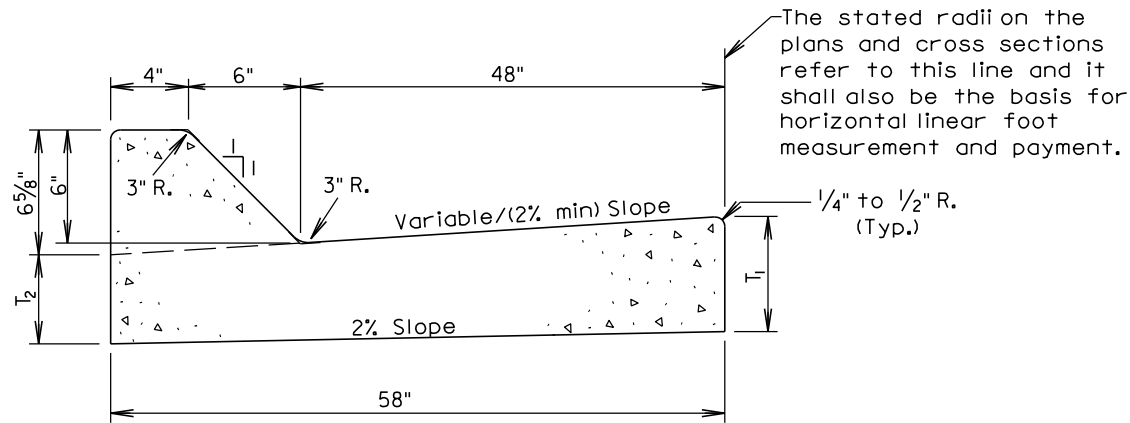
PLOT NAME - 1

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SHEET OF SHEETS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	16A3 - 491	11	21
Plotting Date: 04/27/2017			
Revise Date: - -			
Initials:			

TYPE F MODIFIED CONCRETE CURB AND GUTTER



Type	T ₁ (Inches)	T ₂ (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
F69 (mod)	9	7.5	0.130	7.7

GENERAL NOTES:

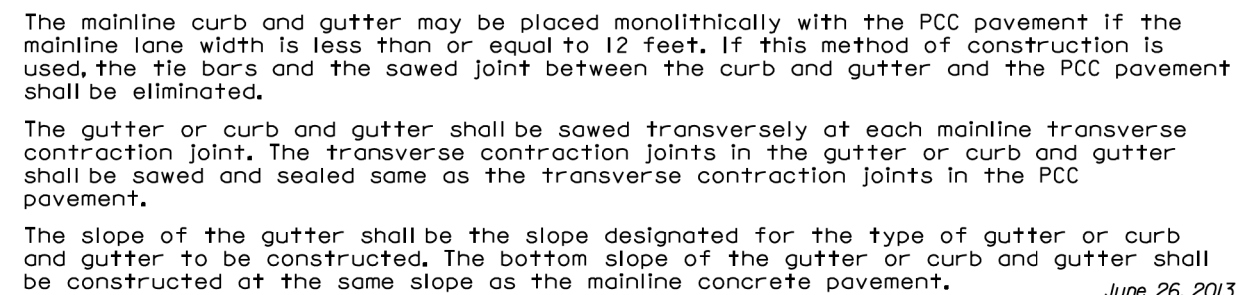
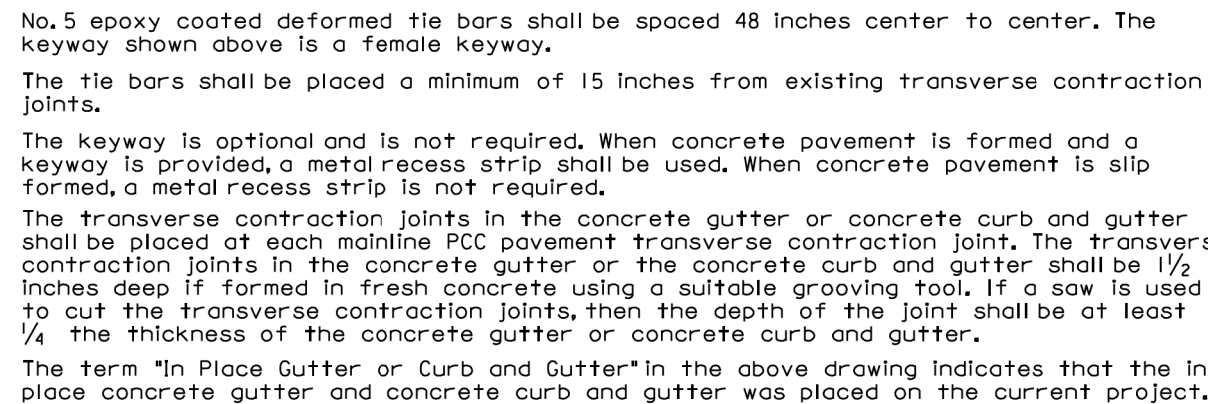
When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment shall be by one of the methods shown on Plate No. 380.11.

1/2" preformed expansion joint fillers shall be placed transversely in the curb and gutter as follows:

1. At each junction of radius return curb and gutter and curb and gutter which is parallel to the project centerline.
2. At each junction with existing concrete curb or concrete curb and gutter.
3. At each junction with existing concrete sidewalk, to the depth of the sidewalk.

When backface of curb and gutter is adjacent to concrete pavement or concrete sidewalk, 1/2" preformed expansion joint filler shall be placed longitudinally along the backface of the curb. The 1/2" preformed expansion joint filler shall be placed to the depth of the adjoining concrete.

Weakened plane joints shall be constructed at 10' intervals except when curb and gutter is constructed adjacent to mainline PCC pavement. When curb and gutter is constructed adjacent to mainline PCC pavement the joints shall coincide with the mainline PCC pavement's transverse joints. The joints shall be constructed to a minimum depth of one inch by scoring with a tool which will leave the corners rounded and provide free movement of concrete at the joint.

Plotting Date: 04/27/2017

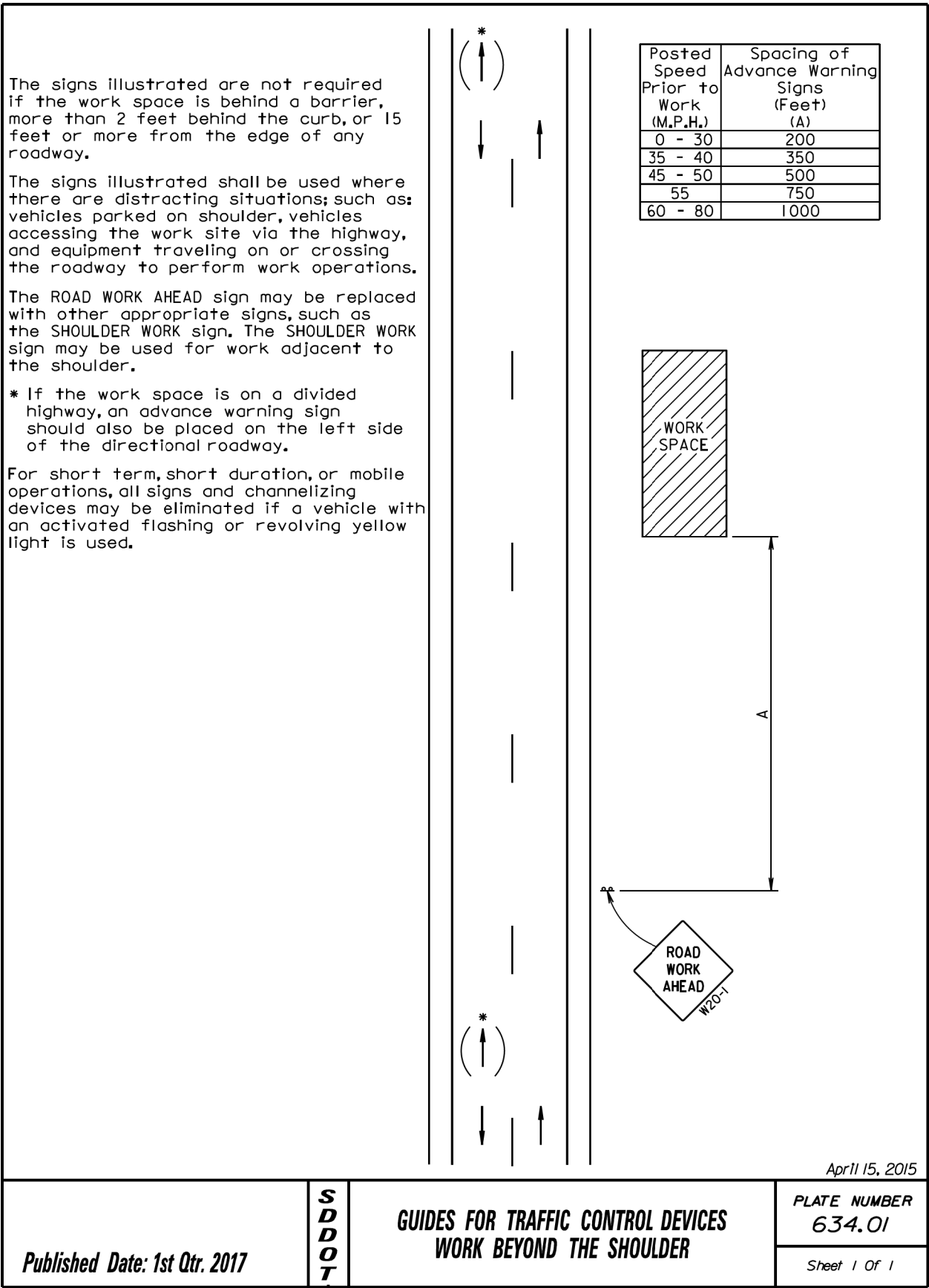
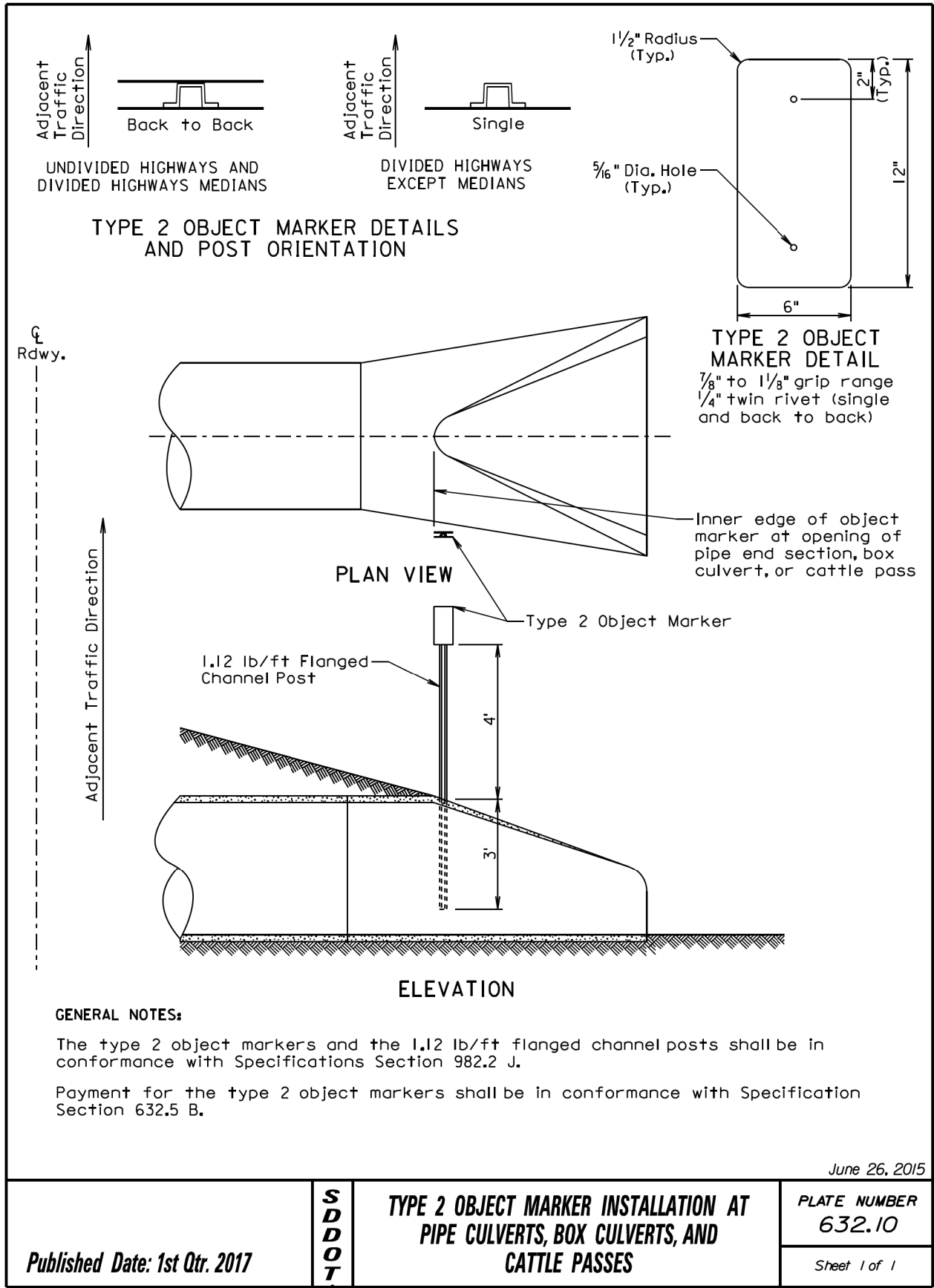
June 26, 2013

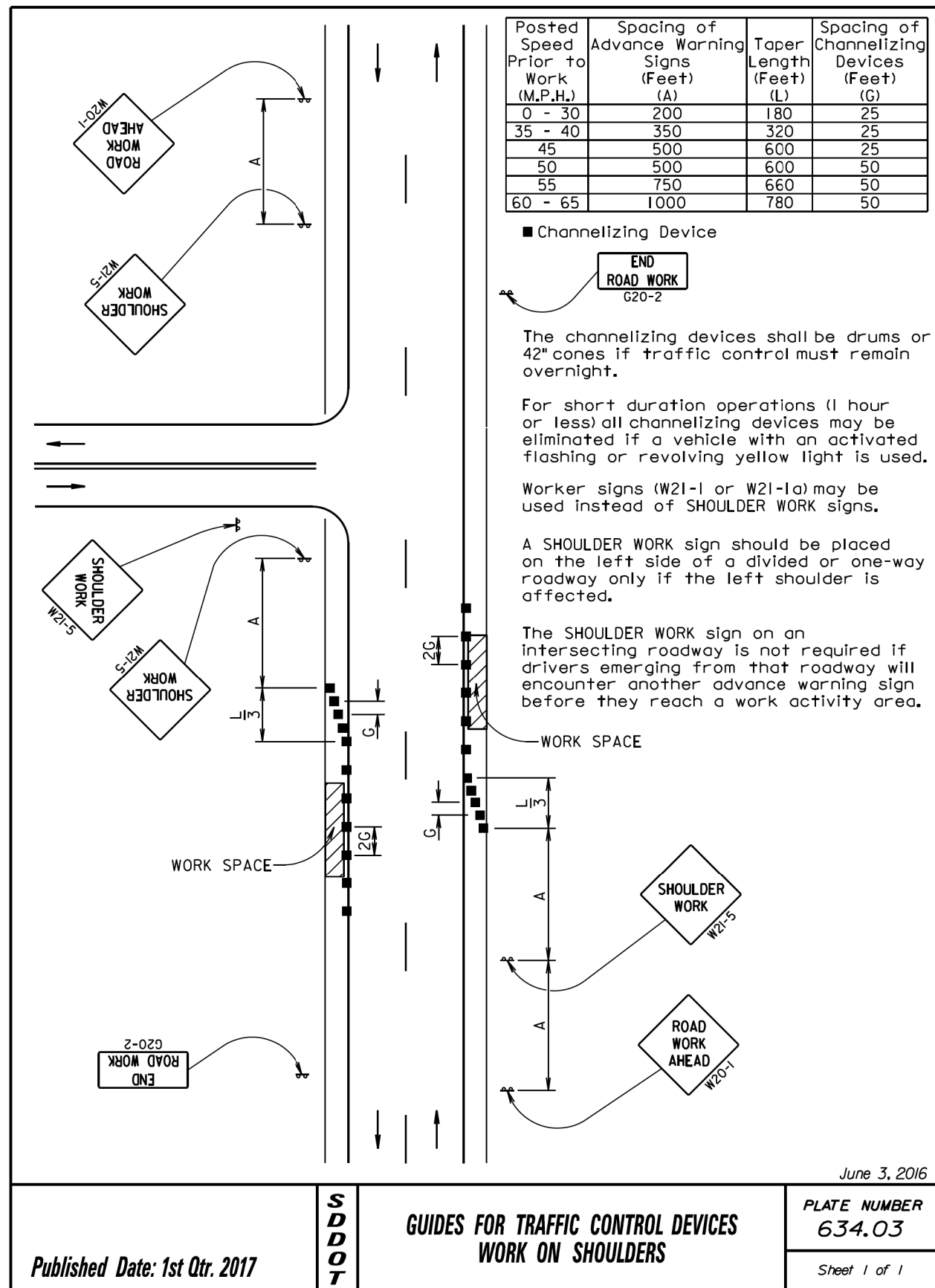
PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER

PLATE NUMBER
380.11

Sheet 1 of 1

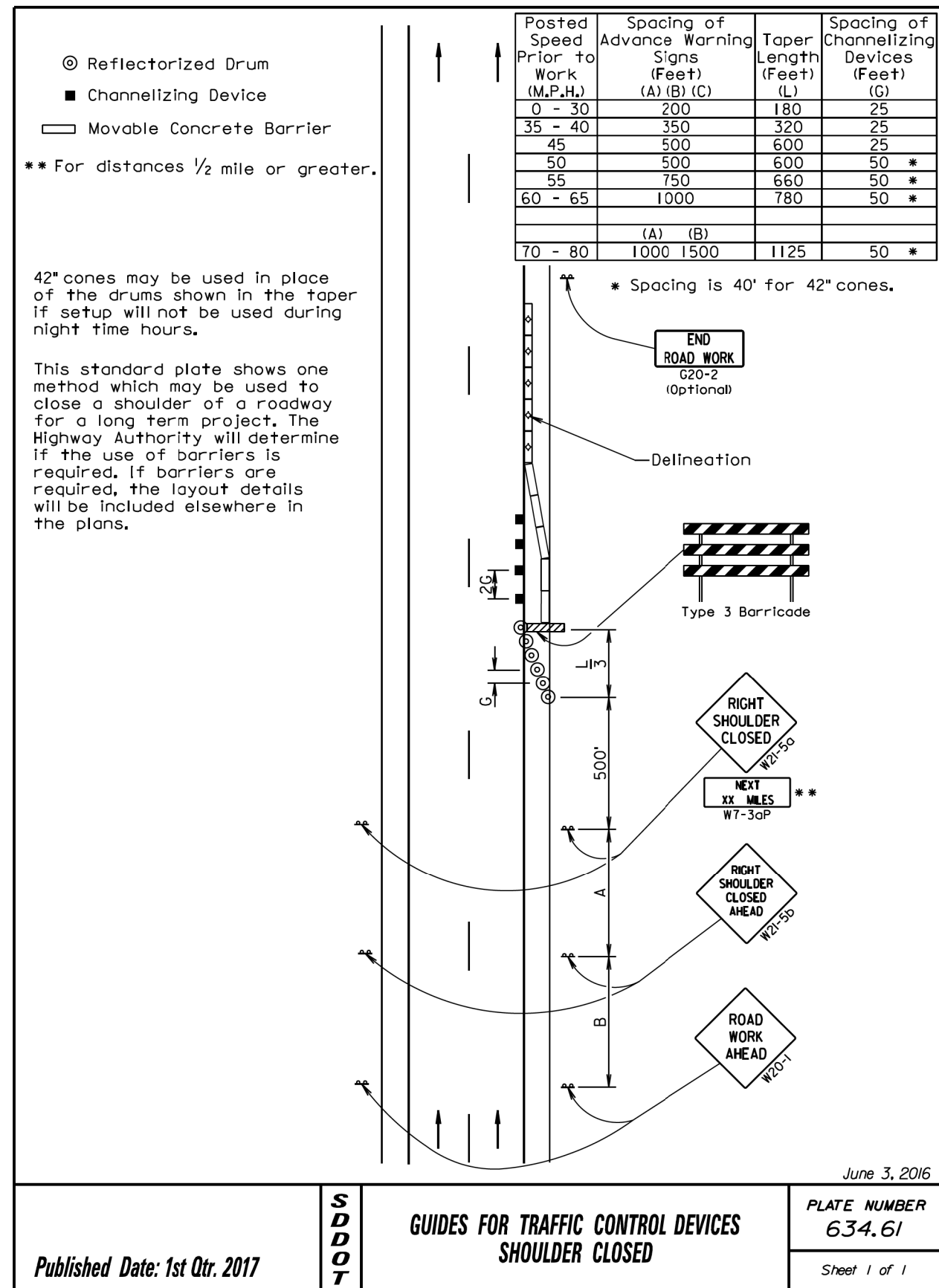
Published Date: 1st Qtr. 2017



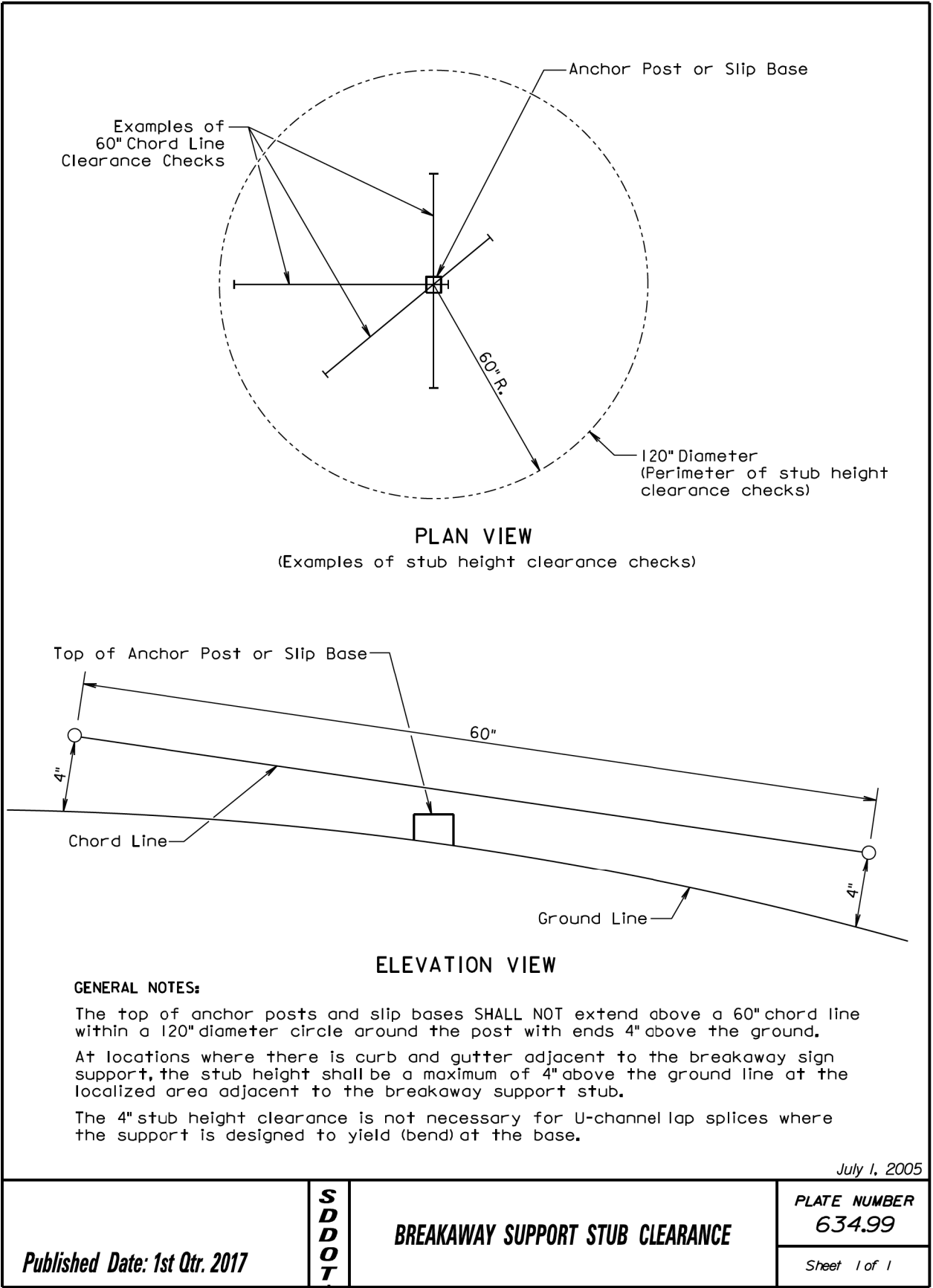
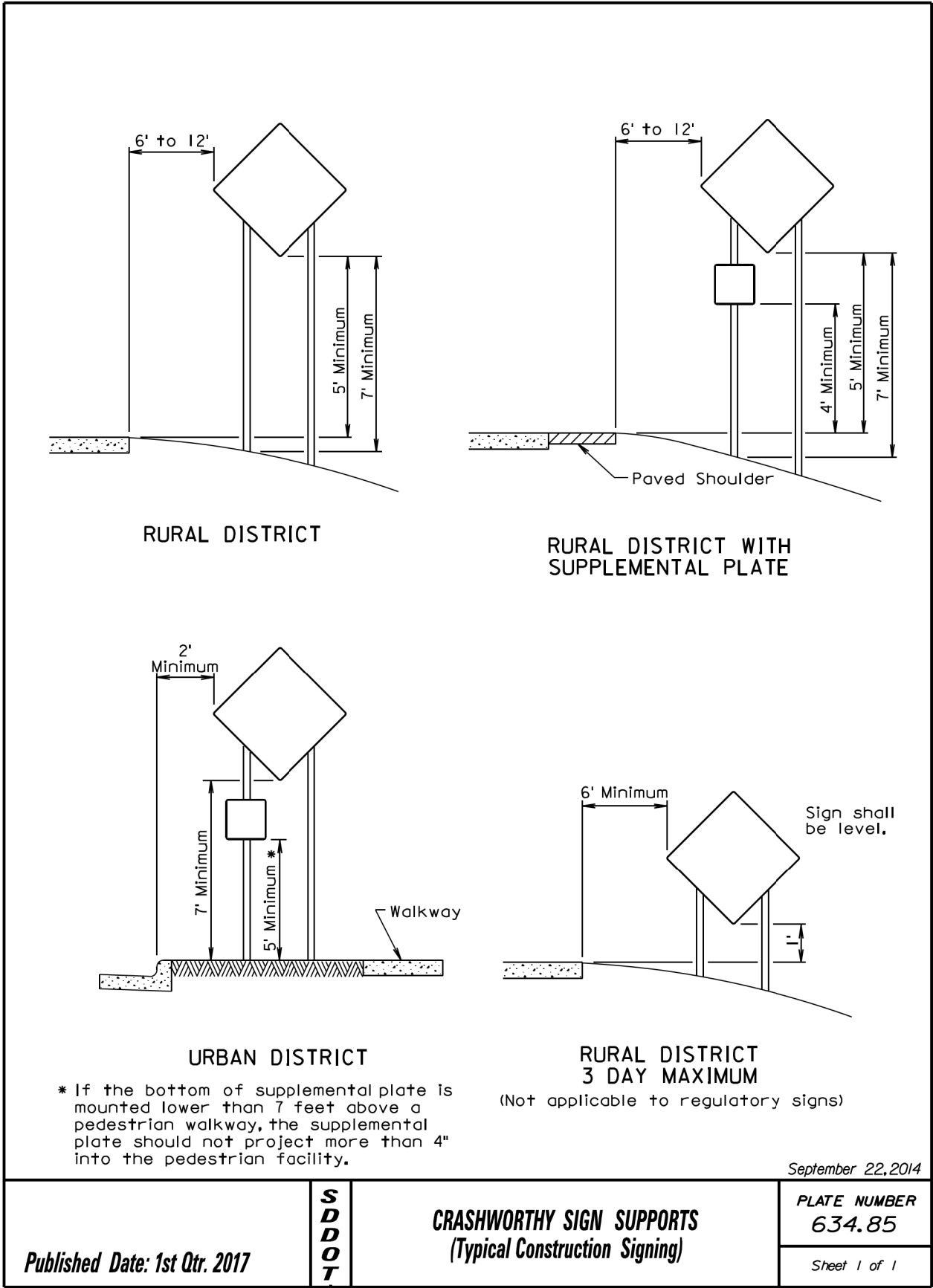


STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	16A3 - 491	14	21

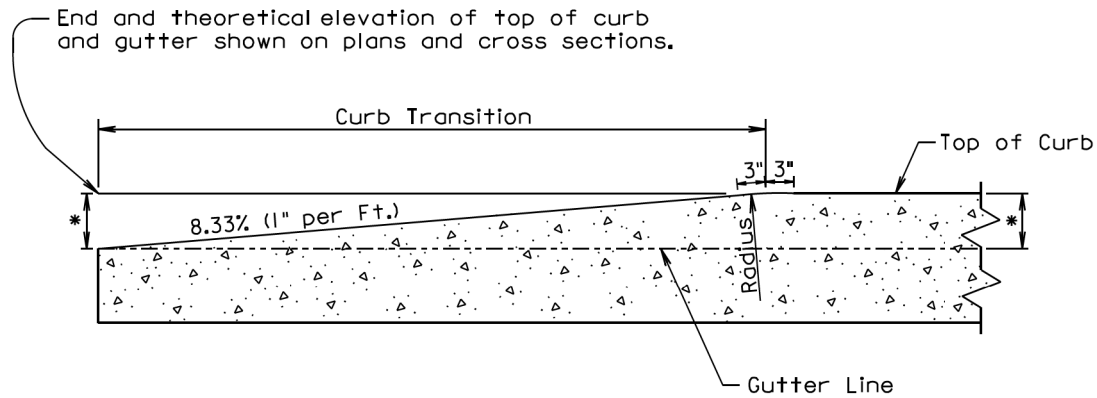
Plotting Date: 04/27/2017



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	16A3 - 491	15	21
Plotting Date: 04/27/2017			



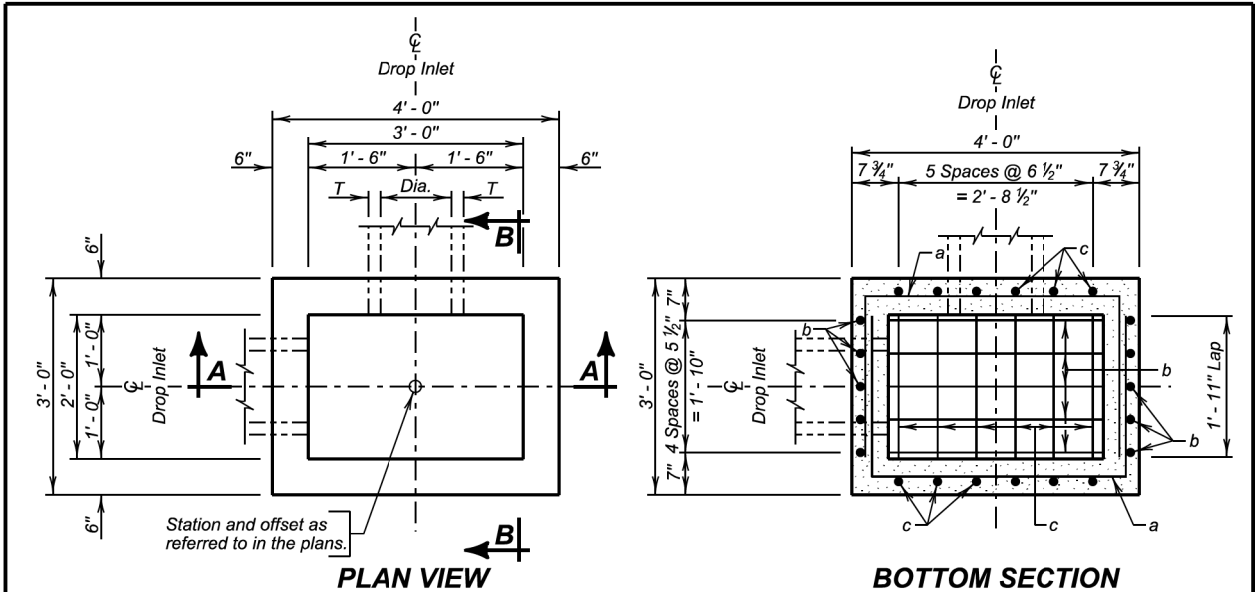
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	16A3 - 491	16	21
Plotting Date: 04/27/2017			



LONGITUDINAL SECTION OF CONCRETE CURB TAPER

September 14, 2005

Published Date: 2nd Qtr. 2017	S D D O T	CONCRETE CURB TAPER	PLATE NUMBER 650.35
			Sheet 1 of 1



ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
* Class M6 Concrete	Cu. Yd.	0.26	0.22H
Reinforcing Steel	Lb.	83.03	28.97H
Frame and Grate Assembly	Each	1	

DROP INLETS FOR 12" TO 24" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.
Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

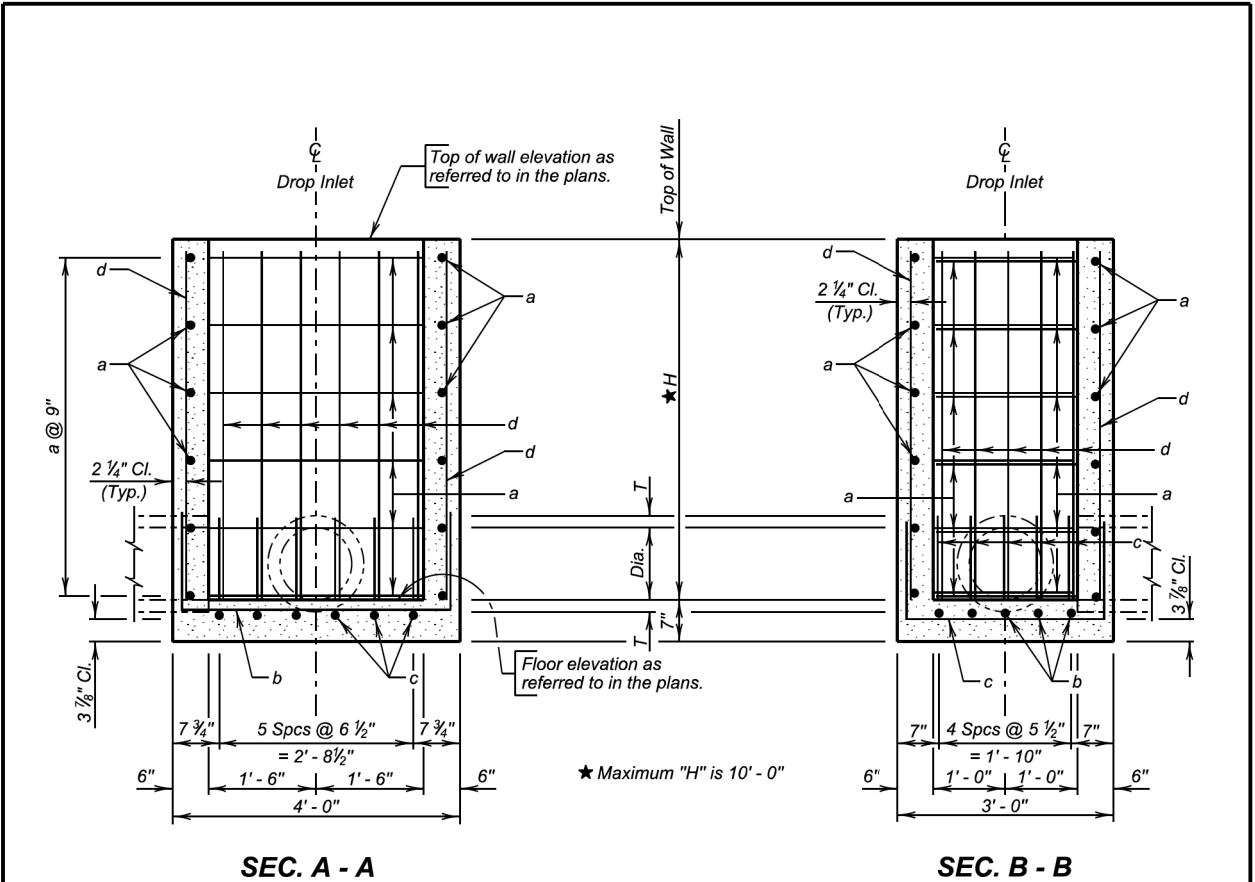
GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.
Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.
Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.
* Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.
Drop inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.
Maximum R.C.P. diameter shall not exceed 18 inches on the 2-foot wide side and shall not exceed 24 inches (24 inches for R.C. arch) on the 3-foot wide side of the drop inlet.

The dimension of H is in feet. Maximum H is 10 feet.

December 16, 2015

Published Date: 1st Qtr. 2017	S D D O T	2' X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.01
			Sheet 1 of 2



REINFORCING SCHEDULE				
Mk.	No.	Size	Length	Type
a	2.67H	4	8' - 0"	17
b	5	5	6' - 3"	17
c	6	4	5' - 3"	17
d	22	4	H - 2"	Str.

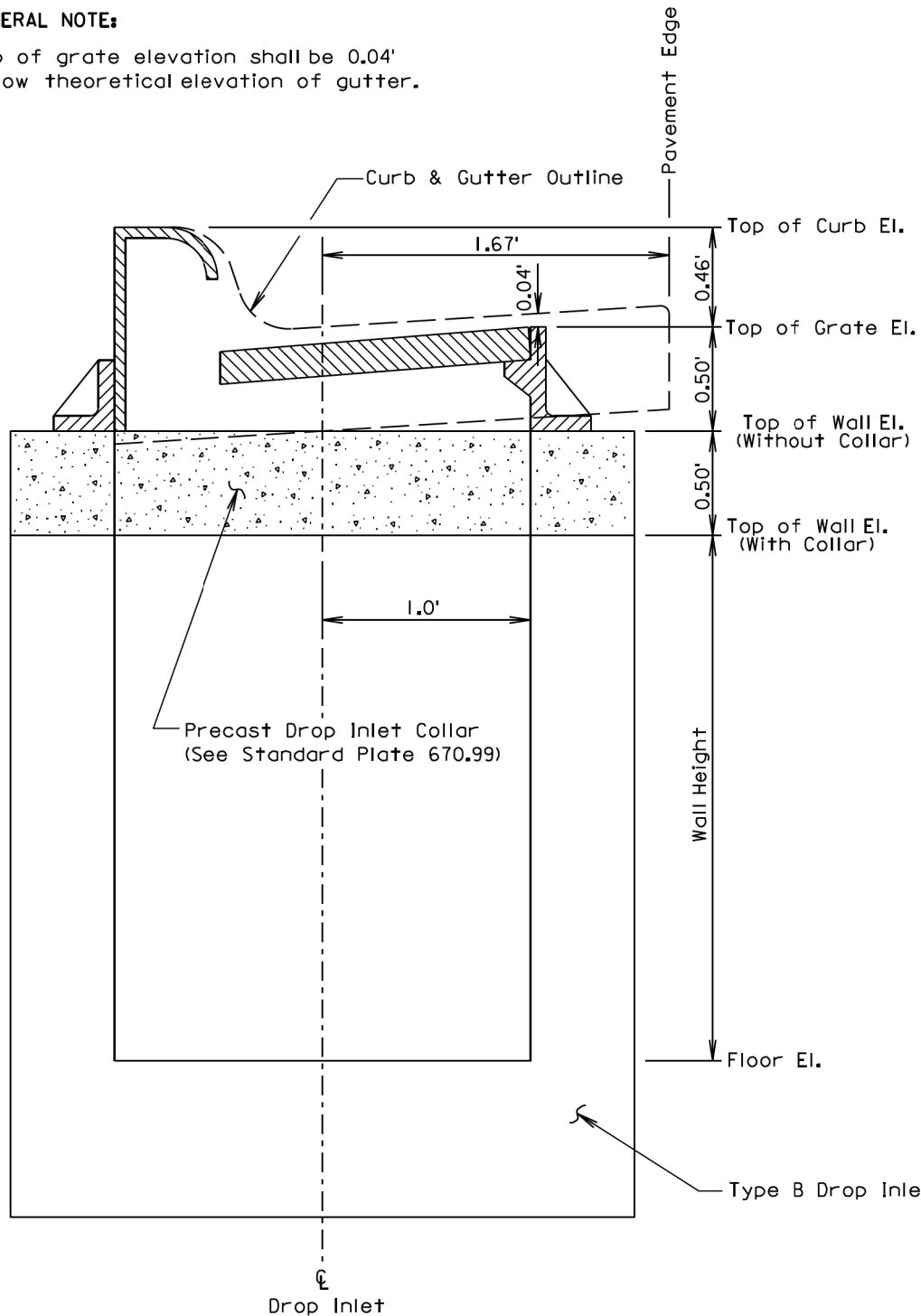
NOTE:
All dimensions are out to out of bars.

December 16, 2015

Published Date: 1st Qtr. 2017	S D D O T	2' X 3' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.01
			Sheet 2 of 2

GENERAL NOTE:

Top of grate elevation shall be 0.04' below theoretical elevation of gutter.



June 26, 2011

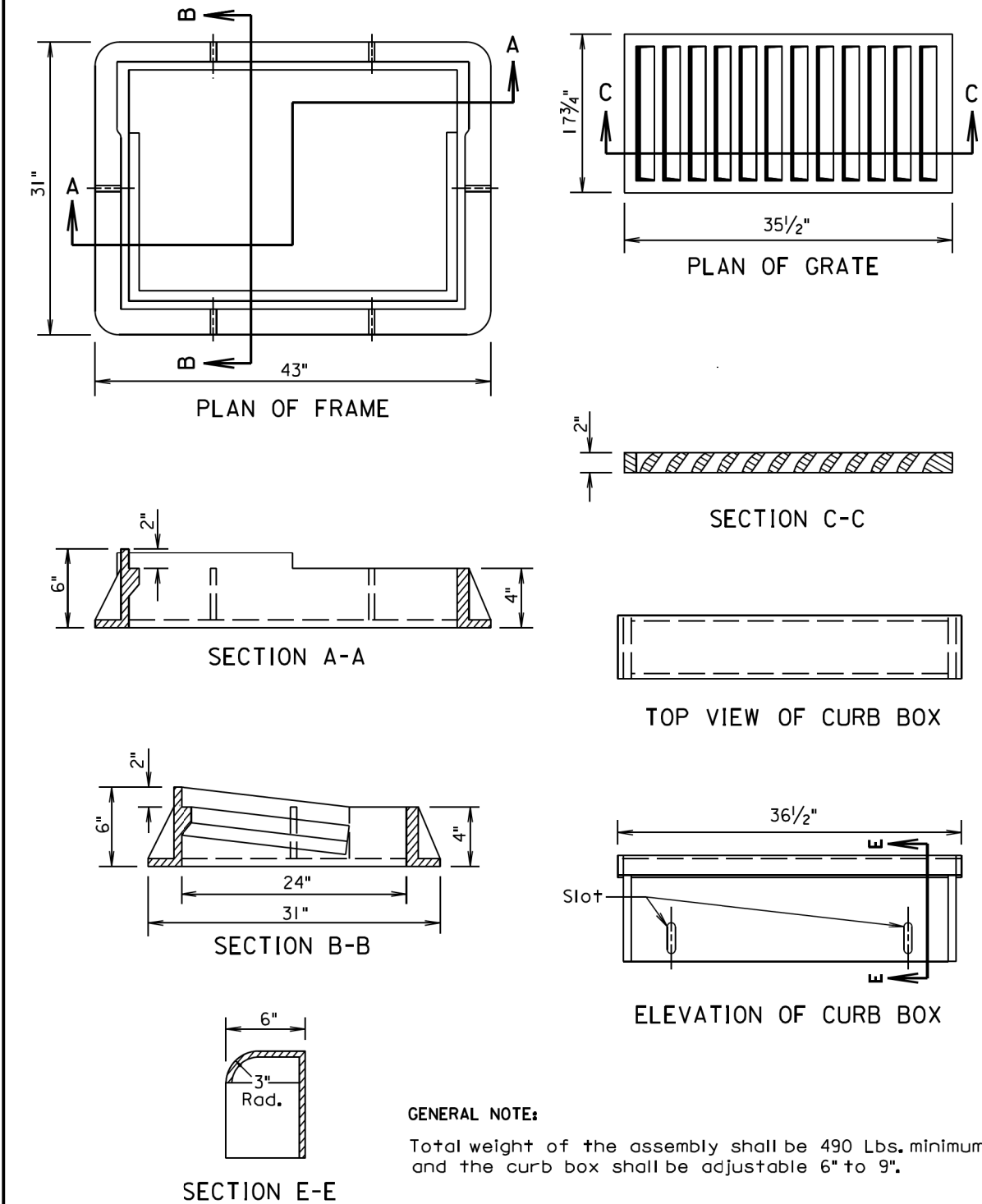
S
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INSTALLATION OF TYPE B DROP INLET

PLATE NUMBER
670.75

Sheet 1 of 1

Published Date: 1st Qtr. 2017



GENERAL NOTE:

Total weight of the assembly shall be 490 Lbs. minimum and the curb box shall be adjustable 6" to 9".

March 31, 2000

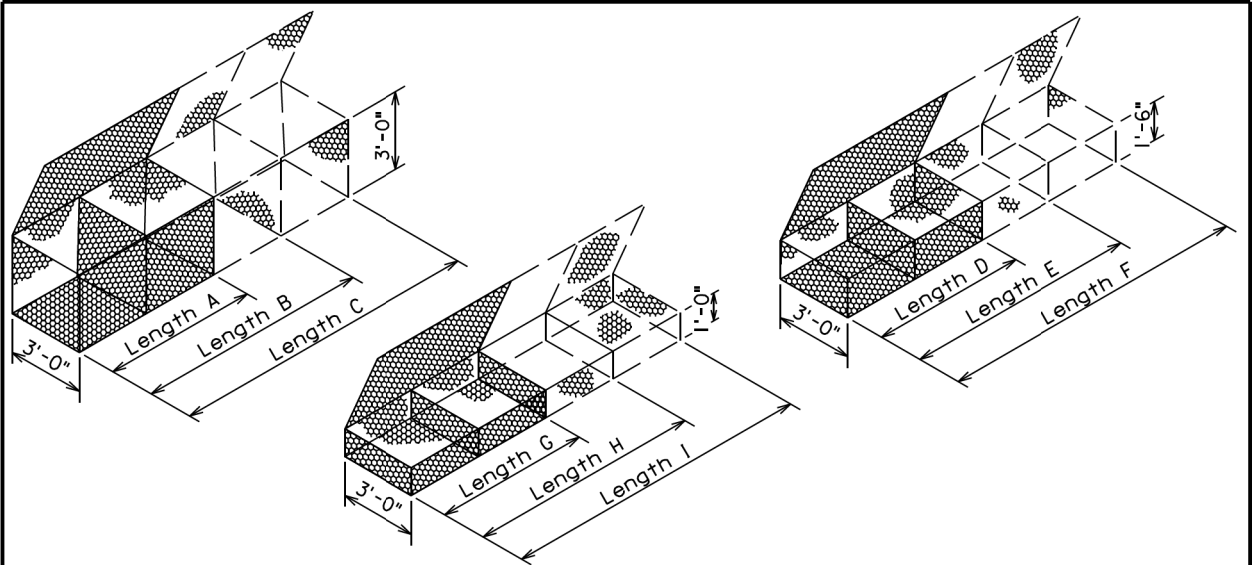
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TYPE B FRAME AND GRATE ASSEMBLY

PLATE NUMBER
670.80

Sheet 1 of 1

Published Date: 1st Qtr. 2017



GABION DETAILS
STANDARD SIZES

SIZE	LENGTH	WIDTH	HEIGHT	NUMBER OF CELLS	CAPACITY, Cu. Yd.
A	6'-0"	3'-0"	3'-0"	2	2.0
B	9'-0"	3'-0"	3'-0"	3	3.0
C	12'-0"	3'-0"	3'-0"	4	4.0
D	6'-0"	3'-0"	1'-6"	2	1.0
E	9'-0"	3'-0"	1'-6"	3	1.5
F	12'-0"	3'-0"	1'-6"	4	2.0
G	6'-0"	3'-0"	1'-0"	2	0.7
H	9'-0"	3'-0"	1'-0"	3	1.0
I	12'-0"	3'-0"	1'-0"	4	1.3

Above Dimensions subject to mill tolerances.

GENERAL NOTES:

Lacing and internal connecting wire shall be 0.0866 inch diameter steel wire ASTM A641 Class 3 soft temper measured after galvanizing and for PVC coated gabions shall be 0.0866 inch diameter steel wire measured after galvanizing but before PVC coating.

The lacing procedure is as follows:

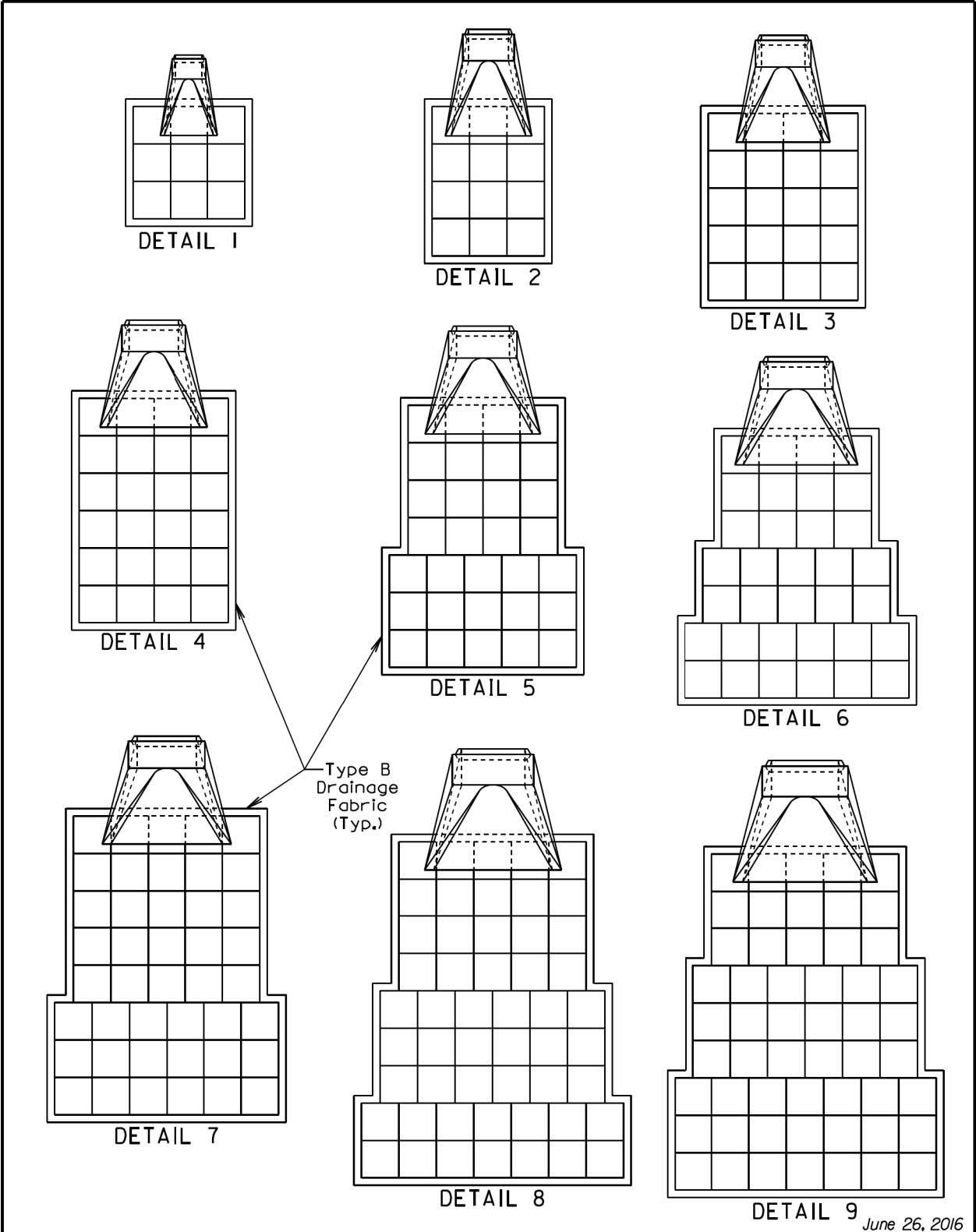
1. Cut a length of lacing wire approximately 1 1/2 times the distance to be laced but not exceeding 5 feet.
2. Secure the wire terminal at the corner by looping and twisting.
3. Proceed lacing with alternating single and double loops at a spacing not to exceed 6 inches.
4. Securely fasten the other lacing wire terminal.

Wire lacing or interlocking type fasteners shall be used for gabion assembly and final construction of gabion structures. Interlocking fasteners for galvanized gabions shall be high tensile 0.120 inch diameter galvanized steel wire measured after galvanizing. The galvanizing shall conform to ASTM A641-92 Class 3 coating. Fasteners shall also be in accordance with ASTM A764, Class II, Type III.

Interlocking fasteners for PVC coated gabions shall be high tensile 0.120 inch diameter stainless steel wire conforming to ASTM A313, Type 302, Class I. The spacing of the interlocking fasteners during all phases of assembly and construction shall not exceed 6 inches. All fasteners shall be placed where the mesh weaves around the selvage wire at the vertical and horizontal joints.

June 26, 2001

Published Date: 1st Qtr. 2017	S D D O T	BANK AND CHANNEL PROTECTION GABIONS	PLATE NUMBER
			720.01
			Sheet 1 of 1



Type B
Drainage
Fabric
(Typ.)

June 26, 2016

Published Date: 1st Qtr. 2017	S D D O T	BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS	PLATE NUMBER
			720.03
			Sheet 1 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	16A3 - 491	20	21

Plotting Date: 04/27/2017

RCP, RCP Arch, CMP, and CMP Arch	ESTIMATED QUANTITIES *			
	Detail	Pipe Diameter (Inches)	Gabion (Cu. Yd.)	Type B Drainage Fabric (Sq. Yd.)
	1	12, 18, and 24	4.5	15
	2	30 and 36	6.0	19
	3	42	10.0	29
	4	48 and 54	12.0	34
	5	60	15.5	43
	6	66	17.0	47
	7	72	21.5	57
	8	78	26.0	68
	9	84	27.0	70

GENERAL NOTES:

Gabions at outlets of CMP and RCP shall be placed under the end section a distance of 2' from the outlet end. For CMP end section installations, the upper fabric of the gabions shall be modified to accommodate the metal end section as approved by the Engineer.

* Gabion and type B drainage fabric quantities on this standard plate are based on standard gabion sizes D, E, and F as depicted on Standard Plate 720.01.

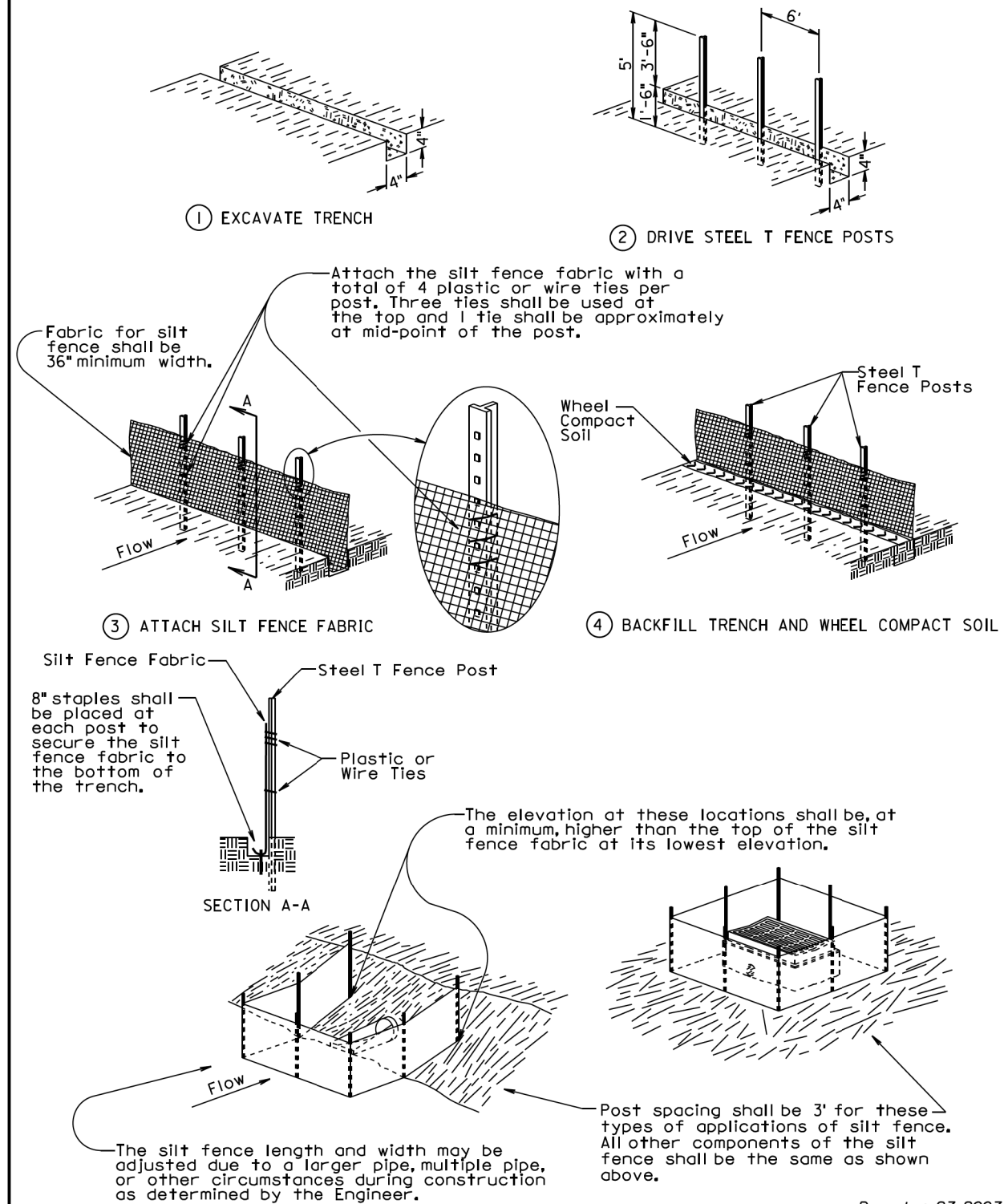
Type B drainage fabric shall be placed under the gabions and around the exterior sides (perimeter) of the gabions as approved by the Engineer. The type B drainage fabric shall be in conformance with Section 831 of the Specifications. Measurement and payment of the type B drainage fabric shall be in conformance with Section 720 of the Specifications.

June 26, 2016

Published Date: 1st Qtr. 2017	S D D O T	BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS	PLATE NUMBER 720.03
			Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	16A3 - 491	21	21
Plotting Date: 04/27/2017			

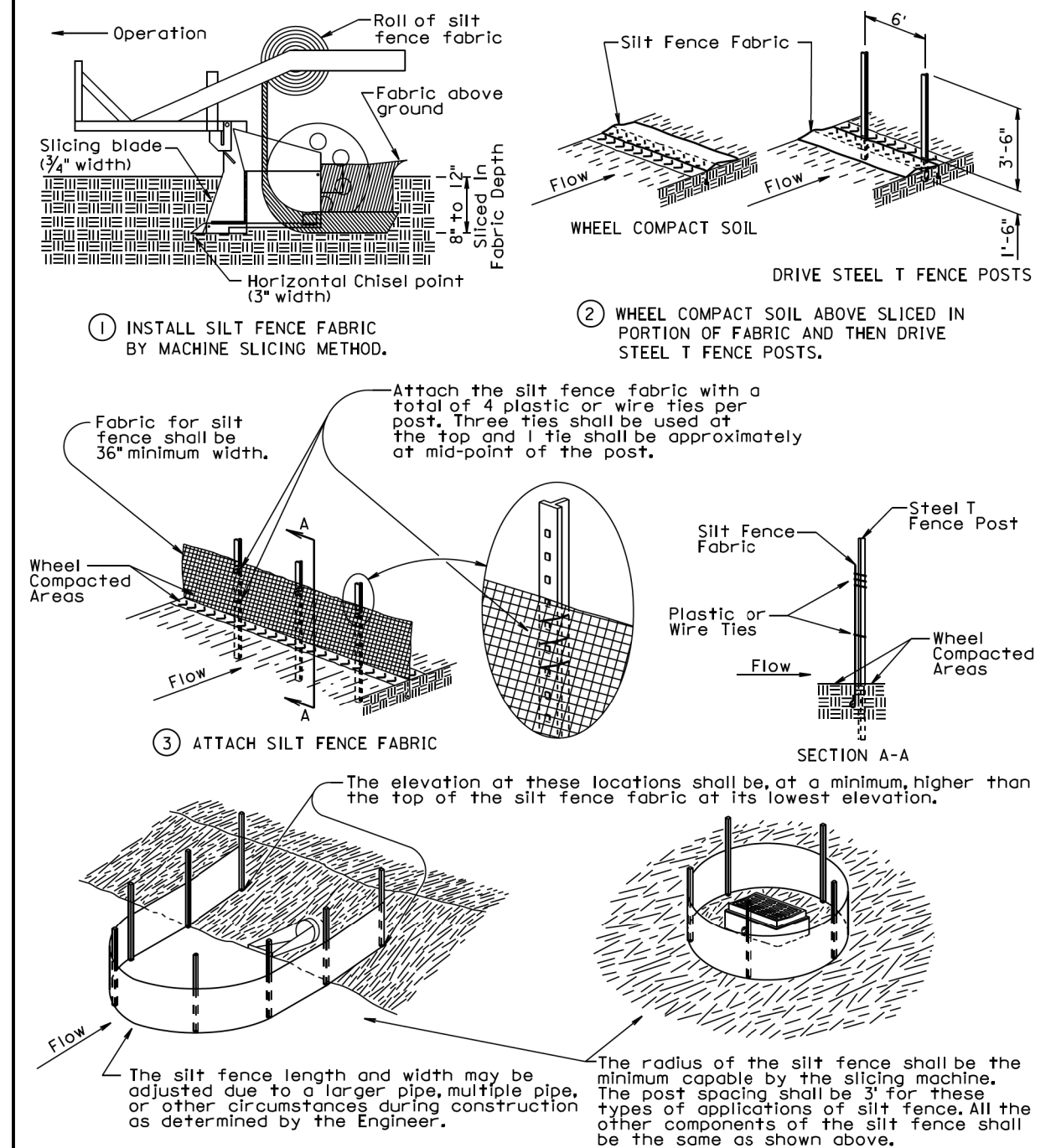
MANUAL HIGH FLOW SILT FENCE INSTALLATION



December 23, 2003

Published Date: 1st Qtr. 2017	S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



GENERAL NOTE:

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 shall be provided on top of the extra length of silt fence fabric to prevent underflow.

December 23, 2003

Published Date: 1st Qtr. 2017	S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 2 of 2