Department of Transportation

Office of Project Development

700 E Broadway Avenue
Pierre, South Dakota 57501-2586 605/773-3268
FAX: 605/773-6608

April 16, 2015

ADDENDUM NO. 2

RE: Item #8, April 17, 2015 Letting - PH 0040(15), PCN 02MT, Butte, Custer County - High Grade Polymer Pavement Markings

TO WHOM IT MAY CONCERN:

The following addenda to the plans shall be inserted and made a part of your proposal for the referenced project.

SPECIAL PROVISIONS: NO CHANGE

BID ITEM FILE: Bid Item 110E1400 "Remove Pavement Marking, 4" or Equivalent" quantity changed from 31,431 Ft to 36,960 Ft

Bid Item 633E5050 "Surface Preparation for Pavement Marking" quantity changed from 103,604 Ft to 136,180 Ft

Please assure the letting date is 04/17/2015 in the upper right corner of the SDEBS Project Item Bid Detail Screen prior to creating and submitting your bid.

PLANS:

Please remove sheets 3 through 7 and replace with the enclosed sheets dated 4/15/15 and 4/16/15.

SHEET 3: Estimate of Quantities –
Bid Item 110E1400 "Remove Pavement Marking, 4" or Equivalent" quantity changed from 31,431 Ft to 36,960 Ft
Bid Item 633E5050 "Surface Preparation for Pavement Marking" quantity changed from 103,604 Ft to 136,180 Ft

WORK DESCRIPTION note was updated to include the need for Surface Preparation on SD34 centerline markings.

SHEET 4: PAVEMENT MARKING PAINT WITH HIGH GRADE POLYMER note was revised.

SURFACE PREPARATION FOR PAVEMENT MARKING note was revised.

REMOVE PAVEMENT MARKING, 4" OR EQUIVALENT (SD79) note was revised.

SHEET 5: COORDINATION WITH COLD APPLIED PLASTIC PAVEMENT MARKINGS PROJECT note moved from sheet 4 to sheet 5.

SHEET 6: MARKING QUANTIITES BY LOCATION table was revised.

SHEET 7: PAVEMENT MARKING LAYOUT sheet was revised to include a typical section.

Sincerely,

Sam Weisgram
Engineering Supervisor

CC: Todd Seaman, Rapid City Region Engineer
Rich Zacher, Custer Area Engineer

ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1400	Remove Pavement Marking, 4" or Equivalent	36,960	Ft
633E1200	Waterborne Pavement Marking Paint with High Grade Polymer, White	1,325.0	Gal
633E1205	Waterborne Pavement Marking Paint with High Grade Polymer,Yellow	951.0	Gal
633E5050	Surface Preparation for Pavement Marking	136,180	Ft
633E5100	Grooving for Durable Pavement Marking, 4"	328,256	Ft
634E0010	Flagging	50	Hour
634E0020	Pilot Car	25	Hour
634E0100	Traffic Control	560	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each

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.

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:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the 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".

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

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

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

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

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all 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.

WORK DESCRIPTION

Work on this project consists of Grooving and applying Waterborne Pavement Marking Paint with High Grade Polymer on the following routes:

1. SD34: Wyoming State Line to Belle Fourche – Asphalt Pavement
   MRM 000.000 to MRM 009.811
   a. All Markings
      - Centerlines – Surface Preparation, Grooved-In
      - Edgelines – Surface Preparation

2. SD79: Buffalo Gap to Fairburn – Concrete Pavement Southbound lanes Asphalt Pavement Northbound lanes.
   MRM 034.000 to MRM 048.000
   a. Edgelines Only
      - Edgelines Only – Grooved-In

PERMANENT PAVEMENT MARKINGS

All surfaces have existing markings and the Contractor is encouraged to review all routes prior to bidding.

All materials shall be applied as per manufacturer's recommendations.

SPECIFICATIONS

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

U.S. Department of Transportation Federal Highway Administration Manual on Uniform Traffic Control Devices, 2009 Edition, and current Revisions.

PAVEMENT MARKING PAINT WITH HIGH GRADE POLYMER

All materials shall be applied as per manufacturer's recommendations.

This material shall consist of a durable high build, low VOC, fast drying, waterborne traffic paint with a 100% acrylic polymer (DOW DT-400 or DOW HD-21A or equivalent) and with reflective media adhered to the paint. The reflective media shall consist of glass beads as well as bonded core reflective elements.

The bonded core reflective elements shall contain either clear or yellow tinted microcrystalline ceramic beads bonded to the outer surface. All microcrystalline ceramic beads bonded to reflective elements shall have a minimum index of refraction of 1.8 when tested using the liquid oil immersion method.

The Department will take retro-reflectivity readings on the pavement marking lines no sooner than 3 days and no later than 30 days after the completion of all line applications required for an individual highway route using a portable retro-reflectometer conforming to 30-meter geometry. Retro-reflectivity readings will be taken on a test location with cleaning being limited to light hand brooming.

Pavement markings not conforming to the Retro-reflectivity requirements shall be removed and replaced. If replacement of markings cannot be applied within the same year, the Contractor shall schedule subject work to be completed no later than June 15th in the following year. Upon replacement, the retro-reflectivity testing process will be done again requiring new readings.

The Department will randomly select one test location per mile of each edge line including ramps and one test location per mile of centerline (solid and/or skip line will be considered as one centerline). Three retro-reflectivity readings will be taken at each test location. The three readings will be averaged and become the reading for that test location.

Initial Readings (within 3 - 30 days of the line application):

Pavement Marking Color	Minimum Value
White	350 mcd/m2/lux
Yellow	275 mcd/m2/lux

All pavement markings not conforming to the requirements provided in these plans will be considered deficient and shall be removed and replaced. Additional retro-reflectivity readings will be taken by the Department to determine the limits of removal. The removal shall be accomplished using suitable sand blasting or grinding equipment unless the Engineer authorizes other means. The removal process shall remove at least 90% of the deficient line, with no excessive scarring of the existing pavement. The removal width shall be one inch wider all around the nominal width of the pavement marking to be removed. Removal and replacement of the pavement markings shall be at Contractor's expense, with no cost incurred by the State.

RATES OF MATERIALS FOR HIGH GRADE POLYMER PAINT

Solid 4" Line = 27.8 Gals/Mile
Glass Beads – 5.3 Lbs/Gal
Composite Reflective Elements – 2.1 Lbs/Gal

All cost for materials, labor, and equipment necessary to furnish and install the pavement markings shall be incidental to the contract unit price per gallon for Waterborne Pavement Marking Paint with High Grade Polymer, White or Yellow.

GROOVE PAVEMENT FOR PAINT WITH HIGH GRADE POLYMER

The Contractor shall establish a positive means for the removal of the grinding and/or grooving residue. Solid residue shall be removed from the pavement surfaces before being blown by traffic action or wind. Residue shall not be permitted to flow across lanes being used by public traffic or into gutter or drainage facilities. Residue, whether in solid or slurry form, shall be handled in a manner that will prevent it from reaching any waterway in a concentrated state and shall be disposed of at an approved facility. Contractor shall not store or place residue in the Right-of-Way.

Unless otherwise specified in the plans, the Contractor shall groove the surface for Pavement Marking Paint with High Grade Polymer as specified in these plans and as per manufacturer's instructions.

The grooving shall be completed within the following tolerances:

Depth of Groove:	70 mils ± 5 mils
Width of 4" Groove:	5" to 6"
Length of Skip Lines:	10'-6" with tolerance of ± 3"
Tapers at Begin/End Lines:	6" to 9"

The equipment shall be capable of the following:

- Grooving the total width of the groove in one pass or uniform depths with multiple passes.
- Grooving without causing damage to the pavement joints or joint sealant material.
- Providing uniform alignment and depth.
- Moving continuously to permit a mobile traffic work operation.

If damage to joints, joint sealant material, backer rod, etc. occurs, the grooving operation shall be stopped and modifications shall be made to the grooving operation to prevent further damage. The Contractor may be required to use specially prepared circular diamond blade cutting heads to prevent damage at the joints. Damage caused to joints, the joint sealant material, backer rod, etc. shall be repaired or replaced by the Contractor, as directed by the Engineer. No additional payment will be made for the repair work or any reapplication of the pavement marking in the area of the repair.

Grooving on bridge decks shall start and stop a sufficient distance from the expansion joints so no damage occurs in these areas. Markings on bridge decks shall be surface applied.

The grooving process shall remove the existing marking that falls within the width of the new groove.

SURFACE PREPARATION FOR PAVEMENT MARKING

Edgeline and centerline markings on SD34 shall require surface preparation prior to installation of the new markings. The Contractor shall remove all existing pavement marking by a method approved by the Engineer. Any markings within the rumble strip shall be removed by sand blasting, water blasting, or by a method approved by the Engineer. The contractor shall not cause any damage to the effectiveness of the rumble strip. Centerline markings on SD 34 are not consistently in the center of the road and will need to be removed prior to grooving for the new centerline. New pavement markings shall be per the detail shown in the (Typical 2-Lane) Pavement Marking Layout. It is recognized that there may be small remnants of marking paint left within the crevices of the road surface which is acceptable. All Contractor costs for labor and equipment required for subject removal shall be incidental to the contract unit price per foot for Surface Preparation for Pavement Marking.

REMOVE PAVEMENT MARKING, 4" OR EQUIVALENT (SD 79)

Markings that fall outside of the new groove on SD 79 shall be removed (at least 90%) using additional methods approved by the Engineer. Removal of existing markings shall be accomplished without causing damage to the pavement, pavement joints, or joint sealant (Contractor shall repair any damages for no additional payment and at no cost to the State). All costs for materials, labor, and equipment necessary to remove the existing markings shall be incidental to the contract unit price per foot for Remove Pavement Marking, 4" or Equivalent.

The estimated removal quantity is 25% of the total project length.

NO PASSING ZONES

The No Pass Zones on SD34 shall be reviewed prior to the application of any new centerline markings. The Contractor shall advise the Engineer a minimum of three (3) weeks prior to the application of permanent pavement markings to allow the State to mark the locations of No Pass Zones.

SEQUENCE OF OPERATIONS

The Contractor shall maintain traffic in accordance with applicable MUTCD Standards, Section 4.4 and 634 of the Specifications, and the details shown in these plans.

Construction work areas shall be limited in length to what the Contractor can groove and paint in a day's production on two-lane highway and low speed (posted speed limited of 45 mph or less) multilane highway segments. High speed multilane highway segments (posted speed limit greater than mph) shall be limited to 3 mile lane closures. The distance between the closed points of any two construction work areas, including channelizing devices shall not be less than 3 miles.

Separate projects may be underway at the same time as this project; therefore the Contractor shall coordinate work zones with the adjacent construction projects to avoid any conflicting traffic control signing.

COORDINATION WITH COLD APPLIED PLASTIC PAVEMENT MARKINGS PROJECT

A pavement marking project PH 0040(17), PCN 02MS is scheduled for construction season 2015. The Contractor on this project shall coordinate with the Contractor on the Cold Applied Plastic Pavement Markings project work zones with the adjacent construction projects to avoid any conflicting traffic control signing.

Location of Cold Applied Plastic Pavement Marking Project:

- SD Highway 79, MRM 34.000 to MRM 48.000

TRAFFIC CONTROL

Each construction work area shall be individually signed throughout the entire length of the construction work area.

The quantity of signs paid will be for the number of installations per sign per highway segment (as shown in the Itemized List for Traffic Control by location table located in these plans) in place at any one time regardless of the number of set-ups on the project.

SD79 shall have one lane open to traffic at all times in each direction.

The delay to the travelling public shall not exceed 15 minutes during pilot car operation.

Resetting, temporary relocation, and/or covering of existing or conflicting traffic control devices as necessary to adequately maintain traffic or perform the work, shall be the responsibility of the Contractor. This work shall be included in the contract lump sum price for Traffic Control, Miscellaneous.

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.

Cost of equipment and traffic control devices on equipment, including arrow panels, attenuators, and signs (per the Guides for Traffic Control Devices Mobile Operations as shown in these plans) will be paid for at the contract lump sum price for Traffic Control, Miscellaneous.

Where practical and when needed, the work and shadow vehicles should pull over periodically to allow vehicular traffic to pass.

Whenever adequate stopping sight distance exists to the rear, the shadow vehicles should maintain the minimum distance from the work vehicle and proceed at the same speed. The shadow vehicles should slow down in advance of vertical or horizontal curves that restrict sight distance.

The shadow vehicles should also be equipped with two high-intensity flashing lights mounted on the rear, adjacent to the sign.

The distance between the work and shadow vehicles may vary according to terrain, paint drying time, and other factors.

Additional shadow vehicles to warn and reduce the speed of oncoming or opposing vehicular traffic may be used. No additional payment will be made for additional shadow vehicles.

Contractor 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.

Damage to the ditch due to the Contractor's operations shall be repaired by the Contractor, to the satisfaction of the Engineer, at no expense to the State.

No work will be allowed during hours of darkness. Hours of darkness are defined as ½ hour after sunset and ½ hour before sunrise.

No overnight lane closures will be allowed.

The Contractor shall have tabs on hand to mark centerline and edgelines in the case of an event that prevents reapplication of markings prior to nightfall. All cost for materials, labor, and equipment necessary to furnish and install the tabs shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

During non-working hours, all materials and equipment shall be stored a minimum of 30 feet from the traveled lanes.

MARKING QUANTITIES BY LOCATION

ITEM	SD34 (MRM 000.000 to MRM 009.811) QUANTITY	SD79 (MRM 034.000 to MRM 048.000) QUANTITY	TOTAL QUANTITY	UNIT
Mobilization	Lump Sum		Lump Sum	LS
Remove Pavement Marking, 4" or Equivalent	0	36,960	36,960	Ft
Waterborne Pavement Marking Paint with High Grade Polymer, White	546	779	1,325	Gal
Waterborne Pavement Marking Paint with High Grade Polymer, Yellow	172	779	951	Gal
Surface Preparation for Pavement Marking	136,180	0	136,180	Ft
Grooving for Durable Pavement Marking, 4"	32,576	295,680	328,256	Ft

ITEMIZED LIST FOR TRAFFIC CONTROL

		SD HIGHWAY 34				SD HIGHWAY 79			
SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
W4-2	LEFT or RIGHT LANE ENDS (symbol)		48" x 48"	34		2	48" x 48"	34	68
W16-2P	___ FEET (supplemental distance plaque)	2	30" x 24"	18	36		30" x 24"	18	
W20-1	ROAD WORK AHEAD	2	48" x 48"	34	68	3	48" x 48"	34	102
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68		48" x 48"	34	
W20-5	LEFT or RIGHT LANE CLOSED AHEAD		48" x 48"	34		2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68		48" x 48"	34	
G20-2	END ROAD WORK	2	36" x 18"	17	34	2	48" x 24"	24	48
*****	FLAGGING	50			Hour				
*****	PILOT CAR	25			Hour				
*****	TYPE C ADVANCE WARNING ARROW PANEL					1			Each
					TOTAL UNITS 274				TOTAL UNITS 286

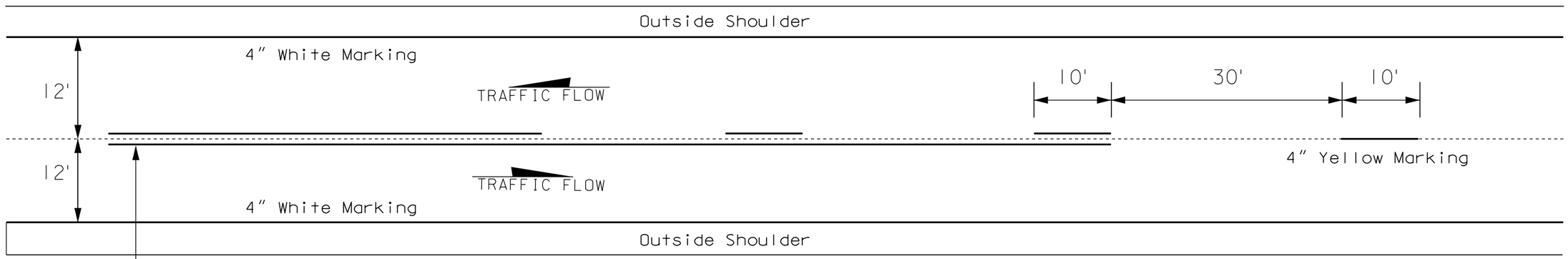
PAVEMENT MARKING LAYOUT

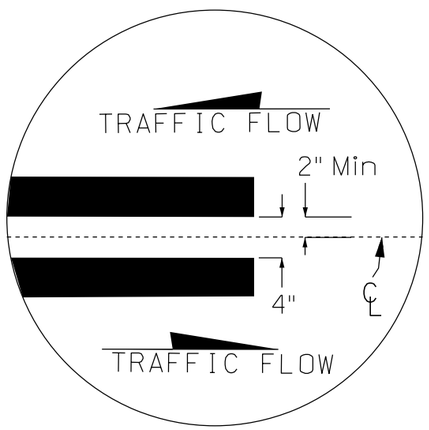
(TYPICAL 2-LANE)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0040(15)	7	11

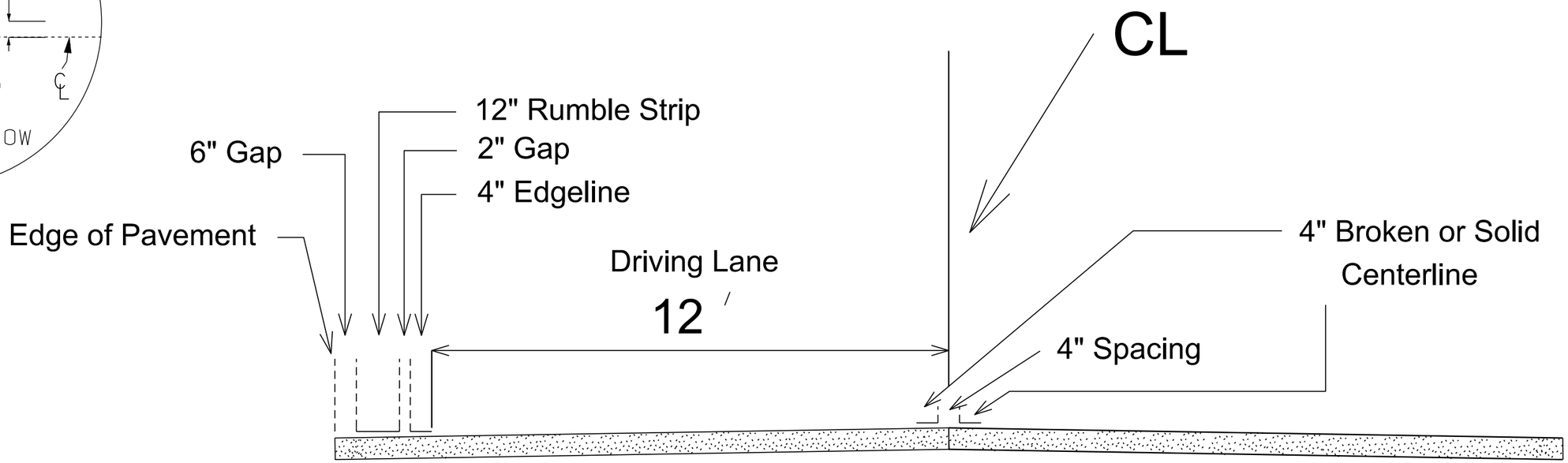
Plotting Date: 04/16/2015

Revised: 4/16/15, DC





SD34 Typical



Plot Scale - 1:200

Plotted From - trrc11628

File - ...\2015\02MT_Typical.dgn