

PLOT SCALE - 1:7000

PLOTTED FROM - I90W-253.DGN

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED

PROJECT 090W-253 & 090E-253  
INTERSTATE 90W & 90E  
LYMAN COUNTY  
SPOT ASPHALT CONCRETE RESURFACING  
ON BUMP/HEAVE AREAS & EDGE DRAINS  
PCN I3WC & I3WD

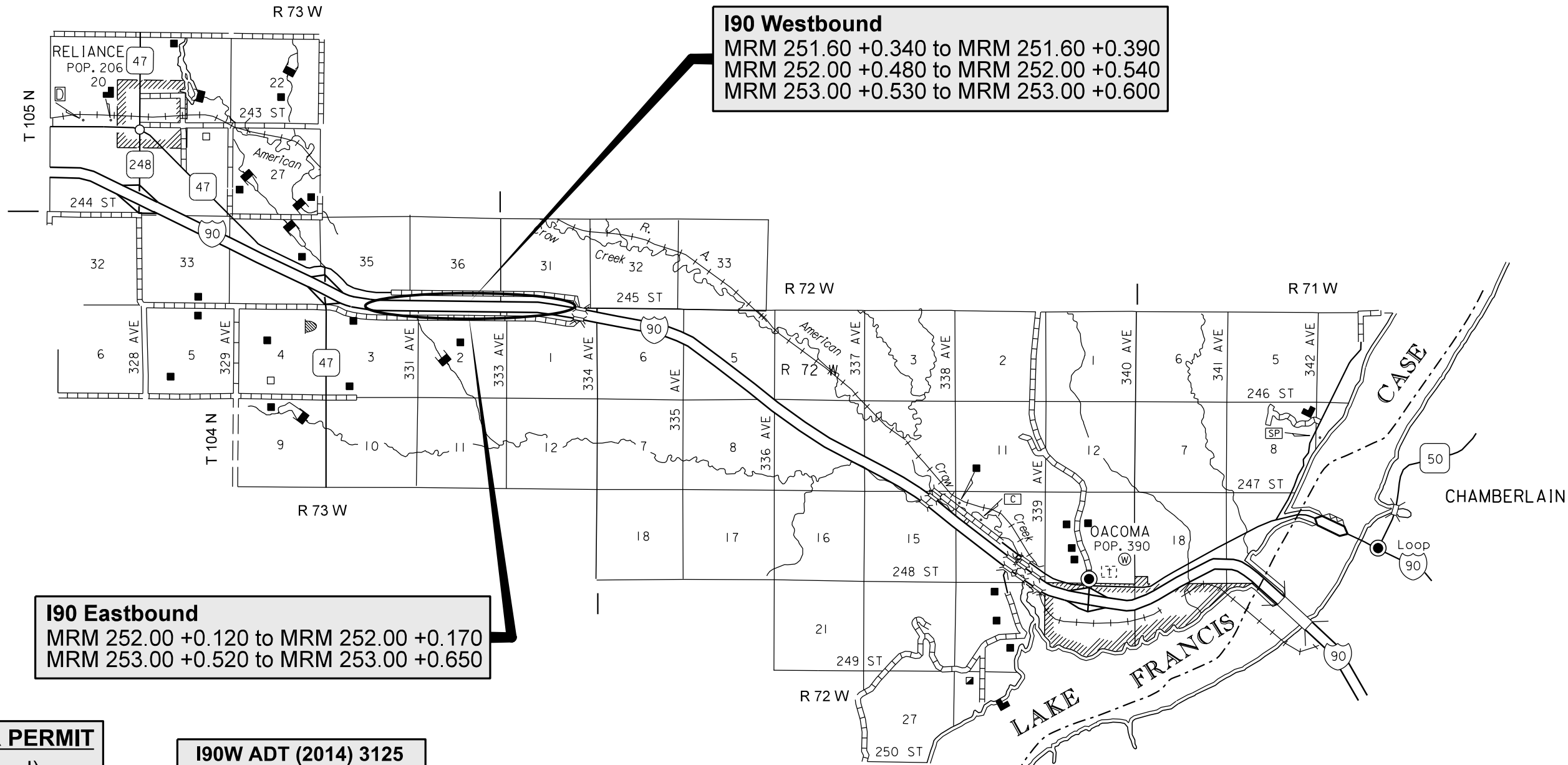
| STATE OF SOUTH DAKOTA | PROJECT             | SHEET | TOTAL SHEETS |
|-----------------------|---------------------|-------|--------------|
|                       | 090W-253 & 090E-253 | 1     | 13           |

Plotting Date: 05/28/2015

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PROJECT



**STORM WATER PERMIT**  
(None required)

**I90W ADT (2014) 3125**  
**I90E ADT (2014) 3125**

LENGTH 950 FEET 0.180 MILE

PLOT NAME - 6

FILE - ...\\2015 BUMP-HEAVE TITL ETC.DGN

ESTIMATE OF QUANTITIES

|                                |                     |       |                 |
|--------------------------------|---------------------|-------|-----------------|
| STATE<br>OF<br>SOUTH<br>DAKOTA | PROJECT             | SHEET | TOTAL<br>SHEETS |
|                                | 090W-253 & 090E-253 | 2     | 13              |

090W-253  
PCN I3WC

| Bid Item<br>Number | Item   | Quantity | Unit |
|--------------------|--|----------|------|
| 009E0010           | Mobilization                                       | Lump Sum | LS   |
| 260E1010           | Base Course  | 39.6     | Ton  |
| 320E1200           | Asphalt Concrete Composite                         | 709.0    | Ton  |
| 332E5000           | Grinding Asphalt Concrete                          | 1,866    | SqYd |
| 634E0010           | Flagging   | 50.0     | Hour |
| 634E0100           | Traffic Control                                    | 598      | Unit |
| 634E0120           | Traffic Control, Miscellaneous                     | Lump Sum | LS   |
| 634E0420           | Type C Advance Warning Arrow Panel                 | 1        | Each |
| 634E0630           | Temporary Pavement Marking                         | 1.2      | Mile |
| 680E0240           | 4" Corrugated Polyethylene Drainage Tubing         | 20       | Ft   |
| 680E0440           | 4" Slotted Corrugated Polyethylene Drainage Tubing | 402      | Ft   |
| 680E2010           | Precast Concrete Headwall for Drain                | 2        | Each |
| 680E2500           | Porous Backfill                                    | 283.0    | Ton  |

090E-253  
PCN I3WD

| Bid Item<br>Number | Item   | Quantity | Unit |
|--------------------|--|----------|------|
| 009E0010           | Mobilization                                       | Lump Sum | LS   |
| 260E1010           | Base Course  | 77.6     | Ton  |
| 320E1200           | Asphalt Concrete Composite                         | 720.0    | Ton  |
| 332E5000           | Grinding Asphalt Concrete                          | 1,244    | SqYd |
| 634E0010           | Flagging   | 50.0     | Hour |
| 634E0100           | Traffic Control                                    | 598      | Unit |
| 634E0120           | Traffic Control, Miscellaneous                     | Lump Sum | LS   |
| 634E0420           | Type C Advance Warning Arrow Panel                 | 1        | Each |
| 634E0630           | Temporary Pavement Marking                         | 1.2      | Mile |
| 680E0240           | 4" Corrugated Polyethylene Drainage Tubing         | 20       | Ft   |
| 680E0440           | 4" Slotted Corrugated Polyethylene Drainage Tubing | 718      | Ft   |
| 680E2010           | Precast Concrete Headwall for Drain                | 2        | Each |
| 680E2500           | Porous Backfill                                    | 517.0    | Ton  |

**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 B: FEDERALLY THREATENED, ENDANGERED AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes’ black wing tips are visible during flight

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pit or staging site associated with the project, cease construction activities in the affected area until the Whooping Crane departs and contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

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.

Action Taken/Required:

The Contractor shall obtain the necessary permits form the regulatory agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE) prior to executing water extraction activities.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum, and regardless of project size, appropriated 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.

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (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.

SCOPE OF WORK

The intent of the mainline repair is to improve the overall ride of the existing surface on Interstate 90 by placing edge drains, overlaying the rough area with asphalt concrete composite and grinding the asphalt concrete composite to achieve a smooth ride at the following locations:

Westbound

MRM 251.60 +0.340 to MRM 251.60 +0.390  
MRM 252.00 +0.480 to MRM 252.00 +0.540  
MRM 253.00 +0.530 to MRM 253.00 +0.600

Eastbound

MRM 252.00 +0.120 to MRM 252.00 +0.170  
MRM 253.00 +0.520 to MRM 253.00 +0.650

SAWING OF EXISTING ASPHALT CONCRETE

Where new asphalt concrete composite is placed adjacent to existing asphalt concrete, in the edge drain trench, 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.

EDGE DRAINS

The trench to place the edge drains shall be one to two feet wide. The existing asphalt concrete on the shoulder shall be sawed to a true line with a vertical face prior to placement of the edge drain. If the true line is damaged during the edge drain work, the asphalt concrete shall be sawed again to a true and vertical face prior to placement of the asphalt concrete composite.

Edge drains shall be placed six feet deep adjacent to the driving lane as per the details in the plans from MRM 253.00 +0.530 to MRM 253.00 +0.600 Westbound and MRM 253.00 +0.520 to MRM 253.00 +0.650 Eastbound. The existing edge drains, which are approximately two feet deep, shall be removed through these areas. Elbows shall be placed on the existing edge drains at MRM 253.00 +0.530 WB and MRM 253.00 +0.520 EB. New outlet drains shall be placed at these locations to outlet the water from the existing edge drain.

One outlet drain shall elbow off of the new edge drain in the westbound lane at MRM 253.00 + 0.600.

EDGE DRAINS (CONTINUED)

One outlet drain shall elbow off of the new edge drain in the eastbound lane at MRM 253.00 +0.650.

The part of the installation using slotted tubing shall be backfilled to within one foot of the surface of the existing asphalt concrete with porous backfill. Nine inches of base course shall then be placed and compacted on top of the porous backfill. The remaining three inches of the trench shall be filled with asphalt concrete composite.

The part of the installation using solid wall tubing will be backfilled and compacted with material from the excavation.

Cost of the 10' sections of 4" PVC pipe are included in the contract unit price per foot for 4" Corrugated Polyethylene Drainage Tubing.

Concrete headwalls are to be installed at the outlet of each drain. Payment for supplying and installing the precast concrete headwall shall be incidental to the contract unit price per each for Precast Concrete Headwall for Drain.

BASE COURSE

Base course for backfilling the 9" of material between the porous backfill and the Asphalt Concrete Composite in the edge drain trenches shall be compacted to the satisfaction of the Engineer.

The cost of water for compaction of the granular material shall be incidental to the Base Course bid item. Six plus or minus percent moisture will be required at the time of compaction unless otherwise directed by the Engineer.

All other requirements for Base Course shall apply.

ASPHALT CONCRETE COMPOSITE

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

All other requirements in the 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 estimated quantities are approximate and there will be no increase in the contract unit price per ton for Asphalt Concrete Composite for any increases or decreases in either the haul or quantity.

The Asphalt for Tack SS-1h or CSS-1h shall be applied at a rate of 0.05 gallon per square yard prior to each lift.

The Flush Seal on mainline shall be applied upon completion of Grinding Asphalt Concrete.

Asphalt for Flush Seal SS-1h or CSS-1h shall be applied 17.5 feet wide on the passing lane and 23.5 feet wide on the driving lane.

The rate of application for the oil shall be 0.05 gallon per square yard.

ASPHALT CONCRETE COMPOSITE (CONTINUED)

Sand for Flush Seal will only be required on the Mainline Repair Areas.

The sand application shall be placed immediately behind the distributor.

The loose sand material left on the surface shall be broomed off prior to opening to traffic as determined by the Engineer.

Sand for Flush Seal shall be applied 12 feet wide on each lane at a rate of 8 pounds per square yard.

SURFACING THICKNESS DIMENSIONS

At those locations where material must be placed to achieve a required elevation, plans tonnage may be varied to achieve the required elevation.

The Contractor shall conduct their operations in such a manner to ensure that at no time during the bump repair portion of the project, the asphalt concrete installation depth per individual lift is greater than 2 inches. The Contractor shall expect to place multiple lifts of asphalt concrete at one repair location for sure, possibly more. The Engineer will determine the exact number of lifts required at each repair location.

BUMP REPAIR LOCATIONS

An estimated 39.9 tons of Asphalt Concrete Composite is to be placed by the Contractor in the edge drain trenches.

An estimated 1389.1 tons of Asphalt Concrete Composite is to be placed by the Contractor for the patches at the locations shown in the plans.

The Engineer will determine the exact locations and extent of repair required at each repair location.

GRINDING ASPHALT CONCRETE

The Contractor will be required to grind the on and off ends of the mainline asphalt repair areas, as defined by the direction of travel. Grinding shall be such that no vertical lip of any kind is present on either end of the repair area. To accomplish this, it may be necessary to grind into the existing concrete prior to the asphalt concrete patch approximately 10 to 15 feet to achieve the desired smoothness. It is estimated that the grinding area will be 50 feet in length at each end of each patch. The Engineer will determine the extent of grinding required at each location.

Additional grinding may be required on the repair area upon completion of the work, as directed by the Engineer, to achieve an acceptable smoothness.

Grinding shall be accomplished with specially prepared circular diamond blades mounted on a horizontal shaft. Areas that have been ground shall not be left smooth or polished, but shall have a uniform texture equal in roughness to the surrounding unground asphalt concrete. Grinding shall be day lighted to the outside edge of the pavement.

The grinding of the ends of the asphalt concrete patches will be measured and paid for at the contract unit price per square yard for Grinding Asphalt Concrete.

**GRINDING ASPHALT CONCRETE (CONTINUED)**

Included in the estimate of quantities is 1000 square yard of Grinding Asphalt Concrete to be used at the discretion of the Engineer. This quantity is designated for areas of which the Engineer determines additional grinding is required to improve the overall ride of the asphalt concrete patch.

The ground up asphalt concrete shall become the property of the Contractor.

**STURGIS MOTORCYCLE RALLY**

No lane closures will be allowed from Wednesday, July 29, 2015 through Monday, August 10, 2015.

**SEQUENCE OF OPERATIONS**

1. Set up traffic control to close the driving lane.
2. Complete the edge drain installation. The Asphalt Concrete Composite, to backfill the top of the edge drain trench, shall be placed within two working days of completion of the edge drain installation.
3. Place Asphalt Concrete Composite on Mainline Driving Lane and shoulder of each repair area.
4. Place Asphalt Concrete Composite on Mainline Passing Lane and shoulder of each repair area.
5. Grind the on and off ends of each of the asphalt concrete patches in the driving lane to make a smooth transition between the existing concrete and the new asphalt concrete. If grinding is needed on the rest of the patch complete that at this time also.
6. Grind the on and off ends of each of the asphalt concrete patches in the passing lane to make a smooth transition between the existing concrete and the new asphalt concrete. If grinding is needed on the rest of the patch complete that at this time also.
7. Place flush seal on mainline driving lane and outside shoulder of each repair area.
8. Place flush seal on mainline passing lane and median shoulder of each repair area.
9. Remove traffic control.

**TRAFFIC CONTROL**

Traffic shall be maintained through the project at ALL times.

The Contractor may perform work on the roadway during daylight hours only. Daylight hours are considered to be ½ hour before sunrise until ½ hour after sunset.

Concrete pavement bump repair shall be confined to a 12 foot lane width, leaving the adjoining 12 foot lane open as a through traffic lane. Traffic shall not be routed onto the bituminous shoulders. Closure of both mainline lanes (24 feet total width) will not be allowed.

**TRAFFIC CONTROL (CONTINUED)**

The Contractor shall conduct his operation in such a manner to ensure that both lanes in a given repair area are completed prior to opening up the entire roadway to traffic. The Contractor shall allow sufficient cooling time of each lift of asphalt prior to opening to traffic, as directed by the Engineer. Uneven lanes in a given area open to traffic will not be permitted.

Lane closures shall be removed from the roadway if no work will be completed on the project for more than two working days.

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

The Contractor's vehicles and equipment will not be allowed to use the maintenance crossovers at any time during the construction of the project.

**GENERAL MAINTENANCE OF TRAFFIC**

Removing, relocating, covering, salvaging and resetting of permanent traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. 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 to 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.

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.

Sufficient traffic control devices have been included in these plans to sign one workspace on each project. If the Contractor elects to work on additional sites simultaneously, the cost for additional traffic control devices shall be incidental to the contract unit price per unit for Traffic Control.

**TEMPORARY PAVEMENT MARKING**

Temporary pavement markers shall be used for Temporary Pavement Marking. They shall have secure covers. If the covers become detached, prior to flush sealing, the temporary pavement marker shall be replaced with a new marker. Any markers that are non-reflective shall be cleaned.

At the end of each day, the temporary pavement marking shall be in place and visible.

**TEMPORARY PAVEMENT MARKING (CONTINUED)**

Temporary Pavement Marking shall be paid for on:

1. The top lift of the asphalt concrete patches.
2. The grinding of the asphalt concrete patches if the tabs are disturbed.
3. Removal of the covers after the flush seal.
4. Tapers for the closures. Six closures are anticipated to require temporary pavement markers.

**PERMANENT PAVEMENT MARKING**

Permanent Pavement Marking shall be applied by State Forces upon completion of the project.

ITEMIZED LIST FOR TRAFFIC CONTROL

090W-253 LYMAN COUNTY PCN I3WC

| SIGN<br>CODE | SIGN SIZE | DESCRIPTION                             | NUMBER<br>REQUIRED | UNITS PER<br>SIGN | UNITS |
|--------------|-----------|---|--------------------|-------------------|-------|
| G20-2        | 48" x 24" | END ROAD WORK                           | 1                  | 24                | 24    |
| R2-1         | 36" x 48" | SPEED LIMIT **                          | 6                  | 29                | 174   |
| R2-6aP       | 36" x 24" | FINES DOUBLE (PLAQUE)                   | 1                  | 20                | 20    |
| W3-5         | 48" x 48" | SPEED LIMIT ** AHEAD (SYMBOL)           | 3                  | 34                | 102   |
| W4-2         | 48" x 48" | LEFT OR RIGHT LANE ENDS (SYMBOL)        | 2                  | 34                | 68    |
| W20-1        | 48" x 48" | ROAD WORK AHEAD                         | 2                  | 34                | 68    |
| W20-5        | 48" x 48" | LEFT OR RIGHT LANE CLOSED AHEAD         | 2                  | 34                | 68    |
| W20-7        | 48" x 48" | FLAGGER                                 | 1                  | 34                | 34    |
| ****         | ****      | TYPE III BARRICADE - 8 FT. SINGLE SIDED | 1                  | 40                | 40    |
| TOTAL UNITS  |           |   |                    |                   | 598   |

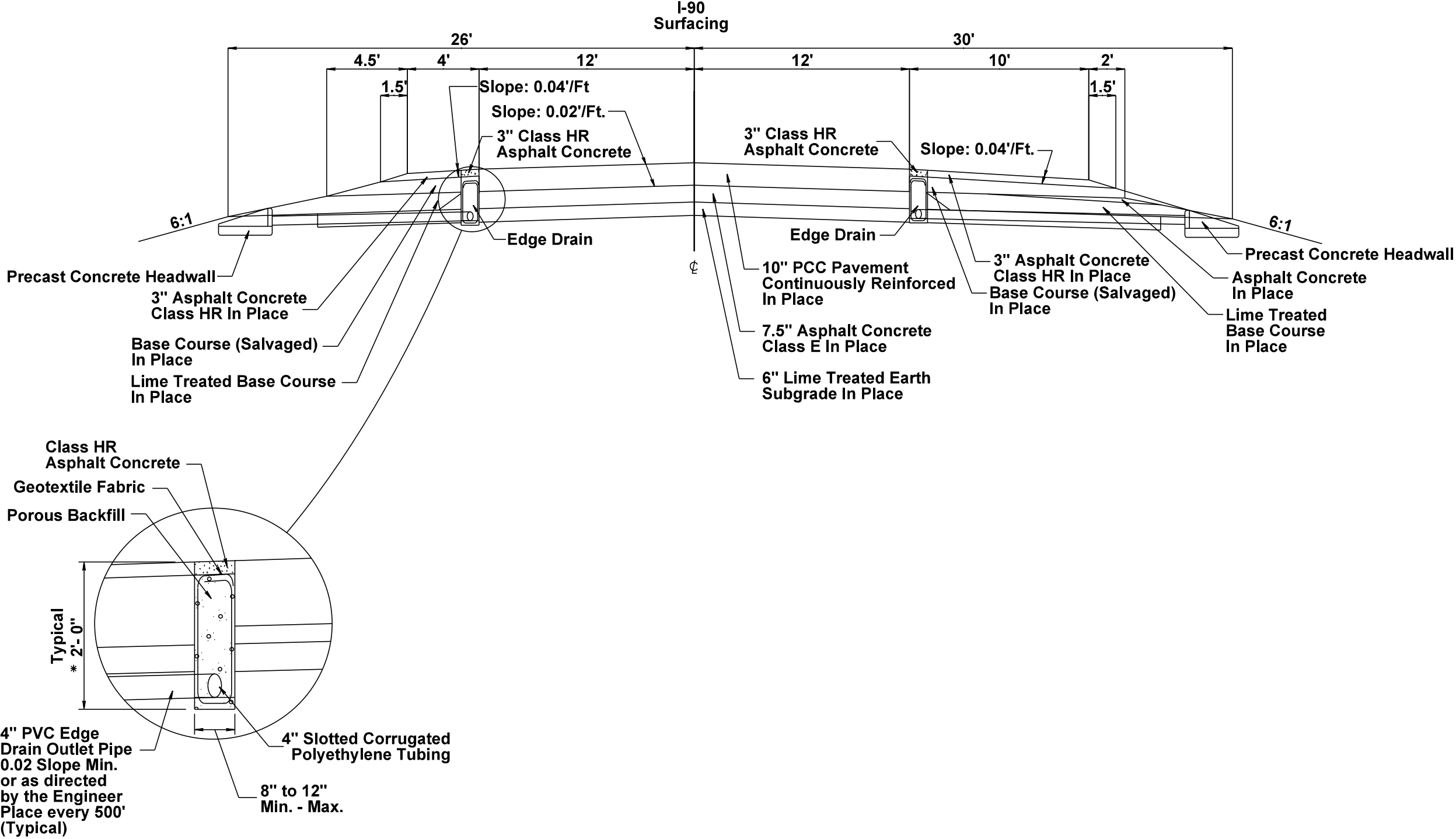
090E-253 LYMAN COUNTY PCN I3WD

| SIGN<br>CODE | SIGN SIZE | DESCRIPTION                             | NUMBER<br>REQUIRED | UNITS PER<br>SIGN | UNITS |
|--------------|-----------|---|--------------------|-------------------|-------|
| G20-2        | 48" x 24" | END ROAD WORK                           | 1                  | 24                | 24    |
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| R2-6aP       | 36" x 24" | FINES DOUBLE (PLAQUE)                   | 1                  | 20                | 20    |
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| W4-2         | 48" x 48" | LEFT OR RIGHT LANE ENDS (SYMBOL)        | 2                  | 34                | 68    |
| W20-1        | 48" x 48" | ROAD WORK AHEAD                         | 2                  | 34                | 68    |
| W20-5        | 48" x 48" | LEFT OR RIGHT LANE CLOSED AHEAD         | 2                  | 34                | 68    |
| W20-7        | 48" x 48" | FLAGGER                                 | 1                  | 34                | 34    |
| ****         | ****      | TYPE III BARRICADE - 8 FT. SINGLE SIDED | 1                  | 40                | 40    |
| TOTAL UNITS  |           |   |                    |                   | 598   |

# EXISTING TYPICAL EDGE DRAINS

|                                |                     |       |                 |
|--------------------------------|---------------------|-------|-----------------|
| STATE<br>OF<br>SOUTH<br>DAKOTA | PROJECT             | SHEET | TOTAL<br>SHEETS |
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PLOT SCALE - 1:7000

PLOTTED FROM - TRW1INT06

PLOT NAME - 6

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PLOT SCALE - 1:7000

PLOTTED FROM - TRM1INT06

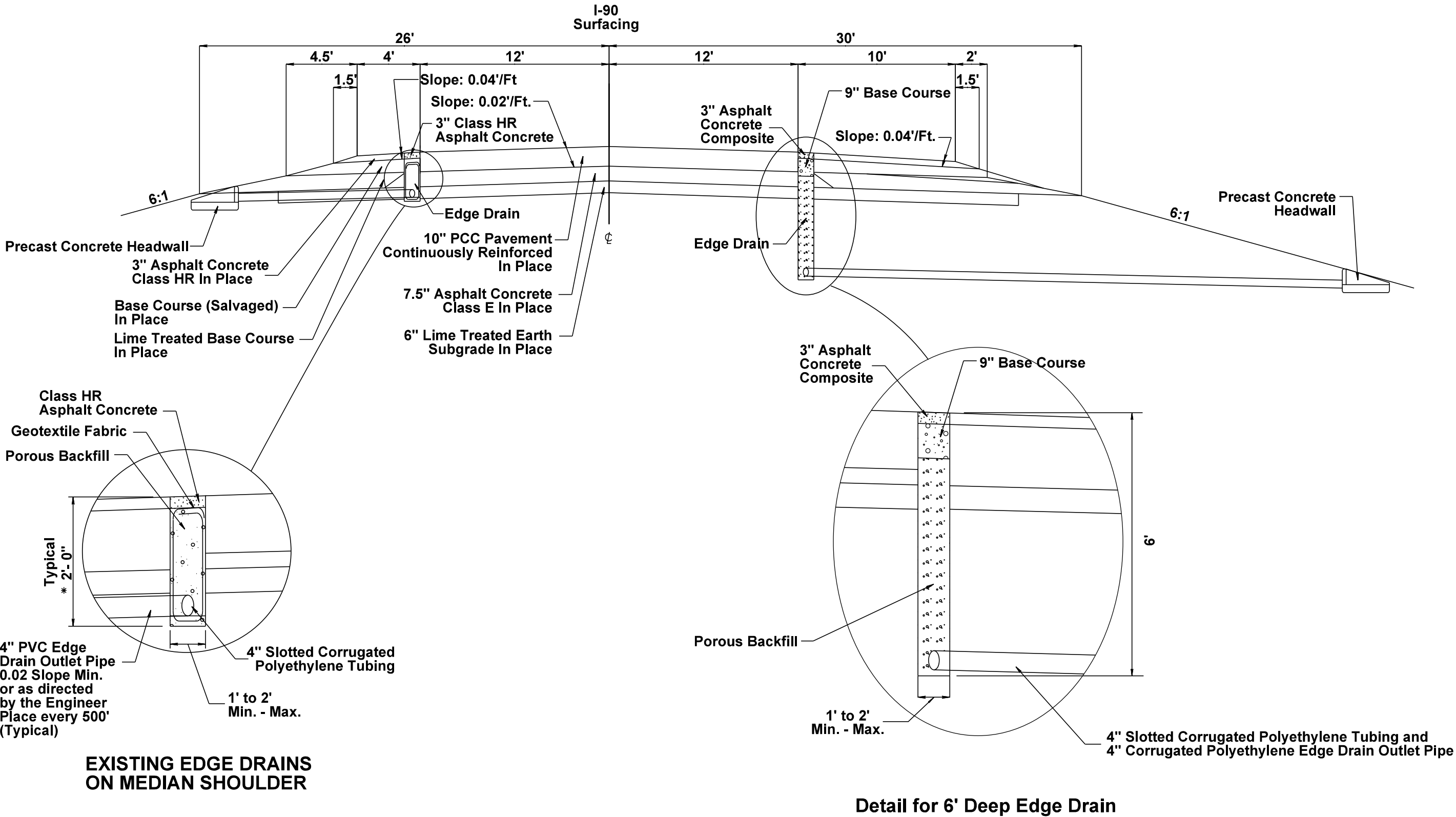
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# TYPICAL EDGE DRAINS

PLOT NAME - 6

FILE - ... \2015 BUMP-HEAVE TITL ETC.DGN





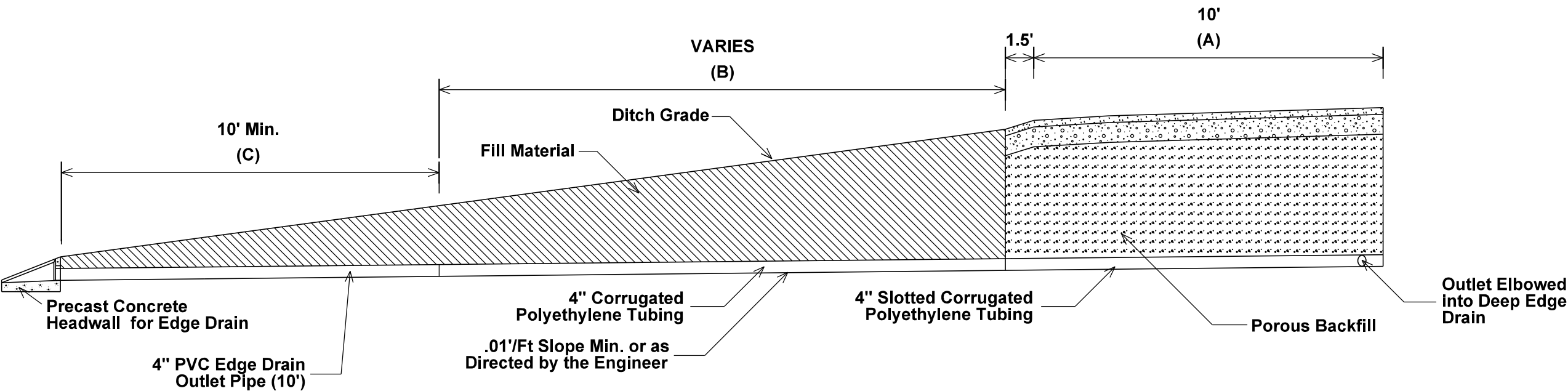
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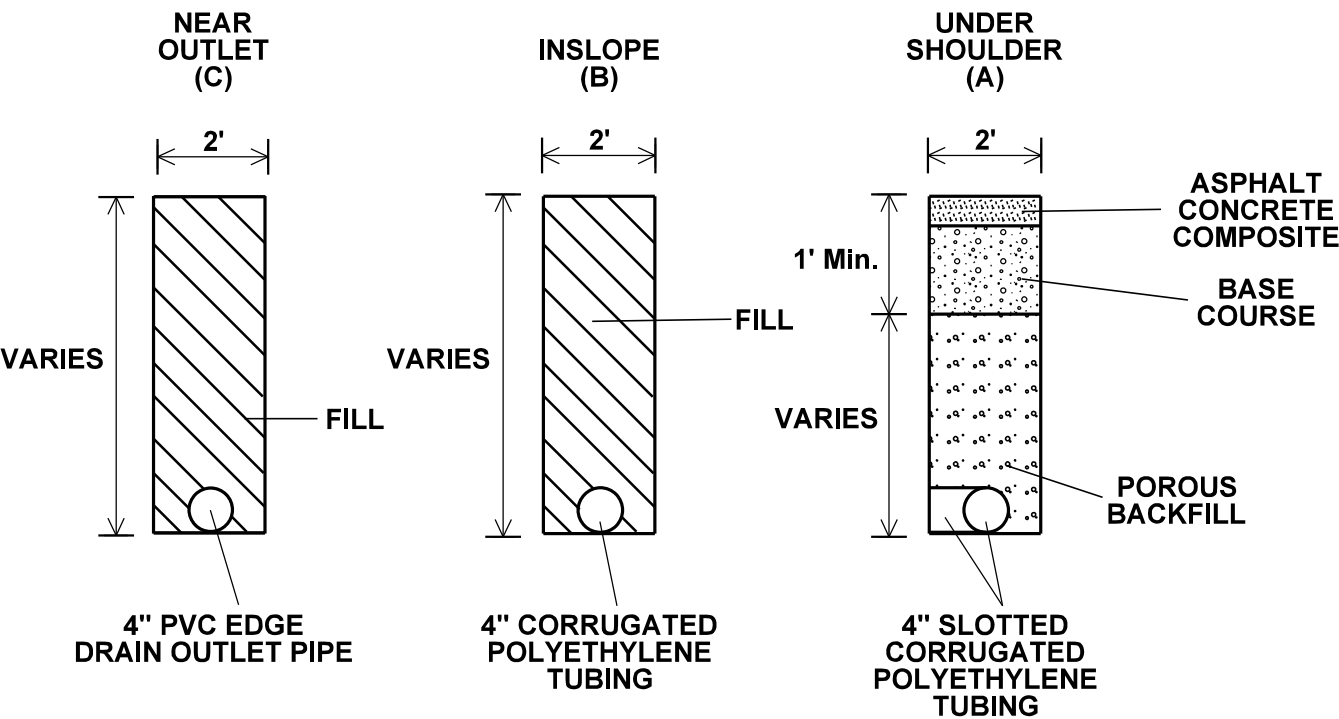
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# TYPICAL OUTLET DRAIN SECTIONS



## TYPICAL DEEP EDGE DRAIN OUTLET



PLOT NAME - 6

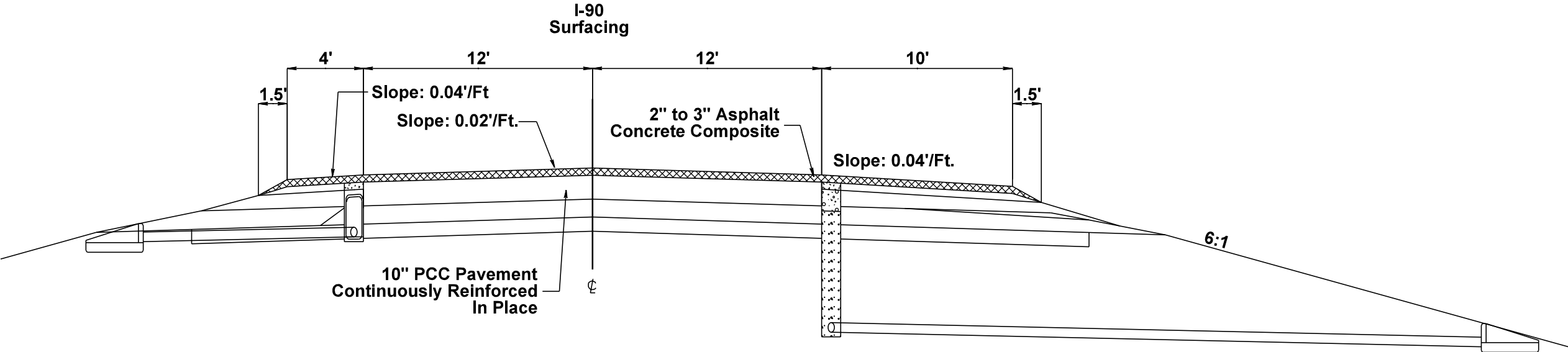
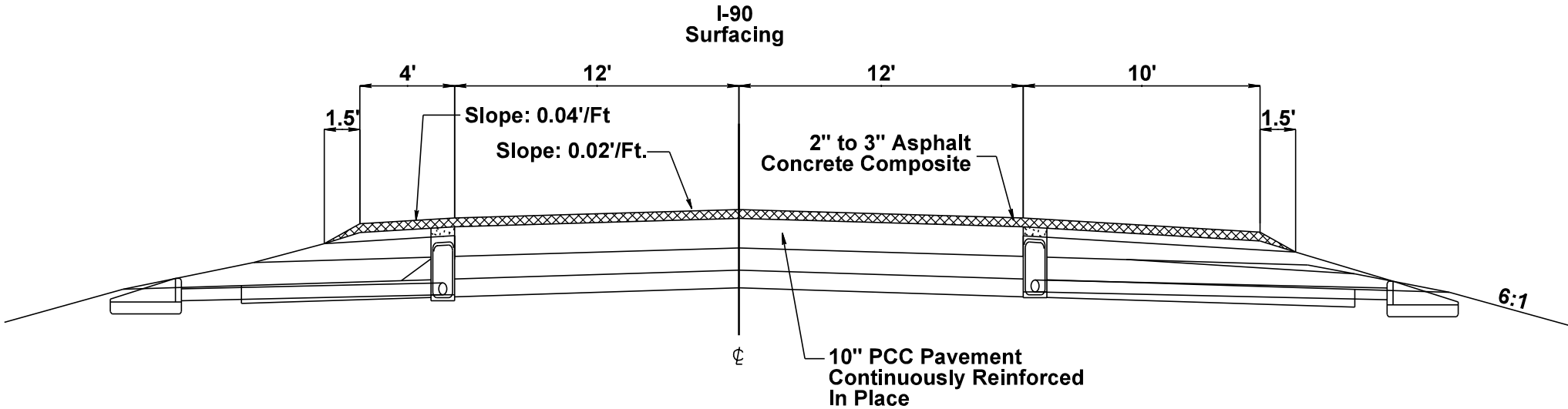
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# TYPICAL SECTION

## ASPHALT CONCRETE PATCHES

|                                |                     |       |                 |
|--------------------------------|---------------------|-------|-----------------|
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PLOTTED FROM - TRM1INT06

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# PROFILE

## ASPHALT CONCRETE PATCHES

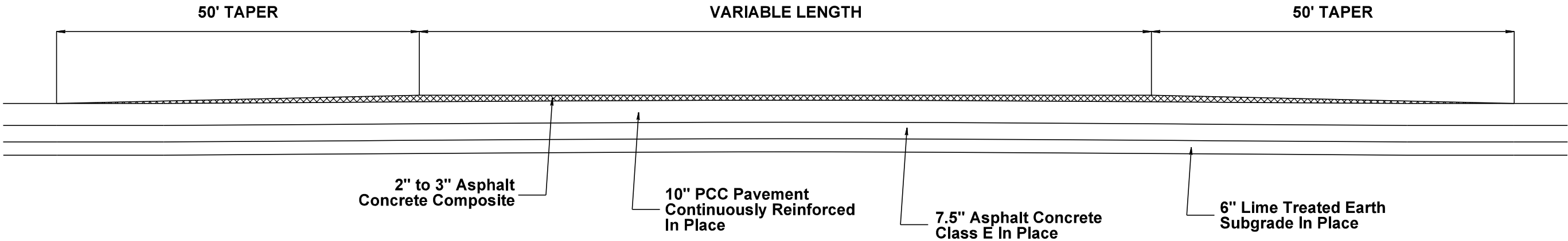
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|                                | 090W-253 & 090E-253 | 11    | 13              |

Plotting Date: 05/28/2015

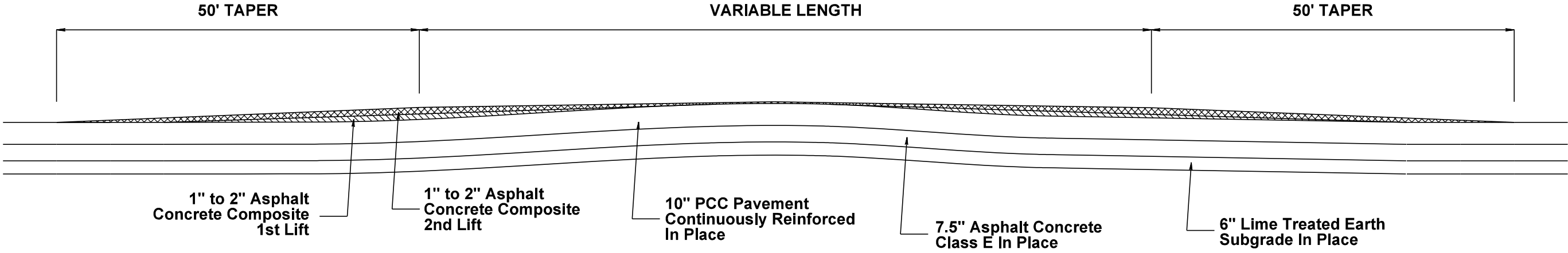
PLOT SCALE - 1:7000

PLOT NAME - 6

FILE - ... \2015 BUMP-HEAVE TITL ETC.DGN



SIDE VIEW



SIDE VIEW

PLOTTED FROM - TRM11N106

| Posted<br>Speed<br>Prior to<br>Work<br>(M.P.H.) | Spacing of<br>Advance Warning<br>Signs<br>(Feet) |      |      |
|---|--|------|------|
|   | (A)  | (B)  | (C)  |
| 0 - 30  | 200  |      |      |
| 35 - 40   | 350  |      |      |
| 45 - 50   | 500  |      |      |
| 55  | 750  |      |      |
| 60 - 65   | 1000   |      |      |
|   | (A)  | (B)  | (C)  |
| 70 - 80   | 1000   | 1500 | 2640 |

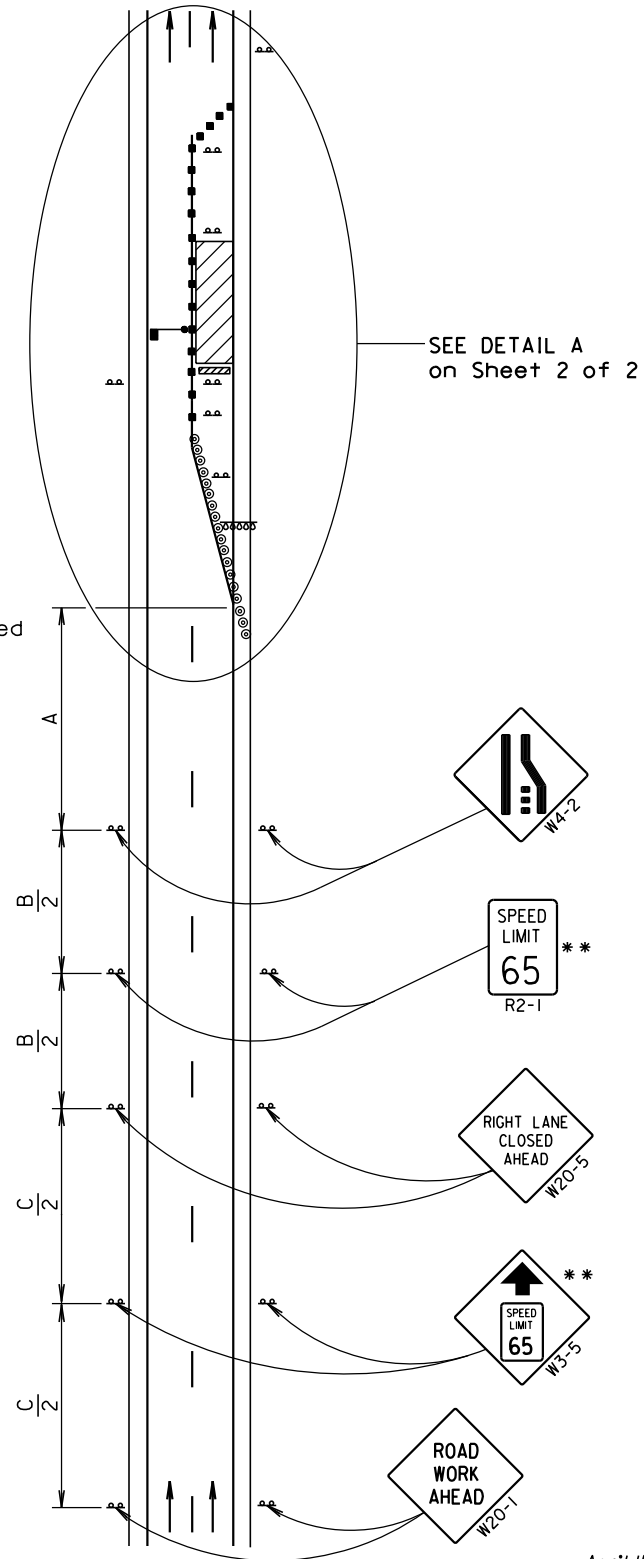
\*\* Speed appropriate for location.

⊙ Reflectorized Drum

■ Channelizing Device

ROAD WORK AHEAD sign is only required  
in advance of the first lane closure.

High speed is defined as having a posted  
speed limit greater than 45 mph.



April 15, 2015

Published Date: 2nd Qtr. 2015

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WORK ZONE SPEED REDUCTION  
FOR INTERSTATE AND HIGH  
SPEED MULTI-LANE HIGHWAYS

PLATE NUMBER  
634.63

Sheet 1 of 2

| Posted<br>Speed<br>Prior to<br>Work<br>(M.P.H.) | Spacing of<br>Channelizing<br>Devices<br>(Feet)<br>(G) | Taper<br>Length<br>(Feet)<br>(L) |
|---|--|----------------------------------|
| 0 - 30  | 25   | 180                              |
| 35 - 40   | 25   | 320                              |
| 45 - 50   | 50 *   | 600                              |
| 55  | 50 *   | 660                              |
| 60 - 65   | 50 *   | 780                              |
| 70 - 80   | 50 *   | 960                              |

\* Spacing is 40' for 42" cones.

\*\*Speed appropriate for location.

\*\*\*Use speed limit designated for  
the condition when workers are  
present in the work space.  
Signs shall be covered or  
removed when workers are  
not present.

● Flagger (As Necessary)

⊙ Reflectorized Drum

■ Channelizing Device

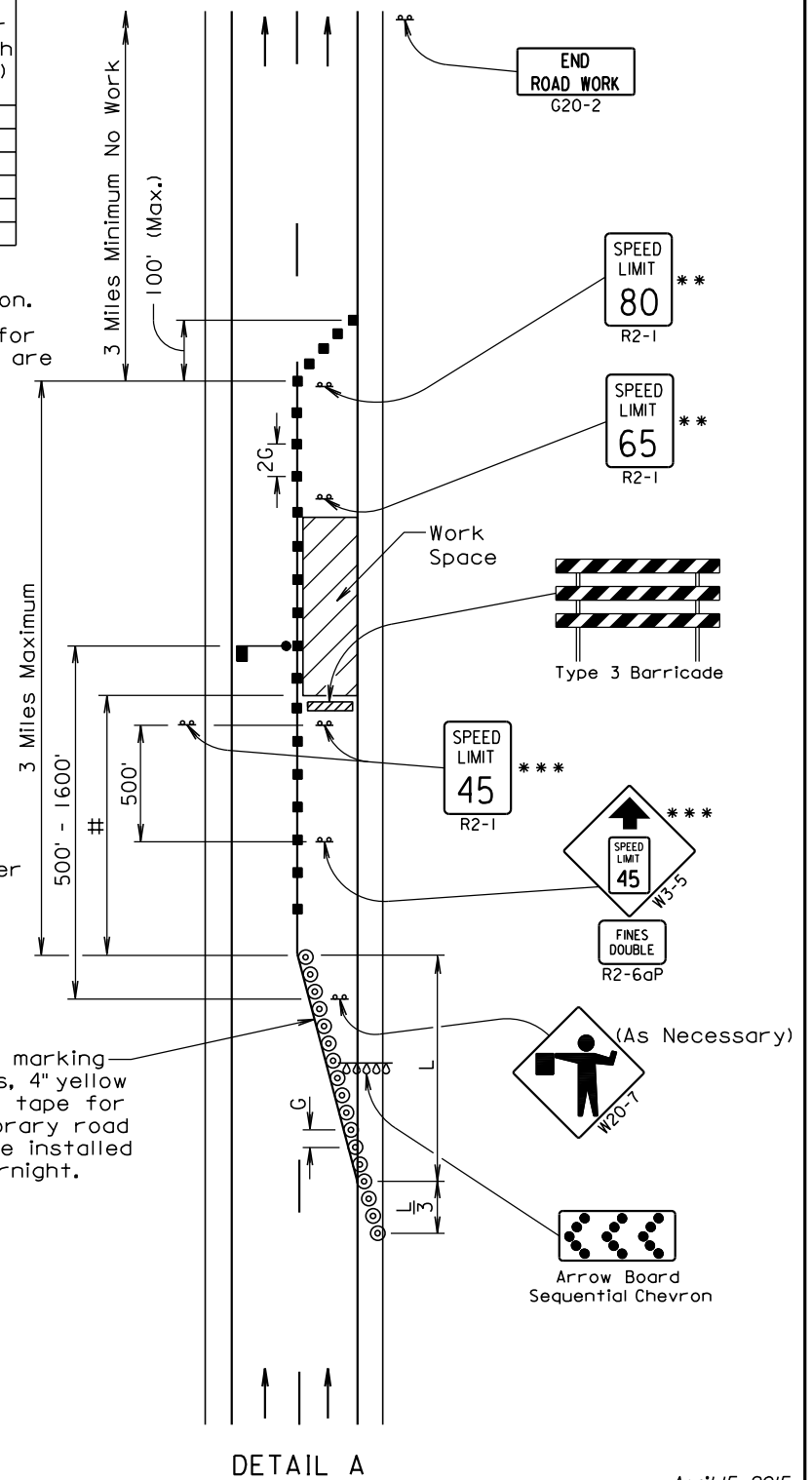
# The Work Space shall be a  
minimum of 500' from the  
end of the taper.

The FLAGGER sign shall be used  
whenever there is a Flagger  
present.

The channelizing devices shall  
be 42" cones or drums.

42" cones may be used in place  
of the drums shown in the taper  
if setup will not be used during  
night time hours.

4" white temporary pavement marking  
tape for right lane closures, 4" yellow  
temporary pavement marking tape for  
left lane closures, or temporary road  
markers at 5' spacing shall be installed  
when the lane is closed overnight.



April 15, 2015

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WORK ZONE SPEED REDUCTION  
FOR INTERSTATE AND HIGH  
SPEED MULTI-LANE HIGHWAYS

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Sheet 2 of 2

