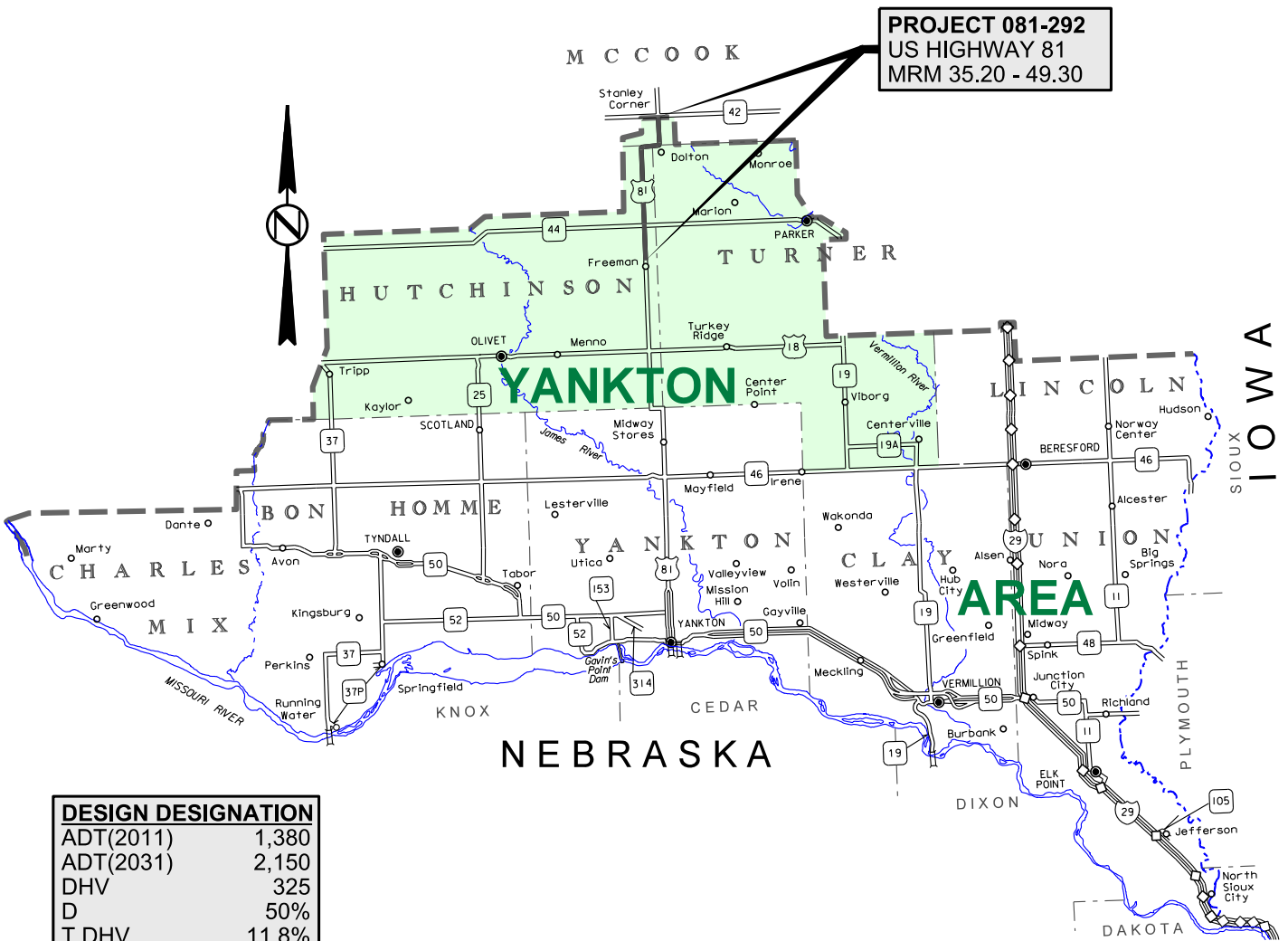


081-292
HUTCHINSON, MCCOOK, & TURNER COUNTIES
SPOT COLD MILLING ASPHALT CONCRETE &
SPOT ASPHALT CONCRETE RESURFACING OF SHOULDERS
LENGTH: 14.100 MILES
PCN I2UJ



DESIGN DESIGNATION	
ADT(2011)	1,380
ADT(2031)	2,150
DHV	325
D	50%
T DHV	11.8%
T ADT	26.0%
V	65 MPH

STORM WATER PERMIT
 (None required)

081-292
HUTCHINSON, McCOOK & TURNER COUNTIES

INDEX OF PLAN SHEETS

Sheet 1	Layout Map
Sheet 2	Index of Plan Sheets
Sheet 3	Estimate of Quantities
Sheets 4 & 5	Typical Sections
Sheets 6 - 10	Plan Notes
Sheets 11 - 15	Traffic Control

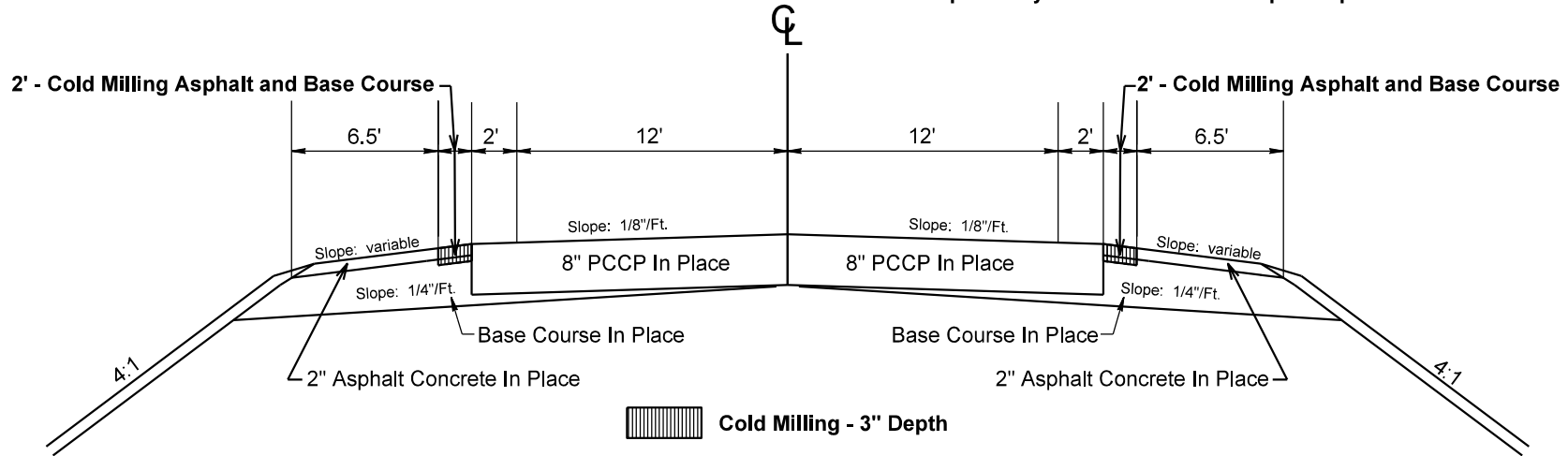
081-292
HUTCHINSON, McCOOK & TURNER COUNTIES

ESTIMATE OF QUANTITIES

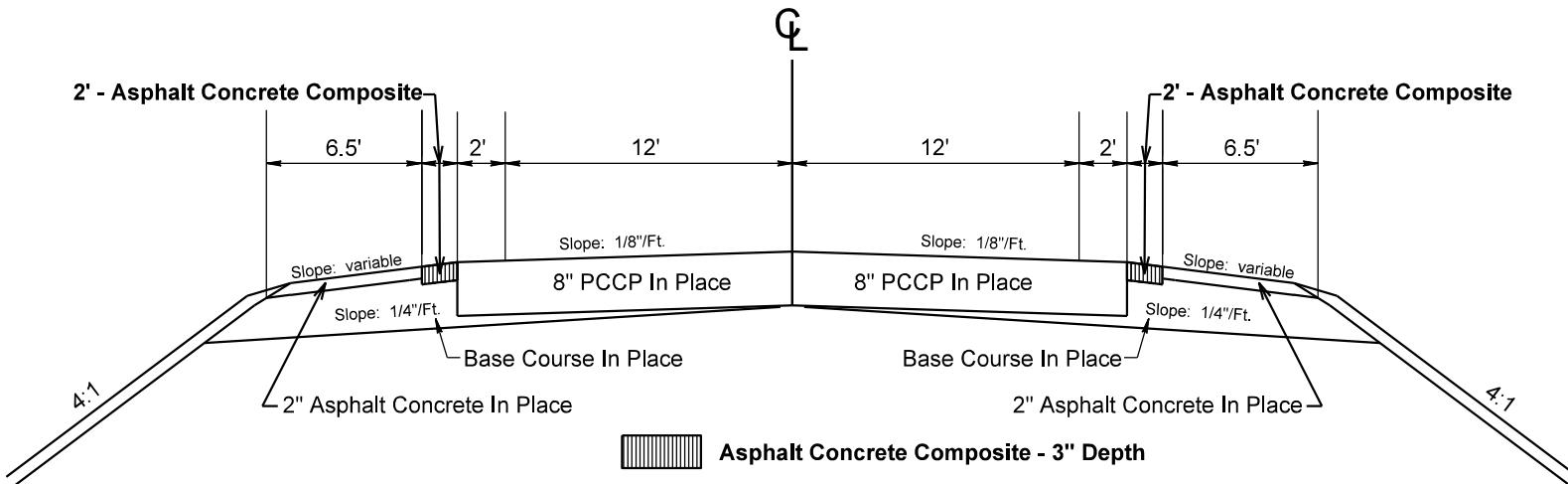
Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	71	CuYd
260E1030	Base Course, Salvaged	141.0	Ton
320E1200	Asphalt Concrete Composite	1,174.0	Ton
332E0010	Cold Milling Asphalt Concrete	7,455	SqYd
634E0010	Flagging	100	Hour
634E0020	Pilot Car	50	Hour
634E0100	Traffic Control	742	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

TYPICAL COLD MILLING SECTION 2 FOOT WIDTH

North Bound and South Bound Shoulders Shown
Some areas require only one shoulder to be repaired per location.

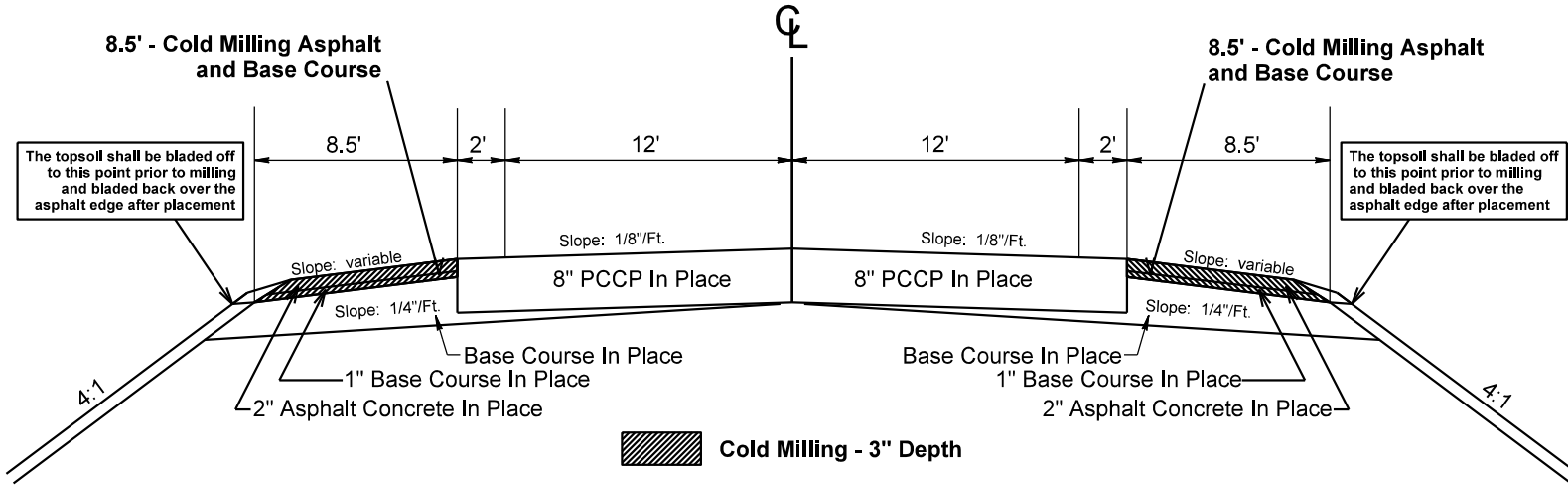


TYPICAL RESURFACING SECTION 2 FOOT WIDTH

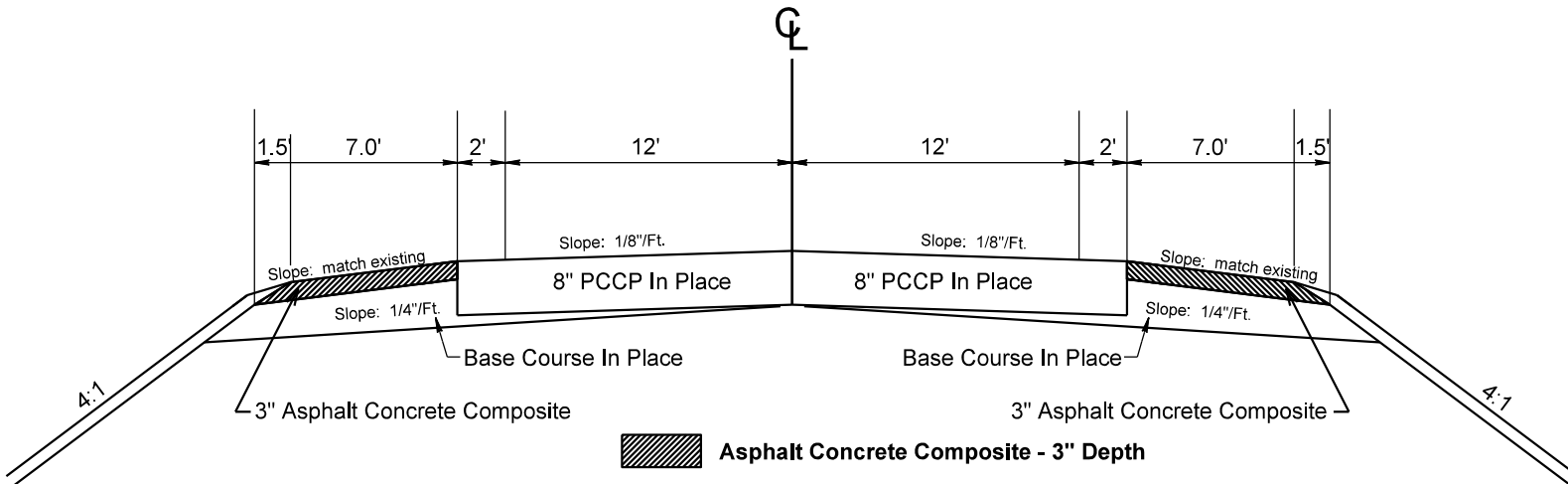


TYPICAL COLD MILLING SECTION FULL WIDTH

North Bound and South Bound Shoulders Shown
Some areas require only one shoulder to be repaired per location.



TYPICAL RESURFACING SECTION FULL WIDTH



**081-292
HUTCHINSON, McCOOK & TURNER COUNTIES**

SPECIFICATIONS

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

TABLE OF SPOT REPAIR OF SHOULDERS

MRM	to	MRM	LOCATION	LENGTH FT	TOP WIDTH FT	BOTTOM WIDTH FT	COLD MILLING ASPHALT CONCRETE (3" Depth) SqYd	ASPHALT CONCRETE COMPOSITE TON
35.379	to	35.497	NB Shoulder	623	7	8.5	588	89
35.507	to	35.629	NB Shoulder	644	2	2	143	24
35.715	to	35.952	NB Shoulder	1251	2	2	278	46
36.060	to	36.383	NB Shoulder	1705	2	2	379	63
36.890	to	37.144	NB Shoulder	1341	2	2	298	50
37.620	to	37.933	NB Shoulder	1653	2	2	367	61
38.190	to	38.199	NB Shoulder	48	7	8.5	45	7
41.909	to	41.929	NB Shoulder	106	7	8.5	100	15
42.680	to	42.882	NB Shoulder	1067	2	2	237	39
42.804	to	42.892	NB Shoulder	465	2	2	103	17
42.909	to	43.027	NB Shoulder	623	2	2	138	23
45.215	to	45.515	NB Shoulder	1584	2	2	352	59
47.570	to	47.604	NB Shoulder	180	2	2	40	7
35.454	to	35.463	SB Shoulder	48	7	8.5	45	7
43.327	to	43.376	SB Shoulder	259	2	2	57	10
43.397	to	43.439	SB Shoulder	222	2	2	49	8
43.553	to	43.587	SB Shoulder	180	2	2	40	7
44.424	to	44.539	SB Shoulder	607	2	2	135	22
45.267	to	45.412	SB Shoulder	766	2	2	170	28
45.412	to	45.524	SB Shoulder	591	7	8.5	559	85
45.626	to	45.979	SB Shoulder	1864	7	8.5	1760	267
46.697	to	46.702	SB Shoulder	26	7	8.5	25	4
47.522	to	47.557	SB Shoulder	185	2	2	41	7
47.823	to	47.837	SB Shoulder	74	7	8.5	70	11
48.048	to	48.170	SB Shoulder	644	7	8.5	608	92
48.931	to	49.097	SB Shoulder	876	7	8.5	828	126
TOTALS:							7455	1174

These quantities and locations are estimates only. Final locations and dimensions shall be marked by the Engineer and are subject to change.

HUTCHINSON, McCOOK & TURNER COUNTIES**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.

SHOULDER WORK

Prior to construction, the Department of Transportation Maintenance Forces will spray the shoulders for the purpose of killing existing vegetation. It will be the responsibility of the Contractor to notify the State at least thirty days in advance when he plans to start working on the surface of the highway. The State assumes no responsibility for the effectiveness of the herbicide applied.

The Contractor shall remove any vegetation and accumulated material adjacent to the existing mat edge to the satisfaction of the Engineer prior to beginning full width repair area milling operations. Along the full width repair area, a 4" +/- depth of topsoil shall be bladed down the respective inslopes and left in a windrow 1' +/- from the shoulder. Following completion of surfacing operations, topsoil shall be bladed back up the inslope to the point indicated on the typical section. Any remaining windrow of accumulated material shall be redistributed evenly on the inslope adjacent to the asphalt shoulder to the satisfaction of the Engineer.

This shoulder work shall be considered incidental to other contract items, therefore separate measurement and payment will not be made.

COLD MILLING ASPHALT CONCRETE (INCLUDING 1"± BASE COURSE)

The requirements for the traveling or fixed string line in Section 332.3B. of the Standard Specifications shall be waived.

Material obtained from cold milling may be used as Base Course, Salvaged without further testing.

The Contractor may propose another method for removal to the Engineer. If another means of removal is accepted, it may require sawing full depth through the asphalt concrete at 2.0' out from the edge of the PCCP for the entire length of 2.0' shoulder removal. No additional payment will be made for removal by other means and the Contractor shall provide Base Course for the backfill of the Unclassified Excavation, Dugouts at no additional cost to the State.

In order to construct the new surfacing flush with the asphalt concrete at the intersecting roads it will be necessary to mill the existing asphalt concrete at the edge of the shoulder and radius or ROW line as directed by the Engineer.

Cold milling operations ahead of asphalt concrete operations will be limited by particular job conditions and shall be subject to approval of the Engineer. In no case shall cold milling operations ahead of asphalt concrete operations exceed three calendar days. Care should be taken to maintain drainage of all milled areas. In the event of precipitation the Contractor shall recompact the base material to the satisfaction of the Engineer at no cost to the State.

Compaction of the base material will be required in the milled areas prior to the placement of Asphalt Concrete Composite. Cost for this work shall be incidental to the contract unit prices for the various items. Compaction shall be to the satisfaction of the Engineer.

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.

EXCAVATION OF UNSTABLE MATERIAL

Included in the Estimate of Quantities are 5 cubic yards per mile of Unclassified Excavation, Dugouts for the necessary removal of unstable material.

Backfill shall be paid for at the contract unit price per ton for Base Course, Salvaged.

HUTCHINSON, McCOOK & TURNER COUNTIES**BASE COURSE, SALVAGED**

Base Course, Salvaged shall be obtained from the milled material on the project and may be used without further testing. Compaction of the Base Course, Salvaged for the Digouts shall be to the satisfaction of the Engineer.

All other requirements of the Standard Specifications for Base Course shall apply.

Included in the Estimate of Quantities are 10 tons per mile of Base Course, Salvaged for backfill of the Unclassified Excavation, Digouts.

If necessary, water shall be added to the Base Course, Salvaged to bring the material to 6%± moisture at the time of compaction unless otherwise directed by the Engineer. Water, if required, shall be incidental to the contract unit price per ton for Base Course, Salvaged.

WASTE DISPOSAL SITE

All Base Course (Salvaged) not reused as detailed in these plans shall be disposed of by the Contractor.

The Contractor shall be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

Construction/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 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/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/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.

Cost 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.

HUTCHINSON, McCOOK & TURNER COUNTIES**HISTORICAL PRESERVATION OFFICE CLEARANCES**

To obtain State Historical Preservation office (SHPO) clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. In lieu of a cultural resources survey, the Contractor could request a records search from Jim Donohue, State Archaeological Research Center (SARC). Provide SARC 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 no artifacts have been found on the site. The Contractor shall arrange and pay for the cultural resource survey and/or records search.

If any earth disturbing activities occur within the current geographical or historic boundaries of any South Dakota reservation, the Contractor shall obtain Tribal Historical Preservation Officer (THPO) clearance. If no THPO exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO or THPO responses, the Contractor should submit a records search or cultural resources survey to Tom Lehmkuhl, DOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). Allow 30 days from the date this information is submitted to the Environmental Engineer for areas, borrow sites, waste disposal sites, and all material processing sites. The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

ASPHALT CONCRETE COMPOSITE

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

Asphalt Concrete Composite for the 2.0' wide replacement areas and the 1.5' wide beveled edge in the full width replacement areas shall be placed and compacted with equipment and to a density satisfactory to the Engineer.

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

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

Mineral aggregate for the Asphalt Concrete Composite shall be furnished by the Contractor.

SS-1h or CSS-1h Asphalt for Tack (Rate = 0.05 gallon per square yard) shall be applied to all surfaces prior to the placement of Asphalt Concrete Composite. If a paver is used for the full width repair areas the tack shall not be applied to the Base Course or Base Course, Salvaged. The cost for this material shall be absorbed in the item Asphalt Concrete Composite or additional items.

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. 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.

081-292

HUTCHINSON, McCOOK & TURNER COUNTIES

PERMANENT PAVEMENT MARKING

The Contractor shall take care not to disturb the existing durable pavement marking. The white edge line is 18" to 24" from the workspace. In the event pavement marking is damaged or covered, the Contractor shall be responsible to replace the pavement marking at no additional cost to the State. Application of permanent pavement marking paint shall be completed within 3 days of completion of the final resurfacing, if required.

RUMBLE STRIPS IN PCCP

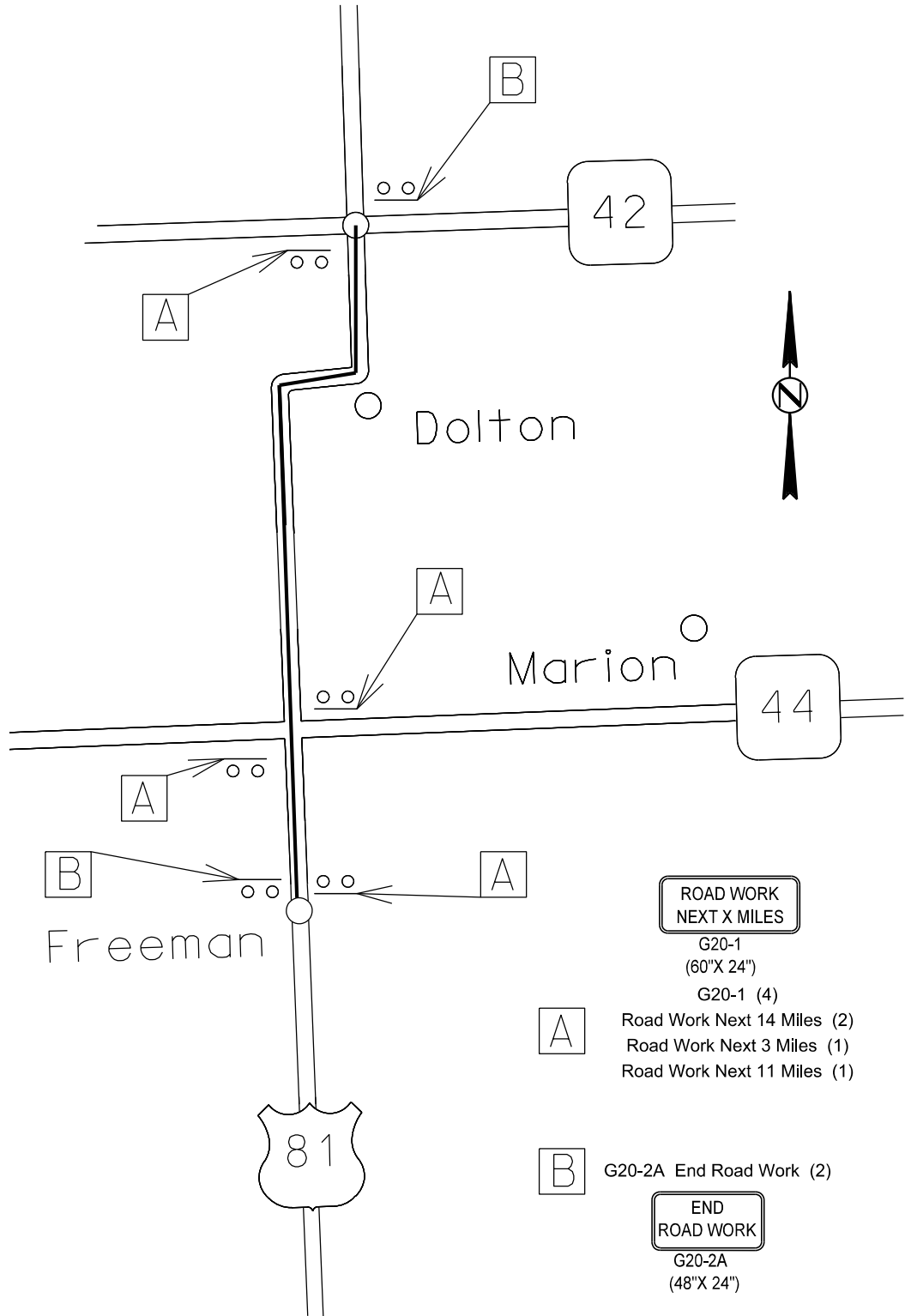
The Contractor shall take care not to damage the existing PCCP rumble strips. Any material that accumulates in the rumble strips shall be removed to the satisfaction of the Engineer at no additional cost.

**081-292
HUTCHINSON, McCOOK & TURNER COUNTIES**

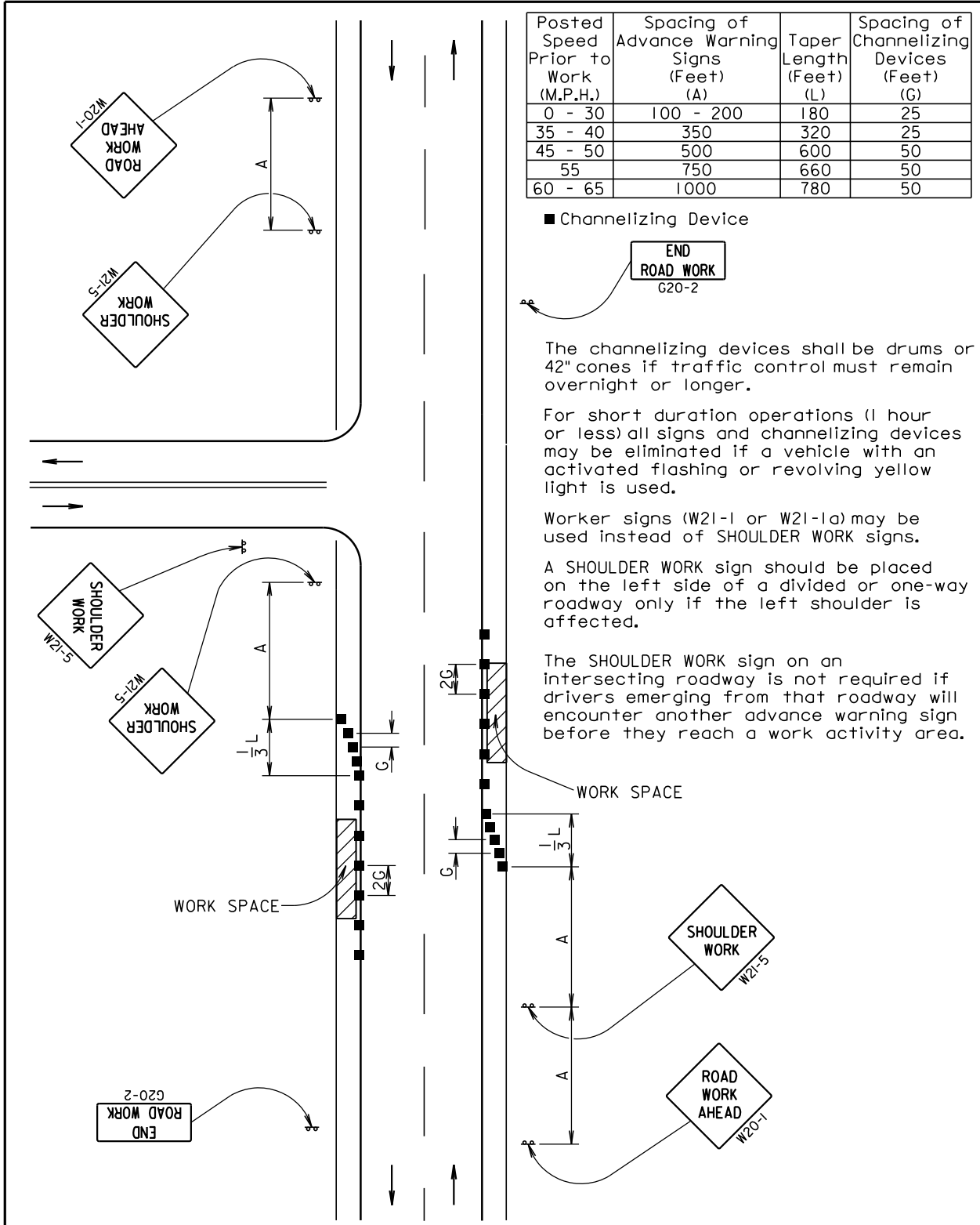
ITEMIZED LIST FOR TRAFFIC CONTROL

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
E5-1	36" x 32"	EXIT GORE SIGN		24	
G20-1	48" x 24"	ROAD WORK NEXT __ MILES	4	24	96
G20-2	36" x 18"	END ROAD WORK	2	17	34
R1-1	48" x 48"	STOP		34	
R1-2	48" x 48"	YIELD		34	
R2-1	30" x 36"	SPEED LIMIT __		23	
R2-6aP	36" x 24"	FINES DOUBLE		20	
R4-7	24" x 30"	KEEP RIGHT (SYMBOL)		18	
R5-1	48" x 48"	DO NOT ENTER		34	
R5-1a	42" x 30"	WRONG WAY		25	
R10-6	24" x 36"	STOP HERE ON RED		20	
R11-2	48" x 30"	ROAD CLOSED		27	
R11-3a	60" x 30"	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY		30	
R11-4	60" x 30"	ROAD CLOSED TO THRU TRAFFIC		30	
SW12-1b	120" x 60"	HIGHWAY WORKERS GIVE'EM A BRAKE		80	
W1-1	48" x 48"	LEFT OR RIGHT TURN ARROW		34	
W1-2	48" x 48"	LEFT OR RIGHT CURVE ARROW		34	
W1-3	48" x 48"	REVERSE TURN SIGN (LEFT OR RIGHT)		34	
W1-4	48" x 48"	REVERSE CURVE SIGN (LEFT OR RIGHT)		34	
W3-1	48" x 48"	STOP AHEAD (SYMBOL)		34	
W3-2	48" x 48"	YIELD AHEAD (SYMBOL)		34	
W3-3	48" x 48"	SIGNAL AHEAD (SYMBOL)		34	
W3-4	48" x 48"	BE PREPARED TO STOP		34	
W3-5	48" x 48"	SPEED REDUCTION (__ MPH)		34	
W4-1	48" x 48"	MERGE (SYMBOL)		34	
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)		34	
W5-2	48" x 48"	NARROW BRIDGE		34	
W5-3	48" x 48"	ONE LANE BRIDGE		34	
W7-3a	30" x 24"	NEXT __ MILES		18	
W8-1	36" x 36"	BUMP		27	
W8-6	48" x 48"	TRUCK CROSSING		34	
W8-7	36" x 36"	LOOSE GRAVEL		27	
W8-9a	48" x 48"	SHOULDER DROP-OFF	4	34	136
W8-11	48" x 48"	UNEVEN LANES		34	
W13-1	24" x 24"	ADVISORY SPEED PLATE		16	
W16-2	30" x 24"	SUPPLEMENTAL DISTANCE PLAQUE		18	
W20-1	48" x 48"	ROAD WORK AHEAD	4	34	136
W20-2	48" x 48"	DETOUR AHEAD		34	
W20-3	48" x 48"	ROAD CLOSED AHEAD		34	
W20-4	48" x 48"	ONE LANE ROAD AHEAD	2	34	68
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD		34	
W20-7a	48" x 48"	FLAGGER	2	34	68
W21-1a	48" x 48"	WORKERS (SYMBOL)		34	
W21-2	36" x 36"	FRESH OIL		27	
W21-3	48" x 48"	ROAD MACHINERY AHEAD		34	
W21-5	48" x 48"	SHOULDER WORK	2	34	68
W21-5a	48" x 48"	RIGHT SHOULDER CLOSED	2	34	68
W21-5b	48" x 48"	RIGHT SHOULDER CLOSED AHEAD	2	34	68
*****	12" x 36"	TYPE III OBJECT MARKER		15	
*****	*****	TYPE III BARRICADE - 8 FT. SINGLE SIDED		40	
*****	*****	TYPE III BARRICADE - 8 FT. DOUBLE SIDED		56	
TOTAL UNITS				742	

Fixed Location Signs



HUTCHINSON, McCOOK & TURNER COUNTIES



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

■ Channelizing Device

END ROAD WORK G20-2

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

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

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

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

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

February 14, 2011

<p>Published Date: 1st Qtr. 2013</p>	<p>S D D O T</p>	<p>GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS</p>	<p>PLATE NUMBER 634.03</p>

**081-292
HUTCHINSON, McCOOK & TURNER COUNTIES**

* In situations where multiple work locations in a limited distance make it practical to place stationary signs, the distance between the advance warning sign and the work should not exceed 5 miles.

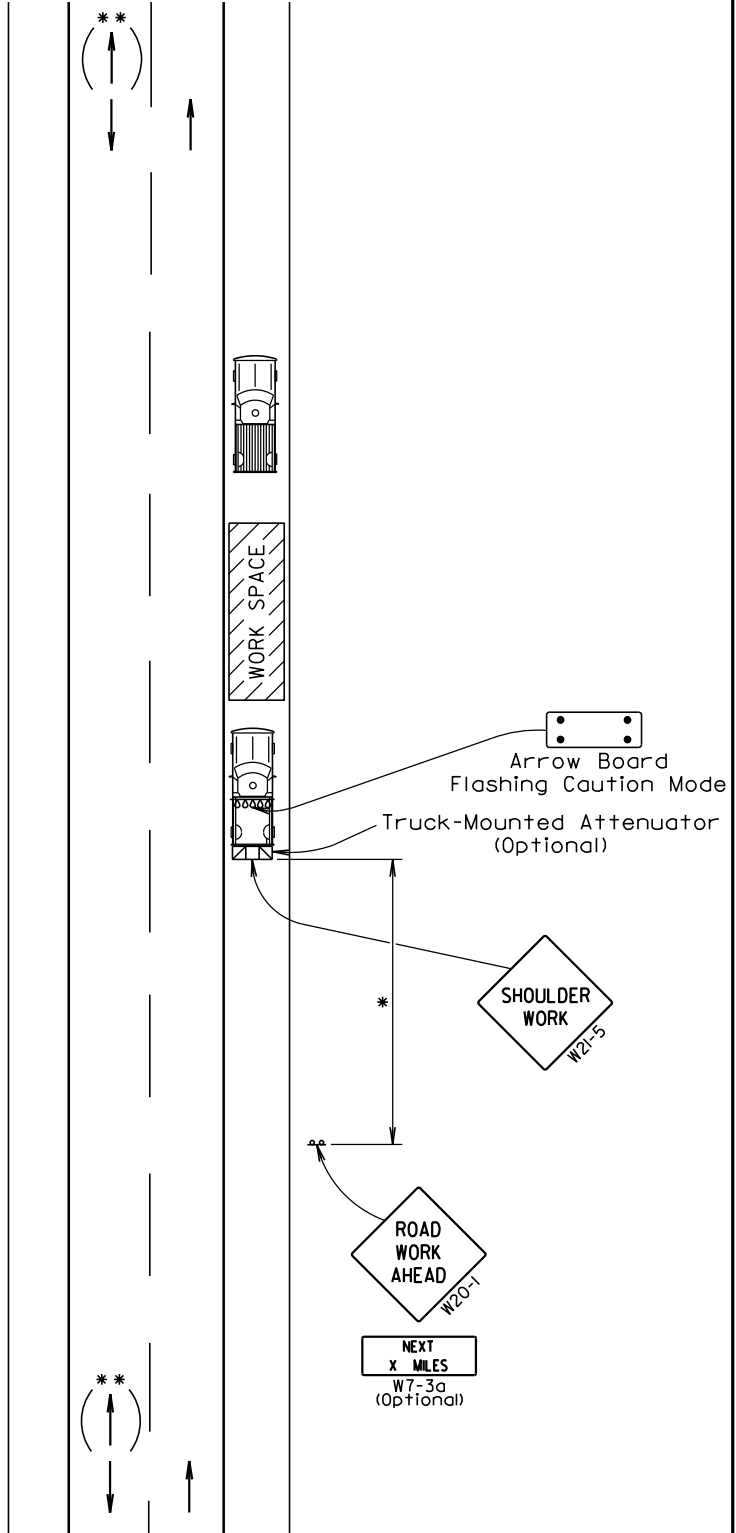
The ROAD WORK NEXT xx MILES sign may be used instead of the ROAD WORK AHEAD sign if the work locations occur over a distance of more than 2 miles.

An activated flashing or yellow light on vehicles may be used for short duration (1 hour or less) only.

Arrow board is required for mobile (intermittent and continuously moving) operations when work exceeds 1 hour.

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

In situations where the distance between the advance warning signs and the work is 2 miles to 5 miles, a supplemental distance plaque should be used with the ROAD WORK AHEAD sign.



February 14, 2011

Published Date: 1st Qtr. 2013

**S
D
D
O
T**



**GUIDES FOR TRAFFIC CONTROL DEVICES
MOBILE OPERATIONS ON SHOULDER**

PLATE NUMBER
634.04

Sheet 1 of 1

HUTCHINSON, McCOOK & TURNER COUNTIES

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

-  Flagger
-  Channelizing Device

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

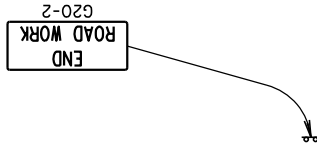
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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

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

The channelizing devices shall be drums or 42" cones.

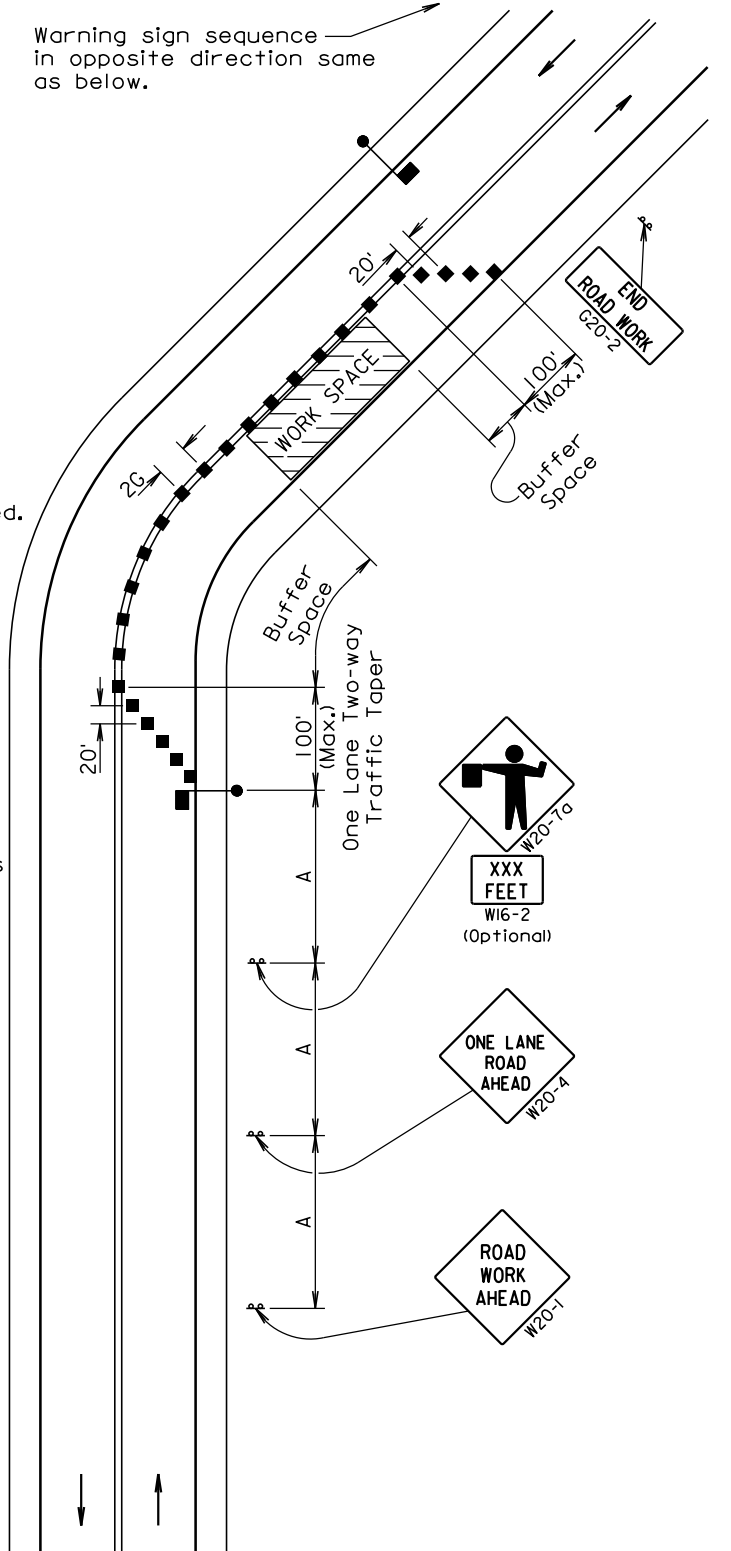
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



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

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

Warning sign sequence in opposite direction same as below.



February 14, 2011

Published Date: 1st Qtr. 2013

S
D
D
O
T

**GUIDES FOR TRAFFIC CONTROL DEVICES
LANE CLOSURE WITH FLAGGER PROVIDED**

PLATE NUMBER
634.23

Sheet 1 of 1