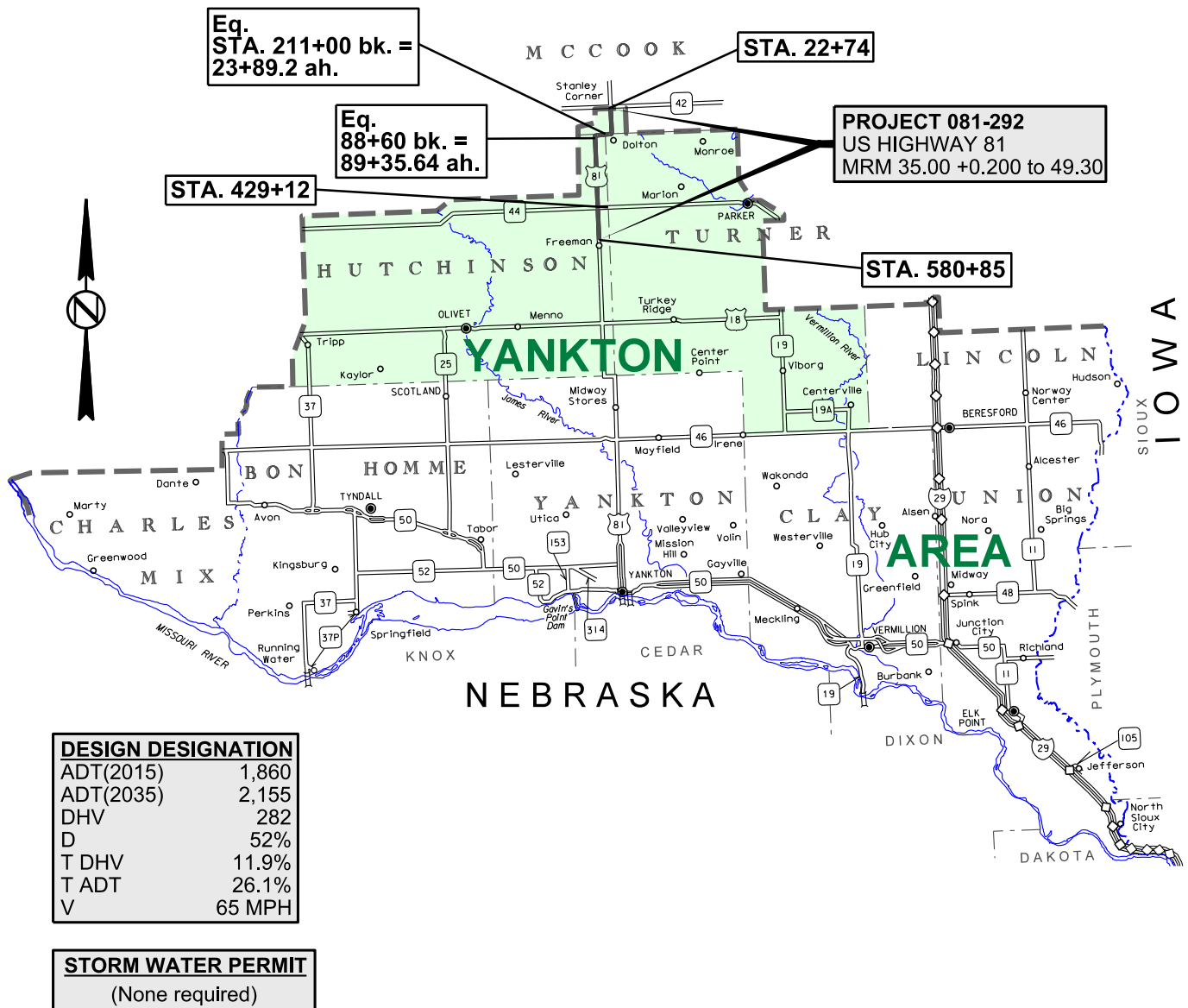


081-292
US HIGHWAY 81
HUTCHINSON, MCCOOK & TURNER COUNTIES
SPOT COLD MILLING ASPHALT CONCRETE &
SPOT ASPHALT CONCRETE RESURFACING OF SHOULDERS
LENGTH: 14.100 MILES
PCN I44N



INDEX OF SHEETS

Sheet 1	Layout Map
Sheet 2	Index of Sheets
Sheet 3	Estimate of Quantities
Sheet 4	Typical Sections
Sheets 5 - 8	Plan Notes
Sheets 9 – 15	Traffic Control

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ESTIMATE OF QUANTITIES

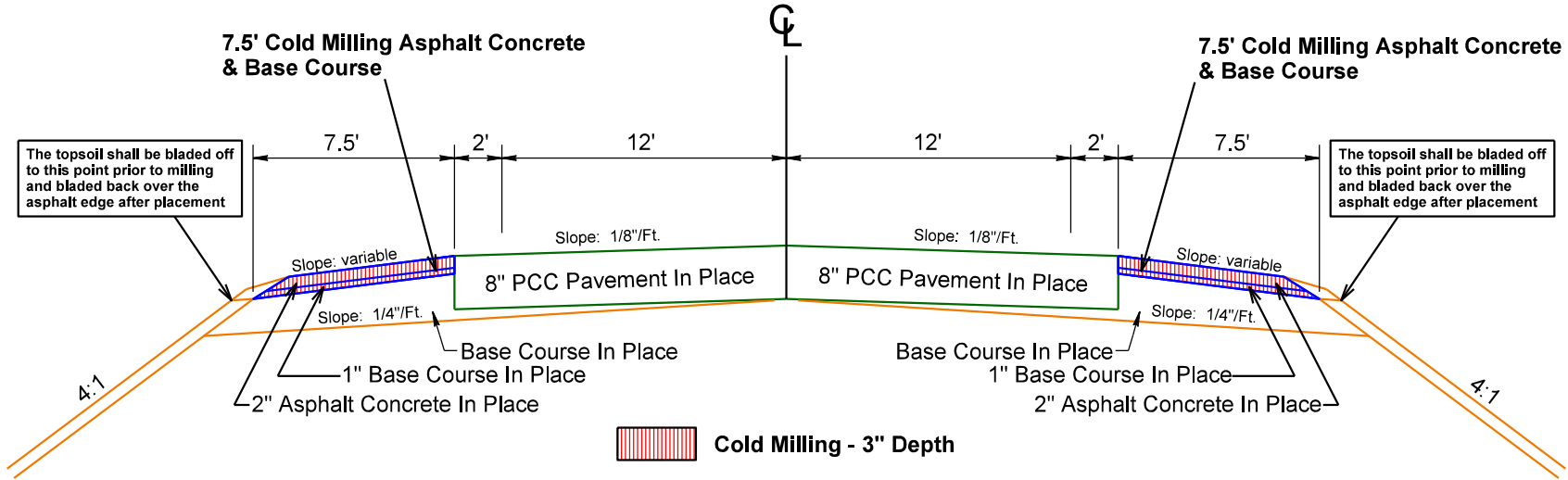
BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	42	CuYd
260E1030	Base Course, Salvaged	84.6	Ton
320E1200	Asphalt Concrete Composite	1,312.0	Ton
332E0010	Cold Milling Asphalt Concrete	7,885	SqYd
634E0010	Flagging	80.0	Hour
634E0020	Pilot Car	40.0	Hour
634E0110	Traffic Control Signs	318	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

SPECIFICATIONS

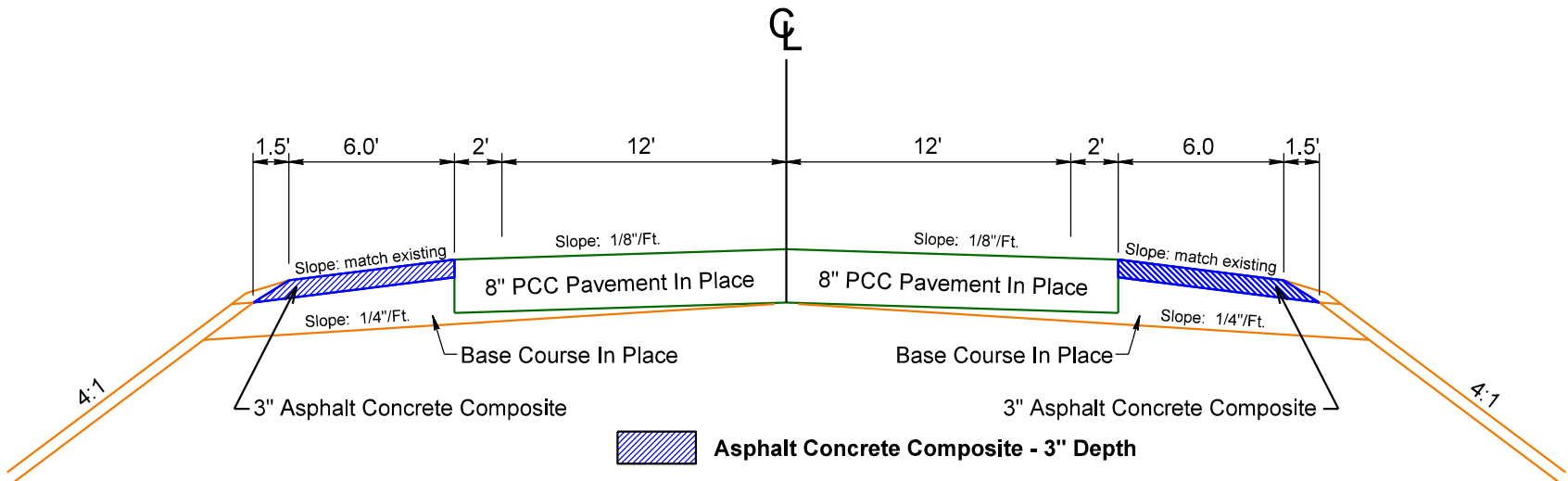
Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications and Special Provisions as included in the Proposal.

TYPICAL COLD MILLING SECTION FULL WIDTH

Northbound and Southbound shoulders shown.
Some areas require only one shoulder to be repaired per location.



TYPICAL RESURFACING SECTION FULL WIDTH



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 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 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".

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HUTCHINSON, McCOOK & TURNER COUNTIES

Action Taken/Required cont.:

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.

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TABLE OF SPOT REPAIR OF SHOULDERS

Sta.	to	Sta.	LOCATION	LENGTH FT	TOP WIDTH FT	BOTTOM WIDTH FT	COLD MILLING ASPHALT CONCRETE (3" Depth) SqYd	ASPHALT CONCRETE COMPOSITE TON
580+85	to	578+38	3rd Sta. NB Shoulder	247	6	7.5	206	34
540+93	to	535+89	3rd Sta. NB Shoulder	504	6	7.5	420	70
519+37	to	516+51	3rd Sta. NB Shoulder	286	6	7.5	238	40
497+11	to	480+55	3rd Sta. NB Shoulder	1656	6	7.5	1380	230
462+53	to	458+90	3rd Sta. NB Shoulder	363	6	7.5	303	50
444+00	to	438+38	3rd Sta. NB Shoulder	562	6	7.5	468	78
418+52	to	415+77	3rd Sta. NB Shoulder	275	6	7.5	229	38
367+88	to	366+76	3rd Sta. NB Shoulder	112	6	7.5	93	15
362+79	to	347+95	3rd Sta. NB Shoulder	1484	6	7.5	1237	206
291+12	to	281+56	3rd Sta. NB Shoulder	956	6	7.5	797	133
124+44	to	119+30	1st Sta. NB Shoulder	514	6	7.5	428	71
82+36	to	84+55	1st Sta. SB Shoulder	219	6	7.5	183	30
252+70	to	272+00	3rd Sta. SB Shoulder	1930	6	7.5	1608	268
491+60	to	495+14	3rd Sta. SB Shoulder	354	6	7.5	295	49
TOTALS:							7885	1312

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

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, Department of Transportation Maintenance Forces will spray the shoulders to kill existing vegetation. It is the Contractor's responsibility to notify the State a minimum of thirty days prior to starting work on the surface of the highway. The State assumes no responsibility for the effectiveness of the herbicide applied.

Vegetation and accumulated material on or adjacent to the existing roadway edge shall be removed to the satisfaction of the Engineer prior to cold milling. Along the repair areas, 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.

Cost for shoulder work including removal and replacement of topsoil shall be incidental to the contract unit prices for the various items. Separate measurement and payment will not be made.

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HUTCHINSON, McCOOK & TURNER COUNTIES

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

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

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

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.

All material not used on the project as Base Course, Salvaged shall be the property of the Contractor.

COORDINATION BETWEEN CONTRACTORS

A separate contract for Project NH 0081(88)15 PCN 023Z has been awarded to another Contractor for Asphalt Concrete Overlay on US HWY 81 which starts at the south end of this project.

The Contractor shall schedule work so as not to interfere with or hinder the progress of the work performed by other Contractors on the Asphalt Concrete Overlay project.

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 3 cubic yards per mile of Unclassified Excavation, Digouts for the necessary removal of unstable material.

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

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 Specifications for Base Course shall apply.

Included in the Estimate of Quantities are 6 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.

GENERAL MAINTENANCE OF TRAFFIC

Sufficient traffic control devices have been included in these plans to sign one three mile 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 square foot for Traffic Control Signs.

PERMANENT PAVEMENT MARKING

The Contractor shall conduct operations so as not to disturb the existing durable pavement marking. Any durable pavement marking disturbed/damaged due to the Contractor's operations shall be replaced by the Contractor at no expense to the State. Repair of the durable pavement marking shall be completed within 3 days of the final surfacing work.

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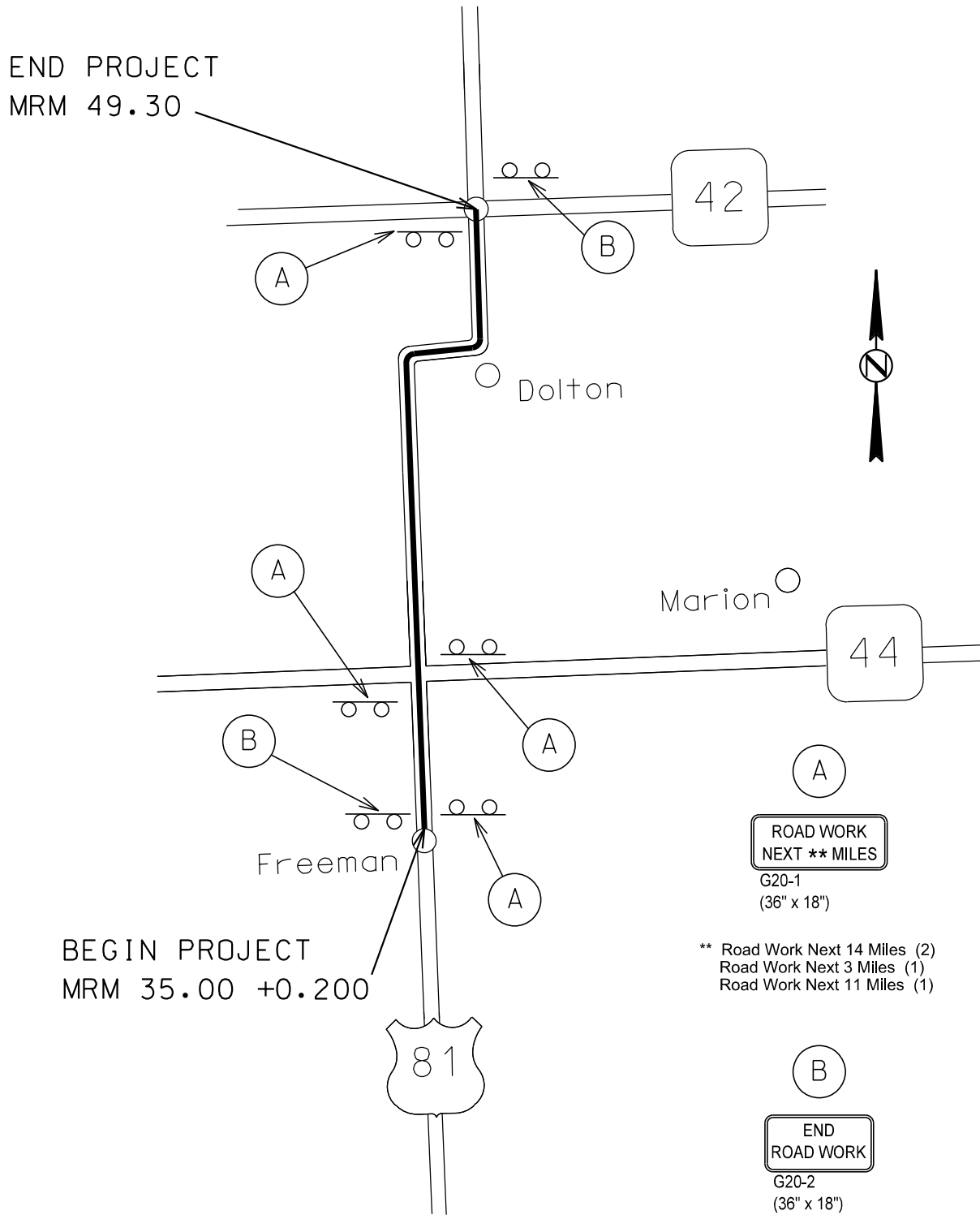
RUMBLE STRIPS IN PCCP

The Contractor shall conduct operations so as not to disturb the existing rumble strips. All material which accumulates in the rumble strip due to the Contractor's operations shall be removed at no expense to the State.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-17	SHOULDER DROP-OFF (symbol)	4	48" x 48"	16	64
W20-1	ROAD WORK AHEAD	4	48" x 48"	16	64
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
W21-5	SHOULDER WORK	2	48" x 48"	16	32
W21-5a	LEFT or RIGHT SHOULDER CLOSED	2	48" x 48"	16	32
W21-5b	LEFT or RIGHT SHOULDER CLOSED AHEAD	2	48" x 48"	16	32
G20-1	ROAD WORK NEXT 14 MILES	2	36" x 18"	5	10
G20-1	ROAD WORK NEXT 3 MILES	1	36" x 18"	5	5
G20-1	ROAD WORK NEXT 11 MILES	1	36" x 18"	5	5
G20-2	END ROAD WORK	2	36" x 18"	5	10
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT 318			

FIXED LOCATION SIGNS



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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	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.

For short duration operations (1 hour or less) all 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.

WORK SPACE

WORK SPACE

SHOULDER WORK
W21-5

ROAD WORK AHEAD
W20-1

END ROAD WORK
G20-2

September 22, 2014

<p>Published Date: 1st Qtr. 2016</p>	<p>S D D O T</p>	<p>GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS</p>	<p>PLATE NUMBER 634.03</p> <p>Sheet 1 of 1</p>
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HUTCHINSON, McCOOK & TURNER COUNTIES

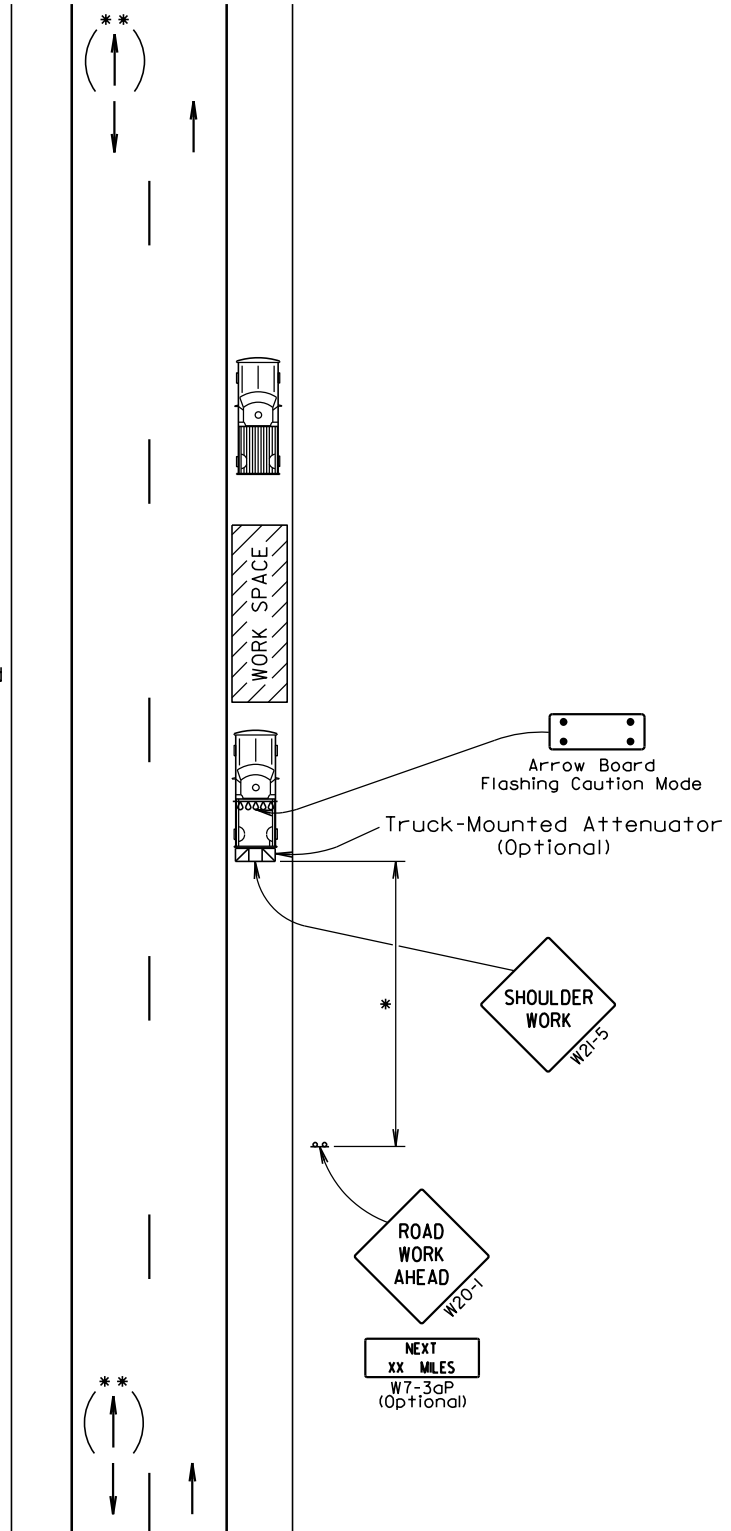
* In situations where multiple work locations in a limited distance make it practical to place stationary signs, the distance between the advance warning sign and the work should not exceed 5 miles.

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.

Arrow board is required for intermittently and continuously moving mobile 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.



September 22, 2014

Published Date: 1st Qtr. 2016

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

PLATE NUMBER
634.04

Sheet 1 of 1

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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.

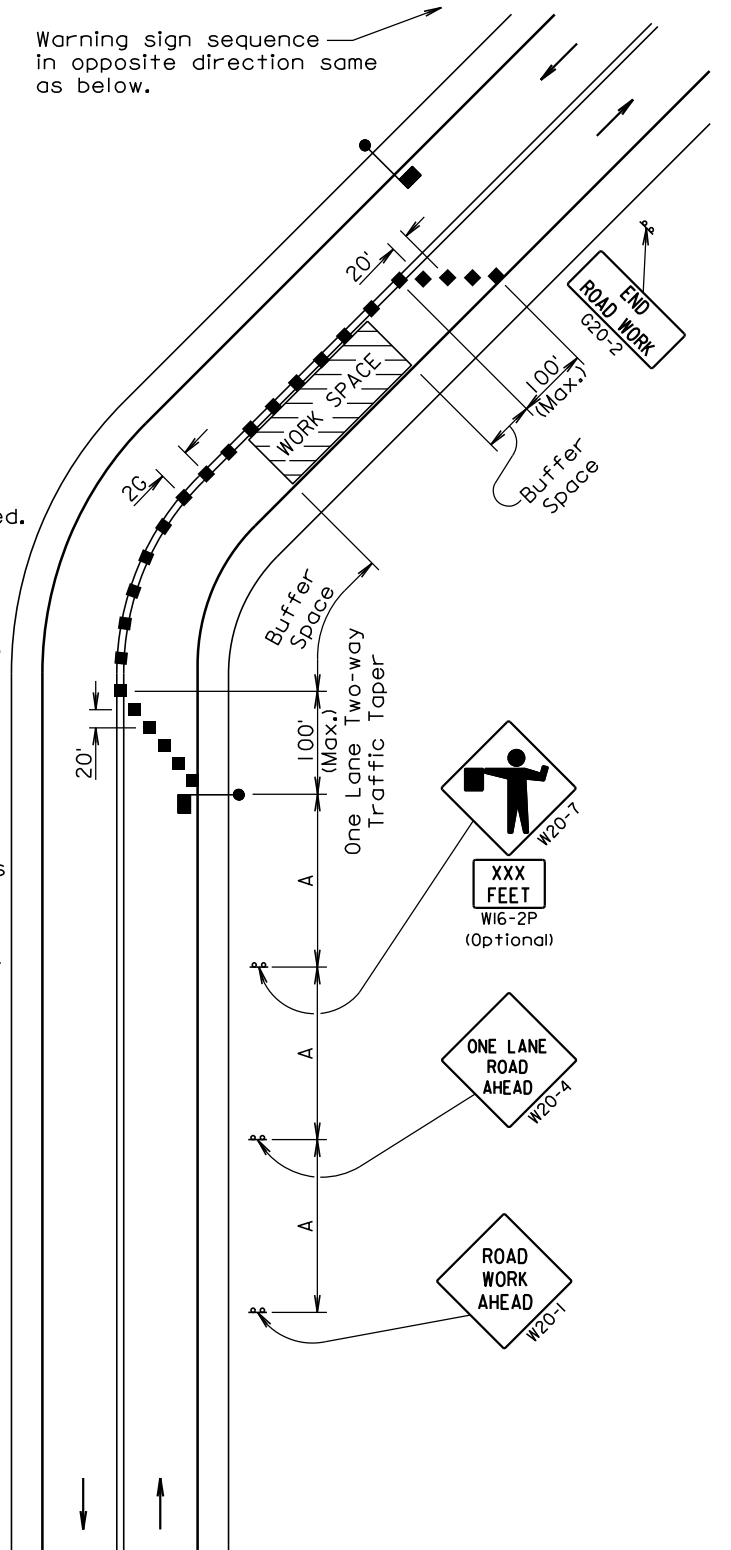
END ROAD WORK
 G20-2

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.

The length of A may be adjusted to fit field conditions.

Warning sign sequence in opposite direction same as below.



September 22, 2014

Published Date: 1st Qtr. 2016

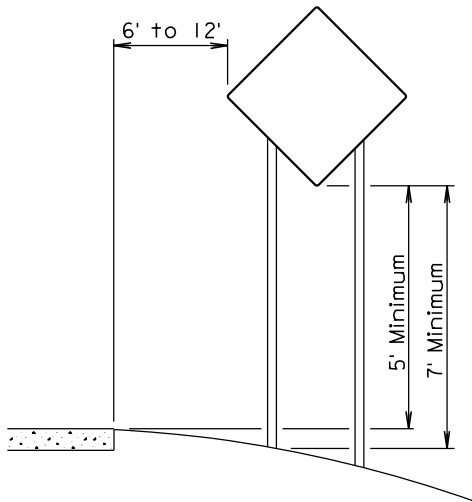
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GUIDES FOR TRAFFIC CONTROL DEVICES
LANE CLOSURE WITH FLAGGER PROVIDED

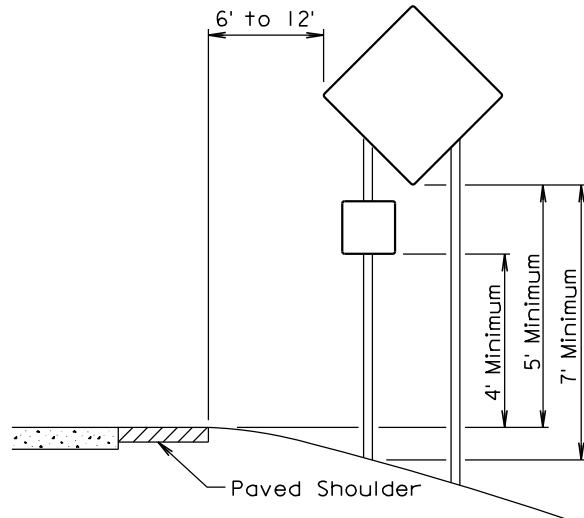
PLATE NUMBER
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Sheet 1 of 1

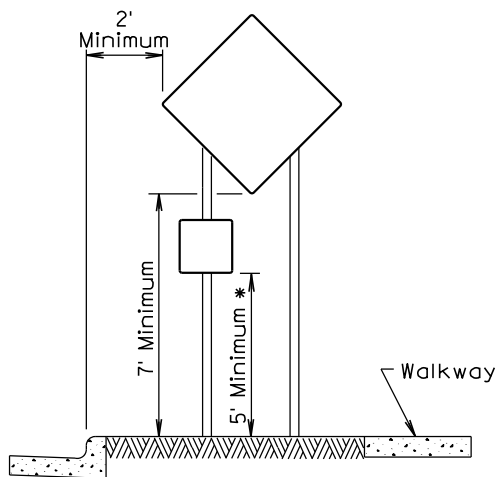
081-292
HUTCHINSON, McCOOK & TURNER COUNTIES



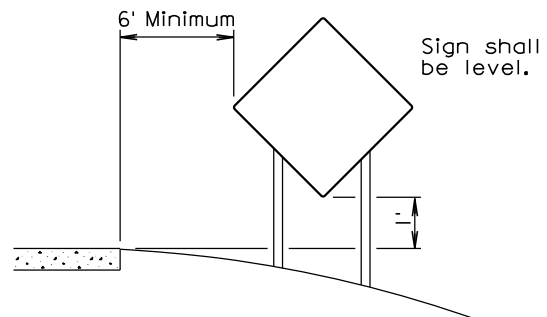
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT



RURAL DISTRICT
3 DAY MAXIMUM

(Not applicable to regulatory signs)

* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

September 22, 2014

Published Date: 1st Qtr. 2016

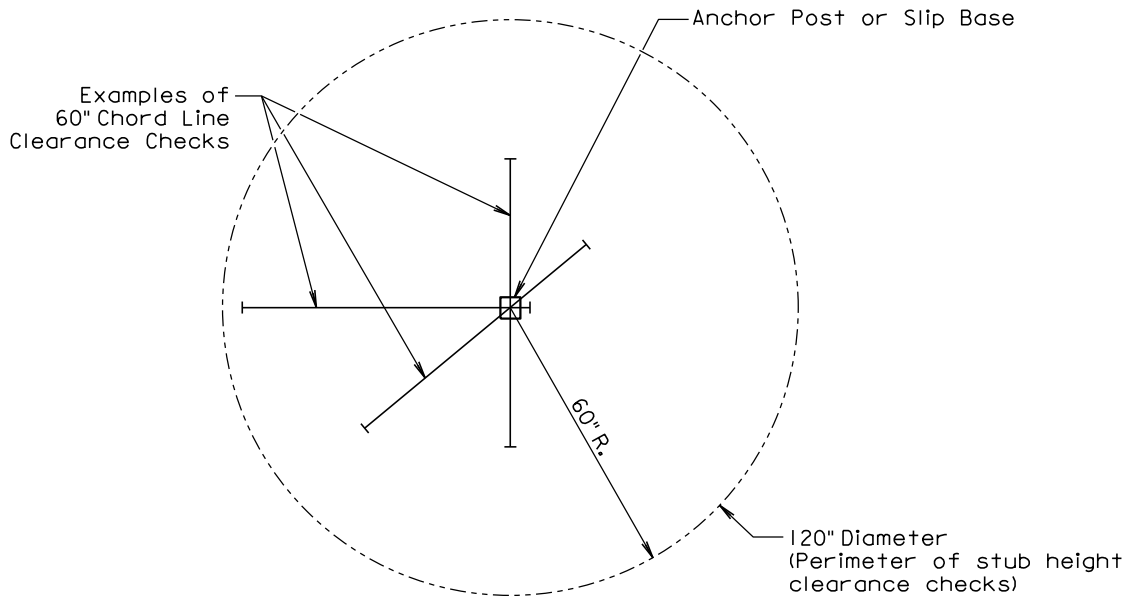
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CRASHWORTHY SIGN SUPPORTS
(Typical Construction Signing)

PLATE NUMBER
634.85

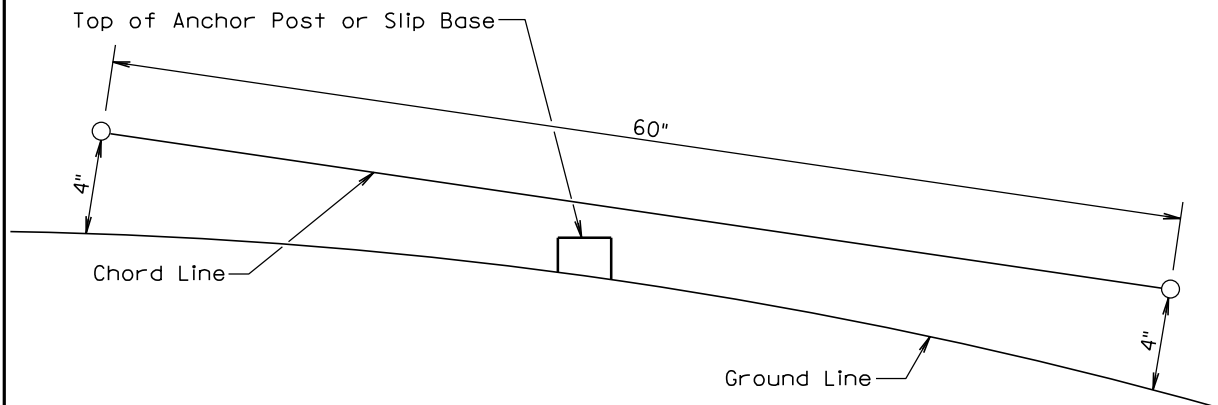
Sheet 1 of 1

081-292
HUTCHINSON, McCOOK & TURNER COUNTIES



PLAN VIEW

(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

Published Date: 1st Qtr. 2016

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BREAKAWAY SUPPORT STUB CLEARANCE

PLATE NUMBER
634.99

Sheet 1 of 1