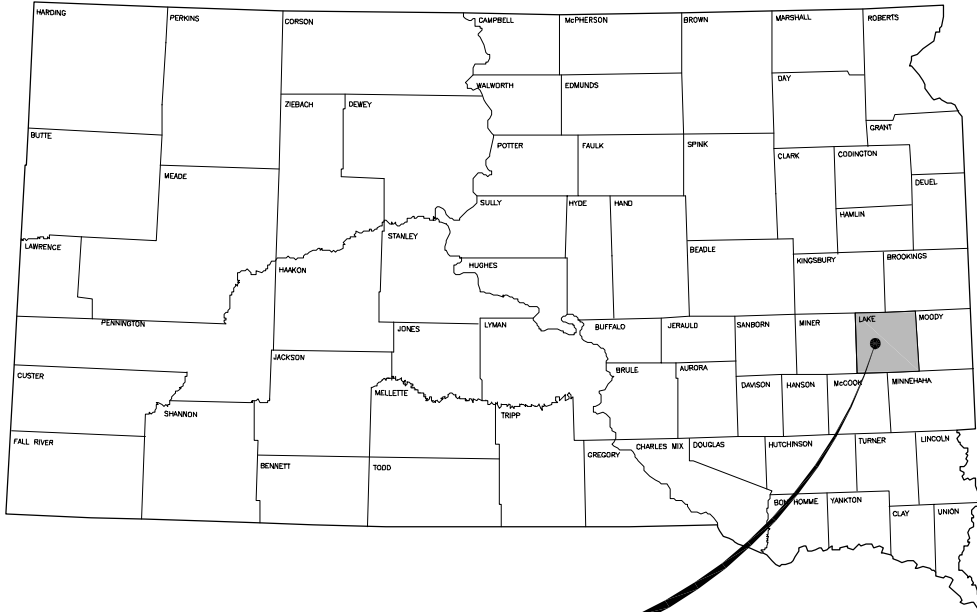


SOUTH DAKOTA

STATE OF SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	EM 8040(16)	1	32

REVISED 04-22-2015



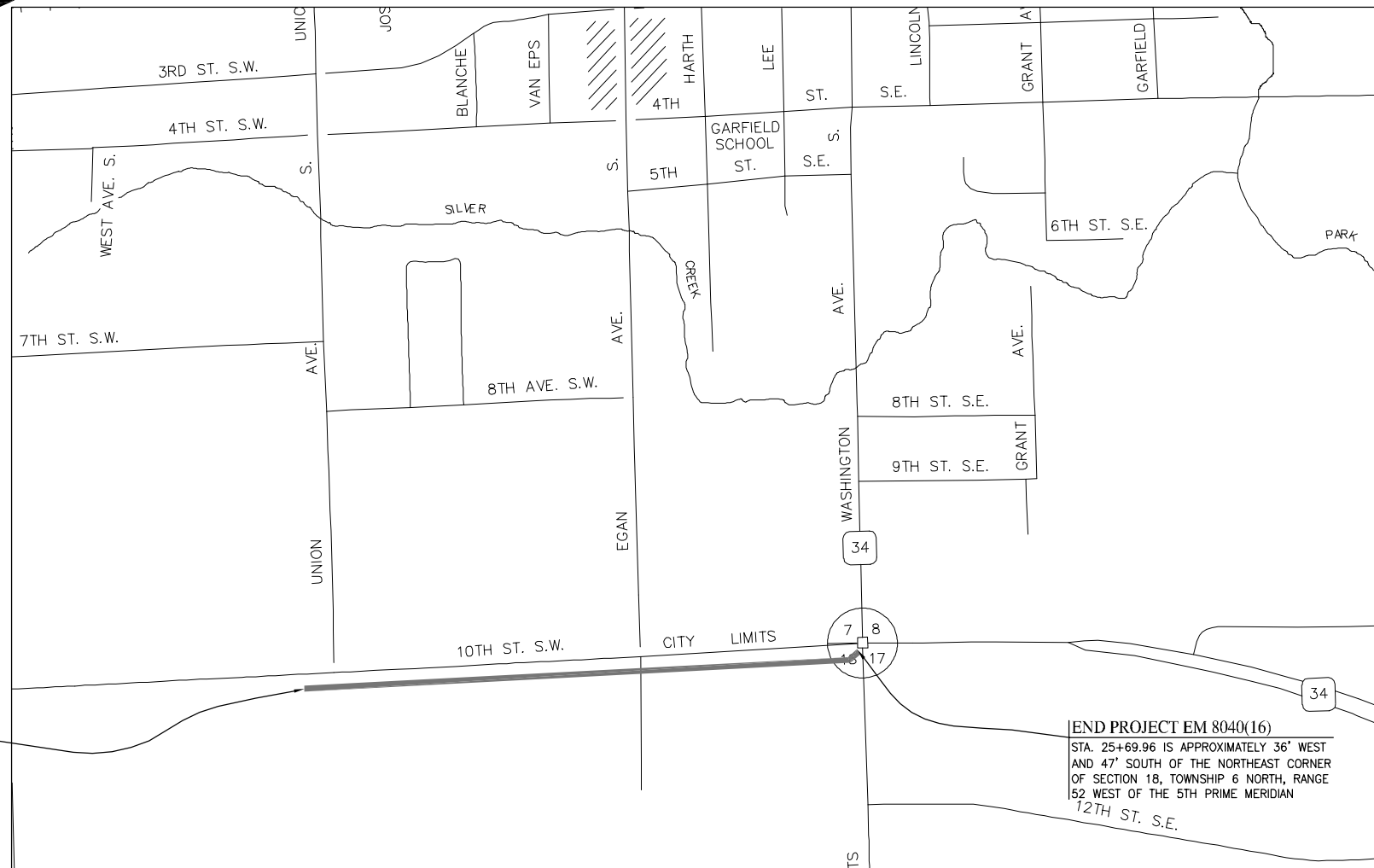
PLANS FOR PROPOSED PROJECT EM 8040 (16) PCN 02J1

CITY OF MADISON MADISON SOUTH TENTH STREET MULTI-USE TRAIL

INDEX OF SHEETS

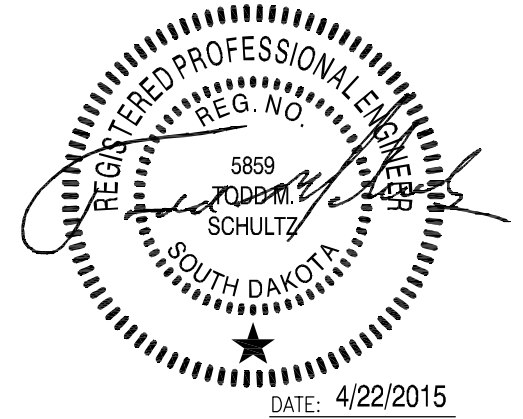
SHEET 1	TITLE SHEET AND LOCATION MAP
SHEET 2	ESTIMATE OF QUANTITIES & ENVIRONMENTAL COMMITMENTS
SHEET 3 THRU 5A	GENERAL NOTES
SHEET 6	TYPICAL SURFACING SECTIONS
SHEET 7 THRU 9	TRAFFIC CONTROL & ITEMIZED LIST FOR TRAFFIC CONTROL
SHEET 10 THRU 12	EROSION CONTROL LAYOUT
SHEET 13 THRU 14	EROSION CONTROL STANDARD PLATES
SHEET 15 THRU 20	PLAN & PROFILE
SHEET 21 THRU 23	STANDARD PLATES AND DETAILS
SHEET 23A THRU 23C	STANDARD PLATES AND DETAILS
SHEET 24 THRU 28	CROSS SECTIONS

MADISON



BEGIN PROJECT EM 8040(16)
STA. 0+20.49 IS APPROXIMATELY 2619'
WEST AND 67' SOUTH OF THE NORTHEAST
CORNER OF SECTION 18, TOWNSHIP 6
NORTH, RANGE 52 WEST OF THE 5TH
PRIME MERIDIAN

END PROJECT EM 8040(16)
STA. 25+69.96 IS APPROXIMATELY 36' WEST
AND 47' SOUTH OF THE NORTHEAST CORNER
OF SECTION 18, TOWNSHIP 6 NORTH, RANGE
52 WEST OF THE 5TH PRIME MERIDIAN



PROJECT LOCATION MAP NOT TO SCALE

STORM WATER PERMIT DATA EM 8040 (16)
Major Receiving Body of Water: Silver Creek
Area Disturbed: 0.73 Ac
Total Project Area: 1.30 Ac
Approx. Begin Lat/Long: 44° 59' 34.15" N
97° 07' 10.60" W

LEGEND
STATE & NATIONAL LINE
COUNTY LINE
SECTION LINE
PROPERTY LINE
SURVEY LINE
RIGHT OF WAY LINE
CUT SLOPES
FILL SLOPES



SCALES
LAYOUT, AS SHOWN ON MAP
PLANS--PROFILE { HORIZONTAL 1"=40'
VERTICAL 1"=10'
CROSS SECTIONS { HORIZONTAL 1"=40'
VERTICAL 1"=10'

GROSS LENGTH	2590.45	FEET	0.4906	MILES
LENGTH OF EXCEPTIONS	43.64	FEET	0.0083	MILES
NET LENGTH	2546.81	FEET	0.4823	MILES
LENGTH OF GRADING	2546.81	FEET	0.4823	MILES
LENGTH OF SURFACING	2546.81	FEET	0.4823	MILES
LENGTH OF BRIDGES	0.00	FEET	0.0000	MILES



TSP, Inc.
800 Kansas City Street
Rapid City, SD 57701-2712

SURVEY BY: SAYRE ASSOCIATES
SIOUX FALLS, SOUTH DAKOTA
& CITY OF MADISON
MADISON, SOUTH DAKOTA
DESIGN BY: TSP INC.
RAPID CITY, SOUTH DAKOTA

ESTIMATE OF QUANTITIES

009E0010	Mobilization	Lump Sum	LS
009E3200	Construction Staking	Lump Sum	LS
100E0020	Clear and Grub Tree	Each	1
100E0100	Clearing	Lump Sum	LS
110E0300	Remove Concrete Curb and Gutter	Ft	28
110E1010	Remove Asphalt Concrete Pavement	SqYd	498
110E1700	Remove Silt Fence	Ft	169
110E5450	Salvage Riprap	CuYd	25
110E7510	Remove Pipe End Section for Reset	Each	3
110E7520	Remove Smooth Tapered Sleeve for Reset	Each	2
120E0010	Unclassified Excavation	CuYd	724
120E0600	Contractor Furnished Borrow	CuYd	405
230E0010	Placing Topsoil	CuYd	262
250E0010	Incidental Work	Lump Sum	LS
260E1010	Base Course	Ton	974
320E1200	Asphalt Concrete Composite	Ton	534
380E0050	8" Non-reinforced PCC Pavement	SqYd	178
450E0102	12" RCP Class 2, Furnish	Ft	18
450E0110	12" RCP, Install	Ft	18
450E0112	15" RCP Class 2, Furnish	Ft	16
450E0120	15" RCP, Install	Ft	16
450E0143	24" RCP Class 3, Furnish	Ft	10
450E0150	24" RCP, Install	Ft	10
450E0153	27" RCP Class 3, Furnish	Ft	10
450E0160	27" RCP, Install	Ft	10
450E0163	30" RCP Class 3, Furnish	Ft	6
450E0170	30" RCP, Install	Ft	6
450E0416	24" RCP Bend, Furnish	Each	1
450E0417	24" RCP Bend, Install	Each	1
450E0424	30" RCP Bend, Furnish	Each	1
450E0425	30" RCP Bend, Install	Each	1
450E2000	12" RCP Flared End, Furnish	Each	2
450E2001	12" RCP Flared End, Install	Each	2
450E2004	15" RCP Flared End, Furnish	Each	1
450E2005	15" RCP Flared End, Install	Each	1
450E8200	Reset Smooth Tapered Sleeve	Each	2
450E9001	Reset Pipe End Section	Each	3
451E6080	Adjust Water Valve Box	Each	2
632E1320	2" x 2" Perforated Tube Post	Ft	63
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	SqFt	19.5
634E0010	Flagging	HR	8
634E0100	Traffic Control	UNITS	306
634E0120	Traffic Control, Misc.	Lump Sum	LS
650E0060	Type B66 Concrete Curb and Gutter	Ft	8
650E1560	Type R48 Concrete Curb and Gutter	Ft	81
650E4660	Type P6 Concrete Gutter	Ft	20
651E0040	4" Concrete Sidewalk	SqFt	216
651E7000	Type 1 Detectable Warnings	SqFt	60
670E2015	3'X4' Type C Drop Inlet	Each	1
670E2200	Type C Frame and Grate	Each	1
700E2000	Place Riprap	CuYd	25
730E0204	Type C Permanent Seed Mixture	Lb	9
732E0100	Mulching	Ton	1.5
734E0150	6" Diameter Erosion Control Wattle	Ft	204
734E0604	High Flow Silt Fence	Ft	169
734E0610	Mucking Silt Fence	CuYd	13
831E0110	Type B Drainage Fabric	SqYd	42
900E1310	Concrete Washout Facility	Each	1

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 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.

The Contractor shall not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

Action Taken/Required:

The Contractor shall obtain the necessary permits from 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, 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, County, or City 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.

GENERAL NOTES

STATE OF SOUTH DAKOTA	PROJECT EM 8040(16)	SHEET 3	TOTAL SHEETS 28
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REVISED 04-03-2015

SPECIFICATIONS :

The South Dakota Department of Transportation, "Standard Specifications for Roads and Bridges", 2004 Edition, and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

SCOPE OF WORK AND SEQUENCE OF OPERATIONS

The work on this project consists of, but is not limited to, removal of existing pavement, installation and backfilling of new culverts, extension of existing culverts using new pipe and bends, trail inslope grading, and seeding and mulching.

The Contractor shall complete this project according to the following sequence:

1. Install erosion control measures.
2. Remove sod and topsoil in area of trail.
3. Excavate for new culverts and area inlet. Install area inlet and new culverts.
4. Perform inslope grading, paving, seeding and mulching. Place traffic control as needed when working along public road shoulders.
5. Remove traffic control.
6. Remove erosion control measures once grass cover is established.

Deviations from this sequence may be allowed if approved by the Engineer.

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 12 gallons of water per cubic yard of Embankment minus Waste. The estimated quantity of Water for Embankment is 13.54 MGal. No separate payment will be made for the Water for Embankment and all costs associated shall be incidental to the contract unit price per cubic yard of "Unclassified Excavation". Scarification and recompaction of the subgrade shall be incidental to the contract unit price per cubic yard of "Unclssified Excavation."

The estimated cubic yards of excavation and/or embankment required to construct outlet ditches, ditch blocks, and approaches are included in the earthwork balance notes on the profile sheets.

TABLE OF EXCAVATION QUANTITIES

Excavation	462 CuYd	Embankment	903 CuYd
Topsoil	262 CuYd	+25% Shrinkage	226 CuYd
Contractor Furnished Borrow	405 CuYd		
Unclassified Excavation	1129 CuYd		1129 CuYd

CONTRACTOR FURNISHED BORROW

The Contractor shall provide a suitable site for Contractor furnished borrow material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The borrow material shall be approved by the Engineer. The plans quantity for "Contractor Furnished Borrow" as shown in the Estimate of Quantities will be the basis of payment for this item.

CONTRACTOR FURNISHED BORROW (CONT)

Restoration of the Contractor furnished borrow site shall be the responsibility of the Contractor.

GENERAL MAINTENANCE OF TRAFFIC

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, County or City and to the satisfaction of the Engineer.

The Contractor shall provide documentation that all breakaway sign supports comply with crash level 3 requirements as per NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

TRAFFIC CONTROL, MISCELLANEOUS

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. The Contractor shall coordinate with the City or County to determine which signs will be reset and to verify reset locations. Cost for this work shall be included in the Contractor's lump sum price for "Traffic Control, Miscellaneous". Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State, County or City.

Devices no longer needed shall be neatly stockpiled on the project at a location(s) designated by the Engineer. This work will be paid for at the contract lump sum price for "Traffic Control, Miscellaneous".

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite shall be furnished by the Contractor.

Mineral Aggregate for Asphalt Concrete shall conform to the requirements of the Specifications for Class E, Type 1.

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

Asphalt pavement patching at Union Avenue So., at the existing gas station and at Washington Avenue So. shall be included in the bid item "Asphalt Concrete Composite."

8" NON-REINFORCED PCC PAVEMENT

8" Non-Reinforced PCC Pavement shall use a Class M6 mix design

.SHRINKAGE FACTOR

Embankment plus 25%.

COMPACTION:

Compaction of earth embankments shall be governed by the ordinary compaction method, except for pipe backfill material which shall be per specified density.

FULL DEPTH SAWCUTTING OF ASPHALT

Full depth sawcutting of asphalt shall be incidental to various bid items.

CLEARING

Before clearing activities begin, the Contractor shall contact the Engineer to determine the limits of clearing for the project. If the trees or shrubs that are supposed to remain within the limits of work are damaged or destroyed by the Contractor, the Contractor shall replace them with the same size and type of tree at the Contractor's expense.

REMOVE TAPERED SLEEVE FOR RESET AND RESET TAPERED SLEEVE

These bid items are for the removal, salvage, and re-setting of RC Pipe to corrugated metal pipe transition fittings.

REMOVE PIPE END SECTION FOR RESET

This bid item shall include removal of existing safety ends and flared end and stockpile for reset after culvert pipe has been extended.

RESET PIPE END SECTION

This bid item shall include resetting of the safety ends and flared end that were removed for reset.

4" CONCRETE SIDEWALK

This bid item consists of the concrete ramps at each end of the multiuse trail including the flares on each side.

HIGH FLOW SILT FENCE

The high flow silt fence fabric provided shall be from the approved product list. The approved product list for high flow silt fence may be viewed at the following internet site.

<http://www.state.sd.us/Applications/HC54ApprovedProducts/main.asp>

High flow silt fence shall be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.05 for details.

TABLE OF HIGH FLOW SILT FENCE

STATION	QUANTITY (FT)
7+20.2, 23.9' L TO 7+17, 15.1' L	24
14+98.2, 6.5' L TO 15+07.2, 9.2' L	23
15+04.2, 8.9' L TO 15+14.6, 15'L	34
22+26.7, 34'L TO 22+34.9, 34' L	20
24+71.8, 19.9' L TO 24+71.8, 15' L	18
ENGINEER'S DISCRETION	50
TOTAL	169

GENERAL NOTES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	EM 8040(16)	4	28

REVISED 04-13-2015

UTILITIES

The utilities shown on the plans are for informational purposes only. It shall be the Contractor's responsibility to contact and to coordinate their work schedule with the County and the Utility Companies. The Contractor shall be responsible for all damage to utilities in the limits of the proposed construction at no cost to the Owners.

Adequate time shall be provided for the utilities to be relocated and adjusted prior to work which may disrupt the utilities per Section 5.6 of the Standard Specifications. The County Highway Superintendent is Dave Fedeler at 605-256-7607. The City Engineer is Chad Comes at 605-256-7514.

The utility Owners will adjust utilities within the limits of the proposed construction unless otherwise indicated on these plans. The Contractor will refer to the note and list of utility owners in the proposal.

South Dakota One Call identified the following utilities in the vicinity of the project limits:

Mid-Continent Communications	(605) 274-2000
City of Madison Electric Department	(605) 256-7521
Northwestern Energy (Gas)	(800) 245-6977
City of Madison Water	(605)-256-7527
City of Madison Sewer	(605) 256-7515

MUCKING SILT FENCE

Mucking silt fence shall consist of removing muck trapped by the silt fence and spreading the material evenly over the adjacent area to conform to the existing grade.

REMOVE SILT FENCE

Silt fence shall be removed when vegetation is established. Some or all of the silt fence may be left on the project until vegetation is established.

PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways and temporary easements under cultivation.

All permanent seed shall be planted in the topsoil at a depth of ¼" to ½".

All seed broadcast must be raked or dragged in (incorporated) within the top ¼" to ½" of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

PERMANENT SEEDING - cont

The varieties listed for seed mixtures are preferred varieties.

Native harvest seed will be allowed.

The area to be seeded and mulched is estimated at 0.47 acres.

Type C Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Flintlock, Rodan, Rosana	16
Canada Wildrye	Mandan	2
		Total: 18

All costs associated with permanent seeding shall be incidental to other items.

MULCHING (GRASS HAY OR STRAW)

Bales with noxious weed contamination will be rejected and the Contractor will be required to remove the contaminated bales from the project.

An additional 0.5 tons of Grass Hay or Straw Mulch has been added to the Estimate of Quantities for temporary erosion control on areas determined by the Engineer during construction

SALVAGE RIPRAP

Salvage riprap shall consist of removing existing riprap and stockpiling on site for re-placement.

PLACE RIPRAP

Place riprap shall consist of placing stockpiled riprap in areas shown on the plans.

NEW PERMANENT SIGNING

Permanent signage locations shall be staked in the field by the Contractor and verified by the Engineer. The Contractor shall give the Engineer a minimum of one week advance notice to allow for verification of permanent sign locations.

The Contractor shall furnish all signs, post, stiffeners, bases, hardware, and labor for the installation of permanent signs in the size and type and quantity as required per the plan tables and/or the direction of the Engineer.

NEW PERMANENT SIGNING (CONT.)

The Contractor shall be responsible for contacting South Dakota One Call to locate utilities at the staked sign locations.

New signs for installation are summarized in the Permanent Sign Installation Table.

Sign Design

Signs shall be constructed as required per the Manual on Uniform Traffic Control Devices (MUTCD), the latest edition of "Standard Highway Signs," and as specified in the plans.

All sign material shall comply with Section 982 of the Specifications.

All upper/lower case letters and numerals shall be as required per the MUTCD, the latest edition of "Standard Highway Signs," and as specified in the plans.

Sign Sheeting

All signs shall use a High Intensity Prismatic Retroreflective background, Typ IV as per ASTM D4956.

All signs shall be manufactured in accordance with the sheeting manufacturer's recommendations utilizing a matched component system, including inks, electronic cuttable films, and protective overlay films. Digitally printed signs will not be accepted.

All black legend and borders shall be nonreflectorized (unless otherwise specified in these plans).

Sign Installation Hardware

The Contractor shall use 3/8 inch diameter rust proof machine sign bolts, flat metal washers, neoprene washers (against the sign sheeting), lock washers and nuts to fasten the sign to the channel aluminum and posts. A minimum of two bolts shall extend through each post.

All costs associated with furnishing and installing the new permanent signs, and with furnishing and installing stiffeners and hardware shall be incidental to the contract unit price per square foot for Flat Aluminum Sign, Non-removable Copy, High Intensity.

Perforated Tube Post

Payment for 2.0"x2.0" perforated tube post shall include all cost for labor, equipment and materials necessary to complete the following work:

1. Furnish all posts, stiffeners, breakaway bases, soil stabilizers and hardware.
2. Assembly and installation of breakaway bases, soil stabilizers and hardware.
3. Assembly of sign to sign post.
4. Installation of sign post and sign,

FLAT ALUMINUM SIGN, NON-REMOVABLE COPY, HIGH INTENSITY

ITEMIZED LIST FOR PERMANENT SIGNAGE

Sign Code	Description	Number	Sign Size	Sq.Ft. Per Sign	Area Sq.Ft.
R1-1	Stop	2	18" x18"	1.85	3.70
W1-2	Left or Right Curve Arrow	1	18" x 18"	2.25	2.25
W1-4	Reverse Curve (L or R)	6	18" X 18"	2.25	13.50
				TOTAL	19.45

GENERAL NOTES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	EM 8040(16)	5	28

REVISED 04-13-2015

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment shall be installed at locations noted in the table and at locations determined by the Engineer during construction. Refer to Standard Plate 734.06 for details.

The Contractor shall provide certification that the erosion control wattles do not contain noxious weed seeds.

Erosion control wattles shall remain on the project to decompose.

The erosion control wattle provided shall be from the approved product list. The approved product list for erosion control wattle may be viewed at the following internet site:

<http://sddot.com/business/certification/products/Default.aspx>

TABLE OF EROSION CONTROL WATTLES

STATION (INCH)	L/R	DIA (Ft)	LOCATION	QUANTITY
1+93 - 29' TO 9'	L	6	DITCH	20
4+60 - 31' TO 11'	L	6	DITCH	20
8+68 - 28' TO 6'	L	6	DITCH	22
10+21 - 26' TO 6'	L	6	DITCH	20
11+71 - 26' TO 6'	L	6	DITCH	20
13+20 - 28' TO 6'	L	6	DITCH	22
19+34 - 28' TO 8'	L	6	DITCH	20
20+84 - 27' TO 7'	L	6	DITCH	20
22+85 - 29' TO 9'	L	6	DITCH	20
		ADDITIONAL		<u>20</u>
		TOTAL		204

TYPE 1 DETECTABLE WARNINGS

Detectable warnings shall be in compliance with the Americans with Disability Act regulations.

The detectable warnings shall be installed according to the manufacturer's installation instructions.

A concrete thickness equal to the adjacent concrete sidewalk thickness and 2 inches of granular cushion material shall be placed below the Type 1 Detectable Warnings. When concrete is placed below the detectable warnings then the concrete thickness shall be transitioned at the rate of 1" per foot to match the adjacent concrete sidewalk thickness.

Cast iron plates may be a natural patina (weathered steel).

When Type 1 Detectable Warnings are specified, the Contractor shall furnish and install only one of the products listed in the Type 1 Detectable Warnings table.

Type 1 Detectable Warnings

Product	Manufacturer
Detectable Warning Plate Cast Iron Plate	Neenah Foundry Company Neenah, WI 800-558-7075 http://www.neenahfoundry.com
Detectable Warning Plate Cast Iron Plate	Deeter Foundry Lincoln, NE 800-234-7466 http://deeter.com
Detectable Warning Plate Cast Iron Plate (No Coating)	East Jordan Iron Works 301 Spring Street East Jordan, MI 49727 800-626-4653 http://www.ejiw.com
CAST-DWD Cast Iron Plate	Key 3 Casting (Northern Foundry) 555 West 25th Street Hibbing, MN 55746 218-263-8871 http://key3casting.com

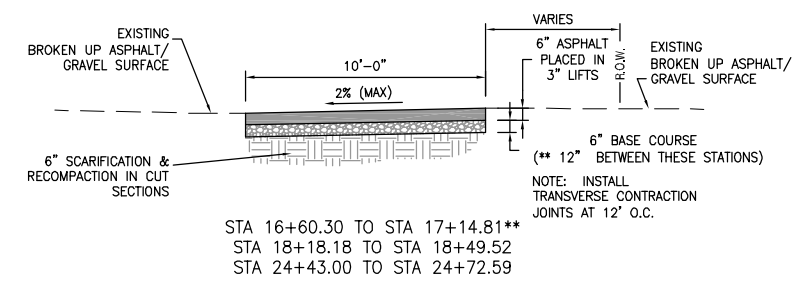
GENERAL NOTES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	EM 8040(16)	5A	28

TABLE OF PIPE QUANTITIES

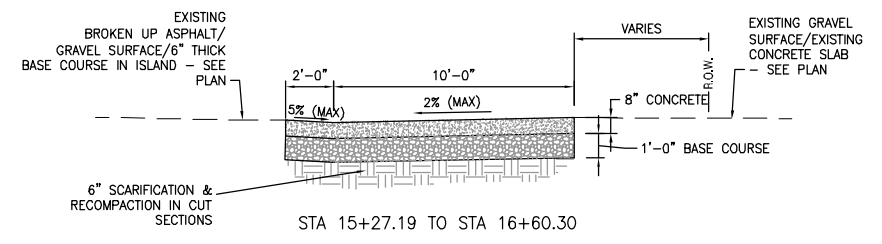
			REMOVE SMOOTH TAPERED SLEEVE FOR RESET (Each)	REMOVE PIPE END SECTION FOR RESET (Each)	RESET TAPERED SLEEVE (Each)	RESET PIPE END SECTION (Each)	INSTALL 24" X 7.5 DEG. RC PIPE BEND (Each)	INSTALL 24" RC PIPE (Ft)	INSTALL 27" RC PIPE (Ft)	INSTALL 30" X 7.5 DEG. RC PIPE BEND (Each)	INSTALL 30" RC PIPE (Ft)	INSTALL 15" RC PIPE FLARED END SECTION (Each)	INSTALL 15" RC PIPE (Ft)	INSTALL 12" RC PIPE FLARED END SECTION (Each)	INSTALL 12" RC PIPE (Ft)
STATION	OFFSET	L/R													
0+08.74	15.57'	L	1												
0+08.74	15.57'	L		1											
0+10.89	15.53'	L					1								
0+10.89	15.53'	L TO													
0+22.64	16.85'	L						10							
0+22.64	16.85'	L			1										
0+22.64	16.85'	L TO													
0+32.57	17.97'	L				1									
2+91.17	5.02'	L		1											
2+91.17	5.02'	L TO													
2+91.17	14.78'	L						10							
2+91.19	14.78'	L TO													
2+91.19	20.78'	L				1									
6+29.28	15.81'	L	1												
6+29.28	15.81'	L		1											
6+29.28	15.81'	L								1					
6+29.28	15.81'	L TO													
6+23.13	16.29'	L									6				
6+23.13	16.29'	L			1										
6+23.13	16.29'	L TO													
6+13.29	17.77'	L				1									
15+01.97	10.86'	R TO													
15+03.85	5.16'	R										1			
15+03.85	5.16'	R TO													
15+08.27	10.06'	L											16		
25+35.60	16.21'	L TO													
25+36.59	10.23'	L												1	
25+36.59	10.23'	L TO													
25+37.81	7.73'	R													18
25+37.81	7.73'	R TO													
25+37.91	11.82'	R												1	
	TOTALS		2	3	2	3	1	10	10	1	6	1	16	2	18

TYPICAL SURFACING SECTIONS



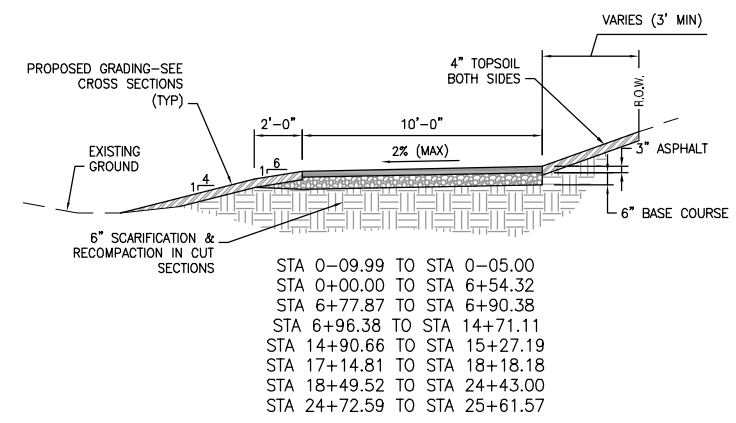
C TYPICAL SHARED USE PATH SECTION WITH THICKENED ASPHALT

NOT TO SCALE



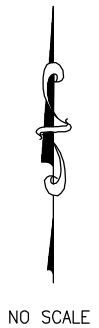
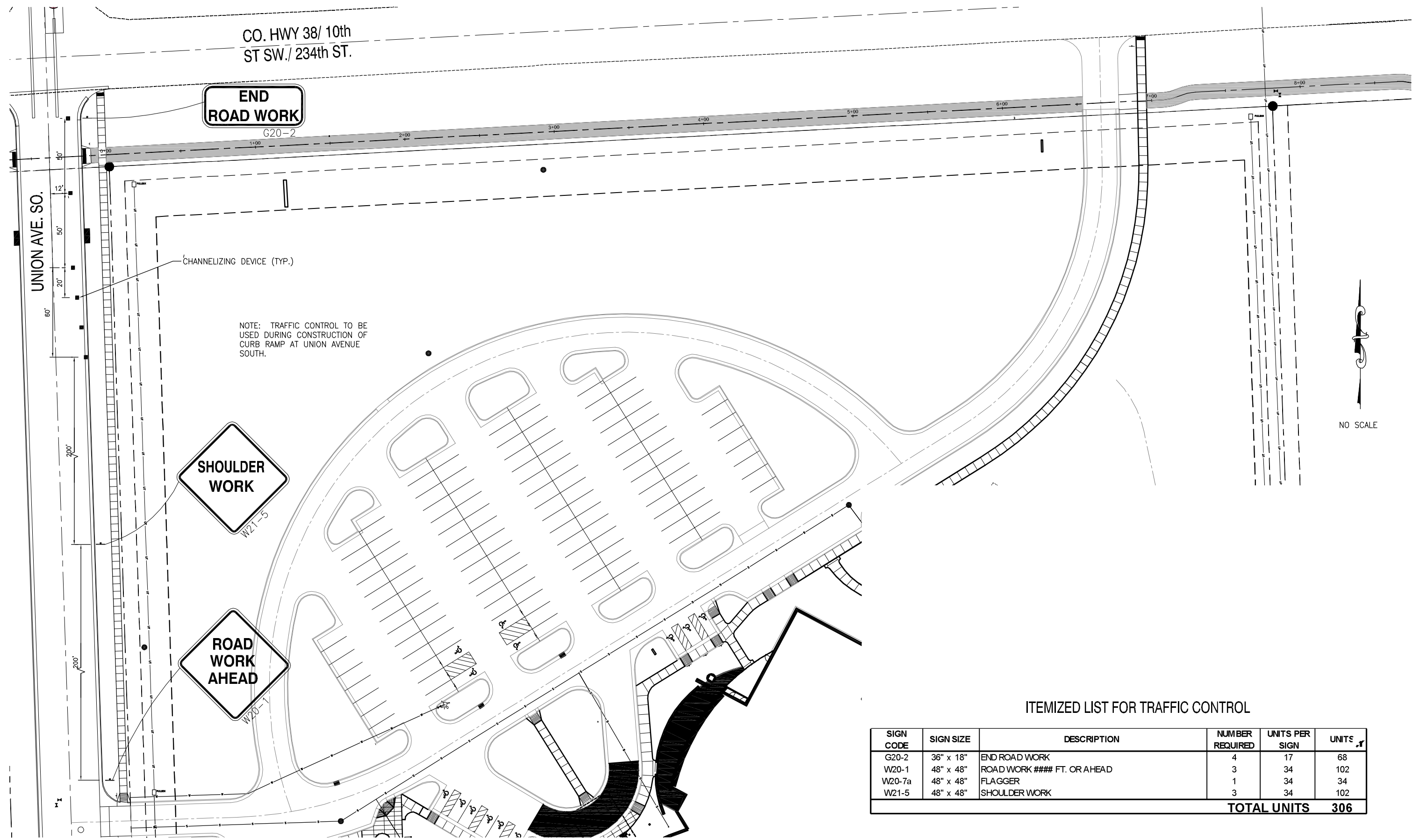
B TYPICAL SHARED USE PATH SECTION WITH CONCRETE

NOT TO SCALE



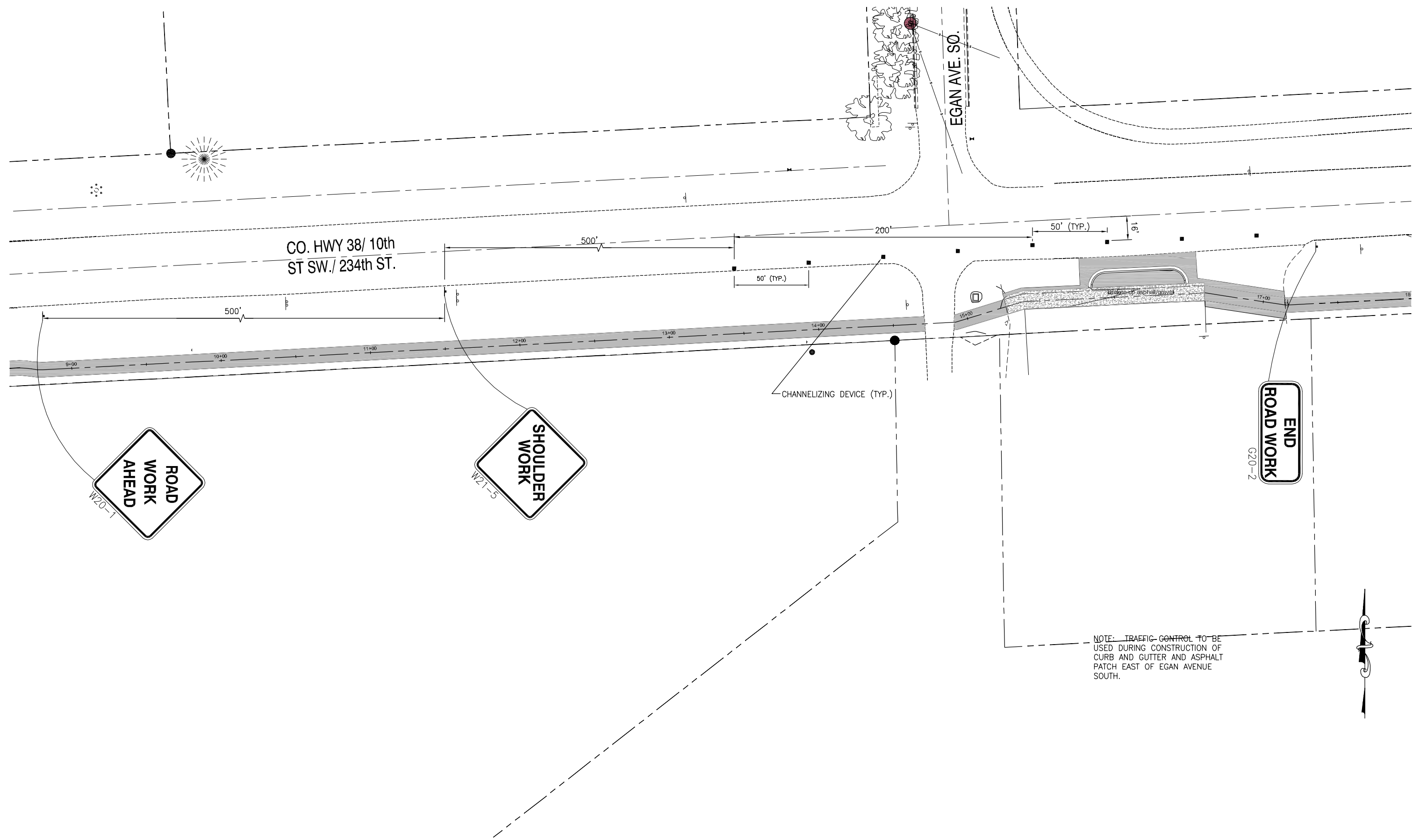
A TYPICAL SHARED USE PATH SECTION

NOT TO SCALE

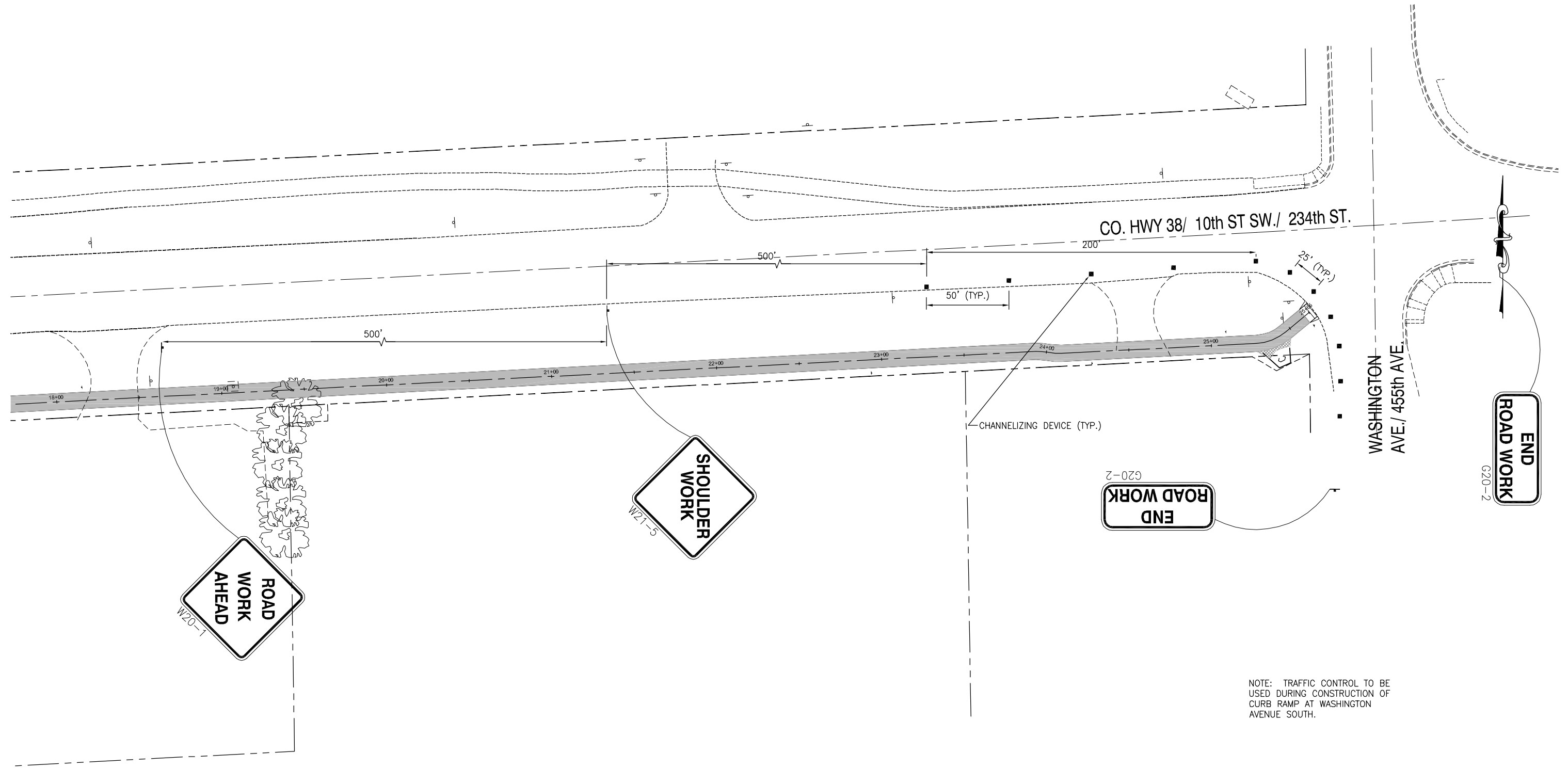


ITEMIZED LIST FOR TRAFFIC CONTROL

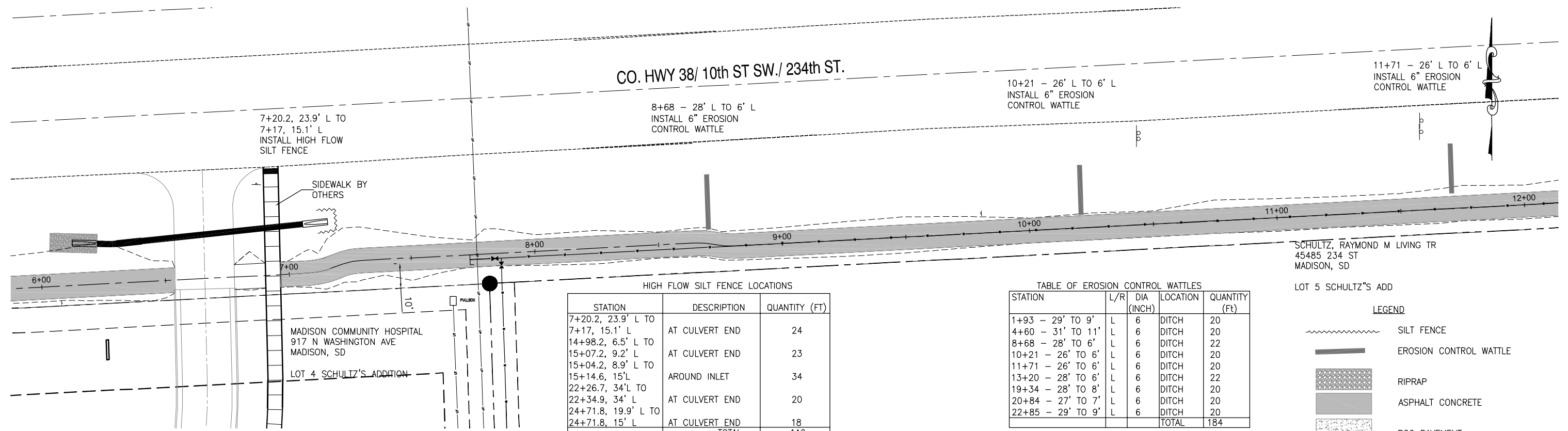
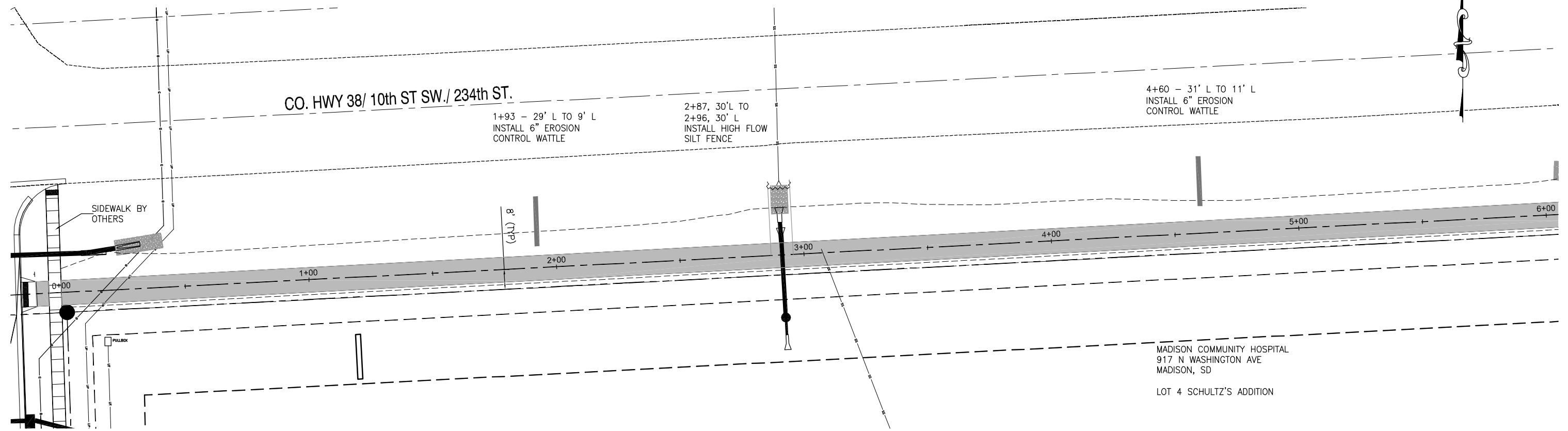
SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	4	17	68
W20-1	48" x 48"	ROAD WORK #### FT. OR AHEAD	3	34	102
W20-7a	48" x 48"	FLAGGER	1	34	34
W21-5	48" x 48"	SHOULDER WORK	3	34	102
TOTAL UNITS					306



NOTE: TRAFFIC CONTROL TO BE USED DURING CONSTRUCTION OF CURB AND GUTTER AND ASPHALT PATCH EAST OF EGAN AVENUE SOUTH.



NOTE: TRAFFIC CONTROL TO BE USED DURING CONSTRUCTION OF CURB RAMP AT WASHINGTON AVENUE SOUTH.



HIGH FLOW SILT FENCE LOCATIONS

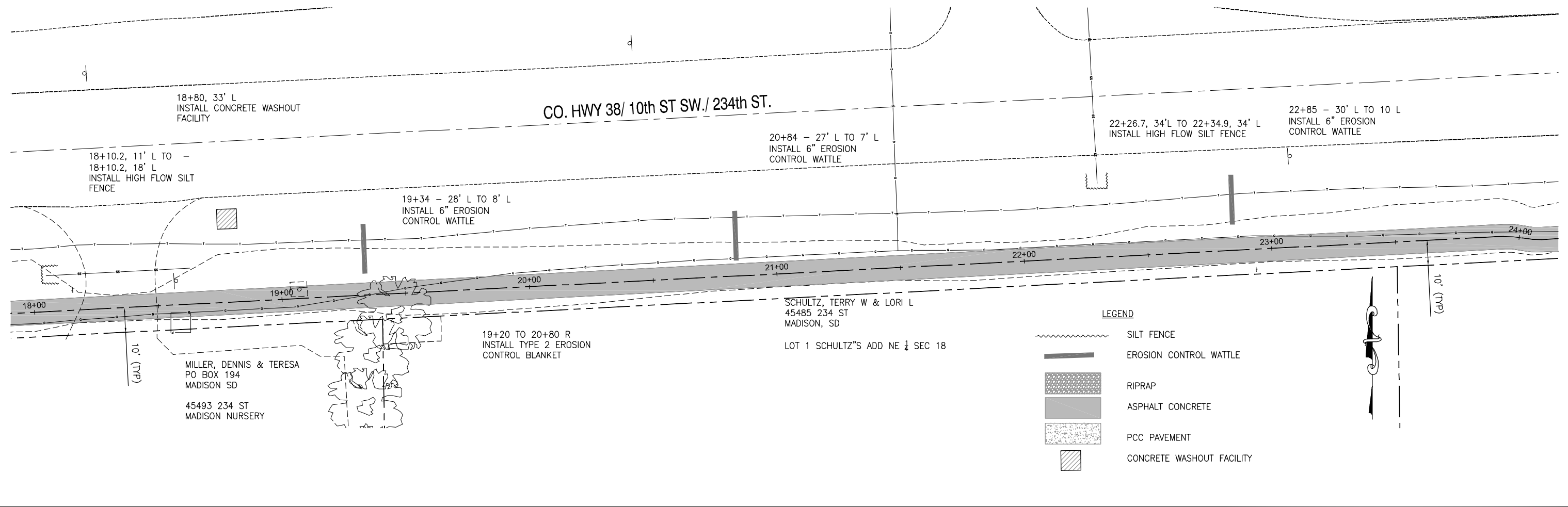
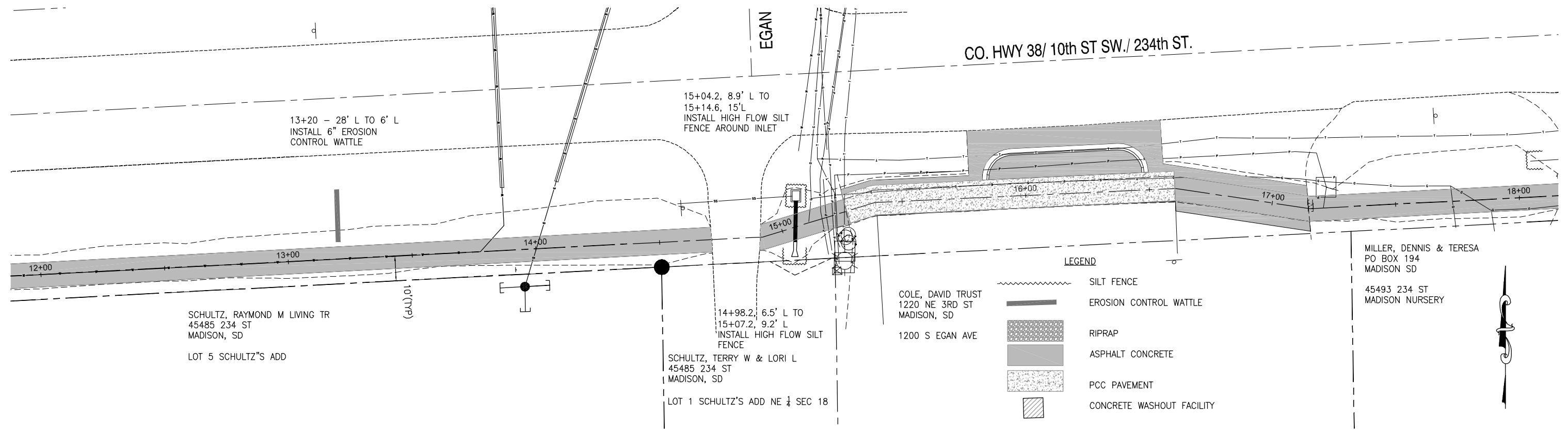
STATION	DESCRIPTION	QUANTITY (FT)
7+20.2, 23.9' L TO 7+17, 15.1' L	AT CULVERT END	24
14+98.2, 6.5' L TO 15+07.2, 9.2' L	AT CULVERT END	23
15+04.2, 8.9' L TO 15+14.6, 15' L	AROUND INLET	34
22+26.7, 34' L TO 22+34.9, 34' L	AT CULVERT END	20
24+71.8, 19.9' L TO 24+71.8, 15' L	AT CULVERT END	18
	TOTAL	119

TABLE OF EROSION CONTROL WATTLES

STATION	L/R	DIA (INCH)	LOCATION	QUANTITY (Ft)
1+93 - 29' TO 9' L	L	6	DITCH	20
4+60 - 31' TO 11' L	L	6	DITCH	20
8+68 - 28' TO 6' L	L	6	DITCH	22
10+21 - 26' TO 6' L	L	6	DITCH	20
11+71 - 26' TO 6' L	L	6	DITCH	20
13+20 - 28' TO 6' L	L	6	DITCH	22
19+34 - 28' TO 8' L	L	6	DITCH	20
20+84 - 27' TO 7' L	L	6	DITCH	20
22+85 - 29' TO 9' L	L	6	DITCH	20
			TOTAL	184

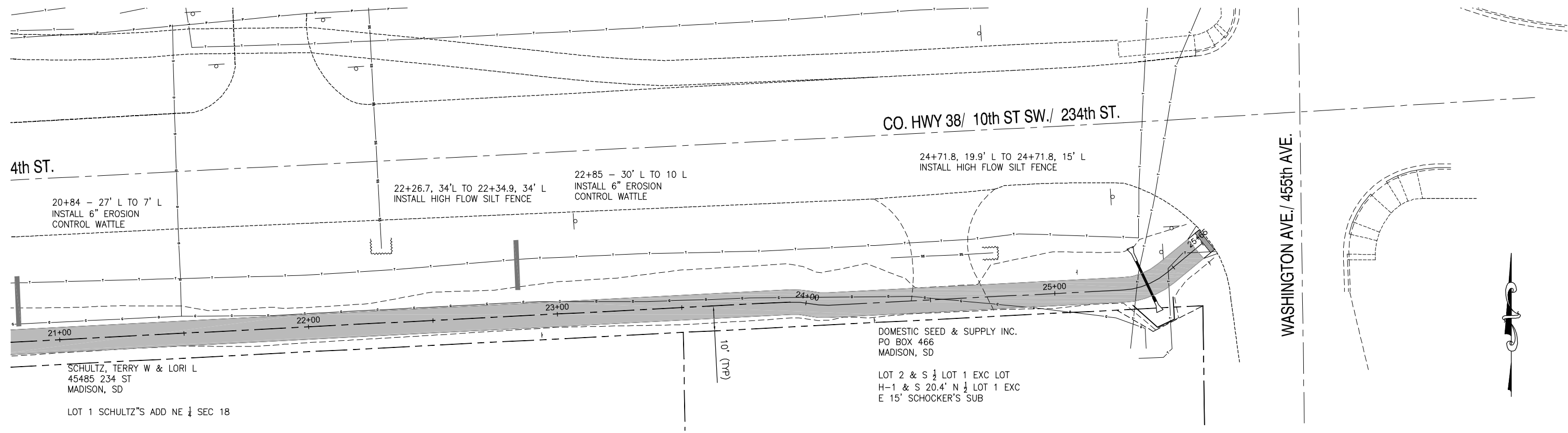
LEGEND

- SILT FENCE
- EROSION CONTROL WATTLE
- RIPRAP
- ASPHALT CONCRETE
- PCC PAVEMENT
- CONCRETE WASHOUT FACILITY

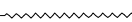







STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	EM 8040(16)	12	28

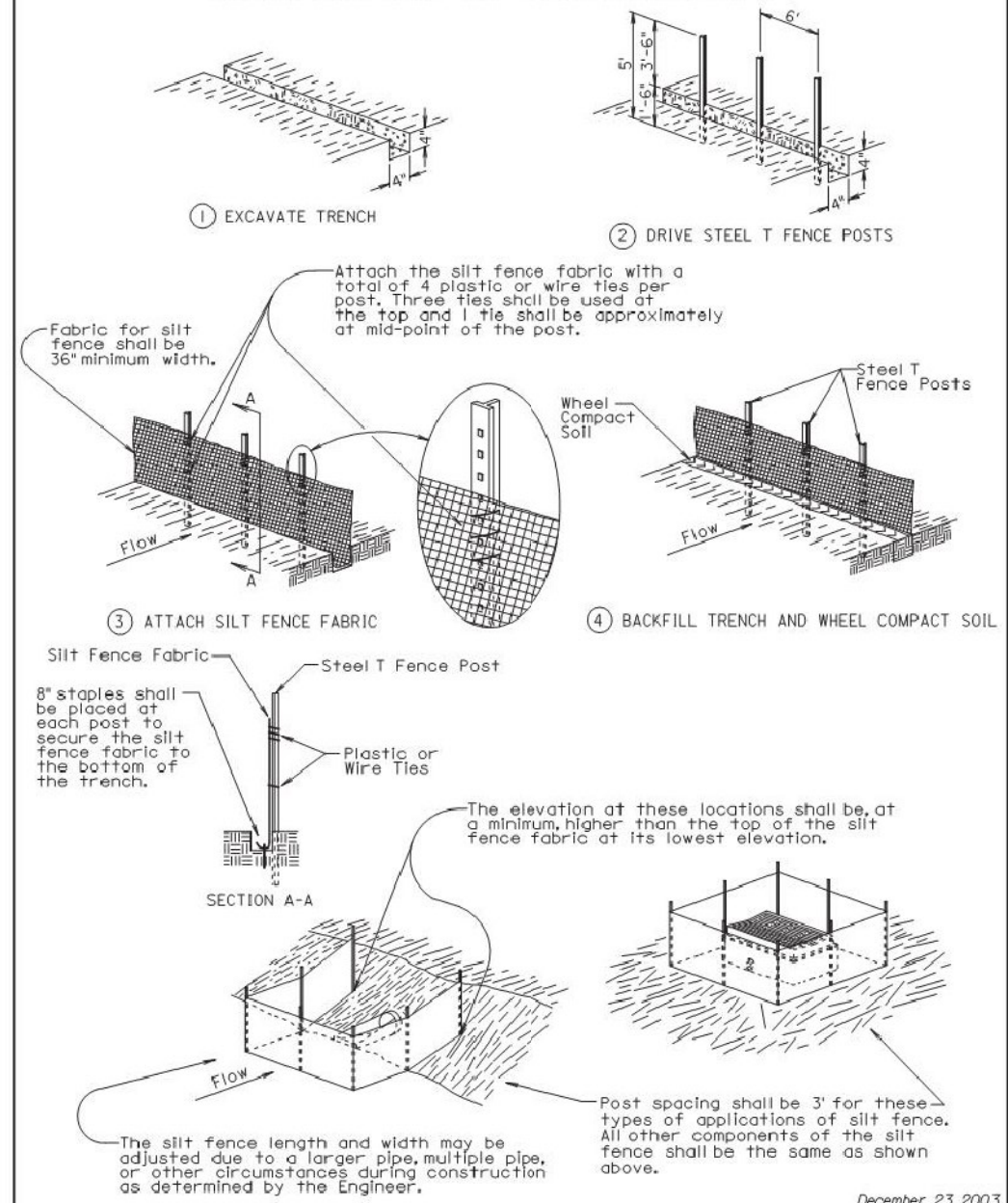
REVISED 04-03-2015



LEGEND

-  SILT FENCE
-  EROSION CONTROL WATTLE
-  RIPRAP
-  ASPHALT CONCRETE
-  PCC PAVEMENT
-  CONCRETE WASHOUT FACILITY

MANUAL HIGH FLOW SILT FENCE INSTALLATION

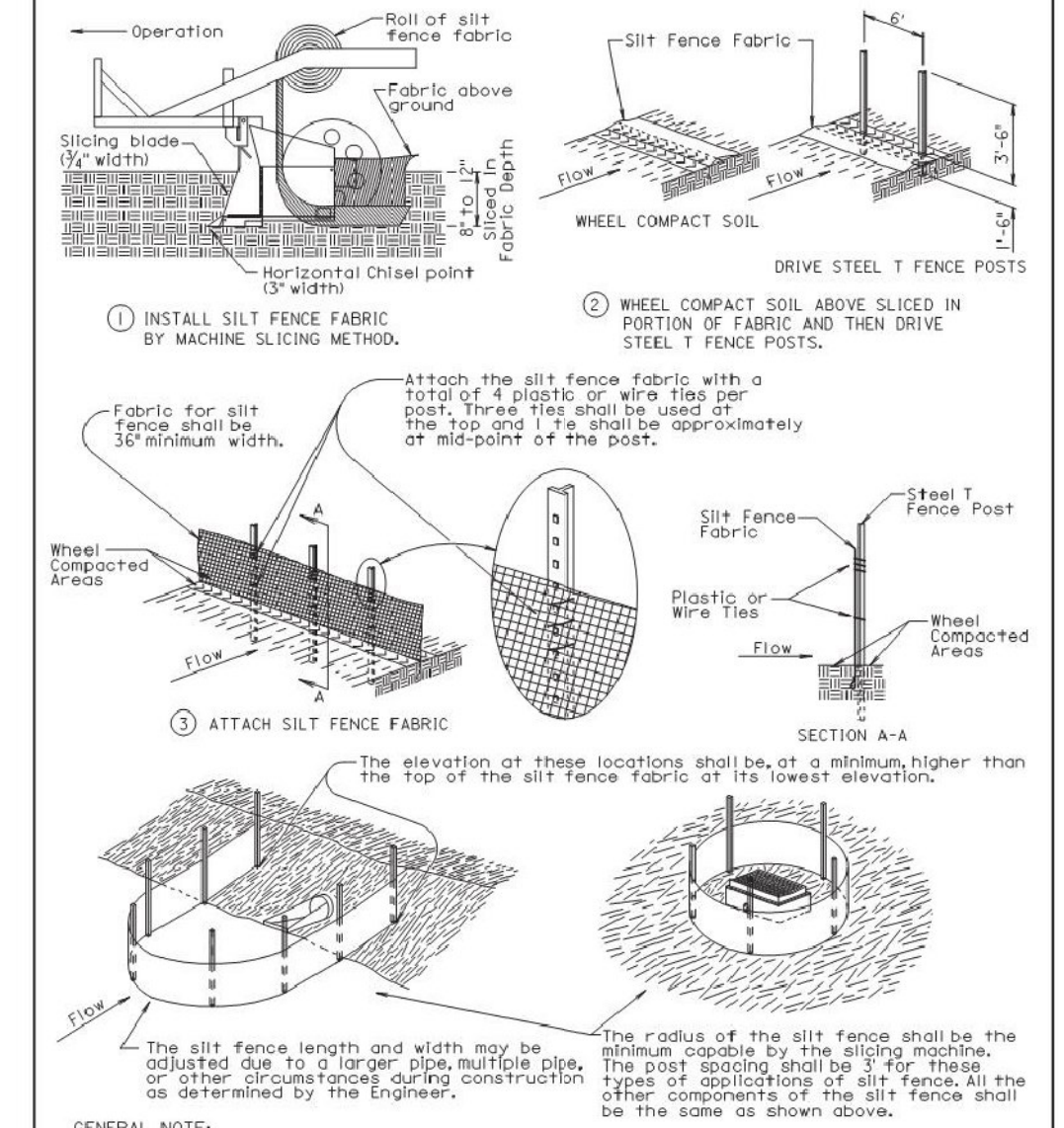


December 23, 2003

S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
		Sheet 1 of 2

Published Date: 1st Qtr. 2015

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



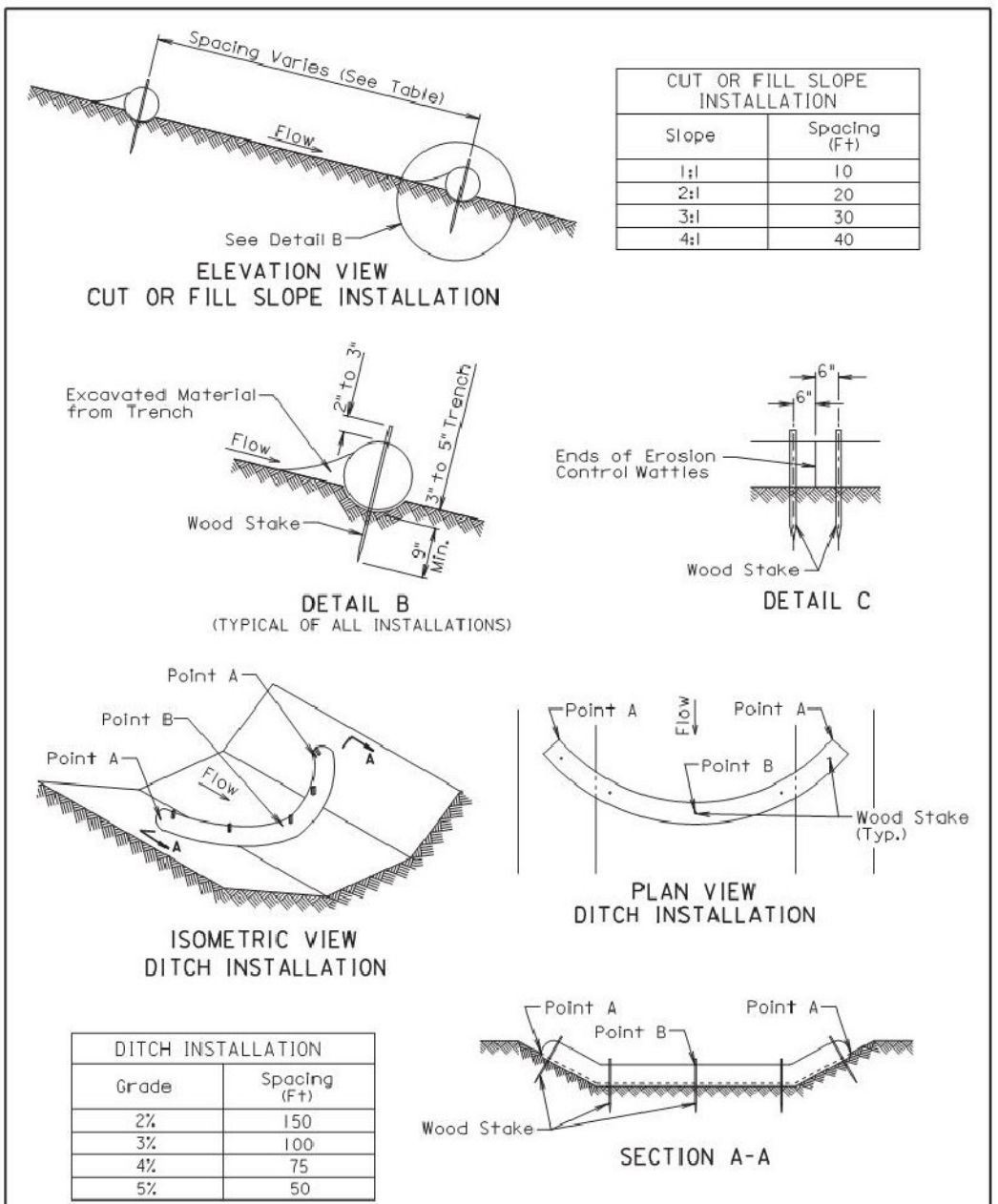
GENERAL NOTE:

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end shall be provided on top of the extra length of silt fence fabric to prevent underflow.

December 23, 2003

S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
		Sheet 2 of 2

Published Date: 1st Qtr. 2015



December 23, 2004

S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
		Sheet 1 of 2
		Published Date: 1st Qtr. 2015

GENERAL NOTES:

At cut or fill slope installations, wattles shall be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor shall dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes shall be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes shall be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles shall be 3' to 4'.

Where installing running lengths of wattles, the Contractor shall butt the second wattle tightly against the first and shall not overlap the ends. See Detail C.

The Contractor and Engineer shall inspect the erosion control wattles once every week and within 24 hours after every rainfall event greater than 1/2". The Contractor shall remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping shall be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping shall be incidental to the contract unit price per cubic yard for "Remove Sediment".

All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials shall be incidental to the contract unit price per foot for the corresponding erosion control wattle bid item.

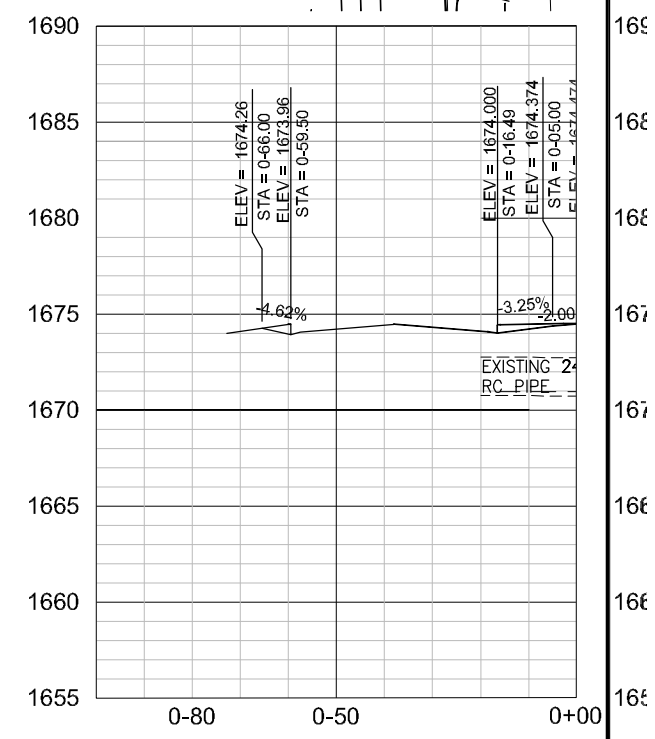
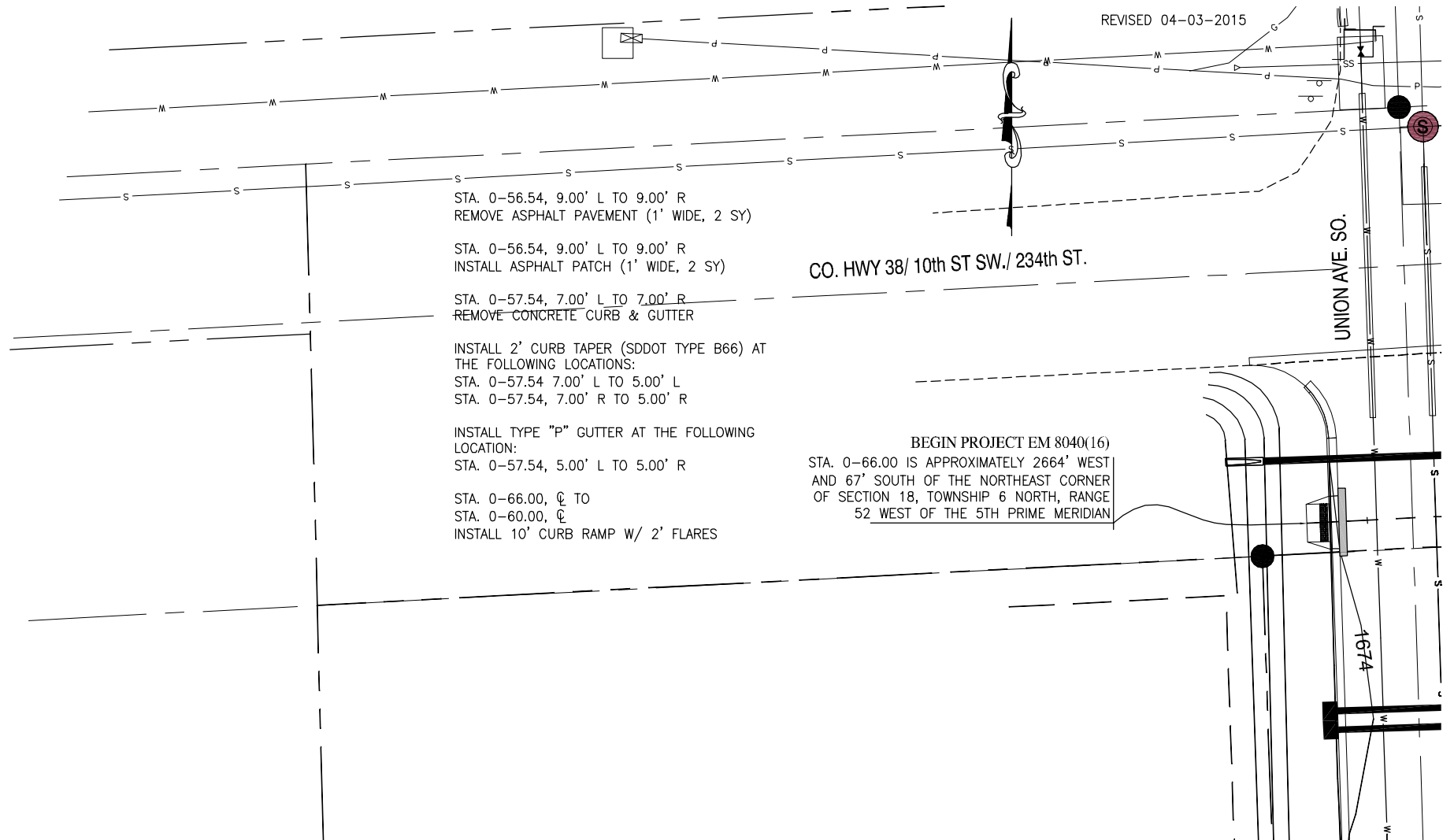
All costs for removing the erosion control wattle from the project including labor, equipment, and materials shall be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

December 23, 2004

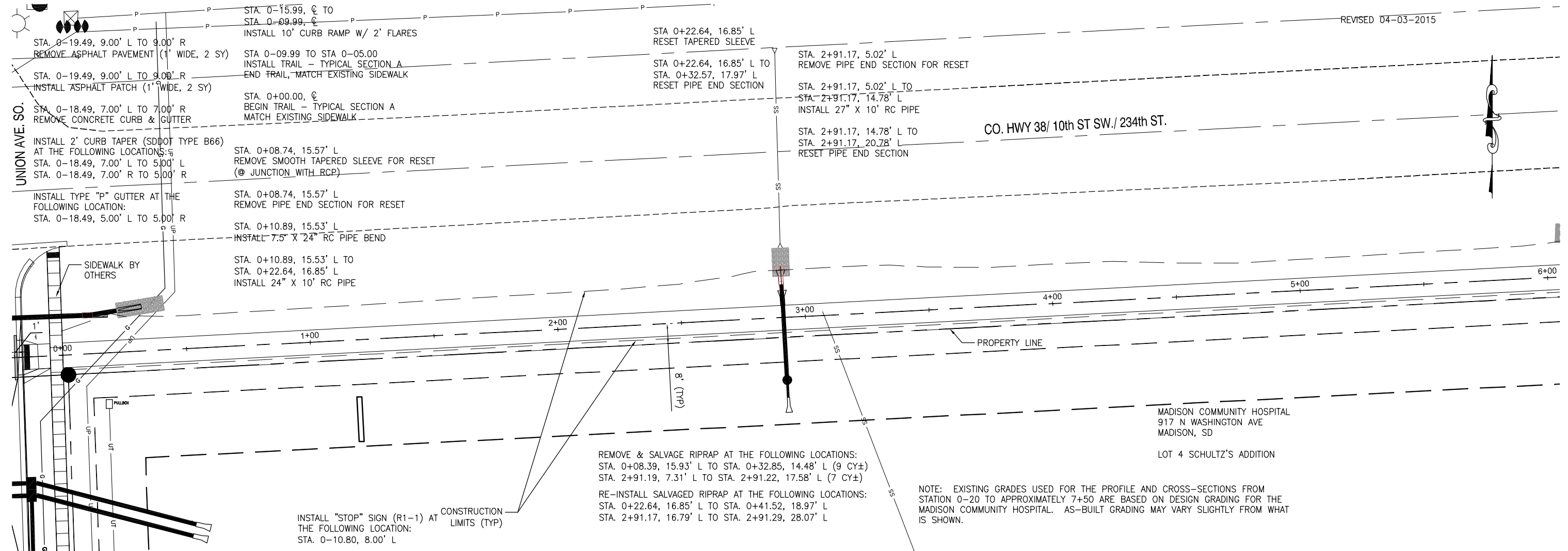
S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
		Sheet 2 of 2
		Published Date: 1st Qtr. 2015

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	EM 8040(16)	15	28

REVISED 04-03-2015



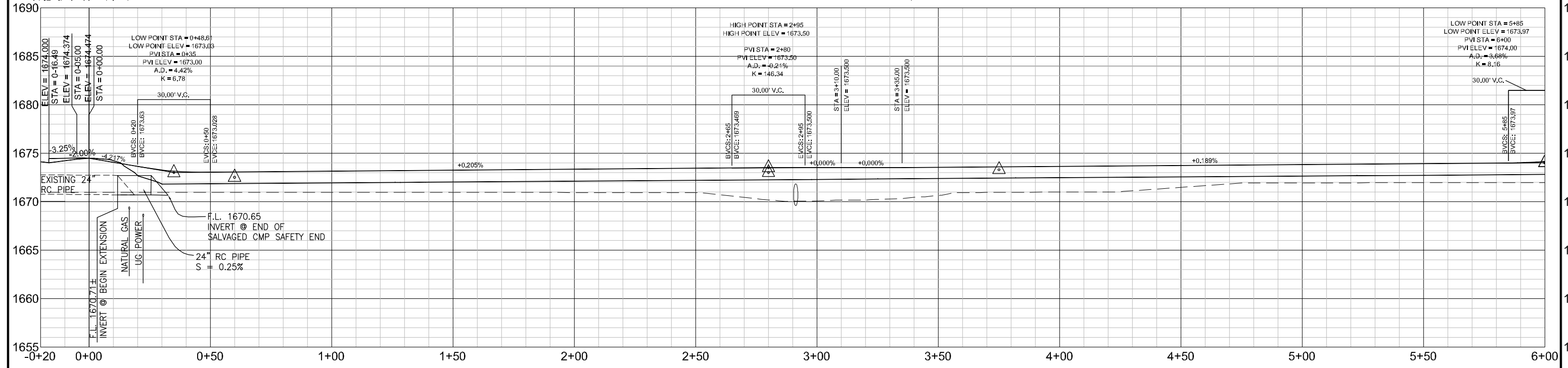
REVISED 04-03-2015

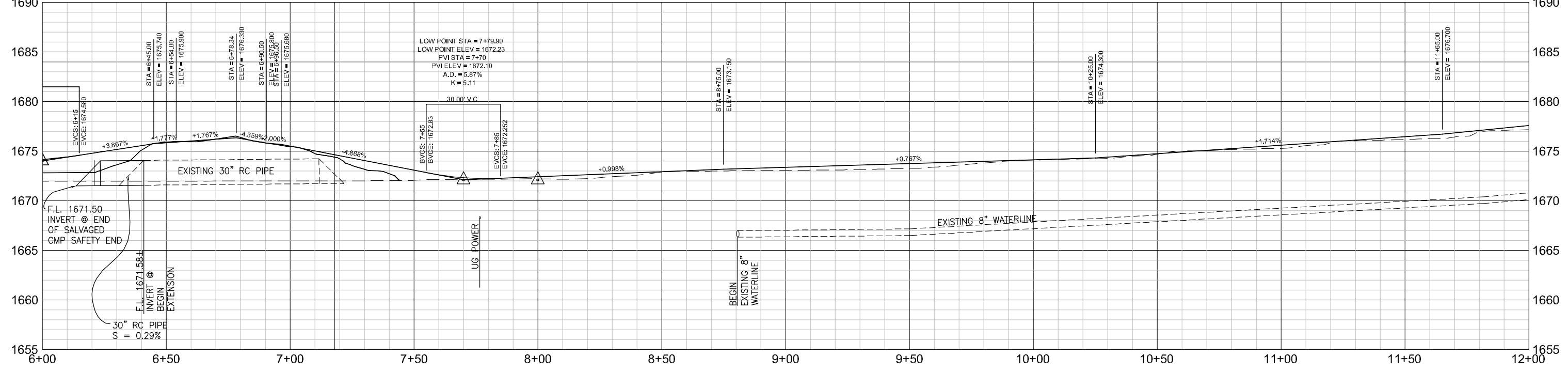
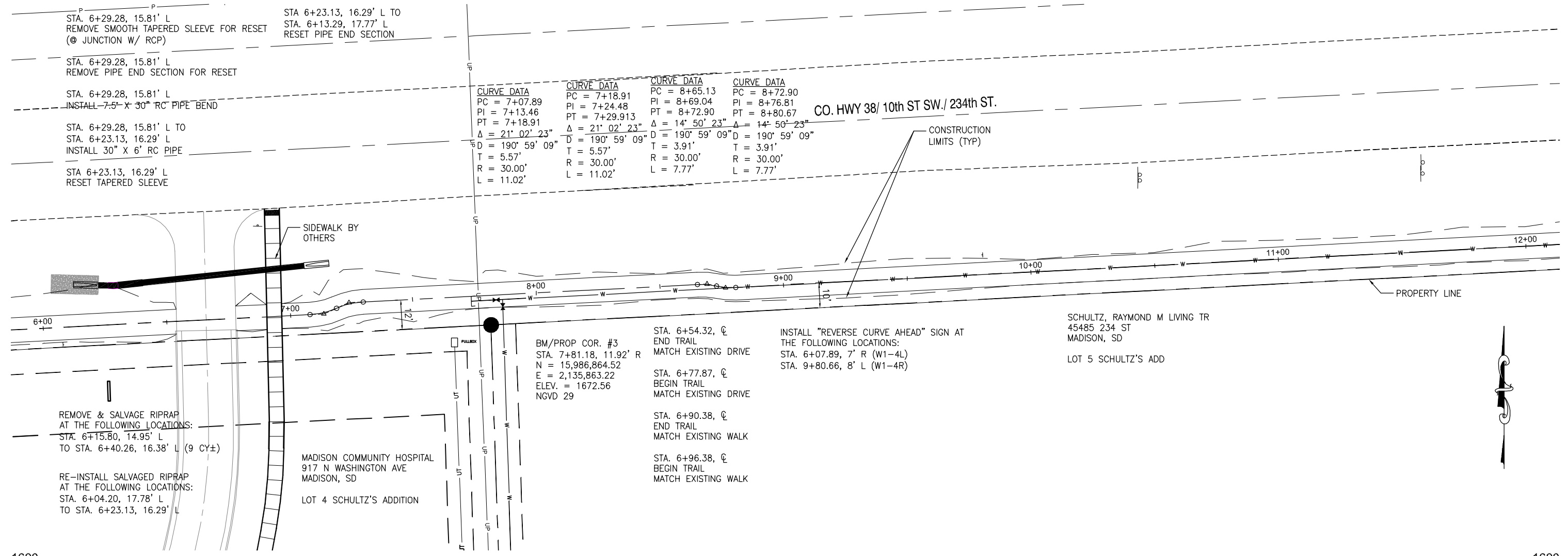


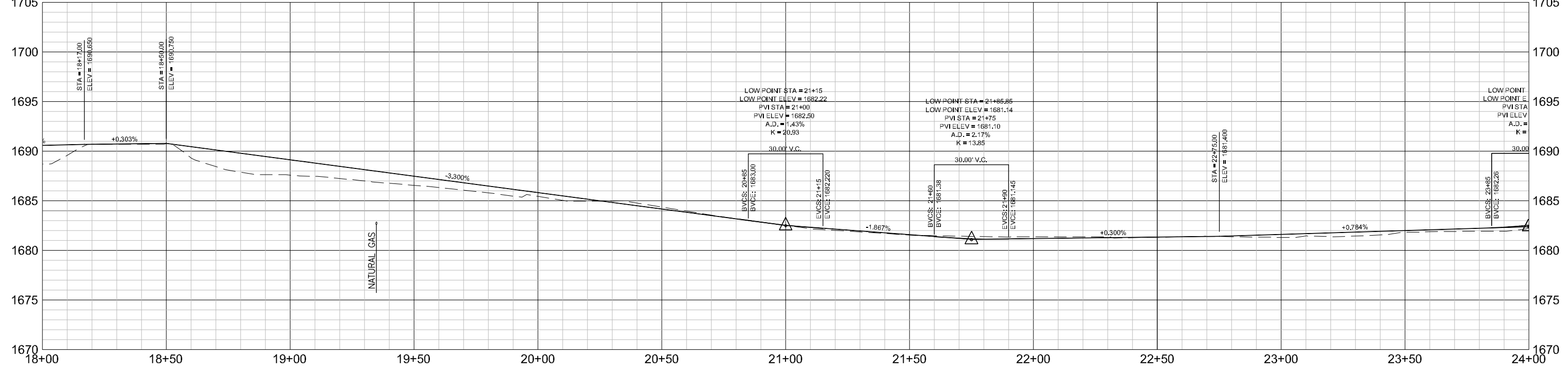
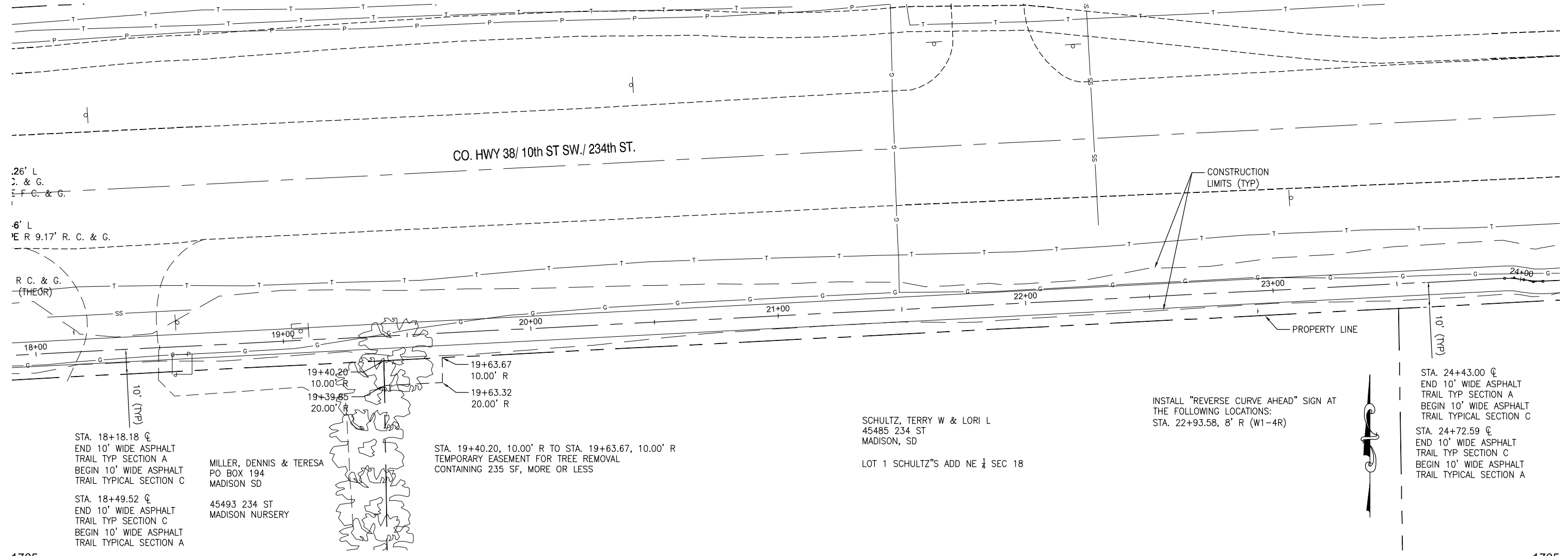
REMOVE & SALVAGE RIPRAP AT THE FOLLOWING LOCATIONS:
 STA. 0+08.39, 15.93' L TO STA. 0+32.85, 14.48' L (9 CY±)
 STA. 2+91.19, 7.31' L TO STA. 2+91.22, 17.58' L (7 CY±)

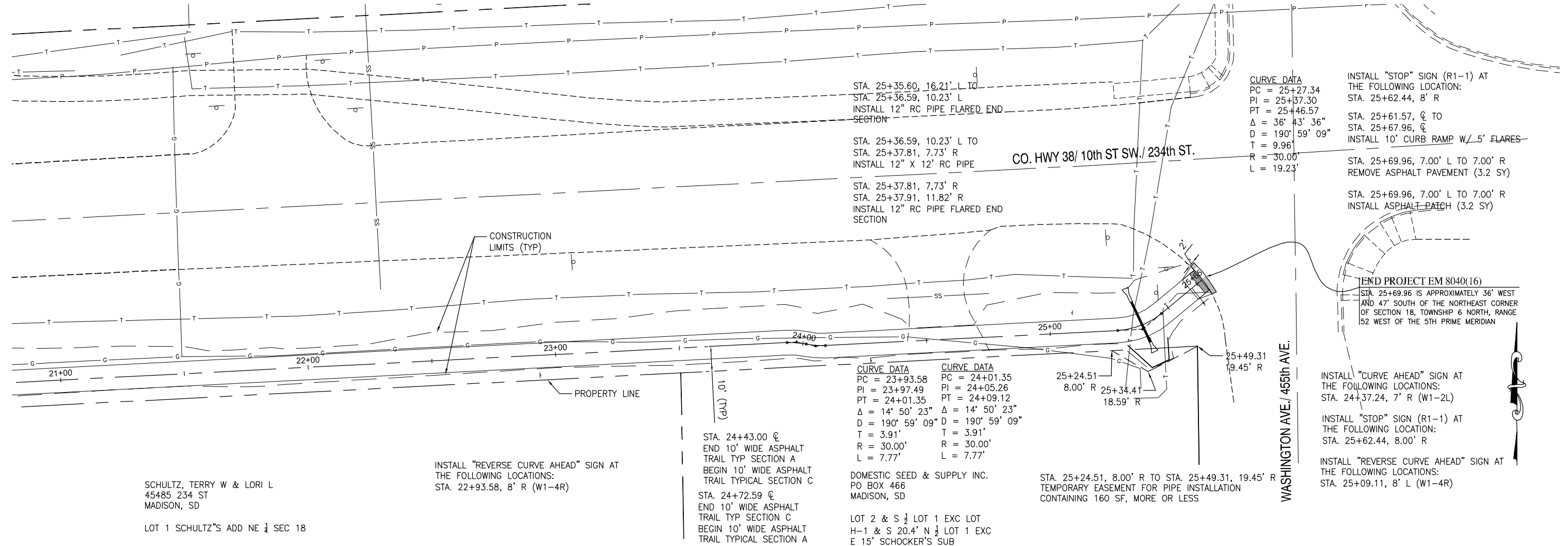
RE-INSTALL SALVAGED RIPRAP AT THE FOLLOWING LOCATIONS:
 STA. 0+22.64, 16.85' L TO STA. 0+41.52, 18.97' L
 STA. 2+91.17, 16.79' L TO STA. 2+91.29, 28.07' L

NOTE: EXISTING GRADES USED FOR THE PROFILE AND CROSS-SECTIONS FROM STATION 0-20 TO APPROXIMATELY 7+50 ARE BASED ON DESIGN GRADING FOR THE MADISON COMMUNITY HOSPITAL. AS-BUILT GRADING MAY VARY SLIGHTLY FROM WHAT IS SHOWN.



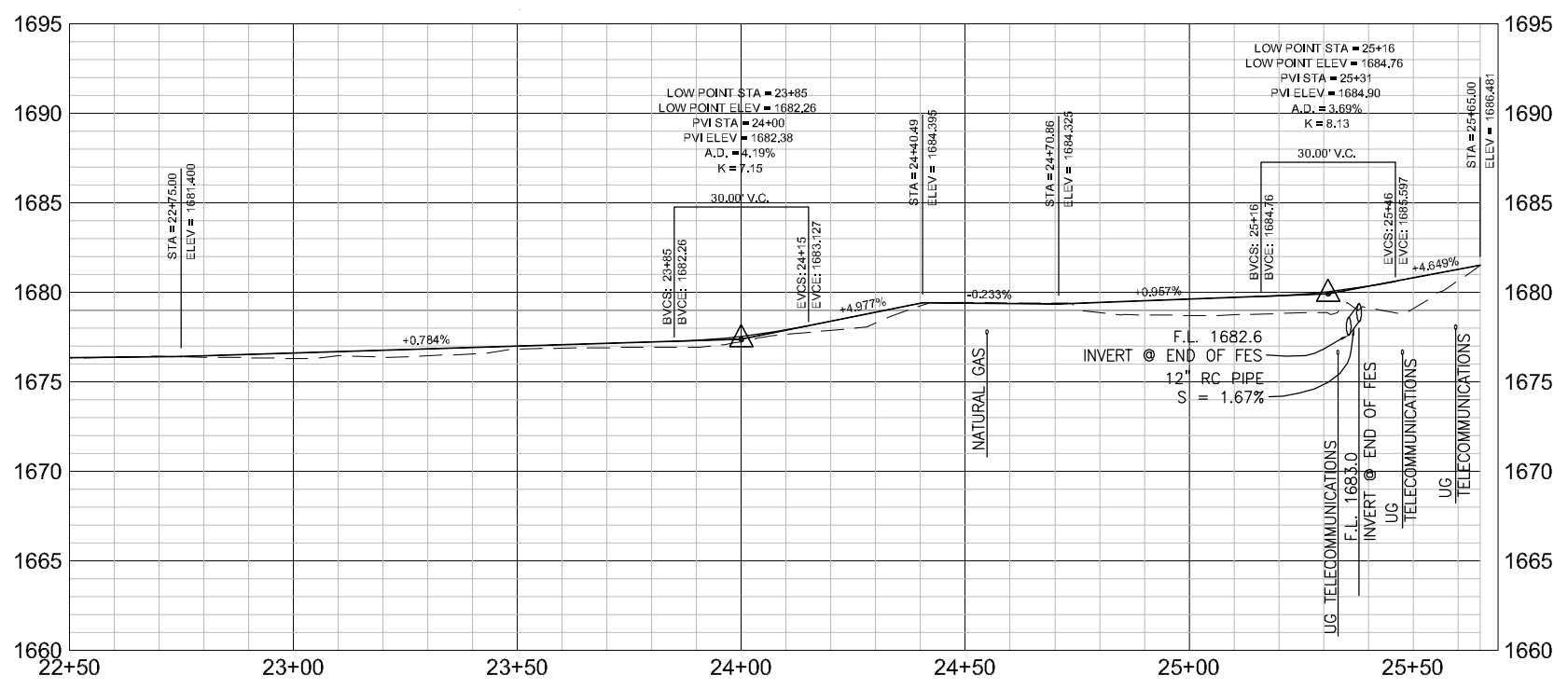


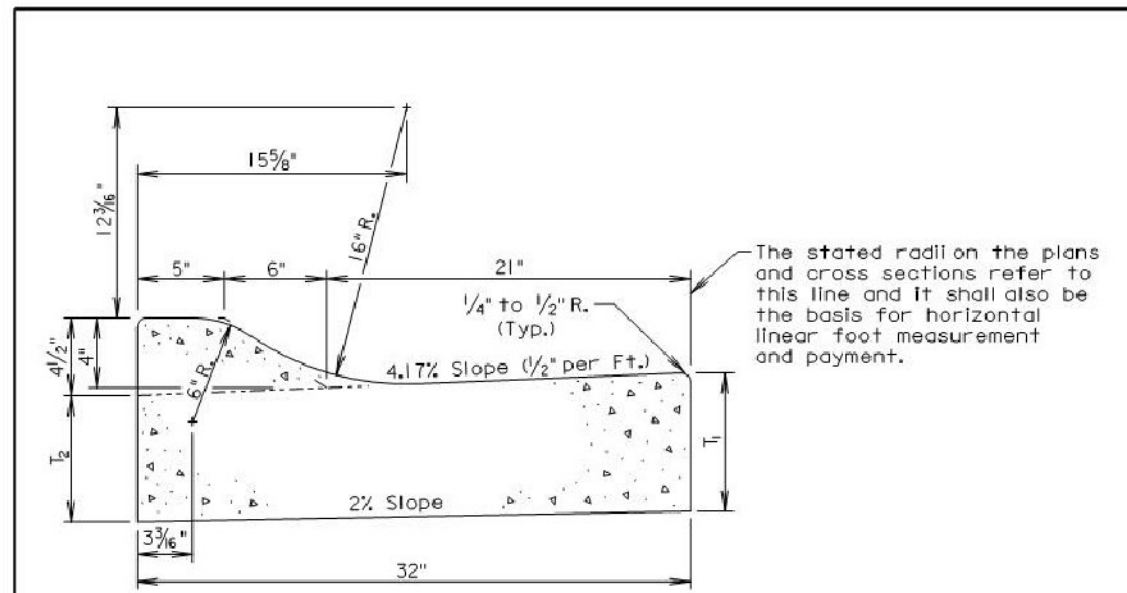




SCHULTZ, TERRY W & LORI L
 45485 234 ST
 MADISON, SD

LOT 1 SCHULTZ'S ADD NE 1/4 SEC 18





The stated radii on the plans and cross sections refer to this line and it shall also be the basis for horizontal linear foot measurement and payment.

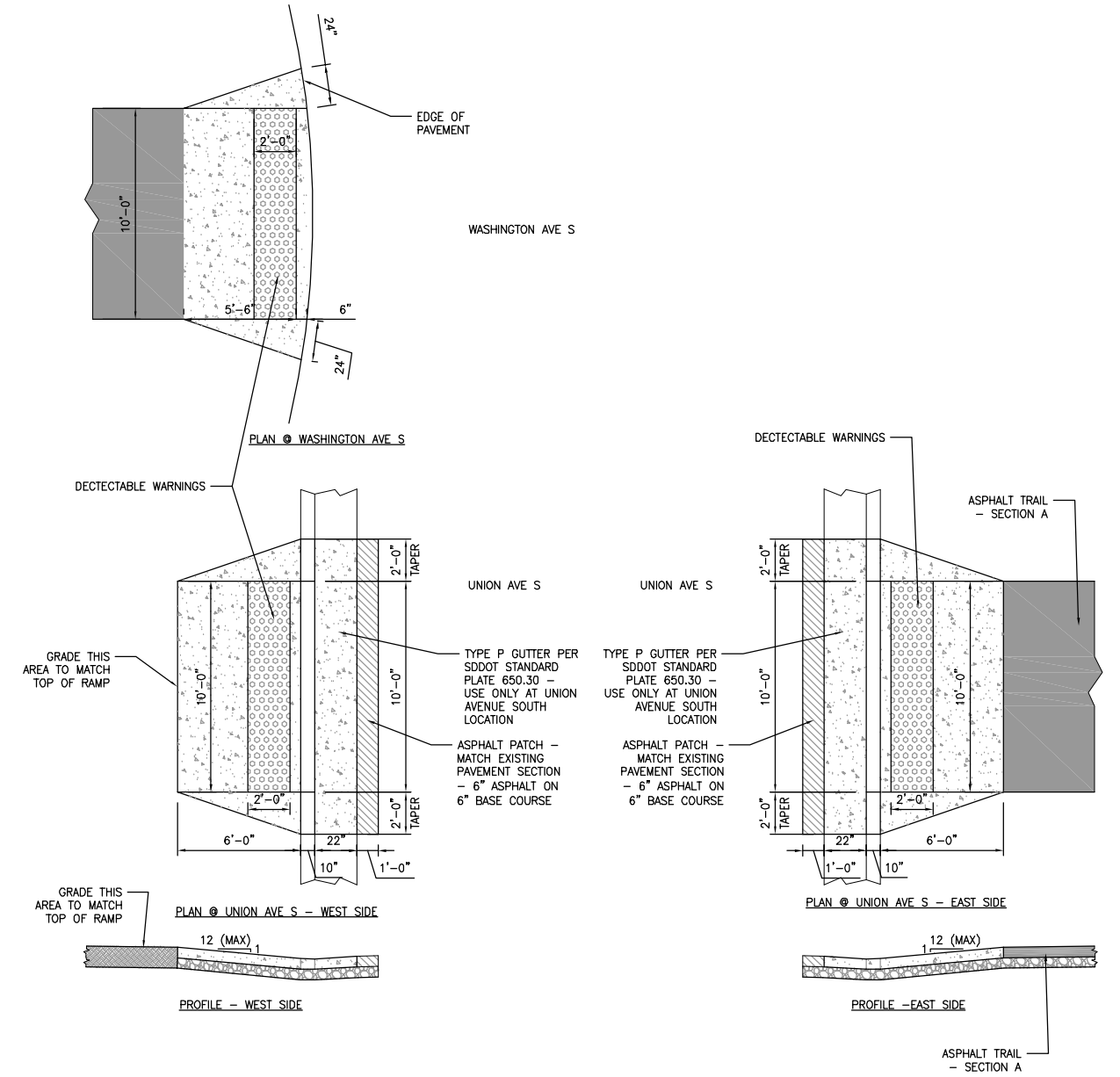
Type	T ₁ (Inches)	T ₂ (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
R48	8	7 ⁵ / ₁₆	0.073	13.7
R48.5	8.5	7 ¹³ / ₁₆	0.077	13.0
R49	9	8 ⁵ / ₁₆	0.081	12.4
R49.5	9.5	8 ¹³ / ₁₆	0.085	11.8
R410	10	9 ⁵ / ₁₆	0.089	11.2
R410.5	10.5	9 ¹³ / ₁₆	0.093	10.7
R411	11	10 ⁵ / ₁₆	0.097	10.3
R411.5	11.5	10 ¹³ / ₁₆	0.101	9.9
R412	12	11 ⁵ / ₁₆	0.106	9.5

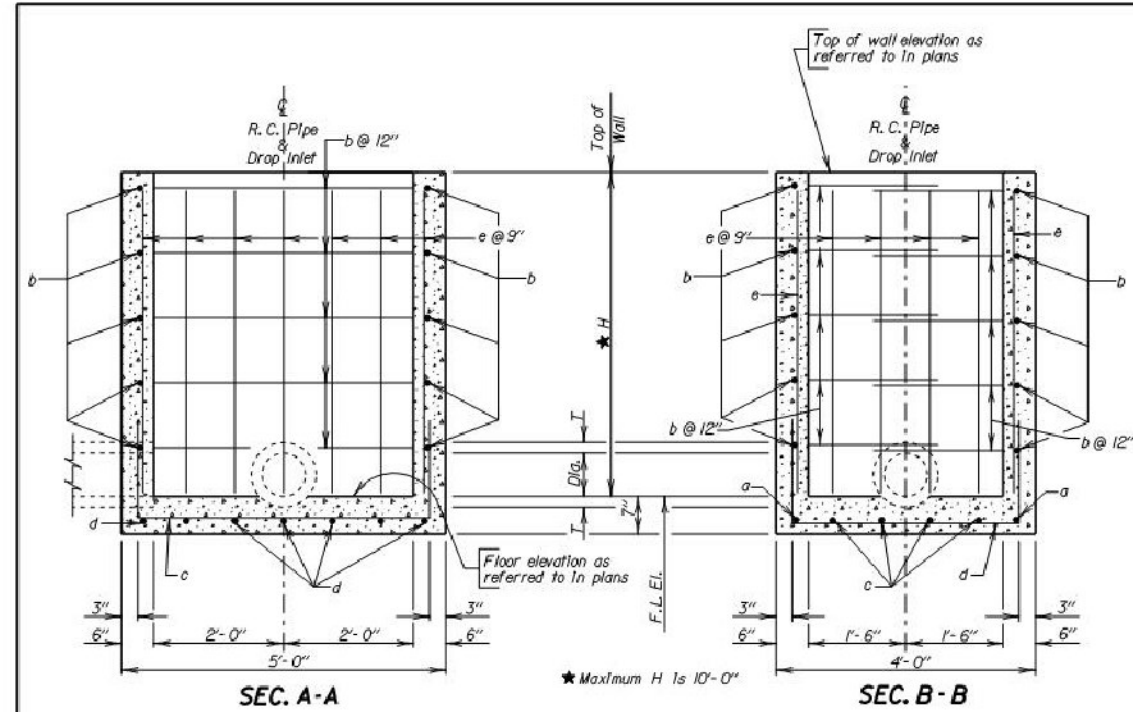
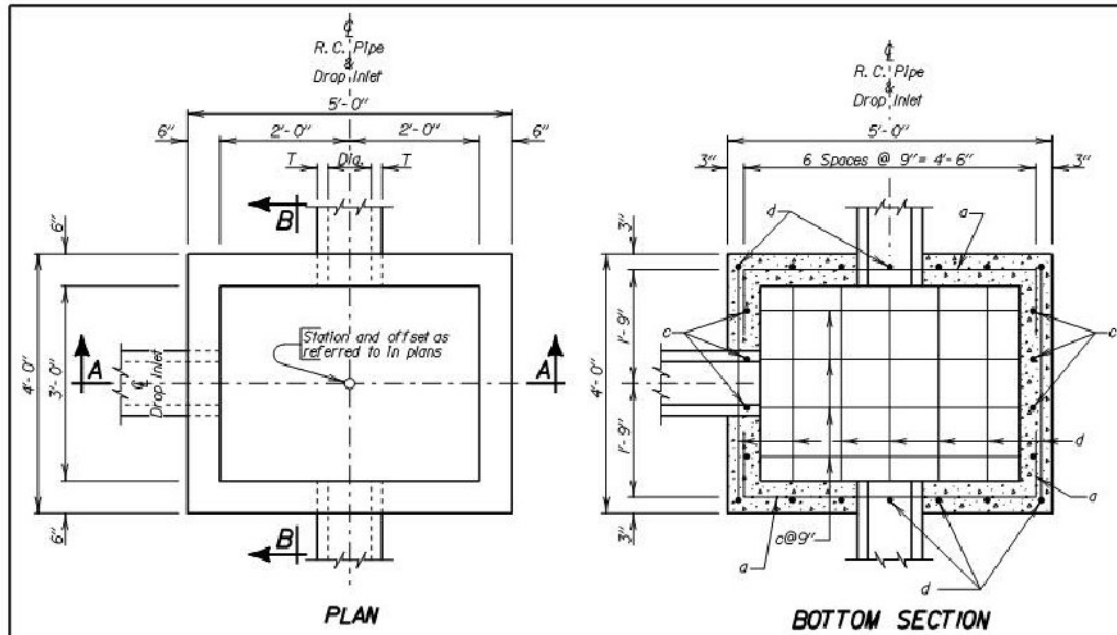
GENERAL NOTES:
 When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment shall be by one of the methods shown on Standard Plate 380.11.
 See Standard Plate 650.90 for expansion and contraction joints in the curb and gutter.

September 6, 2014

S D D O T	TYPE R CONCRETE CURB AND GUTTER	PLATE NUMBER 650.33
	Published Date: 1st Qtr. 2015	Sheet 1 of 1

NOTE:
 TRAIL IS FLUSH WITH WASHINGTON AVE S AS THERE IS NO CURB AND GUTTER, THEREFORE, WALK DOES NOT RAMP DOWN.





ESTIMATED QUANTITIES			
ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
* Class M6 Concrete	Cu/d	0.43	0.29H
Reinforcing Steel	Lb	57	26.72H
Frame and Grate	Each	1	

PIPE DISPLACEMENT REDUCTIONS		
R.C. Pipe Diameter Inches	T Inches	Class M6 Concrete Cu/d
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.05
24	3	0.09
30	3 1/2	0.14
36	4	0.20

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

GENERAL NOTES:

- * Reduce total quantities of concrete by the amount of concrete displaced by the pipe. The total quantity of concrete shall be computed to the nearest hundredth of a cubic yard. The total quantity of reinforcing steel shall be computed to the nearest pound.
- Drop Inlets shown may be modified by the addition or omission of connecting pipes as shown on the layouts.
- Reinforcing steel shall conform to ASTM A615 Grade 60. The b bars shall be lapped 12 inches. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.
- Pipe shall not enter through a corner of the drop inlet.
- Use 2" clear cover on all reinforcing steel unless otherwise noted.
- Precasting of reinforced drop inlets will be permissible. Prior to precasting, the Contractor shall submit details to the Engineer for approval.
- Maximum pipe diameter shall not exceed 27 inches on the 4 foot wide side and shall not exceed 36 inches on the 5 foot wide side of the drop inlet.
- The dimension of H is in feet.

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

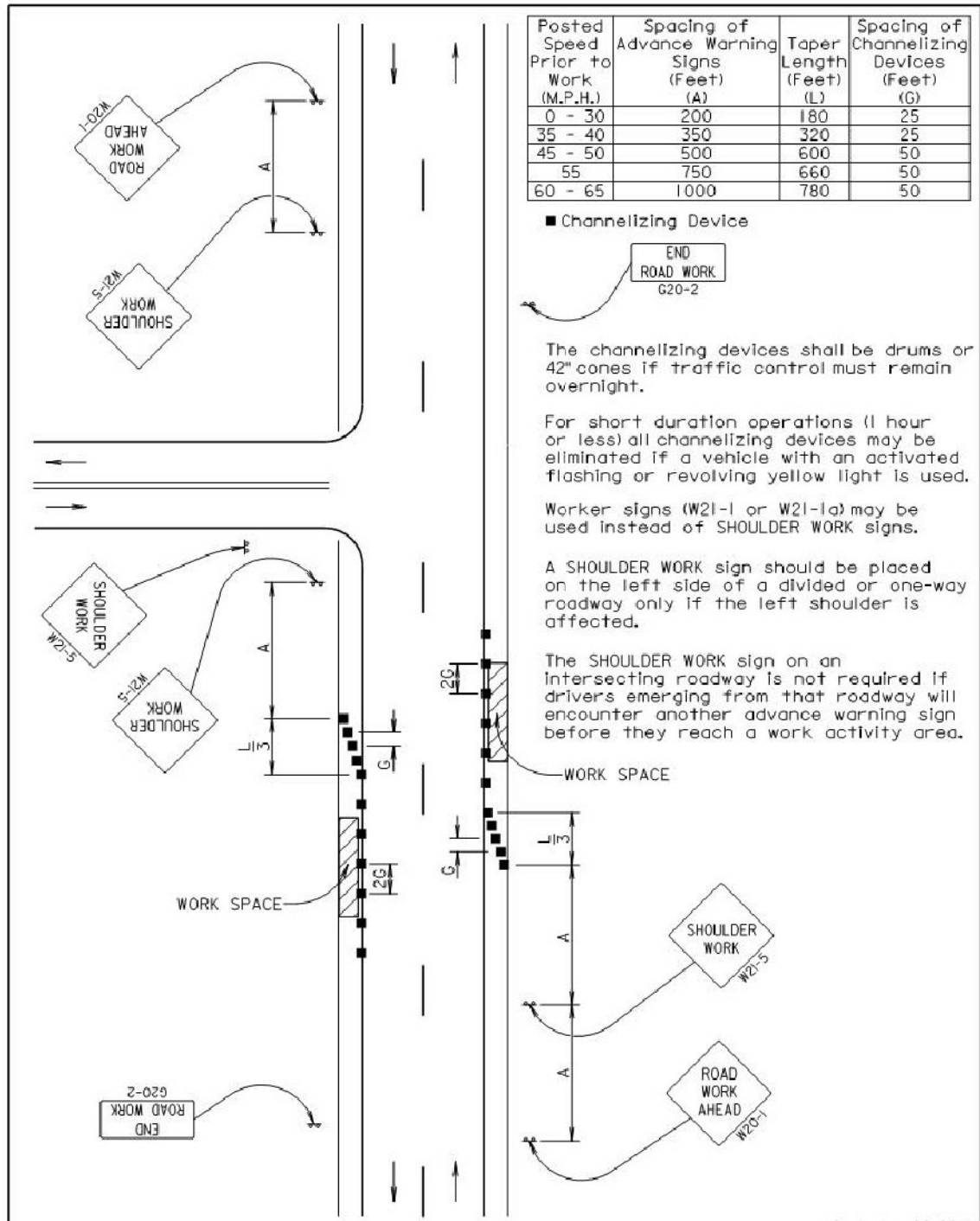
REINFORCING SCHEDULE				
Mk.	No.	Size	Length	Type
a	2	4	6'-6"	17
b	2H	4	9'-0"	17
c	4	4	7'-6"	17
d	7	4	6'-6"	17
e	22	4	H + 2"	Str.

NOTE: All dimensions are out to out of bars.

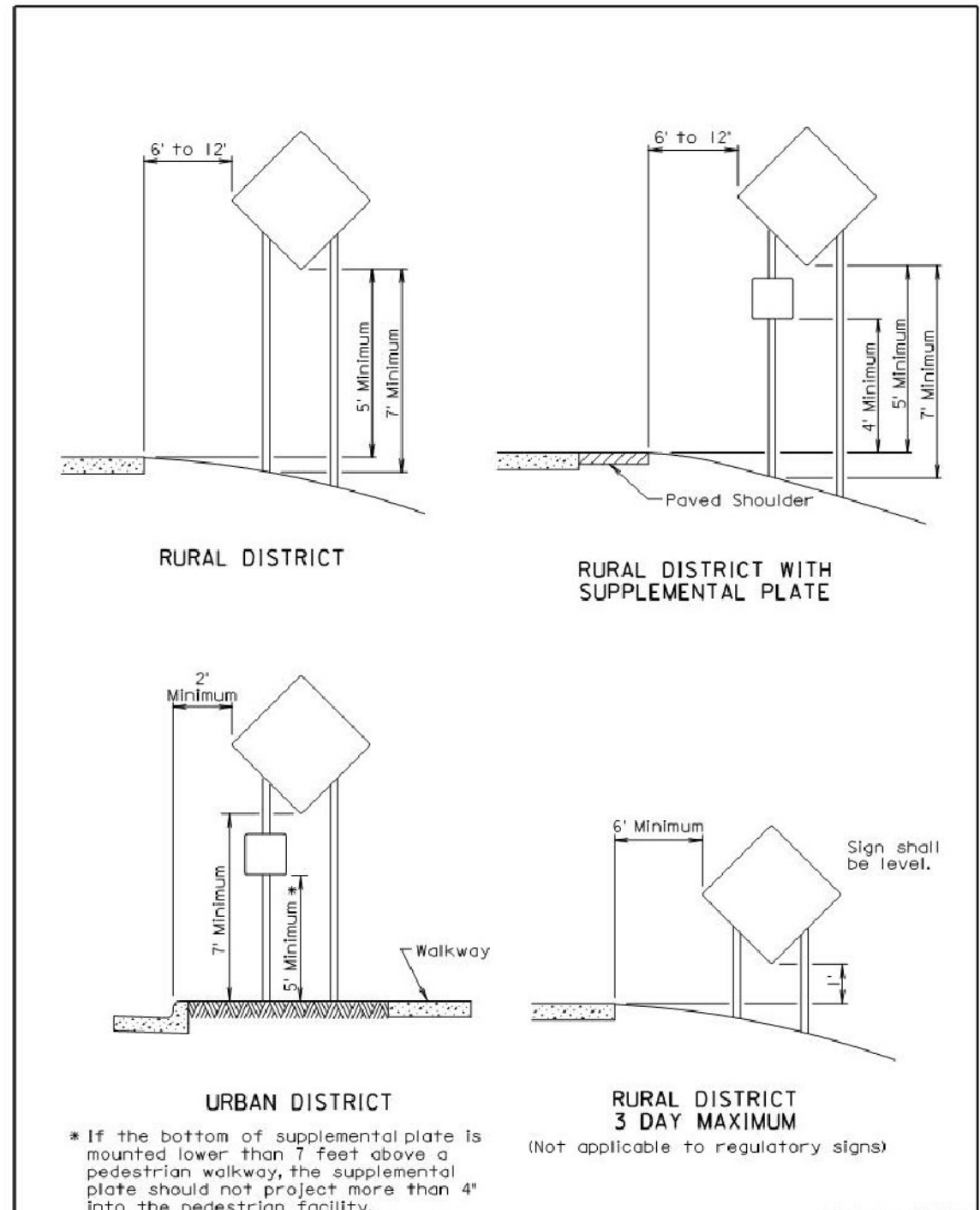
December 23, 2009

S D D O T	3' X 4' TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.10
	Published Date: 1st Qtr. 2015	Sheet 1 of 2

S D D O T	3' X 4' TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.10
Published Date: 1st Qtr. 2015	Sheet 2 of 2	



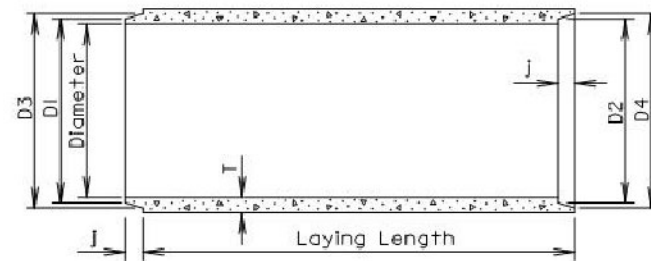
September 22, 2014



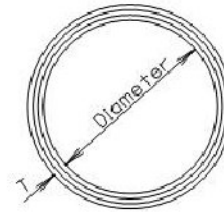
September 22, 2014

TOLERANCES IN DIMENSIONS

Diameter: $\pm 1.5\%$ for 24" Dia. or less and $\pm 1\%$ or $\frac{3}{8}"$ whichever is more for 27" Dia. or greater.
 Diameters at Joints: $\pm 3/16"$ for 30" Dia. or less and $\pm 1/4"$ for 36" or greater.
 Length of joint (J): $\pm 1/4"$.
 Wall thickness (T): not less than design T by more than 5% or $\frac{3}{16}"$, whichever is greater.
 Laying length: shall not underrun by more than $\frac{1}{2}"$.



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

Construction of R.C.P. shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges.

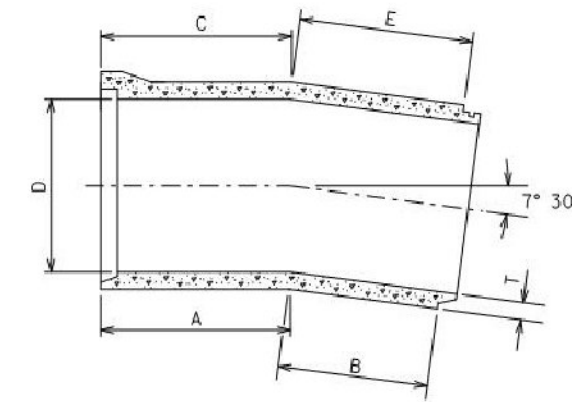
Not more than 2 four foot sections shall be permitted near the ends of any culvert. Four foot lengths shall be used only to secure the required length of culvert.

Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 5/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	3 1/4	3	29 1/4	29 5/8	30 1/4	30 5/8
30	384	3 1/2	3 1/4	32 3/8	32 3/4	33 1/2	33 5/8
36	524	4	3 3/4	38 3/4	39 1/4	40	40 1/2
42	685	4 1/2	4	45 1/8	45 5/8	46 1/2	47
48	867	5	4 1/2	51 1/2	52	53	53 1/2
54	1070	5 1/2	4 1/2	57 5/8	58 3/8	59 3/8	59 5/8
60	1296	6	5	64 1/4	64 3/4	66	66 1/2
66	1542	6 1/2	5 1/2	70 5/8	71 1/8	72 1/2	73
72	1810	7	6	77	77 1/2	79	79 1/2
78	2098	7 1/2	6 1/2	83 3/8	83 7/8	85 5/8	86 1/8
84	2410	8	7	89 3/4	90 1/4	92 1/8	92 5/8
90	2740	8 1/2	7	95 3/4	96 1/4	98 1/8	98 5/8
96	2950	9	7	102 1/8	102 5/8	104 1/2	105
102	3075	9 1/2	7 1/2	109	109 1/2	111 1/2	112
108	3870	10	7 1/2	115 1/2	116	118	118 1/2

March 31, 2000

S D D O T	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
		Sheet 1 of 1

Published Date: 1st Qtr. 2015



GENERAL NOTE:

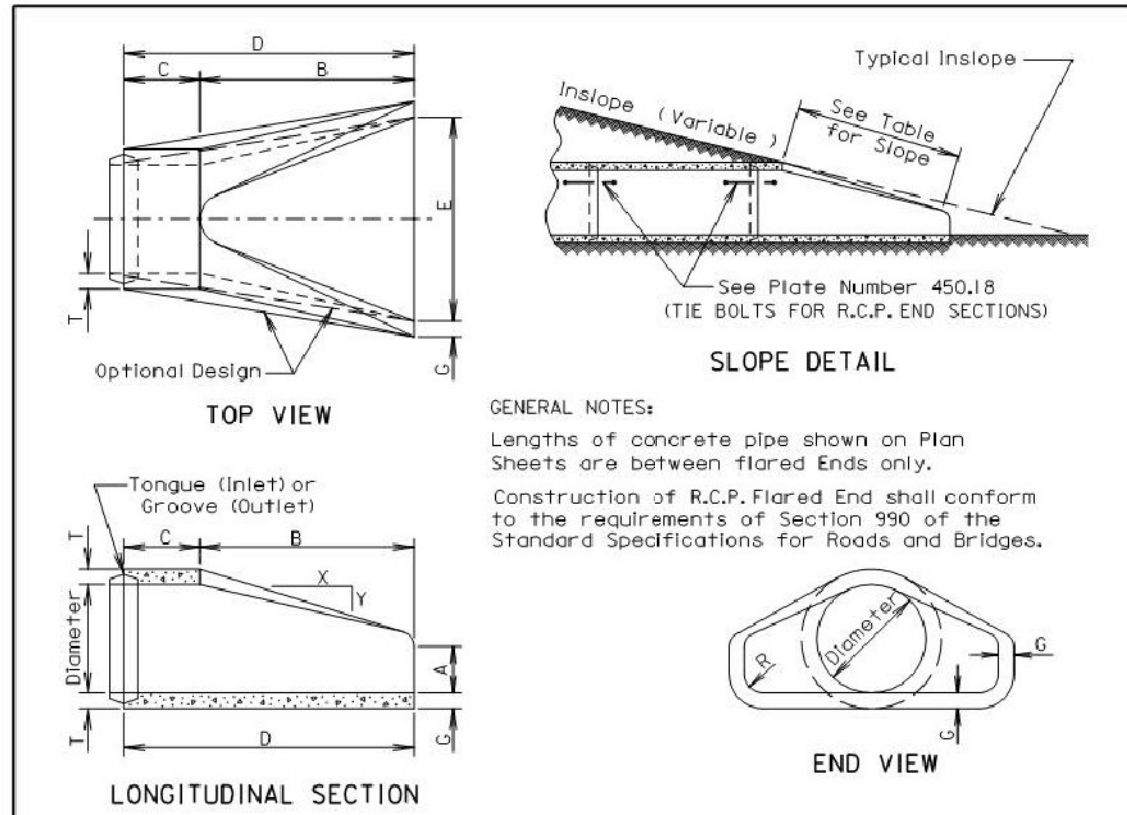
Centerline laying length: 4'-0"
 Radius of Curve: 30.5'

D (in.)	T (in.)	A (in.)	B (in.)	C (in.)	E (in.)	Weight of Section (lbs.)
12	2	36 1/32	10 5/32	37 1/32	11 1/32	368
15	2 1/4	36 1/2	10 1/4	37 3/4	11 1/2	508
18	2 1/2	24 1/2	22	26	23 1/2	672
21	2 3/4	24 1/2	21 3/4	26 1/4	23 1/2	856
24	3	25 1/32	21 1/32	26 3/32	22 3/32	1060
27	3 1/4	25 1/32	20 5/32	27 1/32	22 3/32	1288
30	3 1/2	25 1/32	20 1/32	27 5/32	22 3/32	1536
33	3 3/4	24 5/16	20 7/16	27 7/16	23 1/16	1808
36	4	24 5/16	20 5/16	27 11/16	23 3/16	2096
42	4 1/2	24 3/32	19 27/32	28 5/32	23 5/32	2740
48	5	24 11/32	19 9/32	28 13/32	23 13/32	3468
54	5 1/2	24 5/8	19 1/8	29 11/32	23 3/8	4280
60	6	24 3/32	18 27/32	29 11/32	23 11/32	5184
66	6 1/2	24 11/16	18 3/16	29 13/16	23 5/16	6168
72	7	24 1/8	18 1/8	29 7/8	23 3/8	7240
84	8	24 1/4	17 1/4	30 3/4	23 3/4	9640
96	9	23 5/16	17 5/16	30 11/16	24 1/16	12400

March 31, 2000

S D D O T	REINFORCED CONCRETE PIPE LONG RADIUS BEND	PLATE NUMBER 450.04
		Sheet 1 of 1

Published Date: 1st Qtr. 2015

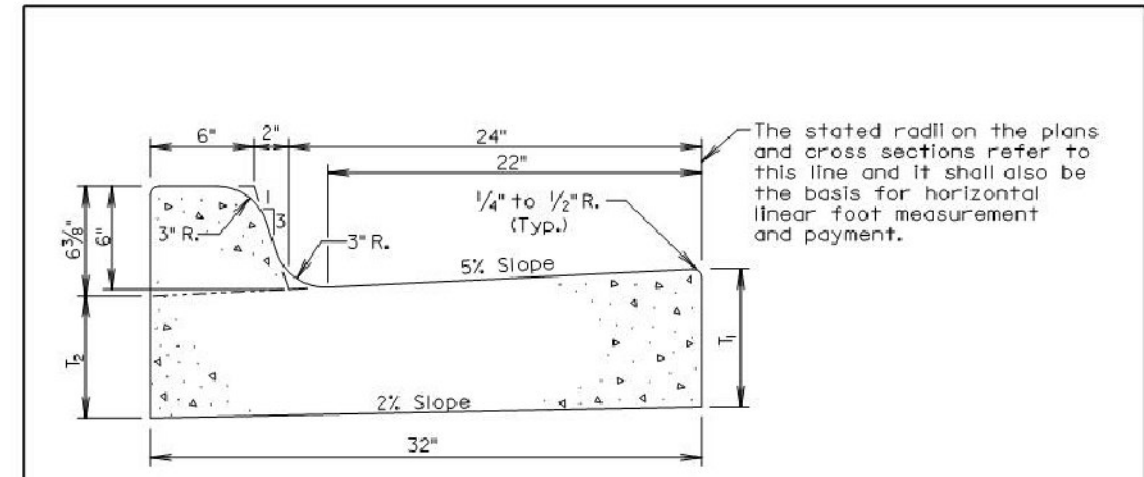


GENERAL NOTES:
 Lengths of concrete pipe shown on Plan Sheets are between flared Ends only.
 Construction of R.C.P. Flared End shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges.

Dia. (in.)	Approx. Wt. of Section (lbs.)	Approx. Slope (X to Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)	R (in.)
12	530	2.4:1	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	1 ¹ / ₂
15	740	2.4:1	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	1 ¹ / ₂
18	990	2.3:1	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	1 ¹ / ₂
21	1280	2.4:1	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	1 ¹ / ₂
24	1520	2.5:1	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	1 ¹ / ₂
27	1930	2.5:1	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	1 ¹ / ₂
30	2190	2.5:1	3 ¹ / ₂	12	54	19 ³ / ₄	73 ³ / ₄	60	3 ¹ / ₂	1 ¹ / ₂
36	4100	2.5:1	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	1 ¹ / ₂
42	5380	2.5:1	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	1 ¹ / ₂
48	6550	2.5:1	5	24	72	26	98	84	5	1 ¹ / ₂
54	8240	2:1	5 ¹ / ₂	27	65	33 ¹ / ₄	98 ¹ / ₄	90	5 ¹ / ₂	1 ¹ / ₂
60	8730	1.9:1	6	35	60	39	99	96	5	1 ¹ / ₂
66	10710	1.7:1	6 ¹ / ₂	30	72	27	99	102	5 ¹ / ₂	1 ¹ / ₂
72	12520	1.8:1	7	36	78	21	99	108	6	1 ¹ / ₂
78	14770	1.8:1	7 ¹ / ₂	36	90	21	111	114	6 ¹ / ₂	1 ¹ / ₂
84	18160	1.6:1	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂
90	20900	1.5:1	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	6

March 31, 2000

Published Date: 1st Qtr. 2015	S D D O T	R. C. P. FLARED ENDS	PLATE NUMBER 450.10
			Sheet 1 of 1



Type	T ₁ (Inches)	T ₂ (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B66	6	5 ¹ / ₁₆	0.057	17.7
B67	7	6 ¹ / ₁₆	0.065	15.4
B68	8	7 ¹ / ₁₆	0.073	13.7
B68.5	8.5	7 ⁷ / ₁₆	0.077	13.0
B69	9	8 ¹ / ₁₆	0.081	12.3
B69.5	9.5	8 ⁷ / ₁₆	0.085	11.7
B610	10	9 ¹ / ₁₆	0.090	11.2
B610.5	10.5	9 ⁷ / ₁₆	0.094	10.7
B611	11	10 ¹ / ₁₆	0.098	10.2
B611.5	11.5	10 ⁷ / ₁₆	0.102	9.8
B612	12	11 ¹ / ₁₆	0.106	9.4

GENERAL NOTES:
 When concrete curb and gutter longitudinally adjoins new concrete pavement, the method of attachment shall be by one of the methods shown on Standard Plate 380.11.
 See Standard Plate 650.90 for expansion and contraction joints in the curb and gutter.

September 6, 2008

Published Date: 1st Qtr. 2015	S D D O T	TYPE B CONCRETE CURB AND GUTTER	PLATE NUMBER 650.01
			Sheet 1 of 1

The stated radii on the plans and cross sections refer to this line and it shall also be the basis for horizontal linear foot measurement and payment.

Type	T ₁ (Inches)	T ₂ (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
P6	6	6 ³ / ₈	0.047	21.2
P7	7	7 ³ / ₈	0.055	18.1
P8	8	8 ³ / ₈	0.064	15.7
P8.5	8.5	8 ⁵ / ₈	0.068	14.8
P9	9	9 ³ / ₈	0.072	13.9
P9.5	9.5	9 ⁵ / ₈	0.076	13.2
P10	10	10 ³ / ₈	0.080	12.5
P10.5	10.5	10 ⁵ / ₈	0.084	11.9
P11	11	11 ³ / ₈	0.088	11.3
P11.5	11.5	11 ⁵ / ₈	0.092	10.8
P12	12	12 ³ / ₈	0.096	10.4

TRANSVERSE SECTION

PLAN VIEW

GENERAL NOTES:

The concrete for the Type P Concrete Gutter shall comply with the requirements of the Standard Specifications for Class M6 Concrete.

When concrete gutter longitudinally adjoins new concrete pavement, the method of attachment shall be by one of the methods shown on Standard Plate 380.11.

Transverse contraction joints shall be constructed at 10' intervals in the concrete gutter except when concrete gutter is constructed adjacent to mainline PCC pavement. When concrete gutter is constructed adjacent to mainline PCC pavement, a transverse contraction joint shall be constructed in the concrete gutter at each mainline PCC pavement transverse contraction joint location.

When concrete gutter is placed monolithically with mainline PCC pavement, the transverse contraction joints in the concrete gutter shall be sawed and sealed the same as the transverse contraction joints in the mainline PCC pavement.

When concrete gutter is not placed monolithically with the mainline PCC pavement and when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete gutter shall be 1/2 inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint shall be at least 1/4 the thickness of the concrete.

September 6, 2013

S D D O T	TYPE P CONCRETE GUTTER	PLATE NUMBER 650.30
		Sheet 1 of 1

Published Date: 4th Qtr. 2014

PLAN OF FRAME

PLAN OF GRATE

SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

ASSEMBLED VIEW

Bolt 2 piece frame together with 1/2" x 2" stainless steel hex bolt, washers, and hex nuts (2 places)

GENERAL NOTE:

The total weight of the frame and grate shall be 850 pounds minimum.

March 31, 2000

S D D O T	TYPE C FRAME AND GRATE	PLATE NUMBER 670.82
		Sheet 1 of 1

Published Date: 1st Qtr. 2015

