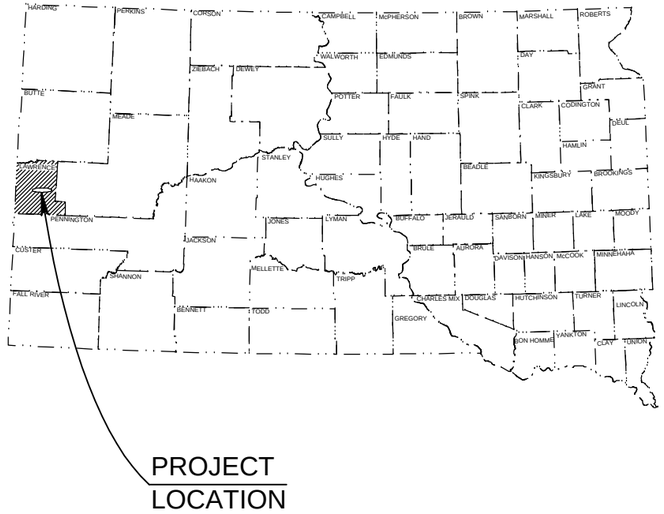


PROJECT LOCATION

STATE OF SOUTH DAKOTA
PLANS FOR PROPOSED

Plotting Date --- 2-22-17

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	1	48

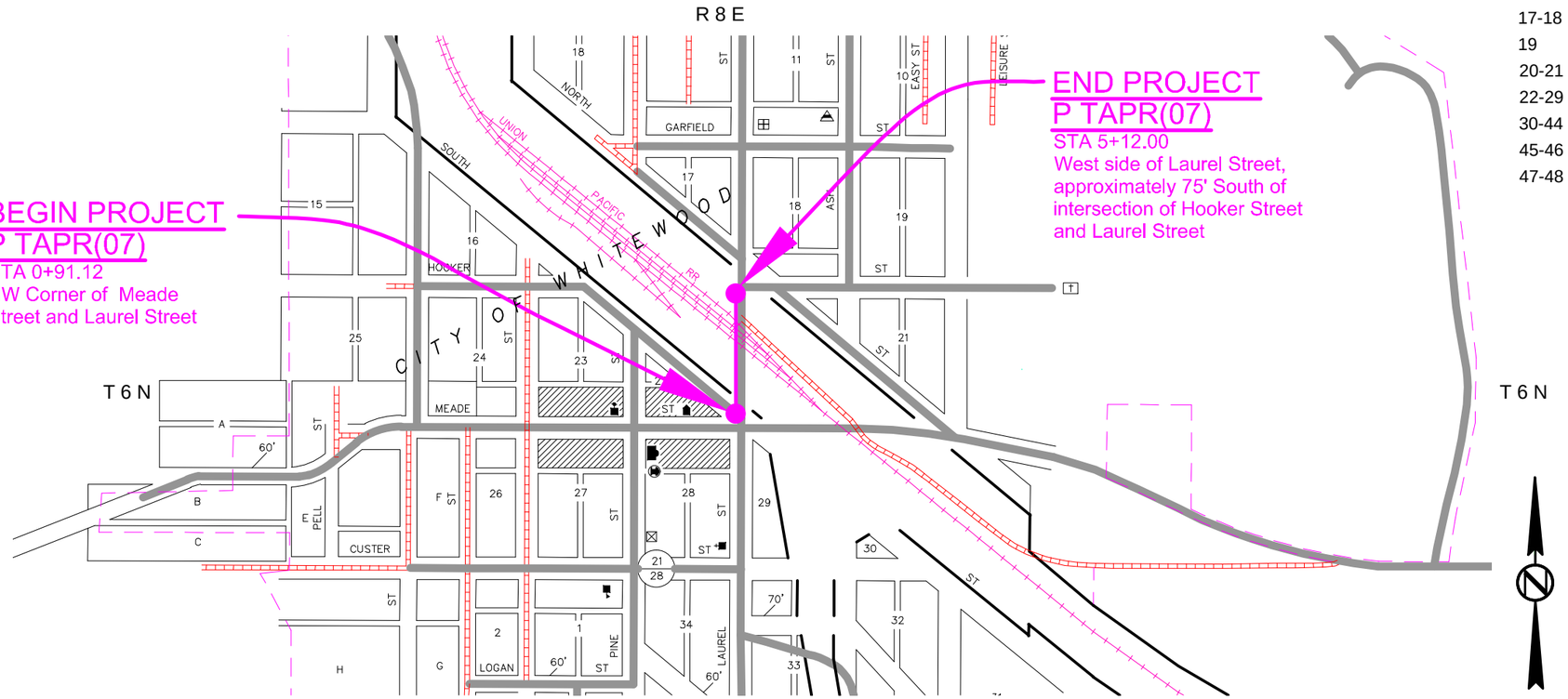
TITLESHEET AND INDEX OF SHEETS

Revise Date: 3-15-17 #2 3-30-17
Initials: RW

PROJECT P TAPR(07)
LAWRENCE COUNTY
WHITEWOOD, SOUTH DAKOTA

PCC SIDEWALK, CURB and GUTTER, STORM SEWER,
ASPHALT CONCRETE PAVEMENT, and PAVEMENT MARKING
PCN 04UE

INDEX OF SHEETS



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

STORM WATER PERMIT
Major Receiving
Body of Water: Whitewood Creek
Area Disturbed: 0.27 Acres
Total Project Area: 0.27 Acres
Approx. Begin Lat/Long: 44Á27'41"/103Á38'19"

AE2S

February 22, 2017 2:34:56 p.m.
Drawing: 13180 TITLE.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

Plotting Date --- 2-22-17
Revised: 3-15-17
Revision #2: 3-30-17

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	2	48

BID ITEM NUMBER	ITEM	PARTICIPATING QUANTITY	NONPARTICIPATING QUANTITY	TOTAL QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	Lump Sum	Lump Sum	LS
009E3200	Construction Staking	Lump Sum	Lump Sum	Lump Sum	LS
100E0100	Clearing	Lump Sum	Lump Sum	Lump Sum	LS
110E0300	Remove Concrete Curb and Gutter	124	31	155	Ft
110E1010	Remove Asphalt Concrete Pavement	384.1	20	404.1	SqYd
110E1100	Remove Concrete Pavement	102.2	0	102.2	SqYd
110E1140	Remove Concrete Sidewalk	205.2	0	205.2	SqYd
110E1690	Remove Sediment	2	0	2	CuYd
110E1695	Remove Sediment Filter Bag	72	0	72	Ft
110E7802	Remove Fence for Reset	75	0	75	Ft
120E0010	Unclassified Excavation	117	0	117	CuYd
120E6300	Water for Vegetation	2	0	2	MGal
230E0020	Placing Contractor Furnished Topsoil	10	0	10	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	Lump Sum	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	Lump Sum	Lump Sum	LS
260E1010	Base Course	211.8	5.0	216.8	Ton
320E1200	Asphalt Concrete Composite	67.8	5.6	73.4	Ton
380E3545	8" Reinforced PCC Approach Pavement	54.4	0	54.4	SqYd
380E4050	8" PCC Fillet Section	46.0	0	46.0	SqYd
450E0122	18" RCP Class 2, Furnish	0	110	110	Ft
450E0130	18" RCP, Install	0	110	110	Ft
462E0100	Class M6 Concrete	0	3.3	3.3	CuYd
470E0020	Pipe Handrail	24.6	0	24.6	Ft
480E0100	Reinforcing Steel	0	379	379	Lb
620E4100	Reset Fence	27	0	27	Ft
632E3520	Remove, Salvage, Relocate, & Reset Traffic Sign	2	0	2	Each
633E1430	Pavement Marking Paint, 24" White	142	0	142	Ft
634E0010	Flagging	40	0	40	Hour
634E0110	Traffic Control Signs	331.0	0	331.0	SqFt
634E0120	Traffic Control, Misc.	Lump Sum	0	Lump Sum	LS
634E0280	Type 3 Barricade, 8' Single Sided	6	0	6	Each
634E2000	Longitudinal Pedestrian Barricade	765	0	765	Ft
650E0060	Type B66 Concrete Curb and Gutter	142	31	173	Ft
650E4680	Type P8 Concrete Gutter	50	0	50	Ft
651E0040	4" Concrete Sidewalk	2145	0	2145	SqFt
651E0180	8" Reinforced Sidewalk	250	0	250	SqFt
651E7000	Type 1 Detectable Warnings	50	0	50	SqFt
670E2200	Type C Frame and Grate	0	1	1	Each
670E5200	Special Frame and Grate Assembly	0	1	1	Each
731E0100	Fertilizing	3	0	3	Lb
733E0100	Sodding	80	0	80	SqYd
734E0180	Sediment Filter Bag	72	0	72	Ft
734E0185	Remove and Reset Sediment Filter Bag	30	0	30	Ft
734E5010	Sweeping	3	0	3	Hour
900E1310	Concrete Washout Facility	1	0	1	Each
900E5152	Weed Barrier Fabric	94	0	94	SqYd
900E5410	Modify Sprinkler System	0	Lump Sum	Lump Sum	LS
998E0100	Railroad Protective Insurance	Lump Sum	0	Lump Sum	LS

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

Plotting Date --- 2-22-17

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	3	48

SPECIFICATIONS

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

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT 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 Public ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for 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 Public 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 Public 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 department designated sources and designated option material sources, stockpile sites, storage areas, and waste 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: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

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 Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

UTILITIES

The Contractor shall be aware that the existing utilities shown in the plans were surveyed prior to the design of this project and might have been relocated or replaced by a new utility facility prior to construction of this project, might be relocated or replaced by a new utility facility during the construction of this project, or might not require adjustment and may remain in its current location. The Contractor shall contact each utility owner and confirm the status of all existing and new utility facilities. The utility contact information is provided elsewhere in the plans or bidding documents.

MIDCONTINENT COMMUNICATIONS
Terry Hofer 605-209-2113
1624 Concourse Court
Rapid City, SD 57703-4761
Midcontinent Communication locations are estimated in the plans and were not field located. It is anticipated that the utility will need to be lowered at 3+70L to facilitate storm sewer installation. The Contractor shall coordinate and schedule with the affected utilities at this location to complete this work. Additional excavation by the Contractor at this location will be necessary. All costs for coordination, additional excavation etc. shall be incidental to the contract lump sum price for Incidental Work.

CENTURYLINK
Keith Nelson 605-394-4720
612 Mt. Rushmore Road
Rapid City, SD 57701
It is anticipated that the utility will need to be lowered at 3+70L to facilitate storm sewer installation. The Contractor shall coordinate and schedule with the affected utilities at this location to complete this work. Additional excavation by the Contractor at this location will be necessary. All costs for coordination, additional excavation etc. shall be incidental to the contract lump sum price for Incidental Work. Construction contact for Centurylink is Doy Ousley (605-394-4224).

VAST
Julie Burckhard 605-415-0692
809 Deadwood Avenue
Rapid City, SD 57702
It is anticipated that the utility will need to be lowered at 3+70L to facilitate storm sewer installation. The Contractor shall coordinate and schedule with the affected utilities at this location to complete this work. Additional excavation by the Contractor at this location will be necessary. All costs for coordination, additional excavation etc. shall be incidental to the contract lump sum price for Incidental Work. Construction contact for VAST is Gene Patrick (605-786-3150)

MDU
Toby Bordewyk 605-355-4054
505 Heritage Drive
Spearfish, SD 57783

No conflicts with MDU utilities are anticipated
with this project.

BLACK HILLS ENERGY
Brad Krush 605-206-2967
1251 Otter Road
Sturgis, SD 57785
There is an underground electrical service to the railroad building west of the project limits at approximately 4+00 L. This underground service was not field located. If, upon construction when the underground service is located for excavation purposes it is determined that the service location will interfere with the proposed area inlet, the Engineer shall be contacted and a revised location will be coordinated.

The Contractor shall contact and coordinate with BHE to remove and reset the existing light pole at 1+05-54'L to facilitate sidewalk installation. BHE will complete the work to remove and reset the pole. All costs for coordination with BHE to remove and reset the pole shall be incidental to the contract lump sum price for Incidental Work.

RAILROAD COORDINATION

The Contractor shall coordinate with the Rapid City, Pierre, and Eastern Railroad on work within the Railroad Right-of-Way as indicated in the Special Provision for "Working on Railroad Property". At the time of this contract, a specific contact for railroad coordination was not available. Contact information for the railroad is:

Gary Bate (605) 515-3940
Rapid City, Pierre & Eastern Railroad
246 Founders Park Drive, Suite 202
Rapid City, SD 57701
Phone (605) 877-3699
Fax (605) 341-3703

The Contractor shall coordinate and schedule with the Rapid City, Pierre, and Eastern Railroad to complete work and provide saw cutting as necessary in existing asphalt concrete pavement and removal of existing asphalt concrete pavement adjacent to the panel replacement work to be done by the Railroad. Due to the close proximity to the railroad tracks, the Rapid City, Pierre, and Eastern Railroad will provide a Railroad Flagman for the purpose of train protection. The existing asphalt concrete pavement is to be removed prior to the beginning of construction of the panels by the Railroad. The area of the removed asphalt concrete pavement shall be backfilled with ballast size gravel until the panel replacement work begins. No separate payment shall be made for the saw cutting and backfill material/placement.

The Contractor shall coordinate and schedule with the Rapid City, Pierre, and Eastern Railroad to complete work including penetrating the proposed inlet #3 to connect to the drain tile pipe that is to be installed by the Railroad.

PRIVATE AND PUBLIC PROPERTY

Care shall be taken by the Contractor such that private and public property located adjacent to the construction area is not damaged during construction operations. Damage to private property caused by the Contractor shall be repaired or replaced at the Contractors expense.

Lawn sprinklers are present on this project. The Contractor is responsible for locating, resetting, and if necessary, repairing if damaged during construction. All work associated with this work shall be incidental to the contract lump sum for Modify Sprinkler System. Exact location of sprinklers are unknown, but sprinklers exist in the grass area from 2+25 to 3+10 L.

STAGING AREA

The Contractor shall coordinate with Cory Heckenlaible, the City of Whitewood Finance Officer on a staging area for the project. Optional location for the staging area will be on the south side of the North Street ROW on the west side of Laurel Street. The Contractor shall be responsible for the restoration of the staging area. Quantities for seed, fertilizer, mulch, base course etc. are NOT included in the project quantities.

SALVAGED ITEMS

All salvaged items indicated on the project shall be delivered to the City of Whitewood Shop located at the intersection of Pine and Custer Streets.

PROPERTY CORNERS

Property corners as located in the plans or found in the field shall be preserved if possible. Corners destroyed by construction activities shall be replaced under the direction of a licensed Land Surveyor in South Dakota at the Contractors expense.

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 at the Contractor's expense.

WATER FOR GRADING OPERATIONS AND GRANULAR MATERIALS

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment. Water for embankment, base course and other granular materials will not be measured for payment. All costs shall be incidental to associated contract items.

For construction purposes on this project, the City of Whitewood will provide bulk water to the Contractor at no charge via the bulk water service located at the City Public Works Shop or via a hydrant connection with City approved meter and backflow device. The Contractor is responsible to load, haul and place water for the various activities in accordance with the specifications.

TABLE OF EXCAVATION QUANTITIES

Location	Excavation
1+00 to 1+67	52
2+17 to 5+12	65
TOTALS	**117 CuYd**

Notes:
1. Removal volume of existing sidewalk is included in Excavation above.
2. Asphalt volume is included in the Excavation above.
3. Volume of Scarification is not included in Excavation.

UNCLASSIFIED EXCAVATION/REMOVE AND REPLACE TOPSOIL

Field measurements for Unclassified Excavation and Remove and Replace Topsoil will not be made. Plans Quantity shall be the basis of payment regardless of variations of thicknesses of topsoil etc.

SCARIFICATION

In all cut sections and embankment prism areas to receive new fill, the earthen subgrade shall be scarified 6” below the earthen subgrade surface. The scarified material will then be recompacted to the density specified for the section being constructed. Scarification shall be completed with the use of an Engineer approved method to achieve a minimum of 6” depth.

No separate payment will be made for scarification and this work shall be considered incidental to unclassified excavation.

ROCK EXCAVATION

Rock Excavation and/or large cobble removal, if any, within this project shall be considered Unclassified Excavation. No additional payment will be made.

MUCK EXCAVATION

Muck Excavation within this project shall be considered Unclassified Excavation. No additional payment will be made.

INCIDENTAL WORK

Incidental work on the project includes the following items:

1. Utility coordination and work as listed in the notes on the previous page.
2. Removal of bollard near fire hydrant.
3. Removal and replacement of landscape rock adjacent to the sidewalk. Note that weed fabric for these areas will be paid for per square yard.
4. Penetrate inlet and connect drain tile pipe.
5. Saw cutting of existing asphalt concrete pavement and backfilling with ballast size gravel and base course.

WATER FOR VEGETATION

Water for Vegetation shall be used to water proposed areas planned to receive fertilizer and sod. An estimated 18 Gallons of water per square yard of area was used to compute the quantity for the bid item “Water for Vegetation”. All costs involved for watering the disturbed areas to promote vegetative growth shall be incidental to the contract unit price per Mgal for “Water for Vegetation”.

For construction and watering purposes on this project, the City of Whitewood will provide bulk water to the Contractor at no charge via the bulk water service located at the City Public Works Shop or via a hydrant connection. The Contractor is responsible to load, haul and place water for the various activities in accordance with the specifications.

REMOVE AND REPLACE TOPSOIL

Contractor shall strip, salvage, and replace topsoil only as needed to facilitate concrete sidewalk installation. Measurement of the topsoil will not be made. Topsoil removal and replacement is estimated at 12 CuYds. All costs for removing, stockpiling, and replacing topsoil shall be incidental to the contract lump sum price for Remove and Replace Topsoil.

Note that the staging area is not included in the estimate and shall be the responsibility of the Contractor if topsoil removal and replacement is necessary.

PLACING CONTRACTOR FURNISHED TOPSOIL

10 CuYds of Contractor Furnished Topsoil is included in the contract quantities to supplement the existing topsoil on the project and to provide for minor fill operations between proposed sidewalk and the existing landscaped area at 1+00 L. The intent is for the finished areas to have a minimum of 4” inches of topsoil on roadway in-slopes and planting areas as determined by the Engineer during construction.

All costs to furnish and place the topsoil shall be incidental to the contract unit price per cubic yard for “Placing Contractor Furnished Topsoil”.

BASE COURSE

Aggregate for Base Course shall be crushed ledge rock and shall be furnished by the Contractor. Base Course quantity is provided for areas outside of sidewalk limits.

CONCRETE SIDEWALK

Concrete sidewalk shall be constructed in accordance with Section 651 of the Specifications.

NOTE: Costs for 2” Gravel Cushion Material shall be incidental to the contract unit price per square foot for sidewalk per the specifications. Costs for the curb to be installed per detail ‘D’ on standard plate 651.03 in locations shown on the plans shall be incidental to the contract price per square foot for the corresponding sidewalk.

PIPE HANDRAIL AND CONCRETE FOOTING

At Station 1+00-40’L+/- a pipe handrail shall be installed on each side of the sidewalk ramp adjacent to the sidewalk. The handrail shall be fabricated in accordance with standard plate 470.01. A 12” wide by 12” deep concrete footing shall be poured adjacent to the concrete sidewalk for the anchor bolts and base plate attachments. Total area for the footing is 2.73 SqYds. All costs for the pipe handrail and concrete footing shall be incidental to the contract unit price for foot for Pipe Handrail.

RESET FENCE

All excess fence materials not reset in areas indicated on the plans shall be salvaged to the City of Whitewood per “Salvaged Items” note.

FERTILIZING

A commercial fertilizer with a minimum guaranteed analysis of 11-52-0 or an approved alternate fertilizer shall be applied to areas designated for sodding Immediately before the sod is placed and incorporated into the soil to a depth of 2”. The application rate of fertilizer shall be 3 pounds per 1000 square feet.

SODDING

Sod shall be placed behind curb and gutter sections in residential areas at locations specified in the plans and at locations determined by the Engineer during construction. Peat sod is not permitted.

CONCRETE WASHOUT FACILITY

The Contractor shall provide a concrete washout facility per detail in the plans to prevent high PH concrete wash water from entering curb lines, storm sewers etc. All costs for materials labor, excavation, maintenance, and removal of the concrete washout facility including surface restoration shall be incidental to the contract unit price per each for Concrete Washout Facility.

SEDIMENT FILTER BAG

Erosion control filter socks for the gutter checks shall be the Snake Bag from Sacramento Bag Manufacturing Company or Engineer approved equal. Bags shall be nine inches in diameter and filled with clean 2” minus rock or Engineer approved clean rock alternate.

All costs for furnishing, installing, maintaining (removing sediment), and removing the Sediment Filter Bags shall be incidental to the contract unit price per foot for Sediment Filter Bag. Sediment Filter Bags that are removed and reset on the project shall be incidental to the contract unit price per foot for Remove and Reset Sediment Filter Bag. An additional 30 Ft of sediment filter bag has been included in the estimate for erosion control on areas determined by the Engineer on construction.

TABLE OF SEDIMENT FILTER BAG

Station	L/R	Quantity (Ft)
1+25.05	L	6
1+31.52	L	6
1+37.27	L	6
2+44.16	R	6
2+49.52	R	6
2+55.02	R	6
2+89.73	R	6
Additional Quantity	-	30
	Total:	72.

TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
0+33.88		1+65.76	L&R	123.7
1+11.86		1+19.40	L	1.7
1+65.49		1+66.76	L&R	2.6
2+04.44		2+05.73	L&R	1.8
2+95.75		3+92.94	R	102.4
3+64.97		4+13.58	R	50.7
3+91.21		3+94.31	R	0.9
3+93.15		4+03.50	L&R	4.5
3+84.55		4+73.48	L&R	76.4
4+09.95		4+25.96	L&R	8.6
4+23.69		4+74.15	L&R	16.4
4+72.57		4+80.00	L&R	1.8
4+77.27		4+95.91	L&R	12.6
			Total:	404.1

TABLE OF CONCRETE PAVEMENT REMOVAL

Station		Station	L/R	Quantity (SqYd)
1+43.09		1+63.09	L/R	22.2
2+13.70		2+32.94	L/R	23.8
			Total:	46.

TABLE OF CONCRETE APPROACH PAVEMENT REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
3+26.27		3+92.75	R	56.2
			Total:	56.2

TABLE OF CONCRETE CURB AND GUTTER REMOVAL

Station	to	Station	L/R	Quantity (Ft)
0+93.97		1+65.76	L&R	124
2+95.80		3+26.27	R	30.5
			Total:	154.5

TABLE OF SIDEWALK REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
0+96.85		1+26.06	L	28.3
1+03.94		1+11.86	L	2.6
1+11.05		1+63.09	L&R	57.4
2+08.48		3+94.77	L&R	108.2
4+95.89		5+12.00	L&R	8.7
			Total:	205.2

TABLE OF ASPHALT CONCRETE COMPOSITE

Station	to	Station	L/R	Quantity (Ton)
0+83.88		1+65.76	L&R	14.1
1+11.86		1+19.40	L	0.4
1+65.76		1+66.76	L&R	0.7
2+04.45		2+05.45	L&R	0.5
2+95.75		3+98.83	R	26.0
3+65.20		2+19.38	R	14.8
3+85.37		4+66.71	R	11.1
4+15.56		4+24.12	L	0.3
4+23.07		4+74.15	R	4.4
4+36.08		4+72.44	L	1.1
			Total:	73.4

TABLE OF B66 CONCRETE CURB AND GUTTER

Station	to	Station	L/R	Quantity (Ft)
1+18.22		1+43.09	L&R	132.0
1+63.09		1+63.09	L	5
2+95.80		3+13.13	R	35.3
			Total:	172.3

TABLE OF P8 CONCRETE GUTTER

Station	to	Station	L/R	Quantity (Ft)
3+31.13		3+81.13	R	50
			Total:	50.

TABLE OF 4” CONCRETE SIDEWALK

Station	to	Station	L/R	Quantity (SqFt)
0+89.54		1+63.09	L&R	932.0
2+08.48		3+31.13	L&R	754.9
3+81.13		4+02.80	L&R	98.4
4+11.60		4+23.66	L&R	38.9
4+32.13		4+71.49	L&R	175.0
4+80.54		5+12.00	L&R	145.5
			Total:	2144.7

TABLE OF 8” REINFORCED CONCRETE SIDEWALK

Station	to	Station	L/R	Quantity (SqFt)
3+31.13		3+81.13	-	250
			Total:	250.

Reinforcement for 8” reinforced concrete sidewalk shall be #4 epoxy coated rebar and shall be spaced in general accordance with the City of Rapid City standard detail 60-4.

TABLE OF 8” REINFORCED PCC APPROACH PAVEMENT

Station	to	Station	L/R	Quantity (SqYd)
3+25.13		3+81.13	R	54.41
			Total:	54.41

Reinforcement for 8” reinforced PCC approach pavement shall be #4 epoxy coated rebar and shall be spaced in general accordance with the City of Rapid City standard detail 60-4.

8” PCC FILLET SECTIONS

Payment for 8” PCC Fillet Section shall be based on plans quantity. If additions or reductions to the area of PCC fillet sections are ordered by the Engineer, payment will be made in accordance with the contract unit price per square yard for 8” PCC Fillet Section.

TABLE OF 8" PCC FILLET SECTION

Station	to	Station	L/R	Radius (Ft)	Quantity (SqYd)
1+43.09		1+63.09	L&R	20	22.2
2+13.71		2+32.94	L&R	40±	23.8
				Total:	46.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

DROP INLETS

The drop inlets shall be covered throughout construction operations as necessary with an Engineer approved cover to provide safe travel for motorists and to prevent materials from entering the storm sewer system. After the permanent surfacing has been placed, the Contractor shall seal any weep holes with grout and remove all debris from the drop inlet. All costs involved with the coverings, weep holes, and removing debris from the drop inlets shall be incidental to the contract unit prices for the components of the drop inlets.

The plan shown quantities of the drop inlet components such as Class M6 Concrete, Reinforcing Steel, Type C Frame and Grate Assembly and Special Frame and Grate Assembly will be the basis of payment for these items.

If additions or reductions to the number of drop inlets are ordered by the Engineer, payment for the components required to construct the drop inlets will be made at the contract unit prices for the components of the drop inlets.

TABLE OF DROP INLETS AND QUANTITIES(STORM SEWER ALIGNMENT)

Station	L / R	Drop Inlet Size	Drop Inlet Type	Class M6 Concrete (CuYd)	Reinf. Steel (Lb)	Frame and Grate/Lid Type
0+43.89	-	3'x4'	B	1.92	289	Special
1+14.54	-	3'x4'	C	1.30	220	C
			Totals:	3.22	509	

Total Type C Frame and Grate Assembly	1
Total Type Special Frame and Grate	1

SPECIAL FRAME AND GRATE ASSEMBLY

It is anticipated that a special frame and grate assembly will be needed to facilitate the drainage within the proposed concrete driveway at 0+43.89(Storm Sewer Alignment). The special frame and grate assembly shall be Neenah 3067-C with a Type L grate or an Engineer approved equal.

All costs for furnishing and installing the Special Frame and Grate Assembly shall be incidental to the contract unit price per each for Special Frame and Grate Assembly.

CONCRETE PIPE CONNECTIONS

Pipe connections to existing pipes, manholes, junction boxes, and drop inlets shall be done by breaking a hole into the existing structure and inserting the pipe. A concrete collar shall then be poured around the pipe in the area of the connection.

When it is not possible to use a normal pipe joint (male-female ends), connections to existing pipe shall be made by placing a 2' wide by 6" thick M6 concrete collar around the outside of the connection. The concrete collar shall be reinforced with 6x6 W2.9 x W2.9 wire mesh.

All costs for constructing the concrete collars including materials and labor shall be incidental to the contract unit price per foot for the corresponding pipe bid item.

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 800-558-5075 http://www.neenahfoundry.com/
Detectable Warning Plate Cast Iron Plate	Deeter Foundry Lincoln, NE 800-234-7466 http://www.deeter.com/
Detectable Warning Plate Cast Iron Plate(No Coating)	East Jordan Iron Works, Inc. 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

TABLE OF DETECTABLE WARNINGS

Station	L/R	Detectable Warnings (Type)	Quantity (SqFt)
1+01.41	-	1	10
1+61.12	-	1	10
2+18.86	-	1	10
3+96.13	-	1	10
4+88.32	-	1	10
Total Type 1 Detectable Warnings:			50

STORM SEWER

Reinforced concrete pipe may be either bell and spigot or tongue and groove. The pipe sections shall be adjoined such that the ends are fully entered and the inner surfaces are reasonably flush and even.

Lift holes in the reinforced concrete pipe shall be plugged with grout.

Watertight joints are required for reinforced concrete pipe, drop inlets, manholes, and junction boxes where storm sewers run parallel to and within 10 feet horizontally from existing or proposed water mains.

Watertight joints are required where reinforced concrete pipes, drop inlets, manholes, or junction boxes cross water mains and are separated a distance of 18 inches or less, above or below, the water main.

Watertight joints are required on this project for the storm sewer and inlets within Laurel Street as it is estimated that the existing water main is within 10' horizontally from the proposed storm sewer location.

If watertight joints are required then the watertight joints shall extend for a distance of 10 feet beyond the water main. This measurement shall be from the sealed concrete joint to the outer most surface of the water main.

Watertight joint seals shall conform to the following requirements:

1. Reinforced Concrete Pipe (Circular): Gasketed pipe shall conform to the requirements of ASTM C443. Non-gasketed concrete pipe shall be sealed with a mastic joint seal conforming to the requirements of ASTM C990 and encased with a minimum 2' wide by 6" thick M6 concrete collar reinforced with 6x6 W2.9 x W2.9 wire mesh.

2. Reinforced Concrete Pipe (Arch): Joints shall be sealed with a waterstop seal meeting the requirements of ASTM C990. Waterstop seals shall consist of hydrophilic compounds such as Waterstop-RX or ConSeal CS-231.

3. Drop Inlets, Manholes, and Junction Boxes: Joints shall be sealed with a waterstop seal or seal wrap meeting the requirements of ASTM C990 or encased with a minimum 2' wide by 6" thick M6 concrete collar reinforced with 6x6 W2.9 x W2.9 wire mesh. Waterstop seal shall contain hydrophilic compounds such as Waterstop-RX or ConSeal CS-231. Seal wrap shall be a self adhesive external joint wrap such as ConWrap CS-217 or Mar Mac Seal Wrap.

Gaskets and seals (mastic, waterstop, and seal wraps) shall be installed in accordance with the manufacturer's recommendations.

The cost for furnishing and installing all gaskets, mastic joint seal, waterstop seal, seal wrap, concrete collars, and for plugging the lift holes shall be incidental to the contract unit price per foot for the corresponding pipe bid item.

TRAFFIC CONTROL

All costs for implementing the traffic control plan including but not limited to: installation, maintenance, and removal of temporary traffic control devices shall be incidental to the associated traffic control bid items.

Traffic Control shall at all times be in accordance with current MUTCD Standards and the specifications.

Unless otherwise stated in these plans, no work will be allowed during hours of darkness.

All materials and equipment shall be stored a minimum distance of 6' from the traveled way during nonworking hours.

All existing signs shall be removed and reset and maintained as needed, during construction. Non applicable signing, including construction signing, shall be covered completely or removed from the shoulder during periods of inactivity. Periods of inactivity are defined as 1 day. All costs to perform this work shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

Temporary construction signing that remains in the same location for more than 3 days shall be on fixed location, ground mounted, breakaway supports, unless otherwise approved by the Engineer. The bottom of signs mounted on portable and fixed location supports shall be a minimum of 7 feet above the elevation of the curb, or in the absence of a curb above the near edge of the traveled way.

Hauling of materials to and from the project site shall be conducted in a safe manner by utilizing flaggers when necessary and appropriate traffic control devices to control traffic.

The Contractor shall protect pedestrians from potential hazards by using channelizing devices that include a detectable edging for pedestrian as outlines in Section 6F.74 of the MUTCD.

Storage of vehicles and equipment shall be as near the right-of-way as possible. 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.

Approved pedestrian channelizing devices for Phase 2 include the following:

a.) Safety Wall by Plastic Safety Systems, Inc. (www.plasticsafety.com) and
b.) ADAcade by Three D TrafficWORKS (www.trafficwks.com)

All costs for pedestrian channelizing devices used to close and reroute the sidewalk shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

When sidewalk is closed, a pedestrian channelizing device shall be placed across the entire width of sidewalk at the location of the closure and the recommended crossing location upstream of the closure.

TRAFFIC CONTROL CONT.

The barricade rail supports on the pedestrian channelizing device used to close the sidewalk shall not project in to pedestrian routes more than 4 inches from the support between 27 and 80 inches from the surface of the sidewalk. To prevent any tripping hazard to pedestrians, ballast shall be located behind or internal to the device.

STREET SWEEPING

Vehicle tracking of sediment from the construction site shall be minimized. Street sweeping shall be used if erosion and sediment control best management practices are not adequate to prevent sediment from being tracked onto the street.

The Contractor shall use a pickup broom having integral self-contained storage to clean the roadway. The pickup broom used shall be a minimum of 6 feet wide and have working gutter brooms.

At a minimum, sweeping will be required:
1. Prior to opening any segment or roadway to traffic.
2. When sawing operations are underway in the inside driving lanes, the outside driving lanes and gutter may need to be swept to control dust.

All costs for cleaning the roadway with a pickup broom shall be incidental to the contract unit price per hour for "Sweeping".

TRAFFIC CONTROL SIGN TABULATION

ITEMIZED LIST FOR TRAFFIC CONTROL

		CONVENTIONAL ROAD			
SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
R3-2	NO LEFT TURN (SYMBOL)	1	24" x 24"	4.0	4.0
R9-9	SIDEWALK CLOSED	2	24" x 12"	2.0	4.0
R9-11	SIDEWALK CLOSED AHEAD with ARROW (L or R) CROSS HERE	2	24" x 18"	3.0	6.0
R11-2	ROAD CLOSED	2	48" x 30"	10.0	20.0
W20-1	ROAD WORK AHEAD	5	48" x 48"	16.0	80.0
W20-3	ROAD CLOSED AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER AHEAD	6	48" x 48"	16.0	96.0
W21-5	SHOULDER WORK	1	48" x 48"	16.0	16.0
				TOTAL SQFT	331.0

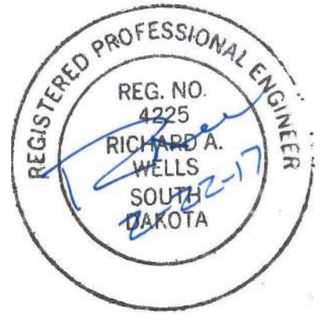
SEQUENCE OF OPERATIONS

When possible, two-way traffic shall be maintained on Laurel Street and all intersecting streets. This may require only one of the intersection quadrants to be under construction at one time due to intersecting street width.

In order to facilitate conveyance of pedestrian traffic, this project shall be completed in two phases as shown on the Pedestrian Signage Phase 1 and Phase 2 layouts. All sidewalk work shall be completed on Phase 1 prior to Phase 2 demolition.

Each phase of the sidewalk reconstruction shall generally follow the sequence below. The Contractor shall define all proposed deviations from the sequence and submit to the Engineer for approval prior to construction operations.

1. Set up traffic control per typical detail and coordinate with Engineer for temporary and fixed sign locations per plan details and standard plates.
2. Install erosion and sediment protection prior to any removal and construction operations.
3. Complete removals and coordinate with Utilities when necessary as noted within these plans.
4. Coordinate with BHE for removal and replacement of the luminaire pole and or pole stabilization when excavation is adjacent to poles to remain in place.
5. Coordinate with Rapid City, Pierre, and Eastern Railroad for asphalt concrete pavement removal and backfill.
6. Complete grading, sidewalk, storm sewer, ramp, and curb and gutter operations.
   a. Coordinate with utilities and Railroad as needed for storm sewer excavation and installation.
7. Set up additional traffic control (flagger setup) as necessary for pavement marking installation.
8. Complete pavement marking.
9. Complete disturbed area restoration.
10. Remove traffic control and restore traffic back to normal condition.



CONTROL DATA

Plotting Date --- 2-22-17

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	9	48

HORIZONTAL AND VERTICAL CONTROL POINTS

POINT	STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP-12	N/A	N/A	Rebar & Cap behind C&G along Laurel Street, 11.4' Southwest of Power Pole at Hooker Street	250599.58	1018988.73	3645.59
CP-11	N/A	N/A	Rebar & Cap behind C&G along Laurel Street, 11' North of Fire Hydrant at Garfield Street	251091.28	1018929.89	3633.92
CP-10	N/A	N/A	Rebar & Cap East of Sidewalk along Laurel Street, 114.5' North of Sherman Street Curb and Gutter	251764.57	1019002.33	3611.68
CP-1	N/A	N/A	Rebar East of Sidewalk along Laurel Street, 27' Southeast of Fire Hydrant at Thompson Street	252372.80	1019047.29	3597.63
CP-13	0+47.85	51.60'R	Rebar 5.7' East of Storm Inlet at Southeast Quadrant of intersection of Meade and Laurel	250099.60	1018968.09	3661.52

The coordinates shown on this sheet are based are a rotated local coordinate system based from a South Dakota State Plane Coordinate System North Zone OPUS solution for Point CP-1.
The elevations shown on this sheet are NAVD 88 based on the OPUS solution for CP-1.

HORIZONTAL ALIGNMENT DATA

Plotting Date --- 2-22-17

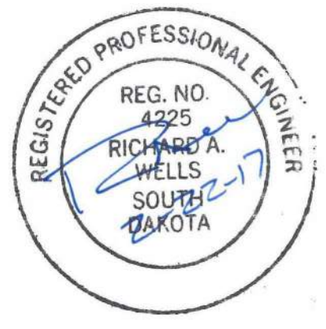
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	10	48

MAINLINE SIDEWALK CENTERLINE ALIGNMENT

Type	Start Station	End Station	Length	Direction	Start Point	End Point	Radius	Delta angle	Chord Direction	PI Station	PI Point
Line	0+00'	2+18.86'	218.86'	N00°20'48"E	(1018918.24',250052.75',0.00')	(1018919.56',250271.61',0.00')					
Line	2+18.86'	2+26.36'	7.49'	N42°40'01"W	(1018919.56',250271.61',0.00')	(1018914.49',250277.12',0.00')					
Line	2+26.36'	2+31.83'	5.48'	N47°14'31"E	(1018914.49',250277.12',0.00')	(1018918.51',250280.84',0.00')					
Line	2+31.83'	2+31.87'	0.04'	N46°41'53"E	(1018918.51',250280.84',0.00')	(1018918.54',250280.86',0.00')					
Curve	2+31.87'	2+34.64'	2.77'		(1018918.54',250280.86',0.00')	(1018919.63',250283.32',0.00')	3.50'	045°17'04"	N24°03'21"E	2+33.33'	(1018919.60',250281.86')
Line	2+34.64'	2+34.70'	0.07'	N01°24'49"E	(1018919.63',250283.32',0.00')	(1018919.64',250283.39',0.00')					
Line	2+34.70'	2+36.66'	1.96'	N00°20'48"E	(1018919.64',250283.39',0.00')	(1018919.65',250285.35',0.00')					
Line	2+36.66'	5+12.00'	275.34'	N00°20'48"E	(1018919.65',250285.35',0.00')	(1018921.31',250560.68',0.00')					

STORM SEWER ALIGNMENT

Type	Start Station	End Station	Length	Direction	Start Point	End Point
Line	0+00'	0+45.89'	45.89'	N00°10'26"E	(1018932.81',250342.56',0.00')	(1018932.95',250388.45',0.00')
Line	0+45.89'	1+16.54'	70.65'	N30°06'56"W	(1018932.95',250388.45',0.00')	(1018897.50',250449.56',0.00')



The coordinates shown on this sheet are based are a rotated local coordinate system based from a South Dakota State Plane Coordinate System North Zone OPUS solution for Point CP-1.
The elevations shown on this sheet are NAVD 88 based on the OPUS solution for CP-1.

Plotting Date --- 2-22-17

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	11	48
	FIXED SIGN PLAN		

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

NOTES:

SIGN LOCATIONS IN THIS PLAN ARE DIAGRAMMATIC. FINAL LOCATIONS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

EXISTING STOP SIGNS SHALL BE USED AND RESET TO THE EXTENT POSSIBLE DURING CONSTRUCTION. COST FOR THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT UNIT PRICE PER EACH FOR REMOVE, SALVAGE, RELOCATE, AND RESET TRAFFIC SIGN.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	12	48
PEDESTRIAN SIGNAGE – PHASE 1			

Plotting Date --- 2-22-17

LEGEND

- WORK ZONE
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PATCH
- PROPOSED CONCRETE CURB and GUTTER/FILLET
- CONSTRUCTION SIGN
- CHANNELIZING DEVICE
- PEDESTRIAN BARRICADE

NOTES:

TWO–WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES AT INTERSECTIONS. WORK AT INTERSECTIONS MAY HAVE TO BE COMPLETED ONE QUADRANT AT A TIME DUE TO INTERSECTING STREET WIDTH(S).

WITH EXCEPTION OF FIXED SIGNS, TEMPORARY TRAFFIC CONTROL SHALL BE LIMITED ONLY TO ACTIVE WORK AREAS.

SIDEWALK CLOSED AHEAD
CROSS HERE
R9-11

SIDEWALK CLOSED AHEAD
CROSS HERE
R9-11

When sidewalk is closed, a pedestrian barricade shall be placed across the entire width of sidewalk at the location of the closure and the recommended crossing location upstream of the closure.

The barricade rail supports on the pedestrian barricade used to close the sidewalk shall not project in to the pedestrian routes more than 4 inches from the support between 27 and 80 inches from the surface of the sidewalk. To prevent any tripping hazard to pedestrians, ballast shall located behind or internal to the device.

All costs for pedestrian barricades used to close sidewalk and protect pedestrians shall be included in the contract price for Longitudinal Pedestrian Barricade.

SIDEWALK CLOSED
R9-9

SIDEWALK CLOSED
R9-9

SHOULDER WORK
W21–5
PER SDDOT STANDARD PLATE 634.03
(AHEAD OF ACTIVE WORK AREA)

200'

CHANNELIZING DEVICE AT 15' SPACING

MEADE STREET

SOUTH STREET

LAUREL STREET

HOOKER STREET

13
3661.53
CP/REBAR PCAP

12
3645.59
CP/REBAR

0' 30' 60'

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

February 22, 2017 2:41:40 p.m.
Drawing: 13180 TRAFFIC.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	13	48
PEDESTRIAN SIGNAGE – PHASE 2			

Plotting Date --- 2-22-17

LEGEND

- WORK ZONE
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PATCH
- TEMPORARY PEDESTRIAN ROUTE
- PROPOSED CONCRETE CURB and GUTTER/FILLET
- CONSTRUCTION SIGN
- PEDESTRIAN BARRICADE

NOTES:

TWO–WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES AT INTERSECTIONS. WORK AT INTERSECTIONS MAY HAVE TO BE COMPLETED ONE QUADRANT AT A TIME DUE TO INTERSECTING STREET WIDTH(S).

WITH EXCEPTION OF FIXED SIGNS, TEMPORARY TRAFFIC CONTROL SHALL BE LIMITED ONLY TO ACTIVE WORK AREAS.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

When sidewalk is closed, a pedestrian barricade shall be placed across the entire width of sidewalk at the location of the closure and the recommended crossing location upstream of the closure.

The barricade rail supports on the pedestrian barricade used to close the sidewalk shall not project in to the pedestrian routes more than 4 inches from the support between 27 and 80 inches from the surface of the sidewalk. To prevent any tripping hazard to pedestrians, ballast shall located behind or internal to the device.

All costs for pedestrian barricades used to close sidewalk and protect pedestrians shall be included in the contract price for Longitudinal Pedestrian Barricade.

When sidewalk is closed, a pedestrian barricade shall be placed across the entire width of sidewalk at the location of the closure and the recommended crossing location upstream of the closure.

The barricade rail supports on the pedestrian barricade used to close the sidewalk shall not project in to the pedestrian routes more than 4 inches from the support between 27 and 80 inches from the surface of the sidewalk. To prevent any tripping hazard to pedestrians, ballast shall located behind or internal to the device.

All costs for pedestrian barricades used to close sidewalk and protect pedestrians shall be included in the contract price for Longitudinal Pedestrian Barricade.

MEADE STREET
SOUTH STREET
LAUREL STREET
HOOKER STREET

SIDEWALK CLOSED AHEAD
CROSS HERE
R9-11

SIDEWALK CLOSED
R9-9

SIDEWALK CLOSED
R9-9

CONTRACTOR SHALL COORDINATE WORK ON ACCESS WITH LANDOWNER

PEDESTRIAN BARRICADE

TEMPORARY PEDESTRIAN ROUTE DURING PHASE 2 CONSTRUCTION

SHOULDER WORK
W21–5
PER SDDOT STANDARD PLATE 634.03
(AHEAD OF ACTIVE WORK AREA)

PROVIDE TEMPORARY CURB RAMP FOR PEDESTRIAN ROUTE
LOCATION DIAGRAMMATIC. LOCATION PER ENGINEER

13
3661.53
CP/REBAR PCAP

12
3645.59
CP/REBAR

0+00 1+00 2+00 3+00 4+00 5+00

0' 30' 60'

February 22, 2017 2:41:40 p.m.
Drawing: 13180 TRAFFIC.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	14	48
	ONE LANE ROAD SIGNAGE		

Plotting Date --- 2-22-17
Revised: 3-15-17

LEGEND

- WORK ZONE
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PATCH
- TEMPORARY PEDESTRIAN ROUTE
- PROPOSED CONCRETE CURB and GUTTER/FILLET
- CONSTRUCTION SIGN
- CHANNELIZING DEVICE

NOTES:

TWO-WAY TRAFFIC SHALL BE RESTRICTED TO ONE LANE FOR ONE DAY IN EACH DIRECTION TO FACILITATE INSTALLATION OF THE CONCRETE PANELS BY THE RAILROAD. FLAGGERS SHALL BE USED TO SAFELY MAINTAIN TRAFFIC FLOW AND REDUCE DELAY TIME TO THE TRAVELING PUBLIC.

AT THE END OF DAY 1 THE CONTRACTOR SHALL BACKFILL THE AREA BETWEEN THE REPLACEMENT CONCRETE PANEL AND THE EXISTING ASPHALT PAVEMENT WITH BASE COURSE AS A TEMPORARY ROAD SURFACE.

Anticipated Schedule of Railroad Work:

Day 1: Install concrete panels on the east side of the road in the area of the 2 siding tracks. Traffic will be restricted to one lane on the west side of the road.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

MEADE STREET
SOUTH STREET
LAUREL STREET
HOOKER STREET

W20-7 FLAGGER AHEAD
W20-4 ONE LANE ROAD AHEAD

0' 30' 60'

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	15	48
	ONE LANE ROAD SIGNAGE		

Plotting Date --- 2-22-17
Revised: 3-15-17

LEGEND

- WORK ZONE
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PATCH
- TEMPORARY PEDESTRIAN ROUTE
- PROPOSED CONCRETE CURB and GUTTER/FILLET
- CONSTRUCTION SIGN
- CHANNELIZING DEVICE

NOTES:

TWO-WAY TRAFFIC SHALL BE RESTRICTED TO ONE LANE FOR ONE DAY IN EACH DIRECTION TO FACILITATE INSTALLATION OF THE CONCRETE PANELS BY THE RAILROAD. FLAGGERS SHALL BE USED TO SAFELY MAINTAIN TRAFFIC FLOW AND REDUCE DELAY TIME TO THE TRAVELING PUBLIC.

AT THE END OF DAY 2 THE CONTRACTOR SHALL BACKFILL THE AREA BETWEEN THE REPLACEMENT CONCRETE PANEL AND THE EXISTING ASPHALT PAVEMENT WITH BASE COURSE AS A TEMPORARY ROAD SURFACE.

Anticipated Schedule of Railroad Work:

Day 2: Install concrete panels on the west side of the road in the area of the 2 siding tracks. Traffic will be restricted to one lane on the east side of the road.

REGISTERED PROFESSIONAL ENGINEER
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SOUTH DAKOTA
2-22-17

MEADE STREET
SOUTH STREET
LAUREL STREET
HOOKER STREET

W20-7 FLAGGER AHEAD
W20-4 ONE LANE ROAD AHEAD

0' 30' 60'

February 22, 2017 2:41:40 p.m.
Drawing: 13180 TRAFFIC.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	16	48
ROAD CLOSED SIGNAGE			

Plotting Date --- 2-22-17
Revised: 3-15-17

LEGEND

- WORK ZONE
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PATCH
- TEMPORARY PEDESTRIAN ROUTE
- PROPOSED CONCRETE CURB and GUTTER/FILLET
- CONSTRUCTION SIGN
- PEDESTRIAN CHANNELIZING DEVICE

NOTES:

IT IS ANTICIPATED THAT TO COMPLETE THE PANEL WORK BY THE RAILROAD, THE FULL WIDTH OF THE ROADWAY WILL NEED TO BE CLOSED FOR A PERIOD OF TIME. THE CONTRACTOR SHALL COORDINATE WITH THE RAILROAD TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC.

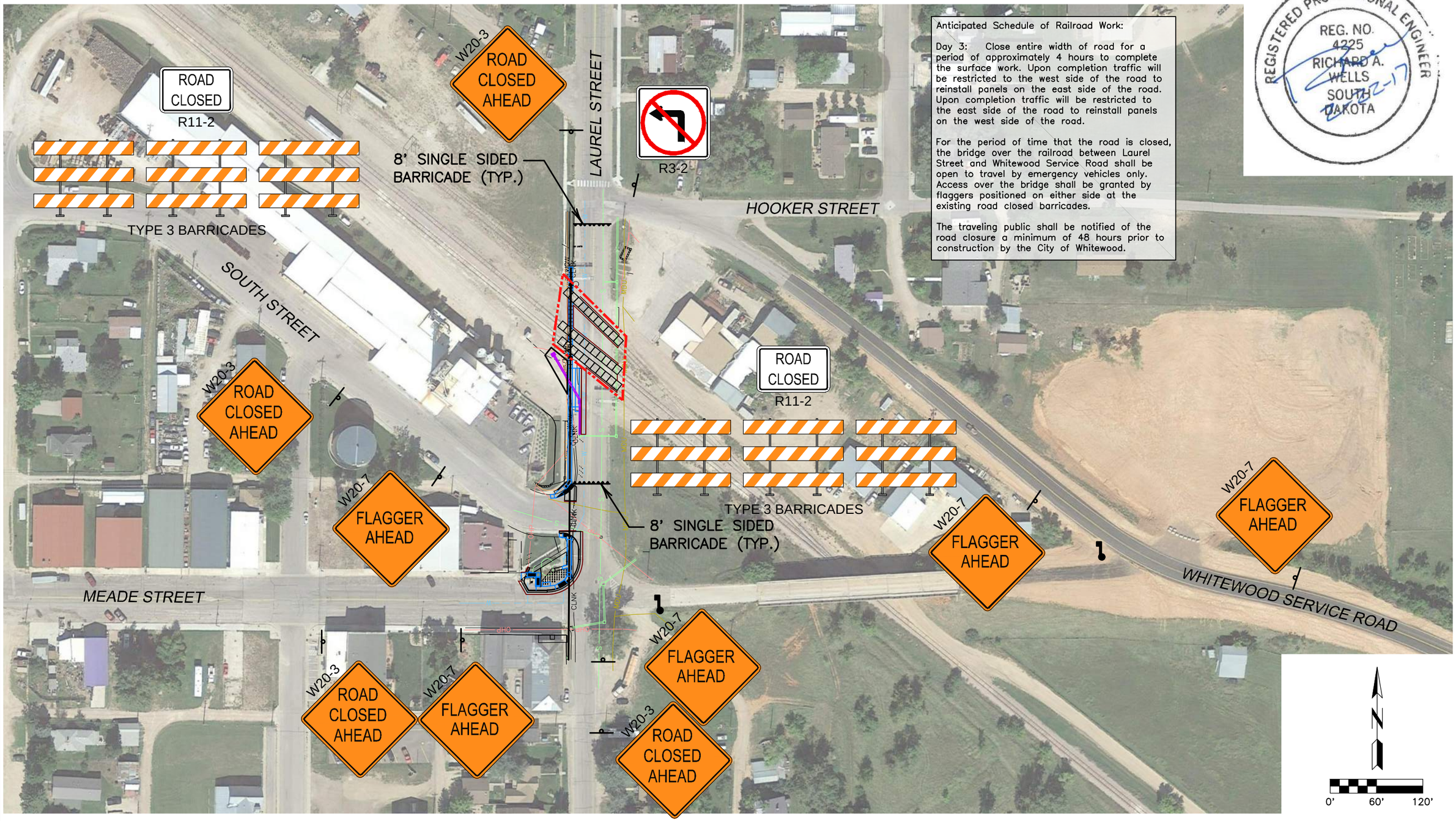
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
12-22-17

Anticipated Schedule of Railroad Work:

Day 3: Close entire width of road for a period of approximately 4 hours to complete the surface work. Upon completion traffic will be restricted to the west side of the road to reinstall panels on the east side of the road. Upon completion traffic will be restricted to the east side of the road to reinstall panels on the west side of the road.

For the period of time that the road is closed, the bridge over the railroad between Laurel Street and Whitewood Service Road shall be open to travel by emergency vehicles only. Access over the bridge shall be granted by flaggers positioned on either side at the existing road closed barricades.

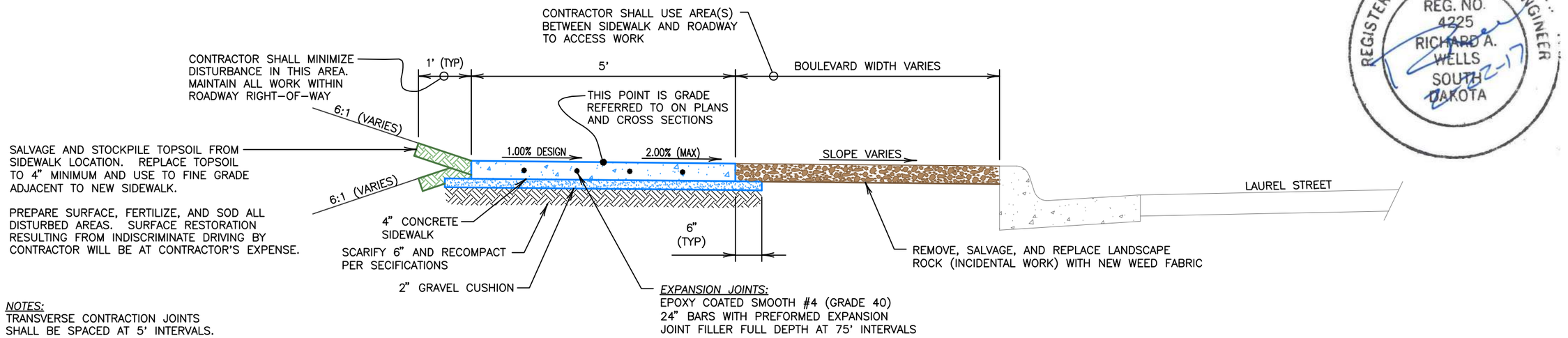
The traveling public shall be notified of the road closure a minimum of 48 hours prior to construction by the City of Whitewood.



Plotting Date --- 2-22-17

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	17	48
TYPICAL SECTION			

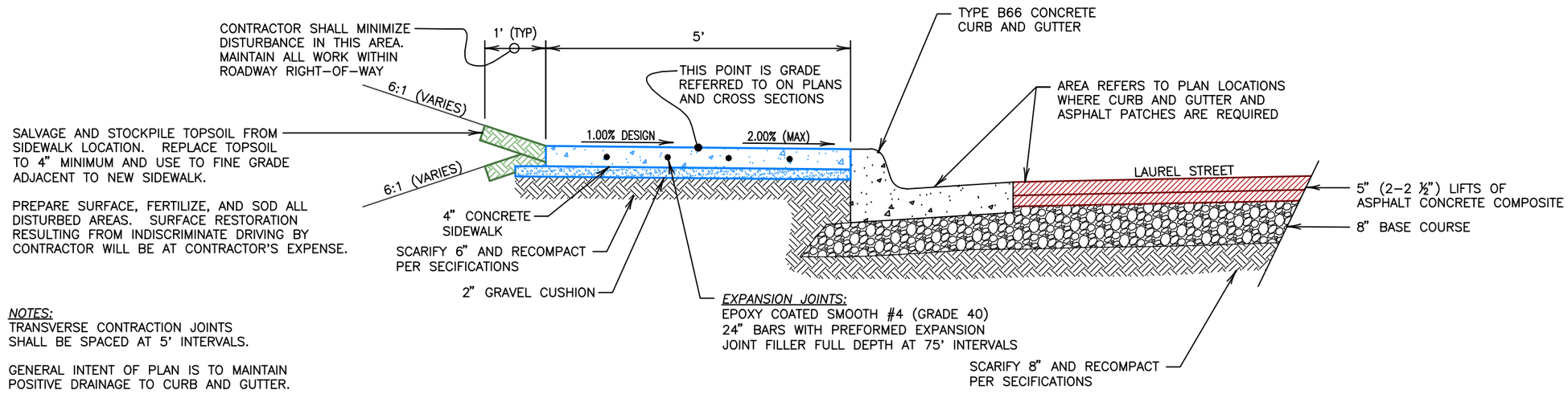
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17



NOTES:
TRANSVERSE CONTRACTION JOINTS SHALL BE SPACED AT 5' INTERVALS.

GENERAL INTENT OF PLAN IS TO MAINTAIN POSITIVE DRAINAGE TO CURB AND GUTTER.

TYPICAL CONCRETE SIDEWALK SECTION



NOTES:
TRANSVERSE CONTRACTION JOINTS SHALL BE SPACED AT 5' INTERVALS.

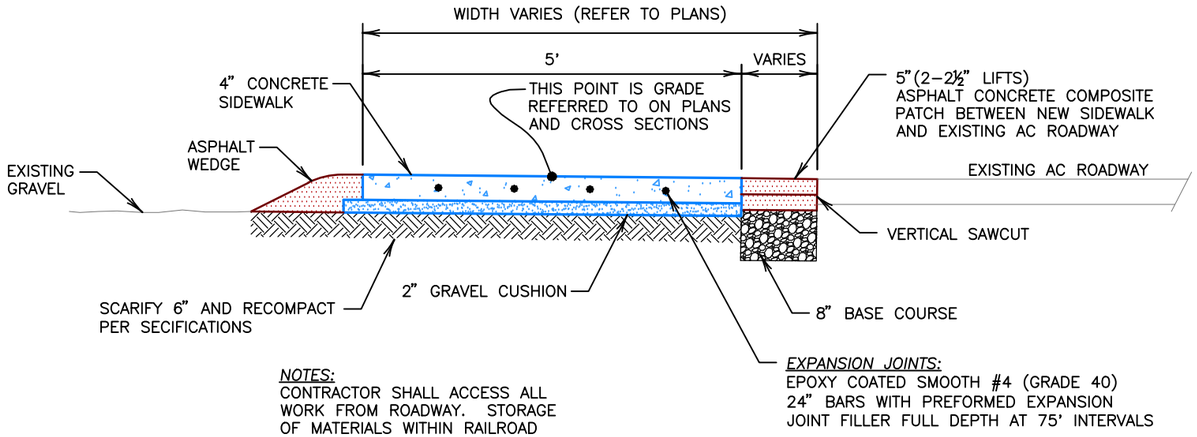
GENERAL INTENT OF PLAN IS TO MAINTAIN POSITIVE DRAINAGE TO CURB AND GUTTER.

TYPICAL CONCRETE SIDEWALK SECTION

Plotting Date --- 2-22-17

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	18	48
TYPICAL SECTION			

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17



NOTES:
CONTRACTOR SHALL ACCESS ALL WORK FROM ROADWAY. STORAGE OF MATERIALS WITHIN RAILROAD RIGHT–OF–WAY IS NOT ALLOWED.

TRANSVERSE CONTRACTION JOINTS SHALL BE SPACED AT 5' INTERVALS.

SIDEWALK SHALL BE SLOPED FROM 0.50% TO 1.00% (TYP) (2% MAX). AND SHALL BE WARPED TO MATCH LONGITUDINAL GRADE OF RAILROAD

TYPICAL CONCRETE SIDEWALK SECTION IN RAILROAD TRACK AREA

Plotting Date --- 2-22-17

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	19	48

TYPICAL SYMBOLS LEGEND

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SOUTH DAKOTA
2-22-17

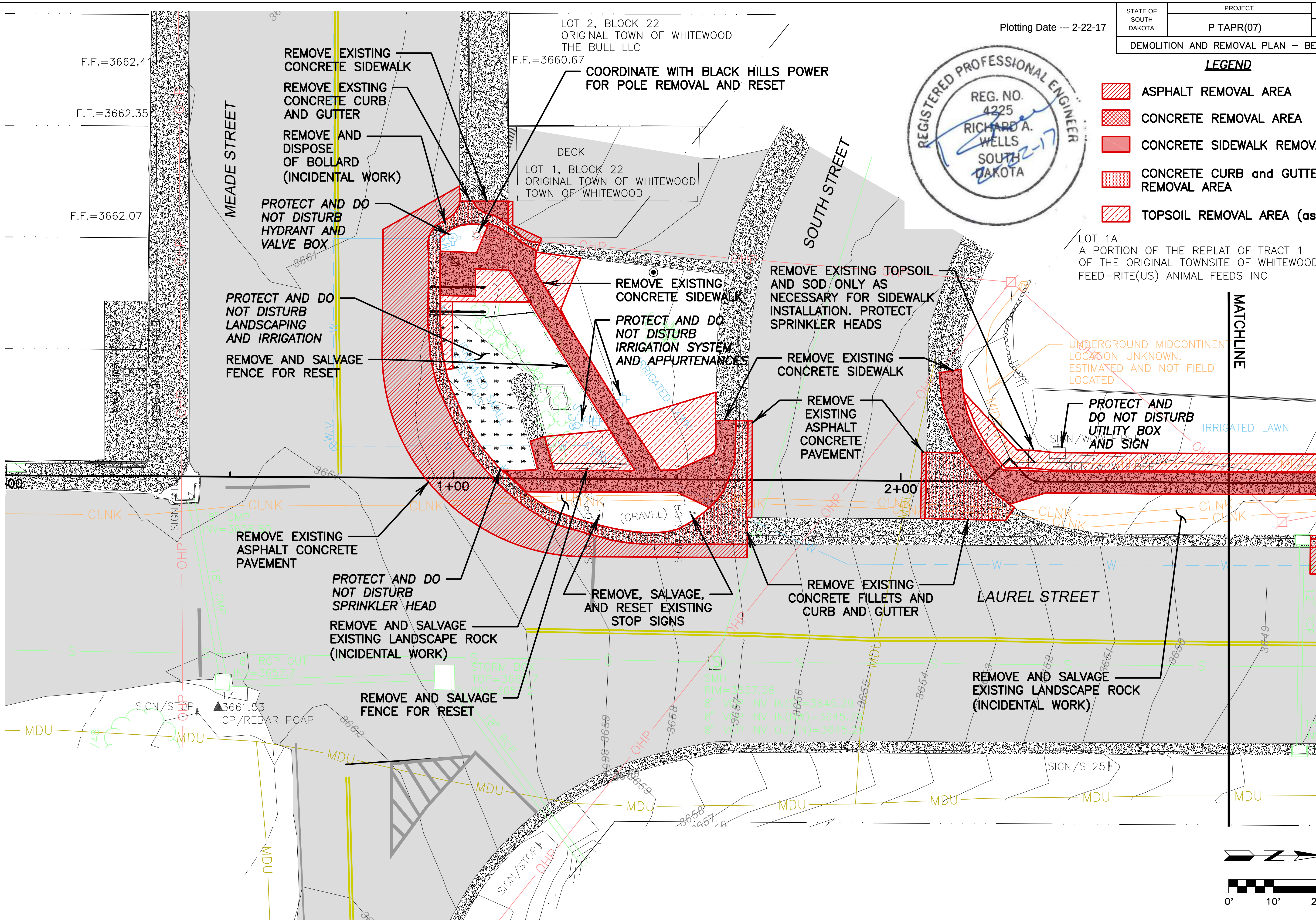
TOPO LEGEND

- CONTROL POINT
- TEMPORARY CONTROL POINT
- R.O.W. MONUMENT
- IRON PIPE
- IRON ROD
- POWER POLE
- POWER/LIGHT POLE
- LIGHT POLE
- GUY POLE
- GUY WIRE
- TRAFFIC LIGHT
- ELECTRIC MANHOLE OR METER
- TELEPHONE
- TELEPHONE BOX
- TELEPHONE MANHOLE
- CABLE TV BOX
- GAS METER/VALVE
- WATER MANHOLE
- WELL/TYPE
- W.V. WATER VALVE
- POST INDICATOR VALVE
- C.S. CURB STOP
- FIRE HYDRANT
- Y.H. YARD HYDRANT
- SPRINKLER HEAD
- WATER METER
- CATHODIC TEST STATION
- HOSEBIB
- SANITARY MANHOLE
- C.O. SEWER CLEAN OUT
- SEPTIC TANK
- WOOD OR STEEL POST
- VENT
- STUMP
- X' BUSH
- X" DECIDUOUS TREE
- X" CONIFEROUS TREE
- STORM SEWER MANHOLE
- SINGLE POST SIGN OR PARK METER
- MULTI POST SIGN
- DELINEATOR
- RAILROAD SIGNAL
- BOLLARD
- BH# BOREHOLE OR TESTHOLE
- UNKNOWN MANHOLE
- COLUMN
- MB. MAILBOX
- BUILDING
- CONCRETE
- GUARDRAIL
- RAILROAD
- S SANITARY SEWER
- W WATER LINE
- X" SS STORM SEWER
- X X X BARBED WIRE FENCE
- / / / CHAIN LINK FENCE
- WOOD FENCE
- WOVEN WIRE FENCE
- OHP OVERHEAD POWER
- OHC OVERHEAD CABLE TV
- OHT OVERHEAD TELEPHONE
- TV UG CABLE TV (UNKNOWN)
- UGE UNDERGROUND ELECTRIC (UNKNOWN)
- UGT UNDERGROUND TELEPHONE (UNKNOWN)
- FO FIBER OPTIC
- G GAS LINE (UNKNOWN)
- KNB KANEB PIPELINE
- MDU MONTANA DAKOTA UTILITIES
- WBI WILLISTON BASIN INTERSTATE PIPELINE
- BEC BUTTE ELECTRIC UG
- BHE BLACK HILLS ELEC UG
- BHP BLACK HILLS POWER UG
- GWT GOLDEN WEST
- KNO KNOLOGY COMMUNICATIONS
- MIDCO MIDCONTINENT COMMUNICATIONS
- MRT MOUNT RUSHMORE TELEPHONE
- CLNK CENTURY LINK COMMUNICATIONS
- WRE WEST RIVER ELEC UG
- ACP ASBESTOS CEMENT PIPE
- CIP CAST IRON PIPE
- CMP CORRUGATED METAL PIPE
- DIP DUCTILE IRON PIPE
- FRP FIBERGLASS REINFORCED PIPE
- HDPE HIGH DENSITY POLYETHYLENE PIPE
- PVC POLYVINYL CHLORIDE PIPE
- RCP REINFORCED CONCRETE PIPE
- VCP VITRIFIED CLAY PIPE

Plotting Date --- 2-22-17

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	20	48

DEMOLITION AND REMOVAL PLAN – BEGIN to 2+70



LEGEND

▨	ASPHALT REMOVAL AREA
▩	CONCRETE REMOVAL AREA
🟥	CONCRETE SIDEWALK REMOVAL AREA
▦	CONCRETE CURB and GUTTER/FILLET REMOVAL AREA
▨	TOPSOIL REMOVAL AREA (as needed)

February 22, 2017 2:47:16 p.m.
Drawing: 13180 DEMO.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	21	48

DEMOLITION AND REMOVAL PLAN – 2+70 to END

Plotting Date --- 2-22-17

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

LEGEND

- ASPHALT REMOVAL AREA
- CONCRETE REMOVAL AREA
- CONCRETE SIDEWALK REMOVAL AREA
- CONCRETE CURB and GUTTER/FILLET REMOVAL AREA
- TOPSOIL REMOVAL AREA (as needed)

RAILROAD TRACT 2
HUBBARD FEEDS INC

SOUTH STREET

HE REPLAT OF TRACT 1
. TOWNSITE OF WHITEWOOD
.NIMAL FEEDS INC

UNDERGROUND ELECTRICAL LOCATION UNKNOWN. ESTIMATED AND NOT FIELD LOCATED

UNDERGROUND MIDCONTINENT LOCATION UNKNOWN. ESTIMATED AND NOT FIELD LOCATED

PARCEL E–2 OF THE FORMER C&NW RAILROAD PROPERTY SPEARFISH PELLET COMPANY

MATCHLINE

PROTECT AND DO NOT DISTURB SPRINKLER HEAD

REMOVE EXISTING CONCRETE CURB AND GUTTER

REMOVE EXISTING CONCRETE SIDEWALK

REMOVE EXISTING CONCRETE APPROACH PAVEMENT

PROTECT AND DO NOT DISTURB PROPERTY PIN

LOT PE1
TRACT 2 OF
ORIGINAL TOWN
OF WHITEWOOD

REMOVE EXISTING ASPHALT CONCRETE PAVEMENT

RAILROAD ROW

REMOVE EXISTING CONCRETE SIDEWALK

PROTECT AND DO NOT DISTURB HYDRANT AND VALVE BOX

GUARDRAIL AROUND SIGNAL REMOVED BY RAILROAD FORCES

PROTECT AND DO NOT DISTURB SIGNAL

LAUREL STREET

REMOVE EXISTING ASPHALT CONCRETE PAVEMENT

REMOVE EXISTING ASPHALT CONCRETE PAVEMENT

SIGN STOP HALEY DR

SIGN

SIGN

SMH
RIM=3645.82
8" VCP INV IN(S)=3639.51
8" VCP INV OUT(N)=3639.44

18" RCP INV=3639.6 (N)
12" RCP INV=3641.0 (W)
PIPE LOCATION FROM NORTH UNKNOWN

12" RCP INV=3641.8

18" RCP

12
3645.59
CP/REBAR

3+00 4+00 5+00 5+12

(GRAVEL) (GRAVEL) (GRAVEL)

0' 10' 20'

February 22, 2017 2:47:16 p.m.
Drawing: 13180 DEMO.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

Plotting Date --- 2-22-17

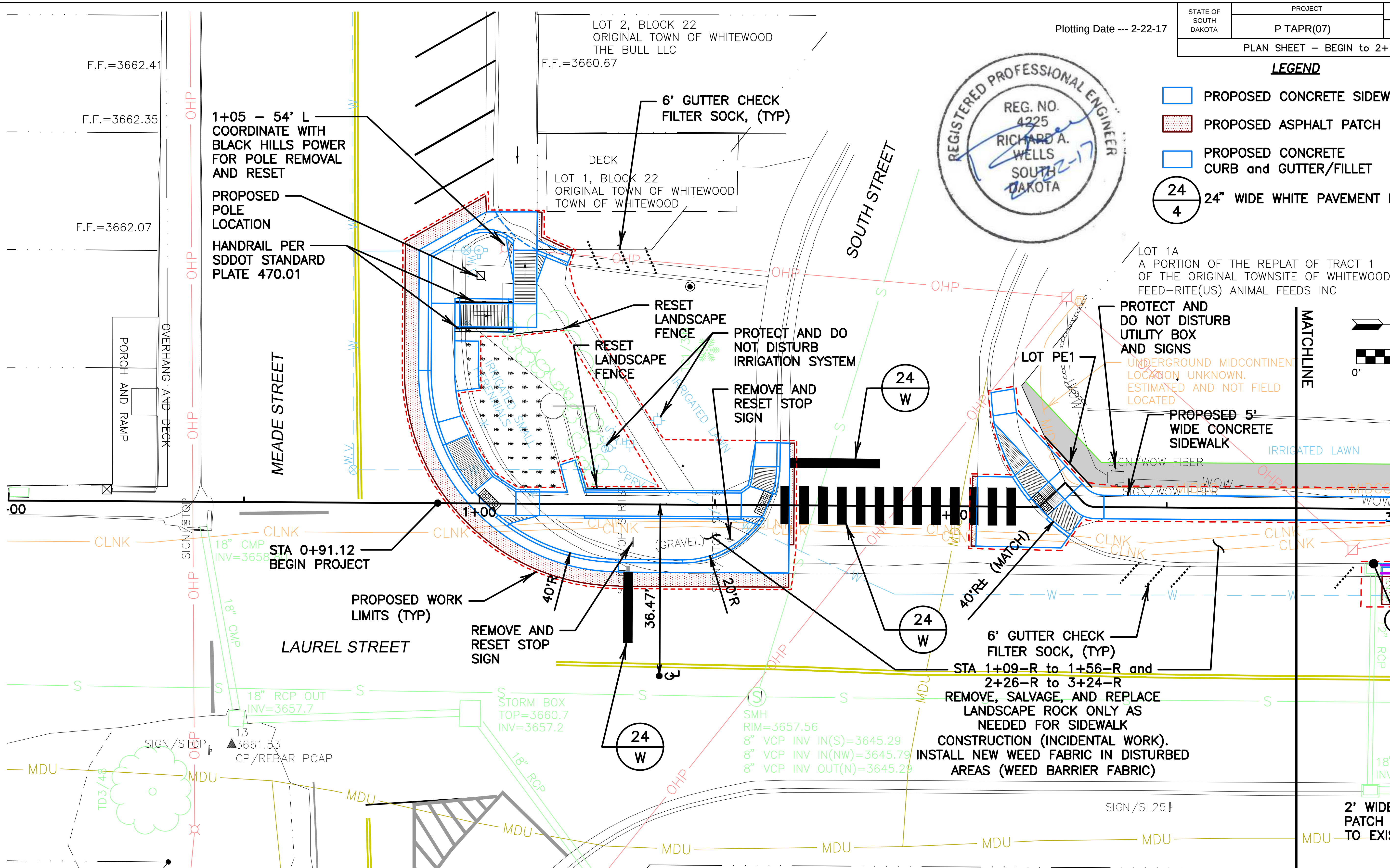
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	22	48

PLAN SHEET – BEGIN to 2+70

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
[illegible] 2-22-17

LEGEND

- ▭ PROPOSED CONCRETE SIDEWALK
- ▨ PROPOSED ASPHALT PATCH
- ▭ PROPOSED CONCRETE CURB and GUTTER/FILLET
- 24/4 24" WIDE WHITE PAVEMENT MARKING



PARCEL 1
2+19.88-14.98' L TO 2+29.99-4.26' L
PERMANENT EASEMENT FOR SIDEWALK
CONTAINING (28 SQ FT) MORE OR LESS

PARCEL 1
2+17.23 L TO 3+47.85 L
TEMPORARY EASEMENT FOR GRADING
CONTAINING (1133 SQ FT) MORE OR LESS

NOTE:
INTENT OF PROJECT IS TO BEGIN AND END AT EXISTING SIDEWALK CONTRACTION JOINTS. ACTUAL REMOVAL LIMITS WILL BE MARKED IN FIELD BY THE ENGINEER.

February 22, 2017 2:50:01 p.m. Drawing: 13180 PLANS.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	23	48

PROFILE SHEET – BEGIN to 2+70

Plotting Date --- 2-22-17

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

STA=1+00.26
EL=3659.839

STA=1+07.71
EL=3659.914

1.00%

-6.42%

STA=1+54.80
EL=3656.890

STA=1+61.30
EL=3656.810

-1.23%

-6.13%

STA=2+31.84
EL=3653.350

STA=2+26.36
EL=3653.390

0.48%

15.05%

2.00%

-0.73%

STA=2+18.86
EL=3653.280

STA=2+23.86
EL=3653.380

VPI STA=2+43.88
VPI EL=3651.54
CURVE LEN=20.00'
K=1.86

VPT STA=2+53.88
VPT EL=3651.11

3675 3670 3665 3660 3655 3650 3645 3640 3635 3625

0+00 1+00 2+00

February 22, 2017 2:50:01 p.m.
Drawing: 13180 PLANS.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	24	48

PLAN SHEET – 2+70 to END

Plotting Date --- 2-22-17

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

STA 0+43.89 – CL
INSTALL 3'x4' TYPE 'B' INLET
WITH SPECIAL FRAME AND
GRATE ASSEMBLY

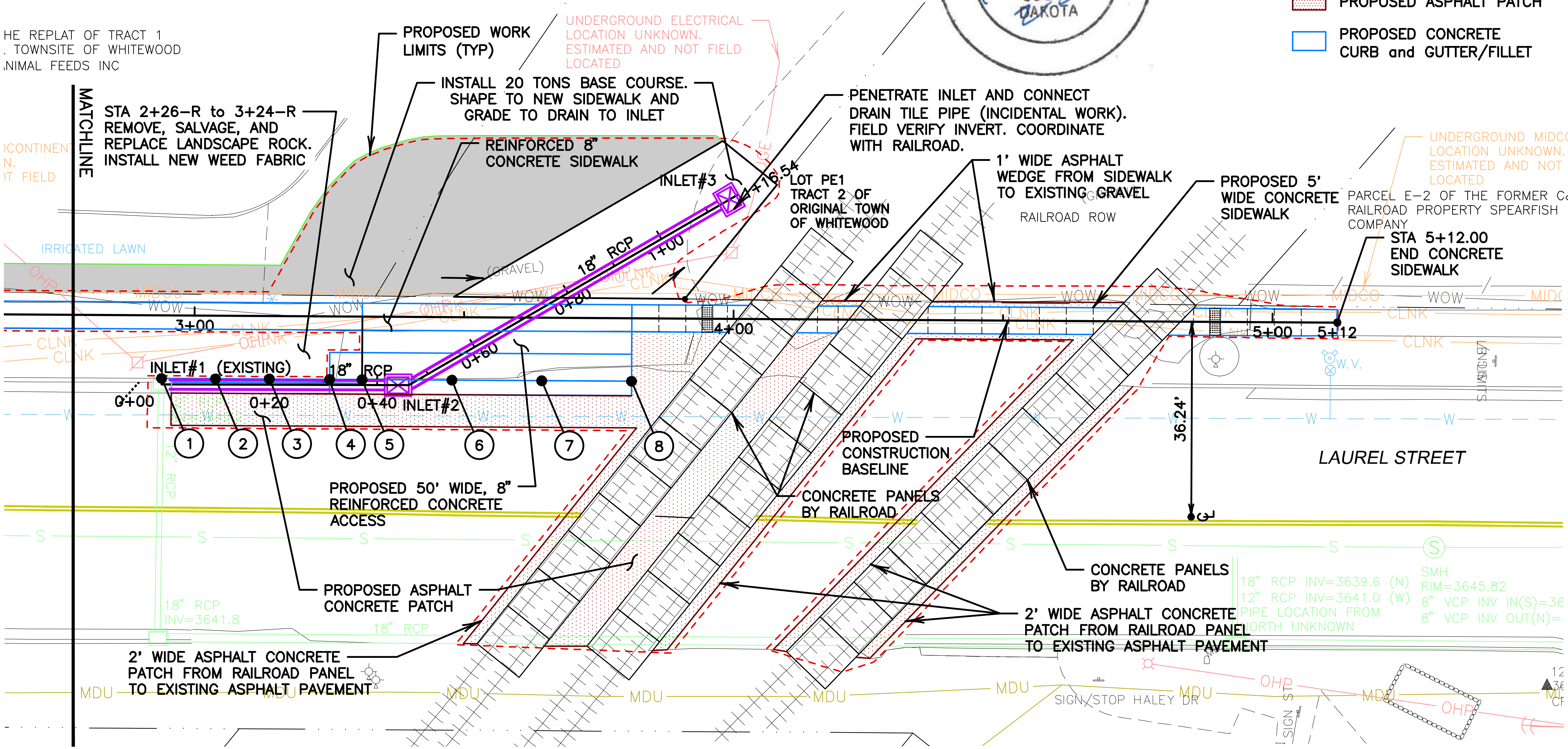
STA 0+00 – CL to 0+43.89 – CL
INSTALL 18" RCP BETWEEN
EXISTING INLET AND INLET#2

STA 1+14.54 – CL
INSTALL 3'x4' TYPE 'C' INLET
WITH TYPE 'C' FRAME AND GRATE

STA 0+43.89 – CL to 1+14.54 – CL
INSTALL 18" RCP BETWEEN
INLET#2 AND INLET #3

LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PATCH
- PROPOSED CONCRETE CURB and GUTTER/FILLET



PARCEL 1
2+17.23 L TO 3+47.85 L
TEMPORARY EASEMENT FOR GRADING
CONTAINING (1133 SQ FT) MORE OR LESS

PARCEL 2
3+29.51 L TO 3+93.74 L
TEMPORARY EASEMENT FOR GRADING
CONTAINING (929 SQ FT) MORE OR LESS

PARCEL 2
3+44.09 L TO 4+03.87 L
PERMANENT EASEMENT FOR DRAINAGE
CONTAINING (806SQ FT) MORE OR LESS

NOTE:
INTENT OF PROJECT IS TO BEGIN AND END AT EXISTING SIDEWALK CONTRACTION JOINTS. ACTUAL REMOVAL LIMITS WILL BE MARKED IN FIELD BY THE ENGINEER.

RAILROAD NOTES:
RAILROAD TO REMOVE SIDEWALK WOOD PLANK.

1. STA 2+93.96 – 11.69'R
BEGIN TYPE 'B66' CURB & GUTTER
TBC=3649.05
2. STA 3+03.96 – 11.69'R
TYPE 'B66' CURB & GUTTER
TBC=3648.78
3. STA 3+13.96 – 11.69'R
TYPE 'B66' CURB & GUTTER
TBC=3648.53
4. STA 3+23.96 – 11.69'R
TYPE 'B66' CURB & GUTTER
TBC=3648.36
5. STA 3+31.13 – 11.69'R
BEGIN TYPE 'P8' CURB & GUTTER
TBC=3648.32 (THEOR)
6. STA 3+47.80 – 11.69'R
TYPE 'P8' CURB & GUTTER
TBC=3648.28 (THEOR)
7. STA 3+64.46 – 11.69'R
TYPE 'P8' CURB & GUTTER
TBC=3648.35 (THEOR)
8. STA 3+81.13 – 11.69'R
TYPE 'P8' CURB & GUTTER
TBC=3648.43 (THEOR)

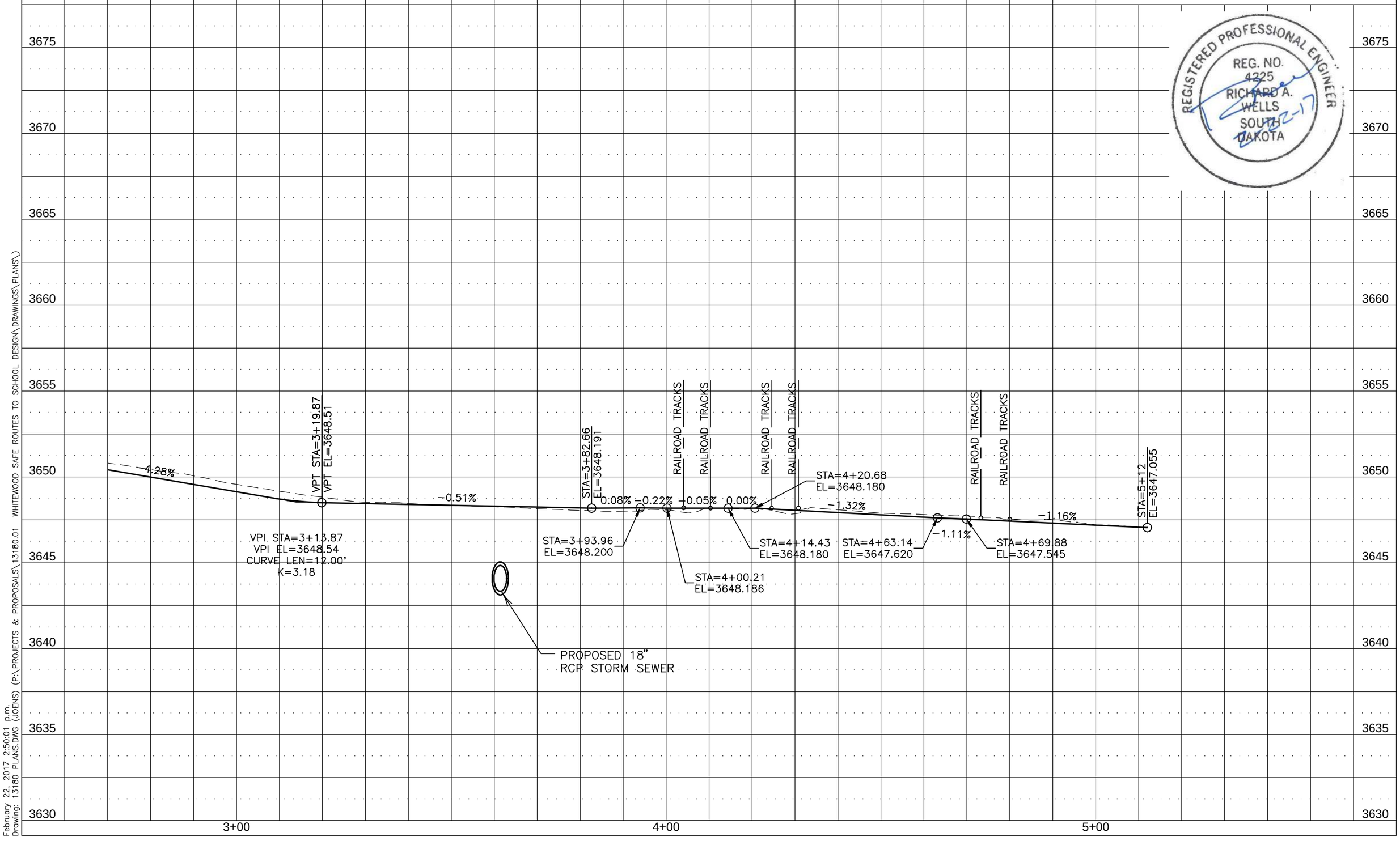
February 22, 2017 2:50:01 p.m.
Drawing: 13180 PLANS.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	25	48

PROFILE SHEET – 2+70 to END

Plotting Date --- 2-22-17

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17



February 22, 2017 2:50:01 p.m.
Drawing: 13180 PLANS.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	26	48

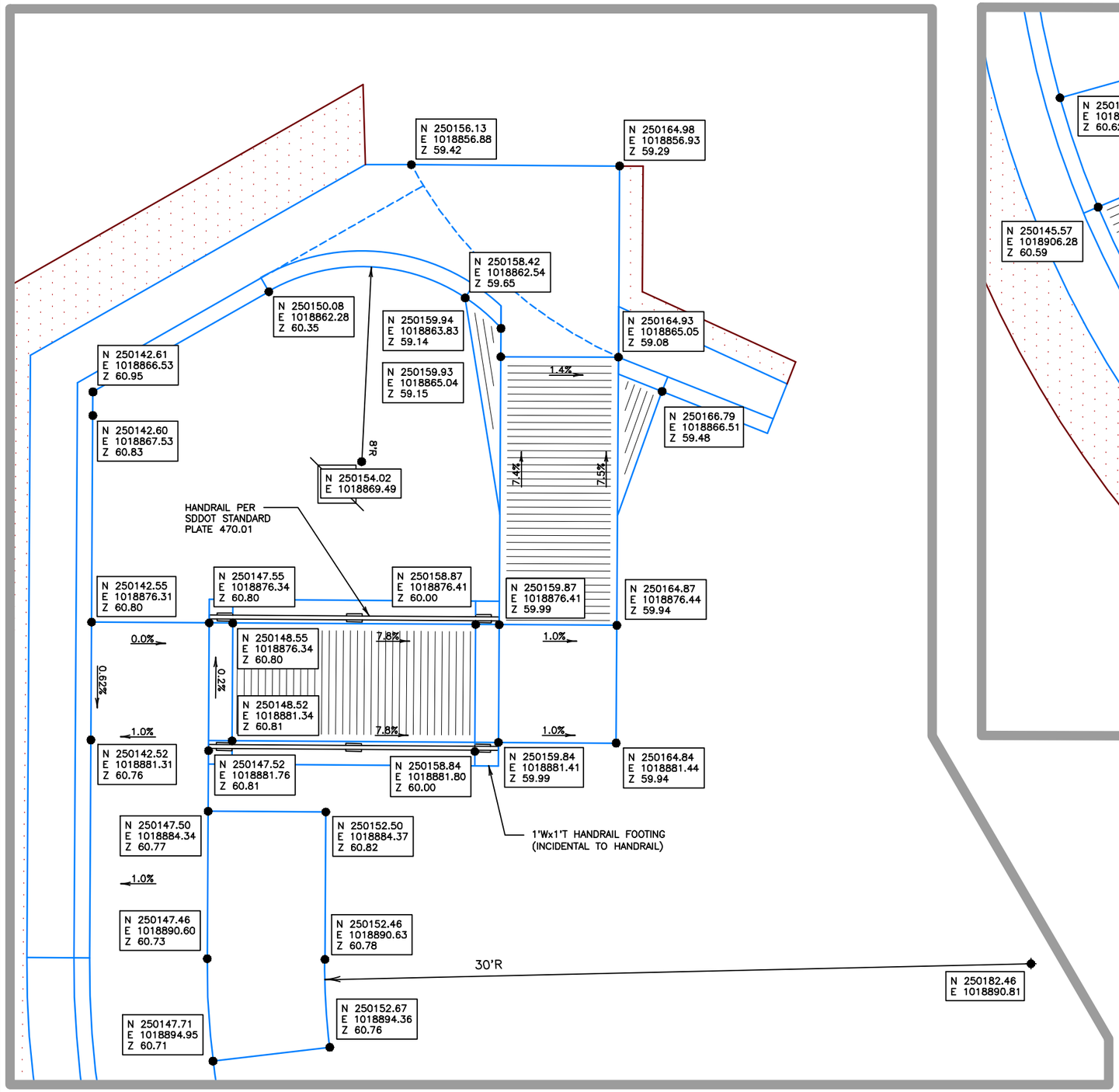
STORM SEWER PROFILE

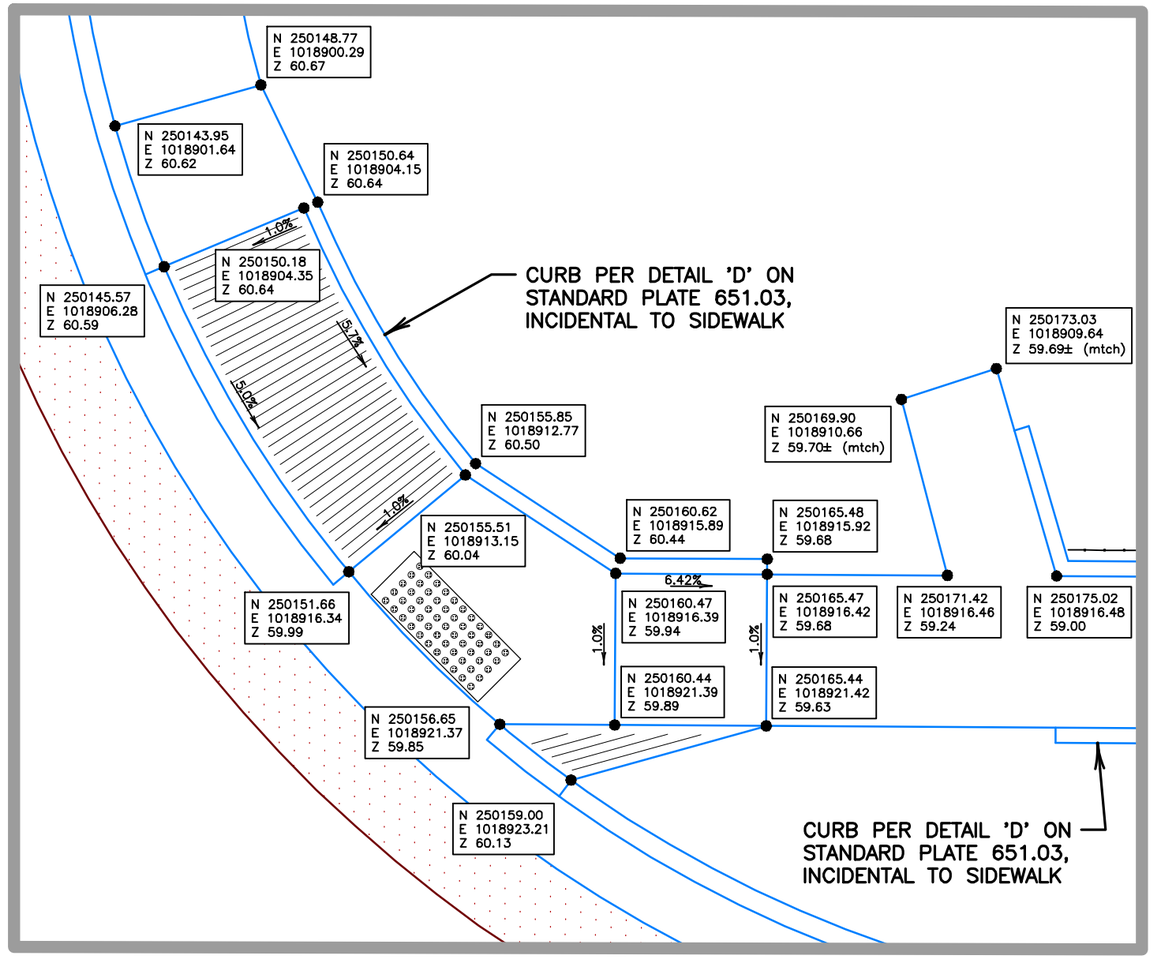
Plotting Date --- 2-22-17

Plotting Date --- 2-22-17
Revised: 3-15-17

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	27	48

SIDEWALK DETAIL – MEADE STREET





REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

0' 2.5' 5'

LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PATCH
- PROPOSED CONCRETE CURB and GUTTER/FILLET

NOTE:
INTENT OF PROJECT IS TO BEGIN AND END AT EXISTING SIDEWALK CONTRACTION JOINTS. ACTUAL REMOVAL LIMITS WILL BE MARKED IN FIELD BY THE ENGINEER.

March 15, 2017 9:00:03 a.m.
Drawing: 13180 PLANS.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	28	48
SIDEWALK DETAIL – SOUTH STREET and LAUREL STREET			

NOTE:
INTENT OF PROJECT IS TO BEGIN AND END AT EXISTING SIDEWALK CONTRACTION JOINTS. ACTUAL REMOVAL LIMITS WILL BE MARKED IN FIELD BY THE ENGINEER.

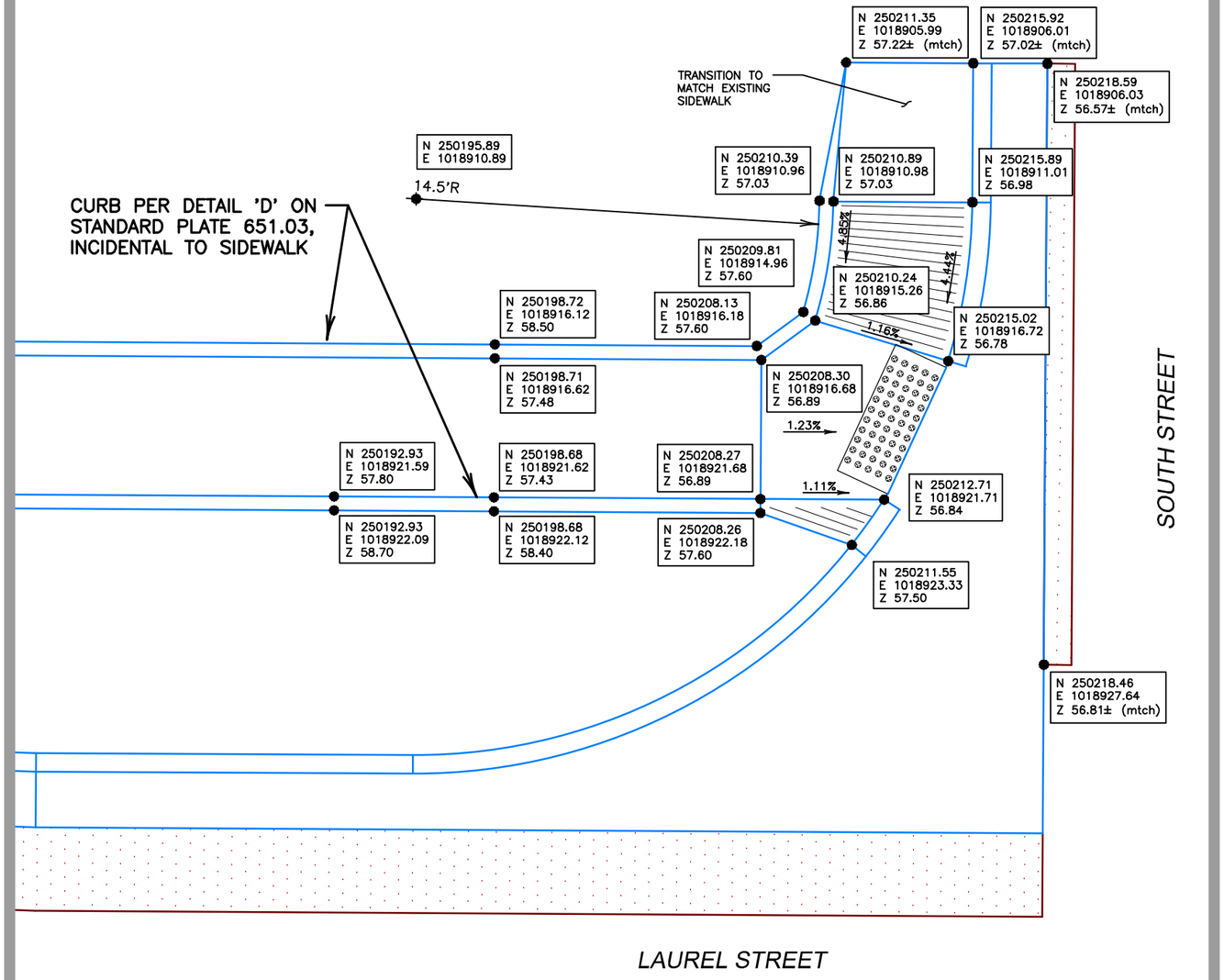
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

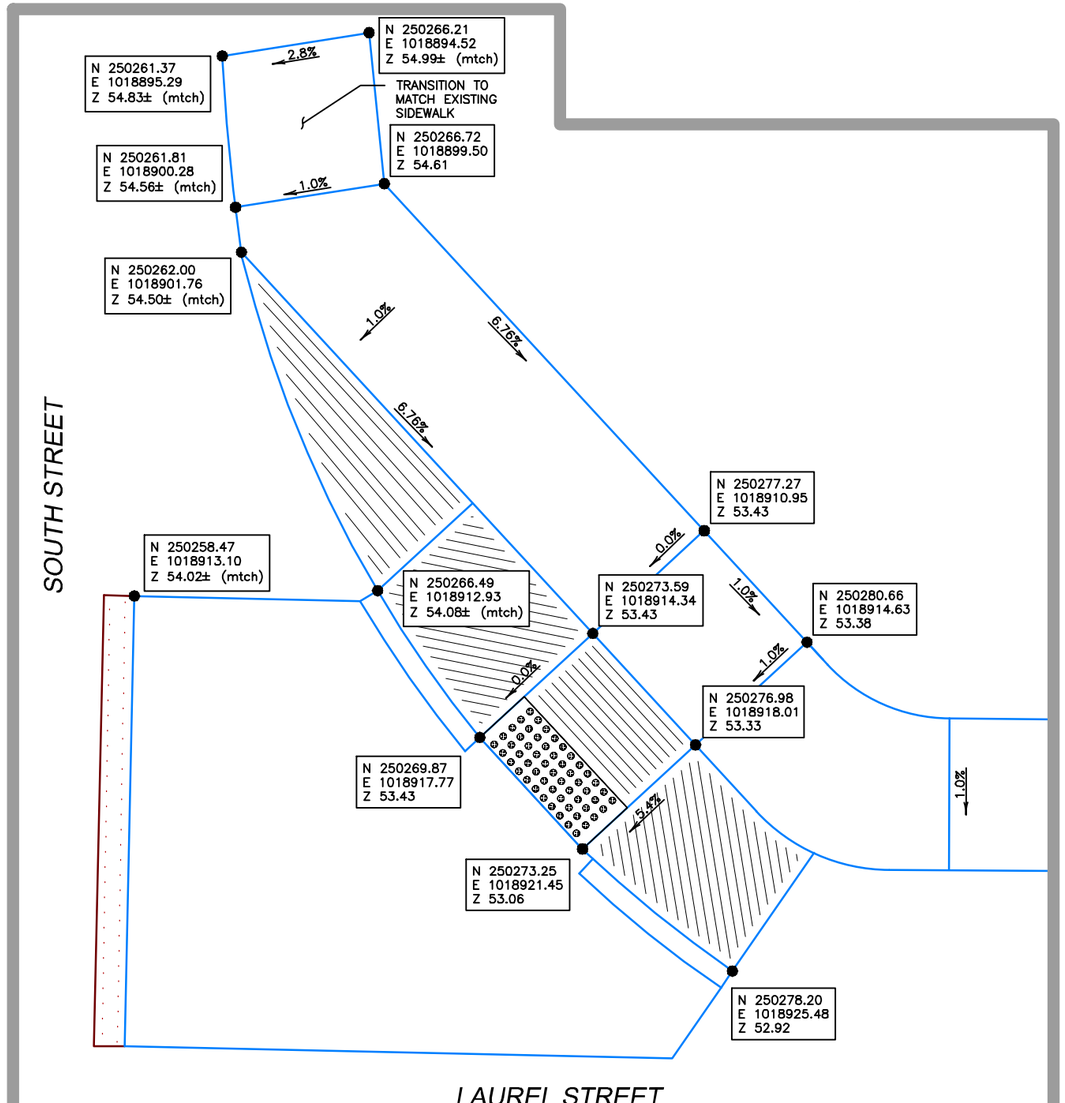
Plotting Date --- 2-22-17
Revised: 3-15-17

0' 2.5' 5'

LEGEND

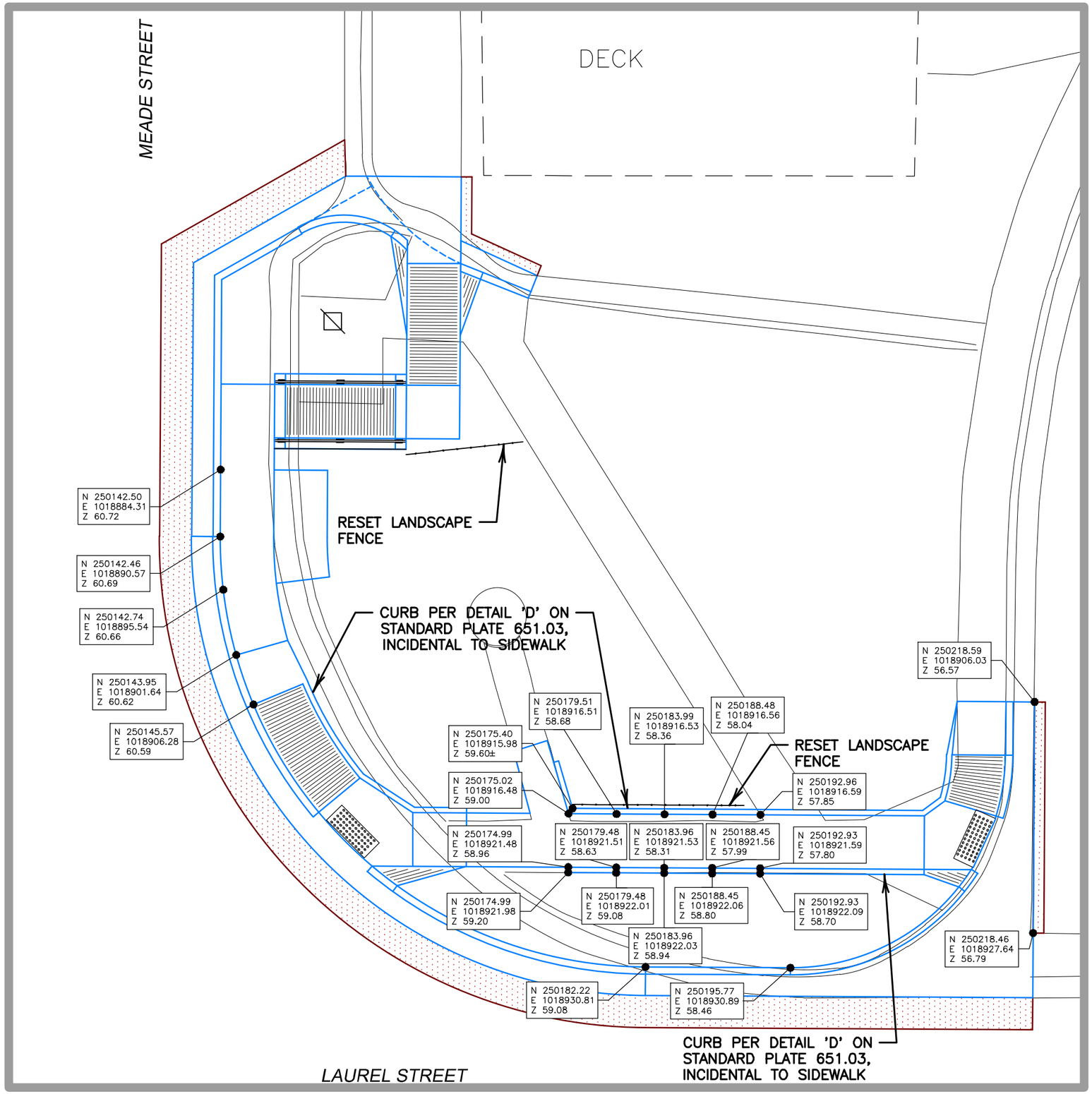
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PATCH
- PROPOSED CONCRETE CURB and GUTTER/FILLET





March 15, 2017 9:00:03 a.m.
Drawing: 13180 PLANS.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)

Plotting Date --- 2-22-17
Revised: 3-15-17

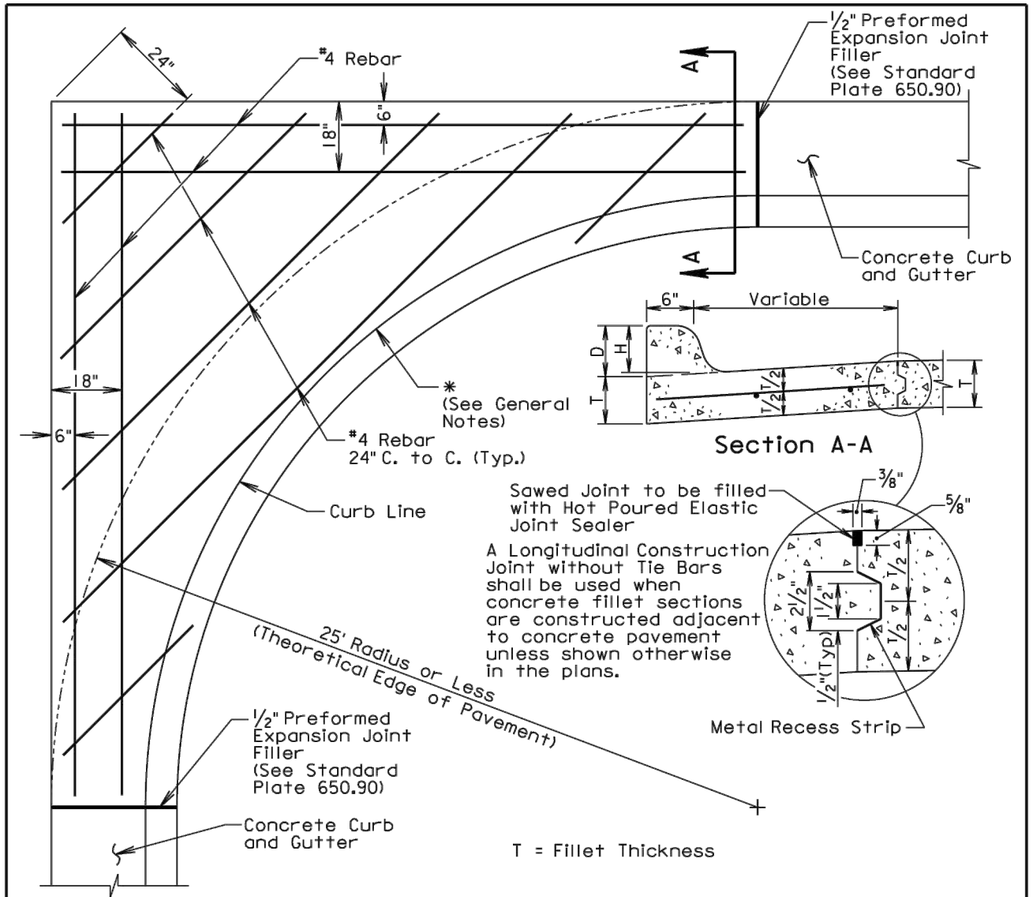


REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

0' 5' 10'

LEGEND

- EXISTING ASPHALT CONCRETE
- EXISTING CONCRETE SURFACE
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PATCH
- PROPOSED CONCRETE CURB and GUTTER/FILLET



GENERAL NOTES:

* If a curb ramp is constructed adjacent to a PCC fillet section, the curb will need to be modified. Refer to the corresponding curb ramp standard plate or other special details in the plans for modification of the PCC fillet section.

Dimensions D, H, and T shall conform to those shown on the appropriate curb and gutter standard plate.

All rebar shall be in conformance with Sections 480 and 1010 of the Specifications. All rebar shall have a minimum of 3" clear cover.

Class M6 Concrete shall be used in construction of the fillets.

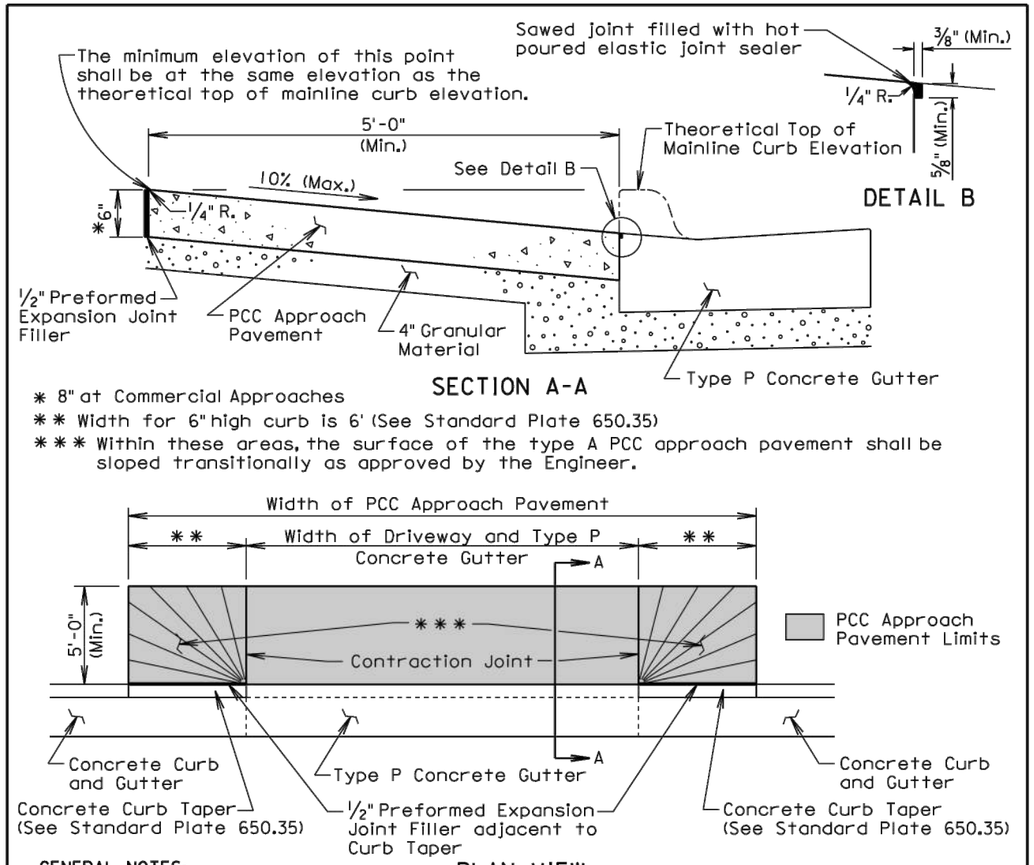
The concrete curb shall be monolithic with the concrete fillet. No separate payment for this curb will be made as the curb is considered a part of the fillet.

Joints shall be constructed at 10' intervals except when fillets are constructed adjacent to PCC Pavement. If there is adjacent PCC Pavement the joints shall be extended from edge of pavement through the fillet section as directed by the Engineer.

The cost for all materials, labor, and incidentals necessary to construct the PCC fillet section with curb and gutter shall be incidental to the contract unit price per square yard for the corresponding PCC fillet section bid item.

June 26, 2015

Published Date: 1st Qtr. 2017	SDDOT	**PCC FILLET SECTION WITH TYPE B CURB AND GUTTER**	PLATE NUMBER 380.16 Sheet 1 of 1



* 8" at Commercial Approaches

** Width for 6" high curb is 6' (See Standard Plate 650.35)

*** Within these areas, the surface of the type A PCC approach pavement shall be sloped transitionally as approved by the Engineer.

PLAN VIEW

GENERAL NOTES:

The concrete for the type A PCC approach pavement and adjacent driveway shall comply with the requirements of the Specifications for class M6 concrete unless otherwise stated in the plans.

Contraction joints in the type A PCC approach pavement shall be 1 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 approach pavement. Additional contraction joints not shown in the Plan View shall be spaced as follows:

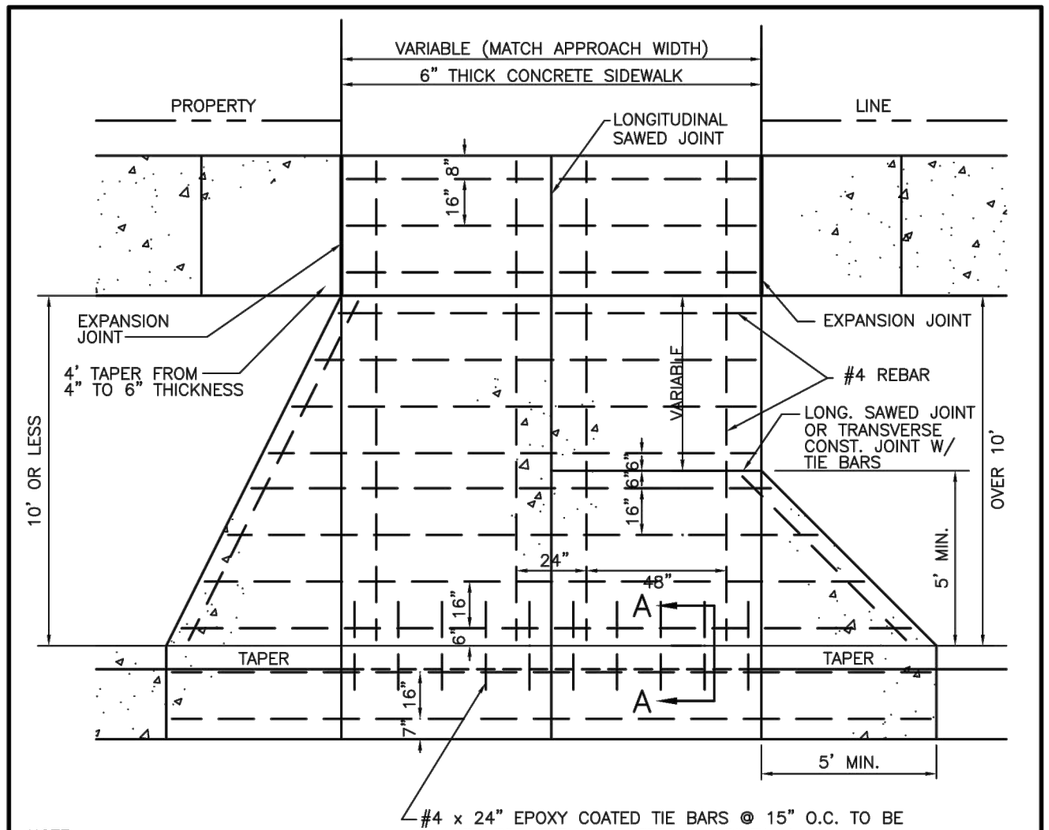
One joint at the center of the approach for driveways 16' to 24' wide.
Two joints spaced at equal intervals for driveways greater than 24' to 40' wide.

All costs for furnishing and placing the type A PCC approach pavement and constructing the expansion and contraction joints including labor, equipment, and materials including the earthen backfill shall be incidental to the contract unit price per square yard for the corresponding PCC Approach Pavement bid item.

All costs for excavation required for placing the type A PCC approach pavement and granular material shall be incidental to the contract unit price per cubic yard for "Unclassified Excavation". All costs for furnishing and placing the granular material shall be incidental to the contract unit price per ton for the corresponding granular material bid item.

June 26, 2015

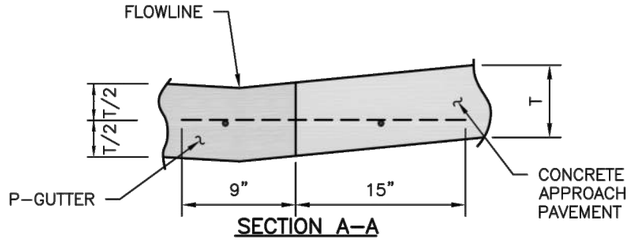
Published Date: 1st Qtr. 2017	SDDOT	**TYPE A PCC APPROACH PAVEMENT**	PLATE NUMBER 380.40 Sheet 1 of 1



NOTE:
MINIMUM DEPTH OF GRANULAR MATERIAL PLACED UNDER REINFORCED DRIVEWAY APPROACH SHALL BE 4".

WHEN REMOVING EXISTING CURB & GUTTER FOR NEW APPROACH CONSTRUCTION, AN EXPANSION JOINT SHALL BE CONSTRUCTED. (SEE JOINT DETAILS 60-7)

REINFORCED DRIVEWAY & SIDEWALK SHALL BE PLACED AT ALL ALLEY ENTRANCES & AT DRIVEWAYS INTO PROPERTY WHICH IS MULTI-FAMILY, COMMMERCIAL, LIGHT INDUSTRIAL & HEAVY INDUSTRIAL. #4 EPOXY COATED REBAR SHALL BE PLACED AS PER DETAIL & TIED TOGETHER. TWO INCH (2") CLEARANCE SHALL BE MAINTAINED BETWEEN BOTTOM OF CONCRETE & REBAR. (PROPERTY LINE SIDEWALK SHOWN)

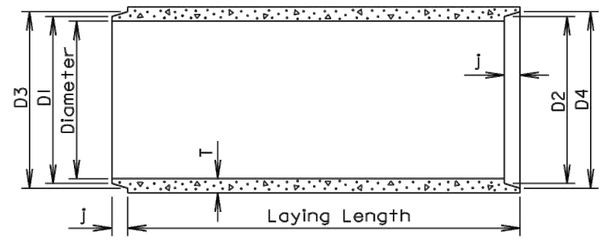


SECTION A-A

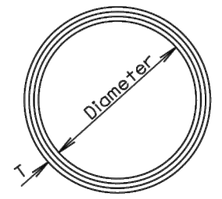
CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
REINFORCED DRIVEWAY APPROACH	DATE: 5-1-07
	SEC. 60-4 SHT.

TOLERANCES IN DIMENSIONS

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



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

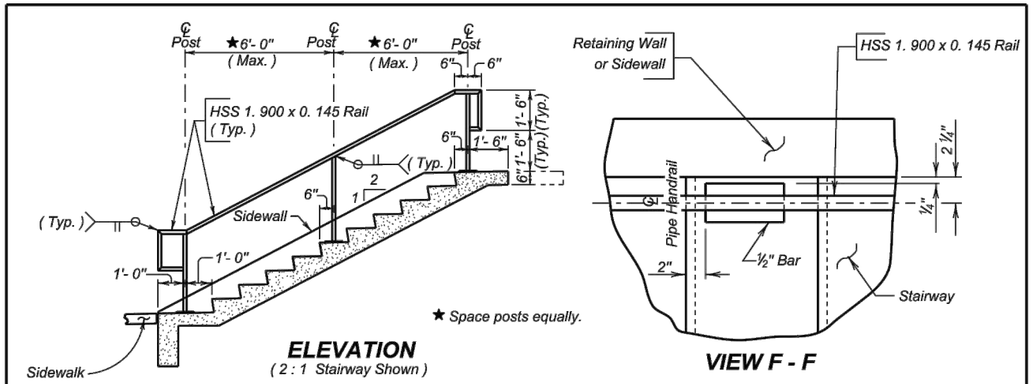
Construction of R. C. P. shall conform to the requirements of Section 990 of the Specifications.

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 7/8	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 7/8
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 1/8	58 3/8	59 3/8	59 7/8
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

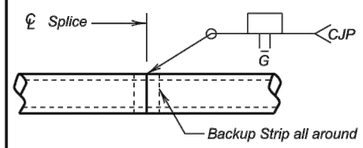
June 26, 2015

Published Date: 1st Qtr. 2017	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1



ELEVATION
(2 : 1 Stairway Shown)

VIEW F - F



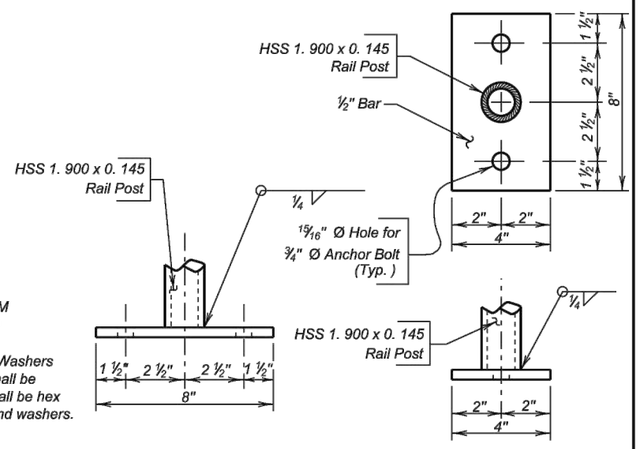
RAIL SPLICE DETAILS

GENERAL NOTES:

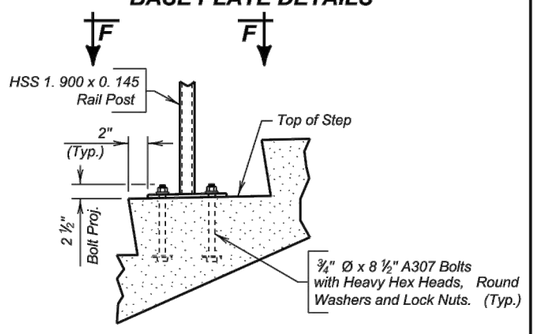
1. All rail posts shall be built vertical.
2. Steel pipe for railing and posts shall conform to ASTM A500, Grade B. Railpost base plates shall conform to ASTM A709, Grade 36.
3. Anchor Bolts and nuts shall conform to ASTM A307. Washers shall be in accordance with ASTM F436. Hardware shall be galvanized in accordance with ASTM F2329. Bolts shall be hex head Structural type with heavy hex lock nuts and round washers.
4. All anchor bolts shall be tightened to a Torque of 120 ft-lbs (approximated without the use of a calibrated torque wrench).
5. Painting of steel railing shall be done in accordance with Section 411 of the Specifications. The finish color shall be Federal Standard 595B, color 27038 (semi-gloss black) unless stated otherwise in the plans.
6. Welding and weld inspection shall be done in accordance with AWS D1. 1-(Current Year) Structural Welding Code - Steel.
7. The cost of structural steel, anchor bolts, painting, galvanizing, fabrication and installation of the Pipe Handrail shall be incidental to welding, weld inspection and that which is incidental to the the contract unit price per foot for "Pipe Handrail".
8. Alternate rail designs, including aluminum rail, may be submitted through proper channels to the Office of Bridge Design for approval.

SHOP PLANS

The fabricator shall submit shop drawings in accordance with the Specifications.



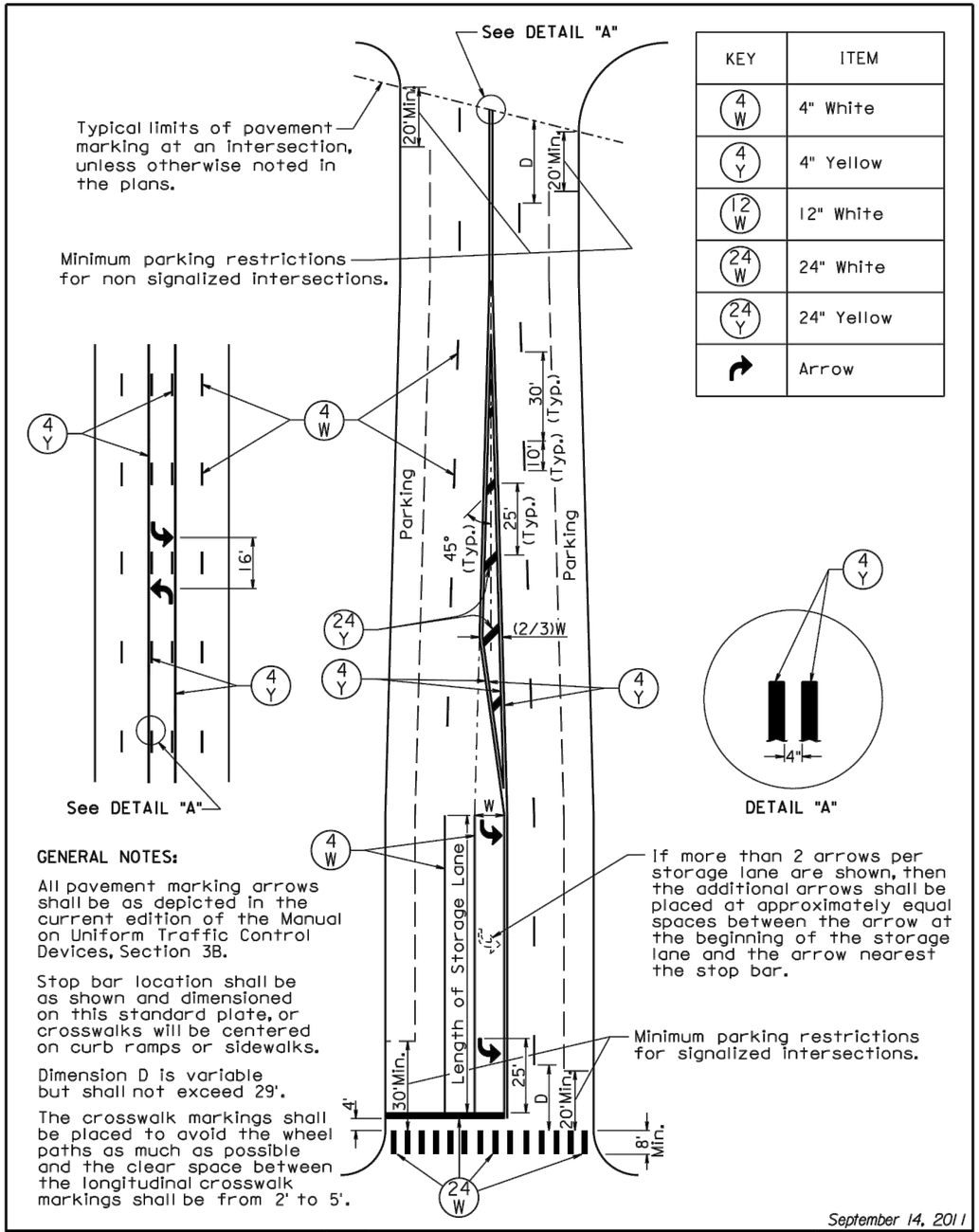
BASE PLATE DETAILS



ANCHOR BOLT DETAIL

June 26. 2015

Published Date: 1st Qtr. 2017	SDDOT	STAIRWAY HANDRAIL	PLATE NUMBER 470.01
			Sheet 1 of 1



KEY	ITEM
4 W	4" White
4 Y	4" Yellow
12 W	12" White
24 W	24" White
24 Y	24" Yellow
↱	Arrow

GENERAL NOTES:

All pavement marking arrows shall be as depicted in the current edition of the Manual on Uniform Traffic Control Devices, Section 3B.

Stop bar location shall be as shown and dimensioned on this standard plate, or crosswalks will be centered on curb ramps or sidewalks.

Dimension D is variable but shall not exceed 29'.

The crosswalk markings shall be placed to avoid the wheel paths as much as possible and the clear space between the longitudinal crosswalk markings shall be from 2' to 5'.

If more than 2 arrows per storage lane are shown, then the additional arrows shall be placed at approximately equal spaces between the arrow at the beginning of the storage lane and the arrow nearest the stop bar.

Minimum parking restrictions for signalized intersections.

September 14. 2011

Published Date: 1st Qtr. 2017	SDDOT	PAVEMENT MARKINGS FOR ADJACENT INTERSECTIONS AND CENTER TURN LANE	PLATE NUMBER 633.01
			Sheet 1 of 1

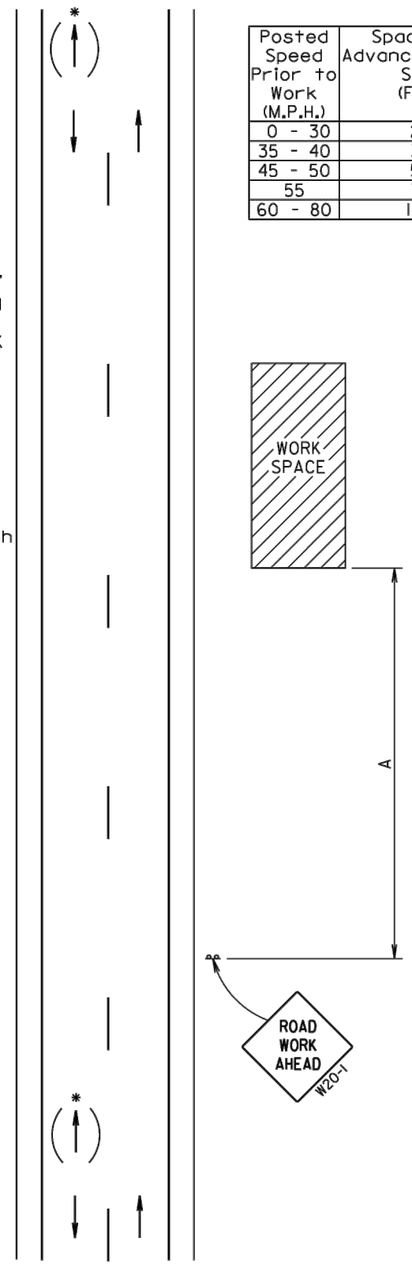
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated shall be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* 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.

For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 80	1000

April 15, 2015

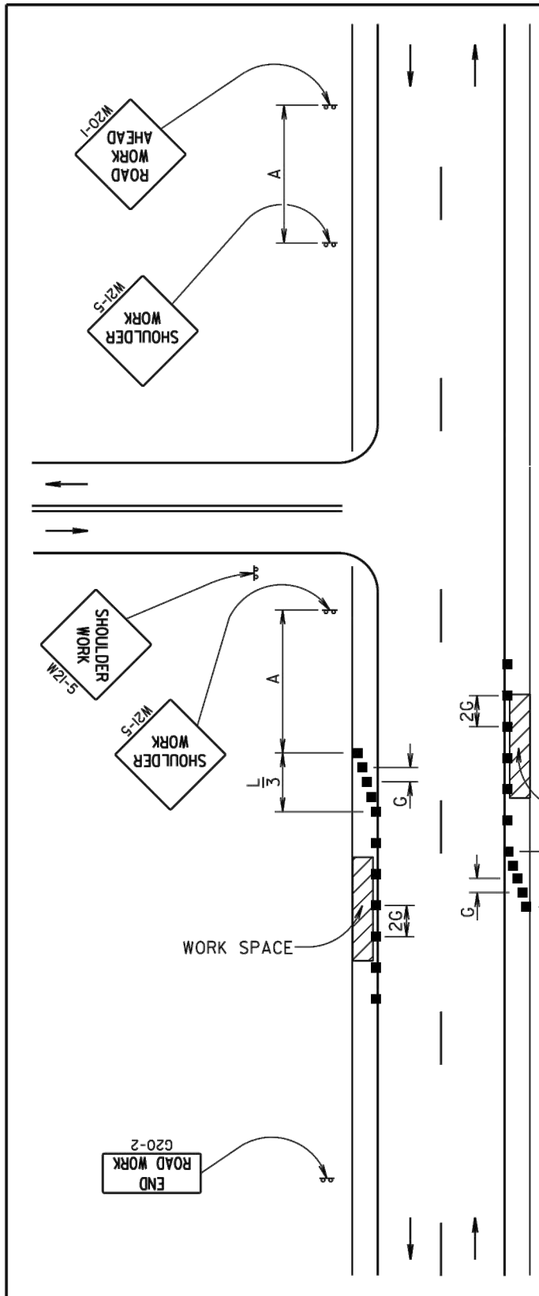
Published Date: 1st Qtr. 2017

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK BEYOND THE SHOULDER

PLATE NUMBER 634.01

Sheet 1 Of 1



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	500	600	25
50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

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.

June 3, 2016

Published Date: 1st Qtr. 2017

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK ON SHOULDERS

PLATE NUMBER 634.03

Sheet 1 of 1

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	500	25
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.

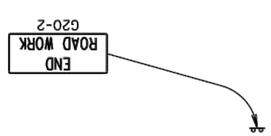
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.

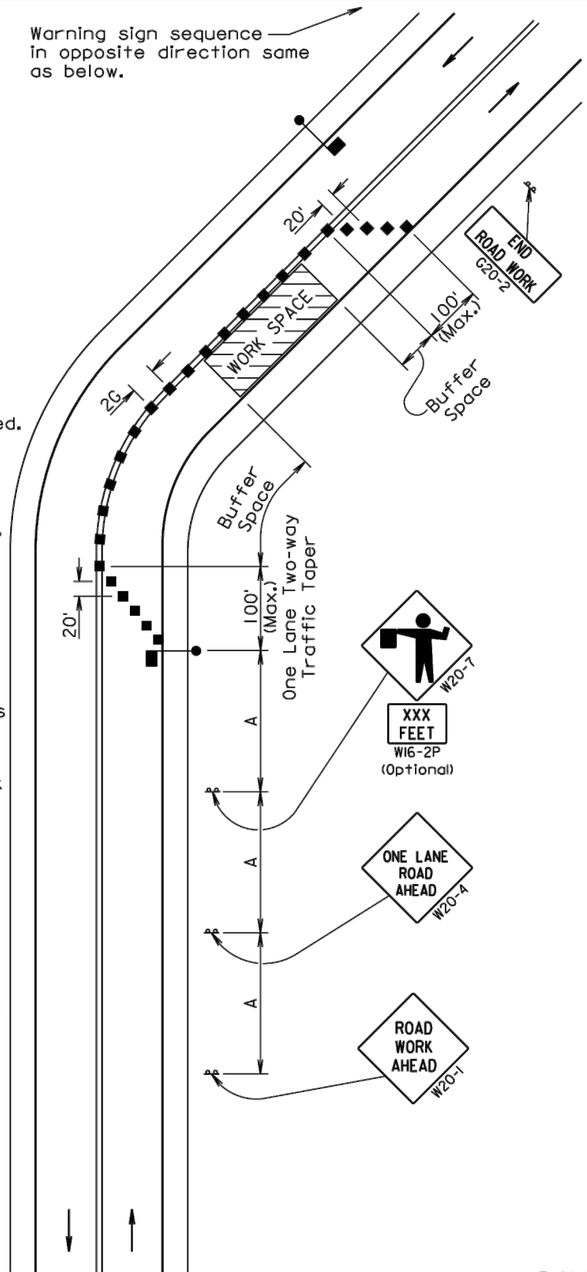
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



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

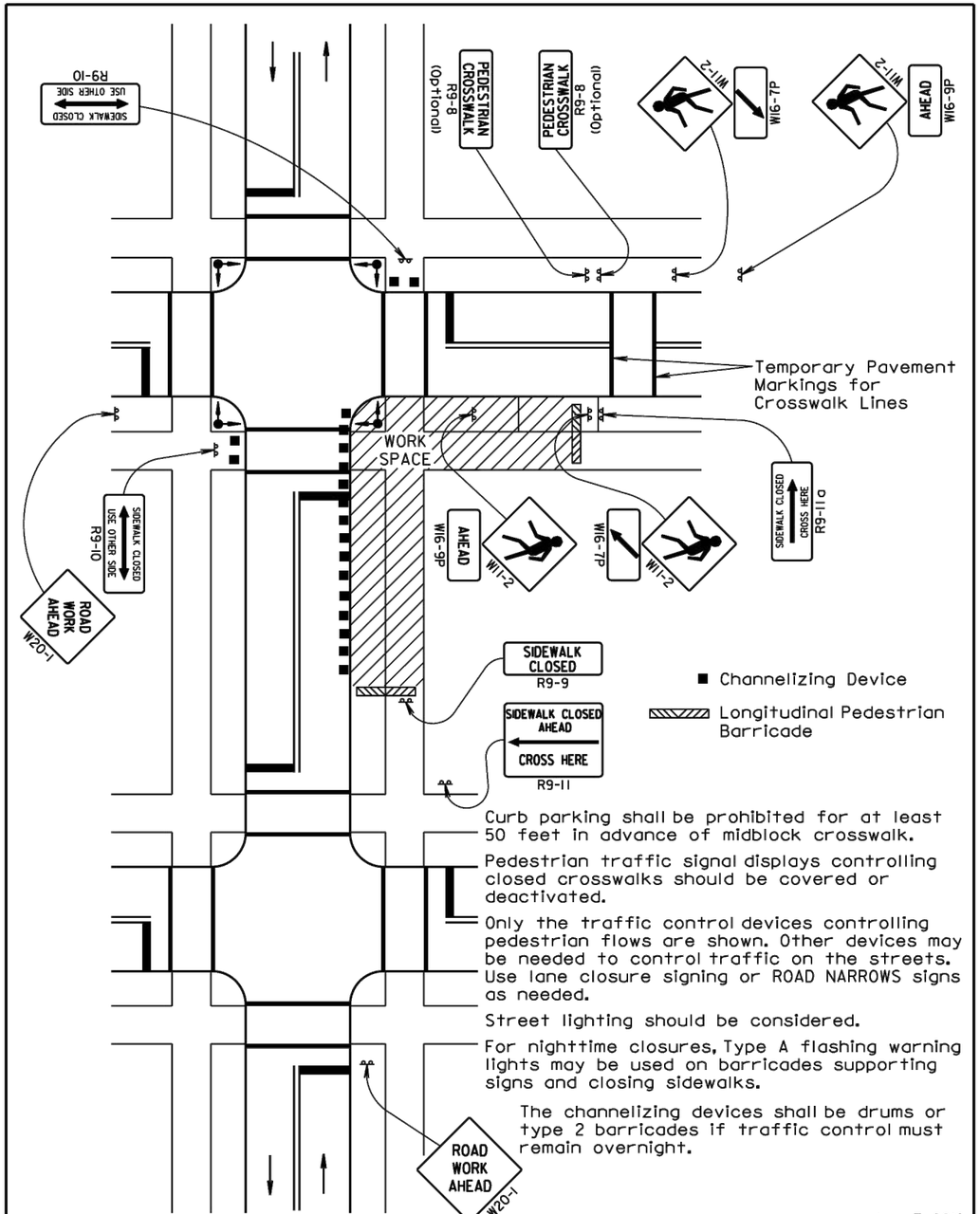
The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

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



June 3, 2016

Published Date: 1st Qtr. 2017	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23 Sheet 1 of 1



Curb parking shall be prohibited for at least 50 feet in advance of midblock crosswalk.

Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.

Only the traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets. Use lane closure signing or ROAD NARROWS signs as needed.

Street lighting should be considered.

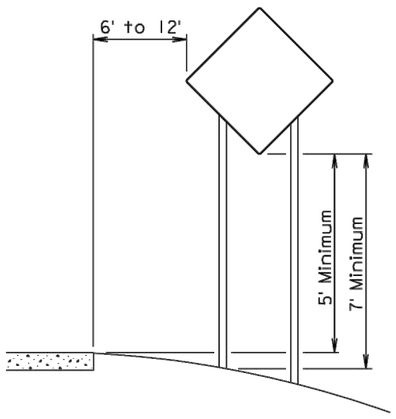
For nighttime closures, Type A flashing warning lights may be used on barricades supporting signs and closing sidewalks.

The channelizing devices shall be drums or type 2 barricades if traffic control must remain overnight.

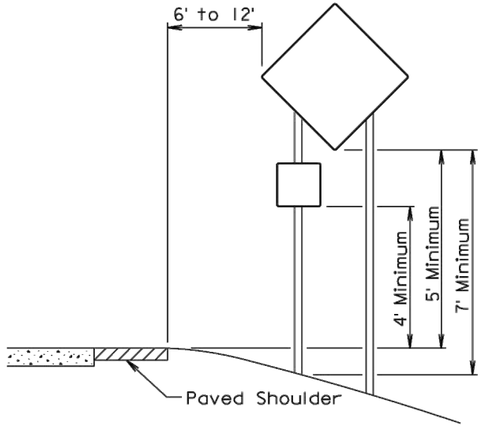
June 3, 2016

Published Date: 1st Qtr. 2017	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES SIDEWALK CLOSURES AND PEDESTRIAN DETOURS	PLATE NUMBER 634.33 Sheet 1 of 1

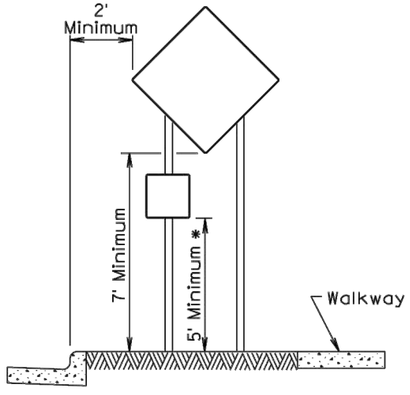
February 22, 2017 3:07:00 p.m.
Drawing: 13180 DETAILS.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)



RURAL DISTRICT

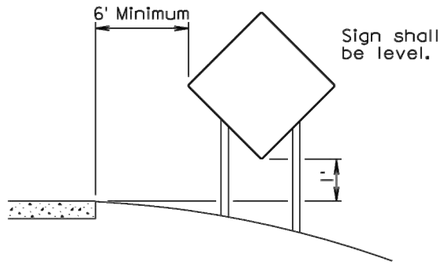


RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

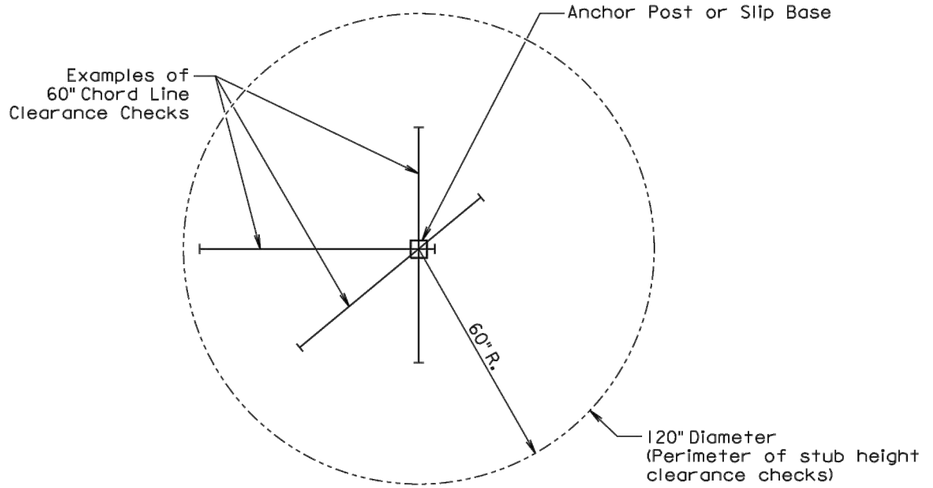
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.



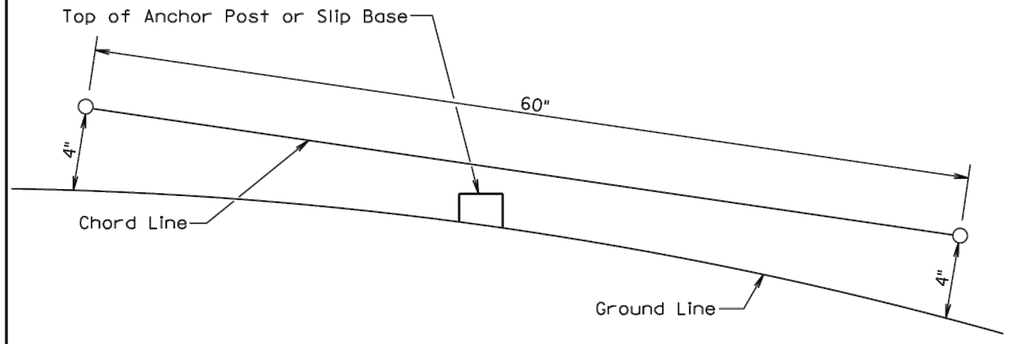
RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

September 22,2014

Published Date: 1st Qtr. 2017	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

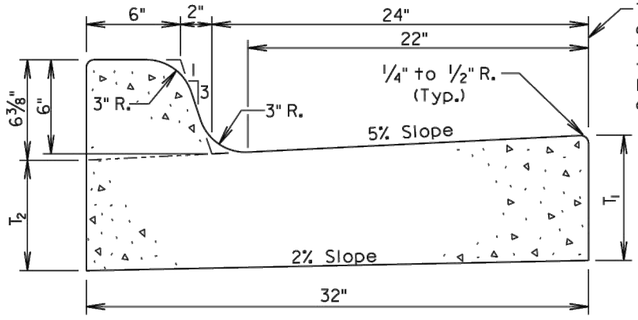
The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

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. 2017	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			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.
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 9/16	0.077	13.0
B69	9	8 1/16	0.081	12.3
B69.5	9.5	8 9/16	0.085	11.7
B610	10	9 1/16	0.090	11.2
B610.5	10.5	9 9/16	0.094	10.7
B611	11	10 1/16	0.098	10.2
B611.5	11.5	10 9/16	0.102	9.8
B612	12	11 1/16	0.106	9.4

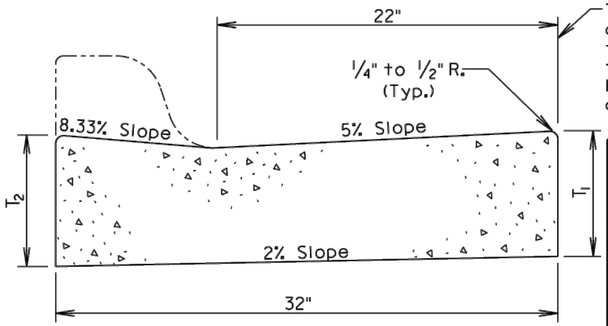
GENERAL NOTES:

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. 2017	SDDOT	TYPE B CONCRETE CURB AND GUTTER	PLATE NUMBER 650.01
			Sheet 1 of 1

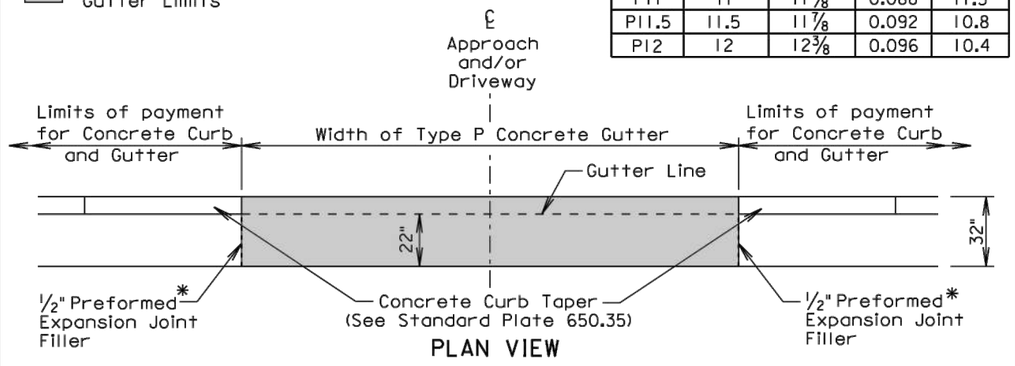


The stated radii on the plans and cross sections refer to this line and it shall also be the basis for horizontal linear foot measurement and payment.

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 7/8	0.068	14.8
P9	9	9 3/8	0.072	13.9
P9.5	9.5	9 7/8	0.076	13.2
P10	10	10 3/8	0.080	12.5
P10.5	10.5	10 7/8	0.084	11.9
P11	11	11 3/8	0.088	11.3
P11.5	11.5	11 7/8	0.092	10.8
P12	12	12 3/8	0.096	10.4

TRANSVERSE SECTION

Type P Concrete Gutter Limits



PLAN VIEW

* Joint will not be needed if concrete curb and gutter and type P concrete gutter is placed at the same time. If the 1/2" Preformed Expansion Joint Filler is provided, then the joint shall be sealed in accordance with Standard Plate 650.90.

GENERAL NOTES:

The concrete for the Type P Concrete Gutter shall comply with the requirements of the 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.

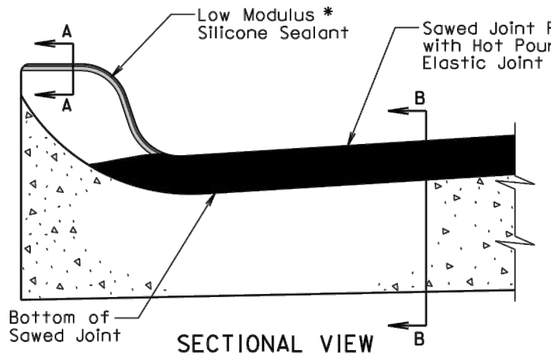
Transverse contraction joints shall be constructed at 10' intervals in the concrete gutter except when concrete gutter is constructed adjacent to mainline PCC pavement. When concrete gutter is constructed adjacent to mainline PCC pavement, a transverse contraction joint shall be constructed in the concrete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

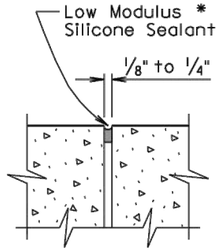
June 26, 2015

Published Date: 1st Qtr. 2017	SDDOT	TYPE P CONCRETE GUTTER	PLATE NUMBER 650.30
			Sheet 1 of 1

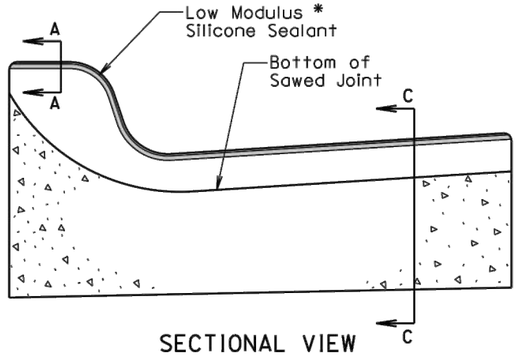


SECTIONAL VIEW

(Curb and Gutter Placed Monolithic with Adjacent Mainline PCC Pavement)

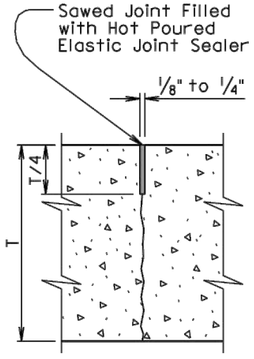


SECTION A-A

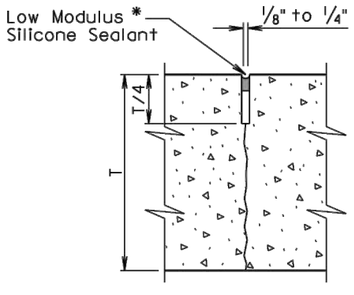


SECTIONAL VIEW

(Curb and Gutter not Placed Monolithic with Adjacent Mainline PCC Pavement or Mainline Surfacing is not PCC Pavement)



SECTION B-B

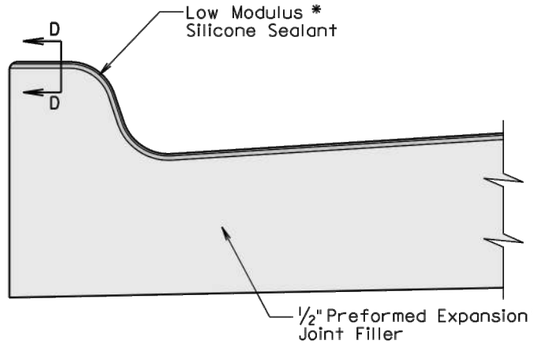


SECTION C-C

* The silicone sealant shall be placed such that it completely seals the joint and is bonded to the sides of the clean joint as approved by the Engineer.

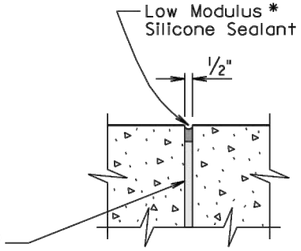
September 6, 2013

Published Date: 1st Qtr. 2017	SDDOT	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 1 of 2



SECTIONAL VIEW

(Curb and Gutter at 1/2" Preformed Expansion Joint Filler Location)



SECTION D-D

* The silicone sealant shall be placed such that it completely seals the joint and is bonded to the sides of the clean joint as approved by the Engineer.

GENERAL NOTES:

For illustrative reason, only the type B curb and gutter is shown.

** A 1/2" preformed expansion joint filler shall be placed transversely in the curb and gutter at the following locations:

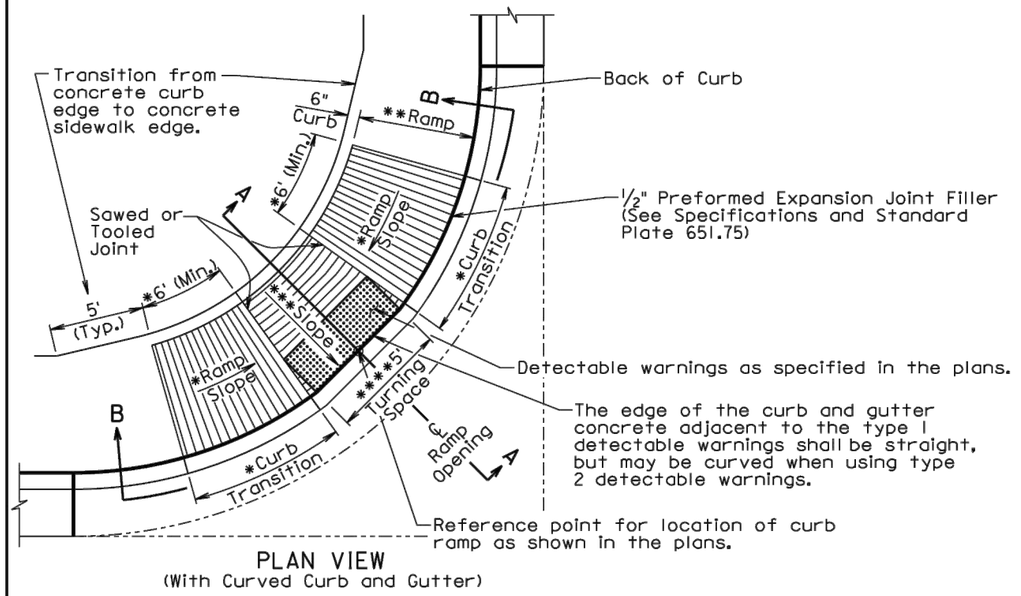
1. At each junction between the radius return of curb and gutter and curb and gutter which is parallel to the project centerline.
2. At each junction between new curb and gutter and existing curb and gutter.

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

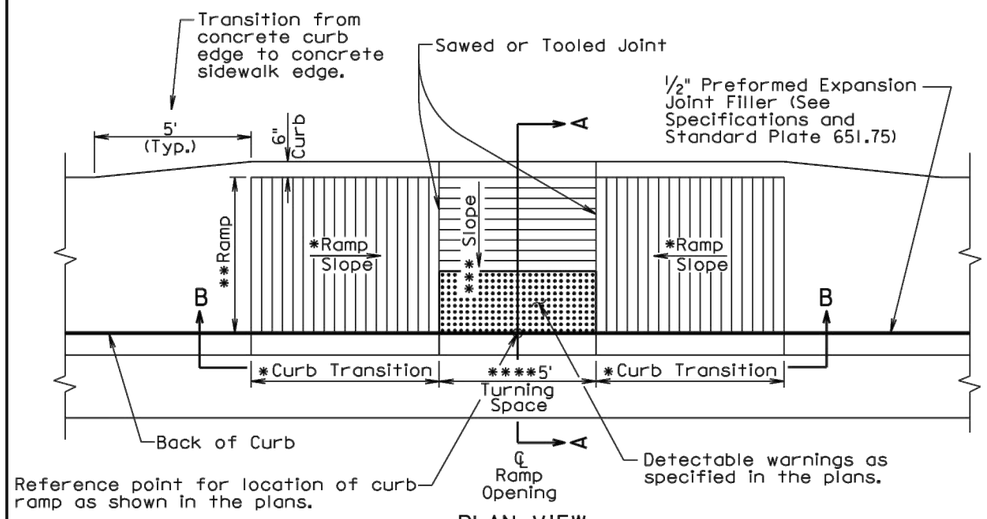
When concrete curb and gutter is not placed monolithically with the mainline PCC pavement or when the adjacent mainline surfacing is not PCC concrete, the transverse contraction joints in the concrete curb and gutter shall be 1 1/2 inches deep if formed in the fresh concrete using a suitable grooving 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 and the joint shall be sealed in accordance with the details shown above.

September 6, 2013

Published Date: 1st Qtr. 2017	SDDOT	JOINTS IN CONCRETE CURB AND GUTTER	PLATE NUMBER 650.90
			Sheet 2 of 2



PLAN VIEW
(With Curved Curb and Gutter)



PLAN VIEW
(With Straight Curb and Gutter)

September 6, 2015

Published Date: 1st Qtr. 2017	SDDOT	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 1 of 3

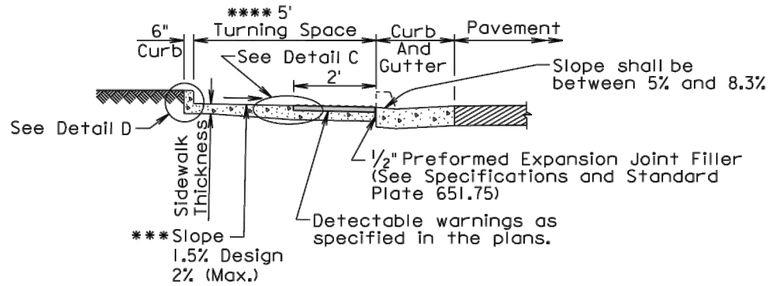
* The curb transition slope shall match the curb ramp slope. Curb ramp slopes are designed at 7.5% unless stated otherwise in the plans. The curb ramp may have a maximum slope of 8.3% at any location of the curb ramp and shall not exceed 15' in length unless stated otherwise in the plans. The curb transitions and curb ramp lengths shall be adjusted as necessary to meet all slope and length requirements based on field geometrics.

** The cross slope of the ramp shall not be steeper than 2% and the ramp width is 5' unless stated otherwise in the plans. Plans are designed using a 1.5% cross slope for the ramp unless stated otherwise in the plans.

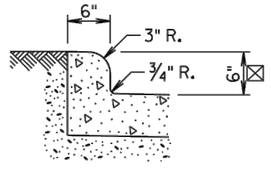
*** The slope in the turning space shall not be steeper than 2% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

**** The turning space is 5' x 5' unless stated otherwise in the plans.

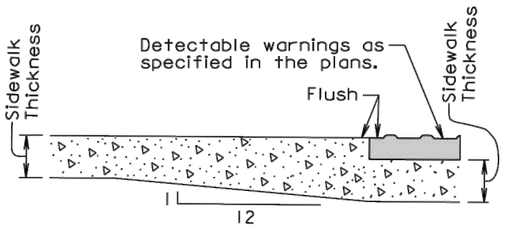
☒ The curb height shall be 6" unless stated otherwise in the plans.



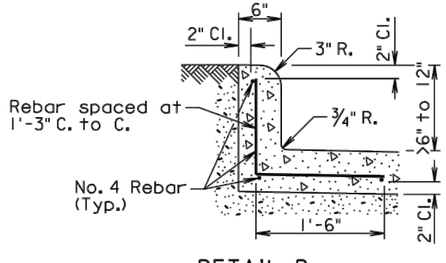
SECTION A-A



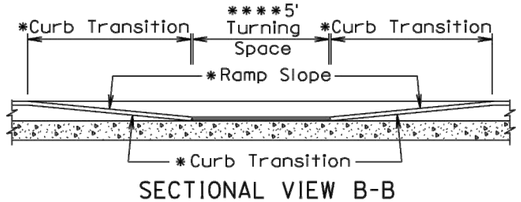
DETAIL D



DETAIL C



DETAIL D
(Use this detail when the curb height is greater than 6" and less than 12")



SECTIONAL VIEW B-B

September 6, 2015

Published Date: 1st Qtr. 2017	SDDOT	TYPE 3 CURB RAMP (PARALLEL CURB RAMP)	PLATE NUMBER 651.03
			Sheet 2 of 3

GENERAL NOTES:

For illustrative purpose only, type I detectable warnings are shown in the drawings.

For illustrative purpose only, a PCC fillet section is shown in one of the drawings. The curb ramp depicted on this standard plate may be used with a PCC fillet section or with curb and gutter.

The curb ramp shall be placed at the location stated in the plans.

Sidewalk adjacent to the curb ramp shall be as shown in the plans.

Care shall be taken to ensure a uniform grade on the curb ramp, free of sags and short grade changes.

Surface texture of the curb ramp shall be obtained by coarse brooming transverse to the slope of the curb ramp.

The normal gutter line profile shall be maintained through the area of the ramp opening.

Joints shall be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking (see plan view for joint location).

Care shall be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

The detectable warnings shall be cut as necessary to fit the plan specified limits of the detectable warnings. Cost for cutting the detectable warnings shall be incidental to the corresponding detectable warning bid item.

When curb height is greater than 6" and less than 12", reinforcing steel is required in accordance with the detail on sheet 2 of 3. The reinforcing steel shall conform to ASTM A615, Grade 60. Cost for furnishing and installing the reinforcing steel shall be incidental to the contract unit price per square foot for the corresponding concrete sidewalk bid item.

There will be no separate payment for curb ramps. The curb ramp shall be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk bid item. The square foot area of the detectable warnings and the curb along the short radius shall be included in the measured and paid for quantity of sidewalk.

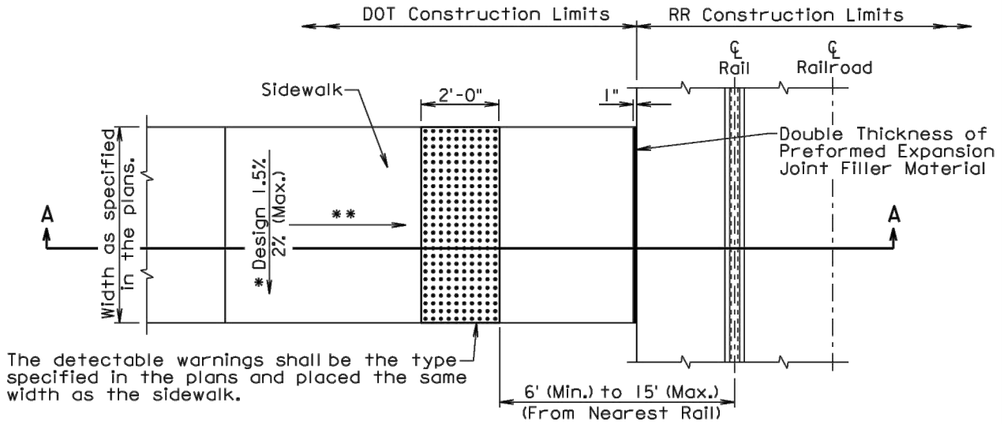
The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.

The type I detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type I detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type I Detectable Warnings".

The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

September 6, 2015

Published Date: 1st Qtr. 2017	SDDOT	***TYPE 3 CURB RAMP (PARALLEL CURB RAMP)***	***PLATE NUMBER 651.03***
			Sheet 3 of 3

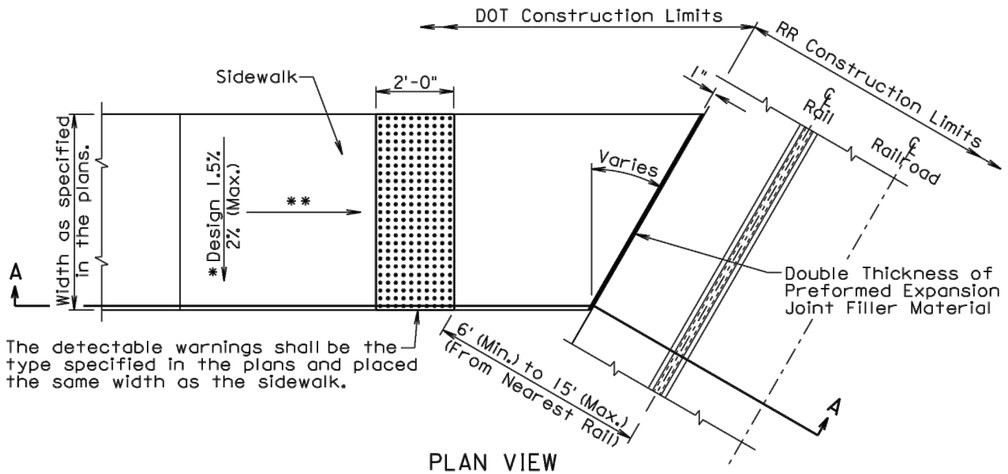


PLAN VIEW
(Railroad Crossing Not Skewed)

*The cross slope of the sidewalk shall not be steeper than 2%. Plans are designed using a 1.5% cross slope unless stated otherwise in the plans.

**If the sidewalk is curbside, then the surface of the curbside sidewalk shall match the slope of the curb transition. The longitudinal slope of the sidewalk and curb transition, where the sidewalk transitions to the railroad crossing elevation, is designed at 4.5% and shall not be steeper than 5% unless stated otherwise in the plans.

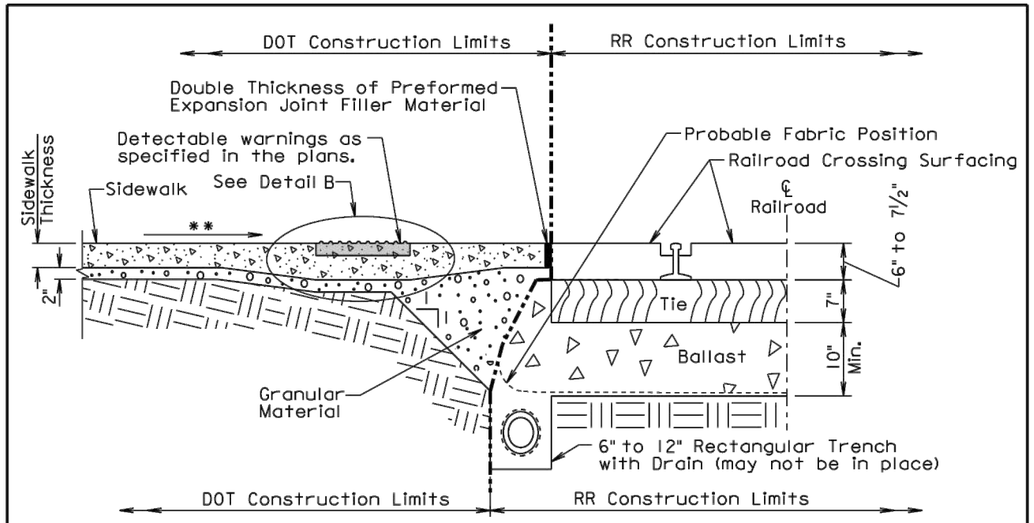
**If there is a boulevard sidewalk, then the curb and gutter transition shall be in accordance with Standard Plate 650.35. The longitudinal slope of the sidewalk, where the sidewalk transitions to the railroad crossing elevation, is designed at 4.5% and shall not be steeper than 5% unless stated otherwise in the plans.



PLAN VIEW
(Railroad Crossing Skewed)

September 6, 2015

Published Date: 1st Qtr. 2017	SDDOT	SIDEWALK AND DETECTABLE WARNINGS ADJACENT TO RAILROAD CROSSING	PLATE NUMBER 651.20
			Sheet 1 of 2



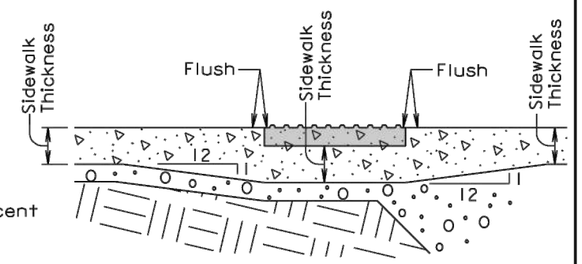
SECTION A-A

GENERAL NOTES:

For illustrative purpose only, type 1 detectable warnings are shown in the drawings.

Ballast material shall not be disturbed during construction work adjacent to the railroad crossing unless the adjacent work involves reconstruction or maintenance of the railroad crossing.

The sidewalk shall be placed at the location stated in the plans.



DETAIL B

Care shall be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.

If curb and gutter is required adjacent to the railroad crossing, the curb transition shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item.

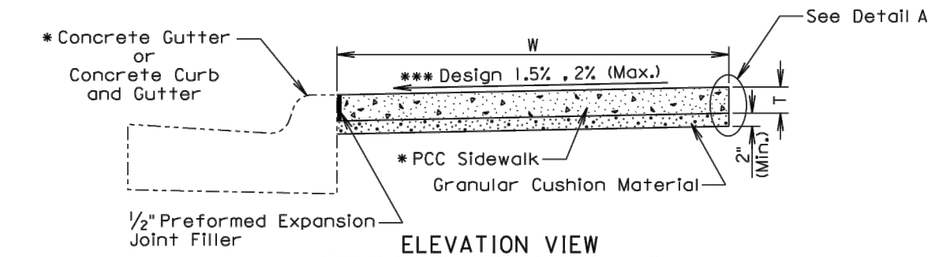
The type 1 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".

The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

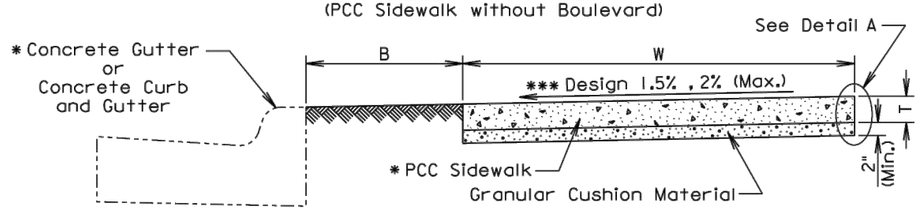
The square foot area of the detectable warnings shall be included in the measured and paid for quantity of sidewalk.

September 6, 2015

Published Date: 1st Qtr. 2017	SDDOT	SIDEWALK AND DETECTABLE WARNINGS ADJACENT TO RAILROAD CROSSING	PLATE NUMBER 651.20
			Sheet 2 of 2

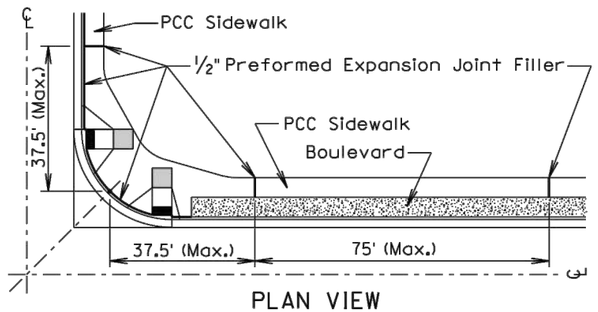


ELEVATION VIEW
(PCC Sidewalk without Boulevard)



ELEVATION VIEW
(PCC Sidewalk with Boulevard)

B Width of boulevard as specified in the plans.
T Thickness of PCC sidewalk as specified in the plans.
W Width of PCC sidewalk as specified in the plans.
* Type as specified in the plans.



PLAN VIEW

GENERAL NOTES:

The PCC sidewalk shall be constructed in accordance with Section 651 of the Specifications.

*** The cross slope of the sidewalk is designed at 1.5% and the maximum slope allowed is 2% unless specified otherwise in the plans.

The maximum length between expansion joints in PCC sidewalk is 75 feet.

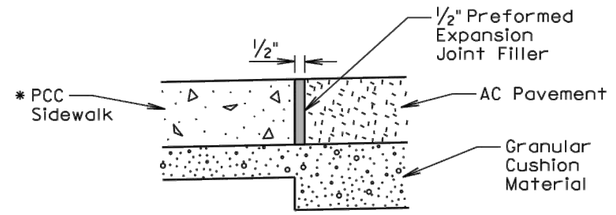
PCC sidewalk placed adjacent to intersection of roadways shall have an expansion joint placed transversely a maximum of 37.5 feet from the intersection. See PLAN VIEW.

An expansion joint in PCC sidewalk shall consist of a 1/2 inch thick preformed expansion joint filler material placed full depth and width of the PCC sidewalk.

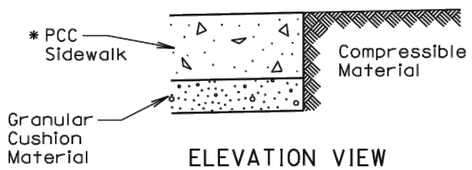
** Large areas of PCC pavement adjacent to PCC sidewalk may require a different joint treatment than shown in the detail. If a different joint detail is necessary, plans will contain the joint detail and the Contractor shall construct the joint treatment in accordance with the plans.

September 6, 2015

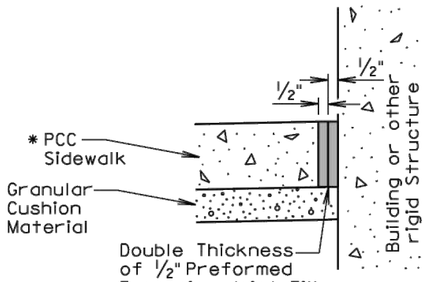
Published Date: 1st Qtr. 2017	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 1 of 2



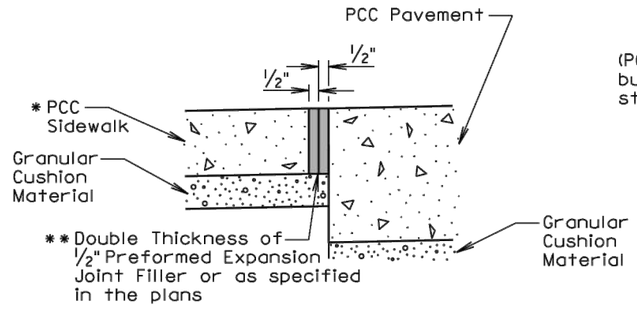
ELEVATION VIEW
(PCC sidewalk adjacent to asphalt concrete pavement)



ELEVATION VIEW
(PCC sidewalk adjacent to earthen material, landscape rock, or other compressible materials)



ELEVATION VIEW
(PCC sidewalk adjacent to building or other rigid structure)



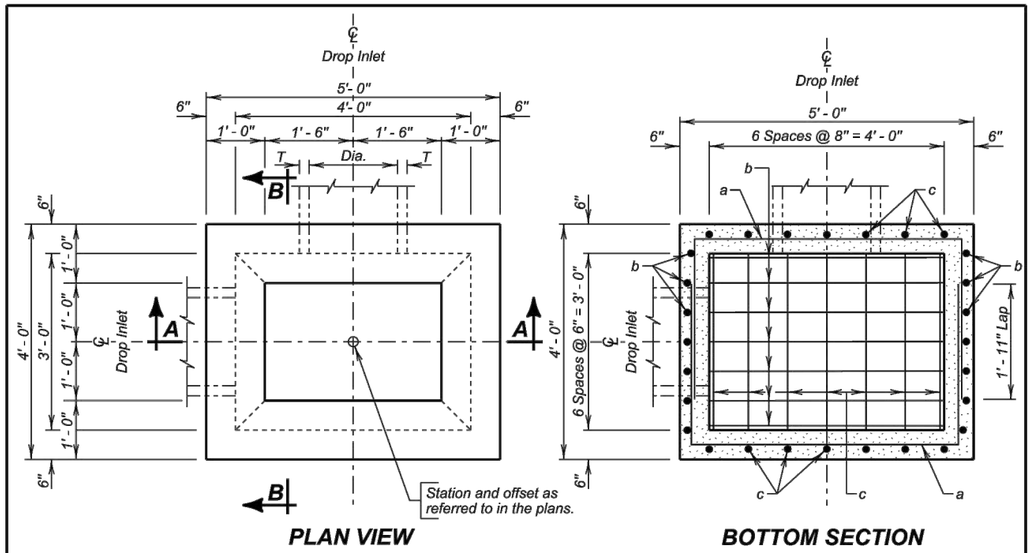
ELEVATION VIEW
(PCC sidewalk adjacent to PCC pavement)

Detail A
(Use Appropriate Detail(s))

September 6, 2015

Published Date: 1st Qtr. 2017	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 2 of 2

February 22, 2017 3:07:00 p.m.
Drawing: 13180 DETAILS.DWG (JOENS) (P:\PROJECTS & PROPOSALS\13180.01 WHITEWOOD SAFE ROUTES TO SCHOOL DESIGN\DRAWINGS\PLANS\)



PLAN VIEW

BOTTOM SECTION

ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
⚹ Class M6 Concrete	Cu. Yd.	0.72	0.30H
Reinforcing Steel	Lb.	130.93	36.54H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

⚹ Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). 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 inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

Maximum R.C.P. diameter shall not exceed 24 inches (24 inches for R. C. arch) on the 3-foot wide side and shall not exceed 36 inches (30 inches for R.C. arch) on the 4-foot wide side of the drop inlet.

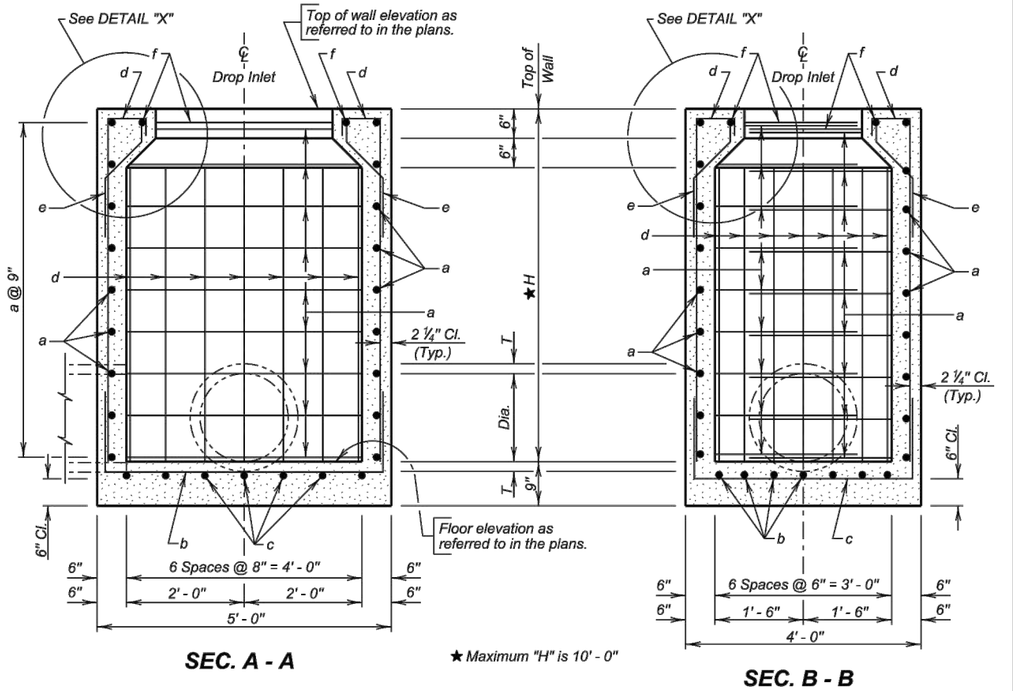
The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS

	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
	30	3 ½	0.14
	36	4	0.20
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09
	30	4	0.14

December 16, 2015

Published Date: 1st Qtr. 2017	SDDOT	3' X 4' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.02
			Sheet 1 of 2



SEC. A - A

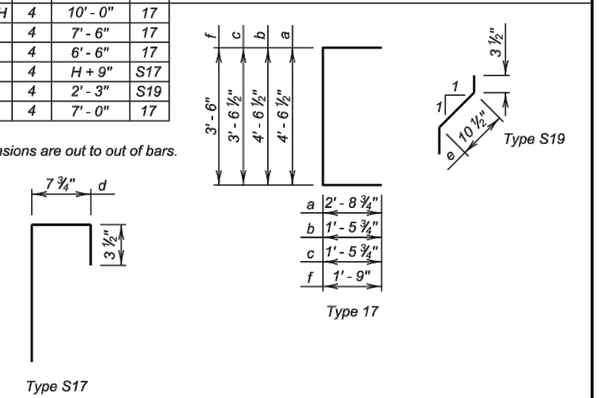
★ Maximum "H" is 10' - 0"

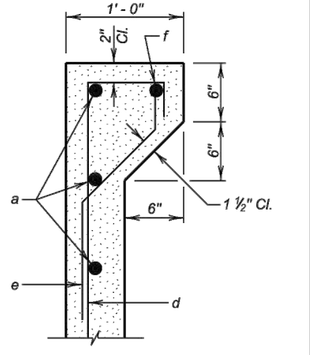
SEC. B - B

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	10' - 0"	17	
b	7	4	7' - 6"	17	
c	7	4	6' - 6"	17	
d	28	4	H + 9"	S17	
e	28	4	2' - 3"	S19	
f	2	4	7' - 0"	17	

NOTE:
All dimensions are out to out of bars.

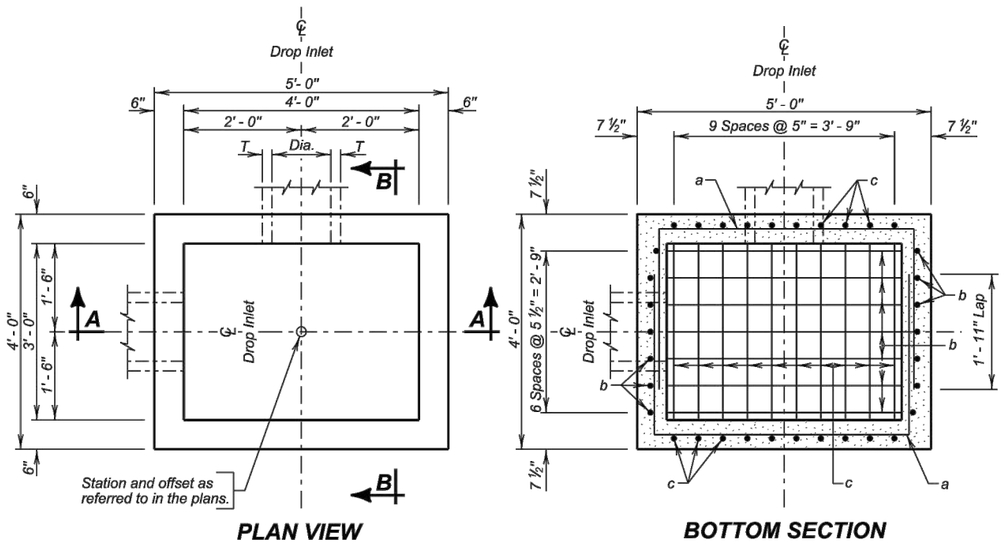




DETAIL "X"

December 16, 2015

Published Date: 1st Qtr. 2017	SDDOT	3' X 4' TYPE B REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.02
			Sheet 2 of 2



PLAN VIEW **BOTTOM SECTION**

ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
⚹ Class M6 Concrete	Cu. Yd.	0.43	0.30H
Reinforcing Steel	Lb.	90.90	40.53H
Frame and Grate Assembly	Each	1	———

DROP INLETS FOR 12" TO 36" DIAMETER PIPE

SPECIFICATIONS

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition.

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition and required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

GENERAL NOTES:

Design Live Load: HL-93. No construction loading in excess of legal load was considered.

Reinforcing steel shall conform to ASTM A615 grade 60. The d bars shall be lapped 12 inches with the b and c bars. Cut and bend reinforcing steel as required to place pipe(s) through the drop inlet wall.

Drop inlet may be precast. If precast drop inlet details differ from this standard plate, submit a checked design done by a SD registered P.E. and shop plans to the Office of Bridge Design for approval.

⚹ Reduce total quantities of concrete by the amount of concrete displaced by the pipe(s). 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 inlet shown may be modified by the addition or omission of connecting pipes as noted elsewhere in the plans. All pipes entering drop inlet must fit between the inside face of walls and shall not enter through the corners.

Maximum R.C.P. diameter shall not exceed 24 inches (24 inches for R. C. arch) on the 3-foot wide side and shall not exceed 36 inches (30 inches for R. C. arch) on the 4-foot wide side of the drop inlet.

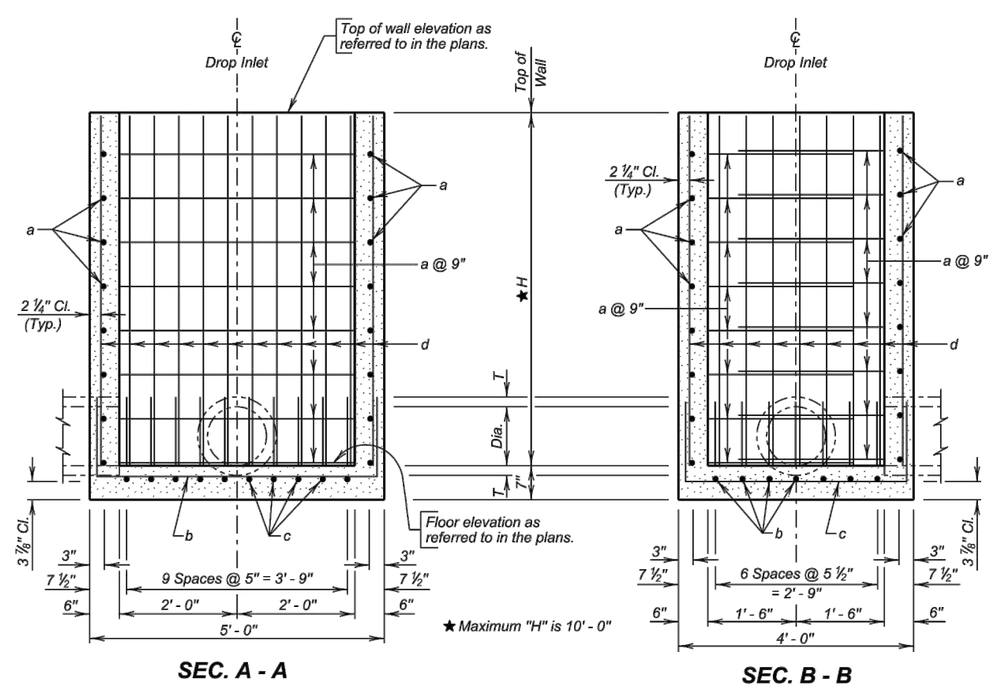
The dimension of H is in feet. Maximum H is 10 feet.

PIPE DISPLACEMENT REDUCTIONS

	Diameter (Inches)	Wall T (Inches)	Class M6 Concrete (Cu. Yd.)
R.C.P.	12	2	0.03
	15	2 ¼	0.04
	18	2 ½	0.05
	24	3	0.09
	30	3 ½	0.14
	36	4	0.20
R.C. ARCH	18	2 ½	0.05
	24	3 ½	0.09
	30	4	0.14

December 16, 2015

Published Date: 1st Qtr. 2017	SDDOT	3'X 4' TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.10
			Sheet 1 of 2

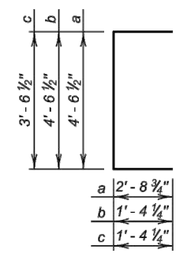


SEC. A - A **SEC. B - B**

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details
a	2.67H	4	10' - 0"	17	
b	7	5	7' - 3"	17	
c	10	4	6' - 3"	17	
d	34	4	H - 2"	Str.	

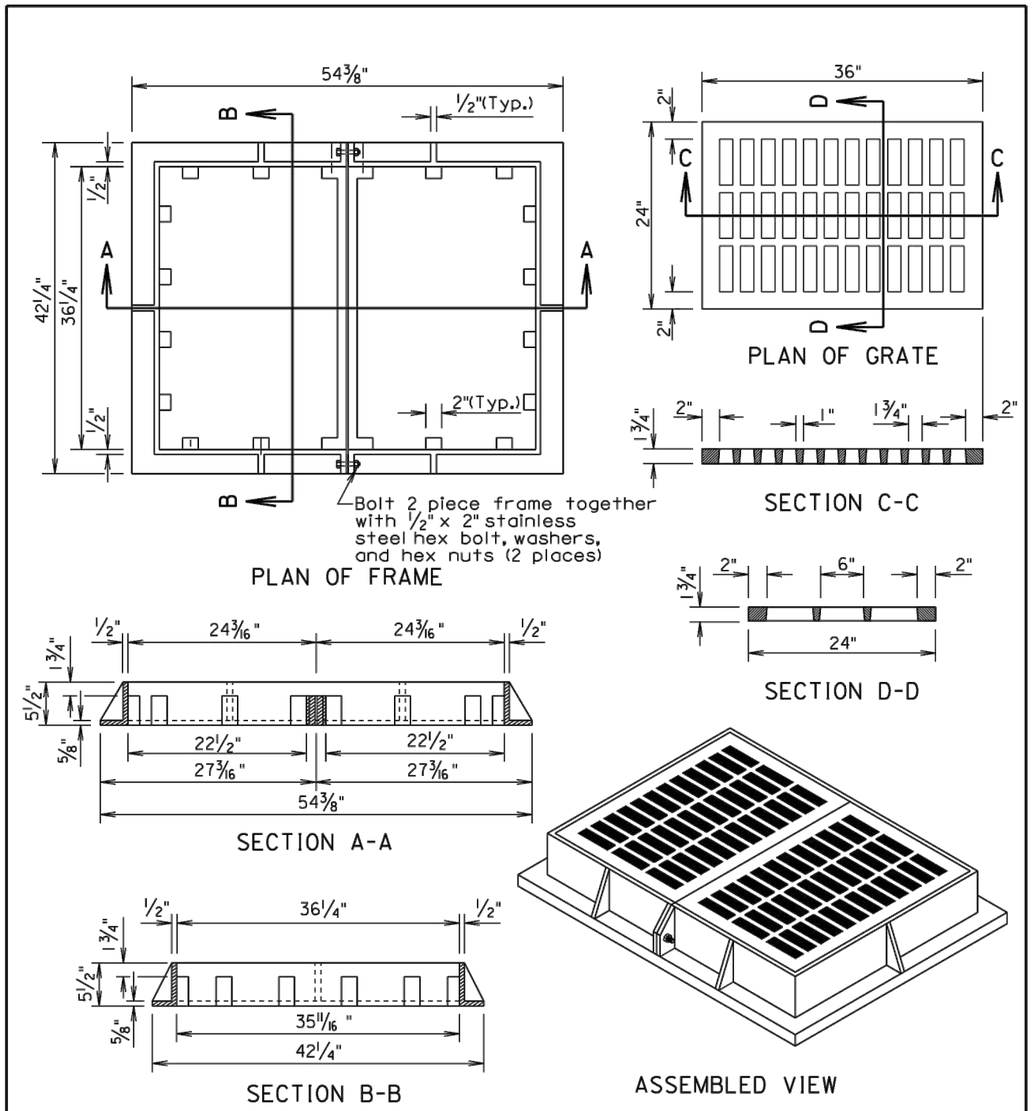
NOTE:
All dimensions are out to out of bars.



Type 17

December 16, 2015

Published Date: 1st Qtr. 2017	SDDOT	3'X 4' TYPE C REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.10
			Sheet 2 of 2

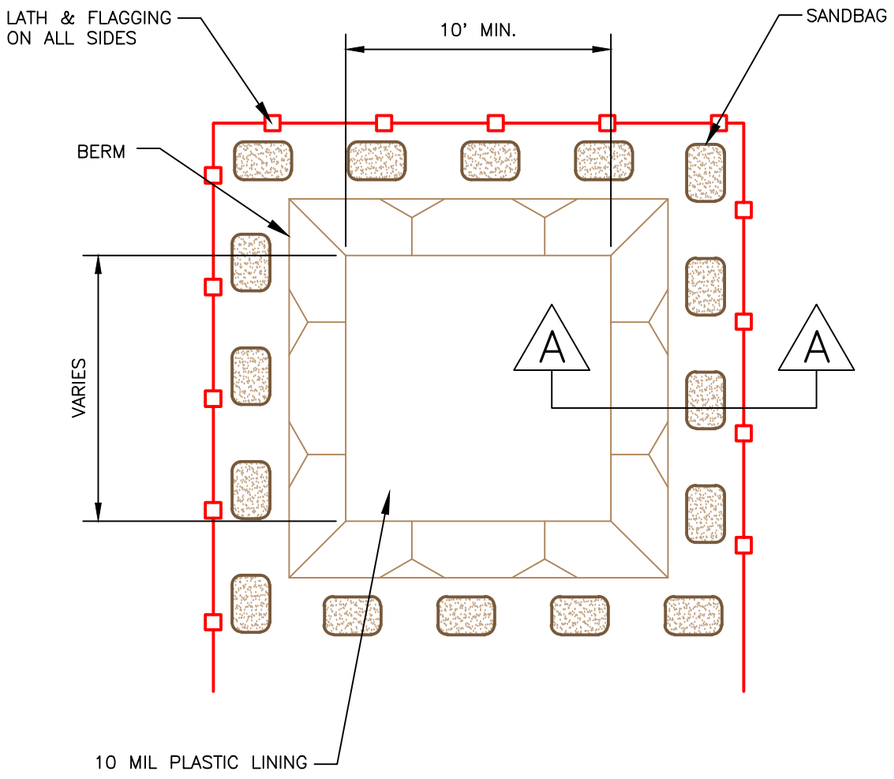


GENERAL NOTE:

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

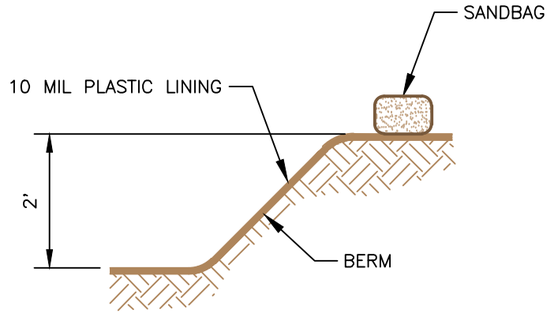
March 31, 2000

Published Date: 1st Qtr. 2017	SDDOT	***TYPE C FRAME AND GRATE***	***PLATE NUMBER 670.82***
			Sheet 1 of 1

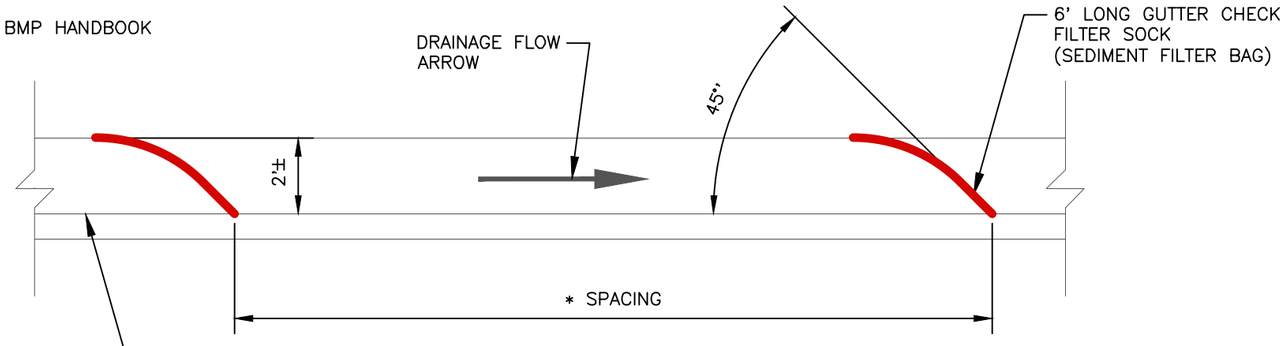


*DETAIL MODIFIED FROM CALIFORNIA STORMWATER BMP HANDBOOK

PLAN
NOT TO SCALE
TYPE "BELOW GRADE"



SECTION A–A
NOT TO SCALE



PLAN
NOT TO SCALE

LONGITUDINAL SLOPE	SPACING
1%	75'
2%	38'
3%	25'
4%	19'
5%	15'

NOTES:

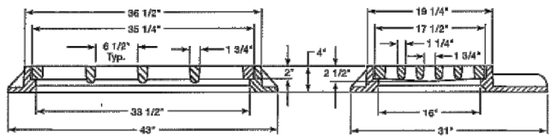
1. FILTER SOCK SHALL BE FILLED WITH CLEAN OR WASHED AGGREGATE 2" MINUS OR SMALLER.
2. GRAVEL FILTER SOCK SHALL BE 9" IN DIAMETER AND SHALL BE THE "SNAKE BAG" FROM SACRAMENTO BAG MANUFACTURING COMPANY OR OTHER PRODUCT OFF OF SDDOT APPROVED PRODUCT LIST FOR USE AS SEDIMENT FILTER BAG.

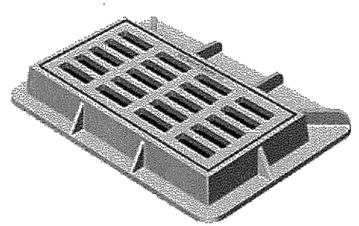
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 4225
RICHARD A. WELLS
SOUTH DAKOTA
2-22-17

R-3067-C (OR ENGINEER APPROVED EQUAL)
COMBINATION INLET FRAME, GRATE

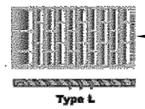
HEAVY DUTY





CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3067-C	C	2.1	8.8
R-3067-C	L	2.1	8.8

Standard Grate (shown): Type C
Alternate Grate(s):



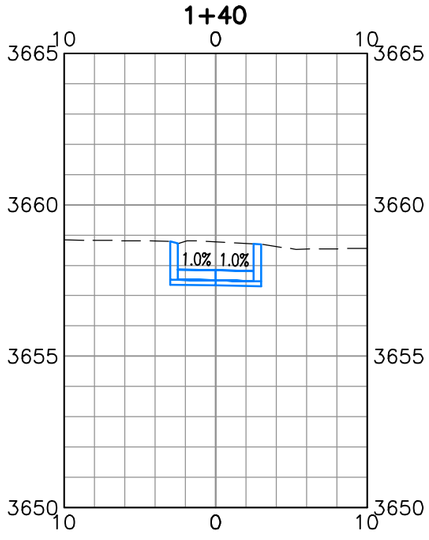
Furnished without curb box for use at driveway locations.

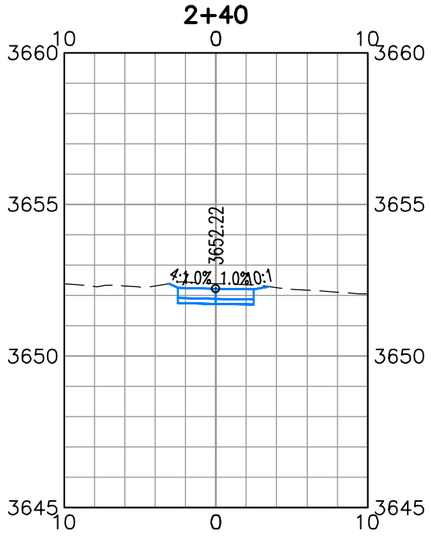
SPECIAL FRAME AND GRATE ASSEMBLY FOR FOR INLET NO.2

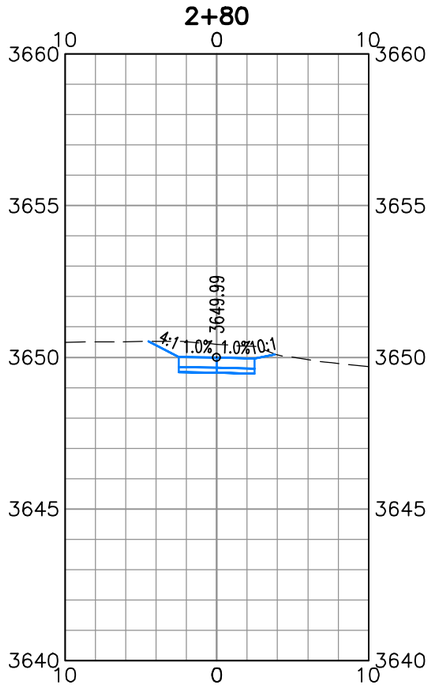
NOT TO SCALE

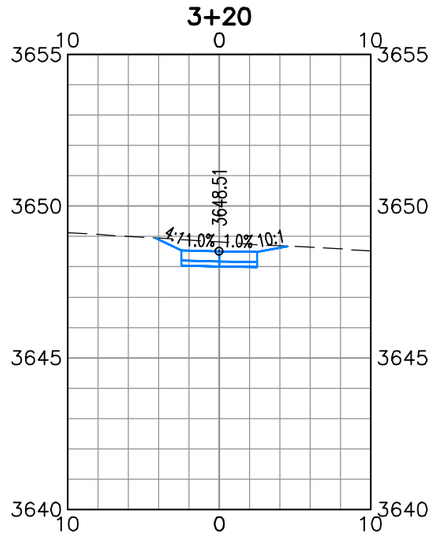
Plotting Date --- 2-22-17

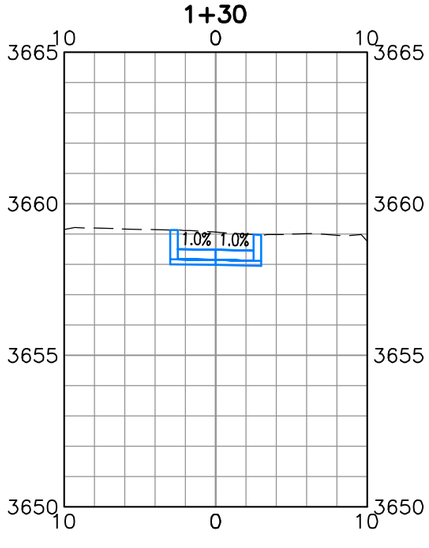
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	47	48
CROSS SECTIONS			

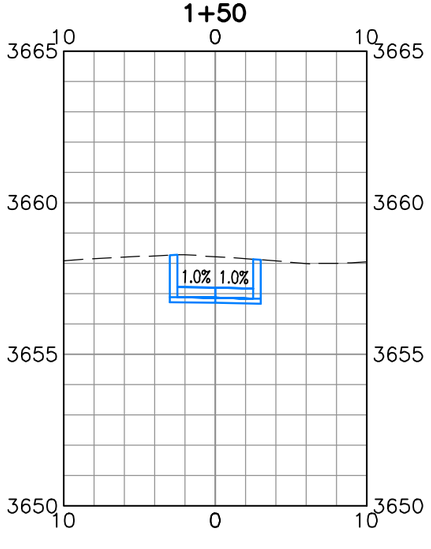


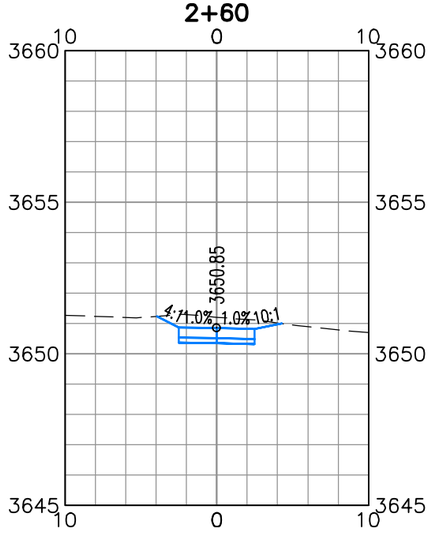


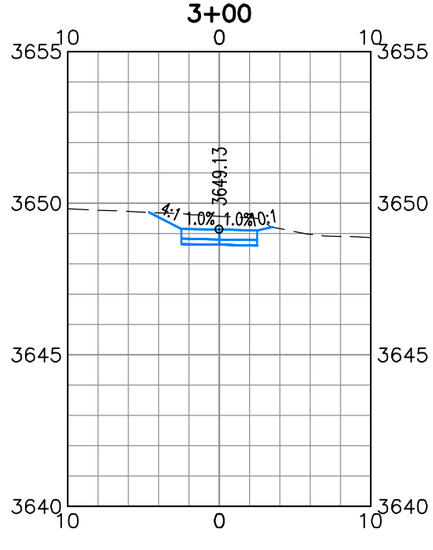






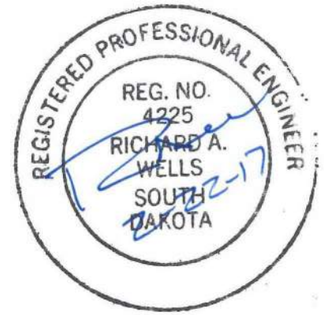




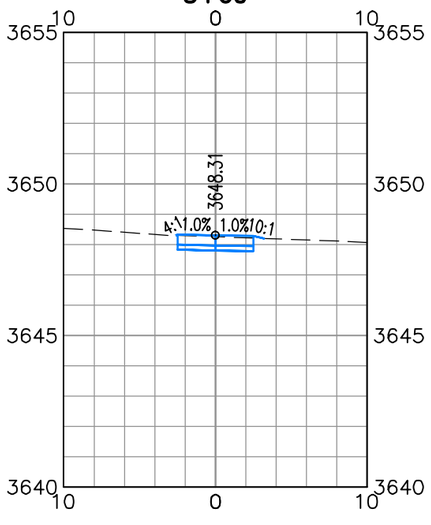


Plotting Date --- 2-22-17

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(07)	48	48
CROSS SECTIONS			



3+60



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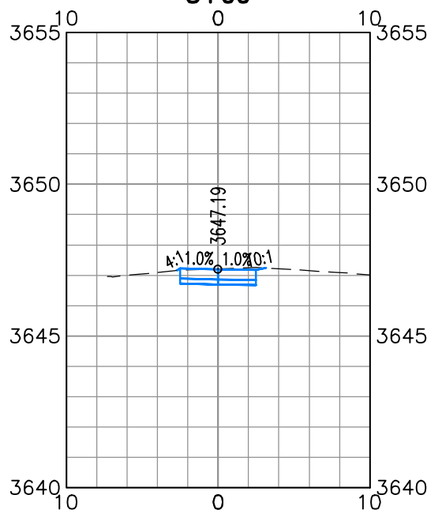

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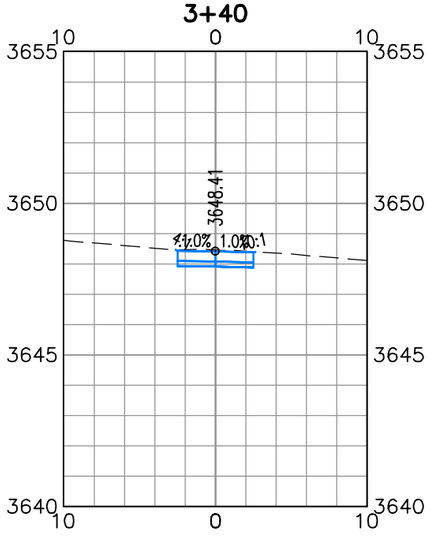

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