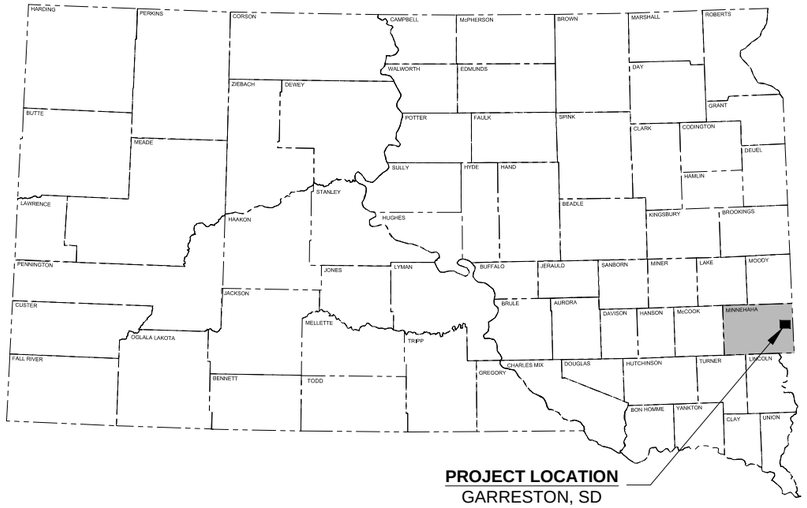
PROJECT	SHEET	TOTAL SHEETS
P TAPR(14)	1	46

Revised 10/11/2017 - DAW



PROJECT LOCATION
GARRESTON, SD
MINNEHAHA COUNTY

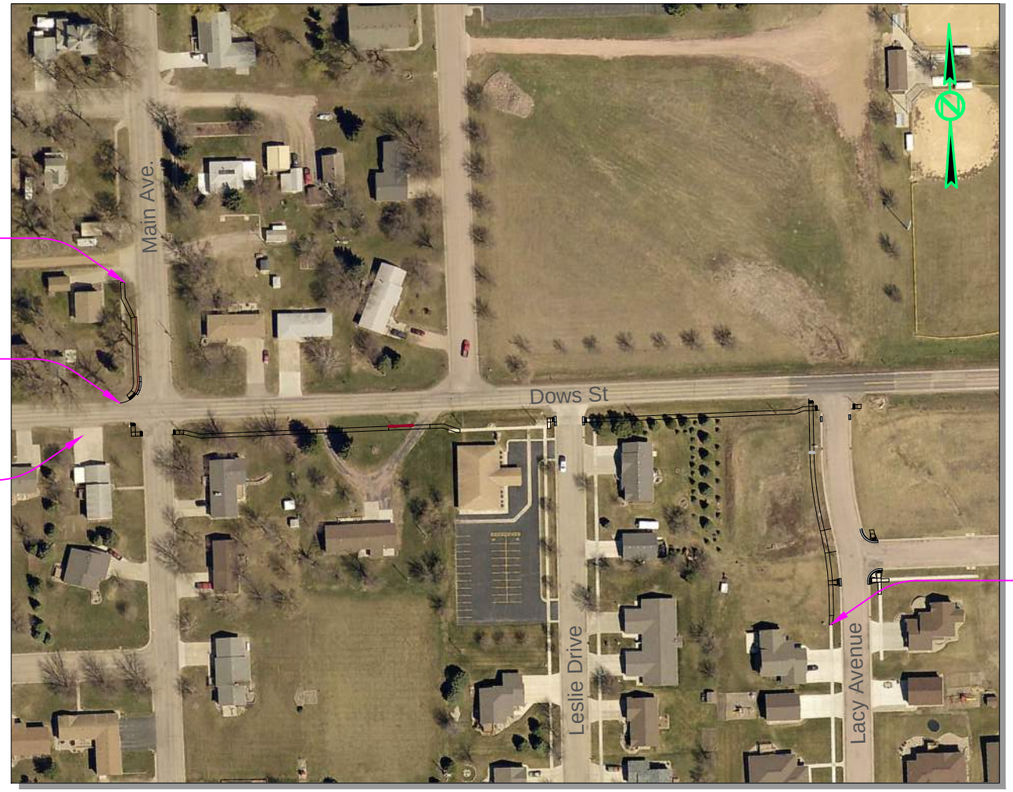
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT P TAPR(14)
CITY OF GARRETSON
MINNEHAHA COUNTY

SIDEWALK, CURB RAMPS, AND STORM SEWER
PCN 05CF

INDEX OF SHEETS:

1	TITLE SHEET
2	ESTIMATE OF QUANTITIES
3-7	GENERAL NOTES, TABLES, TRAFFIC CONTROL NOTES, EROSION CONTROL NOTES
8	ALIGNMENT TABLES AND PROJECT CONTROL DATA
9-10	TYPICAL SECTIONS
11	LEGEND
12-13	DRAINAGE AND CONSTRUCTION EASEMENTS
14	REMOVALS
15-19	PLAN AND PROFILE
20-23	CURB RAMP LAYOUT
24	RETAINING WALL DETAIL
25-26	PAVEMENT MARKING AND SIGNAGE PLAN
27-39	STANDARD PLATES AND DETAILS
40-46	CROSS SECTIONS



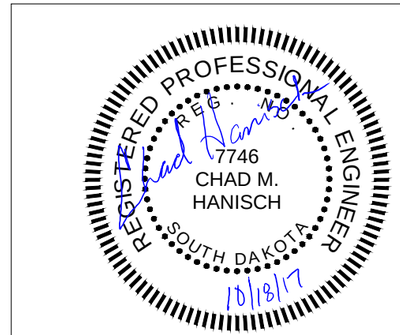
END (MAIN AVE)
21+65.02

BEGIN (MAIN AVE)
20+00.00

BEGIN (DOWS ST)
0+00.00

END (DOWS ST/LACY AVE)
11+73.35

Location Map



I, Chad M. Hanisch, hereby certify that these plans were prepared by me, or under my direct supervision and that I am a duly registered engineer under the laws of the State of South Dakota.

Chad Hanisch 10/18/17

CHAD M. HANISCH | S.D. No. 7746 | Date

STORM WATER PERMIT
Major Receiving Body of Water: Split Rock Creek
Area Disturbed: 0.44 Acres
Project Area: 0.44 Acres
Latitude 43° 42' 35" N
Longitude 96° 30' 04" W

Drawing indicates general utility locations only. Neither the correctness or completeness of locations are guaranteed.

Prior to excavation contact:
SOUTH DAKOTA ONE CALL (1-800-781-7474)

infrastructure design group, inc.

Plans By:
INFRASTRUCTURE DESIGN GROUP, INC.
1111 N. LAKE AVENUE
SIOUX FALLS, SOUTH DAKOTA 57104
PH. (605) 271-5527
www.infrastructuredg.com

S:\0-2016 Projects\16058 - Garretson TAP Project - Dows Street\Design\CAD\SHEETS\16058-TITLE SHEET.dwg
PLOT DATE: 10/18/2017 11:23 AM Derek Westenberg DOT.ctb

ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(14)	2	46

Revised 10/17/2017- DAW

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	0.239	Mile
009E3300	Three Man Survey Crew	10	Hour
100E0020	Clear and Grub Tree	4	Each
110E0300	Remove Concrete Curb and/or Gutter	103	Ft
110E0510	Remove Pipe End Section	1	Each
110E0530	Remove Storm Sewer Pipe	63	Ft
110E1010	Remove Asphalt Concrete Pavement	237.9	SqYd
110E1140	Remove Concrete Sidewalk	72.4	SqYd
110E1700	Remove Silt Fence	92	Ft
120E0010	Unclassified Excavation	532	CuYd
120E0600	Contractor Furnished Borrow Excavation	209	CuYd
120E6100	Water for Embankment	1.5	MGal
120E6200	Water for Granular Material	1.1	Mgal
120E6300	Water for Vegetation	142.9	MGal
230E0010	Placing Topsoil	397	CuYd
320E1200	Asphalt Concrete Composite	37.4	Ton
380E1000	6" Miscellaneous PCC Pavement	31.9	SqYd
420E0300	Structure Excavation, Retaining Wall	11.2	CuYd
450E0103	12” RCP Class 3, Furnish	34	Ft
450E0110	12” RCP, Install	34	Ft
450E0123	18” RCP Class 3, Furnish	48	Ft
450E0130	18” RCP, Install	48	Ft
450E0143	24” RCP Class 3, Furnish	8	Ft
450E0150	24” RCP, Install	8	Ft
450E2000	12" RCP Flared End, Furnish	3	Each
450E2001	12" RCP Flared End, Install	3	Each
450E2008	18" RCP Flared End, Furnish	2	Each
450E2009	18" RCP Flared End, Install	2	Each
450E2016	24" RCP Flared End, Furnish	1	Each
450E2017	24" RCP Flared End, Install	1	Each
462E0100	Class M6 Concrete	8.5	CuYd
470E0040	Steel Pedestrian Railing	32.0	Ft
480E0100	Reinforcing Steel	150	Lb
480E0200	Epoxy Coated Reinforcing Steel	387	Lb
632E1330	2.25" x 2.25" Perforated Tube Post	21	Ft
632E1340	2.5” x 2.5” Perforated Tube Post	9	Ft
632E3520	Remove, Salvage, Relocate, and Reset Traffic Sign	6	Each
633E1430	Pavement Marking Paint, 24” White	240	Ft
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	129.3	SqFt
634E0120	Traffic Control Miscellaneous	Lump Sum	LS
634E2025	Longitudinal Pedestrian Barricade	8	Ft

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
650E0060	Type B66 Concrete Curb and Gutter	119	Ft
651E0040	4" Concrete Sidewalk	4,179	SqFt
651E0060	6" Concrete Sidewalk	1,742	SqFt
651E0560	6" Colored Concrete Sidewalk	188	SqFt
651E7000	Type 1 Detectable Warnings	140	SqFt
671E6007	Type A7 Manhole Frame and Lid	1	Each
700E0210	Class B Riprap	21.2	Ton
730E0202	Type B Permanent Seed Mixture	8.9	Lb
731E0100	Fertilizing	492	Lb
732E0250	Fiber Mulch	984	Lb
734E0102	Type 2 Erosion Control Blanket	214	SqYd
734E0510	Shaping for Erosion Control Blanket	133	Ft
734E0602	Low Flow Silt Fence	237	Ft
734E0620	Repair Silt Fence	92	Ft
734E5010	Sweeping	15	Hour
831E0110	Type B Drainage Fabric	36	SqYd
900E1310	Concrete Washout Facility	1	Each

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7746
CHAD M.
HANISCH
SOUTH DAKOTA
10/18/17

SPECIFICATIONS

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

PROJECT SCOPE

This project is located within the City of Garretson and consists of constructing a new sidewalk and curb ramps along Dows Street from Main Ave to Lacy Ave and Lacy Ave from Dows Street to Jacob Circle.

ENVIRONMENTAL COMMITMENTS

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

COMMITMENT C: WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment before entering South Dakota to reduce the risk of invasive species introduction into the project vicinity.

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

Action Taken/Required:

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

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the 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) 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.

CONSTRUCTION LIMITS

The construction limits shall be within temporary easement areas. Material storage and vehicle and equipment traffic shall be limited to the construction limits.

GRADE STAKES, BENCHMARKS AND MONUMENTS

All monuments now in place and marking lines and corners of boundaries which are likely to be affected by the work herein provided for shall be carefully preserved by the Contractor. In no case shall any excavation be made within five feet (5') of any such monument until they have been properly reset, witnessed, or otherwise cared for by the Engineer and permission is given to proceed with the work. The Engineer shall mark the above described monuments prior to commencing work.

Any monuments disturbed or removed through carelessness or without proper authority will be reset by a licensed Land Surveyor at the expense of the Contractor.

DRAINAGE

Drainage is the Contractor's responsibility. Contractor shall be aware of existing drainage conditions and facilities, and shall provide for drainage during all phases of construction. Damage caused by improper temporary drainage facilities shall be repaired at the Contractor's expense and to the satisfaction of the Engineer.

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 following utility companies are known to have facilities on the project:

City of Garretson (water, sewer, gas)
Craig Nussbaum
(605) 564-6723

Xcel Energy
Derreck Martin
(605) 339-8325

Alliance Communication
Jeff Hove
(605) 564-3411

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

Plan quantities shall be used for final payment for Unclassified Excavation unless changes are requested by the Project Engineer. Unstable material excavation, if deemed necessary, shall be measured in the field and paid for at the contract unit price per cubic yard for "Unclassified Excavation".

TABLE OF UNCLASSIFIED EXCAVATION

	CuYd
Excavation for Imported Materials (hard surfacing)	173
Strip Topsoil – 6" depth	359
Total Unclassified Excavation	532
Embankment	294
Imported Materials	-173
Shrink (30%)	88
Total Embankment	209

CONTRACTOR FURNISHED BORROW EXCAVATION

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

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

Water for Embankment is estimated at the rate of 5 gallons of water per cubic yard of Embankment minus Waste.

REMOVAL OF EXISTING ASPHALT PAVEMENT

The asphalt concrete pavement shall be disposed of by the Contractor. Payment for asphalt removal is included in the contract unit price per square yard for "Remove Asphalt Concrete Pavement". Payment shall be at the contract unit price per square yard, regardless of variations in thickness.

TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL

Station to	Station	L/R	Quantity (SqYd)
20+42.66	21+65.17	L	54
20+00.00	20+45.89	R	30.9
0+57.44	0+76.03	L-R	4.6
1+09.07	1+26.17	R-L	5.9
2+84.98	3+05.51	L-R	27.6
4+03.73	4+35.83	R-L	33.4
4+52.57	4+65.62	R	6.0
5+72.92	5+90.44	R	5.9
6+27.66	6+41.71	R	6.5
N-15888036.371 E-3201297.650	9+22.43	L	16.0
N-15888039.654 E-2301384.543	9+20.83	L	9.2
10+65.27	10+84.60	L	5.8
11+09.44	11+26.16	L	6.4
11+17.67	11+26.32	L	1.5
11+12.81	11+29.42	L	24.2
		Total:	237.9

TABLE OF CONCRETE CURB AND GUTTER REMOVAL

Station to	Station	L/R	Quantity (Ft)
20+45.85	20+35.53	R	10.6
5+91.77	5+91.94	R	3.4
6+26.46	6+26.66	R	3.1
9+11.91	9+22.43	L	10.5
9+11.94	9+20.85	L	8.9
10+65.39	10+82.44	L	29.0
11+11.54	11+26.24	L	28.3
11+17.66	11+26.32	L	9.0
		Total:	102.8

TABLE OF JUNCTION BOXES AND QUANTITIES

Station	L/R	Junction Box Size	Class M6 Concrete (CuYd)	Reinf. Steel (Lb)	Casting Type
4+44.05	5.8'L	4'x4'	2.1	150	A7

TABLE OF RIPRAP AND DRAINAGE FABRIC

Station	Class B Riprap (Ton)	Type B Drainage Fabric (SqYd)
3+78.94-14.9'L	21.2	36
Total:	21.2	36

CONCRETE

All concrete used shall be Class M-6.

TABLE OF 6" MISCELLANEOUS PCC PAVEMENT

Station to	Station	L/R	Quantity (SqYd)	Description
5+90.21	5+93.14	L-R	3.2	Leslie Dr. – L
6+25.32	6+27.39	R-L	2.8	Leslie Dr. – R
10+57.16	10+84.98	L	25.9	Lacy Ave. Driveway
		Total:	31.9	

TABLE OF 6" CONCRETE SIDEWALK

Station to	Station	L/R	Quantity (SqFt)
20+13.46	21+20.53	L	500.2
0+60.54	0+74.53	L-R	124.9
1+12.25	1+25.20	L-R	65.7
2+89.10	3+04.46	L-R	76.8
3+77.00	4+27.79	L-R	254
5+27.89	5+90.47	L-R	43.6
6+27.51	6+41.65	L-R	70.5
9+03.95	9+08.50	L	95.8
N-15888025.4540 E-2301373.2231	9+17.44	L	55.2
10+57.16	10+84.98	L-R	138.5
10+69.11	10+78.97	L	85.7
11+17.66	11+24.46	L-R	82.1
11+12.84	11+26.23	L	148.8
		Total:	1741.8

TABLE OF 4" CONCRETE SIDEWALK

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Station to	Station	L/R	Quantity (SqFt)
21+20.53	21+65.02	L	230
1+24.54	2+89.10	L-R	818.9
3+04.46	3+77.00	L-R	362.7
4+27.96	4+65.66	L-R	187.8
5+72.91	5+81.13	L-R	32.2
6+41.77	9+08.76	L-R	1307.4
9+08.65	10+57.16	L-R	740.4
10+84.98	11+19.43	L-R	172.4
11+24.46	11+73.41	L-R	229.7
11+21.63	11+37.58	L	97.1
		Total:	4178.6

TABLE OF 6" COLORED CONCRETE SIDEWALK

Station to	Station	L/R	Quantity (SqFt)
20+23.96	21+18.52	L-R	187.8
		Total:	187.8

COLORED CONCRETE

The 6" Colored Concrete Sidewalk shall be Solomon #417 Rose or equivalent.

TYPE 1 DETECTABLE WARNINGS

Detectable warnings shall be in compliance with the Americans with Disabilities 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.

The detectable warnings shall be a brick red color for application in concrete curb ramps. 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.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7746
CHAD M. HANISCH
SOUTH DAKOTA
10/18/17

TYPE 1 DETECTABLE WARNINGS (CONT.)

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
TufTile (wet-set) Cast Iron Replaceable Tile	TufTile 1200 Flex Court Lake Zurich, IL 60047 888-960-8897 http://www.tuftile.com/

Type 1 Detectable Warnings shall be installed along a radius at the locations as shown in the plans. The radius necessary shall be as shown in the plans. Payment for the radius detectable warnings shall be at the contract unit price per square foot for “Type 1 Detectable Warnings”.

When Type 1 Detectable Warnings with a radius are specified, the Contractor shall furnish and install an appropriately sized product listed in the following Type 1 Detectable Warnings (Radius) table.

Type 1 Detectable Warnings (Radius)

Product	Manufacturer
Detectable Warning Plate Cast Iron Plate 9’-5”, 15’, 20’, 25’, 35’ Radius	Neenah Foundry Company Neenah, WI 800-558-5075 http://www.neenahfoundry.com/
Detectable Warning Plate Cast Iron Plate (No Coating) 10’, 15’, 17.5’, 20’, 25’, 30’, 35’ Radius	East Jordan Iron Works, Inc. 301 Spring Street East Jordan, MI 49727 800-626-4653 http://www.ejiw.com

TABLE OF TYPE 1 DETECTABLE WARNINGS

Station	L/R	Quantity (SqFt)
20+13.47	.01’ L	20
0+60.54	10.68’ R	10
0+71.77	0’ R	10
1+14.25	0’ R	10
5+88.36	0’ R	10
6+29.61	0’ R	10
9+03.84	6.62’ L	10
9+08.59	5.59’ L	10
9+07.60	53.73’ L	10
10+78.18	56.82’ L	10
11+14.68	57.39’ L	10
11+20.12	50.56’ L	10
11+19.58	8.64’ L	10
	Total:	140

CLEAR AND GRUB TREE

The contract unit price per each “Clear and Grub Tree” will be full compensation for all removal and disposal of trees. The Engineer will establish right-of-way lines and construction lines prior to the start of clearing and grubbing operations. Locations for removal of trees are identified on plan sheets.

TABLE OF CLEAR AND GRUB TREE

Station	L/R	Quantity (Each)
20+61.03	8.8’L	1
20+83.66	7.6’L	1
20+98.88	6.6’L	1
1+72.43	5.1’R	1
	Total:	4

GENERAL MAINTENANCE OF TRAFFIC

All paved streets adjacent to the project are to be swept at the end of each working day.

The Contractor or designated traffic control subcontractor shall ensure the adequacy, legibility, and reflectivity of each sign and device. Sign washing shall be considered incidental to the contract lump sum price for “Traffic Control, Miscellaneous” and required as directed by the Engineer.

PEDESTRIAN TRAFFIC

The Contractor shall protect all work areas for the safety of pedestrians. Safety fence shall be installed around all work areas that are adjacent to pedestrian walkways and at other locations as designated by the Engineer. Payment for all work and associated materials shall be incidental to the contract lump sum price for “Traffic Control, Miscellaneous”.

LONGITUDINAL PEDESTRIAN BARRICADE

Longitudinal Pedestrian Barricades should not be used to provide positive protection for pedestrians.

Barricade rail supports may not project into pedestrian routes more than 4 inches from the face of the barricade. To prevent any tripping hazard to pedestrians, ballast shall be located behind or internal to the device.

When Longitudinal Pedestrian Barricades are combined in a series, the maximum gap between devices that do not interlock shall be one inch. Joints between devices that do interlock shall be closed and flush to prevent canes or small wheels from being trapped and to facilitate safe hand trailing. When used as a sidewalk closure mechanism, Longitudinal Pedestrian Barricade must run the entire width of the sidewalk. Longitudinal Pedestrian Barricade should provide a color contrasting pattern. Black should not be used to color any base on a device. The devices should comply with the general color and stripe pattern requirements of Section 6F.68 of the MUTCD.

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Longitudinal Pedestrian Barricade shall have continuous bottom and top surfaces. A gap height or opening from the walkway surface up to a maximum of 2 inches is allowed for drainage purposes. The top edge of the bottom portion shall be a minimum of 8 inches above the walkway. The top of the top portion shall be between 34 and 38 inches above the walkway. The top surface shall be smooth to allow safe hand trailing. Both upper and lower surfaces shall share a common vertical plane.

All costs shall be incidental to the contract unit price per foot for “LONGITUDINAL PEDESTRIAN BARRICADE”.

TABLE OF LONGITUDINAL PEDESTRIAN BARRICADE

Station	to	Station	L/R	Quantity (Ft)
5+67.29		5+71.23	R	4
6+37.00		60+40.94	R	4
			Total:	8

CONTRACTOR COMMUNICATIONS WITH BUSINESS AND HOME OWNERS

The Contractor shall maintain thorough communications about the schedule of operations throughout the duration of the project. The Contractor shall be required to communicate with the following:

- Business owners / home owners / tenants
- Project Engineers

Communications include, but are not limited to, meetings, direct visits, email notifications and notifications by hangers/flyers. The Contractor shall provide a minimum of one week notice when:

- Access to businesses or homes will be closed or detoured
- Street intersections will be interrupted. At no time will a full intersection closure be allowed. One lane utilizing flaggers shall be provided.
- All costs for this work shall be incidental to the contract lump sum price for “Traffic Control, Miscellaneous”.

SIGN POSTS

The Contractor shall provide Perforated Tube Post sign supports for each sign footing that is not able to be removed entirely. 2 ¼” and 2 ½” square perforated tube post shall be fabricated from 12 gauge galvanized steel and installed at the sign reset location according to the sign mount detail on page 28.

REMOVE, SALVAGE, RELOCATE, AND RESET TRAFFIC SIGN

The Contractor shall remove the sign(s) first and remove the post(s) and footings (if present) separately. Signs, reusable posts, and hardware damaged or lost due to carelessness shall be replaced in kind at the Contractor’s expense. All nuts, bolts, and miscellaneous mounting hardware salvaged from existing signs shall not be reused.

The existing footings for fixed base sign posts shall be removed entirely or broken down a minimum of 1 foot below the surface of the final grade at topsoil elevation. If existing footings are not able to be removed entirely, a new footing shall be installed at the sign reset location according to the sign mount detail on page 28.

The cost for removal, salvage, and resetting of flat aluminum sign assemblies, including post and footing, and miscellaneous hardware shall be incidental to the contract unit price per each for “Remove, Salvage, Relocate, and Reset Traffic Sign”. When multiple signs are on the same post, they shall be measured and paid as one.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7746
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SOUTH DAKOTA
10/18/17

Revised 10/11/2017 - DAW

TABLE OF REMOVE, SALVAGE, RELOCATE, & RESET TRAFFIC SIGN

Station	Type	L/R	Qty
20+37.7	Stop Sign/4-WAY	2'L	1
0+67.7	Street Names	3'L	1
5+83.6	Street Name/Dead End	2'L	1
6+28.6	Stop Sign	3'R	1
10+77.5	Yield Sign	61'L	1
11+16.8	Street Names	63'L	1
		Total	6

PAVEMENT MARKING PAINT

Pavement marking paint shall conform to the requirements and approved products outlined in Section 980 of the Specifications.

PLACING TOPSOIL

The thickness will be approximately 6 inches within the project limits.

FERTILIZING

The Contractor shall apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer shall have a minimum guaranteed analysis of 4-6-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 3.2%, a minimum of 6% (P_2O_5) available phosphate, a minimum of 4% (K_2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer shall be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer shall have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer shall also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The all-natural slow release fertilizer shall be applied according to the manufacturer's application recommendations.

The application rate is 1,000 pounds per acre.

The all-natural slow release fertilizer shall be as shown below or an approved equal:

Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 http://www.sustane.com/

PERMANENT SEEDING

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

Type B Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk	3
Big Bluestem	Bison, Bonilla, Champ, Pawnee, Sunnyview	3
Canada Wildrye	Mandan	2
Total:		18

FIBER MULCHING

Fiber mulch shall be applied in a separate operation following permanent seeding.

Fiber mulch shall be applied at the rate of 2,000 pounds per acre.

The Contractor shall allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

All costs for the additional tackifier added to the fiber mulch including labor, equipment, and materials shall be incidental to the contract unit price per pound for "Fiber Mulching".

The fiber mulch provided shall be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

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

EROSION CONTROL BLANKET

Construction Requirements: For construction requirements, refer to Section 734 of the Specifications.

Erosion Control Blanket shall be installed as determined in the field by the Engineer. The Contractor shall install erosion control blanket according to the manufacturer's installation instructions.

The erosion control blanket provided shall be from the approved product list. The approved product list for erosion control blanket may be viewed at the following internet site: http://apps.sd.gov/Applications/HC54ApprovedProducts/main.asp

TABLE OF TYPE 2 EROSION CONTROL BLANKET

Station	to	Station	L/R	Quantity (SqYd)
2+59.46		2+82.48	L	30.5
3+07.78		3+78.95	L	94.9
4+37.80		4+53.83	R	17.6
4+49.28		4+67.20	L	18.3
4+37.8		4+52.74	R	16.0
4+49.90		4+67.19	L	16.0
8+70.07		8+83.03	L	20
			Total:	213.3

WATER FOR VEGETATION

Water for vegetation consists of applying water to seeded areas to enhance germination and/or root growth. When watering, use the following guidelines:

Immediately after seeding:

- Keep the topsoil moist but not excessively wet until the seed has germinated.
- Water a minimum of 3 days a week for 2 weeks preferably watering 2 or 3 times a day in small quantities.
- Use fine spray and low pressure to avoid topsoil wash and to prevent uncovering buried seeds.

After emergence:

- Topsoil shall be kept thoroughly moistened by sprinkling, as necessary, for 6 weeks. After the 6 week period, an inspection shall be made to determine if grass is established enough to suspend watering. Continue watering until grass has been thoroughly established.
- Never apply water at a rate faster than the topsoil can absorb.
- Water during early morning hours or early evening hours.
- Do not water when rain is forecasted for the area.
- If rainfall occurs, suspend watering according to rainfall amount.

An estimated 60 Gallons of water per square yard of seeding area was used to compute the quantity for the bid item "Water for Vegetation".

All costs for furnishing and applying the water including hauling, materials, equipment, labor, and incidentals necessary shall be paid for at the contract unit price per MGal for "Water for Vegetation".

LOW FLOW SILT FENCE

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

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

Low flow silt fence shall be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.04 for details.

TABLE OF LOW FLOW SILT FENCE

Station	L/R	Location	Quantity (Ft)
2+83.64 to 2+85.31	L	DITCH	9
4+72.72 to 4+72.75	L	DITCH	18
8+60.45 to 8+59.93	L	DITCH	13
8+67.31 to 9+30.80	R	DITCH	39
9+21.22 to Dows St	L	DITCH	42
9+29.28 to 9+48.38	R	DITCH	19
10+59.37 to 10+80.89	L	DITCH	47
		Additional Quantity:	50
		Total:	237

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 broom to sweep material back into the work area.

At a minimum, sweeping will be required:

1. When sediment is present on the roadway
2. Prior to opening any segment or roadway to traffic.

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

CONCRETE WASHOUT AREA

A concrete washout area shall be installed on the project site at a location approved by the Engineer if concrete trucks deliver concrete to the site. No washout area is necessary if all concrete trucks are going to wash out at an approved site constructed by the concrete supplier. The concrete washout area must be kept in a condition to maintain the capacity for all wasted concrete and washout water on the project.

Concrete washout will only be measured if the corresponding bid item has been included in the plans and a concrete washout area has been constructed on the project site. Measurement for the concrete washout area will be per each.

Payment for the concrete washout area will be at the contract unit price per each if specified. Payment shall be full compensation for all materials, labor, equipment, and incidentals required to install, maintain, and remove the concrete washout area.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(14)	7	46

TABLE OF PIPE QUANTITIES

Station	Offset (L/R)	Reinforced Concrete Circular 12" Cl. 3 Ft	Reinforced Concrete Circular 18" Cl. 3 Ft	Reinforced Concrete Circular 24" Cl. 3 Ft	Reinforced Concrete Circular Flared End 12" Each	Reinforced Concrete Circular Flared End 18" Each	Reinforced Concrete Circular Flared End 24" Each
2+84.46-7.53'L TO 3+05.78-7.66'L		22			2		
4+00.61-7.70'L TO 4+41.85-5.86'L			42			1	
4+44.00-3.52'L TO 4+46.79-7.64'R		12			1		
4+44.22-6.12'L TO 4+49.62-7.87'L			6			1	
8+90.13-7.66'L TO 8+96.87-4.04'L				8			1
Totals		34	48	8	3	2	1

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
G20-2	End Road Work	2	36” x 18”	4.5	9
R1-1	Stop	2	30” x 30”	5.2	10.4
R1-2	Yield	1	36” x 36”	3.9	3.9
R9-9	Sidewalk Closed	2	24” x 12”	2	4
R9-11	Sidewalk Closed Ahead	2	24” x 18”	3	6
W3-4	Be Prepared to Stop	2	48” x 48”	16	32
W20-1	Road Work Ahead	2	48” x 48”	16	32
W20-7	Flagger	2	48” x 48”	16	32
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			129.3

PLACEMENT OF TRAFFIC CONTROL SIGNS DURING CONSTRUCTION

A temporary stop sign (R1-1) shall be placed on the west side of Main Avenue at the intersection of Main Avenue and Dows Street. A Temporary Stop Sign (R1-1) shall also be placed on the east side of Leslie Drive at the intersection of Leslie Drive and Dows Street.

A temporary yield sign (R1-2) shall be placed on the north side of Jacob Drive at the intersection of Jacob Drive and Lacy Avenue.

All other Traffic Control signs shall be placed according to Standard Plates.

HORIZONTAL ALIGNMENT DATA

CL – Main Ave

Type	Station			Northing	Easting
POB/PC	20+00.00			15888027.15	2300463.72
PI	20+24.00	R = 25.026	Delta = 87° 36′ 03″	15888027.98	2300487.71
PT	20+38.26			15888051.98	2300487.89
		TL = 77.333	N2° 25' 77"W		
PI	21+15.60			15888129.24	2300484.63
		TL = 3.941	N33° 19' 13"W		
PI	21+19.54			15888132.53	2300482.46
		TL = 26.815	N26° 07' 11"W		
PI	21+46.35			15888156.61	2300470.66
		TL = 62.082	N3° 02′ 08″W		
POE	22+08.43			15888218.60	2300467.37

CL - Dows St Through Lacy Ave

Type	Station			Northing	Easting
POB	0+00.00			15887986.40	2300417.55
		TL = 124.539	N87° 43′ 47″E		
PI	1+24.54			15887991.35	2300541.99
		TL = 21.547	S76° 50′ 57″E		
PI	1+46.09			15887986.45	2300562.97
		TL = 252.844	N87° 35′ 19″E		
PI	3+98.93			15887997.09	2300815.59
		TL = 45.117	N87° 35′ 19″E		
PI	4+44.05			15887998.98	2300860.67
		TL = 18.984	S71° 57′ 12″E		
PI	4+63.03			15887993.10	2300878.72
		TL = 111.873	N87° 44′ 34″E		
PI	5+74.90			15887997.51	2300990.51
		TL = 8.73	N2° 20′ 18″W		
PI	5+83.63			15888006.23	2300990.15
		TL = 6.727	N87° 39′ 42″E		
PI	5+90.36			15888006.51	2300996.87
		TL = 37.245	S88° 58′ 56″E		
PI	6+27.61			15888005.84	2301034.11
		TL = 14.106	N87° 39′ 42″E		
PI	6+41.71			15888006.42	231048.21
		TL = 10.398	N87° 43′ 15″E		
PI	6+52.11			15888006.83	2301058.59
		TL = 234.218	N87° 39′ 42″E		
PI	8+86.33			15888016.39	2301292.62
		TL = 10.540	N69° 35′ 45″E		
PI	8+96.87			15888020.06	2301302.50
		TL = 9.338	N87° 39′ 42″E		
PI	9+06.20			15888020.44	2301311.83
		TL = 53.977	S1° 09′ 28″E		
PC	9+60.18			15887966.48	2301312.92
PI	10+08.49	R = 429.467	Delta = 12° 50′ 10″	15887918.18	2301313.89
PT/PC	10+56.40			15887871.30	2301325.57
PI	10+98.07	R = 370.477	Delta = 12° 50′ 12″	15887830.86	2301335.65
PT	11+39.40			15887789.20	2301336.45
		TL = 22.720	S1° 09′ 27″E		
PI	11+62.12			15887766.48	2301336.95
		TL = 11.237	S4° 46′ 03″E		
PI	11+73.35			15887755.28	2301336.02
		TL = 30.630	S1° 09′ 52″E		
PI	12+03.98			05887724.66	2301336.64
		TL = 37.830	S0° 29′ 12″E		
POE	12+41.81			15887686.83	2301336.96

Control Data

Point	Station & Offset	Description	Northing	Easting	Elevation
100	12+30-50′L	5/8″ Rebar	15887699	2301386	1532.103
101	9+43-81′L	5/8″ Rebar	15887985	2301394	1521.874
102	7+56-100′L	5/8″ Rebar	15888111	2301159	1515.903
103	4+31-48′L	5/8″ Rebar	15888046	2300846	1519.023
104	20+15-4.8′L	5/8″ Rebar	15888036	2300475	1519.344

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The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System. South Zone (NAD 83/CONUS); Geoid 12A; SF = 1.0001566985

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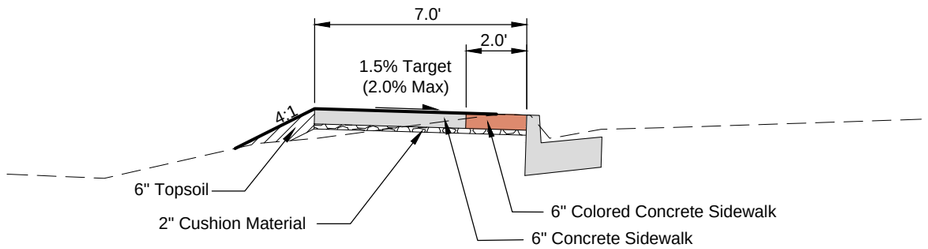
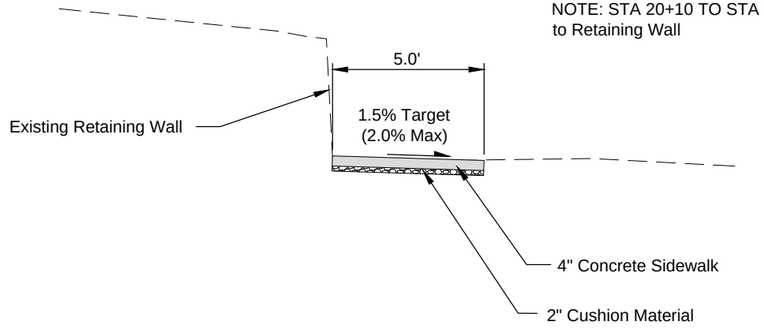
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR (14)	9	46

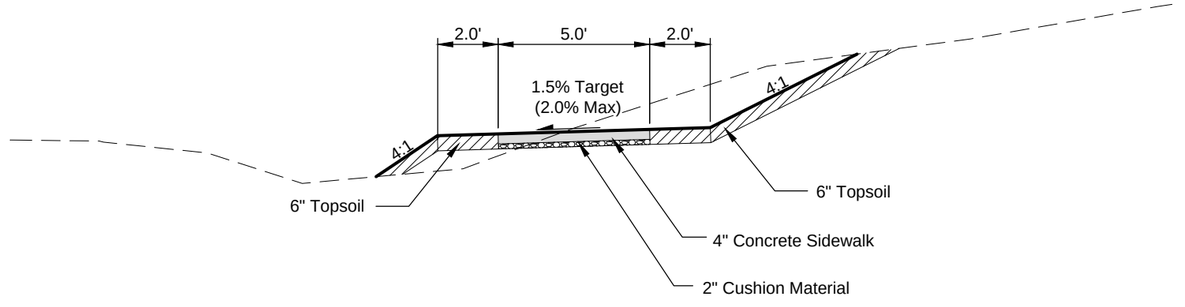


TYPICAL SECTION - 20+20 TO 21+10 (N MAIN AVE)

NOTE: STA 20+10 TO STA 20+46 Transition from Back of Curb to Retaining Wall



TYPICAL SECTION - 20+10 TO 21+65 (N MAIN AVE)



TYPICAL SECTION - 0+00 TO 9+00 (DOWS ST)

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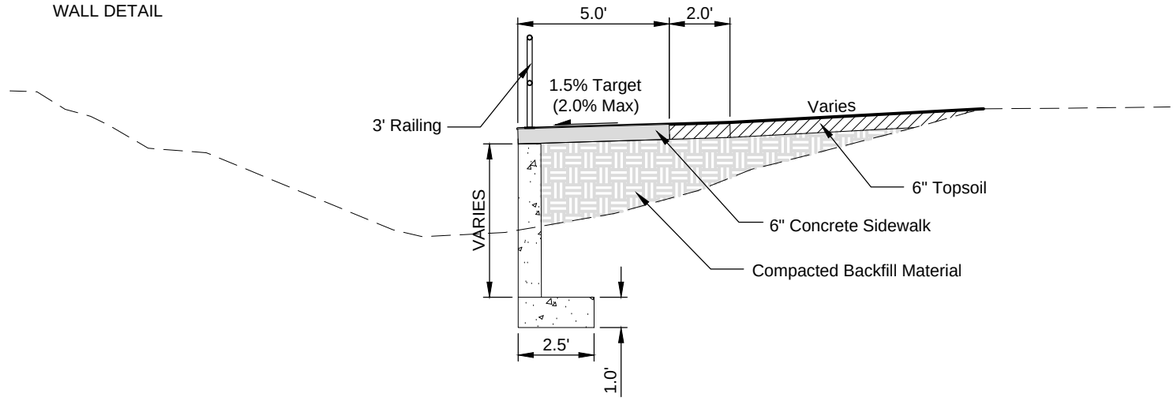
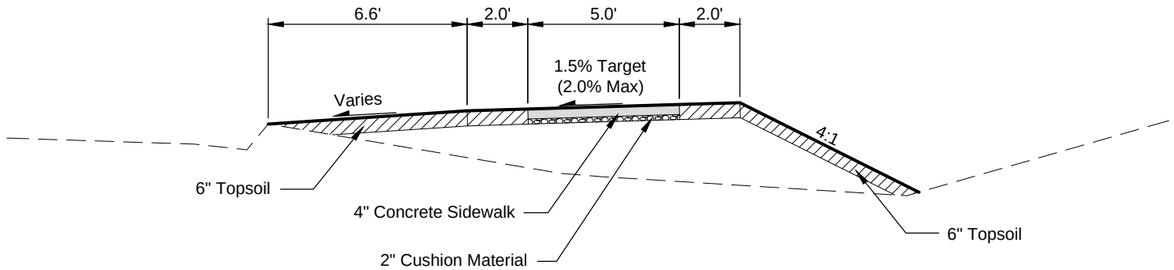
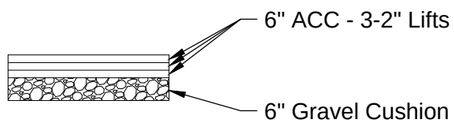
NOTE: SEE RETAINING WALL DETAIL



TYPICAL SECTION - 3+77 TO 4+07 (RETAINING WALL)



TYPICAL SECTION - 9+00 TO 11+73 (END)



TYPICAL SECTION - ASPHALT

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LEGEND

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR (14)	11	46

- Anchor
- Antenna
- Approach
- Assumed Corner
- Azimuth Marker
- BBQ Grill/ Fireplace
- Bearing Tree
- Bench Mark
- Box Culvert
- Bridge
- Brush
- Buildings
- Bulk Tank
- Cattle Guard
- Cemetery
- Centerline
- Cistern
- Clothes Line
- Commercial Sign Double Face
- Commercial Sign One Post
- Commercial Sign Overhead
- Commercial Sign Two Post
- Concrete Symbol
- Creek Edge
- Curb/Gutter
- Curb
- Dam Grade/Dike/Levee
- Deck Edge
- Ditch Block
- Doorway Threshold
- Drainage Profile
- Drop Inlet
- Edge Of Asphalt
- Edge Of Concrete
- Edge Of Gravel
- Edge Of Other
- Edge Of Shoulder
- Elec. Trans./Power Jct. Box
- Environmental Sensitive Site —ESS—
- Fence Barbwire
- Fence Chainlink
- Fence Electric
- Fence Misc.
- Fence Rock
- Fence Snow
- Fence Wood
- Fence Woven
- Fire Hydrant
- Flag Pole
- Flower Bed
- Gas Valve Or Meter
- Gas Pump Island
- Grain Bin
- Guardrail
- Guide Sign One Post
- Guide Sign Two Post
- Gutter
- Guy Pole
- Haystack
- Hedge
- Highway R.O.W. Marker
- Interstate Close Gate
- Iron Pin
- Irrigation Ditch
- Lake Edge
- Lawn Sprinkler
- Mailbox
- Manhole Electric
- Manhole Gas
- Manhole Misc
- Manhole Sanitary Sewer
- Manhole Storm Sewer
- Manhole Telephone
- Manhole Water
- Merry-Go-Round
- Microwave Radio Tower
- Misc. Line
- Misc. Property Corner
- Misc. Post
- Overhang Or Encroachment
- Overhead Utility Line — OH —
- Parking Meter
- Pipe With End Section
- Pipe With Headwall
- Pipe Without End Section
- Playground Slide
- Playground Swing
- Power And Light Pole
- Power And Telephone Pole
- Power Meter
- Power Pole
- Power Pole And Transformer
- Power Tower Structure
- Propane Tank
- Property Pipe
- Property Pipe With Cap
- Property Stone
- Public Telephone
- Railroad Crossing Signal
- Railroad Milepost Marker
- Railroad Profile
- Railroad R.O.W. Marker
- Railroad Signs
- Railroad Switch
- Railroad Track
- Railroad Trestle
- Rebar
- Rebar With Cap
- Reference Mark
- Regulatory Sign One Post
- Regulatory Sign Two Post
- Retaining Wall
- Riprap
- River Edge
- Rock And Wire Baskets
- Rockpiles
- Satellite Dish
- Septic Tank
- Shrub Tree
- Sidewalk
- Sign Face
- Sign Post
- Slough Or Marsh
- Spring
- Stream Gauge
- Street Marker
- Subsurface Utility Exploration Test Hole
- Telephone Fiber Optics — T/F —
- Telephone Junction Box
- Telephone Pole
- Television Cable Jct Box
- Television Tower
- Test Wells/Bore Holes
- Traffic Signal
- Trash Barrel
- Tree Belt
- Tree Coniferous
- Tree Deciduous
- Tree Stumps
- Triangulation Station
- Underground Electric Line — P —
- Underground Gas Line — G —
- Underground High Pressure Gas Line — HG —
- Underground Sanitary Sewer — S —
- Underground Storm Sewer — S —
- Underground Tank
- Underground Telephone Line — T —
- Underground Television Cable — TV —
- Underground Water Line — W —
- Warning Sign One Post
- Warning Sign Two Post
- Water Fountain
- Water Hydrant
- Water Meter
- Water Tower
- Water Valve
- Water Well
- Weir Rock
- Windmill
- Wingwall
- Witness Corner

- State and National Line
- County Line
- Section Line
- Quarter Line
- Sixteenth Line
- Property Line
- Construction Line
- R. O. W. Line
- New R. O. W. Line
- Cut and Fill Limits
- Control of Access
- New Control of Access
- Proposed ROW (After Property Disposal)

- Drainage Arrow

- Remove Concrete Pavement
- Remove Concrete Driveway Pavement
- Remove Asphalt Concrete Pavement
- Remove Concrete Sidewalk
- Remove Concrete Approach Pavement
- Remove Concrete Median Pavement
- Remove Concrete Curb
- Remove Concrete Curb and Gutter
- Remove Concrete Gutter

- Detectable Warning
- Pedestrian Push Button Pole and 30" x 48" Clear Space with 1.5% slope

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10/18/17

Plot Scale - 1:200
Plotted From - tmpl14419
File - ...\rdMiscTestLegendLegend.dgn

PROJECT	SHEET	TOTAL SHEETS
P TAPR(14)	12	46

CONSTRUCTION AND DRAINAGE EASEMENTS

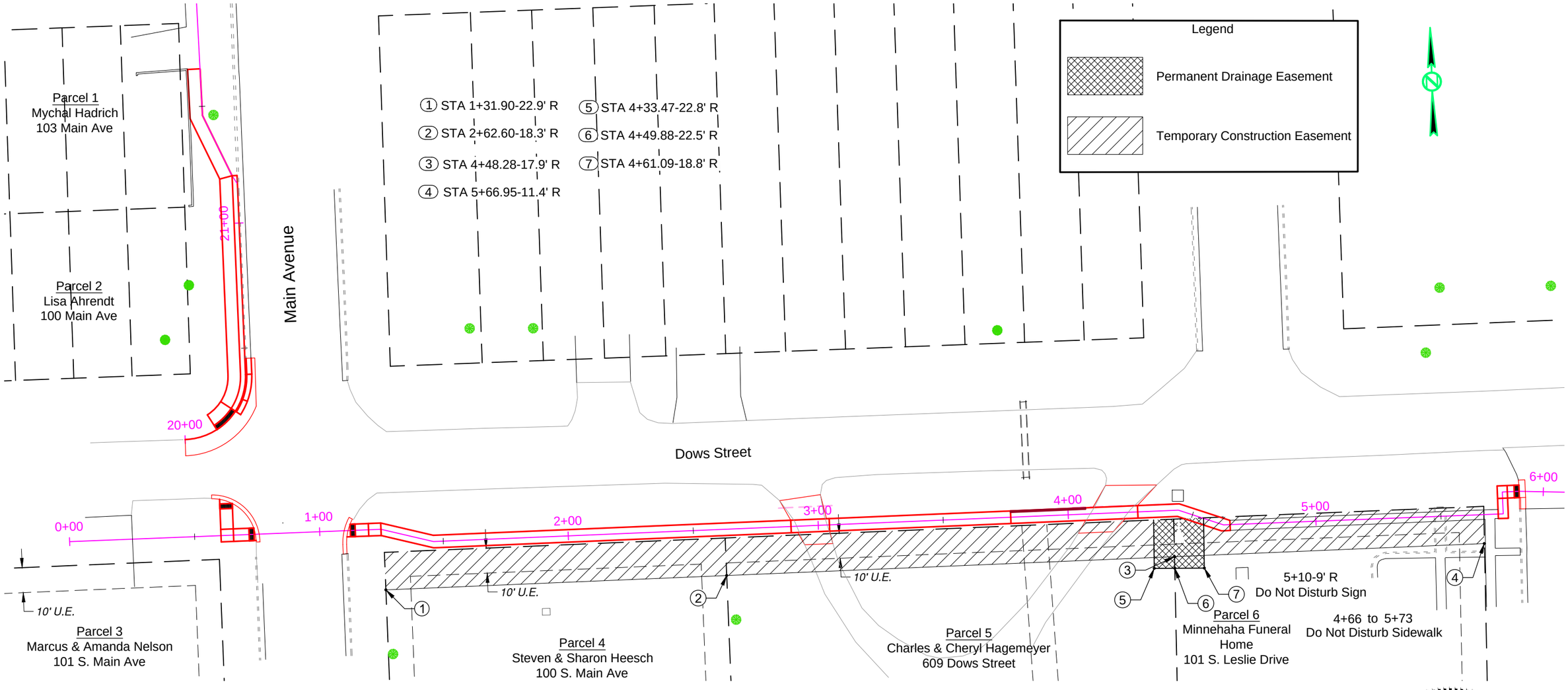

Table of Easements

Parcel Number	Station to Station			Side	Type	Purpose	Area Req'd (Sq Ft)	Owner	Legal Description
4	1+31.90	To	2+62.60	RT	Temporary	Construction	2012	Steven & Sharon Heesch	Lot 2, Block 1, Flanagan's Tracts to the City of Garretson, Minnehaha County, South Dakota
5	2+62.60	To	4+48.28	RT	Temporary	Construction	2646	Charles & Cheryl Hagemeyer	Tract 1 of Hagemeyer's Addition to the City of Garretson, Minnehaha County, South Dakota
6	4+48.28	To	5+66.95	RT	Temporary	Construction	1831	Minnehaha Funeral Home	Lot 1, Block 1, Johnson's Addition to the City of Garretson, Minnehaha County, South Dakota
5	4+33.47	TO	4+49.88	RT	Permanent	Drainage	158	Charles & Cheryl Hagemeyer	Tract 1 of Hagemeyer's Addition to the City of Garretson, Minnehaha County, South Dakota
6	4+49.88	To	4+61.09	RT	Permanent	Drainage	235	Minnehaha Funeral Home	Lot 1, Block 1, Johnson's Addition to the City of Garretson, Minnehaha County, South Dakota

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PLOT DATE: 10/18/2017 11:24 AM Derek Westenberg DOT.ctb

PROJECT	SHEET	TOTAL SHEETS
P TAPR(14)	13	46

CONSTRUCTION AND DRAINAGE EASEMENTS

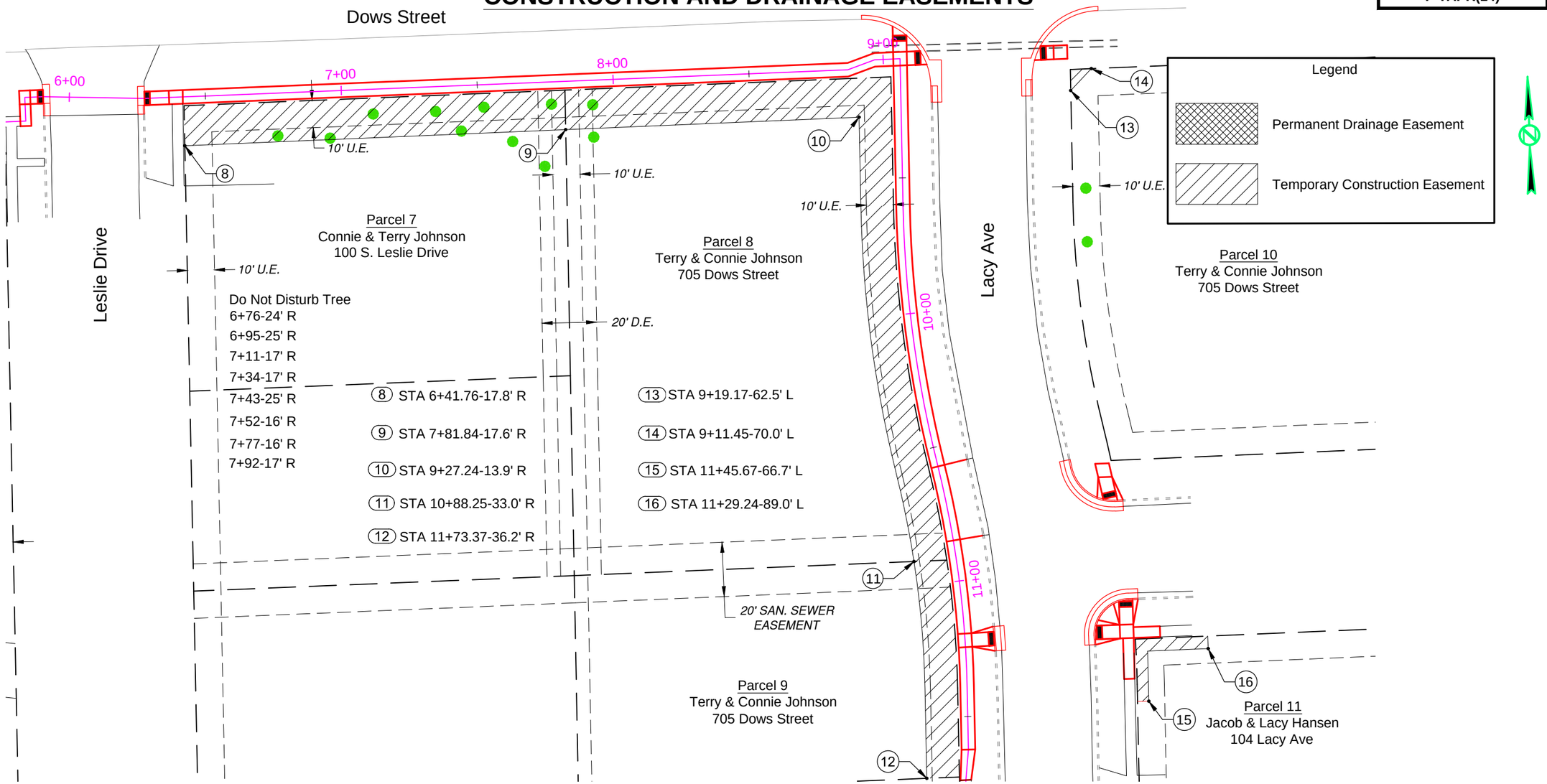

Table of Easements

Parcel Number	Station to Station			Side	Type	Purpose	Area Req'd (Sq Ft)	Owner	Legal Description
7	6+41.76	To	7+81.84	RT	Temporary	Construction	2016	Connie & Terry Johnson	Lot 1C, Block 2, Johnson's 2nd Addition to the City of Garretson, Minnehaha County, South Dakota
8	7+81.84	To	10+88.25	RT	Temporary	Construction	4308	Terry & Connie Johnson	Flanagan's Tract 10 of Johnson's 2nd Addition to the City of Garretson, Minnehaha County, South Dakota
9	10+88.25	To	11+73.37	RT	Temporary	Construction	2612	Terry & Connie Johnson	Lot 9, Block 2, Johnson's 2nd Addition to the City of Garretson, Minnehaha County, South Dakota
10	9+19.17	To	9+11.45	LT	Temporary	Construction	30	Terry & Connie Johnson	Flanagan's Tract 10 to the City of Garretson, Minnehaha County, South Dakota
11	11+45.67	To	11+29.24	LT	Temporary	Construction	200	Jacob & Lacy Hansen	Lot 1, Block 4, Johnson's 2nd Addition to the City of Garretson, Minnehaha County, South Dakota

REGISTERED PROFESSIONAL ENGINEER
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infrastructure design group, inc.

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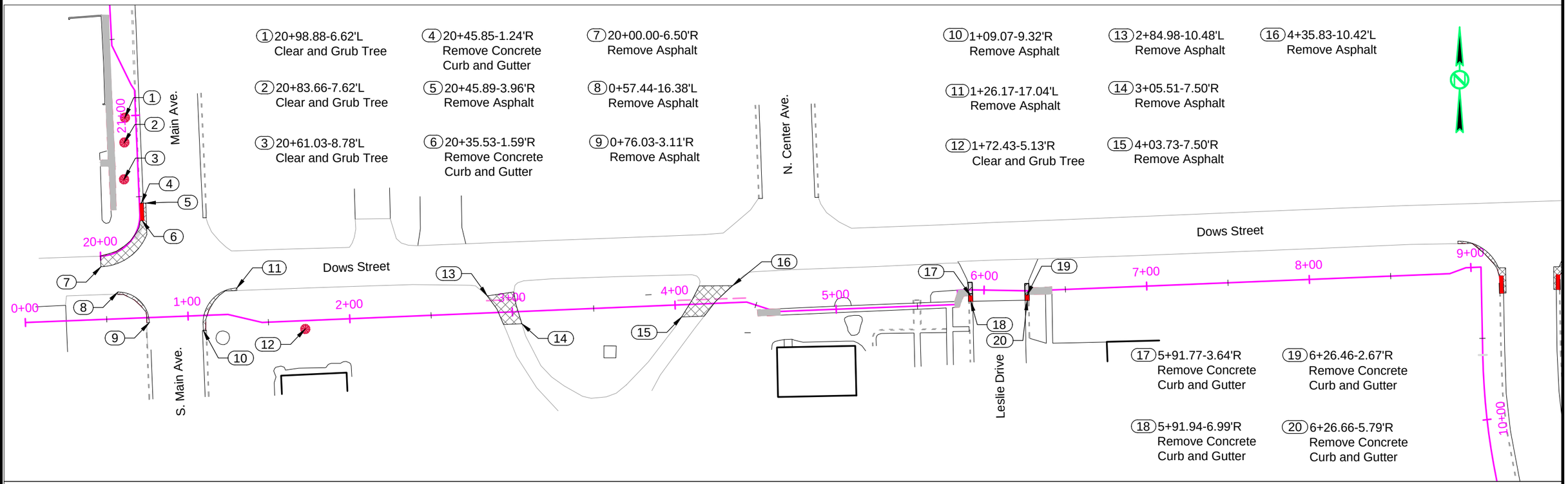
REMOVAL PLAN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR(14)	14	46



1 20+98.88-6.62'L
Clear and Grub Tree

2 20+83.66-7.62'L
Clear and Grub Tree

3 20+61.03-8.78'L
Clear and Grub Tree

4 20+45.85-1.24'R
Remove Concrete Curb and Gutter

5 20+45.89-3.96'R
Remove Asphalt

6 20+35.53-1.59'R
Remove Concrete Curb and Gutter

7 20+00.00-6.50'R
Remove Asphalt

8 0+57.44-16.38'L
Remove Asphalt

9 0+76.03-3.11'R
Remove Asphalt

10 1+09.07-9.32'R
Remove Asphalt

11 1+26.17-17.04'L
Remove Asphalt

12 1+72.43-5.13'R
Clear and Grub Tree

13 2+84.98-10.48'L
Remove Asphalt

14 3+05.51-7.50'R
Remove Asphalt

15 4+03.73-7.50'R
Remove Asphalt

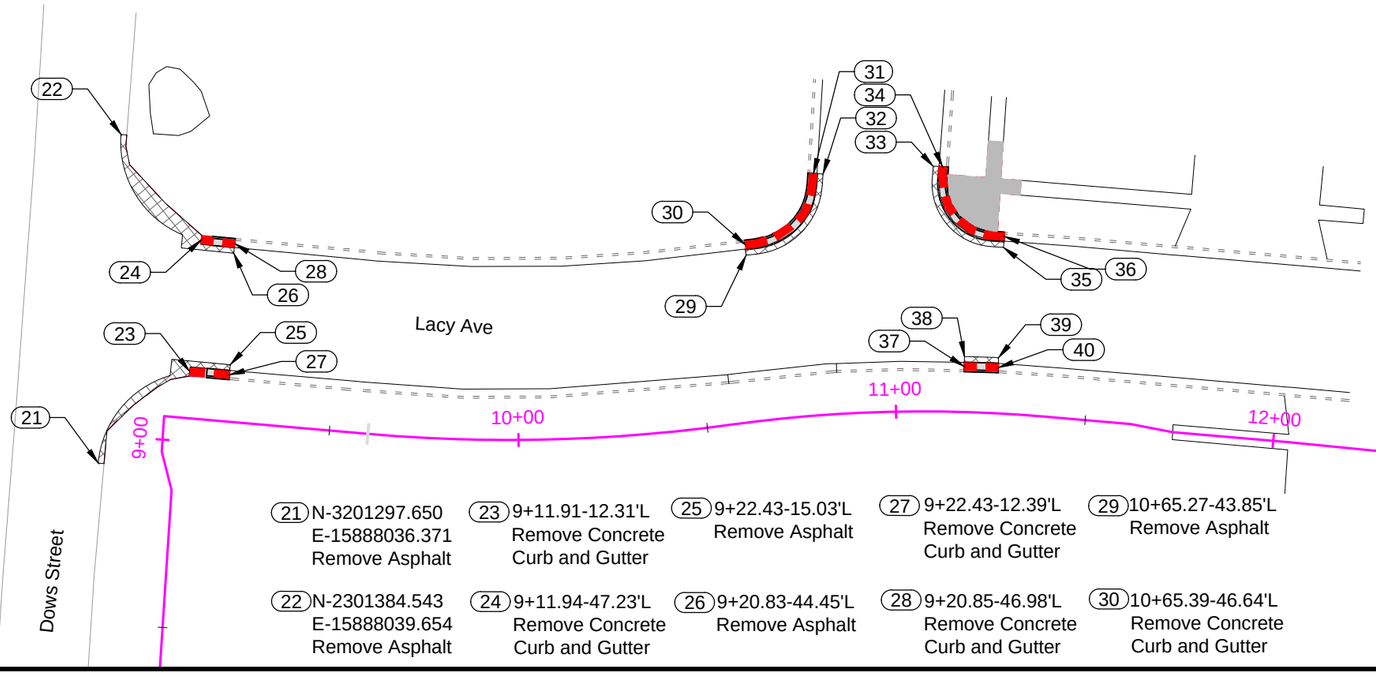
16 4+35.83-10.42'L
Remove Asphalt

17 5+91.77-3.64'R
Remove Concrete Curb and Gutter

18 5+91.94-6.99'R
Remove Concrete Curb and Gutter

19 6+26.46-2.67'R
Remove Concrete Curb and Gutter

20 6+26.66-5.79'R
Remove Concrete Curb and Gutter



21 N-3201297.650
E-15888036.371
Remove Asphalt

22 N-2301384.543
E-15888039.654
Remove Asphalt

23 9+11.91-12.31'L
Remove Concrete Curb and Gutter

24 9+11.94-47.23'L
Remove Concrete Curb and Gutter

25 9+22.43-15.03'L
Remove Asphalt

26 9+20.83-44.45'L
Remove Asphalt

27 9+22.43-12.39'L
Remove Concrete Curb and Gutter

28 9+20.85-46.98'L
Remove Concrete Curb and Gutter

29 10+65.27-43.85'L
Remove Asphalt

30 10+65.39-46.64'L
Remove Concrete Curb and Gutter

31 10+82.44-63.76'L
Remove Concrete Curb and Gutter

32 10+84.60-63.45'L
Remove Asphalt

33 11+09.44-64.76'L
Remove Asphalt

34 11+11.54-64.59'L
Remove Concrete Curb and Gutter

35 11+26.16-43.79'L
Remove Asphalt

36 11+26.24-46.74'L
Remove Concrete Curb and Gutter

37 11+17.66-12.00'L
Remove Concrete Curb and Gutter

38 11+17.67-14.60'L
Remove Asphalt

39 11+26.32-14.72'L
Remove Asphalt

40 11+26.38-12.06'L
Remove Concrete Curb and Gutter

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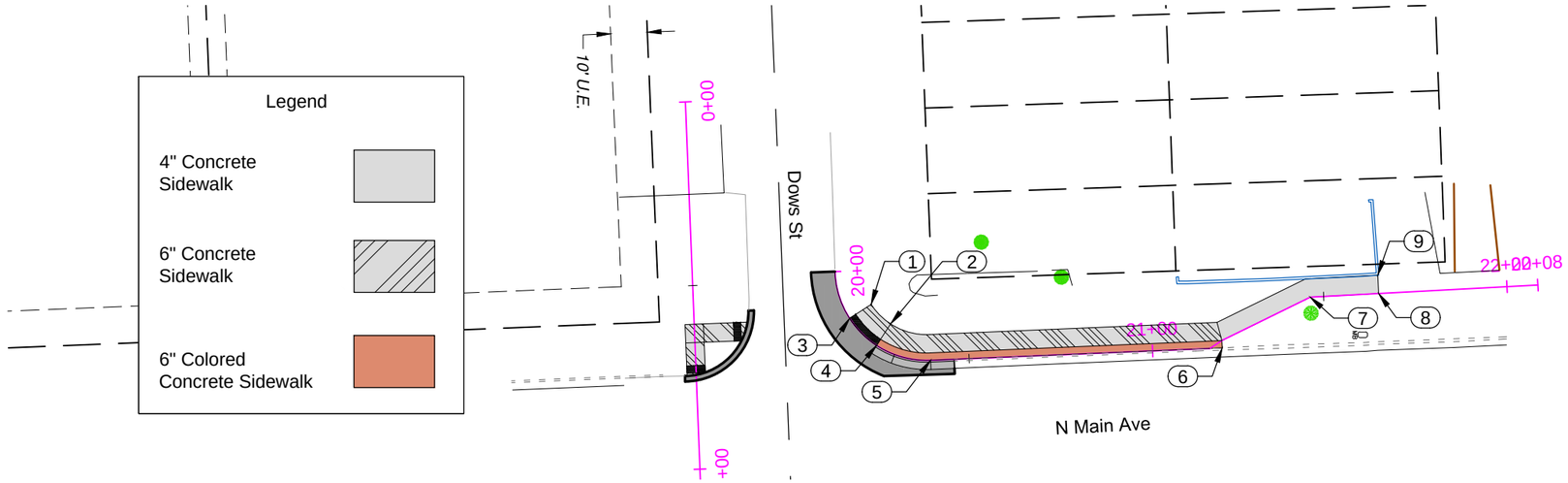
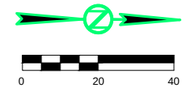
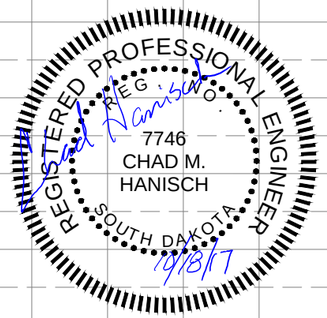
N. MAIN AVENUE SIDEWALK

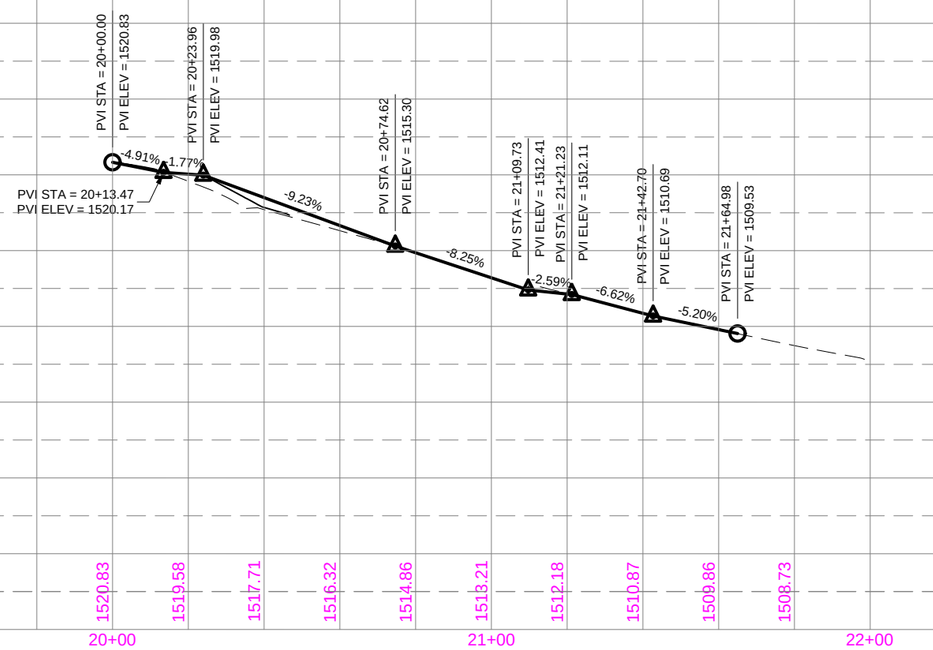
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR(14)	15	46





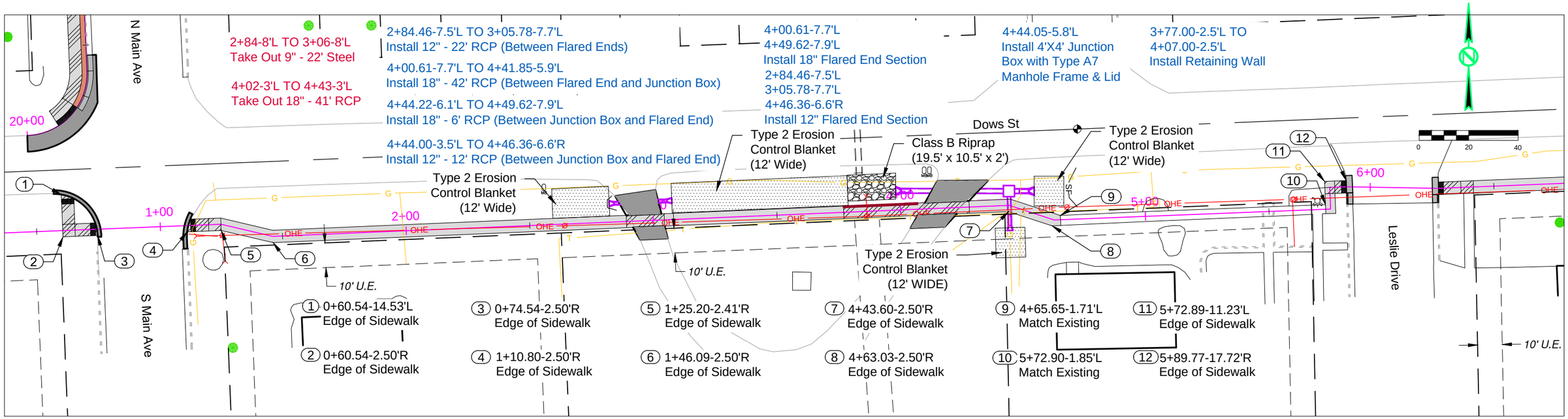
1. 20+13.46-7.01'L
   Edge of Sidewalk
2. 20+23.95-7.01'L
   Edge of Sidewalk
3. 20+13.47-0.00'
   Edge of Sidewalk
4. 20+23.96-0.01'L
   Edge of Sidewalk
5. 20+39.48-0.00'
   Back of Curb
6. 21+18.52-1.72'R
   Back of Curb
7. 21+46.35-0.00'
   Edge of Sidewalk
8. 21+65.02-0.00'
   Match Existing
9. 21+65.03-5.00'L
   Match Existing

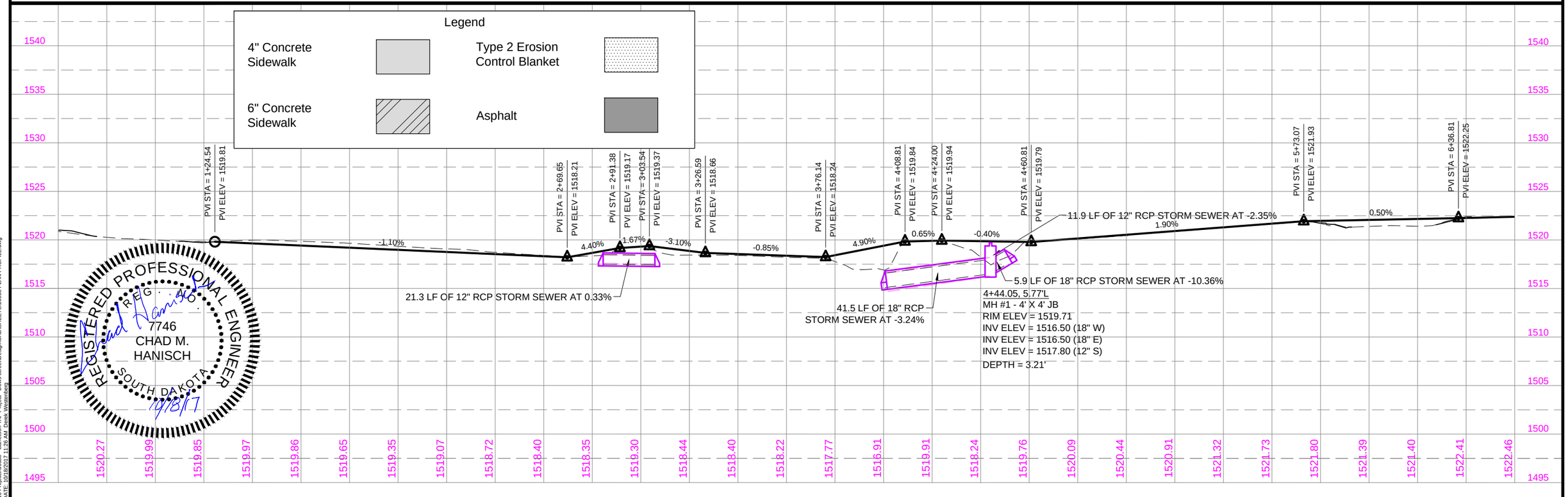




STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR(14)	16	46

DOWS STREET SIDEWALK





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SOUTH DAKOTA
10/18/17

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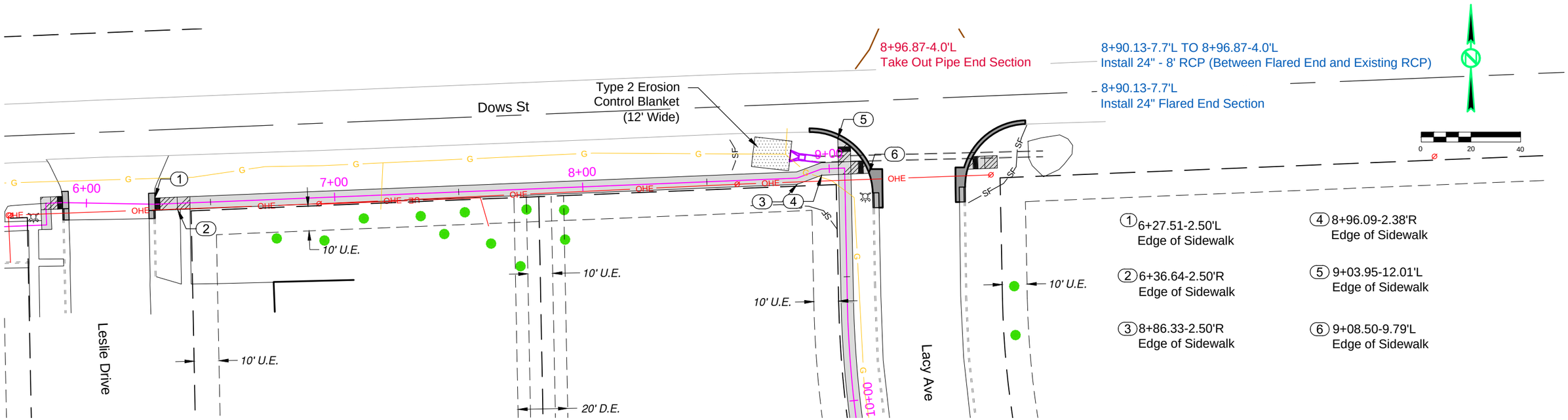
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR(14)	17	46

DOWS STREET SIDEWALK



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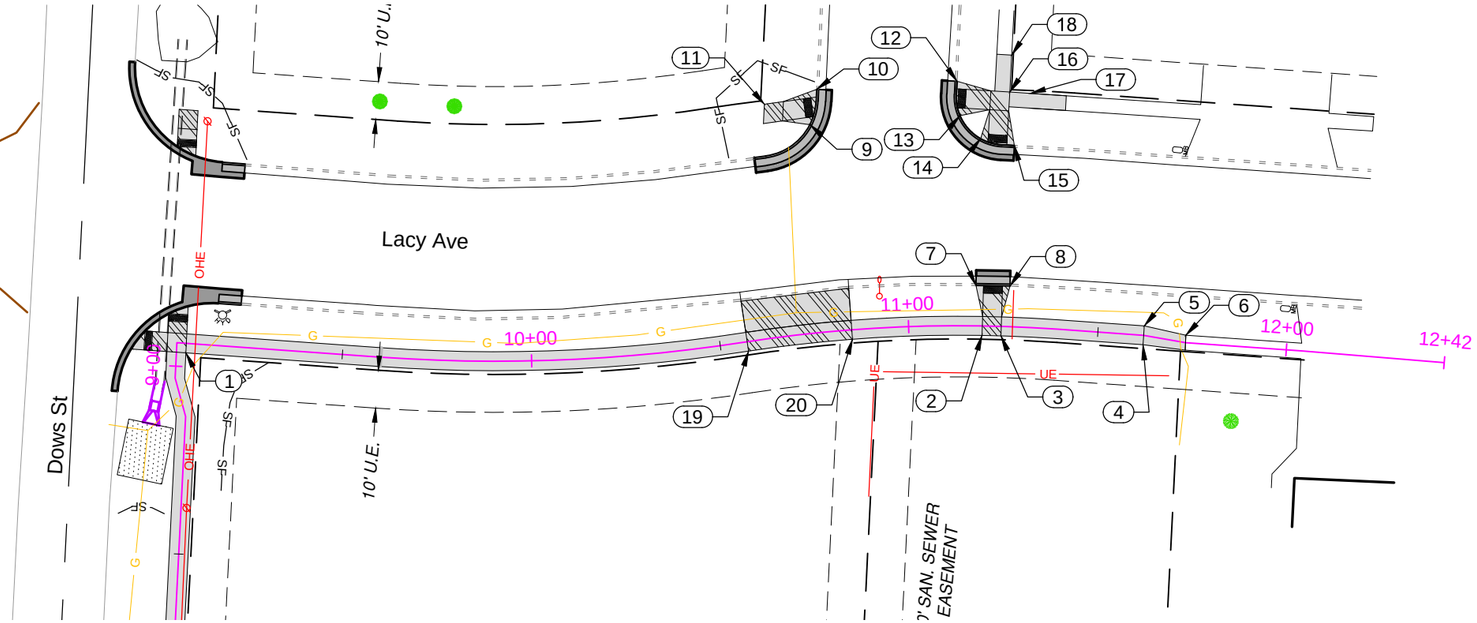
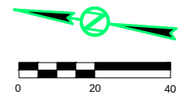
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR(14)	18	46

LACY AVENUE SIDEWALK

1	9+08.76-2.50'R Edge of Sidewalk	11	10+69.11-61.50'L End 2' Taper
2	11+19.41-2.50'R Edge of Sidewalk	12	11+12.84-64.53'L Begin 2' Taper
3	11+24.46-2.50'R Edge of Sidewalk	13	11+13.53-55.47'L End 2' Taper
4	11+62.38-2.49'R Edge of Sidewalk	14	11+18.32-49.42'L Begin 2' Taper
5	11+62.12-2.50'L Edge of Sidewalk	15	11+26.23-47.83'L End 2' Taper
6	11+73.09-1.96'L Match Existing	16	11+24.76-61.91'L Edge of Sidewalk
7	11+17.66-10.64'L Begin 2' Taper	17	11+29.42-61.75'L Match Existing
8	11+26.41-10.72'L End 2' Taper	18	11+24.93-71.66'L Match Existing
9	10+78.97-54.85'L Begin 2' Taper	19	10+57.16-2.50'R Edge of Sidewalk
10	10+81.22-63.99'L End 2' Taper	20	10+84.98-2.50'R Edge of Sidewalk





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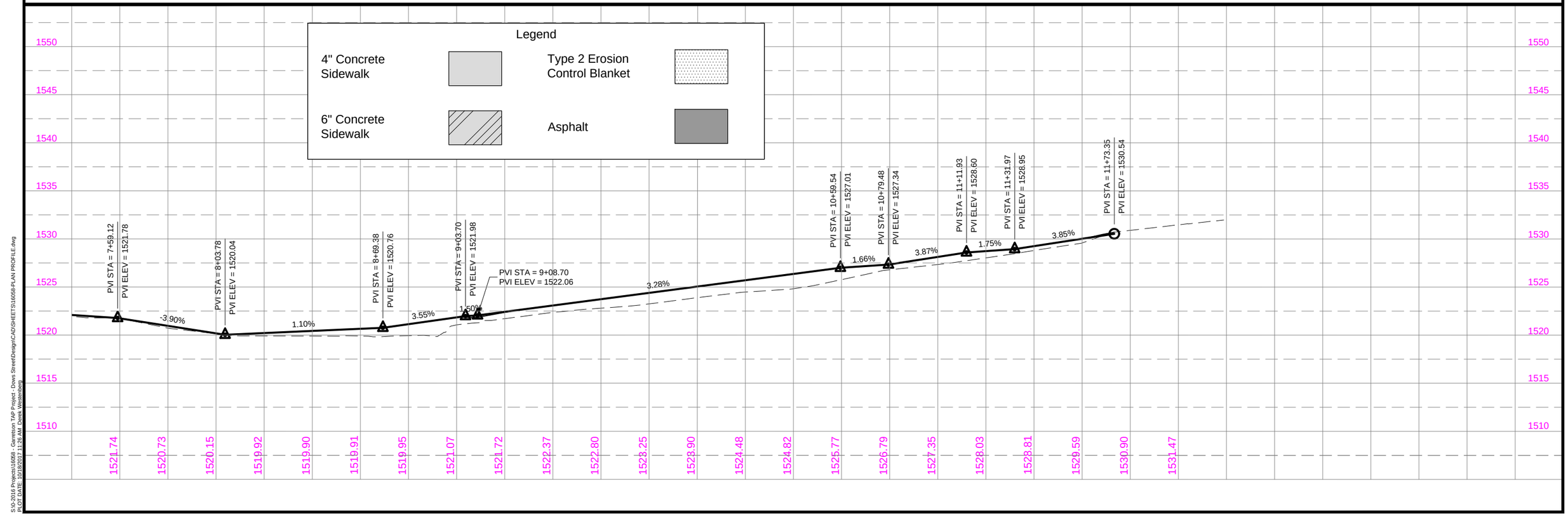

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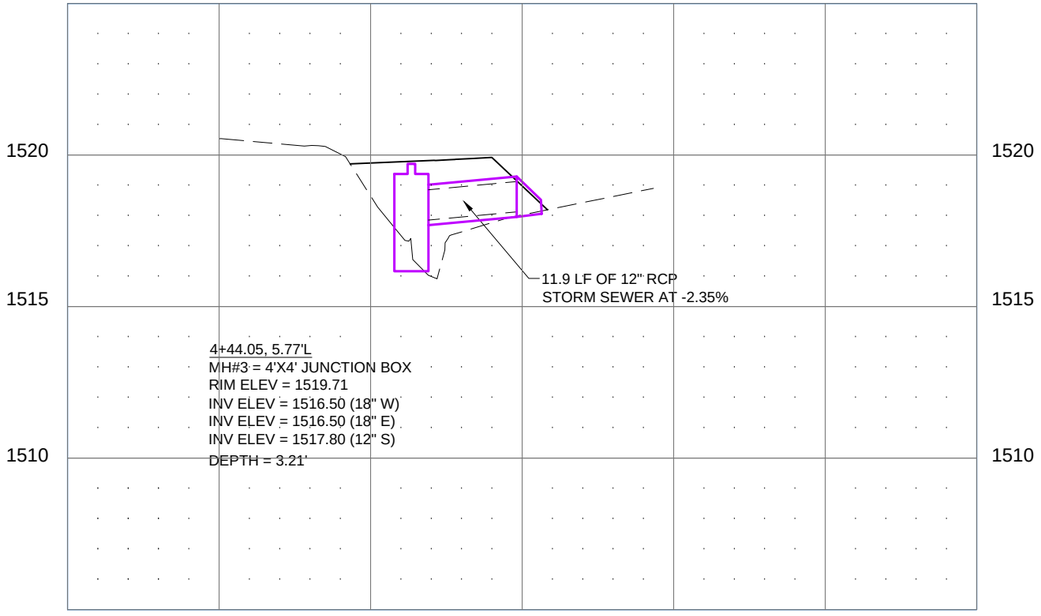
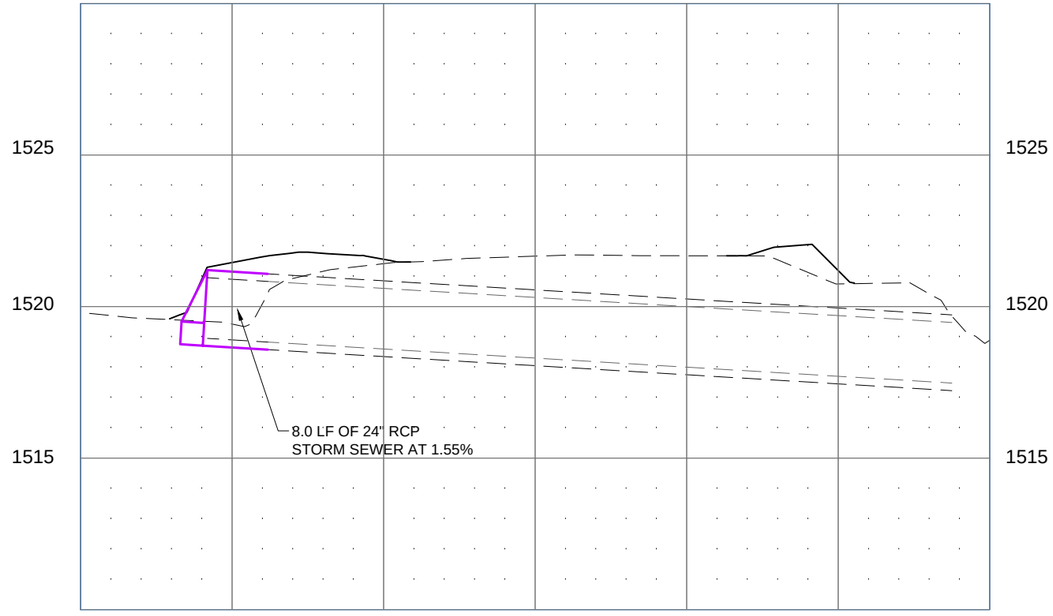
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR(14)	19	46

STORM STA 4+44



STORM AT LACY AVE



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10/18/17

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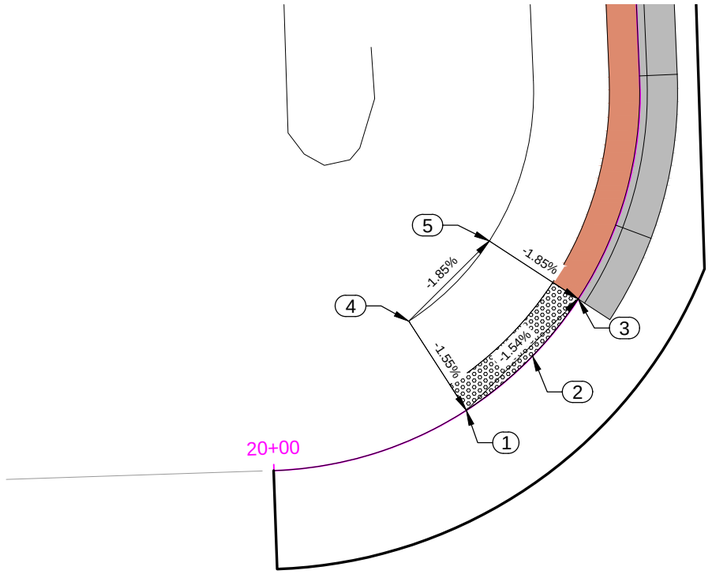
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR(14)	20	46

CURB RAMP LAYOUT

DOWS STREET & MAIN AVENUE INTERSECTION

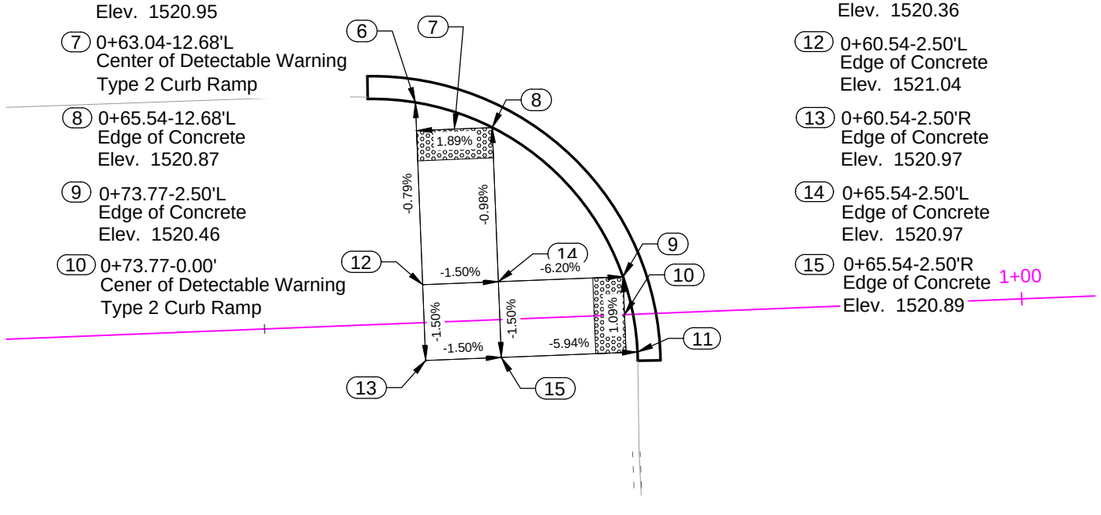
NW QUADRANT



1. 20+13.47-0.01'L
   Edge of Concrete
   Elev. 1520.14
2. 20+19.13-0.00'
   Center of Detectable Warning
   for Mod Type 3 Curb Ramp
3. 20+23.96-0.00'
   Edge of Concrete
   Elev. 1519.98
4. 20+13.46-7.01'L
   Edge of Concrete
   Elev. 1520.25
5. 20+23.95-7.01'L
   Edge of Concrete
   Elev. 1520.11

SW QUADRANT

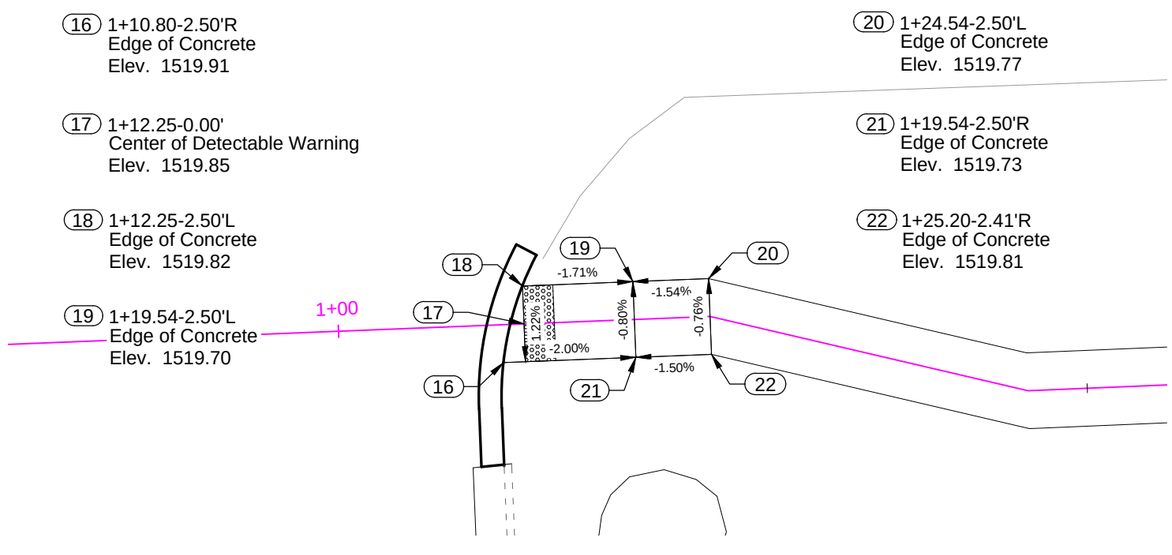
6. 0+60.54-14.53'L
   Edge of Concrete
   Elev. 1520.95
7. 0+63.04-12.68'L
   Center of Detectable Warning
   Type 2 Curb Ramp
8. 0+65.54-12.68'L
   Edge of Concrete
   Elev. 1520.87
9. 0+73.77-2.50'L
   Edge of Concrete
   Elev. 1520.46
10. 0+73.77-0.00'
    Cener of Detectable Warning
    Type 2 Curb Ramp



11. 0+74.53-2.50'R
    Edge of Concrete
    Elev. 1520.36
12. 0+60.54-2.50'L
    Edge of Concrete
    Elev. 1521.04
13. 0+60.54-2.50'R
    Edge of Concrete
    Elev. 1520.97
14. 0+65.54-2.50'L
    Edge of Concrete
    Elev. 1520.97
15. 0+65.54-2.50'R
    Edge of Concrete
    Elev. 1520.89

SE QUADRANT

16. 1+10.80-2.50'R
    Edge of Concrete
    Elev. 1519.91
17. 1+12.25-0.00'
    Center of Detectable Warning
    Elev. 1519.85
18. 1+12.25-2.50'L
    Edge of Concrete
    Elev. 1519.82
19. 1+19.54-2.50'L
    Edge of Concrete
    Elev. 1519.70

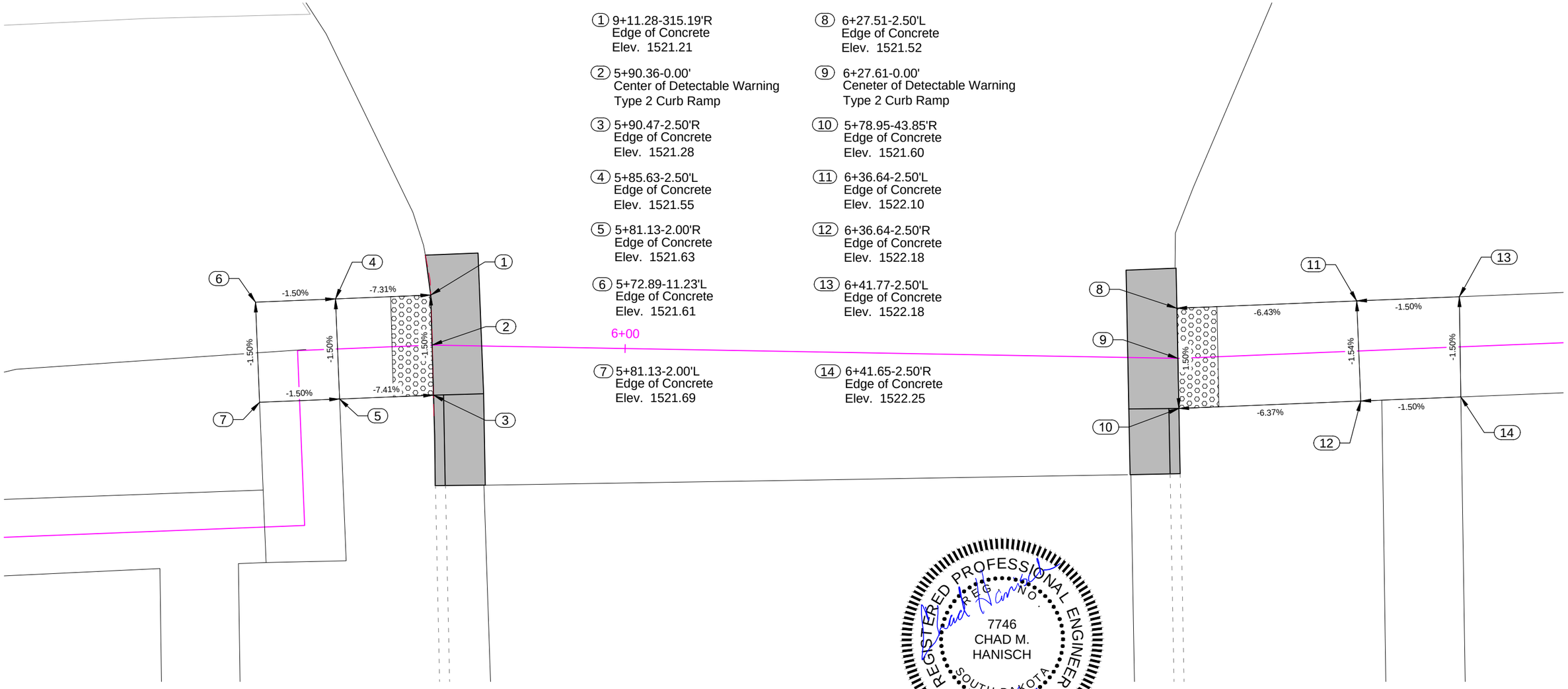


20. 1+24.54-2.50'L
    Edge of Concrete
    Elev. 1519.77
21. 1+19.54-2.50'R
    Edge of Concrete
    Elev. 1519.73
22. 1+25.20-2.41'R
    Edge of Concrete
    Elev. 1519.81

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR(14)	21	46

CURB RAMP LAYOUT

DOWS STREET & LESLIE DRIVE INTERSECTION



1 9+11.28-315.19'R
Edge of Concrete
Elev. 1521.21

2 5+90.36-0.00'
Center of Detectable Warning
Type 2 Curb Ramp

3 5+90.47-2.50'R
Edge of Concrete
Elev. 1521.28

4 5+85.63-2.50'L
Edge of Concrete
Elev. 1521.55

5 5+81.13-2.00'R
Edge of Concrete
Elev. 1521.63

6 5+72.89-11.23'L
Edge of Concrete
Elev. 1521.61

7 5+81.13-2.00'L
Edge of Concrete
Elev. 1521.69

8 6+27.51-2.50'L
Edge of Concrete
Elev. 1521.52

9 6+27.61-0.00'
Ceneter of Detectable Warning
Type 2 Curb Ramp

10 5+78.95-43.85'R
Edge of Concrete
Elev. 1521.60

11 6+36.64-2.50'L
Edge of Concrete
Elev. 1522.10

12 6+36.64-2.50'R
Edge of Concrete
Elev. 1522.18

13 6+41.77-2.50'L
Edge of Concrete
Elev. 1522.18

14 6+41.65-2.50'R
Edge of Concrete
Elev. 1522.25

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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR(14)	22	46

CURB RAMP LAYOUT

DOWS STREET & LACY AVENUE INTERSECTION

(1) 9+03.95-12.01'L
Edge of Concrete
Elev. 1521.28

(2) N 15888029.0173
E 2301311.6532
Center of Detectable Warning
for Mod Type 2 Curb Ramp

(3) N 15888029.0704
E 2301314.1527
Edge of Concrete
Elev. 1521.38

(4) N 15888023.2504
E 2301319.2564
Edge of Concrete
Elev. 1521.47

(5) N 15888020.7525
E 2301319.3584
Center of Detectable Warning
for Mod Type 2 Curb Ramp

(6) 9+08.50-9.79'L
Edge of Concrete
Elev. 1521.57

(7) 9+03.76-2.50'L
Edge of Concrete
Elev. 1521.82

(8) 9+08.76-2.50'R
Edge of Concrete
Elev. 1521.89

(9) 9+08.65-2.50'L
Edge of Concrete
Elev. 1521.82

(10) N 15888023.0470
E 2301314.2744
Edge of Concrete
Elev. 1521.74

(11) N 15888025.0518
E 2301363.3735
Edge of Concrete
Elev. 1521.68

(12) N 15888022.5539
E 2301363.4755
Center of Detectable Warning
for Mod Type 2 Curb Ramp

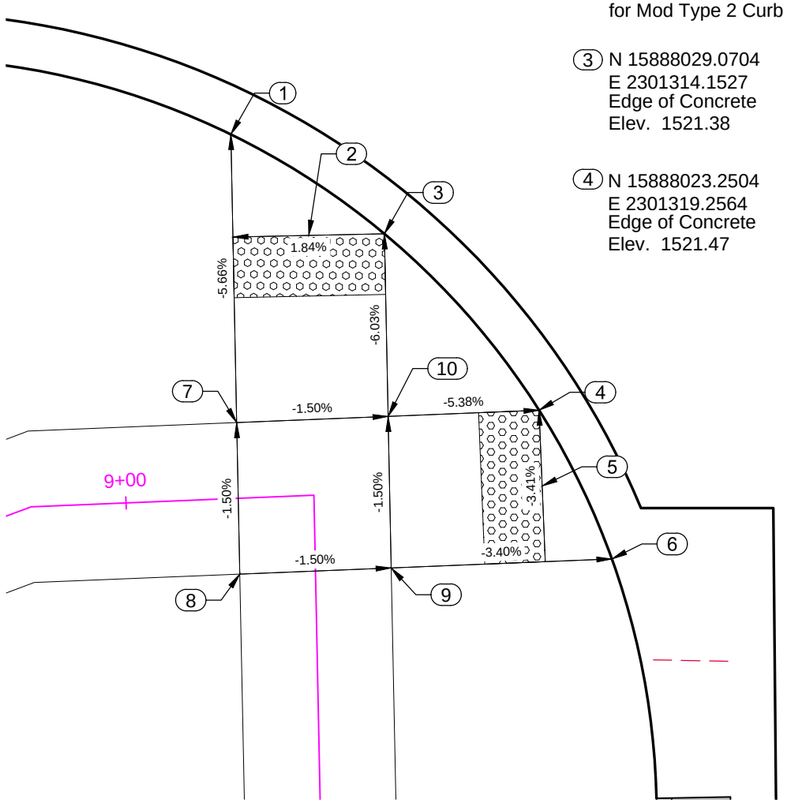
(13) 9+07.69-49.46'L
Edge of Concrete
Elev. 1521.75

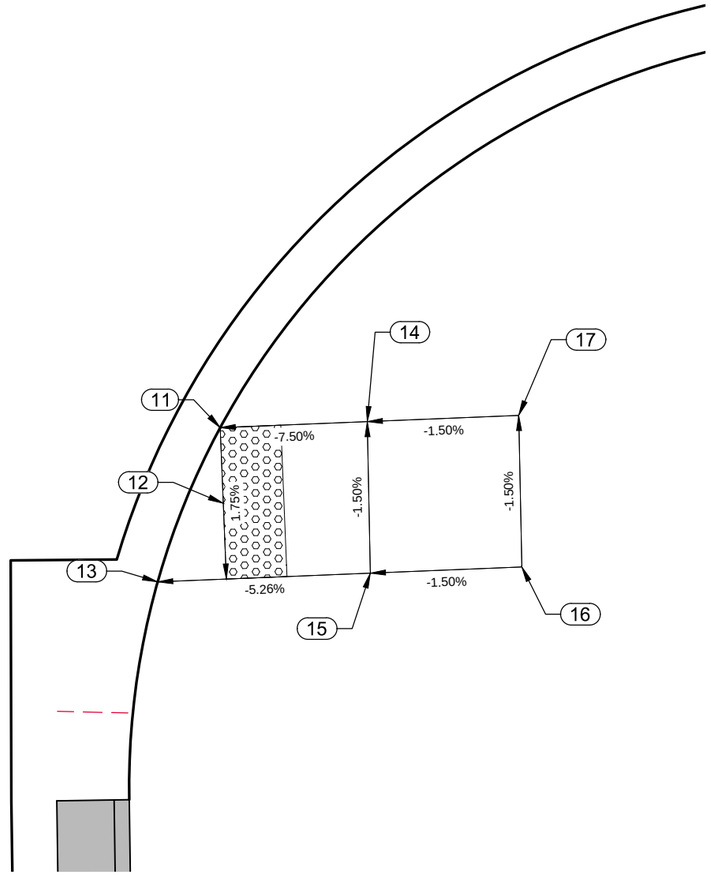
(14) N 15888025.2529
E 2301368.2983
Edge of Concrete
Elev. 1522.05

(15) 9+07.54-56.49'L
Edge of Concrete
Elev. 1522.12

(16) 9+07.44-61.49'L
Edge of Concrete
Elev. 1522.19

(17) N 15888025.4540
E 2301373.2231
Edge of Concrete
Elev. 1522.12





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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR(14)	23	46

CURB RAMP LAYOUT

LACY AVENUE & JACOB CIRCLE INTERSECTION

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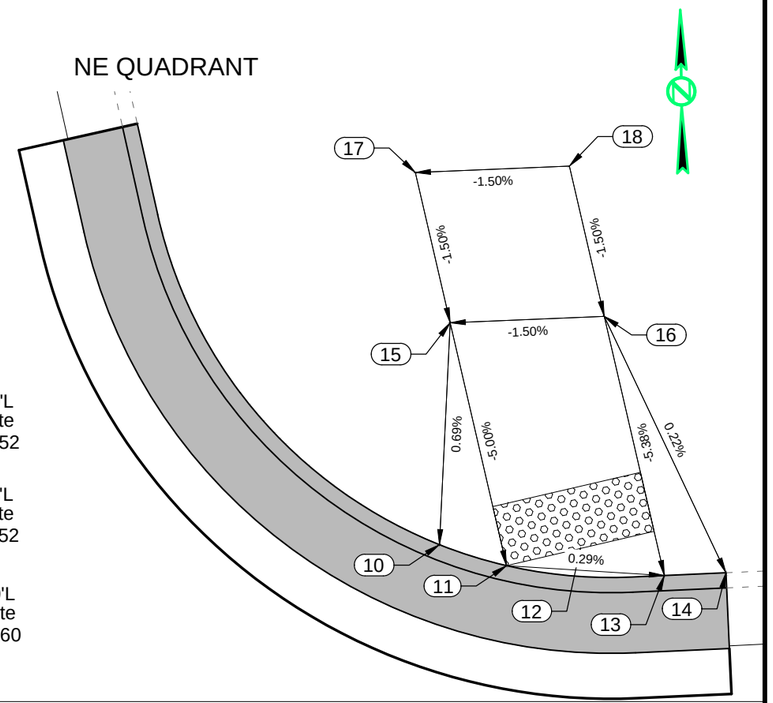
HANISCH
SOUTH DAKOTA
10/18/17

NE QUADRANT



10 10+78.97-54.85'L
Top 2' Taper
TC Elev. 1527.50

11 10+79.91-56.91'L
Bottom 2' Taper
TC Elev. 1527.04

12 10+79.81-59.40'L
Center of Detectable Warning
Type 2 Curb Ramp

13 10+80.99-61.97'L
Bottom 2' Taper
TC Elev. 1527.05

14 10+81.22-63.99'L
Top 2' Taper
TC Elev. 1527.54

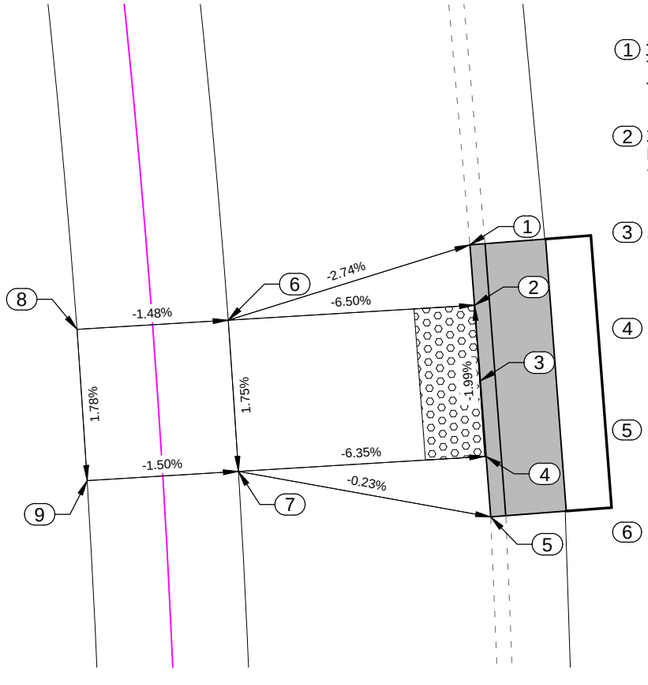
15 10+72.79-56.60'L
Edge of Concrete
TC Elev. 1527.45

16 10+73.47-61.59'L
Edge of Concrete
TC Elev. 1527.52

17 10+68.37-56.48'L
Edge of Concrete
TC Elev. 1527.52

18 10+69.11-61.50'L
Edge of Concrete
TC Elev. 1527.60

SW QUADRANT



1 11+17.66-10.64'L
Top 2' Taper
TC Elev. 1528.46

2 11+19.60-10.64'L
Bottom 2' Taper
TC Elev. 1528.16

3 11+22.03-10.65'L
Center of Detectable Warning
for Type 2 Curb Ramp

4 11+24.46-10.69'L
Bottom 2' Taper
TC Elev. 1528.26

5 11+26.41-10.72'L
Top 2' Taper
TC Elev. 1528.76

6 11+19.50-2.50'L
Edge of Concrete
TC Elev. 1528.69

7 11+19.43-2.50'R
Edge of Concrete
TC Elev. 1528.77

8 11+24.46-2.50'R
Edge of Concrete
TC Elev. 1528.85

9 11+24.46-2.50'L
Edge of Concrete
TC Elev. 1528.78

SE QUADRANT

19 11+12.84-64.53'L
Top 2' Taper
TC Elev. 1527.68

20 11+12.75-62.53'L
Bottom 2' Taper
TC Elev. 1527.48

21 11+13.08-59.99'L
Center of Detectable
Warning Type 2
Curb Ramp

22 11+12.95-57.51'L
Bottom 2' Taper
TC Elev. 1527.56

23 11+13.53-55.47'L
Top 2' Taper
TC Elev. 1528.04

24 11+18.32-49.42'L
Top 2' Taper
TC Elev. 1528.56

25 11+20.05-48.56'L
Bottom 2' Taper
TC Elev. 1528.35

26 11+22.26-48.47'L
Center of Detectable Warning
Type 2 Curb Ramp

27 11+24.46-47.87'L
Bottom 2' Taper
TC Elev. 1528.42

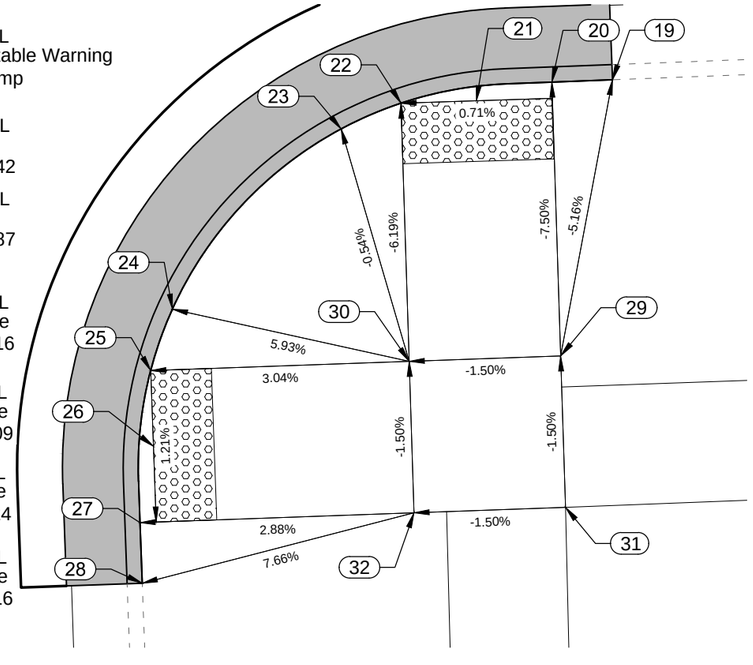
28 11+26.23-47.83'L
Top 2' Taper
TC Elev. 1528.87

29 11+20.48-62.08'L
Edge of Concrete
TC Elev. 1528.16

30 11+20.32-57.09'L
Edge of Concrete
TC Elev. 1528.09

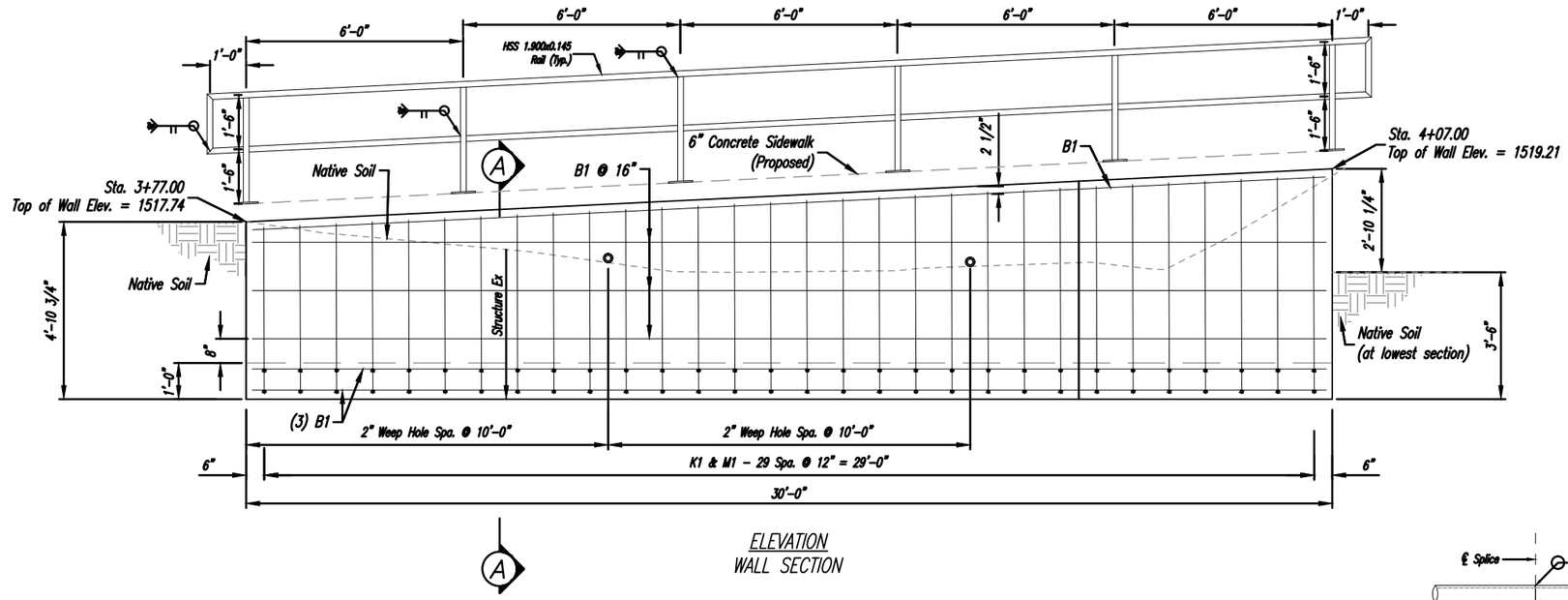
31 11+24.76-61.91'L
Edge of Concrete
TC Elev. 1528.24

32 11+24.66-56.92'L
Edge of Concrete
TC Elev. 1528.16

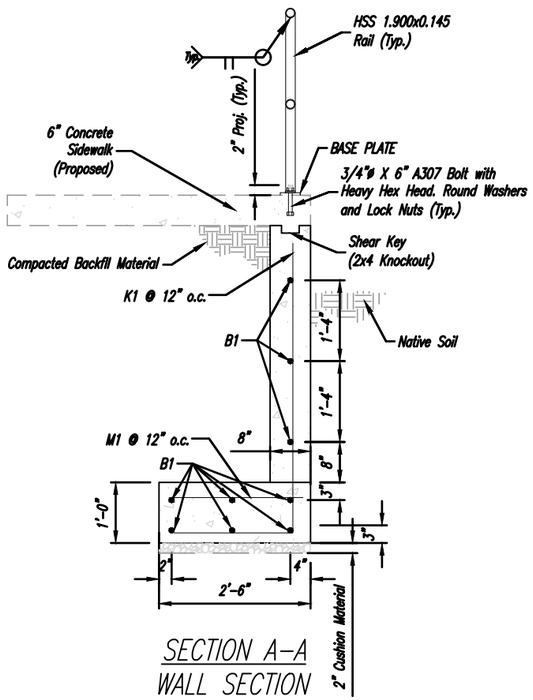


STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P TAPR(14)	24	46

Revised 10/11/2017 - DAW



ELEVATION
WALL SECTION



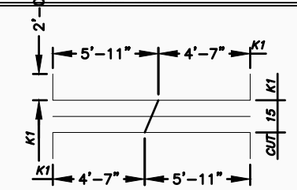
SECTION A-A
WALL SECTION

REINFORCING SCHEDULE

MK.	NO.	SIZE	LENGTH	TYPE
CONCRETE RAMP				
B1	10	4	29'-8"	STR.
K1	15	4	14'-6"	17A
M	30	4	2'-2"	STR.

SEE CUTTING DIAGRAM
NOTE: ALL DIMENSIONS ARE OUT TO OUT OF BARS.

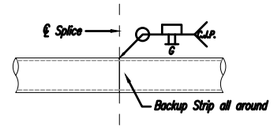
BENDING DETAILS



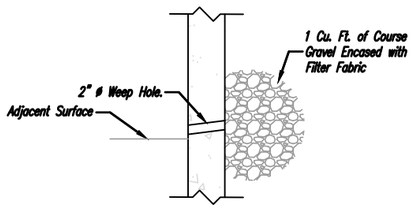
TYPE 17A

ESTIMATED QUANTITIES

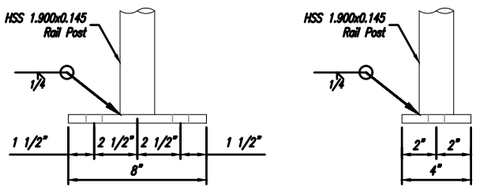
ITEM	CLASS M6 CONCRETE	EPOXY COATED REINFORCING STEEL	STEEL PEDESTRIAN RAILING	STRUCTURE EXCAVATION, RETAINING WALL
UNIT	CUYD	LB	FT	CUYD
RETAINING WALL	6.4	387	32.0	11.2

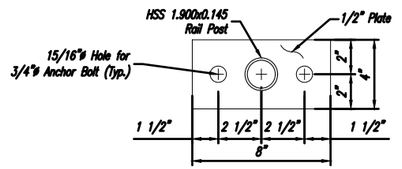


RAIL SPLICE DETAIL



WEEP HOLE SECTION





RAIL BASE PLATE DETAIL

NOTES:

Design Material Strengths: Concrete f'c = 4,000 p.s.i.
All concrete shall be Class M6 and conform to Section 462 of the Specifications.

The exposed retaing wall surface shall recieve a finish in accordance with 460.3.L of the Specifications

Cushion material shall be placed and compacted to a thickness of 2 inches under the retaining wall footing. Cushion Material shall conform to Section 651.2.C of the Specifications

All reinforcing steel shall be epoxy coated and shall conform to ASTM A615 Grade 60. Epoxy Coating shall conform to ASTM A775.

Weep holes shall be placed at locations noted and as depicted in the section detail. PVC Pipe shall be used. Course gravel shall be free-draining material consisting of gravel, rock fragments, quarry run stone, broken stone, or reclaimed miscellaneous aggregate containing no more than 2 percent fines.

All Costs for furnishing and placing backfill material, cushion material and installation of weep holes shall be incidental to the contract unit price per cubic yard for Class M6 Concrete.

RAILING

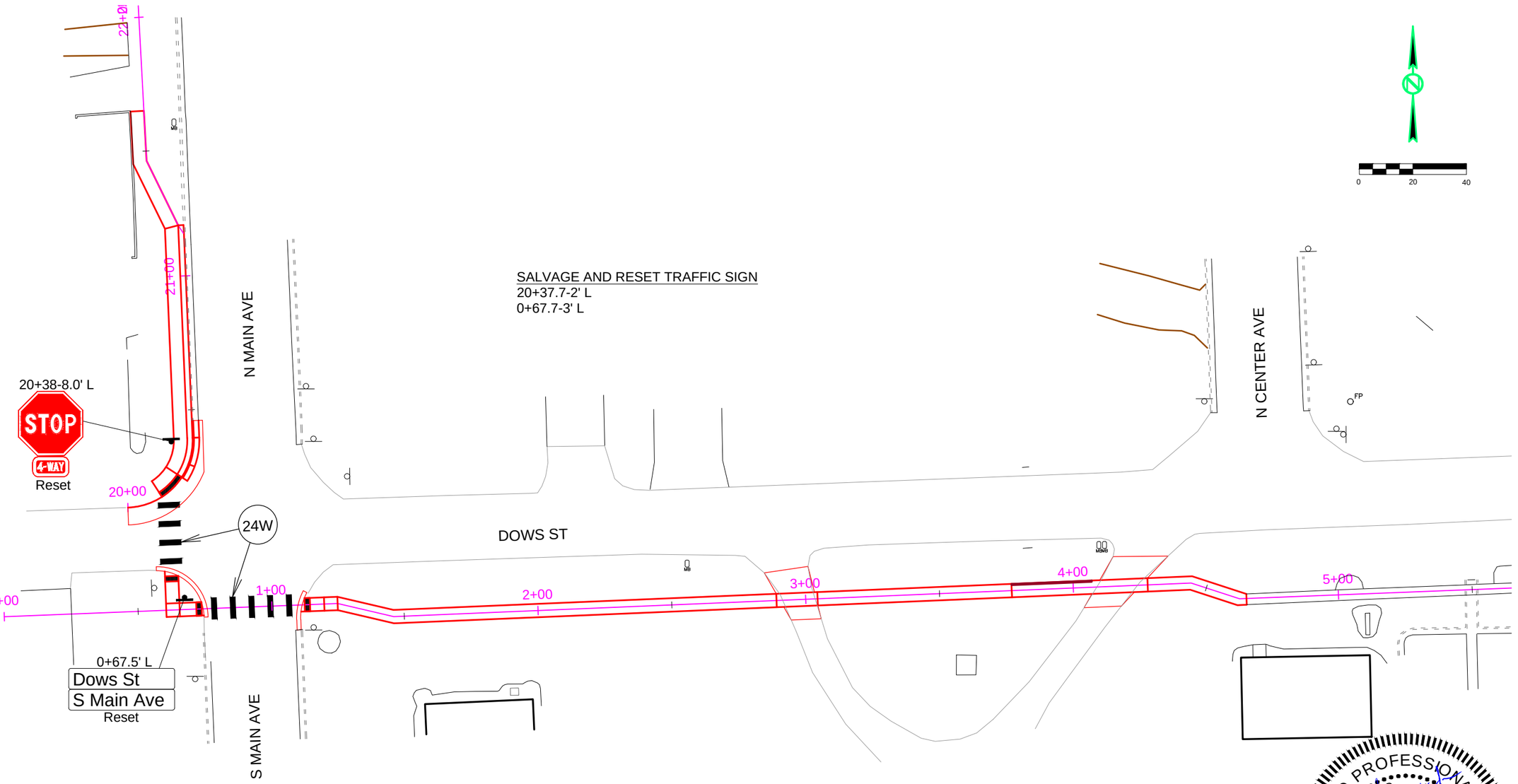
1. All anchor bolts shall be tightened to a torques of 120 ft-lbs.
2. All steel elements that are not galvanized shall be painted semi-gloss black.
3. Welding and weld inspection shall be done in accordance with AWS D1.1Structural Welding Code - Steel.
4. Fabricator shall submit shop drawings for review.

REGISTERED PROFESSIONAL ENGINEER
7746
CHAD M. HANISCH
SOUTH DAKOTA
10/18/17

PERMANENT SIGNAGE AND PAVEMENT MARKING PLAN

FOR WORK FROM STA 20+00 TO STA 22+00 ALONG N MAIN AVE
FOR WORK FROM STA 0+00 TO STA 5+64 ALONG DOWS ST

PROJECT	SHEET	TOTAL SHEETS
P TAPR(14)	25	46



Legend

24W — 24' White Pavement Marking Paint

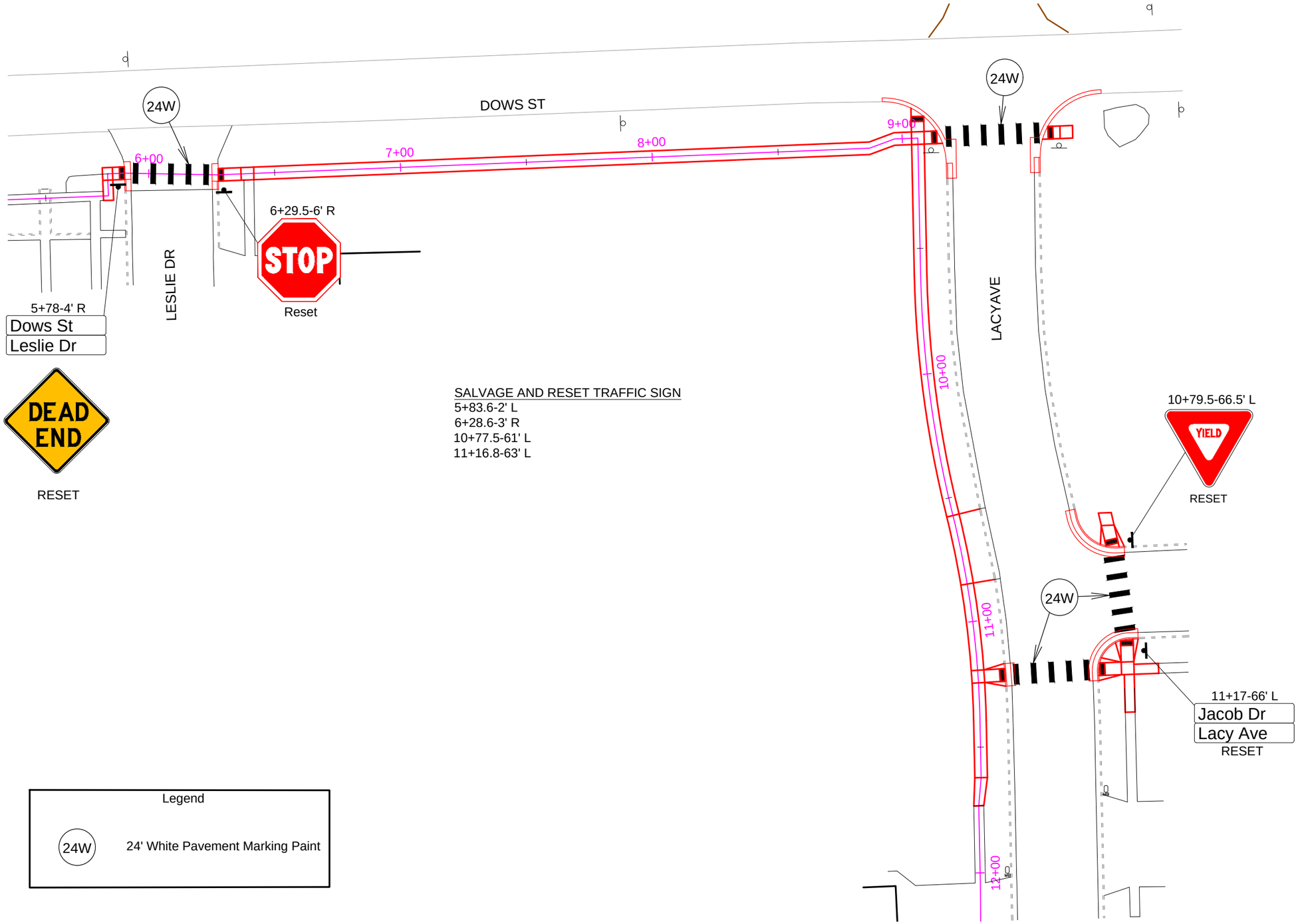
REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7746
CHAD M.
HANISCH
SOUTH DAKOTA
10/18/17

infrastructure design group, inc.

PROJECT	SHEET	TOTAL SHEETS
P TAPR(14)	26	46

PERMANENT SIGNAGE AND PAVEMENT MARKING PLAN

FOR WORK FROM STA 5+35 TO STA 9+06 ALONG DOWS ST
FOR WORK FROM STA 9+06 TO STA 12+19 ALONG LACY AVE

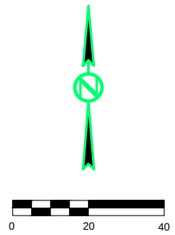


RESET

SALVAGE AND RESET TRAFFIC SIGN
5+83.6-2' L
6+28.6-3' R
10+77.5-61' L
11+16.8-63' L

Legend

24W — 24' White Pavement Marking Paint

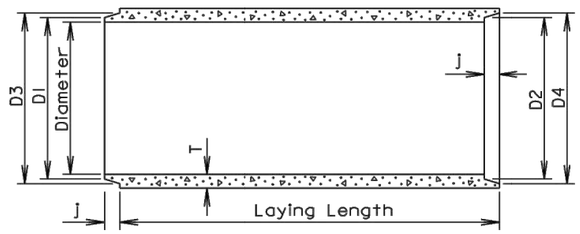


infrastructure design group, inc.

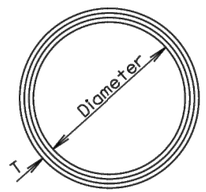
S:\0-2016 Projects\16058 - Garretson TAP Project - Dows Street\Design\CAD\SHEETS\16058-SIGNAGE PLAN.dwg
PLOT DATE: 10/18/2017 11:29 AM Derek Westenberg DOT.ctb

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:

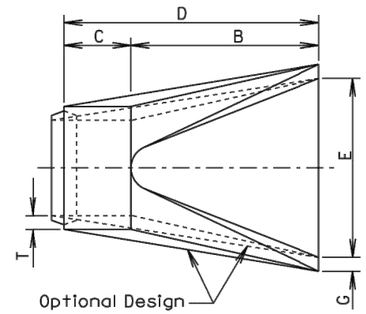
Construction of R. C. P. shall conform to the requirements of Section 990 of the Specifications.

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.

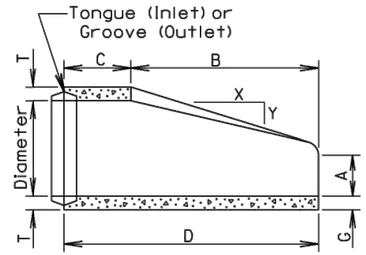
Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	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 7/8	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

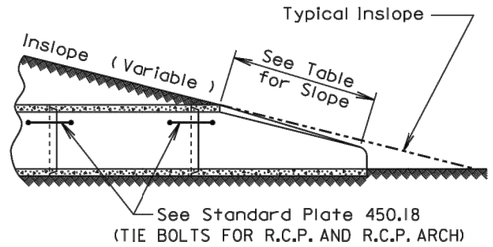
Published Date: 3rd Qtr. 2017	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1



TOP VIEW



LONGITUDINAL SECTION

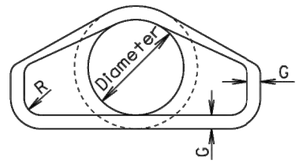


SLOPE DETAIL

GENERAL NOTES:

Lengths of concrete pipe shown on plan sheets are between flared ends only.

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



END VIEW

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

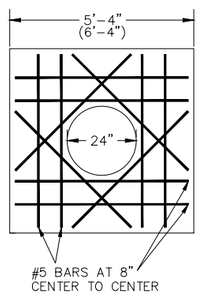
June 26, 2015

Published Date: 3rd Qtr. 2017	SDDOT	R. C. P. FLARED ENDS	PLATE NUMBER 450.10
			Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(14)	28	46

4x4 Junction Box

TOP VIEW



GENERAL NOTES

USE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION ,AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL.

ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615, GRADE 60.

ALL REINFORCING STEEL SHALL BE CUT AND/OR BENT IN THE FIELD TO

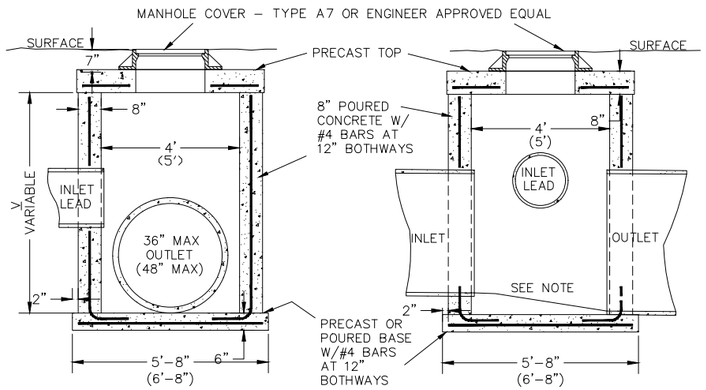
MAINTAIN A MINIMUM OF 2" COVER ON ALL REINFORCING STEEL.

NO VERTICAL CONSTRUCTION JOINTS ARE ALLOWED.

ALL CONC. SHALL BE CLASS M6.

UNIT STRESSES: CONCRETE Fc = 1600 P.S.I.
REINFORCING STEEL Fc = 20,000 P.S.I.

TOP OF MANHOLE COVER TO BE SET FLUSH WITH FINISHED SURFACE ELEVATION.



SIDE VIEWS

ESTIMATED QUANTITIES

ITEM	UNIT	4' X 4' JCT. BOX		5' X 5' JCT. BOX	
		CONSTANT	VARIABLE	CONSTANT	VARIABLE
* CLASS M6 CONCRETE	CUYDS	1.29	0.46V	1.93	0.56V
REINFORCEMENT–CONC. MASONRY	LBS	103	23V	131	35V
MANHOLE RIM & COVER–AS SPECIFIED	EACH	1	----	1	----

* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS;
12" DIA.=–0.03 C.Y., 15" DIA=–0.04 C.Y., 18" DIA.=–0.05 C.Y., 21" DIA.=–0.07 C.Y., 24" DIA.=–0.09 C.Y.,
27" DIA.=–0.11 C.Y., 30" DIA=–0.14 C.Y., 33" DIA.=–0.17 C.Y., 36" DIA.=–0.20 C.Y., 42" DIA.=–0.26 C.Y.,
48" DIA.=–0.34 C.Y.

NOTES:

COVER REINFORCEMENT REQUIRES 12–#5 BARS 5'(6') LONG TO BE PLACED AS SHOWN.
2" FROM CIRCULAR OPENING AND 8" CENTER TO CENTER AT A DEPTH OF 6" W/MIN. COVER THICKNESS OF 8".

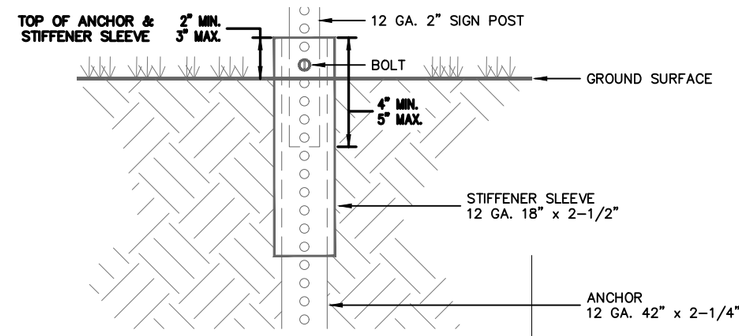
FLOOR OF JCT. BOX TO BE FINISHED IN SUCH A MANNER TO INSURE UNINTERRUPTED FLOW THRU THE BOX.

WHEN PIPE SIZES DIFFER THRU JCT. BOX, TOP OF PIPE TO MATCH WHEN POSSIBLE.

( ) INDICATES SPECIFICATIONS FOR A 5' X 5' JCT. BOX. MAXIMUM PIPE SIZE ALLOWED FOR 4' X 4' JCT. BOX IS 36" R.C.P. A 5' X 5' JCT. IS 48" R.C.P.
VARIABLE DEPTH UP TO 8'

Sign Mount Detail

PERFORATED TUBE POST
(TELESPAR POST)



NOTES

BOLTS AND WASHERS USED FOR MOUNTING TRAFFIC SIGNS SHALL BE STAINLESS STEEL. FLAT WASHERS SHALL BE MIL. SPEC. MS813.

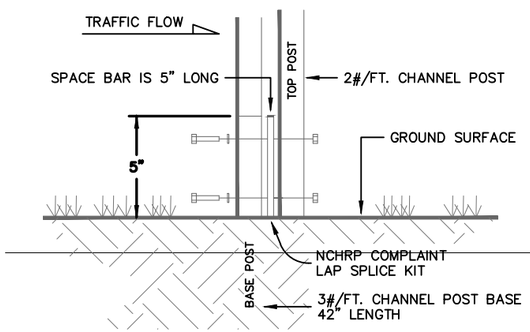
NUTS USED FOR MOUNTING TRAFFIC SIGNS SHALL BE A NYLOC (SELF–LOCKING) TYPE.

SIGNS SHALL BE MOUNTED USING A PLASTIC / NYLON WASHER PLACED BETWEEN THE SIGN FACE AND THE METALLIC FLAT WASHER.

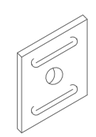
LAG SCREWS USED TO MOUNT TRAFFIC SIGNS TO WOODEN POWER POLES SHALL BE GALVANIZED OR STAINLESS STEEL.

ALL HARDWARE REQUIRED FOR MOUNTING THE SIGNS SHALL BE INCIDENTAL TO THE COST OF INSTALLING THE SIGNS.

FLANGED CHANNEL POST
(U-POST)

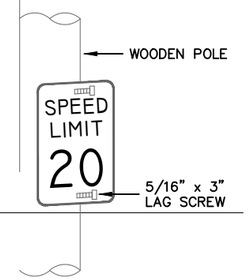


SIGN SAVER PLATE
3"X3" PUNCHED RIBBED ALUMINUM



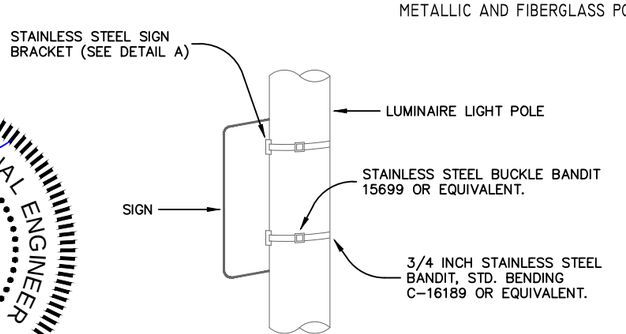
TO BE USED WHEN MOUNTING SIGNS ON CHANNEL POST.

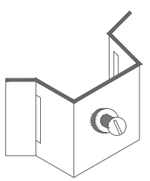
SIGN MOUNTING ON WOODEN POWER POLE



STAINLESS STEEL BAND MOUNTING SYSTEM

TO BE USED WHEN MOUNTING SIGNS ON METALLIC AND FIBERGLASS POLES.

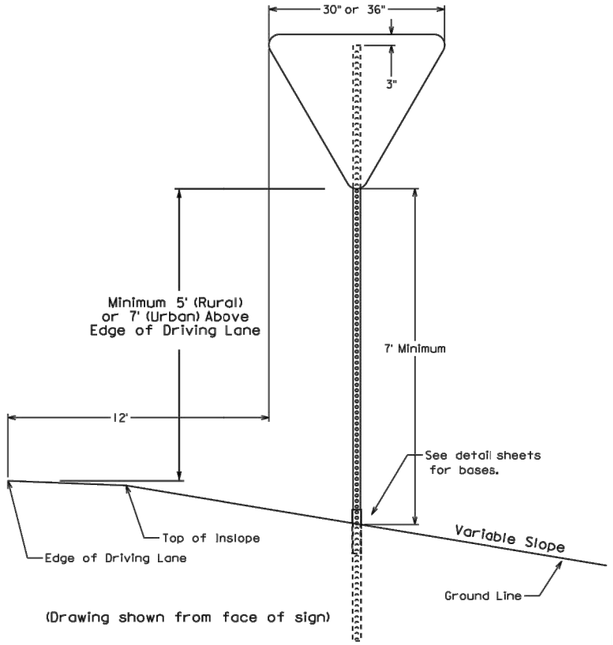




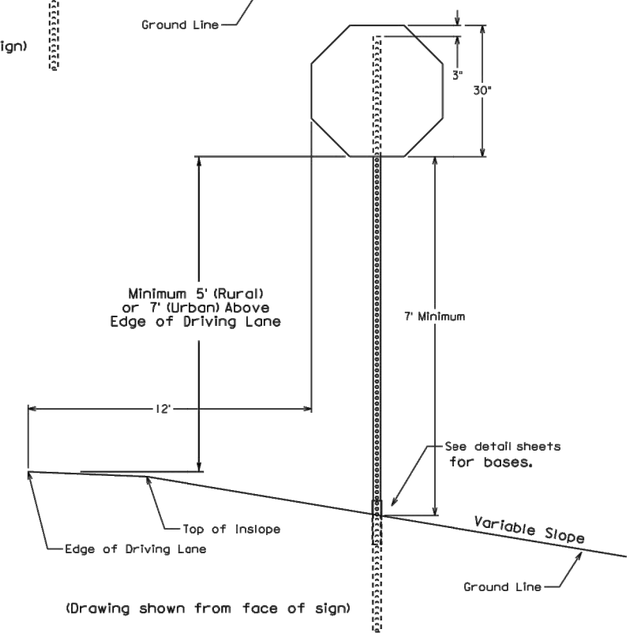
BANDIT DO–21 OR EQUIVALENT.

DETAIL A

infrastructure design group, inc.



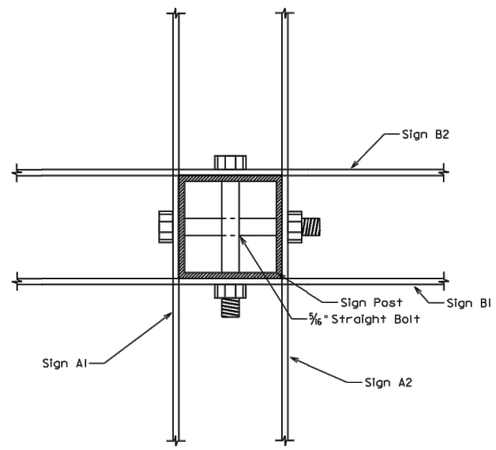
(Drawing shown from face of sign)



(Drawing shown from face of sign)

June 10, 2013

	SDDOT	30" STOP OR 30"-36" YIELD (Typical Sign Details)	SPECIAL DETAIL LO6
			Sheet 1 of 1

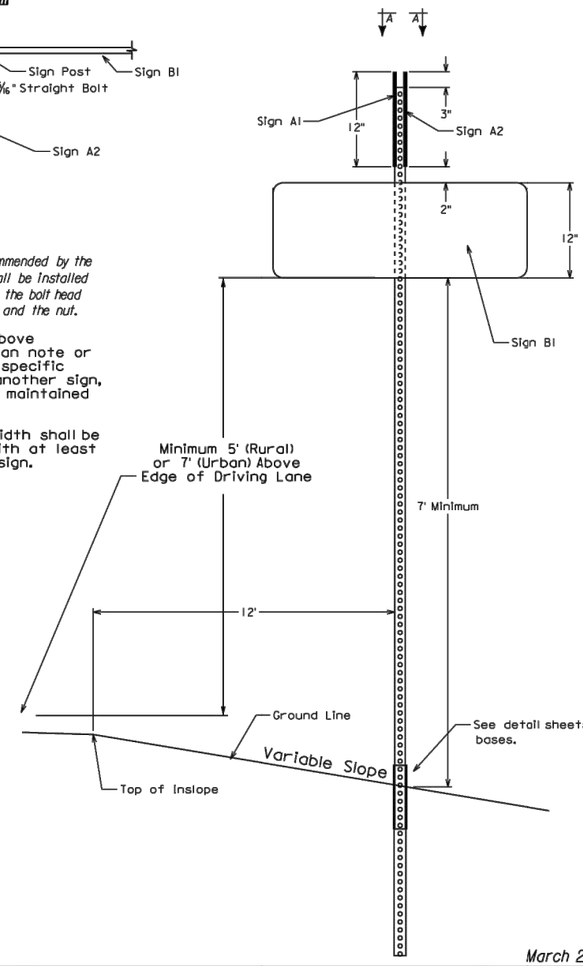


SEC. A-A

≠ A plastic washer, as recommended by the sheeting manufacturer, shall be installed between the sign face and the bolt head and also between the sign and the nut.

NOTE: Sign assembly may be mounted above Yield or Stop sign - refer to plan note or Table of Permanent Signing for specific locations. When mounting above another sign, 2" of verticle clearance shall be maintained between signs.

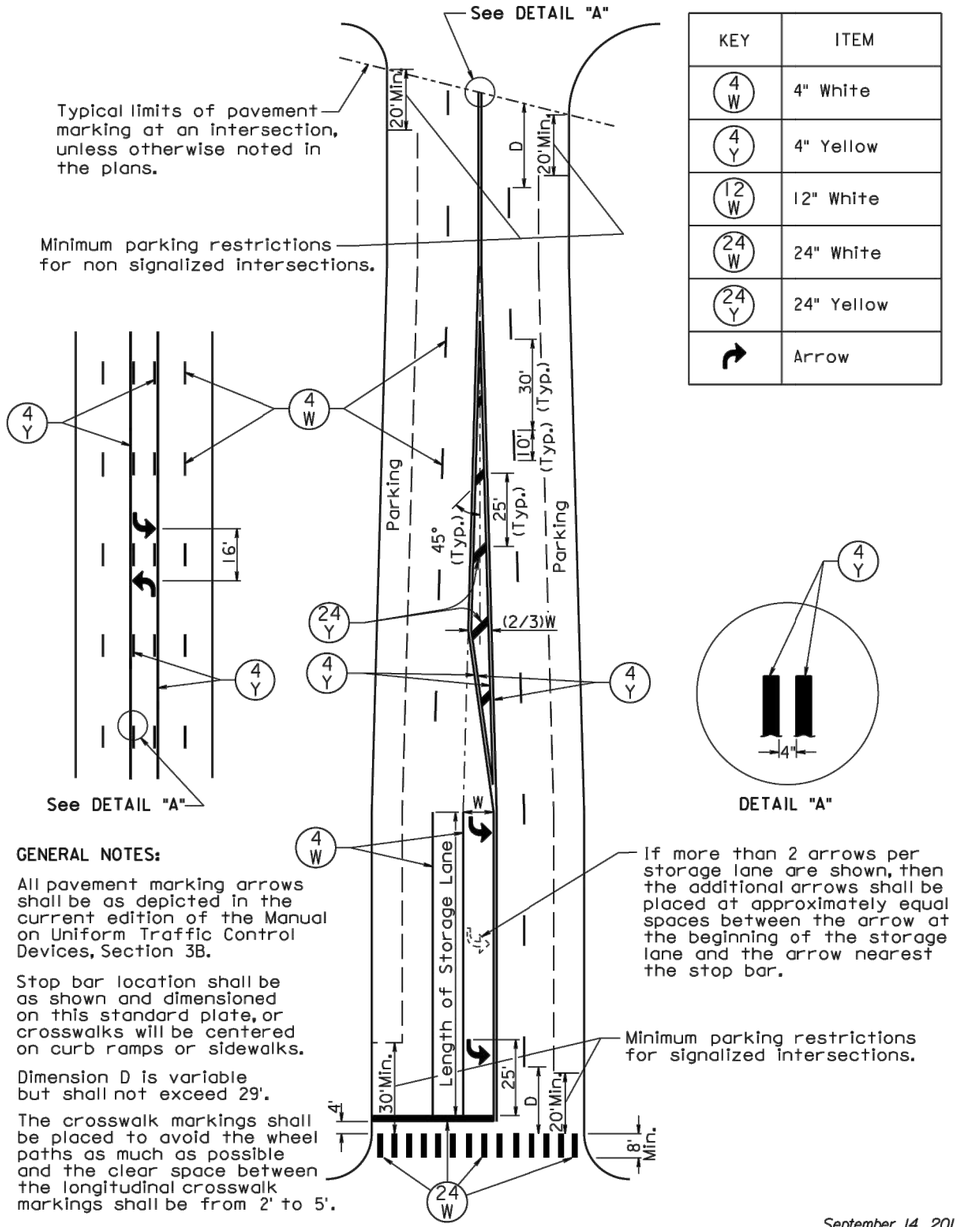
Back-to-back signs over 24" in width shall be bolted/riveted to each other with at least one connector on each end of sign.



March 28, 2014

	SDDOT	STREET NAME SIGN (Typical Sign and Stiffener Details)	SPECIAL DETAIL LIO
			Sheet 1 of 1

infrastructure design group, inc.



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: 3rd Qtr. 2017

SDDOT

PAVEMENT MARKINGS FOR ADJACENT INTERSECTIONS AND CENTER TURN LANE

PLATE NUMBER 633.01

Sheet 1 of 1

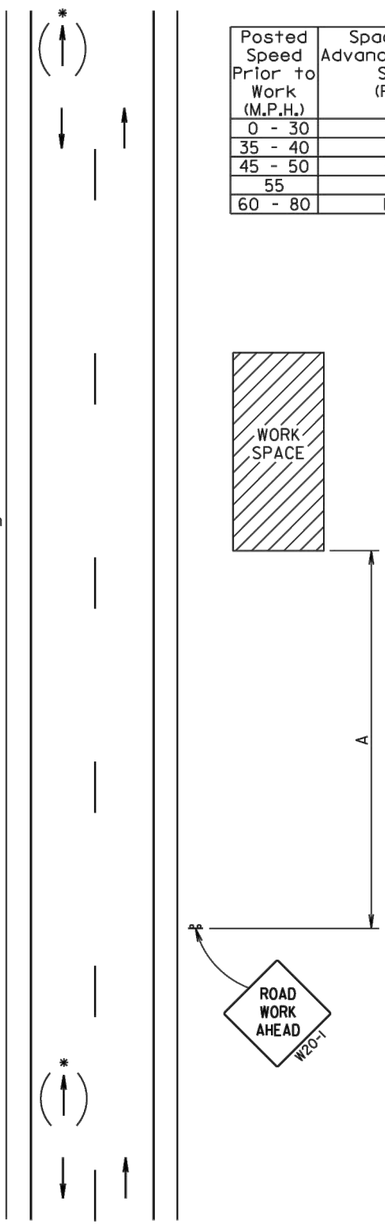
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

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

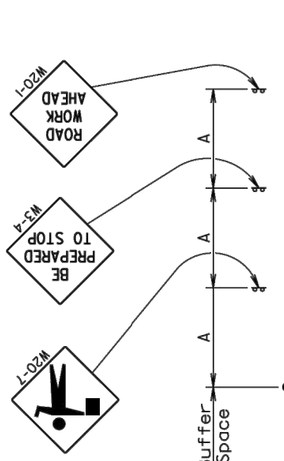
Published Date: 3rd Qtr. 2017

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)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000

Flagger

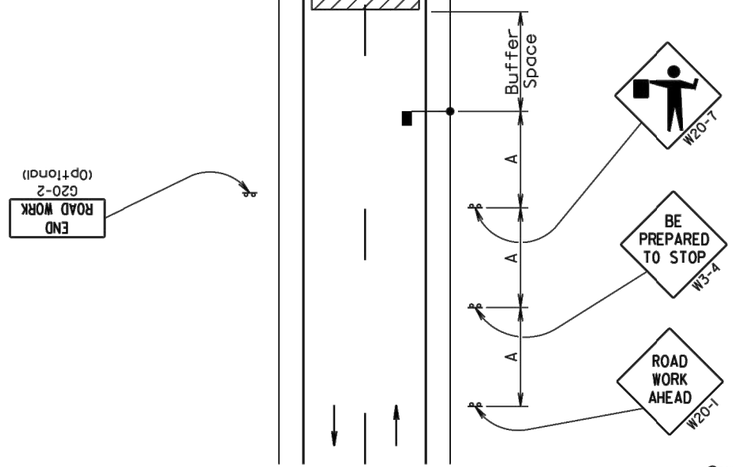
END ROAD WORK
G20-2
(Optional)

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

Buffer space dependent on work site limitations.

Conditions represented are for work that requires closings during daytime hours only.

This application is intended for a planned temporary closing not to exceed 15 to 20 minutes.



September 6, 2015

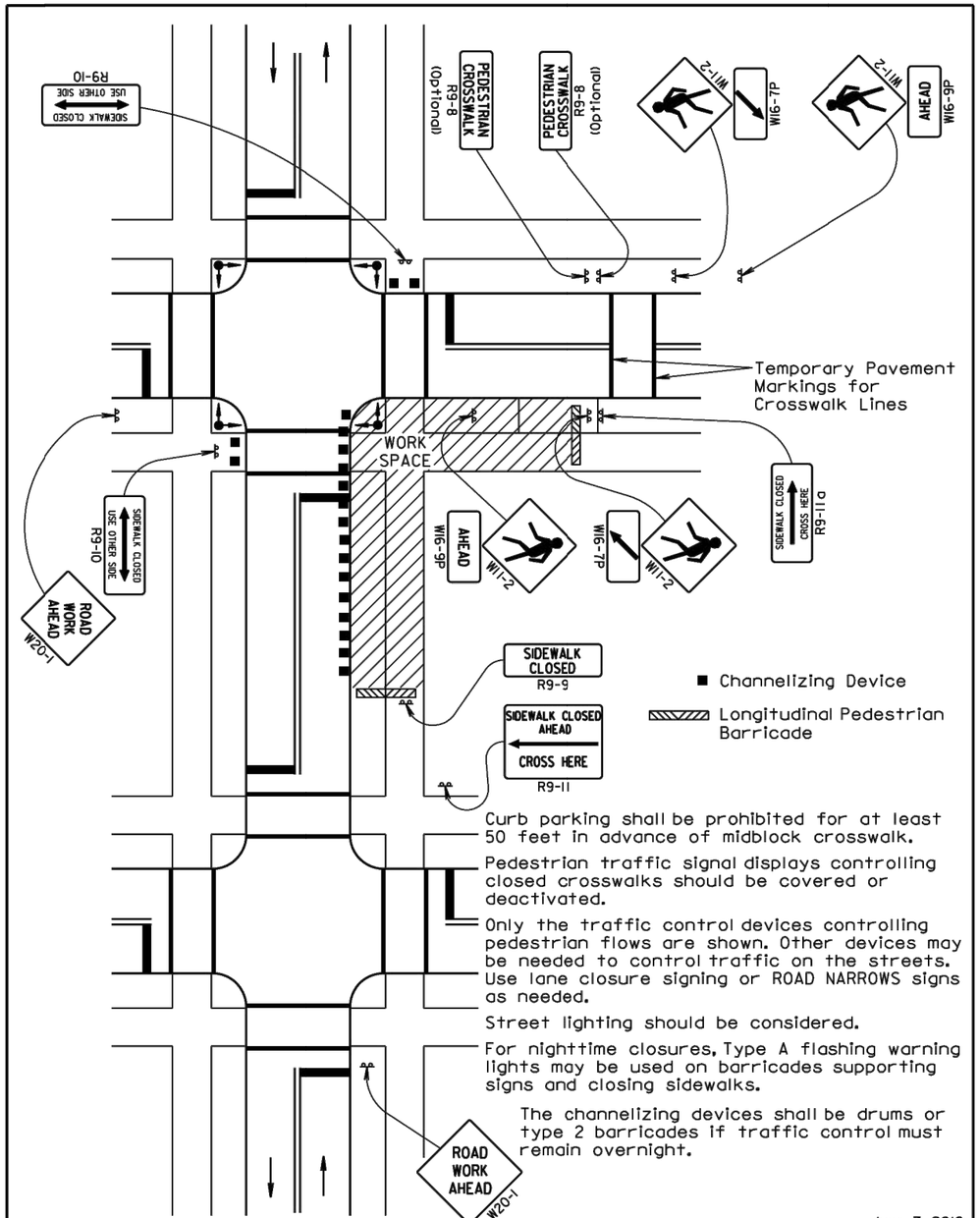
Published Date: 3rd Qtr. 2017

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
TEMPORARY ROAD WORK

PLATE NUMBER 634.30

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: 3rd Qtr. 2017

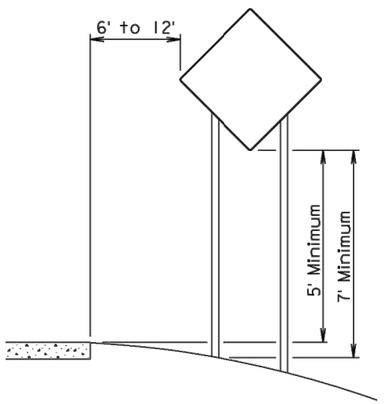
SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
SIDEWALK CLOSURES AND PEDESTRIAN DETOURS

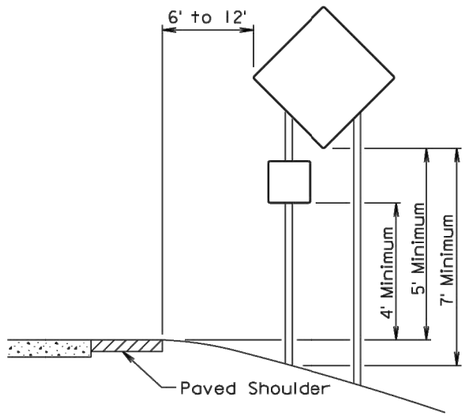
PLATE NUMBER 634.33

Sheet 1 of 1

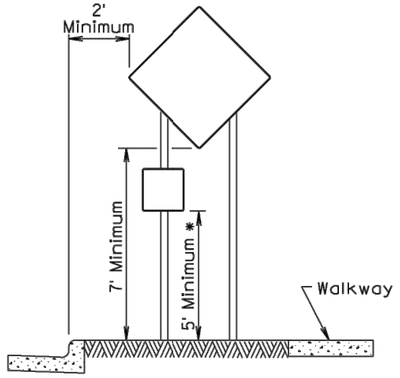
infrastructure design group, inc.



RURAL DISTRICT

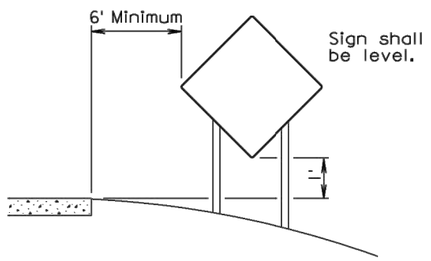


RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

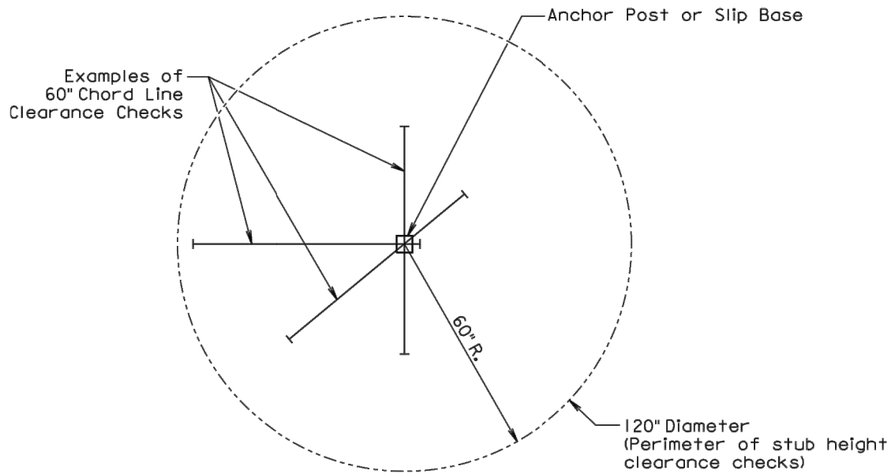
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.



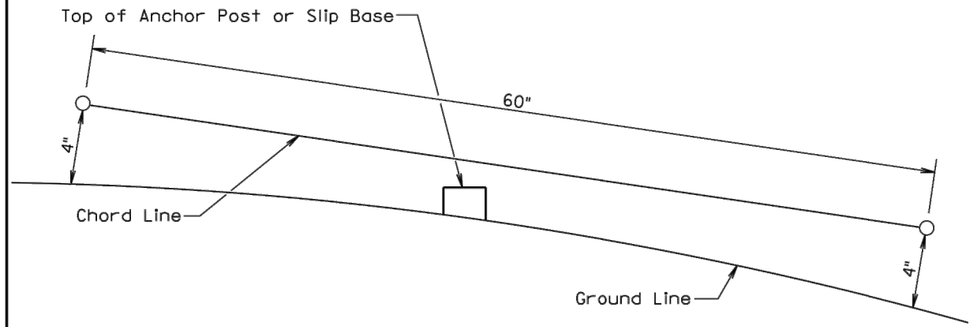
RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

September 22,2014

Published Date: 3rd 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.

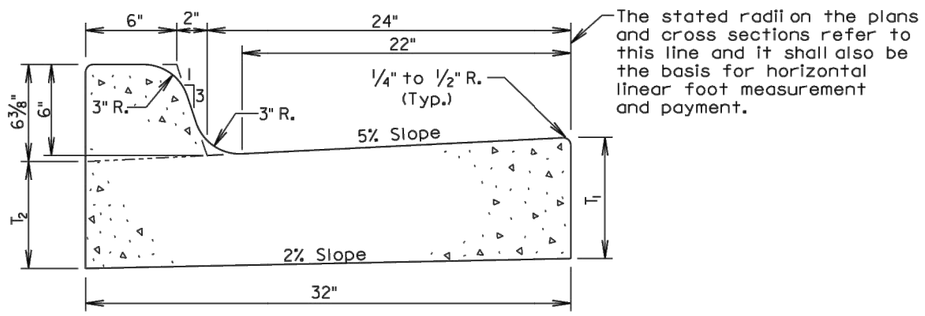
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

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: 3rd Qtr. 2017	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

infrastructure design group, inc.



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

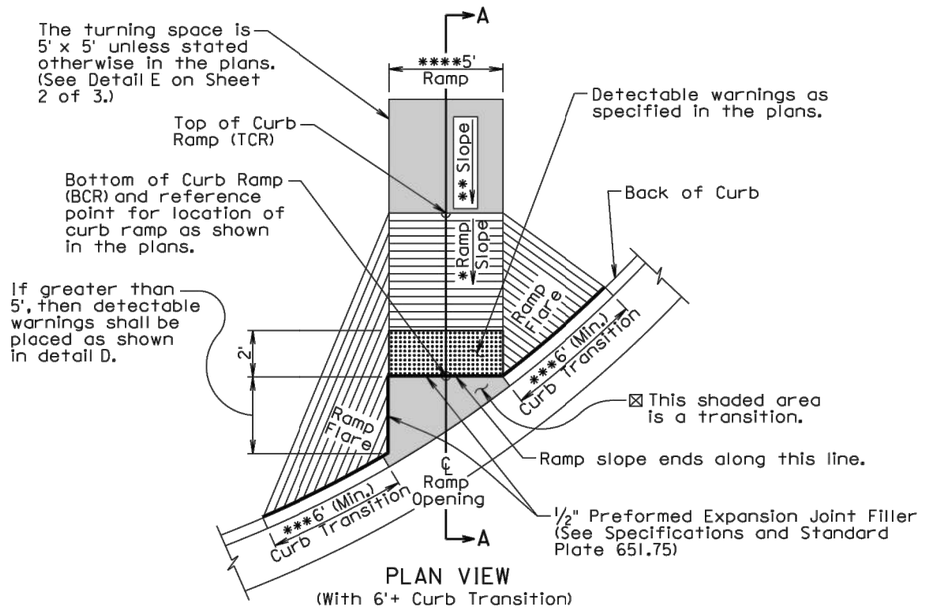
GENERAL NOTES:

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

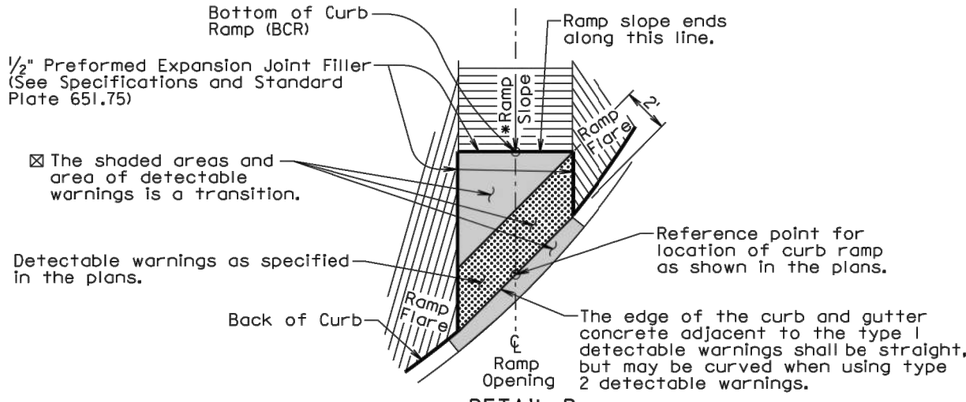
Published Date: 3rd Qtr. 2017	SDDOT	**TYPE B CONCRETE CURB AND GUTTER**	***PLATE NUMBER*** 650.01 Sheet 1 of 1



PLAN VIEW
(With 6'+ Curb Transition)

⊠ The slope within the transition area shall not be steeper than 5%. The concrete within the transition shall be placed monolithic with the curb and gutter or fillet section concrete. The concrete thickness within the transition shall be the same as the curb and gutter or fillet section concrete thickness.

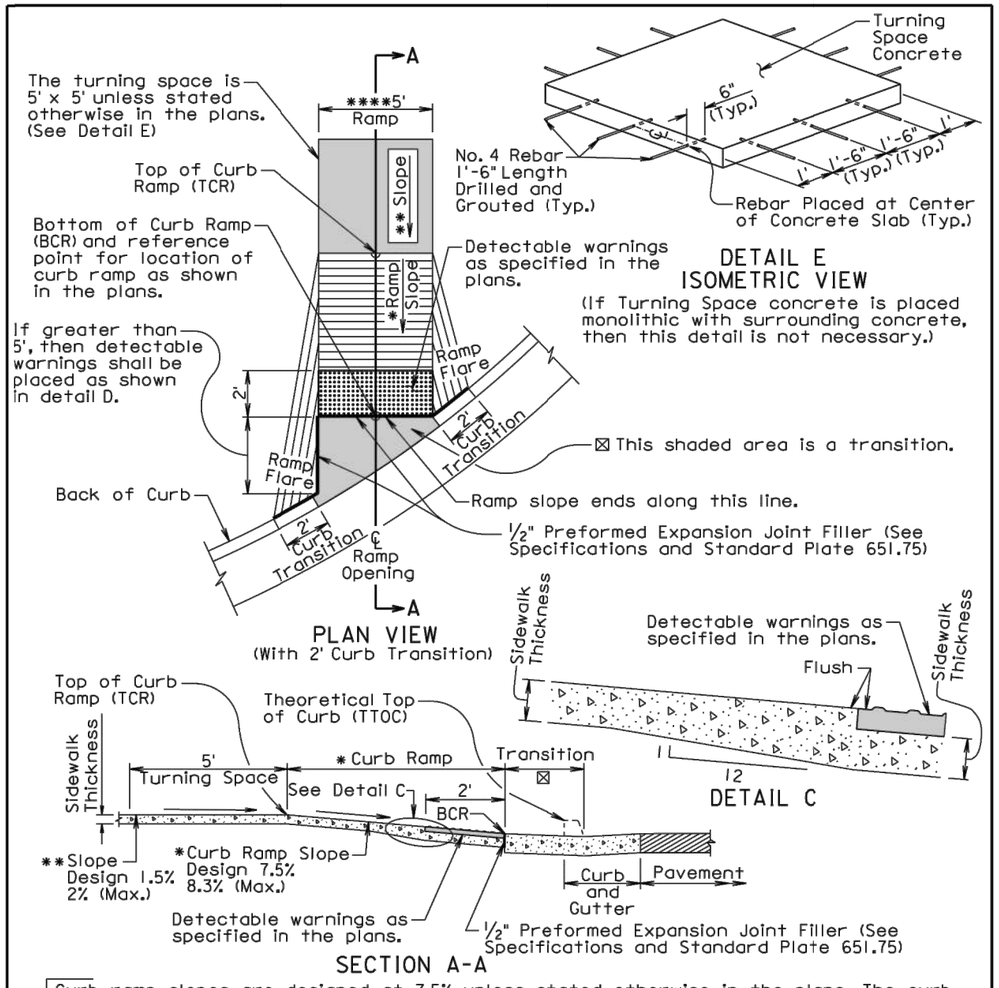
*** The curb transition shall be a minimum of 6' long, a maximum of 10' long, and the curb transition slope shall not be steeper than 10% unless stated otherwise in the plans. The curb transition length shall be adjusted as necessary to meet slope and length requirements based on field geometrics.



DETAIL D

September 6, 2015

Published Date: 3rd Qtr. 2017	SDDOT	**TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)**	***PLATE NUMBER*** 651.02 Sheet 1 of 3



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% and shall not exceed 15' in length unless stated otherwise in the plans.

* The elevation of point TCR shall always be higher than the elevation of point TTOC unless specified otherwise in the plans. The curb ramp length dimension as shown in the plans 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%. Plans are designed using a 1.5% slope 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 ramp width is 5' unless stated otherwise in the plans.

September 6, 2015

Published Date: 3rd Qtr. 2017	SDDOT	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02
			Sheet 2 of 3

GENERAL NOTES:

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

The curb ramp depicted on this standard plate may be used with a PCC fillet section or curb and gutter. The curb ramp shall be placed at the location stated in the plans.

Sidewalk shall not be placed adjacent to the curb ramp flares when a 2' curb transition is used unless shown otherwise 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.

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.

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 shall be included in the measured and paid for quantity of sidewalk.

If rebar is placed in the Turning Space as depicted in DETAIL E, the cost of the materials, labor, and equipment to furnish and install the rebar shall be incidental to the contract unit price per square foot for the corresponding concrete sidewalk bid item.

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.

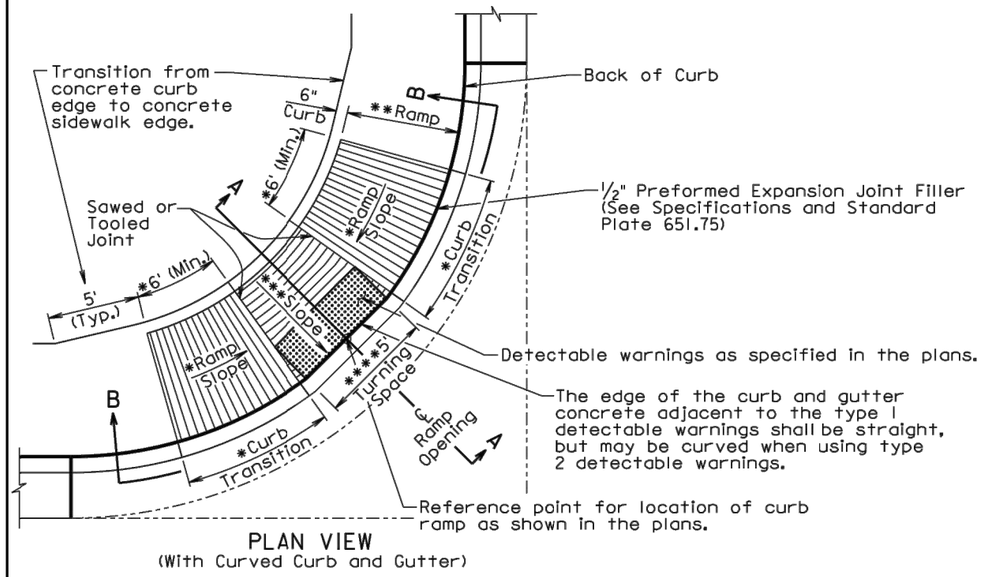
All costs for furnishing and installing the transition area at the base of the curb ramp shall be incidental to the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used and shall be incidental to the contract unit price per square yard for the corresponding 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".

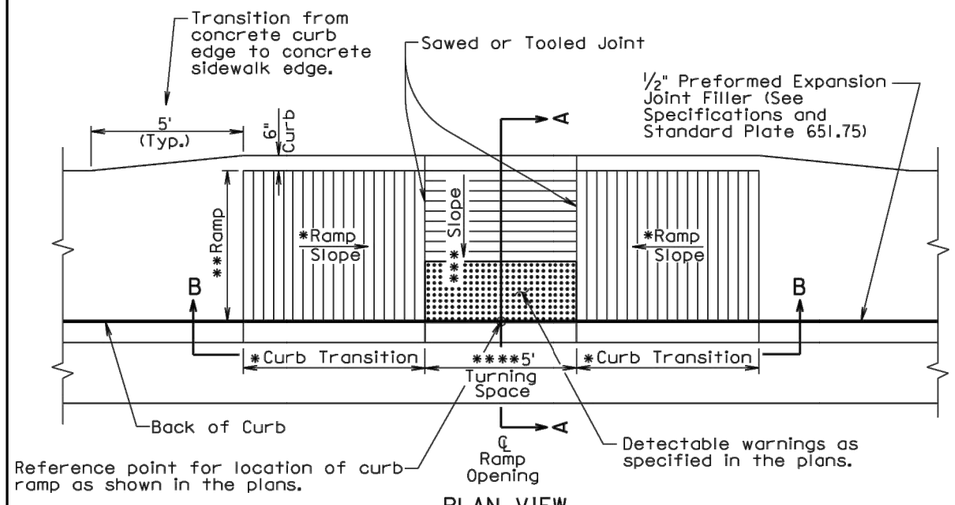
The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit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

September 6, 2015

Published Date: 3rd Qtr. 2017	SDDOT	TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)	PLATE NUMBER 651.02
			Sheet 3 of 3



PLAN VIEW
(With Curved Curb and Gutter)



PLAN VIEW
(With Straight Curb and Gutter)

September 6, 2015

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

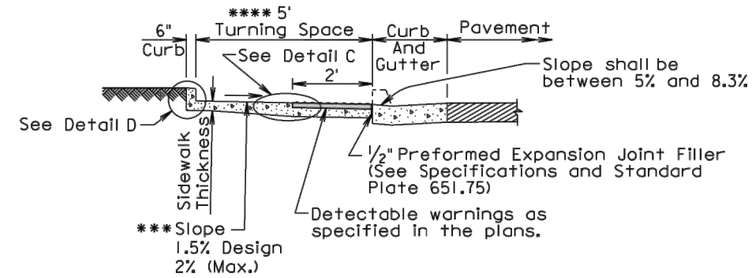
* The curb transition slope shall match the curb ramp slope. Curb ramp slopes are designed at 7.5% unless stated otherwise in the plans. The curb ramp may have a maximum slope of 8.3% at any location of the curb ramp and shall not exceed 15' in length unless stated otherwise in the plans. The curb transitions 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.

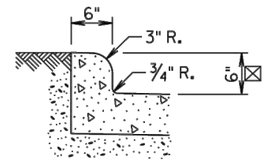
*** The slope in the turning space shall not be steeper than 2% in any direction of pedestrian travel. Plans are designed using a 1.5% slope unless stated otherwise in the plans.

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

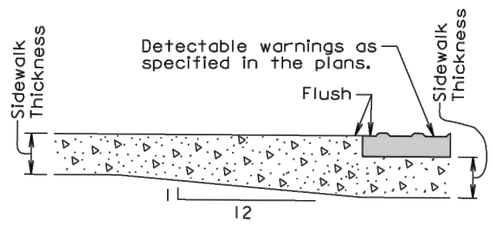
☒ The curb height shall be 6" unless stated otherwise in the plans.



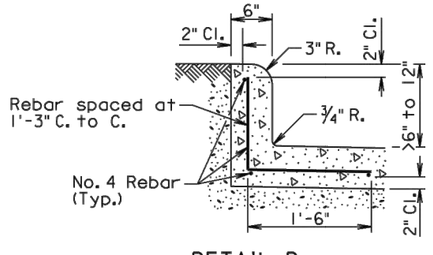
SECTION A-A



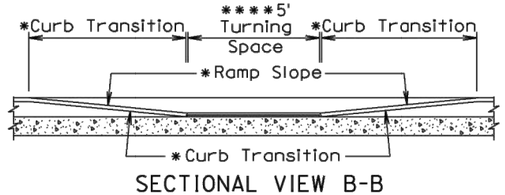
DETAIL D



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: 3rd 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.

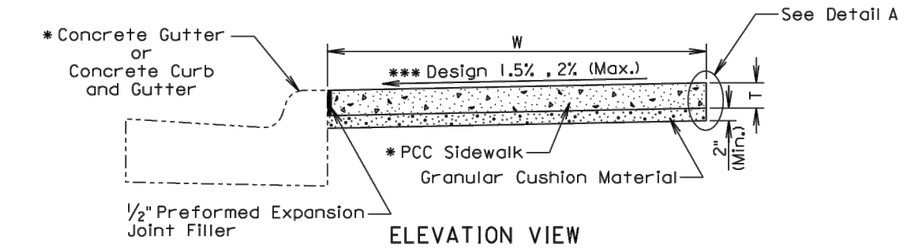
The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the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

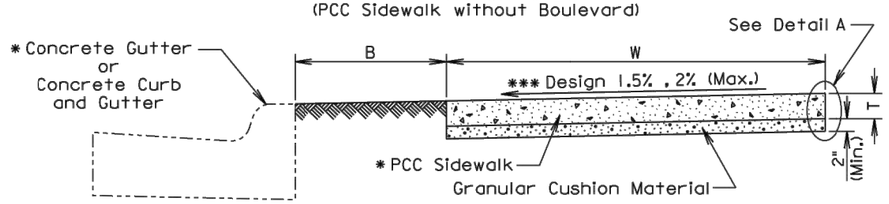
The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit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

September 6, 2015

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

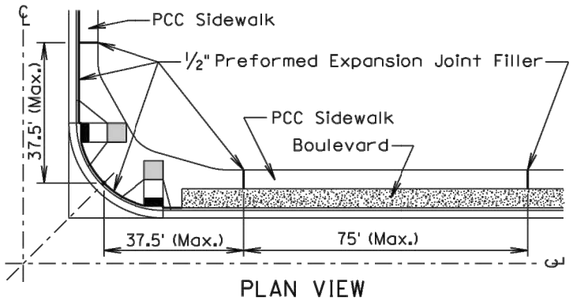


ELEVATION VIEW
(PCC Sidewalk without Boulevard)



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.

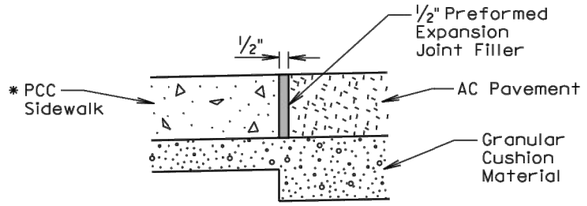
PCC sidewalk placed adjacent to intersection of roadways shall have an expansion joint placed transversely a maximum of 37.5 feet from the intersection. See PLAN VIEW.

An expansion joint in PCC sidewalk shall consist of a ½ inch thick preformed expansion joint filler material placed full depth and width of the PCC sidewalk.

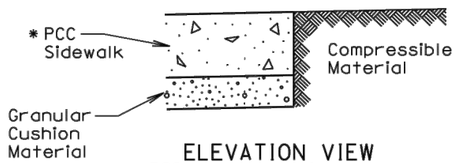
** Large areas of PCC pavement adjacent to PCC sidewalk may require a different joint treatment than shown in the detail. If a different joint detail is necessary, plans will contain the joint detail and the Contractor shall construct the joint treatment in accordance with the plans.

September 6, 2015

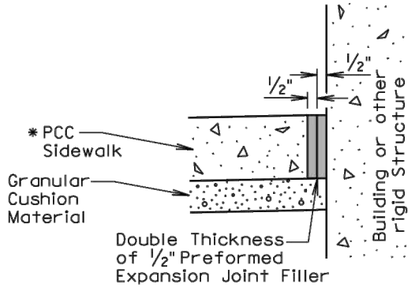
Published Date: 3rd Qtr. 2017	SDDOT	**PCC SIDEWALK**	***PLATE NUMBER*** 651.75 *Sheet 1 of 2*



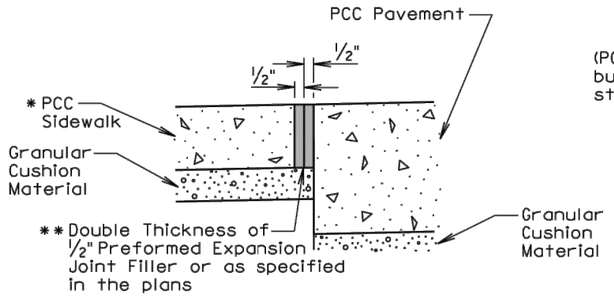
ELEVATION VIEW
(PCC sidewalk adjacent to asphalt concrete pavement)



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)

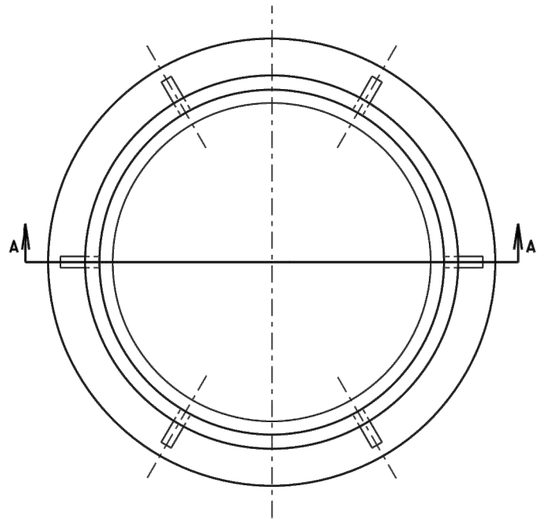


ELEVATION VIEW
(PCC sidewalk adjacent to PCC pavement)

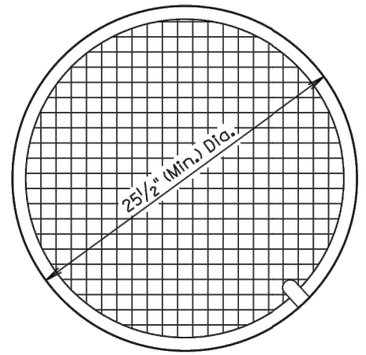
Detail A
(Use Appropriate Detail(s))

September 6, 2015

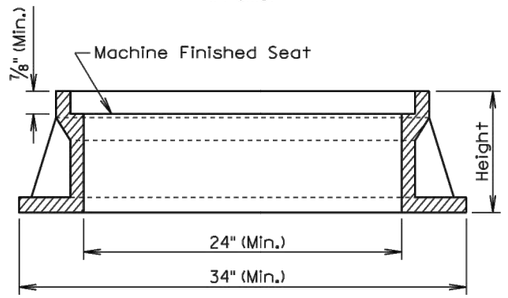
Published Date: 3rd Qtr. 2017	SDDOT	PCC SIDEWALK	PLATE NUMBER 651.75
			Sheet 2 of 2



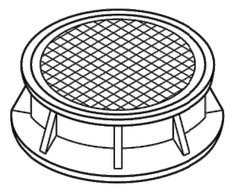
PLAN VIEW
(Frame)



PLAN VIEW
(Lid)



SECTION A-A



ISOMETRIC VIEW

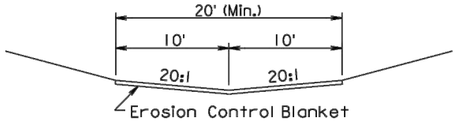
TYPE	HEIGHT (Inches)	MINIMUM WEIGHT (Lb.)
A7	7	400
A8	8	440
A9	9	470
A10	10	480

GENERAL NOTE:

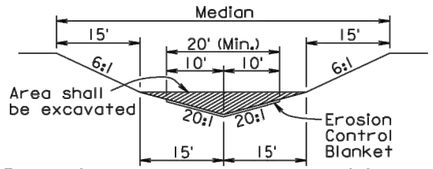
Geometric pattern on top of lid other than that shown shall be approved by the Engineer.

June 26, 2016

Published Date: 3rd Qtr. 2017	SDDOT	TYPE A MANHOLE FRAME AND LID	PLATE NUMBER 671.10
			Sheet 1 of 1

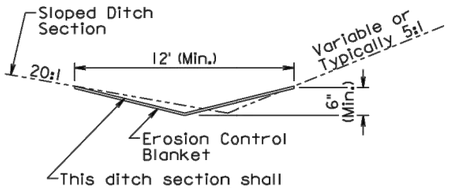


STANDARD DITCH SECTION

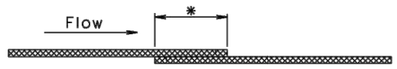


The median shall be shaped to the limits shown in this detail where the erosion control blanket will be placed.

MEDIAN SECTION



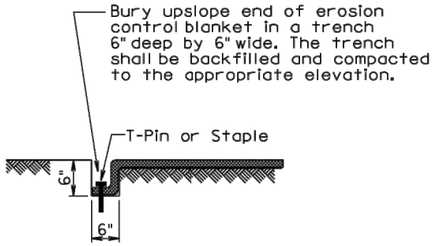
SLOPED DITCH SECTION



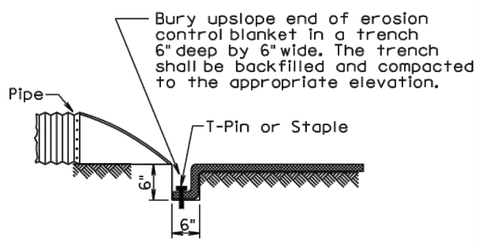
* Use a 4" (Min.) overlap wherever two widths of erosion control blanket are applied side by side.

* Use a 6" (Min.) overlap wherever one roll of erosion control blanket ends and another begins.

OVERLAP DETAIL



TRENCH DETAIL



PIPE END DETAIL

GENERAL NOTES:

Prior to placement of the erosion control blanket, the areas shall be properly prepared, shaped, seeded, and fertilized.

Erosion control blanket shall be unrolled in the direction of the flow of water when placed in ditches and on slopes. The upslope end of the erosion control blanket shall be buried in a trench 6" wide by 6" deep. There shall be at least a 6" overlap wherever one roll of erosion control blanket ends and another begins, with the upslope erosion control blanket placed on top of the downslope erosion control blanket.

The erosion control blanket shall be pinned to the ground according to the manufacturer's installation recommendations.

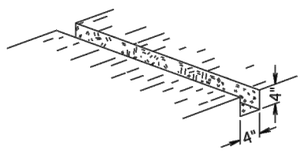
After the placement of the erosion control blanket, the Contractor shall fine grade along all edges of the blanket to maintain a uniform slope adjacent to the blanket and level any low spots which might prevent uniform and unrestricted flow of side drainage directly onto the erosion control blanket.

All ditch sections shall be shaped when installing the erosion control blanket. All costs for shaping the ditches shall be incidental to the contract unit price per foot for "Shaping for Erosion Control Blanket".

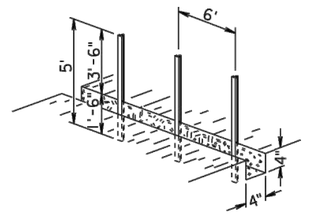
December 23, 2004

Published Date: 3rd Qtr. 2017	SDDOT	***EROSION CONTROL BLANKET***	***PLATE NUMBER*** 734.01 *Sheet 1 of 1*

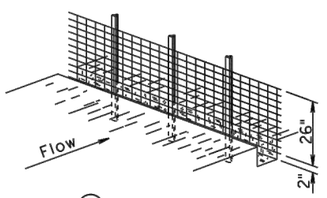
MANUAL LOW FLOW SILT FENCE INSTALLATION



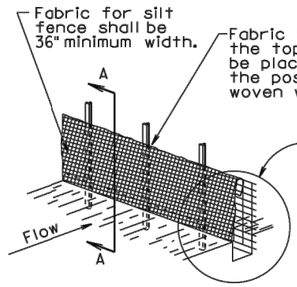
① EXCAVATE TRENCH



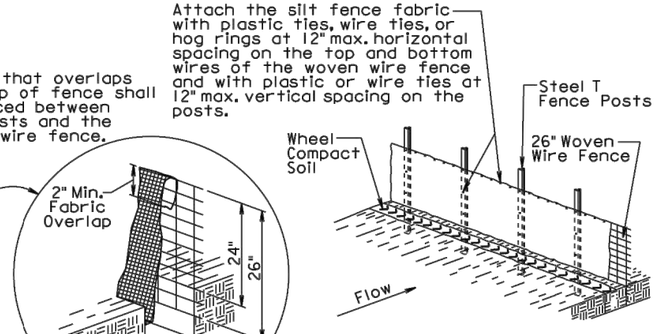
② DRIVE STEEL T FENCE POSTS



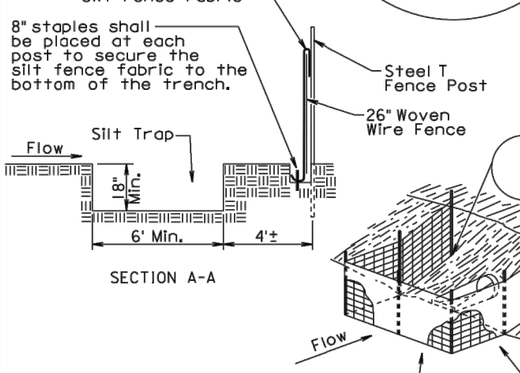
③ ATTACH 26" WOVEN WIRE FENCE TO POSTS



④ ATTACH SILT FENCE FABRIC



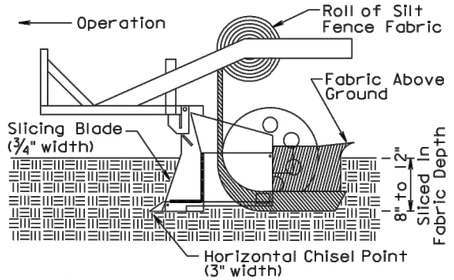
⑤ BACKFILL TRENCH AND WHEEL COMPACT SOIL



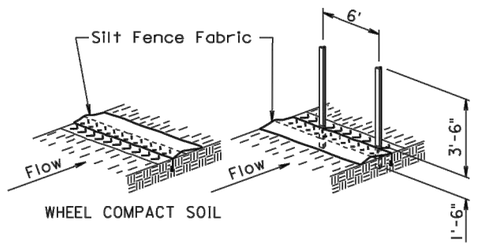
December 23, 2003

Published Date: 3rd Qtr. 2017	SDDOT	***LOW FLOW SILT FENCE AND SILT TRAP***	***PLATE NUMBER*** 734.04 *Sheet 1 of 2*

MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION

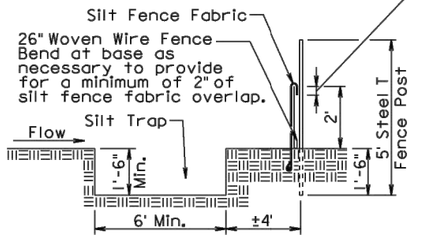


(1) INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

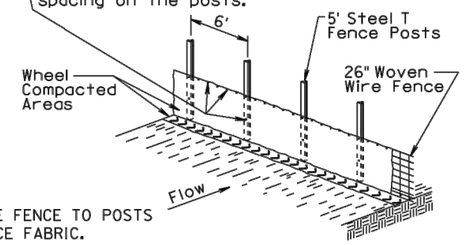


(2) WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.

Silt fence fabric shall be overlapped a minimum of 2" at top of woven wire fence.

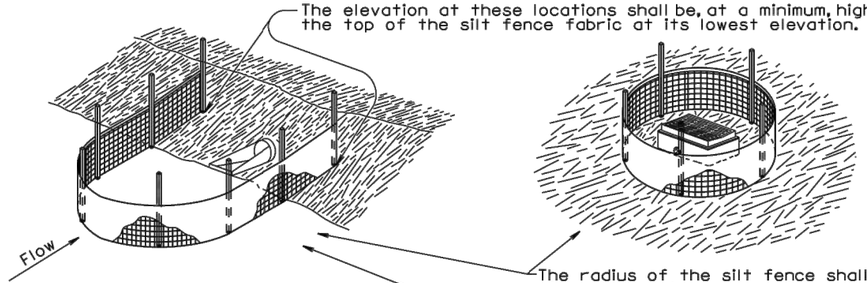


Attach the silt fence fabric with plastic ties, wire ties, or hog rings at 12" max. horizontal spacing on the top and bottom wires of the woven wire fence and with plastic or wire ties at 12" max. vertical spacing on the posts.



(3) ATTACH 26" WOVEN WIRE FENCE TO POSTS AND ATTACH SILT FENCE FABRIC.

The elevation at these locations shall be, at a minimum, higher than the top of the silt fence fabric at its lowest elevation.



The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

The radius of the silt fence shall be the minimum capable by the slicing machine. The post spacing shall be 3' for these types of applications of silt fence. All the other components of the silt fence shall be the same as shown above.

GENERAL NOTES:

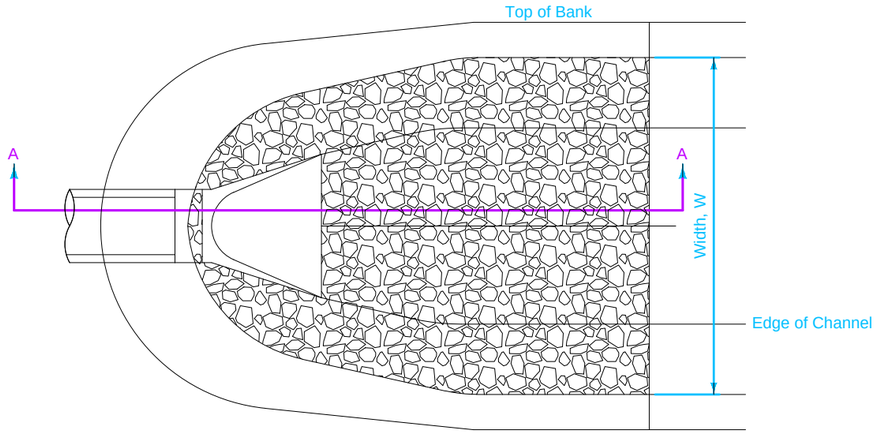
A silt trap shall be provided when specified by a plan note. All costs for constructing the silt trap shall be incidental to the contract unit price per cubic yard for "Silt Trap".

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

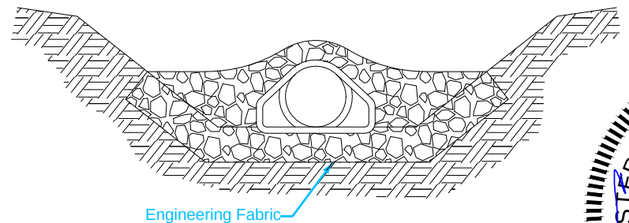
December 23, 2003

Published Date: 3rd Qtr. 2017	SDDOT	***LOW FLOW SILT FENCE AND SILT TRAP***	***PLATE NUMBER 734.04***
			Sheet 2 of 2

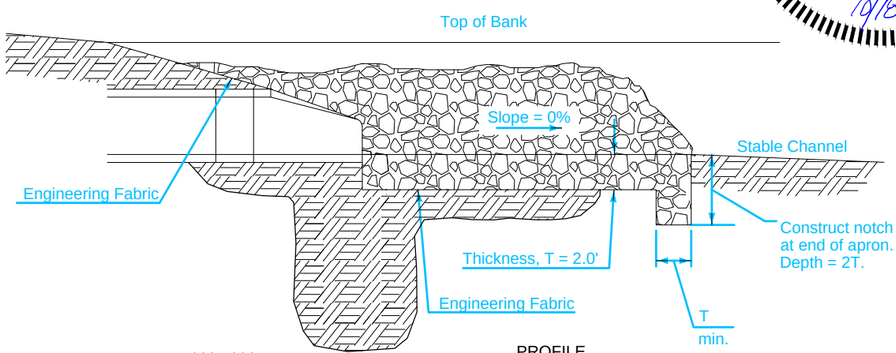
RIP RAP APRON FOR PIPE OUTLET INTO CHANNEL



PLAN



CROSS-SECTION



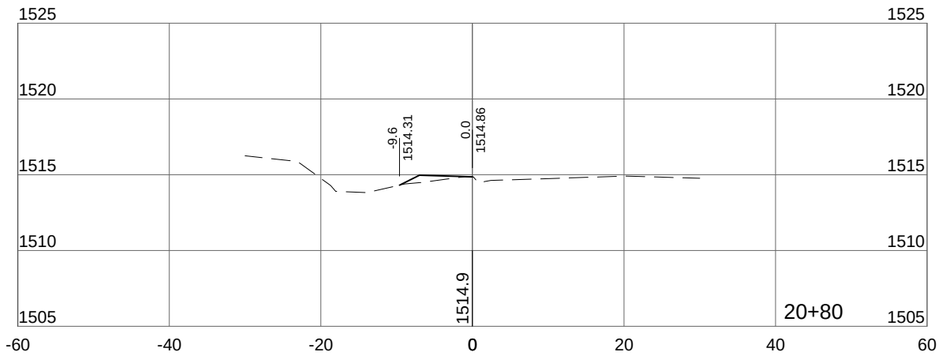
PROFILE
Section A-A

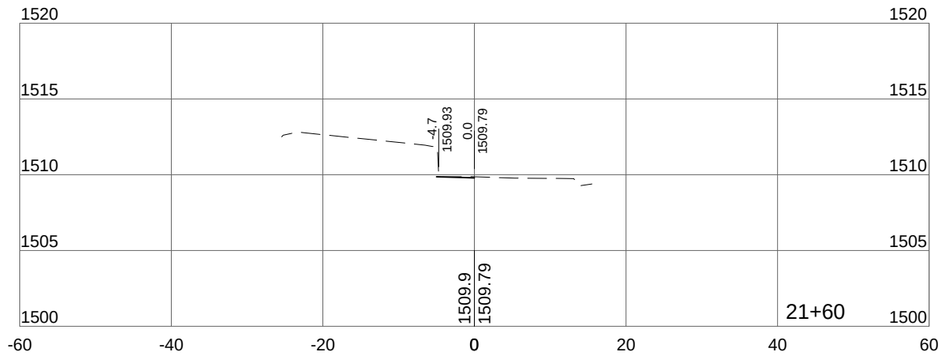
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7746
CHAD M. HANISCH
SOUTH DAKOTA
10/18/17

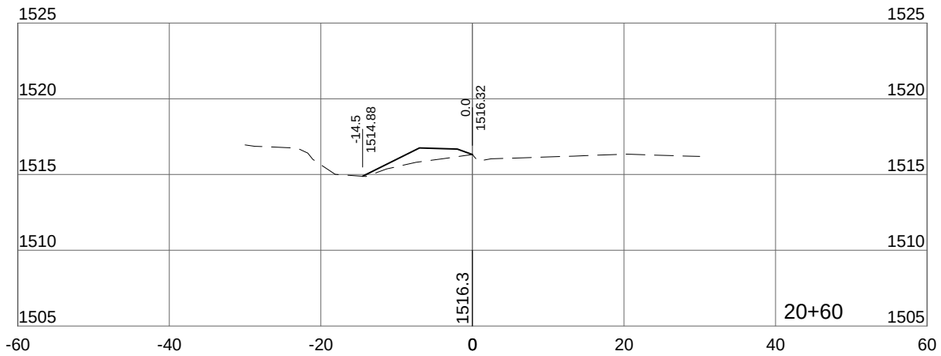
infrastructure design group, inc.

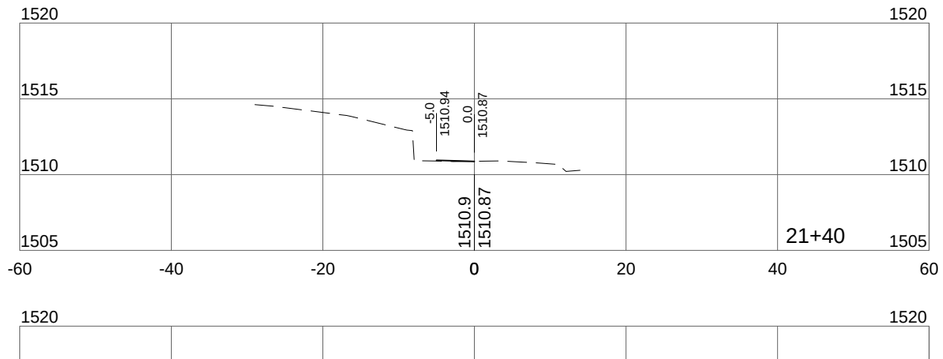
NORTH MAIN AVENUE

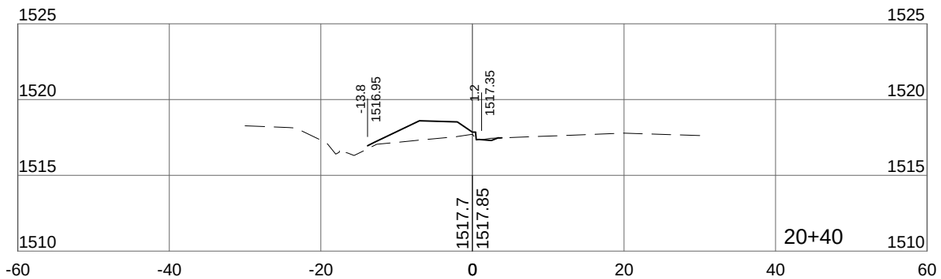
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(14)	40	46

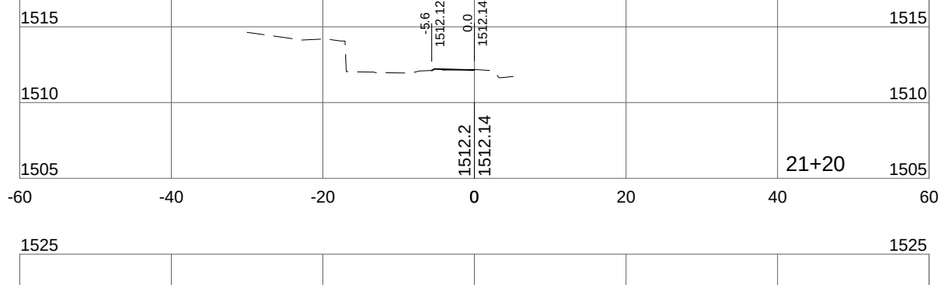


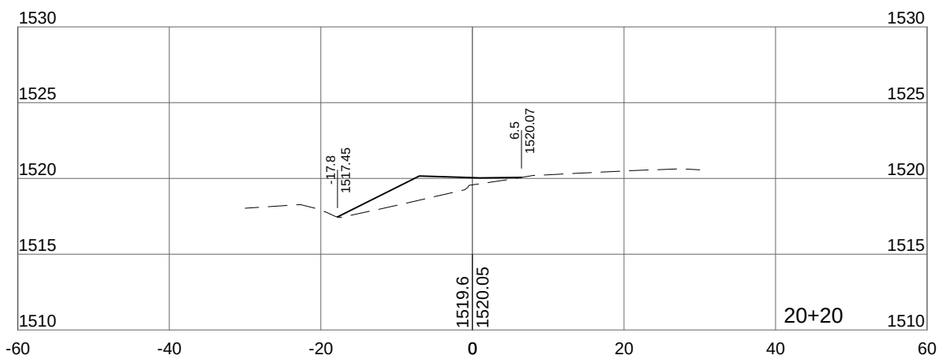


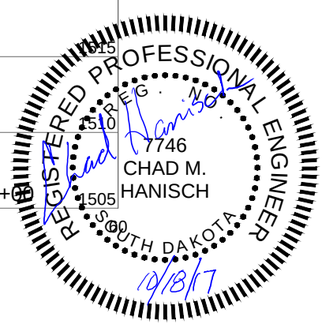






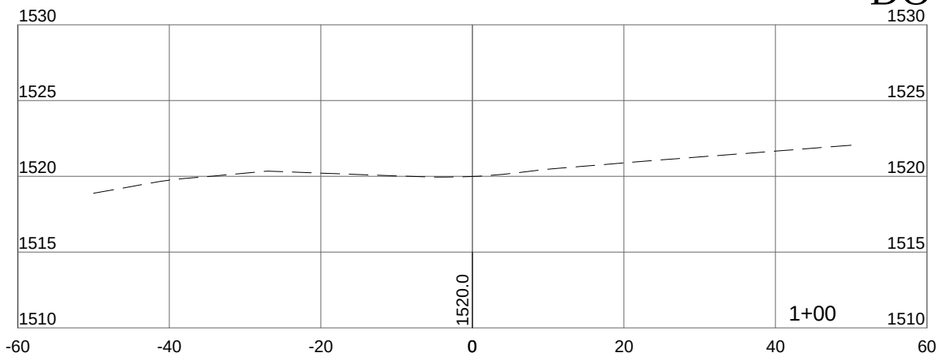


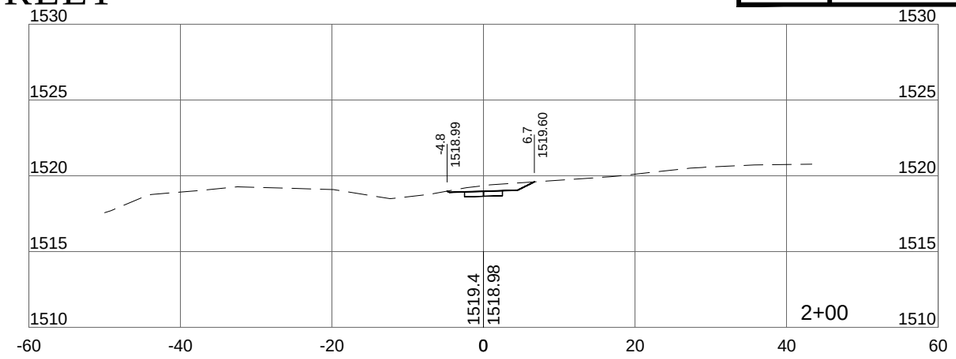


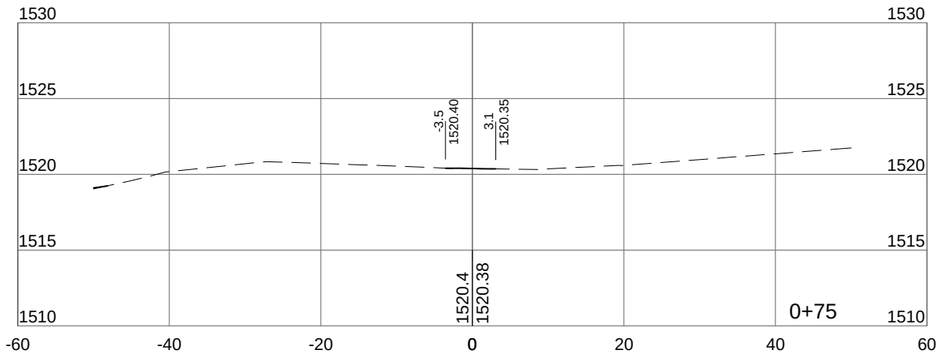


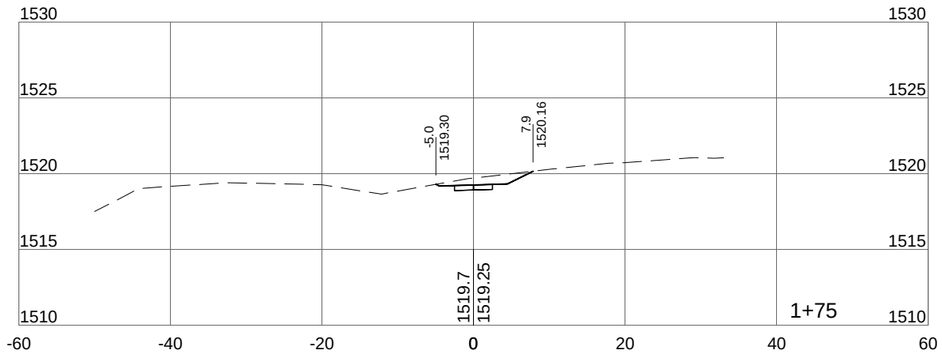
DOWS STREET

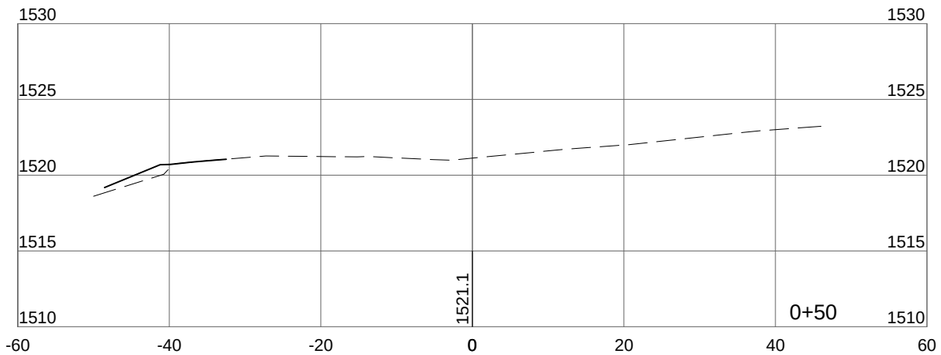
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(14)	41	46

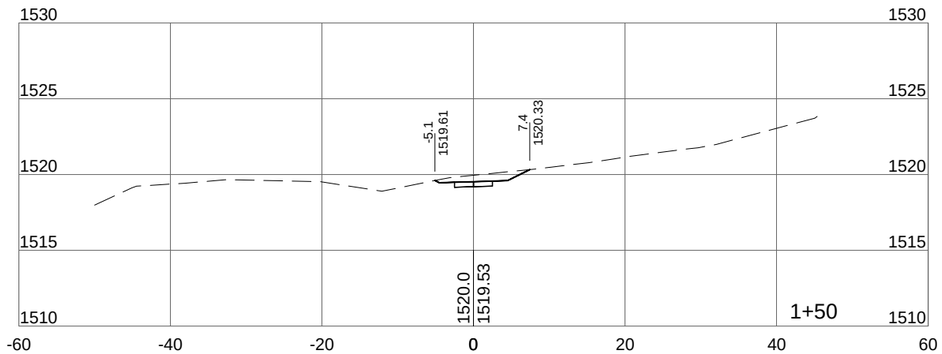


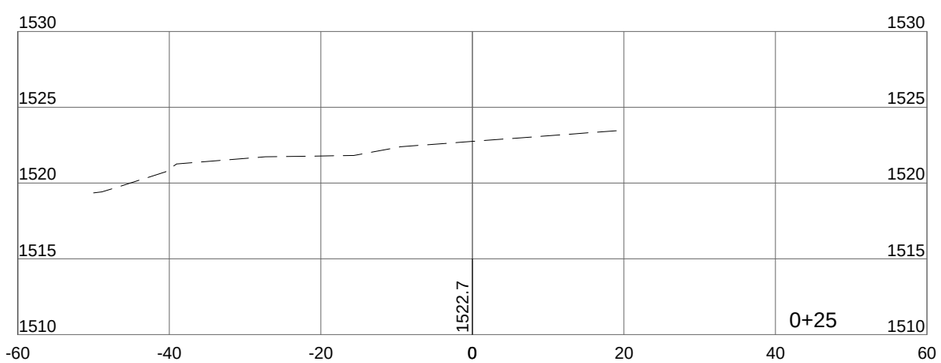


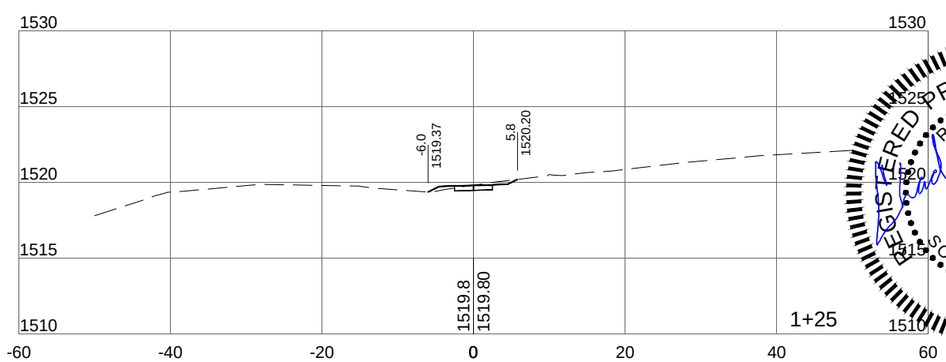


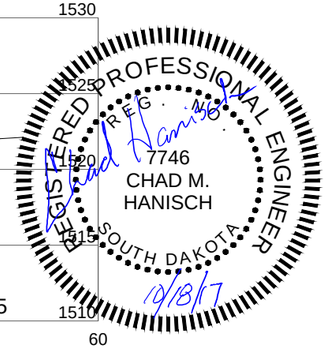






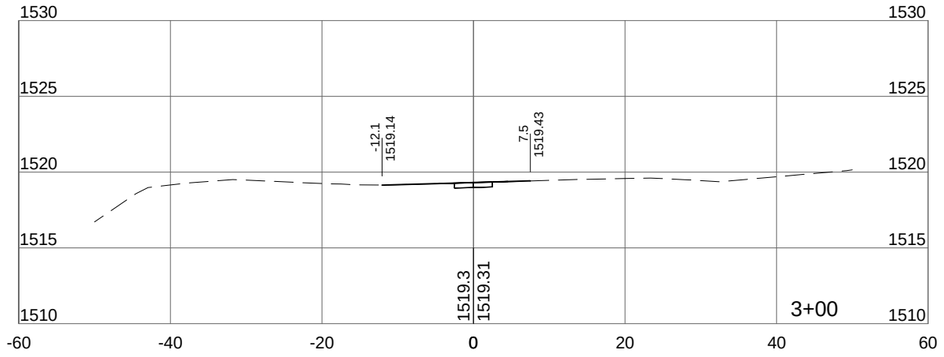


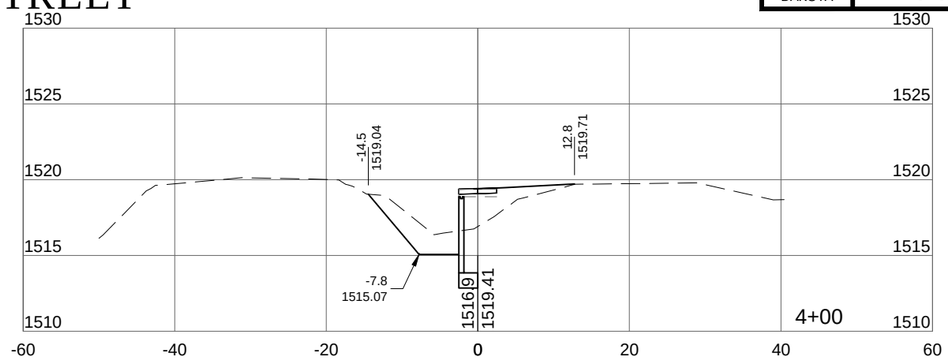


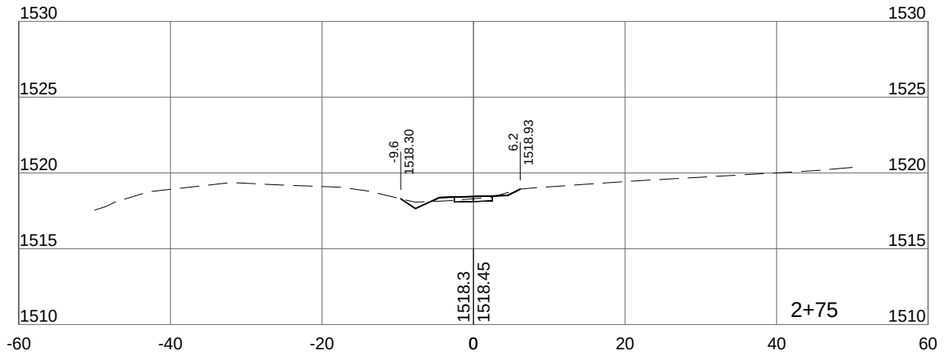


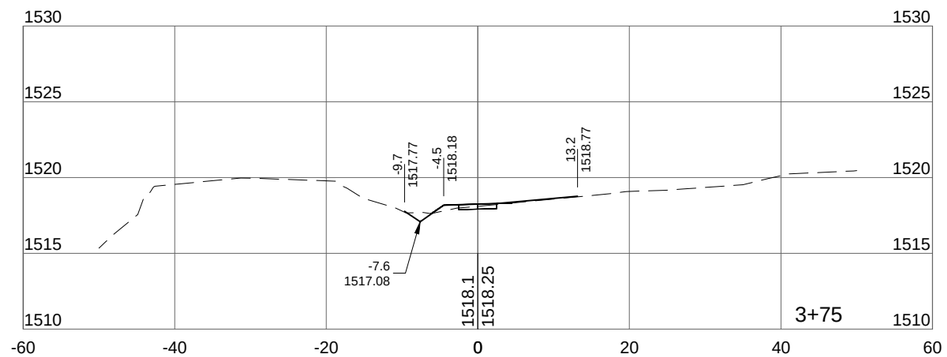
DOWS STREET

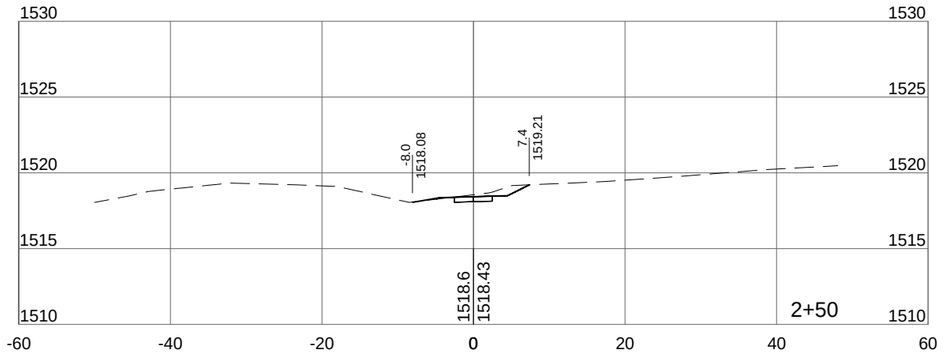
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(14)	42	46

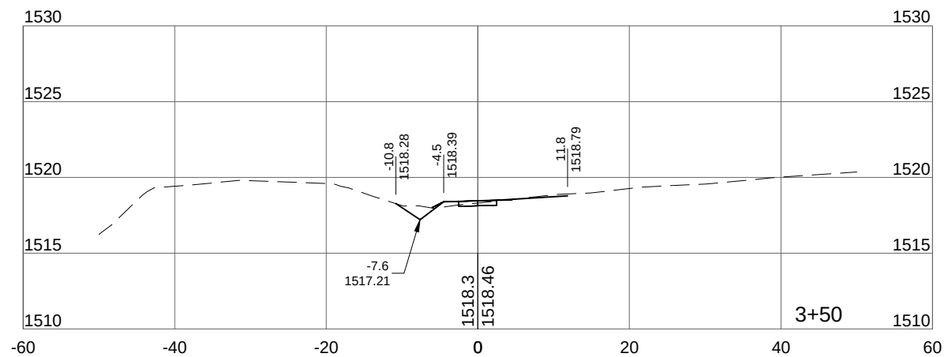


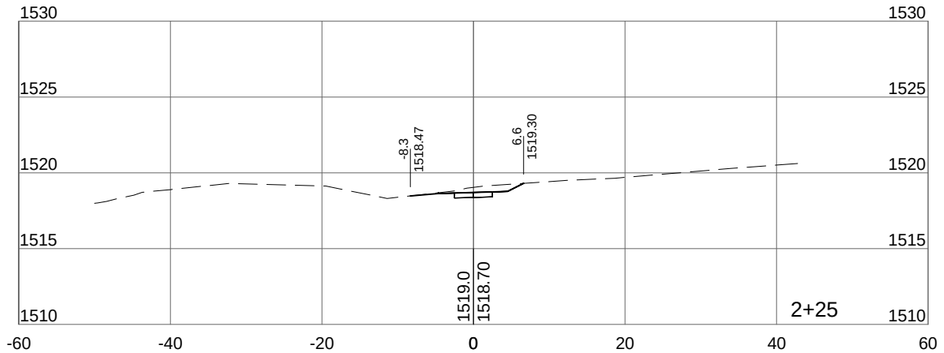


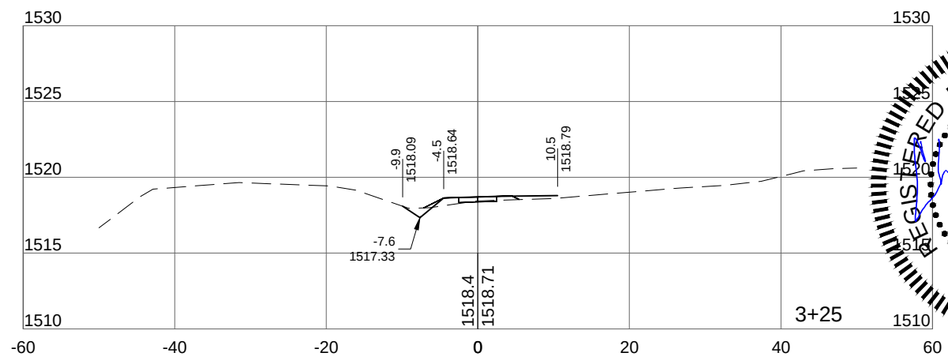


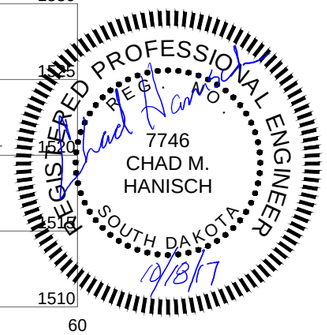






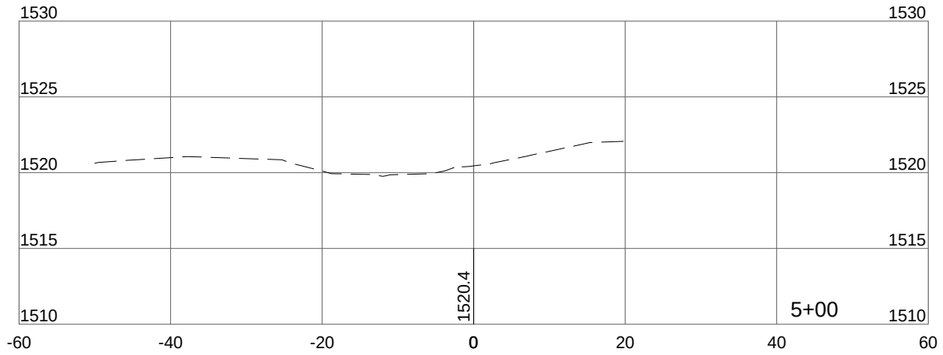


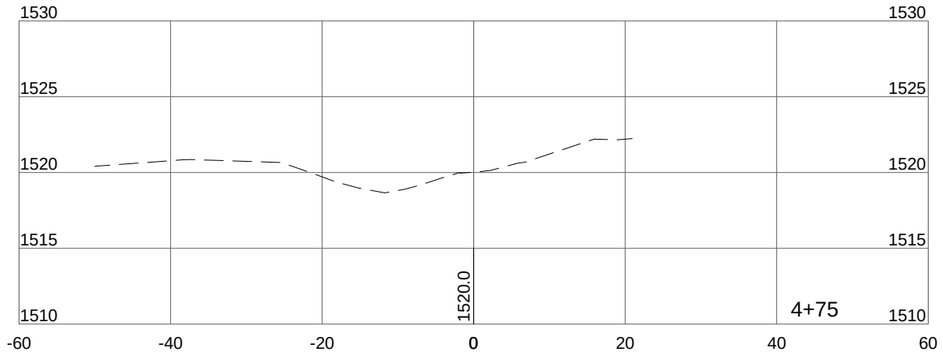


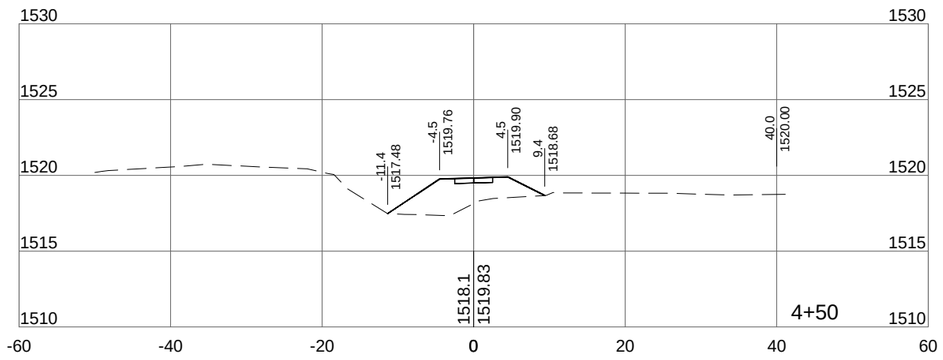


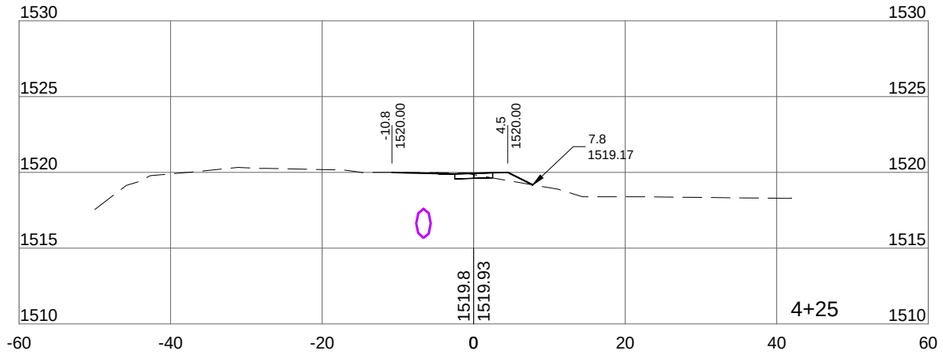
DOWS STREET

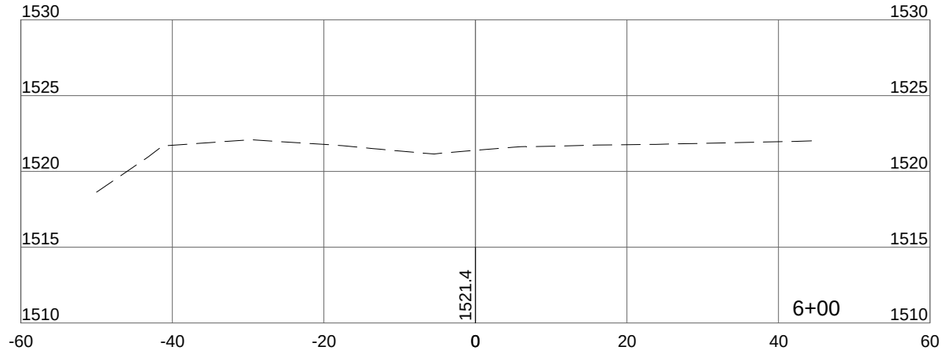
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(14)	43	46

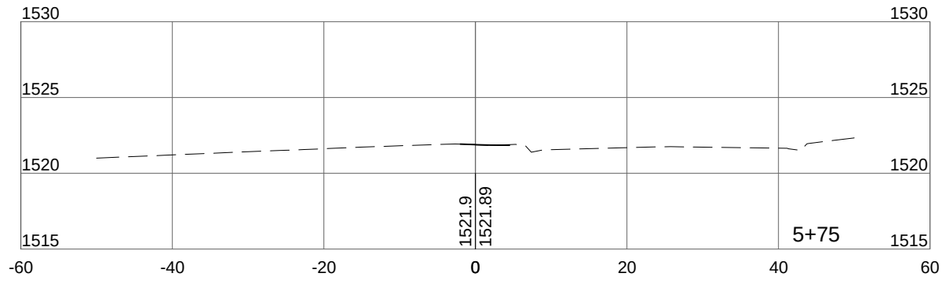


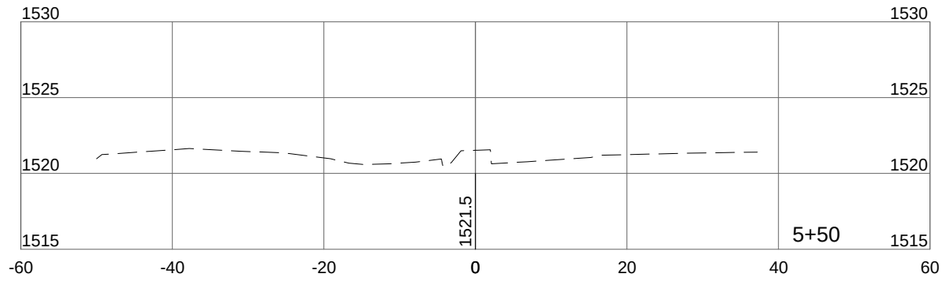


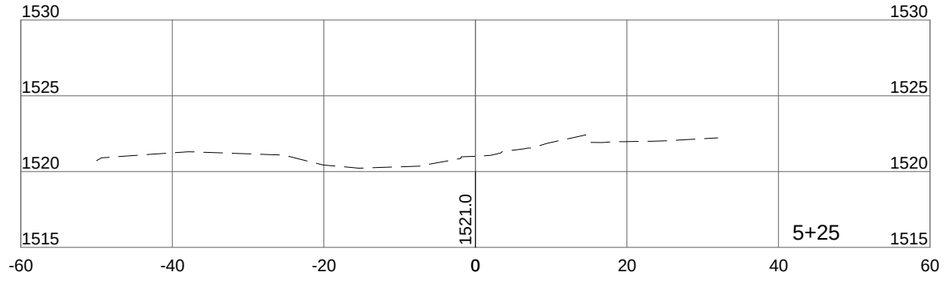












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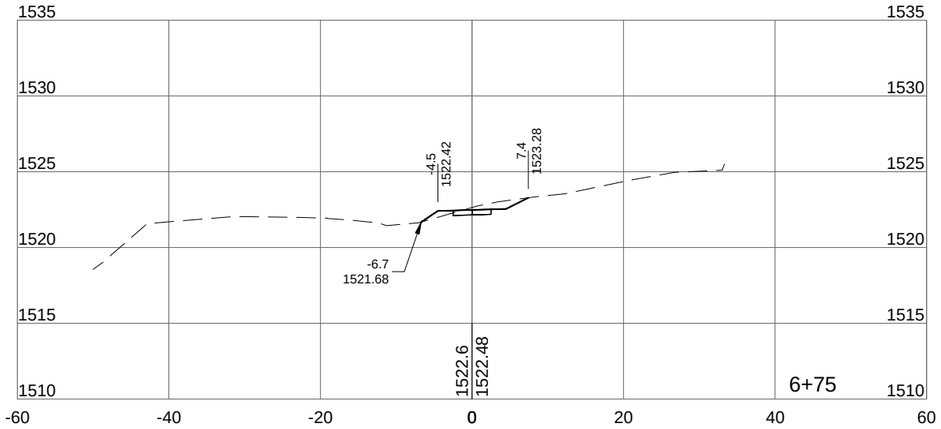
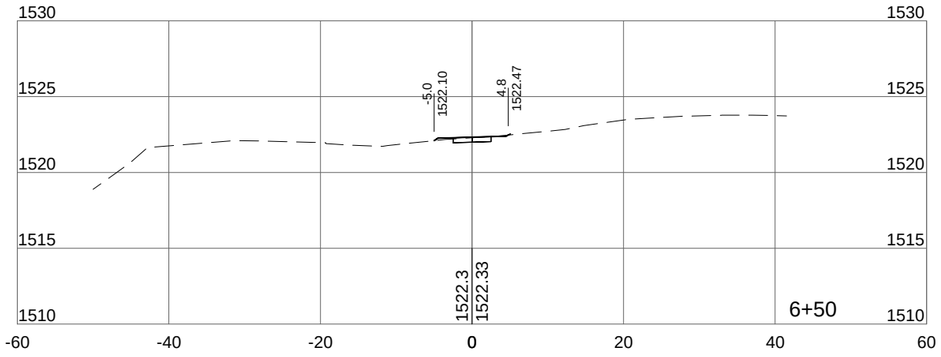
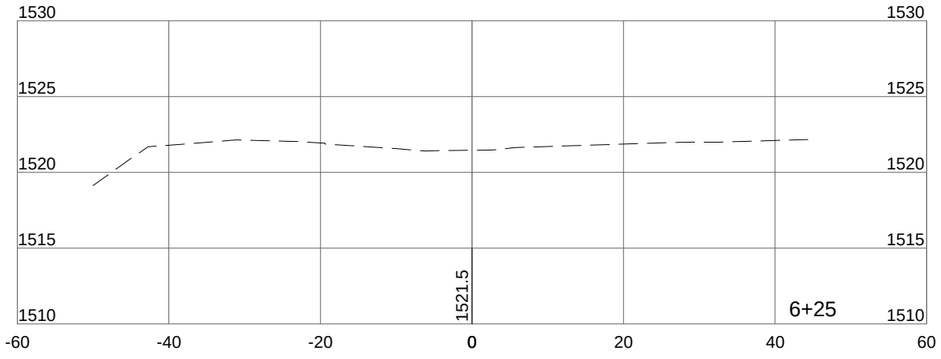
PLOT DATE: 10/19/2017 11:31 AM Derek Westenberg

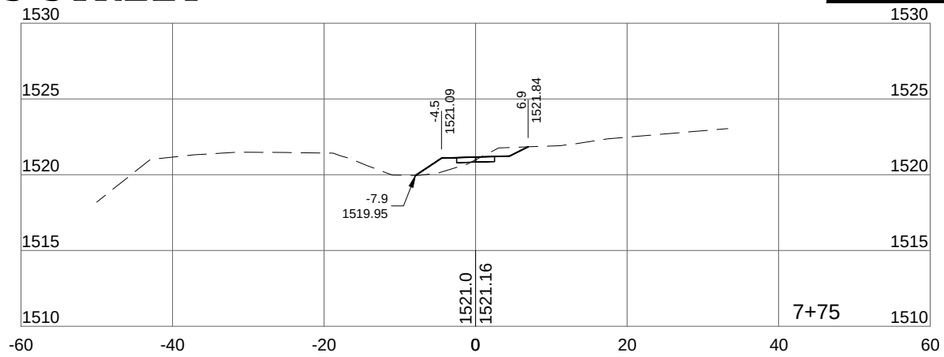
DOWS STREET

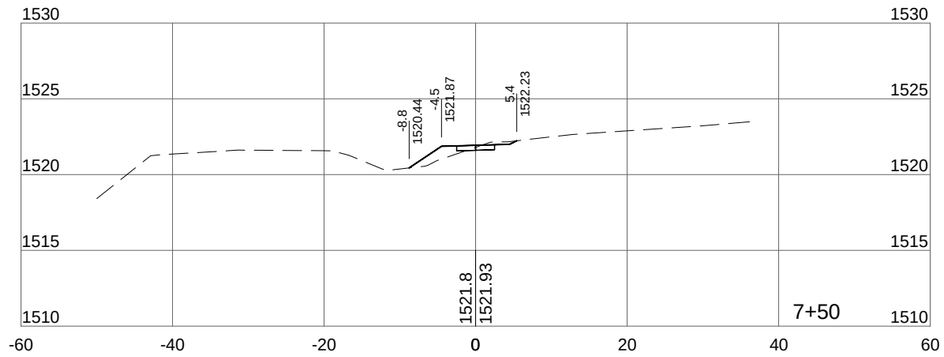
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(14)	44	46

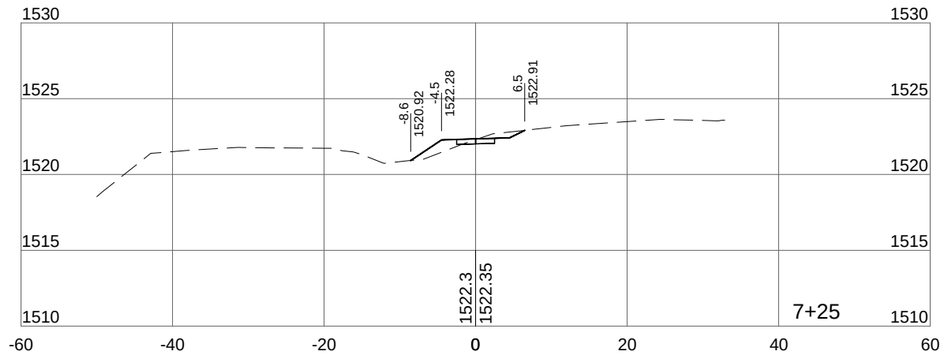


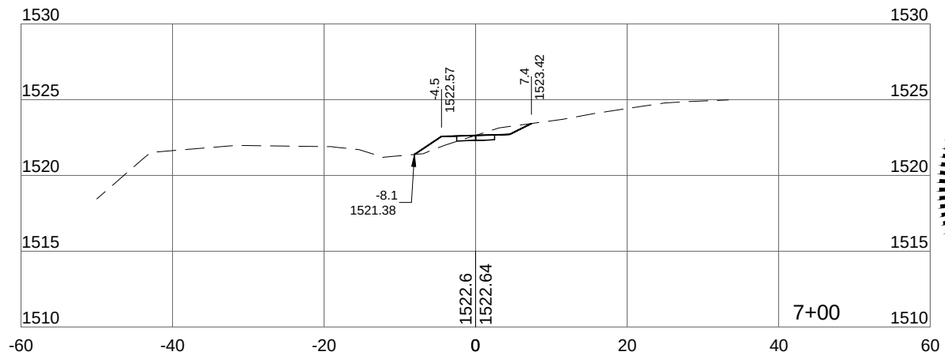






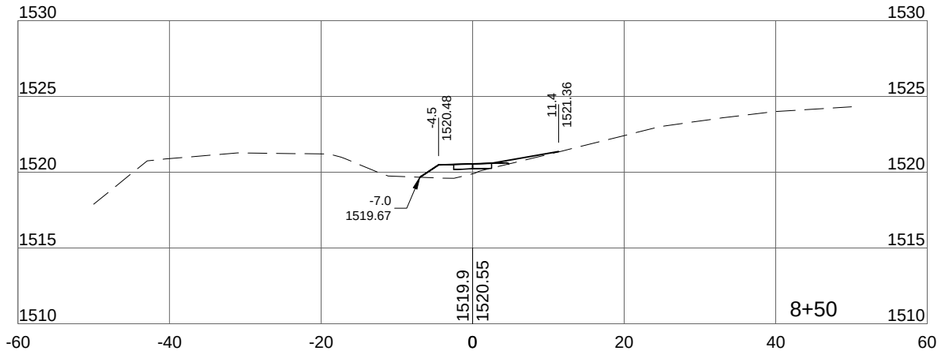


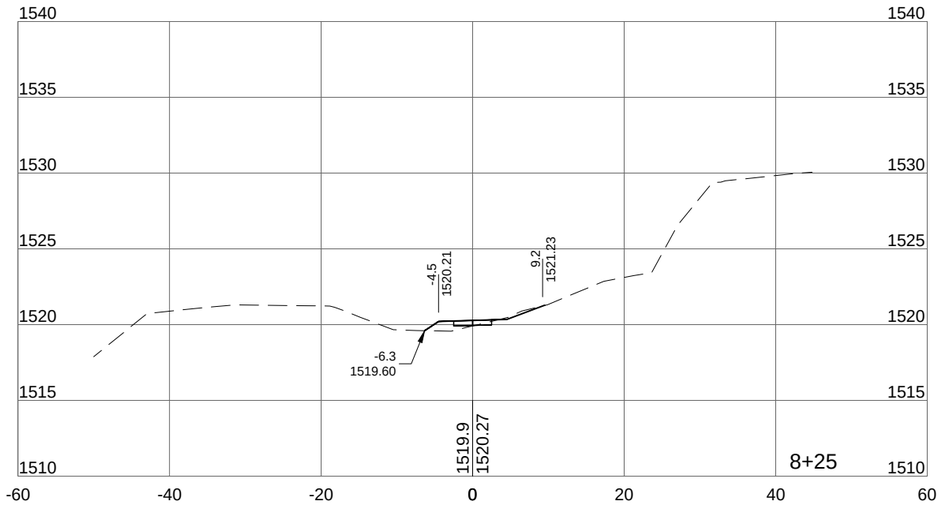


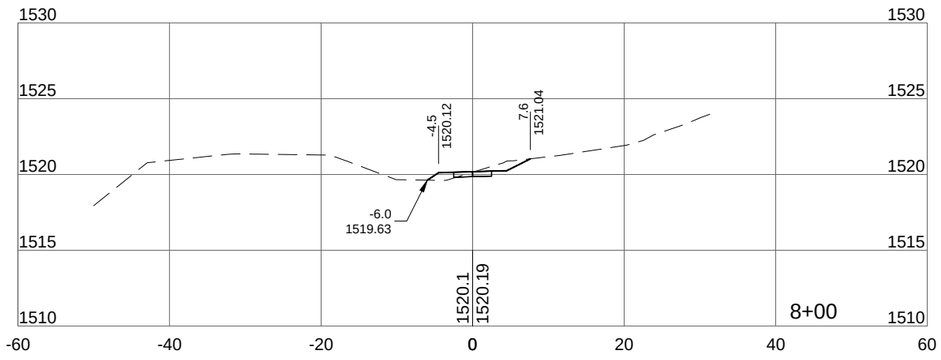


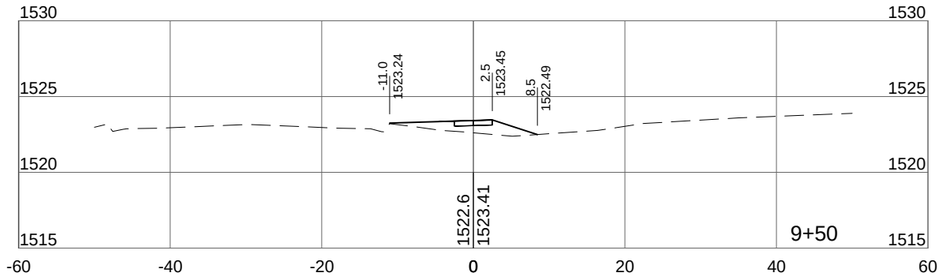
DOWS STREET

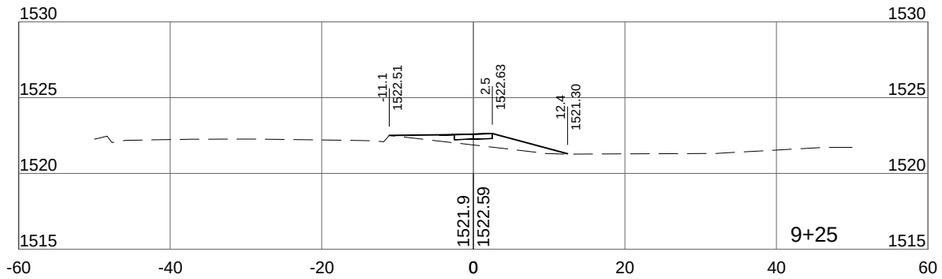
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(14)	45	46

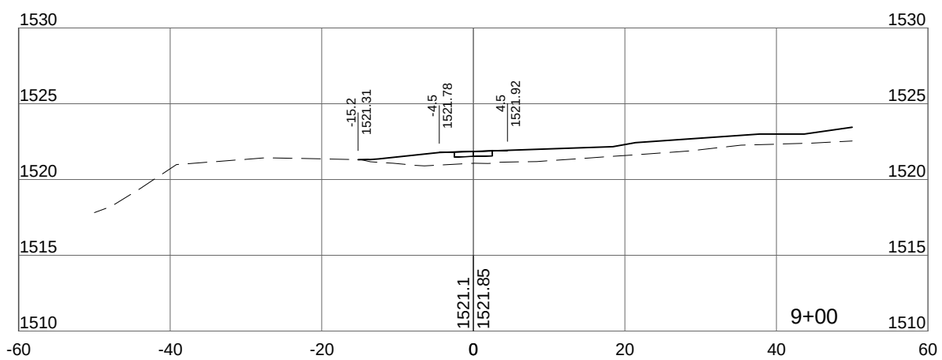


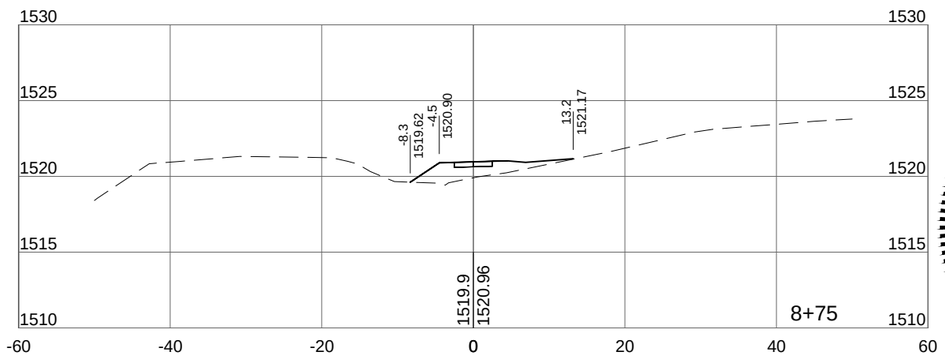












DOWS STREET

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P TAPR(14)	46	46