Meade County
P 7668(05)
PCN 04AE

A Pre-Bid meeting will be held in Sturgis at the Sturgis Fire Hall (1901 Ballpark Road) from 10:00am to 12:00pm MT on Thursday, February 18, 2016. All interested parties are strongly encouraged to attend.

SECTION F: SURFACING PLANS

FOR BIDDING PURPOSES ONLY

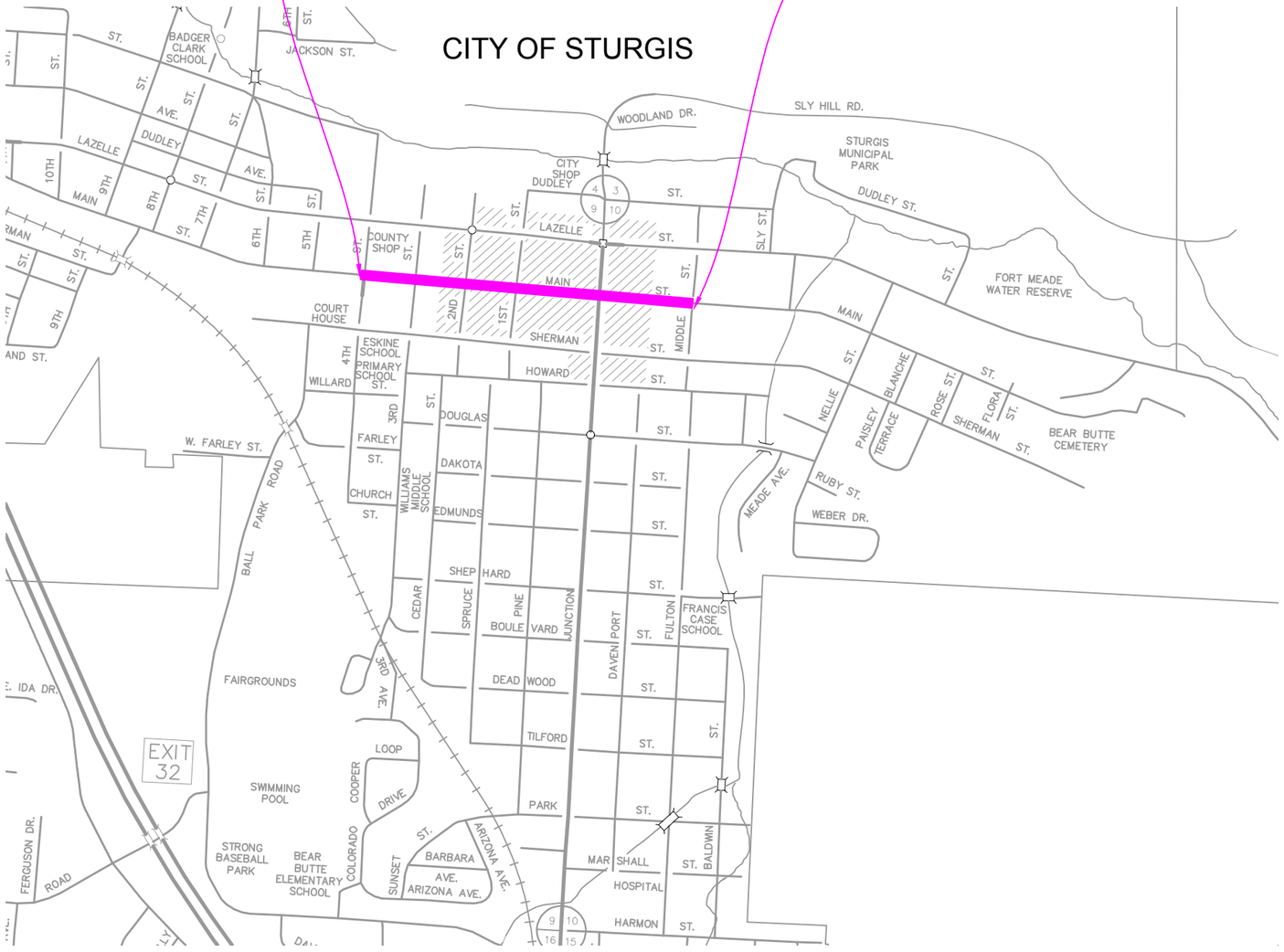
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
FOURFRONT DESIGN INC	P 7668 (05)	F1	F17

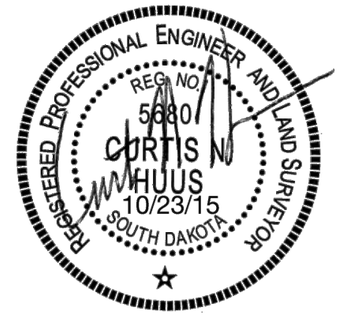
Plotting Date: 10/15/2015

INDEX OF SHEETS

BEGIN P 7668 (05)
Main Street
Station 99+00

END P 7668 (05)
Main Street
Station 125+25





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SECTION F ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
120E6200	Water for Granular Material	101	MGal
260E1010	Base Course	10673	Ton
320E3000	Compaction Sample	3	Each
330E0100	SS-1h or CSS-1h Asphalt for Tack	5.4	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	3.0	Ton
330E2000	Sand for Flush Seal	54.6	Ton
332E0010	Cold Milling Asphalt Concrete	3057	SqYd
380E0200	Colored Nonreinforced PCC Pavement	485.8	SqYd
600E0200	Type II Field Laboratory	1	Each
900E1650	Temporary Surfacing	9134	SqFt

SECTION F ESTIMATE OF QUANTITIES – ALTERNATE A

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0007	PG 64-28 Asphalt Binder	211.0	Ton
320E1050	Class E Asphalt Concrete	3637.8	Ton

SECTION F ESTIMATE OF QUANTITIES – ALTERNATE B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0007	PG 64-28 Asphalt Binder	186.8	Ton
320E1050	Class E Asphalt Concrete	3736.1	Ton

SURFACING THICKNESS DIMENSIONS

Plans tonnage will be applied even though the thickness may vary from that shown on the plans.
At those locations where material must be placed to achieve a required elevation, plans tonnage may be varied to achieve the required elevation.

SAWING IN EXISTING SURFACING

Where new asphalt concrete or new PCC Pavement is placed adjacent to existing asphalt concrete or existing PCC Pavement (end of project, end of ramps, ramp detours, crossovers), the existing pavement shall be sawed full depth to a true, straight vertical face. No separate payment shall be made for sawing.

GRANULAR MATERIAL

Granular Material will conform to the specification for Base Course (Section 882 of the Standard Specifications).
3,850 tons have been included in the Base Course bid item for use in areas of unstable subgrade (see Section B for Geotextile fabric notes). This quantity is based on 1 foot of coverage for 6,111 sq. yds. of subgrade. Granular Material will be paid for at the contract unit price for, Base Course. Payment will be full compensation for furnishing and placing this material.

BASE COURSE

Base Course shall be furnished by the Contractor

All requirements for Base Course shall apply.

COLD MILLING ASPHALT CONCRETE

Cold Milling Asphalt Concrete operations ahead of asphalt concrete laydown will be limited by particular job conditions and will be subject to approval of the Engineer. In no case shall cold milling operations ahead of asphalt concrete laydown operations exceed seven calendar days. Field conditions will vary from that given in the typical section.

Milled material not reused on the project (estimated at 340 tons) shall become the property of the Contractor for disposal.

In order to construct the new surfacing flush with the asphalt concrete at the beginning/end of project and beginning/end of bridges it will be necessary to mill the existing asphalt concrete from 1” to 2”, see details.

Intersecting roads with asphalt concrete beyond Right of Way shall be milled back for approximately 25 feet from edge of shoulder so that additional surfacing may be placed at these locations.

COLD MILLING ASPHALT CONCRETE

Location of Cold Milling Areas	Cold Milled Asphalt Concrete
	SqYds
Main Street	
Sta. 118+22.66 to 123+85.33	3057.38
TOTAL	3057.38

CLASS E ASPHALT CONCRETE

Mineral aggregate for the Class E Asphalt Concrete – Alternate A shall conform to the Requirements of the Standard Specifications for Class E, Type 1.

Mineral Aggregate for Class E Asphalt Concrete - Alternate B shall consist of a minimum of 80 percent crushed limestone ledgerock and shall conform to the requirements for Class E, Type 1.

All other requirements for Class E Asphalt Concrete shall apply.

CHECKING SPREAD RATES

The Contractor shall be responsible for checking the Base Course and Class E Asphalt Concrete spread rates and taking the weigh delivery tickets as the surfacing material arrives on the project and is placed onto the roadway.

The Contractor shall compute the required spread rates for each typical surfacing section and create a spread chart prior to the start of material delivery and placement. The Engineer will review and check the Contractor’s calculations and spread charts. The station to station spread shall be written on each ticket as the surfacing material is delivered to the roadway.

At the end of each day’s shift, the Contractor shall verify the following:

- All tickets are present and accounted for,
- The quantity summary for each item is calculated,
- The amount of material wasted if any,
- Each day’s ticket summary is marked with the corresponding ‘computed by’,
- The ticket summary is initialed and certified that the delivered and placed quantity is correct.

All daily tickets and the summary by item shall be given to the Engineer no later than the following morning.

If the checker is not properly and accurately performing the required duties, the Contractor shall correct the problem or replace the checker with an individual capable of performing the duties to the satisfaction of the Engineer. Failure to do so will result in suspension of the work.

The Department will perform depth checks. The Contractor shall be responsible for placement of material to the correct depth unless otherwise directed by the Engineer. If the placed material is not within a tolerance of ±1/2 inch of the plan shown depth, the Contractor shall correct the problem at no additional cost to the Department. Excess material above the tolerance will not be paid for. Achieving the correct depth may require picking up and moving material or other action as required by the Engineer.

All costs for providing the Contractor furnished checker and performing all related duties shall be incidental to the contract lump sum price for the CHECKER. No allowances will be made to the contract lump sum price for CHECKER due to authorized quantity variations unless the quantities for the material being checked vary above or below the estimated quantities by more than 25 percent. Payment for the Checker shall then be increased or decreased by the same proportion as the placed material quantity bears to the estimated material quantity.

ALKALI SILICA REACTIVITY

Fine aggregate shall conform to Section 800.2.D Alkali Silica Reactivity (ASR) Requirements.

Below is a list of known fine aggregate sources and the average corresponding 14 day expansion values:

Source	Location	Expansion Value
Bachman	Winner, SD	0.335*
Bitterman	Delmont, SD	0.316*
Concrete Materials	Corson, SD	0.170
Croell	Hot Springs, SD	0.089
Croell	Wasta, SD	0.212
Emme Sand & Gravel	Oneil, NE	0.217
Fisher S&G – Mickelson Pit	E. of Nisland, SD	0.129
Fisher S&G - Vallery Pit	Nisland, SD	0.110
Fisher S&G	Rapid City, SD	0.092
Fisher S&G	Spearfish, SD	0.053
Fisher S&G	Wasta, SD	0.159
Fuchs	Pickstown, SD	0.275*
Higman	Akron, IA	0.203
Higman	Hudson, SD	0.187
Hilde	Madison, SD	0.116

ALKALI SILICA REACTIVITY (CONTINUED)

Jensen	Herried, SD	0.276*
L.G. Everist	Brookings, SD	0.186
L.G. Everist	Hawarden, IA	0.166
L.G. Everist	Summit, SD	0.178
Morris	Blunt, SD	0.192
Morris - Richards Pit	Onida, SD	0.188
Myrl & Roys – Ode Pit	E Sioux Falls, SD	0.214
Myrl & Roys - Nelson Pit	NE Sioux Falls, SD	0.156
Northern Concrete Agg.	Rauville, SD	0.113
Northern Concrete Agg.	Luverne, MN	0.133
Opperman - Gunvordahl Pit	Burke, SD	0.362*
Opperman - Cahoy Pit	Herrick, SD	0.307*
Opperman - Jones Pit	Burke, SD	0.321*
Opperman - Randall Pit	Pickstown, SD	0.239
Pete Lien & Sons	Creston, SD	0.158
Pete Lien & Sons	Oral, SD	0.129
Pete Lien & Sons	Wasta, SD	0.192
Thorpe Pit	Britton, SD	0.098
Wagner Building Supplies	Pickstown (Wagner), SD	0.241
Winter Brothers- Whitehead Pit	Brookings, SD	0.197

* These sources will require Type V cement in the concrete mix design and Class F (Modified) fly ash as specified.

The Department will use the running average of the last three known expansion test results or less for determining acceptability of source and the required Type of cement. These expansion results are reported in the preceding table. Additional testing, when requested by the Contractor, will be performed by the Department at the Contractor's expense.

The values listed in the table are intended for use in bidding. If a previously tested pit by SDDOT with acceptable test values (less than 0.250) is discovered after letting to require Type V cement (greater than 0.250) the Department will accept financial responsibility for the change from Type II to Type V cement.

Type II or Type V cement will not change the requirement for the fly ash. The cost for either type of cement shall be subsidiary to the contract item.

10" COLORED NONREINFORCED PCC PAVEMENT

The aggregate may require screening as determined by the Engineer.

The concrete used in the Portland Cement Concrete Pavement shall conform to section 380, shall contain a minimum of 600 lbs of cement and fly ash at 20%. The concrete shall contain at least 55% coarse aggregate. The use of a water reducer at manufacturer's recommendations will be required. The concrete shall obtain a minimum 4,000 psi at 28 days. The contractor is responsible for the mix design used. The contractor shall submit a mix design for approval at least 2 weeks prior to use.

A construction joint will be sawed whenever new concrete pavement is placed adjacent to existing concrete pavement.

The surface of the mainline paving shall be a heavy carpet drag finish.

The 10" Colored Non-reinforced PCC Pavement shall have the Liquid Oxide color "Doeskin" featured. To produce the doeskin color, utilize Colorflo for Color select Liquid Dispensing System per Solomon Colors, Inc. (or as per manufacturer's recommendations for other provider). All costs to furnish and install 10" Colored Non-reinforced PCC Pavement shall be incidental to the contract unit price per square yard for Colored Non-reinforced PCC Pavement. See layout sheets for 10" Colored Non-reinforced PCC Pavement details.

TABLE OF MAINLINE – 10" NONREINFORCED PCC PAVEMENT

LOCATION	10" COLORED NONREINFORCED PCC PAVEMENT
	Area (yd^2)
Mainline	
Sta. 100+68.09 to 100+82.50	12.1
Sta. 101+20.15 to 101+30.15	22.2
Sta. 104+33.45 to 104+43.75	22.2
Sta. 104+84.03 to 104+94.03	22.2
Sta. 107+98.95 to 108+08.95	22.2
Sta. 108+64.27 to 108+74.27	22.2
Sta. 111+70.71 to 111+80.71	22.2
Sta. 112+29.93 to 112+39.93	22.2
Sta. 114+75.14 to 114+85.14	22.2
Sta. 124.38.21 to 124+48.21	22.2
Sta. 124+83.57 to 124+93.57	22.2
Intersecting Roads	
Sta. 300+27.00 to 300+37.00 – 4th St	31.2
Sta. 401+37.64 to 401+47.64 – 3rd St	22.0
Sta. 402+01.61 to 402+11.61 – 3rd St	22.0
Sta. 500+93.11 to 501+03.11 – 2nd St	36.4
Sta. 501+57.10 to 501+67.10 – 2nd St	31.6
Sta. 601+06.32 to 601+16.32 – 1st St	32.0
Sta. 601+70.29 to 601+80.29 – 1st St	32.1
Sta. 800+93.69 to 801+03.69 – Middle St	22.2
Sta. 801+49.69 to 801+59.69 – Middle St	22.2
Total	485.8

CURING OF COLORED CONCRETE

Do NOT fog or spray water on the surface during the initial curing period.
Do NOT cover the surface with plastic.
Use Legacy or Brickform Cure and Seal compounds per ASTM C309 and ASTM 1315.

RATES OF MATERIALS

The Estimate of Quantities is based on the following quantities of materials per Station.

CLASS E ASPHALT CONCRETE – 3 - 2" LIFTs

	ALT A	ALT B	
Crushed Aggregate	56.53	58.16	Tons
PG 64-28 Asphalt Binder	3.48	3.07	Tons
Total Mix	60.01	61.23	Tons

The exact proportions of these materials will be determined on construction.

SS-1h or CSS-1h Emulsified Asphalt for Tack between lifts applied at the rate of 0.12 ton applied 48.66 feet wide (0.05 gallons per square yard).

SS-1h or CSS-1h Emulsified Asphalt for Flush Seal applied at the rate of 0.12 ton applied 48.66 feet wide (0.05 gallons per square yard).

Sand for Flush Seal applied at the rate of 2.16 ton applied 48.66 feet wide (8 pounds per square yard).

TYPE II FIELD LABORATORY

Substitution of a cellular telephone for the hard-wired touch-tone telephone is not allowed, as state personnel need the ability to download information over direct phone lines. The phone is intended for state personnel usage only. Contractor personnel are prohibited from using this phone unless pre-approved by the Project Engineer. The Contractor shall submit a copy of each monthly bill for calls charged to this phone at the end of each month. The Engineer will then audit the bills to ensure all calls are legitimate and then initiate a Construction Change Order (CCO) to reimburse the Contractor for the actual phone calls made, including local and long distance calls. Reimbursement will not be made for fees associated with the purchase, installation, disconnection, monthly line charges, and incidentals involved in the installation, maintenance, and disconnection of the phone (including attachments). These items shall be incidental to the contract unit price per each for "Type II Field Laboratory".

TEMPORARY TRAFFIC CONTROL SURFACING QUANTITIES

Bid Item quantities of material (Base Course, Temporary Surfacing) used for temporary traffic control are included in the Estimate of Quantities. See Section C for construction details.

Class E, Type 1 Asphalt Concrete shall be used for intersection tie-ins, driveways and other areas as directed by the Engineer. The size of these areas and the amount of asphalt needed will vary from site to site. Class E, Type 1 Asphalt Concrete will be paid for at the contract unit price per ton. Payment shall be full compensation for furnishing and installing the Class E, Type 1 Asphalt Concrete.

TABLE OF QUANTITIES – ALTERNATE A

Location-Description	Class E Asphalt Concrete 1st lift	Class E Asphalt Concrete 2nd lift	Class E Asphalt Concrete 3rd lift	10" Colored Non-reinforced Concrete	Base Course
	Ton	Ton	Ton	Square Yard	Ton
Mainline					
Sta. 101+08.46 to 117+82.62 – Main St	868.6	868.6	868.6	234.1	5236
Sta. 118+42.55 to 123+85.33 – Main St	339.6	339.6	339.6	0	0
Sta. 123+85.33 to 125+20.30 – Main St	42.2	42.2	42.2	44.4	277
Cross Streets					
Sta. 201+08.32 to 201+57.85 – 4th St (South)	15.1	15.1	15.1	0	89
Sta. 300+24.98 to 301+00.00 – 4th St (North)	21.3	21.3	21.3	31.2	146
Sta. 400+96.68 to 401+64.54 – 3rd St (South)	16.8	16.8	16.8	22	121
Sta. 401+84.60 to 402+49.64 – 3rd St (North)	17.2	17.2	17.2	22	113
Sta. 500+51.72 to 501+20.17 – 2nd St (South)	26.0	26.0	26.0	36.4	186
Sta. 501+40.12 to 502+06.01 – 2nd St (North)	20.9	20.9	20.9	31.6	152
Sta. 600+64.42 to 601+33.29 – 1st St (South)	23.7	23.7	23.7	32.1	168
Sta. 601+53.37 to 602+18.29 – 1st St (North)	23.0	23.0	23.0	32.0	156
Sta. 800+63.88 to 801+16.69 – Middle St (South)	13.1	13.1	13.1	22.2	97
Sta. 801+36.78 to 801+83.63 – Middle St (North)	11.5	11.5	11.5	22.2	82
Geotextile Fabric Backfill					3850
TOTAL	1439.0	1099.4	1099.4	485.8	10673

TABLE OF QUANTITIES – ALTERNATE B

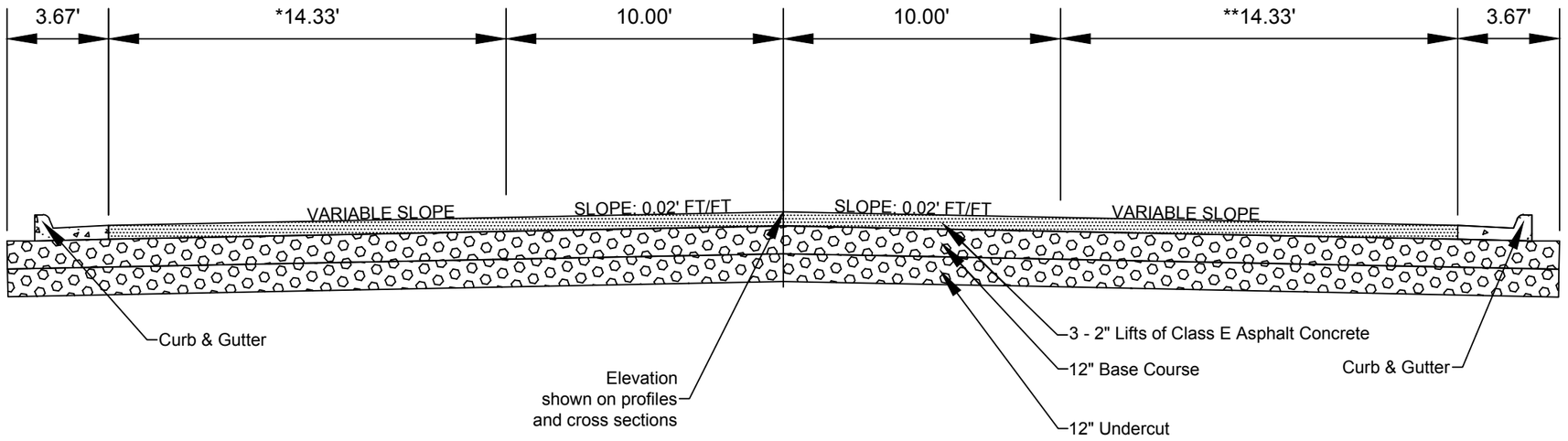
Location-Description	Class E Asphalt Concrete 1st lift	Class E Asphalt Concrete 2nd lift	Class E Asphalt Concrete 3rd lift	10" Colored Non-reinforced Concrete	Base Course
	Ton	Ton	Ton	Square Yard	Ton
Mainline					
Sta. 101+08.46 to 117+82.62 – Main St	892.1	892	892	234.1	5236
Sta. 118+42.55 to 123+85.33 – Main St	348.8	0	0	0	0
Sta. 123+85.33 to 125+20.30 – Main St	43.3	43	43	44	277
Cross Streets					
Sta. 201+08.32 to 201+57.85 – 4th St (South)	15.5	15	15	0	89
Sta. 300+24.98 to 301+00.00 – 4th St (North)	21.9	22	22	31.2	146
Sta. 400+96.68 to 401+64.54 – 3rd St (South)	17.6	18	18	22	121
Sta. 401+84.60 to 402+49.64 – 3rd St (North)	17.3	17	17	22	113
Sta. 500+51.72 to 501+20.17 – 2nd St (South)	26.7	27	27	36.4	186
Sta. 501+40.12 to 502+06.01 – 2nd St (North)	21.5	21	21	31.6	152
Sta. 600+64.42 to 601+33.29 – 1st St (South)	24.3	24	24	32.1	168
Sta. 601+53.37 to 602+18.29 – 1st St (North)	23.6	24	24	32.0	156
Sta. 800+63.88 to 801+16.69 – Middle St (South)	13.4	13	13	22.2	97
Sta. 801+36.78 to 801+83.63 – Middle St (North)	11.8	12	12	22.2	82
Geotextile Fabric Backfill					3850
TOTAL	1477.9	1129.1	1129.1	485.8	10673

Typical Surfacing Sections

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
FOURFRONT DESIGN INC.	P 7668 (05)	F5	F17

Plotting Date: 12/11/2015



*Transitions: 14.33 ' to 0 '

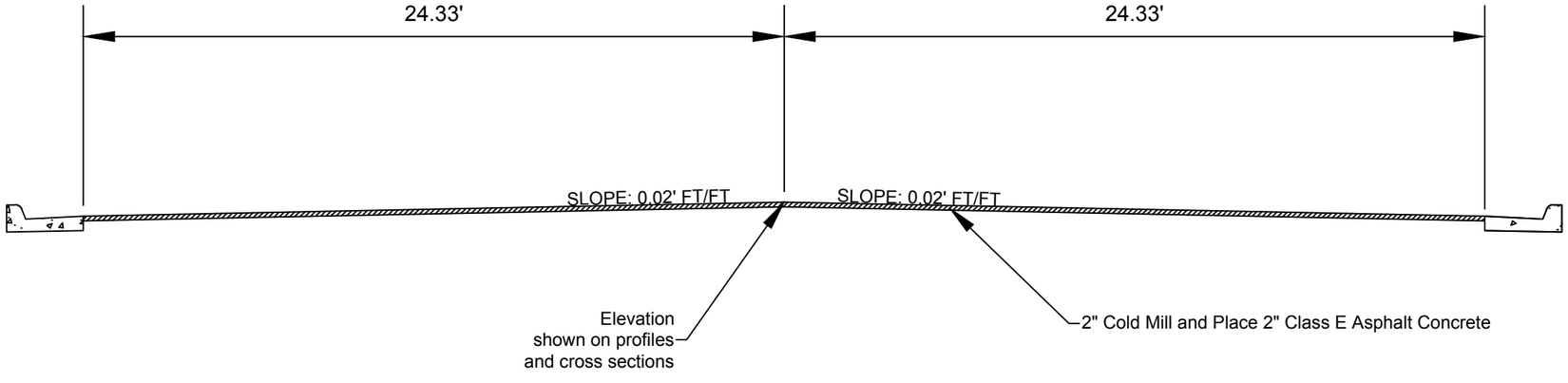
Sta. 101+09.79 to 101+60.24
Sta. 103+79.97 to 104+54.08
Sta. 104+73.64 to 105+11.50
Sta. 107+43.98 to 108+21.19
Sta. 108+49.53 to 109+01.83
Sta. 111+21.55 to 111+91.09
Sta. 112+19.78 to 112+67.78
Sta. 114+38.67 to 115+14.99

**Transitions: 14.33 ' to 0 '

Sta. 101+07.13 to 101+47.98
Sta. 103+99.63 to 104+54.08
Sta. 104+73.54 to 105+42.58
Sta. 107+62.31 to 108+19.29
Sta. 108+51.83 to 109+21.49
Sta. 111+41.22 to 111+90.91
Sta. 112+19.54 to 112+87.89
Sta. 114+34.75 to 115+33.23

Typical Section - Main Street

Sta. 101+08.46 to 104+54.08
Sta. 104+73.59 to 108+20.23
Sta 108+50.68 to 111+91.00
Sta. 112+45.58 to 117+82.62
Sta. 123+85.33 to 125+20.23



Typical Section - Main Street

STA 118+22.66 TO 123+85.33

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR
REG. NO.
5680
CURTIS N
HUUS
10/23/15
SOUTH DAKOTA

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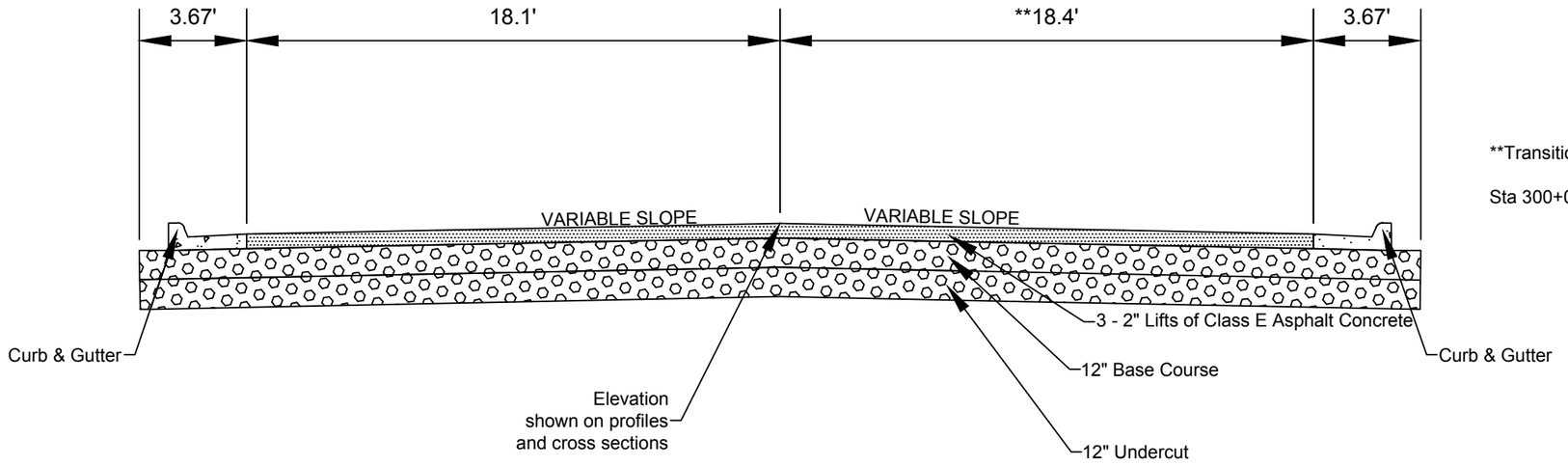
Typical Surfacing Sections

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
FOURFRONT DESIGN INC.	P 7668 (05)	F6	F17

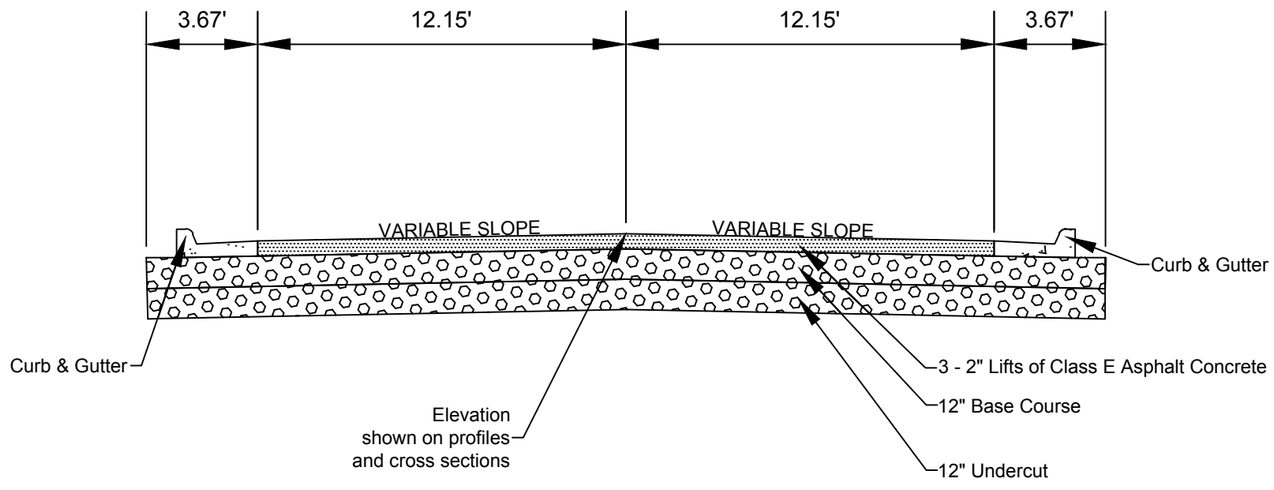
Plotting Date: 12/11/2015



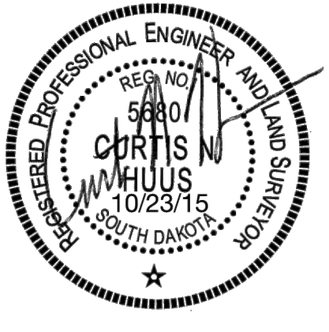
**Transitions: 18.4 ' to 10'

Sta 300+09.97 to 300+64.95

Typical Section - Fourth Street North



Typical Section - Fourth Street South

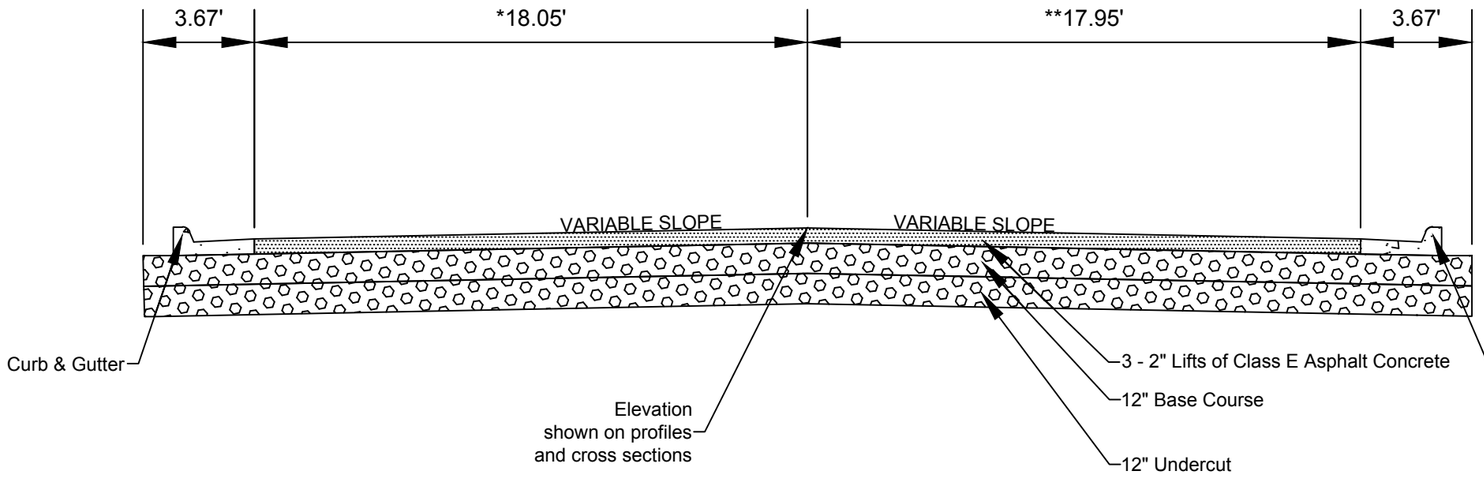


Typical Surfacing Sections

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
FOURFRONT DESIGN INC.	P 7668 (05)	F7	F17

Plotting Date: 12/11/2015



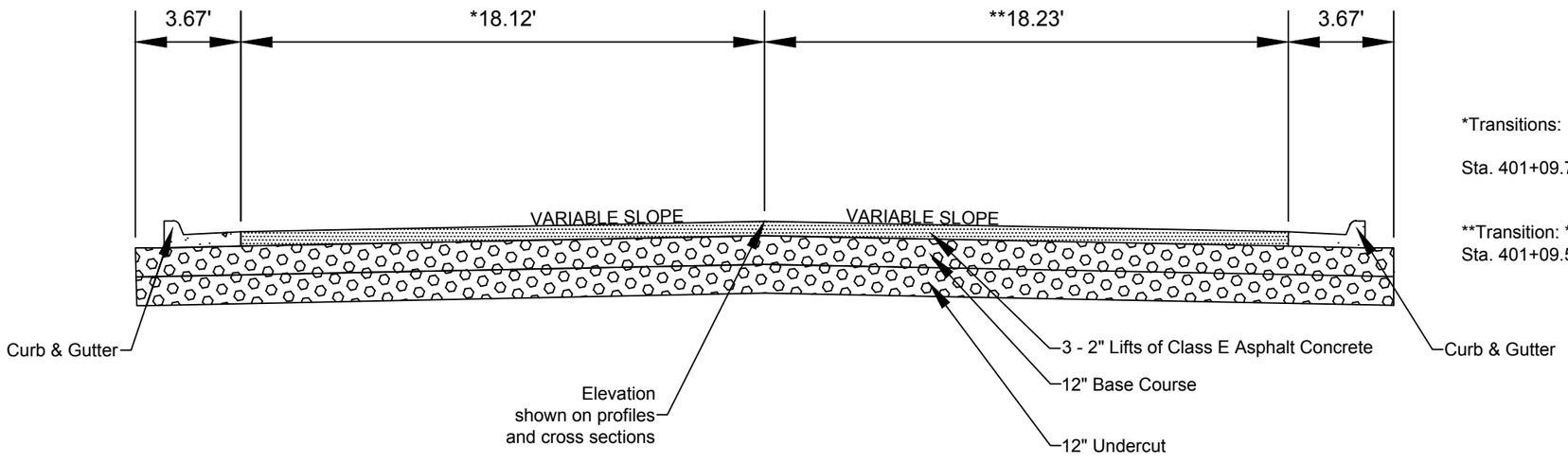
*Transitions:*18.05 ' to 10'

Sta. 401+84.69 to 402+39.51

**Transition: 17.95' to 10'

Sta 401+84.80 to 402+39.71

Typical Section - Third Street North



*Transitions: 18.12' to 10'

Sta. 401+09.72 to 401+64.64

**Transition: **18.23' to 10'
Sta. 401+09.52 to 401+64.69

Typical Section - Third Street South

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR
REG. NO.
5680
CURTIS N
HUUS
10/23/15
SOUTH DAKOTA

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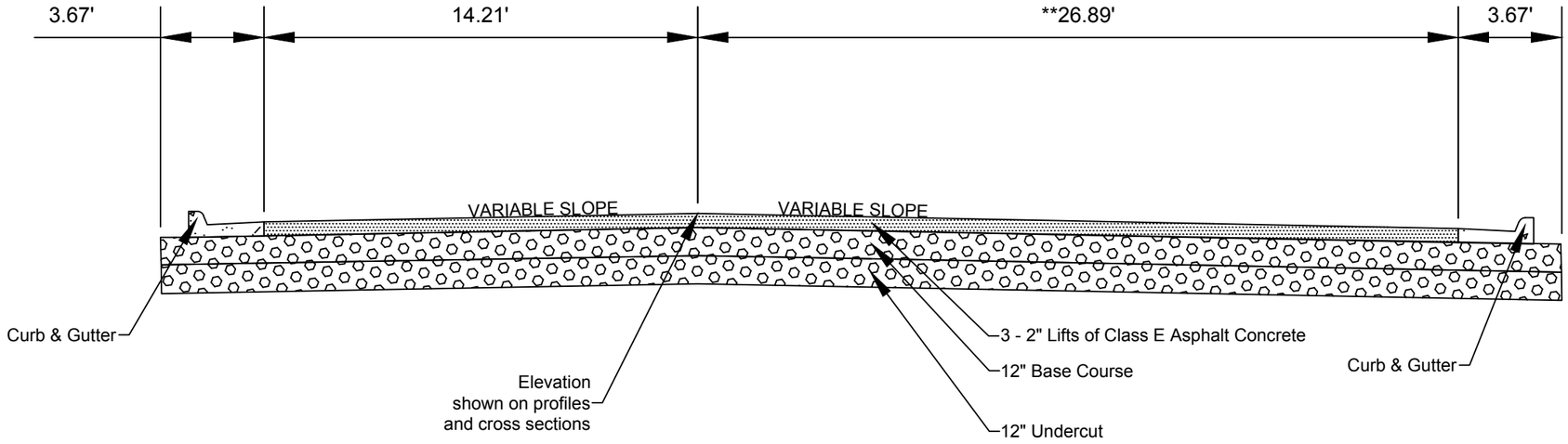
Typical Surfacing Sections

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
FOURFRONT DESIGN INC.	P 7668 (05)	F8	F17

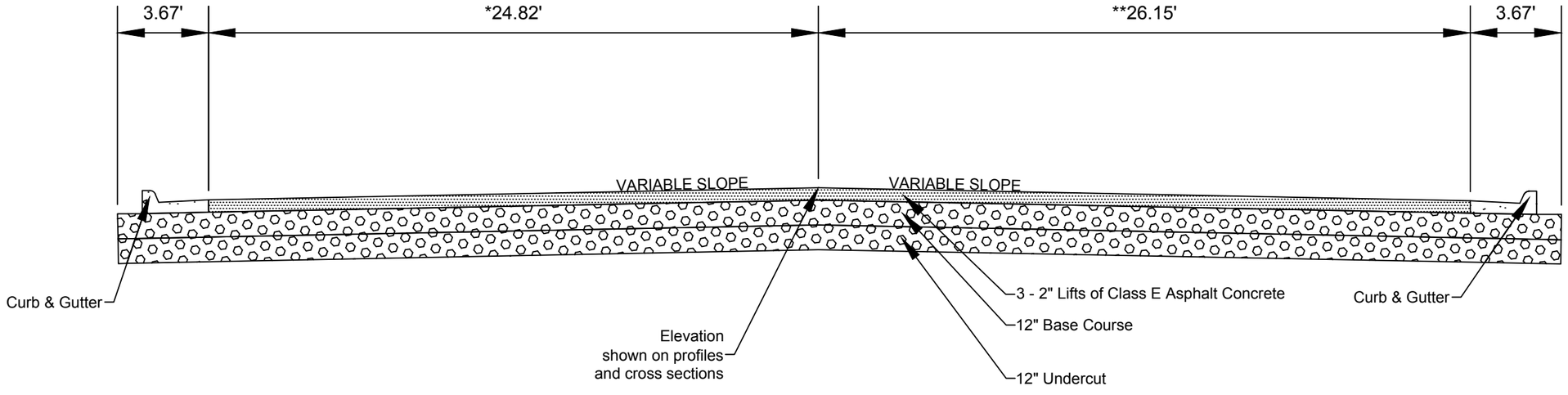
Plotting Date: 12/11/2015



**Transition: 26.89' to 14.21'

Sta. 501+40.32 to 501+95.07

Typical Section - Second Street North



*Transitions:4.82 ' to 16.4'

Sta. 500+62.04 to 501+20.26

**Transition: 26.15' to 16.4'

Sta. 500+61.37 to 501+19.94

Typical Section - Second Street South

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR
REG. NO.
5680
CURTIS N
HUUS
10/23/15
SOUTH DAKOTA

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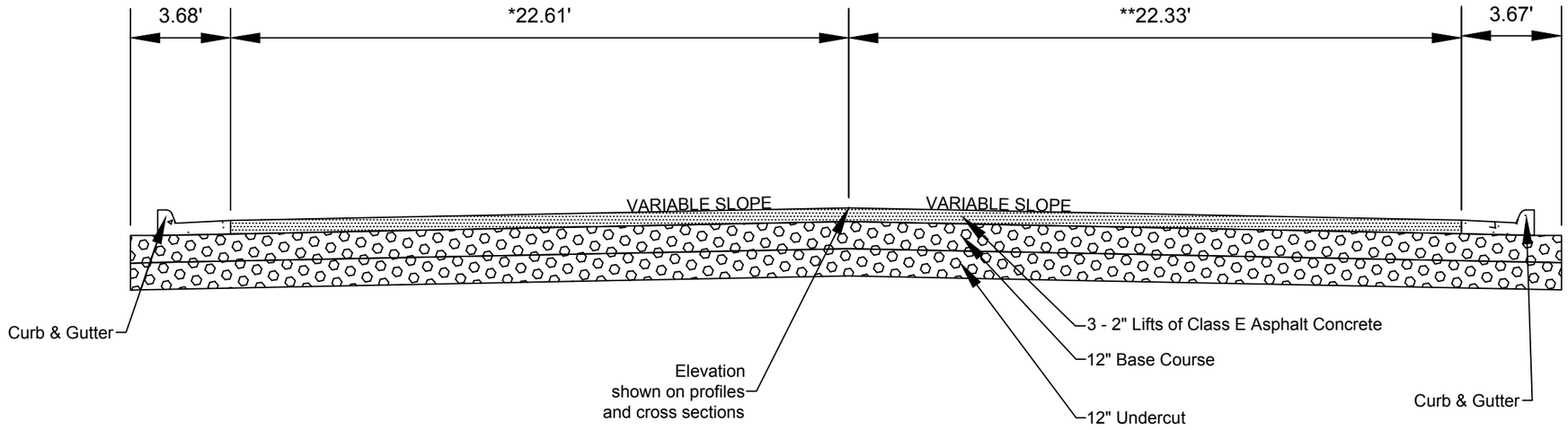
Typical Surfacing Sections

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 7668 (05)	F9	F17

Plotting Date: 12/11/2015



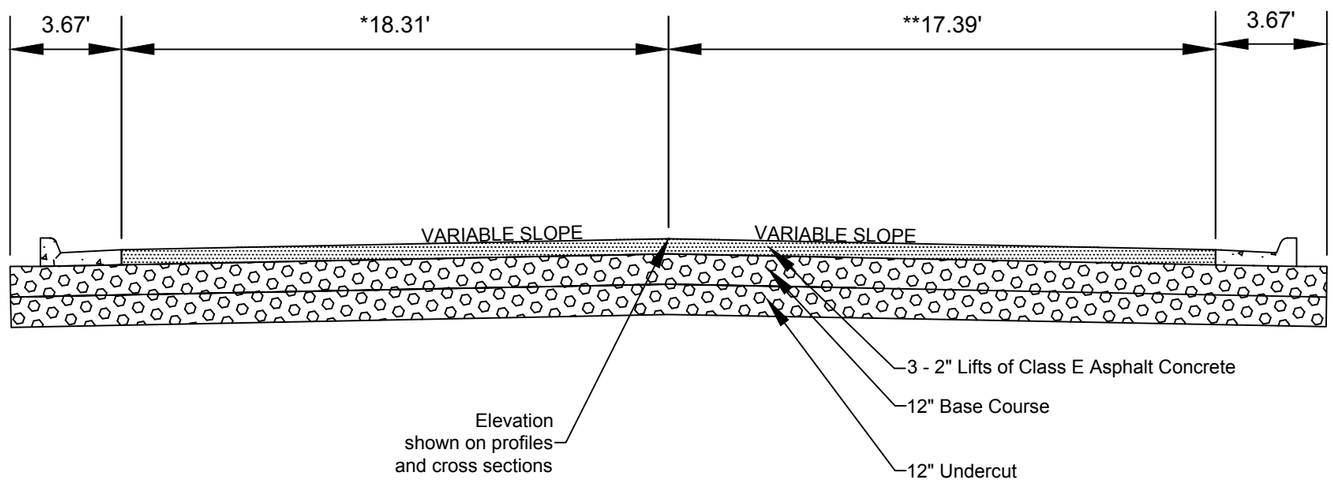
*Transitions: 22.61' to 16.4'

Sta. 600+78.24 to 601+33.25
Sta. 601.53.31 to 602+08.31

**Transition: 22.33' to 16.4'

Sta. 600+78.38 to 601+33.32
Sta. 601+53.28 to 602+08.26

Typical Section - First Street



*Transitions: 18.31' to 10'

Sta. 800+73.84 to 801+16.59
Sta. 801+36.60 to 801+76.58

**Transition: 17.39' to 16.4'

Sta. 800+75.98 to 801+16.79
Sta. 801+36.78 to 801+78.61

Typical Section - Middle Street

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REG. NO.
5680
CURTIS N
HUUS
10/23/15
SOUTH DAKOTA

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Surfacing Plans

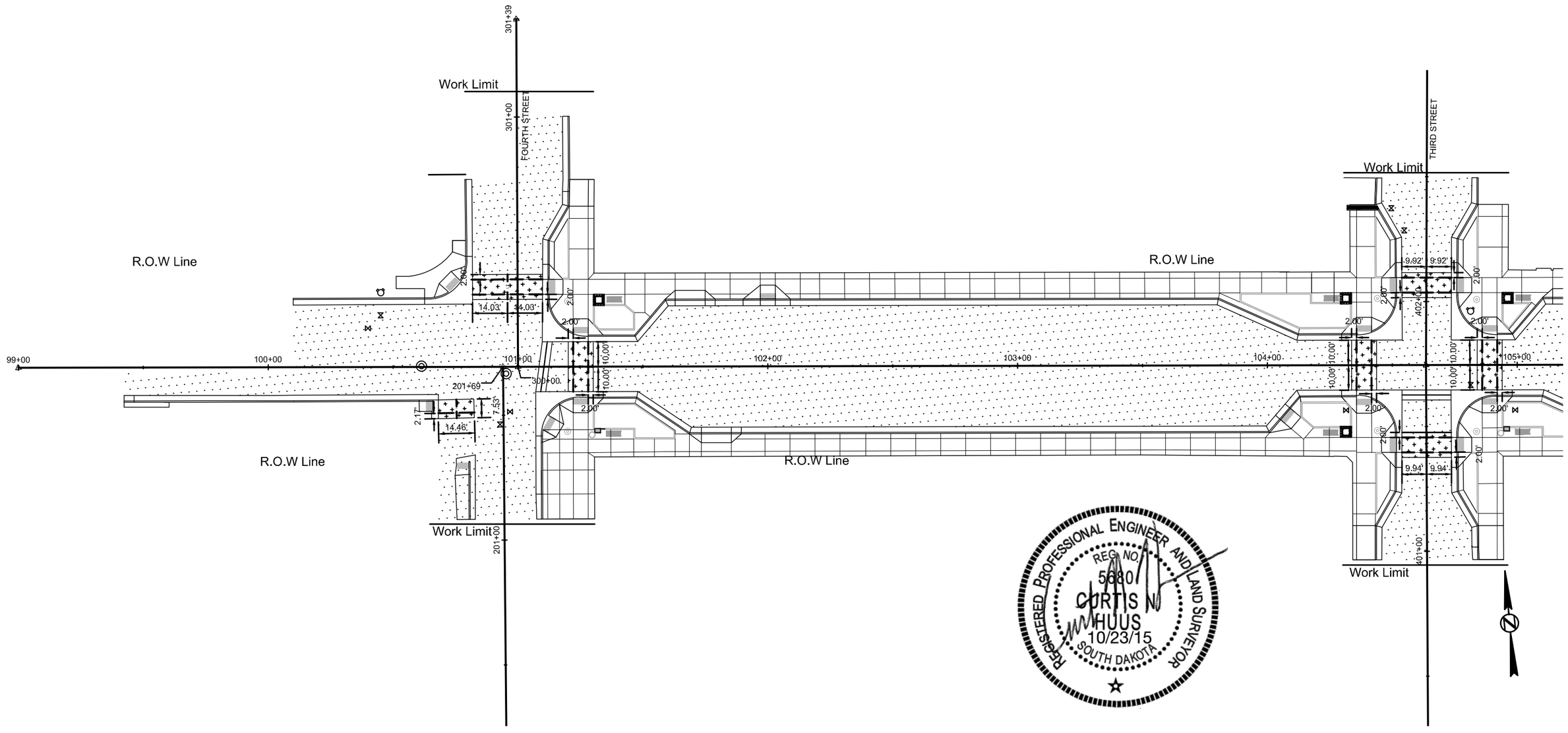
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
FOURFRONT DESIGN INC	P 7668 (05)	F10	F17

Plotting Date: 12/11/2015

LEGEND

- Sanitary Sewer / Storm Sewer Manhole
- Water Gate Valve
- Fire Hydrant
- Curb Stop
- Water Meter Pit
- Waste Receptacle
- Sculpture Plinth
- Bench
- Cold Mill and Overlay\ 2" Asphalt Concrete
- Asphalt Concrete
- Colored PCC Pavement #238 - Doeskin
- LT — Longitudinal Joint With Tie Bars (Construction or Sawed)
- Transverse Contraction Joint



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SOUTH DAKOTA

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Surfacing Plans

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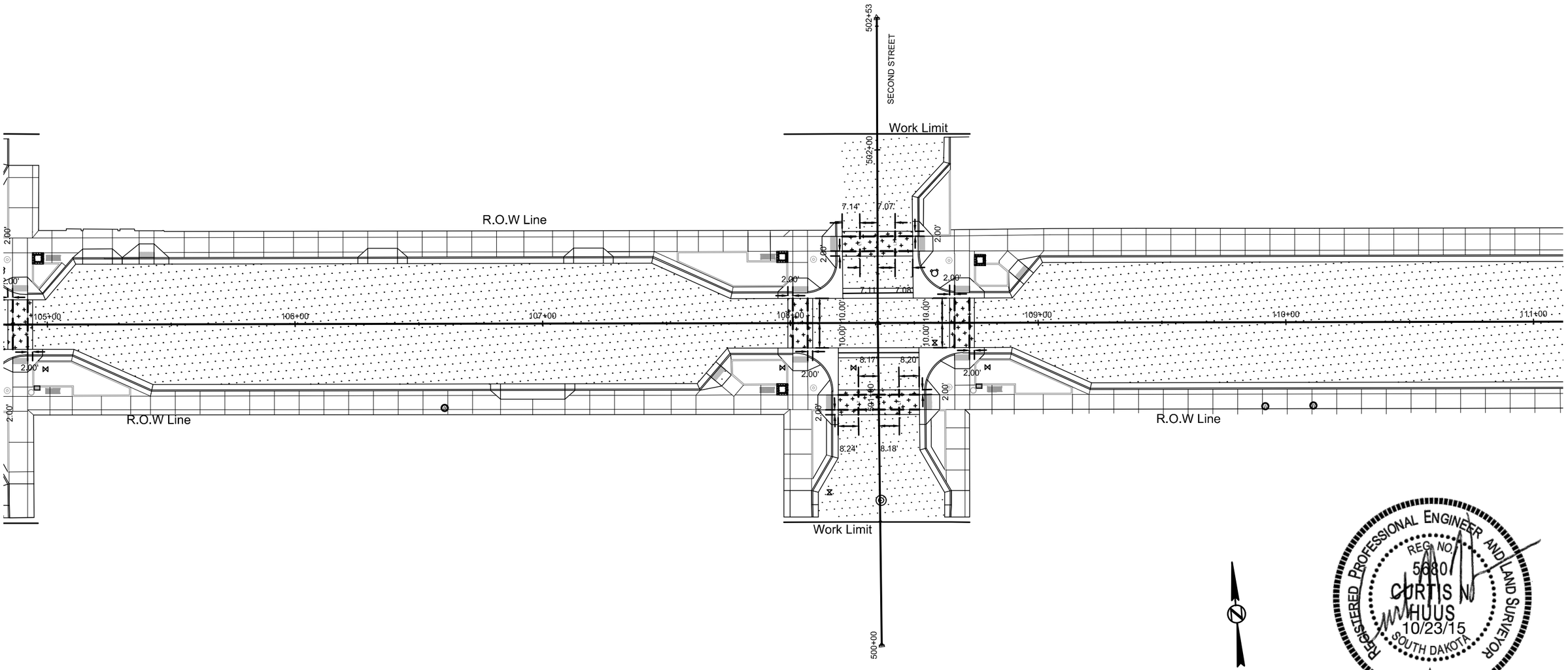
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 7668 (05)	F11	F17

FOURFRONT DESIGN INC

Plotting Date: 12/11/2015

LEGEND

- Sanitary Sewer / Storm Sewer Manhole
- Water Gate Valve
- Fire Hydrant
- Curb Stop
- Water Meter Pit
- Waste Receptacle
- Sculpture Plinth
- Bench
- Cold Mill and Overlay\ 2" Asphalt Concrete
- Asphalt Concrete
- Colored PCC Pavement #238 - Doeskin
- LT — Longitudinal Joint With Tie Bars (Construction or Sawed)
- Transverse Contraction Joint



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Surfacing Plans

FOR BIDDING PURPOSES ONLY

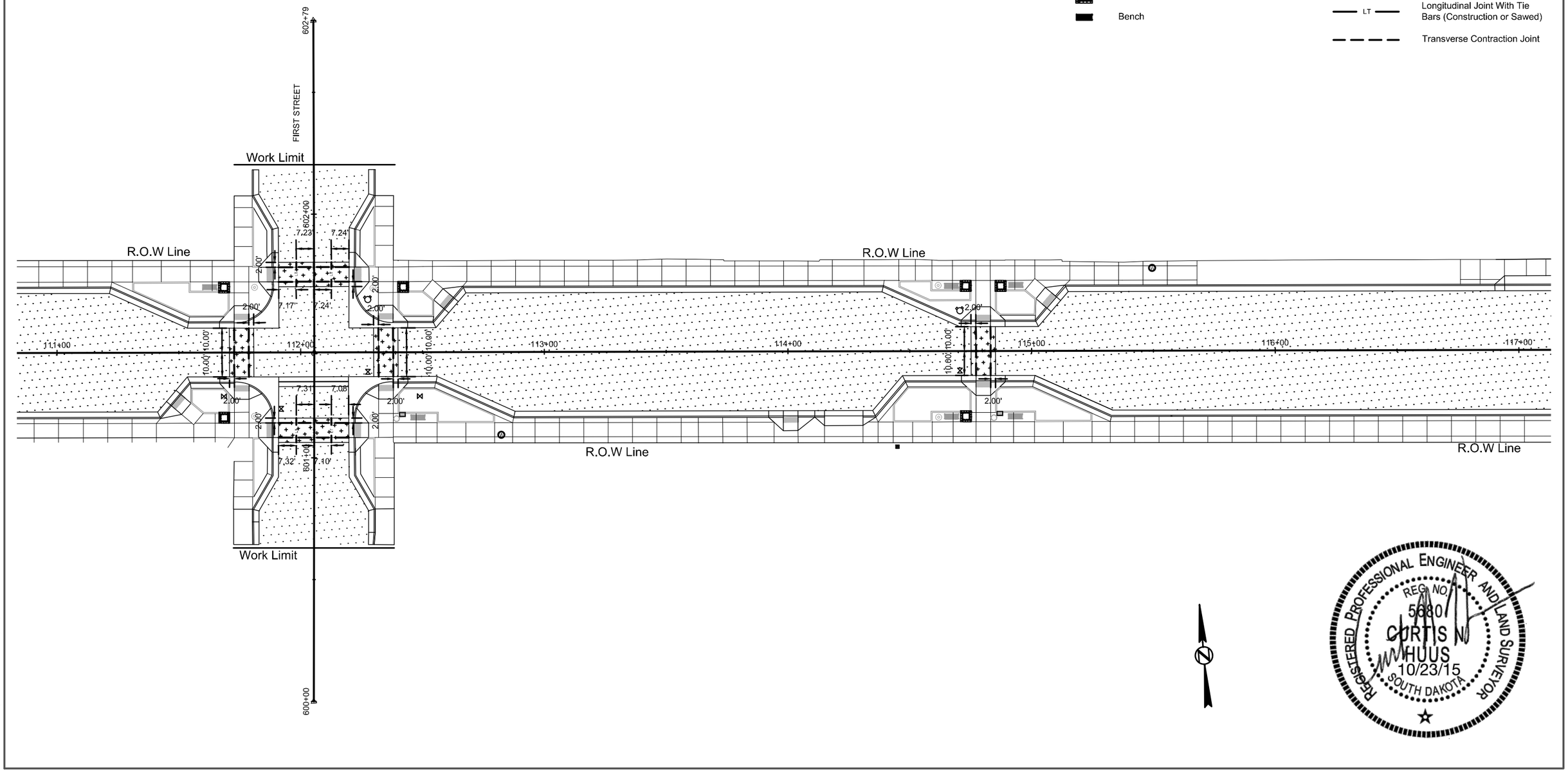
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 7668 (05)	F12	F17

FOURFRONT DESIGN INC

Plotting Date: 12/11/2015

LEGEND

- Sanitary Sewer / Storm Sewer Manhole
- Water Gate Valve
- Fire Hydrant
- Curb Stop
- Water Meter Pit
- Waste Receptacle
- Sculpture Plinth
- Bench
- Cold Mill and Overlay\ 2" Asphalt Concrete
- Asphalt Concrete
- Colored PCC Pavement #238 - Doeskin
- LT — Longitudinal Joint With Tie Bars (Construction or Sawed)
- Transverse Contraction Joint



REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR
REG. NO. 5880
CURTIS N. HUUS
10/23/15
SOUTH DAKOTA

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Surfacing Plans

FOR BIDDING PURPOSES ONLY

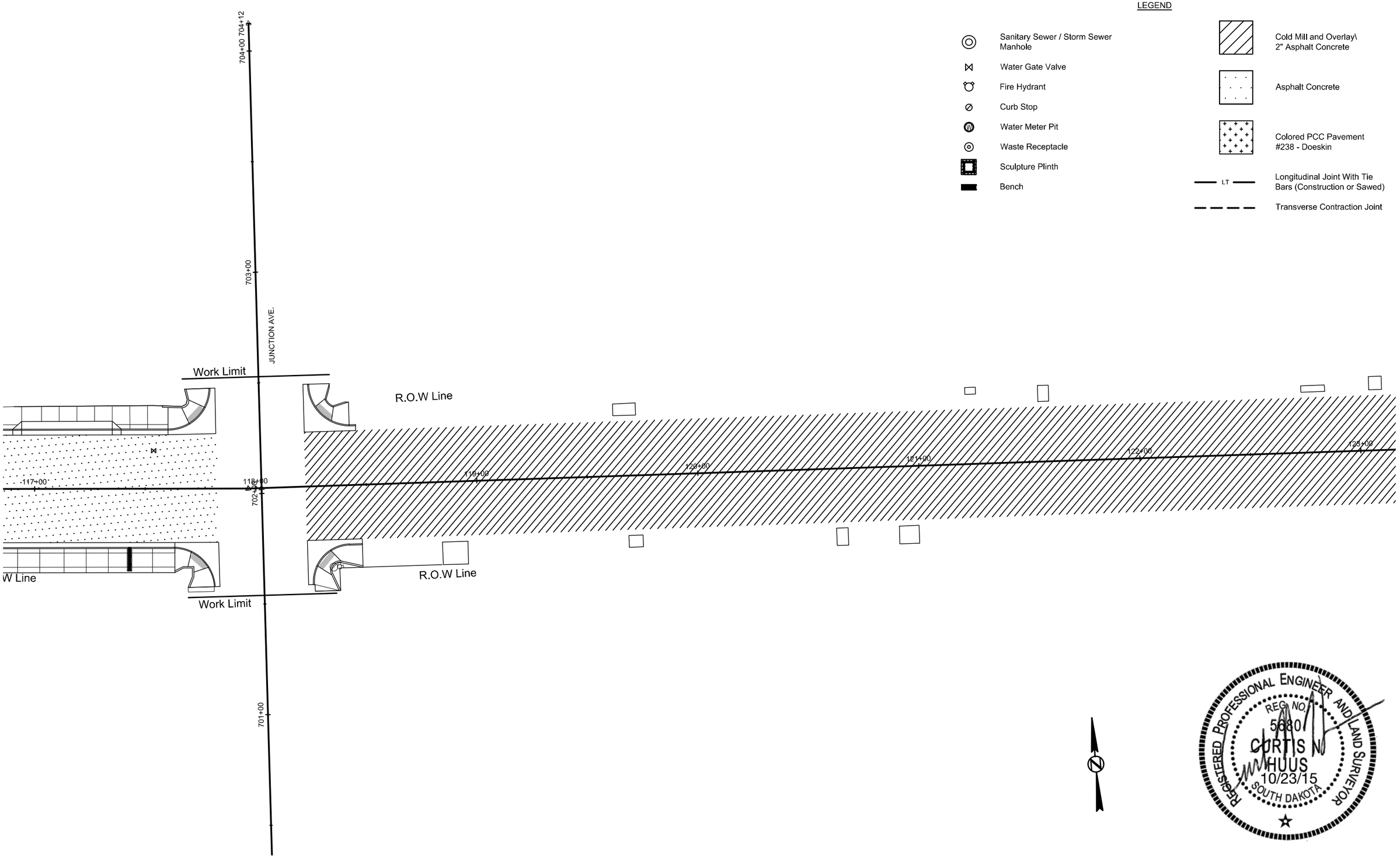
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 7668 (05)	F13	F17

FOURFRONT DESIGN INC.

Plotting Date: 12/11/2015

LEGEND

- Sanitary Sewer / Storm Sewer Manhole
- Water Gate Valve
- Fire Hydrant
- Curb Stop
- Water Meter Pit
- Waste Receptacle
- Sculpture Plinth
- Bench
- Cold Mill and Overlay\ 2" Asphalt Concrete
- Asphalt Concrete
- Colored PCC Pavement #238 - Doeskin
- LT — Longitudinal Joint With Tie Bars (Construction or Sawed)
- Transverse Contraction Joint



REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR
REG. NO. 5680
CURTIS N. HUUS
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SOUTH DAKOTA

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Surfacing Plans

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 7668 (05)	F14	F17

FOURFRONT DESIGN INC

Plotting Date: 12/11/2015

LEGEND

- Sanitary Sewer / Storm Sewer Manhole
- Water Gate Valve
- Fire Hydrant
- Curb Stop
- Water Meter Pit
- Waste Receptacle
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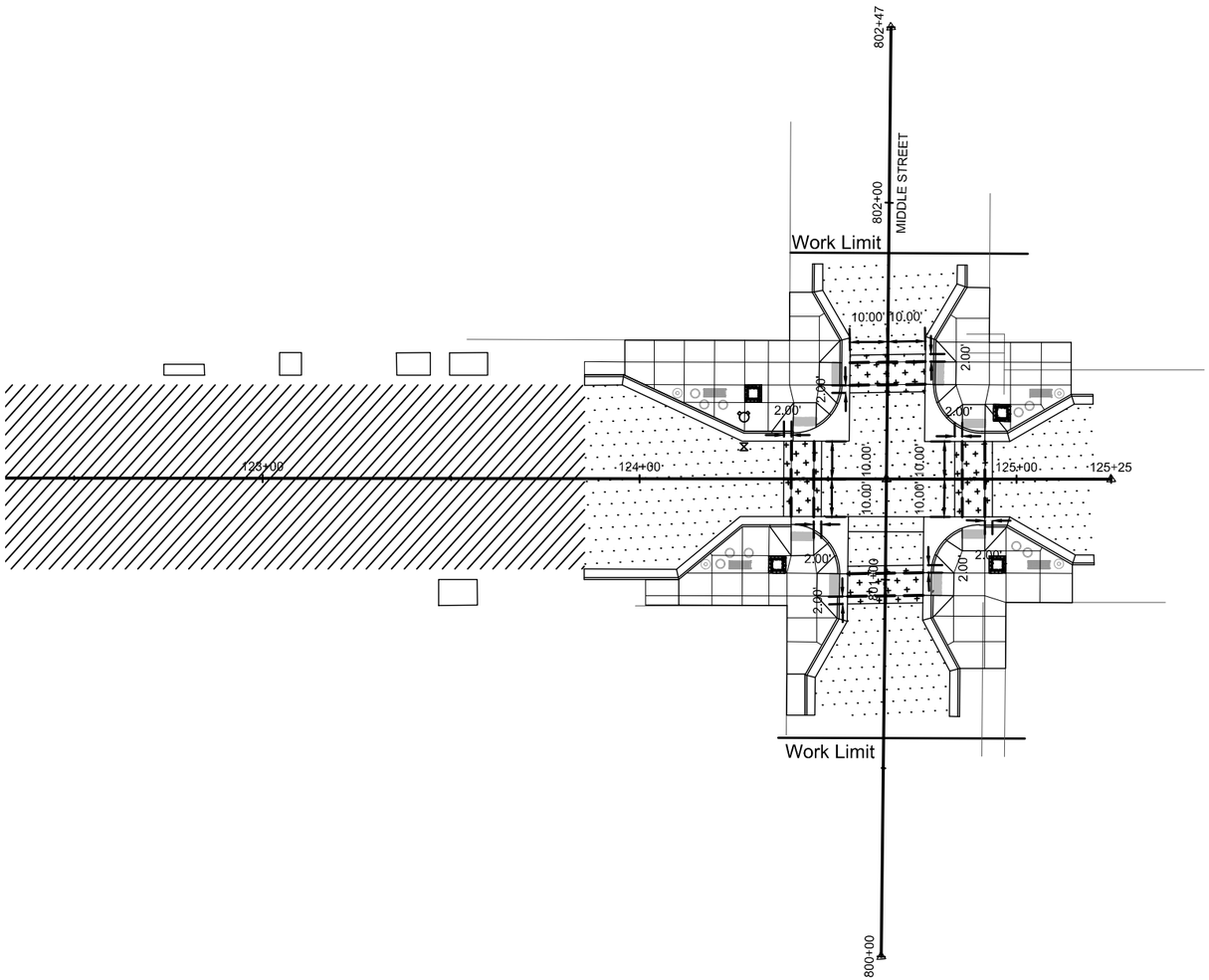
- Transverse Contraction Joint



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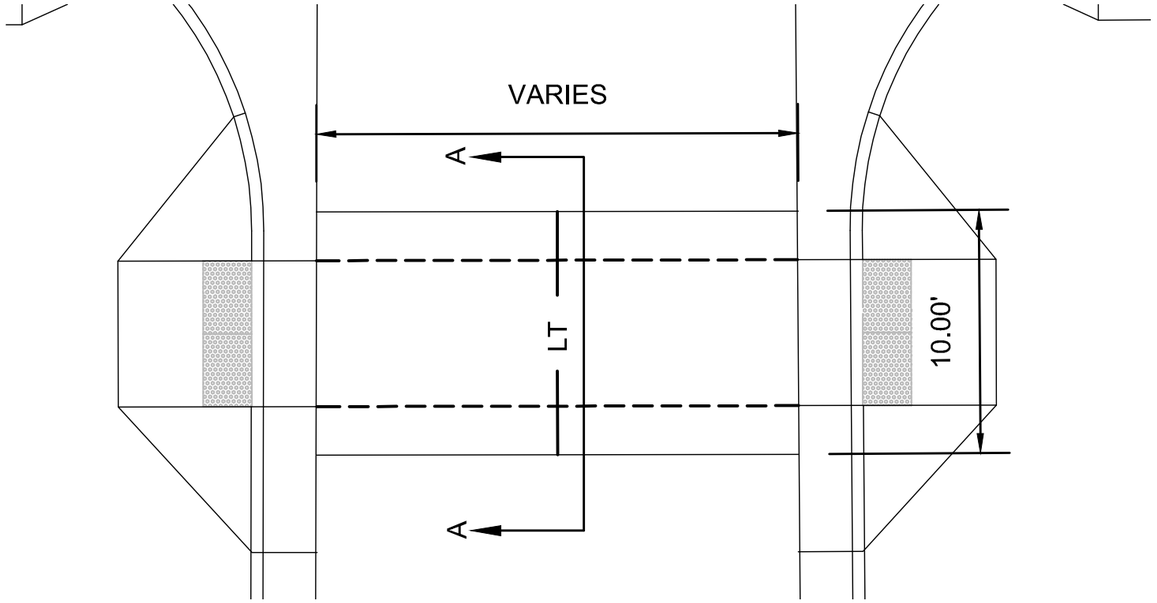
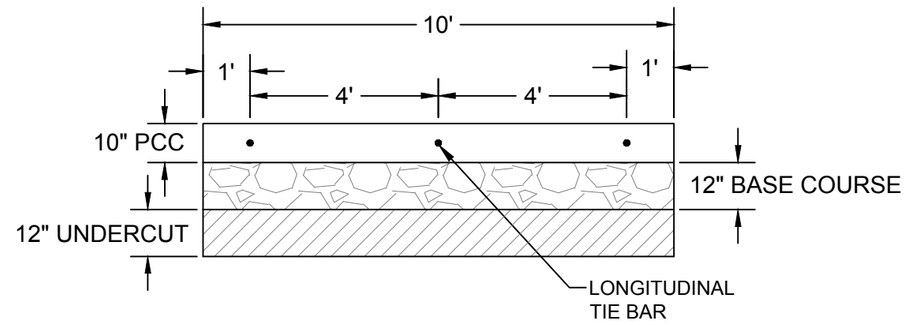
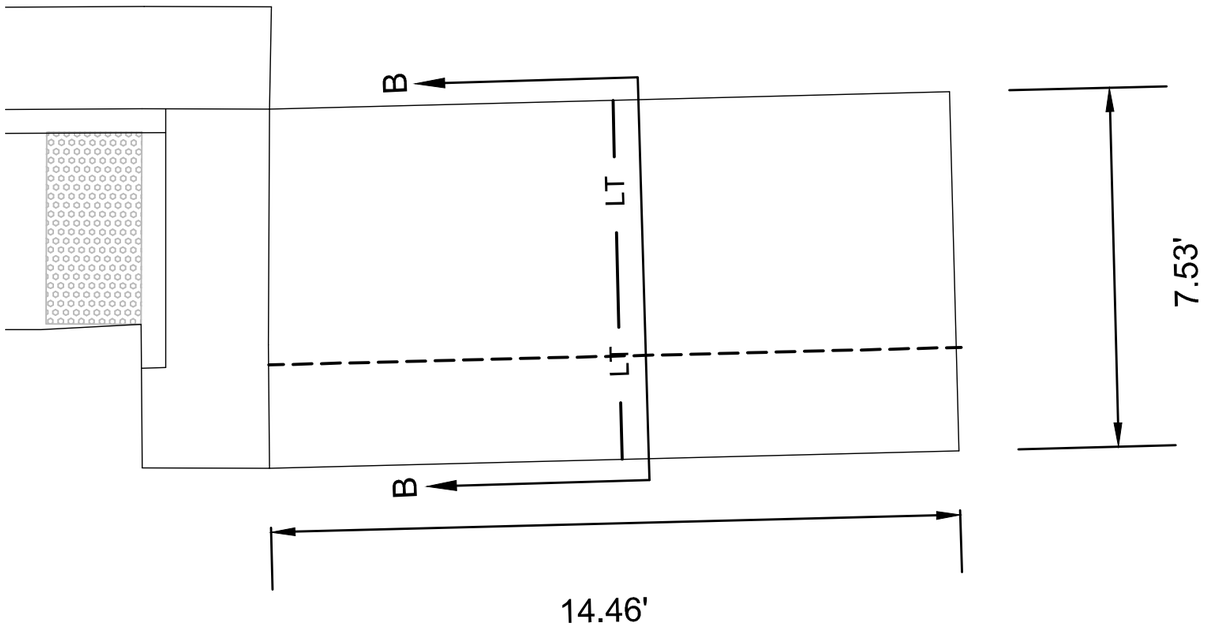
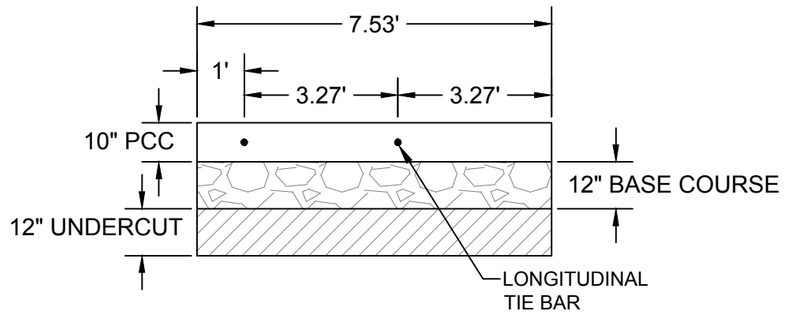


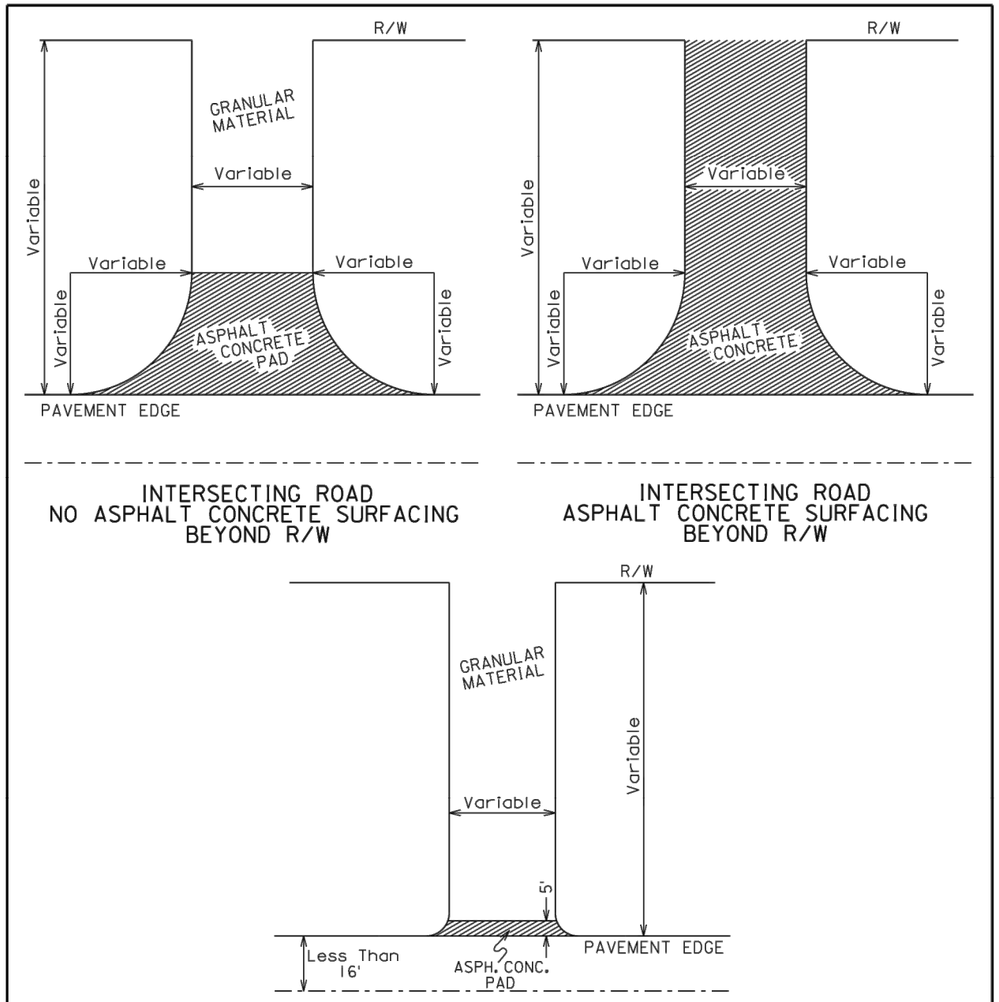


SECTION A-A - TYPICAL PCC CROSSWALK
NTS





SECTION B-B - PCC CROSSWALK LOCATED FROM
100+68.09 - 13.18' R TO 100+82.36 - 12.84'R
NTS



ENTRANCE

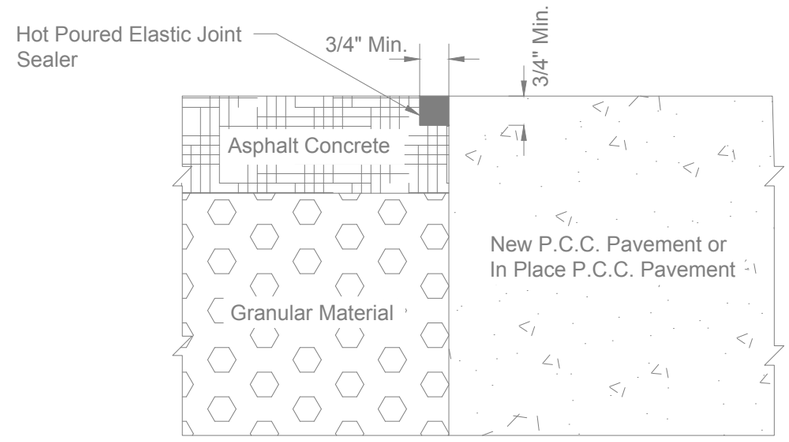
The surfacing details shown on this sheet are provided as a guide for surfacing these facilities. The precise construction limits for situations other than the standards shown will be determined by the Engineer, at the time of construction.

ROADWAY WITH OR WITHOUT SHOULDER

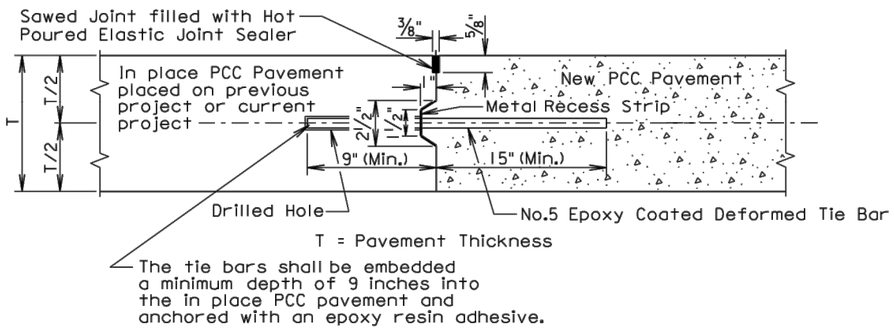
March 31, 2000

Published Date: 3rd Qtr. 2015	SDDOT	RESURFACING OF INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 320.10 Sheet 1 of 1

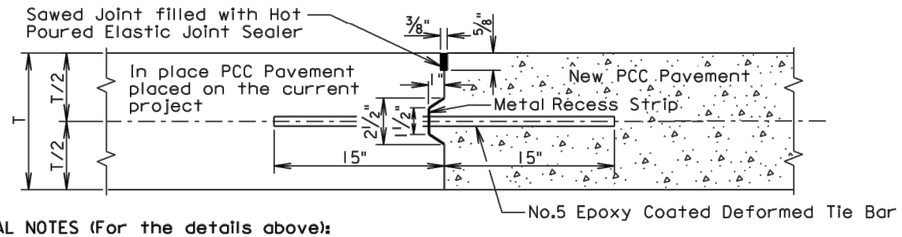
Asphalt Concrete Joint Adjacent to P.C.C. Pavement



LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(DRILLED IN BARS)



LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(INSERTED OR FORMED IN BARS)



GENERAL NOTES (For the details above):

The epoxy coated deformed tie bars shall be spaced in accordance with the following tables:

Tie Bar Spacing 48" Maximum	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

Tie Bar Spacing 30" Maximum	
Transverse Contraction Joint Spacing	Number of Tie Bars
5' to 7'	2
7.5' to 9.5'	3
10' to 12'	4
12.5' to 14.5'	5
15' to 17'	6
17.5' to 19.5'	7
20' to 22'	8

The tie bars shall be placed a minimum of 15 inches from transverse contraction joints.

The required number of tie bars as shown in the table shall be uniformly spaced within each panel. The uniformly spaced tie bars shall be spaced a maximum of 48 inches center to center for a female keyway and shall be spaced a maximum of 30 inches center to center for a vertical face and male keyway. The maximum tie bar spacing shall apply to tie bars within each panel.

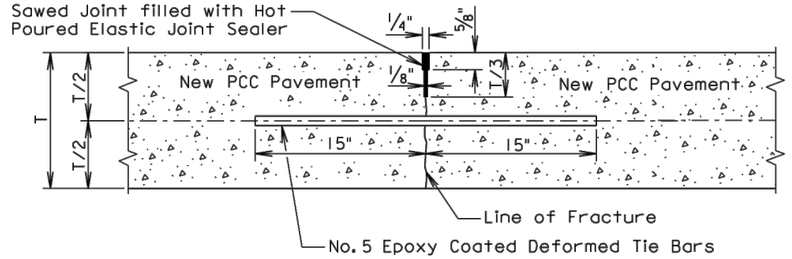
The keyway illustrated in the above details depict a female keyway.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

August 31, 2013

Published Date: 3rd Qtr. 2015	SDDOT	*PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS*	*PLATE NUMBER 380.10*
			Sheet 1 of 2

SAWED LONGITUDINAL JOINT WITH TIE BARS
(POURED MONOLITHICALLY)



T = Pavement Thickness

GENERAL NOTES (For the detail above):

The epoxy coated deformed tie bars shall be spaced in accordance with the following table:

Tie Bar Spacing 48" Maximum	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

The tie bars shall be placed a minimum of 15 inches from the transverse contraction joints.

The required number of tie bars as shown in the table shall be uniformly spaced within each panel with a maximum space of 48 inches center to center. The maximum tie bar spacing shall apply to tie bars within each panel.

The first saw cut to control cracking shall be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer is necessary.

August 31, 2013

Published Date: 3rd Qtr. 2015	SDDOT	*PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS*	*PLATE NUMBER 380.10*
			Sheet 2 of 2