

STATE OF SOUTH DAKOTA  
 DEPARTMENT OF TRANSPORTATION  
 PLANS FOR PROPOSED

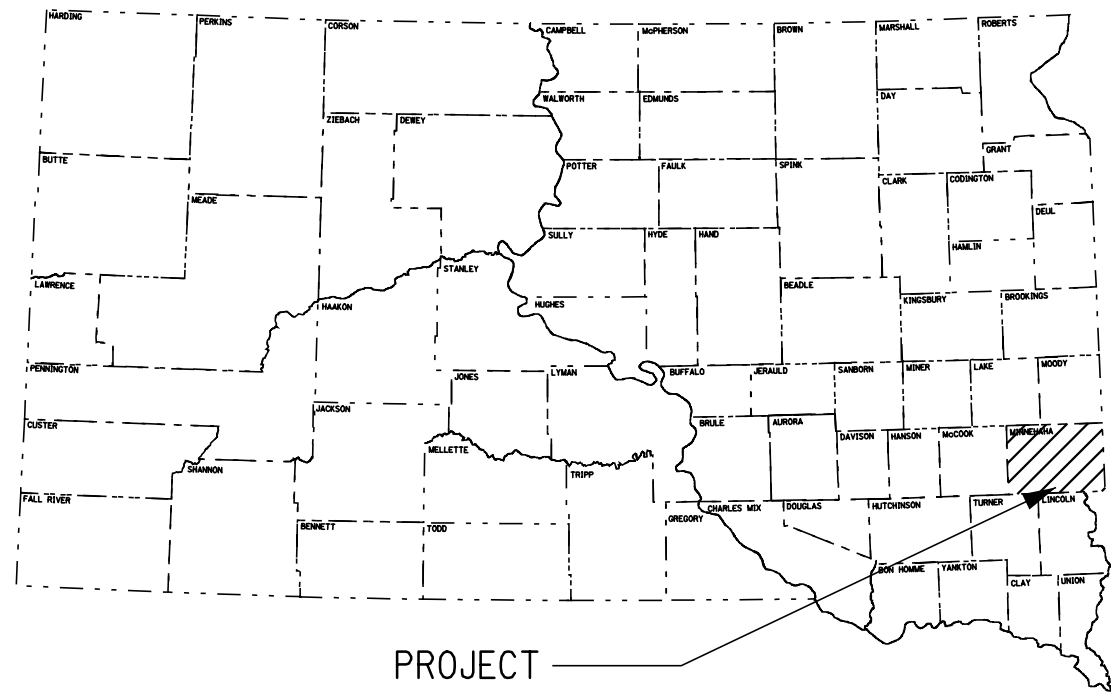
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	0001-271	1	28

PROJECT 0001-271  
 INTERSTATE I 29  
 MINNEHAHA COUNTY

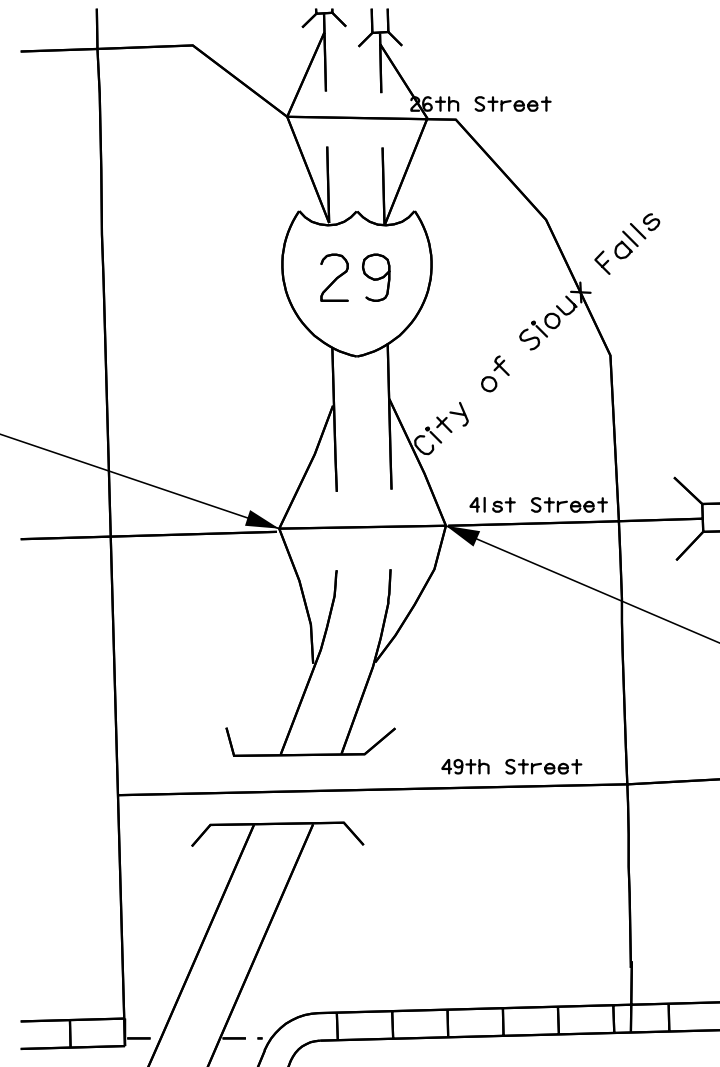
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C&G, SIDEWALK, PEDESTRIAN SIGNALS, AND PAVEMENT MARKING  
 PCN IOE0



Begin Project  
 41st and I29  
 MRM 77.25



End Project  
 41st and I29  
 MRM 77.27

DESIGN DESIGNATION	41st Street	NB ON RAMP	NB OFF RAMP	SB ON RAMP	SB OFF RAMP
ADT (2004)	33100	7050	4975	4765	6690
ADT (2024)	41870	12175	11084	10616	11554
DHV	4020	1327	1208	1157	1259
D	50%	100%	100%	100%	100%
T DHV	2.3%	5.4%	6.8%	6.8%	5.4%
T ADT	5.0%	11.8%	15.0%	15.0%	11.8%
V	35 MPH	50 MPH	50 MPH	50 MPH	50 MPH

## ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0300	Remove Concrete Curb and Gutter	227	Ft
110E1140	Remove Concrete Sidewalk	120	Sqyd
110E1400	Remove Pavement Marking 4" or Equivalent	300	Ft
110E1520	Remove Signal Equipment	Lump Sum	LS
120E6300	Water For Vegetation	10.0	MGal
250E0010	Incidental Work	Lump Sum	LS
380E6110	Insert Steel Bar in PCC Pavement	55	Each
633E0030	Cold Applied Plastic Pavement Marking 24"	1,020	Ft
633E1300	Pavement Marking Paint, White	1	Gal
633E1305	Pavement Marking Paint, Yellow	2	Gal
633E5015	Groove Pavement for Pavement Marking, 24"	1,020	Ft
634E0010	Flagging	200	Hour
634E0100	Traffic Control	1,076	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	2	Each
635E5020	2' Diameter Footing	12	Ft
635E5318	18" Diameter Junction Box	4	Each
635E5324	24" Diameter Junction Box	2	Each
635E5540	Sawed-in Detector Loop	1	Each
635E5550	Detector Unit	1	Each
635E5900	Pedestrian Push Button	8	Each
635E5920	Pedestrian Signal Head	12	Each
635E5930	Pedestrian Crossing Sign	8	Each
635E7010	Install Pedestal Signal Pole	3	Each
635E8120	2" Rigid Conduit, Schedule 40	160	Ft
635E8150	5" Rigid Conduit, Schedule 40	15	Ft
635E8230	3" Rigid Conduit, Schedule 80	315	Ft
635E9302	2/C #14 AWG IMSA Copper Cable, K1	60	Ft
635E9304	4/C #14 AWG IMSA Copper Cable, K1	90	Ft
635E9307	7/C #14 AWG IMSA Copper Cable, K1	160	Ft
635E9312	12/C #14 AWG IMSA Copper Cable, K1	355	Ft
635E9319	19/C #14 AWG IMSA Copper Cable, K1	375	Ft
635E9600	#16 AWG Copper Twisted Shielded Pair	590	Ft
650E0090	Type B69 Concrete Curb and Gutter	227	Ft
651E0040	4" Concrete Sidewalk	1,080	Sqft
730E0206	Type D Permanent Seed Mixture	25	Lb
731E0100	Fertilizing	.01	Ton
732E0100	Mulching	.02	Ton

### SPECIFICATIONS

Standard Specifications for Roads & Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

### COMPLETION DATE

All work shall be completed on or before September 1, 2006.

### UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

### SEQUENCE OF OPERATIONS

The Sequence of Operations shall be as follows unless an alternate Sequence is submitted in writing prior to the preconstruction meeting and approved by the Engineer.

1. Work activities will be permitted after 6 P.M.
2. No work will be permitted from 7 A.M. to 9 A.M. and 3 P.M. to 6 P.M.
3. Pedestrians must have access through the entire length of the project either north side or south side along 41<sup>st</sup> Street.
4. Contractor to reshape and seed disturbed areas.
5. Install Road Work Ahead signs on Interstate 29 southbound and northbound off ramps. Install End Road Work signs on Interstate 29 southbound and northbound on ramps.
6. Install traffic control as shown in these plans. Lane closure will be installed adjacent to the work on the north side of 41<sup>st</sup> Street.
7. Remove curb and gutter and sidewalk on the north side of the 41<sup>st</sup> Street and I29 interchange. Install curb and gutter and sidewalk.
8. Install traffic control as shown in these plans. Lane closure will be installed adjacent to the work on the south side of 41<sup>st</sup> Street.
9. Remove curb and gutter and sidewalk on the south side of the 41<sup>st</sup> Street and I29 interchange. Install curb and gutter and sidewalk.

### GENERAL MAINTENANCE OF TRAFFIC

Removing, relocating, covering, salvaging and resetting of permanent traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

### GENERAL MAINTENANCE OF TRAFFIC (CONTINUED)

The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 crashworthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

The Contractor shall designate an employee whose responsibility is the maintenance of traffic, 24 hours per day and 7 days per week. The person designated must have training and experience in the field of construction traffic control and be knowledgeable about the MUTCD. Cost for the traffic control person shall be incidental to the contract lump sum price for Traffic Control Miscellaneous. The employee selected must be approved by the Engineer. The name, phone number, and location of person(s) shall be provided to the SD Department of Transportation, SD Highway Patrol, County Sheriff's Department, the City of Sioux Falls and the local City Police Department.

Signal timings to be adjusted by the City of Sioux Falls will be required prior to the Contractor installing lane closures.

Work during non day light hours is approved.

If a night time lane closure is used, then lighting and flagging must be provided per MUTCD requirements. Cost for a lighted flagging station shall be incidental to the flagging bid item.

### INCIDENTS

An incident is an emergency road user occurrence or unplanned event that impedes the flow of traffic such as an accident, hazardous materials spill, or similar event.

The Contractor shall set up a meeting prior to start of work to plan and coordinate the response to an incident. The Contractor will invite Department of Transportation, the South Dakota Highway Patrol, and the City of control devices, modify messages on portable changeable message signs or relocate portable changeable message signs as required to warn approaching motorists of the incident and resulting queued traffic.

The Contractor shall provide adequate Sioux Falls Police Department and local emergency response entities to the meeting.

The Contractor will be required to flag traffic, relocate signs, and adjust traffic personnel to accomplish the necessary traffic control work in the event of an incident.

No additional payment will be made for this work. Costs for this work shall be included in the contract unit price per unit for Traffic Control.

### WASTE DISPOSAL SITE

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

**Construction/demolition debris may not be disposed of within the State ROW.**

**WASTE DISPOSAL SITE (CONTINUED)**

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal under the South Dakota Waste

Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the 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/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/demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10.06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

**SAWING IN EXISTING SURFACING**

The existing sidewalk and curb and gutter shall be sawed full depth to a true line with a vertical face. No separate payment shall be made for sawing.

Existing curb and gutter shall be sawed for removal 6" from the face of the curb. The existing concrete fillet will not be removed. All costs associated with sawing of the existing curb and gutter will be incidental to the contract unit price per foot for Remove Concrete Curb and Gutter.

**STEEL BAR INSERTION**

The Contractor shall insert the Steel Bars (No. 5x24 inch epoxy coated deformed tie bars) into drilled holes in the existing concrete pavement. An epoxy resin adhesive must be used to anchor the steel bar in the drilled hole.

The steel bars shall be cut to the specified length by sawing and shall be free from burring or other deformations. Shearing will not be permitted.

Epoxy resin adhesive shall be of the type intended for horizontal applications, and shall conform to the requirements of ASTM C 881, Type IV, Grade 3 (equivalent to AASHTO M235, Type IV, Grade 3).

The diameter of the drilled holes in the existing concrete pavement for the steel bars shall not be less than 1/8 inch nor more than 3/8 inch greater than the overall diameter of the steel bar. Holes drilled into the existing concrete pavement shall be located at mid-depth of the slab and true and normal. The drilled holes shall be blown out with compressed air using a device that will reach to the back of the hole to ensure that all debris or loose material has been removed prior to epoxy injection.

Mix the epoxy resin as recommended by the manufacturer and apply by an injection method approved by the Engineer. If an epoxy pump is utilized, it shall be capable of metering the components at the manufacturer's designated rate and be equipped with an automatic shut-off. The pump shall shut off when any of the components are not being metered at the designated rate. Fill the drilled holes 1/3 to 1/2 full of epoxy, or as recommended by the manufacturer, prior to insertion of the steel bar. Care shall be taken to prevent epoxy from running out of the horizontal holes prior to steel bar insertion. Rotate the steel bar during insertion to eliminate voids and ensure complete bonding of the bar. Insertion of the bars by the dipping method will not be allowed.

Cost for the epoxy resin adhesive, steel bars, drilling of holes, applying the adhesive, inserting the steel bars into the drilled holes and all other items incidental to the insertion of the steel bars shall be incidental to the contract unit price per each for INSERT STEEL BAR IN PCC PAVEMENT.

Epoxy coated deformed steel bars shall be inserted on 30 inch centers and shall be placed a minimum of 15 inches from the existing transverse contraction joint.

**FERTILIZING**

A commercial fertilizer with a minimum guaranteed analysis of 18-46-0, 11-52-0, or an approved alternate fertilizer, shall be applied to all areas designated for permanent seeding. The application rate of fertilizer shall be 100 pounds per acre.

**PERMANENT SEEDING**

The areas to be seeded comprise of all newly graded and disturbed areas within the project limits except for the top of roadways, temporary easements under cultivation, and areas designated to be sod.

**PERMANENT SEEDING (CONTINUED)**

All seed broadcast must be raked or dragged in (incorporated) within the top 1/4" to 1/2" of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

South Dakota native grown seed is an acceptable alternative to any of the seed varieties listed below. South Dakota native grown seeds used as an alternative shall conform to the same specification and requirements for that individual seed type.

Type D Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/1000 SqFt)
Kentucky Bluegrass	Park or South Dakota Grown	3
Perennial Ryegrass	Derby	1
Total:		4

**MULCHING (GRASS HAY OR STRAW)**

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

**WATER SOURCE**

The Contractor shall not withdraw water directly from streams in watersheds of the James, Vermillion, and Big Sioux Rivers without prior approval from the SDDOT Environmental Office, contact Dave Graves at (605) 773-5727. Water may be obtained from other sources not directly connected to these streams such as stock dams, wetlands, or wells. This note does not relieve the Contractor of his/her responsibility to obtain the necessary permits from other agencies such as South Dakota Department of Environment and Natural Resources and Corps of Engineers.

**PAVEMENT MARKING PAINT**

Pavement marking paint shall be applied to the top and face of the island curbs as detailed in these plans.

**REMOVE PAVEMENT MARKING**

Any existing pavement marking {stop bar, crosshatching, solid area, etc.} that conflicts with the marking placed in this project shall be removed.

**COLD APPLIED PLASTIC PAVEMENT MARKING**

Cold Applied Plastic Pavement Marking shall be Type A and shall be installed according to the manufacturer's installation instructions.

**SUPPLYING AS BUILT PLANS**

If the traffic signal systems or roadway lighting systems are constructed different than what is stated in the plans, the Contractor shall supply as built plans to the Engineer and a copy shall be sent to the Traffic Design Engineer. The as built plans may include conduit layouts, wiring diagrams, or other drawings depicting the changes from the original plans.

**INCIDENTAL WORK**

Incidental work includes, but is not limited to, the restoration of all disturbed areas to the satisfaction of the Engineer.

**TABLE OF FOOTING DATA**

Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
A2, A4, B4	2' - 0"	4' - 0"	1' - 8"	33' - 9"	8-#7 x 3' - 6"

\* Footing depth shall be below ground level.  
 \*\* The size of all spirals shall be #3.

**CONDUIT INSTALLATION**

The Contractor shall not use machine requiring flowing water for installation of conduit under streets or roadways unless specifically permitted by the Engineer.

**MULTICONDUCTOR CONTROL CABLE FOR SIGNAL CIRCUITS**

The cable furnished for signal circuits shall be furnished with the number and size of the conductors shown in the plans and shall meet the specifications for either of the two types specified below.

1. General Purpose Control Cable with stranded copper conductors, ICEA S-61-402, PE-PV Insulated (20-10), 600 volts.
2. General Purpose Control Cable, with standard copper conductors, Aerial and Duct. IMSA 20-1, 600 volts.

The Conductor Jackets for the above cables shall be color coded in accordance with ICEA S-61-402 Appendix K, Table K-1 or IMSA 19-1 Table II.

**TRAFFIC SIGNAL CONTROL CABLES**

Traffic signal conductors shall be continuous from the controller cabinets to the pole bases. Splicing of conductors will not be allowed in the junction boxes.

**SIGNAL AIMING**

Signals shall be aimed and trees shall be trimmed such that all the signals for each approach shall be continuously visible for the minimum distance listed in the table in Section 4D.15 of the MUTCD.

**CONDUIT TO NEW JUNCTION BOXES**

Conduit will be bored under the existing concrete pavement. All costs associated with boring of the conduit will be incidental to the conduit bid items.

The Contractor shall make all necessary connections in the conduit to connect from the new junction boxes to the existing conduit.

All cost for Material and labor to connect to existing conduit shall be incidental to the contract unit price per each for 18" Diameter Junction Box and 24" Diameter Junction Box.

**INSTALL PEDESTAL SIGNAL POLE**

The contractor shall install three pedestal poles supplied by the city of Sioux Falls. The Contractor shall contact the city of Sioux Falls traffic Engineering Department one week prior to picking up the pedestal poles.

All cost for delivery, and installation of the three pedestal poles shall be incidental to the contract unit price each for Install Pedestal Pole.

(For information only) the monetary value of the three City furnished pedestal poles is \$260.00.

The pedestrian push button shall be mounted adjacent to, and within 10 inches of a clear ground space or a landing on the pedestrian access route leading to the crosswalk. A clear ground space is an obstruction-free concrete sidewalk at least 32 inches by 54 inches with surface slopes not exceeding .02 ft/ft in any direction. A landing is an obstruction-free concrete sidewalk at least 60 inches by 60 inches with surface slopes not exceeding .02 ft/ft in any direction.

The pedestrian push button shall be mounted 42 inches above the clear ground space or landing. The 42 inch dimension is measured from the surface of the concrete sidewalk to the center of the push button.

The direction of the control face of the pedestrian push button shall be parallel to the direction of the crosswalk.

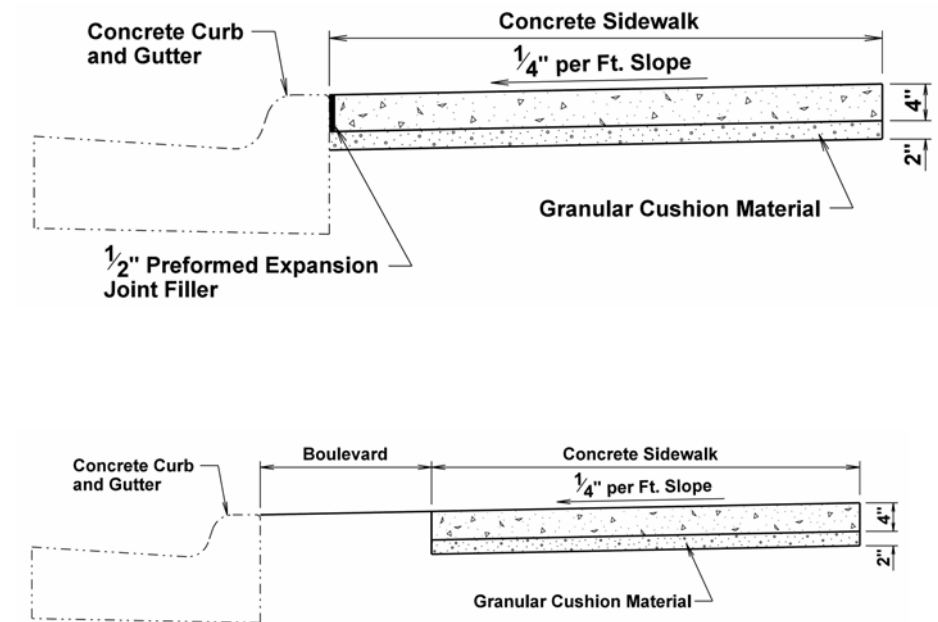
**CONTROLLER PROGRAMING**

The contractor shall contact the city of Sioux Falls to program the pedestrian times in the traffic signal controller.

**TABLE OF PRECAST CONCRETE DETECTABLE WARNING PANELS (For information only)**

Intersection	Quantity (1'x2' Panel)	Quantity (2'x2' Panel)	Quantity (3'x2' Panel)
NW Raised Median	6		3
NW Quad. SB I29 Off Ramp	2		1
NE Quad. SB I29 Off Ramp	2		1
SW Quad. SB I29 On Ramp	2		1
SE Quad. SB I29 On Ramp	2		1
NE Raised Median	4		2
NW Quad NB I29 On Ramp	2		1
NE Quad. NB I29 On Ramp	2		1
SE Raised Median	4		2
SW Quad. NB I29 Off Ramp	2		1
SE Quad. NB I29 Off Ramp	2		1
Totals:	30		15

**CONCRETE SIDEWALK**



The concrete sidewalk shall be constructed in accordance with Section 651 of the Standard Specifications. The sidewalk details shown above are typical of this project; however, the sidewalk widths, boulevard widths, and other special details are shown on the Sidewalk Layout sheets.



**Table of Work**

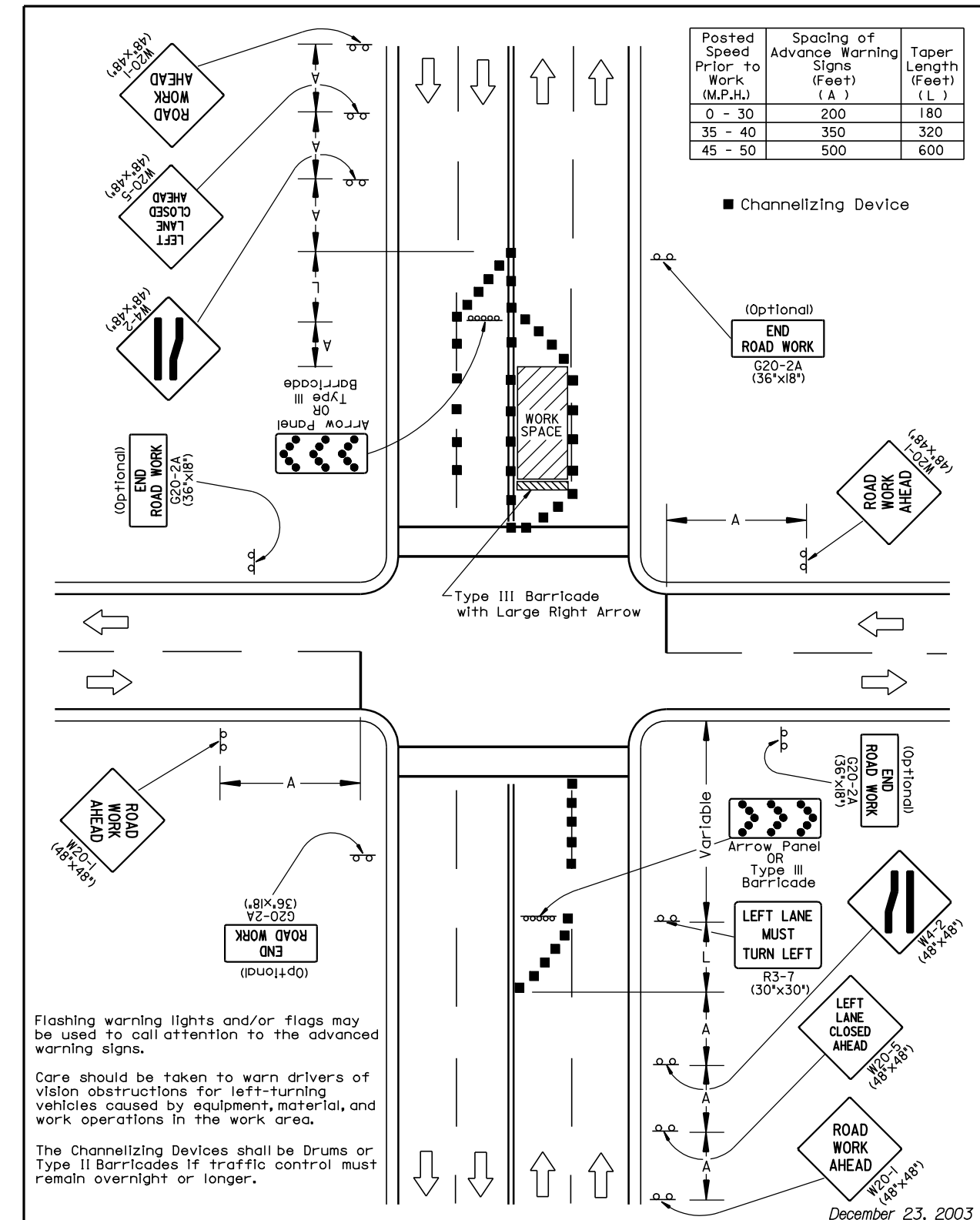
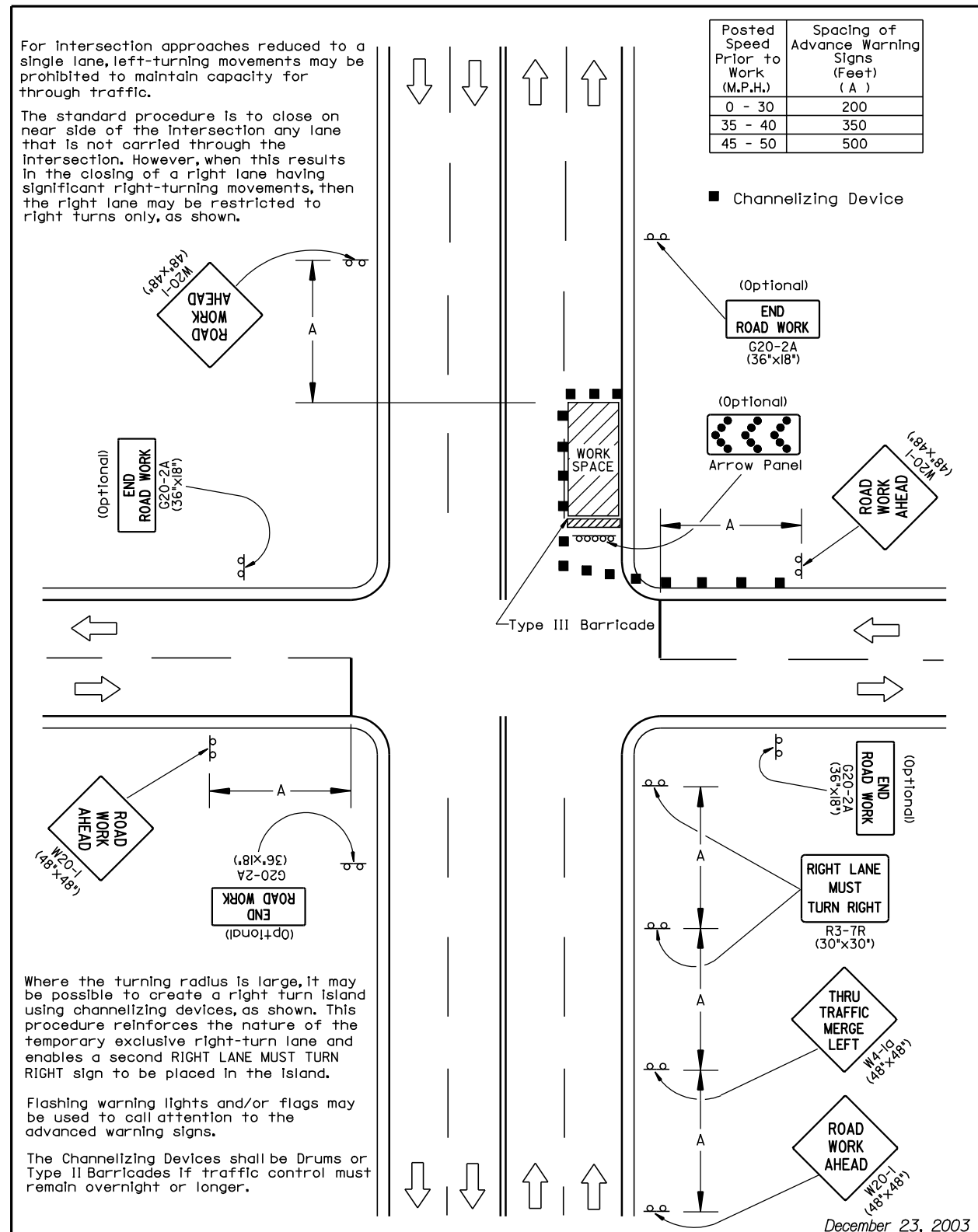
Location	Remove Concrete Curb and Gutter (Ft)	Remove Concrete Sidewalk (SqYd)	Insert Steel Bar in PCC Pavement (Each)	Type B69 Concrete Curb and Gutter (Ft)	4" Concrete Sidewalk (SqFt)	Restore Disturbed Area and Seed (SqYd)
East side of 41st and I29 Interchange						
North side of 41st Raised Median Island	23	10.1	6	23	91	0.0
NW Quadrant NB I29 On Ramp	14	5.1	4	14	46	7.8
NE Quadrant NB I29 On Ramp	17	9.4	4	17	85	9.4
South side of 41st Raised Median Island	23	13.1	4	23	118	0.0
SW Quadrant NB I29 Off Ramp	16	8.5	4	16	76	8.9
SE Quadrant NB I29 Off Ramp	17	9.4	4	17	85	9.4
West side of 41st and I29 Interchange						
North side of 41st Raised Median Island	27	20.7	7	27	186	0.0
NW Quadrant SB I29 Off Ramp	17	9.4	4	17	85	9.4
NE Quadrant SB I29 Off Ramp	17	17.0	4	17	153	9.4
SW Quadrant SB I29 On Ramp	39	4.7	10	39	42	21.7
SE Quadrant SB I29 On Ramp	17	12.6	4	17	113	9.4
Totals:	227	120.0	55	227	1080	85.4

### ITEMIZED LIST FOR TRAFFIC CONTROL

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-1	60" x 24"	ROAD WORK NEXT ## MILES		27	
G20-2A	48" x 24"	END ROAD WORK	4	26	104
M1-1	24" x 24"	INTERSTATE ROUTE MARKER		16	
M1-1	36" x 36"	INTERSTATE ROUTE MARKER		27	
M1-2	24" x 24"	INTERSTATE BUSINESS LOOP ROUTE MARKER		16	
M1-3	24" x 24"	INTERSTATE BUSINESS SPUR ROUTE MARKER		16	
M1-4	24" x 24"	US ROUTE MARKER		16	
M1-5	24" x 24"	SD ROUTE MARKER		16	
M2-1	21" x 15"	JCT		5	
M3-1	24" x 12"	DIRECTION MARKER - NORTH		4	
M3-1i	48" x 24"	DIRECTION MARKER - NORTH (INTERSTATE)		24	
M3-1i	24" x 12"	DIRECTION MARKER - NORTH (INTERSTATE)		4	
M3-2	12" x 12"	DIRECTION MARKER - EAST		2	
M3-3	24" x 12"	DIRECTION MARKER - SOUTH		4	
M3-3i	48" x 24"	DIRECTION MARKER - SOUTH (INTERSTATE)		24	
M3-3i	24" x 12"	DIRECTION MARKER - SOUTH (INTERSTATE)		4	
M3-4	24" x 12"	DIRECTION MARKER - WEST		4	
M4-5	24" x 12"	TO		4	
M4-5i	24" x 12"	TO (INTERSTATE)		4	
M4-6	24" x 12"	END		4	
M4-8	24" x 12"	DETOUR		4	
M4-8A	48" x 36"	END DETOUR		29	
M4-8A	24" x 18"	END DETOUR		7	
M4-10	18" x 48"	DETOUR ARROW (LEFT OR RIGHT)		22	
M5-1	15" x 21"	ADVANCE TURN 90 DEGREE (LEFT OR RIGHT)		5	
M5-2	21" x 15"	ADVANCE TURN 45 DEGREE (LEFT OR RIGHT)		5	
M6-1	21" x 15"	DIRECTION ARROW - HORIZONTAL SINGLE HEAD		5	
M6-1i	21" x 15"	DIR. ARROW - HORIZ. SINGLE HEAD (INTERSTATE)		5	
M6-2	21" x 15"	DIRECTION ARROW - 45 DEG. SINGLE HEAD (LT. OR RT.)		5	
M6-2i	30" x 24"	DIR. ARROW - 45 DEG. SINGLE HEAD (LT. OR RT.) (INT.)		18	
M6-3	21" x 15"	DIRECTION ARROW - VERTICAL SINGLE HEAD		5	
M6-3i	21" x 15"	DIR. ARROW - VERTICAL SINGLE HEAD (INTERSTATE)		5	
M6-4	21" x 15"	DIRECTION ARROW - HORIZONTAL DOUBLE HEAD		5	
M6-5	21" x 15"	DIR. ARROW - 45 DEG. DOUBLE HEAD (LT. OR RT.)		5	
R1-1	48" x 48"	STOP		34	
R1-2	48" x 48"	YIELD		34	
	36" x 30"	TO ON COMING TRAFFIC		23	
R2-1	48" x 60"	SPEED LIMIT ##		38	
R2-5A	48" x 60"	REDUCED SPEED AHEAD		38	
R2-5C	30" x 36"	SPEED ZONE AHEAD		23	
R3-1	36" x 36"	NO RT TURN (SYMBOL)		27	
R3-2	36" x 36"	NO LT TURN (SYMBOL)		27	
R3-5	30" x 36"	MUST TURN RIGHT (SYMBOL)		23	
R3-7	30" x 30"	LEFT OR RIGHT LANE MUST TURN	1	13	13
R4-1	48" x 60"	DO NOT PASS		38	
R4-2	30" x 24"	PASS WITH CARE		18	
R4-7	24" x 30"	KEEP RIGHT (SYMBOL)		18	
R4-8	24" x 30"	KEEP LEFT (SYMBOL)		18	
R5-1	36" x 36"	DO NOT ENTER		27	
R5-1A	48" x 36"	WRONG WAY		29	
R5-5C	60" x 48"	NO VEHICLES OVER ## FT.		38	
R6-1	36" x 12"	ONE WAY		14	
R9-9	24" x 12"	SIDEWALK CLOSED	2	4	8
<b>SUBTOTAL</b>					<b>125</b>

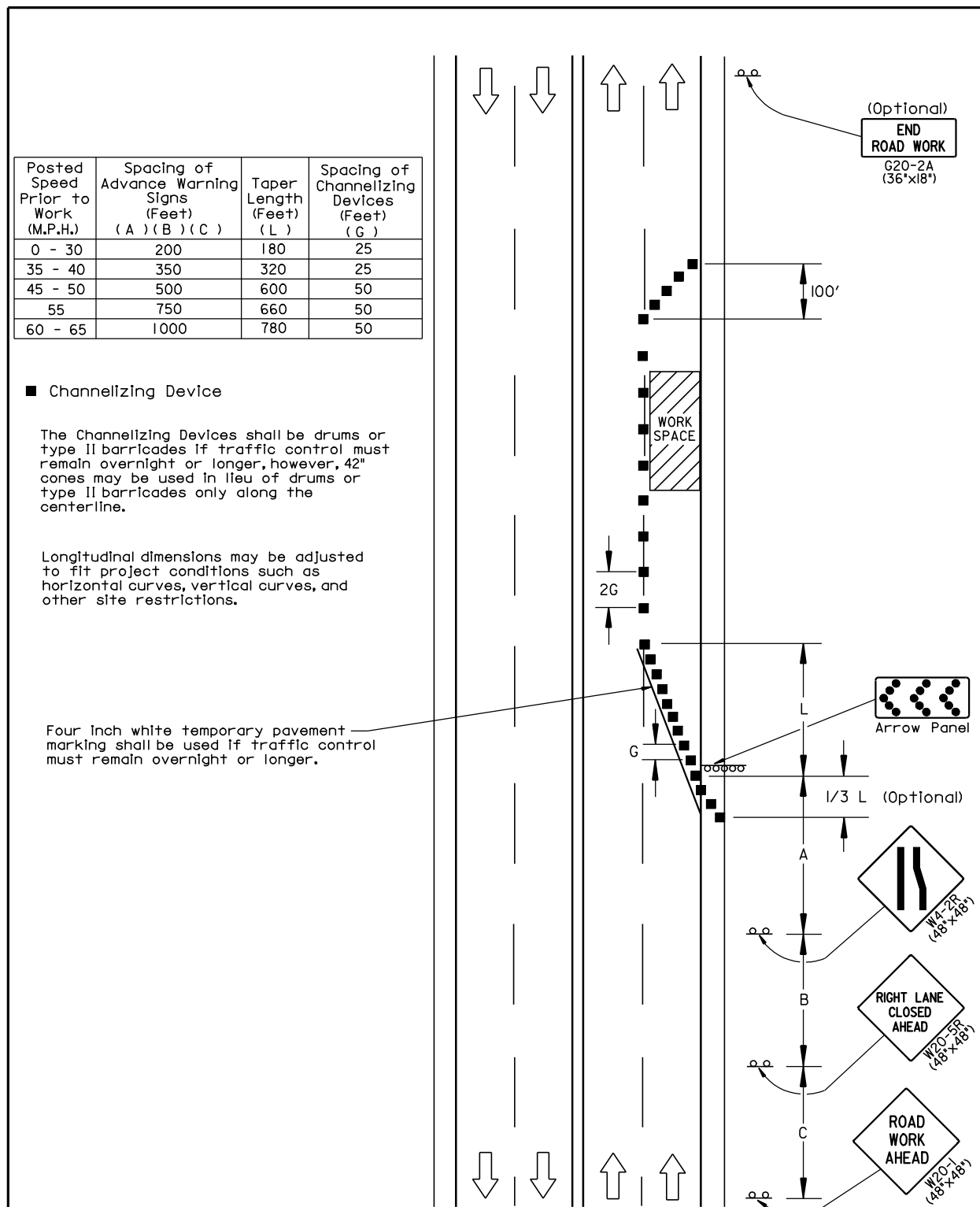
SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
R9-10	24" x 12"	SIDEWALK CLOSED USE OTHER SIDE	4	4	16
R9-10	24" x 12"	SIDEWALK CLOSED - CROSS HERE	2	4	8
R9-11	60" x 30"	SIDEWALK CLOSED AHEAD - CROSS HERE	2	4	8
R12-5D	84" x 48"	WIDTH RESTRICTION ## MILES AHEAD		48	
SW12-1B	120" x 60"	HIGHWAY WORKERS GIVE'EM A BRAKE		80	
W1-1	48" x 48"	LEFT OR RIGHT TURN ARROW		34	
W1-2	36" x 36"	PEDESTRIAN SIGN	4	19	76
W1-3	48" x 48"	REVERSE TURN SIGN (LEFT OR RIGHT)		34	
W1-4a	48" x 48"	REVERSE CURVE SIGN (LEFT OR RIGHT)		34	
W1-6	48" x 24"	LARGE ARROW		24	
W1-7	48" x 24"	LARGE ARROW - HORIZ. DOUBLE HEAD		24	
W1-8	24" x 18"	CHEVRON		7	
W2-2	48" x 48"	Y INTERSECTION SYMBOL		34	
W3-1A	48" x 48"	STOP AHEAD (SYMBOL)		34	
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68
W6-3	48" x 48"	TWO WAY TRAFFIC (SYMBOL)		34	
W7-3a	30" x 24"	NEXT XX MILES		18	
W8-1	48" x 48"	BUMP		34	
W8-6	48" x 48"	TRUCK CROSSING		34	
W8-11	48" x 48"	UNEVEN LANES		34	
W4-1A	36" x 36"	THRU TRAFFIC MERGE LEFT	1	27	27
W13-1	24" x 24"	ADVISORY SPEED PLATE		16	
W13-2	30" x 36"	EXIT SPEED LIMIT		23	
W9-3	48" x 48"	CENTER LANE CLOSED AHEAD	2	34	68
W12-1	36" x 36"	DOUBLE ARROW	2	20	40
W20-3	48" x 48"	ROAD CLOSED ##### FT. OR AHEAD		34	
W20-4	48" x 48"	ONE LANE ROAD ##### FT. OR AHEAD		34	
W20-5	48" x 48"	LT. OR RT. LANE CLOSED ##### FT. OR AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	2	34	68
W20-7b	48" x 48"	BE PREPARED TO STOP		34	
W21-1a	48" x 48"	WORKERS (SYMBOL)		34	
W21-2	48" x 48"	FRESH OIL		34	
W21-5	48" x 48"	SHOULDER WORK		34	
W21-5a	48" x 48"	RIGHT SHOULDER CLOSED		34	
W21-5b	48" x 48"	RIGHT SHOULDER CLOSED AHEAD		34	
W16-7	30" x 18"	ARROW SIGN FOR PED SIGN	4	8	32
W20-1	48" x 48"	ROAD WORK XXXX FT. OR AHEAD	4	34	136
SPECIAL	108" x 48"	WIDTH RESTRICTION 11' MAX 10 MILES AHEAD		64	
SPECIAL	108" x 48"	WIDTH RESTRICTION 11' MAX 2 MILES AHEAD		64	
SPECIAL	108" x 48"	WIDTH RESTRICTION VEH OVER 11' WIDE EXIT HERE		64	
SPECIAL	60" x 48"	OVERWIDTH VEHICLES		38	
SPECIAL	30" x 24"	OVERWIDTH VEHICLES		18	
SPECIAL	60" x 36"	DETOUR AHEAD EXIT 73 NORTH CLOSED USE EXIT 71		33	
SPECIAL	120" x 108"	EXIT 73 271ST STREET CLOSED USE EXIT 71		127	
SPECIAL	24" x 12"	271st ST		4	
SPECIAL	60" x 48"	EXIT 73		38	
SPECIAL	108" x 90"	EXIT 73 TEA		101	
*****	12" x 36"	TYPE III OBJECT MARKER		14	
*****	*****	TYPE III BARRICADE - 6 FT. SINGLE SIDED		30	
*****	*****	TYPE III BARRICADE - 8 FT. SINGLE SIDED		40	
*****	*****	TYPE III BARRICADE - 6 FT. DOUBLE SIDED		42	
*****	*****	TYPE III BARRICADE - 8 FT. DOUBLE SIDED	6	56	336
<b>SUBTOTAL</b>					<b>951</b>
<b>GRAND TOTAL</b>					<b>1076</b>

Plotting Date: 25-APR-2006



Username - trsf12115

Plotting Date: 25-APR-2006

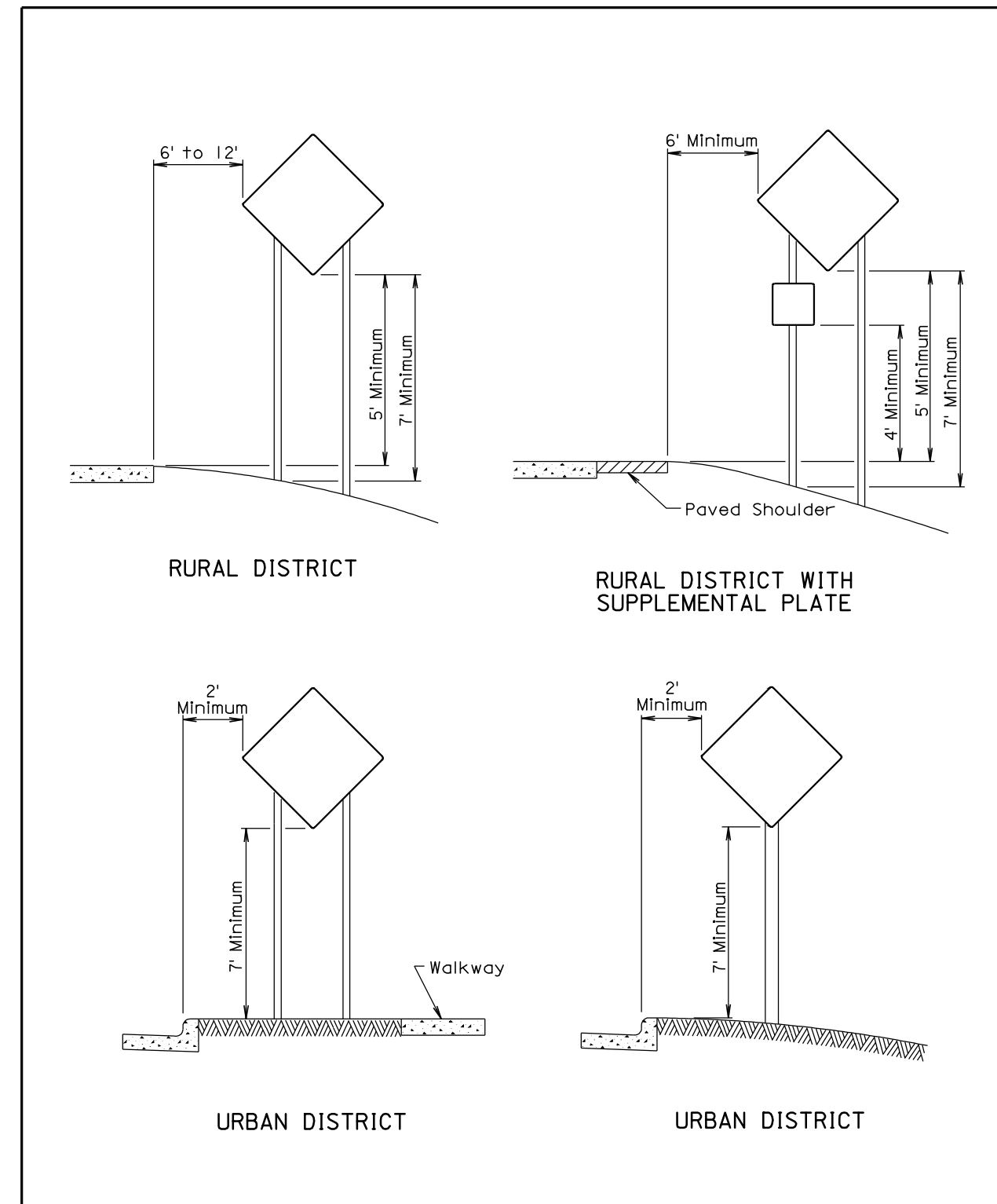


**Channelizing Device**

The Channelizing Devices shall be drums or type II barricades. If traffic control must remain overnight or longer, however, 42" cones may be used in lieu of drums or type II barricades only along the centerline.

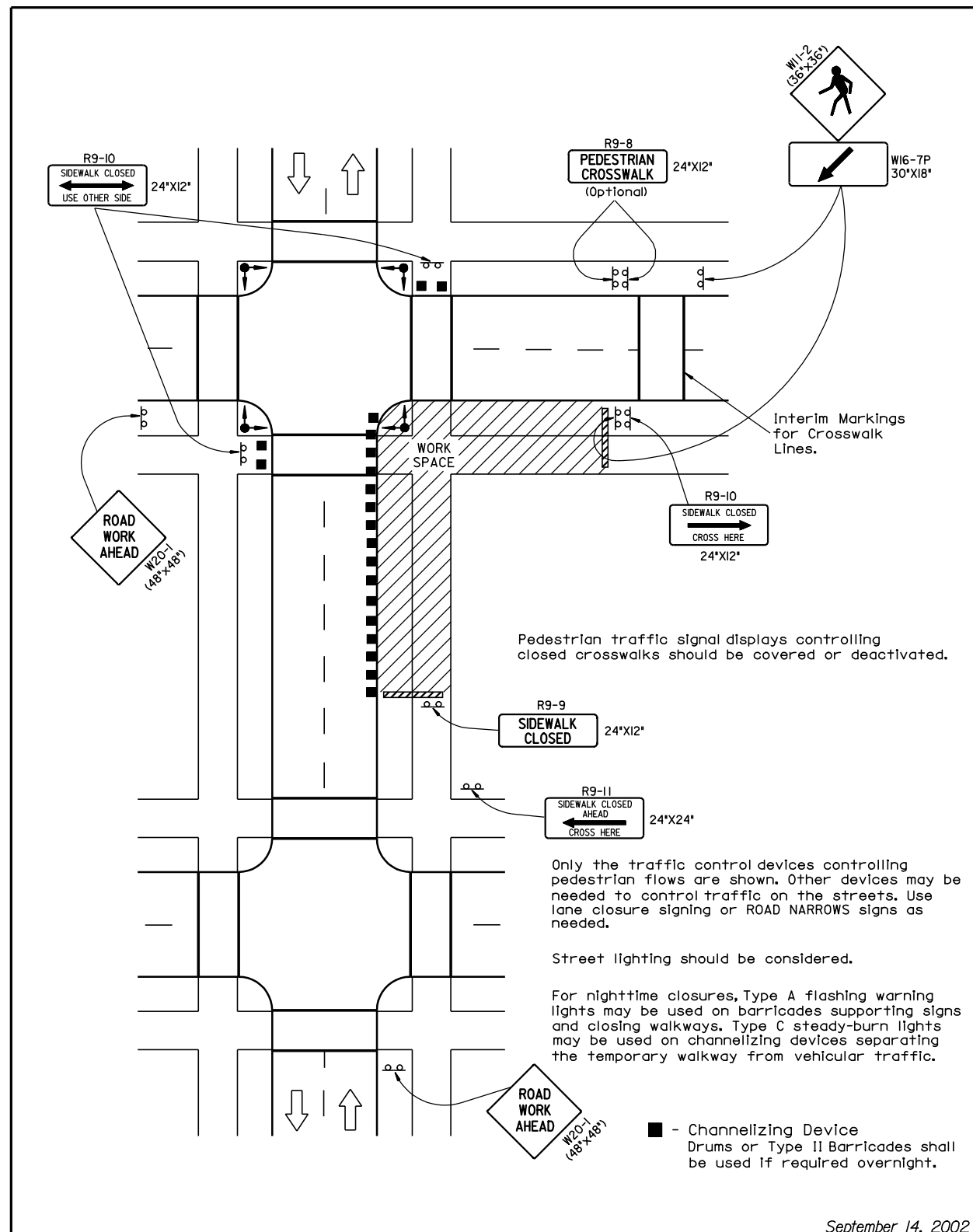
Longitudinal dimensions may be adjusted to fit project conditions such as horizontal curves, vertical curves, and other site restrictions.

Four inch white temporary pavement marking shall be used if traffic control must remain overnight or longer.

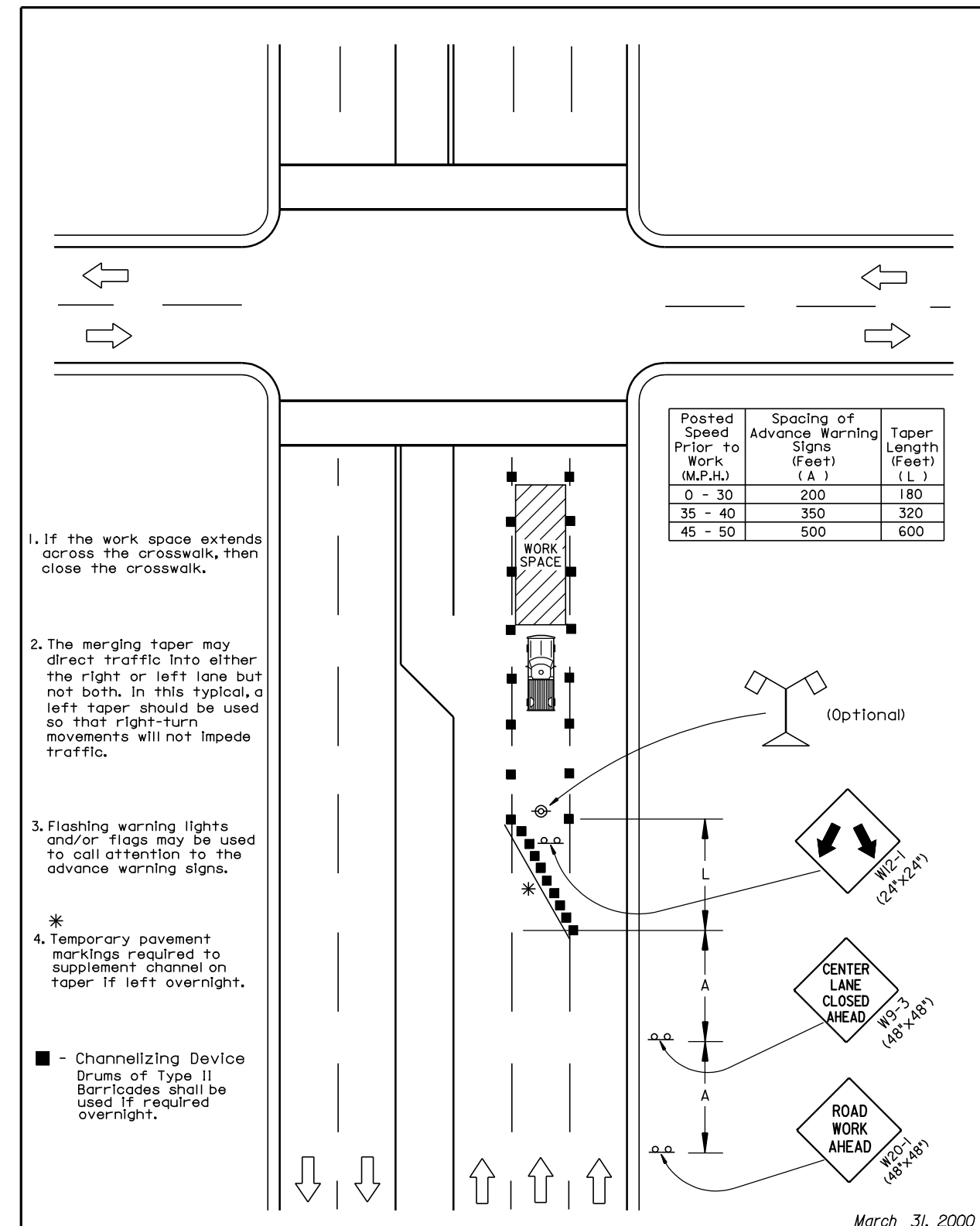




Plotting Date: 25-APR-2006



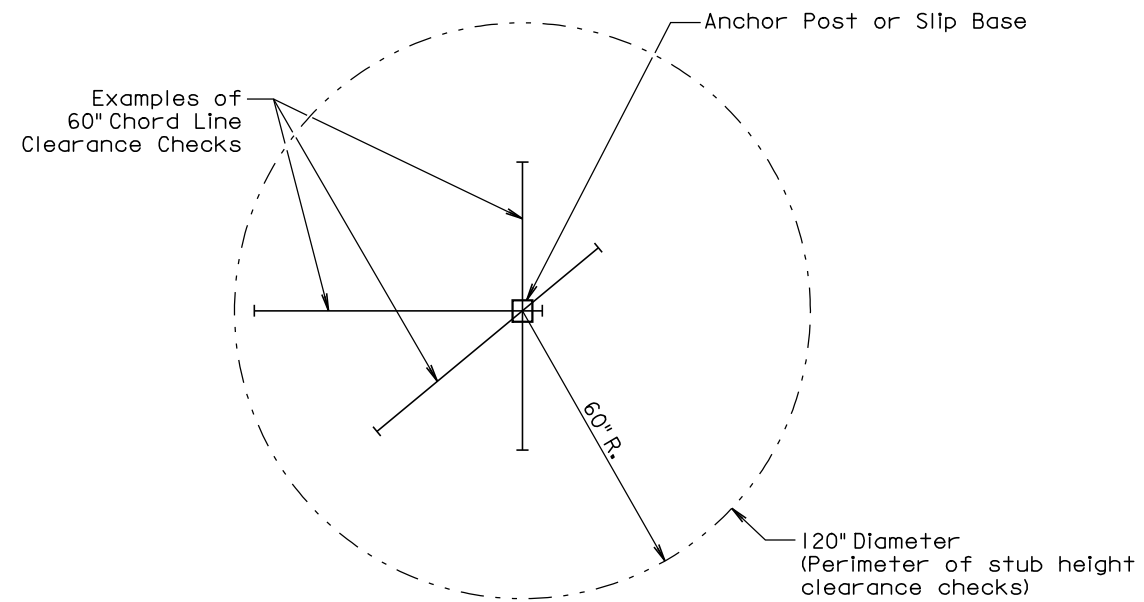
September 14, 2002



March 31, 2000

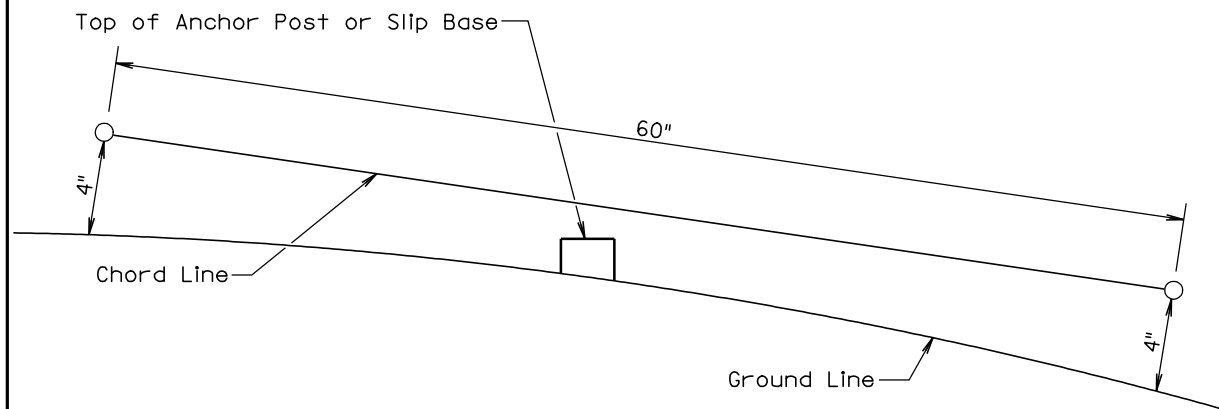
Username - trsf12115

Plotting Date: 25-APR-2006



**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

<b>S D D O T</b>	<b>BREAKAWAY SUPPORT STUB CLEARANCE</b>	PLATE NUMBER <b>634.99</b>
		Sheet 1 of 1

*Published Date: 2nd Qtr. 2006.*

PLOT SCALE - 40.000000:1.000000

PLOTTED FROM - IRSE12115

# SIDEWALK LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001-271	11	28

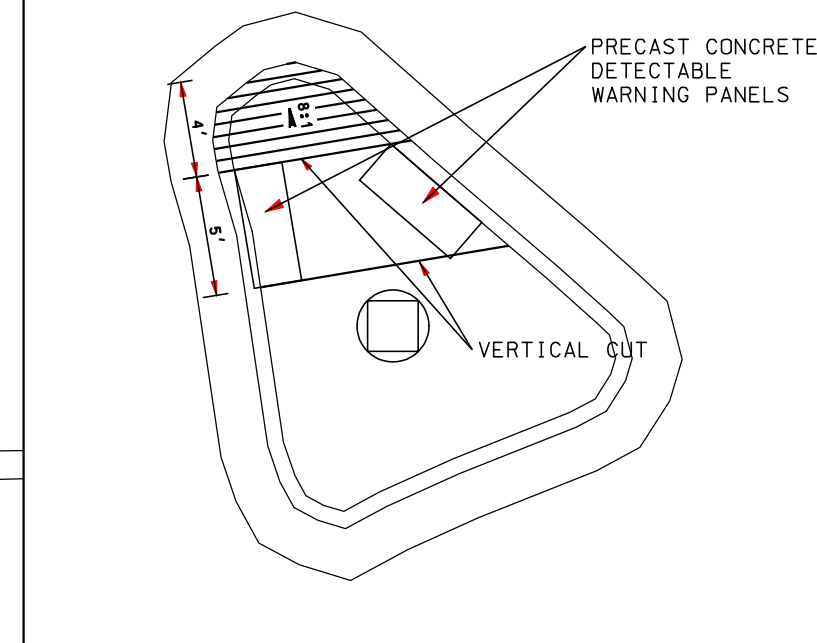
Plotting Date: 25-APR-2006

SCALE 1" = 40'

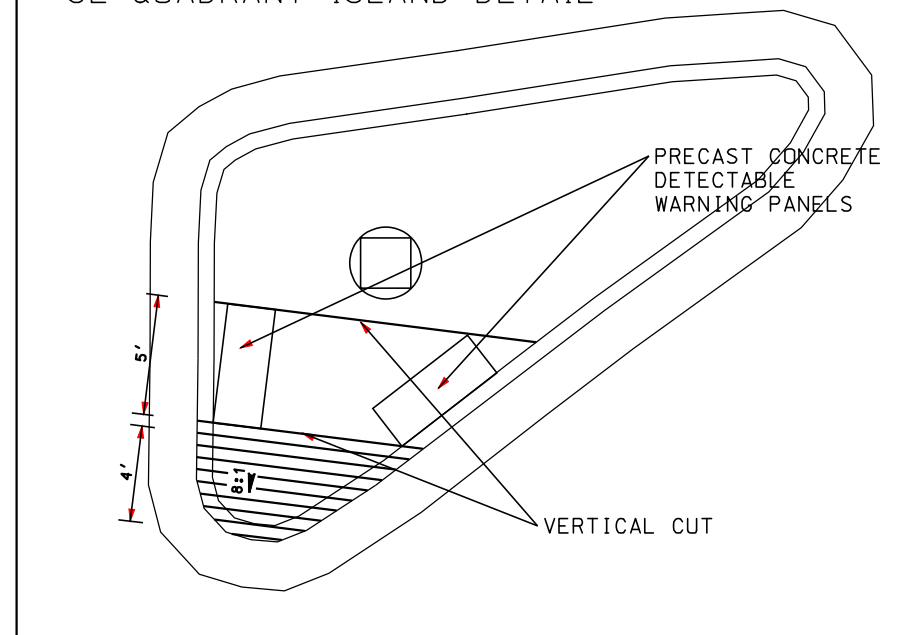
I-29

41st St.

## NE QUADRANT ISLAND DETAIL



## SE QUADRANT ISLAND DETAIL



PLOT NAME - 11

FILE - U:\RD\MISC\DESIGN\PRJ\129-41ST\NEAST\129-41ST.DGN

PLOT SCALE - 40.000000:1.000000

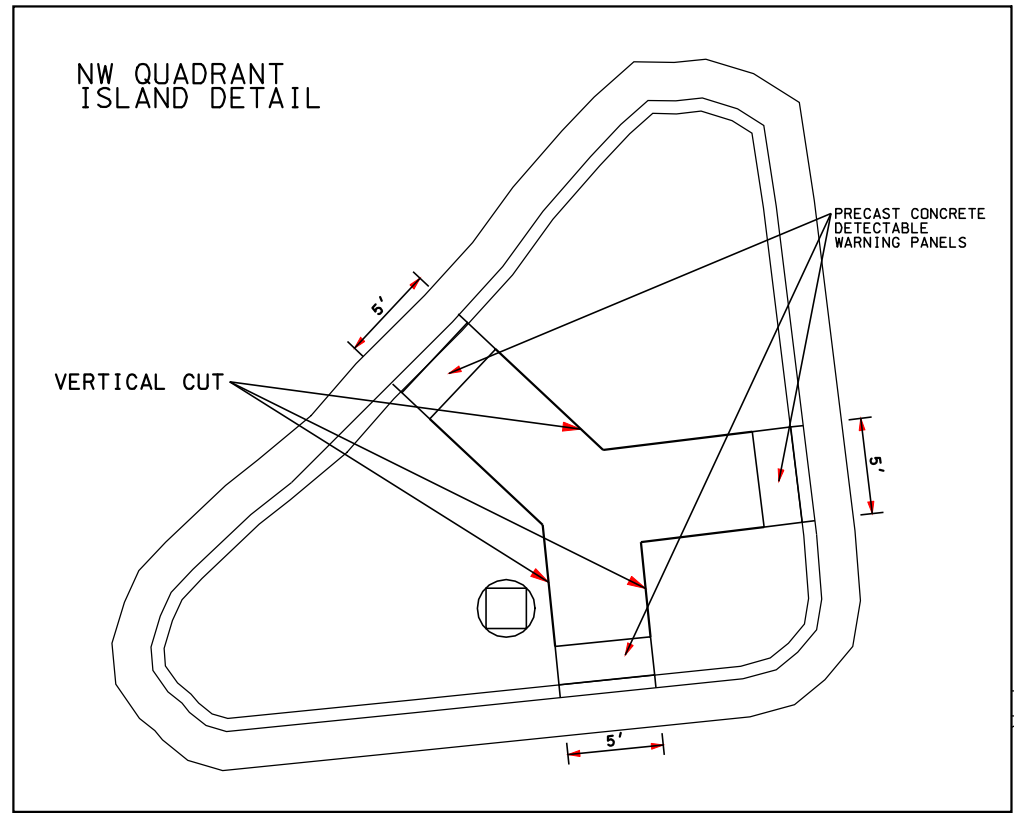
PLOTTED FROM - IRSE12115

# SIDEWALK LAYOUT

STATE OF SOUTH DAKOTA	PROJECT 0001-271	SHEET 12	TOTAL SHEETS 28
-----------------------	---------------------	-------------	--------------------

Plotting Date: 25-APR-2006

SCALE 1" = 40'



I-29

41st St.

FILE - U:\RD\MISC\DESIGN\PRJ\129-41ST\WEST\129-41ST.DGN PLOT NAME - 12

PLOT SCALE - 8.0000001.000000

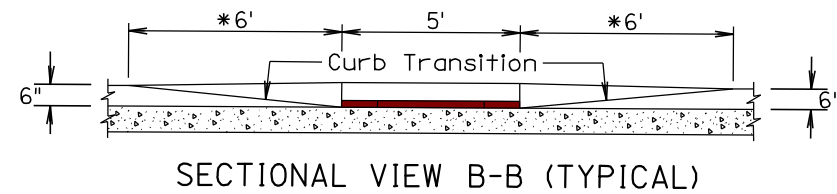
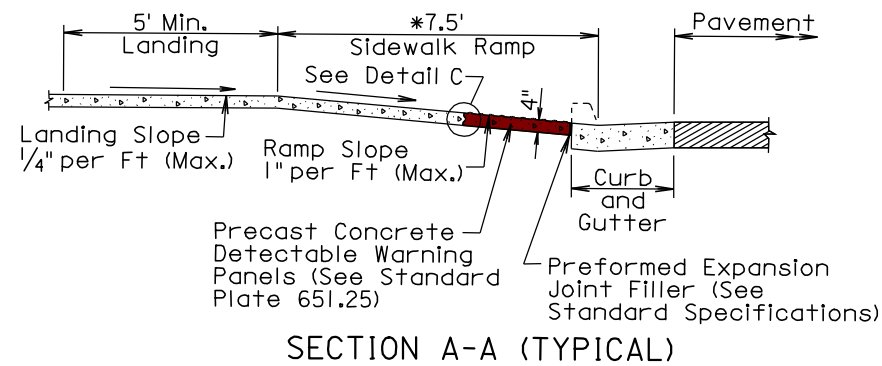
PLOTTED FROM - TRSF12115

# CURB RAMP DETAILS FOR CURBSIDE SIDEWALK

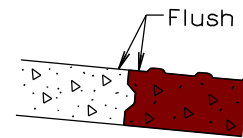
Sheet 1 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	0001-271	13	28

Plotting Date: 25-APR-2006



\*The 6' dimension shall be used with 6" high curbs. The dimension shall be adjusted for the curb type shown in the plans based on the maximum allowable 1" per Ft ramp slope.



DETAIL C (TYPICAL)

**GENERAL NOTES:**

For illustrative purposes only, PCC fillet sections are shown in the drawings on sheets 1 & 2. The curb ramp depicted on the drawings may be used with a PCC fillet section or with curb and gutter. Sidewalk adjacent to the ramp flares and landing area shall be as shown in the plans. See sheets 3 thru 6 for additional details for the curb ramps.

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

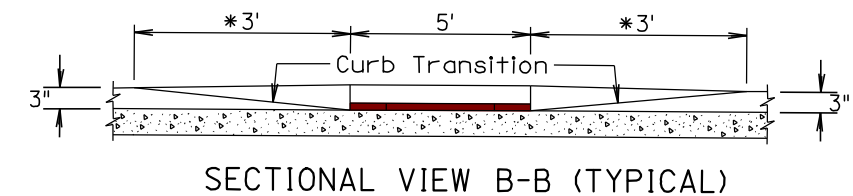
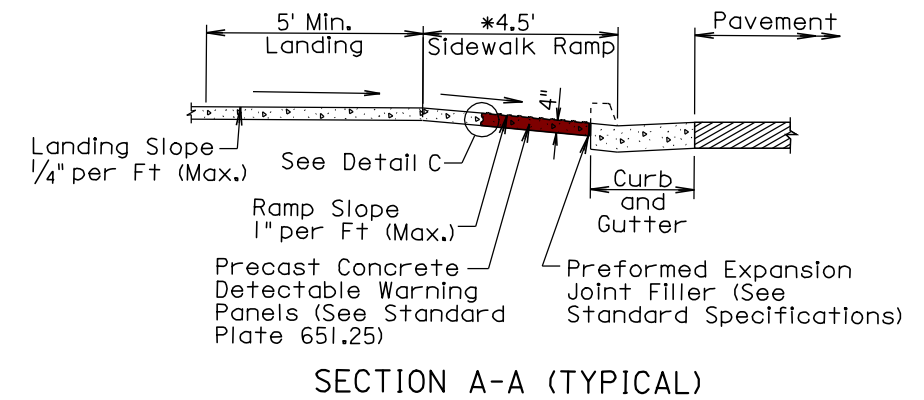
The normal gutter line profile shall be maintained through the area of the ramp.

Care shall be taken to ensure that the surface of the precast concrete panel is clean and maintains a uniform brick red color after placement of the ramp concrete.

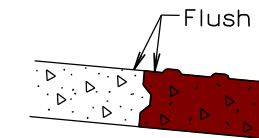
Surface texture of the ramp shall be obtained by coarse brooming transverse to the slope of the ramp.

Joints shall be tooled into the concrete adjacent to the precast detectable warning panels to alleviate possible corner cracking. Location of the joints shall be as approved by the Engineer.

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 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 3' dimension shall be used with 3" high curbs. The dimension shall be adjusted for the curb type shown in the plans based on the maximum allowable 1" per Ft ramp slope.



DETAIL C (TYPICAL)

PLOT NAME - 13

FILE - N:\PR\AD41ST\PLATES\INTERSECTION LAYOUT.DGN



PLOT SCALE - 8.0000001.000000

PLOTTED FROM - TRSE12115

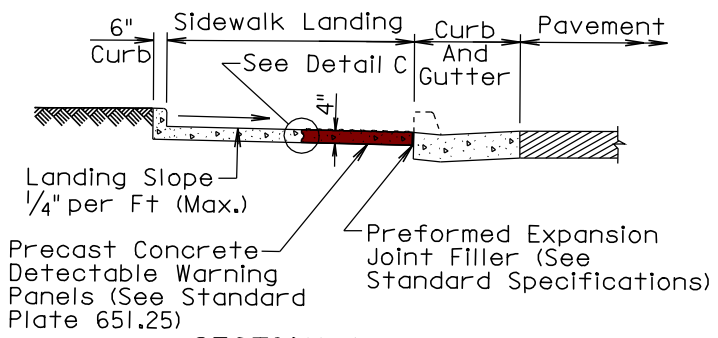
# CURB RAMP DETAILS FOR CURBSIDE SIDEWALK

Sheet 2 of 2

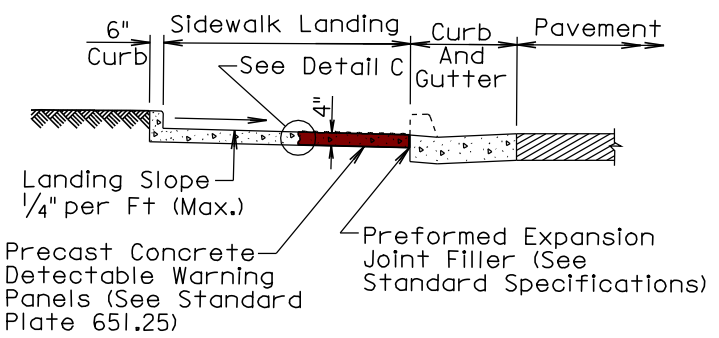
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	0001-271	14	28

Plotting Date: 25-APR-2006

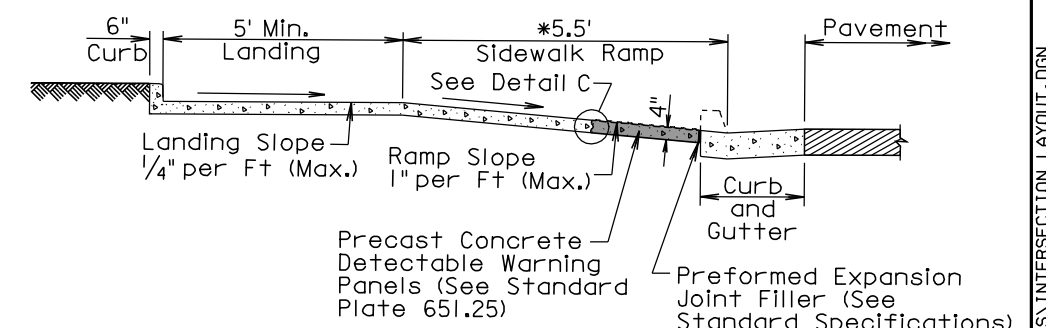
FILE - N:\PR\AD041ST\PLATES\INTERSECTION LAYOUT.DGN PLOT NAME - 14



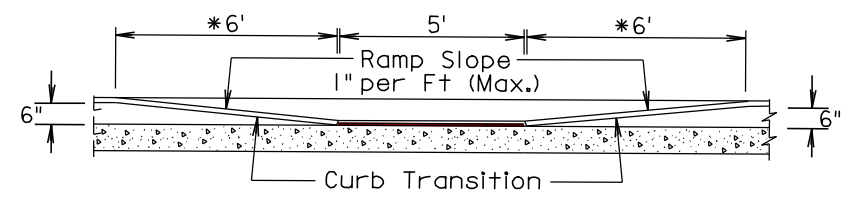
SECTION A-A (TYPICAL)



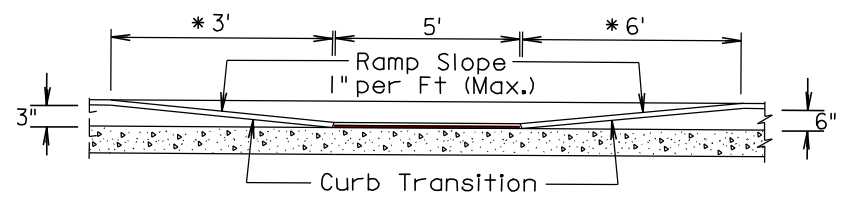
SECTION A-A (TYPICAL)



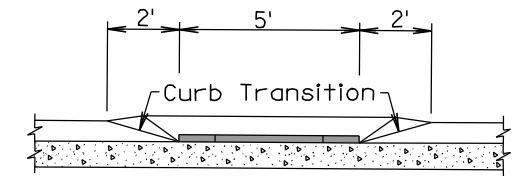
SECTION A-A (TYPICAL)



SECTIONAL VIEW B-B (TYPICAL)

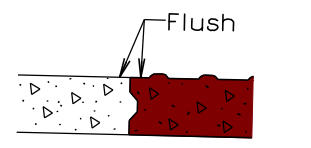


SECTIONAL VIEW B-B (TYPICAL)



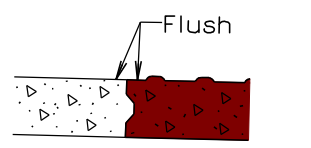
SECTIONAL VIEW B-B (TYPICAL)

\* The 6' dimension shall be used with 6" high curbs. The dimension shall be adjusted for the curb type shown in the plans based on the maximum allowable 1" per Ft ramp slope.



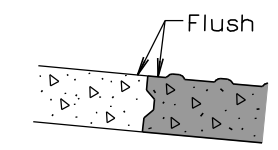
DETAIL C (TYPICAL)

\* The 6' & 3' dimension shall be used with 6" & 3" high curbs. The dimension shall be adjusted for the curb type shown in the plans based on the maximum allowable 1" per Ft ramp slope.



DETAIL C (TYPICAL)

\*The 5.5' dimension shall be used with 6" high curbs. The dimension shall be adjusted for the curb type shown in the plans based on the maximum allowable 1" per Ft ramp slope.



DETAIL C (TYPICAL)

PLOT SCALE - 20\_0000001.000000

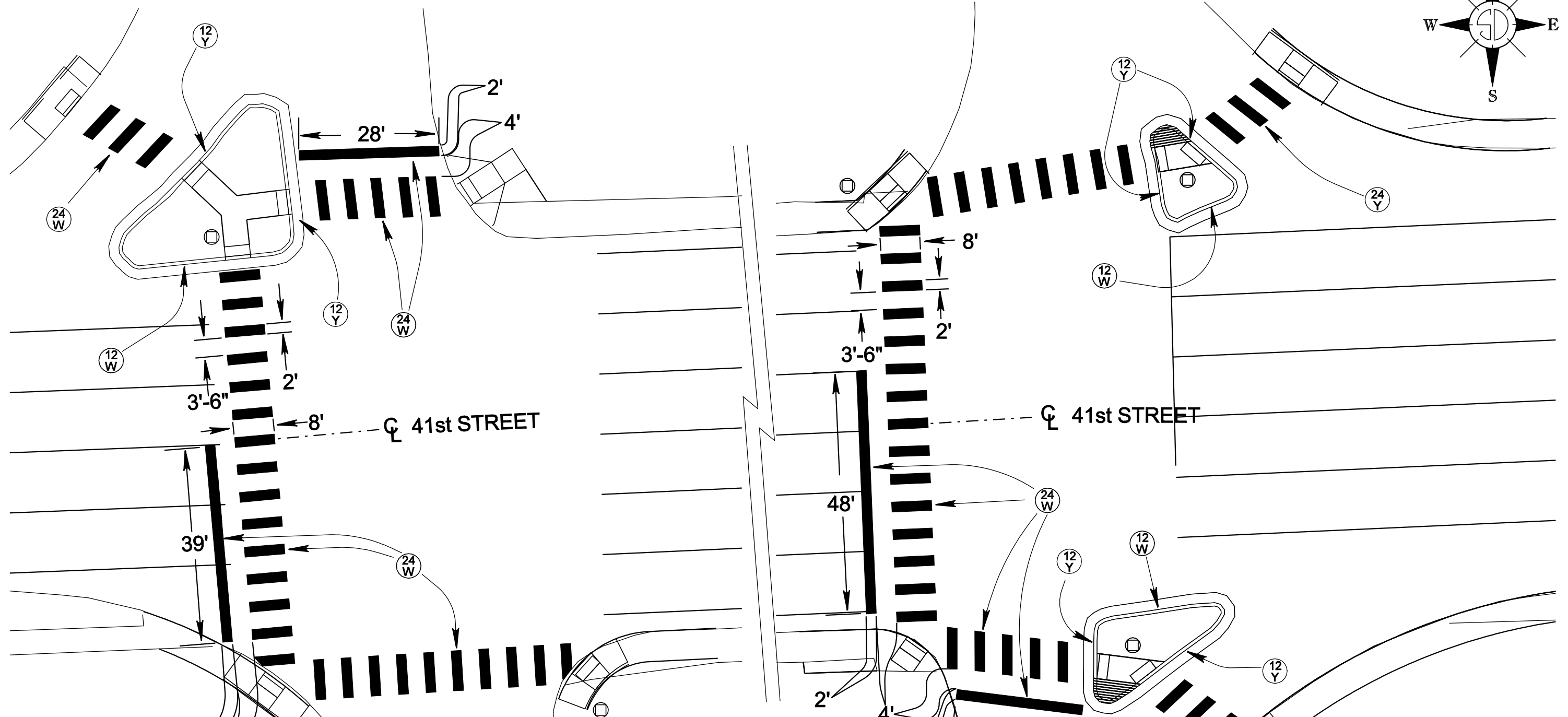
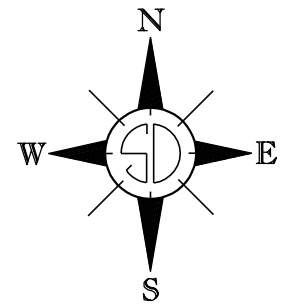
PLOTTED FROM - TRSE12115

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	0001-271	15	28




Plotting Date: 25-APR-2006

# PAVEMENT MARKING LAYOUT

## 41st STREET AT EXIT 77 ON AND OFF RAMPS



**KEY:**

-  - 12" Yellow Pavement Marking
-  - 12" White Pavement Marking
-  - 24" White Cold Applied Plastic Pavement Marking.

PLOT NAME - 15

FILE - N:\PR\AD041ST\MARKING LAYOUT.DGN

# EXISTING SIGNAL LAYOUT

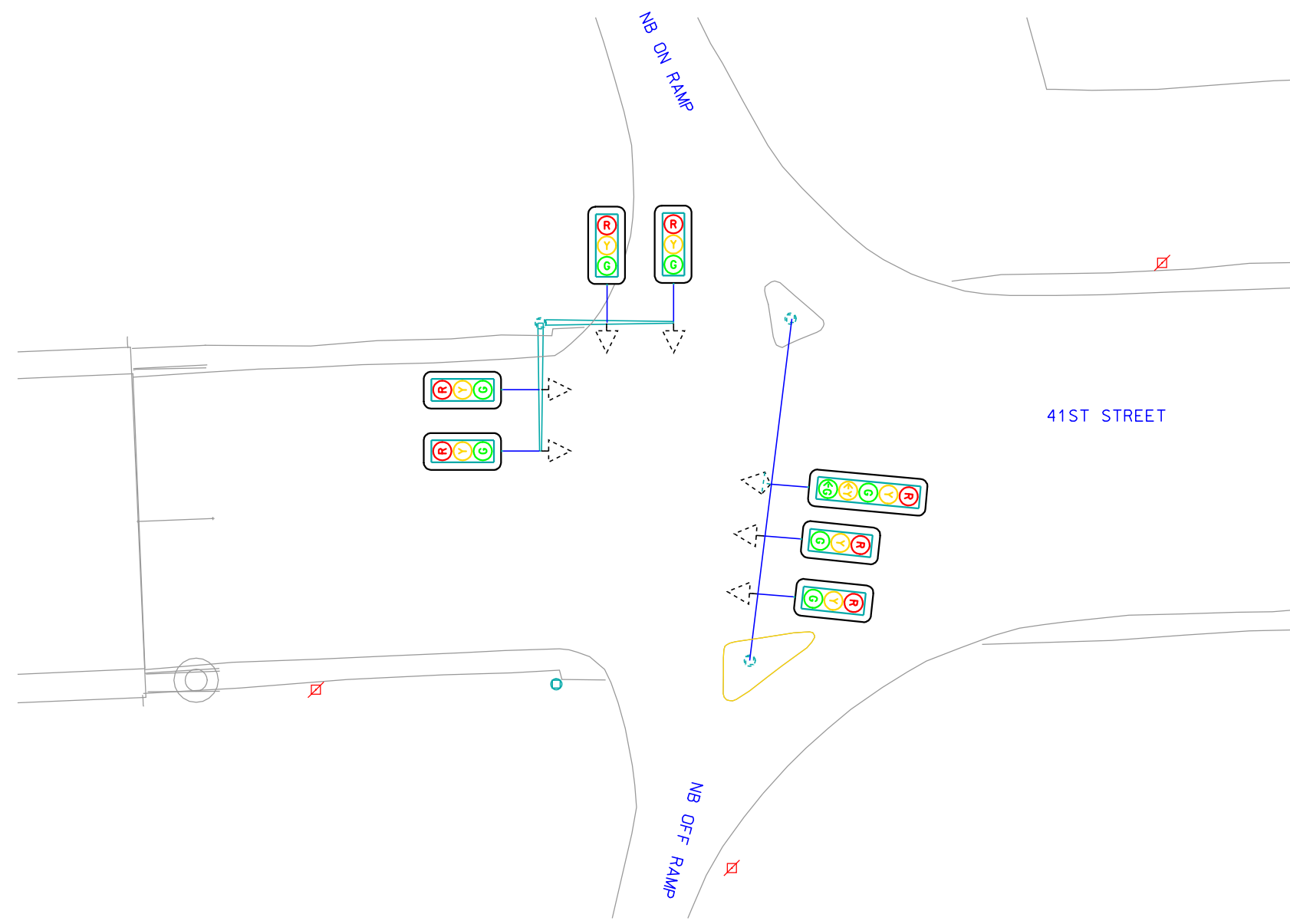
I-29 / 41ST STREET EAST

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001-271	16	28

Plotting Date: 25-APR-2006



SCALE  
1" = 40'



PLOT SCALE - 40.000000:1.000000

PLOTTED FROM - IRSE12115

PLOT NAME - 16

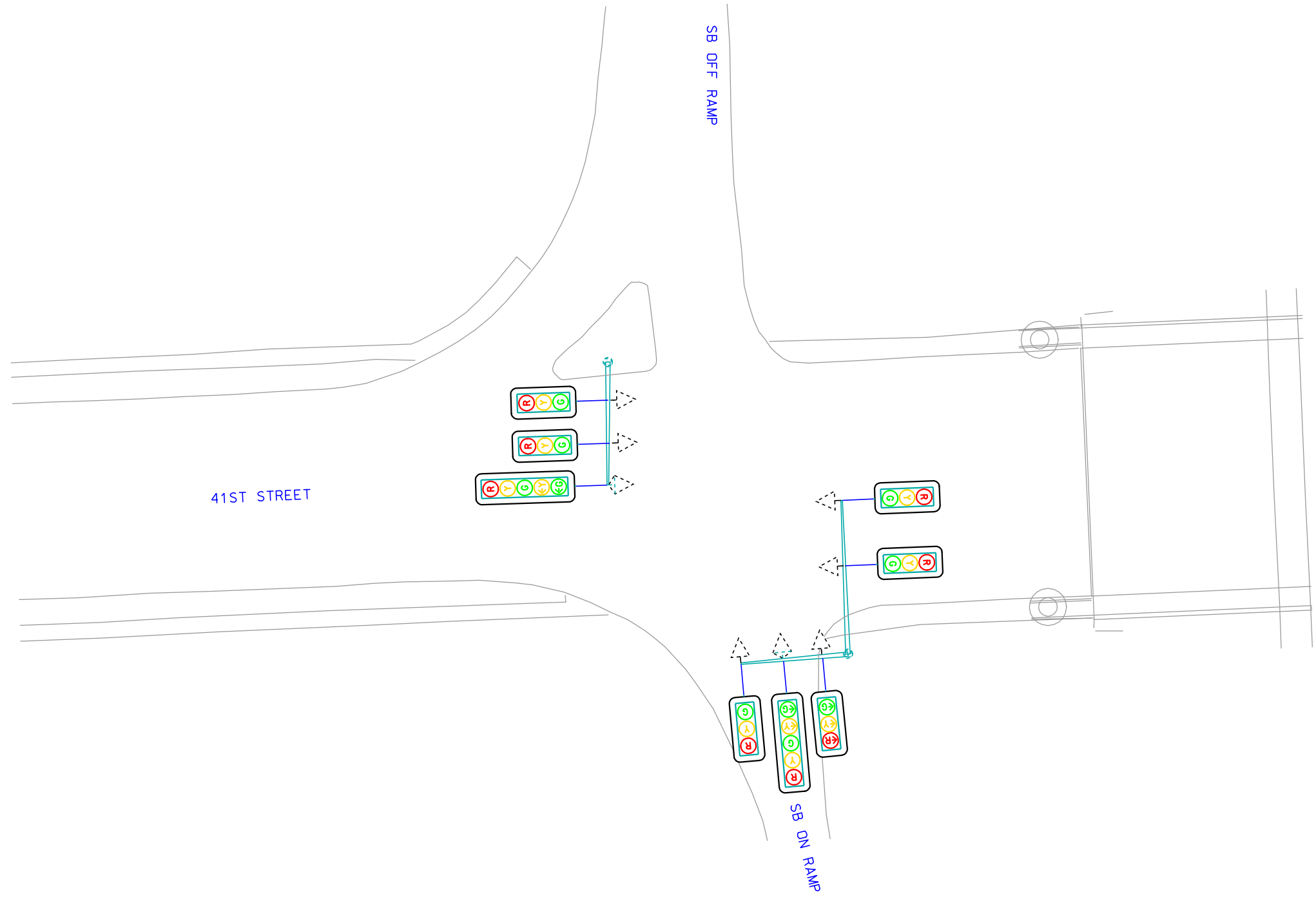
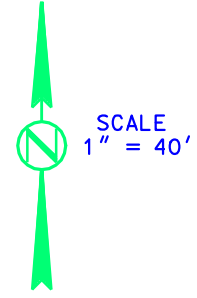
FILE - U:\RD\MISC\DESIGN\PRJ\129-41ST\010ES.DGN

# EXISTING SIGNAL LAYOUT

I-29 / 41ST STREET WEST

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001-271	17	28

Plotting Date: 25-APR-2006



PLOT SCALE - 40.000000:1.000000

PLOTTED FROM - IRSE12115

PLOT NAME - 17

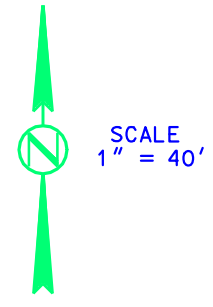
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# SIGNAL LAYOUT

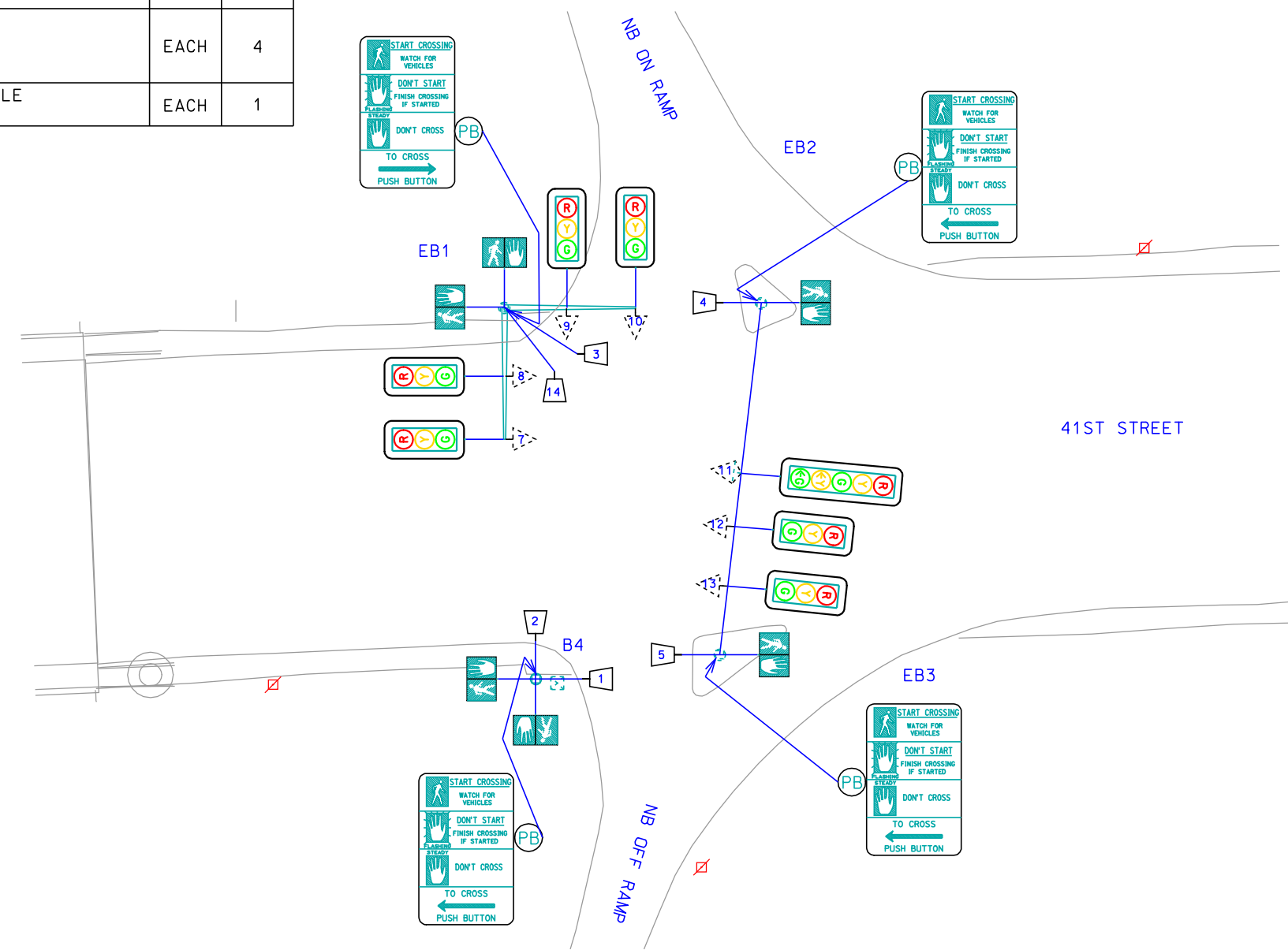
I-29 / 41ST STREET EAST

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001-271	18	28

Plotting Date: 25-APR-2006



ESTIMATE OF QUANTITIES			
KEY	ITEM	UNIT	EST QUANT
	PEDESTRIAN SIGNAL HEAD (1-5,14)	EACH	6
	PEDESTRIAN PUSH BUTTON	EACH	4
	PEDESTRIAN CROSSING SIGN (RIGHT - 1 LEFT - 3)	EACH	4
	INSTALL PEDESTAL SIGNAL POLE (B4)	EACH	1



EXISTING ITEMS	
KEY	ITEM
	SIGNAL POLE (EB1,EB2,EB3)
	3-SECTION VEHICLE HEAD (7-10,12-13)
	5-SECTION VEHICLE HEAD (11)
	TRAFFIC SIGNAL CONTROLLER

PLOT SCALE - 40.000000:1.000000

PLOTTED FROM - IRSE12115

PLOT NAME - 18

FILE - U:\RD\MISC\DESIGN\PRJ\129-41ST\010S.DGN



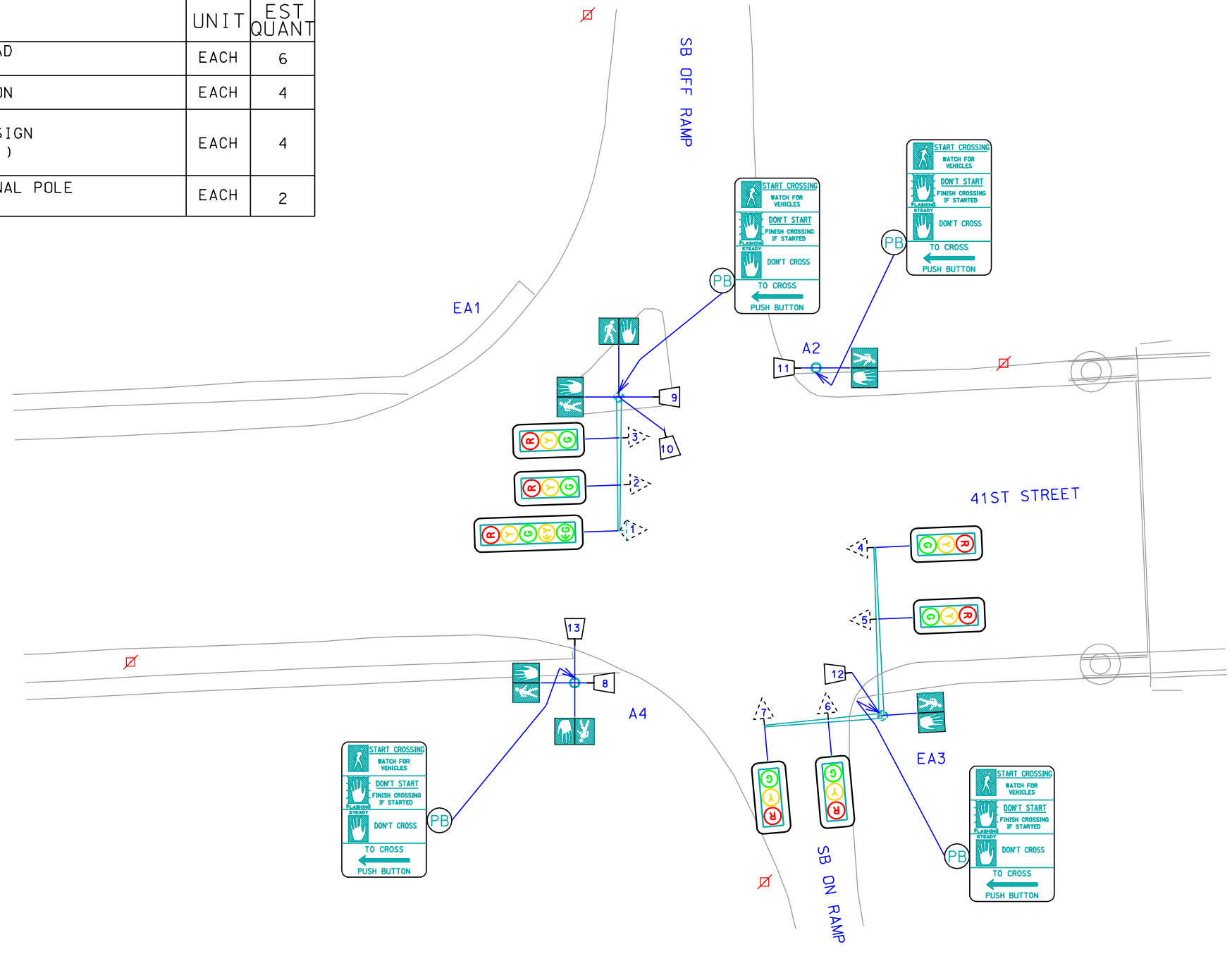
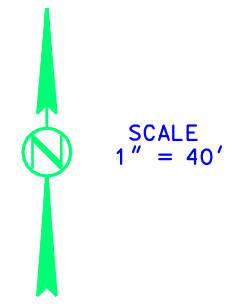
# SIGNAL LAYOUT

## I-29 / 41ST STREET WEST

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001-271	19	28

Plotting Date: 25-APR-2006

ESTIMATE OF QUANTITIES			
KEY	ITEM	UNIT	EST QUANT
☐	PEDESTRIAN SIGNAL HEAD (8-13)	EACH	6
⊙	PEDESTRIAN PUSH BUTTON	EACH	4
☐	PEDESTRIAN CROSSING SIGN (RIGHT - 0 LEFT - 4)	EACH	4
○	INSTALL PEDESTAL SIGNAL POLE (A2,A4)	EACH	2



EXISTING ITEMS	
KEY	ITEM
☐	SIGNAL POLE (EA1,EA3)
☐	3-SECTION VEHICLE HEAD (2,3,4,5,6,7)
☐	5-SECTION VEHICLE HEAD (1)
☐	TRAFFIC SIGNAL CONTROLLER

PLOT SCALE - 40.000000:1.000000

PLOTTED FROM - IRSE12115

FILE - U:\RD\MISC\DESIGN\PRJ\129-41ST\0206.DGN PLOT NAME - 19

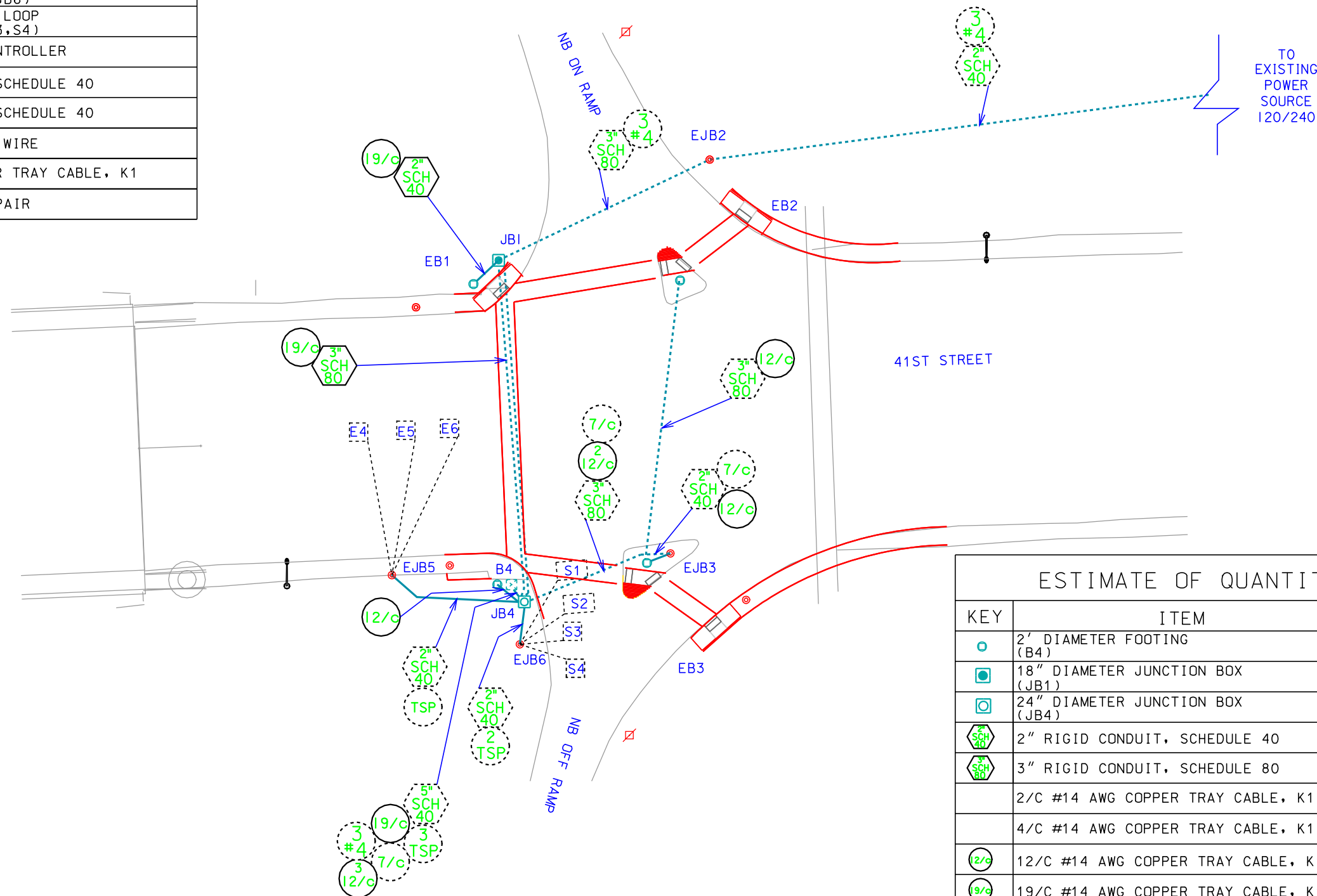
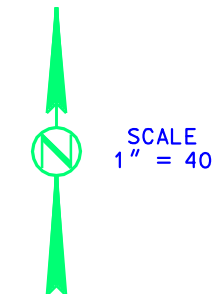
# CONDUIT LAYOUT

I-29 / 41ST STREET EAST

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001-271	20	28

Plotting Date: 25-APR-2006

EXISTING ITEMS	
KEY	ITEM
	SIGNAL POLE (EB1, EB2, EB3)
	18" DIAMETER JUNCTION BOX (EJB2, EJB3, EJB5, EJB6)
	SAWED-IN DETECTOR LOOP (E4, E5, E6, S1, S2, S3, S4)
	TRAFFIC SIGNAL CONTROLLER
	2" RIGID CONDUIT SCHEDULE 40
	5" RIGID CONDUIT SCHEDULE 40
	1/C #4 AWG COPPER WIRE
	7/C #12 AWG COPPER TRAY CABLE, K1
	TWISTED SHIELDED PAIR



ESTIMATE OF QUANTITIES			
KEY	ITEM	UNIT	EST QUANT
	2" DIAMETER FOOTING (B4)	FT	4
	18" DIAMETER JUNCTION BOX (JB1)	EACH	1
	24" DIAMETER JUNCTION BOX (JB4)	EACH	1
	2" RIGID CONDUIT, SCHEDULE 40	FT	50
	3" RIGID CONDUIT, SCHEDULE 80	FT	125
	2/C #14 AWG COPPER TRAY CABLE, K1	FT	30
	4/C #14 AWG COPPER TRAY CABLE, K1	FT	90
	12/C #14 AWG COPPER TRAY CABLE, K1	FT	235
	19/C #14 AWG COPPER TRAY CABLE, K1	FT	165

PLOT SCALE - 40.000000:1.000000

PLOTTED FROM - TRSE12115

FILE - U:\RD\MISC\DESIGN\PRJ\129-41ST\010C.DGN

PLOT NAME - 20

# CONDUIT LAYOUT

I-29 / 41ST STREET WEST

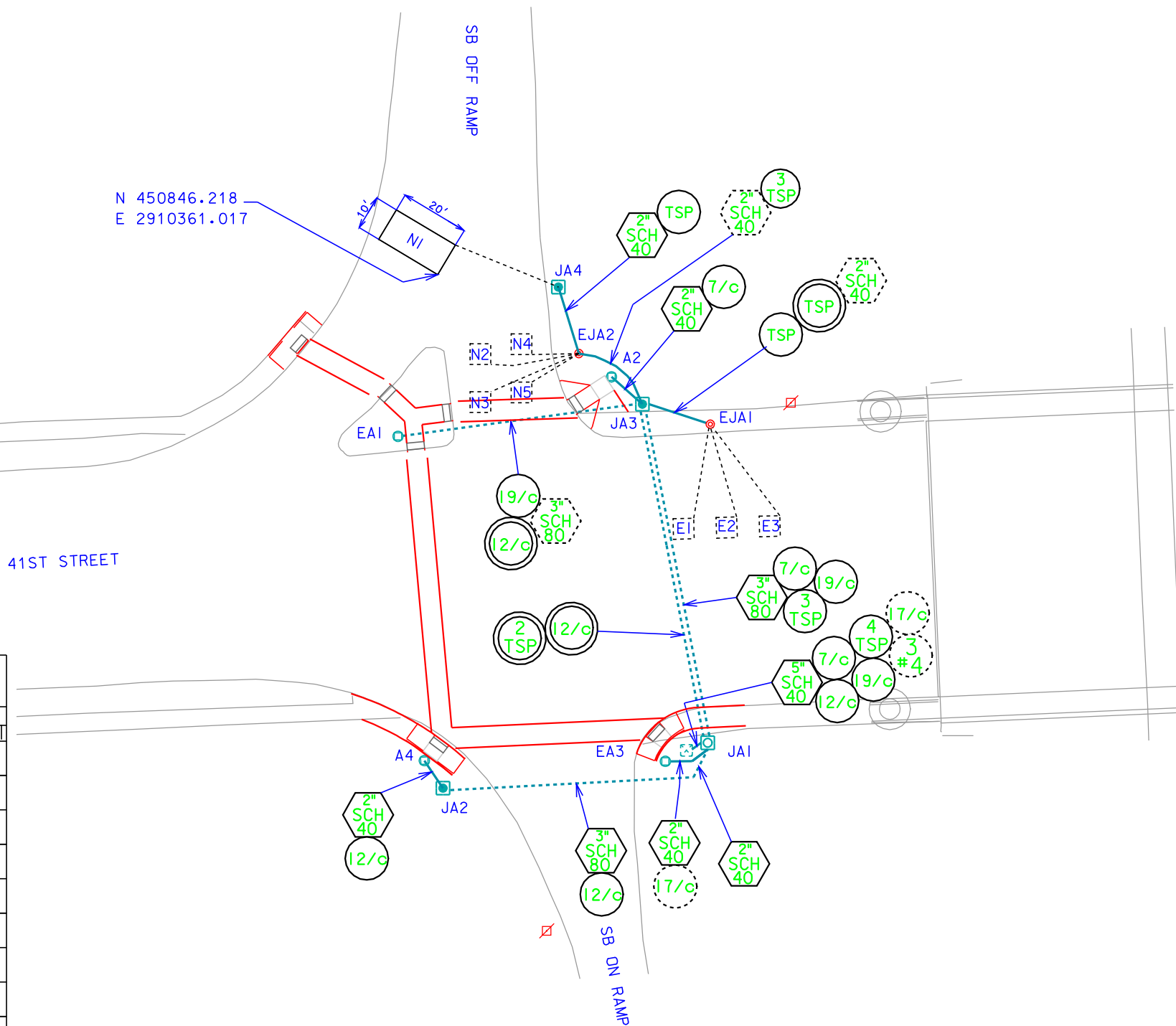
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001-271	21	28

Plotting Date: 25-APR-2006

EXISTING ITEMS	
KEY	ITEM
○	SIGNAL POLE (EA1,EA2)
●	JUNCTION BOX (EJA1,EJA2)
□	SAWED-IN DETECTOR LOOP (N2,N3,N4,N5,E1,E2,E3)
⊞	TRAFFIC SIGNAL CONTROLLER
⬡	2" RIGID CONDUIT, SCHEDULE 40
⬢	NOT A BID ITEM

REMOVE SIGNAL EQUIPMENT	
KEY	ITEM
⬢	12/C #12 AWG COPPER TRAY CABLE, KI
⊞	TWISTED SHIELDED PAIR

ESTIMATE OF QUANTITIES			
KEY	ITEM	UNIT	EST QUANT
○	2' DIAMETER FOOTING (A2,A4)	FT	8
⊞	18" DIAMETER JUNCTION BOX (JA2,JA3,JA4)	EACH	3
⊞	24" DIAMETER JUNCTION BOX (JA1)	EACH	1
□	SAWED-IN DETECTOR LOOP (N1)	EACH	1
	DETECTOR UNIT	EACH	1
⬡	2" RIGID CONDUIT, SCHEDULE 40	FT	110
⬢	5" RIGID CONDUIT, SCHEDULE 40	FT	15
⬢	3" RIGID CONDUIT, SCHEDULE 80	FT	190
	2/C #14 AWG COPPER TRAY CABLE, KI	FT	30
⬢	7/C #14 AWG COPPER TRAY CABLE, KI	FT	160
⬢	12/C #14 AWG COPPER TRAY CABLE, KI	FT	120
⬢	19/C #14 AWG COPPER TRAY CABLE, KI	FT	210
⊞	TWISTED SHIELDED PAIR	FT	590
	REMOVE SIGNAL EQUIPMENT	LS	LUMP SUM



PLOT SCALE -- 40.000000+1.000000

PLOTTED FROM -- TRSE12115

FILE -- U:\RD\MISC\DESIGN\PRJ\129-41ST\020C.DGN PLOT NAME -- 21

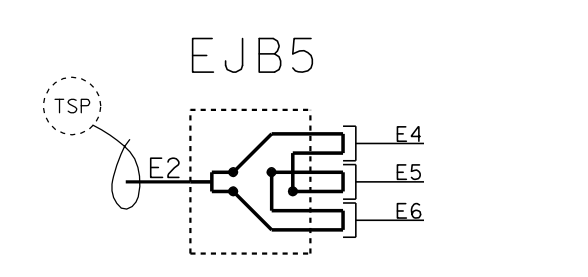
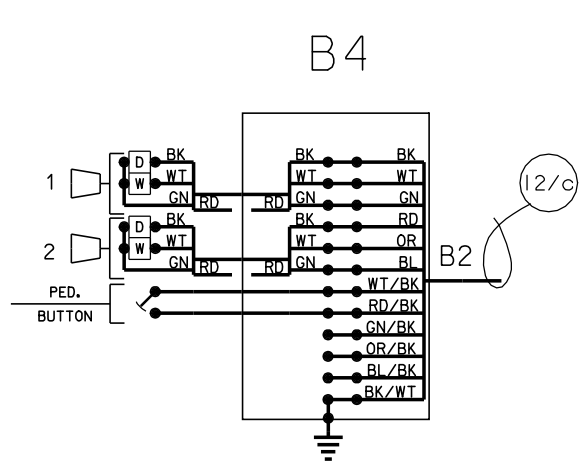
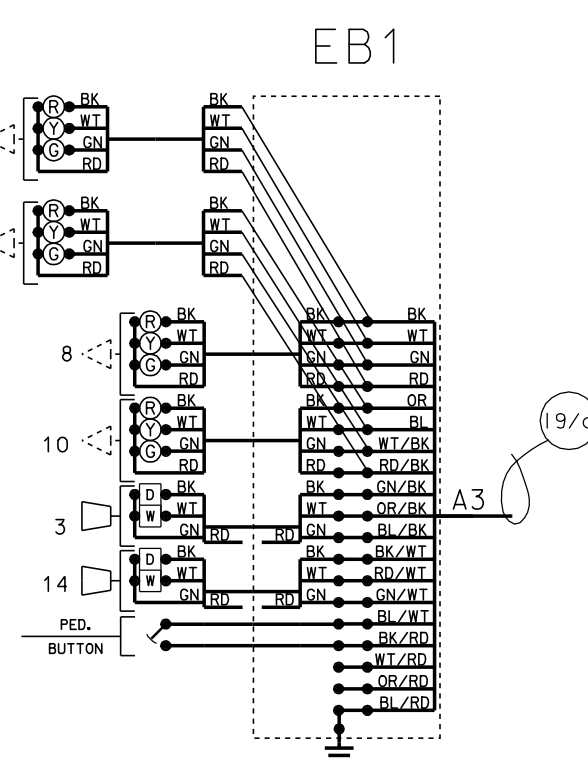
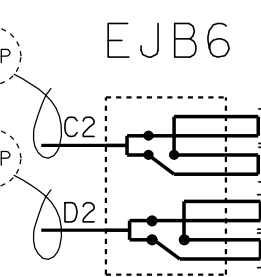
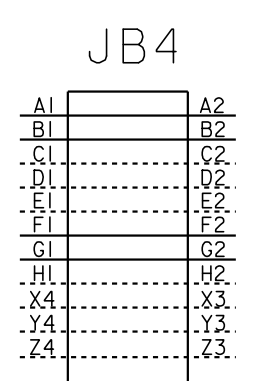
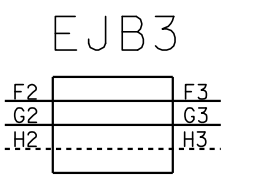
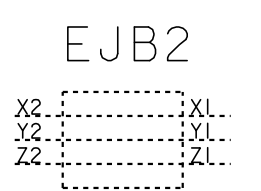
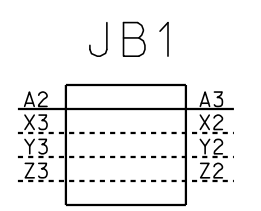
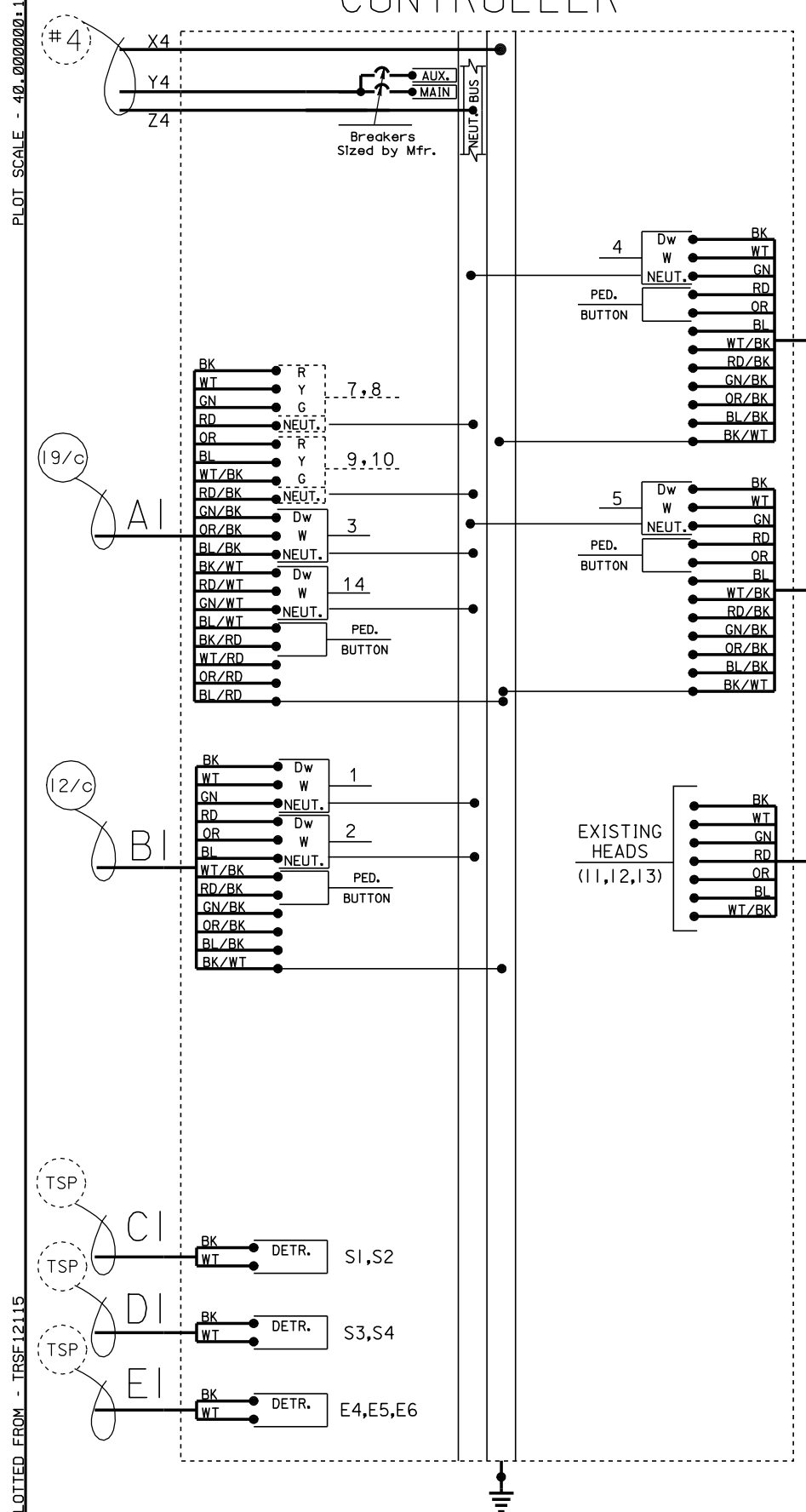
# WIRING DIAGRAM

I-29 / 41ST STREET EAST

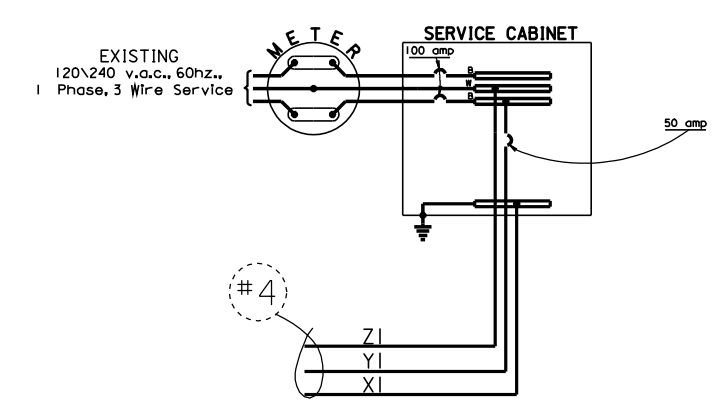
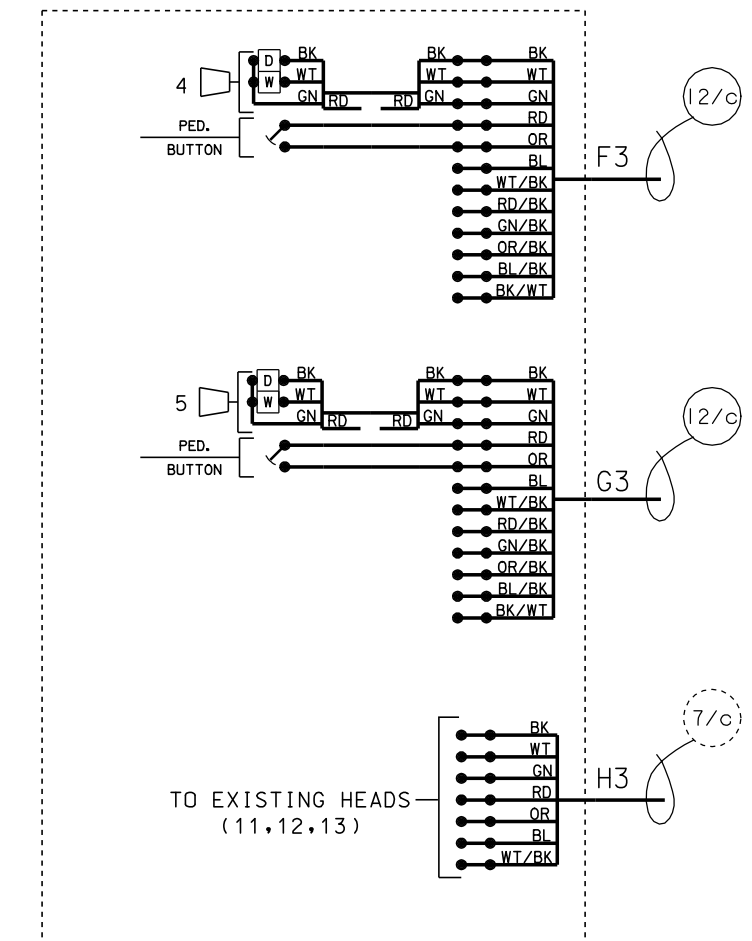
STATE OF SOUTH DAKOTA	PROJECT 0001-271	SHEET 22	TOTAL SHEETS 28
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Plotting Date: 25-APR-2006

## CONTROLLER



## EXISTING SIGN BRIDGE



NOTE:  
All circuits shall be bonded in accordance with the NATIONAL ELECTRICAL CODE.  
Quantities for bonding conductors are not included in these plans.

PLOT SCALE - 40.000000:1.000000

PLOT NAME - 28 FILE - U:\RD\MISC\DESIGN\PRJ\129-41ST\010.DGN

# WIRING DIAGRAM

I-29 / 41ST STREET WEST

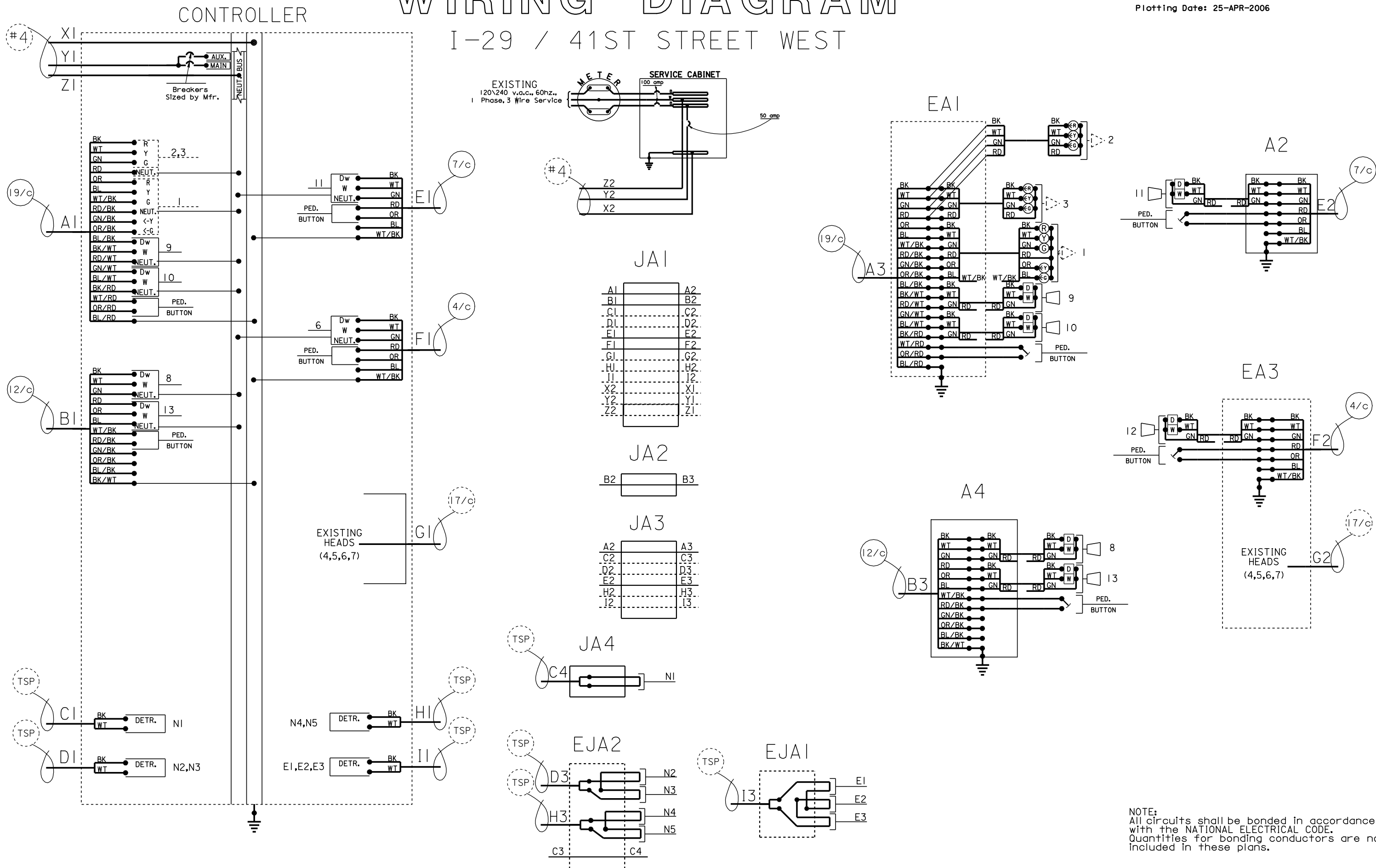
STATE OF SOUTH DAKOTA	PROJECT 0001-271	SHEET 23	TOTAL SHEETS 28
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Plotting Date: 25-APR-2006

PLOT SCALE - 40.000000:1.000000

PLOTTED FROM - IRSE12115

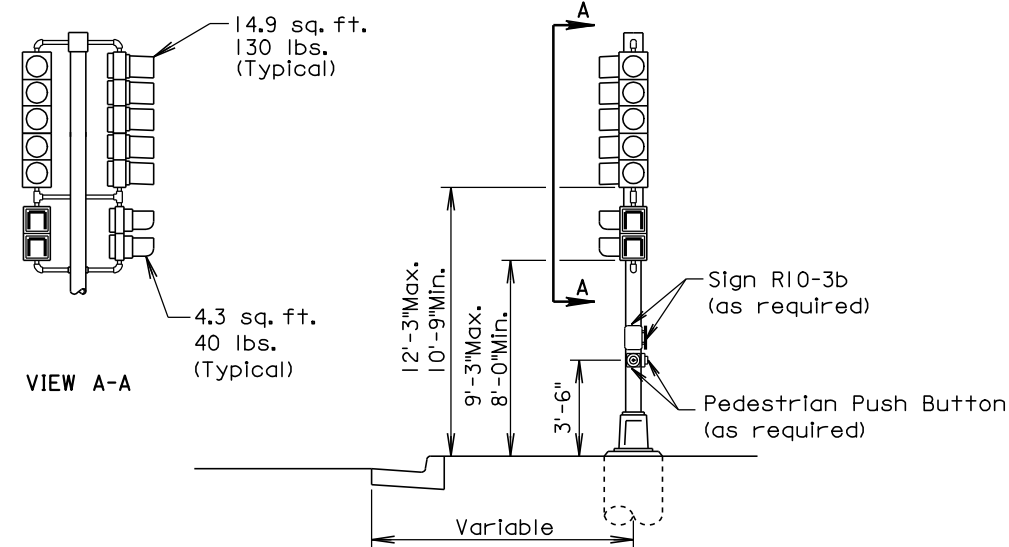
PLOT NAME - 23 FILE - U:\RD\MISC\DESIGN\PRJ\129-41ST\020W.DGN



NOTE:  
All circuits shall be bonded in accordance with the NATIONAL ELECTRICAL CODE.  
Quantities for bonding conductors are not included in these plans.



Plotting Date: 25-APR-2006



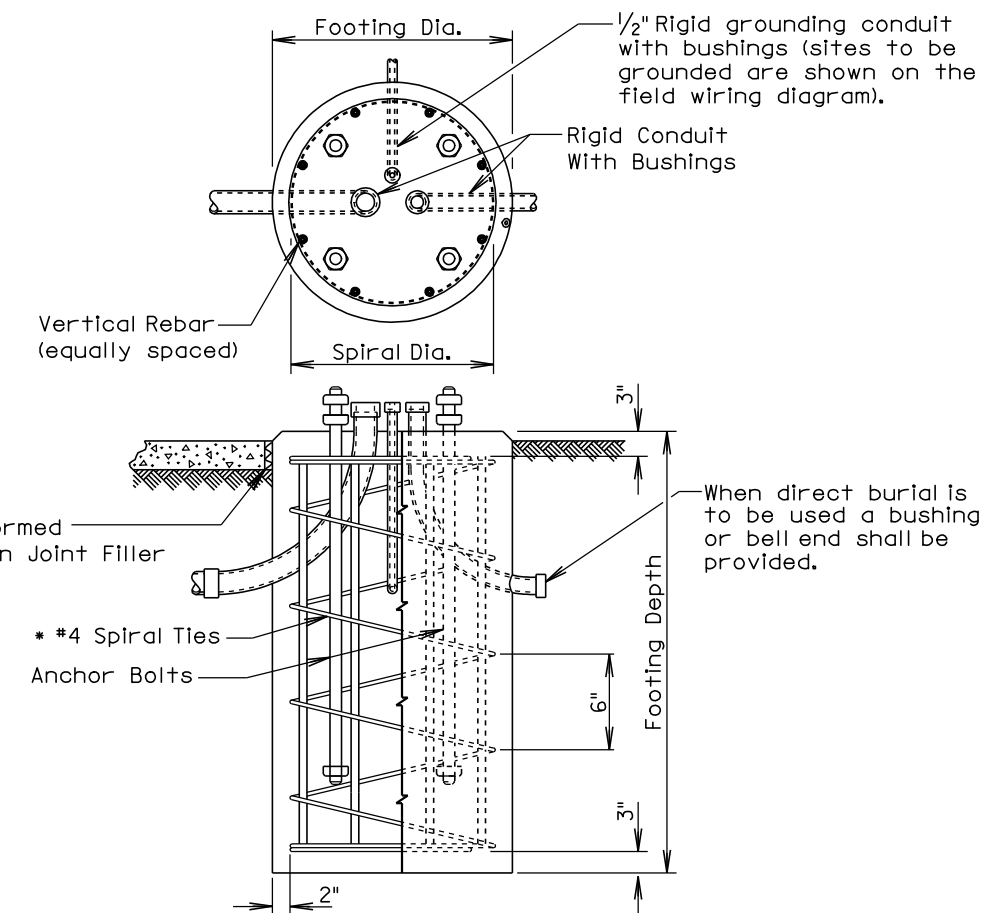
**GENERAL NOTE:**

The signal heads are shown with backplates removed so that the mounting hardware is visible.

April 1, 2002

<b>S D D O T</b>	<b>SIGNAL POLE (PEDESTAL)</b>	PLATE NUMBER 635.30
		Sheet 1 of 1

Published Date: 2nd Qtr. 2006



**GENERAL NOTES:**

\* #4 Circular ties may be used in lieu of the #4 spiral ties. The ties shall be spaced 6" apart except for the top two which shall be spaced 3" apart. The ties shall be lapped 18" and the laps shall be staggered around the cage. Spiral ties shall have 1-1/2 extra turns at each end. Circular ties shall conform to ASTM 82.

See section 985 of the Standard Specifications for footing materials.

Conduits and bushings may project 2 1/2" to 6" above footing for fixed base poles but shall not project above the slip plane or fracture plane for breakaway poles.

Conduits shall be sealed water-tight during all phases of construction until poles are in place.

Costs of conduit and conduit bushings shown on footing detail shall be incidental to the footing bid item(s).

The pole shall not be installed until the concrete has attained design strength (4000 psi).

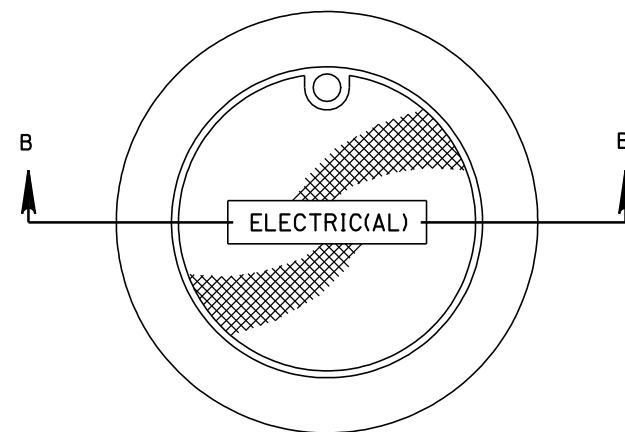
The contour of the area surrounding the breakaway pole shall be flat, though not necessarily level for a distance of 5 feet in all directions. The Contractor may be required to provide finish grading at some breakaway pole locations.

May 14, 2003

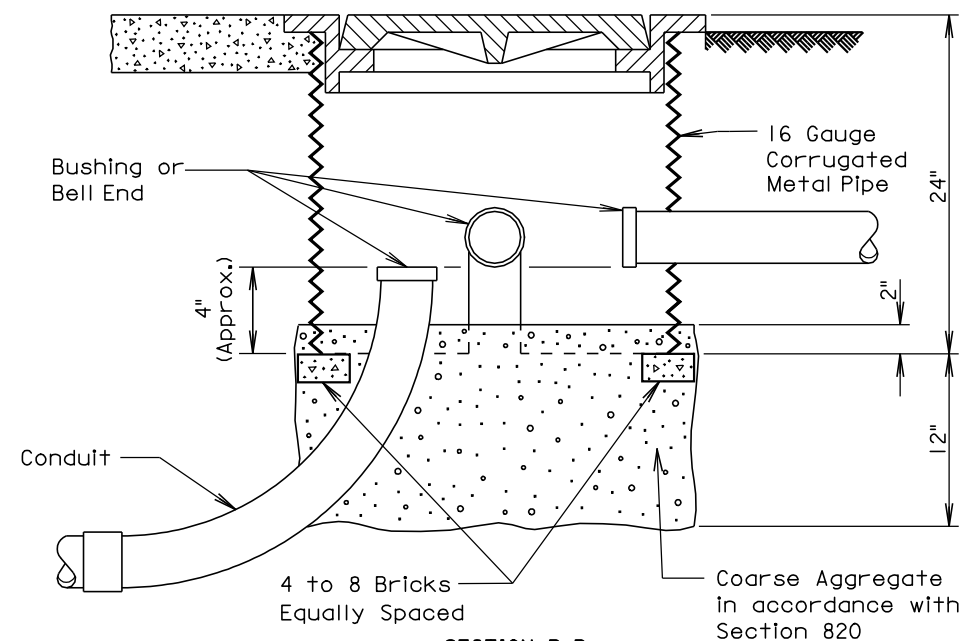
<b>S D D O T</b>	<b>POLE FOOTING</b>	PLATE NUMBER 635.56
		Sheet 1 of 1

Published Date: 2nd Qtr. 2006

Plotting Date: 25-APR-2006



PLAN VIEW



SECTION B-B

**GENERAL NOTES:**

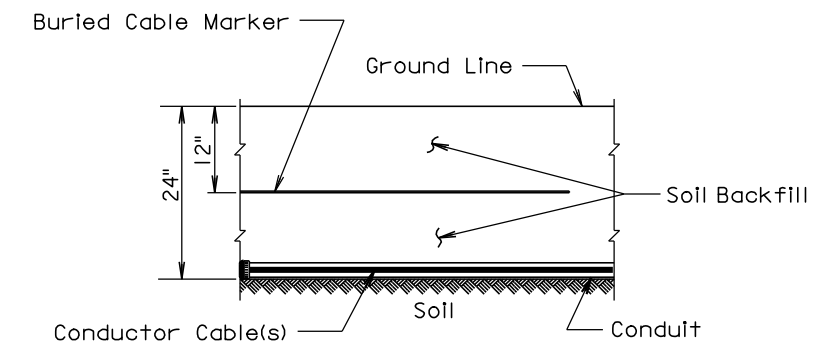
Where conductors are installed by the direct burial method, the conductors shall enter into the junction box through stub conduits. The stub conduit shall have a minimum nominal inside diameter as determined by the 40% fill method. The stub conduits shall have a minimum length of 12 inches and conduit bushings or bell ends shall be provided at both ends. The costs for furnishing and installing the stub conduits shall be incidental to the contract unit price per Each for the appropriate junction box bid item(s).

The junction box covers shall be bonded to the equipment ground prior to energization of wires in the junction box.

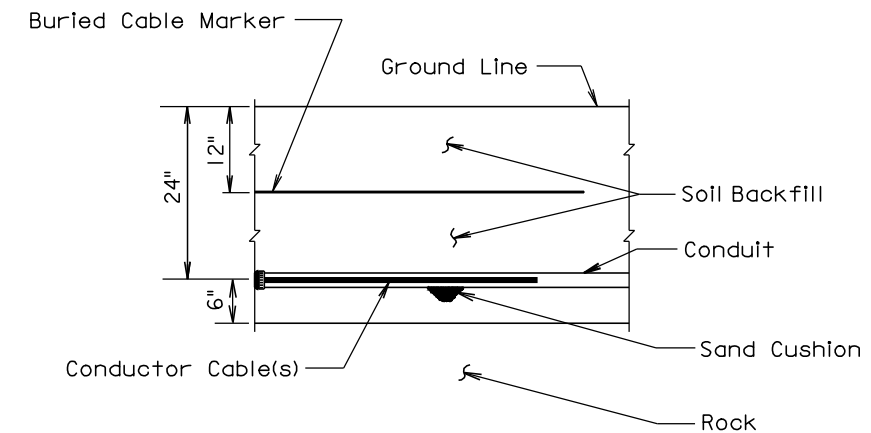
The junction box sizes and quantities are shown on the plan sheets.

March 31, 2000

<i>Published Date: 2nd Qtr. 2006.</i>	S D D O T	<b>ELECTRICAL JUNCTION BOX (CORRUGATED METAL PIPE)</b>	PLATE NUMBER 635.65
			Sheet 1 of 1



SECTION VIEW



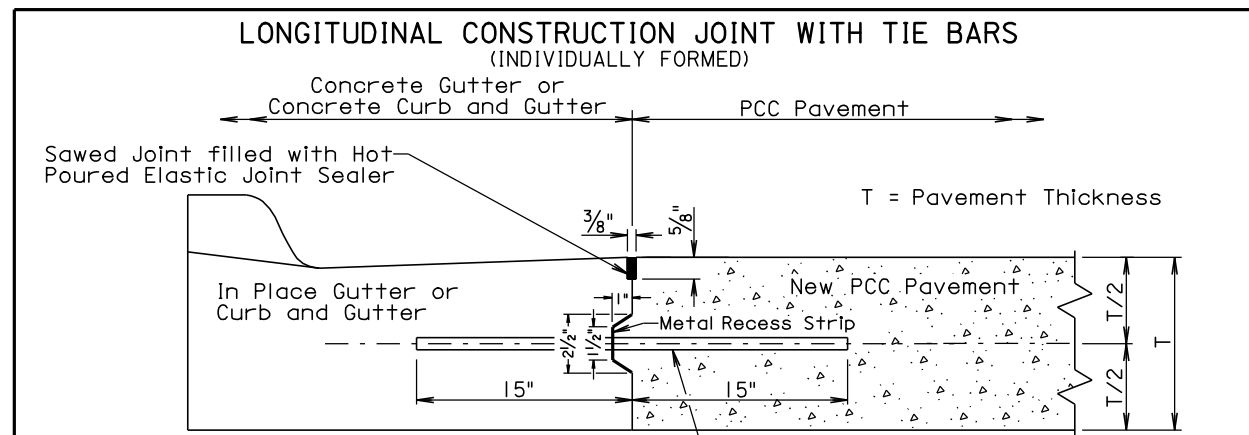
SECTION VIEW

**GENERAL NOTE:**

The Buried Cable Marker shall be plastic, approximately 6" wide, and shall be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker shall have a life expectancy approximately equal to that of the conductor(s) beneath it. A phrase indicating the presence of a buried electric circuit below shall be printed in a contrasting color on the cable marker. The Buried Cable Marker shall be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker shall be incidental to the contract unit price per Foot for the bid item used for the electrical conductor.

March 31, 2000

<i>Published Date: 2nd Qtr. 2006.</i>	S D D O T	<b>CONDUIT INSTALLATION</b>	PLATE NUMBER 635.76
			Sheet 1 of 1



**GENERAL NOTES:**

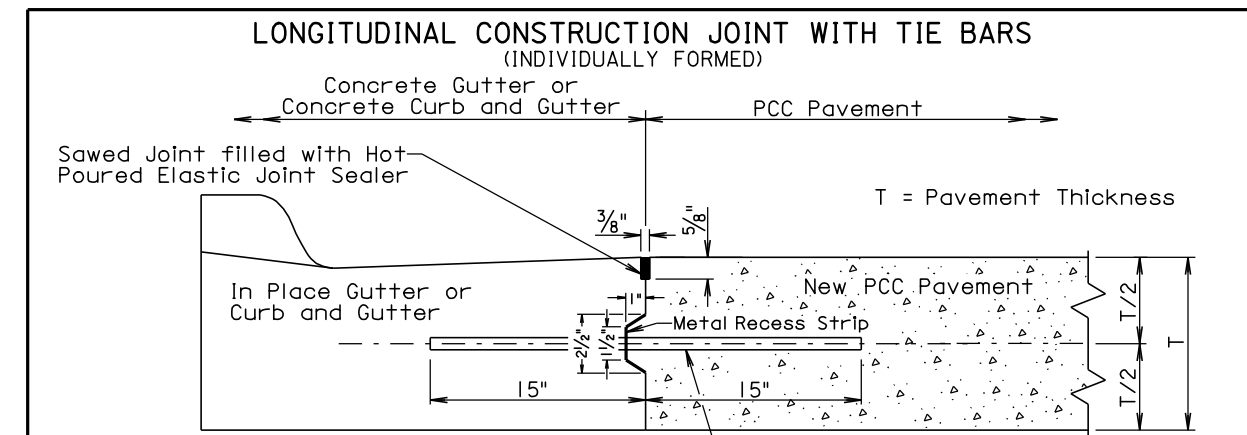
No.5 epoxy coated deformed tie bars shall be spaced 48" center to center. The keyway shown above is a female keyway.

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

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.

The transverse contraction joints in the concrete gutter or concrete curb and gutter shall be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter shall be 1/2" deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint shall be at least 1/4 the thickness of the concrete gutter or concrete curb and gutter.

The term "In Place Gutter or Curb and Gutter" in the above drawing indicates that the in place concrete gutter and concrete curb and gutter was placed on the current project.



**GENERAL NOTES:**

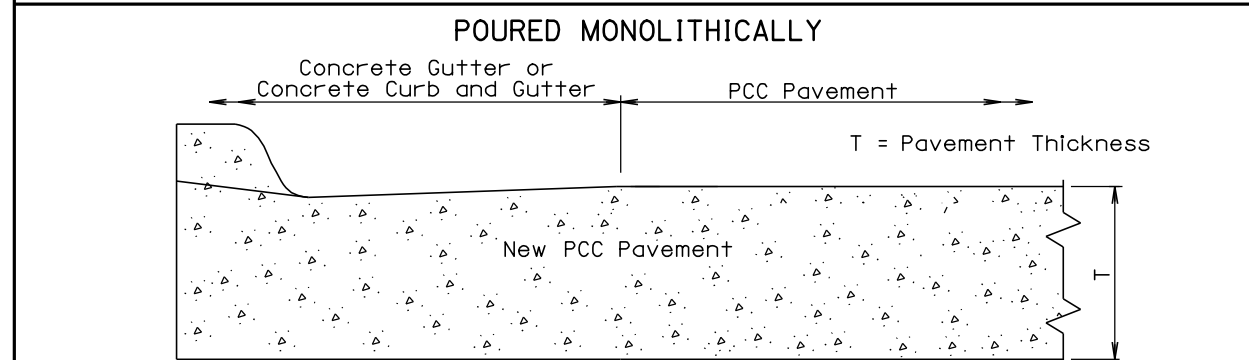
No.5 epoxy coated deformed tie bars shall be spaced 48" center to center. The keyway shown above is a female keyway.

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

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.

The transverse contraction joints in the concrete gutter or concrete curb and gutter shall be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter shall be 1/2" deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint shall be at least 1/4 the thickness of the concrete gutter or concrete curb and gutter.

The term "In Place Gutter or Curb and Gutter" in the above drawing indicates that the in place concrete gutter and concrete curb and gutter was placed on the current project.



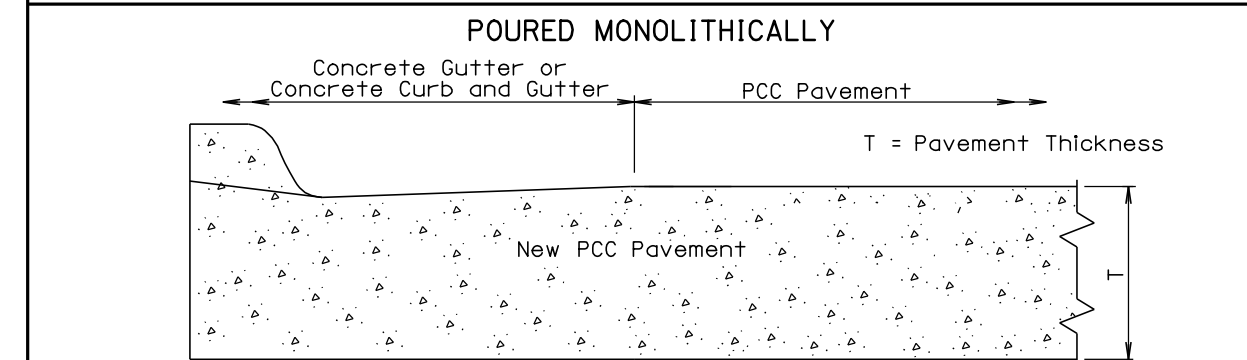
**GENERAL NOTES:**

The mainline curb and gutter may be placed monolithically with the PCC pavement. If this method of construction is used, the tie bars and the sawed joint between the curb and gutter and the PCC pavement shall be eliminated.

The gutter or curb and gutter shall be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter shall be sawed and sealed same as the transverse contraction joints in the PCC pavement.

The slope of the gutter shall be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter shall be constructed at the same slope as the mainline concrete pavement.

September 14, 2005



**GENERAL NOTES:**

The mainline curb and gutter may be placed monolithically with the PCC pavement. If this method of construction is used, the tie bars and the sawed joint between the curb and gutter and the PCC pavement shall be eliminated.

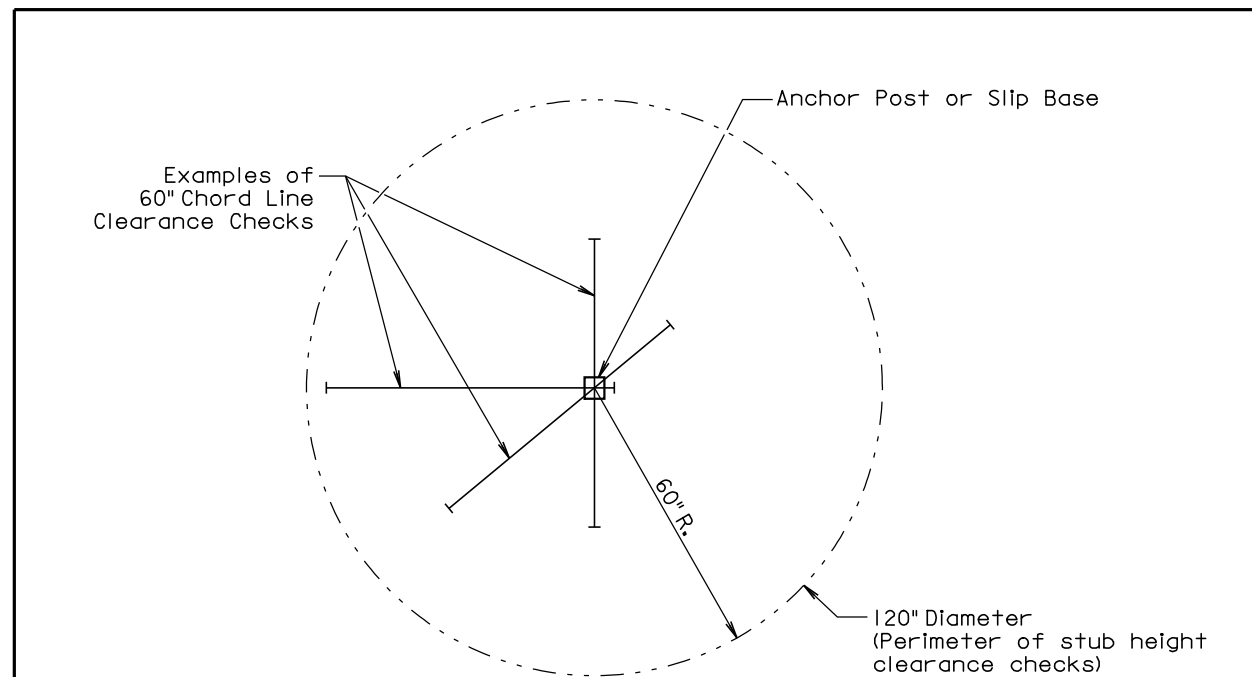
The gutter or curb and gutter shall be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter shall be sawed and sealed same as the transverse contraction joints in the PCC pavement.

The slope of the gutter shall be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter shall be constructed at the same slope as the mainline concrete pavement.

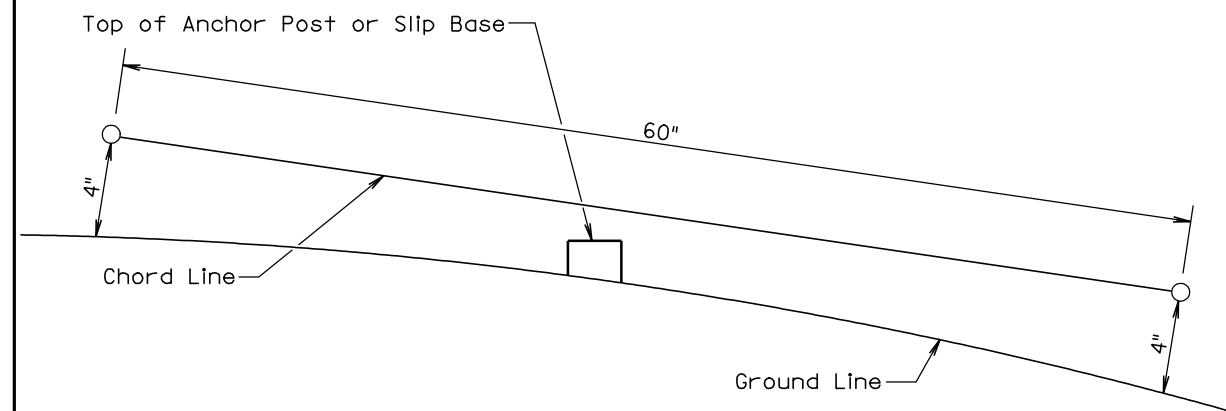
September 14, 2005

Username - trsf12115

Plotting Date: 25-APR-2006



**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.

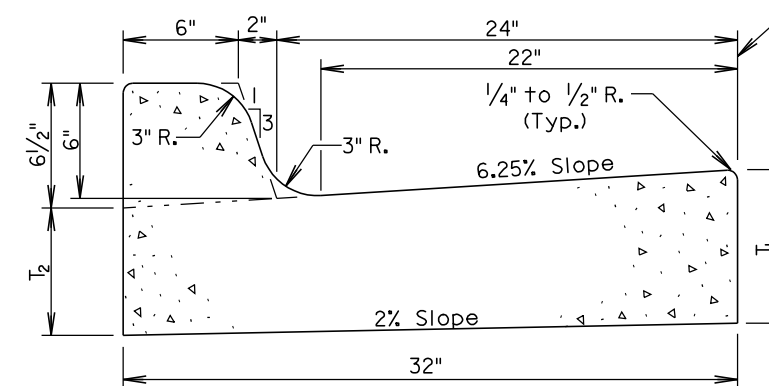
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

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

<b>S D D O T</b>	<b>BREAKAWAY SUPPORT STUB CLEARANCE</b>	PLATE NUMBER <b>634.99</b>
		Sheet 1 of 1

*Published Date: 2nd Qtr. 2006*



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 <sub>1</sub> (Inches)	T <sub>2</sub> (Inches)	Cu. Yd. Per Lin. Ft.	Lin. Ft. Per Cu. Yd.
B66	6	4 <sup>5</sup> / <sub>8</sub>	0.055	18.2
B67	7	5 <sup>5</sup> / <sub>8</sub>	0.063	15.9
B68	8	6 <sup>5</sup> / <sub>8</sub>	0.071	14.1
B68.5	8.5	7 <sup>1</sup> / <sub>8</sub>	0.075	13.3
B69	9	7 <sup>5</sup> / <sub>8</sub>	0.079	12.7
B69.5	9.5	8 <sup>1</sup> / <sub>8</sub>	0.084	11.9
B610	10	8 <sup>5</sup> / <sub>8</sub>	0.088	11.4
B610.5	10.5	9 <sup>1</sup> / <sub>8</sub>	0.092	10.9
B611	11	9 <sup>5</sup> / <sub>8</sub>	0.096	10.4
B611.5	11.5	10 <sup>1</sup> / <sub>8</sub>	0.100	10.0
B612	12	10 <sup>5</sup> / <sub>8</sub>	0.104	9.6

**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.

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

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

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

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

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

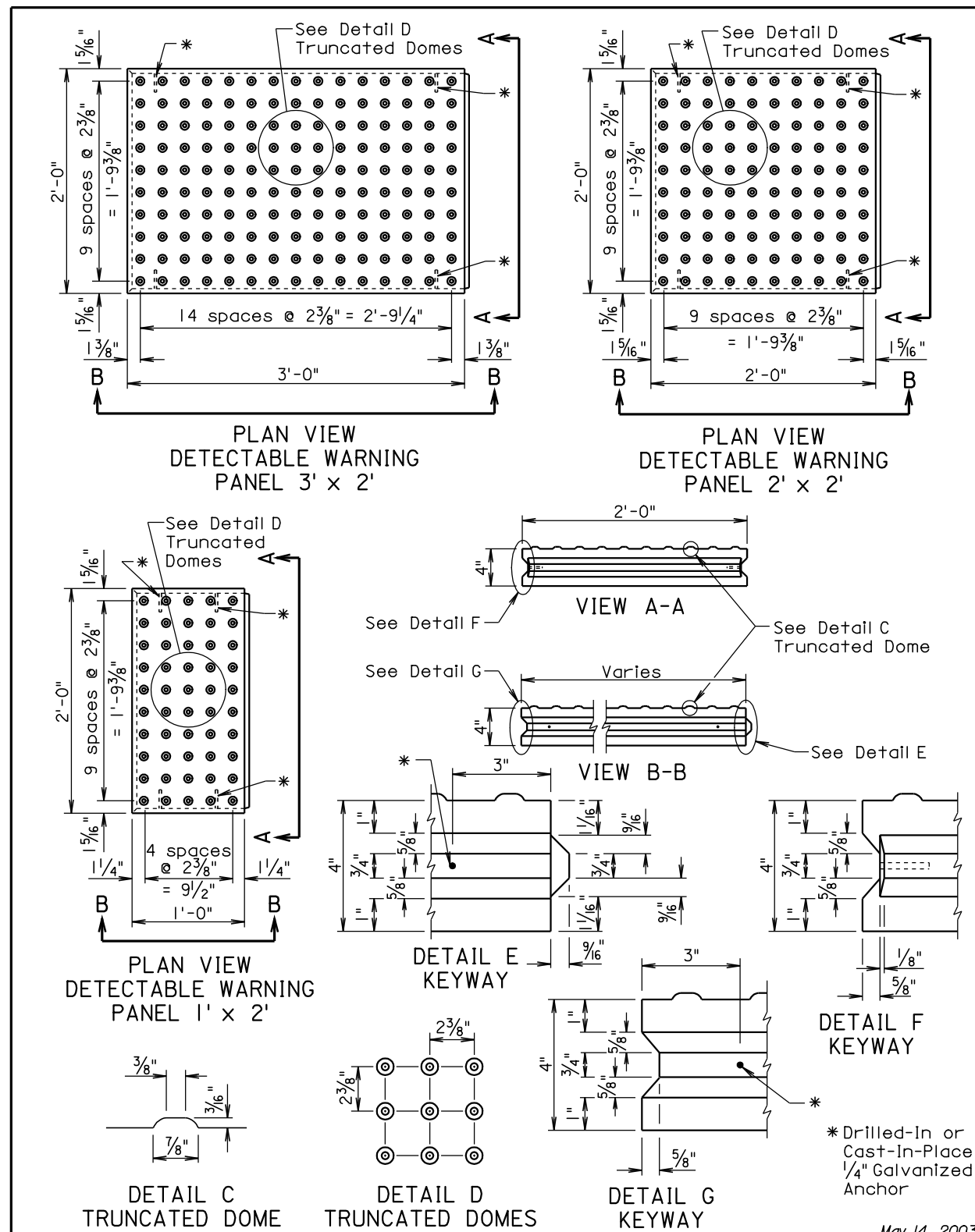
September 14, 2005

<b>S D D O T</b>	<b>TYPE B CONCRETE CURB AND GUTTER</b>	PLATE NUMBER <b>650.01</b>
		Sheet 1 of 1

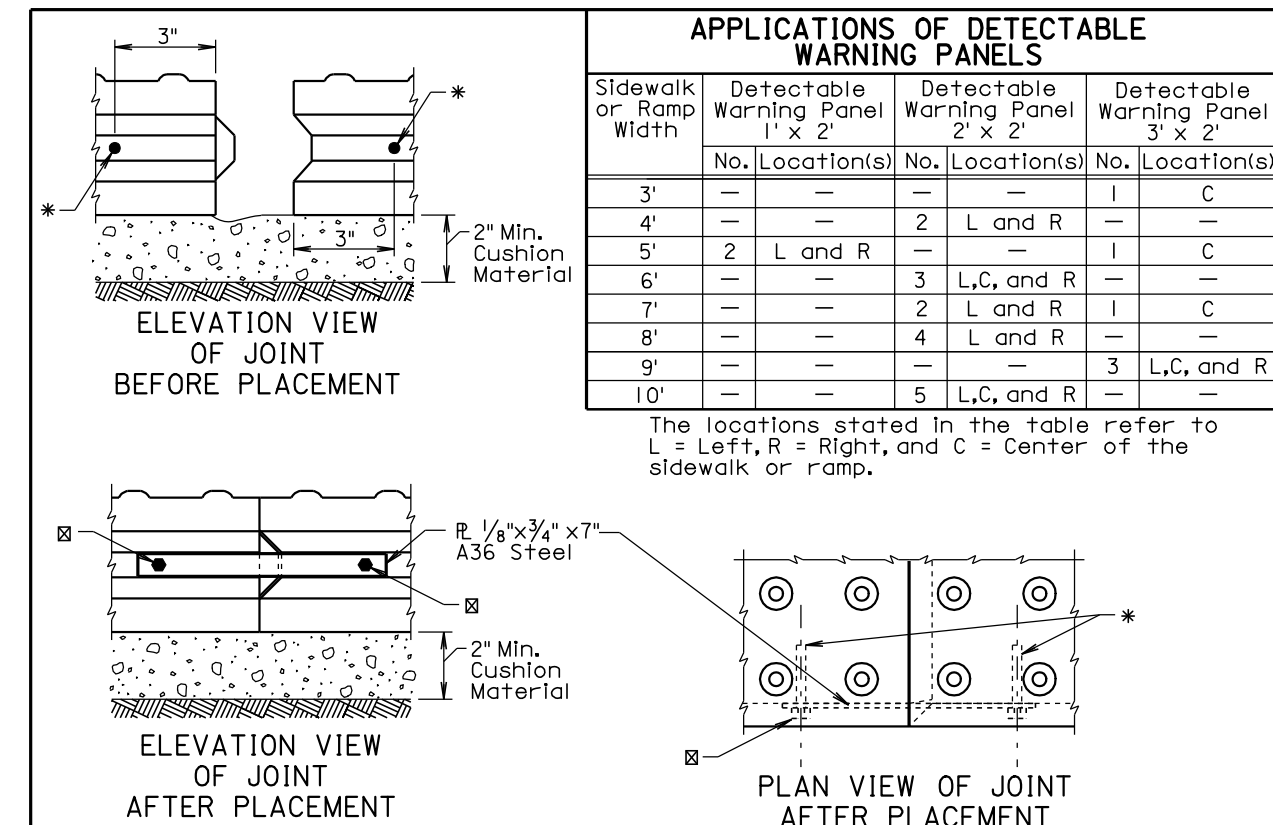
*Published Date: 2nd Qtr. 2006*



Plotting Date: 25-APR-2006



May 14, 2003



Sidewalk or Ramp Width	Detectable Warning Panel 1' x 2'		Detectable Warning Panel 2' x 2'		Detectable Warning Panel 3' x 2'	
	No.	Location(s)	No.	Location(s)	No.	Location(s)
3'	—	—	—	—	1	C
4'	—	—	2	L and R	—	—
5'	2	L and R	—	—	1	C
6'	—	—	3	L, C, and R	—	—
7'	—	—	2	L and R	1	C
8'	—	—	4	L and R	—	—
9'	—	—	—	—	3	L, C, and R
10'	—	—	5	L, C, and R	—	—

The locations stated in the table refer to L = Left, R = Right, and C = Center of the sidewalk or ramp.

- \* Drilled-In or Cast-In-Place 1/4" Galvanized Anchor
- ☒ Bolt or Nut with Washer

**GENERAL NOTES:**

The concrete shall be Class M6 in conformance with Section 462 of the Standard Specifications. The concrete shall consist of a "brick red" color. The coloring compound shall be mixed into the concrete mix according to the manufacturer's recommendations. A color placed only on the surface of the concrete is not allowed, the color has to be throughout the concrete mix. Curing compounds that would discolor the precast panel shall not be used; however, other approved viable methods of curing shall be used.

The precast concrete detectable warning panels shall not have any cracks, chips, or color deformations. The truncated domes shall be the same size, shape, and placed at the same pattern as specified on sheet 1 of this standard plate.

The precast concrete detectable warning panels shall be placed prior to adjacent sidewalk or ramp PCC pavement.

Care shall be taken when sliding adjoining panels together so that the cushion material is not slid or pinched into the joint. The joint shall be free from cushion material. Placement of solid nonbiodegradable material to slide panels on or digging very small trough at the joint will be acceptable for placement of the panels.

There will be no separate payment for precast concrete detectable warning panels. All costs for materials, labor, and equipment necessary for constructing, hauling, and placing the detectable warning panels shall be incidental to the contract unit price per square foot for the corresponding sidewalk bid item.

May 14, 2003

Username - trsf12115