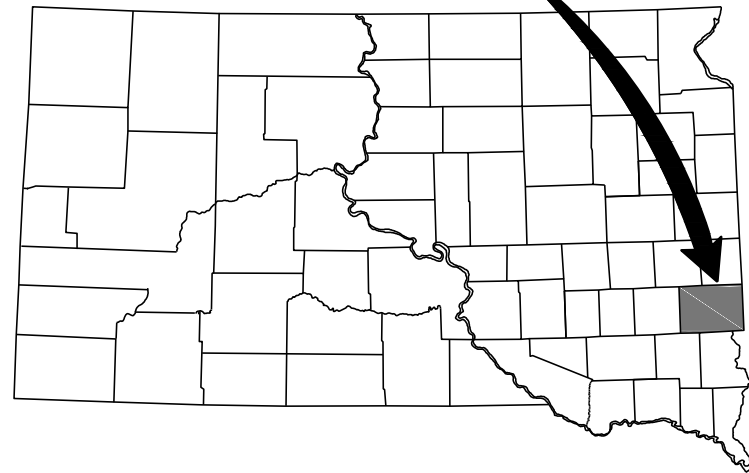


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# STATE OF SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P SRTS (37)	1	16

## PROJECT LOCATION



## Plans for Proposed PROJECT P SRTS(37) CITY OF DELL RAPIDS MINNEHAHA COUNTY

SAFE ROUTES TO SCHOOL PROJECT  
PCN 04NV, LGA-77-SRTS-13

### INDEX OF SHEETS

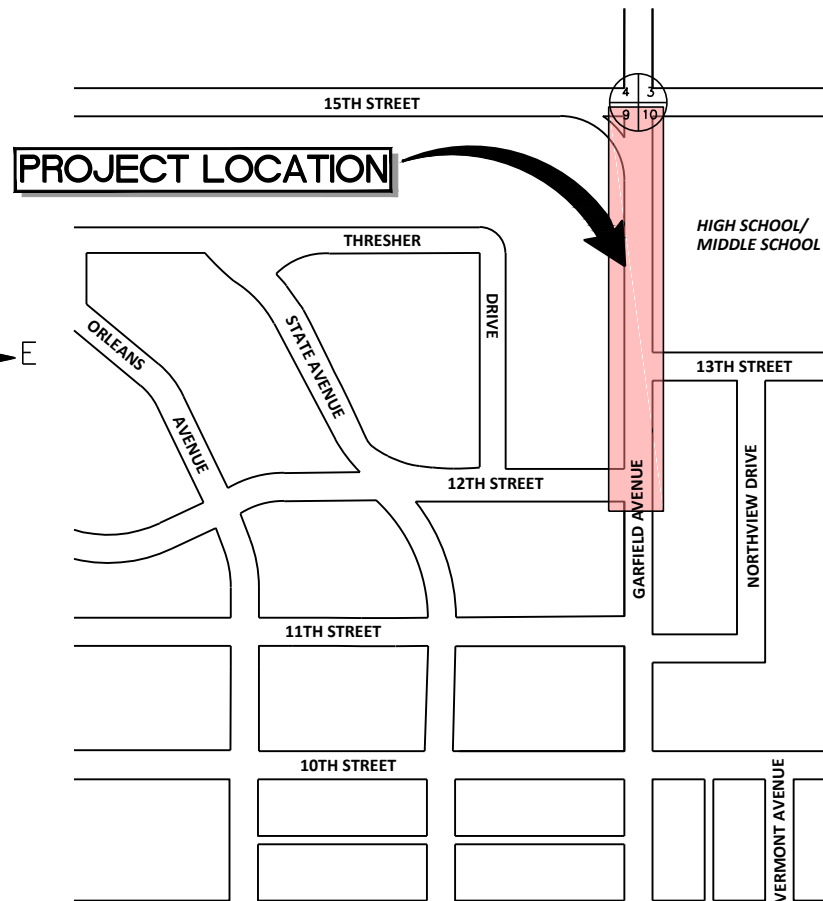
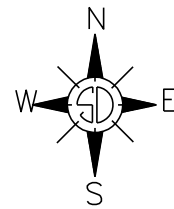
SHEET NO. 1	TITLE SHEET
SHEET NO. 2 THRU 6	ESTIMATE OF QUANTITIES AND GENERAL NOTES
SHEET NO. 7	TRAFFIC CONTROL
SHEET NO. 8	LEGEND OF SYMBOLS
SHEET NO. 9 THRU 10	PLAN SHEETS
SHEET NO. 11	PAVEMENT MARKING LAYOUT
SHEET NO. 12	WIRING DIAGRAM
SHEET NO. 13 THRU 16	STANDARD DETAILS



### CIVIL:

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF SOUTH DAKOTA.

BY Lance W. Mayer DATE 2/3/15  
LANCE W. MAYER, P.E.  
REG. NO. 8028



### OWNER:

CITY OF DELL RAPIDS  
JUSTIN WEILAND - CITY ADMINISTRATOR  
PO BOX 10  
DELL RAPIDS, SOUTH DAKOTA 57022  
605-420-3595

### ENGINEER/SURVEYOR:

**DGR ENGINEERING**  
LANCE MAYER, PE  
DGR ENGINEERING  
2909 EAST 57TH STREET SUITE #101  
SIOUX FALLS, SD 57108  
605-339-4157  
lance.mayer@dgr.com



### ELECTRICAL:

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF SOUTH DAKOTA.

BY Shannen P. Struckman DATE 2/3/15  
SHANNEN P. STRUCKMAN, P.E.  
REG. NO. 8977

### SCALES:

PLAN: 1"=40'  
PROFILE: 1"=10' VERTICAL  
1"=40' HORIZONTAL

### STORM WATER:

MAJOR RECEIVING BODY OF WATER: BIG SIOUX RIVER  
AREA DISTURBED: 0.03 ACRES  
TOTAL PROJECT AREA: 0.07 ACRES

APPROXIMATE LATITUDE: 43°49'53.90"N  
APPROXIMATE LONGITUDE: 96°42'23.50"W

### VICINITY MAP - DELL RAPIDS, SD

NOTE: FOR SOUTH DAKOTA ONE CALL, THE PROJECT IS LOCATED IN SECTION 9-T104N-R49W & SECTION 10-T104N-R49W.

DRAWING INDICATES GENERAL UTILITY LOCATIONS ONLY. NEITHER THE CORRECTNESS OR COMPLETENESS OF LOCATIONS ARE GUARANTEED. CONTACT SOUTH DAKOTA ONE CALL PRIOR TO EXCAVATIONS. (1-800-781-7474)  
INFORMATION ON SECTION-TOWNSHIP-RANGE SHOWN ON LOCATION MAP ON THIS SHEET.

P:\06\65\020\663030\DWG\663030 - TITLE.DWG

**ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E1400	Remove Pavement Marking, 4" or Equivalent	600	Ft
110E5020	Salvage Traffic Sign	2	Each
110E7150	Remove Sign for Reset	1	Each
230E0100	Remove and Replace Topsoil	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
632E3205	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity	16	SqFt
632E3500	Reset Sign	1	Each
633E0030	Cold Applied Plastic Pavement Marking, 24" Grooving for Cold Applied Plastic Pavement Marking, 24"	272	Ft
633E5015	Traffic Control	272	Ft
634E0100	Traffic Control	306	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
635E2000	Pedestal Signal Pole	2	Each
635E4010	1 Section Vehicle Signal Head	4	Each
635E5020	2.0' Diameter Footing	11	Ft
635E5400	Electrical Service Cabinet	2	Each
635E5500	Meter Socket	2	Each
635E5510	Signal Flasher Unit	2	Each
635E6200	Miscellaneous, Electrical	Lump Sum	LS
635E8015	1.5" Rigid Galvanized Steel Conduit	24	Ft
635E8215	1.5" Rigid Conduit, Schedule 80	150	Ft
635E9020	1/C #10 AWG Copper Wire	580	Ft
730E0206	Type D Permanent Seed Mixture	10	Lb
731E0100	Fertilizing	45	Lb
732E0250	Fiber Mulching	70	Lb

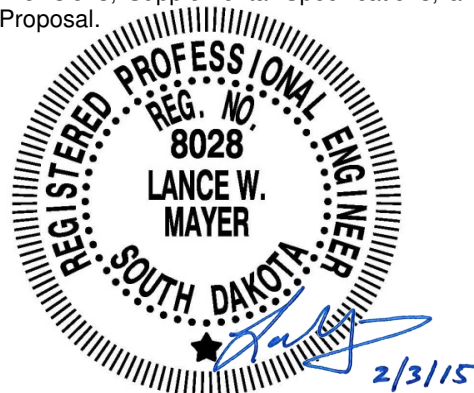
**PROJECT SCOPE**

The project is located in the City of Dell Rapids and includes, but is not limited to, the following:

1. Remove and either salvage or reset existing street signs and posts as shown in the plans.
2. Install two yellow flashing beacons (120V) and warning sign at the two locations shown in the plans.
3. Trench and bore conduit and pull wire as shown in plans.
4. Remove existing 6" crosswalk cold plastic pavement markings.
5. Install grooved 24" cold applied plastic pavement markings as detailed.

**SPECIFICATIONS**

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



**ENVIRONMENTAL COMMITMENTS**

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

**COMMITMENT E: STORM WATER**

Construction activities constitute less than 1 acre of disturbance.

**Action Taken/Required:**

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

**COMMITMENT H: WASTE DISPOSAL SITE**

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

**Action Taken/Required:**

Construction and/or demolition debris may be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

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

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

**COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES**

**Action Taken/Required:**

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: staging areas, borrow sites, waste disposal sites, and all material processing sites.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

**QUANTITIES**

The Contractor shall be aware that all quantities are estimates to be used for bidding purposes and the Contractor will be paid only for the units of work actually completed, except for items where the plan quantity is specified as the basis of payment. This is particularly important for those bid items which are difficult to estimate precisely.

**GENERAL**

At completion of the project, all finish backfill, finish shaping, and finish grading within the project shall create a finished product of quality (both in usage and appearance), shall be done to the satisfaction of the Engineer, and shall be incidental to construction with no specific pay item.

The Contractor shall give 48-hour notification for staking. The Contractor will be responsible for all restaking and will pay for all costs of any necessary restaking.

**GENERAL (CONTINUED)**

The general Contractor shall have a superintendent or foreman on site at all times during construction for direction and supervision. A subcontractor cannot represent the general Contractor.

The Contractor shall perform construction operations only during daylight hours, unless the Engineer approved additional hours.

A staging site should be acquired by the Contractor and will be the Contractor's responsibility.

**UTILITIES**

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

Field verification of depth and location of utilities will need to be done before construction of the project proceeds.

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

- Dell Rapids Water & Sewer – Larry Schildhauer 605-428-3160
- Xcel Energy – Adam Amundson 605-339-8316
- MidAmerican Energy – Eric Berg 605-373-6038
- Golden West – Dave London 605-428-5421
- Dell Rapids School District – Mike Tiernan 605-428-5700

Private Utilities–SD One Call – 800-781-7474

The Contractor shall coordinate the relocation of all privately owned utility facilities when necessary to accommodate the new construction.

The Contractor shall safe guard all utilities and coordinate work on this project to coincide with utility work in order to avoid interference and to minimize inconvenience between the Contractor and the public.

Any damage to utilities because of the Contractor's carelessness shall be repaired at the Contractor's expense.

Utility location as shown on the plan sheets may not be complete and accurate. Utilities as located within these plans are shown as a convenience to the Contractor, and the Engineer will not be held responsible for any omissions or inaccuracies. All underground utilities should be accurately located in the field by the respective utility companies before any excavation, and notification of such utilities will be the responsibility of the Contractor prior to beginning any excavation.



**INCIDENTAL WORK**

The lump sum bid price for "Incidental Work" shall be full compensation for all work listed below. The following is a list of major items of Incidental Work:

- A. Site Cleaning: The Contractor shall execute a thorough cleaning prior to substantial completion review by the Engineer – clean sidewalks, driveways/approaches, and road pavements by brooming. Prior to Final Completion, the Contractor shall remove and dispose from the project site all construction waste, unused materials, excess soil, and other debris resulting from construction activities.
- B. All spoil material removed for underground utility installations (conduit, footings, etc.) is the property of the Contractor and is to be removed from the project by the Contractor.
- C. The Contractor shall remove any mailboxes, street signs and miscellaneous signs and safe guard them thru construction. The Contractor shall reset any mailboxes, street signs and miscellaneous signs to the correct height and location behind the curb and gutter, when construction is complete.

Also, include with Incidental Work all miscellaneous items of work for which no pay item exists.

**MAINTENANCE OF TRAFFIC**

Removing, relocating, covering, salvaging and resetting of permanent traffic control devices, including delineation, shall be the responsibility of the Contractor. The cost of this work shall be incidental to Traffic Control, Miscellaneous. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the City.

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

Work activities during non-daylight hours are subject to prior approval.

Contractor will be required to protect pedestrian traffic from open excavations and other hazards with snow fence or an alternate approved by the Engineer. Where this fencing is adjacent to pedestrian walkways, the Contractor shall provide a continuously detectable edging. The edging should protrude at least 6 inches above the surface of the sidewalk or pathway, with the bottom of the edging a maximum of 2.5 inches above the surface. Examples of detectable edging for pedestrians are given in Section 6F.74 of the MUTCD. Construction traffic should also be protected with cones or other alternatives.

Storage of vehicles and equipment shall be as near the right-of-way as possible. Any damage to vegetation, surfacing, grading, and existing signs resulting from such individuals from indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the City of Dell Rapids, and to the satisfaction of the Engineer.

Water will be used to control dust as necessary. Any cost for dust control would be at the Contractor's expense.

Affected parties and the engineer shall be notified two (2) business days prior to any access closures.

The Contractor shall have channelization devices and orange fencing available to control individual work areas. These devices shall be moved as needed and shall be incidental to the price bid for Traffic Control, Miscellaneous, Lump Sum.

Truck traffic shall not be allowed down any City streets that are not designated as typical city truck routes unless prior authorization is obtained.

**STANDARD SPACING FOR SIGNS, TAPERS, AND CHANNELIZING DEVICES**

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)				Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
	(A)	(B)	(C)	(D)		
0 – 30	200				180	25
35 – 40	350				320	25
45 – 50	500				600	50
55	500				660	50
	(A)	(B)	(C)	(D)		
60 – 65	500	1000	1300	1600	780	50
75	500	1000	1300	1600	1125	50

**SALVAGE TRAFFIC SIGN**

All salvaged items noted on the plans shall be salvaged for future use and hauled to Dell Rapids City Shop as directed by the Engineer. Care shall be taken not to damage the structural properties of the items during dismantling and transporting. All costs for salvaging and transporting the items shall be incidental to the contract lump sum price for "Incidental Work, Grading". Before preparing his/her bid, the Contractor shall make a visual inspection of the project to verify the extent of the work and material involved. All bolts, nuts, and washers shall be placed in individual five-gallon pails.

Signs, reusable posts, and hardware damaged or lost due to carelessness shall be replaced in kind at the Contractor's expense.

Signs shall be separated from supports prior to stockpiling. Salvaged signs shall be neatly stockpiled without damaging them.

Station	Sign Type	Salvage	Reset
1+67.0–33.0'R	School Sign	1	
1+67.0–33.0'R	No Parking	1	1
9+00.0-24.0'L	School Sign	1	

**PERMANENT SIGNING**

All signs are to be installed in accordance with Sections 632 and 982 of the Specifications.

All sign sheeting shall conform to AASHTO DESIGNATION:M 268.

All sign legend, border and background sheeting material shall meet or exceed standards for ASTM D 4956 classified Type XI very high intensity microprismatic sheeting, as indicated in the plans. Type XI sheeting shall be fluorescent.

The signs listed on the Work Table in the plans as new installations shall be provided for the locations specified.

All sign post locations and positions shall be located by the Contractor and verified by the Engineer. The Contractor shall verify that the post location allows for proper placement of the signs according to the plans.

Prior to ordering signs, the Contractor shall verify dimensions, background, border, and legends of the signs.

**PERMANENT SIGNING (CONTINUED)**

The Contractor shall use 3/8" rust proof machine sign bolts, flat metal washers, neoprene washers (against the sign sheeting), lock washers and nuts to fasten the sign to the channel aluminum.

Cost for all hardware items shall be included in the contract unit prices for the sign.

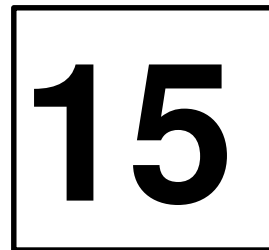
The plan post lengths shall be field verified by the Contractor.

All breakaway sign supports shall comply with FHWA NCHRP 350 or Manual for Assessing Safety Hardware (MASH) crash-worthy requirements.

All sign support bases shall conform to Plate number 634.99.

**DATE DECAL**

The Contractor shall affix a date decal to each new sign installed. Each decal is a self-adhesive sticker approximately 2" X 2" with removable paper backing and black numerals on a white background. The date decal displays the last two digits of the year the sign was manufactured (as illustrated).



One decal shall be placed in the extreme lower left corner of the back of flat aluminum signs.

Sign supports or other obstructions shall not block the view of the date decal upon completion of the sign installation.

All costs for furnishing and installing of date decals on new signs shall be incidental to the contract unit price for the various signing bid items.

**TRENCHING/PLOWING**

Trenching or plowing will be completed through grass boulevards.

Trenching or plowing will not be allowed through the roadway, driveways, sidewalks, or curb and gutter.



**1.5" RIGID CONDUIT, SCHEDULE 80**

The Contractor shall bore the rigid conduit beneath asphalt concrete roadways, driveways, sidewalks, and curb and gutter. Cost for boring shall be incidental to the contract unit price per Foot for 1.5" Rigid Conduit, Schedule 80.

Cost for all fittings, sweeps, etc. shall be incidental to the contract unit price per Foot for 1.5" Rigid Conduit, Schedule 80.

**1.5" RIGID GALVANIZED STEEL CONDUIT**

All conduit exposed above-ground shall be Galvanized Rigid Steel.

Cost for all galvanized steel conduit fittings, etc. shall be incidental to the contract unit price per Foot for 1.5" Rigid Galvanized Steel Conduit.

**MISCELLANEOUS CONCRETE**

All concrete for footings shall be Class M-6 as detailed in the SDDOT Standard Specifications.

**TABLE OF FOOTING DATA**

Station (Site Designation)	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
1+67.0-33.3'R (15 <sup>th</sup> /Garfield)	2' - 0"	5' - 6"	1' - 8"	41' - 8"	8-#7 x 5' - 0"
9+29.3-24.0'L (12 <sup>th</sup> /Garfield)	2' - 0"	5' - 6"	1' - 8"	41' - 8"	8-#7 x 5' - 0"

\* Footing depth shall be below ground level.

\*\* The size of all spirals shall be #3.

**POWER SOURCE**

XCEL Energy – Adam Amundson  
500 West Russell Street  
Sioux Falls, SD 57104-1419  
(605) 339-8316

**DUAL FLASHING BEACONS**

The Contractor shall furnish and install two flashing beacons. Both of the flashing beacons are on Garfield Avenue as shown in the plans.

Warning dual beacons shall be flashing 12 inch round yellow light emitting diode (LED) signal modules. Warning Beacons shall be compliant with the requirements for design, illumination, and color of signal sections required by Chapter 4L, Flashing Beacons, of the 2009 Manual on Uniform Traffic Control Devices.

The 1 section vehicle signal heads shall be fabricated from ultraviolet stabilized polycarbonate with a yellow body with a black door and black tunnel visor.

Each flashing beacon shall have dual 12" beacons (facing forward) and be mountable to a 4.5" round pedestal pole.

Each flashing beacon shall be installed on a 12' (9+29.3-24.0'L) and 14' (1+67.0-33.3'R), 4.5" diameter, pole that is installed on a 12" transformer base. A 24" Diameter Pole Footing shall be used for the foundation anchor.

The entire assembly and bracket, including the signal housing and dual LED modules, shall be provided with the hardware for mounting to a 4.5" round pedestal pole.

The signal flasher units shall be housed in NEMA weatherproof cabinet.

The signal housing shall be constructed of polycarbonate material and must be adjustable independent from the bracket for lens alignment. The signal housing shall meet the equipment standard of the Institute of Transportation Engineers Vehicle Traffic Control Signal Heads (VTCSH) Chapter 2. The lens shall be ITE compliant and ETL certified 12" yellow LED lens. The lens shall contain a maximum of 10 LEDs.

A signal flasher unit is required so that the dual indications shall alternately flash.

The flash rate shall be 60 flashes per minute.

The beacon shall flash with a 50% duty cycle (0.5s on, 0.5s off).

Beacons shall be programmed such that they are only allowed to flash 45 minutes prior to start of school to 15 minutes after start and 15 minutes prior to release times to 45 minutes after release times.

The beacon shall have automatic adjustable brightness and night dimming capability.

The beacon shall have a minimum operating autonomy of 30 days.

The beacon shall be activated by an integrated, programmable microcontroller. The beacon shall store 500 days of flash data. The software must allow for a minimum of seven distinct usage programs to allow for different usage variations from that of a standard school day. The usage program shall be uploaded by a customer provided laptop running any of the following Microsoft Windows products: XP, Vista, 7 or 8.

The system should be able to withstand and operate at temperature extremes of -40 deg F to +165 deg F.

The system should be designed and constructed to withstand 110 mph wind loads in conformance with the requirements of the AASHTO publication, "Standard Specifications for Structural Supports of Highway Signs, Luminaires, and Traffic Signals", Current Edition.

The product must be FCC certified to comply with all 47 CRF FCC Part 15 Subpart B Emission requirements and Manufacturer must be ISO 9001 certified.

The beacon, including batteries, panels, and all components, shall be guaranteed for a minimum of three years.

The software needed to program the flashing beacon must be provided to the City of Dell Rapids.

The services of a qualified technician to conduct on-site start-up operations and to instruct the Owner's personnel in system programming, operation, and maintenance shall be furnished.

The dual flashing beacons, 12' and 14' (4.5" diameter) pole, 12" transformer base, meter, and pole footing along with labor, parts, software, and anything else needed for furnishing and installing the flashing beacons shall be paid at the unit bid price for each respective bid item. Payment for all materials, labor, and equipment not specifically identified through other bid items shall be included in the lump sum cost for "Miscellaneous Electrical".

**POLES**

New poles shall be galvanized steel. Galvanizing shall be in accordance with AASHTO Specification M111 (ASTM A123). Steel pole material shall be in accordance with ASTM A36, A242, A570, A572, A607 or A595 Grade A or B. A595 material shall be limited to a 3/8 inch maximum thickness. Steel pole material with a thickness of 1/2 inch to 2 inches, shall satisfy Charpy V-Notch toughness test requirements of 15 ft. lb. at 40 degrees F. The SDDOT Office of Bridge Design shall be contacted for Charpy impact requirements for steel pole material thickness greater than 2 inches.

**POLES (CONTINUED)**

The steel pole-to-base-plate connection shall be a full-penetration groove-welded connection with a backing ring as described in Table 11.9.3.1-1, Section 4.5 of the current edition of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

All poles shall have transformer bases.

**MISCELLANEOUS ELECTRICAL**

The Contractor shall provide all necessary materials, labor, and equipment to install the flashing light system and make connection to power source by conforming to local electrical and building codes. Payment for all materials, labor, and equipment not specifically identified through other bid items shall be included in the lump sum cost for "Miscellaneous Electrical".

**ELECTRIC SERVICE DETAILS**

The Contractor shall provide an Xcel Energy approved 120 VAC lever-bypass meter socket, with 5<sup>th</sup> jaw, where shown on the Plans. Contractor shall provide a 20 amp, service entrance rated, enclosed single pole circuit breaker on the load side of the meter where indicated as "Electrical Service Cabinet with Lock" on sheet 15. The meter socket shall be mounted as shown on sheet 15 and shall not be mounted on Xcel Energy's pole. The meter socket shall be paid for at the contract unit bid price per each "Meter Socket". All conduit exposed above-ground shall be Galvanized Rigid Steel.

**REMOVE PAVEMENT MARKINGS:**

The Contractor shall remove an estimated 400 feet (600 feet of 4" equivalent) of existing 6" pavement markings as shown in the plans.

**PAVEMENT MARKINGS:**

Cold Applied Plastic Pavement Marking tape if used shall be an extended season – high performance pavement marking tape. The Contractor shall use 3M™ Stamark™ High Performance Pavement Marking Tape Series 380I ES or an Engineer approved equal.

**GROOVE PAVEMENT FOR PAVEMENT MARKING**

The Contractor shall establish a positive means for the removal of the grinding and/or grooving residue. Solid residue shall be removed from the pavement surfaces before being blown by traffic action or wind. Residue shall not be permitted to flow across lanes being used by public traffic or into gutter or drainage facilities. Residue, whether in solid or slurry form, shall be disposed of in a manner that will prevent it from reaching any waterway in a concentrated state.

**EROSION CONTROL**

The Contractor shall perform all construction on the project in such a manner to minimize erosion from areas disturbed by excavation, grading, or other activities.

The Contractor shall conduct his excavation and haul operations in such a manner as to minimize vehicle tracking of mud on to paved street surfaces.

Should the Contractor track any mud onto a paved street as part of his operations, the Contractor will be responsible for immediately cleaning the street by street sweeping or other means. The Contractor shall work to stabilize disturbed areas as soon as practical.

All paved streets adjacent to the site shall be cleaned at the end of each working day if sediment from the disturbed area is tracked on them.

No additional payment will be made for any work, equipment or materials associated with Erosion Control and shall be incidental to the various contract items.

**REMOVE & REPLACE TOPSOIL**

The Contractor may or may not salvage topsoil during grading operations. It is the Contractor's responsibility to provide topsoil to finish the project. Their source is their choice. No extra cost will be paid for material brought in. All labor and material associated with topsoiling is incidental to the "Remove & Replace Topsoil" bid item.

Topsoil location is from the Back of Curb location to the disturbed limits. Estimated quantity of topsoil is 150 SqYd. No field measurement will be made for this item.

Topsoil shall be black in color, clumpless, free from gravel, rocks, and other foreign material and suitable for growing grass. The Contractor shall place topsoil to a minimum depth of 6" on all disturbed areas.

Upon completion of the work, the Contractor shall grade the area between the back of curb and work limits in a uniform grade line as directed by the Engineer.

The size and type of equipment utilized on this portion of the work shall be commensurate with the work to be accomplished.

Care shall be taken in working around existing utilities, mailboxes, trees, shrubs, and private improvements so to avoid damage.

The final surface finish shall be left in a condition such that all terraces will be suitable for seeding.

**FERTILIZING**

The Contractor shall apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer shall have a minimum guaranteed analysis of 4-6-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 3.2%, a minimum of 6% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer shall be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer shall have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer shall also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

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

The application rate is 34 pounds per 1,000 square feet.

The all-natural slow release fertilizer shall be from the list below or an approved equal:

Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 <a href="http://www.sustane.com/">http://www.sustane.com/</a>

**PERMANENT SEEDING**

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

All permanent seed shall be planted in the topsoil at a depth of 1/4" to 1/2".

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.

The varieties listed for seed mixtures are preferred varieties.

Native harvest seed will be allowed.

Type D Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/1000 SqFt)
Kentucky Bluegrass	Avalanche, Appalachian, Wildhorse, Blue Bonnet	1.4
Perennial Ryegrass	Turf Type Varieties	1.4
Creeping Red Fescue	Epic, Boreal	1.4
Chewings Fescue	Ambrose, K2, VNS, Zodiac	1.4
Alkali Grass	Fults, Fults II, Quill, Salty	1.4
Total:		7

**FIBER MULCHING**

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

Fiber mulch shall be applied at the rate of 2000 pounds per acre.

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

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

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

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



**TABLE OF FIBER MULCHING**

Station	to	Station	L/R	Quantity (Lb)
9+19		10+15	L	30
1+23		1+80	R	40
Total:				70

**DAMAGE TO PROPERTY**

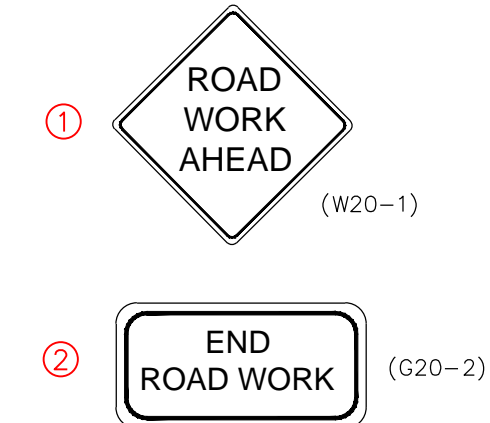
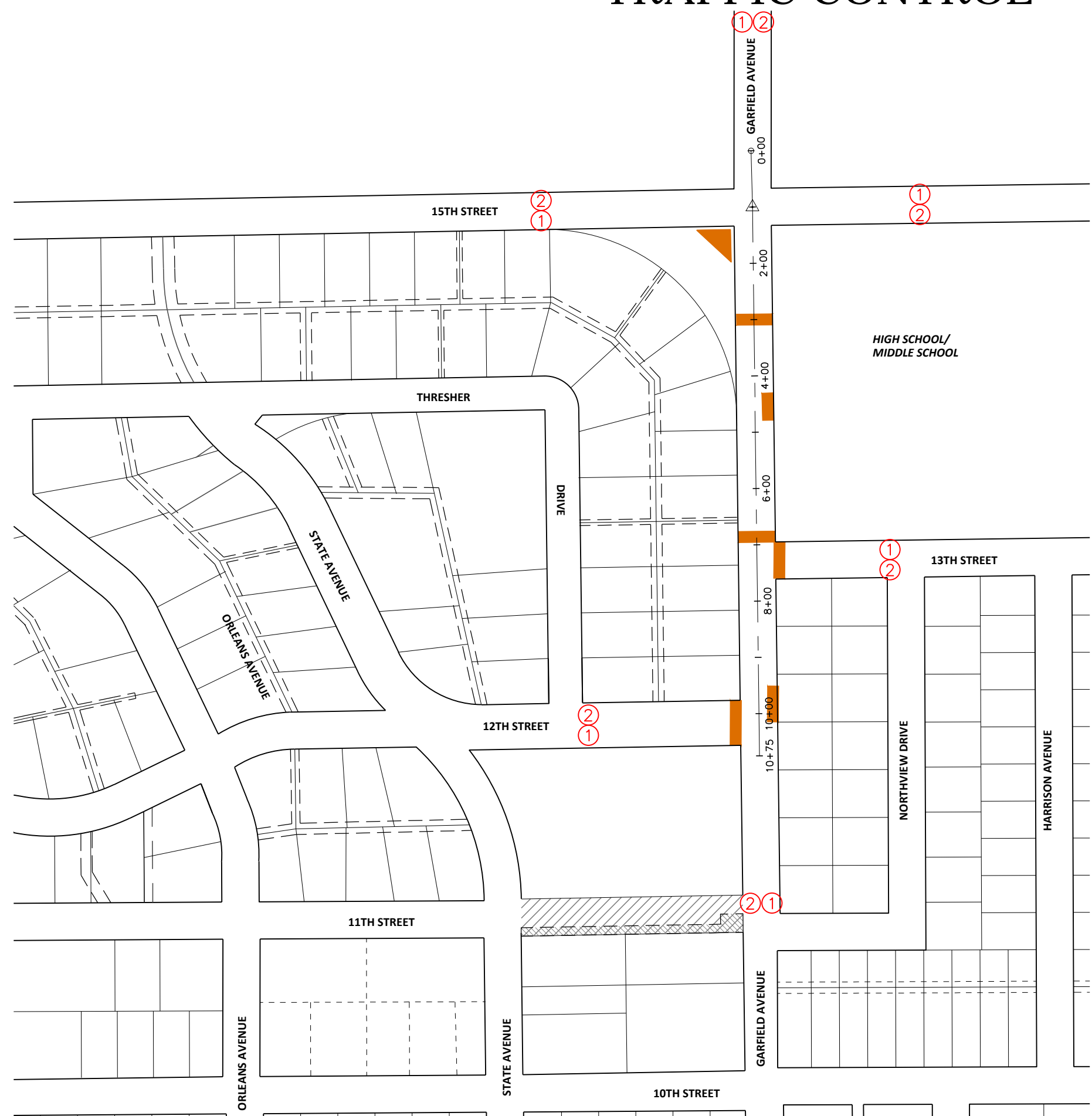
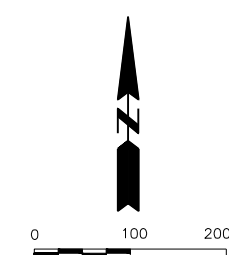
The Contractor shall ensure that private and public property including trees, fences, retaining walls, landscaping, gardens, drain tiles, sprinklers, etc. along the construction site is not damaged by his operations. In the event such damage should occur due to the Contractor's negligence, the Contractor shall restore the damaged area to the pre-construction condition at his own expense and to the satisfaction of the Engineer and the property owner.



# TRAFFIC CONTROL



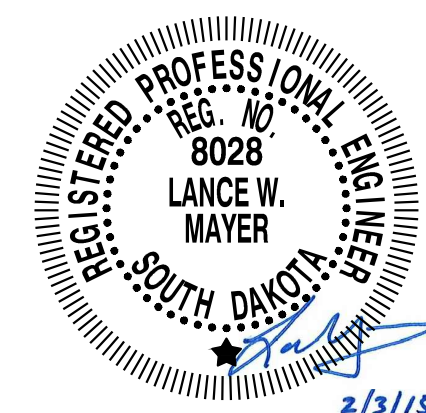
STATE OF SOUTH DAKOTA	PROJECT P SRTS(37)	SHEET 7	TOTAL SHEETS 16
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PROJECT AREAS

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
W20-1	48" x 48"	ROAD WORK AHEAD	6	34	204
G20-2	36" x 18"	END ROAD WORK	6	17	102
<b>TOTAL UNITS</b>					<b>306</b>

**NOTE:**  
CONTRACTOR SHALL BE REQUIRED TO UTILIZE CONES, BARRELS, ETC. DURING ANY WORK WHICH EXTENDS INTO THE STREET AND/OR REQUIRES A LANE CLOSURE. THIS WORK SHALL BE COVERED BY THE LUMP SUM BID ITEM "TRAFFIC CONTROL, MISCELLANEOUS".

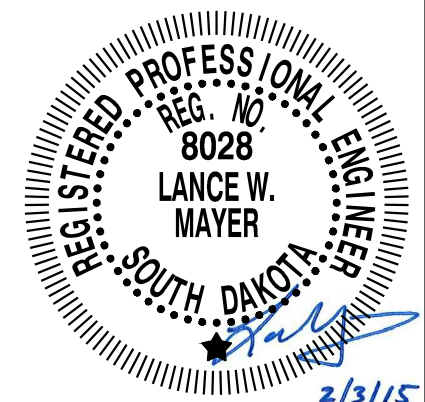


# LEGEND OF SYMBOLS



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P SRTS (37)	8	16

	EXISTING WATER SHUTOFF		LAWN SPRINKLER LINE		WATER LEVEL
	EXISTING FIRE HYDRANT		FENCE		WELL
	EXISTING VALVE & BOX		SECTION LINE		TEST HOLE AND NUMBER
	EXISTING TEE		QUARTER SECTION LINE		POWER POLE WITH LIGHT
	EXISTING REDUCER		CENTERLINE		TRAFFIC SIGNAL LIGHT
	EXISTING SLEEVE		EASEMENT		PEDESTRIAN SIGNAL LIGHT
	EXISTING CROSS		PROPERTY LINE/ RIGHT OF WAY		GUY ANCHOR
	EXISTING 6" - W		CONC. CURB & GUTTER		POWER POLE
	EXISTING 12" - RW		UNDERGROUND GAS		UTILITY CLOSURE
	EXISTING WATER CISTERN		UNDERGROUND TELEPHONE		TELEPHONE PEDESTAL
	EXISTING WATER MANHOLE		OVERHEAD TELEPHONE		FIBER OPTIC PEDESTAL
	EXISTING SANITARY MANHOLE		UNDERGROUND POWER		FIBER OPTIC VAULT
	EXISTING SANITARY LAMPHOLE		OVERHEAD POWER		SIGN
	EXISTING JUNCTION BOX		FIBER OPTIC		SPRINKLER HEAD
	EXISTING CLEAN OUT		MIDCONTINENT COMMUNICATIONS		GAS METER
	EXISTING APPROACH		MIDCONTINENT COMMUNICATIONS FIBER OPTIC		MAILBOX
	EXISTING SIDEWALK		CENTURY LINK, FIBER OPTIC		HEDGE, BRUSH, SHRUBS, WOODS
	EXISTING DROP INLET		CENTURY LINK, 200 PR		DECIDUOUS TREE & SIZE
	EXISTING CULVERT		CENTURY LINK, 100 PR		CONIFEROUS TREE & SIZE
	EXISTING 15" - CMP		CENTURY LINK, 50 PR		TREE STUMP & SIZE
	1400		CENTURY LINK, 25 PR OR LESS		
	EXISTING 8" - SA		SDN COMMUNICATIONS		
	EXISTING 16" - FM		SIOUX VALLEY ELECTRIC, OVERHEAD		
	CS		SIOUX VALLEY ELECTRIC, UNDERGROUND		
MATERIAL FOR LINES:			EAST RIVER ELECTRIC, OVERHEAD		
VCP	VITRIFIED CLAY PIPE		UNDERGROUND CABLE TV		
PVC	SOLID WALL POLYVINYL CHLORIDE PIPE		OVERHEAD CABLE TV		
ABS TRUSS	ACRYLONITRILE-BUTADIENNE-STYRENE COMPOSITE		TRAFFIC, OVERHEAD		
PVC TRUSS	POLYVINYL CHLORIDE TRUSS COMPOSITE PIPE		INDUSTRIAL WASTE		
PVC CP	CLOSED PROFILE WALL POLYVINYL CHLORIDE PIPE		PROPOSED APPROACH		
DIP	DUCTILE IRON PIPE		PROPOSED SIDEWALK		
RCP	REINFORCED CONCRETE PIPE		PROPOSED STORM SEWER & SIZE		
CIP	CAST IRON PIPE		PROPOSED DROP INLET		
CIPP	CURED IN PLACE PIPE		PROPOSED STORM SEWER JUNCTION BOX		
PE	POLYETHYLENE PIPE		PROPOSED CONTOURS		

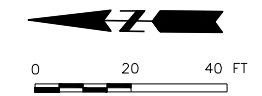




ESTIMATE OF QUANTITIES - ELECTRICAL/WIRING		
ITEM	ESTIMATED QUANTITY	UNIT
PEDESTAL SIGNAL POLE	2	EACH
1 SECTION VEHICLE SIGNAL HEAD	4	EACH
2.0' DIAMETER FOOTING	11	FT
SIGNAL FLASHER UNIT	2	EACH
ELECTRICAL SERVICE CABINET	2	EACH
METER SOCKET, 5-JAW, LEVER-BYPASS	2	EACH
MISCELLANEOUS, ELECTRICAL	1	LS
1.5" RIGID GALVANIZED STEEL CONDUIT	24	FT
1.5" RIGID CONDUIT, SCHEDULE 80	150	FT
1/C #10 AWG THHN COPPER WIRE (BK,WH,GR AS REQUIRED)	580	FT

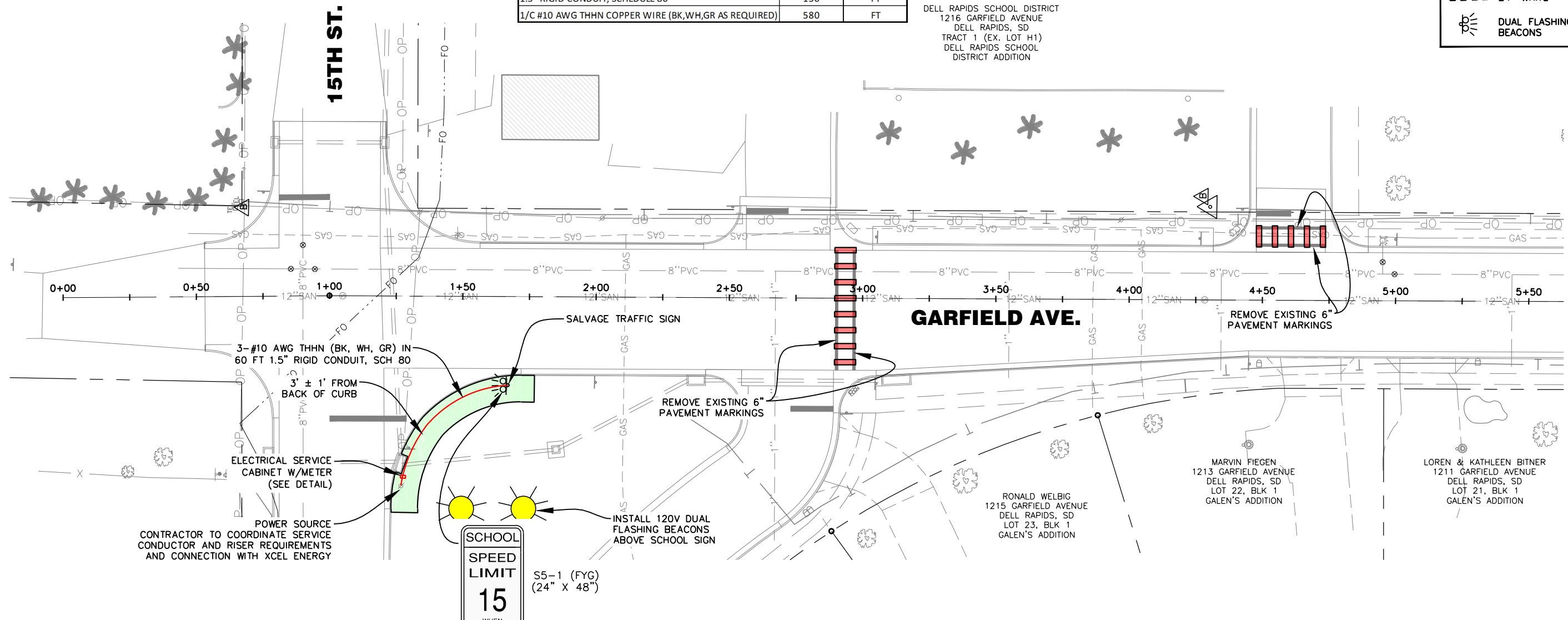


STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P SRTS(37)	9	16

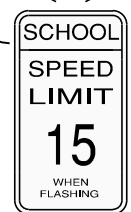


- TOPSOIL, FERTILIZE, SEED & FIBER MULCH
- PAVEMENT MARKINGS 24" WHITE
- DUAL FLASHING BEACONS

DELL RAPIDS SCHOOL DISTRICT  
1216 GARFIELD AVENUE  
DELL RAPIDS, SD  
TRACT 1 (EX. LOT H1)  
DELL RAPIDS SCHOOL DISTRICT ADDITION



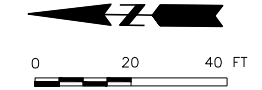
PERMANENT SIGN TABLE								
SIGN DATA						POST DATA		
STATIONING	DESCRIPTION	SIGN CODE	CONTRACTOR FURNISHED TRAFFIC SIGN AREA (SQFT) HIGH INTENSITY PRISMATIC	BACKGROUND COLOR	LEGEND & BORDER COLOR	(F)IXED or (B)REAK-AWAY	OTHER POST TYPE	INSTALL TRAFFIC SIGN ON POST (EACH)
1+67.03-33.3'R	SCHOOL/SPEED LIMIT -15/ WHEN FLASHING	S5-1	24"X48" = 8.0	FLUOR YEL/GRN WHITE	BLACK BLACK	B	FLASHER POLE (4.5" DIAMETER)	2
	NO PARKING HERE TO CORNER	SALVAGED	18"X24" (SALVAGED)	SALVAGED	SALVAGED			
9+29.3-24.0'L	SCHOOL/SPEED LIMIT -15/ WHEN FLASHING	S5-1	24"X48" = 8.0	FLUOR YEL/GRN WHITE	BLACK BLACK	B	FLASHER POLE (4.5" DIAMETER)	1
<b>TOTALS</b>			<b>16.0</b>				<b>2</b>	<b>3</b>



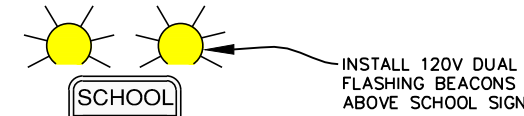
S5-1 (FYG) (24" X 48")



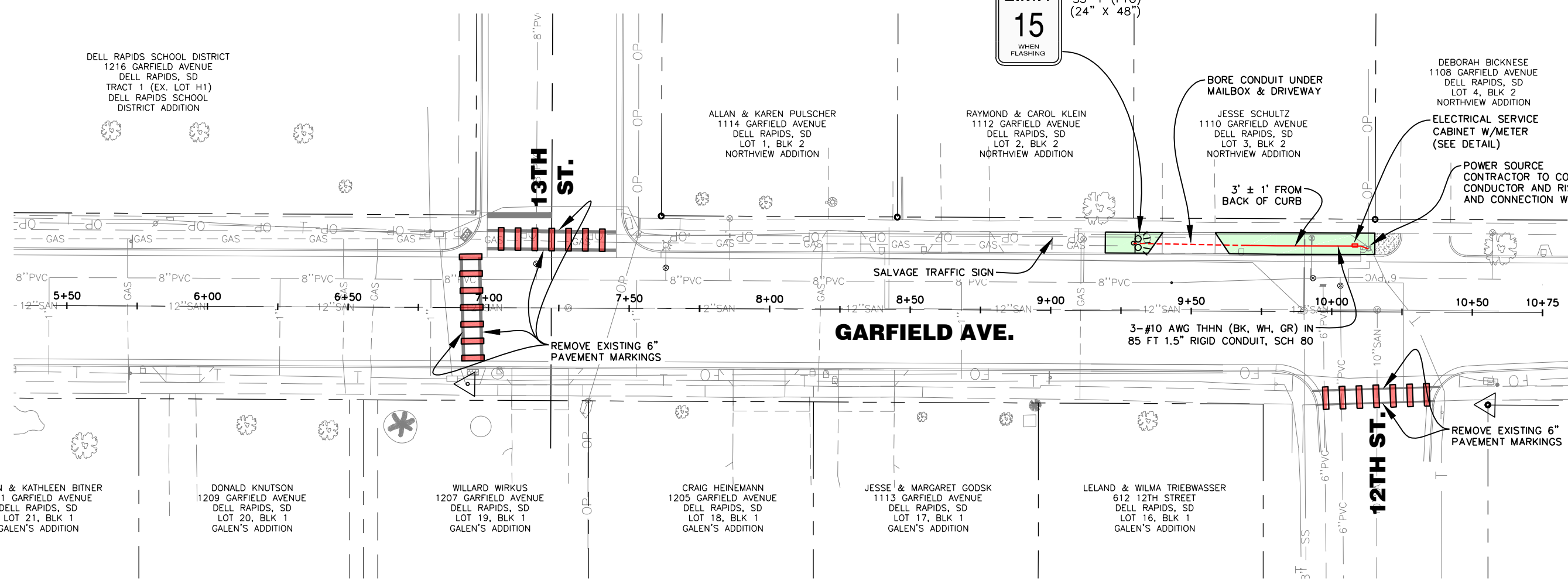
R7-11 (RESET SALVAGED SIGN)



- TOPSOIL, FERTILIZE, SEED & FIBER MULCH
- PAVEMENT MARKINGS 24" WHITE
- DUAL FLASHING BEACONS



S5-1 (FYC)  
(24" X 48")



LOREN & KATHLEEN BITNER  
1211 GARFIELD AVENUE  
DELL RAPIDS, SD  
LOT 21, BLK 1  
GALEN'S ADDITION

DONALD KNUTSON  
1209 GARFIELD AVENUE  
DELL RAPIDS, SD  
LOT 20, BLK 1  
GALEN'S ADDITION

WILLARD WIRKUS  
1207 GARFIELD AVENUE  
DELL RAPIDS, SD  
LOT 19, BLK 1  
GALEN'S ADDITION

CRAIG HEINEMANN  
1205 GARFIELD AVENUE  
DELL RAPIDS, SD  
LOT 18, BLK 1  
GALEN'S ADDITION

JESSE & MARGARET GODSK  
1113 GARFIELD AVENUE  
DELL RAPIDS, SD  
LOT 17, BLK 1  
GALEN'S ADDITION

LELAND & WILMA TRIEBWASSER  
612 12TH STREET  
DELL RAPIDS, SD  
LOT 16, BLK 1  
GALEN'S ADDITION

ALLAN & KAREN PULSCHER  
1114 GARFIELD AVENUE  
DELL RAPIDS, SD  
LOT 1, BLK 2  
NORTHVIEW ADDITION

RAYMOND & CAROL KLEIN  
1112 GARFIELD AVENUE  
DELL RAPIDS, SD  
LOT 2, BLK 2  
NORTHVIEW ADDITION

JESSE SCHULTZ  
1110 GARFIELD AVENUE  
DELL RAPIDS, SD  
LOT 3, BLK 2  
NORTHVIEW ADDITION

DEBORAH BICKNESE  
1108 GARFIELD AVENUE  
DELL RAPIDS, SD  
LOT 4, BLK 2  
NORTHVIEW ADDITION

ELECTRICAL SERVICE  
CABINET W/METER  
(SEE DETAIL)

POWER SOURCE  
CONTRACTOR TO COORDINATE SERVICE  
CONDUCTOR AND RISER REQUIREMENTS  
AND CONNECTION WITH XCEL ENERGY



# PAVEMENT MARKING LAYOUT

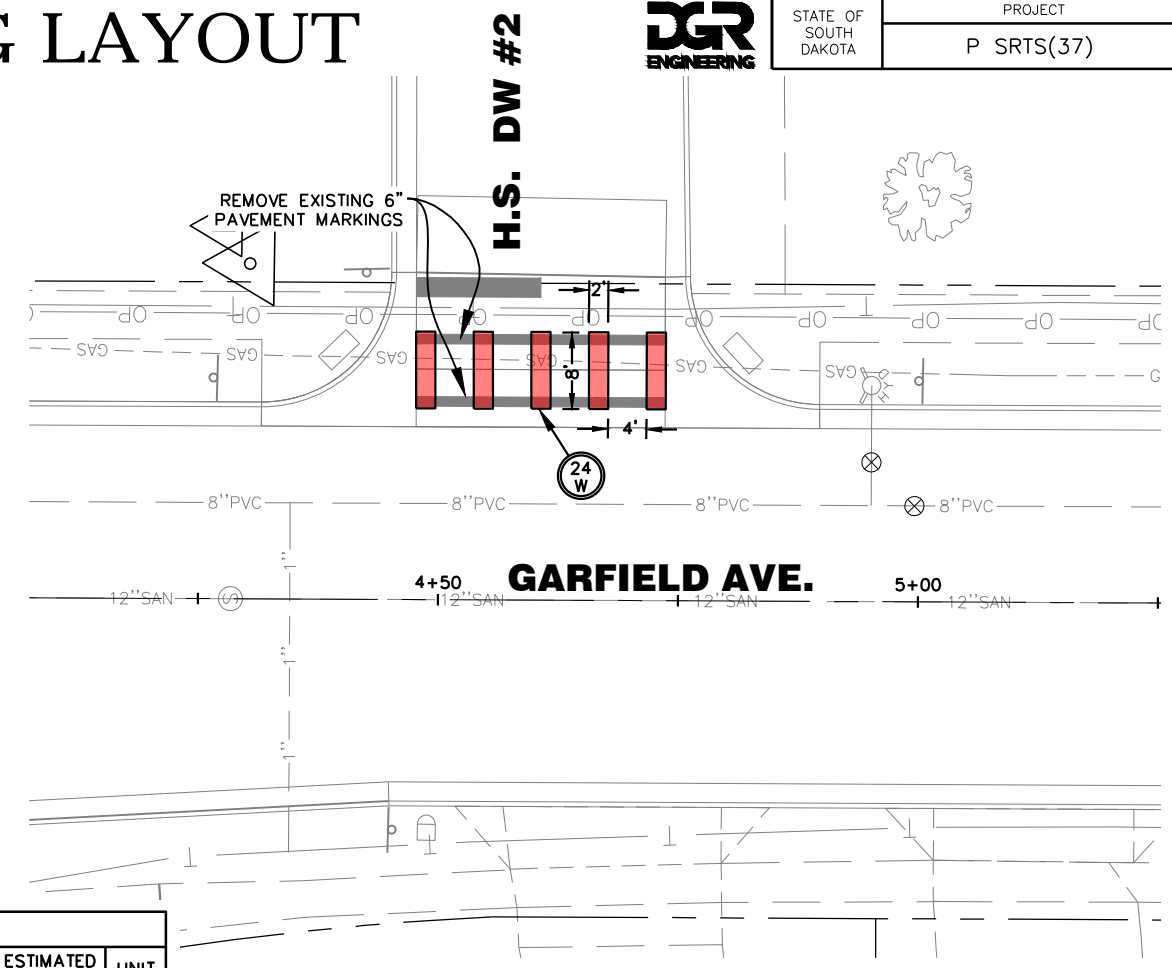
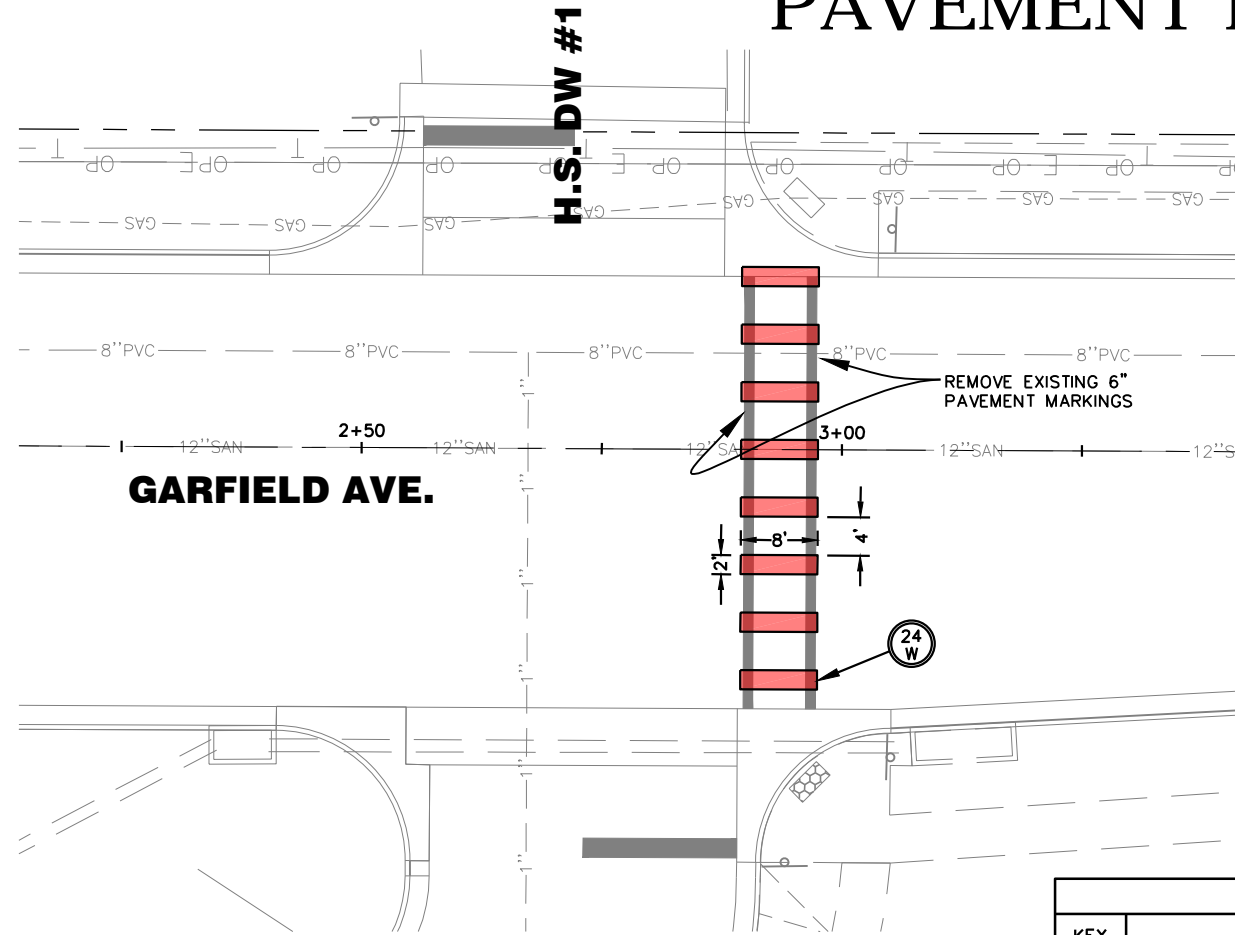


STATE OF SOUTH DAKOTA

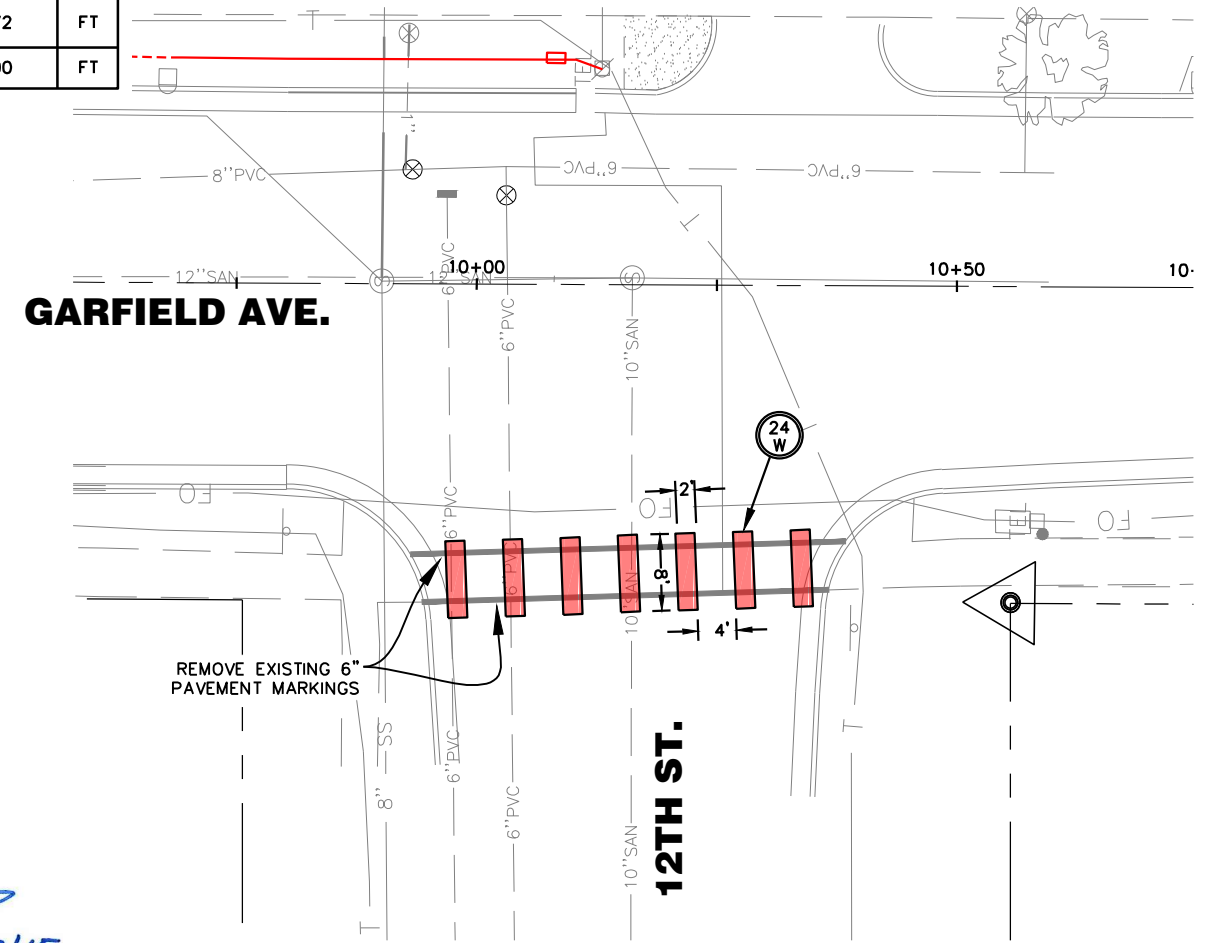
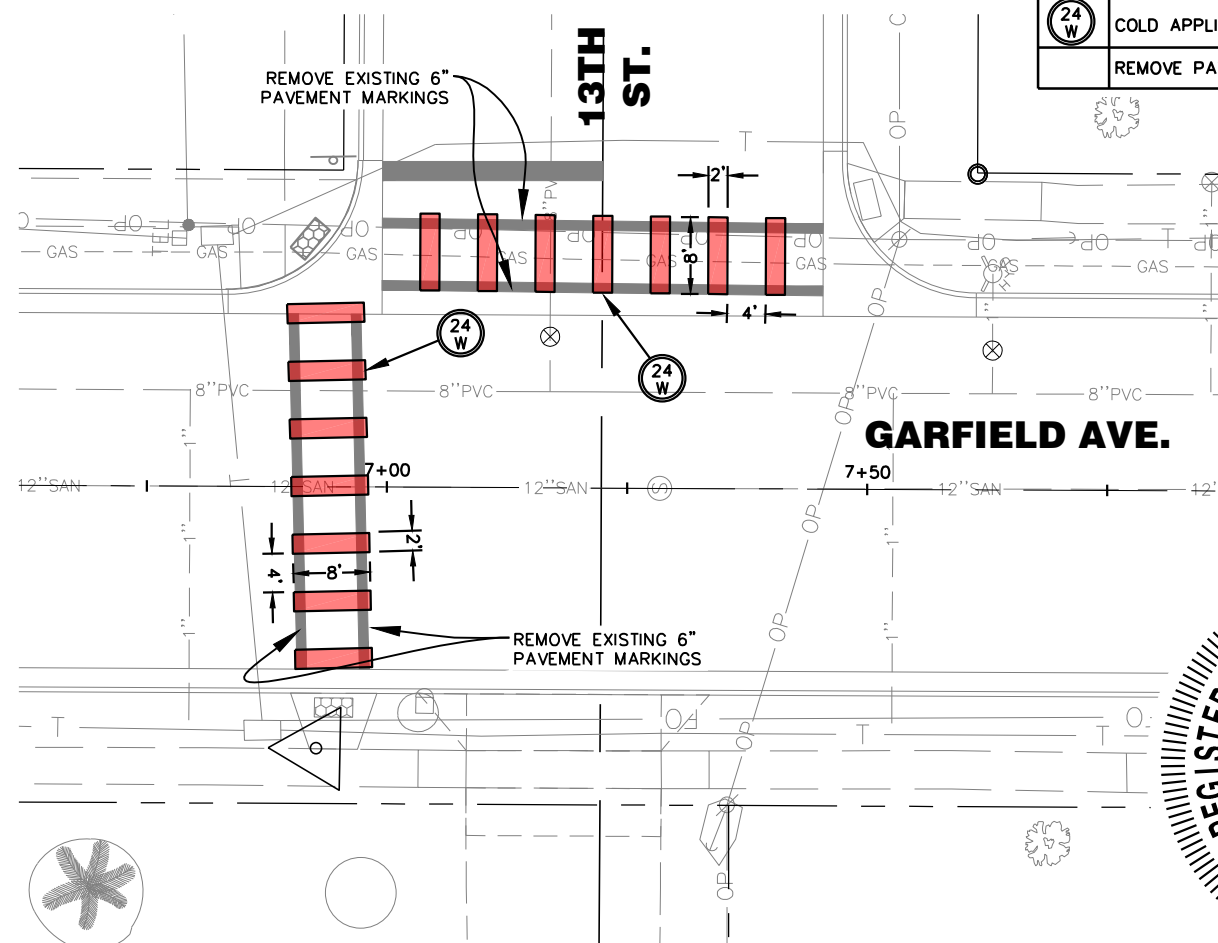
PROJECT  
P SRTS(37)

SHEET  
11

TOTAL SHEETS  
16



ESTIMATE OF QUANTITIES			
KEY	ITEM	ESTIMATED QUANTITY	UNIT
(24 W)	COLD APPLIED PLASTIC PAVEMENT MARKING	272	FT
	REMOVE PAVEMENT MARKING, 4" OR EQUIVALENT	600	FT

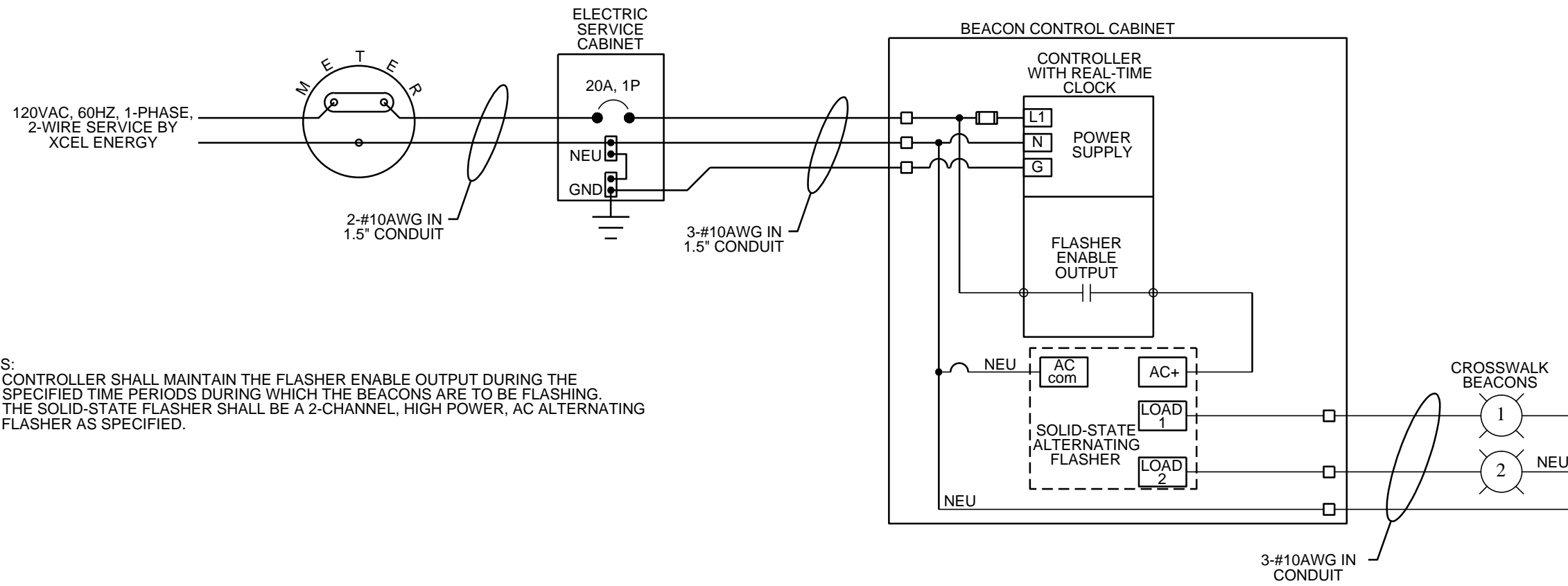


2/3/15

# WIRING DIAGRAM



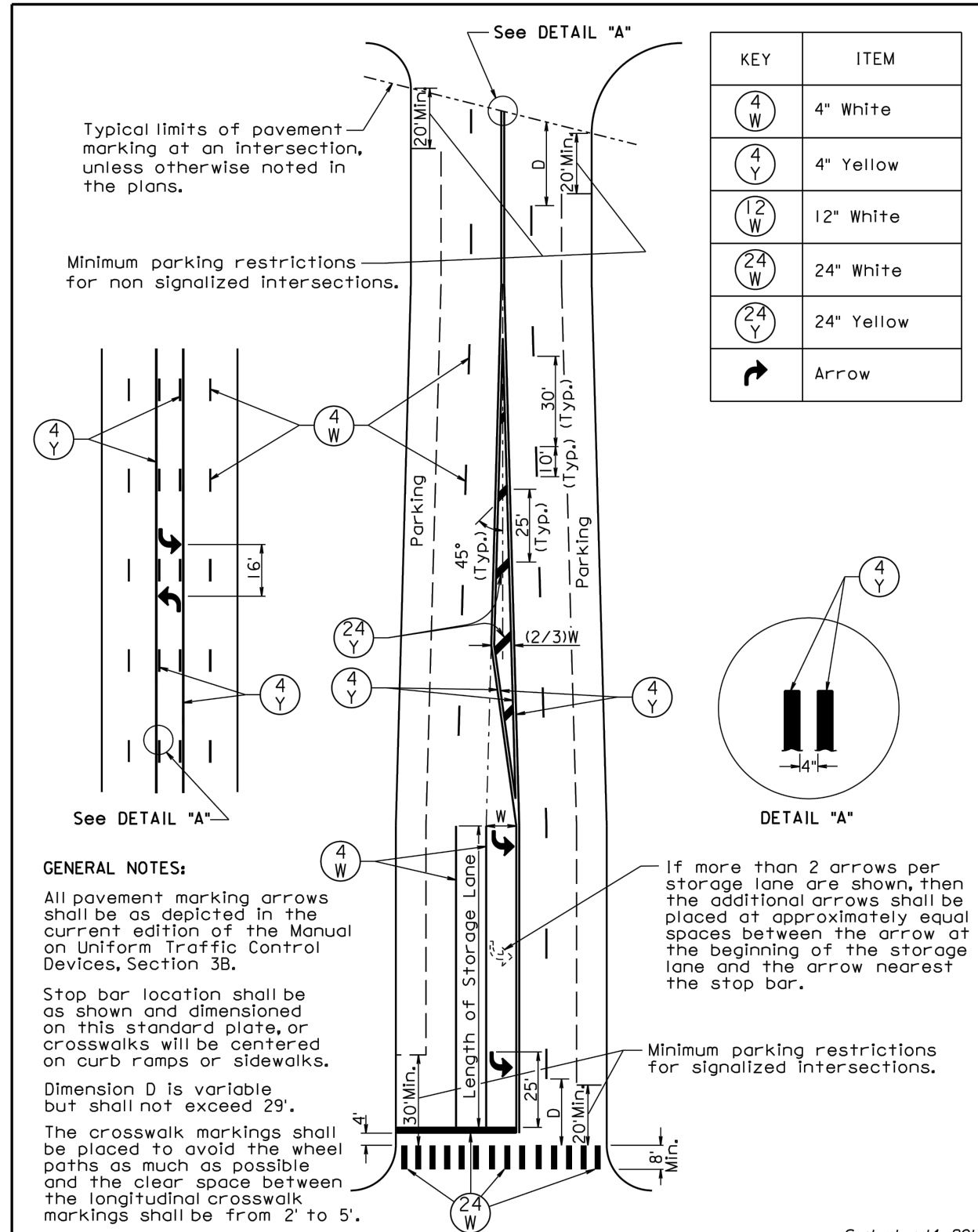
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P SRTS(37)	12	16



- NOTES:
1. CONTROLLER SHALL MAINTAIN THE FLASHER ENABLE OUTPUT DURING THE SPECIFIED TIME PERIODS DURING WHICH THE BEACONS ARE TO BE FLASHING.
  2. THE SOLID-STATE FLASHER SHALL BE A 2-CHANNEL, HIGH POWER, AC ALTERNATING FLASHER AS SPECIFIED.

# WIRING DIAGRAM





Typical limits of pavement marking at an intersection, unless otherwise noted in the plans.

Minimum parking restrictions for non signalized intersections.

**GENERAL NOTES:**

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

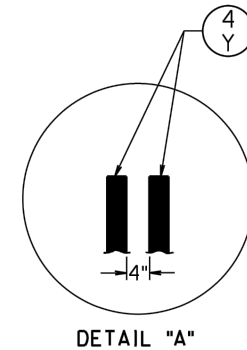
Stop bar location shall be as shown and dimensioned on this standard plate, or crosswalks will be centered on curb ramps or sidewalks.

Dimension D is variable but shall not exceed 29'.

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

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

Minimum parking restrictions for signalized intersections.

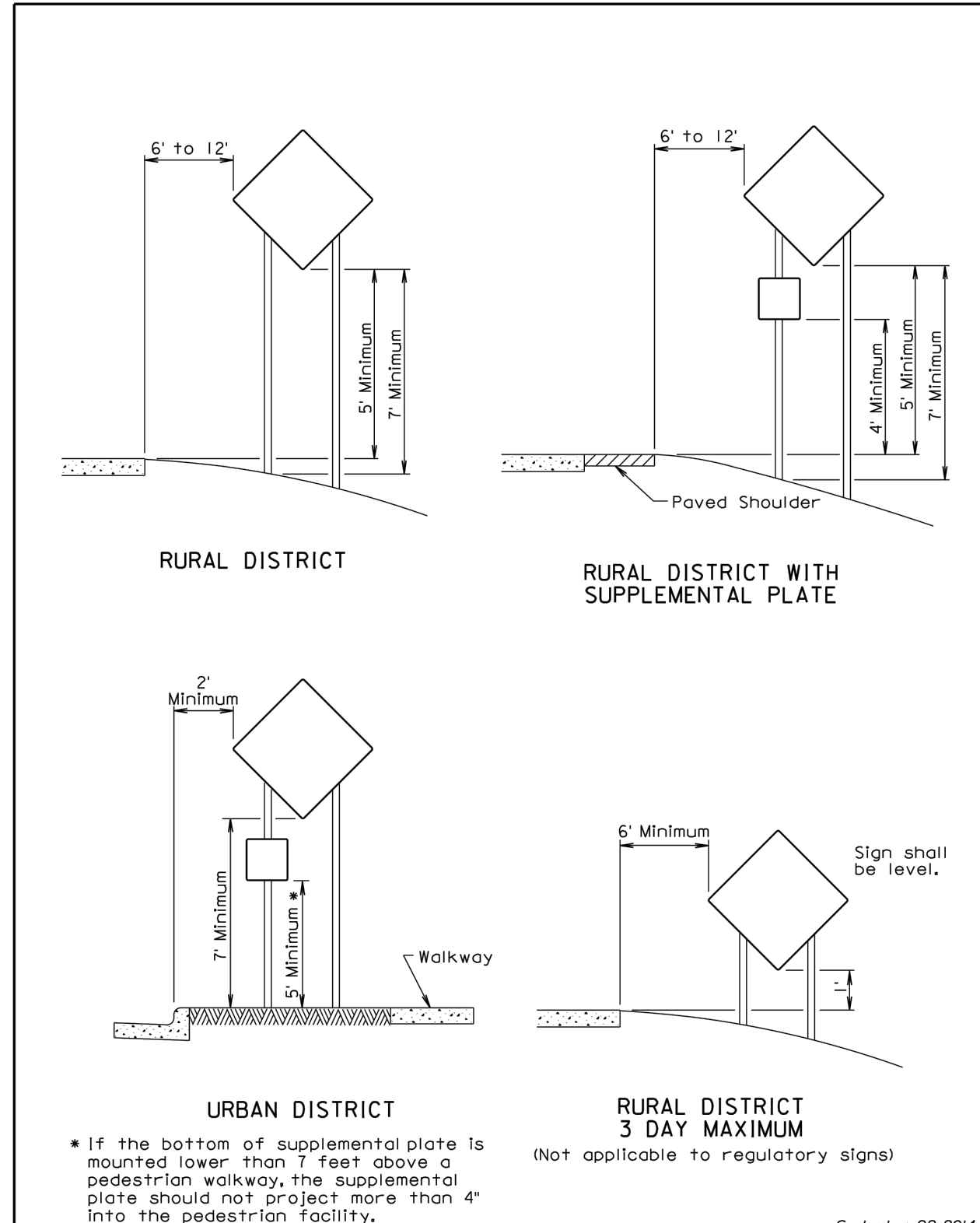


KEY	ITEM
(4 W)	4" White
(4 Y)	4" Yellow
(12 W)	12" White
(24 W)	24" White
(24 Y)	24" Yellow
↪	Arrow

September 14, 2011

<b>S D D T</b>	<b>PAVEMENT MARKINGS FOR ADJACENT INTERSECTIONS AND CENTER TURN LANE</b>	PLATE NUMBER <b>633.01</b>
		Sheet 1 of 1

Published Date: 4th Qtr. 2014



RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE

URBAN DISTRICT

RURAL DISTRICT 3 DAY MAXIMUM

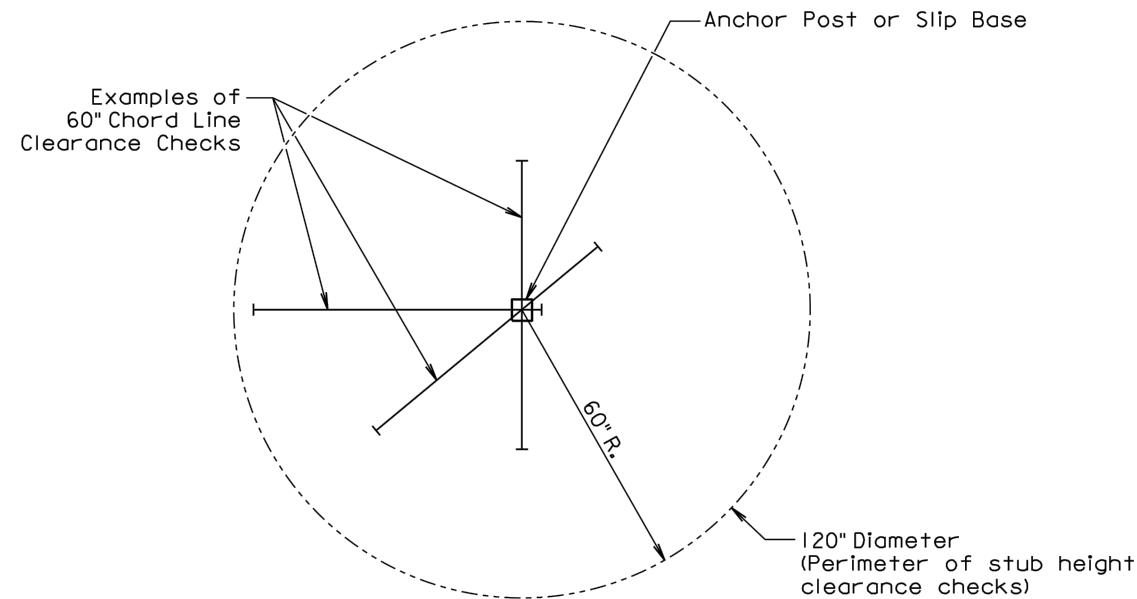
\* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

(Not applicable to regulatory signs)

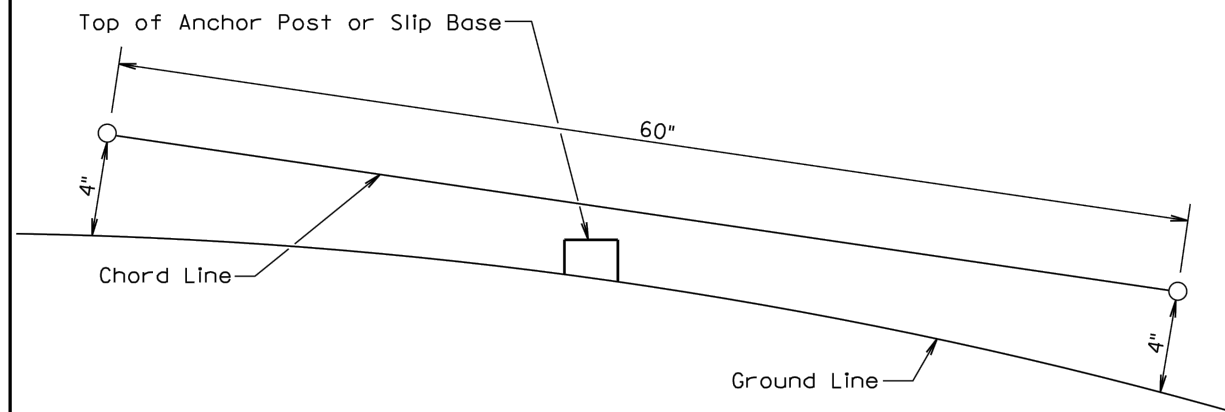
September 22, 2014

<b>S D D T</b>	<b>CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)</b>	PLATE NUMBER <b>634.85</b>
		Sheet 1 of 1

Published Date: 4th Qtr. 2014



**PLAN VIEW**  
(Examples of stub height clearance checks)



**ELEVATION VIEW**

**GENERAL NOTES:**

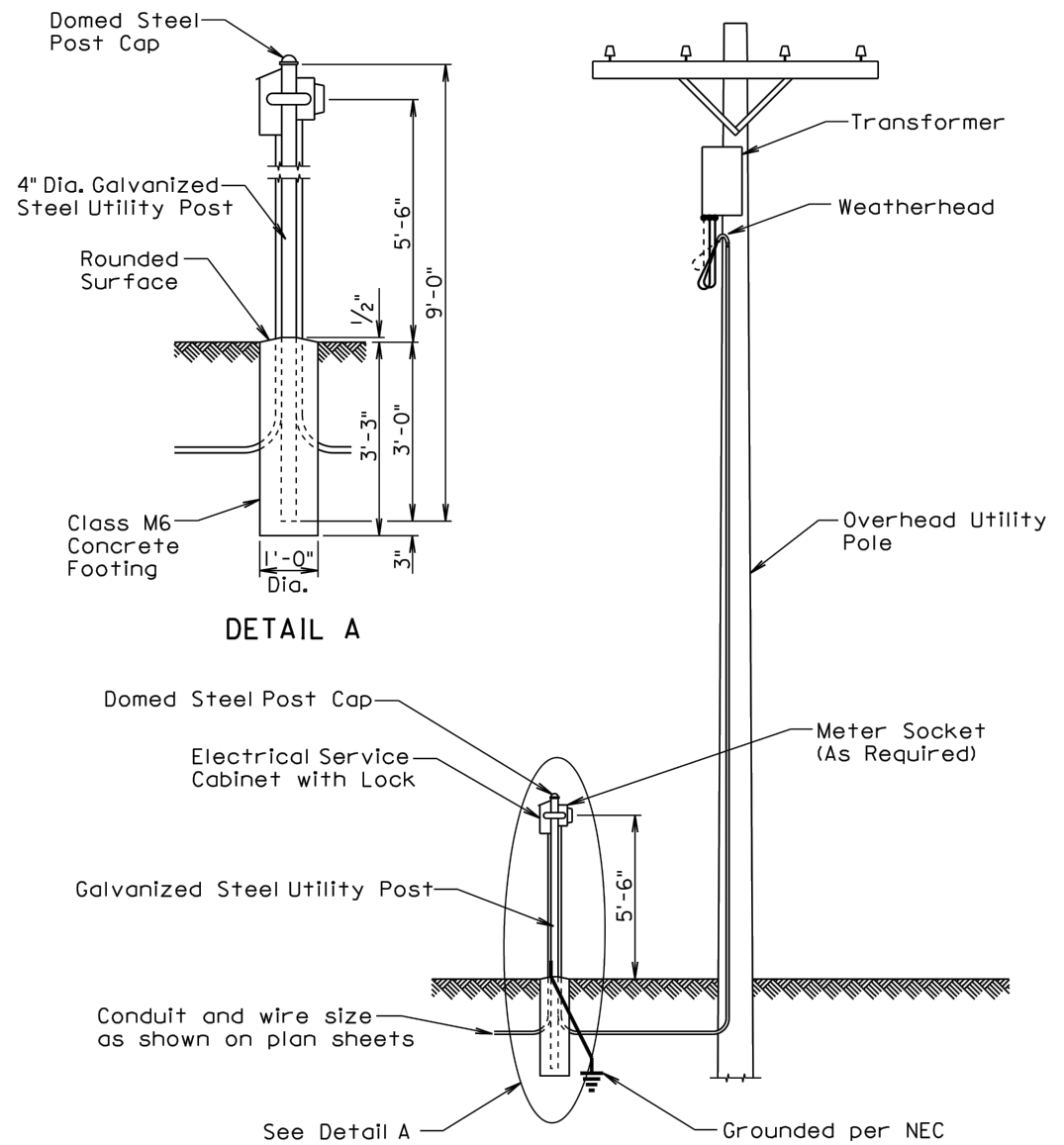
The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

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
<i>Published Date: 4th Qtr. 2014</i>		



**DETAIL A**

**ELEVATION**

**GENERAL NOTES:**

The concrete for the post footing shall be class M6 concrete.

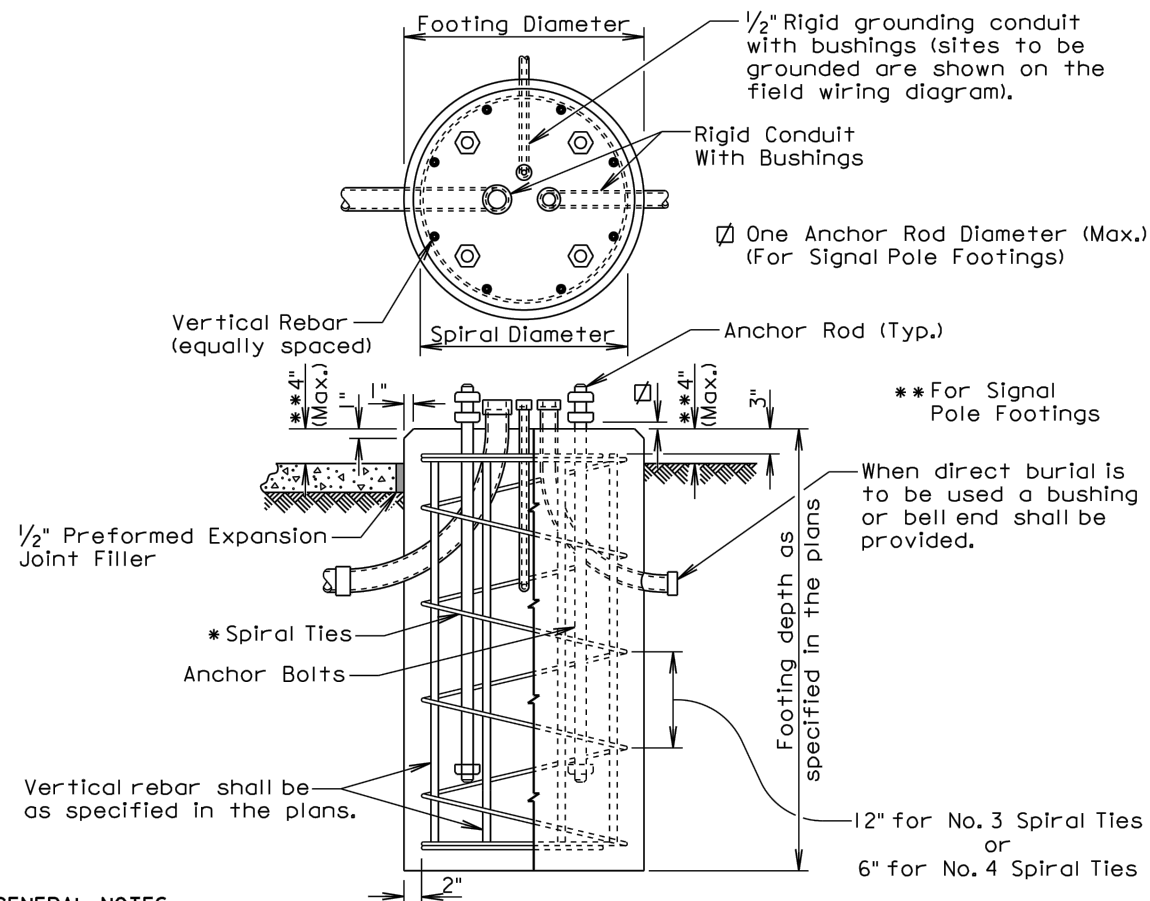
The 4" diameter galvanized steel utility post shall be 9' long and shall be in conformance with AASHTO Standard Specifications M181. The post shall be Type 1 and either Grade 1 or Grade 2. The domed steel post cap shall be in conformance with AASHTO Standard Specifications M181 and shall be Type 1.

The Contractor shall contact and coordinate his/her work with the Utility Companies regarding hookup requirements, fees, materials, and equipment necessary.

All costs for furnishing and installing all materials from the electrical service cabinet to the transformer including labor, equipment, hookup fees, all items within the cabinet, post, concrete footing, post cap, meter socket if required, conduit, and incidentals shall be incidental to the contract unit price per each for "Electrical Service Cabinet".

June 26, 2006

<b>S D D O T</b>	<b>GALVANIZED STEEL UTILITY POST WITH OVERHEAD UTILITY POLE</b>	PLATE NUMBER <b>635.35</b>
		Sheet 1 of 1
<i>Published Date: 4th Qtr. 2014</i>		



**GENERAL NOTES:**

\* The tie sizes are specified in the plans. Circular ties may be used in lieu of the spiral ties. The No. 3 ties shall be spaced 12 inches apart except for the top two which shall be spaced 6 inches apart. The No. 4 ties shall be spaced 6 inches apart except for the top two which shall be spaced 3 inches apart. The ties shall be lapped 18 inches and the laps shall be staggered around the cage.

Spiral ties shall have 1-1/2 extra turns at each end.

See section 985 of the Standard Specifications for footing materials.

Conduits and bushings may project 2 1/2 inches to 6 inches 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.

The anchor rods shall fit inside the reinforcing steel cage. If the anchor rods designed by the Pole Manufacturer do not fit, contact the Office of Bridge Design for footing redesign. No additional payment will be made for the redesigned footing.

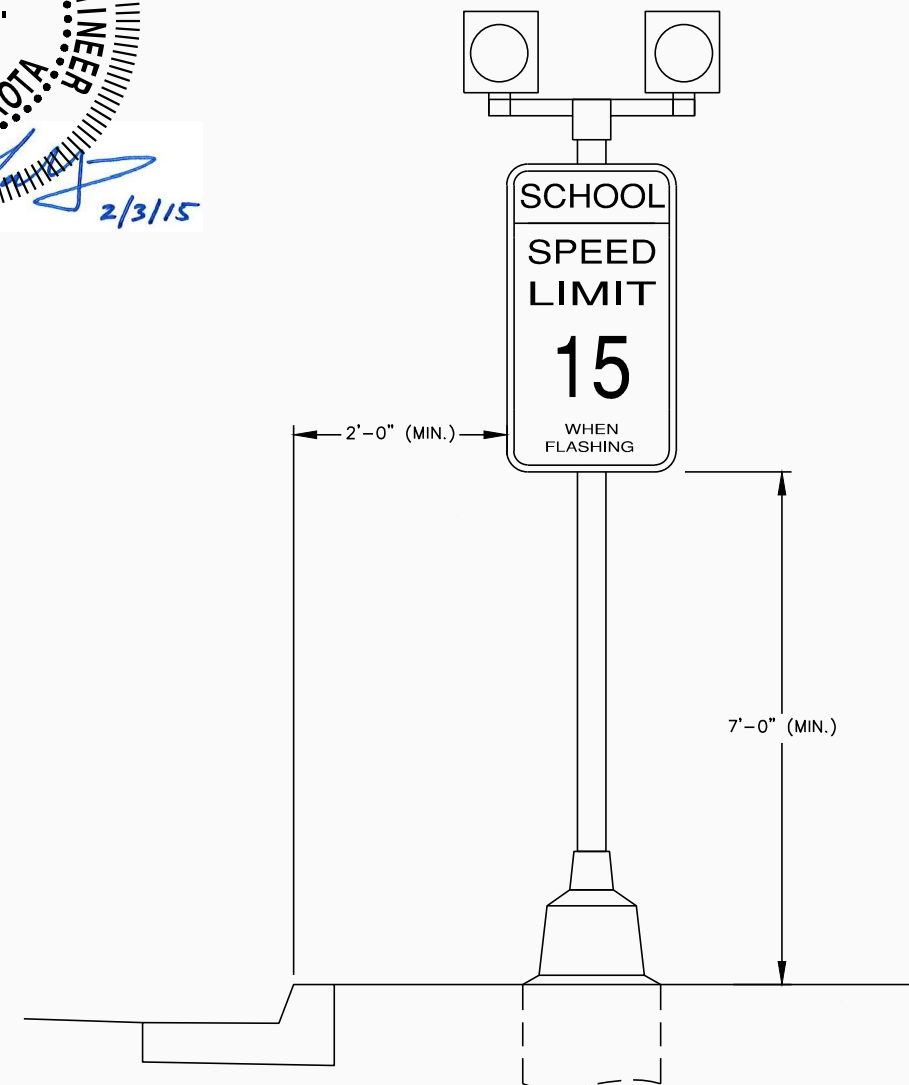
Costs of conduit and conduit bushings shown on footing detail shall be incidental to the footing bid item(s).

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.

September 6, 2013

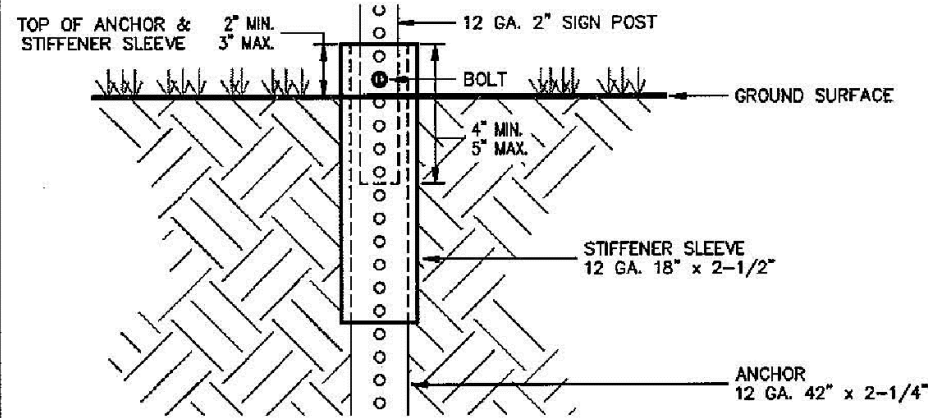
<i>Published Date: 4th Qtr. 2014</i>	<b>S D D O T</b>	<b>POLE FOOTING</b>	PLATE NUMBER 635.55
			Sheet 1 of 1



<i>Published Date: 4th Qtr. 2014</i>	<b>S D D O T</b>	<b>FLASHING BEACON POLE</b>	PLATE NUMBER SPECIAL
			Sheet 1 of 1

Plot Date: 2/3/2015 10:31:53 AM

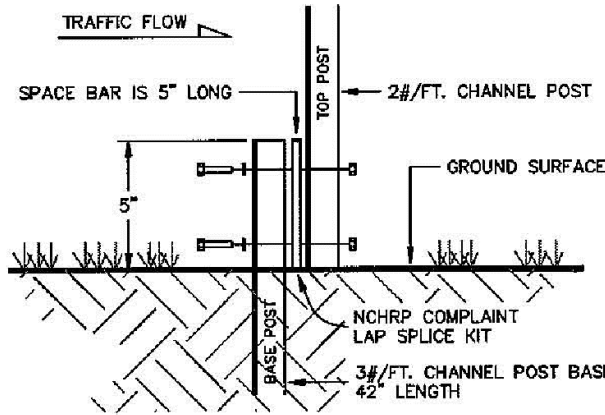
**PERFORATED TUBE POST (TELESPAR POST)**



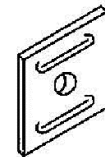
**NOTES**

BOLTS AND WASHERS USED FOR MOUNTING TRAFFIC SIGNS SHALL BE STAINLESS STEEL. FLAT WASHERS SHALL BE MIL SPEC. MS813.  
NUTS USED FOR MOUNTING TRAFFIC SIGNS SHALL BE A NYLOC (SELF-LOCKING) TYPE.  
SIGNS SHALL BE MOUNTED USING A PLASTIC / NYLON WASHER PLACED BETWEEN THE SIGN FACE AND THE METALLIC FLAT WASHER.  
LAG SCREWS USED TO MOUNT TRAFFIC SIGNS TO WOODEN POWER POLES SHALL BE ZINC COATED.  
ALL HARDWARE REQUIRED FOR MOUNTING THE SIGNS SHALL BE INCIDENTAL TO THE COST OF INSTALLING THE SIGNS.

**FLANGED CHANNEL POST (U-POST)**

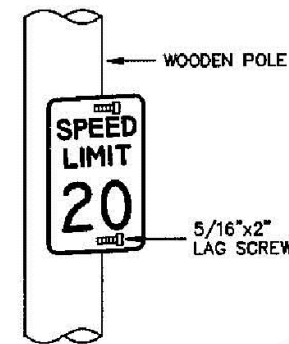


**SIGN SAVER PLATE 3\"/>**

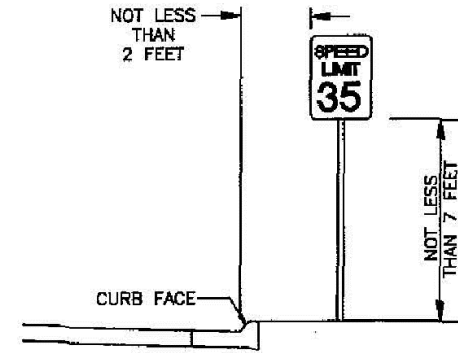


TO BE USED WHEN MOUNTING SIGNS ON CHANNEL POST.

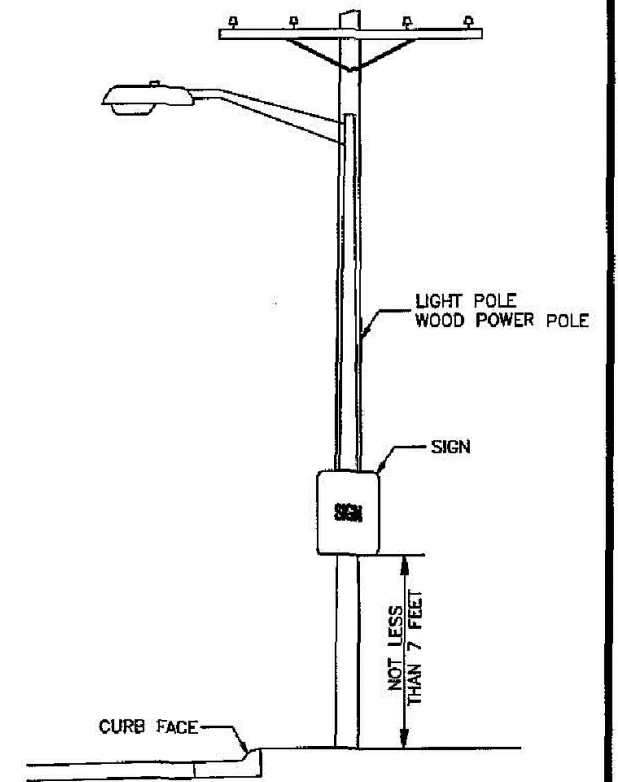
**SIGN MOUNTING ON WOODEN POWER POLE**



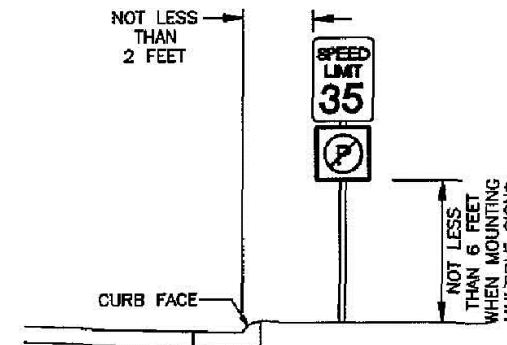
**ROADSIDE SINGLE SIGN**



**STREET LIGHT/WOODEN POWER POLE MOUNT**

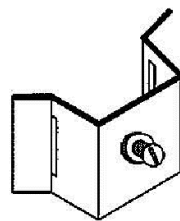
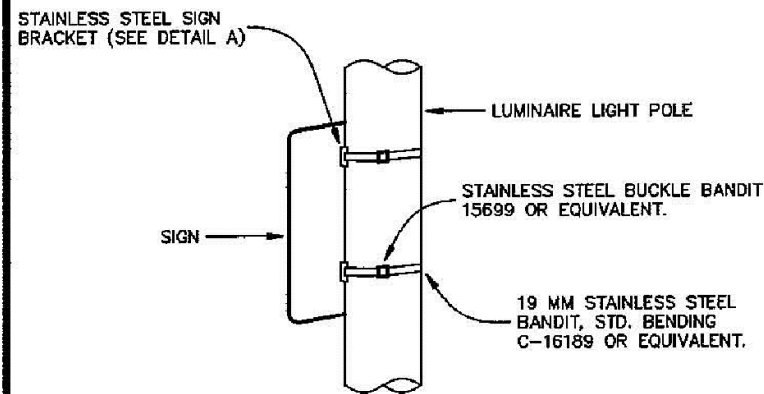


**ROADSIDE MULTIPLE SIGN**



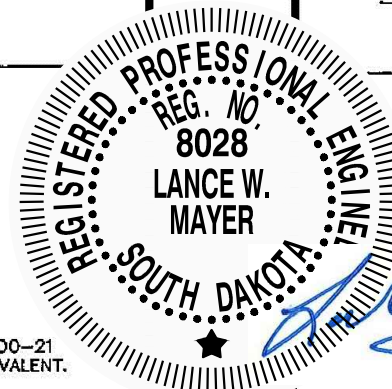
**STAINLESS STEEL BAND MOUNTING SYSTEM**

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

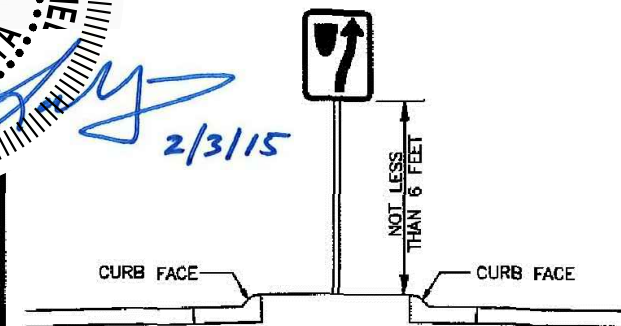


DETAIL A

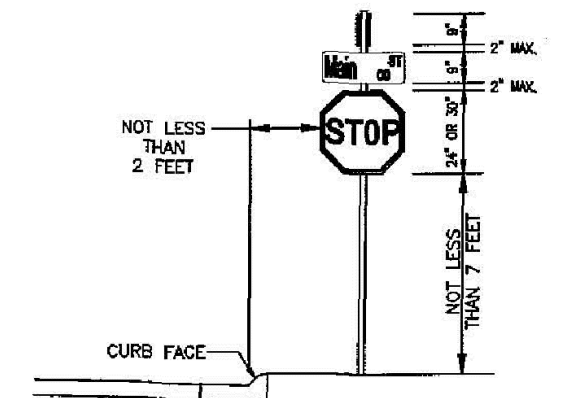
REVISED: NOVEMBER 2007



**SIGN ON NOSE OF MEDIAN**



**STOP/STREET NAME SIGNS**



REVISED: FEBRUARY 2008

SPECIFICATION REFERENCE NO. 635



CITY OF SIOUX FALLS ENGINEERING DIVISION SIGN MOUNT SPECIFICATIONS

PLATE NUMBER SPECIAL

**SIGN MOUNT SPECIFICATIONS**

SPECIFICATION REFERENCE NO. 635



CITY OF SIOUX FALLS ENGINEERING DIVISION HEIGHTS AND LATERAL LOCATIONS OF SIGNS FOR TYPICAL URBAN INSTALLATION

PLATE NUMBER SPECIAL

**HEIGHTS AND LATERAL LOCATIONS OF SIGNS FOR TYPICAL URBAN INSTALLATION**

P:\06\635\20\635\20\DWG\635\20 - DETAILS.DWG