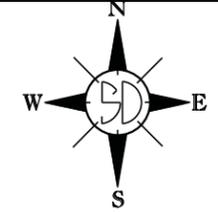


# SECTION L: SIGNAL PLANS

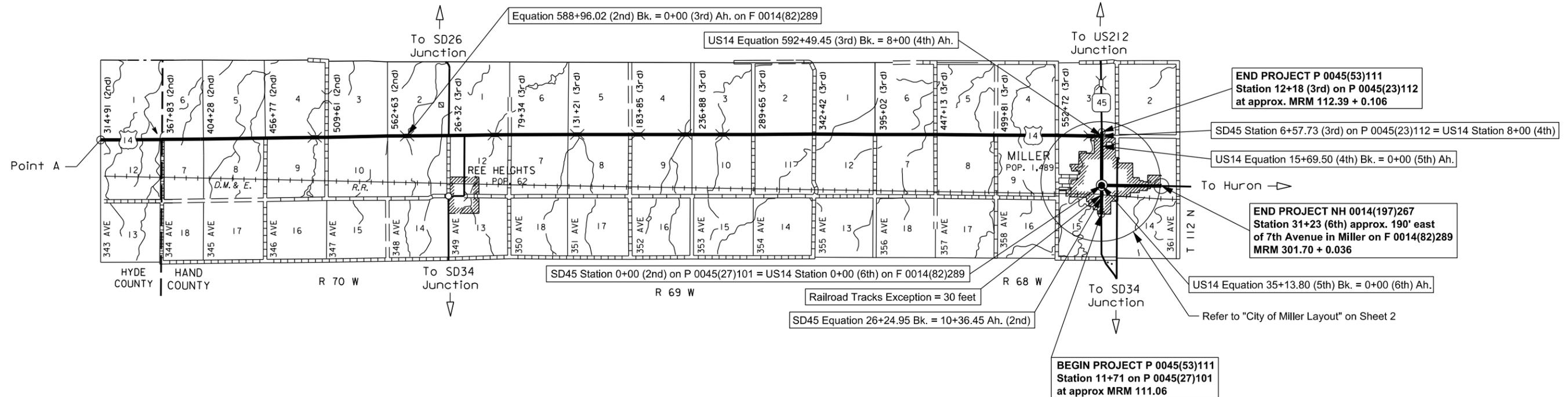
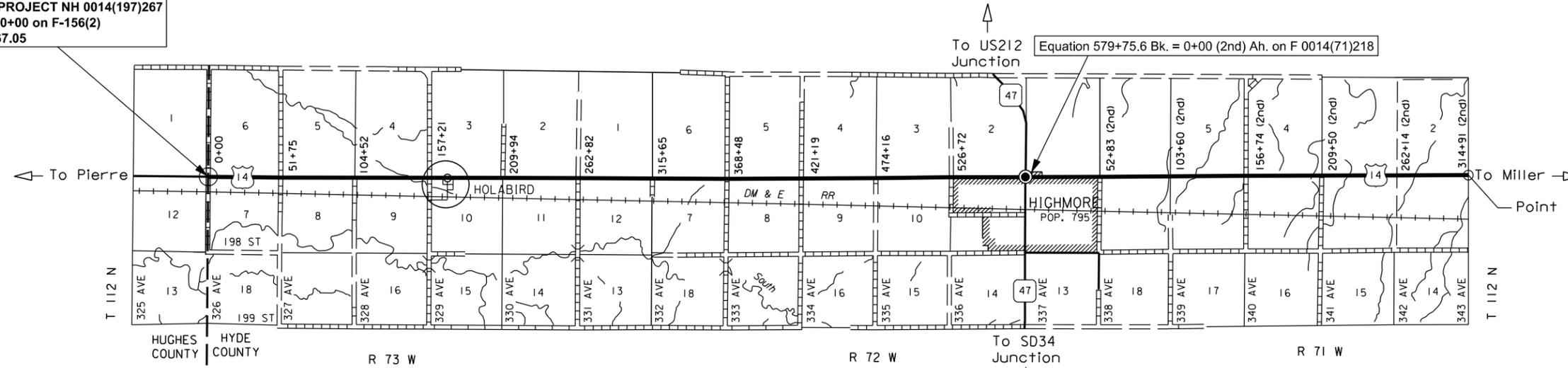
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0014(197)267 P 0045(53)111	L1	L15
Plotting Date: 01/21/2015			



## INDEX OF SHEETS

Sheet L1	Layout Map and Index
Sheet L2-L3	Estimate of Quantities & Plan Notes
Sheet L4	Table of Quantities
Sheet L5	Conduit Layout
Sheet L6	Signal Layout
Sheet L7	Curb Ramp Detail
Sheet L8	Ped Push Button Sign Detail
Sheet L9	Rapid Flashing Beacon Detail
Sheet L10	Wiring Diagram
Sheet L11 - L15	Standard Plates

BEGIN PROJECT NH 0014(197)267  
Station 0+00 on F-156(2)  
MRM 267.05



PLOT SCALE - 1"=33000.1

PLOTTED FROM - TRAB17882

PLOT NAME - 1

FILE - ... \SECTION\SECTION\_L\_TITLE.DGN

**ESTIMATE OF QUANTITIES NH 0014(197)267**

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0014(197)267 P 0045(53)111	L2	L15

Type 1 Detectable Warnings

Bid Item Number	Item	Quantity	Unit
110E1140	Remove Concrete Sidewalk	0.8	SqYd
635E5020	2' Diameter Footing	12.0	Ft
635E5302	Type 2 Electrical Junction Box	3	Each
635E5400	Electrical Service Cabinet	1	Each
635E5900	Pedestrian Push Button	2	Each
635E5980	Rectangular Rapid Flashing Beacon	2	Each
635E8120	2" Rigid Conduit, Schedule 40	335	Ft
635E8220	2" Rigid Conduit, Schedule 80	125	Ft
635E9016	1/C #6 AWG Copper Wire	1,335	Ft
635E9504	4/C #14 AWG Copper Tray Cable, K2	205	Ft
635E9512	12/C #14 AWG Copper Tray Cable, K2	205	Ft
651E0040	4" Concrete Sidewalk	30	SqFt
651E7000	Type 1 Detectable Warnings	10	SqFt

Product	Manufacturer
Detectable Warning Plate Cast Iron Plate	Neenah Foundry Company Neenah, WI 800-558-5075 <a href="http://www.neenahfoundry.com/">http://www.neenahfoundry.com/</a>
Detectable Warning Plate Cast Iron Plate	Deeter Foundry Lincoln, NE 800-234-7466 <a href="http://www.deeter.com/">http://www.deeter.com/</a>
Detectable Warning Plate Cast Iron Plate	East Jordan Iron Works, Inc. 301 Spring Street East Jordan, MI 49727 800-626-4653 <a href="http://www.ejiw.com">http://www.ejiw.com</a>
CAST-DWD Cast Iron Plate	Key 3 Casting (Northern Foundry) 555 West 25 <sup>th</sup> Street Hibbing, MN 55746 218-263-8871 <a href="http://key3casting.com">http://key3casting.com</a>

**SUPPLYING AS BUILT PLANS**

If the traffic signal system is constructed differently 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 Aberdeen Region Traffic Engineer. The as built plans may include conduit layouts, wiring diagrams, or other drawings depicting the changes from the original plans.

**SHOP DRAWING AND CATALOG CUTS SUBMITTALS**

The Contractor shall submit shop drawings and catalog cuts in accordance with Section 985 of the Specifications or in Adobe PDF format.

Adobe PDF submittals shall be sent to the following email addresses:

[Dan.Matertell@state.sd.us](mailto:Dan.Matertell@state.sd.us)  
[Pete.Longman@state.sd.us](mailto:Pete.Longman@state.sd.us)

**ON-SITE INSPECTION**

An on-site inspection of the rectangular rapid flashing beacon shall be conducted before acceptance of the project, once the beacon system is complete and operational. The on-site inspection shall be conducted by the Project Engineer and the Region Traffic Engineer, with the Contractor and City present.

**TABLE OF FOOTING DATA**

Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
S1 & S2	2' - 0"	6' - 0"	1' - 8"	44' - 3"	8-#7 x 5' - 6"

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

**TABLE OF SIDEWALK REMOVAL**

Station	Offset	to	Offset	Quantity (SqYd)
e(6 <sup>th</sup> ) 23+68.97	28.79' L		34.8' L	0.8

**TYPE 1 DETECTABLE WARNINGS**

Detectable warnings shall be in compliance with the Americans with Disability Act regulations.

The detectable warnings shall be installed according to the manufacturer's installation instructions.

A concrete thickness equal to the adjacent concrete sidewalk thickness and 2 inches of granular cushion material shall be placed below the Type 1 Detectable Warnings. When concrete is placed below the detectable warnings then the concrete thickness shall be transitioned at the rate of 1" per foot to match the adjacent concrete sidewalk thickness.

The detectable warnings shall be a brick red color for application in concrete curb ramps. Cast iron plates may be a natural patina (weathered steel).

When Type 1 Detectable Warnings are specified, the Contractor shall furnish and install only one of the products listed in the Type 1 Detectable Warnings table.

**TABLE OF TYPE 1 DETECTABLE WARNINGS**

Station	L/R	Quantity (SqFt)
e(6 <sup>th</sup> ) 23+68.97	28.79' L	10

**TABLE OF 4" CONCRETE SIDEWALK**

Station	Offset	to	Offset	Quantity (SqFt)
e(6 <sup>th</sup> ) 23+68.97	28.79' L		34.8' L	30..

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0014(197)267 P 0045(53)111	L3	L15

## INTERSECTION OF US14 & 6<sup>th</sup> Ave

Concrete placement operations should closely follow excavation procedures. The longer the excavations are left open the more likely caving may occur. If caving soils are encountered casing may be required to construct the footings.

### 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.12 of the MUTCD.

### PEDESTRIAN PUSH BUTTON

The pedestrian push button shall meet the following requirements:

#### **General Requirements:**

1. Shall be pressure activated with essentially no moving parts.
2. Shall be vandal resistant.
3. Shall activate with 3 lbs. force or less.
4. Shall have an LED that illuminates when the button is being pushed and remains illuminated until the pedestrian call is served.
5. Shall give a toned beep verification of button being pushed.
6. Shall have an operating life of 1 million actuations.
7. Shall be compatible with NEMA TS1 and TS2 controllers.

#### **Housing:**

1. Button housing shall be high impact cast or machined aluminum.
2. All switch electronics shall be sealed within the high impact cast or machined aluminum housing.
3. Shall have a gasket between the button housing and the mounting cup.

#### **Electrical:**

1. Operating Voltage: 15 to 24V DC or 12 to 24V AC.
2. On Resistance 10 Ohms (When the button is activated and placing a call).
3. Standby Current 10 micro amps typical.
4. Shall have built in surge protection.
5. Shall have a solid state electronic piezo switch rated for 1 million cycles with no moving plunger or moving electrical contacts.
6. Shall hold the call for a minimum of 5 seconds.
7. Requires only two conductors be run from the traffic signal cabinet to the push button to operate.

## RECTANGULAR RAPID FLASHING BEACONS (RRFB)

### 1. Beacon Dimensions and Placement in Sign Assembly:

Each RRFB shall consist of two rectangular-shaped yellow indications, each with an LED-array based light source. Each RRFB indication shall be a minimum of approximately 5 inches wide by approximately 2 inches high.

RRFB shall be located on the right and left hand side of the road for both directions of traffic.

The two RRFB indications shall be aligned horizontally, with the longer dimension horizontal and with a minimum space between the two indications of approximately seven inches (7 in), measured from inside edge of one indication to inside edge of the other indication.

The outside edges of the RRFB indications, including any housings, shall not project beyond the outside edges of the W11-2 sign.

The RRFB shall be located between the bottom of the pedestrian crossing warning sign and the top of the supplemental downward diagonal arrow

### 2. Beacon Flashing Requirements:

When activated, the two yellow indications in each RRFB shall flash in a rapidly alternating "wig-wag" flashing sequence (left light on, then right light on).

Each of the two yellow indications of the RRFB shall have 70 to 80 periods of flashing per minute and shall have alternating but approximately equal periods of rapid pulsing light emissions and dark operation. During each of its 70 to 80 flashing periods per minute, one of the yellow indications shall emit two rapid pulses of light and the other yellow indication shall emit three rapid pulses of light.

The flash rate of each individual yellow indication, as applied over the full on-off sequence of a flashing period of the indication, shall not be between 5 and 30 flashes per second, to avoid frequencies that might cause seizures.

The light intensity of the yellow indications shall meet the minimum specifications of the Society of Automotive Engineers (SAE) standard J595 (Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles) dated January 2005.

### 3. Beacon Operation:

The RRFB shall be normally dark, shall initiate operation only upon pedestrian actuation, and shall cease operation at a predetermined time of 28 seconds after the pedestrian actuation.

All RRFBs associated with a given crosswalk (including those with an advance crossing sign, if used) shall, when activated, simultaneously commence operation of their alternating rapid flashing indications and shall cease operation simultaneously.

A pedestrian instruction sign with the legend PUSH BUTTON FOR WARNING FLASHER WATCH FOR TRAFFIC should be mounted adjacent to or integral with each pedestrian pushbutton.

A small light directed at and visible to pedestrians in the crosswalk shall be installed integral to the RRFB or push button to give confirmation that the RRFB is in operation.

### 4. Other:

Except as otherwise provided above, all other provisions of the MUTCD applicable to Warning Beacons shall apply to RRFBs.

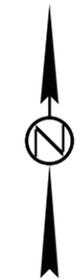
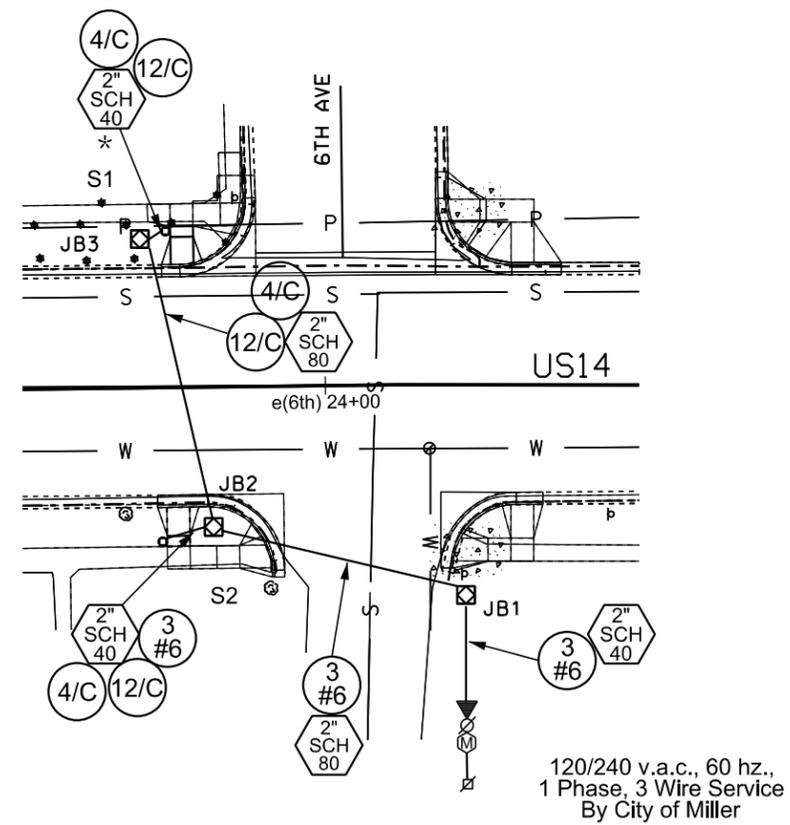
## BREAKAWAY BASES

A statement is required, signed by a Professional Engineer registered in the State of South Dakota, certifying that the breakaway base devices meet the design requirements, including breakaway and structural adequacy, of the "AASHTO Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals". The physical testing procedures outlined in Section 8 of the Fifth Edition of the Aluminum Association's "Specifications for Aluminum Structures" may be used to establish service limits for structural adequacy certification of aluminum breakaway transformer bases and frangible couplings. If requested, test data of production samples to support the certification shall be provided.



# CONDUIT LAYOUT

ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
○	2' DIAMETER FOOTING (S1-S2)	12	EACH
◻	TYPE 2 ELECTRICAL JUNCTION BOX (JB1-JB3)	3	EACH
▲	ELECTRICAL SERVICE CABINET	1	EACH
∅	GALVANIZED STEEL UTILITY POLE NOT A BID ITEM	1	EACH
Ⓜ	METER SOCKET NOT A BID ITEM	1	EACH
2" SCH 40	2" RIGID CONDUIT, SCHEDULE 40	335	FT
2" SCH 80	2" RIGID CONDUIT, SCHEDULE 80	125	FT
#6	1/C #6 AWG COPPER WIRE	1335	FT
4/C	4/C #14 AWG COPPER TRAY CABLE K2	205	FT
12/C	12/C #14 AWG COPPER TRAY CABLE K2	205	FT

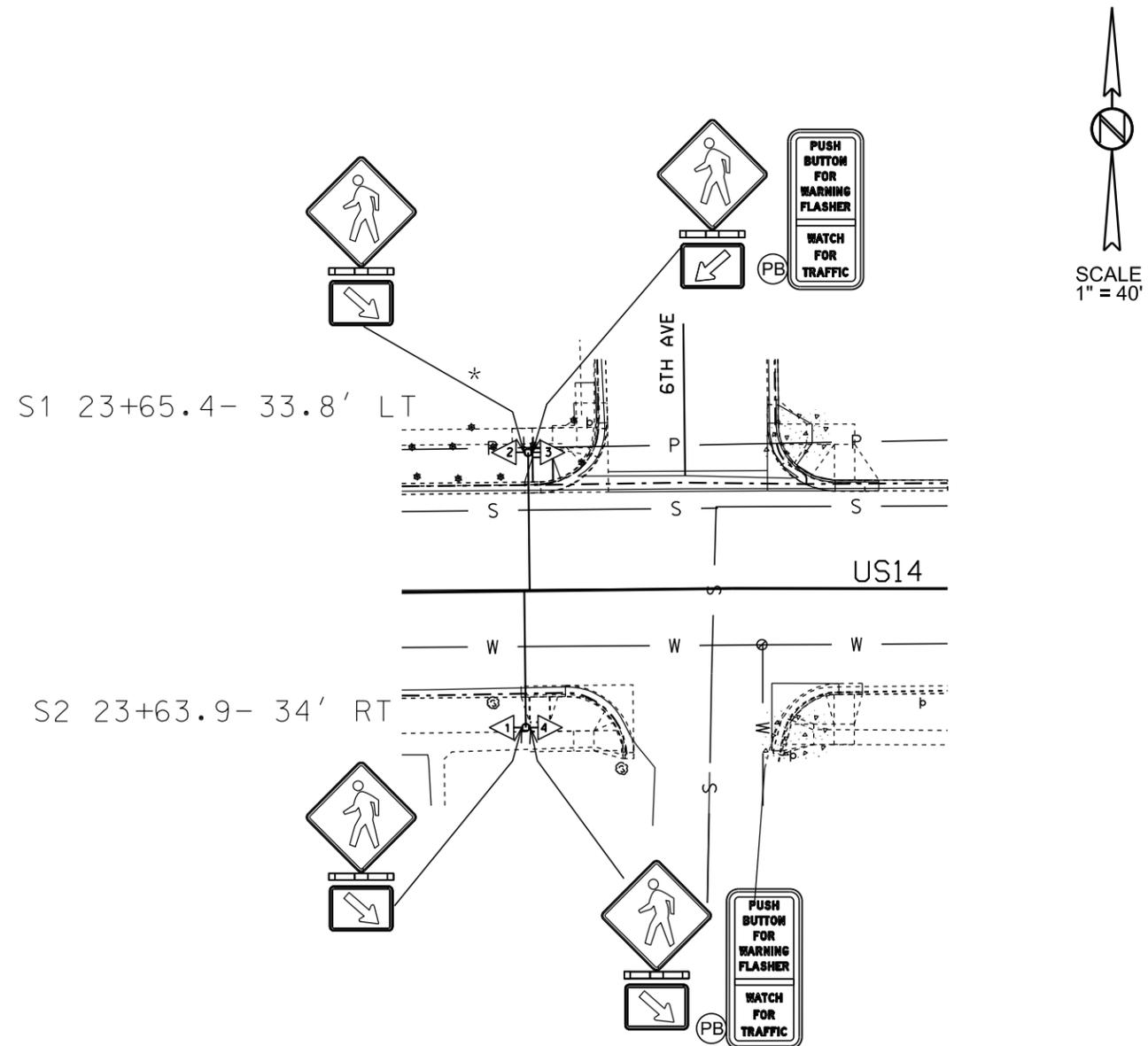


SCALE  
1" = 40'

# SIGNAL LAYOUT

## ESTIMATE OF QUANTITIES

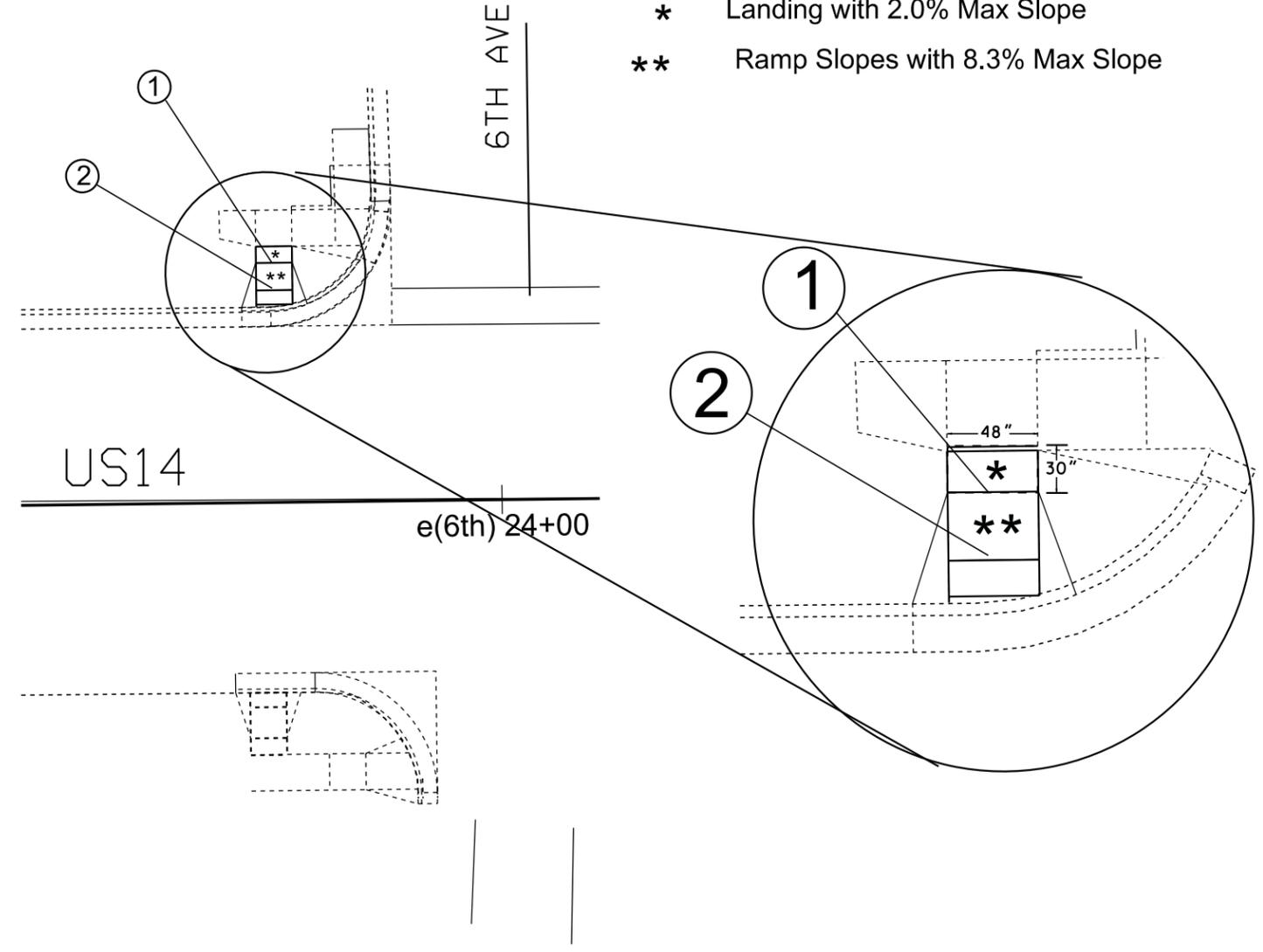
KEY	ITEM	EST QUANT	UNIT
(PB)	PEDESTRIAN PUSH BUTTON	2	EACH
○	4" PEDESTAL SIGNAL POLE (S1,S2) NOT A BID ITEM	2	EACH
◁	RECTANGULAR RAPID FLASHING BEACON (1,4 & 2,3) NOT A BID ITEM	4	EACH
⊠	PEDESTRIAN SIGN W11-2 (S1,S2) NOT A BID ITEM	4	EACH
⊠	PEDESTRIAN DIRECTIONAL SIGN W16-7pL/W16-7pR (S1,S2) NOT A BID ITEM	4	EACH
	PEDESTRIAN CROSSING SIGN (PA1,PA2) NOT A BID ITEM	2	EACH



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0014(197)267 P 0045(53)111	L7	L15
Plotting Date: 01/21/2015			

- ① e(6th) 23+68.97 - 32.55' L  
Begin Ramp Slope
- ② e(6th) 23+68.97 - 28.79' L  
Begin Detectable Warning  
and Type 2 Ramp Slope

- \* Landing with 2.0% Max Slope
- \*\* Ramp Slopes with 8.3% Max Slope



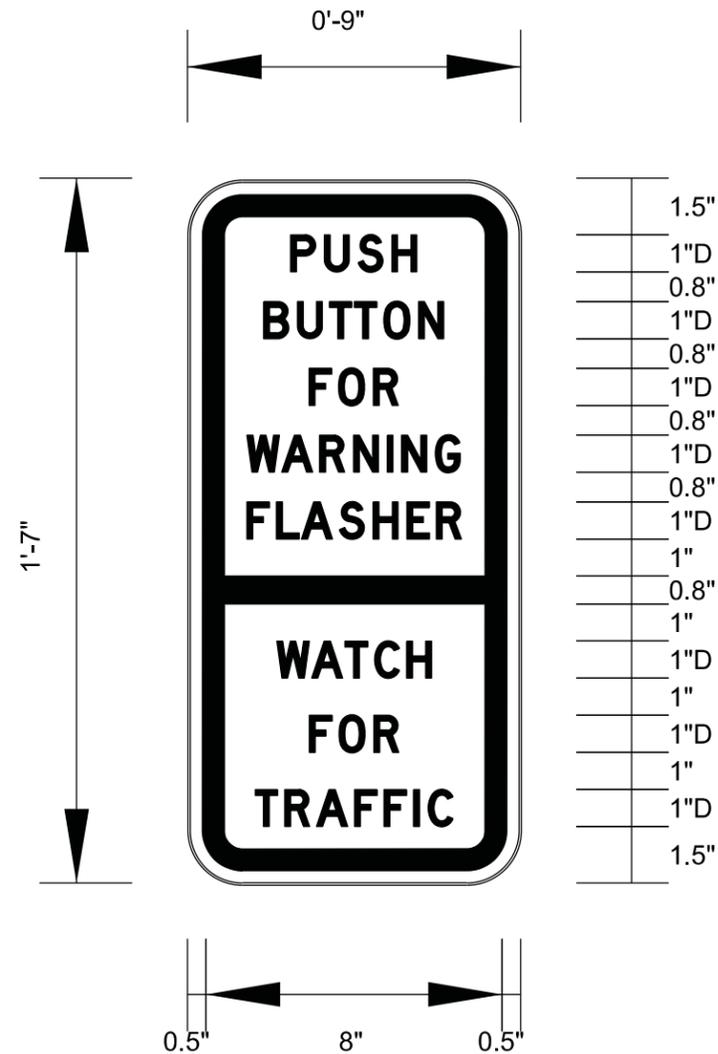
PLOT SCALE - 1:22

PLOTTED FROM - TRAB17882

PLOT NAME - 3

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# PEDESTRIAN PUSH BUTTON SIGN DETAIL



SIGN NUMBER	Ped Crossing
WIDTH x HEIGHT	0'-9" x 1'-7"
BORDER WIDTH	0.63"
CORNER RADIUS	1.13"
MOUNTING	Ground
BACKGROUND	TYPE: High Intensity COLOR: White
LEGEND/BORDER	TYPE: Vinyl COLOR: Black

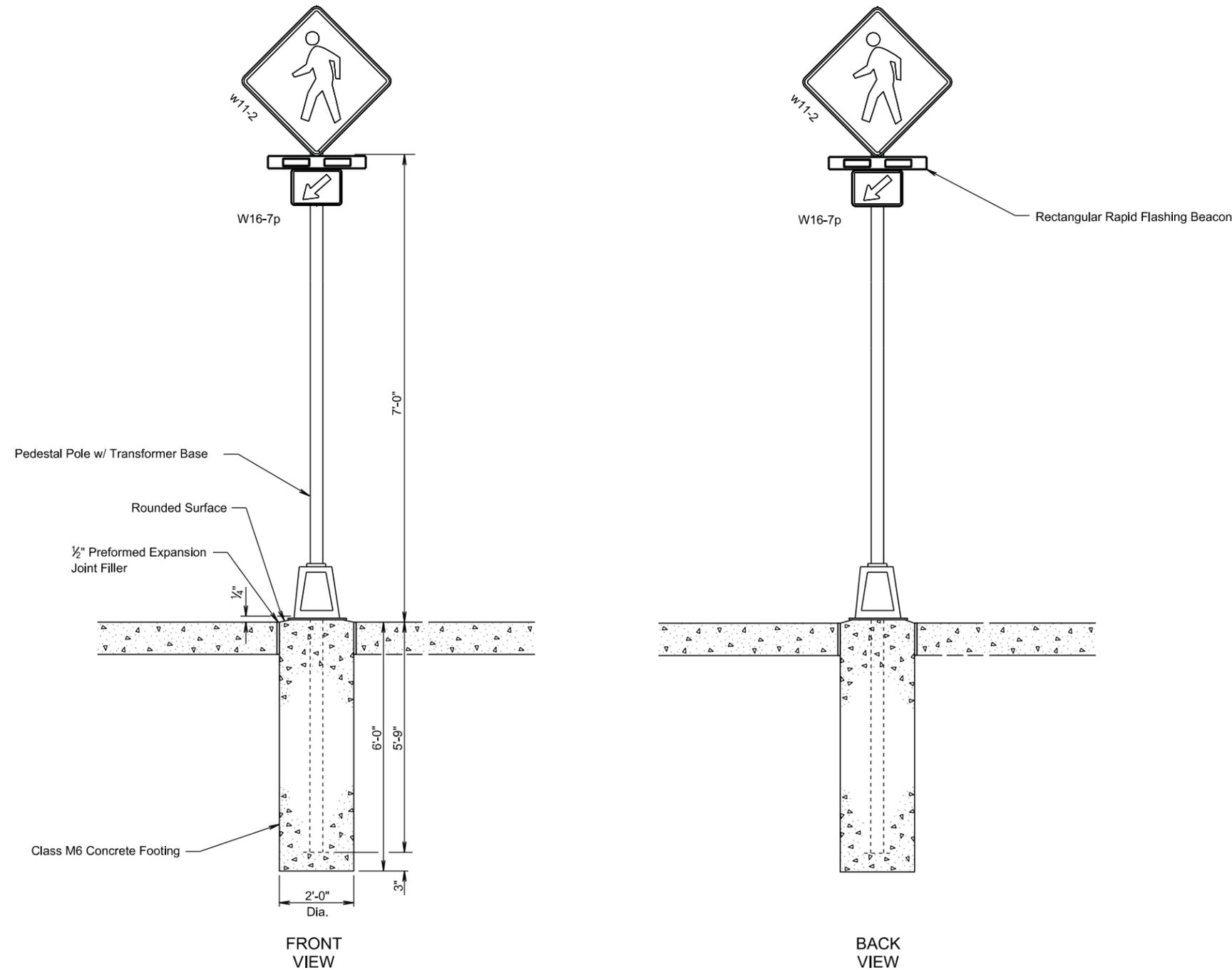
Dimensions are in inches.tenths. Word lengths and spaces between words are shown.

LETTER POSITIONS (X)											LENGTH	SERIES/SIZE
	P	U	S	H								D1
2.8	3.4				2.8						3.4	
	B	U	T	T	O	N						D1
2.1	4.9						2.1				4.9	
	F	O	R									D1
3.3	2.4			3.3							2.4	
	W	A	R	N	I	N	G					D1
1.6	5.8						1.6				5.8	
	F	L	A	S	H	E	R					D1
1.6	5.8						1.6				5.8	
	W	A	T	C	H							D1
2.4	4.2					2.4					4.2	
	F	O	R									D1
3.3	2.4			3.3							2.4	
	T	R	A	F	F	I	C					D1
1.8	5.4						1.8				5.4	

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0014(197)267 P 0045(53)1111	L9	L15
Plotting Date: 01/21/2015			

# SPECIAL DETAIL

## RECTANGULAR RAPID FLASHING BEACONS & SIGNS



**GENERAL NOTES:**

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

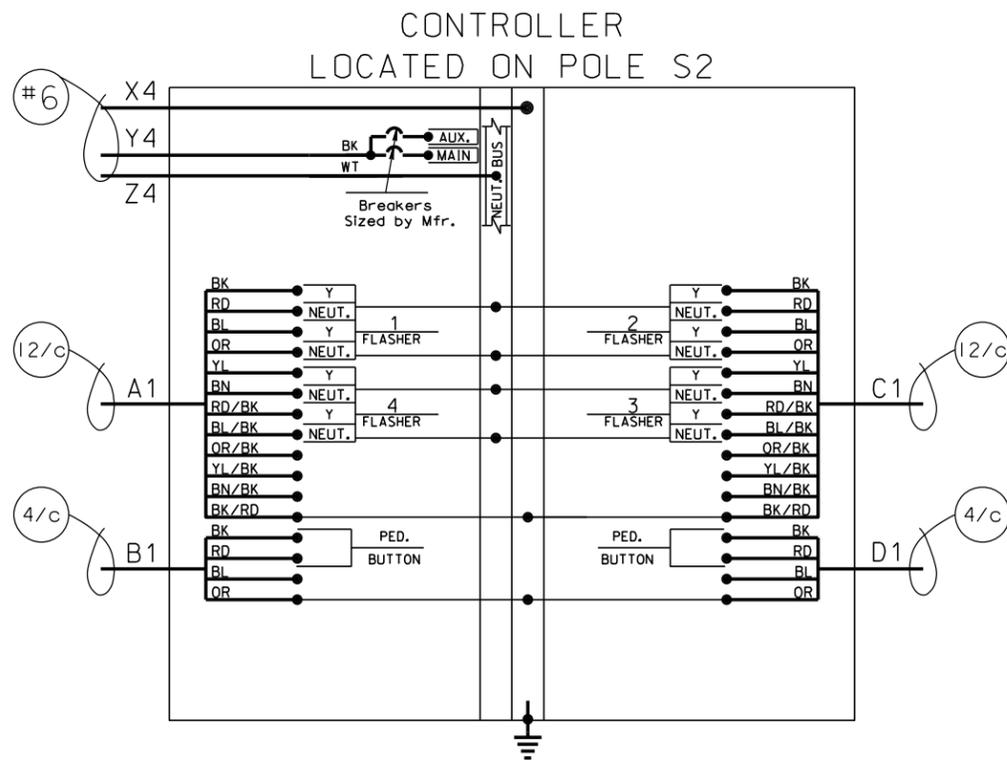
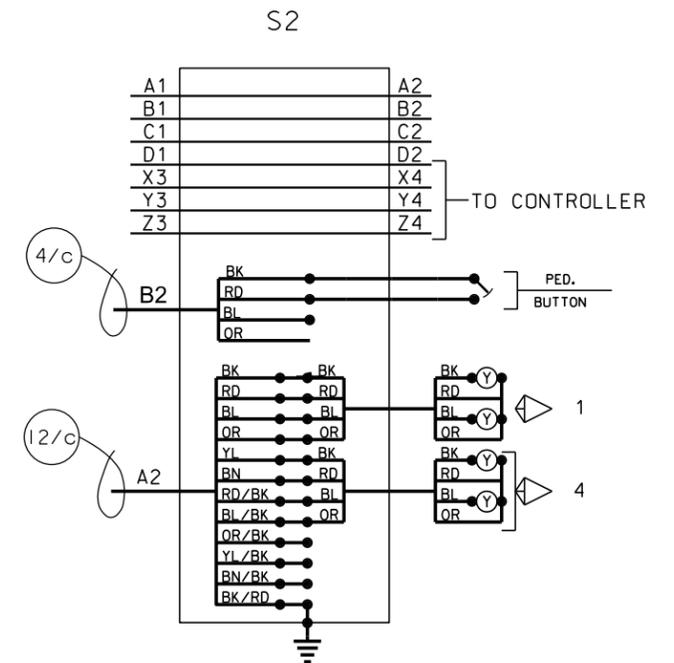
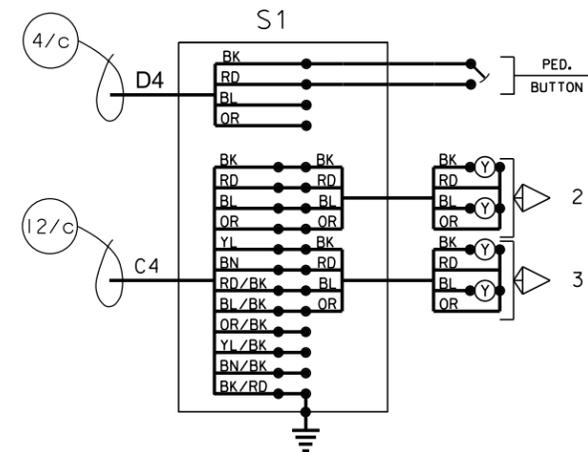
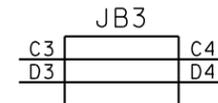
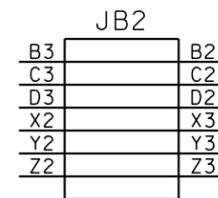
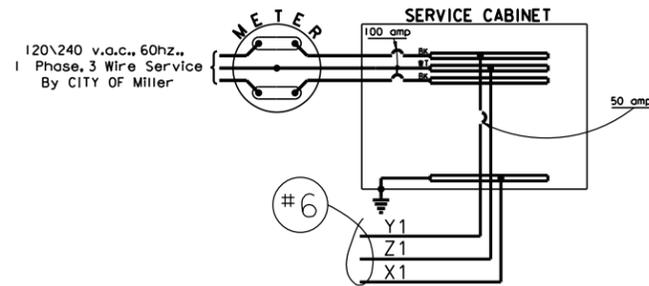
The signal controller shall be located on signal pole S2 below sign W-16-7p at a mounting height that may be reached by maintenance personnel without the use of a ladder or other climbing device.

All costs for furnishing and installing the pedestal signal pole, W11-2 and w16-7p signs (two each), pedestrian push button signs, controller, and rectangular rapid flashing beacons (one each direction) shall be incidental to the contract unit price per each for "Rectangular Rapid Flashing Beacon".

# WIRING DIAGRAM

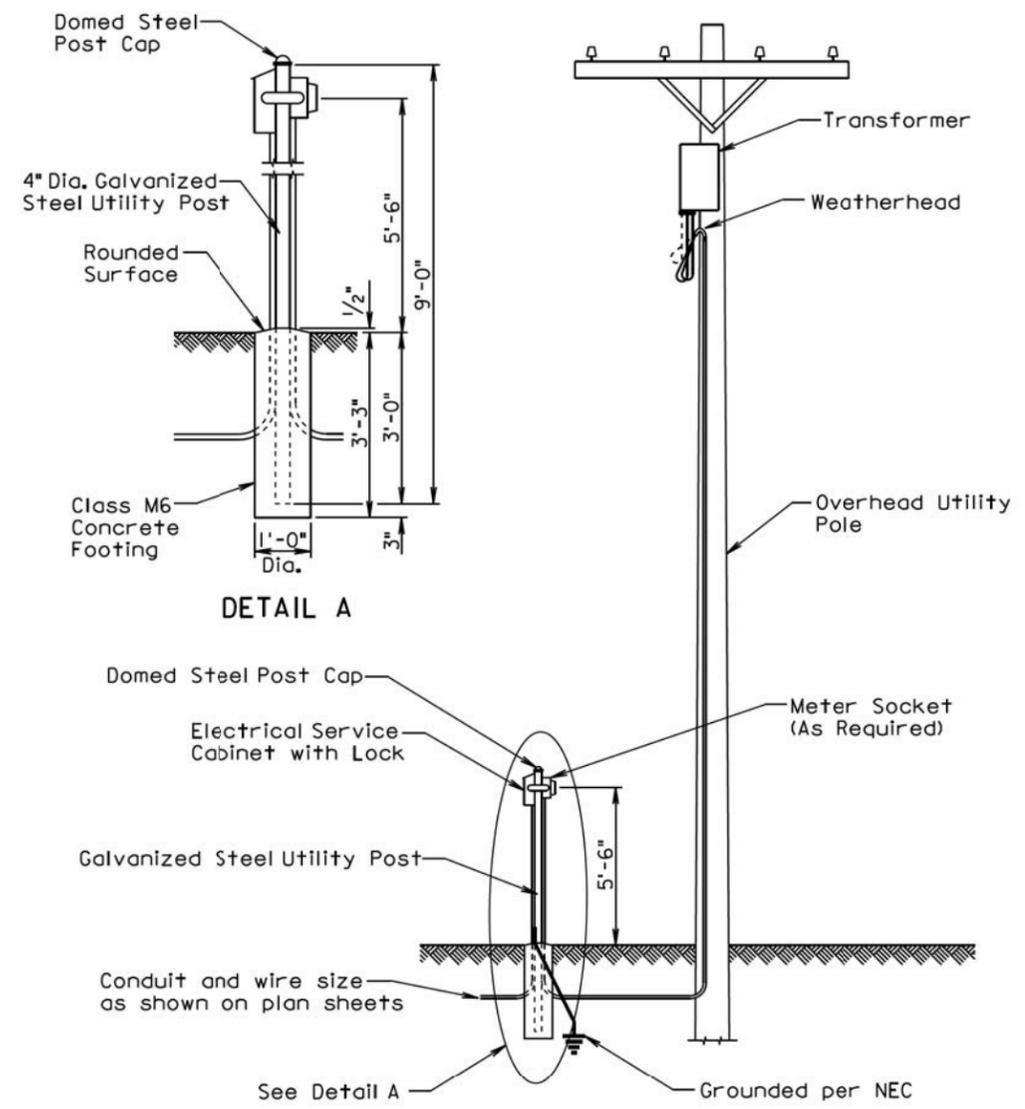
## US HWY 14 & E 6TH AVE

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



NOTE:  
Signal Conductors Shall Have Breakaway Disconnects Installed in the Signal Transformer Base.

Plotting Date: 01/21/2015



**GENERAL NOTES:**

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

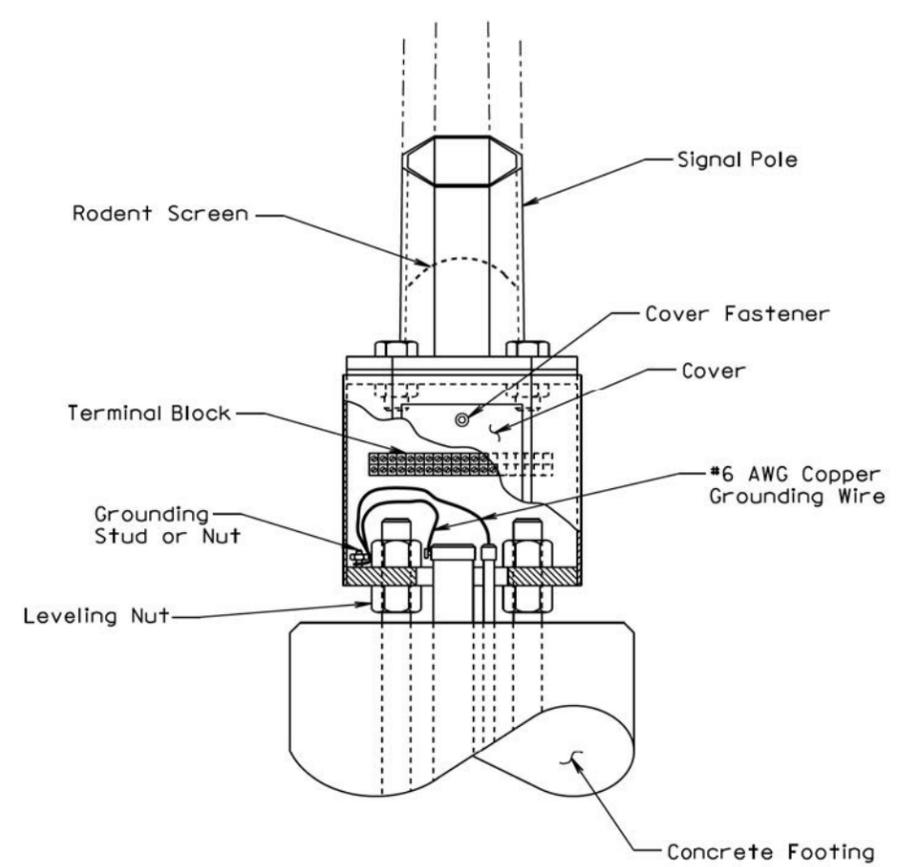
The 4" diameter galvanized steel utility post shall be 9' long and shall be in conformance with AASHTO Standard Specifications M181. The post shall be Type 1 and either Grade 1 or Grade 2. The domed steel post cap shall be in conformance with AASHTO Standard Specifications M181 and shall be Type 1.

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>
	Published Date: 4th Qtr. 2014	Sheet 1 of 1



**GENERAL NOTES:**

Base details are provided for example only and are not intended to be a complete design.

The Contractor shall furnish and install a rodent screen in the signal pole above the transformer base. The rodent screen shall be a galvanized steel mesh with a maximum opening size of 1/4 inch. The rodent screen shall be friction fitted or installed by other methods approved by the Engineer.

All costs for furnishing and installing the rodent screen including labor, equipment, and materials shall be incidental to the contract unit price per each for the corresponding signal pole bid item.

<b>S D D O T</b>	<b>TRANSFORMER SIGNAL POLE BASE</b>	PLATE NUMBER <b>635.50</b>
	Published Date: 4th Qtr. 2014	Sheet 1 of 1

PLOT SCALE - 1:200

-PLOTTED FROM - TRAB17882

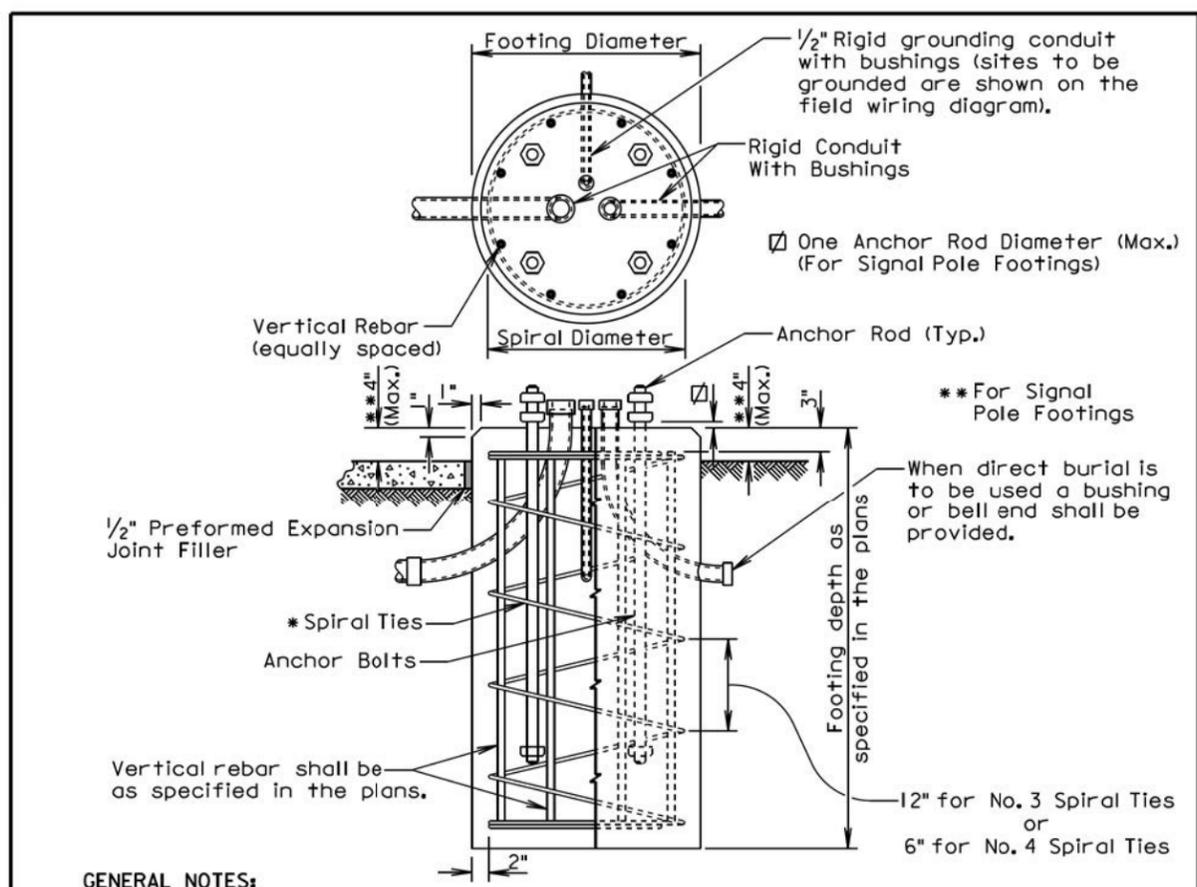
PLOT NAME - 1

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Plotting Date: 01/21/2015

PLOT SCALE - 1:200

PLOT NAME - 2

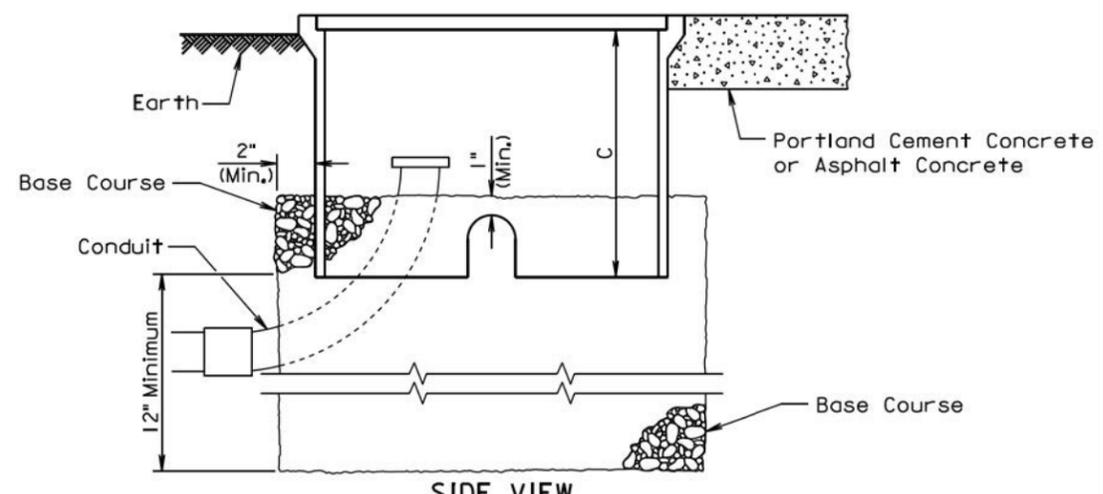
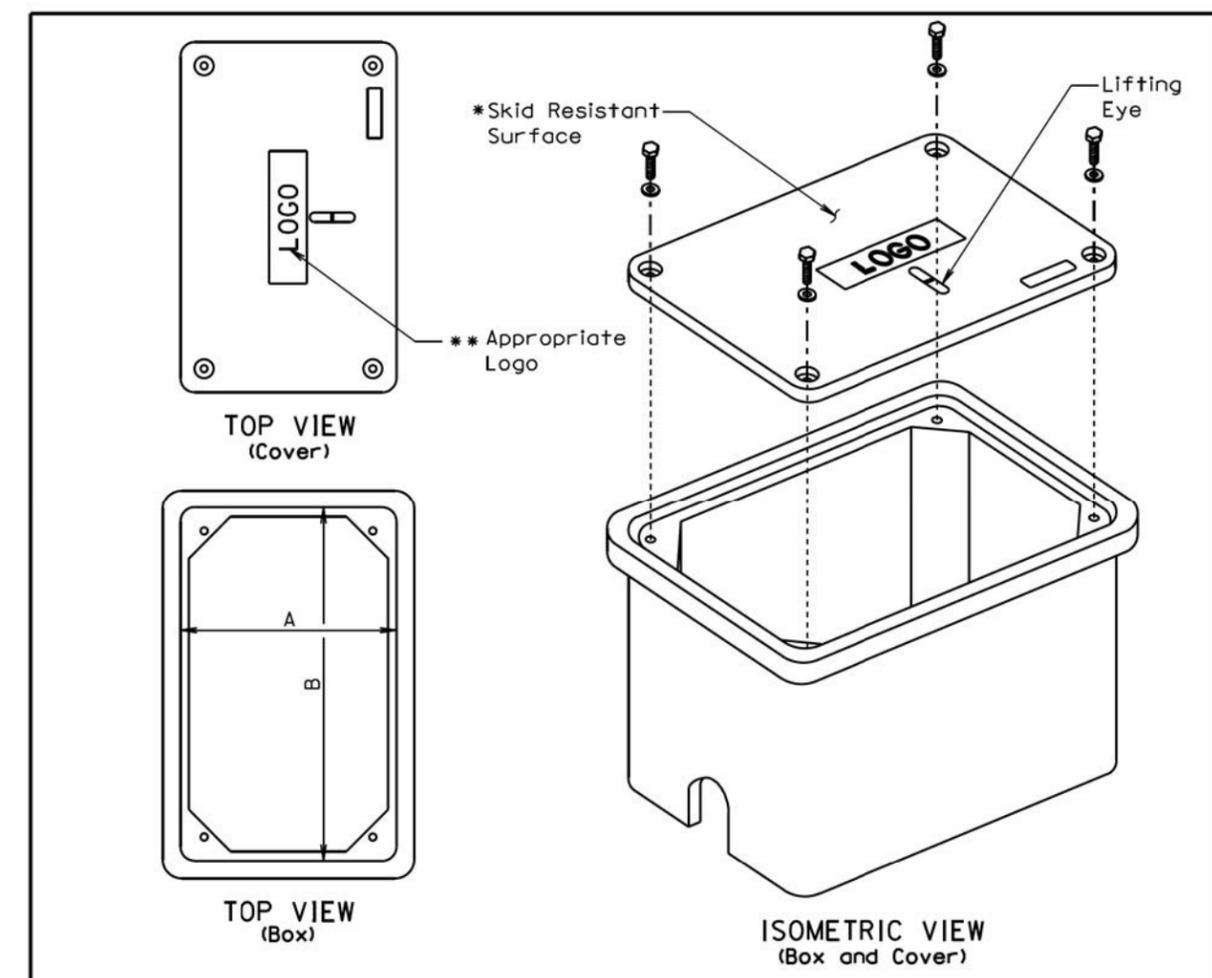


**GENERAL NOTES:**

- \* 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

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



**SIDE VIEW**  
(Electrical Junction Box Installation Details)

June 26, 2012

<b>S D D O T</b>	<b>ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4</b>	PLATE NUMBER <b>635.65</b>
	Published Date: 4th Qtr. 2014	Sheet 1 of 2

PLOTTED FROM - TRAB17882

FILE - ... \SECTIONAL\63555 & 63565.DGN

PLOT SCALE - 1:200

### ELECTRICAL JUNCTION BOX

TYPE	DESCRIPTION	DIMENSIONS		
		A	B	C
1	Open Bottom with Gasket	11"-15"	18"-21"	18" (Min.)
2	Open Bottom with Gasket	13"-18"	23"-28"	18" (Min.)
3	Open Bottom with Gasket	17"-22"	24"-30"	18" (Min.)
4	Open Bottom with Gasket	28"-33"	36"-48"	24" (Min.)

#### GENERAL NOTES:

The cover shall be gasketed with a minimum of two stainless steel bolts and washers.

The cover shall have a lifting eye.

\*The surface of the cover shall have a minimum wet and dry coefficient of friction value of 0.5 as determined by ASTM F 609.

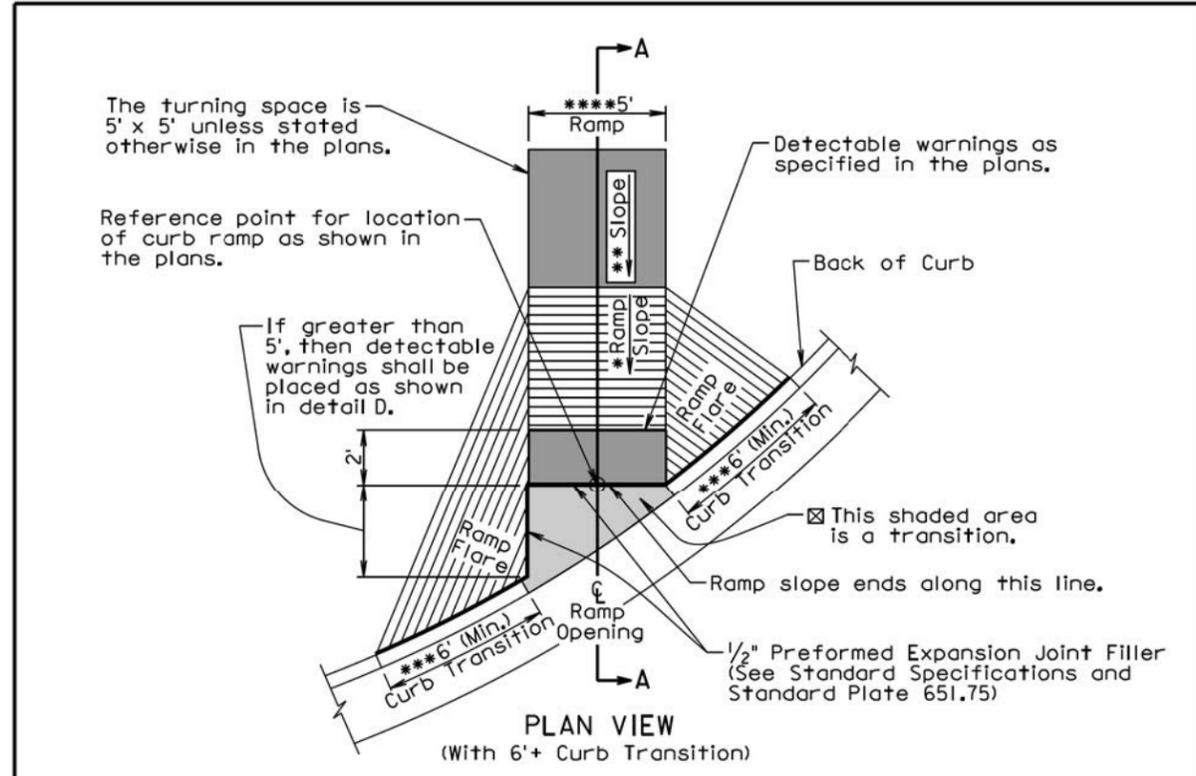
\*\*The cover of the junction box shall have the appropriate logo in one inch size letters and shall be recessed. When the junction box contains cables or wires for a traffic signal then the logo shall be "Signal". When the junction box contains lighting conductors then the logo shall be "Lighting".

The electrical junction boxes shall comply with the American National Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) 77 2007 Specification for Underground Enclosure Integrity. The loading requirement for all the electrical junction boxes shall be Tier 8 of ANSI/SCTE 77 2007.

The electrical junction boxes shall be UL listed.

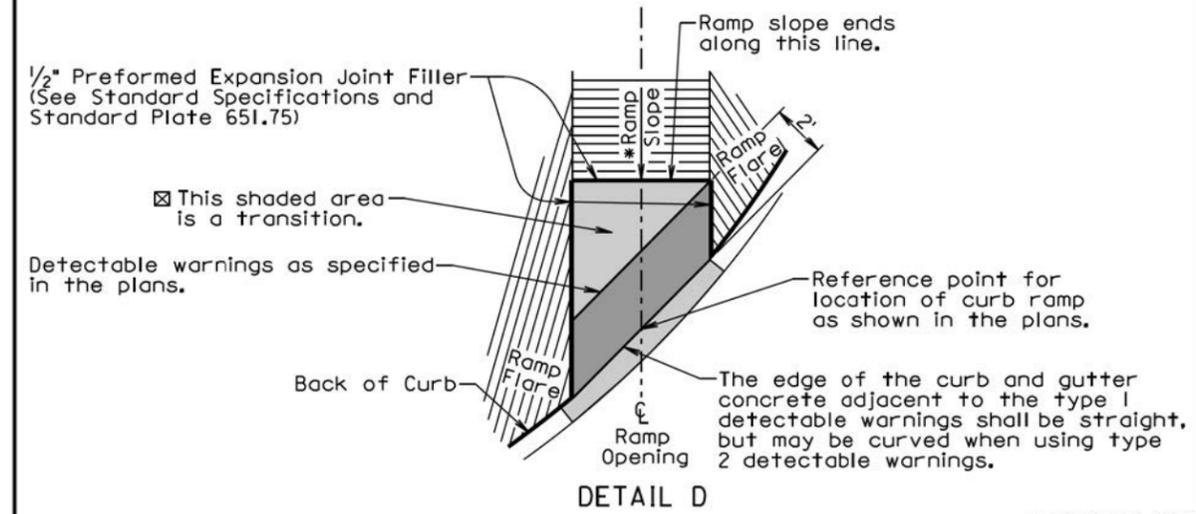
June 26, 2012

<b>S D D O T</b>	<b>ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4</b>	PLATE NUMBER <b>635.65</b>
	Published Date: 4th Qtr. 2014	Sheet 2 of 2



☒ The slope within the transition area shall not be steeper than a 20:1 (5%). The concrete within the transition shall be placed monolithic with the curb and gutter or fillet section concrete. The concrete thickness within the transition shall be the same as the curb and gutter or fillet section concrete thickness.

\*\*\*The curb transition shall be a minimum of 6' long, a maximum of 10' long, and the curb transition slope shall not be steeper than a 10:1 (10%) unless stated otherwise in the plans.

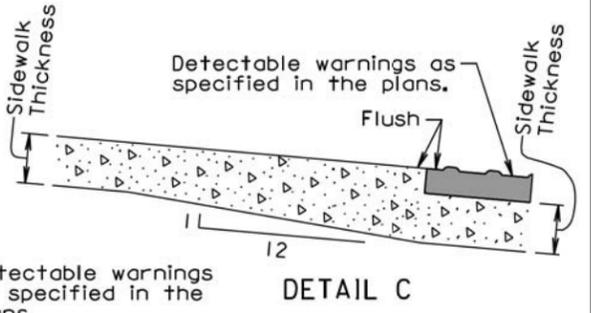
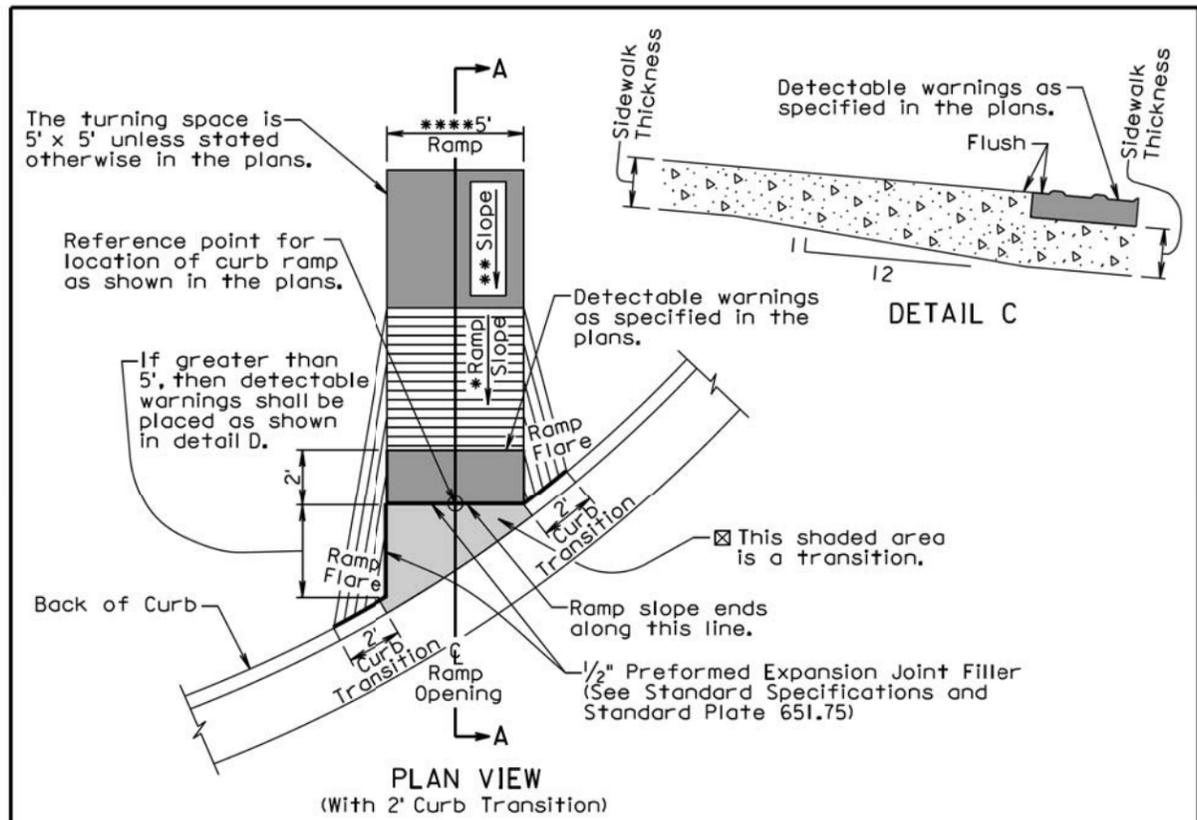


September 6, 2013

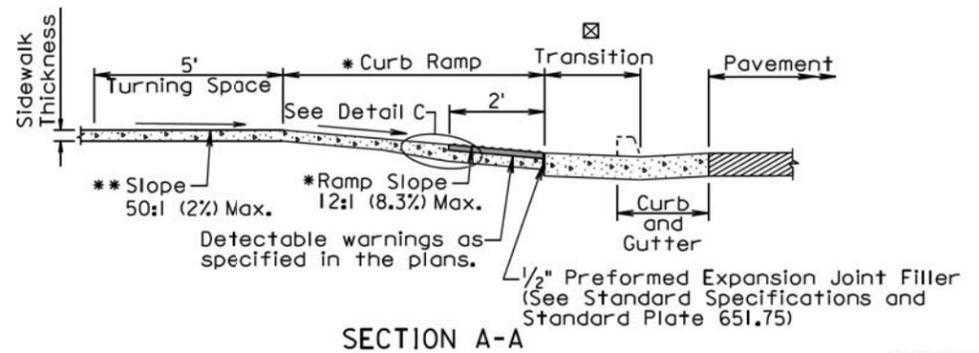
<b>S D D O T</b>	<b>TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)</b>	PLATE NUMBER <b>651.02</b>
	Published Date: 4th Qtr. 2014	Sheet 1 of 3

FILE ... \SECTIONAL\63565 & 65102.DGN

Plotting Date: 01/21/2015



- \* The ramp slope shall be 12:1 (8.3%) maximum. The ramp length shall not exceed 15' unless stated otherwise in the plans. Ramp slopes are designed at 12:1 (8.3%) unless stated otherwise in the plans.
- The cross slope of the ramp shall not be steeper than 50:1 (2%).
- \*\* The slope in the turning space shall not be steeper than a 50:1 (2%) in any direction of pedestrian travel.
- \*\*\*\* The ramp width is 5' unless stated otherwise in the plans.



September 6, 2013

<b>S D D O T</b>	<b>TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)</b>	PLATE NUMBER 651.02
		Sheet 2 of 3

Published Date: 4th Qtr. 2014

**GENERAL NOTES:**

- For illustrative purpose only, type 1 detectable warnings are shown in the drawings.
- The curb ramp depicted on this standard plate may be used with a PCC fillet section, with curved curb and gutter, or with straight curb and gutter. The curb ramp shall be placed at the location stated in the plans.
- Sidewalk shall not be placed adjacent to the ramp flares when a 2' curb transition is used unless shown otherwise in the plans.
- \* Care shall be taken to ensure a uniform grade on the ramp, free of sags and short grade changes.
- Surface texture of the ramp shall be obtained by coarse brooming transverse to the slope of the ramp.
- The normal gutter line profile shall be maintained through the area of the ramp.
- Joints shall be sawed or tooled into the concrete adjacent to the detectable warnings to alleviate possible corner cracking.
- Care shall be taken to ensure that the surface of the detectable warnings are clean and maintains a uniform color.
- The detectable warnings shall be cut as necessary to fit the plan specified limits of the detectable warnings. Cost for cutting the detectable warnings shall be incidental to the corresponding detectable warning bid item.
- There will be no separate payment for curb ramps. The curb ramp shall be measured and paid for at the contract unit price per square foot for the corresponding concrete sidewalk bid item. The square foot area of the detectable warnings shall be included in the measured and paid for quantity of sidewalk.
- The curb transitions and ramp opening shall be measured and paid for at the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used. The curb transitions and ramp opening shall be measured and paid for at the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.
- All costs for furnishing and installing the transition area at the base of the ramp shall be incidental to the contract unit price per foot for the corresponding curb and gutter bid item when curb and gutter is used and shall be incidental to the contract unit price per square yard for the corresponding PCC fillet section bid item when a PCC fillet section is used.
- The type 1 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 1 detectable warnings including labor, equipment, materials, and incidentals shall be paid for at the contract unit price per square foot for "Type 1 Detectable Warnings".
- The type 2 detectable warnings shall be measured to the nearest square foot. All costs for furnishing and installing the type 2 detectable warnings including labor, equipment, and materials, including adhesive, necessary sealant or grout, and necessary grinding shall be paid for at the contract unit price per square foot for "Type 2 Detectable Warnings".

September 6, 2013

<b>S D D O T</b>	<b>TYPE 2 CURB RAMP (DIRECTIONAL CURB RAMP)</b>	PLATE NUMBER 651.02
		Sheet 3 of 3

Published Date: 4th Qtr. 2014

PLOT SCALE - 1:200

-PLOTTED FROM - TRAB17882

PLOT NAME - 4

FILE - ... \SECTIONAL\65102 & 65102.DGN

Plotting Date: 01/21/2015

PLOT SCALE - 1:200

PLOT NAME - 5

FILE - ... \SECTION\65175 & 65175.DGN

**ELEVATION VIEW**  
(PCC Sidewalk without Boulevard)

**ELEVATION VIEW**  
(PCC Sidewalk with Boulevard)

**PLAN VIEW**

**GENERAL NOTES:**

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

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

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

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

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

August 31, 2013

S D D O T	PCC SIDEWALK	PLATE NUMBER 651.75
		Sheet 1 of 2

Published Date: 4th Qtr. 2014

**ELEVATION VIEW**  
(PCC sidewalk adjacent to asphalt concrete pavement)

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

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

**ELEVATION VIEW**  
(PCC sidewalk adjacent to PCC pavement)

**Detail A**  
(Use Appropriate Detail(s))

August 31, 2013

S D D O T	PCC SIDEWALK	PLATE NUMBER 651.75
		Sheet 2 of 2

Published Date: 4th Qtr. 2014

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