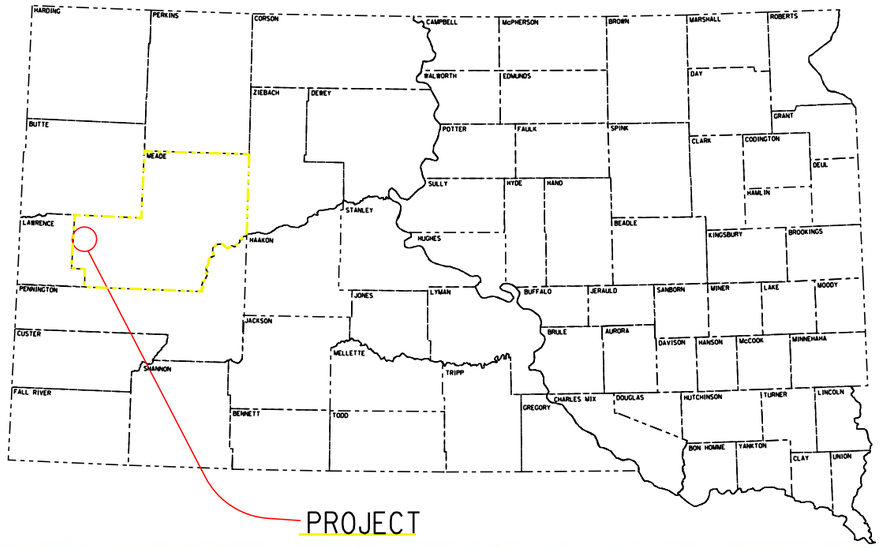


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT P 034–451
MEADE COUNTY

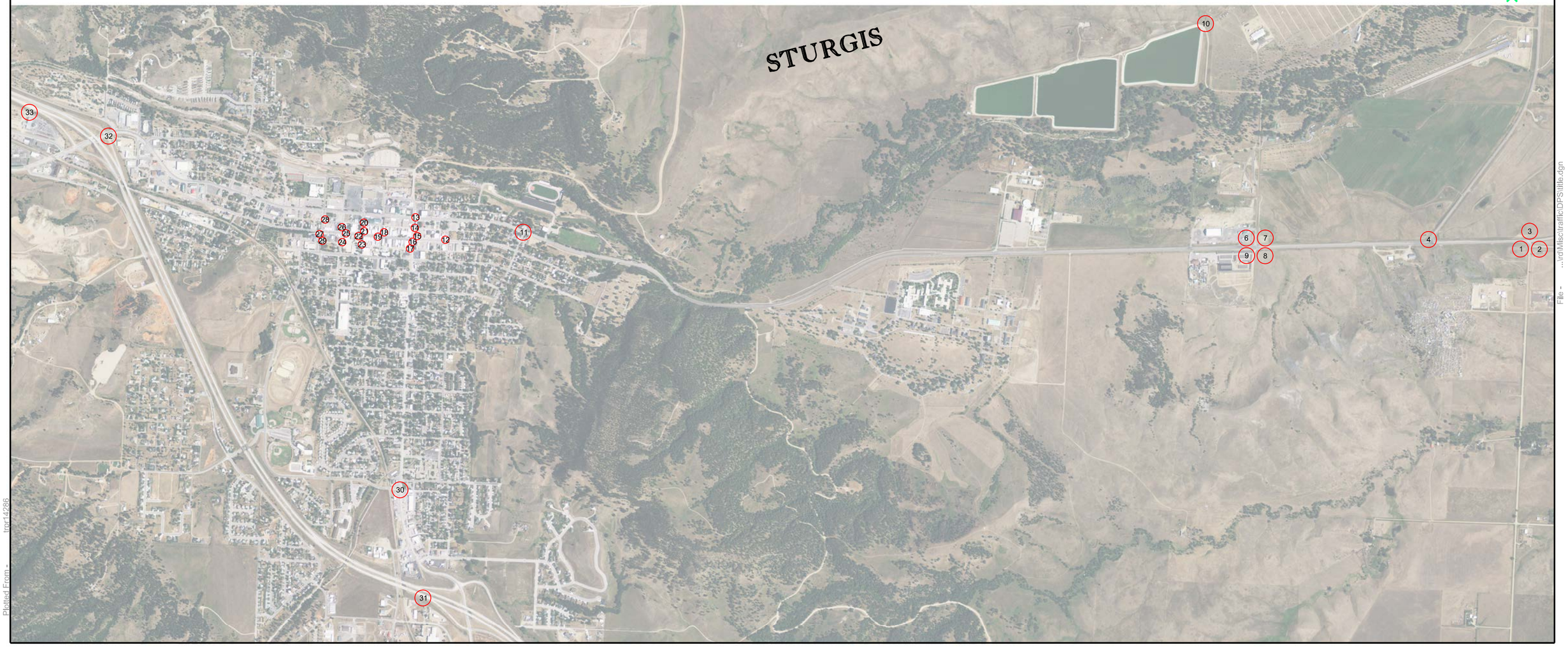
CAMERA SYSTEM

PCN 139R

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	1	107

Plotting Date: 04/02/2014

INDEX OF SHEETS



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ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
635E9924	24 Strand Fiber Optic Cable	2,650	Ft

SPECIFICATIONS

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

SUPPLYING AS BUILT PLANS

If the camera system is constructed differently than what is stated in the plans, the Contractor shall supply as built plans to the SDDOT Project Engineer and a copy shall be sent to the SDDOT Traffic Design 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 to the SDDOT Traffic Design Engineer in accordance with Section 985 of the SDDOT Standard Specifications or in Adobe PDF format.

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

Stacy.Bartlett@state.sd.us

ON-SITE INSPECTION

An on-site inspection of the camera system shall be conducted before acceptance of the project, once the cameras are installations are completed and operational. The on-site inspection shall be conducted by SDDOT and SDDCI with the Contractor, Sturgis City Manager and Sturgis Police Department present.

INCIDENTAL WORK

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

FIBER OPTIC CABLE INTERCONNECTION

The Contractor shall install fiber optic cable to allow the existing fiber network to transmit video imagery to the SDDOT Sturgis Maintenance Shop on a single mode fiber optic cable pair from multiple specified camera locations. Daisy chained single mode fiber cable links shall connect various locations of cameras by managed multiport Ethernet switches with fiber optic uplink ports.

Cameras Locations 13 – 33 shall have Gigabit Ethernet communication over singlemode fiber optic cable. Communication between Cameras 13- 33 to the SDDOT Sturgis Maintenance Shop shall be Gigabit Ethernet. Camera IP schemes shall be devised and programmed by SDBIT and SDDCI.

The existing fiber network consists of fiber optic cable owned by the SDDOT and City of Sturgis. The SDDOT network is underground from along SD34/Lazelle St from 8th St to Junction Ave, along Junction Ave from SD34/Lazelle St to Ballpark Rd, from the intersection of Junction Ave & Ballpark Rd to Exit 32, from Exit 32 to SDDOT Maintenance Building and from Exit 32 to Exit 30. The City network is underground from the Public Works Office to the intersection of 1st St and the alley between Main St & Sherman St and aerial from the intersection of 1st St and the alley between Main St & Sherman Street to the Sturgis Police Department.

Black Hills Power (BHP) poles are identified by numbers 1 – 30 on the plan sheets. The Contractor shall install the fiber optic cable on BHP poles 1-23. The Contractor shall coordinate the installation of the fiber optic cable with BHP and notify BHP 10 days before beginning fiber optic cable installation. The BHP contact is Dean Sigman at (605) 720-3304.

The Contractor shall determine the adequate length of fiber optic cable between poles. The distance between BHP Poles 1- 23 is listed in the Table of Span. An estimated length of fiber is given in the plans. The Contractor shall determine the method to adequately attach span cable to the support poles.

The Contractor shall install aerial fiber optic cable on BHP poles 1 – 18 from Location 14, BHP pole 1 on the west side of Junction Ave intersecting with the alley between SD34/Lazelle St and Main St west to the intersection with 4th St, Location 28, BHP pole 18.

The Contractor shall install aerial fiber optic cable on BHP poles 18 – 22 along the east side of 4th St both north and south of Location 28, BHP pole 18 on the east side of 4th St intersecting with the alley between SD34/Lazelle St & Main St.

The Contractor shall install aerial fiber optic cable on BHP poles 18 & 19 from camera Location 28 north to the SE quadrant of the intersection with SD34/Lazelle St. The Contractor shall run the aerial fiber optic cable down BHP pole 19 to ground level, covering the aerial fiber optic cable with U guard. The aerial fiber optic cable shall be hand trenched underground, to junction box JF6.

FIBER OPTIC CABLE INTERCONNECTION (continued)

The Contractor fusion splice the 24 single mode aerial fiber optic cable to the existing single mode fiber optic cable in JF6 or terminate in at the patch panel in the traffic signal controller at the intersection of SD34/Lazelle St & 4th St. The existing fiber optic cable is 48 strand single mode. 8 strands of the existing 48 strand single mode fiber optic cable are terminated at a patch panel in the traffic signal controller.

The Contractor shall fusion splice the fiber optic cable at BHP poles 6, 13 & 18 to continue fiber path camera locations 18, 25 & 28.

The Contractor shall install aerial fiber optic cable on BHP poles 18, 20 - 22 & from Location 28 south to the NE quadrant of the intersection with the alley between Main St & Sherman St. The Contractor shall install the aerial fiber optic cable on the BHP pole 22 to ground level, covering the aerial fiber optic cable with U Guard. The existing City aerial 12 strand single mode fiber optic cable runs east to 1st St and west into the Sturgis Police Department. The Contractor shall locate the conduit entering the Sturgis Police Department at the intersection of 4th St and the alley between Main St & Sherman St and continue the fiber optic run along 4th St into the Sturgis Police Department.

The conduit entering the Sturgis Police Department is owned by Midcontinent. The Contractor shall notify Midcontinent 5 days before installing fiber optic cable in the conduit entering the Sturgis Police Department. The Midcontinent contact is Terry Hofer at (605) 209-2113.

The Contractor shall splice the City's existing fiber optic network to terminating fiber optic pairs at Camera Locations 23, 24 & 29 for video imagery transmission. Fiber is coiled on BHP poles 23, 25 & 29 and shall be used for slack when terminating the fiber ends at Camera Locations 23, 24 & 29. The City fiber optic cable is 12 strand single mode and one pair (2 strands) may be used for the video imagery transmit.

The Contractor shall coordinate the installation of the span cable and fusion splicing of existing aerial fiber optic cable with the City and notify the City 10 days before installing fiber optic cable in the conduit entering the Sturgis Police Department. The City contact is Rick Bush at (605) 490-1152.

Fiber splicing shall be in accordance with the manufacturer's recommendations. Splices shall be of the fusion type. Fiber splicing shall be in an environmentally safe weatherproof and dust protected containment.

The Contractor shall indicate to the Project Engineer or Traffic Design Engineer and label which single mode fiber optic cable pair shall be used in the existing fiber optic network to daisy chain transmit video imagery to the SDDOT Sturgis Maintenance Shop.

All costs for materials and equipment to connect new fiber optic cable to existing fiber optic cable, splice fiber optic cable, coordinating installs, labor, and testing required to and transmit video imagery from Camera Locations 13-33 to the SDDOT Sturgis Maintenance Shop on fiber optic cable shall be incidental to the contract unit price per each for "24 Strand Fiber Optic Cable".

FIBER OPTIC CABLE

The fiber optic cable shall be a self-supporting cable that can be installed in an aerial environment without the use of a messenger. The self-supporting cable shall be Figure-8 type.

The fiber optic cable shall be a 24 strand single mode fiber optic cable with a each buffer containing 12 fibers. The buffer tubes shall be color coded according to EIA/TIA specifications.

Fiber optic cable shall meet the latest applicable EIA/TIA Specifications and REA PE-90 Specifications for single mode. The fiber optic cable shall be rated for outdoor use.

Singlemode optical cable shall have the following optical and physical characteristics:

1. Cladding diameter of 125µm +/- 2µm.
2. Zero dispersion slope shall be 0.092 ps/ (nm^2●km) or less.
3. Zero dispersion wavelength, 1300 to 1322 nm.
4. Cutoff wavelength, less than 1250 nm.
5. Maximum attenuation at 1310 nm shall be 0.4 dB per Kilometer.
6. The outside diameter shall be less than 22.1 nm.
7. One factory fusion splice per kilometer per fiber shall be allowed.

The fiber optic cable shall have a seven-core configuration, dielectric central strength member, and thermoplastic tubes. The minimum bending radii of the cable shall be 209.5 mm under a static load and 419.1 mm during installation. The installation tensile load rating shall be 2.7 kPa.

The cable core interstices shall be filled with water blocking material. If a gel compound is used, the gel compound shall be readily removable with a nontoxic solvent.

The fiber optic cable shall be installed in accordance with the manufacturer's recommendations and the NEC. Slack cable shall be left in each camera housing enclosure, traffic signal cabinet, junction box 6 at the intersection of SD34/Lazelle St & 4th St and inside the Sturgis Police Department. Fiber switch cabinets shall have 2' of slack, junction box 6 shall have 20' of slack and the Sturgis Police Department shall have 50' of slack. Slack cable shall be coiled and tied in a minimum of three places around the coil. No splices shall be allowed in the fiber optic cable except at the locations specified. The contractor shall test the fiber optic cable after the installation to verify the integrity of the fiber for video transmission to SDDOT Sturgis Maintenance Shop.

The payment for supplying and installing fiber optic cable and fiber optic cable mounting and attachment hardware and testing the fiber optic cable for video transmission shall be incidental to the contract unit price per foot for "24 Strand Fiber Optic Cable".

TABLE OF SPAN

BHP POLE NUMBER	TO	BHP POLE NUMBER	DISTANCE (FT)
1 (Camera 14 Location)	-	2	104
2	-	3	96
3	-	4	101
4	-	5	117
5	-	6 (fusion splice)	106
6 (fusion splice)	-	7	96
6 (fusion splice)	-	23	75
7	-	8A	37
8A	-	8B	53
8B	-	9	98
9	-	10 (Camera 20 Location)	79
10 (Camera 20 Location)	-	11	102
11	-	12	109
12	-	13 (fusion splice)	99
13 (fusion splice)	-	14	113
14	-	15	89
15	-	16A	84
16A	-	16B	23
16B		17	59
17	-	18 (Camera 28 Location & fusion splice)	59
18 (Camera 28 Location & fusion splice)	-	19	56
18 (Camera 28 Location & fusion splice)	-	20	119
20	-	21	117
21	-	22	325

The Contractor shall coordinate the installation of fiber optic cable attachment and mounting hardware and splice containments on BHP Poles with BHP. The BHP contact is Dean Sigman at (605) 720-3304. All costs for fiber optic cable attachment and mounting hardware and coordinating installs shall be incidental to the contract unit price per each for "24 Strand Fiber Optic Cable".

FIBER OPTIC CABLE TERMINATION

The Contractor shall terminate all fiber optic strands at each Camera Locations 14, 18, 20, 23, 24, 25, 28, 29, 32 (18 strands), the Sturgis Police Department (14 strands) and at the SDDOT Sturgis Maintenance Shop (2 strands) with LC single mode connectors. The SDDOT Maintenance Building is where the video imagery shall be transferred.

Fiber optic cable shall be terminated in camera housing enclosures and traffic signal controllers with a wall mounted distribution enclosure or patch panel. The distribution enclosure or patch panel shall be dust and moisture resistant. The size of the distribution enclosure or patch panel shall be adequate for the number of fibers installed. The distribution enclosure or patch panel shall be mounted in the camera housing where it does not interfere with normal cabinet maintenance. The fiber optic cable shall be prepared in accordance with the manufacturer's recommendations and have sufficient length to reach the fiber switch.

The camera housing shall be supplied and installed by DCI. The Contractor shall provide a temporary weatherproof enclosure for the terminated fiber ends if the fiber ends are terminated before the camera housing is installed. The Contractor shall coordinate the termination of fiber optic ends with DCI. The DCI contact is Chad Carpenter at (605) 520-2854.

All work involved in the termination connections of the fiber optic strands shall be incidental to the contract unit price per foot for "24 Strand Fiber Optic Cable".

CABLE LABELS

Fiber optic cable and Cat-5 cable shall be identified in fiber switches, traffic signal controllers and pole bases. Labels shall be wrapped around cable to indicate the camera that it is connected to. Labels shall be self-adhesive vinyl cloth with a preprinted legend.

FIBER SWITCH – *provided for informational purposes only*

SDDOT shall supply managed Ethernet switches with Gigabit fiber optic uplink ports at Camera Locations 13, 14, 15, 17, 18, 20, 23, 24, 25, 28, 29, 30, 31, 32 and 33 and in the Sturgis Police Department. The fiber switches shall be managed by Milestone video management software.

The fiber switch will be housed in a camera enclosure. The fiber switch size shall not exceed 7.5"x3"x5.5". The fiber switch shall meet or exceed the following specifications; IEEE 1613 (electric utility substations), IEC 61850-3 (electric utility substations), IEC 61800-3 (variable speed drive systems), IEC 61000-6-2 (generic industrial), NEMA TS-2 (traffic control equipment) and IEEE 802.1p. The fiber switch shall have Hazardous Location Certification Class 1, Division 2

The fiber switch shall have the specified Gigabit fiber optic Ethernet ports and fast Ethernet copper ports or greater. The fiber switch shall have connector type LC. The fiber switch shall operate at -40 degrees Celsius to 85 degrees Celsius. The fiber switch shall support Gigabit distances to 70km. The fiber switch shall have 128-bit encryption.

The integrated fiber switch power supply shall have a universal high voltage range: 88-300VDC or 85-264VACpower supply. The fiber switch shall have dual low voltage DC inputs: 24VDC (10-36VDC) or 48VDC (36-72VDC).

The RuggedSwitch RS900G or equivalent meets the fiber switch requirements.

Fiber Switch A shall be installed at Location 14, BHP pole 1 on the west side of Junction Ave intersecting with the alley between SD34/Lazelle St and Main St. Camera 14 shall connect to Fiber Switch A with copper. Fiber switch A shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

Fiber Switch B shall be installed in the housing for Camera 18, building in the NE quadrant of 1st St & Main St. Cameras 18 & 19 shall connect to Fiber Switch B with copper. Fiber switch B shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

Fiber Switch C shall be installed at Location 20, BHP pole 10 on the east side of 2nd St intersecting with the alley between SD34/Lazelle St and Main St. Camera 20 shall connect to Fiber Switch C with copper. Fiber switch A shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

Fiber Switch D shall be installed in the housing for Camera 25, building in the NE quadrant of 3rd St & Main St. Cameras 25 & 26 shall connect to Fiber Switch D with copper. Fiber switch D shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

Fiber Switch E shall be installed at Location 23, BHP pole 24 in the NW quadrant of the intersection of 1st St and the alley between Main St & Sherman St. Cameras 21, 22 & 23 shall connect to Fiber Switch E with copper. Fiber switch E shall have 2 Gigabit fiber optic Ethernet ports and 4 fast Ethernet copper ports.

Fiber Switch F shall be installed in the housing for Camera 24, BHP pole 25 in the NE quadrant of the intersection of 3rd St and the alley between Main St & Sherman St. Camera 24 shall connect to Fiber Switch F with copper. Fiber switch F shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

FIBER SWITCH (continued) – *provided for informational purposes only*

Fiber Switch G shall be installed in the housing for Camera 29, BHP pole 26 in the alley between Main St & Sherman St east of 4th St. Camera 29 shall connect to Fiber Switch G with copper. Fiber switch G shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

Fiber Switch H shall be installed in the housing for Camera 28, BHP pole 18 on the east side of 4th St intersecting with the alley between SD34/Lazelle St and Main St. Camera 28 shall connect to Fiber Switch H with copper. Fiber switch H shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

Fiber Switch O shall be located in the Sturgis Police Department. Camera 27 shall connect to Fiber Switch O with copper. The City aerial fiber shall connect to Fiber Switch O with the daisy chained pair connecting cameras 21-24 and 29. Fiber for connection to Milestone video management software shall terminate at Fiber Switch O. Fiber Switch O shall have 8 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

Fiber Switch I shall be installed in the traffic signal controller at the in the NW of SD34/Lazelle St & Junction Ave. Camera 13 shall connect to Fiber Switch I with copper. Fiber switch I shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports. 8 strands of the existing 48 strand single mode fiber optic cable is terminated in the traffic signal controller.

Fiber Switch P shall be installed in the housing for Camera 15. Fiber shall connect Fiber Switch P to Fiber Switch I. Fiber exists in the base of Luminaire Pole EL37 to the electrical service cabinet. Cameras 15 & 16 shall connect to Fiber Switch P with copper. Fiber Switch P shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

Fiber Switch J shall be installed in the electrical service cabinet next to Location 17, BHP pole on the east side of Junction Ave intersecting with the alley between Main St & Sherman St. Camera 17 shall connect to Fiber Switch J with copper. Fiber shall connect Fiber Switch P to Fiber Switch I. Fiber Switch J shall have 4 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

Fiber Switch K shall be installed in the traffic signal controller at the in the NW quadrant of Junction Ave & Ballpark Ave. Camera 30 shall connect to Fiber Switch J with copper. Fiber switch J shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports. 8 strands of the existing 48 strand single mode fiber optic cable is terminated in the traffic signal controller.

Fiber Switch L shall be installed in the traffic signal controller at the in the SE quadrant of SD34/Lazelle St & WB off ramp. Camera 32 shall connect to Fiber Switch L with copper. Fiber switch L shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports. 8 strands of the existing 24 strand single mode fiber optic cable is terminated in the traffic signal controller.

Fiber Switch M shall be installed in the housing for Camera 33, SDDOT pole at Exit 30 EB off ramp. Camera 33 shall connect to Fiber Switch M with copper. Fiber exists in the base of Pole VD2 to the traffic signal controller Fiber switch M shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

Fiber Switch N shall be installed in the housing for Camera 31, SDDOT pole at Exit 32 EB off ramp. Fiber exists in the base of Luminaire Pole AL1 to the traffic signal controller. Camera 31 shall connect to Fiber Switch N with copper. Fiber switch N shall have 2 Gigabit fiber optic Ethernet ports and 2 fast Ethernet copper ports.

TABLE OF CAMERAS– *provided for informational purposes only*

Camera Location	Camera Type	Coordinate Equipment Install
1	PTZ	BHP
2	PTZ	private
3	FIXED - 180	N/A
4	FIXED - 180	N/A
5	PTZ	Butte Electric
6	PTZ	N/A
7	FIXED - 180	N/A
8	PTZ	N/A
9	FIXED - 180	N/A
10	PTZ	BHP
11	PTZ	N/A
12	PTZ	BHP
13	FIXED - 180	N/A
14	FIXED - CUSTOM	BHP
15	PTZ	N/A
16	FIXED - 180	N/A
17	CUSTOM	BHP
18	PTZ	private
19	FIXED - 180	private
20	FIXED - CUSTOM	BHP
21	PTZ	private
22	FIXED - 180	private
23	FIXED - CUSTOM	BHP
24	FIXED - 180	BHP
25	PTZ	private
26	FIXED - 180	private
27	FIXED - 180	City
28	FIXED - 180	BHP
29	PTZ	N/A
30	PTZ	N/A
31	PTZ	N/A
32	PTZ	N/A
33	PTZ	N/A

CAMERAS– *provided for informational purposes only*

The cameras are identified by number on the plan sheets. The cameras are PTZ and Fixed type. The camera location, type of camera and coordination of equipment install are stated in the Table of Cameras. There are 16 PTZ cameras and 17 fixed cameras. The fixed cameras shall provide either 180 degree viewing area or a custom viewing area. The cameras shall be installed by SDDCI in an outdoor housing system.

Installation of equipment shall be coordinated with the party indicated. The BHP contact is Dean Sigman at (605) 720-3304. The City contact is Rick Bush at (605) 490-1152. The Project Engineer shall provide contact information for locations listed private.

PTZ CAMERAS– *provided for informational purposes only*

The PTZ camera shall be outdoor enclosure ready. The PTZ external source shall be 24 VAC or 12VDC. The PTZ camera shall function at -10 degrees Celsius to 50 degrees Celsius. The PTZ camera shall have electronic image stabilization.

The PTZ camera shall have day/night functionality. The PTZ shall have minimum illumination color: 0.4 lux at 50 IRE F1.6; b/w: 0.02 lux at 50 IRE F1.6. The PTZ camera shall support H.264 video compression format.

The PTZ camera shall have a 20x optical zoom and 12x digital zoom with auto focus. The PTZ camera shall have 1920x1080 (HDTV 2.1 megapixel) resolution or greater. The PTZ camera shall have 340 degree pan. The PTZ camera shall have a horizontal viewing angle of 60 degrees and a vertical viewing angle of 35 degrees.

The Cannon VB-H41 or equivalent meets the PTZ camera requirements.

FIXED CAMERAS– *provided for informational purposes only*

The fixed cameras shall be a dual encoder (H.264 & MJPEG) and having no more than 20 Megapixels of resolution. The fixed cameras shall be IP addressable with no less than 180 degrees of panoramic Day/Night IP capabilities.

The fixed camera shall provide an all-in-one solution with no less than four integrated high sensitivity 5 megapixel sensors, with the option of gimbals that allow independent camera orientation. The fixed camera should allow multiple lens options ranging from 2.8mm to 16mm. The housing shall be a vandal resistant dome enclosure with IP66 rating for water and dust protection along with a heater/blower option.

The fixed camera shall be a PoE (IEEE 802.3af) compliant camera with color and a Day/Night features along with all the necessary heater & bower configurations. The fixed camera shall have the ability to output multiple image formats to allow the simultaneous viewing of full resolution field of views and regions of interest for high definition forensic zooming capabilities. The fixed camera shall have binning technique which shall provide low-light performance and increase sensitivity

The fixed camera shall include any all necessary wall mount and or pole mount bracket. Also every fixed camera will be supplied with a premade 15m in length, outdoor shielded CAT5E FTP cable that is no less than 24AWG solid copper wire.

The fixed camera shall be made in the USA complying with the made in the USA standards.

The Arecont Vision AV20185DN or equivalent meets the fixed camera requirements.

CAMERA HOUSING SYSTEM– *provided for informational purposes only*

The camera housing systems shall be installed by SDDCI at Camera Locations 1-33. The camera housing shall be compatible with IP and analog PTZ and fixed cameras. The camera enclosure shall internal brackets for camera mounting. The camera enclosure shall contain internal mounting space for camera components. Fiber switches shall be placed in the camera housing

The camera housing shall contain 12 VDC and 24 VAC for camera and component power. The camera housing shall have 24VAC/VDC or 110-220 VAC input power source options.

The camera housing shall be vandal-resistant and weatherproof. The camera housing shall be IP66 rated against dust and water and IP68 rated for water proof connection ports. The camera housing shall be thermostatically controlled with a heater and blower. The camera housing system shall provide an operating system of -32 degrees Celsius to 60 degrees Celsius.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	6	107

Plotting Date: 04/02/2014

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	7	107

Plotting Date: 04/02/2014

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1
2
3
4
5
6
24
7
23
8B (NOT SHOWN)
9
10
11
12
13
14
15
16A
16B
17
18
21

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	9	107

Plotting Date: 04/02/2014

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	10	107

Plotting Date: 04/02/2014

Plot Scale - 1:40

Plotted From - tnr14286

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CAMERA LOCATIONS

CAMERA LOCATIONS

MATCH POINT

PTZ
5

12
107

SD HWY 34 & 131st AVE
LOCATION 1/2/3

13 107

NOT TO SCALE

180
3

SD HWY 34

PTZ 1

ALKALI RD

PTZ
2

131st AVE


SD HWY 34 & 131st AVE
Location 1/2/3
NOT TO SCALE
TEMPORARY SIGNAL TRAILER
180
3
2
PTZ
1
PTZ

SD HWY 34 & 131st AVE

Location 1/2

SD HWY 34 & 131st AVE

Location 3

NOT TO SCALE

SD HWY 34 & SD HWY 79
LOCATION 4

17 107

SD 79

NOT TO SCALE

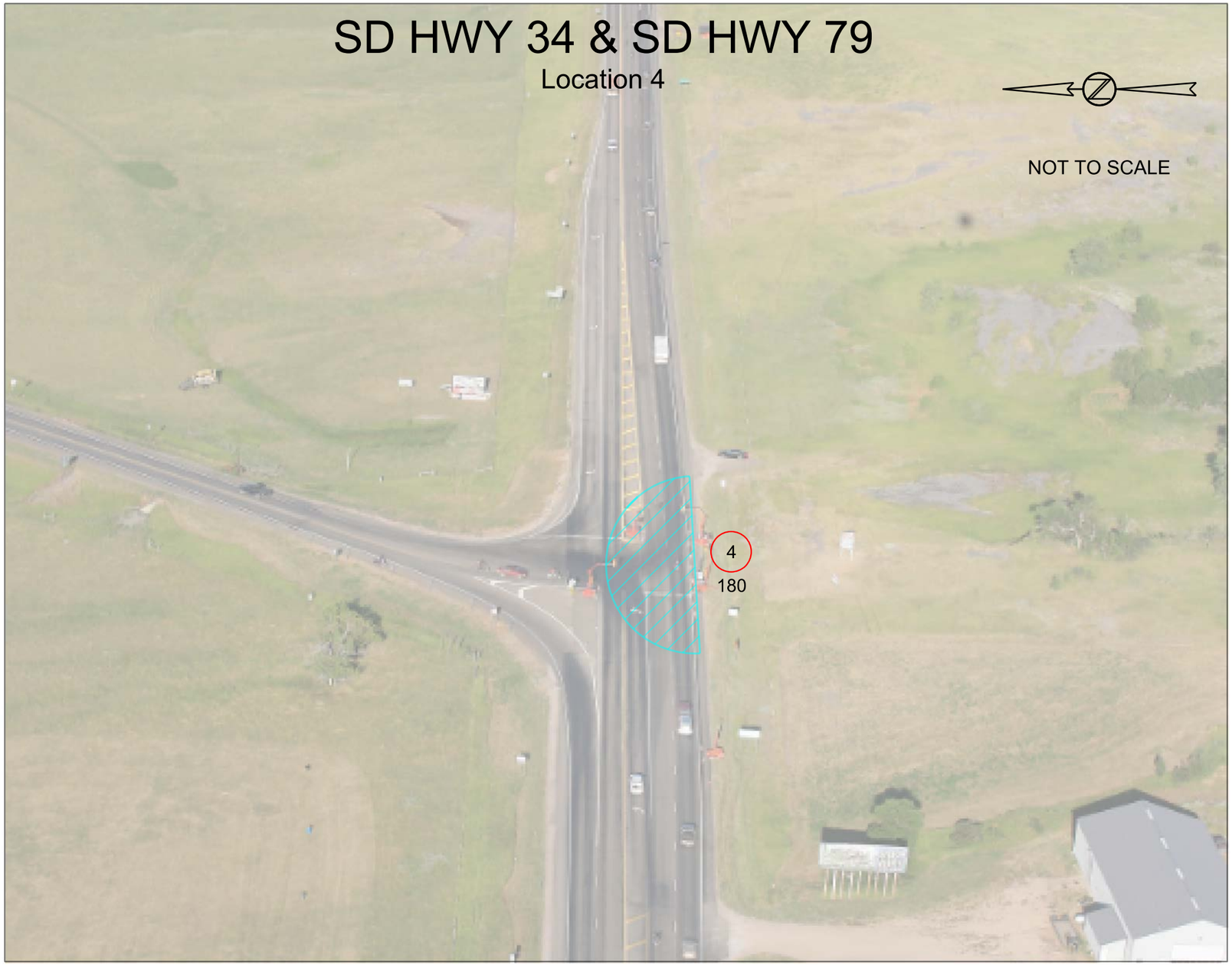
SD HWY 34

4
180

SD HWY 34 & SD HWY 79

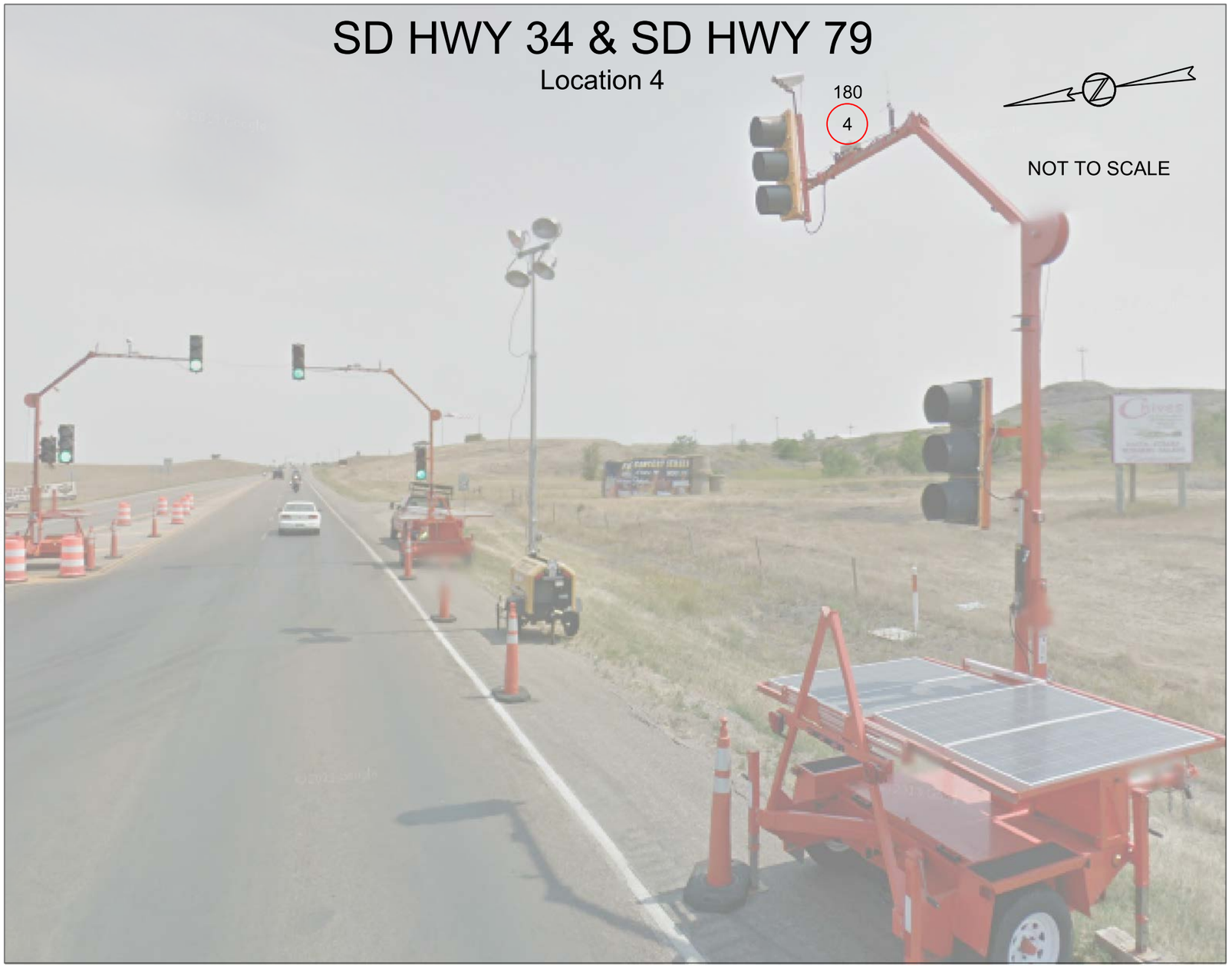
Location 4

NOT TO SCALE



SD HWY 34 & SD HWY 79

Location 4



SD HWY 79
LOCATION 5

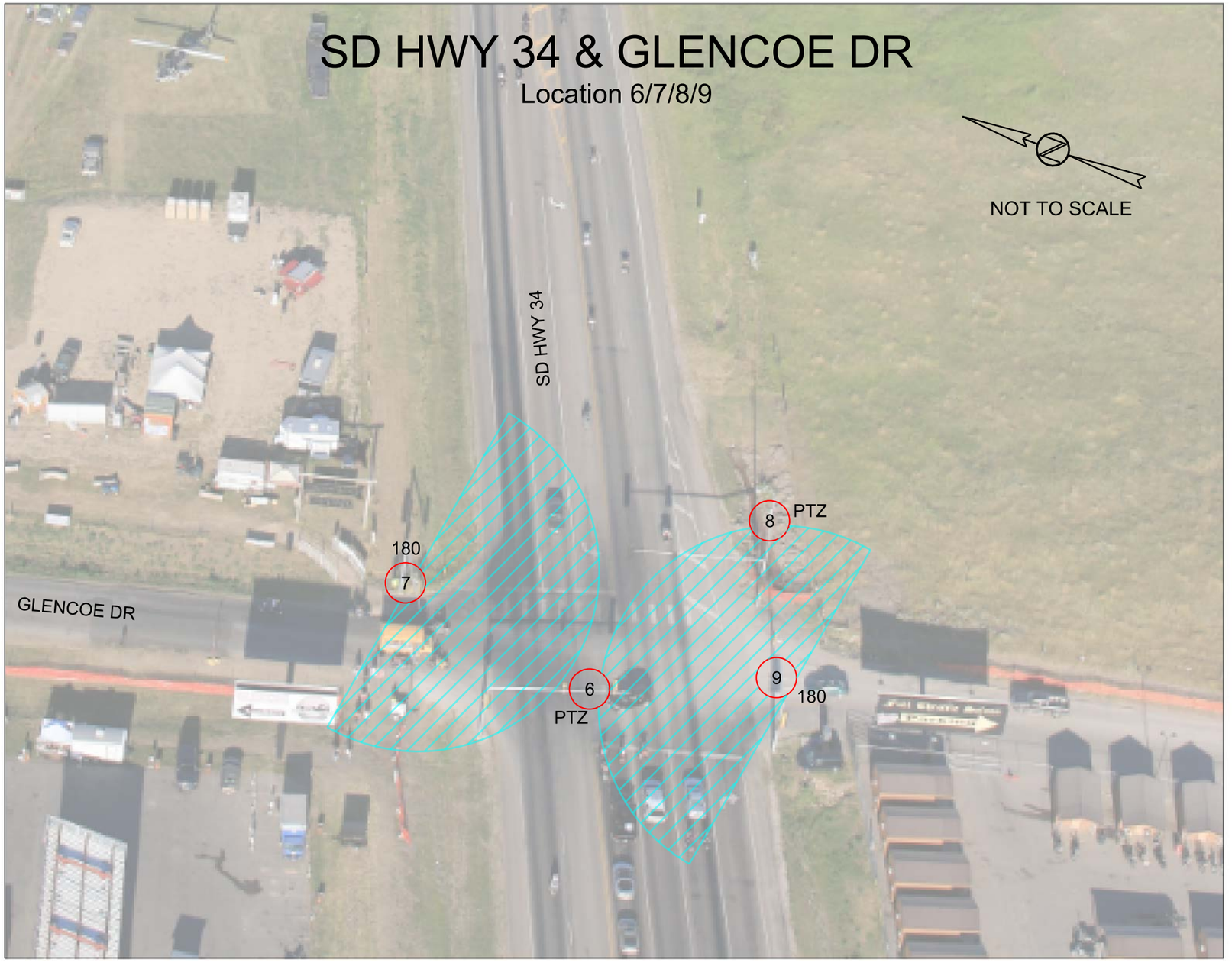
NOT TO SCALE

PTZ
5

130th AVE/SD HWY 79

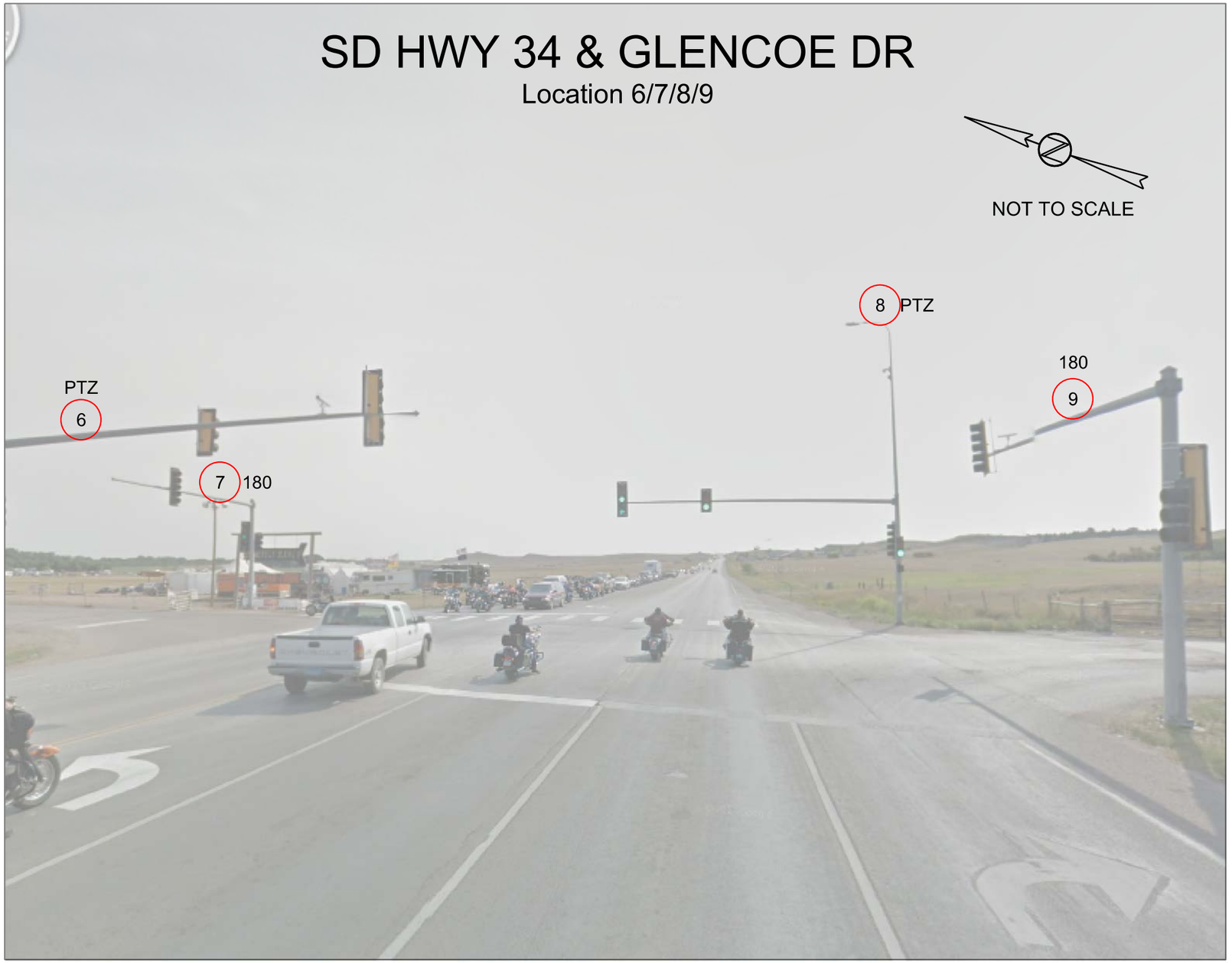
BROKEN SPOKE SALOON
CAMPGROUND


SD HWY 79
Location 5
NOT TO SCALE
PTZ
5


SD HWY 34 & GLENCOE DR
Location 6/7/8/9
NOT TO SCALE
SD HWY 34
GLENCOE DR
180
7
6
PTZ
8
PTZ
9
180

SD HWY 34 & GLENCOE DR

Location 6/7/8/9



SIGNAL LAYOUT

SD HWY 34 & GLENCOE/FULL THROTTLE ENTRANCES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	24	107

Plotting Date: 04/02/2014

KEY	ITEM
	SIGNAL POLE WITH LUMINAIRE ARM (S1)
	LUMINAIRE POLE WITH MAST ARM (S2-S4)
	SIGNAL HEAD (3-Section)(3,4,7,8,11,14)
	SIGNAL HEAD (5-SECTION)(1,2,5,6,9,10,12,13)
	TRAFFIC SIGNAL CONTROLLER
	VIDEO DETECTION SYSTEM (15,16,17,18)
	PEDESTRIAN SIGNAL HEAD (19,20)
PB	PEDESTRIAN PUSH BUTTON
START CROSSING WHEN I'M WHITE / DON'T START / FINISH CROSSING IF STARTED / DON'T CROSS / TO CROSS / PUSH BUTTON	PEDESTRIAN CROSSING SIGN (1 LEFT,1 RIGHT)

SCALE
1" = 40'

GLENCOE ENTRANCE

FULL THROTTLE ENTRANCE

S1 63+98 - 42' LT.

S2 64+54 - 42' LT.

S3 64+48 - 54' RT.

S4 63+91 - 54' RT.

59+35-9' RT.

59+35-21' RT.

60+00

65+00

6 PTZ

7 180

9 180

8 PTZ

Plot Scale - 1:40

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GLENCOE DR
LOCATION 10

25 107

NOT TO SCALE

SD HWY 34

10
PTZ
29

GLENCOE DR

GLENCOE DR

GLENCOE DR
LOCATION 10

LAZELLE ST/SD HWY 34 & NELLIE ST
LOCATION 11

NOT TO SCALE

11
PTZ

LAZELLE ST/SD HWY 34

NELLIE ST

SIGNAL LAYOUT

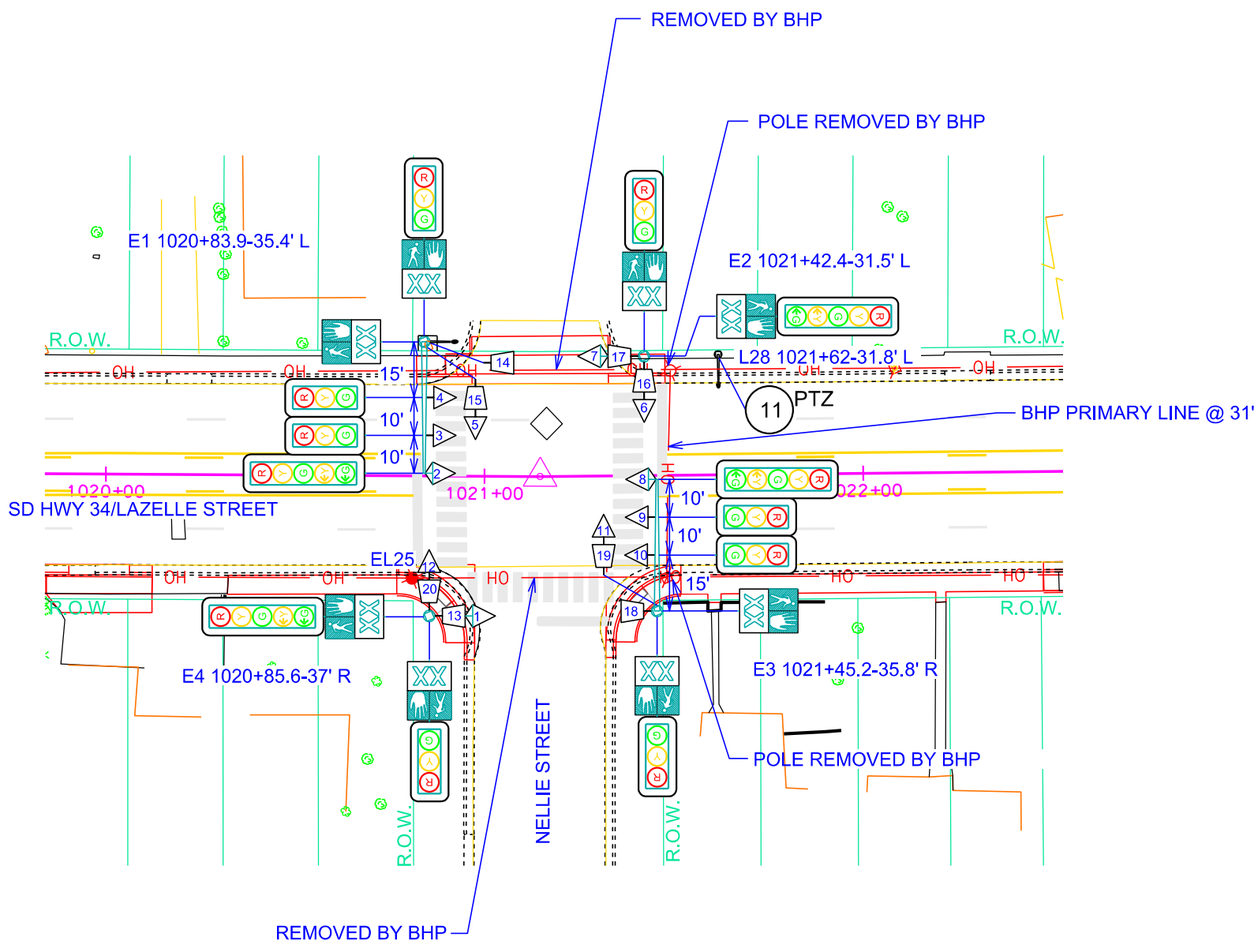
SD HWY 34/LAZELLE STREET & NELLIE STREET
LOCATION 11

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	28	107

Plotting Date: 04/02/2014
Revised Date: 08/13/2013 SB

SCALE
1" = 40'

EXISTING SIGNAL EQUIPMENT	
KEY	ITEM
	PEDESTAL SIGNAL POLE (E2,E4)
	SIGNAL POLE W/35' MAST ARM (E3)
	SIGNAL POLE W/35' MAST ARM & 6' LUMIN ARM 50' MT HT (E1)
	ROADWAY LUMINAIRE, 400W WITH P.E. (D1)
	3 SECTION VEHICLE SIGNAL HEAD (3-6,9-12)
	5 SECTION VEHICLE SIGNAL HEAD (1,2,7,8)
	PEDESTRIAN SIGNAL HEAD W/COUNTDOWN TIMER (13-20)



Plot Scale - 1:40
Plotted From - tropr14286
File - ...\DPS\Location11Signal.dgn

CAMERA LOCATIONS
12-20

29 107

180
13
LAZELLE ST
20 CUSTOM
14 CUSTOM
NOT TO SCALE
PTZ 180
18 19
MAIN ST
12 PTZ
15
180 16 PTZ
MIDDLE ST
17 CUSTOM
JUNCTION AVE
SHERMAN ST


MIDDLE ST & MAIN ST
Location 12
NOT TO SCALE
PTZ
12

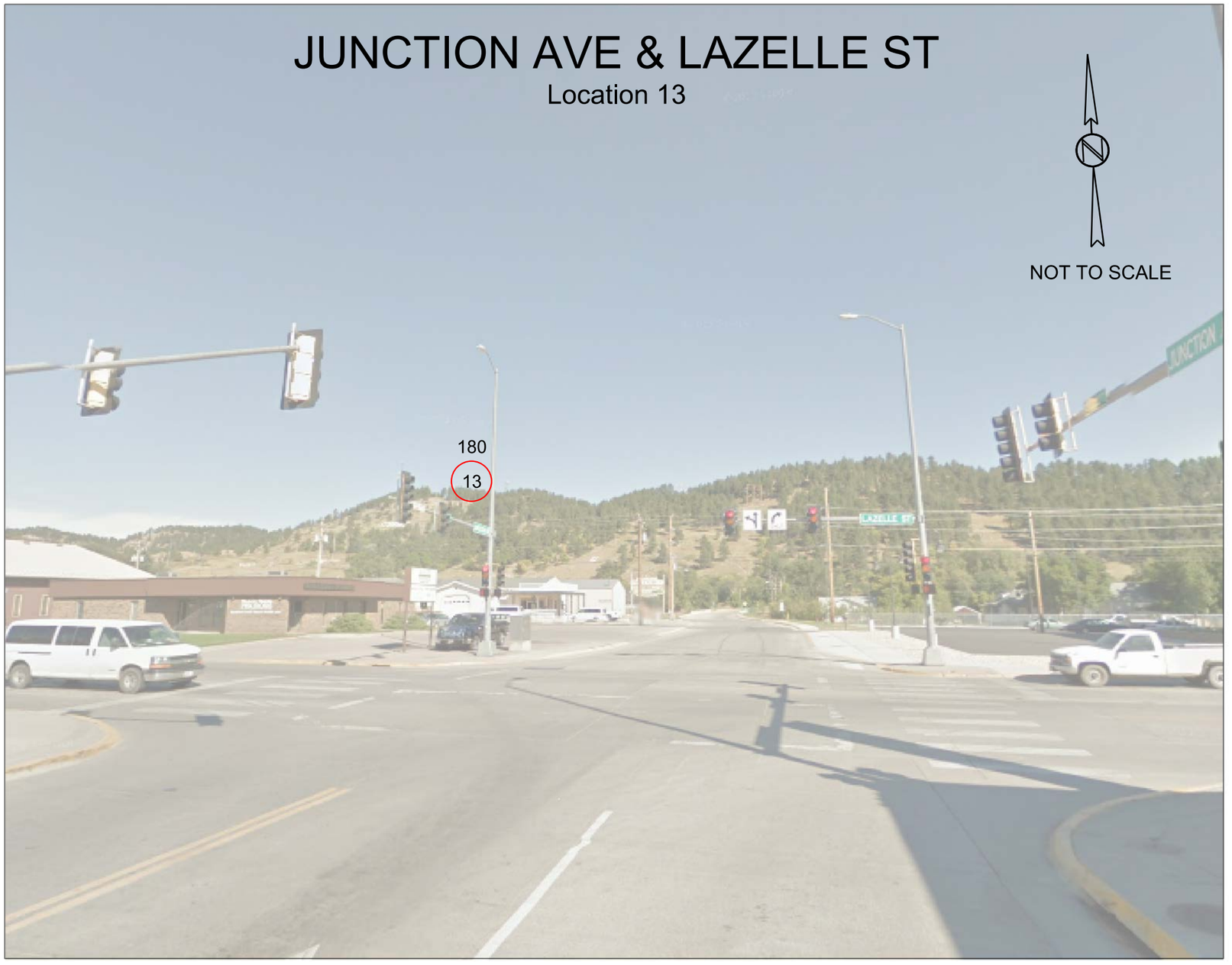
MIDDLE ST & MAIN ST

Location 12

JUNCTION AVE & LAZELLE ST

Location 13

NOT TO SCALE



SIGNAL LAYOUT

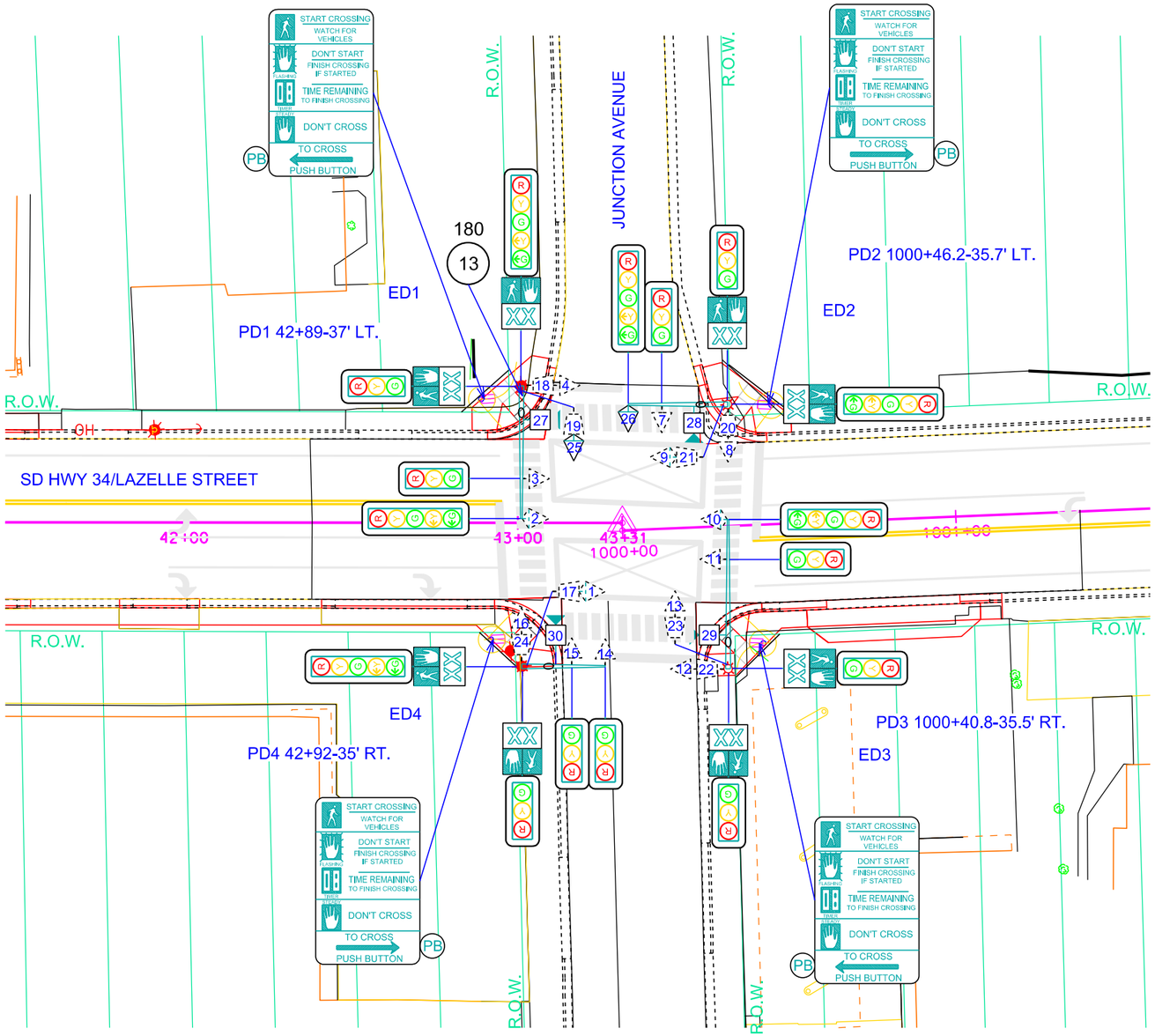
SD HWY 34/LAZELLE STREET & JUNCTION AVENUE
LOCATION 13

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	33	107

Plotting Date: 04/02/2014
Revised Date: 07/11/2012 SB

EXISTING ITEMS	
KEY	ITEM
	SIGNAL POLE W/MAST ARM & LUMINAIRE ARM (ED1-ED4)
	ROADWAY LUMINAIRE, 400W WITH P.E. (ED1-ED4)
	3 SECTION VEHICLE SIGNAL HEAD (3,4,7,8,11-16)
	5 SECTION VEHICLE SIGNAL HEAD (1,2,9,10)
	PEDESTRIAN SIGNAL HEAD W/COUNTDOWN TIMER (17-24)
	VIDEO DETECTION CAMERA NOT A BID ITEM (27-30)
	5 SECTION VEHICLE SIGNAL HEAD (25,26)
	MISCELLANEOUS SIGNAL PARTS
PB	PEDESTRIAN PUSH BUTTON
	PEDESTRIAN PUSH BUTTON POLE (PD1-PD4)
START CROSSING WATCH FOR VEHICLES / DON'T START FINISH CROSSING IF STARTED / TIME REMAINING TO FINISH CROSSING / DON'T CROSS / TO CROSS PUSH BUTTON	PEDESTRIAN CROSSING SIGN R10-3e (2-LEFT,2-RIGHT)
	MISCELLANEOUS, ELECTRICAL OUTLET RECEPTACLE ON ED1 & ED4

SCALE
1" = 40'



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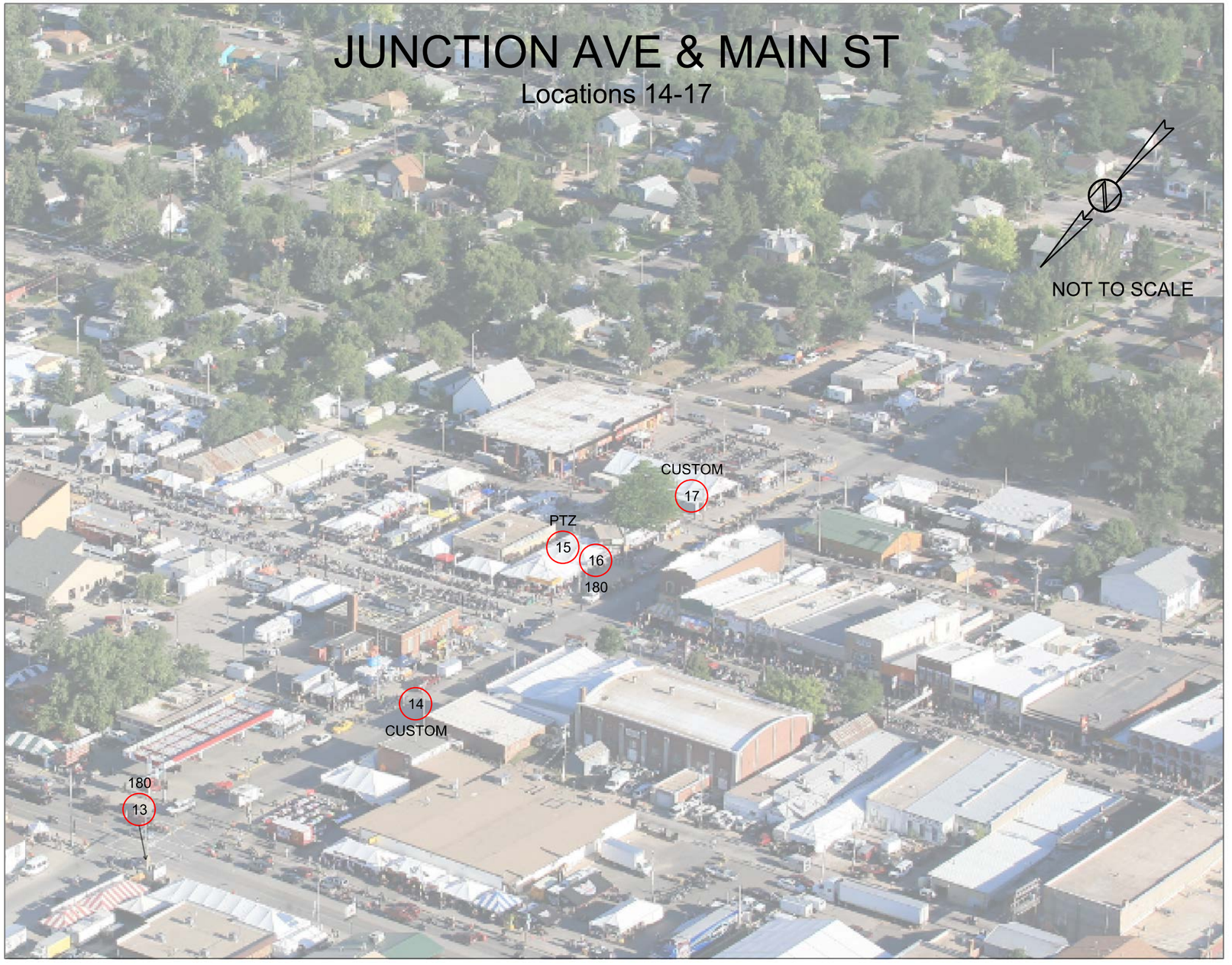
Plotted From - tmpt14286
File - ...\DPS\Location13\Signal.dgn

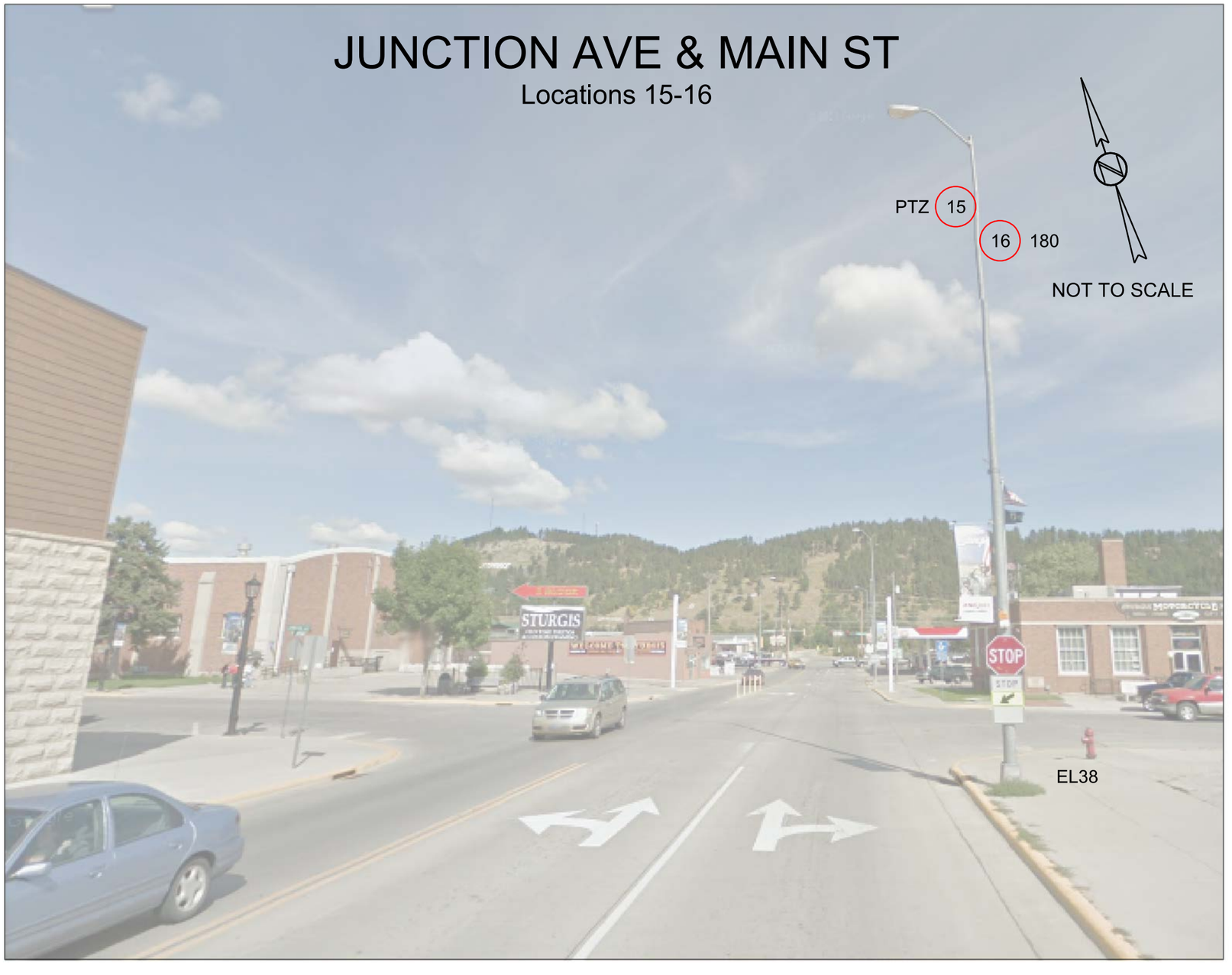

JUNCTION AVE & MAIN ST
Locations 14-17
NOT TO SCALE
CUSTOM
17
PTZ
15
16
180
14
CUSTOM
180
13

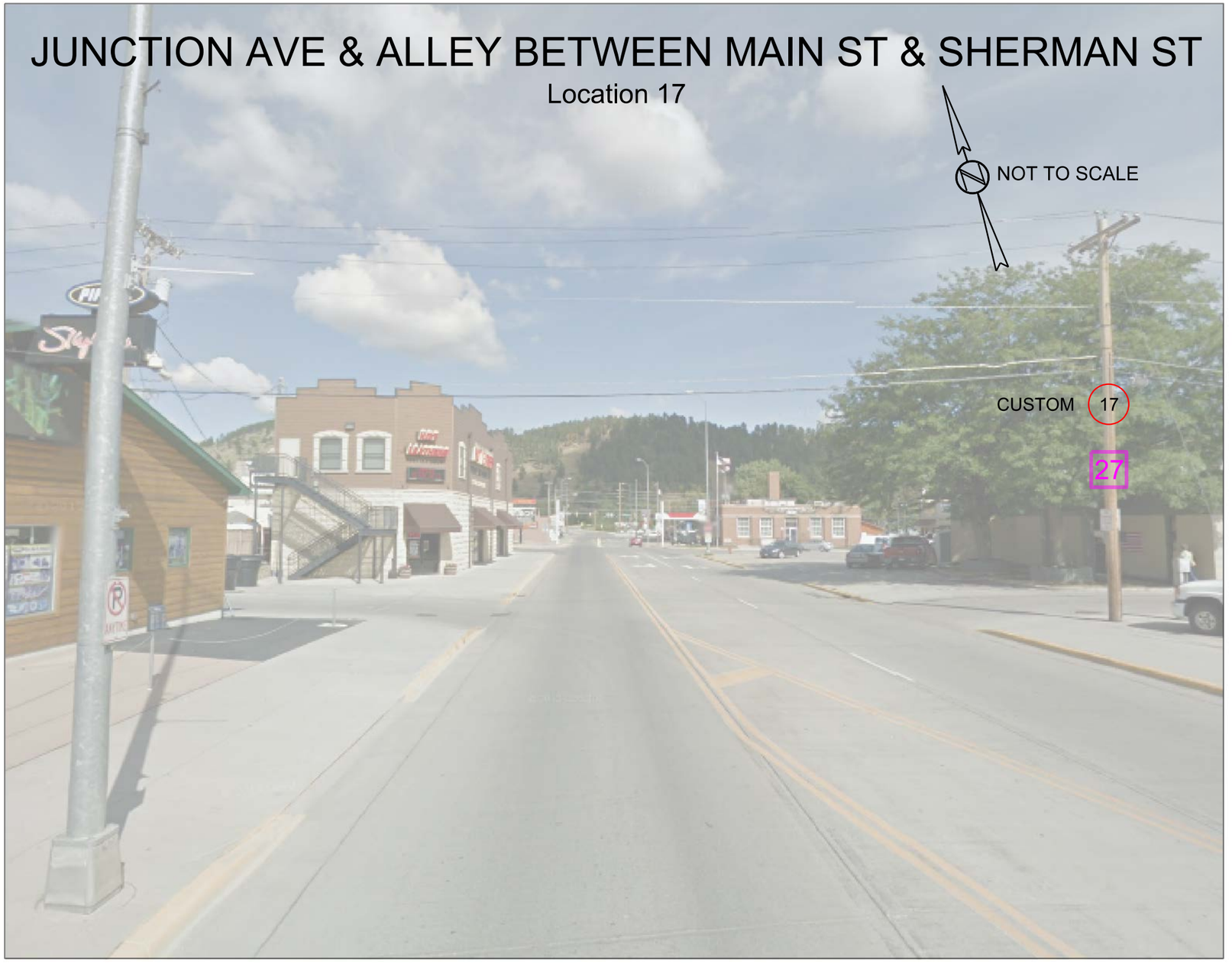
JUNCTION AVE & ALLEY BETWEEN LAZELLE ST & MAIN ST

Location 14

JUNCTION AVE & MAIN ST

Locations 15-16




JUNCTION AVE & ALLEY BETWEEN MAIN ST & SHERMAN ST
Location 17
NOT TO SCALE
CUSTOM 17
27

CAMERA LOCATIONS
13-29

LAZELLE ST

MAIN ST

SHERMAN ST

4th ST

3rd ST

2nd ST

1st ST

JUNCTION AVE

NOT TO SCALE

28 180

27
180

180
29

180
26
25
PTZ

24 180

2122
PTZ 180

20 CUSTOM

23 CUSTOM

PTZ 180
1819

180 13

14 CUSTOM

16
15 180
PTZ

17 CUSTOM


1st ST & MAIN ST
Locations 18-19
NOT TO SCALE
PTZ
180
18
19
STOP


2nd ST & ALLEY BETWEEN LAZELLE ST & MAIN ST
Location 20
NOT TO SCALE
20
CUSTOM
6

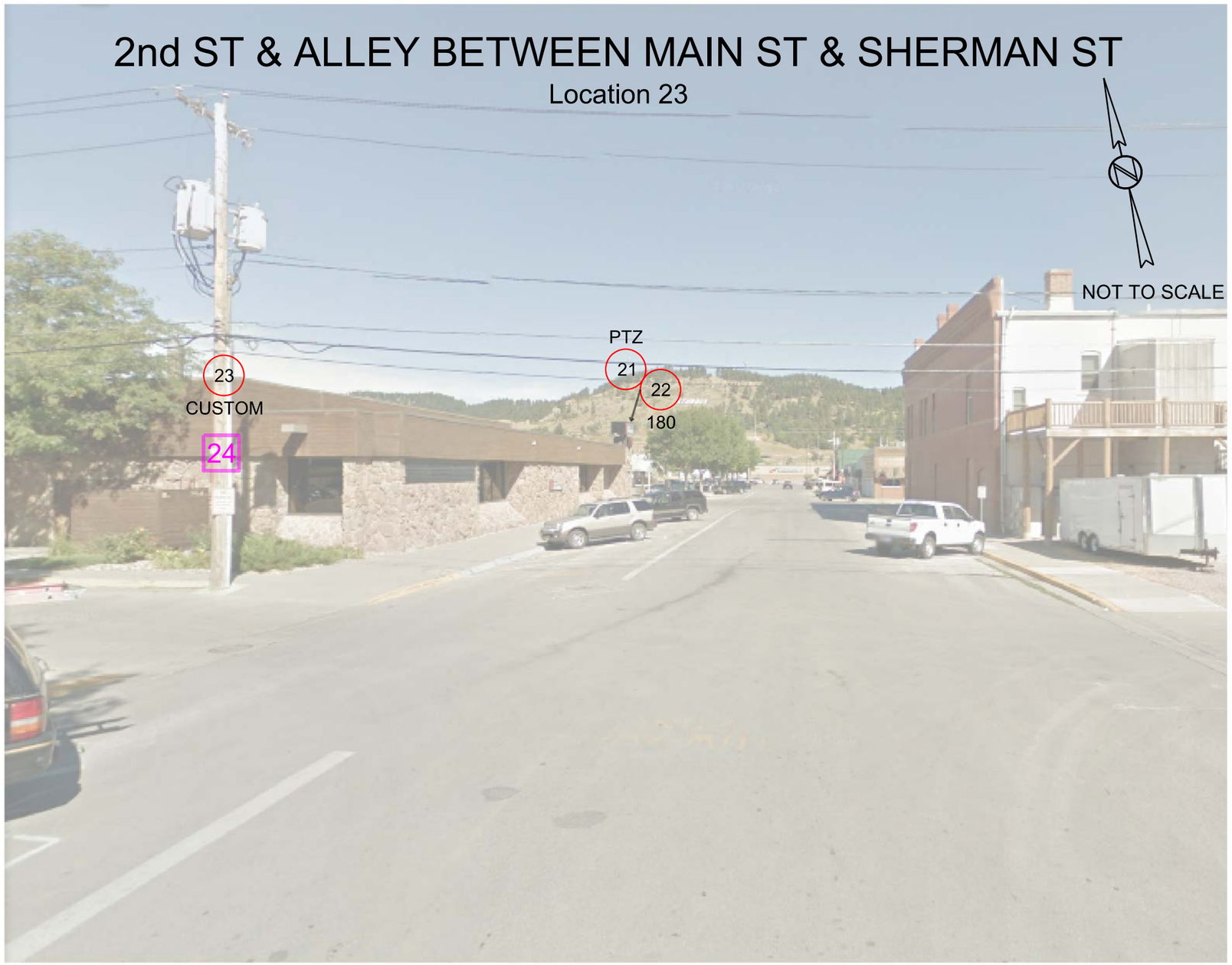
2nd ST & MAIN ST

Locations 21 & 22

NOT TO SCALE

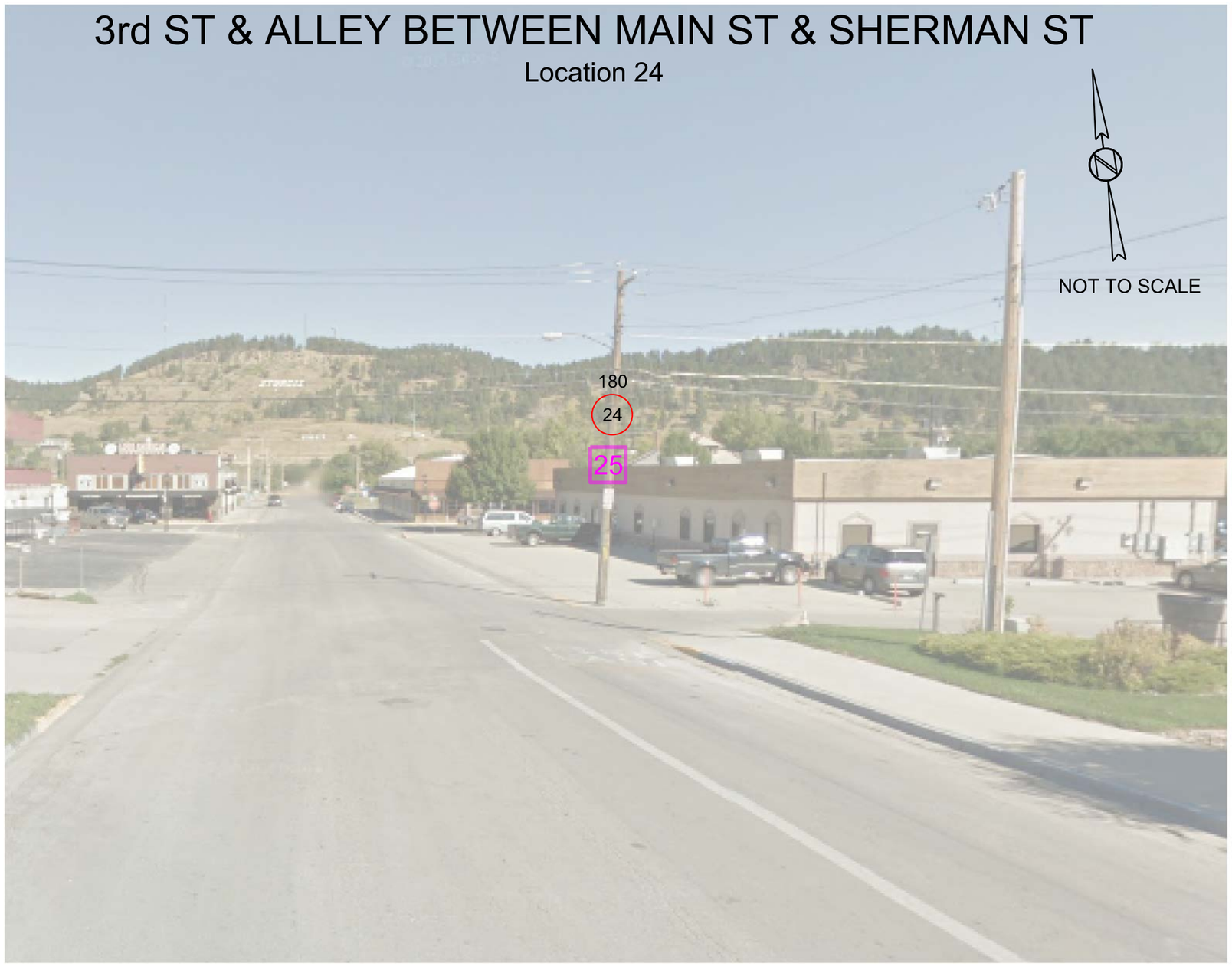
2nd ST & ALLEY BETWEEN MAIN ST & SHERMAN ST

Location 23



3rd ST & ALLEY BETWEEN MAIN ST & SHERMAN ST

Location 24



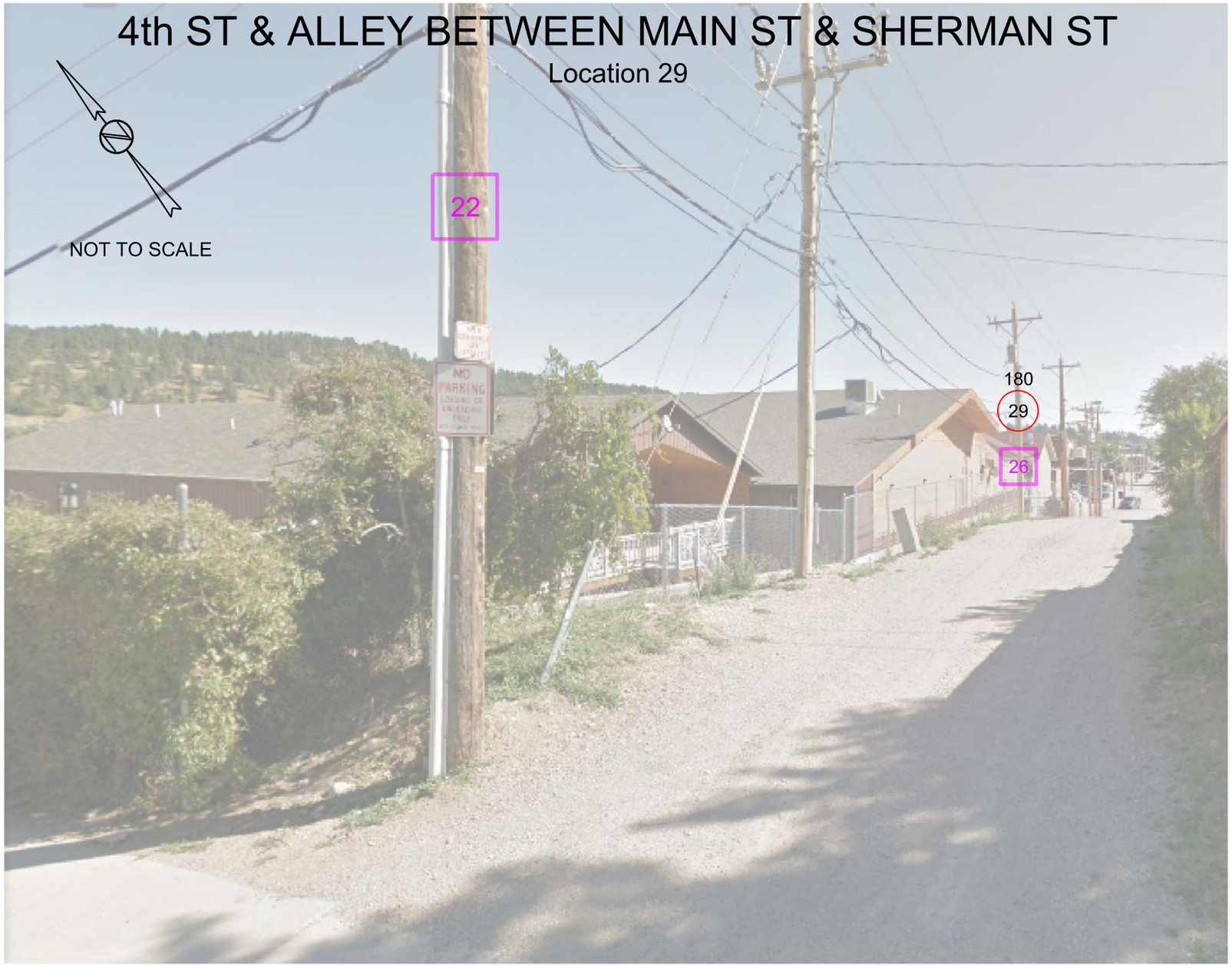

3rd ST & MAIN ST
Locations 25 & 26
NOT TO SCALE
PTZ
180
25
26
13

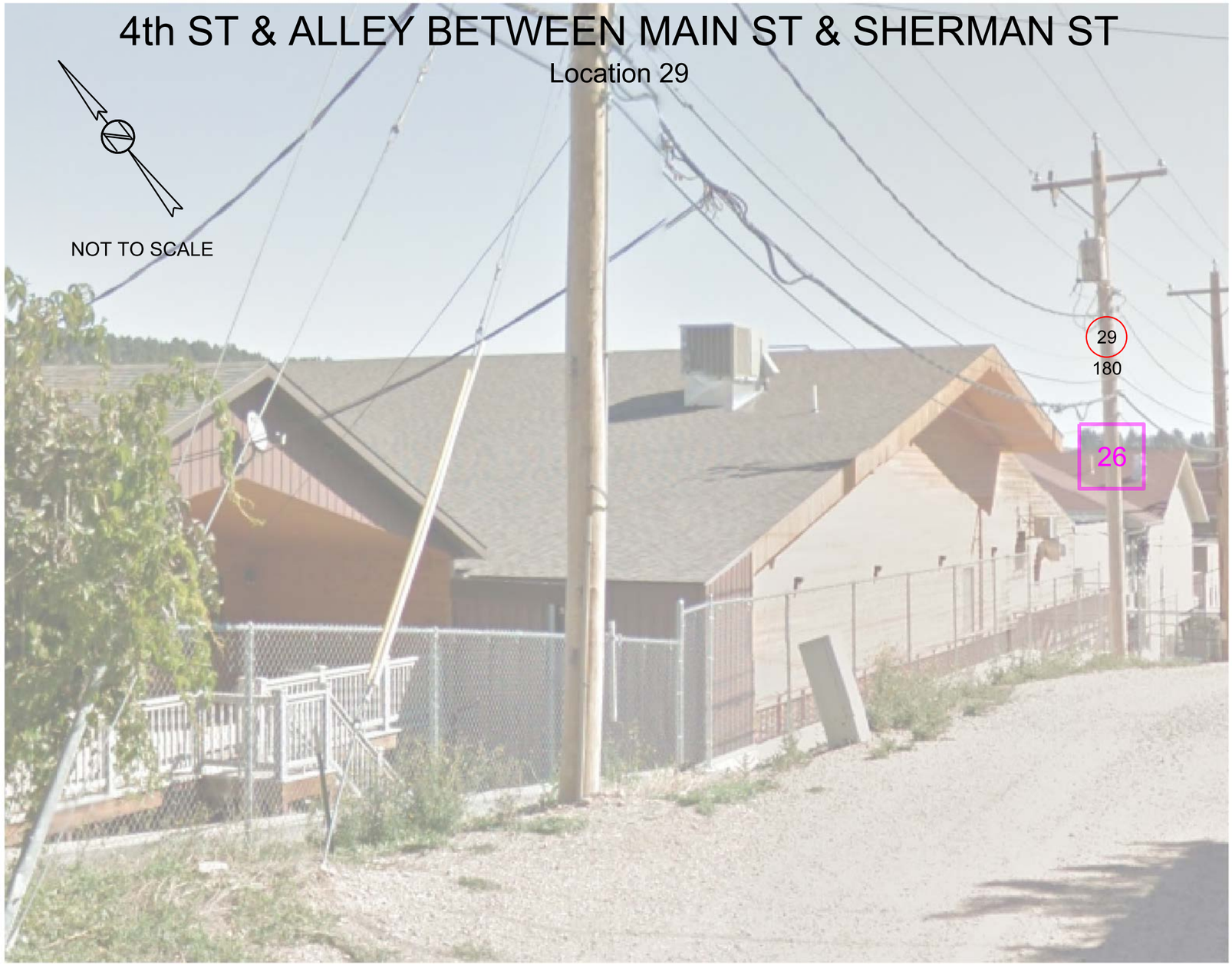

4th ST & MAIN ST
Location 27
180
27
NOT TO SCALE
MEADE COUNTY
LAW ENFORCEMENT
CENTER


4th ST & ALLEY BETWEEN LAZELLE ST & MAIN ST
Location 28
NOT TO SCALE
28
180
18
19

4th ST & ALLEY BETWEEN MAIN ST & SHERMAN ST

Location 29

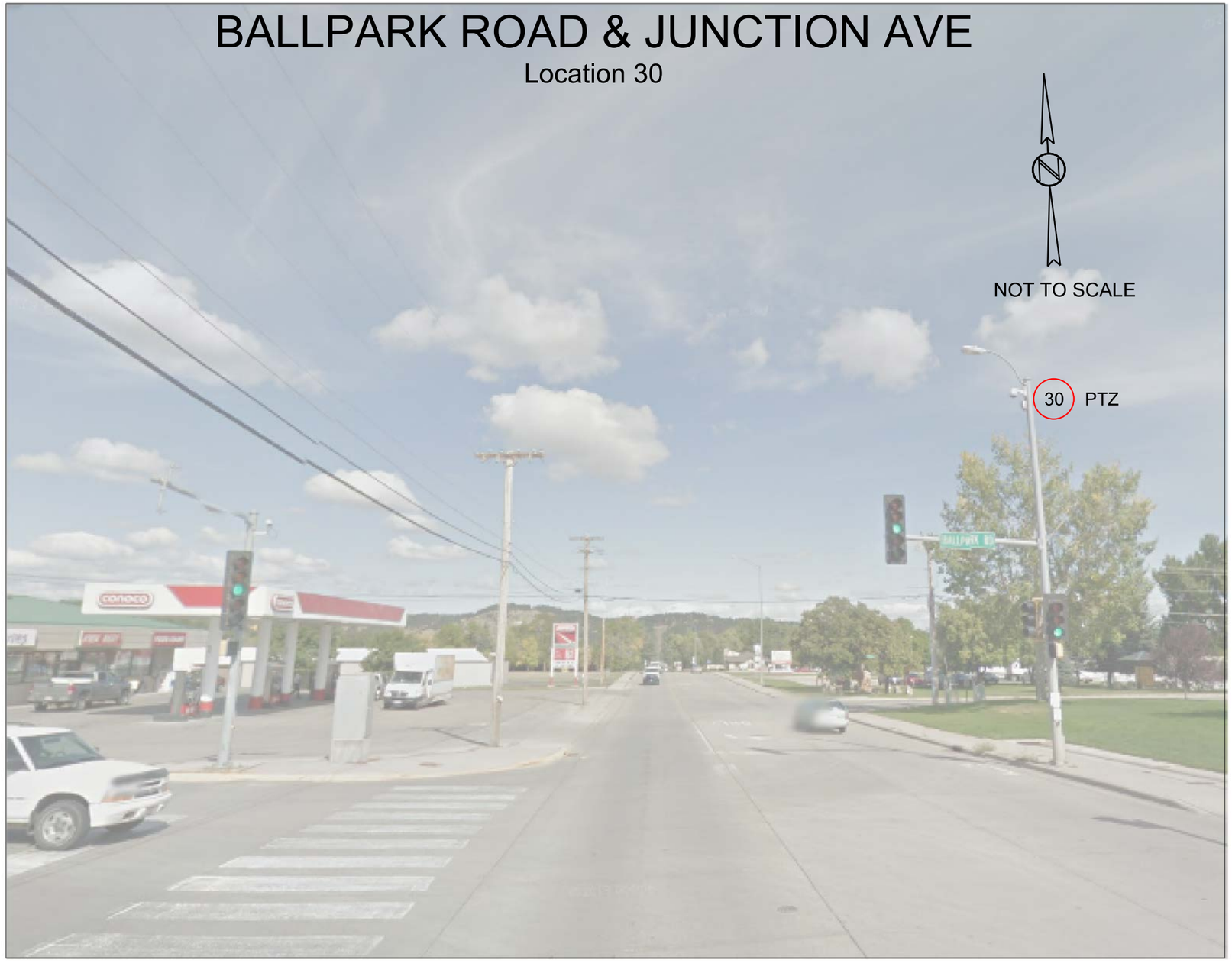



4th ST & ALLEY BETWEEN MAIN ST & SHERMAN ST
Location 29
NOT TO SCALE
29
180
26

I90/ EXIT 32 WEST BOUND & JUNCTION AVE
LOCATION 30 & 31

BALLPARK ROAD & JUNCTION AVE

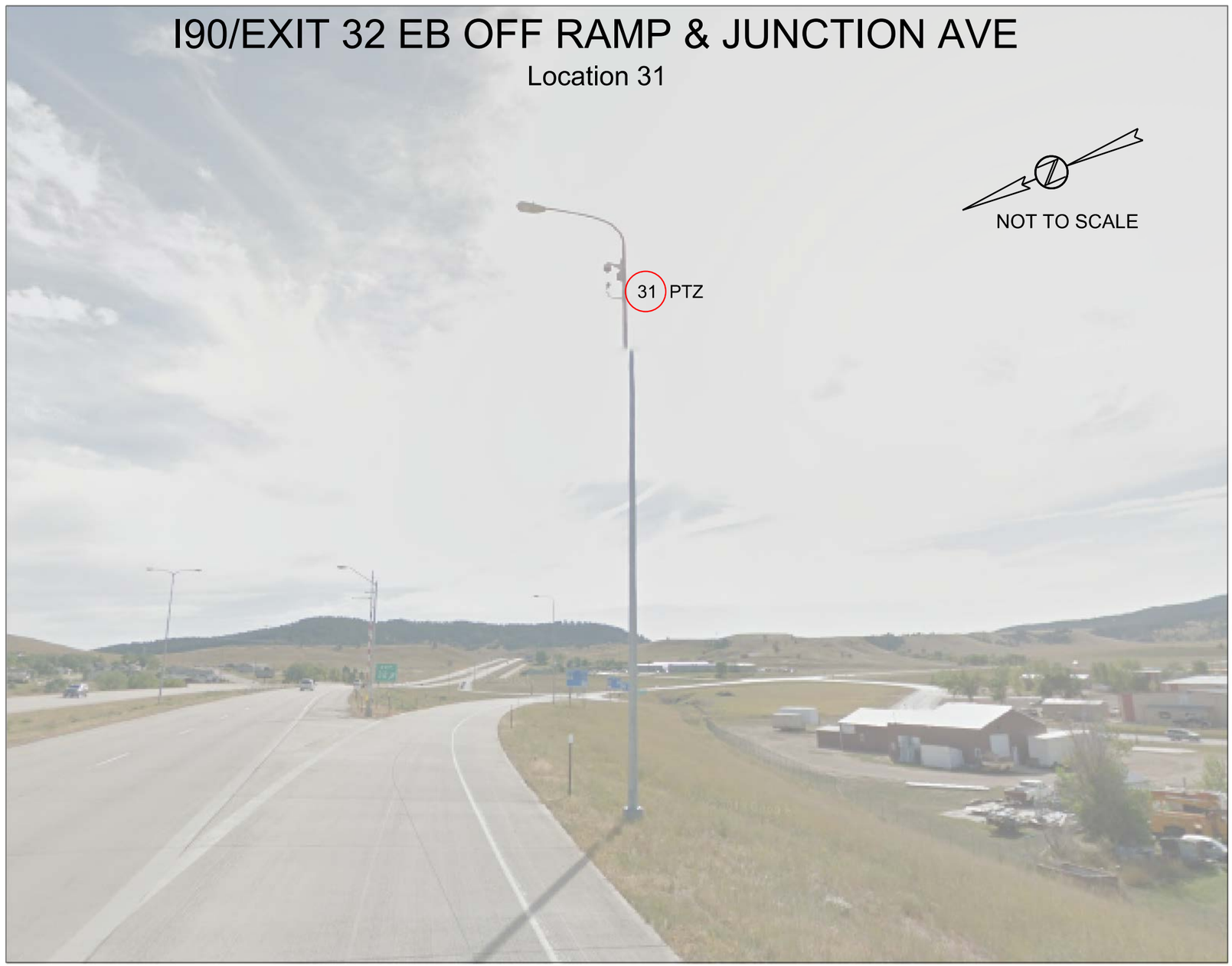
Location 30




I90/EXIT 32 EB OFF RAMP & JUNCTION AVE
Location 31
NOT TO SCALE
31 PTZ

I90/EXIT 32 EB OFF RAMP & JUNCTION AVE

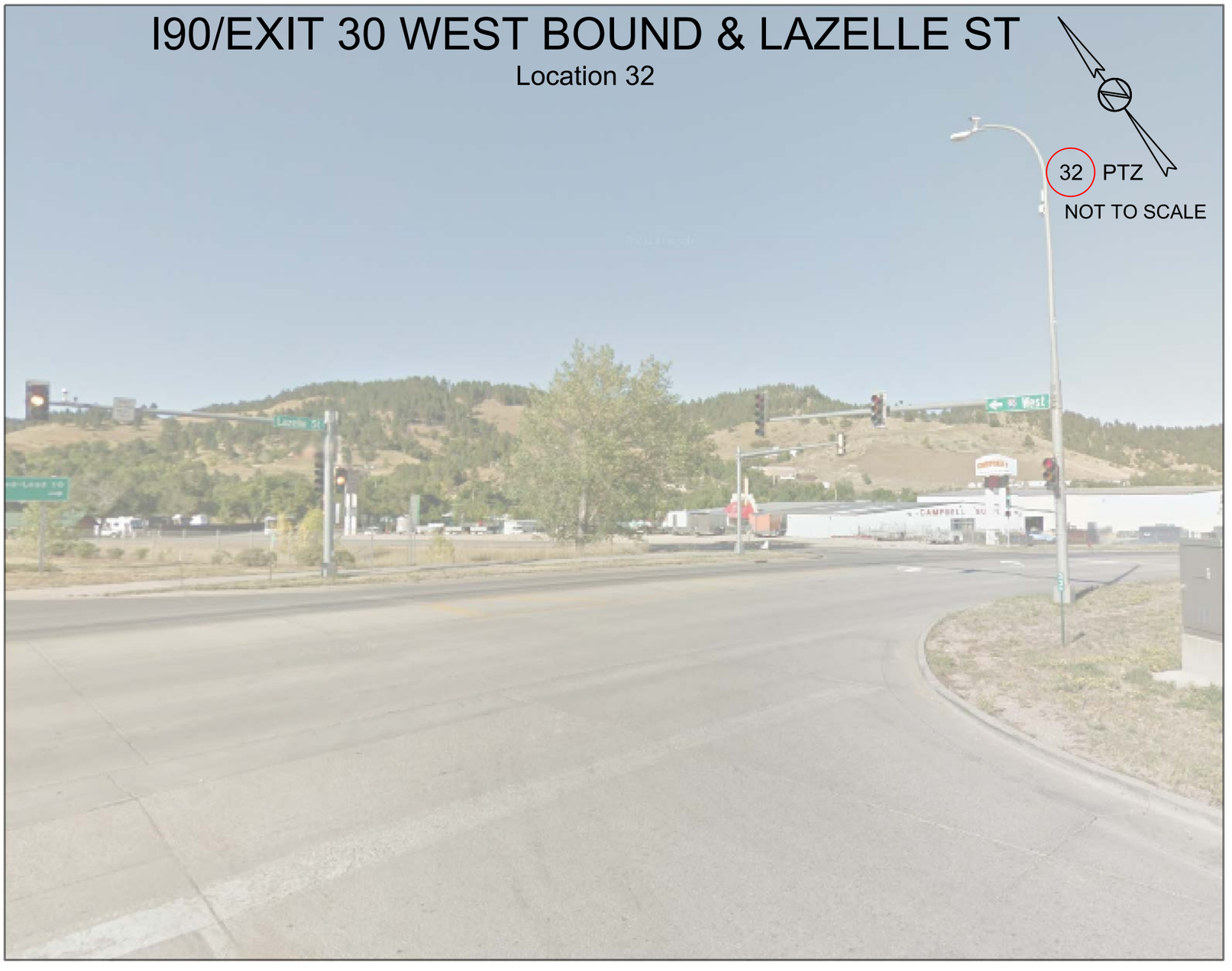
Location 31



I90/EXIT 30 EB OFF RAMP & LAZELLE ST
LOCATION 32/33

I90/EXIT 30 WEST BOUND & LAZELLE ST

Location 32



I90/EXIT 30 EAST BOUND & LAZELLE ST

Location 33

NOT TO SCALE

FIBER PATH

NOT TO SCALE

EXIT 30
INTERSTATE 90
EXIT 30
LAZELLE ST
8th ST
LAZELLE ST
3rd ST
2nd ST
MAIN ST
STURGIS P.D.
4th ST
2nd ST
SHERMAN ST
JUNCTION AVE
HOWARD ST
MIDDLE ST
NELLIE ST
LAZELLE ST/206th ST
DOUGLAS ST
BALLPARK RD
JUNCTION AVE
VANOCKER RD
OTTER RD
DICKSON DR
D.O.T.
INTERSTATE 90
EXIT 32
EXIT 32
JUNCTION AVE

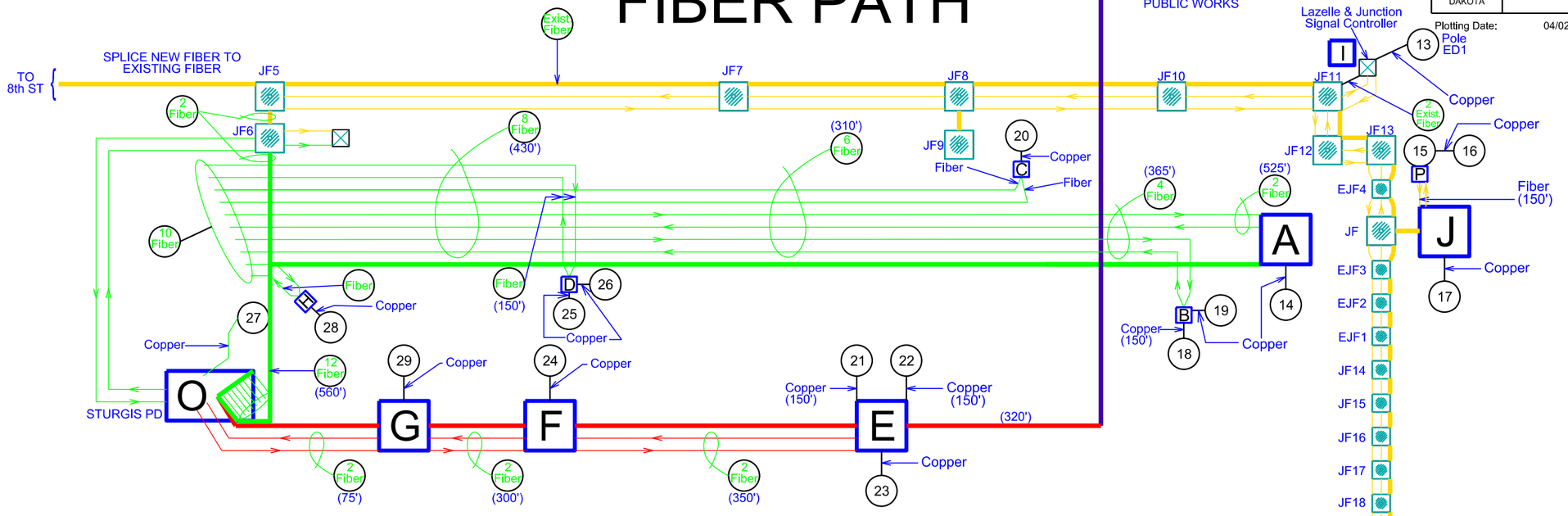
CITY AERIAL
CITY UNDERGROUND
DOT UNDERGROUND
PROPOSED AERIAL
PROPOSED IN EXISTING CONDUIT

FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	57	107

Plotting Date: 04/02/2014

NOT TO SCALE



- CITY UNDERGROUND
- CITY AERIAL (12 SINGLE MODE)
- DOT UNDERGROUND (48 SINGLE MODE)
- PROPOSED AERIAL (12 SINGLE MODE)
- DOT UNDERGROUND (24 SINGLE MODE/24 MULTI-MODE)
- DOT UNDERGROUND (12 SINGLE MODE)
- FIBER SWITCH
- JUNCTION BOX
- CONTROLLER

FIBER PATH
(LOCATIONS 13-29)

58 107

NOT TO SCALE

JF5
JF6
JF8
JF9
JF10
JF11
JF12
JF13
EJF4
EJF3
EJF2
JF 17

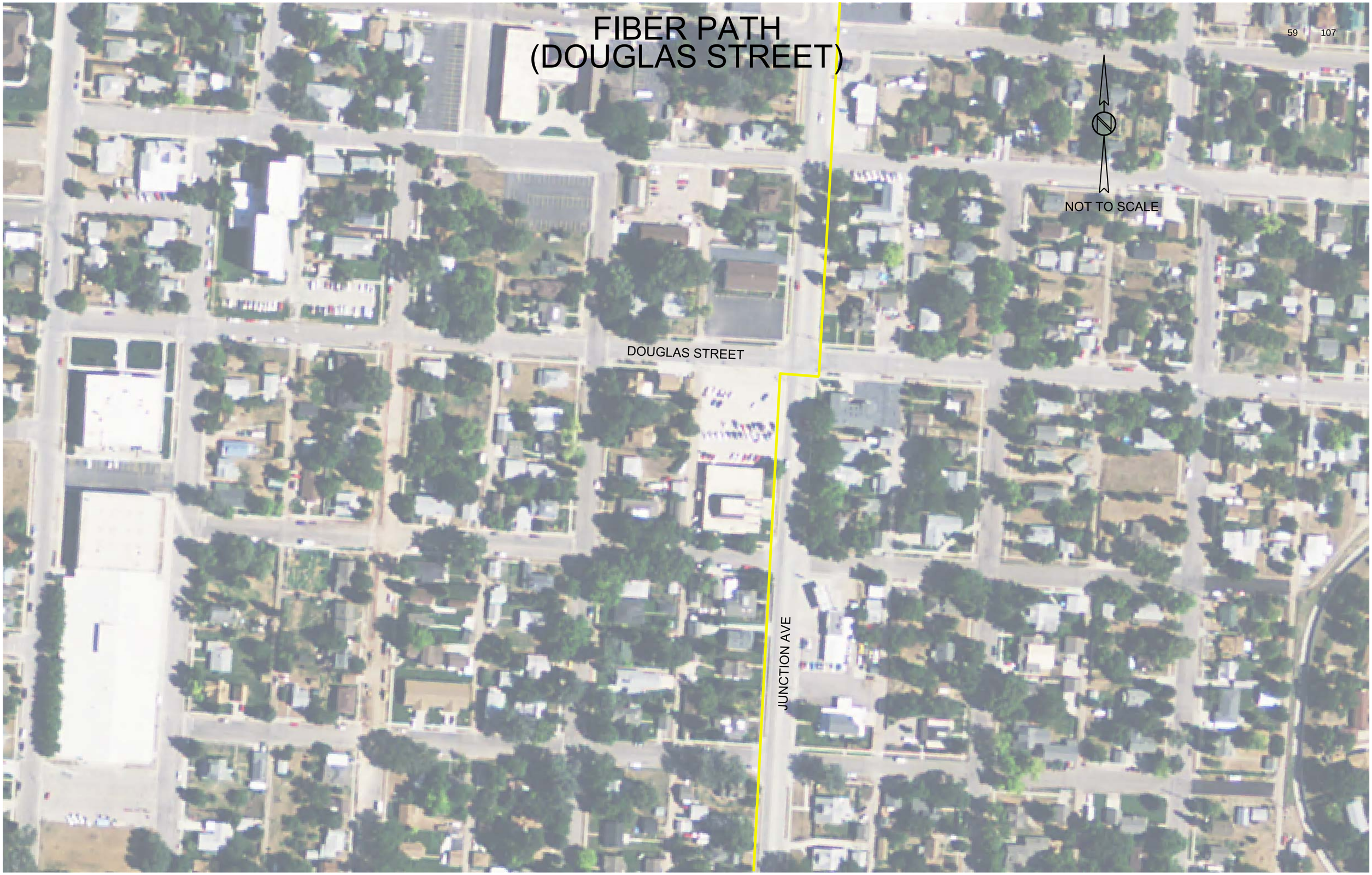
LAZELLE ST
MAIN ST
SHERMAN ST
HOWARD ST
4th ST
3rd ST
2nd ST
1st ST
JUNCTION AVE
MIDDLE ST

STURGIS POLICE DEPT.

12 13 14 15 16 18 19 20 21 22 23 24 25 26 27 28 29

CITY AERIAL
CITY UNDERGROUND
DOT UNDERGROUND
PROPOSED AERIAL
PROPOSED IN EXISTING CONDUIT

FIBER PATH
(DOUGLAS STREET)



FIBER PATH
(BALLPARK RD - LOCATION 30)

NOT TO SCALE

JUNCTION AVE

30

BALLPARK RD

FIBER PATH
(LOCATION 31)

NOT TO SCALE

31

INTERSTATE 90

EXIT 32

EXIT 32

JUNCTION AVE

DICKSON DR

CITY AERIAL

CITY UNDERGROUND

DOT UNDERGROUND

PROPOSED AERIAL

FIBER PATH
(VANOCKER RD)

- CITY AERIAL
- CITY UNDERGROUND
- DOT UNDERGROUND
- PROPOSED AERIAL

FIBER PATH
(STURGIS D.O.T.)

JB

SDN
JUNCTION BOX

SDN
JUNCTION BOX

DOT
JUNCTION BOX

D.O.T.

OTTER RD

63

107

VANOCKER RD

NOT TO SCALE

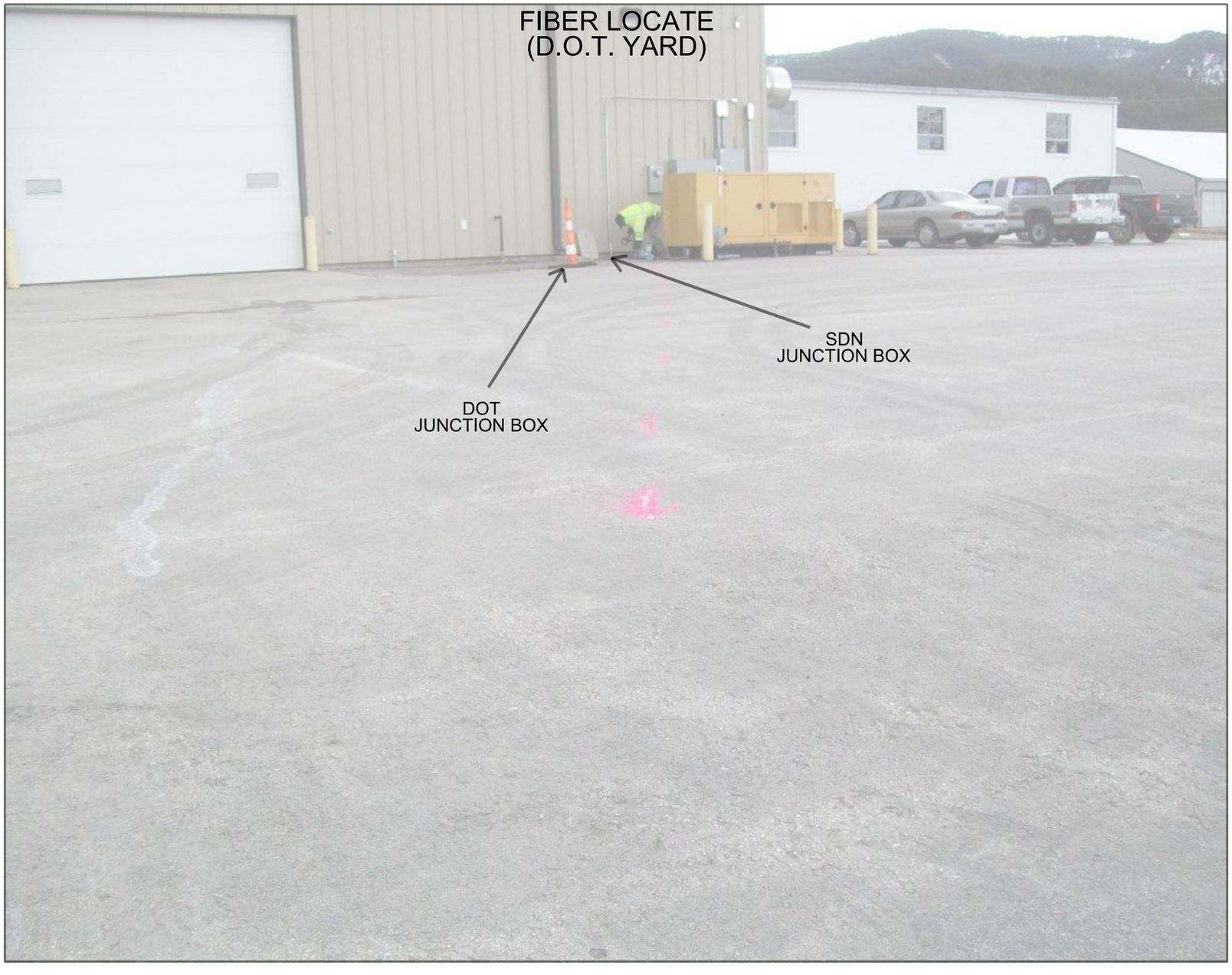
CITY AERIAL

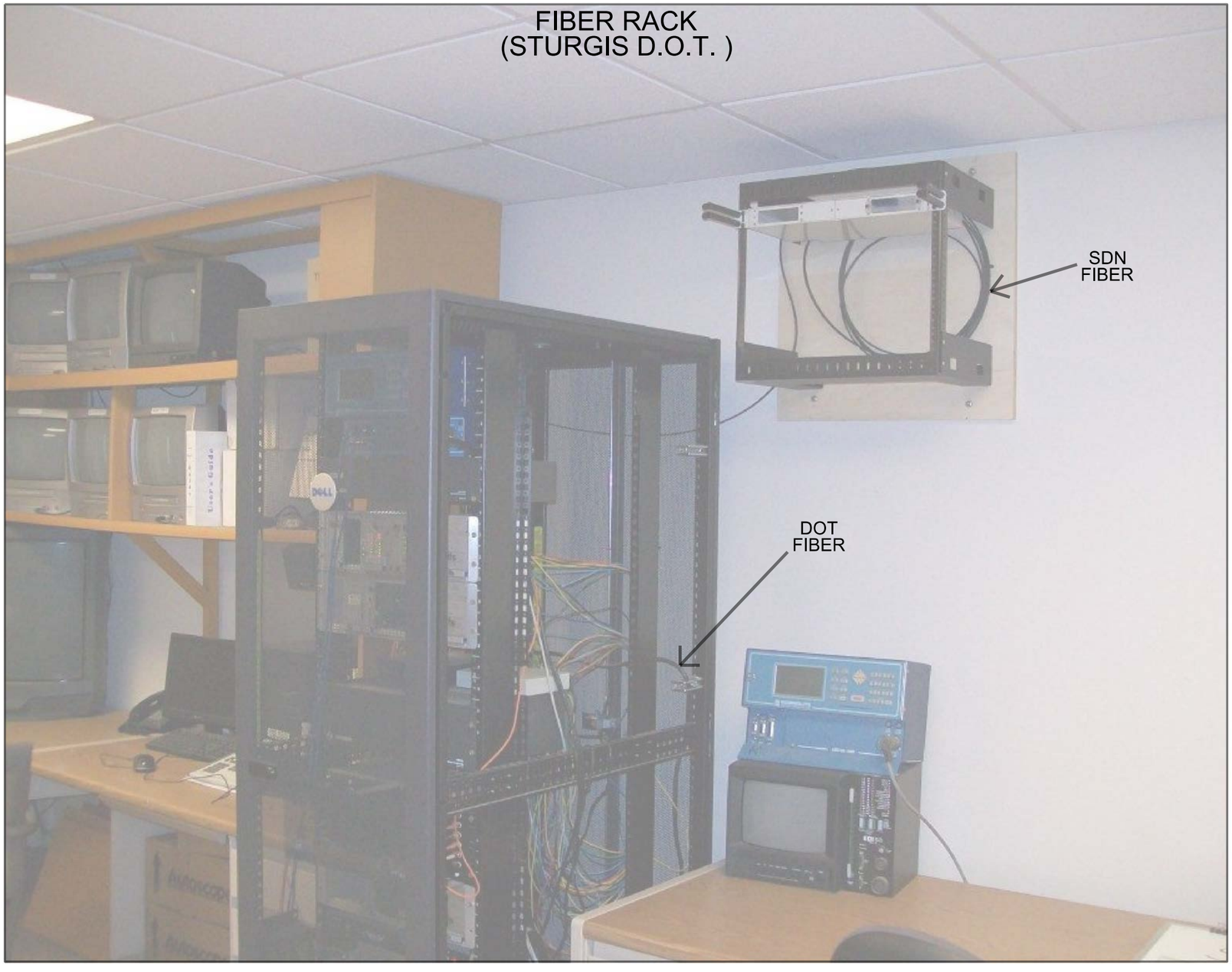
CITY UNDERGROUND

DOT UNDERGROUND

PROPOSED AERIAL

PROPOSED
IN EXISTING CONDUIT


FIBER LOCATE
(D.O.T. YARD)
SDN
JUNCTION BOX
DOT
JUNCTION BOX


FIBER RACK
(STURGIS D.O.T.)
SDN
FIBER
DOT
FIBER

FIBER PATH
(LOCATIONS 32-33)

33

32

EXIT 30

INTERSATE 90

EXIT 30

LAZELLE ST

NOT TO SCALE

CITY AERIAL

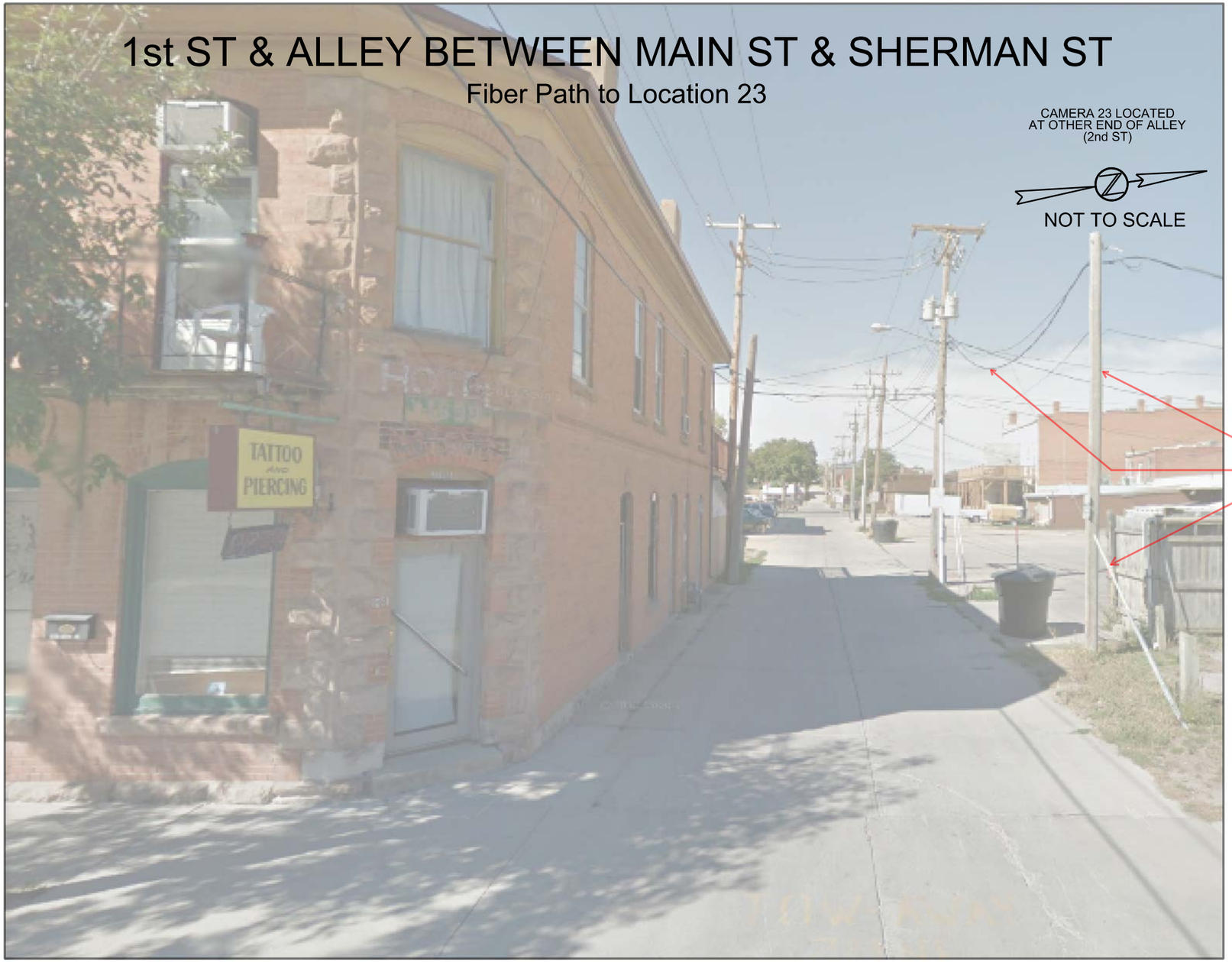
CITY UNDERGROUND

DOT UNDERGROUND

PROPOSED AERIAL

1st ST & ALLEY BETWEEN MAIN ST & SHERMAN ST

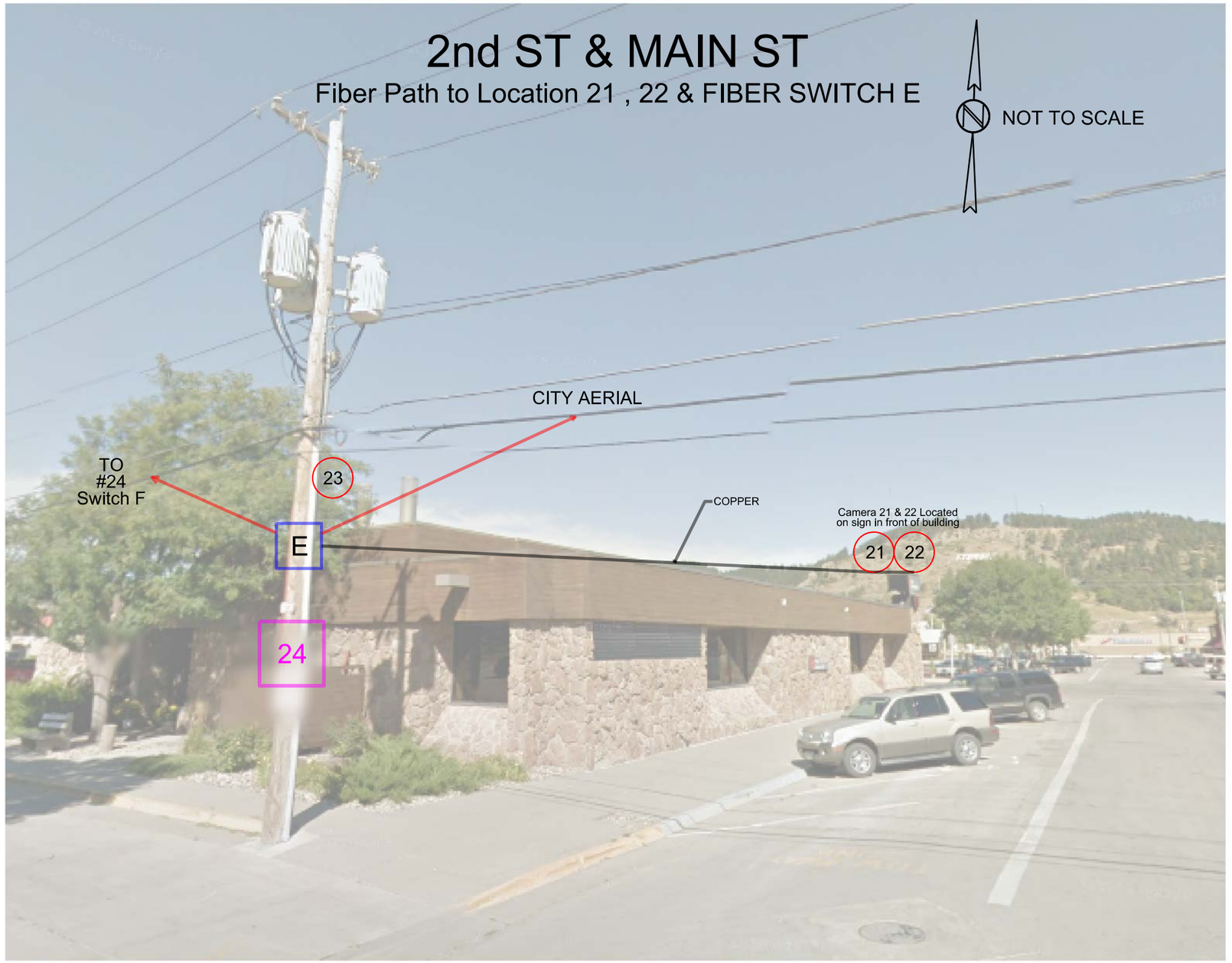
Fiber Path to Location 23



CAMERA 23 LOCATED
AT OTHER END OF ALLEY
(2nd ST)

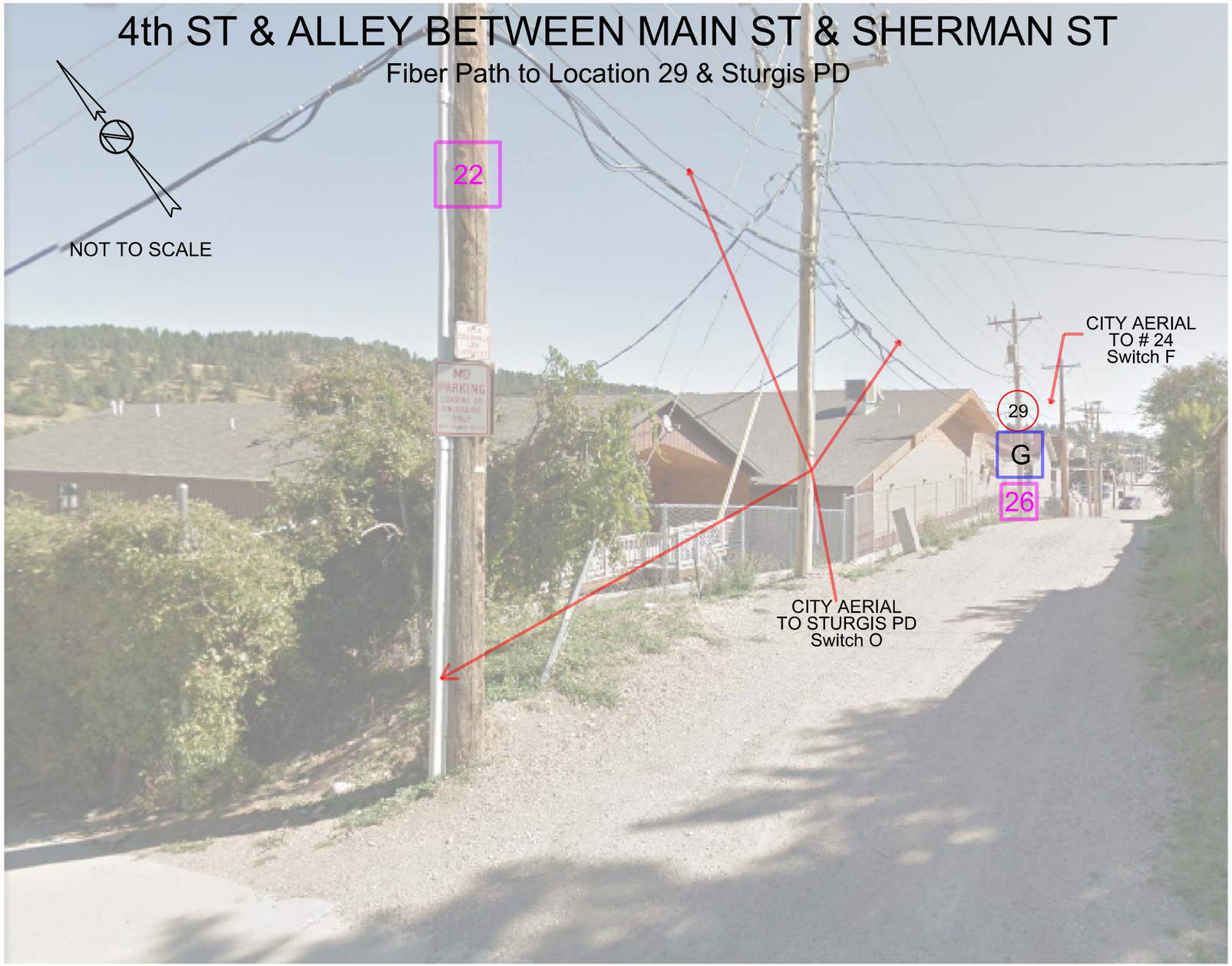
NOT TO SCALE

CITY AERIAL


2nd ST & MAIN ST
Fiber Path to Location 21 , 22 & FIBER SWITCH E
NOT TO SCALE
CITY AERIAL
TO
#24
Switch F
23
E
24
COPPER
Camera 21 & 22 Located
on sign in front of building
21
22

3rd ST & ALLEY BETWEEN MAIN ST & SHERMAN ST

Fiber Path to Location 24 & FIBER SWITCH F


4th ST & ALLEY BETWEEN MAIN ST & SHERMAN ST
Fiber Path to Location 29 & Sturgis PD
NOT TO SCALE
22
CITY AERIAL
TO # 24
Switch F
29
G
26
CITY AERIAL
TO STURGIS PD
Switch O

JUNCTION AVE & ALLEY BETWEEN MAIN ST & SHERMAN ST

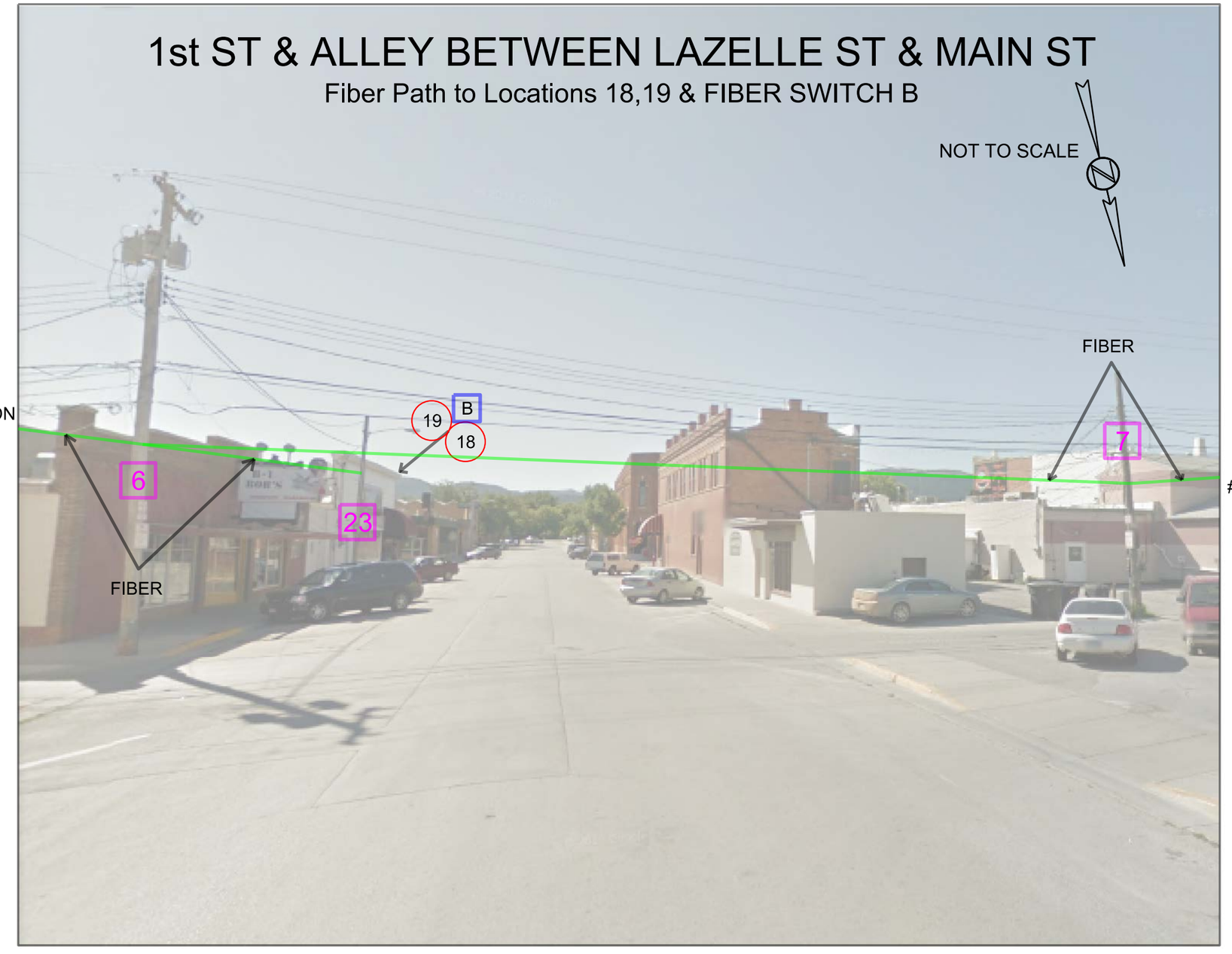
Fiber Path to Location 15-17 & Fiber Switch J&P


JUNCTION AVE & ALLEY BETWEEN LAZELLE ST & MAIN ST
Fiber Path to Location 14 & Fiber Switch A
FIBER
1
14
A
NOT TO SCALE

1st ST & ALLEY BETWEEN LAZELLE ST & MAIN ST

Fiber Path to Locations 18,19 & FIBER SWITCH B

NOT TO SCALE



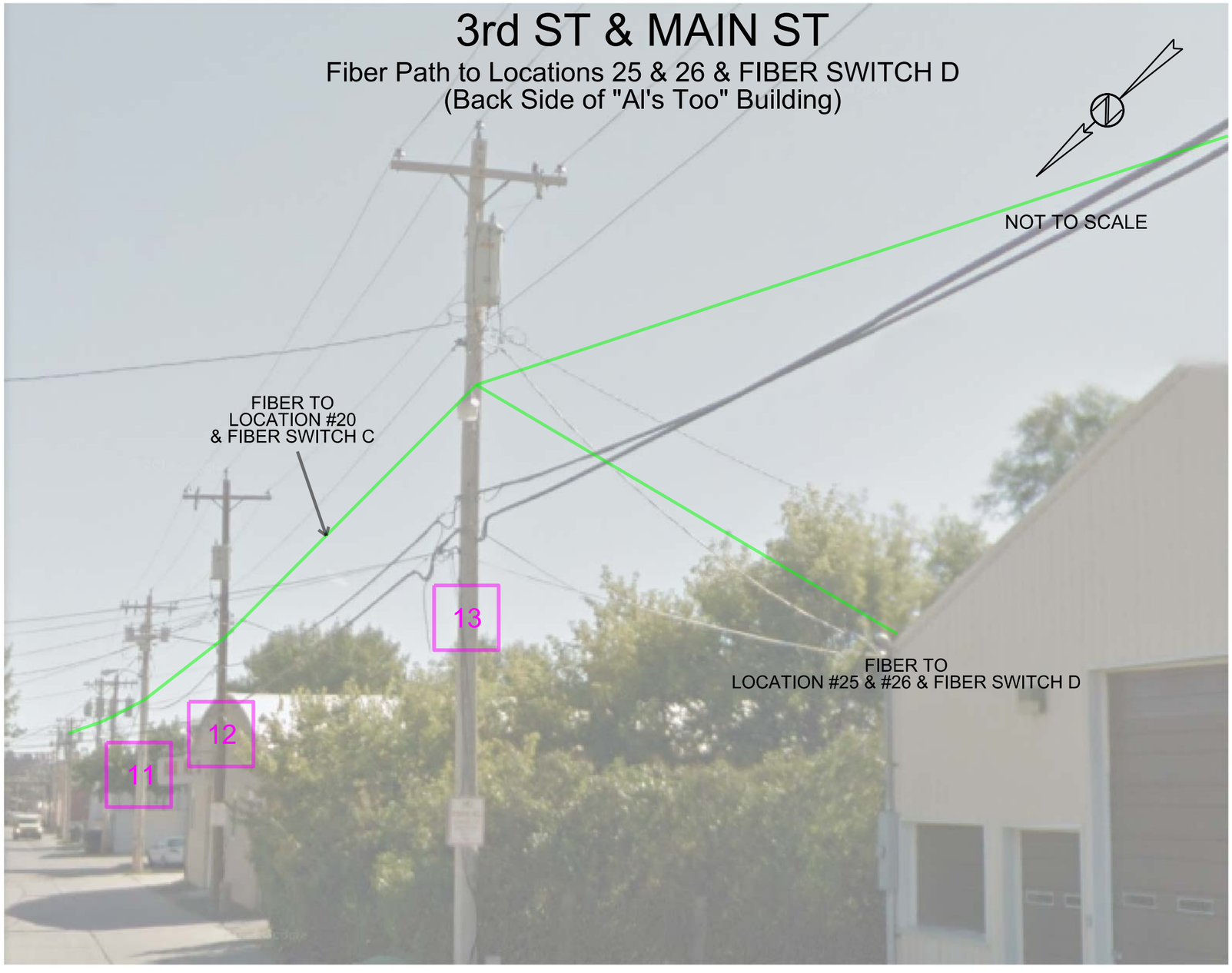

1st ST & ALLEY BETWEEN LAZELLE ST & MAIN ST
Fiber Path to Locations 18,19 & FIBER SWITCH B
CAMERAS 18 & 19 LOCATED ON TOP OF THIS BUILDING (FRONT)
NOT TO SCALE
FIBER
23
6
AERIAL FIBER

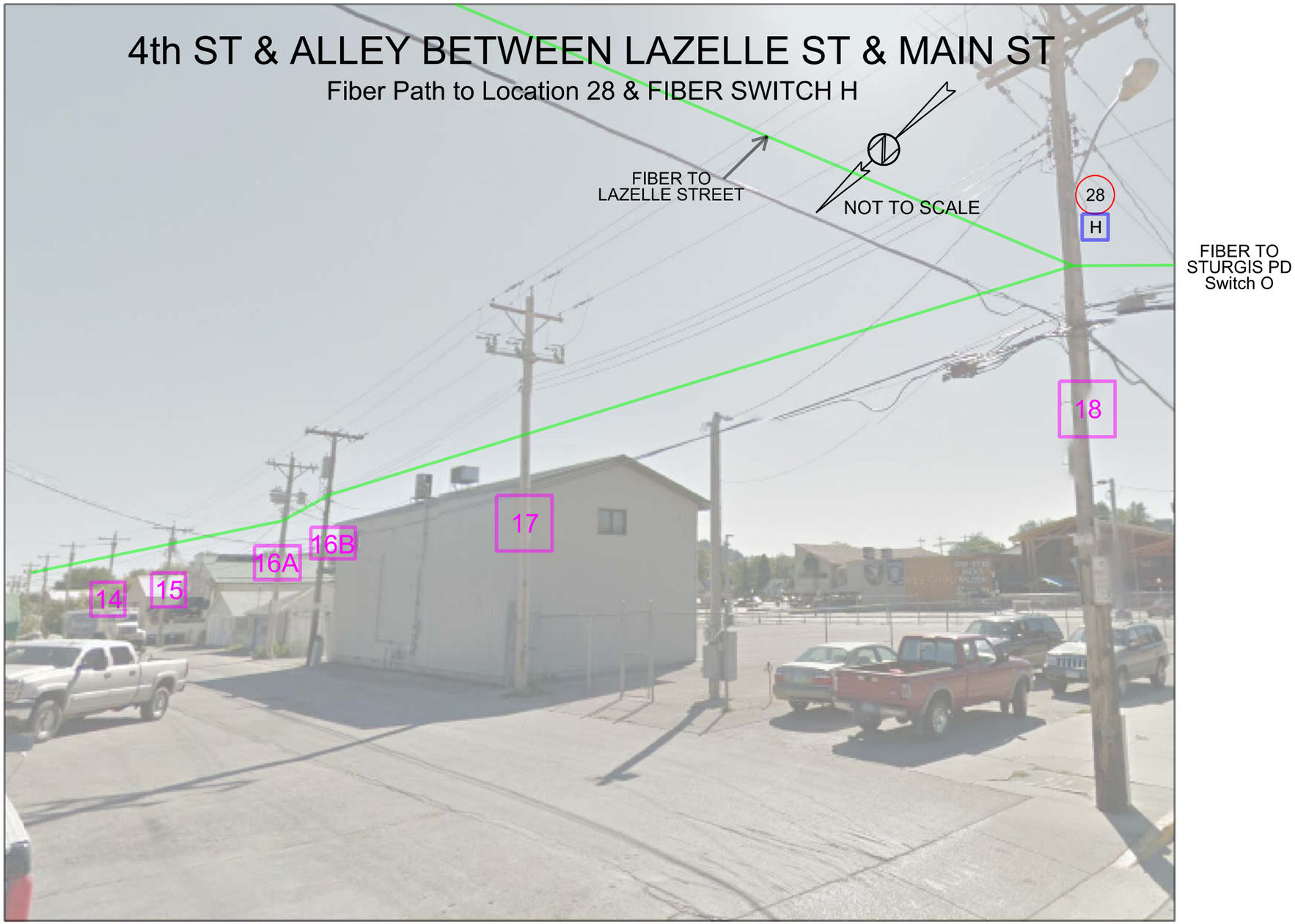
2nd ST & ALLEY BETWEEN LAZELLE ST & MAIN ST

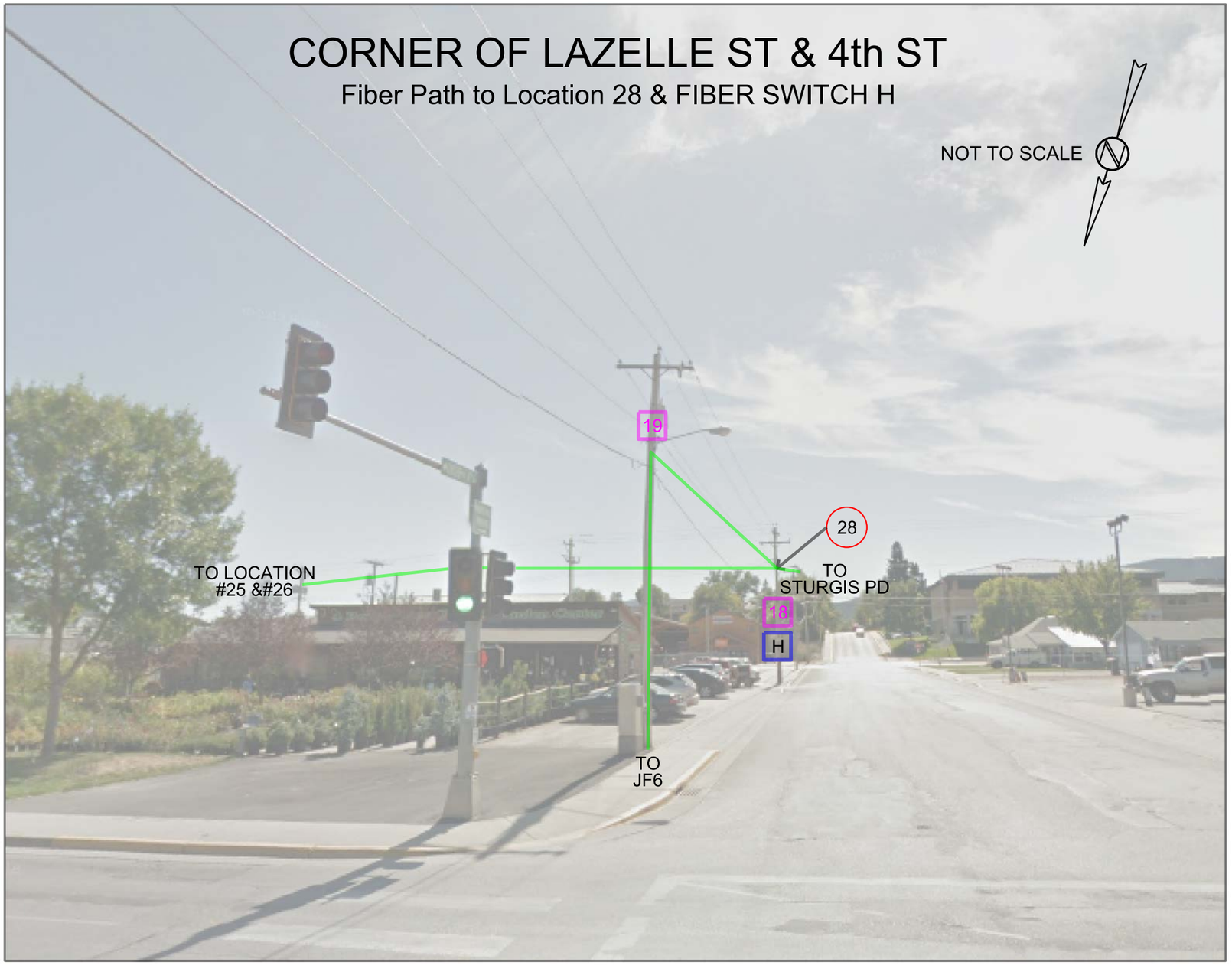
Fiber Path to Locations 20 & SWITCH C

3rd ST & MAIN ST

Fiber Path to Locations 25 & 26 & FIBER SWITCH D
(Back Side of "Al's Too" Building)



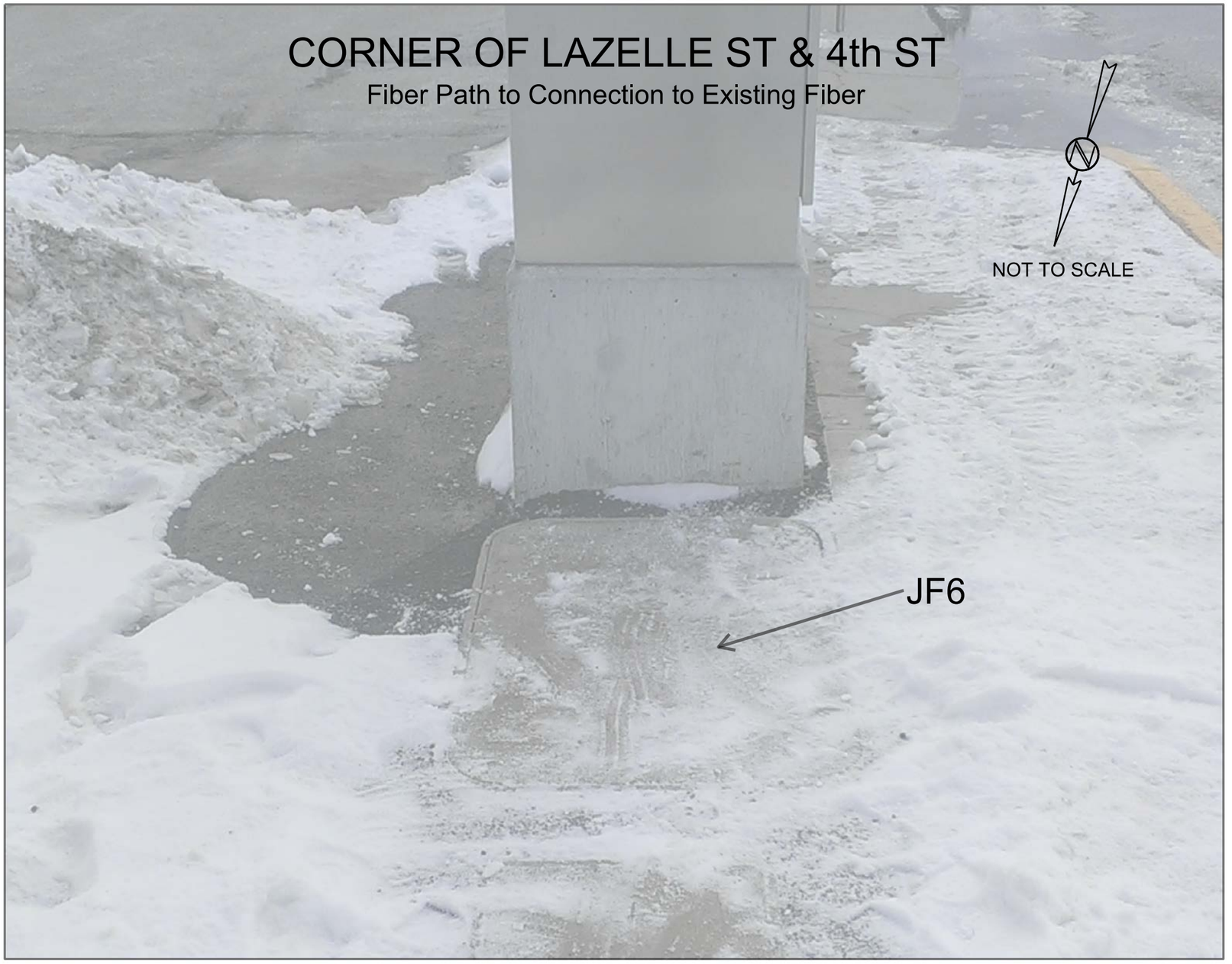

4th ST & ALLEY BETWEEN LAZELLE ST & MAIN ST
Fiber Path to Location 28 & FIBER SWITCH H
FIBER TO
LAZELLE STREET
NOT TO SCALE
28
H
FIBER TO
STURGIS PD
Switch O
18
17
16B
16A
15
14


CORNER OF LAZELLE ST & 4th ST
Fiber Path to Location 28 & FIBER SWITCH H
NOT TO SCALE
19
28
TO LOCATION
#25 &#26
TO
STURGIS PD
18
H
TO
JF6


CORNER OF LAZELLE ST & 4th ST
Fiber Path to Connect to Existing Fiber
NOT TO SCALE
19
TO
28
TO
JF6
ROCKINGTREE
Floral
&
Garden
Center
Gifts
THIS WEEK, SALE
30 - 50% OFF
KITCHEN ITEMS

CORNER OF LAZELLE ST & 4th ST

Fiber Path to Connection to Existing Fiber



EXISTING CONDUIT LAYOUT

SD HWY 34/LAZELLE STREET & 4TH STREET

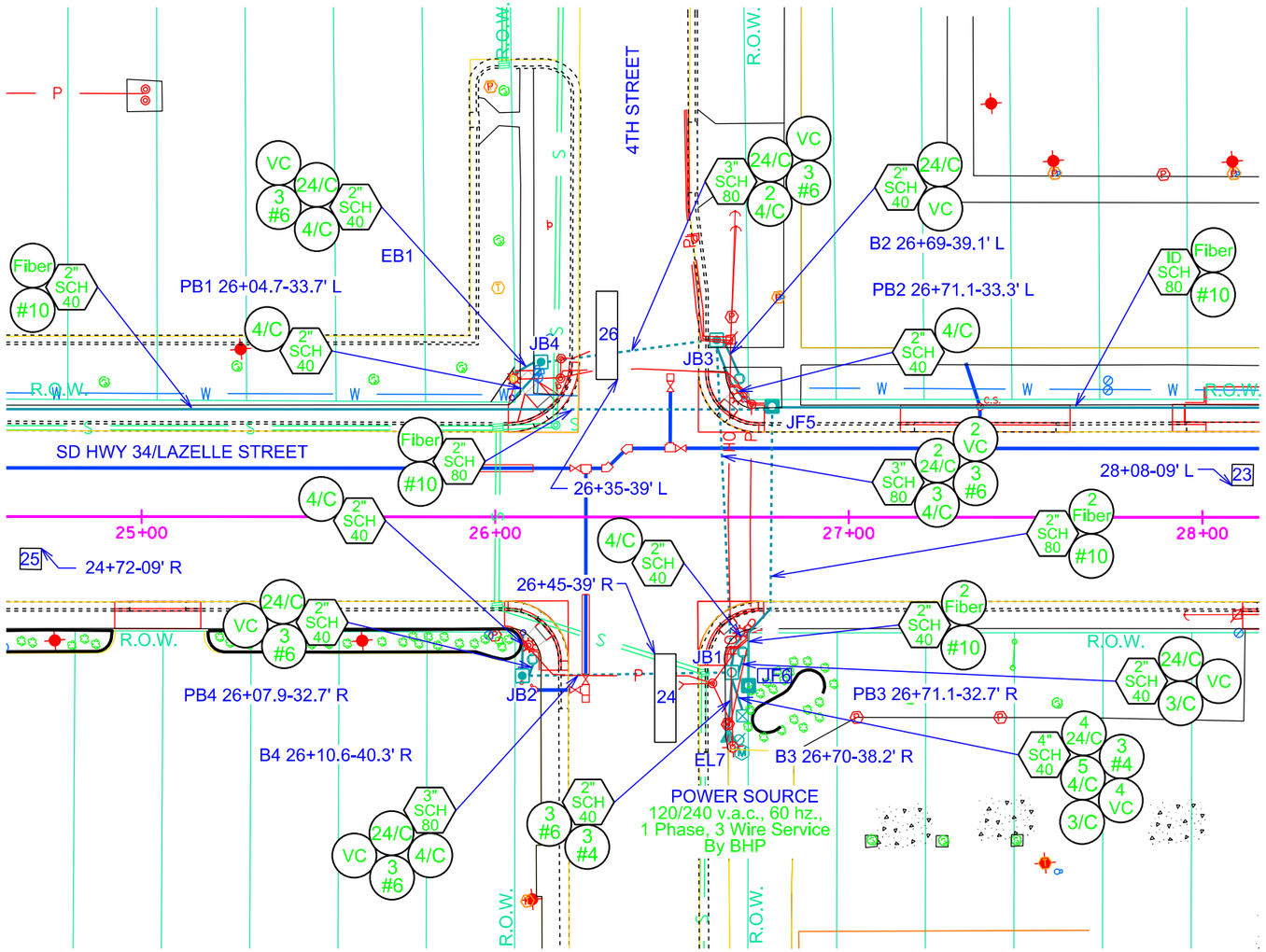
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	81	107

Plotting Date: 04/02/2014

THIS SHEET HAS BEEN REVISED TO REFLECT CONSTRUCTION AS-BUILTS

SCALE
1" = 40'

KEY	ITEM
	3' DIAMETER FOOTING (B2,B3)
	4' DIAMETER FOOTING (B4)
	TYPE 2 ELECTRICAL JUNCTION BOX (JB2-JB4)
	TYPE 3 ELECTRICAL JUNCTION BOX (JB1)
	TRAFFIC SIGNAL CONTROLLER
	GALVANIZED STEEL UTILITY POST
M	METER SOCKET
	ELECTRICAL SERVICE CABINET
	VIDEO DETECTION LOOP (23,25)
	VIDEO DETECTION LOOP (24,26)
2 SCH 40	2" RIGID CONDUIT, SCHEDULE 40
4 SCH 40	4" RIGID CONDUIT, SCHEDULE 40
3 SCH 80	3" RIGID CONDUIT, SCHEDULE 80
#4	1/C #4 AWG COPPER WIRE
#6	1/C #6 AWG COPPER CABLE
4/C	4/C #14 AWG COPPER TRAY CABLE, K2
24/C	24/C #14 AWG COPPER TRAY CABLE, K2
VC	VIDEO CABLE



EXISTING CONDUIT LAYOUT

SD HWY 34/LAZELLE STREET & 3RD STREET

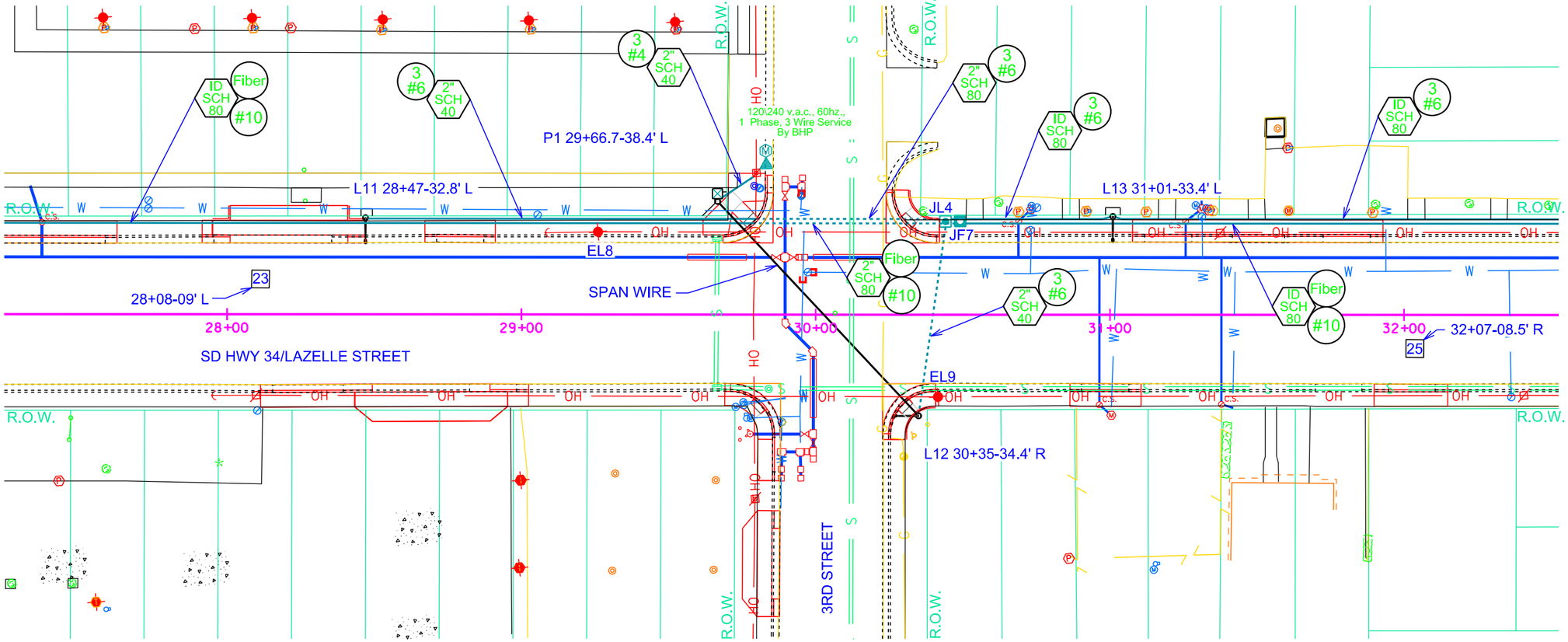
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	82	107

Plotting Date: 04/02/2014

THIS SHEET HAS BEEN REVISED TO REFLECT CONSTRUCTION AS-BUILTS

SCALE
1" = 40'

KEY	ITEM
⌀	GALVANIZED STEEL UTILITY POLE NOT A BID ITEM
O	3' DIAMETER FOOTING (P1,L12)
▲	ELECTRICAL SERVICE CABINET
2 SCH 40	2" RIGID CONDUIT, SCHEDULE 40
#4	1/C #4 AWG COPPER WIRE



Plot Scale - 1:40

Plotted From - tmpt14286

File - U:\traf\Misc\traffic\DPS\028c.dgn

EXISTING CONDUIT LAYOUT

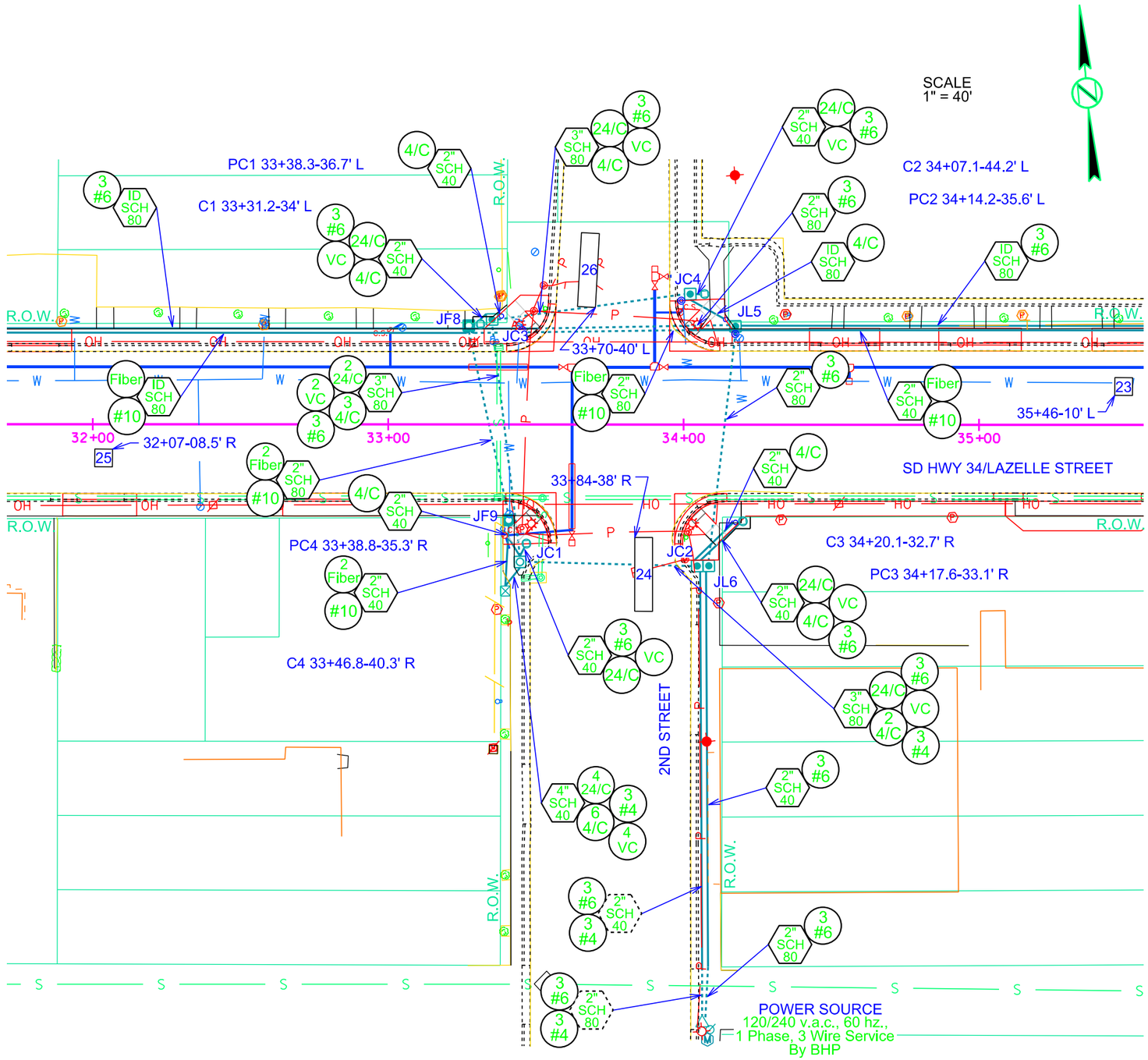
SD HWY 34/LAZELLE STREET & 2ND STREET

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	83	107

Plotting Date: 04/02/2014

THIS SHEET HAS BEEN REVISED TO REFLECT CONSTRUCTION AS-BUILTS

KEY	ITEM
	4' DIAMETER FOOTING (C1-C4)
	GALVANIZED STEEL UTILITY POST
M	METER SOCKET
	ELECTRICAL SERVICE CABINET
	TYPE 2 ELECTRICAL JUNCTION BOX (JC2-JC4)
	TYPE 3 ELECTRICAL JUNCTION BOX (JC1)
	TRAFFIC SIGNAL CONTROLLER
	VIDEO DETECTION LOOP (23,25)
	VIDEO DETECTION LOOP (24,26)
2" SCH 40	2" RIGID CONDUIT, SCHEDULE 40
2" SCH 80	2" RIGID CONDUIT, SCHEDULE 80
4" SCH 40	4" RIGID CONDUIT, SCHEDULE 40
3" SCH 80	3" RIGID CONDUIT, SCHEDULE 80
#4	1/C #4 AWG COPPER WIRE
#6	1/C #6 AWG COPPER CABLE
4/C	4/C #14 AWG COPPER TRAY CABLE, K2
24/C	24/C #14 AWG COPPER TRAY CABLE, K2
VC	VIDEO CABLE



EXISTING CONDUIT LAYOUT

SD HWY 34/LAZELLE STREET & 1ST STREET
EXISTING FIBER PATH

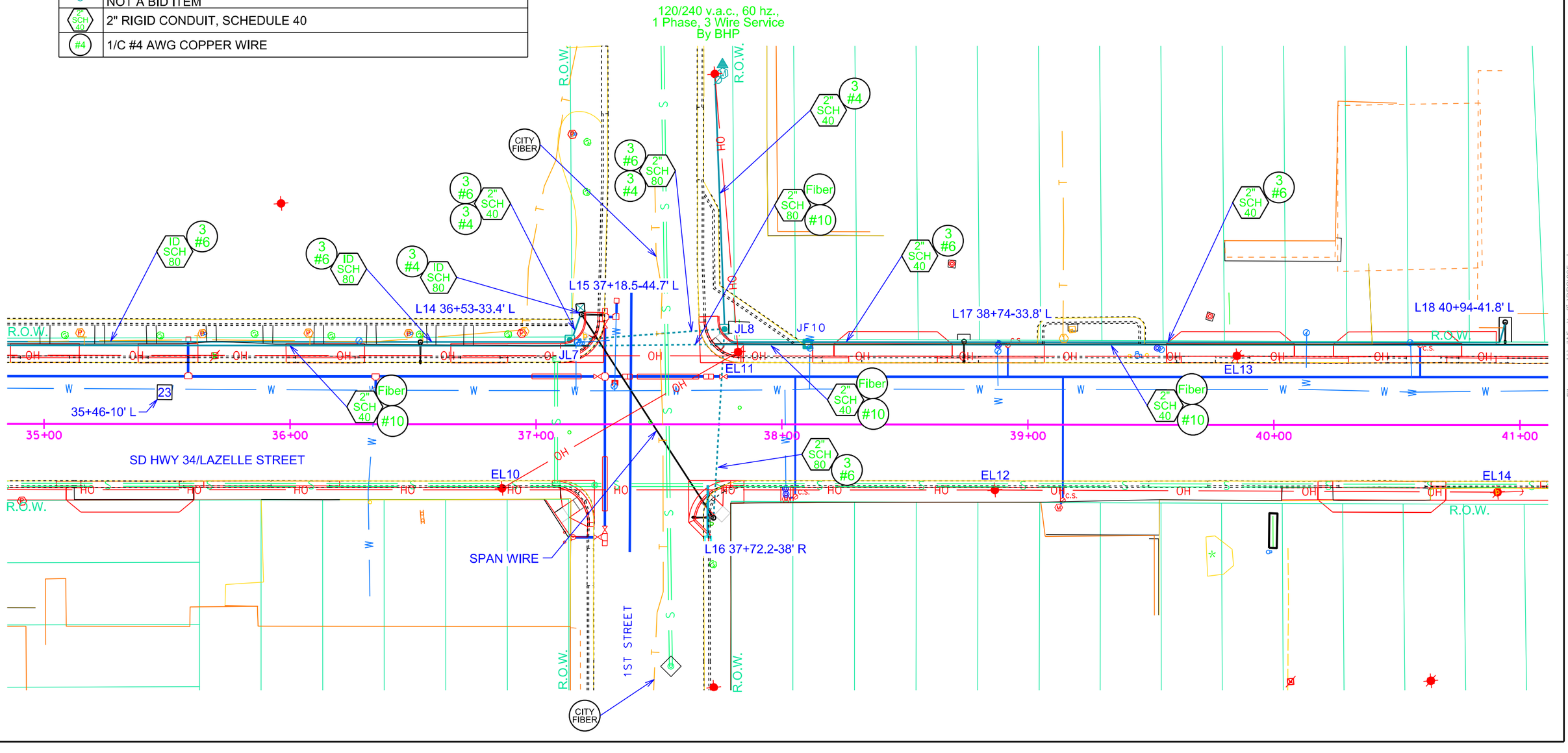
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	84	107

Plotting Date: 04/02/2014 Revised Date: 07/16/2013 SB

THIS SHEET HAS BEEN REVISED TO REFLECT CONSTRUCTION AS-BUILTS

SCALE
1" = 40'

KEY	ITEM
⌀	GALVANIZED STEEL UTILITY POLE NOT A BID ITEM
O	3' DIAMETER FOOTING (L15,L16)
▲	ELECTRICAL SERVICE CABINET
M	METER SOCKET NOT A BID ITEM
2" SCH 40	2" RIGID CONDUIT, SCHEDULE 40
#4	1/C #4 AWG COPPER WIRE



EXISTING CONDUIT LAYOUT

SD HWY 34/LAZELLE STREET & JUNCTION AVENUE
CAMERA 13 & SWITCH I EXISTING FIBER PATH

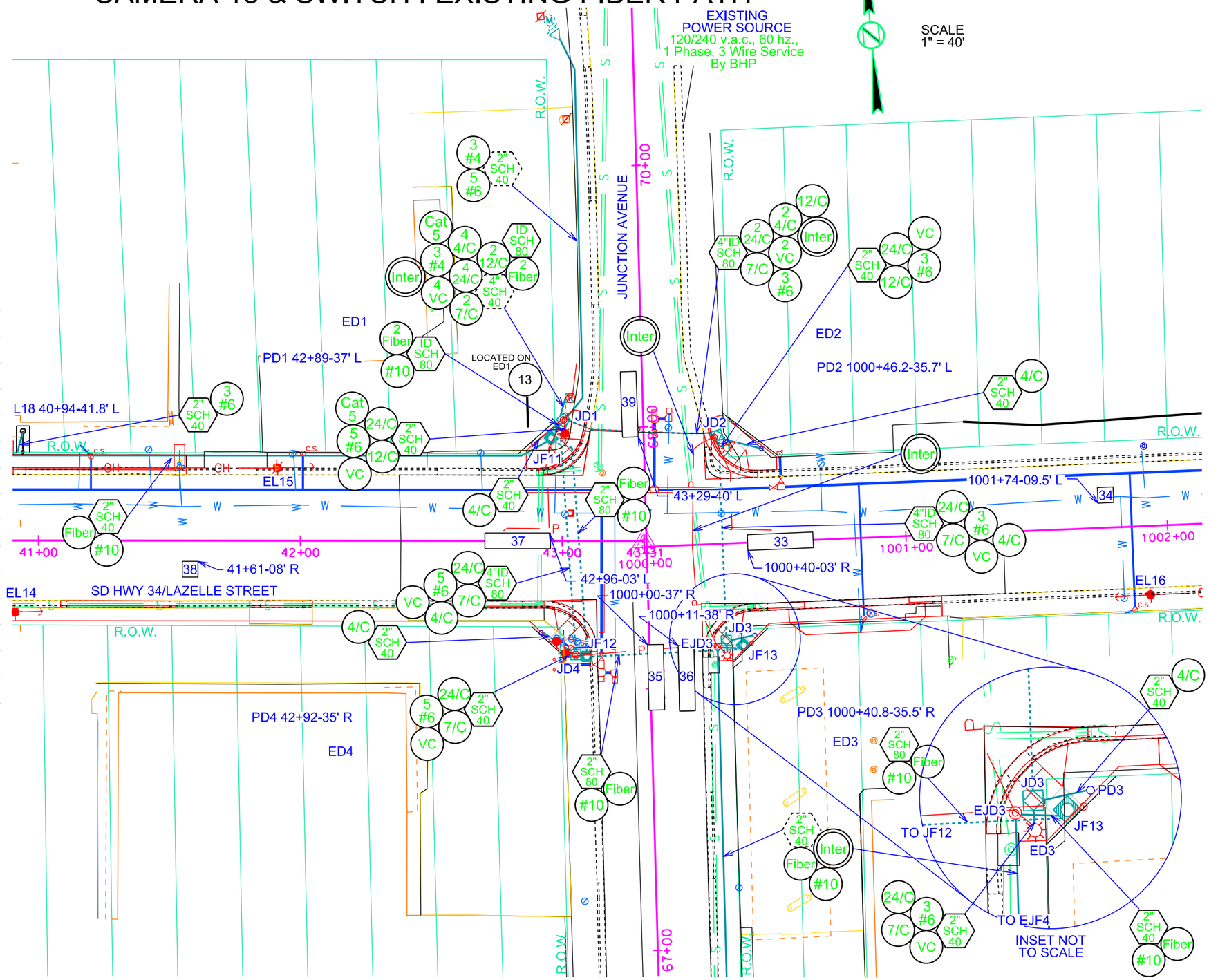
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	85	107

Plotting Date: 04/02/2014 Revised Date: 01/31/2014 SB

THIS SHEET HAS BEEN REVISED TO REFLECT CONSTRUCTION AS-BUILTS

SCALE 1" = 40'

EXISTING SIGNAL EQUIPMENT	
KEY	ITEM
	POWER POLE
	WOOD UTILITY POLE
	JUNCTION BOX (EJD3)
	ELECTRICAL SERVICE CABINET
M	METER SOCKET
2" SCH 40	2" RIGID CONDUIT, SCHEDULE 40
4" SCH 40	4" RIGID CONDUIT, SCHEDULE 40
	VIDEO DETECTION LOOP (34,38)
	VIDEO DETECTION LOOP (33,35,36,37,39)
	TRAFFIC SIGNAL CONTROLLER
	TYPE 1 ELECTRICAL JUNCTION BOX (JD2, JD3, JD4)
	TYPE 3 ELECTRICAL JUNCTION BOX (JD1)
2" SCH 40	2" RIGID CONDUIT, SCHEDULE 40
4"ID SCH 80	4" INNERDUCT, SCHEDULE 80
#4	1/C #4 AWG COPPER WIRE
#6	1/C #6 AWG COPPER WIRE
4/C	4/C #14 AWG COPPER TRAY CABLE, K2
7/C	7/C #14 AWG COPPER TRAY CABLE, K2
12/C	12/C #14 AWG COPPER TRAY CABLE, K2
24/C	24/C #14 AWG COPPER TRAY CABLE, K2
VC	VIDEO CABLE NOT A BID ITEM
CAT 5	OUTDOOR RATED CATEGORY 5 CABLE
	MISCELLANEOUS, ELECTRICAL (OUTLETS ON ED1 & ED4)



Plot Scale - 1:40

Plotted From - tmp14286

File - ...\DPSLocation14Conduit.dgn

EXISTING CONDUIT LAYOUT

SD HWY 79/JUNCTION AVENUE
CAMERAS 14 - 17 & SWITCHES A,J&P EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	86	107

Plotting Date: 04/02/2014

SCALE
1" = 40'

HOWARD STREET
SHERMAN STREET
MAIN STREET
SD HWY 79/JUNCTION AVENUE
R.O.W.
EL35
EL36
EL37
EL38
EL39
EJL1
EJL2
EJF2
EJF3
EJF4
57+00
58+00
59+00
60+00
61+00
62+00
63+00
64+00
65+00
66+00
67+00
3 #6 2" SCH 40
4 #6 2" SCH 80
4 #6 2" SCH 40
Fiber Inter #10 2" SCH 40
Fiber Inter #10 2" SCH 80
CAT 5 2" SCH 80
4 #6 1 FIBER PAIR
4 #6 FIBER PAIRS
17
P
15
16
A
14
J
120/240 v.a.c., 60 hz., 1 Phase, 3 Wire Service By BHP

Plot Scale - 1:40
Plotted From - tmp14286
File - ...\DPS\Location15-16Conduit.dgn

EXISTING CONDUIT LAYOUT

SD HWY 79/JUNCTION AVENUE
EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	87	107

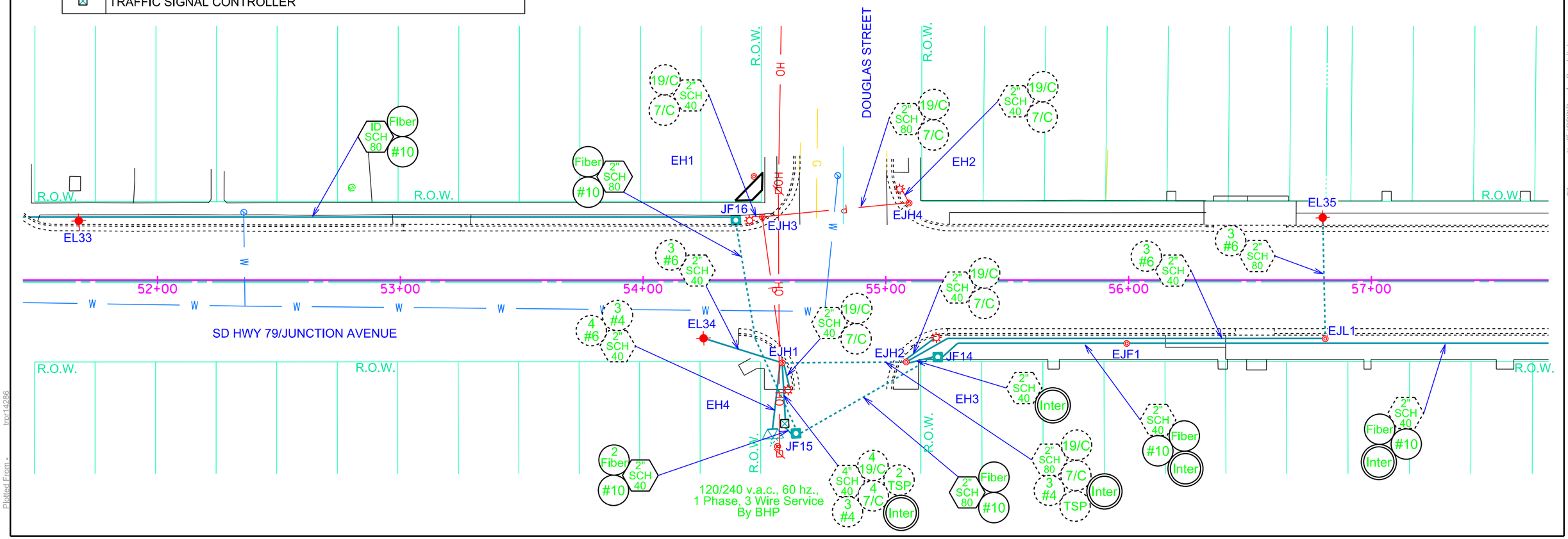
Plotting Date: 04/02/2014 Revised Date: 07/16/2013 SB

THIS SHEET HAS BEEN REVISED TO REFLECT CONSTRUCTION AS-BUILTS

SCALE
1" = 40'

AS-BUILT NOTE: NO SLACK IN FIBER FROM DOUGLAS STREET TO LAZELLE STREET

EXISTING ITEMS	
KEY	ITEM
	POWER POLE
	WOOD UTILITY POLE
	JUNCTION BOX (EJH1-EJH4)
	ELECTRICAL SERVICE CABINET
M	METER SOCKET
2" SCH 40	2" RIGID CONDUIT, SCHEDULE 40
4" SCH 40	4" RIGID CONDUIT, SCHEDULE 40
2" SCH 80	2" RIGID CONDUIT, SCHEDULE 80
#4	1/C # 4 AWG COPPER WIRE
#6	1/C #6 AWG COPPER WIRE
4/C	7/C #14 AWG COPPER TRAY CABLE, K2
19/C	19/C #14 AWG COPPER TRAY CABLE, K2
TSP	#16 AWG COPPER TWISTED SHIELDED PAIR
	TRAFFIC SIGNAL CONTROLLER



Plotted From - trgr14286

File - ...\traffic\DPS\DouglasConduit.dgn

EXISTING CONDUIT LAYOUT

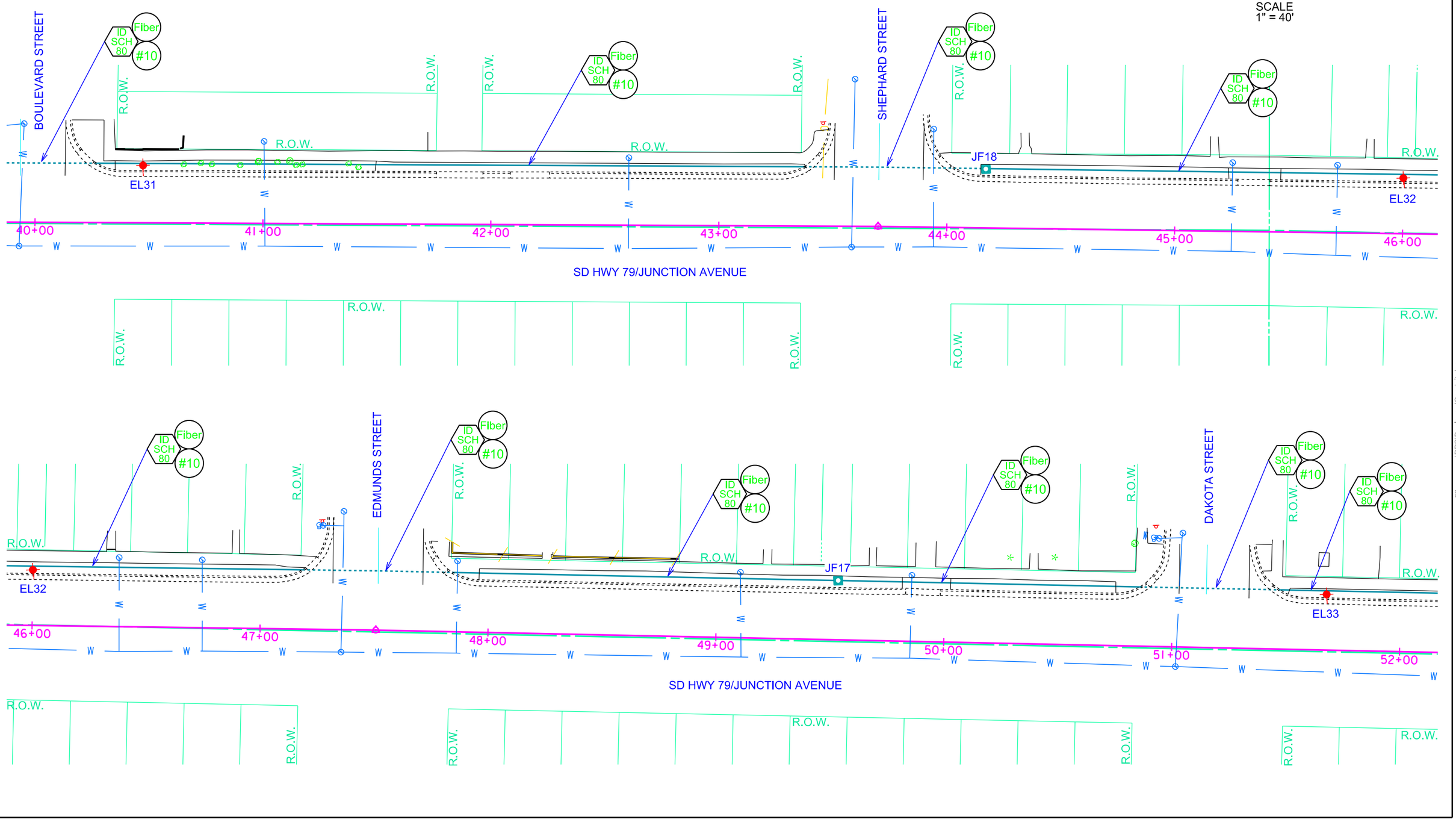
SD HWY 79/JUNCTION AVENUE
EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	88	107

Plotting Date: 04/02/2014 Revised Date: 07/16/2013 SB

THIS SHEET HAS BEEN REVISED TO REFLECT CONSTRUCTION AS-BUILTS

SCALE
1" = 40'



Plot Scale - 1:40

Plotted From - tmpr14286

File - ...\DPS\BoulevardConduit.dgn

EXISTING CONDUIT LAYOUT

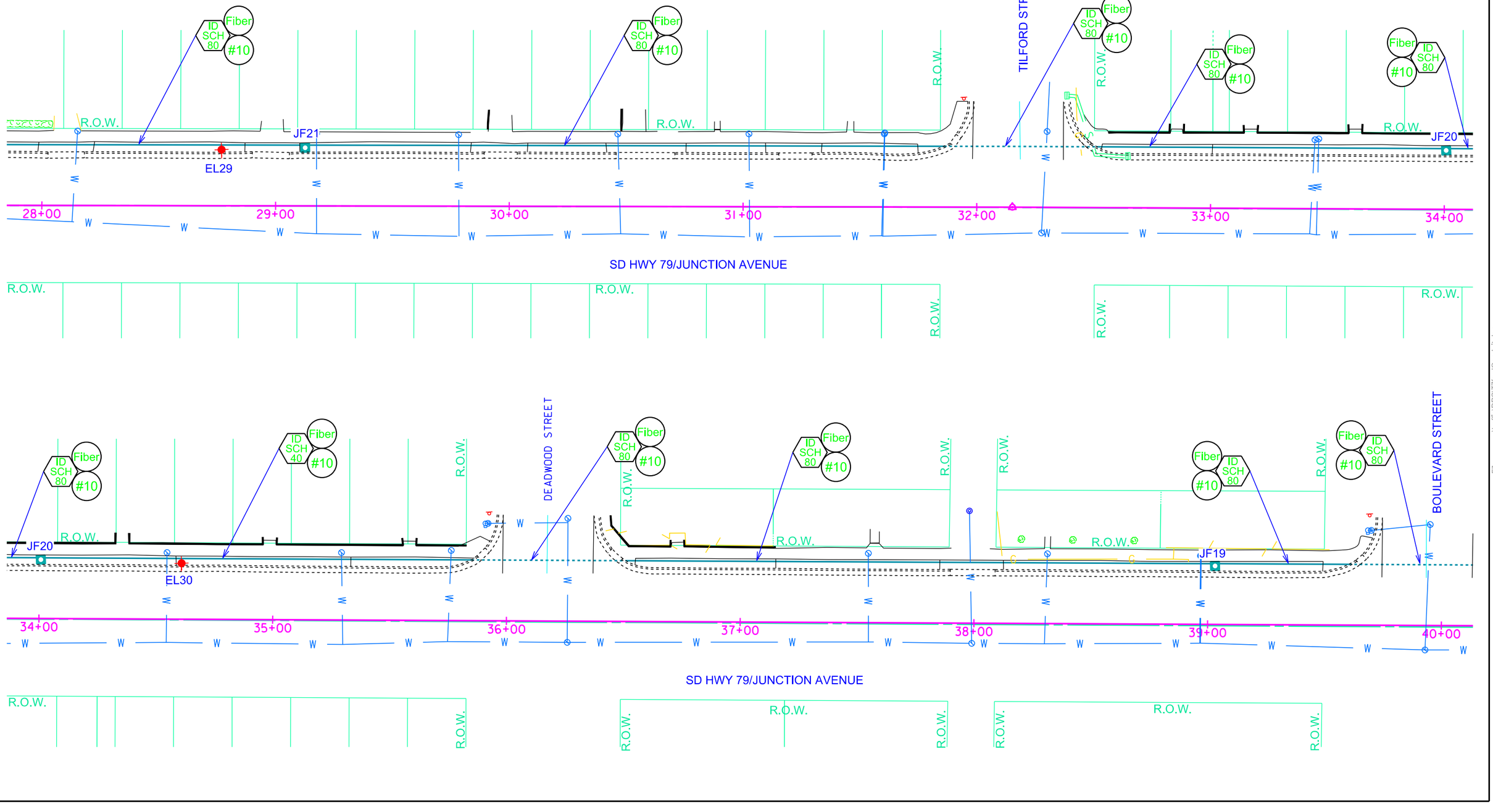
SD HWY 79/JUNCTION AVENUE
EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	89	107

Plotting Date: 04/02/2014 Revised Date: 07/16/2013 SB

THIS SHEET HAS BEEN REVISED TO REFLECT CONSTRUCTION AS-BUILTS

SCALE
1" = 40'



Plot Scale - 1:40

Plotted From - trpr14286

File - ...\traffic\DPS\TilfordConduit.dgn

EXISTING CONDUIT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	90	107

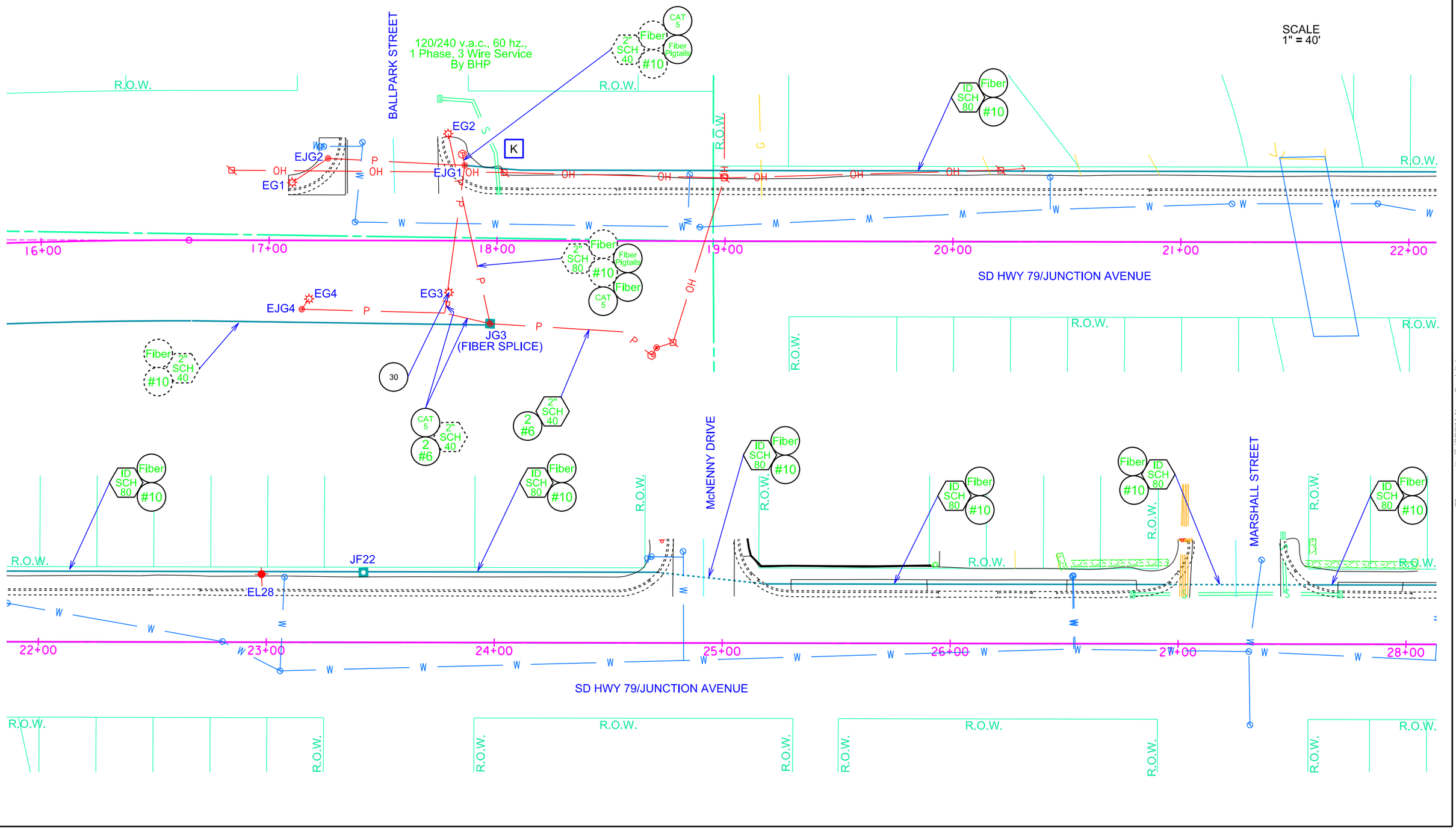
Plotting Date: 04/02/2014 Revised Date: 07/16/2013 SB

THIS SHEET HAS BEEN REVISED TO REFLECT CONSTRUCTION AS-BUILTS

NOTE: ADDITIONAL CABLES EXIST IN THE CONDUIT AT THE BALLPARK STREET INTERSECTION THAT ARE NOT INDICATED ON PLAN SHEET.

SD HWY 79/JUNCTION AVENUE EXISTING FIBER PATH

SCALE 1" = 40'



Plot Scale - 1:40

Plotted From - tmp14286

File - ...\traffic\DPS\McNennyConduit.dgn

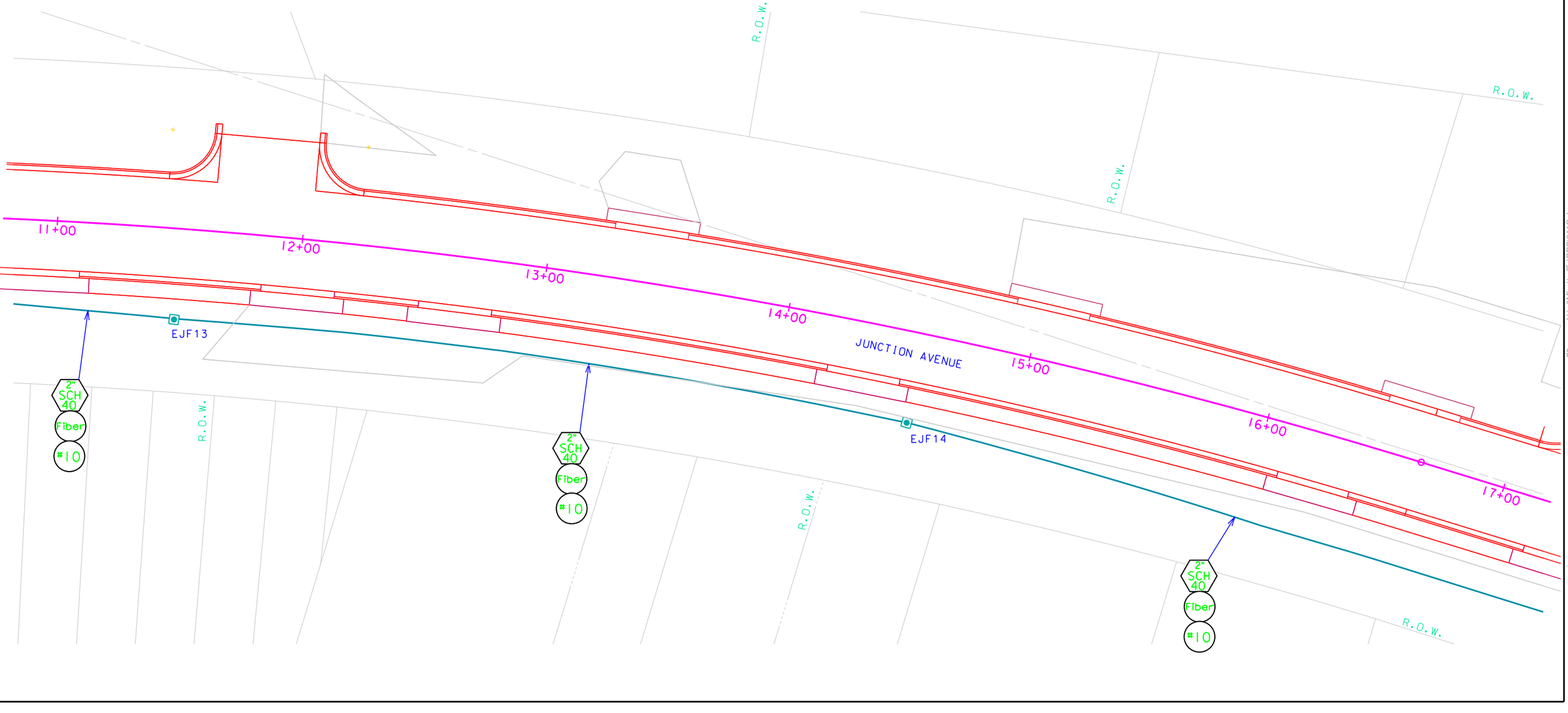
EXISTING CONDUIT LAYOUT

JUNCTION AVENUE
EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	91	107

Plotting Date: 04/02/2014

SCALE
1" = 40'



Plot Scale - 1:40
Plotted From - tmpr14286
File - U:\rdv\Misc\traffic\DPS\011C.dgn

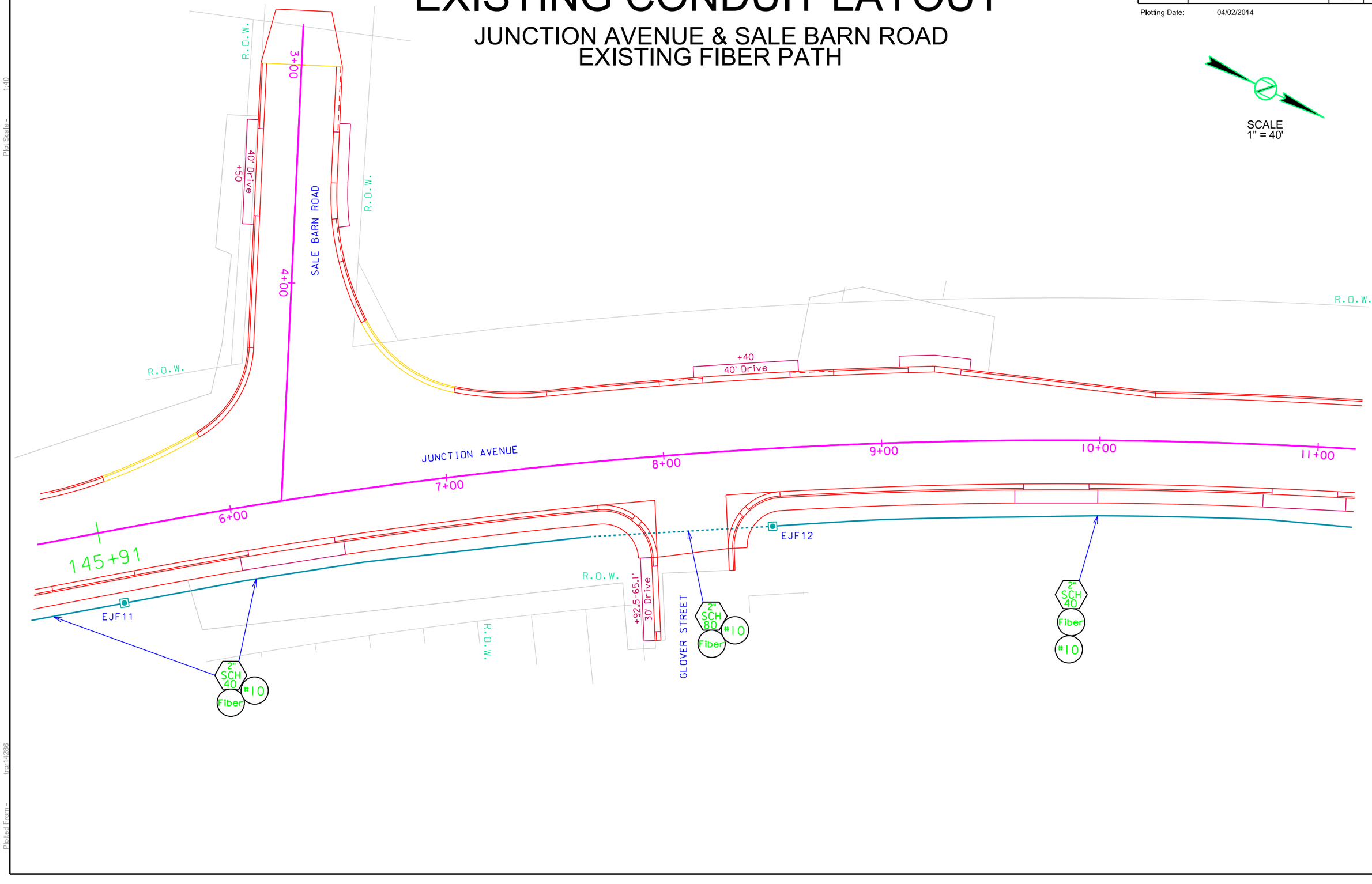
EXISTING CONDUIT LAYOUT

JUNCTION AVENUE & SALE BARN ROAD
EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	92	107

Plotting Date: 04/02/2014

SCALE
1" = 40'



Plot Scale - 1:40

Plotted From - tmpr14286

File - U:\rd\Misc\traffic\DPS\146C.DGN

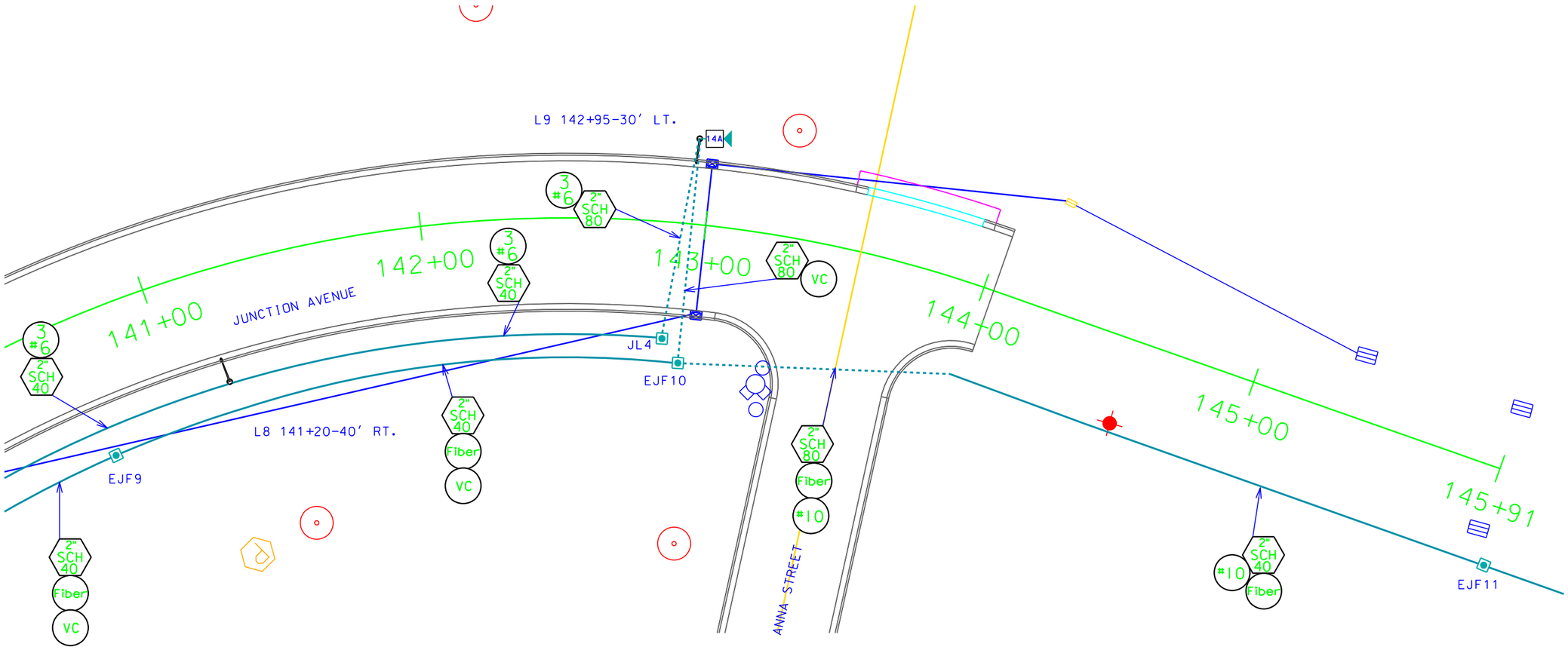
EXISTING CONDUIT LAYOUT

JUNCTION AVENUE & ANNA STREET
EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	93	107

Plotting Date: 04/02/2014

SCALE
1" = 40'



Plot Scale - 1:40

Plotted From - tmp14286

File - U:\rdi\Misc\traffic\DPS\141c.dgn

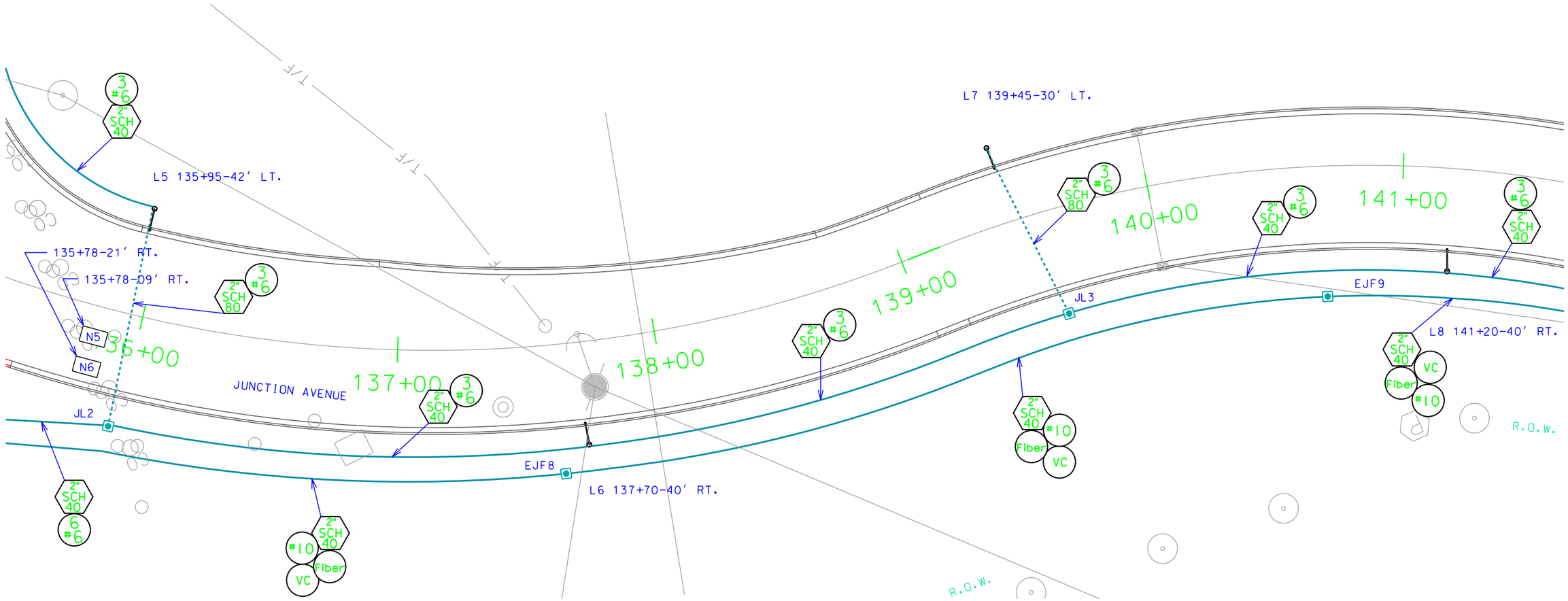
EXISTING CONDUIT LAYOUT

JUNCTION AVENUE
EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	94	107

Plotting Date: 04/02/2014

SCALE
1" = 40'



Plot Scale - 1:40

Plotted From - trpr14286

File - U:\rd\Misc\traffic\DPS136c.dgn

EXISTING CONDUIT LAYOUT

EXIT 32 WESTBOUND I-90 RAMPS & JUNCTION AVENUE
EXISTING FIBER PATH

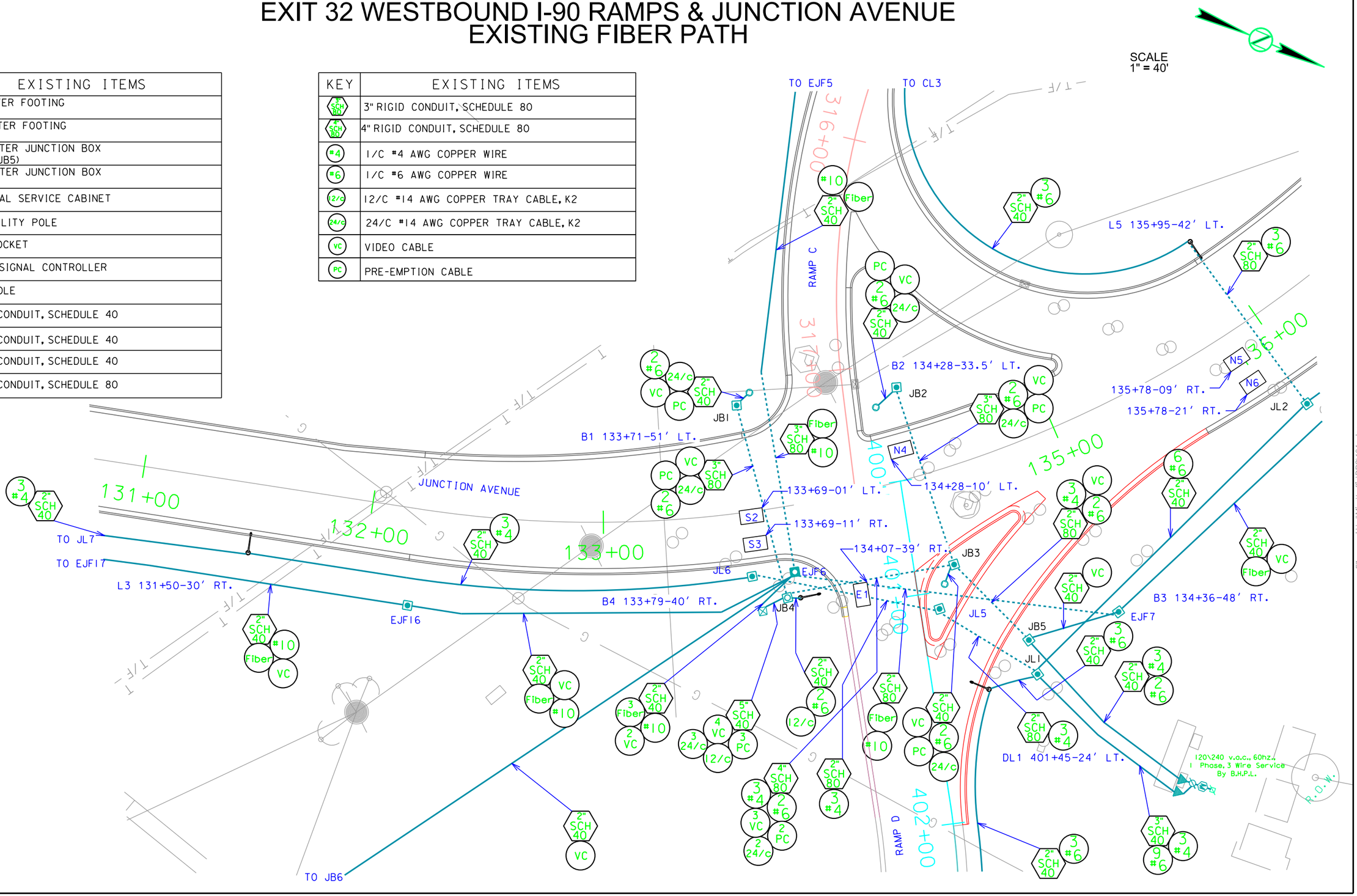
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	95	107

Plotting Date: 04/02/2014

SCALE
1" = 40'

KEY	EXISTING ITEMS
	2' DIAMETER FOOTING (B4)
	3' DIAMETER FOOTING (B1-B3)
	18" DIAMETER JUNCTION BOX (JB1-JB3,JB5)
	24" DIAMETER JUNCTION BOX (JB4)
	ELECTRICAL SERVICE CABINET
	WOOD UTILITY POLE
M	METER SOCKET
	TRAFFIC SIGNAL CONTROLLER
	POWER POLE
2" SCH 40	2" RIGID CONDUIT, SCHEDULE 40
3" SCH 40	3" RIGID CONDUIT, SCHEDULE 40
5" SCH 40	5" RIGID CONDUIT, SCHEDULE 40
2" SCH 80	2" RIGID CONDUIT, SCHEDULE 80

KEY	EXISTING ITEMS
3" SCH 80	3" RIGID CONDUIT, SCHEDULE 80
4" SCH 80	4" RIGID CONDUIT, SCHEDULE 80
#4	1/C #4 AWG COPPER WIRE
#6	1/C #6 AWG COPPER WIRE
12/c	12/C #14 AWG COPPER TRAY CABLE, K2
24/c	24/C #14 AWG COPPER TRAY CABLE, K2
VC	VIDEO CABLE
PC	PRE-EMPTION CABLE



Plot Scale - 1:40

Plotted From - tmp14286

File - U:\rdi\Misc\traffic\DPS1134c.dgn

EXISTING CONDUIT LAYOUT

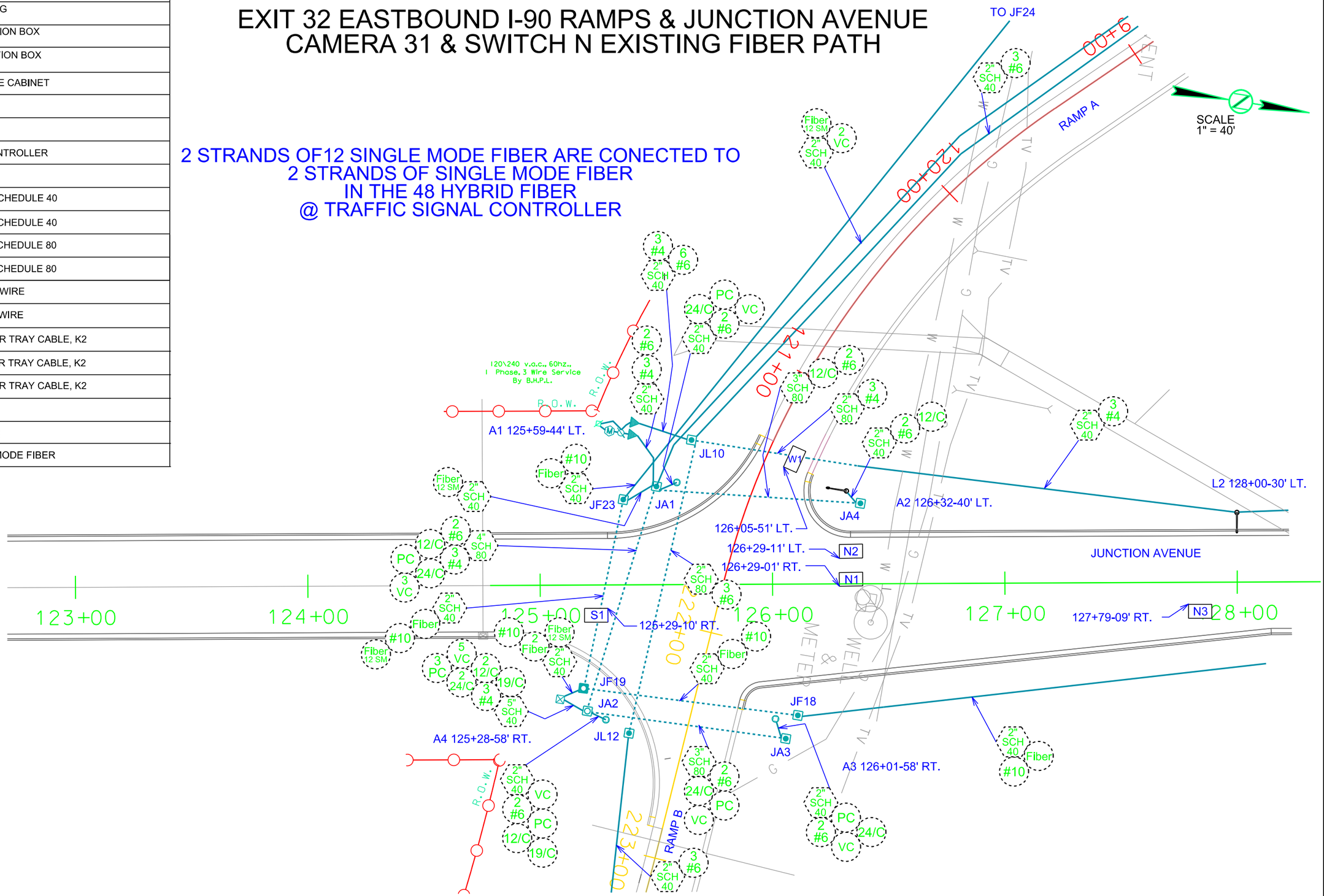
EXIT 32 EASTBOUND I-90 RAMPS & JUNCTION AVENUE
CAMERA 31 & SWITCH N EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	96	107

Plotting Date: 04/02/2014

KEY	EXISTING ITEMS
	2' DIAMETER FOOTING (A2)
	3' DIAMETER FOOTING (A1,A3-A4)
	18" DIAMETER JUNCTION BOX (JA1,JA3-JA7)
	24" DIAMETER JUNCTION BOX (JA2)
	ELECTRICAL SERVICE CABINET
	WOOD UTILITY POLE
M	METER SOCKET
	TRAFFIC SIGNAL CONTROLLER
	POWER POLE
2" SCH 40	2" RIGID CONDUIT, SCHEDULE 40
5" SCH 40	5" RIGID CONDUIT, SCHEDULE 40
3" SCH 80	3" RIGID CONDUIT, SCHEDULE 80
4" SCH 80	4" RIGID CONDUIT, SCHEDULE 80
#4	1/C #4 AWG COPPER WIRE
#6	1/C #6 AWG COPPER WIRE
12/C	12/C #14 AWG COPPER TRAY CABLE, K2
19/C	19/C #14 AWG COPPER TRAY CABLE, K2
24/C	24/C #14 AWG COPPER TRAY CABLE, K2
VC	VIDEO CABLE
PC	PRE-EMPTION CABLE
Fiber 12 SM	12 STRAND SINGLE MODE FIBER

2 STRANDS OF12 SINGLE MODE FIBER ARE CONECTED TO
2 STRANDS OF SINGLE MODE FIBER
IN THE 48 HYBRID FIBER
@ TRAFFIC SIGNAL CONTROLLER



EXISTING CONDUIT LAYOUT

INTERSTATE 90 EXIT 32 EASTBOUND OFF RAMP
CAMERA 31

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(133)34	97	107

Plotting Date: 04/02/2014

SCALE
1" = 40'

3 #4 2" SCH 40

IL4 214+47

IL5 217+90

213+00 214+00 215+00 216+00 217+00 218+00

INTERSTATE 90 EASTBOUND

3 #6 2" SCH 40

113+00 114+00 115+00 116+00 117+00 118+00 119+00

2" SCH 40 Fiber 12 SM 2 VC

JA6

AL2 115+05-10' RT.

RAMP A

JA5

AL3 118+34-10' RT.

R.O.W.

R.O.W.

EXISTING

Plot Scale - 1:40

Plotted From - trpr14286

File - ...\DPS\meade00DS213slc (2).dgn

EXISTING CONDUIT LAYOUT

INTERSTATE 90 EXIT 32 EASTBOUND OFF RAMP
CAMERA 31 & SWITCH N EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0034(133)34	98	107

Plotting Date: 04/02/2014

SCALE
1" = 40'

Fiber
#10
2" RG SC

Fiber
#10
2" SCH 40

3
#6
2" SCH 40

Fiber
#10
2" SCH 40

3
#6
2" SCH 40

Fiber
#10
2" SCH 40

JF1

CL1 309+50-10' LT.

JF2

CL2 312+11-10' LT.

JF3

RAMP C

307+00 308+00 309+00 310+00 311+00 312+00 313+00

3
#4
2" RG SC

3
#4
2" SCH 40

3
#4
2" SCH 40

IL2 207+60

IL3 211+04

INTERSTATE 90 WESTBOUND

207+00 208+00 209+00 210+00 211+00 212+00 213+00

INTERSTATE 90 EASTBOUND

W3

108+02-03' LT.

W2

110+52-03' LT.

N
31

AL1 111+75-10' RT.

13A & 13B

JA7

2
VC

2" SCH 40
Fiber 12 SM

3
#6
2" SCH 40

2
VC

2" SCH 40
Fiber 12 SM

RAMP A

107+00 108+00 109+00 110+00 111+00 112+00 113+00

Plot Scale - 1:40

Plotted From - tmp14286

File - ...\DPS\mead00\DS\207c (2).dgn

EXISTING CONDUIT LAYOUT

OTTER ROAD
EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	99	107

Plotting Date: 04/02/2014

SCALE
1" = 40'

#10 Fiber 2" SCH 40

#10 Fiber 2" SCH 40

Fiber #10 2" SCH 40

GRAVEL

GRAVEL

GRAVEL

JF25

JF24

CPSB

EL=3529.86

S 86° 22' 44" E

OTTER ROAD

798+00

799+00

800+00

801+00

802+00

803+00

804+00

800+97.96

PC STA 800+97.96

METER

AIR CONDI

UE

Plot Scale - 1:40

Plotted From - tmpr14286

File - U:\rdMiscTraffic\DPS\798C.dgn

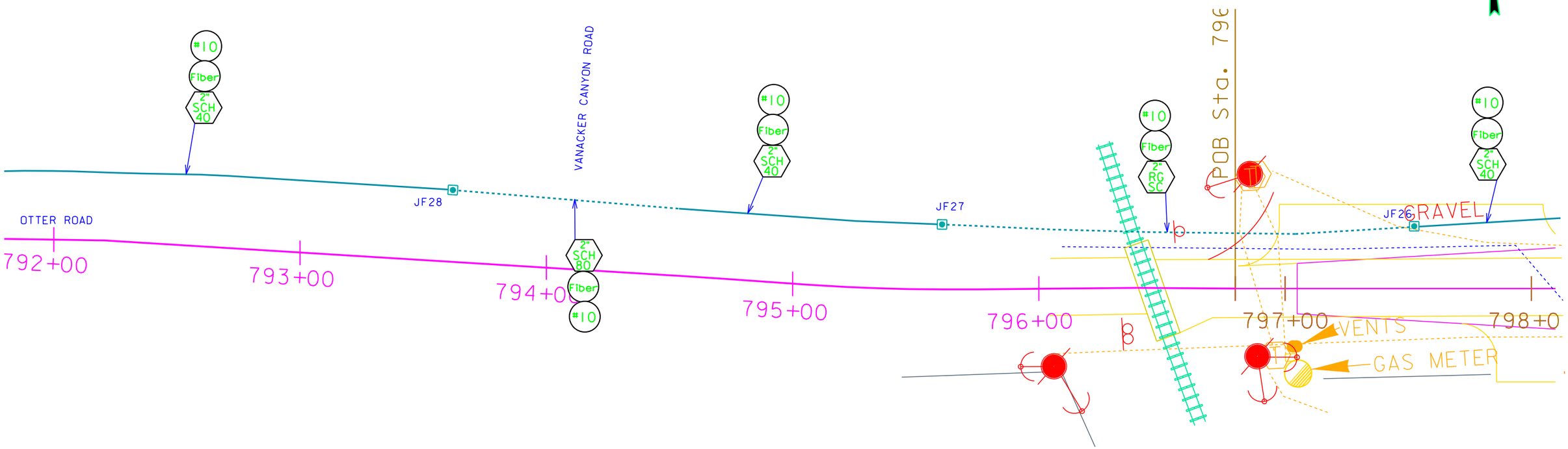
EXISTING CONDUIT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	100	107

Plotting Date: 04/02/2014

OTTER ROAD
EXISTING FIBER PATH

SCALE
1" = 40'



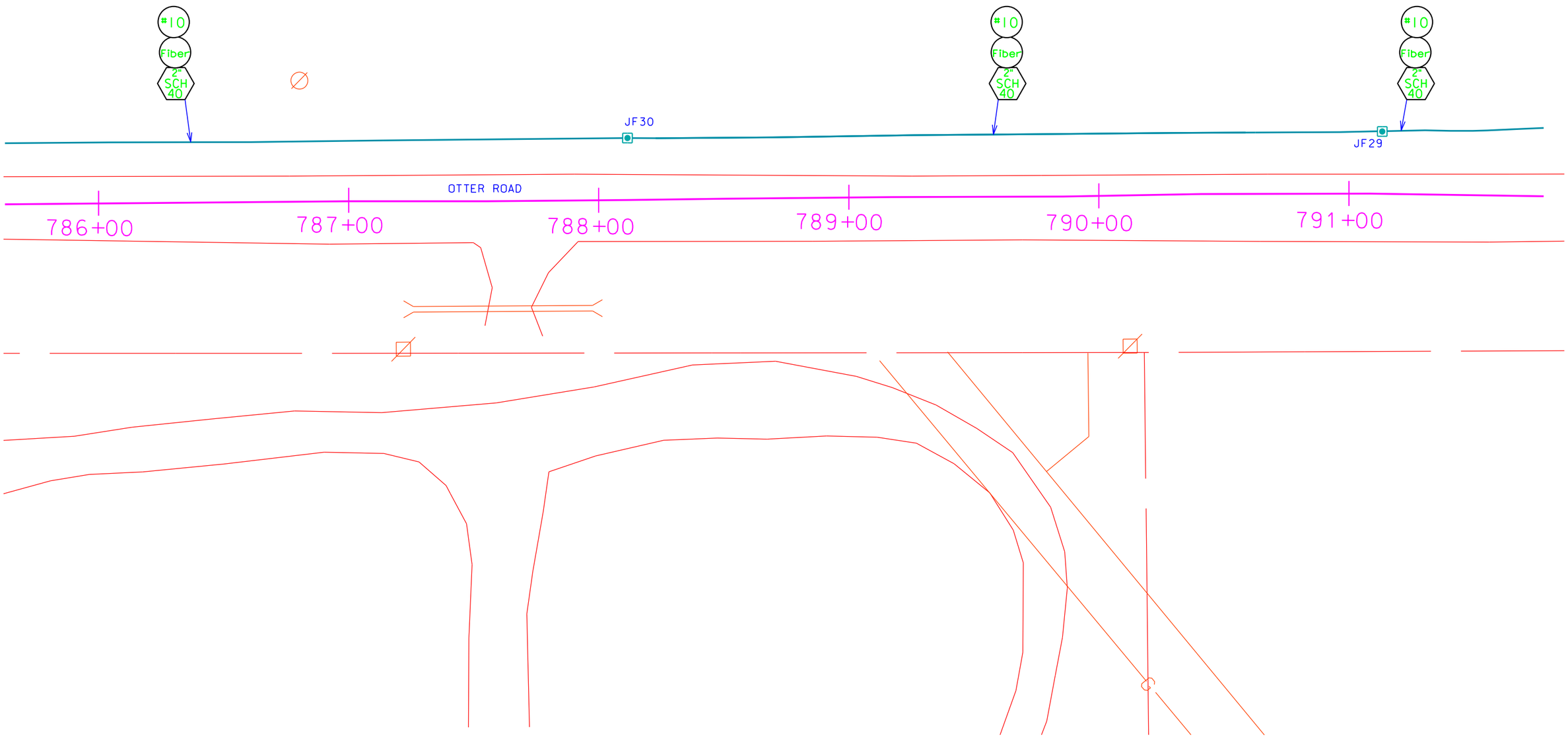
EXISTING CONDUIT LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	101	107

Plotting Date: 04/02/2014

OTTER ROAD
EXISTING FIBER PATH

SCALE
1" = 40'



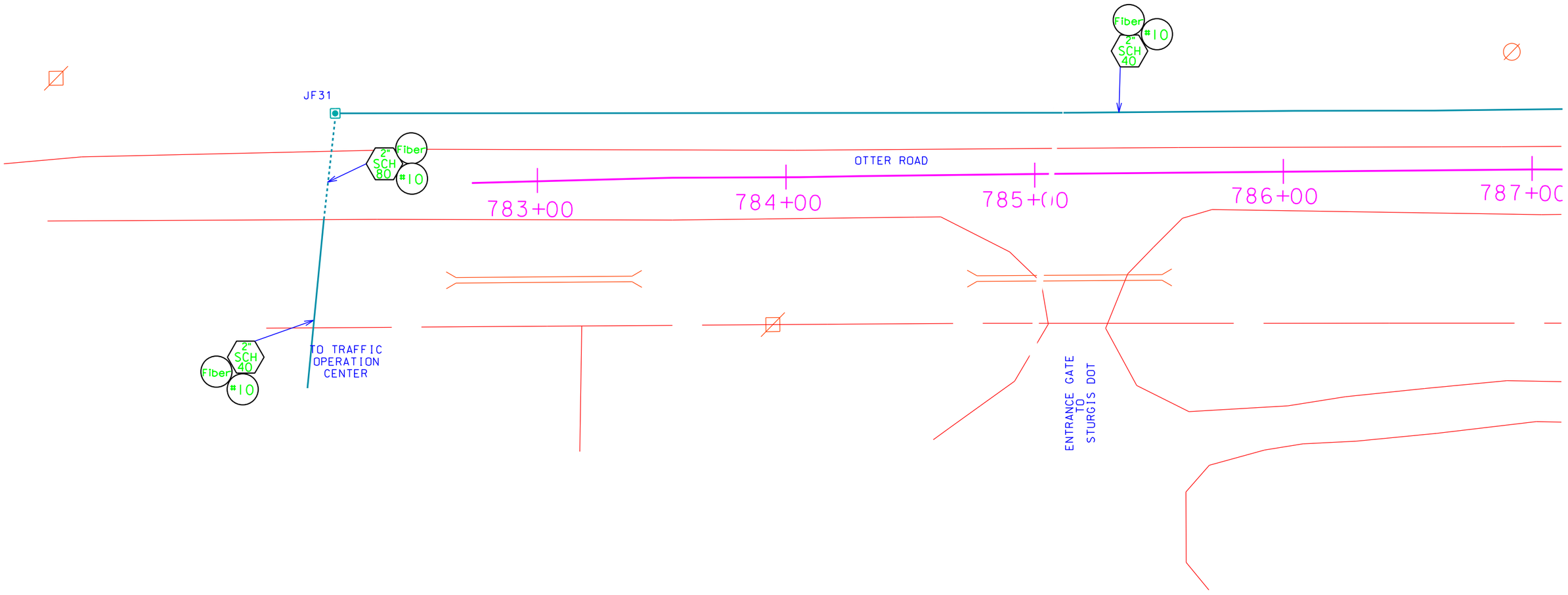
EXISTING CONDUIT LAYOUT

OTTER ROAD
EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	102	107

Plotting Date: 04/02/2014

SCALE
1" = 40'



Plot Scale - 1:40
Plotted From - tmp14286
File - U:\rdv\Misc\traffic\DPS\785C.dgn

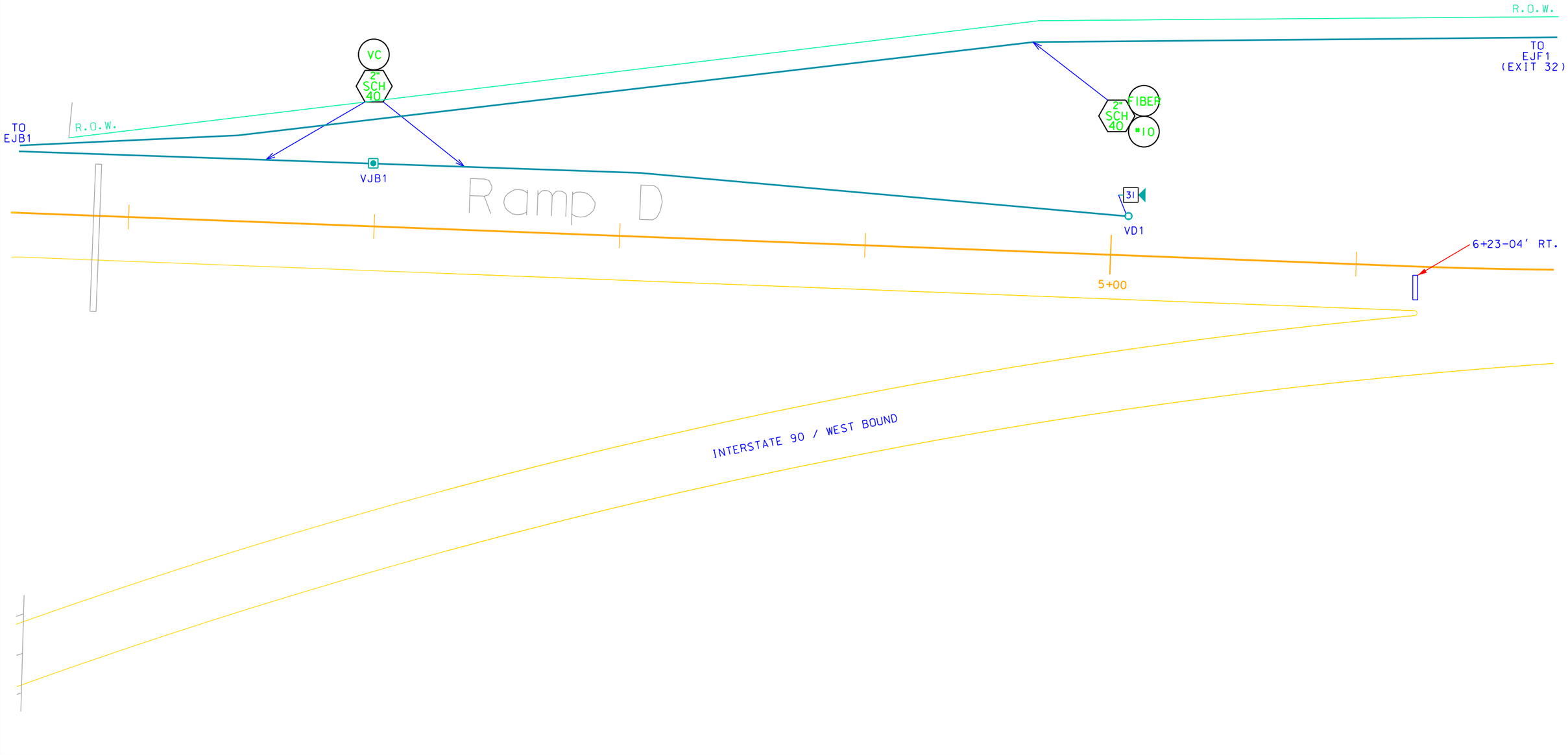
EXISTING CONDUIT LAYOUT

INTERSTATE 90 EXIT 30 / WESTBOUND OFF RAMP
EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	103	107

Plotting Date: 04/02/2014

SCALE
1" = 40'



Plot Scale - 1:40

Plotted From - tmp14286

File - ...\DPS\Exit30WB\conduit.dgn

EXISTING CONDUIT LAYOUT

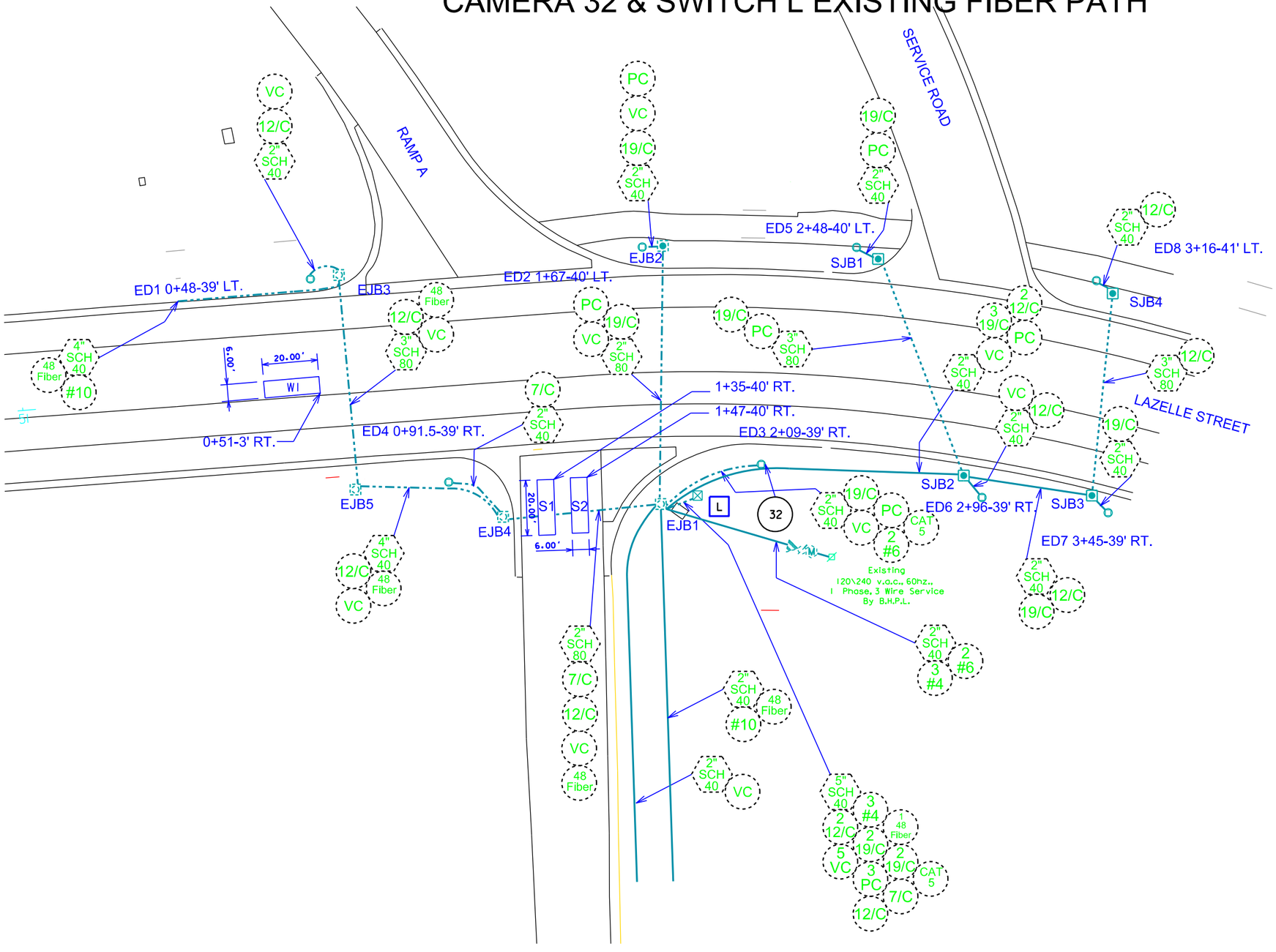
INTERSTATE 90 EXIT 30 WESTBOUND RAMPS & LAZELLE STREET

CAMERA 32 & SWITCH L EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	104	107

Plotting Date: 04/02/2014

SCALE
1" = 40'



EXISTING ITEMS

KEY	ITEM
	18 INCH DIAMETER JUNCTION BOX (EJB2)
	24 INCH DIAMETER JUNCTION BOX (EJB1,EJB3-EJB5)
2" SCH 40	2" RIGID CONDUIT SCHEDULE 40
#1	1/C #2 AWG COPPER WIRE
#3	1/C #3 AWG COPPER WIRE
#4	1/C #4 AWG COPPER WIRE
12/C	12/C #14 AWG COPPER TRAY CABLE, K2
19/C	19/C #14 AWG COPPER TRAY CABLE, K2
7/C	7/C #14 AWG COPPER TRAY CABLE, K2
	SERVICE CABINET
	WOOD UTILITY POLE
M	METER SOCKET
	2' DIAMETER FOOTING (VD1,ED8)
	3' DIAMETER FOOTING (ED5-ED7)
	18 INCH DIAMETER JUNCTION BOX (SJB1-SJB4) (VJB1)
	TRAFFIC SIGNAL CONTROLLER
3" SCH 40	3" RIGID CONDUIT SCHEDULE 40
5" SCH 40	5" RIGID CONDUIT SCHEDULE 40
3" SCH 80	3" RIGID CONDUIT SCHEDULE 80
PC	PRE-EMPTION CABLE
VC	VIDEO CABLE
48 Fiber	FIBER OPTIC CABLE
CAT 5	OUTDOOR RATED CATEGORY 5 CABLE

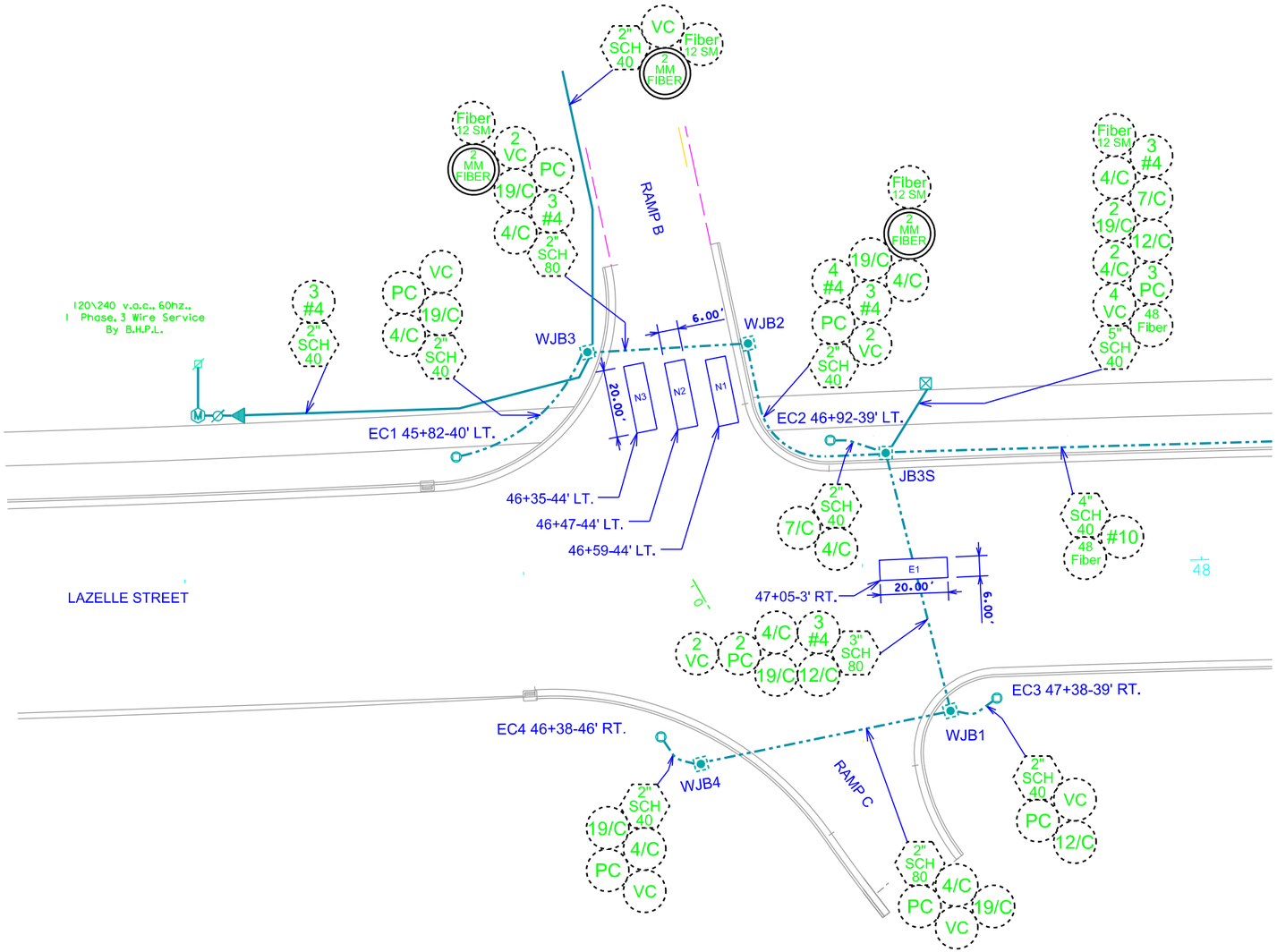
EXISTING CONDUIT LAYOUT

INTERSTATE 90 EXIT 30 EASTBOUND RAMPS & LAZELLE STREET
CAMERA 33 & EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	105	107

Plotting Date: 04/02/2014

SCALE
1" = 40'



EXISTING ITEMS

KEY	ITEM
	18" DIAMETER JUNCTION BOX (WJB1-WJB4,VJB2,VJB3)
2" SCH 40	2" RIGID CONDUIT SCHEDULE 40
4" SCH 40	4" RIGID CONDUIT SCHEDULE 40
2" SCH 80	2" RIGID CONDUIT SCHEDULE 80
3" SCH 80	3" RIGID CONDUIT SCHEDULE 80
12/C	12/C #14 AWG COPPER TRAY CABLE, K2
19/C	19/C #14 AWG COPPER TRAY CABLE, K2
7/C	7/C #14 AWG COPPER TRAY CABLE, K2
4/C	4/C #14 AWG COPPER TRAY CABLE, K2
	2' DIAMETER FOOTING (VD2)
	TRAFFIC SIGNAL CONTROLLER
M	METER SOCKET
	SERVICE CABINET
	WOOD UTILITY POLE
	VIDEO DETECTION SYSTEM (32)
2" SCH 40	2" RIGID CONDUIT SCHEDULE 40
5" SCH 40	5" RIGID CONDUIT SCHEDULE 40
#4	1/C #4 AWG COPPER WIRE
4/C	4/C #14 AWG TRAY CABLE, K2
PC	PRE-EMPTION CABLE (NOT A BID ITEM)
VC	VIDEO CABLE (NOT A BID ITEM)
48 Fiber	FIBER OPTIC CABLE
#10	1/C #10 AWG COPPER TRAY CABLE, K2
Fiber 12 SM	12 STRAND SINGLE MODE FIBER

2 STRANDS OF12 SINGLE MODE FIBER ARE CONNECTED TO
2 STRANDS OF SINGLE MODE FIBER
IN THE 48 HYBRID FIBER
@ TRAFFIC SIGNAL CONTROLLER

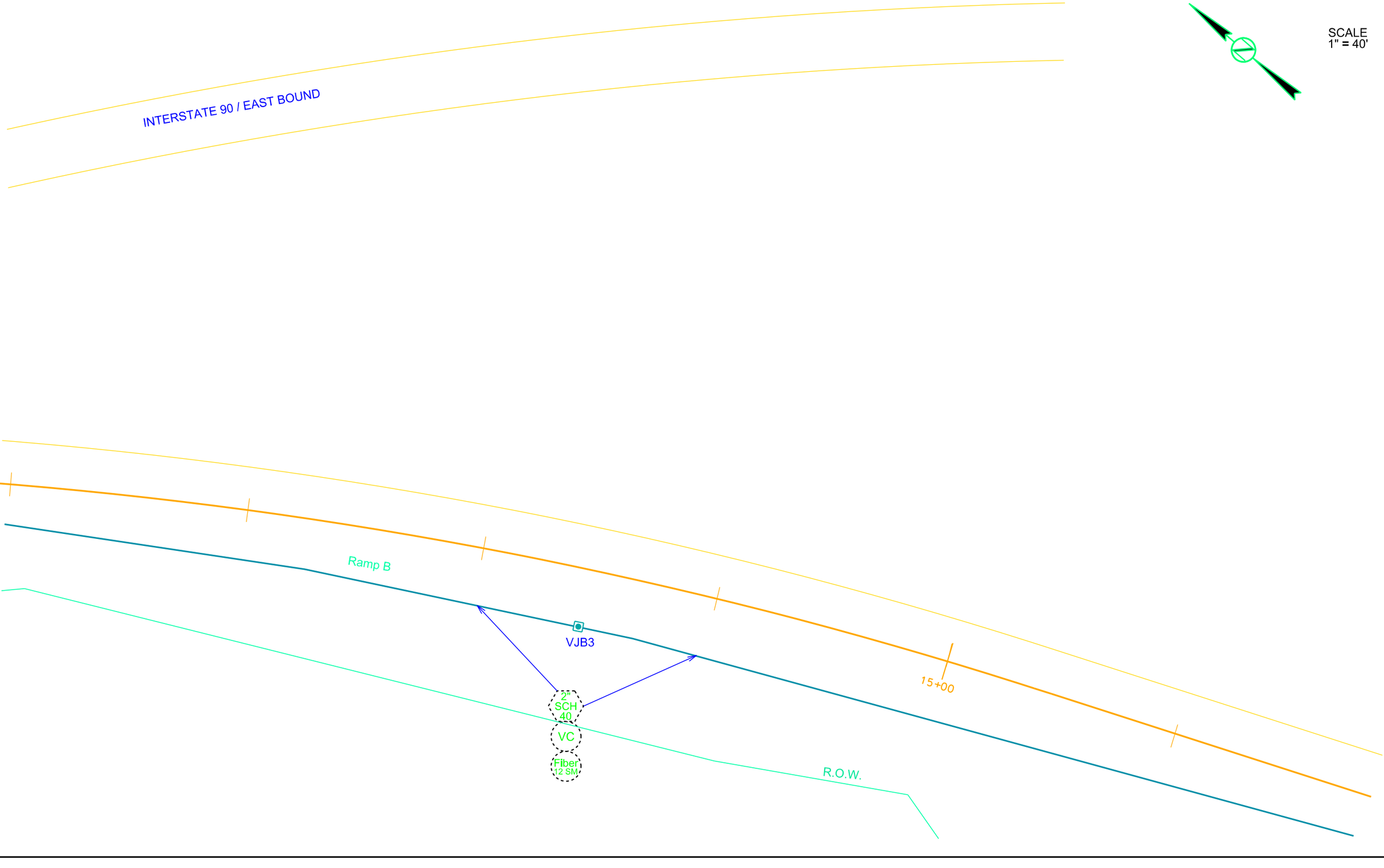
EXISTING CONDUIT LAYOUT

INTERSTATE 90 EXIT 30 EASTBOUND OFF RAMP
CAMERA 33 & EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	106	107

Plotting Date: 04/02/2014

SCALE
1" = 40'



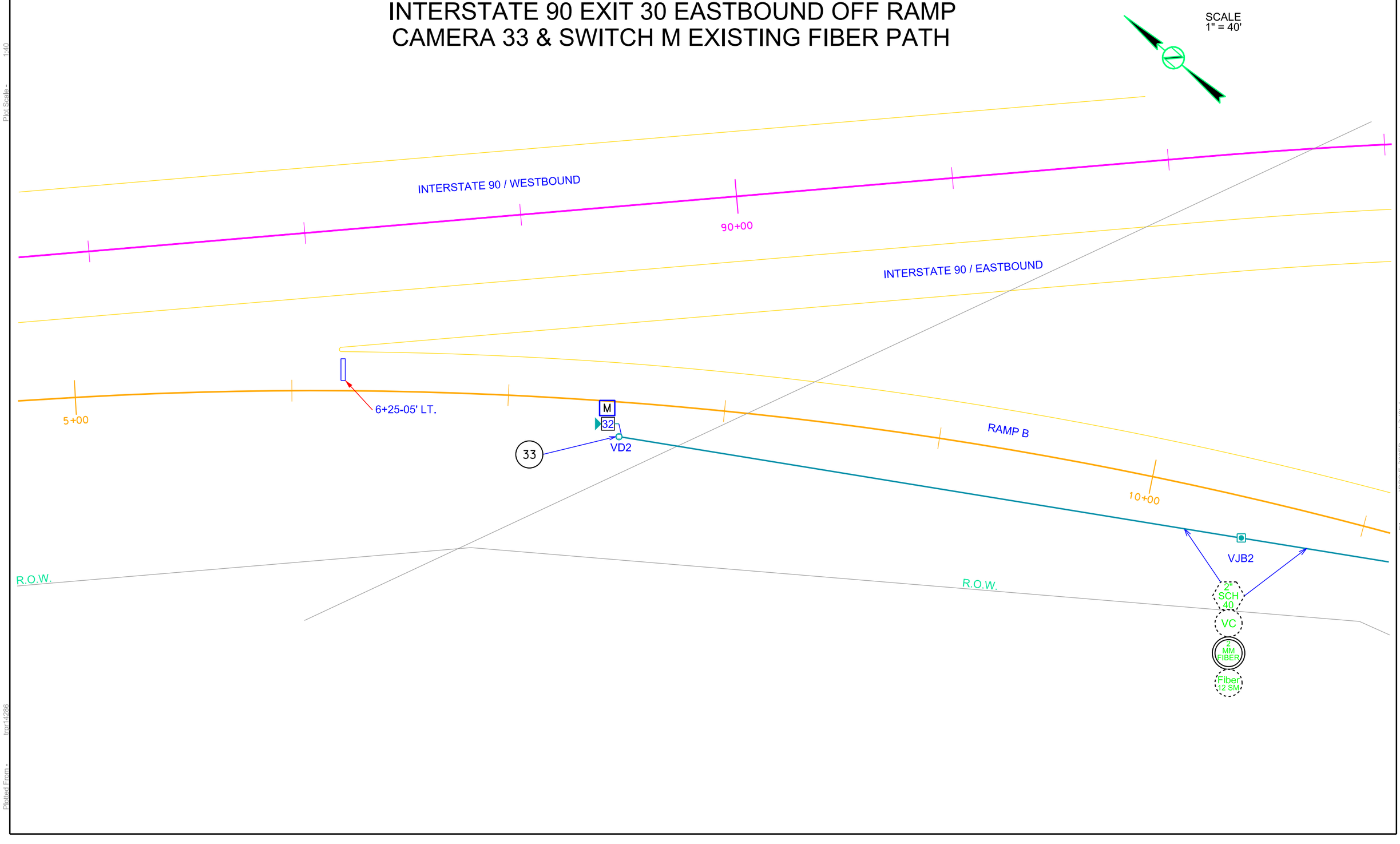
EXISTING CONDUIT LAYOUT

INTERSTATE 90 EXIT 30 EASTBOUND OFF RAMP
CAMERA 33 & SWITCH M EXISTING FIBER PATH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 034-451	107	107

Plotting Date: 04/02/2014

SCALE
1" = 40'



Plot Scale - 1:40

Plotted From - tpp14286

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