DEADWOOD RIDGE APARTMENTS

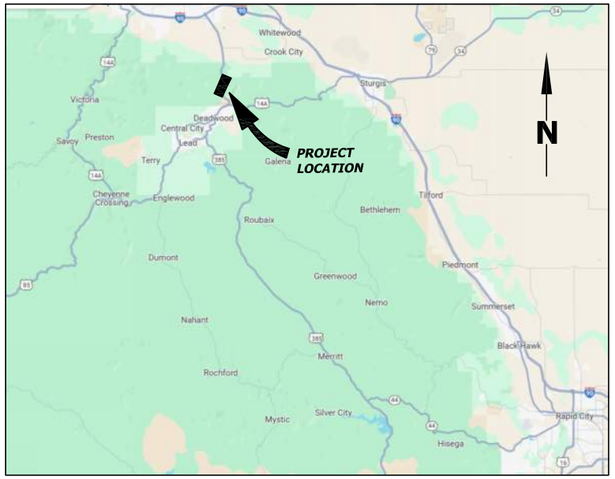
UTILITY IMPROVEMENTS

DEADWOOD, SOUTH DAKOTA

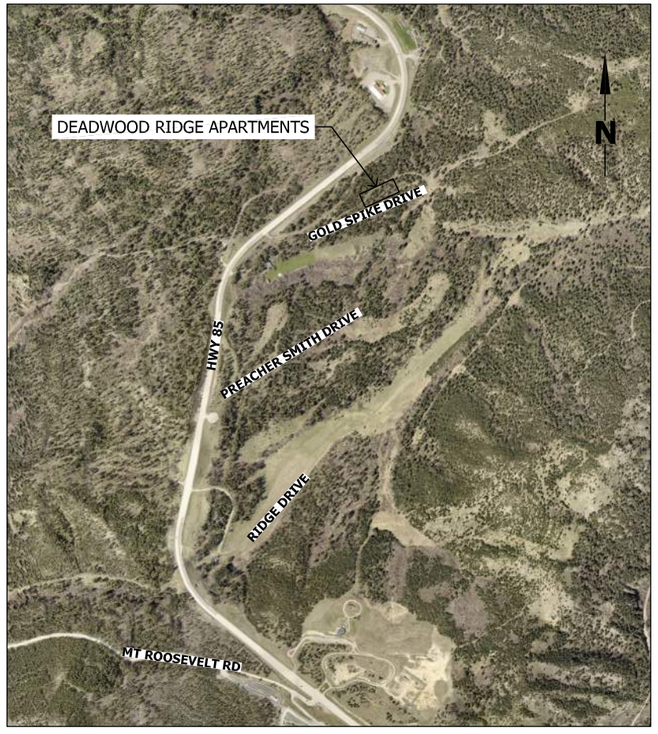
CLIENT: ***DEADWOOD RIDGE APARTMENTS, LLC***
2525 W Main, Suite 209
Rapid City, SD 57702

SEI# - 24135

VICINITY MAP (REGIONAL):



LOCATION MAP (LOCAL):



LEGEND OF LINE TYPES:

- CENTERLINE
- PROPERTY LINE
- SECTION LINE
- QUARTER LINE
- MAJOR CONTOUR
- MINOR CONTOUR
- WATER MAIN
- STORM SEWER
- SANITARY SEWER
- SANITARY SEWER FORCE MAIN
- COMBINED SEWER
- GAS MAIN
- UNDERGROUND POWER
- OVERHEAD POWER
- FIBER OPTIC
- CONC. CURB & GUTTER
- APPROACH
- WOOD FENCE
- CHAIN LINK FENCE
- BARBED WIRE FENCE

LEGEND OF SYMBOLS:

- DECIDUOUS TREE
- CONIFEROUS TREE
- TREE STUMP
- SHRUB
- SIGN
- PARKING METER POST
- MAIL BOX
- FLAGPOLE
- SPRINKLER HEAD
- GAS VALVE
- TRAFFIC SIGNAL LIGHT
- POWER POLE
- GUY WIRE
- STREET LIGHT
- FLOOD LIGHT
- HISTORICAL STREET LIGHT
- UTILITY CLOSURE
- WELL
- WATERMAIN SHUTOFF
- FIRE HYDRANT
- WATERMAIN VALVE & BOX
- WATERMAIN CAP
- UTILTIY CLEANOUT
- UTILTIY RISER
- UTILITY METER
- STORM SEWER MANHOLE
- SANITARY MANHOLE
- WATER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- FIBER OPTIC MANHOLE

SHEET INDEX:

CONSTRUCTION SET

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA

I, Jace D Christiansen, hereby certify that these plans, except where otherwise indicated, were prepared by me, or under my direct supervision and that I am a duly registered engineer under the laws of the State of South Dakota.

Jace D. Christiansen, PE — S.D. No. 16882 — 4/4/2025 Date

PLANS ISSUED BY:
CIVIL ENGINEER / SURVEYOR

STOCKWELL

STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

UTILITY PROVIDER LIST:

CITY OF DEADWOOD
LORNIE STALDER
CELL: 605.641.7745
LORNIE@CITYOFDEADWOOD.COM

BLACK HILLS ENERGY
JIM SRSTKA
CELL: 605.415.2648
JIM.SRSTKA@BLACKHILLSCORP.COM

BLUEPEAK (VAST)
JEROME HARDY
CELL: 605.786-5453
JEROME.HARDY@MYBLUEPEAK.COM

MONTANA-DAKOTA UTILITIES
JACK VANDEKOP
CELL: 605.340.5256
JACK.VANDEKOP@MDU.COM

LUMEN (CENTURY LINK)
ARTHUR TURNER
CELL: 605.645.3757
AURTHUR.TURNER@LUMEN.COM

BUTTE ELECTRIC
CHUCK EVEN
CELL: 605.210-2369
CHUCKE@BUTTEELECTRIC.COM

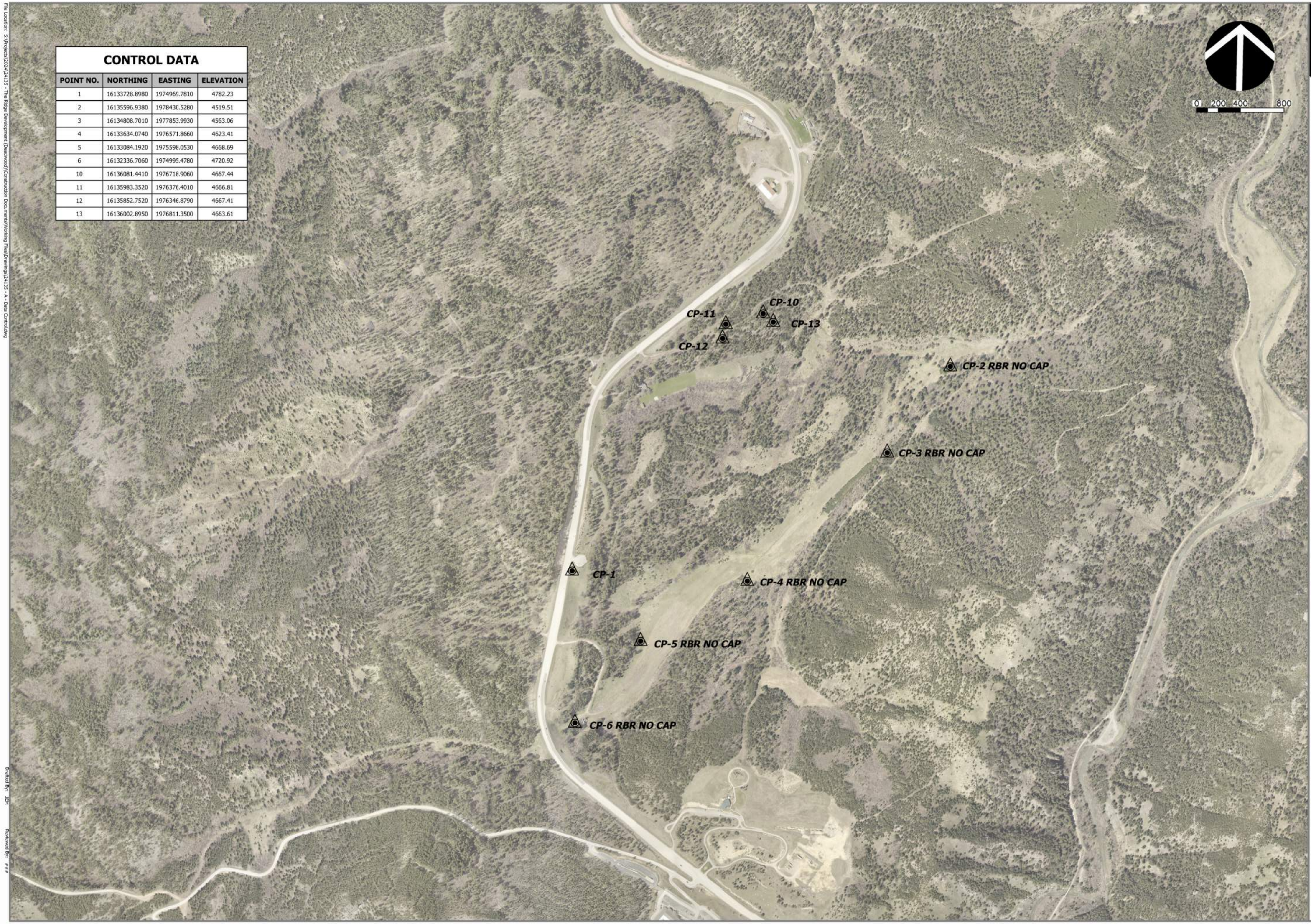
WBI ENERGY (WILLISTON BASIN)
BEAU ACKERMAN
CELL: 406.772.2448
BEAU.ACKERMAN@WBIENERGY.COM

MIDCO
BLAKE SANDIDGE
605.787.3935
BLAKE.SANDIDGE@MIDCO.COM

SDN COMMUNICATIONS
RYAN SMITH
CELL: 605.341.2518
RYAN.SMITH@SDNCOMMUNICATIONS.COM

Drawings indicate general utility locations only. Neither the correctness or completeness of locations are guaranteed.

Prior to excavation contact:
SOUTH DAKOTA ONE CALL (1-800-781-7474)



CONTROL DATA

POINT NO.	NORTHING	EASTING	ELEVATION
1	16133728.8980	1974969.7810	4782.23
2	16135596.9380	1978430.5280	4519.51
3	16134808.7010	1977853.9930	4563.06
4	16133634.0740	1976571.8660	4623.41
5	16133084.1920	1975598.0530	4668.69
6	16132336.7060	1974995.4780	4720.92
10	16136081.4410	1976718.9060	4667.44
11	16135983.3520	1976376.4010	4666.81
12	16135852.7520	1976346.8790	4667.41
13	16136002.8950	1976811.3500	4663.61

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA

Time Stamp: 4/2/2025 1:43 PM

CONSTRUCTION SET

DATA CONTROL

A-2.00

Note: Unless otherwise indicated, unit prices include all necessary material, plus cost for delivery, storing, handling, installation, insurance applicable taxes, overhead, and profit. Work that does not include a respective bid item but is necessary to complete Work as specified, shall be considered incidental to the project, and included in the Contractor's price.

ESTIMATE OF QUANTITY

ITEM NO.	SDDOT/CRC ITEM	ITEM	UNIT	QUANTITY	INCIDENTAL WORK & SPECIAL PROVISIONS
GENERAL ITEMS					
1	9.0010	MOBILIZATION	LS	1	**Measurement:** None **Payment:** Lump Sum per Rapid City Standard Specification's schedule **Include:** price to move personnel, equipment, supplies and other incidentals to the project site; to establish offices, buildings, and other temporary facilities necessary to complete the Work; to complete operations and Work which must be performed, and for bonding, permits or other expenses incurred prior to construction.
2	250.0010	INCIDENTAL WORK	LS	1	**Measurement:** None **Payment:** Lump Sum **Include:** price to complete all Work that does not include a respective bid item but is necessary to complete the Work as specified.
SECTION F - TRAFFIC CONTROL					
3	SD DOT - 634.011	TRAFFIC CONTROL SIGNS	SqFt	85	**Measurement & Payment:** per unit area of sign surface provided for the project. The maximum amount of each type of sign provided at any given time shall be the basis of total measurement and payment. **Include:** Price to install, move, maintain and remove temporary traffic control signs.
4	SD DOT - 632.3203	FLAT ALUMINUM SIGN, NONREMOVABLE COPY HIGH INTENSITY	SqFt	10	**Measurement & Payment:** per unit area sign surface provided. **Include:** price to furnish and installing aluminum signs including borders, legends and trim.
5	SD DOT - 634.012	TRAFFIC CONTROL MISCELLANEOUS	LS	1	**Measurement:** None **Payment:** Lump Sum **Include:** Price to install, move, maintain and remove temporary traffic control facilities, including temporary pavement marking. Include price for flagging. Flagging is required whenever it is necessary for a construction vehicle or piece of equipment blocks a lane of traffic.
6	SD DOT - 634.0640	4" WHITE TEMPORARY PAVEMENT MARKING	FT	660	**Measurement:** per unit length of temporary pavement making installed for the respective color and width. **Include:** price to prepare for, install, and protect pavement marking.
7	SD DOT - 634.0275	TYPE 3 BARRICADE	Each	15	**Measurement & Payment:** per each barricade provided for the project. The maximum amount of each type of barricade provided at any given time shall be the basis of total measurement and payment. **Include:** Price to install, move, maintain and remove temporary barricades.
8	L05.04	TYPE C - ADVANCED WARNING ARROW PANEL	Each	1	**Measurement & Payment:** per Rapid City Standard Specification
9	SD DOT - 632.4000	TYPE 3 BARRICADE DOUBLE SIDED BARRICADE - PERMANENT	Each	3	**Measurement & Payment:** per each barricade provided for the project. To include all cost for installation.
10	SD DOT - 634.0700	MOVABLE CONCRETE BARRIER (F-SHAPE)	Each	45	**Measurement & Payment:** per each barrier provided for the project. The maximum amount of each type of barriers provided at any given time shall be the basis of total measurement and payment. **Include:** Price to install, maintain and remove barriers
11	SD DOT - 634.0750	MOVABLE CONCRETE BARRIER END SECTION (F-SHAPE)	Each	1	**Measurement & Payment:** per each barrier provided for the project. The maximum amount of each type of barriers provided at any given time shall be the basis of total measurement and payment. **Include:** Price to install, maintain and remove barriers
12	SD DOT - 634.0705	REMOVE AND RESET MOVABLE CONCRETE BARRIER (F-SHAPE)	Each	29	**Measurement & Payment:** per each barrier provided to remove and reset. The maximum amount of barrier to be moved shall be the basis of total measurement and payment. **Include:** Price to remove, reset, maintain and remove barriers
13	SD DOT - 634.0755	REMOVE AND RESET MOVABLE CONCRETE BARRIERE END SECTION (F-SHAPE)	Each	1	**Measurement & Payment:** per each barrier provided to remove and reset. The maximum amount of barrier to be moved shall be the basis of total measurement and payment. **Include:** Price to remove, reset, maintain and remove barriers
SECTION G - EROSION CONTROL, SURFACING & RESTORATION					
14	C02.01	UNCLASSIFIED EXCAVATION	CY	1,246	**Measurement & Payment:** per Rapid City Standard Specification
15	SD DOT - 730.0210	TYPE F PERMANENT SEED MIXTURE	LB	195	**Measurement & Payment:** per the respective unit weight of seed mix placed. **Include:** Price to examine and prepare areas to be planted; to control weeds, sow seed; renovate, water, maintain, cleanup and protect turf.
16	SPECIAL	NON-IRRIGATED LAWN MIX (RAPID CITY STAND.)	LB	63	**Measurement & Payment:** per Rapid City Standard Specification
17	SD DOT - 731.0200	FERTILIZER	LB	14,861	**Measurement & Payment:** per unit price to furnish and install fertilizers on newly planted seed. Work shall be measured and paid per unit weight of initial fertilizer placed. No separate measurement will be made for fertilizers placed after the initial application.
18	SPECIAL	RECLAMATION BLEND (RAPID CITY STAND.)	LB	72	**Measurement & Payment:** per Rapid City Standard Specification
19	H08.01	BONDED FIBER MATRIX	TON	15.2	**Measurement & Payment:** per Rapid City Standard Specification **Include:** Price to install, maintain until grass is established.
20	SD DOT - 734.0604	HIGH FLOW SILT FENCE	FT	6,076	**Measurement & Payment:** per the respective unit length of silt fence installed. **Include:** Price to install, maintain, place and remove once grass is established.
21	SD DOT - 700.0110	CLASS A RIP RAP	TON	15	**Measurement & Payment:** per the respective unit weight of rip rap installed. **Include:** Price to furnish, install, place and maintain rip rap until grass is established. Include price to furnish, install and maintain Type B drainage fabric below rip rap areas.
22	H13.02	STABILIZED CONSTRUCTION ENTRANCE	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
23	C07.02	TOPSOIL, PLACE	CY	4,147	**Measurement & Payment:** per Rapid City Standard Specification
24	I01.01	AGGREGATE BASE COURSE, 3/4"	TON	504	**Measurement & Payment:** per Rapid City Standard Specification
25	I04.03	AC, CLASS G, TYPE 1 PG 64-28	TON	128	**Measurement & Payment:** per Rapid City Standard Specification
26	I04.04	AC, CLASS G, TYPE 2 PG 64-28	TON	99	**Measurement & Payment:** per Rapid City Standard Specification
27	I03.04	WOVEN GEOTEXTILE SEPARATOR	SY	655	**Measurement & Payment:** per Rapid City Standard Specification

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/4/2025

Plot Time: 4/2/2025 4:11 PM

CONSTRUCTION SET

ESTIMATE OF QUANTITY

B-1.00

28	I14.01	PCC APPROACH PAVEMENT, 6' REINFORCED	SY	258	**Measurement & Payment:** per Rapid City Standard Specification
SECTION H – REMOVALS					
29	A01.01	CLEARING & GRUBBING, (6"-18") TREES	EA	12	**Measurement & Payment:** per Rapid City Standard Specification
30	A01.01	CLEARING & GRUBBING, (>30") TREES	EA	2	
31	A03.01	CLEARING & GRUBBING	LS	1	**Measurement & Payment:** per lump sum. **Included:** price to remove and dispose of obstructions and vegetation necessary to perform the Work. Include price for removal of all trees less than six (6) inches in diameter, shrubs, bushes, boulder, and other removals where bid items are not provided.
32	B05.01	REMOVE GRAVEL SURFACING	SY	852	**Measurement & Payment:** per Rapid City Standard Specification
33	B05.02	SAWING, ASPHALT PAVEMENT	SY	159	**Measurement & Payment:** per Rapid City Standard Specification
34	B05.03	SAWING, CONCRETE PAVEMENT / CURB & GUTTER	LF	39	**Measurement & Payment:** per Rapid City Standard Specification
35	B05.10	REMOVE AC PAVEMENT	SY	432	**Measurement & Payment:** per Rapid City Standard Specification
36	B05.14	REMOVE PCC APPROACH PAVEMENT	SY	73	**Measurement & Payment:** per Rapid City Standard Specification
37	C07.03	TOPSOIL, SALVAGE	CY	4,148	**Measurement & Payment:** per Rapid City Standard Specification
SECTION I - UTILITIES					
38	B01.01	REMOVE SANITARY SEWER MAIN	FT	17	**Measurement & Payment:** per Rapid City Standard Specification
39	B02.01	REMOVE WATER MAIN	FT	11	**Measurement & Payment:** per Rapid City Standard Specification
40	B02.03	REMOVE & SALVAGE FIRE HYDRANT, VALVE AND BOX	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
41	SPECIAL	REMOVE & SALVAGE SEWER CAP	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
42	SPECIAL	RE-INSTALL SALVAGED SEWER CAP	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
43	E02.04	8" PVC SEWER MAIN (10'-12')	FT	203	**Measurement & Payment:** per Rapid City Standard Specification
44	SPECIAL	6" PVC FORCE MAIN C-900, CLASS 150	FT	6,172	**Measurement & Payment:** per Rapid City Standard Specification
45	SPECIAL	6" PVC FORCE MAIN C-900, CLASS 150 (RESTRAINED JOINT)	FT	100	**Measurement & Payment:** per Rapid City Standard Specification
46	SPECIAL	6" TRENCHLESS CONSTRUCTION	FT	100	**Measurement & Payment:** per linear foot of trenchless construction installed
47	E14.02	6" PVC SEWER SERVICE LINE	FT	35	**Measurement & Payment:** per Rapid City Standard Specification
48	E15.01	STANDARD MANHOLE, 48"	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
49	E17.01	TERMINATION MANHOLE, 48"	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
50	E19.01	EXTRA MANHOLE DEPTH, 48"	VF	9	**Measurement & Payment:** per Rapid City Standard Specification
51	SPECIAL	MANHOLE VACUUM TEST	EA	2	**Measurement & Payment:** per Rapid City Standard Specification
52	E24.05	CONNECT TO EXISTING MANHOLE	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
53	E24.04	RECONNECT SEWER SERVICE	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
54	E27.01	ADJUST MANHOLE RING & COVER	EA	2	**Measurement & Payment:** per Rapid City Standard Specification
55	SPECIAL	VALVE VAULT AND LIFT STATION	EA	2	**Measurement & Payment:** per each valve vault and lift station location. **Include:** Price shall include all materials and incidentals called out on plans and technical specifications. Price shall include all labor, equipment, and overhead.
56	F01.01	6" PVC WATER MAIN C-900, CLASS 150	FT	80	**Measurement & Payment:** per Rapid City Standard Specification
57	F01.05	8" PVC WATER MAIN C-900, CLASS 150	FT	6,188	**Measurement & Payment:** per Rapid City Standard Specification
58	SPECIAL	8" PVC WATER MAIN C-900, CLASS 150 (RESTRAINED JOINT)	FT	100	**Measurement & Payment:** per Rapid City Standard Specification
59	SPECIAL	8" TRENCHLESS CONSTRUCTION	FT	100	**Measurement & Payment:** per linear foot of trenchless construction installed
60	F06.06	6" MJ 22.5 DEGREE BEND	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
61	F06.07	6" MJ 45 DEGREE BEND	EA	5	**Measurement & Payment:** per Rapid City Standard Specification
62	F06.08	6" MJ 90 DEGREE BEND	EA	3	**Measurement & Payment:** per Rapid City Standard Specification
63	F06.10	8" MJ 22.5 DEGREE BEND	EA	2	**Measurement & Payment:** per Rapid City Standard Specification
64	F06.11	8" MJ 45 DEGREE BEND	EA	10	**Measurement & Payment:** per Rapid City Standard Specification
65	F06.12	8" MJ 90 DEGREE BEND	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
66	F11.02	6" MJ PLUG	EA	2	**Measurement & Payment:** per Rapid City Standard Specification
67	F12.03	8" X 6" REDUCER	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
68	F13.05	8" X 8" X 6" TEE	EA	2	**Measurement & Payment:** per Rapid City Standard Specification
69	F13.06	12" X 12" X 8" TEE	EA	1	**Measurement & Payment:** per Rapid City Standard Specification

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Plot Time: 4/2/2025 4:11 PM

CONSTRUCTION SET

ESTIMATE OF QUANTITY

B-1.01

70	F15.03	8" MJ GATE VALVE W/ BOX	EA	9	**Measurement & Payment:** per Rapid City Standard Specification
71	F17.01	FIRE HYDRANT W/AUX VALVE & BOX	EA	3	**Measurement & Payment:** per Rapid City Standard Specification
72	F19.01	FIRE HYDRANT EXTENSION, 6"	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
73	F26.01	CONNECT TO EXISTING WATER MAIN	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
74	F26.03	RECONNECT WATER SERVICE	EA	1	**Measurement & Payment:** per Rapid City Standard Specification
75	F28.03	ADJUST WATER VALVE	EA	12	**Measurement & Payment:** per Rapid City Standard Specification
76	SPECIAL	PRESSURE REDUCING VALVE VAULT	LS	1	**Measurement & Payment:** per each pressure reducing valve vault location. **Include:** Price shall include all materials and incidentals called out on plans and technical specifications. Price shall include all labor, equipment, and overhead.
77	SPECIAL	COMBINATION AIR RELIEF VALVE ASSEMBLY	EA	8	**Measurement & Payment:** per each combination air relief valve assembly location. **Include:** Price shall include all materials and incidentals called out on plans and technical specifications. Price shall include all labor, equipment, and overhead.
78	B03.01	REMOVE STORM PIPE	FT	64	**Measurement & Payment:** per Rapid City Standard Specification
79	B03.04	REMOVE END SECTION	EA	2	**Measurement & Payment:** per Rapid City Standard Specification
80	G32.03	18" CMP	FT	64	**Measurement & Payment:** per Rapid City Standard Specification
81	G34.03	18" CMP FLARED END	EA	2	**Measurement & Payment:** per Rapid City Standard Specification
82	F33.03	CATHODIC CONTROL ANODE - 18 LB - ZINC	EA	40	**Measurement & Payment:** per Rapid City Standard Specification

STOCKWELL

STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments

Utility improvements

Deadwood, South Dakota

SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
16882
JACE D.
CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Plot Time: 4/2/2025 4:11 PM

CONSTRUCTION SET

ESTIMATE OF QUANTITY

B-1.02

SECTION F - ITEMIZED LIST FOR TRAFFIC CONTROL

SIGN CODE	SIGN SIZE			DESCRIPTION	PHASE 1	SQ FT PER SIGN	MAX REQUIRED	TOTAL SQ FT
*****	*****			TYPE III BARRICADE - 8 FT. DOUBLE SIDED	15	N/A	15	***N/A***
*****	*****			TYPE III BARRICADE - 8 FT. DOUBLE SIDED - PERMANENT	3	N/A	3	***N/A***
*****	*****			42" BARREL CONE	AS REQ.	N/A	AS REQ.	***N/A***
*****	*****			42" GRABBER CONE	AS REQ.	N/A	AS REQ.	***N/A***
*****	*****			MOVABLE CONCRETE BARRIER (F-SHAPE)	45	N/A	45	***N/A***
*****	*****			MOVABLE CONCRETE BARRIER END SECTION (F-SHAPE)	1	N/A	1	***N/A***
*****	*****			4" WHITE TEMPORARY PAVEMENT MARKING	660'	N/A	660'	***N/A***
*****	96"	x	48"	TYPE C ADVANCE WARNING ARROW PANEL	1	N/A	1	***N/A***
W20-1	36"	x	36"	ROAD WORK AHEAD	1	9	1	***9***
W20-5R	36"	x	36"	RIGHT LANE CLOSED AHEAD	1	9	1	***9***
W4-2R	30"	x	30"	END LANE - MERGE LEFT	1	6.25	1	***6.25***
G20-2	36"	x	18"	END ROAD WORK	2	4.5	2	***9***
R11-2	48"	x	30"	ROAD CLOSED	5	10	5	***50***
							TOTAL	***83.25***

SECTION G - TABLE OF EROSION CONTROL, SURFACING & RESTORATION QUANTITY

STD BID ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	G-2.01	G-2.02	G-2.03	G-2.04	G-2.05	G-2.06
SD DOT - 730.0210	TYPE F PERMANENT SEED MIXTURE	LB	***195***	44	49	33	36	33	-
SPECIAL	NON-IRRIGATED LAWN MIX (RAPID CITY STAND.)	LB	***63***	-	-	-	-	-	63
SD DOT - 731.0200	FERTILIZER	LB	***14,861***	3,366	3,746	2,481	2,759	2,509	-
SPECIAL	RECLAMATION BLEND (RAPID CITY STAND.)	LB	***72***	-	-	-	-	-	72
H08.01	BONDED FIBER MATRIX	TON	***15.2***	3.3	3.7	2.4	2.7	2.4	0.7
SD DOT - 734.0604	HIGH FLOW SILT FENCE	FT	***6,076***	1,081	1,164	1,148	1,174	1,461	48
SD DOT - 700.0110	CLASS A RIP RAP	TON	***15.0***	12.0	-	-	-	3.0	-
H13.02	STABILIZED CONSTRUCTION ENTRANCE	EA	***1***	-	-	-	-	1	-
C07.02	TOPSOIL, PLACE	CY	***4,147***	896	997	661	735	668	190
I01.01	AGGREGATE BASE COURSE, 3/4"	TON	***504***	65	-	62	59	284	34
I04.03	AC, CLASS G, TYPE 1 PG 64-28	TON	***92***	-	-	-	-	86	6
I04.04	AC, CLASS G, TYPE 2 PG 64-28	TON	***63***	-	-	-	-	57	6
I03.04	WOVEN GEOTEXTILE SEPARATOR	SY	***655***	-	-	-	-	655	-
I14.01	PCC APPROACH PAVEMENT, 6' REINFORCED	SY	***258***	-	-	-	24	186	48

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Plot Time: 4/2/2025 3:53 PM

CONSTRUCTION SET

SECTION TABLES

B-2.00

SECTION H - TABLE OF REMOVALS QUANTITY

STD BID ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	H-1.01	H-1.02	H-1.03	H-1.04	H-1.05	H-1.06	H-1.07	H-1.08	H-1.09	H-1.10	H-1.11
A01.01	CLEARING & GRUBBING, (6"-18") TREES	EA	***12***	-	-	-	-	-	-	3	3	-	6	-
A01.01	CLEARING & GRUBBING, (>30") TREES	EA	***2***	-	-	-	-	-	-	-	-	-	2	-
A03.01	CLEARING & GRUBBING	LS	***1***	-	-	-	-	-	-	-	-	-	-	-
B05.01	REMOVE GRAVEL SURFACING	SY	***852***	-	-	-	-	-	-	-	-	248	536	68
B05.02	SAWING, ASPHALT PAVEMENT	SY	***84***	-	-	-	-	-	-	-	32	-	25	27
B05.03	SAWING, CONCRETE PAVEMENT / CURB & GUTTER	LF	***39***	-	-	-	-	-	-	-	-	-	-	39
B05.10	REMOVE AC PAVEMENT	SY	***138***	-	-	-	-	-	-	-	6	-	88	44
B05.14	REMOVE PCC APPROACH PAVEMENT	SY	***73***	-	-	-	-	-	-	-	19	-	-	54
C07.03	TOPSOIL, SALVAGE	CY	***4,148***	453	444	555	442	323	338	387	348	395	273	190

SECTION I - TABLE OF UTILITIES QUANTITY

STD BID ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	I-1.01	I-1.02	I-1.03	I-1.04	I-1.05	I-1.06	I-1.07	I-1.08	I-1.09	I-1.10	I-1.11	I-1.12
B01.01	REMOVE SANITARY SEWER MAIN	FT	***17***	-	-	-	-	-	-	-	-	-	17	-	-
B02.01	REMOVE WATER MAIN	FT	***11***	-	-	-	-	-	-	-	-	-	11	-	-
B02.03	REMOVE & SALVAGE FIRE HYDRANT, VALVE AND BOX	EA	***1***	-	-	-	-	-	-	-	-	-	1	-	-
SPECIAL	REMOVE & SALVAGE SEWER CAP	EA	***1***	-	-	-	-	-	-	-	-	-	1	-	-
SPECIAL	RE-INSTALL SALVAGED SEWER CAP	EA	***1***	-	-	-	-	-	-	-	-	-	1	-	-
E02.04	8" PVC SEWER MAIN (10'-12')	FT	***203***	-	-	-	-	-	-	-	-	-	-	203	-
SPECIAL	6" PVC FORCE MAIN C-900, CLASS 150	FT	***6,172***	500	600	600	600	600	500	569	600	593	620	390	-
SPECIAL	6" PVC FORCE MAIN C-900, CLASS 150 (RESTRAINED JOINT)	FT	***100***	-	-	-	-	-	100	-	-	-	-	-	-
SPECIAL	6" TRENCHLESS CONSTRUCTION	FT	***100***	-	-	-	-	-	100	-	-	-	-	-	-
E14.02	6" PVC SEWER SERVICE LINE	FT	***35***	-	-	-	-	-	-	-	-	-	-	35	-
E15.01	STANDARD MANHOLE, 48"	EA	***1***	-	-	-	-	-	-	-	-	-	-	1	-
E17.01	TERMINATION MANHOLE, 48"	EA	***1***	-	-	-	-	-	-	-	-	-	-	-	1
E19.01	EXTRA MANHOLE DEPTH, 48"	VF	***8.71***	-	-	-	-	-	-	-	-	-	-	5.43	3.28
SPECIAL	MANHOLE VACUUM TEST	EA	***2***	-	-	-	-	-	-	-	-	-	-	1	1
E24.05	CONNECT TO EXISTING MANHOLE	EA	***1***	1	-	-	-	-	-	-	-	-	-	-	-
E24.04	RECONNECT SEWER SERVICE	EA	***1***	-	-	-	-	-	-	-	-	-	-	1	-
E27.01	ADJUST MANHOLE RING & COVER	EA	***2***	-	-	-	-	-	-	-	-	-	-	1	1
SPECIAL	VALVE VAULT AND LIFT STATION	EA	***2***	-	-	-	-	-	-	1	-	-	-	1	-
F01.01	6" PVC WATER MAIN C-900, CLASS 150	FT	***80***	-	-	-	-	-	-	-	-	-	15	65	-
F01.05	8" PVC WATER MAIN C-900, CLASS 150	FT	***6,188***	475	599	594	600	600	500	602	596	580	611	431	-
SPECIAL	8" PVC WATER MAIN C-900, CLASS 150 (RESTRAINED JOINT)	FT	***100***	-	-	-	-	-	100	-	-	-	-	-	-
SPECIAL	8" TRENCHLESS CONSTRUCTION	FT	***100***	-	-	-	-	-	100	-	-	-	-	-	-
F06.06	6" MJ 22.5 DEGREE BEND	EA	***1***	-	-	-	-	-	-	-	-	-	1	-	-
F06.07	6" MJ 45 DEGREE BEND	EA	***5***	-	-	-	-	-	-	-	4	-	1	-	-
F06.08	6" MJ 90 DEGREE BEND	EA	***3***	-	-	-	-	-	-	-	-	-	2	1	-
F06.10	8" MJ 22.5 DEGREE BEND	EA	***2***	-	-	-	-	-	-	-	1	-	1	-	-
F06.11	8" MJ 45 DEGREE BEND	EA	***6***	1	-	-	-	-	-	-	3	1	1	-	-
F06.12	8" MJ 90 DEGREE BEND	EA	***1***	-	-	-	-	-	-	-	-	-	1	-	-

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Plot Time: 4/2/2025 3:53 PM

CONSTRUCTION SET

SECTION TABLES

B-2.01

STD BID ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	I-1.01	I-1.02	I-1.03	I-1.04	I-1.05	I-1.06	I-1.07	I-1.08	I-1.09	I-1.10	I-1.11	I-1.12
F11.02	6" MJ PLUG	EA	**2**	-	-	-	-	-	-	-	-	-	1	1	-
F12.03	8" X 6" REDUCER	EA	**1**	-	-	-	-	-	-	-	-	-	-	1	-
F13.05	8" X 8" X 6" TEE	EA	**2**	-	-	-	-	-	-	-	-	-	-	2	-
F13.06	12" X 12" X 8" TEE	EA	**1**	1	-	-	-	-	-	-	-	-	-	-	-
F15.03	8" MJ GATE VALVE W/ BOX	EA	**9**	1	1	-	1	1	-	1	1	-	2	1	-
F17.01	FIRE HYDRANT W/AUX VALVE & BOX	EA	**3**	-	-	-	-	-	-	-	-	-	1	2	-
F19.01	FIRE HYDRANT EXTENSION, 6"	EA	**1**	-	-	-	-	-	-	-	-	-	-	-	-
F26.01	CONNECT TO EXISTING WATER MAIN	EA	**1**	1	-	-	-	-	-	-	-	-	-	-	-
F26.03	RECONNECT WATER SERVICE	EA	**1**	-	-	-	-	-	-	-	-	-	-	1	-
F28.03	ADJUST WATER VALVE	EA	**12**	1	1	-	1	1	-	1	1	-	3	3	-
SPECIAL	PRESSURE REDUCING VALVE VAULTS	LS	**1**	1	-	-	-	-	-	-	-	-	-	-	-
SPECIAL	COMBINATION AIR RELIEF VALVE ASSEMBLY	EA	**8**	-	-	-	-	2	2	-	2	-	2	-	-
B03.01	REMOVE STORM PIPE	FT	**64**	-	-	-	-	-	-	-	-	64	-	-	-
B03.04	REMOVE END SECTION	EA	**2**	-	-	-	-	-	-	-	-	2	-	-	-
G32.03	18" CMP	FT	**64**	-	-	-	-	-	-	-	-	-	64	-	-
G34.03	18" CMP FLARED END	EA	**2**	-	-	-	-	-	-	-	-	-	2	-	-
F33.03	CATHODIC CONTROL ANODE - 18 LB - ZINC	EA	**36**	3	1	-	1	1	-	1	9	1	11	8	-

STOCKWELL

STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments

Utility improvements

Deadwood, South Dakota

SEI Project #: 24135

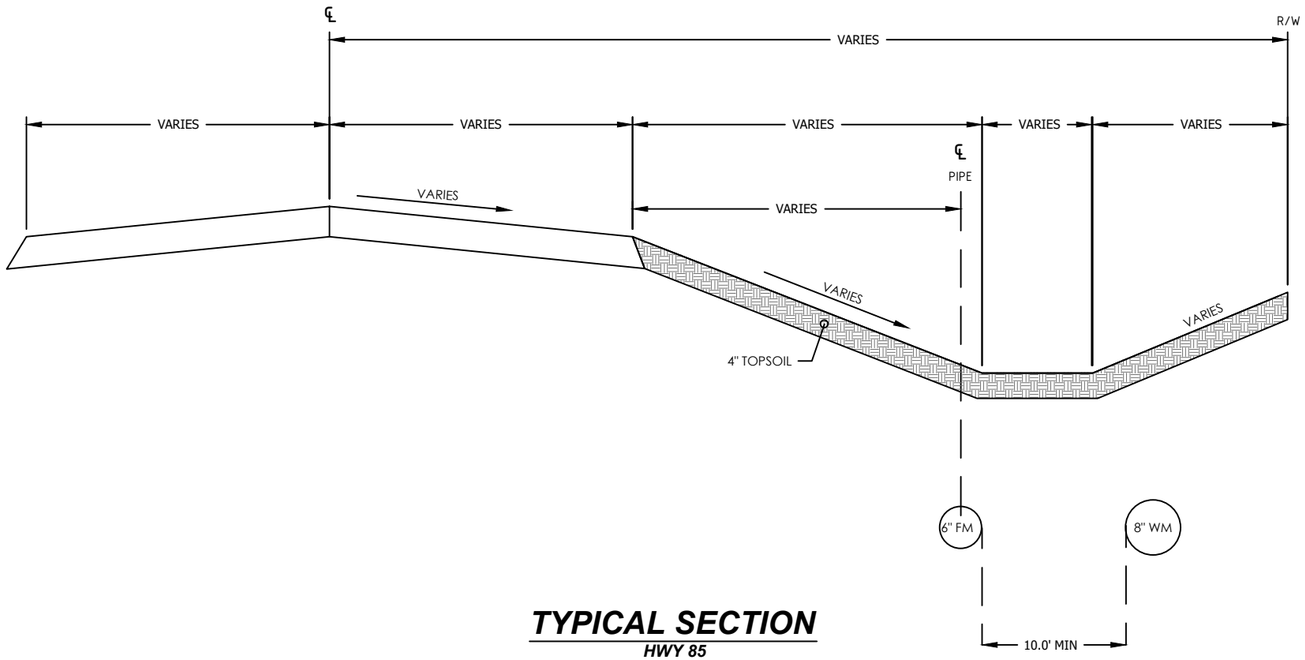
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Plot Time: 4/2/2025 3:53 PM

CONSTRUCTION SET

SECTION TABLES

B-2.02



TYPICAL SECTION

HWY 85

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO
16882
JACE D.
CHRISTIANSEN
SOUTH DAKOTA
4/2/2025

Time Stamp: 4/2/2025 1:46 PM

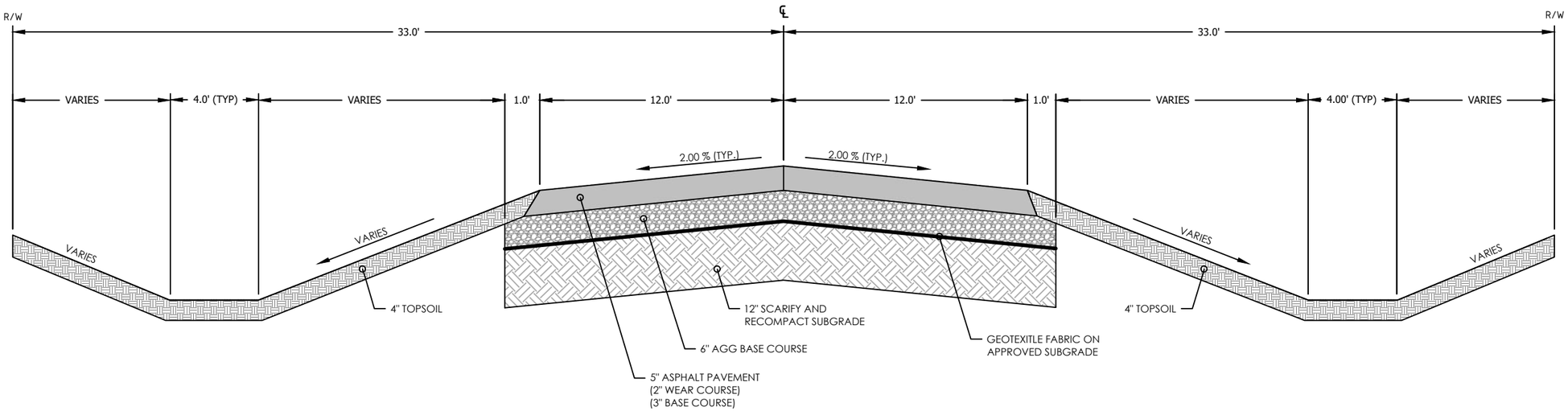
CONSTRUCTION SET

TYPICAL SECTION

C-1.00

Drafted By: ###
Reviewed By: ###

File Location: S:\Projects\2024\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - C - Typical Section.dwg



TYPICAL SECTION

GOLD SPIKE DRIVE (N.T.S)

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

Time Stamp: 4/2/2025 1:46 PM

CONSTRUCTION SET

TYPICAL SECTION

C-1.01

GENERAL REQUIREMENTS

1.1 PROJECT INFORMATION

1.1.1 The Owner of the project is Deadwood Ridge Apartments, LLC. Deadwood Ridge Apartments, LLC has retained Stockwell Engineer's to act as the Owner's representative. Contact information for each is provided below:

Deadwood Ridge Apartments, LLC
2525 W Main, Suite 209
Rapid City, SD 57702

Stockwell Engineers
801 North Phillips Ave, Suite 100
Sioux Falls, SD 57104
(605) 338-6668

1.2 DESCRIPTION OF WORK

1.2.1 This project consists of underground utilities in the South Dakota Department of Transportation's right-of-way to service the Deadwood Ridge Apartments. The underground utilities include water main, sewer main, sanitary sewer lift stations, a pressure-reducing valve station, and other work as identified in the technical drawings.

1.3 SPECIFICATION AND DRAWING CONVENTIONS

1.3.1 The specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1.3.2 Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.3.3 Specification requirements are to be performed by Contractor unless specifically stated otherwise.

1.3.4 The General Requirements of this section apply to the Work of all Sections in the Specifications.

1.4 SPECIFICATIONS TO BE USED

1.4.1 The City of Rapid City Standard Specifications 2022 Edition, together with the most current edition of the South Dakota Department of Transportation Standard Specifications for Roads and Bridges with Supplemental Specifications and Errata and required provisions, are hereby made a part of these specifications in its entirety unless otherwise revised, deleted, or supplemented herein.

1.4.2 The South Dakota Department of Transportation Standard Specifications for Roads and Bridges with Supplemental Specifications and Errata can be downloaded from the SDDOT's website at http://www.sddot.com/.

1.5 ORDER OF PRECEDENCE

1.5.1 If conflicts arise, the order of precedence of the contract documents shall be as follows: Drawings over City of Rapid City Standard Specifications over General Requirements over General Conditions over South Dakota Department of Transportation Supplemental Specifications and Errata over South Dakota Department of Transportation Standard Specifications for Roads and Bridges.

1.6 STANDARD DETAILS

1.6.1 The Contractor shall reference City of Rapid City Standard Details for all applicable details.

1.7 LOCAL ORDINANCES

1.7.1 The Contractor shall abide by all local, state, and federal ordinances or policies.

1.8 TIME PROVISIONS

1.8.1 Time provisions shall be as specified under Article 4 of the Agreement between Owner/Design Builder and Contractor.

1.9 COMMENCEMENT & SEQUENCE OF OPERATIONS

1.9.1 Commencement: Construction may begin after the notice to proceed is issued and a preconstruction meeting is held, and in accordance with Article 4 of the Agreement between the Owner and the Contractor.

1.9.2 Sequence of Operations: Reference Section F for sequence of operations and commencement conditions. Adhere to the sequence of operations unless an alternative is submitted in writing and approved by Engineer. Notify Engineer as commencement requirements approach. Work may begin after Engineer determines conditions are satisfied.

1.10 SOIL BORINGS

1.10.1 Refer to the Project Manual for a summary and of Geotechnical Reports completed within the vicinity of the Project.

1.11 WORK BY OWNER

1.11.1 General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

1.11.2 Preceding Work: Owner will perform the following construction operations at Project site. Those operations are scheduled to be substantially complete before work under this Contract begins.

1. None anticipated

1.11.3 Concurrent Work: Owner will perform the following construction operations at Project site. Those operations will be conducted simultaneously with Work under this Contract.

1. None anticipated

1.11.4 Subsequent Work: Owner will perform the following additional work at site after Substantial Completion. Completion of that work will depend on successful completion of preparatory Work under this Contract.

1. None anticipated

1.12 WORK UNDER SEPARATE CONTRACTS

1.12.1 General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying Work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

1.12.2 Preceding Work: Owner has awarded or will award separate contract(s) for the following construction operations at Project site. Those operations are scheduled to be substantially complete before Work under this Contract begins.

1. None

1.12.3 Concurrent Work: Owner has awarded or will award separate contract(s) for the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract.

1. None

1.12.4 Subsequent Work: Owner has awarded or will award separate contract(s) for the following additional work to be performed at site following Substantial Completion. Completion of that work will depend on successful completion of preparatory Work under this Contract.

1. None

1.13 FUTURE WORK

1.13.1 The Contract Documents include requirements that will allow Owner to carry out future work following completion of this Project; provide for the following future work:

1. None Anticipated

1.14 PURCHASE CONTRACTS

1.14.1 General: Where Owner has negotiated Purchase contracts with suppliers of material and equipment to be incorporated into the Work, Owner will assign the Purchase contracts to Contractor. Include costs for purchasing, receiving, handling, storage if required, and installation of material and equipment in the Contract Sum unless otherwise indicated. Contractor's responsibilities are same as if Contractor had negotiated Purchase contracts, including responsibility to renegotiate purchase and to execute final purchasing agreements. The Owner has negotiated the following Purchas contracts:

1. None

1.15 OWNER FURNISHED PRODUCTS

1.15.1 Owner will furnish products indicated. The Work includes receiving, unloading, handling, storing, protecting, and installing Owner-furnished products. Owner will furnish the following products.

1. None

1.16 CONTRACTOR-FURNISHED, OWNER-INSTALLED PRODUCTS

1.16.1 Contractor shall furnish products indicated. The Work includes unloading, handling, storing, and protecting Contractor-furnished products as directed and turning them over to Owner at Project closeout. The Contractor shall furnish for the Owner to install the following products:

1. None

1.17 FACILITIES AND UTILITY WORK BY OTHERS

1.17.1 General: Review and investigate work by utility owners and incorporate into bid. Cooperate and coordinate efforts to work with utility owners and their Contractors. Safeguard utility owner's facilities and coordinate efforts to coincide and minimize inconvenience to the public and utility companies. Where pipe utility installation crosses existing utilities, support the utilities in a manner that is acceptable to the owner of the utility. Repair damage caused to facilities to the satisfaction of utility owner. Remove and dispose of abandoned utilities encountered while performing work. The following utility companies are known to have facilities within the Project Site or near Its vicinity.

1.17.2 Work Summary: The following summary of Work was provided by the various utility Owners:

1. **Black Hills Energy:**
   Contact: Jim Srstka, cell: (605) 415-2648, jim.srstka@blackhillscorp.com
   Facilities within Project Site: Yes
   Maps provided: Yes

2. **City of Deadwood:**
   Contact: Lornie Stalder, cell: (605) 641-7745, lornie@cityofdeadwood.com
   Facilities within Project Site: Yes
   Maps provided: Yes

3. **Bluepeak (Vast)**
   Contact: Jerome Hardy, cell: (605) 786-5453, jerome.hardy@mybluepeak.com
   Facilities within Project Site: Yes

4. **Montana-Dakota Utilities**
   Contact: Jack Vandekop, cell: (605) 340-5256, jack.vandekop@mdu.com
   Facilities within Project Site:

5. **WBI Energy (Williston Basin Interstate Pipeline)**
   Contact: Beau Ackerman, cell: (406) 772-2448
   Facilities within Project Site: Yes

6. **LUMEN (Century Link)**
   Contact: Arthur Turner, cell: (605) 645-3757, arthur.turner@lumen.com
   Facilities within Project Site: Yes
   Maps Provided: Yes

7. **Butte Electric**
   Contact: Chuck Even, cell: (605) 210-2369, chucke@butteelectric.com
   Facilities within Project Site: Yes
   Maps Provided: Yes

8. **Midco**
   Contact: Blake Sandidge, cell: (605) 787-3935, blake.sandidge@midco.com
   Facilities within Project Site: Yes
   Maps Provided: Yes

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Plot Time: 4/2/2025 4:08 PM

CONSTRUCTION SET

GENERAL REQUIREMENTS

D-1.00

9. **SDN Communication**
   Contact: Ryan Smith, cell: (605) 341-2518,
   ryan.smith@sdncommunications.com
   Facilities within Project Site: Yes
   Maps Provided: No

1.18 STAKING SCHEDULE

1.18.1 General: Notify Engineer's Surveyor to establish benchmarks and control points using accepted surveying practices for Contractor to set lines and levels. Preserve and protect benchmarks and control points during construction operations. Do not change or relocate benchmarks or control points without prior written approval of Engineer. Report lost or destroyed benchmarks or control points promptly. The project staking schedule is provided below.

1. Site: Site limits at 50-ft intervals
2. Underground: Alignments and elevation of mainline piping at 50-ft intervals
3. Underground: Locations and elevation of utility structures and appurtenances
4. Earthwork: Slope stakes at 50-ft intervals
5. Earthwork: Elevation of subgrade (blue-top) at 50-ft intervals and critical deflection points
6. Earthwork: Elevation of subbase (blue-top) at 50-ft intervals and critical deflection points
7. Surfacing: Alignment and elevation of curb and gutter at 50-ft intervals and critical deflection points.

1.18.2 Resetting: Costs for resetting benchmarks, requests to establish benchmarks beyond what is specified in the Staking Schedule or otherwise exhaustive trips to the site will be charged to the Contractor, and the Contract Sum will be adjusted by Change Order.

1.19 ACCESS TO SITE

1.19.1 General: The Project Site shall be within the right-of-way and easement areas as illustrated in Section E of the drawings. Contractor shall have limited use of Project Site for construction operations as indicated in the construction documents. Driveways and entrances serving premises shall be kept clear and available to Owner, Owner's employees, and emergency vehicles at all times. Material storage and vehicle and equipment traffic shall be limited to the construction limits. Schedule deliveries to minimize space and time requirements for storage of material and equipment on-site.

1.19.2 Access: Coordinate and maintain temporary access to adjacent properties whenever feasible. Always maintain access to commercial businesses and industries. Coordinate access with those with disabilities or special needs.

1.20 UNIT PRICES AND INCIDENTAL WORK

1.20.1 General: Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit. Measurement and payment of items are described throughout the construction documents. Engineer reserves the right to reject Contractor's measurement of work-in-place and measure the Work independently. Any work that does not include a respective bid item but is necessary to complete Work as specified, shall be considered incidental to the project, and included in the Contractor's bid. No separate payment will be made. Items listed below are not meant to be all inclusive.

1. Working around, locating, and exposing existing utilities
2. Verify existing tie-in elevations prior to installation of new utility
3. Effects of faulty existing water valves
4. When exposed, the capping or plugging existing pipes to be abandoned
5. Removal of incidental items as noted in the drawings
6. Removal of unused conduits, valve boxes, and manhole castings
7. Investigate and verify active sewer services
8. Site restoration
9. Street Sweeping
10. Tree trimming for construction purposes or damage during construction.
11. Remove and Replace Landscaping
12. Additional costs caused by adverse or unfavorable weather conditions

1.21 SUBSTITUTIONS

1.21.1 Refer to the general conditions for substitution procedures.

1.22 CONTRACT MODIFICATION AND PAYMENT

1.22.1 Refer to the general conditions for contract modification and payment procedures.

1.23 SCHEDULE OF VALUES

1.23.1 General: Prior to the preconstruction meeting, submit to Engineer a schedule of values as required in the General Conditions. Prepare schedule of values in coordination with the Contractor's progress schedule. Where work is separated into phases requiring separately phased payments, provide sub-schedules showing values coordinated with each phase of payment. The schedule of values shall be updated when requested by Engineer.

1.24 LIST OF SUBCONTRACTOR AND SUPPLIERS

1.24.1 General: Prior to the preconstruction meeting, submit to Engineer a summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment to be fabricated. The list shall include the following information:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Description of related Work covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.
4. Names of key personnel who will be involved with the Work.

1.25 LIST OF CONTACTS

1.25.1 General: Prior to the pre-construction meeting, submit to Engineer a list of key personnel. The list shall include superintendent and other personnel in attendance at Project Site. Identify individuals along with their duties and responsibilities. Include addresses, cellular telephone numbers and e-mail addresses.

1.26 PROGRESS SCHEDULE

1.26.1 Preliminary Schedule: In accordance with the General Conditions and prior to scheduling the pre-construction meeting, submit a preliminary progress schedule to Engineer for approval. Prepare the schedule using current version of a computer program that was developed specifically to manage progress schedules. Approved programs include Microsoft Project, Primavera, Meridian Prolog or another equivalent program.

1.26.2 General Format: Develop schedule in bar and network format. Span schedule from date established for the Notice to Proceed to date of Readiness for Final Payment. Illustrate first workday of each week with a continuous vertical line. Block out and clearly label holidays. Illustrate each significant construction activity separately and indicate each activity's estimated start date, completion date, time duration, sequence requirements, and relationship to other activities. Indicate float or the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.

1.26.3 Significant Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, Notice to Proceed, Commencement Deadlines, Interim Completion dates, Substantial Completion, and Readiness for Final Payment.

1.26.4 Narrative: Include a narrative that lists the Contractor's anticipated work hours. Describe the days of the week when operations are expected to occur and the associated hours for each day. List holidays and other anticipated days when work will not occur. Provide the estimated number of adverse weather days for each month.

1.26.5 Maintaining Schedule: After the Progress Schedule is approved, a preconstruction meeting can be scheduled. At monthly intervals, update schedule to reflect actual construction progress and activities. Issue revised schedule one week before each regularly scheduled coordination meeting. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations. As the Work progresses, indicate final completion percentage for each activity. Failure to submit schedules will result in the Owner withholding payment until the updated schedule is submitted.

1.26.6 Regaining Schedule: When periodic update indicates the Work is behind the current approved schedule, submit a report indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which the schedule will be regained.

1.27 SCHEDULE OF SUBMITTALS

1.27.1 General: Prior to the pre-construction meeting, deliver to Engineer a Submittal Schedule as required in the General Conditions. The Schedule of Submittals shall be prepared in coordination with the Contractor's Progress Schedule and Schedule of Values. When establishing dates, include time required for review, ordering, manufacturing, fabrication and delivery. Include additional time required for making corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.

1.28 GENERAL COORDINATION PROCEDURES

1.28.1 Coordination: Coordinate operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work, including those that depend on each other for proper installation, connection, and operation. Make adequate provisions to accommodate items scheduled for later installation.

1.28.2 Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to the following:

1. Preparation of Contractor's Progress Schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.29 REQUEST FOR INFORMATION (RFI):

1.29.1 General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors. Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Engineer.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

1.29.2 Review: Engineer will review each RFI, determine action required, and respond. Allow seven working days for Engineer's response for each RFI. The following Contractor generated RFIs will be returned without action:

1. Requests for approval of submittals.
2. Requests for approval of substitutions.
3. Requests for approval of Contractor's means and methods.
4. Requests for coordination information already indicated in the Contract Documents.
5. Requests for adjustments in the Contract Time or the Contract Sum.
6. Requests for interpretation of Engineer's actions on submittals.
7. Incomplete RFIs or inaccurately prepared RFIs.

1.29.3 Action: Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt by Engineer of additional information. Engineer's action of RFIs that may result in a change to the Contract Time, or the Contract Price may require a Change Order as specified in the General Conditions of the Contract.

1.30 DIGITAL DATA FILES

1.30.1 General: Digital data files of Engineer's CAD drawings will be provided by Engineer upon request. Engineer makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings and are provided "AS IS AND WITH

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Plot Time: 4/2/2025 4:08 PM

CONSTRUCTION SET

GENERAL REQUIREMENTS

D-1.01

ALL FAULTS" and without warranties of any kind. Engineer shall not be held liable for any claims arising from use or alteration of digital data files. Digital data files are provided for use in relation to the Project only and shall remain confidential. Do not share with third parties or use in a manner to perform work or provide services other than in relation to the Project. Those parties granted access shall execute a data licensing agreement in form acceptable to Engineer.

1.31 PROJECT MEETINGS

1.31.1 General: The Contractor shall schedule and conduct meetings and conferences at Project site unless otherwise indicated. Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Engineer of scheduled meeting dates and times a minimum of 10 working days prior to meeting.

1.31.2 Preconstruction Meeting: Schedule and conduct a preconstruction conference in accordance with the General Conditions.

1. Attendees: Authorized representatives of Owner, Engineer and their consultants, Contractor and its superintendent, major contractors, suppliers, and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss procedures and items of significance that could affect progress, including responsibilities and personnel assignments, tentative construction schedule, phasing, critical work sequencing and long lead items, designation of key personnel and their duties, lines of communications, use of web-based Project software, procedures for processing field decisions and change orders, procedures for RFIs, Procedures for testing and inspecting, procedures for processing Applications for Payment, distribution of the Contract Documents, submittal procedures, use of the premises, work restrictions, working hours, Owner's occupancy requirements, responsibility for temporary facilities and controls, procedures for disruptions and shutdowns, parking availability, staging areas, equipment deliveries and priorities, safety, security, and progress cleaning.

1.31.3 Coordination Meetings: Contractor shall conduct Project coordination meetings at biweekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes. Coordination meetings shall be held at a time and location approved by Engineer.

1. Attendees: In addition to representatives of Owner, and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work. Private utility owners, the general public, and those interested in the current progress or performance of future activities shall be invited to attend. The Contractor will provide a summary of the project schedule and will answer questions. The public will then be dismissed, and the remaining attendees will discuss construction coordination and other items as needed.

2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project. Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time. Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting. Review present and future needs of each contractor present, including interface requirements, sequence of operations, status of submittals, deliveries, off-site fabrication, access, site use, temporary facilities and controls, work hours, hazards and risks, progress cleaning, quality and work standards, status of RFIs, proposal requests, change orders or pending changes. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.31.4 Owner Board Meetings: Attend Owner's Council/Board meeting upon request. Coordinate attendance with preparation of payment requests. Prepare a written report two business days in advance of the meeting and submit to Engineer. Report to describe progress since the last meeting, coming schedules, and overall performance relating to the Contract Time. Attend meeting and present report. Answer questions of the Board.

1.32 SUBMITTALS

1.32.1 General: Submittal procedures are specified in the General Conditions. Deliver submittals in form acceptable to Engineer. Include a transmittal or cover letter listing the following:

1. Name of the Project
2. Date transmitted
3. Name of Engineer
4. Name of the Contractor
5. Name of firm or entity that prepared the submittal
6. Submittal purpose and description
7. References to specification section with paragraph number and generic name sited.
8. Drawing number and detail references, as appropriate
9. Location(s) where product is to be installed, as appropriate
10. Other necessary identification
11. Remarks
12. Identify options requiring selection by Engineer
13. Signature of transmitter

1.32.2 Format: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Engineer on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet. Site references to specification section, drawing number or detail with paragraph number and generic name.

1.32.3 Coordinate Submittals: Prepare and deliver submittals required by individual specification sections. A non-comprehensive list is provided below.

1. Progress Schedule
2. Schedule of Values
3. Schedule of Submittals
4. List of Subcontractors and Suppliers
5. Contact List
6. Asphalt/Concrete job mix formula
7. Materials Certifications
8. Shop Drawings
9. Trenchless Excavation Plan
10. Sanitary Sewer Bypass Pumping Plan
11. Temporary Water Plan
12. Other Plans for Temporary Facilities
13. DANR Contractor Certification Form (2110 LD)

1.32.4 Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data. Fully illustrate requirements in the Contract Documents. Include identification of products, schedules, compliance with specified standards, notation of coordination requirements, notation of dimensions established by field measurement, relationship, and attachment to adjoining construction clearly indicated, seal and signature of professional engineer if specified.

1.32.5 Rejections: Incomplete submittals will be rejected and will be returned for resubmittal without review. Engineer will discard submittals received from sources other than Contractor.

1.33 ACCEPTANCE TESTING

1.33.1 Refer to the general conditions for acceptance testing procedures.

1.33.2 General: Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

1.33.3 Notification: Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

1.34 CONFLICTING REQUIREMENTS

1.34.1 Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Engineer for direction before proceeding.

1.34.2 Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

1.35 REFERENCES

1.35.1 Industry Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference. Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.35.2 Abbreviations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

1.36 TEMPORARY FACILITIES

1.36.1 General: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate, modify, and repair facilities as required by progress of the Work. Locate facilities to limit site disturbance.

1.36.2 Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

1.36.3 Traffic Controls: Comply with MUTCD and requirements of authorities having jurisdiction. Protect existing site improvements to remain including curbs, pavement, and utilities. Maintain access for fire-fighting equipment and access to fire hydrants. Reference Section 92 of Rapid City Standard Specifications for additional requirements.

1.36.4 Parking: Provide temporary or use designated areas of Owner's existing parking areas for construction personnel.

1.36.5 Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Review existing storm water runoff patterns and facilities. Maintain Project site, excavations, and construction free of water. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities. Remove snow and ice as required to minimize accumulations.

1.36.6 Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

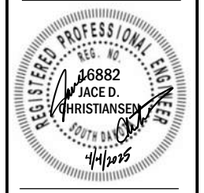
1.37 SECURITY AND PROTECTION OF FACILITIES

1.37.1 Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

1.37.2 Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135



Plot Time: 4/2/2025 4:08 PM

CONSTRUCTION SET

GENERAL REQUIREMENTS

D-1.02

1.37.3 Temporary Erosion and Sediment Control: Comply with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent, and requirements specified in project drawings.

1.37.4 Storm Water Control: Comply with requirements of authorities having jurisdiction. Review existing storm water runoff patterns and facilities. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains. Protect sanitary sewer manholes and facilities from inflow. Repair damage caused by improper temporary drainage facilities at Contractor's expense.

1.38 PRODUCT DELIVERY, STORAGE AND HANDLING

1.38.1 General: Furnish products with maximum available recycled content and with materials extracted, processed, and manufactured within closest proximity to Project site. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

1.38.2 Delivery and Handling: Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

1.38.3 Storage: Store products to allow for inspection and measurement of quantity or counting of units. Store materials in a manner that will not endanger Project structure. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage. Protect stored products from damage and liquids from freezing.

1.39 PRODUCT WARRANTIES

1.39.1 General: Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1.40 EXAMINATION, PREPARATION AND CONSTRUCTION LAYOUT

1.40.1 Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

1.40.2 Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

1.40.3 Existing Utility Information: Furnish information to local utility owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

1.40.4 Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.40.5 Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

1.40.6 Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.

1.40.7 Construction Layout: Where provided, reference the project Staking Schedule for a list of benchmarks and control points to be established by the Engineer's Surveyor. Contractor shall verify the accuracy of benchmarks set by Surveyor and notify Engineer immediately if errors are discovered. Proceed to lay out the Site only after errors are corrected. Proceeding with the Work indicates Contractor's acceptance of Surveyor's benchmarks.

1.40.8 Lines and Levels: Contractor shall lay out and establish control lines and levels for site improvements. Transfer survey markings and elevations from benchmarks, as necessary. Always level from two or more locations.

1.41 INSTALLATION

1.41.1 General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated. Make vertical Work plumb and make horizontal Work level. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

1.41.2 Favorable Conditions: Install work during favorable seasonal and weather conditions. Provide temporary facilities and additional means and methods, at contractor's expense, to protect Work from adverse weather or unfavorable conditions.

1.41.3 Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.

1.42 CUTTING AND PATCHING

1.42.1 General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

1.42.2 Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

1.42.3 Temporary Support: Provide temporary support of work to be cut.

1.42.4 Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

1.42.5 Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

1.42.6 Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use. Cut or drill from the exposed or finished side into concealed surfaces. For concrete and masonry, cut using a cutting machine, such as an abrasive saw or a diamond-core drill. For excavating and backfilling, comply with requirements in applicable Sections where required by cutting and patching operations. Proceed with patching after construction operations requiring cutting are complete.

1.42.7 Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable. Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing. Clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

1.42.8 Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

1.43 PROGRESS CLEANING

1.43.1 General: Clean Project site and work areas daily. Enforce requirements strictly. Dispose of materials lawfully. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations. Use containers intended for holding waste materials of type to be stored. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

1.43.2 Site: Maintain Project site free of waste materials and debris. Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1.43.3 Street Sweeping: Clean paved streets adjacent to the project at the end of each working day.

1.43.4 Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

1.43.5 Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

1.43.6 Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

1.43.7 Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements as specified.

1.43.8 Clean, Protect and Maintain: During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

1.43.9 Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

1.44 PROTECTION OF INSTALLED CONSTRUCTION

1.44.1 General: Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

1.44.2 Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in the condition that existed at commencement of the Work.

1.44.3 Comply with manufacturer's written instructions for temperature and relative humidity.

1.45 WASTE MANAGEMENT AND DISPOSAL

1.45.1 General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract. Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1.45.2 Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Plot Time: 4/2/2025 4:08 PM

CONSTRUCTION SET

GENERAL REQUIREMENTS

D-1.03

occupied and used facilities. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled. Comply with requirements for Temporary Facilities and Controls for controlling dust and dirt, environmental protection, and noise control.

1.45.3 Disposal of Waste: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas. Burning waste materials on Site is not permitted.

1.46 CLOSEOUT PROCEDURES

1.46.1 Procedures for Substantial Completion are specified in the General Conditions and further described in the paragraphs that follow.

1.46.2 Final Cleaning: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average maintenance program. Comply with manufacturer's written instructions. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

1. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
3. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
4. Engage licensed arborist to trim tree limbs damaged during construction.
5. Remove tools, construction equipment, machinery, and surplus material from Project site.
6. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
7. Remove labels that are not permanent.
8. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
9. Leave Project clean and ready for occupancy.

1.46.3 Pre-Inspection: Submit and complete the following items before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

1. Submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
2. Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
3. Submit closeout submittals specified in other Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, special warranties, and similar final record information.
4. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
5. Advise Owner of pending insurance changeover requirements.
6. Advise Owner of changeover in utility services.
7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
8. Complete final cleaning requirements.

1.46.4 Final Inspection: Submit a written request for inspection to determine Substantial Completion in conformance with the General Conditions.

1.46.5 Punch List: Complete repair and restoration operations identified in Engineer's Punch List. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1.46.6 Certify Completion: Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

CONCRETE

1.47 CAST IN PLACE CONCRETE

1.47.1 Reference: City of Rapid City Standard Specification 2022 Edition and SDDOT Standard Specifications for Roads and Bridges (SDDOT SSRB)

1.47.2 Definitions:

1. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.
2. W/C Ratio: The ratio by weight of water to cementitious materials.
3. Fine-to-Median Textured Surface: Concrete, texture lined finish accomplished by drawing a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic.
4. Median-to-Course Textured Surface: Concrete, textured finish accomplished by striating float finished concrete surface 1/16 to 1/8 inch deep with a stiff bristled broom, perpendicular to line of traffic.

1.47.3 Submittals: Submit design mixture for each job mix proposed for the Work. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments. Indicate amounts of mixing water to be withheld for later addition at Project site.

1.47.4 Products: Products to be as follows unless otherwise specified. Reference SDDOT SSRB for additional specifications.

1. Concrete Materials: Cementations materials, aggregates, admixtures, water and other materials used in batching concrete delivered to the project site shall conform to SDDOT SSRB
2. Mix Designs: Concrete delivered to the project site shall conform as follows unless otherwise indicated in the drawings.
   i. Roadway Pavement: SDDOT SSRB – Section 380.
   ii. Miscellaneous flatwork including driveways, curb and gutter and walks: M6 Concrete per SDDOT SSRB – Section 462
   iii. Cast in Place Storm Drainage Structures: M6 Concrete per SDDOT SSRB – Section 462
3. Form Facing Materials: Provide form-facing panels that provide full depth, continuous, true, straight and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints. Plywood, metal, or other approved panel materials. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.
4. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.
5. Reinforcing Bars: ASTM A 615, Grade 60, deformed steel.
6. Epoxy Coated Reinforcing Bars: ASTM A 615, Grade 60, deformed bars, ASTM A 775, epoxy coated, with less than 2 percent damaged coating in each 12-inch bar length.
7. Joint Dowel Bars: ASTM A615, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs.
8. Epoxy-Coated, Joint Dowel Bars: ASTM A775; with ASTM A615, Grade 60 plain-steel bars.
9. Tie Bars: ASTM A615, Grade 60; deformed.
10. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
    i. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
    ii. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
11. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating; compatible with epoxy coating on reinforcement and complying with ASTM A 775.
12. Curing Compound: SDDOT SSRB – Section 821.
13. Joint Fillers: SDDOT SSRB Bridges – Section 860.
14. Joint Sealer: SDDOT SSRB – Section 870.

1.47.5 Field Quality Control: Schedule Owner's testing agency to perform tests and inspections. Obtain at least one composite sample for each 100 cuyd, 5000 sqft or fraction thereof of each concrete mixture placed each day. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used. Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete. Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Concrete paving will be considered defective if it does not pass tests and inspections. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements. Testing and inspecting of composite samples of fresh concrete obtained according to ASTM C172 shall be performed according to the following requirements:

1. Slump: ASTM C143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
2. Air Content: ASTM C231; pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
3. Concrete Temperature: ASTM C1064; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
4. Compression Test Specimens: ASTM C31; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
5. Compressive-Strength Tests: ASTM C39; test one specimen at seven days and two specimens at 28 days. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi

EARTHWORK

2.1 SITE CLEARING

2.1.1 General: Protect and maintain benchmarks and survey control points from disturbance during construction. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed. Protect existing site improvements to remain from damage during construction. Restore damaged improvements to their original condition, as acceptable to Owner.

2.1.2 Documentation: Document existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing. Use sufficiently detailed photographs or video recordings. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.

2.1.3 Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.

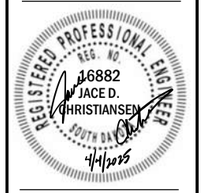
2.1.4 Locate Utilities: Notify State One Call system for area where Project is located before site clearing. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place. Carefully remove items indicated to be salvaged and store on Owner's premises. (South Dakota One Call 1-800-781-7474)

2.1.5 Existing Utilities: Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place. Arrange with private utility companies to shut off indicated utilities. Owner will arrange to shut off indicated utilities when requested by Contractor. Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted by Engineer and only after arranging to provide temporary utility services.

2.2 CLEARING & GRUBBING

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135



Plot Time: 4/2/2025 4:08 PM

CONSTRUCTION SET

GENERAL REQUIREMENTS

D-1.04

2.2.1 General: Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction. Engage licensed arborist to prune brush and trim trees. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated. Grind down stumps and remove roots larger than 2 inches in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade. Use only hand methods or air spade for grubbing within protection zones. Chip removed tree branches and dispose of off-site. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

2.2.2 Salvage, Protect and Replenish: Salvage landscaping within the construction limits for reset where indicated in the Drawings. Protect lawn ornaments and decorations. Replenish landscape rock or mulch where deficient.

2.3 TOPSOIL STRIPPING

2.3.1 General: Strip topsoil to depth of 4 inches minimum in a manner to prevent intermingling with underlying subsoil or other waste materials. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects larger than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water. Do not stockpile topsoil within protection zones. Dispose of surplus topsoil.

2.4 SITE IMPROVEMENTS

2.4.1 General: Remove existing above and below grade improvements as necessary to facilitate new construction. Remove slabs, paving, curbs, gutters, and aggregate base as indicated in the drawings. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

2.5 EARTH MOVING

2.5.1 Reference: SDDOT Standard Specifications for Roads and Bridges

2.5.2 Definitions

1. Backfill: Soil material or controlled low-strength material used to fill an excavation, above the bedding conduit.
   i. Initial Backfill: Backfill placed immediately over the bedding conduit of a trench.
   ii. Final Backfill: Backfill placed over the initial backfill to fill a trench.
2. Bedding: Aggregate material placed under, beside and over pipe in a trench, including haunches to support sides of pipe.
3. Bedding Foundation: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
4. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.
5. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
6. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.
7. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
8. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
9. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
10. Fill: Soil materials used to raise existing grades.
11. Bedrock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of solid rock material that exceed 2 cu. yd. that cannot be removed by rock-excavating equipment without systematic drilling, ram hammering, ripping, or blasting.
12. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
13. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
14. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
15. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

2.5.3 Preinstallation: Review methods and procedures related to earthmoving, including, but not limited to personnel and equipment needed to make progress and avoid delays, coordination of Work with utility locator service, coordination of Work and equipment movement with the locations of tree- and plant-protection zones, extent of trenching by hand or with air spade and field quality control.

2.5.4 Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.

2.5.5 Utility Locator Service: Notify South Dakota One Call for area where Project is located before beginning earth-moving operations.

2.5.6 Erosion Control: Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures are in place.

2.5.7 Plant Protection: Do not commence earth-moving operations until plant-protection measures specified within drawings are in place.

2.5.8 Protection Zones: Do not direct vehicle or equipment exhaust towards protection zones. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

2.5.9 Products: Provide borrowed soil and aggregate materials when sufficient satisfactory materials are not available from excavations. Reference SDDOT Standard Specifications for Roads and Bridges for additional specifications.

1. Satisfactory Earthen Soils: Soil classification groups GW, GP, GM, SW, SP and SM according to ASTM D2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
2. Unsatisfactory Earthen Soils: Soil classification groups GC, SC, CL, ML, OL, CH, MH, OH and PT according to ASTM D2487 or a combination of these groups. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
3. Base Course: Base course to be SDDOT Standard Specifications for Roads and Bridges Aggregate Base Course unless otherwise specified.
4. Gravel Surfacing: Gravel surfacing shall meet the gradation of Aggregate Base Course per the SDDOT Standard Specifications for Roads and Bridges.
5. Engineered Fill: Crushed, angular washed rock of size as specified throughout drawings.
6. Drainage Course: Narrowly graded mixture of washed crushed stone as specified throughout drawings.
7. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.
8. Geotextile Separation Fabric: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
   i. Wide Width Tensile Strength, 3600 lb-ft minimum; ASTM D-4595
   ii. Wide Width Tensile Strength at 5% strain; ASTM D-4595
   iii. 1350 lb/ft minimum
   iv. Permittivity: 0.25 per second, minimum; ASTM D 4491
   v. UV Stability: 70% after 500 hours' exposure; ASTM D 4355
9. Dust Control Chlorides: SDDOT SSRB – Section 891.

2.5.10 Inspections: Schedule inspections with Owner's inspectors and testing agencies. Inspections and testing include:

1. Proof roll of subgrades and base course below pavements
2. Compaction tests

2.5.11 Preparation: Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations. Protect and maintain erosion and sedimentation controls during earth-moving operations. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

2.5.12 Dewatering: Provide dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches. Dispose of water removed by dewatering lawfully and in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others. No separate measurement or payment will be made for dewatering.

2.5.13 Explosives: Do not use explosives unless the work necessitates. Obtain permits from Owner and written permission from authorities having jurisdiction before bringing explosives to Project site. Perform blasting without damaging adjacent structures, property, or site improvements. Perform blasting without weakening the bearing capacity of bedrock subgrade and with the least practicable disturbance to bedrock to remain.

2.5.14 Unclassified Earth Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. While excavating, separate and stockpile satisfactory and unsatisfactory materials for reuse in Work including course or fine aggregate materials. Unclassified excavated earthen materials may include soil materials or boulders. No changes in the Contract Sum or the Contract Time will be authorized for removal of boulders. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; and soil, boulders, and other materials not classified as bedrock or unauthorized excavation. If bedrock is encountered, do not excavate until it has been classified and cross sectioned by Engineer. Bedrock shall be measured and paid separately.

2.5.15 Bedrock Excavation: Bedrock excavation includes removal and disposal of bedrock. Remove bedrock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:

1. 24 inches outside of concrete forms other than at footings.
2. 12 inches outside of concrete forms at footings.
3. 6 inches outside of minimum required dimensions of concrete cast against grade.
4. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
5. 6 inches beneath bottom of concrete slabs-on-grade.
6. 6 inches beneath pipe in trenches and the greater of 24 inches wider than pipe or 42 inches wide.

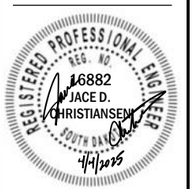
2.5.16 Excavating for Structures: Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections. Do not disturb bottom of excavation. Trim bottoms to required lines and grades to leave solid base to receive other work.

2.5.17 Excavating for Pavements: Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

2.5.18 Subgrade Inspection: Notify Engineer when excavations have reached required subgrade. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed. Proof-roll subgrade below pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Engineer, and replace with compacted backfill or fill as directed. Reconstruct

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135



Plot Time: 4/2/2025 4:08 PM

CONSTRUCTION SET

GENERAL REQUIREMENTS

D-1.05

subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

2.5.19 Unauthorized Excavation: Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Engineer. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Engineer.

2.5.20 Soil Fill: Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material. Place soil fill on subgrades free of mud, frost, snow, or ice. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under steps and ramps, use engineered fill.
4. Under building slabs, use engineered fill.

2.5.21 Soil Moisture Control: Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry density.

2.5.22 Compaction of Soil Backfill and Fills: Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

2.5.23 Compaction Density: Compact soil materials to not less than the following percentages of maximum dry density according to ASTM D 698 ASTM D 1557:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.

2.5.24 Grading: General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated. Provide a smooth transition between adjacent existing grades and new grades. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

2.5.25 Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch
2. Walks: Plus or minus 1 inch
3. Pavements: Plus or minus 1/2 inch

2.5.26 Testing: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements. At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Engineer. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained. Testing agency will test compaction of soils in place according to ASTM D1556, ASTM D2167, ASTM D2937, and ASTM D6938, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length but no fewer than two tests.
3. Trench Backfill: See Trench Backfill section under Utility Requirements.

2.5.27 Protection: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

2.5.28 Disposal of Surplus and Waste Materials: Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

2.5.29 Stockpile Cleanup: Remove stockpiles and leave areas in clean and neat condition. Grade site surface to prevent free standing water. Where specified, leave unused materials in neat, compact stockpile.

2.5.30 Earthwork Quantities: The quantity of unclassified excavation represents the unadjusted net volume of cut that exists within the site. The volumes listed within the earthwork table were calculated through comparing the existing grade surface less 4" to the subgrade surface. The subgrade surface is defined as the finished elevation of the subgrade prior to placement of surfacing such as topsoil, aggregate base, asphalt, or concrete. The volumes of cut and fill are unadjusted and describe the net volume of existing, in-place material needed to be excavated on site and the net volume of area needed to be filled to reach subgrade elevation. The contractor shall note that no adjustments have been made to the excavation or embankment volumes for pavements to be removed. The contractor shall anticipate excavated material to compact to a higher density than its native state and apply his/her own assumptions of shrinkage as they see fit and include them in their unit price.

TABLE OF EARTHWORK QUANTITIES (CUBIC YARD) WORK SITE	
Strip Topsoil	4148 CY
Unclassified Excavation	1394 CY
Embankment	114 CY
Shrinkage (30% of Fill)	34 CY
Placing Topsoil	4148 CY
Net (waste)	1246 CY

2.5.31 Excess Material: Haul excess suitable soil resulting from earthwork or trenching activities offsite.

EXTERIOR IMPROVEMENTS

3.1 ASPHALT PAVING

3.1.1 Reference: City of Rapid City Standard Specifications – 2022 Edition and SDDOT Standard Specifications for Roads and Bridges

3.1.2 Submittals: Submit Job-Mix Designs for each job mix proposed for the Work. Include technical data and tested physical and performance properties. Certificates of compliance for performance graded asphalt binder.

3.1.3 Products: Products to be as follows unless otherwise specified. Reference SDDOT Standard Specifications for Roads and Bridges for additional specifications.

1. Surface lift to be Type 2. All other lifts to be Type 1.
2. 15% maximum by weight of reclaimed asphalt pavement (RAP) is allowed. Reclaimed unbound-aggregate base material or recycled tires, asphalt shingles or glass are not allowed. Remove additional foreign debris such as concrete, grass, dirt, wood, metal, coal tar, etc. from RAP stockpiles.
3. Asphalt cement used in mixture to be performance graded AASHTO designation PG64-28 conforming to current SDDOT specifications.
4. Tack Coat to be SS-1h or Css-1h.

3.1.4 Inspections: Schedule inspections with Owner's inspectors and testing agencies. Inspections and testing include:

1. Proof Roll of Base Course
2. Asphalt Sampling
3. Compaction Tests
4. Visual inspection of asphalt base lifts, valves, manholes and other facilities prior to installing final lift of asphalt.

3.1.5 Preinstallation: Review methods and procedures related to hot-mix asphalt paving. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.

3.1.6 Environmental Limitations: Do not apply asphalt materials if subgrade is wet, excessively damp, frozen, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:

1. Base Lift: Minimum ambient temperature of 35 deg F with a forecast of holding or rising at time of placement
2. Middle or Top Lift: Minimum ambient temperature of 40 deg F with a forecast of holding or rising at time of placement

3.1.7 Subbase Preparation: Verify that subbase is dry, ready to support paving and imposed loads and is otherwise in suitable condition to begin paving. Provide protective materials, procedures, and worker training to prevent asphalt materials from spilling, coating, or building up on curbs, driveway aprons, manholes, and other surfaces adjacent to the Work. Verify manhole frames, valve boxes and other facilities are plumb and installed in the correct position and elevation. Notify Engineer when subbase has reached required elevation. Proof-roll subbase below asphalt pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades. Completely proof-roll subgrade in one direction. Limit vehicle speed to 3 mph. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Engineer, and replace with compacted backfill or fill as directed. Reconstruct subbases damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation. Saw cut and notch existing pavements as indicated in drawings. Clean existing pavements to remove foreign material, excess joint sealant and crack filler from pavement surface. Repair surface defects in existing pavement to provide uniform surface to receive new paving. Proceed with paving only after unsatisfactory conditions are corrected.

3.1.8 Patching: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade. Before placing patch material, apply tack coat uniformly to vertical asphalt surfaces abutting the patch. Apply at a rate of 0.05 to 0.15 gal./sq. yd. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces. Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.

3.1.9 Surface Preparation: Immediately before placing asphalt materials, clean and remove loose and deleterious material from substrate surfaces. Apply tack coat uniformly to asphalt and concrete surfaces that will be in contact with new asphalt at a rate of 0.05 to 0.15 gal./sqyd, including vertical edges such as gutters. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Do not tack coat surface of manhole lids, valve boxes and other facilities. Cover surfaces as necessary to prevent asphalt from adhering to undesired surfaces. Remove spillages and clean affected surfaces. Place asphalt within 24 hours of applying tack coat.

3.1.10 Placing Hot Mix Asphalt: Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each lift to required grade, cross section, and thickness when compacted. Place hot-mix asphalt in number of lifts and thicknesses indicated. Do not exceed thickness of 3-in and 2-in of base lifts and surface lifts, respectively. Measure the temperature of mix at time of placement. Spread mix at a minimum temperature of 250 deg F. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Overlap mix placement about 1 to 1-1/2 inches from strip to strip to ensure proper compaction of mix along longitudinal joints. Complete asphalt base lifts and allow to cool to 175 deg F before placing asphalt surface lift. Promptly correct surface irregularities in paving lift behind paver. Use

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/4/2025

Plot Time: 4/2/2025 4:08 PM

CONSTRUCTION SET

GENERAL REQUIREMENTS

D-1.06

suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.1.11 Joints: Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt. Clean contact surfaces and apply tack coat to joints. Offset longitudinal joints, in successive lifts, a minimum of 6 inches. Offset transverse joints, in successive lifts, a minimum of 24 inches. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints as shown on Drawings. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement. Compact asphalt at joints to a density within 2 percent of specified lift density.

3.1.12 Compaction: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers. Complete compaction before mix temperature cools to 185 deg F. Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements. Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt lift has been uniformly compacted to 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent or greater than 96 percent. Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

3.1.13 Surface Lifts: Prior to installing surface lifts, visually inspect base lifts for structural failures and compliance tolerances. Open all manholes, valve boxes and other access facilities and verify facilities are plumb and did not shift during base lift installation. Remove and repair areas that are defective or out of compliance prior to placing surface lift.

3.1.14 Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

3.1.15 Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

3.1.16 Protection: After final rolling, erect barricades, station guarding systems and otherwise protect paving from mechanical and structural damage. Prevent vehicular traffic on pavement until it has cooled to less than 100 deg F and hardened enough not to become marred.

3.1.17 Pavement Thickness: Compact each asphalt lift to produce the thickness indicated within the following tolerances:

1. Base Lifts: Plus or minus 1/2 inch.
2. Surface Lifts: Plus 1/4 inch, no minus.
3. Overall mat thickness: Plus 1/4 inch, no minus.

3.1.18 Pavement Surface Smoothness: Compact each lift to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:

1. Base Lifts: 1/4 inch.
2. Surface Lifts: 1/8 inch.

3.1.19 Field Quality Control: Owner will engage a qualified testing agency to perform tests and inspections. In-place compacted thickness of hot-mix asphalts will be determined according to ASTM D 3549. Finished surface of each hot-mix asphalt lift will be tested for compliance with smoothness tolerances. Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979 or AASHTO T 168. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726. One core sample will be taken for every 1000 sq. yd. or less of installed pavement, with at least three cores taken. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726. Replace and compact hot-mix asphalt where core tests were taken. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.1.20 Waste Handling: Handle asphalt-paving waste according to approved waste management plan.

3.2 MANHOLE/STRUCTURE ADJUSTMENTS, FRAMES, COVERS & GRATES

3.2.1 Reference: City of Rapid City Standard Specification – 2022 Edition

3.2.2 Submittals: Submit product data and certifications for each type of product.

3.2.3 Products:

1. Products:
   i. Reference City of Rapid City Standard Specification:
      (a) Sanitary Sewer Pipe: Section 9
      (b) Sanitary Sewer Force Main: Section 9

3.2.4 Installation: Use flat or tapered adjusting rings to achieve indicated elevation for frames. Do not adjust elevation greater than 6 inches with rubber manhole rings. Maximum overall height of adjusting rings is 18 inches. Remove and swap manhole or structure sections to comply with maximum adjustment heights. Cut flat top storm drainage structures to comply with maximum adjustment heights. Use sealant to seal joints between manhole top, rings, and frame.

3.3 SOIL PREPARATION:

3.3.1 Reference: SDDOT Standard Specifications for Roads and Bridges

3.3.2 Preconstruction Testing: Owner will engage a qualified testing agency to perform preconstruction soil analyses on imported soil. Submit in airtight containers 10 lb sample of each type of fill to Engineer labeled with the name, location and the distance from the Project site of the material source. Notify Engineer seven days in advance of the dates and times when soil will be imported.

3.3.3 Delivery, Storage and Handling: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with state and Federal laws if applicable. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways. Do not move or handle materials when they are wet or frozen. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates. Furnish soil materials from single source throughout the Work.

3.3.4 Products: Products to be as follows unless otherwise specified in drawings. Reference SDDOT Standard Specifications for Roads and Bridges for additional specifications.

1. Contractor Furnished Topsoil: Imported, naturally formed soil from off-site and modified as necessary to produce viable planting soil. If necessary, amend imported soil with materials to become planting soil meeting testing requirements of AASHTO T88, ASTM D 5268-07 and the following:

Compositional Category	Percentage by Mass
Total Sample:	
Deleterious materials (rock, gravel, slag, cinder, roots, sod)	5 max
Material passing the No. 10 sieve:	
Organic Material	2 to 20
Sand content	20 to 60
Silt and clay content	35 to 70
pH (ASTM D 5268)	5 to 7

   i. Source: Take imported, unamended soil from sources that are naturally well-drained sites where topsoil occurs at least 4 inches deep, not from bogs, or marshes; and that do not contain undesirable organisms; disease-causing plant pathogens; or obnoxious weeds and invasive plants.

   ii. Unacceptable Materials: Concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.

   iii. Fertilizers: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in composition amounts recommended in soil reports from qualified testing agency.

3.3.5 Preinstallation: Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in planting soil. Proceed with placement only after unsatisfactory conditions have been corrected.

3.3.6 Preparation of Soil: Excavate soil from designated area(s) to depths required and stockpile until amended. Clean soil of concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth. Clean soil to contain specified combined maximum of percent by dry weight of stones, roots, plants, sod, clay lumps, and pockets of coarse sand. If necessary, mix unamended soil with amendments to produce required planting soil.

3.3.7 Subgrade Preparation: Do not till if existing soil or subgrade is frozen, muddy, or excessively wet. Till subgrade to a minimum depth of 4 inches in ROW and 6 inches in easement areas. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

3.3.8 Placing Soil: Do not apply soil if existing soil or subgrade is frozen, muddy, or excessively wet. Apply soil and mix approximately half the thickness of soil over prepared, loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil.

3.3.9 Compaction: Compact each blended lift of planting soil to 75 to 82 percent of maximum Standard Proctor density according to ASTM D 698 except where a different compaction value is indicated on Drawings.

3.3.10 Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.3.11 Protection: Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Vehicle traffic.
4. Foot traffic.
5. Erection of sheds or structures.
6. Impoundment of water.
7. Excavation or other digging unless otherwise indicated.

3.3.12 Soil Renovation: If planting soil or subgrade is over compacted, disturbed, or contaminated by foreign or deleterious materials or liquids, remove the planting soil and contamination; restore the subgrade as directed by Engineer and replace contaminated planting soil with new planting soil.

3.3.13 Weed Control: Perform weed control and protect in-place soil from noxious weed germination.

3.3.14 Cleaning: Protect areas adjacent to planting-soil preparation and placement areas from contamination. Keep adjacent paving and construction clean and work area in an orderly condition. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off Owner's property unless otherwise indicated. Dispose of excess subsoil and unsuitable materials on-site where directed by Owner.

3.4 TURF AND GRASSES

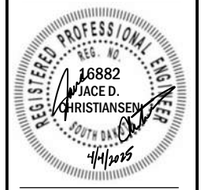
3.4.1 Reference: SDDOT Standard Specifications for Roads and Bridges and City of Rapid City Standard Specifications.

3.4.2 Submittals: Provide the following submittals

1. Certificate of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
2. Product certificates for fertilizers from manufacturer.

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135



Plot Time: 4/2/2025 4:08 PM

CONSTRUCTION SET

GENERAL REQUIREMENTS

D-1.07

3.4.3 Delivery, Storage and Handling: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways. Accompany each delivery of bulk materials with appropriate certificates.

3.4.4 Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

3.4.5 Products: Products to be as follows unless otherwise specified. Reference SDDOT Standard Specifications for Roads and Bridges for additional specifications.

1. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances. Seed of grass species as listed below for solar exposure, with not less than 85% germination, not less than 97% pure seed, and not more than 0.10% weed seed:

   i. Type F Permanent Seed Mixture:

Grass Species	Variety	Pure Live Seed (PLS) LBS/1 ACRE
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Green Needlegrass	Lodorm, AC Mallard Ecovar	4
Sideots Grama	Butte, Pierre	3
Blue Grama	Bad River	2
Oats or Spring Wheat: April through May Winter Wheet: August through November		10
TOTALS		**26**

2. Fertilizers: The Contractor will apply an all-natural slow release fertilizer prior to seeding. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ration (C:N ratio) of 5:1. The all0-natural fertilizer will be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer will have a near neutral pH. A low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer will also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

   i. Fertilizer will be applied at a rate of 2,000 pounds per acre in accordance with the manufacturer's recommended method of application.

3. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

4. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

5. Bonded Fiber Matrix: Per City of Rapid City Standard Specification.

   i. Approved Bonded Fiber Matrix: EarthGuard Fiber Matrix or engineer approved equal.

3.4.6 Inspections: Schedule inspections with Owner's inspectors and testing agencies. Inspections and testing include:

1. Inspection of planting areas prior to seeding.

3.4.7 Examination: Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, gravel, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results. Uniformly moisten excessively dry soil that is not workable, or which is dusty. Proceed with installation only after unsatisfactory conditions have been corrected. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Engineer and replace with new planting soil.

3.4.8 Initial Weed Control: Inspect areas to be planted for vegetative growth that has already germinated. Where found, apply an appropriate post-emergent herbicide with low soil residual as recommended by the manufacturer. Suspend seeding operations until soil residual dissipates.

3.4.9 Preparation: Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray. Protect grade stakes set by others until directed to remove them. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways. Prepare planting area for soil placement and mix planting soil according to "Soil Preparation" Section. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil. Pulverize soil to less than 1-inch particles and rake to a uniformly smooth, fine textured surface within 0.5 inches of finished elevation. Remove stones larger than 1 inch. Before planting, obtain Engineer's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4.10 Seeding: Sow seed with drill or slit seeder wherever feasible. Do not hydroseed, broadcast or drop seed unless necessary. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other. Do not use wet seed or seed that is moldy or otherwise damaged. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer. Sow seed at rates specified under "Products" Section. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.

3.4.11 Hydroseeding: Hydroseed where slopes are steeper than 3:1. Increase the specified seed ratio amount 50% and mix with fiber mulch slurry. Spray apply slurry uniformly to all areas to be seeded in a two-step process. Apply first slurry coat at a rate so that mulch component is deposited at not less than 500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate. Apply slurry cover coat of Bonded Fiber Matrix at a rate specified in City of Rapid City Standard Specifications.

3.4.12 Turf Renovation: Renovate existing turf where indicated. Renovate turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles. Reestablish turf where settlement or washouts occur or where minor regrading is required. Install new planting soil as required. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil. Remove topsoil containing foreign materials, such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil. Mow, dethatch, core aerate, and rake existing turf. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches. Apply initial fertilizer required for establishing new turf and mix thoroughly into top 4 inches of existing soil. Install new planting soil to fill low spots and meet finish grades. Apply seed and protect with mulch as required for new turf. Water newly planted areas and keep moist until new turf is established.

3.4.13 Turf Maintenance: Roll, regrade and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement. Hand pull or inoculate legumes and noxious weeds.

3.4.14 Turf Acceptance: Turf installations shall appear healthy and uniform with a close stand of grass, free of weeds and surface irregularities, with coverage exceeding 75% over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory to Engineer.

3.4.15 Cleanup and Protection: Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established. Remove nondegradable erosion-control measures after grass establishment period.

UTILITIES

4.1 COMMON WORK RESULTS FOR UTILITIES

4.1.1 Delivery: Accept materials on Site in manufacture's original packaging and inspect for damage. Deliver pipes and tubes with factory-applied end caps. Ensure that valves are dry and internally protected against rust and corrosion. Protect valves against damage to threaded ends and flange faces. Set valves in best position for handling. Set valves closed to prevent rattling. Seal valve and hydrant ends to prevent entry of foreign matter.

4.1.2 Storage: Store materials according to manufacturer instructions. Do not remove end protectors unless necessary for inspection; then reinstall for storage. Protect from weather. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas. Store indoors and maintain temperature higher than ambient dew-point temperature. Do not exceed structural capacity of floor when storing inside. Elevate above grade. Support off the ground or pavement in watertight enclosures when outdoor storage is necessary. Support to prevent sagging and bending. Block individual and stockpiled pipe lengths to prevent moving. Do not place pipe or pipe materials on private property or in areas obstructing pedestrian or vehicle traffic. Store PE and PVC materials out of sunlight.

4.1.3 Handling: Handle and assemble pipe according to manufacturer instructions and as indicated on drawings. Protect pipe, pipe fittings, and seals from dirt and damage. Use sling to handle valves and fire hydrants if size requires handling by crane or lift. Rig valves to avoid damage to exposed parts. Do not use handwheels or stems as lifting or rigging points. Handle manholes and other structures according to manufacturer's written rigging instructions. Inspect materials for defects prior to installation. Remove defective materials from the site.

4.1.4 Piped Utility Demolition: Disconnect, demolish, and remove piped utility systems, equipment, and components indicated to be removed. Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material. Drain piping to be abandoned in place. Fill abandoned piping with flowable fill, and cap or plug piping with same or compatible piping material where indicated. If pipe, insulation, or equipment to remain is damaged in appearance or is unserviceable, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.

4.1.5 Transition Fittings: In general, same size as, and with pressure rating at least equal to and with ends compatible with, piping to be joined.

4.1.6 Examination and Preparation: Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected. Prior to starting Work, review required lines, levels, contours and benchmarks, schedule surveyor to establish benchmarks, determine exact location and size of valves, manholes, service connections and other appurtenances from Drawings, and verify that elevations of existing facilities are as indicated in Drawings. Locate, identify, and protect utilities that are to remain. Do not interrupt utility service without permission and without making arrangements to provide temporary services. Notify Engineer no fewer than two days in advance of proposed interruption of service. Do not proceed with interruption of service without Engineer's written permission.

4.1.7 Piping Installation: Install piping according to the following requirements and utilities Sections specifying piping systems. Drawing, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on the Coordination Drawings. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise. Install piping to permit valve servicing. Do not lay pipes in wet or frozen trench. Prevent foreign material from entering pipes during placement. Install piping at indicated slopes. Install piping free of sags and bends. Install pipes in straight lines, and re-lay pipe that is out of alignment or grade. Install pipes to allow for expansion and contraction without stressing pipe or joints. Install pressure pipes without high points. Install fittings for changes in direction and branch connections. Select system components with pressure rating equal to or greater than system operating pressure. Install sleeves for pipes passing through concrete and masonry walls and concrete floor and roof slabs. Protect and support existing piping and appurtenances as

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/4/2025

Plot Time: 4/2/2025 4:08 PM

CONSTRUCTION SET

GENERAL REQUIREMENTS

D-1.08

Work progresses. Install piping by tunneling or jacking, or combination of both, under streets and other obstructions that cannot be disturbed.

4.1.8 Piping Joint Construction: Join pipe and fittings according to the following requirements and utilities Sections specifying piping systems. Cut pipe ends square, using only equipment specifically designed for pipe cutting. Use of chisels or hand saws is not permitted. Ream ends of pipes and tubes to full diameter and remove burrs. Grind edges smooth with beveled end for push-on connections. Bevel plain ends of steel pipe. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly. For threaded joints, thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified. Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds. Join plastic pressure piping gasketed joints according to ASTM D 3139. Join plastic nonpressure piping gasketed joints according to ASTM D 3212.

4.1.9 Separation: Construct sanitary sewers and watermains with separation between them as required by Authorities having jurisdiction. Maintain a minimum of 10-ft of horizontal separation between water main and sewer facilities. Where water mains and sewers cross, provide minimum 18-in clearance and center full pipe lengths on crossing to stagger joints as far from crossing as feasible. Where minimum separation or crossing clearance is not achieved, encase water main or sewer in PVC pipe, for a minimum distance of 10-ft, either direction of the conflict. Seal ends of encasement pipe with rubber boots.

4.1.10 Damage and Touchup: Repair marred and damaged factory-painted finishes with materials and procedures to match original factory finish.

4.1.11 Grouting: Mix and install grout for equipment base bearing surfaces, pump and other equipment base plates, and anchors. Clean surfaces that will come into contact with grout. Provide forms as required for placement of grout. Avoid air entrapment during placement of grout. Place grout, completely filling equipment bases. Place grout on concrete bases and provide smooth bearing surface for equipment. Place grout around anchors. Cure placed grout.

4.1.12 Testing: Prior to starting tests, verify that trenches are backfilled, thrust restraints are installed for pressure systems, and that facilities are otherwise ready for testing. Proceed with testing only after unsatisfactory conditions have been corrected. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects. Do not enclose, cover, or put into service before inspection and approval. Test completed piping systems according to requirements of authorities having jurisdiction. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours advance notice. Leaks and loss in test pressure constitute defects that must be repaired. Replace leaking facilities using new materials, and repeat testing until leakage is within allowances specified. If tests indicate that Work does not meet specified requirements, remove Work, replace, and retest.

4.1.13 Record Keeping: Record installed locations of all underground facilities including pipes, fittings, access manholes, structures, services and other appurtenances. Record location of termination and connection points. Record invert elevations of pipes at 50-ft intervals and at pipe ends. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

4.2 TRENCHING

4.2.1 Reference City of Rapid City Standard Specification 2022 Edition

1. Utility Excavation and Backfill: Section 11

4.2.2 Submittals

1. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan.
2. Product data for geotextile fabric indicating fabric and construction.

4.3 COLLECTION AND GRAVITY SEWERS

4.3.1 Reference: City of Rapid City Standard Specifications 2022 edition

4.3.2 Submittals:

1. Product Data: Submit product data for pipe and fittings, non-pressure and pressure couplings, expansion joints, deflection fittings, cleanouts and other appurtenances.
2. Shop Drawings: Submit Shop drawings for structures. Include plans, elevations, sections, details and frames, covers, grates design calculations and concrete mix reports.
3. Product Certifications: Submit product certifications for each type of pipe and fitting.
4. Sanitary Sewer Bypass Plan: Submit plan to temporarily bypass sanitary sewer during construction. Provide map of temporary facilities, specifications of pumping facilities and emergency action plan. Submit specific detailed description of proposed bypass pumping system, including written description of plan addressing schedule, quantity, capacity, and location of pumping equipment.

4.3.3 Quality Assurance: Piping materials shall bear label, stamp, or other markings of specified testing agency.

4.3.4 Field Measurements: Verify field measurements prior to fabrication. Indicate field measurements on shop drawings.

4.3.5 Products:

1. Reference City of Rapid City Standard Specification:
   i. Sanitary Sewer Pipe: Section 9
   ii. Sanitary Sewer Force Main: Section 9
   iii. Drainage Pipe: Section 120
   iv. Standard Precast Concrete Manholes (Sanitary): Section 9
   v. Storm Drainage Concrete Structures: Section 63
   vi. Storm Pipe Outlets:
      (a) Head Walls: Cast in place reinforced concrete, with apron and tapered sides.
      (b) Riprap Basins: Broken, irregularly sized and shaped, graded stone in accordance with drawing details.
      (c) Energy Dissipaters: In accordance with drawing details.

4.3.6 Investigation: Locations of service wyes and connections within Drawings are approximate. Investigate and locate active services and connections through ground penetrating sonar prior to installing main line piping.

4.3.7 General Locations and Arrangements: Drawings and details indicate general location and arrangement of underground sewer piping. Location and arrangement of piping layout take into account design considerations. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for using lubricants, cements, and other installation requirements. Install manholes for changes in direction unless fittings are indicated. Use fittings for branch connections unless direct tap into existing sewer is indicated. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited. When installing pipe under streets or other obstructions that cannot be disturbed, use pipe jacking process, micro-tunneling or other approved trenchless method. Clear interior of piping and manholes of dirt and superfluous material as work progresses. Maintain swab or drag in piping, and pull past each joint as it is completed. Place plug in end of incomplete piping at end of day and when work stops.

4.3.8 Permanent Markers: Install permanent pipe and valve box markers where specified.

4.3.9 Force Main Testing: Perform hydrostatic test after thrust blocks, supports, and anchors have hardened according to AWWA M23. Test at pressure not less than 1-1/2 times the maximum system operating pressure, but not less than 150 psig.

4.4 WATER DISTRIBUTION PIPING

4.4.1 Reference: City of Rapid City Standard Specifications 2022 Edition

4.4.2 Submittals:

1. Product Data: Submit product data for piping, fittings, valves, hydrants, service fittings and other appurtenances.
2. Shop Drawings: Submit Shop drawings for manholes. Include plans, elevations, sections, details and frame covers.
3. Product Certifications: Submit product certifications for each type of pipe and fitting.
4. Temporary Water Service: Submit plan to provide temporary water service during construction. Include map of temporary facilities, specifications of connection fittings, disinfection and testing plan, and emergency repair action plan.

4.4.3 Regulatory Requirements: Comply with requirements of utility company supplying water. Include tapping of water mains and backflow prevention. Comply with standards of authorities having jurisdiction for potable-water-service piping, including materials, installation, testing, and disinfection. Comply with standards of authorities having jurisdiction for fire-suppression water-service piping, including materials, hose threads, installation, and testing.

4.4.4 Quality Assurance: Piping materials shall bear label, stamp, or other markings of specified testing agency. Cast manufacturer's name, pressure rating, and year of fabrication into valve bodies. Materials in contact with potable water shall be certified according to NSF 61 and NSF 372.

4.4.5 Service Interruption: Notify Engineer no fewer than two days in advance of proposed interruption of service. Do not proceed with interruption of water-distribution service without Engineer's written permission and then only after arranging to provide temporary water service where specified. Notify customers to be interrupted with door hangers 24 hours in advance.

4.4.6 Products:

1. Reference City of Rapid City Standard Specification:
   i. Water Main Pipe: Section 8A

4.4.7 General Pipe Applications: Do not use flanges or unions for underground piping. Flanges, unions, grooved-end-pipe couplings, and special fittings may be used, instead of joints indicated, on aboveground piping and piping in vaults. Underground water-service piping shall be soft copper tube or PE piping.

4.4.8 General Valve Applications: Use mechanical-joint-end valves for NPS 3 and larger underground installation. Use threaded- or flanged-end valves for installation in vaults. Use corporation stops and curb stops with ends compatible with piping, for NPS 2 and smaller installation. Drawings indicate valve types to be used.

4.4.9 Temporary Water Service: Provide temporary water service to interrupted customers. Coordinate individual connections with customers. Request and install water meter from utility superintendent to measure quantity of water used. Disinfect, flush and sample temporary facilities in compliance with AWWA C651 and Disinfection and Cleaning Section. Conduct hydrostatic test of facilities at test pressure of 100 psig prior to activating system. Protect facilities during construction. Designate representative to monitor and repair temporary facilities at all hours. Decommission and remove temporary water facilities after new facilities are operational. Measure and report water used to utility superintendent.

4.4.10 Planned Outages: Minimize duration of water service outages. 12 hours in advance of a planned outage, review the weather, coordinate system operators, gather tools and materials, and verify operational status of valves. Hours prior to outage, measure and assemble materials above ground and excavate trenches to the extent possible. Close valves and decommission water main. Excavate remaining trenches and expose existing facilities. With Installer present, examine excavation and conditions affecting performance of work. Only after unsatisfactory conditions have been corrected, measurements have been verified and materials fully assembled, cut into existing piping. Complete Work in an orderly, organized, and efficient manner. Prevent foreign material from entering the system. Restore service once backfilled. Flush water mains clear of air and foreign materials. Flush water services, clear meters and otherwise restore system to fully operational.

4.4.11 Permanent Markers: Install permanent pipe and valve box markers where specified.

SPECIALTY CONSTRUCTION

5.1 CATHODIC PROTECTION

5.1.1 Reference City of Rapid City Standard Specification 2022 Edition

1. Corrosion Protection – Plastic Pipe Systems: Section 8B

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/4/2025

Plot Time: 4/2/2025 4:08 PM

CONSTRUCTION SET

GENERAL REQUIREMENTS

D-1.09

5.1.2 Testing: Prior to starting tests, verify that trenches are backfilled, and that facilities are otherwise ready for testing. Proceed with testing only after unsatisfactory conditions have been corrected. Contractor's Cathodic Protection Specialist to conduct and supervise testing. Coordinate schedule with Engineer five (5) days in advance to observe testing.

1. Pipeline Continuity Testing: Conduct continuity test at each bonded joint prior to backfilling pipeline.
2. Test Station Testing: Measure and record native potential of each individual test lead at all test stations. Investigate facilities where potential measurement differ across test wires by more than two millivolts.

5.1.3 Reporting: Compile all test results into typed reports. Reference all data to alignment stations. Submit reports with cover letter to the Engineer. Cover letter shall describe the test methods, analysis and conclusions regarding the corrosion control and monitoring system's effectiveness as it relates to the specified performance requirements. Correct deficiencies in installation where criteria is not met until satisfied by the Engineer.

5.1.4 Record Keeping: Record locations of test stations and buried wires and submit to Engineer.

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Plot Time: 4/2/2025 4:08 PM

CONSTRUCTION SET

GENERAL REQUIREMENTS

D-1.10

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Time Stamp: 4/2/2025 2:01 PM

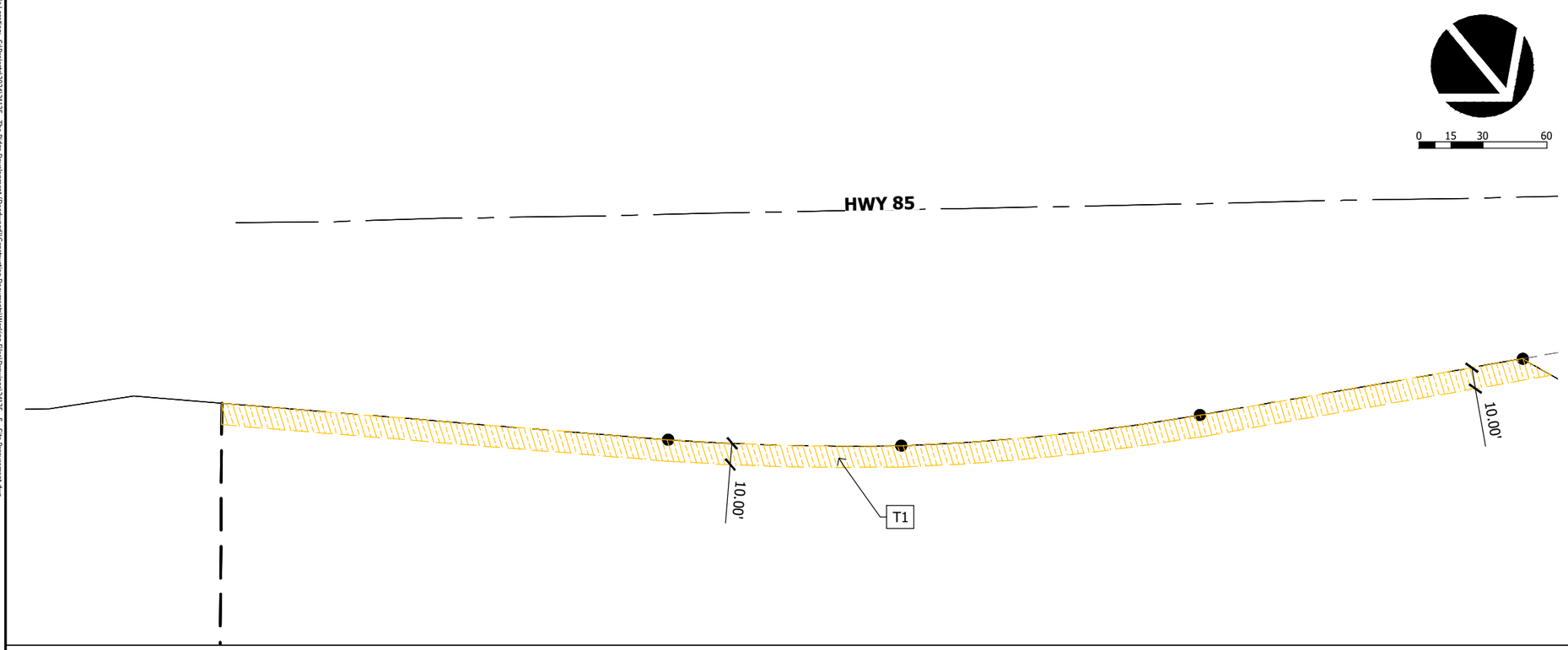
CONSTRUCTION SET

SITE PROCUREMENT

E-1.00

File Location: S:\Projects\24135 - The Ridge Development\Civil\Construction Documents\Working Files\Drawings\24135 - Site Procurement.dwg
Drafted by: JDC
Reviewed by: ###

File Location: S:\Projects\24135\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - E - Site Procurement.dwg



LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- RIGHT OF WAY

NOTES

1. WHERE ACCESS TO ADJACENT PROPERTIES IS REQUIRED, OBTAIN WRITTEN PERMISSION FROM ADJACENT LAND OWNER TO ACCESS PROPERTY.
2. COORDINATE WORK WITHIN EASEMENTS NOTED AS "PENDING" WITH ENGINEER PRIOR TO START.

* LEGAL DESCRIPTIONS ARE ABBREVIATED AND DO NOT REFLECT THE RECORDED DEED ON FILE. DO NOT USE FOR LEGAL DOCUMENTS

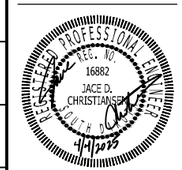
SITE PROCUREMENT TABLE

EASEMENT #	LEGAL DESCRIPTION	PROPERTY OWNER	TYPE	PURPOSE	CONTACT NAME	PHONE NUMBER	EMAIL ADDRESS	STATUS
T1	TATANKA TRACK 2015-5510	BLACK HILLS CONFERENCE CENTER INC.	TEMPORARY	CONSTRUCTION	ALEX			PENDING

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135



Time Stamp: 4/2/2025 2:01 PM

CONSTRUCTION SET

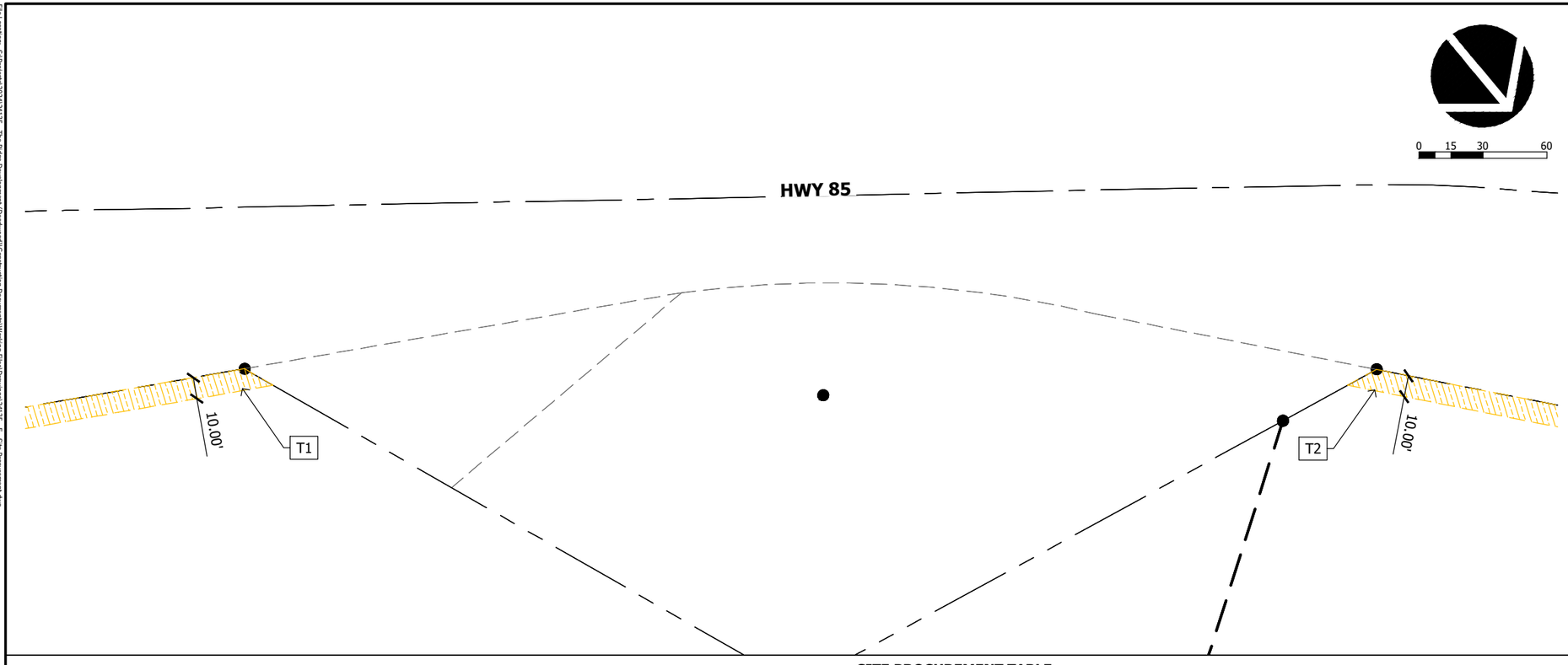
SITE PROCUREMENT

E-1.01

Plotted by: JDC

Reviewed by: ###

File Location: S:\Projects\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - E - Site Procurement.dwg



LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- RIGHT OF WAY

NOTES

1. WHERE ACCESS TO ADJACENT PROPERTIES IS REQUIRED, OBTAIN WRITTEN PERMISSION FROM ADJACENT LAND OWNER TO ACCESS PROPERTY.
2. COORDINATE WORK WITHIN EASEMENTS NOTED AS "PENDING" WITH ENGINEER PRIOR TO START.

* LEGAL DESCRIPTIONS ARE ABBREVIATED AND DO NOT REFLECT THE RECORDED DEED ON FILE. DO NOT USE FOR LEGAL DOCUMENTS

SITE PROCUREMENT TABLE

EASEMENT #	LEGAL DESCRIPTION	PROPERTY OWNER	TYPE	PURPOSE	CONTACT NAME	PHONE NUMBER	EMAIL ADDRESS	STATUS
T1	TATANKA TRACK 2015-5510	BLACK HILLS CONFERENCE CENTER INC.	TEMPORARY	CONSTRUCTION	ALEX			PENDING
T2	BLOCK 1 OF THE RIDGE DEVELOPMENT	PREACHER SMITH LLC	TEMPORARY	CONSTRUCTION				PENDING

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:01 PM

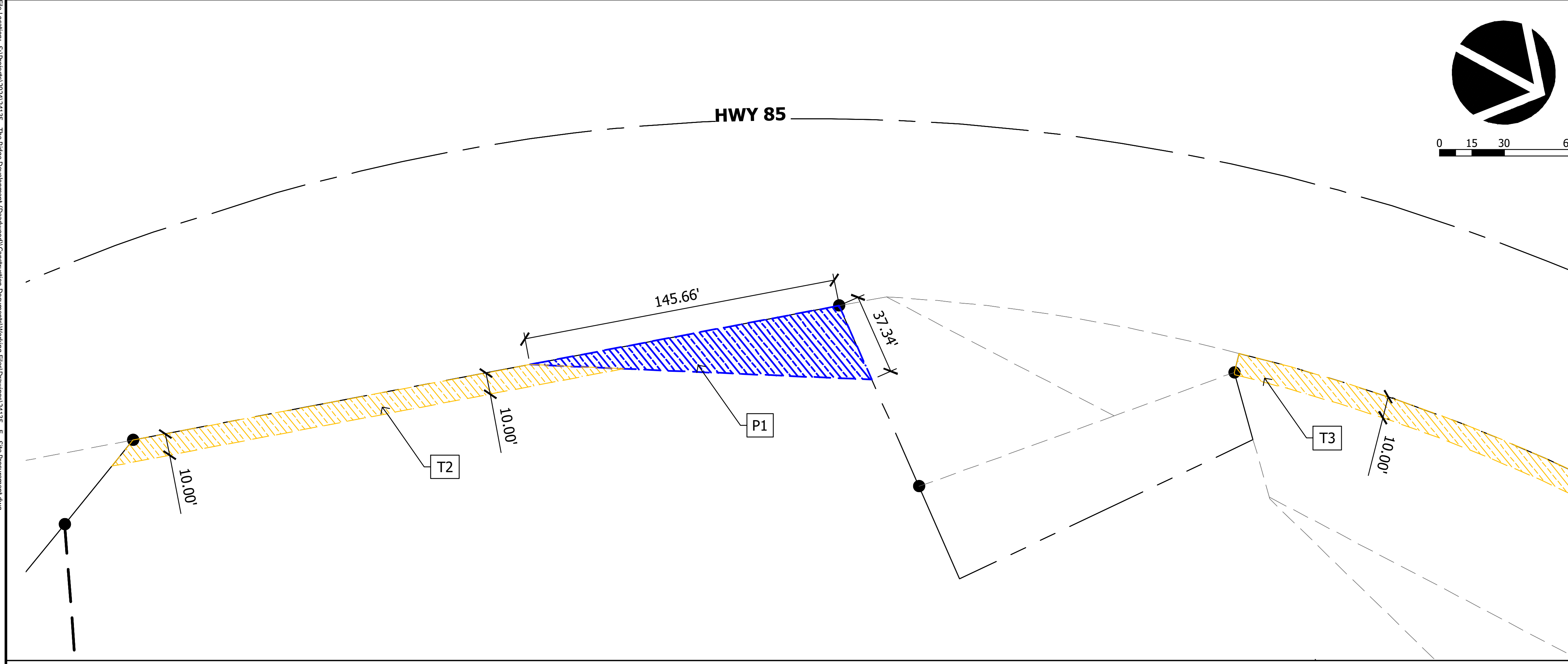
CONSTRUCTION SET

SITE PROCUREMENT

E-1.02

Plotted by: JDC

Reviewed by: ###



LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- RIGHT OF WAY

NOTES

1. WHERE ACCESS TO ADJACENT PROPERTIES IS REQUIRED, OBTAIN WRITTEN PERMISSION FROM ADJACENT LAND OWNER TO ACCESS PROPERTY.
2. COORDINATE WORK WITHIN EASEMENTS NOTED AS "PENDING" WITH ENGINEER PRIOR TO START.

* LEGAL DESCRIPTIONS ARE ABBREVIATED AND DO NOT REFLECT THE RECORDED DEED ON FILE. DO NOT USE FOR LEGAL DOCUMENTS

SITE PROCUREMENT TABLE

EASEMENT #	LEGAL DESCRIPTION	PROPERTY OWNER	TYPE	PURPOSE	CONTACT NAME	PHONE NUMBER	EMAIL ADDRESS	STATUS
T2	BLOCK 1 OF THE RIDGE DEVELOPMENT	PREACHER SMITH LLC	TEMPORARY	CONSTRUCTION				PENDING
P1	BLOCK 1 OF THE RIDGE DEVELOPMENT	PREACHER SMITH LLC	PERMANENT	MUNICIPAL UTILITY				PENDING
T3	BLOCK 1 OF THE RIDGE DEVELOPMENT	PREACHER SMITH LLC	TEMPORARY	CONSTRUCTION				PENDING

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER REG. NO. 16882 JACE D. CHRISTIANSEN SOUTH DAKOTA 4/1/2025

Time Stamp: 4/2/2025 2:01 PM

CONSTRUCTION SET

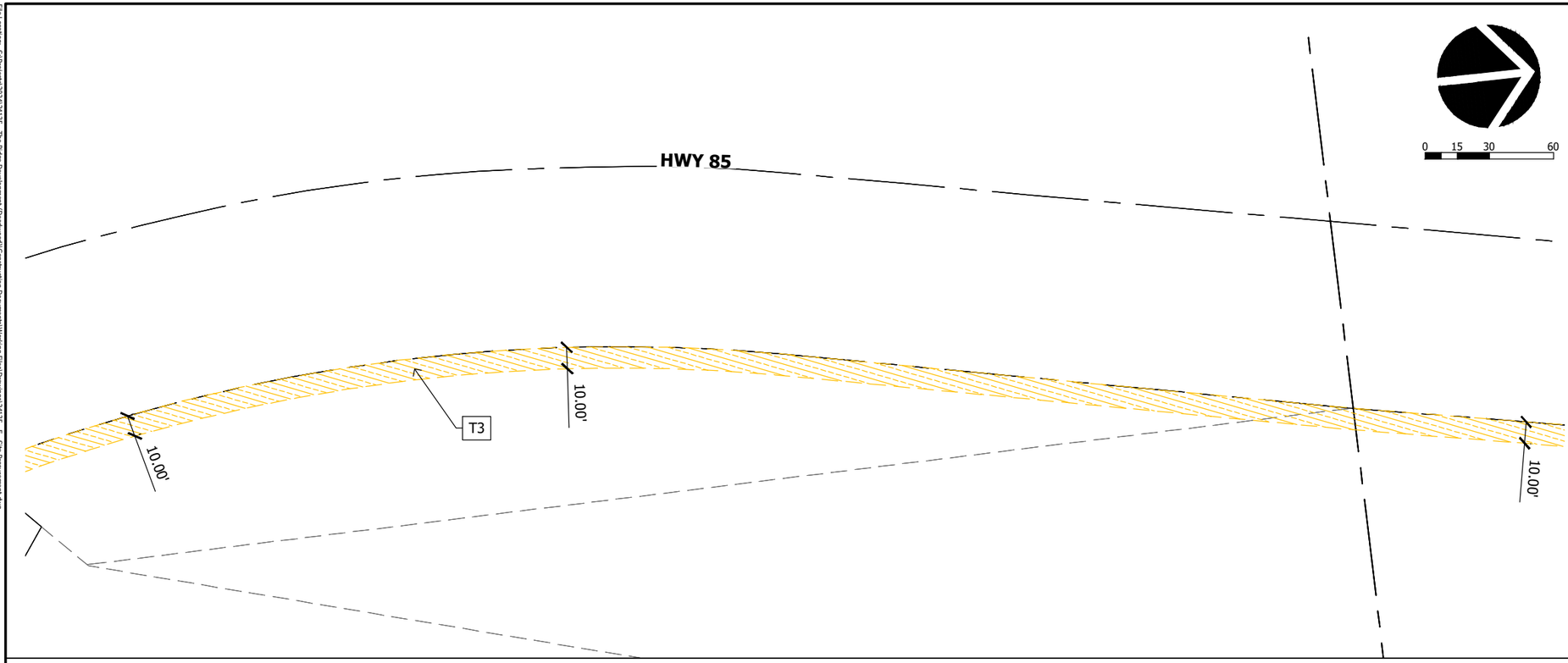
SITE PROCUREMENT

E-1.03

File Location: S:\Projects\2024\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - E - Site Procurement.dwg

Drafted By: JDC

Reviewed By: ###



0 15 30 60

LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- RIGHT OF WAY

NOTES

1. WHERE ACCESS TO ADJACENT PROPERTIES IS REQUIRED, OBTAIN WRITTEN PERMISSION FROM ADJACENT LAND OWNER TO ACCESS PROPERTY.
2. COORDINATE WORK WITHIN EASEMENTS NOTED AS "PENDING" WITH ENGINEER PRIOR TO START.

* LEGAL DESCRIPTIONS ARE ABBREVIATED AND DO NOT REFLECT THE RECORDED DEED ON FILE. DO NOT USE FOR LEGAL DOCUMENTS

SITE PROCUREMENT TABLE

EASEMENT #	LEGAL DESCRIPTION	PROPERTY OWNER	TYPE	PURPOSE	CONTACT NAME	PHONE NUMBER	EMAIL ADDRESS	STATUS
T3	BLOCK 1 OF THE RIDGE DEVELOPMENT	PREACHER SMITH LLC	TEMPORARY	CONSTRUCTION				PENDING

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:01 PM

CONSTRUCTION SET

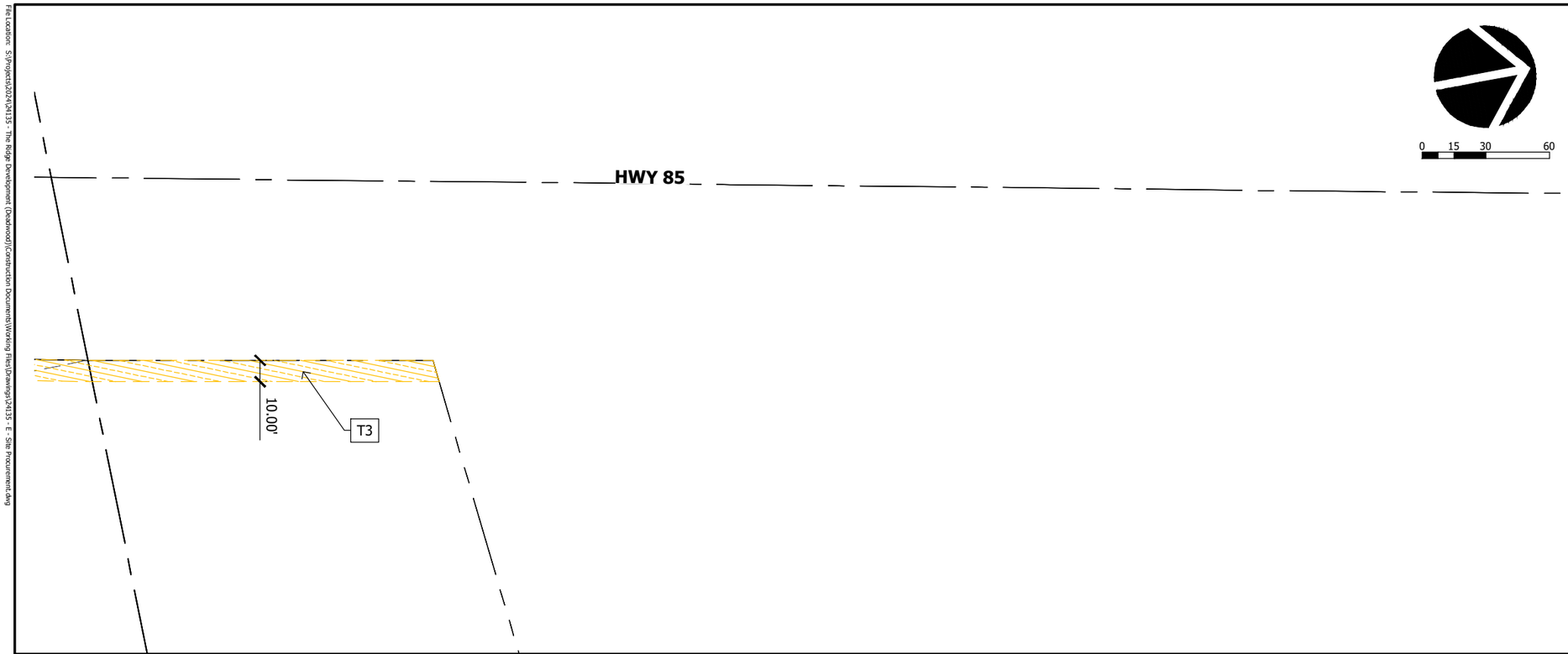
SITE PROCUREMENT

E-1.04

File Location: S:\Projects\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - E - Site Procurement.dwg

Plotted by: JDC

Reviewed by: ###



LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- RIGHT OF WAY

NOTES

1. WHERE ACCESS TO ADJACENT PROPERTIES IS REQUIRED, OBTAIN WRITTEN PERMISSION FROM ADJACENT LAND OWNER TO ACCESS PROPERTY.
2. COORDINATE WORK WITHIN EASEMENTS NOTED AS "PENDING" WITH ENGINEER PRIOR TO START.

* LEGAL DESCRIPTIONS ARE ABBREVIATED AND DO NOT REFLECT THE RECORDED DEED ON FILE. DO NOT USE FOR LEGAL DOCUMENTS

SITE PROCUREMENT TABLE

EASEMENT #	LEGAL DESCRIPTION	PROPERTY OWNER	TYPE	PURPOSE	CONTACT NAME	PHONE NUMBER	EMAIL ADDRESS	STATUS
T3	BLOCK 1 OF THE RIDGE DEVELOPMENT	PREACHER SMITH LLC	TEMPORARY	CONSTRUCTION				PENDING

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:01 PM

CONSTRUCTION SET

SITE PROCUREMENT

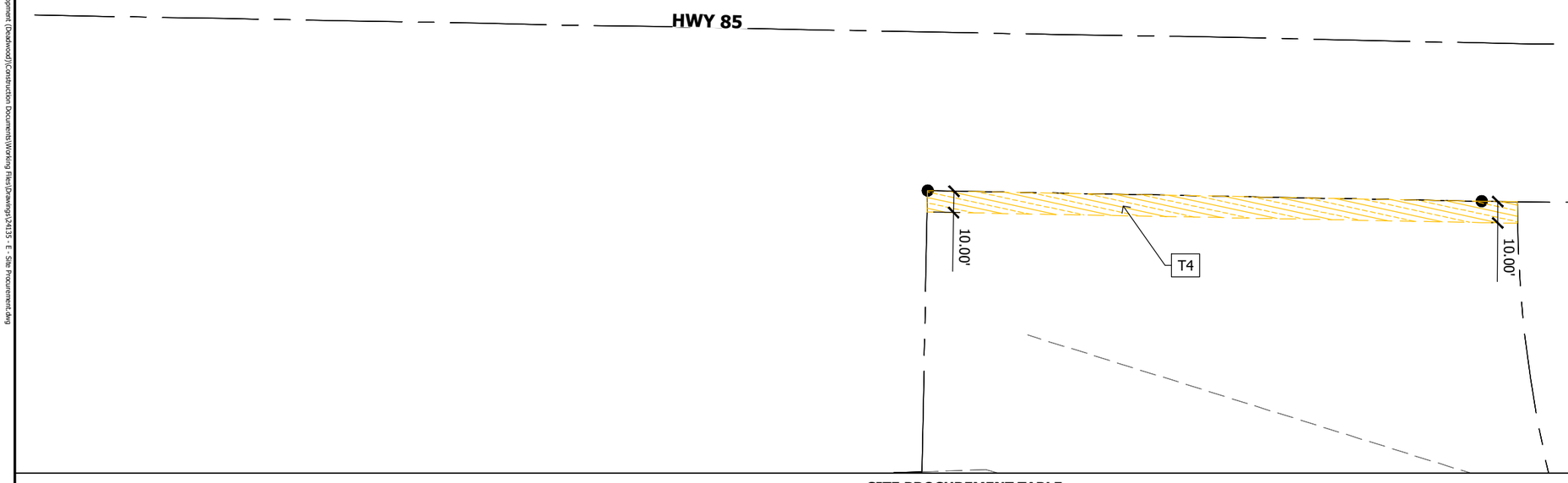
E-1.05

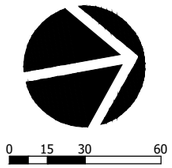
File Location: S:\Projects\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - E - Site Procurement.dwg

Updated by: JDC

Reviewed by: ###

File Location: S:\Projects\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - E - Site Procurement.dwg





LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- RIGHT OF WAY

NOTES

1. WHERE ACCESS TO ADJACENT PROPERTIES IS REQUIRED, OBTAIN WRITTEN PERMISSION FROM ADJACENT LAND OWNER TO ACCESS PROPERTY.
2. COORDINATE WORK WITHIN EASEMENTS NOTED AS "PENDING" WITH ENGINEER PRIOR TO START.

* LEGAL DESCRIPTIONS ARE ABBREVIATED AND DO NOT REFLECT THE RECORDED DEED ON FILE. DO NOT USE FOR LEGAL DOCUMENTS

SITE PROCUREMENT TABLE

EASEMENT #	LEGAL DESCRIPTION	PROPERTY OWNER	TYPE	PURPOSE	CONTACT NAME	PHONE NUMBER	EMAIL ADDRESS	STATUS
T4	BLOCK 1 OF THE RIDGE DEVELOPMENT	PREACHER SMITH LLC	TEMPORARY	CONSTRUCTION				PENDING

Checked by: JDC

Reviewed by: ###

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

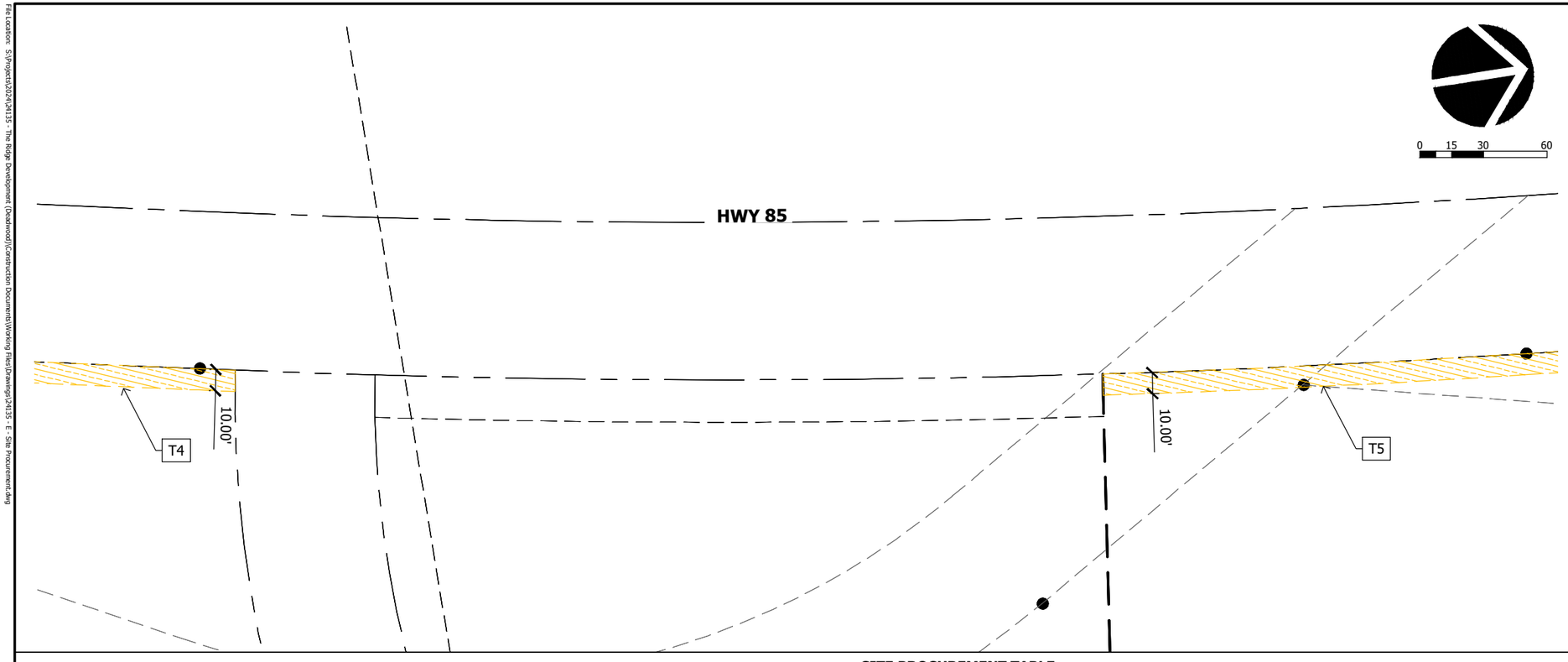
Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:01 PM

CONSTRUCTION SET

SITE PROCUREMENT

E-1.06



LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- RIGHT OF WAY

NOTES

1. WHERE ACCESS TO ADJACENT PROPERTIES IS REQUIRED, OBTAIN WRITTEN PERMISSION FROM ADJACENT LAND OWNER TO ACCESS PROPERTY.
2. COORDINATE WORK WITHIN EASEMENTS NOTED AS "PENDING" WITH ENGINEER PRIOR TO START.

* LEGAL DESCRIPTIONS ARE ABBREVIATED AND DO NOT REFLECT THE RECORDED DEED ON FILE. DO NOT USE FOR LEGAL DOCUMENTS

SITE PROCUREMENT TABLE

EASEMENT #	LEGAL DESCRIPTION	PROPERTY OWNER	TYPE	PURPOSE	CONTACT NAME	PHONE NUMBER	EMAIL ADDRESS	STATUS
T4	BLOCK 1 OF THE RIDGE DEVELOPMENT	PREACHER SMITH LLC	TEMPORARY	CONSTRUCTION				PENDING
T5	BLOCK 1A OF THE RIDGE DEVELOPMENT	PREACHER SMITH LLC	TEMPORARY	CONSTRUCTION				PENDING

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:01 PM

CONSTRUCTION SET

SITE PROCUREMENT

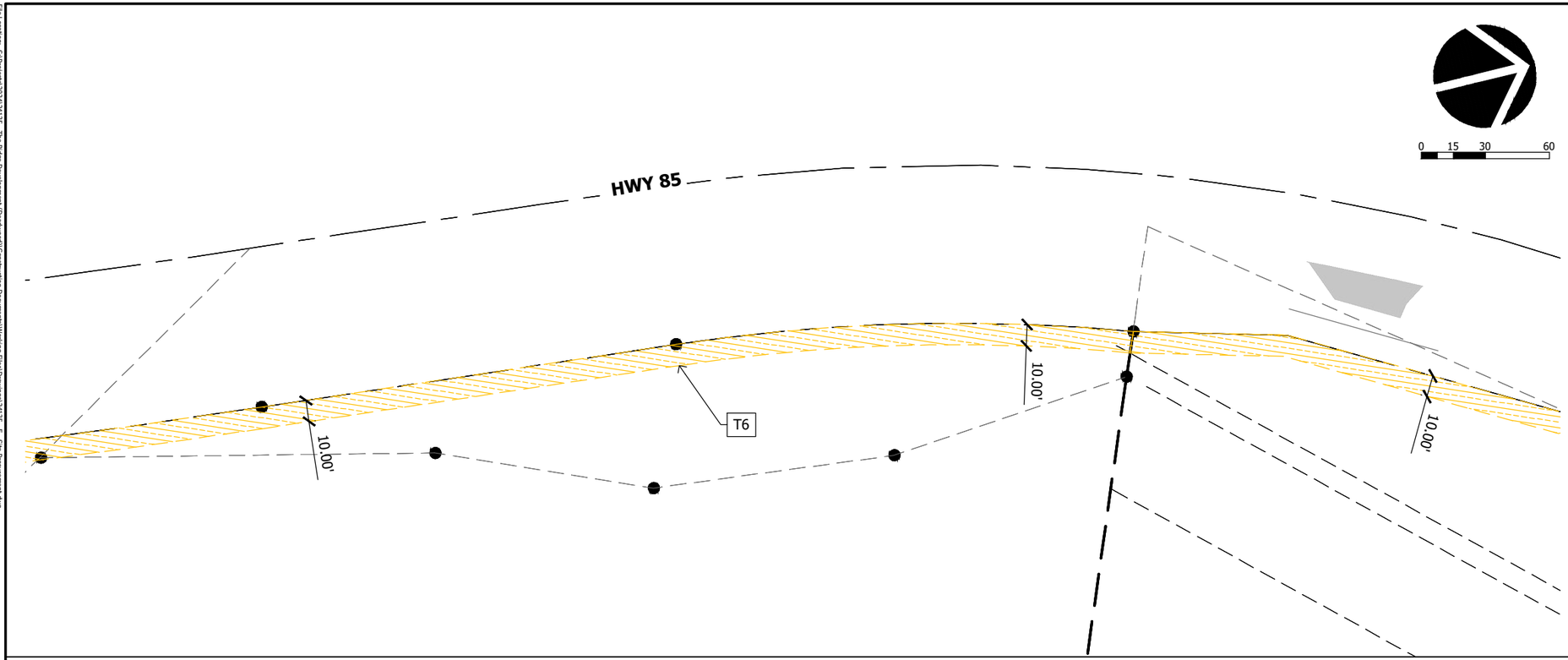
E-1.07

File Location: S:\Projects\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - E - Site Procurement.dwg

Plotted by: JDC

Reviewed by: ###

File Location: S:\Projects\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - E - Site Procurement.dwg



LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- RIGHT OF WAY

NOTES

1. WHERE ACCESS TO ADJACENT PROPERTIES IS REQUIRED, OBTAIN WRITTEN PERMISSION FROM ADJACENT LAND OWNER TO ACCESS PROPERTY.
2. COORDINATE WORK WITHIN EASEMENTS NOTED AS "PENDING" WITH ENGINEER PRIOR TO START.

* LEGAL DESCRIPTIONS ARE ABBREVIATED AND DO NOT REFLECT THE RECORDED DEED ON FILE. DO NOT USE FOR LEGAL DOCUMENTS

SITE PROCUREMENT TABLE

EASEMENT #	LEGAL DESCRIPTION	PROPERTY OWNER	TYPE	PURPOSE	CONTACT NAME	PHONE NUMBER	EMAIL ADDRESS	STATUS
T6	TRACT 0092 SE ¼ NE ¼ EX LOTS H1 AND H2	DEADWOOD MEADOWS LLC	TEMPORARY	CONSTRUCTION				PENDING

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Time Stamp: 4/2/2025 2:01 PM

CONSTRUCTION SET

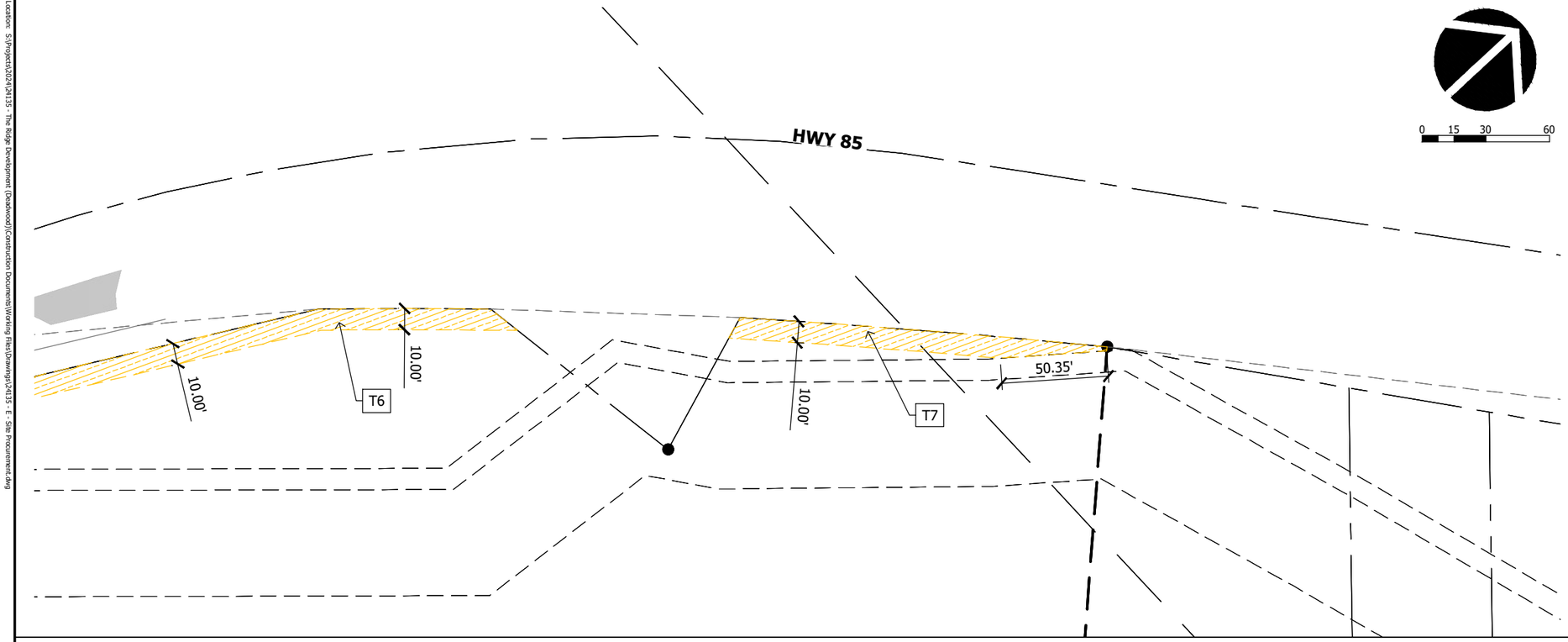
SITE PROCUREMENT

E-1.08

Checked by: JDC

Reviewed by: ###

File Location: S:\Projects\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - E - Site Procurement.dwg



LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- RIGHT OF WAY

NOTES

1. WHERE ACCESS TO ADJACENT PROPERTIES IS REQUIRED, OBTAIN WRITTEN PERMISSION FROM ADJACENT LAND OWNER TO ACCESS PROPERTY.
2. COORDINATE WORK WITHIN EASEMENTS NOTED AS "PENDING" WITH ENGINEER PRIOR TO START.

* LEGAL DESCRIPTIONS ARE ABBREVIATED AND DO NOT REFLECT THE RECORDED DEED ON FILE. DO NOT USE FOR LEGAL DOCUMENTS

SITE PROCUREMENT TABLE

EASEMENT #	LEGAL DESCRIPTION	PROPERTY OWNER	TYPE	PURPOSE	CONTACT NAME	PHONE NUMBER	EMAIL ADDRESS	STATUS
T6	TRACT 0092 SE ¼ NE ¼ EX LOTS H1 AND H2	DEADWOOD MEADOWS LLC	TEMPORARY	CONSTRUCTION				PENDING
T7	TRACT 0092 SE ¼ NE ¼ EX LOTS H1 AND H2	DEADWOOD MEADOWS LLC	TEMPORARY	CONSTRUCTION				PENDING

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:01 PM

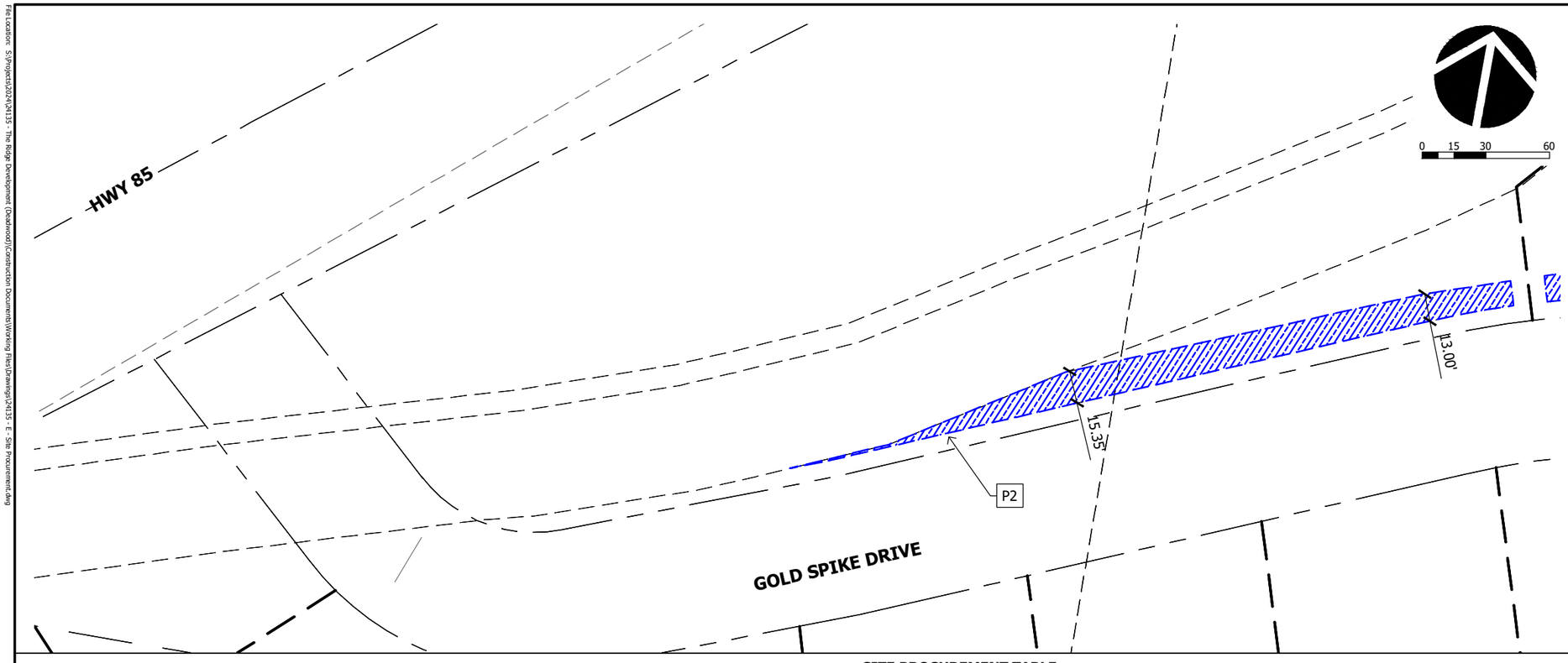
CONSTRUCTION SET

SITE PROCUREMENT

E-1.09

Plotted by: JDC

Reviewed by: ###



LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- RIGHT OF WAY

NOTES

1. WHERE ACCESS TO ADJACENT PROPERTIES IS REQUIRED, OBTAIN WRITTEN PERMISSION FROM ADJACENT LAND OWNER TO ACCESS PROPERTY.
2. COORDINATE WORK WITHIN EASEMENTS NOTED AS "PENDING" WITH ENGINEER PRIOR TO START.

* LEGAL DESCRIPTIONS ARE ABBREVIATED AND DO NOT REFLECT THE RECORDED DEED ON FILE. DO NOT USE FOR LEGAL DOCUMENTS

SITE PROCUREMENT TABLE

EASEMENT #	LEGAL DESCRIPTION	PROPERTY OWNER	TYPE	PURPOSE	CONTACT NAME	PHONE NUMBER	EMAIL ADDRESS	STATUS
P2	LOT 2, BLOCK 1B OF THE RIDGE DEVELOPMENT	DEADWOOD RIDGE APARTMENTS LLC	PERMANENT	UTILITY				PENDING

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

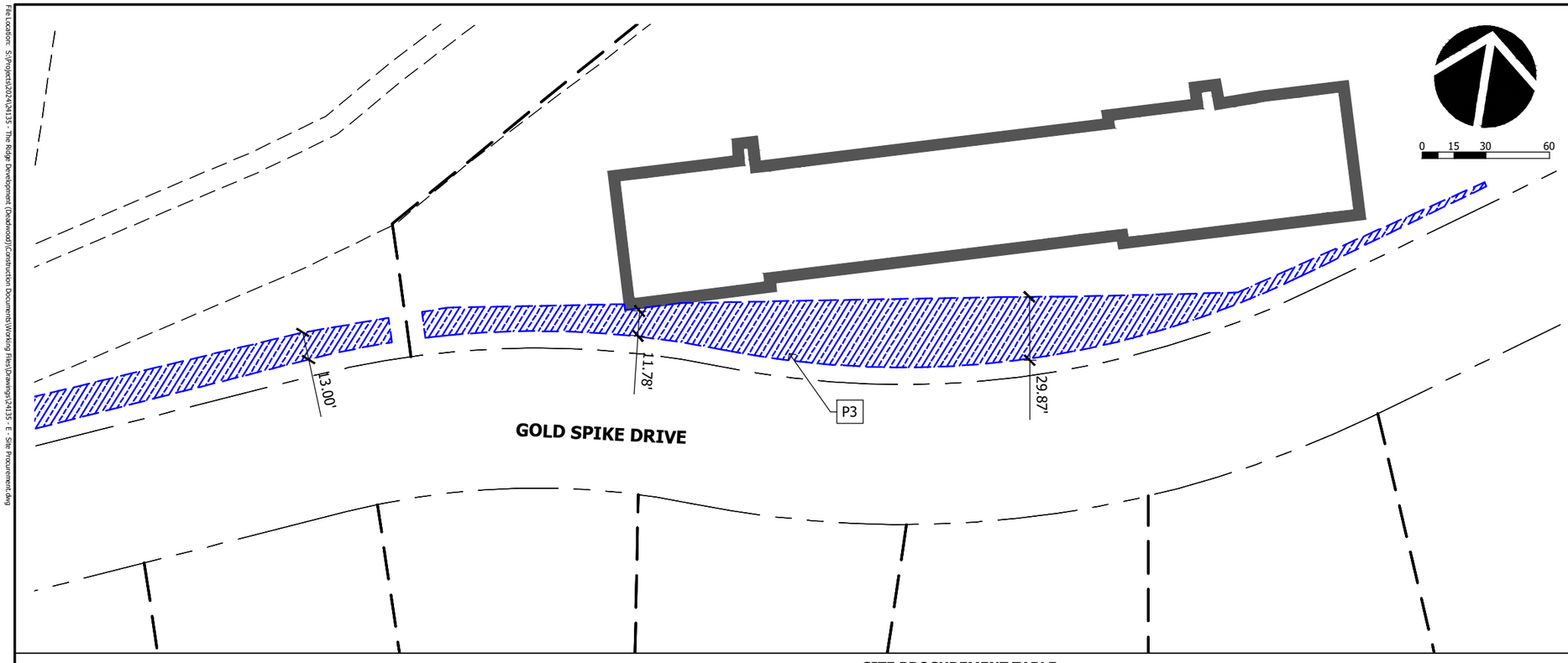
Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:01 PM

CONSTRUCTION SET

SITE PROCUREMENT

E-1.10



LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- RIGHT OF WAY

NOTES

1. WHERE ACCESS TO ADJACENT PROPERTIES IS REQUIRED, OBTAIN WRITTEN PERMISSION FROM ADJACENT LAND OWNER TO ACCESS PROPERTY.
2. COORDINATE WORK WITHIN EASEMENTS NOTED AS "PENDING" WITH ENGINEER PRIOR TO START.

* LEGAL DESCRIPTIONS ARE ABBREVIATED AND DO NOT REFLECT THE RECORDED DEED ON FILE. DO NOT USE FOR LEGAL DOCUMENTS

SITE PROCUREMENT TABLE

EASEMENT #	LEGAL DESCRIPTION	PROPERTY OWNER	TYPE	PURPOSE	CONTACT NAME	PHONE NUMBER	EMAIL ADDRESS	STATUS
P3	LOT 1, BLOCK 1B OF THE RIDGE DEVELOPMENT	DEADWOOD RIDGE APARTMENTS LLC	PERMANENT	UTILITY				PENDING

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:01 PM

CONSTRUCTION SET

SITE PROCUREMENT

E-1.11

File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - E - Site Procurement.dwg

Plotted by: JDC

Reviewed by: ###

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
4/1/2025

Time Stamp: 4/2/2025 2:04 PM

CONSTRUCTION SET

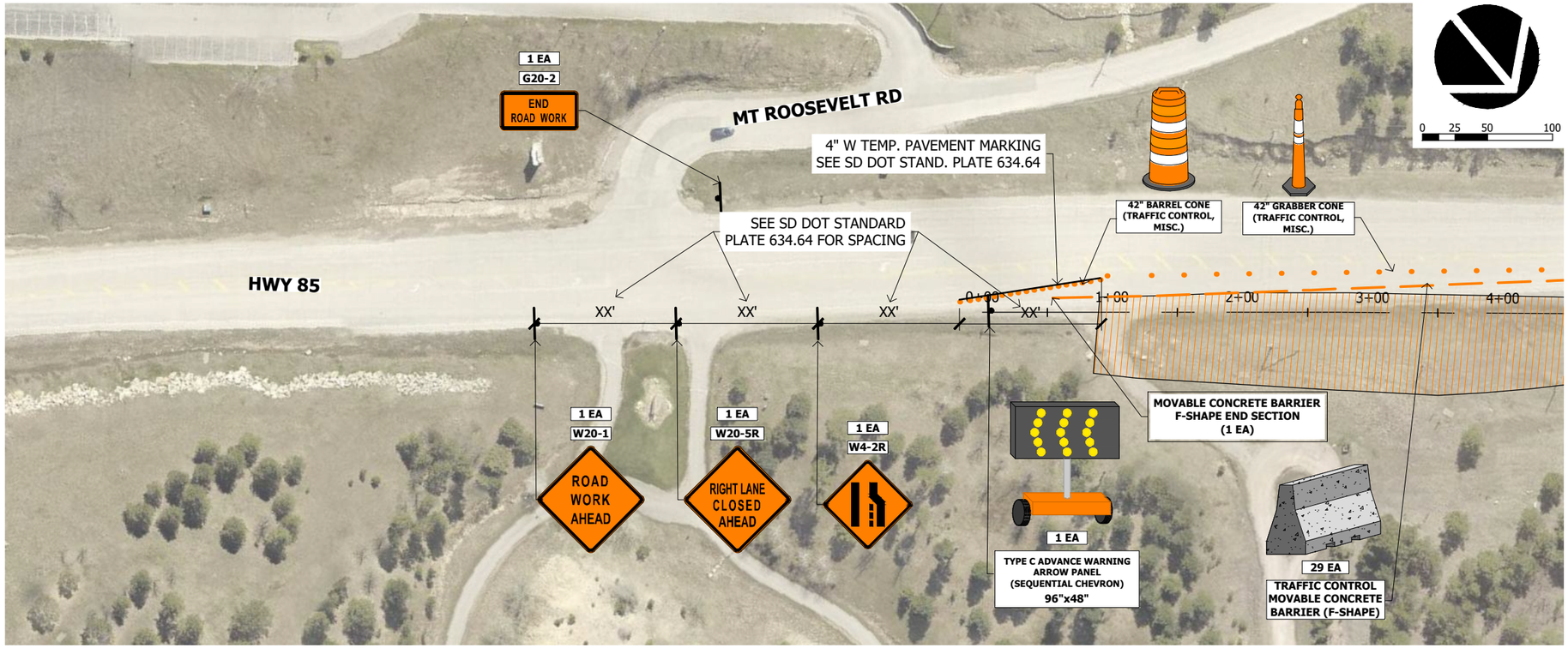
TRAFFIC CONTROL

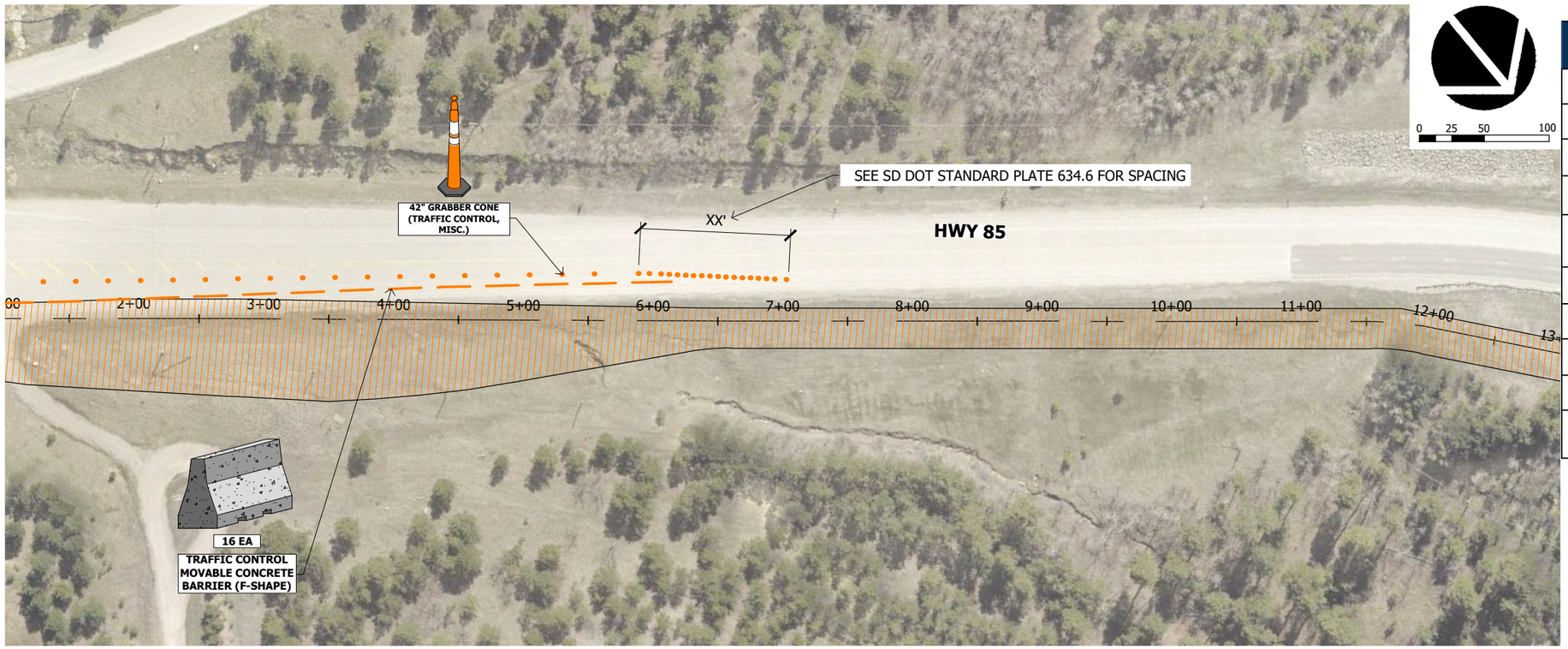
F-1.00

File Location: S:\Projects\24135\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - F-1 - Traffic Control.dwg

Drawing by: JDC

Reviewed by: ###





TEMPORARY SIGNAGE PLAN PHASE

LEGEND

- CONSTRUCTION ZONE
- TEMPORARY CONSTRUCTION SIGN
- 8-FT DOUBLE SIDED TYPE III BARRICADE

GENERAL NOTES

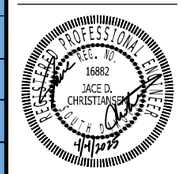
1. SIGNAGE PLANS REPRESENT THE MINIMUM DEVICES REQUIRED. PROVIDE ADDITIONAL TEMPORARY DEVICES TO COMPLY WITH MUTCD.
2. SIGN LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT TO MAXIMIZE VISIBILITY , AVOID OBSTRUCTIONS AND OTHERWISE ENSURE COMPLIANCE WITH AUTHORITIES HAVING JURISDICTION.
3. MAINTAIN ACCESS WHERE INDICATED. COORDINATE INTERRUPTIONS TO ACCESS WITH PROPERTY OWNERS AND TENANTS.
4. REFERENCE TYPICAL INTERSECTION CLOSURE DETAIL FOR PERIODIC INTERSECTION CLOSURES. COORDINATE ALL INTERSECTION CLOSURES WITH ENGINEER. PROVIDE MINIMUM 48 HOUR NOTICE PRIOR TO ANTICIPATED INTERSECTION CLOSURE.
5. NOTIFY ENGINEER PRIOR TO MAJOR CHANGES TO TRAFFIC CONTROL SUCH AS SETTING UP A NEW TRAFFIC PHASE, CLOSING, REMOVING TRAFFIC CONTROL PHASE AND SETTING UP DETOURS.
6. WHENEVER IT IS NECESSARY FOR A CONSTRUCTION VEHICLE OR PIECE OF EQUIPMENT TO BLOCK A LANE, FLAGGERS MUST BE PRESENT TO DIRECT TRAFFIC.
7. OBEY ALL TRAFFIC LAWS. DISPATCH TRUCKS ALONG DESIGNATED HAUL ROUTES. COORDINATE SECONDARY ROUTES WITH STREET SUPERINTENDENT.
8. COORDINATE ACCESS WITH DISABLED RESIDENTS
9. REFERENCE SECTION SECTION 92 - TEMPORARY TRAFFIC CONTROL, RAPID CITY STANDARD SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

QUANTITIES

SIGN CODE	SIGN SIZE			DESCRIPTION	PHASE 1
*****	*****			42" BARREL CONE	-
*****	*****			42" GRABBER CONE	-
*****	*****			4" WHITE TEMP. PAVEMENT MARKING	7920
*****	*****			MOVABLE CONCRETE BARRIER (F-SHAPE)	45 EA
*****	*****			MOVABLE CONCRETE BARRIER END SECTION (F-SHAPE)	1 EA
*****	96	X	48	TYPE C ADVANCE WARNING ARROW PANEL	1
W20-1	36	X	36	ROAD WORK AHEAD	9
W20-5 R	36	X	36	RIGHT LANE CLOSED AHEAD	9
W4-2R	30	X	30	END LANE - MERGE LEFT	6.25
G20-2	36	X	18	END ROAD WORK	4.5

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135



Time Stamp: 4/2/2025 2:04 PM

CONSTRUCTION SET

TRAFFIC CONTROL

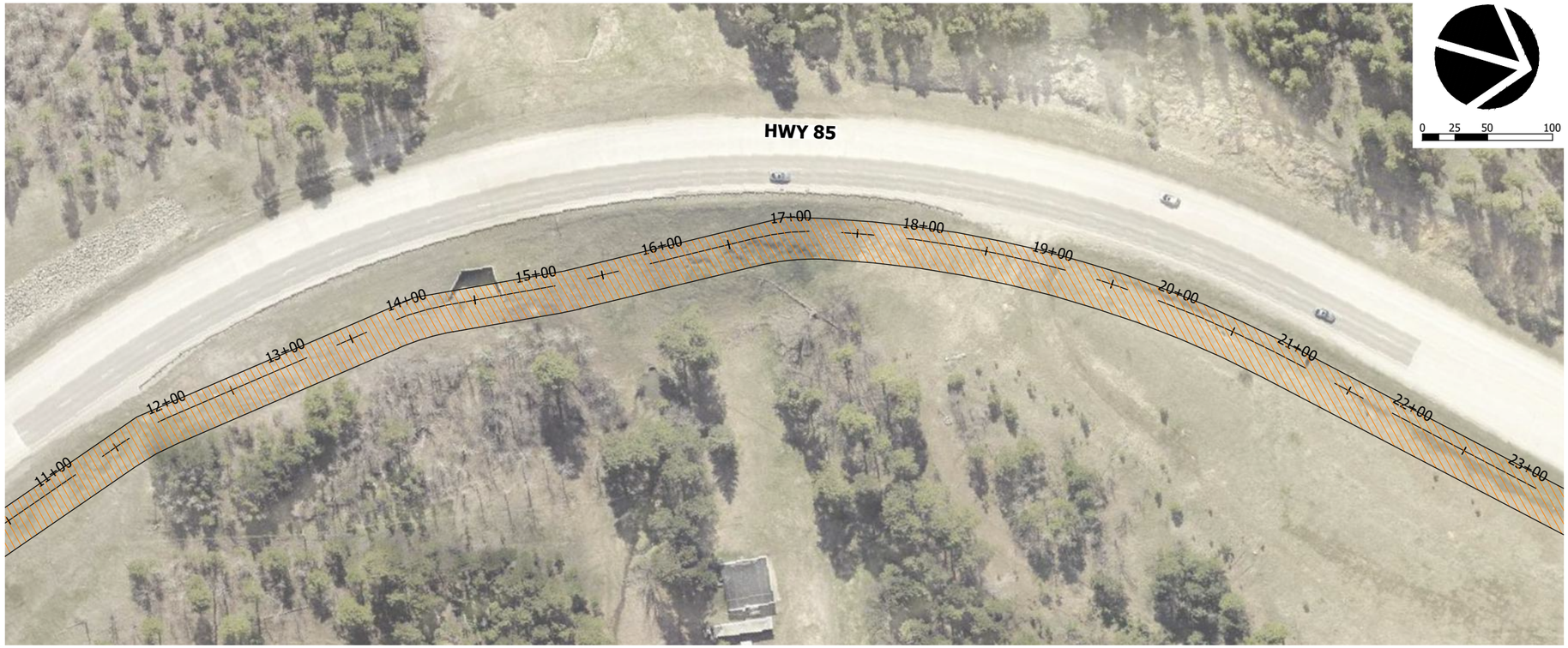
F-1.01

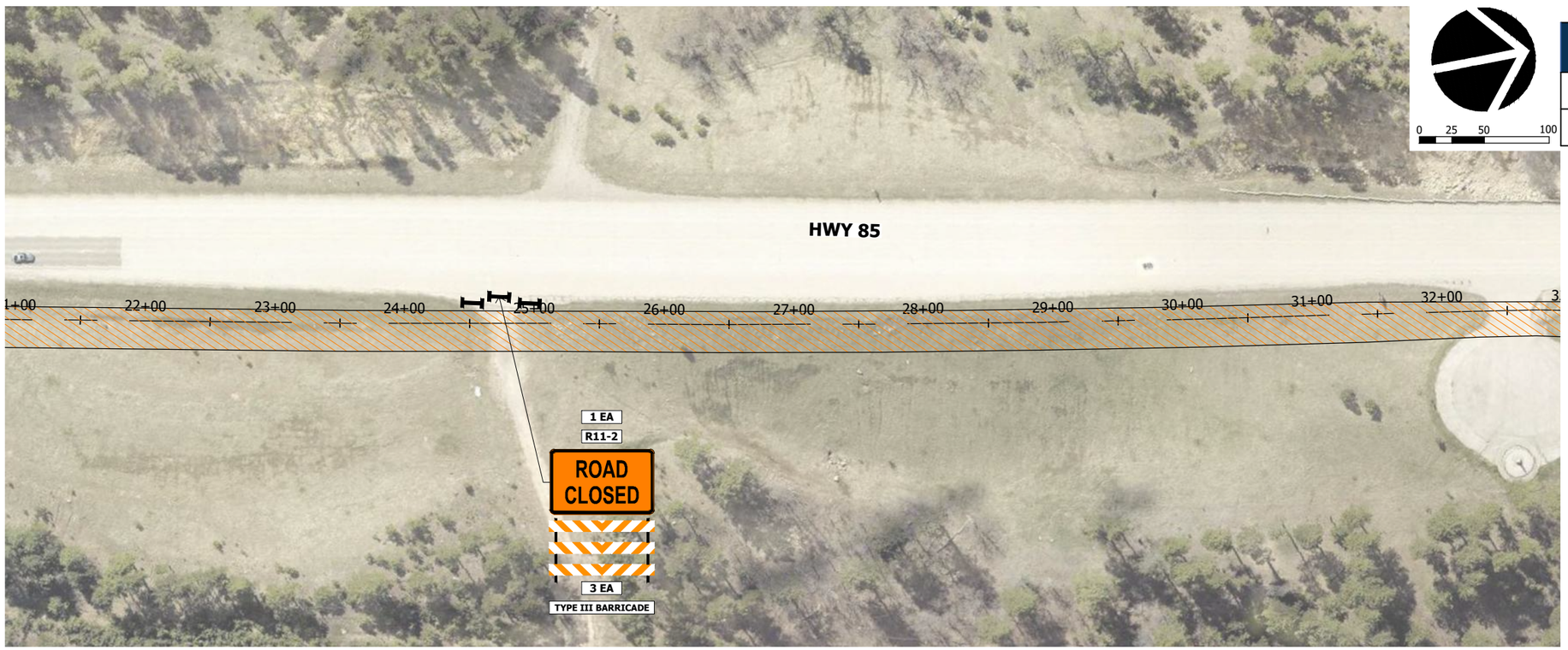
File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - F - Traffic Control.dwg

Drafted by: JDC

Reviewed by: ###

File Location: S:\Projects\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - F - Traffic Control.dwg





TEMPORARY SIGNAGE PLAN PHASE

LEGEND

- CONSTRUCTION ZONE
- TEMPORARY CONSTRUCTION SIGN
- 8-FT DOUBLE SIDED TYPE III BARRICADE

GENERAL NOTES

1. SIGNAGE PLANS REPRESENT THE MINIMUM DEVICES REQUIRED. PROVIDE ADDITIONAL TEMPORARY DEVICES TO COMPLY WITH MUTCD.
2. SIGN LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT TO MAXIMIZE VISIBILITY , AVOID OBSTRUCTIONS AND OTHERWISE ENSURE COMPLIANCE WITH AUTHORITIES HAVING JURISDICTION.
3. MAINTAIN ACCESS WHERE INDICATED. COORDINATE INTERRUPTIONS TO ACCESS WITH PROPERTY OWNERS AND TENANTS.
4. REFERENCE TYPICAL INTERSECTION CLOSURE DETAIL FOR PERIODIC INTERSECTION CLOSURES. COORDINATE ALL INTERSECTION CLOSURES WITH ENGINEER. PROVIDE MINIMUM 48 HOUR NOTICE PRIOR TO ANTICIPATED INTERSECTION CLOSURE.
5. NOTIFY ENGINEER PRIOR TO MAJOR CHANGES TO TRAFFIC CONTROL SUCH AS SETTING UP A NEW TRAFFIC PHASE, CLOSING, REMOVING TRAFFIC CONTROL PHASE AND SETTING UP DETOURS.
6. WHENEVER IT IS NECESSARY FOR A CONSTRUCTION VEHICLE OR PIECE OF EQUIPMENT TO BLOCK A LANE, FLAGGERS MUST BE PRESENT TO DIRECT TRAFFIC.
7. OBEY ALL TRAFFIC LAWS. DISPATCH TRUCKS ALONG DESIGNATED HAUL ROUTES. COORDINATE SECONDARY ROUTES WITH STREET SUPERINTENDENT.
8. COORDINATE ACCESS WITH DISABLED RESIDENTS
9. REFERENCE SECTION SECTION 92 - TEMPORARY TRAFFIC CONTROL, RAPID CITY STANDARD SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

QUANTITIES

SIGN CODE	SIGN SIZE			DESCRIPTION	PHASE 1
*****	*****			TYPE III BARRICADE - 8 FT. DOUBLE SIDED	3
R11-2	48	X	30	ROAD CLOSED	10

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:05 PM

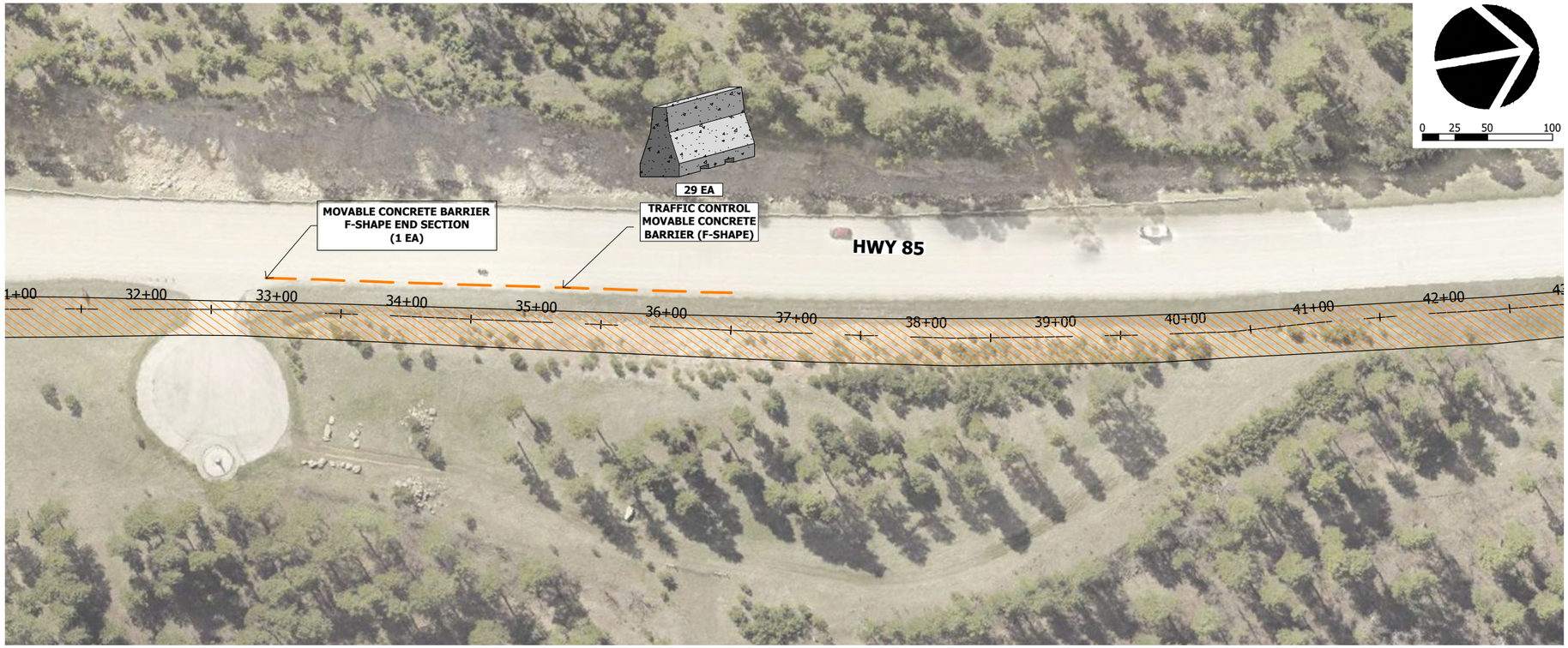
CONSTRUCTION SET

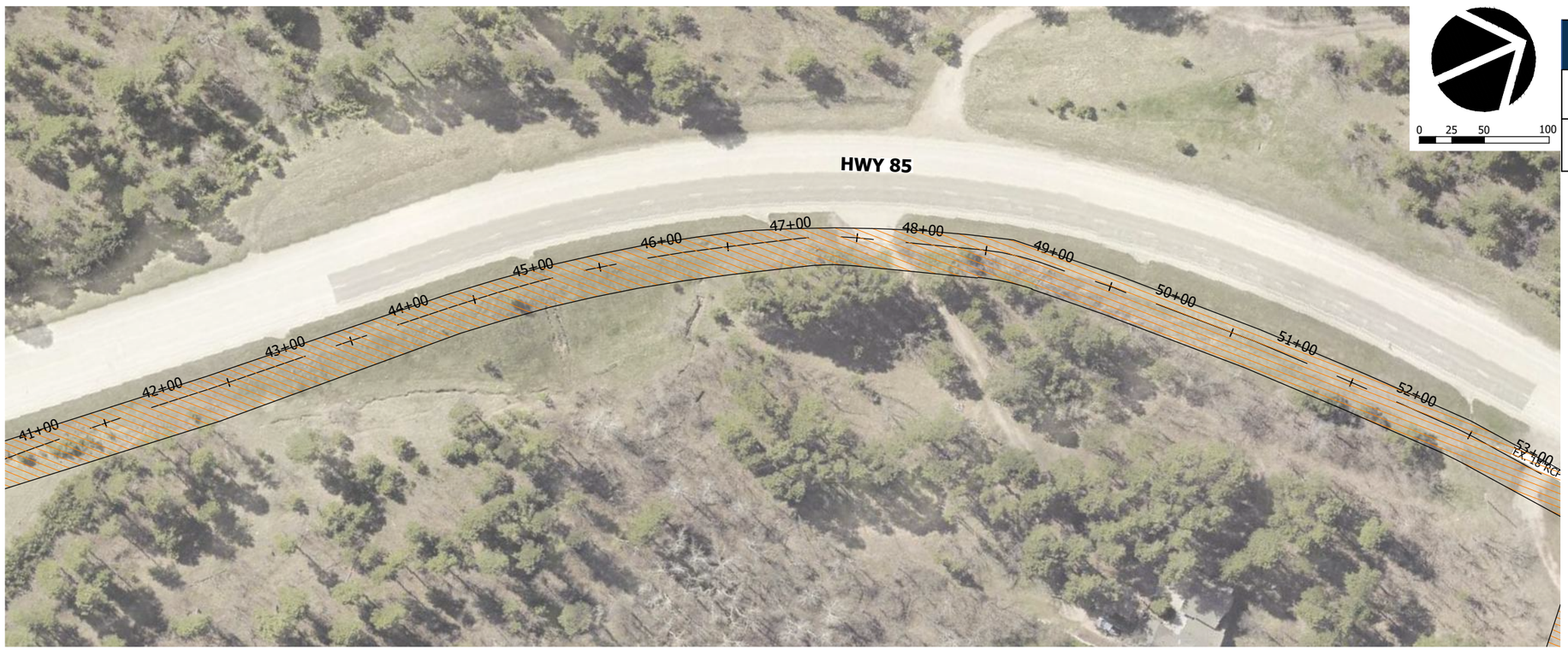
TRAFFIC CONTROL

F-1.02

Created by: JDC
Reviewed by: ###

File Location: S:\Projects\2024\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - F - Traffic Control.dwg





TEMPORARY SIGNAGE PLAN PHASE

LEGEND

- CONSTRUCTION ZONE
- TEMPORARY CONSTRUCTION SIGN
- 8-FT DOUBLE SIDED TYPE III BARRICADE

GENERAL NOTES

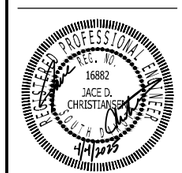
1. SIGNAGE PLANS REPRESENT THE MINIMUM DEVICES REQUIRED. PROVIDE ADDITIONAL TEMPORARY DEVICES TO COMPLY WITH MUTCD.
2. SIGN LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT TO MAXIMIZE VISIBILITY , AVOID OBSTRUCTIONS AND OTHERWISE ENSURE COMPLIANCE WITH AUTHORITIES HAVING JURISDICTION.
3. MAINTAIN ACCESS WHERE INDICATED. COORDINATE INTERRUPTIONS TO ACCESS WITH PROPERTY OWNERS AND TENANTS.
4. REFERENCE TYPICAL INTERSECTION CLOSURE DETAIL FOR PERIODIC INTERSECTION CLOSURES. COORDINATE ALL INTERSECTION CLOSURES WITH ENGINEER. PROVIDE MINIMUM 48 HOUR NOTICE PRIOR TO ANTICIPATED INTERSECTION CLOSURE.
5. NOTIFY ENGINEER PRIOR TO MAJOR CHANGES TO TRAFFIC CONTROL SUCH AS SETTING UP A NEW TRAFFIC PHASE, CLOSING, REMOVING TRAFFIC CONTROL PHASE AND SETTING UP DETOURS.
6. WHENEVER IT IS NECESSARY FOR A CONSTRUCTION VEHICLE OR PIECE OF EQUIPMENT TO BLOCK A LANE, FLAGGERS MUST BE PRESENT TO DIRECT TRAFFIC.
7. OBEY ALL TRAFFIC LAWS. DISPATCH TRUCKS ALONG DESIGNATED HAUL ROUTES. COORDINATE SECONDARY ROUTES WITH STREET SUPERINTENDENT.
8. COORDINATE ACCESS WITH DISABLED RESIDENTS
9. REFERENCE SECTION SECTION 92 - TEMPORARY TRAFFIC CONTROL, RAPID CITY STANDARD SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

QUANTITIES

SIGN CODE	SIGN SIZE	DESCRIPTION	PHASE 1
*****	*****	MOVABLE CONCRETE BARRIER (F-SHAPE)	29 EA
*****	*****	MOVABLE CONCRETE BARRIER END SECTION (F-SHAPE)	1 EA

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135



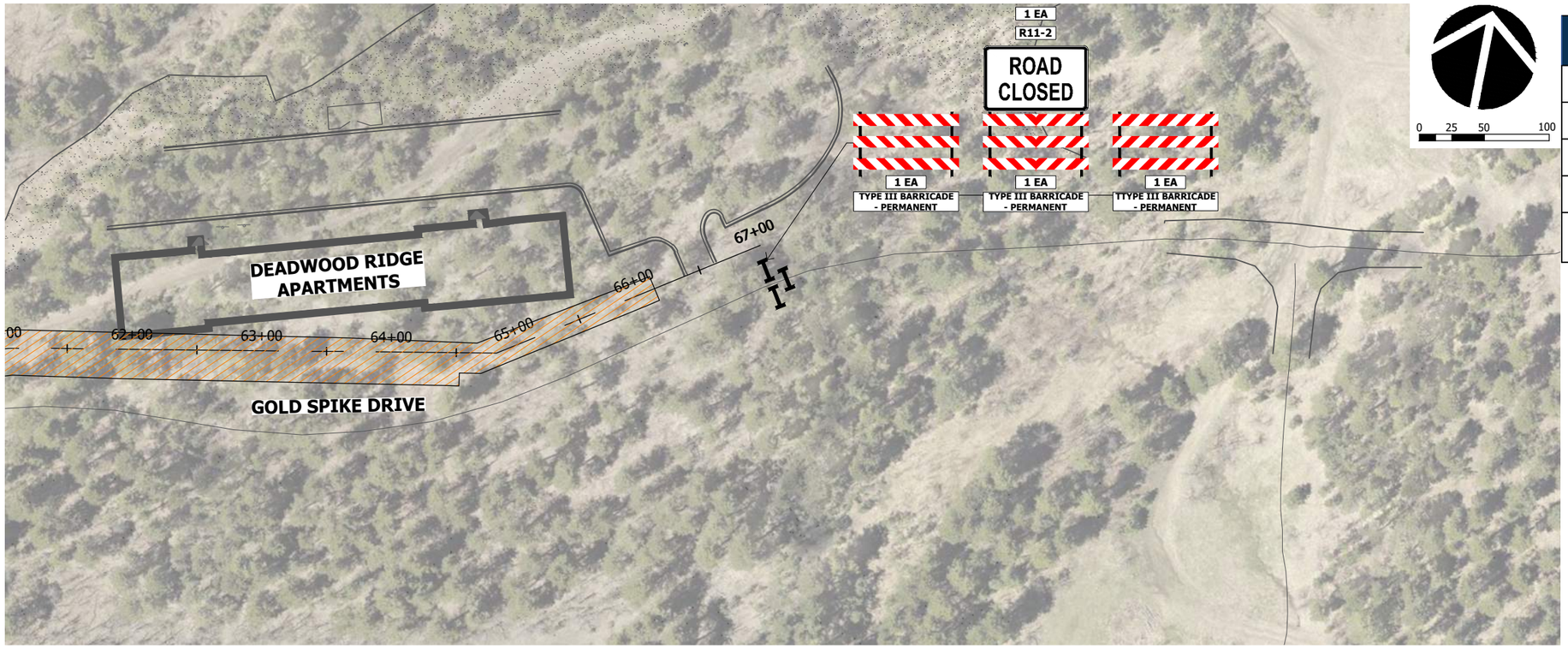
Time Stamp: 4/2/2025 2:05 PM

CONSTRUCTION SET

TRAFFIC CONTROL

F-1.03

Plotted By: JDC
Reviewed By: ###



TEMPORARY SIGNAGE PLAN PHASE

LEGEND

- CONSTRUCTION ZONE
- TEMPORARY CONSTRUCTION SIGN
- 8-FT DOUBLE SIDED TYPE III BARRICADE

GENERAL NOTES

1. SIGNAGE PLANS REPRESENT THE MINIMUM DEVICES REQUIRED. PROVIDE ADDITIONAL TEMPORARY DEVICES TO COMPLY WITH MUTCD.
2. SIGN LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT TO MAXIMIZE VISIBILITY , AVOID OBSTRUCTIONS AND OTHERWISE ENSURE COMPLIANCE WITH AUTHORITIES HAVING JURISDICTION.
3. MAINTAIN ACCESS WHERE INDICATED. COORDINATE INTERRUPTIONS TO ACCESS WITH PROPERTY OWNERS AND TENANTS.
4. REFERENCE TYPICAL INTERSECTION CLOSURE DETAIL FOR PERIODIC INTERSECTION CLOSURES. COORDINATE ALL INTERSECTION CLOSURES WITH ENGINEER. PROVIDE MINIMUM 48 HOUR NOTICE PRIOR TO ANTICIPATED INTERSECTION CLOSURE.
5. NOTIFY ENGINEER PRIOR TO MAJOR CHANGES TO TRAFFIC CONTROL SUCH AS SETTING UP A NEW TRAFFIC PHASE, CLOSING, REMOVING TRAFFIC CONTROL PHASE AND SETTING UP DETOURS.
6. WHENEVER IT IS NECESSARY FOR A CONSTRUCTION VEHICLE OR PIECE OF EQUIPMENT TO BLOCK A LANE, FLAGGERS MUST BE PRESENT TO DIRECT TRAFFIC.
7. OBEY ALL TRAFFIC LAWS. DISPATCH TRUCKS ALONG DESIGNATED HAUL ROUTES. COORDINATE SECONDARY ROUTES WITH STREET SUPERINTENDENT.
8. COORDINATE ACCESS WITH DISABLED RESIDENTS
9. REFERENCE SECTION SECTION 92 - TEMPORARY TRAFFIC CONTROL, RAPID CITY STANDARD SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

QUANTITIES

SIGN CODE	SIGN SIZE			DESCRIPTION	PHASE 1
*****	*****			TYPE III BARRICADE - 8 FT. DOUBLE SIDED	9
*****	*****			TYPE III BARRICADE - 8 FT. DOUBLE SIDED - PERMANENT	3
R11-2	48	X	30	ROAD CLOSED	30
R11-2	48	X	30	ROAD CLOSED - PERMANENT	10
G20-2	36	X	18	END ROAD WORK	4.5

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Time Stamp: 4/2/2025 2:05 PM

CONSTRUCTION SET

TRAFFIC CONTROL

F-1.04

File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - F - Traffic Control.dwg

Updated by: JDC

Reviewed by: ###

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/7/2025

Time Stamp: 4/2/2025 2:08 PM

CONSTRUCTION SET

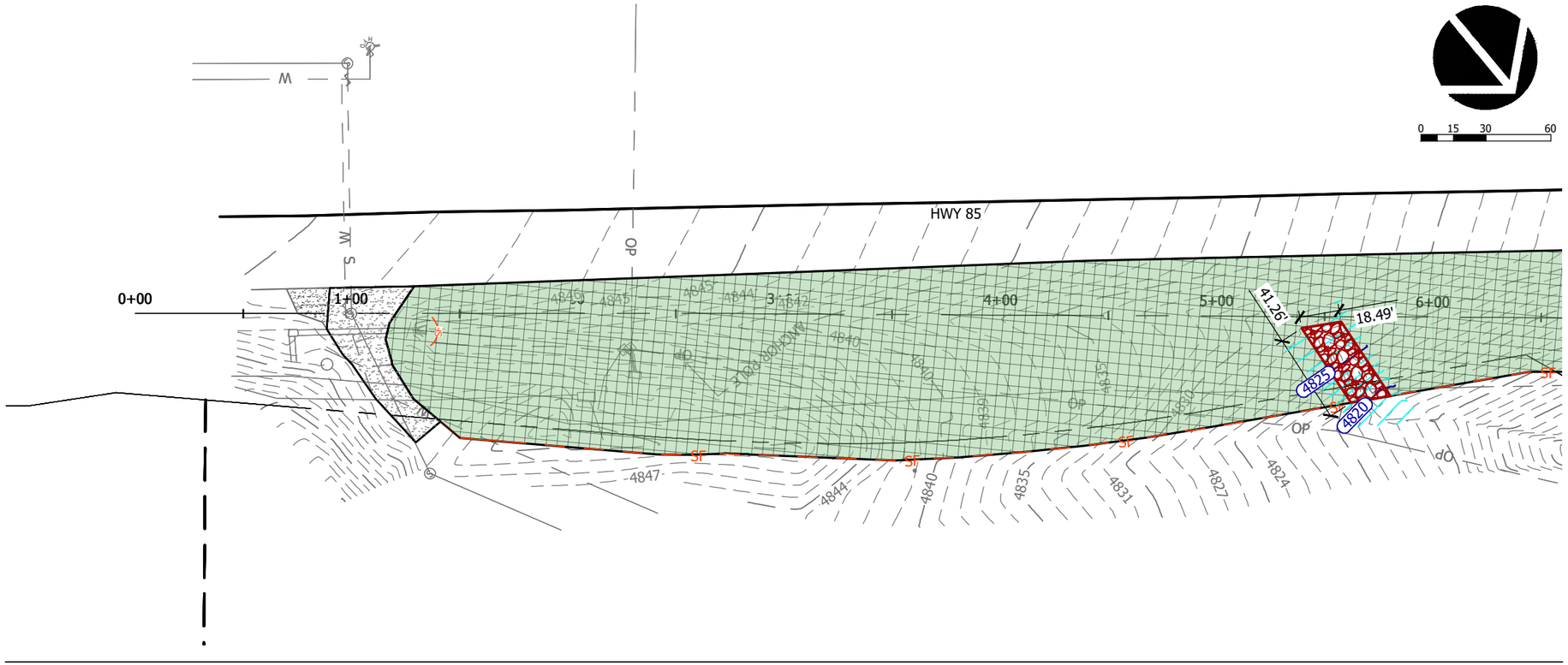
EROS. CONT., SURFACING & RESTORATION

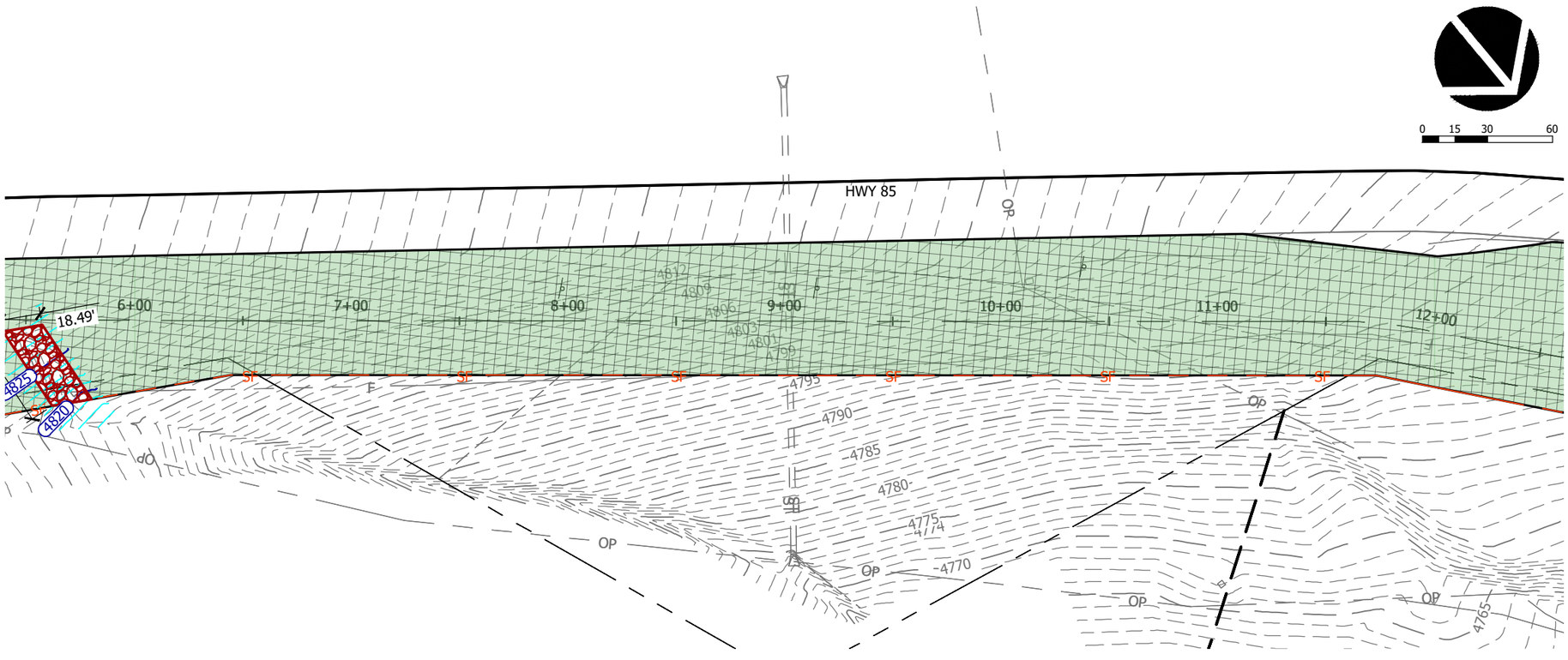
G-2.00

File Location: S:\Projects\24135\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - G - Erosion Control, Surfacing & Restoration.dwg

Drawn by: JDC
Reviewed by: ###

File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - G - Erosion Control, Surfacing & Restoration.dwg





LEGEND

- TYPE F PERMANENT SEED MIXTURE
- NON-IRRIGATED LAWN MIX (RC STAND.)
- BONDED FIBER MATRIX
- RIP RAP, CLASS A
- INLET PROTECTION
- VTC - VEHICLE TRACKING CONTROL
- CWF - CONCRETE WASHOUT FACILITY
- SF - SILT FENCE
- W - SEDIMENT CONTROL WATTLE
- CONCRETE SURFACING
- CONCRETE CURB & GUTTER
- ASPHALT PAVEMENT
- GRAVEL SURFACING
- V S - ADJUST VALVE BOX, MANHOLE
- RESET TRAFFIC SIGN, MAILBOX
- 1350 - PROPOSED FG SURFACE MAJOR CONTOUR
- 1349 - PROPOSED FG SURFACE MAJOR CONTOUR
- 1350 - EG SURFACE CONTOUR

ABBREVIATIONS

CWF - CONCRETE WASHOUT FACILITY
SF - SILT FENCE
SWPPP - STORMWATER POLLUTION PREVENTION PLAN
VTC - VEHICLE TRACKING CONTROL

VG - VALLEY GUTTER	SWK - SIDEWALK
FS - FILLET SECTION	ECR - END RADIUS
CTR - CENTER	DRWY - DRIVEWAY

NOTES

1. MONITOR AND MAINTAIN SITE IN COMPLIANCE WITH SWPPP. PREVENT EROSION AND CONTAIN ALL CONSTRUCTION RELATED DEBRIS, SEDIMENTS, OR CONTAMINANTS ON SITE. REPORT SPILLS OF REGULATED SUBSTANCES TO PERMIT AUTHORITIES.
2. CLEAN PROJECT SITE AND WORK AREAS DAILY. MAINTAIN PROJECT SITE FREE OF WASTE MATERIALS AND DEBRIS. COLLECT AND DISPOSE CONCRETE WASHOUT MATERIAL AND OTHER DEBRIS IN A LAWFUL MANNER.
3. REFER TO DETAILS FOR EROS. CONT., SURFACING & RESTORATION INSTALLATIONS. EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE PAID ONCE PER EACH LOCATION OR FACILITY PROTECTED. MAINTENANCE OF EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE INCIDENTAL.
4. CONTRACTOR SHALL TAKE CARE NOT TO TRACK MUD/DIRT ONTO ROADWAYS. IF MUD/DIRT/DEBRIS ARE TRACKED ONTO THE ROADWAY IT SHALL BE SWEPT THE SAME DAY.
5. ALL PCC DRIVEWAY PAVEMENTS ARE TO BE 6" THICK UNLESS OTHERWISE SPECIFIED.
6. ASPHALT CONCRETE DRIVEWAYS ARE TO BE 4" THICK UNLESS OTHERWISE SPECIFIED.
7. ASPHALT CONCRETE ROADWAY PAVEMENT THICKNESS SHALL BE AS SPECIFIED IN THE TYPICAL SECTIONS.
8. GRAVEL SURFACING FOR PATCHING BACK EXISTING GRAVEL DRIVEWAYS SHALL BE 6" THICK UNLESS OTHERWISE SPECIFIED.
9. COORDINATE RESET OF PERMANENT MAILBOXES WITH POSTAL SERVICE AND PROPERTY OWNERS.

QUANTITIES

44 LB - TYPE F PERMANENT SEED MIXTURE
3366 LB - FERTILIZER
3.3 TON - BONDED FIBER MATRIX
896 CY - TOPSOIL, PLACE
1081 FT - HIGH FLOW SILT FENCE
12 TON - CLASS A RIP RAP
65 TON - AGGREGATE BASE COURSE, ¾"

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/4/2025

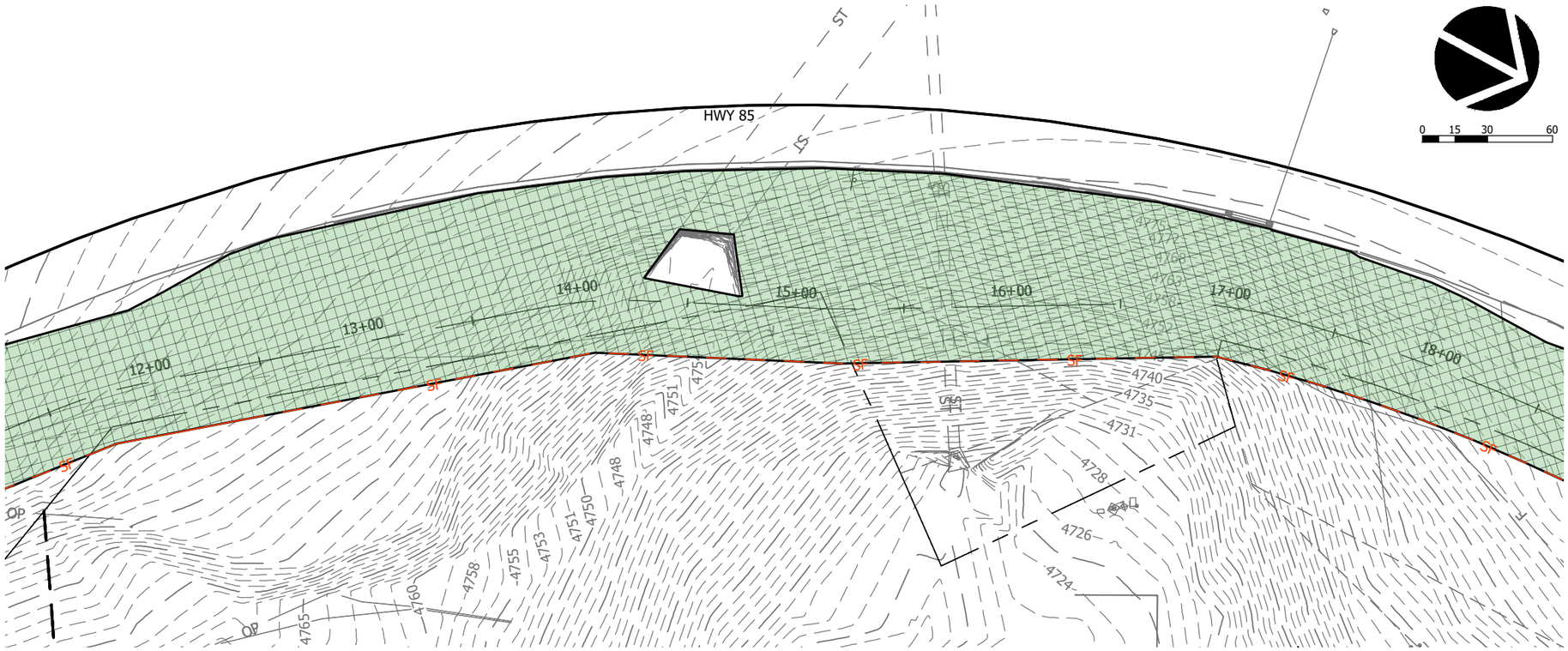
Time Stamp: 4/2/2025 2:08 PM

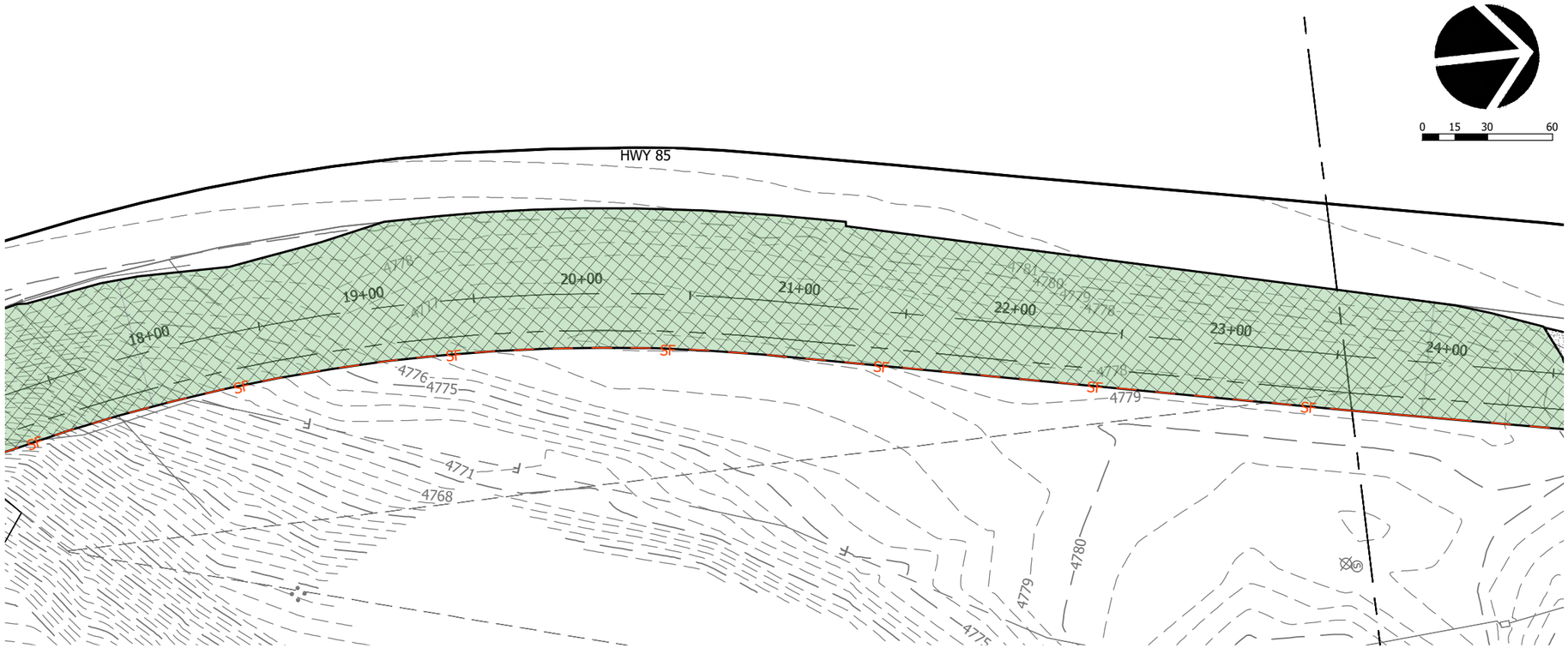
CONSTRUCTION SET

EROS. CONT., SURFACING & RESTORATION

G-2.01

Plotted by: JDC
Plotted by: ###





LEGEND

- TYPE F PERMANENT SEED MIXTURE
- NON-IRRIGATED LAWN MIX (RC STAND.)
- BONDED FIBER MATRIX
- RIP RAP, CLASS A
- INLET PROTECTION
- VTC - VEHICLE TRACKING CONTROL
- CWF - CONCRETE WASHOUT FACILITY
- SF - SILT FENCE
- W - SEDIMENT CONTROL WATTLE
- CONCRETE SURFACING
- CONCRETE CURB & GUTTER
- ASPHALT PAVEMENT
- GRAVEL SURFACING
- V S - ADJUST VALVE BOX, MANHOLE
- RESET TRAFFIC SIGN, MAILBOX
- 1350 - PROPOSED FG SURFACE MAJOR CONTOUR
- 1349 - PROPOSED FG SURFACE MAJOR CONTOUR
- 1350 - EG SURFACE CONTOUR

ABBREVIATIONS

CWF - CONCRETE WASHOUT FACILITY
SF - SILT FENCE
SWPPP - STORMWATER POLLUTION PREVENTION PLAN
VTC - VEHICLE TRACKING CONTROL

VG - VALLEY GUTTER	SWK - SIDEWALK
FS - FILLET SECTION	ECR - END RADIUS
CTR - CENTER	DRWY - DRIVEWAY

NOTES

1. MONITOR AND MAINTAIN SITE IN COMPLIANCE WITH SWPPP. PREVENT EROSION AND CONTAIN ALL CONSTRUCTION RELATED DEBRIS, SEDIMENTS, OR CONTAMINANTS ON SITE. REPORT SPILLS OF REGULATED SUBSTANCES TO PERMIT AUTHORITIES.
2. CLEAN PROJECT SITE AND WORK AREAS DAILY. MAINTAIN PROJECT SITE FREE OF WASTE MATERIALS AND DEBRIS. COLLECT AND DISPOSE CONCRETE WASHOUT MATERIAL AND OTHER DEBRIS IN A LAWFUL MANNER.
3. REFER TO DETAILS FOR EROS. CONT., SURFACING & RESTORATION INSTALLATIONS. EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE PAID ONCE PER EACH LOCATION OR FACILITY PROTECTED. MAINTENANCE OF EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE INCIDENTAL.
4. CONTRACTOR SHALL TAKE CARE NOT TO TRACK MUD/DIRT ONTO ROADWAYS. IF MUD/DIRT/DEBRIS ARE TRACKED ONTO THE ROADWAY IT SHALL BE SWEPT THE SAME DAY.
5. ALL PCC DRIVEWAY PAVEMENTS ARE TO BE 6" THICK UNLESS OTHERWISE SPECIFIED.
6. ASPHALT CONCRETE DRIVEWAYS ARE TO BE 4" THICK UNLESS OTHERWISE SPECIFIED.
7. ASPHALT CONCRETE ROADWAY PAVEMENT THICKNESS SHALL BE AS SPECIFIED IN THE TYPICAL SECTIONS.
8. GRAVEL SURFACING FOR PATCHING BACK EXISTING GRAVEL DRIVEWAYS SHALL BE 6" THICK UNLESS OTHERWISE SPECIFIED.
9. COORDINATE RESET OF PERMANENT MAILBOXES WITH POSTAL SERVICE AND PROPERTY OWNERS.

QUANTITIES

49 LB - TYPE F PERMANENT SEED MIXTURE
3746 LB - FERTILIZER
3.7 TON - BONDED FIBER MATRIX
997 CY - TOPSOIL, PLACE
1164 FT - HIGH FLOW SILT FENCE

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:08 PM

CONSTRUCTION SET

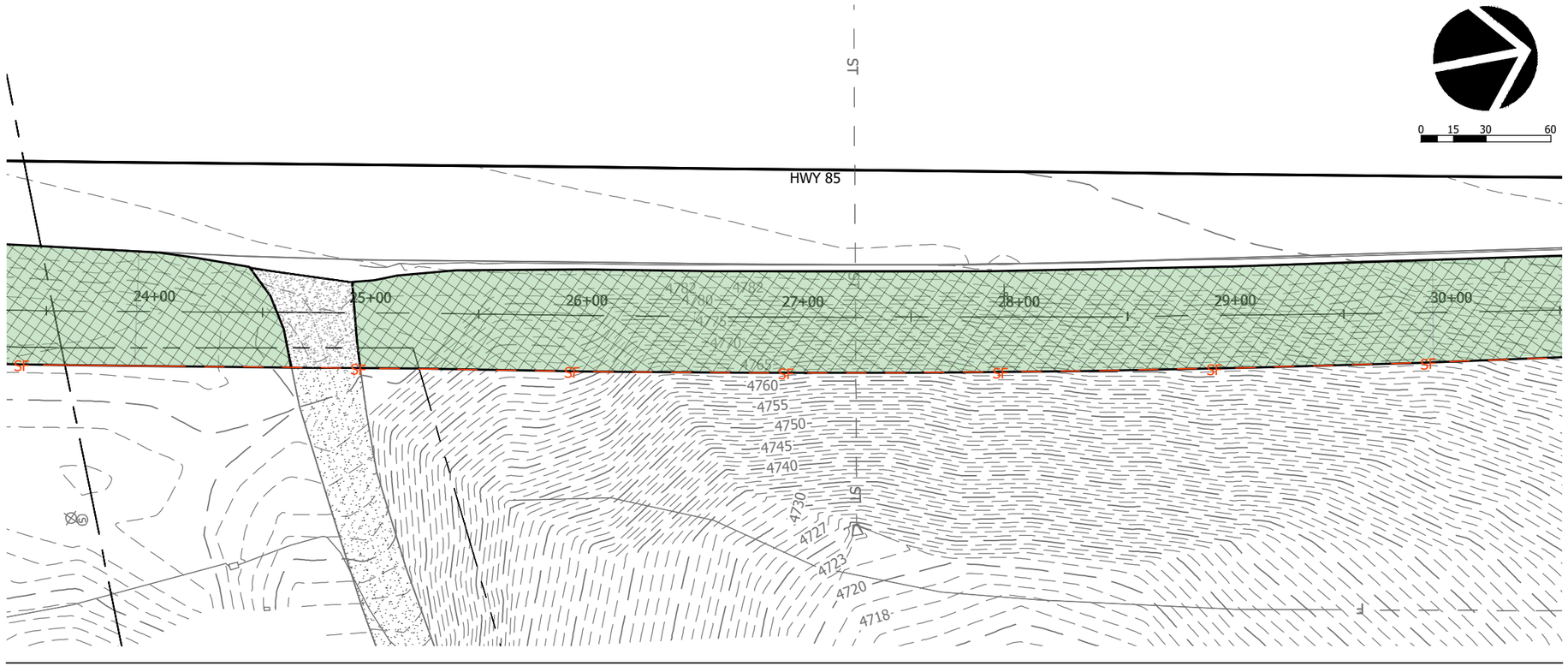
EROS.CONT., SURFACING & RESTORATION

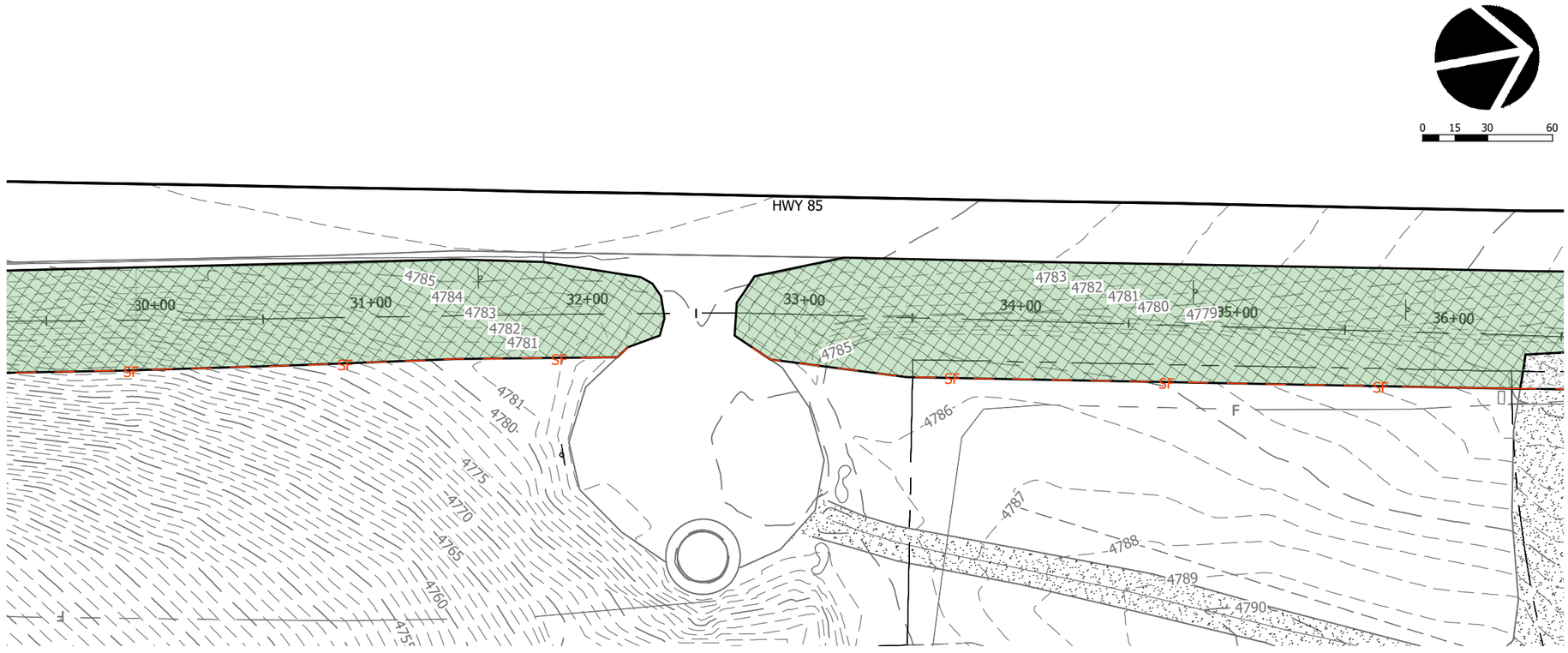
G-2.02

File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - G - Erosion Control, Surfacing & Restoration.dwg

Drafted By: JDC

Reviewed By: ###





LEGEND

- TYPE F PERMANENT SEED MIXTURE
- NON-IRRIGATED LAWN MIX (RC STAND.)
- BONDED FIBER MATRIX
- RIP RAP, CLASS A
- INLET PROTECTION
- VTC - VEHICLE TRACKING CONTROL
- CWF - CONCRETE WASHOUT FACILITY
- SF - SILT FENCE
- W - SEDIMENT CONTROL WATTLE
- CONCRETE SURFACING
- CONCRETE CURB & GUTTER
- ASPHALT PAVEMENT
- GRAVEL SURFACING
- V S - ADJUST VALVE BOX, MANHOLE
- RESET TRAFFIC SIGN, MAILBOX
- 1350 - PROPOSED FG SURFACE MAJOR CONTOUR
- 1349 - PROPOSED FG SURFACE MAJOR CONTOUR
- 1350 - EG SURFACE CONTOUR

ABBREVIATIONS

CWF - CONCRETE WASHOUT FACILITY
SF - SILT FENCE
SWPPP - STORMWATER POLLUTION PREVENTION PLAN
VTC - VEHICLE TRACKING CONTROL

VG - VALLEY GUTTER	SWK - SIDEWALK
FS - FILLET SECTION	ECR - END RADIUS
CTR - CENTER	DRWY - DRIVEWAY

NOTES

1. MONITOR AND MAINTAIN SITE IN COMPLIANCE WITH SWPPP. PREVENT EROSION AND CONTAIN ALL CONSTRUCTION RELATED DEBRIS, SEDIMENTS, OR CONTAMINANTS ON SITE. REPORT SPILLS OF REGULATED SUBSTANCES TO PERMIT AUTHORITIES.
2. CLEAN PROJECT SITE AND WORK AREAS DAILY. MAINTAIN PROJECT SITE FREE OF WASTE MATERIALS AND DEBRIS. COLLECT AND DISPOSE CONCRETE WASHOUT MATERIAL AND OTHER DEBRIS IN A LAWFUL MANNER.
3. REFER TO DETAILS FOR EROS. CONT., SURFACING & RESTORATION INSTALLATIONS. EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE PAID ONCE PER EACH LOCATION OR FACILITY PROTECTED. MAINTENANCE OF EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE INCIDENTAL.
4. CONTRACTOR SHALL TAKE CARE NOT TO TRACK MUD/DIRT ONTO ROADWAYS. IF MUD/DIRT/DEBRIS ARE TRACKED ONTO THE ROADWAY IT SHALL BE SWEPT THE SAME DAY.
5. ALL PCC DRIVEWAY PAVEMENTS ARE TO BE 6" THICK UNLESS OTHERWISE SPECIFIED.
6. ASPHALT CONCRETE DRIVEWAYS ARE TO BE 4" THICK UNLESS OTHERWISE SPECIFIED.
7. ASPHALT CONCRETE ROADWAY PAVEMENT THICKNESS SHALL BE AS SPECIFIED IN THE TYPICAL SECTIONS.
8. GRAVEL SURFACING FOR PATCHING BACK EXISTING GRAVEL DRIVEWAYS SHALL BE 6" THICK UNLESS OTHERWISE SPECIFIED.
9. COORDINATE RESET OF PERMANENT MAILBOXES WITH POSTAL SERVICE AND PROPERTY OWNERS.

QUANTITIES

33 LB - TYPE F PERMANENT SEED MIXTURE
2481 LB - FERTILIZER
2.4 TON - BONDED FIBER MATRIX
661 CY - TOPSOIL, PLACE
1148 FT - HIGH FLOW SILT FENCE
62 TON - AGGREGATE BASE COURSE, 3/4"

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/4/2025

Time Stamp: 4/2/2025 2:08 PM

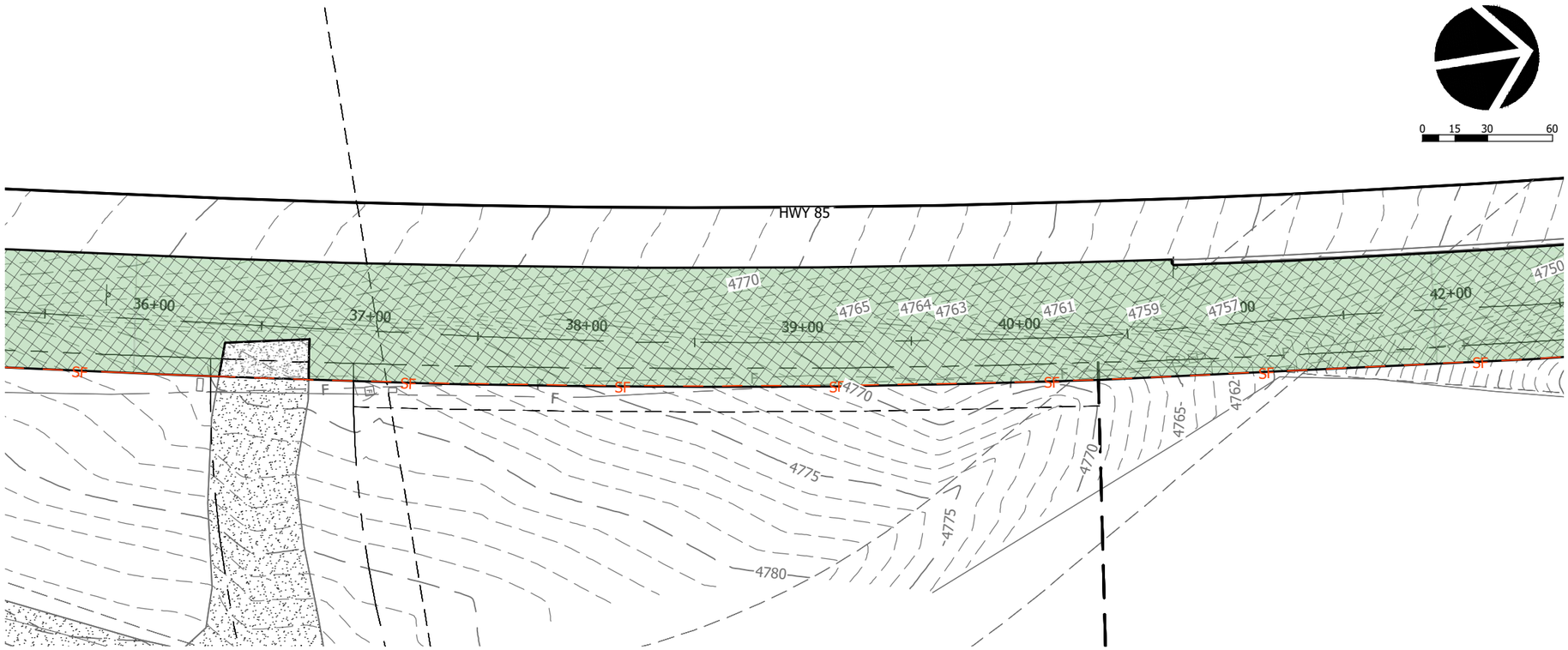
CONSTRUCTION SET

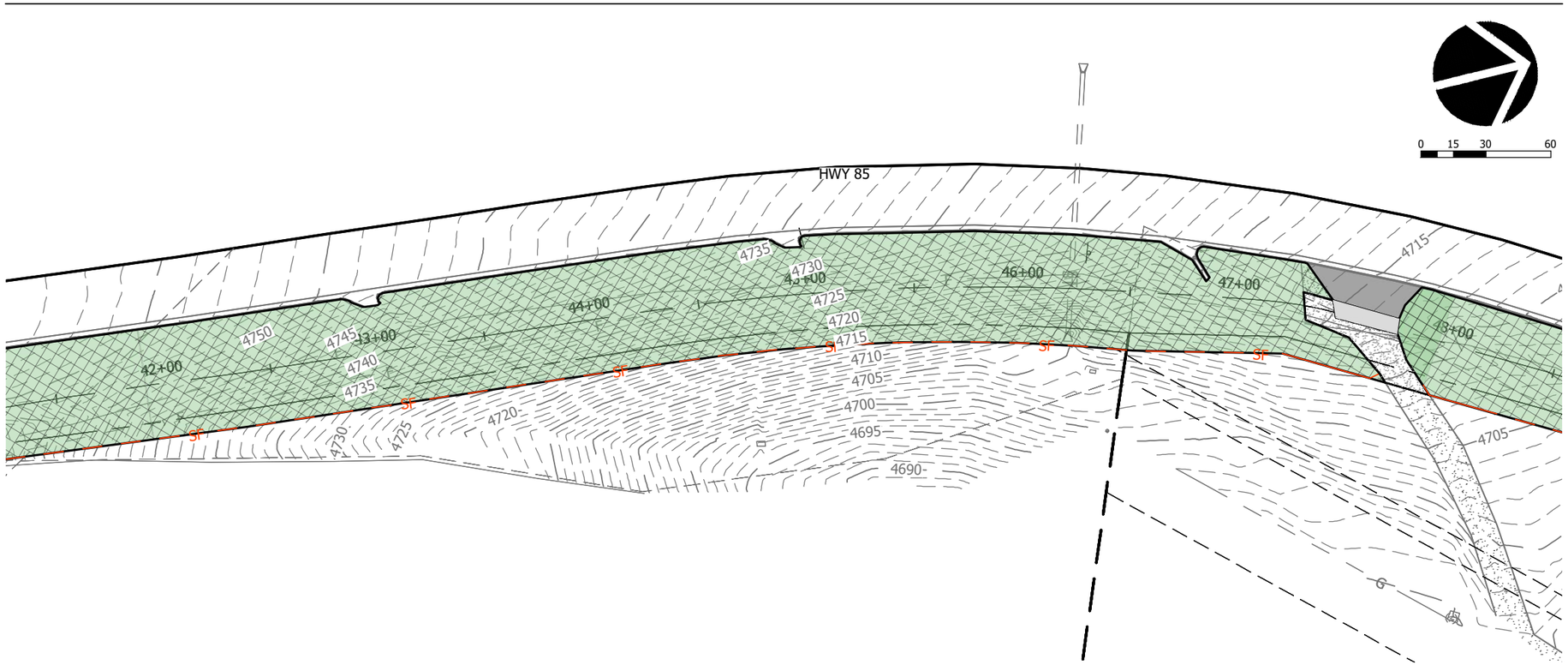
EROS. CONT., SURFACING & RESTORATION

G-2.03

File Location: S:\Projects\24135\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - G - Erosion Control, Surfacing & Restoration.dwg

Drafted By: JDC
Reviewed By: ###





LEGEND

- TYPE F PERMANENT SEED MIXTURE
- NON-IRRIGATED LAWN MIX (RC STAND.)
- BONDED FIBER MATRIX
- RIP RAP, CLASS A
- INLET PROTECTION
- VTC - VEHICLE TRACKING CONTROL
- CWF - CONCRETE WASHOUT FACILITY
- SF - SILT FENCE
- W - SEDIMENT CONTROL WATTLE
- CONCRETE SURFACING
- CONCRETE CURB & GUTTER
- ASPHALT PAVEMENT
- GRAVEL SURFACING
- V S - ADJUST VALVE BOX, MANHOLE
- RESET TRAFFIC SIGN, MAILBOX
- 1350 - PROPOSED FG SURFACE MAJOR CONTOUR
- 1349 - PROPOSED FG SURFACE MAJOR CONTOUR
- 1350 - EG SURFACE CONTOUR

ABBREVIATIONS

CWF - CONCRETE WASHOUT FACILITY
SF - SILT FENCE
SWPPP - STORMWATER POLLUTION PREVENTION PLAN
VTC - VEHICLE TRACKING CONTROL

VG - VALLEY GUTTER	SWK - SIDEWALK
FS - FILLET SECTION	ECR - END RADIUS
CTR - CENTER	DRWY - DRIVEWAY

NOTES

1. MONITOR AND MAINTAIN SITE IN COMPLIANCE WITH SWPPP. PREVENT EROSION AND CONTAIN ALL CONSTRUCTION RELATED DEBRIS, SEDIMENTS, OR CONTAMINANTS ON SITE. REPORT SPILLS OF REGULATED SUBSTANCES TO PERMIT AUTHORITIES.
2. CLEAN PROJECT SITE AND WORK AREAS DAILY. MAINTAIN PROJECT SITE FREE OF WASTE MATERIALS AND DEBRIS. COLLECT AND DISPOSE CONCRETE WASHOUT MATERIAL AND OTHER DEBRIS IN A LAWFUL MANNER.
3. REFER TO DETAILS FOR EROS. CONT., SURFACING & RESTORATION INSTALLATIONS. EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE PAID ONCE PER EACH LOCATION OR FACILITY PROTECTED. MAINTENANCE OF EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE INCIDENTAL.
4. CONTRACTOR SHALL TAKE CARE NOT TO TRACK MUD/DIRT ONTO ROADWAYS. IF MUD/DIRT/DEBRIS ARE TRACKED ONTO THE ROADWAY IT SHALL BE SWEPT THE SAME DAY.
5. ALL PCC DRIVEWAY PAVEMENTS ARE TO BE 6" THICK UNLESS OTHERWISE SPECIFIED.
6. ASPHALT CONCRETE DRIVEWAYS ARE TO BE 4" THICK UNLESS OTHERWISE SPECIFIED.
7. ASPHALT CONCRETE ROADWAY PAVEMENT THICKNESS SHALL BE AS SPECIFIED IN THE TYPICAL SECTIONS.
8. GRAVEL SURFACING FOR PATCHING BACK EXISTING GRAVEL DRIVEWAYS SHALL BE 6" THICK UNLESS OTHERWISE SPECIFIED.
9. COORDINATE RESET OF PERMANENT MAILBOXES WITH POSTAL SERVICE AND PROPERTY OWNERS.

QUANTITIES

36 LB - TYPE F PERMANENT SEED MIXTURE
2759 LB - FERTILIZER
2.7 TON - BONDED FIBER MATRIX
735 CY - TOPSOIL, PLACE
1174 FT - HIGH FLOW SILT FENCE
59 TON - AGGREGATE BASE COURSE, ¾"
24 SY - PCC APPROACH PAVEMENT, 6" REINFORCED

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:08 PM

CONSTRUCTION SET

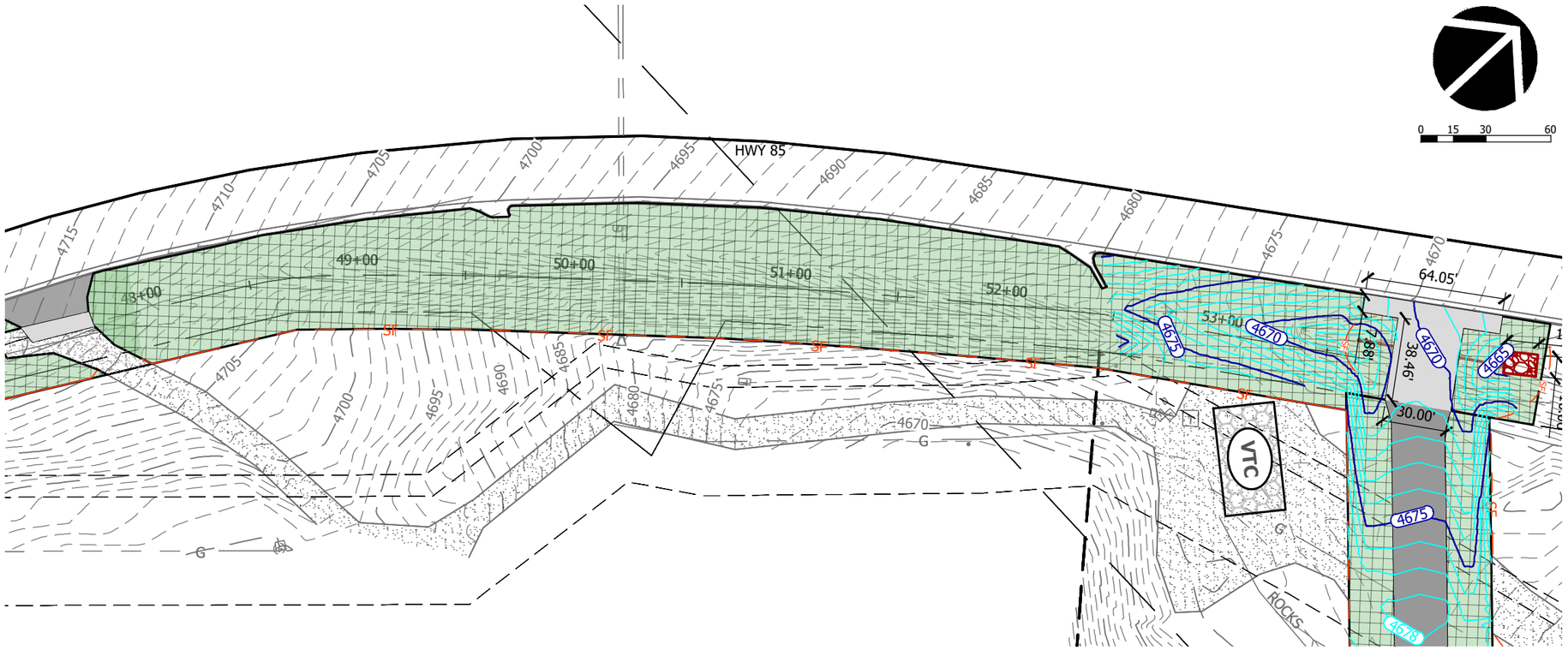
EROS. CONT., SURFACING & RESTORATION

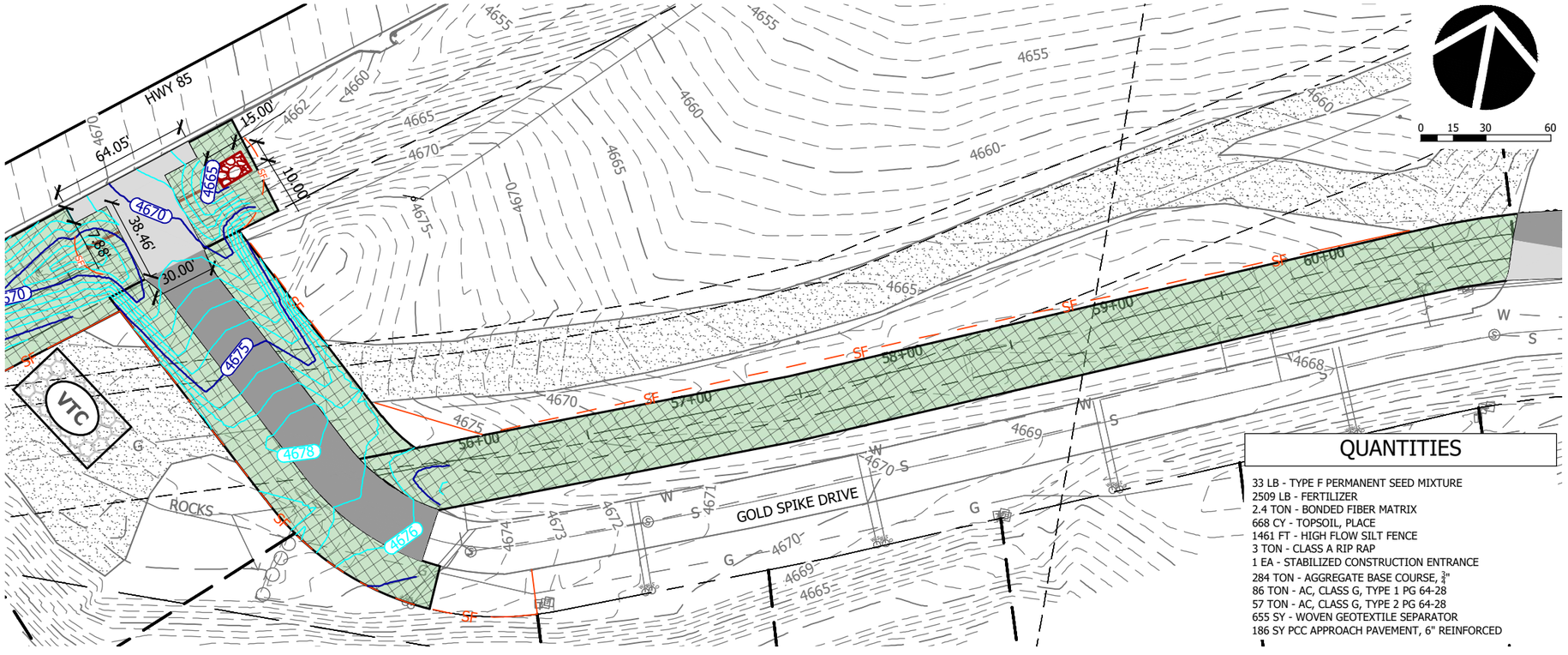
G-2.04

File Location: S:\Projects\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - G - Erosion Control, Surfacing & Restoration.dwg

Plotted By: JDC

Xrefs Attached By: ###





LEGEND

- TYPE F PERMANENT SEED MIXTURE
- NON-IRRIGATED LAWN MIX (RC STAND.)
- BONDED FIBER MATRIX
- RIP RAP, CLASS A
- INLET PROTECTION
- VTC - VEHICLE TRACKING CONTROL
- CWF - CONCRETE WASHOUT FACILITY
- SF - SILT FENCE
- W - SEDIMENT CONTROL WATTLE
- CONCRETE SURFACING
- CONCRETE CURB & GUTTER
- ASPHALT PAVEMENT
- GRAVEL SURFACING
- ADJUST VALVE BOX, MANHOLE
- RESET TRAFFIC SIGN, MAILBOX
- 1350 - PROPOSED FG SURFACE MAJOR CONTOUR
- 1349 - PROPOSED FG SURFACE MAJOR CONTOUR
- 1350 - EG SURFACE CONTOUR

ABBREVIATIONS

CWF - CONCRETE WASHOUT FACILITY
SF - SILT FENCE
SWPPP - STORMWATER POLLUTION PREVENTION PLAN
VTC - VEHICLE TRACKING CONTROL

VG - VALLEY GUTTER	SWK - SIDEWALK
FS - FILLET SECTION	ECR - END RADIUS
CTR - CENTER	DRWY - DRIVEWAY

NOTES

1. MONITOR AND MAINTAIN SITE IN COMPLIANCE WITH SWPPP. PREVENT EROSION AND CONTAIN ALL CONSTRUCTION RELATED DEBRIS, SEDIMENTS, OR CONTAMINANTS ON SITE. REPORT SPILLS OF REGULATED SUBSTANCES TO PERMIT AUTHORITIES.
2. CLEAN PROJECT SITE AND WORK AREAS DAILY. MAINTAIN PROJECT SITE FREE OF WASTE MATERIALS AND DEBRIS. COLLECT AND DISPOSE CONCRETE WASHOUT MATERIAL AND OTHER DEBRIS IN A LAWFUL MANNER.
3. REFER TO DETAILS FOR EROS. CONT., SURFACING & RESTORATION INSTALLATIONS. EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE PAID ONCE PER EACH LOCATION OR FACILITY PROTECTED. MAINTENANCE OF EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE INCIDENTAL.
4. CONTRACTOR SHALL TAKE CARE NOT TO TRACK MUD/DIRT ONTO ROADWAYS. IF MUD/DIRT/DEBRIS ARE TRACKED ONTO THE ROADWAY IT SHALL BE SWEPT THE SAME DAY.
5. ALL PCC DRIVEWAY PAVEMENTS ARE TO BE 6" THICK UNLESS OTHERWISE SPECIFIED.
6. ASPHALT CONCRETE DRIVEWAYS ARE TO BE 4" THICK UNLESS OTHERWISE SPECIFIED.
7. ASPHALT CONCRETE ROADWAY PAVEMENT THICKNESS SHALL BE AS SPECIFIED IN THE TYPICAL SECTIONS.
8. GRAVEL SURFACING FOR PATCHING BACK EXISTING GRAVEL DRIVEWAYS SHALL BE 6" THICK UNLESS OTHERWISE SPECIFIED.
9. COORDINATE RESET OF PERMANENT MAILBOXES WITH POSTAL SERVICE AND PROPERTY OWNERS.

QUANTITIES

33 LB - TYPE F PERMANENT SEED MIXTURE
2509 LB - FERTILIZER
2.4 TON - BONDED FIBER MATRIX
668 CY - TOPSOIL, PLACE
1461 FT - HIGH FLOW SILT FENCE
3 TON - CLASS A RIP RAP
1 EA - STABILIZED CONSTRUCTION ENTRANCE
284 TON - AGGREGATE BASE COURSE, 1½"
86 TON - AC, CLASS G, TYPE 1 PG 64-28
57 TON - AC, CLASS G, TYPE 2 PG 64-28
655 SY - WOVEN GEOTEXTILE SEPARATOR
186 SY PCC APPROACH PAVEMENT, 6" REINFORCED

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

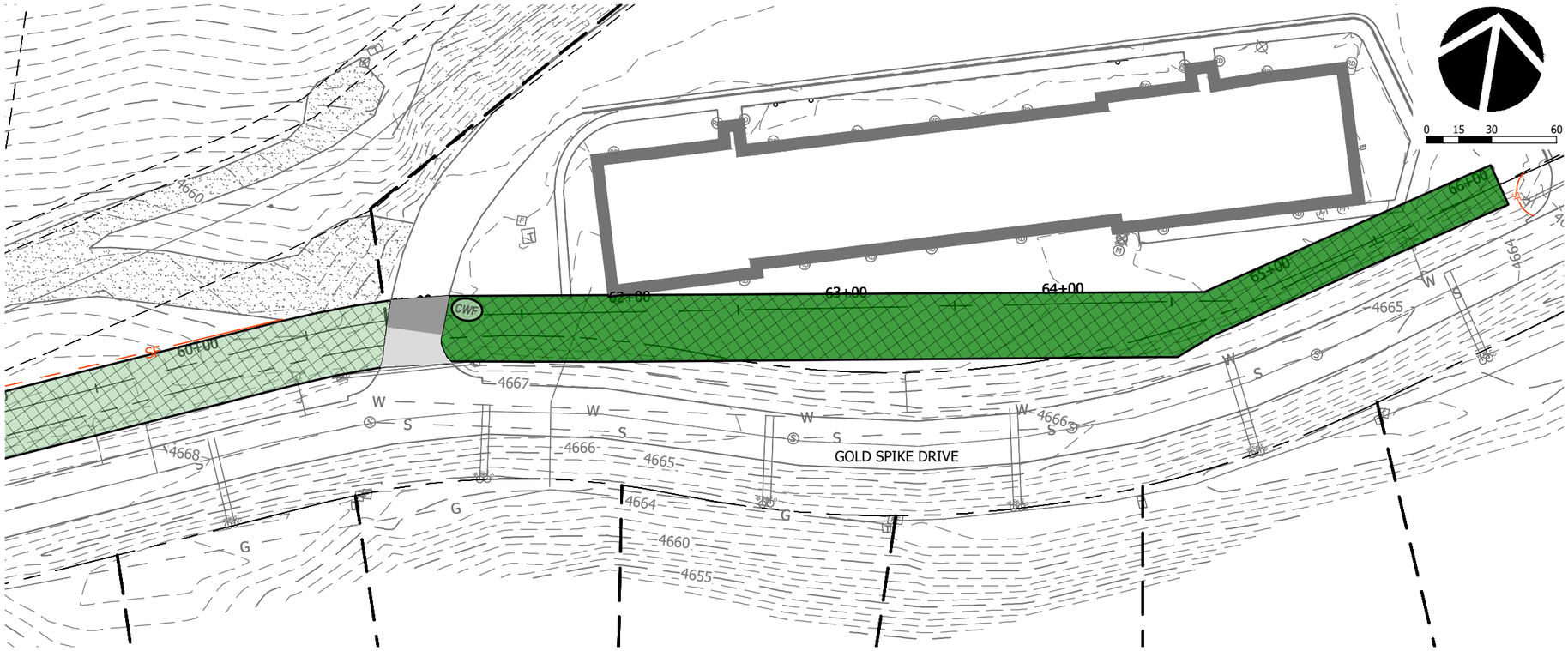
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
4/4/2025

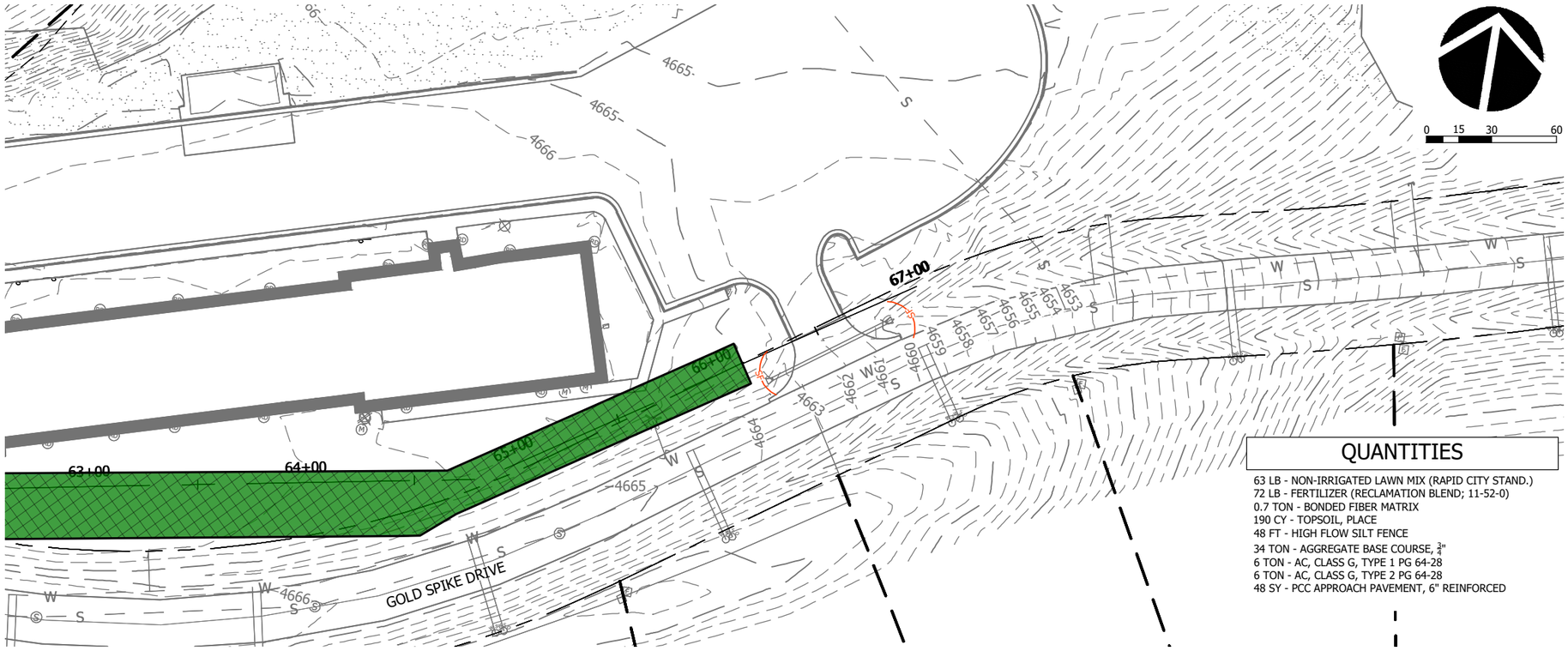
Time Stamp: 4/2/2025 2:08 PM

CONSTRUCTION SET

EROS. CONT., SURFACING & RESTORATION

G-2.05





LEGEND

- TYPE F PERMANENT SEED MIXTURE
- NON-IRRIGATED LAWN MIX (RC STAND.)
- BONDED FIBER MATRIX
- RIP RAP, CLASS A
- INLET PROTECTION
- VTC - VEHICLE TRACKING CONTROL
- CWF - CONCRETE WASHOUT FACILITY
- SF - SILT FENCE
- W - SEDIMENT CONTROL WATTLE
- CONCRETE SURFACING
- CONCRETE CURB & GUTTER
- ASPHALT PAVEMENT
- GRAVEL SURFACING
- V, S - ADJUST VALVE BOX, MANHOLE
- RESET TRAFFIC SIGN, MAILBOX
- 1350 - PROPOSED FG SURFACE MAJOR CONTOUR
- 1349 - PROPOSED FG SURFACE MINOR CONTOUR
- 1350 - EG SURFACE CONTOUR

ABBREVIATIONS

CWF - CONCRETE WASHOUT FACILITY
SF - SILT FENCE
SWPPP - STORMWATER POLLUTION PREVENTION PLAN
VTC - VEHICLE TRACKING CONTROL
VG - VALLEY GUTTER
SWK - SIDEWALK
FS - FILLET SECTION
ECR - END RADIUS
CTR - CENTER
DRWY - DRIVEWAY

NOTES

1. MONITOR AND MAINTAIN SITE IN COMPLIANCE WITH SWPPP. PREVENT EROSION AND CONTAIN ALL CONSTRUCTION RELATED DEBRIS, SEDIMENTS, OR CONTAMINANTS ON SITE. REPORT SPILLS OF REGULATED SUBSTANCES TO PERMIT AUTHORITIES.
2. CLEAN PROJECT SITE AND WORK AREAS DAILY. MAINTAIN PROJECT SITE FREE OF WASTE MATERIALS AND DEBRIS. COLLECT AND DISPOSE CONCRETE WASHOUT MATERIAL AND OTHER DEBRIS IN A LAWFUL MANNER.
3. REFER TO DETAILS FOR EROS. CONT., SURFACING & RESTORATION INSTALLATIONS. EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE PAID ONCE PER EACH LOCATION OR FACILITY PROTECTED. MAINTENANCE OF EROS. CONT., SURFACING & RESTORATION FACILITIES SHALL BE INCIDENTAL.
4. CONTRACTOR SHALL TAKE CARE NOT TO TRACK MUD/DIRT ONTO ROADWAYS. IF MUD/DIRT/DEBRIS ARE TRACKED ONTO THE ROADWAY IT SHALL BE SWEPT THE SAME DAY.
5. ALL PCC DRIVEWAY PAVEMENTS ARE TO BE 6" THICK UNLESS OTHERWISE SPECIFIED.
6. ASPHALT CONCRETE DRIVEWAYS ARE TO BE 4" THICK UNLESS OTHERWISE SPECIFIED.
7. ASPHALT CONCRETE ROADWAY PAVEMENT THICKNESS SHALL BE AS SPECIFIED IN THE TYPICAL SECTIONS.
8. GRAVEL SURFACING FOR PATCHING BACK EXISTING GRAVEL DRIVEWAYS SHALL BE 6" THICK UNLESS OTHERWISE SPECIFIED.
9. COORDINATE RESET OF PERMANENT MAILBOXES WITH POSTAL SERVICE AND PROPERTY OWNERS.

QUANTITIES

63 LB - NON-IRRIGATED LAWN MIX (RAPID CITY STAND.)
72 LB - FERTILIZER (RECLAMATION BLEND; 11-52-0)
0.7 TON - BONDED FIBER MATRIX
190 CY - TOPSOIL, PLACE
48 FT - HIGH FLOW SILT FENCE
34 TON - AGGREGATE BASE COURSE, $\frac{3}{4}$"
6 TON - AC, CLASS G, TYPE 1 PG 64-28
6 TON - AC, CLASS G, TYPE 2 PG 64-28
48 SY - PCC APPROACH PAVEMENT, 6" REINFORCED

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:08 PM

CONSTRUCTION SET

EROS. CONT., SURFACING & RESTORATION

G-2.06

Drawn by: JDC
Reviewed by: ###

1.0 STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

1.1 GENERAL

1.1.1 The Contractor shall be responsible for preventing erosion and containing all construction related debris, sediments, or containments on site. Protective measures are illustrated in the technical drawings but are not meant to be all inclusive. The contractor shall monitor their site and notify the Engineer of any failures to contain construction related pollutants.

1.1.2 The Contractor is responsible for maintaining and repairing all erosion control measures until a Notice of Termination is filed with the DANR. No payment will be made to the Contractor for maintaining or repairing those items unless otherwise specified.

1.2 STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

STORMWATER POLLUTION PREVENTION PLAN CHECKLIST

*(The numbers left of the title headings are **reference numbers** to the GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES (Stormwater Permit))*

5.3 (2): STAFF TRAINING/SWPPP IMPLEMENTATION

To promote stormwater management awareness specific for this project, the Contractor's Erosion Control Supervisor should provide correspondence of how the SWPPP will be implemented. The Contractor's Erosion Control Supervisor is responsible for providing this information at the preconstruction meeting, and subsequently completing an attendance log, which should identify site-specific implementation of the SWPPP and the names of the personnel who attended the preconstruction meeting. Documentation of the preconstruction meeting will be filed with the SWPPP documents.

5.3 (3): DESCRIPTION OF CONSTRUCTION ACTIVITIES

- **5.3 (3a): Project Limits** (See Title Sheet)
- **5.3 (3a): Project Description** (See Title Sheet)
- **5.3 (4): Site Map(s)** (See Title Sheet and Plans)
- **Major Soil Disturbing Activities** (check all that apply)
  - ☒ Clearing and grubbing
  - ☒ Excavation/borrow
  - ☒ Grading and shaping
  - ☐ Filling
  - ☐ Other (describe):
- **5.3 (3b): Total Project Area** 7.8 Acres
- **5.3 (3b): Total Area to be Disturbed** 7.8 Acres
- **5.3 (3c): Maximum Area Disturbed at One Time** 7.8 Acres
- **5.3 (3d): Existing Vegetative Cover (%)** 56
- **5.3 (3d): Description of Vegetative Cover**: Right of Way Grass
- **5.3 (3e): Soil Properties:** Typic Udarents, reclaimed, 3-60% slopes; Bullflat, moist-Cordeston silt loams, 2-9% slopes; Citadel-Tollflat-Danjay complex, 10-40% slopes; Cordeston-Rapidcreek, rarely flooded complex, 2-9% slopes; Rapidcreek gravelly loam, 2-10% slopes rarely flooded; Roubaix silt loam, 6-40% slopes; Vanocker-Citadel complex, 10-40% slopes; Vanocker-Danjay-Hopdraw, moist complex, 40-80% slopes; Vanocker-Sawdust, moist-Rock outcrop complex, 40-80% slopes
- **5.3 (3f): Name of Receiving Water Body/Bodies** Unnamed Tributary to Whitewood Creek
- **5.3 (3g): Location of Construction Support Activity Areas** NA

5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES

All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report. Include the technical reasoning for selecting each control. (check all that apply)

Perimeter Controls (See Detail Plan Sheets)

Description	Estimated Start Date
☐ Natural Buffers (within 50 ft of Waters of State)	
☒ Silt Fence	
☐ Erosion Control Wattles	
☐ Temporary Berm / Windrow	
☐ Floating Silt Curtain	
☒ Stabilized Construction Entrances	
☐ Entrance/Exit Equipment Tire Wash	
☐ Other:	

Structural Erosion and Sediment Controls

Description	Estimated Start Date
☒ Silt Fence	
☐ Temporary Berm/Windrow	
☒ Erosion Control Wattles	
☐ Temporary Sediment Barriers	
☐ Erosion Bales	
☐ Temporary Slope Drain	
☐ Turf Reinforcement Mat	
☒ Riprap	
☐ Gabions	
☐ Rock Check Dams	
☐ Sediment Traps/Basins	
☒ Culvert Inlet Protection	
☐ Transition Mats	
☐ Median/Area Drain Inlet Protection	
☐ Curb Inlet Protection	
☐ Interceptor Ditch	
☒ Concrete Washout Facility	
☐ Work Platform	
☐ Temporary Water Barrier	
☐ Temporary Water Crossing	
☐ Permanent Stormwater Ponds	
☐ Permanent Open Vegetated Swales	
☐ Natural Depressions to allow for Infiltration	
☐ Sequential Systems that combine several practices	
☐ Other:	

Dust Controls

Description	Estimated Start Date
☐ Tarps & Wind impervious fabrics	
☐ Watering	
☐ Stockpile location/orientation	
☐ Dust Control Chlorides	
☐ Other	

Dewatering BMPs

Description	Estimated Start Date
☐ Sediment Basins	
☐ Dewatering bags	
☐ Weir tanks	
☐ Temporary Diversion Channel	
☐ Other:	

Stabilization Practices (See Detail Plan Sheets)

(Stabilization measures shall begin the following workday whenever earth disturbing activity on any portion of the site has temporarily or permanently ceased. Temporary stabilization shall be completed as soon as practicable but no later than 14 days after initiating soil stabilization activities (**3.18**))

Description	Estimated Start Date
☐ Vegetation Buffer Strips	
☐ Temporary Seeding (Cover Crop Seeding)	
☒ Permanent Seeding	
☐ Sodding	
☐ Planting (Woody Vegetation for Soil Stabilization)	
☐ Mulching (Grass Hay or Straw)	
☐ Fiber Mulching (Wood Fiber Mulch)	
☐ Soil Stabilizer	
☐ Bonded Fiber Matrix	
☐ Fiber Reinforced Matrix	
☒ Erosion Control Blankets	
☒ Surface Roughening (e.g., tracking)	
☐ Other:	

Wetland Avoidance

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes ☐ No ☒ If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches $^1/_3$ of the height of the silt fence.
- Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
- Check dams will be inspected for stability. Sediment will be removed when depth reaches ½ the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The SDDOT Project Engineer and Contractor's Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Plot Time: 4/2/2025 4:15 PM

CONSTRUCTION SET

SWPPP

G-1.00

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

Stormwater management will be handled by temporary controls outlined in "DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES" above, and any permanent controls needed to meet permanent stormwater management needs in the post construction period will be shown in the plans and noted as permanent.

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

- **Material Management**
  - Housekeeping
    - The Contractor will only store needed products on site.
    - Except for bulk materials the contractor will store all materials under cover and/or in appropriate containers.
    - Products must be stored in original containers and labeled.
    - Material mixing will be conducted in accordance with the manufacturer's recommendations.
    - When possible, all products will be completely used before properly disposing of the container off-site.
    - The manufacturer's directions for disposal of materials and containers will be followed.
    - The Contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
    - Dust generated will be controlled in an environmentally safe manner.
  - Hazardous Materials
    - Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.
    - Original labels and material safety data sheets will be retained in a safe place to relay important product information.
    - If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
    - Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
    - Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any stormwater system or stormwater treatment system.
    - Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.

- **Spill Control Practices**

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer's recommended methods for spill cleanup will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- The Contractor will maintain appropriate cleanup materials and equipment in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for cleanup purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill, a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The Contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator.

- **Spill Response**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into stormwater runoff and conveyance systems. If the release has impacted on-site stormwater, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens stormwater or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The Contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.
- If oil sheen is observed on surface water (e.g., settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SDDANR.
- Personnel with primary responsibility for spill response and cleanup will receive training by the Contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

5.3 (8b): WASTE MANAGEMENT PROCEDURES

- **Waste Disposal**
  - All liquid waste materials will be collected and stored in approved sealed containers. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal and notices stating proper practices will be posted. The Contractor is responsible for ensuring waste disposal procedures are followed.

- **Hazardous Waste**
  - All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the Contractor will be responsible for seeing that these practices are followed.

- **Sanitary Waste**
  - Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units which must be secured to prevent tipping and serviced in a timely manner by a licensed waste management Contractor or as required by any local regulations.

5.3 (9): CONSTRUCTION SITE POLLUTANTS

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the heading "POLLUTION PREVENTION PROCEDURES" (check all that apply).

- ☒ Concrete and Portland Cement
- ☐ Detergents
- ☐ Paints
- ☒ Metals
- ☒ Bituminous Materials
- ☒ Petroleum Based Products
- ☒ Diesel Exhaust Fluid
- ☐ Cleaning Solvents
- ☒ Wood
- ☒ Cure
- ☐ Texture
- ☒ Chemical Fertilizers
- ☐ Other:

Product Specific Practices

- **Petroleum Products**
  All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

- **Fertilizers**
  Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to stormwater. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

- **Paints**
  All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.

- **Concrete Trucks**
  Contractors will provide designated truck washout facilities on the site. These areas must be self-contained and not connected to any stormwater outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

5.3 (10): NON-STORMWATER DISCHARGES

The following non-stormwater discharges are anticipated during this project (check all that apply).

- ☒ Discharges from water line flushing.
- ☐ Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
- ☐ Uncontaminated ground water associated with dewatering activities.

5.3 (11): INFEASIBILITY DOCUMENTATION

If it is determined to be infeasible to comply with any of the requirements of the Stormwater Permit, the infeasibility determination must be thoroughly documented in the SWPPP.

7.0: SPILL NOTIFICATION

In the event of a spill, the Contractor's site superintendent will make the appropriate notification(s), consistent with the following procedures:

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to SDDANR immediately **if any one of the following** conditions exists:
  - The release or spill threatens or can threaten waters of the state (surface water or ground water)
  - The release or spill causes an immediate danger to human health or safety
  - The release or spill exceeds 25 gallons
  - The release or spill causes a sheen on surface water
  - The release or spill of any substance that exceeds the ground water quality standards of ARSD Chapter 74:54:01
  - The release or spill of any substance that exceeds th quality standards of ARSD Chapter 74:51:01
  - The release or spill of any substance that harms or threatens to harm wildlife or aquatic life
  - The release or spill is required to be reported according to Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists, Consolidated List of Chemicals Subject to Reporting Under the Emergency Planning and Community Right to Know Act, US Environmental Protection Agency.

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Plot Time: 4/2/2025 4:15 PM

CONSTRUCTION SET

SWPPP

G-1.01

- To report a release or spill, call SDDANR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central Standard Time). To report the release after hours, on weekends or holidays, call South Dakota Emergency Management at 605-773-3231. Reporting the release to SDDANR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, you must also contact local authorities to determine the local reporting requirements for releases. A written report of the unauthorized release of any regulated substance, including quantity discharged, and the location of the discharge shall be sent to SDDANR within 14 days of the discharge.

5.4: SWPPP CERTIFICATIONS

- **Certification of Compliance with Federal, State, and Local Regulations**

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

- **Deadwood Ridge Apartments, Inc.**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

Authorized Signature (See the General Permit, Section 7.4 (1))

- **Prime Contractor**

This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments will be revised or maintained under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

Authorized Signature

CONTACT INFORMATION

The following personnel are duly authorized representatives and have signatory authority for modifications made to the SWPPP:

- **Contractor Information**:
  - Prime Contractor Name: _____
  - Contractor Contact Name: _____
  - Address: _____
  - _____
  - City: _____State: _____Zip: _____
  - Office Phone: _____Field: _____
  - Cell Phone: _____Fax: _____

- **SDDANR Contact Spill Reporting**
  - Business Hours Monday-Friday (605) 773-3296
  - Nights and Weekends (605) 773-3231

- **SDDANR Contact for Hazardous Materials.**
  - (605) 773-3153

- **National Response Center Hotline**
  - (800) 424-8802.

- **SDDANR Stormwater Contact Information**
  - SDDANR Stormwater (800) 737-8676
  - Surface Water Quality Program (605) 773-3351

5.5: REQUIRED SWPPP MODIFICATIONS

- **5.5 (1): Conditions Requiring SWPPP Modification**

The SWPPP must be modified, including the site map(s), in response to any of the following conditions:

  - When a new operator responsible for implementation of any part the SWPPP begins work on the site.
  - When changes to the construction plans, sediment and erosion control measures, or any best management practices on site that are no longer accurately reflected in the SWPPP. This includes changes made in response to corrective actions triggered by inspections.
  - To reflect areas on the site map where operational control has been transferred (including the date of the transfer) or has been covered under a new permit since initiating coverage under this general permit.
  - If inspections by site staff, local officials, SDDANR, or U.S. EPA determine that SWPPP modifications are necessary for compliance with the Stormwater Permit.
  - To reflect any revisions to applicable federal, state, or local requirements that affect the control measures implemented at the site.
  - If approved by the Secretary, to reflect any changes in chemical water treatment systems or controls, including the use of a different water treatment chemical, age rates, different areas, or methods of application.

- **5.5 (2): Deadlines for SWPPP Modification**

Any required revisions to the SWPPP must be completed within 7 calendar days following any of the items listed above.

- **5.5 (3): Documentation of Modifications to the Plan**

All SWPPP modification records are required to be maintained showing the dates of when the modification occurred. The records must include the name of the person authorizing each change and a summary of all changes.

- **5.5 (4): Certification Requirements**

All modifications made to the SWPPP must be signed and certified as required in Section 7.4.

- **5.5 (5): Required Notice to Other Operators**

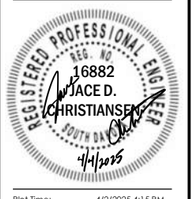
If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.

When modifications as described above occur, the SWPPP will be modified to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters.

[redacted]

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI Project #: 24135



Plot Time: 4/2/2025 4:15 PM

CONSTRUCTION SET

SWPPP

G-1.02

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/7/2025

Time Stamp: 4/2/2025 2:13 PM

CONSTRUCTION SET

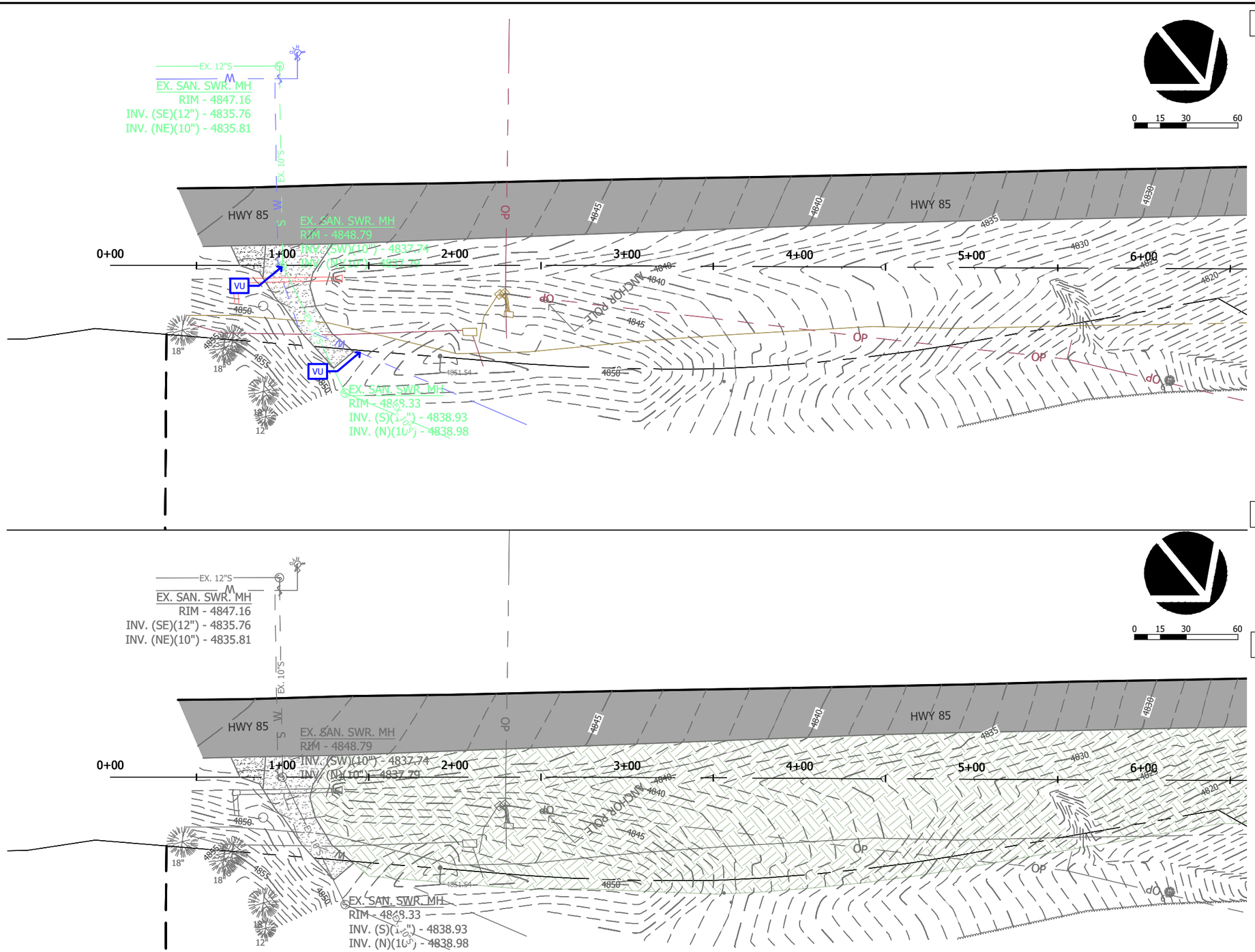
EXISTING CONDITIONS AND REMOVALS

H-1.00

File Location: S:\Projects\2024\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - H1 - Existing Conditions & Removals.dwg

Drawing by: JDC
Reviewed by: ###

File Location: S:\Projects\24135\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - H - Existing Conditions & Removals.dwg



LEGEND

- EXISTING TREE
- CENTERLINE
- PROPERTY LINE
- CONTOUR LINE
- NATURAL GAS
- UNDERGROUND COMMUNICATION
- UNDERGROUND POWER
- OVERHEAD POWER
- UNDERGROUND CABLE
- OVERHEAD CABLE
- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- CURB AND GUTTER
- POWER POLE, LIGHT POLE, GUY WIRE
- WATER VALVE, GAS VALVE, MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK
- VERIFY ELEVATION & LOCATION OF UTILITY
- REMOVE CURB & GUTTER
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALT PAVEMENT
- REMOVE GRAVEL
- STRIP & SALVAGE TOPSOIL
- SALVAGE TRAFFIC SIGN
- CONSTRUCTION PLATE MARKER
- CLEAR & GRUB TREE/ STUMP/ SHRUB
- CLEAR AND GRUB TREES

ABBREVIATIONS

VU - VERIFY UTILITY
CMP - CORREGATED METAL PIPE
RCP - REINFORCED CONCRETE PIPE
FFE - FINISHED FLOOR ELEVATION
INV - INVERT ELEVATION
FES - FLARED END SECTION
PVC - POLYVINYL CHLORIDE

NOTES

1. REFERENCE GENERAL REQUIREMENTS FOR DESCRIPTION OF WORK BY OTHERS. COORDINATE EFFORTS WITH UTILITY OWNERS.
2. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES. EXPOSE, LOCATE, AND RECORD ELEVATIONS OF ALL FACILITIES, WHETHER INDICATED OR NOT. NOTIFY ENGINEER AND UTILITY OWNER WHERE CONFLICTS ARE DISCOVERED. COORDINATE SCHEDULES WITH UTILITY OWNER AND ALLOW AMPLE TIME TO ACCESS SITE AND ADJUST FACILITIES.
3. VERIFY THE LOCATION AND INVERT ELEVATION AT POINTS OF CONNECTION OF GRAVITY SEWER AND WATER SERVICE FACILITIES. REPORT DISCREPANCIES TO THE ENGINEER.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES AS NECESSARY.
5. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER OF DAMAGE.
6. PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.
7. INSTALL EROSION CONTROL DEVICES PRIOR TO START.
8. REVIEW EXISTING STORM WATER RUNNOFF PATTERNS AND FACILITIES. PROVIDE BARRIERS TO PREVENT FLOODING FROM HEAVY RAINS. PROTECT SANITARY SEWER FACILITIES FROM INFLOW.
9. PROTECT EXISTING FACILITIES OTHERWISE INDICATED TO BE REMOVED OR ALTERED. REPAIR DAMAGE TO EXISTING FACILITIES.
10. STRIP SITE OF TOPSOIL AND OTHER SURFACE STRATUM AS INDICATED ON THE DRAWINGS. STOCKPILE TOPSOIL AWAY FROM EXCAVATIONS. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. DISPOSE OF SURPLUS TOPSOIL.

QUANTITIES

453 CY - TOPSOIL, SALVAGE

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA

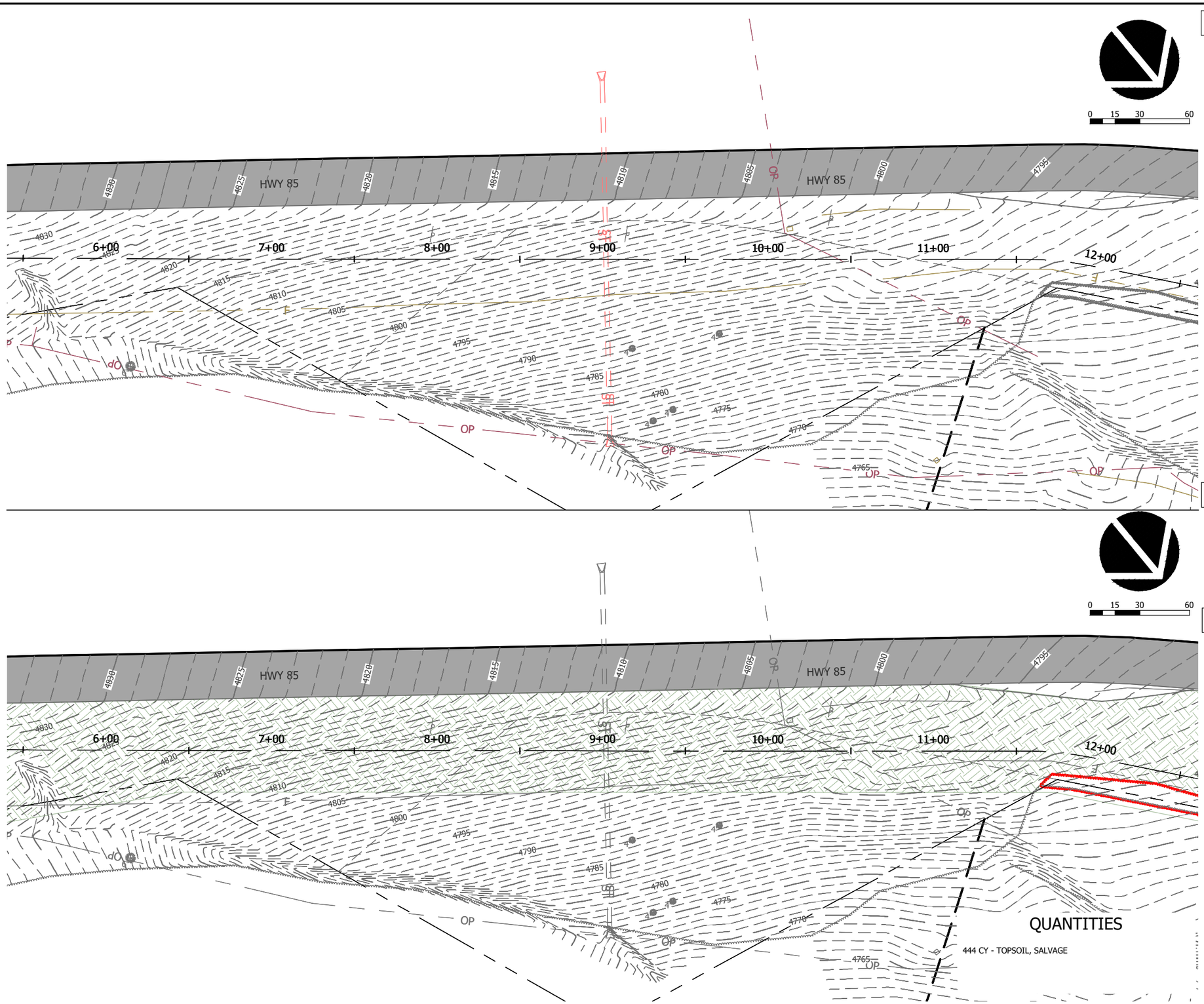
Time Stamp: 4/2/2025 2:14 PM

CONSTRUCTION SET

EXISTING CONDITIONS AND REMOVALS

H-1.01

Checked by: JDC
Reviewed by: ###



LEGEND

- EXISTING TREE
- CENTERLINE
- PROPERTY LINE
- CONTOUR LINE
- NATURAL GAS
- UNDERGROUND COMMUNICATION
- UNDERGROUND POWER
- OVERHEAD POWER
- UNDERGROUND CABLE
- OVERHEAD CABLE
- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- CURB AND GUTTER
- POWER POLE, LIGHT POLE, GUY WIRE
- WATER VALVE, GAS VALVE, MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK
- VERIFY ELEVATION & LOCATION OF UTILITY
- REMOVE CURB & GUTTER
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALT PAVEMENT
- REMOVE GRAVEL
- STRIP & SALVAGE TOPSOIL
- SALVAGE TRAFFIC SIGN
- CONSTRUCTION PLATE MARKER
- CLEAR & GRUB TREE/ STUMP/ SHRUB
- CLEAR AND GRUB TREES

ABBREVIATIONS

VU - VERIFY UTILITY
CMP - CORREGATED METAL PIPE
RCP - REINFORCED CONCRETE PIPE
FFE - FINISHED FLOOR ELEVATION
INV - INVERT ELEVATION
FES - FLARED END SECTION
PVC - POLYVINYL CHLORIDE

NOTES

1. REFERENCE GENERAL REQUIREMENTS FOR DESCRIPTION OF WORK BY OTHERS. COORDINATE EFFORTS WITH UTILITY OWNERS.
2. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES. EXPOSE, LOCATE, AND RECORD ELEVATIONS OF ALL FACILITIES, WHETHER INDICATED OR NOT. NOTIFY ENGINEER AND UTILITY OWNER WHERE CONFLICTS ARE DISCOVERED. COORDINATE SCHEDULES WITH UTILITY OWNER AND ALLOW AMPLE TIME TO ACCESS SITE AND ADJUST FACILITIES.
3. VERIFY THE LOCATION AND INVERT ELEVATION AT POINTS OF CONNECTION OF GRAVITY SEWER AND WATER SERVICE FACILITIES. REPORT DISCREPANCIES TO THE ENGINEER.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES AS NECESSARY.
5. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER OF DAMAGE.
6. PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.
7. INSTALL EROSION CONTROL DEVICES PRIOR TO START.
8. REVIEW EXISTING STORM WATER RUNNOFF PATTERNS AND FACILITIES. PROVIDE BARRIERS TO PREVENT FLOODING FROM HEAVY RAINS. PROTECT SANITARY SEWER FACILITIES FROM INFLOW.
9. PROTECT EXISTING FACILITIES OTHERWISE INDICATED TO BE REMOVED OR ALTERED. REPAIR DAMAGE TO EXISTING FACILITIES.
10. STRIP SITE OF TOPSOIL AND OTHER SURFACE STRATUM AS INDICATED ON THE DRAWINGS. STOCKPILE TOPSOIL AWAY FROM EXCAVATIONS. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. DISPOSE OF SURPLUS TOPSOIL.

QUANTITIES

444 CY - TOPSOIL, SALVAGE

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

PROFESSIONAL ENGINEER
REG. NO
16882
JACE D.
CHRISTIANSEN
SOUTH DAKOTA
4/4/2025

Time Stamp: 4/2/2025 2:14 PM

CONSTRUCTION SET

EXISTING CONDITIONS AND REMOVALS

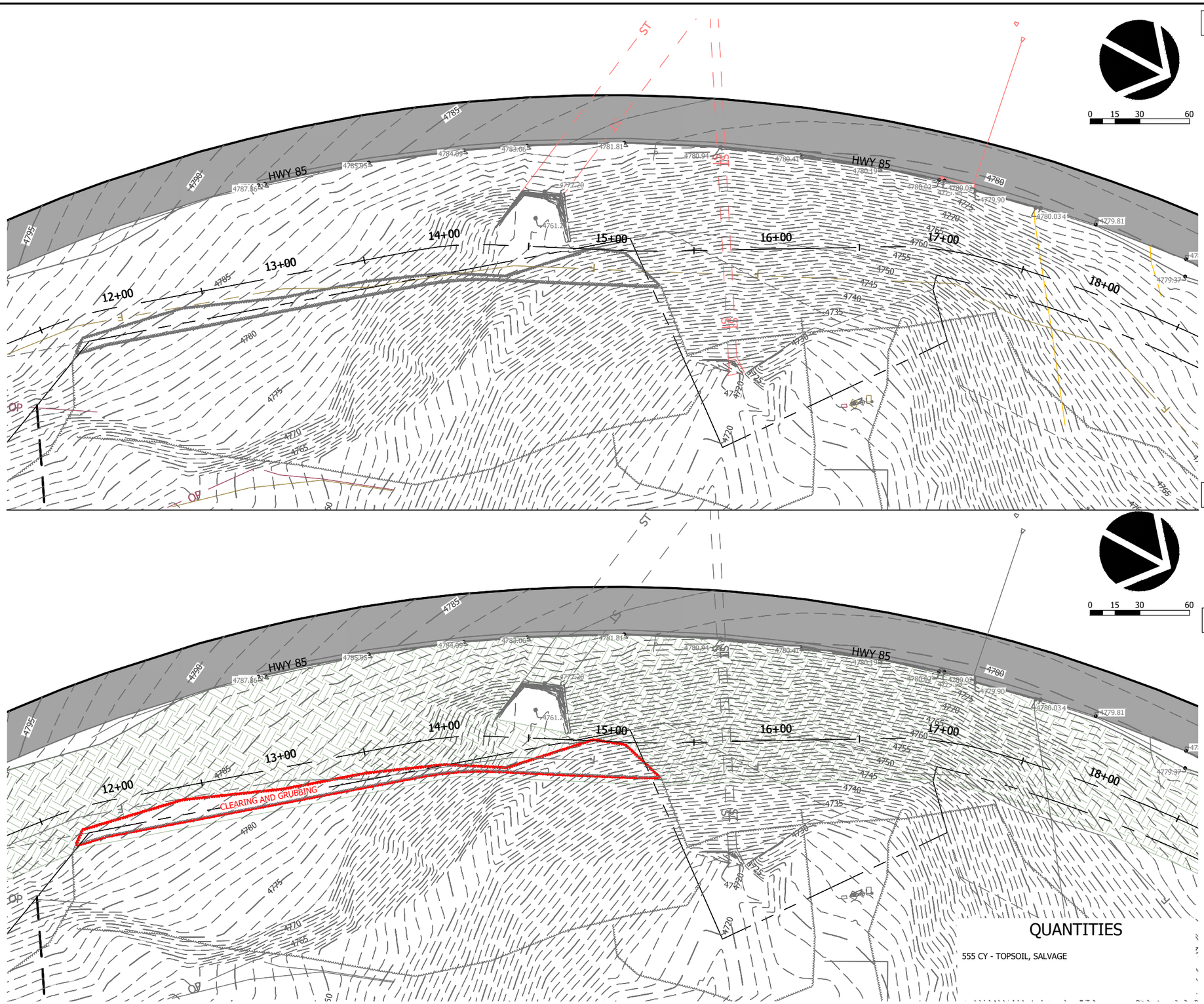
H-1.02

File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - H - Existing Conditions & Removals.dwg

Plotted By: JSC

Reviewed By: ###

File Location: S:\Projects\2024\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - H1 - Existing Conditions & Removals.dwg



LEGEND

- EXISTING TREE
- CENTERLINE
- PROPERTY LINE
- CONTOUR LINE
- NATURAL GAS
- UNDERGROUND COMMUNICATION
- UNDERGROUND POWER
- OVERHEAD POWER
- UNDERGROUND CABLE
- OVERHEAD CABLE
- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- CURB AND GUTTER
- POWER POLE, LIGHT POLE, GUY WIRE
- WATER VALVE, GAS VALVE, MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK
- VERIFY ELEVATION & LOCATION OF UTILITY
- REMOVE CURB & GUTTER
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALT PAVEMENT
- REMOVE GRAVEL
- STRIP & SALVAGE TOPSOIL
- SALVAGE TRAFFIC SIGN
- CONSTRUCTION PLATE MARKER
- CLEAR & GRUB TREE/ STUMP/ SHRUB
- CLEAR AND GRUB TREES

ABBREVIATIONS

VU - VERIFY UTILITY
CMP - CORREGATED METAL PIPE
RCP - REINFORCED CONCRETE PIPE
FFE - FINISHED FLOOR ELEVATION
INV - INVERT ELEVATION
FES - FLARED END SECTION
PVC - POLYVINYL CHLORIDE

NOTES

1. REFERENCE GENERAL REQUIREMENTS FOR DESCRIPTION OF WORK BY OTHERS. COORDINATE EFFORTS WITH UTILITY OWNERS.
2. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES. EXPOSE, LOCATE, AND RECORD ELEVATIONS OF ALL FACILITIES, WHETHER INDICATED OR NOT. NOTIFY ENGINEER AND UTILITY OWNER WHERE CONFLICTS ARE DISCOVERED. COORDINATE SCHEDULES WITH UTILITY OWNER AND ALLOW AMPLE TIME TO ACCESS SITE AND ADJUST FACILITIES.
3. VERIFY THE LOCATION AND INVERT ELEVATION AT POINTS OF CONNECTION OF GRAVITY SEWER AND WATER SERVICE FACILITIES. REPORT DISCREPANCIES TO THE ENGINEER.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES AS NECESSARY.
5. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER OF DAMAGE.
6. PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.
7. INSTALL EROSION CONTROL DEVICES PRIOR TO START.
8. REVIEW EXISTING STORM WATER RUNNOFF PATTERNS AND FACILITIES. PROVIDE BARRIERS TO PREVENT FLOODING FROM HEAVY RAINS. PROTECT SANITARY SEWER FACILITIES FROM INFLOW.
9. PROTECT EXISTING FACILITIES OTHERWISE INDICATED TO BE REMOVED OR ALTERED. REPAIR DAMAGE TO EXISTING FACILITIES.
10. STRIP SITE OF TOPSOIL AND OTHER SURFACE STRATUM AS INDICATED ON THE DRAWINGS. STOCKPILE TOPSOIL AWAY FROM EXCAVATIONS. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. DISPOSE OF SURPLUS TOPSOIL.

QUANTITIES

555 CY - TOPSOIL, SALVAGE

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

PROFESSIONAL ENGINEER
REG. NO
16882
JACE D.
CHRISTIANSEN
SOUTH DAKOTA
4/2/2025

Time Stamp: 4/2/2025 2:14 PM

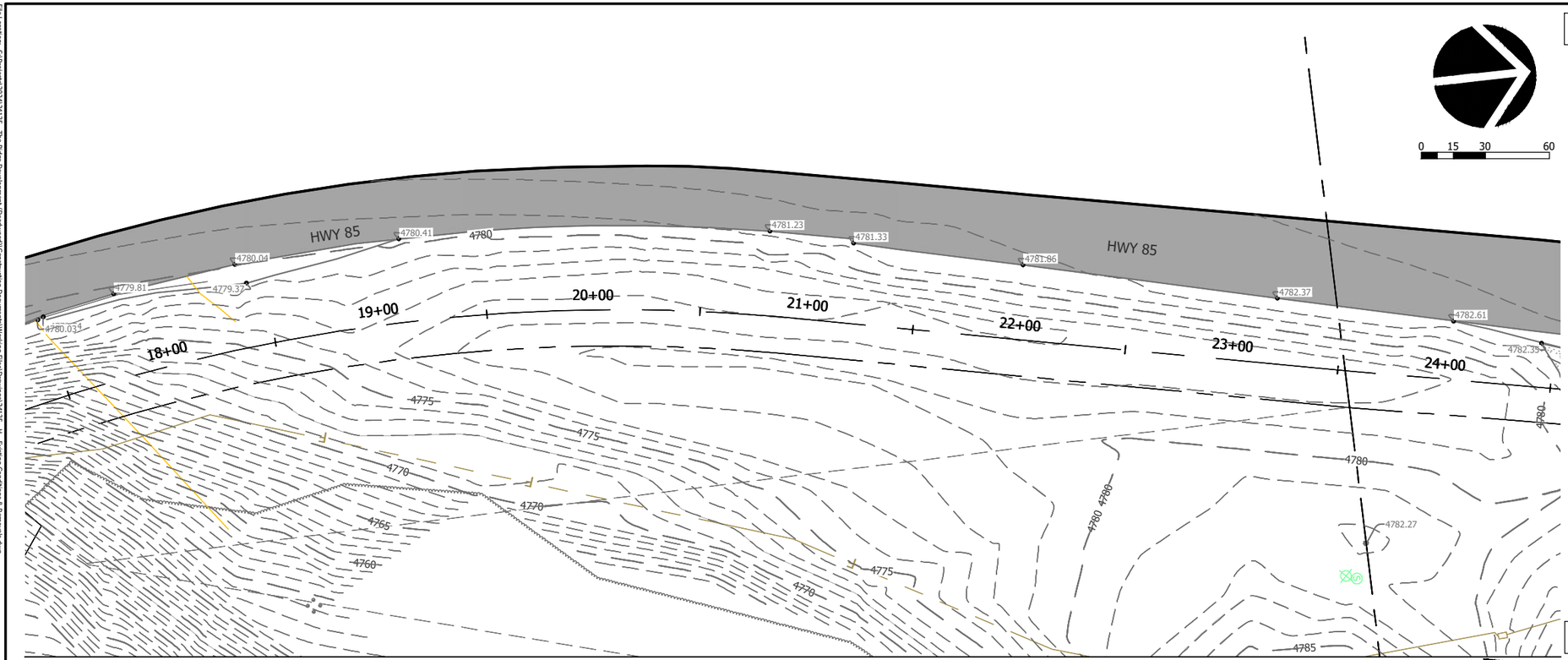
CONSTRUCTION SET

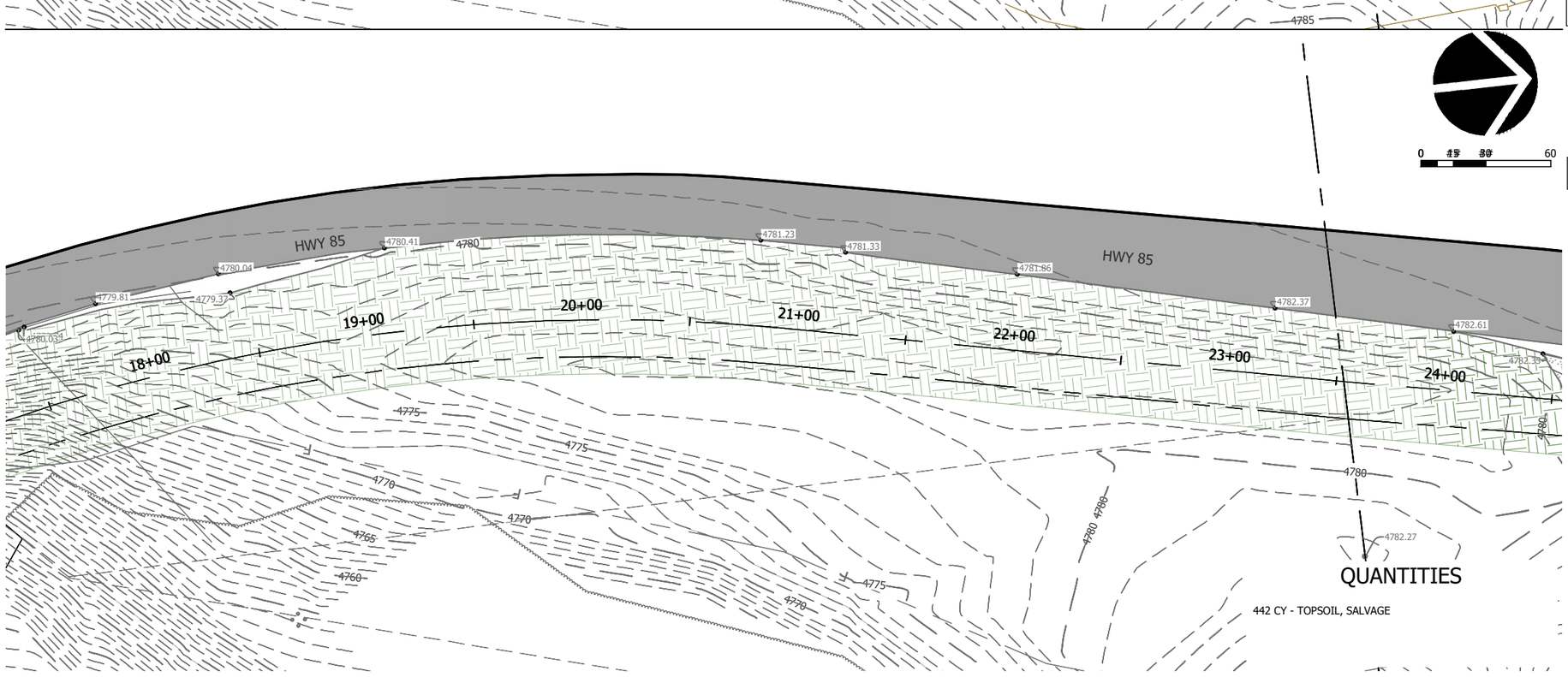
EXISTING CONDITIONS AND REMOVALS

H-1.03

Started By: JDC
Reviewed By: ###

File Location: S:\Projects\2024\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - H - Existing Conditions & Removals.dwg





Started By: JSC
Reviewed By: ###

LEGEND

- EXISTING TREE
- CENTERLINE
- PROPERTY LINE
- 1233 CONTOUR LINE
- G NATURAL GAS
- UT UNDERGROUND COMMUNICATION
- UP UNDERGROUND POWER
- OP OVERHEAD POWER
- UTV UNDERGROUND CABLE
- OTV OVERHEAD CABLE
- S SANITARY SEWER
- CMP STORM SEWER
- W WATER MAIN
- CURB AND GUTTER
- POWER POLE, LIGHT POLE, GUY WIRE
- WATER VALVE, GAS VALVE, MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK
- VU VERIFY ELEVATION & LOCATION OF UTILITY
- REMOVE CURB & GUTTER
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALT PAVEMENT
- REMOVE GRAVEL
- STRIP & SALVAGE TOPSOIL
- SALVAGE TRAFFIC SIGN
- CONSTRUCTION PLATE MARKER
- CLEAR & GRUB TREE/ STUMP/ SHRUB
- CLEAR AND GRUB TREES

ABBREVIATIONS

VU - VERIFY UTILITY
CMP - CORREGATED METAL PIPE
RCP - REINFORCED CONCRETE PIPE
FFE - FINISHED FLOOR ELEVATION
INV - INVERT ELEVATION
FES - FLARED END SECTION
PVC - POLYVINYL CHLORIDE

NOTES

1. REFERENCE GENERAL REQUIREMENTS FOR DESCRIPTION OF WORK BY OTHERS. COORDINATE EFFORTS WITH UTILITY OWNERS.
2. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES. EXPOSE, LOCATE, AND RECORD ELEVATIONS OF ALL FACILITIES, WHETHER INDICATED OR NOT. NOTIFY ENGINEER AND UTILITY OWNER WHERE CONFLICTS ARE DISCOVERED. COORDINATE SCHEDULES WITH UTILITY OWNER AND ALLOW AMPLE TIME TO ACCESS SITE AND ADJUST FACILITIES.
3. VERIFY THE LOCATION AND INVERT ELEVATION AT POINTS OF CONNECTION OF GRAVITY SEWER AND WATER SERVICE FACILITIES. REPORT DISCREPANCIES TO THE ENGINEER.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES AS NECESSARY.
5. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER OF DAMAGE.
6. PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.
7. INSTALL EROSION CONTROL DEVICES PRIOR TO START.
8. REVIEW EXISTING STORM WATER RUNNOFF PATTERNS AND FACILITIES. PROVIDE BARRIERS TO PREVENT FLOODING FROM HEAVY RAINS. PROTECT SANITARY SEWER FACILITIES FROM INFLOW.
9. PROTECT EXISTING FACILITIES OTHERWISE INDICATED TO BE REMOVED OR ALTERED. REPAIR DAMAGE TO EXISTING FACILITIES.
10. STRIP SITE OF TOPSOIL AND OTHER SURFACE STRATUM AS INDICATED ON THE DRAWINGS. STOCKPILE TOPSOIL AWAY FROM EXCAVATIONS. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. DISPOSE OF SURPLUS TOPSOIL.

QUANTITIES

442 CY - TOPSOIL, SALVAGE

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

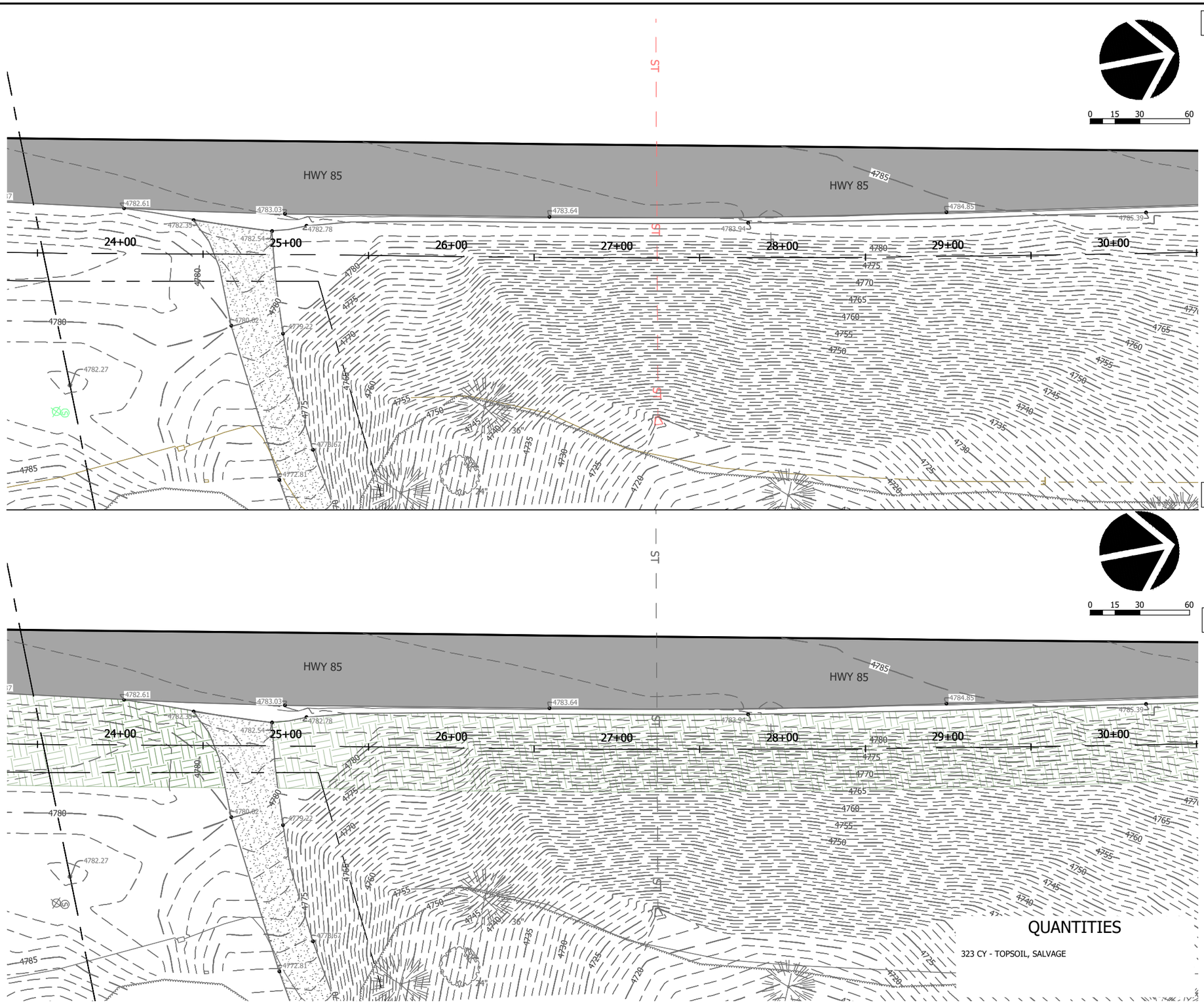
Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:15 PM

CONSTRUCTION SET

EXISTING CONDITIONS AND REMOVALS

H-1.04



LEGEND

- EXISTING TREE
- CENTERLINE
- PROPERTY LINE
- 1233 CONTOUR LINE
- NATURAL GAS
- UT UNDERGROUND COMMUNICATION
- UP UNDERGROUND POWER
- OP OVERHEAD POWER
- UTV UNDERGROUND CABLE
- OTV OVERHEAD CABLE
- S SANITARY SEWER
- CMP STORM SEWER
- W WATER MAIN
- CURB AND GUTTER
- POWER POLE, LIGHT POLE, GUY WIRE
- WATER VALVE, GAS VALVE, MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK
- VU VERIFY ELEVATION & LOCATION OF UTILITY
- REMOVE CURB & GUTTER
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALT PAVEMENT
- REMOVE GRAVEL
- STRIP & SALVAGE TOPSOIL
- SALVAGE TRAFFIC SIGN
- CONSTRUCTION PLATE MARKER
- CLEAR & GRUB TREE/ STUMP/ SHRUB
- CLEAR AND GRUB TREES

ABBREVIATIONS

VU - VERIFY UTILITY
CMP - CORREGATED METAL PIPE
RCP - REINFORCED CONCRETE PIPE
FFE - FINISHED FLOOR ELEVATION
INV - INVERT ELEVATION
FES - FLARED END SECTION
PVC - POLYVINYL CHLORIDE

NOTES

1. REFERENCE GENERAL REQUIREMENTS FOR DESCRIPTION OF WORK BY OTHERS. COORDINATE EFFORTS WITH UTILITY OWNERS.
2. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES. EXPOSE, LOCATE, AND RECORD ELEVATIONS OF ALL FACILITIES, WHETHER INDICATED OR NOT. NOTIFY ENGINEER AND UTILITY OWNER WHERE CONFLICTS ARE DISCOVERED. COORDINATE SCHEDULES WITH UTILITY OWNER AND ALLOW AMPLE TIME TO ACCESS SITE AND ADJUST FACILITIES.
3. VERIFY THE LOCATION AND INVERT ELEVATION AT POINTS OF CONNECTION OF GRAVITY SEWER AND WATER SERVICE FACILITIES. REPORT DISCREPANCIES TO THE ENGINEER.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES AS NECESSARY.
5. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER OF DAMAGE.
6. PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.
7. INSTALL EROSION CONTROL DEVICES PRIOR TO START.
8. REVIEW EXISTING STORM WATER RUNNOFF PATTERNS AND FACILITIES. PROVIDE BARRIERS TO PREVENT FLOODING FROM HEAVY RAINS. PROTECT SANITARY SEWER FACILITIES FROM INFLOW.
9. PROTECT EXISTING FACILITIES OTHERWISE INDICATED TO BE REMOVED OR ALTERED. REPAIR DAMAGE TO EXISTING FACILITIES.
10. STRIP SITE OF TOPSOIL AND OTHER SURFACE STRATUM AS INDICATED ON THE DRAWINGS. STOCKPILE TOPSOIL AWAY FROM EXCAVATIONS. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. DISPOSE OF SURPLUS TOPSOIL.

QUANTITIES

323 CY - TOPSOIL, SALVAGE

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

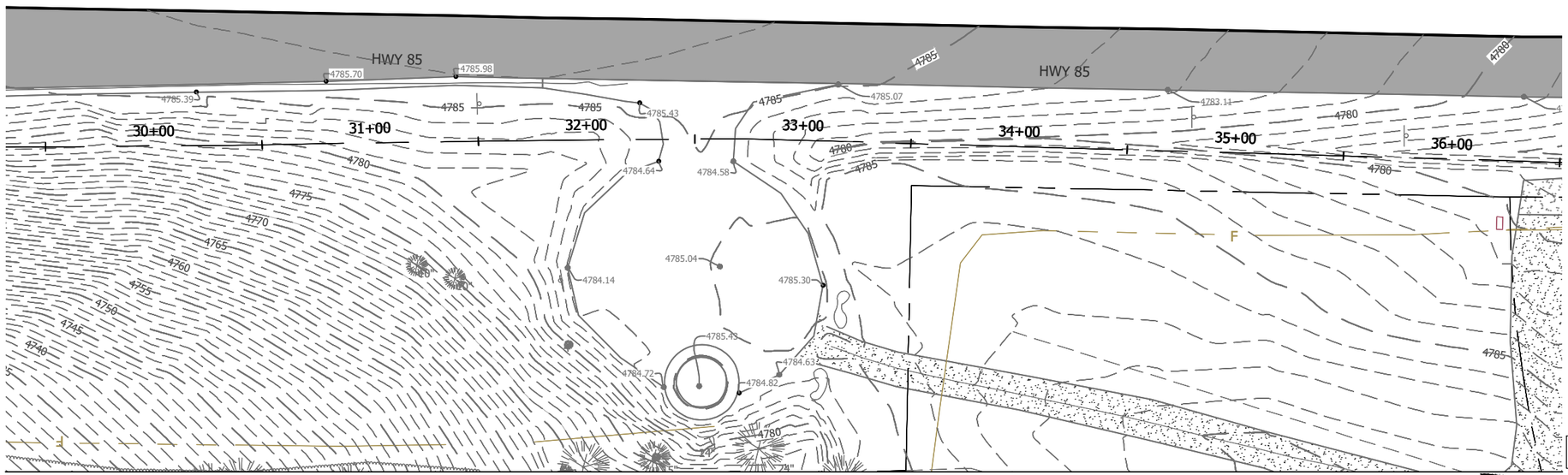
SEI PROJECT #: 24135

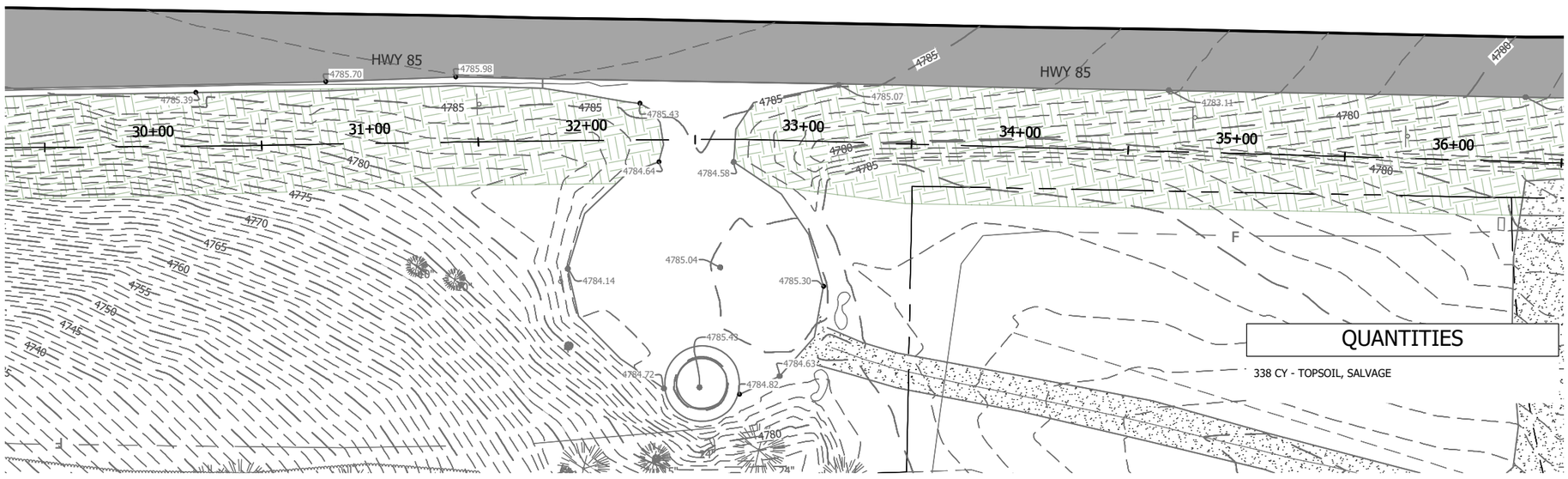
Time Stamp: 4/2/2025 2:15 PM

CONSTRUCTION SET

EXISTING CONDITIONS AND REMOVALS

H-1.05





0 15 30 60

LEGEND

- EXISTING TREE
- CENTERLINE
- PROPERTY LINE
- 1233 CONTOUR LINE
- G NATURAL GAS
- UT UNDERGROUND COMMUNICATION
- UP UNDERGROUND POWER
- OP OVERHEAD POWER
- UTV UNDERGROUND CABLE
- OTV OVERHEAD CABLE
- S SANITARY SEWER
- CMP STORM SEWER
- W WATER MAIN
- CURB AND GUTTER
- POWER POLE, LIGHT POLE, GUY WIRE
- WATER VALVE, GAS VALVE, MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK
- VU VERIFY ELEVATION & LOCATION OF UTILITY
- REMOVE CURB & GUTTER
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALT PAVEMENT
- REMOVE GRAVEL
- STRIP & SALVAGE TOPSOIL
- SALVAGE TRAFFIC SIGN
- CONSTRUCTION PLATE MARKER
- CLEAR & GRUB TREE/ STUMP/ SHRUB
- CLEAR AND GRUB TREES

ABBREVIATIONS

VU - VERIFY UTILITY
CMP - CORREGATED METAL PIPE
RCP - REINFORCED CONCRETE PIPE
FFE - FINISHED FLOOR ELEVATION
INV - INVERT ELEVATION
FES - FLARED END SECTION
PVC - POLYVINYL CHLORIDE

NOTES

1. REFERENCE GENERAL REQUIREMENTS FOR DESCRIPTION OF WORK BY OTHERS. COORDINATE EFFORTS WITH UTILITY OWNERS.
2. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES. EXPOSE, LOCATE, AND RECORD ELEVATIONS OF ALL FACILITIES, WHETHER INDICATED OR NOT. NOTIFY ENGINEER AND UTILITY OWNER WHERE CONFLICTS ARE DISCOVERED. COORDINATE SCHEDULES WITH UTILITY OWNER AND ALLOW AMPLE TIME TO ACCESS SITE AND ADJUST FACILITIES.
3. VERIFY THE LOCATION AND INVERT ELEVATION AT POINTS OF CONNECTION OF GRAVITY SEWER AND WATER SERVICE FACILITIES. REPORT DISCREPANCIES TO THE ENGINEER.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES AS NECESSARY.
5. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER OF DAMAGE.
6. PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.
7. INSTALL EROSION CONTROL DEVICES PRIOR TO START.
8. REVIEW EXISTING STORM WATER RUNNOFF PATTERNS AND FACILITIES. PROVIDE BARRIERS TO PREVENT FLOODING FROM HEAVY RAINS. PROTECT SANITARY SEWER FACILITIES FROM INFLOW.
9. PROTECT EXISTING FACILITIES OTHERWISE INDICATED TO BE REMOVED OR ALTERED. REPAIR DAMAGE TO EXISTING FACILITIES.
10. STRIP SITE OF TOPSOIL AND OTHER SURFACE STRATUM AS INDICATED ON THE DRAWINGS. STOCKPILE TOPSOIL AWAY FROM EXCAVATIONS. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. DISPOSE OF SURPLUS TOPSOIL.

QUANTITIES

338 CY - TOPSOIL, SALVAGE

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:15 PM

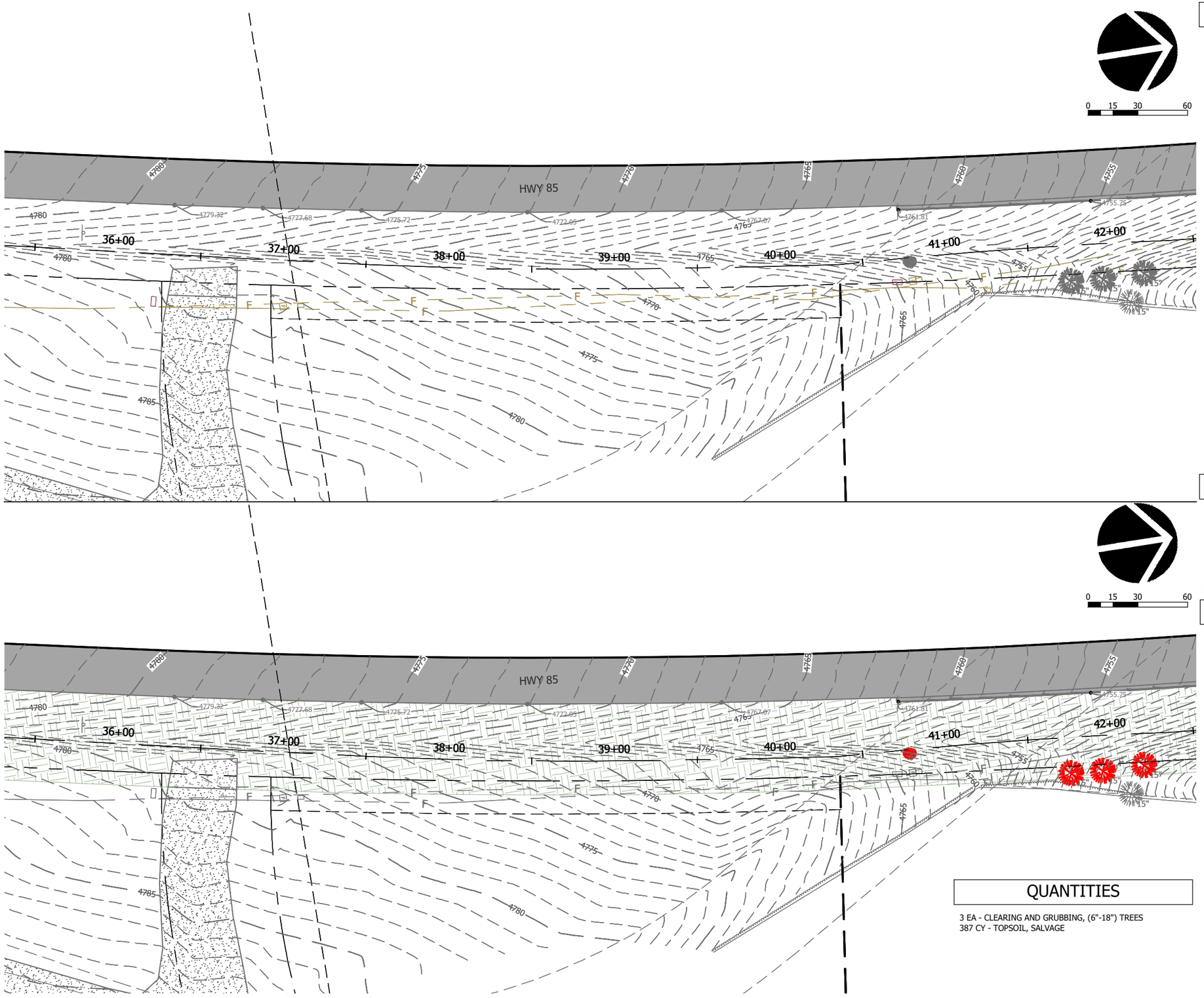
CONSTRUCTION SET

EXISTING CONDITIONS AND REMOVALS

H-1.06

File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - H - Existing Conditions & Removals.dwg

Created By: JSC
Reviewed By: ###



LEGEND

- EXISTING TREE
- CENTERLINE
- PROPERTY LINE
- CONTOUR LINE
- NATURAL GAS
- UNDERGROUND COMMUNICATION
- UNDERGROUND POWER
- OVERHEAD POWER
- UNDERGROUND CABLE
- OVERHEAD CABLE
- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- CURB AND GUTTER
- POWER POLE, LIGHT POLE, GUY WIRE
- WATER VALVE, GAS VALVE, MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK
- VERIFY ELEVATION & LOCATION OF UTILITY
- REMOVE CURB & GUTTER
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALT PAVEMENT
- REMOVE GRAVEL
- STRIP & SALVAGE TOPSOIL
- SALVAGE TRAFFIC SIGN
- CONSTRUCTION PLATE MARKER
- CLEAR & GRUB TREE/ STUMP/ SHRUB
- CLEAR AND GRUB TREES

ABBREVIATIONS

VU - VERIFY UTILITY
CMP - CORREGATED METAL PIPE
RCP - REINFORCED CONCRETE PIPE
FFE - FINISHED FLOOR ELEVATION
INV - INVERT ELEVATION
FES - FLARED END SECTION
PVC - POLYVINYL CHLORIDE

NOTES

1. REFERENCE GENERAL REQUIREMENTS FOR DESCRIPTION OF WORK BY OTHERS. COORDINATE EFFORTS WITH UTILITY OWNERS.
2. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES. EXPOSE, LOCATE, AND RECORD ELEVATIONS OF ALL FACILITIES, WHETHER INDICATED OR NOT. NOTIFY ENGINEER AND UTILITY OWNER WHERE CONFLICTS ARE DISCOVERED. COORDINATE SCHEDULES WITH UTILITY OWNER AND ALLOW AMPLE TIME TO ACCESS SITE AND ADJUST FACILITIES.
3. VERIFY THE LOCATION AND INVERT ELEVATION AT POINTS OF CONNECTION OF GRAVITY SEWER AND WATER SERVICE FACILITIES. REPORT DISCREPANCIES TO THE ENGINEER.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES AS NECESSARY.
5. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER OF DAMAGE.
6. PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.
7. INSTALL EROSION CONTROL DEVICES PRIOR TO START.
8. REVIEW EXISTING STORM WATER RUNNOFF PATTERNS AND FACILITIES. PROVIDE BARRIERS TO PREVENT FLOODING FROM HEAVY RAINS. PROTECT SANITARY SEWER FACILITIES FROM INFLOW.
9. PROTECT EXISTING FACILITIES OTHERWISE INDICATED TO BE REMOVED OR ALTERED. REPAIR DAMAGE TO EXISTING FACILITIES.
10. STRIP SITE OF TOPSOIL AND OTHER SURFACE STRATUM AS INDICATED ON THE DRAWINGS. STOCKPILE TOPSOIL AWAY FROM EXCAVATIONS. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. DISPOSE OF SURPLUS TOPSOIL.

QUANTITIES

3 EA - CLEARING AND GRUBBING, (6"-18") TREES
387 CY - TOPSOIL, SALVAGE

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

PROFESSIONAL ENGINEER
REG. NO
16882
JACE D.
CHRISTIANSEN
SOUTH DAKOTA
4/4/2025

Time Stamp: 4/2/2025 2:16 PM

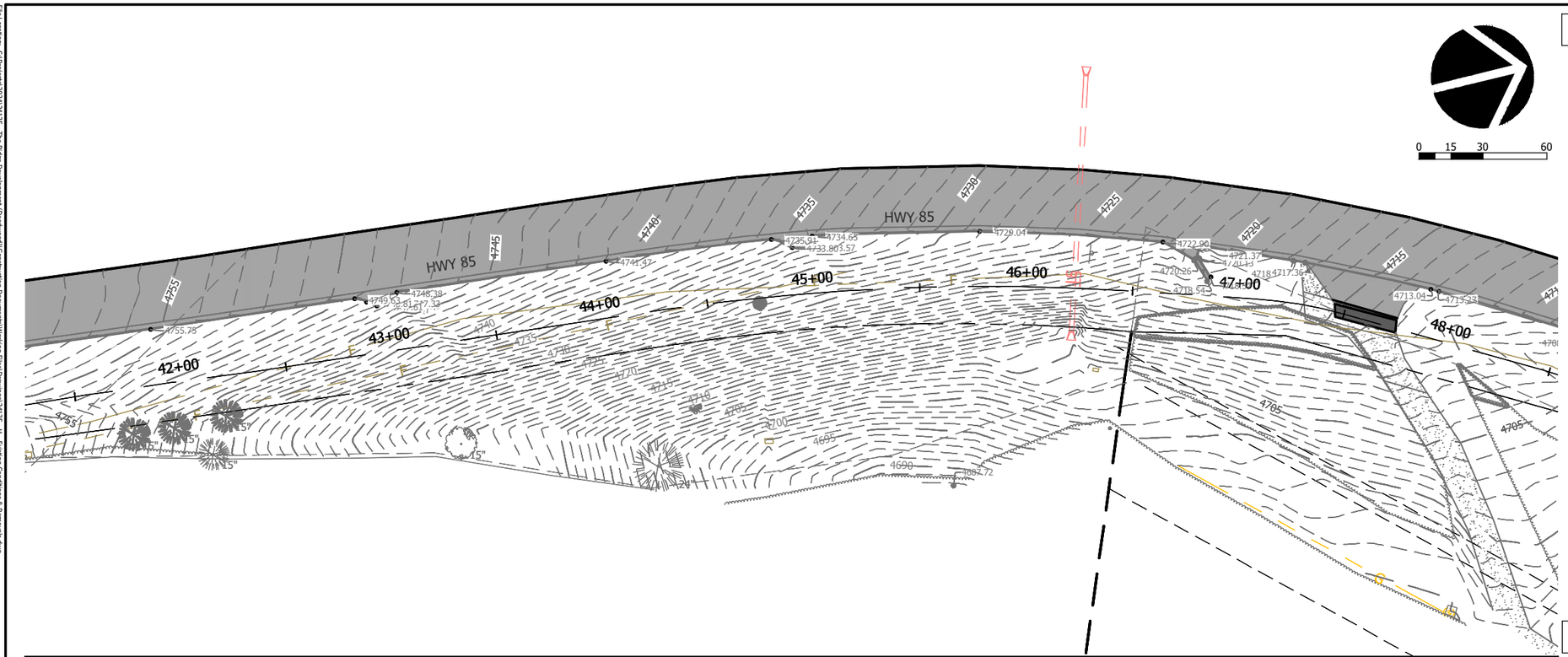
CONSTRUCTION SET

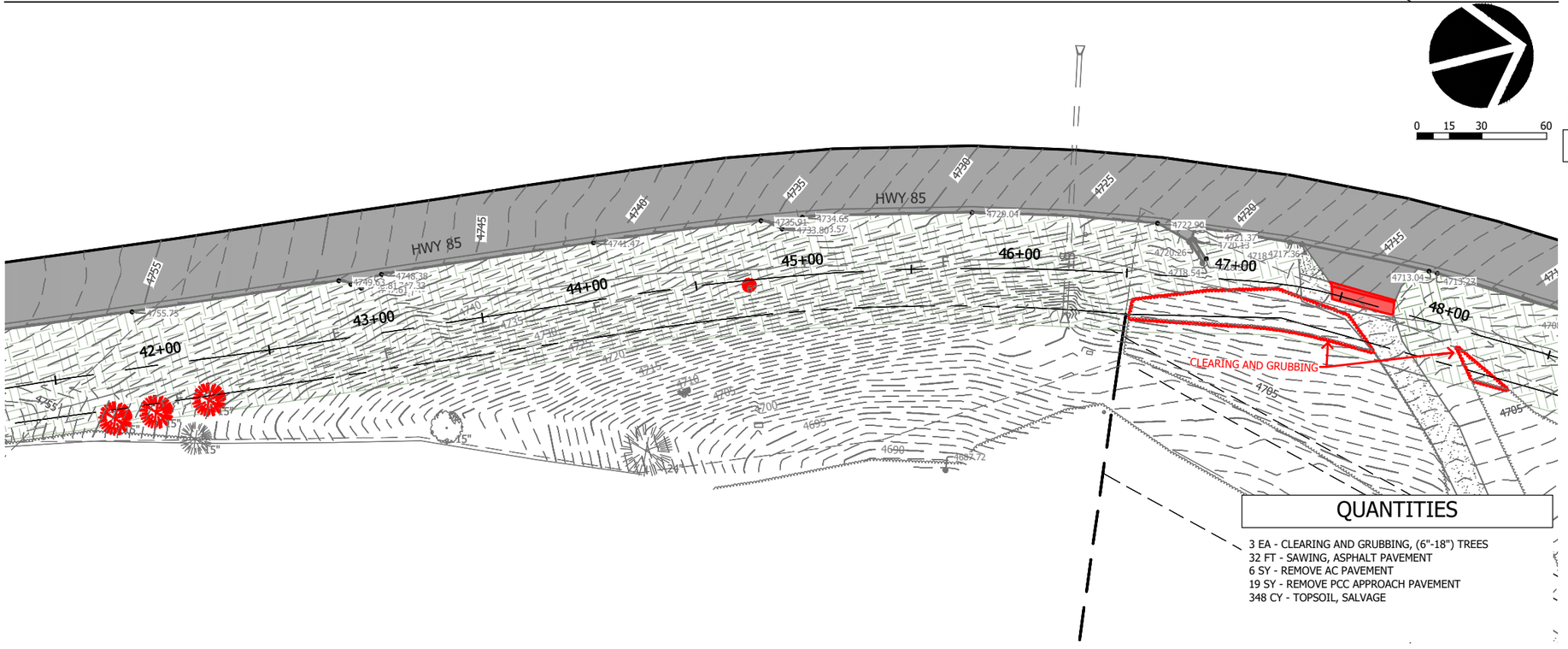
EXISTING CONDITIONS AND REMOVALS

H-1.07

File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - H - Existing Conditions & Removals.dwg

Created By: JSC
Reviewed By: ###





LEGEND

- EXISTING TREE
- CENTERLINE
- PROPERTY LINE
- 1233 CONTOUR LINE
- G NATURAL GAS
- UT UNDERGROUND COMMUNICATION
- UP UNDERGROUND POWER
- OP OVERHEAD POWER
- UTV UNDERGROUND CABLE
- OTV OVERHEAD CABLE
- S SANITARY SEWER
- CMP STORM SEWER
- W WATER MAIN
- CURB AND GUTTER
- POWER POLE, LIGHT POLE, GUY WIRE
- WATER VALVE, GAS VALVE, MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK
- VU VERIFY ELEVATION & LOCATION OF UTILITY
- REMOVE CURB & GUTTER
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALT PAVEMENT
- REMOVE GRAVEL
- STRIP & SALVAGE TOPSOIL
- SALVAGE TRAFFIC SIGN
- CONSTRUCTION PLATE MARKER
- CLEAR & GRUB TREE/ STUMP/ SHRUB
- CLEAR AND GRUB TREES

ABBREVIATIONS

VU - VERIFY UTILITY
CMP - CORREGATED METAL PIPE
RCP - REINFORCED CONCRETE PIPE
FFE - FINISHED FLOOR ELEVATION
INV - INVERT ELEVATION
FES - FLARED END SECTION
PVC - POLYVINYL CHLORIDE

NOTES

1. REFERENCE GENERAL REQUIREMENTS FOR DESCRIPTION OF WORK BY OTHERS. COORDINATE EFFORTS WITH UTILITY OWNERS.
2. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES. EXPOSE, LOCATE, AND RECORD ELEVATIONS OF ALL FACILITIES, WHETHER INDICATED OR NOT. NOTIFY ENGINEER AND UTILITY OWNER WHERE CONFLICTS ARE DISCOVERED. COORDINATE SCHEDULES WITH UTILITY OWNER AND ALLOW AMPLE TIME TO ACCESS SITE AND ADJUST FACILITIES.
3. VERIFY THE LOCATION AND INVERT ELEVATION AT POINTS OF CONNECTION OF GRAVITY SEWER AND WATER SERVICE FACILITIES. REPORT DISCREPANCIES TO THE ENGINEER.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES AS NECESSARY.
5. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER OF DAMAGE.
6. PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.
7. INSTALL EROSION CONTROL DEVICES PRIOR TO START.
8. REVIEW EXISTING STORM WATER RUNNOFF PATTERNS AND FACILITIES. PROVIDE BARRIERS TO PREVENT FLOODING FROM HEAVY RAINS. PROTECT SANITARY SEWER FACILITIES FROM INFLOW.
9. PROTECT EXISTING FACILITIES OTHERWISE INDICATED TO BE REMOVED OR ALTERED. REPAIR DAMAGE TO EXISTING FACILITIES.
10. STRIP SITE OF TOPSOIL AND OTHER SURFACE STRATUM AS INDICATED ON THE DRAWINGS. STOCKPILE TOPSOIL AWAY FROM EXCAVATIONS. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. DISPOSE OF SURPLUS TOPSOIL.

QUANTITIES

3 EA - CLEARING AND GRUBBING, (6"-18") TREES
32 FT - SAWING, ASPHALT PAVEMENT
6 SY - REMOVE AC PAVEMENT
19 SY - REMOVE PCC APPROACH PAVEMENT
348 CY - TOPSOIL, SALVAGE

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA

Time Stamp: 4/2/2025 2:16 PM

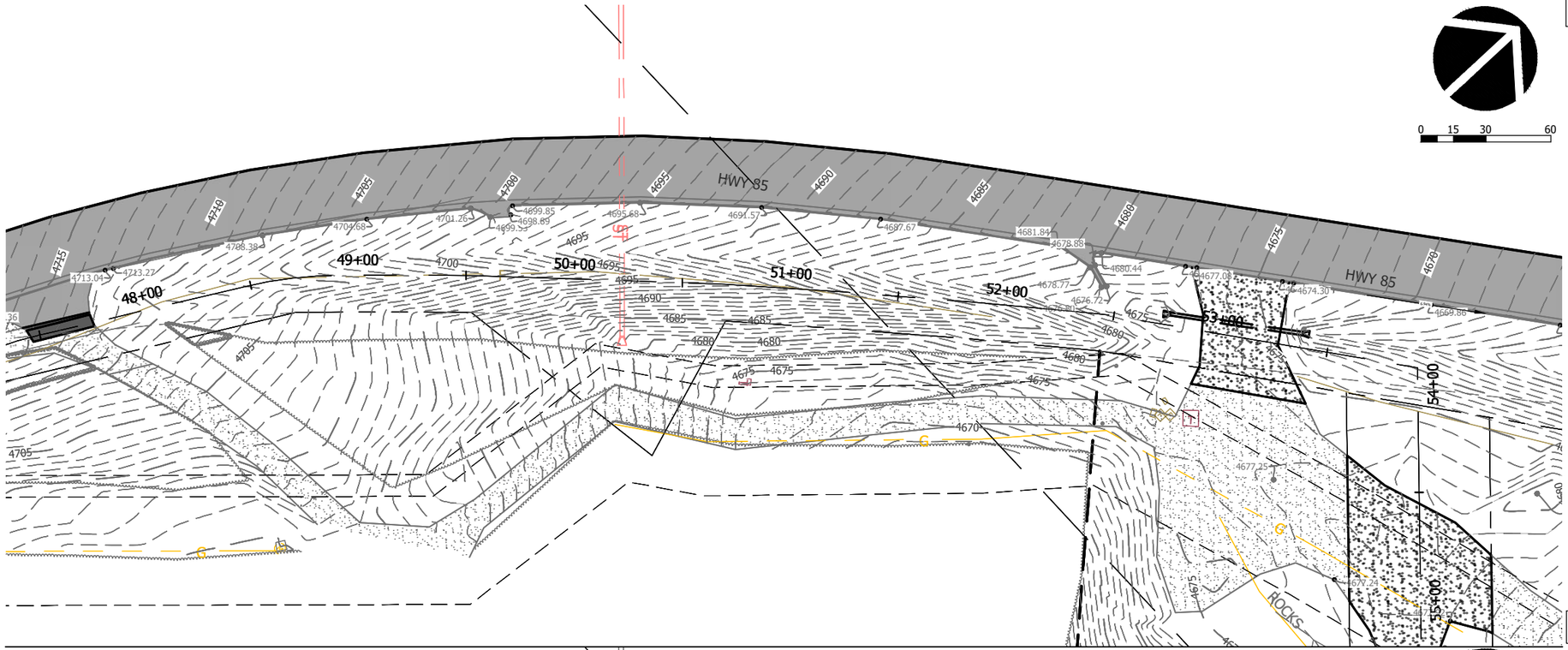
CONSTRUCTION SET

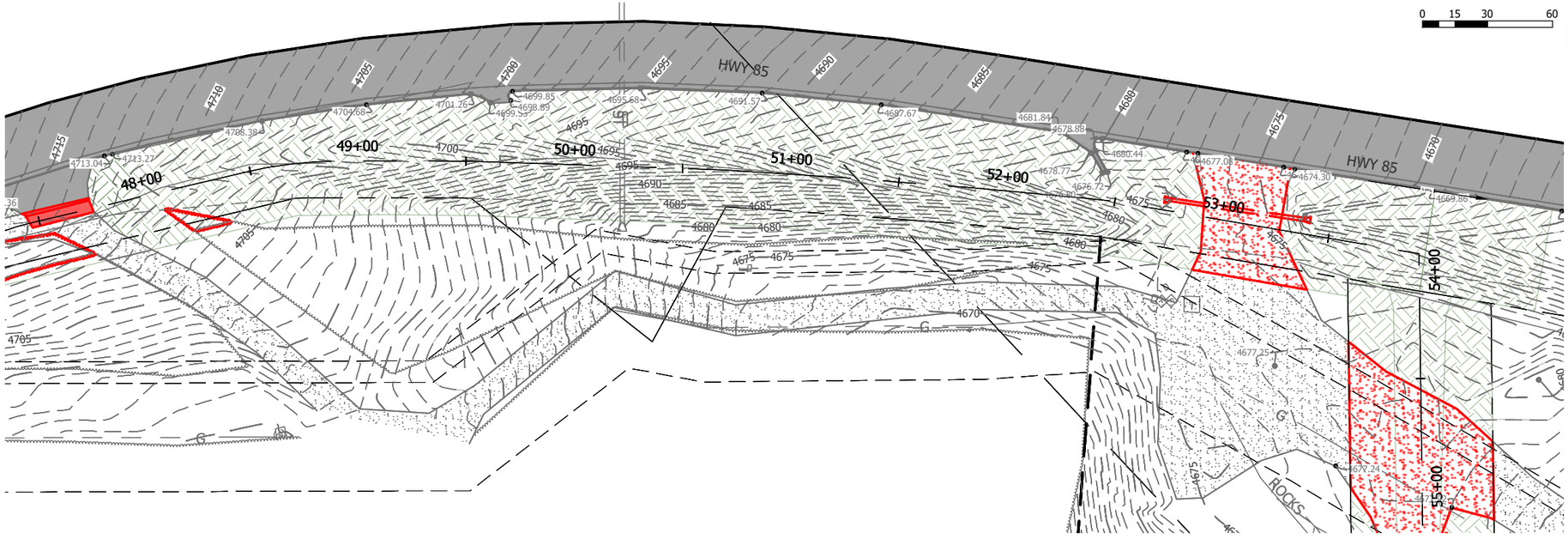
EXISTING CONDITIONS AND REMOVALS

H-1.08

File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - H - Existing Conditions & Removals.dwg

Updated by: ###
Reviewed by: ###





LEGEND

- EXISTING TREE
- CENTERLINE
- PROPERTY LINE
- 1233 CONTOUR LINE
- G NATURAL GAS
- UT UNDERGROUND COMMUNICATION
- UP UNDERGROUND POWER
- OP OVERHEAD POWER
- UTV UNDERGROUND CABLE
- OTV OVERHEAD CABLE
- S SANITARY SEWER
- CMP STORM SEWER
- W WATER MAIN
- CURB AND GUTTER
- POWER POLE, LIGHT POLE, GUY WIRE
- WATER VALVE, GAS VALVE, MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK
- VU VERIFY ELEVATION & LOCATION OF UTILITY
- REMOVE CURB & GUTTER
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALT PAVEMENT
- REMOVE GRAVEL
- STRIP & SALVAGE TOPSOIL
- SALVAGE TRAFFIC SIGN
- CONSTRUCTION PLATE MARKER
- CLEAR & GRUB TREE/ STUMP/ SHRUB
- CLEAR AND GRUB TREES

ABBREVIATIONS

VU - VERIFY UTILITY
CMP - CORREGATED METAL PIPE
RCP - REINFORCED CONCRETE PIPE
FFE - FINISHED FLOOR ELEVATION
INV - INVERT ELEVATION
FES - FLARED END SECTION
PVC - POLYVINYL CHLORIDE

QUANTITIES

395 CY - TOPSOIL, SALVAGE
248 SY - REMOVE GRAVEL SURFACING

NOTES

1. REFERENCE GENERAL REQUIREMENTS FOR DESCRIPTION OF WORK BY OTHERS. COORDINATE EFFORTS WITH UTILITY OWNERS.
2. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES. EXPOSE, LOCATE, AND RECORD ELEVATIONS OF ALL FACILITIES, WHETHER INDICATED OR NOT. NOTIFY ENGINEER AND UTILITY OWNER WHERE CONFLICTS ARE DISCOVERED. COORDINATE SCHEDULES WITH UTILITY OWNER AND ALLOW AMPLE TIME TO ACCESS SITE AND ADJUST FACILITIES.
3. VERIFY THE LOCATION AND INVERT ELEVATION AT POINTS OF CONNECTION OF GRAVITY SEWER AND WATER SERVICE FACILITIES. REPORT DISCREPANCIES TO THE ENGINEER.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES AS NECESSARY.
5. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER OF DAMAGE.
6. PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.
7. INSTALL EROSION CONTROL DEVICES PRIOR TO START.
8. REVIEW EXISTING STORM WATER RUNNOFF PATTERNS AND FACILITIES. PROVIDE BARRIERS TO PREVENT FLOODING FROM HEAVY RAINS. PROTECT SANITARY SEWER FACILITIES FROM INFLOW.
9. PROTECT EXISTING FACILITIES OTHERWISE INDICATED TO BE REMOVED OR ALTERED. REPAIR DAMAGE TO EXISTING FACILITIES.
10. STRIP SITE OF TOPSOIL AND OTHER SURFACE STRATUM AS INDICATED ON THE DRAWINGS. STOCKPILE TOPSOIL AWAY FROM EXCAVATIONS. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. DISPOSE OF SURPLUS TOPSOIL.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

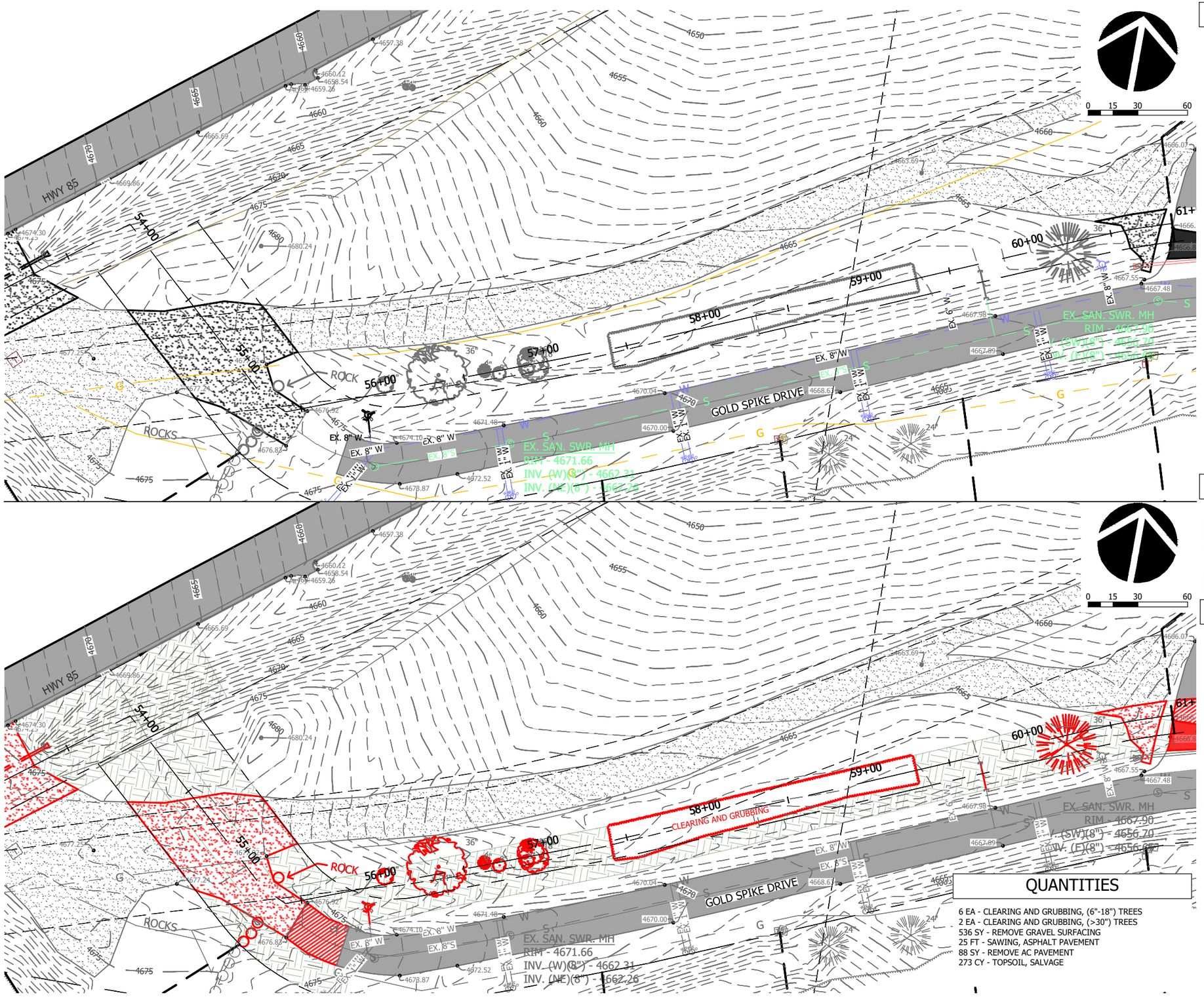
Time Stamp: 4/2/2025 2:16 PM

CONSTRUCTION SET

EXISTING CONDITIONS AND REMOVALS

H-1.09

Issued By: JDC
Reviewed By: ###



LEGEND

- EXISTING TREE
- CENTERLINE
- PROPERTY LINE
- 1233 CONTOUR LINE
- G NATURAL GAS
- UT UNDERGROUND COMMUNICATION
- UP UNDERGROUND POWER
- OP OVERHEAD POWER
- UTV UNDERGROUND CABLE
- OTV OVERHEAD CABLE
- S SANITARY SEWER
- CMP STORM SEWER
- W WATER MAIN
- CURB AND GUTTER
- POWER POLE, LIGHT POLE, GUY WIRE
- WATER VALVE, GAS VALVE, MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK
- VU VERIFY ELEVATION & LOCATION OF UTILITY
- REMOVE CURB & GUTTER
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALT PAVEMENT
- REMOVE GRAVEL
- STRIP & SALVAGE TOPSOIL
- SALVAGE TRAFFIC SIGN
- CONSTRUCTION PLATE MARKER
- CLEAR & GRUB TREE/ STUMP/ SHRUB
- CLEAR AND GRUB TREES

ABBREVIATIONS

VU - VERIFY UTILITY
CMP - CORREGATED METAL PIPE
RCP - REINFORCED CONCRETE PIPE
FFE - FINISHED FLOOR ELEVATION
INV - INVERT ELEVATION
FES - FLARED END SECTION
PVC - POLYVINYL CHLORIDE

NOTES

1. REFERENCE GENERAL REQUIREMENTS FOR DESCRIPTION OF WORK BY OTHERS. COORDINATE EFFORTS WITH UTILITY OWNERS.
2. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES. EXPOSE, LOCATE, AND RECORD ELEVATIONS OF ALL FACILITIES, WHETHER INDICATED OR NOT. NOTIFY ENGINEER AND UTILITY OWNER WHERE CONFLICTS ARE DISCOVERED. COORDINATE SCHEDULES WITH UTILITY OWNER AND ALLOW AMPLE TIME TO ACCESS SITE AND ADJUST FACILITIES.
3. VERIFY THE LOCATION AND INVERT ELEVATION AT POINTS OF CONNECTION OF GRAVITY SEWER AND WATER SERVICE FACILITIES. REPORT DISCREPANCIES TO THE ENGINEER.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES AS NECESSARY.
5. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER OF DAMAGE.
6. PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.
7. INSTALL EROSION CONTROL DEVICES PRIOR TO START.
8. REVIEW EXISTING STORM WATER RUNNOFF PATTERNS AND FACILITIES. PROVIDE BARRIERS TO PREVENT FLOODING FROM HEAVY RAINS. PROTECT SANITARY SEWER FACILITIES FROM INFLOW.
9. PROTECT EXISTING FACILITIES OTHERWISE INDICATED TO BE REMOVED OR ALTERED. REPAIR DAMAGE TO EXISTING FACILITIES.
10. STRIP SITE OF TOPSOIL AND OTHER SURFACE STRATUM AS INDICATED ON THE DRAWINGS. STOCKPILE TOPSOIL AWAY FROM EXCAVATIONS. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. DISPOSE OF SURPLUS TOPSOIL.

QUANTITIES

6 EA - CLEARING AND GRUBBING, (6"-18") TREES
2 EA - CLEARING AND GRUBBING, (>30") TREES
536 SY - REMOVE GRAVEL SURFACING
25 FT - SAWING, ASPHALT PAVEMENT
88 SY - REMOVE AC PAVEMENT
273 CY - TOPSOIL, SALVAGE

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/4/2025

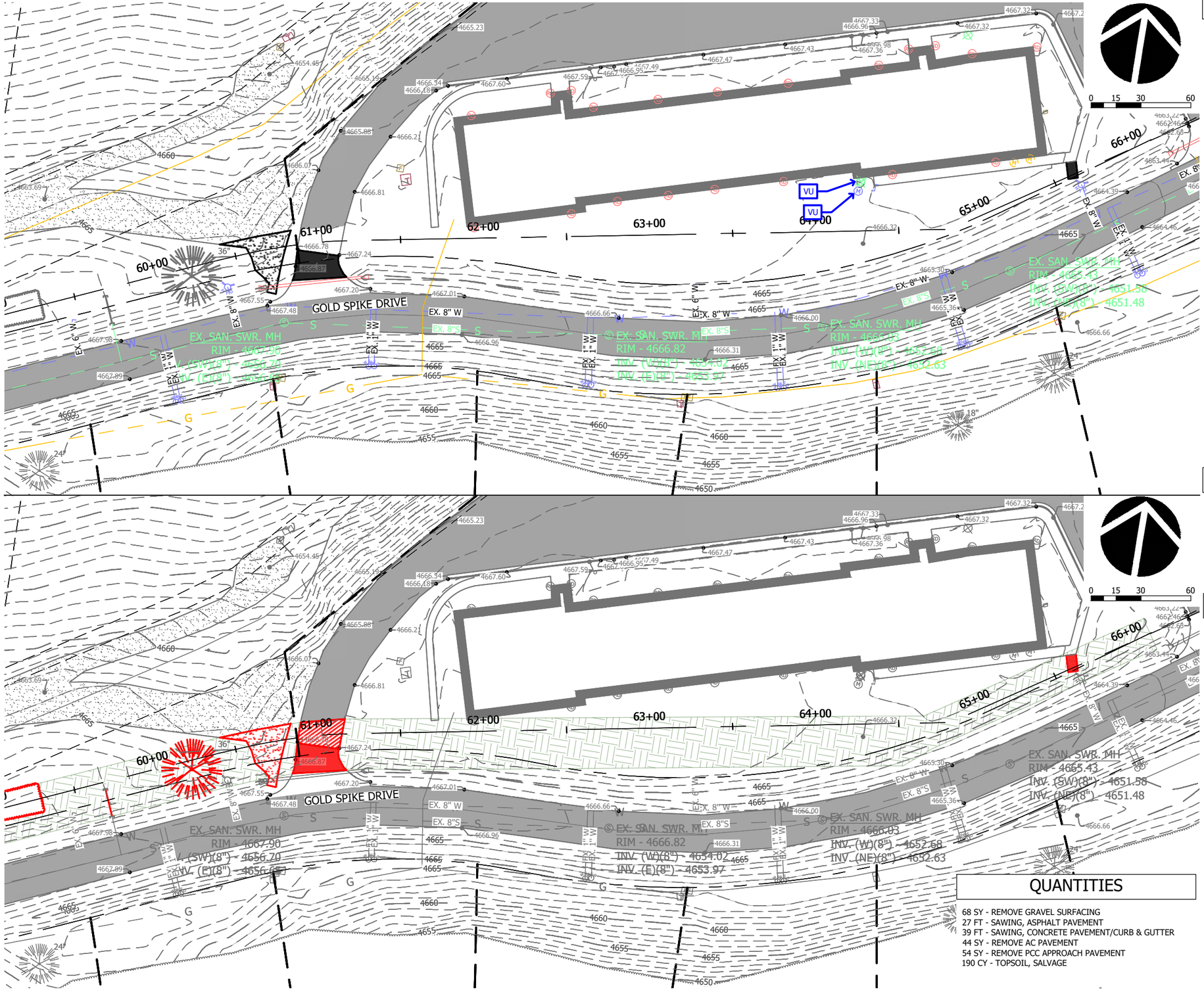
Time Stamp: 4/2/2025 2:16 PM

CONSTRUCTION SET

EXISTING CONDITIONS AND REMOVALS

H-1.10

File Location: S:\Projects\24\24135 - The Ridge Development\Deadwood\Construction Documents\Working Files\Drawings\24135 - H1 - Existing Conditions & Removals.dwg
Updated by: JDC
Reviewed by: ###



LEGEND

- EXISTING TREE
- CENTERLINE
- PROPERTY LINE
- 1233 CONTOUR LINE
- NATURAL GAS
- UT — UNDERGROUND COMMUNICATION
- UP — UNDERGROUND POWER
- OP — OVERHEAD POWER
- UTV — UNDERGROUND CABLE
- OTV — OVERHEAD CABLE
- S — SANITARY SEWER
- CMP — STORM SEWER
- W — WATER MAIN
- CURB AND GUTTER
- POWER POLE, LIGHT POLE, GUY WIRE
- WATER VALVE, GAS VALVE, MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK
- VU — VERIFY ELEVATION & LOCATION OF UTILITY
- REMOVE CURB & GUTTER
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALT PAVEMENT
- REMOVE GRAVEL
- STRIP & SALVAGE TOPSOIL
- SALVAGE TRAFFIC SIGN
- CONSTRUCTION PLATE MARKER
- CLEAR & GRUB TREE/ STUMP/ SHRUB
- CLEAR AND GRUB TREES

ABBREVIATIONS

VU - VERIFY UTILITY
CMP - CORREGATED METAL PIPE
RCP - REINFORCED CONCRETE PIPE
FFE - FINISHED FLOOR ELEVATION
INV - INVERT ELEVATION
FES - FLARED END SECTION
PVC - POLYVINYL CHLORIDE

NOTES

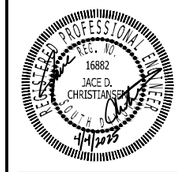
1. REFERENCE GENERAL REQUIREMENTS FOR DESCRIPTION OF WORK BY OTHERS. COORDINATE EFFORTS WITH UTILITY OWNERS.
2. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES. EXPOSE, LOCATE, AND RECORD ELEVATIONS OF ALL FACILITIES, WHETHER INDICATED OR NOT. NOTIFY ENGINEER AND UTILITY OWNER WHERE CONFLICTS ARE DISCOVERED. COORDINATE SCHEDULES WITH UTILITY OWNER AND ALLOW AMPLE TIME TO ACCESS SITE AND ADJUST FACILITIES.
3. VERIFY THE LOCATION AND INVERT ELEVATION AT POINTS OF CONNECTION OF GRAVITY SEWER AND WATER SERVICE FACILITIES. REPORT DISCREPANCIES TO THE ENGINEER.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES AS NECESSARY.
5. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER OF DAMAGE.
6. PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.
7. INSTALL EROSION CONTROL DEVICES PRIOR TO START.
8. REVIEW EXISTING STORM WATER RUNNOFF PATTERNS AND FACILITIES. PROVIDE BARRIERS TO PREVENT FLOODING FROM HEAVY RAINS. PROTECT SANITARY SEWER FACILITIES FROM INFLOW.
9. PROTECT EXISTING FACILITIES OTHERWISE INDICATED TO BE REMOVED OR ALTERED. REPAIR DAMAGE TO EXISTING FACILITIES.
10. STRIP SITE OF TOPSOIL AND OTHER SURFACE STRATUM AS INDICATED ON THE DRAWINGS. STOCKPILE TOPSOIL AWAY FROM EXCAVATIONS. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. DISPOSE OF SURPLUS TOPSOIL.

QUANTITIES

68 SY - REMOVE GRAVEL SURFACING
27 FT - SAWING, ASPHALT PAVEMENT
39 FT - SAWING, CONCRETE PAVEMENT/CURB & GUTTER
44 SY - REMOVE AC PAVEMENT
54 SY - REMOVE PCC APPROACH PAVEMENT
190 CY - TOPSOIL, SALVAGE

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135



Time Stamp: 4/2/2025 2:17 PM

CONSTRUCTION SET

EXISTING CONDITIONS AND REMOVALS

H-1.11

Checked by: JDC
Reviewed by: ###

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

PROFESSIONAL ENGINEER
REG. NO. 16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/1/2025

Time Stamp: 4/2/2025 2:34 PM

CONSTRUCTION SET

UTILITIES

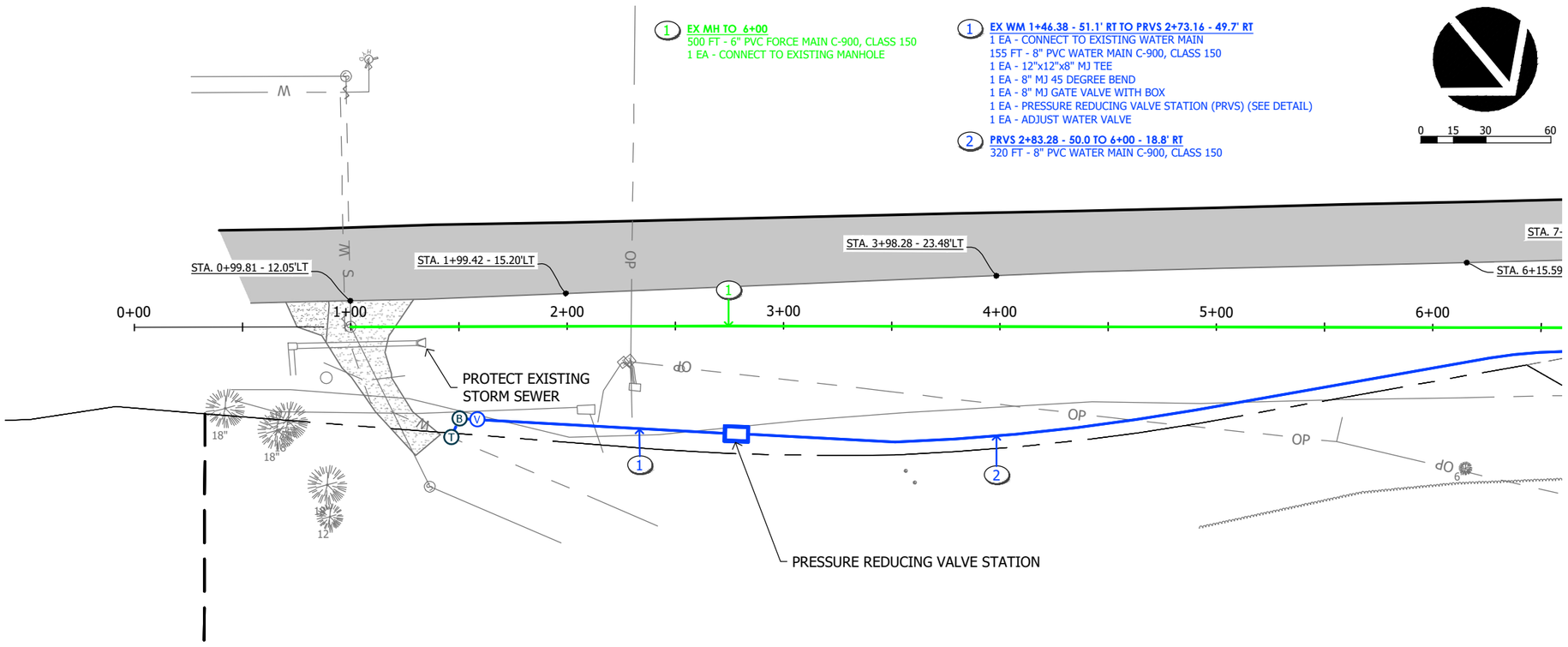
I-1.00

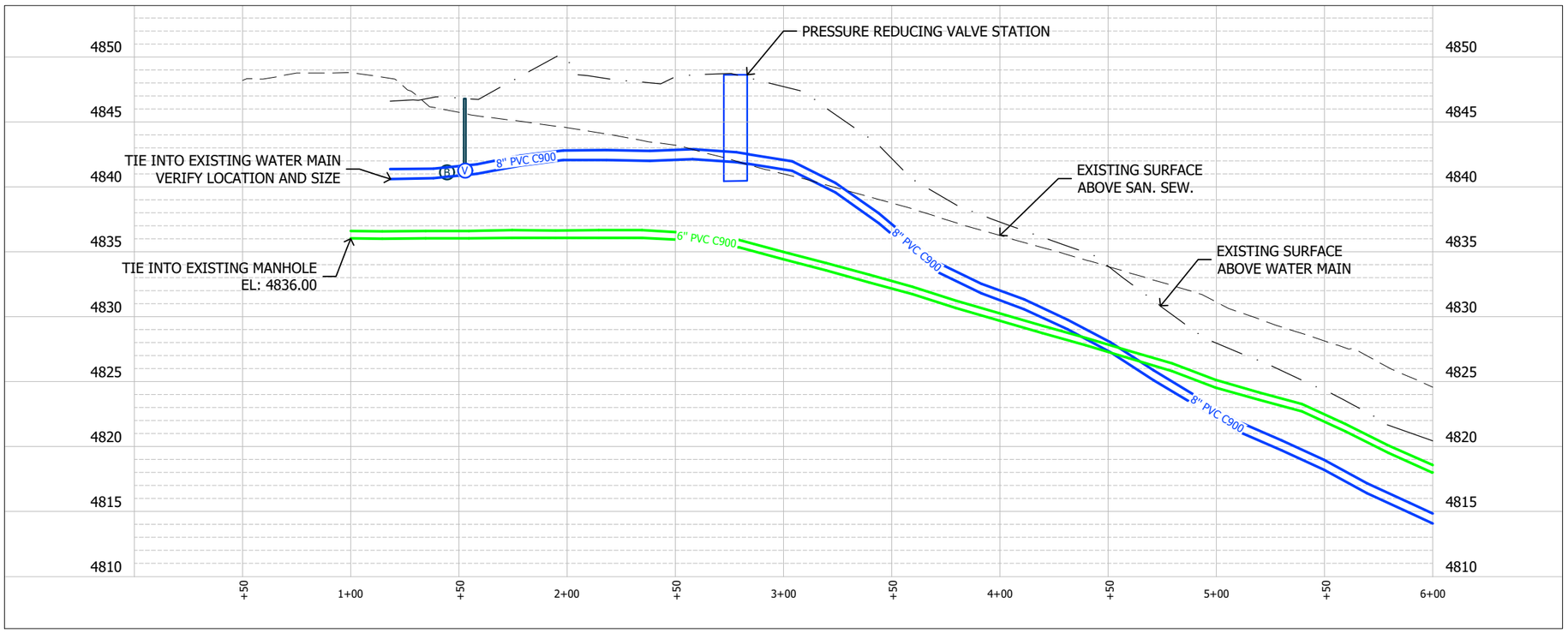
File Location: S:\Projects\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - Utilities.dwg
Drawing by: JDC
Reviewed by: ###

File Location: S:\Projects\25\24135 - The Ridge Development\Deadwood\Construction Documents\Working Files\Drawings\24135 - I - Utilities.dwg

Plotted by: JDC

Reviewed by: ###





LEGEND

- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET
CMP - CORRUGATED METAL PIPE
DI - DROP INLET
DBL - DOUBLE
GI - GRATED INLET
HYD - HYDRANT
INV - INVERT ELEVATION
JB - JUNCTION BOX
MH - MANHOLE
PE - POLYETHYLENE
PVC - POLYVINYL CHLORIDE
RCP - REINFORCED CONCRETE PIPE
RCPA - REINFORCED CONCRETE PIPE-ARCH
STRC - STRUCTURE
SWR - SEWER
TRP -TRIPLE

NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

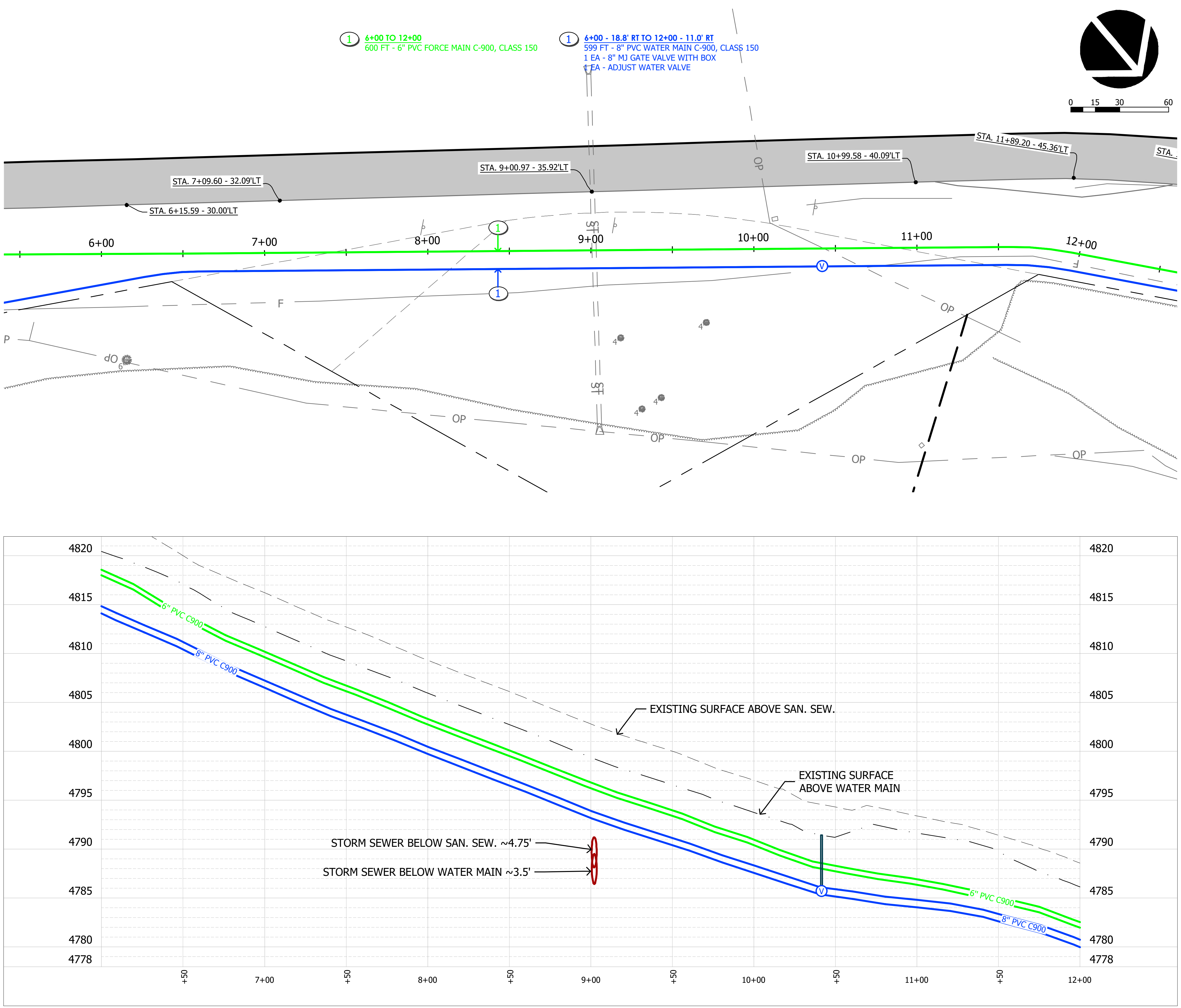
SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:34 PM

CONSTRUCTION SET

UTILITIES

I-1.01



LEGEND

- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- 8"S - PROPOSED SANITARY SEWER
- 8"W - PROPOSED WATER MAIN
- 8"ST - PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET
CMP - CORRUGATED METAL PIPE
DI - DROP INLET
DBL - DOUBLE
GI - GRATED INLET
HYD - HYDRANT
INV - INVERT ELEVATION
JB - JUNCTION BOX
MH - MANHOLE
PE - POLYETHYLENE
PVC - POLYVINYL CHLORIDE
RCP - REINFORCED CONCRETE PIPE
RCPA - REINFORCED CONCRETE PIPE-ARCH
STRC - STRUCTURE
SWR - SEWER
TRP -TRIPLE

NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER REG. NO. 16882 JACE D. CHRISTIANSEN SOUTH DAKOTA 4/1/2025

Time Stamp: 4/2/2025 2:34 PM

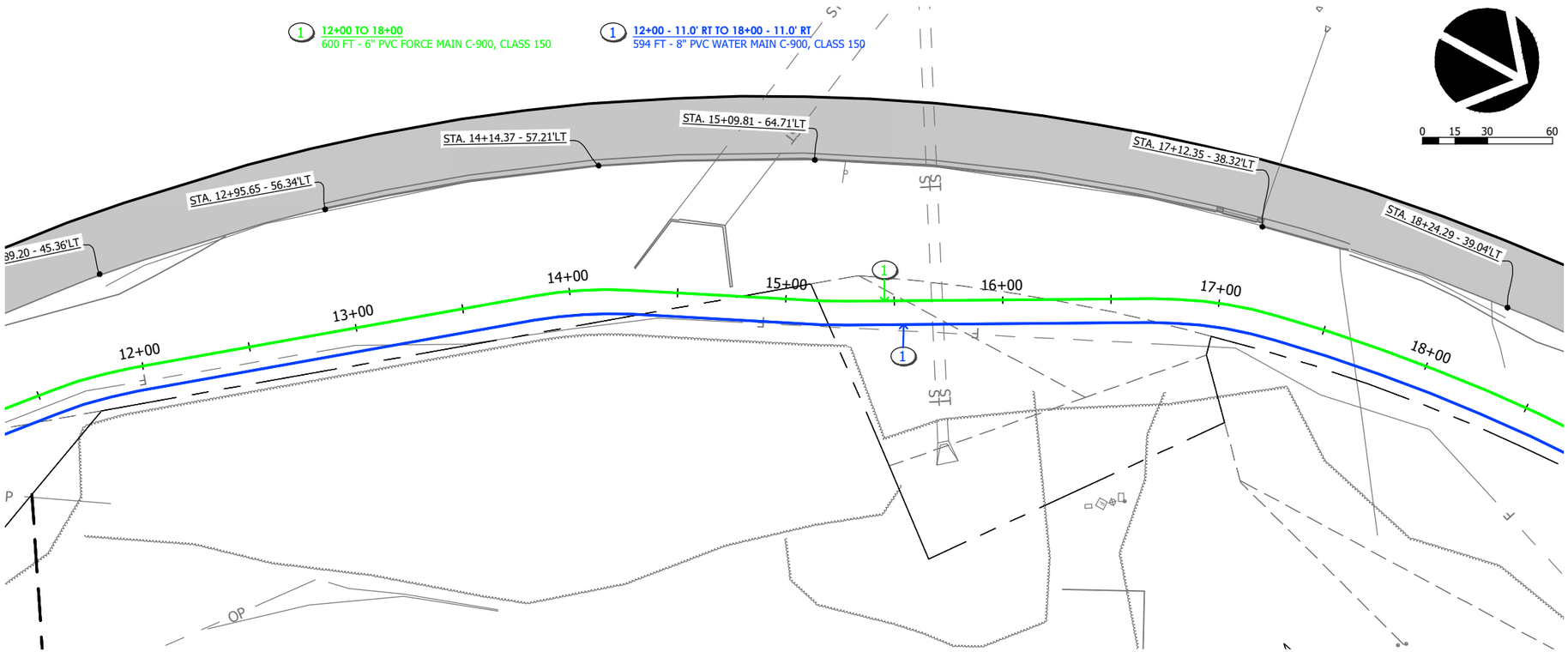
CONSTRUCTION SET

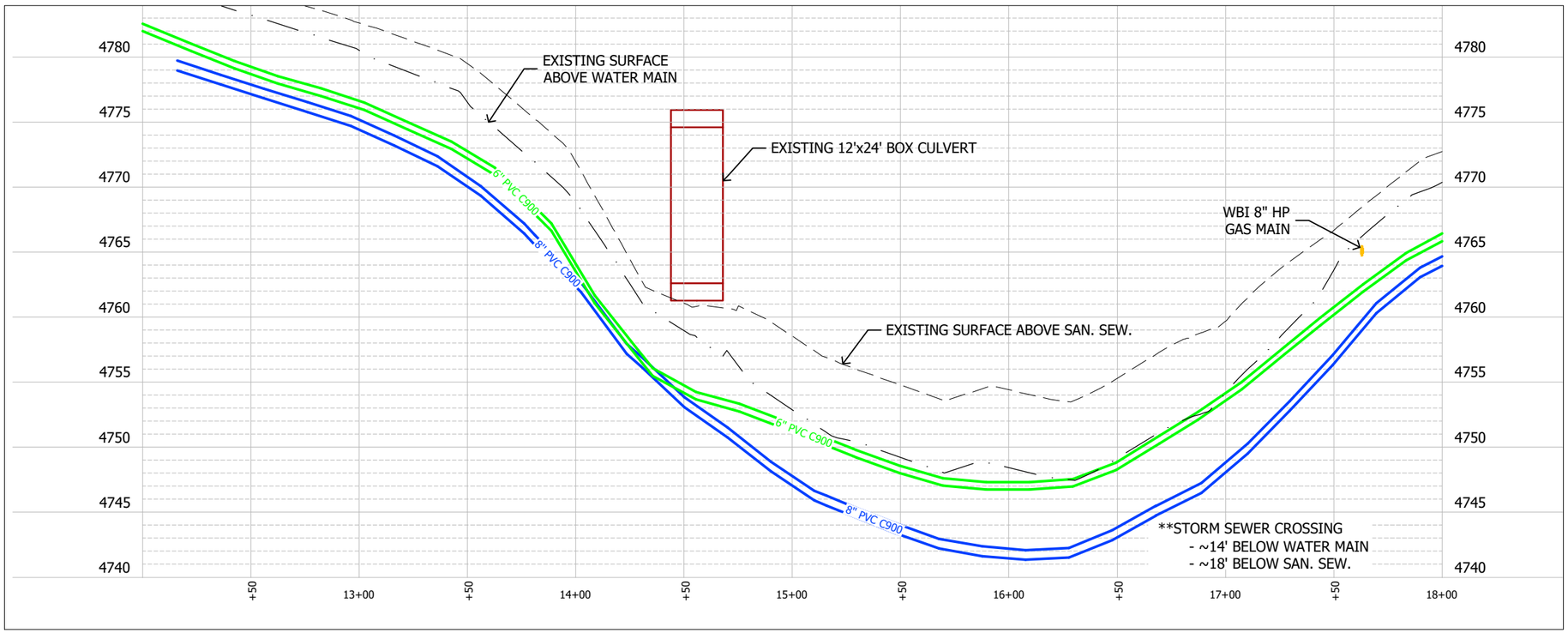
UTILITIES

I-1.02

File Location: S:\Projects\2024\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - I - Utilities.dwg
Drafted By: JDC
Reviewed By: ###

File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - 1 - Utilities.dwg





LEGEND

- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- 8"S - PROPOSED SANITARY SEWER
- 8"W - PROPOSED WATER MAIN
- 8"ST - PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET
CMP - CORRUGATED METAL PIPE
DI - DROP INLET
DBL - DOUBLE
GI - GRATED INLET
HYD - HYDRANT
INV - INVERT ELEVATION
JB - JUNCTION BOX
MH - MANHOLE
PE - POLYETHYLENE
PVC - POLYVINYL CHLORIDE
RCP - REINFORCED CONCRETE PIPE
RCPA - REINFORCED CONCRETE PIPE-ARCH
STRC - STRUCTURE
SWR - SEWER
TRP -TRIPLE

NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:34 PM

CONSTRUCTION SET

UTILITIES

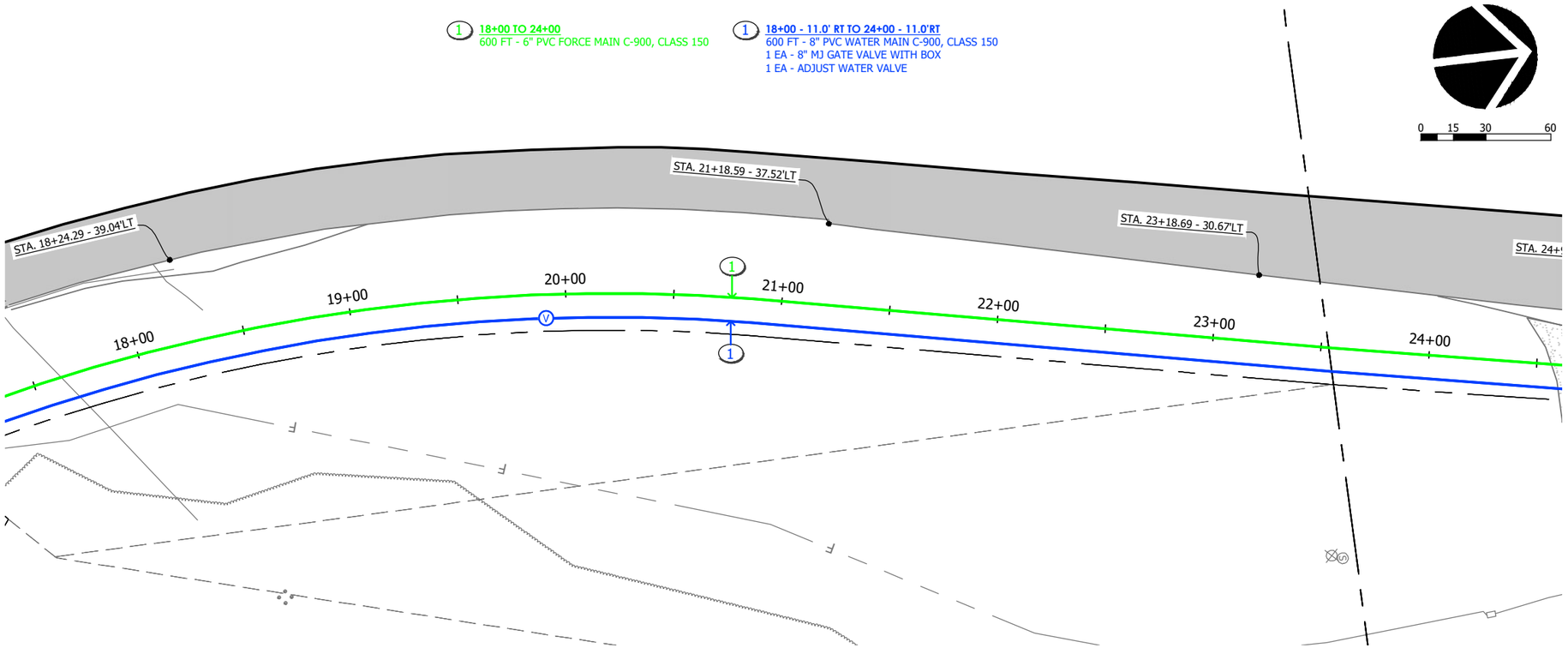
I-1.03

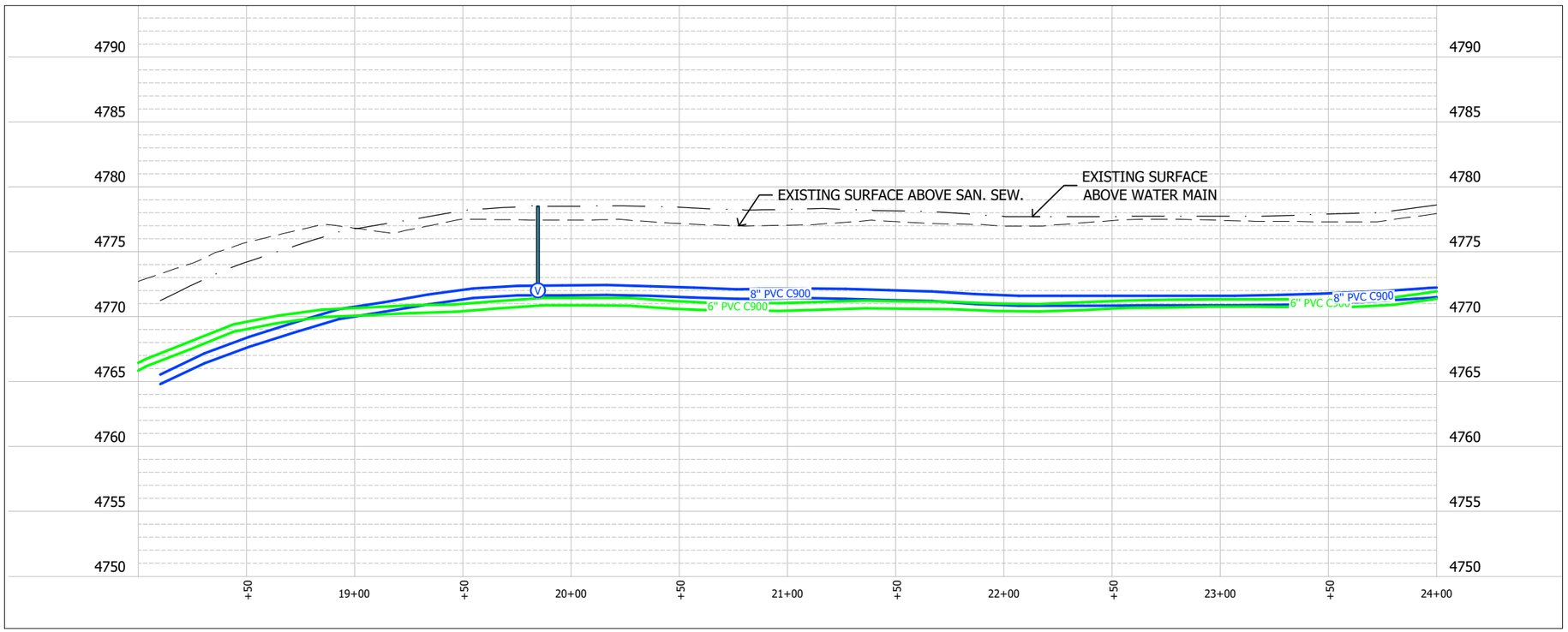
Checked by: JDC
Reviewed by: ###

File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - 1 - Utilities.dwg

1 18+00 TO 24+00
600 FT - 6" PVC FORCE MAIN C-900, CLASS 150

1 18+00 - 11.0' RT TO 24+00 - 11.0'RT
600 FT - 8" PVC WATER MAIN C-900, CLASS 150
1 EA - 8" MJ GATE VALVE WITH BOX
1 EA - ADJUST WATER VALVE





Drafted by: JSC
Reviewed by: ###

LEGEND

- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- 8"S - PROPOSED SANITARY SEWER
- 8"W - PROPOSED WATER MAIN
- 8"ST - PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET
CMP - CORRUGATED METAL PIPE
DI - DROP INLET
DBL - DOUBLE
GI - GRATED INLET
HYD - HYDRANT
INV - INVERT ELEVATION
JB - JUNCTION BOX
MH - MANHOLE
PE - POLYETHYLENE
PVC - POLYVINYL CHLORIDE
RCP - REINFORCED CONCRETE PIPE
RCPA - REINFORCED CONCRETE PIPE-ARCH
STRC - STRUCTURE
SWR - SEWER
TRP -TRIPLE

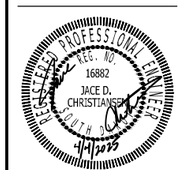
NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135



Time Stamp: 4/2/2025 2:34 PM

CONSTRUCTION SET

UTILITIES

I-1.04

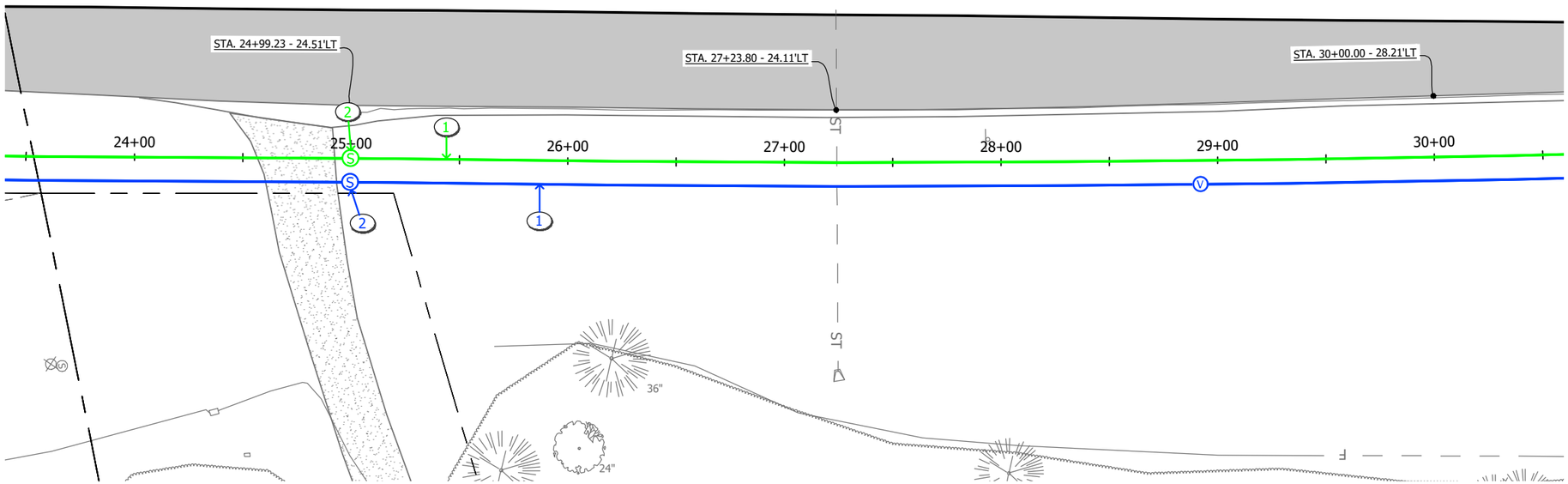
File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - 1 - Utilities.dwg

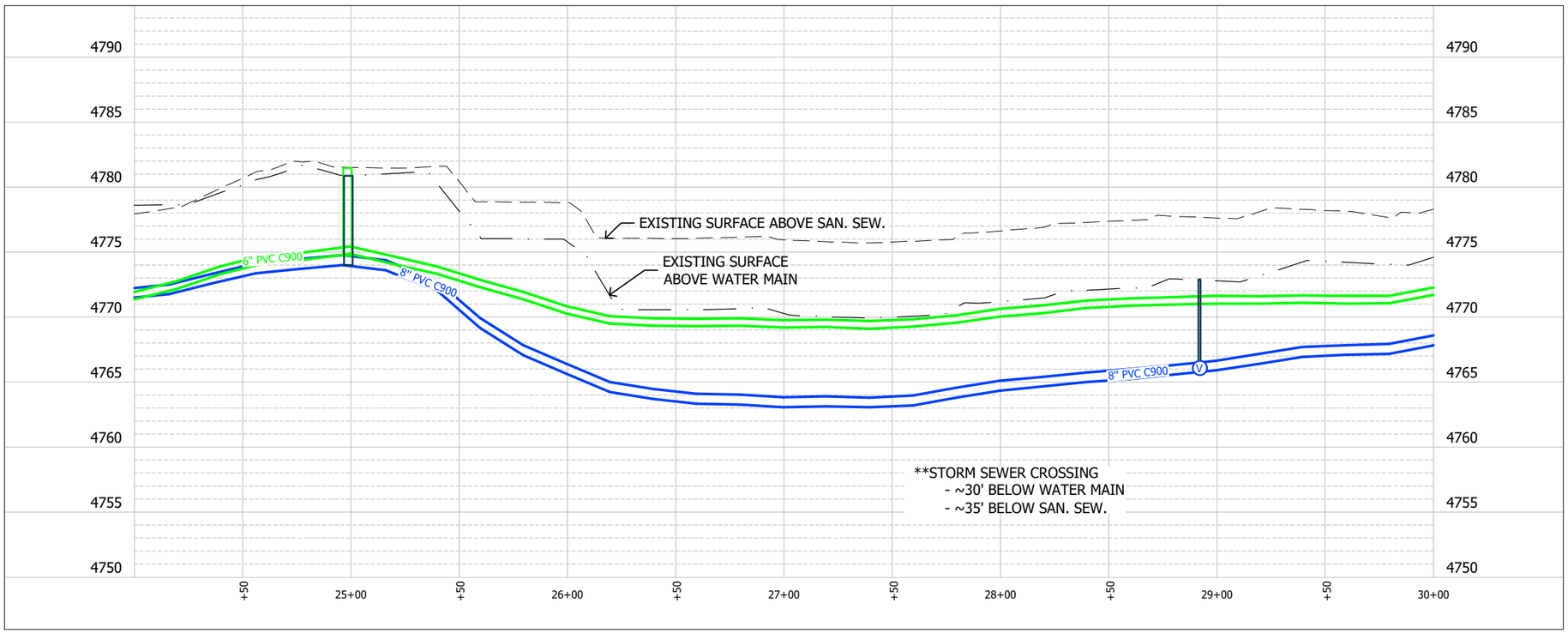
1 24+00 TO 30+00
600 FT - 6" PVC FORCE MAIN C-900, CLASS 150

2 25+00.0 - 0.0' RT
1 EA - COMBINATION AIR RELIEF VALVE ASSEMBLY (SEE DETAIL)

1 24+00 - 11.0' RT TO 30+00 - 11.0' RT
600 FT - 8" PVC WATER MAIN C-900, CLASS 150
1 EA - 8" MJ GATE VALVE WITH BOX
1 EA - ADJUST WATER VALVE

2 STA 24+99.57 - 11.0' RT
1 EA - COMBINATION AIR RELIEF VALVE ASSEMBLY (SEE DETAIL)





0 15 30 60

LEGEND

- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- 8"S - PROPOSED SANITARY SEWER
- 8"W - PROPOSED WATER MAIN
- 8"ST - PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET
CMP - CORRUGATED METAL PIPE
DI - DROP INLET
DBL - DOUBLE
GI - GRATED INLET
HYD - HYDRANT
INV - INVERT ELEVATION
JB - JUNCTION BOX
MH - MANHOLE
PE - POLYETHYLENE
PVC - POLYVINYL CHLORIDE
RCP - REINFORCED CONCRETE PIPE
RCPA - REINFORCED CONCRETE PIPE-ARCH
STRC - STRUCTURE
SWR - SEWER
TRP -TRIPLE

NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

SOUTH DAKOTA PROFESSIONAL ENGINEER REG. NO 16882 JACE D. CHRISTIANSEN 4/4/2025

Time Stamp: 4/2/2025 2:35 PM

CONSTRUCTION SET

UTILITIES

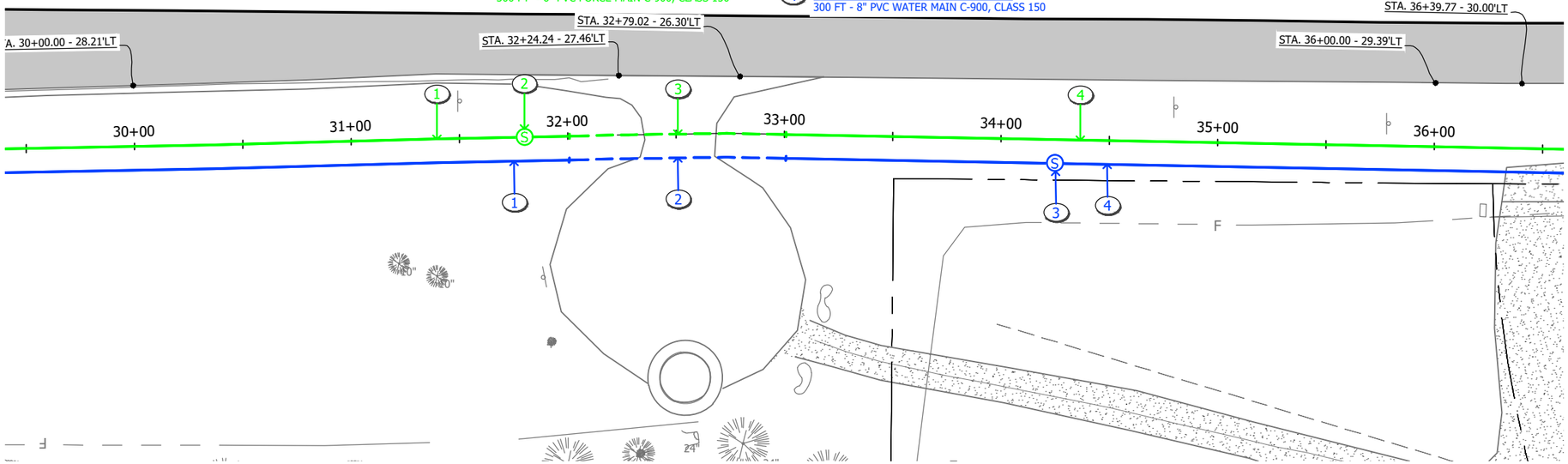
I-1.05

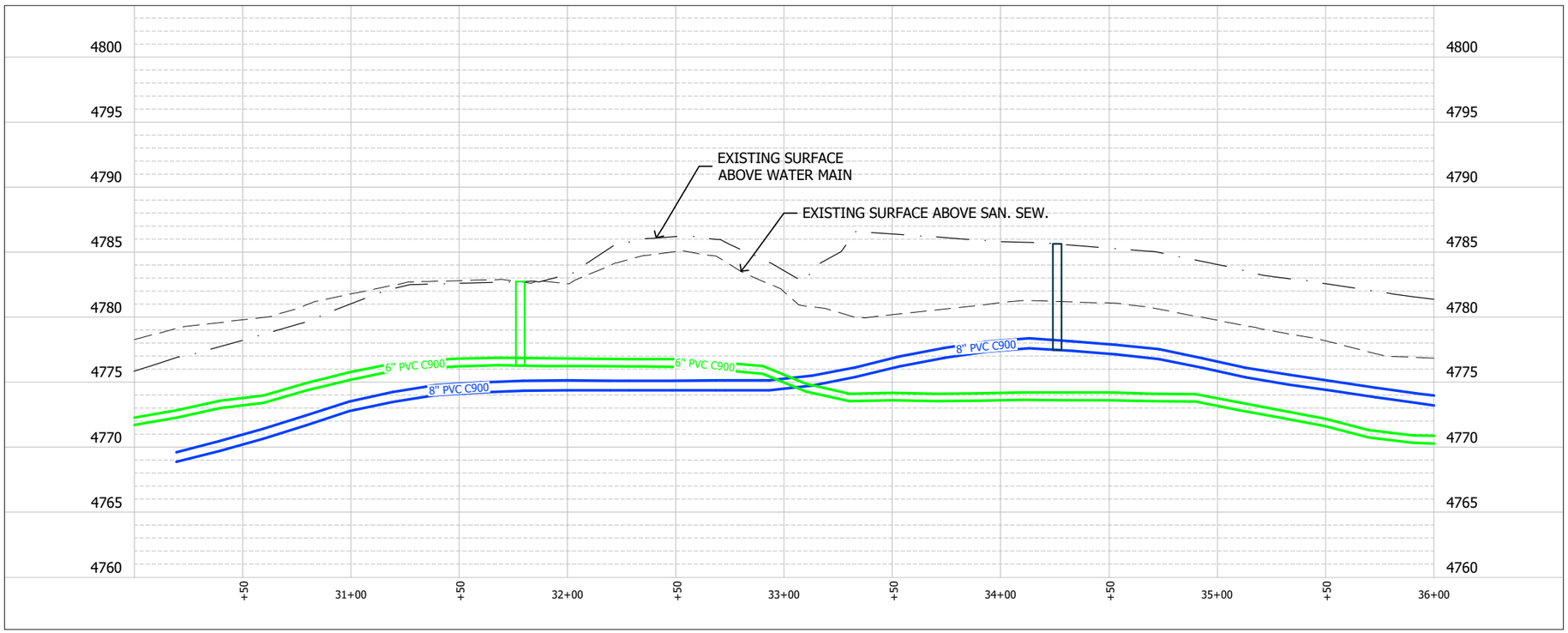
Detailed by: JDC
Reviewed by: ###

File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - I - Utilities.dwg

1. 30+00 - 0.0' RT TO 32+00 - 0.0'RT
   200 FT - 6" PVC FORCE MAIN C-900, CLASS 150
2. 31+80.0 - 0.0' RT
   1 EA - COMBINATION AIR RELIEF VALVE ASSEMBLY (SEE DETAIL)
3. 32+00 - 0.0' RT TO 33+00 - 0.0' RT
   100 FT - 6" TRENCHLESS CONSTRUCTION
   100 FT - 6" PVC FORCE MAIN C-900, CLASS 150 (RESTRAINED JOINT)
4. 33+00 - 0.0' RT TO 36+00 - 0.0' RT
   300 FT - 6" PVC FORCE MAIN C-900, CLASS 150

1. 30+00 - 11.0' RT TO 32+00- 11.0' RT
   200 FT - 8" PVC WATER MAIN C-900, CLASS 150
2. STA 32+00 - 11.0' RT TO 33+00 - 11.0' RT
   100 FT - 8" TRENCHLESS CONSTRUCTION
   100 FT - 8" PVC WATER MAIN C-900, CLASS 150 (RESTRAINED JOINT)
3. STA 34+24.94 - 11.0' RT
   1 EA - COMBINATION AIR RELIEF VALVE ASSEMBLY (SEE DETAIL)
4. STA 33+00 - 11.0' RT TO 36+00 - 11.0' RT
   300 FT - 8" PVC WATER MAIN C-900, CLASS 150





Checked by: JDC
Reviewed by: ###

0 15 30 60

LEGEND

- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- 8"S - PROPOSED SANITARY SEWER
- 8"W - PROPOSED WATER MAIN
- 8"ST - PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET
CMP - CORRUGATED METAL PIPE
DI - DROP INLET
DBL - DOUBLE
GI - GRATED INLET
HYD - HYDRANT
INV - INVERT ELEVATION
JB - JUNCTION BOX
MH - MANHOLE
PE - POLYETHYLENE
PVC - POLYVINYL CHLORIDE
RCP - REINFORCED CONCRETE PIPE
RCPA - REINFORCED CONCRETE PIPE-ARCH
STRC - STRUCTURE
SWR - SEWER
TRP -TRIPLE

NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

PROFESSIONAL ENGINEER
REG. NO
16882
JACE D.
CHRISTIANSEN
SOUTH DAKOTA
4/4/2025

Time Stamp: 4/2/2025 2:35 PM

CONSTRUCTION SET

UTILITIES

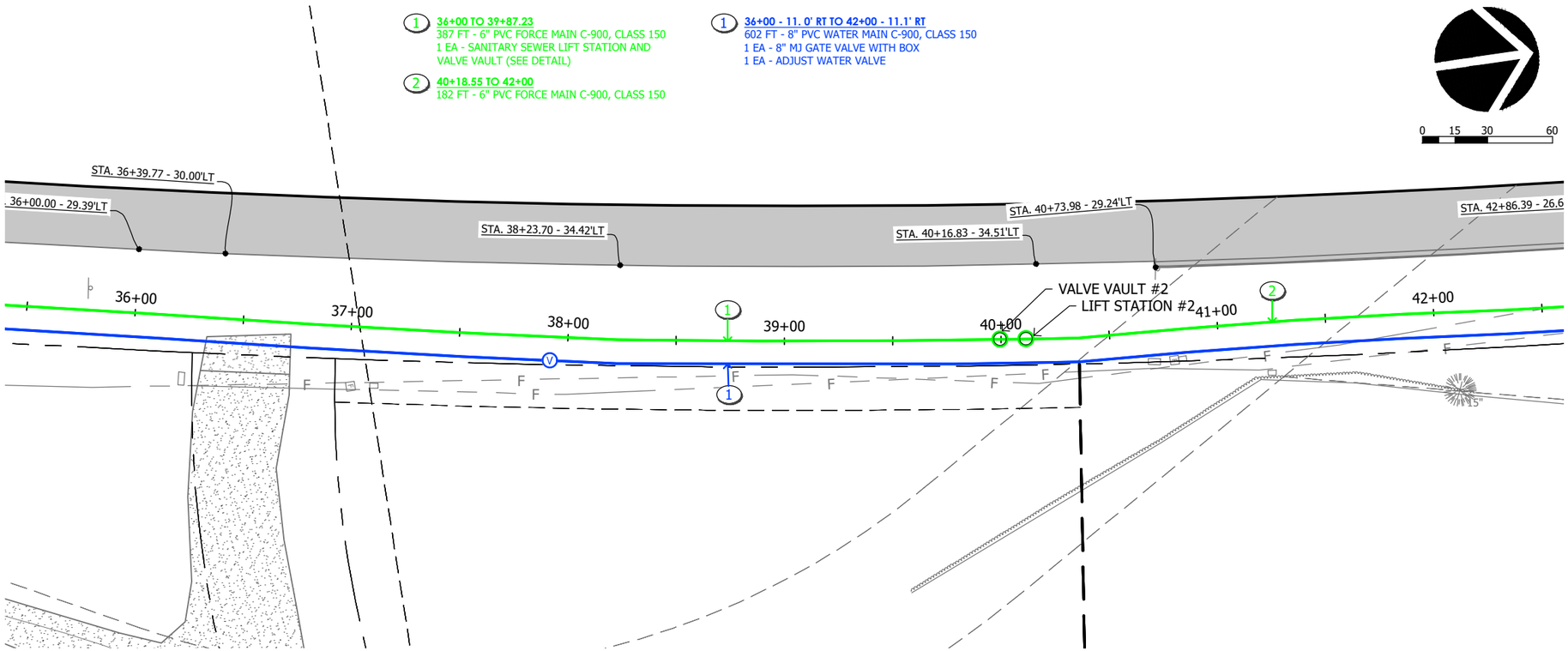
I-1.06

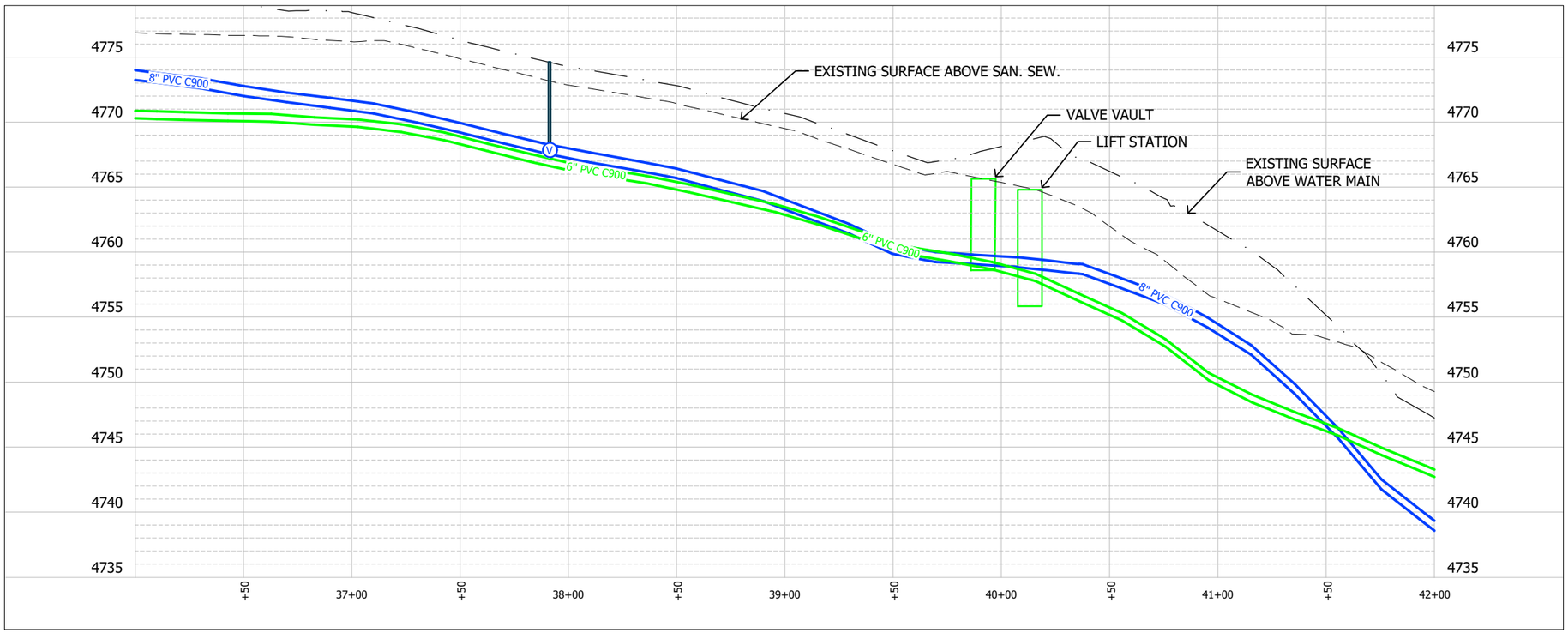
File Location: S:\Projects\24\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - 1 - Utilities.dwg

1 **36+00 TO 39+87.23**
387 FT - 6" PVC FORCE MAIN C-900, CLASS 150
1 EA - SANITARY SEWER LIFT STATION AND VALVE VAULT (SEE DETAIL)

2 **40+18.55 TO 42+00**
182 FT - 6" PVC FORCE MAIN C-900, CLASS 150

1 **36+00 - 11. 0' RT TO 42+00 - 11.1' RT**
602 FT - 8" PVC WATER MAIN C-900, CLASS 150
1 EA - 8" MJ GATE VALVE WITH BOX
1 EA - ADJUST WATER VALVE





LEGEND

- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- 8"S - PROPOSED SANITARY SEWER
- 8"W - PROPOSED WATER MAIN
- 8"ST - PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET
CMP - CORRUGATED METAL PIPE
DI - DROP INLET
DBL - DOUBLE
GI - GRATED INLET
HYD - HYDRANT
INV - INVERT ELEVATION
JB - JUNCTION BOX
MH - MANHOLE
PE - POLYETHYLENE
PVC - POLYVINYL CHLORIDE
RCP - REINFORCED CONCRETE PIPE
RCPA - REINFORCED CONCRETE PIPE-ARCH
STRC - STRUCTURE
SWR - SEWER
TRP -TRIPLE

NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:35 PM

CONSTRUCTION SET

UTILITIES

I-1.07

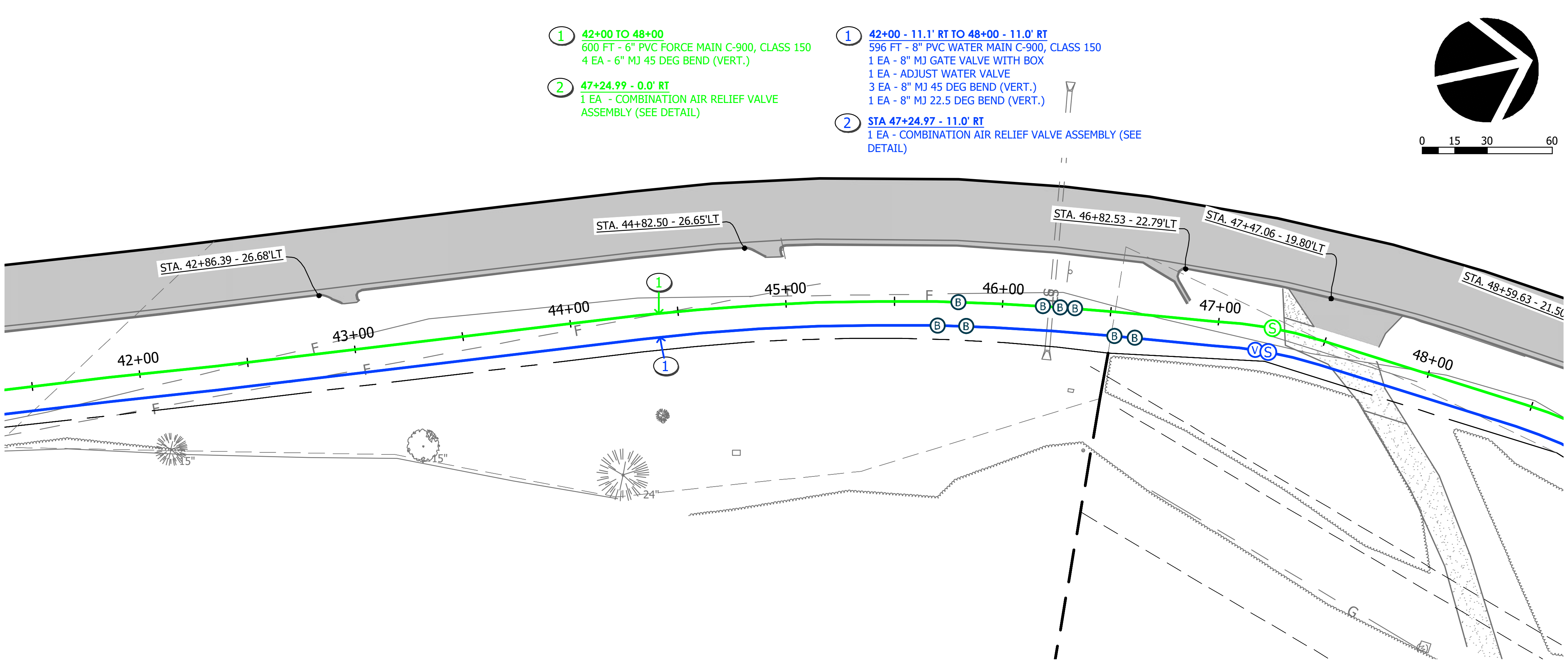
Detailed by: JDC
Reviewed by: ###

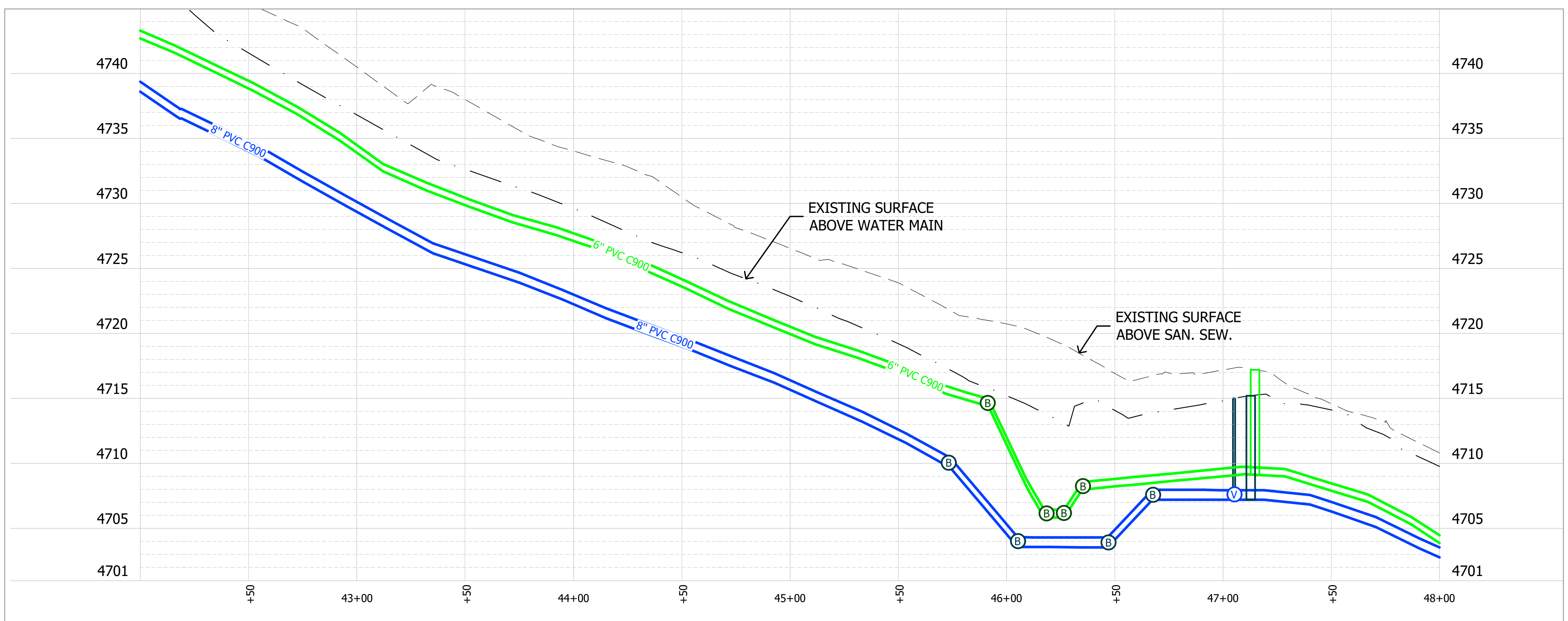
1 **42+00 TO 48+00**
600 FT - 6" PVC FORCE MAIN C-900, CLASS 150
4 EA - 6" MJ 45 DEG BEND (VERT.)

2 **47+24.99 - 0.0' RT**
1 EA - COMBINATION AIR RELIEF VALVE ASSEMBLY (SEE DETAIL)

1 **42+00 - 11.1' RT TO 48+00 - 11.0' RT**
596 FT - 8" PVC WATER MAIN C-900, CLASS 150
1 EA - 8" MJ GATE VALVE WITH BOX
1 EA - ADJUST WATER VALVE
3 EA - 8" MJ 45 DEG BEND (VERT.)
1 EA - 8" MJ 22.5 DEG BEND (VERT.)

2 **STA 47+24.97 - 11.0' RT**
1 EA - COMBINATION AIR RELIEF VALVE ASSEMBLY (SEE DETAIL)





LEGEND

- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- 8"S — PROPOSED SANITARY SEWER
- 8"W — PROPOSED WATER MAIN
- 8"ST — PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET	PE - POLYETHYLENE
CMP - CORRUGATED METAL PIPE	PVC - POLYVINYL CHLORIDE
DI - DROP INLET	RCP - REINFORCED CONCRETE PIPE
DBL - DOUBLE	RCPA - REINFORCED CONCRETE PIPE-ARCH
GI - GRATED INLET	STRC - STRUCTURE
HYD - HYDRANT	SWR - SEWER
INV - INVERT ELEVATION	TRP - TRIPLE
JB - JUNCTION BOX	
MH - MANHOLE	

NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments

Utility Improvements

Deadwood, South Dakota

SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER REG. NO. 16882 JACE D. CHRISTIANSEN SOUTH DAKOTA 4/1/2025

Time Stamp: 4/2/2025 2:35 PM

CONSTRUCTION SET

UTILITIES

I-1.08

File Location: S:\Projects\2024\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - I - Utilities.dwg

Drafted By: JDC

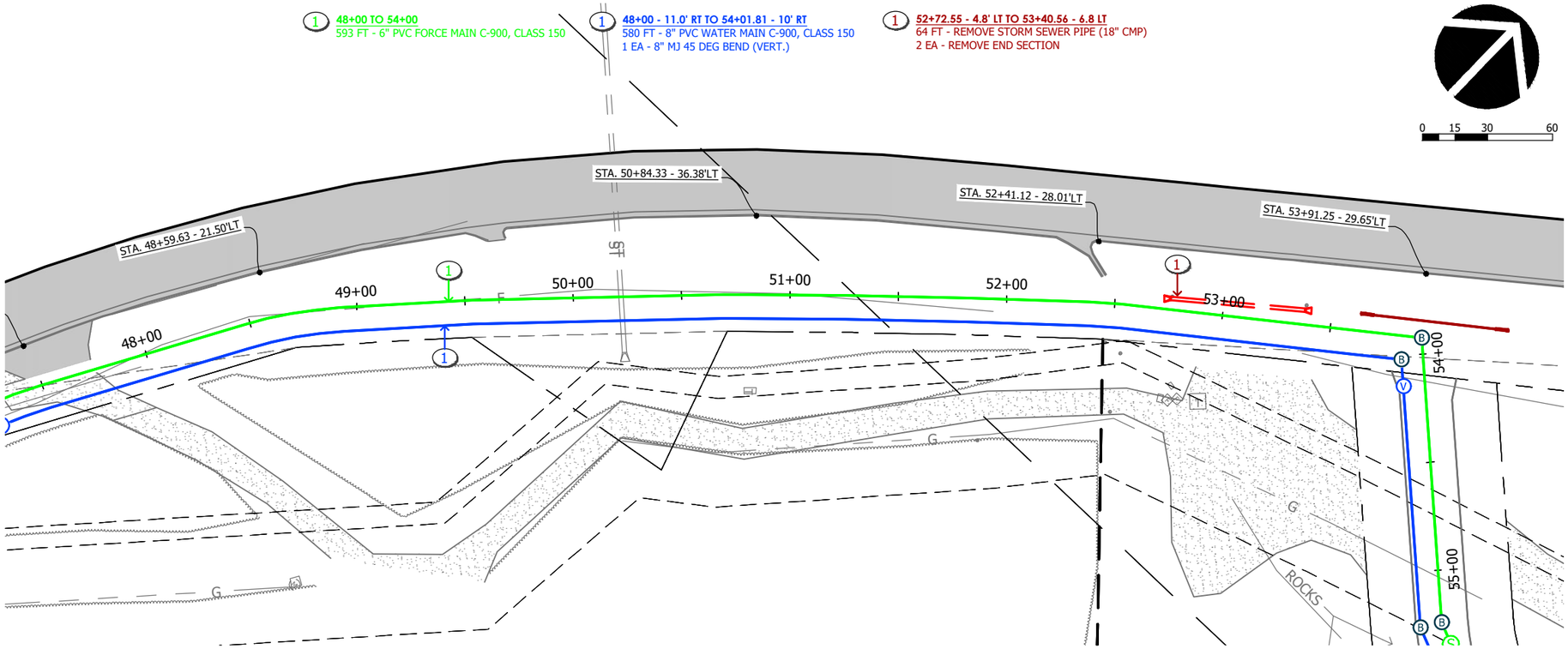
Reviewed By: ###

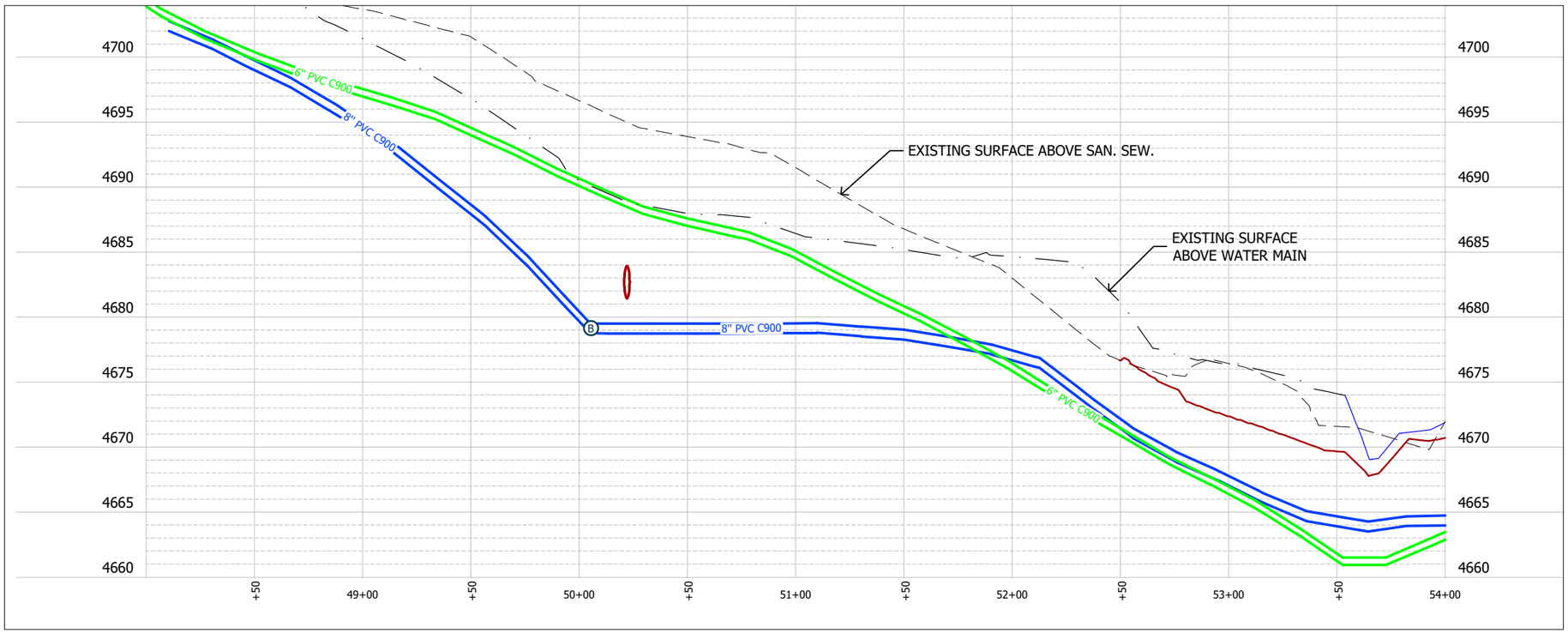
File Location: S:\Projects\2024\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - I - Utilities.dwg

1 48+00 TO 54+00
593 FT - 6" PVC FORCE MAIN C-900, CLASS 150

1 48+00 - 11.0' RT TO 54+01.81 - 10' RT
580 FT - 8" PVC WATER MAIN C-900, CLASS 150
1 EA - 8" MJ 45 DEG BEND (VERT.)

1 52+72.55 - 4.8' LT TO 53+40.56 - 6.8 LT
64 FT - REMOVE STORM SEWER PIPE (18" CMP)
2 EA - REMOVE END SECTION





Checked by: JDC
Reviewed by: ###

LEGEND

- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- 8"S - PROPOSED SANITARY SEWER
- 8"W - PROPOSED WATER MAIN
- 8"ST - PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET
CMP - CORRUGATED METAL PIPE
DI - DROP INLET
DBL - DOUBLE
GI - GRATED INLET
HYD - HYDRANT
INV - INVERT ELEVATION
JB - JUNCTION BOX
MH - MANHOLE
PE - POLYETHYLENE
PVC - POLYVINYL CHLORIDE
RCP - REINFORCED CONCRETE PIPE
RCPA - REINFORCED CONCRETE PIPE-ARCH
STRC - STRUCTURE
SWR - SEWER
TRP -TRIPLE

NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

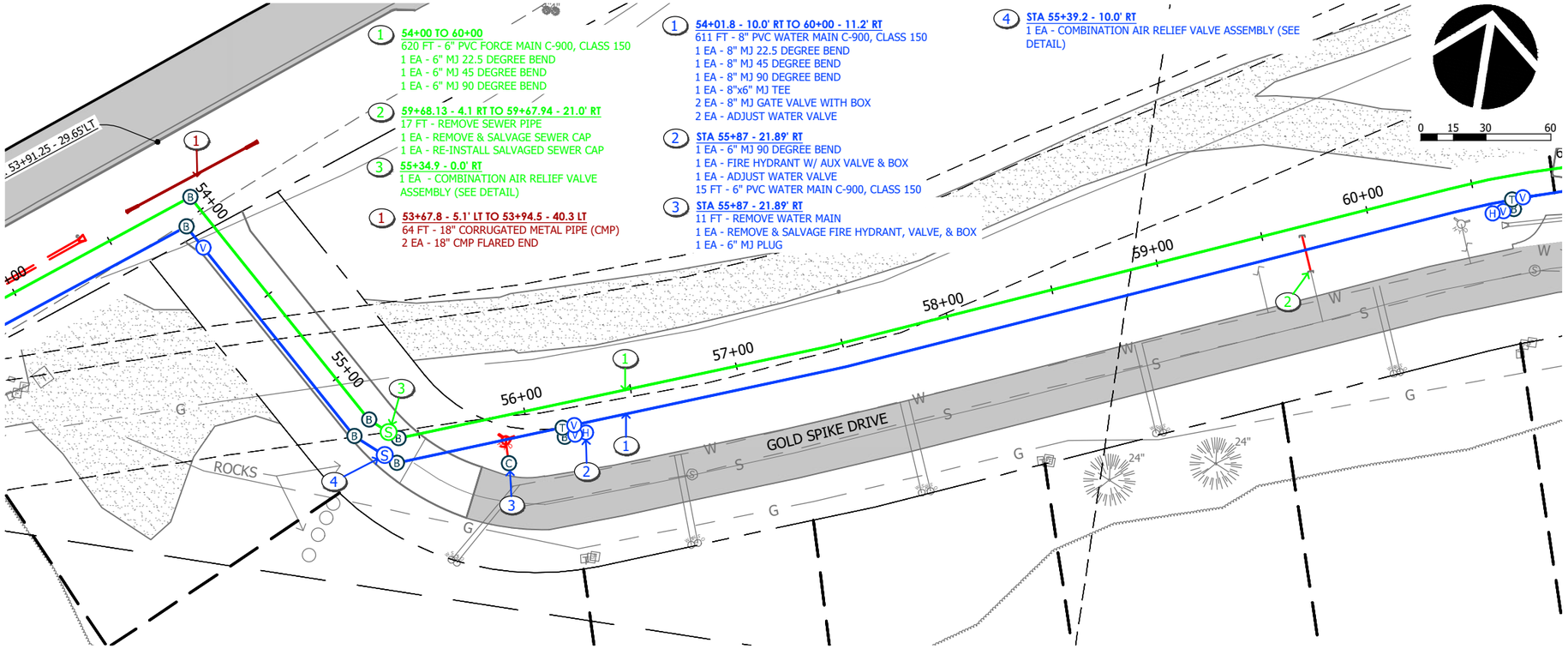
Time Stamp: 4/2/2025 2:35 PM

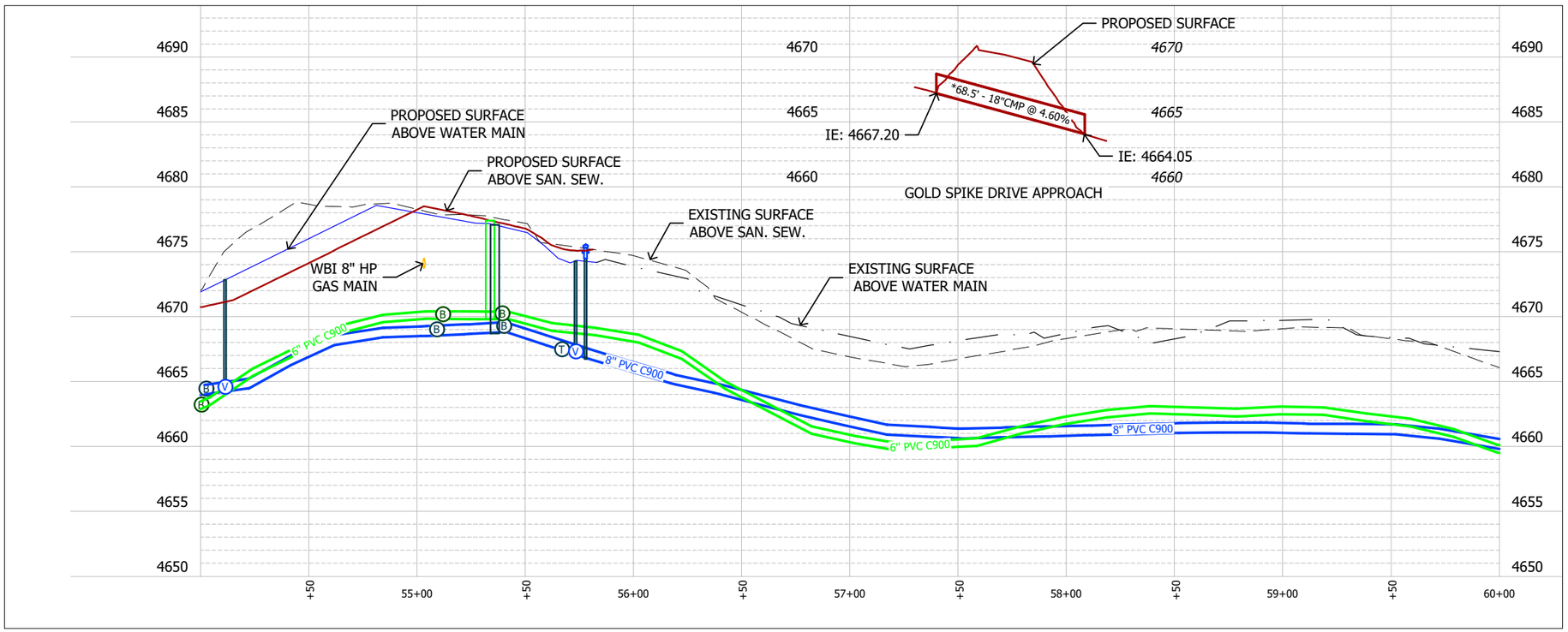
CONSTRUCTION SET

UTILITIES

I-1.09

File Location: S:\Projects\2024\24135 - The Ridge Development (Deadwood)\Construction Documents\Working Files\Drawings\24135 - 1 - Utilities.dwg





LEGEND

- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- 8"S - PROPOSED SANITARY SEWER
- 8"W - PROPOSED WATER MAIN
- 8"ST - PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET	PE - POLYETHYLENE
CMP - CORRUGATED METAL PIPE	PVC - POLYVINYL CHLORIDE
DI - DROP INLET	RCP - REINFORCED CONCRETE PIPE
DBL - DOUBLE	RCPA - REINFORCED CONCRETE PIPE-ARCH
GI - GRATED INLET	STRC - STRUCTURE
HYD - HYDRANT	SWR - SEWER
INV - INVERT ELEVATION	TRP -TRIPLE
JB - JUNCTION BOX	
MH - MANHOLE	

NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

Time Stamp: 4/2/2025 2:35 PM

CONSTRUCTION SET

UTILITIES

I-1.10

Updated by: JDC
Reviewed by: ###

1 **60+00 TO MH #1**
390 FT - 6" C900 FORCE MAIN C-900, CLASS 150
1 EA - SANITARY SEWER LIFT STATION AND VALVE VAULT (SEE DETAIL)

2 **LIFT STATION TO MH #1**
83 FT - 8" PVC SEWER MAIN (10'-12')

3 **MH #1 TO MH #2**
120 FT - 8" PVC SEWER MAIN (10'-12')

LOCATE AND RECONNECT SEWER SERVICE
1 EA - RECONNECT SEWER SERVICE
35 FT - 6" PVC SEWER SERVICE LINE

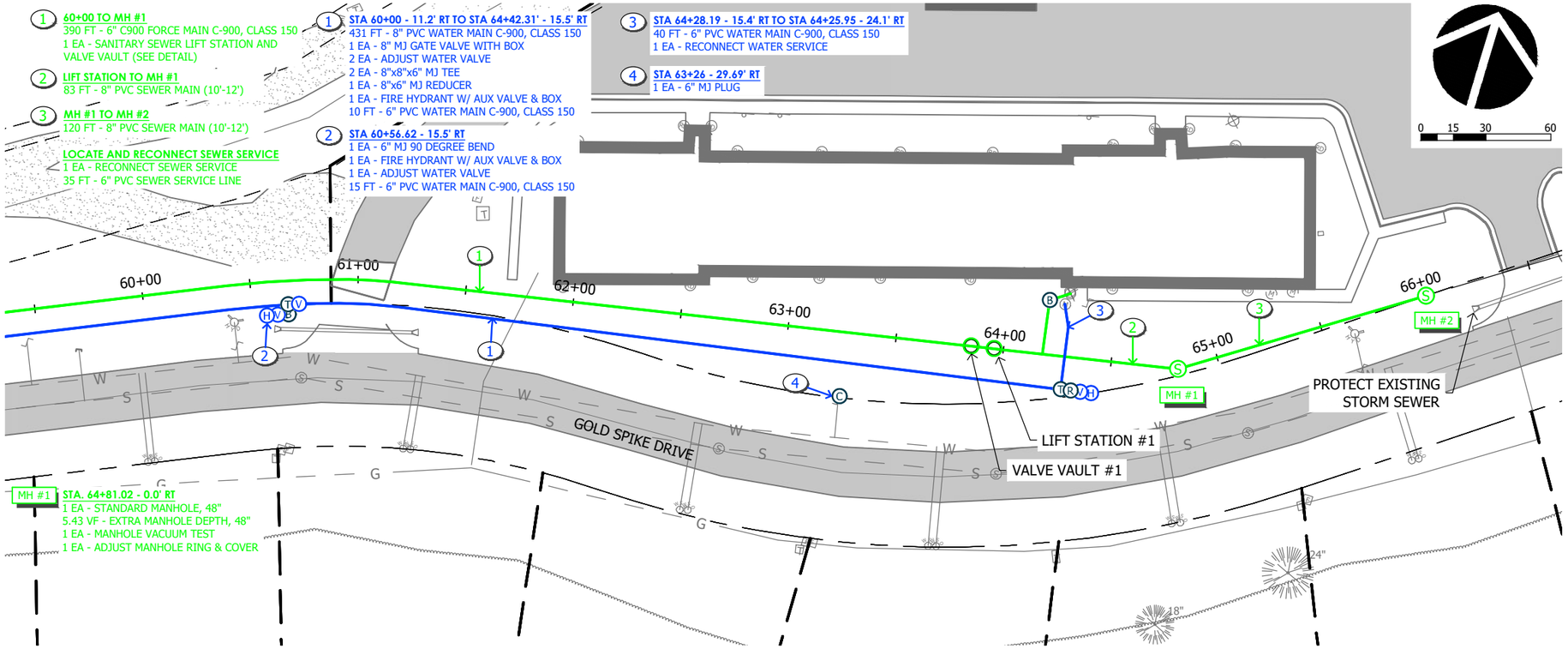
1 **STA 60+00 - 11.2' RT TO STA 64+42.31' - 15.5' RT**
431 FT - 8" PVC WATER MAIN C-900, CLASS 150
1 EA - 8" MJ GATE VALVE WITH BOX
2 EA - ADJUST WATER VALVE
2 EA - 8"x8"x6" MJ TEE
1 EA - 8"x6" MJ REDUCER
1 EA - FIRE HYDRANT W/ AUX VALVE & BOX
10 FT - 6" PVC WATER MAIN C-900, CLASS 150

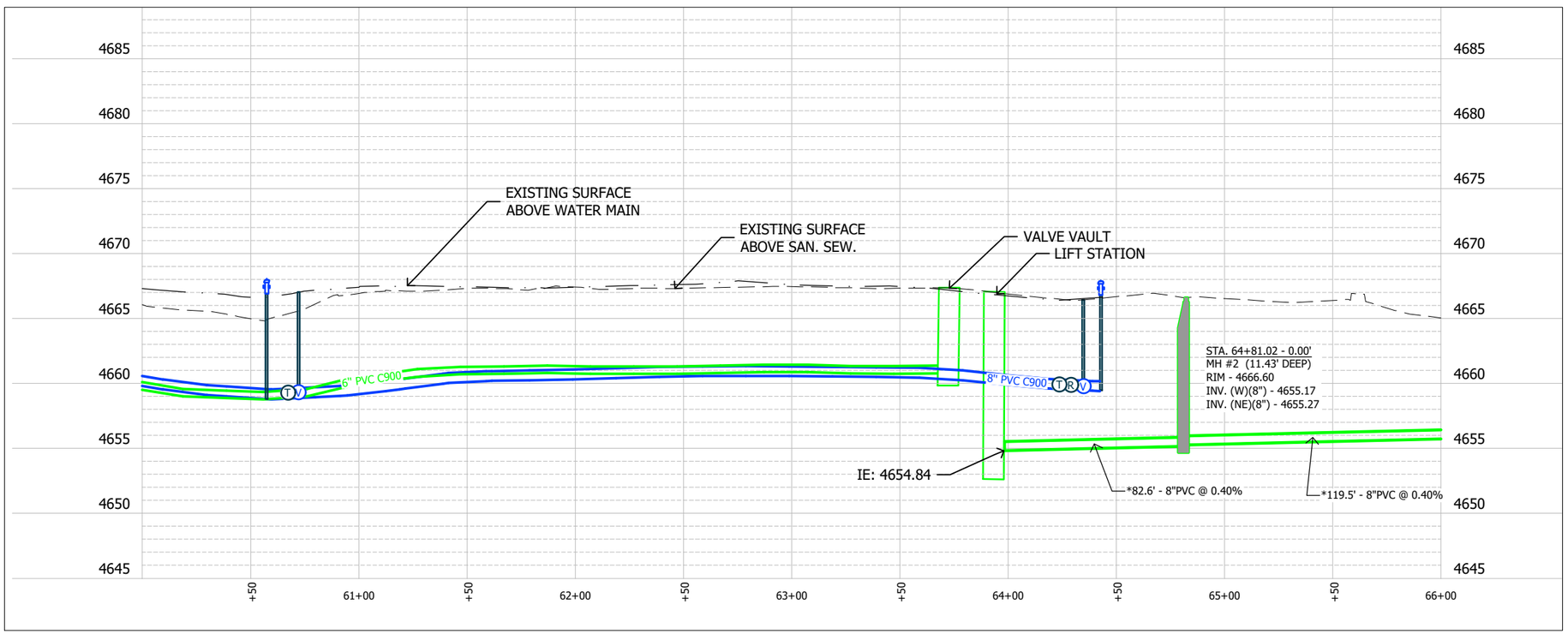
2 **STA 60+56.62 - 15.5' RT**
1 EA - 6" MJ 90 DEGREE BEND
1 EA - FIRE HYDRANT W/ AUX VALVE & BOX
1 EA - ADJUST WATER VALVE
15 FT - 6" PVC WATER MAIN C-900, CLASS 150

3 **STA 64+28.19 - 15.4' RT TO STA 64+25.95 - 24.1' RT**
40 FT - 6" PVC WATER MAIN C-900, CLASS 150
1 EA - RECONNECT WATER SERVICE

4 **STA 63+26 - 29.69' RT**
1 EA - 6" MJ PLUG

MH #1 **STA. 64+81.02 - 0.0' RT**
1 EA - STANDARD MANHOLE, 48"
5.43 VF - EXTRA MANHOLE DEPTH, 48"
1 EA - MANHOLE VACUUM TEST
1 EA - ADJUST MANHOLE RING & COVER





LEGEND

- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- 8"S - PROPOSED SANITARY SEWER
- 8"W - PROPOSED WATER MAIN
- 8"ST - PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET
CMP - CORRUGATED METAL PIPE
DI - DROP INLET
DBL - DOUBLE
GI - GRATED INLET
HYD - HYDRANT
INV - INVERT ELEVATION
JB - JUNCTION BOX
MH - MANHOLE
PE - POLYETHYLENE
PVC - POLYVINYL CHLORIDE
RCP - REINFORCED CONCRETE PIPE
RCPA - REINFORCED CONCRETE PIPE-ARCH
STRC - STRUCTURE
SWR - SEWER
TRP -TRIPLE

NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

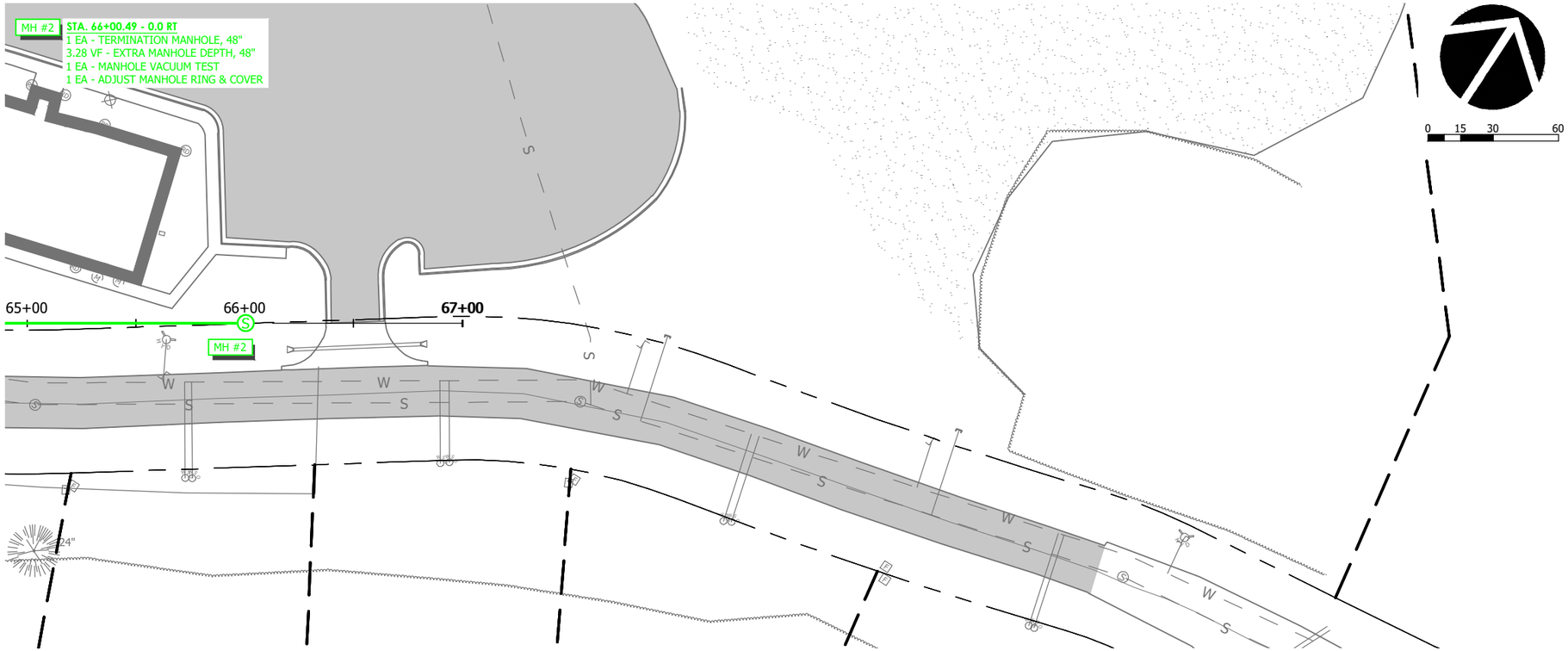
Time Stamp: 4/2/2025 2:35 PM

CONSTRUCTION SET

UTILITIES

I-1.11

Checked by: JDC
Reviewed by: ###



LEGEND

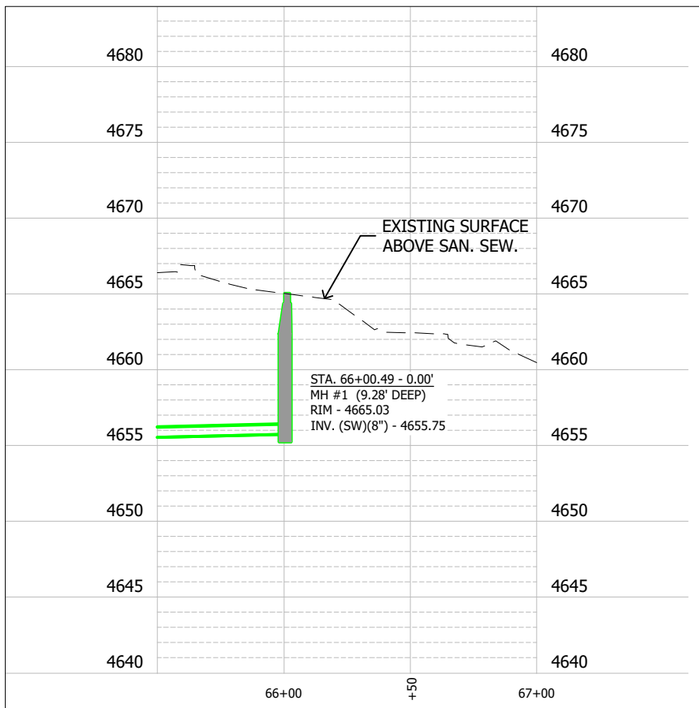
- REMOVE PIPE / STRUCTURE
- UNKOWN SERVICE LOCATION
- 8"S - PROPOSED SANITARY SEWER
- 8"W - PROPOSED WATER MAIN
- 8"ST - PROPOSED STORM SEWER
- DROP INLET / GRATED INLET / AREA INLET
- STORM SEWER JB / COUPLER / COLLAR
- FLARED END
- SANITARY SEWER MH / COUPLER / CAP
- WATER MAIN BEND / TEE / REDUCER / CAP SLEEVE / CROSS / PLUG
- WATER MAIN VALVE / HYDRANT / CURB STOP
- WATER MAIN SMITH TAP

ABBREVIATIONS

AI - AREA INLET	PE - POLYETHYLENE
CMP - CORRUGATED METAL PIPE	PVC - POLYVINYL CHLORIDE
DI - DROP INLET	RCP - REINFORCED CONCRETE PIPE
DBL - DOUBLE	RCPA - REINFORCED CONCRETE PIPE-ARCH
GI - GRATED INLET	STRC - STRUCTURE
HYD - HYDRANT	SWR - SEWER
INV - INVERT ELEVATION	TRP -TRIPLE
JB - JUNCTION BOX	
MH - MANHOLE	

NOTES

1. ELEVATIONS SHOWN ARE THEORETICAL. CONTRACTOR TO VERIFY ELEVATIONS AND ALIGNMENTS BEFORE PROCEEDING TO LAYOUT THE WORK. REPORT DISCREPANCIES TO THE ENGINEER.
2. LOCATIONS OF SERVICE WYES AND CONNECTIONS ARE APPROXIMATE. INVESTIGATE AND LOCATE ACTIVE SERVICES AND CONNECTIONS THROUGH GROUND PENETRATING SONAR PRIOR TO INSTALLING MAIN LINE PIPING.
3. PRIOR TO STARTING WORK, NOTIFY STATE ONE CALL SYSTEM AND OTHERWISE COORDINATE LOCATING SERVICES FOR UNDERGROUND FACILITIES.
4. DO NOT INTERRUPT UTILITIES UNLESS THE WORK NECESSITATES. COORDINATE TEMPORARY FACILITIES WITH UTILITY OWNERS WHERE NECESSARY. SAFEGUARD UNDERGROUND FACILITIES WHILE PERFORMING WORK. NOTIFY UTILITY OWNER IF DAMAGED.
5. REMOVE, SEPARATE AND SET ASIDE TOPSOIL, GRAVEL, OR OTHER SURFACE STRATUM PRIOR TO TRENCHING AND PLACE AT SURFACE AFTER BACKFILLED. REPLENISH DEFICIENT AREAS WITH NEW MATERIAL.
6. MAINTAIN SEPARATION AND COVER STANDARDS AS SPECIFIED. NOTIFY ENGINEER WHERE ADJUSTMENTS TO FACILITIES ARE NECESSARY TO MEET SPECIFICATIONS.
7. INSTALL WATER MAIN FACILITIES TO MAINTAIN A MINIMUM OF 6-FT OF COVER. ADJUST WATER MAIN PROFILE AS NECESSARY TO AVOID CONFLICTS. NOTIFY ENGINEER PRIOR TO ADJUSTMENT.
8. COORDINATE THE LOCATION OF ABOVE GROUND FACILITIES, SUCH AS VALVE BOXES AND MANHOLE CASTINGS, WITH PAVEMENT JOINTING PLAN.
9. PRIOR TO BACKFILLING, RECORD THE LOCATION AND INVERT ELEVATION OF ALL PIPES, FITTINGS AND OTHER APPURTENANCES ON PROVIDED DRAWINGS. RECORD THE DISTANCE OF PIPE BETWEEN FITTINGS AND SWING TIES TO BURIED CONNECTIONS. COMPILE AND SUBMIT AS-BUILT MARKUPS TO ENGINEER UPON COMPLETION.
10. WATER USED FOR DISINFECTING THE WATER LINE MUST NOT REACH A STREAM, RIVER, OR OTHER WATERWAY IF CHLORINE IS DETECTED IN THE WATER. CONTACT THE DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SURFACE WATER QUALITY PROGRAM AT (605) 773-3351 FOR MORE INFORMATION.
11. CHANGES IN HORIZONTAL ALIGNMENT MUST BE VERIFIED WITH THE ENGINEER PRIOR TO CONSTRUCTING THE UTILITY. ANY HORIZONTAL ALIGNMENT CHANGES MUST BE DIRECTED AWAY FROM THE HIGHWAY.
12. MAINTAIN MINIMUM 10' CLEAR HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SANITARY FORCE MAIN.
13. TRENCH CHECK DAMS SHALL BE INSTALLED AT A MIN. 450' INTERVALS PER RCSS 2022 VERSION.
14. 18 LB ZINC ANODE SHALL BE PLACED AT EACH BURIED DUCTILE IRON FITTING FOLLOWING CITY OF RAPID CITY STANDARD SPEC. AND DETAILS.



Checked by: ###

Drawn by: JDC

STOCKWELL
WWW.STOCKWELLENGINEERS.COM
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota

SEI PROJECT #: 24135

PROFESSIONAL ENGINEER
REG. NO
16882
JACE D. CHRISTIANSEN
SOUTH DAKOTA
4/4/2025

Time Stamp: 4/2/2025 2:35 PM

CONSTRUCTION SET

UTILITIES

I-1.12

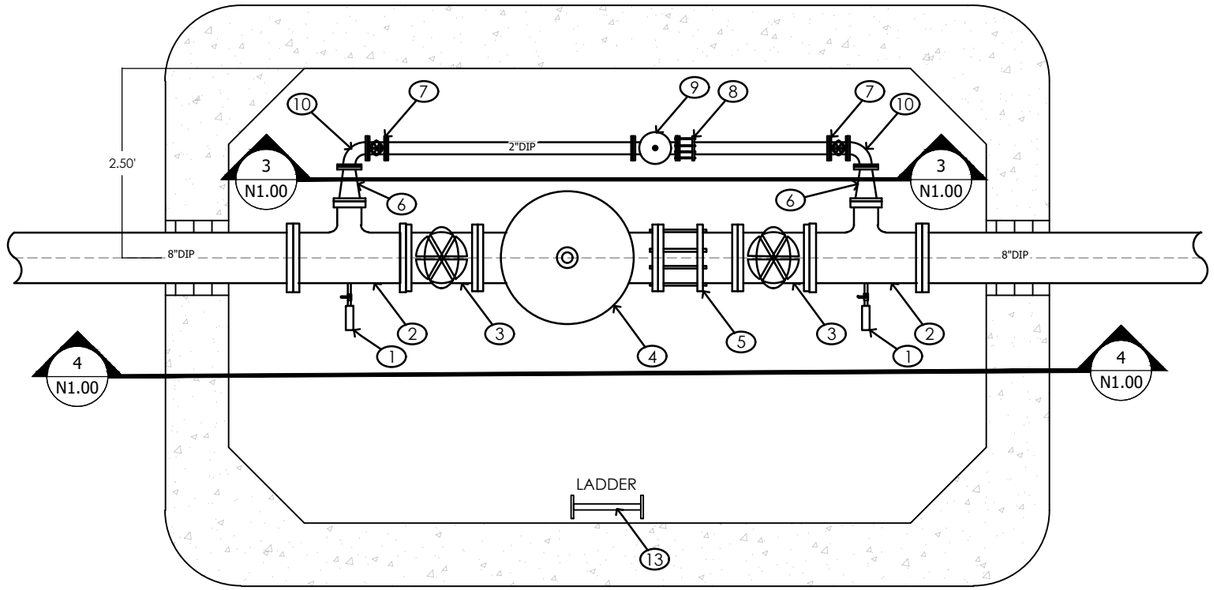
24135 - N - Details.dwg

KEY NOTES

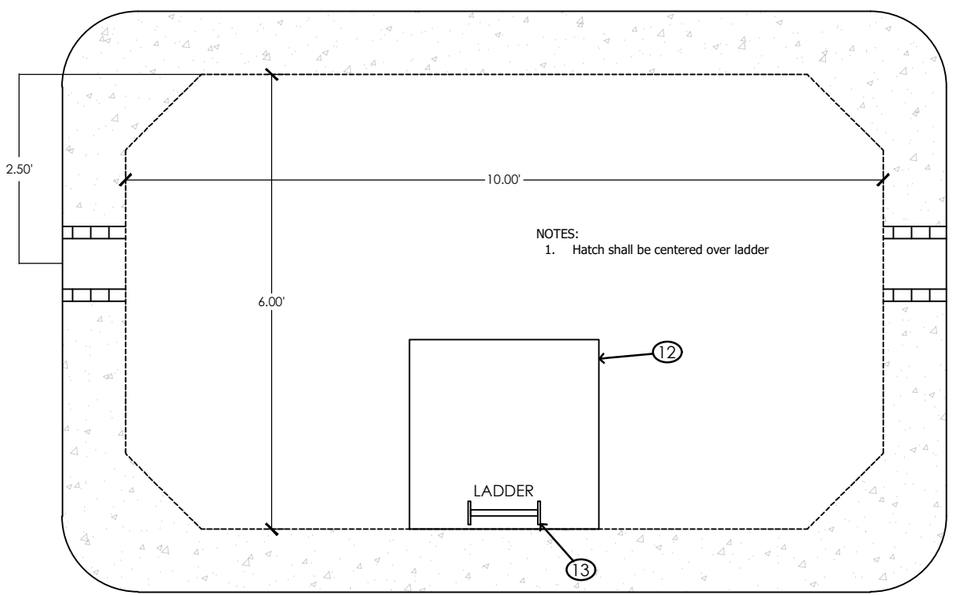
1. ½" PRESSURE GAUGE ASSEMBLY (DETAIL 01 - N1.00)
2. 8"x8"x4" DI TEE W/ ½" THREADED TAP AS SHOWN
3. 8" WHEEL OPERATED GATE VALVE
4. 8" PRESSURE REDUCING VALVE
5. 8" DRESSER COUPLING
6. 4"x2" DI CONCENTRIC REDUCER
7. 2" WHEEL OPERATED GATE VALVE
8. 2" DRESSER COUPLING
9. 2" PRESSURE REDUCING VALVE
10. 2" DI 90 DEGREE BEND
11. PIPE SUPPORT (DETAIL 01 - N1.00)
    11.1. SUPPORTS FOR 8" AND 2" PIPE
12. 30"x30" ALUMINUM HATCH (HALLIDAY OR APPROVED EQUAL)
13. LADDER (SHALL MEET OSHA STANDARDS)

GENERAL NOTES

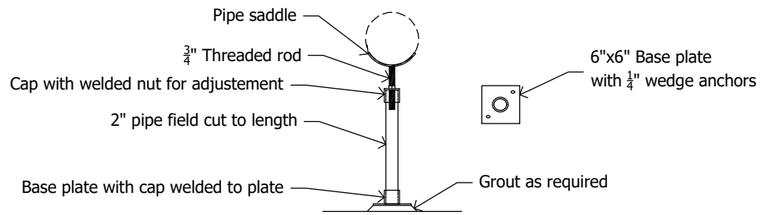
1. 2" and 8" PRESSURE REDUCING VALVE: CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF VALVE PER MANUFACTURES RECOMMENDATIONS AND SHALL PROVIDE UP TO 4 HOURS OF TRAINING TO THE OWNER ON THE USE AND MAINTENANCE OF THE PRESSURE REDUCING VALVE. MANUFACTURER MUST PROVIDE A MINIMUM OF 1-YEAR WARRANTY. APPROVED MODELS: CLA-VAL MODEL 90-01 OR APPROVED EQUAL.
2. CONTRACTOR SHALL VERIFY ALL PIPE AND FITTING DIMENSIONS PRIOR TO FABRICATION AND ASSEMBLY.
3. PROVIDE 1' MINIMUM THICKNESS GRANULAR BASE UNDER VAULT EXTENDING 1' OUTSIDE THE VAULT FOOTPRINT.
4. 2" STAINLESS STEEL PIPE AND FITTINGS MAY BE SUBSTITUTED FOR 2" DIP. PROPER DISSIMILAR METAL ISOLATION WILL BE REQUIRED BETWEEN DIP AND SS CONNECTIONS.
5. FINISH GRADE SHOULD BE FLUSH WITH THE TOP OF THE VAULT AND GRADED TO ALLOW POSITIVE DRAINAGE AWAY FROM THE VAULT.



PRESSURE REDUCING VALVE STATION PLAN - N.T.S.

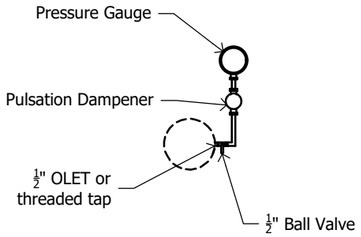


PRESSURE REDUCING VALVE STATION LID PLAN - N.T.S.



01 PIPE SUPPORT

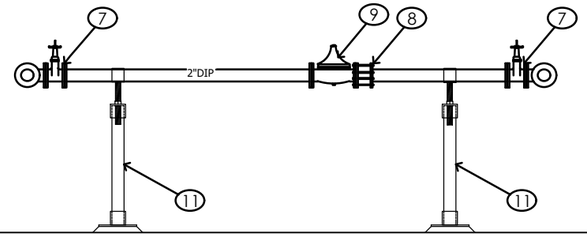
SECTION - N.T.S.



NOTES:
1. Pressure Gauges
   1.1. Dial Size: 4-1/2" Black
   1.2. Polypropylene pressure relief back safety case
   1.3. Pressure Range: 0 to 120 psi
   1.4. Fill: Glycerin
   1.5. Accuracy: 0.5%
   1.6. Movement: SST Rotary
   1.7. Under and overload stops
   1.8. Seamless Drawn 316L SST bourdon tube
   1.9. 316 SST Socket
   1.10. ½" MNPT Bottom connection
   1.11. Shatterproof window
   1.12. Tap shall be 90 degrees from the top of the pipe. Contractor shall coordinate with Engineer prior to installation for the exact locations.
   1.13. Provide Winters PCC Series, Ashcroft, U.S. Gauge or approved equal.

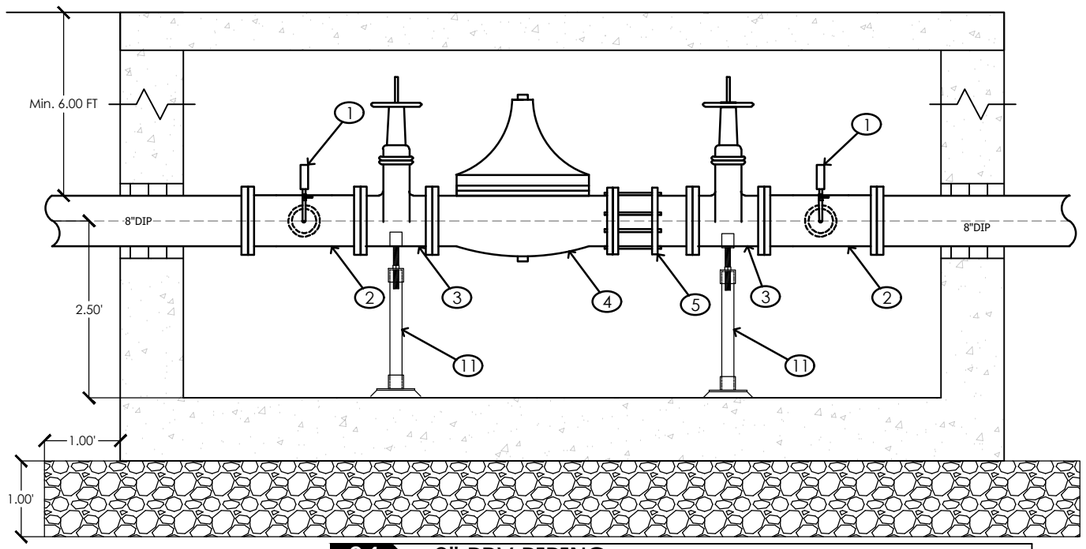
02 PRESSURE GAUGE ASSEMBLY

SECTION - N.T.S.



03 2" PRV LOOP

SECTION - N.T.S.



04 8" PRV PIPING

SECTION - N.T.S.

STOCKWELL

STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
16882
JACE D. CHRISTIANSEN
4/4/2025

PLOT DATE 4/4/2025 7:24 AM

CONSTRUCTION SET

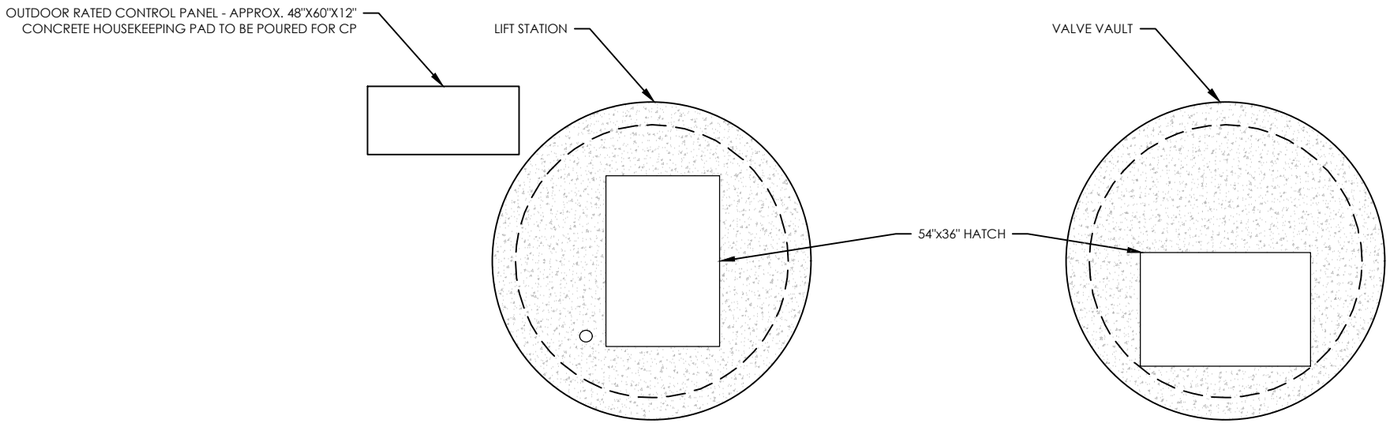
DETAILS

N-1.00

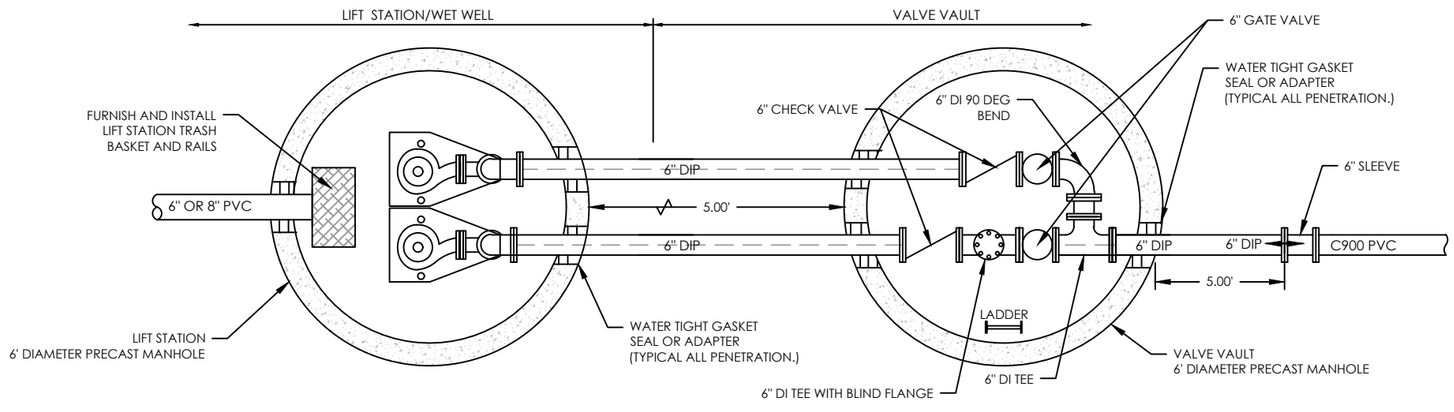
24135 - N - Details.dwg

GENERAL NOTES

1. ALUMINUM HATCHES SHALL BE HALLIDAY S1R3654 OR APPROVED EQUAL.
2. LADDER SHALL MEET OSHA STANDARDS
3. ALL PIPING WITHIN 5' AND BETWEEN THE STRUCTURES SHALL BE INCLUDED IN THE LIFT STATION/VALVE VAULT
4. WET WELL #1 SHALL HAVE A TRASH BASKET. WET WELL #2 WILL NOT REQUIRE A TRASH BASKET.
5. CHECK VALVES SHALL BE APCO CVS-250 SWING CHECK VALVE, OR APPROVED EQUAL. THE VALVE MUST BE RATED FOR RAW SEWAGE APPLICATIONS.
6. GATE VALVES SHALL MEET CITY OF RAPID CITY STANDARD SPECIFICATIONS AND BE EQUIPPED WITH HAND WHEEL OPERATORS. THE VALVE MUST BE RATED FOR RAW SEWAGE APPLICATIONS.
7. LIFT STATION MANHOLE SHALL BE LINED WITH HDPE LINER OR ENGINEER APPROVED EQUIVALENT.
8. FURNISH AND INSTALL A THERN COMMANDER, 2000LB DAVIT CRANE W/ HAND WINCH, SS CABLE AND FLUSH MOUNT BASE.



LIFT STATION AND VALVE VAULT LID PLAN - N.T.S.



LIFT STATION AND VALVE VAULT PIPING PLAN - N.T.S.

NOT TO SCALE

STOCKWELL

STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
16882
JACE D. CHRISTIANSEN
4/4/2025

PLOT DATE 4/4/2025 7:24 AM

CONSTRUCTION SET

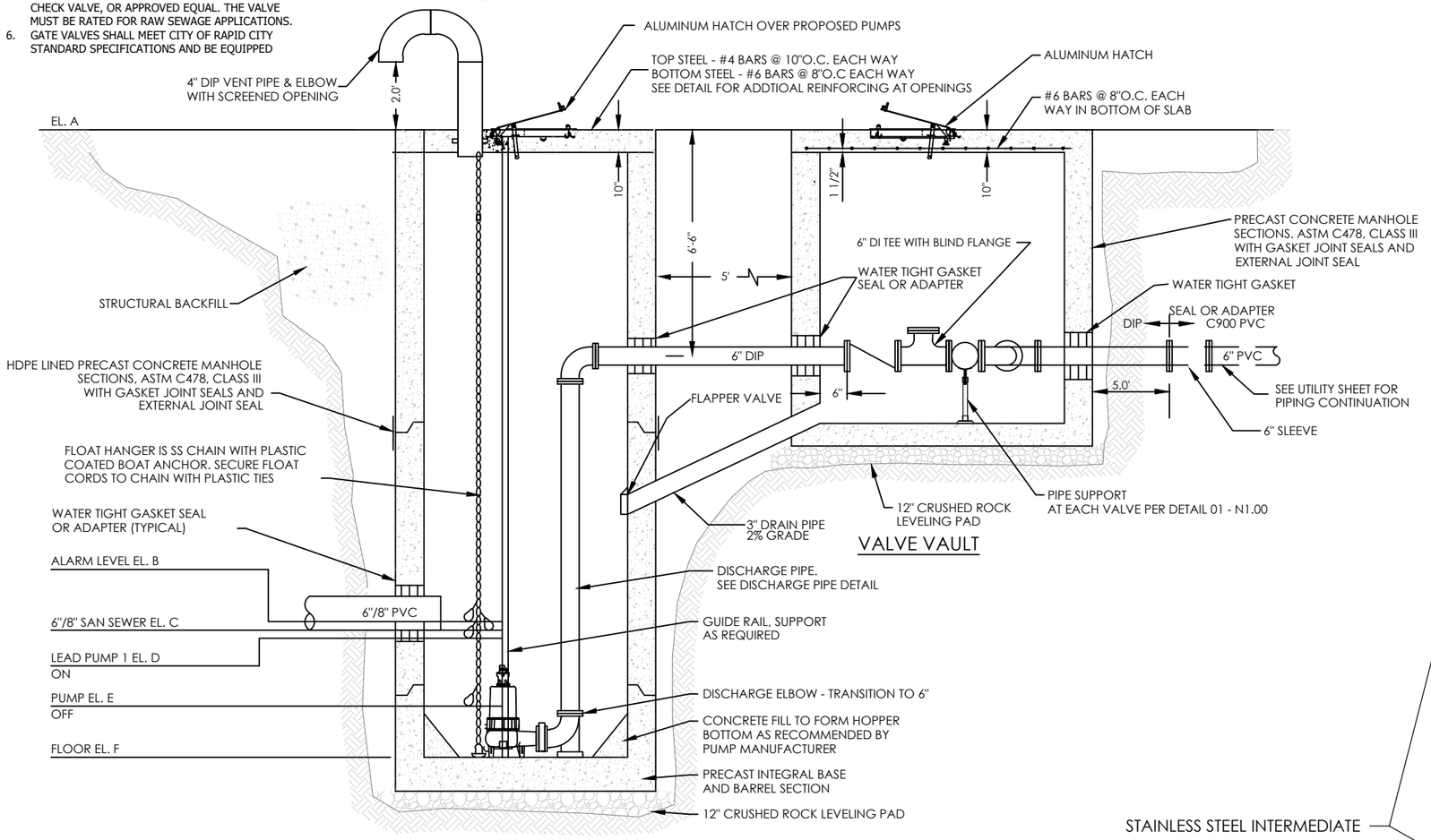
DETAILS

N-1.01

24135 - N - Details.dwg

GENERAL NOTES

1. ALUMINUM HATCHES SHALL BE HALLIDAY S1R3654 OR APPROVED EQUAL.
2. LADDER SHALL MEET OSHA STANDARDS
3. ALL PIPING WITHIN 5' AND BETWEEN THE STRUCTURES SHALL BE INCLUDED IN THE LIFT STATION/VALVE VAULT
4. WET WELL #1 SHALL HAVE A TRASH BASKET. WET WELL #2 WILL NOT REQUIRE A TRASH BASKET.
5. CHECK VALVES SHALL BE APCO CVS-250 SWING CHECK VALVE, OR APPROVED EQUAL. THE VALVE MUST BE RATED FOR RAW SEWAGE APPLICATIONS.
6. GATE VALVES SHALL MEET CITY OF RAPID CITY STANDARD SPECIFICATIONS AND BE EQUIPPED WITH HAND WHEEL OPERATORS. THE VALVE MUST BE RATED FOR RAW SEWAGE APPLICATIONS.
7. LIFT STATION MANHOLE SHALL BE LINED WITH HDPE LINER OR ENGINEER APPROVED EQUIVALENT.
8. FURNISH AND INSTALL A THERN COMMANDER, 2000LB DAVIT CRANE W/ HAND WINCH, SS CABLE AND FLUSH MOUNT BASE.
9. SEE CALCULATION SHEETS FOR VARIOUS ELEVATIONS FOR LIFT STATION/VALVE VAULT.



VALVE VAULT

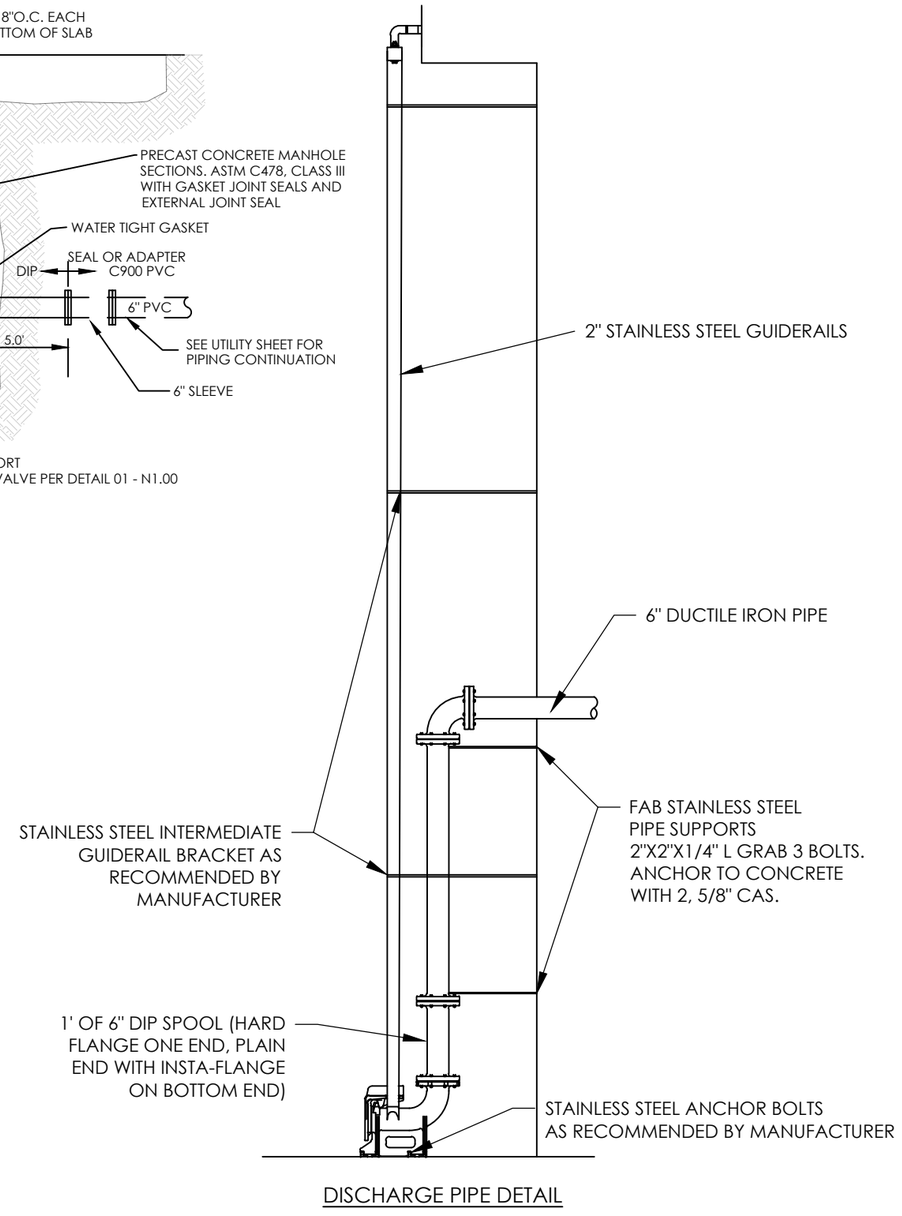
LIFT STATION WET WELL

LIFT STATION AND VALVE VAULT

SECTION - N.T.S.

LIFT STATION #1 ELEVATIONS
- A. 4667.18 FT
- B. 4654.84 FT
- C. 4654.84 FT
- D. 4654.34 FT
- E. 4648.84 FT
- F. 4646.17 FT
- G. WET WELL DEPTH: 21.01 FT

LIFT STATION #2 ELEVATIONS
- A. 4766.08 FT
- B. 4757.50 FT
- C. 4757.50 FT
- D. 4757.00 FT
- E. 4751.60 FT
- F. 4748.93 FT
- G. WET WELL DEPTH: 17.15 FT



DISCHARGE PIPE DETAIL

NOT TO SCALE

STOCKWELL

STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

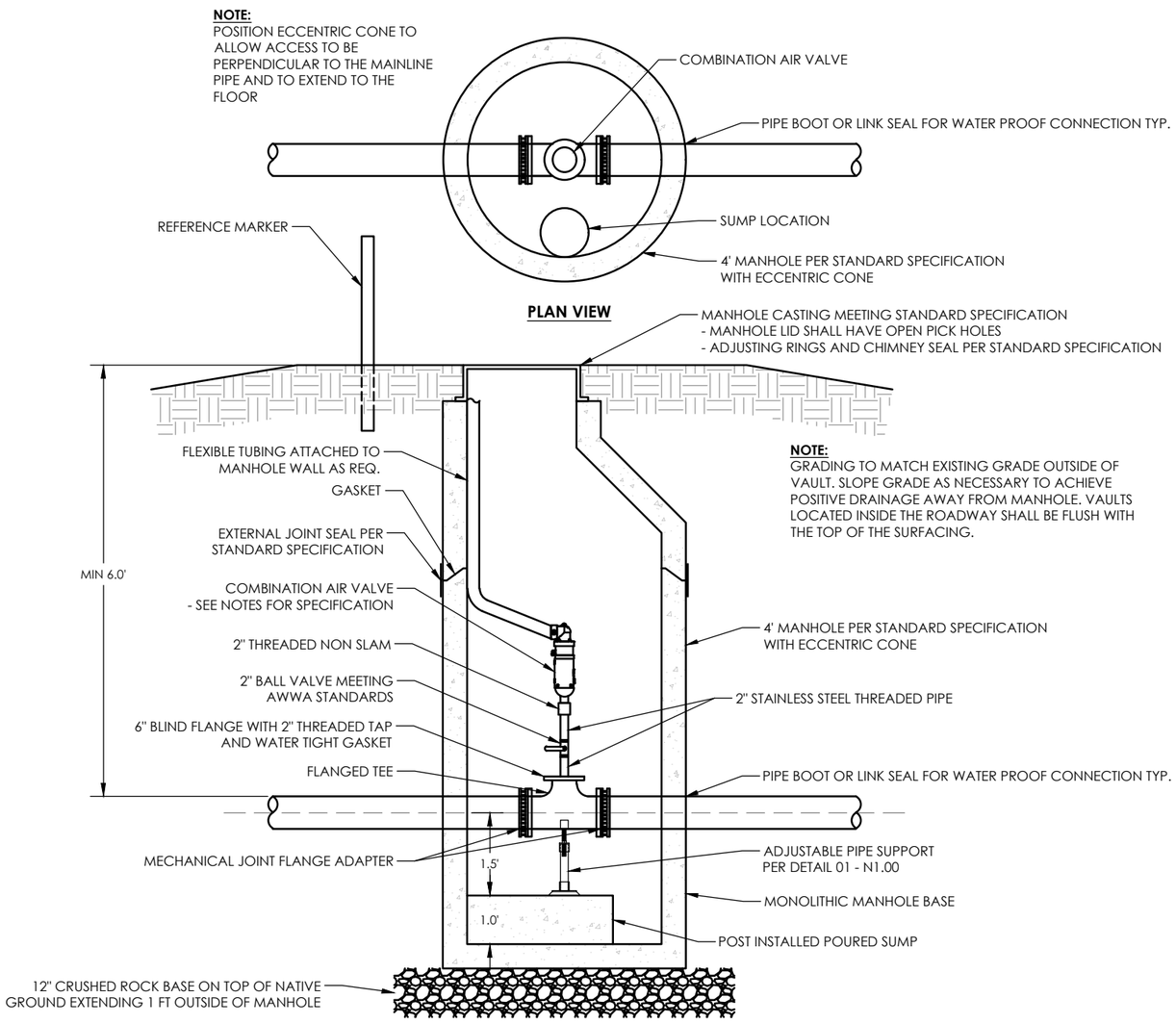
REGISTERED PROFESSIONAL ENGINEER
16882
JACE D. CHRISTIANSEN
4/4/2025

PLOT DATE 4/4/2025 7:24 AM

CONSTRUCTION SET

DETAILS

N-1.02



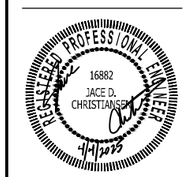
COMBNINATION AIR RELIEF VALVE ASSEMBLY N.T.S.

NOTES:

1. SEE PLAN AND PROFILE SHEETS FOR LOCATION OF AIR RELIEF VALVE VAULTS.
2. TEE SHALL BE AN AWWA STANDARD TEE, JOINTS WITH PIPELINE SHALL BE FLANGED, OR OTHERWISE APPROVED BY OWNER.
3. INSTALL CORROSION PROTECTION SYSTEM AS RECOMMENDED BY MANUAFACTURER.
4. THE NUMBER OF PIPE SUPPORTS IN THE VAULTS SHALL BE PER PIPE MANUFACTURER'S RECOMMENDATION, MINIMUM ONE PIPE SUPPORT UNDER THE TEE.
5. ACCESSORIES:
   - 5.1. WATER MAIN
     - 5.1.1. 8"x8"x6" AWWA REDUCING TEE
     - 5.1.2. A.R.I. D46-TP02 OR APPROVED EQUAL
   - 5.2. SANITARY FORCE MAIN
     - 5.2.1. 6"x6"x6" AWWA TEE
     - 5.2.2. A.R.I. D025-TPO2 OR APPROVED EQUAL
6. ALL MATERIALS FOR WATER MAIN SHALL MEET AWWA STANDARDS FOR DRINKING WATER AND BE RATED FOR A MINIMUM OF 160 PSI.

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

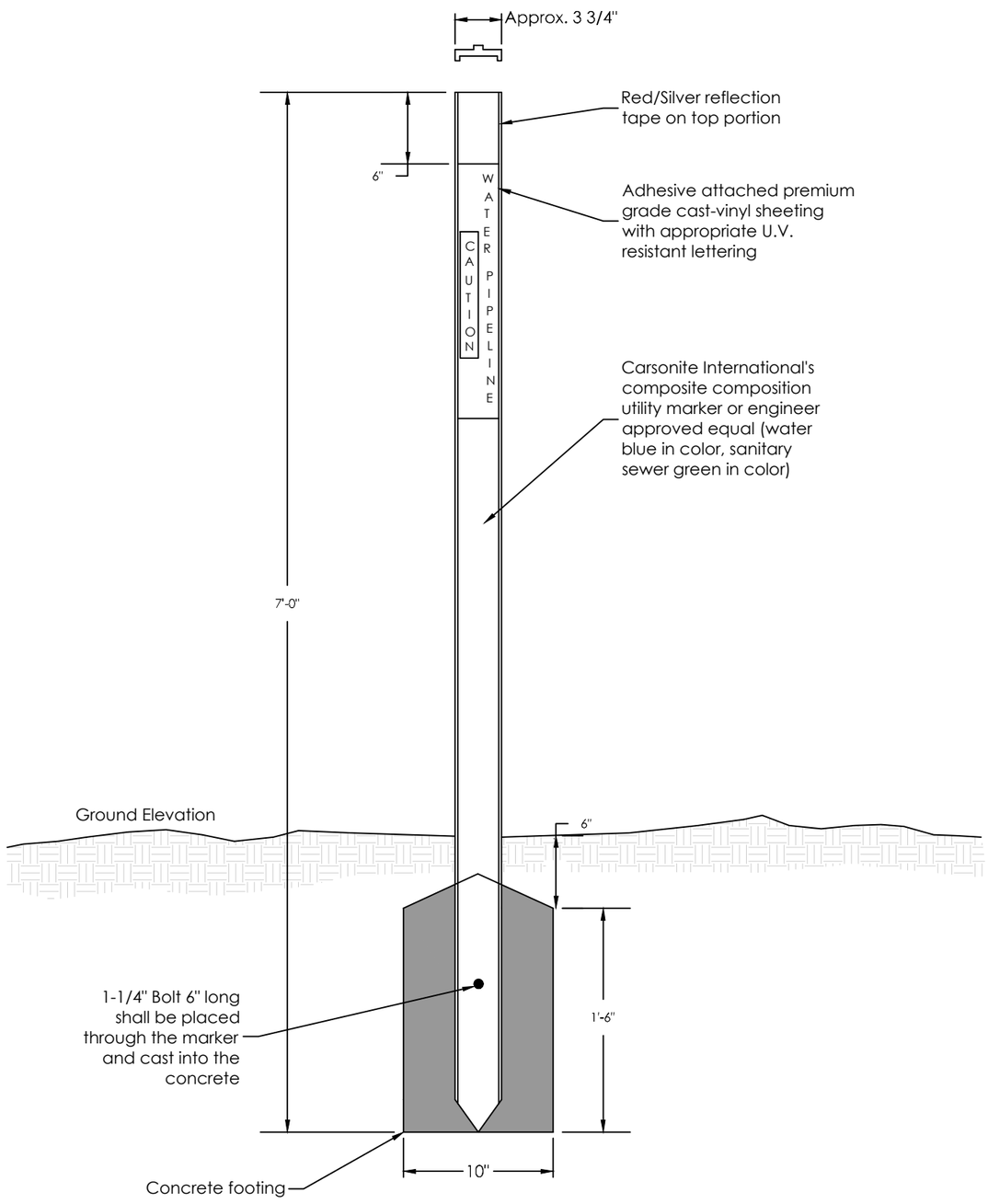


PLOT DATE 4/4/2025 7:24 AM

CONSTRUCTION SET

DETAILS

N-1.03



Valve Box Marker

STOCKWELL

STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

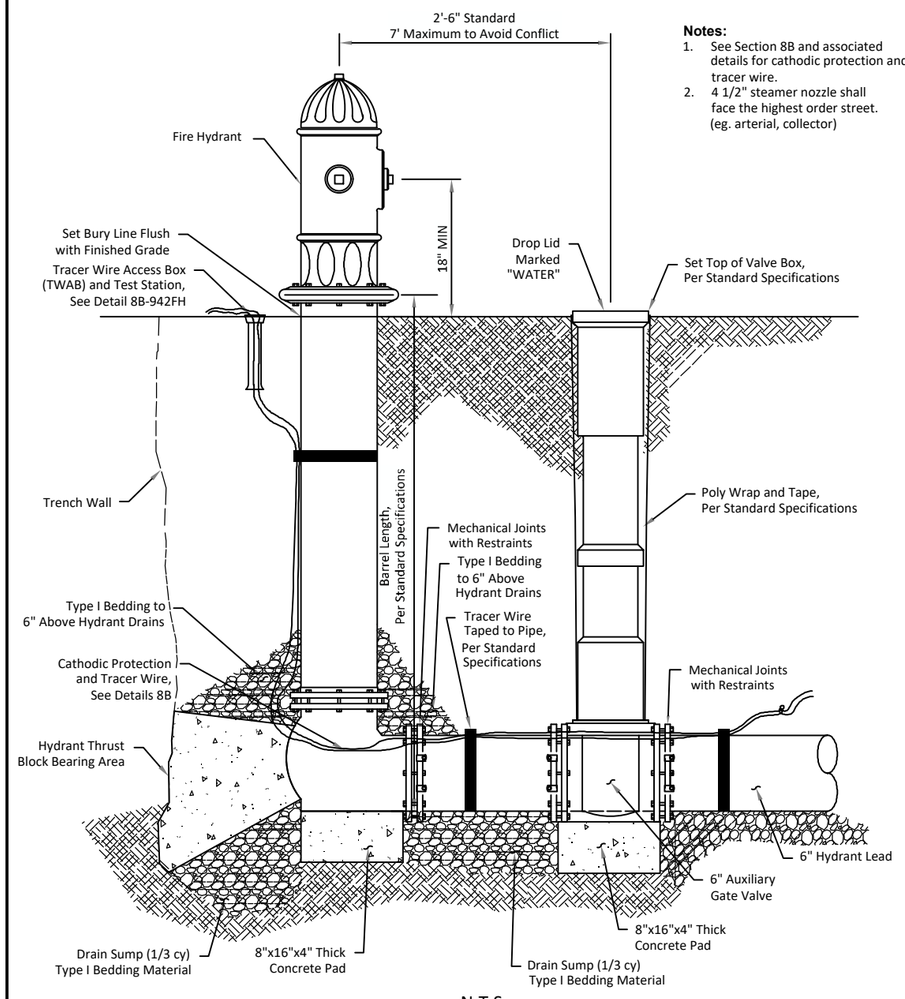
REGISTERED PROFESSIONAL ENGINEER
16882
JACE D. CHRISTIANSEN
4/4/2025

PLOT DATE 4/4/2025 7:24 AM

CONSTRUCTION SET

DETAILS

N-1.04



Notes:
1. See Section 8B and associated details for cathodic protection and tracer wire.
2. 4 1/2" steamer nozzle shall face the highest order street. (eg. arterial, collector)

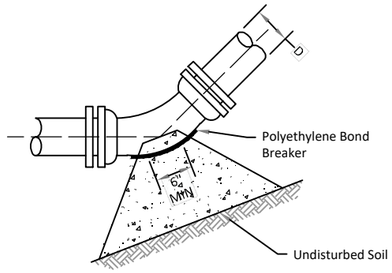
N.T.S.

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

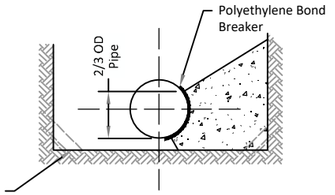
HYDRANT SETTING DETAIL

DATE: 8-19-22

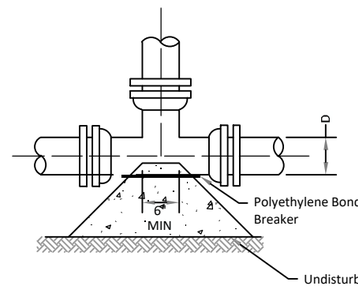
Sec. - Sht.
8A-1



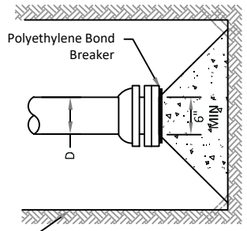
11.25°, 22.5°, 45°, AND 90° BENDS



TYPICAL CROSS SECTION



TEE



DEAD END

THRUST BLOCK
DETAILS

Notes:
1. Thrust blocks shall be a minimum of 6" wide at the fitting or one half the diameter of the pipe, whichever is greater.
2. Thrust blocks shall extend from the fitting to the undisturbed trench wall. Thrust block dimensions at the undisturbed wall shall be as per plans and shall meet the minimum bearing area as required by plans.

N.T.S.

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

THRUST BLOCKS

DATE: 8-19-22

Sec. - Sht.
8A-3

STOCKWELL

STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

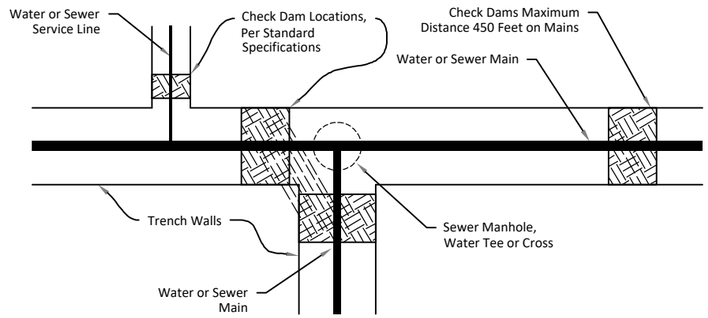
REGISTERED PROFESSIONAL ENGINEER
16882
JACE D. CHRISTIANSEN
4/4/2025

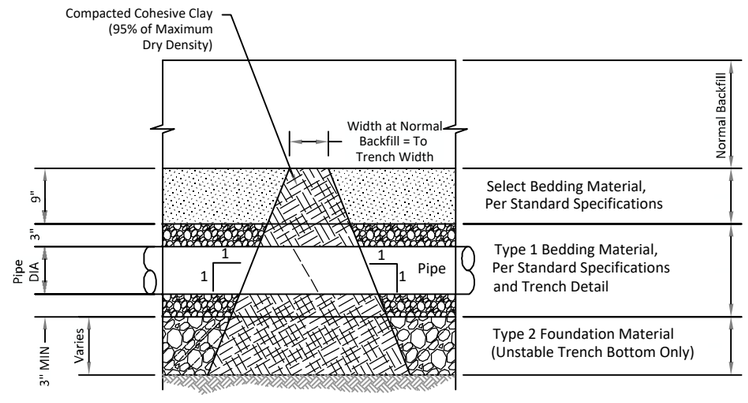
PLOT DATE 4/4/2025 7:24 AM

CONSTRUCTION SET

DETAILS

N-1.05

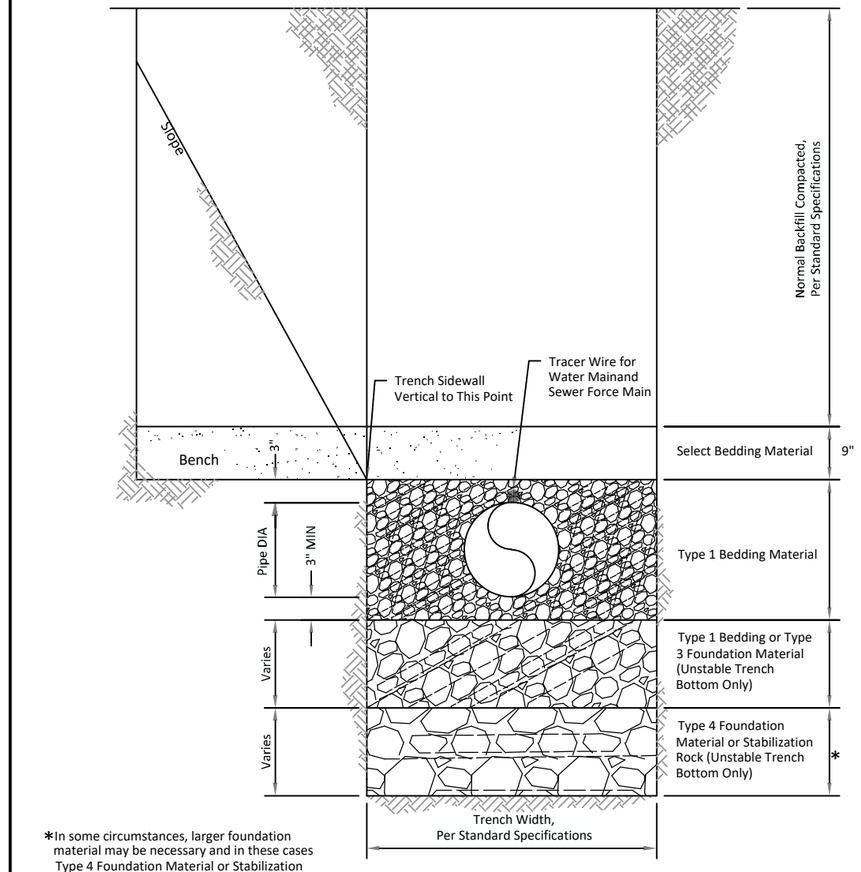




Note:
Check dam installation locations shall be as indicated on the plans. However during construction, check dam installation locations may be moved due to field conditions. The check dam shall extend from the bottom of the excavation through the bedding material to the "Normal Backfill" and shall extend completely to each trench sidewall. Do not construct check dam around pipe joint.

N.T.S.

CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
TYPICAL TRENCH CHECK DAM DETAIL FOR WATER & SEWER MAINS	DATE: 8-19-22 Sec. - Sht. 11-2



*In some circumstances, larger foundation material may be necessary and in these cases Type 4 Foundation Material or Stabilization Rock maybe used Per Standard Specifications, Section 112. If Type 4 Foundation Material or Stabilization Rock is used, then a minimum 6 inches of Type 3 Foundation Material shall be placed directly above the material and prior to the placement of the Type 1 Bedding Material.

N.T.S.

CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
TRENCH DETAIL FOR PVC WATER & SEWER MAINS	DATE: 8-19-22 Sec. - Sht. 11-3

STOCKWELL

STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
16882
JACE D. CHRISTIANSEN
4/4/2025

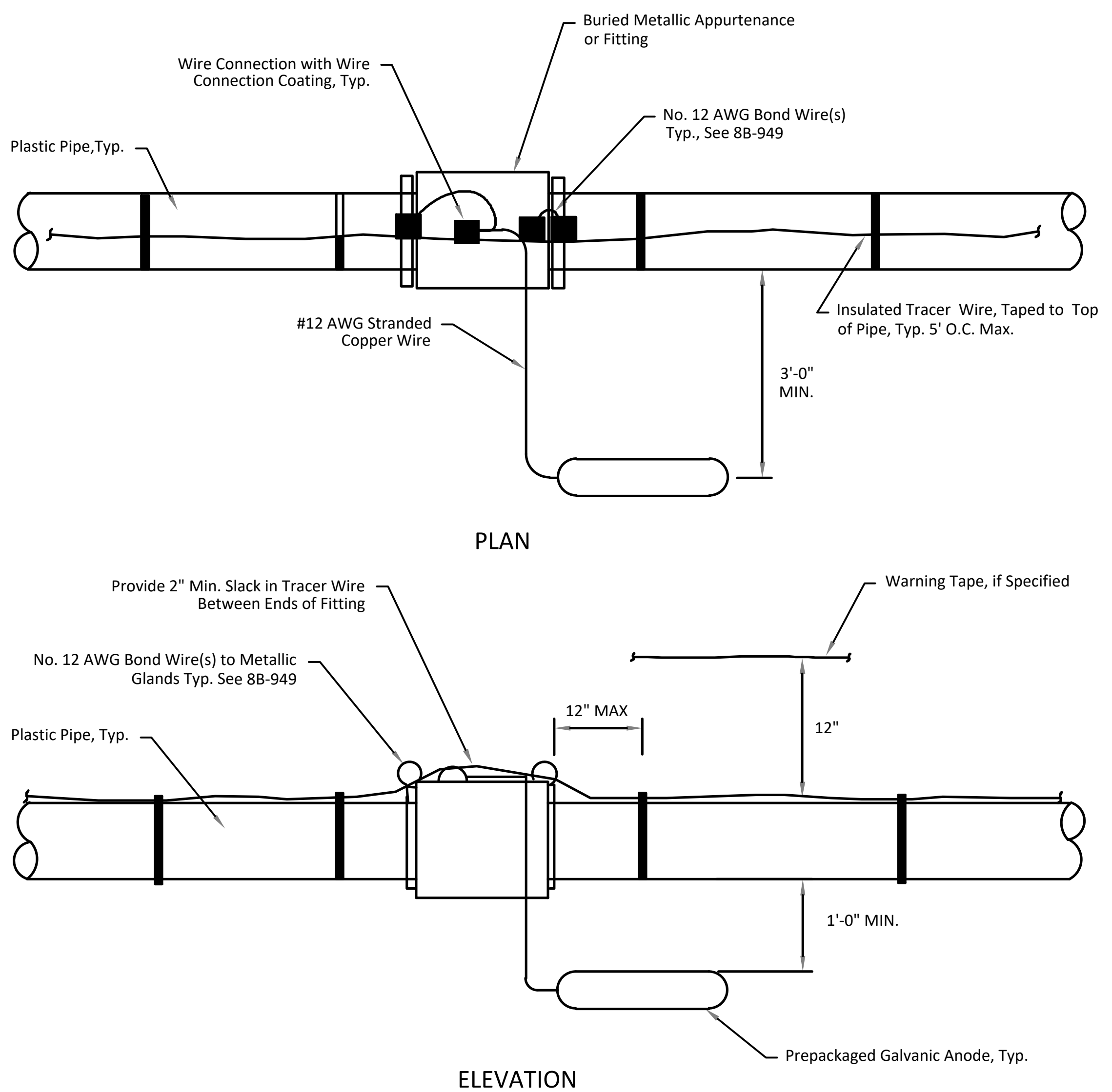
PLOT DATE 4/4/2025 7:24 AM

CONSTRUCTION SET

DETAILS

N-1.06

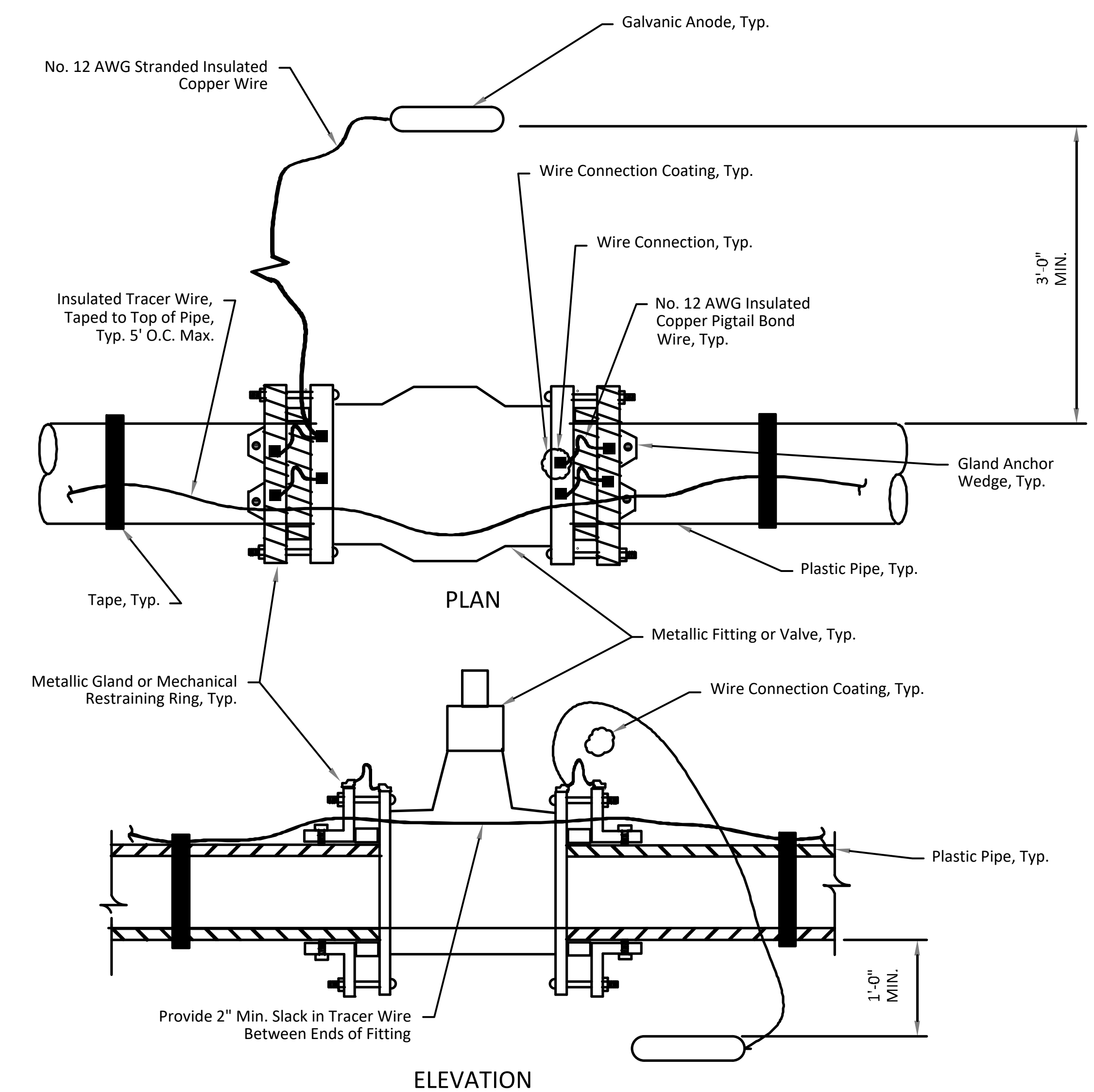
24135 - N - Details.dwg



Notes:
1. Minimum of two No. 12 AWG bond wires each for 12" and larger pipe. One bond wire for smaller pipe.
2. Provide type, number and size of anodes as specified. Minimum shall be one anode per fitting.

N.T.S.

CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
GALVANIC ANODE INSTALLATION AT BURIED METALLIC FITTINGS	DATE: 8-19-22 Sec. - Sht. 8B-940



Notes:
1. Bond plastic pipe metallic glands or mechanical restraining rings to metallic valve or fitting body, see 8B-940 and 8B-949.
2. Provide type, number & size of anodes as specified. Minimum shall be one anode per fitting.

N.T.S.

CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
CORROSION PROTECTION FOR METALLIC VALVES OR FITTINGS ON PLASTIC PIPE	DATE: 8-19-22 Sec. - Sht. 8B-943DIP

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

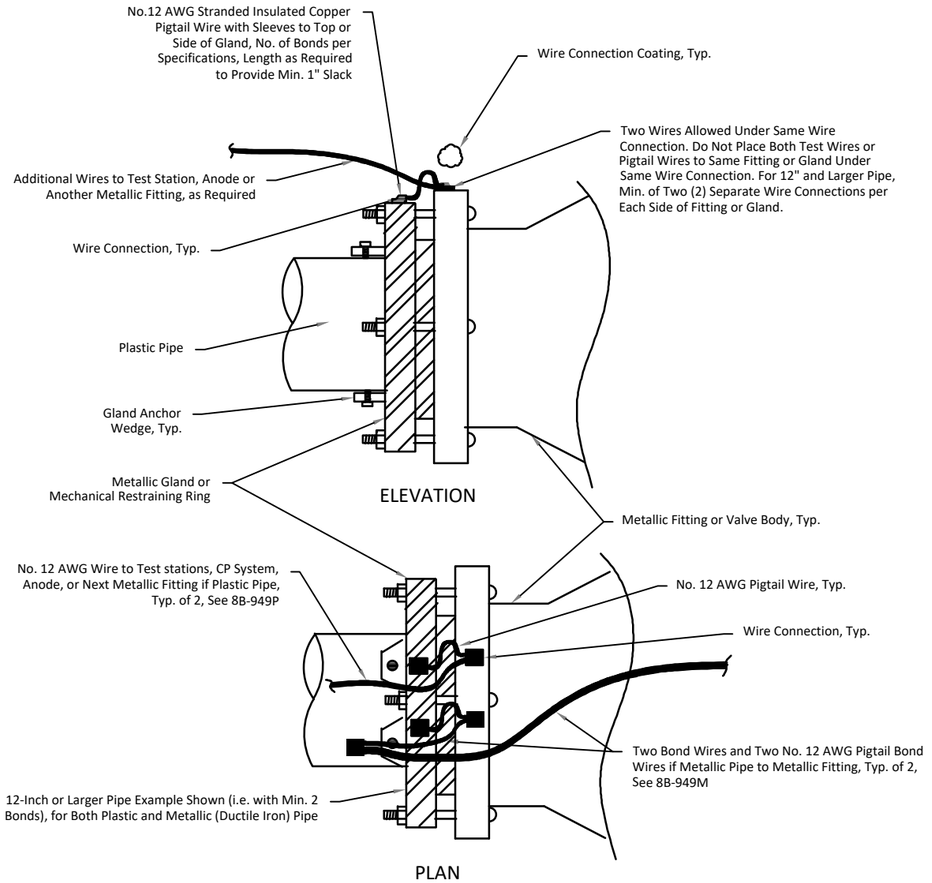
REGISTERED PROFESSIONAL ENGINEER 16882 JACE D. CHRISTIANSEN 4/4/2025

PLOT DATE 4/4/2025 7:24 AM

CONSTRUCTION SET

DETAILS

N-1.07



Notes:
1. Bond metallic or plastic pipe metallic glands to metallic fitting body. Complete pigtail wire connections to glands before assembly.
2. Bond metallic mechanical restraint rings to metallic fitting body
3. Minimum of two (2) bonds each for 12" and larger pipe. One (1) bond for pipe smaller than 12".

N.T.S.

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

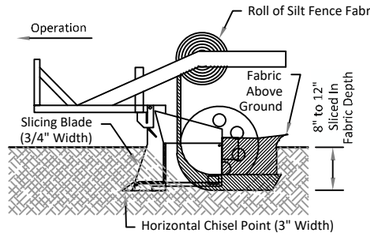
METALLIC FITTING GLANDS AND MECHANICAL RESTRAINT RINGS BONDING

DATE: 8-19-22

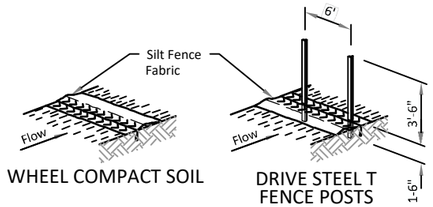
Sec. - Sht.
8B-949

HF — High Flow Silt Fence

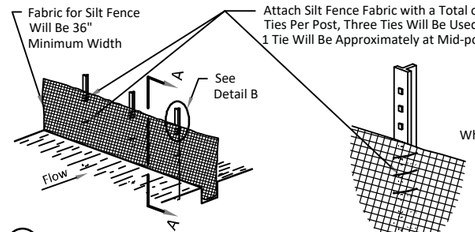
MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



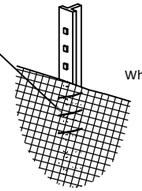
1 INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

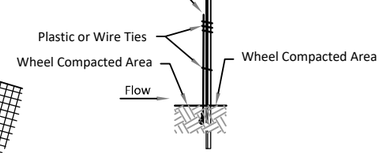


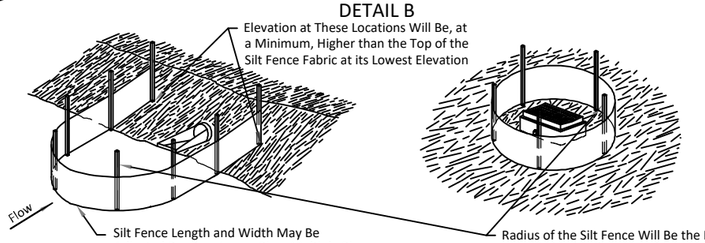
2 WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.



3 ATTACH SILT FENCE FABRIC







Note:
If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end will be provided on top of the extra length of silt fence fabric to prevent underflow.

N.T.S.

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

HIGH FLOW SILT FENCE

DATE: 8-19-22

Sec. - Sht.
18-3b

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

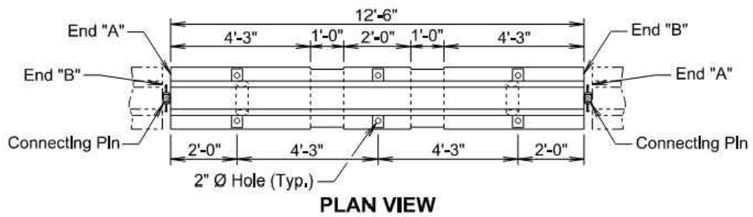
REGISTERED PROFESSIONAL ENGINEER
16882
JACE D. CHRISTIANSEN
4/4/2025

PLOT DATE 4/4/2025 7:24 AM

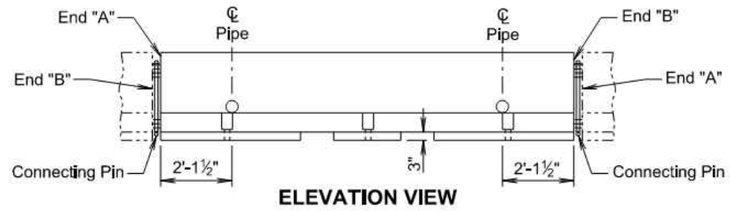
CONSTRUCTION SET

DETAILS

N-1.08



PLAN VIEW



ELEVATION VIEW

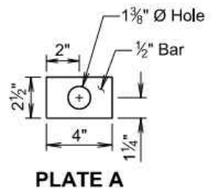
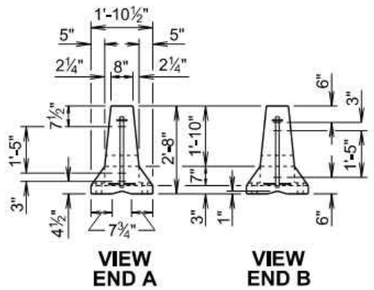
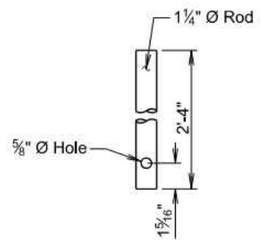


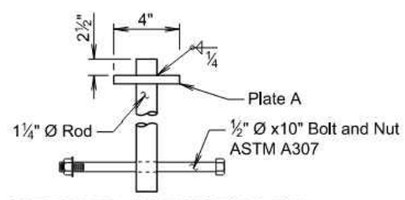
PLATE A



VIEW END A **VIEW END B**



CONNECTING PIN DETAIL



ASSEMBLED CONNECTING PIN

September 14, 2018

Published Date: 2025	SDDOT	TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (F SHAPE INTERIOR SECTION)	PLATE NUMBER 628.01 Sheet 1 of 2

GENERAL NOTES:

The detailed drawings are for illustrative purpose and depicts the current version of the F shape concrete barrier. If new movable concrete barriers are requested on a project, they will be constructed according to the F shape movable concrete barrier details on standard plate 628.10.

Each movable concrete barrier section weighs 5030 ± pounds.

Each movable concrete barrier section is detailed to provide end "A" to end "B" connection by insertion of a pin through steel loops.

The Jersey shape or any version of the F shape traffic control movable concrete barriers may be used on a project, however, only the same type or version will be used for each run of barriers.

Movable concrete barrier sections will be placed to provide uniform bearing of the sections with the paved surface as approved by the Engineer.

Movable concrete barrier sections will never be moved or lifted using the end loops.

Movable concrete barrier sections that have been damaged will not be used. Barrier sections are considered damaged if the loops are end welded onto existing damaged loops, loops are fractured, or there is exposed rebar from fractured concrete.

All cost for transporting the barriers from the specified location to the project site, installing, and returning the barriers to the specified location will be incidental to the contract unit price per each for "Traffic Control Movable Concrete Barrier".

If the concrete barriers need to be moved and reset on the project, requiring the barriers to be transported by truck, all cost for removing, transporting, and resetting the barriers will be incidental to the contract unit price per each for "Remove and Reset Traffic Control Movable Concrete Barrier". All cost for small shifts in alignment of the barriers, not requiring the barriers to be transported by truck, will be incidental to various contract items.

September 14, 2018

Published Date: 2025	SDDOT	TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (F SHAPE INTERIOR SECTION)	PLATE NUMBER 628.01 Sheet 2 of 2

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

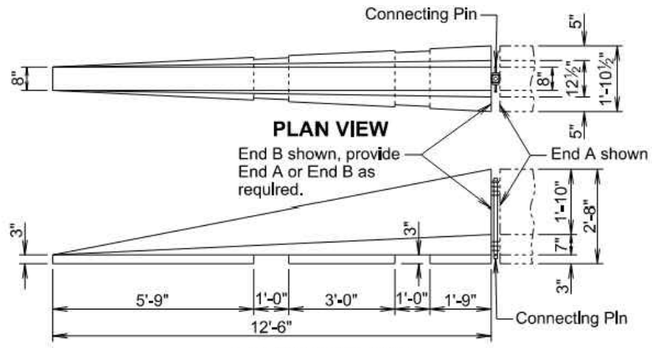
Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

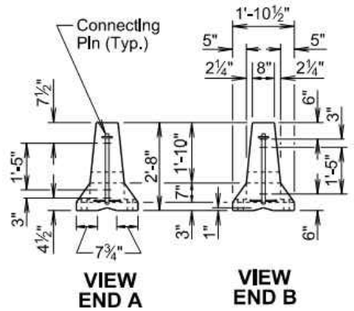
PLOT DATE 4/4/2025 7:24 AM

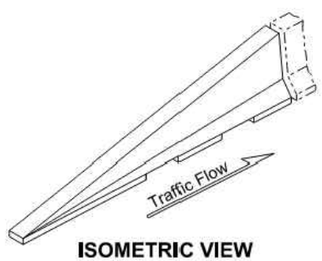
CONSTRUCTION SET

DETAILS

N-1.09

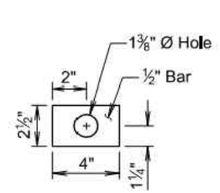


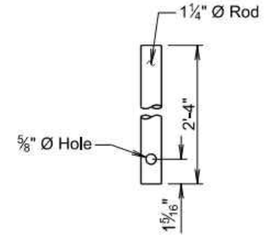


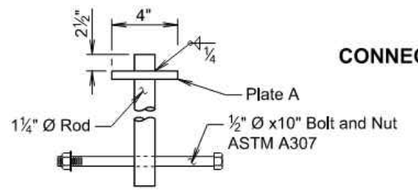


September 14, 2018

Published Date: 2025	SDDOT	TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (F SHAPE END SECTION)	PLATE NUMBER 628.02 Sheet 1 of 2







GENERAL NOTES:

The detailed drawings are for illustrative purpose and depicts the current version of the F shape concrete barrier end section. If new concrete barrier end sections are requested on a project, they will be constructed according to the F shape movable concrete barrier end section details on standard plate 628.11.

Each movable concrete barrier end section welghs 2450 ± pounds.

Each movable concrete barrier end section is detailed to provide end "A" to end "B" connection by insertion of a pin through steel loops.

The Jersey shape or any version of the F shape traffic control movable concrete barriers may be used on a project, however, only the same type or version will be used for each run of barriers.

Movable concrete barrier sections will be placed to provide uniform bearing of the sections with the paved surface as approved by the Engineer.

Movable concrete barrier end sections will never be moved or lifted using the end loops.

Movable concrete barrier end sections that have been damaged will not be used. Barrier sections are considered damaged if the loops are end welded onto existing damaged loops, loops are fractured, or there is exposed rebar from fractured concrete.

All cost for transporting the barriers from the specified location to the project site, installing, and returning the barriers to the specified location will be incidental to the contract unit price per each for "Traffic Control Movable Concrete Barrier".

If the concrete barriers need to be moved and reset on the project, requiring the barriers to be transported by truck, all cost for removing, transporting, and resetting the barriers will be incidental to the contract unit price per each for "Remove and Reset Traffic Control Movable Concrete Barrier". All cost for small shifts in alignment of the barriers, not requiring the barriers to be transported by truck, will be incidental to various contract items.

September 14, 2018

Published Date: 2025	SDDOT	TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (F SHAPE END SECTION)	PLATE NUMBER 628.02 Sheet 2 of 2

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

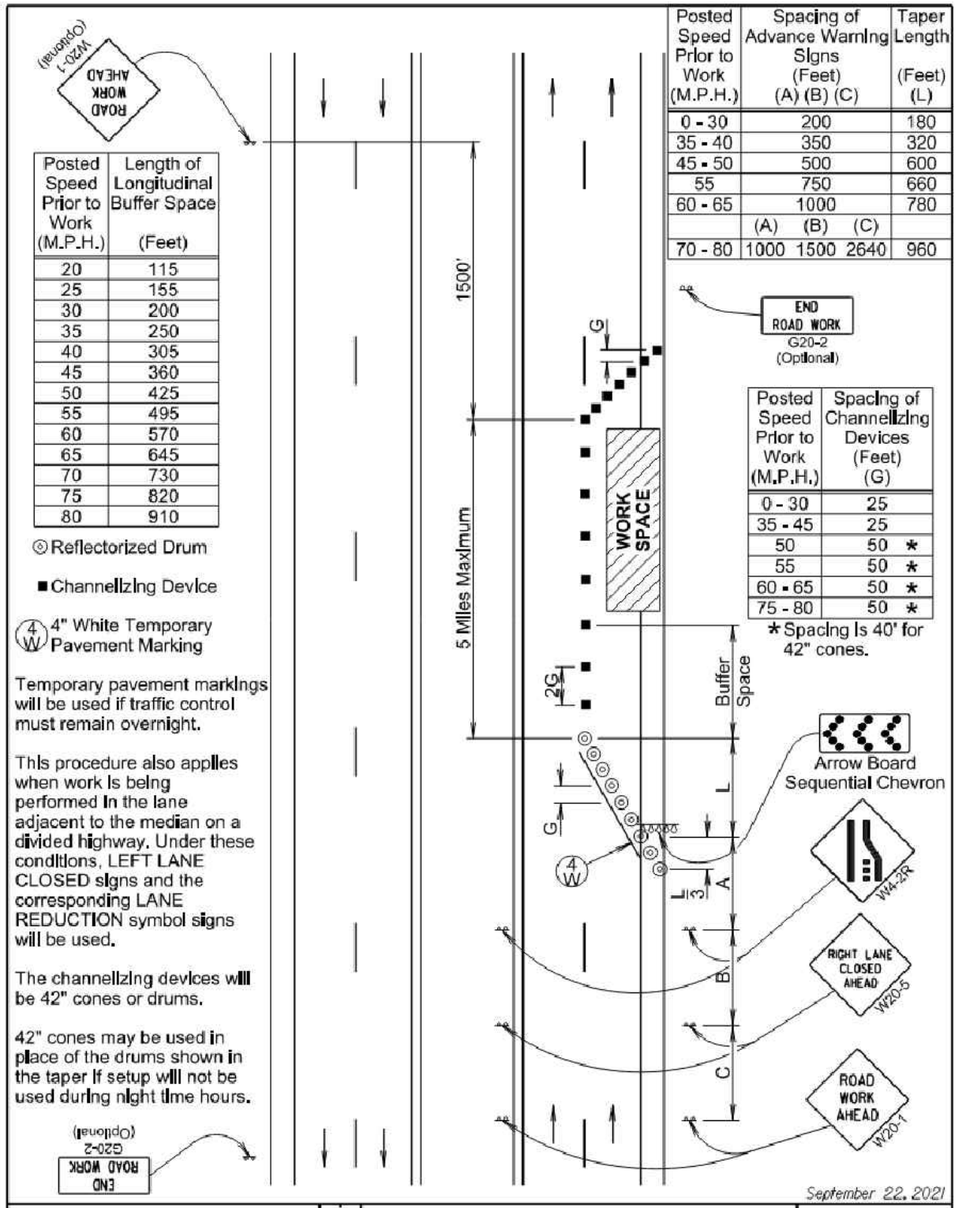
Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

PLOT DATE 4/4/2025 7:24 AM

CONSTRUCTION SET

DETAILS

N-1.10



Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 80	1000 1500 2640	960

Posted Speed Prior to Work (M.P.H.)	Spacing of Channellzing Devices (Feet) (G)
0 - 30	25
35 - 45	25
50	50 *
55	50 *
60 - 65	50 *
75 - 80	50 *

*Spacing is 40' for 42" cones.

September 22, 2021

Published Date: 2025	SDDOT	LANE CLOSURE WITHOUT BARRIER	PLATE NUMBER 634.64
			Sheet 1 of 1

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

Deadwood Ridge Apartments
Utility Improvements
Deadwood, South Dakota
SEI PROJECT #: 24135

REGISTERED PROFESSIONAL ENGINEER
16882
JACE D. CHRISTIANSEN
4/4/2025

PLOT DATE 4/4/2025 7:24 AM

CONSTRUCTION SET

DETAILS

N-1.11