

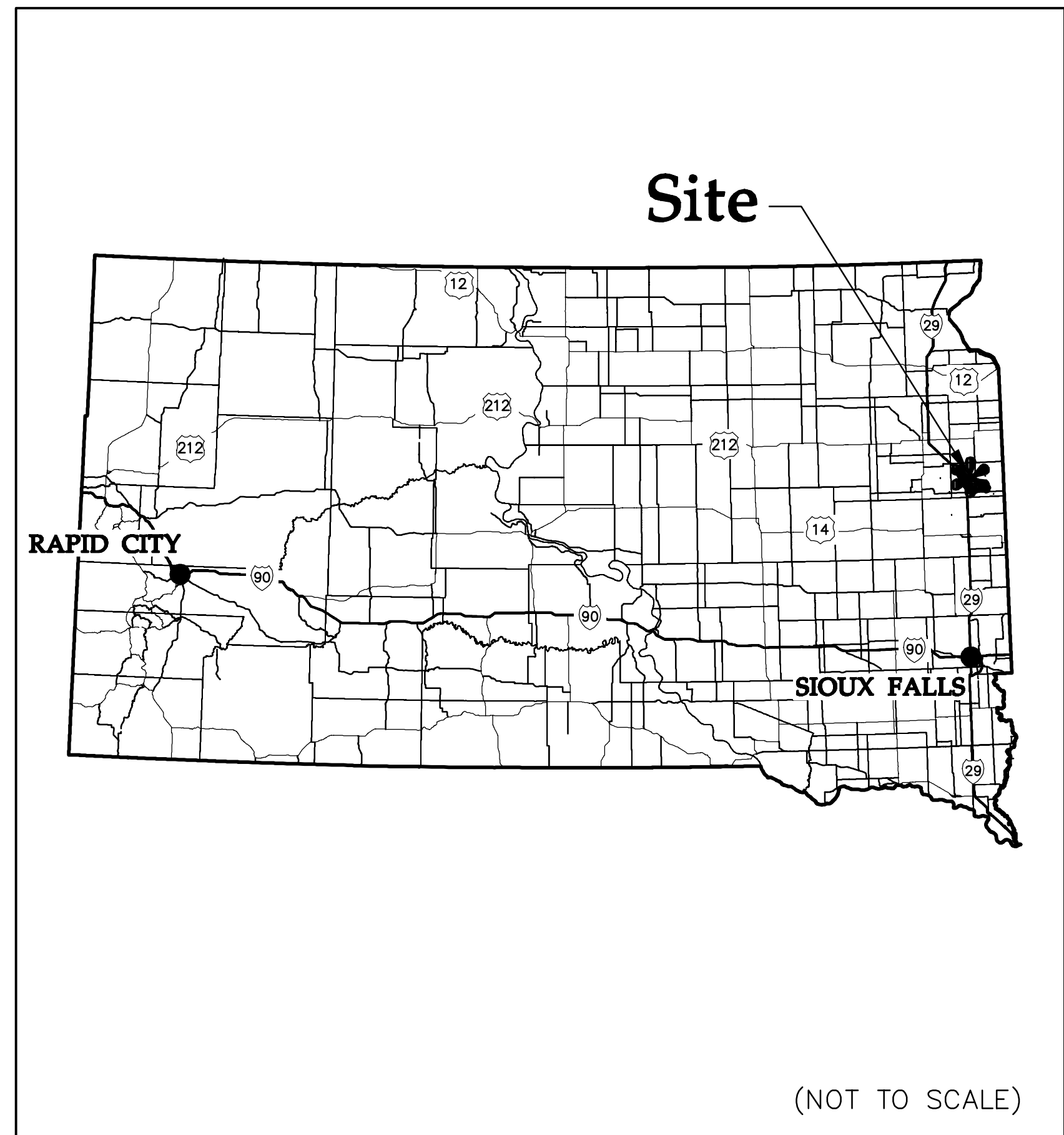
Civil Record Plans

for

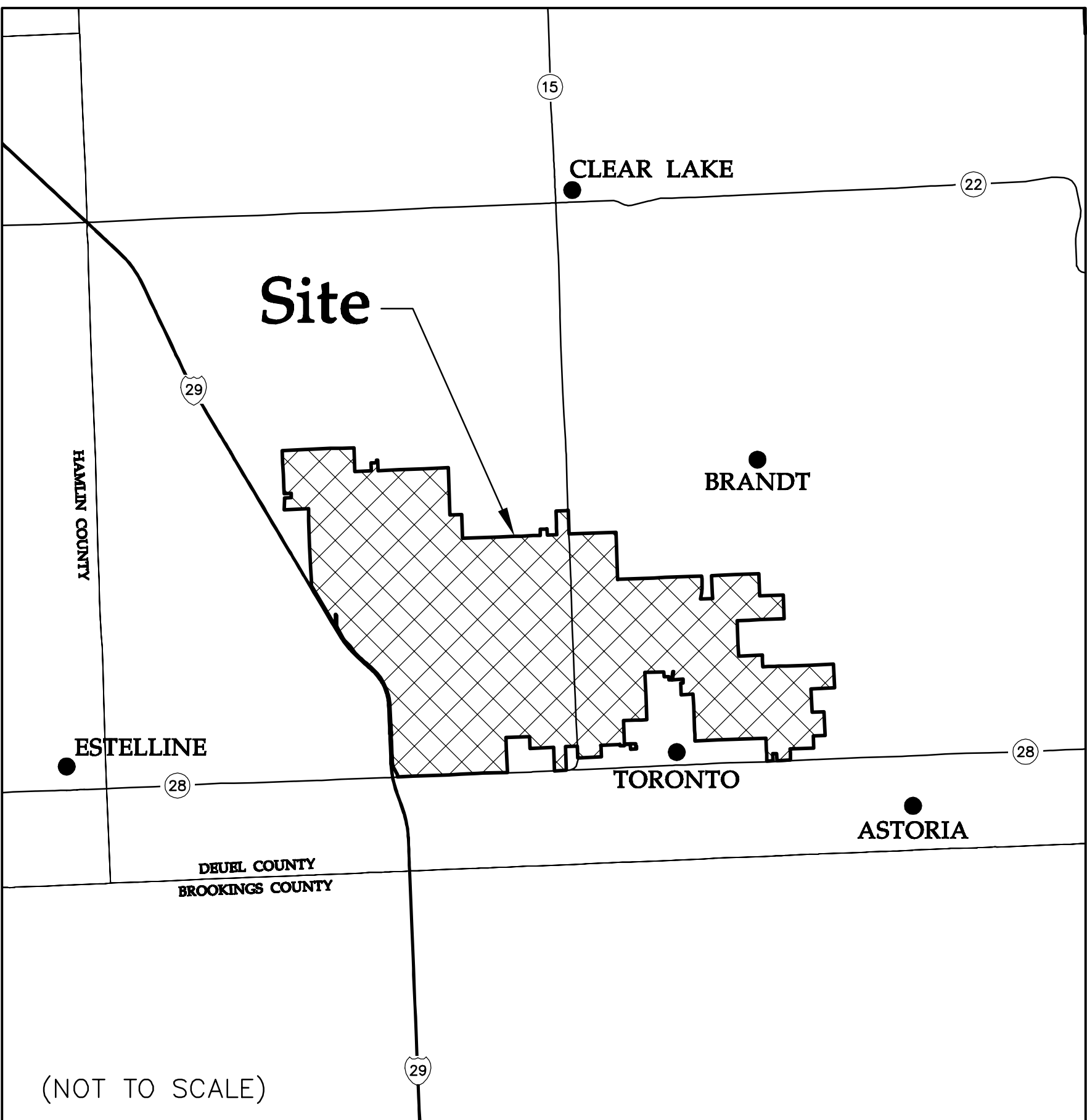
Wind Turbines, Access Roads, and Drainage

Tatanka Ridge Wind Project Deuel County, SD

State Map



Vicinity Map



PUBLIC

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TRW-C-510-002-00	Delivery Flow Plan
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TRW-C-512-002-00	Construction Details
TRW-C-512-003-00	Construction Details
TRW-C-512-004-00	Construction Details
TRW-C-512-005-00	Construction Details
TRW-C-512-006-00	Construction Details
TRW-C-512-007-00	Construction Details
TRW-C-512-008-00	Construction Details
TRW-C-512-009-00	Construction Details
TRW-C-512-010-00	Construction Details
TRW-C-512-011-00	Construction Details
TRW-C-512-012-00	Construction Details
TRW-C-512-013-00	Construction Details
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TRW-C-511-003-00	Civil Site Plan L1
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TRW-C-511-010-00	Civil Site Plan K0 K1 K2
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TRW-C-511-018-00	Civil Site Plan P3 P4
TRW-C-511-019-00	Civil Site Plan P6 P7 P8
TRW-C-511-020-00	Civil Site Plan E1 E2
TRW-C-511-021-00	Civil Site Plan E3 E4
TRW-C-511-022-00	Civil Site Plan E5 E6
TRW-C-511-023-00	Civil Site Plan B1 C5
TRW-C-511-024-00	Civil Site Plan B2 B3
TRW-C-511-025-00	Civil Site Plan
TRW-C-511-026-00	Civil Site Plan A1 A2
TRW-C-511-027-00	Civil Site Plan
TRW-C-511-028-00	Road B2 Profile - Sta 0+00 to 12+50
TRW-C-511-029-00	Road B2 Profile - Sta 12+50 to 25+00
TRW-C-511-030-00	Road B2 Profile - Sta 25+00 to End
TRW-C-511-031-00	Road C5 Profile - Sta 0+00 to End
TRW-C-511-032-00	O&M Grading Plan

TRW-C-511-033-00	Laydown Grading Plan
TRW-C-511-034-00	O&M and Laydown Grading Details
TRW-C-511-035-00	Temporary Improvement 1
TRW-C-511-036-00	Temporary Improvement 2 & 3
TRW-C-511-037-00	Temporary Improvement 4
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TRW-C-511-040-00	Temporary Improvement 7
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TRW-C-511-045-00	Temporary Improvement 12 & 13
TRW-C-511-046-00	Temporary Improvement 14
TRW-C-511-047-00	Temporary Improvement 15
TRW-C-511-048-00	Temporary Improvement 16
TRW-C-511-049-00	Temporary Improvement 17
TRW-C-511-050-00	Temporary Improvement 18
TRW-C-511-051-00	Temporary Improvement 19 & 20
TRW-C-511-052-00	Temporary Improvement 21
TRW-C-511-053-00	Temporary Improvement 22

RECORD CIVIL PLANS
CONFORMING TO CONSTRUCTION RECORDS PROVIDED
BY WANZEK AND FIELD SURVEY, PROVIDED BY
WESTWOOD PROFESSIONAL SERVICES, COMPLETED
JUNE, 2021.

PROJECT CONTACT INFORMATION:

TITLE	COMPANY	NAME	CONTACT NUMBER
OWNER	AVANGRID RENEWABLES	MARK CROISSANT	503-964-1713
OWNER	AVANGRID RENEWABLES	JEBBY VARUGHESE	484-654-1880
PROJECT MANAGER	WESTWOOD PROFESSIONAL SERVICES	DANI NYGREN	952-906-7493
ENGINEER OF RECORD	WESTWOOD PROFESSIONAL SERVICES	ROB COPOULS	952-906-7470
CONTRACTOR	WANZEK	MARCUS BEEDLE	701-893-3673

DATA SET INFORMATION:

BASE FILE	FILE NAME / NOTES	PROVIDER	DATE
AERIAL IMAGE	160532_JackRabbit_160533_Tatanka_NW.sid, 160532_JackRabbit_160533_Tatanka_SW.sid	Avangrid	2/13/2017
LAND CONTROL	Signed_Electrical_Easements_20200327.shp, Signed_Good_Neighbor_Agreements_20200327.shp, Signed_Wind_Leases_20200327.shp	Wanzek/Avangrid	3/30/2020
ALTA SURVEY	00010431SURV.dwg	Westwood	10/14/2019
TOPOGRAPHY	160533 Tatanka revised DTM.dwg, 160532 Jackrabbit DTM.dwg	Avangrid	10/8/2019
TURBINE ARRAY	0022401TURB-RECO.dwg	Westwood	1/8/2021
UNDERGROUND COLLECTION	0022401RECO.dwg	Westwood	3/5/21
STREAMS/WETLANDS	SWCA_Tatanka_Streams-OHWM_20200529.shp SWCA_Tatanka_Wetlands_20200529.shp	Wanzek/Avangrid	5/29/2020
TOPEKA SHINER	TatankaRidge_TopekaShiner-Waterbodies_WithinSurveyArea_ 20191121.shp	Wanzek/Avangrid	5/19/2020
DAKOTA SKIPPER	DASK-POSK_SuitableHabitat_Unoccupied_20190606.shp	Wanzek/Avangrid	5/19/2020
GRASSLANDS	NativeGrassland_20190606.shpNon-NativeGrassland_Wetlands_ 20190606.shp	Wanzek/Avangrid	5/19/2020
LAND EASEMENTS	Tatanka_Land_Easements.shp USFWS_Easements.shp	Wanzek/Avangrid	2/28/2020
WATERSHED BOUNDARY	WBDHU6.shp	Wanzek/Avangrid	10/11/2019

REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



Westwood

Phone (952) 937-5150 12701 Whitewater Drive, Suite #300
Fax (952) 937-5822 Minnetonka, MN 55343
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

WANZEK
a MasTec company

4850 32nd Avenue S
Fargo, ND 58104

**AVANGRID
RENEWABLES**

**Tatanka Ridge
Wind Farm**

Cover

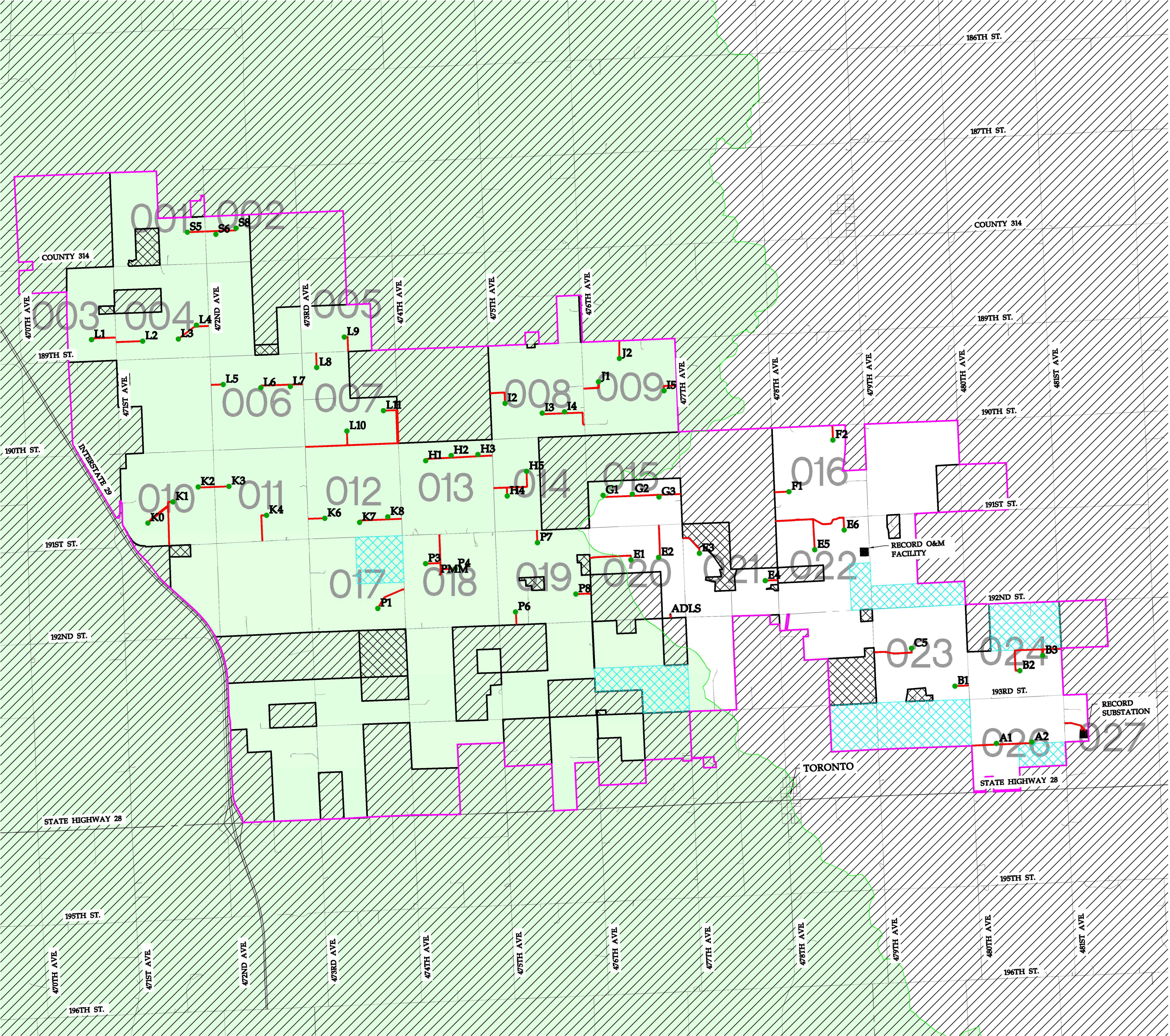
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: Date Created: 09/27/21

Project Number: 0022401

File Name: 0022401CV01.dwg

Dwg No: TRW-C-100 Sht No: 001



LEGEND:

- PROJECT BOUNDARY
- NON-PARTICIPATING
- GOOD NEIGHBOR AGREEMENT
- ELECTRICAL EASEMENT
- RECORD TURBINE LOCATION
- RECORD TURBINE NUMBER
- RECORD ACCESS ROAD
- BIG SIOUX WATERSHED
- EXISTING PUBLIC ROAD
- EXISTING HIGHWAY/INTERSTATE
- SHEET NUMBER (TKW-C-511-XXX)

ITEM	LENGTH
RECORD ACCESS ROAD	16.5 mi.



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
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AVANGRID RENEWABLES

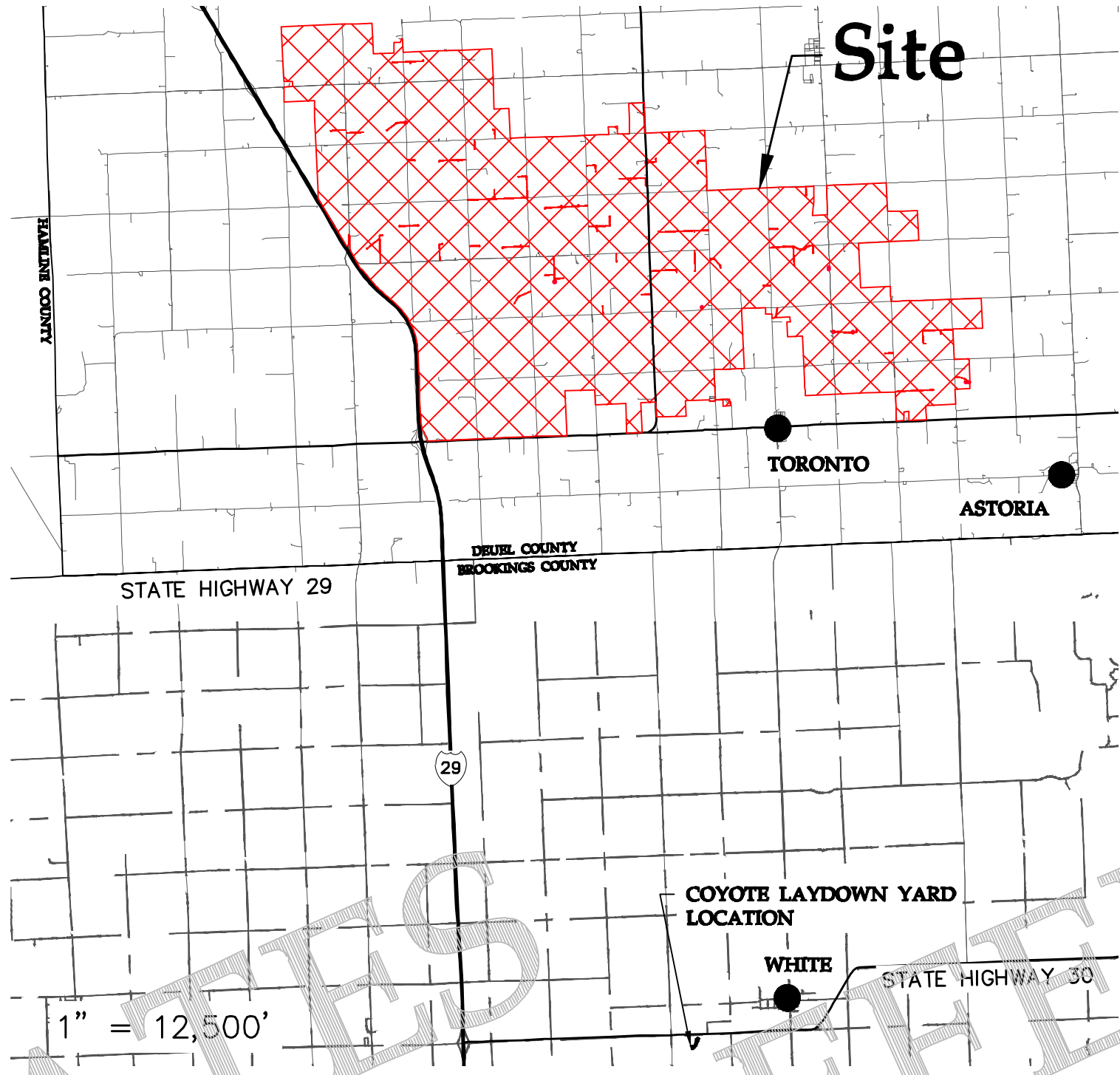
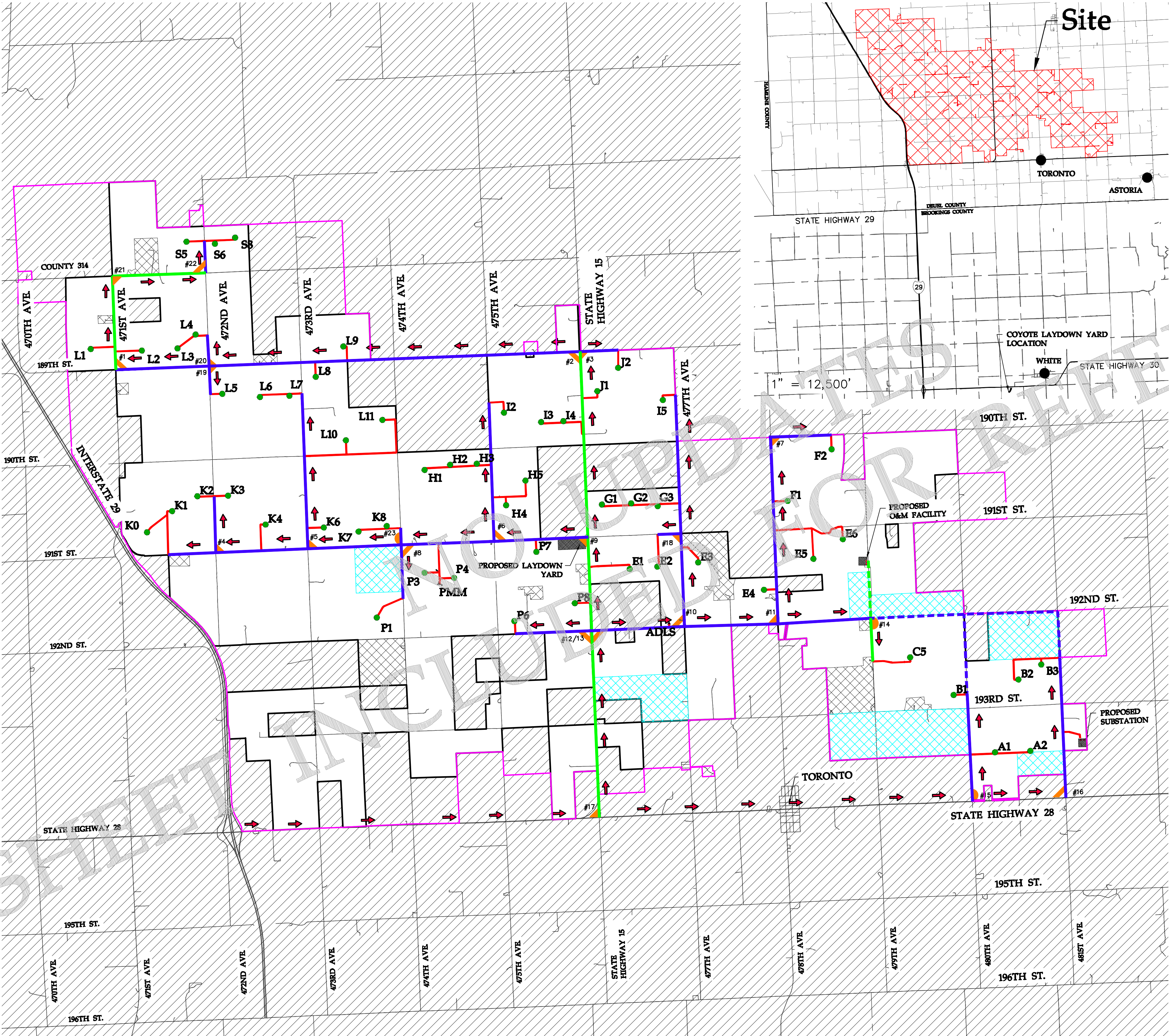
Tatanka Ridge Wind Farm

Overall Site Plan

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=3000' Date Created: 09/27/21
Project Number: 0022401
File Name: 0022401OA01.dwg
Dwg No: TRW-C-510 Sht No: 001

Vicinity Map



LEGEND:

- PROJECT BOUNDARY
- NON-PARTICIPATING
- GOOD NEIGHBOR AGREEMENT
- ELECTRICAL EASEMENT
- PROPOSED TURBINE LOCATION
- PROPOSED TURBINE NUMBER
- PROPOSED ACCESS ROAD
- EXISTING PAVED DELIVERY ROAD
- EXISTING GRAVEL DELIVERY ROAD
- EXISTING PAVED ROAD - CONSTRUCTION TRAFFIC
- EXISTING GRAVEL ROAD - CONSTRUCTION TRAFFIC
- EXISTING ROAD
- EXISTING HIGHWAY/INTERSTATE
- PUBLIC INTERSECTION IMPROVEMENTS (SEE SHEETS 032-046 FOR DETAILED DESIGN)
- TURBINE/EQUIPMENT DELIVERY ROUTE DIRECTION

ITEM	LENGTH
PAVED DELIVERY ROUTE	7.5 mi.
GRAVEL DELIVERY ROUTE	27.2 mi.

REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
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**AVANGRID
RENEWABLES**

**Tatanka Ridge
Wind Farm**

Delivery Flow Plan

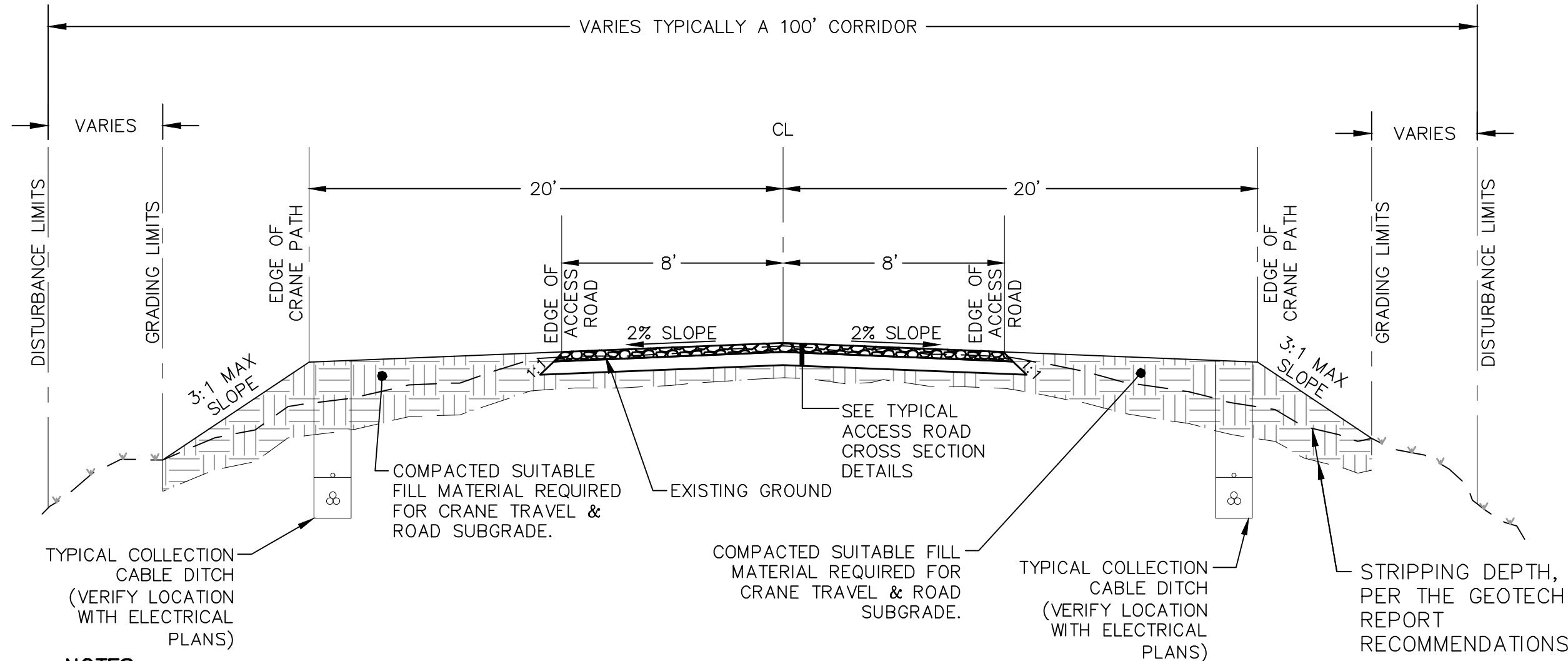
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Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=3000' Date Created: 09/27/21

Project Number: 0022401

File Name: 0022401DFP01.dwg

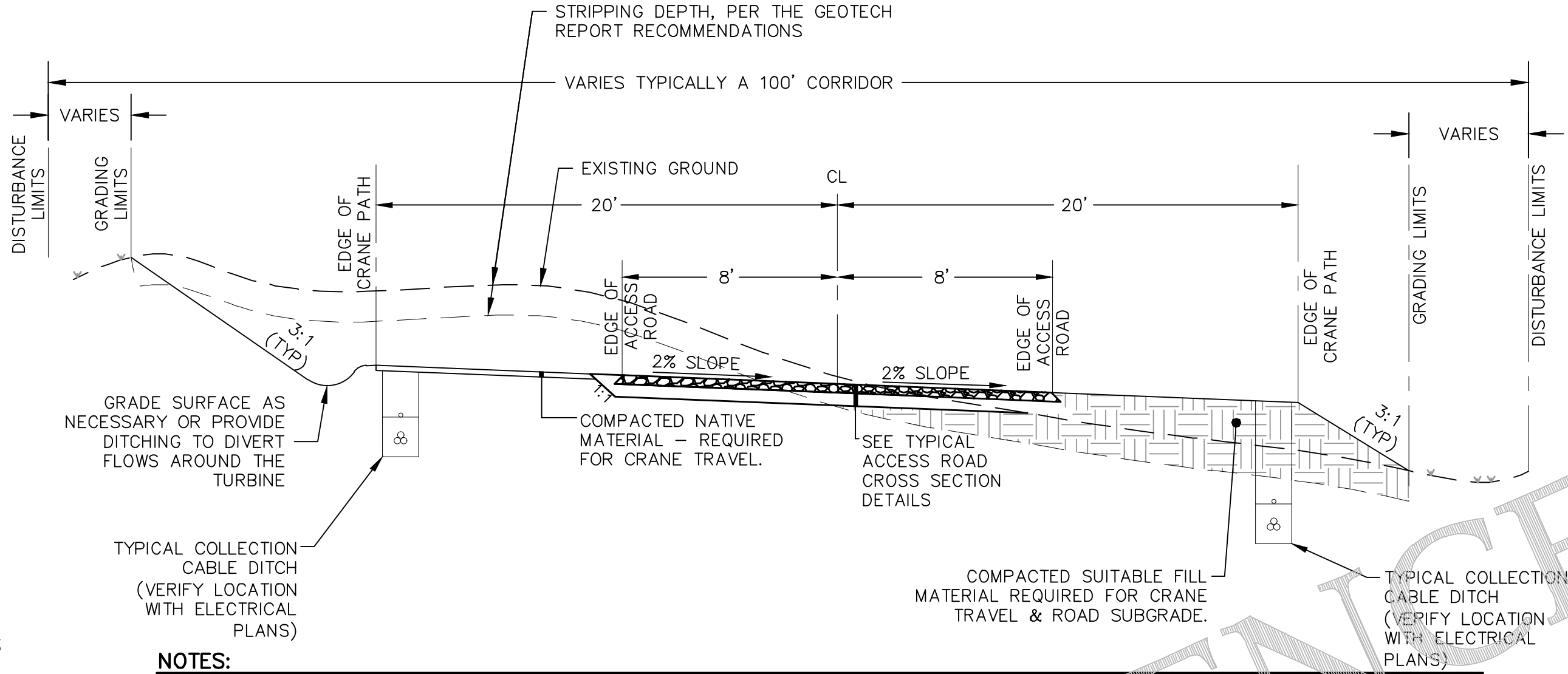
Dwg No: TRW-C-510 Sht No: 002



NOTES:

1. ROADS TO GENERALLY FOLLOW EXISTING CONTOURS.
2. ALL FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MOST RECENT VERSION OF ASTM D-698 OR AN APPROVED ALTERNATIVE STANDARD.
3. MAXIMUM CUT & FILL SLOPES TO BE 3:1 UNLESS SPECIFIED OTHERWISE IN PLANS.
4. WHEN CRANE PATH IS NOT NEEDED, MATCH THE ACCESS ROAD DIRECTLY INTO EXISTING GROUND SURFACE.
5. IF NECESSARY ADD A SHOULDER BUFFER FOR CRANE TRAVEL.

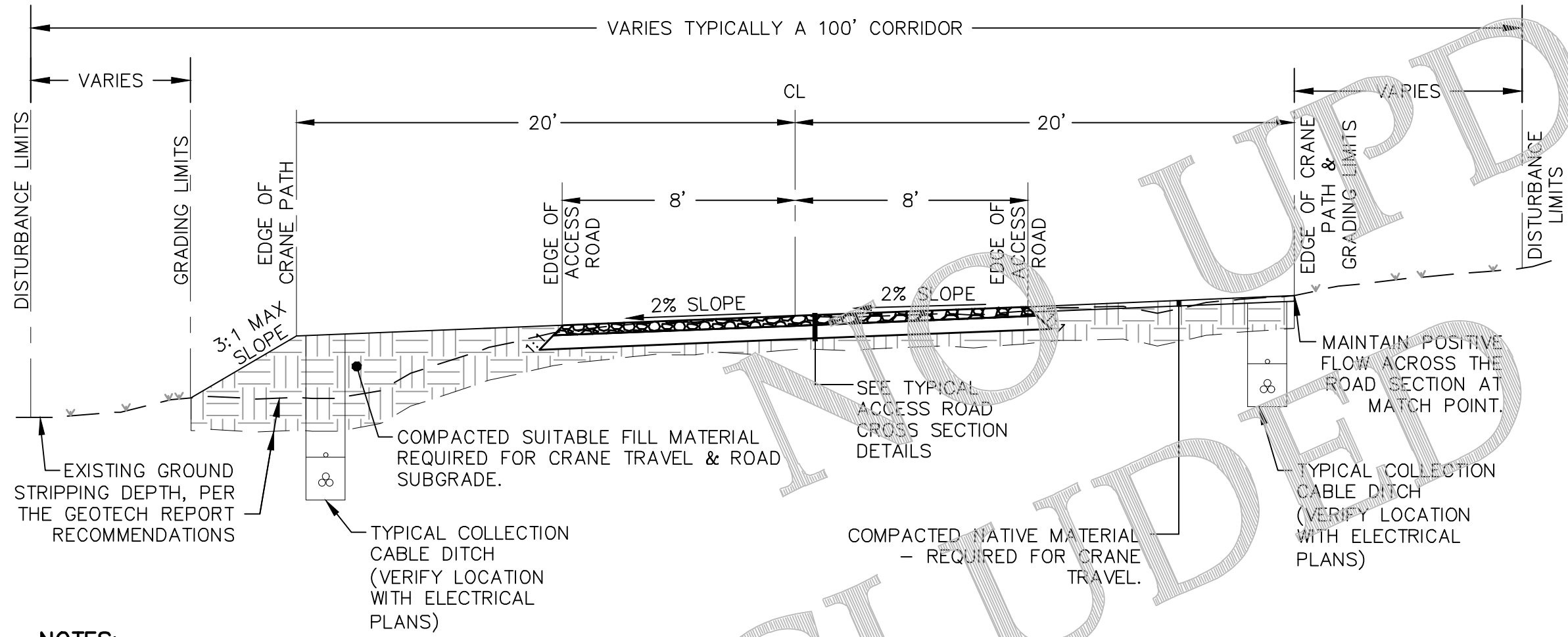
50-1 PRIVATE ACCESS ROAD - RIDGE SECTION



NOTES:

1. ROADS TO GENERALLY FOLLOW EXISTING CONTOURS.
2. ALL FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MOST RECENT VERSION OF ASTM D-698 OR AN APPROVED ALTERNATIVE STANDARD.
3. MAXIMUM CUT & FILL SLOPES TO BE 3:1 UNLESS SPECIFIED OTHERWISE IN PLANS.
4. WHEN CRANE PATH IS NOT NEEDED, MATCH THE ACCESS ROAD DIRECTLY INTO EXISTING GROUND SURFACE.
5. IF NECESSARY ADD A SHOULDER BUFFER FOR CRANE TRAVEL.
6. ROAD GRADE WILL DEPEND ON EXISTING GROUND. 2% GRADE FOR FARMLAND.
7. DITCH DEPTH, SHAPE, AND CAPACITY TO BE DETERMINED AS NECESSARY.

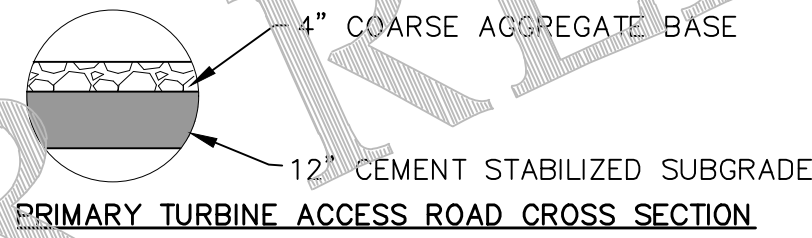
50-2 PRIVATE ACCESS ROAD - CUT SECTION



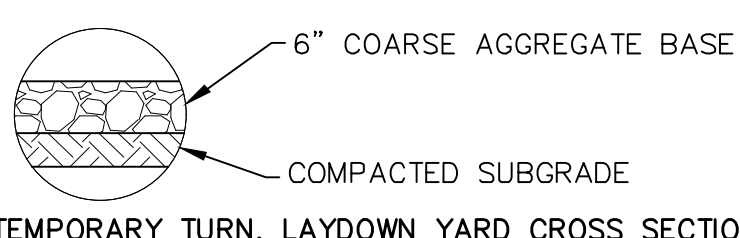
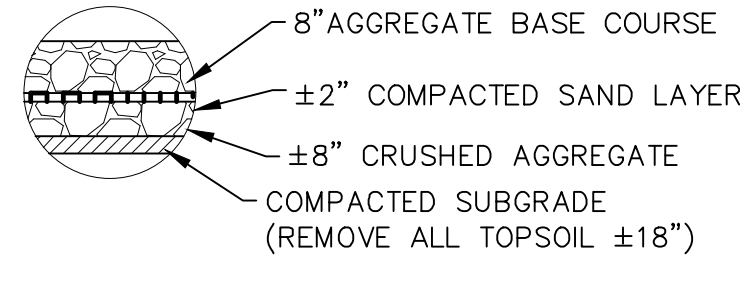
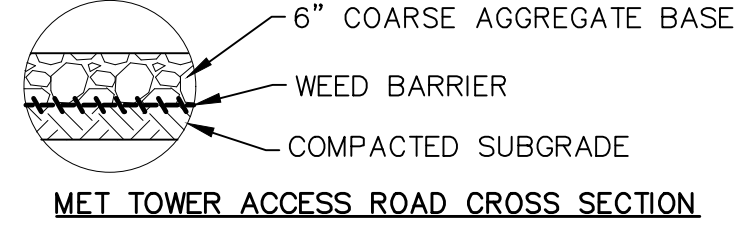
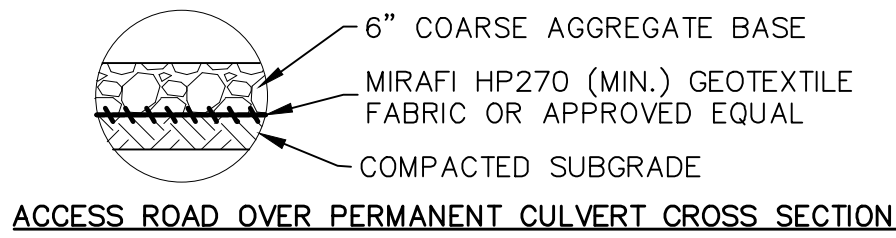
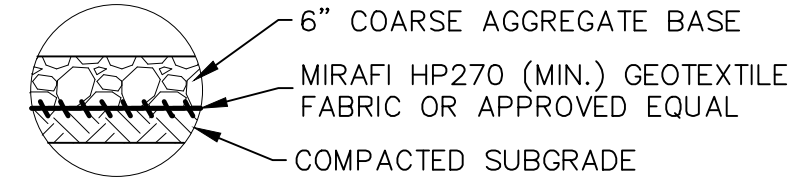
NOTES:

1. ROADS TO GENERALLY FOLLOW EXISTING CONTOURS.
2. ALL FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MOST RECENT VERSION OF ASTM D-698 OR AN APPROVED ALTERNATIVE STANDARD.
3. MAXIMUM CUT & FILL SLOPES TO BE 3:1 UNLESS SPECIFIED OTHERWISE IN PLANS.
4. WHEN CRANE PATH IS NOT NEEDED, MATCH THE ACCESS ROAD DIRECTLY INTO EXISTING GROUND SURFACE.
5. IF NECESSARY ADD A SHOULDER BUFFER FOR CRANE TRAVEL.
6. ROAD GRADE WILL DEPEND ON EXISTING GROUND. 2% GRADE FOR FARMLAND.

50-3 PRIVATE ACCESS ROAD - RELATIVELY FLAT GROUND



*SEE SHEET TRW-C-512-### FOR CEMENT PROCEDURE AND DESIGN BASIS



50-4 TYPICAL POST-CONSTRUCTION CROSS SECTIONS

NOTE:

1. MAJOR CUT SLOPES ARE DEFINED AS SLOPES GREATER THAN 4 FEET IN HEIGHT WITH A STRUCTURAL LOAD, SUCH AS EQUIPMENT, VEHICLES, OR STORAGE, WITHIN 5 FEET OF THE TOP OF SLOPE, OR ANY SLOPE GREATER THAN 10 FEET IN HEIGHT.
2. A FACTOR OF SAFETY OF TWO (2) MUST BE ASSUMED FOR DESIGN PURPOSES.

50-5 CUT SLOPE IN ROCK

NOTE:

1. MAJOR CUT SLOPES ARE DEFINED AS SLOPES GREATER THAN 4 FEET IN HEIGHT WITH A STRUCTURAL LOAD, SUCH AS EQUIPMENT, VEHICLES, OR STORAGE, WITHIN 5 FEET OF THE TOP OF SLOPE, OR ANY SLOPE GREATER THAN 10 FEET IN HEIGHT.
2. A FACTOR OF SAFETY OF TWO (2) MUST BE ASSUMED FOR DESIGN PURPOSES.

50-6 CUT SLOPE IN SOIL

NOTE:

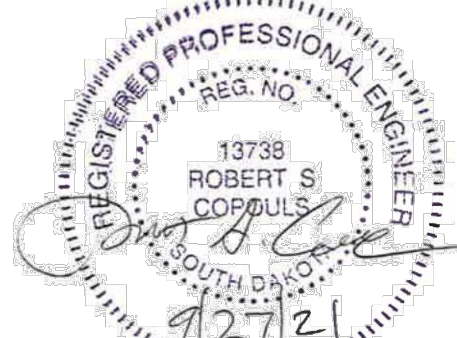
1. MAJOR FILL SLOPES ARE DEFINED AS SLOPES GREATER THAN 4 FEET IN HEIGHT WITH A STRUCTURAL LOAD, SUCH AS EQUIPMENT, VEHICLES, OR STORAGE, WITHIN 5 FEET OF THE TOP OF SLOPE, OR ANY SLOPE GREATER THAN 10 FEET IN HEIGHT.
2. A FACTOR OF SAFETY OF TWO (2) MUST BE ASSUMED FOR DESIGN PURPOSES.

50-7 BACKFILL

REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
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NOTES



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**AVANGRID
RENEWABLES**

**Tatanka Ridge
Wind Farm**

Construction Details

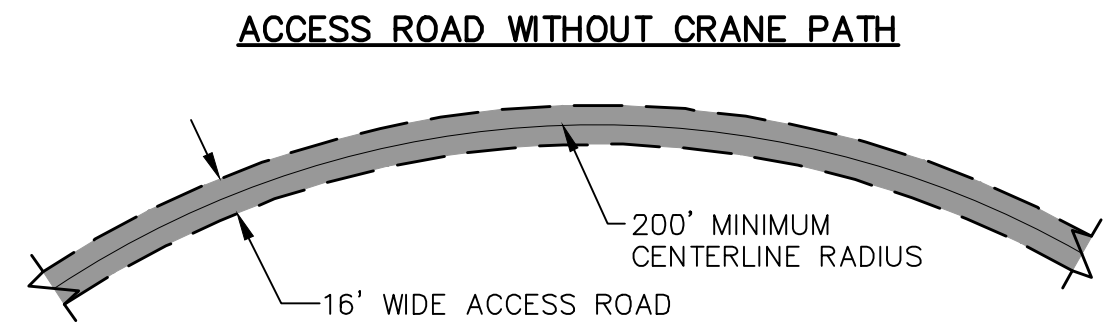
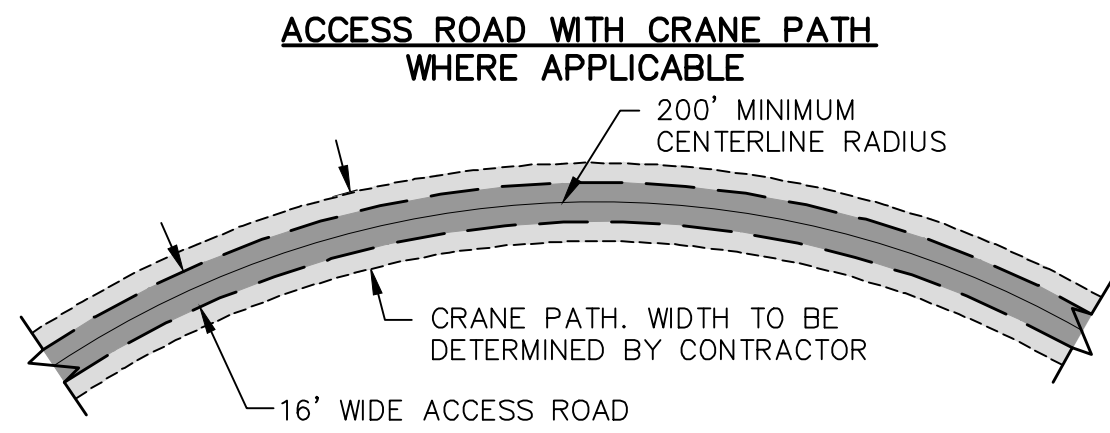
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: Date Created: 09/27/21

Project Number: 0022401

File Name: 0022401DTP01.dwg

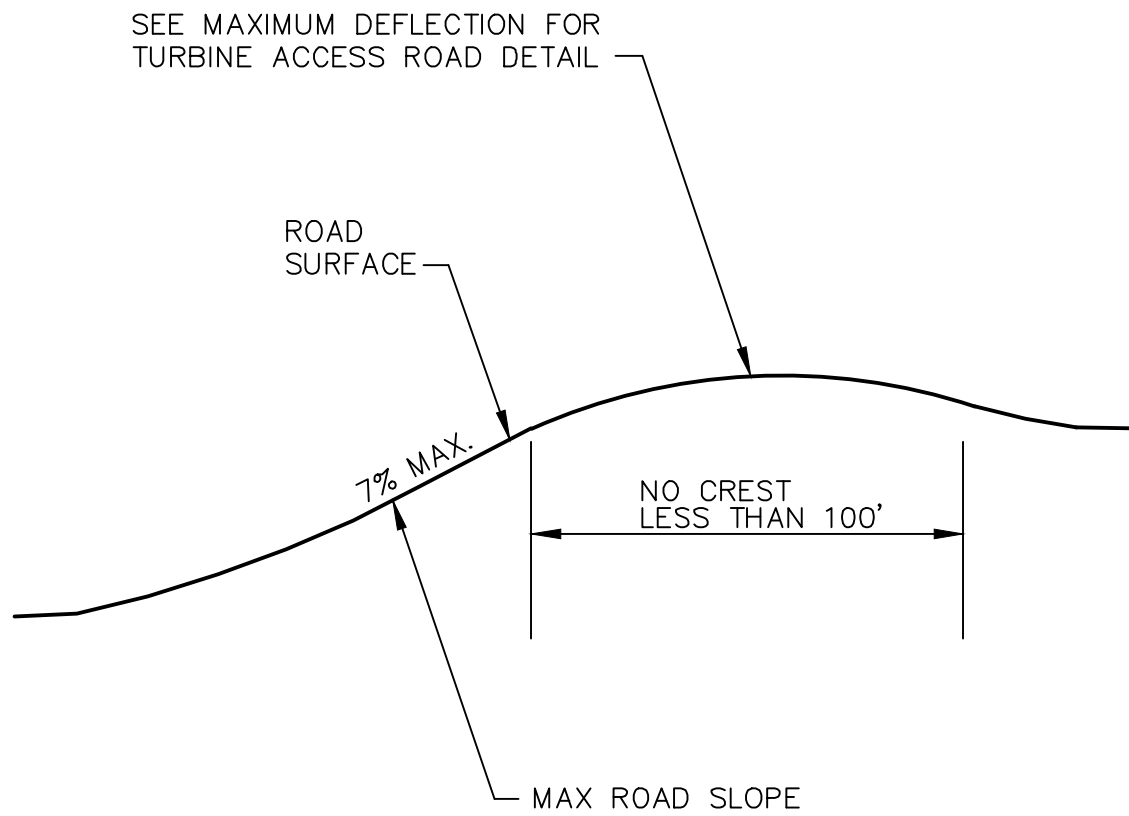
Dwg No: TRW-C-512 Sht No: 001



NOTE:

1. SOME RADII MAY REQUIRE ADDITIONAL SOIL COMPACTION OR GRAVEL OUTSIDE OF THE WIDTH SHOWN ABOVE TO ACCOMMODATE TRACTORS TRAILERS TRACKING OFF THE ACCESS ROAD.

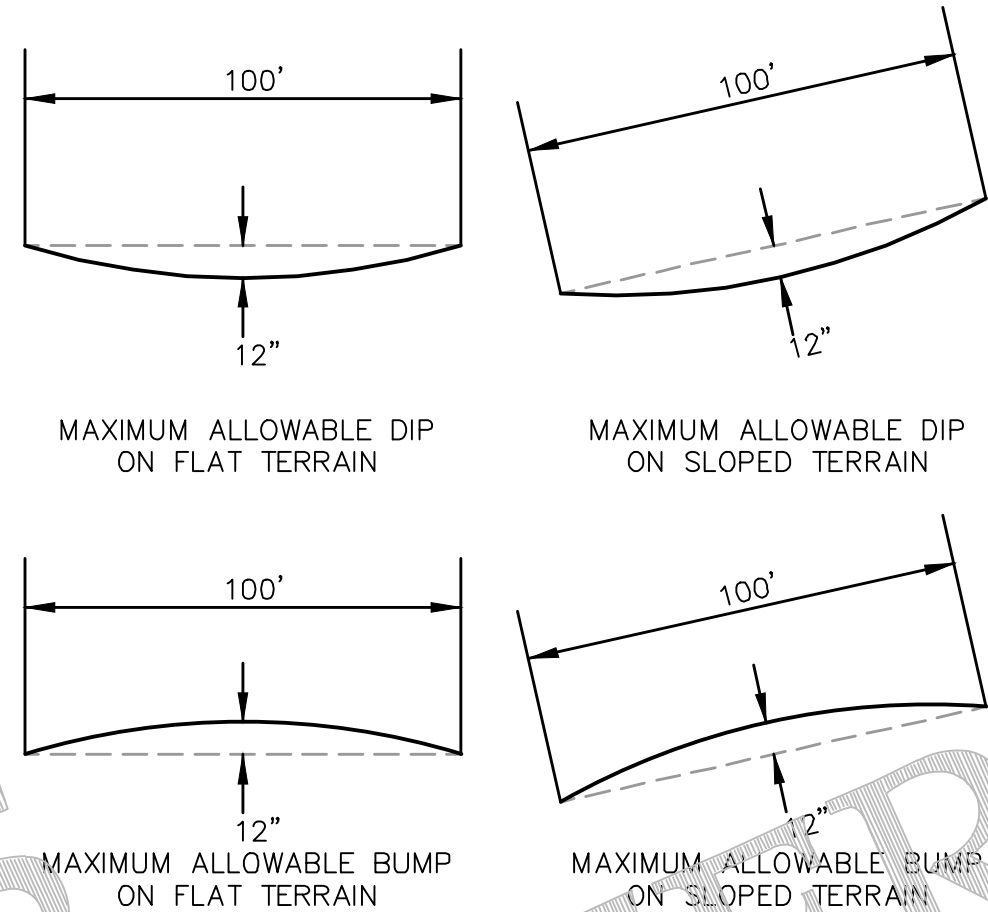
**51-1 MINIMUM RADIUS FOR
TURBINE ACCESS ROAD**



NOTES:

1. ROAD SLOPE SHALL NOT EXCEED 7% WITHOUT OWNER APPROVAL.

**51-2 MAXIMUM VERT. SLOPE FOR TURBINE
ACCESS ROAD/CRANE TRAVEL PATH**



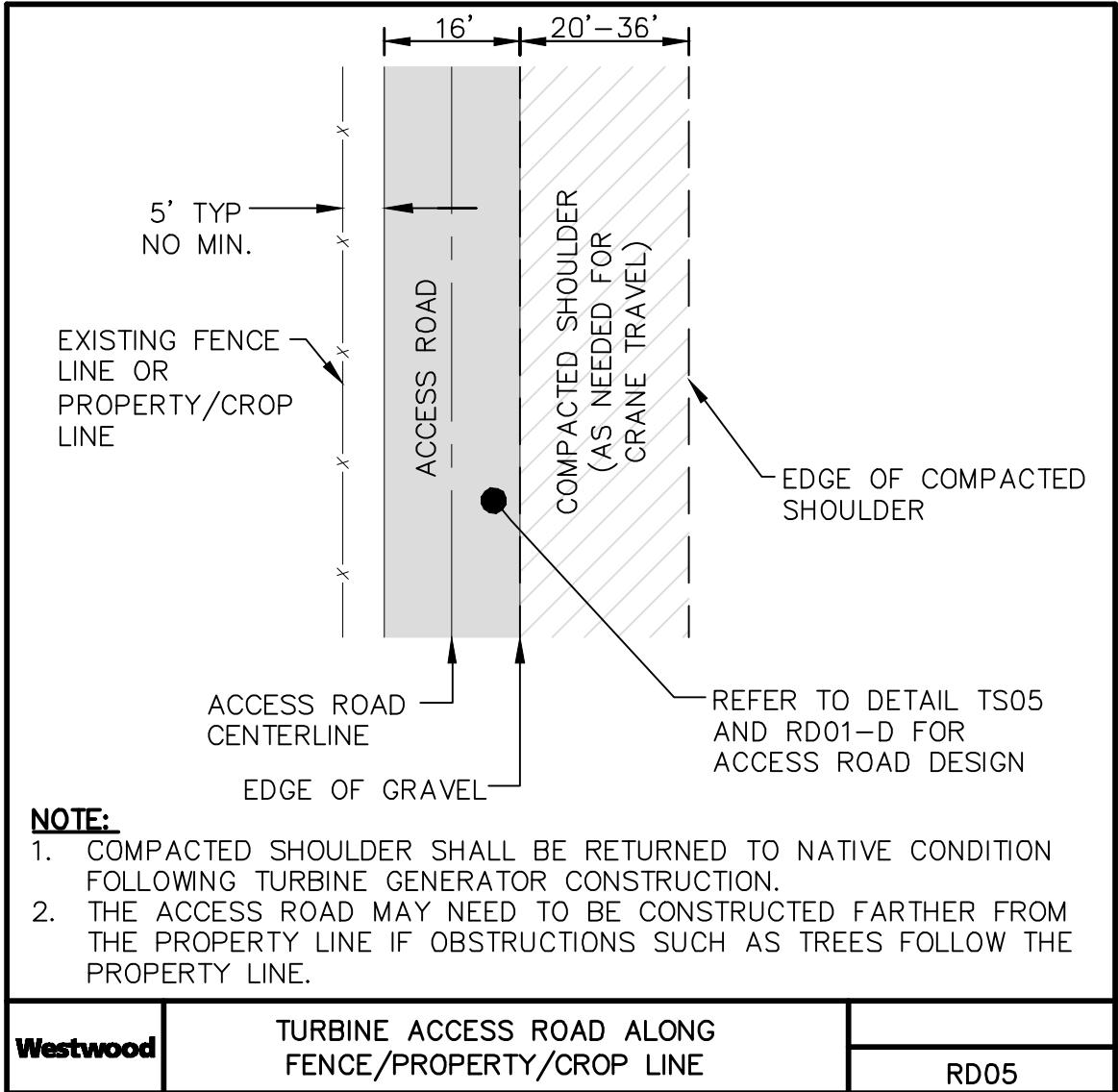
NOTES:

1. (MINIMUM K VALUE OF 16.5)

**51-3 MAXIMUM DEFLECTION
FOR TURBINE ACCESS ROAD**

Tatanka Ridge Wind Project - Wind Turbine OEM Access Road Design Requirements Comparison			
	Review Parameters	GE	
File Name		Site_Roads_Crane_Spec_2.0-2.8-60Hz_2MW_EN_r04.pdf	
Document Details		Site Roads and Crane Hard Standings Specification Applicable for 2.0 MW to 2.8 MW Wind Turbine Generators Rev. 04 - EN 2018-11-06	
Model		2.0 MW to 2.8MW, 107/116/127 m rotor diameters	Units
	Plan, profile and grade	Not specified	
	Main Entrance	30 wide and 200 long	ft
Site Access	Site Access Road Width	16.5	ft
	Site Access Road Cross Slope	2	%
	Site Access Road Side Slopes	2	H:V
	Site Access Road Grade (Packed Gravel)	7	%
	K value	12" in a 100'	
	Intersections (inside radius)	Varies, see Table 1 pg. 12	ft
	Turning area	See Figure 28 pg.26	
	Lay-bys	Not specified	ft
	Bearing capacity for roads	withstand (pressure resistance) on axles load between 12-20 metric ton	psf
	Axel loading	12 to 20	MT
	Tire Pressure	116	psi
	Blade overhang (Horizontal)	Varies, see Table 1 pg. 12	
Lay-down, Storage, Staging Areas	Main Component storage ground bearing capacity	Not Specified	psf
	Surfaces of laydown, storage and staging areas	Called out in the contract	ft
	Overhead/Side Clearances	17.5	ft

* NOTE: ACCESS ROADS ARE DESIGNED TO BE 16' WIDTH PER INDUSTRY STANDARD.



NOTE:

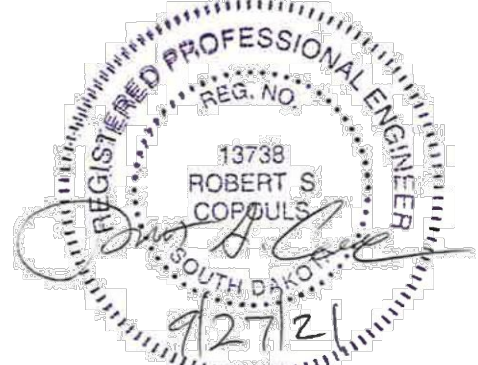
1. COMPACTED SHOULDER SHALL BE RETURNED TO NATIVE CONDITION FOLLOWING TURBINE GENERATOR CONSTRUCTION.
2. THE ACCESS ROAD MAY NEED TO BE CONSTRUCTED FARTHER FROM THE PROPERTY LINE IF OBSTRUCTIONS SUCH AS TREES FOLLOW THE PROPERTY LINE.

Westwood	TURBINE ACCESS ROAD ALONG FENCE/PROPERTY/CROP LINE	
		RD05

REVISIONS

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**AVANGRID
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Construction Details

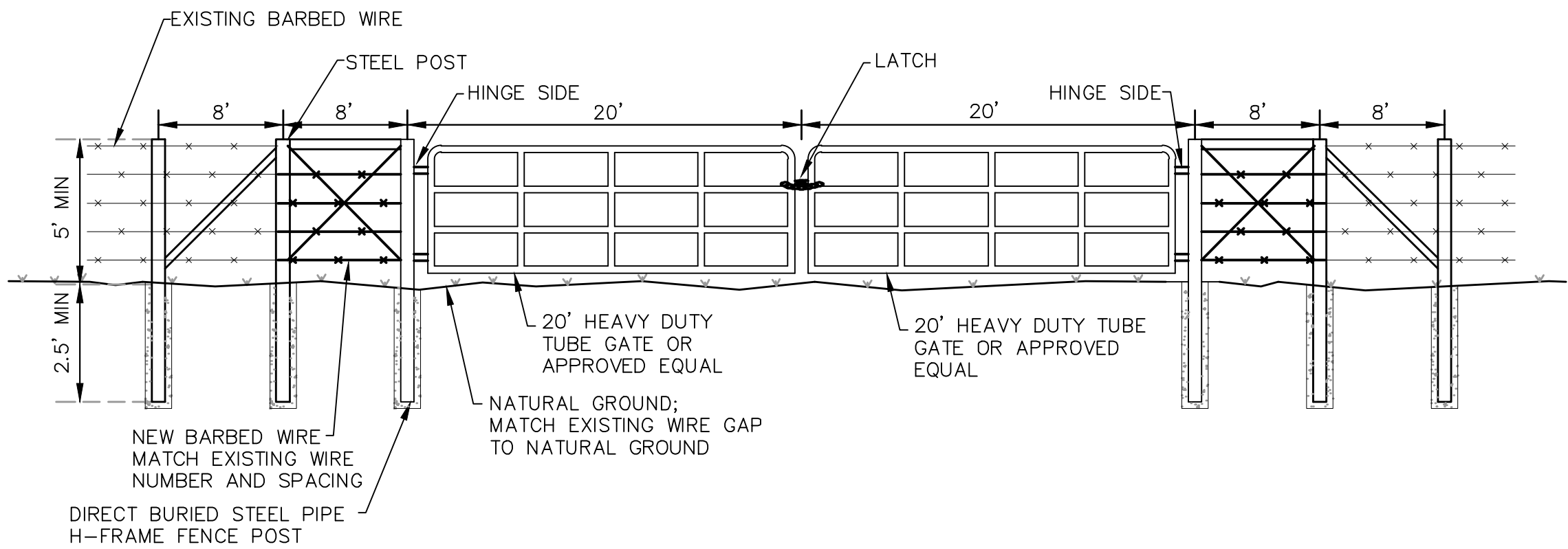
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: Date Created: 09/27/21

Project Number: 0022401

File Name: 0022401DTP01.dwg

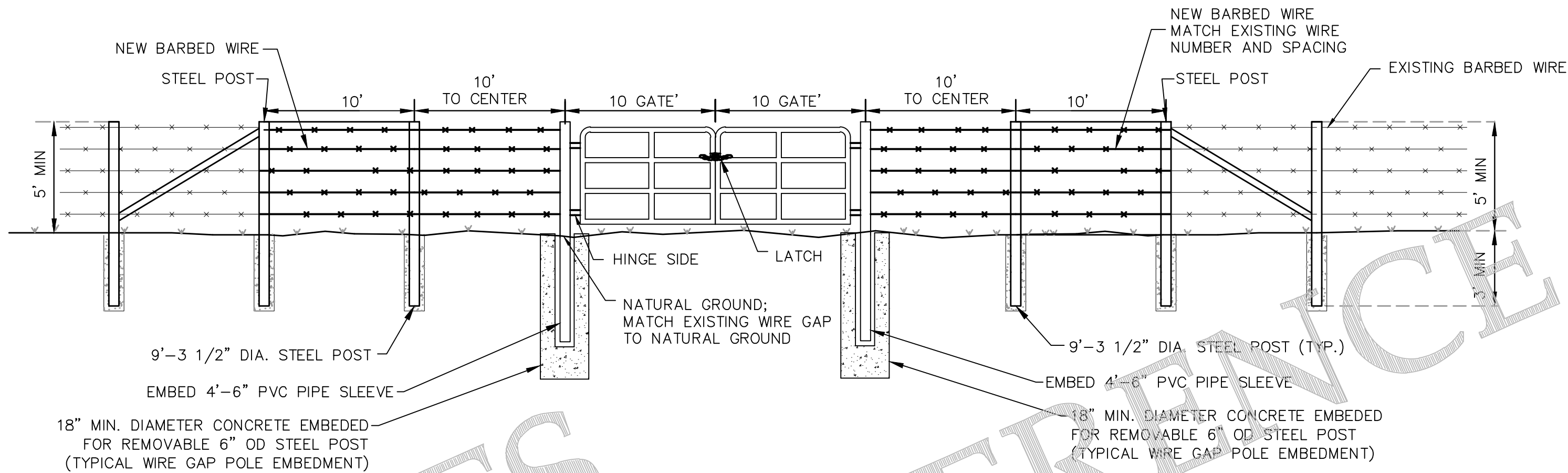
Dwg No: TRW-C-512 Sht No: 002



NOTE:

1. H-BRACING SHALL BE CONSTRUCTED ON EACH END OF THE GATE.
2. ALL DIRECT BURIED POSTS SHALL BE BACKFILLED WITH TWO BAGS OF UNMIXED, NO WATER ADDED, QUICKRETE®, OR APPROVED EQUAL, FOLLOWED BY NATIVE SOIL.
3. REFER TO LOCAL AGENCY/LAND OWNER REQUIREMENTS.

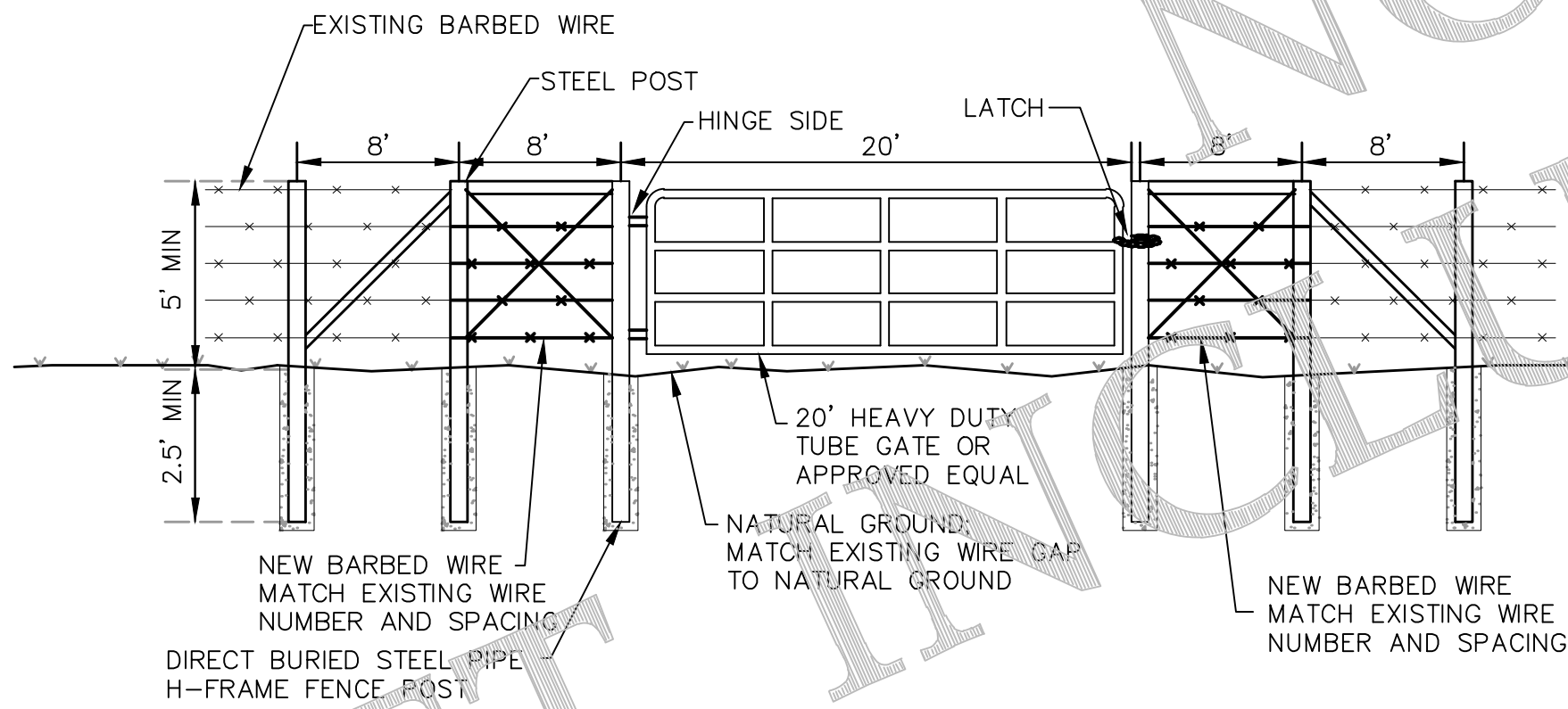
53-1 PROJECT MAIN ENTRANCE



NOTE:

1. H-BRACING SHALL BE CONSTRUCTED ON EACH END OF THE GATE.
2. ALL DIRECT BURIED POSTS SHALL BE BACKFILLED WITH TWO BAGS OF UNMIXED, NO WATER ADDED, QUICKRETE®, OR APPROVED EQUAL, FOLLOWED BY NATIVE SOIL.
3. REFER TO LOCAL AGENCY/LAND OWNER REQUIREMENTS.

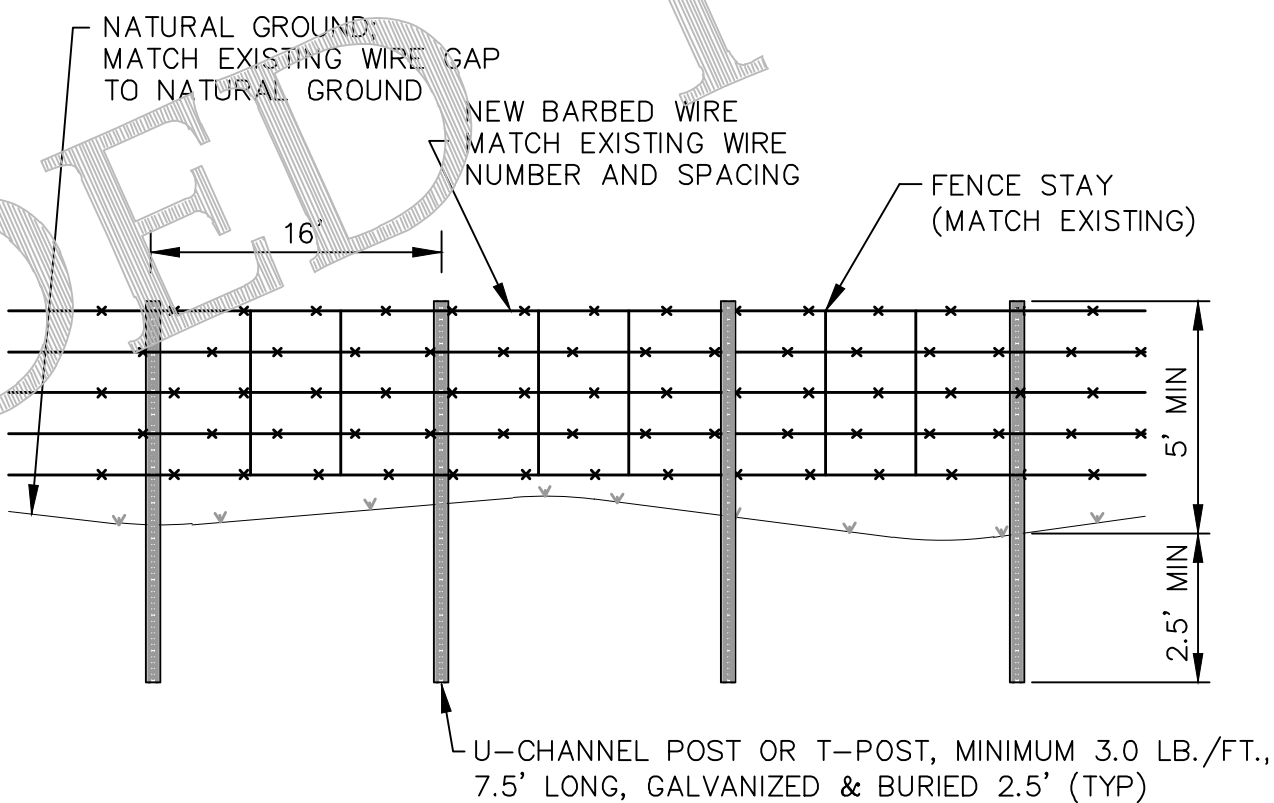
53-2 TYPICAL SINGLE GATE - SPUR ROAD, TURBINE ACCESS ROAD (INTERNAL) FENCE CROSSING



NOTE:

1. H-BRACING SHALL BE CONSTRUCTED ON EACH END OF THE GATE.
2. ALL DIRECT BURIED POSTS SHALL BE BACKFILLED WITH TWO BAGS OF UNMIXED, NO WATER ADDED, QUICKRETE®, OR APPROVED EQUAL, FOLLOWED BY NATIVE SOIL.
3. REFER TO LOCAL AGENCY/LAND OWNER REQUIREMENTS.

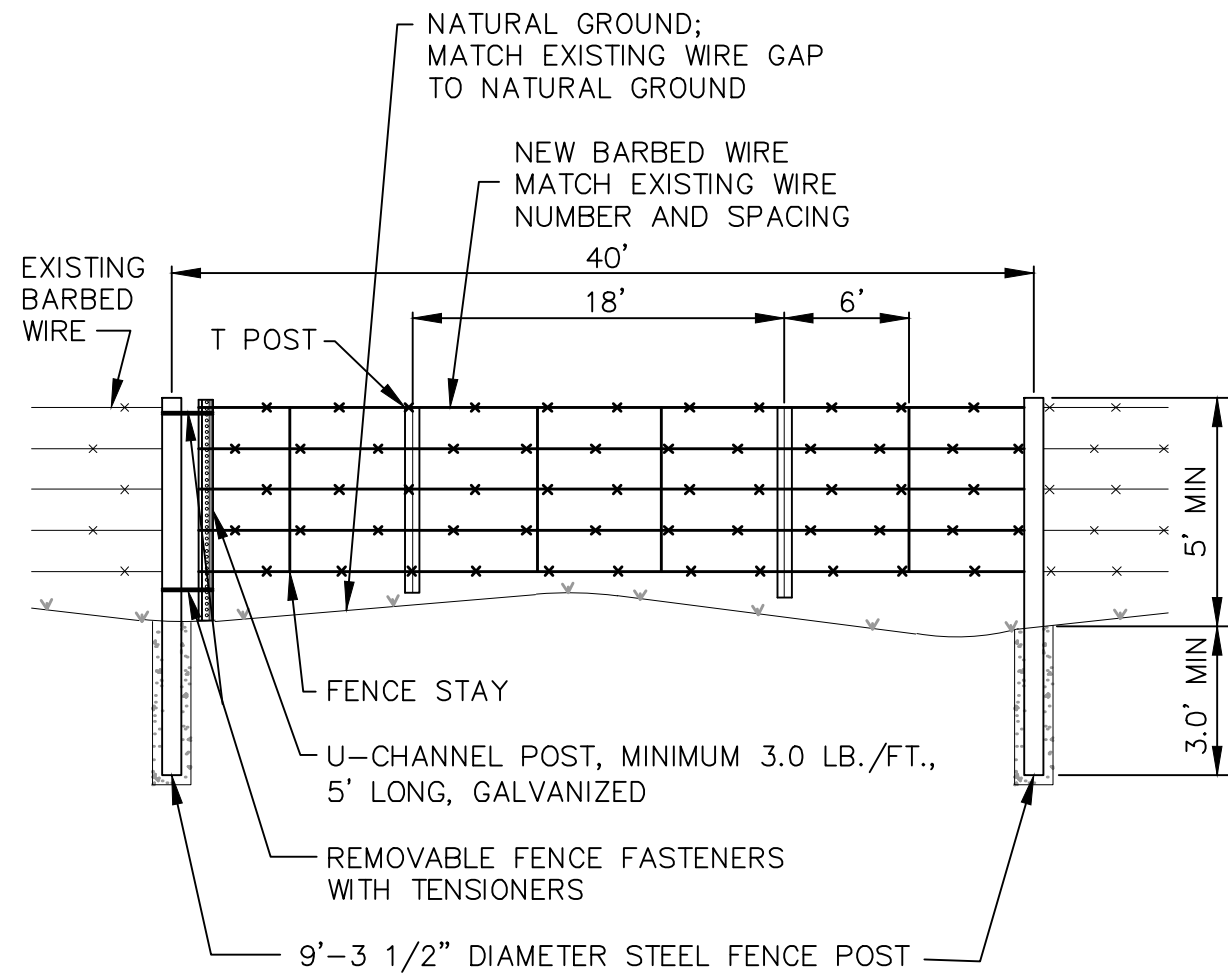
53-3 LAND OWNER CROSSING



NOTE:

1. BARBED WIRE SHALL BE 3, 4, 5 OR 6 STRAND WIRE FENCE TO MATCH EXISTING.
2. ALL FENCES SHALL BE TIED BACK TO MAINTAIN TENSION ON EXISTING FENCE PRIOR TO CUTTING OF THE EXISTING WIRES.
3. CONTRACTOR SHALL VERIFY ELECTRIC FENCE CROSSING LOCATIONS PRIOR TO CONSTRUCTION AND REPLACE ANY DISTURBED ELECTRIC FENCE TO MATCH EXISTING CONDITIONS.

53-4 PERMANENT FENCE



NOTE:

1. TO BE USED AT CROSS COUNTRY CRANE PATH AND ELECTRICAL FENCE CROSSINGS.
2. ALL FITTINGS, HARDWARE AND OTHER APPURTENANCES SHALL BE FABRICATED AND FITTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
3. ALL DIRECT BURIED POSTS SHALL BE BACKFILLED WITH TWO BAGS OF UNMIXED, NO WATER ADDED, QUICKRETE®, OR APPROVED EQUAL, FOLLOWED BY NATIVE SOIL.
4. BARBED WIRE SHALL MATCH EXISTING 4, 5, OR 6 WIRE FENCE.

53-5 TEMPORARY FENCE CROSSING

NOTE - ALL FENCE, GATE, AND CATTLE GUARD STRUCTURES SHALL BE FIELD APPROVED BY BOTH CONTRACTOR AND LANDOWNER.

REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

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REGISTERED PROFESSIONAL ENGINEER
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Westwood Professional Services, Inc.

WANZEK

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4850 32nd Avenue S
Fargo, ND 58104

AVANGRID RENEWABLES

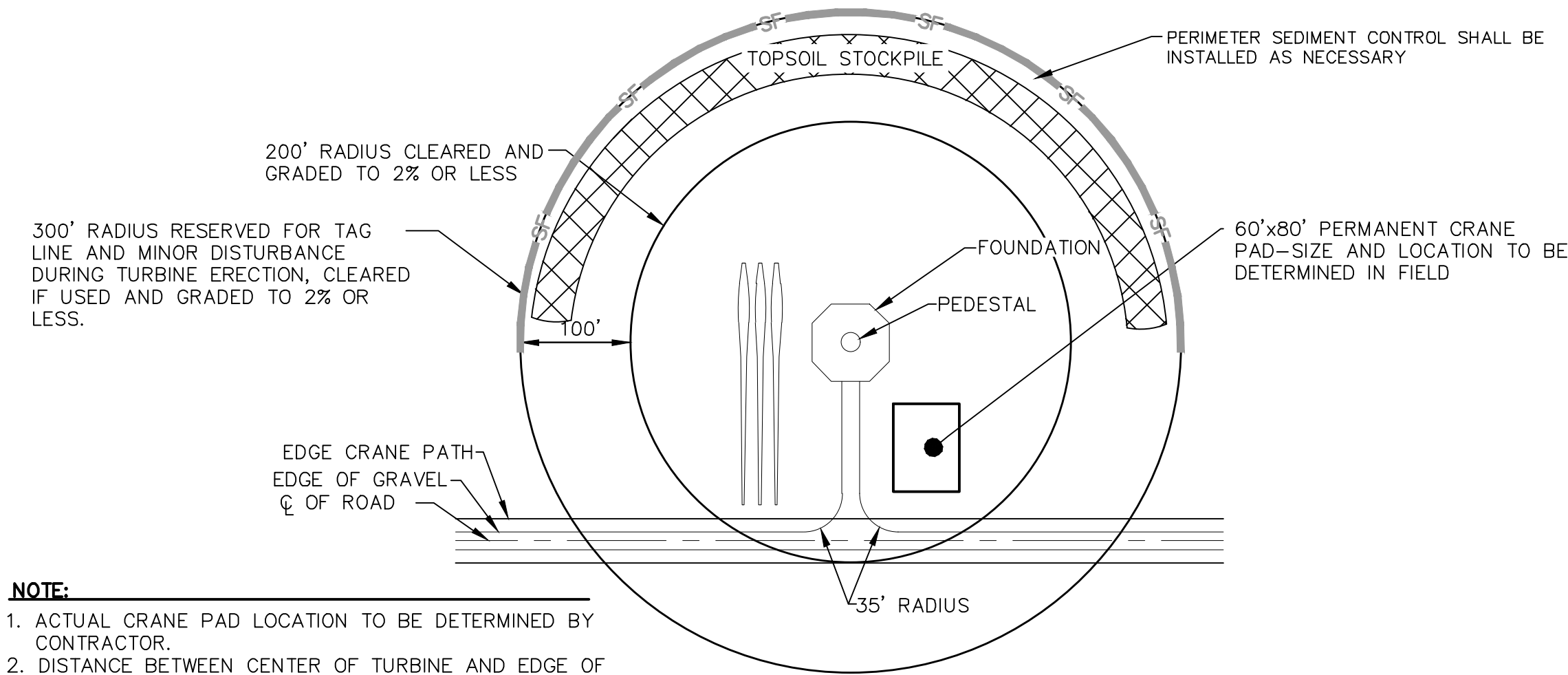
**Tatanka Ridge
Wind Farm**

**Construction Details
Record Plans**

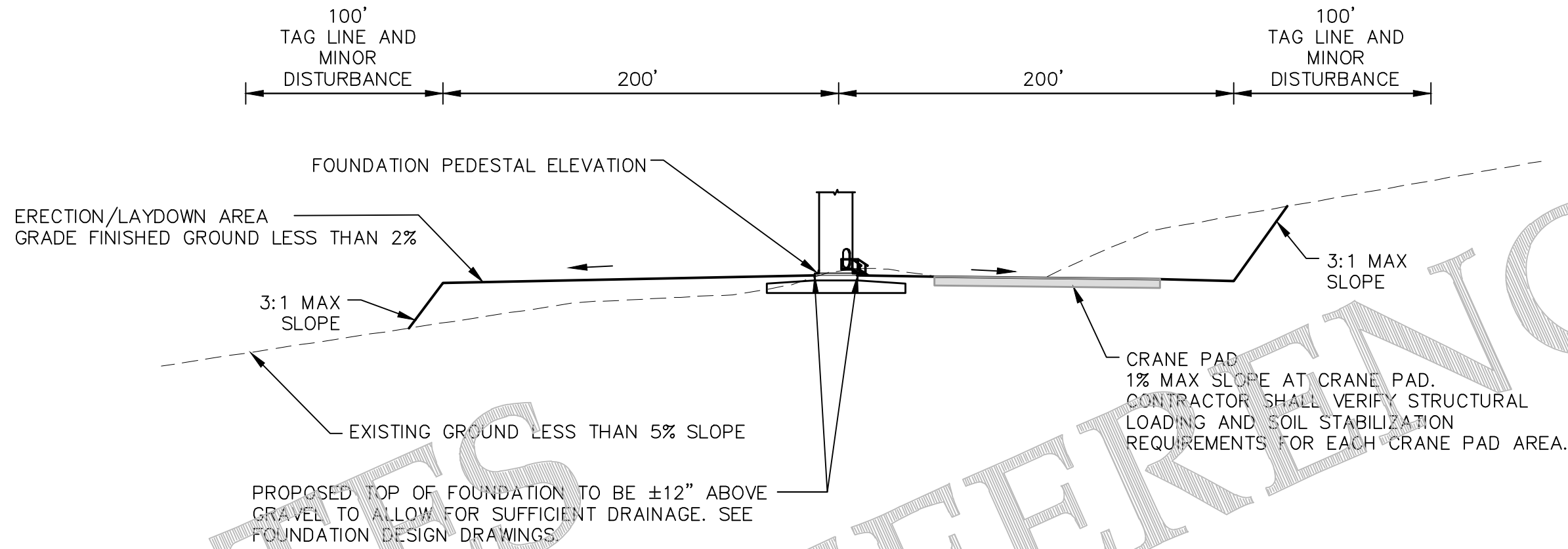
Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401DTP01.dwg

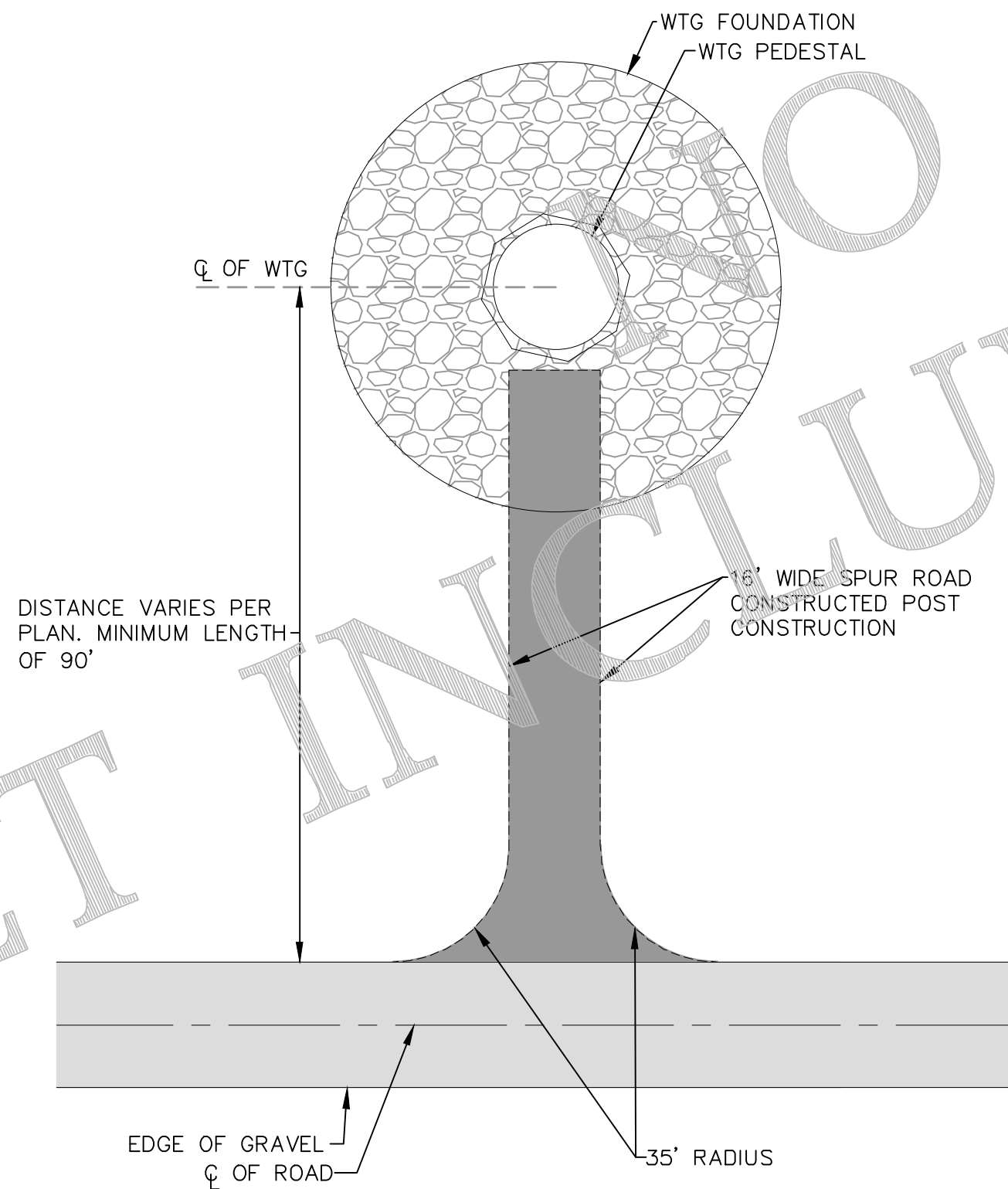
Dwg No: TRW-C-512 Sht No: 004



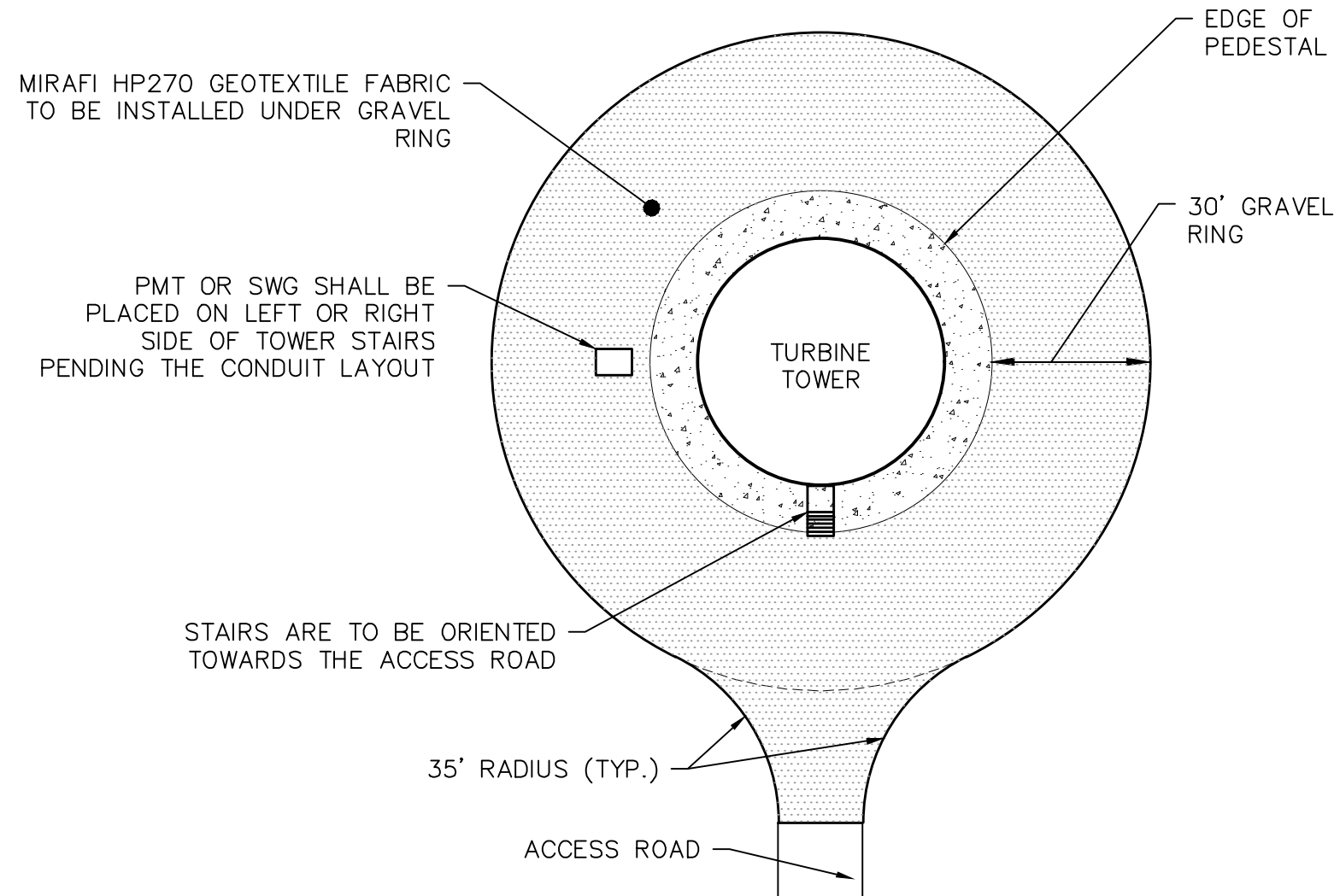
54-1 TYPICAL WTG SITE --
PLAN VIEW



54-2 TYPICAL WTG SITE -- PROFILE VIEW



55-1 TYPICAL SPUR ROAD



55-2 GRAVEL RING DETAIL

REVISIONS			
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AVANGRID RENEWABLES

Tatanka Ridge
Wind Farm

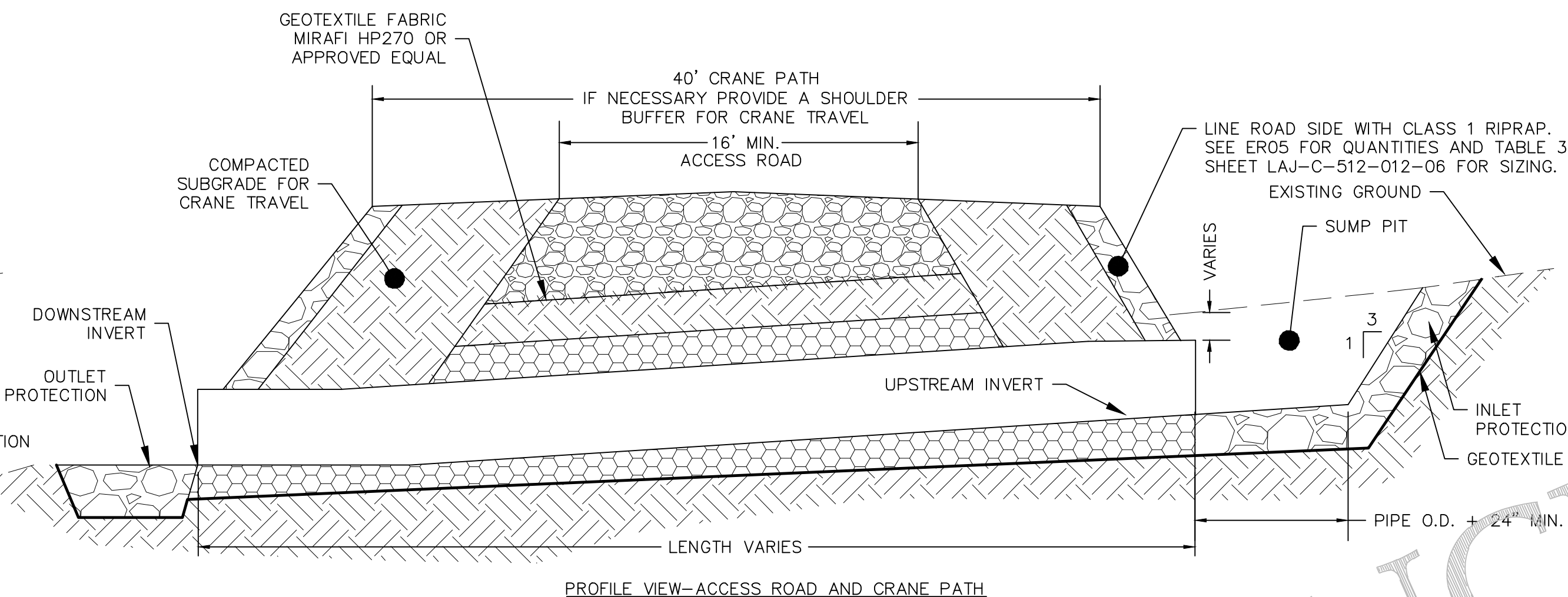
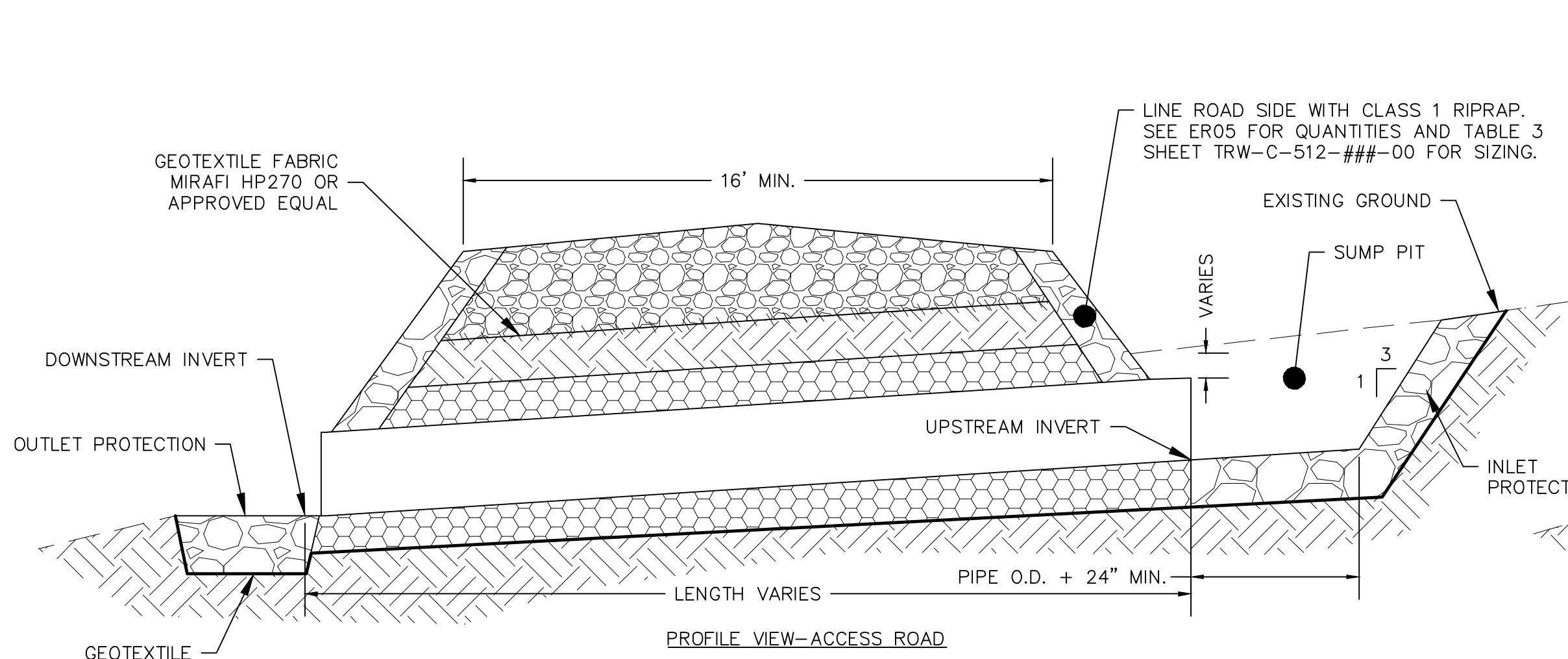
Construction Details

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401DTP01.dwg

Dwg No: TRW-C-512 Sht No: 005

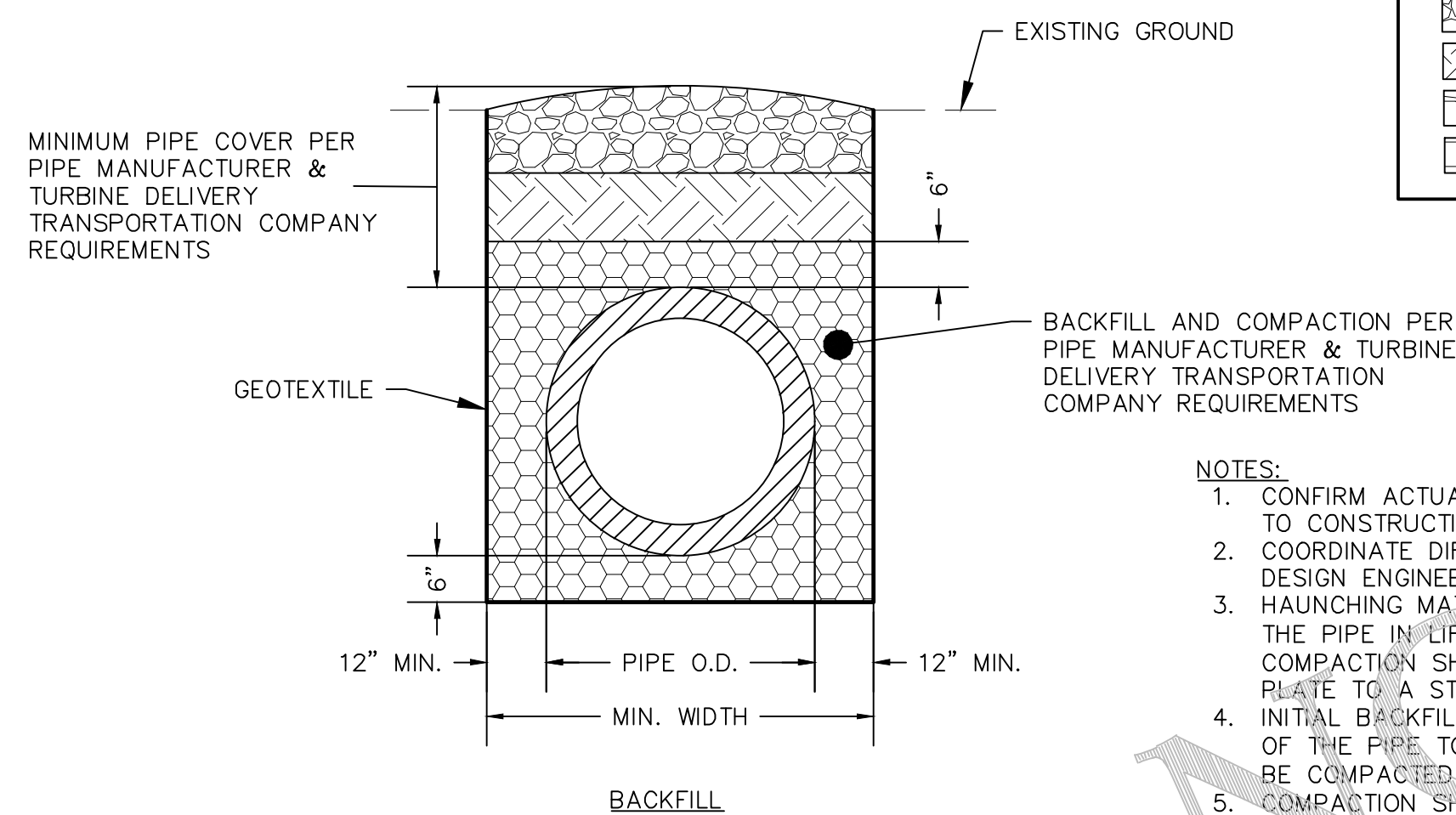


NOTES:

- CRANE IMPROVEMENTS TO ROAD MAY BE ON ONE SIDE ONLY DEPENDING ON HOW THE CONTRACTOR DECIDES TO WALK THE CRANE.
- IF NECESSARY PROVIDE A SHOULDER BUFFER FOR CRANE TRAVEL.

LEGEND:

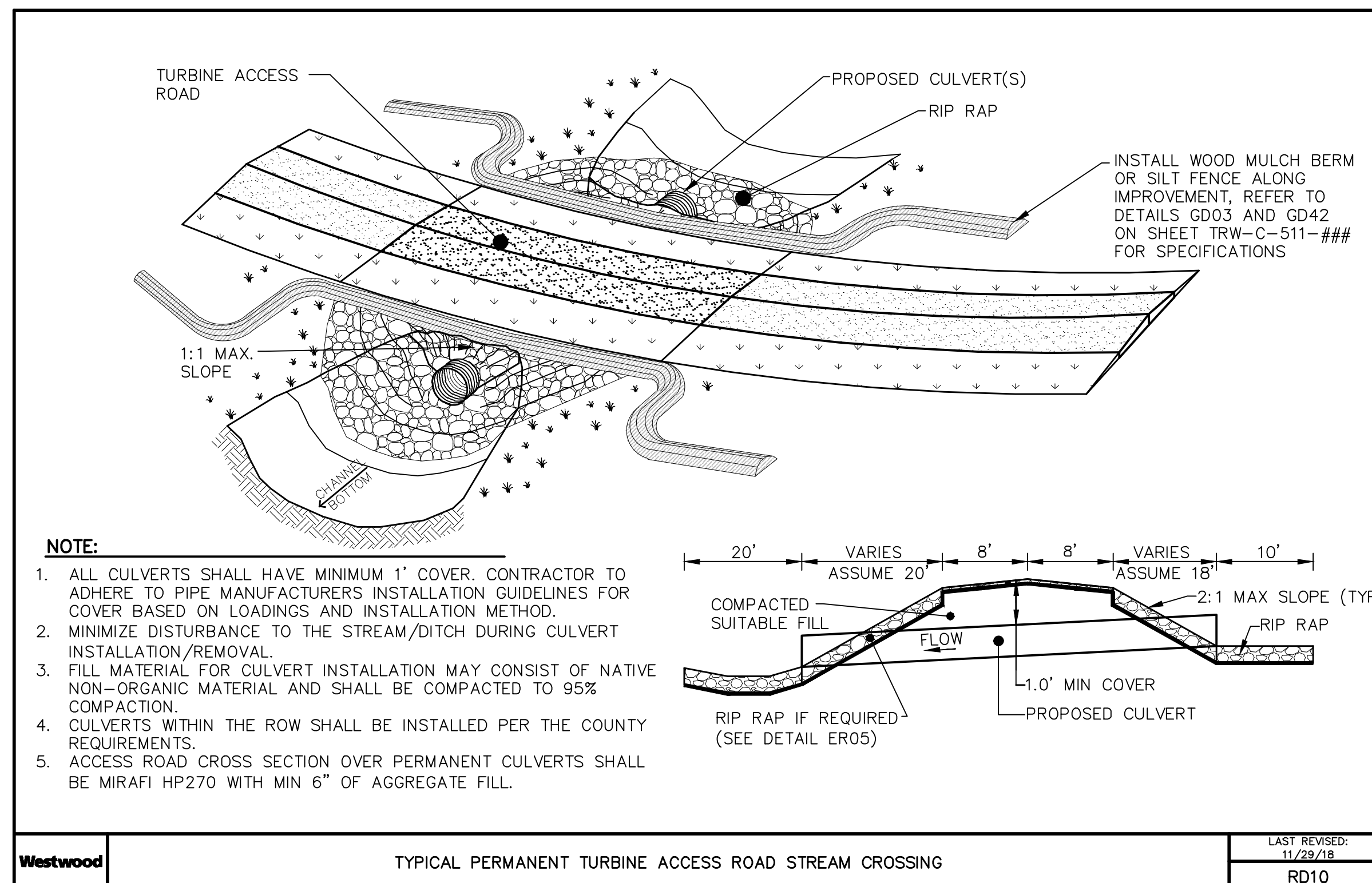
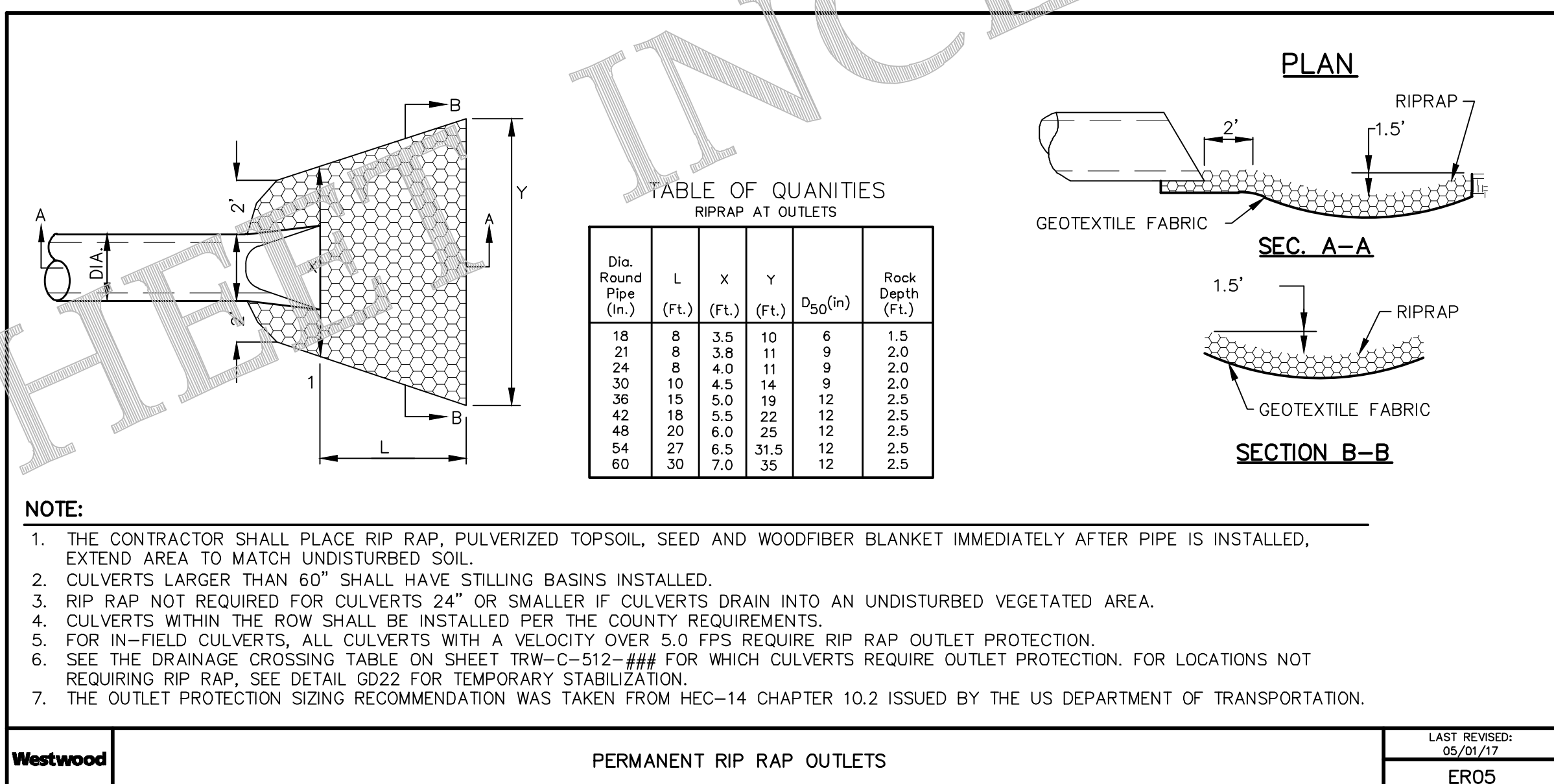
	AGGREGATE
	COMPACTED SUBGRADE
	RIP RAP, INLET/OUTLET PROTECTION
	COMPACTED BACKFILL



NOTES:

- CONFIRM ACTUAL INVERT ELEVATIONS IN FIELD PRIOR TO CONSTRUCTION
- COORDINATE DIFFERENCES IN FIELD CONDITIONS WITH DESIGN ENGINEER PRIOR TO CONSTRUCTION
- HAUNCHING MATERIAL SHALL BE COMPACTED AROUND THE PIPE IN LIFTS NO THICKER THAN 6". COMPACTION SHALL BE BY A TAMPER OR VIBRATORY PLATE TO A STABLE CONDITION.
- INITIAL BACKFILL SHALL EXTEND FROM THE CROWN OF THE PIPE TO AT LEAST 12" OVER THE PIPE AND BE COMPACTED AS SPECIFIED FOR HAUNCHING.
- COMPACTION SHALL BE IN 8" LIFTS. WHERE APPLICABLE COARSE AGGREGATE FOR ROADWAYS SHOULD BE INSTALLED.
- MINIMUM CULVERT SIZE IS 18"

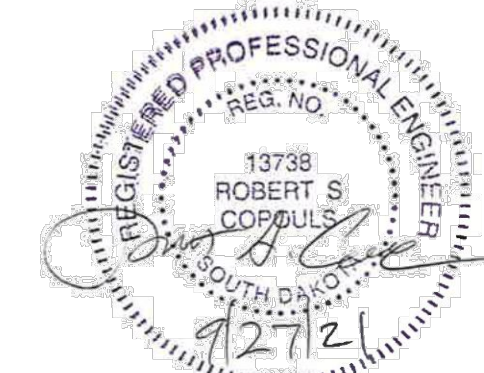
57-1 CULVERT TYPICAL CROSS SECTION



REVISIONS

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0	IFC CIVIL PLANS	05/15/20	TDD
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AVANGRID RENEWABLES

**Tatanka Ridge
Wind Farm**

Construction Details

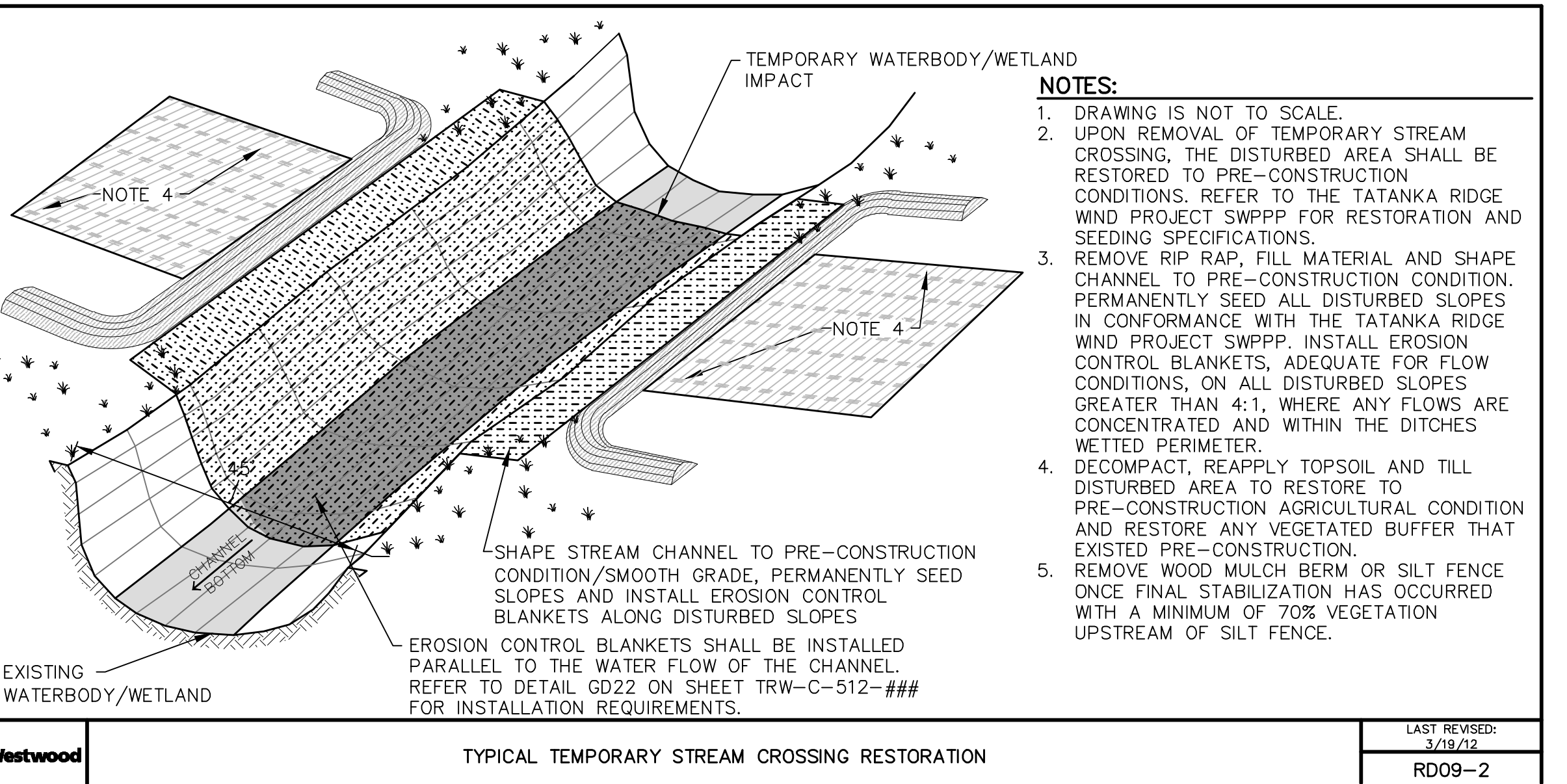
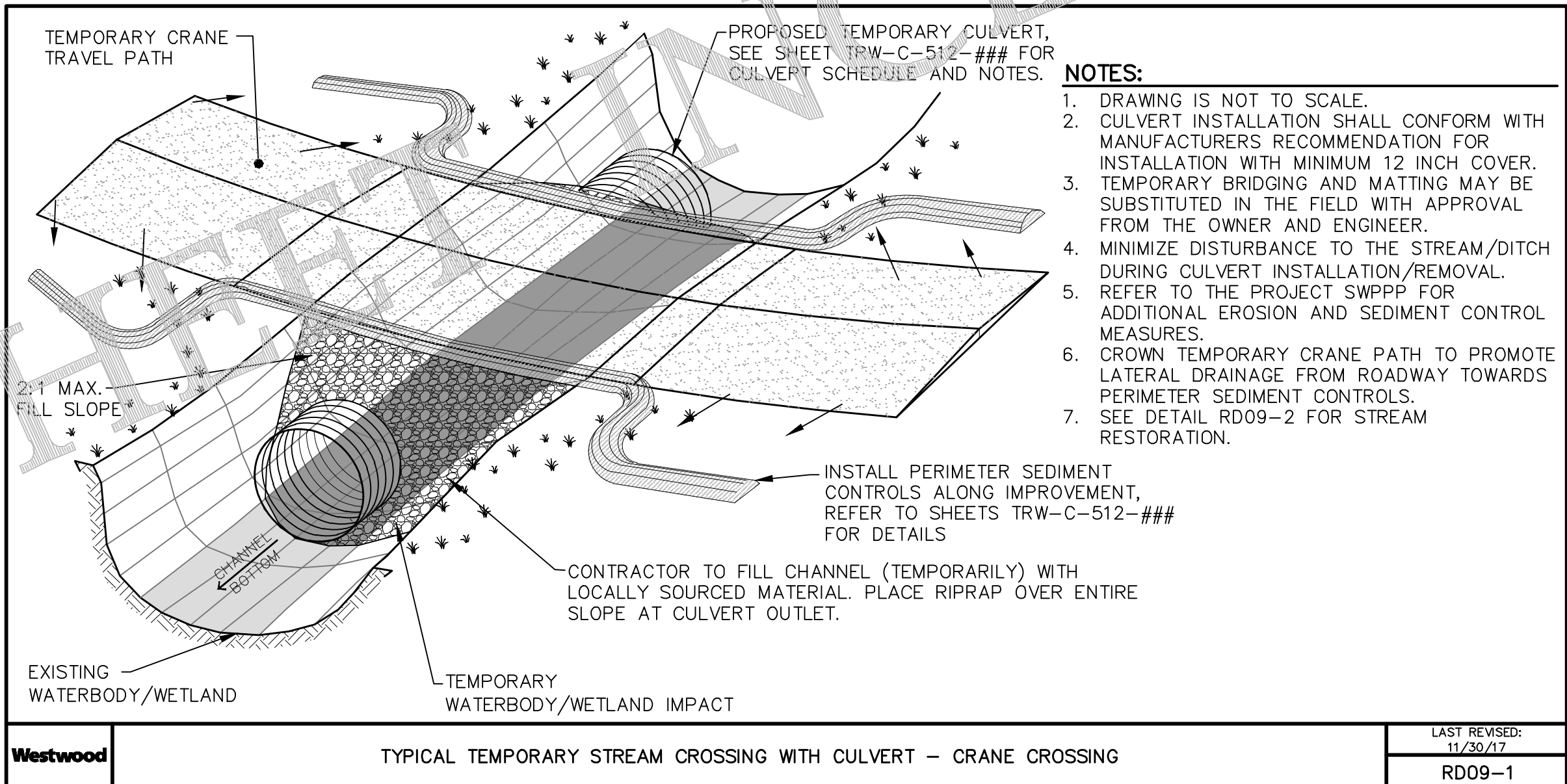
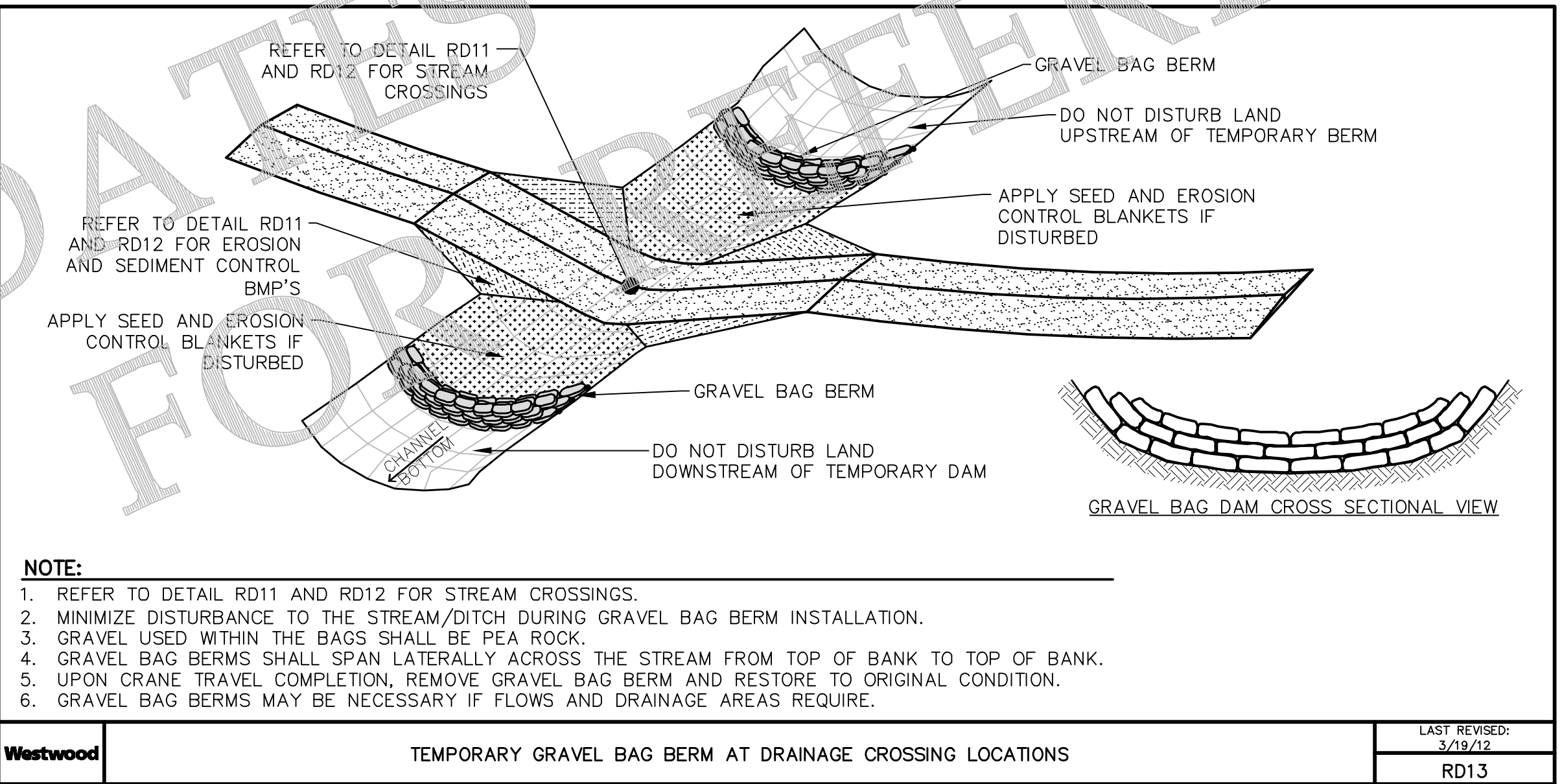
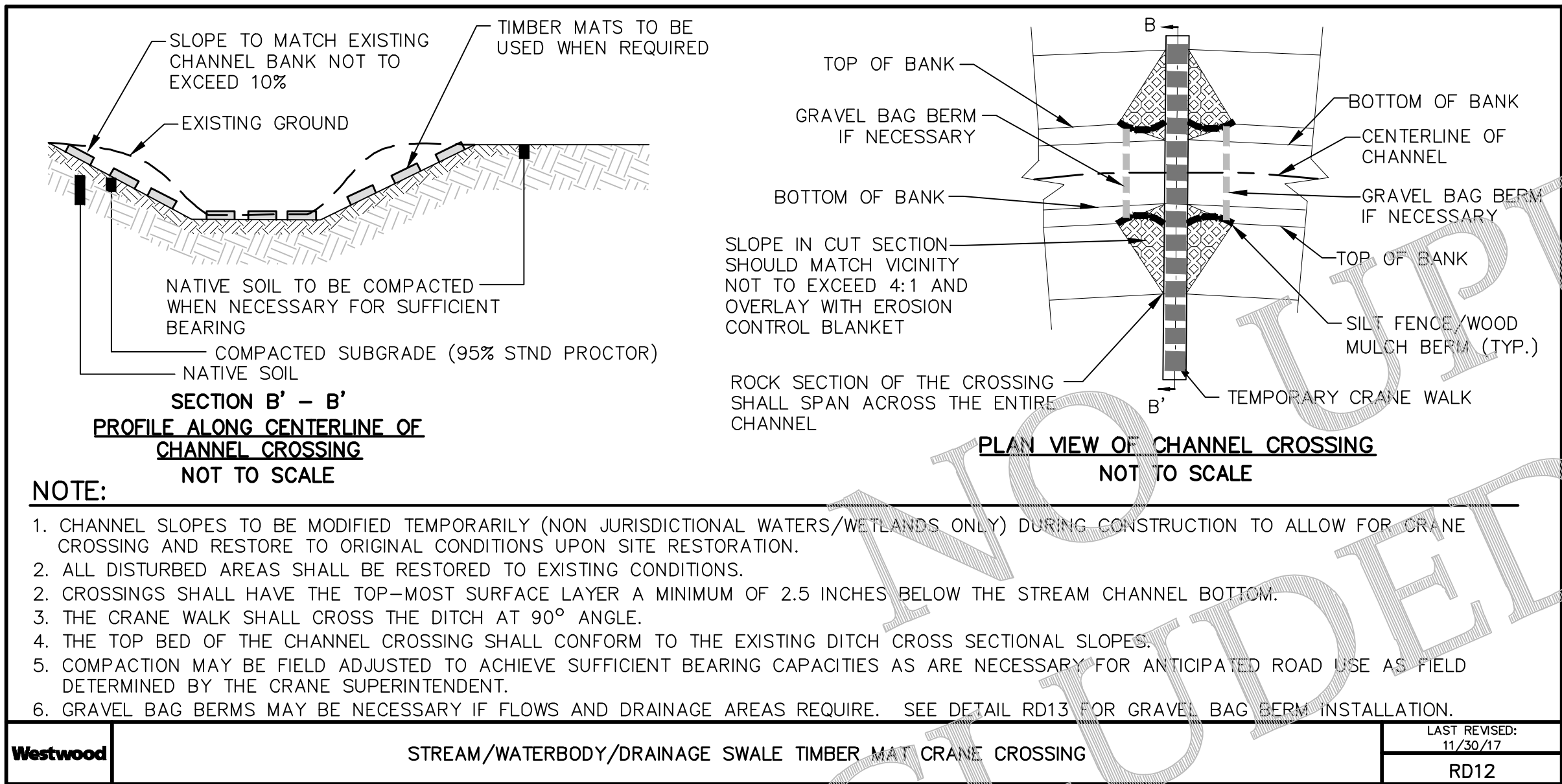
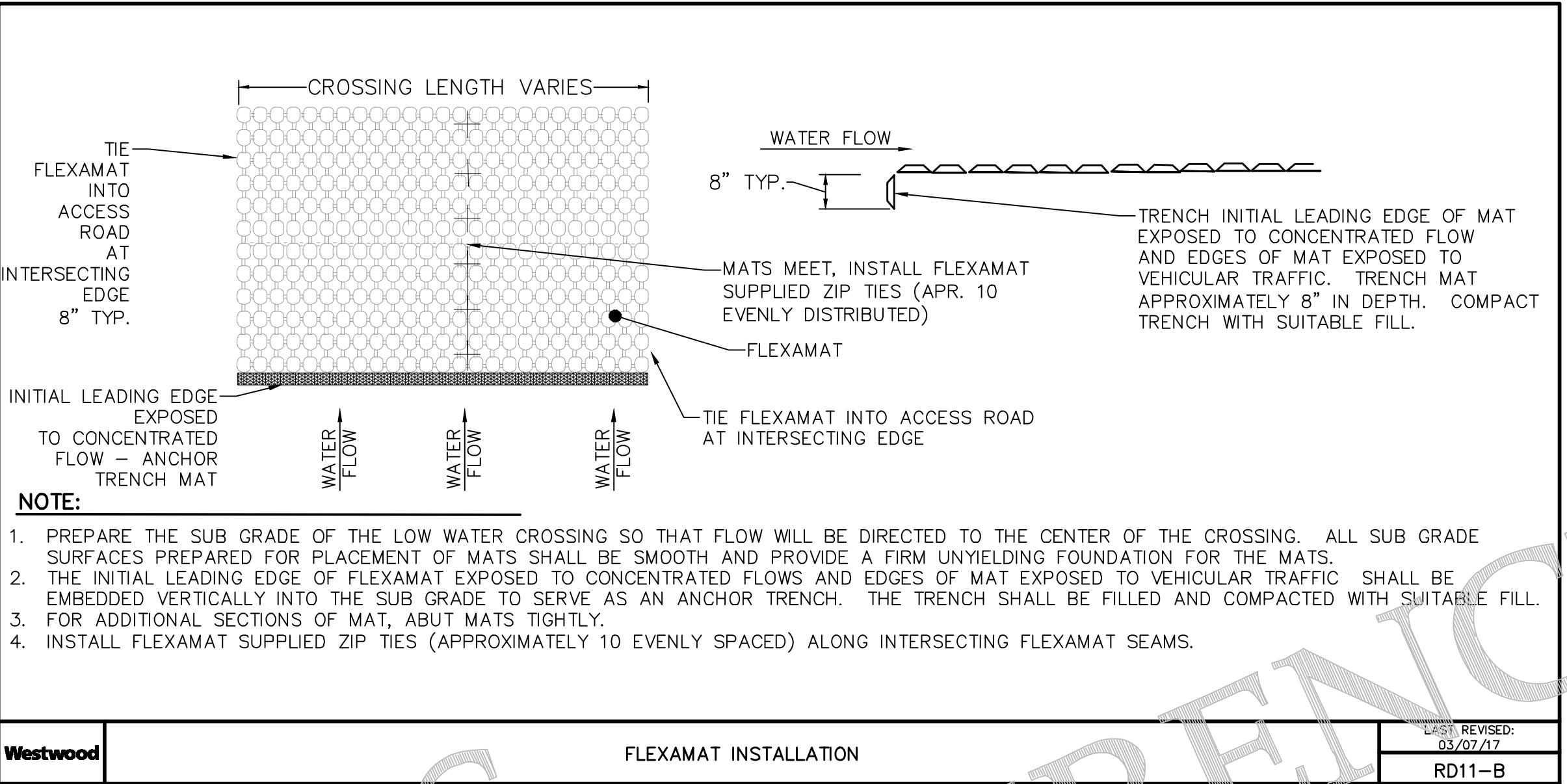
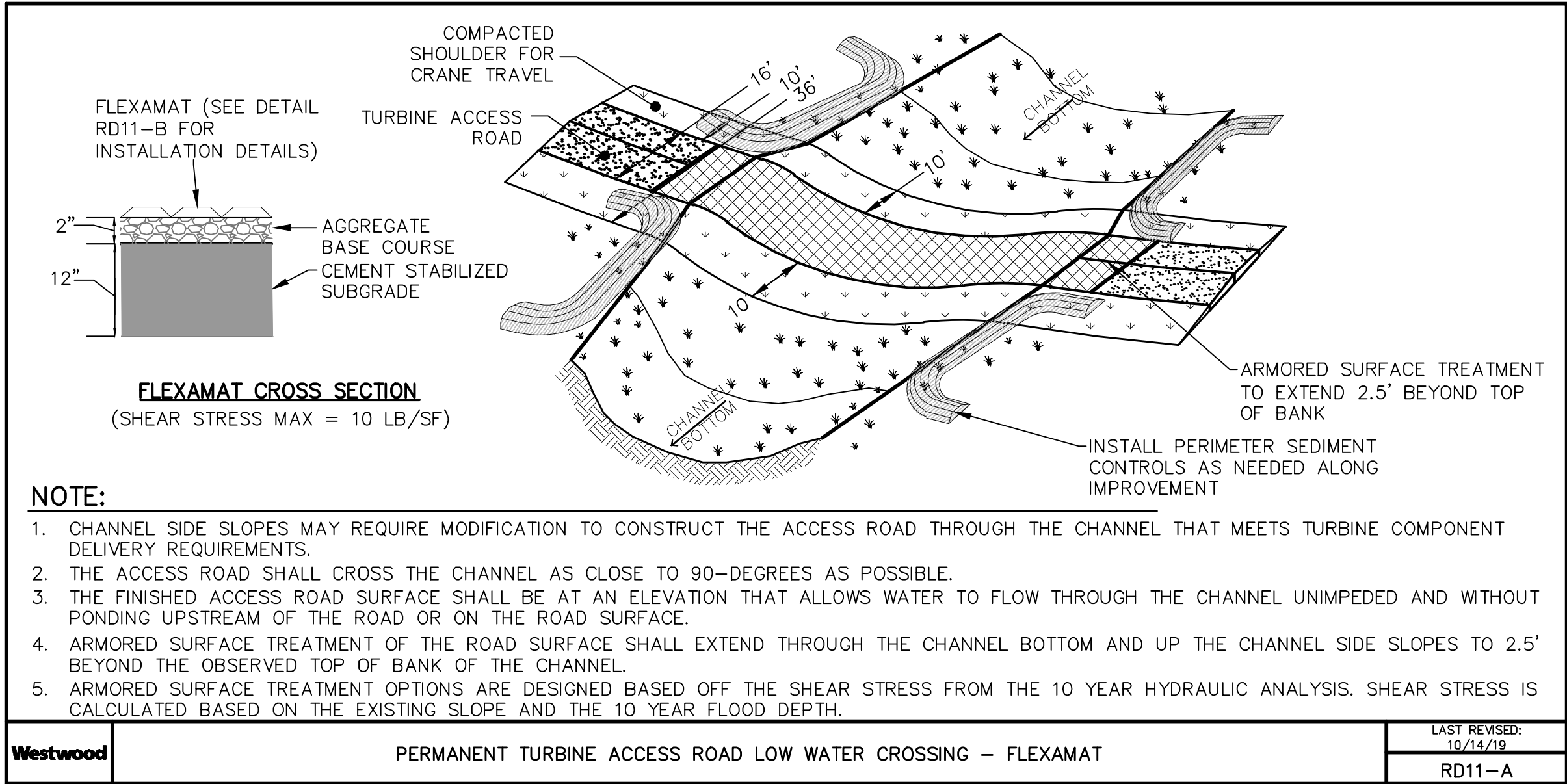
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: Date Created: 09/27/21

Project Number: 0022401

File Name: 0022401DTP01.dwg

Dwg No: TRW-C-512 Sht No: 007



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AVANGRID RENEWABLES

Tatanka Ridge Wind Farm

Construction Details

Record Plans

Drawn By: TDD Checked By: DJN
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Scale: Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401DTP01.dwg

Dwg No:TRW-C-512 Sht No: 008

TABLE 1: UTILITY CROSSINGS
COORDINATE SYSTEM: HARN/SDSD-NF

CROSSING ID	SITE IMPROVEMENT	TYPE	OWNER	SOURCE	LATITUDE	LONGITUDE	NORTHING	EASTING
1	ACCESS ROAD	TELEPHONE FIBER OPTIC	ITC	ALTA	44.66457038	-96.76423779	319868.9995	2810150.774
2	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.66457013	-96.76397307	319871.6613	2810219.596
3	ACCESS ROAD	POWER OVERHEAD	HDELEC	ALTA PDF	44.66456996	-96.76378815	319873.5208	2810267.673
4	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.66453003	-96.76378812	319858.9776	2810268.263
5	Collection	WATER LINE	BDRWS	ALTA	44.66452981	-96.76397255	319856.9769	2810220.319
6	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.66452938	-96.7642384	319854.0579	2810151.212
7	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.65991773	-96.76348324	318181.9858	2810414.728
8	Collection	WATER LINE	BDRWS	ALTA	44.65982109	-96.76348367	318146.7792	2810416.025
9	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.65943507	-96.76348538	318006.1433	2810421.206
10	Collection	GAS LINE	NORBOR	ALTA PDF	44.6539364	-96.76343536	316003.6172	2810514.333
11	Collection	WATER LINE	BDRWS	ALTA	44.64894614	-96.78368479	313975.8066	2805321.347
12	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.64894508	-96.78379479	313974.2823	2805292.756
13	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.64894302	-96.784461	313966.6471	2805119.543
14	ACCESS ROAD	TELEPHONE FIBER OPTIC	ITC	ALTA	44.64871327	-96.78446108	313882.9537	2805122.847
15	CRANE	POWER UNDERGROUND	HDELEC	ALTA PDF	44.6487096	-96.78379549	313888.4951	2805295.984
16	CRANE	WATER LINE	BDRWS	ALTA	44.64870827	-96.7836858	313889.1447	2805324.527
17	ACCESS ROAD	POWER UNDERGROUND	HDELEC	ALTA PDF	44.64799582	-96.78379761	313628.4572	2805305.768
18	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.6479955	-96.78368884	313629.4654	2805334.058
19	Collection	GAS LINE	NORBOR	ALTA PDF	44.64493473	-96.73542472	313017.1517	2817929.857
20	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.64475393	-96.67480163	313593.2811	2833697.668
21	CRANE	GAS LINE	NORBOR	ALTA PDF	44.64435282	-96.73476717	312812.0769	2818109.412
22	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.64034483	-96.74347389	311260.8173	2815903.92
23	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.64031674	-96.74411948	311243.8278	2815736.429
24	CRANE	POWER UNDERGROUND	HDELEC	ALTA PDF	44.6403149	-96.74367447	311247.815	2815852.191
25	CRANE	TELEPHONE FIBER OPTIC	ITC	ALTA	44.64031407	-96.74347372	311249.6139	2815904.415
26	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.64027868	-96.74347353	311236.7238	2815904.983
27	Collection	WATER LINE	BDRWS	ALTA	44.64013036	-96.74412759	311175.8479	2815737.05
28	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.64012769	-96.74367552	311179.6084	2815854.663
29	Collection	WATER LINE	BDRWS	ALTA	44.64008922	-96.74412939	311160.8444	2815737.187
30	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.64008654	-96.74367575	311164.613	2815855.206
31	Collection	WATER LINE	BDRWS	ALTA	44.63817379	-96.7436548	310468.0721	2815888.698
32	Collection	WATER LINE	BDRWS	ALTA	44.63815825	-96.74359725	310463.0105	2815903.893
33	Collection	WATER LINE	BDRWS	ALTA	44.63814269	-96.74353966	310457.9455	2815919.099
34	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.63784018	-96.68283158	310989.1416	2831712.742
35	CRANE	POWER UNDERGROUND	HDELEC	ALTA PDF	44.63783958	-96.68317445	310985.2673	2831623.576
36	CRANE	WATER LINE	BDRWS	ALTA	44.63783947	-96.68327141	310984.1935	2831598.362
37	ACCESS ROAD	POWER OVERHEAD	HDELEC	ALTA PDF	44.6377521	-96.66287006	311170.5428	2836905.634
38	Collection	WATER LINE	BDRWS	ALTA	44.63748966	-96.68327258	310856.7603	2831603.22
39	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.63748889	-96.68317627	310857.5044	2831628.341
40	Collection	WATER LINE	BDRWS	ALTA	44.63748613	-96.68283379	310860.1511	2831717.453
41	Collection	GAS LINE	NORBOR	ALTA PDF	44.63443698	-96.70265986	309538.679	2826606.294
42	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.63420248	-96.68328359	309659.2457	2831649.5
43	ACCESS ROAD	POWER UNDERGROUND	HDELEC	ALTA PDF	44.63420148	-96.68319327	309659.8421	2831673.008
44	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.63420132	-96.68317916	309659.9353	2831676.681
45	Collection	GAS LINE	NORBOR	ALTA PDF	44.63136095	-96.69311919	308519.4648	2829133.592
46	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.6308328	-96.74316784	307799.0387	2816122.985
47	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.6308318	-96.74342248	307796.0066	2816056.765
48	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.63080538	-96.74316747	307789.0512	2816123.484
49	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.63080437	-96.74342233	307786.0165	2816057.205
50	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.63077795	-96.7431671	307779.0637	2816123.983
51	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.63077694	-96.74342218	307776.026	2816057.646
52	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.6307421	-96.73467515	307855.0334	2818333.43
53	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.63071028	-96.72677718	307926.4529	2820388.304
54	Collection	WATER LINE	BDRWS	ALTA	44.63071015	-96.72673876	307926.8085	2820398.301
55	Collection	WATER LINE	BDRWS	ALTA	44.6306937	-96.69346034	308272.7809	2829054.789
56	Collection	WATER LINE	BDRWS	ALTA	44.63068142	-96.70231391	308174.3244	2826752.03
57	Collection	WATER LINE	BDRWS	ALTA	44.63061761	-96.73390329	307817.79	2818536.035
58	Collection	WATER LINE	BDRWS	ALTA	44.63061721	-96.73384544	307818.25	2818551.09
59	ACCESS ROAD	POWER UNDERGROUND	HDELEC	ALTA PDF	44.63058716	-96.74374537	307703.5127	2815976.36
60	ACCESS ROAD	TELEPHONE FIBER OPTIC	ITC	ALTA	44.63058698	-96.74342115	307706.8391	2816060.698
61	ACCESS ROAD	TELEPHONE FIBER OPTIC	ITC	ALTA	44.63058683	-96.74316452	307709.4717	2816127.457
62	Collection	WATER LINE	BDRWS	ALTA	44.63042741	-96.72346888	307858.2391	2812153.026
63	Collection	POWER OVERHEAD	UNKNOWN	ALTA	44.62840832	-96.702784	307341.3248	2826663.496
64	CRANE	WATER LINE	BDRWS	ALTA	44.62790913	-96.7234515	306941.088	2821294.695
65	Collection	POWER OVERHEAD	UNKNOWN	ALTA	44.62310031	-96.6979115	305459.4877	2828009.863
66	ACCESS ROAD	POWER OVERHEAD	UNKNOWN	ALTA	44.62301086	-96.69782977	305427.7745	2828032.456
67	ACCESS ROAD	TELEPHONE FIBER OPTIC	ITC	ALTA	44.62091832	-96.66309038	305036.3238	2837101.222
68	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.62091797	-96.66292688	305037.9517	2837143.764
69	ACCESS ROAD	POWER OVERHEAD	HDELEC	ALTA PDF	44.62091796	-96.66292069	305038.0134	2837145.375
70	ACCESS ROAD	TELEPHONE FIBER OPTIC	ITC	ALTA	44.62059863	-96.64239076	305142.6553	2842491.11

71	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61950919	-96.74373873	303668.1664	2816140.491
72	ACCESS ROAD	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61944047	-96.74373873	303643.132	2816141.498
73	Collection	POWER OVERHEAD	UNKNOWN	ALTA	44.61858124	-96.69376233	303857.4328	2829156.528
74	Collection	POWER OVERHEAD	UNKNOWN	ALTA	44.61854688	-96.69373064	303845.2533	2829165.284
75	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.61638209	-96.66642258	303348.2232	2836302.417
76	CRANE	TELEPHONE FIBER OPTIC	ITC	ALTA	44.61634905	-96.68273733	303161.7327	2832058.211
77	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61632586	-96.69352883	303038.3609	2829250.851
78	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.6163257	-96.69358643	303037.6897	2829235.865
79	CRANE	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61632004	-96.70045443	302962.6813	2827449.042
80	Collection	WATER LINE	BDRWS	ALTA	44.61622606	-96.72341434	302685.6868	2821476.701
81	Collection	WATER LINE	BDRWS	ALTA	44.61617223	-96.72341313	302666.094	2821477.812
82	CRANE	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61615068	-96.72347741	302657.5648	2821461.403
83	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61615065	-96.7234672	302657.6629	2821464.06
84	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61615044	-96.72337574	302658.5474	2821487.86
85	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61615025	-96.72328434	302659.4444	2823530.6151
86	ACCESS ROAD	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61613102	-96.71558843	302727.3463	2823514.2696
87	Collection	WATER LINE	BDRWS	ALTA	44.61611841	-96.72341191	302646.5008	2821478.922
88	ACCESS ROAD	TELEPHONE FIBER OPTIC	ITC	ALTA	44.61611192	-96.64237425	303509.5263	2842563.224
89	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.61609312	-96.68280336	303067.8038	2837044.855
90	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61609223	-96.68332044	303061.9613	2831910.333
91	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.61609222	-96.70875105	302751.7774	2825293.794
92	Collection	WATER LINE	BDRWS	ALTA	44.61609197	-96.68346779	303060.2966	2831872
93	Collection	WATER LINE	BDRWS	ALTA	44.61609048	-96.7081609	302797.3896	2825447.376
94	CRANE	WATER LINE	BDRWS	ALTA	44.61608902	-96.72341124	302635.8001	2821479.529
95	Collection	POWER OVERHEAD	UNKNOWN	ALTA	44.61607778	-96.69145832	302970.0133	2829793.247
96	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.61605203	-96.68280284	303052.8406	2832045.603
97	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61605113	-96.68332074	303046.9892	2831910.87
98	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.61605107	-96.70875066	302776.7932	2825294.515
99	Collection	WATER LINE	BDRWS	ALTA	44.61605088	-96.68346772	303045.3288	2831872.632
100	Collection	WATER LINE	BDRWS	ALTA	44.61604932	-96.70815526	302782.4556	2825449.455
101	Collection	POWER OVERHEAD	UNKNOWN	ALTA	44.61603678	-96.6914206	302955.4795	2829803.671
102	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.61601084	-96.68280232	303037.8409	2832046.353
103	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61600994	-96.68332103	303031.9797	2831911.408
104	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.61600993	-96.70875023	302761.8103	2825295.237
105	Collection	WATER LINE	BDRWS	ALTA	44.61600968	-96.68346765	303030.3232	2831873.264
106	Collection	WATER LINE	BDRWS	ALTA	44.61600816	-96.70814961	302767.5216	2825451.534
107	Collection	POWER OVERHEAD	UNKNOWN	ALTA	44.61599563	-96.69138274	302940.8923	2829814.135
108	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.61596969	-96.6828018	303022.859	2832047.103
109	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61596879	-96.68332133	303016.9889	2831911.945
110	Collection	WATER LINE	BDRWS	ALTA	44.61596854	-96.68346759	303015.3364	2831873.896
111	Collection	POWER OVERHEAD	UNKNOWN	ALTA	44.61595455	-96.69134495	302926.3313	2829824.579
112	ACCESS ROAD	POWER OVERHEAD	OTTERTAIL	ALTA PDF	44.61406992	-96.66266927	302546.2514	2837313.672
113	CRANE	TELEPHONE FIBER OPTIC	ITC	ALTA	44.61265864	-96.68274376	301817.3867	2832111.652
114	CRANE	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61162835	-96.68274556	301442.0695	2832126.571
115	Collection	POWER OVERHEAD	OTTERTAIL	ALTA PDF	44.61156997	-96.66268535	301635.452	2837347.047
116	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.61150136	-96.68332608	301389.6201	2831977.416
117	Collection	WATER LINE	BDRWS	ALTA	44.61150002	-96.68346022	301387.7008	283

TABLE 1: UTILITY CROSSINGS (CONTINUED)
COORDINATE SYSTEM: HARN/SDSD-NF

CROSSING ID	SITE IMPROVEMENT	TYPE	OWNER	SOURCE	LATITUDE	LONGITUDE	NORTHING	EASTING
141	ACCESS ROAD	TELEPHONE FIBER OPTIC	ITC	ALTA	44.6019789	-96.66618161	298104.3124	2836581.287
142	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60197834	-96.65289436	298246.8685	2840039.148
143	Collection	WATER LINE	BDRWS	ALTA	44.60197783	-96.65284773	298247.1861	2840051.29
144	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.60195441	-96.66618157	298095.3908	2836581.665
145	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60193718	-96.65289437	298231.8751	2840039.766
146	Collection	WATER LINE	BDRWS	ALTA	44.60193668	-96.65284825	298232.1901	2840051.775
147	ACCESS ROAD	TELEPHONE FIBER OPTIC	ITC	ALTA	44.60186551	-96.69960852	297706.3703	2827883.904
148	Collection	WATER LINE	BDRWS	ALTA	44.60175429	-96.64316633	298270.1388	2842574.126
149	Collection	WATER LINE	BDRWS	ALTA	44.60175307	-96.64306679	298270.7668	2842600.049
150	Collection	WATER LINE	BDRWS	ALTA	44.60175184	-96.64296725	298271.3954	2842625.973
151	Collection	WATER LINE	BDRWS	ALTA	44.60175062	-96.6428677	298272.024	2842651.89
152	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.60166911	-96.64235612	298247.8594	2842786.262
153	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.60161806	-96.64235615	298229.2626	2842787.024
154	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60160621	-96.64223639	298226.2403	2842818.37
155	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.6015925	-96.6423075	298220.4769	2842800.072
156	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60155592	-96.64249712	298205.1078	2842751.279
157	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60154221	-96.64256822	298199.344	284232.982
158	Collection	WATER LINE	BDRWS	ALTA	44.60154107	-96.6294331	298341.0514	2846151.248
159	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60152849	-96.64263933	298193.5803	2842714.685
160	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60151478	-96.64271043	298187.8168	2842696.388
161	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.60148192	-96.64235625	298179.6718	2842789.057
162	Collection	WATER LINE	BDRWS	ALTA	44.6014443	-96.64192821	298170.5928	2842901.017
163	Collection	WATER LINE	BDRWS	ALTA	44.60144345	-96.64202381	298169.2506	2842876.153
164	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.60143086	-96.64235629	298161.0751	2842789.819
165	Collection	POWER OVERHEAD	OTTERTAIL	ALTA PDF	44.60138191	-96.64060611	298161.5646	2843231.97
166	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.60137981	-96.64235632	298142.479	2842790.581
167	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60137814	-96.64171418	298148.8038	2842957.717
168	Collection	POWER OVERHEAD	OTTERTAIL	ALTA PDF	44.60134075	-96.64067155	298146.4475	2843229.614
169	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60133704	-96.64170873	298133.8924	2842959.557
170	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.60132876	-96.64235636	298123.8819	2842791.343
171	Collection	POWER OVERHEAD	OTTERTAIL	ALTA PDF	44.60129958	-96.640683	298131.3304	2843227.258
172	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60129594	-96.64170328	298118.9804	2842961.797
173	Collection	POWER OVERHEAD	OTTERTAIL	ALTA PDF	44.60125842	-96.64069444	298116.7133	2843224.903
174	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60125484	-96.64169783	298104.0686	2842963.837
175	Collection	POWER OVERHEAD	OTTERTAIL	ALTA PDF	44.60121726	-96.64070589	298101.0965	2843222.547
176	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60121374	-96.64169238	298089.1569	2842965.877
177	Collection	POWER OVERHEAD	OTTERTAIL	ALTA PDF	44.6011751	-96.64071733	298085.9791	2843220.192
178	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.60117264	-96.64168692	298074.2452	2842967.917
179	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.59936976	-96.62251676	297625.2067	2847984.143
180	Collection	WATER LINE	BDRWS	ALTA	44.59936927	-96.62262227	297623.7727	2847954.089
181	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.5993689	-96.62280134	297621.8029	2847910.146
182	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.59932859	-96.62251628	297610.2156	2847984.894
183	Collection	WATER LINE	BDRWS	ALTA	44.59932809	-96.62263247	297608.7724	2847954.664
184	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.5993277	-96.62280056	297606.8029	2847910.924
185	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.59928742	-96.6225158	297595.2235	2847985.645
186	Collection	WATER LINE	BDRWS	ALTA	44.59928692	-96.62263267	297593.7727	2847955.238
187	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.5992865	-96.62279998	297591.8029	2847911.702
188	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.59924625	-96.62251532	297580.2321	2847986.396
189	Collection	WATER LINE	BDRWS	ALTA	44.59924575	-96.62263286	297578.7728	2847955.813
190	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.59924531	-96.6227994	297576.803	2847912.48
191	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.59920508	-96.62251484	297565.2406	2847987.147
192	Collection	WATER LINE	BDRWS	ALTA	44.59920457	-96.62263306	297563.7728	2847956.387
193	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.59920411	-96.62279882	297561.803	2847913.258
194	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.5991639	-96.62251436	297550.2489	2847987.898
195	Collection	WATER LINE	BDRWS	ALTA	44.5991634	-96.62263326	297548.7725	2847956.962
196	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.59916291	-96.62279823	297546.8027	2847914.035
197	ACCESS ROAD	TELEPHONE FIBER OPTIC	ITC	ALTA	44.58944102	-96.60239449	294227.9455	2853372.708
198	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.58755473	-96.62208202	293326.2947	2848276.957
199	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.58755463	-96.62202444	293326.884	2848291.945
200	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.58755453	-96.62196686	293327.4732	2848306.934
201	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.58755443	-96.62190929	293328.0621	2848321.922
202	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.58755433	-96.62185171	293328.6517	2848336.911
203	Collection	TELEPHONE FIBER OPTIC	ITC	ALTA	44.58755423	-96.62179414	293329.2409	2848351.9
204	Collection	WATER LINE	BDRWS	ALTA	44.58750635	-96.6220819	293308.674	2848277.723
205	Collection	WATER LINE	BDRWS	ALTA	44.58750539	-96.62202432	293308.9486	2848292.725
206	Collection	WATER LINE	BDRWS	ALTA	44.58750442	-96.62196674	293309.2232	2848307.72

207	Collection	WATER LINE	BDRWS	ALTA	44.58750346	-96.62190917	293309.4978	2848322.729
208	Collection	WATER LINE	BDRWS	ALTA	44.58750318	-96.62185159	293310.0205	2848337.721
209	Collection	WATER LINE	BDRWS	ALTA	44.58750307	-96.62179401	293310.6074	2848352.71
210	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.58743206	-96.62208172	293281.616	2848278.899
211	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.58743192	-96.62202415	293282.1902	2848293.888
212	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.58743178	-96.62196657	293282.7646	2848308.87
213	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.58743164	-96.62190899	293283.3388	2848323.866
214	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.5874315	-96.62185142	293283.9132	2848338.555
215	Collection	POWER OVERHEAD	HDELEC	ALTA PDF	44.58743136	-96.62179384	293284.4881	2848353.845
216	Collection	WATER LINE	BDRWS	ALTA	44.58719442	-96.5815562	293638.1002	2858831.194
217	Collection	POWER OVERHEAD	EASTRIVER	ALTA PDF	44.58718892	-96.58155112	293636.1557	2858832.601
218	Collection	GAS LINE	NORBOR	ALTA PDF	44.58479184	-96.58132991	292765.4684	2858927.073
219	ACCESS ROAD	WATER LINE	BDRWS	ALTA	44.58298303	-96.58160843	292103.5577	2858882.407
220	Collection	WATER LINE	BDRWS	ALTA	44.58182605	-96.58138974	291684.5414	2858957.144
221	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.58146614	-96.62212041	291108.1049	2848359.553
222	Collection	POWER UNDERGROUND	HDELEC	ALTA PDF	44.58036192	-96.62212601	290705.8305	2848374.888
223	Collection	POWER OVERHEAD	EASTRIVER	ALTA PDF	44.58034158	-96.58188921	291138.3358	2858849.966
224	Collection	WATER LINE	BDRWS	ALTA	44.58034011	-96.58074933	291130.344	2859145.728
225	Collection	POWER OVERHEAD	EASTRIVER	ALTA PDF	44.58030162	-96.58188935	291123.784	2858850.542
226	Collection	WATER LINE	BDRWS	ALTA	44.58029936	-96.58075032	291135.4904	2859147.097
227	Collection	POWER OVERHEAD	EASTRIVER	ALTA PDF	44.58026048	-96.5818895	291108.7952	2858851.137
228	Collection	WATER LINE	BDRWS	ALTA	44.58025821	-96.58075132	291120.4894	2859147.47
229	Collection	POWER OVERHEAD	EASTRIVER	ALTA PDF	44.58021933	-96.58188965	291093.8071	2858851.73
230	Collection	WATER LINE	BDRWS	ALTA	44.58021708	-96.58075232	291105.4963	2859147.843
231	Collection	POWER OVERHEAD	EASTRIVER	ALTA PDF	44.58017819	-96.5818898	291078.8189	2858852.324
232	Collection	WATER LINE	BDRWS	ALTA	44.58017593	-96.58075332	291090.4993	2859148.216
233	Collection	POWER OVERHEAD	EASTRIVER	ALTA PDF	44.58013704	-96.58188995	291063.8304	2858852.918
234	Collection	WATER LINE	BDRWS	ALTA	44.58013479	-96.58075432	291075.5023	2859148.589
235	Collection	POWER OVERHEAD	EASTRIVER	ALTA PDF	44.5800959	-96.5818901	291048.8423	2858853.512
236	Collection	WATER LINE	BDRWS	ALTA	44.58009365	-96.58075532	291060.5053	2859148.96

REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



4850 32nd Avenue S
Fargo, ND 58104



Tatanka Ridge Wind Farm

Construction Details

Record Plans

Drawn By: TDD Checked By: DJN

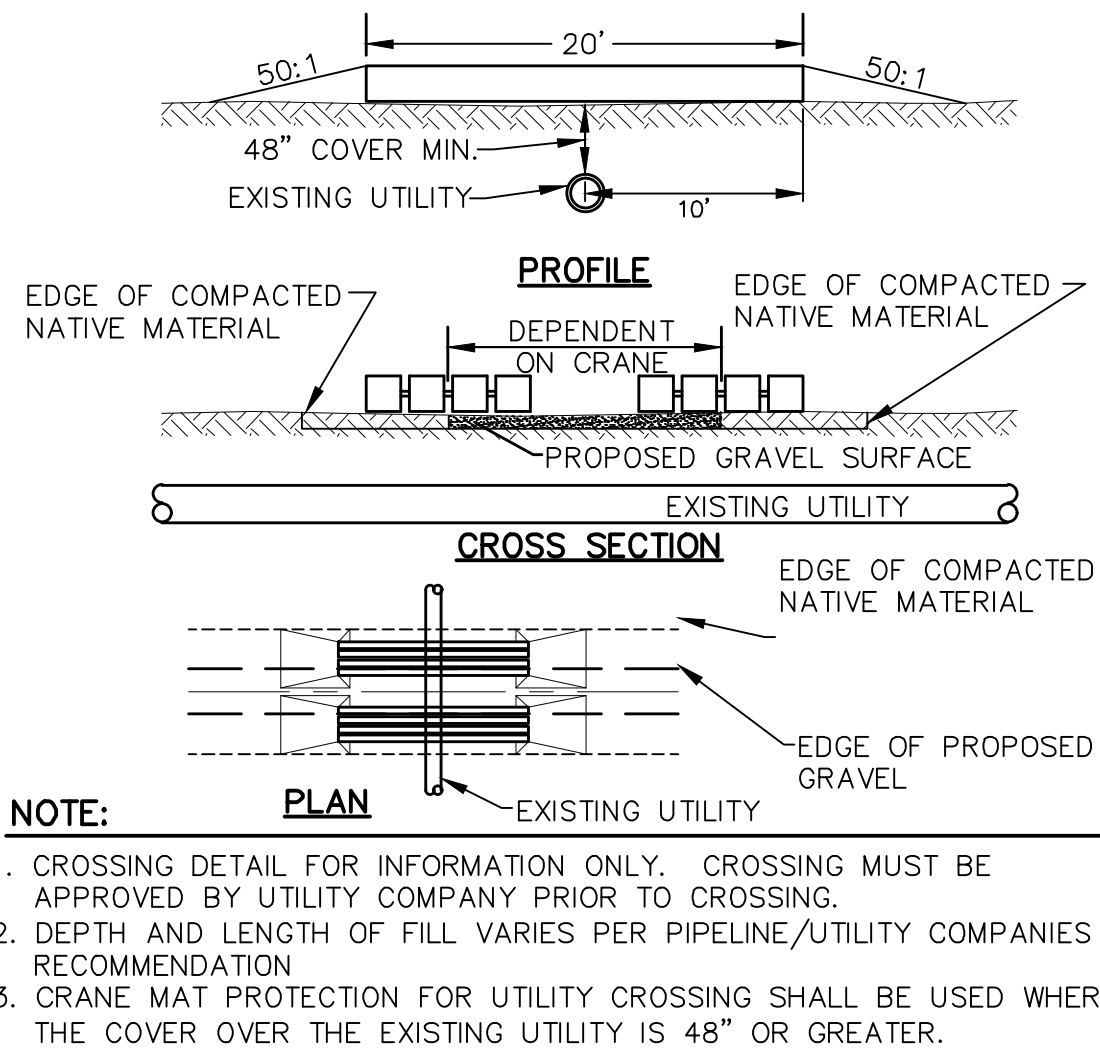
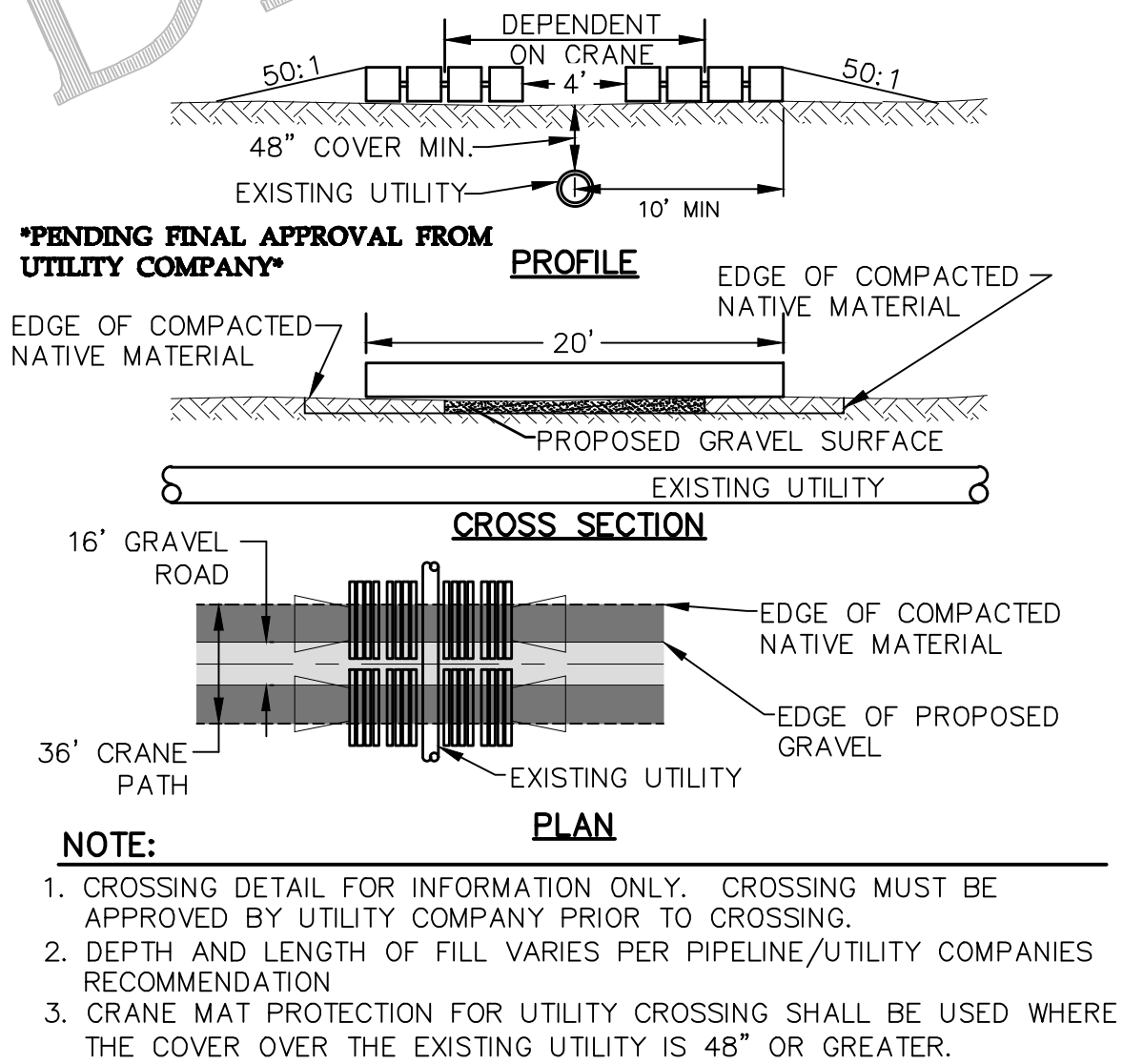
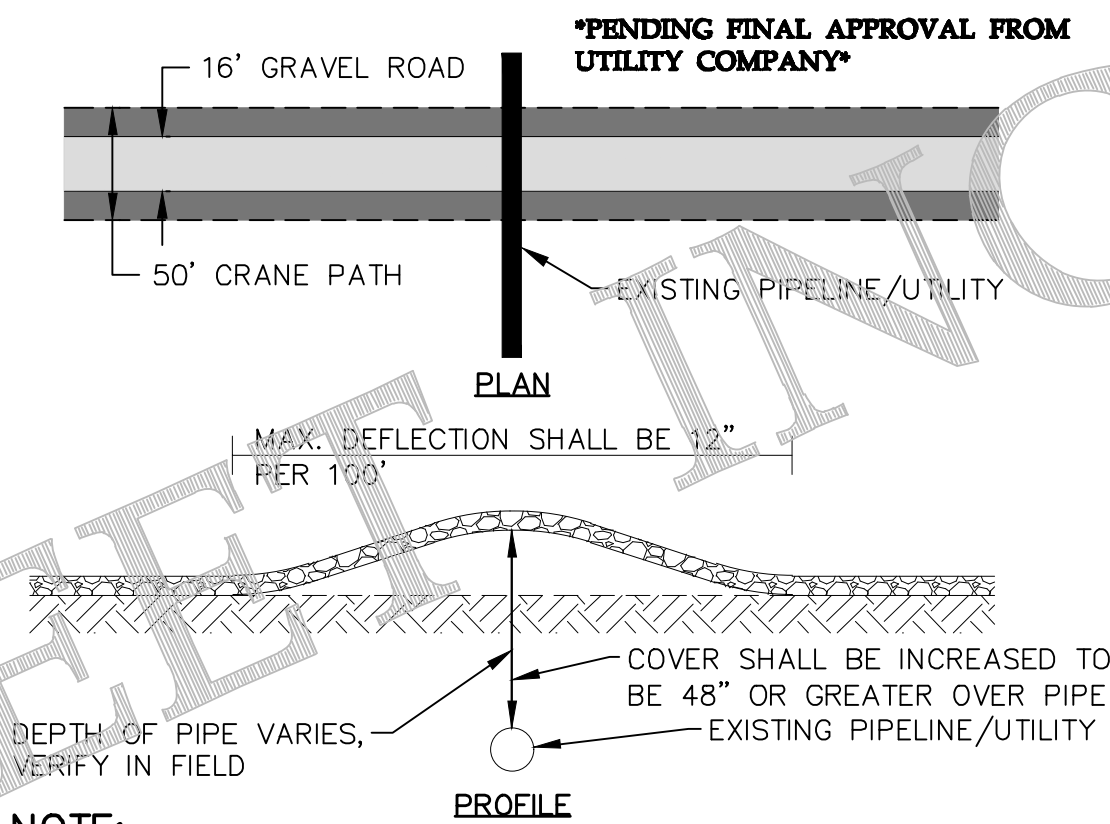
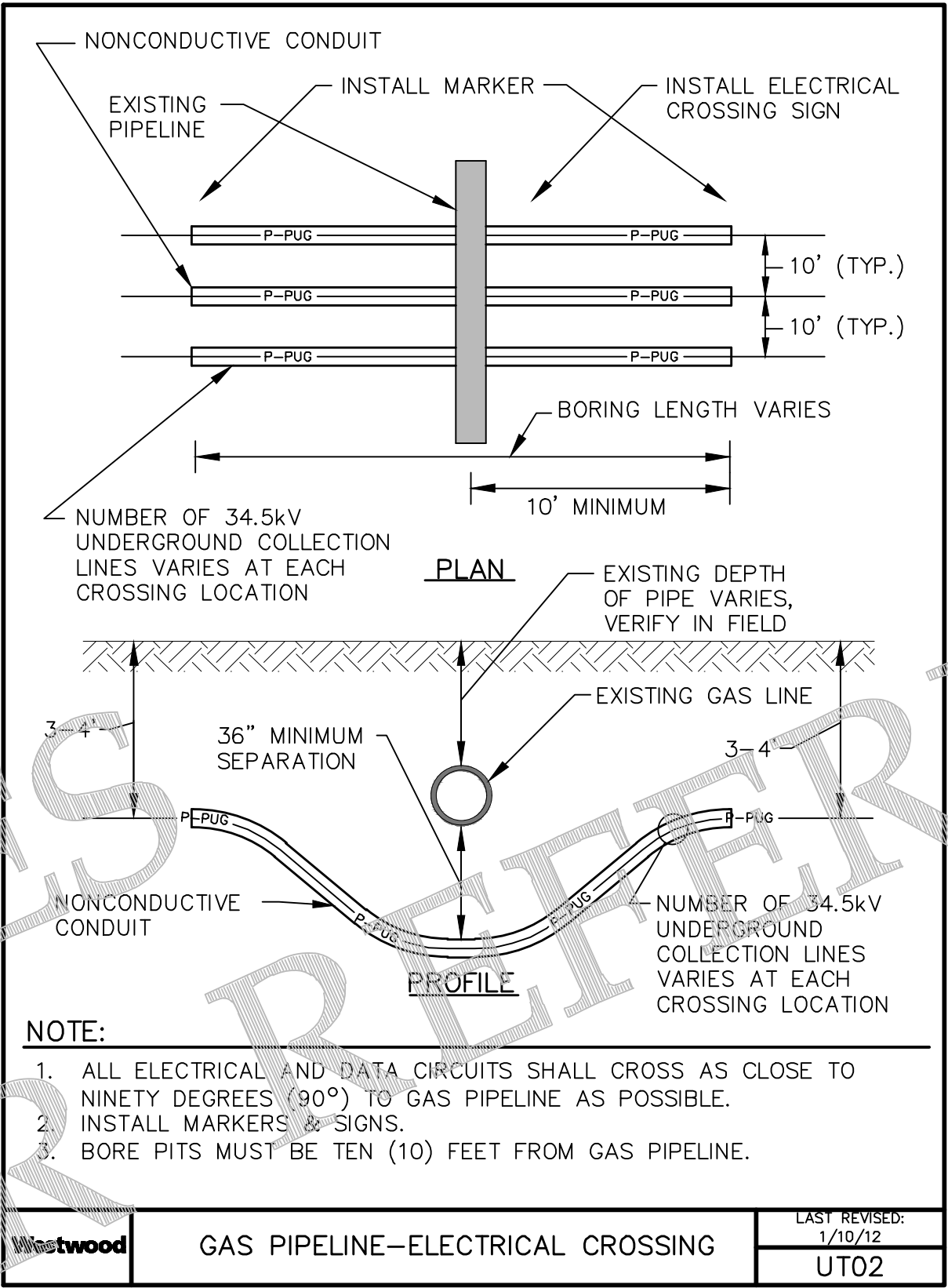
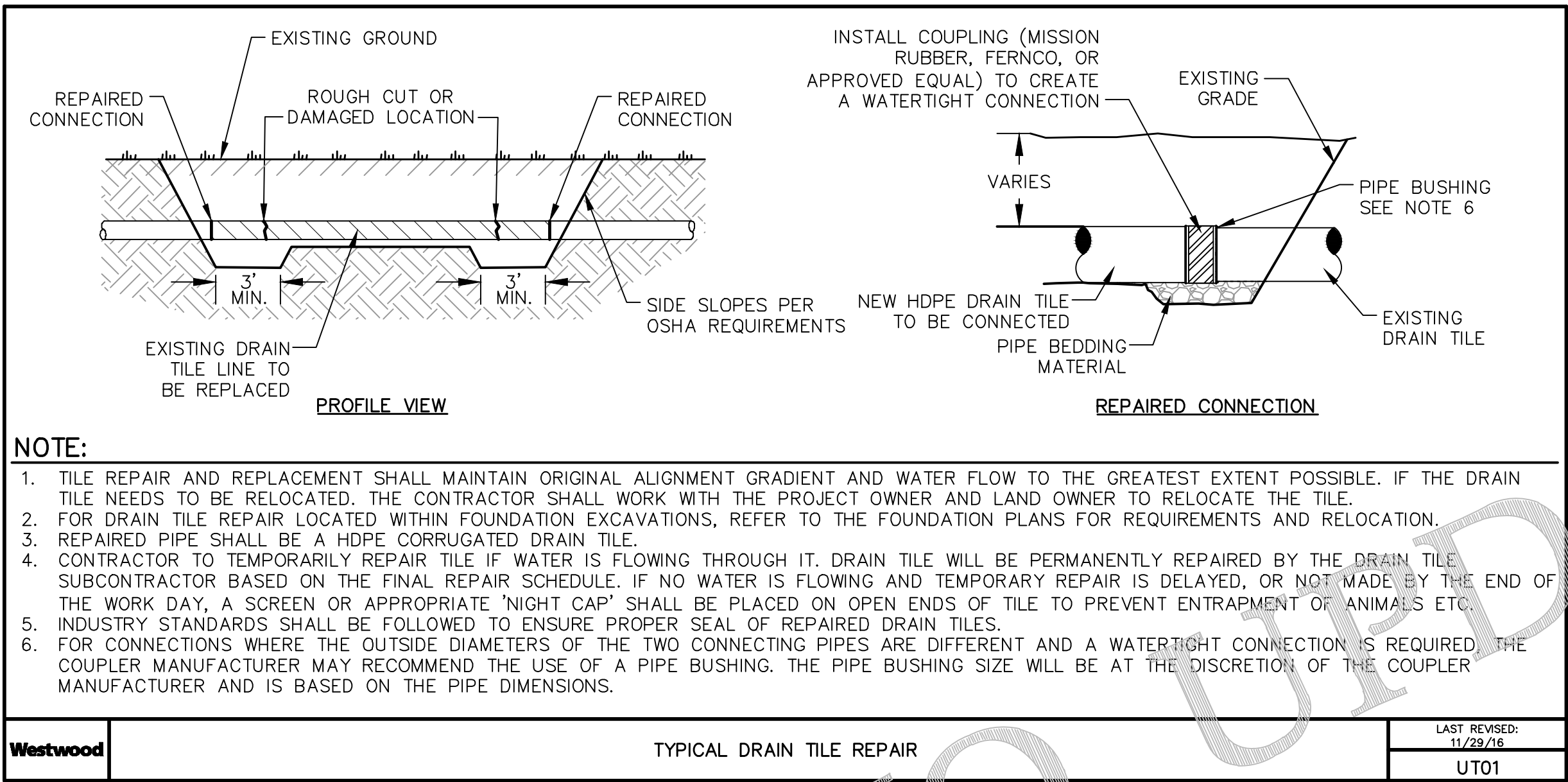
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Dwg No:TRW-C-512 Sht No: 010



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

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AVANGRID RENEWABLES

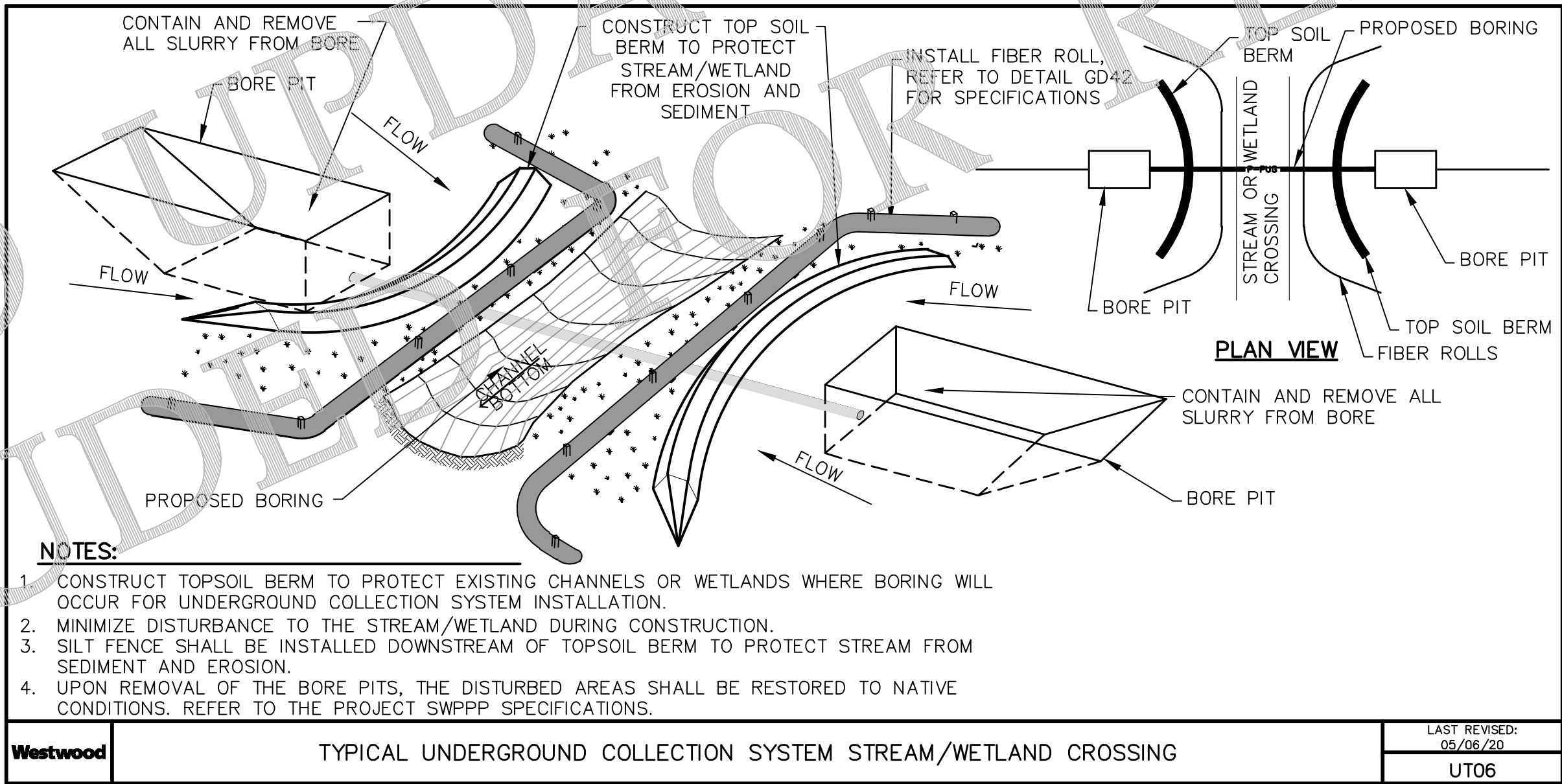
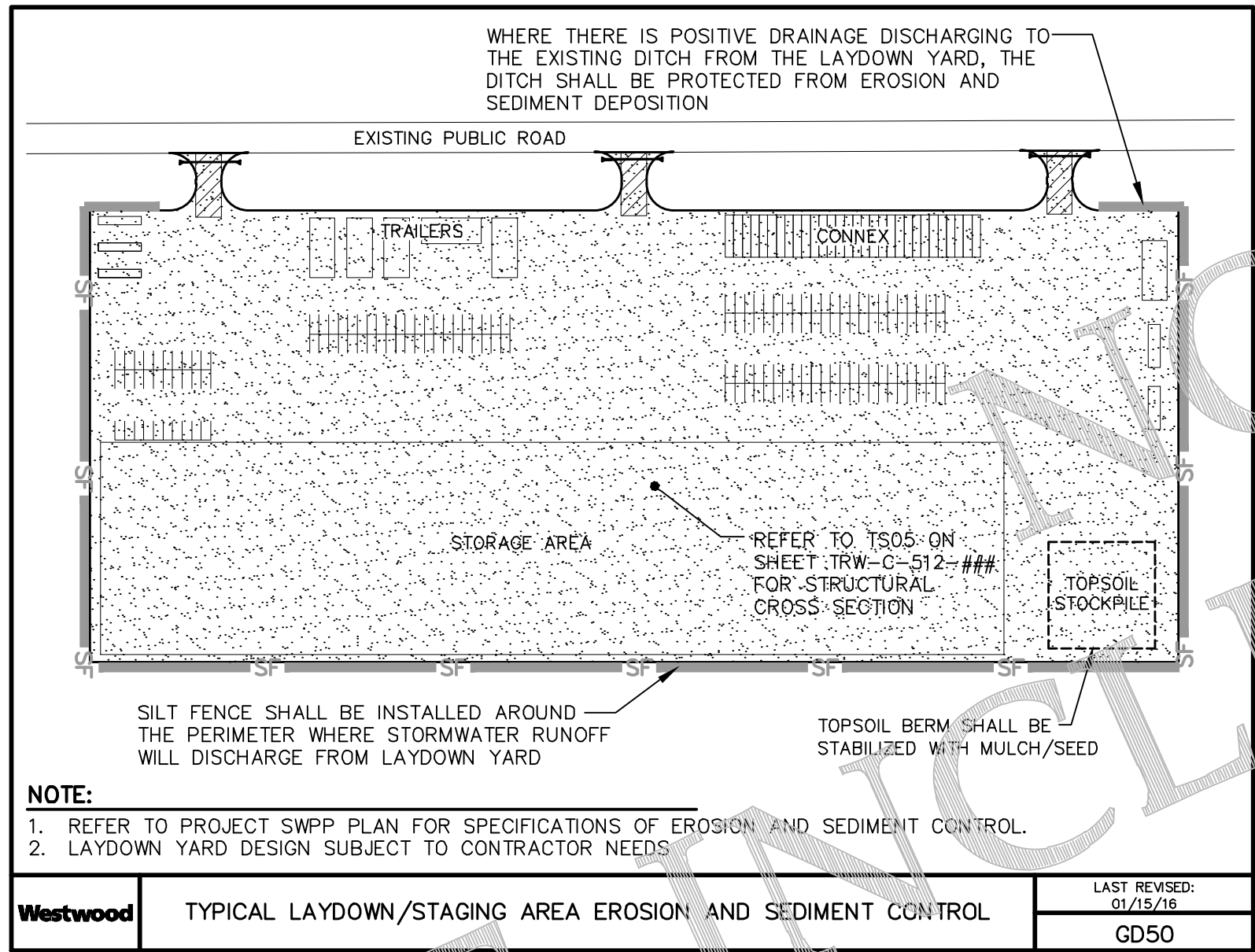
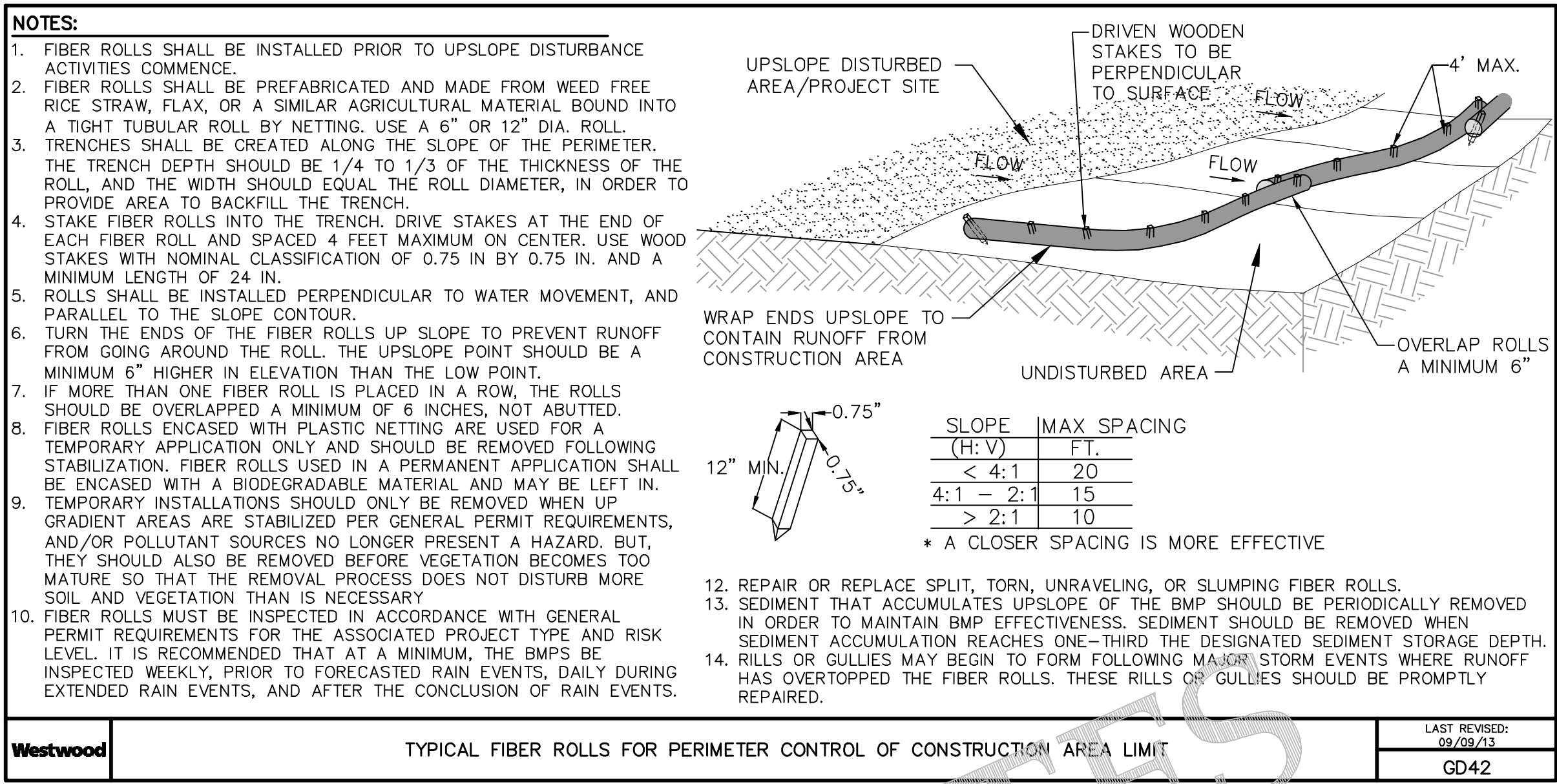
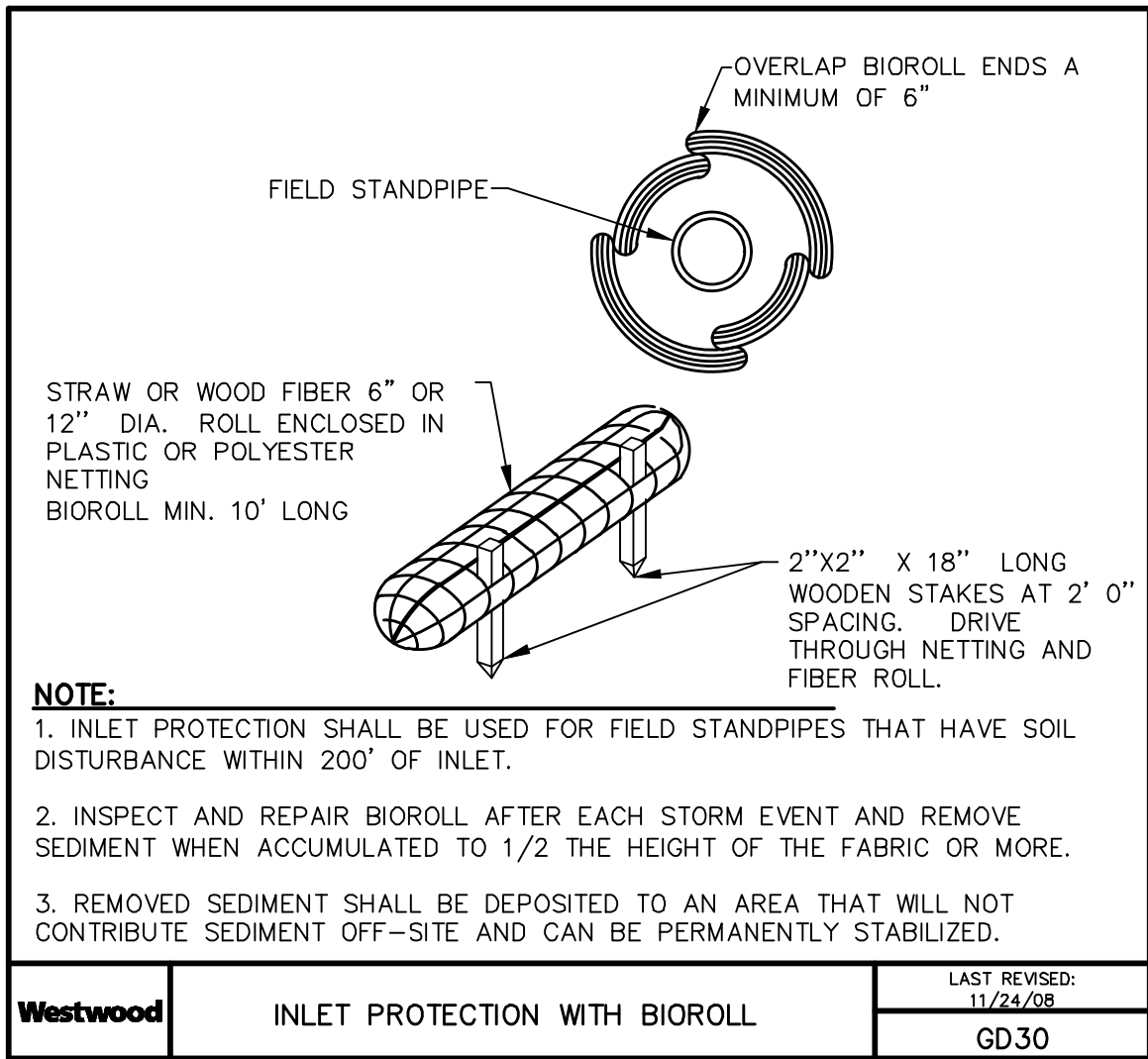
Tatanka Ridge
Wind Farm

Construction Details
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401DTP01.dwg

Dwg No: TRW-C-512 Sht No: 011



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
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AVANGRID RENEWABLES

Tatanka Ridge
Wind Farm

Construction Details
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401DTP01.dwg

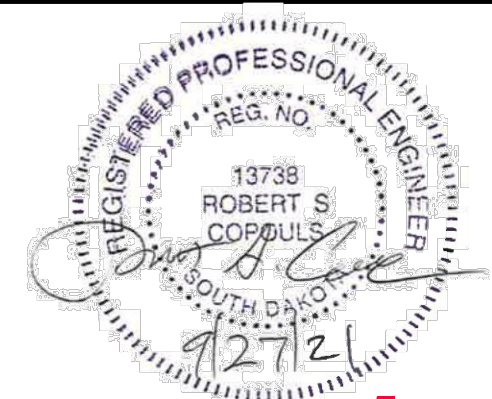
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TABLE 2: RECORD TURBINE ARRAY COORDINATES
COORDINATE SYSTEM: HARN/SDSD-NF

Turbine	Easting	Northing	Model
A1	290955.418	2855006.348	GE 127
A2	291031.760	2857001.384	GE 127
B1	294193.972	2852663.579	GE 127
B2	295068.644	2856329.640	GE 127
B3	295916.980	2857621.369	GE 127
C5	296321.188	2850207.469	GE 127
E1	301321.726	2834354.708	GE 116
E2	301457.557	2835917.446	GE 127
E3	301692.164	2838223.095	GE 116
E4	300144.667	2841944.562	GE 127
E5	301893.645	2844739.173	GE127
E6	303007.217	2846403.288	GE 127
F1	305172.987	2843283.366	GE 127
F2	308091.165	2845766.910	GE 127
G1	304967.563	2832779.757	GE 116
G2	305033.947	2834434.359	GE 116
G3	304872.751	2835938.338	GE 116
H1	306923.962	2822756.644	GE 127
H2	307216.331	2824194.733	GE 127
H3	307275.982	2825708.068	GE 127
H4	304927.685	2827364.098	GE 127
H5	306323.873	2828454.438	GE 127
I2	310164.505	2827241.346	GE 127
I3	309613.913	2829339.530	GE 127
I4	309685.006	2830602.640	GE 127
I5	310879.098	2836225.496	GE 127
J1	311382.045	2832519.646	GE 127
J2	312699.421	2833701.320	GE 127
K0	303398.833	2807059.378	GE 127
K1	304595.933	2808477.344	GE 127
K2	305439.582	2809904.478	GE 127
K3	305472.018	2811639.367	GE 127
K4	303837.332	2813763.870	GE 127
K6	303666.577	2817056.298	GE 127
K7	303436.870	2819019.714	GE 127
K8	303751.644	2820615.327	GE 127
L1	313764.938	2803873.978	GE 127
L10	308599.568	2818303.683	GE 127
L11	309752.498	2820371.570	GE 127
L2	313678.091	2806766.453	GE 127
L3	313799.820	2808781.190	GE 127
L4	314582.179	2809805.439	GE 127
L5	311229.455	2811316.196	GE 127
L6	311048.332	2813445.450	GE 127
L7	311117.975	2815110.802	GE 127
L8	312191.208	2816598.872	GE 127
L9	313910.395	2818158.022	GE 127
P1	298574.120	2820052.158	GE 127
P3	301105.701	2822751.930	GE 116
P4	300818.137	2824426.101	GE 127
P6	298376.004	2827830.136	GE 127
P7	302291.093	2829072.130	GE 127
P8	299387.363	2831242.994	GE 127
S5	319836.249	2809289.452	GE 127
S6	319718.328	2810899.504	GE 127
S8	320064.737	2812043.124	GE 127
PMM	300486.861	2823544.884	
ADLS	298251.258	2836573.448	

REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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**AVANGRID
RENEWABLES**

Tatanka Ridge
Wind Farm

Turbine Array

Record Plans

Drawn By: TDD

Design By: TDD

Scale:

Checked By: DJN

Approved By: DJN

Date Created: 09/27/21

Project Number: 0022401

File Name: 0022401DTP01.dwg

Dwg No:TRW-C-512

Sht No: 014

TABLE 3: RECORD DRAINAGE CROSSING SCHEDULE

Crossing Number	Design Options		Installed			Plan Sheet "TKW-C-510-XXX"	Access Road	Installed Station	Hydro Number	Notes
	Low Water Crossing Design	25-Year Sizing	Type	Sizing	Length (LF)					
1	Flexamat	1-18"	CMP	2-18"	30	002	S8	08+50	DC-01	-
2	-	1-24", 2-18"	Flexamat	-	50	002	S8	13+25	DC-02	-
3	Flexamat	1-42", 2-30", 3-24"	Flexamat	-	50	003	L1	12+50	DC-29	-
4	Flexamat	1-42", 2-30", 4-24"	Flexamat	-	50	003	L1	07+75	DC-03	RFI #054
5	Flexamat	1-30", 2-24", 3-18"	Flexamat	-	50	004	L2	08+00	DC-04	-
6	Flexamat	2-24", 4-18"	Flexamat	-	50	004	L3	04+25	DC-05	RFI #051
7	Flexamat	3-30"	Flexamat	-	50	004	L3	08+00	DC-06	RFI #051
8	Flexamat	1-42", 2-30", 4-24"	Flexamat	-	50	004	L3	11+75	DC-07	RFI #051
9	Flexamat	1-24", 2-18"	Flexamat	-	70	005	L9	08+25	DC-08	RFI #056
10	Flexamat	1-36", 2-24", 4-18"	Flexamat	-	50	006	L6	23+00	DC-10	RFI #055
11	Flexamat	1-36", 2-30", 3-24"	Flexamat	-	50	006	L6	11+25	DC-09	-
12	Flexamat	-	Flexamat	-	50	007	L11	26+50	DC-11	-
13	Flexamat	1-18"	Flexamat	-	50	009	I5	08+00	DC-12	-
14	-	-	-	-	-	-	-	-	DC-13	-
15	Flexamat	1-42", 2-30", 3-24"	Flexamat	-	50	012	K7	05+00	DC-14	-
16	Flexamat	1-24", 2-18"	Flexamat	-	50	012	K7	12+75	DC-15	-
17	Flexamat	1-24", 2-18"	Flexamat	-	50	012	K7	19+25	DC-16	-
18	Flexamat	1-36", 2-30", 3-24"	Flexamat	-	50	014	H5	10+00	DC-17	-
19	Flexamat	1-24", 2-18"	Flexamat	-	50	014	H5	14+50	DC-28	-
20	Flexamat	1-18"	Flexamat	-	50	019	P8	04+00	DC-18	-
21	Flexamat	1-36", 2-24", 4-18"	Flexamat	-	50	022	E6	09+50	DC-30	-
22	Flexamat	1-36", 2-30", 3-24"	Flexamat	-	50	022	E6	15+00	DC-20	-
23	Flexamat	1-42", 2-30", 3-24"	Flexamat	-	50	022	E5	32+00	DC-21	-
24	-	1-24", 2-18"	CMP	2-18"	60	023	C5	01+80	DC-22	-
25	-	1-24", 2-18"	-	-	-	023	C5	11+50	DC-23	-
26	-	1-24", 2-18"	-	-	-	023	C5	16+75	DC-24	-
27	Flexamat	1-54", 2-42", 3-36"	Flexamat	-	50	024	B2	24+00	DC-25	-
28	Cabled Concrete	1-54", 2-42", 3-36"	Cabled Concrete	-	50	025	A2	09+75	DC-26	RFI #050
29	Flexamat	1-42", 2-30", 4-24"	Flexamat	-	50	025	A2	19+50	DC-27	RFI #050
30	Flexamat	-	Flexamat	-	50	022	E5	12+00	DC-31	-
32	Flexamat	-	Flexamat	-	50	020	E2	12+00	DC-32	-
33	Flexamat	1-48", 2-36", 3-30"	Flexamat	-	50	007	L11	38+25	DC-33	-
34	Flexamat	1-18"	Flexamat	-	50	007	L11	59+50	DC-34	-

- NOTES:
- CULVERTS AND LOW WATER CROSSINGS ARE SIZED AT A 25-YEAR STORM EVENT
 - WHERE TWO DESIGN OPTIONS ARE LISTED, ONLY ONE IS REQUIRED
 - REFER TO THE HYDROLOGY MEMO DATED 02/05/202 FOR ADDITIONAL INFORMATION.

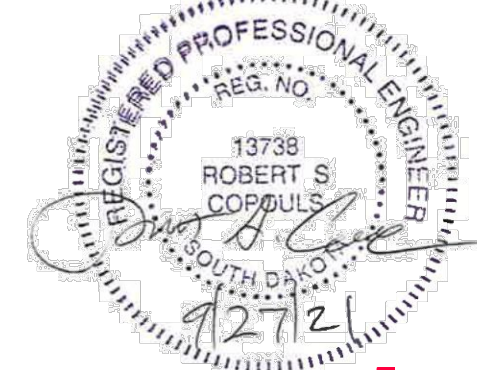
TABLE 4: RECORD ENTRANCE CULVERT SCHEDULE

Crossing Number	Design Options		Installed		Plan Sheet "TKW-C-510-XXX"	Access Road	Hydro Number	Notes
	50-Year Sizing	100-Year Sizing	Sizing	Length				
1	1-18"	1-18"	1-18"	40	001	S5	EC-01	
2	1-18"	1-18"	1-18"	40	002	S8	EC-02	
3	1-18"	1-18"	1-18"	60	003	L1	EC-03	Rip Rap Installed
4	1-36", 2-30", 3-24"	1-42", 2-30", 3-24"	2-32"	60	004	L2	EC-04	Rip Rap Installed
5	1-18"	1-24", 2-18"	1-18"	60	004	L3	EC-05	Rip Rap Installed
6	1-18"	1-18"	1-18"	40	005	L9	EC-06	
7	1-18"	1-18"	1-18"	40	006	L5	EC-07	
8	1-18"	1-18"	1-18"	40	006	L6	EC-08	
9	1-18"	1-18"	1-18"	40	007	L8	EC-09	
10	-	1-96", 2-72", 3-60"	-	-	007	L11	EC-10	Existing 30" CMP. Rip Rap Installed
12	1-24"	1-18"	1-24"	60	008	I3	EC-28	
13	1-18"	1-18"	1-18"	60	009	J1	EC-29	
14	LWC	1-24", 2-18"	LWC	50	009	I5	EC-11	No ditch. LWC to installed at entrance
15	1-18"	1-18"	1-18"	40	010	K2	EC-12	
16	1-18"	1-18"	1-18"	40	011	K3	EC-13	
17	1-24", 2-18"	1-24", 2-18"	1-24"	40	011	K4	EC-14	Rip Rap Installed
18	1-18"	1-18"	1-18"	40	012	K6	EC-15	
19	1-18"	1-18"	1-18"	40	012	K7	EC-16	
20	1-18"	1-18"	1-18"	40	015	G1	EC-30	
21	1-30", 2-24", 3-18"	1-30", 2-24", 4-18"	3-18"	40	016	F1	EC-17	
22	1-18"	1-18"	1-18"	40	016	F2	EC-18	
23	1-18"	1-18"	1-18"	40	019	P6	EC-19	
24	1-18"	1-18"	1-18"	60	019	P7	EC-20	
25	1-18"	1-18"	1-18"	60	019	P8	EC-21	
26	-	1-24", 2-18"	-	-	-	-	-	Removed in Rev 3. Use existing road and approach
27	1-24", 2-18"	1-24", 2-18"	1-18"	40	021	E3	EC-32	
28	1-24", 2-18"	1-24", 2-18"	2-18"	40	021	E4	EC-22	
29	1-18"	1-18"	1-18"	60	023	C5	EC-23	
30	1-18"	1-18"	1-18"	60	023	B1	EC-24	
31	-	1-24", 2-18"	-	-	-	-	-	Removed in Rev 3. No ditch to fit culvert and minimal flow
32	1-24", 2-18"	1-24", 2-18"	1-24"	60	025	A2	EC-26	
33	-		-	-	-	-	-	
34	-	1-18"	-	-	-	-	-	Removed in Rev 3. Location not needed
35	1-18"		1-18"	80	022	-	EC-45 (O&M)	O&M
36	-		-	-	026	Sub Road	EC-36	Substation
37	1-18"		-	-	019	-	EC-37 (Laydown)	Temporary Culvert at Laydown Yard
38	1-18"		-	-	019	-	EC-38 (Laydown)	Temporary Culvert at Laydown Yard
39	1-18"		-	-	019	-	EC-39 (Laydown)	Temporary Culvert at Laydown Yard
40	1-18"		-	-	019	-	EC-40 (Laydown)	Temporary Culvert at Laydown Yard
41	1-18"		-	-	019	-	EC-41 (Laydown)	Temporary Culvert at Laydown Yard
42	1-18"		-	-	019	-	EC-42 (Laydown)	Temporary Culvert at Laydown Yard
43	1-18"		1-18"	60	020	E2	EC-37	
44	1-18"		1-18"	40	013	H1	EC-38	
45	1-18"		1-18"	40	022	-	EC-46 (O&M)	O&M Field Entrance, Renumbered to 45 in Rev 3

REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
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NOTES



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AVANGRID
RENEWABLES

Tatanka Ridge

Wind Farm

Drainage & Entrance Culvert Tables

Record Plans

Drawn By: TDD

Checked By: DJN

Design By: TDD

Approved By: DJN

Scale:

Date Created: 09/27/21

Project Number: 0022401

File Name: 0022401DTP01.dwg

Dwg No: TRW-C-512

Sht No: 014

ROAD DESIGN PARAMETERS

1. ACCESS ROADS HAVE BEEN DESIGNED TO ACCOMMODATE LIGHT DUTY TRUCKS (PICKUP TRUCKS AND MAINTENANCE VEHICLES) FOR LOW VOLUME USE IN NORMAL OPERATING CONDITIONS AS WELL AS HEAVY DUTY CONSTRUCTION TRAFFIC UNDER DRY CONDITIONS. THE ROAD DESIGN SPECIFIED IS NOT INTENDED FOR ALL WEATHER USE FOR HEAVY DUTY CONSTRUCTION LOADS. REFER TO THE ACCESS ROAD DESIGN REPORT FOR ADDITIONAL DESIGN PARAMETERS AND CALCULATIONS.
2. ROAD MAINTENANCE CAN BE EXPECTED OVER THE LIFE OF THE PERMANENT FACILITY. TYPICAL MAINTENANCE MAY INCLUDE FILLING RUTS, FIXING WASH OUT AREAS, ADDING ADDITIONAL GRAVEL AS NEEDED, MAINTAINING ROAD CROWN, AND BLADING FOR WASHBOARD.

PRODUCTS

1. AGGREGATE BASE SHALL CONSIST OF LOCALLY SOURCED AGGREGATE AS APPROVED BY THE ENGINEER AND IN CONFORMANCE WITH THE GRADATION IN TABLE 5. AGGREGATE GRADATIONS SHALL BE SUBMITTED TO ENGINEER AND OWNER FOR REVIEW. SEE TABLE 5 FOR SIEVE ANALYSIS, ATTERBERG LIMITS, AND LA ABRASION.
2. ROAD SHOULDERS SHALL CONSIST OF COMPACTED NATIVE SOILS. CRANE PAD DESIGN WILL BE PROVIDED AS A TESTING SPECIFICATION ONCE PICK PLANS AND VEHICLE WEIGHTS ARE PROVIDED TO THE ENGINEER.
3. CULVERTS: ACCESS ROAD CULVERTS IN PUBLIC RIGHT OF WAY SHALL MEET AVANGRID SPECIFICATIONS OF 50 YEAR 24 HOUR STORM DURATION AND MEET THE MINIMUM SPECIFICATIONS SET FORTH BY THE SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION AND/OR DUEL COUNTY. ACCESS ROAD CULVERTS IN PRIVATE LAND SHALL MEET AVANGRID SPECIFICATION OF 25 YEAR 24 HOUR STORM EVENT. ALL CULVERTS ARE PLANNED TO BE A MINIMUM OF 18 INCH DIAMETER AND MANUFACTURED OF 16 GAUGE CORRUGATED METAL PIPE OR HDPE WITH NO END TREATMENTS UNLESS NOTED OTHERWISE. ACTUAL SIZE WILL BE DETERMINED THROUGH HYDRAULIC ANALYSIS. ALL TEMPORARY CULVERTS FOR CRANE TRAVEL ARE TO BE FIELD FIT BY THE CONTRACTOR.
4. GEOTEXTILE FABRIC: MIRAFI HP270 OR APPROVED EQUALS. SEE CIVIL DETAILS FOR MATERIAL APPLICATION. MATERIAL TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.
5. FILL PLACEMENT: NATIVE MATERIAL FREE OF ORGANICS AND WITH NO ROCKS LARGER THAN 4" IN DIAMETER. FILL PLACEMENT MAY BE USED BELOW ROADS, CRANE WALKS, TEMPORARY TURNING IMPROVEMENTS, LAYDOWN YARD AND WTC ERECTION AREAS.
6. FLEXAMAT:FLEXAMAT STANDARD AND PLUS OR APPROVED EQUAL. MATERIAL TO BE INSTALLED PER MANUFACTURER SPECIFICATION.
7. RIP RAP:REFER TO DETAIL E05 FOR RIP RAP DESIGN AND TABLE 3 ON SHEET TRW-C-512-###.
8. TYPE I OR II PORTLAND CEMENT (ASTM C150) FOR CEMENT STABILIZED ACCESS ROADS.

EXECUTION

1. CLEARING AND GRUBBING
- A. THE CONTRACTOR SHALL BE REQUIRED TO GRUB ALL TREES, STUMPS, BRUSH, AND DEBRIS WITHIN THE GRADING AREAS SHOWN ON THE PLANS. THE CONTRACTOR IS TO REMOVE ONLY THOSE TREES WHICH ARE DESIGNATED BY THE OWNER'S REPRESENTATIVE FOR REMOVAL, AND SHALL EXERCISE EXTREME CARE AROUND EXISTING TREES TO BE SAVED.
2. TOPSOIL STRIPPING
- A. SEE CEMENT STABILIZATION NOTES FOR TOPSOIL STRIPPING FOR STABILIZED ACCESS ROADS.
- B. TOPSOIL ON TEMPORARY IMPROVEMENTS, MET AND SPUR ROADS, AND TURBINE AREAS SHALL BE STRIPPED UP TO 6" IN DEPTH, REMOVING ROOT MASSES LARGER THAN 2" IN DIAMETER.
- C. SEE GRADING PLANS ON SHEET TRW-C-512-032 AND TRW-C-512-033 FOR TOPSOIL STRIPPING AT THE LAYDOWN AND O&M.
- D. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THE DESIGNATED DISTURBANCE AREAS.
- E. ANY TOPSOIL THAT HAS BEEN STRIPPED SHALL BE STOCKPILED FOR POST CONSTRUCTION REVEGETATION. ALL TOPSOIL SHALL BE REDISTRIBUTED TO THE LAND OWNER'S PROPERTY OF WHERE IT ORIGINATED FROM.
3. FILL PLACEMENT
- A. FILL PLACEMENT SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL, AFTER TOPSOIL STRIPPING, ABOVE THE EXISTING GRADE. GENERALLY, SIDE SLOPES SHALL BE CONSTRUCTED AT THREE FOOT HORIZONTAL TO ONE FOOT VERTICAL. THE MATERIAL FOR FILL CONSTRUCTION SHALL BE OBTAINED FROM THE ACCESS ROAD/TURBINE EXCAVATION (SEE GEOTECHNICAL REPORT FOR RESTRICTIONS), OR ANY SUITABLE, APPROVED SOIL OBTAINED ONSITE/OFFSITE BY CONTRACTOR, AS DIRECTED OR APPROVED BY THE ENGINEER. SEE TESTING REQUIREMENTS FOR FILL MATERIAL.
- B. SIDE SLOPES GREATER THAN 3:1 WILL NOT BE PERMITTED, UNLESS OTHERWISE NOTED ON THE PLAN.
4. SUBGRADE
- A. NONCOMPACTED SUBGRADE PREPARED AT GRADE OR IN CUT REQUIRES SCARIFICATION AND RECOMPACTION TO A DEPTH OF 12" OR MORE.
- B. ACCESS ROAD CROSS SLOPES SHOWN IN THE PLANS ARE MEANT AS A GUIDE. ACCESS ROAD CROSS SLOPES MAY RANGE FROM 1%-2%. CHECK WITH THE ENGINEER IF THE CROSS SLOPE FALLS OUTSIDE OF THIS RANGE. ACCESS ROADS BEING UTILIZED FOR CRANE TRAVEL SHOULD HAVE A MAX CROSS SLOPE OF 2%.
5. GEOTEXTILE
- A. MIRAFI HP270 GEOTEXTILE WILL BE INSTALLED PER MANUFACTURERS SPECIFICATION.
6. AGGREGATE
- B. AGGREGATE WILL BE PLACED OVER THE STABILIZED SUBGRADE OR FABRIC, COMPACTED, AND PROOF ROLLED FOR THE FULL WIDTH OF THE ROAD.

TABLE 5: SDDOT AGGREGATE BASE COURSE-- LOCALLY SOURCED	
SIEVE SIZE	PERCENT PASSING
1"	(100)
3/4"	(80-100)
1/2 "	(68-91)
NO. 4	(46-70)
NO. 8	(34-58)
NO. 40	(13-35)
NO. 200	(3-12)
ATTERBERG LIMITS: LIQUID LIMIT=25 MAX PLASTICITY INDEX (PI)= 0-6	
L.A ABRASION (% MAX) = 40% CRUSHED PARTICLES (MINIMUM, NO 4 Sieve) = 30% 1-CF	
GRADATION HAS BEEN OBTAINED FROM THE 2015 SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION BOOK.	

TESTING

1. TESTING SHALL BE PERFORMED BY A DESIGNATED INDEPENDENT TESTING AGENCY.
2. SUBMIT ONE SET OF TESTING AND INSPECTION RECORDS SPECIFIED TO THE CIVIL ENGINEER OF RECORD AND OWNER.

DEFINITIONS:

1. PROOF ROLLING:
- SHALL BE PERFORMED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER OR QUALIFIED GEOTECHNICAL REPRESENTATIVE USING A FULLY LOADED TANDEM AXLE DUMP TRUCK OR WATER TRUCK WITH A MINIMUM GROSS WEIGHT OF 25 TONS OR A FULLY LOADED BELLY DUMP WITH AN EQUIVALENT AXLE LOADING. PROOF-ROLLING ACCEPTANCE STANDARDS INCLUDE NO RUTTING GREATER THAN 1.5 INCHES FOR NATURAL SUBGRADE AND 0.75 INCHES FOR CEMENT STABILIZED SUBGRADE, AND NO "PUMPING" OF THE SOIL BEHIND THE LOADED TRUCK. TWO PASSES MINIMUM ONE PER EACH LANE WILL BE REQUIRED FOR NATURAL SUBGRADE. FOR CEMENT STABILIZED SUBGRADES, PROOF-ROLLING SHOULD BE PERFORMED WITH ONE PASS DOWN THE CENTER AND NOT BE PERFORMED WITHIN 12 INCHES OF THE EDGE OF THE STABILIZED SECTION.
2. SIEVE ANALYSIS:
- SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM C-136
3. STANDARD PROCTOR:
- SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D-698
4. ATTERBERG LIMITS:
- SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D-4318
5. MOISTURE DENSITY (NUCLEAR DENSITY):
- SHALL BE DONE IN ACCORDANCE WITH ASTM D-6938
6. DYNAMIC CONE PENETROMETER (DCP) TESTING:
- SHALL BE DONE IN ACCORDANCE WITH ASTM D6951-18 WITH A 17.6 LB HAMMER WEIGHT. CONTRACTOR TO SUBMIT TO OWNER AND ENGINEER MAKE AND MODEL OF DCP EQUIPMENT FOR APPROVAL.
7. COMPACTED
- PASSING THE PROOF ROLL, DCP AND MOISTURE DENSITY TESTS AS APPLICABLE.
8. AGGREGATE SAMPLING
- SHALL BE CONDUCTED IN ACCORDANCE WITH SD 201.

REQUIREMENTS:

1. FILL MATERIAL:
- A. SOILS USED AS FILL MATERIAL OVER ROADS AND CULVERTS SHALL BE TESTED FOR GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR TESTS.
- B. FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12" AND BE MOISTURE CONDITIONED WITHIN 2% OPTIMUM MOISTURE CONTENT. SHALLOW FILLS (LESS THAN 5 FEET) SHOULD BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY, DEEP FILLS (GREATER THAN 5 FEET) SHOULD BE COMPACTED TO A MINIMUM OF 98 PERCENT OF THE STANDARD PROCTOR DRY DENSITY PER THE GEOTECHNICAL REPORT.
2. COMPACTED SUBGRADE (CEMENT STABILIZED):
- A. SEE REQUIREMENTS ON SHEET TRW-C-512-###
3. COMPACTED SUBGRADE (TEMPORARY TURNS, SPUR ROADS AND MET ROAD):
- A. THE ENTIRE FULL WIDTH OF SUBGRADE SHALL BE PROOF-ROLLED PRIOR TO THE PLACEMENT OF THE AGGREGATE BASE TO IDENTIFY AREAS OF UNSTABLE SUBGRADE. TWO PASSES MINIMUM ARE REQUIRED, ONE IN EACH LANE.
- B. IF THE PROOF ROLL ABOVE CANNOT BE ACHIEVED, THE FOLLOWING ALTERNATES MAY BE IMPLEMENTED:
- a. SCARIFY, DRY AND RECOMPACT SUBGRADE AND PERFORM ADDITIONAL PROOF ROLL.
- b. REMOVE UNSUITABLE MATERIAL AND REPLACE WITH CRUSHED AGGREGATE BASE.
4. AGGREGATE BASE:
- A. AGGREGATE BASE SHALL BE PLACED COMPACTED AND TESTED PER TABLE 6. AGGREGATE BASE SHALL BE PROOF-ROLLED OVER THE FULL WIDTH. IF PROOF ROLLING DETERMINES THAT THE ROAD IS UNSTABLE, ADDITIONAL AGGREGATE SHALL BE ADDED UNTIL THE UNSTABLE SECTION IS ABLE TO PASS A PROOF ROLL.
- B. PROVIDE 1 SIEVE ANALYSIS (PROJECT MAX OF 20) PER 2500 CY OF ROAD BASE PLACED. ANALYSIS TO BE SUBMITTED TO OWNER AND ENGINEER.
5. CRANE PAD AND CRANE PATHS / CRANE TRAVEL SHOULDERS:
- A. CRANE PAD TESTING REQUIREMENTS ARE PENDING BASED ON CRANE PICK PLANS PROVIDED BY THE CONTRACTOR.
- B. CRANE PATHS ARE BASED ON CONTRACTORS MEANS AND METHODS.
6. GEOTEXTILE
- A. INSTALL PER MANUFACTURER
7. FLEXAMAT
- A. INSTALL PER MANUFACTURER

TABLE 6: TESTING SCHEDULE SUMMARY		
LOCATION	TEST	FREQUENCY
FILL PLACEMENT	PROCTOR	1 PER MAJOR SOIL TYPE
	SIEVE ANALYSIS, ATTERBERG LIMITS (LL MAX = 45, PI MAX = 15)	1 PER MAJOR SOIL TYPE
	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 PER LIFT PER 2,500 SF OF FILL PLACED OR 1 PER 300 LF OF ROAD
COMPACTED SUBGRADE (TEMPORARY IMPROVEMENTS, SPUR ROADS AND MET ROAD)	PROOF-ROLL	FULL WIDTH OVER ENTIRE LENGTH MIN. 2 PASSES IN EACH LANE
COMPACTED SUBGRADE (CEMENT STABILIZED)	SEE SHEET TRW-C-512-###	SEE SHEET TRW-C-512-###
AGGREGATE BASE	PROOF-ROLL	FULL WIDTH OVER ENTIRE LENGTH MIN. 2 PASSES IN EACH LANE
	SIEVE ANALYSIS, LL, PL, AND L.A ABRASION	1 PER 2,500 CY
	AGGREGATE SAMPLING	1 PER 2,500 CY

GENERAL NOTES:

1. THE PLANIMETRIC FEATURES AND GROUND SURFACE CONTOURS AND ELEVATIONS ARE BASED ON A 2' DTM SURFACE PROVIDED BY AVANGRID. IF MAJOR DISCREPANCIES ARE FOUND IN THE GROUND ELEVATIONS DURING FIELD STAKING TO THE GROUND ELEVATIONS SHOWN ON THE PLANS, THE OWNER AND ENGINEER SHALL BE NOTIFIED.
2. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE OWNER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
3. GRADE ALL PROPOSED DELIVERY ROADS TO A MAXIMUM SLOPE OF 7%. IF 7% SLOPE CANNOT BE ACHIEVED, THE CONTRACTOR MAY UTILIZE ASSIST VEHICLES FOR THE PURPOSE OF DELIVERIES. GRADE ALL PROPOSED CRANE PATHS TO A MAXIMUM OF 7% UNLESS OTHERWISE NOTED IN PLAN SHEETS.
4. ANY FACILITIES REMOVED TO ALLOW FOR CONSTRUCTION (MAILBOXES, SIGNS, FENCES, ETC.) SHALL BE REPLACED BY THE CONTRACTOR IN A CONDITION AS GOOD AS EXISTING.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DRAINAGE THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. CONSTRUCTION ACTIVITIES SHALL NOT BLOCK THE NATURAL OR MANMADE CREEKS OR DRAINAGE SWALES CAUSING RAINWATER TO POND. DEPENDING ON FIELD CONDITIONS, ADDITIONAL CULVERTS IN EXCESS OF THOSE ON THE PLANS MAY BE REQUIRED.
6. WHILE BUILDING THE ROADS AND EXCAVATING THE TURBINE FOUNDATIONS, EXCESS SOIL WILL RESULT. THE CONTRACTOR SHALL DISPOSE OF THIS EXCESS SOIL IN AN APPROVED MANNER. EXCESS TOPSOIL SHALL BE DISTRIBUTED INTO A THIN LAYER ON LAND IMMEDIATELY ADJACENT TO WHERE THE TOPSOIL ORIGINATED. ALL EXCESS TOPSOIL TO BE WASTED ONSITE. WHILE DOING SO THE CONTRACTOR SHALL AVOID CAUSING RIDGES OR MOUNDS THAT WOULD MAKE IT DIFFICULT FOR STORM WATER RUNOFF TO DRAIN. THE FINAL SURFACE OF THE DISTURBED TOPSOIL SHALL BE SMOOTH AND FOLLOW THE NATURAL CONTOUR OF THE LAND.
7. THE CONTRACTOR SHALL NOTIFY SOUTH DAKOTA 811 AT LEAST 48 HOURS BEFORE EXCAVATION ACTIVITIES COMMENCE.
8. TEMPORARY INTERSECTION WDENING SHALL, UPON COMPLETION OF ALL PROJECT CONSTRUCTION OR UPON NOTIFICATION OF THE ENGINEER, BE REMOVED AND THE AREA RESTORED TO ITS ORIGINAL LINES AND GRADES WITH TOPSOIL REPLACED, EXCEPT WHERE REQUESTED BY THE TOWNSHIP OR COUNTY TO PERMANENTLY REMAIN. DISTURBED AREAS OUTSIDE OF THE FINAL ROADWAY SHALL BE SEEDED AND MULCHED.
9. GEOTECHNICAL REPORT WITH RECOMMENDATIONS HAS BEEN PROVIDED BY BARR ENGINEERING COMPLETED JUNE 2019.
10. FIELD SURVEY WETLAND INFORMATION HAS BEEN PROVIDED BY AVANGRID. ALL WETLAND DELINEATIONS AND PERMITTING SHALL BE THE RESPONSIBILITY OF OTHERS AND BE COMPLETED PRIOR TO CONSTRUCTION COMMENCING. THE OWNER AND GENERAL CONTRACTOR SHALL VERIFY THAT ALL WETLAND PERMITS HAVE BEEN SUBMITTED AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.
11. CULTURAL RESOURCE REPORTS HAVE BEEN PROVIDED BY THE OWNER. CULTURAL RESOURCE LOCATIONS ARE SHOWN ON THE PLANS. INFORMATION WILL BE THE RESPONSIBILITY OF THE OWNER AND GENERAL CONTRACTOR. THE LOCATIONS OF THE CULTURAL RESOURCE SITES MAY BE CONFIDENTIAL AND PROTECTED BY STATE OR FEDERAL LAW. PUBLIC RELEASE OF SPECIFIC INFORMATION REGARDING THESE RESOURCES MAY BE RESTRICTED.
12. AN ENVIRONMENTAL ASSESSMENT AS BEEN PROVIDED BY THE OWNER. THE CONTRACTOR SHALL BE FAMILIAR WITH THE REPORT AND REVIEW ALL RECOMMENDATIONS.
13. ELECTRICAL INFORMATION SHOWN ON THE PLANS IS FOR REFERENCE ONLY. REFER TO ELECTRICAL CONSULTANT'S PLANS FOR SPECIFIC LOCATIONS AND CONSTRUCTION DETAILS FOR THE UNDERGROUND POWER COLLECTION SYSTEM AND SUBSTATION.
14. CRANE PATHS ARE SHOWN ON THESE PLANS. IF THE CONTRACTOR PROPOSES ALTERNATE CRANE PATHS, THEY SHALL ENSURE THAT WETLAND AND CULTURAL RESOURCE CORRIDORS ARE NOT DISTURBED. FINAL CRANE PATH ALIGNMENTS SHALL BE DETERMINED BY THE CONTRACTOR BASED ON FIELD CONDITIONS WITHIN THE WETLAND AND CULTURAL RESOURCE CORRIDORS, SPECIAL LANDOWNER AGREEMENTS AND THE PROJECT BOUNDARY.
15. EFFORTS SHALL BE MADE TO MINIMIZE SOIL DISTURBANCE TO AREAS OF THE ROAD GRADING LIMITS, CRANE PATHS, AND TURBINE SITES. THE GRADING LIMITS SHALL BE CENTERED ON THE ROADWAYS AND WIND TURBINES. THE CONTRACTOR SHALL MAKE ALL EFFORTS TO KEEP ACTIVITIES WITHIN THE ERECTION AREAS SHOWN ON THE PLANS BUT IT IS UNDERSTOOD THAT SOME ACTIVITIES THAT WILL NOT REQUIRE GRADING OR SOIL DISTURBANCE MAY EXTEND BEYOND THE DEFINED LIMITS. SURVEYS HAVE TO BE COMPLETED IF ADDITIONAL AREA IS NEEDED OUTSIDE OF CLEARED CORRIDOR, AND CLEARANCE WILL BE NEEDED FROM PERMITTING DEPARTMENT. DURING ERECTION OF THE ROTOR, TRUCKS AND/OR FORKLIFTS MAY EXTEND BEYOND THESE LIMITS. SEE DETAIL 54-1 FOR TYPICAL ERECTION AREAS.
16. DISTURBANCE LIMITS: 100' CORRIDOR FOR ACCESS ROAD, CRANE PATH, AND OVERHEAD POWER. 50' CORRIDOR FOR UNDERGROUND COLLECTION.
17. TURBINE SITES SHALL ACT AS THE TRUCK TURNAROUNDS. REFER TO GE SPECIFICATIONS FOR TURN CRITERIA.
18. OFF SITE TEMPORARY INTERSECTION IMPROVEMENTS ARE NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATIONS AND CONSTRUCTION REQUIREMENTS.
19. AN ALTA SURVEY HAS BEEN PROVIDED BY WESTWOOD. CONTRACTOR AND OWNER ARE RESPONSIBLE FOR LOCATING ALL UTILITIES AND VERIFYING LOCATION OF CONSTRUCTION ACTIVITIES PRIOR TO COMMENCING WORK.
20. FOLLOWING CONSTRUCTION ACTIVITIES, CRANE PATHS SHALL BE DECOMPACTED TO A DEPTH OF 18".

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

1. THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES AS PLANNED AND SPECIFIED FOLLOWING BEST MANAGEMENT PRACTICES AS OUTLINED BY THE SOUTH DAKOTA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES AND BEING IN CONFORMANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT.
2. REFER TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR THE PROJECT, FOR EROSION CONTROL AND RESTORATION SPECIFICATIONS, SEDIMENT AND EROSION CONTROL PROCEDURES, LOCATIONS OF BMPs, DETAILS, AND INSPECTION INFORMATION.
3. ALL PASTURES AND DRAINAGE SWALES DISTURBED DURING CONSTRUCTION ACTIVITIES AND NOT COVERED BY ROAD SURFACING MATERIALS, SHALL BE SEEDED IN ACCORDANCE WITH THE SWPP PLAN.
4. TEMPORARY EROSION CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE TEMPORARY EROSION CONTROL PLAN SHALL BE IN ACCORDANCE WITH THE SOUTH DAKOTA DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES AND THE PROJECT STORMWATER POLLUTION PREVENTION PLAN ON FILE.
5. SEE SWPP PLAN FOR RECOMMENDED SEED MIX AND APPLICATION GUIDANCE.

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REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
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NOTES



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AVANGRID
RENEWABLES

Tatanka Ridge
Wind Farm

Construction Notes

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401DTP01.dwg

Dwg No:TRW-C-512 Sht No: 016

CEMENT STABILIZATION - PROCEDURE

THE SPECIFICATIONS BELOW ARE GENERAL RECOMMENDATIONS/GUIDELINES FOR CEMENT STABILIZATION OF SUBGRADES FOR THE PROJECT. ACTUAL FIELD CONDITIONS MAY ALTER APPLICATION RATE. CONSULT WESTWOOD FOR FURTHER RECOMMENDATIONS .

1. STRIP THE TOP 4± INCHES OF TOPSOIL (THROUGH THE ROOT ZONE) FROM THE AREA TO BE STABILIZED. ROOTS SMALLER THAN 1/4" DIAMETER ARE CONSIDERED INSIGNIFICANT.
2. PERFORM A PROCTOR (ASTM D 698) TEST TO DETERMINE THE OPTIMUM MOISTURE CONTENT IF THE MATERIAL TO BE STABILIZED DOES NOT MATCH A PREVIOUSLY PERFORMED PROCTOR. PREVIOUSLY PERFORMED PROCTOR INCLUDES PROCTORS FROM THE GEOTECH REPORT.
3. DETERMINE THE IN-SITU MOISTURE CONTENT USING A NUCLEAR DENSITY GAUGE (OR EQUIVALENT MOISTURE CONTENT TEST) DAILY, PRIOR TO INCORPORATION OF THE CEMENT. PROVIDE ADDITIONAL MOISTURE CONTENT TESTING AS NEEDED BASED ON WEATHER CONDITIONS.

3.1. THE CONTRACTOR WILL BE ADVISED OF IN-SITU MOISTURE CONTENT, AND MOISTURE ADJUSTMENTS SHOULD BE MADE IF IN-SITU MOISTURE IS LESS THAN OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE PROCTOR (ASTM D 698). IF EXCESSIVE MOISTURE IS PRESENT, THE SOIL MAY BE DRIED OR ADDITIONAL CEMENT MAY BE ADDED TO MEET THE STRENGTH REQUIREMENTS.
4. SOIL AND CEMENT BLENDING:

4.1. COMPLETELY BLEND SUBGRADE SOIL EVENLY ACROSS THE SECTION WITH THE APPROPRIATE AMOUNT OF CEMENT BY WEIGHT. A MINIMUM OF 8% CEMENT IS ANTICIPATED AND WILL BE VERIFIED WITH TESTS STRIPS PRIOR TO FULL ROAD CONSTRUCTION.

4.2. IN AREAS OF HIGH MOISTURE OR POOR SOILS, THE CONTRACTOR MAY INCREASE THE PERCENT OF CEMENT IN ORDER TO MEET THE MINIMUM SUBGRADE STRENGTH REQUIREMENTS.

4.3. THE USE OF A RECLAIMER IS AN ADEQUATE BLENDING METHOD. DISKING IS NOT AN ADEQUATE BLENDING METHOD.

4.4. A STABILIZATION DEPTH OF 12" WAS USED FOR DESIGN PURPOSES. STABILIZATION DEPTH MAY NEED TO INCREASE TO 16" IN AREAS OF EXTREME MOISTURE OR POOR SOILS IN ORDER TO MEET THE STRENGTH AND PROOF ROLL REQUIREMENTS.

4.5. THE AIR TEMPERATURE SHALL BE ABOVE 40 DEGREES (F) DURING THE CEMENT STABILIZATION PROCESS. MIXING CEMENT INTO FROZEN GROUND IS NOT ACCEPTABLE. NO SOIL AND CEMENT BLENDING SHOULD BE PERFORMED IF TEMPERATURES ARE BELOW 40 DEGREES FOR THE NEXT THREE DAYS OR EXPECTED TO FALL BELOW FREEZING WITHIN THE NEXT SEVEN DAYS.

4.6. CEMENT STABILIZATION SHALL NOT BE PERFORMED WHEN RAINFALL WILL DISTURB CHEMICAL SPREADING OR COMPROMISE STABILITY OF THE TREATED MATERIAL.
5. COMPACTION:

5.1. COMPACTION SHOULD BEGIN AS SOON AS POSSIBLE, AND GENERALLY COMPLETED WITHIN 2 HOURS OF INITIAL MIXING.

5.2. A ROLLING PATTERN WILL BE ESTABLISHED USING A NUCLEAR DENSITY GAUGE DURING COMPACTION.

5.2.1. COMPACTION WILL BE PERFORMED UNTIL THE STABILIZED MATERIAL REACHES A MINIMUM OF 95% OF MAXIMUM DRY DENSITY (ASTM D698).

5.2.2. THE NUMBER OF PASSES AND EQUIPMENT USED TO REACH A MINIMUM OF 95% OF MAXIMUM DRY DENSITY IS CONSIDERED THE ROLLING PATTERN.

5.2.3. DENSITY TESTS SHALL BE TAKEN AT THE RATE OF 1 TEST PER 500 LF IN EACH PASS OF THE RECLAIMER TO CONFIRM THE DENSITY MEETS THE MINIMUM REQUIREMENT.

5.2.4. A NEW ROLLING PATTERN MAY NEED TO BE ESTABLISHED IF THE PERFORMANCE REQUIREMENTS ARE NOT BEING MET. THIS MAY BE DUE TO CHANGES IN THE MOISTURE CONTENT, THE SOIL TYPE, OR THE CEMENT RATE

5.3. COMPACTION IS TYPICALLY ACHIEVED BY MULTIPLE PASSES OF A PAD FOOT ROLLER. A SMOOTH DRUM OR RUBBER TIRE ROLLERS ARE THEN USED TO FINISH ROLLING. FINAL ROLLING WILL REMOVE HIGH AND LOW POINTS AND SET THE FINAL PROFILE.
6. THE STABILIZED MATERIAL SHALL BE CONTINUOUSLY WET CURED FOR A MINIMUM OF 24 HOURS (WET CURED IS IDENTIFIED VISUALLY AS DAMP SURFACE). THE STABILIZED MATERIAL SHALL BE PROTECTED FROM FREEZING FOR 7 DAYS.
7. STABILIZED SUBGRADE DCP TESTING AND ACCEPTANCE:

7.1. PERFORM SUBGRADE STRENGTH TESTING BY DYNAMIC CONE PENETROMETER (DCP) PER ASTM D 6951-18 NO SOONER THAN 24 HOURS AFTER FINAL COMPACTION.

7.2. DCP TESTING FREQUENCY SHALL BE WITH A RANDOM SPACING AND A MINIMUM OF 1 TEST PER 500 LF IN EACH PASS OF THE RECLAIMER. A MINIMUM OF 3 TESTS PER ROAD IS REQUIRED.

7.3. THE CBR OF THE STABILIZED SUBGRADE SHOULD BE CALCULATED IN 6" INCREMENTS THROUGH THE ENTIRE DEPTH OF THE STABILIZED LAYER.

7.4. THE MINIMUM REQUIRED CBR PRIOR TO PROOF-ROLLING IS PROVIDED IN TABLE 7 BELOW:

TABLE 7: FINAL CEMENT STABILIZED CBR/DCP REQUIREMENTS TABLE			
TIME ELAPSED BETWEEN FINAL COMPACTION AND DCP TEST	REQUIRED MINIMUM CBR	MINIMUM DCP (BLOWS PER 6")	BEARING CAPACITY (PSF)
24 – 48 HOURS	20	14	14,700
3 – 7 DAYS	25	17	17,500
28 DAYS	50	32	31,400

NOTE: UNDRAINED SHEAR STRENGTH WAS CALCULATED USING THE BLACK (1961) EQUATION. BEARING CAPACITY WAS CALCULATED USING THE VESIC EQUATION MODIFIED FOR TWO LAYERS (12" CEMENT STABILIZED SUBGRADE OVER A NATURAL SUBGRADE WITH A CBR OF 2.5 AND 4" OF AGGREGATE)

- 7.5. ONCE THE MINIMUM REQUIRED CBR IS ACHIEVED AT THE CORRESPONDING TIME PERIOD, THE SUBGRADE IS CONSIDERED ADEQUATE AND THE CONTRACTOR MAY PROCEED WITH PROOF-ROLL TESTING. FUTURE DCP TESTING ON THAT SEGMENT OF SUBGRADE IS NOT REQUIRED.
- 7.6. IF TESTING DOES NOT INDICATE A CBR OF 25 WITHIN 7 DAYS, ADDITIONAL GRAVEL SURFACING AND/OR THE ADDITION OF GEOTEXTILE FABRIC MAY BE REQUIRED. SEE TABLE 8.
8. SUBGRADE PROOF-ROLL TESTING AND ACCEPTANCE:

8.1. ONCE THE REQUIRED DCP VALUE HAS BEEN OBTAINED BUT PRIOR TO PLACING AGGREGATE, THE SUBGRADE SHALL BE PROOF-ROLLED. REFER TO THE PROJECT TESTING REQUIREMENTS FOR PROOF-ROLL DEFINITION.

8.2. PROOF-ROLLING SHOULD BE PERFORMED WITH ONE PASS DOWN THE CENTER AND NOT BE PERFORMED WITHIN 12 INCHES OF THE EDGE OF THE STABILIZED SECTION.

8.3. IF PROOF-ROLLING FAILS, RE-STABILIZATION MAY BE REQUIRED AND A NEW ROLLING PATTERN OR ADDITIONAL CEMENT MAY BE REQUIRED FOR FUTURE SUBGRADE STABILIZATION AREAS. CONTACT THE ENGINEER FOR RECOMMENDATIONS.
9. AGGREGATE PLACEMENT:

9.1. SURFACE AGGREGATE SHALL BE PLACED OVER THE STABILIZED SUBGRADE FOLLOWING PASSING DCP AND PROOF-ROLL TESTS AND WITHIN 30 DAYS OF STABILIZATION.

9.2. THE AGGREGATE SURFACING IS INTENDED TO PROTECT THE SUBGRADE FROM WATER BEING PUMPED INTO THE SUBGRADE AND TO PROVIDE A TRACTION COURSE. WESTWOOD RECOMMENDS A MINIMUM OF 4 INCHES OF AGGREGATE INITIALLY PLACED OVER STABILIZED SUBGRADE. MAINTENANCE IS REQUIRED THROUGHOUT CONSTRUCTION AND MAY REQUIRE THE PLACEMENT OF ADDITIONAL AGGREGATE.

9.3. REFER TO THE TESTING SCHEDULE ON SHEET TRW-C-512-### FOR AGGREGATE PLACEMENT CRITERIA.

9.4. CRANE MATS MAY BE PLACED AT THE END OF A STABILIZED ROAD TO PREVENT DAMAGE DUE TO AGGREGATE TRUCKS DRIVING FROM THE STABILIZED SUBGRADE TO THE NON STABILIZED SUBGRADE.

CEMENT STABILIZATION - DESIGN BASIS

1. DURING INITIAL CONSTRUCTION, CONTRACTOR SHALL CONSTRUCT MINIMUM 300 LF TEST STRIPS CONTAINING 6%, 8%, 10%, AND 12% CEMENT IN ACCORDANCE WITH CEMENT STABILIZATION PROCEDURES.
2. SUBGRADE DCP TESTING AND ACCEPTANCE (SEE TABLE 7):

2.1. PERFORM DCP TESTING AT 24 AND 48 HOURS AFTER FINAL COMPACTION.

2.2. PERFORM SUBSEQUENT DCP TESTS AT 7 DAYS AFTER FINAL COMPACTION AS VERIFICATION OF STRENGTH CURVE.

2.3. A MINIMUM OF 3 TESTS PER TEST SECTION PER TIMEFRAME IS REQUIRED. TESTS SHALL BE TAKEN AT THE CENTERLINE AND 2' FROM EACH SHOULDER.

2.4. RECORD DCP TEST RESULTS EVERY 6 INCHES TO TOTAL DEPTH OF 12 INCHES.

2.5. IF THE MINIMUM DCP REQUIREMENTS ARE NOT OBTAINED, CONTACT ENGINEER FOR RECOMMENDATIONS MOVING FORWARD.

CEMENT STABILIZATION - REPAIR

SPECIFICATION BELOW ARE FOR THE REPAIR OF CEMENT STABILIZED SUBGRADE DAMAGED BY EQUIPMENT SUCH AS CRANES OR TRENCHING:

1. RECOMPACT CEMENT-SOIL OR NATIVE MATERIAL TO 95% OF THE MAXIMUM DRY DENSITY. THE COMPACTED SUBGRADE ELEVATION SHALL BE 6 INCHES BELOW TOP OF FINAL GRADE.
2. PLACE MIRAFI HP270 ON SUBGRADE, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. PLACE AND COMPACT 6 INCHES OF AGGREGATE BASE FOR CONSTRUCTION TRAFFIC. NOTE LOCATION OF REPAIR ON RED-LINE DRAWINGS.

TABLE 8: ALTERNATIVE ACCESS ROAD SECTIONS (AFTER 7 DAYS)		
DCP (BLOWS/6")	7 DAY CBR (FROM DCP)	GRAVEL THICKNESS (IN)
4	5-10	6" OVER MIRAFI HP270 FABRIC
8	10-15	6" OVER MIRAFI HP270 FABRIC
11	15-20	6
14	20-25	5
17	>25	4

TABLE 9: CEMENT STABILIZATION PRODUCTION TESTING SCHEDULE SUMMARY		
LOCATION	TEST	FREQUENCY
COMPACTED SUBGRADE (CEMENT STABILIZED)	PROCTOR	MINIMUM 1 PER MAJOR SOIL TYPE (PREVIOUS PROCTORS MAY BE USED)
	MOISTURE DENSITY TEST (NUCLEAR DENSITY)–	
		BEFORE ADDING CEMENT MIN 1 PER ROAD (DAILY). ADJUST AS NEEDED BASED ON FIELD CONDITIONS.
		DURING COMPACTION 1 PER 500 LF IN EACH PASS OF THE RECLAIMER MIN. 3 PER ROAD
	DCP TEST	1 PER 500 LF IN EACH PASS OF THE RECLAIMER, A MIN. 3 PER ROAD
	PROOF-ROLL (AFTER PASSING DCP TESTS)	ENTIRE LENGTH

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4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

REGISTERED PROFESSIONAL ENGINEER

REG. NO.

13738

ROBERT S. COPPOLA

SOUTH DAKOTA

927121

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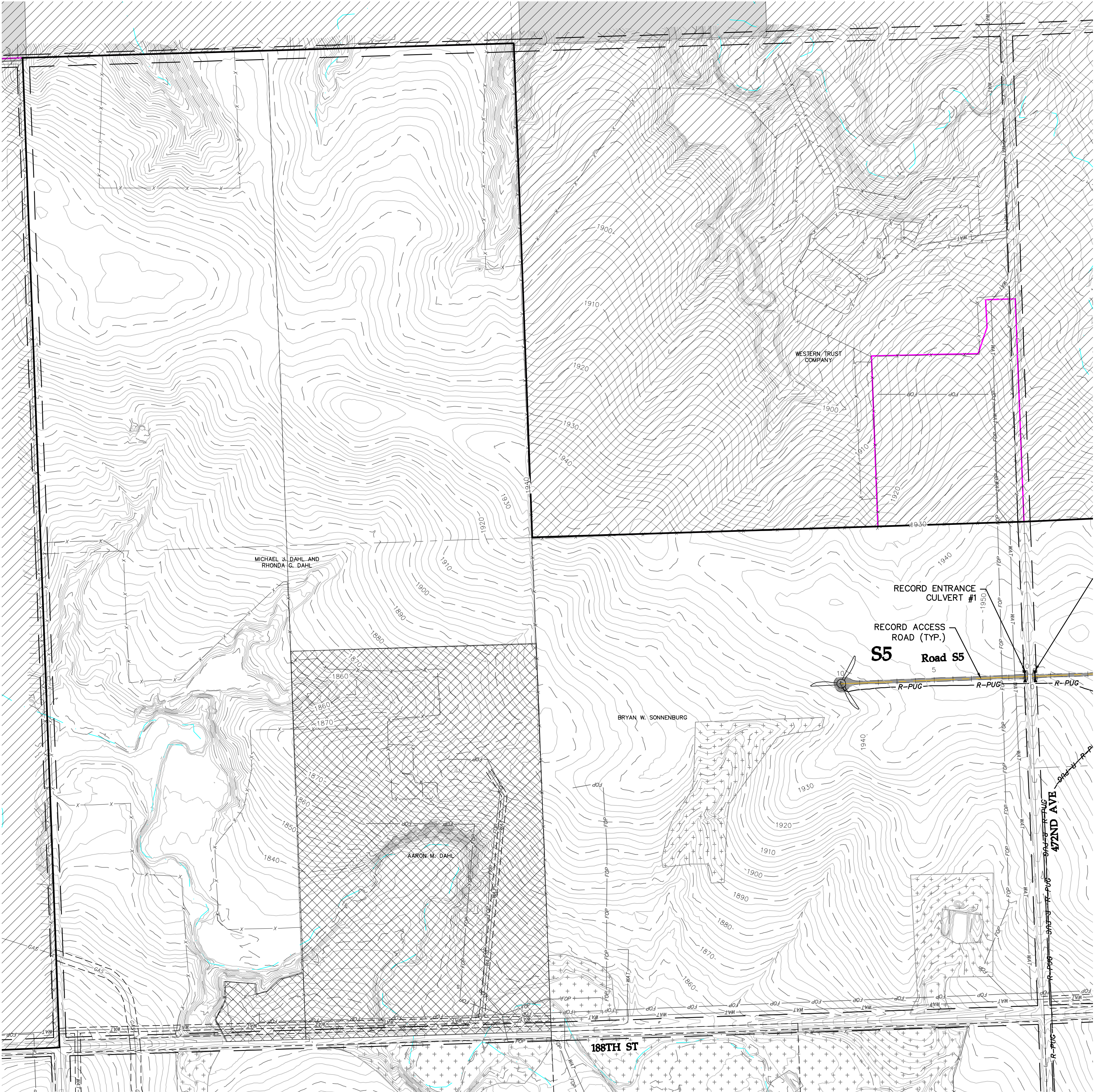
AVANGRID RENEWABLES

Tatanka Ridge
Wind Farm
Cement Stabilization
Construction Notes
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: Date Created: 09/27/21

Project Number: 0022401
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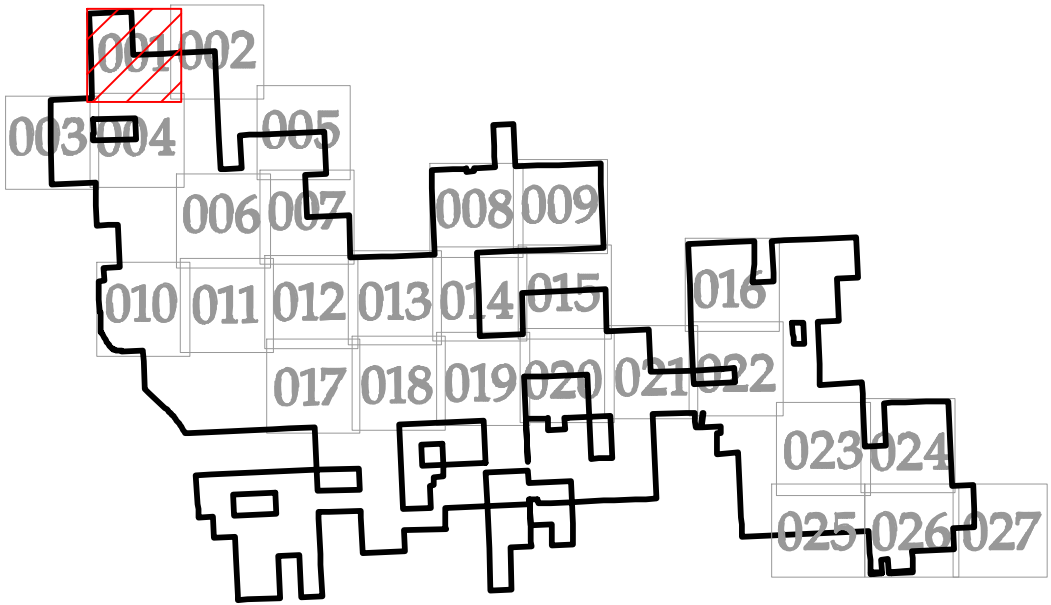
SEE SHEET 004

SEE SHEET 002

LEGEND:

- RECORD TURBINE LOCATION
- RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-001



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0	IFC CIVIL PLANS	05/15/20	TDD
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AVANGRID RENEWABLES

**Tatanka Ridge
Wind Farm**

Civil Site Plan S5

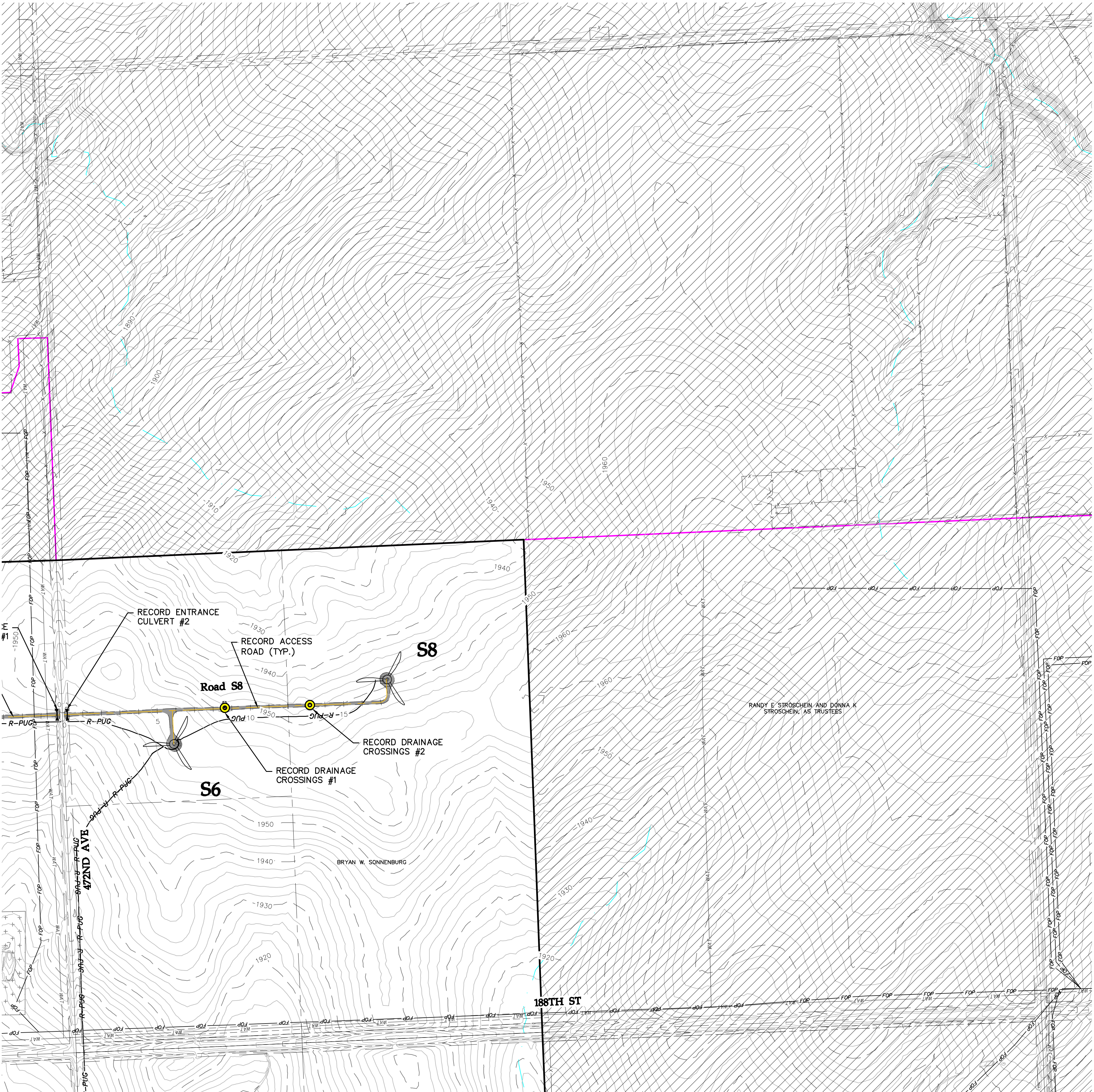
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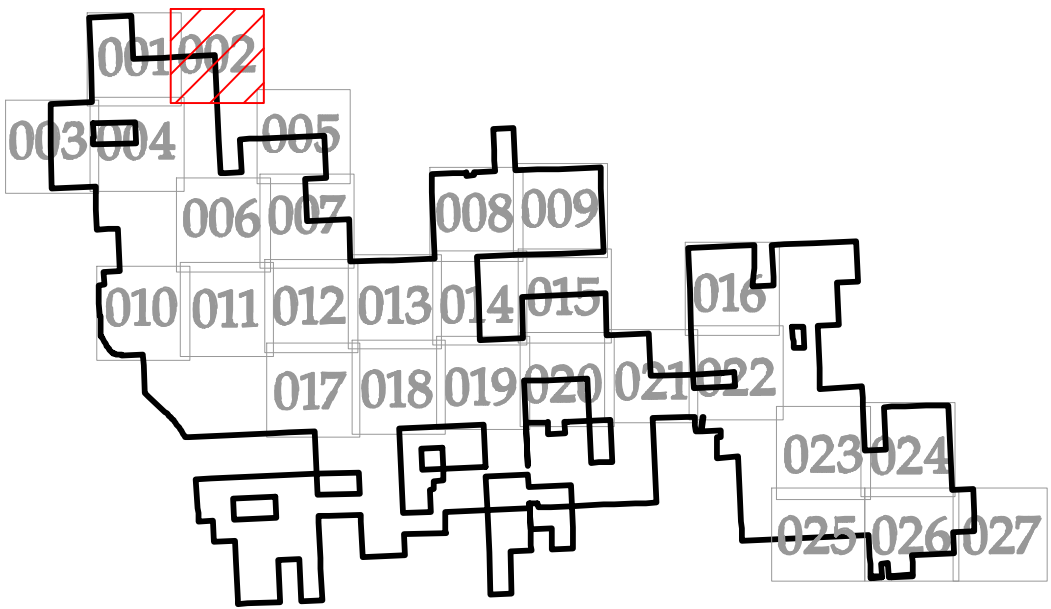
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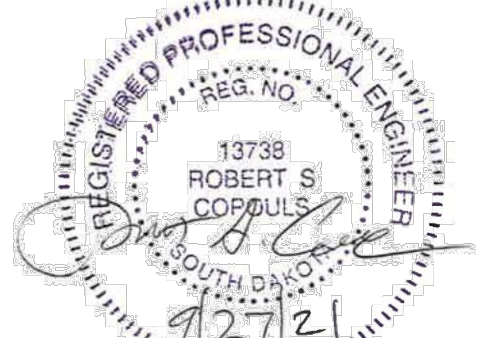
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- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-002



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 **AVANGRID RENEWABLES**

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Wind Farm

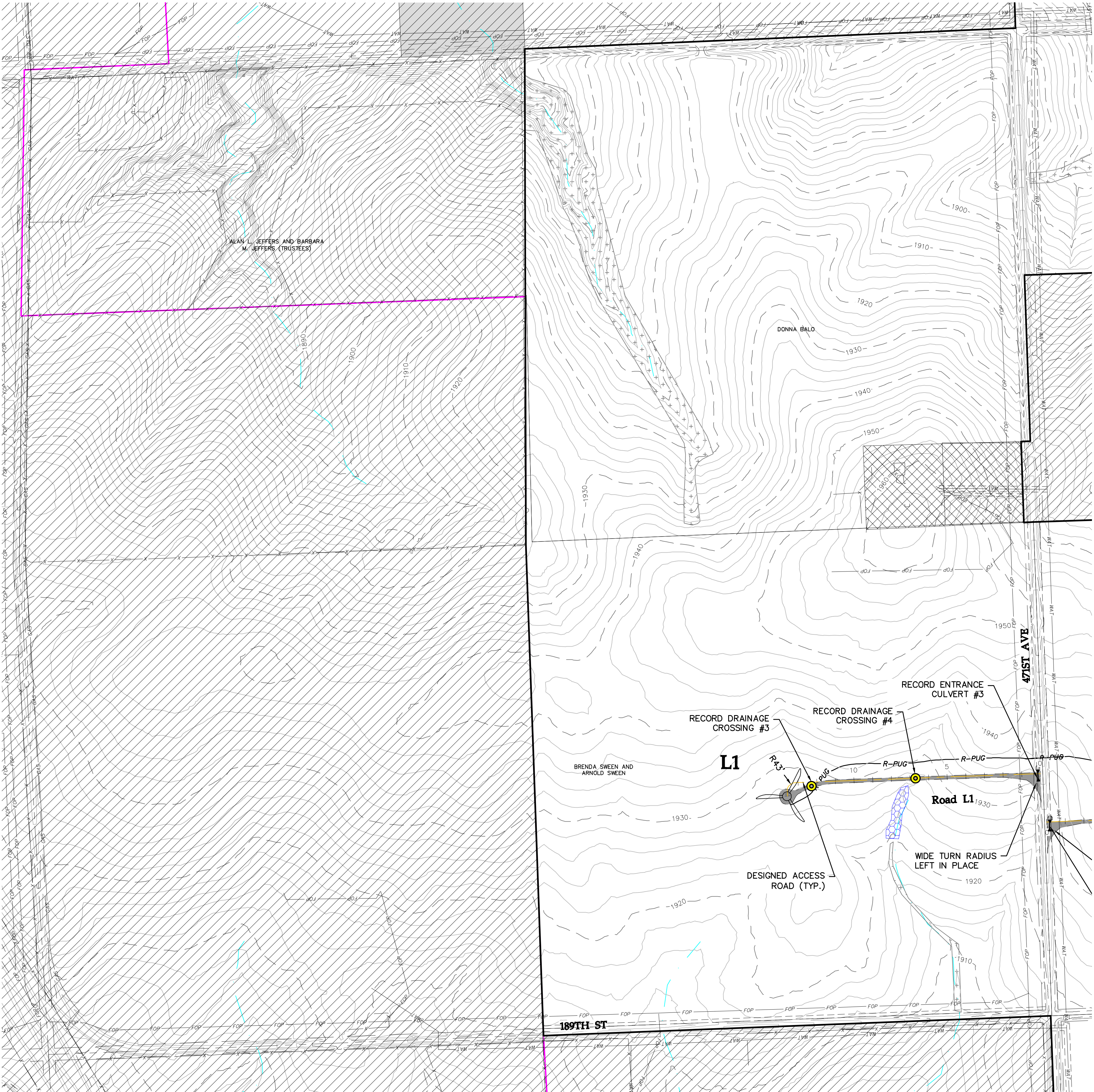
Civil Site Plan S6 S8

Record Plans

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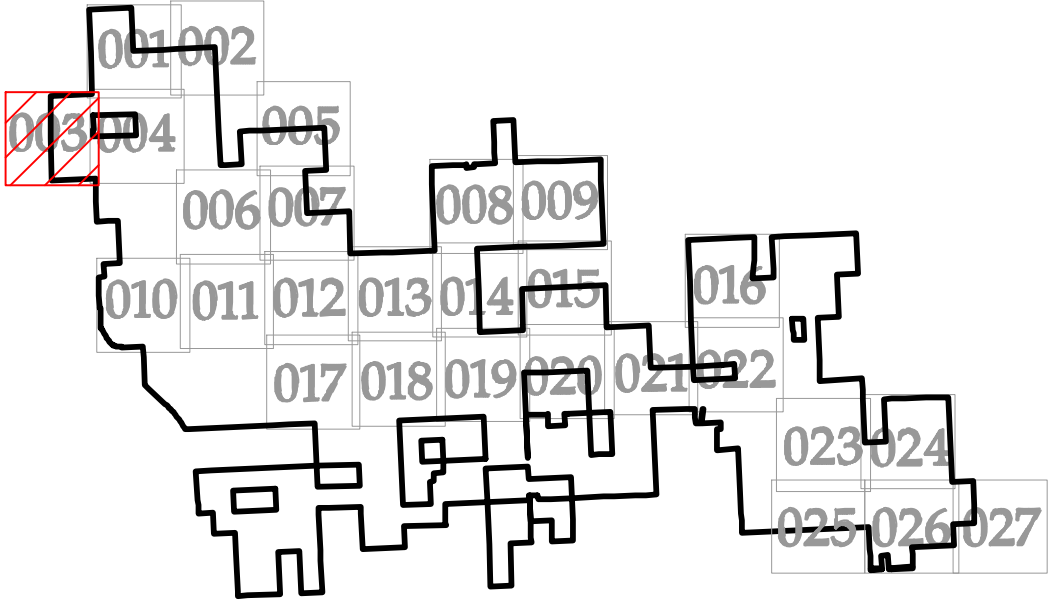
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SEE SHEET 004

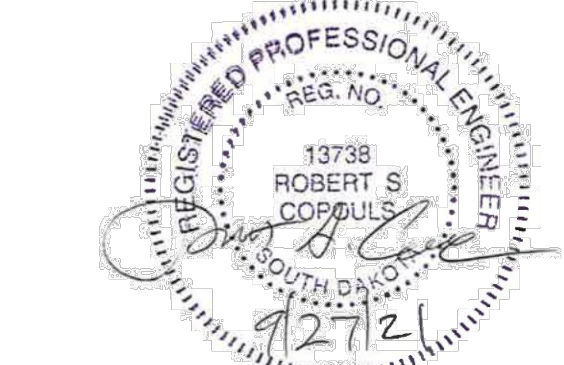
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 - PARTICIPATING-TRANSMISSION AGREEMENT
 - EXISTING USFWS EASEMENT
 - EXISTING STREAMS - NHD
 - EXISTING STREAMS - TOPEKA SHINER
 - EXISTING DELINEATED WETLANDS
 - EXISTING NATIVE GRASSLAND
 - EXISTING NON-NATIVE GRASSLAND
 - EXISTING DAKOTA SKIPPER HABITAT
 - EXISTING LANDOWNER EASEMENT
 - RECORD DRAINAGE CROSSING
 - RECORD CULVERT
 - RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-003



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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**AVANGRID
RENEWABLES**

**Tatanka Ridge
Wind Farm**

Civil Site Plan L1

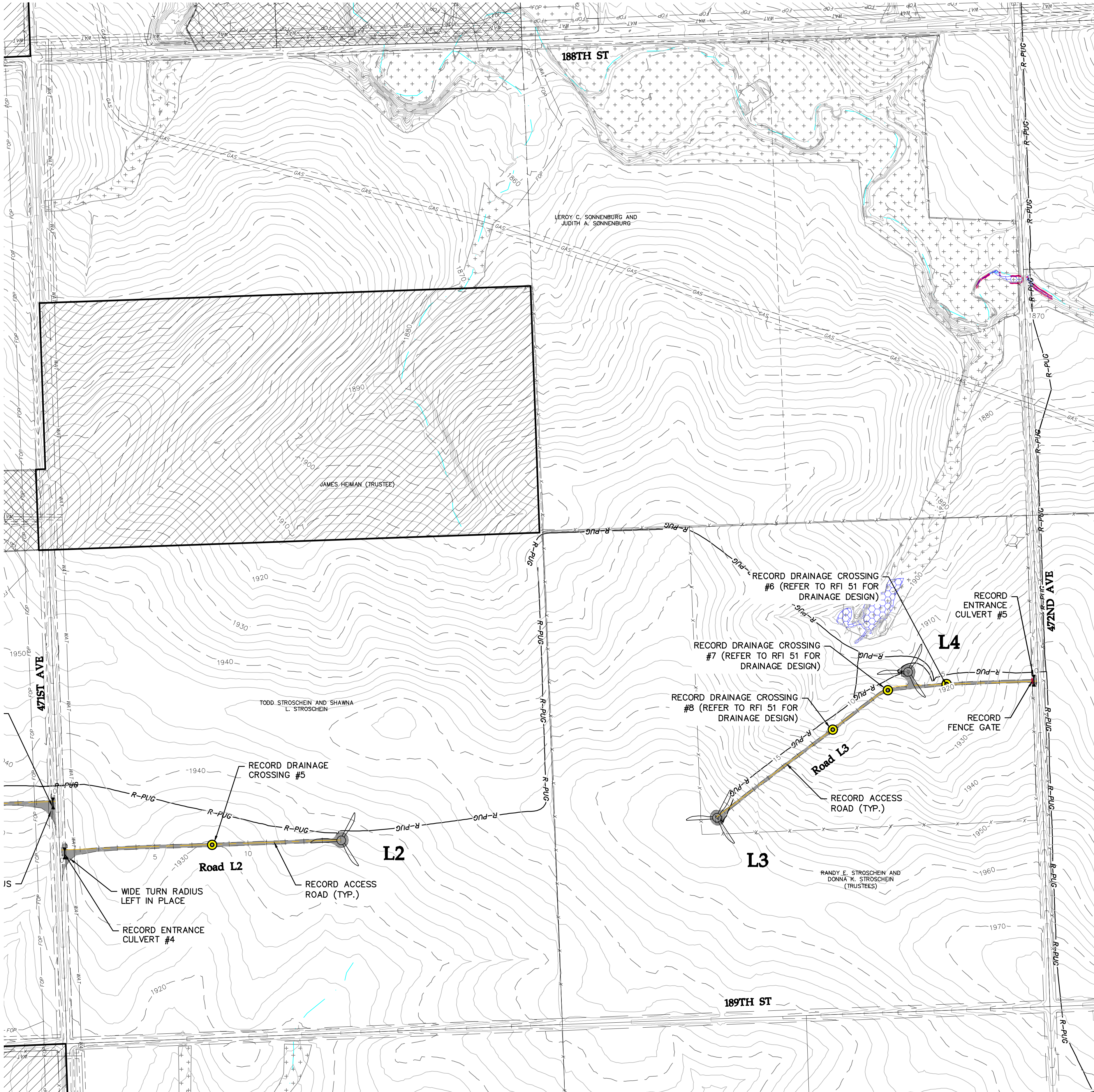
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 003

SEE SHEET 001

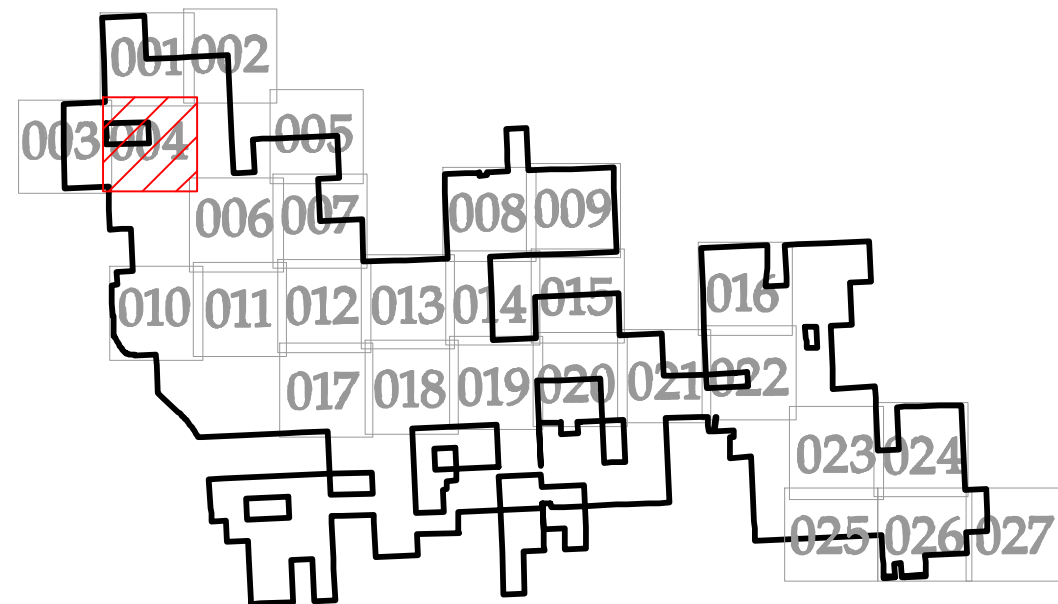


SEE SHEET 003

LEGEND:

- RECORD TURBINE LOCATION
- RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-004



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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AVANGRID RENEWABLES

Tatanka Ridge
Wind Farm

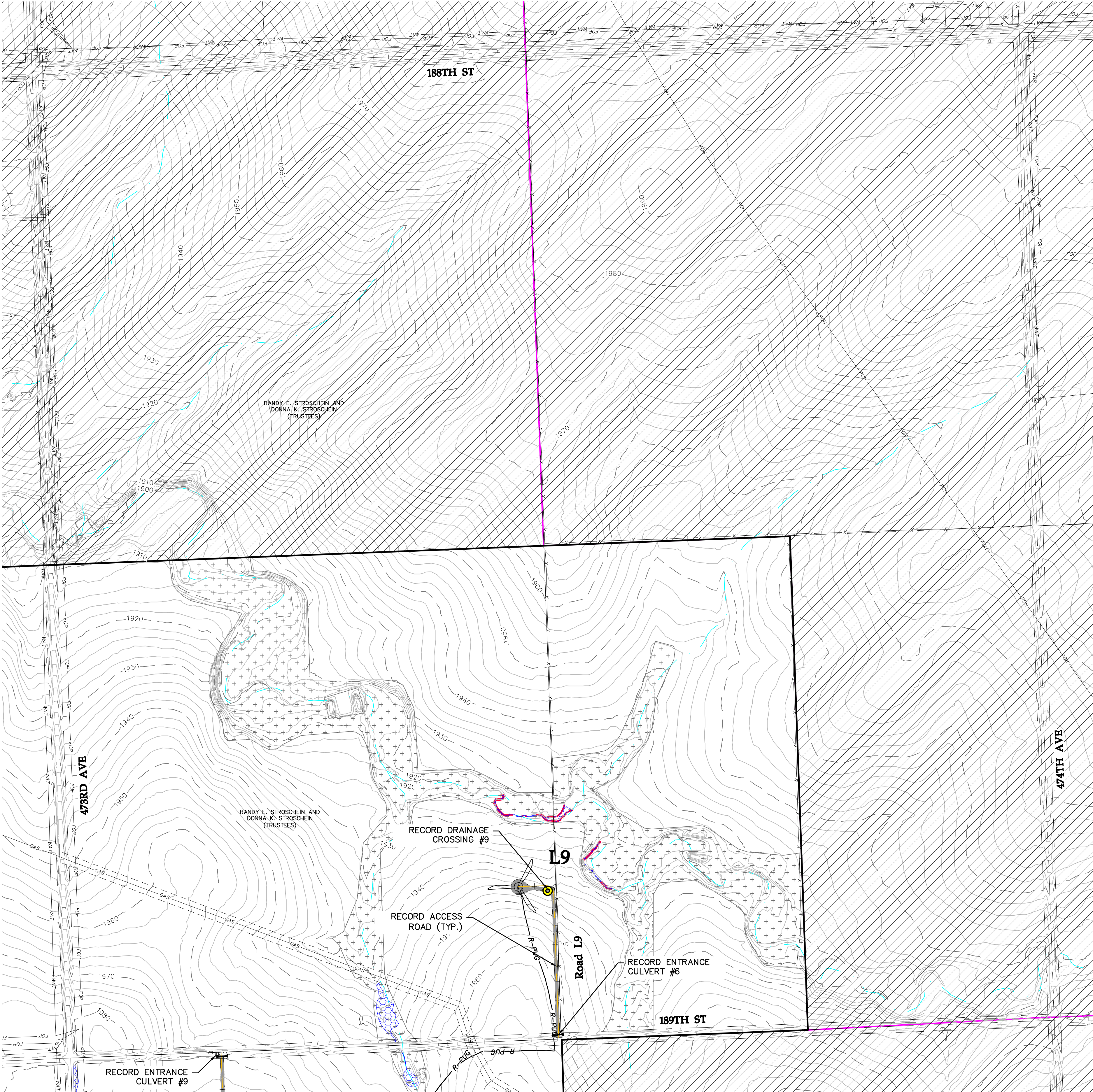
Civil Site Plan L2 L3 L4

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 004

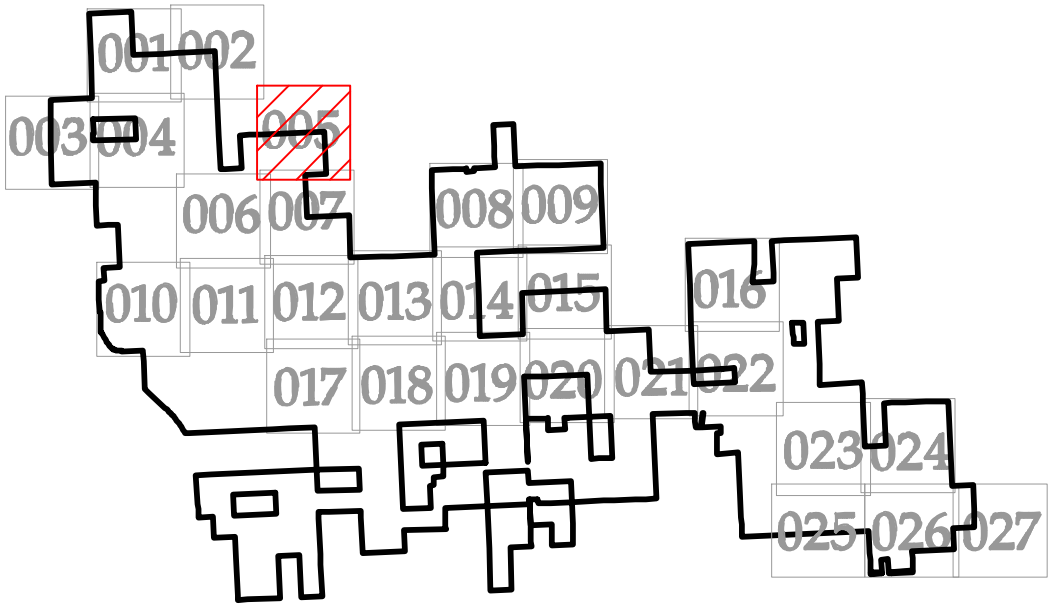


SEE SHEET 007

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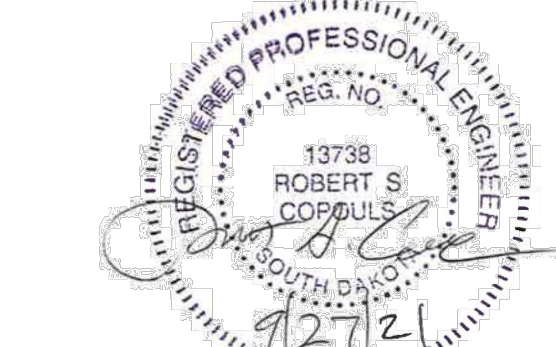
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- XX** RECORD TURBINE NUMBER
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- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
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- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
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- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-005



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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Tatanka Ridge
Wind Farm
Civil Site Plan L9
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 005

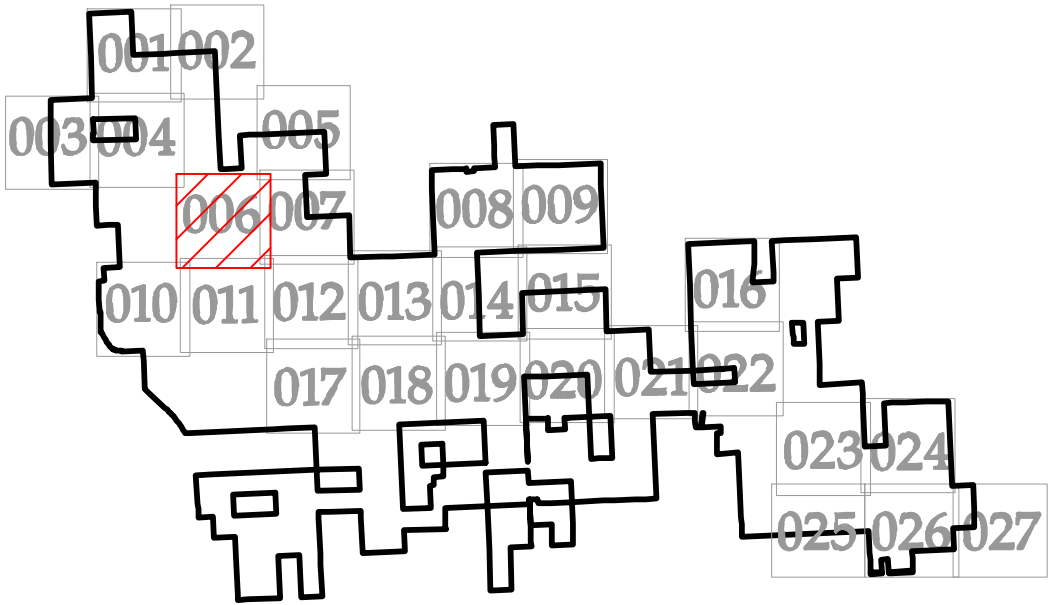


SEE SHEET 011

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 - RECORD MET TOWER LOCATION
 - RECORD MET TOWER NUMBER
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 - RECORD ACCESS ROAD
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 - RECORD OVERHEAD TRANSMISSION
 - RECORD ACCESS ROAD
 - EXISTING 2' CONTOURS
 - EXISTING SECTION LINE
 - EXISTING PARCEL LINE
 - EXISTING RIGHT OF WAY
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 - EXISTING OVERHEAD POWER
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 - PROJECT BOUNDARY
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 - PARTICIPATING-TRANSMISSION AGREEMENT
 - EXISTING USFWS EASEMENT
 - EXISTING STREAMS - NHD
 - EXISTING STREAMS - TOPEKA SHINER
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 - RECORD CULVERT
 - RECORD FENCE GATE

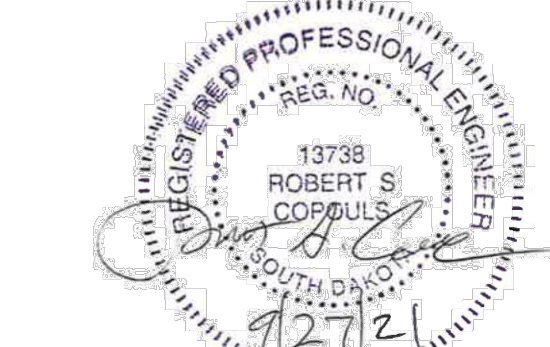
SEE SHEET 007

KEY MAP: SHEET TKW-C-511-006



REVISIONS			
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1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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Civil Site Plan L5 L6 L7

Record Plans

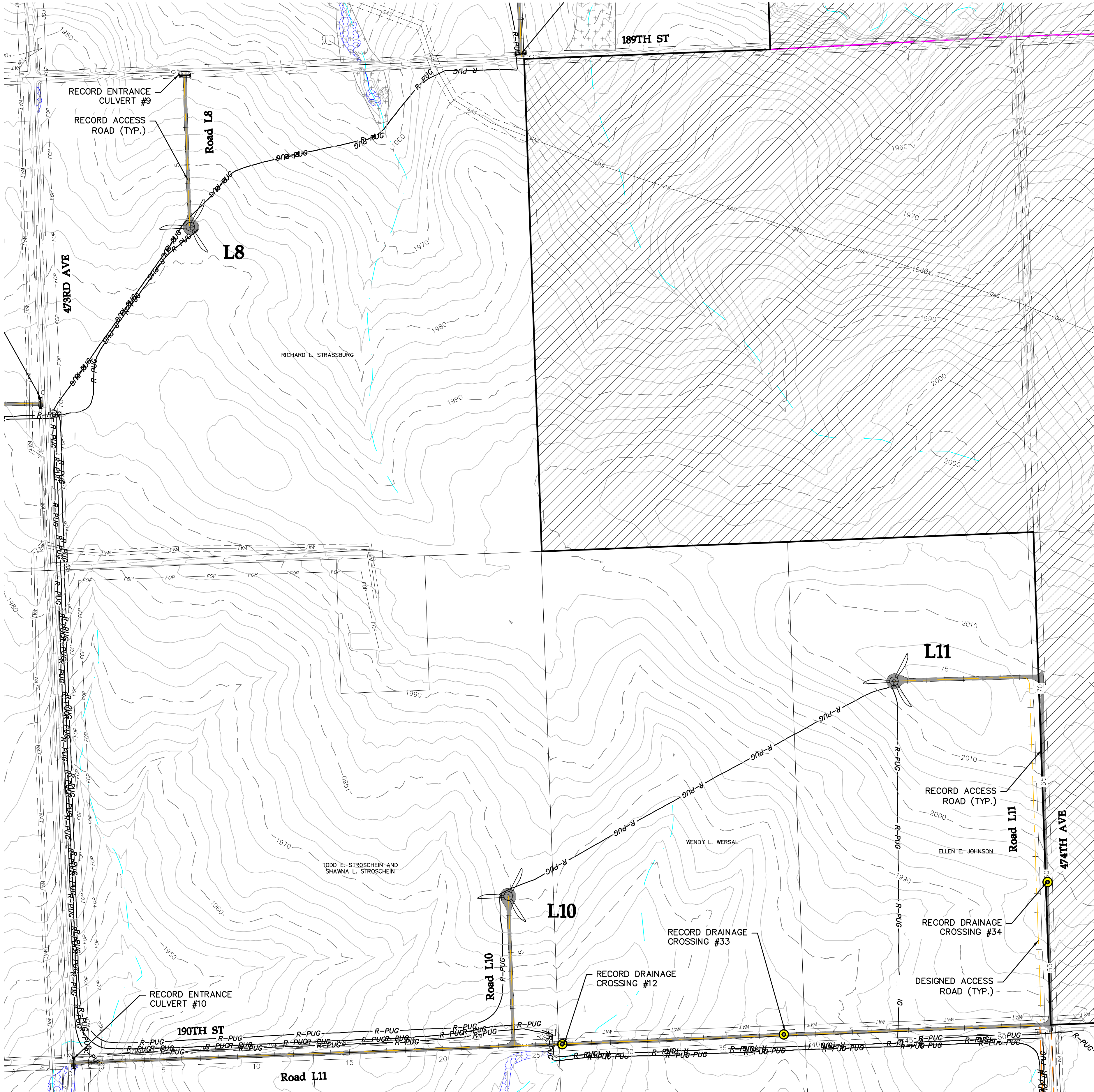
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Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401

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Dwg No: TRW-C-511 Sht No: 006

SEE SHEET 005



SEE SHEET 012

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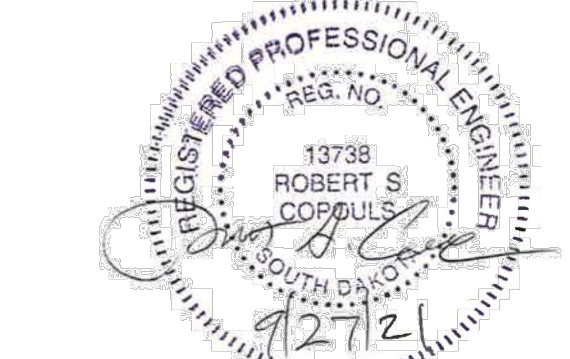
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- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
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- EXISTING RIGHT OF WAY
- EXISTING FENCE
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- EXISTING WATER LINE
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- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
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- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-###



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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Wind Farm

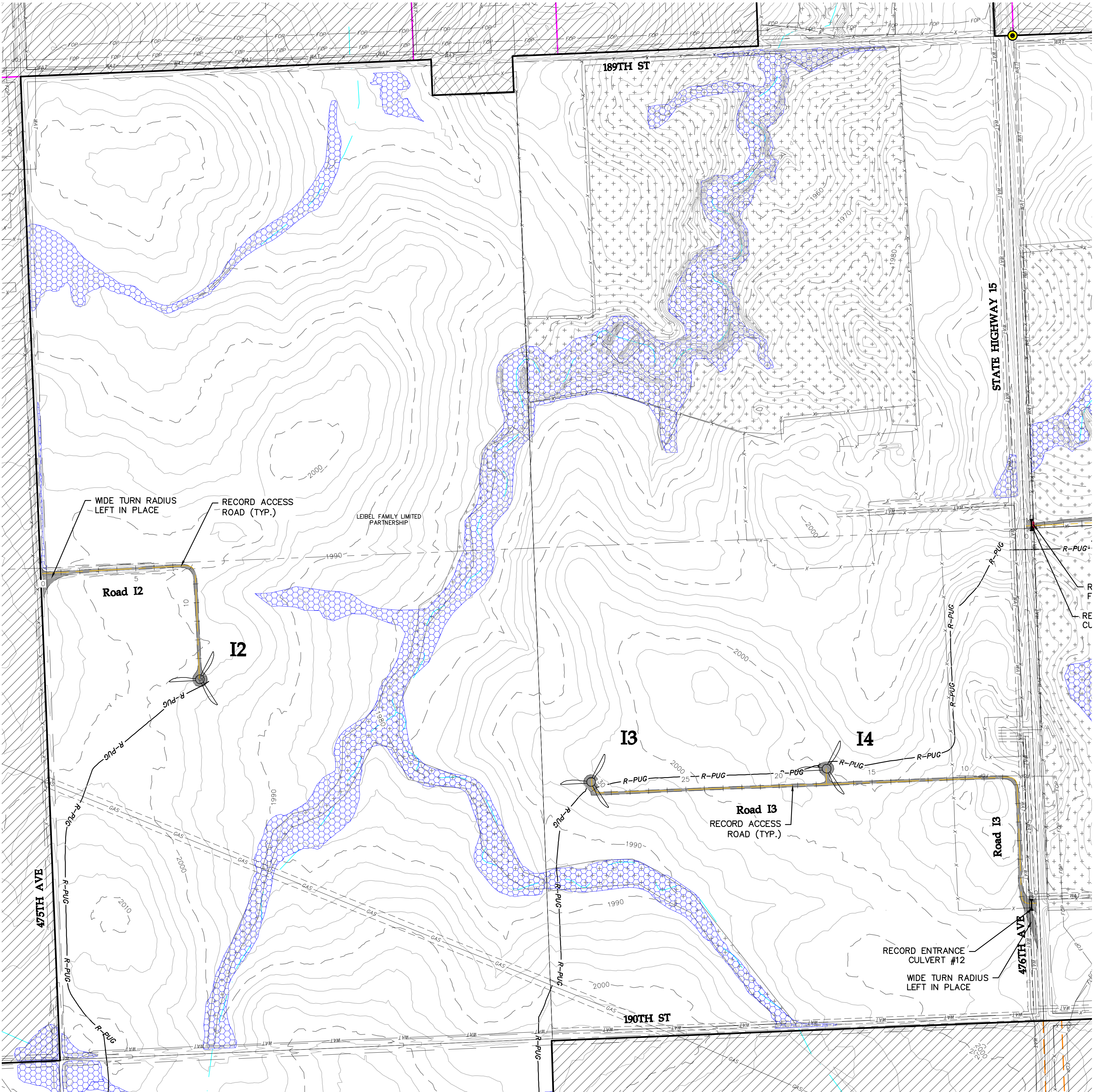
Civil Site Plan L8 L10 L11

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No:TRW-C-511 Sht No: 007



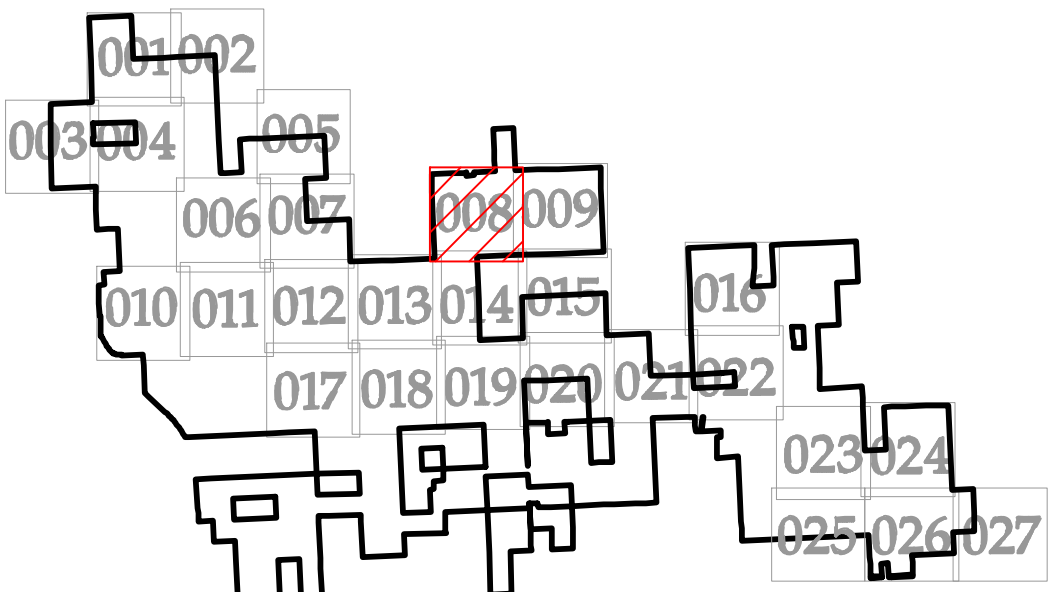
SEE SHEET 014

SEE SHEET 009

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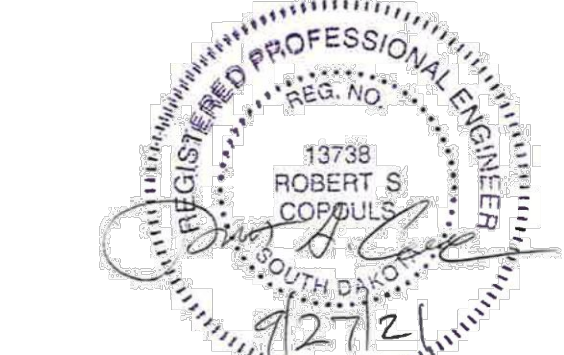
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- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
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- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-008



REVISIONS			
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1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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Civil Site Plan I2 I3 I4

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

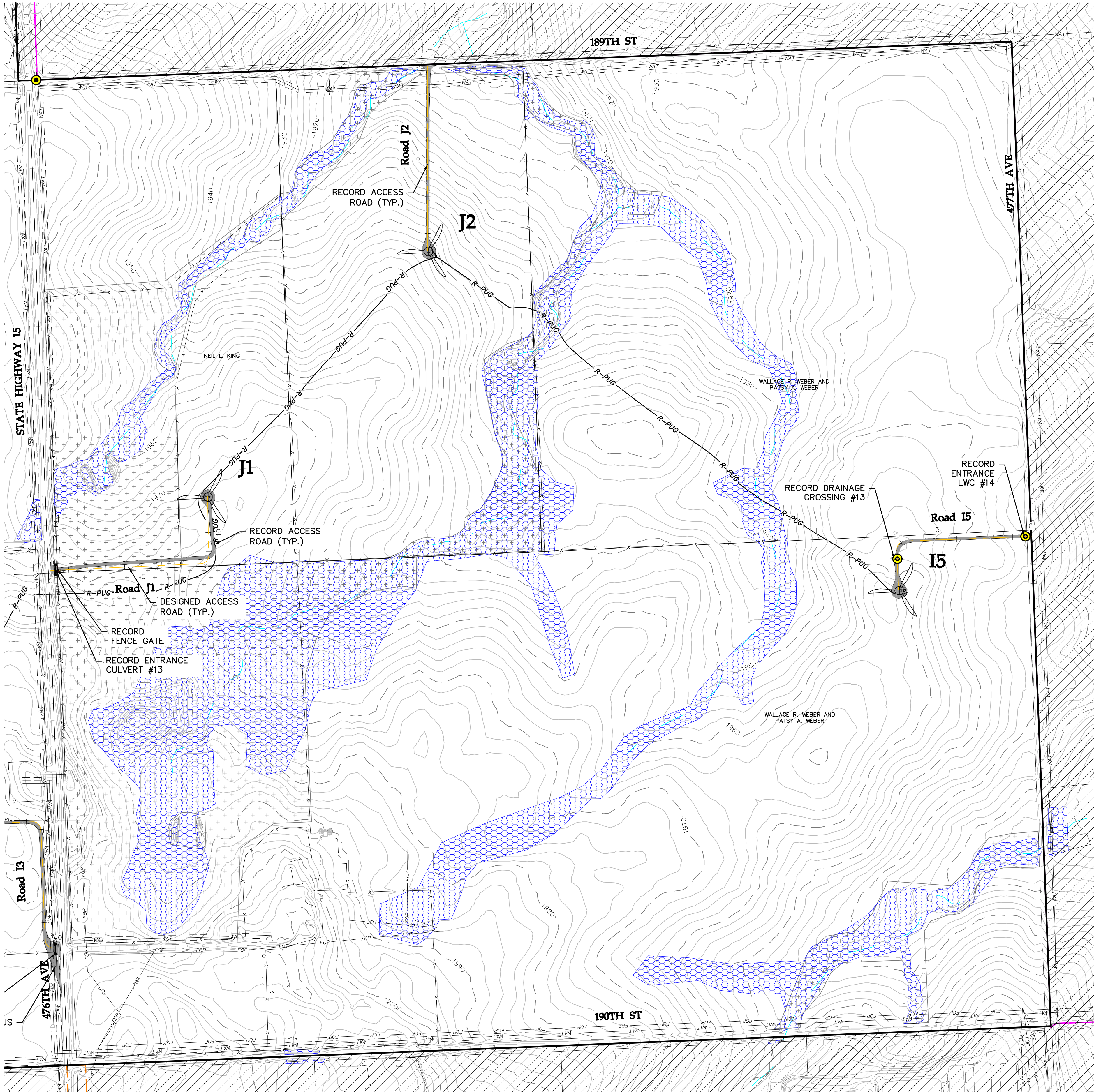
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File Name: 0022401SPP01.dwg

Dwg No:TRW-C-511

Sht No: 008

SEE SHEET 008

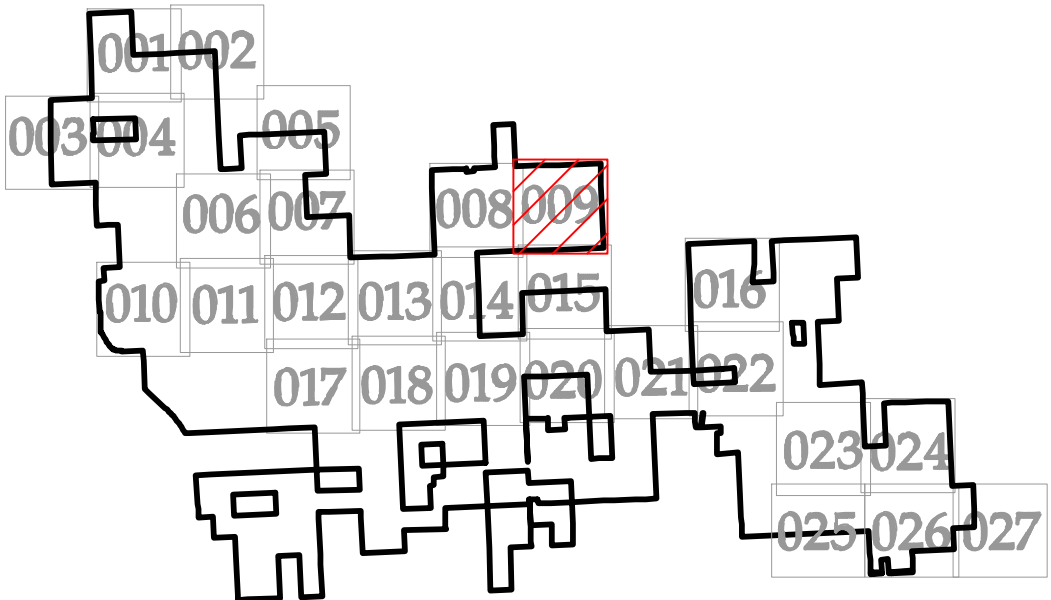


SEE SHEET 015

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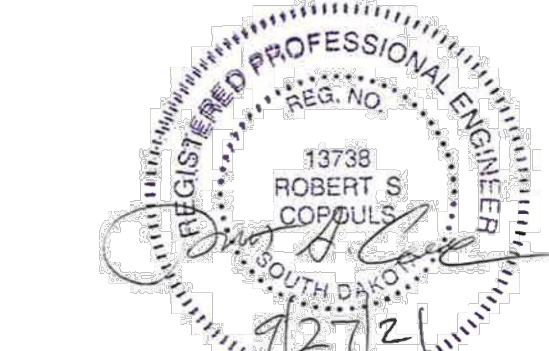
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- DESIGNED ACCESS ROAD
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- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
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- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
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- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-009



REVISIONS			
REV	DESCRIPTION	DATE	BY
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1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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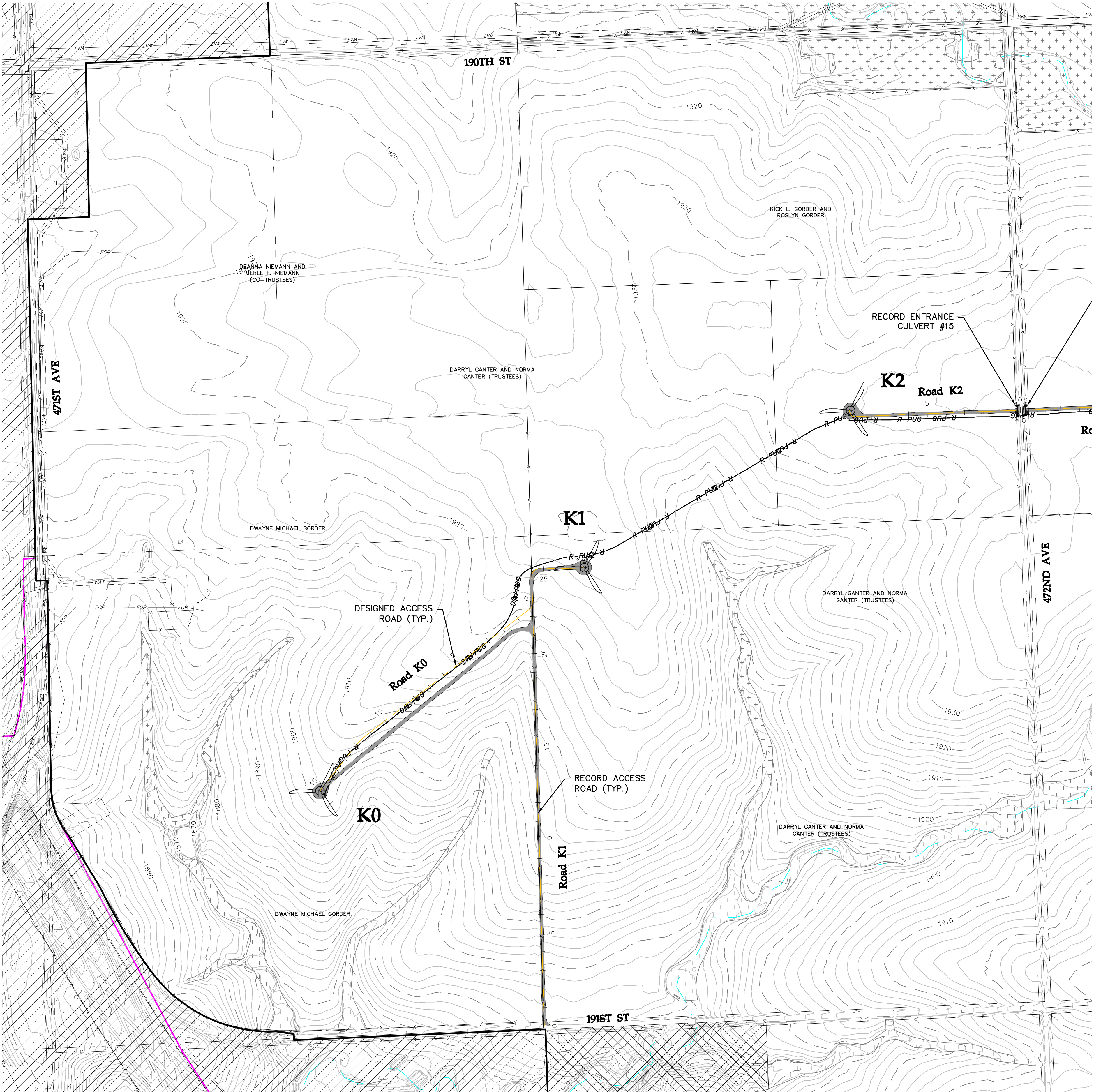
Civil Site Plan I5 J1 J2

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 009

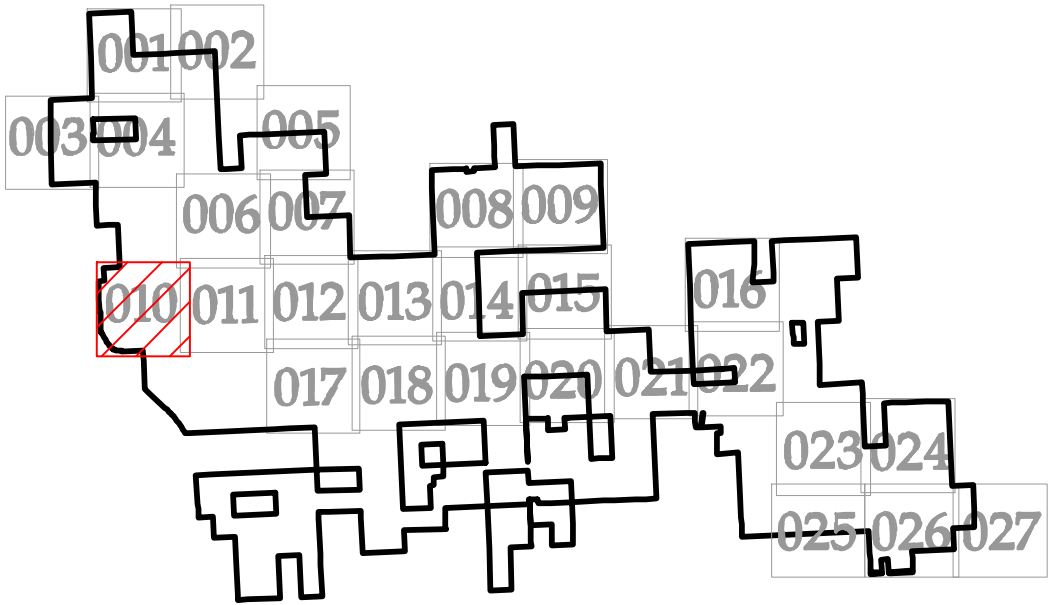


SEE SHEET 011

LEGEND:

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- RECORD MET TOWER LOCATION
- RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
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- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
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- EXISTING RIGHT OF WAY
- EXISTING FENCE
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- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
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- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-010



REVISIONS			
REV	DESCRIPTION	DATE	BY
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1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

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AVANGRID RENEWABLES

Tatanka Ridge
Wind Farm

Civil Site Plan K0 K1 K2

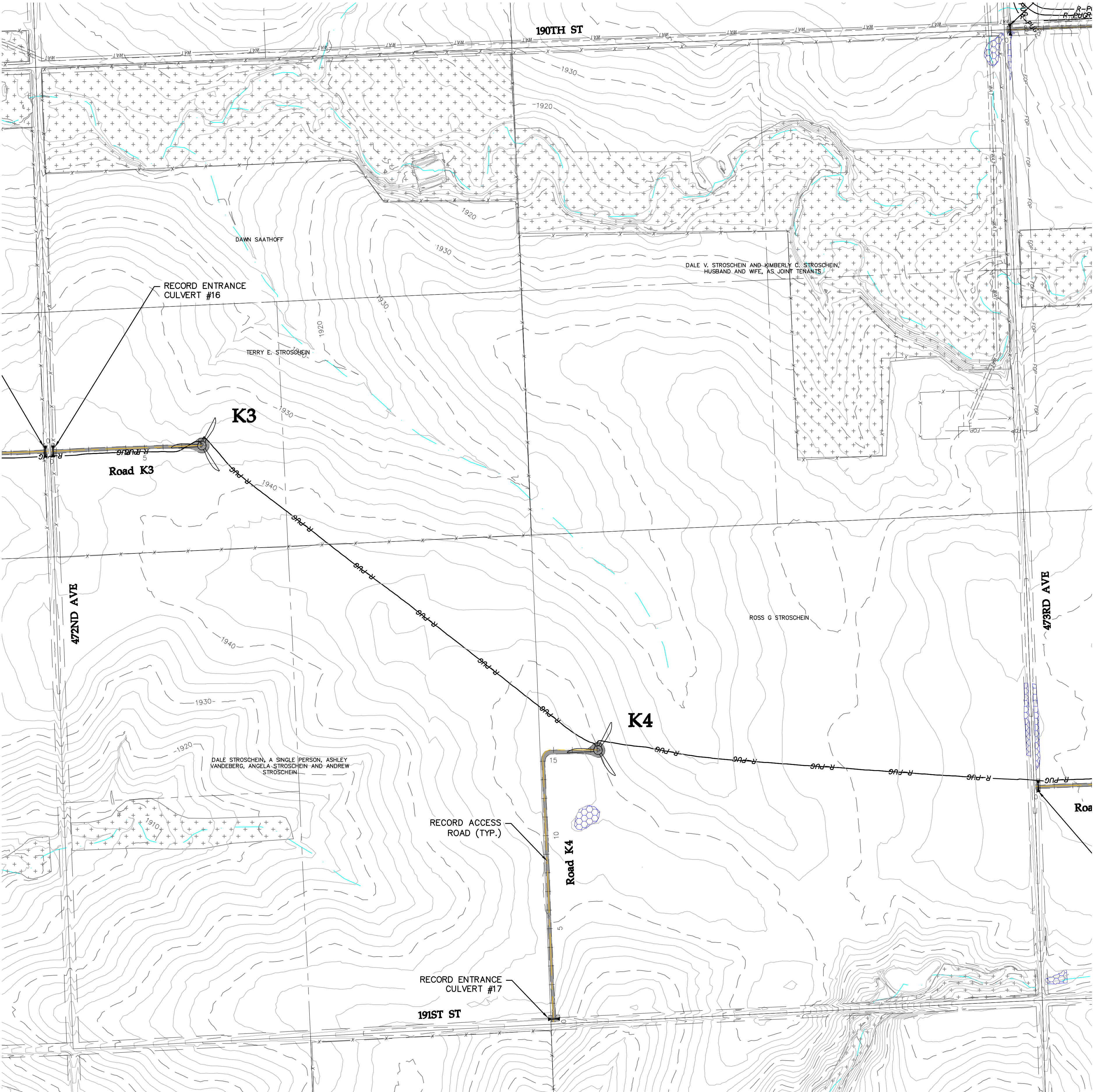
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 010

SEE SHEET 006

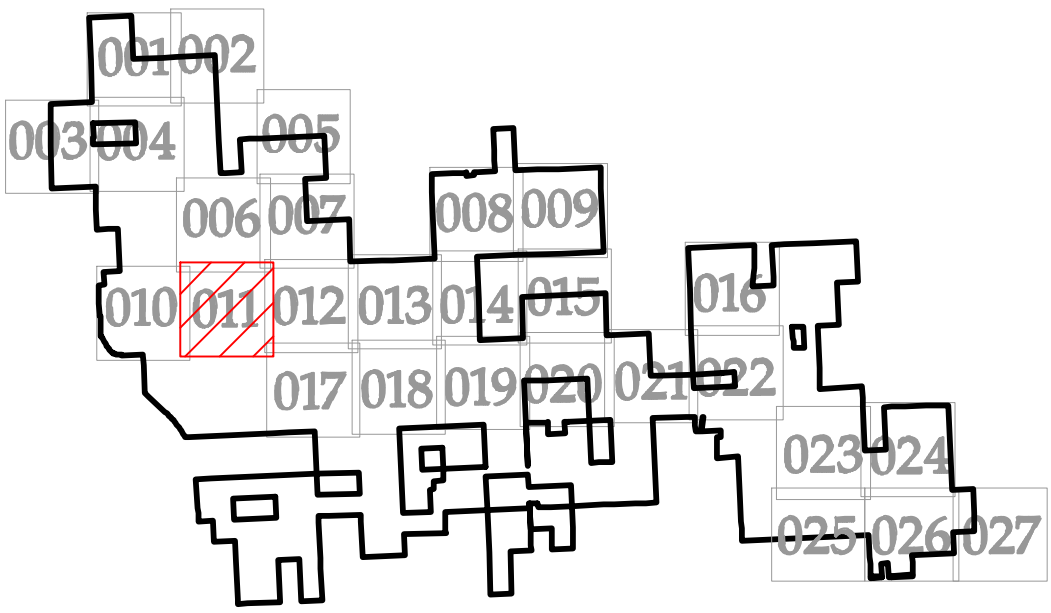


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- EXISTING USFWS EASEMENT
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- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

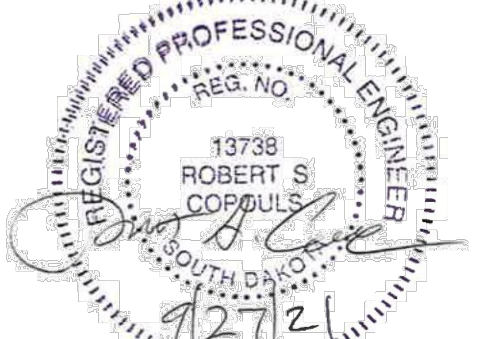
SEE SHEET 012

KEY MAP: SHEET TKW-C-511-011



REVISIONS			
REV	DESCRIPTION	DATE	BY
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1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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AVANGRID
RENEWABLES

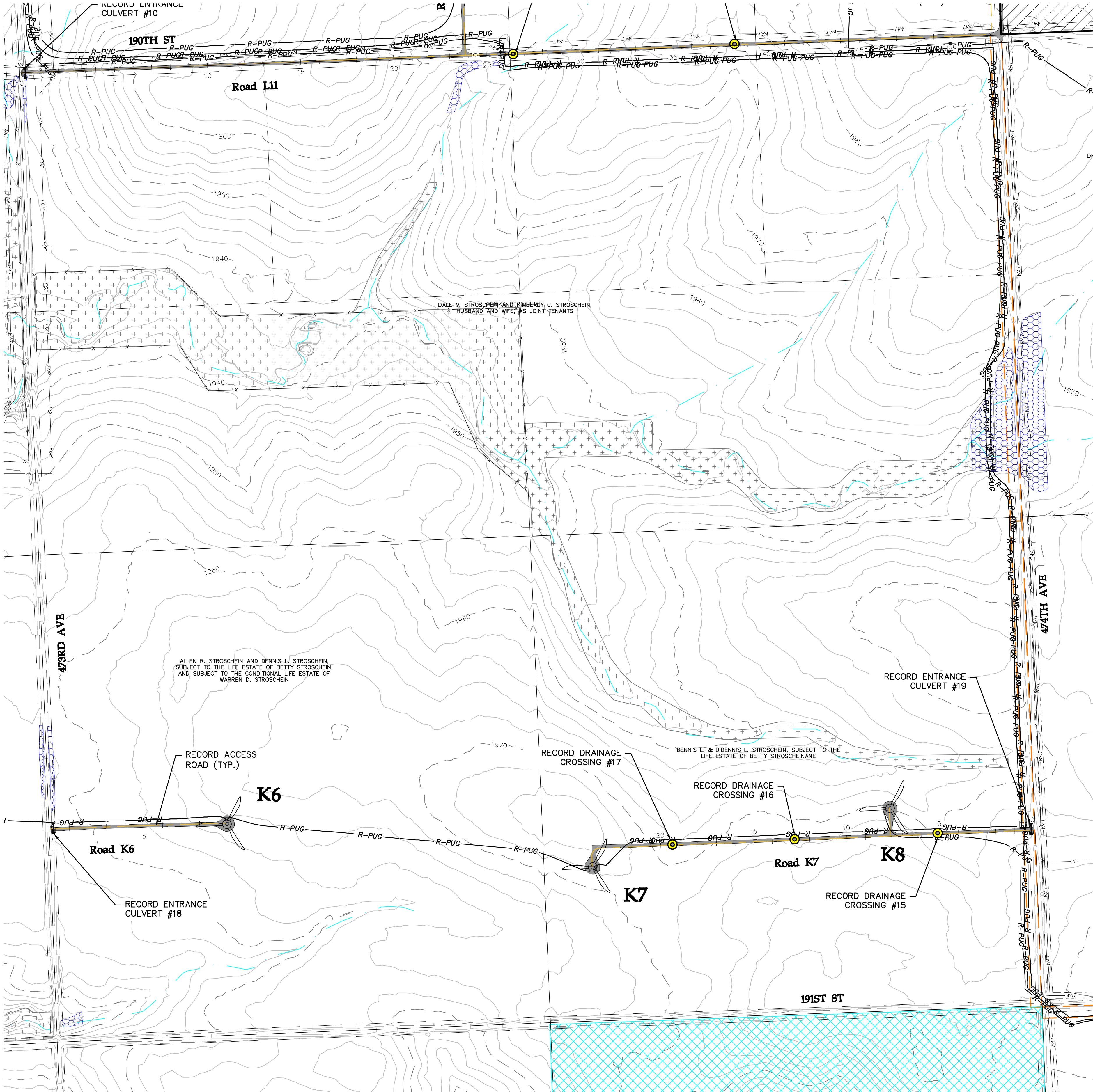
Tatanka Ridge
Wind Farm
Civil Site Plan K3 K4 K5
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No:TRW-C-511 Sht No: 011

SEE SHEET 007



SEE SHEET 017

LEGEND:

- RECORD TURBINE LOCATION
- RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-012



REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

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AVANGRID RENEWABLES

Tatanka Ridge
Wind Farm

Civil Site Plan K6 K7 K8

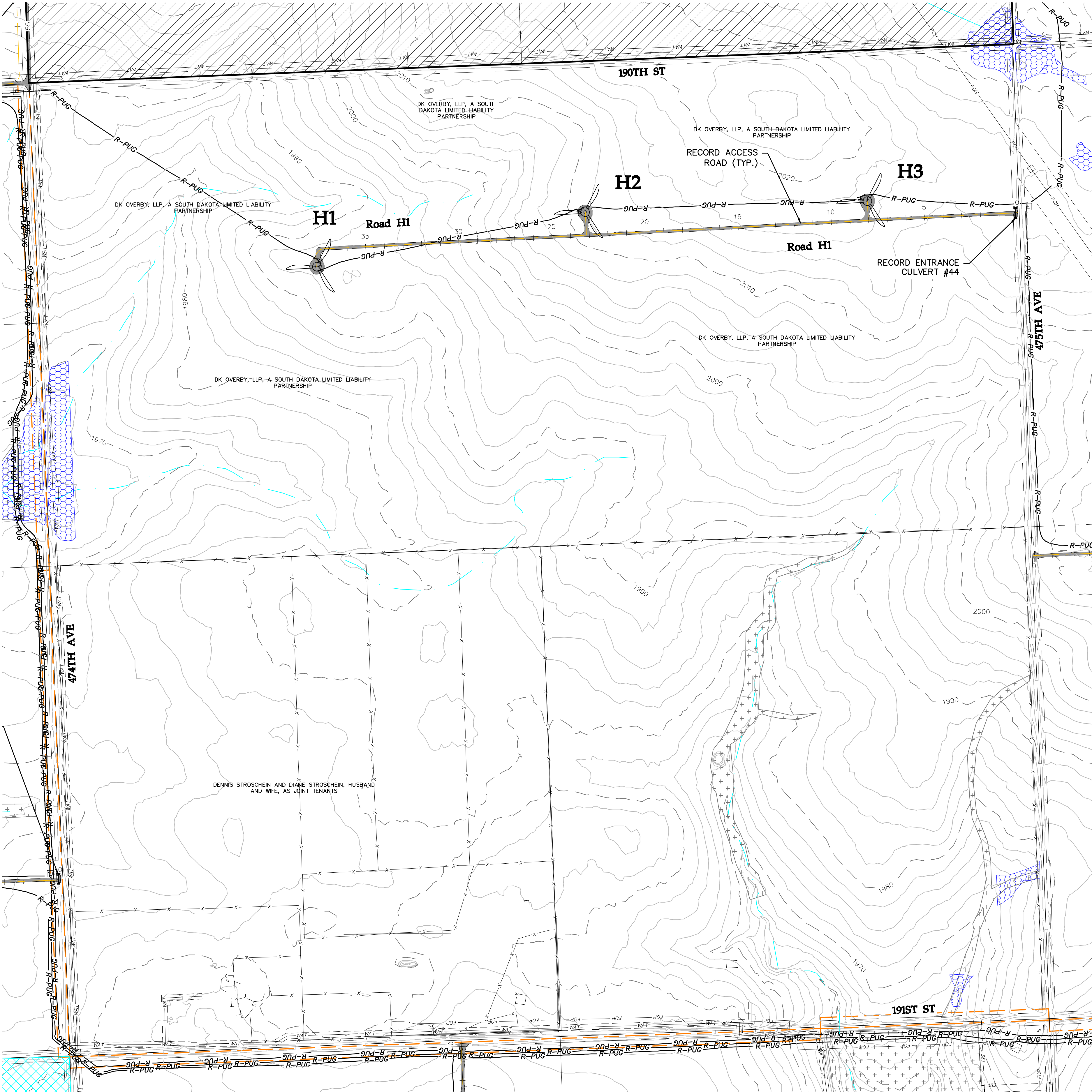
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 012

SEE SHEET 012

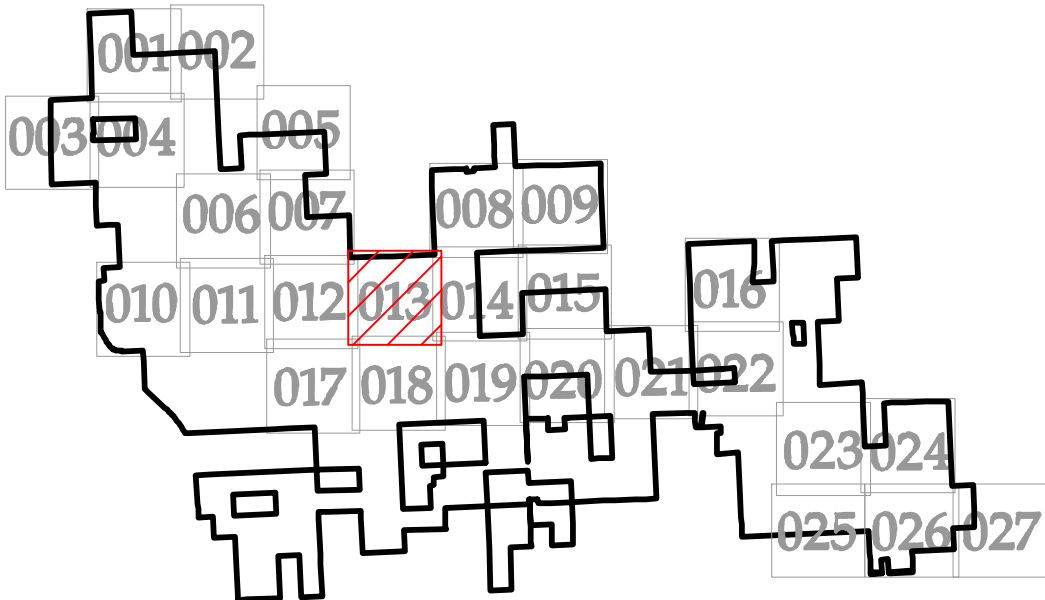


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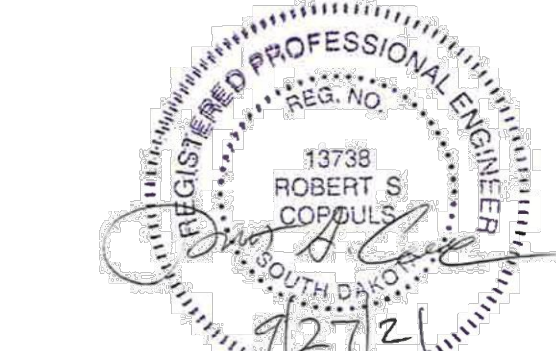
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- RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
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- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-013



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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AVANGRID
RENEWABLES

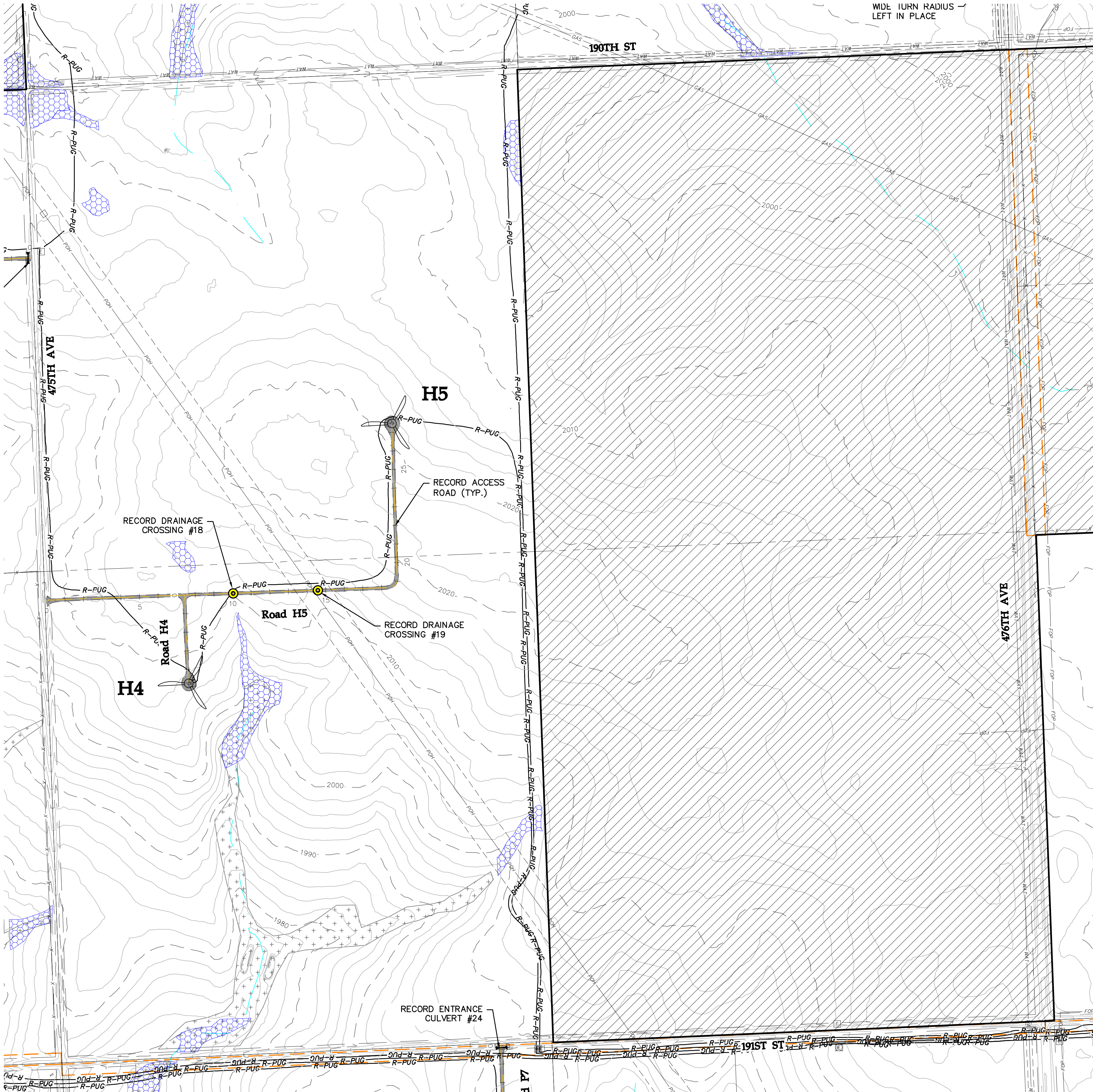
Tatanka Ridge
Wind Farm
Civil Site Plan H1 H2 H3
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No:TRW-C-511 Sht No: 013

SEE SHEET 008

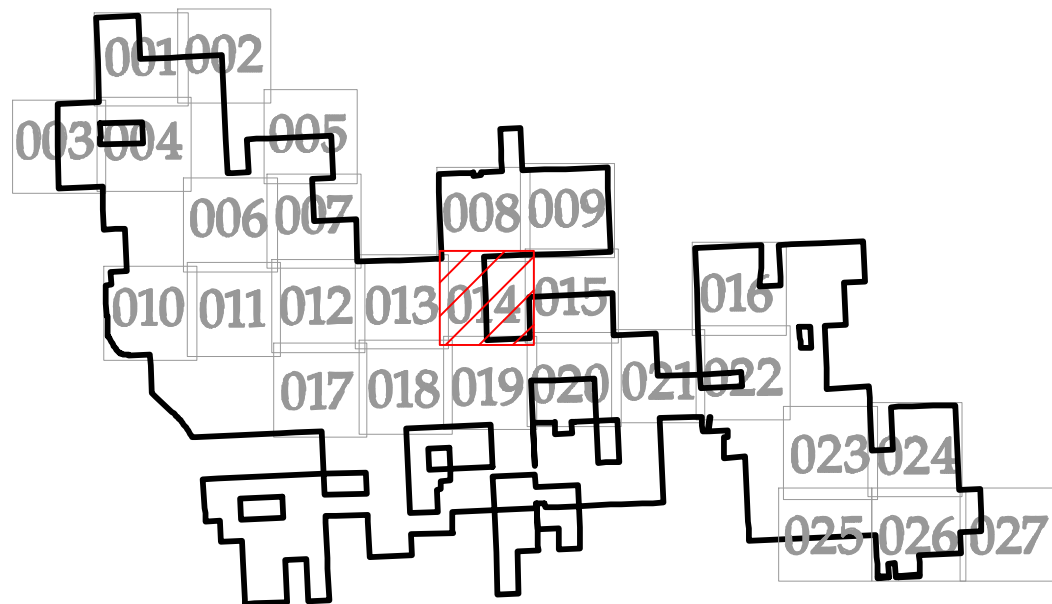


SEE SHEET 019

LEGEND:

- RECORD TURBINE LOCATION
- RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
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- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
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- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

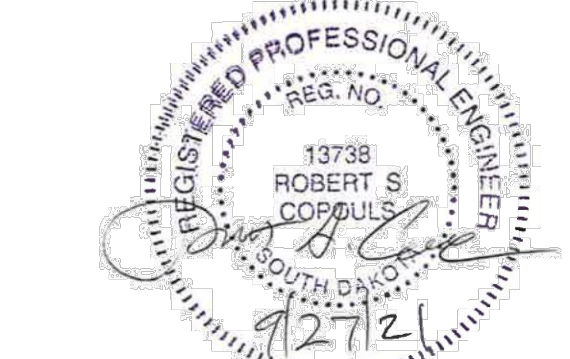
KEY MAP: SHEET TKW-C-511-014



REVISIONS

REV	DESCRIPTION	DATE	BY
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1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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**AVANGRID
RENEWABLES**

Tatanka Ridge
Wind Farm

Civil Site Plan H4 H5

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

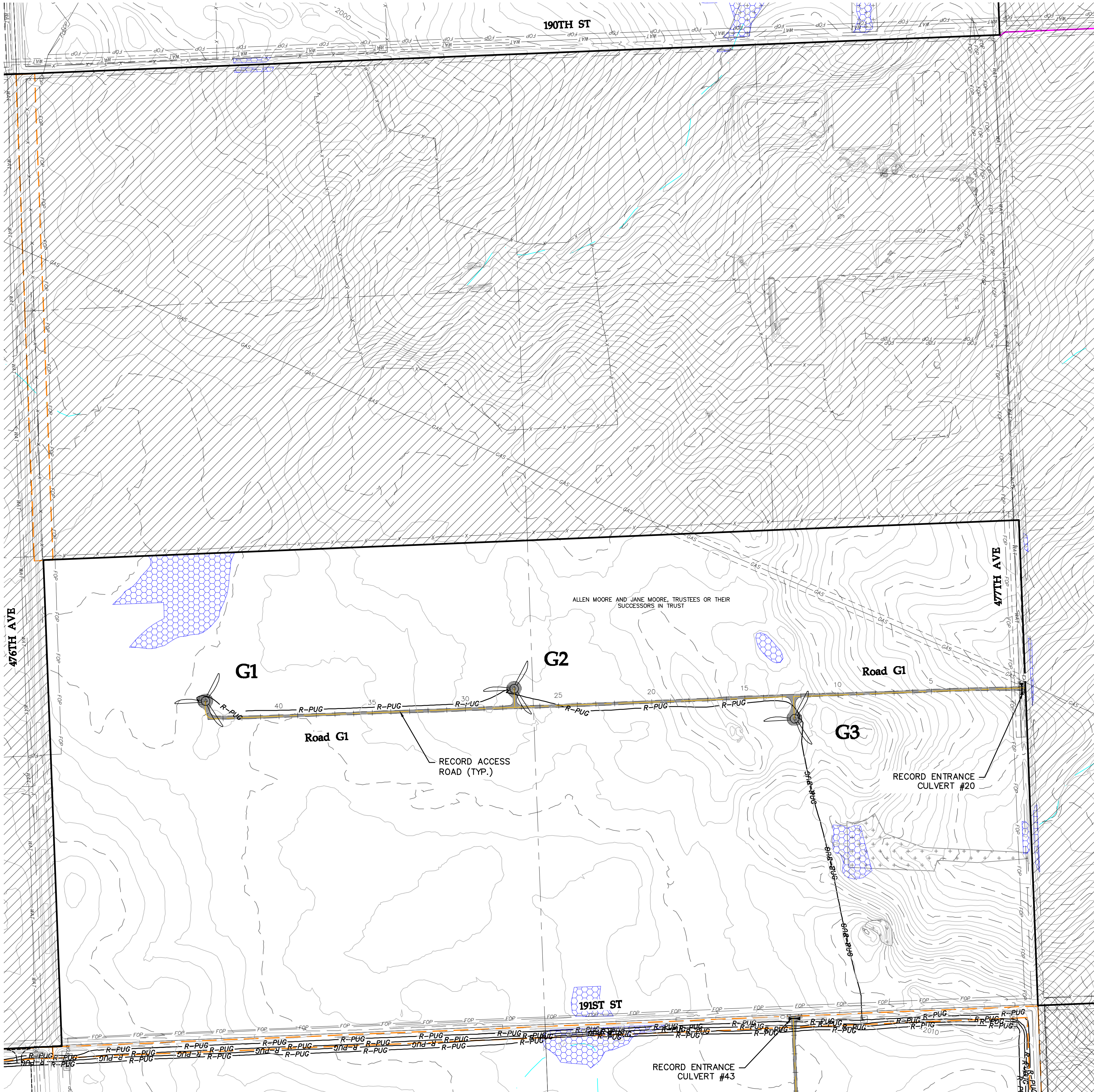
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File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511

Sht No: 014

SEE SHEET 009

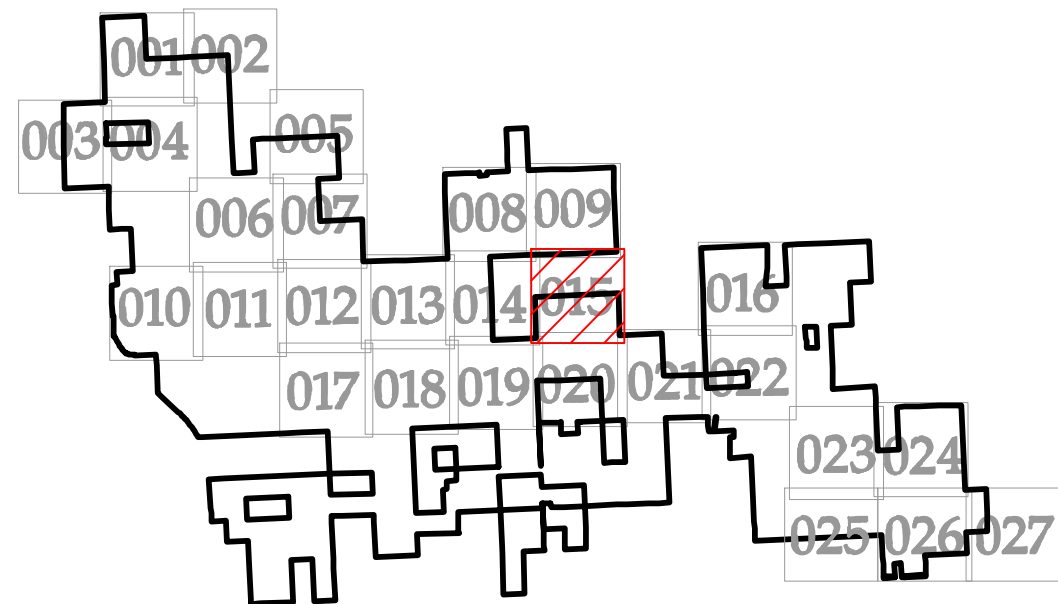


SEE SHEET 020

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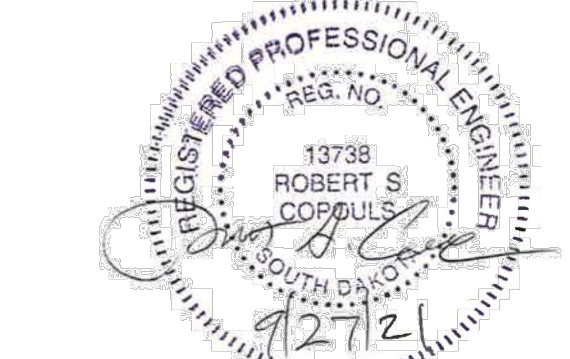
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- XX** RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- XX** RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
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- EXISTING RIGHT OF WAY
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- EXISTING WATER LINE
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- PROJECT BOUNDARY
- NON-PARTICIPATING
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- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-015



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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**AVANGRID
RENEWABLES**

Tatanka Ridge
Wind Farm

Civil Site Plan G1 G2 G3

Record Plans

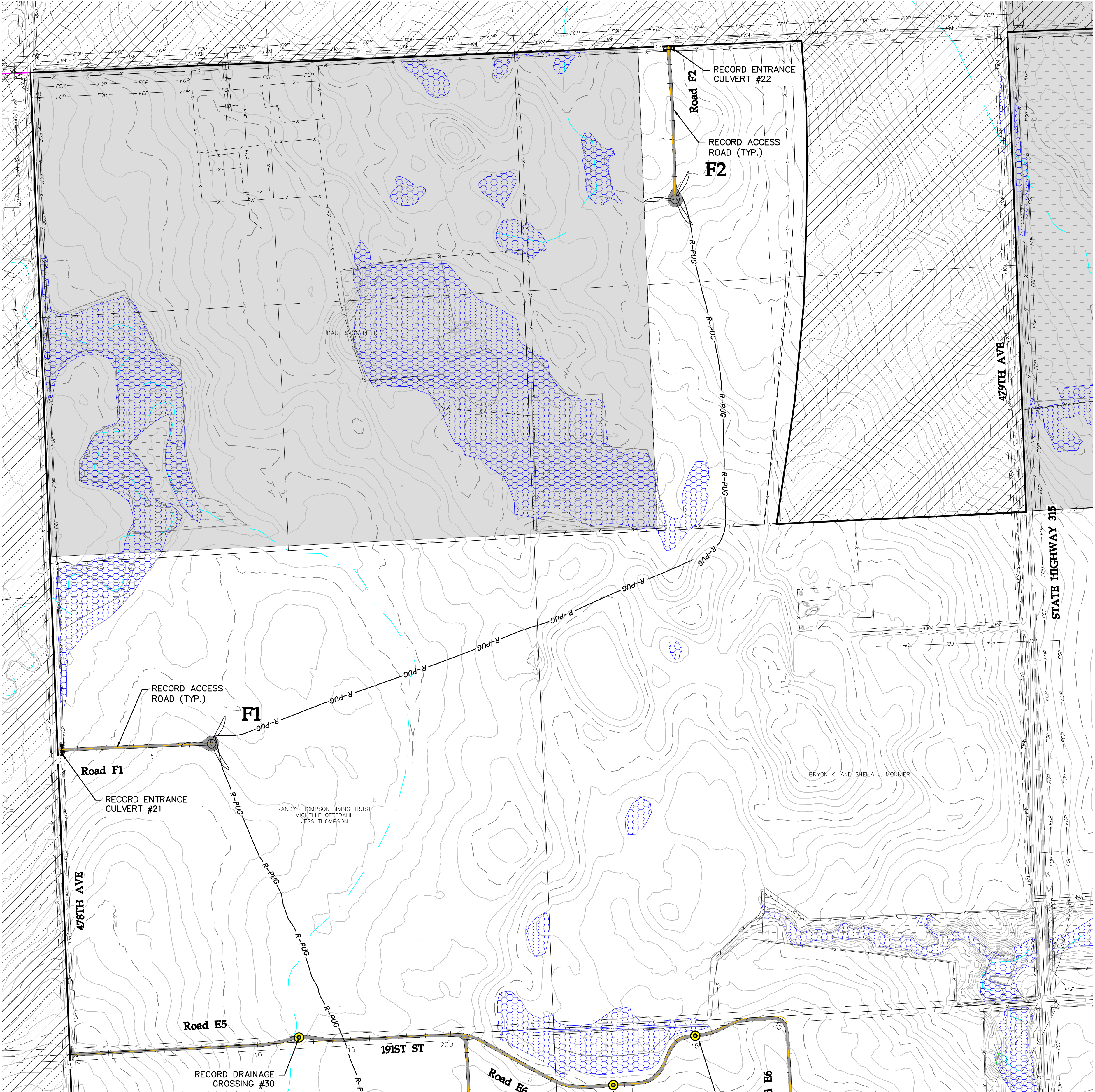
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Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401

File Name: 0022401SPP01.dwg

Dwg No:TRW-C-511 Sht No: 015

SEE SHEET 015

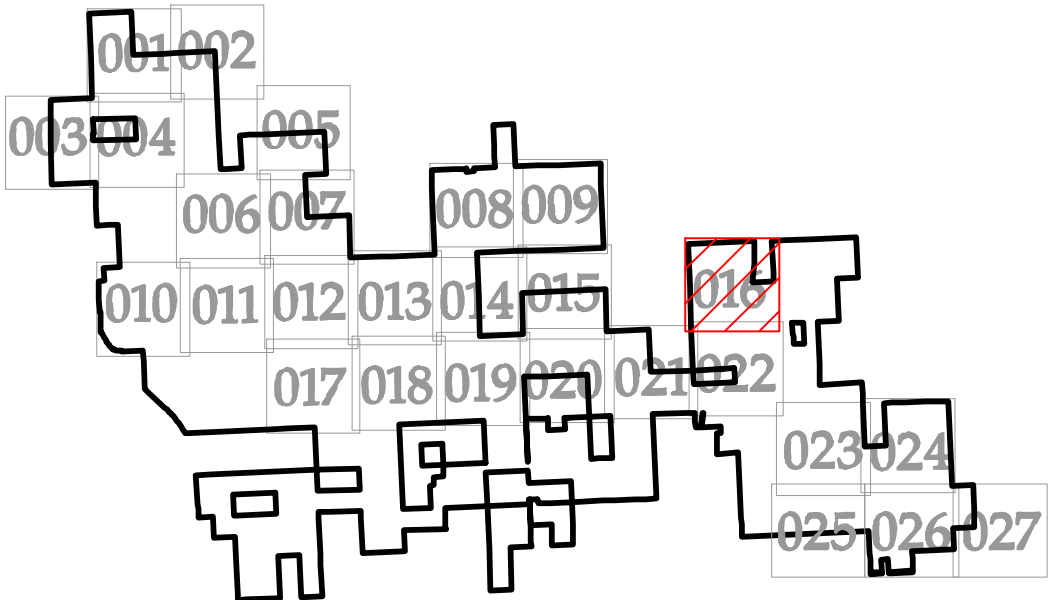


SEE SHEET 022

LEGEND:

- RECORD TURBINE LOCATION
- XX** RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- XX** RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-016



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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AVANGRID RENEWABLES

Tatanka Ridge
Wind Farm

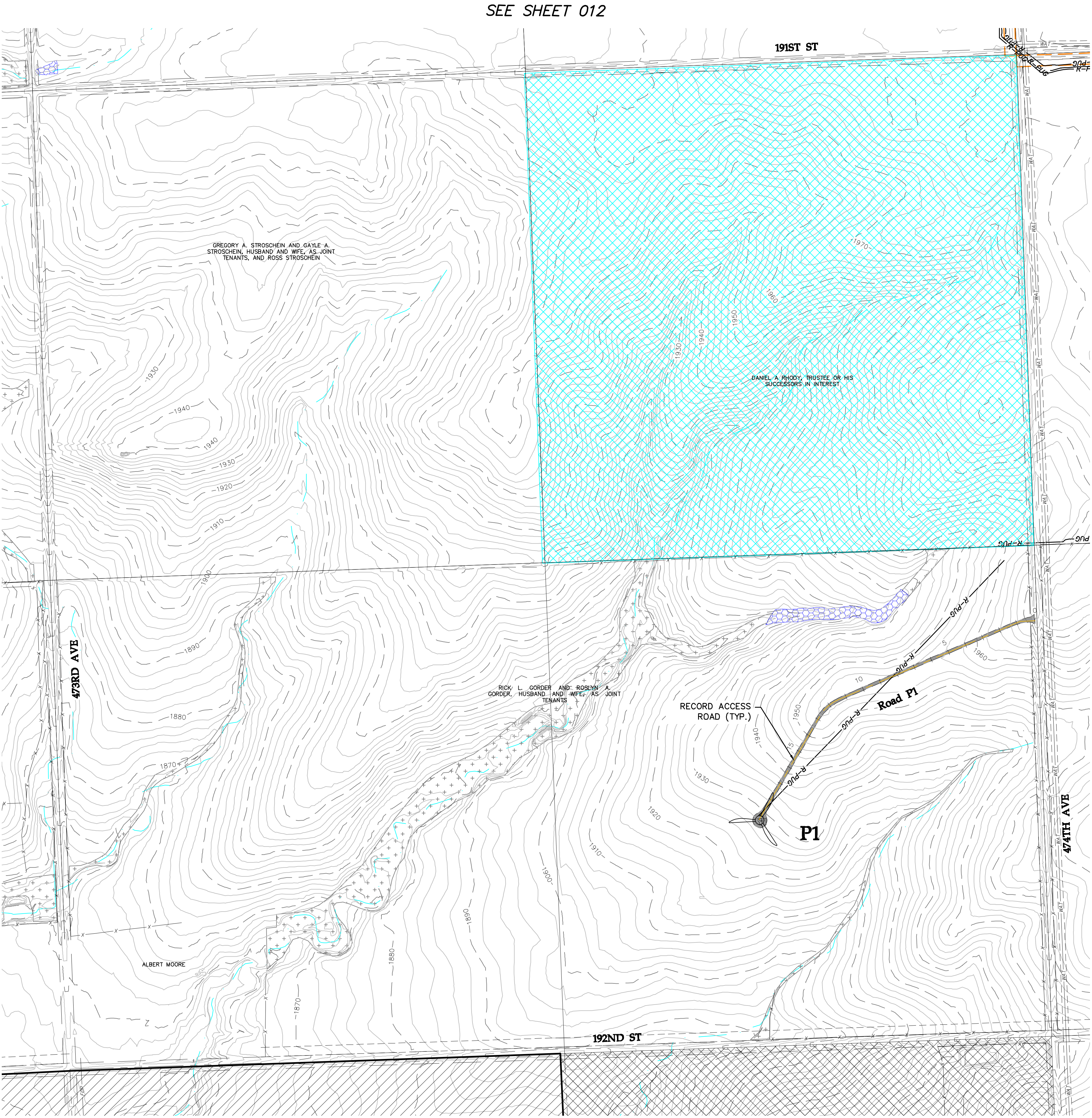
Civil Site Plan F1 F2

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 016

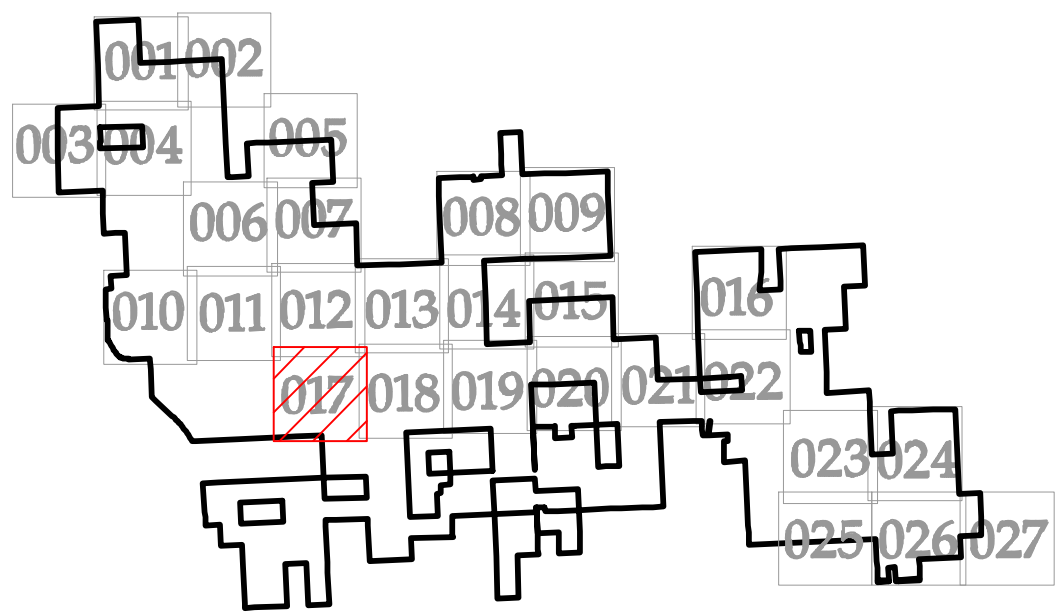


SEE SHEET 018

LEGEND:

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- XX** RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- XX** RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-017



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

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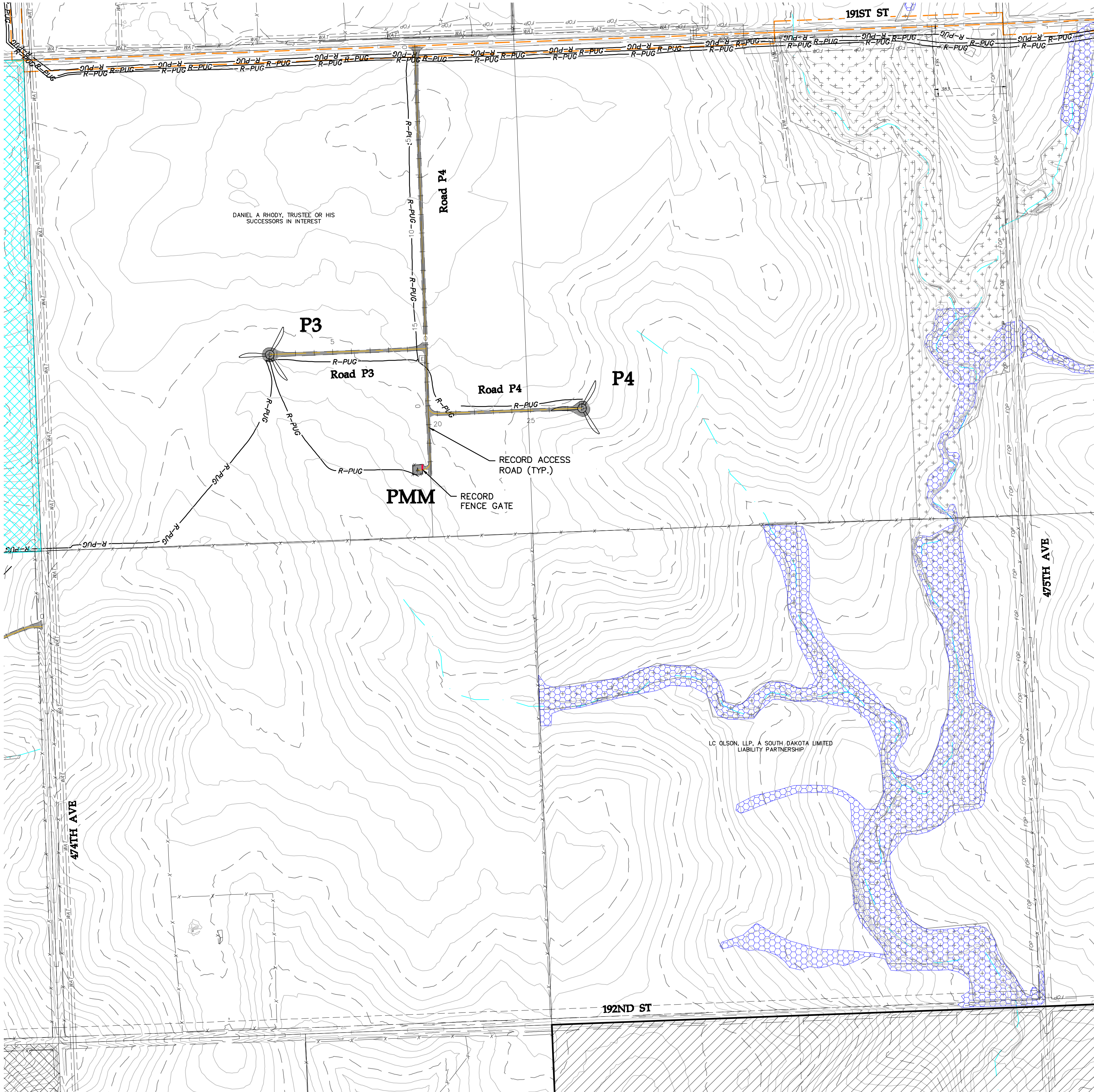
Tatanka Ridge
Wind Farm
Civil Site Plan P1
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 017

SEE SHEET 013



SEE SHEET 017

SEE SHEET 019

LEGEND:

- RECORD TURBINE LOCATION
- RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
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- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
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- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

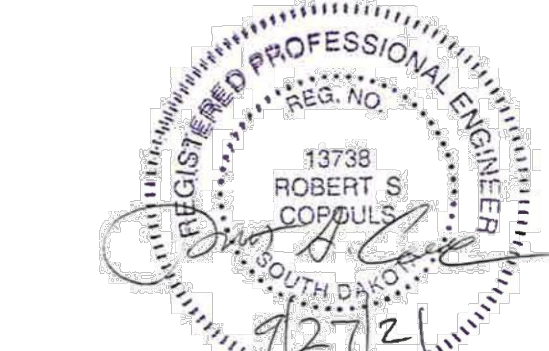
KEY MAP: SHEET TKW-C-511-018



REVISIONS

REV	DESCRIPTION	DATE	BY
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1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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AVANGRID
RENEWABLES

Tatanka Ridge
Wind Farm

Civil Site Plan P3 P4

Record Plans

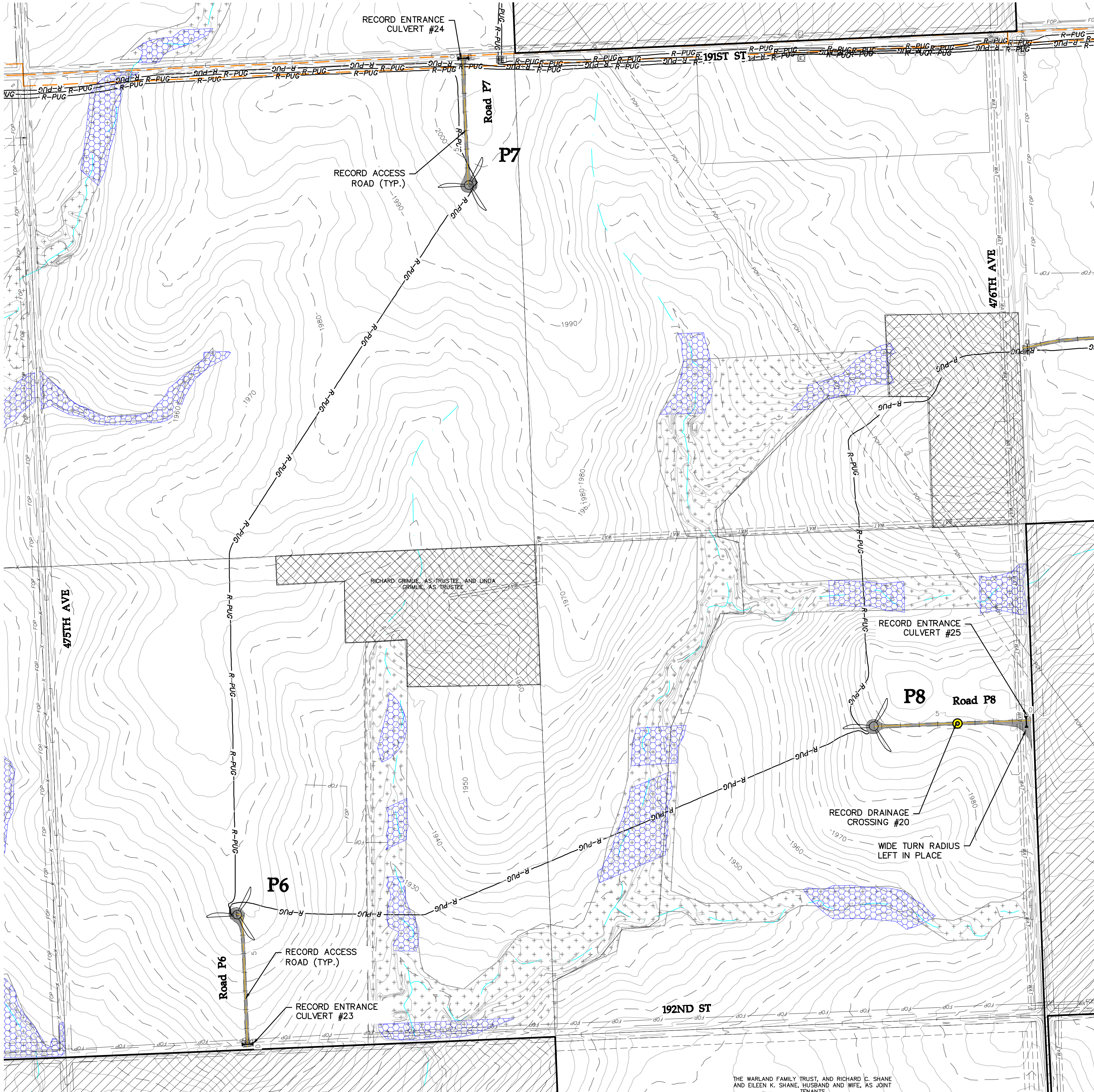
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Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401

File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 018

SEE SHEET 014



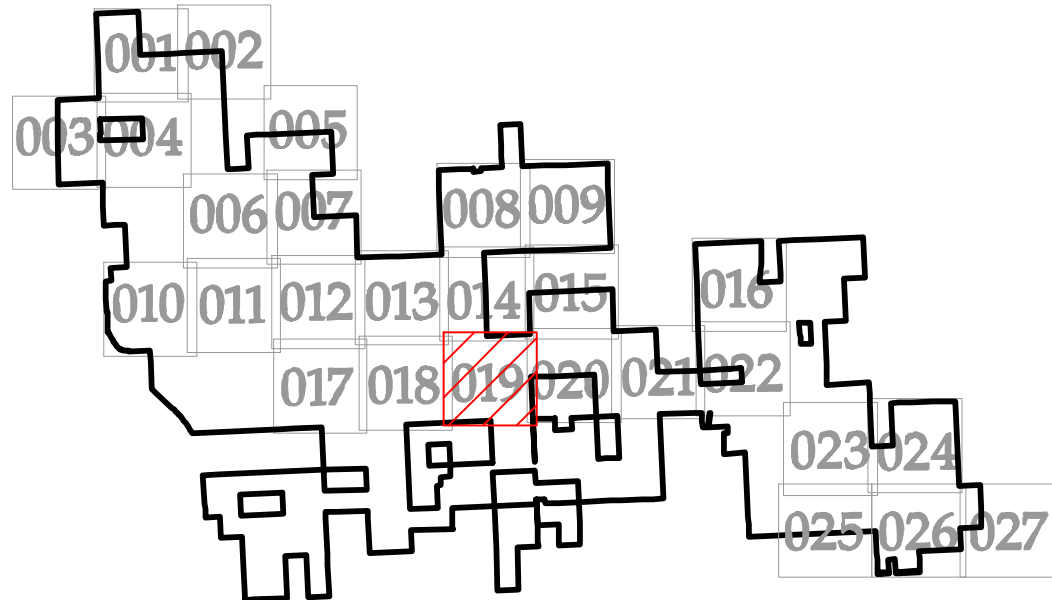
THE WARLAND FAMILY TRUST, AND RICHARD C. SHANE
AND EILEEN K. SHANE, HUSBAND AND WIFE, AS JOINT
TENANTS

LEGEND:

- RECORD TURBINE LOCATION
- RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
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- PROJECT BOUNDARY
- NON-PARTICIPATING
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- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
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- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

SEE SHEET 020

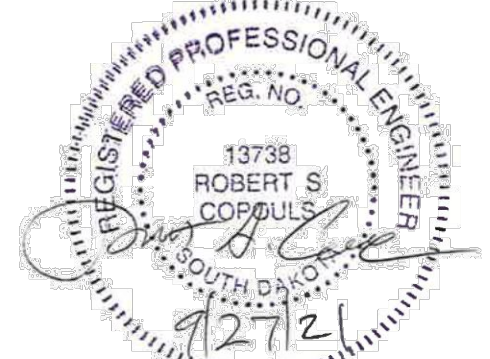
KEY MAP: SHEET TKW-C-511-019



REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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AVANGRID
RENEWABLES

Tatanka Ridge
Wind Farm

Civil Site Plan P6 P7 P8

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

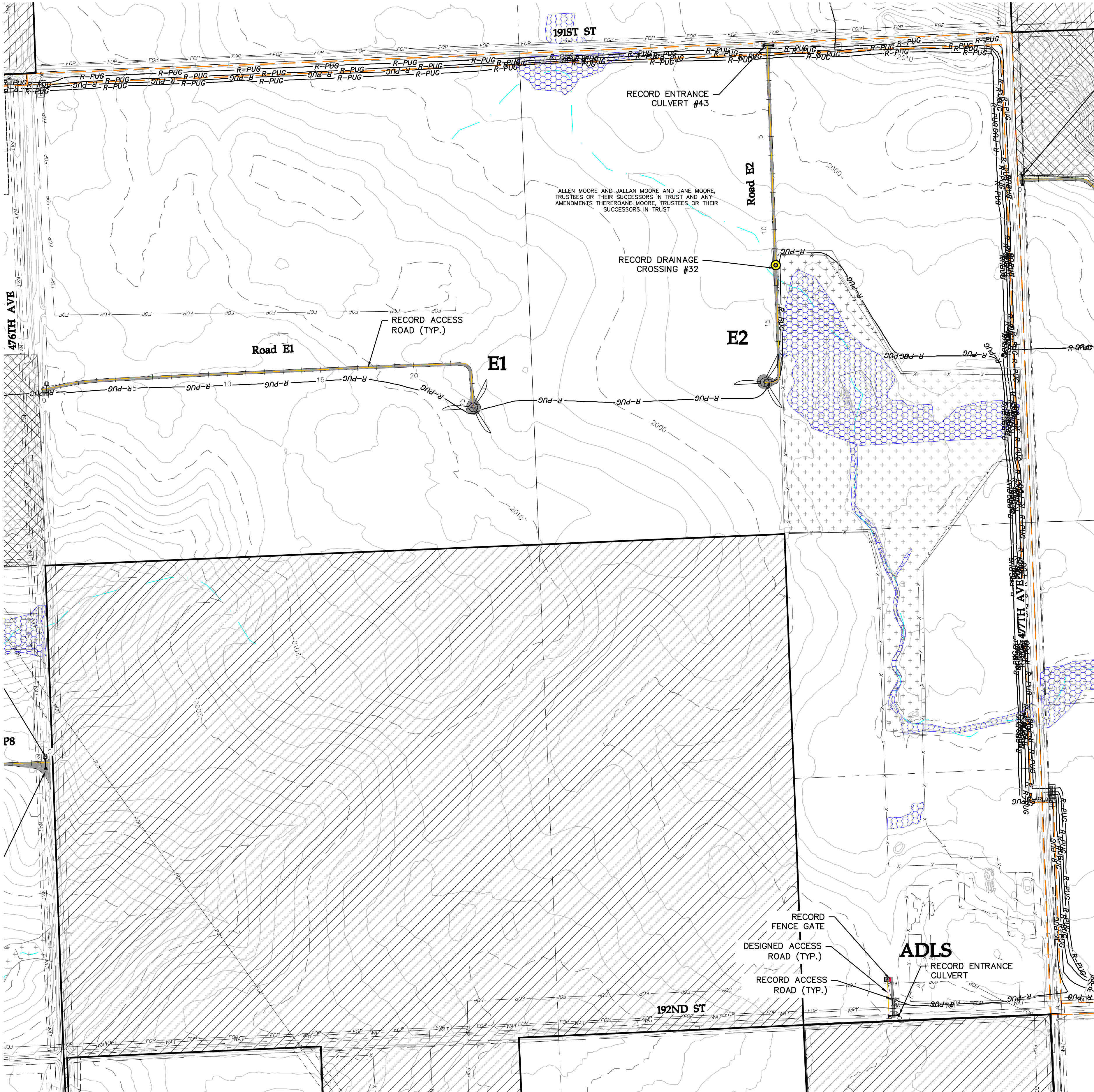
Project Number: 0022401

File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511

Sht No: 019

SEE SHEET 015



LEGEND:

- RECORD TURBINE LOCATION
- RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
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- RECORD FENCE GATE

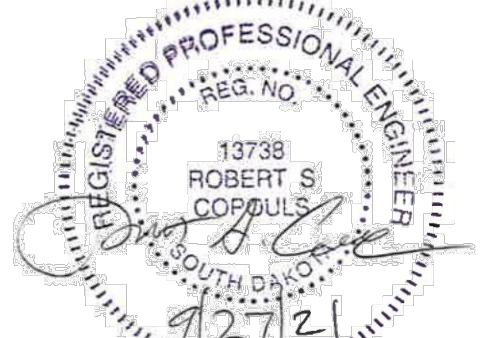
SEE SHEET 021

KEY MAP: SHEET TKW-C-511-020



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

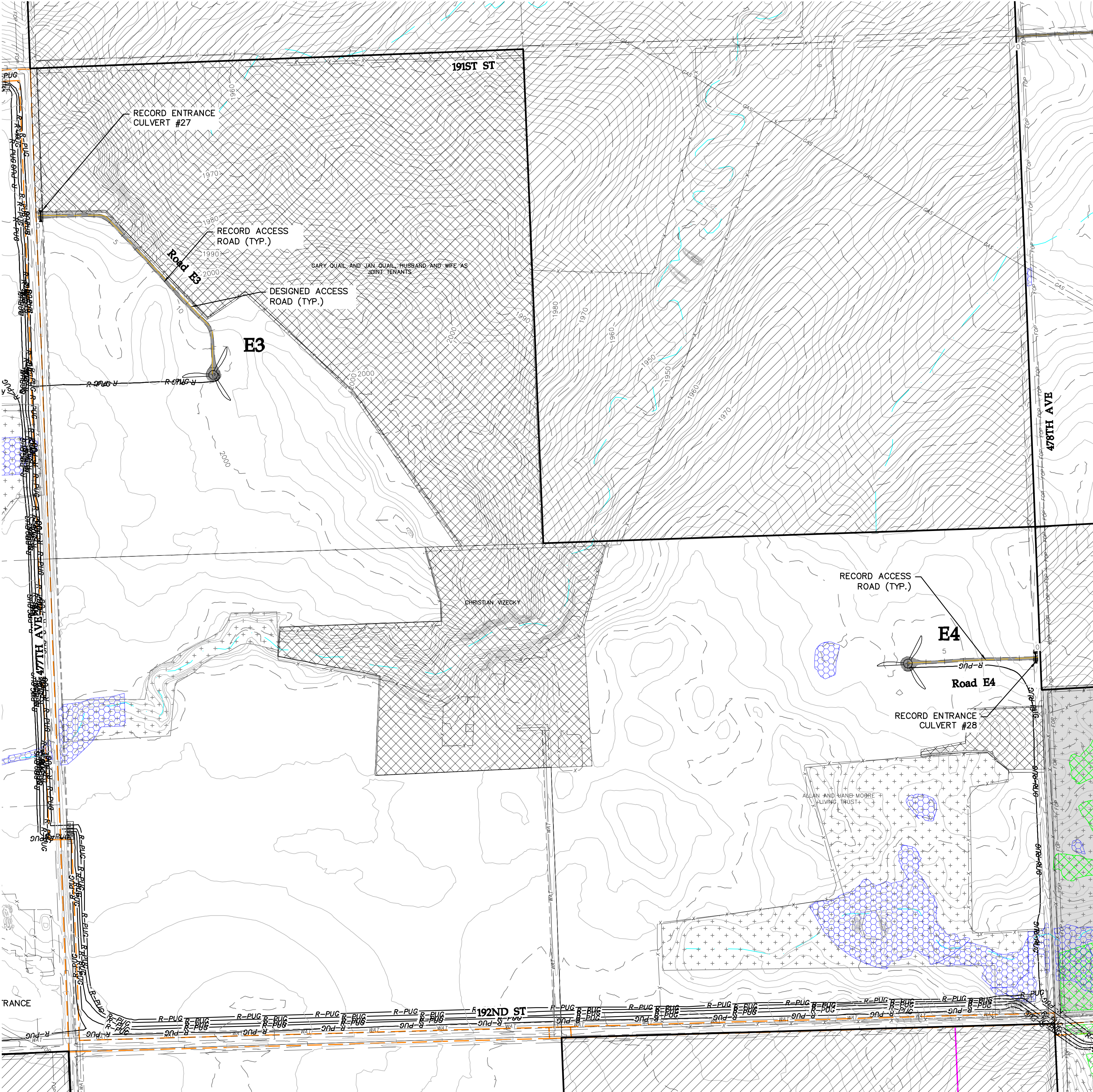
NOTES


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4850 32nd Avenue S
Fargo, ND 58104
 **AVANGRID RENEWABLES**
Tatanka Ridge
Wind Farm
Civil Site Plan E1 E2
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21
Project Number: 0022401
File Name: 0022401SPP01.dwg
Dwg No: TRW-C-511 Sht No: 020

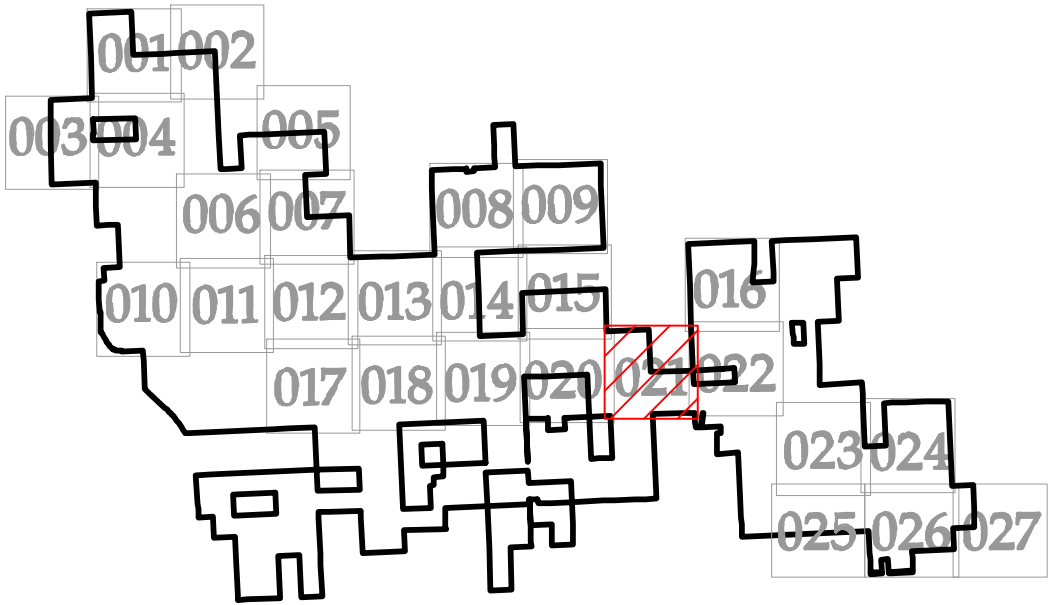
SEE SHEET 020



SEE SHEET 022

- LEGEND:**
- RECORD TURBINE LOCATION
 - XX** RECORD TURBINE NUMBER
 - RECORD MET TOWER LOCATION
 - XX** RECORD MET TOWER NUMBER
 - DESIGNED ACCESS ROAD
 - RECORD ACCESS ROAD
 - RECORD UNDERGROUND COLLECTION
 - RECORD OVERHEAD TRANSMISSION
 - RECORD ACCESS ROAD
 - EXISTING 2' CONTOURS
 - EXISTING SECTION LINE
 - EXISTING PARCEL LINE
 - EXISTING RIGHT OF WAY
 - EXISTING FENCE
 - EXISTING UNDERGROUND POWER
 - EXISTING OVERHEAD POWER
 - EXISTING WATER LINE
 - EXISTING FIBER OPTIC LINE
 - EXISTING GAS PIPELINE
 - EXISTING UTILITY EASEMENT
 - PROJECT BOUNDARY
 - NON-PARTICIPATING
 - PARTICIPATING-NEIGHBOR AGREEMENT
 - PARTICIPATING-TRANSMISSION AGREEMENT
 - EXISTING USFWS EASEMENT
 - EXISTING STREAMS - NHD
 - EXISTING STREAMS - TOPEKA SHINER
 - EXISTING DELINEATED WETLANDS
 - EXISTING NATIVE GRASSLAND
 - EXISTING NON-NATIVE GRASSLAND
 - EXISTING DAKOTA SKIPPER HABITAT
 - EXISTING LANDOWNER EASEMENT
 - RECORD DRAINAGE CROSSING
 - RECORD CULVERT
 - RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-021



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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Tatanka Ridge
Wind Farm

Civil Site Plan E3 E4

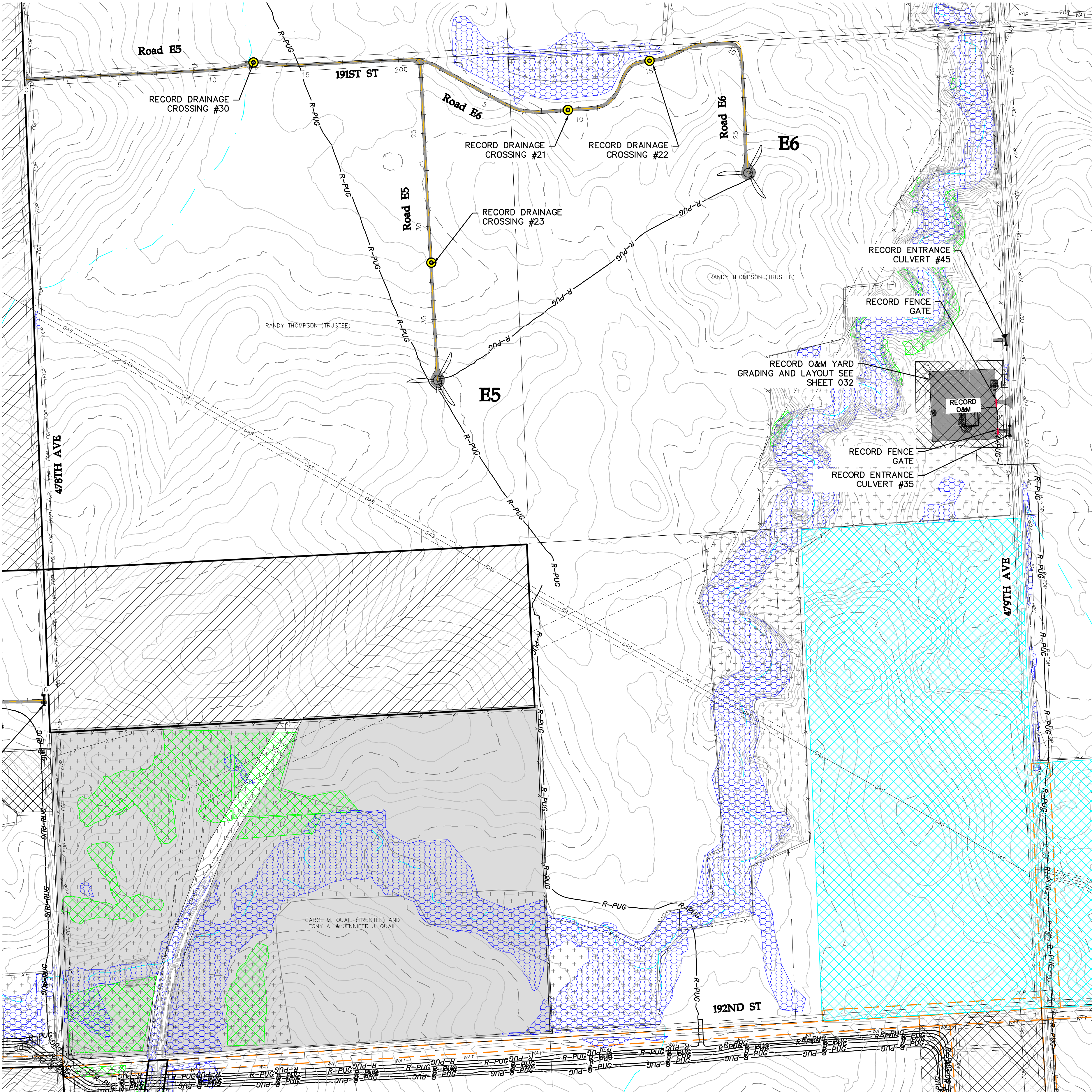
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 021

SEE SHEET 016

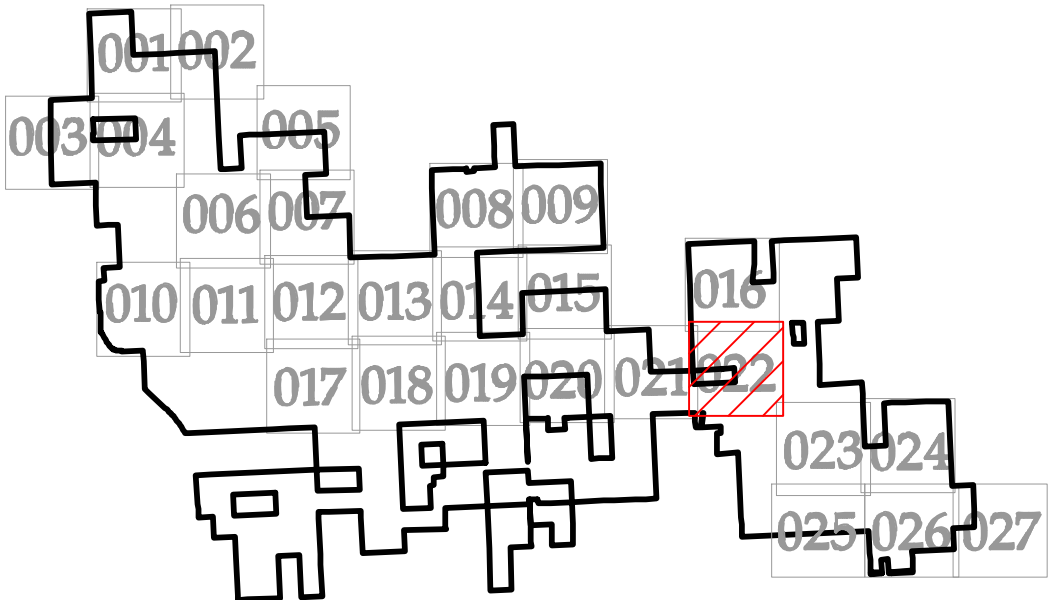


SEE SHEET 021

LEGEND:

- RECORD TURBINE LOCATION
- RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

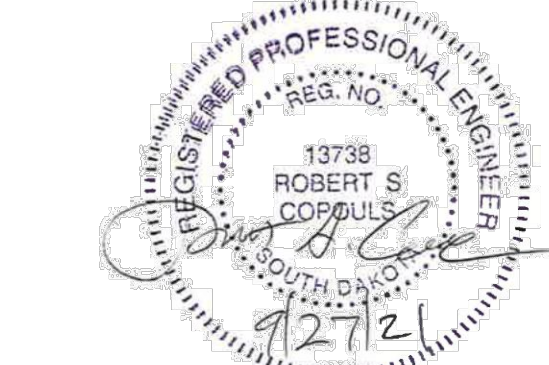
KEY MAP: SHEET TKW-C-511-022



REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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**AVANGRID
RENEWABLES**

**Tatanka Ridge
Wind Farm**

Civil Site Plan E5 E6

Record Plans

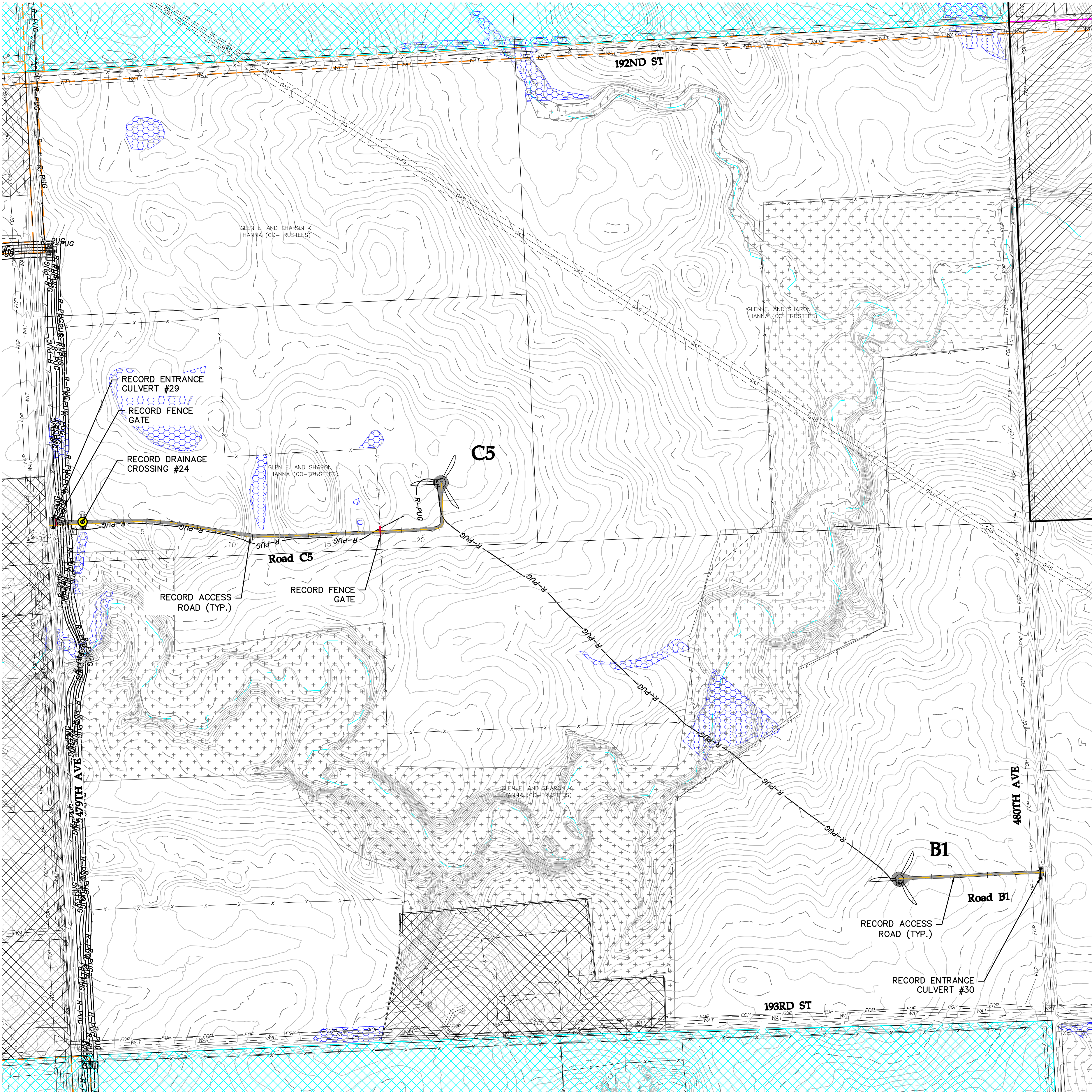
Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401

File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511

Sht No: 022



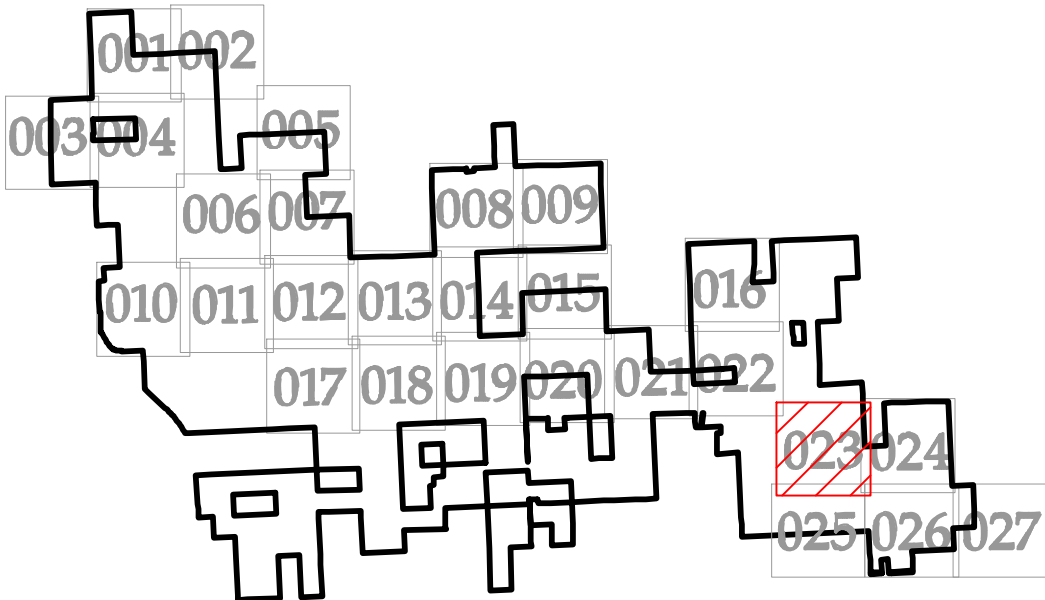
SEE SHEET 025

LEGEND:

- RECORD TURBINE LOCATION
- XX** RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- XX** RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

SEE SHEET 024

KEY MAP: SHEET TKW-C-511-023



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

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AVANGRID RENEWABLES

Tatanka Ridge Wind Farm

Civil Site Plan B1 C5

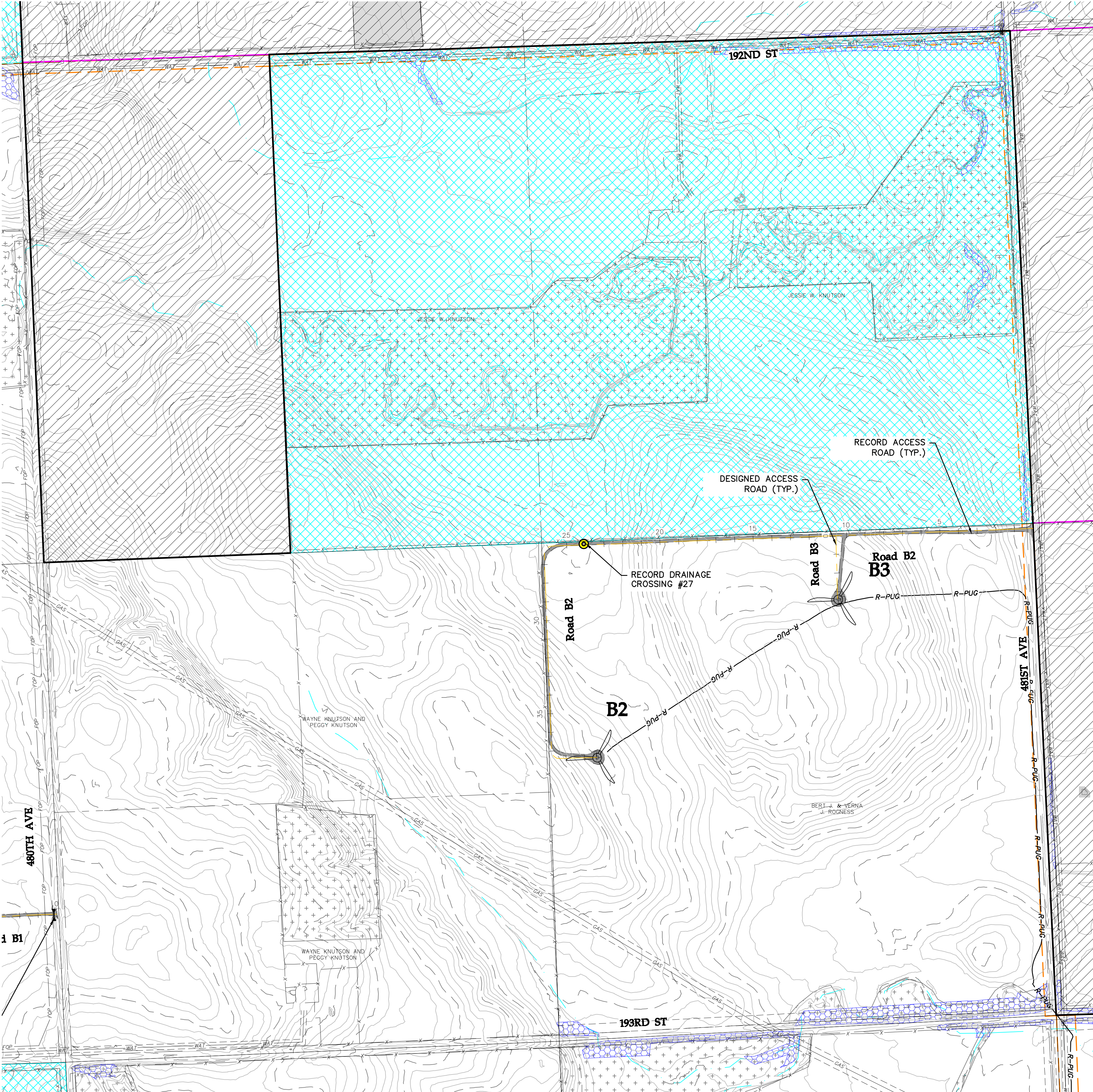
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Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 023

SEE SHEET 023

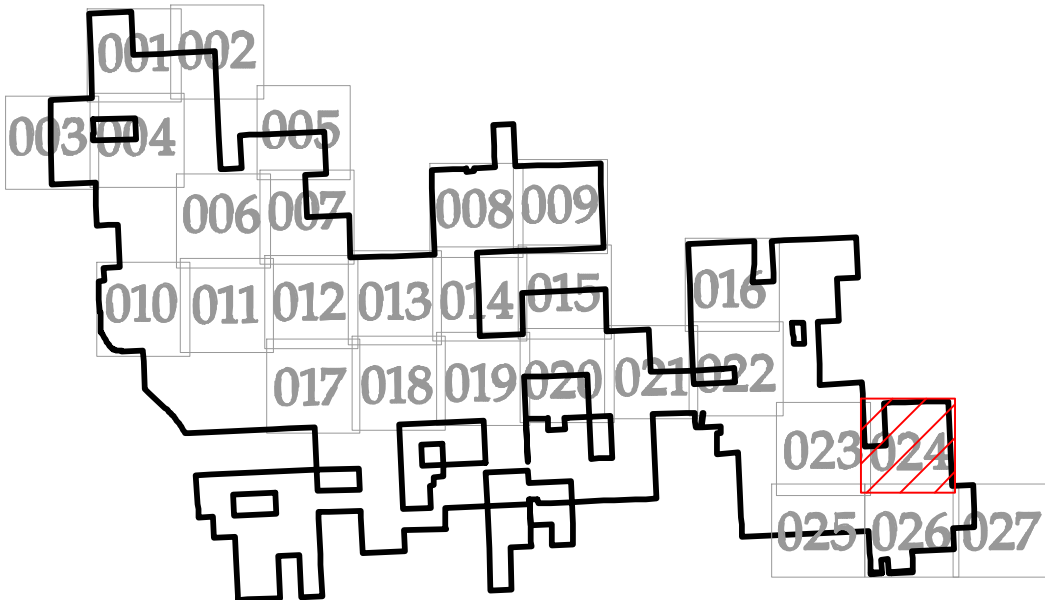


SEE SHEET 026

LEGEND:

- RECORD TURBINE LOCATION
- XX** RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
- XX** RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-024



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

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**AVANGRID
RENEWABLES**

Tatanka Ridge
Wind Farm

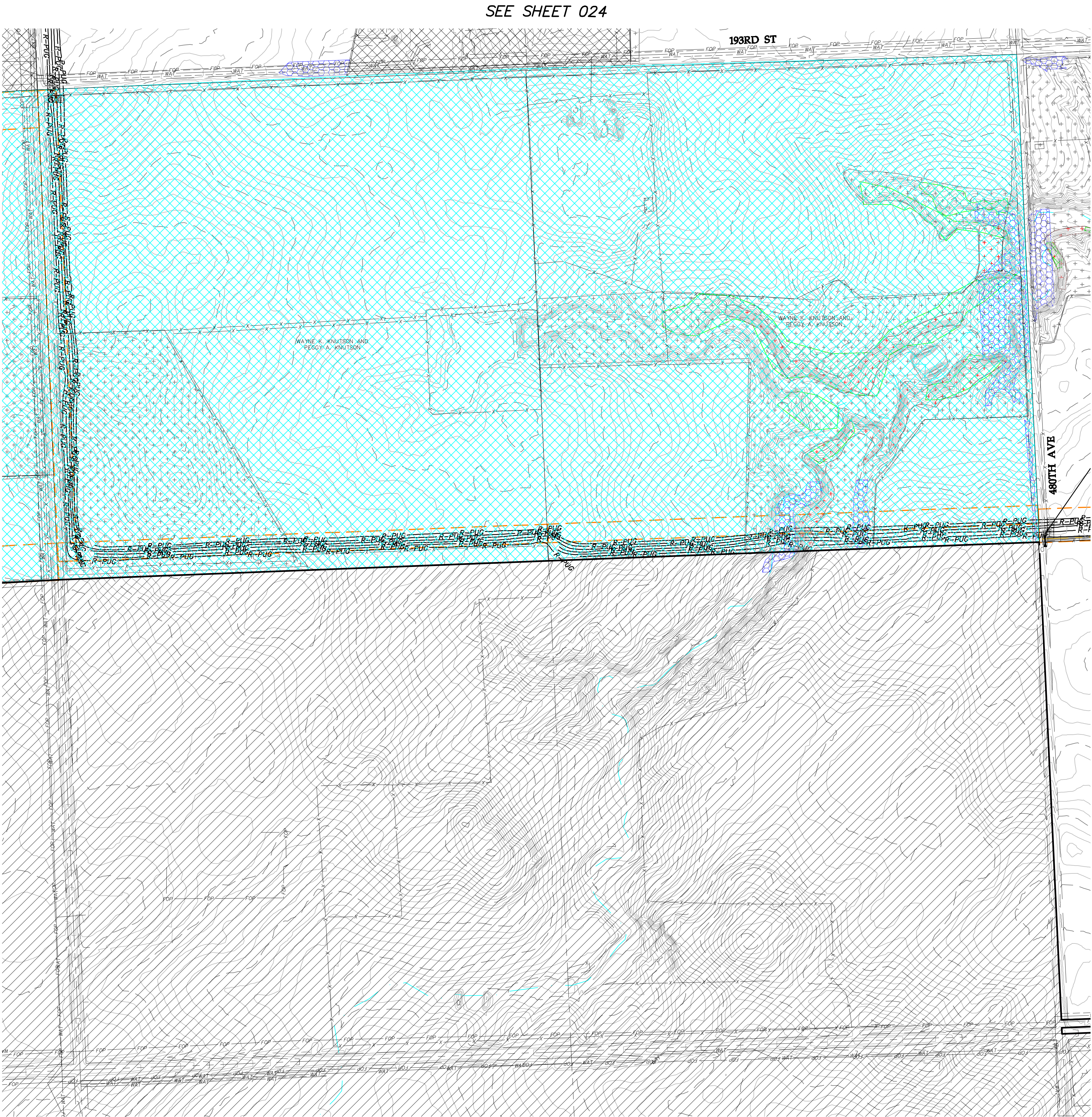
Civil Site Plan B2 B3

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

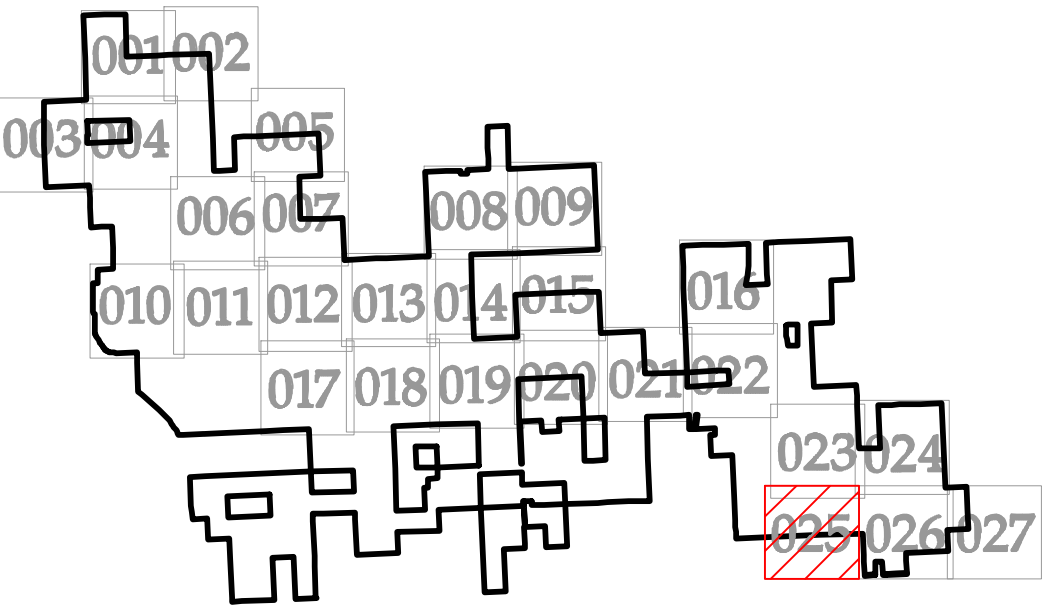
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File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 024



- LEGEND:**
- RECORD TURBINE LOCATION
 - RECORD TURBINE NUMBER
 - RECORD MET TOWER LOCATION
 - RECORD MET TOWER NUMBER
 - DESIGNED ACCESS ROAD
 - RECORD ACCESS ROAD
 - RECORD UNDERGROUND COLLECTION
 - RECORD OVERHEAD TRANSMISSION
 - RECORD ACCESS ROAD
 - EXISTING 2' CONTOURS
 - EXISTING SECTION LINE
 - EXISTING PARCEL LINE
 - EXISTING RIGHT OF WAY
 - EXISTING FENCE
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 - EXISTING WATER LINE
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 - PROJECT BOUNDARY
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 - PARTICIPATING-TRANSMISSION AGREEMENT
 - EXISTING USFWS EASEMENT
 - EXISTING STREAMS - NHD
 - EXISTING STREAMS - TOPEKA SHINER
 - EXISTING DELINEATED WETLANDS
 - EXISTING NATIVE GRASSLAND
 - EXISTING NON-NATIVE GRASSLAND
 - EXISTING DAKOTA SKIPPER HABITAT
 - EXISTING LANDOWNER EASEMENT
 - RECORD DRAINAGE CROSSING
 - RECORD CULVERT
 - RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-025



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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**AVANGRID
RENEWABLES**

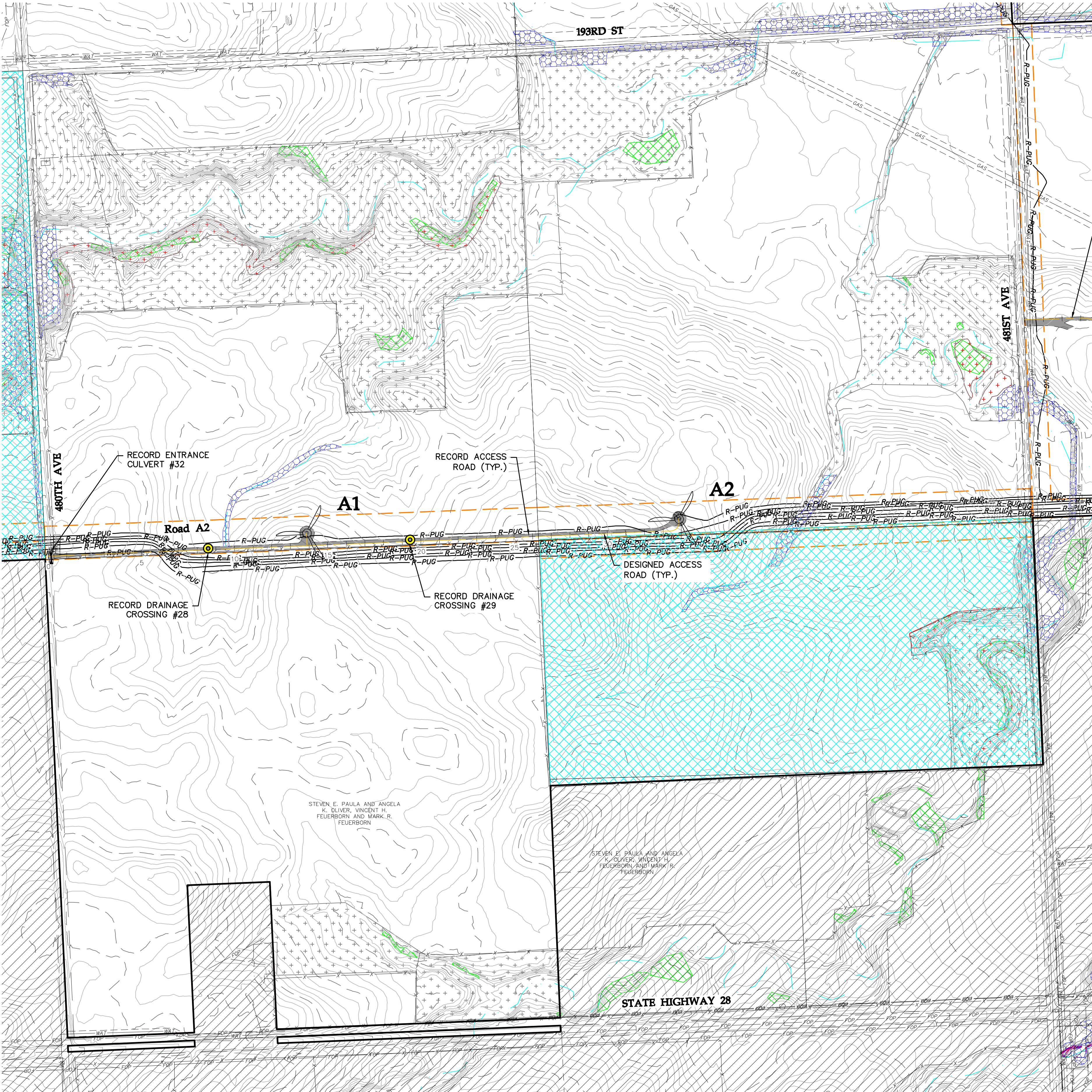
**Tatanka Ridge
Wind Farm**
Civil Site Plan
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No:TRW-C-511 Sht No: 025

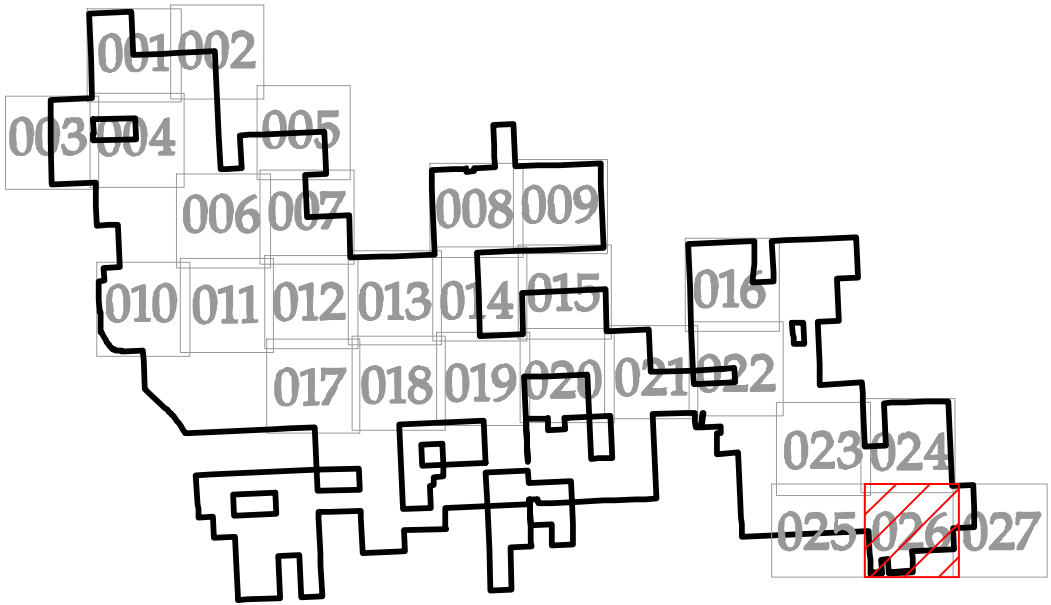
SEE SHEET 024



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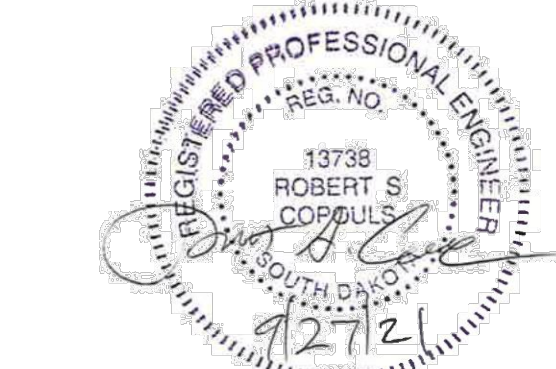
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- RECORD MET TOWER NUMBER
- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
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- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-026



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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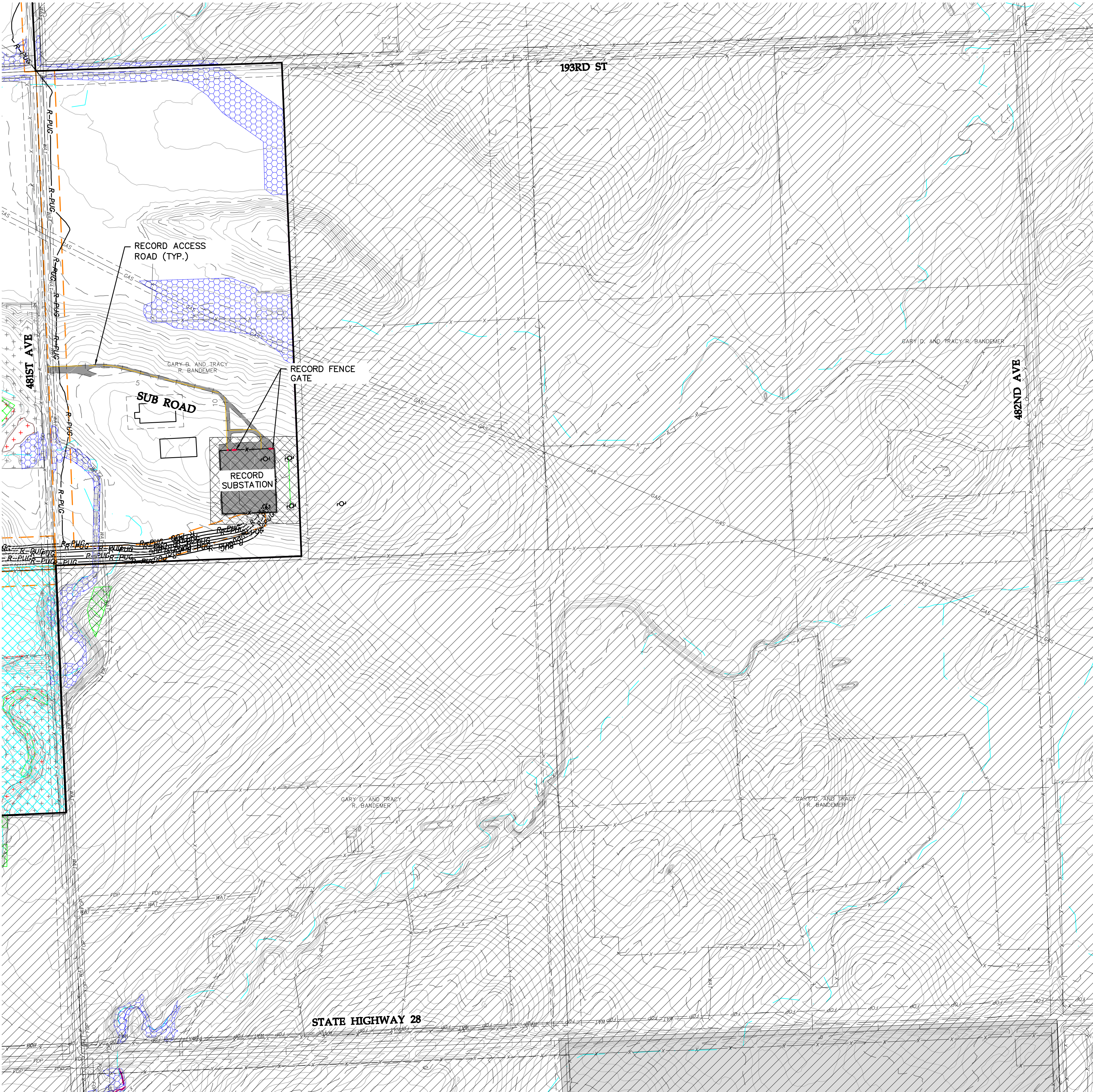
AVANGRID
RENEWABLES

Tatanka Ridge
Wind Farm
Civil Site Plan A1 A2
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

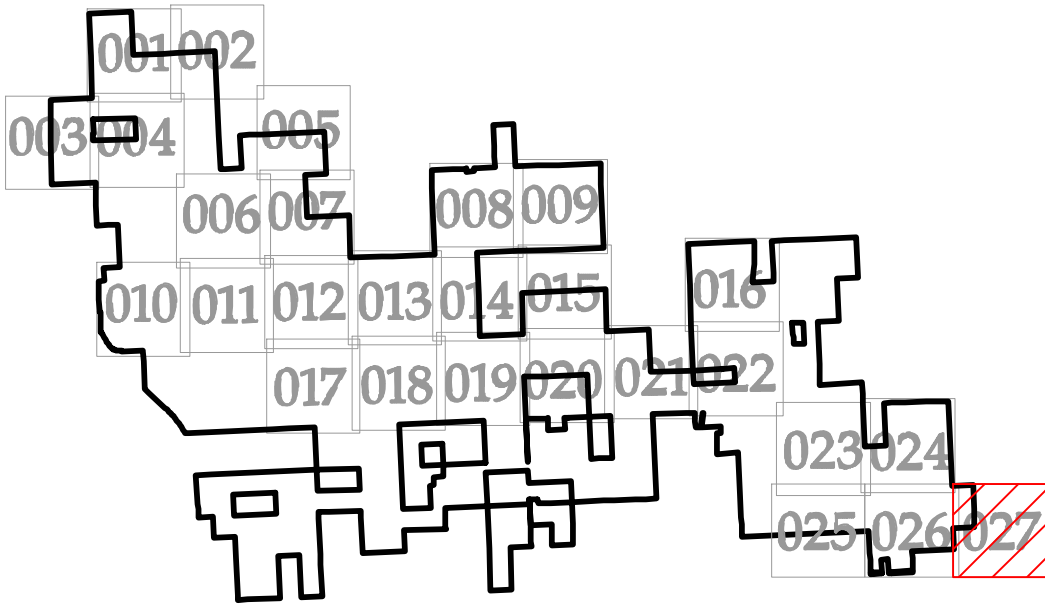
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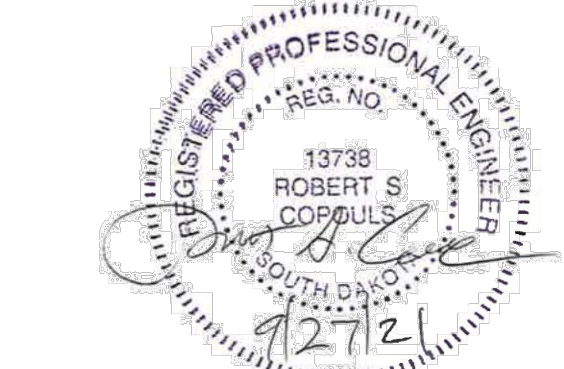
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- RECORD TURBINE NUMBER
- RECORD MET TOWER LOCATION
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- DESIGNED ACCESS ROAD
- RECORD ACCESS ROAD
- RECORD UNDERGROUND COLLECTION
- RECORD OVERHEAD TRANSMISSION
- RECORD ACCESS ROAD
- EXISTING 2' CONTOURS
- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- PROJECT BOUNDARY
- NON-PARTICIPATING
- PARTICIPATING-NEIGHBOR AGREEMENT
- PARTICIPATING-TRANSMISSION AGREEMENT
- EXISTING USFWS EASEMENT
- EXISTING STREAMS - NHD
- EXISTING STREAMS - TOPEKA SHINER
- EXISTING DELINEATED WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING LANDOWNER EASEMENT
- RECORD DRAINAGE CROSSING
- RECORD CULVERT
- RECORD FENCE GATE

KEY MAP: SHEET TKW-C-511-027



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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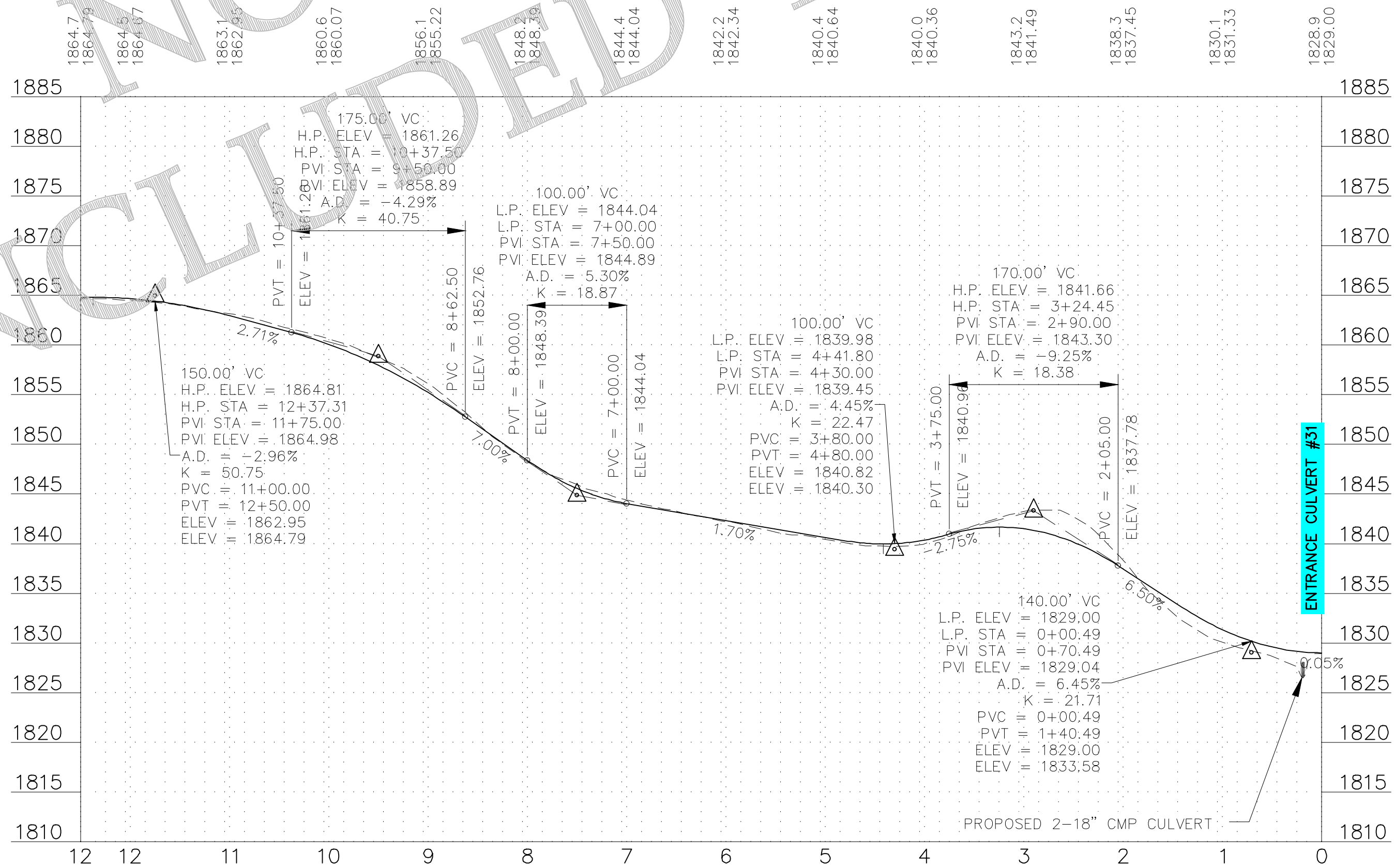
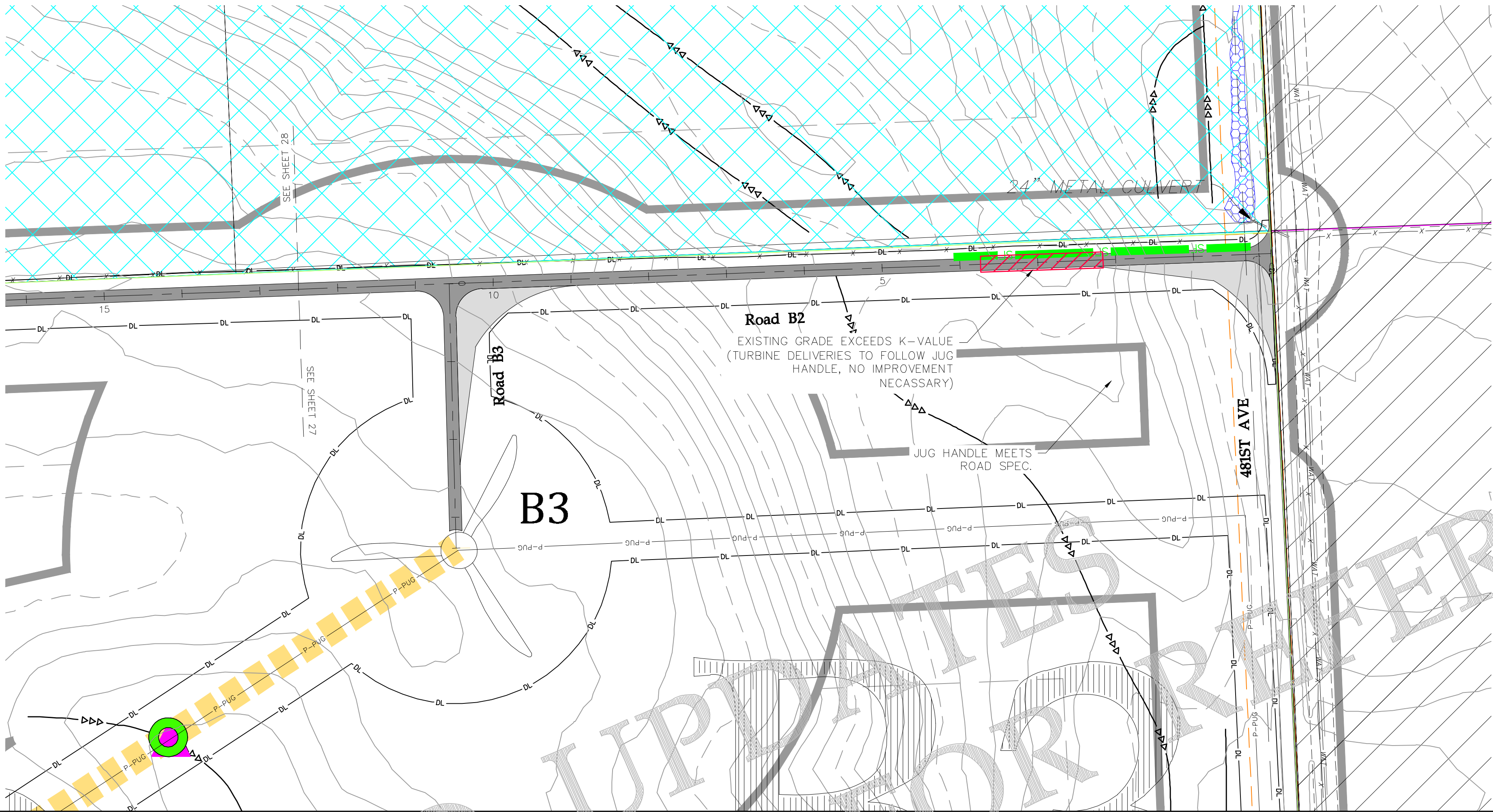
AVANGRID
RENEWABLES

Tatanka Ridge
Wind Farm
Civil Site Plan
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=300' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401SPP01.dwg

Dwg No: TRW-C-511 Sht No: 027



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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AVANGRID RENEWABLES

Tatanka Ridge Wind Farm

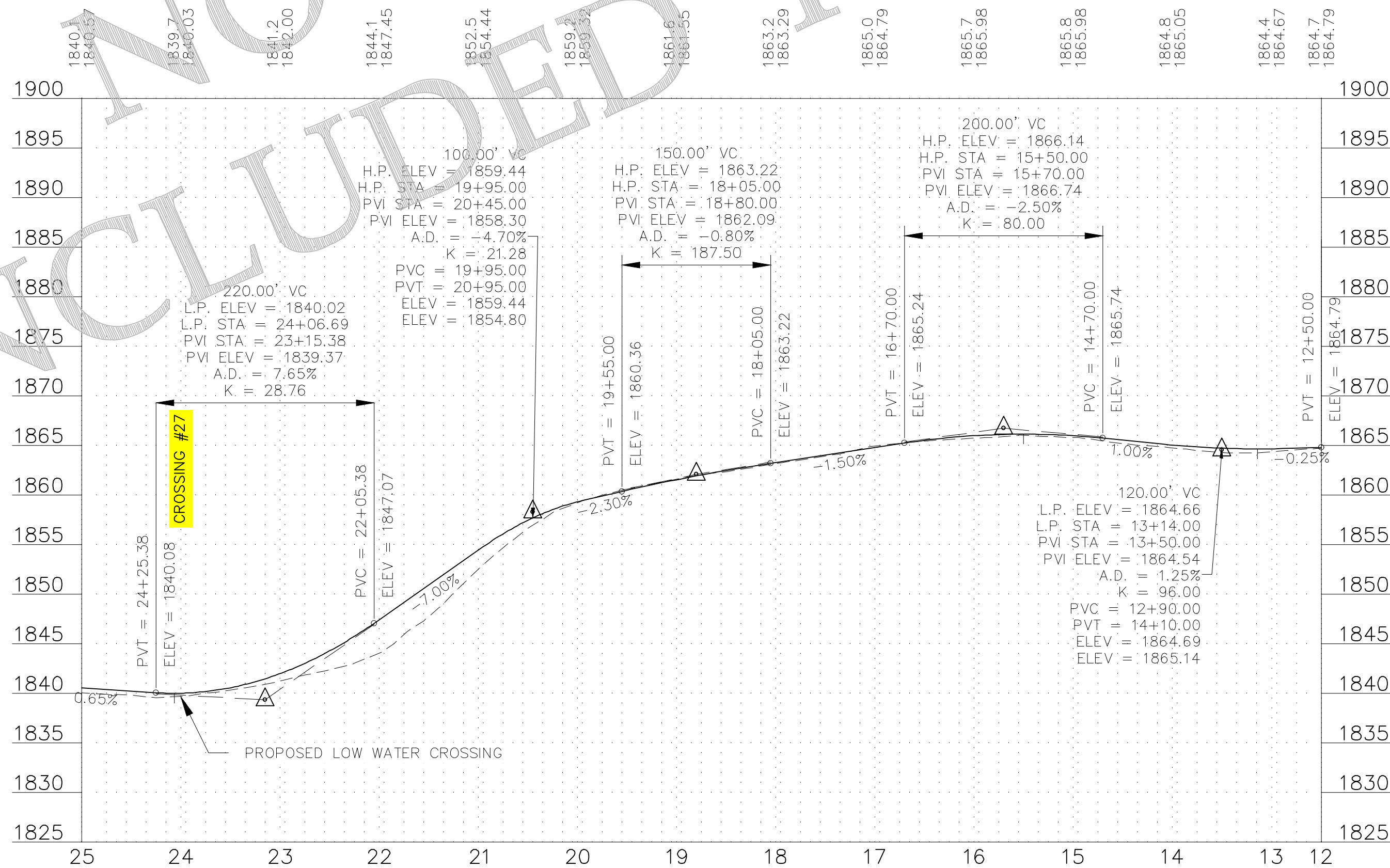
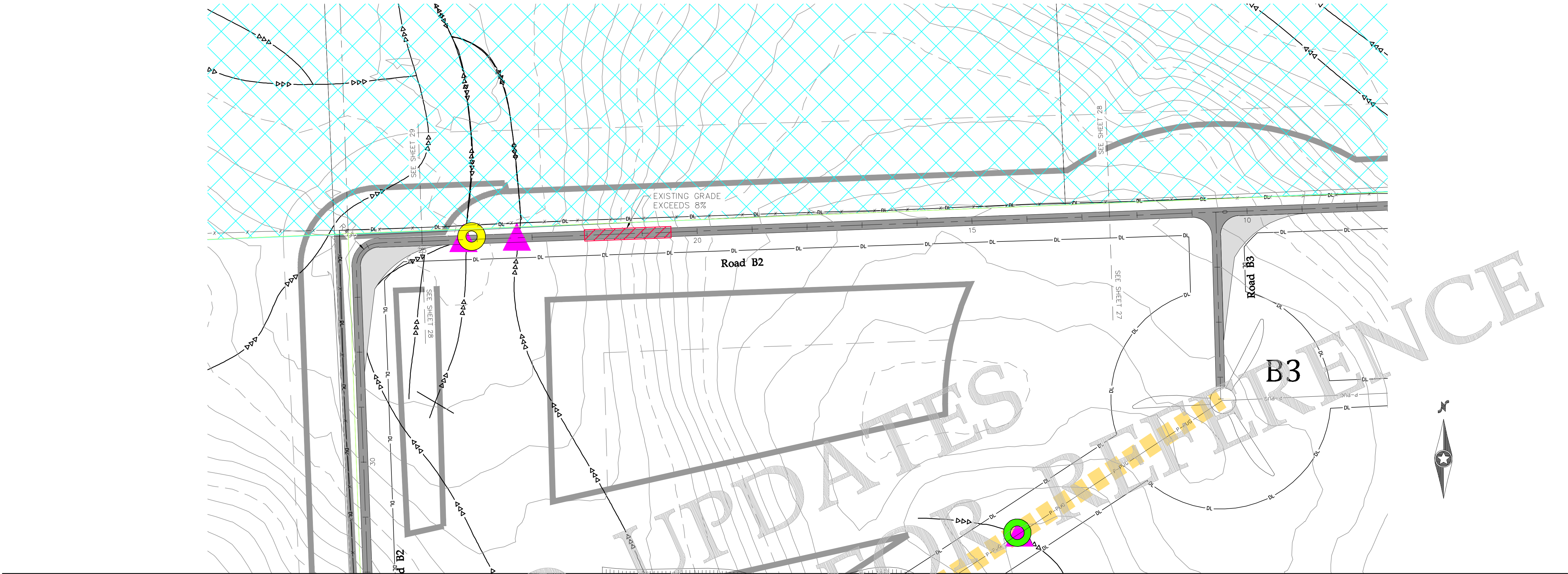
Road B2 Profile - Sta 0+00 to 12+50

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=100' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401PPF01.dwg

Dwg No: TRW-C-511 Sht No: 028



REVISIONS			
REV	DESCRIPTION	DATE	BY
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1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

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Toll Free (888) 937-5150 westwoodps.com

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Fargo, ND 58104

Tatanka Ridge
Wind Farm

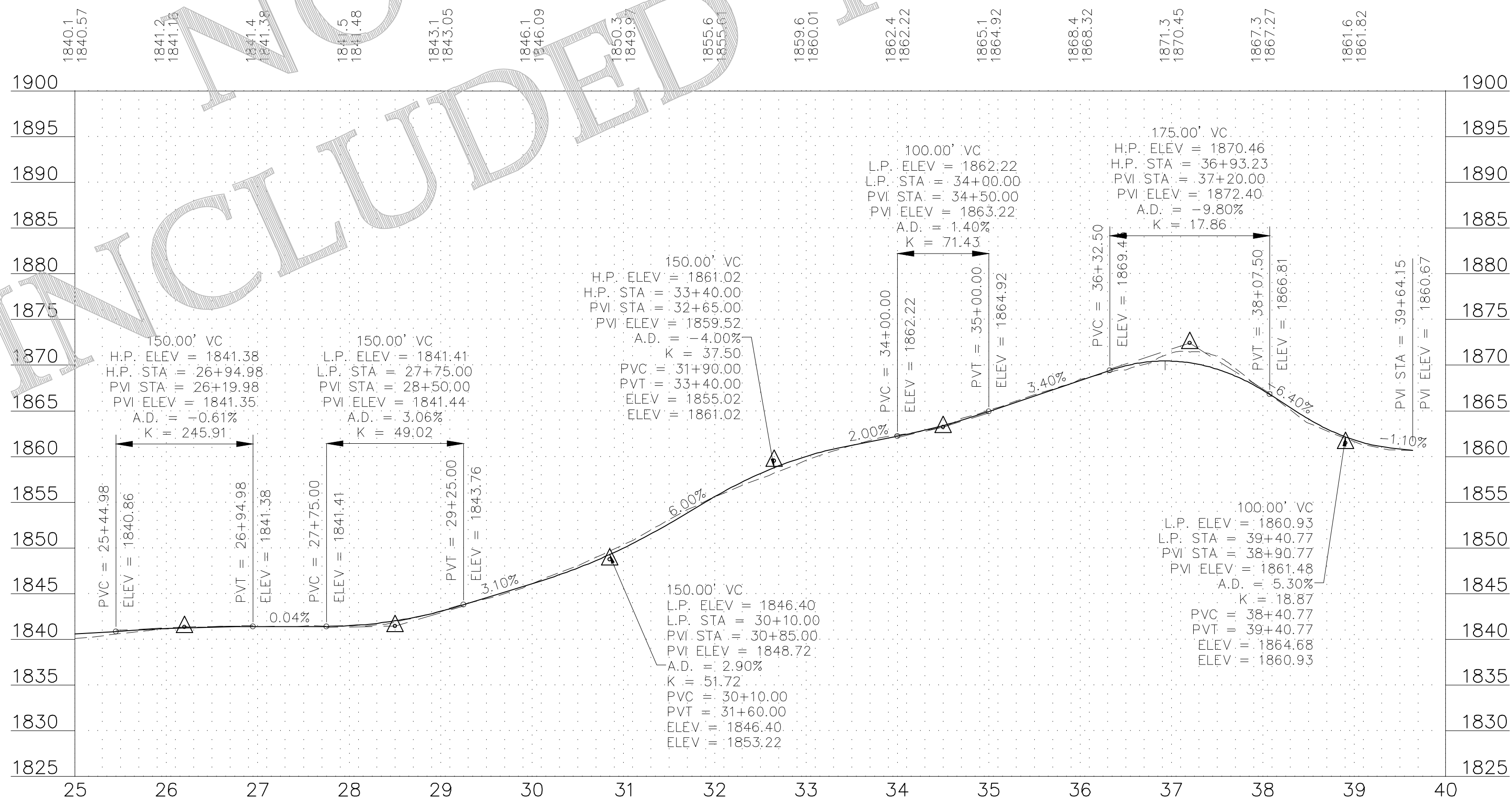
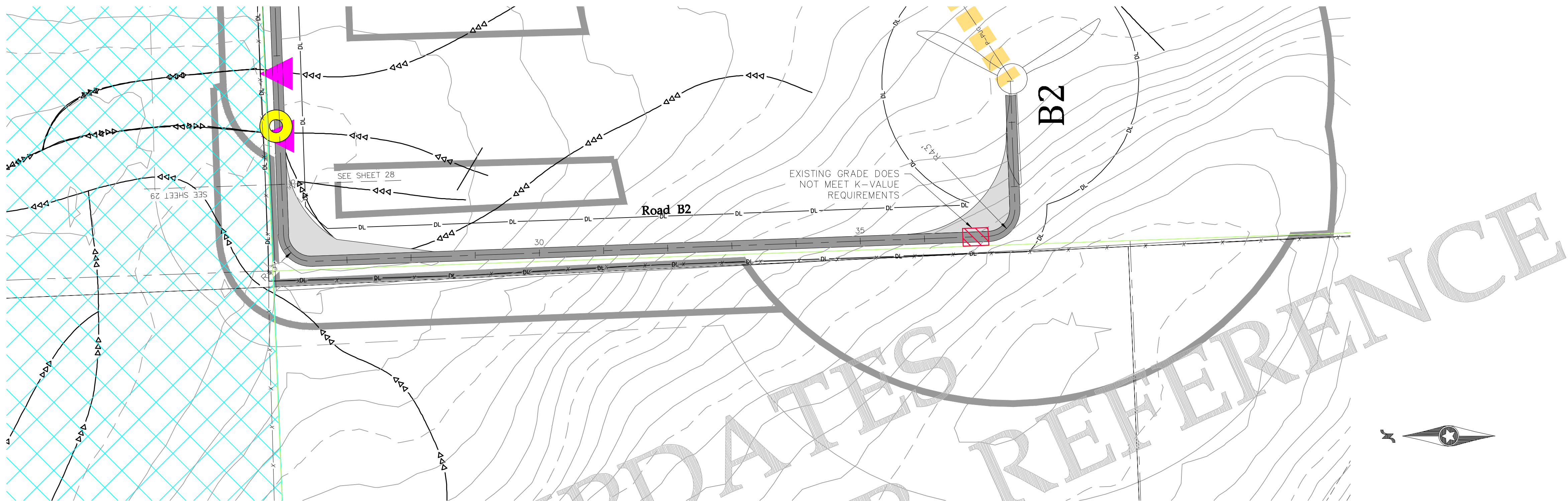
Road B2 Profile - Sta 12+50 to 25+00

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=100' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401PPF01.dwg

Dwg No: TRW-C-511 Sht No: 029



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

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Fargo, ND 58104

**Tatanka Ridge
Wind Farm**

Road B2 Profile - Sta 25+00 to End

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=100' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401PPF01.dwg

Dwg No: TRW-C-511 Sht No: 030

REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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**AVANGRID
RENEWABLES**

**Tatanka Ridge
Wind Farm**

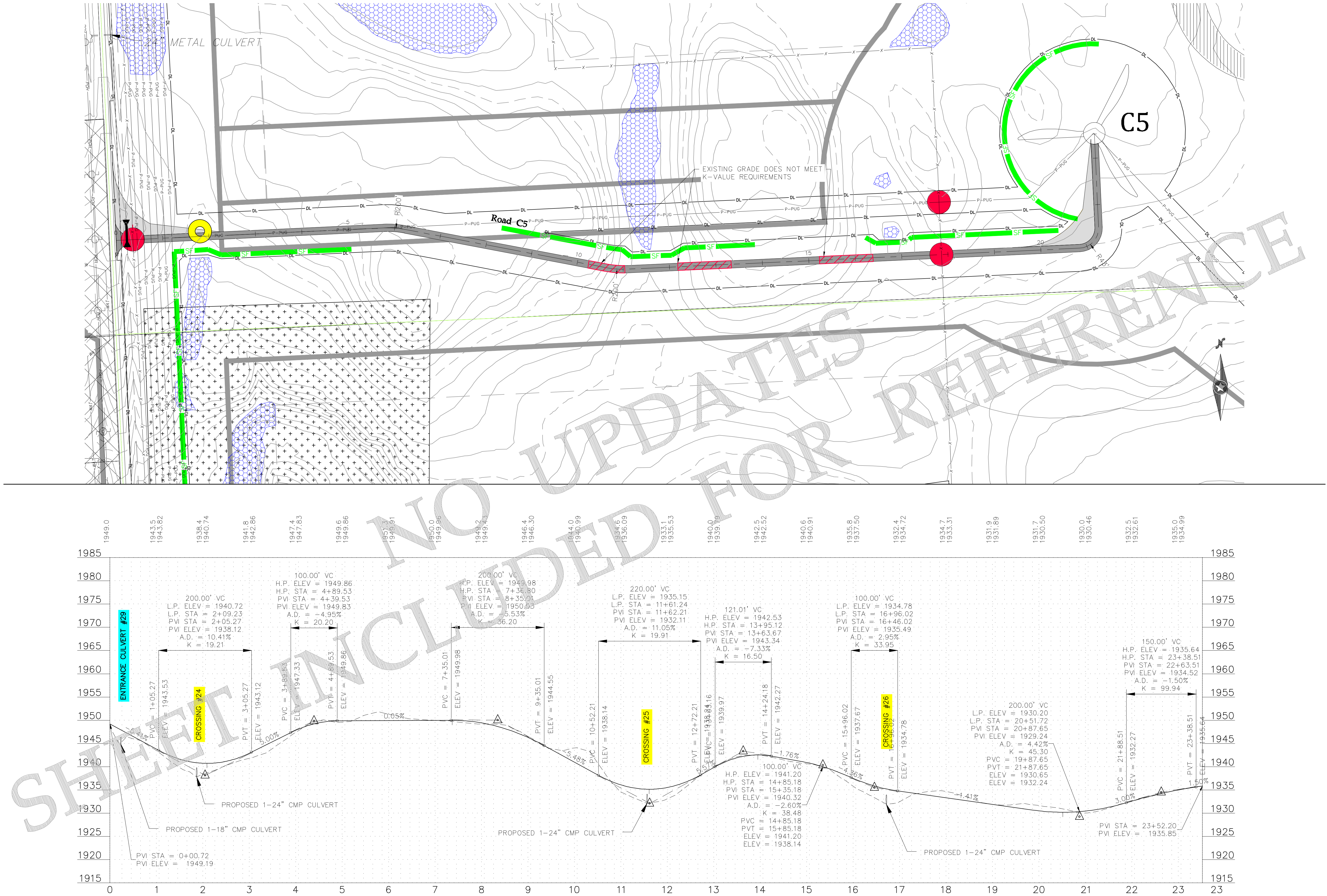
Road C5 Profile - Sta 0+00 to End

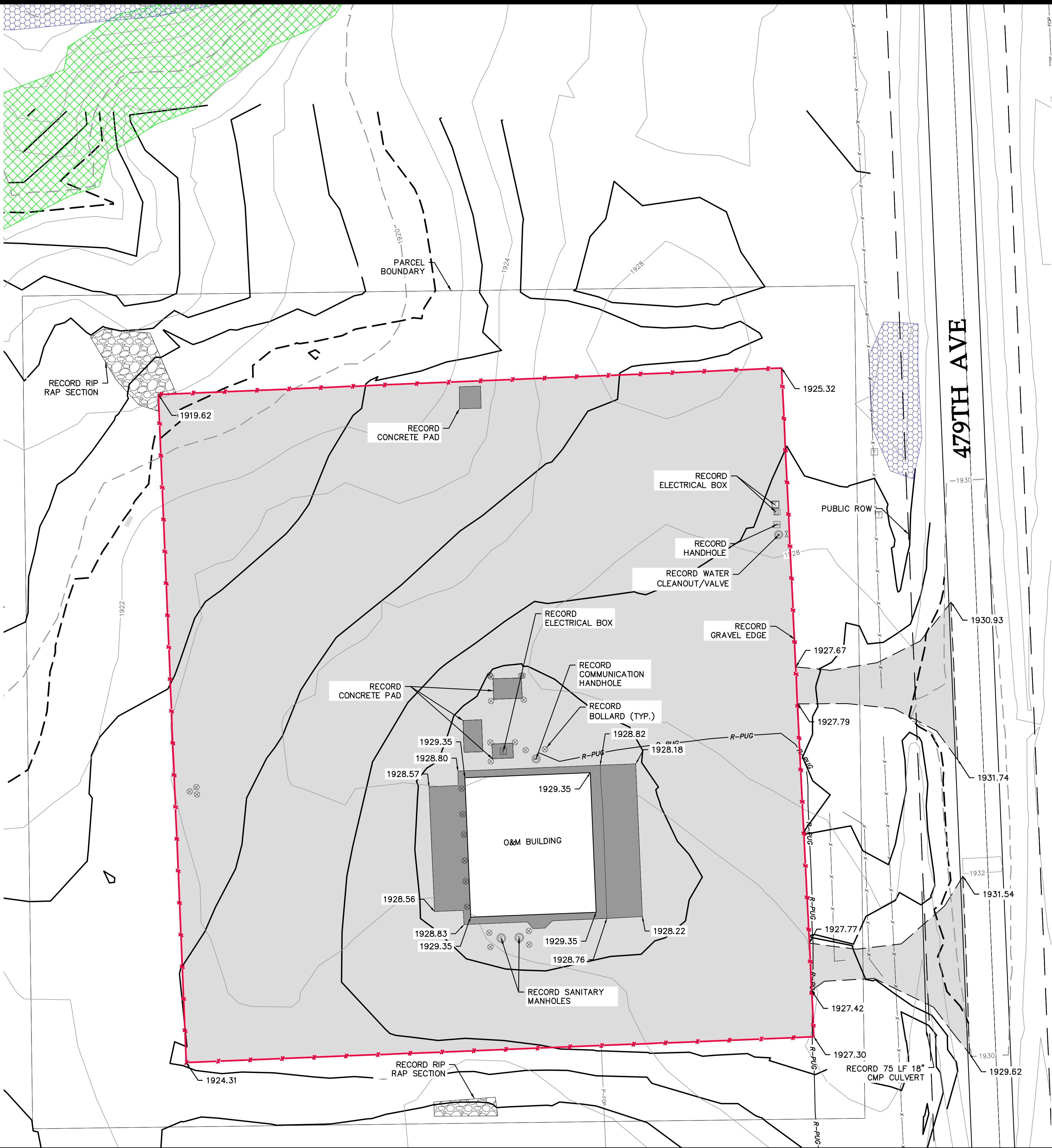
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=100' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401PPF01.dwg

Dwg No: TRW-C-511 Sht No: 031

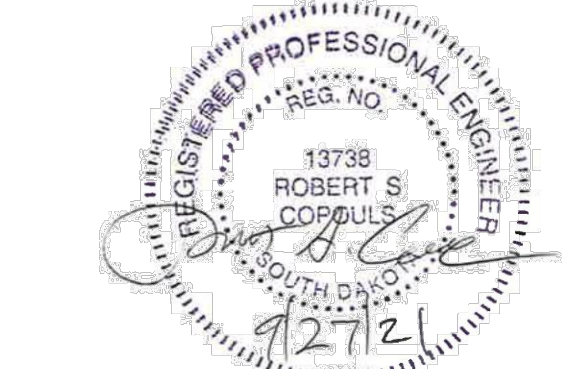




- LEGEND:**
- 1901 EXISTING 2' CONTOURS
 - 1900 EXISTING 10' CONTOURS
 - EXISTING BITUMINOUS EDGE
 - EXISTING RIGHT OF WAY
 - EXISTING PARCEL LINE
 - EXISTING FENCE
 - GRADED PAD AREA
 - RECORD CONCRETE PAD
 - RECORD RIP RAP
 - EXISTING DELINEATED WETLANDS
 - EXISTING DAKOTA SKIPPER HABITAT
 - R-PUG RECORD COLLECTION LINE
 - 1962 RECORD 2' CONTOURS
 - 1960 RECORD 10' CONTOURS
 - 1900 RECORD GROUND ELEVATION
 - RECORD FENCE

REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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Tatanka Ridge
Wind Farm

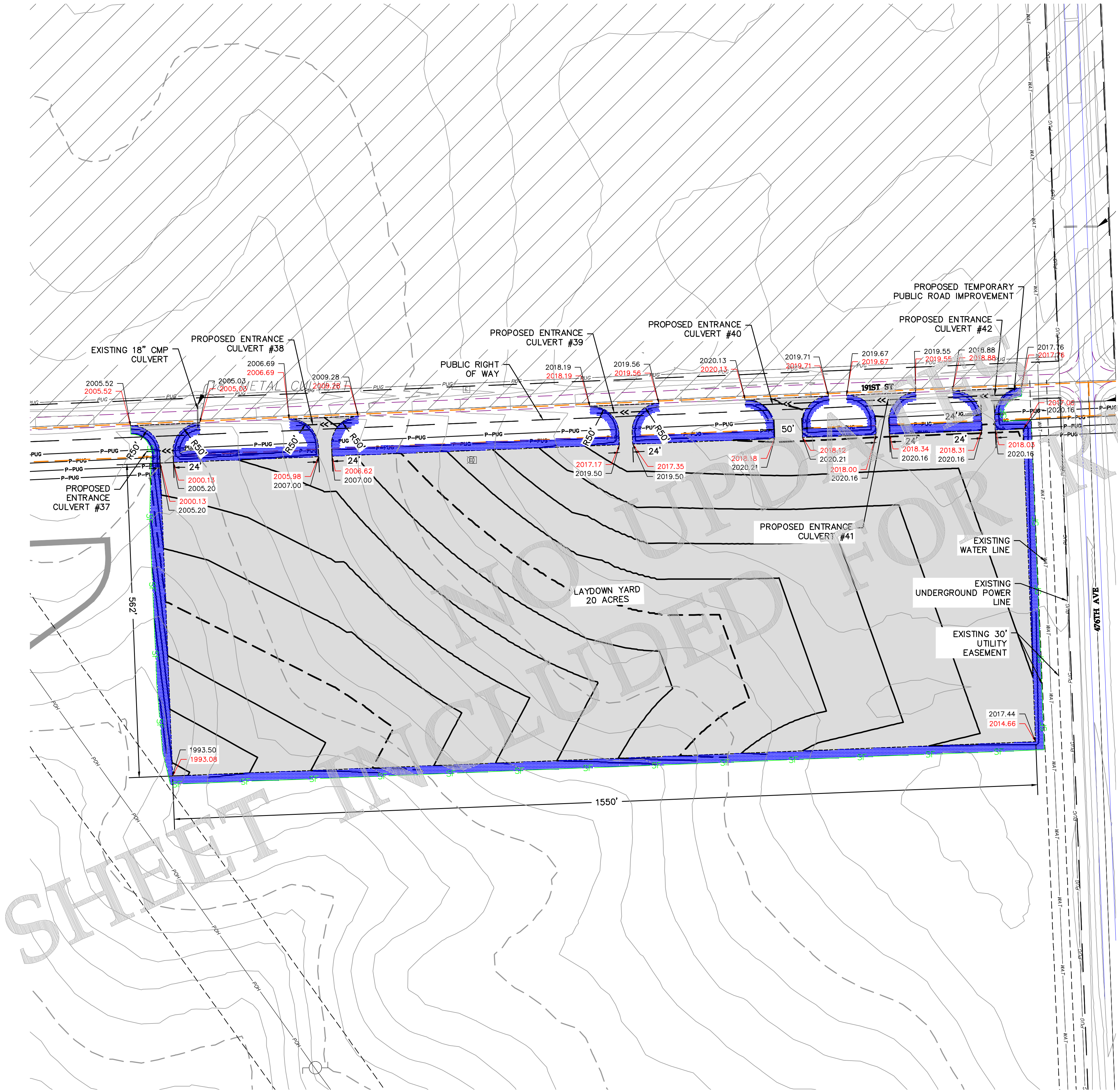
O&M Grading Plan

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401GDP01.dwg

Dwg No:TRW-C-511 Sht No: 032



LEGEND:

- 1901 EXISTING 1' CONTOURS
- 1900 EXISTING 5' CONTOURS
- EXISTING BITUMINOUS EDGE
- EXISTING GRAVEL EDGE
- EXISTING RIGHT OF WAY
- EXISTING PARCEL LINE
- EXISTING FENCE
- WAT EXISTING WATER LINE
- PUG EXISTING UNDERGROUND POWER LINE
- EXISTING UTILITY EASEMENT
- EXISTING LANDOWNER EASEMENT
- GRADED PAD AREA
- PROPOSED EROSION CONTROL BLANKET
- 1961 PROPOSED 1' CONTOURS
- 1960 PROPOSED 5' CONTOURS
- 1900 PROPOSED FINISH GRADE ELEVATION
- 1900 EXISTING GROUND ELEVATION
- PROPOSED DRAINAGE SWALE
- P-PH PROPOSED OVERHEAD COLLECTION
- P-PUG PROPOSED UNDERGROUND COLLECTION
- PROPOSED FENCE
- SF PROPOSED SILT FENCE

LAYDOWN SITE

AGGREGATE AREA FOOTPRINT = 937,525 SF

EARTHWORK

TOPSOIL STRIP (12")

PAD & DRIVEWAY AREA = 33,055 CY
REMAINING GRADED AREA = 1,670 CY

COMPACTED SUBGRADE

RAW CUT - 30,740 CY
RAW FILL - 30,740 CY
RAW NET - 0 CY

FINISHED GRADE

6" AGGREGATE BASE = 17,360 CY

NOTES:

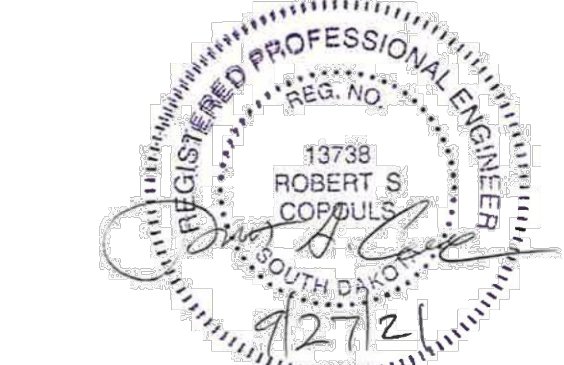
- APPROXIMATE EARTHWORK BALANCE IS AFTER THE TOPSOIL HAS BEEN STRIPPED.
- GRADING ELEVATIONS ARE MEASURED TO FINISH GRADE LEVEL. SUBGRADE ELEVATIONS ARE 6" LOWER THAN FINISHED GRADE.
- QUANTITIES ARE IN-PLACE ESTIMATES NO SHRINK OR SWELL IS ASSUMED.
- REFER TO PROJECT SWPPP NARRATIVE BY WESTWOOD FOR ADDITIONAL BMP'S.



REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
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NOTES



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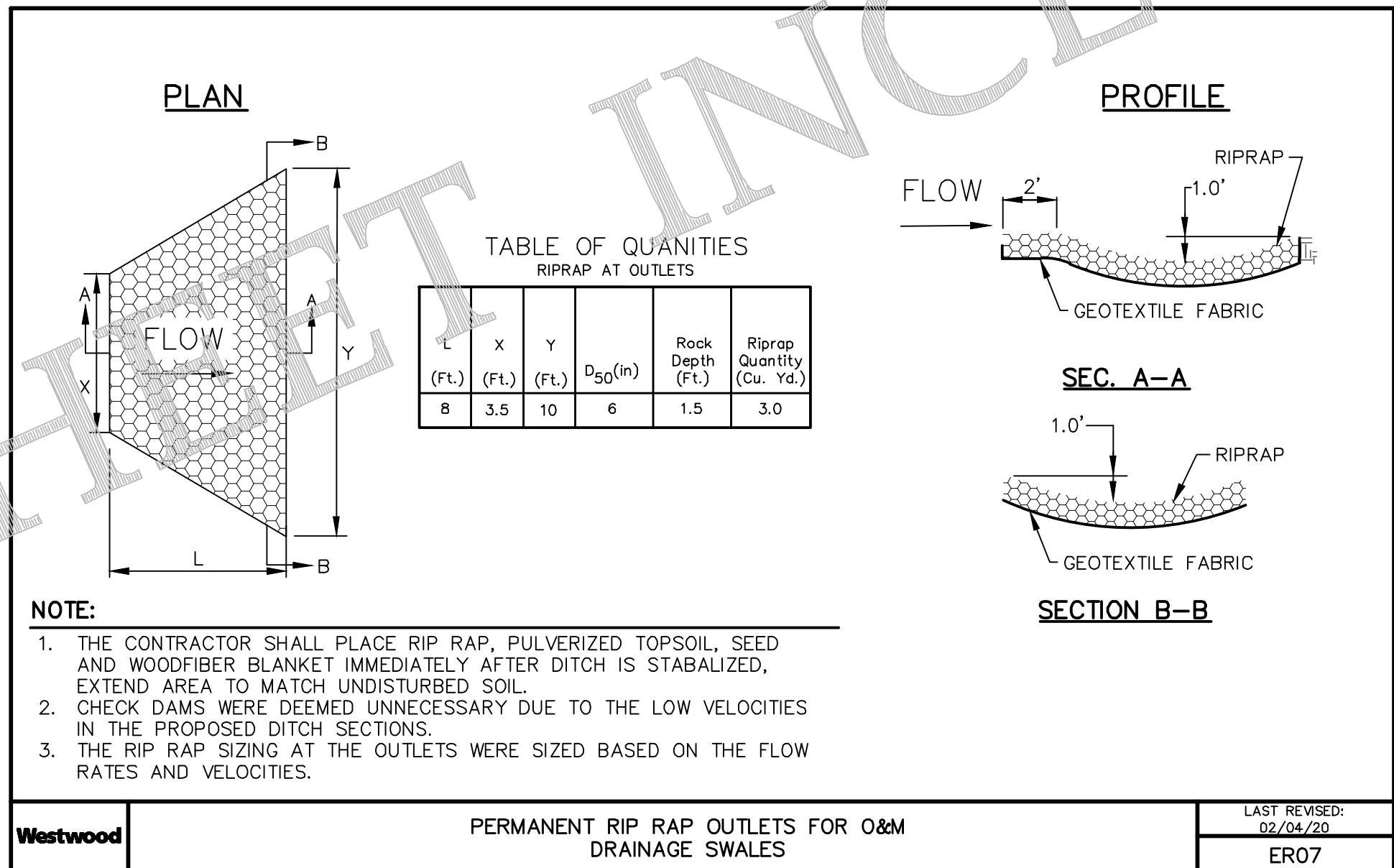
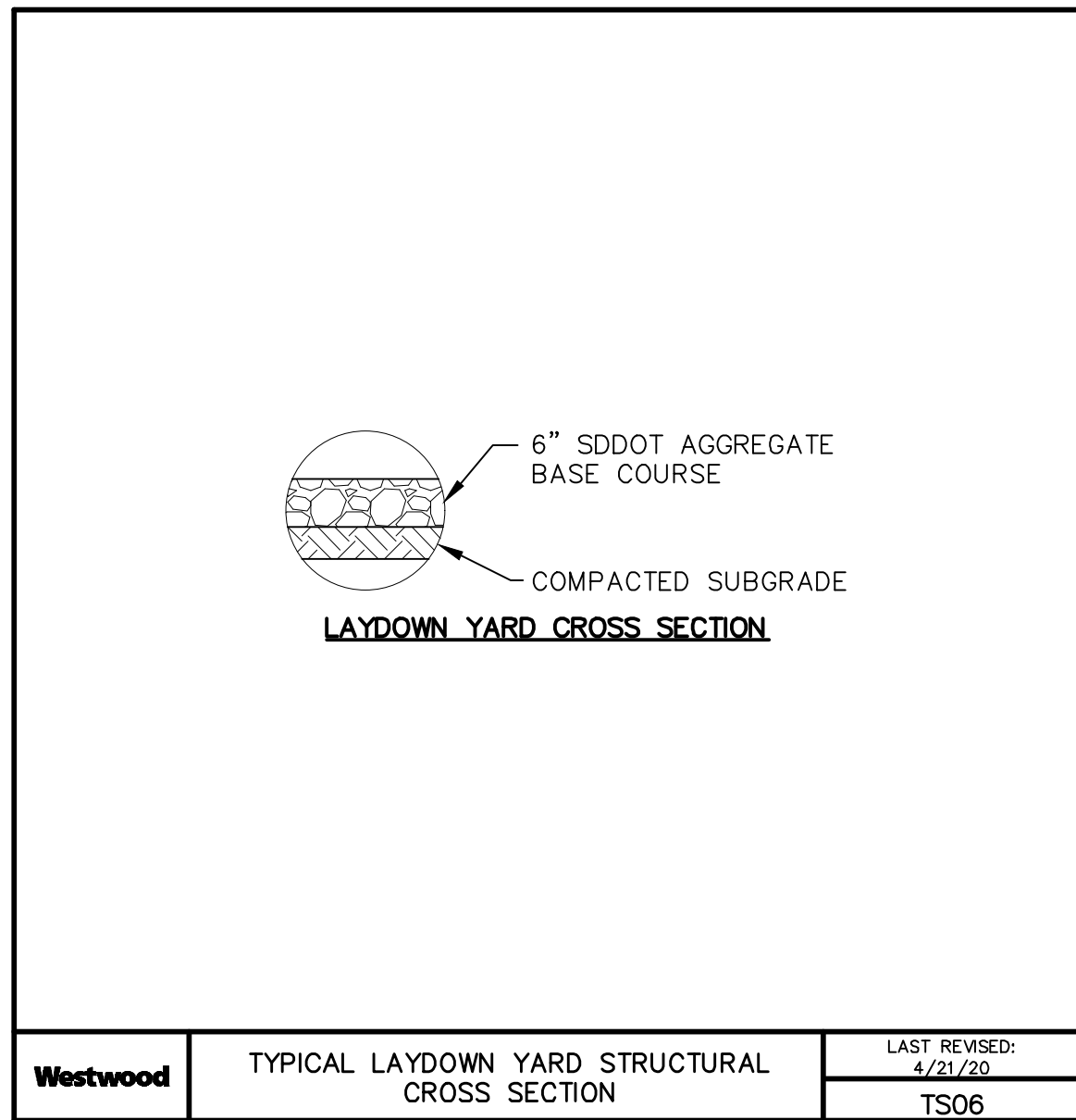
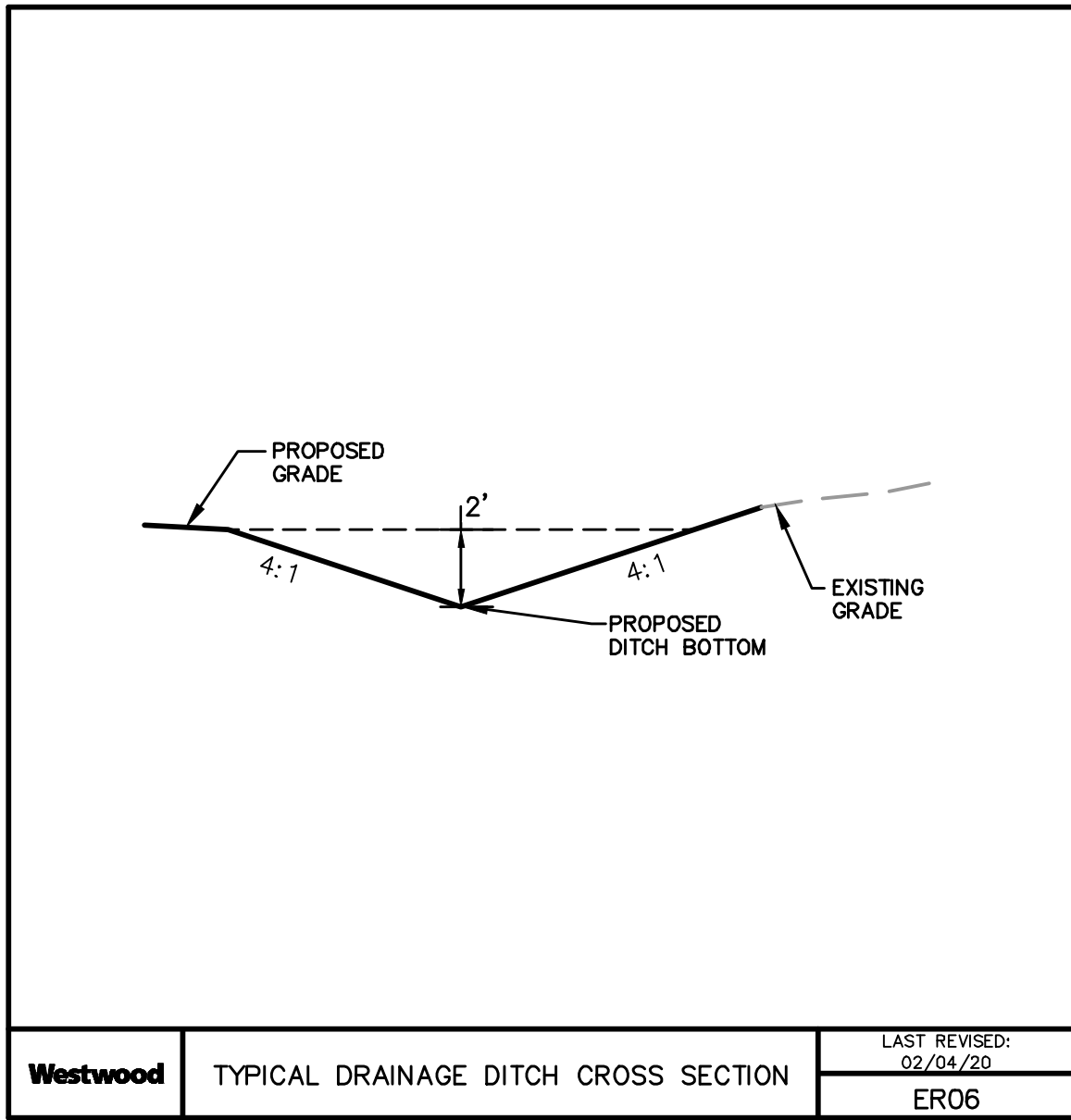
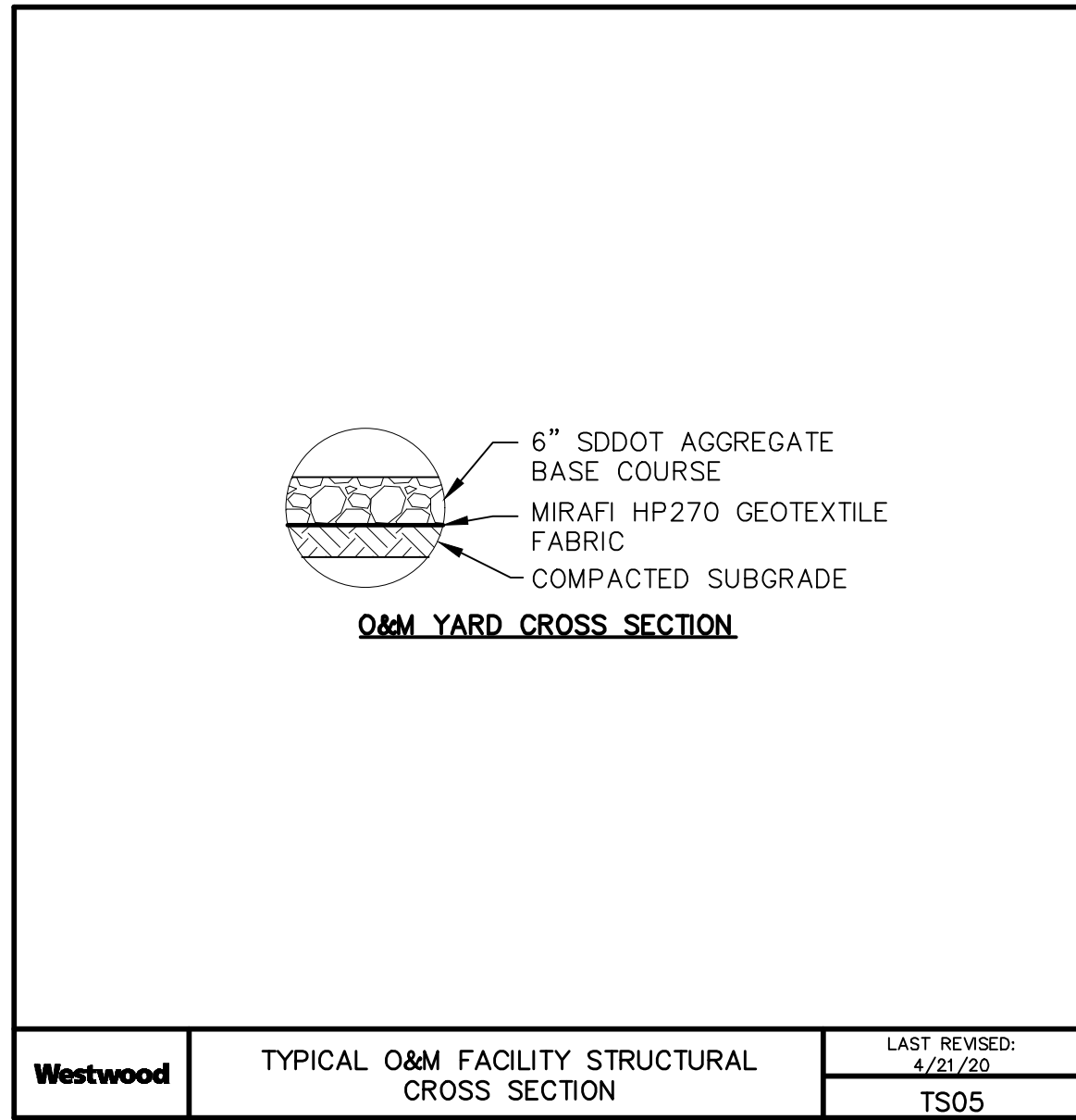
**AVANGRID
RENEWABLES**

Tatanka Ridge
Wind Farm
Laydown Grading Plan
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=100' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401GDP01.dwg

Dwg No: TRW-C-511 Sht No: 033



GENERAL NOTES

- ALL CONSTRUCTION SHALL CONFORM TO LOCAL, STATE AND FEDERAL RULES INCLUDING THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT REQUIREMENTS. REFER TO THE STORM WATER POLLUTION PREVENTION PLAN PREPARED FOR THE TATANKA RIDGE WIND PROJECT FOR DETAILS.
- REFER TO ARCHITECTURAL PLANS AND SITE PLAN BY OTHERS FOR DETAILED DIMENSIONS FOR BUILDING FOOTPRINT AND EXACT LOCATIONS/DIMENSIONS OF FEATURES (I.E. FENCE, GATES, UTILITIES, SEPTIC, VESTIBLE, SLOPED PAVING, RAMPS, TRUCK DOCKS, UTILITY ENTRANCES AND DOWNSPOUT LOCATIONS).
- THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING TRAFFIC CONTROL DEVICES SUCH AS BARRICADES, WARNING SIGNS, DIRECTIONAL SIGNS, FLAGGERS AND LIGHTS TO CONTROL THE MOVEMENT OF TRAFFIC WHERE NECESSARY. PLACEMENT OF THESE DEVICES SHALL BE APPROVED BY THE COUNTY AND ENGINEER PRIOR TO PLACEMENT. TRAFFIC CONTROL DEVICES SHALL CONFORM TO APPROPRIATE SOUTH DAKOTA HIGHWAY DEPARTMENT STANDARDS.
- ALL SLOPES SHALL BE GRADED TO 3:1 OR FLATTER, UNLESS OTHERWISE INDICATED ON THE PLAN. ALL SLOPES 4:1 OR GREATER SHALL BE SEEDED AND STABILIZED WITH FIBER BLANKET.
- SPOT ELEVATIONS AND PROPOSED CONTOURS INDICATE FINISH GRADE SURFACE. SUB-GRADE ELEVATIONS ARE 6" LOWER THAN THE SPOT ELEVATIONS SHOWN.
- AFTER THE SITE GRADING IS COMPLETED, IF EXCESS SOIL MATERIAL EXISTS, THE CONTRACTOR SHALL DISPOSE OF ALL EXCESS SOIL MATERIAL IN A MANNER ACCEPTABLE TO THE OWNER AND THE REGULATING AGENCIES INVOLVED.
- PROVIDE EROSION CONTROL SILT FENCE AT THE PERIMETER OF ALL TEMPORARY STOCKPILES. LOCATIONS TO BE DETERMINED BY SEQUENCE OF GRADING OPERATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING DRAINAGE PATTERNS.
- THE CONTRACTOR SHALL NOTIFY SOUTH DAKOTA 811 AT LEAST 48 HOURS BEFORE EXCAVATION ACTIVITIES COMMENCE.

O&M AND LAYDOWN YARD EXECUTION

- TOPSOIL:
 - TOPSOIL, INCLUDING ROOTS LARGER THAN 2" AND ROOT MASSES SHALL BE STRIPPED FROM THE ENTIRE O&M PAD. A TOPSOIL STRIP OF 13" WAS ASSUMED, FOR THE O&M AND 12" FOR THE LAYDOWN.
 - TOPSOIL TO BE STOCKPILED IN A DESIGNATED AREA AND SPREAD WITHIN PARCEL AFTER GRADING AND COMPACTED WITHOUT ADVERSELY AFFECTING THE DRAINAGE PATTERN.
- FILL MATERIAL:
 - SOILS USED AS FILL MATERIAL SHALL BE TESTED FOR GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR TESTS.
 - FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12" AND BE MOISTURE CONDITIONED WITHIN 2% OPTIMUM MOISTURE CONTENT. SHALLOW FILLS (LESS THAN 5 FEET) SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY, DEEP FILLS (GREATER THAN 5 FEET) SHOULD BE COMPACTED TO A MINIMUM 98 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY PER THE GEOTECHNICAL REPORT.
- SUBGRADE TESTING:
 - COMPACTED SUBGRADE MUST BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.
 - THE FINAL SUBGRADE SHALL BE PROOF-ROLLED PRIOR TO THE PLACEMENT OF THE AGGREGATE BASE TO IDENTIFY AREAS OF UNSTABLE SUBGRADE.
- GEOTEXTILE FABRIC (O&M):
 - INSTALL PER MANUFACTURER RECOMMENDATIONS.
- AGGREGATE BASE TESTING:
 - AGGREGATE BASE SHALL BE PROOF-ROLLED OVER THE ENTIRE O&M PAD AND LAYDOWN YARD.
 - PROVIDE 1 SIEVE ANALYSIS.

REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

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AVANGRID RENEWABLES

Tatanka Ridge Wind Farm

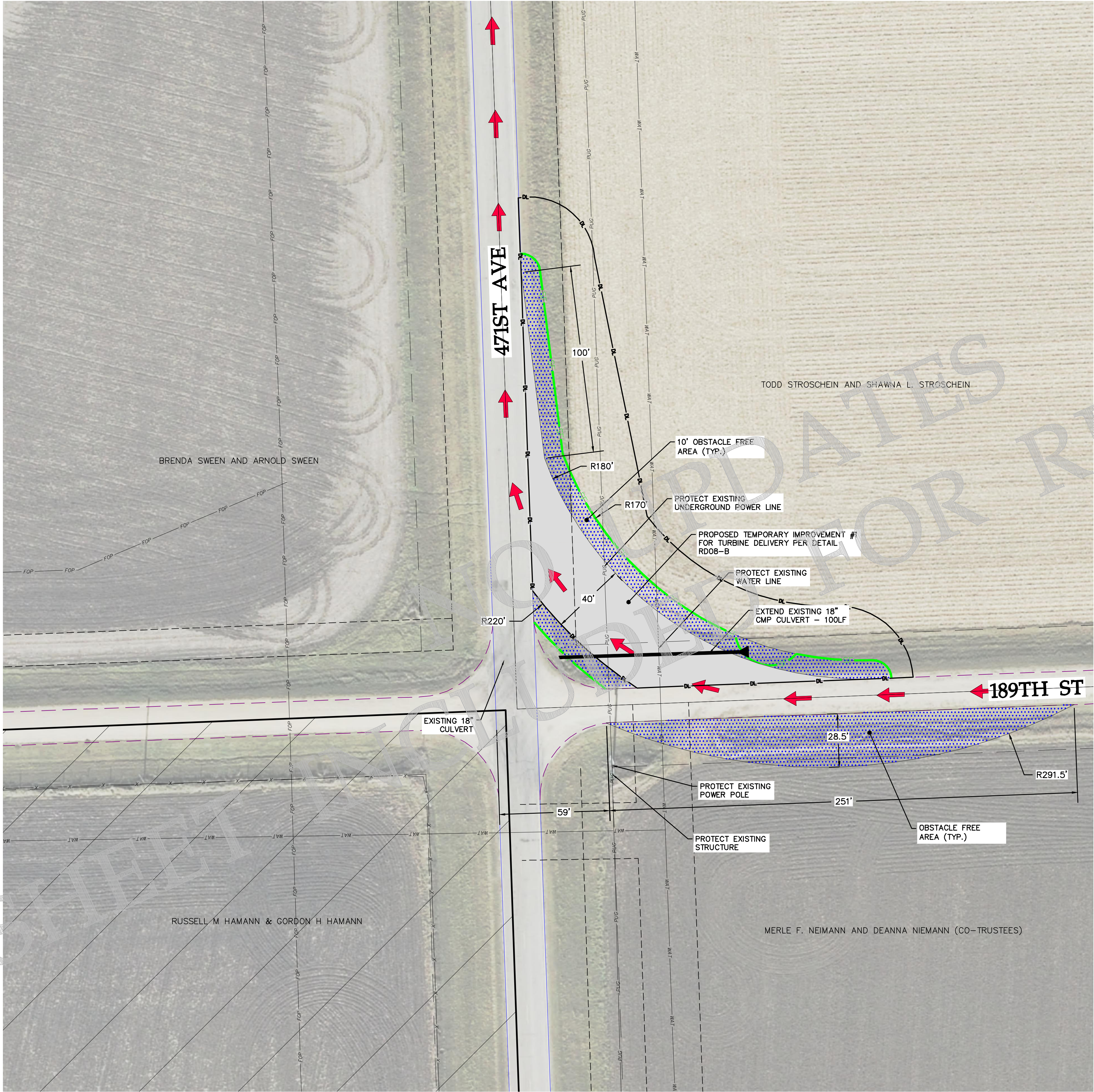
O&M and Laydown Grading Details

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401GDP01.dwg

Dwg No:TRW-C-511 Sht No: 034



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- EXISTING DRAIN TILE
- EXISTING CULVERT
- NON-PARTICIPATING BOUNDARY
- EXISTING USFWS EASEMENT
- EXISTING WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING CULTURAL AVOIDANCE AREA
- EXISTING LANDOWNER EASEMENT
- PROPOSED UNDERGROUND POWER
- PROPOSED OVERHEAD POWER
- PROPOSED PERIMETER SEDIMENT CONTROL
- PROPOSED TEMPORARY CULVERT
- TEMPORARY INTERSECTION IMPROVEMENT
- TEMPORARY OBSTACLE FREE AREA FOR TRAILER OVERHANG
- PROPOSED TURBINE DELIVERY DIRECTION

REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

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AVANGRID
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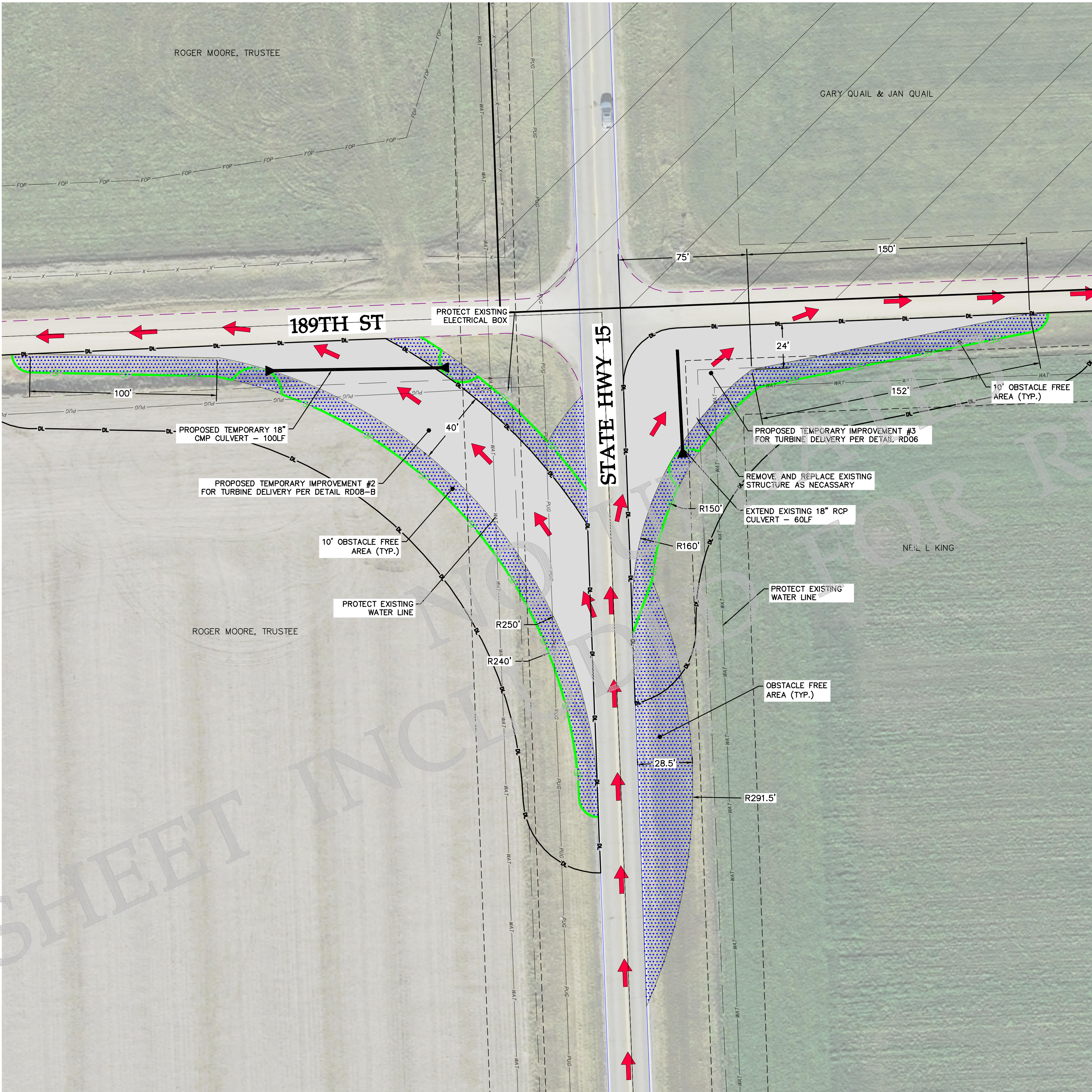
Tatanka Ridge
Wind Farm
Temporary Improvement 1
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401

File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 035



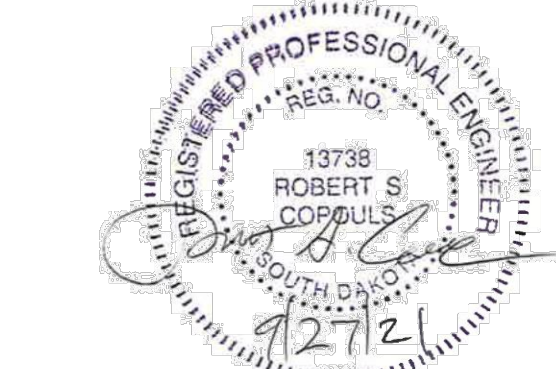
LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
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- TEMPORARY OBSTACLE FREE AREA FOR TRAILER OVERHANG
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REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



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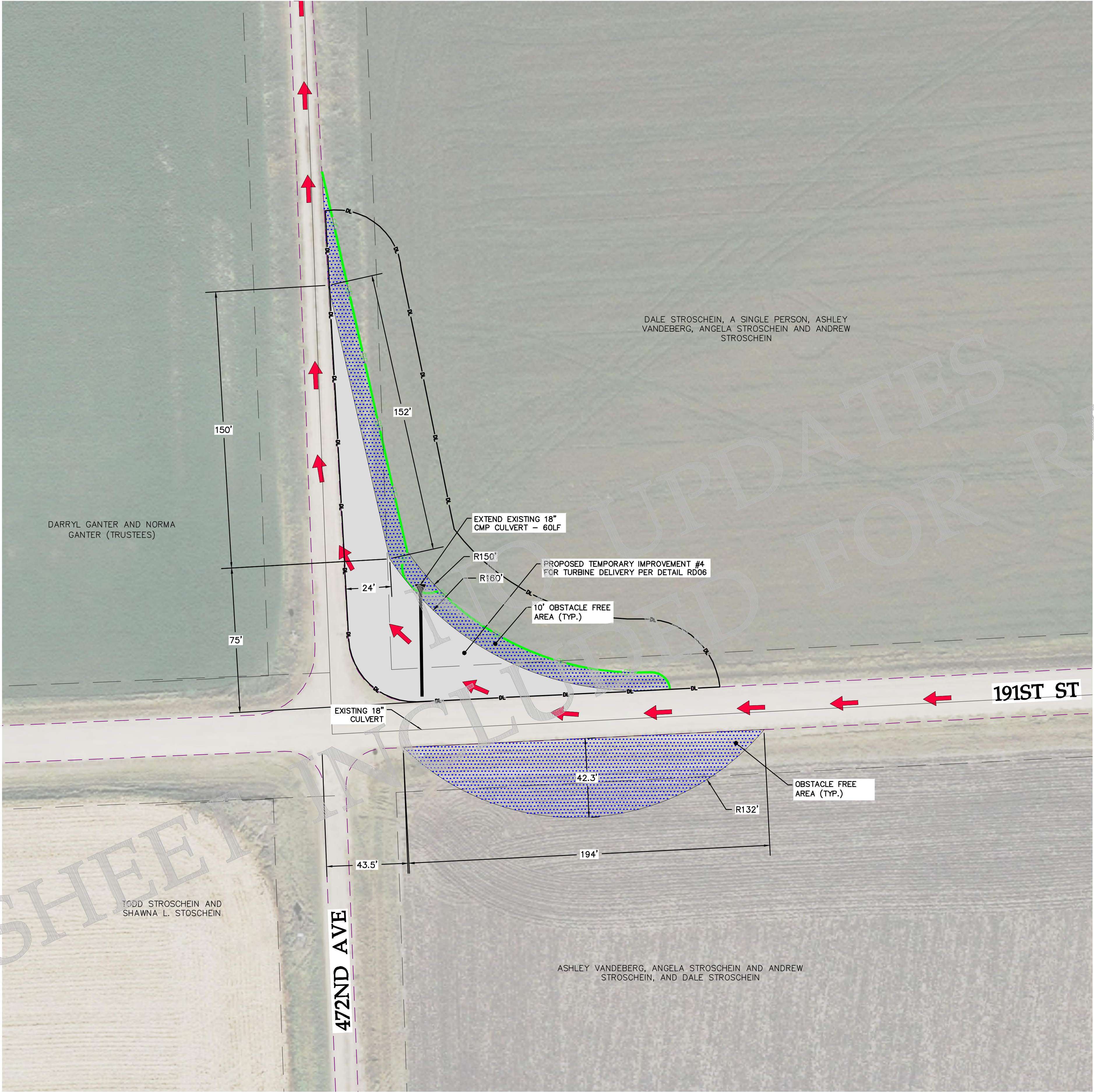
**AVANGRID
RENEWABLES**

**Tatanka Ridge
Wind Farm
Temporary Improvement 2 & 3
Record Plans**

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 036



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
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- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
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- EXISTING USFWS EASEMENT
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- TEMPORARY INTERSECTION IMPROVEMENT
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- PROPOSED TURBINE DELIVERY DIRECTION

REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13738
ROBERT S. COPPOLA
SOUTH DAKOTA
9/27/21

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Tatanka Ridge
Wind Farm

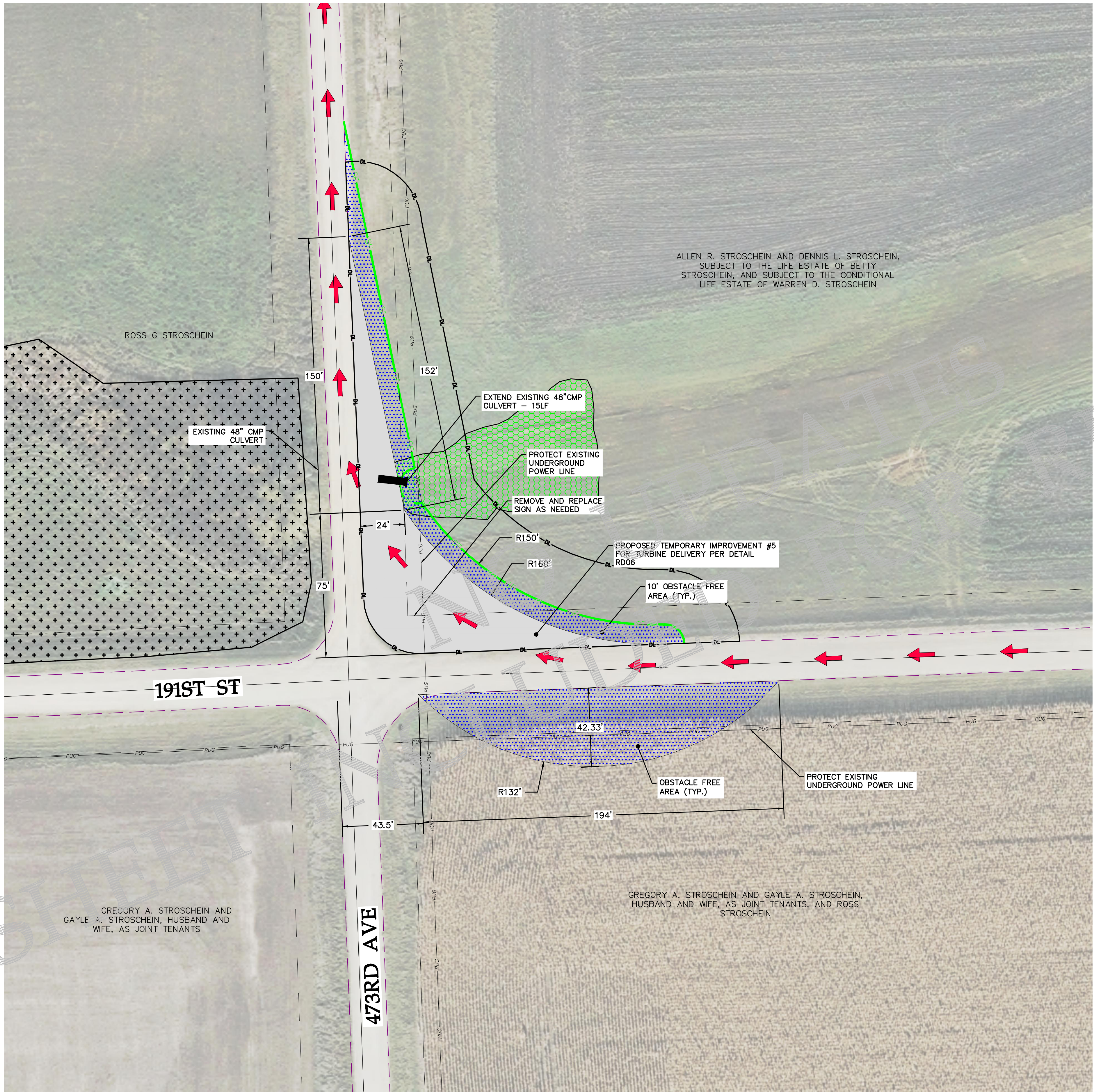
Temporary Improvement 4

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 037



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
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AVANGRID RENEWABLES

Tatanka Ridge
Wind Farm

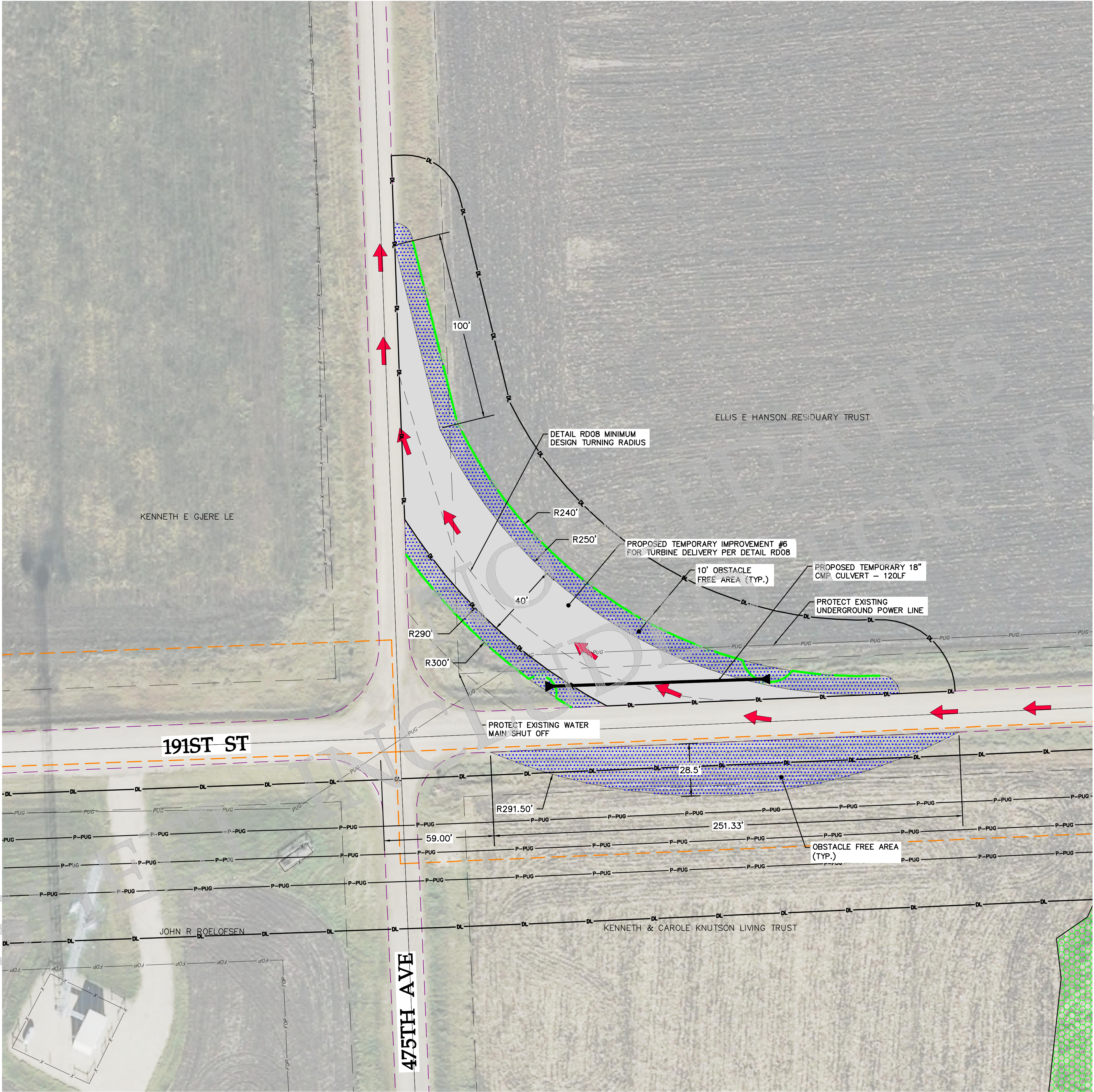
Temporary Improvement 5
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 038





LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
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- PROPOSED TURBINE DELIVERY DIRECTION



REVISIONS			
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AVANGRID RENEWABLES

Tatanka Ridge Wind Farm

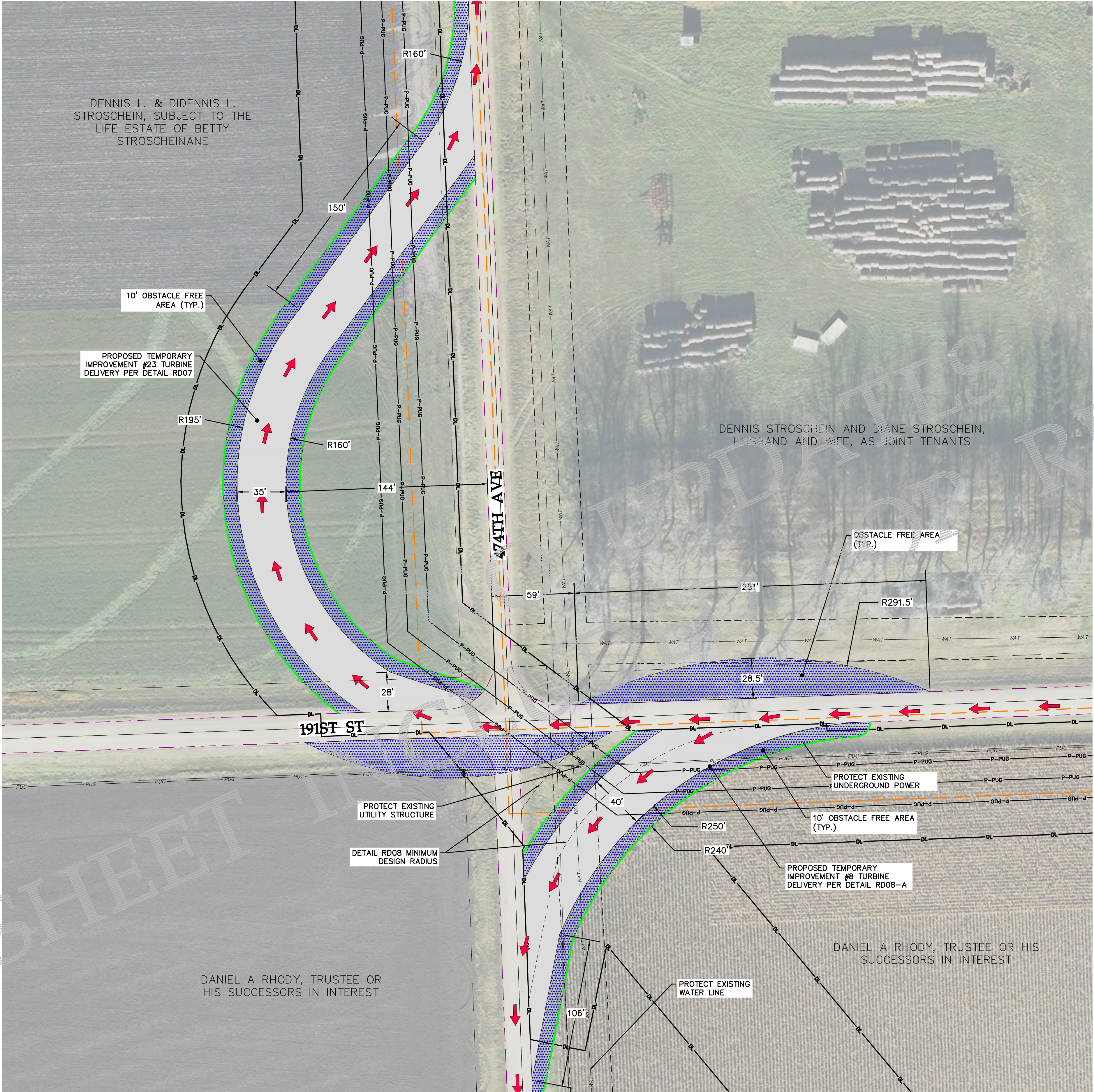
Temporary Improvement 6

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 039



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- EXISTING DRAIN TILE
- EXISTING CULVERT
- NON-PARTICIPATING BOUNDARY
- EXISTING USFWS EASEMENT
- EXISTING WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING CULTURAL AVOIDANCE AREA
- EXISTING LANDOWNER EASEMENT
- PROPOSED UNDERGROUND POWER
- PROPOSED OVERHEAD POWER
- PROPOSED PERIMETER SEDIMENT CONTROL
- PROPOSED TEMPORARY CULVERT
- TEMPORARY INTERSECTION IMPROVEMENT
- TEMPORARY OBSTACLE FREE AREA FOR TRAILER OVERHANG
- PROPOSED TURBINE DELIVERY DIRECTION

REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

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AVANGRID RENEWABLES

Tatanka Ridge
Wind Farm

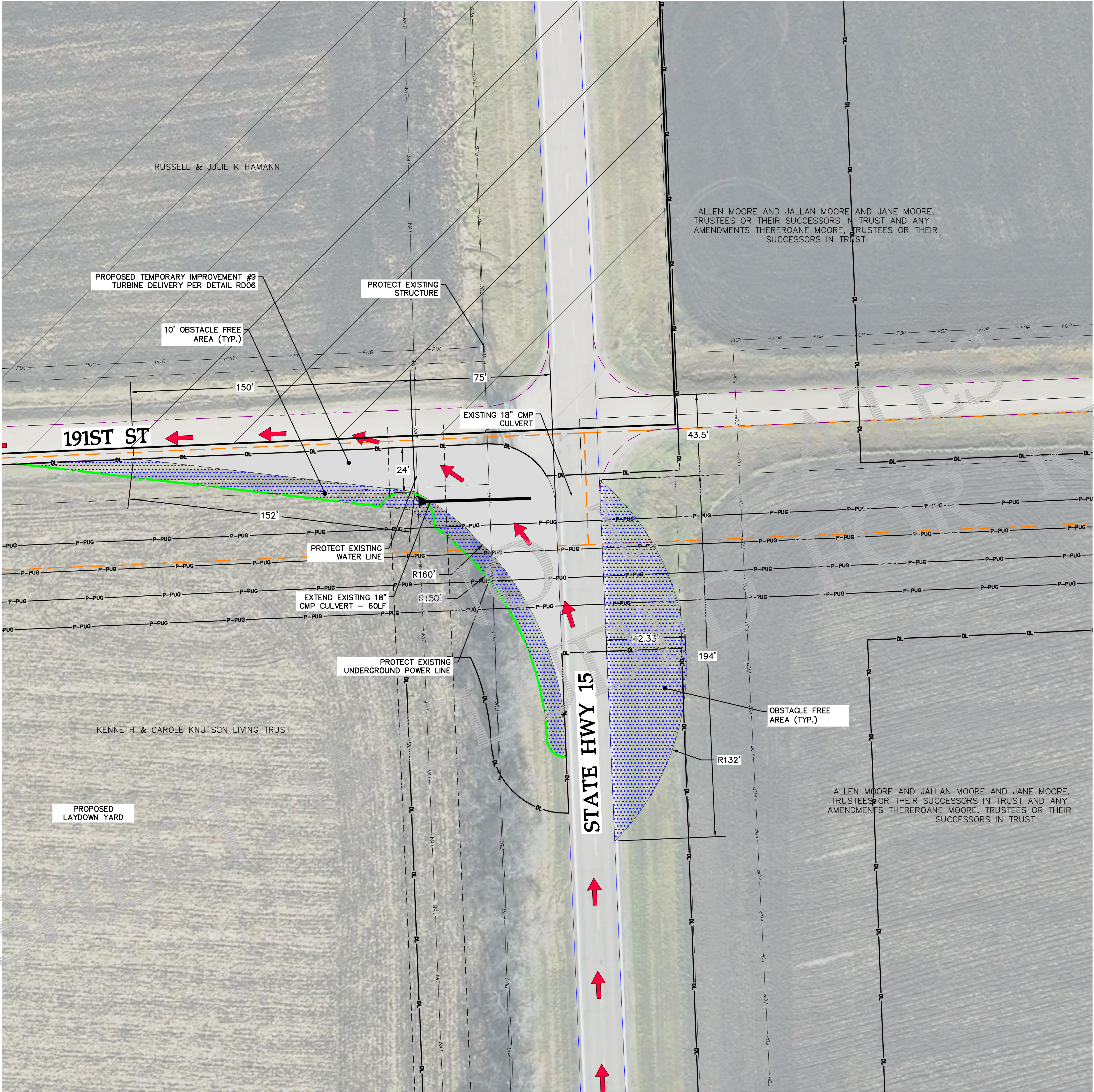
Temporary Improvement 8 & 23

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=40' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 041



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
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REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
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4	RECORD PLANS - PUBLIC	09/27/21	TDD

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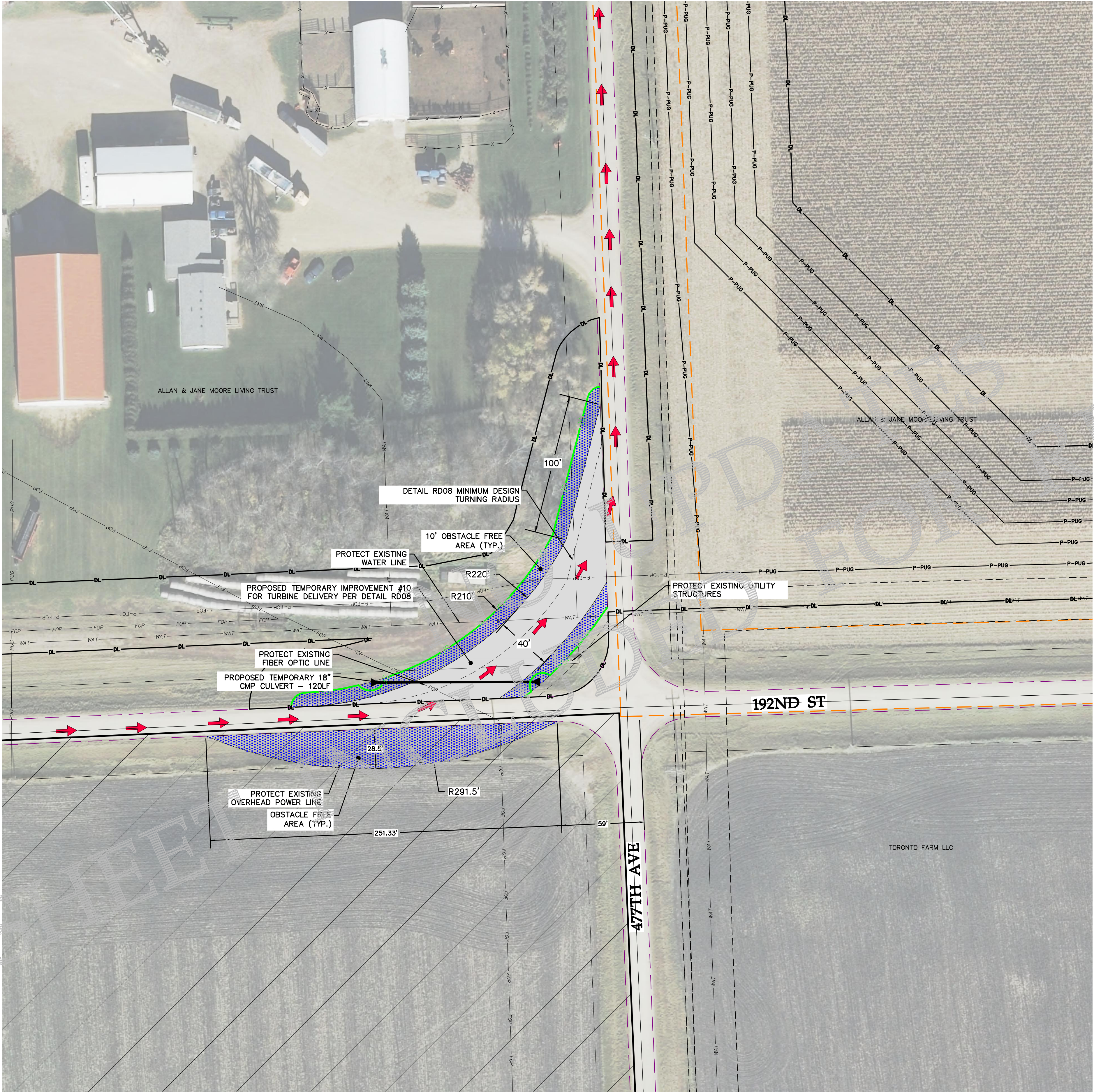


Tatanka Ridge
Wind Farm
Temporary Improvement 9
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 042



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
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- EXISTING OVERHEAD POWER
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- PROPOSED TEMPORARY CULVERT
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- PROPOSED TURBINE DELIVERY DIRECTION



REVISIONS

REV	DESCRIPTION	DATE	BY
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1	REVISION 01	06/08/20	TDD
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4	RECORD PLANS - PUBLIC	09/27/21	TDD

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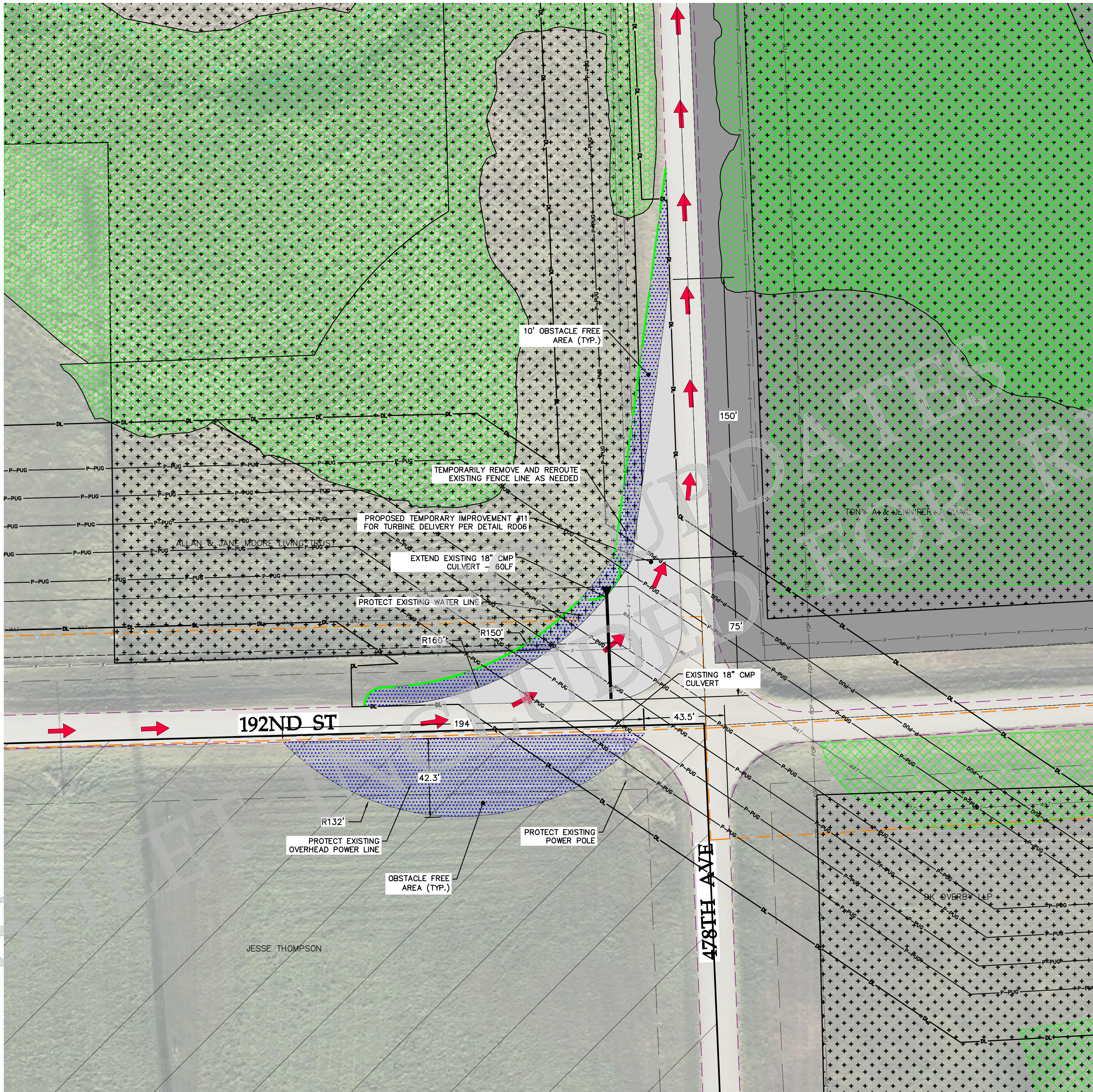
AVANGRID
RENEWABLES

Tatanka Ridge
Wind Farm
Temporary Improvement 10
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No:TRW-C-511 Sht No: 043



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
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REVISIONS

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**AVANGRID
RENEWABLES**

**Tatanka Ridge
Wind Farm**

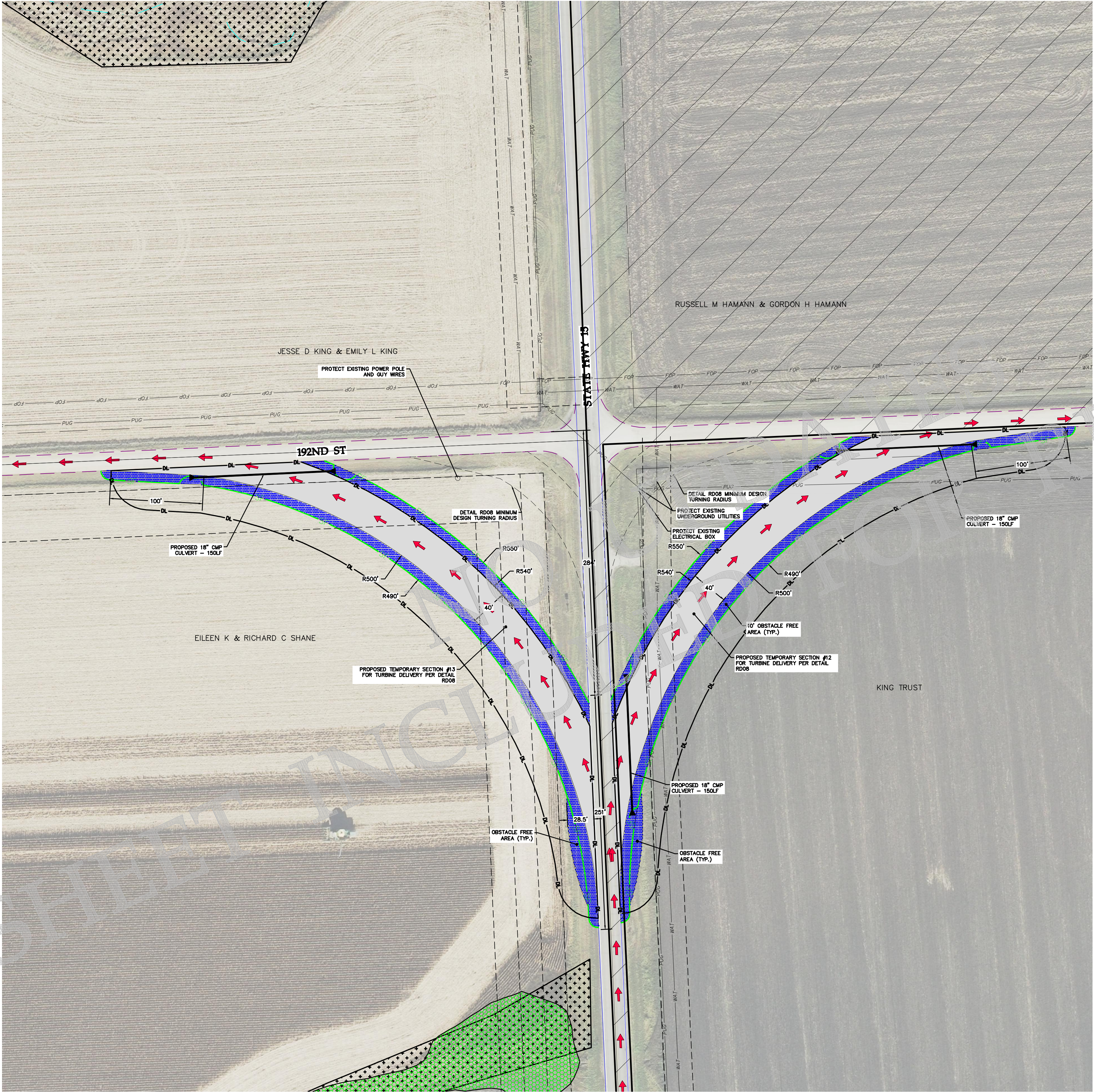
Temporary Improvement 11

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 044



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
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REVISIONS

REV	DESCRIPTION	DATE	BY
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AVANGRID
RENEWABLES

Tatanka Ridge
Wind Farm

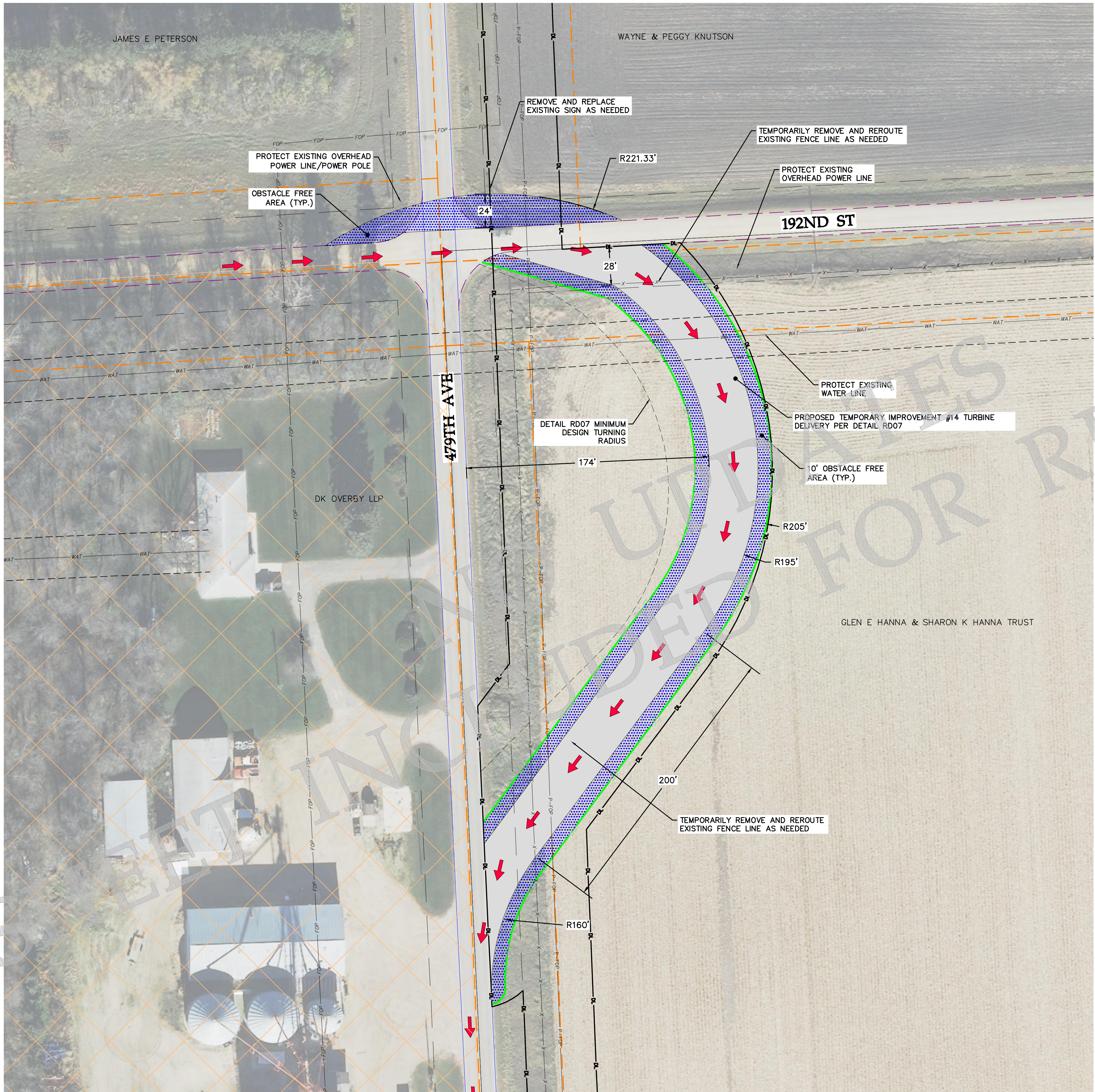
Temporary Improvement 12 & 13

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=60' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No:TRW-C-511 Sht No: 045



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
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REVISIONS			
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AVANGRID RENEWABLES

**Tatanka Ridge
Wind Farm**

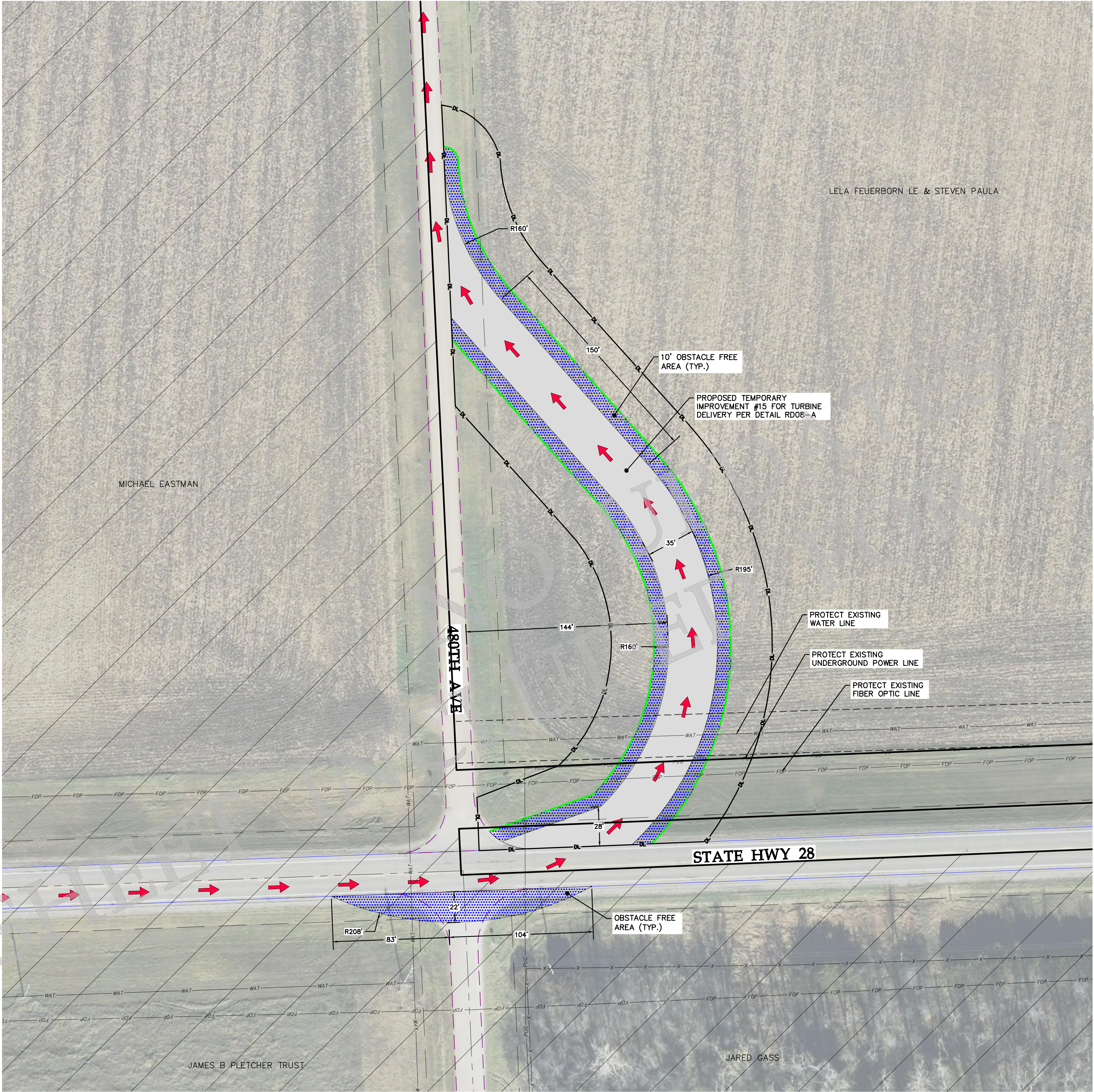
Temporary Improvement 14

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=40' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 046



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
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REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
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2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES

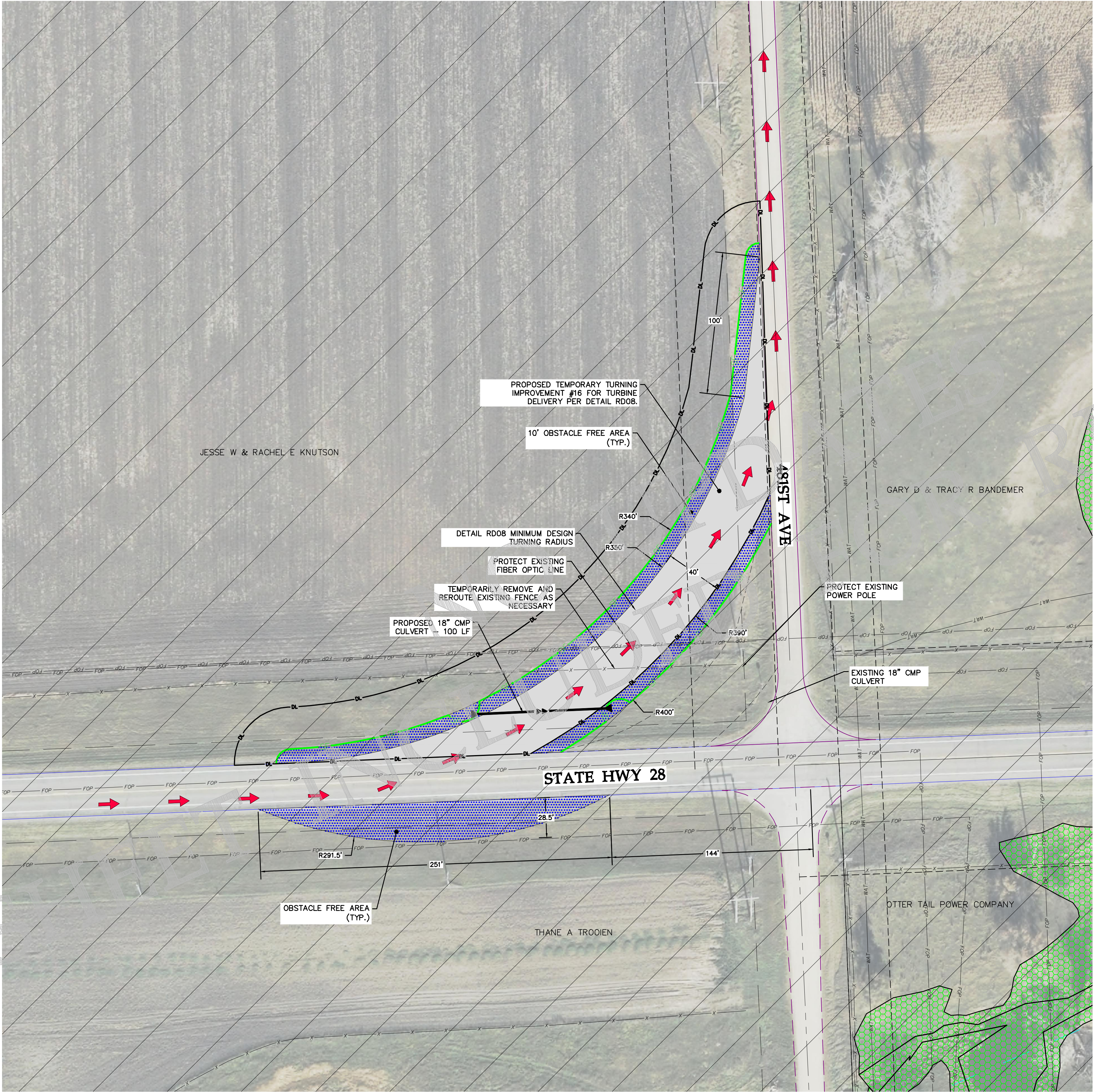

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 **AVANGRID
RENEWABLES**

Tatanka Ridge
Wind Farm
Temporary Improvement 15
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=40' Date Created: 09/27/21
Project Number: 0022401
File Name: 0022401STP01.dwg
Dwg No: TRW-C-511 Sht No: 047



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
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REVISIONS

REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
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AVANGRID RENEWABLES

Tatanka Ridge Wind Farm

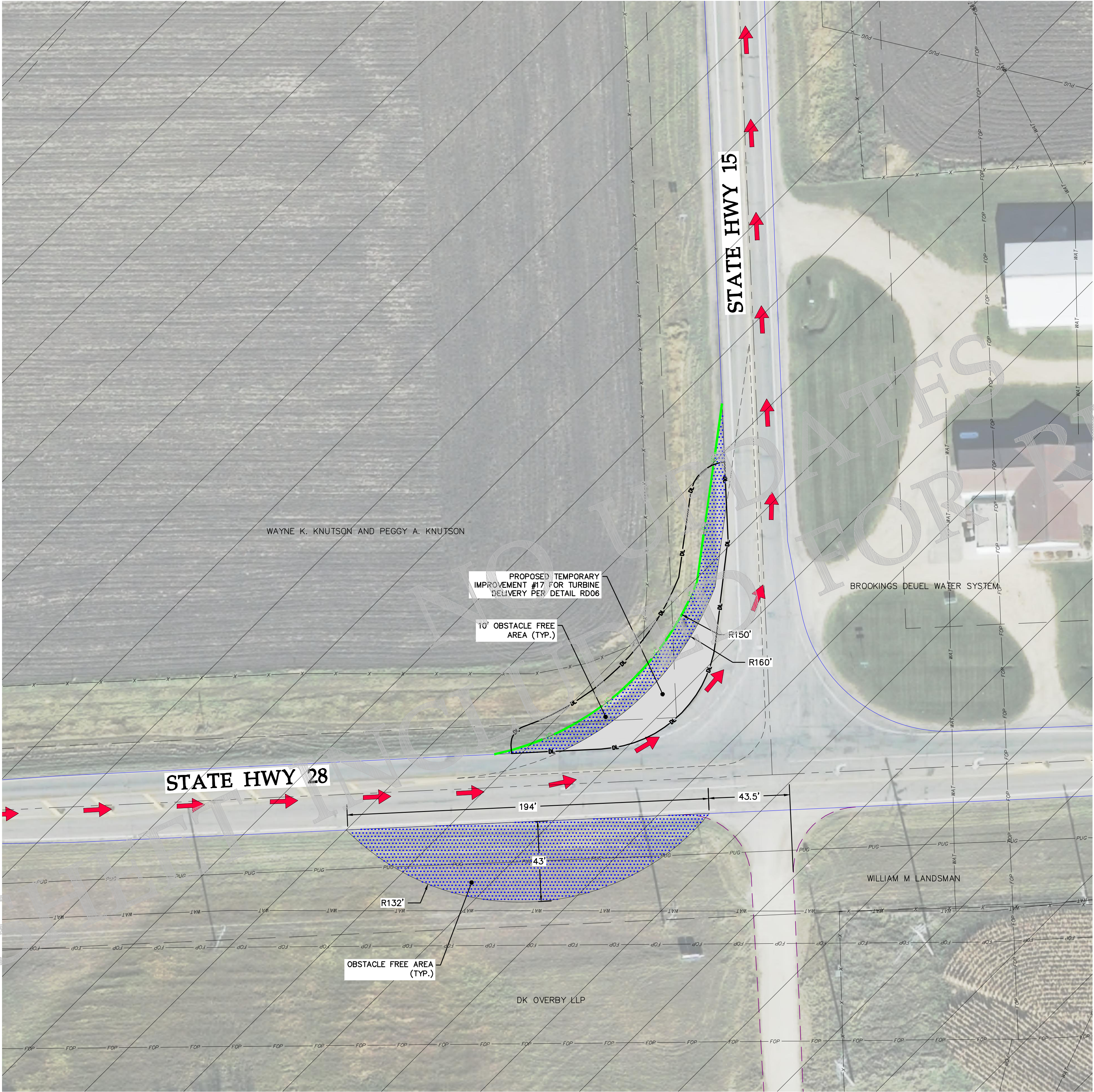
Temporary Improvement 16

Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=40' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No:TRW-C-511 Sht No: 048



LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
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REVISIONS

REV	DESCRIPTION	DATE	BY
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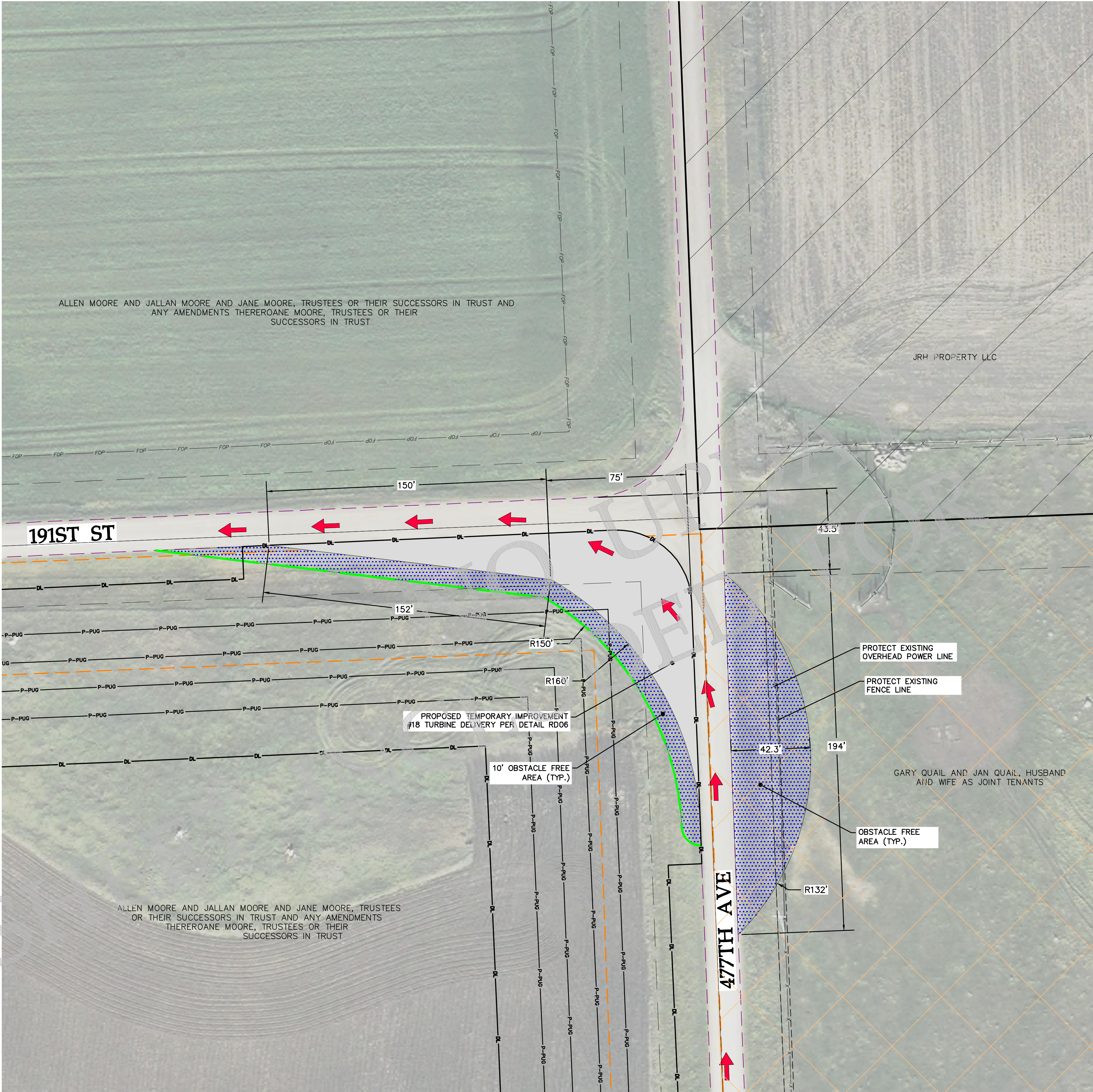
**AVANGRID
RENEWABLES**

**Tatanka Ridge
Wind Farm**
Temporary Improvement 17
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 049



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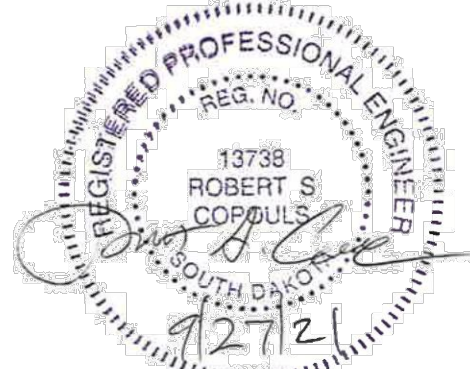
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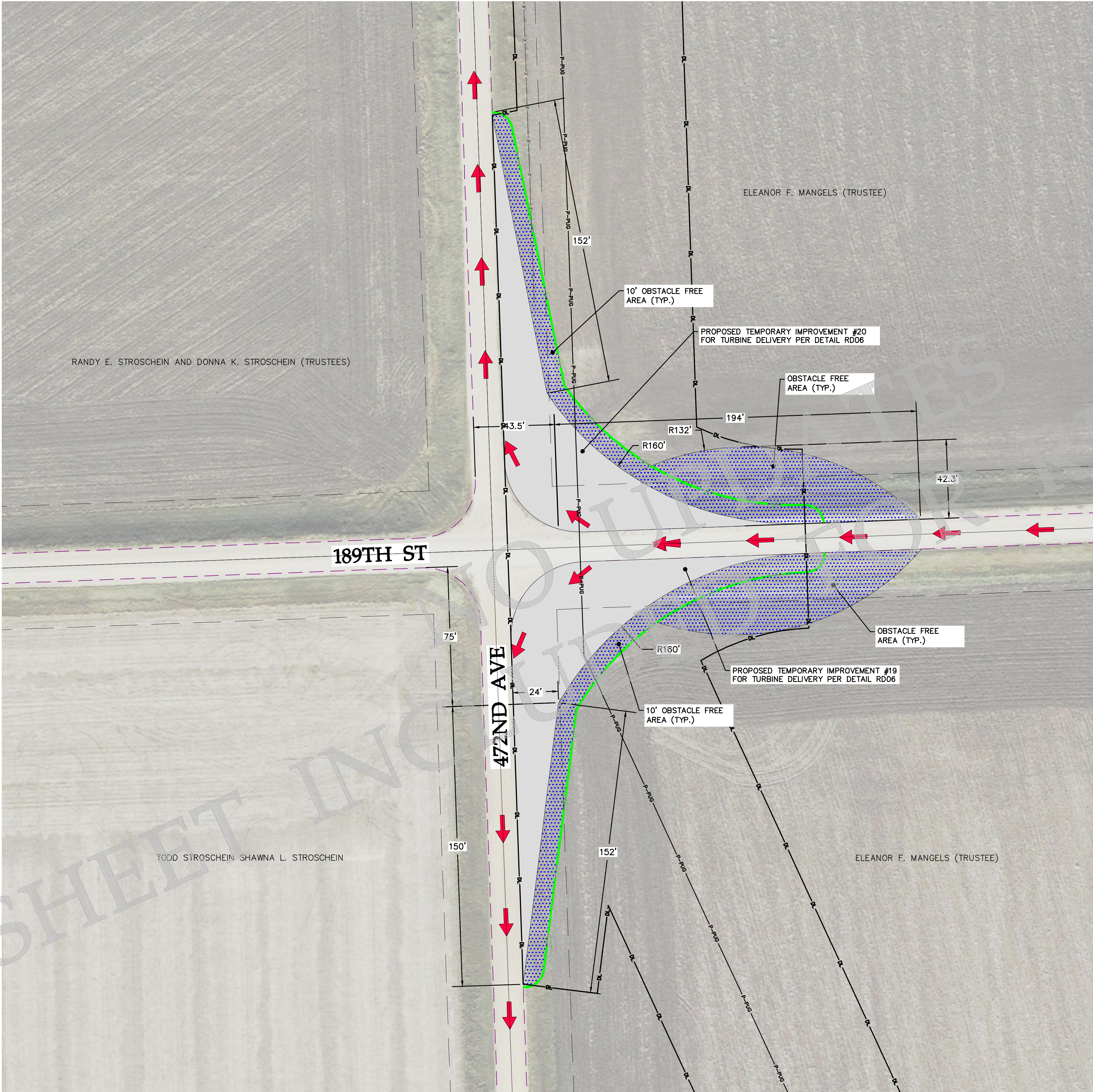
AVANGRID
RENEWABLES

Tatanka Ridge
Wind Farm
Temporary Improvement 18
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 050



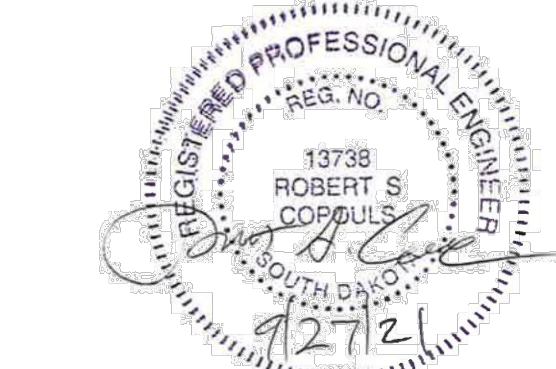
LEGEND:

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- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING CULTURAL AVOIDANCE AREA
- EXISTING LANDOWNER EASEMENT
- PROPOSED UNDERGROUND POWER
- PROPOSED OVERHEAD POWER
- PROPOSED PERIMETER SEDIMENT CONTROL
- PROPOSED TEMPORARY CULVERT
- TEMPORARY INTERSECTION IMPROVEMENT
- TEMPORARY OBSTACLE FREE AREA FOR TRAILER OVERHANG
- PROPOSED TURBINE DELIVERY DIRECTION



REVISIONS			
REV	DESCRIPTION	DATE	BY
0	IFC CIVIL PLANS	05/15/20	TDD
1	REVISION 01	06/08/20	TDD
2	REVISION 02	07/20/20	TDD
3	RECORD PLANS	07/23/21	TDD
4	RECORD PLANS - PUBLIC	09/27/21	TDD

NOTES



Westwood

Phone (952) 937-5150 12701 Whitewater Drive, Suite #300
Fax (952) 937-5822 Minnetonka, MN 55343
Toll Free (888) 937-5150 www.westwood-engine.com
Westwood Professional Services, Inc.



4850 32nd Avenue S
Fargo, ND 58104

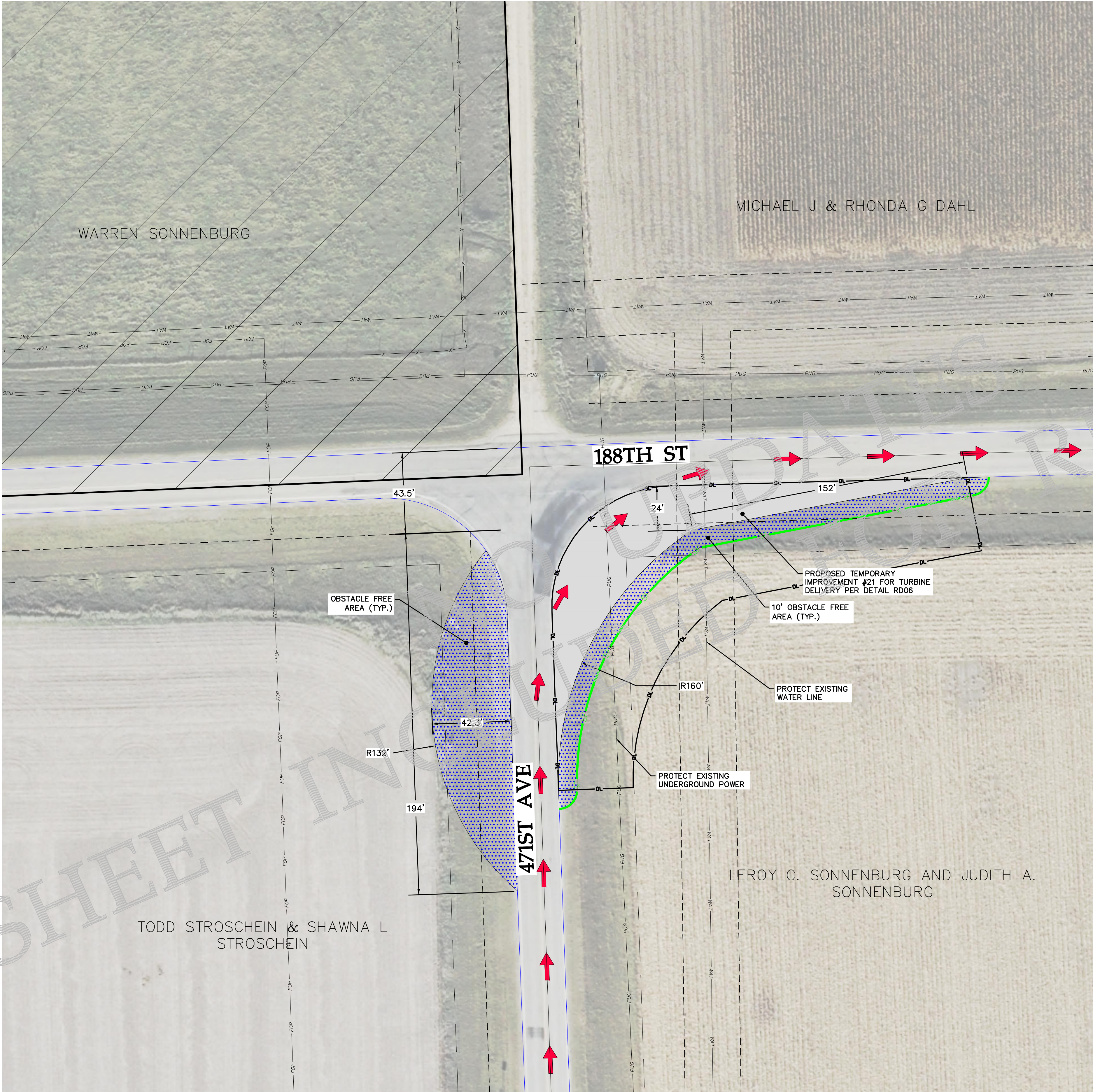


Tatanka Ridge
Wind Farm
Temporary Improvement 19 & 20
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No:TRW-C-511 Sht No: 051



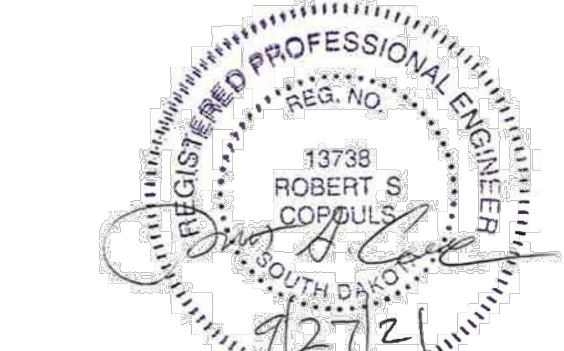
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- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
- EXISTING UNDERGROUND POWER
- EXISTING OVERHEAD POWER
- EXISTING WATER LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS PIPELINE
- EXISTING UTILITY EASEMENT
- EXISTING DRAIN TILE
- EXISTING CULVERT
- NON-PARTICIPATING BOUNDARY
- EXISTING USFWS EASEMENT
- EXISTING WETLANDS
- EXISTING NATIVE GRASSLAND
- EXISTING NON-NATIVE GRASSLAND
- EXISTING DAKOTA SKIPPER HABITAT
- EXISTING CULTURAL AVOIDANCE AREA
- EXISTING LANDOWNER EASEMENT
- PROPOSED UNDERGROUND POWER
- PROPOSED OVERHEAD POWER
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- PROPOSED TEMPORARY CULVERT
- TEMPORARY INTERSECTION IMPROVEMENT
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REVISIONS			
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Fargo, ND 58104

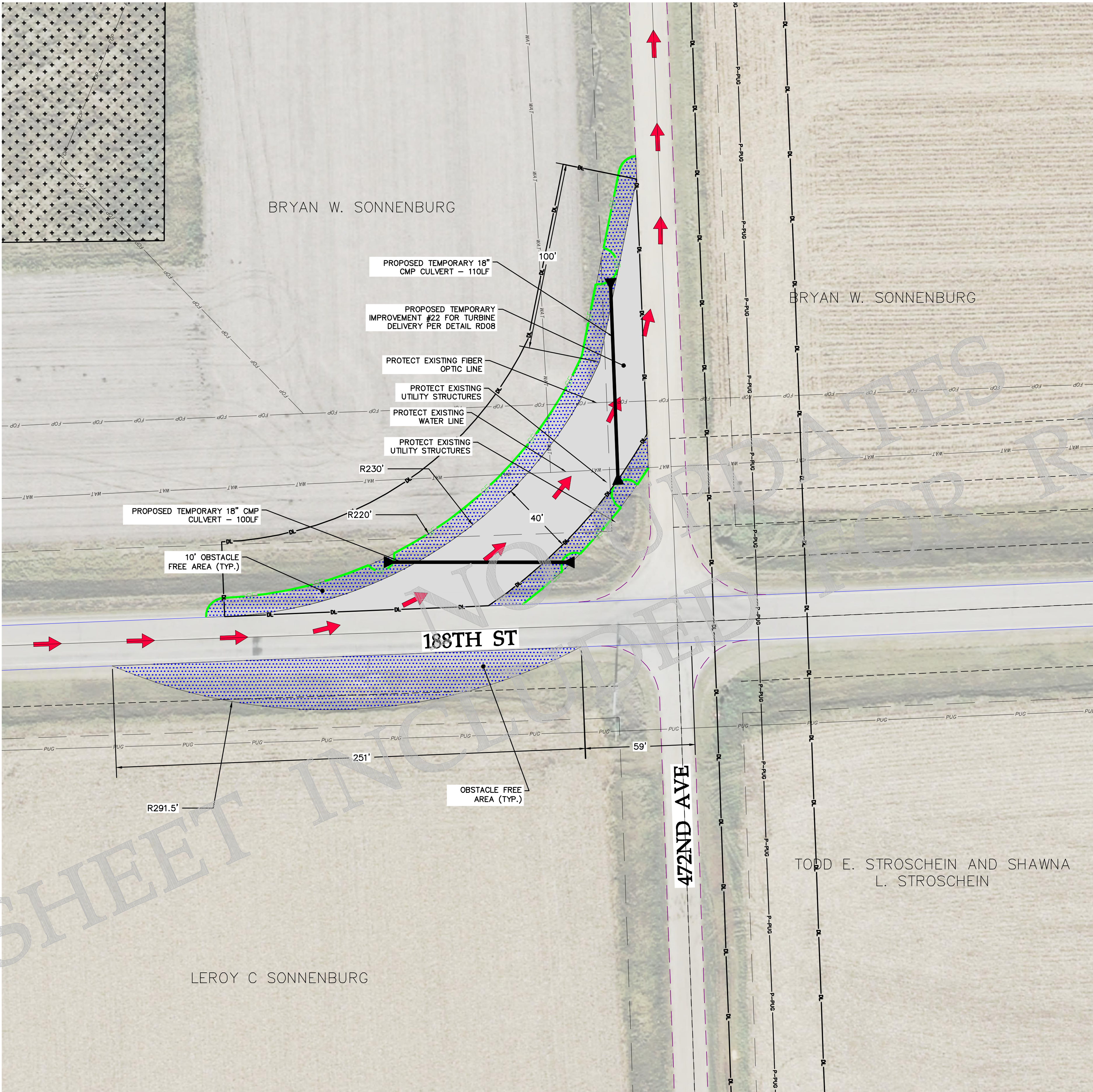
AVANGRID
RENEWABLES

Tatanka Ridge
Wind Farm
Temporary Improvement 21
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No: TRW-C-511 Sht No: 052



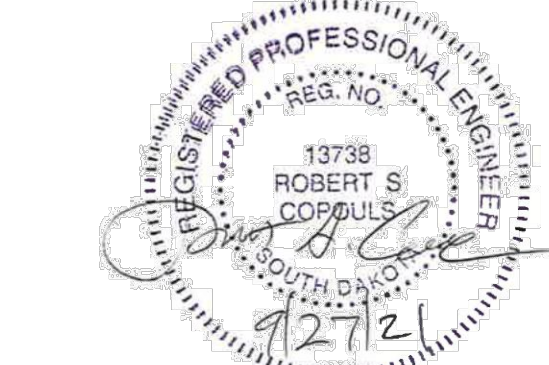
LEGEND:

- EXISTING SECTION LINE
- EXISTING PARCEL LINE
- EXISTING RIGHT OF WAY
- EXISTING GRAVEL EDGE
- EXISTING BITUMINOUS EDGE
- EXISTING FENCE
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REVISIONS			
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AVANGRID
RENEWABLES

Tatanka Ridge
Wind Farm
Temporary Improvement 22
Record Plans

Drawn By: TDD Checked By: DJN
Design By: TDD Approved By: DJN
Scale: 1"=30' Date Created: 09/27/21

Project Number: 0022401
File Name: 0022401STP01.dwg

Dwg No:TRW-C-511 Sht No: 053