

Grazing Yak Solar

SITE DEVELOPMENT PLAN

El Paso County, Colorado

Civil Construction Plans - Issued For Site Development Plan



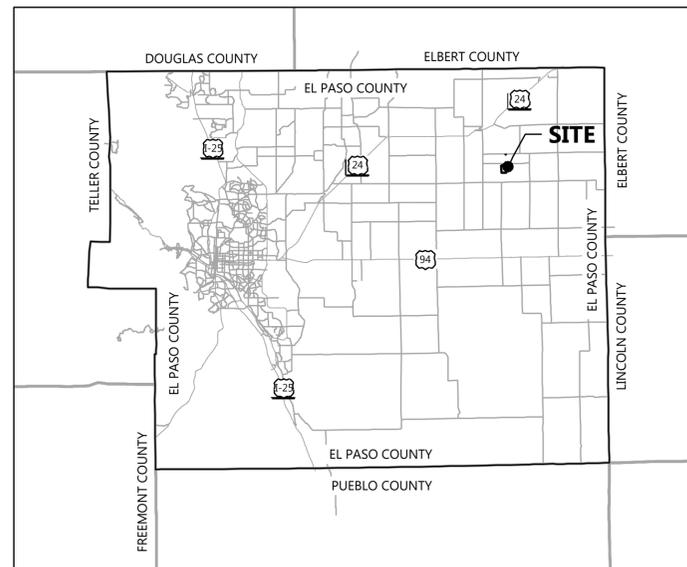
PREPARED FOR:



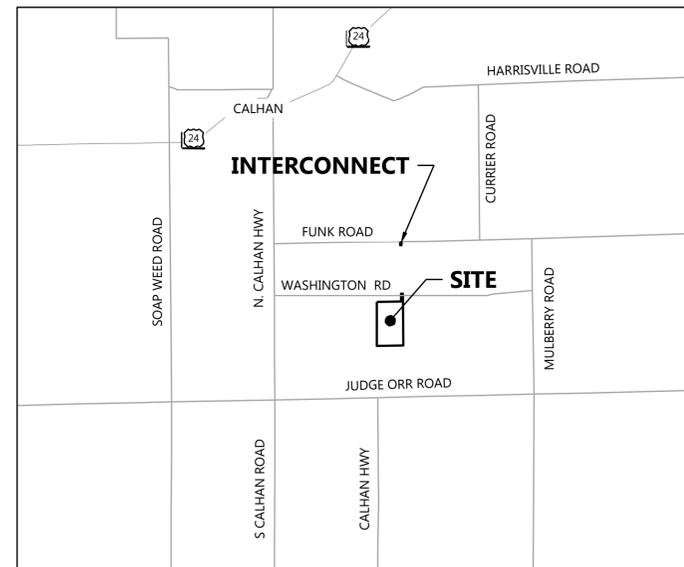
REVISIONS:

#	DATE	COMMENT
B	03/28/19	Issued for Review (60%)
C	04/22/19	Permit Submittal Revisions
D	04/26/19	Issued for Review (90%)
E	04/29/19	Issued for Grading Permit
F	06/04/19	Re-Issue for Permit

REGIONAL MAP



VICINITY MAP



DESIGN ENGINEER'S STATEMENT:

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

BRENDAN D. MILLER, P.E. #44186 DATE

OWNER/DEVELOPER'S STATEMENT:

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

JOHN DIDONATO DATE
GRAZING YAK SOLAR, LLC
700 UNIVERSE BLVD, JUNO BEACH, FL 33408

EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTORS DISCRETION.

JENNIFER IRVINE, P.E. DATE
COUNTY ENGINEER / ECM ADMINISTRATOR

Sign Plans

PROJECT ADDRESS:
Washington Road and McQueen Road
Calhan, Colorado

The dimensional should be noted from what the WSE-O identifies. Uses, setbacks, hiwghts

you forgot the substation upgrade sheet

Sheet List Table

Sheet Number	Sheet Title
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Grazing Yak Solar

El Paso County, Colorado

Cover Sheet

DATE: 06/04/2019

SHEET: C.100

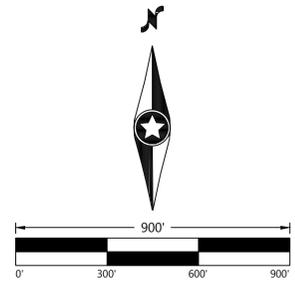


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Grazing Yak Solar

El Paso County, Colorado

Overall Site Plan

DATE: 06/04/2019

SHEET: C.200

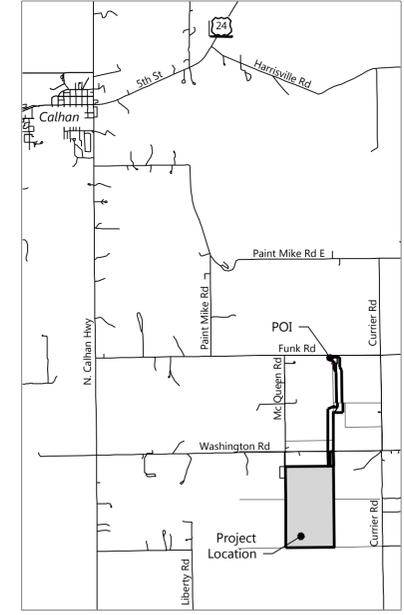
See Plan View 2 (This Sheet)

LEGEND & ABBREVIATIONS

- EX. PROJECT BOUNDARY LINE
- INVERTER BLOCK BOUNDARY
- P-PUG-1- PROPOSED UNDERGROUND CIRCUIT 1
- P-PUG-2- PROPOSED UNDERGROUND CIRCUIT 2
- X- PROPOSED FENCE LINE
- PROPOSED SOLAR TRACKER
- BOUNDARY SET BACK LINE 10M
- BOUNDARY SET BACK LINE 15M
- PROPOSED GRAVEL ACCESS RD. (5,200 FT.)
- PROPOSED DIRT ACCESS RD. (10,175 FT.)
- PROPOSED CAB
- PROPOSED LAYDOWN AREA
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED PROTECTED CROSSING
- PROPOSED INDEX CONTOUR LINE
- PROPOSED INTERVAL CONTOUR LINE
- EX. INDEX CONTOUR LINE
- EX. INTERVAL CONTOUR LINE
- EX. SECTION LINE
- EX. EASEMENT LINE
- EX. FENCE LINE
- EX. OVERHEAD POWERLINE
- EX. UNDERGROUND POWERLINE
- EX. FIBER OPTIC LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD

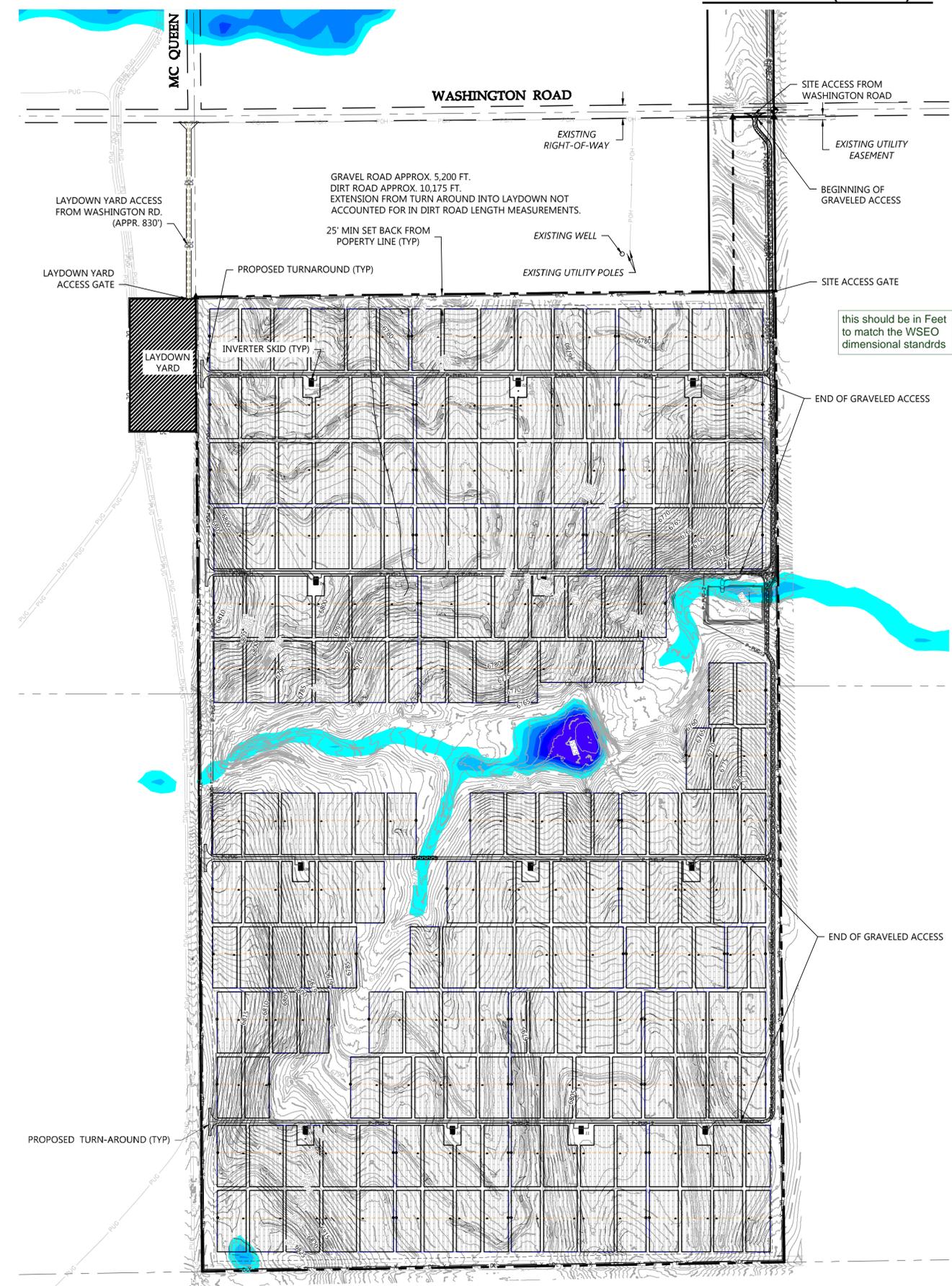
NOTES:

NO OCCUPIED STRUCTURES PROPOSED ON THIS SITE.



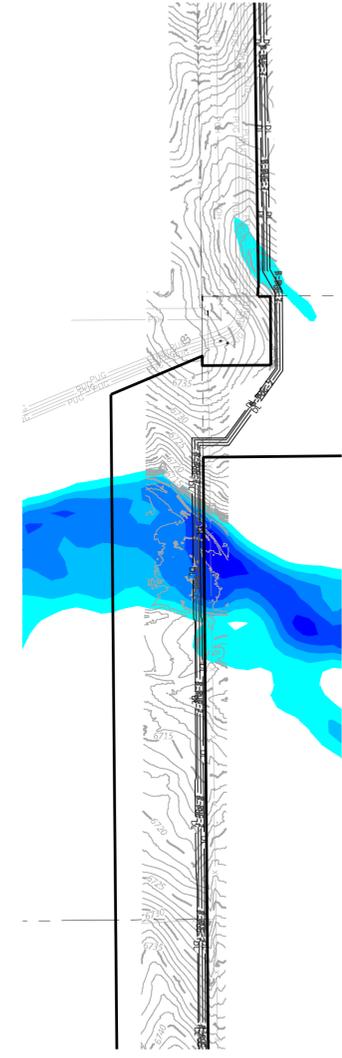
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Scale: 1" = 5000'

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1.500'	2.000'	
2.000'	2.500'	
2.500'	3.000'	
3.000'	5.000'	



this should be in Feet to match the WSEO dimensional standrds

See Plan View 1 (This Sheet)



See Plan View 3 (This Sheet)

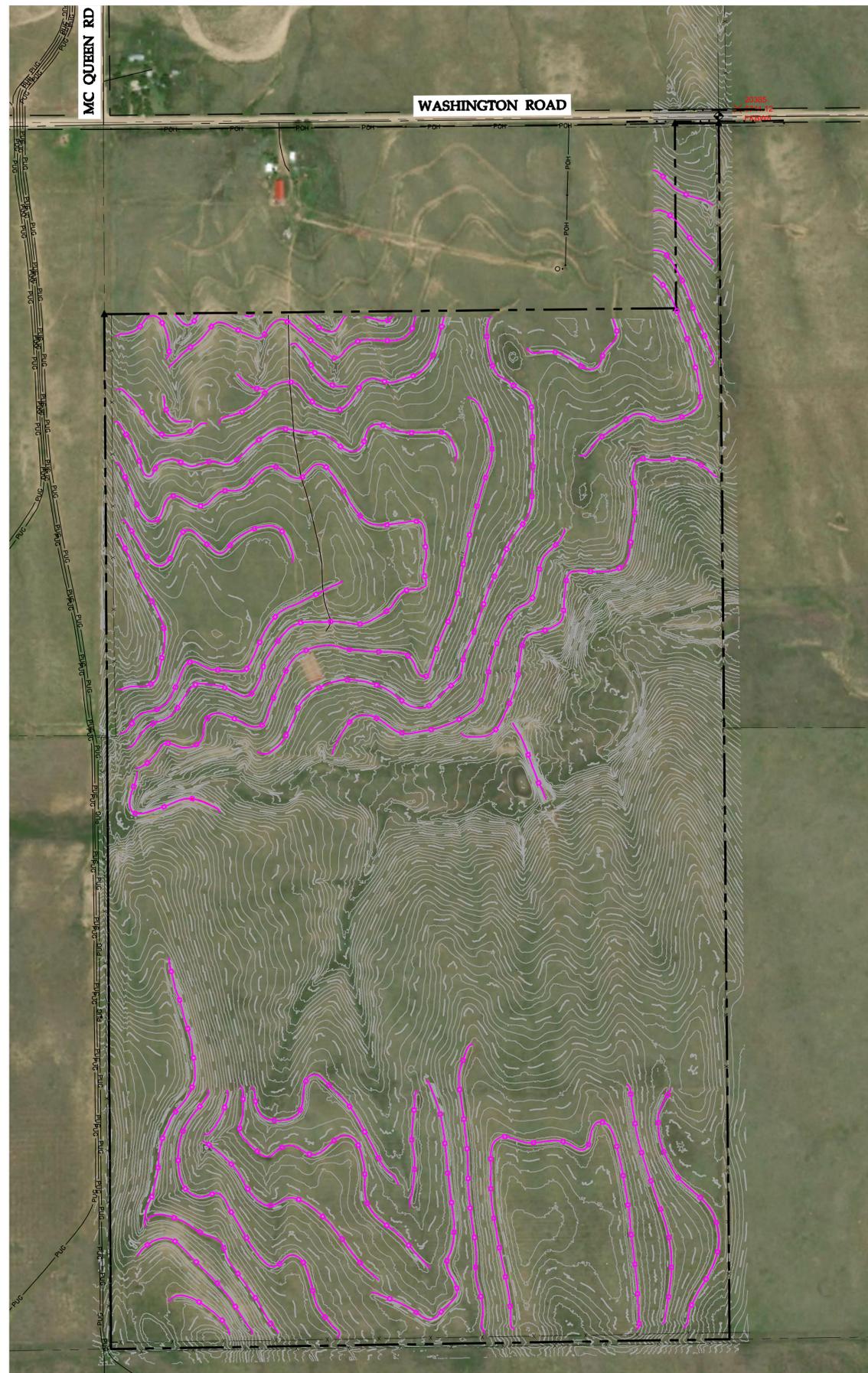
3 Plan View 3
1" = 300'

See Plan View 2 (This Sheet)

1 Plan View 1
1" = 300'

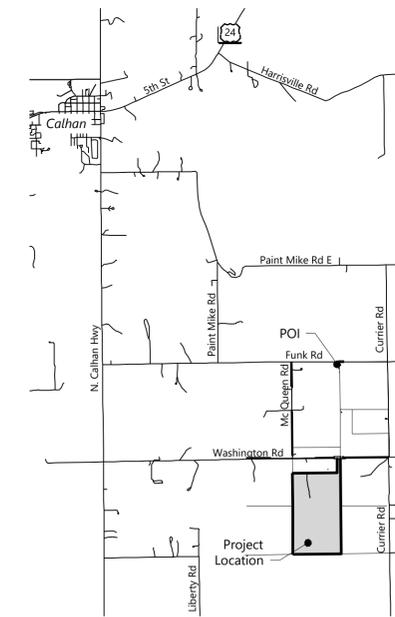
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See Plan View 2 (This Sheet)



LEGEND & ABBREVIATIONS

- EX. PROJECT BOUNDARY LINE
- - - 340 - - - EX. INDEX CONTOUR LINE
- EX. INTERVAL CONTOUR LINE
- EX. SECTION LINE
- EX. EASEMENT LINE
- x - EX. FENCE LINE
- POH EX. OVERHEAD POWERLINE
- PUG EX. UNDERGROUND POWERLINE
- FO EX. FIBER OPTIC LINE
- OIL EX. OIL LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD
- ○ ○ EX. BERM



VICINITY MAP
Scale: 1" = 5000'

Westwood

Phone (720) 531-8350 10170 Church Ranch Way, Suite #100
Westminster, CO 80021
westwoodps.com

Westwood Professional Services, Inc.



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Grazing Yak Solar

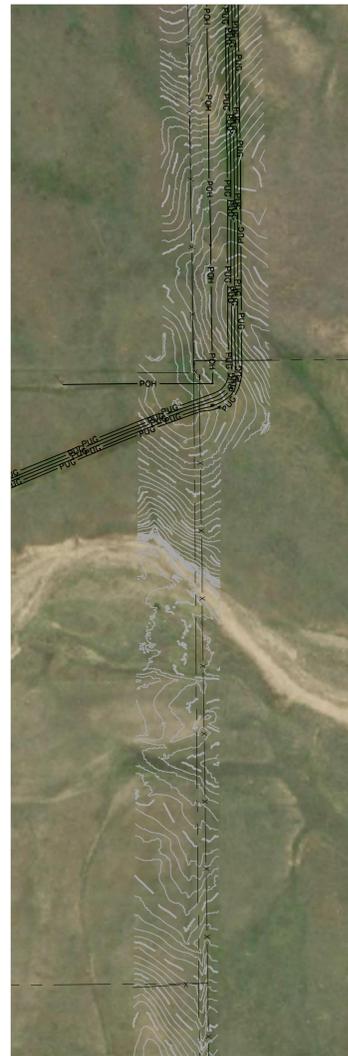
El Paso County, Colorado

Existing Conditions Plan

DATE: 06/04/2019

SHEET: C.110

See Plan View 1 (This Sheet)



See Plan View 3 (This Sheet)

2 Plan View 2
1" = 300'



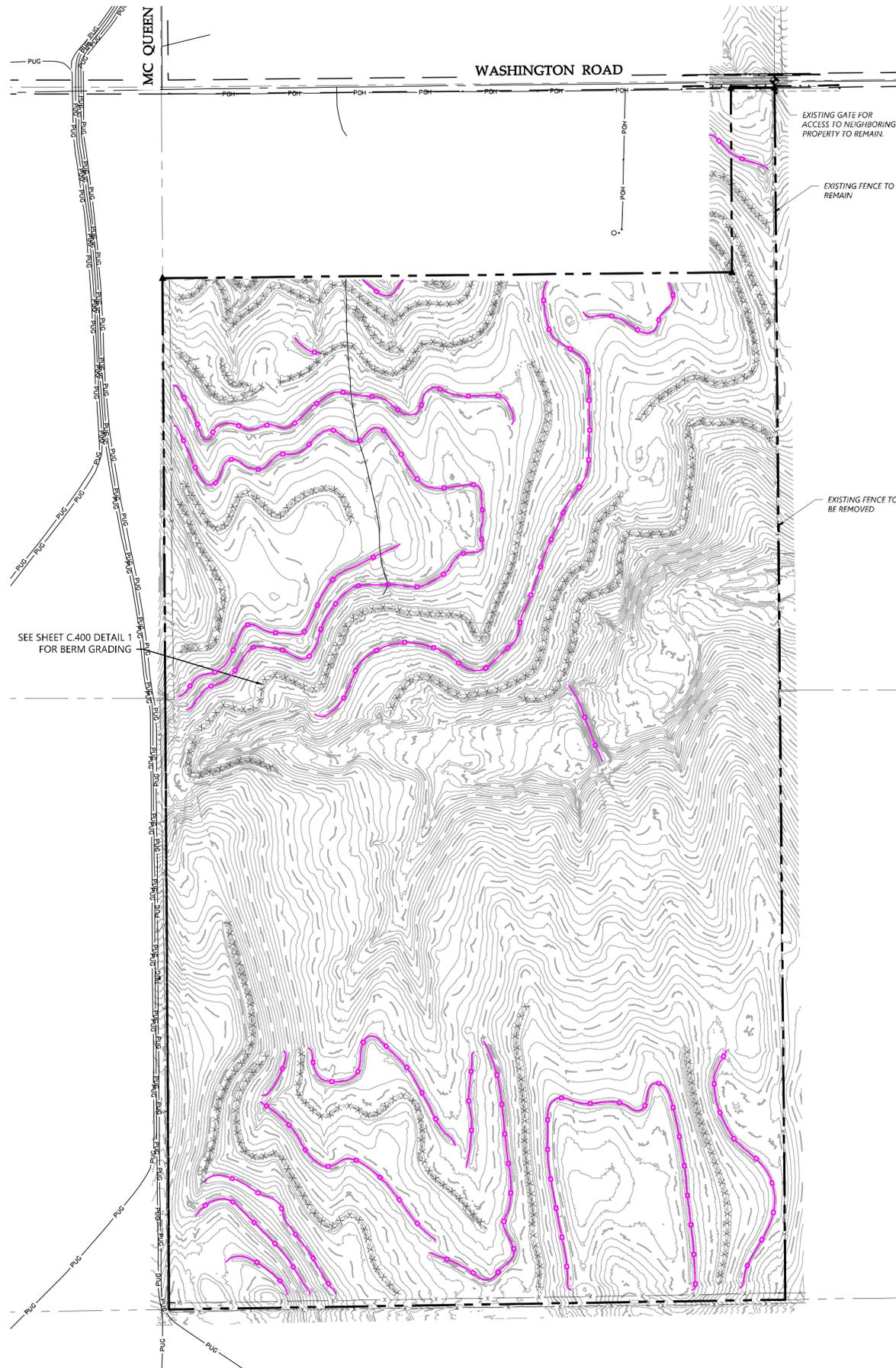
See Plan View 2 (This Sheet)

1 Plan View 1
1" = 300'

3 Plan View 3
1" = 300'

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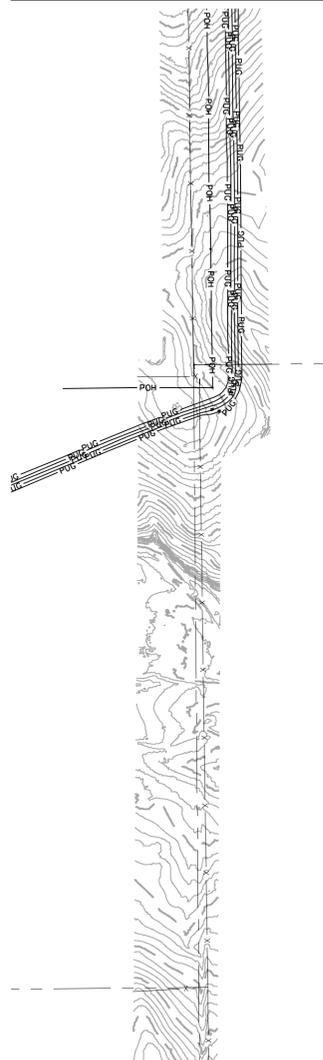
See Plan View 2 (This Sheet)



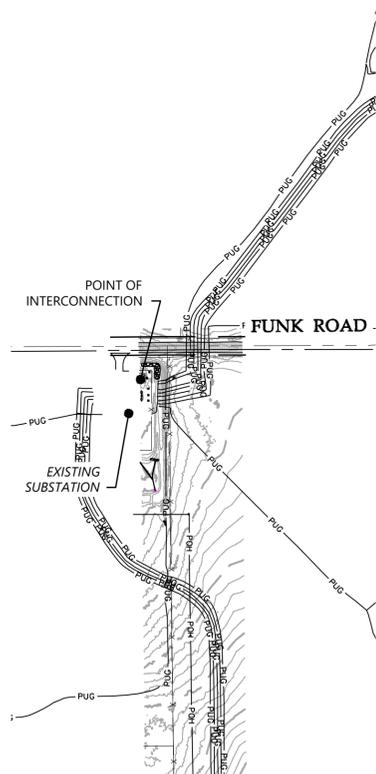
LEGEND & ABBREVIATIONS

- EX. PROJECT BOUNDARY LINE
- - - 340 - - - EX. INDEX CONTOUR LINE
- EX. INTERVAL CONTOUR LINE
- EX. SECTION LINE
- EX. EASEMENT LINE
- x - EX. FENCE LINE
- PUG --- EX. OVERHEAD POWERLINE
- PUG --- EX. UNDERGROUND POWERLINE
- FO --- EX. FIBER OPTIC LINE
- OL --- EX. OIL LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD
- EX. BERM
- x - x - x - x - x - x - x - EX. BERM CUT

See Plan View 1 (This Sheet)



See Plan View 3 (This Sheet)

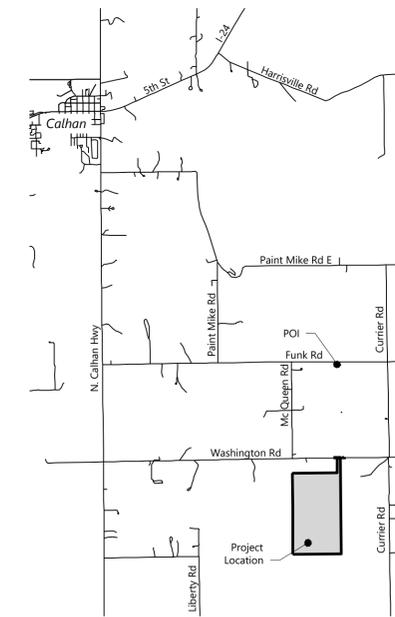


See Plan View 2 (This Sheet)

1 Plan View 1
1" = 300'

2 Plan View 2
1" = 300'

3 Plan View 3
1" = 300'



VICINITY MAP
Scale: 1" = 5000'



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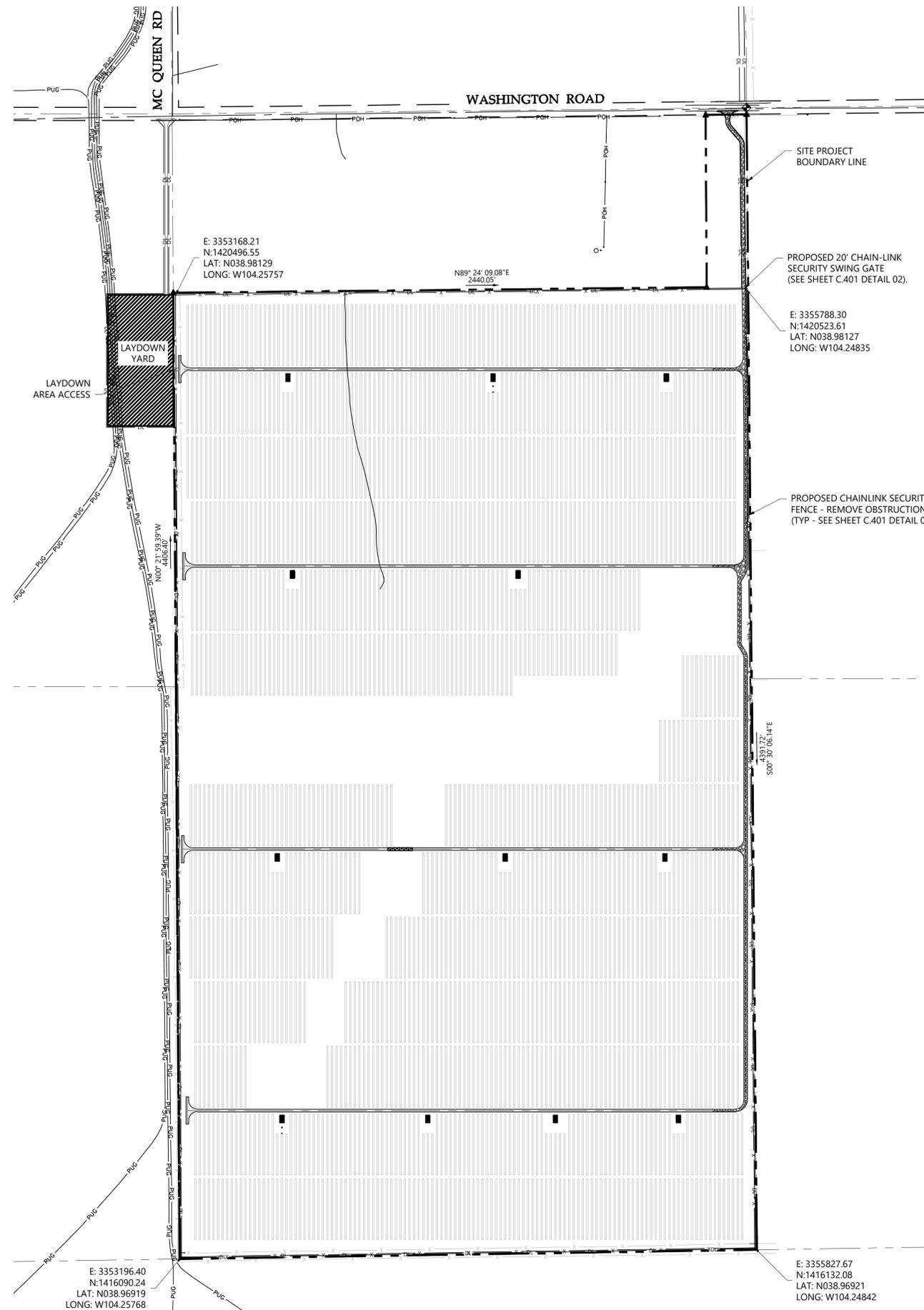
Grazing Yak Solar

El Paso County, Colorado

Demolition Plan

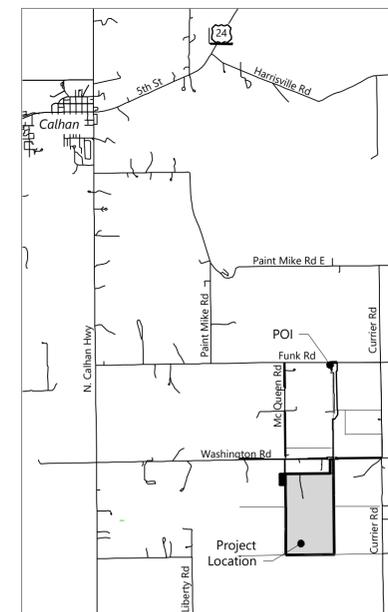
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SHEET: C.120



LEGEND & ABBREVIATIONS

- EX. PROJECT BOUNDARY LINE
- EX. FENCE LINE
- PROPOSED SOLAR TRACKER
- PROPOSED INVERTER SKID
- PROPOSED PERMANENT ACCESS ROAD
- PROPOSED LAYDOWN AREA
- EX. SECTION LINE
- EX. EASEMENT LINE
- EX. FENCE LINE
- EX. OVERHEAD POWERLINE
- EX. UNDERGROUND POWERLINE
- EX. FIBER OPTIC LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD
- PROPOSED SECURITY FENCE TURNING POINT



VICINITY MAP
Scale: 1" = 5000'

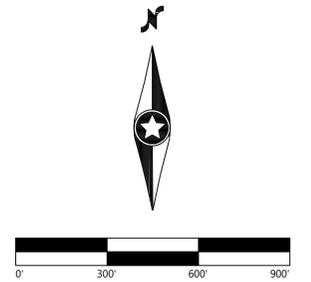


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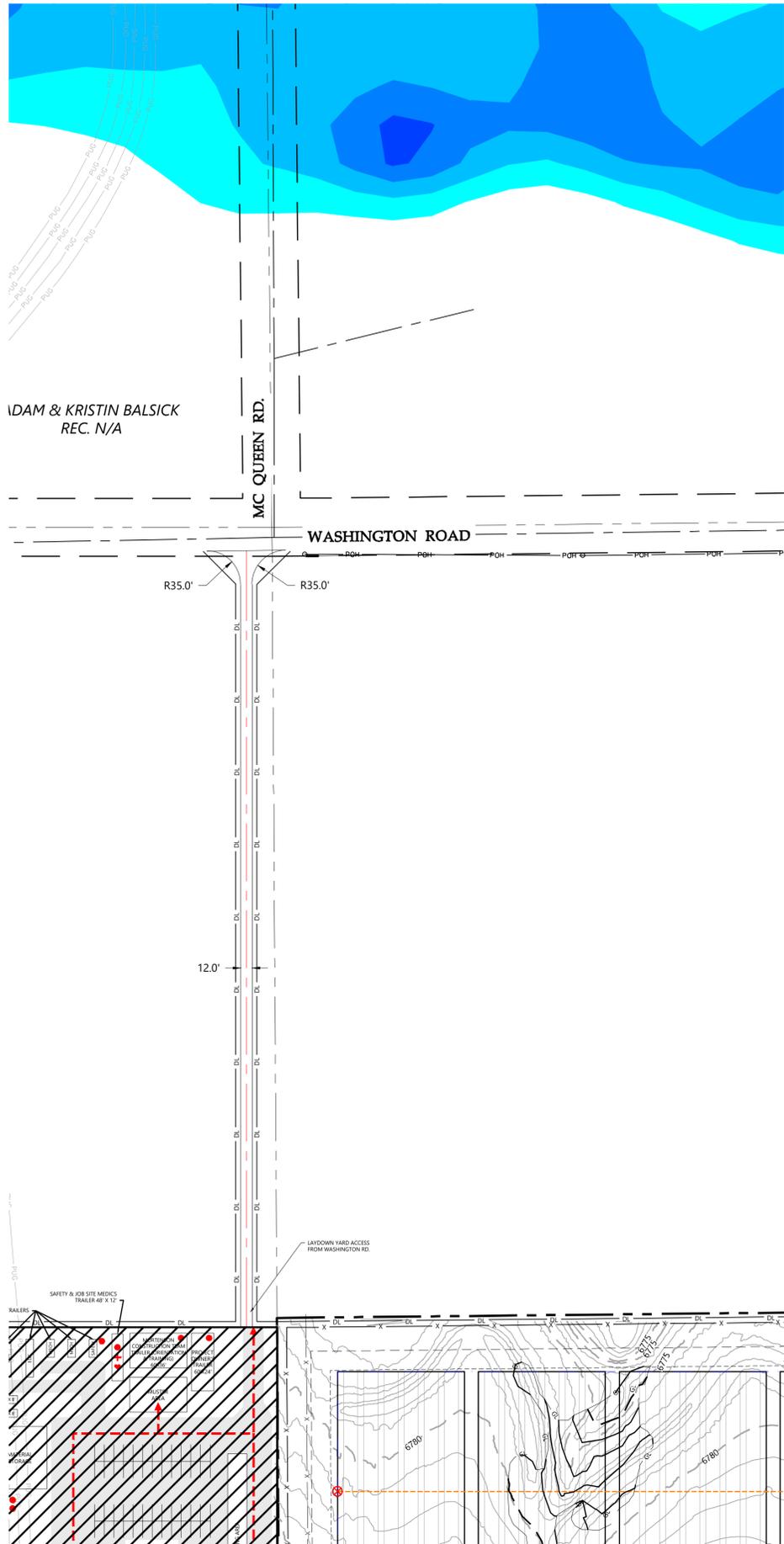
Grazing Yak Solar
El Paso County, Colorado

Fence Plan

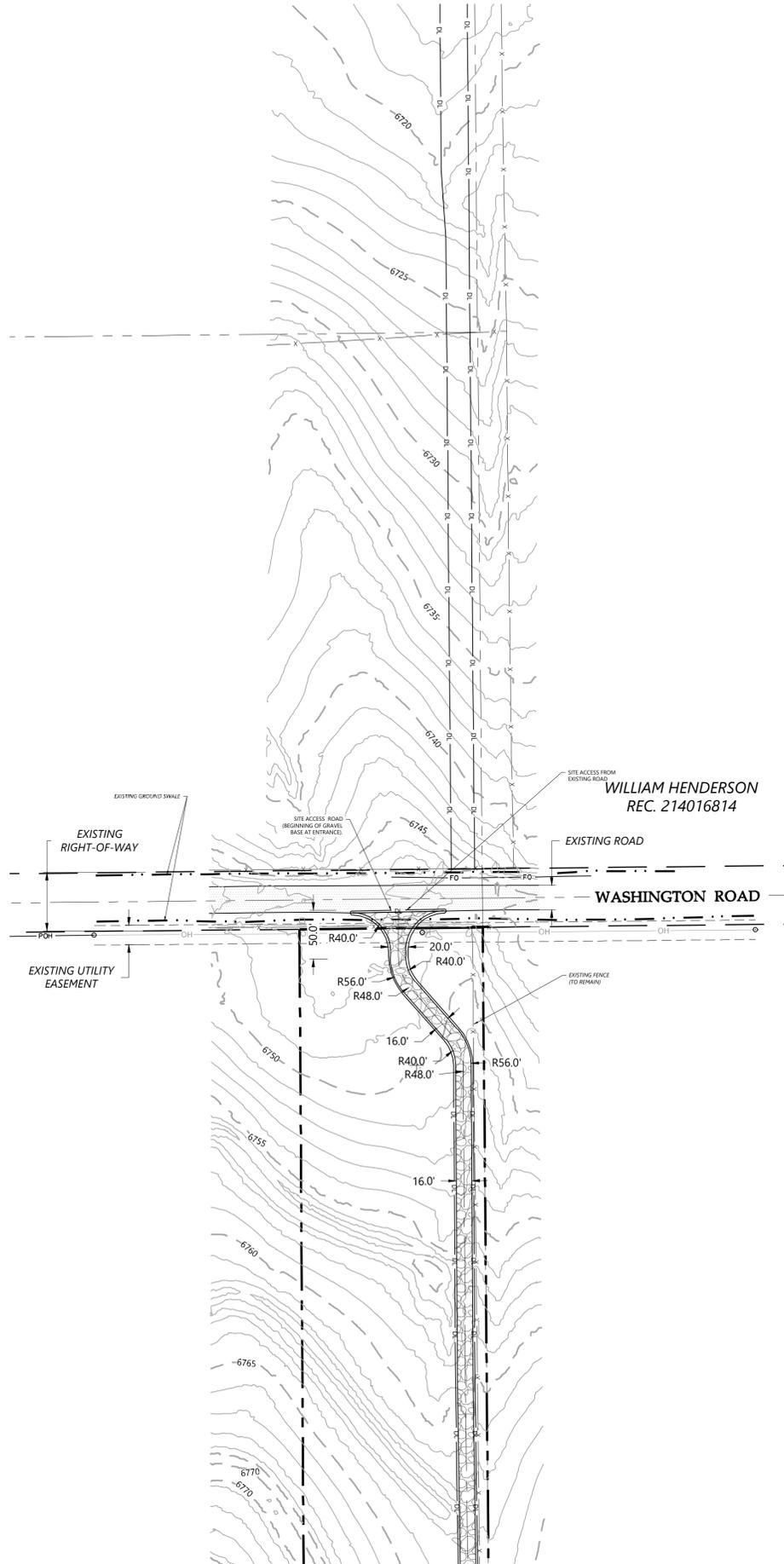
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SHEET: C.210

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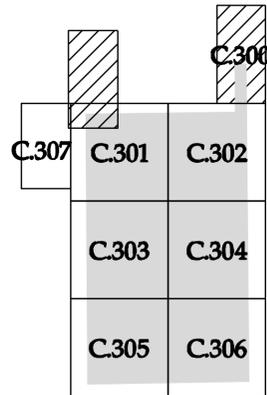
SEE SHEET C.301



SEE SHEET C.302

LEGEND & ABBREVIATIONS

- EX. PROJECT BOUNDARY LINE
- - - - - INVERTER BLOCK BOUNDARY
- - - - - PROPOSED FENCE LINE
- ===== PROPOSED SOLAR TRACKER
- 55' EQUIPMENT SET BACK LINE
- ===== PROPOSED GRAVELED ACCESS ROAD
- PROPOSED ACCESS RD. (NO GRAVEL)
- PROPOSED CAB
- ⊗ PROPOSED DEAD END POST (IF REQ'D)
- PROPOSED SECONDARY CAB
- ===== PROPOSED LAYDOWN AREA
- ===== PROPOSED PROTECTED CROSSING
- PROPOSED GRADING LIMITS
- EX. INDEX CONTOUR LINE
- EX. INTERVAL CONTOUR LINE
- EX. SECTION LINE
- EX. EASEMENT LINE
- - - - - EX. FENCE LINE
- EX. OVERHEAD POWERLINE
- EX. UTILITY POLE
- EX. UNDERGROUND ELECTRICAL
- EX. FIBER OPTIC LINE
- EX. OIL LINE
- ===== EX. GRAVEL ROAD
- ===== EX. ASPHALT PAVEMENT ROAD
- EX. ROAD CENTERLINE
- EX. TRAIL CENTERLINE
- EX. GROUND SWALE
- EX. RIGHT OF WAY LINE
- █ INVERTER/TRANSFORMER SKID



KEYMAP
Scale: 1"=1500'

Existing Topo Flood Depths		
0.500'	1.000'	
1.000'	1.500'	
1.500'	2.000'	
2.000'	2.500'	
2.500'	3.000'	
3.000'	5.000'	



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Grazing Yak Solar
El Paso County, Colorado

Civil Plan Set - 1

DATE: 06/04/2019

SHEET: C.300

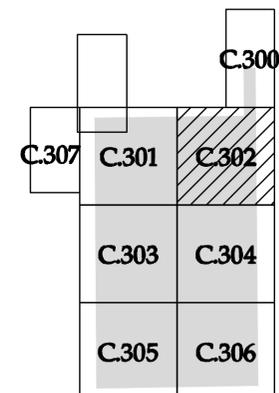
SEE SHEET C.300



JERRY WEBB
REC. 206112465

LEGEND & ABBREVIATIONS

- EX. PROJECT BOUNDARY LINE
- INVERTER BLOCK BOUNDARY
- - - PROPOSED FENCE LINE
- PROPOSED SOLAR TRACKER
- 55' EQUIPMENT SET BACK LINE
- PROPOSED GRAVELED ACCESS ROAD
- PROPOSED ACCESS RD. (NO GRAVEL)
- PROPOSED CAB
- ⊗ PROPOSED DEAD END POST (IF REQ'D)
- PROPOSED SECONDARY CAB
- PROPOSED LAYDOWN AREA
- PROPOSED PROTECTED CROSSING
- PROPOSED GRADING LIMITS
- GA EX. INDEX CONTOUR LINE
- 6765 EX. INTERVAL CONTOUR LINE
- EX. SECTION LINE
- - - EX. EASEMENT LINE
- - - EX. FENCE LINE
- POH EX. OVERHEAD POWERLINE
- EX. UTILITY POLE
- PUG EX. UNDERGROUND ELECTRICAL
- FO EX. FIBER OPTIC LINE
- OIL EX. OIL LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD
- EX. ROAD CENTERLINE
- EX. TRAIL CENTERLINE
- EX. GROUND SWALE
- EX. RIGHT OF WAY LINE
- INVERTER/TRANSFORMER SKID



KEYMAP
Scale: 1"=1500'

Westwood

Phone (720) 531-8350 10170 Church Ranch Way, Suite #100
Westminster, CO 80021
westwoodps.com

Westwood Professional Services, Inc.



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Grazing Yak Solar

El Paso County, Colorado

Civil Plan Set - 3

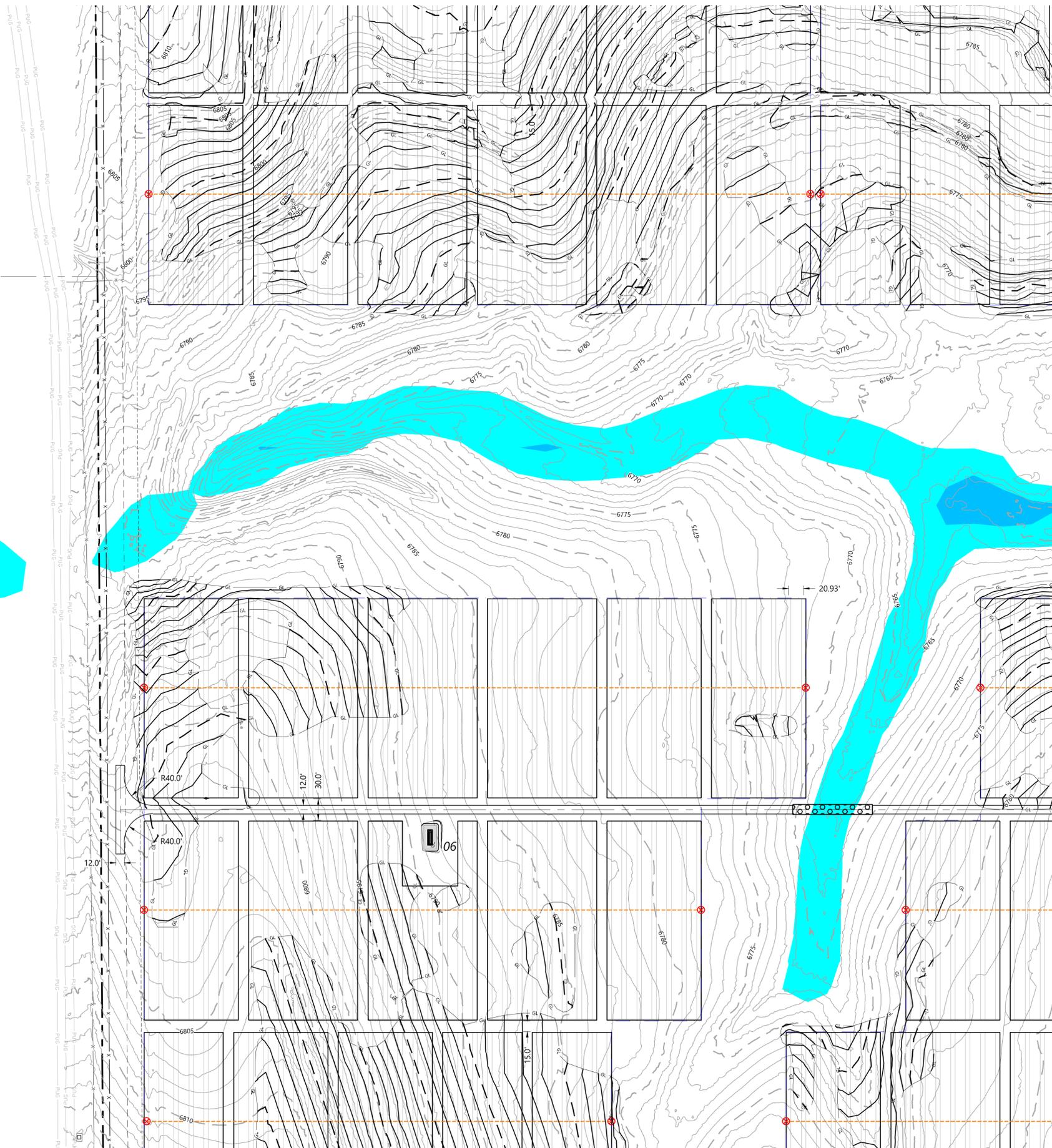
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1.000'	1.500'	■
1.500'	2.000'	■
2.000'	2.500'	■
2.500'	3.000'	■
3.000'	5.000'	■

DATE: 06/04/2019

SHEET: C.302

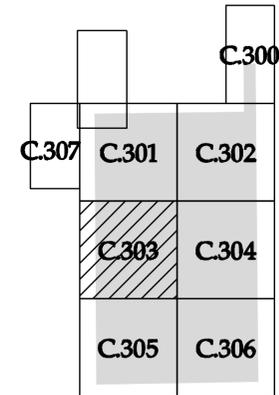
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SEE SHEET C.301



LEGEND & ABBREVIATIONS

- EX. PROJECT BOUNDARY LINE
- INVERTER BLOCK BOUNDARY
- - - PROPOSED FENCE LINE
- PROPOSED SOLAR TRACKER
- 55' EQUIPMENT SET BACK LINE
- PROPOSED GRAVELED ACCESS ROAD
- PROPOSED ACCESS RD. (NO GRAVEL)
- PROPOSED CAB
- ⊗ PROPOSED DEAD END POST (IF REQ'D)
- PROPOSED SECONDARY CAB
- PROPOSED LAYDOWN AREA
- PROPOSED PROTECTED CROSSING
- PROPOSED GRADING LIMITS
- EX. INDEX CONTOUR LINE
- EX. INTERVAL CONTOUR LINE
- EX. SECTION LINE
- EX. EASEMENT LINE
- - - EX. FENCE LINE
- EX. OVERHEAD POWERLINE
- EX. UTILITY POLE
- EX. UNDERGROUND ELECTRICAL
- EX. FIBER OPTIC LINE
- EX. OIL LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD
- EX. ROAD CENTERLINE
- EX. TRAIL CENTERLINE
- EX. GROUND SWALE
- EX. RIGHT OF WAY LINE
- █ INVERTER/TRANSFORMER SKID



KEYMAP
Scale: 1"=1500'

Existing Topo Flood Depths		
0.500'	1.000'	
1.000'	1.500'	
1.500'	2.000'	
2.000'	2.500'	
2.500'	3.000'	
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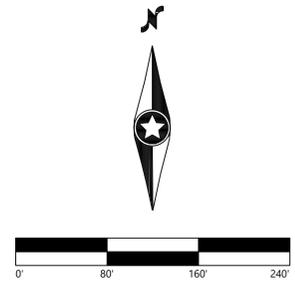


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Grazing Yak Solar

El Paso County, Colorado

Civil Plan Set - 4

DATE: 06/04/2019

SHEET: C.303

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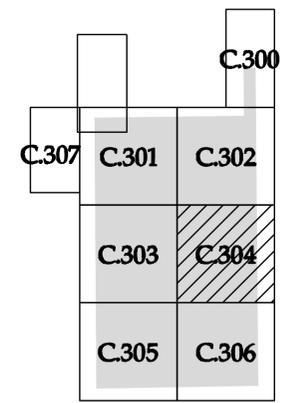


REVISIONS:

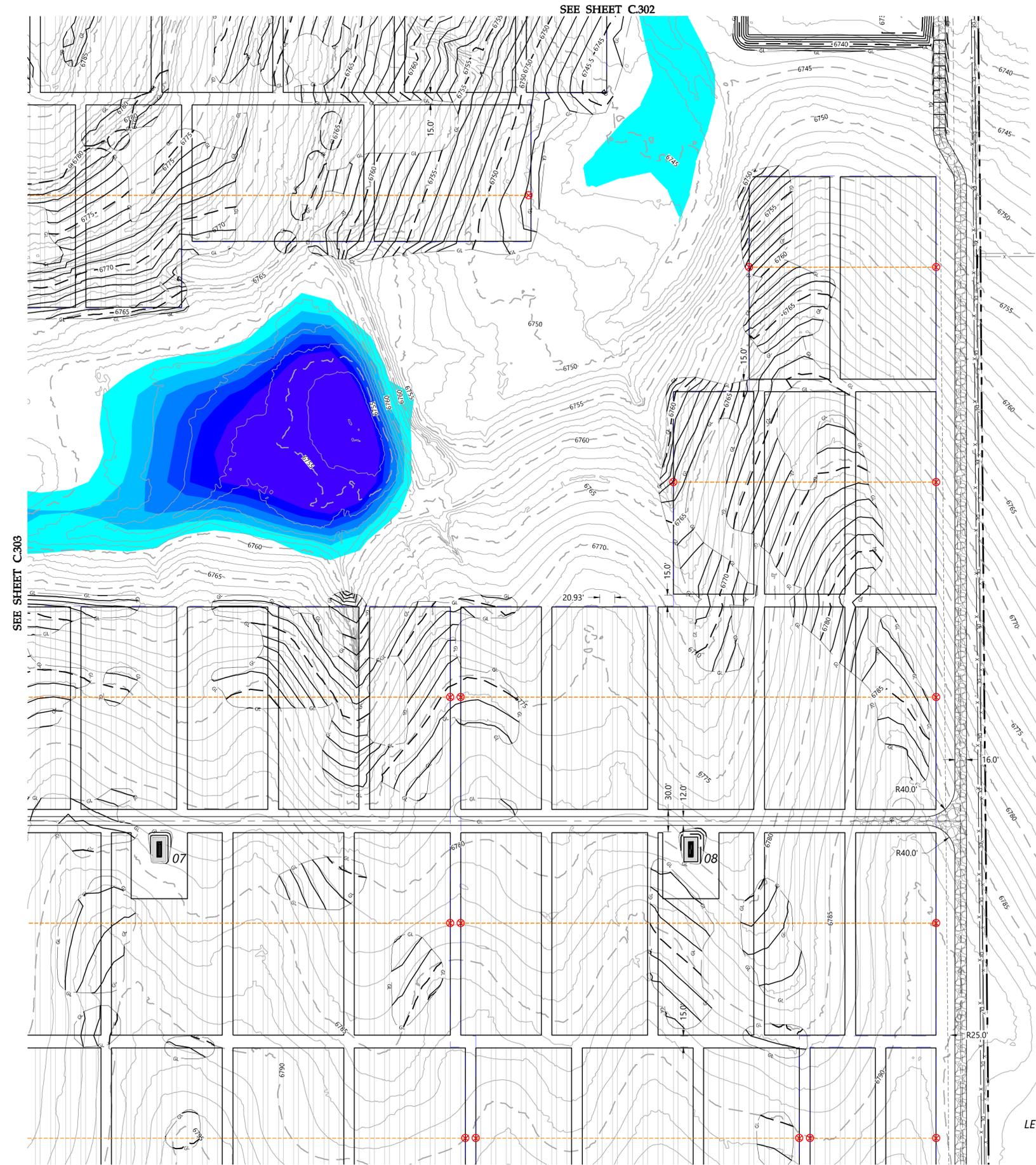
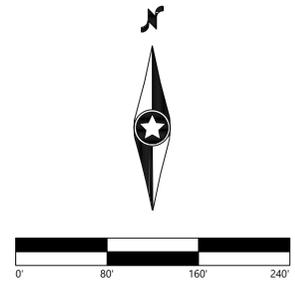
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- PROPOSED ACCESS RD. (NO GRAVEL)
- PROPOSED CAB
- PROPOSED DEAD END POST (IF REQ'D)
- PROPOSED SECONDARY CAB
- PROPOSED LAYDOWN AREA
- PROPOSED PROTECTED CROSSING
- PROPOSED GRADING LIMITS
- EX. INDEX CONTOUR LINE
- EX. INTERVAL CONTOUR LINE
- EX. SECTION LINE
- EX. EASEMENT LINE
- EX. FENCE LINE
- EX. OVERHEAD POWERLINE
- EX. UTILITY POLE
- EX. UNDERGROUND ELECTRICAL
- EX. FIBER OPTIC LINE
- EX. OIL LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD
- EX. ROAD CENTERLINE
- EX. TRAIL CENTERLINE
- EX. GROUND SWALE
- EX. RIGHT OF WAY LINE
- INVERTER/TRANSFORMER SKID



KEYMAP
Scale: 1"=1500'



LEO V. MINIX JR.
REC. N/A

Existing Topo Flood Depths		
0.500'	1.000'	
1.000'	1.500'	
1.500'	2.000'	
2.000'	2.500'	
2.500'	3.000'	
3.000'	5.000'	

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El Paso County, Colorado

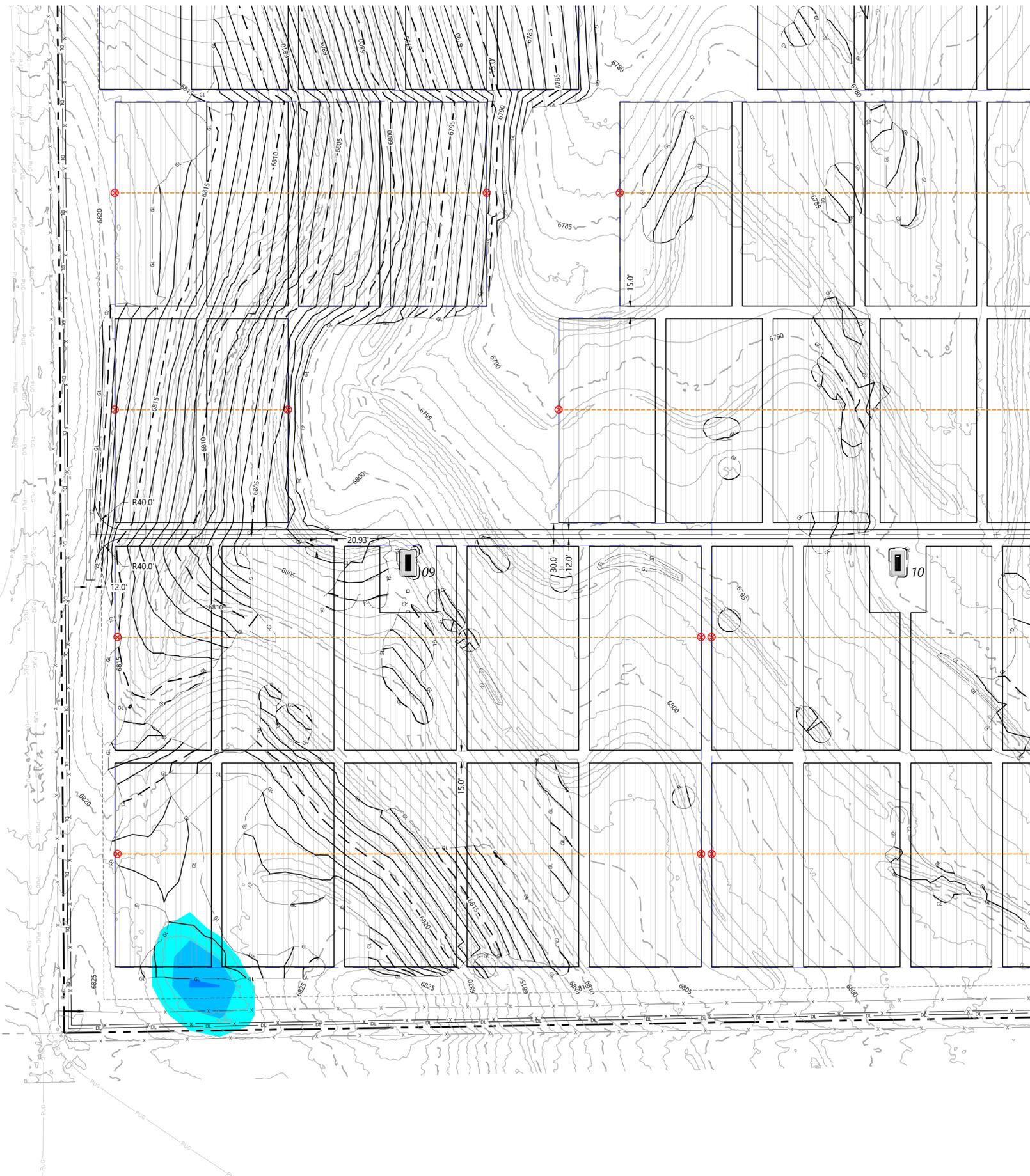
Civil Plan Set - 5

DATE: 06/04/2019

SHEET: C.304

WILSON FARM LLLP
REC. 98085330

SEE SHEET C.303

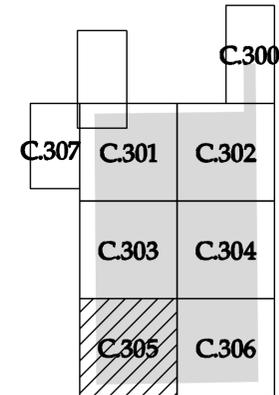


SEE SHEET C.306

WILSON FARM LLLP
REC. 98085330

LEGEND & ABBREVIATIONS

- EX. PROJECT BOUNDARY LINE
- - - - - INVERTER BLOCK BOUNDARY
- - - - - PROPOSED FENCE LINE
- - - - - PROPOSED SOLAR TRACKER
- - - - - 55' EQUIPMENT SET BACK LINE
- - - - - PROPOSED GRAVELED ACCESS ROAD
- - - - - PROPOSED ACCESS RD. (NO GRAVEL)
- - - - - PROPOSED CAB
- ⊗ PROPOSED DEAD END POST (IF REQ'D)
- - - - - PROPOSED SECONDARY CAB
- ▨ PROPOSED LAYDOWN AREA
- PROPOSED PROTECTED CROSSING
- GL PROPOSED GRADING LIMITS
- - - - - EX. INDEX CONTOUR LINE
- - - - - EX. INTERVAL CONTOUR LINE
- - - - - EX. SECTION LINE
- - - - - EX. EASEMENT LINE
- - - - - EX. FENCE LINE
- - - - - EX. OVERHEAD POWERLINE
- EX. UTILITY POLE
- EX. UNDERGROUND ELECTRICAL
- FO EX. FIBER OPTIC LINE
- OIL EX. OIL LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD
- EX. ROAD CENTERLINE
- EX. TRAIL CENTERLINE
- EX. GROUND SWALE
- EX. RIGHT OF WAY LINE
- ▭ INVERTER/TRANSFORMER SKID



KEYMAP
Scale: 1"=1500'

Westwood

Phone (720) 531-8350 10170 Church Ranch Way, Suite #100
Westminster, CO 80021
westwoodps.com

Westwood Professional Services, Inc.



PREPARED FOR:



REVISIONS:

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C	04/22/19	Permit Submittal Revisions
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Grazing Yak Solar

El Paso County, Colorado

Civil Plan Set - 6

Existing Topo Flood Depths		
0.500'	1.000'	
1.000'	1.500'	
1.500'	2.000'	
2.000'	2.500'	
2.500'	3.000'	
3.000'	5.000'	

DATE: 06/04/2019

SHEET: C.305

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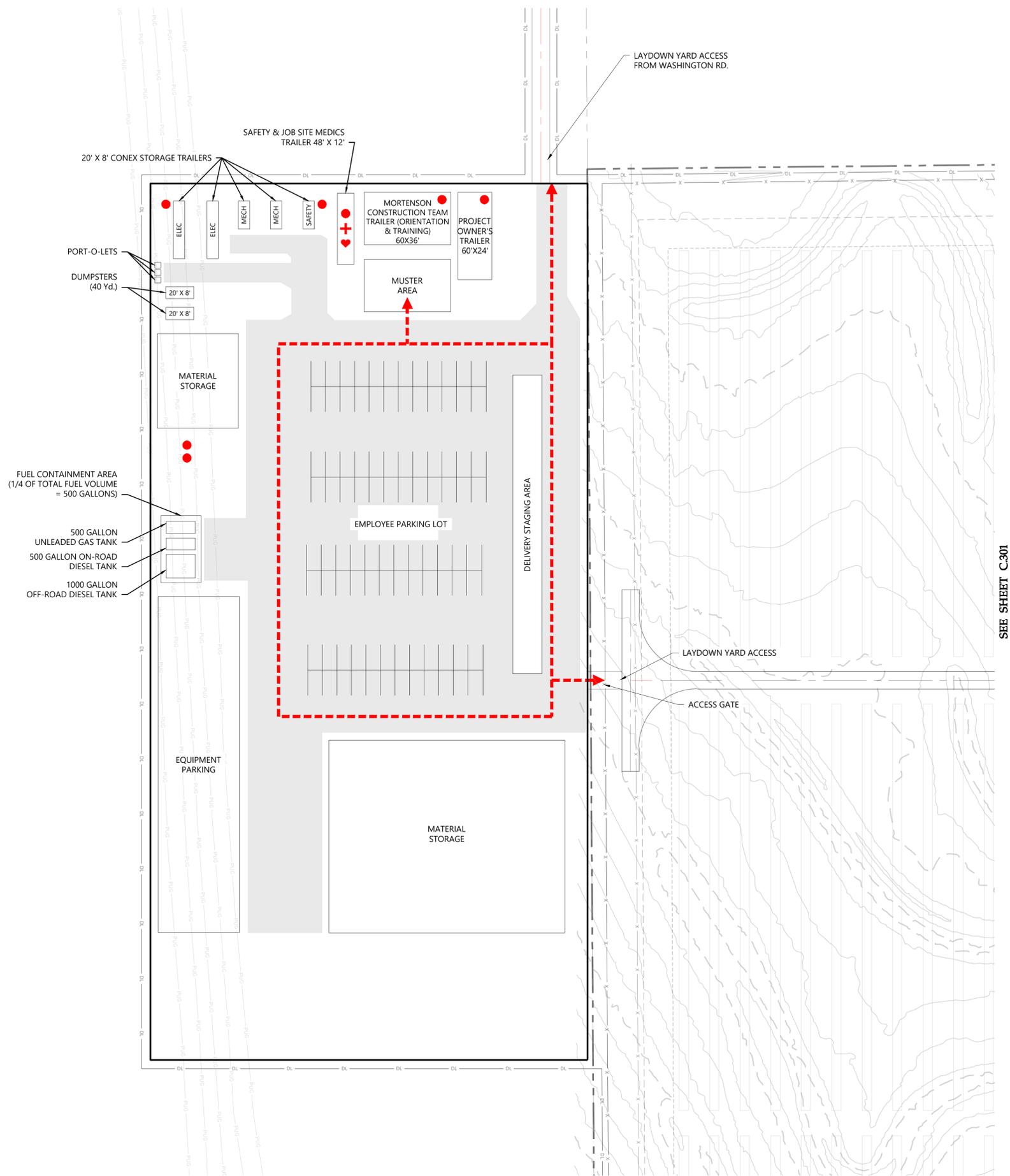


PREPARED FOR:



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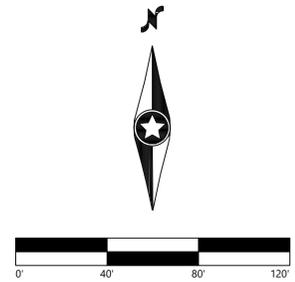
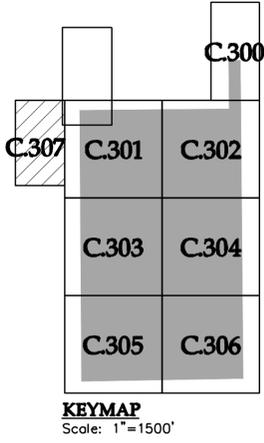
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LEGEND & ABBREVIATIONS

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	INVERTER BLOCK BOUNDARY
	PROPOSED FENCE LINE
	PROPOSED SOLAR TRACKER
	55' EQUIPMENT SET BACK LINE
	PROPOSED GRAVELED ACCESS ROAD
	PROPOSED ACCESS RD. (NO GRAVEL)
	PROPOSED LAYDOWN AREA
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	EX. INDEX CONTOUR LINE
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	EX. FIBER OPTIC LINE
	EX. OIL LINE
	EX. GRAVEL ROAD
	EX. ASPHALT PAVEMENT ROAD
	EX. ROAD CENTERLINE
	EX. TRAIL CENTERLINE
	EX. GROUND SWALE
	EX. RIGHT OF WAY LINE
	EMERGENCY EGRESS ROUTE
	FIRE EXTINGUISHERS
	FIRST AID KIT
	AED

- NOTES:**
- ENTIRE LAYDOWN YARD TO BE COVERED WITH 4" AGGREGATE.
 - ENTIRE LAYDOWN YARD TO BE RETURNED TO ORIGINAL STATE UPON COMPLETION OF PROJECT.



Grazing Yak Solar

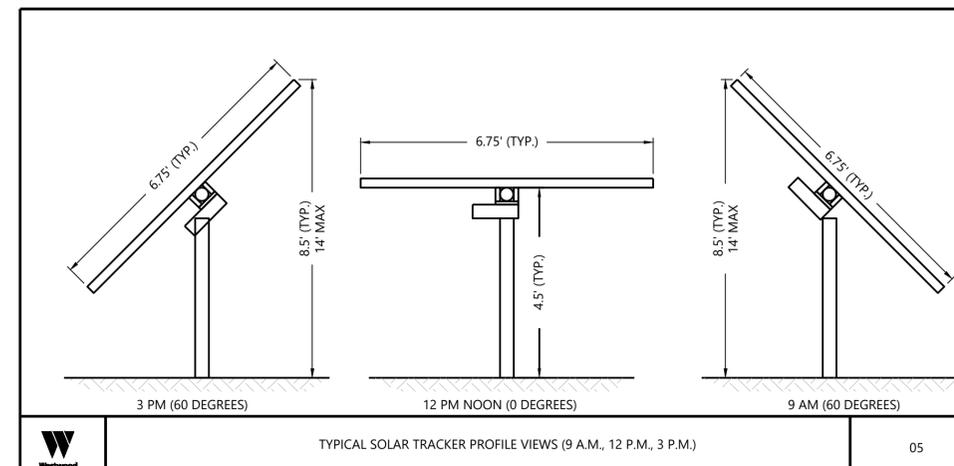
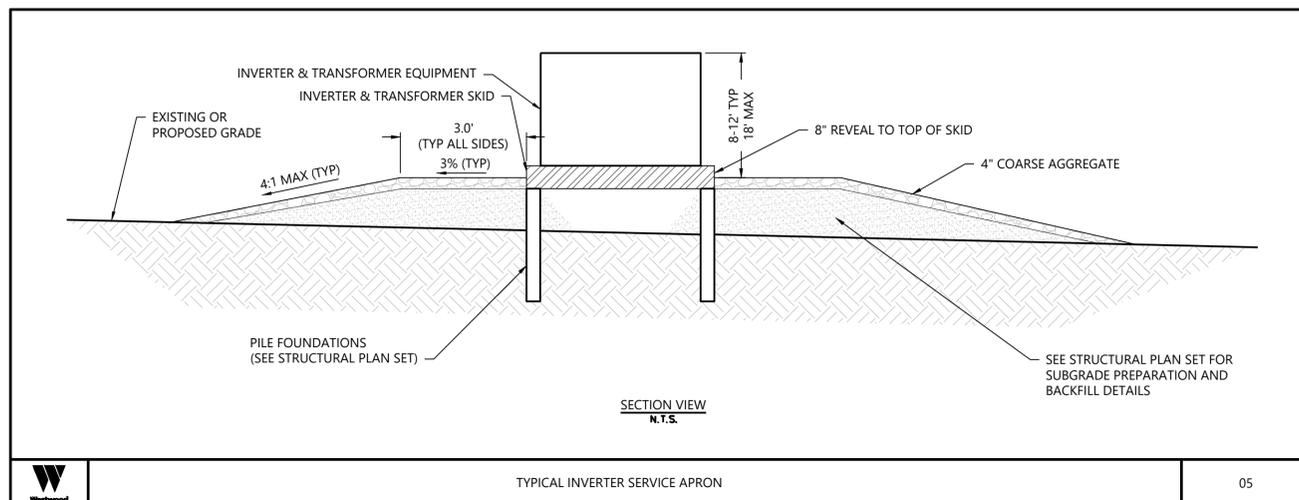
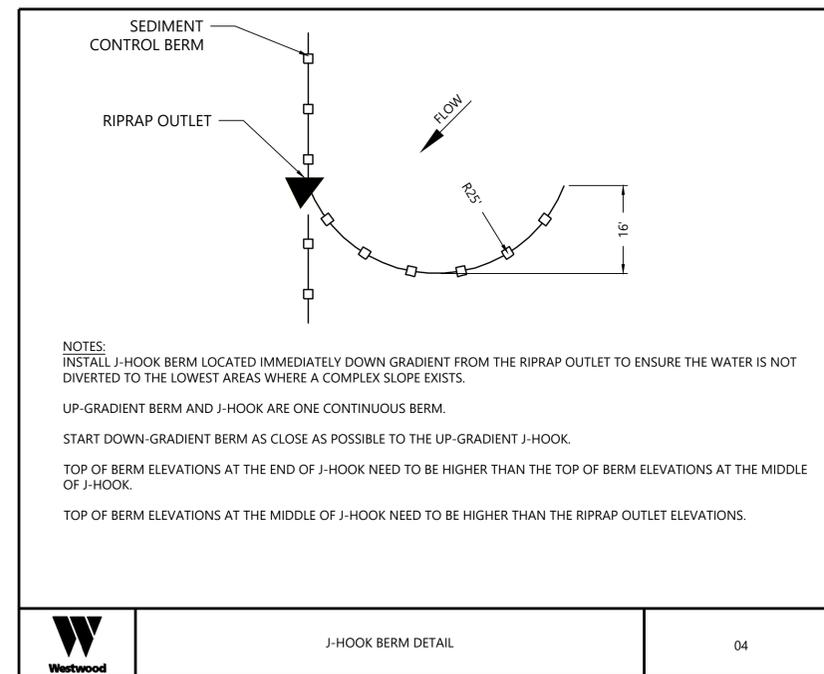
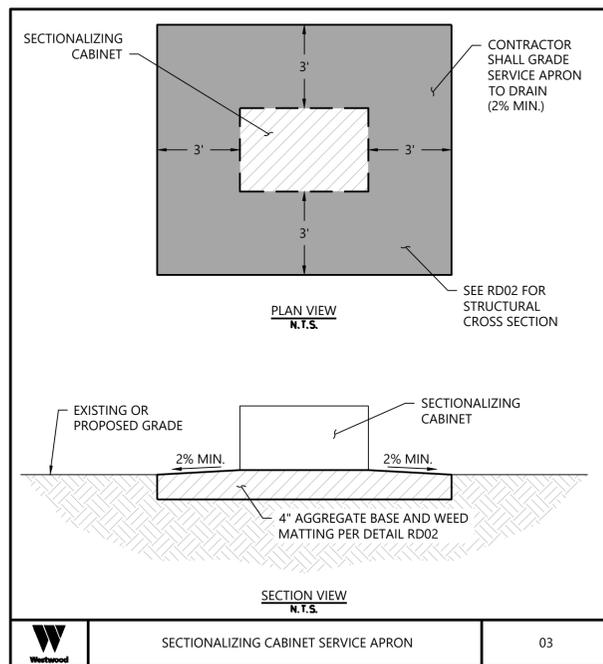
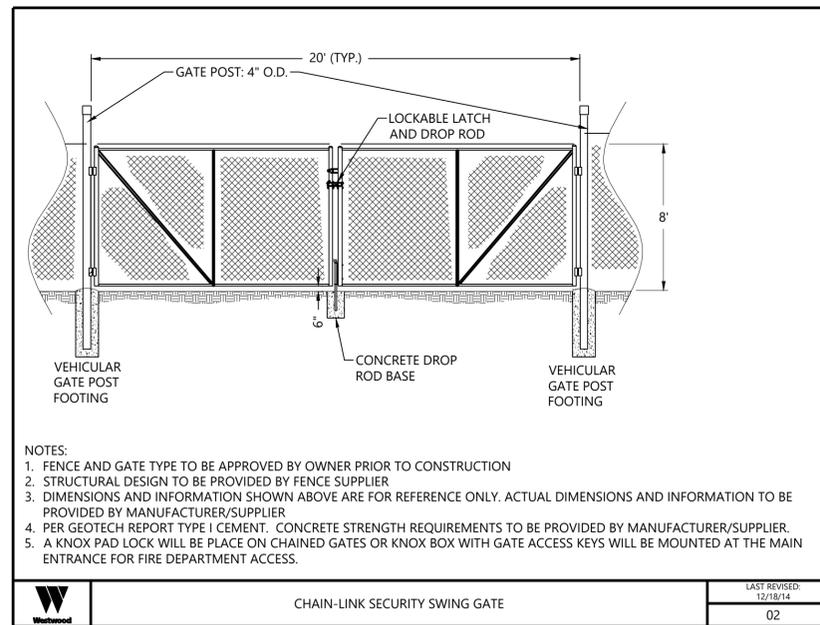
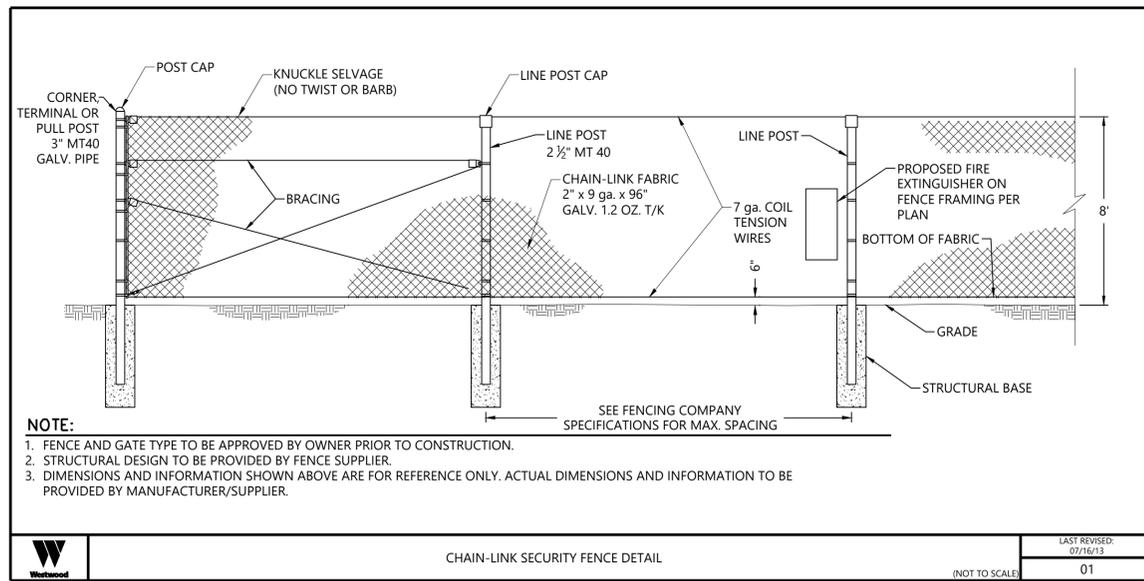
El Paso County, Colorado

Civil Plan Set -
Laydown Area Plan

DATE: 06/04/2019

SHEET: C.307

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Grazing Yak Solar
El Paso County, Colorado

Construction Details - 2

DATE: 06/04/2019

SHEET: C.401

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NOTE: THIS SHEET IS FOR REFERENCE ONLY - ALL DESIGN BY OTHERS

www.jinkosolar.com



Eagle HC 72-V
390-410 Watt
MONO CRYSTALLINE MODULE

Positive power tolerance of 0~10W

(Draft)



- ISO9001:2008 Quality Standards
- ISO14001:2004 Environmental Standards
- OHSAS18001 Occupational Health & Safety Standards
- IEC61215, IEC61730 certified products

Nomenclature:
JKM410M-72H-V

Code	Cell
Full	Full
Half	Half



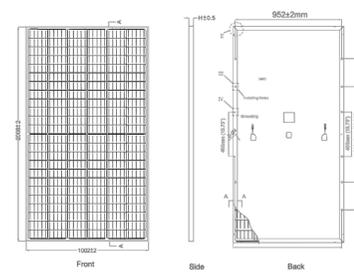
KEY FEATURES

- Innovative Solar Cells**
Five busbar mono PERC half cell technology
- High Efficiency**
Higher module conversion efficiency (up to 20.38%) due to lower resistance characteristics
- High Voltage**
UL and IEC 1500V certified; lowers BOS costs and yields better LCOE
- PID-Free**
World's 1st PID-Free module
- Low-Light Performance**
Advanced glass technology improves light absorption and retention
- Strength and Durability**
Certified for high snow (5400 Pa) and wind (2400 Pa) loads

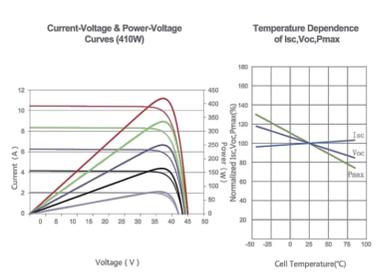
10 Year Product Warranty • 25 Year Linear Power Warranty



Engineering Drawings



Electrical Performance & Temperature Dependence



Mechanical Characteristics

Cell Type	Mono-crystalline PERC 158.75x158.75mm
No. of Half-cells	144 (12x12)
Dimensions	2008x1002x40mm (79.06x39.45x1.57 inch)
Weight	27 kg (59.5 lbs)
Front Glass	4.0mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP67 Rated
Output Cables	anode 1400mm, cathode 1400mm or Customized Length

Packaging Configuration

(Two pallets = One stack)
26pcs/pallet, 52pcs/stack, 572 pcs/40'HQ Container

SPECIFICATIONS

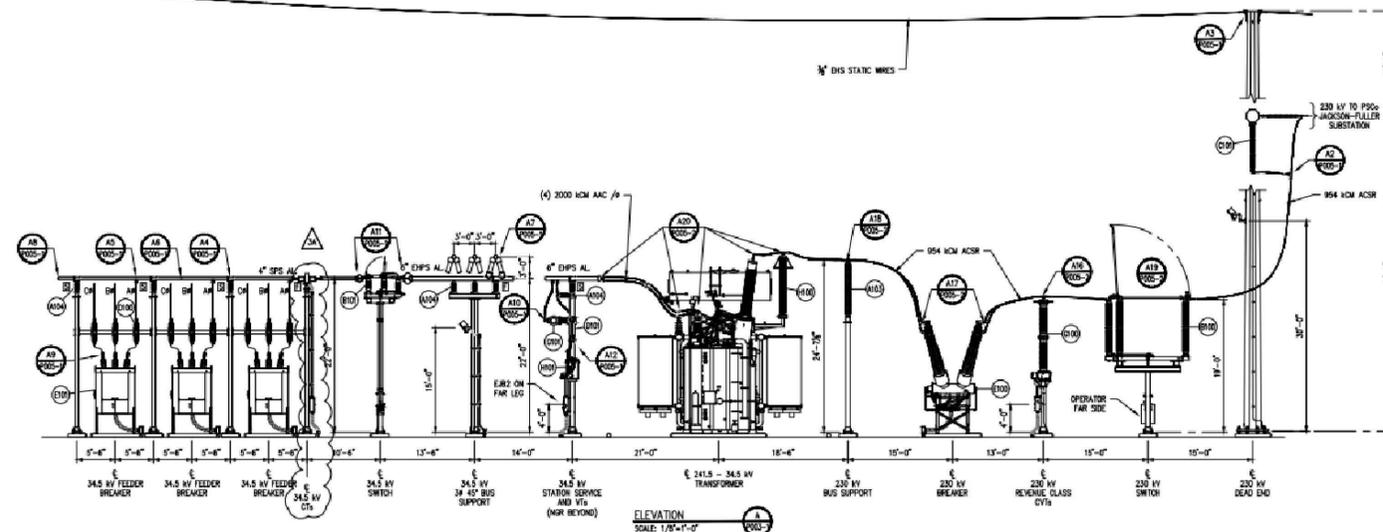
Module Type	JKM390M-72H-V		JKM395M-72H-V		JKM400M-72H-V		JKM405M-72H-V		JKM410M-72H-V	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	390Wp	294Wp	395Wp	297Wp	400Wp	300Wp	405Wp	303Wp	410Wp	308Wp
Maximum Power Voltage (Vmp)	39.63V	38.00V	39.66V	38.10V	39.72V	38.23V	39.82V	38.26V	39.88V	38.35V
Maximum Power Current (Imp)	9.84A	7.75A	9.96A	7.81A	10.07A	7.85A	10.17A	7.92A	10.28A	7.98A
Open-circuit Voltage (Voc)	48.55V	45.60V	48.75V	45.70V	48.92V	45.90V	49.02V	46.00V	49.23V	46.30V
Short-circuit Current (Isc)	10.17A	8.21A	10.32A	8.34A	10.41A	8.41A	10.48A	8.48A	10.55A	8.52A
Module Efficiency STC (%)	19.38%		19.63%		19.88%		20.13%		20.38%	
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1500VDC(UL)/1500VDC(IEC)									
Maximum series fuse rating	20A									
Power tolerance	0~10W									
Temperature coefficients of Pmax	-0.37%/°C									
Temperature coefficients of Voc	-0.29%/°C									
Temperature coefficients of Isc	0.048%/°C									
Nominal operating cell temperature (NOCT)	45±2°C									

STC: Irradiance 1000W/m² Cell Temperature 25°C AM=1.5

NOCT: Irradiance 800W/m² Ambient Temperature 20°C AM=1.5 Wind Speed 1m/s

* Power measurement tolerance: ± 10W

The company reserves the final right for explanation on any of the information presented hereby. US-JKM-PERC-410M-72H-V_v1.0_rev2018



BY OTHERS

Westwood

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Westminster, CO 80021
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Westwood Professional Services, Inc.



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Grazing Yak Solar

El Paso County, Colorado

Construction Details - 3

DATE: 06/04/2019

SHEET: C.402

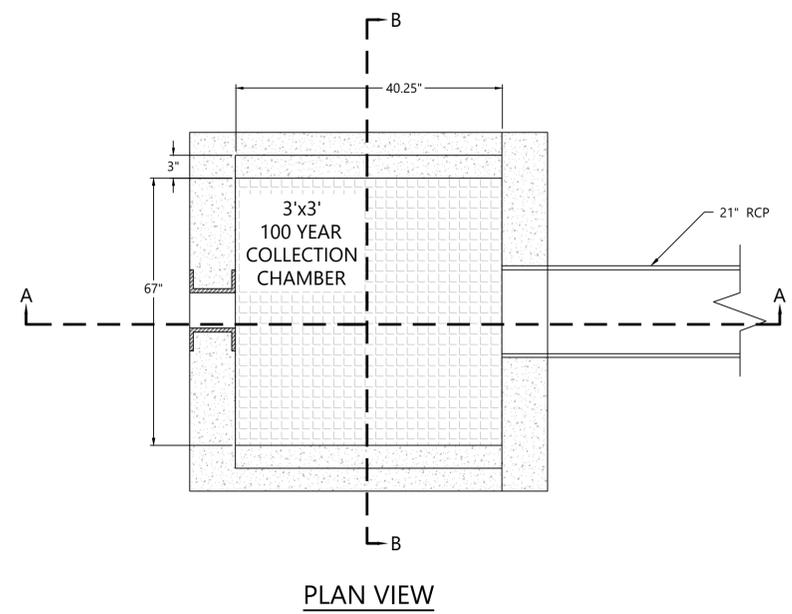


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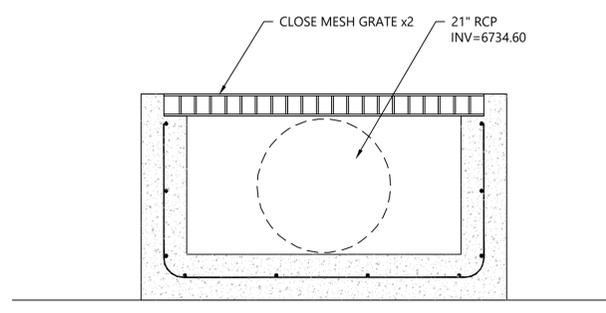


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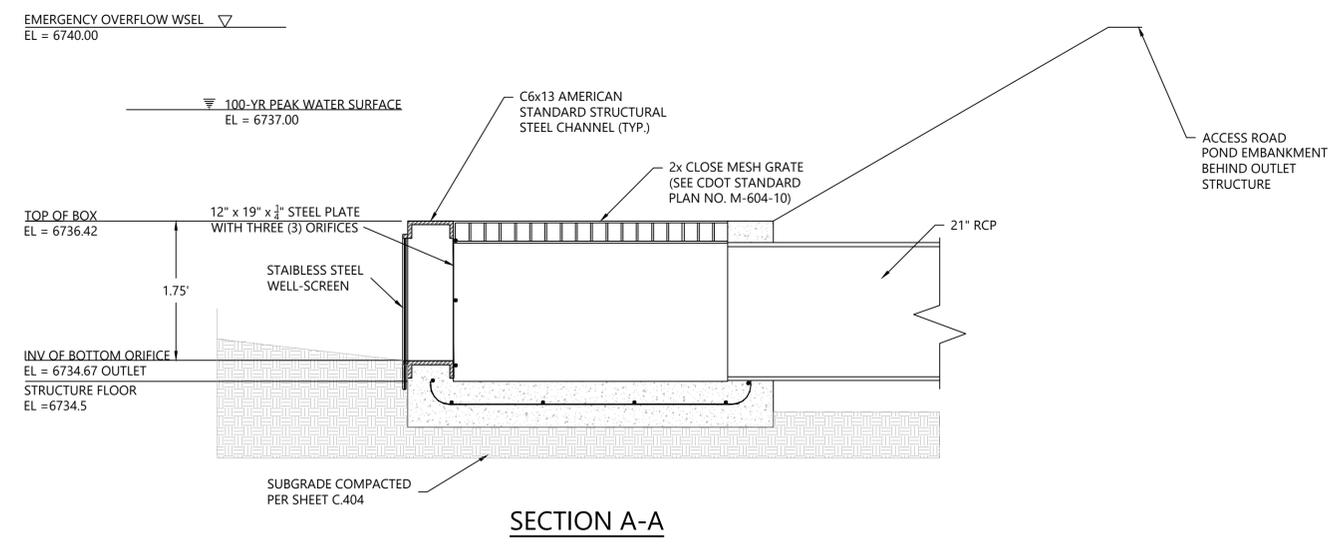


PLAN VIEW

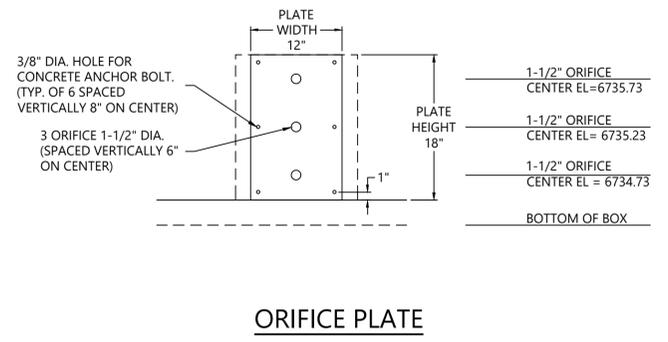


SECTION B-B

- NOTES:
1. COLLECTION CHAMBER TO BE CONSTRUCTED USING PRE-CAST REINFORCED CONCRETE.
 2. INSTALL NEOPRENE CLOSED CELL MEDIUM GASKETS WITH ADHESIVE ON ONE SIDE, 1/2" THICK x 2" WIDE BETWEEN ORIFICE PLATE AND STRUCTURE.
 3. ORIFICE PLATE, STRUCTURAL STEEL CHANNEL, AND CLOSE MESH GRATES SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
 4. ORIFICE PLATE SHALL BE MOUNTED WITH 3" x 1/2" STAINLESS STEEL CONCRETE ANCHOR BOLTS W/ WASHERS, AND NUTS AS SHOWN.



SECTION A-A



ORIFICE PLATE

SAND FILTER BASIN WITH FULL SPECTRUM OUTLET STRUCTURE DETAILS

Grazing Yak Solar
El Paso County, Colorado

Construction Details - 4

DATE: 06/04/2019

SHEET: C.403

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ROAD DESIGN PARAMETERS

1. THE ROAD HAS BEEN DESIGNED TO ACCOMMODATE LOADS DURING CONSTRUCTION AND LIGHT DUTY TRUCKS FOR LOW VOLUME USE IN NORMAL OPERATING CONDITIONS. THE ROAD DESIGN SPECIFIED IS NOT INTENDED FOR ALL WEATHER USE FOR HEAVY DUTY, HIGH VOLUME, CONSTRUCTION LOADS.
2. ROAD MAINTENANCE CAN BE EXPECTED DURING CONSTRUCTION AND OVER THE LIFE OF THE PERMANENT FACILITY.
3. ROAD SECTION AND SPECIFICATION SHOWN ON THE PLANS WERE PREPARED BY WESTWOOD PROFESSIONAL SERVICES BASED ON GEOTECHNICAL RECOMMENDATIONS FROM TERRACON CONSULTANTS.

PRODUCTS

1. ACCESS ROAD AGGREGATE SHALL BE #57 STONE MEETING CDOT SPECIFICATION FOR SURFACE AGGREGATE.
2. CULVERTS: SEE PLAN FOR DRAINAGE CULVERT LOCATIONS. ACCESS ROAD CULVERTS SHALL MEET THE MINIMUM SPECIFICATIONS SET FORTH BY THE COLORADO DEPARTMENT OF TRANSPORTATION AND/OR EL PASO COUNTY. ALL CULVERTS SHALL BE HELICAL CORRUGATED 12 GAUGE OR APPROVED EQUAL AND MANUFACTURED OF CORRUGATED METAL PIPE.
3. GEOTEXTILE FABRIC SHALL BE MIRAFI HP270 OR APPROVED EQUAL.
4. EXCAVATED SOILS THROUGHOUT PROJECT SHALL BE UTILIZED AS FILL. SOILS SHALL BE CLEAN OF DEBRIS AND ORGANIC MATERIAL.

EXECUTION

1. SITE PREPARATION
 - A. THE CONTRACTOR SHALL BE REQUIRED TO CLEAR AND GRUB AREAS DESIGNATED ON THE PLANS REMOVING ALL TREES, STUMPS, BRUSH AND DEBRIS. TREES AND BRUSH LOCATED OUTSIDE OF THE PROJECT DEVELOPMENT AREA SHALL NOT BE DISTURBED.
 - B. AREAS THAT ARE NOT TO BE CLEARED AND GRUBBED SHALL HAVE ANY EXISTING VEGETATION MOWED TO A MINIMUM HEIGHT OF 3 INCHES PRIOR TO GRADING ACTIVITIES.
 - C. IF THE SITE WAS PREVIOUSLY FARMED, THE CONTRACTOR MIGHT NEED TO LEVEL FALLOW GROUND BY DISCING/DRAWING FIELD AND COMPACTING NATIVE SOILS USING A SMOOTH DRUM ROLLER TO REMOVE FALLOW. THE SITE WILL HAVE FINAL STABILIZATION MEASURES ESTABLISHED SO COMPACTION SHOULD ONLY BE TO SMOOTH THE SURFACE.
 - D. THE CONTRACTOR SHALL PRESERVE OTHER EXISTING VEGETATION TO THE MAXIMUM EXTENT PRACTICABLE. ANY VEGETATION THAT IS REMOVED SHALL ONLY BE ALLOWED WITHIN THE PROJECT BOUNDARY. THE CONTRACTOR IS TO REMOVE ONLY THAT VEGETATION WHICH SHALL BE DESIGNATED BY THE OWNERS REPRESENTATIVE FOR REMOVAL, AND SHALL EXERCISE EXTREME CARE AROUND EXISTING VEGETATION TO BE SAVED. CONSTRUCTION FENCING MAY BE INSTALLED TO PROTECT AREAS THAT ARE NOT TO BE DISTURBED.
 - F. NO BURNING OF DEBRIS IS ALLOWED WITHOUT THE NECESSARY PERMITS FROM JURISDICTIONAL GOVERNING AUTHORITIES AND APPROVAL BY THE OWNER.
2. FILL MATERIALS AND PLACEMENT
 - A. ALL FILL MATERIALS SHALL BE INORGANIC SOILS FREE OF VEGETATION, DEBRIS, AND FRAGMENTS LARGER THAN THREE (3) INCHES IN SIZE. PEA GRAVEL OR OTHER SIMILAR NON-CEMENTITIOUS, POORLY-GRADED MATERIALS SHALL NOT BE USED AS FILL OR BACKFILL WITHOUT THE PRIOR APPROVAL OF THE GEOTECHNICAL ENGINEER.
 - B. CLEAN ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS FILL MATERIAL FOR GENERAL SITE GRADING. THIS MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 10".
 - C. ANY IMPORTED SOILS MUST HAVE EXPANSION VALUES IN THE "VERY LOW" RANGE.

ACCESS ROAD CONSTRUCTION AND SITE GRADING

1. TOPSOIL MANAGEMENT
 - A. TOPSOIL SHALL BE STRIPPED FROM ALL ROADWAY AREAS (TYPICALLY 6"). TOPSOIL STRIPPING AREAS (AS IDENTIFIED ON THE PLANS) SHALL BE STRIPPED THROUGH THE TOPSOIL DEPTH. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THESE DESIGNATED AREAS.
 - B. STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS SHALL BE STOCKPILED ON THE SITE. STOCKPILES WITHIN THE SITE SHALL HAVE TEMPORARY EROSION AND SEDIMENT CONTROL APPLIED IN ACCORDANCE WITH THE PROJECT SWPPP OR USED TO REVEGETATE LANDSCAPED AREAS OR EXPOSED SLOPES AFTER COMPLETION OF GRADING OPERATIONS. IF IT IS NECESSARY TO DISPOSE OF ORGANIC MATERIALS ON-SITE THEY SHALL BE PLACED IN NON-STRUCTURAL AREAS.
2. INTERNAL ROAD EMBANKMENT
 - A. EMBANKMENT CONSTRUCTION SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL. AFTER TOPSOIL STRIPPING, ABOVE THE EXISTING GRADE AS INDICATED ON CIVIL PLANS. GENERALLY, THE INTERNAL ROAD EMBANKMENT SHALL HAVE COMPACTED SUPPORT SLOPES OF THREE FEET HORIZONTAL TO ONE FOOT VERTICAL.
 - B. THE MATERIAL FOR EMBANKMENT CONSTRUCTION SHALL BE GENERATED ON SITE BY THE CONTRACTOR FROM THE IDENTIFIED BORROW AREA. THIS MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 10".
 - C. ALL SLOPES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GRADING SHOWN ON THE PLANS.
 - D. EXPOSED SURFACES SHALL BE FREE OF MOUNDS AND DEPRESSIONS WHICH COULD PREVENT UNIFORM COMPACTION. SEE TABLE 2 FOR TESTING REQUIREMENTS AND TABLE 3 FOR COMPACTION REQUIREMENTS.
3. SITE GRADING
 - A. SUBSEQUENT TO THE SURFACE CLEARING, GRUBBING AND TOPSOIL REMOVAL IN AREAS SHOWN ON THE PLANS, THE SUBSURFACE SOILS SHALL HAVE THE GRADES AND ELEVATIONS MODIFIED AS SHOWN ON THE PLANS. THE PROPOSED CONTOURS AND ELEVATIONS SHOWN ON THE PLANS ARE TO FINISHED GRADE.
 - B. SUBSURFACE SOILS SHALL BE MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFICATIONS OF TABLE 3.
 - C. ANY CUT MATERIAL THAT CANNOT BE USED FOR STRUCTURAL BACKFILL THROUGHOUT THE PROJECT SHALL BE USED IN FILL AREAS IDENTIFIED ON THE PLANS. THE FILL AREA SHALL HAVE TOPSOIL REMOVED AND MANAGED AS IDENTIFIED ABOVE IN "TOPSOIL MANAGEMENT".
 - D. CLEAN, ORGANIC FREE, ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS SUBGRADE MATERIAL FOR GENERAL SITE GRADING.
3. SUBGRADE PREPARATION
 - A. SUBSEQUENT TO THE SURFACE CLEARING, GRUBBING, TOPSOIL REMOVAL AND EMBANKMENT CONSTRUCTION, THE EXPOSED SUBGRADE SOILS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF EIGHT (8) INCHES, MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFICATIONS OF TABLE 3. THE COMPACTED EXPOSED SUBGRADES SHALL BE PROOF ROLLED AND OBSERVED BY A GEOTECHNICAL ENGINEER TO DETERMINE IF SOFT SOILS EXIST. IF SOFT SOILS EXIST THEY SHALL BE SCARIFIED AND ALLOWED TO DRY, RECOMPACTED AND TESTED AGAIN, IF THEY CONTINUE TO REMAIN SOFT, FOLLOWING SCARIFICATION, DRYING AND RECOMPACTION EFFORTS ADDITIONAL AGGREGATE MAY BE ADDED FOR STABILITY.
 - B. ROAD SUBGRADE AND COMPACTION SHALL EXTEND HORIZONTALLY AT LEAST TWO FEET BEYOND THE OUTSIDE EDGE OF THE DRIVABLE SURFACE.
 - C. THE MOISTURE CONTENT AND COMPACTION OF ROAD SUBGRADE SOILS SHALL BE MAINTAINED UNTIL PAVEMENT CONSTRUCTION.
 - D. CLEAN, ORGANIC FREE, ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS SUBGRADE MATERIAL FOR GENERAL SITE GRADING AND ROADWAY AREAS.
4. AGGREGATE PLACEMENT
 - A. ACCESS ROADS - SUBSEQUENT TO THE SUBGRADE PREPARATION THE ROAD AGGREGATE BASE SHALL BE PLACED AND COMPACTED TO THE SPECIFICATIONS IDENTIFIED IN TABLE 3.
5. TOPSOIL REDISTRIBUTION AND STABILIZATION
 - A. FOLLOWING THE PLACEMENT OF THE AGGREGATE BASE AND APPROVAL OF THE TESTING, TOPSOIL SHALL BE DISTRIBUTED OVER THE EXPOSED DISTURBED AREAS, EXCLUDING THE AGGREGATE DRIVING SURFACE.
 - B. FOLLOWING SITE GRADING OPERATIONS, TOPSOIL CAN BE USED TO BRING THE GROUND ELEVATIONS UP TO THE DESIGNED FINISHED GRADE ELEVATIONS.
 - C. THE TOPSOIL SHALL HAVE TEMPORARY AND PERMANENT STABILIZATION MEASURES ESTABLISHED IN ACCORDANCE WITH THE PROJECT SWMP.

TEMPORARY LAYDOWN/STORAGE YARD

1. PREPARATION
 - A. THE LAYDOWN/STORAGE YARD SHALL CONSIST OF COMPACTED NATIVE MATERIAL OVERLAID WITH A GEOTEXTILE FABRIC AND AGGREGATE MATERIAL.
 - B. THE COMPACTED NATIVE MATERIAL SHALL BE MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFICATIONS OF TABLE 3 (NON-STRUCTURAL AREA).
 - C. GEOTEXTILE FABRIC SHALL BE PLACED ON TOP OF COMPACTED NATIVE MATERIAL AND THEN AGGREGATE PLACED AND COMPACTED.
 - D. FOLLOWING CONSTRUCTION AND REMOVAL OF PROJECT INVENTORY THE COMPACTED NATIVE MATERIAL SHALL BE DECOMPACTED AND PERMANENTLY STABILIZED IN ACCORDANCE WITH THE PROJECT SWMP SPECIFICATIONS.

EXECUTION (CONTINUED)

ELECTRICAL TRENCHES

- A. TRENCH'S SHALL BE EXCAVATED TO THE DEPTH IDENTIFIED IN THE ELECTRICAL DRAWINGS/DETAILS.
- B. TRENCH BACKFILL SHALL CONSIST OF APPROVED, ONSITE OR IMPORT SOILS. SOILS SHALL BE FREE OF VEGETATION, DEBRIS, AND FRAGMENTS LARGER THAN 3 INCHES.
- C. INITIAL BACKFILL LIFT SHALL BE 18 INCHES, ADDITIONAL BACKFILL LIFTS SHALL NOT EXCEED 10 INCHES OF LOOSE MATERIAL. IF TESTING OF THE INITIAL LIFT DOES NOT PROVIDE THE REQUIRED DENSITY THE INITIAL BACKFILL LIFT WILL BE REDUCED TO A 8 INCH LOOSE THICKNESS.
- D. BACKFILL SHALL BE COMPACTED TO AT LEAST 85% OF MAXIMUM DRY DENSITY IN NON-STRUCTURAL AREAS AND 95% OF MAXIMUM DRY DENSITY UNDER STRUCTURAL AREA OR WITHIN 18" OF SOLAR POST FOUNDATION, AND WITHIN -2% TO +3% OF OPTIMUM MOISTURE.
- E. TRENCH BACKFILL SHALL BE MECHANICALLY COMPACTED.

LOCATION	TEST	FREQUENCY
STRUCTURAL FILL	GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR	1 PER MAJOR SOIL TYPE
COMPACTED SUBGRADE	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 EVERY 500 LF OF ROAD
	PROOF-ROLL	ENTIRE LENGTH
AGGREGATE BASE	DYNAMIC CONE PENETROMETER TEST (DCP)	1 EVERY 500 LF OF ROAD
	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 EVERY 500 LF OF ROAD
	PROOF-ROLL	ENTIRE LENGTH
MISCELLANEOUS FILL:	SIEVE ANALYSIS	1 PER 2000 CY
	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 PER 2 FOOT VERTICAL LIFTS AND/OR 500 C.Y. OF MATERIAL
TRENCH BACKFILL:	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 EVERY 500 LF OF TRENCH, ALTERNATE TEST DEPTHS OF 18" AND AT GRADE

MATERIAL TYPE AND LOCATION	MINIMUM COMPACTION REQUIREMENT (%)	RANGE OF MOISTURE CONTENTS FOR COMPACTION (% OVER OPTIMUM)	
		MINIMUM	MAXIMUM
AGGREGATE BASE:	100	-2%	+3%
STRUCTURAL FILL:	95	-2%	+3%
SUBGRADE (BENEATH EQUIPMENT PADS, NATIVE MATERIAL)	95	-2%	+3%
SUBGRADE (BENEATH EQUIPMENT PADS, IMPORT NON-EXPANSIVE SOILS)	95	-2%	+3%
TRENCH BACKFILL (NON-STRUCTURAL AREAS)	85	-4%	+4%
TRENCH BACKFILL (STRUCTURAL AREAS)	95	-2%	+3%
NON-STRUCTURAL FILL	90	-4%	+4%

TESTING REQUIREMENTS:

DEFINITIONS

1. THE CONTRACTOR SHALL SUBMIT MATERIAL TESTING REPORTS AS SHOWN ON THE DRAWINGS AS WELL AS GEOTEXTILE MATERIAL TO BE USED DURING CONSTRUCTION.
2. TESTING SHALL BE PERFORMED BY A DESIGNATED INDEPENDENT TESTING AGENCY.
3. SUBMIT TESTING AND INSPECTION RECORDS SPECIFIED TO THE CIVIL ENGINEER OF RECORD FOR REVIEW.
 - A. THE ENGINEER WILL REVIEW THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONSTRUCTION CONTRACTOR FROM THE RESPONSIBILITY FOR CORRECTING DEFECTIVE WORK.
3. PROOF ROLLING SHALL BE PERFORMED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER OR QUALIFIED GEOTECHNICAL REPRESENTATIVE USING A FULLY LOADED TANDEM AXLE DUMP TRUCK WITH A MINIMUM GROSS WEIGHT OF 25 TONS OR A FULLY LOADED WATER TRUCK WITH AN EQUIVALENT AXLE LOADING. PROOF-ROLLING ACCEPTANCE STANDARDS INCLUDE NO RUTTING GREATER THAN 1.5 INCHES, AND NO "PUMPING" OF THE SOIL BEHIND THE LOADED TRUCK.
4. SIEVE ANALYSIS SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM C136
5. PROCTORS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D1557
6. ATTERBERG LIMITS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D4318
7. MOISTURE DENSITY (NUCLEAR DENSITY) TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM D2922
8. DYNAMIC CONE PENETROMETER (DCP) TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM D6951-03

REQUIREMENTS

1. COMPACTION:
 - A. REFER TO TABLE 3 FOR COMPACTION REQUIREMENTS AND ACCEPTABLE MOISTURE CONTENTS.
2. IMPORT FILL MATERIAL:
 - A. IMPORT SOILS USED AS FILL MATERIAL SHALL BE TESTED FOR GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, PROCTOR TESTS, R-VALUES, SAND EQUIVALENTS, DURABILITY INDEX, LIQUID LIMIT, PLASTICITY INDEX, AND MAXIMUM EXPANSION INDEX.
3. COMPACTED SUBGRADE:
 - A. PROVIDE 1 MOISTURE DENSITY COMPACTION TEST FOR EVERY 500 L.F. OF ROAD LENGTH
 - B. THE ENTIRE INTERNAL/ACCESS ROAD SUBGRADE SHALL BE PROOF-ROLLED PRIOR TO THE PLACEMENT OF THE AGGREGATE BASE TO IDENTIFY AREAS OF UNSTABLE SUBGRADE. IF UNSTABLE SUBGRADE IS ENCOUNTERED SCARIFY, MOISTURE CONDITION, AND RECOMPACT SOILS TO ACHIEVE COMPACTION.
 - C. PROVIDE 1 DYNAMIC CONE PENETROMETER (DCP) TEST FOR EVERY 500 L.F. OF ROAD LENGTH
4. AGGREGATE BASE:
 - A. PROVIDE 1 MOISTURE DENSITY COMPACTION TEST FOR EVERY 500 L.F. OF ROAD LENGTH.
 - B. AGGREGATE BASE SHALL BE PROOF-ROLLED OVER THE ENTIRE LENGTH, 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 FOR ALL ROAD CLASSIFICATIONS.
 - C. PROVIDE 1 SIEVE ANALYSIS PER 2000 CY OF ROAD AGGREGATE BASE PLACED.
5. MISCELLANEOUS FILL:
 - A. PROVIDE MOISTURE DENSITY COMPACTION TESTS ONCE PER 2 FOOT VERTICAL LIFTS AND/OR 500 C.Y. OF COMPACTED FILL MATERIAL.

TRAFFIC CONTROL:

1. 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 CITY/COUNTY AND ENGINEER PRIOR TO PLACEMENT. TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST VERSION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

GENERAL NOTES:

1. CONSTRUCTION PLANS ARE BASED OFF THE COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, US FOOT.
2. PROPOSED SOLAR LAYOUT FOR THIS PROJECT PROVIDED BY WESTWOOD PROFESSIONAL SERVICES.
3. THE ALTA SURVEY AND EXISTING PLANIMETRIC DATA WAS PROVIDED BY WESTWOOD PROFESSIONAL SERVICES.
4. ALL DIMENSIONS ARE TO PROJECT BOUNDARY, EDGE OF GRAVEL, FENCE LINES AND SOLAR PANELS UNLESS OTHERWISE NOTED.
5. THE GROUND SURFACE CONTOURS (AT ONE-FOOT VERTICAL INTERVALS) AND ELEVATIONS ARE BASED ON A LIDAR DATA FROM THE STATE OF COLORADO.
6. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE OWNER SHALL BE NOTIFIED AND ARE NOT TO BE REMOVED WITHOUT PERMISSION FROM THE OWNER. 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.
7. THE CONTRACTOR SHALL NOTIFY COLORADO 811 (ONE CALL) AT LEAST 48 HOURS BEFORE EXCAVATION ACTIVITIES COMMENCE.
8. ELECTRONIC FILES ARE AVAILABLE FOR CONSTRUCTION OPERATIONS.

GRADING EROSION AND SEDIMENT CONTROL / STORMWATER MANAGEMENT PLAN (SWMP):

1. THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES AS PLANNED AND SPECIFIED FOLLOWING BEST MANAGEMENT PRACTICES AS OUTLINED BY THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE), AND BEING IN CONFORMANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT. SEE THE PROJECT SITE PLANS AND ASSOCIATED STORMWATER MANAGEMENT PLAN (SWMP) FOR EROSION CONTROL AND RESTORATION LOCATIONS AND SPECIFICATIONS. UNLESS OTHERWISE NOTED OR MODIFIED IN THE SWMP/HEREIN, ALL SECTIONS OF THE GENERAL CONDITIONS SHALL APPLY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SWMP'S AVAILABILITY.
3. ALL FIBER ROLLS AND OTHER EROSION CONTROL FEATURES SHALL BE IN-PLACE PRIOR TO ANY EXCAVATION/CONSTRUCTION AND SHALL BE MAINTAINED UNTIL VIABLE TURF OR GROUND COVER HAS BEEN ESTABLISHED.
4. ALL DRAINAGE SWALES DISTURBED DURING CONSTRUCTION ACTIVITIES AND NOT COVERED BY ROAD SURFACING MATERIALS, SHALL BE STABILIZED IN ACCORDANCE WITH THE SWMP PLAN.



PREPARED FOR:



REVISIONS:

#	DATE	COMMENT
B	03/28/19	Issued for Review (60%)
C	04/22/19	Permit Submittal Revisions
D	04/26/19	Issued for Review (90%)
E	04/29/19	Issued for Grading Permit
F	06/04/19	Re-Issue for Permit

Grazing Yak Solar

El Paso County, Colorado

Construction Notes - 1

DATE: 06/04/2019

SHEET: C.404

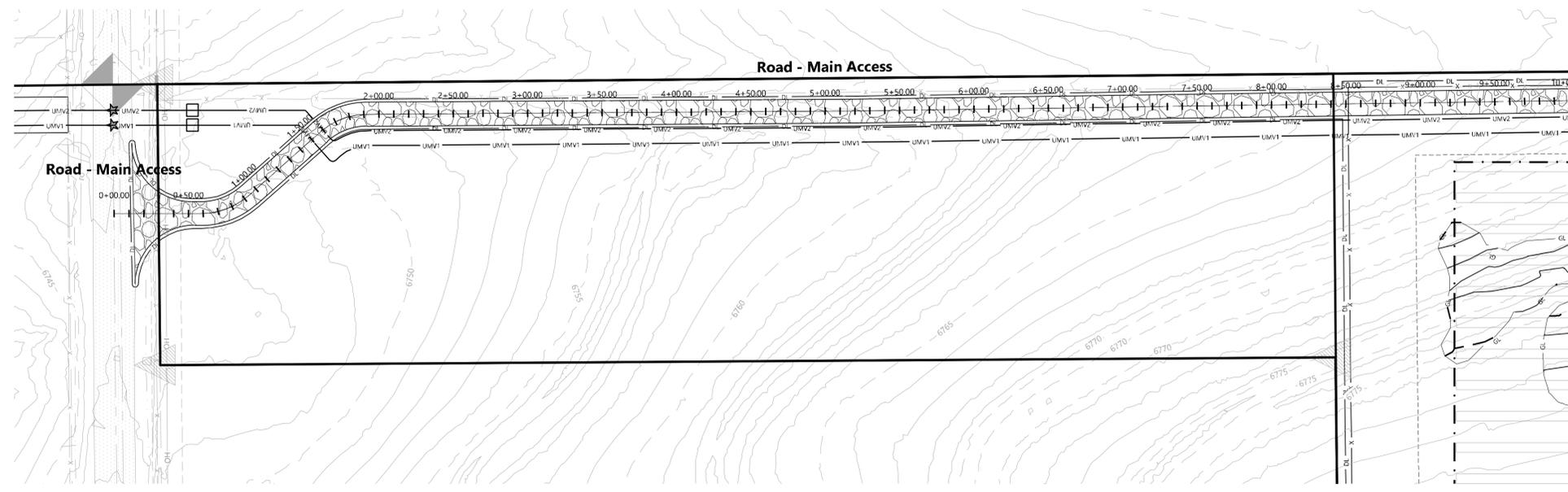


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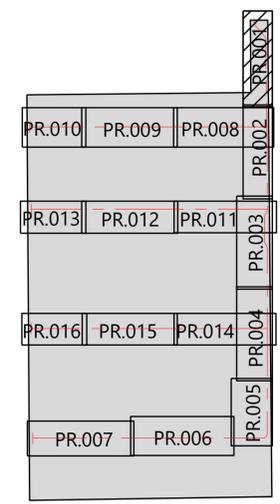
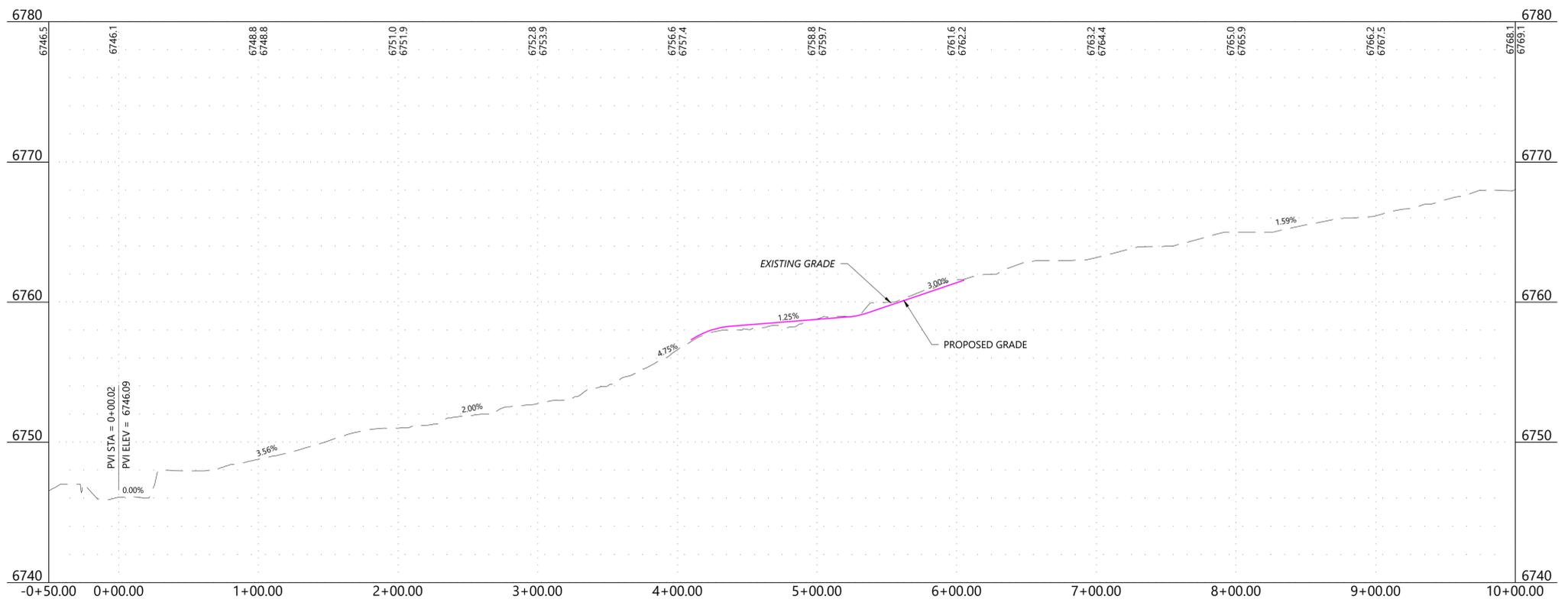
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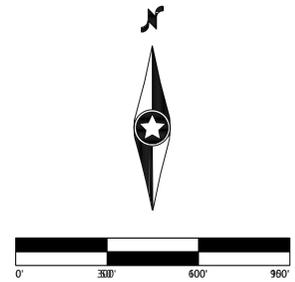
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- PROPOSED LAYDOWN AREA
- PROPOSED PROTECTED CROSSING
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- PROPOSED UNDERGROUND CIRCUIT 2
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- PROPOSED INTERVAL CONTOUR LINE
- PROPOSED GRADING LIMITS
- EX. INDEX CONTOUR LINE
- EX. INTERVAL CONTOUR LINE
- EX. SECTION LINE
- EX. EASEMENT LINE
- EX. FENCE LINE
- EX. OVERHEAD POWERLINE
- EX. UTILITY POLE
- EX. UNDERGROUND ELECTRICAL
- EX. FIBER OPTIC LINE
- EX. OIL LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD
- EX. ROAD CENTERLINE
- EX. TRAIL CENTERLINE
- EX. GROUND SWALE
- EX. RIGHT OF WAY LINE
- INVERTER/TRANSFORMER SKID

Road - Main Access
-0+50.00 - 10+00.00



KEYMAP
Not to Scale



Grazing Yak Solar

El Paso County, Colorado

Plan Profile - Main Access Rd Sheet 1

DATE: 06/04/2019

SHEET: **PR.001**

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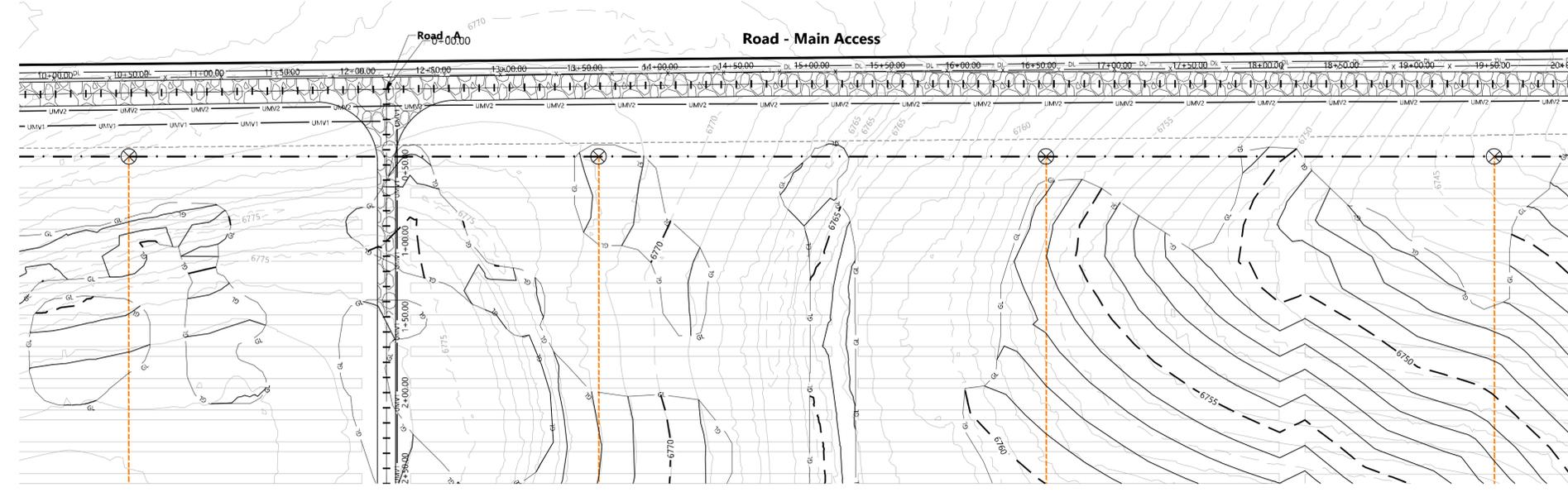


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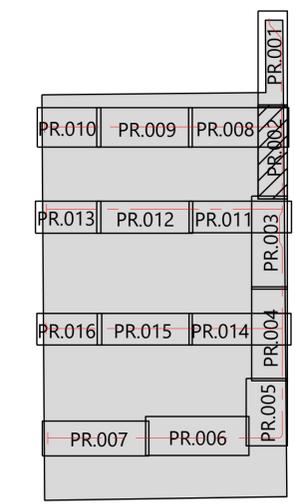
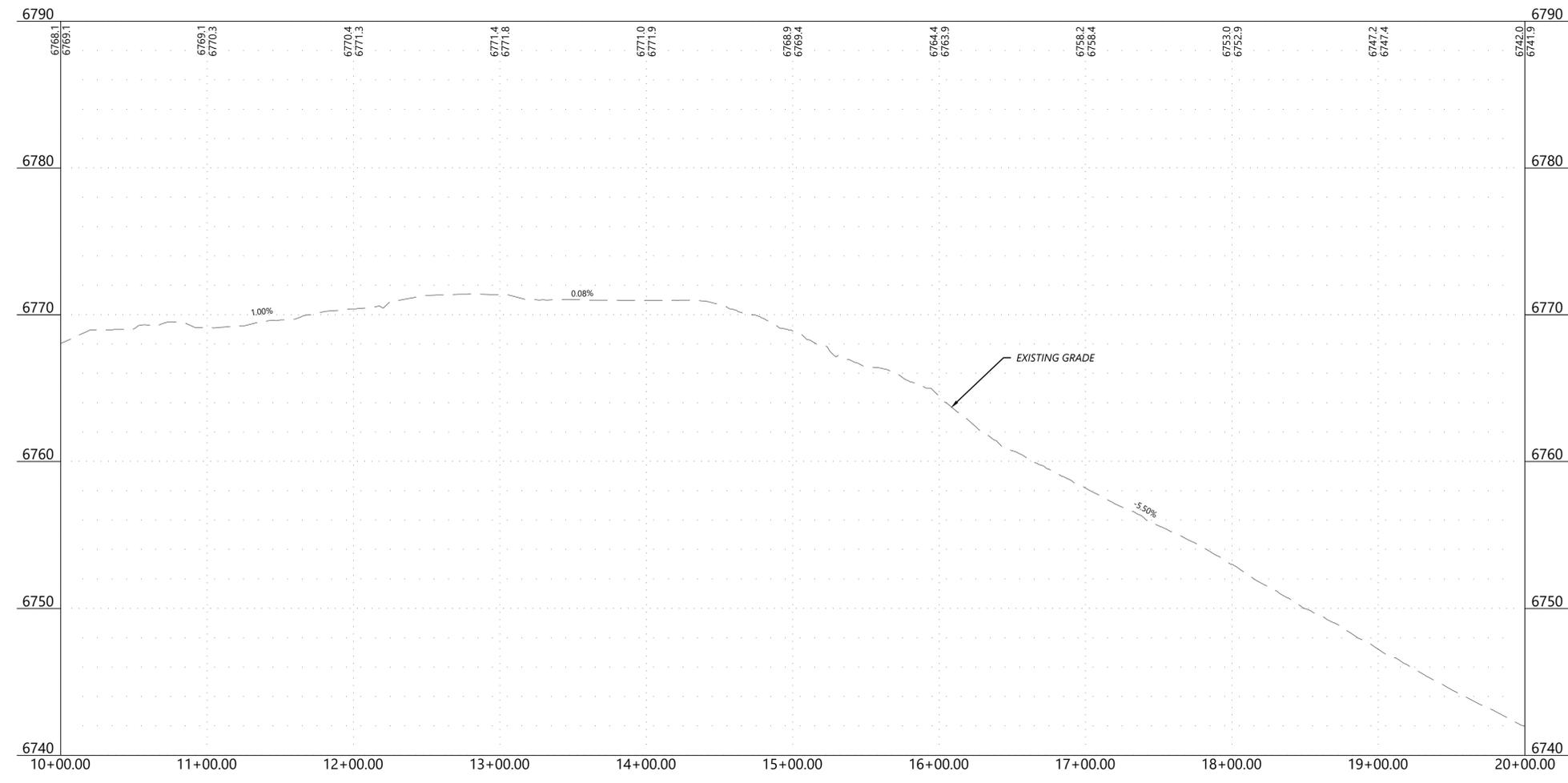
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- EX. GROUND SWALE
- EX. RIGHT OF WAY LINE
- INVERTER/TRANSFORMER SKID



Road - Main Access
10+00.00 - 20+00.00



KEYMAP
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Grazing Yak Solar
El Paso County, Colorado

Plan Profile - Main Access Rd Sheet 2

DATE: 06/04/2019

SHEET: **PR.002**

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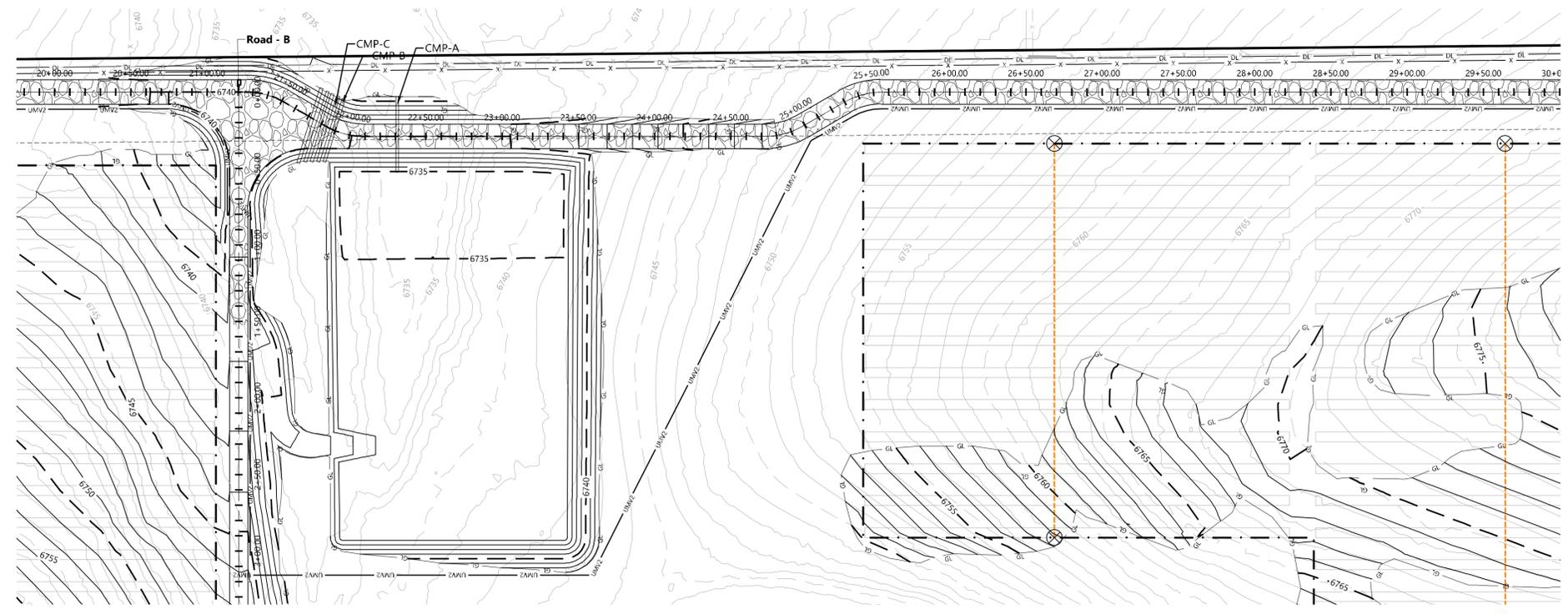


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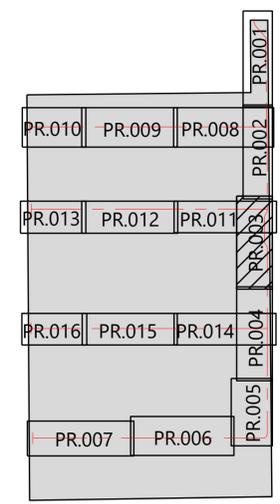
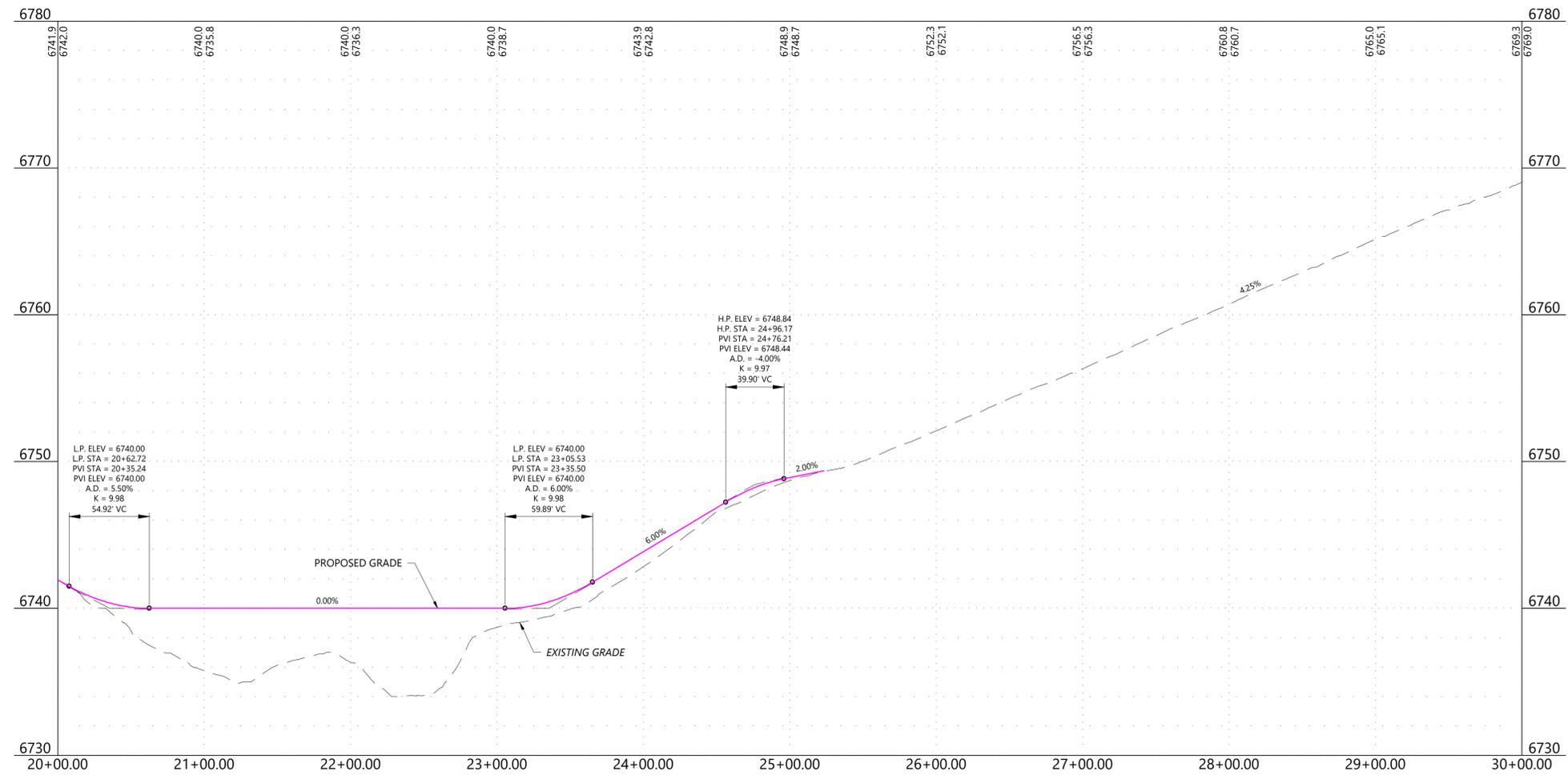
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Road - Main Access
20+00.00 - 30+00.00

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- EX. INDEX CONTOUR LINE
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- EX. RIGHT OF WAY LINE
- INVERTER/TRANSFORMER SKID



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Grazing Yak Solar

El Paso County, Colorado

Plan Profile - Main Access Rd Sheet 3

DATE: 06/04/2019

SHEET: PR.003

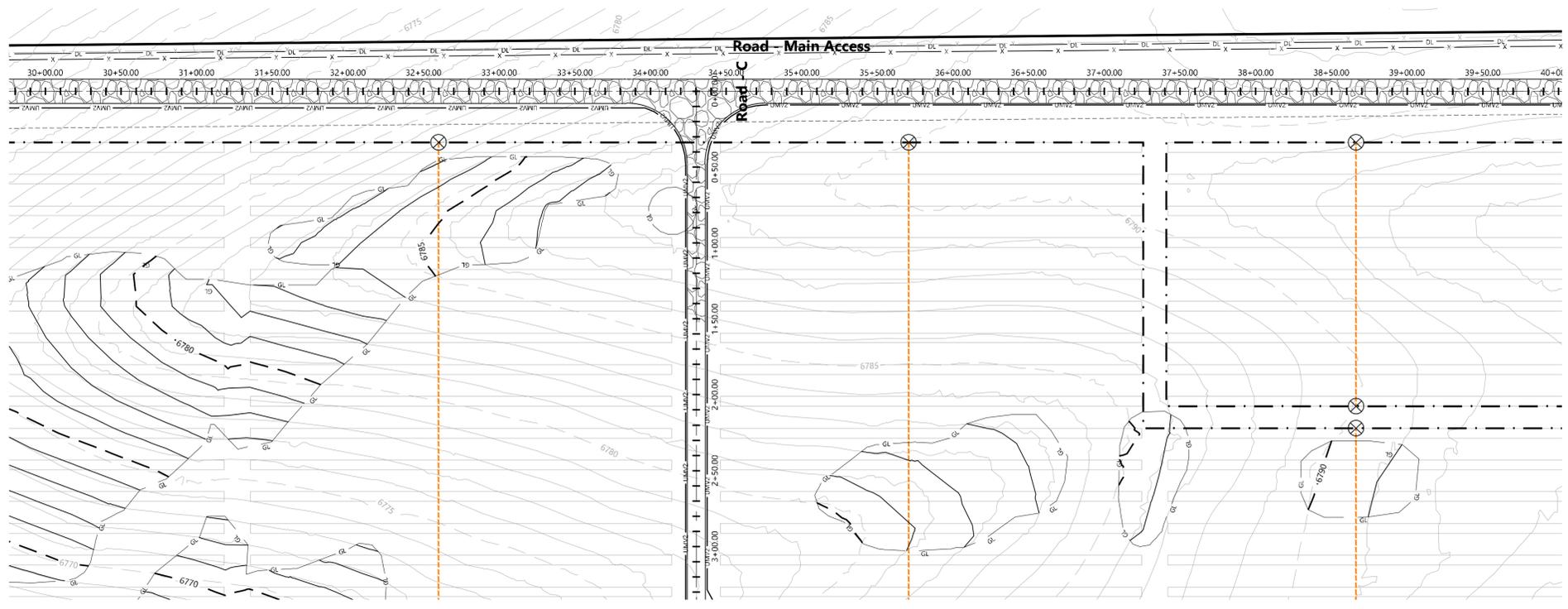


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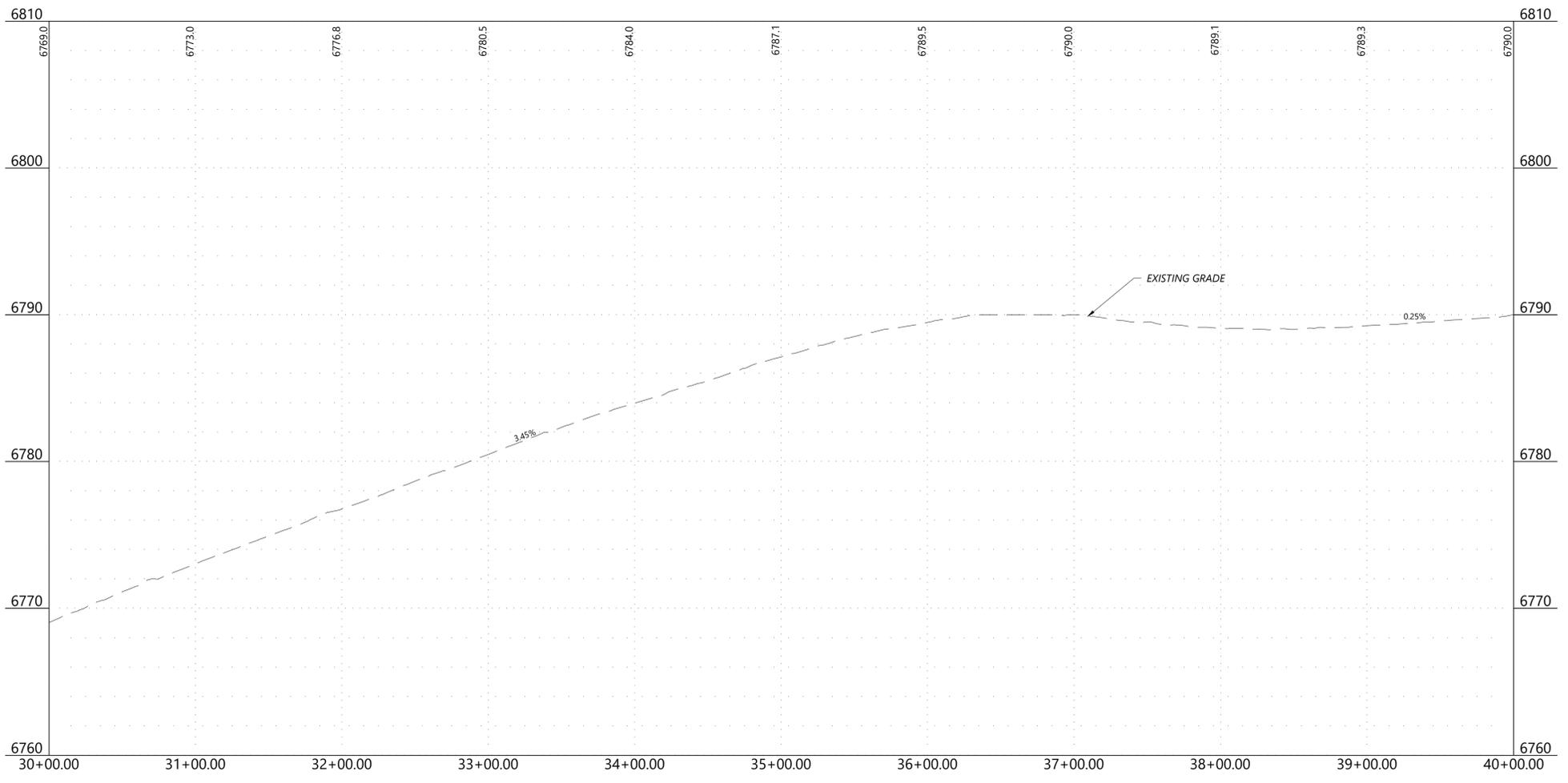


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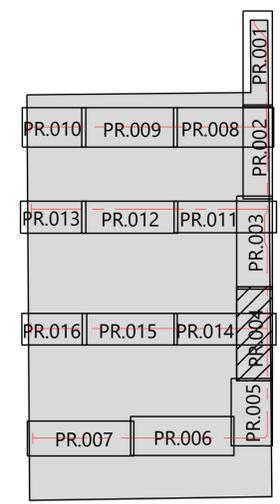


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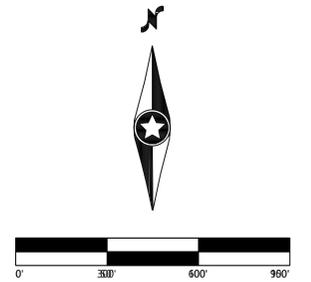


LEGEND & ABBREVIATIONS

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- PROPOSED LAYDOWN AREA
- PROPOSED PROTECTED CROSSING
- PROPOSED UNDERGROUND CIRCUIT 1
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- PROPOSED INDEX CONTOUR LINE
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- EX. INDEX CONTOUR LINE
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- INVERTER/TRANSFORMER SKID



KEYMAP
Not to Scale



Grazing Yak Solar

El Paso County, Colorado

Plan Profile - Main Access Rd Sheet 4

DATE: 06/04/2019

SHEET: **PR.004**

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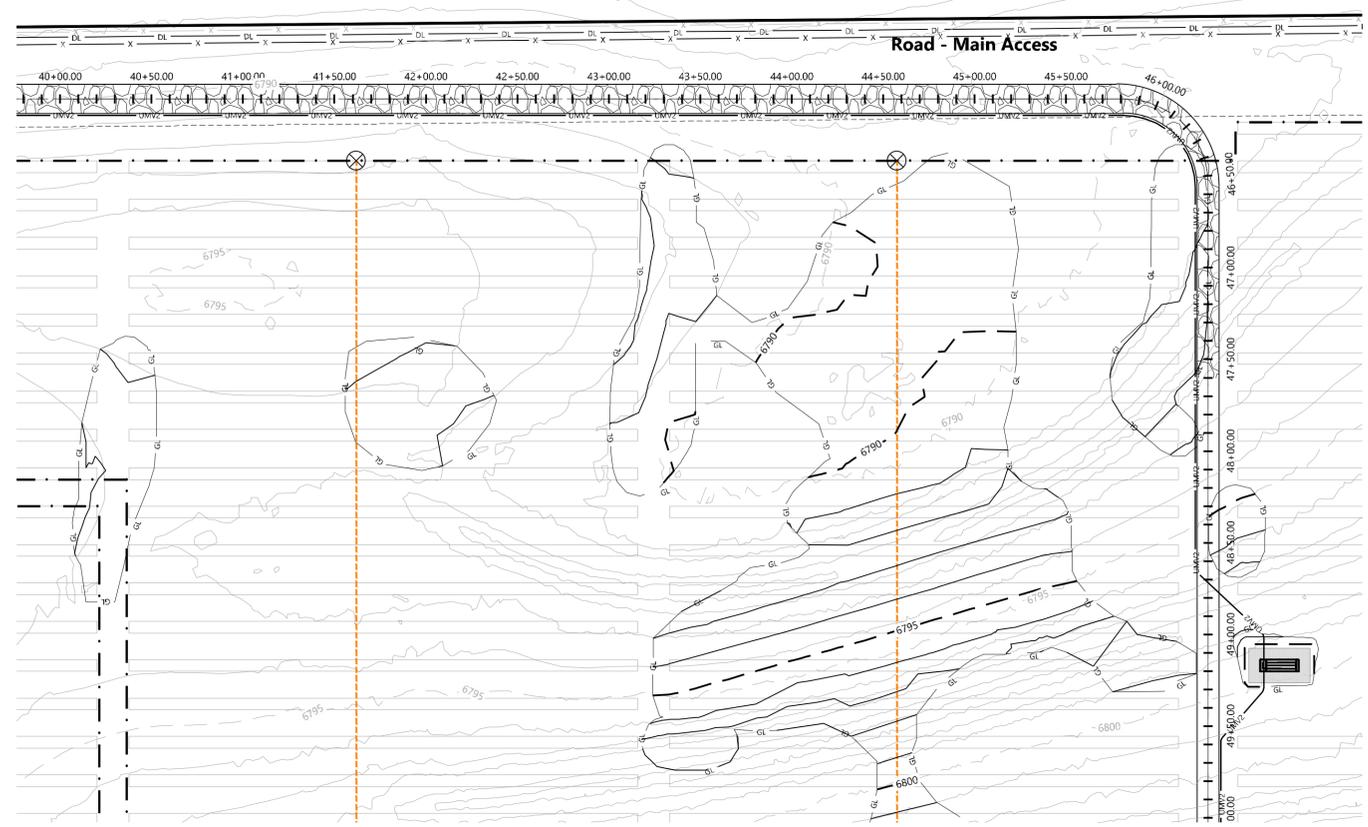


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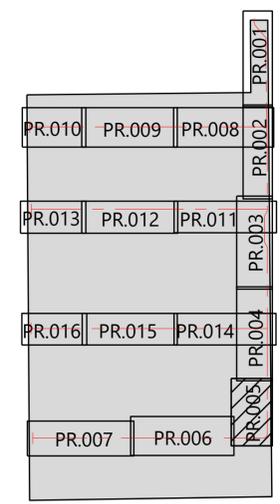
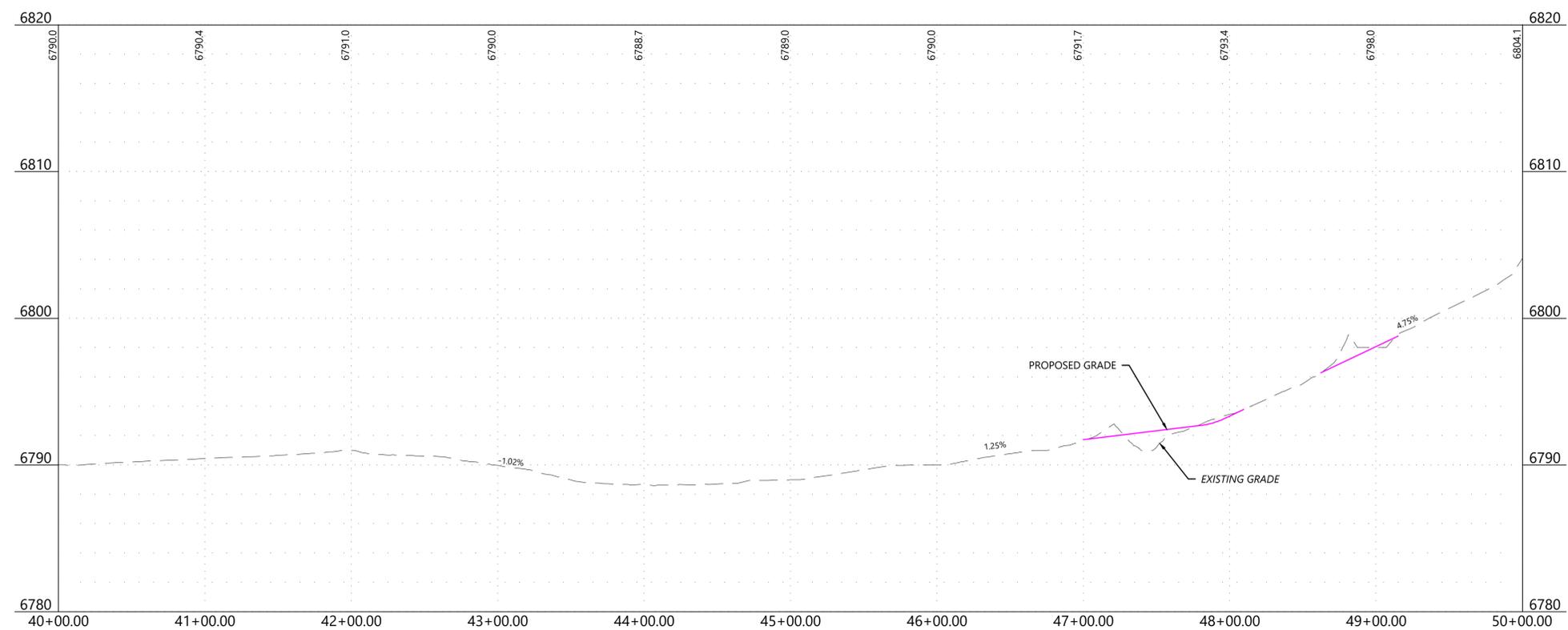
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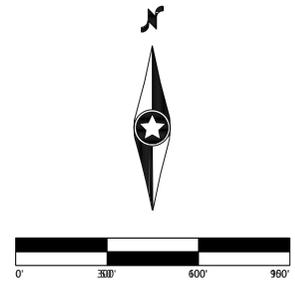
LEGEND & ABBREVIATIONS

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- - - INVERTER BLOCK BOUNDARY
- - - x - - - PROPOSED FENCE LINE
- PROPOSED SOLAR TRACKER
- 55' EQUIPMENT SET BACK LINE
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- PROPOSED CAB
- ⊗ PROPOSED DEAD END POST (IF REQ'D)
- ▨ PROPOSED LAYDOWN AREA
- ○ ○ ○ ○ PROPOSED PROTECTED CROSSING
- UMW1 PROPOSED UNDERGROUND CIRCUIT 1
- UMW2 PROPOSED UNDERGROUND CIRCUIT 2
- - - 3.40 - - - PROPOSED INDEX CONTOUR LINE
- PROPOSED INTERVAL CONTOUR LINE
- GL PROPOSED GRADING LIMITS
- - - 6765 EX. INDEX CONTOUR LINE
- - - EX. INTERVAL CONTOUR LINE
- - - EX. SECTION LINE
- - - EX. EASEMENT LINE
- - - x - - - EX. FENCE LINE
- POH EX. OVERHEAD POWERLINE
- ⊕ EX. UTILITY POLE
- PUG EX. UNDERGROUND ELECTRICAL
- FO EX. FIBER OPTIC LINE
- OIL EX. OIL LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD
- EX. ROAD CENTERLINE
- EX. TRAIL CENTERLINE
- EX. GROUND SWALE
- EX. RIGHT OF WAY LINE
- ▭ INVERTER/TRANSFORMER SKID

Road - Main Access
40+00.00 - 50+00.00



KEYMAP
Not to Scale



Grazing Yak Solar
El Paso County, Colorado

Plan Profile - Main Access Rd Sheet 5

DATE: 06/04/2019

SHEET: **PR.005**

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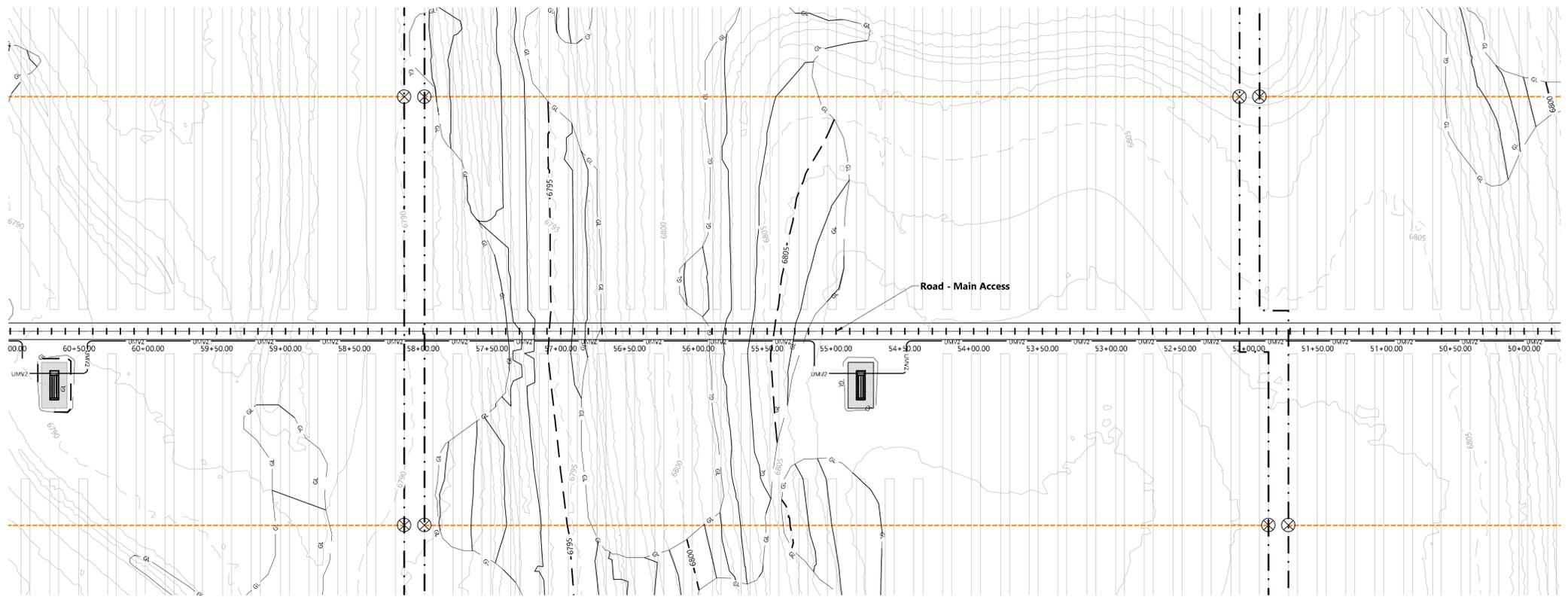


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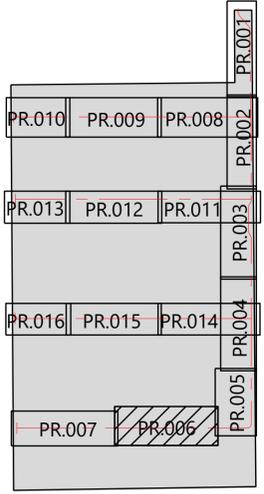
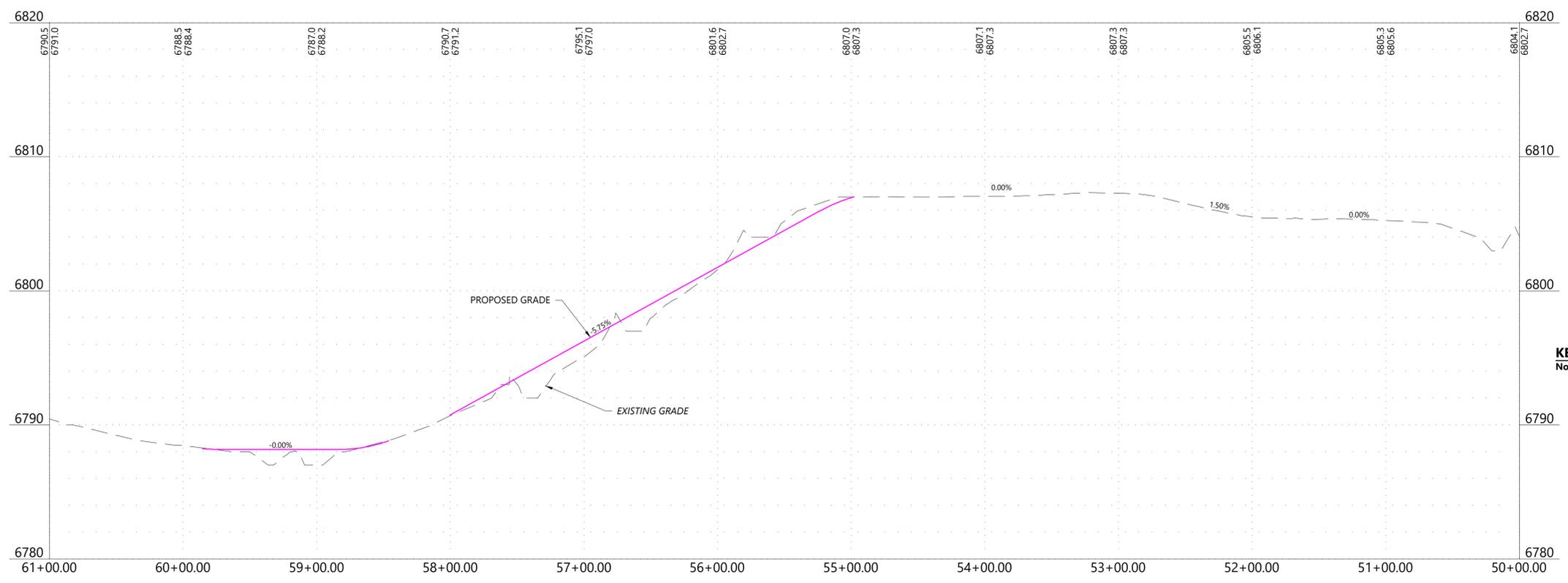
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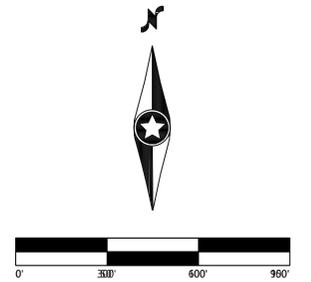
LEGEND & ABBREVIATIONS

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	EX. OVERHEAD POWERLINE
	EX. UTILITY POLE
	EX. UNDERGROUND ELECTRICAL
	EX. FIBER OPTIC LINE
	EX. OIL LINE
	EX. GRAVEL ROAD
	EX. ASPHALT PAVEMENT ROAD
	EX. ROAD CENTERLINE
	EX. TRAIL CENTERLINE
	EX. GROUND SWALE
	EX. RIGHT OF WAY LINE
	INVERTER/TRANSFORMER SKID

Road - Main Access
50+00.00 - 61+00.00



KEYMAP
Not to Scale



Grazing Yak Solar

El Paso County, Colorado

Plan Profile - Main Access Rd Sheet 6

DATE: 06/04/2019

SHEET: **PR.006**

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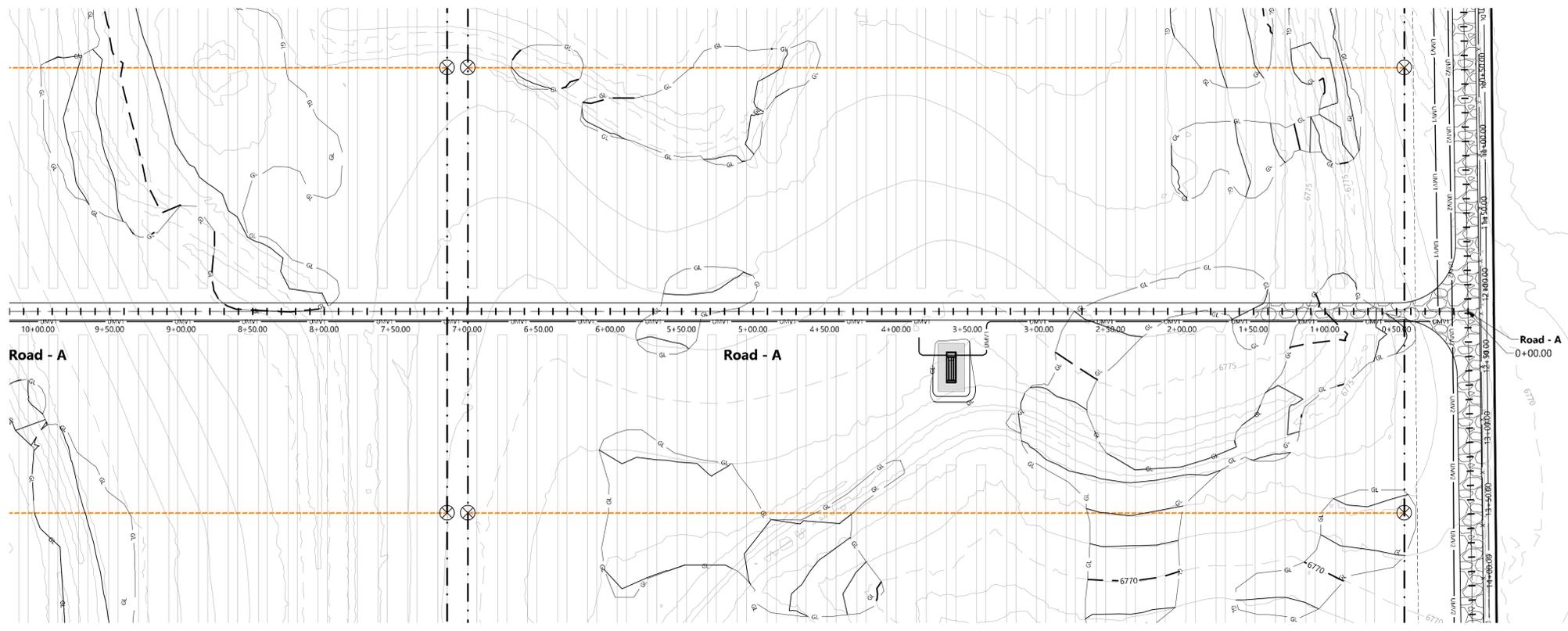


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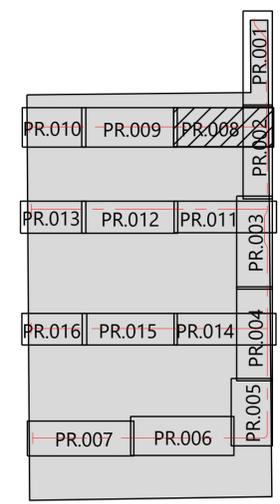
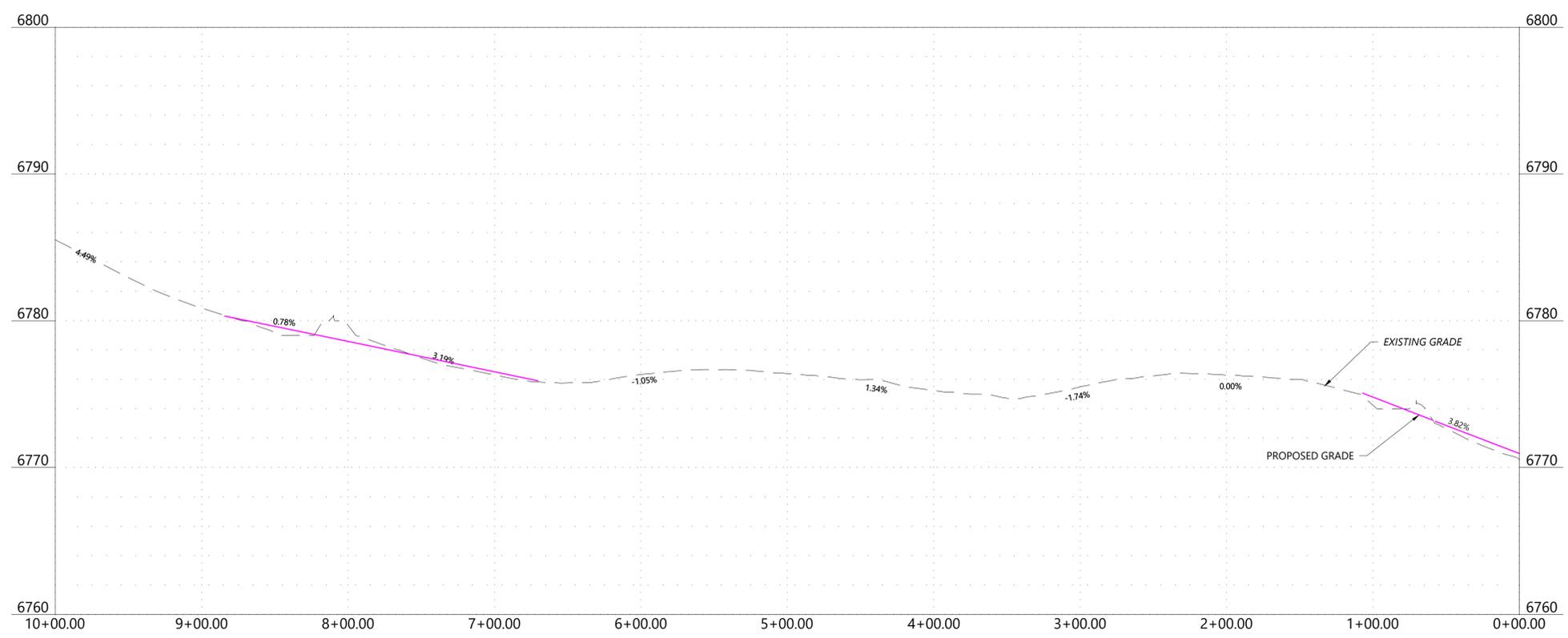
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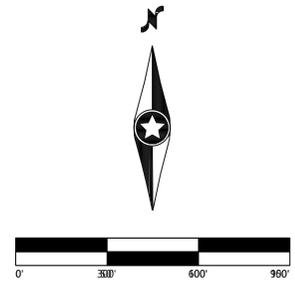
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- PROPOSED INTERVAL CONTOUR LINE
- PROPOSED GRADING LIMITS
- EX. INDEX CONTOUR LINE
- EX. INTERVAL CONTOUR LINE
- EX. SECTION LINE
- EX. EASEMENT LINE
- EX. FENCE LINE
- EX. OVERHEAD POWERLINE
- EX. UTILITY POLE
- EX. UNDERGROUND ELECTRICAL
- EX. FIBER OPTIC LINE
- EX. OIL LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD
- EX. ROAD CENTERLINE
- EX. TRAIL CENTERLINE
- EX. GROUND SWALE
- EX. RIGHT OF WAY LINE
- INVERTER/TRANSFORMER SKID

Road - A
0+00.00 - 10+00.00



KEYMAP
Not to Scale



Grazing Yak Solar

El Paso County, Colorado

Plan Profile - Road-A
Sheet 8

DATE: 06/04/2019

SHEET: **PR.008**

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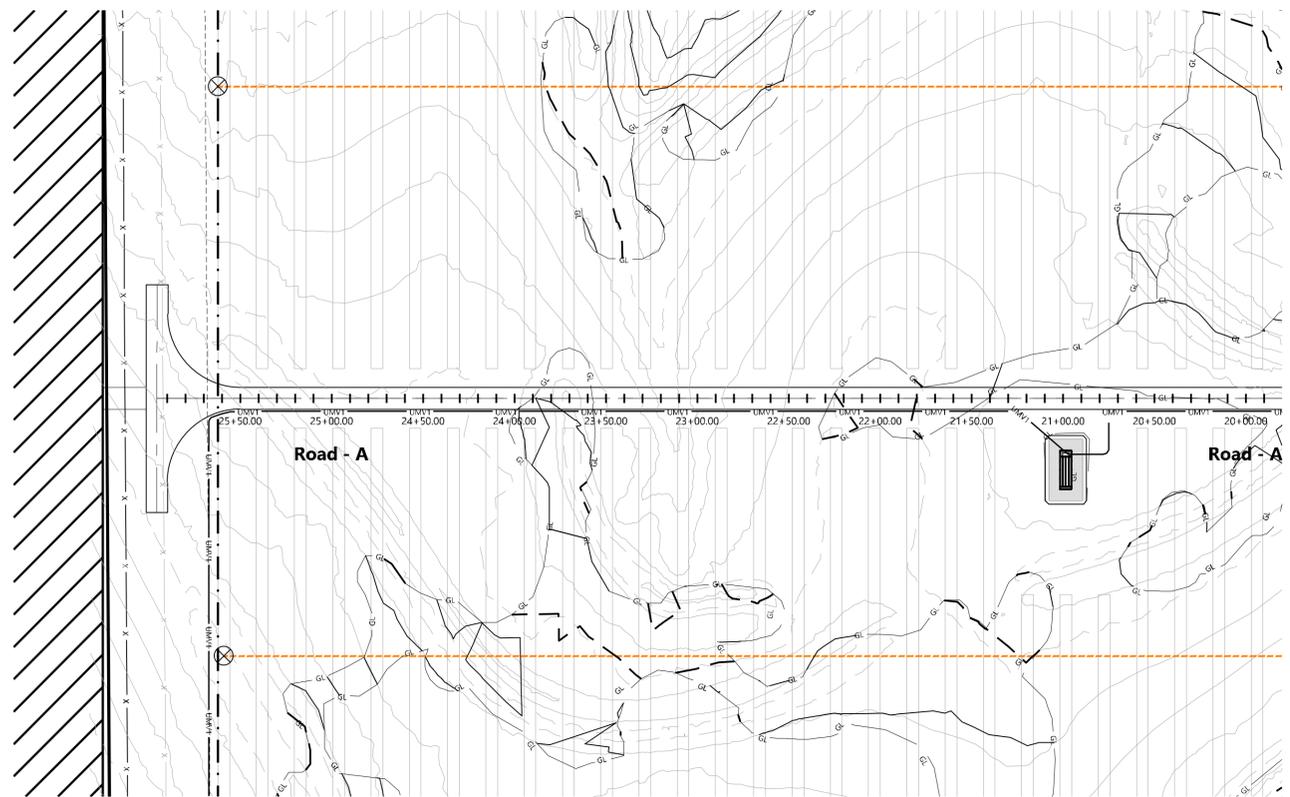


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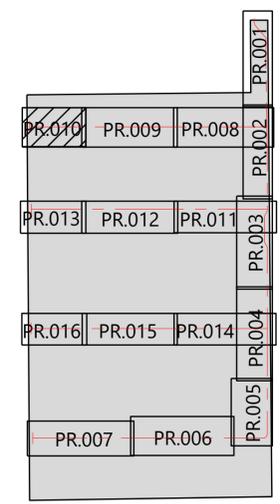
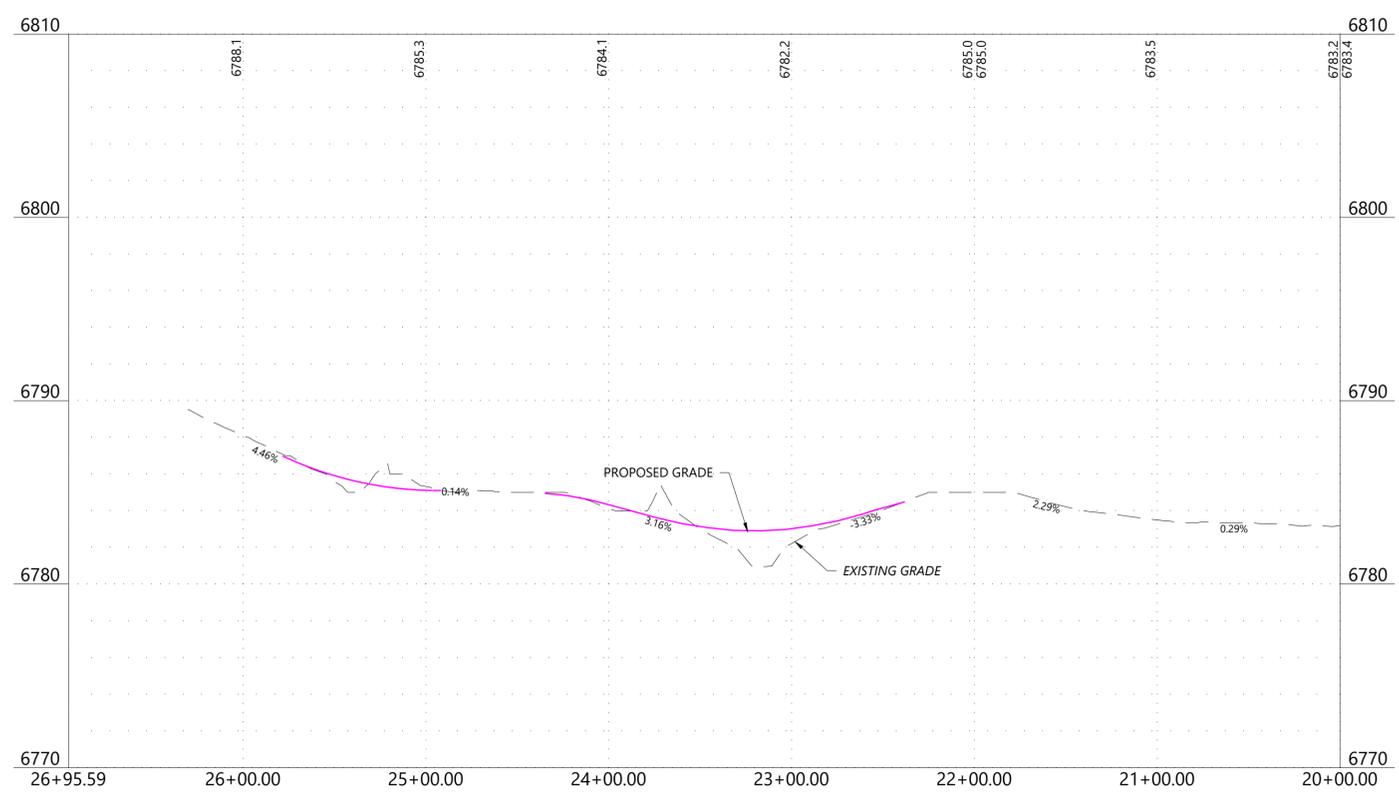
#	DATE	COMMENT
B	03/28/19	Issued for Review (60%)
C	04/22/19	Permit Submittal Revisions
D	04/26/19	Issued for Review (90%)
E	04/29/19	Issued for Grading Permit
F	06/04/19	Re-Issue for Permit



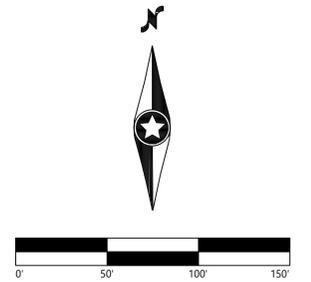
LEGEND & ABBREVIATIONS

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- PROPOSED FENCE LINE
- PROPOSED SOLAR TRACKER
- 55' EQUIPMENT SET BACK LINE
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- PROPOSED ACCESS RD. (NO GRAVEL)
- PROPOSED CAB
- PROPOSED DEAD END POST (IF REQ'D)
- PROPOSED LAYDOWN AREA
- PROPOSED PROTECTED CROSSING
- PROPOSED UNDERGROUND CIRCUIT 1
- PROPOSED UNDERGROUND CIRCUIT 2
- PROPOSED INDEX CONTOUR LINE
- PROPOSED INTERVAL CONTOUR LINE
- PROPOSED GRADING LIMITS
- EX. INDEX CONTOUR LINE
- EX. INTERVAL CONTOUR LINE
- EX. SECTION LINE
- EX. EASEMENT LINE
- EX. FENCE LINE
- EX. OVERHEAD POWERLINE
- EX. UTILITY POLE
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- EX. OIL LINE
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- EX. ASPHALT PAVEMENT ROAD
- EX. ROAD CENTERLINE
- EX. TRAIL CENTERLINE
- EX. GROUND SWALE
- EX. RIGHT OF WAY LINE
- INVERTER/TRANSFORMER SKID

Road - A
20+00.00 - 26+95.59



KEYMAP
Not to Scale



Grazing Yak Solar

El Paso County, Colorado

Plan Profile - Road-A
Sheet 10

DATE: 06/04/2019

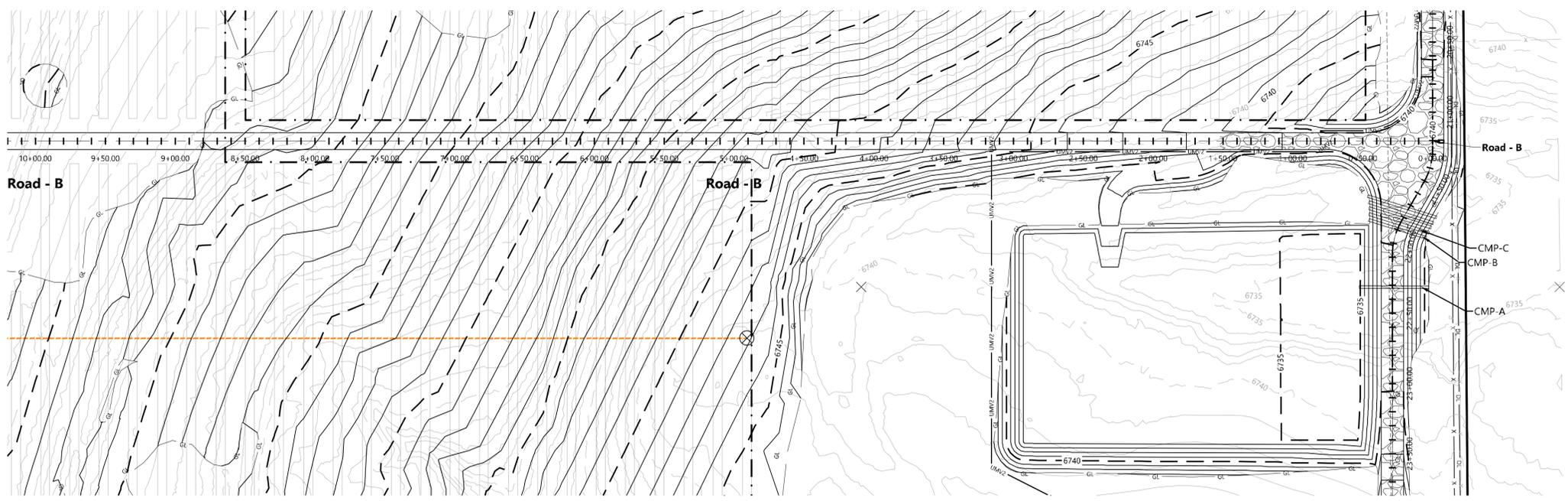
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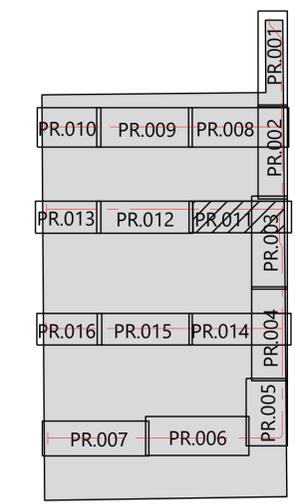
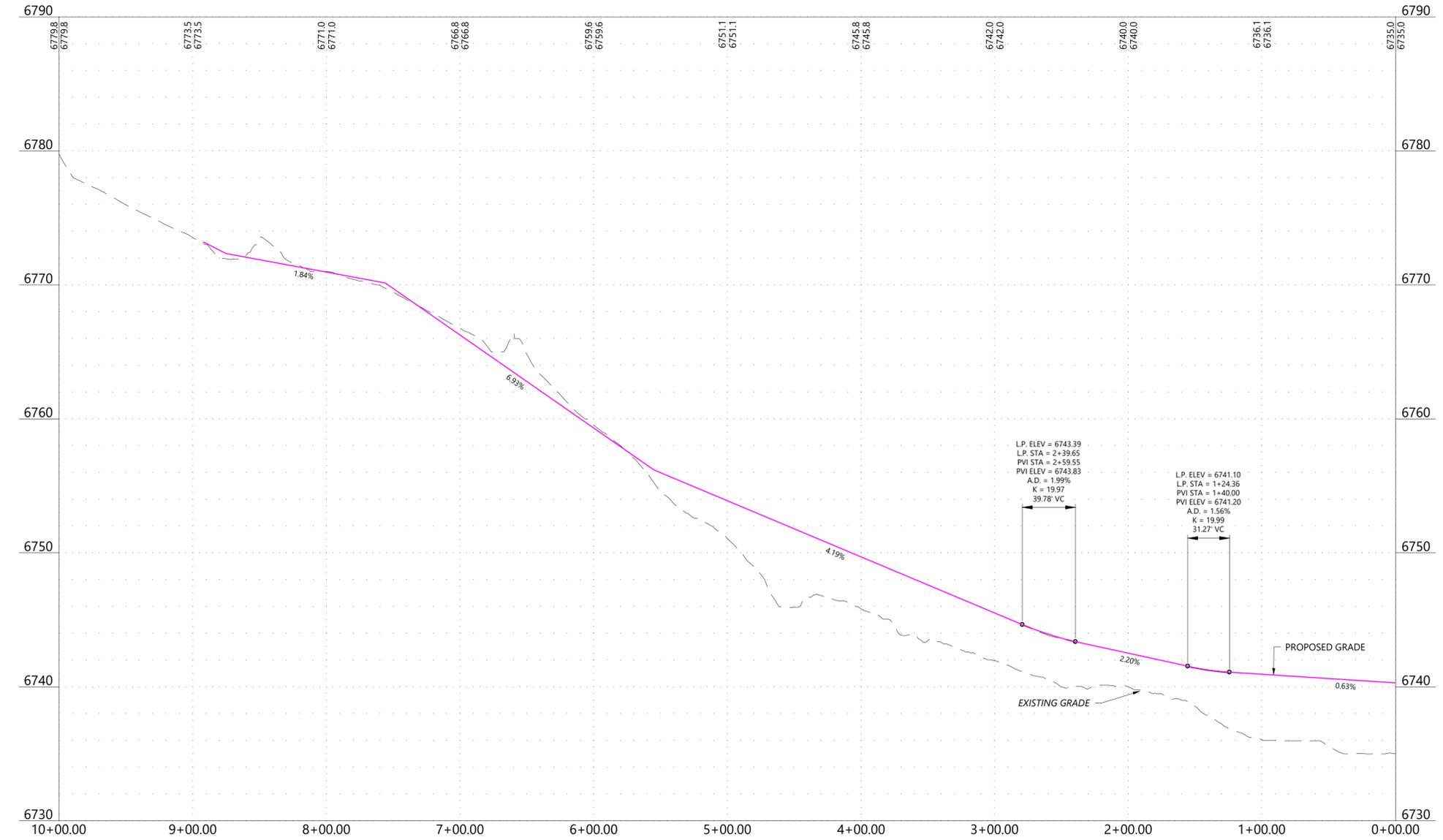
REVISIONS:

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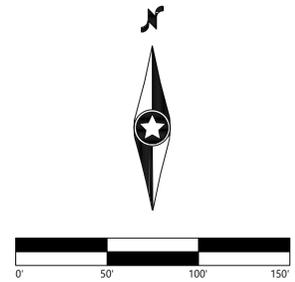


- LEGEND & ABBREVIATIONS**
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 - PROPOSED INDEX CONTOUR LINE
 - PROPOSED INTERVAL CONTOUR LINE
 - PROPOSED GRADING LIMITS
 - EX. INDEX CONTOUR LINE
 - EX. INTERVAL CONTOUR LINE
 - EX. SECTION LINE
 - EX. EASEMENT LINE
 - EX. FENCE LINE
 - EX. OVERHEAD POWERLINE
 - EX. UTILITY POLE
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 - EX. FIBER OPTIC LINE
 - EX. OIL LINE
 - EX. GRAVEL ROAD
 - EX. ASPHALT PAVEMENT ROAD
 - EX. ROAD CENTERLINE
 - EX. TRAIL CENTERLINE
 - EX. GROUND SWALE
 - EX. RIGHT OF WAY LINE
 - INVERTER/TRANSFORMER SKID

Road - B
0+00.00 - 10+00.00



KEYMAP
Not to Scale



Grazing Yak Solar

El Paso County, Colorado

Plan Profile - Road-B
Sheet 11

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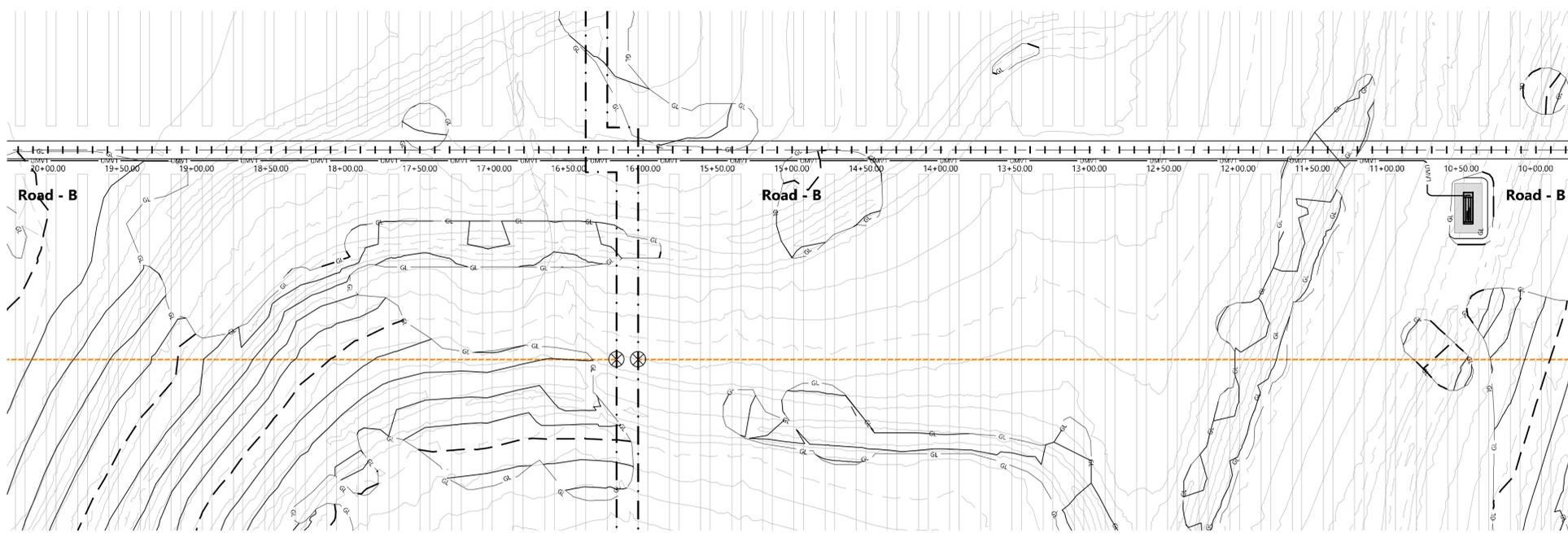


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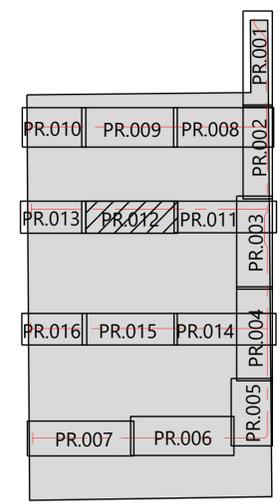
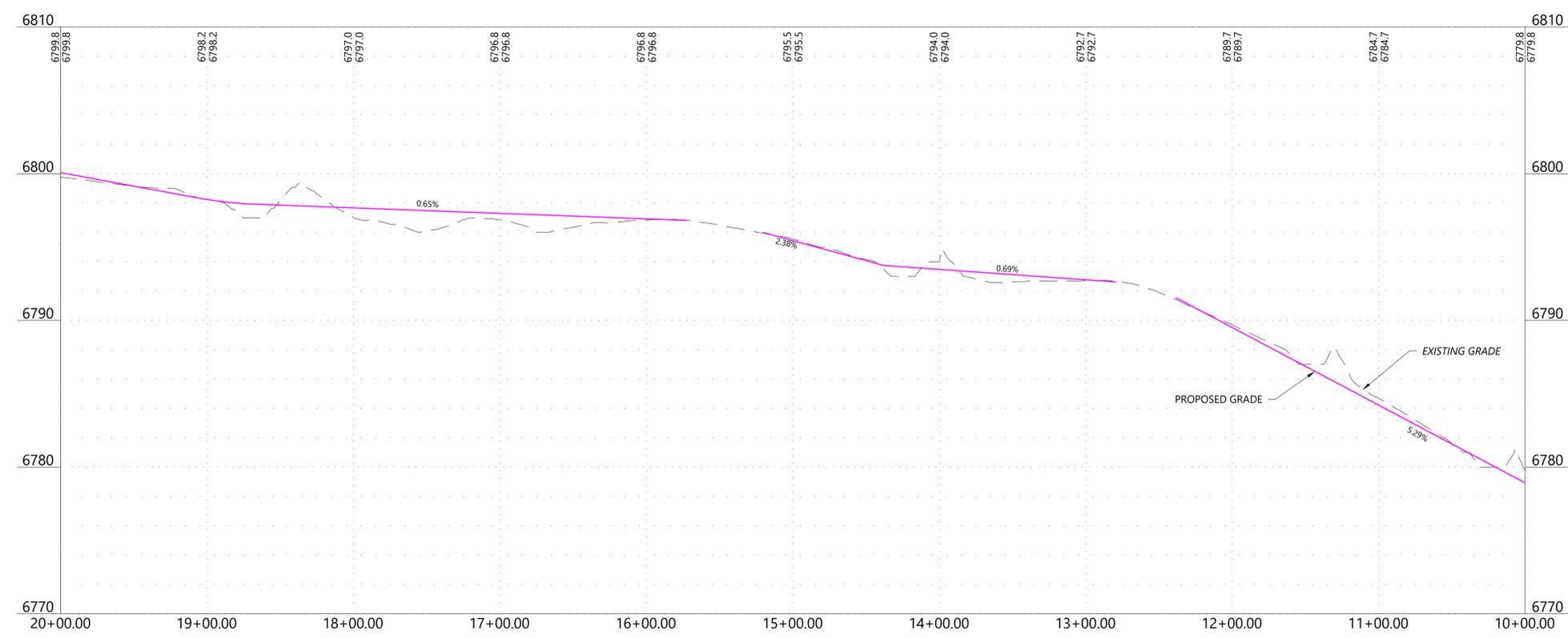
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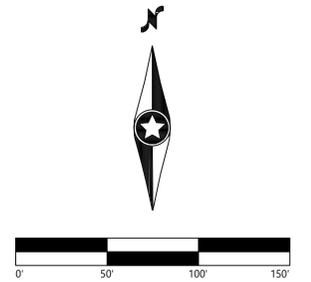
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- ⊗ PROPOSED DEAD END POST (IF REQ'D)
- ▨ PROPOSED LAYDOWN AREA
- ○ ○ ○ ○ PROPOSED PROTECTED CROSSING
- UMW1 PROPOSED UNDERGROUND CIRCUIT 1
- UMW2 PROPOSED UNDERGROUND CIRCUIT 2
- - -3.40- PROPOSED INDEX CONTOUR LINE
- PROPOSED INTERVAL CONTOUR LINE
- GL PROPOSED GRADING LIMITS
- - -6765- EX. INDEX CONTOUR LINE
- - - EX. INTERVAL CONTOUR LINE
- - - EX. SECTION LINE
- - - EX. EASEMENT LINE
- x - EX. FENCE LINE
- POH EX. OVERHEAD POWERLINE
- ⊕ EX. UTILITY POLE
- PUG EX. UNDERGROUND ELECTRICAL
- FO EX. FIBER OPTIC LINE
- OIL EX. OIL LINE
- EX. GRAVEL ROAD
- EX. ASPHALT PAVEMENT ROAD
- EX. ROAD CENTERLINE
- EX. TRAIL CENTERLINE
- EX. GROUND SWALE
- EX. RIGHT OF WAY LINE
- ▭ INVERTER/TRANSFORMER SKID

Road - B
10+00.00 - 20+00.00



KEYMAP
Not to Scale



Grazing Yak Solar

El Paso County, Colorado

Plan Profile - Road-B
Sheet 12

DATE: 06/04/2019

SHEET: **PR.012**

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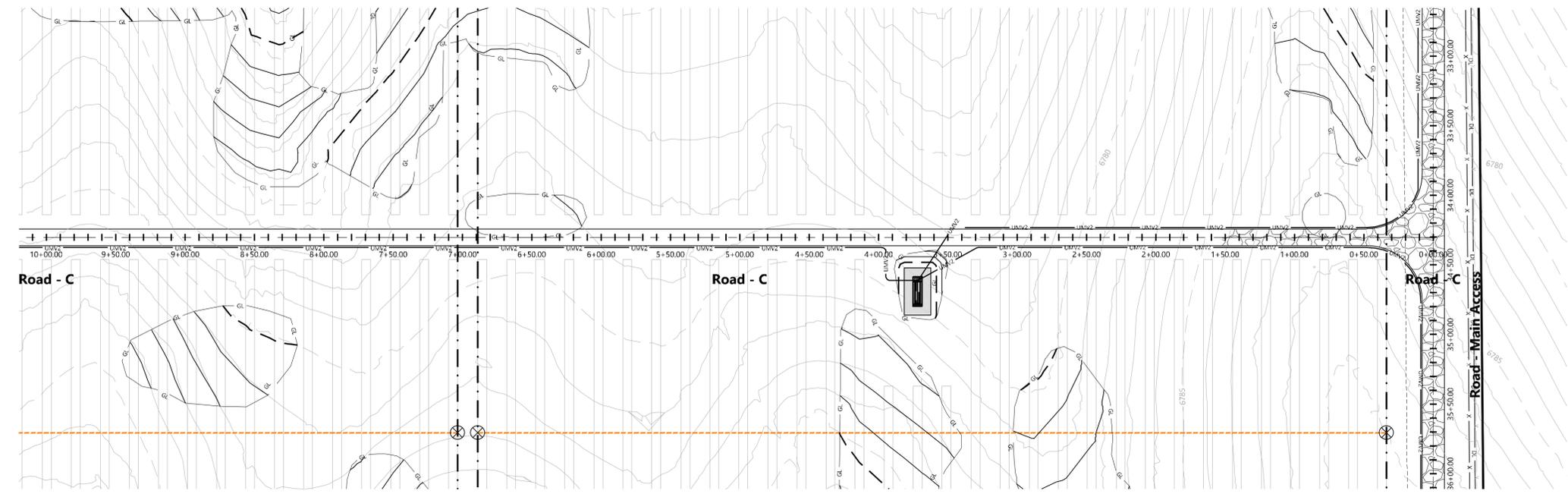


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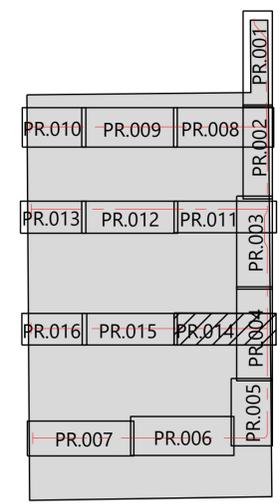
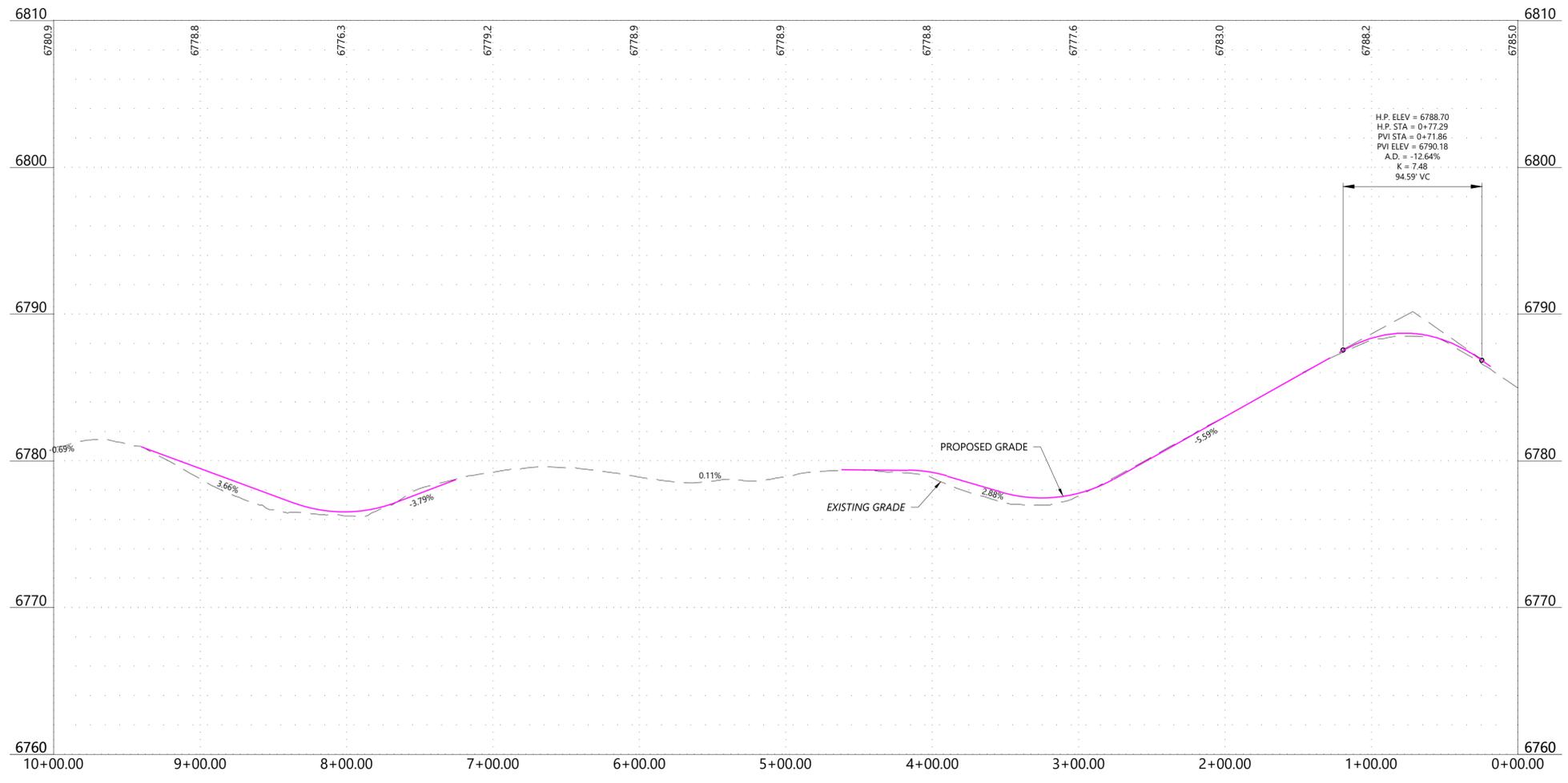
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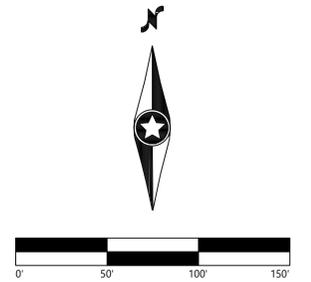
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Road - C
0+00.00 - 10+00.00



KEYMAP
Not to Scale



Grazing Yak Solar
El Paso County, Colorado

Plan Profile - Road-C
Sheet 14

DATE: 06/04/2019

SHEET: **PR.014**

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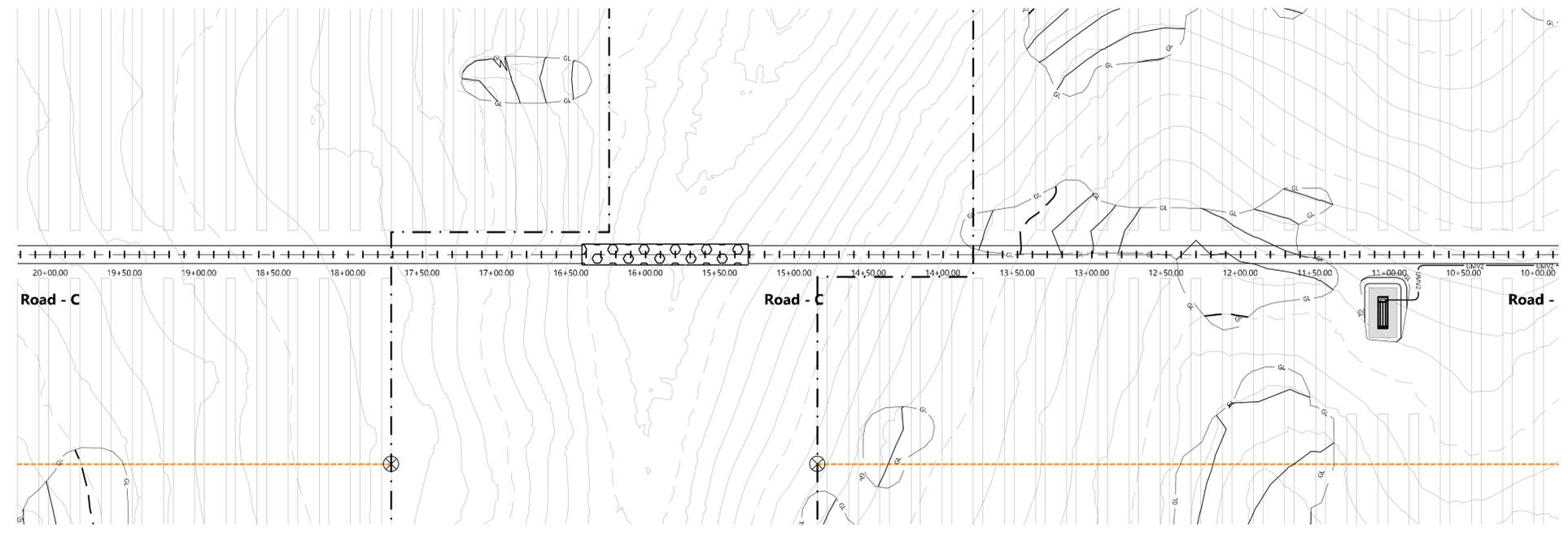


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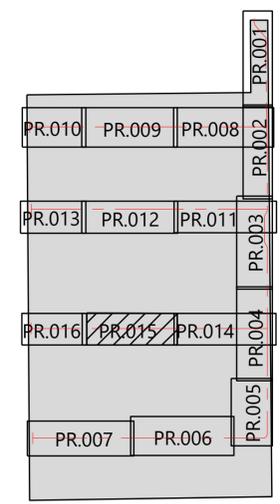
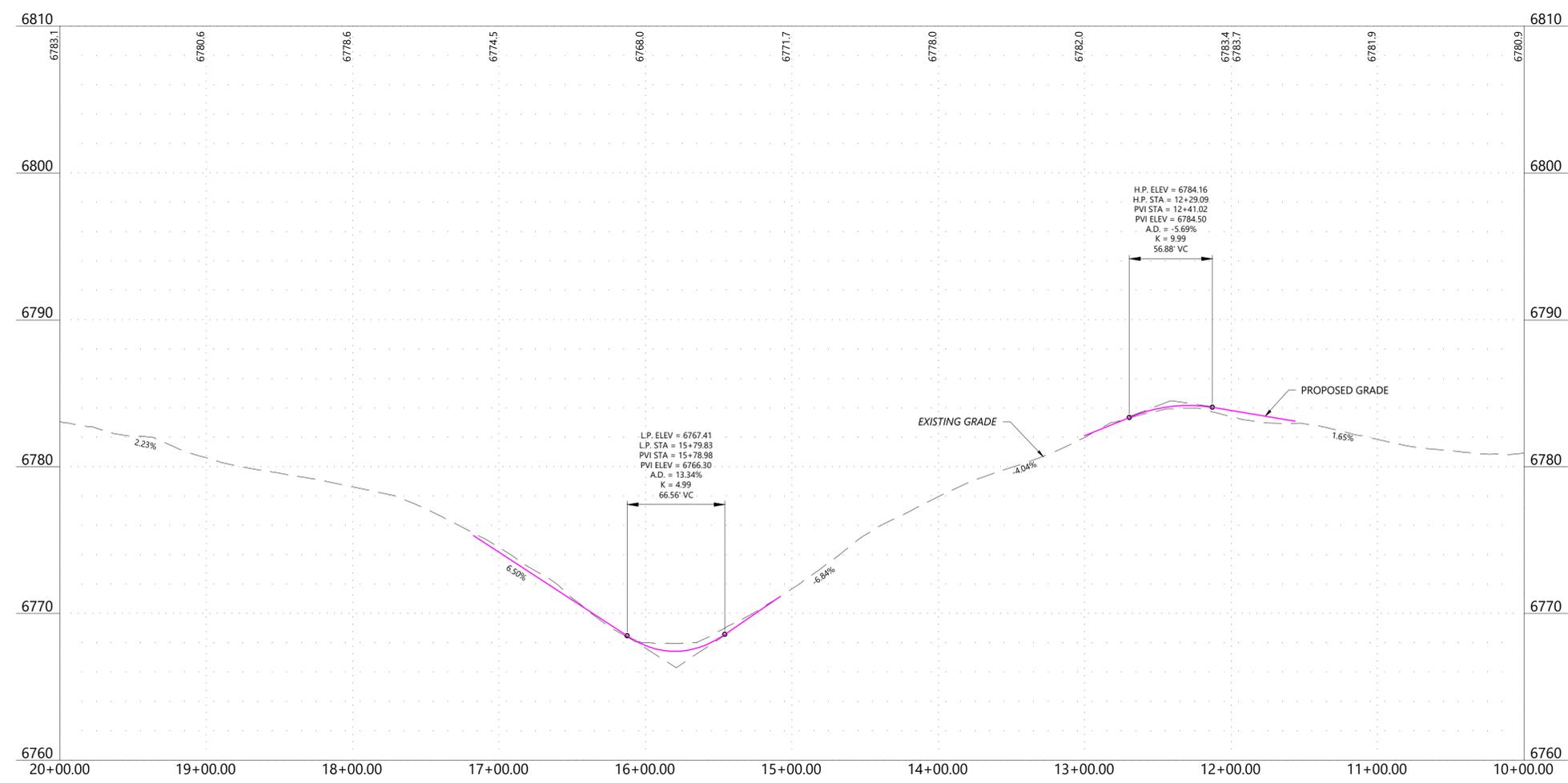
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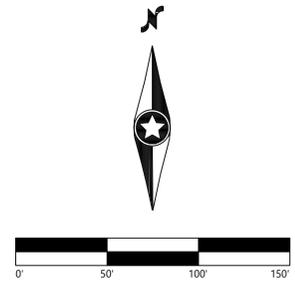
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- EX. RIGHT OF WAY LINE
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Road - C
10+00.00 - 20+00.00



KEYMAP
Not to Scale



Grazing Yak Solar
El Paso County, Colorado

Plan Profile - Road-C
Sheet 15

DATE: 06/04/2019

SHEET: **PR.015**

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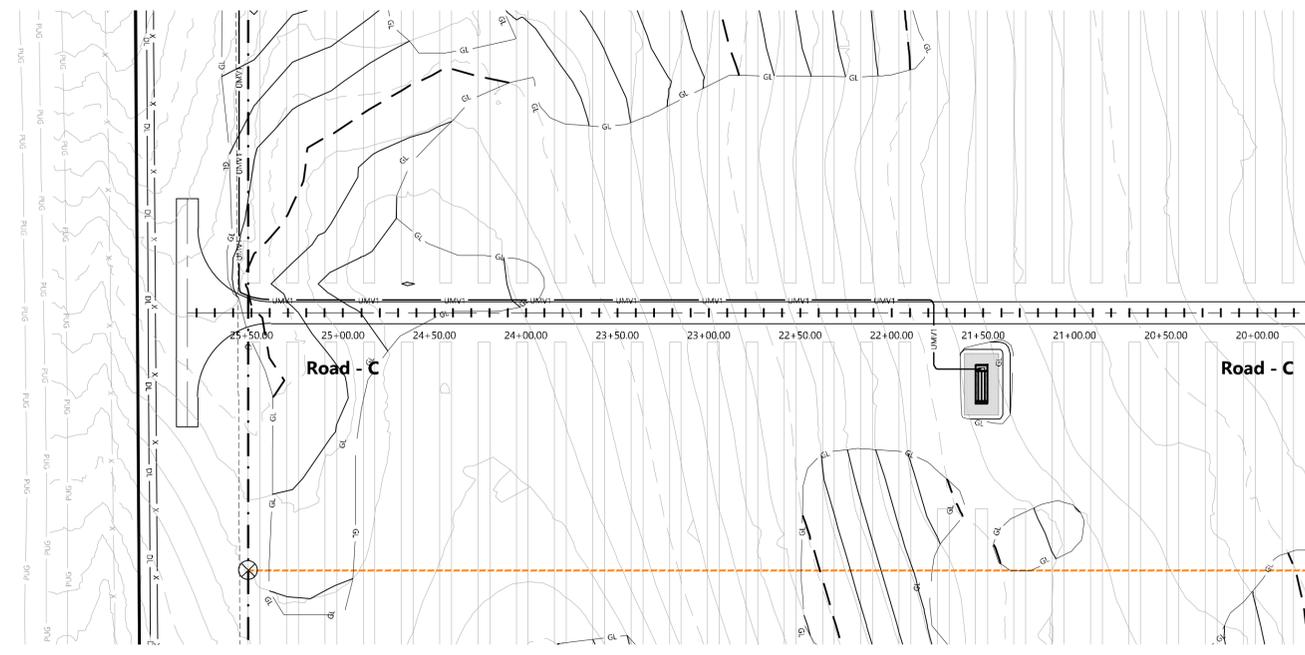


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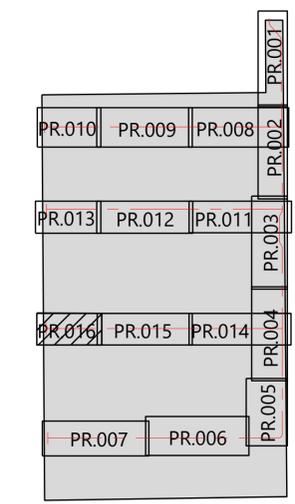
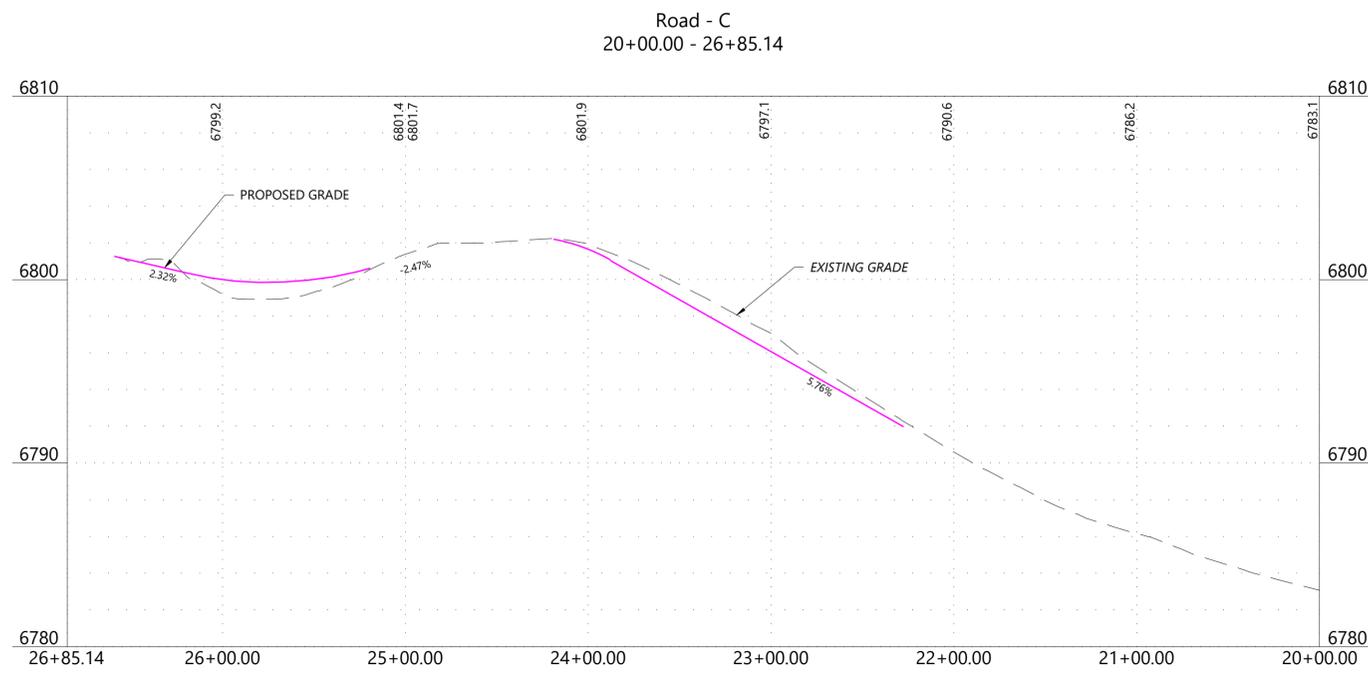
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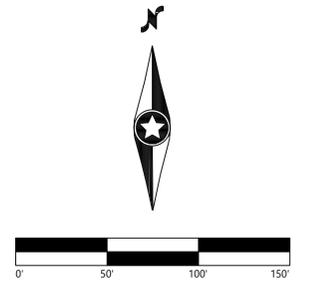


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- INVERTER/TRANSFORMER SKID



KEYMAP
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Grazing Yak Solar
El Paso County, Colorado

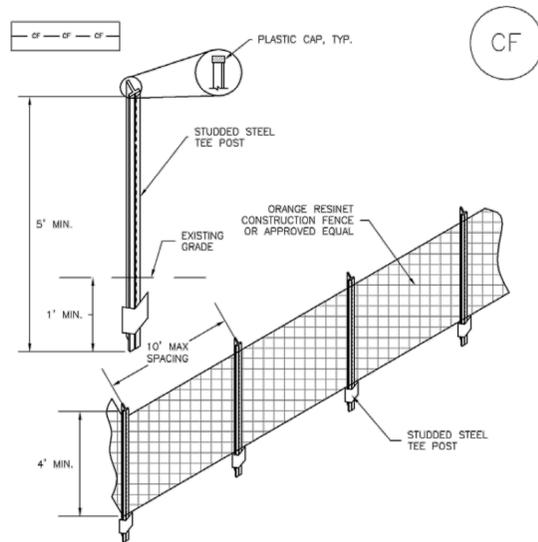
Plan Profile - Road-C
Sheet 16

DATE: 06/04/2019

SHEET: **PR.016**

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SM-3 Construction Fence (CF)

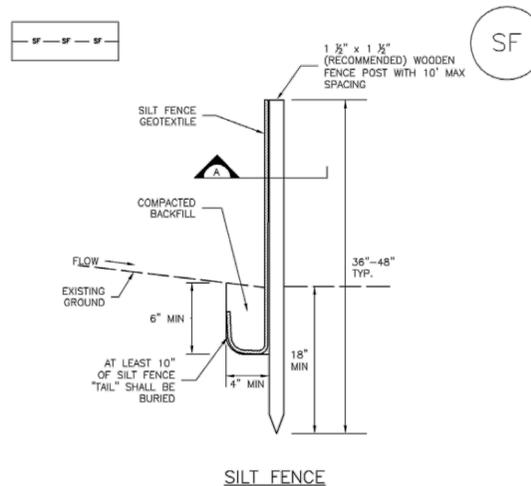


CF-1. PLASTIC MESH CONSTRUCTION FENCE

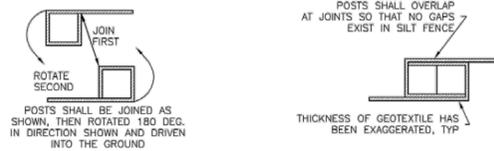
CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
 - LOCATION OF CONSTRUCTION FENCE.
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

Silt Fence (SF) SC-1



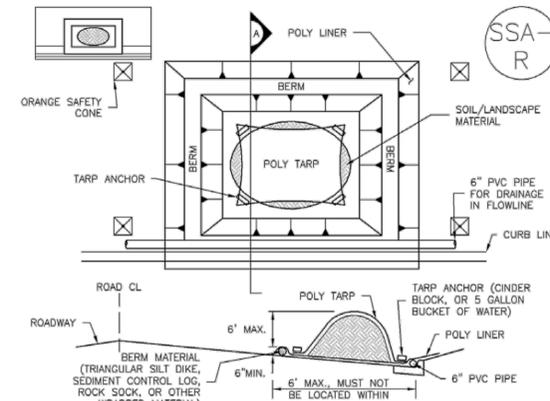
SILT FENCE



SECTION A

SF-1. SILT FENCE

Stockpile Management (SP) MM-2



SP-2. MATERIALS STAGING IN ROADWAY

MATERIALS STAGING IN ROADWAYS INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
 - LOCATION OF MATERIAL STAGING AREA(S).
 - CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
2. FEATURE MUST BE INSTALLED PRIOR TO EXCAVATION, EARTHWORK OR DELIVERY OF MATERIALS.
3. MATERIALS MUST BE STATIONED ON THE POLY LINER. ANY INCIDENTAL MATERIALS DEPOSITED ON PAVED SECTION OR ALONG CURB LINE MUST BE CLEANED UP PROMPTLY.
4. POLY LINER AND TARP COVER SHOULD BE OF SIGNIFICANT THICKNESS TO PREVENT DAMAGE OR LOSS OF INTEGRITY.
5. SAND BAGS MAY BE SUBSTITUTED TO ANCHOR THE COVER TARP OR PROVIDE BERMING UNDER THE BASE LINER.
6. FEATURE IS NOT INTENDED FOR USE WITH WET MATERIAL THAT WILL BE DRAINING AND/OR SPREADING OUT ON THE POLY LINER OR FOR DEMOLITION MATERIALS.
7. THIS FEATURE CAN BE USED FOR:
 - UTILITY REPAIRS.
 - WHEN OTHER STAGING LOCATIONS AND OPTIONS ARE LIMITED.
 - OTHER LIMITED APPLICATION AND SHORT DURATION STAGING.

Construction Fence (CF) SM-3

CONSTRUCTION FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 4. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
 5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

Silt Fence (SF) SC-1

SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
2. A UNIFORM 6" x 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.
3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.
6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').
7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".
 5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
 6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
 7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

Stockpile Management (SM) MM-2

MATERIALS STAGING IN ROADWAY MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 4. INSPECT PVC PIPE ALONG CURB LINE FOR CLOGGING AND DEBRIS. REMOVE OBSTRUCTIONS PROMPTLY.
 5. CLEAN MATERIAL FROM PAVED SURFACES BY SWEEPING OR VACUUMING.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM AURORA, COLORADO)



PREPARED FOR:



REVISIONS:

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B	04/22/19	Issued for Permit
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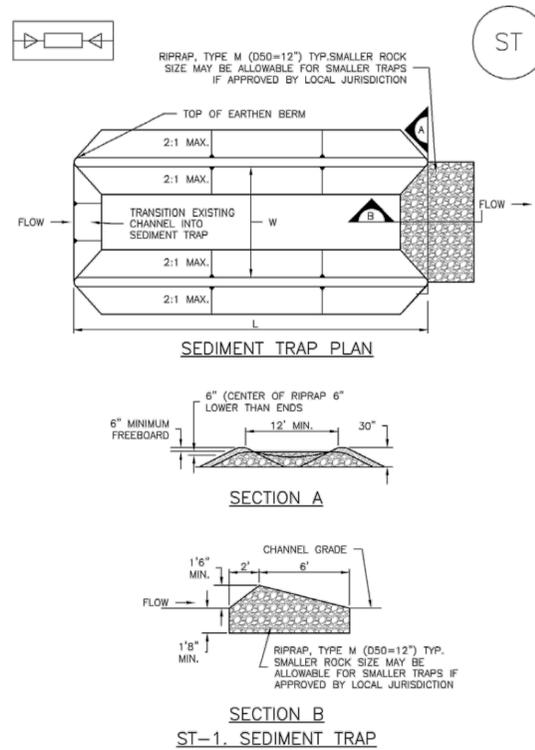
Grazing Yak Solar

El Paso County, Colorado

Notes and Details - Sheet 2

DATE: 06/04/2019

SHEET: ND02



Sediment Trap (ST) SC-8

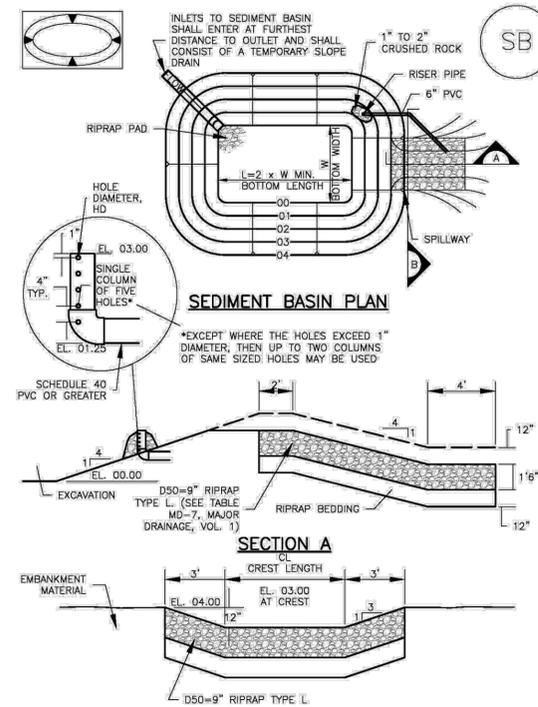
SEDIMENT TRAP INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION, LENGTH AND WIDTH OF SEDIMENT TRAP.
- ONLY USE FOR DRAINAGE AREAS LESS THAN 1 ACRE.
- SEDIMENT TRAPS SHALL BE INSTALLED PRIOR TO ANY UPGRADE LAND-DISTURBING ACTIVITIES.
- SEDIMENT TRAP BERM SHALL BE CONSTRUCTED FROM MATERIAL FROM EXCAVATION, THE BERM SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
- SEDIMENT TRAP OUTLET TO BE CONSTRUCTED OF RIPRAP, TYPE M (D50=12") TYP. SMALLER ROCK SIZE MAY BE ALLOWABLE FOR SMALLER TRAPS IF APPROVED BY LOCAL JURISDICTION.
- THE TOP OF THE EARTHEN BERM SHALL BE A MINIMUM OF 6" HIGHER THAN THE TOP OF THE RIPRAP OUTLET STRUCTURE.
- THE ENDS OF THE RIPRAP OUTLET STRUCTURE SHALL BE A MINIMUM OF 6" HIGHER THAN THE CENTER OF THE OUTLET STRUCTURE.

SEDIMENT TRAP MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- REMOVE SEDIMENT ACCUMULATED IN TRAP AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN THE SEDIMENT DEPTH REACHES 1/2 THE HEIGHT OF THE RIPRAP OUTLET.
- SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN SEDIMENT TRAPS ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTODWG)
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.



SC-7 Sediment Basin (SB)

TABLE SB-1. SIZING INFORMATION FOR STANDARD SEDIMENT BASIN

Upstream Drainage Area (rounded to nearest acre), (ac)	Basin Bottom Width (W), (ft)	Spillway Crest Length (CL), (ft)	Hole Diameter (HD), (in)
1	12 1/2	2	3/32
2	21	3	1/16
3	28	5	1/8
4	33 1/2	6	3/16
5	38 1/2	8	1/4
6	43	9	5/32
7	47 1/4	11	3/16
8	51	12	1/4
9	55	13	5/8
10	58 1/4	15	1/2
11	61	16	3/32
12	64	18	1
13	67 1/2	19	1 1/8
14	70 1/2	21	1 1/4
15	73 1/4	22	1 3/8

SEDIMENT BASIN INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION OF SEDIMENT BASIN.
-TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN).
-FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, HD.
-FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER HD AND PIPE DIAMETER D.
- FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
- SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON ON BASINS AS A STORMWATER CONTROL.
- EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.
- EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
- PIPE SCH 40 OR GREATER SHALL BE USED.
- THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

SEDIMENT BASIN MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E., TWO FEET BELOW THE SPILLWAY CREST).
 - SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION.
 - WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO)
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.



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Grazing Yak Solar

El Paso County, Colorado

Notes and Details - Sheet 3

DATE: 06/04/2019

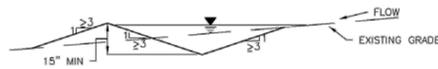
SHEET: ND03



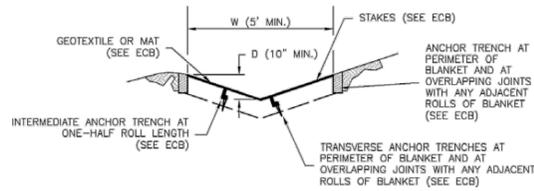
ED-1. COMPACTED UNLINED EARTH DIKE FORMED BY BERM



DS-1. COMPACTED UNLINED EXCAVATED SWALE

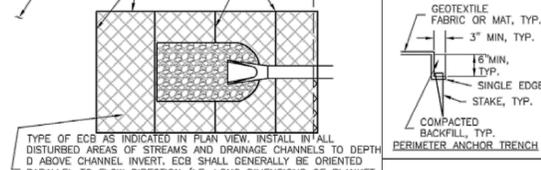
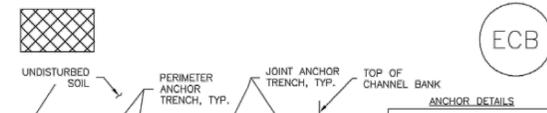


DS-2. COMPACTED UNLINED SWALE FORMED BY CUT AND FILL

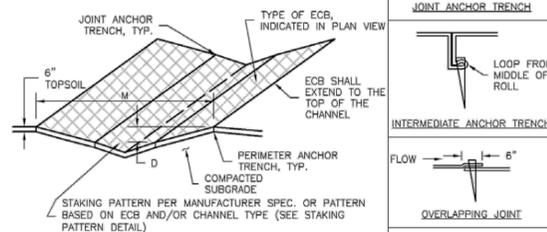


DS-3. ECB LINED SWALE (CUT AND FILL OR BERM)

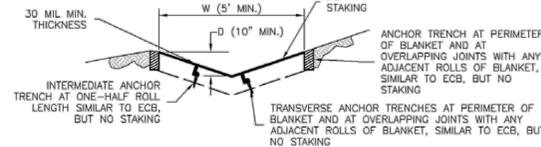
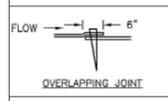
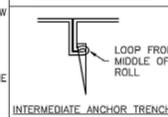
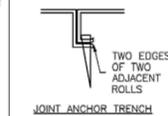
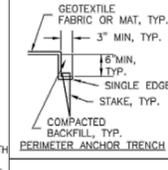
EC-6 Rolled Erosion Control Products (RECP)



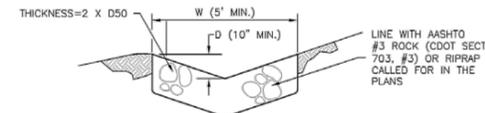
ECB-1. PIPE OUTLET TO DRAINAGWAY



ECB-2. SMALL DITCH OR DRAINAGWAY



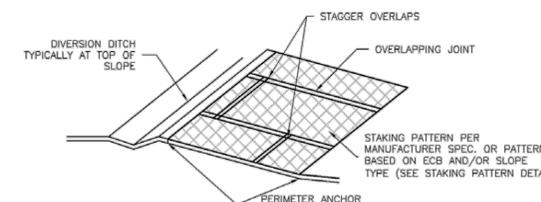
DS-4. SYNTHETIC LINED SWALE



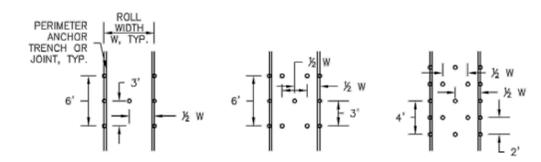
DS-5. RIPRAP LINED SWALE

- EARTH DIKE AND DRAINAGE SWALE INSTALLATION NOTES**
- SEE SITE PLAN FOR:
 - LOCATION OF DIVERSION SWALE
 - TYPE OF SWALE (UNLINED, COMPACTED AND/OR LINED).
 - LENGTH OF EACH SWALE.
 - DEPTH, D, AND WIDTH, W DIMENSIONS.
 - FOR ECB/TRM LINED DITCH, SEE ECB DETAIL.
 - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, D50.
 - SEE DRAINAGE PLANS FOR DETAILS OF PERMANENT CONVEYANCE FACILITIES AND/OR DIVERSION SWALES EXCEEDING 2-YEAR FLOW RATE OR 10 CFS.
 - EARTH DIKES AND SWALES INDICATED ON SWMP PLAN SHALL BE INSTALLED PRIOR TO LAND-DISTURBING ACTIVITIES IN PROXIMITY.
 - EMBANKMENT IS TO BE COMPACTED TO 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D698.
 - SWALES ARE TO DRAIN TO A SEDIMENT CONTROL BMP.
 - FOR LINED DITCHES, INSTALLATION OF ECB/TRM SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
 - WHEN CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION SWALE, INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12 INCHES.

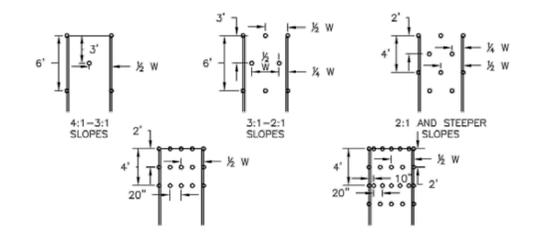
EC-6 Rolled Erosion Control Products (RECP)



ECB-3. OUTSIDE OF DRAINAGWAY



STAKING PATTERNS BY ECB TYPE



STAKING PATTERNS BY SLOPE OR CHANNEL TYPE

EARTH DIKE AND DRAINAGE SWALE MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - SWALES SHALL REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION; IF APPROVED BY LOCAL JURISDICTION, SWALES MAY BE LEFT IN PLACE.
 - WHEN A SWALE IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.
- (DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF COLORADO SPRINGS, COLORADO, NOT AVAILABLE IN AUTOCAD)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

EC-6 Rolled Erosion Control Products (RECP)

EROSION CONTROL BLANKET INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION OF ECB.
 - TYPE OF ECB (STRAW, STRAW-COCOONUT, COCOONUT, OR EXCELSIOR).
 - AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB.
- 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.
- IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
- PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
- JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.
- INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCOONUT AND EXCELSIOR ECBs.
- OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
- MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
- ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBs SHALL BE RESEEDED AND MULCHED.
- DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

TABLE ECB-1. ECB MATERIAL SPECIFICATIONS

TYPE	COCOONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING**
STRAW*	-	100%	-	DOUBLE/NATURAL
STRAW-COCOONUT	30% MIN	70% MAX	-	DOUBLE/NATURAL
COCOONUT	100%	-	-	DOUBLE/NATURAL
EXCELSIOR	-	-	100%	DOUBLE/NATURAL

*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNELS.
**ALTERNATE NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS

EC-6 Rolled Erosion Control Products (RECP)

EROSION CONTROL BLANKET MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
 - ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO REVEALED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO AND TOWN OF PARKER COLORADO, NOT AVAILABLE IN AUTOCAD)



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Grazing Yak Solar

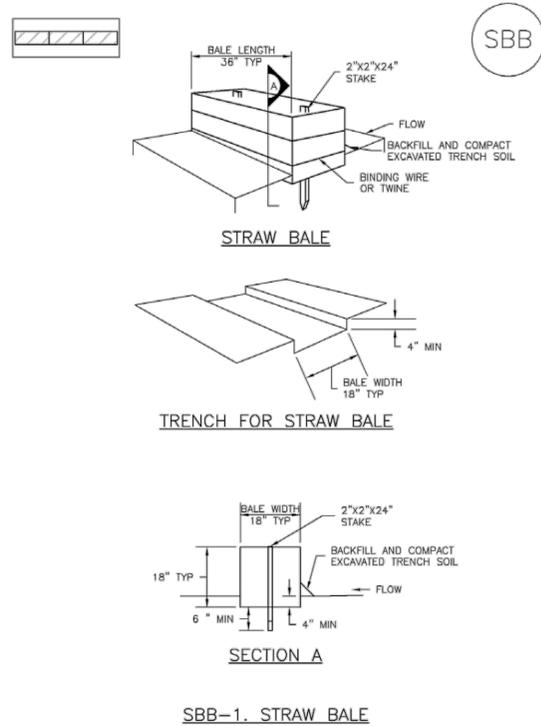
El Paso County, Colorado

Notes and Details - Sheet 4

DATE: 06/04/2019

SHEET: ND04

SC-3 Straw Bale Barrier (SBB)



SBB-2 Urban Drainage and Flood Control District November 2010
Urban Storm Drainage Criteria Manual Volume 3

Straw Bale Barrier (SBB) SC-3

STRAW BALE INSTALLATION NOTES

- SEE PLAN VIEW FOR: -LOCATION(S) OF STRAW BALES.
- STRAW BALES SHALL CONSIST OF CERTIFIED WEED FREE STRAW OR HAY. LOCAL JURISDICTIONS MAY REQUIRE PROOF THAT BALES ARE WEED FREE.
- STRAW BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF STRAW OR HAY AND WEIGH NOT LESS THAN 35 POUNDS.
- WHEN STRAW BALES ARE USED IN SERIES AS A BARRIER, THE END OF EACH BALE SHALL BE TIGHTLY ABUTTING ONE ANOTHER.
- STRAW BALE DIMENSIONS SHALL BE APPROXIMATELY 36"X18"X18".
- A UNIFORM ANCHOR TRENCH SHALL BE EXCAVATED TO A DEPTH OF 4". STRAW BALES SHALL BE PLACED SO THAT BINDING TWINE IS ENCOMPASSING THE VERTICAL SIDES OF THE BALE(S). ALL EXCAVATED SOIL SHALL BE PLACED ON THE UPHILL SIDE OF THE STRAW BALE(S) AND COMPACTED.
- TWO (2) WOODEN STAKES SHALL BE USED TO HOLD EACH BALE IN PLACE. WOODEN STAKES SHALL BE 2"X2"X24". WOODEN STAKES SHALL BE DRIVEN 6" INTO THE GROUND.

STRAW BALE MAINTENANCE NOTES

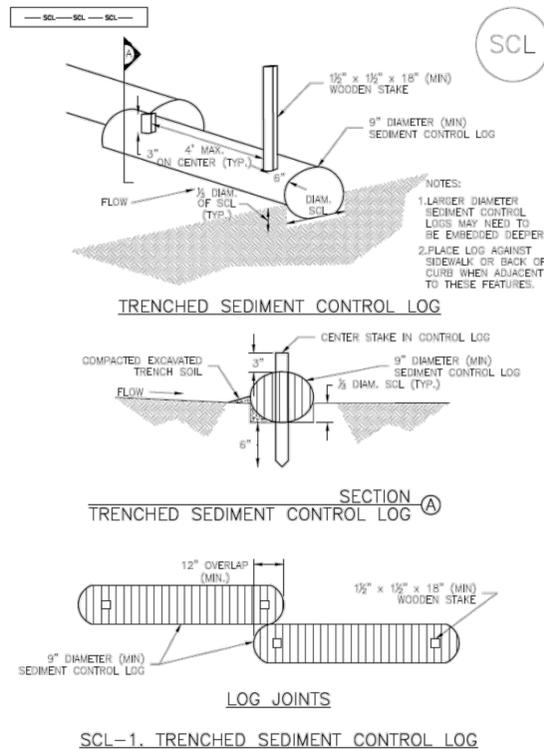
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- STRAW BALES SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTEN, OR DAMAGED BEYOND REPAIR.
- SEDIMENT ACCUMULATED UPSTREAM OF STRAW BALE BARRIER SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE STRAW BALE BARRIER.
- STRAW BALES ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN STRAW BALES ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

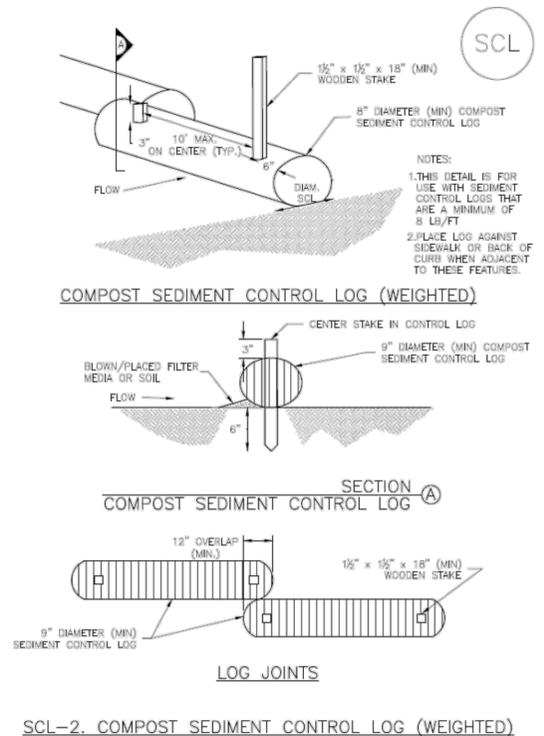
November 2010 Urban Drainage and Flood Control District SBB-3
Urban Storm Drainage Criteria Manual Volume 3

Sediment Control Log (SCL) SC-2



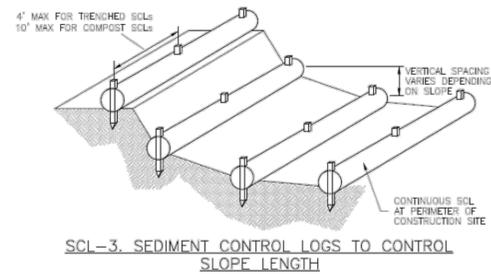
November 2015 Urban Drainage and Flood Control District SCL-3
Urban Storm Drainage Criteria Manual Volume 3

SC-2 Sediment Control Log (SCL)



November 2015 Urban Drainage and Flood Control District SCL-4
Urban Storm Drainage Criteria Manual Volume 3

Sediment Control Log (SCL) SC-2



November 2015 Urban Drainage and Flood Control District SCL-5
Urban Storm Drainage Criteria Manual Volume 3

SC-2 Sediment Control Log (SCL)

SEDIMENT CONTROL LOG INSTALLATION NOTES

- SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
- SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADE/GRADING/DISTURBING ACTIVITIES.
- SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
- SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.
- IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/2 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING. COMPOST LOGS THAT ARE 8 LB/FT DO NOT NEED TO BE TRENCHED.
- THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL OR FILTER MATERIAL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER OR BLOWN IN PLACE.
- FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED. COMPOST LOGS SHOULD BE STAKED 10' ON CENTER.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
- SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. COMPOST FROM COMPOST LOGS MAY BE LEFT IN PLACE AS LONG AS BAGS ARE REMOVED AND THE AREA SEEDED. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

November 2015 Urban Drainage and Flood Control District SCL-6
Urban Storm Drainage Criteria Manual Volume 3



PREPARED FOR:



REVISIONS:

#	DATE	COMMENT
A	03/27/19	Issued for 30% Design Review
B	04/22/19	Issued for Permit
C	04/26/19	Issued for Review (90%)
D	04/29/19	Issued for Grading Permit
E	06/04/19	Re-Issue for Permit

Grazing Yak Solar

El Paso County, Colorado

Notes and Details - Sheet 5

DATE: 06/04/2019

SHEET: ND05

Compost Blanket and Filter Berm (CB) EC-5

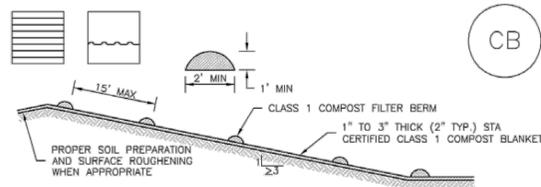


TABLE CB-1. CLASS 1 COMPOST	
PARAMETERS	CHARACTERISTIC
MINIMUM STABILITY INDICATOR	STABLE TO VERY STABLE
SOLUBLE SALTS	MAXIMUM 5 mmhos/cm
PH	6.0 - 8.0
AG INDEX	> 10
MATURITY INDICATOR EXPRESSED AS PERCENTAGE OF GERMINATION/VIGOR	80+/80+
MATURITY INDICATOR EXPRESSED AS AMMONIA N/ NITRATE N RATIO	< 4
MATURITY INDEX AS CARBON TO NITROGEN RATIO	20:1
TESTED FOR CLOPYRALID	YES/NEGATIVE RESULT
MOISTURE CONTENT	30-60%
ORGANIC MATTER CONTENT	25-45% OF DRY WEIGHT
PARTICLE SIZE DISTRIBUTION	3" (75mm) 100% PASSING
PRIMARY, SECONDARY NUTRIENTS; TRACE ELEMENTS	MUST BE REPORTED
TESTING AND TEST REPORT SUBMITTAL REQUIREMENTS	STA + CLOPYRALID
ORGANIC MATTER PER CUBIC YARD	MUST REPORT
CHEMICAL CONTAMINANTS	COMPLY WITH US EPA CLASS A STANDARD, 40 CFR 503.1 TABLES 1 & 3 LEVELS
MINIMUM MANUFACTURING/PRODUCTION REQUIREMENT	FULLY PERMITTED UNDER COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION
RISK FACTOR RELATING TO PLANT GERMINATION AND HEALTH	LOW

CB-1. COMPOST BLANKET AND COMPOST FILTER BERM

EC-5 Compost Blanket and Filter Berm (CB)

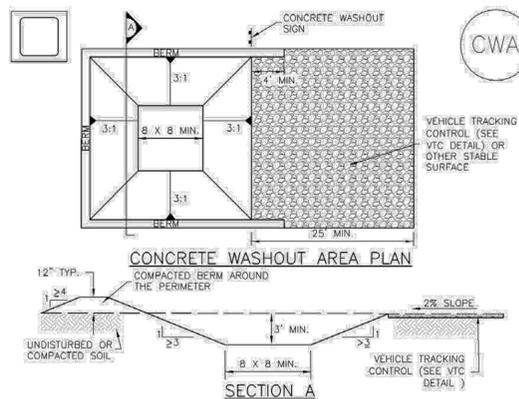
COMPOST FILTER BERM AND COMPOST BLANKET INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION OF COMPOST FILTER BERM(S).
 - LENGTH OF COMPOST FILTER BERM(S).
- COMPOST BERMS AND BLANKETS MAY BE USED IN PLACE OF STRAW MULCH OR GEOTEXTILE FABRIC IN AREAS WHERE ACCESS TO LANDSCAPING IS DIFFICULT DUE TO LANDSCAPING OR OTHER OBJECTS OR IN AREAS WHERE A SMOOTH TURF GRASS FINISH IS DESIRED.
- FILTER BERMS SHALL RUN PARALLEL TO THE CONTOUR.
- FILTER BERMS SHALL BE A MINIMUM OF 1 FEET HIGH AND 2 FEET WIDE.
- FILTER BERMS SHALL BE APPLIED BY PNEUMATIC BLOWER OR BY HAND.
- FILTER BERMS SHALL ONLY BE UTILIZED IN AREAS WHERE SHEET FLOW CONDITIONS PREVAIL AND NOT IN AREAS OF CONCENTRATED FLOW.
- COMPOST BLANKETS SHALL BE APPLIED AT A DEPTH OF 1 - 3 INCHES (TYPICALLY 2 INCHES). FOR AREAS WITH EXISTING VEGETATION THAT ARE TO BE SUPPLEMENTED BY COMPOST, A THIN 0.5-INCH LAYER MAY BE USED.
- SEEDING SHALL BE PERFORMED PRIOR TO THE APPLICATION OF COMPOST. ALTERNATIVELY, SEED MAY BE COMBINED WITH COMPOST AND BLOWN WITH THE PNEUMATIC BLOWER.
- WHEN TURF GRASS FINISH IS NOT DESIRED, SURFACE ROUGHENING ON SLOPES SHALL TAKE PLACE PRIOR TO COMPOST APPLICATION.
- COMPOST SHALL BE A CLASS 1 COMPOST AS DEFINED BY TABLE CB-1.

COMPOST FILTER BERM MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - COMPOST BERMS AND BLANKETS SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RILLING IN THE COMPOST SURFACE OCCURS.
- (DETAILS ADAPTED FROM ARAPAHOE COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)
 NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

Concrete Washout Area (CWA) MM-1



CWA-1. CONCRETE WASHOUT AREA

- CWA INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - CWA INSTALLATION LOCATION.
 - DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS IMPRACTICABLE OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
 - THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
 - CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
 - BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 12'.
 - VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
 - SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
 - USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MM-1 Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
 - CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
 - THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
 - WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
- (DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)
 NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.



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Grazing Yak Solar
 El Paso County, Colorado

Notes and Details - Sheet 6

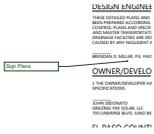
DATE: 06/04/2019

SHEET: ND06

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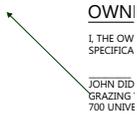
Markup Summary 6-24-2019

dsdparsons (5)



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Author: dsdparsons
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Sign Plans

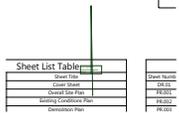


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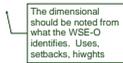
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this should be in Feet to match the WSEO dimensional standrds



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Author: dsdparsons
Date: 6/24/2019 10:13:32 AM
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you forgot the substation upgrade sheet



Subject: Callout
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Author: dsdparsons
Date: 6/24/2019 10:16:25 AM
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The dimensional should be noted from what the WSE-O identifies. Uses, setbacks, hiwghts