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WARE SOLAR WARE PLANNING COMMISSION PLANS

FOR
Site/Electrical Layout, Grading/Drainage/Erosion Control/Landscaping
IN
WARE, MASSACHUSETTS

LOCATION MAP



SOURCE: MAP DATA ©2017 GOOGLE (NOT TO SCALE)

CONTACT INFO:

OWNER/DEVELOPER:
ECOS ENERGY
222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402

CIVIL ENGINEER:
WESTWOOD PROFESSIONAL
SERVICES
12701 WHITEWATER DRIVE
SUITE 300,
MINNETONKA, MN 55343

Sheet List Table	
Sheet Number	Sheet Title
1	Cover Sheet
2	Overall Site Plan
3	Removal and Erosion Control Plan
4	Overall Grading Plan
5	Site & Grading Plan - 1
6	Site & Grading Plan - 2
7	Site & Grading Plan - 3
8	Site & Grading Plan - 4
9	Site & Grading Plan - 5
10	Road Profile - 1
11	Road Profile - 2
12	Road Profile - 3
13	Overall Landscape Plan
14	Drainage Plan
15	Post Construction Drainage Plan
16	Civil Notes
17	Civil Details
18	Civil Details

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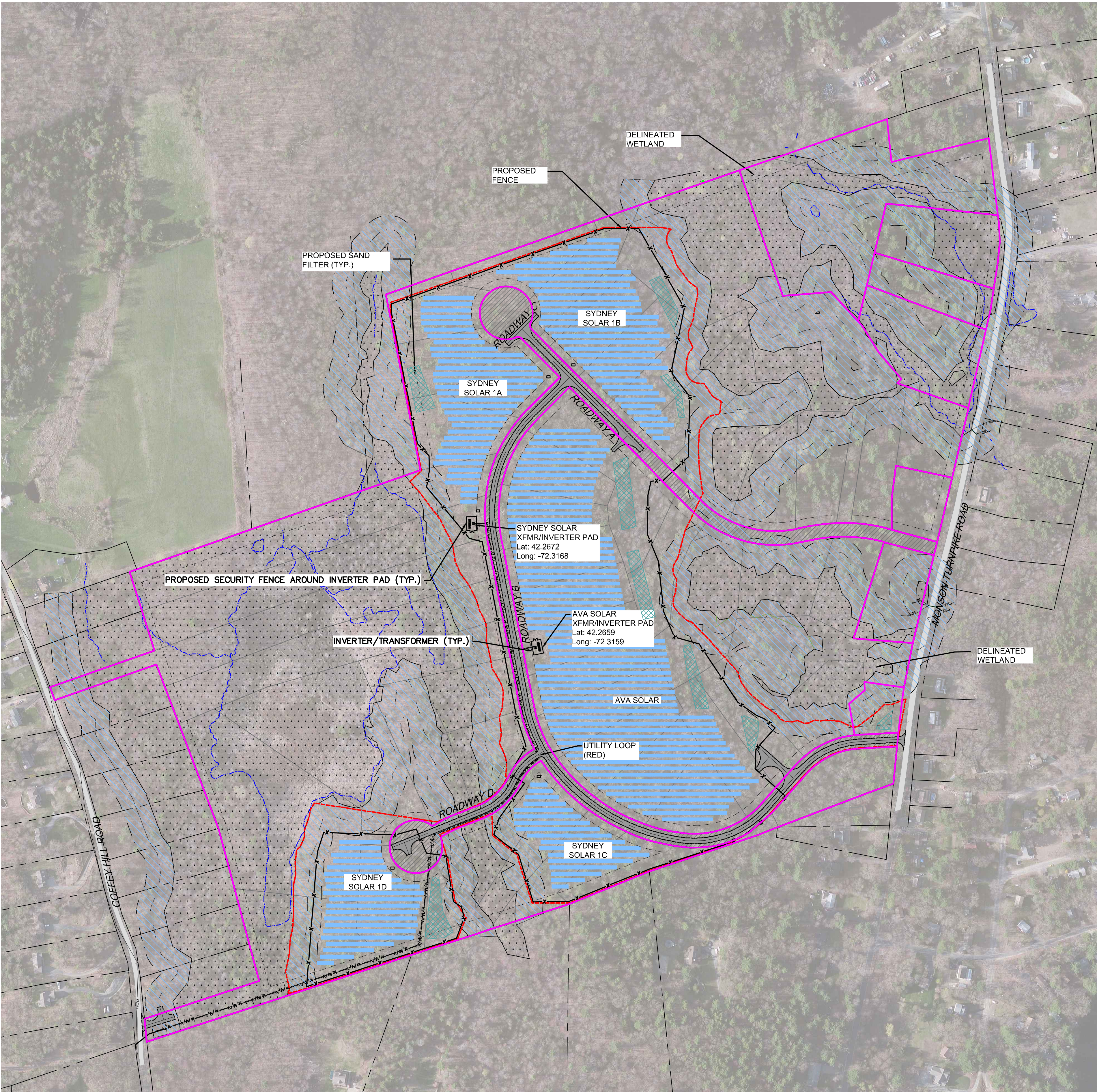
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WARE, MA
HAMPSHIRE COUNTY

COVER SHEET

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020
SHEET: 1

A
B
C
D
E
F
G
H



LEGEND:

- EXISTING LOT LINE
- PROPOSED LOT LINE
- PROPOSED FENCE
- ACCESS ROAD EASEMENT
- PROPOSED GRAVEL ACCESS ROAD
- WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA
- PROPOSED AC DISTRIBUTION
- 18 x 2 SOLAR MODULE BOCK
- MODULE SETBACK LINE
- DISTURBANCE LIMIT
- PROPOSED SAND FILTER

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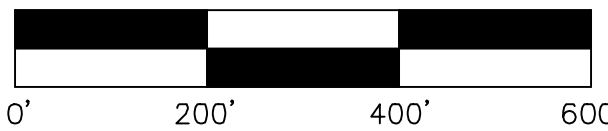


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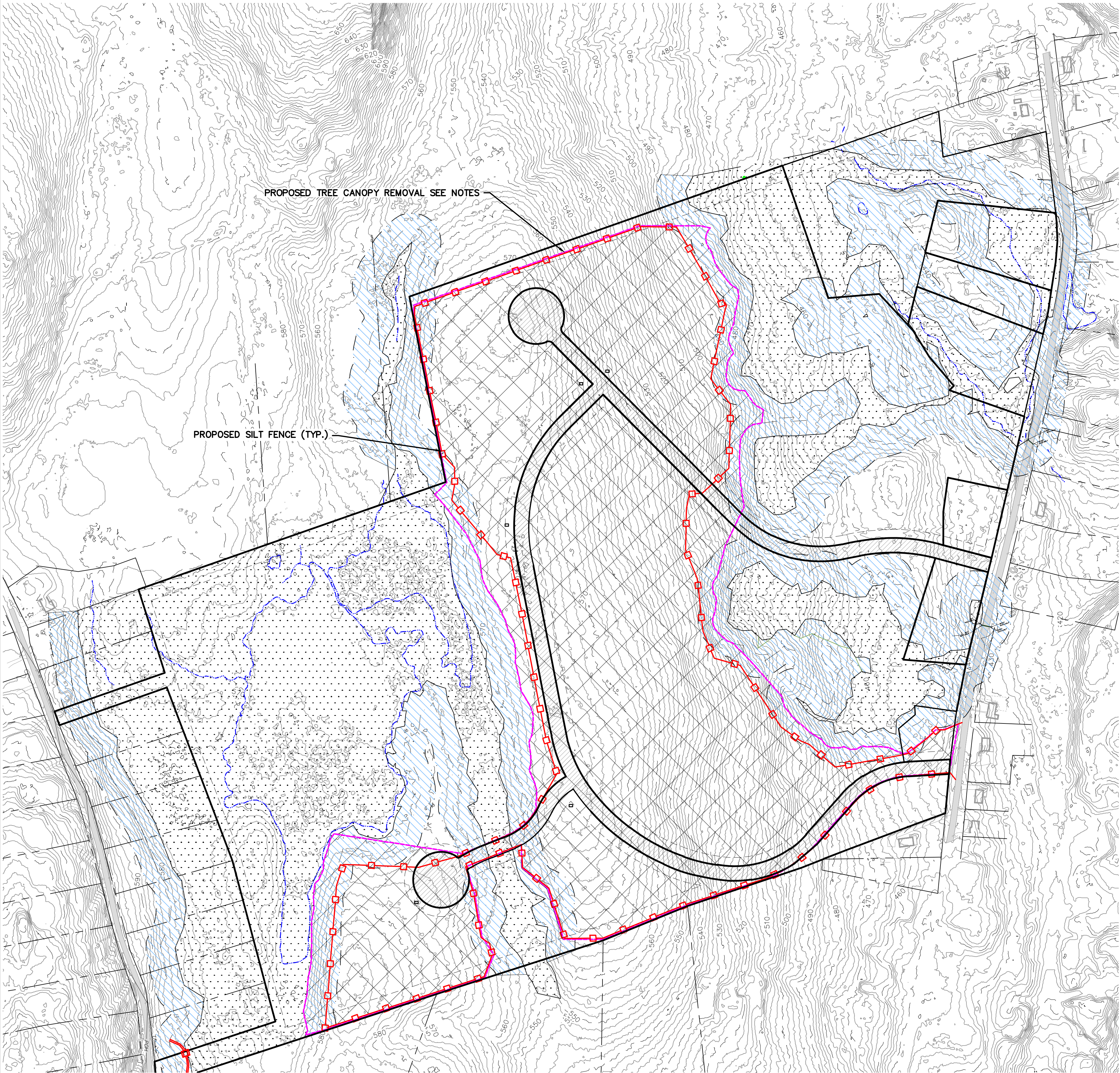
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OVERALL SITE
PLAN

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020
SHEET: 2



LEGEND:

- PROPOSED LOT LINE
- 100' WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA
- PROPOSED SILT FENCE
- TREE CANOPY CLEARING
- ACCESS ROAD EASEMENT
- DISTURBANCE LIMIT

CONSTRUCTION SEQUENCING NOTES:

1. THE CONTRACTOR SHALL PERFORM ALL TREE REMOVAL ACTIVITIES ON SITE TO ALLOW FOR BMP INSTALLATION, NO GRUBBING IS TO OCCUR DURING TREE REMOVAL, PRIOR TO BMP INSTALLATION.
2. ALL BMP'S IDENTIFIED ON THE PLAN SHALL BE STAKED BY A REGISTERED SURVEYOR AND INSTALLED PER PLANS PRIOR TO ANY CONSTRUCTION ACTIVITY.
3. AS-BUILT DRAWINGS SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF THE PROJECT.

PROJECT FOOTPRINT REMOVAL NOTES

AREAS WITHIN THE PROJECT FENCELINE LIMITS SHALL BE CLEARED BY THE FOLLOWING METHODS:

- TREE CANOPY AREAS (57.9 ACRES):
1. TREES AND VEGETATION SHALL BE CLEARED AND GRUBBED

EROSION CONTROL NOTES:

1. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BEFORE ANY SOIL DISTURBANCE.
2. THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 14 DAYS SHALL BE STABILIZED.
3. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. SEDIMENT IN RUNOFF WATER SHALL BE TRAPPED AND RETAINED WITHIN THE PROJECT AREA USING APPROVED MEASURES.
4. WETLAND AREAS AND SURFACE AREAS SHALL BE PROTECTED FROM SEDIMENT. OFF-SITE SURFACE WATER AND RUNOFF FROM UNDISTURBED AREAS SHALL BE DIVERTED AWAY FROM DISTURBED AREAS WHERE FEASIBLE OR CARRIED THROUGH THE PROJECT AREA WITHOUT CAUSING EROSION. INTEGRITY OF DOWNSTREAM DRAINAGE SYSTEMS SHALL BE MAINTAINED.
5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. STABILIZATION MEASURES SUCH AS HYDROSEEDING OR APPLICATION OF HAY/MULCH OR SOIL NETTING SHALL BE APPLIED PRIOR TO REMOVAL OF TEMPORARY EROSION MEASURES AND INSPECTED WEEKLY UNTIL STABILIZATION IS COMPLETE. TEMPORARY EROSION CONTROL MEASURES MAY BE REMOVED ONCE STABILIZATION OF ALL SITE SOILS HAS BEEN ACHIEVED AND WRITTEN AUTHORIZATION TO DO SO HAS BEEN PROVIDED BY THE STORMWATER AUTHORITY. TRAPPED SEDIMENT SHALL BE REMOVED IMMEDIATELY WITH TEMPORARY EROSION CONTROL METHODS AND LAWFULLY DISPOSED OF OFF-SITE. OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN THIRTY DAYS.
6. DEVELOPER TO OBTAIN AN NPDES PERMIT PRIOR TO CONSTRUCTION.



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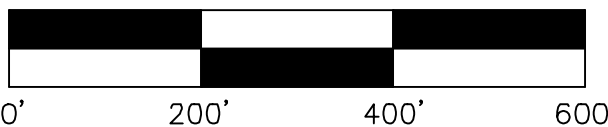
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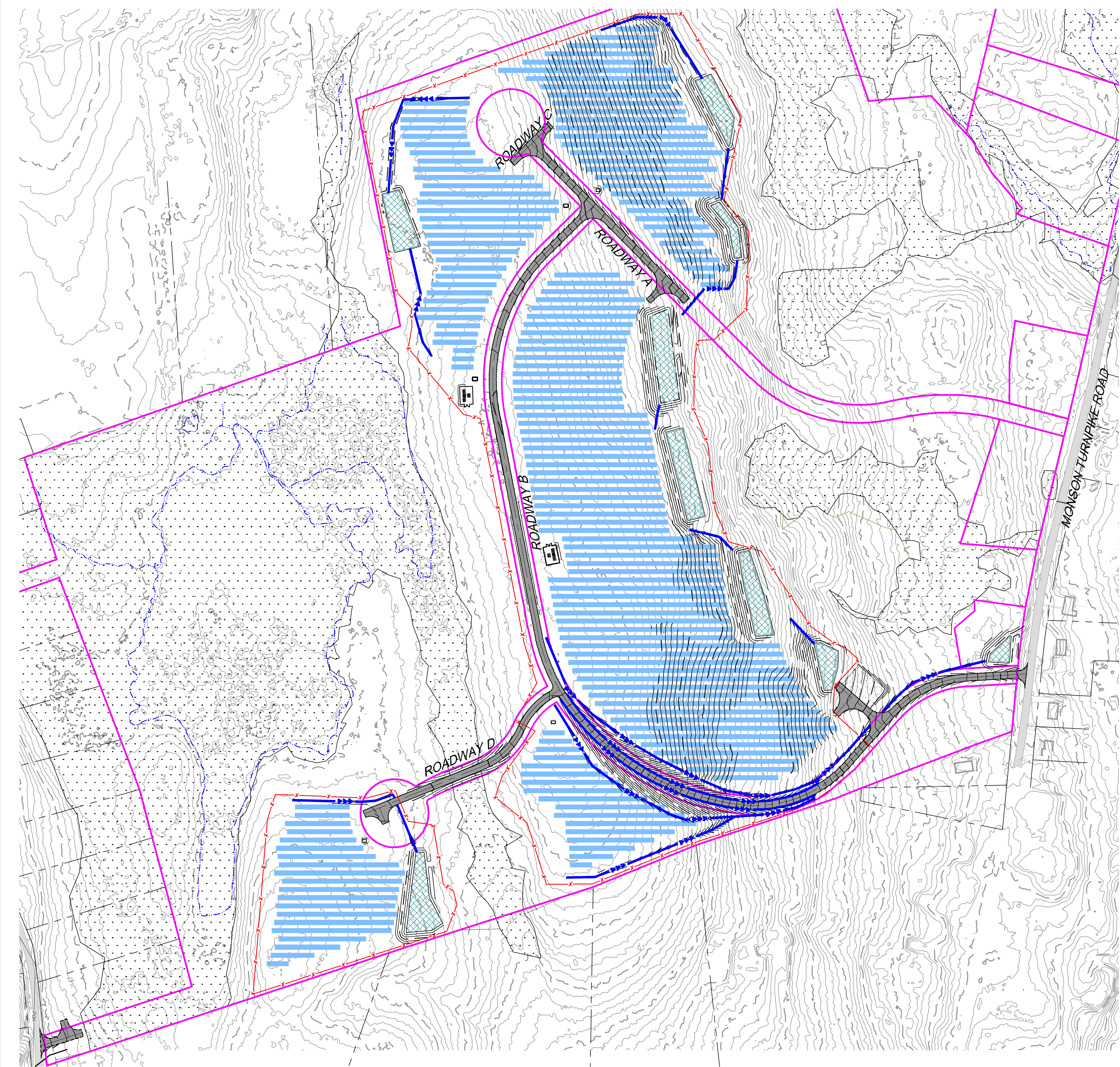
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REMOVAL AND
EROSION
CONTROL PLAN

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020

SHEET: 3



- LEGEND:
- PROPOSED LOT LINE
 - PROPOSED FENCE
 - PROPOSED GRAVEL ACCESS ROAD
 - WETLAND DELINEATION LINE/AREA
 - 18 x 2 SOLAR MODULE BLOCK
 - PROPOSED SAND FILTER
 - EXISTING 10' CONTOUR
 - EXISTING 2' CONTOUR
 - PROPOSED 10' CONTOUR
 - PROPOSED 2' CONTOUR
 - PROPOSED DRAINAGE CHANNEL
 - PROPOSED TEMPORARY LAYDOWN YARD

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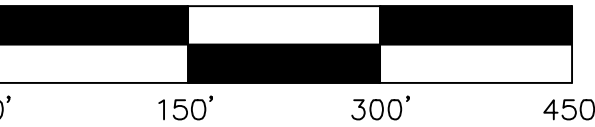


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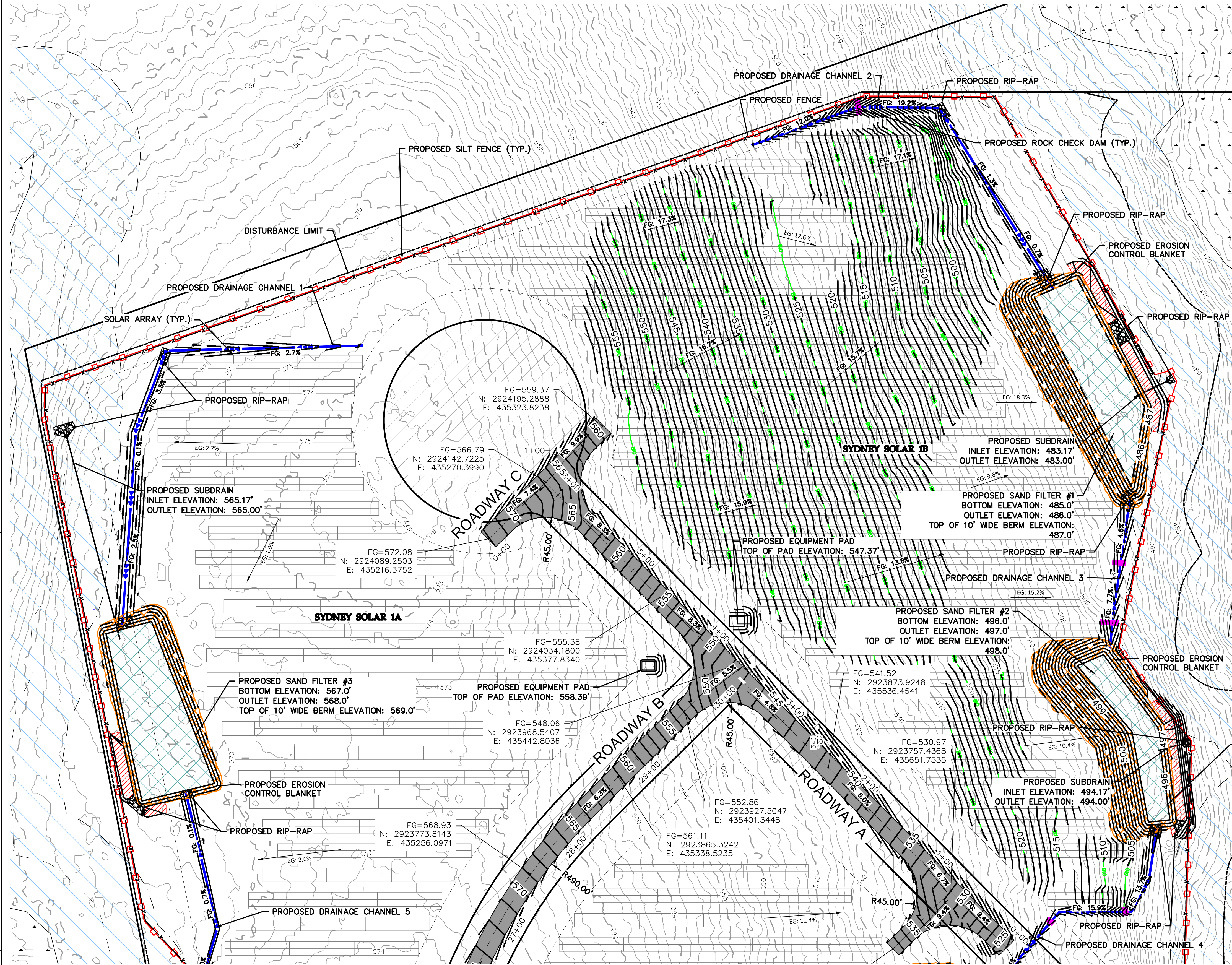
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OVERALL GRADING PLAN

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020
SHEET: 4



SEE SHEET 6

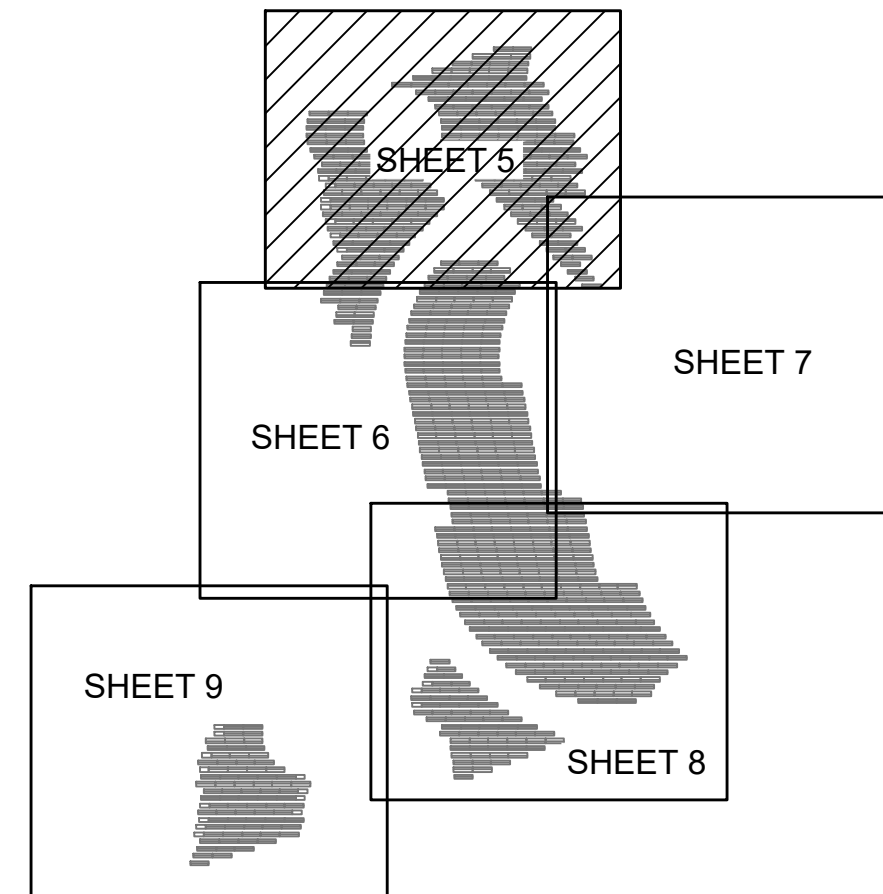
SEE SHEET 7

LEGEND:

- PROPOSED LOT LINE
- EXISTING OVERHEAD POWERLINE
- ACCESS ROAD EASEMENT
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SILT FENCE
- PROPOSED FENCE
- EXISTING 5' CONTOUR
- EXISTING 1' CONTOUR
- PROPOSED 5' CONTOUR
- PROPOSED 1' CONTOUR
- PROPOSED FENCE
- 18 x 2 SOLAR MODULE BLOCK
- BUFFER AREA
- EXISTING GROUND SLOPE
- PROPOSED GROUND SLOPE
- WETLAND DELINEATION LINE/AREA
- PROPOSED UNDERGROUND COLLECTOR
- MODULE SETBACK LINE
- DISTURBANCE LIMIT
- PROPOSED DRAINAGE CHANNEL
- PROPOSED SAND FILTER
- PROPOSED TEMPORARY LAYDOWN YARD
- PROPOSED RIP-RAP
- PROPOSED CULVERT/PIPE
- PROPOSED WATER BAR
- PROPOSED BERM
- PROPOSED EROSION CONTROL BLANKET
- PROPOSED LOW WATER CROSSING
- PROPOSED BIO-ROLL
- PROPOSED CHECK DAM

- NOTES:
- SILT FENCES ADJACENT TO OR WITHIN WETLAND BUFFERS SHOULD BE WIREBACKED AND HAYBALE REINFORCED.

KEY MAP



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SITE & GRADING PLAN - 1

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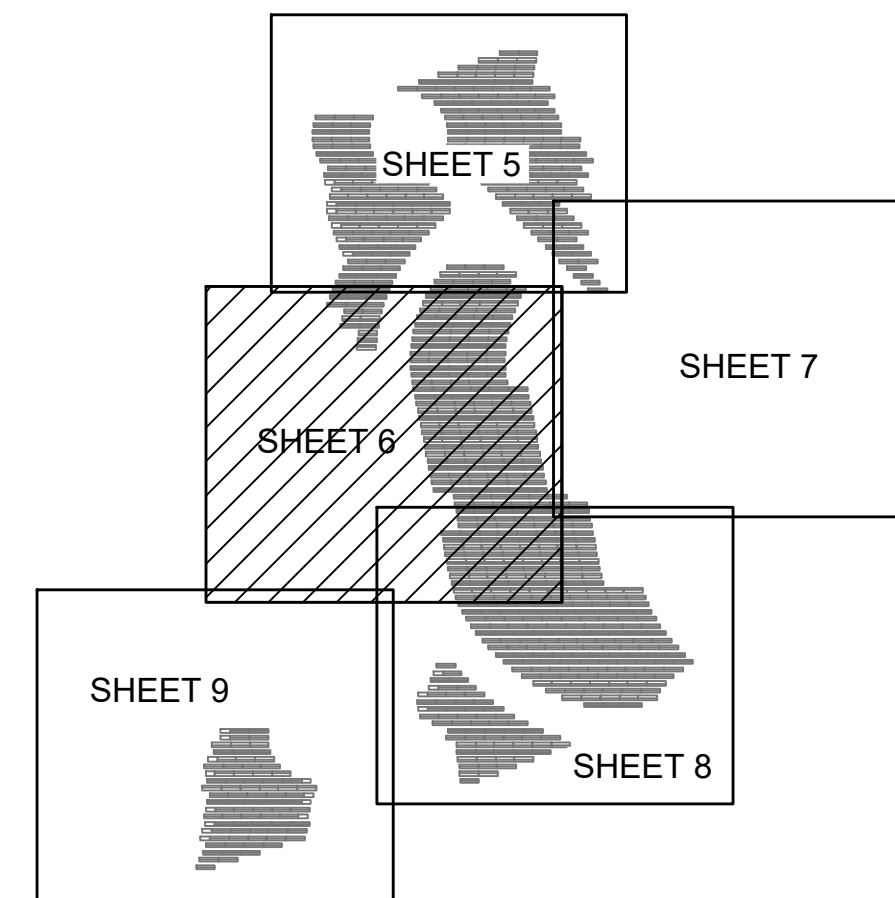
SEE SHEET 5

LEGEND:

- PROPOSED LOT LINE
- EXISTING OVERHEAD POWERLINE
- ACCESS ROAD EASEMENT
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SILT FENCE
- PROPOSED FENCE
- EXISTING 5' CONTOUR
- EXISTING 1' CONTOUR
- PROPOSED 5' CONTOUR
- PROPOSED 1' CONTOUR
- PROPOSED FENCE
- 18 x 2 SOLAR MODULE BLOCK
- BUFFER AREA
- EXISTING GROUND SLOPE
- PROPOSED GROUND SLOPE
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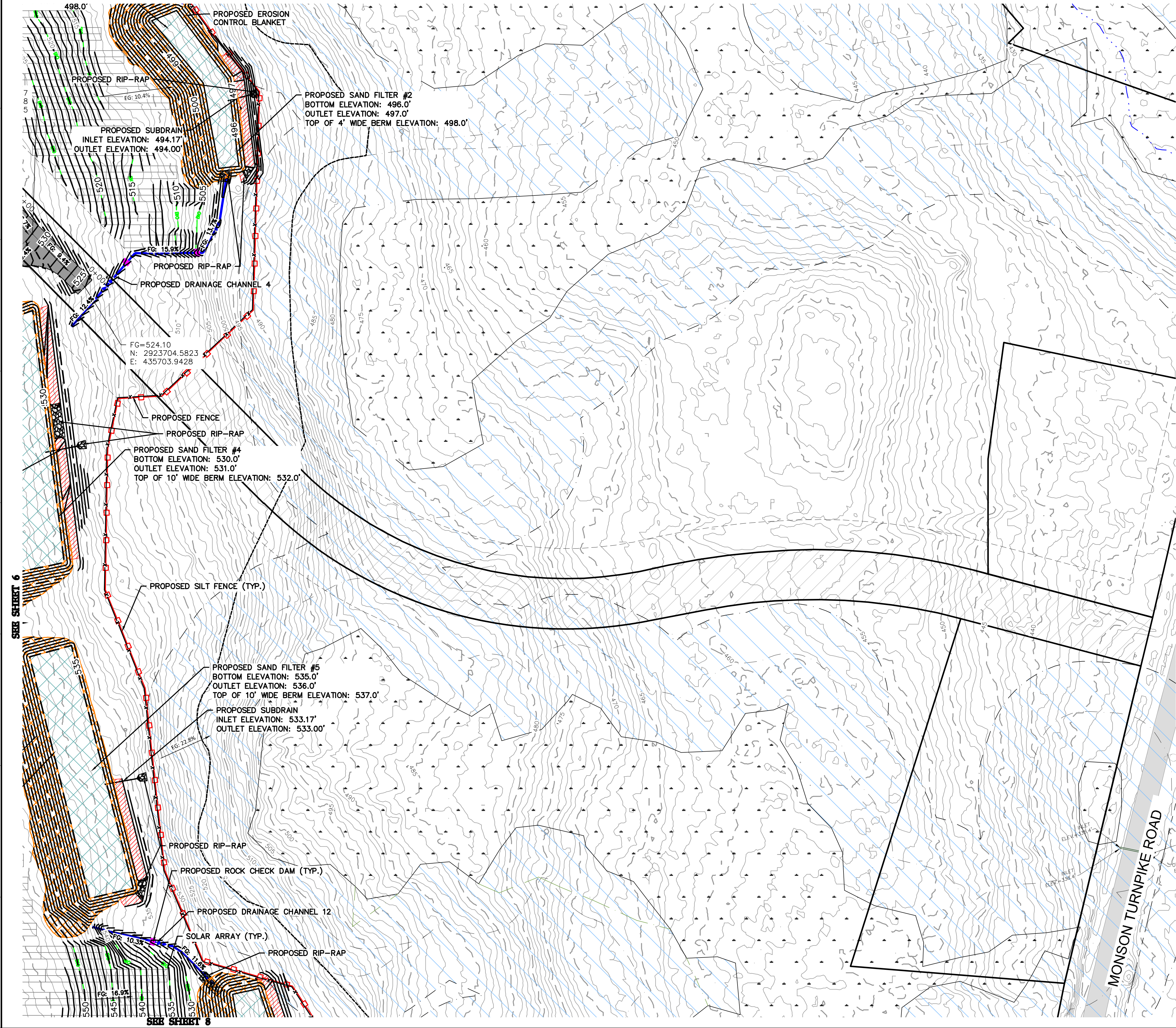
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SITE & GRADING PLAN - 2

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020

SHEET: 6

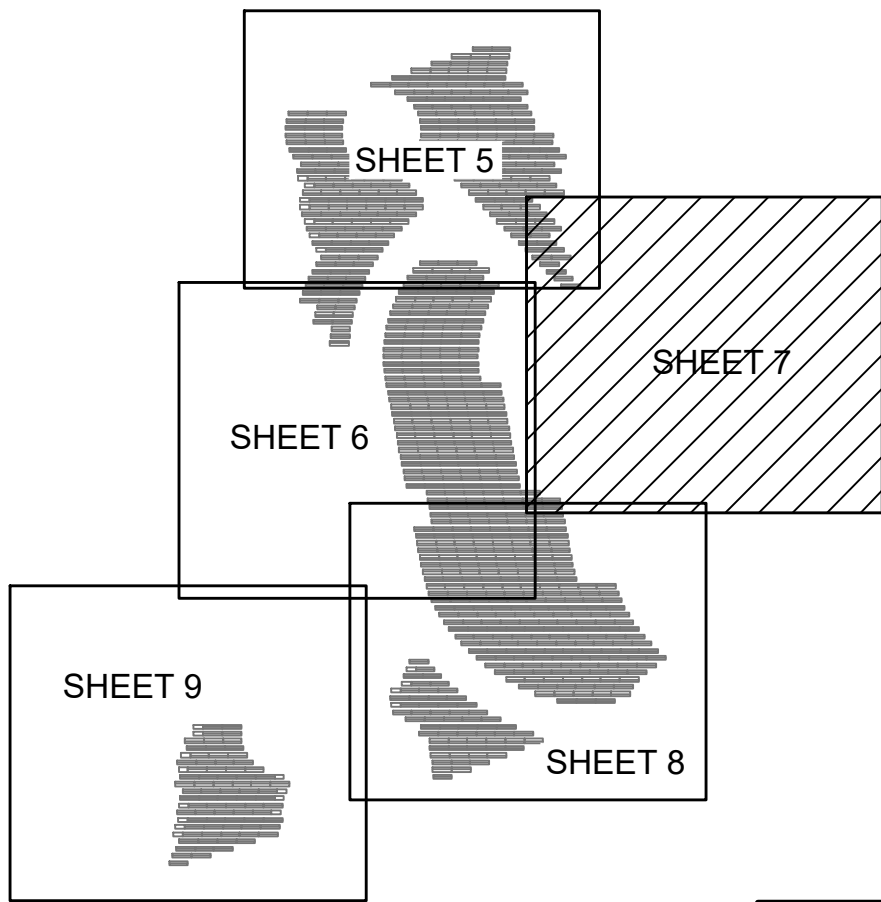


LEGEND:

- PROPOSED LOT LINE
- EXISTING OVERHEAD POWERLINE
- ACCESS ROAD EASEMENT
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SILT FENCE
- PROPOSED FENCE
- EXISTING 5' CONTOUR
- EXISTING 1' CONTOUR
- PROPOSED 5' CONTOUR
- PROPOSED 1' CONTOUR
- PROPOSED FENCE
- 18 x 2 SOLAR MODULE BLOCK
- BUFFER AREA
- EXISTING GROUND SLOPE
- PROPOSED GROUND SLOPE
- WETLAND DELINEATION LINE/AREA
- PROPOSED UNDERGROUND COLLECTOR
- MODULE SETBACK LINE
- DISTURBANCE LIMIT
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- PROPOSED LOW WATER CROSSING
- PROPOSED BIO-ROLL
- PROPOSED CHECK DAM

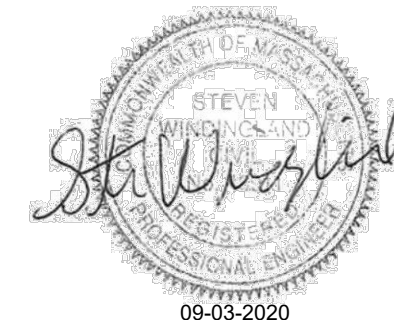
- NOTES:
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KEY MAP



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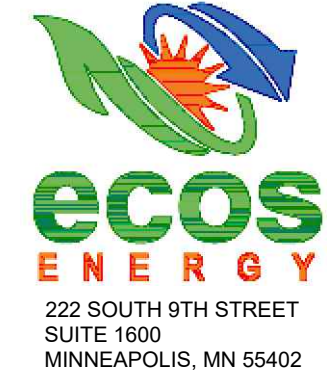
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SITE & GRADING PLAN - 3

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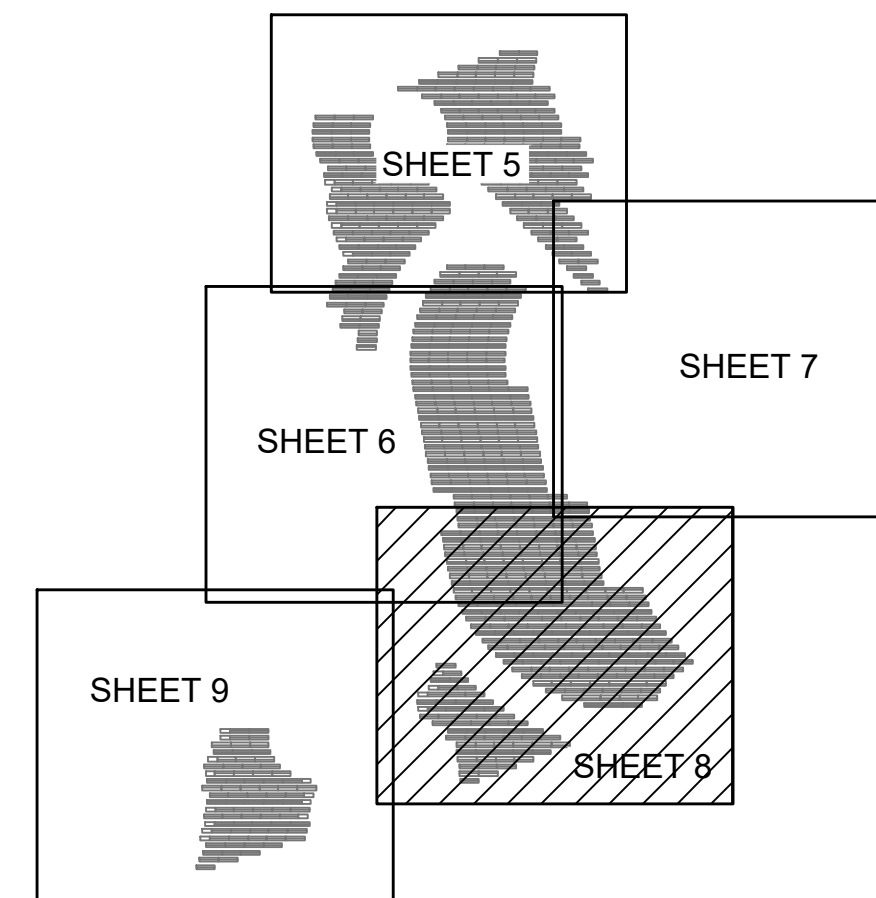
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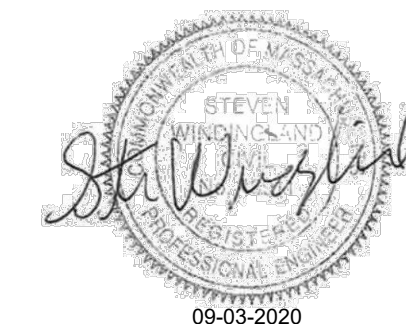
	PROPOSED LOT LINE
	EXISTING OVERHEAD POWERLINE
	ACCESS ROAD EASEMENT
	PROPOSED GRAVEL ACCESS ROAD
	PROPOSED SILT FENCE
	PROPOSED FENCE
	EXISTING 5' CONTOUR
	EXISTING 1' CONTOUR
	PROPOSED 5' CONTOUR
	PROPOSED 1' CONTOUR
	PROPOSED FENCE
	18 x 2 SOLAR MODULE BLOCK
	BUFFER AREA
	EXISTING GROUND SLOPE
	PROPOSED GROUND SLOPE
	WETLAND DELINEATION LINE/AREA
	PROPOSED UNDERGROUND COLLECTOR
	MODULE SETBACK LINE
	DISTURBANCE LIMIT
	PROPOSED DRAINAGE CHANNEL
	PROPOSED SAND FILTER
	PROPOSED TEMPORARY LAYDOWN YARD
	PROPOSED RIP-RAP
	PROPOSED CULVERT/PIPE
	PROPOSED WATER BAR
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	PROPOSED BIO-ROLL
	PROPOSED CHECK DAM

NOTES:
1. SILT FENCES ADJACENT TO OR WITHIN WETLAND BUFFERS SHOULD BE WIREBACKED AND HAYBALE REINFORCED.

KEY MAP

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222 SOUTH 9TH STREET
SUITE 1600
MINNEAPOLIS, MN 55402



0' 50' 100' 150'

WARE SOLAR

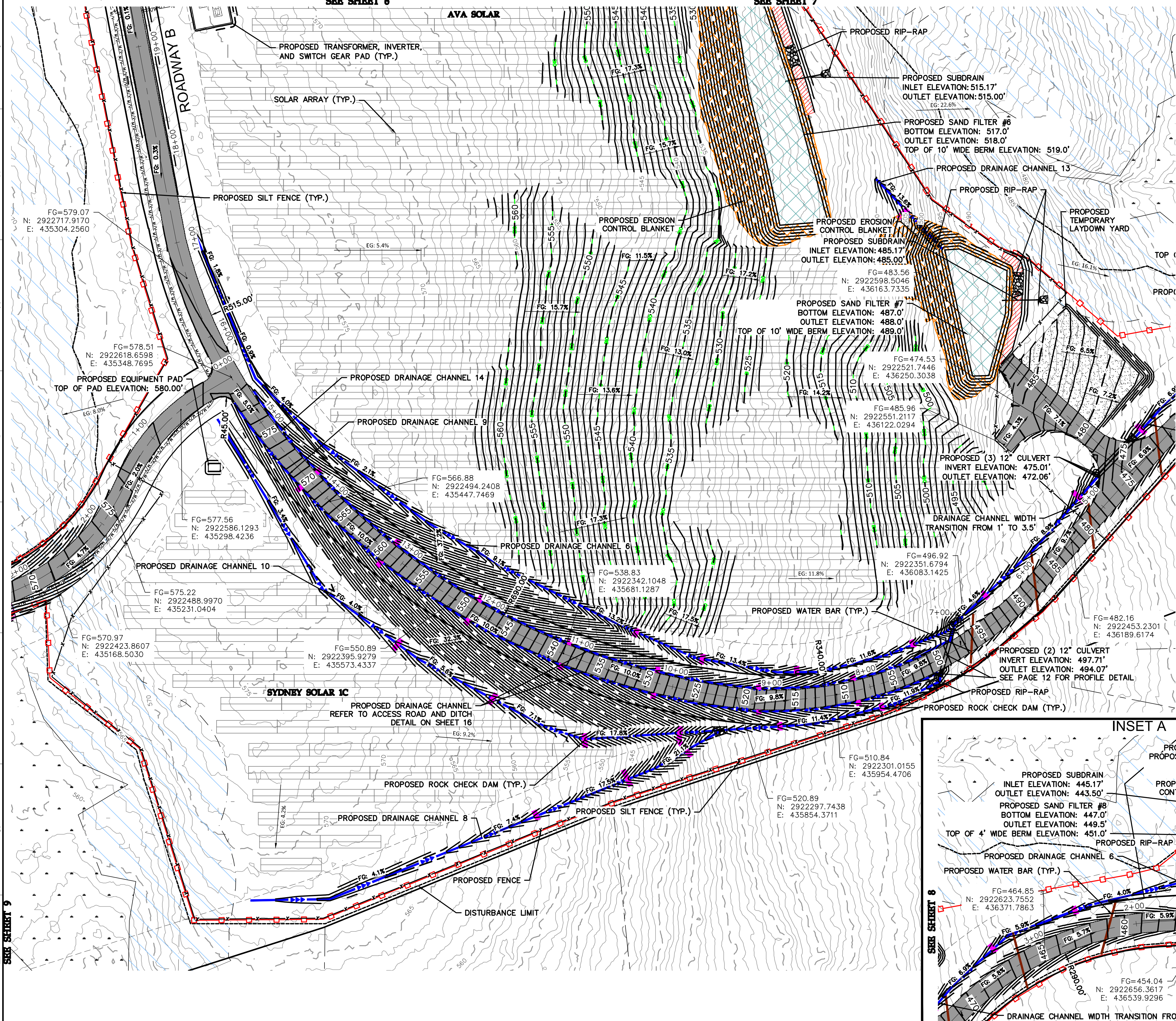
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SITE & GRADING
PLAN - 4

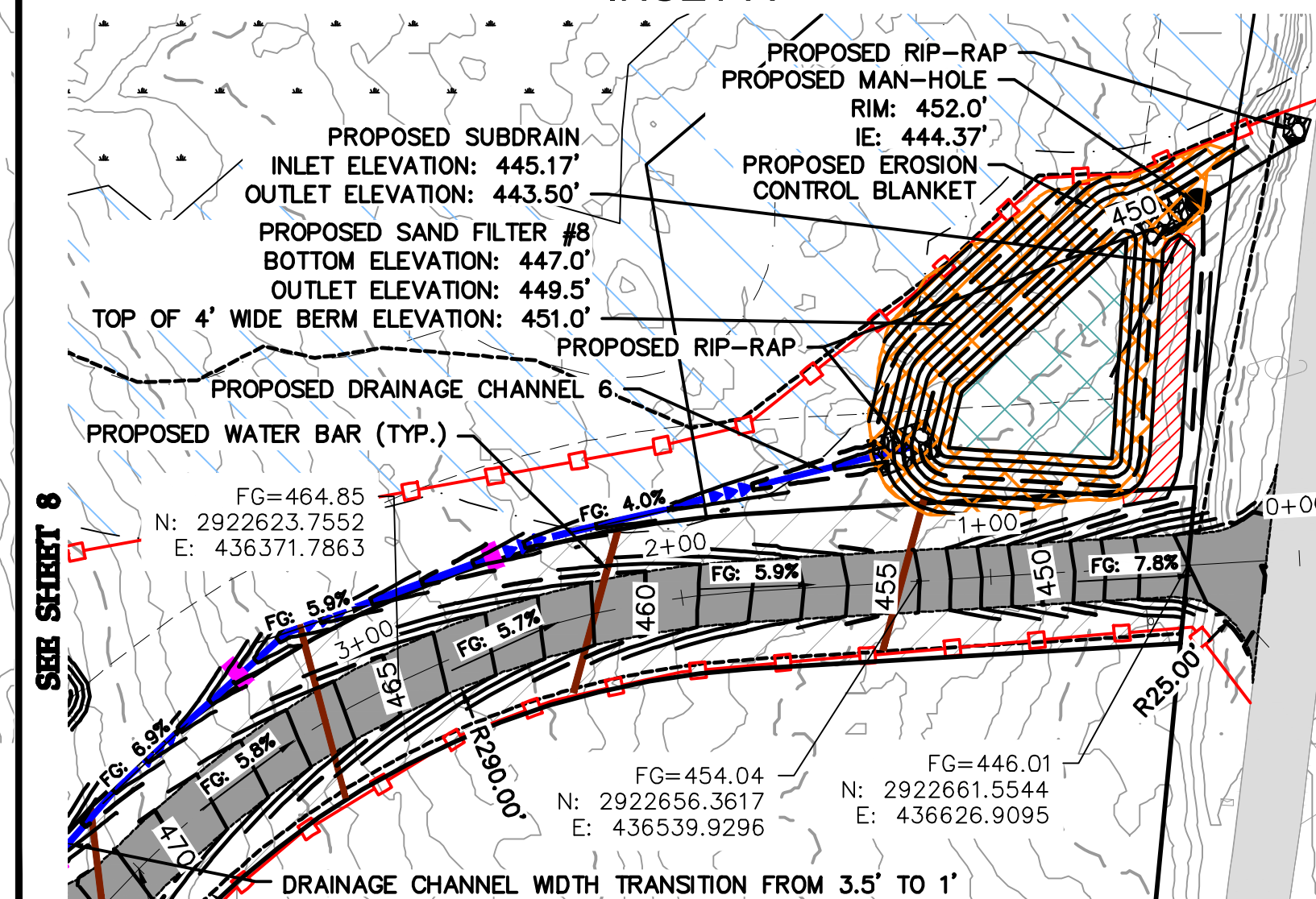
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INSET A

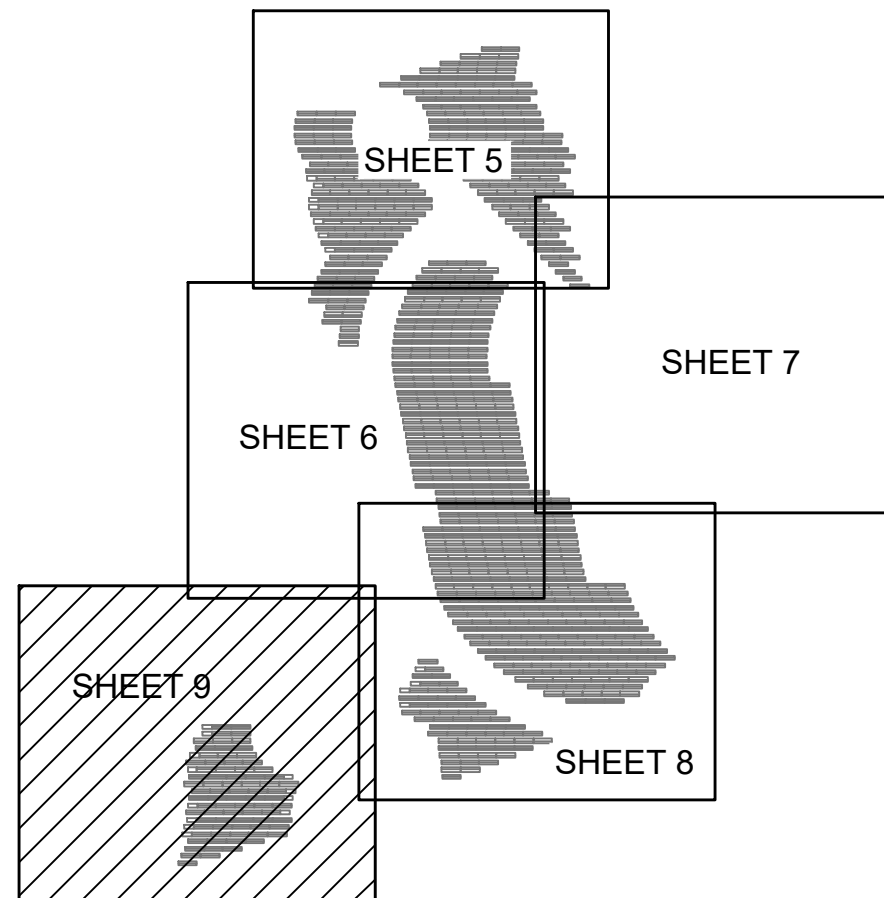


LEGEND:

- PROPOSED LOT LINE
- EXISTING OVERHEAD POWERLINE
- ACCESS ROAD EASEMENT
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SILT FENCE
- PROPOSED FENCE
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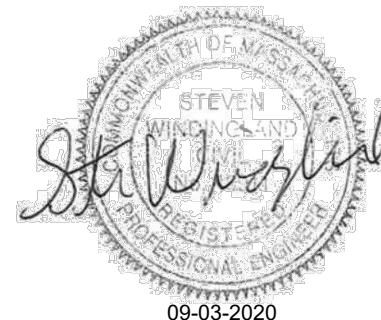
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KEY MAP



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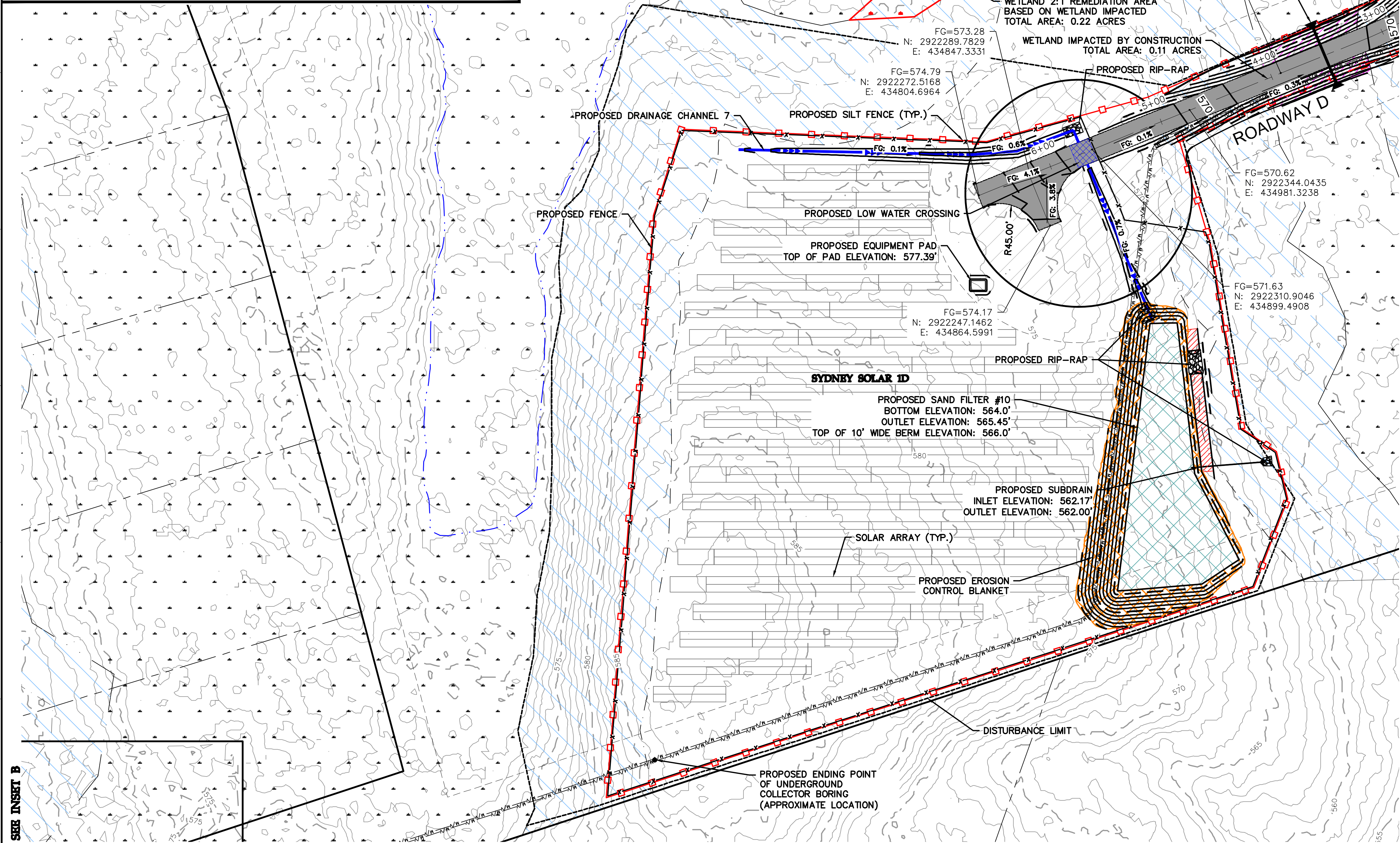
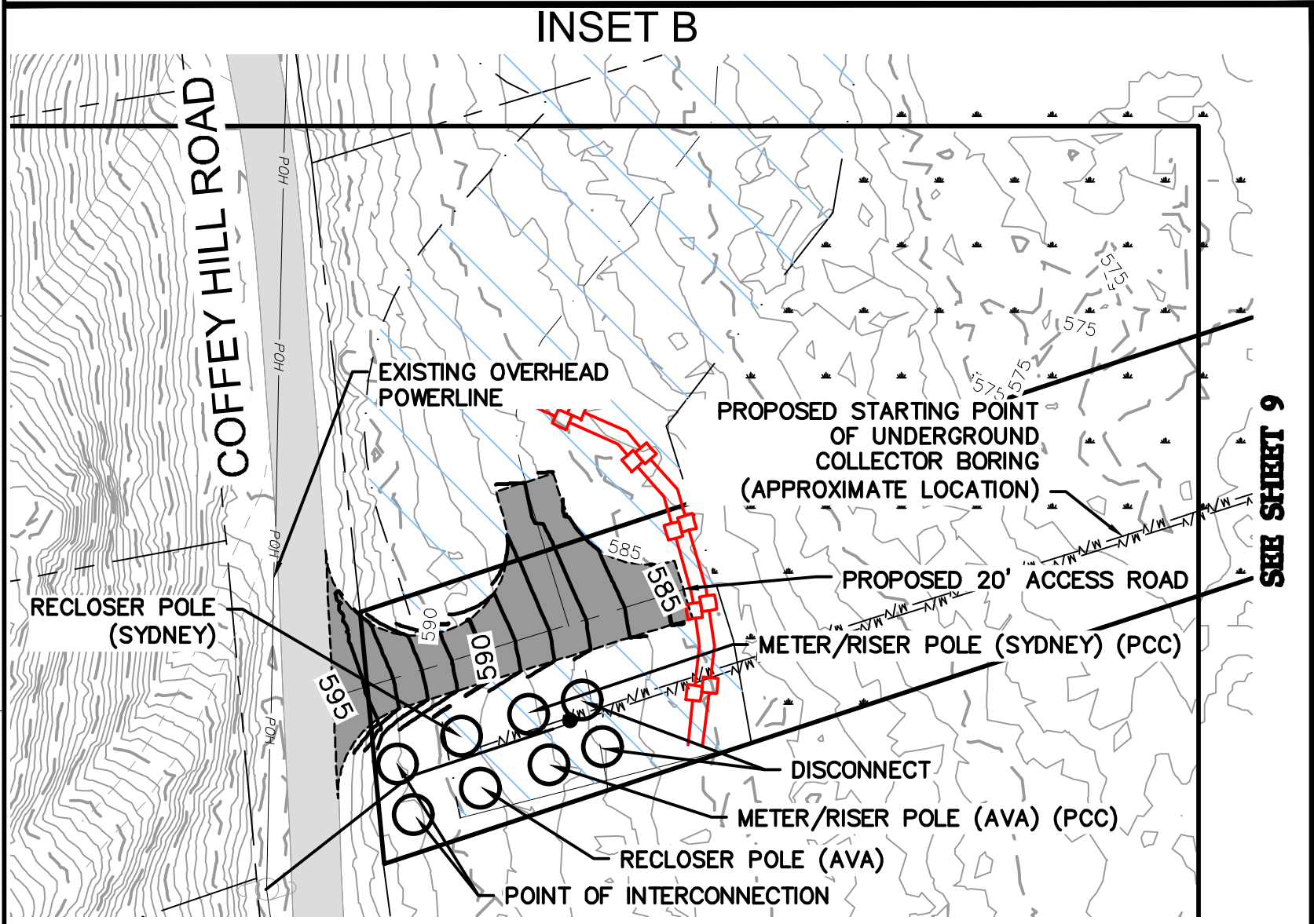
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SITE & GRADING
PLAN - 5

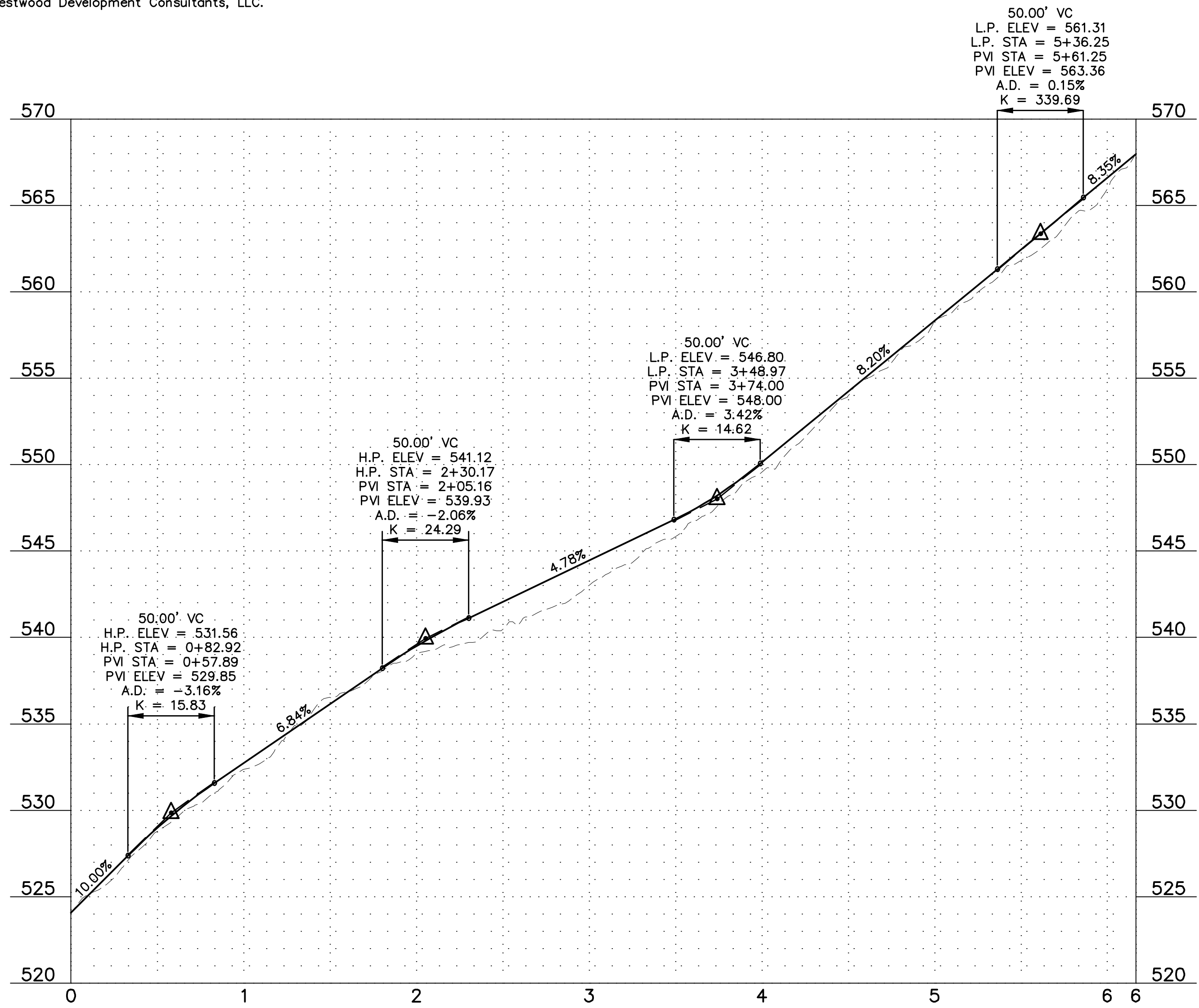
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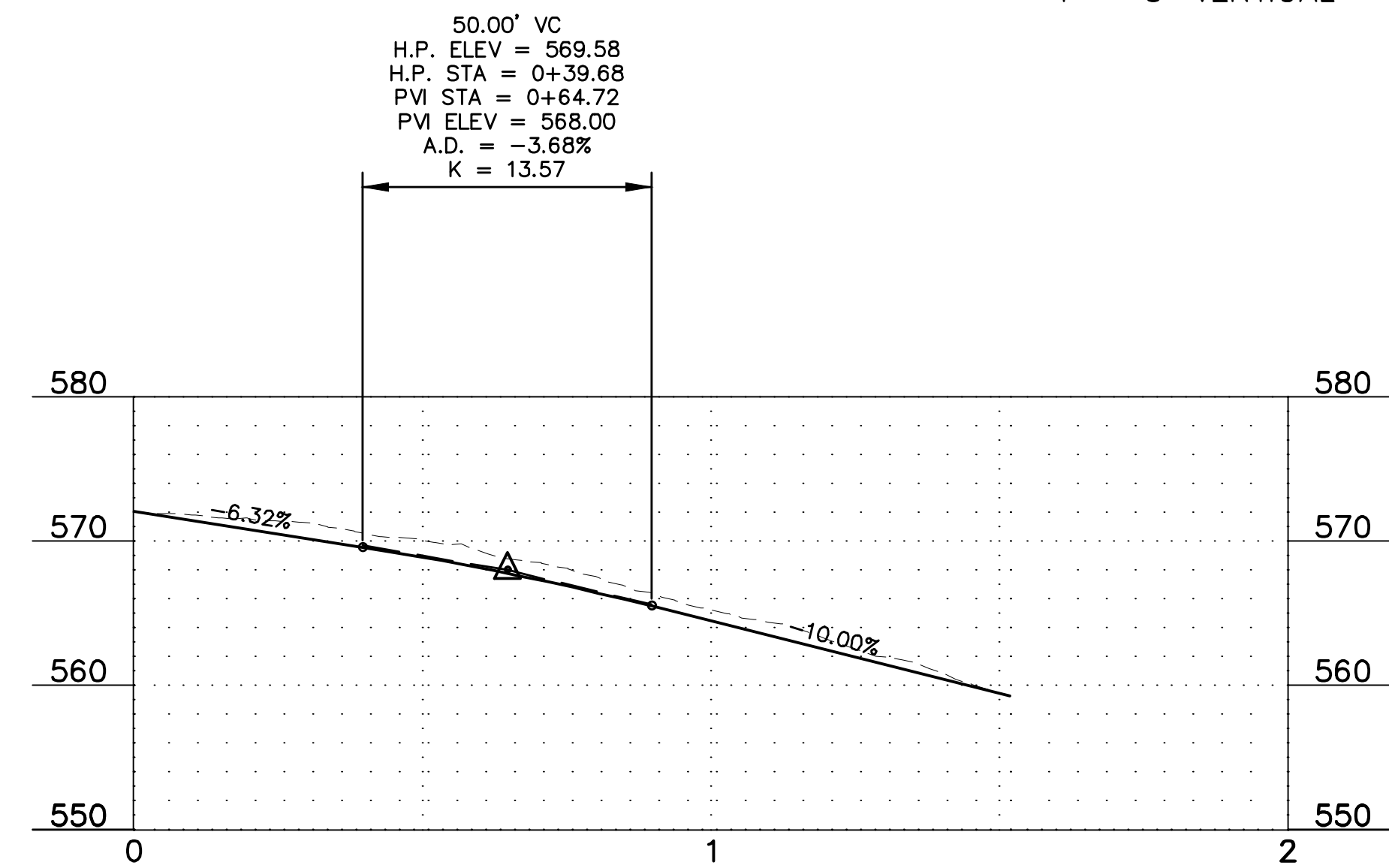
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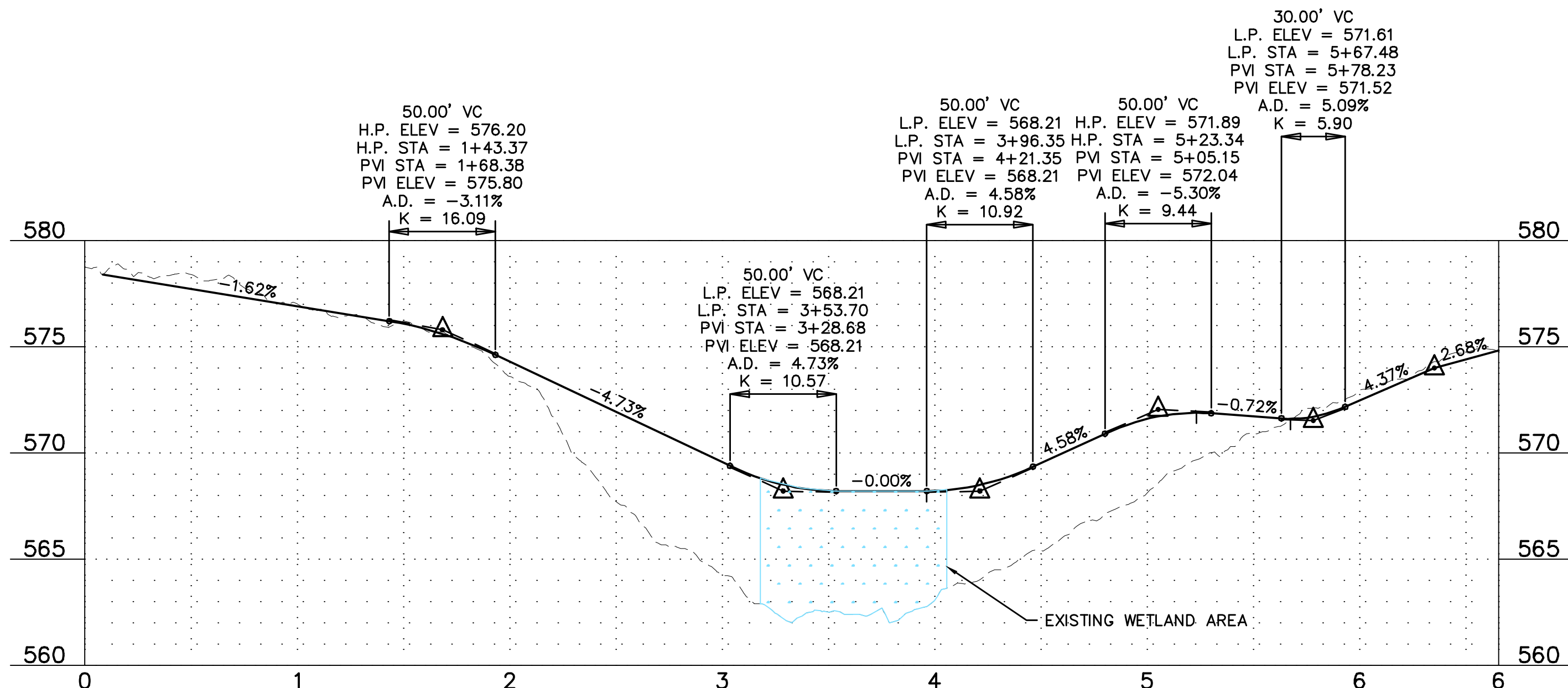
SEE SHEET 8



ROADWAY A
SCALE: 1' = 50' HORIZONTAL
1' = 5' VERTICAL



ROADWAY C
SCALE: 1' = 25' HORIZONTAL
1' = 10' VERTICAL



ROADWAY D
SCALE: 1' = 50' HORIZONTAL
1' = 5' VERTICAL

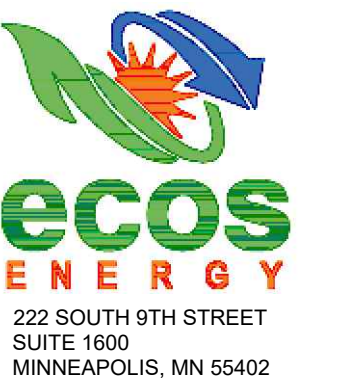


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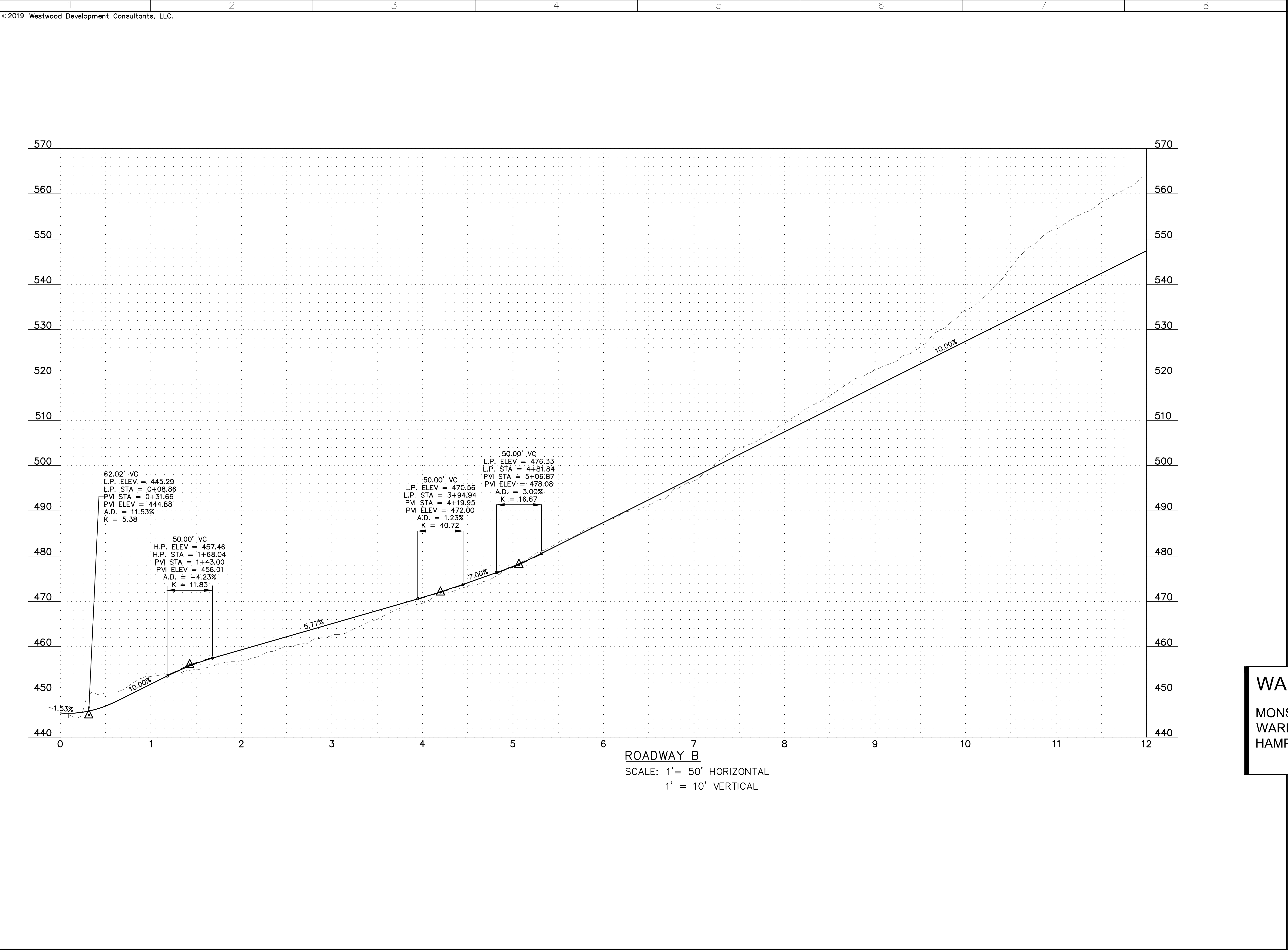
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ROAD PROFILE - 1

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020

SHEET: 10



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MONSON TURNPIKE ROAD
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ROAD PROFILE - 2

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020
SHEET: 11



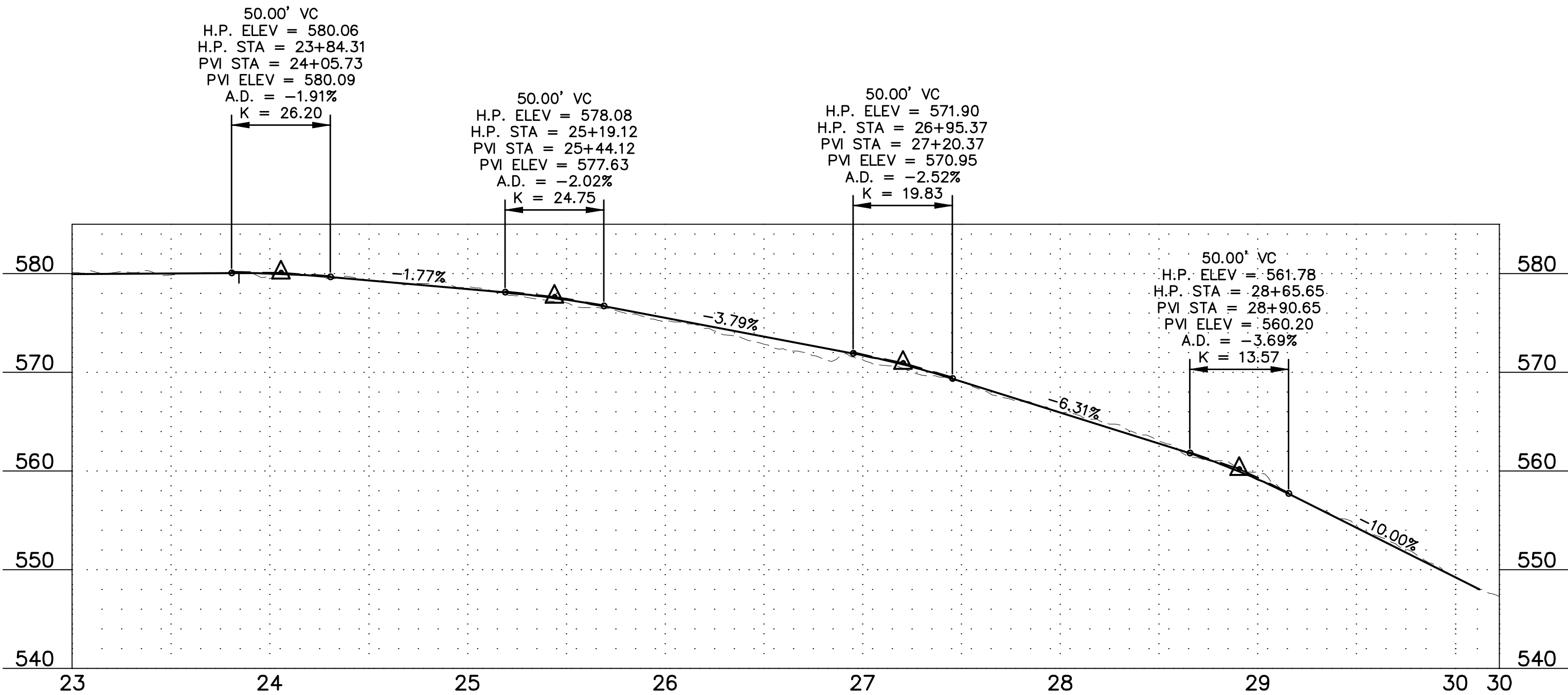
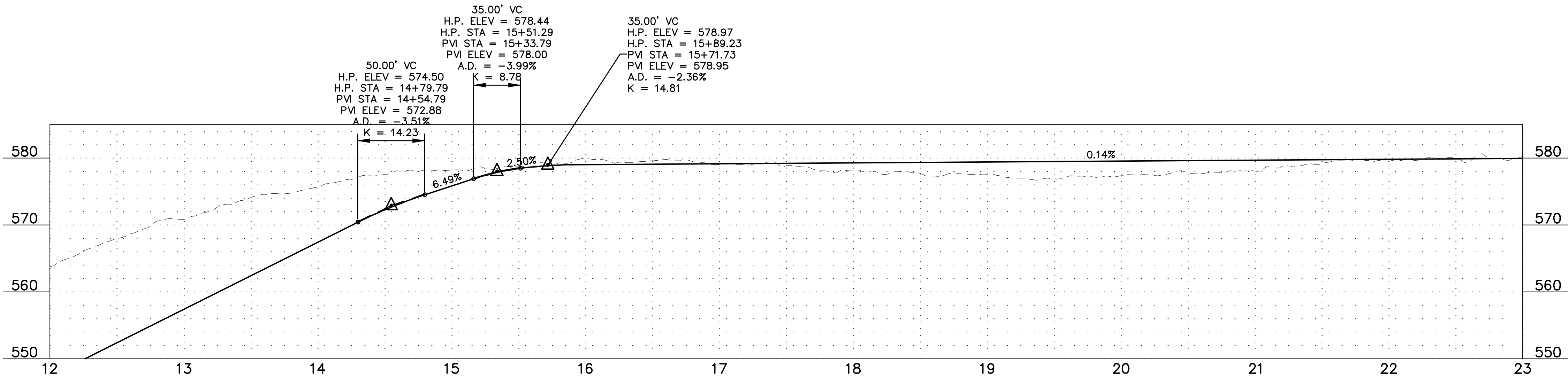
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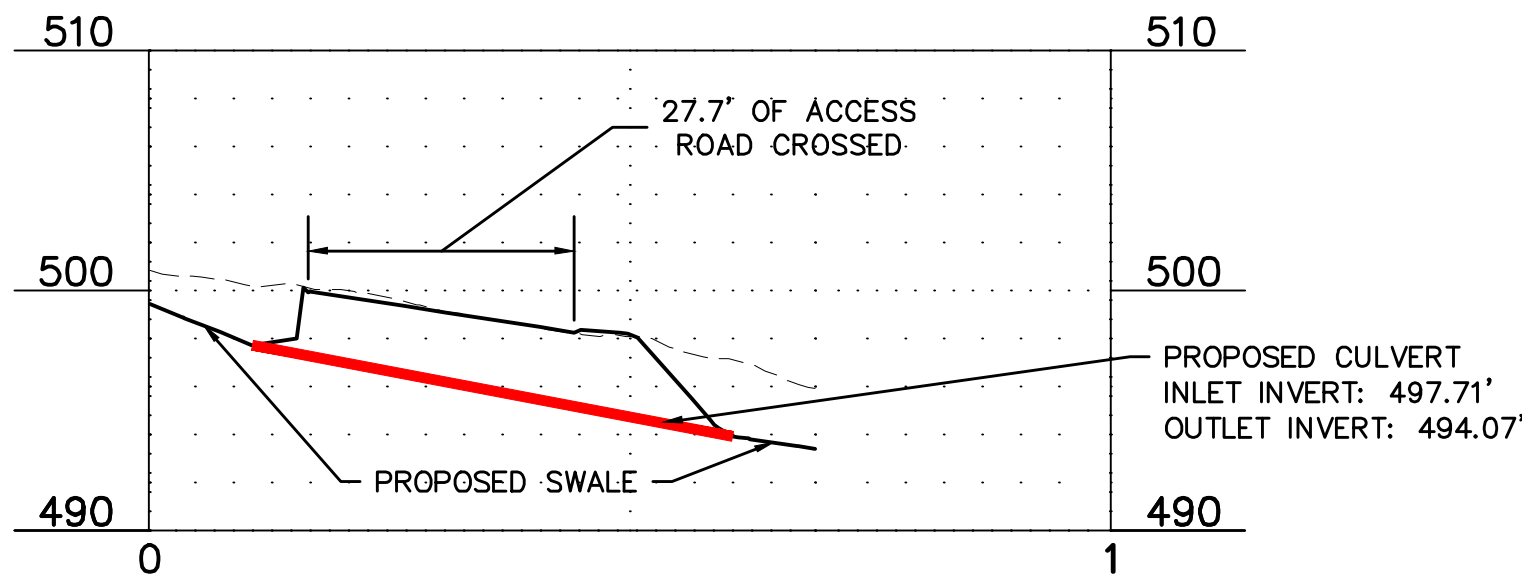
ROADWAY B (CONTINUED)

SCALE: 1' = 50' HORIZONTAL
1' = 10' VERTICAL



ROADWAY B (CONTINUED)

SCALE: 1' = 50' HORIZONTAL
1' = 10' VERTICAL



CULVET CROSSING AT ROADWAY B

SCALE: 1' = 0.2' HORIZONTAL
1' = 8' VERTICAL

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WARE, MA
HAMPSHIRE COUNTY

ROAD PROFILE - 3

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020
SHEET: 12



ALL AREAS UNDER THE PROPOSED ARRAY SHALL RECEIVE WOOD CHIPS OR MULCH FROM CLEARING AND GRUBBING TO REDUCE EROSION POTENTIAL.

HYDROSEED AREA TO BE APPLIED TO ALL DISTURBED & GRADED AREAS (SEEDING IN WETLAND & BUFFER AREA TO ADHERE TO PERMITTING REQUIREMENTS)

SEEDING NOTES:

- 1. THE CONTRACTOR SHALL HYDROSEED ALL DISTURBED AREAS ASSOCIATED WITH THE CONSTRUCTION OF THE SOLAR FACILITY. CONTRACTOR SHALL USE AN APPROVED LOW GROWTH LOW MAINTENANCE SEED MIX APPROVED BY THE APPROPRIATE GOVERNING AUTHORITY.
- 2. THE TOTAL HYDROSEEDING AREA IS APPROXIMATED TO BE 13.00 ACRES.
- 3. REMAINING AREA SHOULD BE STUMPED AND SPOT SEEDED TO ENSURE THAT THERE IS NO LARGE EXPOSED AREAS OUTSIDE OF THE GRADING FOOTPRINTS.

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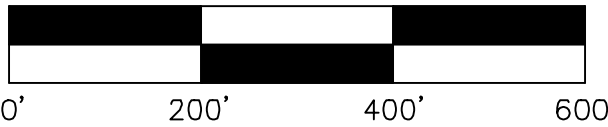


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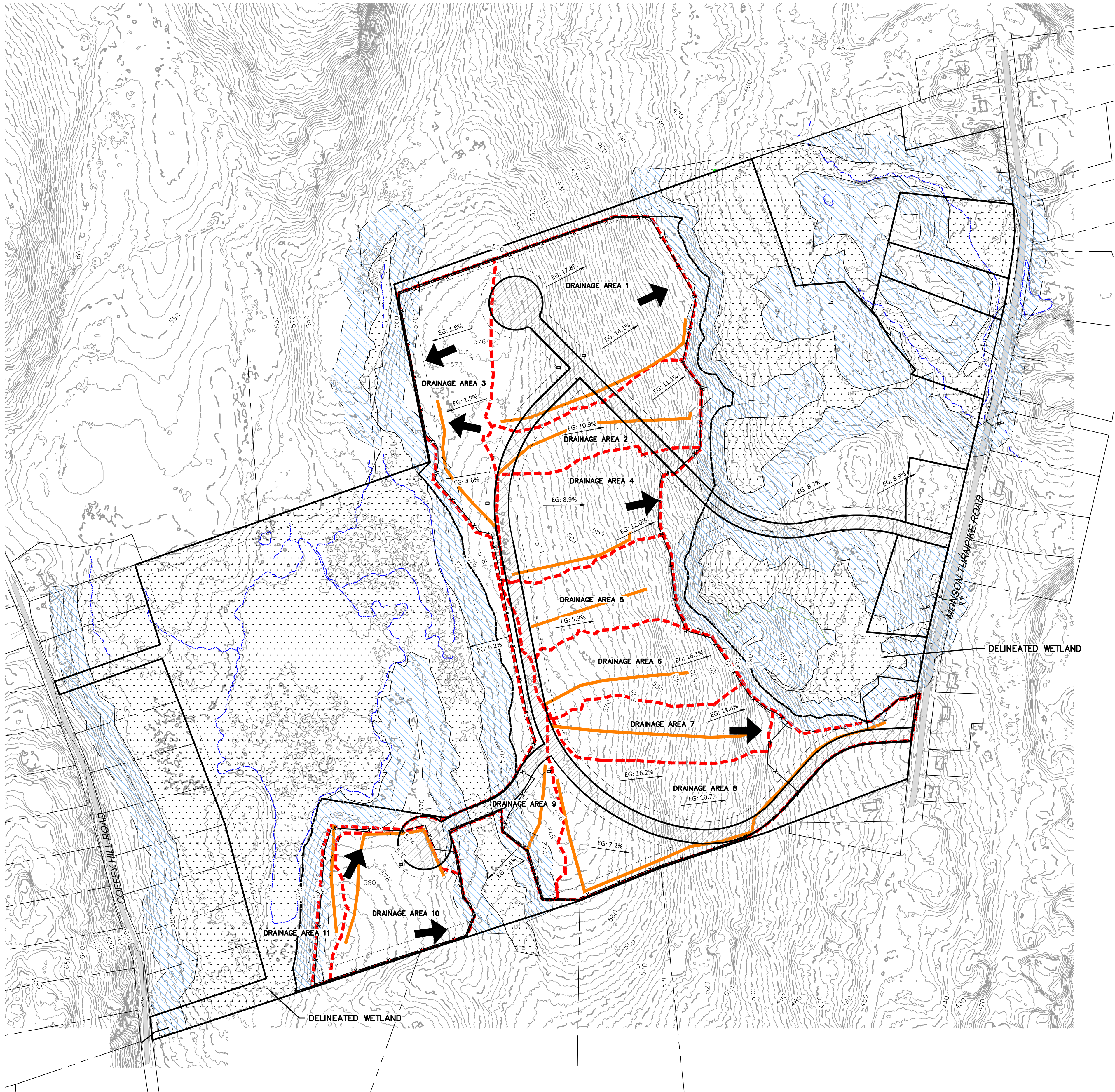
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MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

OVERALL
LANDSCAPE PLAN

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020
SHEET: 13



LEGEND:

- PROJECT BOUNDARY
- ACCESS ROAD EASEMENT
- WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA
- MODULE SETBACK LINE
- DISTURBANCE LIMIT
- EXISTING GROUND SLOPE
- EG: 9.5%
- DRAINAGE BOUNDARY
- HYDRAULIC LENGTH
- FLOW DIRECTION ARROW

Westwood

Phone (952) 937-5150 12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
westwoodps.com

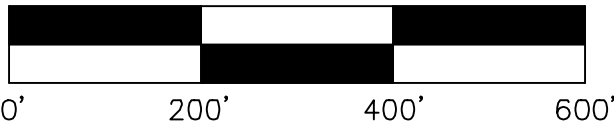


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Revisions:	#	DATE	DESCRIPTION

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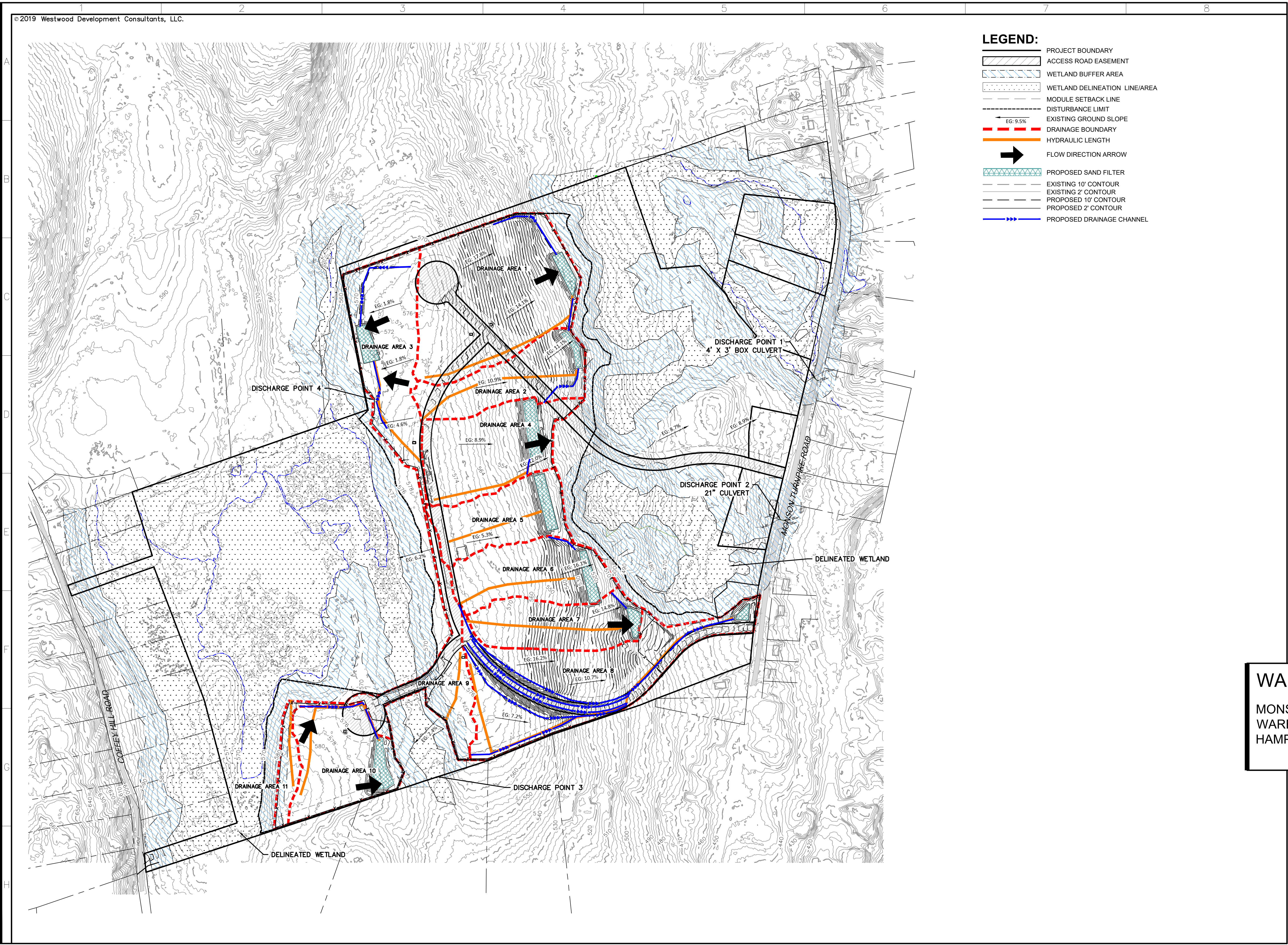
WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

DRAINAGE PLAN

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020
SHEET: 14



LEGEND:

- PROJECT BOUNDARY
- ACCESS ROAD EASEMENT
- WETLAND BUFFER AREA
- WETLAND DELINEATION LINE/AREA
- MODULE SETBACK LINE
- DISTURBANCE LIMIT
- EXISTING GROUND SLOPE
- EG: 9.5%
- DRAINAGE BOUNDARY
- HYDRAULIC LENGTH
- FLOW DIRECTION ARROW
- PROPOSED SAND FILTER
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED DRAINAGE CHANNEL

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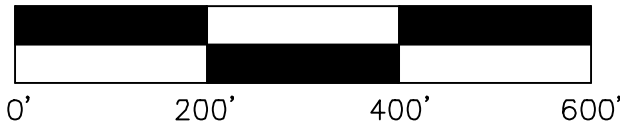


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WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

POST
CONSTRUCTION
DRAINAGE PLAN

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020
SHEET: 15

ROAD DESIGN PARAMETERS

1. ROAD MAINTENANCE CAN BE EXPECTED OVER THE LIFE OF THE PERMANENT FACILITY.

SPECIAL PROVISIONS FOR GRADING AND EROSION CONTROL

THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES AS PLANNED AND SPECIFIED FOLLOWING BEST MANAGEMENT PRACTICES AS OUTLINED BY THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION AND BEING IN CONFORMANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT. SEE THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR EROSION CONTROL AND RESTORATION SPECIFICATIONS. UNLESS OTHERWISE NOTED OR MODIFIED HEREIN, ALL SECTIONS OF THE GENERAL CONDITIONS SHALL APPLY.

EXECUTION

1. CLEARING AND GRUBBING
- A. THE CONTRACTOR SHALL BE REQUIRED TO REMOVE ALL TREES, STUMPS, BRUSH, AND DEBRIS WITHIN THE GRADING LIMITS SHOWN ON THE PLANS. THE CONTRACTOR IS TO REMOVE ONLY THOSE TREES WHICH ARE DESIGNATED BY THE OWNER'S REPRESENTATIVE FOR REMOVAL, AND SHALL EXERCISE EXTREME CARE AROUND EXISTING TREES TO BE SAVED.
2. TOPSOIL STRIPPING
- A. TOPSOIL SHALL BE STRIPPED FROM ALL ROADWAY AREAS THROUGH THE ROOT ZONE. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THE DESIGNATED DISTURBANCE AREAS.
- B. ANY TOPSOIL, THAT HAS BEEN STRIPPED, SHALL BE RE-SPREAD OR STOCKPILED WITHIN GRADING AREAS AND/OR USED AS FILL OUTSIDE OF THE DISTURBANCE AREAS, AS DIRECTED BY THE ENGINEER.
3. EMBANKMENT CONSTRUCTION.
- A. EMBANKMENT CONSTRUCTION SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL, AFTER TOPSOIL STRIPPING, ABOVE THE EXISTING GRADE. GENERALLY, EMBANKMENTS SHALL HAVE COMPACTED SUPPORT SLOPES OF TWO AND A HALF FEET HORIZONTAL TO ONE FOOT VERTICAL. THE MATERIAL FOR EMBANKMENT CONSTRUCTION SHALL BE OBTAINED FROM THE ACCESS ROAD EXCAVATION (SEE GEOTECHNICAL REPORT FOR RESTRICTIONS), OR ANY SUITABLE, APPROVED SOIL OBTAINED OFFSITE BY CONTRACTOR, AS DIRECTED OR APPROVED BY THE ENGINEER. THIS MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 9".
- B. SIDE SLOPES GREATER THAN 2.5:1 WILL NOT BE PERMITTED, UNLESS OTHERWISE NOTED ON THE PLAN.

STORM WATER DESIGN PARAMETERS

1. MAINTENANCE OF STORMWATER DEVICES SHOULD BE EXPECTED OVER THE LIFE OF THE PROJECT AND PARTICULARLY AFTER HEAVY RAINFALL EVENTS.

TESTING REQUIREMENTS:

1. TESTING SHALL BE PERFORMED BY A DESIGNATED INDEPENDENT TESTING AGENCY.
2. 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:
- A. 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:
- A. SIEVE ANALYSIS SHALL BE CONDUCTED IN ACCORDANCE WITH AASHTO T27
5. PROCTOR:
- A. PROCTORS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D-1557
6. ATTERBERG LIMITS:
- A. ATTERBERG LIMITS SHALL BE DETERMINED IN ACCORDANCE WITH AASHTO T89 AND T90
7. MOISTURE DENSITY (NUCLEAR DENSITY):
- A. MOISTURE DENSITY TESTING SHALL BE DONE IN ACCORDANCE WITH AASHTO T310

SUBGRADE COMPACTION, TEST ROLLING AND AGGREGATE BASE COMPACTION:

1. FILL MATERIAL:
- A. SOILS USED AS FILL MATERIAL SHALL BE TESTED FOR GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR TESTS (MODIFIED DRY MAXIMUM DENSITY).
- a. FOR PLACED & COMPACTED FILLS, PROVIDE ONE COMPACTION TEST PER LIFT FOR EVERY 1000 FT OF ROAD LENGTH. INCLUDE THE LOCATION, DRY DENSITY, MOISTURE CONTENT, AND COMPACTION PERCENT BASED ON MODIFIED PROCTOR MAXIMUM DRY DENSITY.
- B. IN ROADWAY CUT AREAS, OR WHERE EMBANKMENT CONSTRUCTION REQUIRES LESS THAN 12 INCHES OF FILL PLACEMENT, COMPACT TO A MINIMUM OF 95 PERCENT OF THE MATERIAL'S MODIFIED PROCTOR MAXIMUM DRY DENSITY.
2. COMPACTED SUBGRADE:
- A. THE ENTIRE SUBGRADE SHALL BE PROOF-ROLLED PRIOR TO THE PLACEMENT OF THE AGGREGATE BASE TO IDENTIFY AREAS OF UNSTABLE SUBGRADE.
- B. IF PROOF ROLLING DETERMINES THAT THE SUBGRADE STABILIZATION CANNOT BE ACHIEVED, THE FOLLOWING ALTERNATIVES WILL BE IMPLEMENTED:
- a. REMOVE UNSUITABLE MATERIAL AND REPLACE WITH SUITABLE EMBANKMENT.
- b. SCARIFY, DRY, AND RECOMPACT SUBGRADE AND PERFORM ADDITIONAL PROOF ROLL.
- c. INCREASE ROAD BASE THICKNESS.
- C. PROVIDE 1 MOISTURE DENSITY COMPACTION TESTS FOR EVERY 1000 L.F. OF ROAD LENGTH. COMPACTED SUBGRADE MUST BE COMPACTED TO A MINIMUM OF 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY AT ±3% OF OPTIMUM MOISTURE CONTENT FOR GRANULAR SOILS AND AT -1 TO +3% OF OPTIMUM MOISTURE CONTENT FOR COHESIVE SOILS.
3. AGGREGATE BASE:
- A. AGGREGATE BASE SHALL BE PROOF-ROLLED OVER THE ENTIRE LENGTH. PROVIDE 1 SIEVE ANALYSIS PER 2500 CY OF ROAD BASE PLACED.
- a. 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.

GENERAL NOTES:

1. THE PLANIMETRIC FEATURES, GROUND SURFACE CONTOURS ON A DTM SURFACE PROVIDED BY NOAA.
2. NO GRADING OR SOIL DISTURBANCE IS PERMITTED OUTSIDE OF THE GRADING LIMITS IDENTIFIED ON THE PLANS.
3. GRADE ALL PROPOSED ROADS TO THE SLOPES PROPOSED ON THE PLANS.
4. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DRAINAGE THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. CONSTRUCTION ACTIVITIES SHALL NOT BLOCK THE NATURAL OR MANMADE CREEKS OR DRAINAGE CHANNEL CAUSING RAINWATER TO POND. ADDITIONAL CULVERTS IN EXCESS OF THOSE ON THE PLANS MAY BE REQUIRED AS APPROVED BY THE ENGINEER.
5. THE CONTRACTOR SHALL NOTIFY DIGSAFE AT LEAST 48 HOURS BEFORE EXCAVATION ACTIVITIES COMMENCE.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

1. REFER TO THE SWPPP BOOKLET FOR SEDIMENT AND EROSION CONTROL PROCEDURES, LOCATIONS OF Bmps, DETAILS, AND INSPECTION INFORMATION.
2. ALL AREAS DISTURBED DURING CONSTRUCTION ACTIVITIES AND NOT COVERED BY ROAD SURFACING MATERIALS, SHALL BE SEEDED IN ACCORDANCE WITH THE SWPPP PLAN.
3. TEMPORARY EROSION CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE TEMPORARY EROSION CONTROL PLAN SHALL BE IN ACCORDANCE WITH STATE OF MASSACHUSETTS, THE EPA, AND THE SWPPP ON FILE.

SLOPE STABILIZATION:

ALL AREAS DESIGNATED ON THE PLAN FOR SLOPE STABILIZATION SHALL BE GRADED AND COMPACTED, SMOOTH AND CLEAN TO THE FINISH CONTOURS SHOWN ON THE PLAN, WITH A MINIMUM OF 4 INCHES OF TOPSOIL PLACED ON THE AREA. STABILIZATION SHALL BE ACHIEVED IN ONE OF TWO MANNERS:

- EITHER:
- 1) RIP-RAP
- OR:
- 2) SEED WITH EROSION CONTROL AND REVEGETATION MAT (ECRM)

1. PLACEMENT OF RIP-RAP

RIP-RAP SHALL CONSIST OF D50=8". BEFORE ANY RIP RAP IS PLACED, THE SURFACE TO BE COVERED SHALL BE FULLY COMPACTED AND GRADED TO THE REQUIRED SLOPE. PLACE MIRAFI TM8 OR APPROVED EQUAL GEOTEXTILE ON SLOPE. RIP RAP ON SLOPES SHALL NOT BE LESS THAN 12 INCHES THICK, MEASURED PERPENDICULAR TO THE SLOPE.

2. STABILIZATION WITH EROSION CONTROL AND REVEGETATION MAT (ECRM)

- 1) AREA MUST BE GRADED SMOOTH AND CLEAN TO FINISH GRADES, AND COMPACTED.
- 2) SEED AND MULCH AREA. USE SEED MIX APPROVED BY THE ENGINEER.
- 3) INSTALL ECRM PER MANUFACTURER'S INSTRUCTIONS, HOWEVER THESE MUST INCLUDE THE FOLLOWING MINIMUM REQUIREMENTS:
- A) GRADE GROUND TO FINISH CONTOURS. REMOVE ALL ROCKS, DIRT CLODS, STUMPS, ROOTS, TRASH, AND OTHER OBSTRUCTIONS LYING IN DIRECT CONTACT WITH THE SOIL SURFACE.
- B) DIG MAT ANCHOR TRENCHES (MINIMUM 12"DEEP, 6" WIDE) AT TERMINAL ENDS AND PERIMETER SIDES WHERE MAT IS TO BE INSTALLED.
- C) INSTALL MAT BY ROLLING UPHILL PARALLEL TO WATER FLOW, STARTING AT TRENCH. OVERLAP ROLLS BY MINIMUM OF 3". FASTEN TO GROUND WITH 18" PINS AND 1 1/2" WASHERS, OR EQUIVALENT. PIN MAT AT ENDS, AND EVERY 3' TO 5' ALONG OVERLAPS. DO NO STRETCH MAT. SPLICING ROLLS SHOULD BE DONE IN A CHECK SLOT. BACKFILL TO COVER ENDS AND FASTENERS. ROLLING MAT ACROSS BACKFILL AND PIN AGAIN.
- FOR MAT USE MIRAFI MIRAMAT TM8 OR EQUIVALENT.

SEEDING:

1. COMPOSITION OF SEED MIX CHANGES YEARLY. SEED SPECIFICATIONS MUST BE SUBMITTED TO ENGINEER 2 WEEKS PRIOR TO INSTALLATION. ALL SPECIES MUST BE NATIVE TO WORCESTER COUNTY.
2. RESTORED AREAS TO BE SEEDED WITH ABOVE MIX OR EQUAL (SUBJECT TO ENGINEERS APPROVAL). SEED TO BE LIGHTLY RAKED TO ALLOW FOR PROPER SEED/SOIL CONTACT.
3. CONTRACTOR SHALL OVERSEED AND/OR RE-MULCH AS NECESSARY TO ESTABLISH A GOOD COVER OF VEGETATION, WHETHER DUE TO POOR INITIAL COVER, INCLEMENT WEATHER BEFORE/DURING/AFTER SEEDING, OR THE ONSET OF WINTER.
4. RILLING, GULLIES, OR OTHER EROSION DUE TO POOR COVER SHALL BE RAKED AND/OR REFILLED AND REMULCH/RESEEDED.
5. CONTRACTOR SHALL WARRANTEE SEEDING, MULCHING AND EROSION CONTROL FABRIC FOR ONE YEAR FROM THE SUBSTANTIAL COMPLETION OF THE RELEVANT AREA OF WORK.

INVASIVE SPECIES:

1. ALL EQUIPMENT SHALL BE INSPECTED UPON ARRIVAL. EQUIPMENT ARRIVING WITH OBSERVABLE SOIL OR PLANT FRAGMENTS WILL BE REMOVED AND CLEANED.
2. HAY BALES ARE NOT BE USED ON SITE; ONLY WEED-FREE STRAW BALES ARE APPROVED.
3. OFF-SITE TOPSOIL MUST BE FREE OF INVASIVE SPECIES. THE ENGINEER SHALL BE NOTIFIED OF THE TOPSOIL SOURCE 6 WEEKS BEFORE DELIVERY.

TABLE 3: TESTING SCHEDULE SUMMARY		
LOCATION	TEST	FREQUENCY
STRUCTURAL FILL	GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR	1 PER MAJOR SOIL TYPE
	MOISTURE DENSITY	1 PER 2,000 CY OR MIN. 1 PER LIFT
COMPACTED SUBGRADE	PROOF--ROLL	ENTIRE LENGTH
	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 PER 1,000 FT OR MIN. 5 FOR THE SITE
AGGREGATE BASE	PROOF--ROLL	ENTIRE LENGTH
	SIEVE ANALYSIS	1 PER 2,500 CY

PROJECT SIGN:

HOURS OF OPERATION:

MONDAY THRU SATURDAY: 7:00AM - 7:00 PM, WITH NO EQUIPMENT STARTING UNTIL 7:00 AM.

SUNDAY: 9:00AM - 5:00 PM WITH NO EQUIPMENT STARTING UNTIL 8:00 AM.

NO OPERATION OF MACHINERY FOR WARM UP OR MAINTENANCE OUTSIDE OF THE ABOVE HOURS.

NO CONSTRUCTION OPERATIONS TO OCCUR ON NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, CHRISTMAS DAY.

EMERGENCY REPAIRS AND MAINTENANCE, INCLUDING SNOW PLOWING, MAY OCCUR AT ANY TIME.

WHILE SCHOOL IS IN SESSION, ALL DELIVERIES SHALL BE SCHEDULED TO AVOID SCHOOL BUS ROUTES DURING THEIR HOURS OF PICK-UP AND DROP-OFF.

OPERATIONS MUST COMPLY WITH ANY OTHER TOWN NOISE OR HOURS OF OPERATION RESTRICTIONS.

CONTACT INFORMATION:

OWNER/DEVELOPER - ECOS ENERGY 612-326-1500

ODIS - LEE JARVIS - 508-885-7500 X180

WARE POLICE - SHAWN CREVIER - 413-967-3571

WARE CONSERVATION COMMISSION - DAVID KOPACZ - 413-967-9648 X 114

CONTRACTOR - _____ - _____

APPROVED CERTIFICATE OF DECISION SP-2018-04 & SPR-2018-06

GENERAL

1. DEVELOPER WILL BE HELD TO ALL APPLICABLE STATE AND LOCAL REQUIREMENTS
2. PRIOR TO APPLYING FOR A CONSTRUCTION/BUILDING PERMIT, THE CONSTRUCTION BOND, IN AN AMOUNT AGREED UPON, SHALL BE PAID; PROOF TO BE SUBMITTED TO THE PLANNING BOARD. PRIOR TO BUILDING, APPLICANT SHALL MEET WITH REPRESENTATIVES OF ALL APPLICABLE BOARDS AND COMMISSIONS FOR A PRECONSTRUCTION MEETING TO DETERMINE CURRENT BEST PRACTICES
3. THE WARE PLANNING BOARD RESERVES THE RIGHT TO CONDUCT SITE VISITS DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT SCHEDULED WITH THE DEVELOPER. THE PLANNING BOARD RESERVES THE RIGHT TO MODIFY THE SCREENING WITHIN REASON, AT THE COST OF THE APPLICANT
4. ANY MAJOR CHANGES TO THE PLANS APPROVED BY THIS PERMIT MUST BE REVIEWED BY THE DIRECTOR OF PLANNING 81 COMMUNITY DEVELOPMENT (PCD), PRIOR TO IMPLEMENTATION, TO DETERMINE IF THEY CONSTITUTE A CHANGE SIGNIFICANT ENOUGH TO REQUIRE MODIFYING THE EXISTING SPECIAL PERMIT AND ADDITIONAL PUBLIC HEARINGS. A "MAJOR CHANGE" IS A CHANGE IN THE APPROVED PROJECT THAT WOULD HAVE THE POTENTIAL FOR SIGNIFICANT IMPACT WITH RESPECT TO §7.2.4 OF THE WARE ZONING BYLAW.
5. TOWN OF WARE OFFICIALS (TOWN MANAGER AND PLANNING BOARD VIA THE PCD DEPARTMENT) SHALL BE NOTIFIED BY CERTIFIED MAIL THIRTY (30) DAYS PRIOR TO ANY CHANGE OF OWNERSHIP OF THE PROPERTY, LEASE HOLDER AND/OR PLANT OPERATING COMPANY WITHIN THIRTY (30) DAYS OF SUCH NOTICE, OR AT A MUTUALLY-CONVENIENT TIME, THE NEW PARTY SHALL ARRANGE TO MEET WITH THE PLANNING BOARD TO REVIEW THE OPERATING CONDITIONS OF THE SPECIAL PERMIT, OR AS SOON AS CONVENIENT TO BOTH PARTIES; PROVIDED THAT THIS PROVISION SHALL NOT APPLY WITH RESPECT TO ANY TRANSFER OF OWNERSHIP THROUGH A SALE-LEASEBACK FINANCING ARRANGEMENT WHEREBY THE APPLICANT CONTINUES TO OPERATE THE PROJECT.
6. THE SPECIAL PERMIT SHALL BE RECORDED AT THE HAMPSHIRE DISTRICT REGISTRY OF DEEDS AND A CERTIFIED COPY OF THE RECORDING PROVIDED TO THE PCD DEPARTMENT.
7. THE SPECIAL PERMIT MUST BE RECORDED AT THE HAMPSHIRE DISTRICT REGISTRY OF DEEDS WITHIN 30 DAYS AFTER THE APPEAL PERIOD HAS ENDED, OR 30 DAYS AFTER THE DECISION ON ANY APPEAL, OR THE PERMIT SHALL BECOME VOID
8. WORK MUST COMMENCE WITHIN TWO (2) YEARS OF THE APPROVAL DATE BY THE BOARD OR AN EXTENSION REQUEST MUST BE FILED AT LEAST 30 DAYS PRIOR TO THE END OF THE 2-YEAR PERIOD, WITH SUCH EXTENSION APPROVAL NOT TO BE UNREASONABLY WITHHELD OR DELAYED IF THE APPLICANT CAN DEMONSTRATE GOOD CAUSE OR THAT SUCH EXTENSION WAS REQUIRED AS A DIRECT RESULT OF THE TIMELINE ACCORDING TO THE DEPARTMENT OF ENERGY RESOURCES FOR THE SOLAR MASSACHUSETTS RENEWABLE TARGET (SMART) PROGRAM OR OTHER SIMILAR PROGRAM.
9. ALL APPLICABLE LOCAL, STATE, AND FEDERAL PERMITS AND APPROVALS MUST BE IN PLACE PRIOR TO THE START OF CONSTRUCTION AND OPERATIONS
10. APPLICANT WILL COMPLY WITH ALL LAWFUL LAWS, REGULATIONS AND REQUIREMENTS OF THE TOWN OF WARE, COMMONWEALTH OF MASSACHUSETTS, AND THE UNITED STATES OF AMERICA, THE STRICTEST OF WHICH SHALL PREVAIL

BONDS/SURETIES

11. PRIOR TO COMMENCING OPERATION, A FINANCIAL SURETY IN THE AMOUNT OF ONE PERCENT OF THE PROJECT CONSTRUCTION COSTS (ES SUBMITTED ON THE BUILDING PERMIT APPLICATION) SHALL BE PROVIDED AS REQUIRED IN §4.8.3.H.5 OF THE WARE ZONING BYLAW.
12. AT THE COMPLETION OF CONSTRUCTION, A PROJECT DECOMMISSIONING BOND SHALL BE PUT INTO PLACE AT AN AGREED UPON SUM BY THE PLANNING BOARD. SALVAGE OF SOLAR PANELS SHALL NOT BE ESTIMATED INTO THE BOND.
13. SATISFACTORY COMPLETION OF CONSTRUCTION SHALL BE A PROJECT THAT HAS ALL MAJOR COMPONENTS IN PLACE, ALL SITE WORK COMPLETED AND ALL CONSTRUCTION PERMITS (CONSERVATION, BUILDING, ELECTRICAL, ETC.) PROPERLY CLOSED OUT OR IN COMPLIANCE WITH ALL REGULATIONS AND REQUIREMENTS

SITE CONDITIONS

14. TOP SOIL WILL NOT BE LEFT WITHOUT SEDIMENTATION CONTROLS FOR A PERIOD OF LONGER THAN THIRTY (30) DAYS.
15. HYDRO SEEDING (OR A COMPARABLE METHOD) WILL INCLUDE A TACKIFIER IN ORDER TO ENSURE THAT THE SEED MEDIA ADHERES TO THE SOIL PARTICLES; OR, IF HYDROSEED (OR A COMPARABLE METHOD) IS NOT USED, STRAW BALES (NOT HAY), OR OTHER COMPARABLE, APPROVED CONTROLS WILL BE USED AND MAINTAINED AS SEDIMENTATION CONTROLS
16. NO CHEMICAL HERBICIDES OR FUNGICIDES SHALL BE SUED ON SITE OTHER THAN THOSE APPROVED BY THE WARE CONSERVATION COMMISSION; THE PLANNING BOARD, VIA THE PLANNING & COMMUNITY DEVELOPMENT DEPARTMENT STAFF, SHALL BE COPIED ON APPROVED USES
17. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR RESTORING THE PROPERTY TO A STABLE CONDITION SHOULD THE SOLAR LESSEE, CONSTRUCTION ENTITY, OPERATOR, OR ANY OTHER OPERATOR ON THE PROPERTY, FAIL TO COMPLETE THE PROJECT
18. NO CONTINUOUSLY-ON LIGHTS SHOULD BE PRESENT. MOTION DETECTOR LIGHTS AT GATE AND EQUIPMENT ARE PERMITTED, PROVIDED THEY CAN BE PREVENTED FROM MIS-CYCLING CAUSED BY WILDLIFE
19. ALL FENCING, GATES, ETC. SHALL BE A DARK, EARTH TONE COLOR SUCH AS DARK GREEN, BLACK, DARK RED, ETC. AND SHALL BE MINIMALLY 6" ABOVE THE GROUND FOR WILDLIFE MOVEMENT
20. GLARE IMPACTING ANY ABUTTERS SHALL BE MITIGATED BY THE APPLICANT TO THE EXTENT PRACTICABLE IN COOPERATION WITH STATE AND LOCAL OFFICIALS
21. CONNECTION LINES SHALL BE INSTALLED UNDERGROUND VIA BORING AT SOUTHERN PART OF PROPERTY, AWAY FROM ABUTTERS
22. ANY NEW POLES TO BE INSTALLED WILL BE AT THE DISCRETION OF NATIONAL GRID
23. THERE WILL BE NO SOIL REMOVED FROM SITE
24. THE CONSTRUCTION AREA LIES ADJACENT TO A WATER SUPPLY PROTECTION AREA AND PRIVATE WELLS. THEREFORE, ALL EQUIPMENT REFUELING SHOULD OCCUR AS CLOSE TO MONSON TURNPIKE ROAD AS POSSIBLE. A SPILL KIT INCLUDING ADSORBENTS MUST BE PRESENT AT THE SITE AT ALL TIMES FOR ALL EQUIPMENT
25. NO DIESEL FUEL TRAILER TO BE USED ON SITE IN ORDER TO AVOID SPILL PREVENTION, CONTROL AND COUNTERMEASURE (SPCC) RULE PROBLEMS.
26. OPERATORS MUST BE TRAINED TO REPORT AND RESPOND TO FUEL, LUBRICANT, HYDRAULIC OR OTHER RELEASES. A REPORTABLE SPILL IS TYPICALLY A RELEASE OF 10 OR MORE GALLONS OF A MATERIAL. CHECK THE PERTINENT MASSDEP REPORTABLE QUANTITIES LIST FOR APPLICABLE SUBSTANCES. WHEN IN DOUBT, CONTACT THE WARE FIRE DEPARTMENT
27. IN NO CASE SHALL THE PROJECT OPERATOR ALLOW THE SITE TO CAUSE EXCESSIVE RUNOFF TO CREATE A DANGEROUS CONDITION ALONG THE ROADWAY, OUTSIDE OF EXTRAORDINARY STORM CONDITIONS AS EVIDENCED BY SIMILAR ISSUES IN THE ADJACENT AREAS
28. APPLICANT UNDERSTANDS THAT THE WARE POLICE DEPARTMENT WILL NOT POLICE THEIR UNFENCED PROJECT; THAT SITE SECURITY IS SOLELY IN THE APPLICANT'S CARE
29. OTHER THAN THE PROPOSED AREA OF CONSTRUCTION, THERE WILL BE NO DEFORESTATION OTHER THAN THROUGH AN APPROVED FORESTRY CUTTING PLAN.



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WARE SOLAR

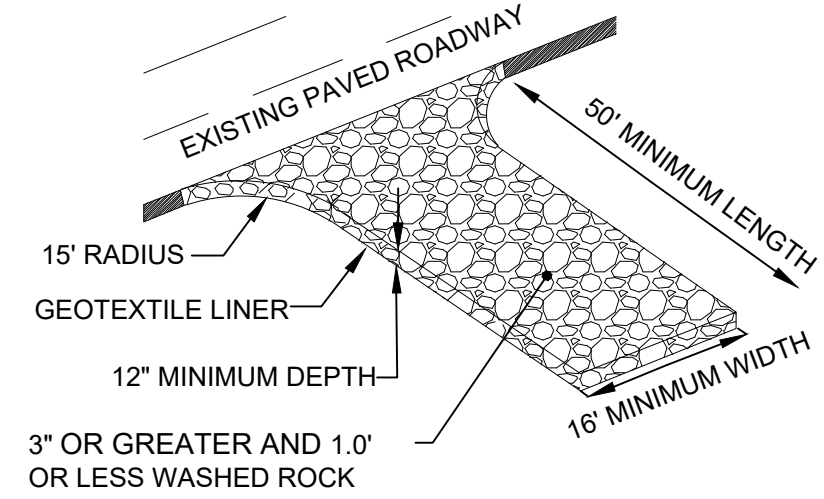
MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

CIVIL NOTES

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020

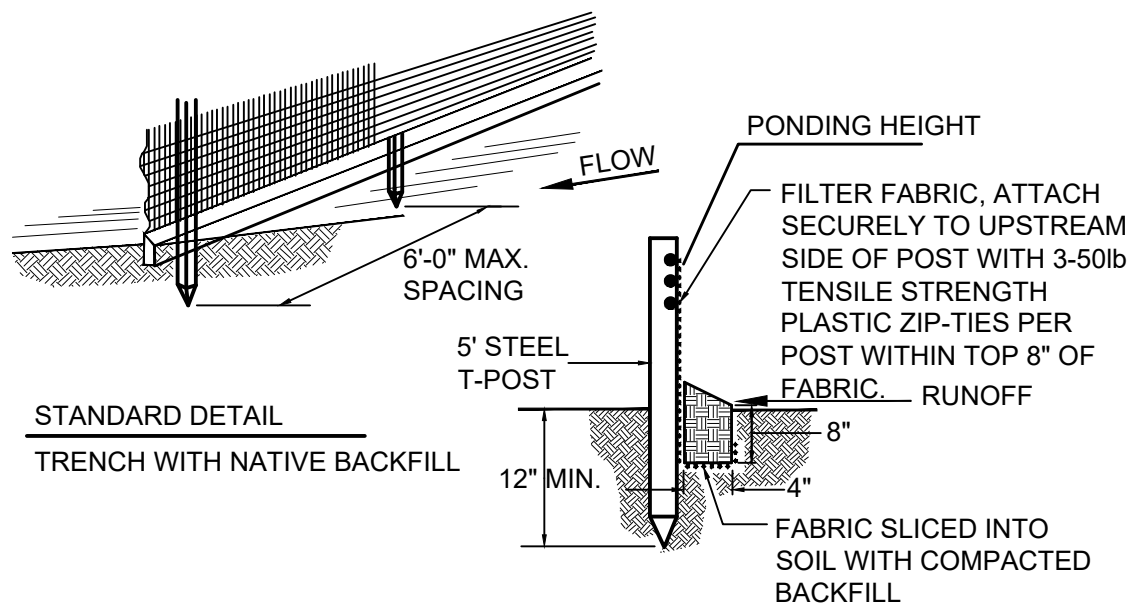
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NOTE:

ROCK CONSTRUCTION ENTRANCE SHOULD BE A MINIMUM THICKNESS OF 1.0' AND CONTAIN MAXIMUM SIDE SLOPES OF 4:1. ROCK ENTRANCE SHOULD BE INSPECTED AND MAINTAINED REGULARLY. ROCK ENTRANCE LENGTH MAY NEED TO BE EXTENDED IN CLAY SOILS.

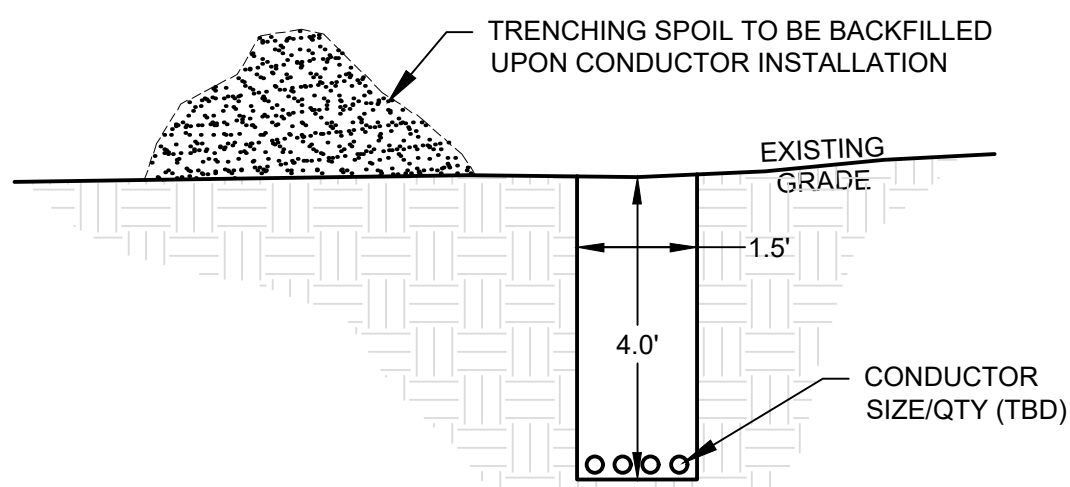
ROCK CONSTRUCTION ENTRANCE



NOTES:

1. ROADWAY TINSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN ACCUMULATED TO 1/3 THE HEIGHT OF THE FABRIC OR MORE.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
4. ALL ENDS OF THE SILT FENCE SHALL BE WRAPPED UPSLOPE SO THE ELEVATION OF THE BOTTOM OF FABRIC IS HIGHER THAN "PONDING HEIGHT".

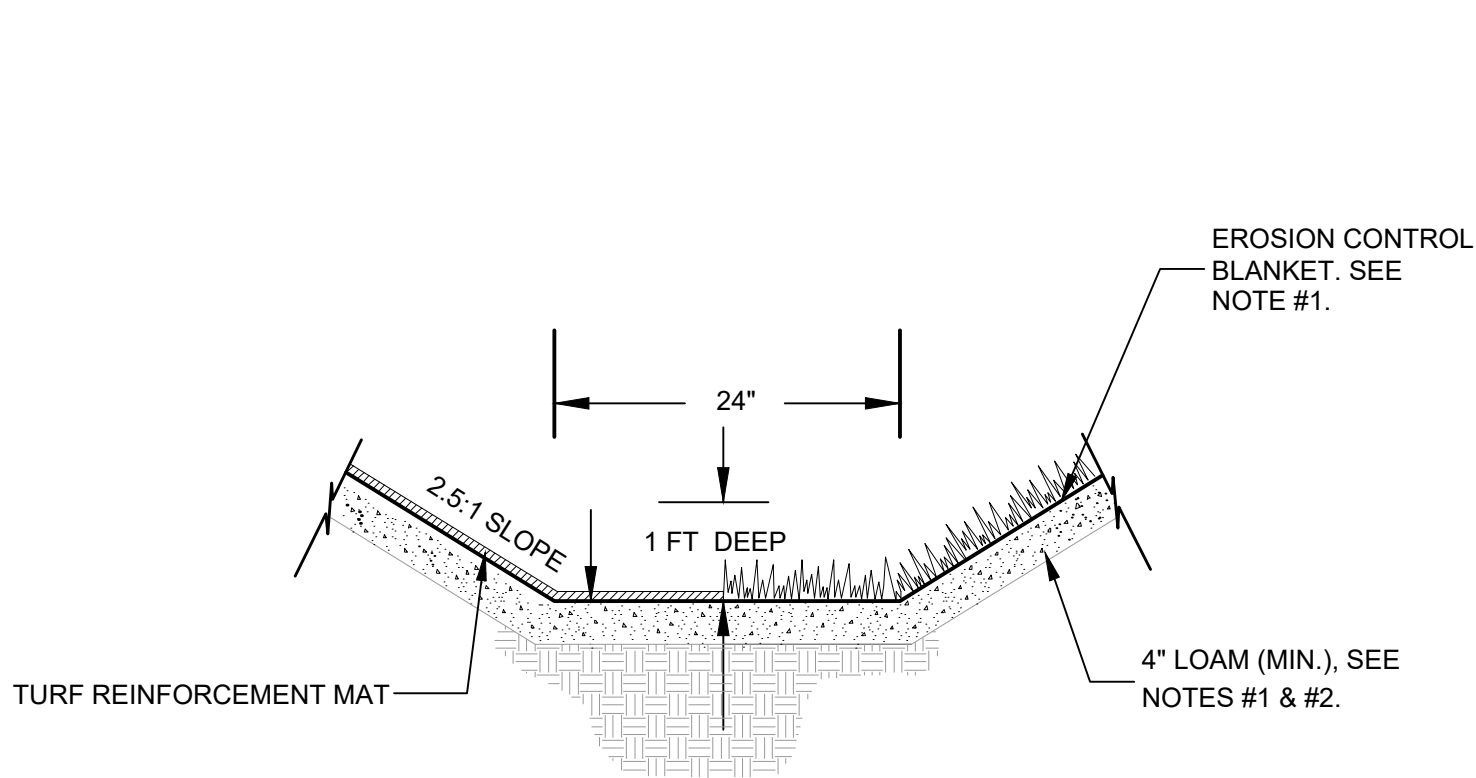
SILT FENCE



NOTES:

1. CONDUCTOR CLEARANCES DEPENDENT ON GEOTECHNICAL PARAMETERS AND ELECTRICAL DESIGN
2. CONDUCTOR SIZING AND QUANTITIES PER TRENCH DEPENDENT ON FINAL ELECTRICAL DESIGN TRENCH DIMENSIONS.

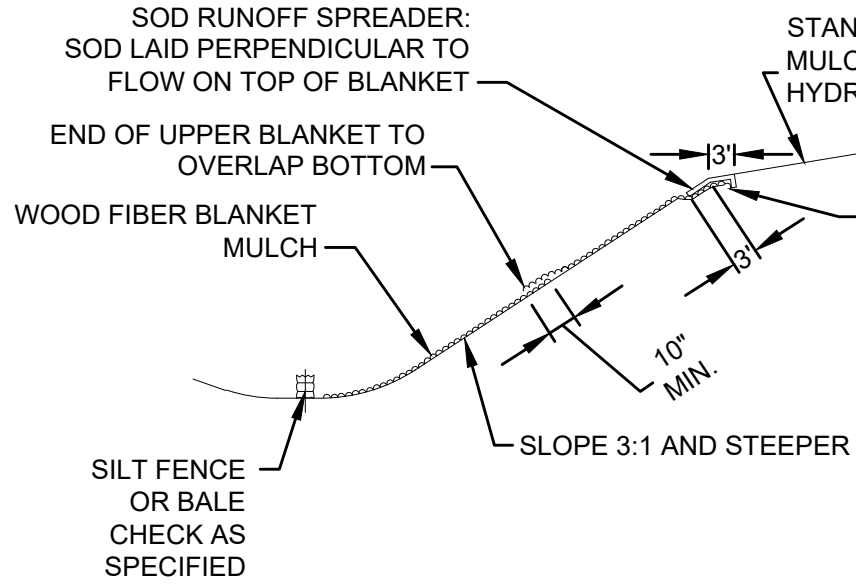
TRENCHING DETAIL- WITHIN ARRAY FIELD



DRAINAGE CHANNEL SIZING:

1. DRAINAGE CHANNEL TO SAND FILTERS SHALL BE: 1.0' DEEP ; 2' WIDE BOTTOM 2.5:1 SIDE SLOPES

DRAINAGE CHANNEL



EROSION CONTROL BLANKET INSTALLATION ON AN INSLOPE (WHEN REQUIRED)

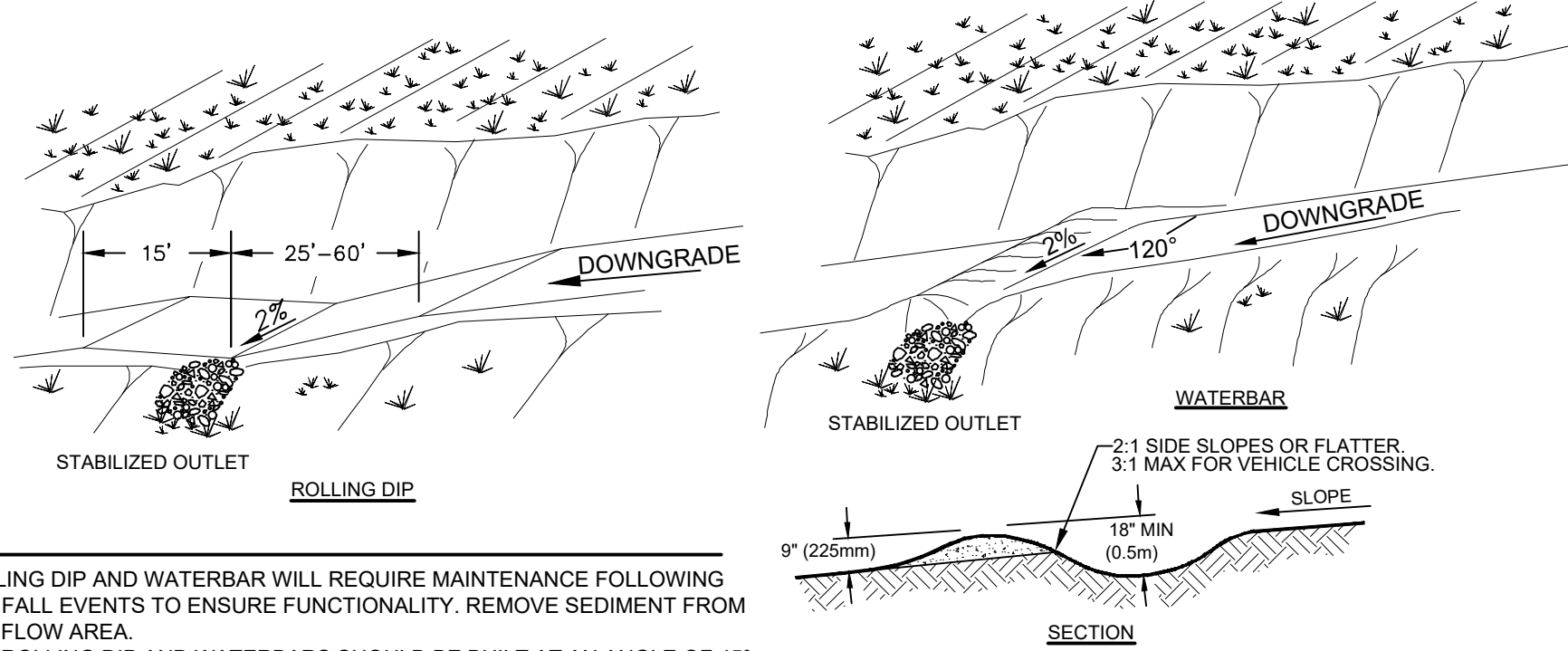
CATEGORY	SLOPE	VELOCITY
1	FLAT	-
2	3:1	< 5.0 fps
3	3:1	< 6.5 fps
4	2:1	< 7.0 fps

CATEGORY	ACCEPTABLE TYPES
1	STRAW RD 1S, WOOD FIBER RD 1S
2	STRAW 1S, WOOD FIBER 1S
3	STRAW 2S, WOOD FIBER 2S
4	STRAW/COCONUT 2S, WOOD FIBER HV 2S

THE LETTERING DESIGNATION SHALL BE DEFINED AS FOLLOWS:

1S -	NETTING ON ONE SIDE
RD -	RAPIDLY DEGRADABLE
2S -	NETTING ON TWO SIDES
HV -	HIGH VELOCITY

EROSION CONTROL BLANKET

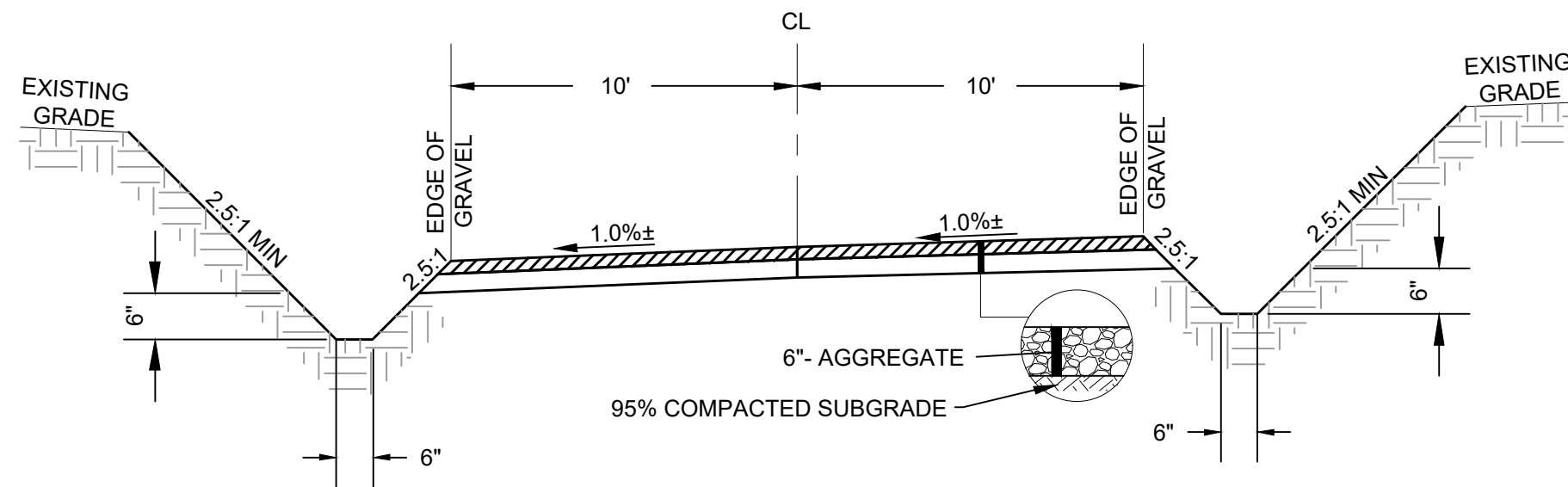


NOTE:

1. ROLLING DIP AND WATERBAR WILL REQUIRE MAINTENANCE FOLLOWING RAINFALL EVENTS TO ENSURE FUNCTIONALITY. REMOVE SEDIMENT FROM THE FLOW AREA.
2. THE ROLLING DIP AND WATERBARS SHOULD BE BUILT AT AN ANGLE OF 45° TO 60° FROM THE CENTERLINE.
3. THE DIVERSION SHOULD HAVE A POSITIVE GRADE OF 2% MINIMUM.
4. FOR ROLLING DIPS, THE HEIGHT FROM CHANNEL BOTTOM TO THE TOP OF THE SETTLED RIDGE SHALL BE 18 INCHES AND THE SIDE SLOPES OF THE RIDGE SHALL BE 2:1 OR FLATTER.
5. OUTLET: DIVERSIONS SHOULD HAVE STABLE OUTLETS, EITHER NATURAL OR MANMADE.
6. REFER TO TABLE 1 FOR SPACING RECOMMENDATIONS FOR SPECIFIC ACCESS ROAD SLOPES.

TABLE 1: ROLLING DIP AND WATERBAR SPACING RECOMMENDATIONS	
SLOPE (%)	SPACING (FT)
<5	125
5-10	100
10-20	75

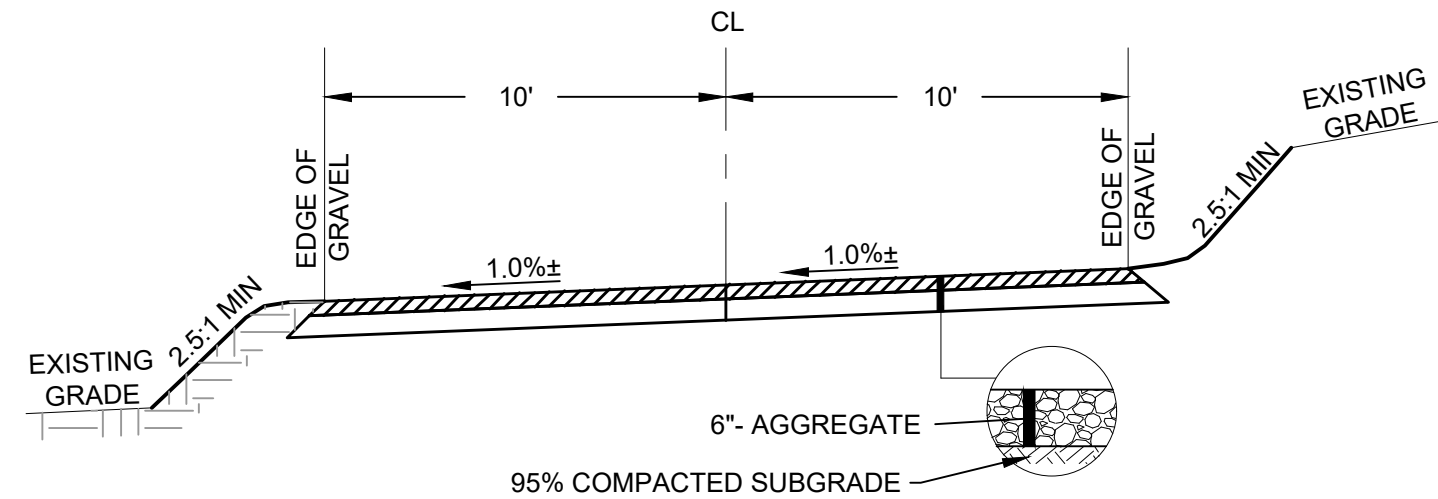
ROLLING DIP AND WATER BAR



NOTES:

1. CONTRACTOR TO SUBCUT ROADWAY TO EXISTING GRADE ELEVATION TO MAINTAIN EXISTING SITE DRAINAGE PATTERNS WHEREVER POSSIBLE.
2. IN FILL LOCATIONS CONTRACTOR TO GRADE TOE OF SLOPE TO EXISTING GRADE, AND MAINTAIN NATURAL DRAINAGE PATTERNS.
3. IN CUT LOCATIONS CONTRACTOR TO CREATE DRAINAGE CHANNEL ON DOWNSTREAM SIDE, REFER TO GRADING PLANS FOR DETAILS.
4. CONTRACTOR TO COMPACT AGGREGATE TO 95% MAXIMUM DRY DENSITY.
5. THE DITCH SHOWN ABOVE IS LOCATED AT ROADWAY B FROM STATION 7+40 TO 15+31

ACCESS ROAD AND DITCH DETAIL (CUT SECTION)



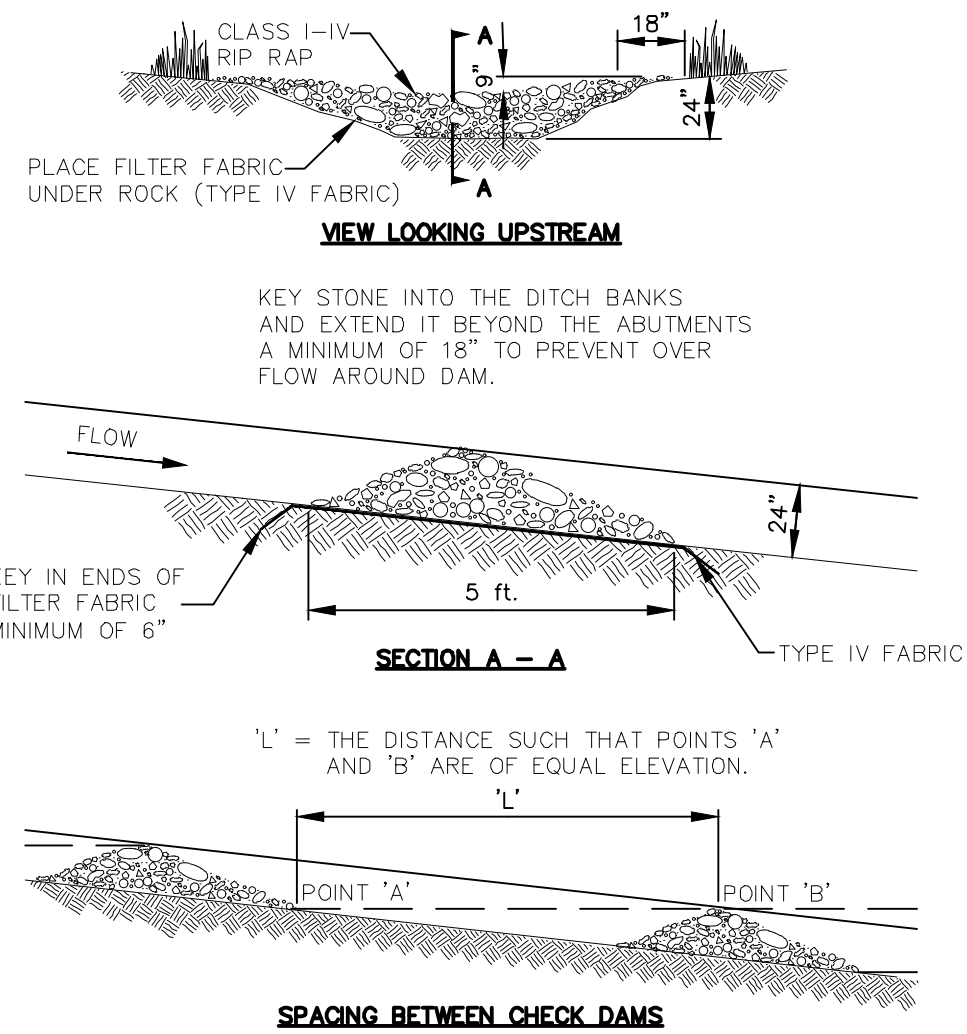
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ACCESS ROAD DETAIL

TABLE 1A. DRAINAGE CHANNEL INSTALLATION TABLE

Drainage Channel	Sheer Stress [lbs/ft^2]	Lining
Upper 200 feet of Drainage Channel 2	7.8	Turf Reinforcement Mat
Lower Part of Drainage Channel 2	0.50	Grass
Upper 20 feet of Drainage Channel 3	10.87	Turf Reinforcement Mat
Last 130 feet of Drainage Channel 3	3.31	Turf Reinforcement Mat
First 130 feet of Drainage Channel 4	2.18	Turf Reinforcement Mat
Middle 30 feet of Drainage Channel 4	4.65	Turf Reinforcement Mat
Lower 90 feet of Drainage Channel 4	1.93	Turf Reinforcement Mat
Upper 30 feet of Drainage Channel 5	4.23	Turf Reinforcement Mat
Lower 300 feet of swale 5	0.28	Grass
First 180 feet of Upper Drainage Channel 6	0.25	Grass
180 feet to end of Upper Drainage Channel 6	0.94	Grass
460 feet to 950 feet of Upper Drainage Channel 6	0.81	Grass
Middle Drainage Channel 6 between proposed culverts	3.49	Turf Reinforcement Mat
Lower Drainage Channel 6	4.04	Turf Reinforcement Mat
Drainage Channel 7 first 40 feet and last 40 feet	0.98	Grass
Drainage Channel 7 middle 360 feet	0.22	Grass
Drainage Channel 8 first 200 feet	0.18	Grass
Drainage Channel 8 middle 150 feet	0.97	Grass
Drainage Channel 8 last 150 feet	2.29	Turf Reinforcement Mat
Drainage Channel 9 (roadside)	2.37	Turf Reinforcement Mat
Drainage Channel 10 first 150 feet	0.2	Grass
Drainage Channel 10 from 150 feet to 500 feet	0.71	Grass
Drainage Channel 10 from 500 feet to end	1.98	Turf Reinforcement Mat
Drainage Channel 11	1.07	Turf Reinforcement Mat
Drainage Channel 12	2.12	Turf Reinforcement Mat
Drainage Channel 13	1.09	Turf Reinforcement Mat
Drainage Channel 14	5.31	Turf Reinforcement Mat



ROCK CHECK DAM

Westwood

Phone (952) 937-5150 12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
westwoodps.com



Designed: MPG

Checked: ADC

Drawn: MPG

Record Drawing by/date:

Revisions: # DATE DESCRIPTION

Prepared for:



WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

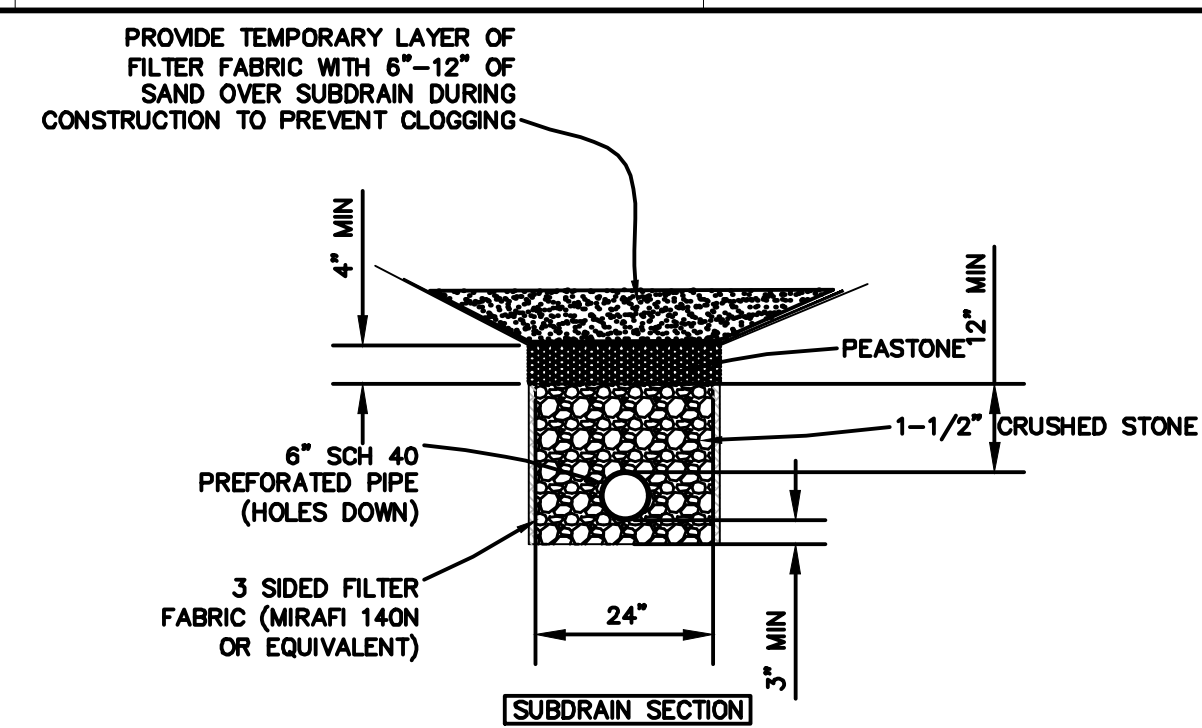
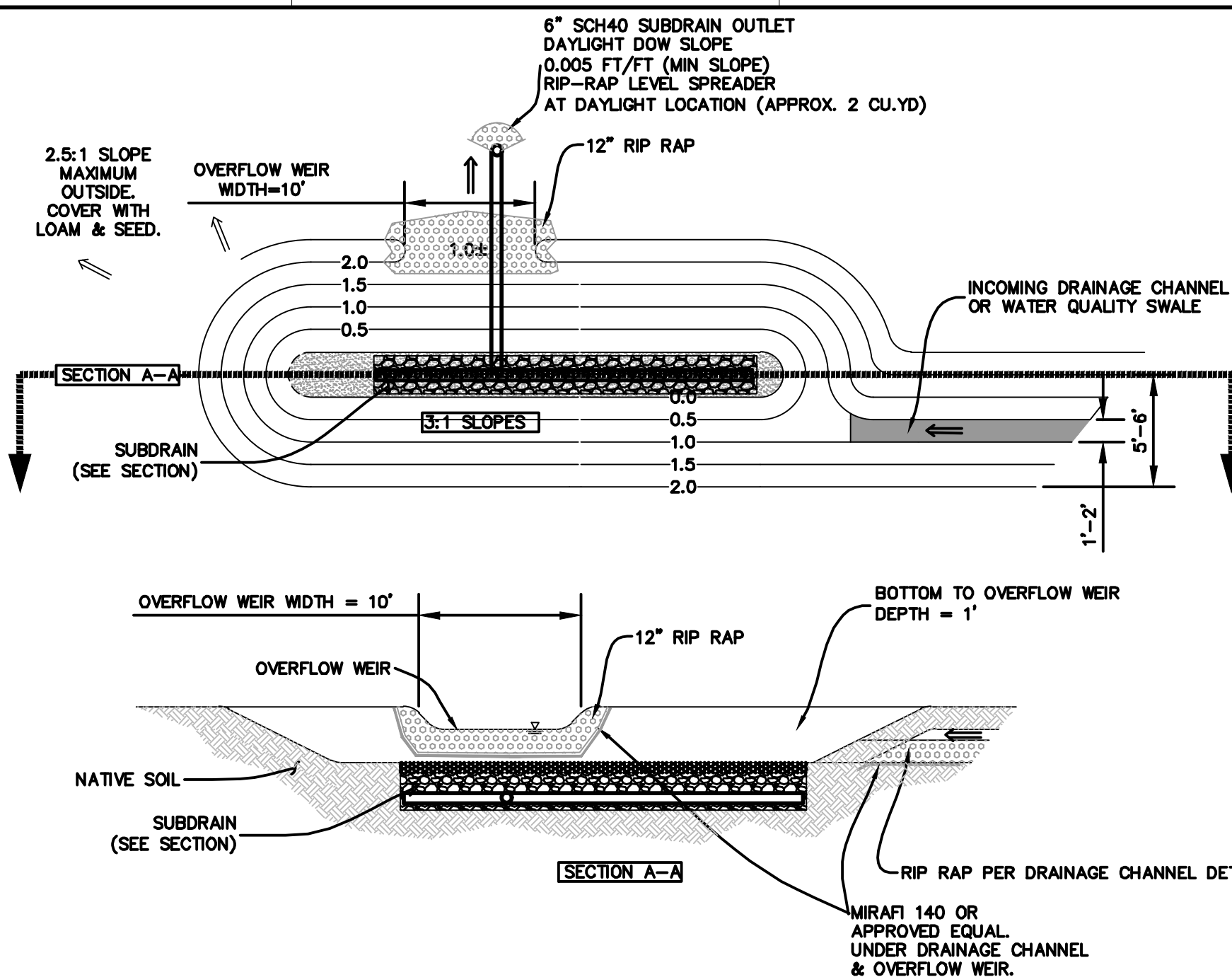
CIVIL DETAILS

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020

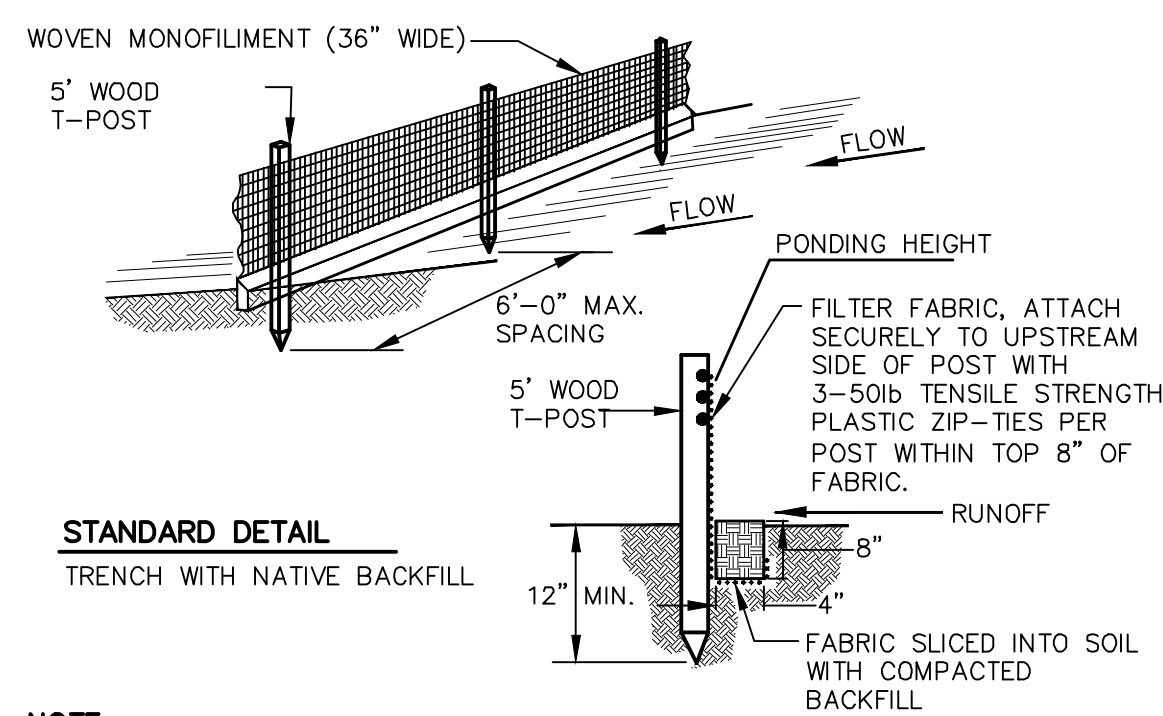
SHEET: 17

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES.
2. GEOTEXTILE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF GEOTEXTILE ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NOTED IN THE EROSION CONTROL PLAN. COLLECTED MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. ALL SILT FENCE SHALL INCLUDE WIRE SUPPORT UNLESS INDICATED OTHERWISE.
6. WIREBACKED WITH HAYBALE SILT FENCE TO BE USED AS NEEDED.



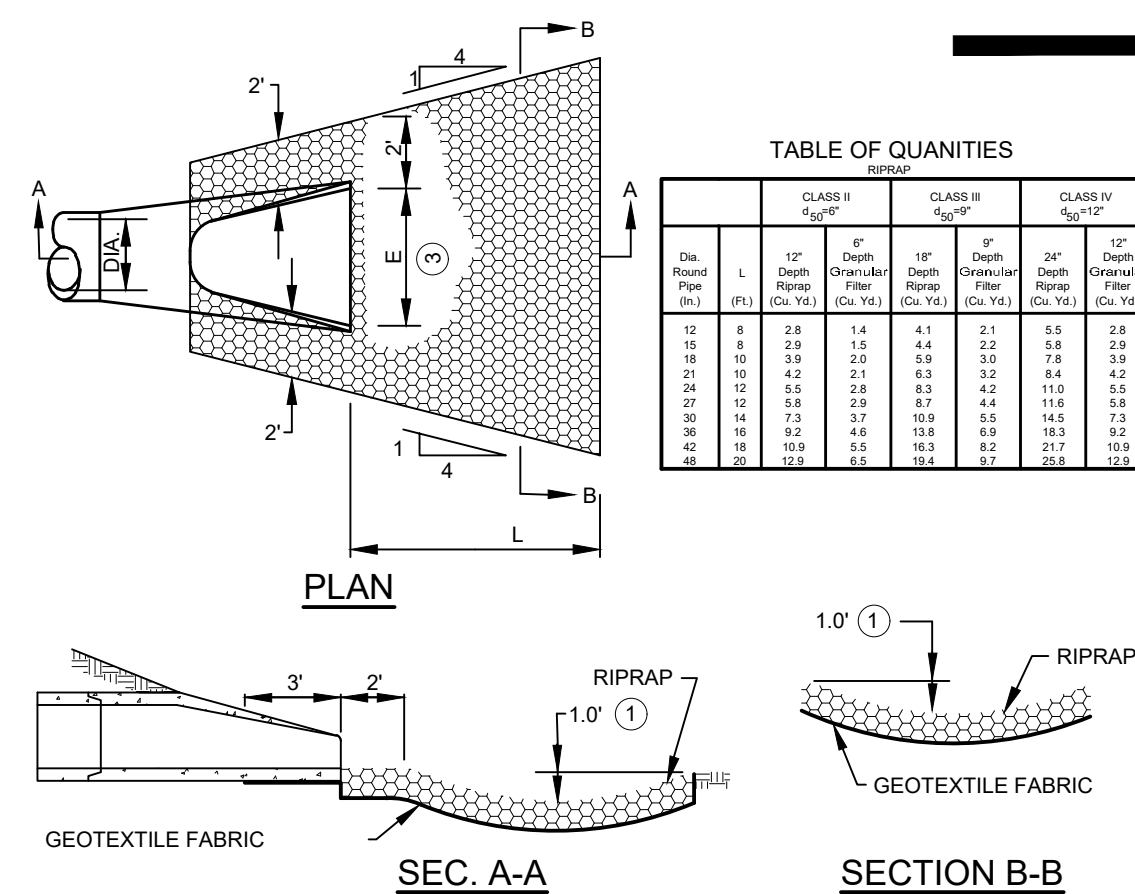
1. THE CONTRACTOR SHOULD ENSURE THAT CARE IS TAKEN DURING EXCAVATION, BY MECHANICAL MEANS, OF THE BOTTOM OF THE SAND FILTER AREAS TO PROMOTE ANY AVAILABLE INFILTRATION.
2. THE CONTRACTOR SHALL NOT TO COMPACT OR SMEAR THE SOIL AT THE BOTTOM OF EXCAVATIONS, VEHICULAR TRAFFIC IS NOT ALLOWED WITHIN THE FOOTPRINT OF THE FOREBAY/RECHARGE AREA BOTTOM.
3. CONTRACTOR TO INSTALL ORANGE SNOW FENCE AROUND THE FOREBAY/RECHARGE AREA AFTER INITIAL CONSTRUCTION/EXCAVATION OF BMP FOR PROTECTION OF THE AREAS DURING CONSTRUCTION OPERATIONS.
4. SAND FILTERS SHALL ACT AS TEMPORARY SAND FILTER DURING CONSTRUCTION OF THE PROJECT.
5. SUBDRAINS SHALL BE THE LOW POINT OF THE SAND FILTER BOTTOMS

WIREBACKED WITH HAYBALE SILT FENCE



NOTE:

1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN ACCUMULATED TO 1/2 THE HEIGHT OF THE FABRIC OR MORE.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
4. ALL ENDS OF THE SILT FENCE SHALL BE WRAPPED UPSLOPE SO THE ELEVATION OF THE BOTTOM OF FABRIC IS HIGHER THAN "PONDING HEIGHT".



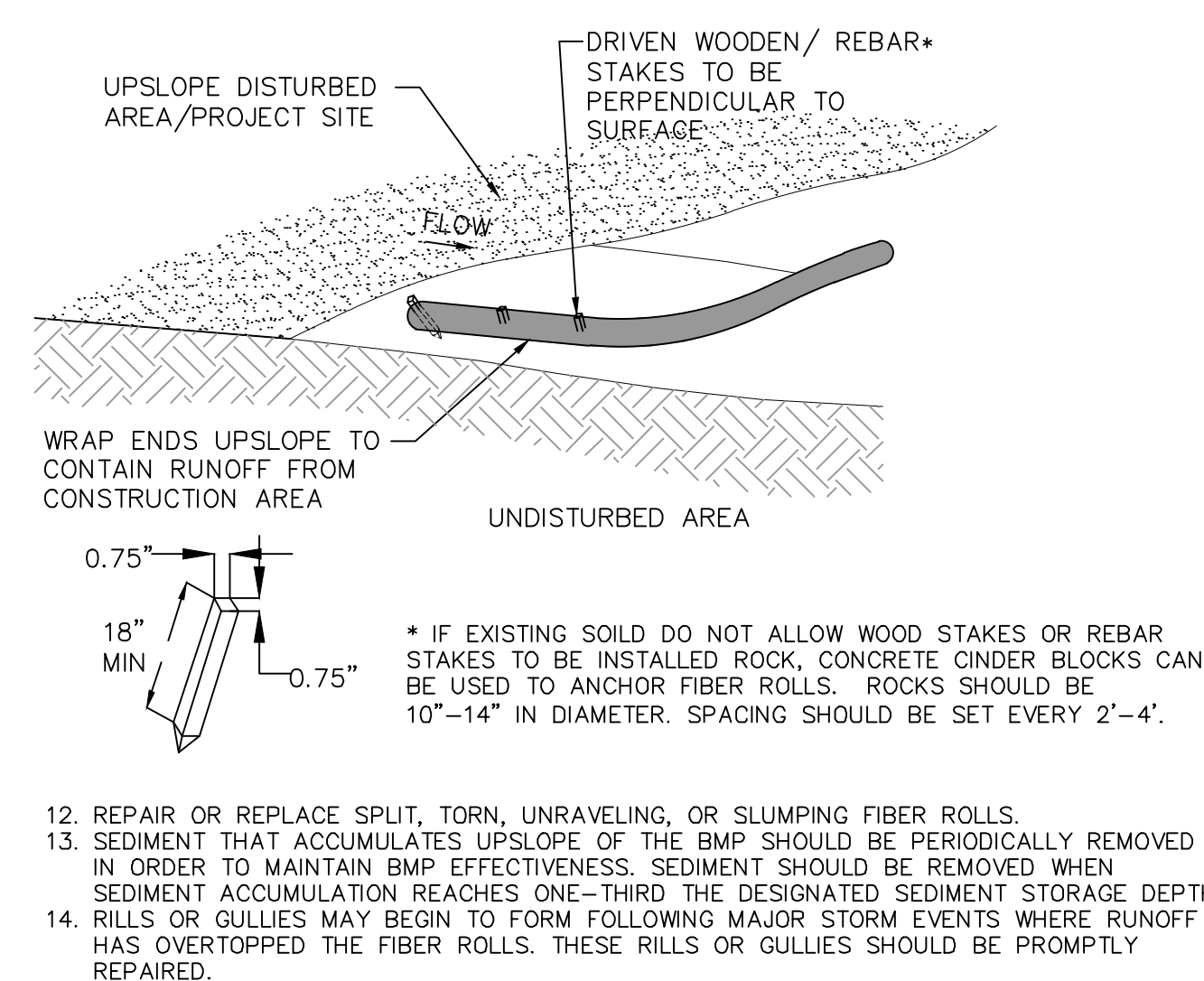
NOTE:

1. FOR PIPES GREATER OR EQUAL TO 30", USE 1.5'.
2. THE CONTRACTOR SHALL PLACE RIP RAP, PULVERIZED TOPSOIL, SEED AND WOODFIBER BLANKET IMMEDIATELY AFTER PIPE IS INSTALLED, EXTEND AREA TO MATCH UNDISTURBED SOIL.
3. DIMENSION "E" EQUALS INSIDE WIDTH OF APRON.
4. RIP RAP SHALL BE CLASS 3 SIZE UNLESS OTHERWISE NOTED ON PLANS.

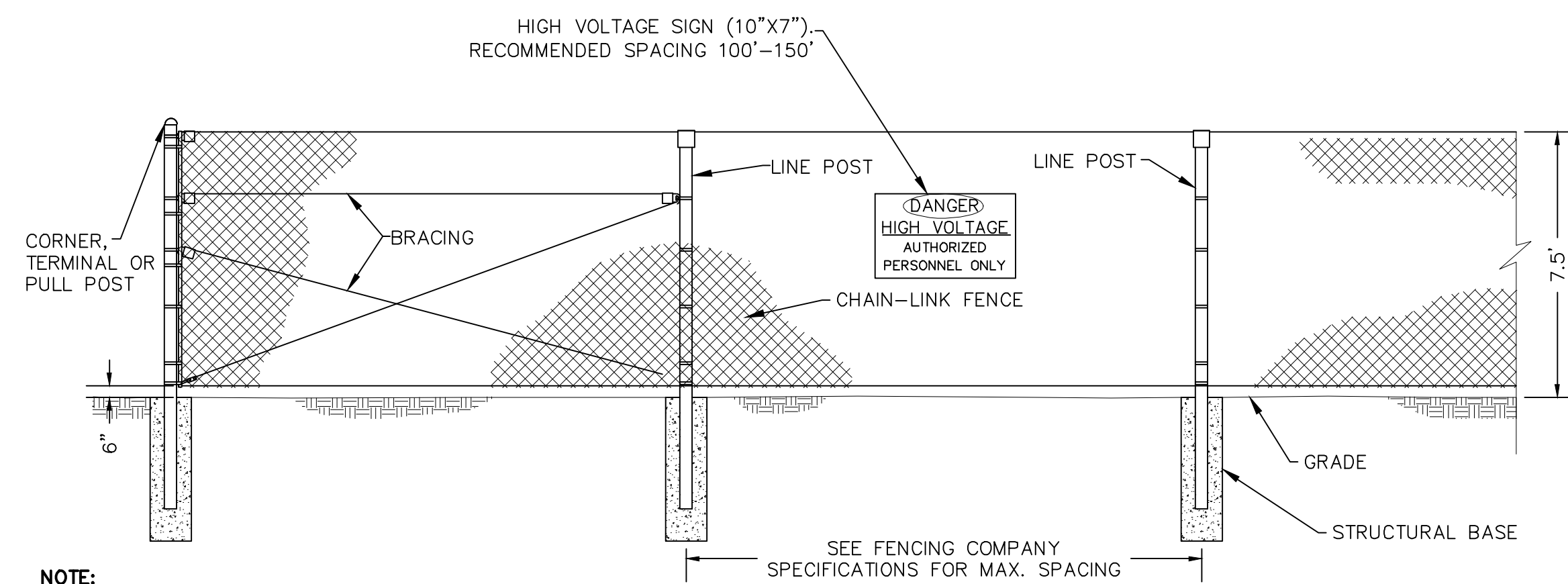
SILT FENCE

NOTES:

1. FIBER ROLLS SHALL BE INSTALLED PRIOR TO UPSLOPE DISTURBANCE ACTIVITIES COMMENCE.
2. FIBER ROLLS SHALL BE PREFABRICATED AND MADE FROM WEED FREE RICE STRAW, FLAX, OR A SIMILAR AGRICULTURAL MATERIAL BOUND INTO A TIGHT TUBULAR ROLL BY NETTING. USE A 152mm (6") DIA. 1270mm (50") DIA. ROLL.
3. TRENCHES SHALL BE CUT AT AN ANGLE TO THE SLOPE OF THE PERIMETER. THE TRENCH DEPTH SHOULD BE 1/4 TO 1/3 OF THE THICKNESS OF THE ROLL, AND THE WIDTH SHOULD EQUAL THE ROLL DIAMETER, IN ORDER TO PROVIDE AREA TO BACKFILL THE TRENCH.
4. STAKE THE ROLL TO THE TRENCH. DRIVE STAKES AT THE END OF EACH FIBER ROLL AND SPACED 4 FEET [1.219m] MAXIMUM ON CENTER. USE WOOD STAKES WITH NOMINAL CLASSIFICATION OF 0.75 IN. [19mm] BY 0.75 IN. [19mm] AND A MINIMUM LENGTH OF 24 IN. [610mm].
5. ROLLS SHALL BE INSTALLED PERPENDICULAR TO WATER MOVEMENT, AND TUNNEL TO THE SLOPE CONTOUR.
6. TURN THE ENDS OF THE FIBER ROLLS UP SLOPE TO PREVENT RUNOFF FROM GOING BEHIND THE ROLL. THE UPSLOPE POINT SHOULD BE A MINIMUM 6" HIGHER IN ELEVATION THAN THE LOW POINT.
7. IF MORE THAN ONE FIBER ROLL IS PLACED IN A ROW, THE ROLLS SHOULD BE OVERLAPPED A MINIMUM OF 6 INCHES [152mm] NOT ABUTTED.
8. FIBER ROLL ENDS SHOULD BE SECURED TO THE GROUND FOR A TEMPORARY APPLICATION ONLY AND SHOULD BE REMOVED FOLLOWING STABILIZATION. FIBER ROLLS USED IN A PERMANENT APPLICATION SHALL BE ENCASED WITH A BIODEGRADABLE MATERIAL AND MAY BE LEFT IN.
9. ANY INSTALLATIONS SHOULD ONLY BE REMOVED WHEN UP GRADIENT AREAS ARE STABILIZED PER GENERAL PERMIT REQUIREMENTS, AND/OR POLLUTANT SOURCES NO LONGER PRESENT A HAZARD. BUT, THEY SHOULD ALSO BE REMOVED BEFORE VEGETATION BECOMES TOO MATURE SO THAT THE REMOVAL PROCESS DOES NOT DISTURB MORE SOIL AND VEGETATION THAN IS NECESSARY.
10. FIBER ROLLS MUST BE INSPECTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS FOR THE ASSOCIATED PROJECT TYPE AND RISK LEVEL. IT IS RECOMMENDED THAT AT A MINIMUM, THE BMPs BE INSPECTED WEEKLY, PRIOR TO ANY PLASTIC OR FIBER ROLL REMOVAL FOLLOWING EXTENDED RAIN EVENTS, AND AFTER THE CONCLUSION OF RAIN EVENTS.

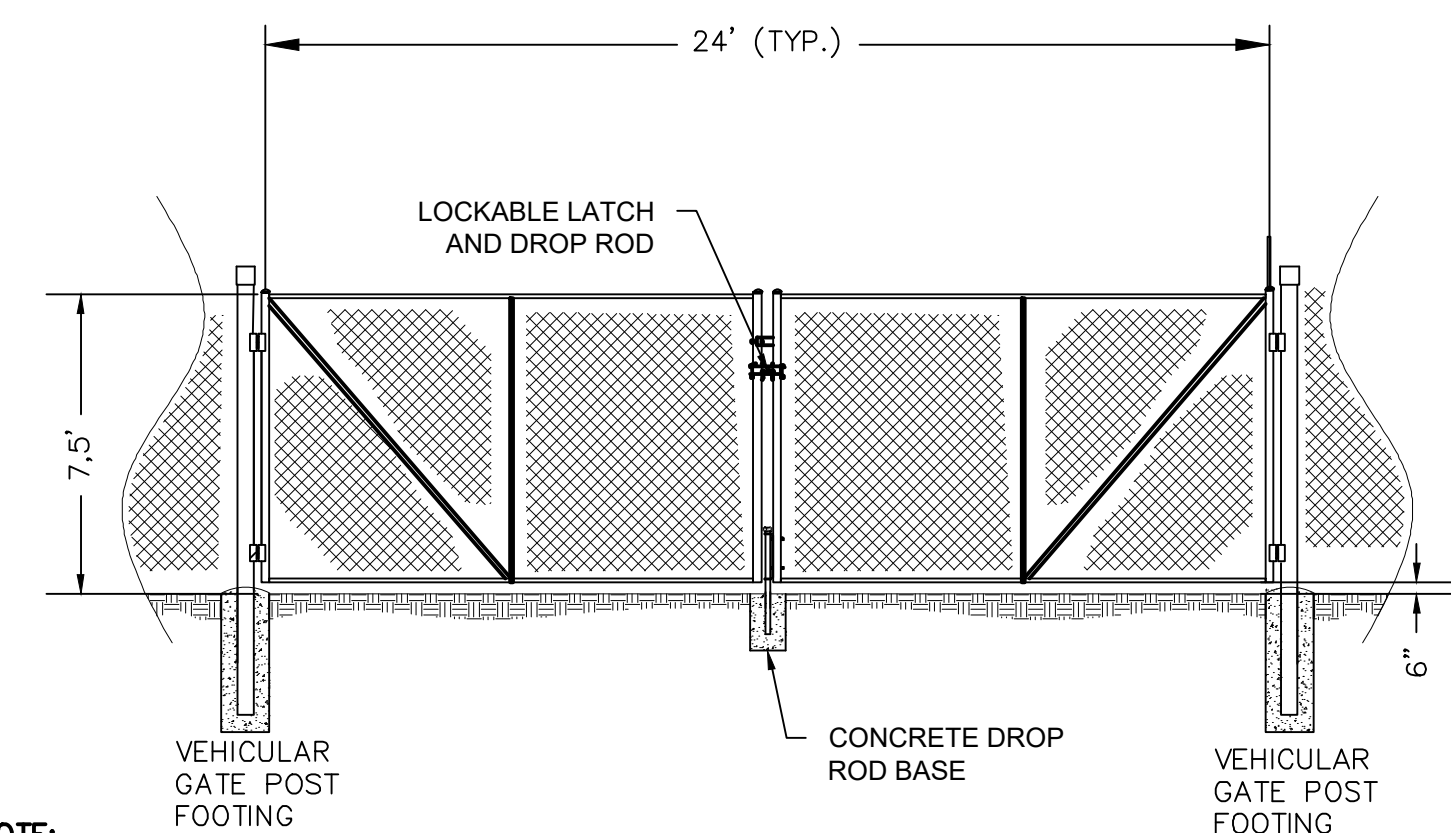


RIP RAP



NOTE:

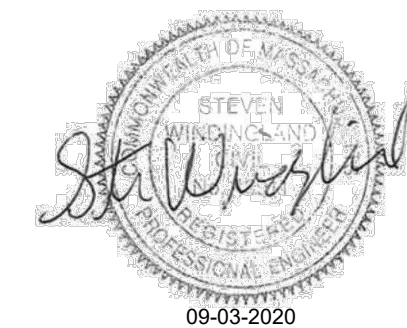
1. FENCE AND GATE TYPE TO BE APPROVED BY OWNER PRIOR TO CONSTRUCTION
2. STRUCTURAL DESIGN TO BE PROVIDED BY FENCE SUPPLIER
3. DIMENSIONS AND INFORMATION SHOWN ABOVE ARE FOR REFERENCE ONLY. ACTUAL DIMENSIONS AND INFORMATION TO BE PROVIDED BY MANUFACTURER/SUPPLIER
4. FENCE/GATE TO BE 7.5' TALL, 6" WILDLIFE GAP AT THE BOTTOM, AND MUST BE DARK OR EARTH TONED COLOR.



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TYPICAL FIBER ROLLS FOR PERIMETER CONTROL OF CONSTRUCTION AREA LIMIT



Designed:	MPG
Checked:	ADC
Drawn:	MPG
Record Drawing by/date:	
Revisions:	
#	DATE DESCRIPTION
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____	_____
____	_____

Prepared for:



WARE SOLAR

MONSON TURNPIKE ROAD
WARE, MA
HAMPSHIRE COUNTY

CIVIL DETAILS

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 09/03/2020

SHEET: 18