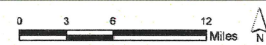
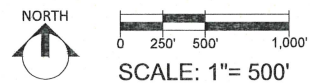


LOCATION MAP



AREA MAP



SKARE PARK STREAM MITIGATION BANK

OGLE COUNTY, IL

LAND AND WATER RESOURCES, INC.

PHONE: 847-692-7170

SHEET LIST TABLE	
Sheet Number	Sheet Title
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49	SEED MIXTURES
50	DETAILS
51	DETAILS

SUMMARY OF QUANTITIES - PHASE 1

ITEM	DESCRIPTION	QUANTITY	UNIT
1	SITE PREPARATION		
1.1	MOBILIZATION	1	LS
1.2	MOW	7.8	AC
1.3	BROADCAST HERBICIDE (1X) HERBACEOUS LAYER	7.8	AC
2	EARTHWORK		
2.1	TOTAL AMOUNT OF CUT (APPROX.) *	7,000	CY
2.2	TOTAL AMOUNT OF FILL (APPROX.) *	7,050	CY
2.3	TOPSOIL STRIP / STOCKPILE / RESPREAD	7,089	CY
2.4	LOG VANES - BOULDERS (28 EA)	94.5	TON
2.5	LOG VANES - GRAVEL BACKFILL (28 EA)	31.5	TON
2.6	LOG WEIRS - RIP RAP (14 EA)	8.8	TON
2.7	CROSS VANES - BOULDERS (2 EA)	41.0	TON
2.8	CROSS VANES - BEDDING STONE (2 EA)	14.5	TON
2.9	BOULDER CLUSTERS (23 EA)	136.9	TON
2.10	J-HOOKS - BOULDERS (25 EA)	260.0	TON
2.11	J-HOOKS - BEDDING STONE (25 EA)	91.3	TON
2.12	ROCK TOE BANK TREATMENT 8-18" RIPRAP (5,000 LF)	2,500.0	TON
2.13	ROCK TOE BANK TREATMENT - GRAVEL (5,000 LF)	161.0	TON
3	TEMPORARY EROSION AND SEDIMENT CONTROL		
3.1	TEMPORARY EROSION AND SEDIMENT CONTROL	1	LS
3.2	EROSION CONTROL BLANKET - ROLANKA BIOD-MAT 60 OR EQUAL (WOVEN)	2,743	SY
3.3	EROSION CONTROL BLANKET - ROLANKA BIOD-MAT-OCF OR EQUAL (NON-WOVEN)	33,359	SY
3.4	CONSTRUCTION FENCE	2,311	FT
3.5	TEMPORARY ROCK CONSTRUCTION ENTRANCE	2	EA
3.6	TEMPORARY STREAM CROSSING	2	EA
4	ECOLOGICAL RESTORATION AND MANAGEMENT		
4.1	WET PRAIRIE/SEDGE MEADOW SEEDING	7.8	AC
4.2	WET PRAIRIE PLANT PLUGS	4,551	EA

* DEWATERING IS INCIDENTAL TO EARTHWORK

SUMMARY OF QUANTITIES - PHASE 2

ITEM	DESCRIPTION	QUANTITY	UNIT
1	SITE PREPARATION		
1.1	MOBILIZATION	1	LS
1.2	MOW	37.3	AC
1.3	BROADCAST HERBICIDE (2X) HERBACEOUS LAYER	37.3	AC
1.4	SPOT HERBICIDE (2X) SCATTERED RCG STANDS	4.0	AC
1.5	PRESCRIBED BURN	23.5	AC
1.6	GRUB	13.8	AC
1.7	SCARIFY AND SEED DEAD RCG AREAS	4.0	AC
2	ECOLOGICAL RESTORATION AND MANAGEMENT		
2.1	FLOODPLAIN WOODLAND/SAVANNA SEEDING	5.7	AC
2.2	WET-MESIC WOODLAND/SAVANNA SEEDING	8.1	AC
2.3	WET PRAIRIE/SEDGE MEADOW SEEDING	15.4	AC
2.4	WET-MESIC PRAIRIE SEEDING	8.1	AC

SUMMARY OF QUANTITIES - PHASE 3

ITEM	DESCRIPTION	QUANTITY	UNIT
1	ECOLOGICAL RESTORATION AND MANAGEMENT		
1.1	5-YEAR MAINTENANCE AND MONITORING	1	LS

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9575 W. Higgins Rd., Suite 801
Rosemont, IL 60018



Steven J. Decker
3-12-18

SEALS AND SIGNATURES

FINAL DESIGN PLANS

COVER SHEET

No.	Date	By

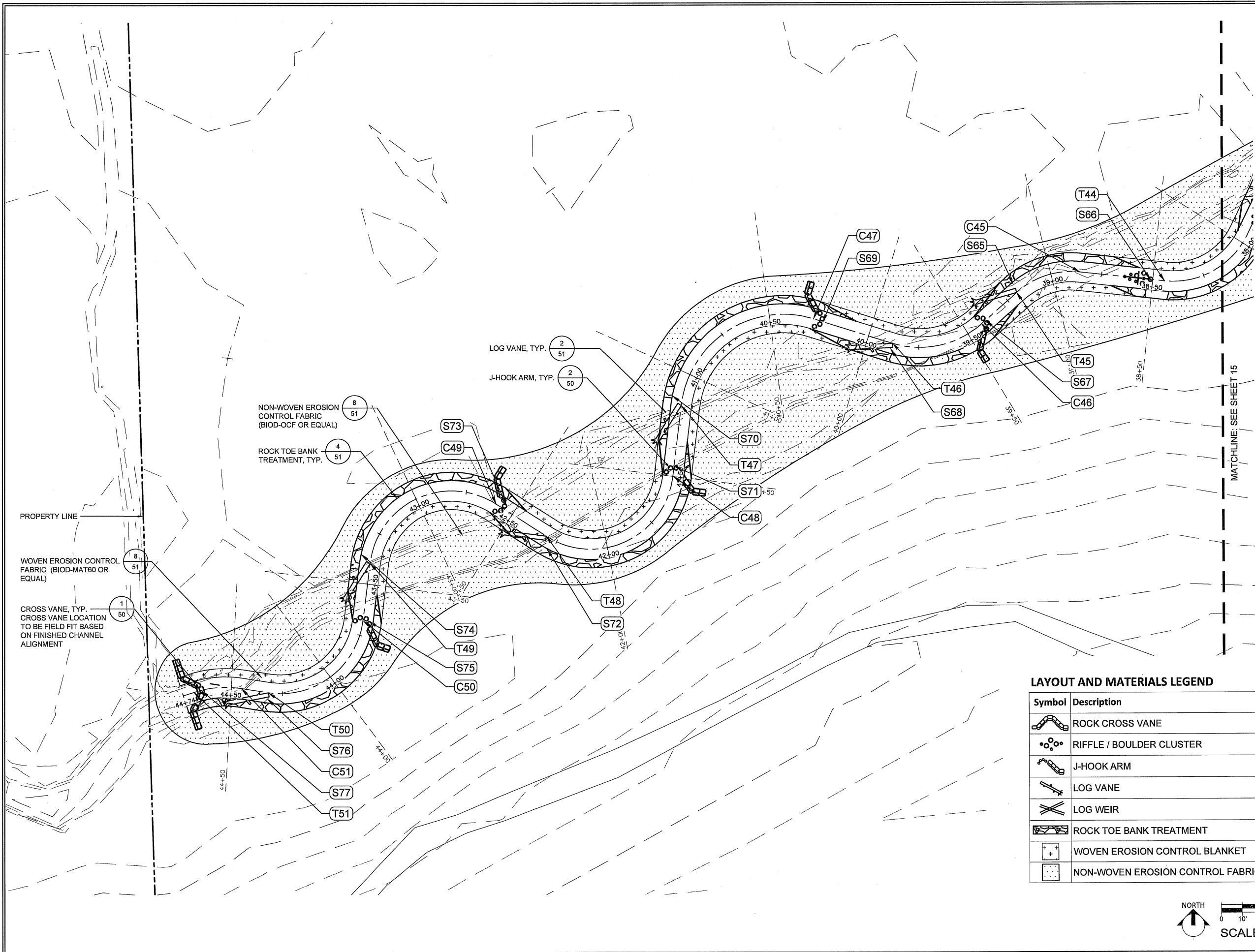
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Designed By: BJK
Drawn By: SLL
Checked By: CAS
File: 01 COVER SHEET.dwg
Date: MARCH 12, 2018
Coordinate System: NAD 83, ILSP, US FT



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Sheet Number
01
SHEET 01 OF 51

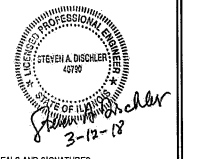


LAYOUT AND MATERIALS LEGEND

Symbol	Description
	ROCK CROSS VANE
	RIFFLE / BOULDER CLUSTER
	J-HOOK ARM
	LOG VANE
	LOG WEIR
	ROCK TOE BANK TREATMENT
	WOVEN EROSION CONTROL BLANKET
	NON-WOVEN EROSION CONTROL FABRIC

MATCHLINE: SEE SHEET 15

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SEALS AND SIGNATURES

FINAL DESIGN PLANS
**LAYOUT &
 MATERIALS PLAN**

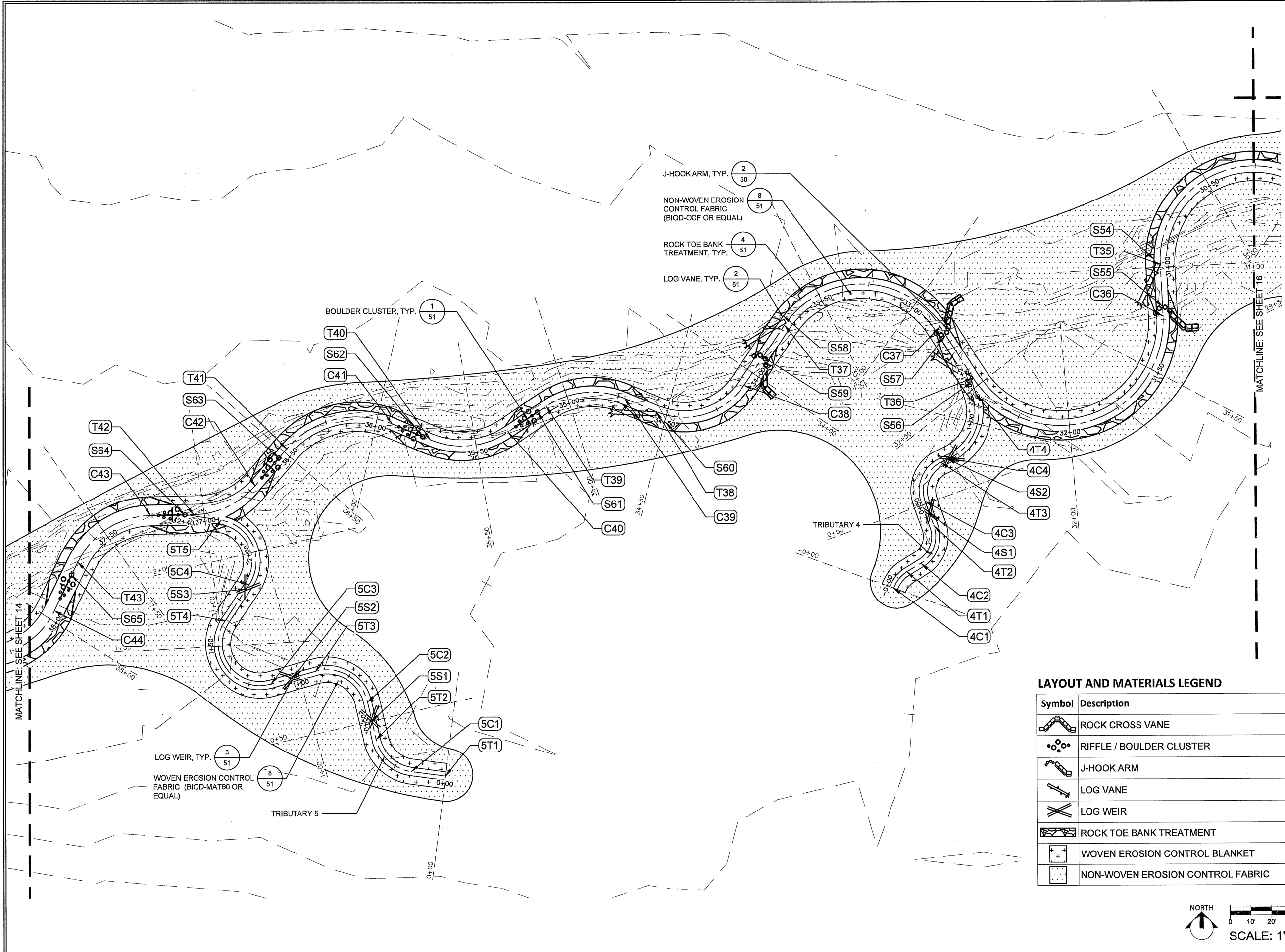
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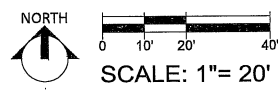
- J-HOOK ARM, TYP. (2/50)
- NON-WOVEN EROSION CONTROL FABRIC (BIOD-OCF OR EQUAL) (8/51)
- ROCK TOE BANK TREATMENT, TYP. (4/51)
- LOG VANE, TYP. (2/51)

- BOULDER CLUSTER, TYP. (1/51)

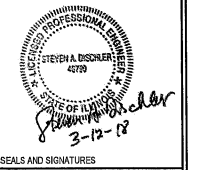
- LOG WEIR, TYP. (3/51)
- WOVEN EROSION CONTROL FABRIC (BIOD-MAT60 OR EQUAL) (8/51)

LAYOUT AND MATERIALS LEGEND

Symbol	Description
	ROCK CROSS VANE
	RIFFLE / BOULDER CLUSTER
	J-HOOK ARM
	LOG VANE
	LOG WEIR
	ROCK TOE BANK TREATMENT
	WOVEN EROSION CONTROL BLANKET
	NON-WOVEN EROSION CONTROL FABRIC



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FINAL DESIGN PLANS
LAYOUT & MATERIALS PLAN

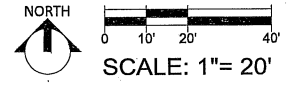
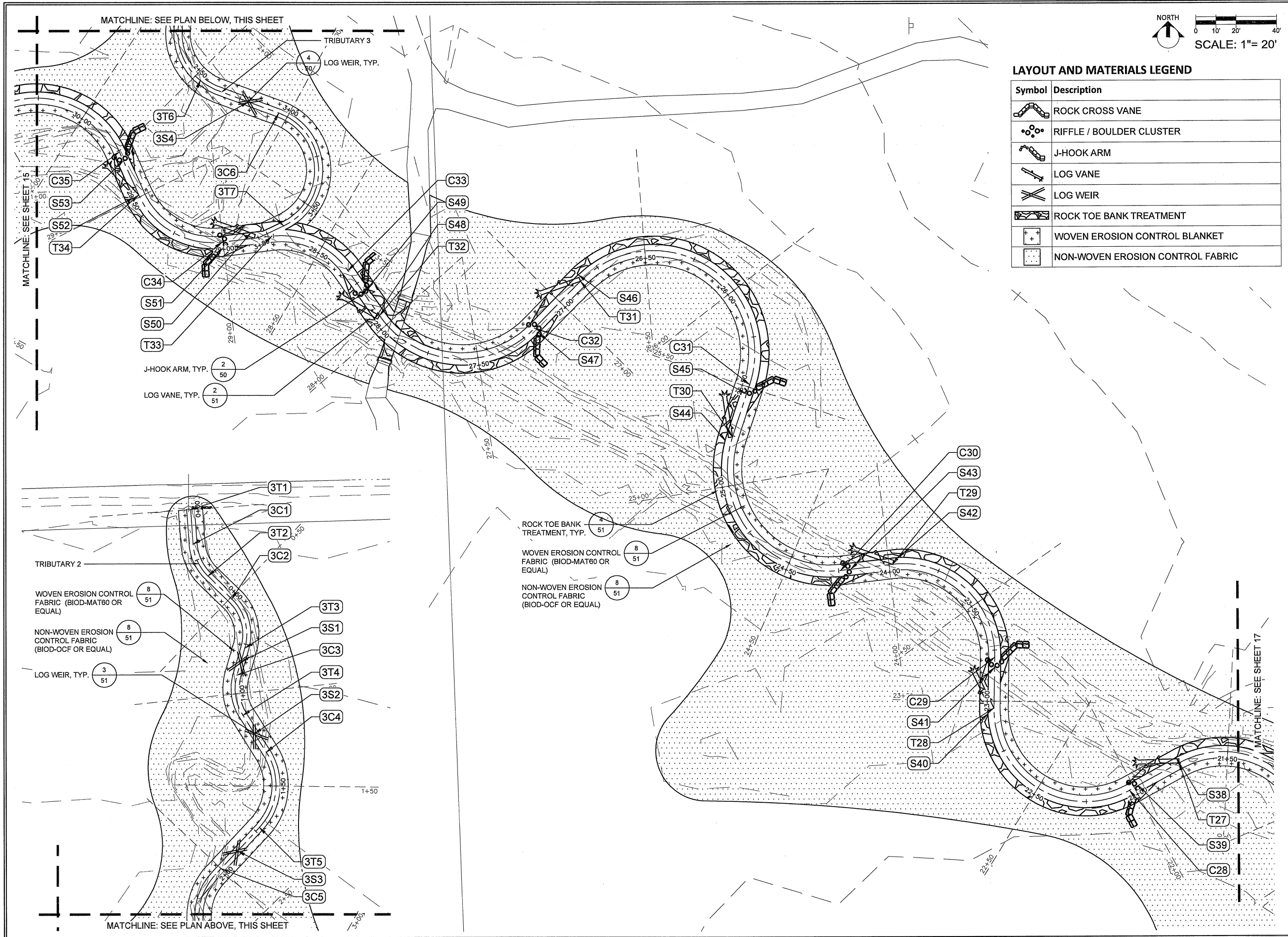
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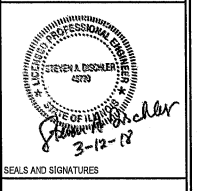
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 SHEET 15 OF 51



LAYOUT AND MATERIALS LEGEND

Symbol	Description
	ROCK CROSS VANE
	RIFFLE / BOULDER CLUSTER
	J-HOOK ARM
	LOG VANE
	LOG WEIR
	ROCK TOE BANK TREATMENT
	WOVEN EROSION CONTROL BLANKET
	NON-WOVEN EROSION CONTROL FABRIC

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FINAL DESIGN PLANS
**LAYOUT &
 MATERIALS PLAN**

No.	Date	Revision Description









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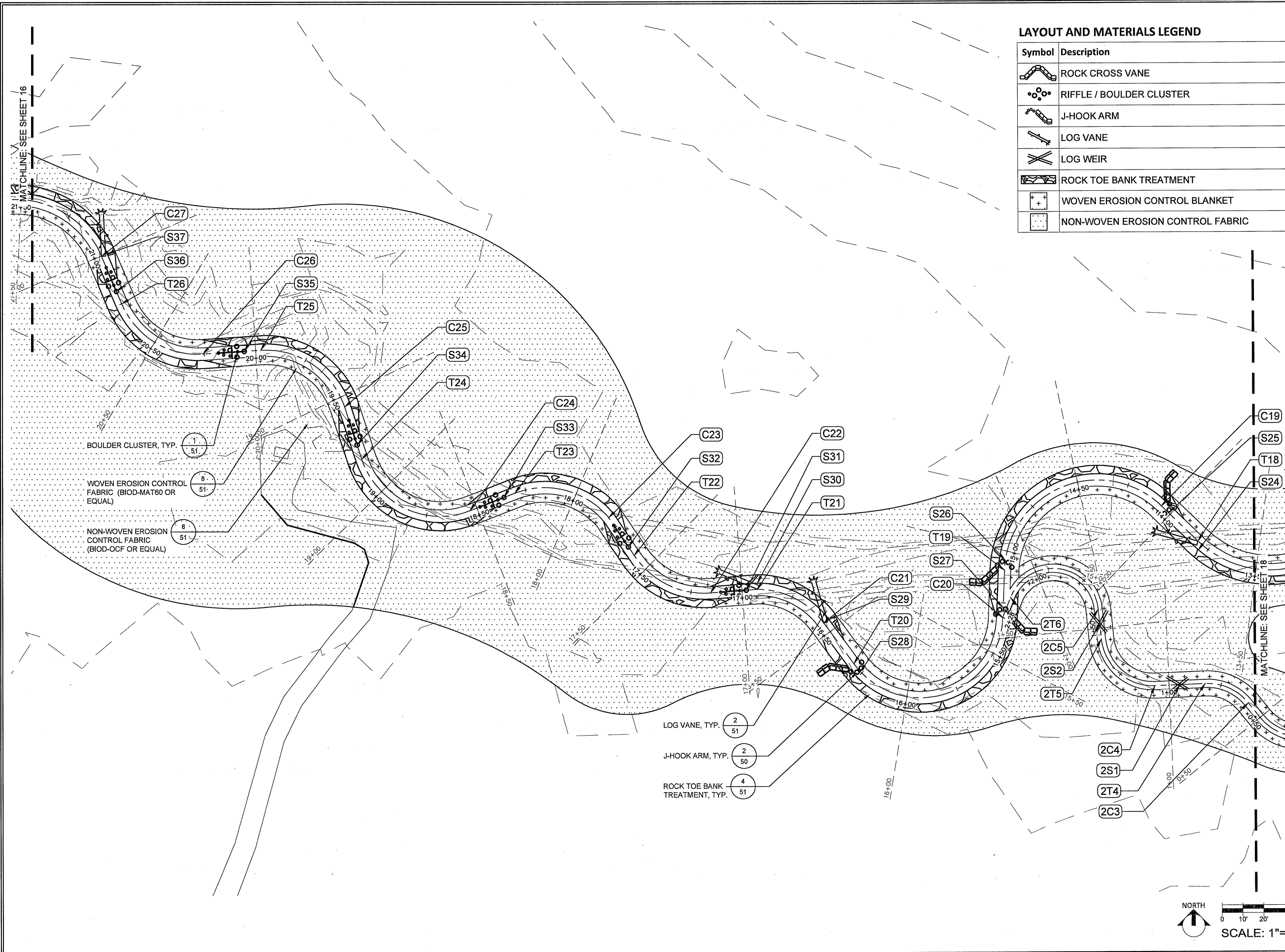


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LAYOUT AND MATERIALS LEGEND

Symbol	Description
	ROCK CROSS VANE
	RIFFLE / BOULDER CLUSTER
	J-HOOK ARM
	LOG VANE
	LOG WEIR
	ROCK TOE BANK TREATMENT
	WOVEN EROSION CONTROL BLANKET
	NON-WOVEN EROSION CONTROL FABRIC



BOULDER CLUSTER, TYP. $\frac{1}{51}$

WOVEN EROSION CONTROL FABRIC (BIOD-MAT60 OR EQUAL) $\frac{8}{51}$

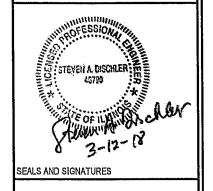
NON-WOVEN EROSION CONTROL FABRIC (BIOD-OCF OR EQUAL) $\frac{8}{51}$

LOG VANE, TYP. $\frac{2}{51}$

J-HOOK ARM, TYP. $\frac{2}{50}$

ROCK TOE BANK TREATMENT, TYP. $\frac{4}{51}$

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FINAL DESIGN PLANS
LAYOUT & MATERIALS PLAN

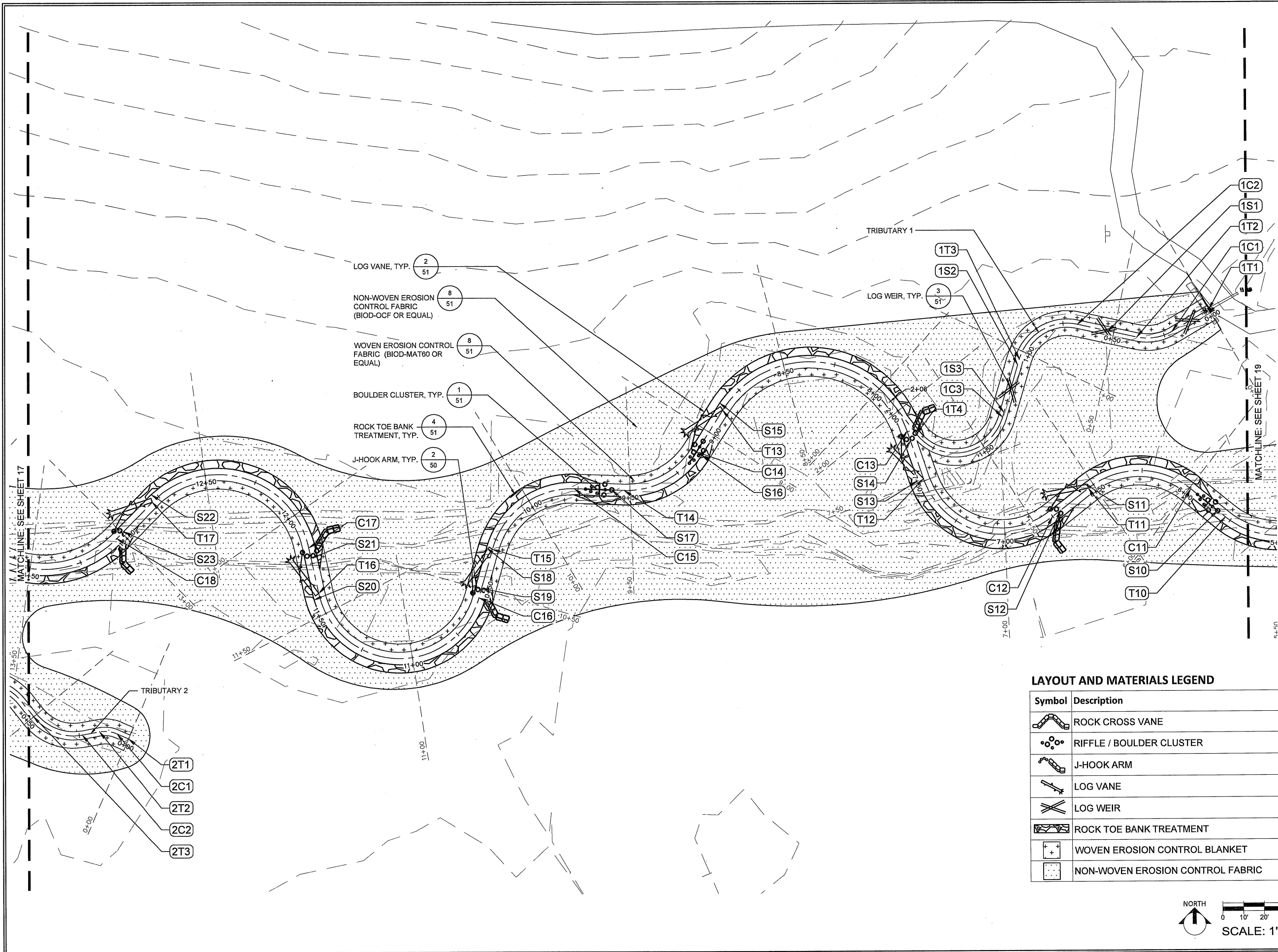
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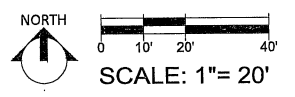
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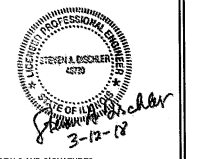
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- WOVEN EROSION CONTROL FABRIC (BIOD-MAT60 OR EQUAL) 8
51
- BOULDER CLUSTER, TYP. 1
51
- ROCK TOE BANK TREATMENT, TYP. 4
51
- J-HOOK ARM, TYP. 2
50

LAYOUT AND MATERIALS LEGEND

Symbol	Description
	ROCK CROSS VANE
	RIFFLE / BOULDER CLUSTER
	J-HOOK ARM
	LOG VANE
	LOG WEIR
	ROCK TOE BANK TREATMENT
	WOVEN EROSION CONTROL BLANKET
	NON-WOVEN EROSION CONTROL FABRIC



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FINAL DESIGN PLANS
**LAYOUT &
 MATERIALS PLAN**

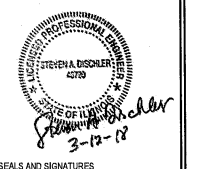
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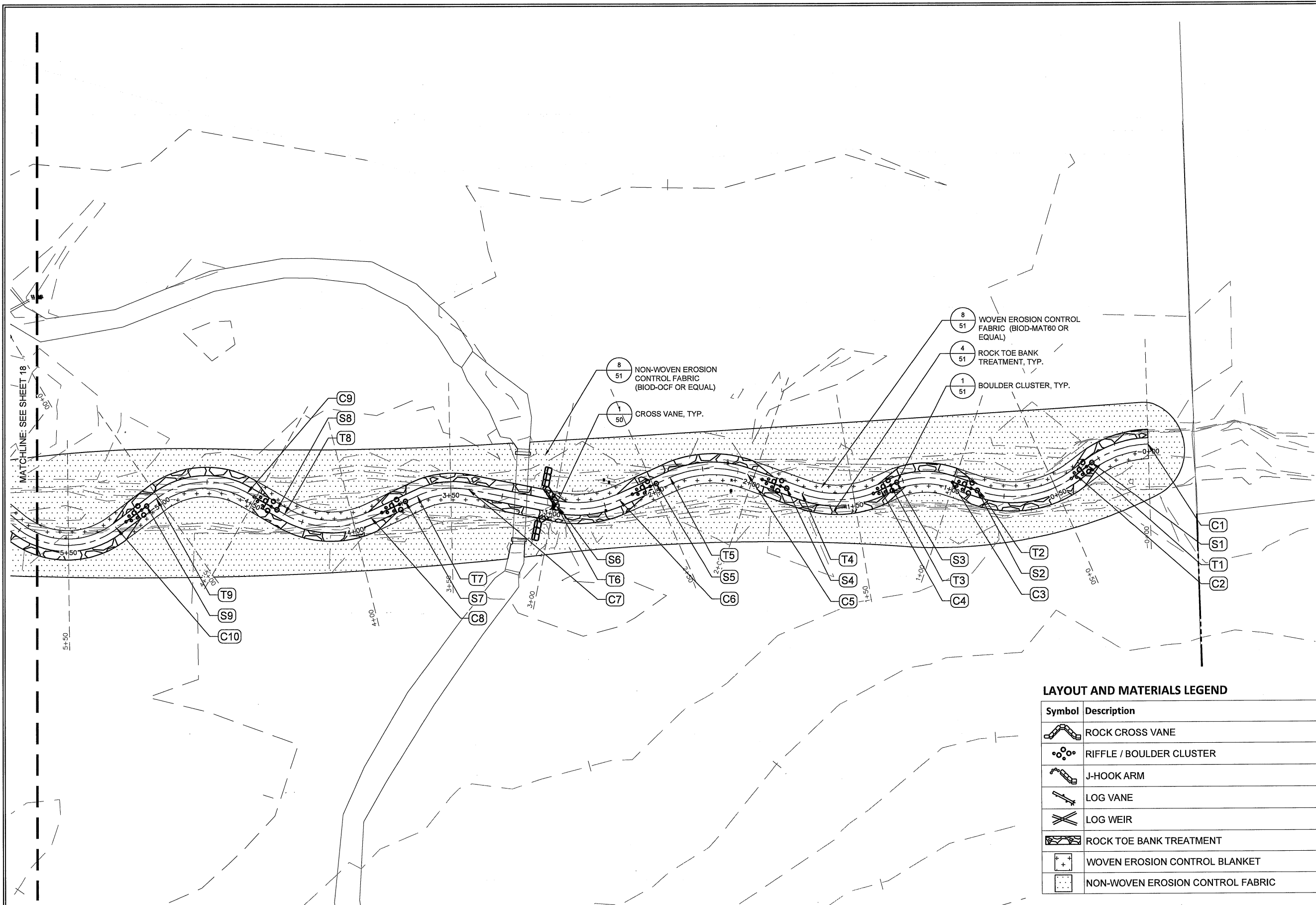
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FINAL DESIGN PLANS
LAYOUT & MATERIALS PLAN



LAYOUT AND MATERIALS LEGEND

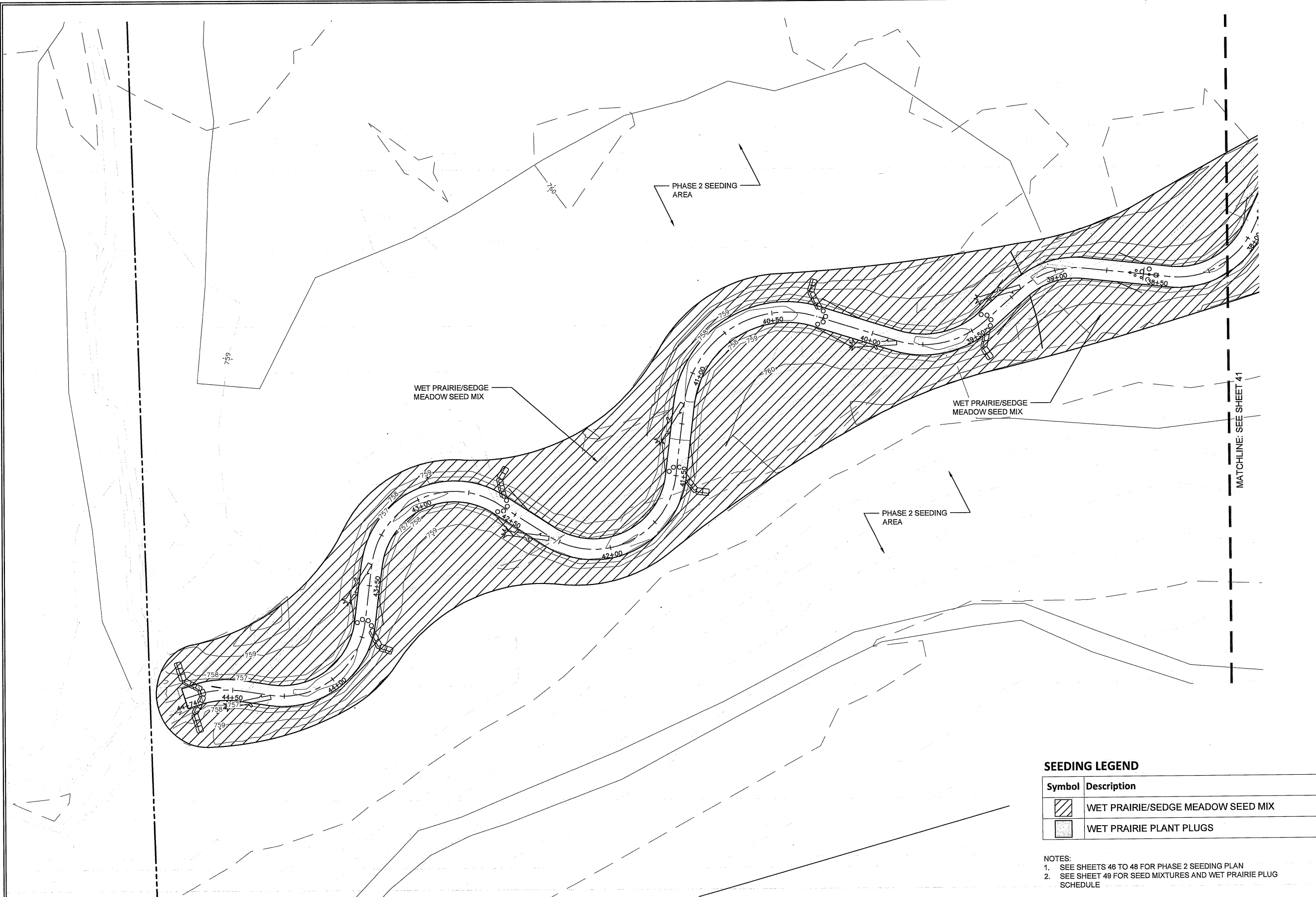
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	RIFFLE / BOULDER CLUSTER
	J-HOOK ARM
	LOG VANE
	LOG WEIR
	ROCK TOE BANK TREATMENT
	WOVEN EROSION CONTROL BLANKET
	NON-WOVEN EROSION CONTROL FABRIC

NORTH
0 10' 20' 40'
SCALE: 1" = 20'

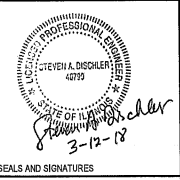
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FINAL DESIGN PLANS
**PHASE 1 SEEDING
 PLAN**

No.	Date	Revision Description	By

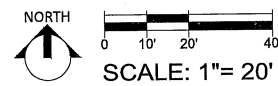
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 Date: MARCH 12, 2018
 Coordinate System: NAD 83, U.S.P., US Ft.

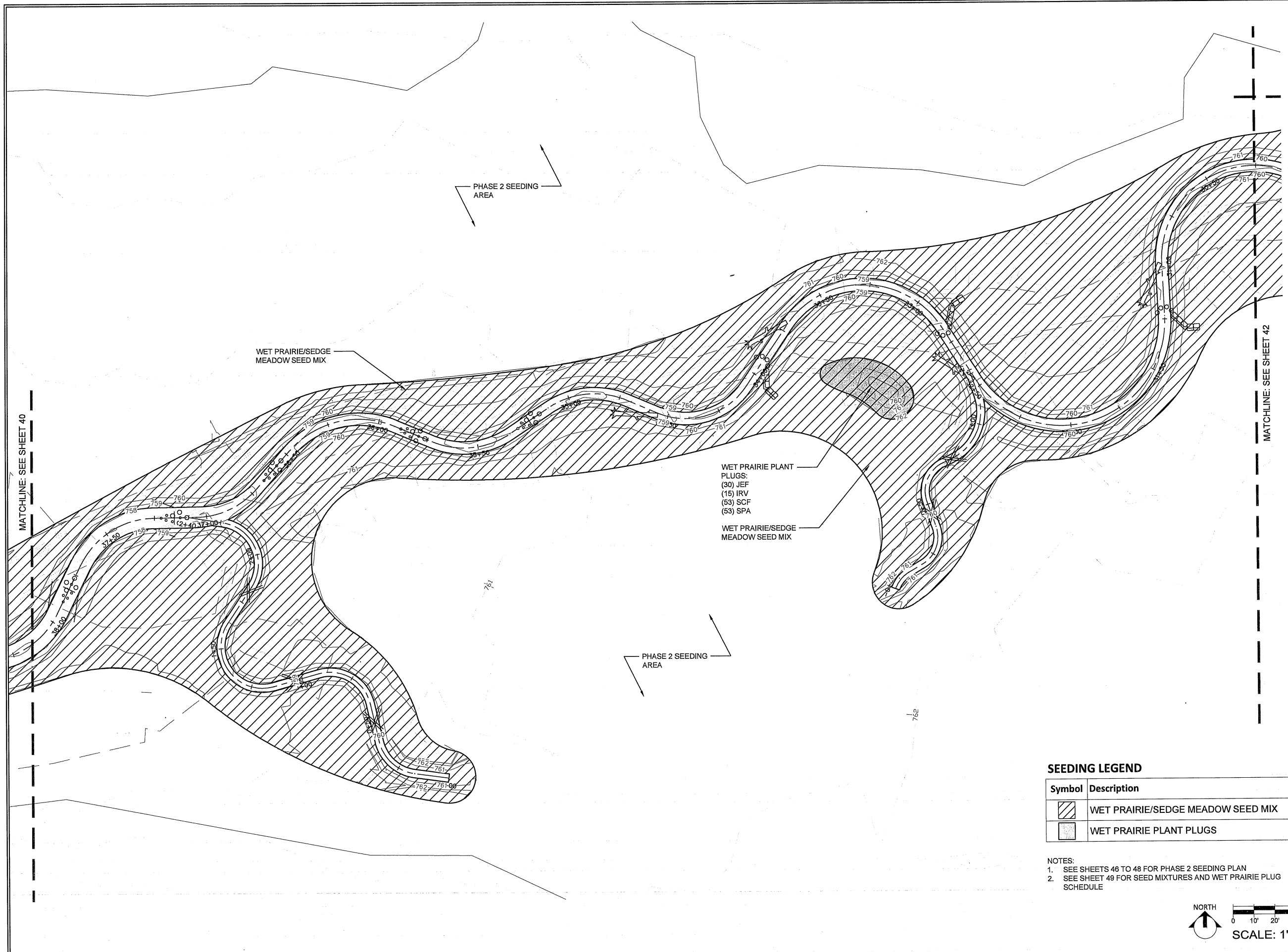
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 SHEET NUMBER: **40**
 SHEET 40 OF 51

SEEDING LEGEND

Symbol	Description
	WET PRAIRIE/SEDGE MEADOW SEED MIX
	WET PRAIRIE PLANT PLUGS

- NOTES:
 1. SEE SHEETS 46 TO 48 FOR PHASE 2 SEEDING PLAN
 2. SEE SHEET 49 FOR SEED MIXTURES AND WET PRAIRIE PLUG SCHEDULE





WET PRAIRIE/SEDGE MEADOW SEED MIX

WET PRAIRIE PLANT PLUGS:
 (30) JEF
 (15) IRV
 (53) SCF
 (53) SPA

WET PRAIRIE/SEDGE MEADOW SEED MIX

PHASE 2 SEEDING AREA

PHASE 2 SEEDING AREA

MATCHLINE: SEE SHEET 40

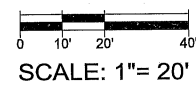
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SEEDING LEGEND

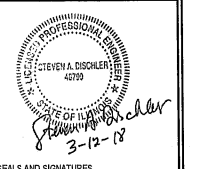
Symbol	Description
	WET PRAIRIE/SEDGE MEADOW SEED MIX
	WET PRAIRIE PLANT PLUGS

NOTES:

- 1. SEE SHEETS 46 TO 48 FOR PHASE 2 SEEDING PLAN
- 2. SEE SHEET 49 FOR SEED MIXTURES AND WET PRAIRIE PLUG SCHEDULE



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FINAL DESIGN PLANS
PHASE 1 SEEDING PLAN

No.	Date	Revision/Description	By

AES Proj. #: 17-0057
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 Checked By: CAS
 File: 38 PHASE 1 SEEDING
 Date: MARCH 12, 2018



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41
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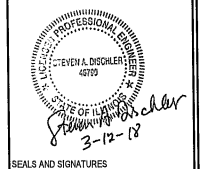
SEEDING LEGEND

Symbol	Description
	WET PRAIRIE/SEDGE MEADOW SEED MIX
	WET PRAIRIE PLANT PLUGS

- NOTES:**
- SEE SHEETS 46 TO 48 FOR PHASE 2 SEEDING PLAN
 - SEE SHEET 49 FOR SEED MIXTURES AND WET PRAIRIE PLUG SCHEDULE



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FINAL DESIGN PLANS
PHASE 1 SEEDING PLAN

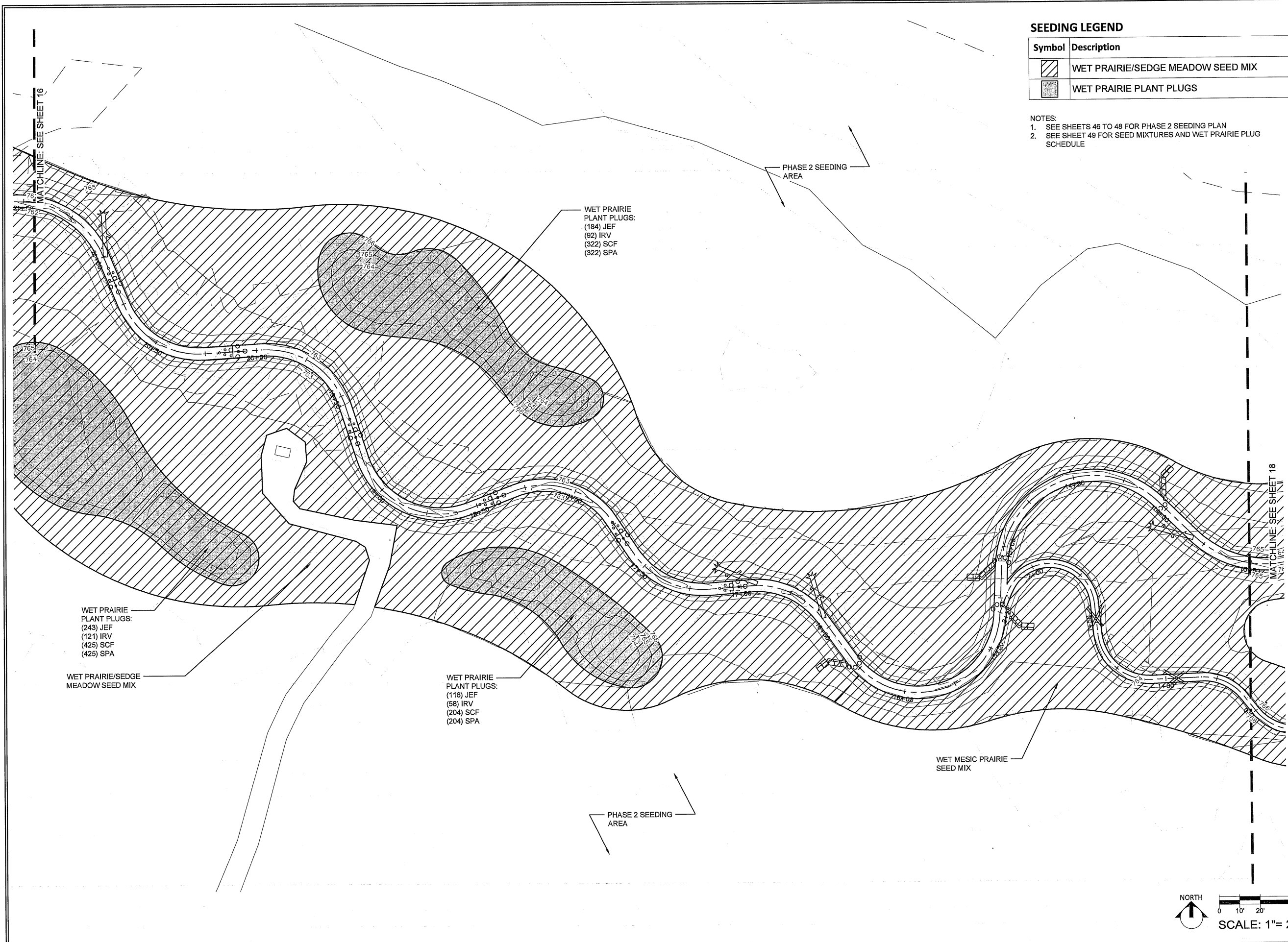
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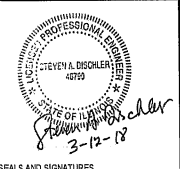
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Symbol	Description
	WET PRAIRIE/SEDGE MEADOW SEED MIX
	WET PRAIRIE PLANT PLUGS

NOTES:

- SEE SHEETS 46 TO 48 FOR PHASE 2 SEEDING PLAN
- SEE SHEET 49 FOR SEED MIXTURES AND WET PRAIRIE PLUG SCHEDULE

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FINAL DESIGN PLANS
PHASE 1 SEEDING PLAN

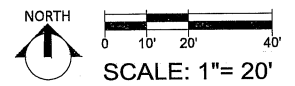
No.	Date	Revision Description	By

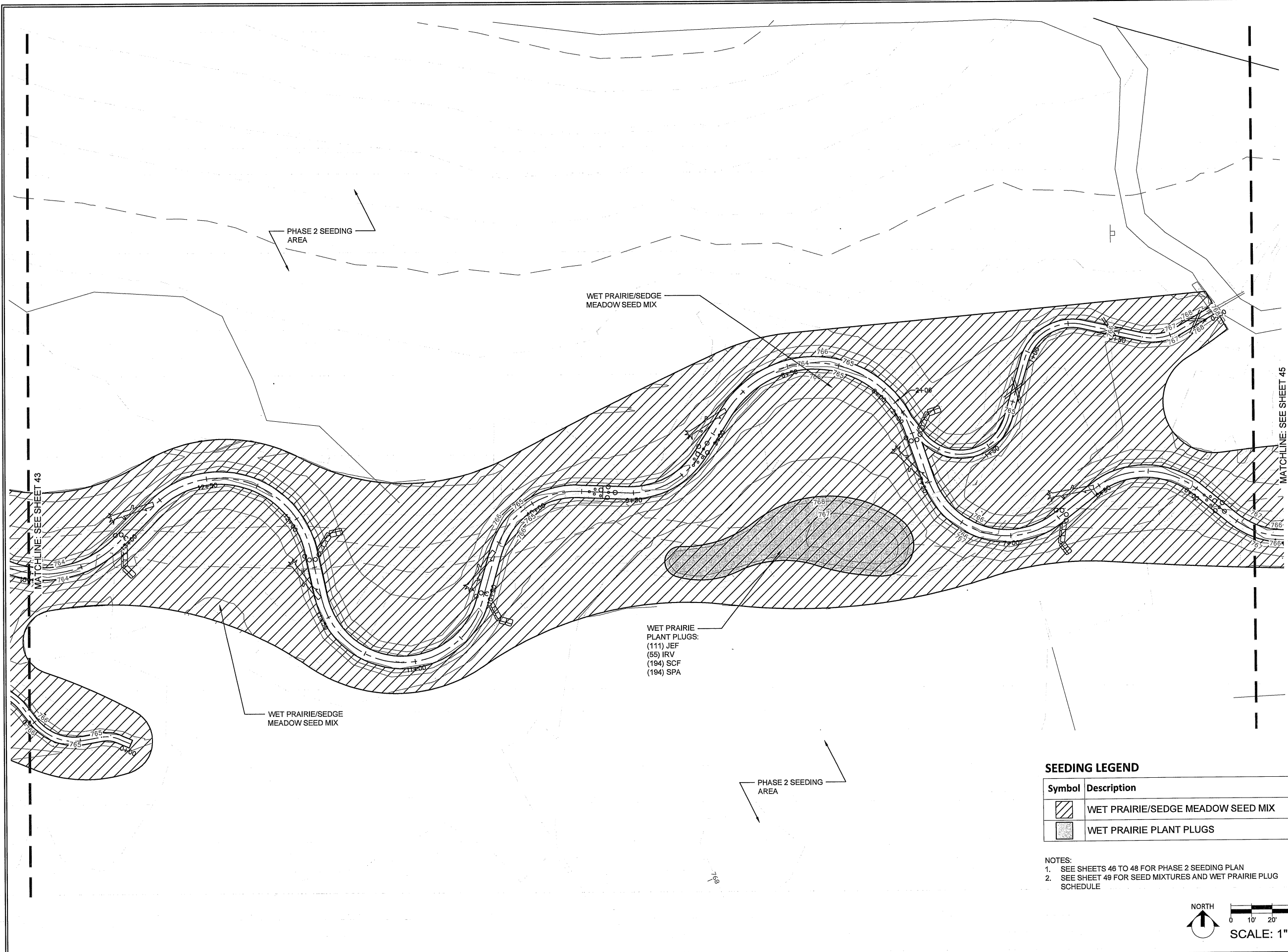
AES Proj. #: 17-0557
 Designed By: BJK
 Drawn By: SLL
 Checked By: CAS
 File: 38 PHASE 1 SEEDING
 Date: MARCH 12, 2018
 Coordinate System: NAD 83, U.S.P. 10 FT.



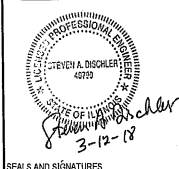
Applied Ecological Services, Inc.
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FINAL DESIGN PLANS
PHASE 1 SEEDING PLAN

No.	Date	Revision Description	By

AES Proj. #: 17-0057
 Designed By: BJK
 Drawn By: SLL
 Checked By: CAS
 File: 39 PHASE 1 SEEDING
 Date: MARCH 12, 2018
 Coordinate System: NAD 83, U.S.P. US FT



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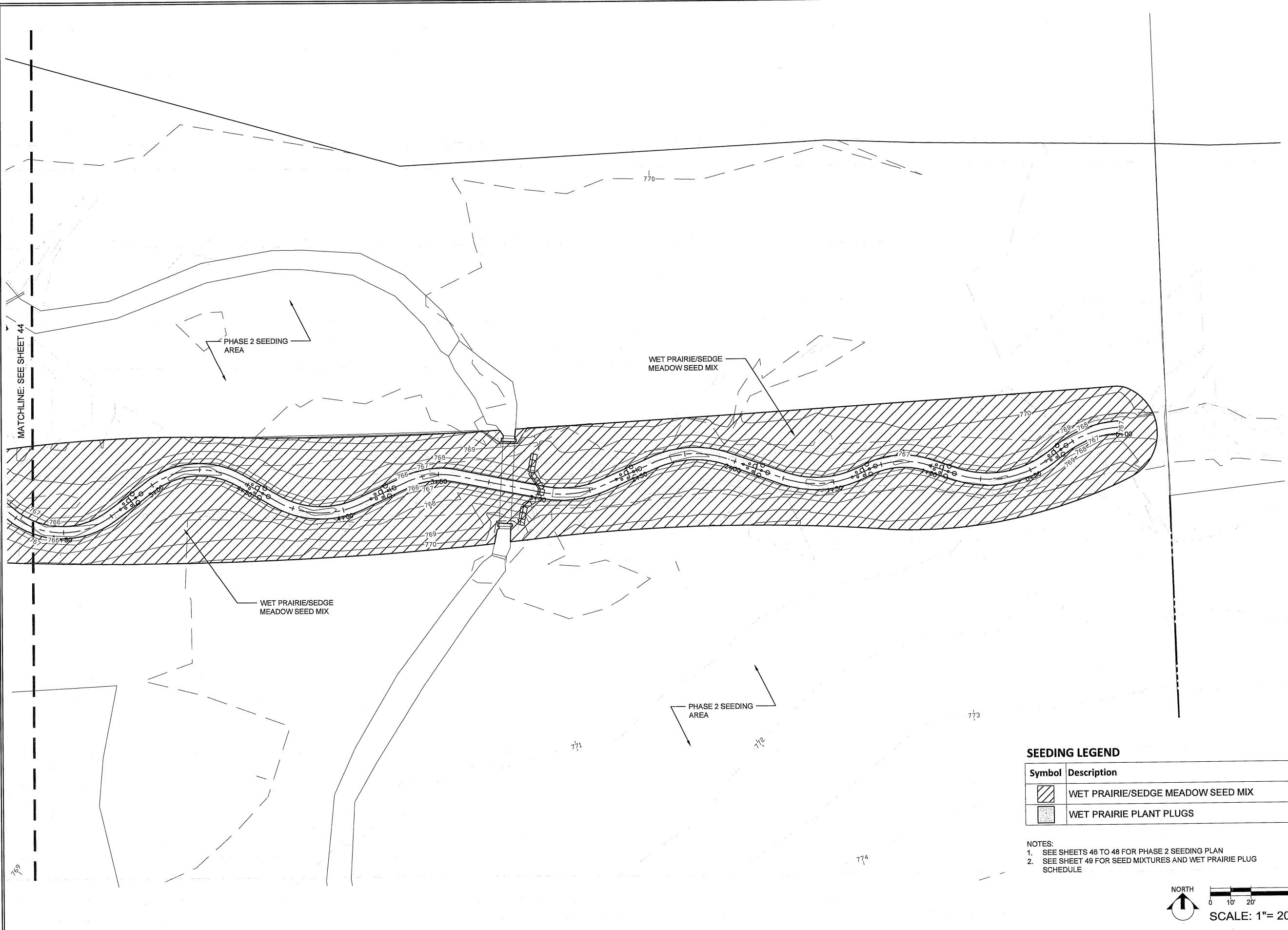
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SEEDING LEGEND

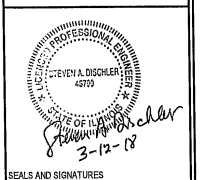
Symbol	Description
	WET PRAIRIE/SEDGE MEADOW SEED MIX
	WET PRAIRIE PLANT PLUGS

- NOTES:
 1. SEE SHEETS 46 TO 48 FOR PHASE 2 SEEDING PLAN
 2. SEE SHEET 49 FOR SEED MIXTURES AND WET PRAIRIE PLUG SCHEDULE





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SEALS AND SIGNATURES

FINAL DESIGN PLANS

PHASE 1 SEEDING PLAN

No.	Date	Revised Description	By

AES Proj. #: 17-0067
 Designed By: BJK
 Drawn By: SLL
 Checked By: CAS
 File: 39 PHASE 1 SEEDING
 Date: MARCH 12, 2018
 Coordinate System: NAD 83, ILL, US FL



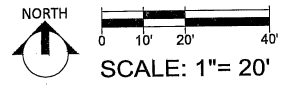
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 Email: info@appliedeco.com

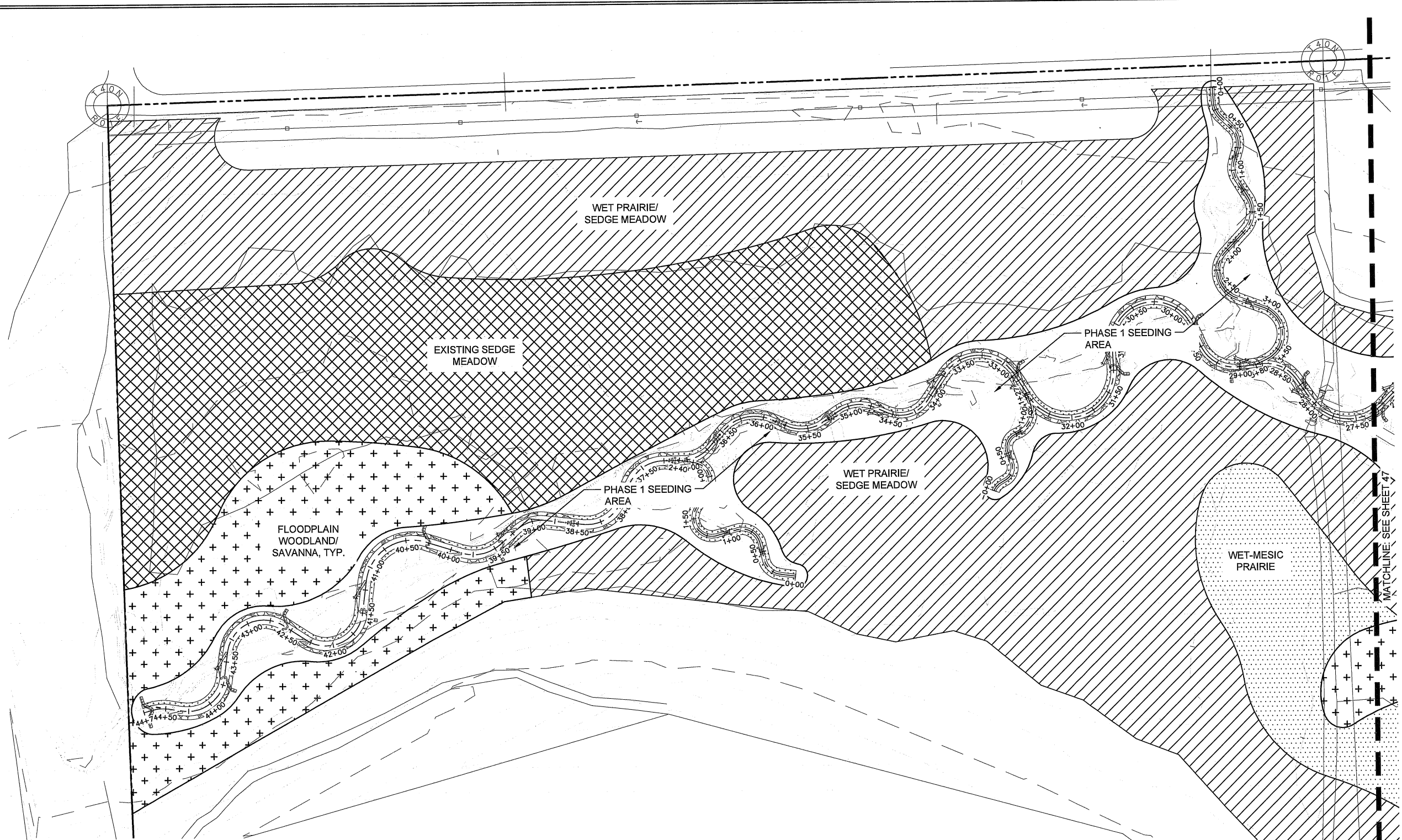
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 Sheet Number
45
 SHEET 45 OF 51

SEEDING LEGEND

Symbol	Description
	WET PRAIRIE/SEDGE MEADOW SEED MIX
	WET PRAIRIE PLANT PLUGS

- NOTES:
- SEE SHEETS 46 TO 48 FOR PHASE 2 SEEDING PLAN
 - SEE SHEET 49 FOR SEED MIXTURES AND WET PRAIRIE PLUG SCHEDULE

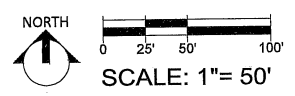




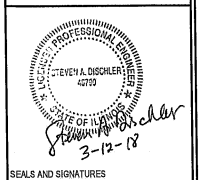
SEEDING LEGEND

Symbol	Description
	FLOODPLAIN WOODLAND/SAVANNA SEED MIX
	WET PRAIRIE/SEDGE MEADOW SEED MIX
	WET-MESIC WOODLAND/SAVANNA SEED MIX
	WET-MESIC PRAIRIE SEED MIX
	EXISTING SEDGE MEADOW

- NOTES:
 1. SEE SHEETS 40 TO 45 FOR PHASE 1 SEEDING PLAN
 2. SEE SHEET 49 FOR SEED MIXTURES



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FINAL DESIGN PLANS
PHASE 2 SEEDING PLAN

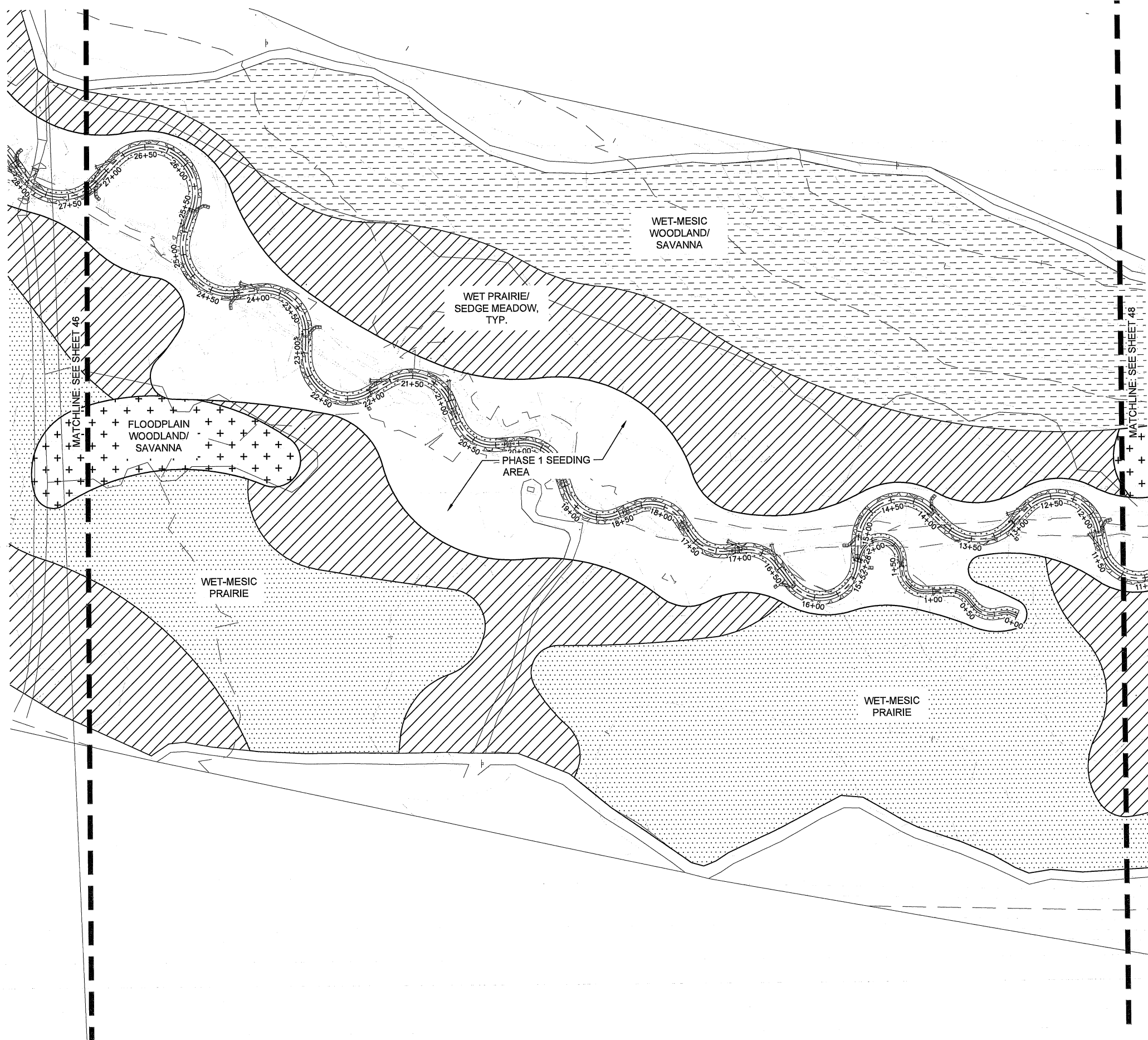
No.	Date	Revised Description	By

AES Proj. #: 17-0067
 Designed By: BJK
 Drawn By: SLL
 Checked By: CAS
 File: 45 PHASE 2 SEEDING
 Date: MARCH 12, 2018
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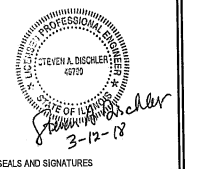


SEEDING LEGEND

Symbol	Description
	FLOODPLAIN WOODLAND/SAVANNA SEED MIX
	WET PRAIRIE/SEDGE MEADOW SEED MIX
	WET-MESIC WOODLAND/SAVANNA SEED MIX
	WET-MESIC PRAIRIE SEED MIX
	EXISTING SEDGE MEADOW

NOTES:
 1. SEE SHEETS 40 TO 45 FOR PHASE 1 SEEDING PLAN
 2. SEE SHEET 49 FOR SEED MIXTURES

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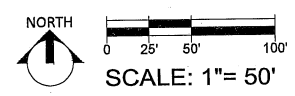
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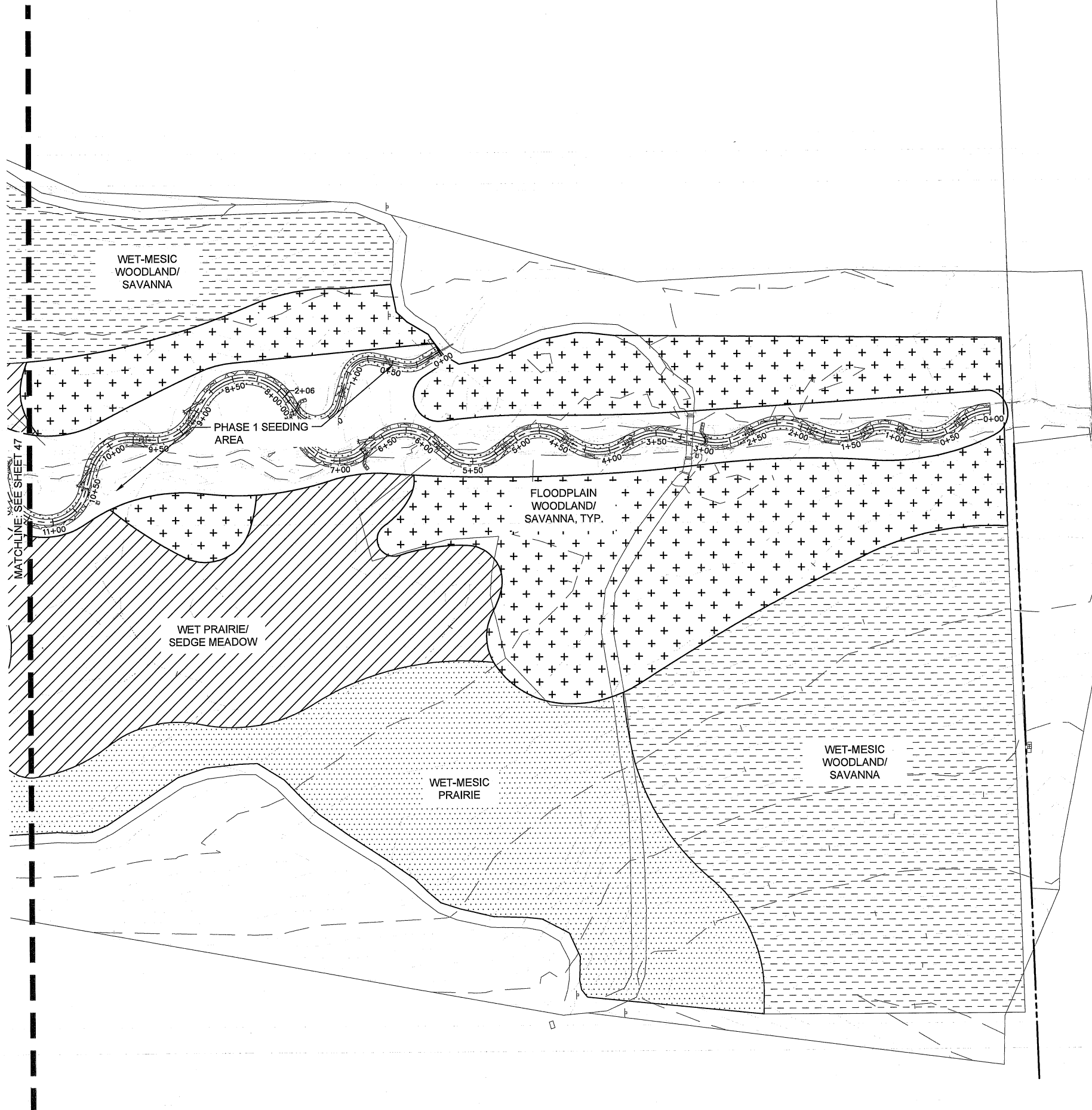
No.	Date	Revision Description	By

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 Designed By: BJK
 Drawn By: SLL
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 File: 45 PHASE 2 SEEDING
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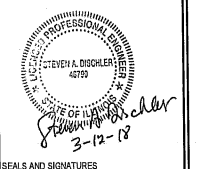


SEEDING LEGEND

Symbol	Description
	FLOODPLAIN WOODLAND/SAVANNA SEED MIX
	WET PRAIRIE/SEDGE MEADOW SEED MIX
	WET-MESIC WOODLAND/SAVANNA SEED MIX
	WET-MESIC PRAIRIE SEED MIX
	EXISTING SEDGE MEADOW

- NOTES:
 1. SEE SHEETS 40 TO 45 FOR PHASE 1 SEEDING PLAN
 2. SEE SHEET 49 FOR SEED MIXTURES

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Land and Water Resources, Inc.
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FINAL DESIGN PLANS
PHASE 2 SEEDING PLAN

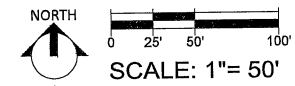
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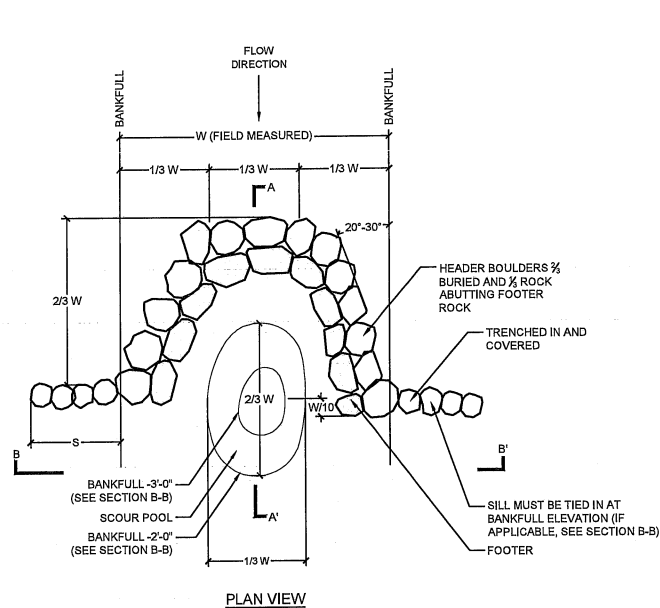
AES Proj. #: 17-0057
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 File: 45 PHASE 2 SEEDING
 Date: MARCH 12, 2018
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48
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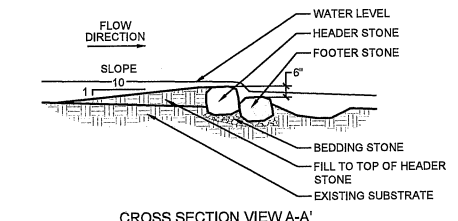




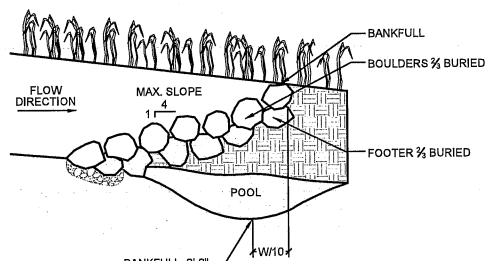
PLAN VIEW

NOTES:

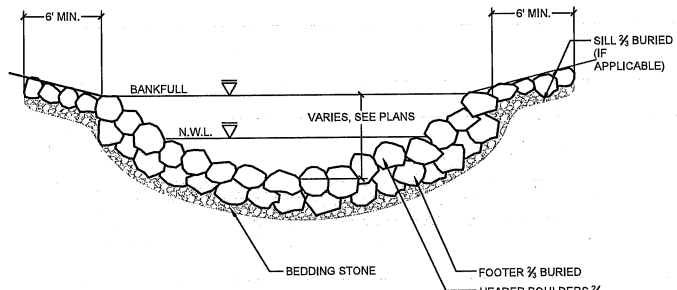
1. STONE SHALL BE ANGULAR IN SHAPE AND NEITHER BREADTH NOR THICKNESS OF A SINGLE STONE SHOULD BE LESS THAN ONE-THIRD ITS LENGTH. STONE SHALL BE BLOCKY RATHER THAN ELONGATED. STONE SHALL HAVE SHARP, ANGULAR, CLEAN EDGES AT THE INTERSECTIONS OF RELATIVELY FLAT SURFACES AND SHOULD BE NESTED TOGETHER. ROUNDED STONES OR BOULDERS WILL NOT BE ACCEPTED.
2. HEADER, FOOTER AND SILL STONE SIZES SHALL BE 18-24".
3. STONE HAS BEEN SIZED AS HAVING A UNIT WEIGHT OF 165 PCF. NO STONE SHALL BE LESS THAN 150 PCF AND ITS SIZING SHOULD BE INCREASED RELATIVE TO ITS UNIT WEIGHT.
4. FOOTERS, HEADERS AND SILLS SHALL BE 1/2 BURIED AND HEADERS SHALL BE UPSTREAM AND ABUTTING THE FOOTERS BY MIN. 1/2 ROCK DEPTH. FOOTERS, HEADERS AND SILLS SHALL BE TIED INTO THE BANK SIDE SLOPES WITH MINIMAL DISRUPTION OF SIDE SLOPES.



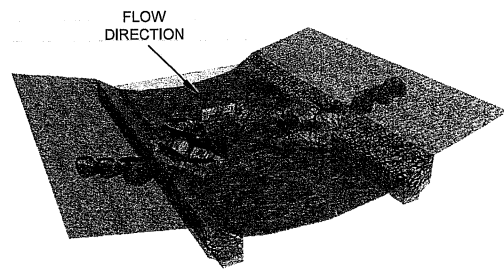
CROSS SECTION VIEW A-A'



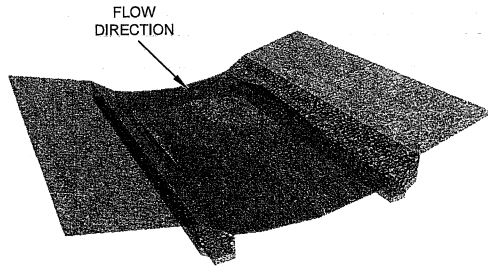
PROFILE VIEW



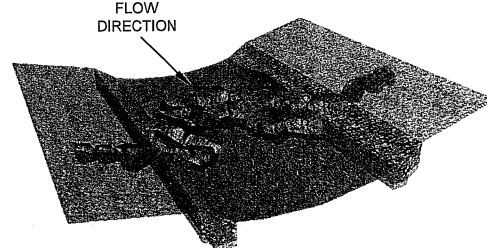
CROSS SECTION VIEW B-B'



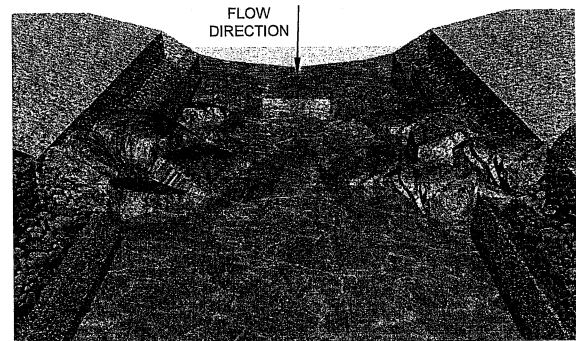
VIEW OF CROSS VANE AT NORMAL WATER LEVEL



VIEW OF CROSS VANE WITHOUT WATER OR BOULDERS

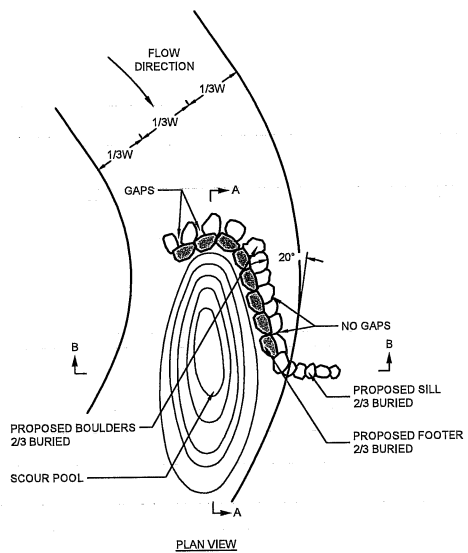


VIEW OF CROSS VANE WITHOUT WATER



VIEW OF CROSS VANE AT NORMAL WATER LEVEL

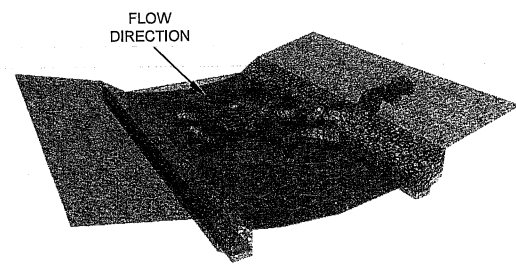
1 **ROCK CROSS VANE**
N.T.S.



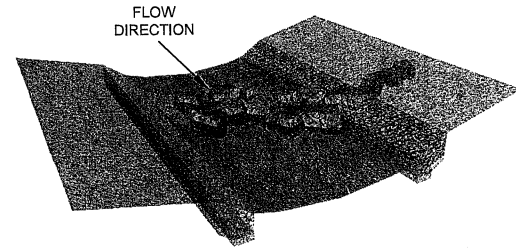
PLAN VIEW

NOTES:

1. STONE SHALL BE ANGULAR IN SHAPE AND NEITHER BREADTH NOR THICKNESS OF A SINGLE STONE SHOULD BE LESS THAN ONE-THIRD ITS LENGTH. STONE SHALL BE BLOCKY RATHER THAN ELONGATED. STONE SHALL HAVE SHARP, ANGULAR, CLEAN EDGES AT THE INTERSECTIONS OF RELATIVELY FLAT SURFACES AND SHOULD BE NESTED TOGETHER. ROUNDED STONES OR BOULDERS WILL NOT BE ACCEPTED.
2. STONE SIZING HAS BEEN SIZED AS HAVING A UNIT WEIGHT OF 165 PCF. NO STONE SHALL BE LESS THAN 150 PCF AND ITS SIZING SHOULD BE INCREASED RELATIVE TO ITS UNIT WEIGHT.
3. FOOTERS, HEADERS, AND SILLS SHALL BE 18-24" STONE SLABS. BEDDING STONE SHALL BE 4-12" IDOT RIPRAP.
4. FOOTERS, HEADERS, AND SILLS SHALL BE 2/3 BURIED AND HEADERS SHALL BE UPSTREAM OF THE FOOTERS. SILLS SHALL BE TIED INTO THE BANK SIDE SLOPES WITH MINIMAL DISRUPTION OF SIDE SLOPES.

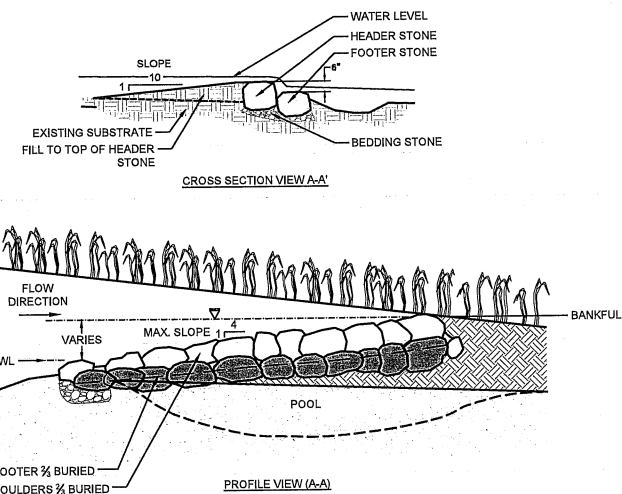


VIEW OF J-HOOK AT NORMAL WATER LEVEL

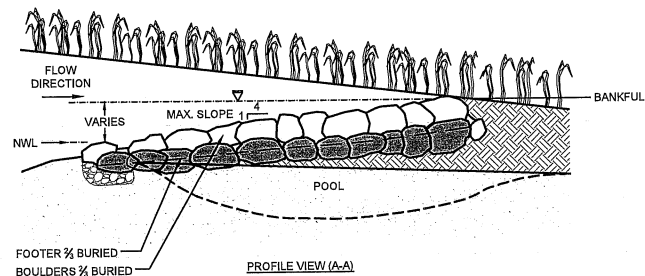


VIEW OF J-HOOK WITHOUT WATER

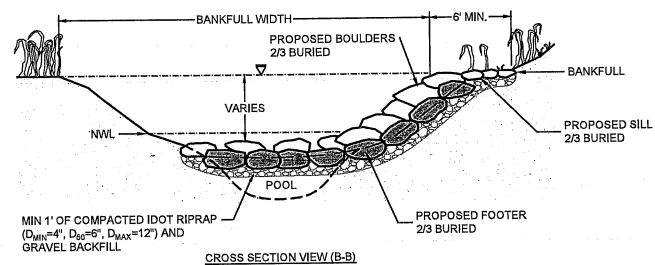
2 **J-HOOK ARM**
N.T.S.



CROSS SECTION VIEW A-A'

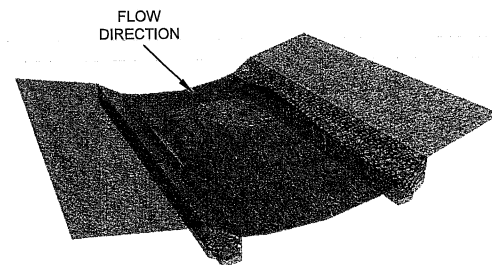


PROFILE VIEW (A-A')

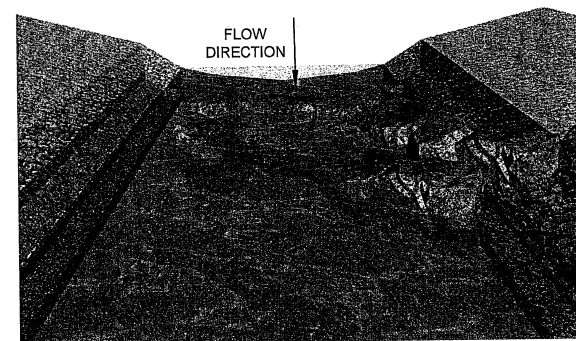


CROSS SECTION VIEW (B-B')

MIN 1' OF COMPACTED IDOT RIPRAP (D_{min}=4", D₉₀=6", D_{max}=12") AND GRAVEL BACKFILL

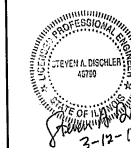


VIEW OF J-HOOK WITHOUT WATER OR BOULDERS



VIEW OF J-HOOK AT NORMAL WATER LEVEL

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SEALS AND SIGNATURES

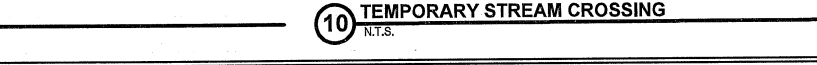
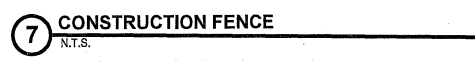
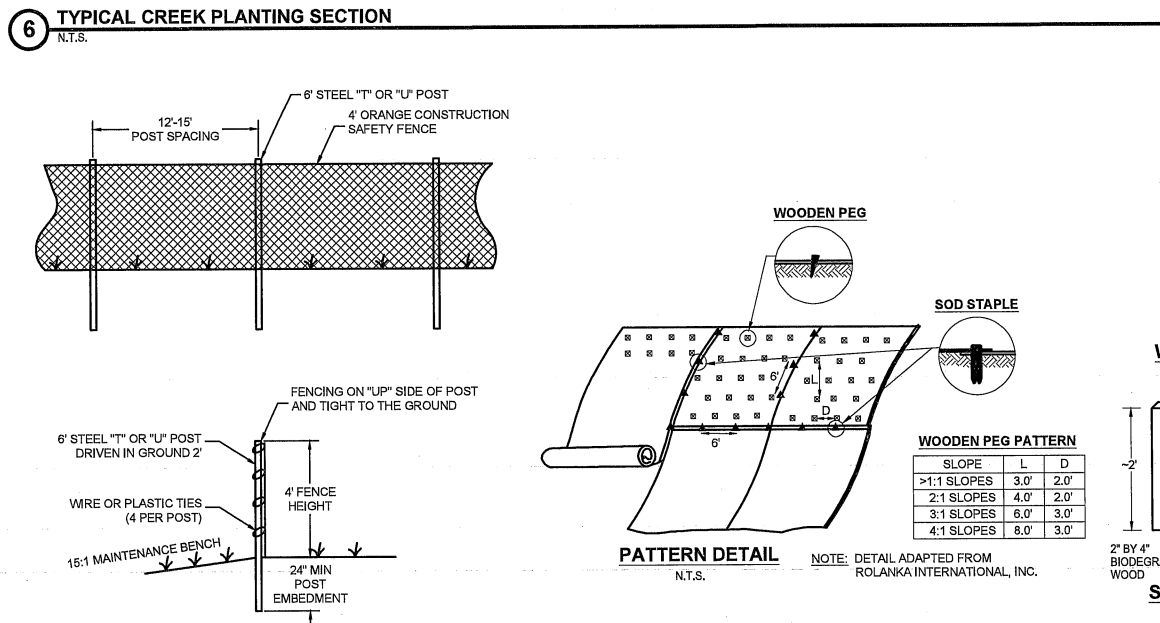
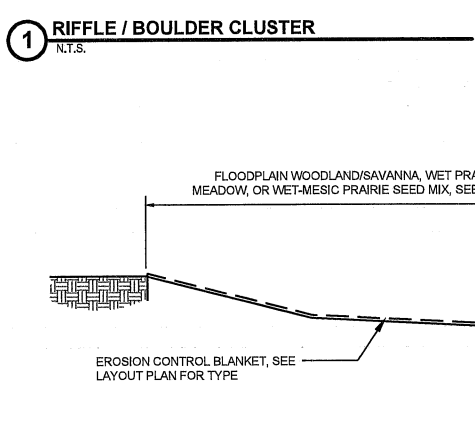
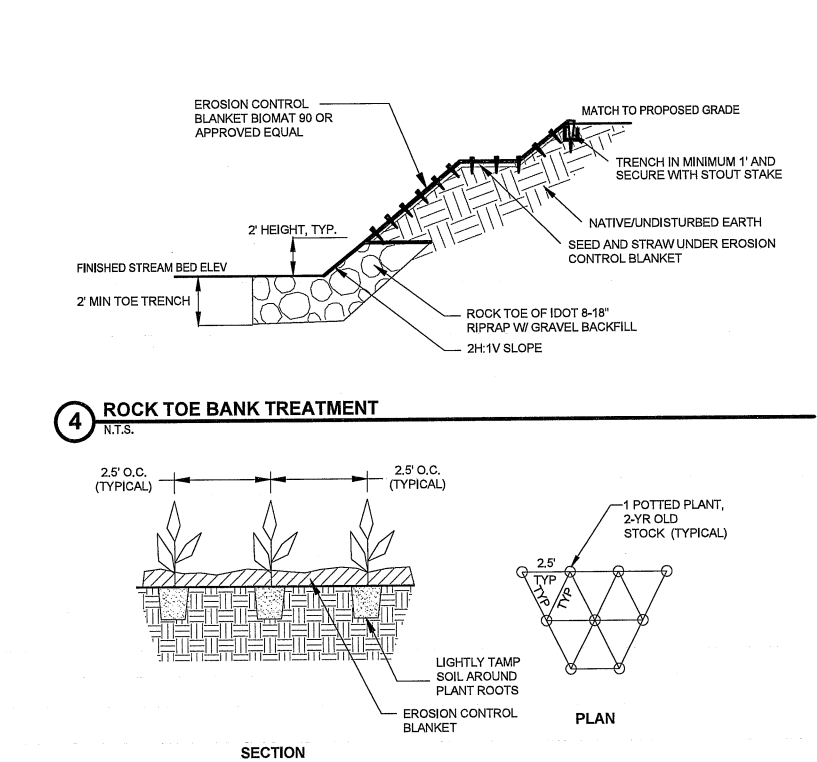
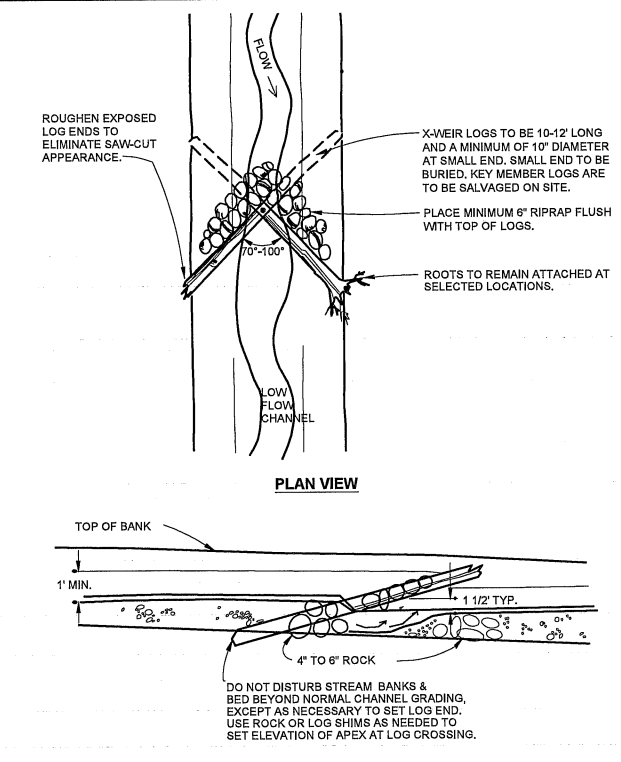
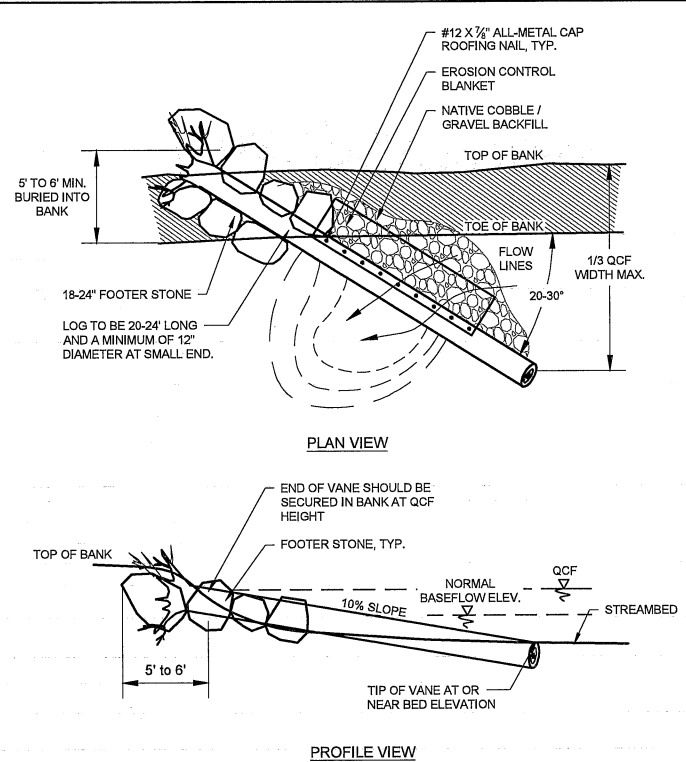
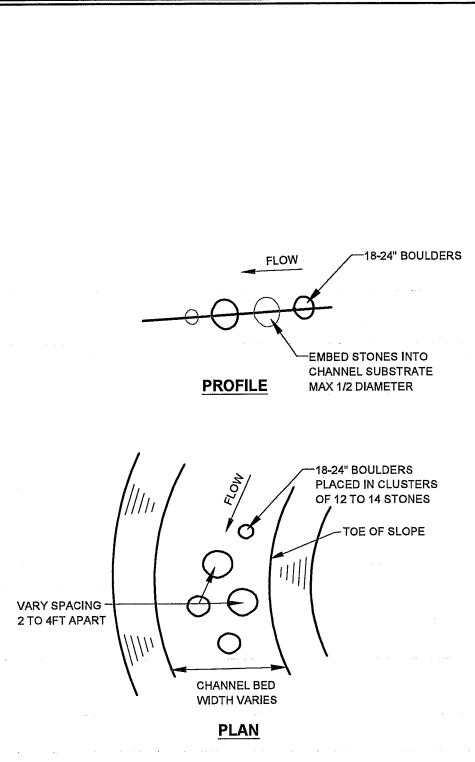
FINAL DESIGN PLANS
DETAILS

By	
Checked By	
Date	
No.	

AES Proj. #: 17-0057
Designed By: BJK
Drawn By: SLL
Checked By: CAS
File: 49 DETAILS.dwg
Date: MARCH 12, 2018
Coordinate System: NAD 83, I, S.P., US FL

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STATE OF ILLINOIS
REGISTERED PROFESSIONAL ENGINEER
NO. 0379
APPLIED ECOLOGICAL SERVICES, INC.
3-12-18
SEALS AND SIGNATURES

FINAL DESIGN PLANS
DETAILS

Project	AE5 Proj. # 17-0057
Designed By	BAK
Drawn By	SLL
Checked By	CAS
File	49 DETAILS.dwg
Date	MARCH 12, 2018
Coordinate System	NAD 83, ILSF, US FL
Project	DATE
Designed	DATE
Checked	DATE
Approved	DATE
PROJECT NO.	IUM-675CP
SHEET	1 OF 1
DATE	07-28-18
Sheet Number	51
	SHEET 51 OF 51

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