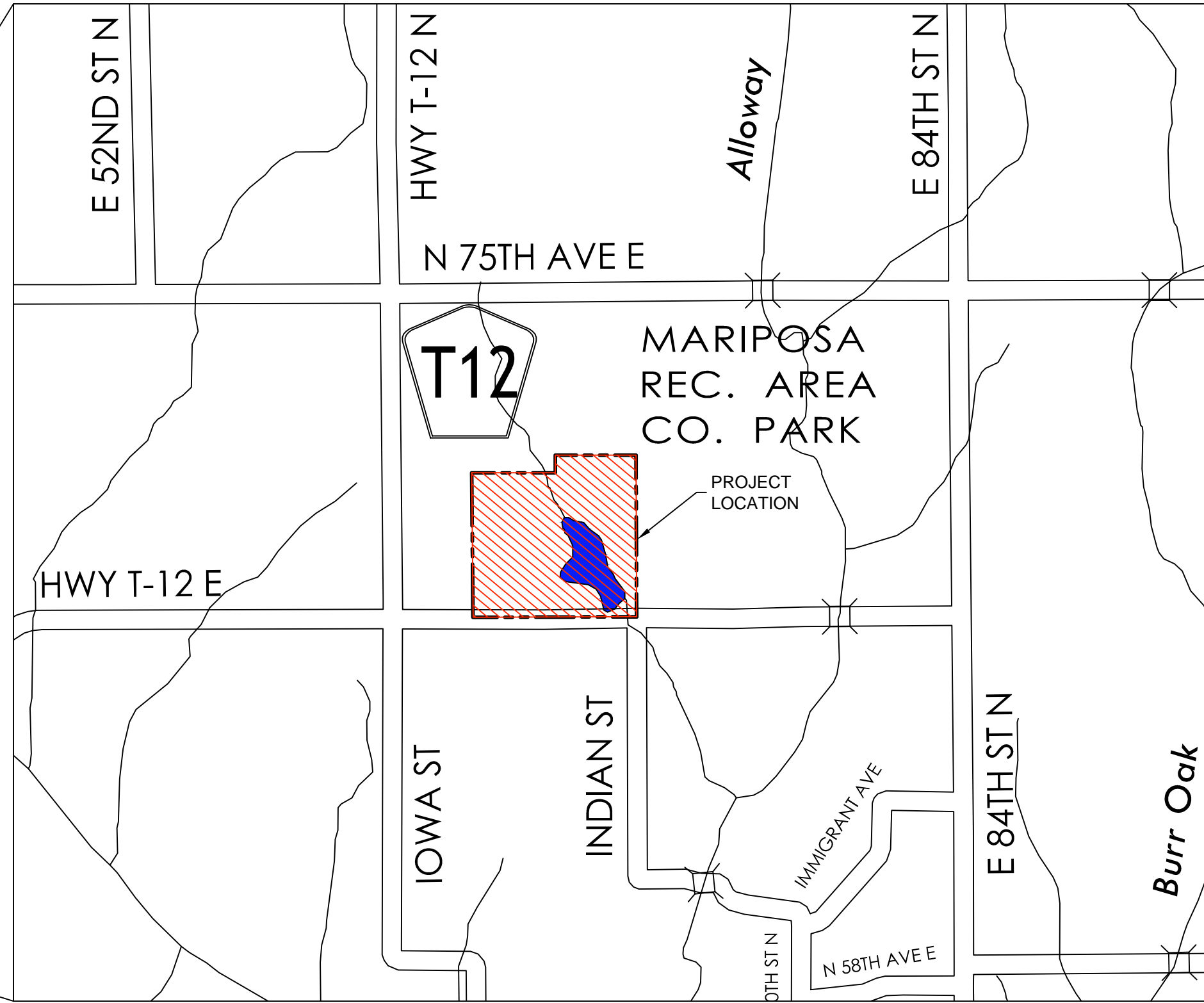
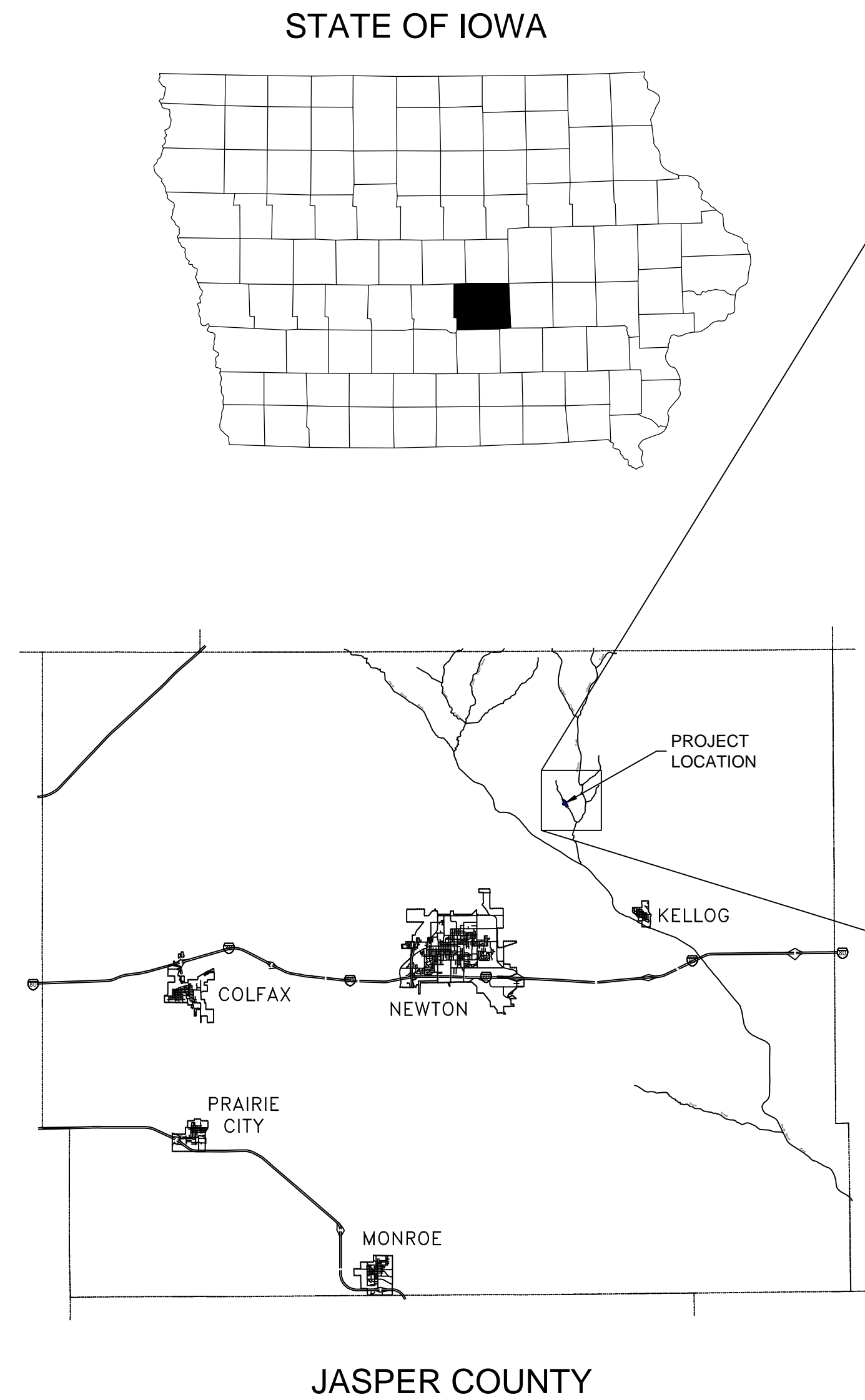


MARIPOSA LAKE RESTORATION

JASPER COUNTY, IA



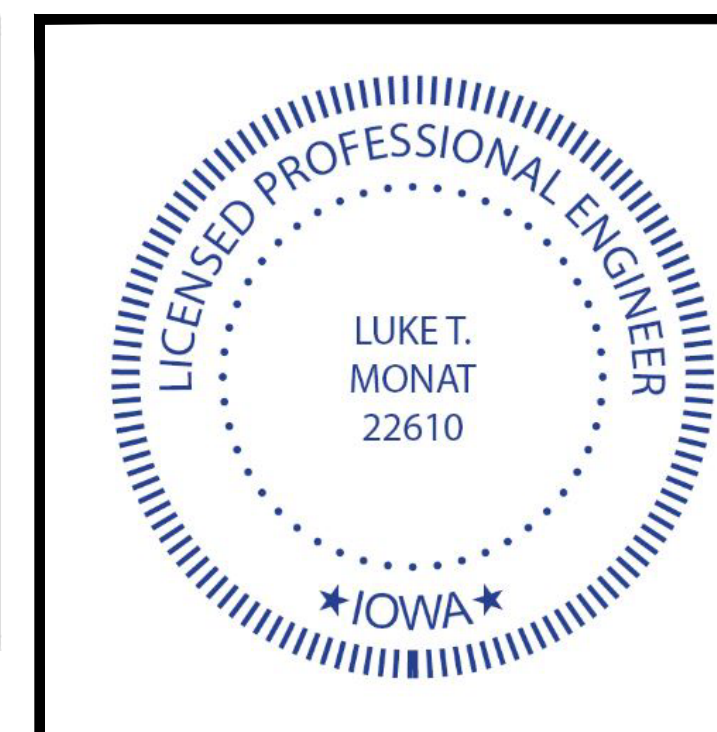
Sheet List Table	
Sheet Number	Sheet Title
C000	COVER SHEET
C001	PROJECT QUANTITIES & NOTES
C002	OVERALL PROJECT PLAN
C101	LAKE ACCESS AND WETLAND SITE & GRADING PLAN
C102	FISHING JETTY & TRAIL SITE PLAN
C201	DAM CENTERLINE PROFILE
C202	PRINCIPAL SPILLWAY IMPROVEMENTS
C203	EMERGENCY SPILLWAY PROFILE
C204	CHIMNEY DRAIN PLAN AND PROFILE
C205	DAM CROSS SECTIONS
C206	FOREBAY EMBANKMENT CENTERLINE PROFILE
C207	FOREBAY OUTLET PROFILE
C301	LAKE BOTTOM DREDGING AND GRADING PLAN
C302	LAKE BOTTOM CROSS SECTIONS
C303	LAKE BOTTOM CROSS SECTIONS
C304	LAKE BOTTOM CROSS SECTIONS
C305	PROJECT CUT-FILL PLAN
C306	FISH HABITAT PLAN
C401	STORAGE BASIN PLAN
C402	STORAGE BASIN GRADING PLAN
C403	STORAGE BASIN PRINCIPAL SPILLWAY PLAN & PROFILE
C501	DETAILS
C502	DETAILS
C503	DETAILS
L101	WETLAND SEEDING PLAN

CONTACT INFORMATION:

ENGINEER
 SHIVE-HATTERY, INC
 ATTN: LUKE MONAT
 4125 WESTOWN PARKWAY, SUITE 100
 WEST DES MOINES, IOWA 50266
 PH: (515) 223-8104

OWNER
 JASPER COUNTY CONSERVATION
 ATTN: KERI VANZANTE
 1030 W 2ND STREET S
 NEWTON, IA 50208
 PH: (641) 792-9780

PARTNER
 DNR LAKE RESTORATION PROGRAM
 ATTN: GEORGE ANTONIOU
 502 E. 9TH STREET
 DES MOINES, IA 50319
 PH: (515) 725-8449



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: _____
 NAME: LUKE MONAT
 DATE: 8/28/2017 LICENSE NUMBER: 22610
 MY LICENSE RENEWAL DATE IS: DECEMBER 31, 2018
 PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL: _____
 ALL SHEETS

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SHIVEHATTERY
 ARCHITECTURE + ENGINEERING
 4125 Westown Pkwy, Suite 100 | West Des Moines, Iowa 50266
 515.223.8104 | fax: 515.223.0622 | www.shive-hattery.com
 Iowa | Illinois | Indiana



MARIPOSA LAKE RESTORATION
 JASPER COUNTY CONSERVATION
 NEWTON, IA 50208

8-28-2017
 CONSTRUCTION
 PROJECT NO: 4144990
 CLIENT NO:

C000

ESTIMATED PROJECT QUANTITIES:

Table with 4 columns: #, ITEM DESCRIPTION, QUANTITY, UNITS. Lists various construction items like Mobilization, Site Prep, Waste Disposal, Earthfill, etc.

ESTIMATE REFERENCE INFORMATION:

Table with 2 columns: ITEM NO., DESCRIPTION. Provides detailed notes for each item number, explaining the scope of work and reference materials.

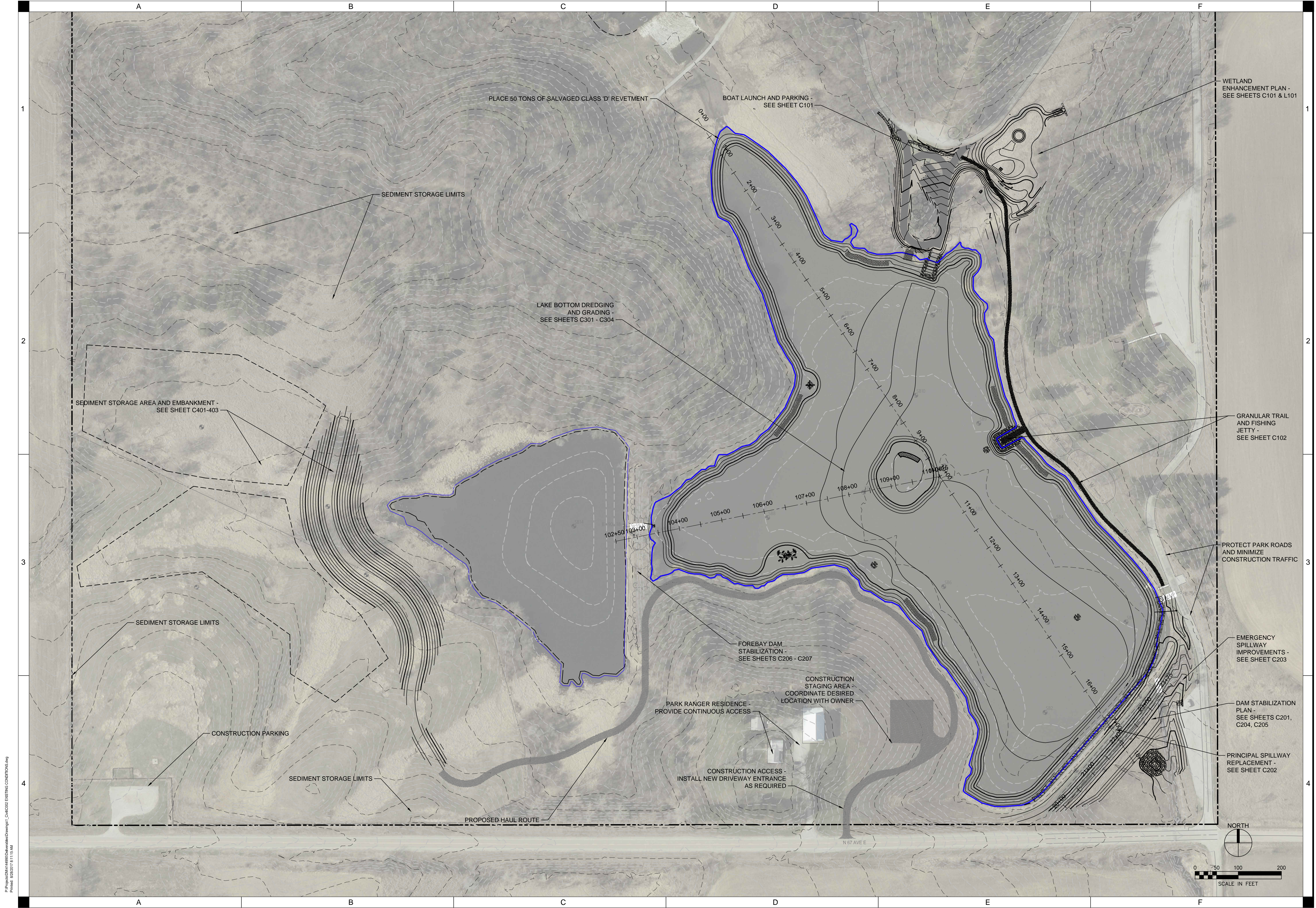
Table with 2 columns: ITEM NO., DESCRIPTION. Continuation of the Estimate Reference Information table, listing items 20 through 44 and an alternate item A1.

GENERAL NOTES

- 1. THE LOCATIONS OF UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS PLOTTED ON THIS DRAWING ARE APPROXIMATE ONLY... 2. IOWA CODE 480, UNDERGROUND FACILITIES INFORMATION... 3. THE MEANS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR...

LEGEND

Legend table showing symbols for EXISTING and PROPOSED features: SOIL BORING, CONTROL POINT, HYDRANT, STORM STRUCTURE, TREE LINE, STORM SEWER, WATER MAIN, FENCE, PROPERTY LINE (APPROX), CONTOUR - MAJOR, CONTOUR - MINOR, PROJECT LIMITS, GRANULAR ROADWAY, GRANULAR TRAIL, PCC PAVING, REVETMENT, PEA GRAVEL, WETLANDS.



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 515.223.8704 | Fax: 515.223.8822 | www.shivehattery.com
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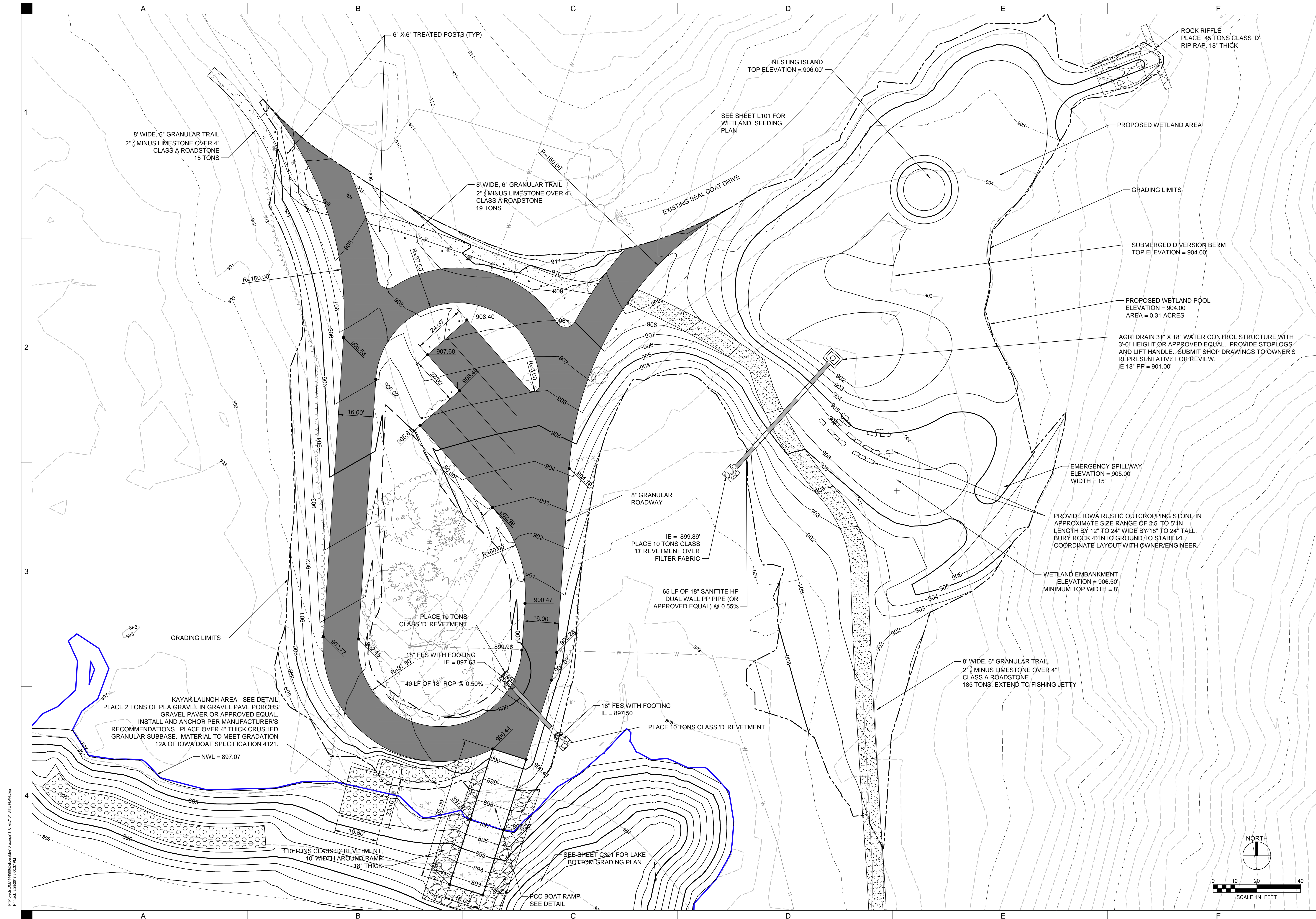


MARIPOSA LAKE RESTORATION
 JASPER COUNTY CONSERVATION
 NEWTON, IA 50208

DRAWN:	KAR
APPROVED:	LTM
ISSUED FOR:	CONSTRUCTION
DATE:	8-28-2017
PROJECT NO.:	414880
FIELD BOOK:	---
CLIENT NO.:	---

OVERALL PROJECT PLAN

C002

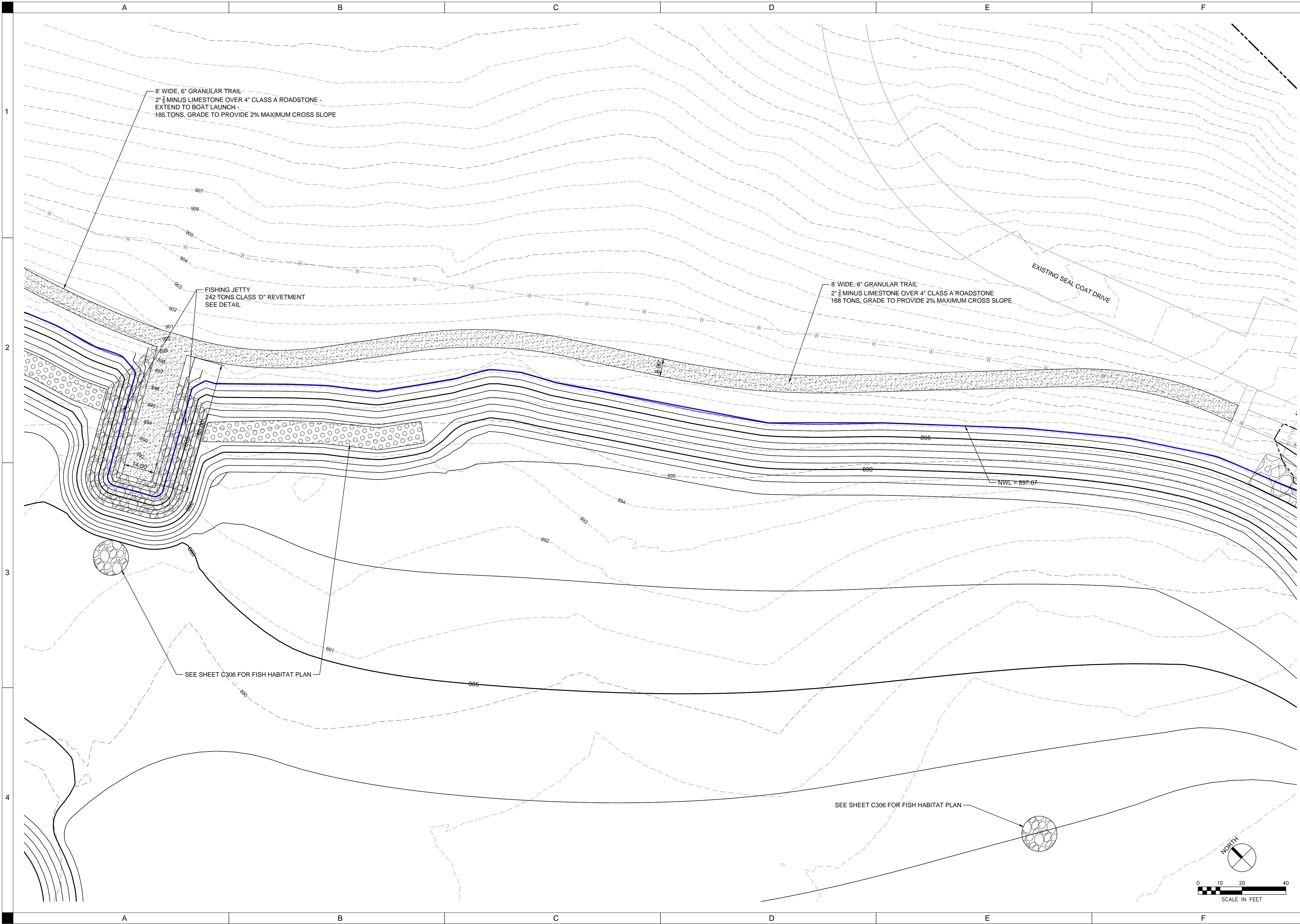


DRAWN: KAR
APPROVED: LTM
ISSUED FOR: CONSTRUCTION
DATE: 8-28-2017
PROJECT NO: 414690
FIELD BOOK: ---
CLIENT NO: ---

LAKE ACCESS AND WETLAND SITE & WETLAND GRADING PLAN

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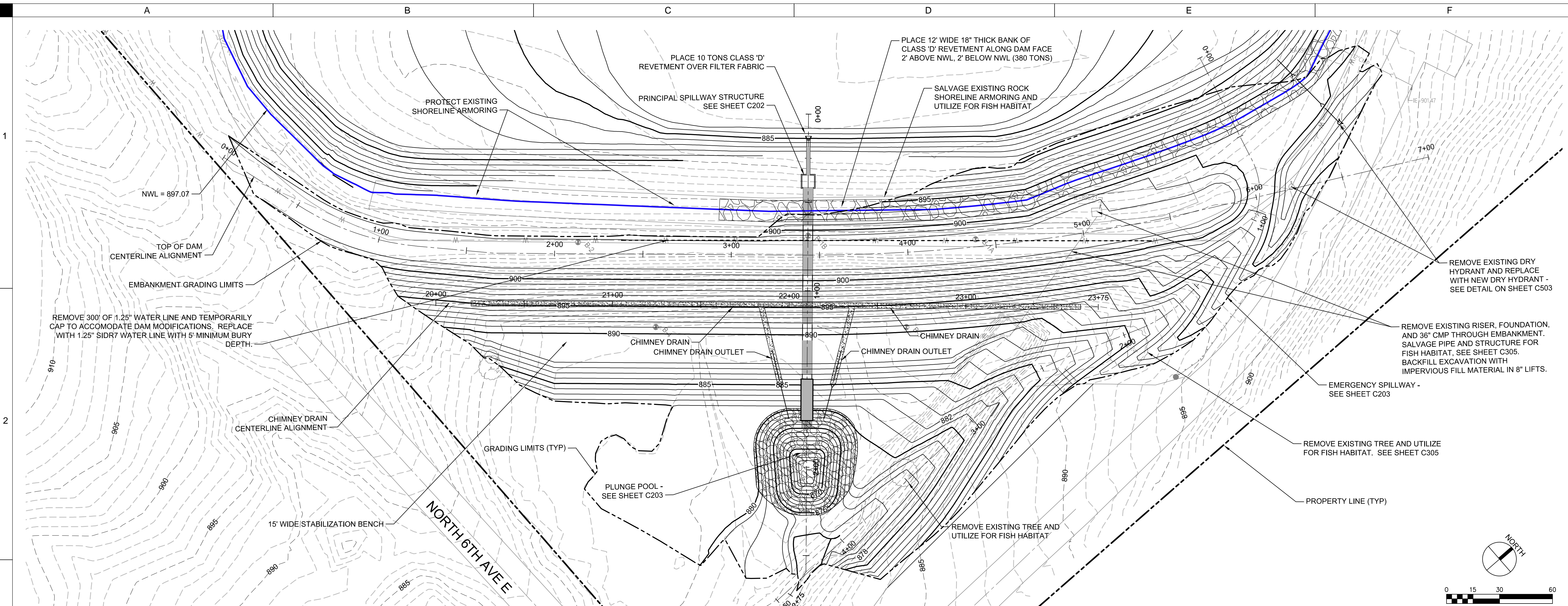
MARIPOSA LAKE RESTORATION

JASPER COUNTY CONSERVATION
NEWTON, IA 50208

DRAWN: JRM
APPROVED: LTM
ISSUED FOR: CONSTRUCTION
DATE: 8-28-2017
PROJECT NO: 1448205
FIELD BOOK: --
CLIENT NO: --

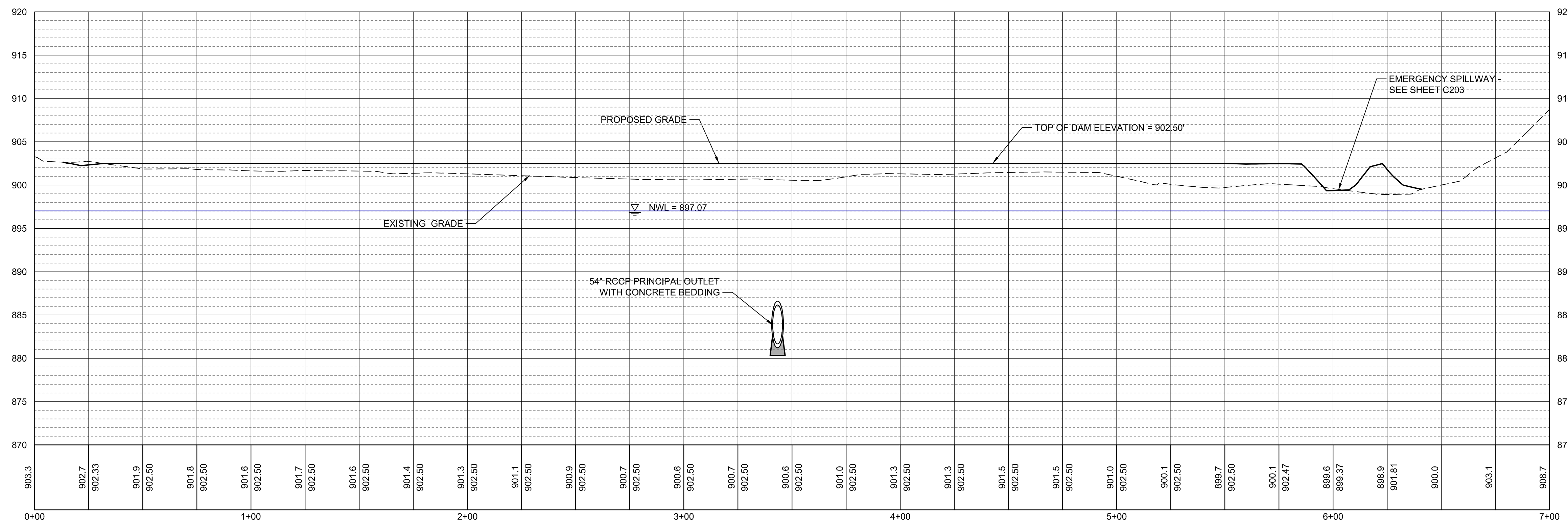
FISHING JETTY & TRAIL SITE PLAN

C102



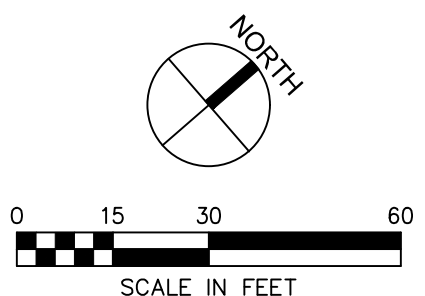
DAM EMBANKMENT PLAN VIEW

1"=30'



DAM EMBANKMENT CENTERLINE PROFILE

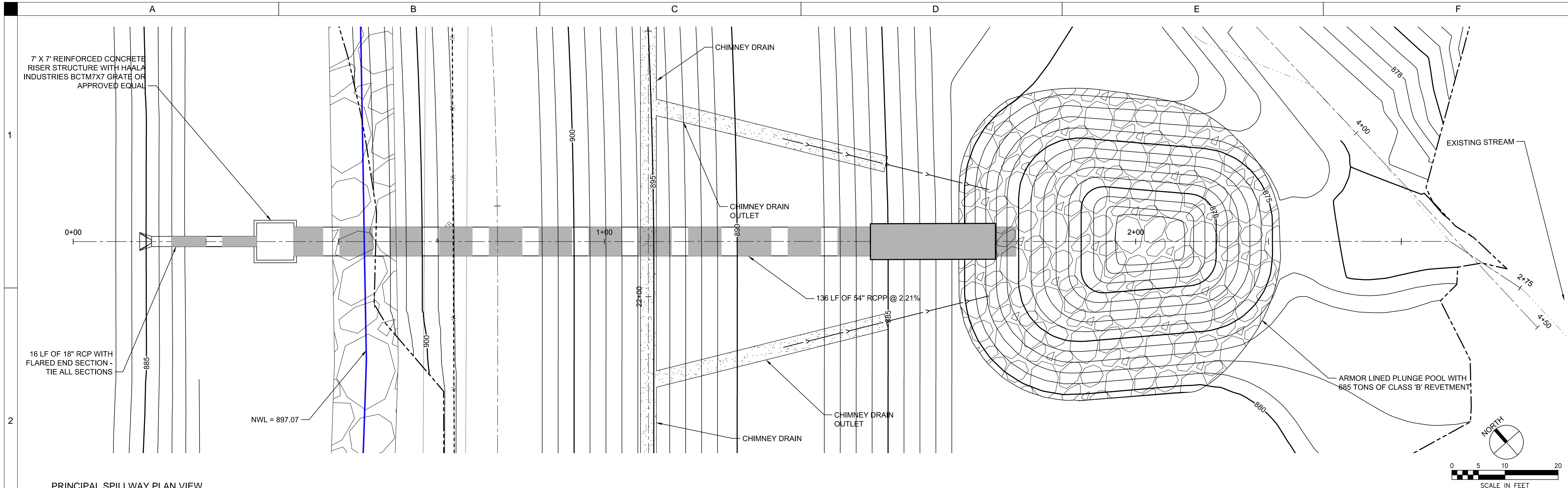
HORIZONTAL SCALE: 1"=30', VERTICAL SCALE: 1"=7.5'



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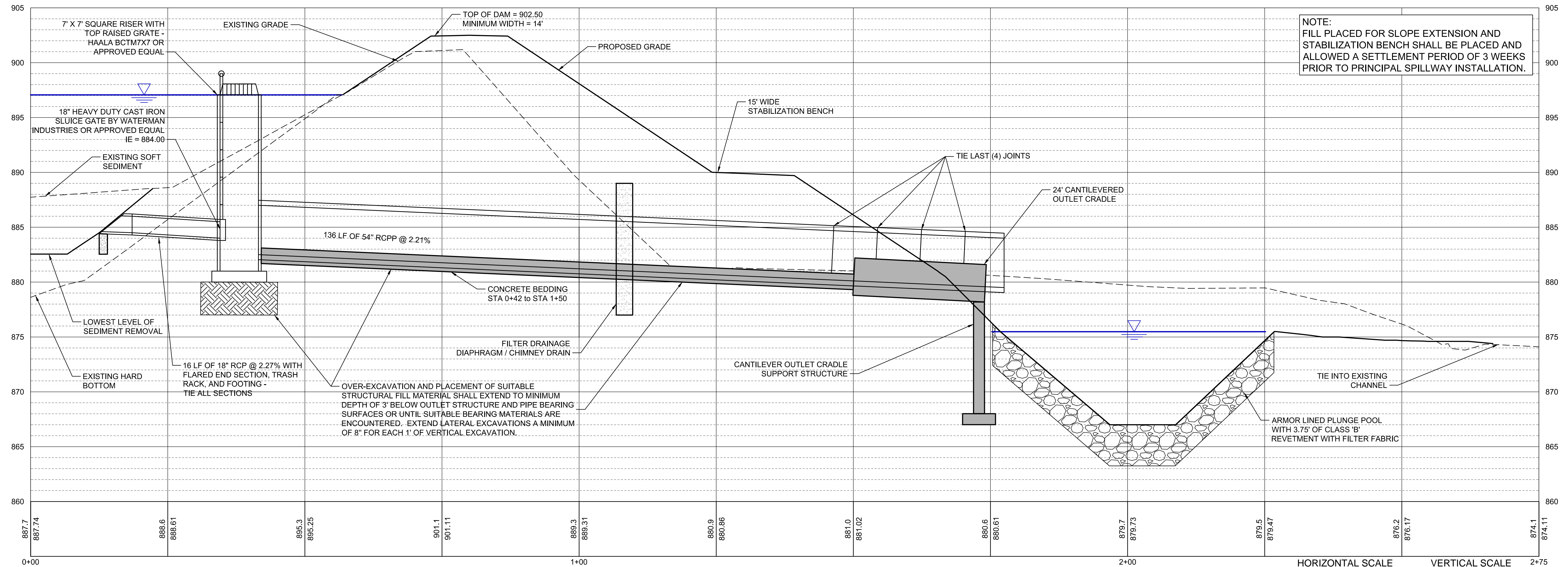
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APPROVED: LTM	
ISSUED FOR: CONSTRUCTION	
DATE: 8-28-2017	
PROJECT NO: 144890	
FIELD BOOK: --	

DAM CENTERLINE PROFILE



PRINCIPAL SPILLWAY PLAN VIEW

SCALE: 1"=10'



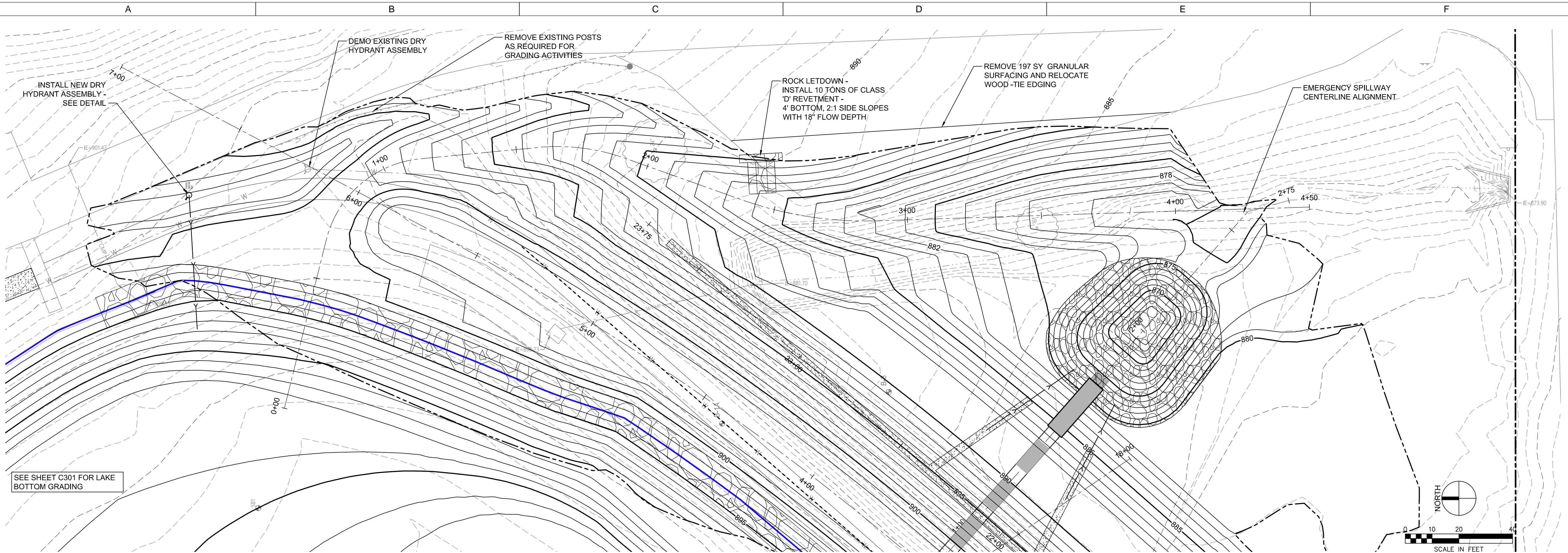
PRINCIPAL SPILLWAY CENTERLINE PROFILE

HORIZONTAL SCALE: 1"=10', VERTICAL SCALE: 1"=5'

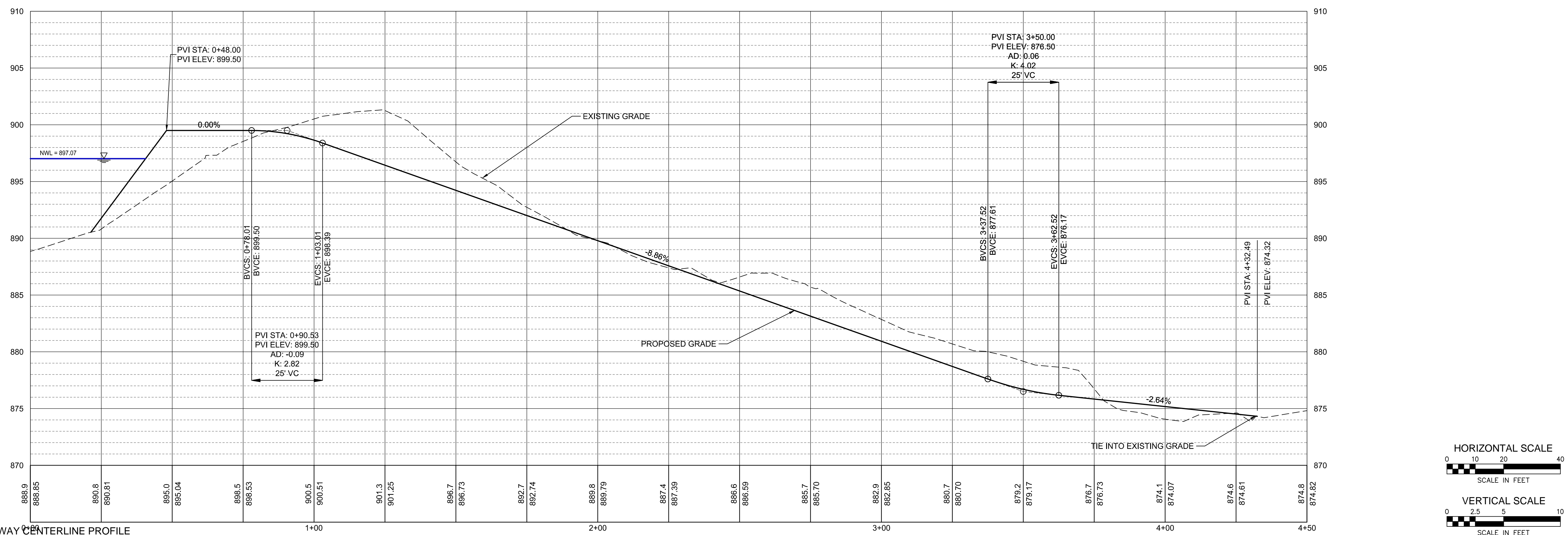
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NO.	DATE	DESCRIPTION

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APPROVED:	LTM
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DATE:	8-28-2017
PROJECT NO.:	414890
FIELD BOOK:	---
CLIENT NO.:	---



EMERGENCY SPILLWAY PLAN VIEW
SCALE: 1"=20'



PRINCIPAL SPILLWAY CENTERLINE PROFILE
HORIZONTAL SCALE: 1"=20', VERTICAL SCALE: 1"=5'

DRAWN: KAR
APPROVED: LTM
ISSUED FOR: CONSTRUCTION
DATE: 8-28-2017
PROJECT NO: 4144890
FIELD BOOK: --
CLIENT NO: --

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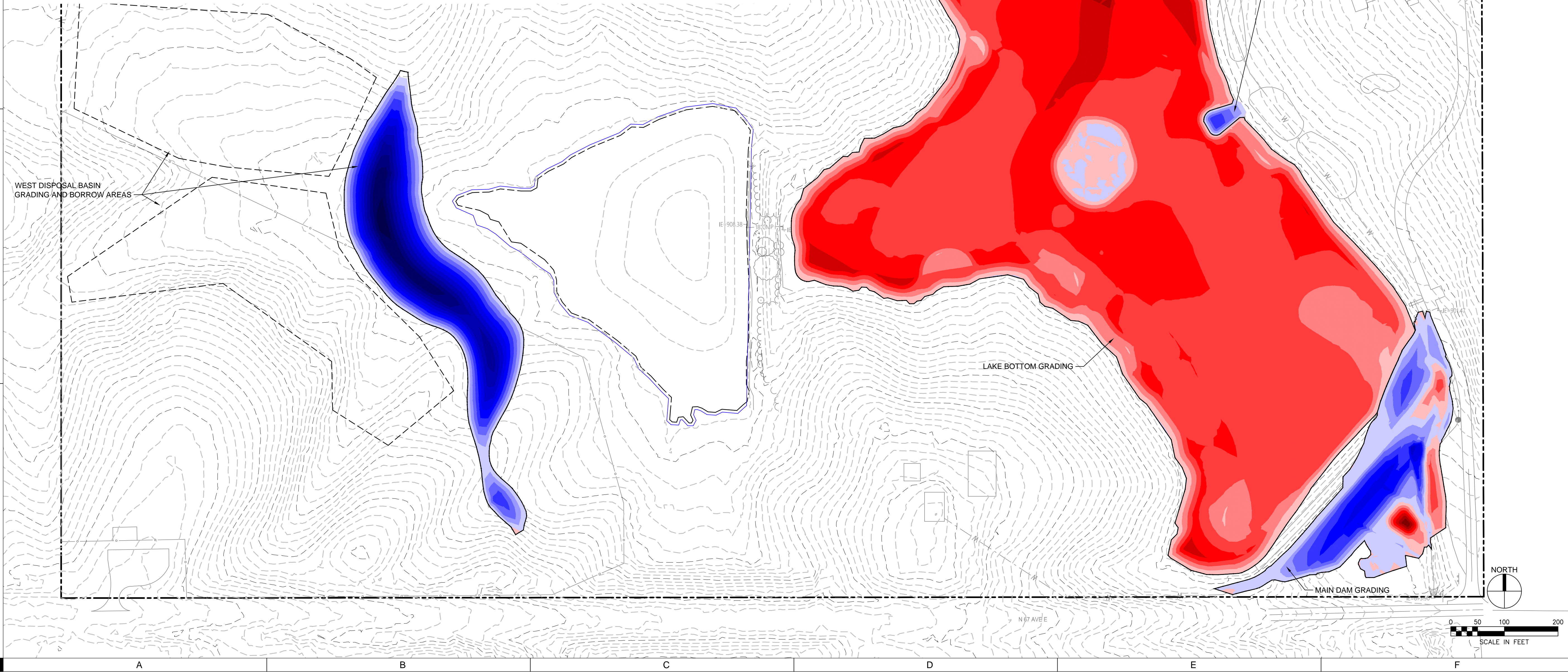
ELEVATIONS TABLE

CUT/FILL	MINIMUM ELEVATION (FT.)	MAXIMUM ELEVATION (FT.)	COLOR
CUT	-14.0000	-12.0000	[Color gradient from dark red to light pink]
CUT	-12.0000	-10.0000	
CUT	-10.0000	-8.0000	
CUT	-8.0000	-6.0000	
CUT	-6.0000	-4.0000	
CUT	-4.0000	-2.0000	
BALANCE LINE	0.0000	0.0000	[White]
FILL	0.0000	2.0000	[Color gradient from light blue to dark blue]
FILL	2.0000	4.0000	
FILL	4.0000	6.0000	
FILL	6.0000	8.0000	
FILL	8.0000	10.0000	
FILL	10.0000	12.0000	
FILL	12.0000	14.0000	
FILL	14.0000	16.0000	
FILL	16.0000	18.0000	
FILL	18.0000	20.0000	
FILL	20.0000	22.0000	
FILL	22.0000	24.0000	

- NOTES:**
1. A SHRINKAGE OF 25% IS ASSUMED FOR FILL.
 2. EXISTING CONTOURS SHOWN AT 2' INCREMENTS. PROPOSED CONTOURS NOT SHOWN.

EARTHWORK SUMMARY

LOCATION	CUT (CY)	FILL (CY)
MAIN DAM	1,370	8,250
LAKE BOTTOM	155,000	0
WEST DISPOSAL BASIN	39,650	39,650
BOAT LAUNCH, WETLAND, & FISHING JETTY	500	3,200

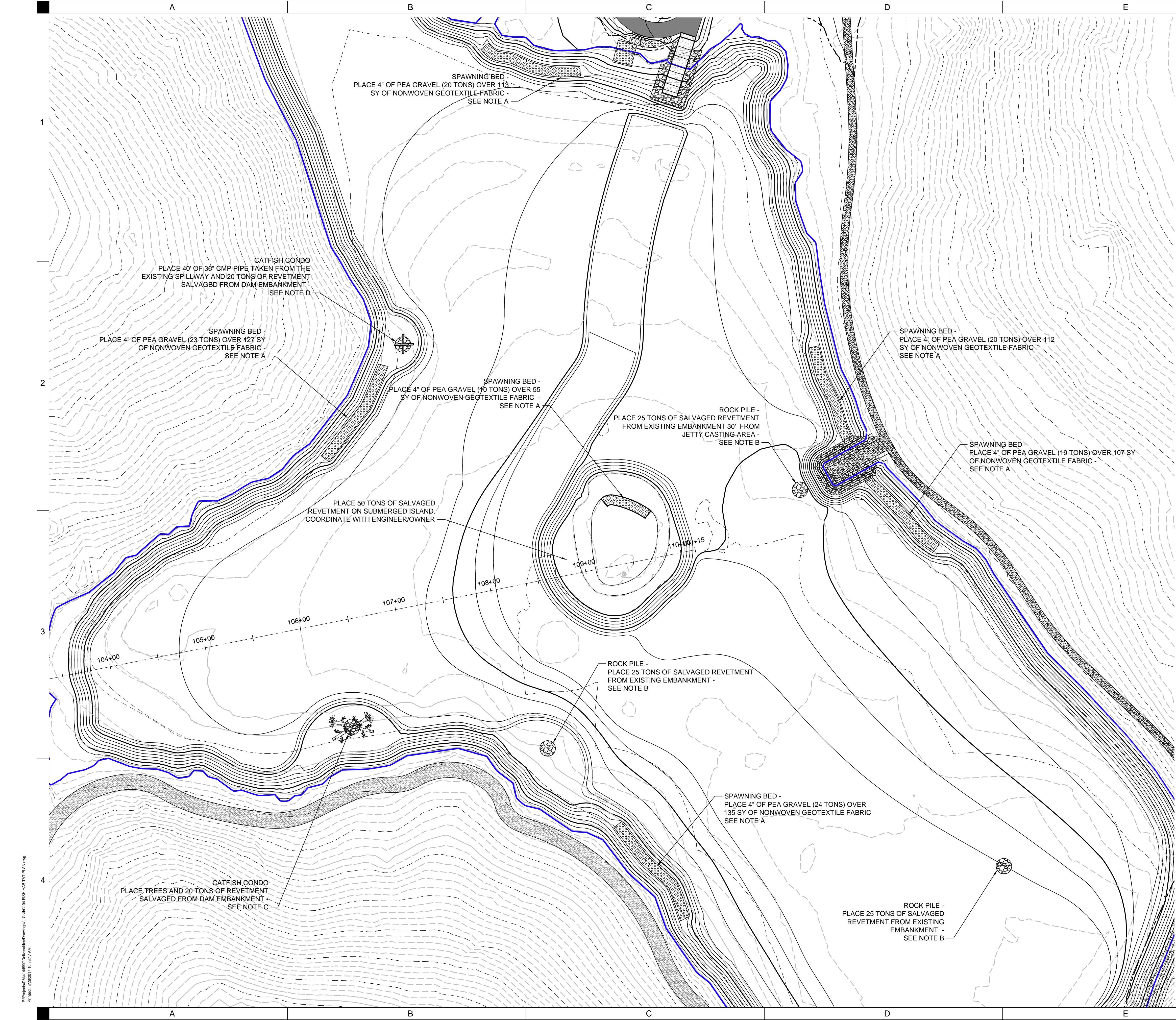


DRAWN: JRM	APPROVED: LTM
ISSUED FOR: CONSTRUCTION	DATE: 8-28-2017
PROJECT NO: 414890	FIELD BOOK: --
CLIENT NO: --	

PROJECT CUT-FILL PLAN

C305

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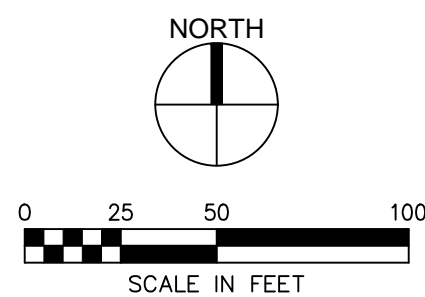
NOTES:

COORDINATE FISH HABITAT PLACEMENT AND LAYOUT WITH DNR FISHERIES REPRESENTATIVE AND OWNER.

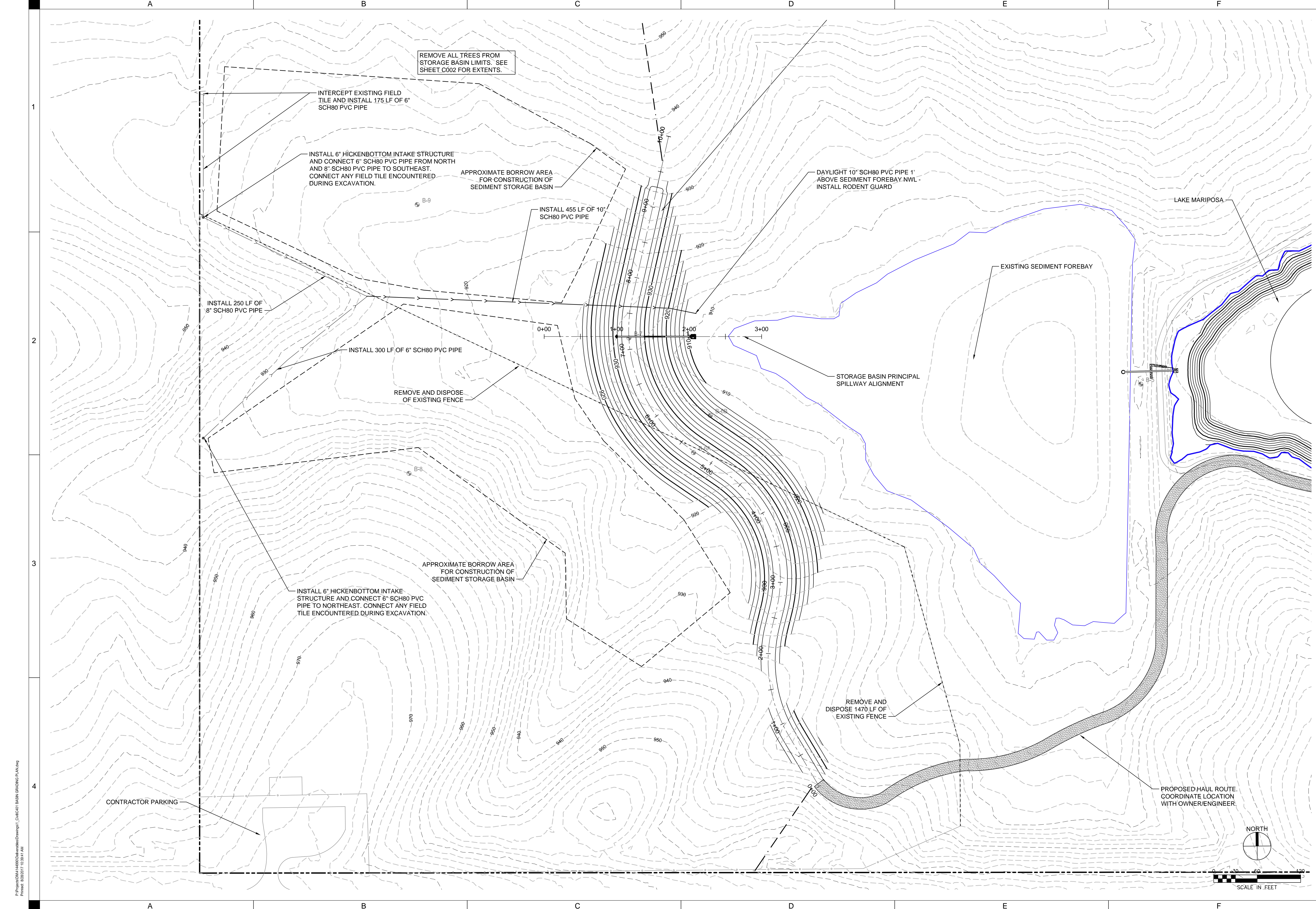
- A. SPAWNING BED HABITAT: INSTALL 4" OF PEA GRAVEL OVER GEOTEXTILE FABRIC ALONG 10' WIDE BENCH. SEE DETAIL ON SHEET C503
- B. ROCK PILE HABITAT: PLACE STONE REVETMENT SALVAGED FROM DAM EMBANKMENT IN PILES REACHING 3'-4' IN HEIGHT AND 16" DIAMETER AT BASE. SUPPLEMENT ROCK PILE NEAREST DAM WITH CONCRETE RUBBLE FROM EXISTING SPILLWAY RISER STRUCTURE. ROCK AND RUBBLE SHOULD BE FREE OF DIRT TO PROVIDE VOIDS FOR HABITAT.
- C. SOUTH CATFISH CONDO HABITAT: UTILIZE TWO TREES WITH ROOT WADS REMOVED FROM SITE AND LIMB BRANCHES BACK TO REMOVE ALL BRANCHES SMALLER THAN 4" DIAMETER. PLACE TREES ACROSS EACH OTHER AND TIE EACH TREE DOWN AT A MINIMUM OF TWO POINTS. USE 3/8" STEEL CABLE. MONROE EARTH ANCHORS - 45" LONG SHAFT WITH 6" AUGER OR APPROVED EQUIVALENT. PLACE STONE REVETMENT AROUND AND ON TREE TRUNKS TO CREATE VOIDS FOR HABITAT.
- D. NORTH CATFISH CONDO HABITAT: SALVAGE EXISTING 36" CMP SPILLWAY PIPE AND CUT INTO 5'-12' LONG SECTIONS. PARTIALLY SMASHED PIPE IS ACCEPTABLE. PLACE STONE REVETMENT AROUND AND ON PIPE TO CREATE VOIDS FOR HABITAT.



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PROJECT NO: 414890	FIELD BOOK: ---
CLIENT NO: ---	



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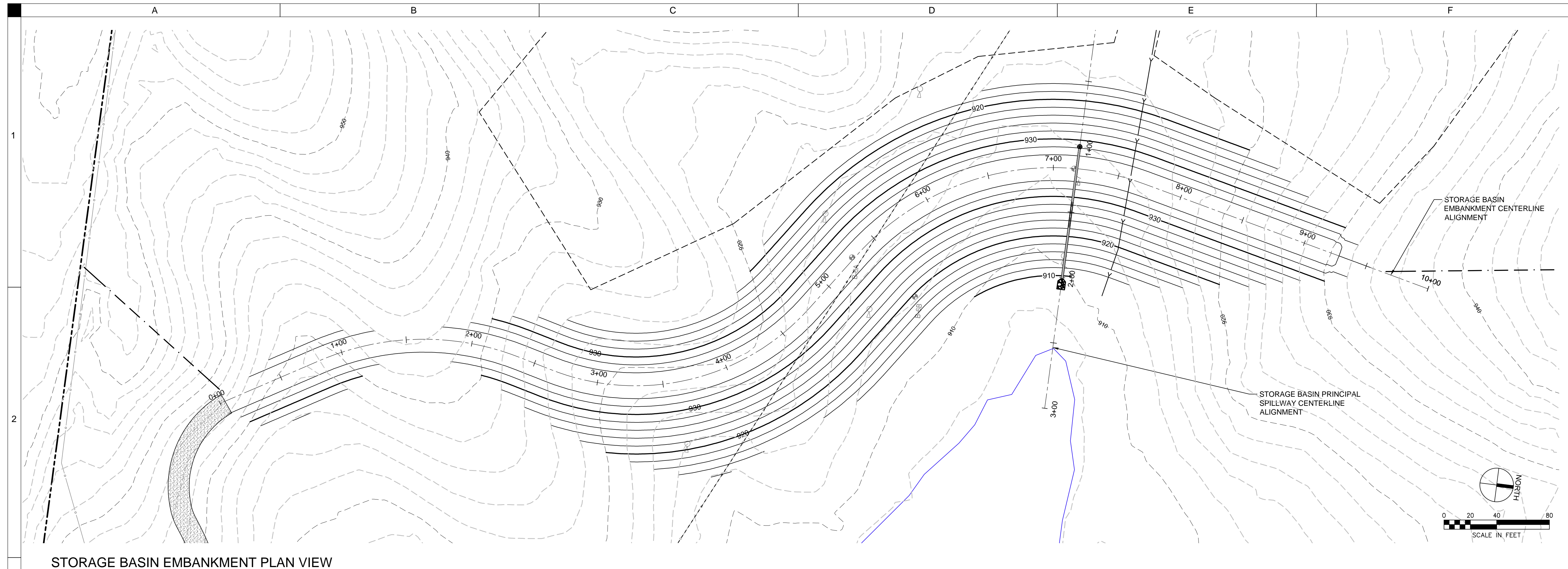


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ISSUED FOR: CONSTRUCTION
DATE: 8-28-2017
PROJECT NO: 414890
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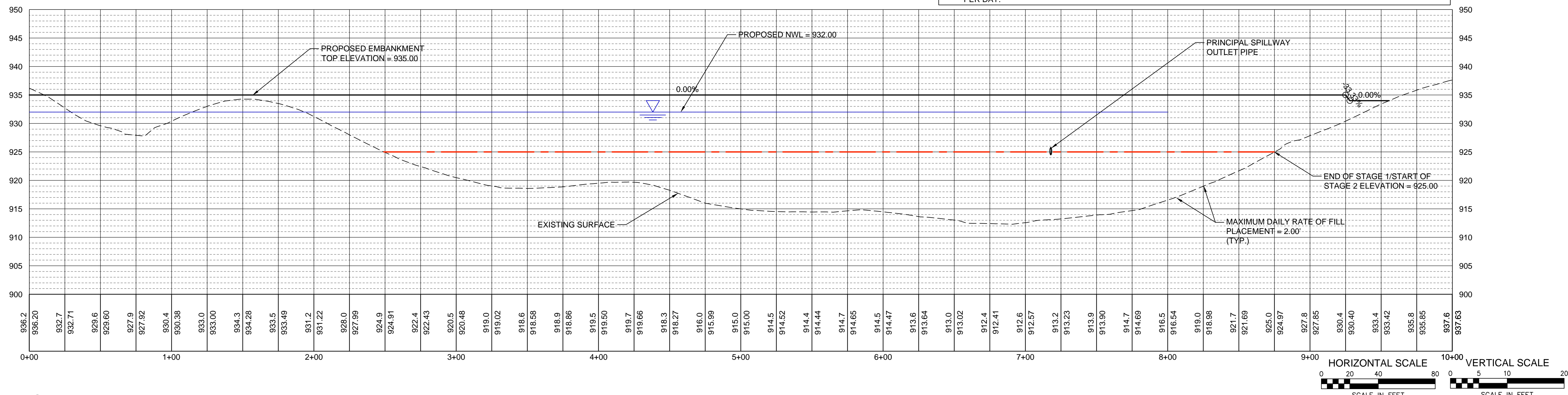
STORAGE BASIN PLAN

C401



STORAGE BASIN EMBANKMENT PLAN VIEW
1" = 40'

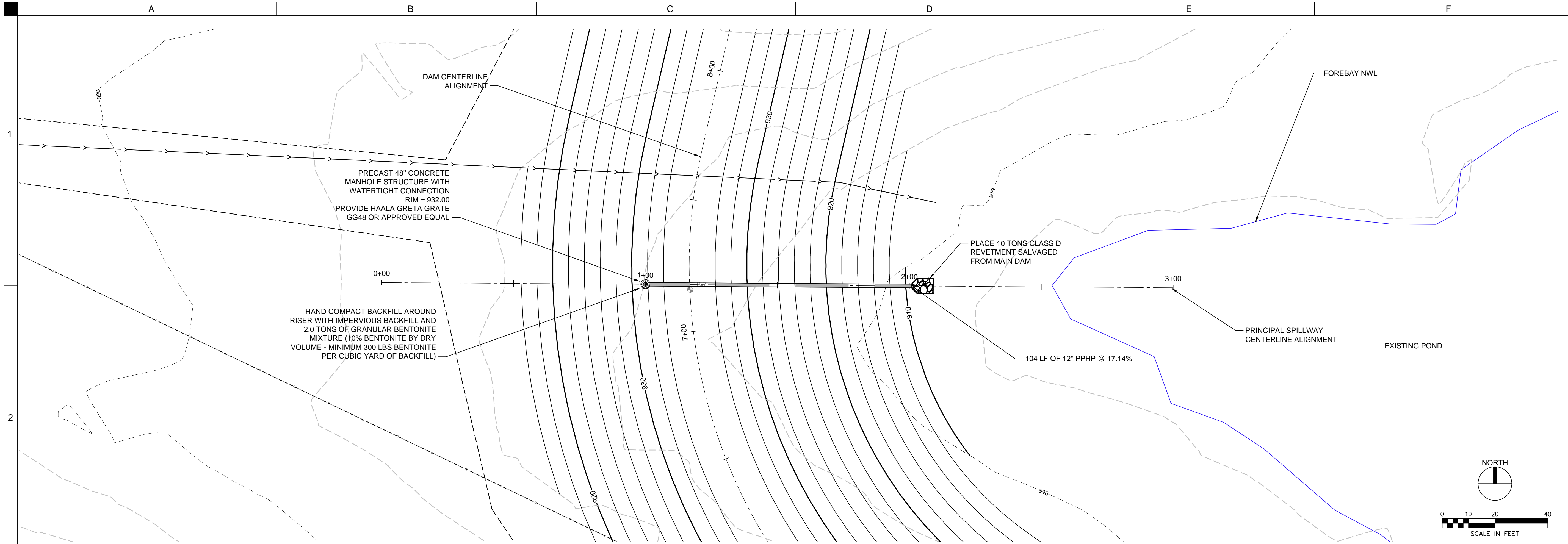
- EMBANKMENT SHALL BE CONSTRUCTED IN A MINIMUM OF 2 STAGES.**
1. STAGE 1 CONSTRUCTION SHALL CONSIST OF PLACING FILL TO ELEVATION 925.00 AT A RATE OF NO MORE THAN 2 FEET PER DAY.
 2. AT THE COMPLETION OF STAGE 1, PLACEMENT OF FILL SHALL BE DISCONTINUED UNTIL ADEQUATE DISSIPATION OF PORE WATER PRESSURES IS REACHED. GEOTECHNICAL ENGINEER WILL MONITOR EMBANKMENT UNTIL ACCEPTABLE PORE WATER PRESSURES ARE ACHIEVED. ACCEPTABLE PORE WATER PRESSURES MUST BE REACHED PRIOR TO PLACEMENT OF FILL FOR STAGE 2. ANTICIPATED SETTLEMENT PERIOD IS 3 WEEKS.
 3. STAGE 2 CONSTRUCTION SHALL CONSIST OF PLACING FILL TO ELEVATION 935.00 AT A RATE OF NO MORE THAN 2 FEET PER DAY.



STORAGE BASIN PLAN VIEW
1" = 40'

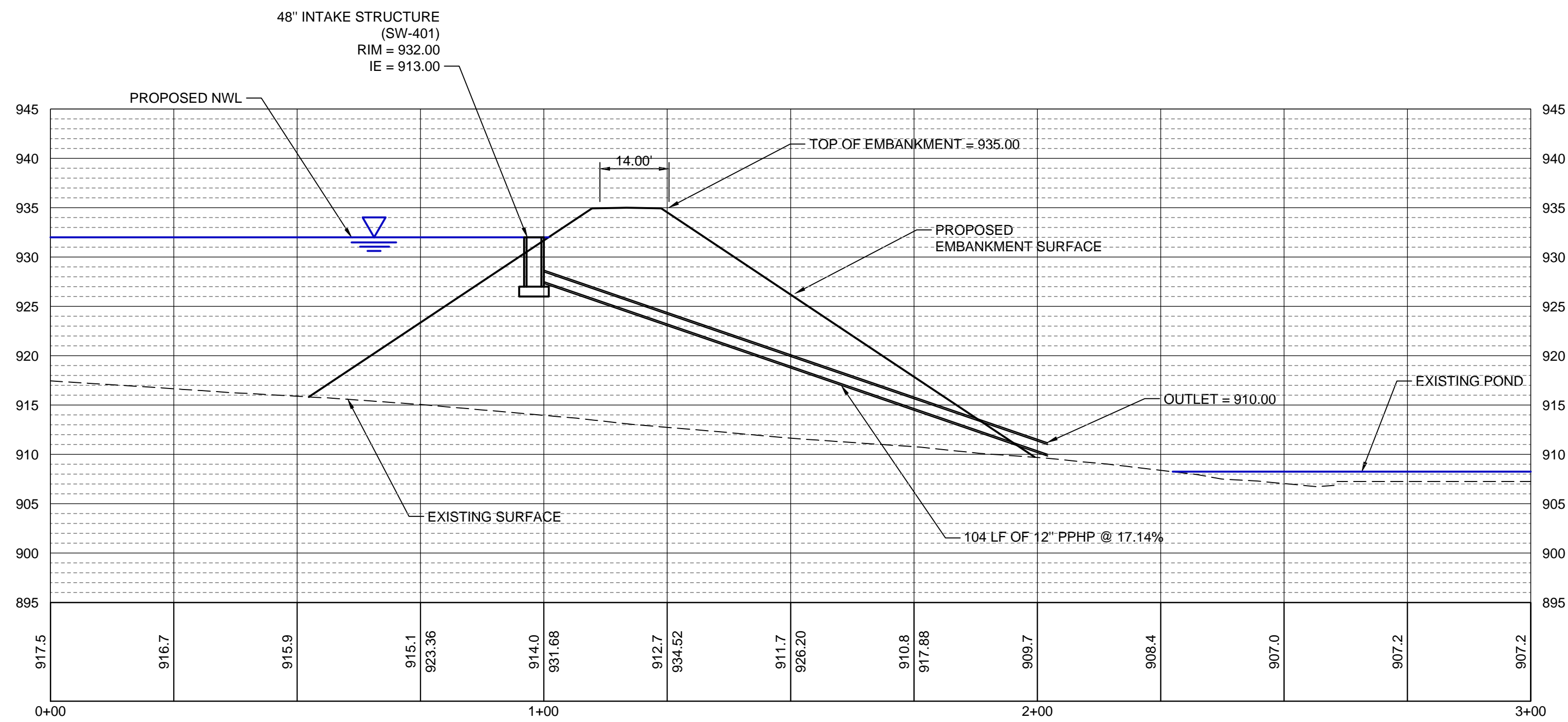
DRAWN: KAR
APPROVED: LTM
ISSUED FOR: CONSTRUCTION
DATE: 8-28-2017
PROJECT NO: 144890
FIELD BOOK: --
CLIENT NO: --

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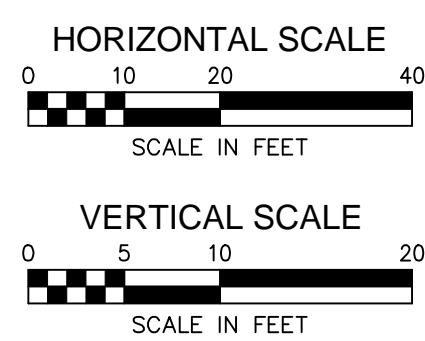
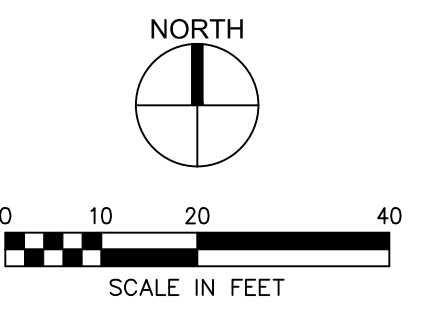
STORAGE BASIN PRINCIPAL SPILLWAY PLAN VIEW

1" = 20'

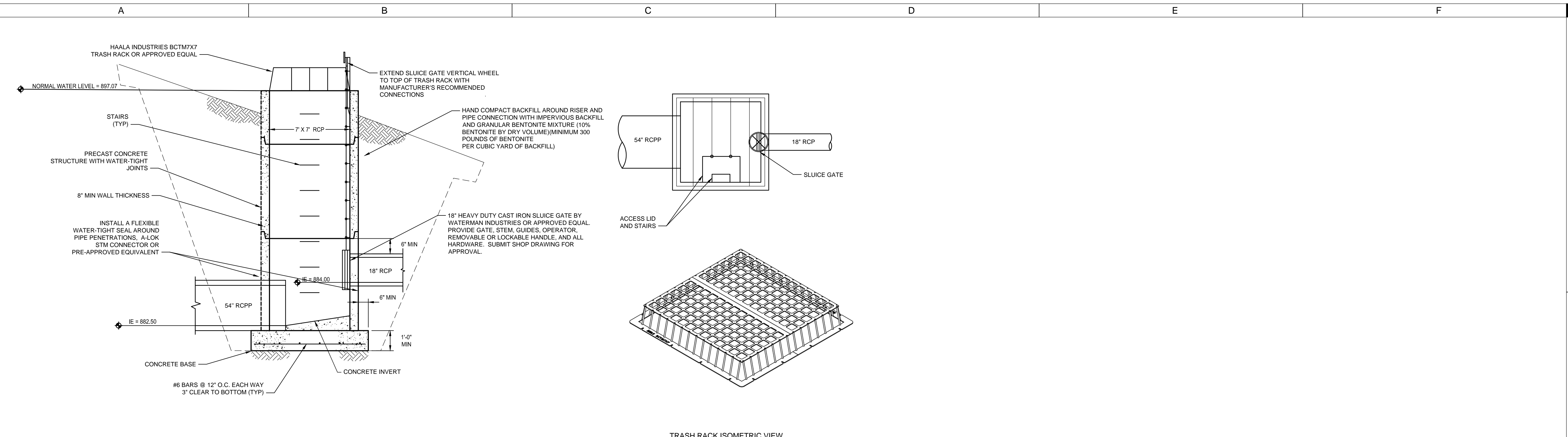


STORAGE BASIN PRINCIPAL SPILLWAY PROFILE

HORIZONTAL: 1" = 20' VERTICAL: 1" = 10'

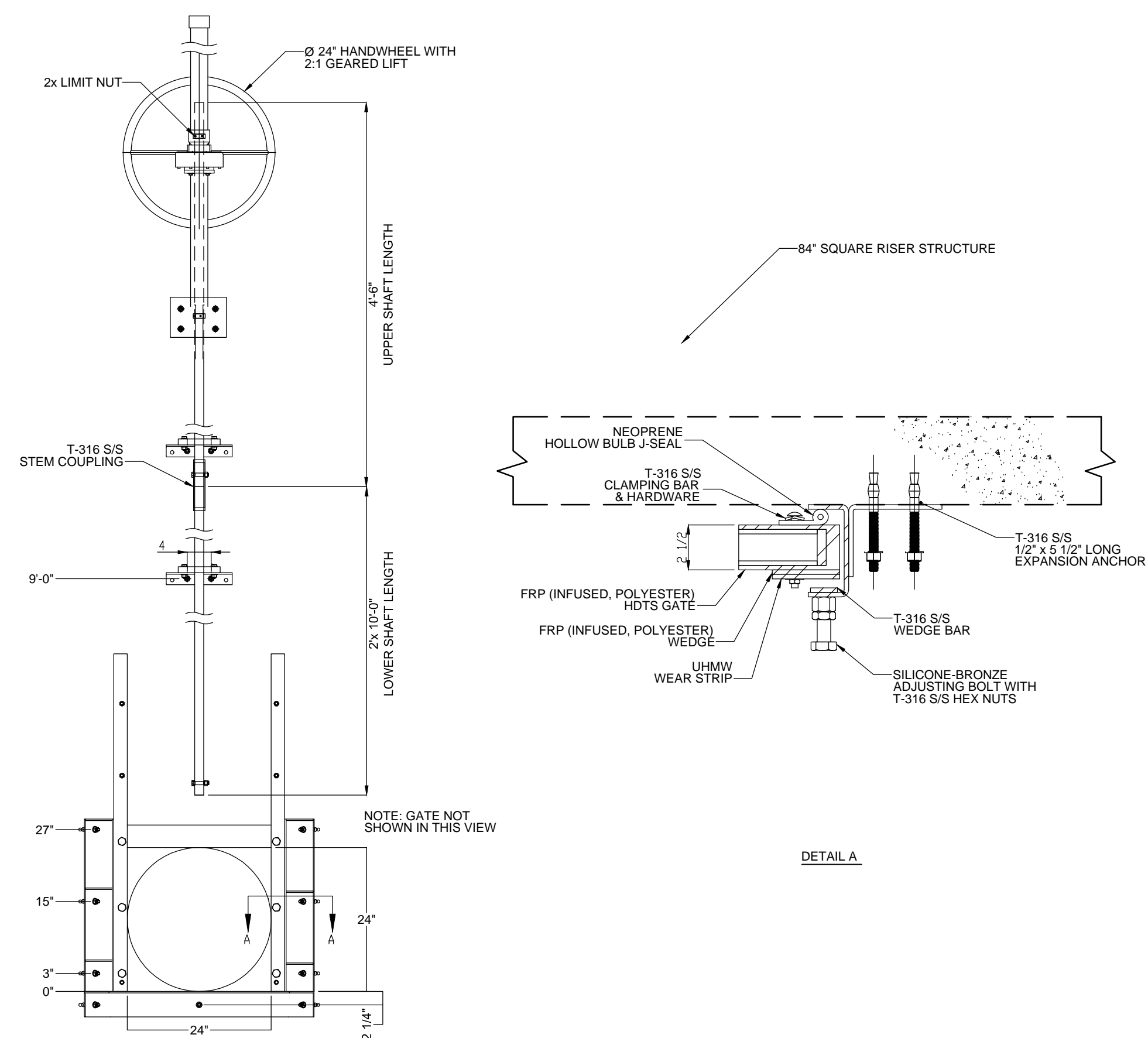


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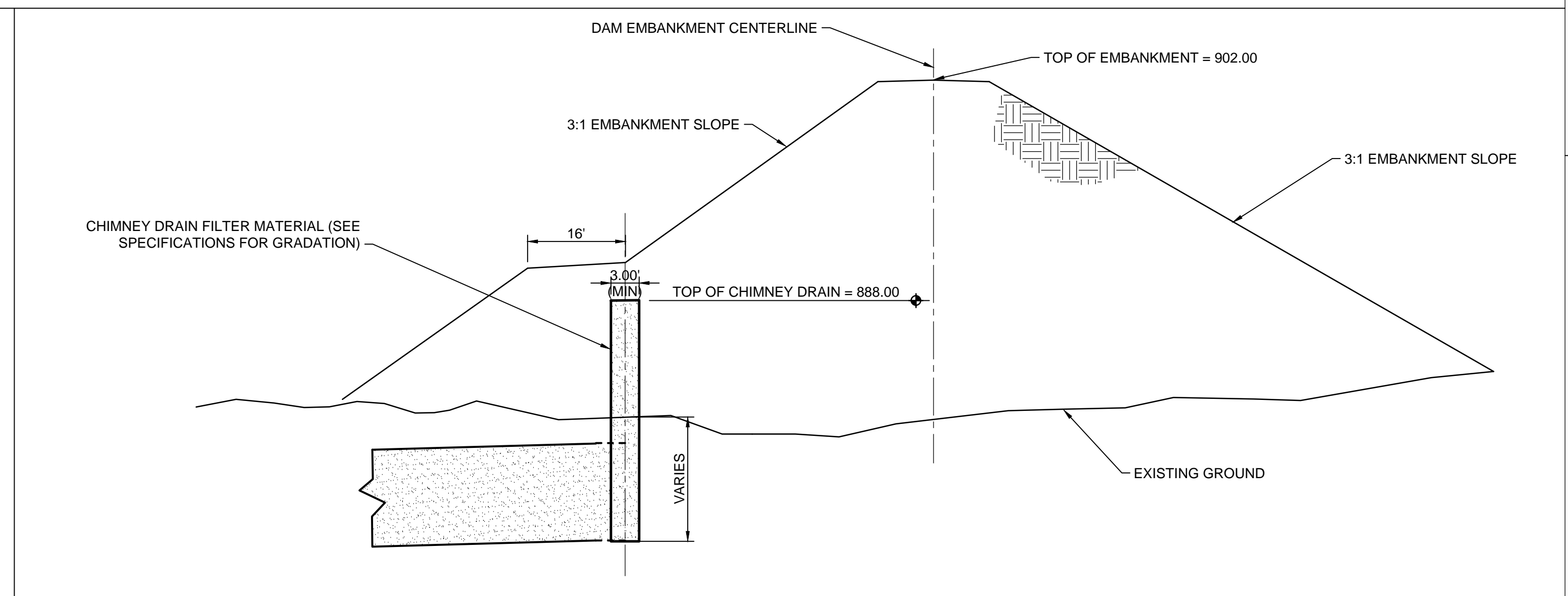
4 OUTLET STRUCTURE WITH TRASH RACK
NOT TO SCALE

TRASH RACK ISOMETRIC VIEW

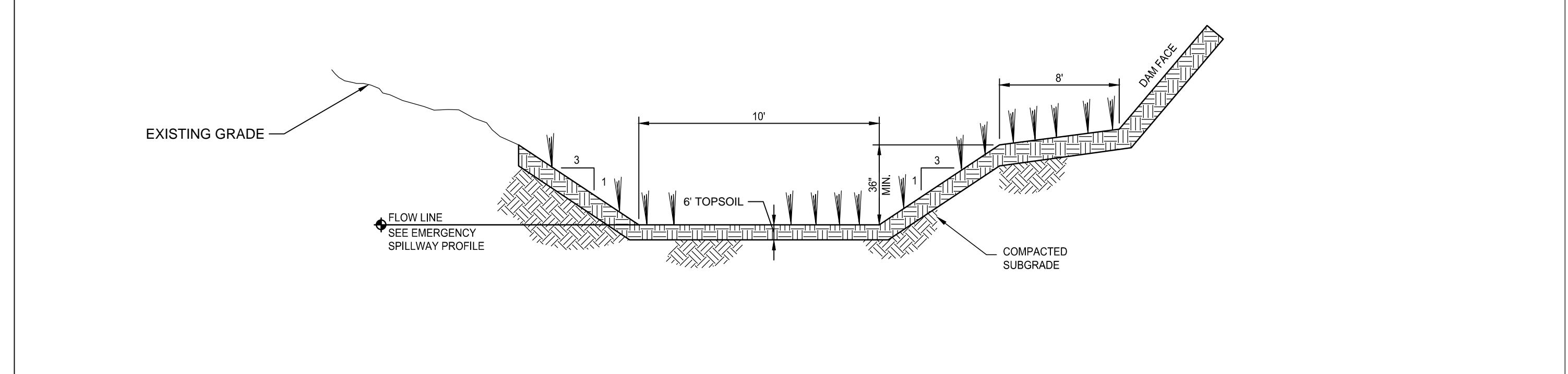


3 24" SLUICE GATE
NOT TO SCALE

DETAIL A



2 CHIMNEY DRAIN
NOT TO SCALE



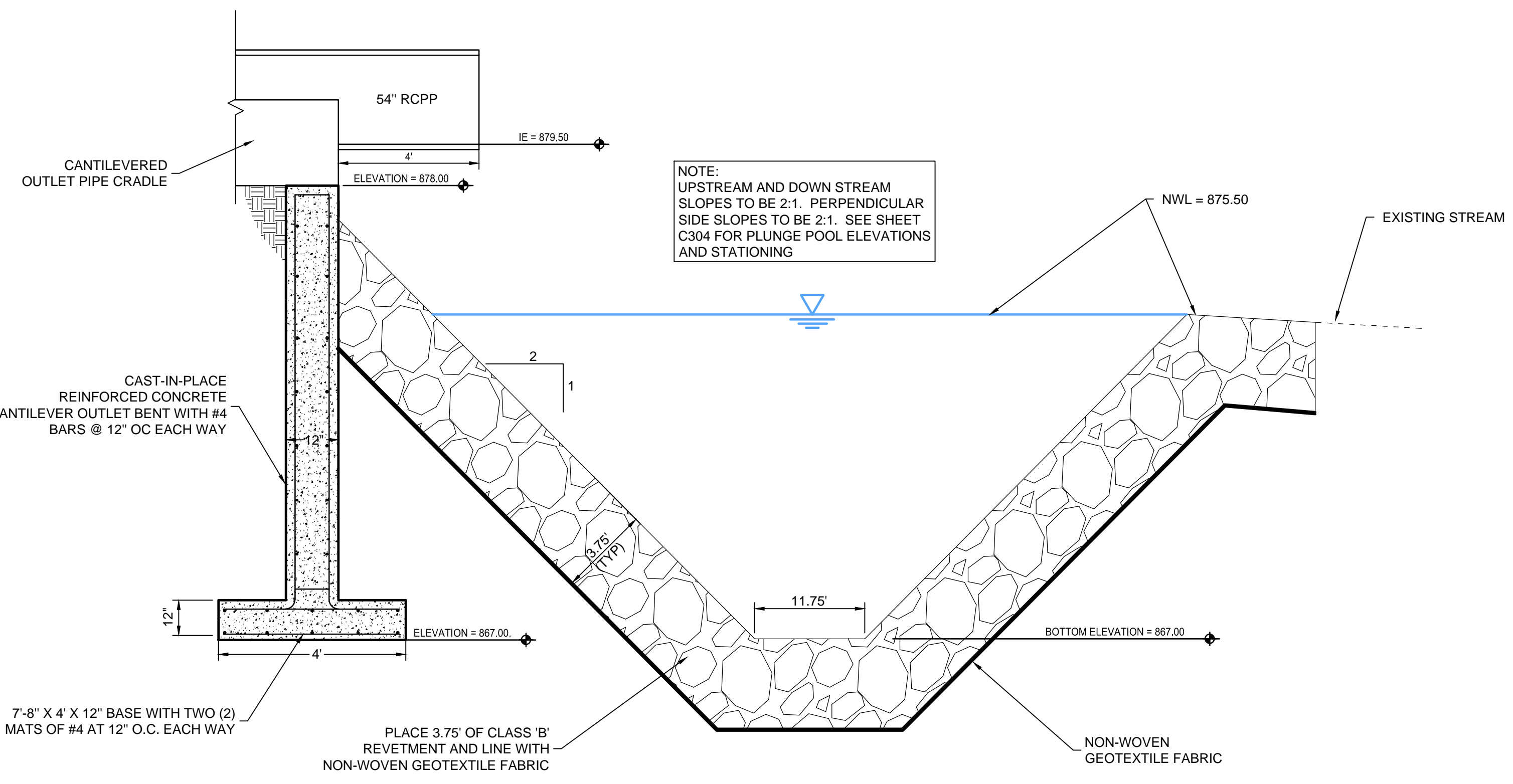
1 TYPICAL EMERGENCY SPILLWAY CHANNEL
NOT TO SCALE

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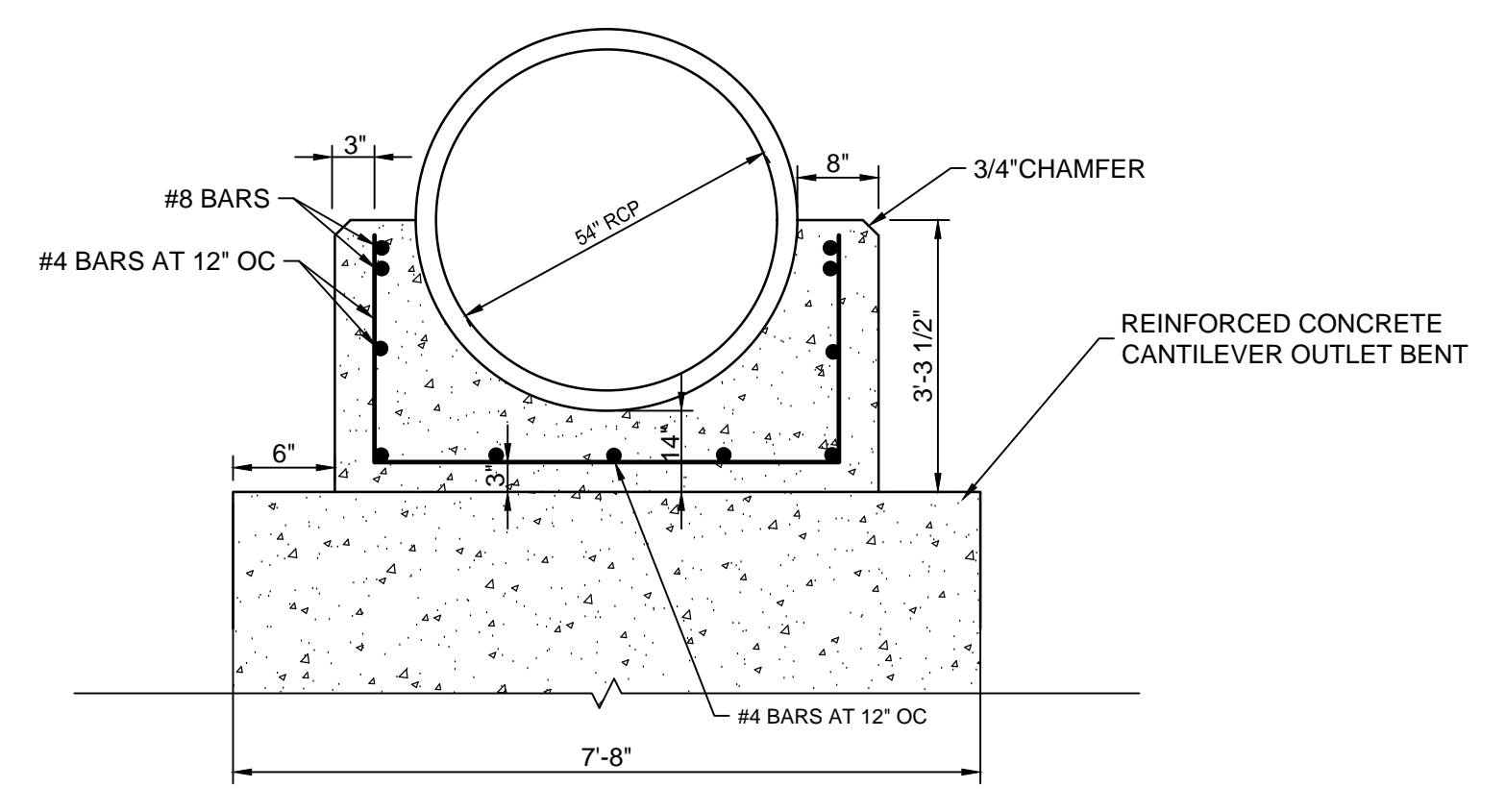
DRAWN: JRM
APPROVED: LTM
ISSUED FOR: CONSTRUCTION
DATE: 8-28-2017
PROJECT NO: 414890
FIELD BOOK: ---
CLIENT NO: ---

DETAILS

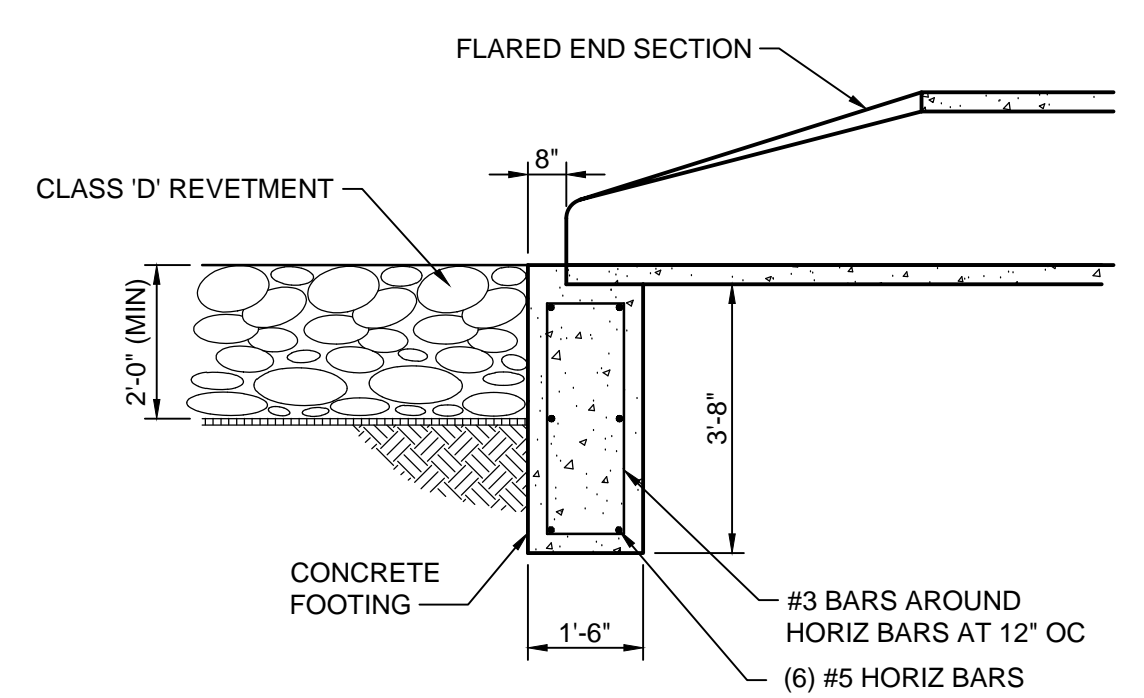
C501



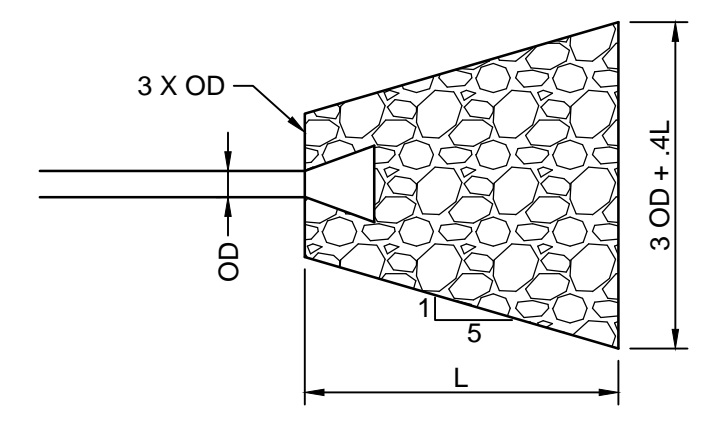
4 ARMOR LINED PLUNGE POOL
NOT TO SCALE



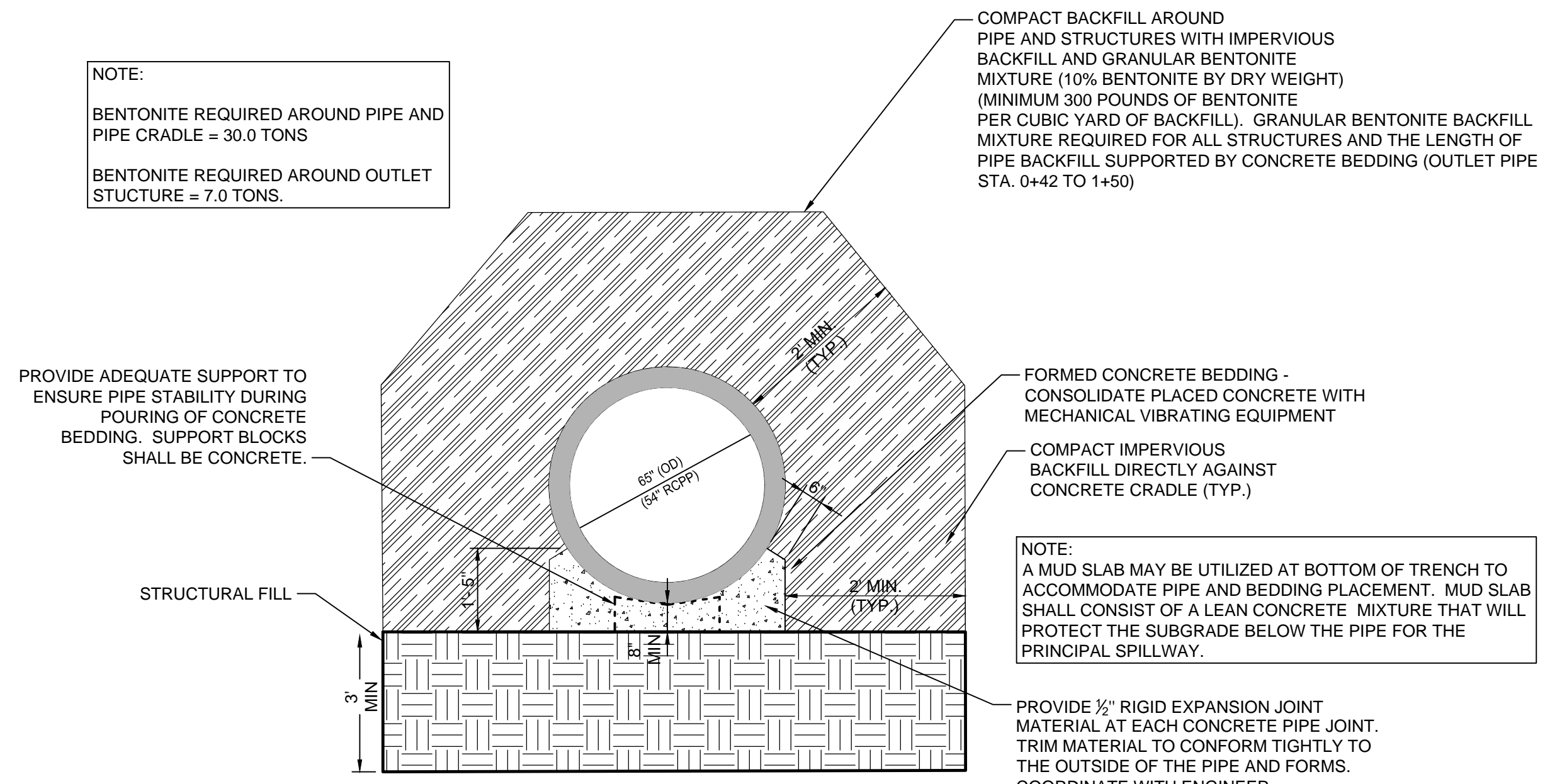
3 CANTILEVERED OUTLET PIPE CRADLE
NOT TO SCALE



FLARED END SECTION FOOTING



2 FLARED END SECTION
NOT TO SCALE



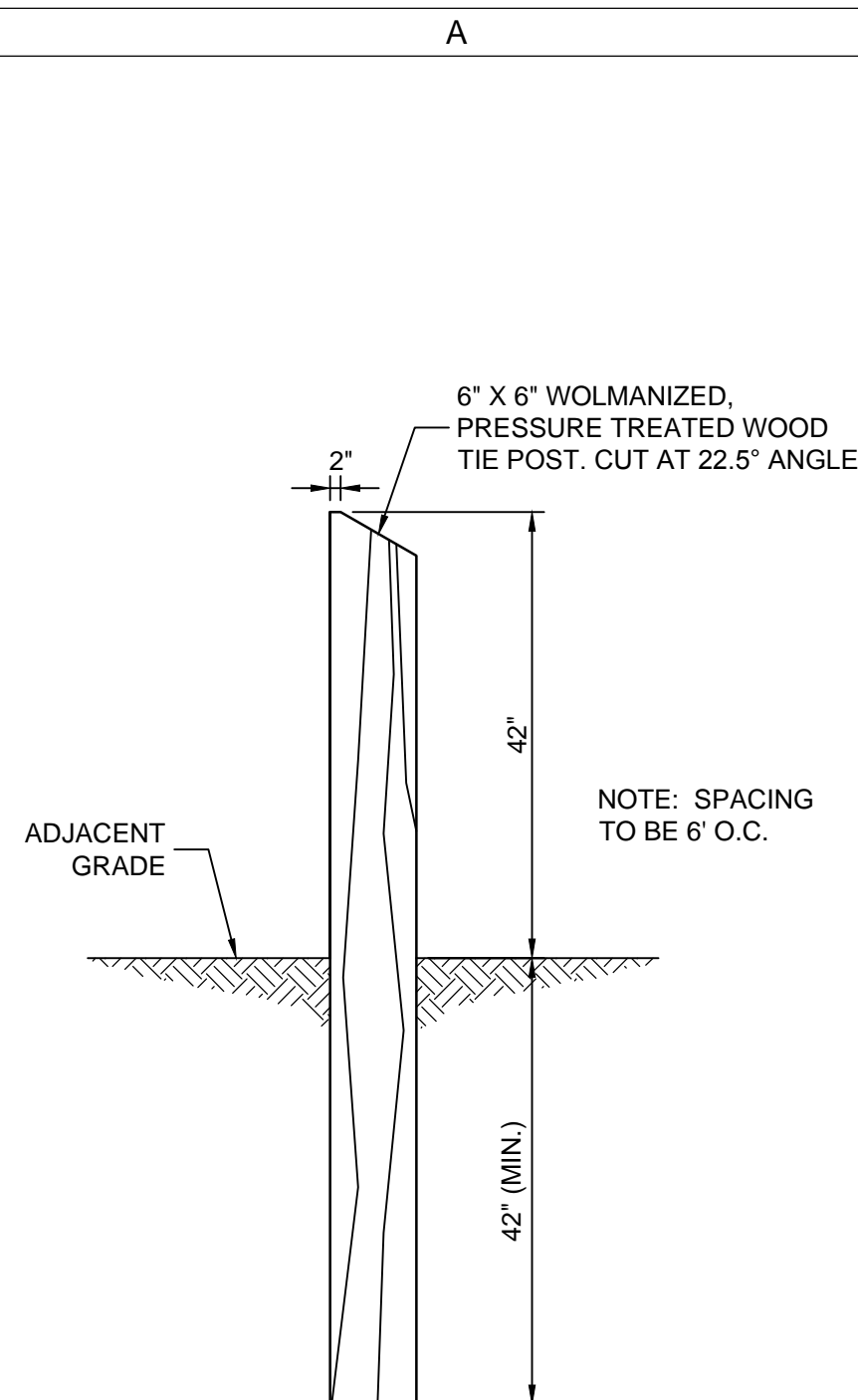
1 54" PRIMARY PIPE BACKFILL DETAIL
NOT TO SCALE

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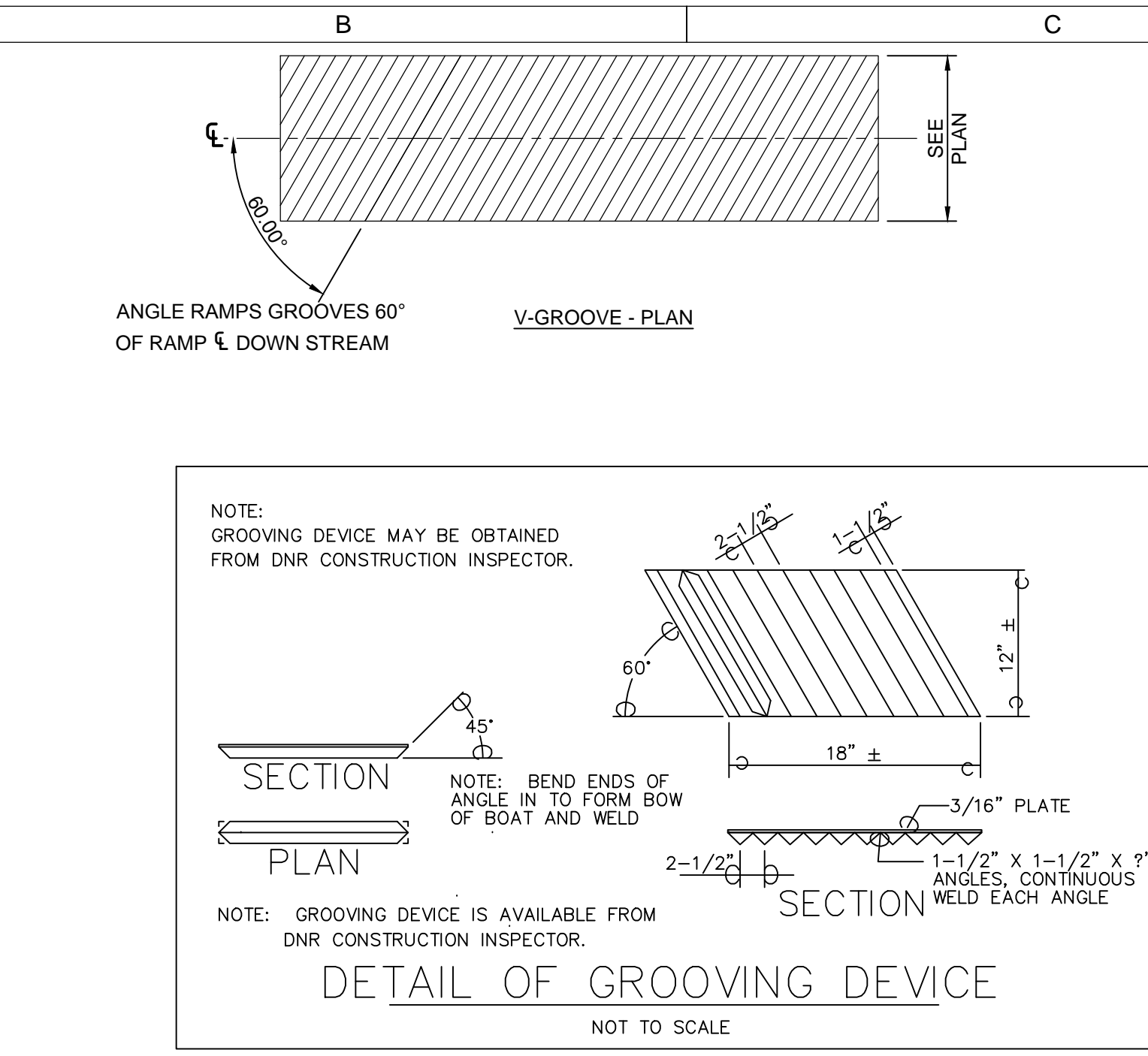
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APPROVED:	LTM
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DATE:	8-28-2017
PROJECT NO.:	4144890
FIELD BOOK:	---
CLIENT NO.:	---

DETAILS

C502

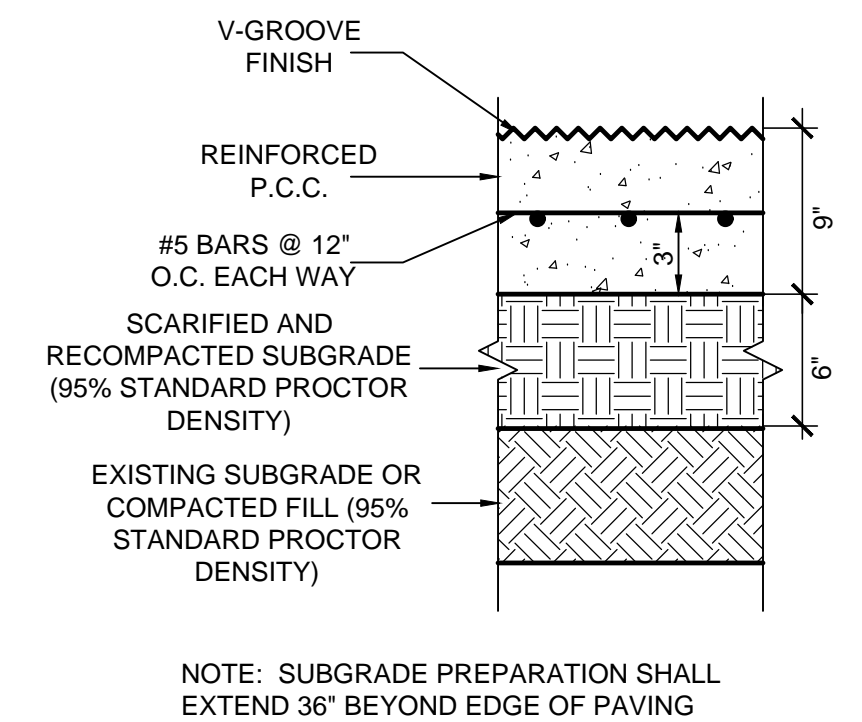


8 6" X 6" TREATED POST
NOT TO SCALE

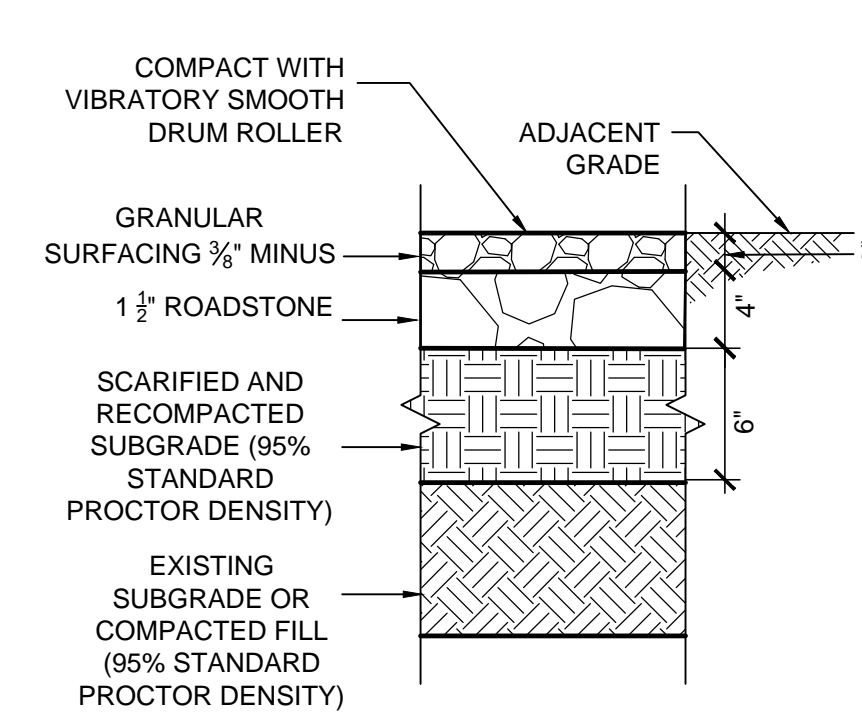


- 7** PCC BOAT RAMP V-GROOVE FINISH
NOT TO SCALE
- NOTES:**
- CONCRETE LAUNCH RAMP SHALL BE FINISHED WITH A NON-SKID V-GROOVE FINISH TO ENSURE MAXIMUM TRACTION FOR TOW VEHICLES LAUNCHING AND RETRIEVING BOATS.
 - THE GROOVING DEVICE MAY BE OBTAINED FROM DNR INSPECTOR FOR USE ON THIS PROJECT.
 - THE GROOVES SHALL BE FORMED IN THE RAMP SURFACE ANGLED 60 DEGREES FROM THE LONGITUDINAL AXIS OF THE RAMP AND ORIENTED TO THE DOWN STREAM SIDE OF THE RAMP. THIS WILL CARRY SMALL DEBRIS TO THE DOWN STREAM SIDE OF THE RAMP.
 - THE EDGES OF THE LAUNCH RAMP SHOULD BE TOOLED WITH A 4" WIDE EDGER. THIS GIVES THE RAMP A CLEAN FINISHED LOOK BECAUSE OF THE DIFFICULTY IN FINISHING THE GROOVES UP AGAINST THE FORM BOARDS.

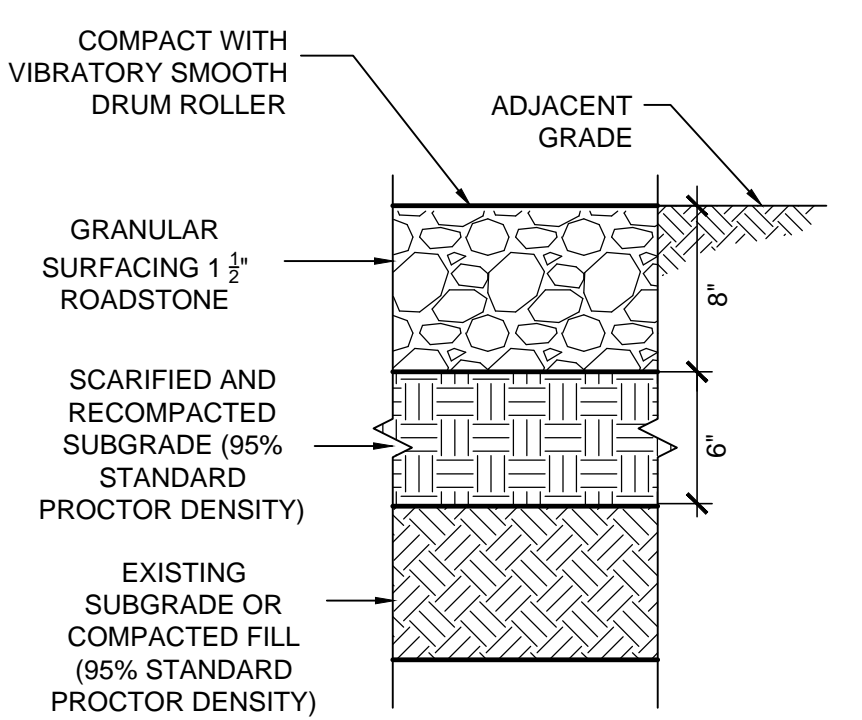
7 PCC BOAT RAMP V-GROOVE FINISH
NOT TO SCALE



6 PCC BOAT RAMP PAVEMENT
NOT TO SCALE

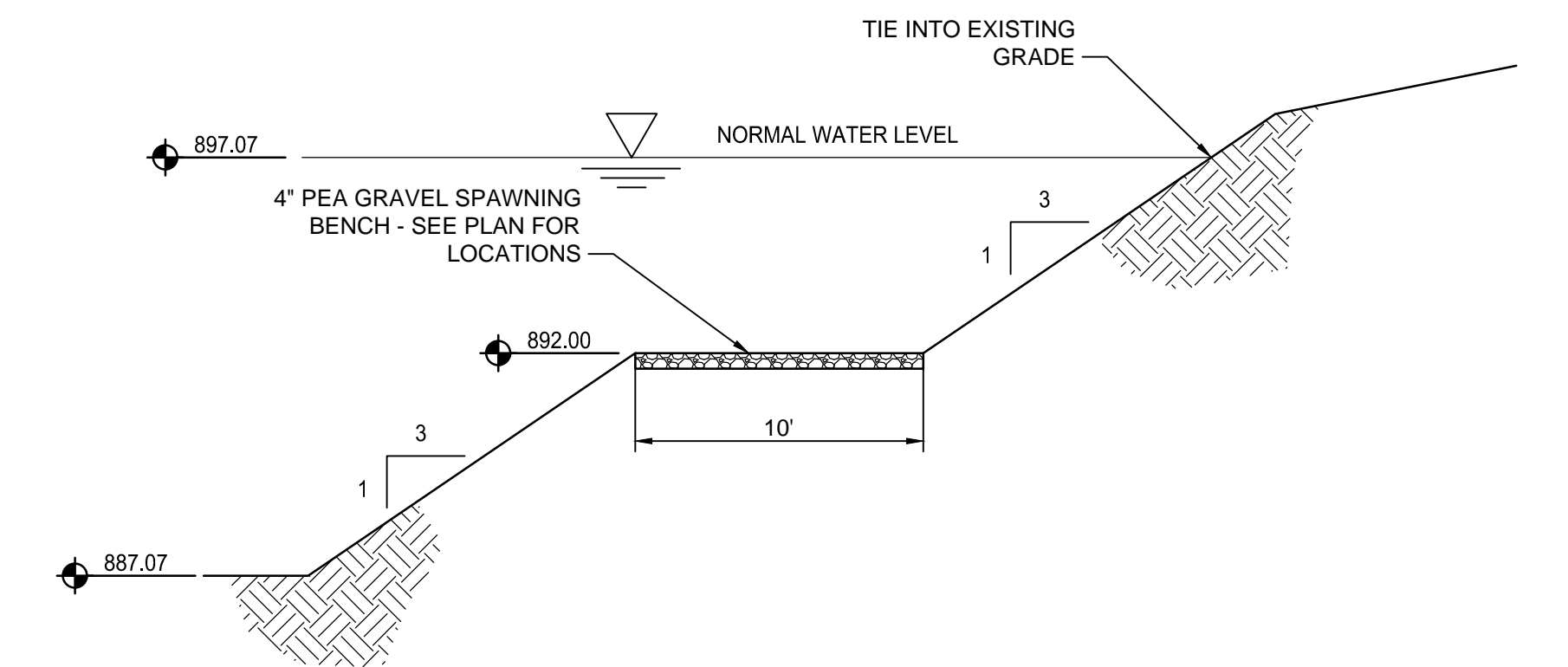


5 6" GRANULAR TRAIL
NOT TO SCALE

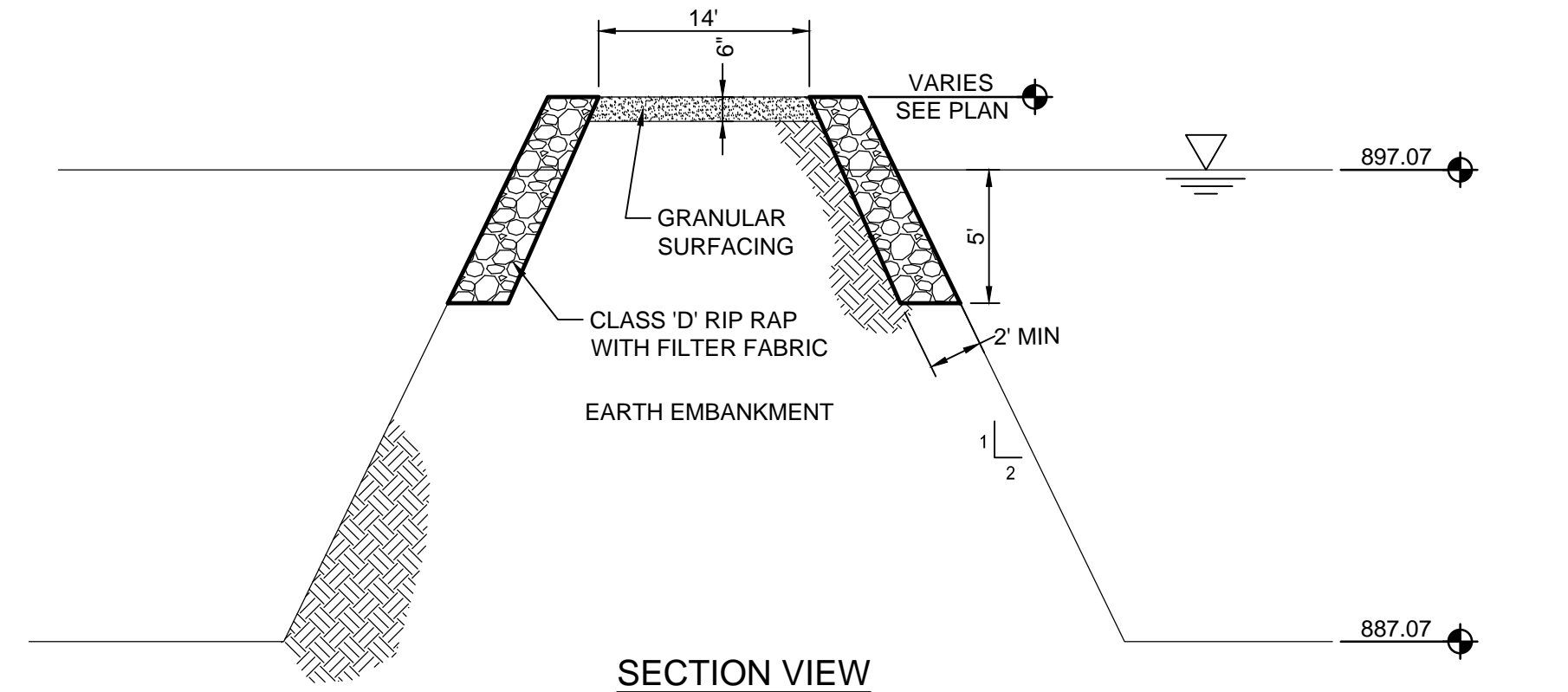


4 8" GRANULAR ROADWAY
NOT TO SCALE

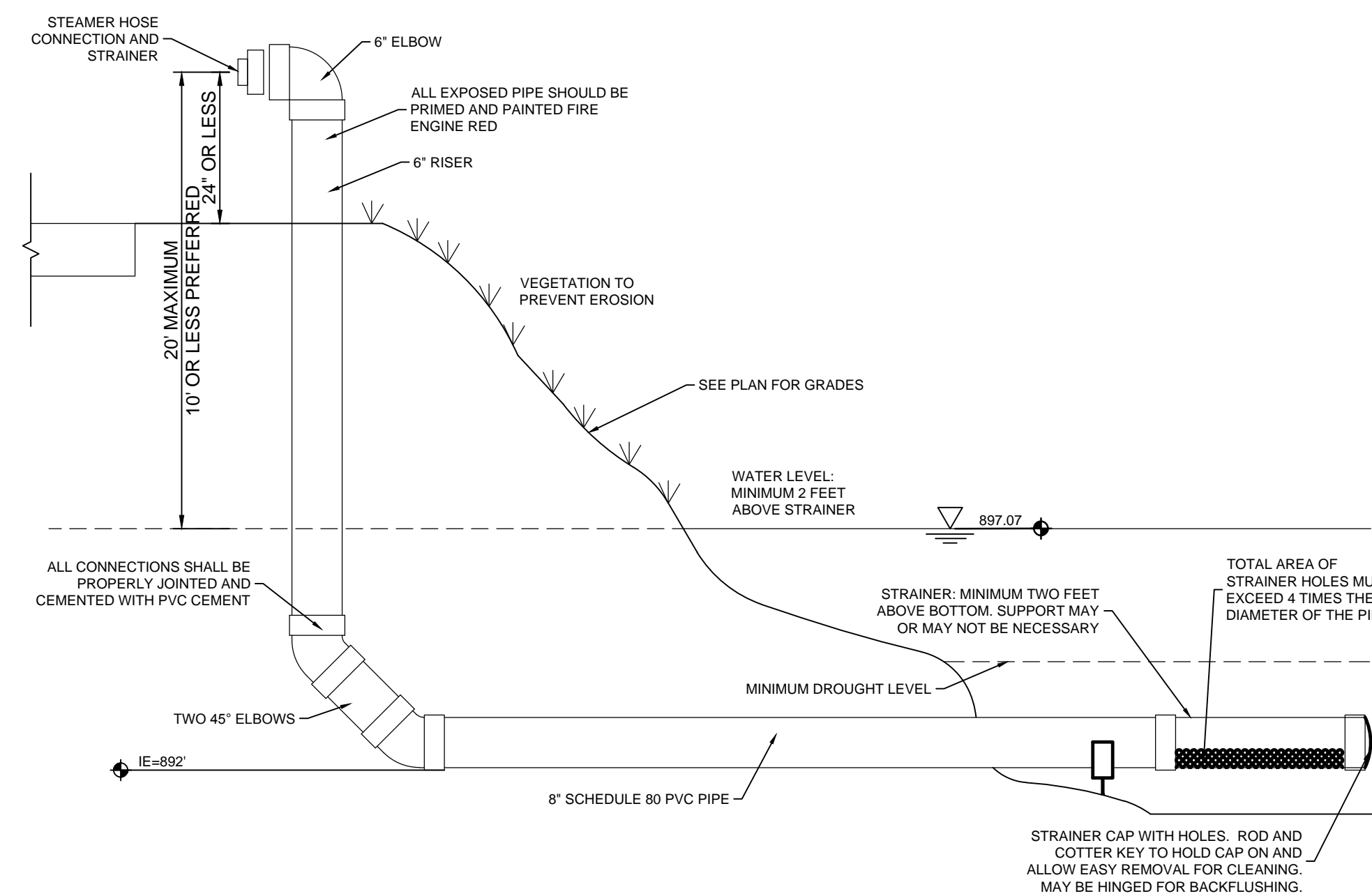
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3 SPAWNING BENCH
NOT TO SCALE



2 FISHING JETTY
NOT TO SCALE



1 DRY HYDRANT
NOT TO SCALE

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PROJECT NO: 414890	FIELD BOOK: --
CLIENT NO: --	

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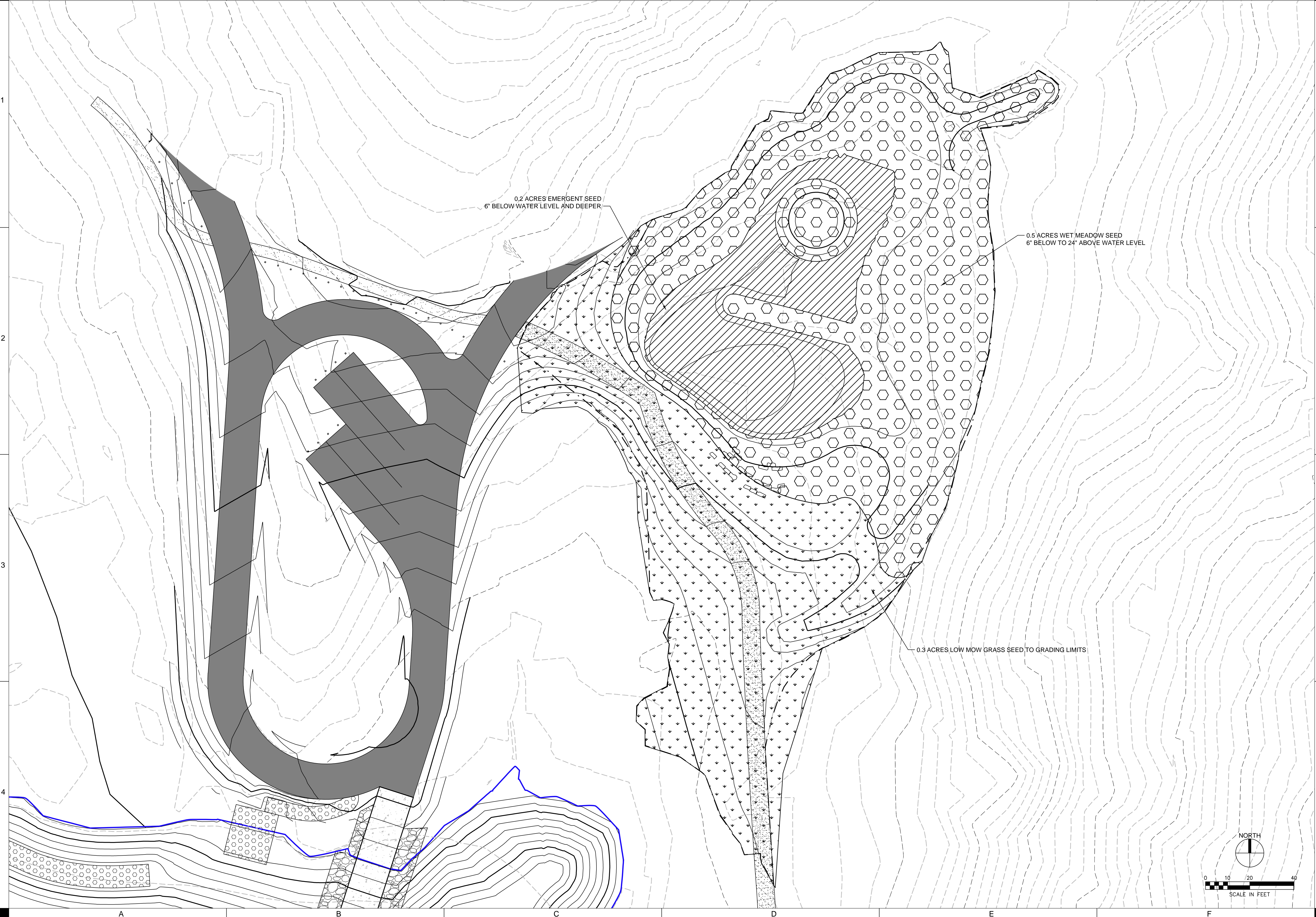
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