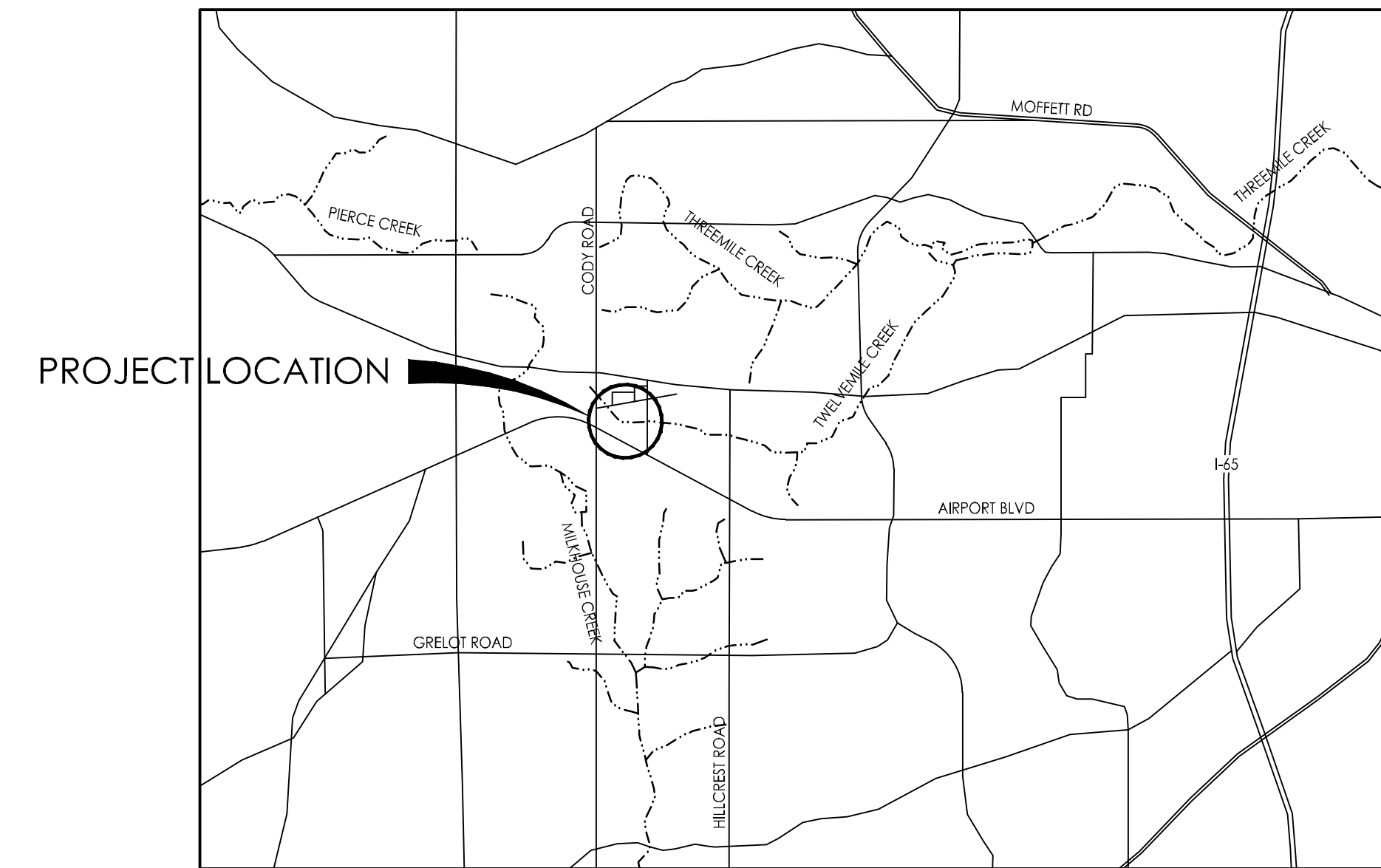




MOBILE BAY NATIONAL ESTUARY PROGRAM



VICINITY MAP
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TWELVE MILE CREEK HEADWATERS RESTORATION

MOBILE, AL

60% SUBMITTAL

2018.11.01

PROJECT NUMBER: 177311100

INDEX OF SHEETS

| <u>SHEET NO.</u> | <u>TITLE</u> |
|------------------|------------------------------------|
| 1 | COVER SHEET |
| 2 | EXISTING CONDITIONS |
| 3 | PROPOSED CONDITIONS |
| 4 | TYPICAL CROSS SECTIONS |
| 5-9 | PLAN & PROFILE |
| 10-11 | CROSS SECTIONS |
| 12-14 | STREAM RESTORATION DETAILS |
| 15-16 | PLANTING PLAN |
| EC-1 - EC-2 | EROSION & SEDIMENT CONTROL PLANS |
| EC-3 - EC-5 | EROSION & SEDIMENT CONTROL DETAILS |



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TWELVE MILE CREEK
HEADWATERS RESTORATION
MOBILE, AL

Title
EXISTING CONDITIONS

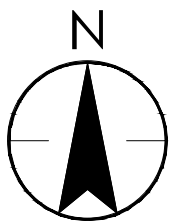
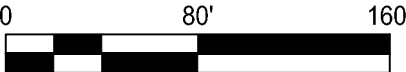
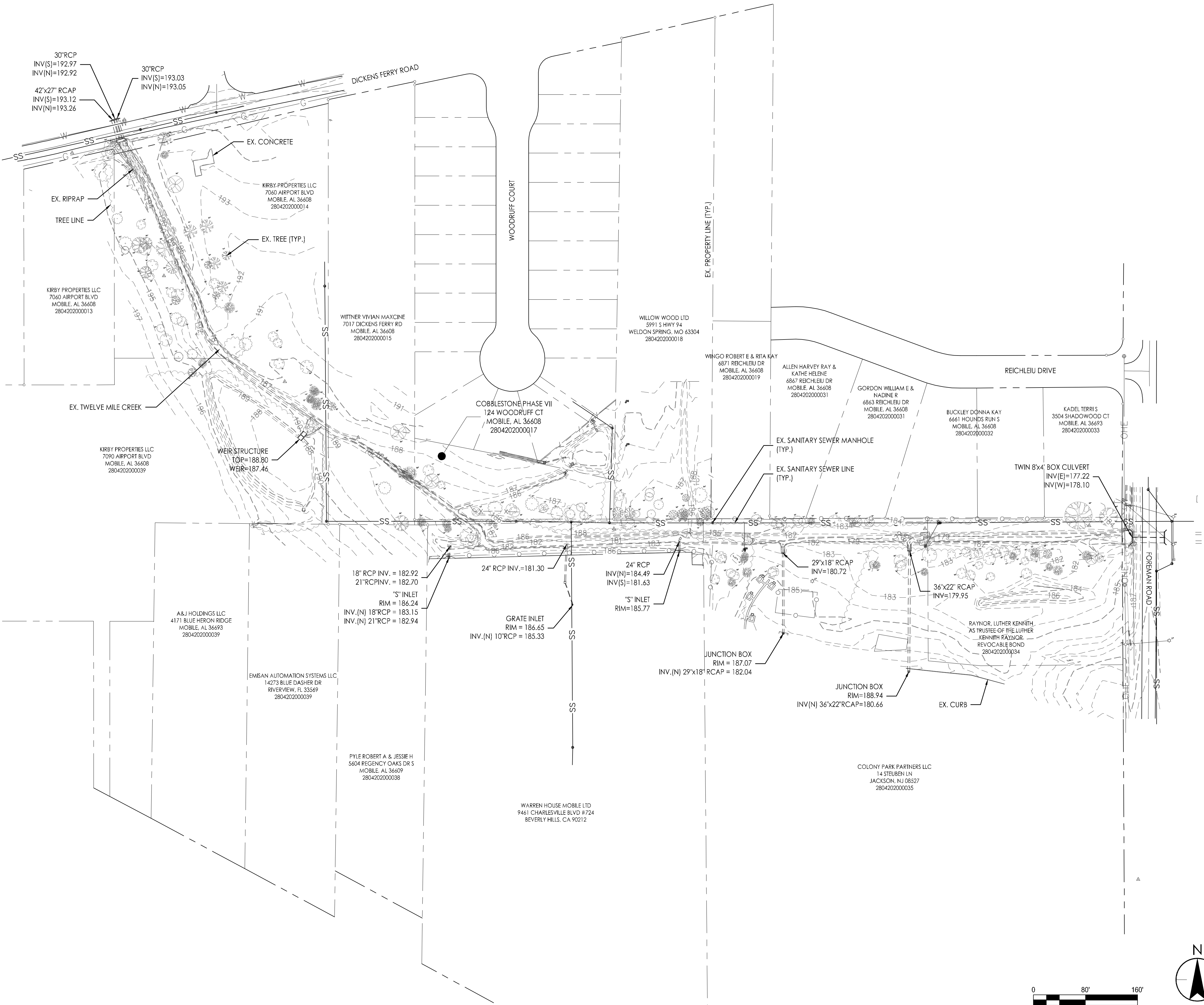
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Sheet
2 of 21

2



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TWELVE MILE CREEK
HEADWATERS RESTORATION
MOBILE, AL

Title
PROPOSED CONDITIONS

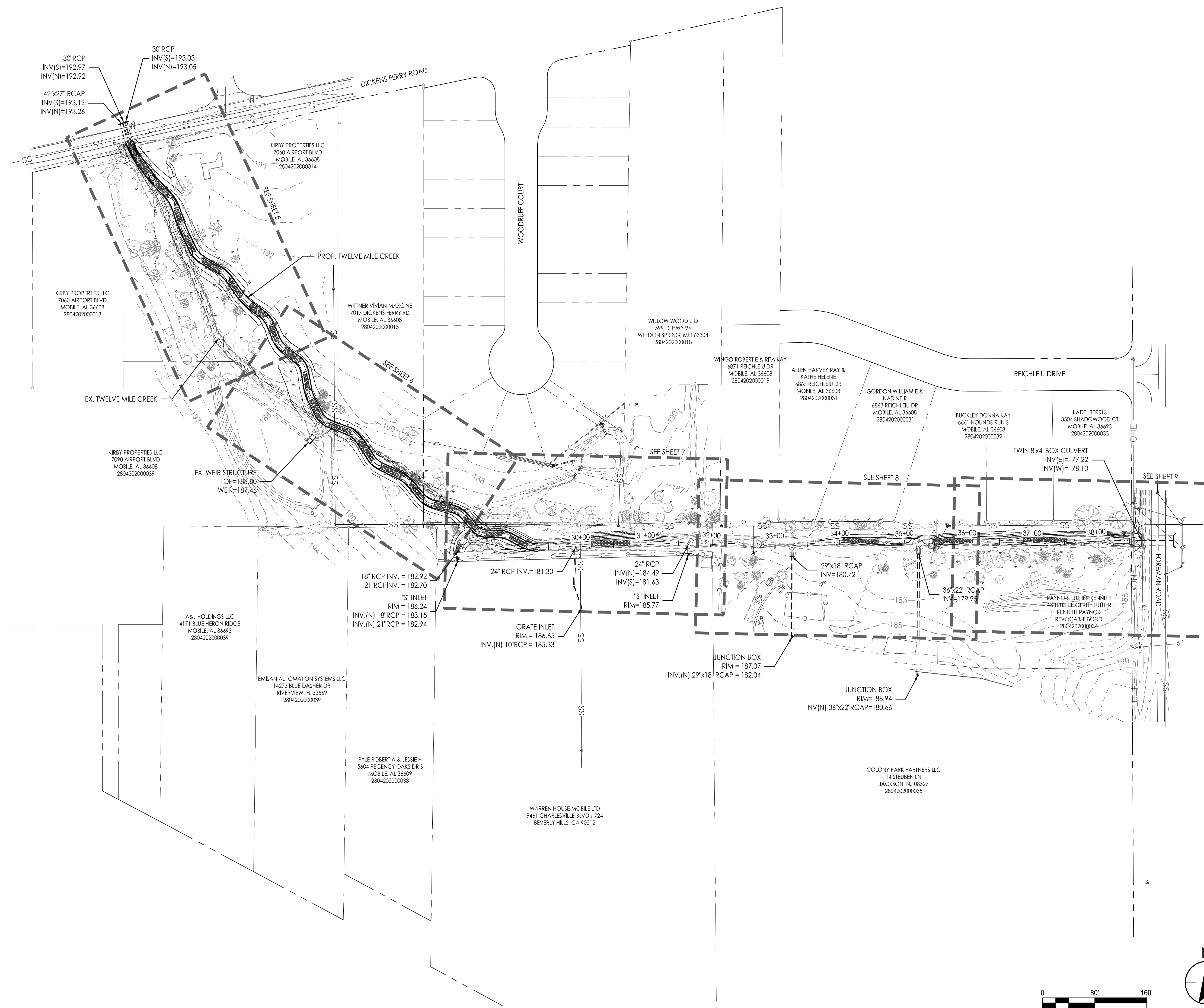
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Revision X Sheet 3 of 21

Drawing No.

3



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CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION. CONTACT 811 OR 1-800-293-8525 PRIOR TO EXCAVATION.

THE LOCATION OF THE UTILITIES SHOWN ARE APPROXIMATE AND ARE BASED ON INFORMATION PROVIDED BY OTHERS. THE CONTRACTOR SHALL LOCATE ALL ON-SITE UTILITIES PRIOR TO EXCAVATION AND SHALL ASSUME RESPONSIBILITY FOR DAMAGE CAUSED BY ACTIVITIES COMPLETED UNDER THIS CONTRACT.

FOR REQUESTING A BULK INSPECTION, THE CONTRACTOR MUST OBTAIN RECORD DRAWINGS AND AN ENGINEER'S CERTIFICATION TO THE ENGINEERING DEPARTMENT. THE CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS FOR A CITY OF MOBILE LAND DISTURBANCE PERMIT.

ALL WORK MUST CARRY A MINIMUM ONE-YEAR WARRANTY TO COVER ALL DEFECTS IN MATERIALS AND WORKMANSHIP.

PRIOR TO BEGINNING ANY WORK, THE CONTRACTOR MUST NOTIFY THE CITY OF MOBILE ENGINEERING DEPARTMENT TO ARRANGE FOR A CONSTRUCTION INSPECTION.

ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE ADOT STANDARD SPECIFICATIONS UNLESS OTHERWISE SPECIFIED IN THE PROJECT MANUAL OR IN THE DRAWINGS.

ENGINEER WILL PROVIDE CONTRACTOR WITH AUTOMATED DRAWING TO BE USED FOR CONSTRUCTION STAKING. INCORPORATION OF LAYOUT AND ANY CHANGES TO CONTRACT DRAWING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY IMPROVEMENT TO THE ROAD CONDITIONS, GATES, AND FENCES REQUIRED FOR ACCESS DURING CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGED ITEMS DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, EXISTING ROADS, GATES, FENCES, ETC.

THE CONTRACTOR SHALL KEEP STREETS AFFECTED BY HIS CONSTRUCTION FREE OF DIRT, SEDIMENT, OR MUD. THE ENGINEER MAY DIRECT THE CONTRACTOR TO PERFORM STREET CLEANING (ON AN AS-NEEDED BASIS), AND IS REQUIRED THROUGHOUT THE DURATION OF THIS CONSTRUCTION PROJECT. THIS INCLUDES SWEEPING, POWER CLEANING, AND IF NECESSARY, HAND CLEANING.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING NECESSARY TRAFFIC CONTROLS ASSOCIATED WITH THE PROJECT SITE ACCESS. IT IS RECOMMENDED THAT CONSTRUCTION TRAFFIC SHOULD BE SCHEDULED AROUND THE LOCAL SCHOOL SCHEDULE TO REDUCE THE RISK TO PUBLIC SAFETY.

ALL WORK SHALL BE WITHIN 0.5' OF THE REQUIRED ELEVATION(S) SHOWN ON THE PLANS UNLESS OTHERWISE SPECIFIED.

ALL WORK SHALL BE WITHIN 0.5' OF THE REQUIRED HORIZONTAL LOCATION(S) SHOWN ON THE PLANS AND TYPICAL SECTIONS UNLESS OTHERWISE SPECIFIED.

DIRECTION "LEFT (L)" AND "RIGHT (R)" ARE DETERMINED RELATIVE TO THE CHANNEL AS IF FACING DOWNSTREAM.

PROTECTION OF EXISTING VEGETATION IS A PRIMARY GOAL ALONG THE PROJECT RIGHT-OF-WAY. VEGETATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO STARTING WORK. ANY TREES OR SHRUBS NOT TO BE DISTURBED SHALL BE PROTECTED. VEGETATION MAY BE CUT BACK (PRUNED) TO FACILITATE ACCESS TO THE WORK.

CONSTRUCTION SHALL BE LIMITED TO THE HOURS OF 8AM UNTIL 5PM, MONDAY THROUGH FRIDAY. ADDITIONAL WORK HOURS ARE CONTINGENT ON THE APPROVAL OF THE PROPERTY OWNERS.

1. ALL FUELING AND MAINTENANCE SHALL BE PERFORMED A MINIMUM OF 50' FROM ANY BODY OF WATER, WETLAND AND/OR "WET AREA".
2. THE CONTRACTOR SHALL SUBMIT A WRITTEN PLAN FOR "REFUELING OPERATIONS" INCLUDING PROCEDURES FOR FUEL HANDLING, SPILL/LEAK CONTAINMENT, CLEANUP AND DISPOSAL OF FUEL CONTAMINATED MATERIAL TEN (10) DAYS PRIOR TO THE START OF ANY PROJECT WORK.
3. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, STATE AND LOCAL LAWS AND AT NO ADDITIONAL COST TO THE OWNER.
4. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF ON-SITE FUEL STORAGE NEEDS. IF FUEL IS TO BE STORED ON THE PROJECT SITE, THE CONTRACTOR SHALL PROVIDE A COPY OF A WRITTEN PLAN WITH THE PROJECT PROPOSAL. THE WRITTEN PLAN SHALL BE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS AND AT NO ADDITIONAL COST TO THE OWNER. THE WRITTEN PLAN SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THE "REFUELING OPERATIONS" PLAN.

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TWELVE MILE CREEK
HEADWATERS RESTORATION

MOBILE, AL

Title
PLAN & PROFILE

Project No.
177311100

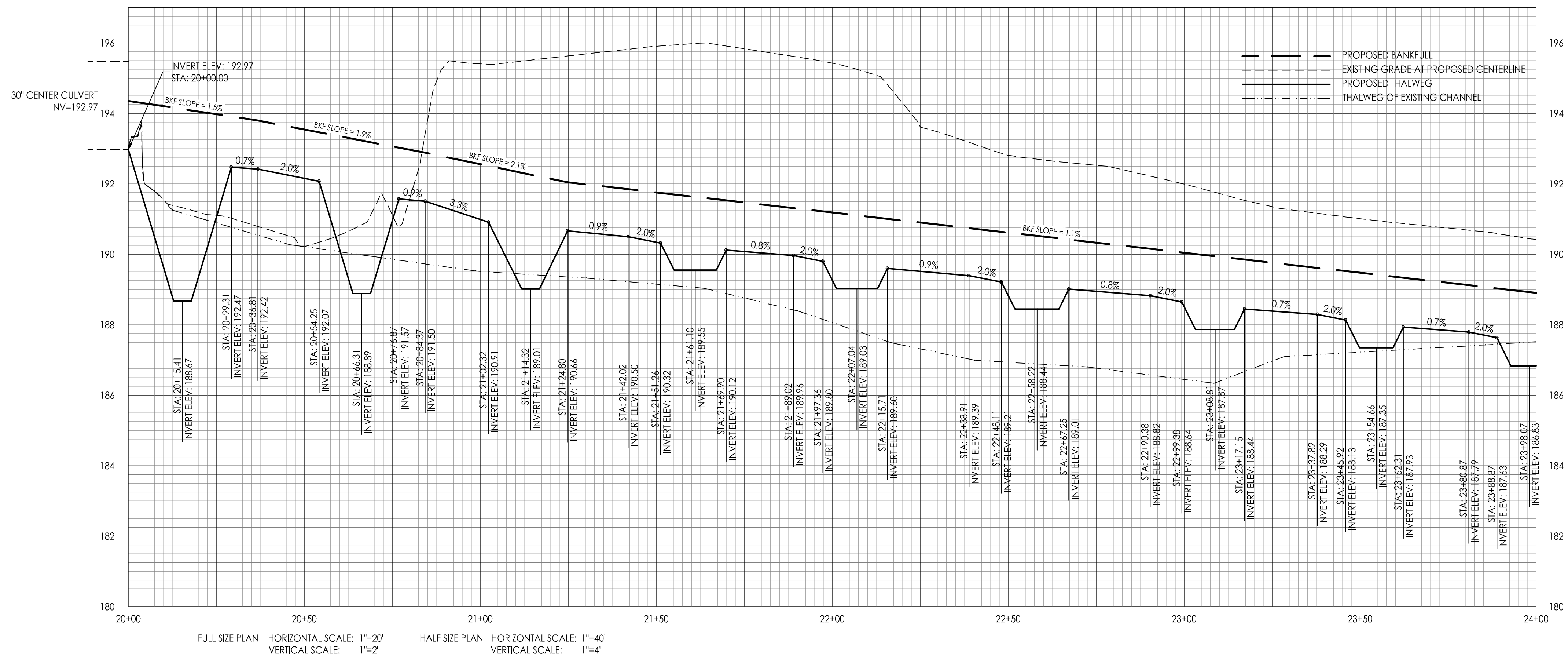
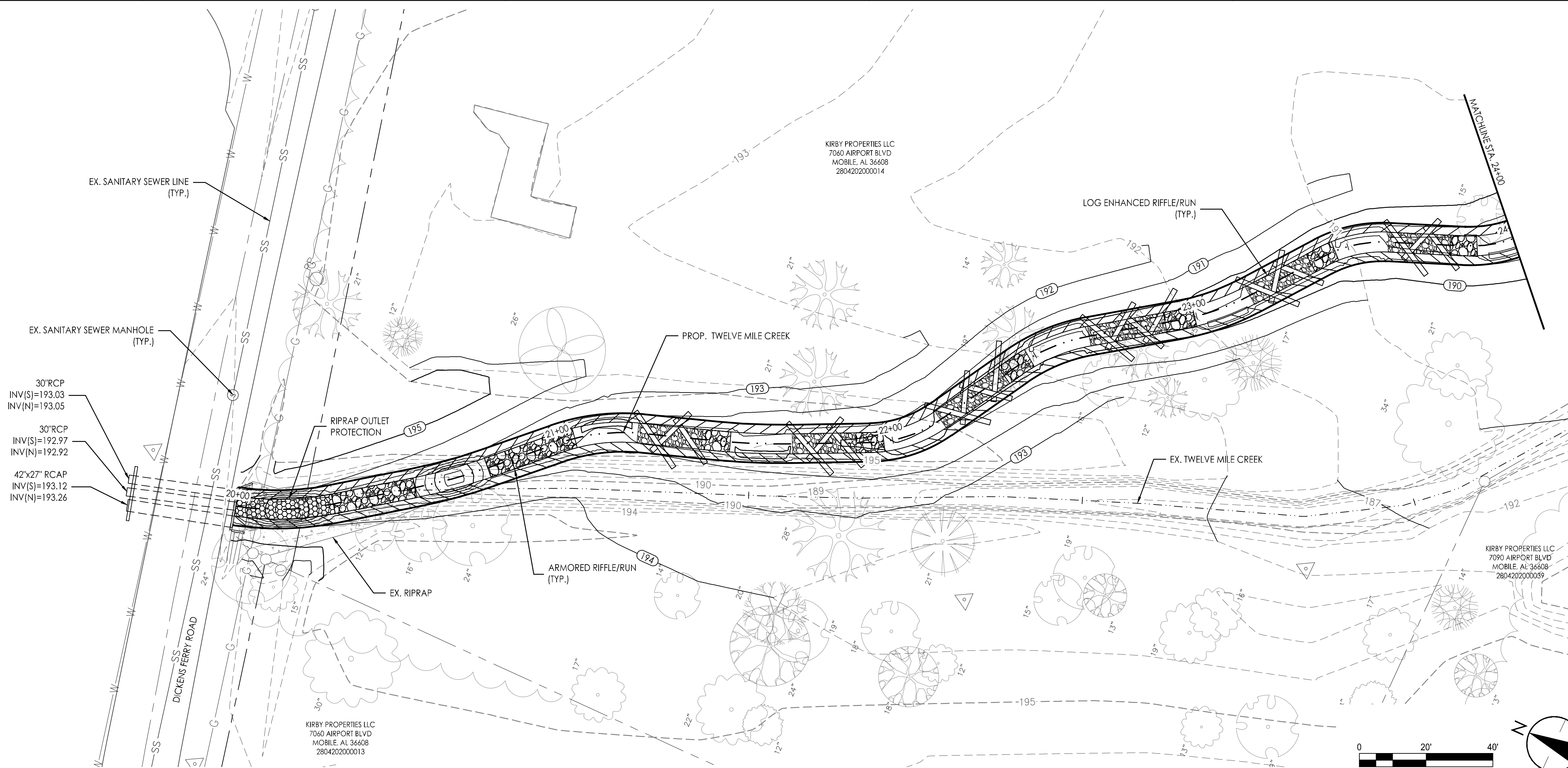
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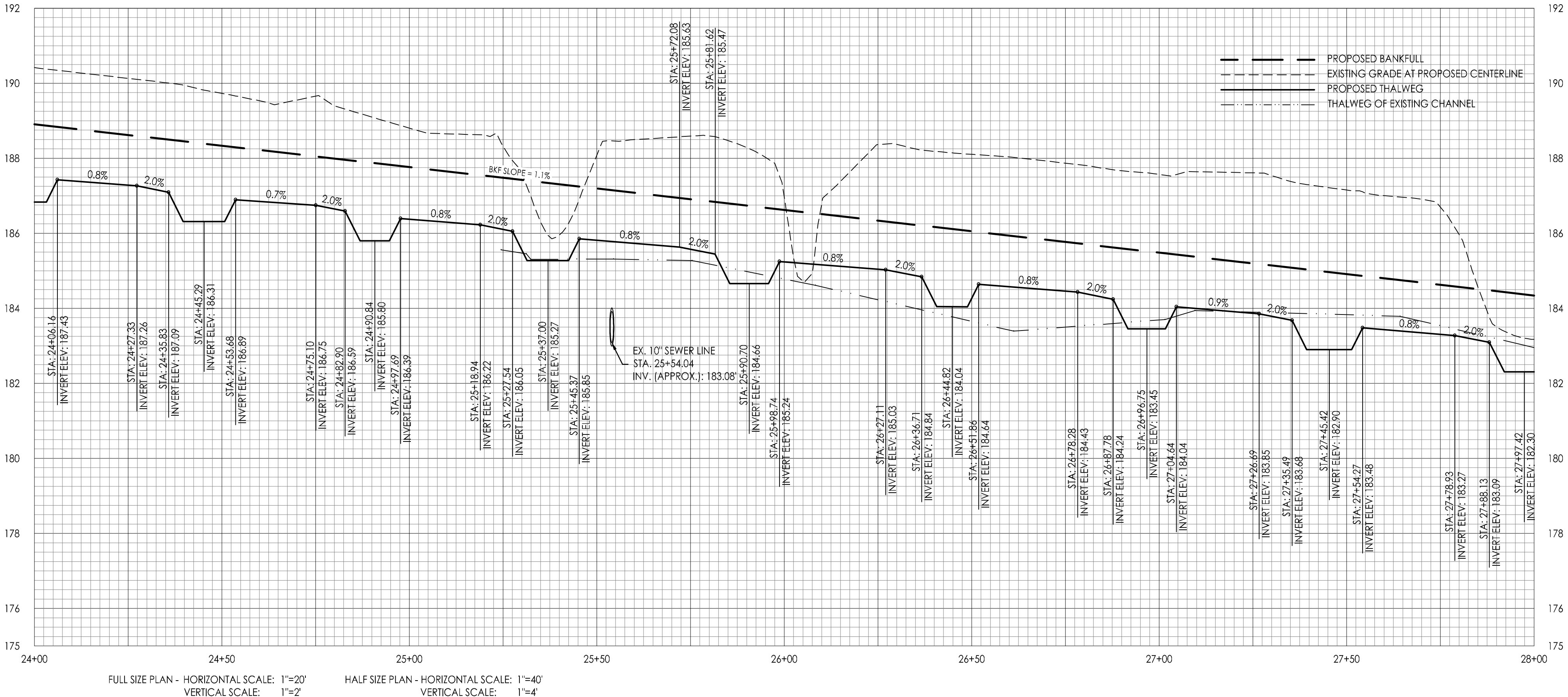
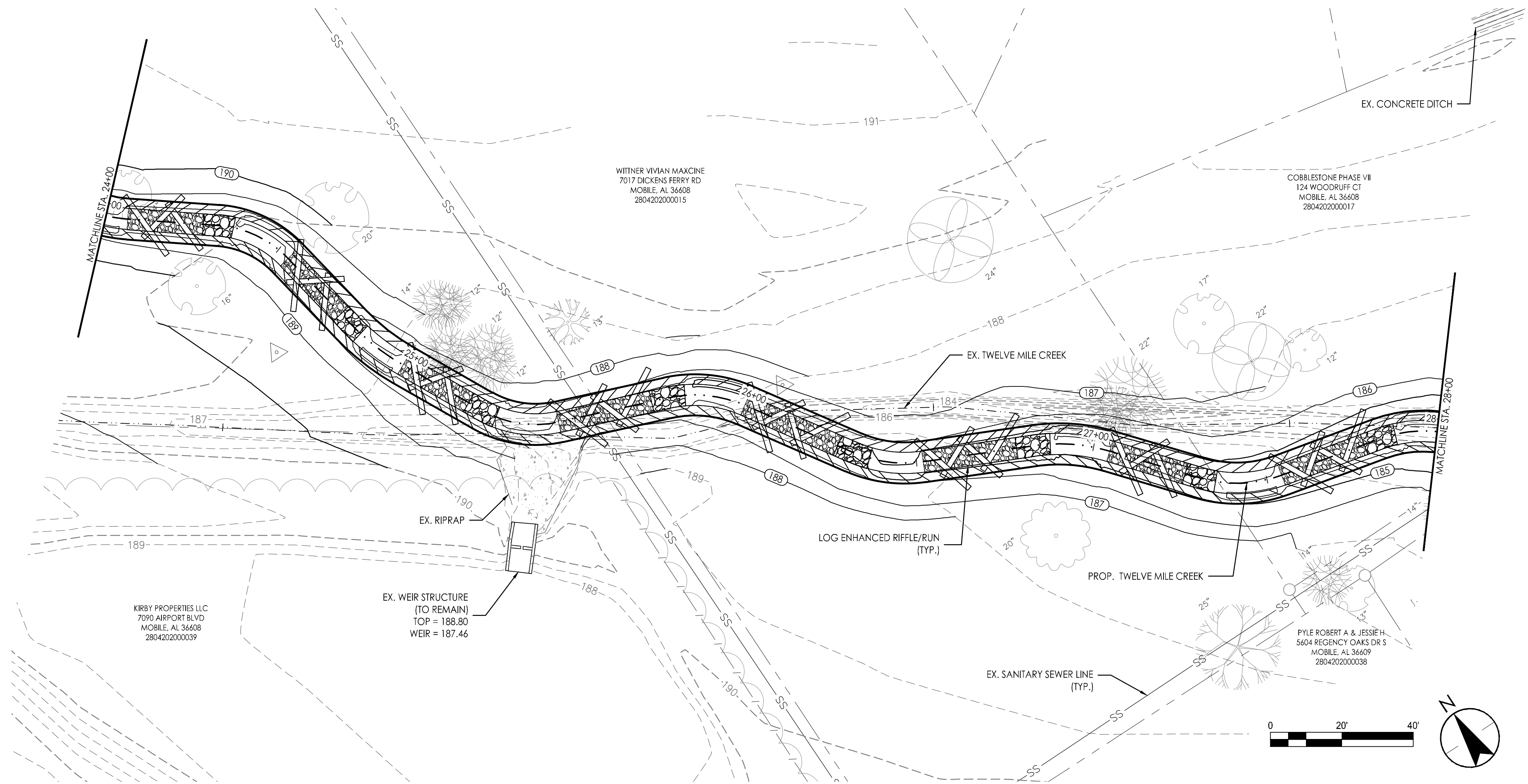
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5 of 21

Drawing No.

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MOBILE BAY NATIONAL ESTUARY PROGRAM

TWELVE MILE CREEK
HEADWATERS RESTORATION
MOBILE, AL

Title
PLAN & PROFILE

Project No.
177311100

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Sheet
6 of 21

Drawing No.

6



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TWELVE MILE CREEK
HEADWATERS RESTORATION

MOBILE, AL

Title

PLAN & PROFILE

Project No.
177311100

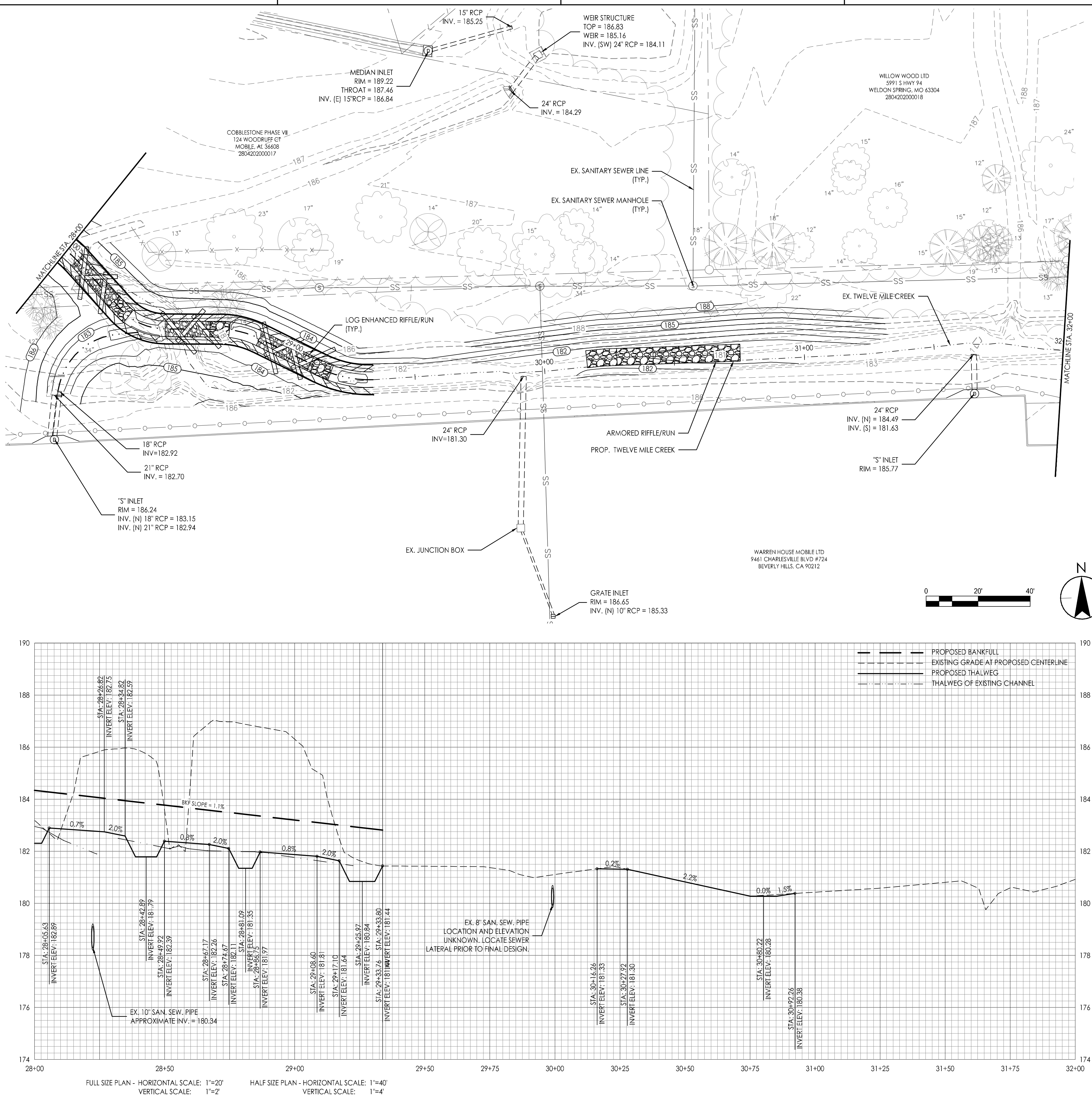
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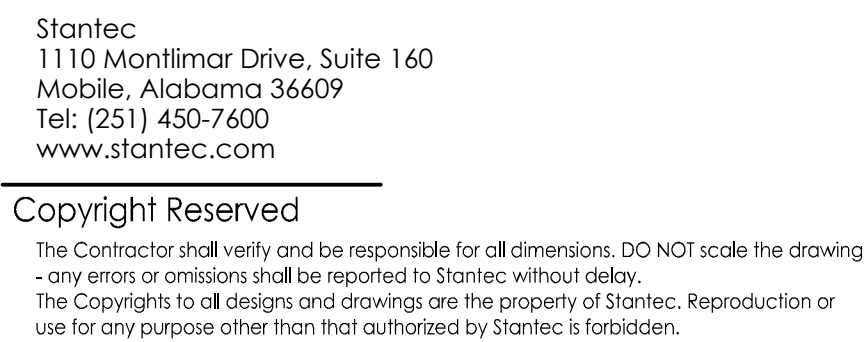
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TWELVE MILE CREEK
HEADWATERS RESTORATION
MOBILE, AL

Title
PLAN & PROFILE

Project No.
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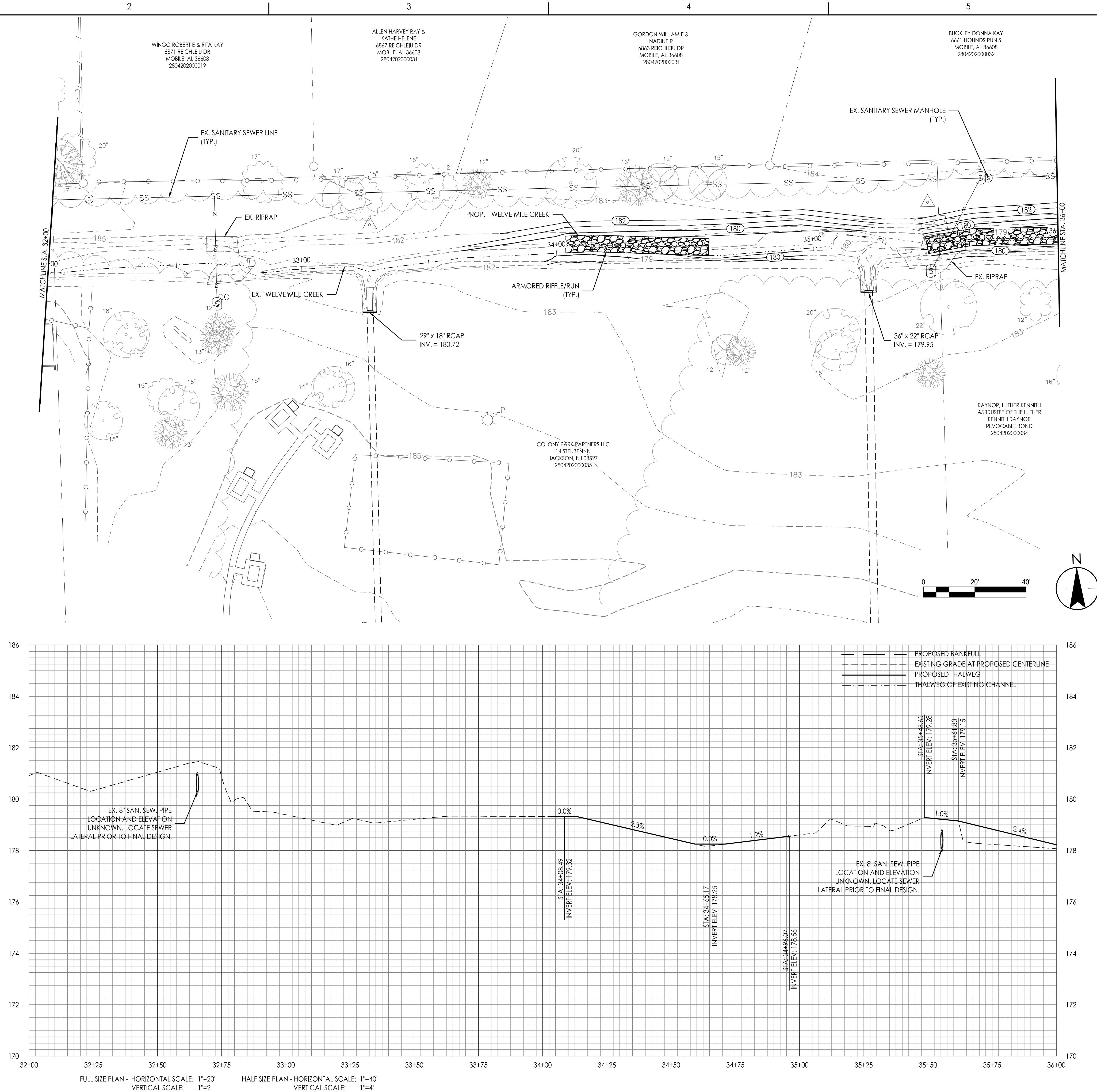
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Sheet
8 of 21

Drawing No

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MOBILE BAY NATIONAL ESTUARY PROGRAM

TWELVE MILE CREEK
HEADWATERS RESTORATION
MOBILE, AL

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PLAN & PROFILE

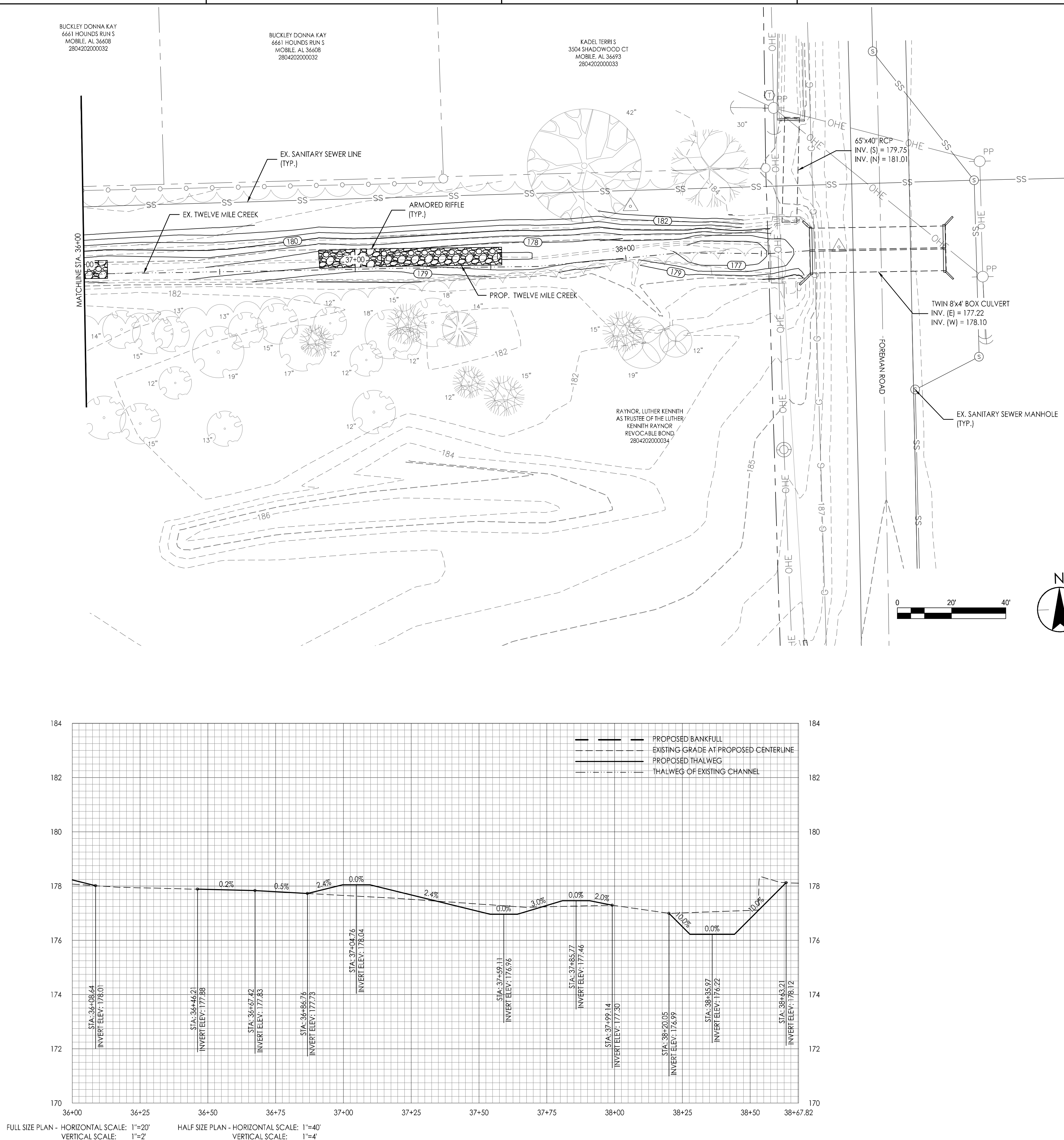
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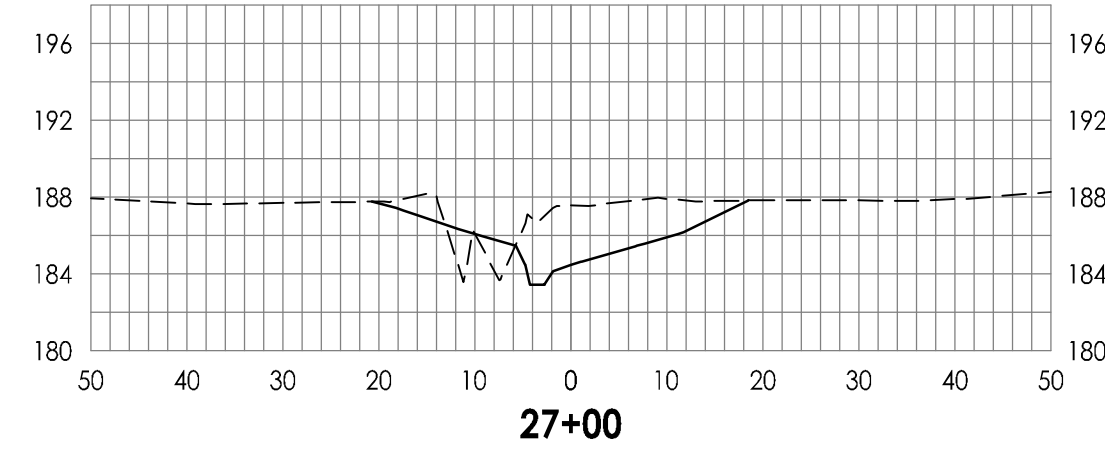
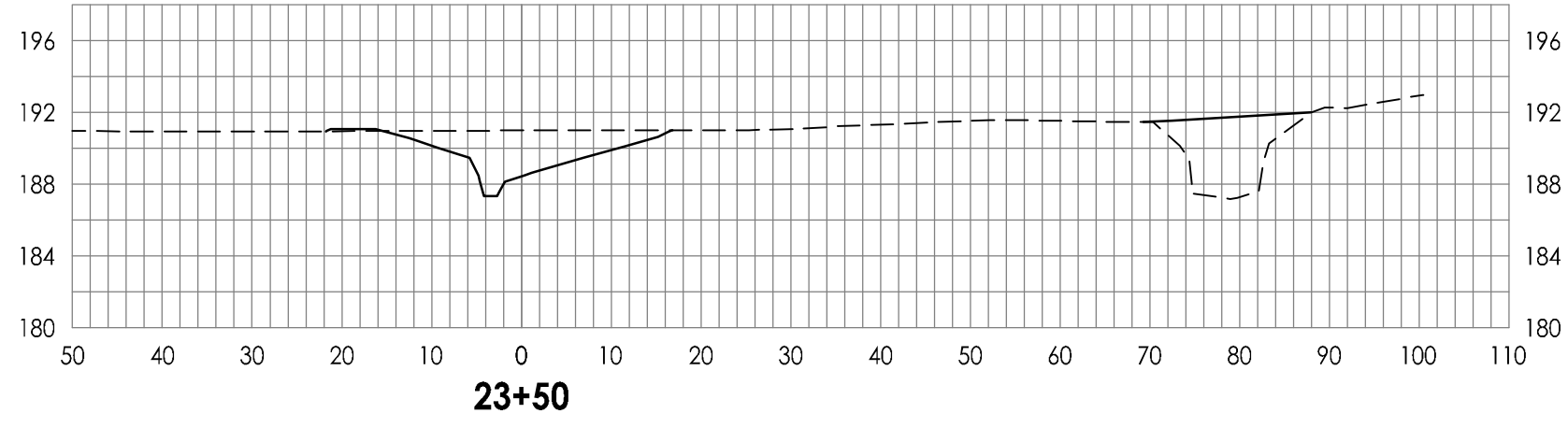
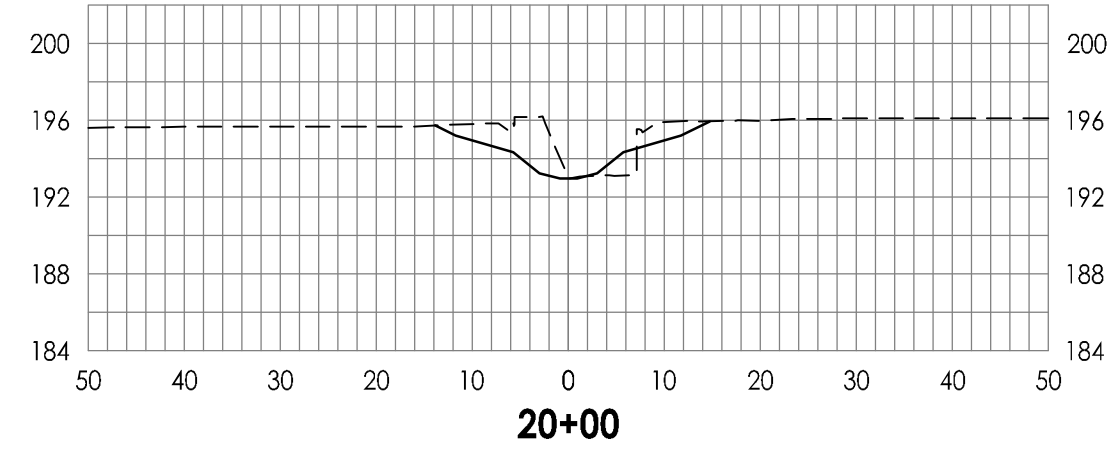
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9 of 21

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Title

CROSS SECTIONS

Project No.
177311100

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| Revision | Sheet |
| X | 10 of 21 |

Scale
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Drawing No

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MOBILE BAY NATIONAL ESTUARY PROGRAM

TWELVE MILE CREEK
HEADWATERS RESTORATION
MOBILE, AL

Title
CROSS SECTIONS

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| Revision X | Sheet 11 of 21 |
| Drawing No. | 11 |



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TWELVE MILE CREEK
HEADWATERS RESTORATION
MOBILE, AL

Title
STREAM RESTORATION DETAILS

Project No.
177311100

Scale
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| Revision | Sheet |
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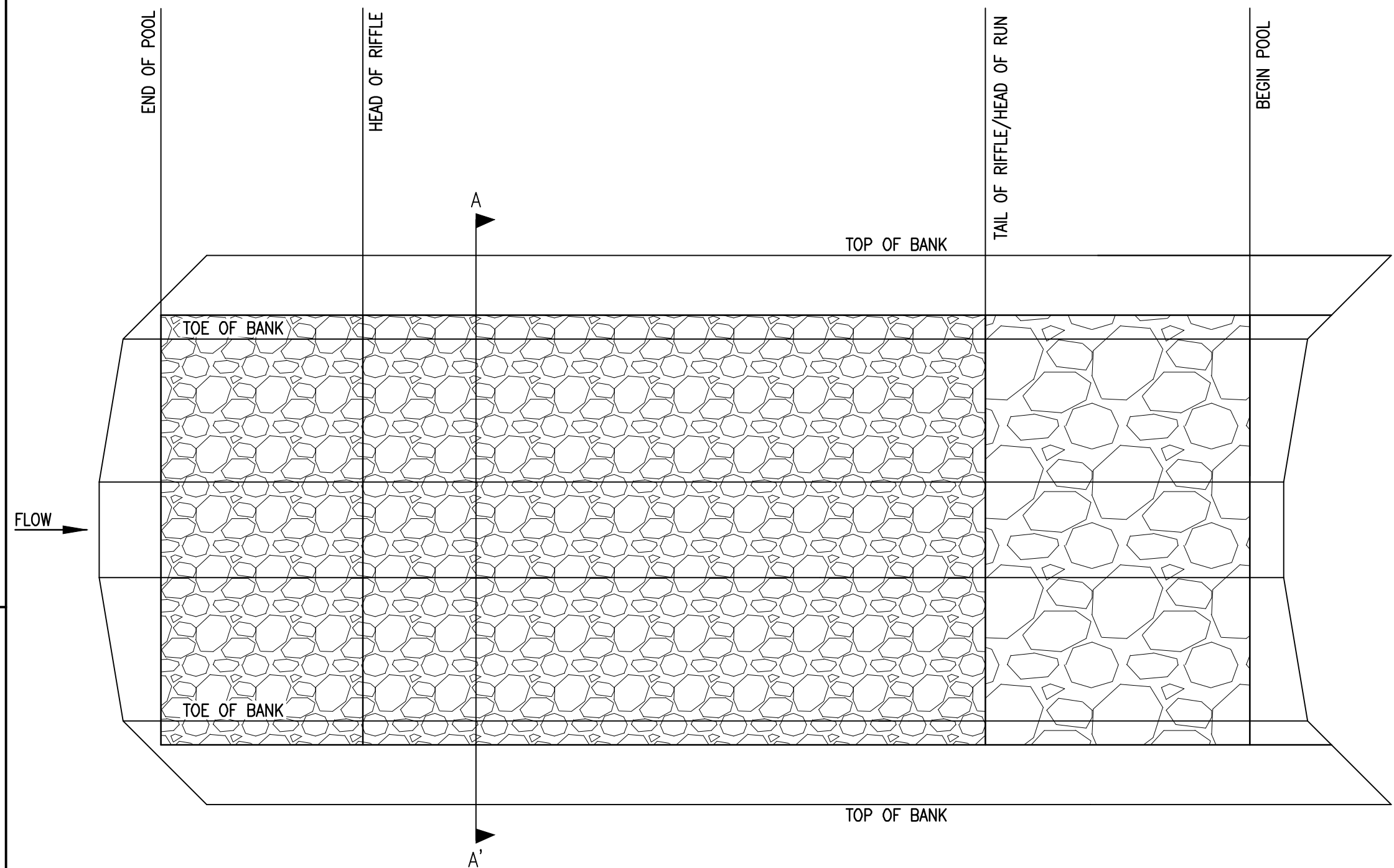
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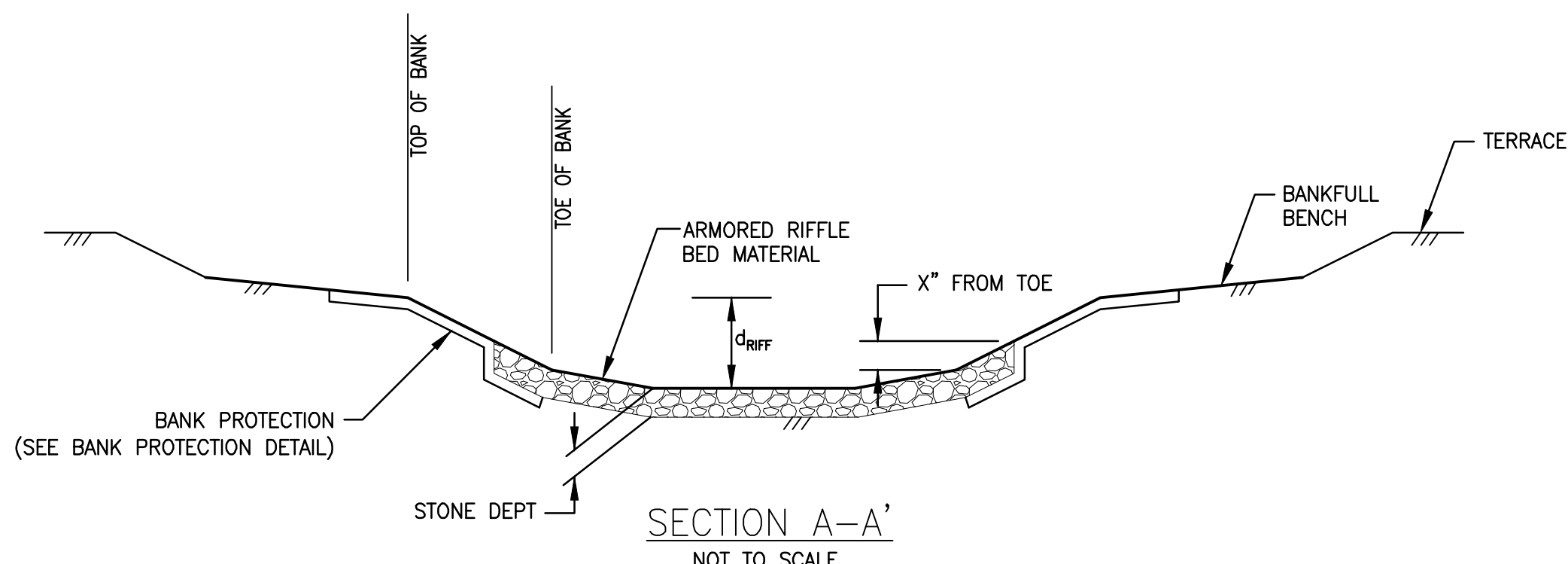
- NOTES:

1. SILL, FOOTER, AND SURFACE STONES SHALL BE DURABLE LIMESTONE, GRANITE, OR DOLOMITE AND BE SIZED PER THE TABLE IN THIS DETAIL. STONES SHOULD BE APPROXIMATELY RECTANGULAR IN SHAPE.
2. SELECT STONE SHALL BE USED IN THE RIFLES TO CHINK GAPS IN THE MINI-VANES, CONTRACTOR MAY SUBSTITUTE DESIGNATED MATERIAL FOR CHINKING ROCK AS PER ENGINEER'S APPROVAL.
3. THE MOST UPSTREAM MINI-VANE SHALL HAVE A SILL ON THE SAME SIDE AS THE OUTSIDE BEND AND SHALL HAVE FOOTER Boulders. IF BEDROCK IS PRESENT DIRECTLY BELOW THE SURFACE BOLLER, THE SILL AND FOOTER BOLLER MAY BE PLACED AT THE BEDROCK AT THE OUTSIDE BEND. THE MOST DOWNSTREAM MINI-VANE SHALL HAVE A SILL ON THE SAME SIDE AS THE DOWNSTREAM OUTSIDE BEND. INCLUDING ROADWAYS, SHALL NOT BE VISIBLE AT FINISHED BANKFULL GRADE.
4. THE MAXIMUM AMOUNT OF DROP FROM ONE MINI-VANE TO THE NEXT SHALL BE NO GREATER THAN 0.3 FT. THE COMBINED AMOUNT OF DROP OVER ALL THE MINI-VANES IN THE SAME RIFLE SHALL NOT EXCEED THE TOTAL AMOUNT OF FALL IN THE RIFLE SLOPE.
5. LOW POINT OF STONE OR LOG VANE SHALL BE AT GRADE INDICATED IN PROFILE.
6. LOW POINT SHALL ALTERNATE LEFT AND RIGHT OF CENTERLINE.
7. MINI-VANES SHALL BE EQUALLY SPACED ALONG RIFLE THALWEG.
8. CONTRACTOR MAY INSTALL Boulders IN PLACE OF LOGS AS PER ENGINEER'S APPROVAL.
9. RIFLE ARMOR MATERIAL SHALL BE AS PER TABLE. UPON COMPLETION OF THE PAYMENT LAYER, THE CONTRACTOR SHALL PLACE SUB PAYEMENT MATERIAL OVER THE PAYEMENT AND WASH IT INTO THE GAPS IN THE PAYEMENT.



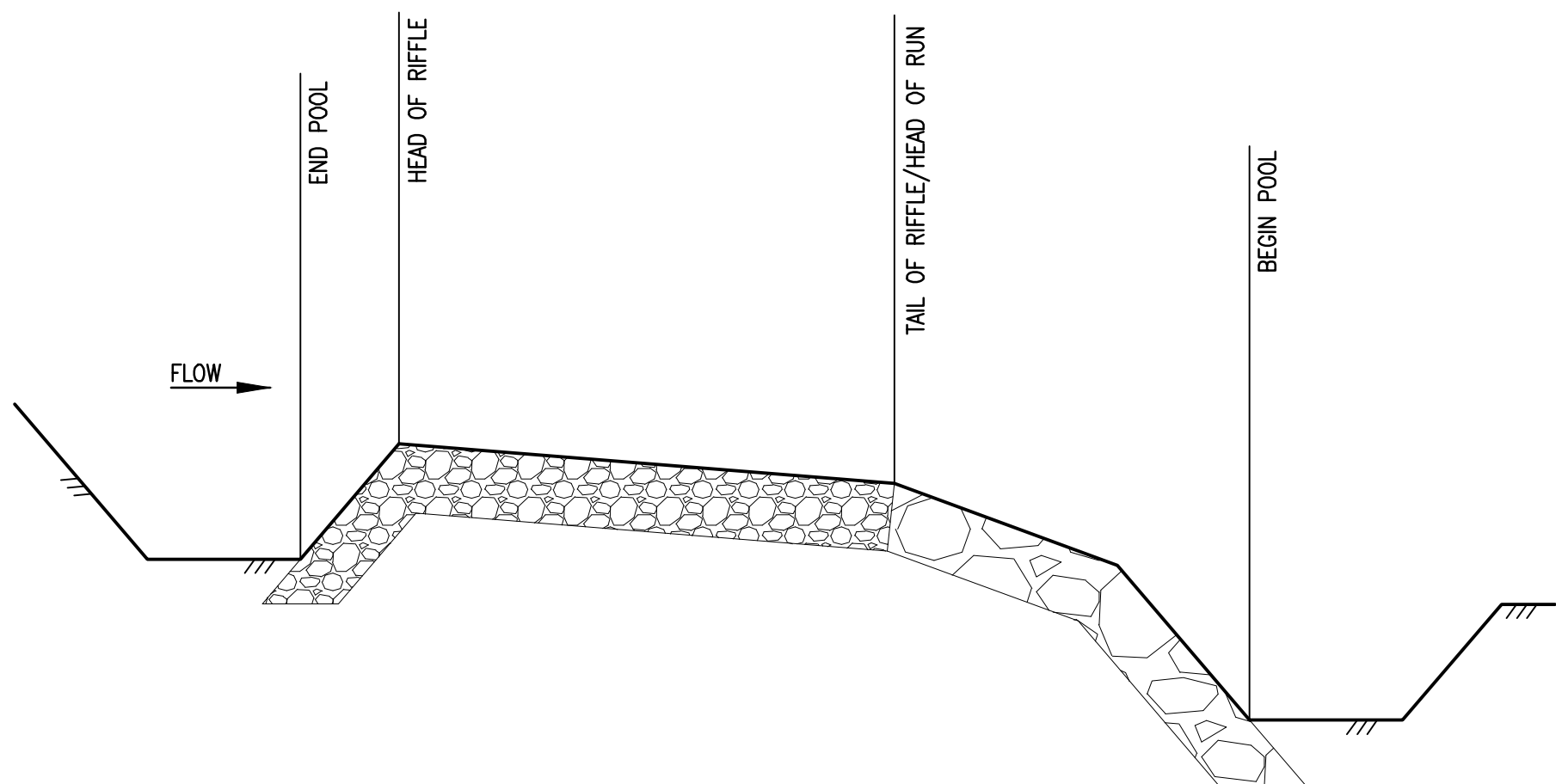
ARMORED RIFLE/RUN PLAN
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NOTE: RIFFLE AND RUN MATERIAL TO
BE DETERMINED IN FINAL PLANS.



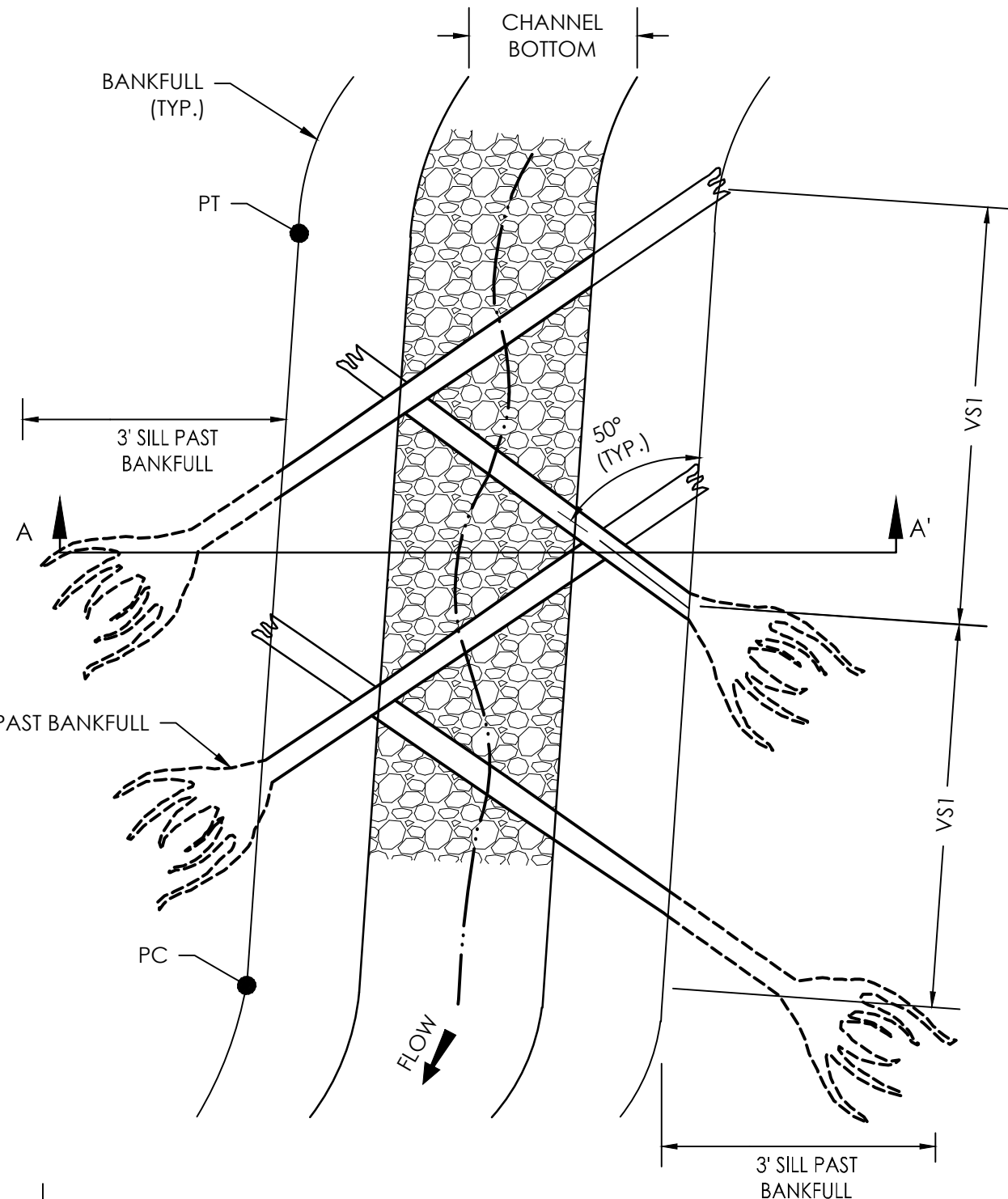
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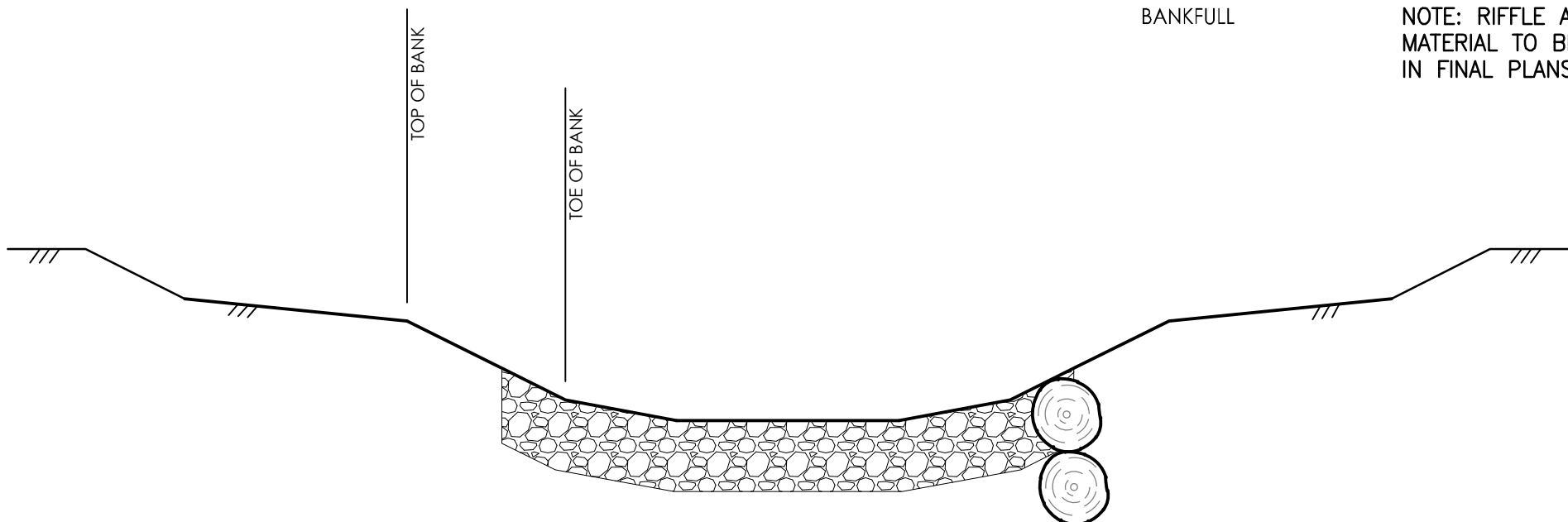
PROFILE
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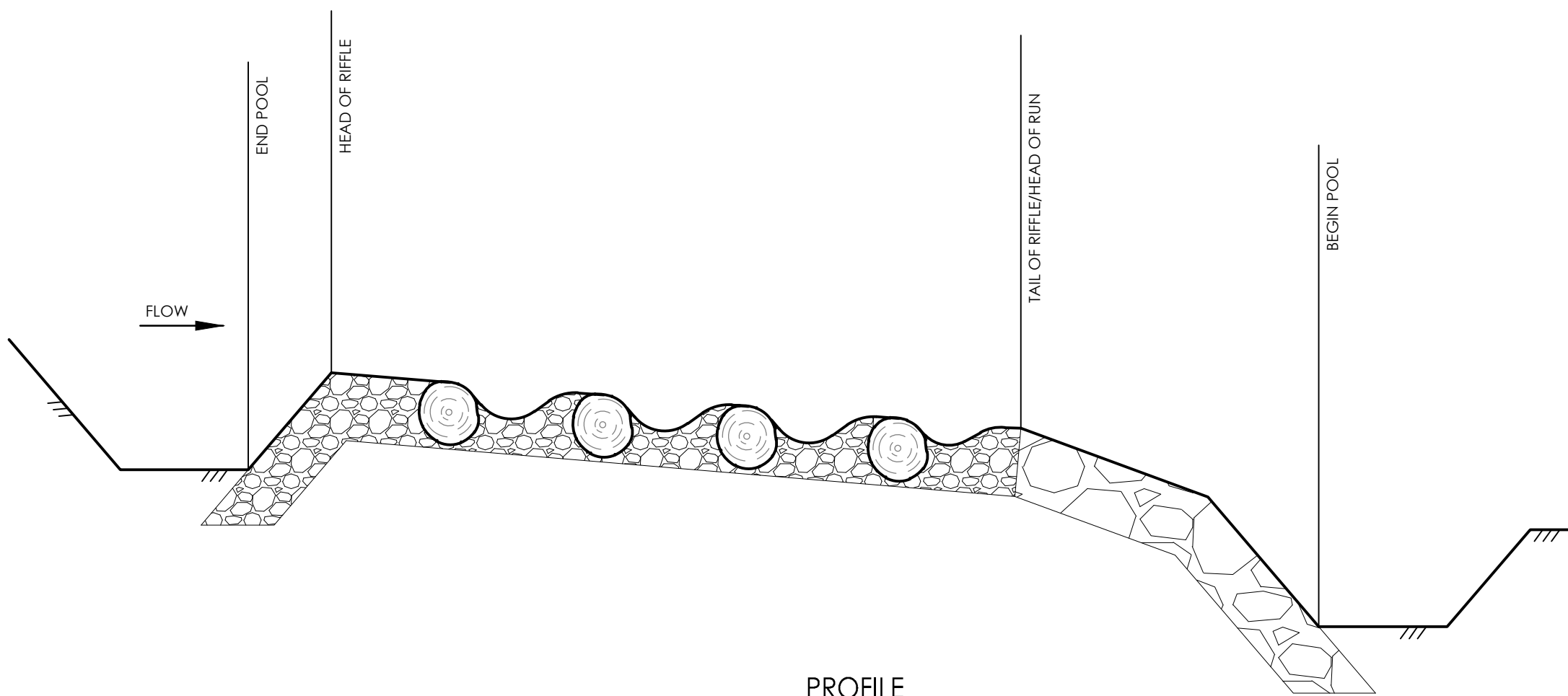
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SECTION A-A'

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PROFILE
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| 2 | LOG ENHANCED RIFFLE / RUN |
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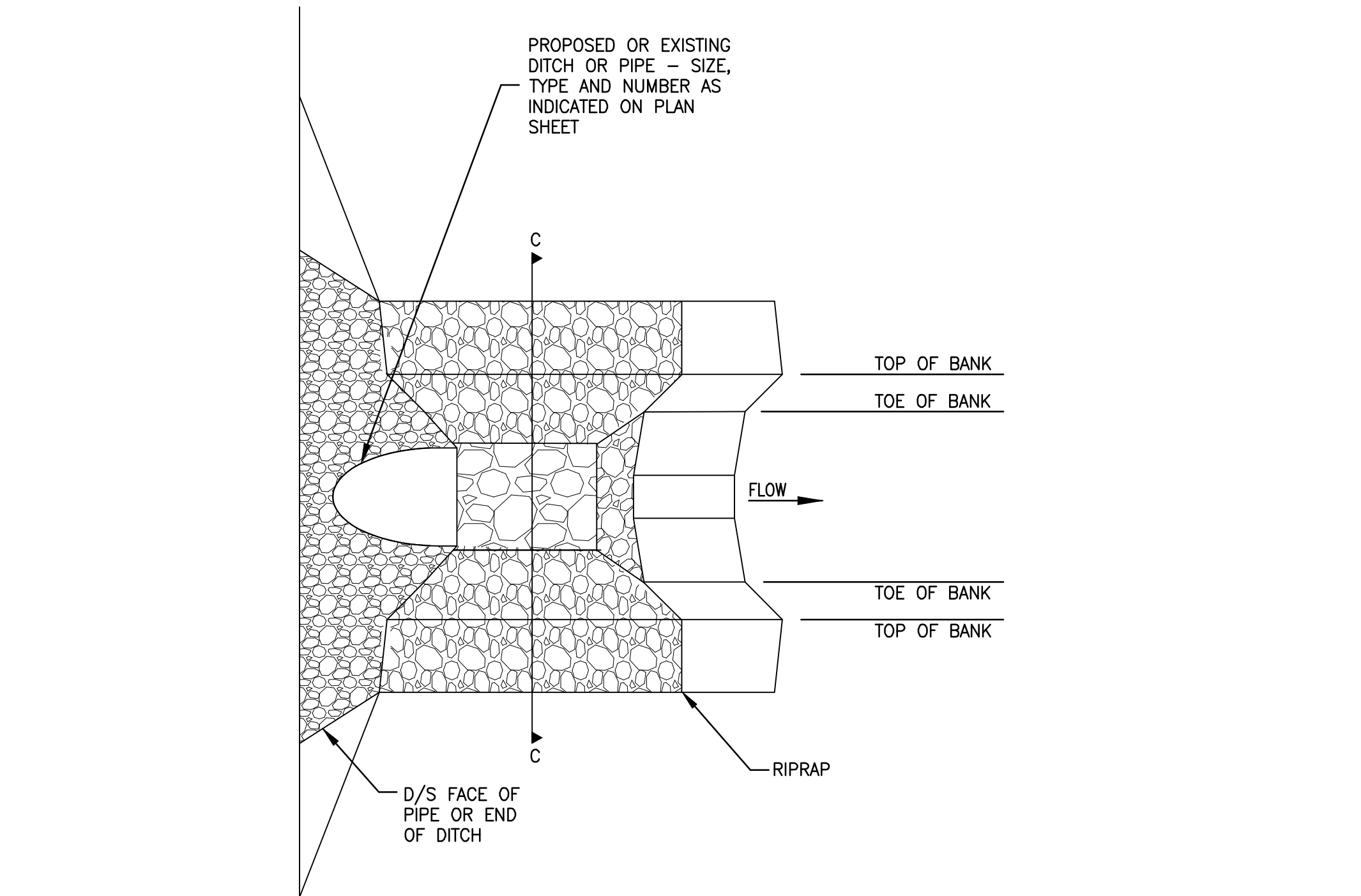
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Client/Project
MOBILE BAY NATIONAL ESTUARY PROGRAM

TWELVE MILE CREEK
HEADWATERS RESTORATION
MOBILE, AL

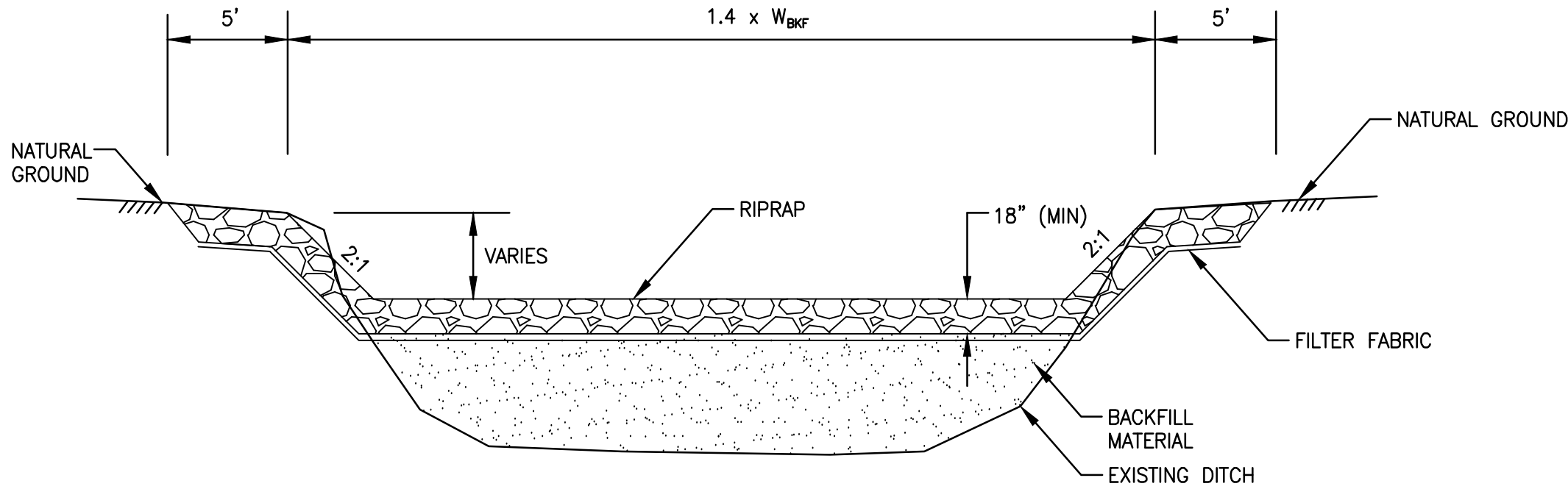
Title
STREAM RESTORATION DETAILS

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| Project No. 177311100 | Scale AS NOTED |
| Revision X | Sheet 13 of 21 |
| Drawing No. 13 | |



PLAN VIEW
NOT TO SCALE

NOTE: RIPRAP MATERIAL SIZE
WILL BE DETERMINED DURING
FINAL DESIGN.



SECTION C-C
NOT TO SCALE

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9
RIPRAP OUTLET PROTECTION
N.T.S.

PRELIMINARY
60% DRAFT

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MOBILE BAY NATIONAL ESTUARY PROGRAM

TWELVE MILE CREEK
HEADWATERS RESTORATION
MOBILE, AL

Title
STREAM RESTORATION DETAILS

Project No.
177311100

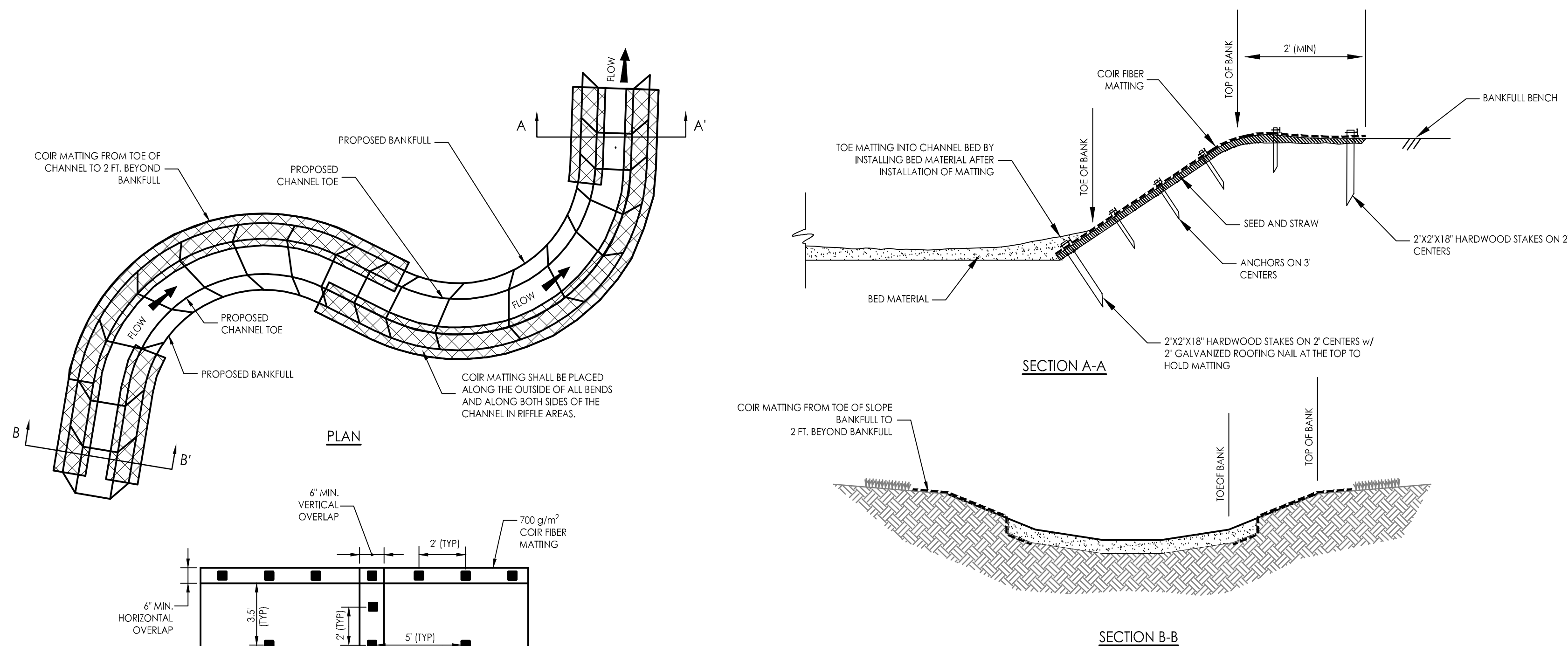
Revision
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Sheet
14 of 21

Scale
AS NOTED

Drawing No.

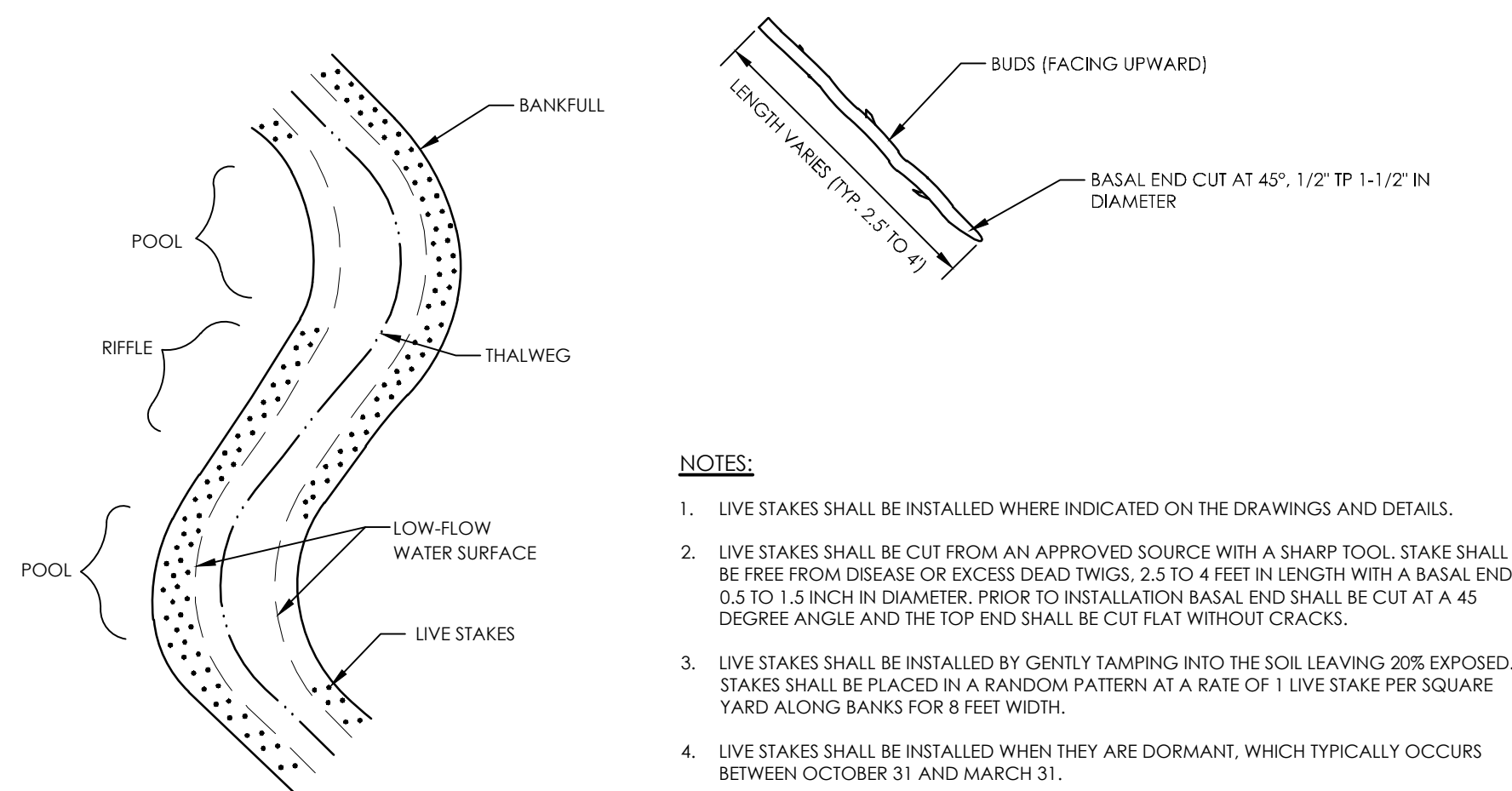
14



NOTES:

- ALL MATERIALS ARE TO BE APPROVED BY ENGINEER OR ENGINEER'S ONSITE CONSTRUCTION MANAGER.
- BEFORE INSTALLING COIR MATTING, TILL UPPER 3"-4" OF SOIL TO HELP VEGETATION TO ESTABLISH. RAKE SOIL LEVEL AND ADD SEED AND MULCH BEFORE INSTALLING COIR FIBER MATTING.
- MATTING SHALL TERMINATE AND BE BURIED AT THE EDGE OF CHANNEL SUBSTRATE. MATTING SHALL NOT EXTEND BELOW LOW-FLOW STAGE IN TWO-STAGE RIFFLE.

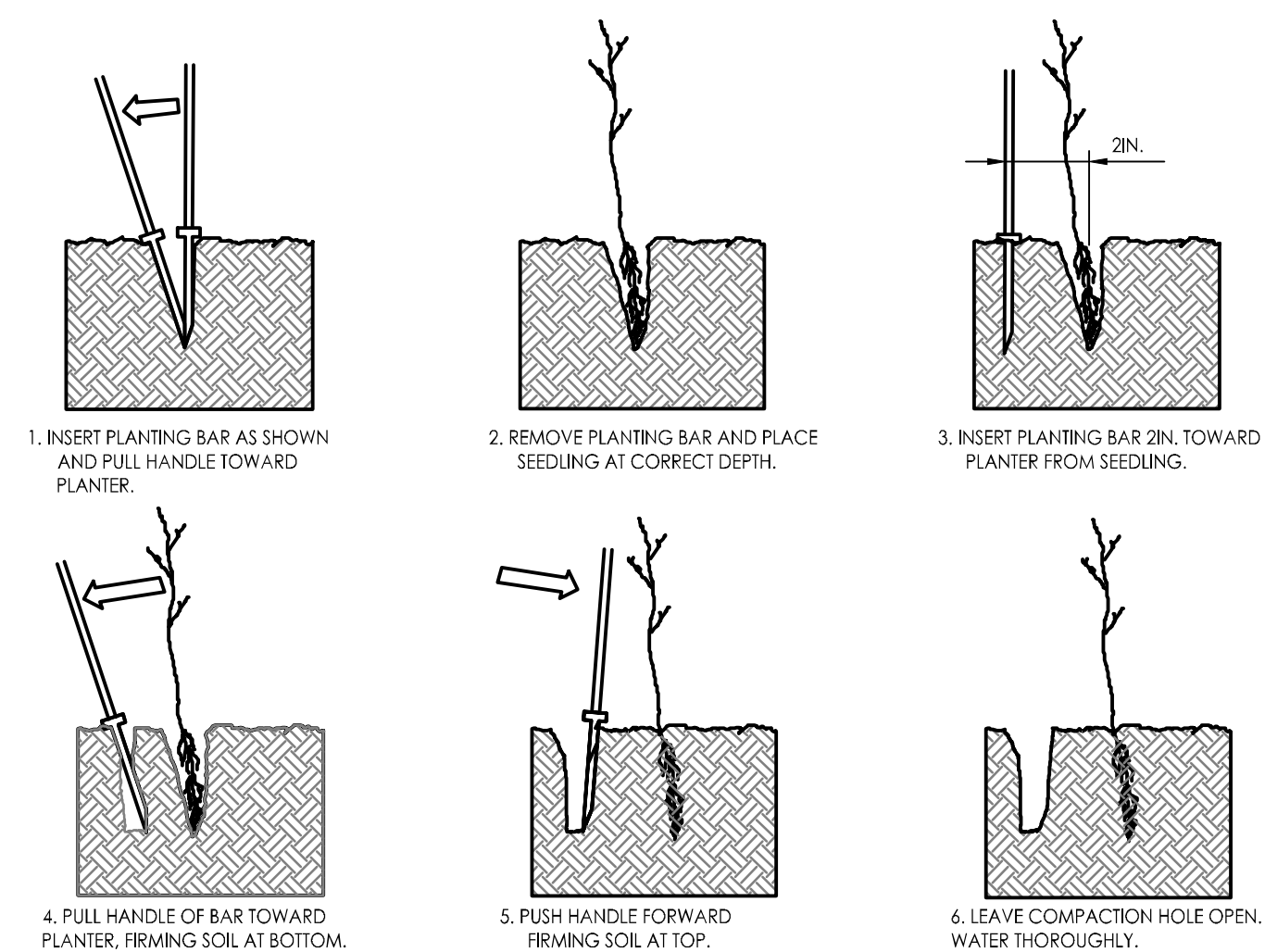
2
10
TYPICAL MATTING
N.T.S.



NOTES:

- LIVE STAKES SHALL BE INSTALLED WHERE INDICATED ON THE DRAWINGS AND DETAILS.
- LIVE STAKES SHALL BE CUT FROM AN APPROVED SOURCE WITH A SHARP TOOL. STAKE SHALL BE FREE FROM DISEASE OR EXCESS DEAD TWIGS. 2.5 TO 4 FEET IN LENGTH WITH A BASAL END 0.5 TO 1.5 INCH IN DIAMETER. PRIOR TO INSTALLATION BASAL END SHALL BE CUT AT A 45 DEGREE ANGLE AND THE TOP END SHALL BE CUT FLAT WITHOUT CRACKS.
- LIVE STAKES SHALL BE INSTALLED BY GENTLY TAMPING INTO THE SOIL LEAVING 20% EXPOSED. STAKES SHALL BE PLACED IN A RANDOM PATTERN AT A RATE OF 1 LIVE STAKE PER SQUARE YARD ALONG BANKS FOR 8 FEET WIDTH.
- LIVE STAKES SHALL BE INSTALLED WHEN THEY ARE DORMANT, WHICH TYPICALLY OCCURS BETWEEN OCTOBER 31 AND MARCH 31.
- SEE PLANTING SCHEDULE.

2
10
LIVE STAKING
N.T.S.



PLANTING BAG:
DURING PLANTING, SEEDLINGS SHALL BE KEPT IN A MOIST CANVAS BAG OR SIMILAR CONTAINER TO PREVENT THE ROOT SYSTEMS FROM DRYING.

KBC PLANTING BAR:
PLANTING BAR SHALL HAVE A BLADE WITH A TRIANGULAR CROSS SECTION, AND SHALL BE 12IN. LONG, 4IN. WIDE AND 1IN. THICK AT CENTER.

ROOT PRUNING:
ALL SEEDLINGS SHALL BE ROOT PRUNED, IF NECESSARY, SO THAT NO ROOTS EXTEND MORE THAN 10 INCHES (10IN.) BELOW THE ROOT COLLAR.

NOTES:

- TREE REFORESTATION SHALL BE PLANTED 6' TO 10' ON CENTER, RANDOM SPACING, AVERAGING 8' ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.
- OTHER PLANTING METHOD CAN BE USED WITH THE PERMISSION OF THE PLANTING SUPERVISOR.
- ALL MATERIALS ARE TO BE APPROVED BY ENGINEER OR ENGINEER'S ONSITE CONSTRUCTION MANAGER.

DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR
(FOR FLOODPLAIN BUFFER PLANTING AND UPLAND BUFFER PLANTING)

3
10
BARE ROOT PLANTING
N.T.S.

Notes

PRELIMINARY
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CONSTRUCTION**

Client/Project Logc

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MOBILE BAY NATIONAL ESTUARY PROGRAM

TWELVE MILE CREEK
HEADWATERS RESTORATION
MOBILE, AL

Title
PLANTING PLAN

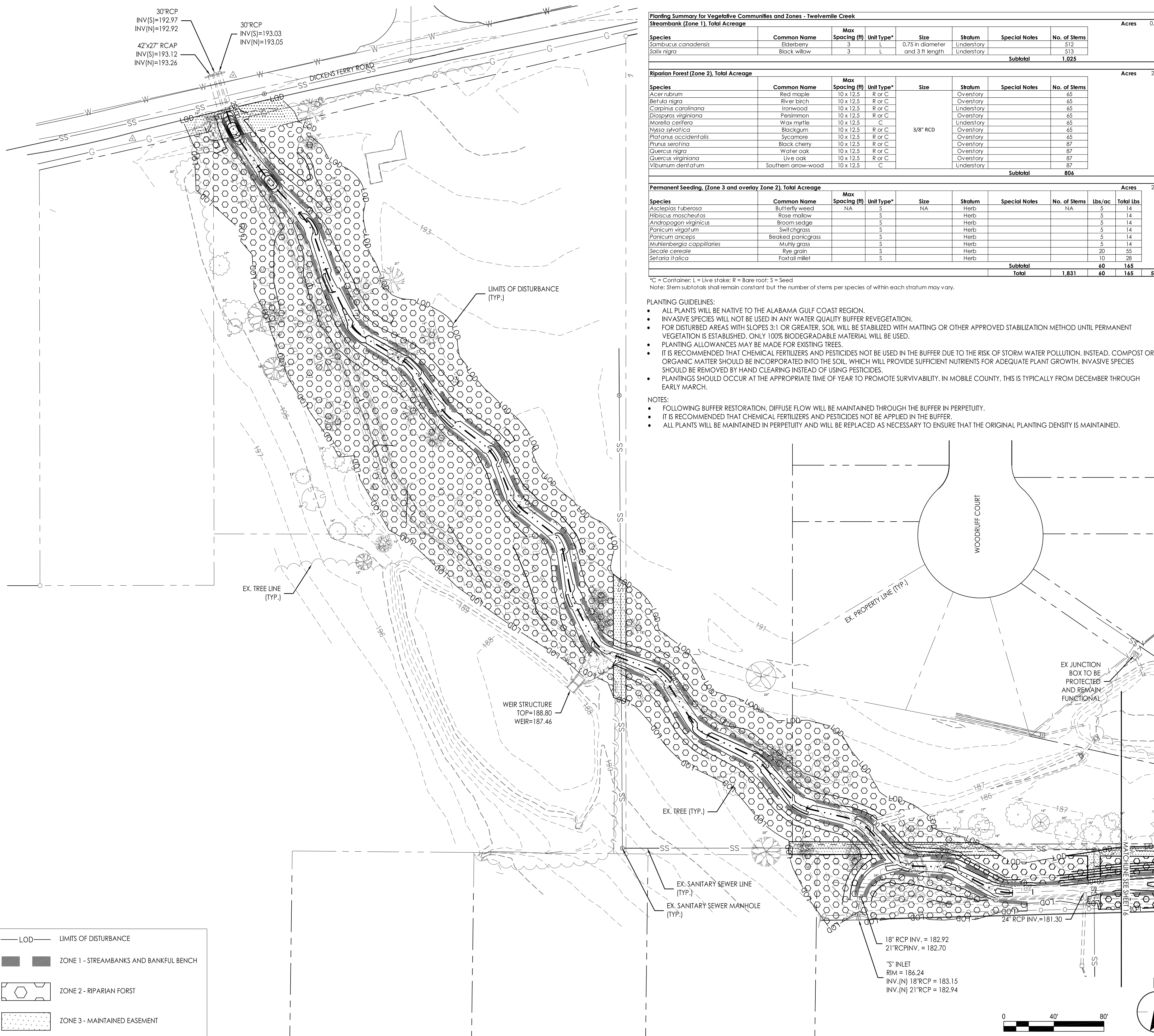
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177311100

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| Revision | Sheet |
| X | 15 of 21 |

Scale
AS NOTED

Drawing No. _____

15





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Consultant

Notes

PRELIMINARY
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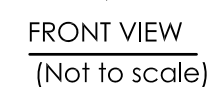
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MOBILE BAY NATIONAL ESTUARY PROGRAM

TWELVE MILE CREEK
HEADWATERS RESTORATION
MOBILE, AL

Title
EROSION AND SEDIMENT CONTROL
DETAILS III

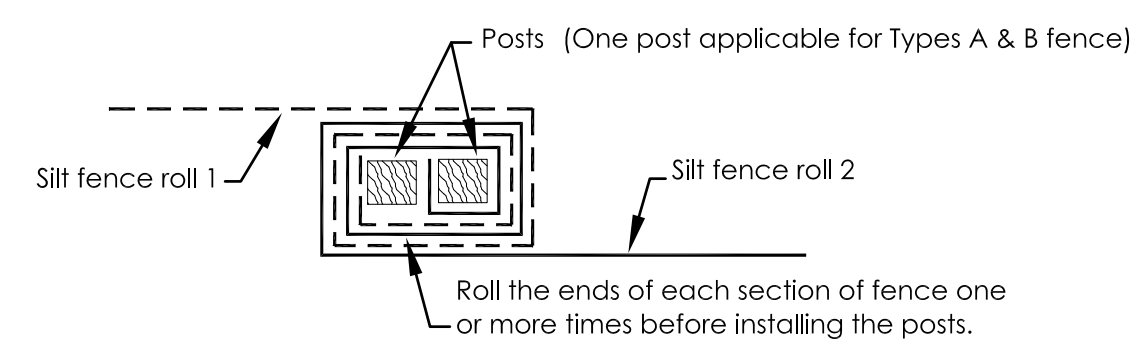
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| Project No. 177311100 | | Scale AS NOTED |
| Revision X | Sheet EC-5 of 21 | Drawing No. EC-5 |



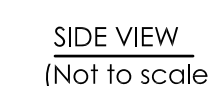
* According to ASTM D4632/D4632M :
When geotextile elongation $\geq 50\%$, use
4 ft. post spacing



FASTENERS FOR SILT FENCES
(Not to scale)



ROLL JOINT FOR JOINING TWO ADJACENT SILT FENCE SECTIONS
(Not to scale)

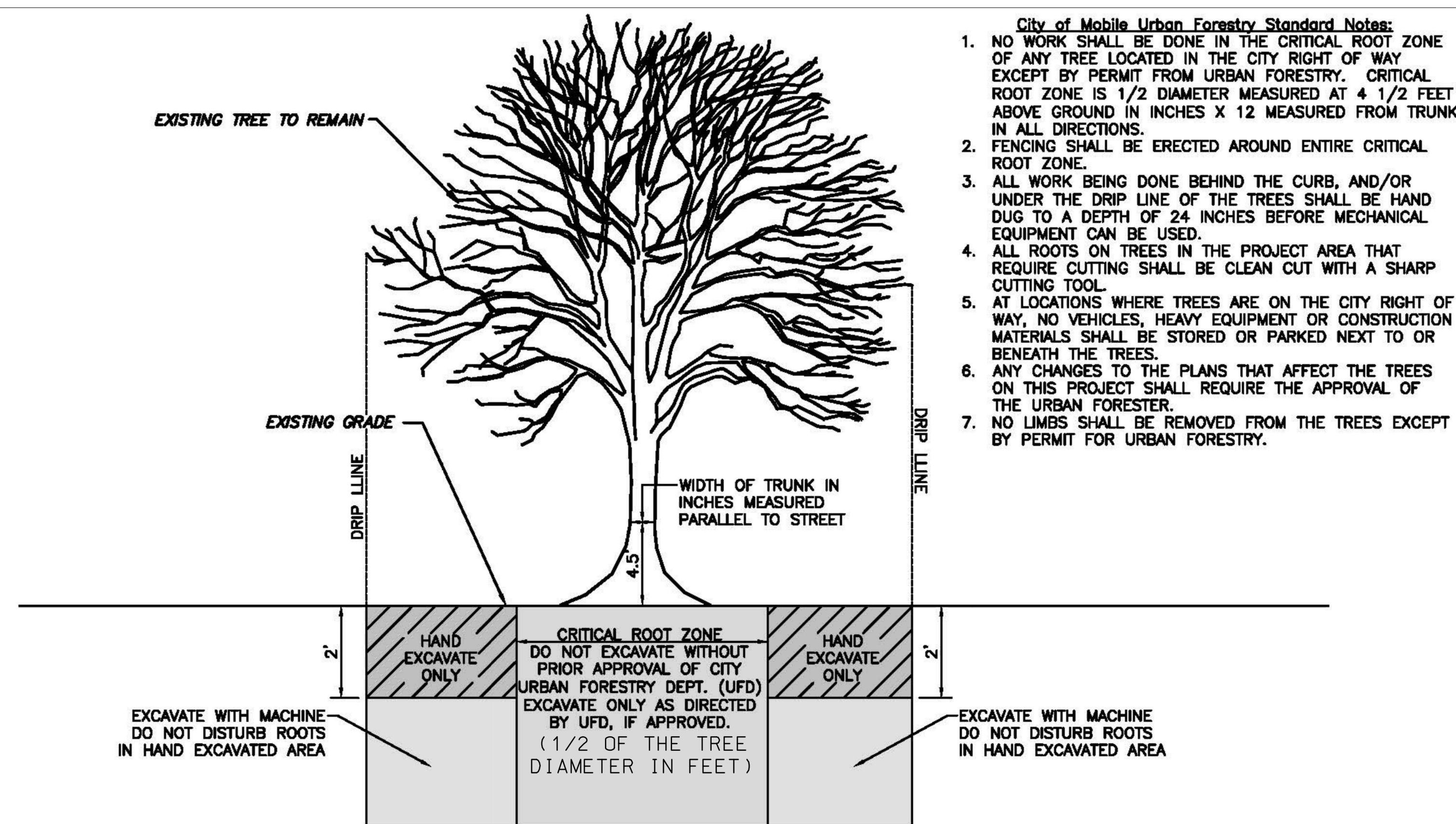


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DETAIL – SILT FENCE

NOT TO SCALE

2 DETAIL - ROCK CHECK DAM
NOT TO SCALE



TREE ROOT PROTECTION DETAIL
N.T.S.