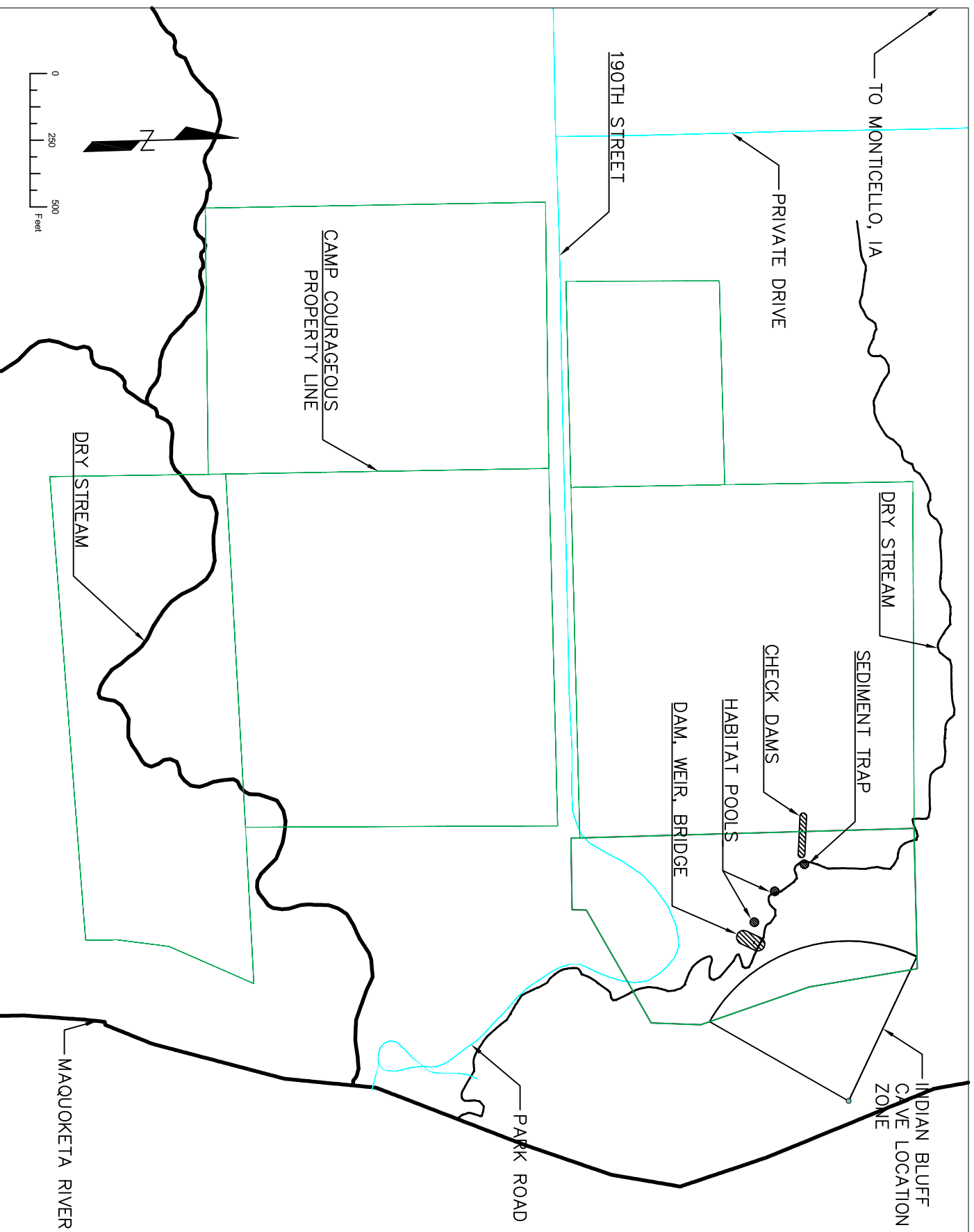


# UNIVERSITY OF IOWA CIVIL AND ENVIRONMENTAL ENGINEERING

**STORMWATER QUALITY PROJECT  
CAMP COURAGEOUS  
12007 190TH STREET  
MONTICELLO, JONES COUNTY, IA 52310**



<u>SHEET NO.</u>	<u>INDEX OF SHEETS.</u>
1	COVER SHEET
2	EXISTING CONDITIONS
3	GRADING PLAN
4	HABITAT POOL
5	SEDIMENT TRAP
6	WOOD CHECK DAM
7	SOCK SLEEVE CHECK DAM
8	ROCK CHECK DAM
9	DAM
10	WEIR
11	PREFAB BRIDGE DETAIL
12	LANDSCAPE PLAN

## STORMWATER QUALITY

12007 190TH ST  
MONTICELLO, IA 52310

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EMAIL: [civil-hawks@iowa.edu](mailto:civil-hawks@iowa.edu)

PROJECT: CEE: 4850

DATE : 12/17/2021

DRAWN BY: DZ, DS, KJ

REVISION:

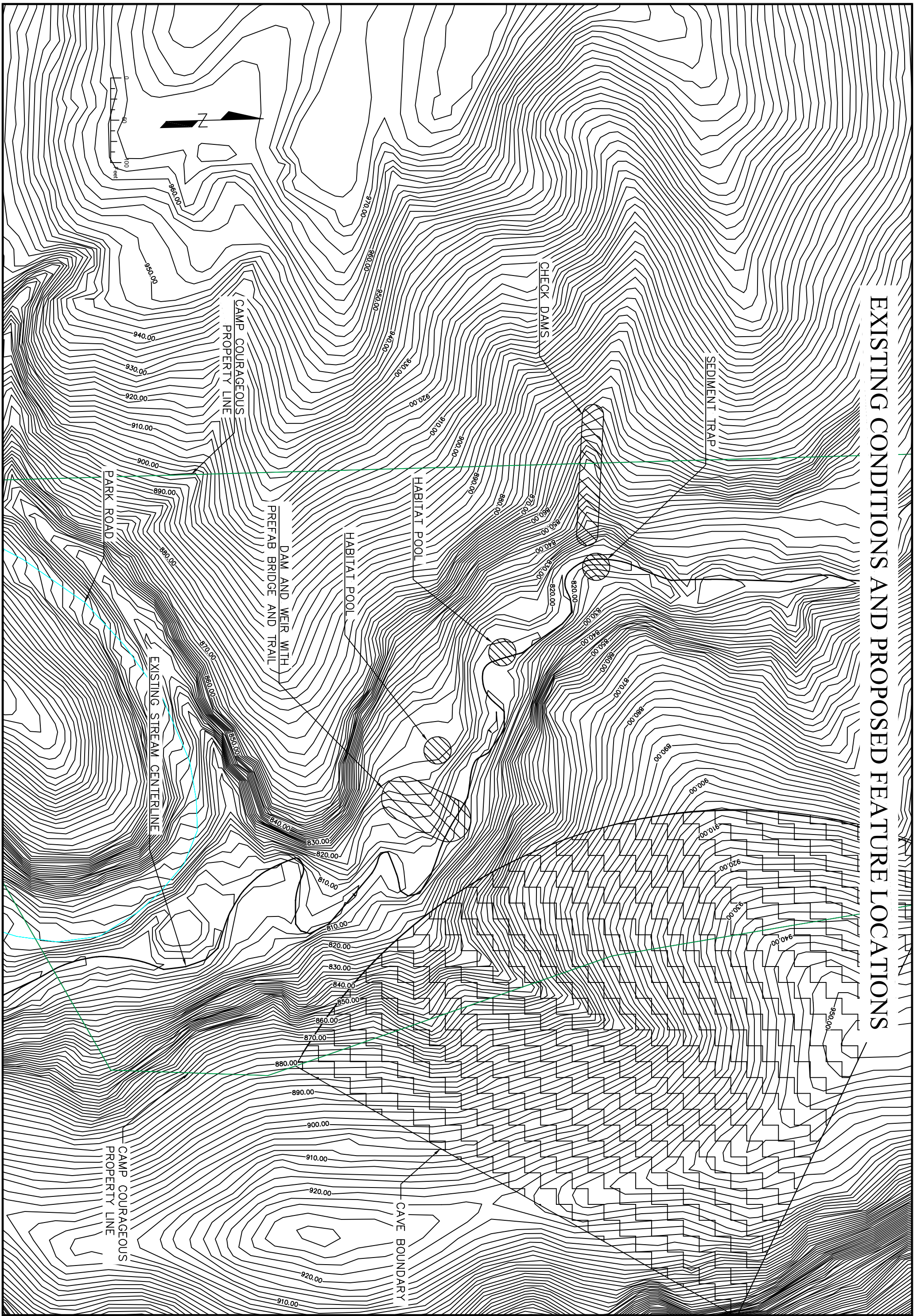
SHEET NAME

COVER SHEET

SHEET NO.

1

# EXISTING CONDITIONS AND PROPOSED FEATURE LOCATIONS



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SHEET NAME	EXISTING
SHEET NO.	<b>2</b>

**SITE PREPARATION NOTES:**

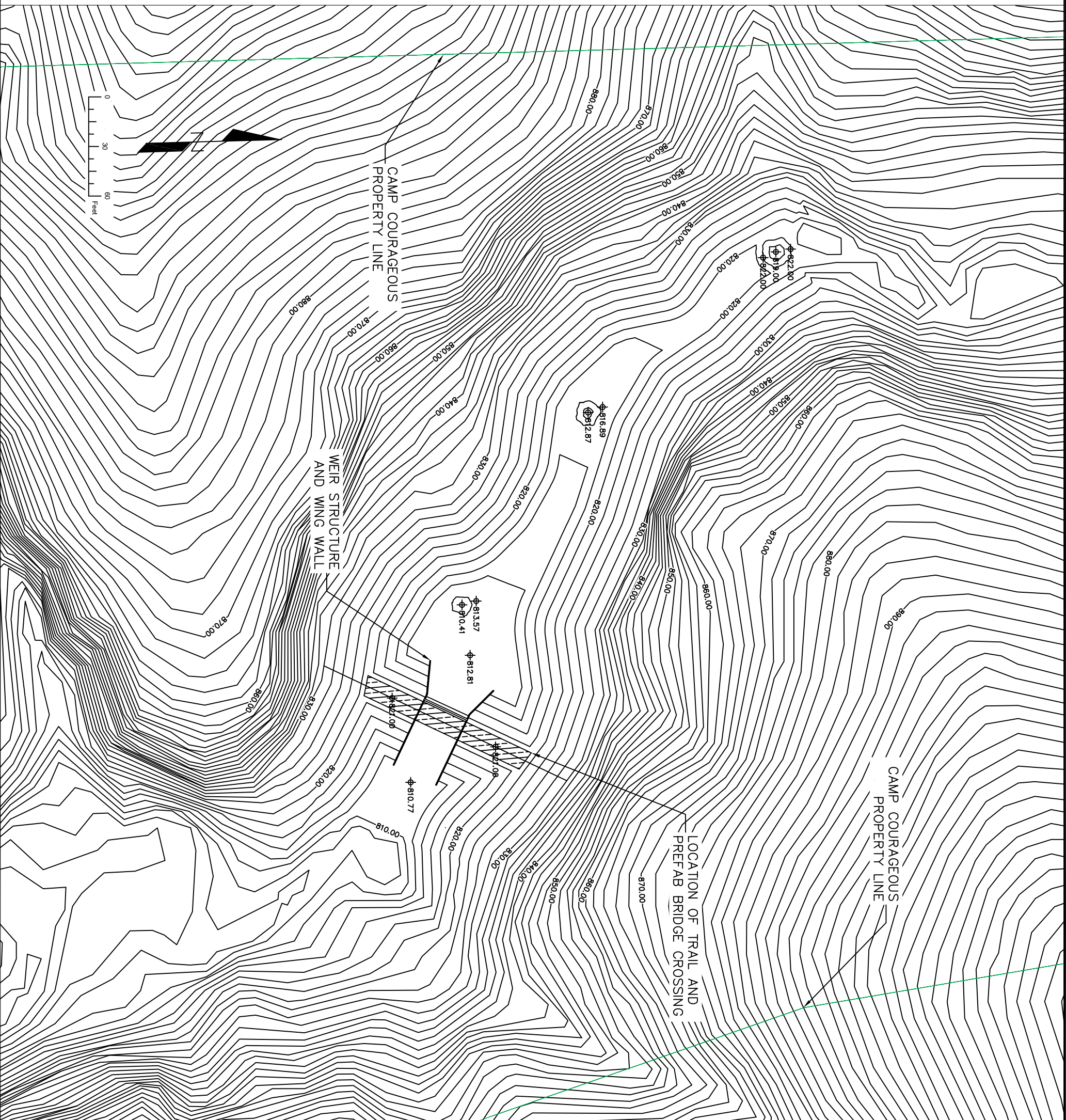
1. DISPOSAL SITES FOR EXCESS EXCAVATED MATERIAL TO BE OFF-SITE AND SHALL BE IN ACCORDANCE WITH THE APPLICABLE GOVERNMENTAL REGULATIONS.
2. ANY EXISTING FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THAT CONTRACTOR AT HIS/HER COST.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT TREES AND SHRUBS.
4. REMOVAL AND DISPOSAL OF EXISTING TREES AND SHRUBS WITHIN CONSTRUCTION LIMITS SHALL BE INCIDENTAL TO THE GRADING PORTION OF THE PROJECT.

**GRADING:**

1. REMOVE ALL EXISTING ORGANIC MATERIAL TO 6" MINIMUM DEPTH.
2. FILL AREAS TO RECEIVE STRUCTURAL FILL WILL REQUIRE SOIL TESTING BY AN APPROVED GEOTECHNICAL FIRM. PROVIDE TESTING RESULTS TO OWNER AND ENGINEER OF RECORD.
3. OBSERVATION AND TESTING OF FILL OPERATION SHALL BE BY THE SOILS ENGINEER HIRED BY THE CONTRACTOR.
4. FILL SHALL BE PLACED IN UNIFORM LIFTS HAVING A MAXIMUM LOOSE THICKNESS OF 6". THE ENTIRE SITE SHALL BE FINE GRADED WITH ELEVATION TOLERANCE OF 0.1 FOOT.
6. ALL PROPOSED ELEVATIONS ARE TO FINISH GRADE, UNLESS OTHERWISE NOTED.
7. COORDINATE CLEARING AND GRUBBING LIMITS, DEBRIS STOCKPILE LOCATIONS AND DEBRIS DISPOSAL WITH OWNER.
8. IF APPLICABLE, VERIFY STOCKPILE LOCATION AND VOLUME WITH OWNER PRIOR TO COMMENCING WORK.
9. EXCESSIVE TOPSOIL TO BE UTILIZED AS FILL OUTSIDE OF MAJOR PROJECT FEATURES TO HELP ACHIEVE A BALANCE ON EARTHWORK.

**EROSION CONTROL NOTES:**

1. EROSION CONTROL METHODS SHALL BE IN PLACE PRIOR TO AREAS BEING DISTURBED.
2. EROSION CONTROL DEVICES SHOULD BE CHECKED AND REPAIRS AT LEAST EVERY SEVEN (7) DAYS AND AFTER EACH RAINFALL EVENT.
3. MINIMIZE SOIL EROSION AND TRANSPORT BY MAINTAINING ALL EXISTING VEGETATION GROWTH WITHIN THE PROJECT LIMITS FOR AS LONG AS POSSIBLE TO SERVE AS A NATURAL BUFFER. CONTRACTOR TO PROTECT ALL ADJACENT PROPERTIES FROM DISRUPTION AT ALL TIMES.
4. ALL OPEN EXCAVATIONS SHALL BE PROTECTED.



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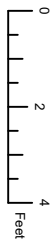
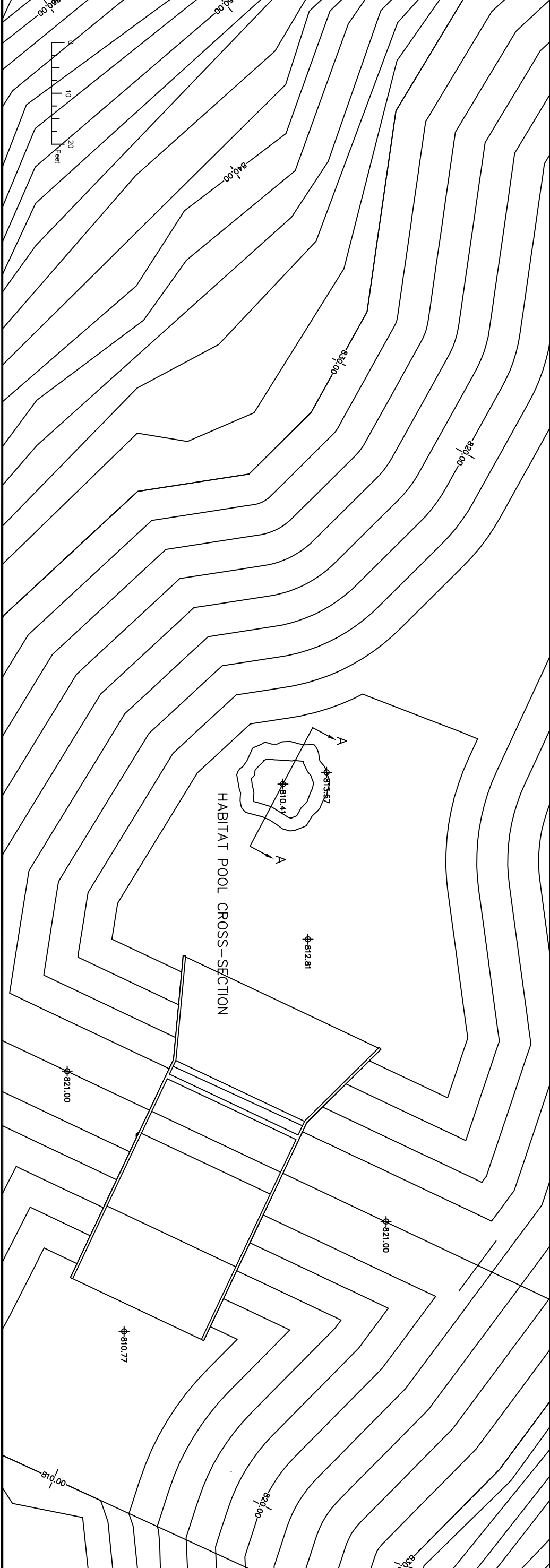
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SHEET NAME  
**GRADING PLAN**  
 SHEET NO.  
**3**



FLOW DIRECTION

SECTION A-A

CLAY LINING

4'-6" POOL DEPTH



FINISHED GRADE

APPROXIMATE 15' POOL DIAMETER

HABITAT POOL CROSS-SECTION

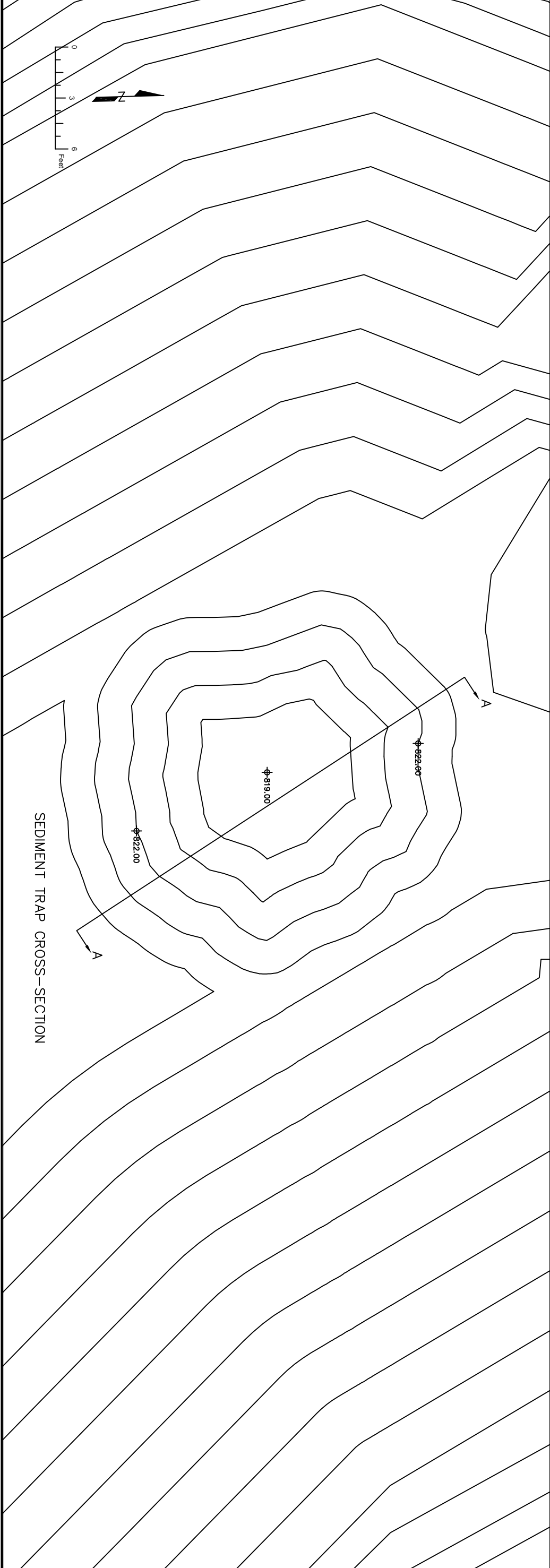
<b>4</b>	SHEET NO.
	HABITAT POOL

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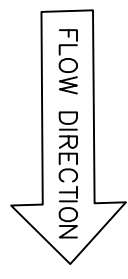
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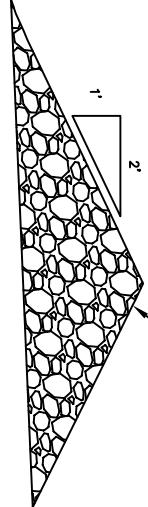
SEDIMENT TRAP CROSS-SECTION



SECTION A-A



ALL SLOPES ARE 2:1



DOWNSTREAM HALF OF SEDIMENT TRAP TO BE CONSTRUCTED OF CLASS E RIPRAP

FINISHED GRADE

SHEET NO.	<b>5</b>
SHEET NAME	SEDIMENT TRAP

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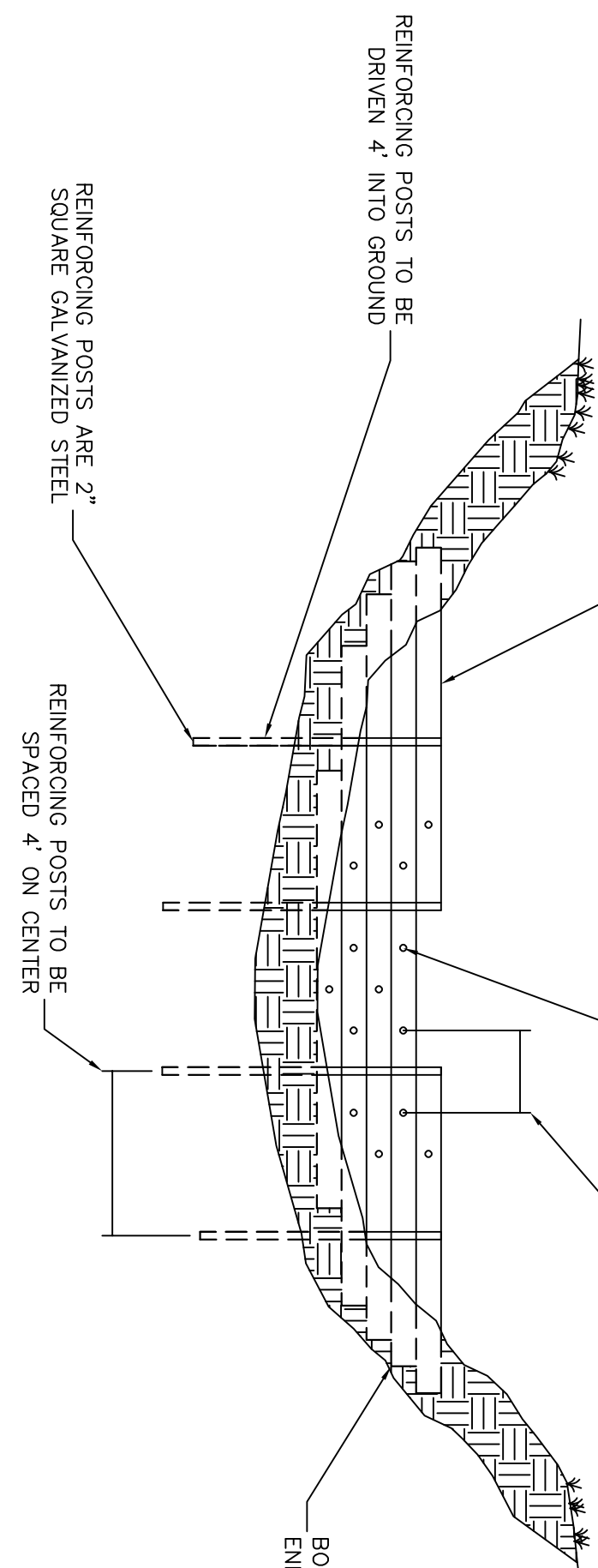
PROJECT:	CEE: 4850
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BOARDS ARE 2x8 TREATED DIMENSIONAL LUMBER AND LENGTH TO BE SIZED BASED ON SITE SPECIFIC TRIBUTARY WIDTH

BORE HOLES ARE RECOMMENDED TO BE 2" DIAMETER WITH 4 HOLES PER BOARD

BORE HOLES TO BE SPACED 2' ON CENTER ALONG THE MIDDLE OF THE BOARD

BOARDS TO BE PLACED WITH ENDS 18" INTO SIDE SLOPE SOIL



REINFORCING POSTS TO BE 2" SQUARE GALVANIZED STEEL

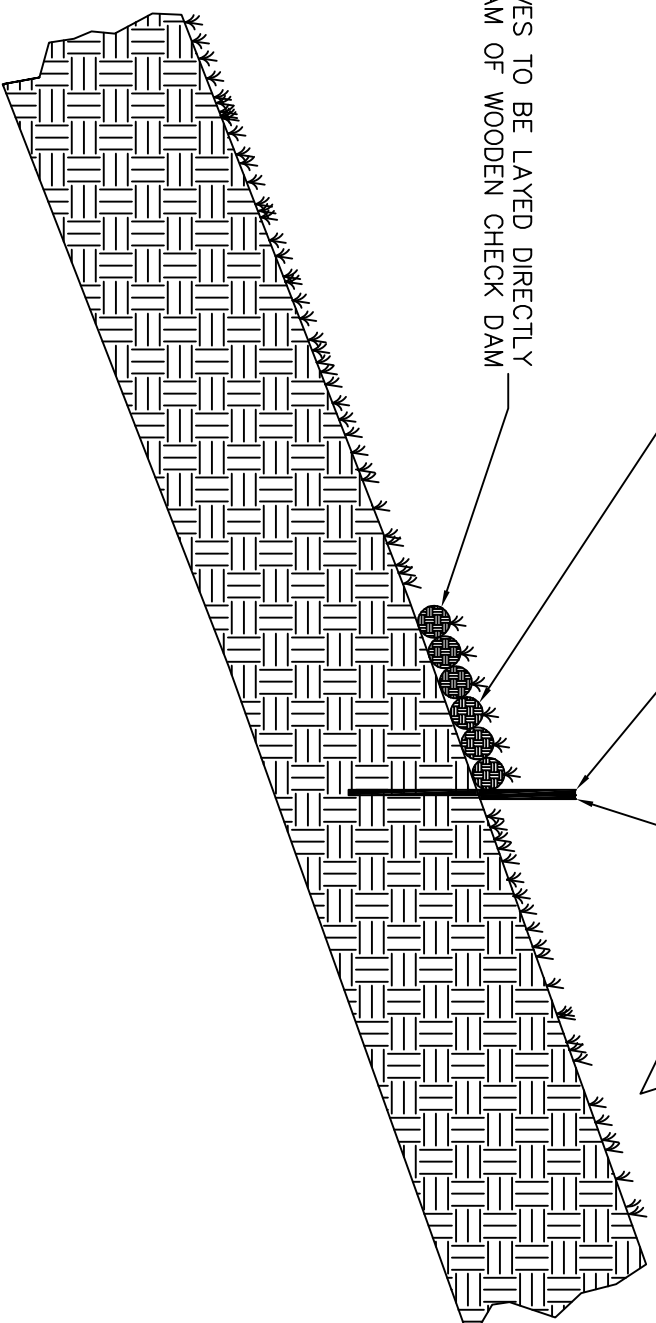
REINFORCING POSTS TO BE SPACED 4' ON CENTER

REINFORCING POSTS TO BE DRIVEN 4' INTO GROUND

2" SQUARE POST DRIVEN 4' INTO GROUND

12" DIAMETER SOCK SLEEVE

6 SOCK SLEEVES TO BE LAYED DIRECTLY DOWNSTREAM OF WOODEN CHECK DAM



FLOW DIRECTION

MAXIMUM WOODEN CHECK DAM HEIGHT IS 3'

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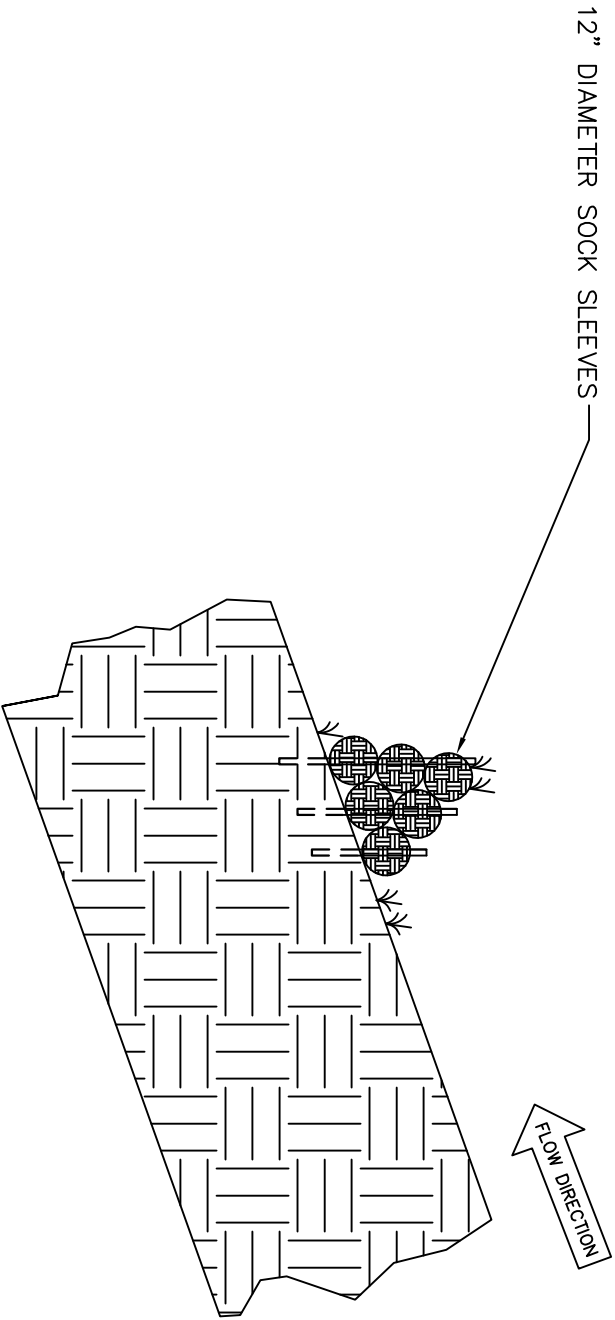
REVISION:

SHEET NAME

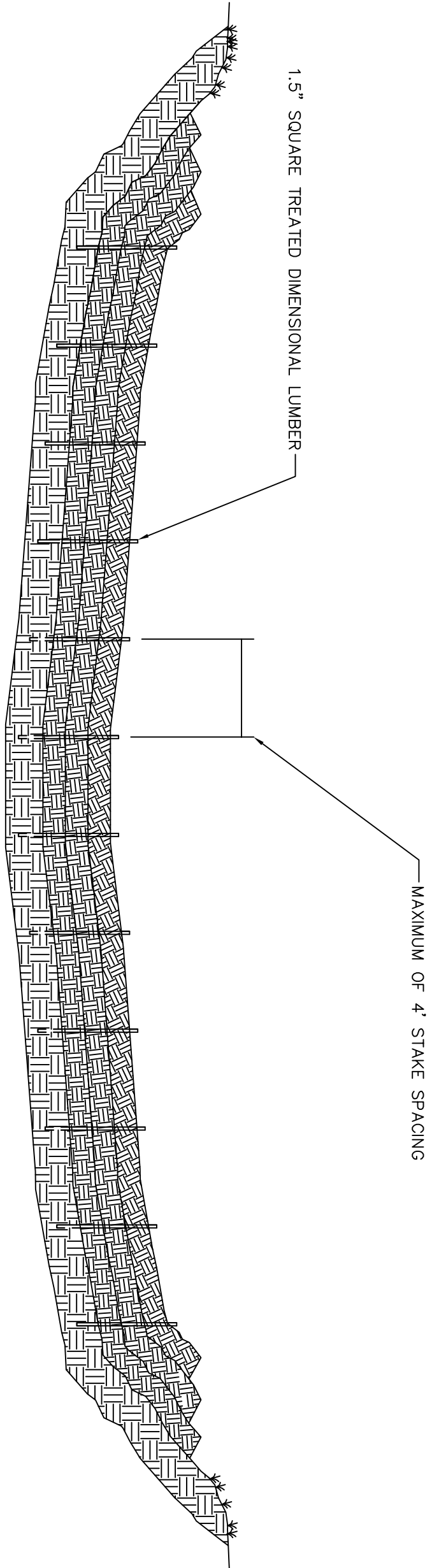
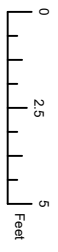
WOOD CHECK DAM

SHEET NO.

**6**



FLOW DIRECTION



**STORMWATER QUALITY**

12007 190TH ST  
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SHEET NAME

SOCK SLEEVE

SHEET NO.

**7**

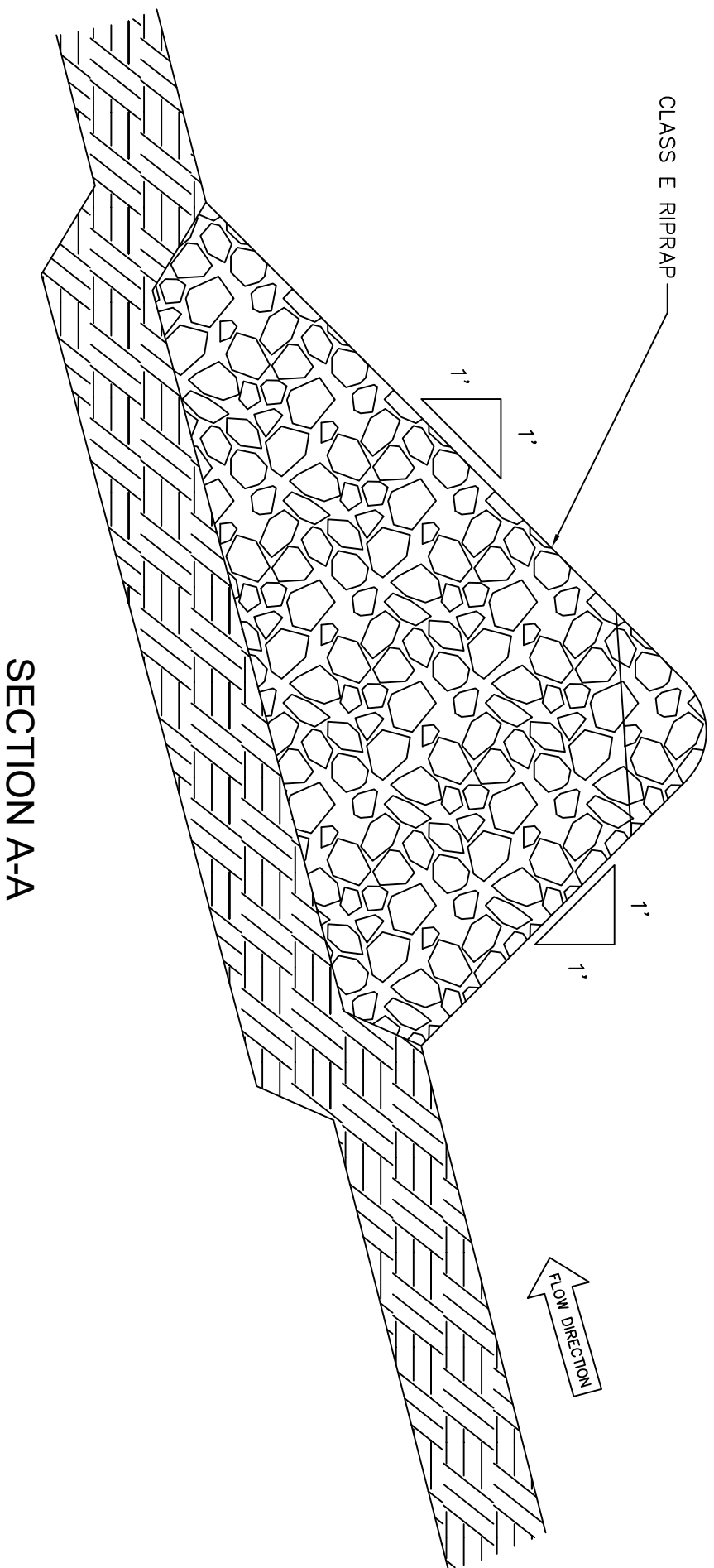
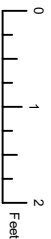
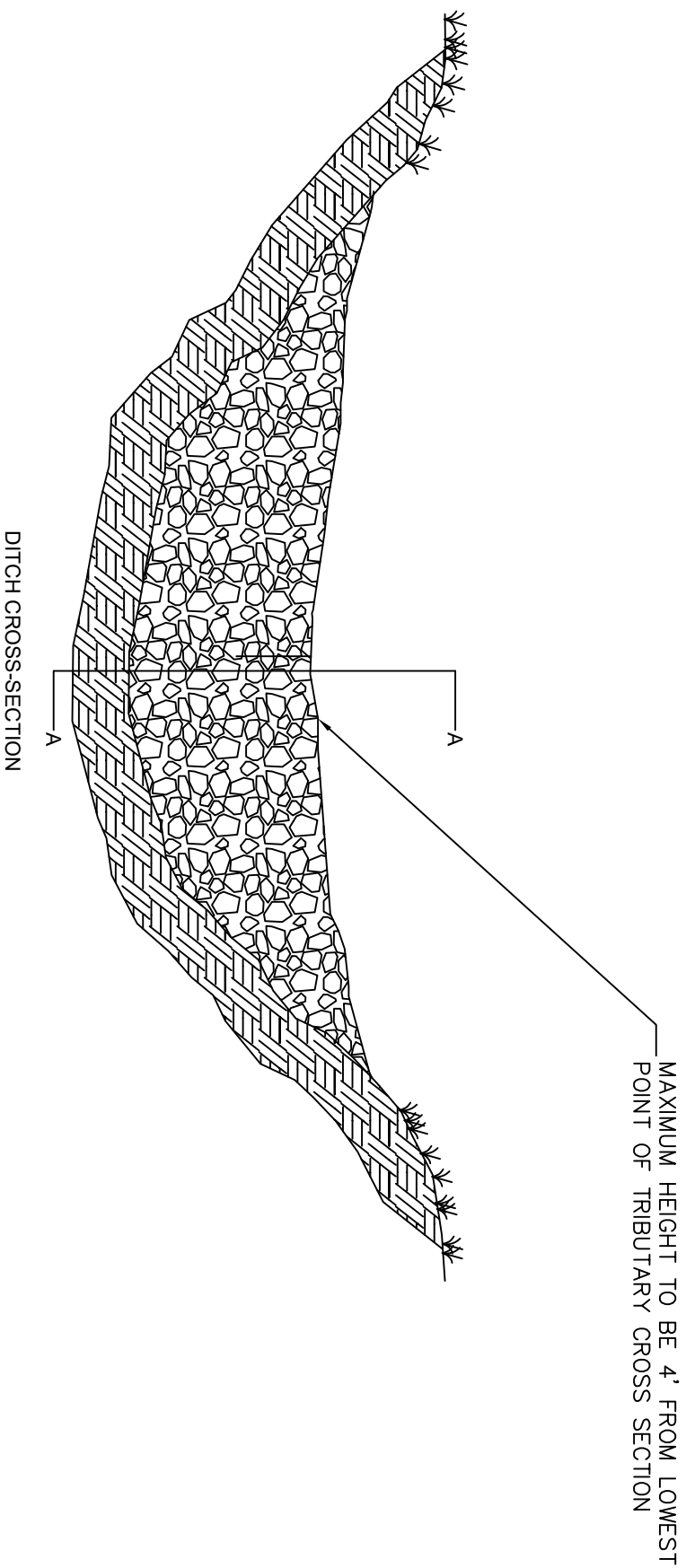
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SHEET NAME

ROCK CHECK DAM

SHEET NO.

**8**





WING WALLS ON UPSTREAM AND  
DOWNSTREAM END OF WEIR TO  
BE CONSTRUCTED OF CONCRETE

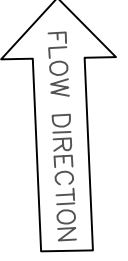
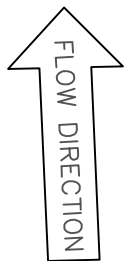
BRIDGE PIERS ARE INCORPORATED INTO  
THE WEIR STRUCTURE AND WING WALLS

8' WIDE TRAIL WILL TIE INTO  
10' WIDE BRIDGE DECK

PREFAB BRIDGE WITH  
10' WIDE BRIDGE DECK

REINFORCED CONCRETE FOUNDATION  
DEPTH IS TO BEDROCK

REINFORCED CONCRETE  
SHARP CRESTED WEIR TO  
BE 28' LONG AND 5' TALL

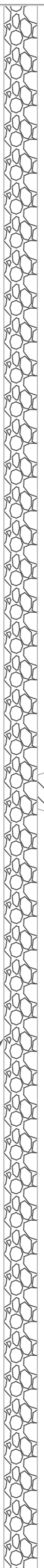


8' WIDE CONCRETE SIDEWALK  
AT TOP OF EMBANKMENT

CLAY CORE

BEDROCK

SOIL



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SHEET NAME  
DAM

SHEET NO.

**9**

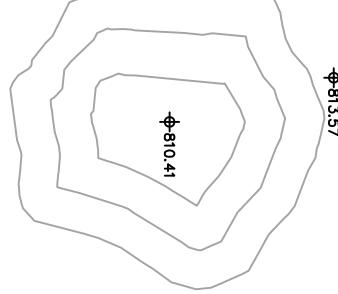
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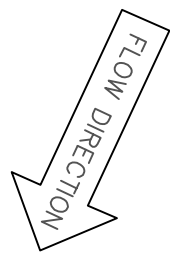
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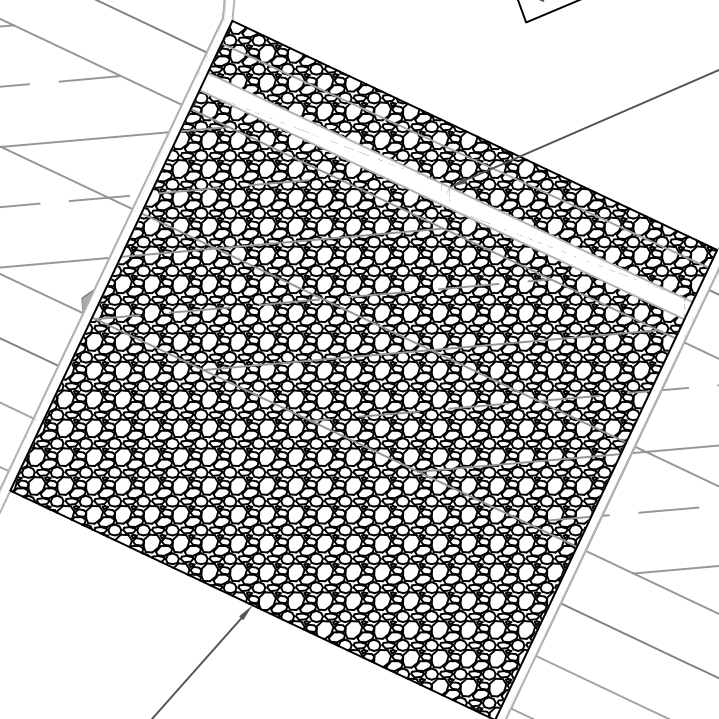
813.57

812.81



SHARP CRESTED WEIR TO BE 28' LONG

WING WALL



821.00

821.00

WING WALL

810.77

UPSTREAM AND DOWNSTREAM PROTECTION BY USING CLASS E RIPRAP

LOCATION OF TRAIL AND PREFAB BRIDGE CROSSING

810.00

820.00

SHEET NO. **10**

SHEET NAME  
WEIR

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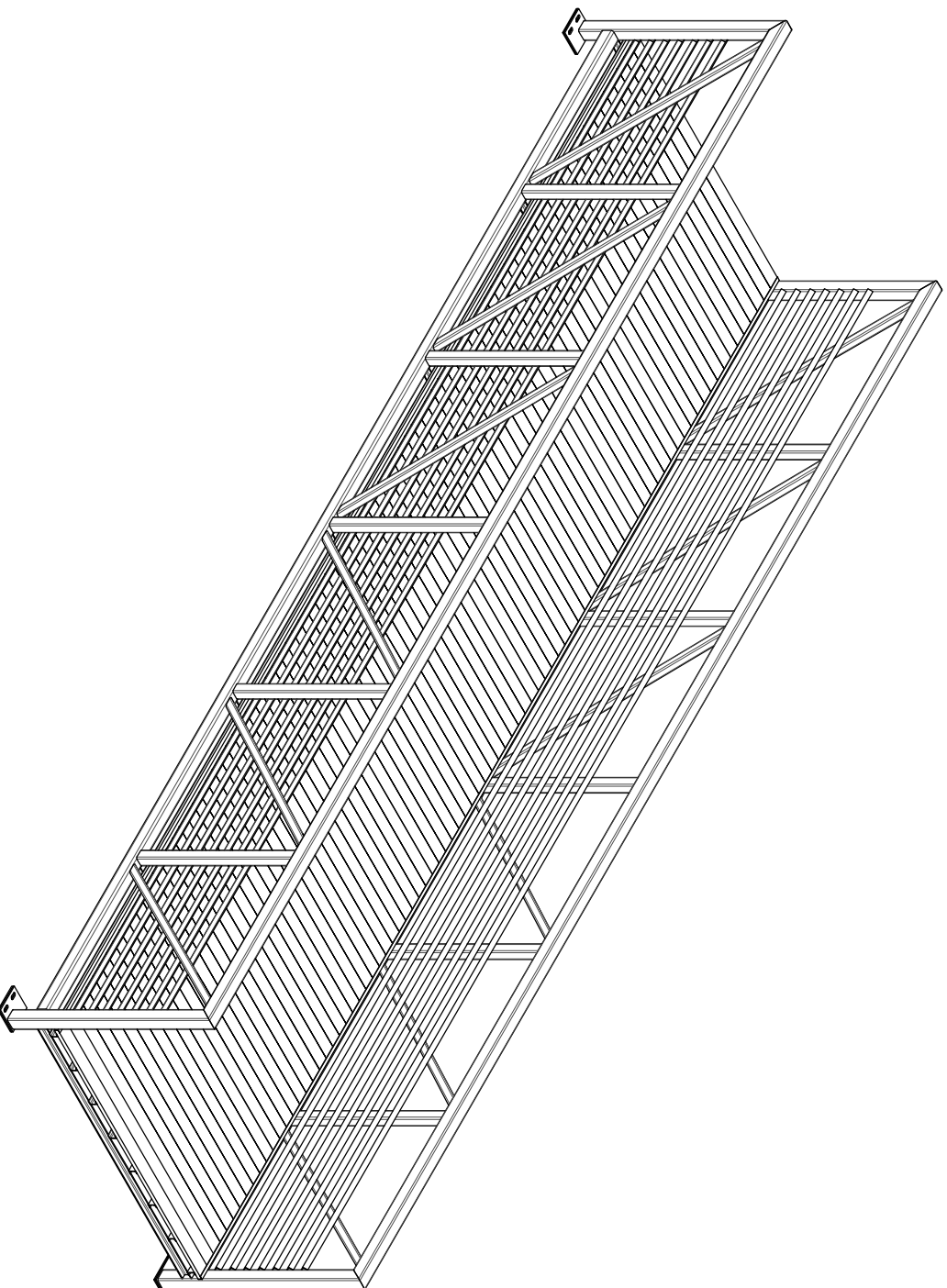
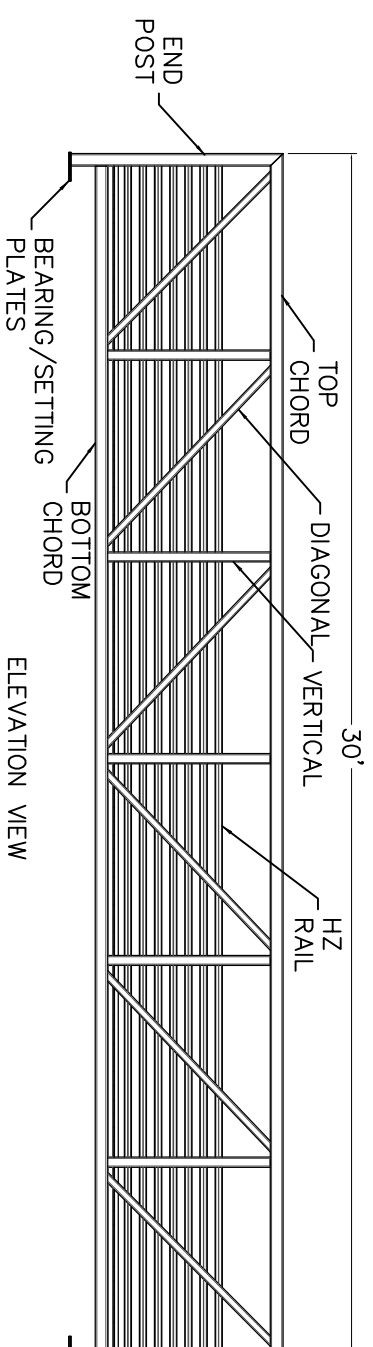
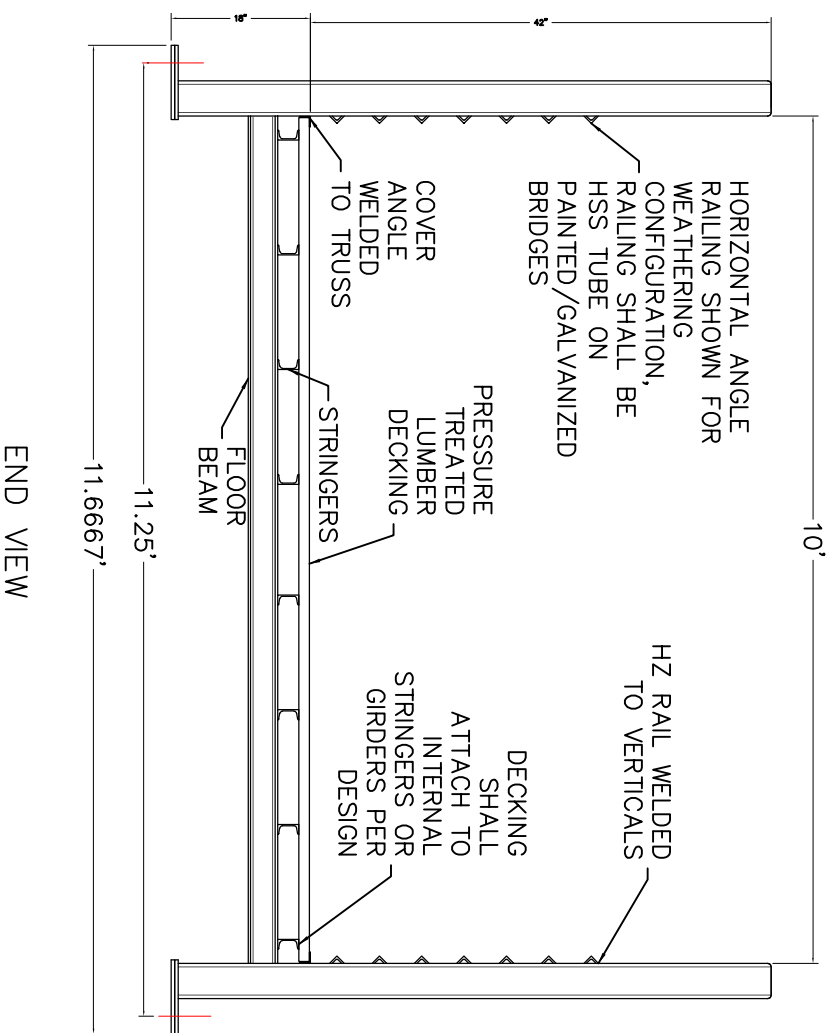
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GENERAL NOTES:

1. THE PRIMARY FUNCTION OF THIS STRUCTURE IS TO CARRY PEDESTRIANS & BICYCLISTS
2. SLIDE PLATES SHALL BE MADE FROM UHMW AND ARE GENERALLY SHIPPED LOOSE FROM BRIDGE; BRIDGE ENDS SHALL BE CONSTRUCTED AT THE SAME ELEVATION
3. BRIDGES SHALL BE DESIGNED FOR BOLTED FIELD SPLICES LOCATED ON THE BRIDGE SO AS TO PRODUCE A STRUCTURE WHICH CAN BE ECONOMICALLY SHIPPED AND ERECTED
4. BRIDGES SHALL HAVE VERTICAL CAMBER TO OFFSET ANY DEAD LOAD DEFLECTIONS GREATER THAN 1/4"
5. UNPAINTED WEATHERING STEEL BRIDGES WHICH ARE NOT TO BE PAINTED SHALL BE FABRICATED FROM HIGH STRENGTH, LOW ALLOY, AND ATMOSPHERIC CORROSION RESISTANT ASTM A847 SQUARE AND RECTANGULAR TUBING AND ASTM A588 PLATE AND STRUCTURAL SHAPES
6. SHOP WELDING SHALL CONFORM TO AWS D1.1-STEEL OR D1.2-ALUMINUM
7. ALL ELECTRICAL AND LIGHT HARDWARE INSTALLATION AND DESIGN ARE PROVIDED BY OTHERS UNLESS OTHERWISE SPECIFIED
8. STANDARD BACKWALL HEIGHT PER DESIGN:  
<50' BRIDGES SHALL HAVE A STANDARD BACKWALL HEIGHT OF 18"-20"  
5-10 TON LOAD CAPACITY
10. PREFAB BRIDGE TO SPAN ACROSS THE WEIR AND TIE INTO THE TRAIL SYSTEM



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SHEET NAME  
 PREFAB BRIDGE

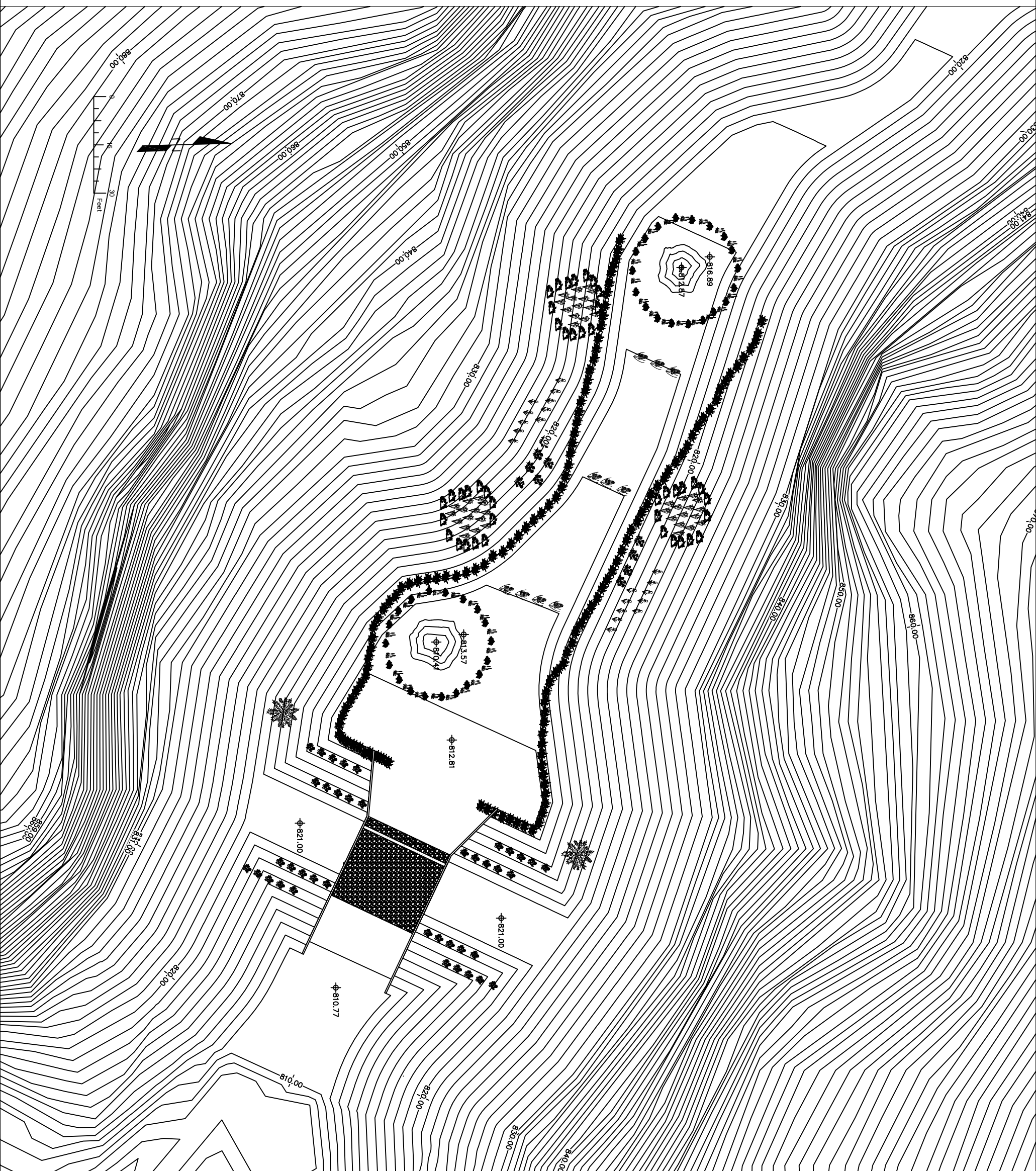
SHEET NO.


**LANDSCAPING NOTES:**

1. ALL PLANT MATERIAL INSTALLATION, INCLUDING SEED AND SOD, SHALL BE COMPLETED PRIOR TO OPENING.
2. THE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR FROM DATE OF THE PROJECT ACCEPTANCE.
3. NO PLANT MATERIAL SHALL BE SUBSTITUTED WITHOUT THE APPROVAL OF THE OWNER.
4. ALL PROTECTIVE WRAPPING TO BE REMOVED AT THE TIME OF INSTALLATION. NEWLY PLANTED TREES SHALL REMAIN UNWRAPPED.
5. NURSERY TAGS SHALL BE LEFT ON PLANT MATERIAL UNTIL THE INITIAL INSPECTION HAS BEEN COMPLETED BY OWNER.
6. CONTRACTOR SHALL NOTIFY OWNER AT LEAST ONE WEEK IN ADVANCE OF ANY CONSTRUCTION. CONTRACTOR SHALL OBTAIN ALL APPLICABLE CITY PERMITS.
7. ALL OTHER GROUND COVER TO BE PENNSYLVANIA SEDGE
- 8.

**KEY:**

-  Long Beaked Sedge
-  Green Milkweed
-  Cut Leaved Toothwort
-  Elderberry Plant
-  Indian Grass
-  Early Sunflower
-  Pennsylvania Sedge
-  Woodland Blue Phlox
-  Prairie Wild Rose
-  Marsh Marigold



<p>SHEET NO. <b>12</b></p>	<p>SHEET NAME LANDSCAPING</p>	<p><b>STORMWATER QUALITY</b></p> <p>12007 190TH ST MONTICELLO, IA 52310</p>	<p>EDUCATIONAL - NOT FOR CONSTRUCTION</p>		<p><b>THE UNIVERSITY OF IOWA</b> <b>CIVIL AND ENVIRONMENTAL ENGINEERING</b></p> <p>4105 SEAMANS CENTER FOR THE ENGINEERING ARTS AND SCIENCES 103 S CAPITOL ST IOWA CITY, IOWA 52242 PHONE: 319.335.5647 FAX: 319.335.5660 EMAIL: <a href="mailto:civil-hawks@uiowa.edu">civil-hawks@uiowa.edu</a></p>	<p>PROJECT: CEE: 4850</p> <p>DATE : 12/17/2021</p> <p>DRAWN BY: DZ, DS, KJ</p> <p>REVISION:</p>
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