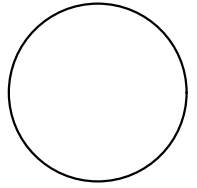


PROJECT LOCATION

PROJECT LOCATION:

BOAT RAMP LOCATION COORDINATES: 41°55'60.00"N, 93°53'11.34"W

CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



VICINITY MAPS/SPOIL LOCATION

CONSTRUCTION PROJECT FOR:

SPORTSMAN BOAT RAMP

BOONE COUNTY, IOWA

NO.	DATE	REVISION

DRAWN BY: PROJECT NUMBER: 20-02-08-02
CHKD BY: DATE: 04/26/2023

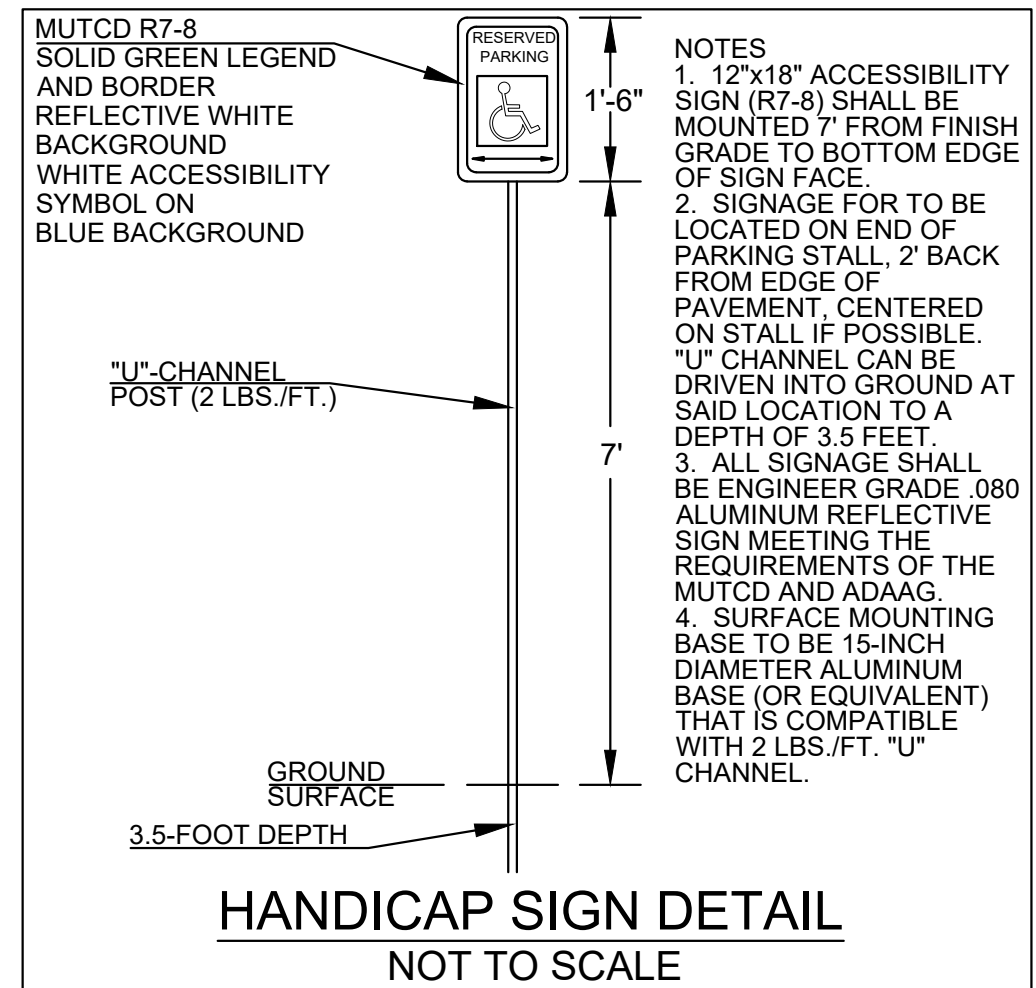
SHEET No: 2

ESTIMATED PROJECT QUANTITIES			
ITEM NO.	ITEM	UNIT	TOTAL
1	CLEARING AND GRUBBING	LS	1
2	GRADING	LS	1
3	CLASS 'A' CRUSHED STONE	TONS	515
4	6-INCH REINFORCED PCC PAVEMENT	SY	161
5	CLASS 'B' RIPRAP	TONS	150
6	CLASS 'D' RIPRAP	TONS	260
7	MACADAM STONE	TONS	22
8	GROOVED REINFORCED PCC BOAT RAMP	SY	116.7
9	GROUT OR K-CRETE	CY	10
10	8-INCH FILTER SOCK	LF	210
11	SEEDING, FERTILIZING AND MULCHING	ACRE	0.6
12	HANDICAP SIGNAGE AND PAVEMENT MARKINGS	LS	1
13	MOBILIZATION	LS	1

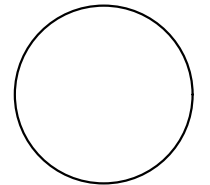
ESTIMATE REFERENCE INFORMATION	
ITEM NO.	DESCRIPTION
1	CLEARING & GRUBBING A. CONTRACTOR TO CLEAR AND GRUB THE PROJECT SITE. TOTAL PROJECT AREA IS APPROXIMATELY 0.75 ACRES.
2	GRADING A. CONTRACTOR TO GRADE THE SITE AS DETAILED IN THE PLANS. THERE IS A TOTAL CUT/FILL OF 620 CY OF WHICH APPROXIMATELY 473 CY IS EXCESS AND WILL NEED TO BE MOVED TO THE SPOIL LOCATION APPROXIMATELY 0.25 MILES AWAY (SEE SHEET #2 FOR SPOIL LOCATION). COORDINATE WITH DNR INSPECTOR.
3	CLASS 'A' CRUSHED STONE A. CONTRACTOR SHALL PLACE AND COMPACT A 6-INCH DEPTH CLASS 'A' CRUSHED STONE FOR THE ACCESS ROAD AND PARKING AREAS AS DETAILED ON SHEETS #6 & 7. B. CONTRACTOR SHALL PLACE AND COMPACT A 6-INCH DEPTH BASE BELOW THE BOAT RAMP PAVEMENT (100 LF) AS DETAILED ON SHEETS #8 & 9. C. PROPOSED BASE SHALL EXTEND 1-FOOT BEYOND THE BOAT RAMP FOOTPRINT.
4	6-INCH REINFORCED PCC PAVEMENT A. CONTRACTOR TO INSTALL 6-INCH REINFORCED CLASS 'C' PCC PAVEMENT AS DETAILED IN THE PLANS ON SHEETS #5-9.
5	CLASS 'B' RIPRAP A. CONTRACTOR SHALL PLACE CLASS 'B' RIPRAP UPSTREAM OF THE RAMP ALONG THE RIVER BANK AS DETAILED IN THE PLANS ON SHEETS #5-9.
6	CLASS 'D' RIPRAP A. CONTRACTOR SHALL PLACE CLASS 'D' RIPRAP ALONG THE SIDES AND END OF THE RAMP AND ALONG THE RIVER BANK SOUTH OF THE PROPOSED BOAT RAMP AS DETAILED IN THE PLANS ON SHEETS #5-9.
7	MACADAM STONE A. CONTRACTOR SHALL PLACE AND COMPACT A 6-INCH DEPTH MACADAM BASE BELOW THE CRUSHED STONE BASE FOR THE 40-FOOT PANEL LENGTH THAT WILL BE UNDERWATER AS DETAILED ON SHEETS #7 & 8. B. PROPOSED MACADAM STONE BASE SHALL EXTEND 1-FOOT BEYOND THE BOAT RAMP FOOTPRINT.
8	GROOVED BOAT RAMP A. CONTRACTOR TO INSTALL 15'x70' REINFORCED PCC (CLASS 'C') GROOVED BOAT RAMP AS DETAILED IN THE PLANS ON SHEETS #6-9.
9	GROUT OR K-CRETE A. CONTRACTOR SHALL FILL THE VOIDS OF THE RIPRAP ADJACENT TO THE BOAT RAMP WITH GROUT OR K-CRETE AS DETAILED IN THE PLANS ON SHEETS #5-8.
10	8-INCH FILTER SOCK A. CONTRACTOR SHALL INSTALL 8-INCH FILTER SOCK AS DETAILED IN THE PLANS. ADDITIONAL FILTER SOCK MAY BE REQUIRED BY THE DNR INSPECTOR TO CONTROL EROSION.
11	SEEDING, FERTILIZING & MULCHING A. THE CONTRACTOR SHALL SEED, FERTILIZE & MULCH ALL DISTURBED AREAS. SEED WITH TYPE 2 SEED MIXTURE (PERMANENT COOL SEASON MIXTURE). APPROXIMATELY 0.6 ACRES WILL NEED TO BE SEEDED.
12	HANDICAP SIGNAGE AND PAVEMENT MARKINGS A. CONTRACTOR TO INSTALL HANDICAP SIGNAGE AND CROSS HATCH PAVEMENT MARKINGS AS SHOWN ON SHEETS #5 & 6.
13	MOBILIZATION A. CONTRACTOR'S COST OF MOBILIZATION TO THE PROJECT SITE.

GENERAL NOTES

- TWO WEEKS PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY:
 - IOWA DNR PROJECT MANAGER: BRETT JOHNSON 515-250-3711
 - DISTRICT INSPECTOR: DON LABATE 515-250-3714
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH STATEWIDE URBAN STANDARD DESIGN SPECIFICATIONS FOR PUBLIC IMPROVEMENTS (SUDAS). ALL CONSTRUCTION TESTING TO BE IN ACCORDANCE WITH SUDAS AND IS THE EXPENSE OF THE CONTRACTORS.
- THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ABOVE MENTIONED CONTACTS OF ANY DISCREPANCIES.
- THE LOCATIONS AND DIMENSIONS SHOWN ON THE PLANS FOR EXISTING FACILITIES ARE IN ACCORDANCE WITH AVAILABLE INFORMATION WITHOUT UNCOVERING AND MEASURING. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION OR THAT ALL EXISTING UNDERGROUND FACILITIES ARE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL PUBLIC AND/OR PRIVATE UTILITIES SERVING THE AREA TO DETERMINE THE PRESENT EXTENT AND LOCATION OF THEIR FACILITIES BEFORE BEGINNING WORK.
- THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROPER UTILITY IMMEDIATELY UPON BREAKING OR DAMAGE TO ANY UTILITY LINE OR APPURTENANCE, OR THE INTERRUPTION OF THEIR SERVICE. HE SHALL NOTIFY THE PROPER UTILITY INVOLVED. IF EXISTING UTILITY LINES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED.
- CONTRACTOR TO PROTECT ALL UTILITY, PAVING, BUILDINGS, ETC. OUTSIDE OF LIMITS OF PROPOSED CONSTRUCTION.
- IN THE EVENT THAT THERE IS A DISCREPANCY BETWEEN THE QUANTITIES AND THE PLANS, THE DETAILED PLANS SHALL GOVERN.
- CONTRACTOR SHALL SEED/MULCH ALL DISTURBED AREAS. USE TYPE 2 (PERMANENT COOL SEASON MIXTURE) SEED MIX.
- MAINTAIN ALL CUT AND FILL AREAS TO ACCOMMODATE SURFACE DRAINAGE.
- FINISHED GRADE ON ALL NON-PAVED AREAS SHALL BE WITHIN 0.20 FOOT OF PLAN GRADE. PAVED AREAS SHALL BE WITHIN 0.10 FOOT.
- TOPSOIL SHALL BE SPREAD TO A MINIMUM THICKNESS OF 6-INCHES ON ALL DISTURBED UNPAVED AREAS.
- BACKFILL TO THE TOP OF ALL ROCK OR PAVED SURFACES.
- ALL ELEVATIONS ARE TO THE FINISH GRADE UNLESS NOTED OTHERWISE.
- PROTECT ALL EXISTING TREES AND VEGETATION UNLESS OTHERWISE NOTED.
- GRADING FOR THE PROJECT HAS EXCESS CUT WHICH WILL NEED TO BE TRANSPORTED TO THE SPOIL LOCATION. COORDINATE WITH DNR INSPECTOR. COST OF MOVING SPOILS MATERIAL TO BE INCLUDED IN GRADING BID ITEM.
- CONSTRUCTION IS TO BE COMPLETED BY NOVEMBER 30, 2023.
- CONTRACTOR TO COORDINATE STAGING AREA WITH INSPECTOR.



CONSULTANT:



**IOWA DEPARTMENT OF
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ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



QUANTITIES & GENERAL NOTES

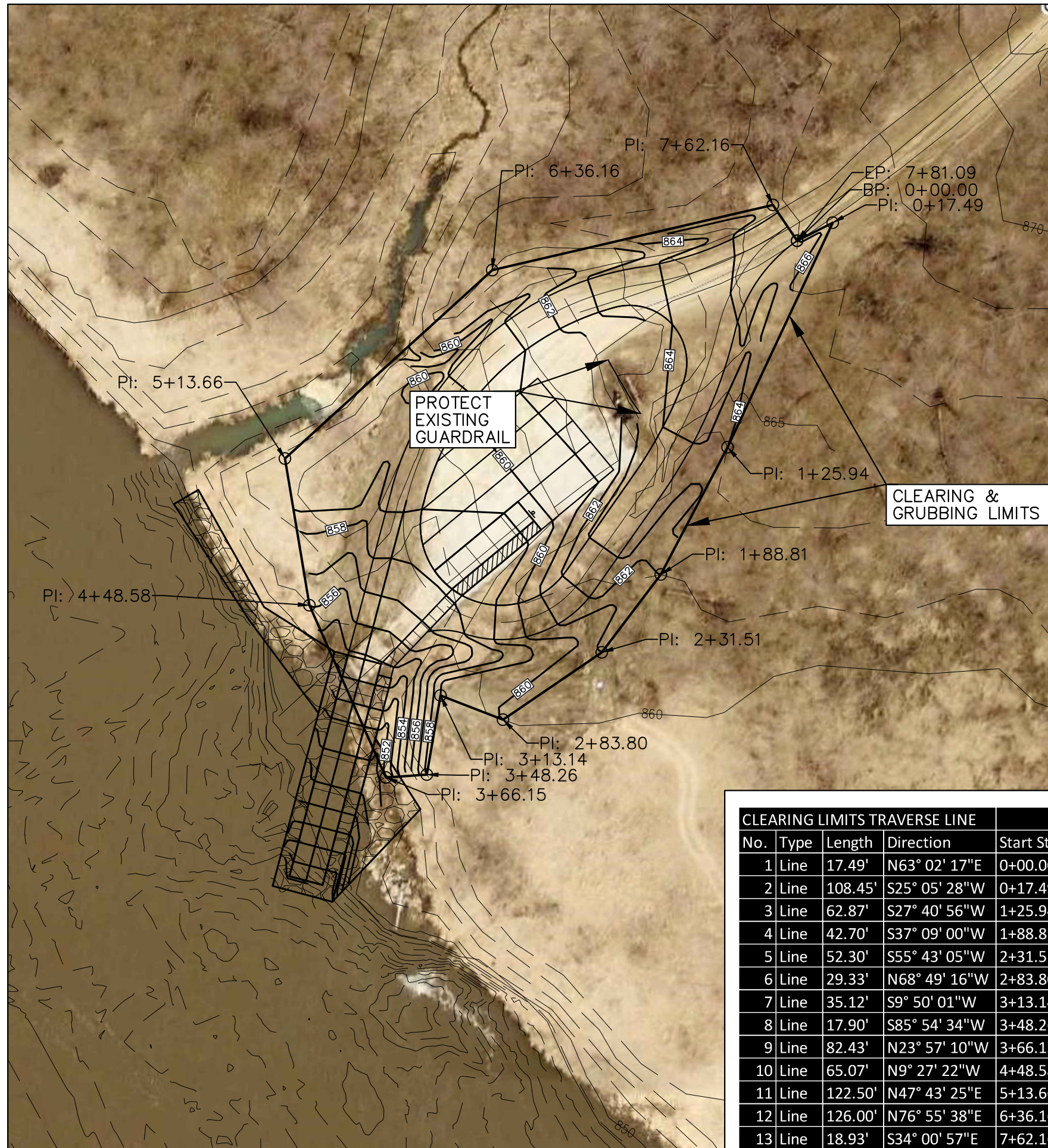
CONSTRUCTION PROJECT FOR:

SPORTSMAN BOAT RAMP

BOONE COUNTY, IOWA

NO.	DATE	REVISION
	PROJECT NUMBER:	20-02-08-02
	DATE:	04/26/2023

SHEET No:



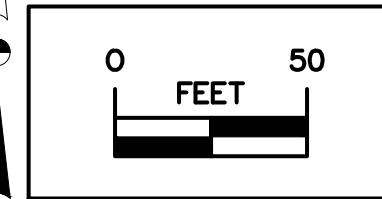
LEGEND

EXISTING/PROPOSED

-990 990 ELEVATION

1144x50 SPOT ELEVATION

FILTER SOCK



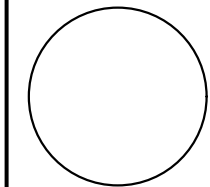
CLEARING & GRUBBING NOTES

1. CONTRACTOR TO REMOVE TREES AND SHRUBS AND DISPOSE OF OFF-SITE IN ACCORDANCE WITH RULES AND REGULATIONS.
2. TOTAL CLEARING & GRUBBING AREA IS 0.75 ACRES.

CLEARING LIMITS TRAVERSE LINE

No.	Type	Length	Direction	Start Station	End Station	Start Point	End Point
1	Line	17.49'	N63° 02' 17"E	0+00.00'	0+17.49'	(4816267.9218',3439158.8012')	(4816283.5074',3439166.7294')
2	Line	108.45'	S25° 05' 28"W	0+17.49'	1+25.94'	(4816283.5074',3439166.7294')	(4816237.5164',3439068.5099')
3	Line	62.87'	S27° 40' 56"W	1+25.94'	1+88.81'	(4816237.5164',3439068.5099')	(4816208.3102',3439012.8384')
4	Line	42.70'	S37° 09' 00"W	1+88.81'	2+31.51'	(4816208.3102',3439012.8384')	(4816182.5247',3438978.8055')
5	Line	52.30'	S55° 43' 05"W	2+31.51'	2+83.80'	(4816182.5247',3438978.8055')	(4816139.3117',3438949.3475')
6	Line	29.33'	N68° 49' 16"W	2+83.80'	3+13.14'	(4816139.3117',3438949.3475')	(4816111.9591',3438959.9453')
7	Line	35.12'	S9° 50' 01"W	3+13.14'	3+48.26'	(4816111.9591',3438959.9453')	(4816105.9614',3438925.3437')
8	Line	17.90'	S85° 54' 34"W	3+48.26'	3+66.15'	(4816105.9614',3438925.3437')	(4816088.1092',3438924.0669')
9	Line	82.43'	N23° 57' 10"W	3+66.15'	4+48.58'	(4816088.1092',3438924.0669')	(4816054.6439',3438999.3981')
10	Line	65.07'	N9° 27' 22"W	4+48.58'	5+13.66'	(4816054.6439',3438999.3981')	(4816043.9530',3439063.5859')
11	Line	122.50'	N47° 43' 25"E	5+13.66'	6+36.16'	(4816043.9530',3439063.5859')	(4816134.5944',3439145.9948')
12	Line	126.00'	N76° 55' 38"E	6+36.16'	7+62.16'	(4816134.5944',3439145.9948')	(4816257.3300',3439174.4948')
13	Line	18.93'	S34° 00' 57"E	7+62.16'	7+81.09'	(4816257.3300',3439174.4948')	(4816267.9218',3439158.8012')

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



CLEARING & GRUBBING

CONSTRUCTION PROJECT FOR:

SPORTSMAN BOAT RAMP

BOONE COUNTY, IOWA

NO. BY DATE REVISION

DRAWN BY: PROJECT NUMBER:

20-02-08-02

CHK'D BY: DATE:

04/26/2023

SHEET No:

LEGEND

EXISTING/PROPOSED

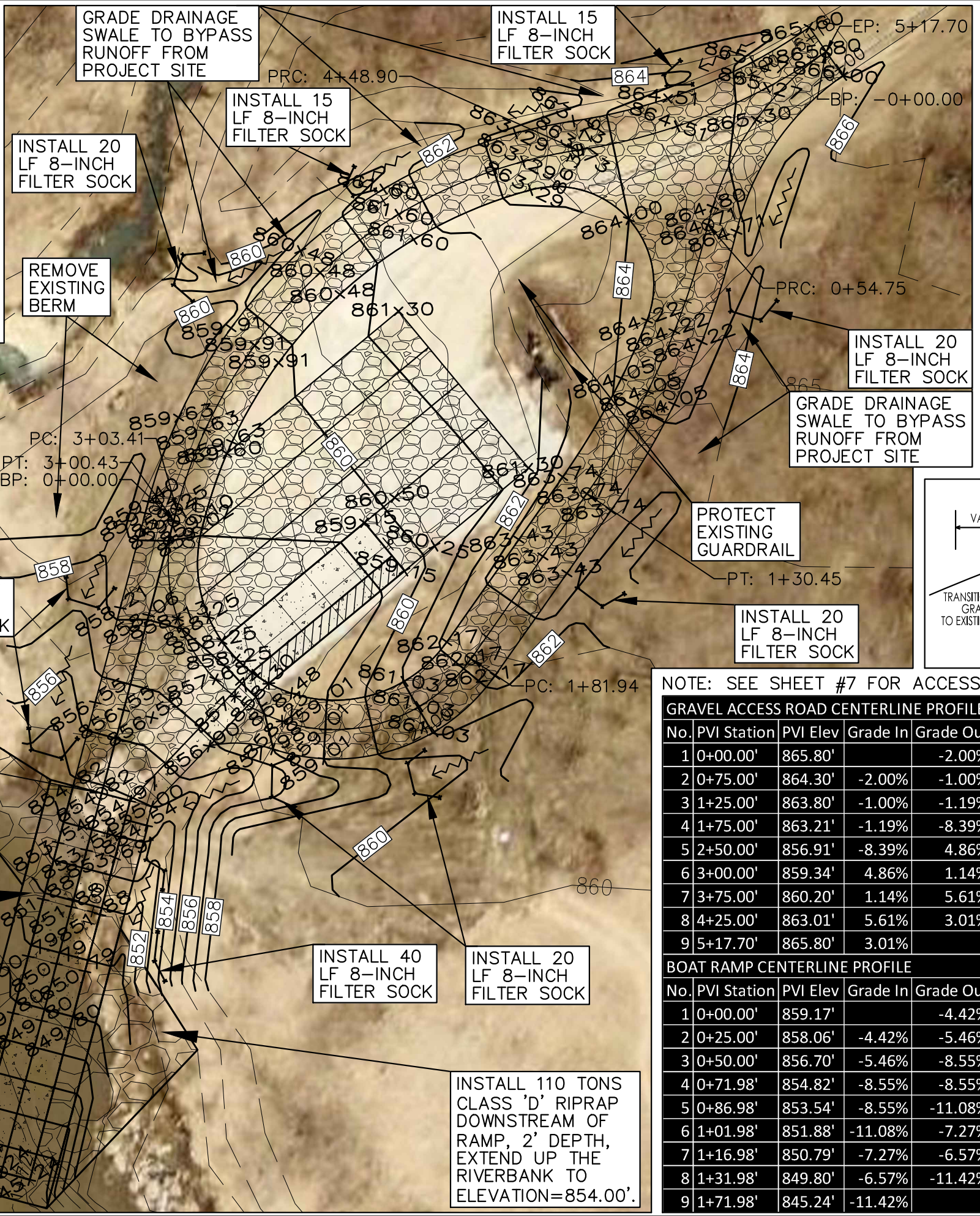
990 - ELEVATION

1144x50 - SPOT ELEVATION

X-X-X-X - FILTER SOCK

~ - DRAINAGE SWALE

0 30 - FEET



- GRADING NOTES**
- NPDES GENERAL PERMIT #2 WILL NOT BE REQUIRED FOR THIS PROJECT. 0.75 ACRES WILL BE DISTURBED.
 - CUT/FILL QUANTITY IS 620 CY. THERE IS AN EXCESS OF 473 CY. HAUL EXCESS TO SPOIL LOCATION AS SHOWN ON SHEET #2. HAUL DISTANCE IS APPROXIMATELY 0.25 MILES.
 - THE CONTRACTOR SHALL SEED, FERTILIZE & MULCH ALL DISTURBED AREAS (INCLUDING SPOIL SITE). SEED WITH TYPE 2 SEED MIXTURE (PERMANENT COOL SEASON MIXTURE). APPROXIMATELY 0.6 ACRES WILL NEED TO BE SEEDED.
 - SEE SHEET #6 FOR SITE PLAN DETAILS.
 - SEE SHEET #7 FOR PLAN/PROFILE FOR ACCESS ROAD AND BOAT RAMP.
 - SEE SHEETS #8 AND 9 FOR BOAT RAMP DETAILS.
 - SEE SHEET #9 FOR CONCRETE PARKING AND WALKWAY EDGE CONTROL.
 - SEE SHEET #10 FOR ACCESS ROAD AND BOAT RAMP ϕ HORIZONTAL CONTROL.

INSTALL 150 TONS CLASS 'B' RIPRAP UPSTREAM OF RAMP ALONG BANK. 2' DEPTH x 80' LENGTH, EXCAVATE THE 2' DEPTH FOR PLACEMENT.

INSTALL 150 TONS CLASS 'D' RIPRAP AT THE END AND ALONG THE SIDES OF RAMP, EXCAVATE THE 2' DEPTH FOR PLACEMENT.

INSTALL 20 LF 8-INCH FILTER SOCK

INSTALL 15 LF 8-INCH FILTER SOCK

INSTALL 15 LF 8-INCH FILTER SOCK

INSTALL 20 LF 8-INCH FILTER SOCK

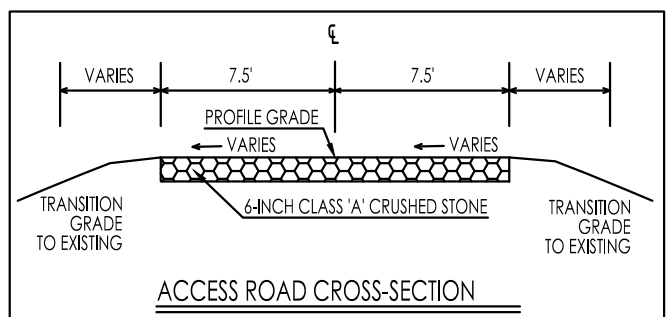
PROTECT EXISTING GUARDRAIL

INSTALL 20 LF 8-INCH FILTER SOCK

INSTALL 40 LF 8-INCH FILTER SOCK

INSTALL 20 LF 8-INCH FILTER SOCK

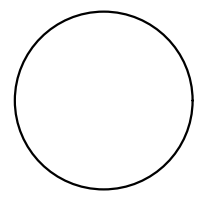
INSTALL 110 TONS CLASS 'D' RIPRAP DOWNSTREAM OF RAMP, 2' DEPTH, EXTEND UP THE RIVERBANK TO ELEVATION=854.00'



NOTE: SEE SHEET #7 FOR ACCESS ROAD AND BOAT RAMP PROFILES

GRAVEL ACCESS ROAD CENTERLINE PROFILE								
No.	PVI Station	PVI Elev	Grade In	Grade Out	A (Grade Change)	Profile Type	Curve Length	K Value
1	0+00.00'	865.80'		-2.00%				
2	0+75.00'	864.30'	-2.00%	-1.00%	1.00%			
3	1+25.00'	863.80'	-1.00%	-1.19%	0.19%			
4	1+75.00'	863.21'	-1.19%	-8.39%	7.21%	Crest	75.00'	10.409
5	2+50.00'	856.91'	-8.39%	4.86%	13.26%	Sag	50.00'	3.771
6	3+00.00'	859.34'	4.86%	1.14%	3.72%	Crest	40.00'	10.744
7	3+75.00'	860.20'	1.14%	5.61%	4.47%	Sag	50.00'	11.177
8	4+25.00'	863.01'	5.61%	3.01%	2.60%	Crest	25.00'	9.616
9	5+17.70'	865.80'	3.01%					
BOAT RAMP CENTERLINE PROFILE								
No.	PVI Station	PVI Elev	Grade In	Grade Out	A (Grade Change)	Profile Type	Curve Length	K Value
1	0+00.00'	859.17'		-4.42%				
2	0+25.00'	858.06'	-4.42%	-5.46%	1.03%			
3	0+50.00'	856.70'	-5.46%	-8.55%	3.09%	Crest	40.00'	12.946
4	0+71.98'	854.82'	-8.55%	-8.55%	0.00%			
5	0+86.98'	853.54'	-8.55%	-11.08%	2.53%			
6	1+01.98'	851.88'	-11.08%	-7.27%	3.81%			
7	1+16.98'	850.79'	-7.27%	-6.57%	0.69%			
8	1+31.98'	849.80'	-6.57%	-11.42%	4.84%			
9	1+71.98'	845.24'	-11.42%					

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



GRADING PLAN

CONSTRUCTION PROJECT FOR:

SPORTSMAN BOAT RAMP

BOONE COUNTY, IOWA

NO. BY DATE REVISION

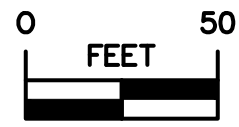
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PROJECT NUMBER:
20-02-08-02

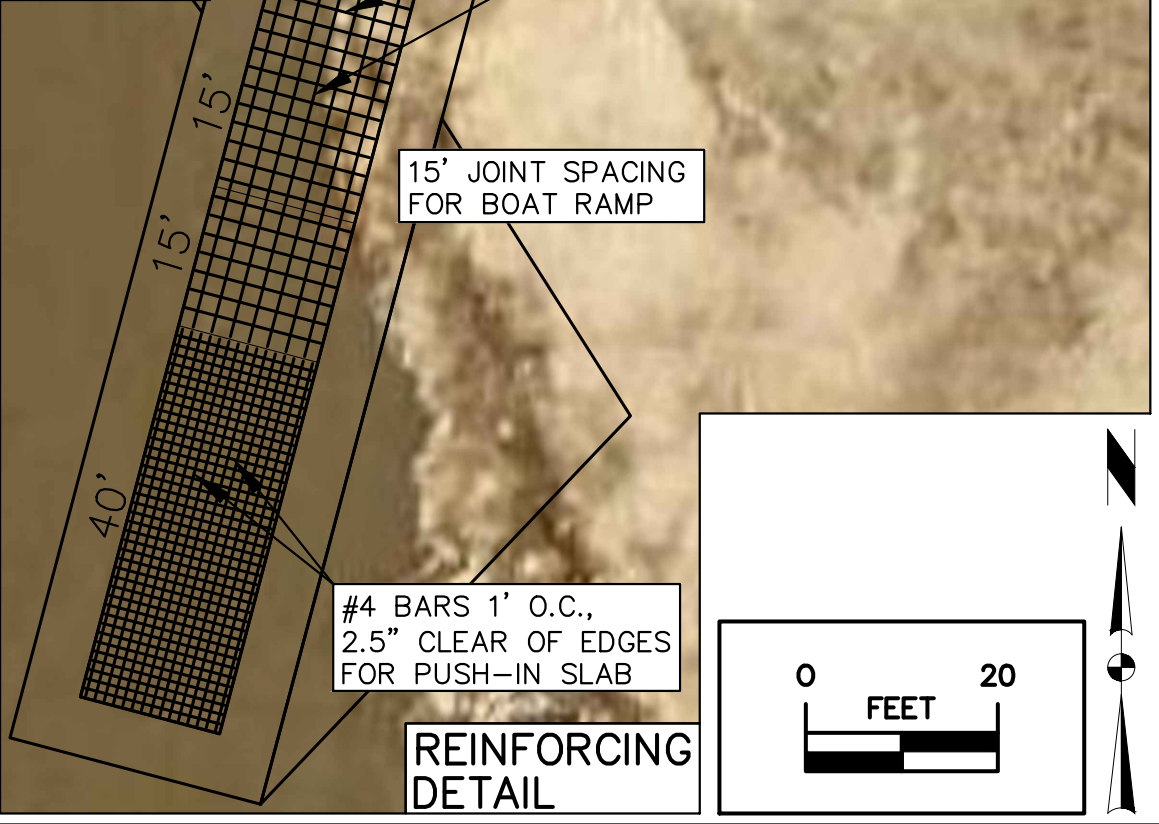
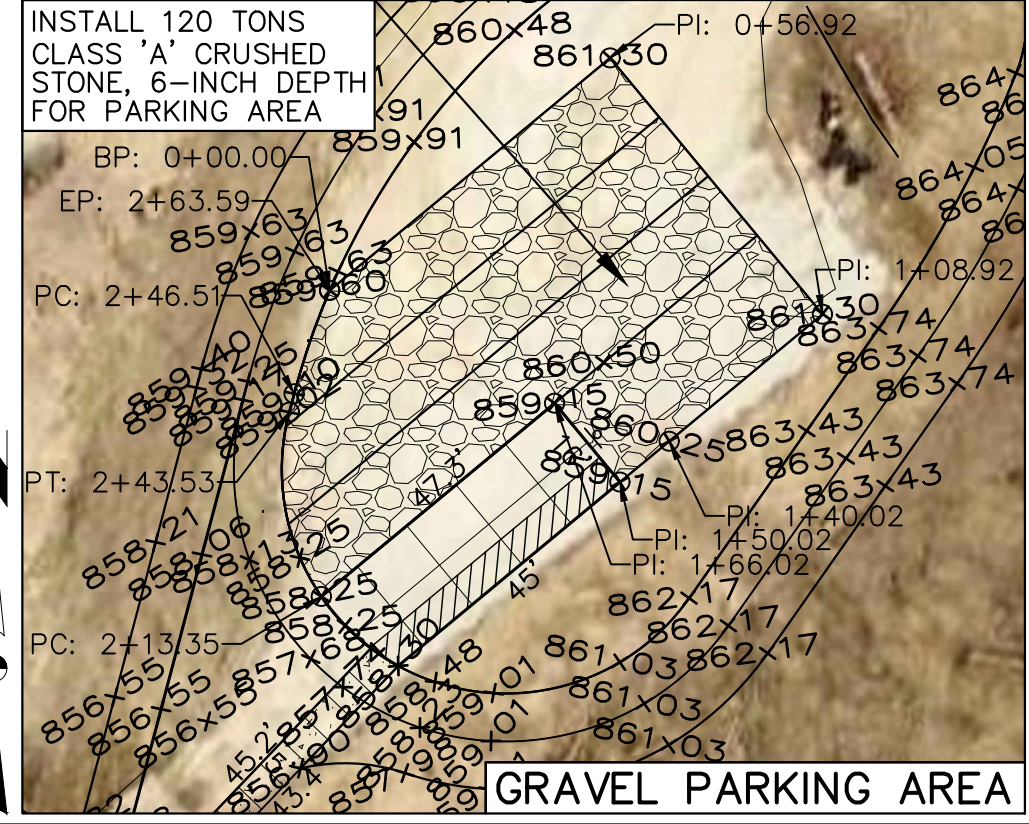
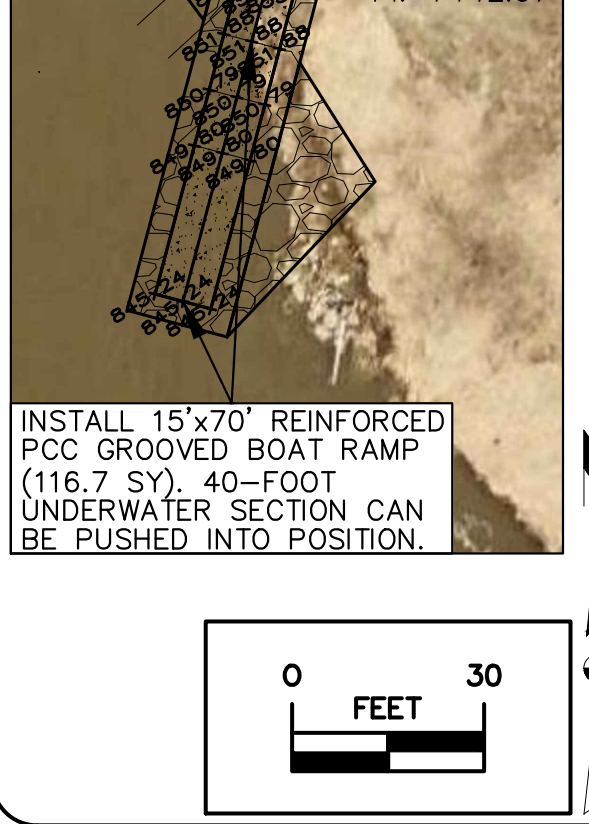
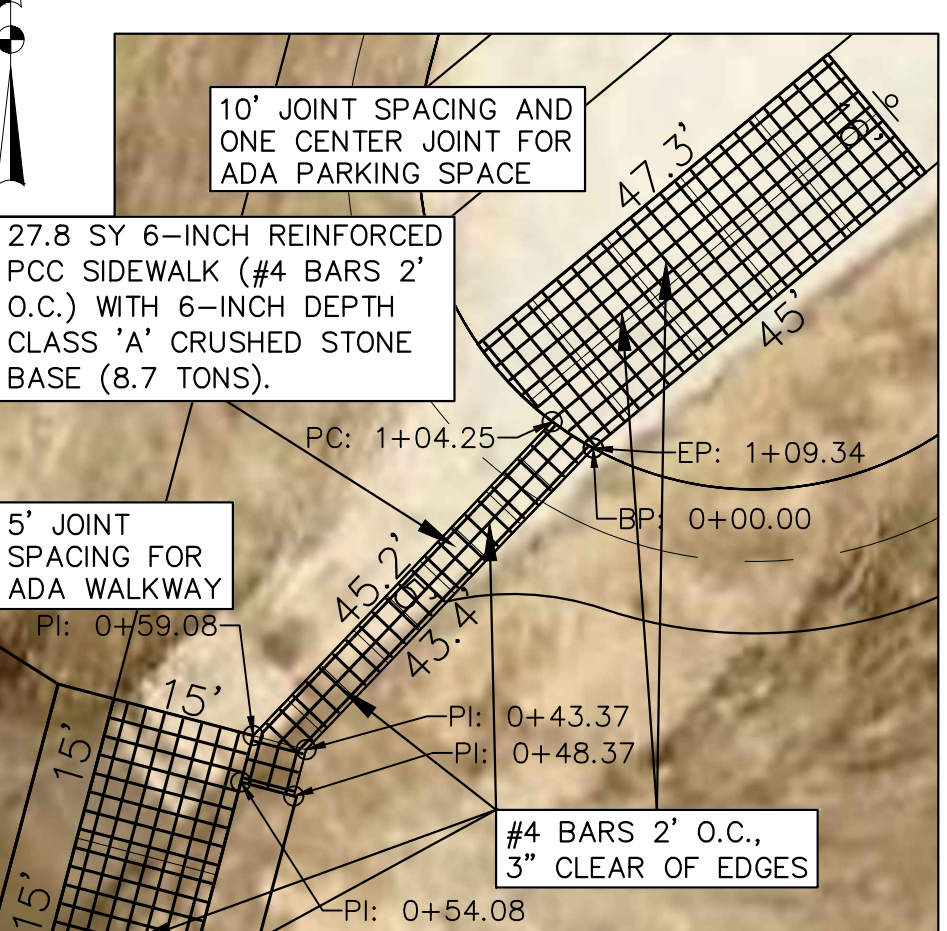
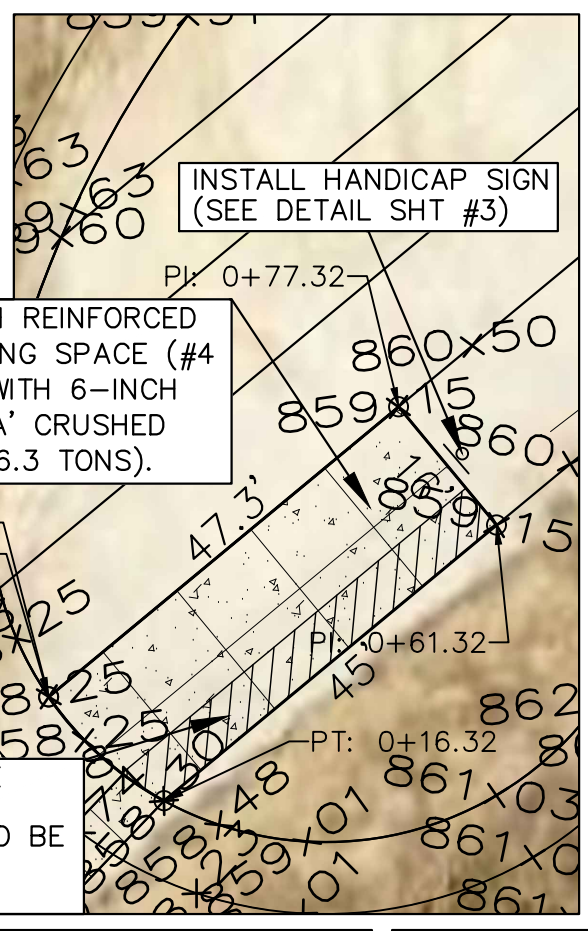
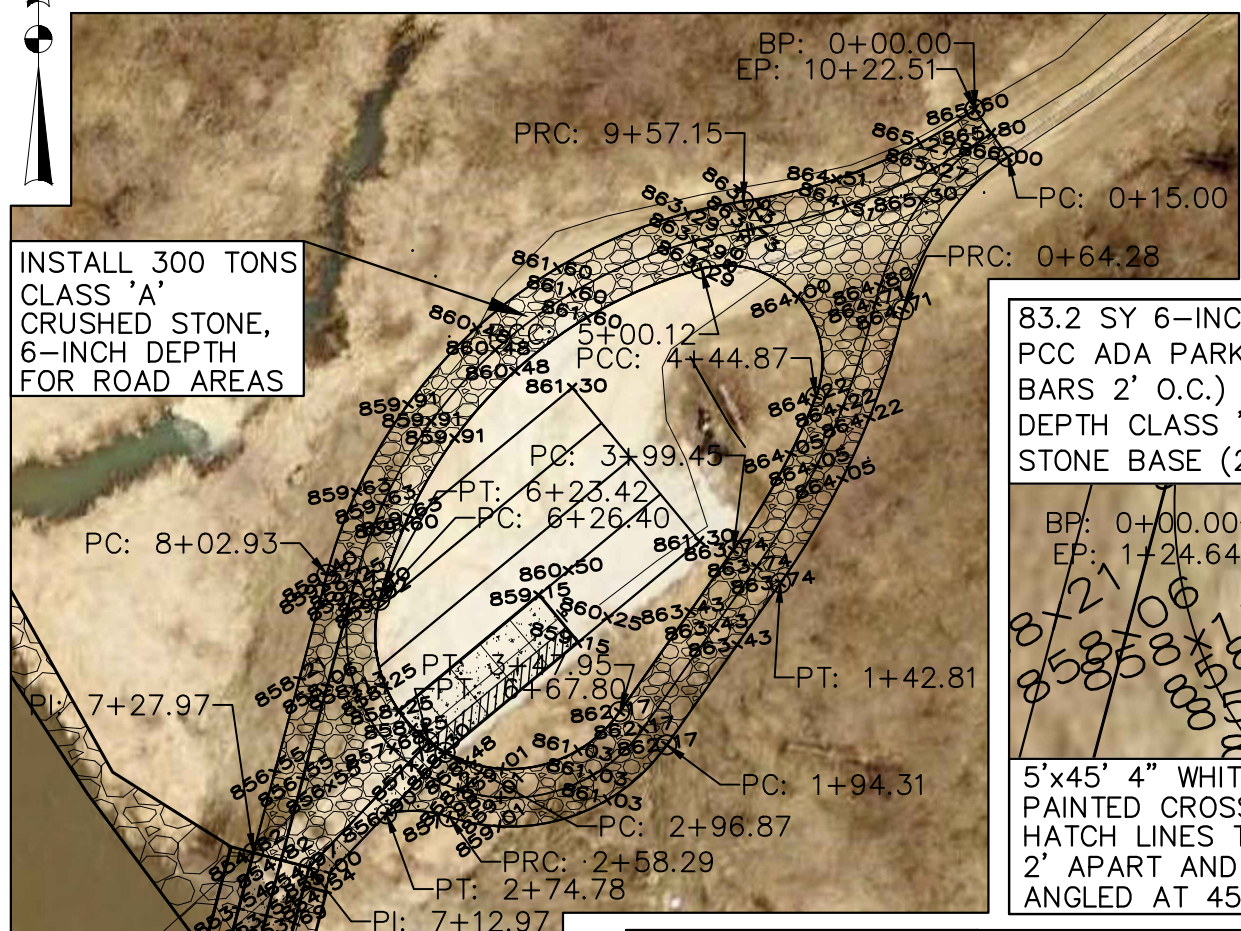
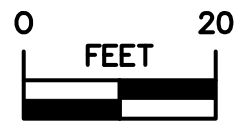
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DATE:
04/26/2023

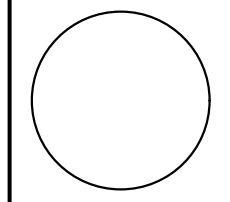
SHEET No:



NOTES
 1. SEE SHEETS #8 & 9 FOR BOAT RAMP DETAILS.
 2. SEE SHEET #9 FOR EDGE OF CONCRETE ADA PARKING SPACE CONTROL LINE AND EDGE OF CONCRETE WALKWAY CONTROL LINE.
 3. SEE SHEET #10 FOR EDGE OF GRAVEL ACCESS ROAD TRAVERSE LINE AND EDGE OF GRAVEL PARKING TRAVERSE LINE.



CONSULTANT:



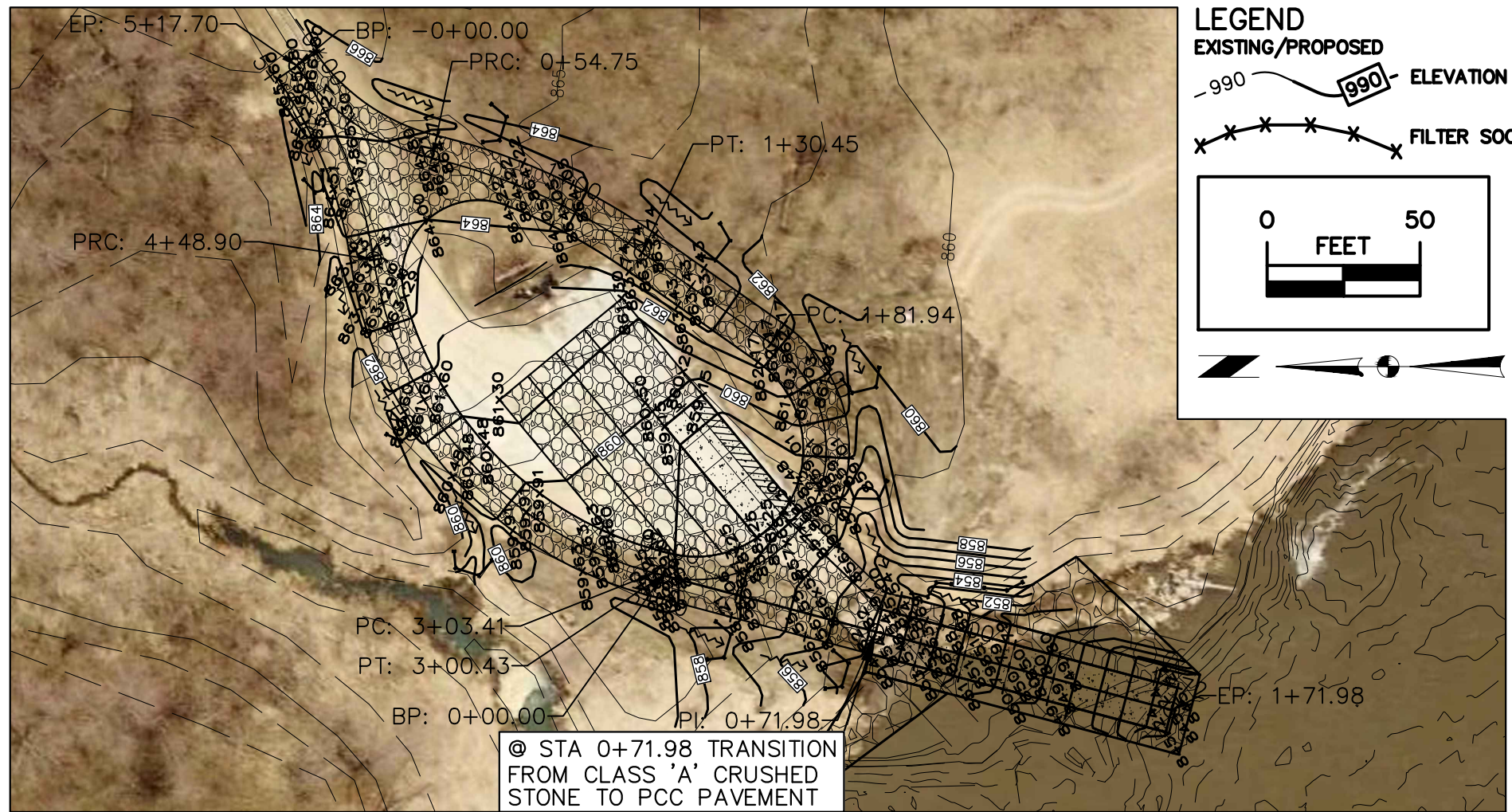
IOWA DEPARTMENT OF NATURAL RESOURCES
 ENGINEERING SERVICES - WALLACE BUILDING
 502 E. 9TH ST., DES MOINES, IA 50319-0034



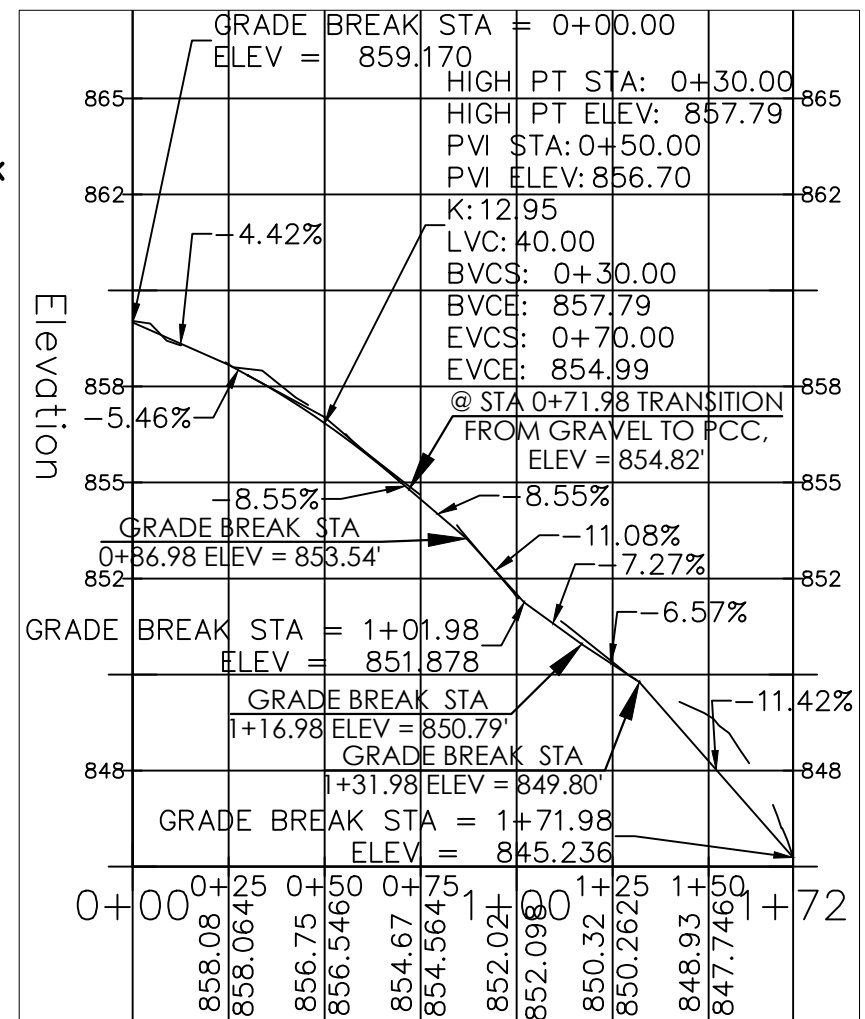
SITE PLAN
 CONSTRUCTION PROJECT FOR:
 SPORTSMAN BOAT RAMP
 BOONE COUNTY, IOWA

NO.	DATE	REVISION

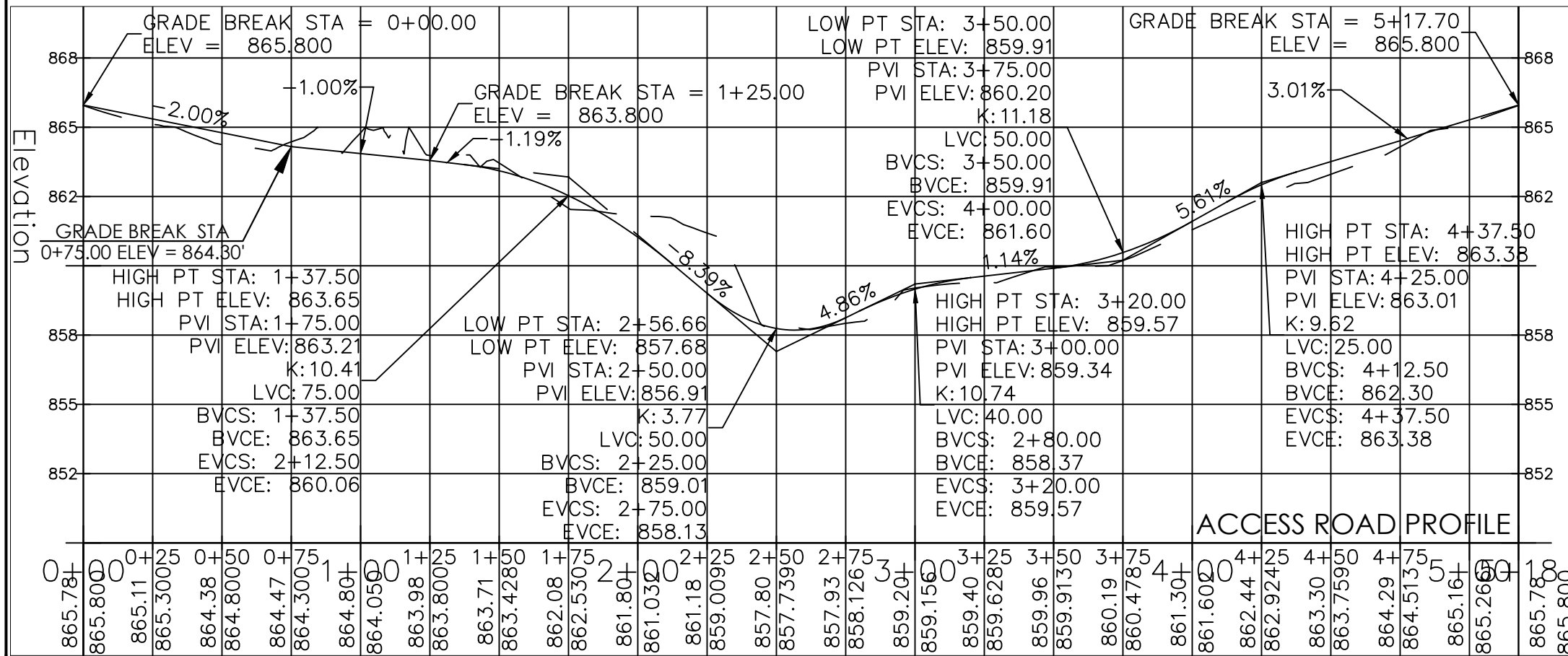
DRAWN BY: PROJECT NUMBER: 20-02-08-02
 CHKD BY: DATE: 04/26/2023
 SHEET No:



@ STA 0+71.98 TRANSITION FROM CLASS 'A' CRUSHED STONE TO PCC PAVEMENT

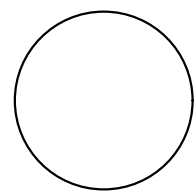


BOAT RAMP PROFILE



ACCESS ROAD PROFILE

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



ACCESS ROAD/RAMP PROFILE

CONSTRUCTION PROJECT FOR:

SPORTSMAN BOAT RAMP

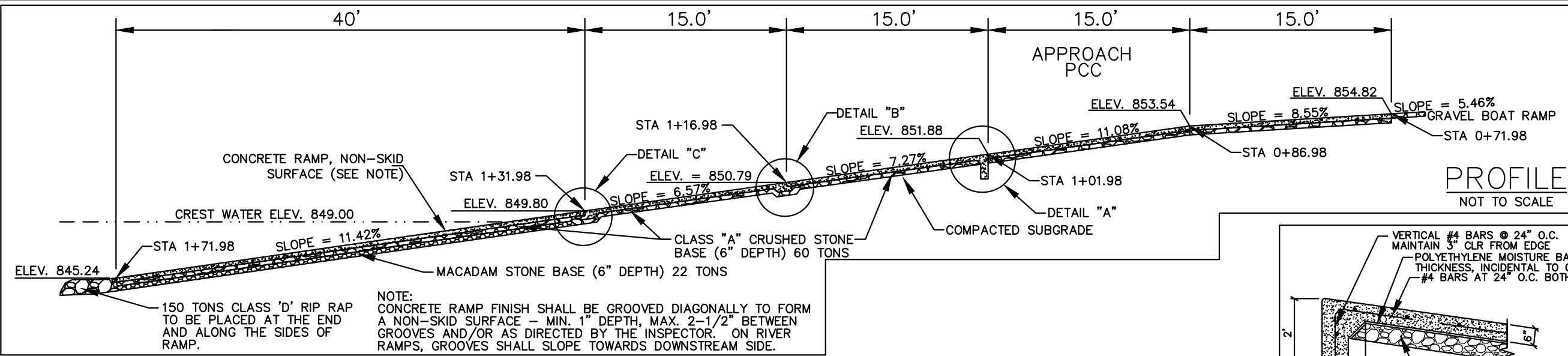
BOONE COUNTY, IOWA

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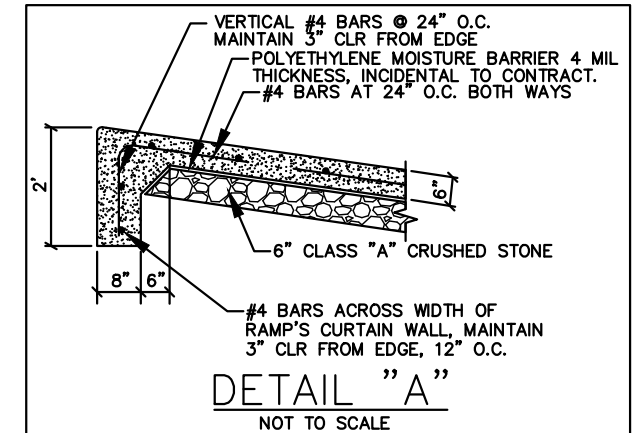
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20-02-08-02

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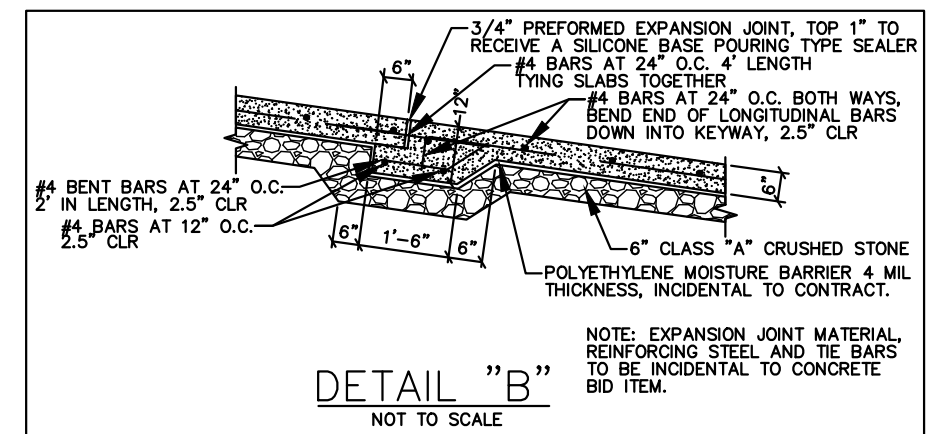
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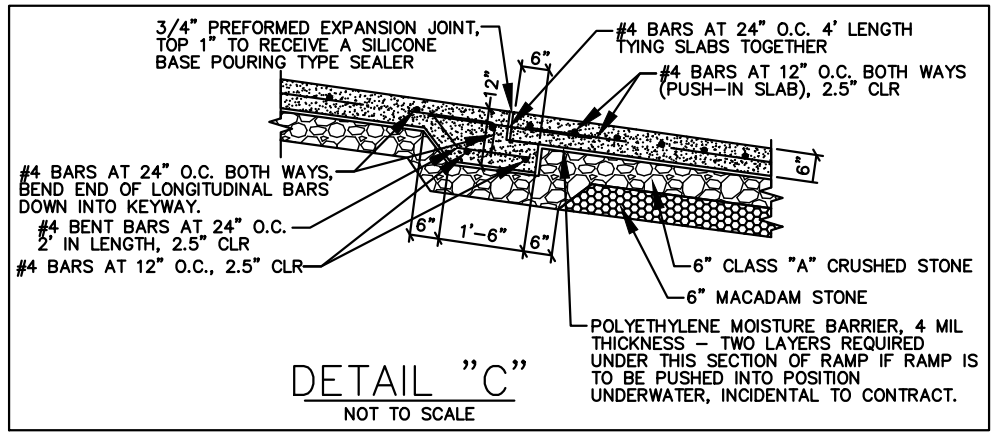
PROFILE
NOT TO SCALE



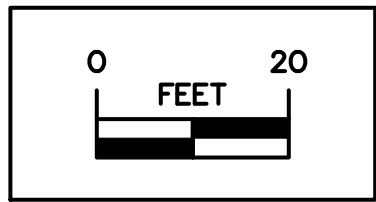
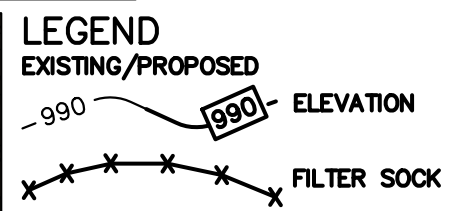
DETAIL "A"
NOT TO SCALE



DETAIL "B"
NOT TO SCALE

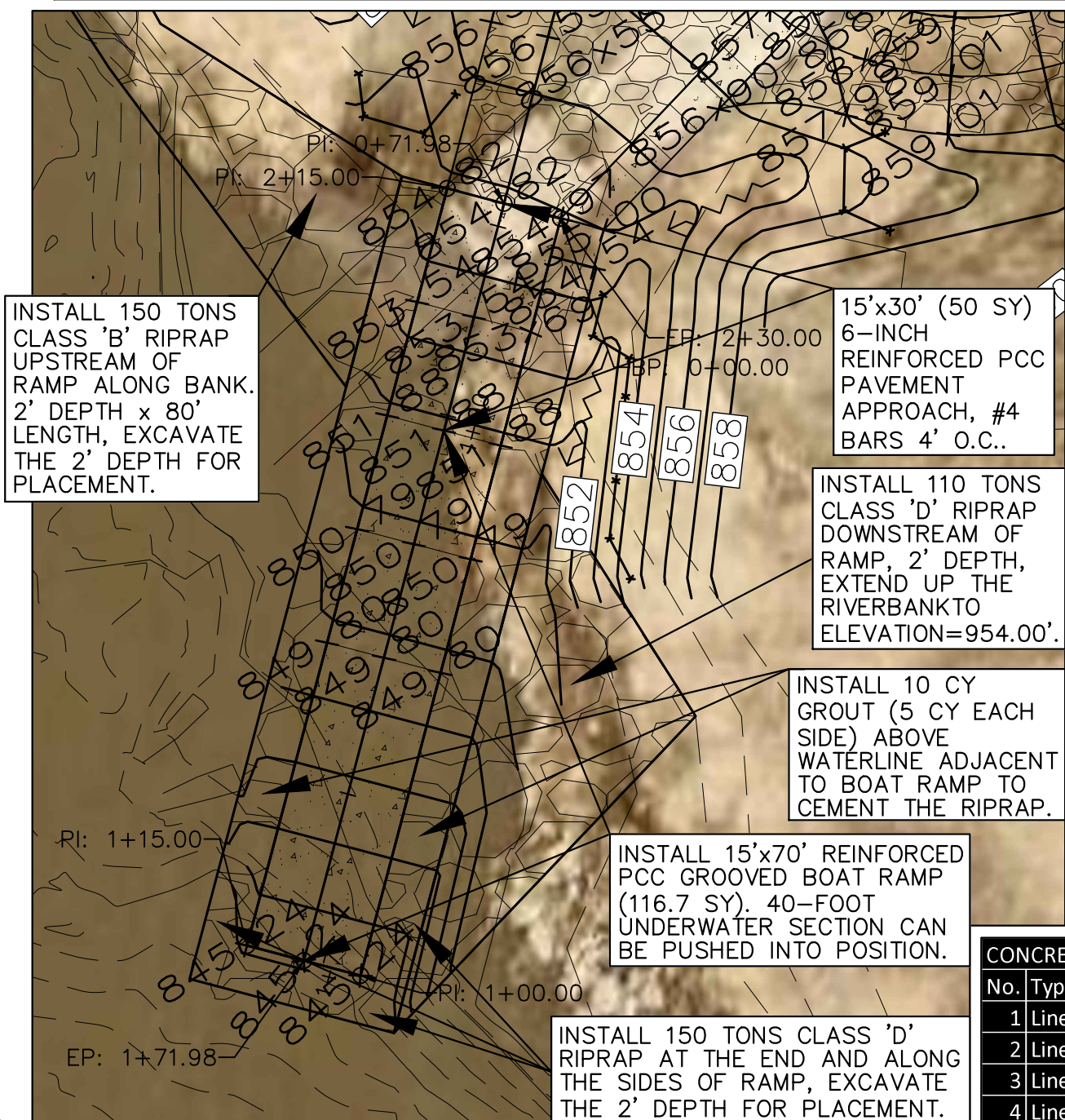


DETAIL "C"
NOT TO SCALE



GENERAL NOTES

1. ALL CONCRETE SHALL CONFORM TO CLASS 'C' MIX IDOT SPECIFICATIONS SERIES 2012.
2. ALL EXPOSED EDGES OF CONCRETE TO BE BEVELED WITH 3/4" CHAMFER STRIPS OR 1/2" RADIUS TOOLED EDGE.
3. THE TOP 1" OF ALL EXPANSION JOINTS TO RECEIVE A SILICONE BASE POURING TYPE SEAL.
4. EXPANSION JOINTS - 3/4" PREFORMED RESILIENT FILLER MATERIAL.
5. REINFORCING STEEL - GRADE 40 - DEFORMED EPOXY COATED REBAR.
6. THAT PORTION OF THE RAMP TO BE PLACED BELOW THE WATERLINE MAY BE FORMED ABOVE THE WATERLINE AND CAREFULLY PUSHED INTO POSITION UNDERWATER TO THE LOCATION AND ELEVATION AS SHOWN ON THE PLAN AND AS APPROVED BY THE INSPECTOR. THE REMAINING SECTIONS OF THE RAMP SHALL BE FORMED AND POURED IN PLACE.



CONCRETE BOAT RAMP PERIMETER EDGE CONTROL							
No.	Type	Length	Direction	Start Sta	End Sta	Start Point	End Point
1	Line	100.00'	S14° 48' 53"W	0+00.00'	1+00.00'	(4816085.9562', 3438973.7610', 854.97')	(4816060.3869', 3438877.0852', 845.24')
2	Line	15.00'	N75° 11' 07"W	1+00.00'	1+15.00'	(4816060.3869', 3438877.0852', 845.24')	(4816045.8855', 3438880.9206', 845.24')
3	Line	100.00'	N14° 48' 53"E	1+15.00'	2+15.00'	(4816045.8855', 3438880.9206', 845.24')	(4816071.4549', 3438977.5964', 854.82')
4	Line	15.00'	S75° 11' 07"E	2+15.00'	2+30.00'	(4816071.4549', 3438977.5964', 854.82')	(4816085.9562', 3438973.7610', 854.97')

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

BOAT RAMP DETAILS

CONSTRUCTION PROJECT FOR:
SPORTSMAN BOAT RAMP

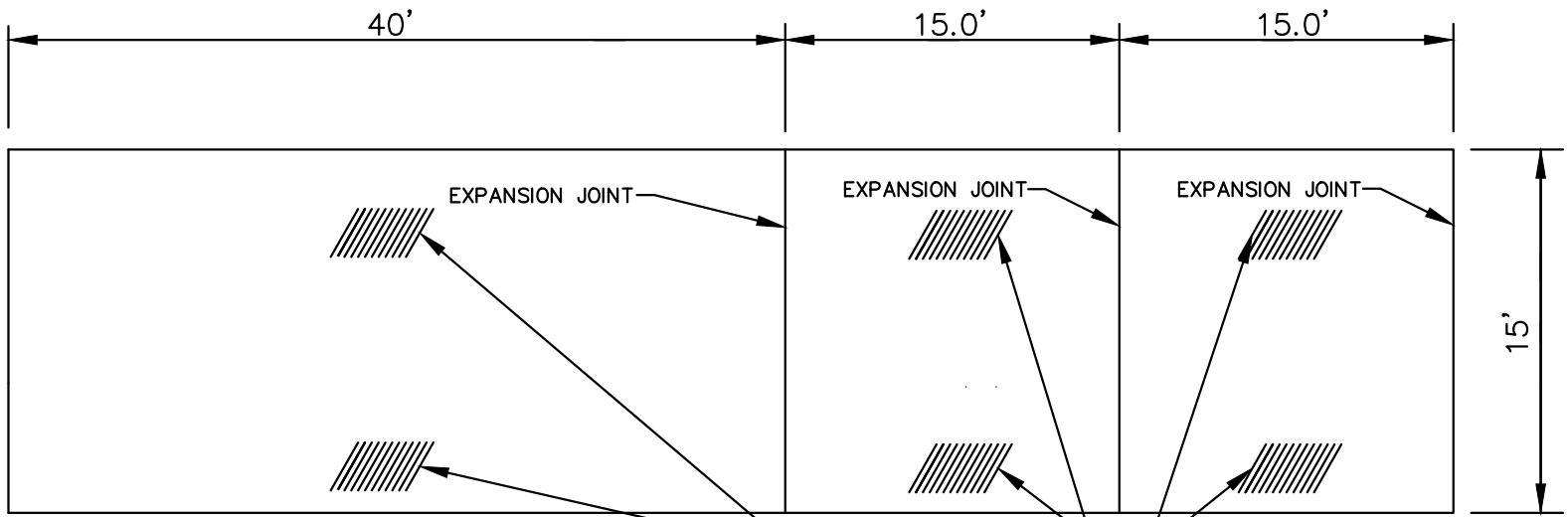
BOONE COUNTY, IOWA

NO.	DATE	REVISION

DRAWN BY: PROJECT NUMBER:
20-02-08-02

CHKD BY: DATE:
04/26/2023

SHEET No: **8**



NOTE:
CONCRETE RAMP FINISH SHALL BE GROOVED DIAGONALLY (60°) TO FORM A NON-SKID SURFACE - MIN. 1" DEPTH, MAX. 2-1/2" BETWEEN GROOVES AND/OR AS DIRECTED BY THE INSPECTOR.

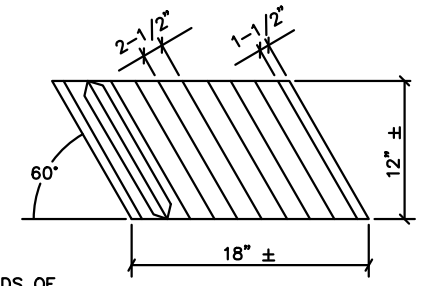
PLAN
NOT TO SCALE

NOTE:
GROOVING DEVICE MAY BE OBTAINED FROM DNR CONSTRUCTION INSPECTOR.



SECTION

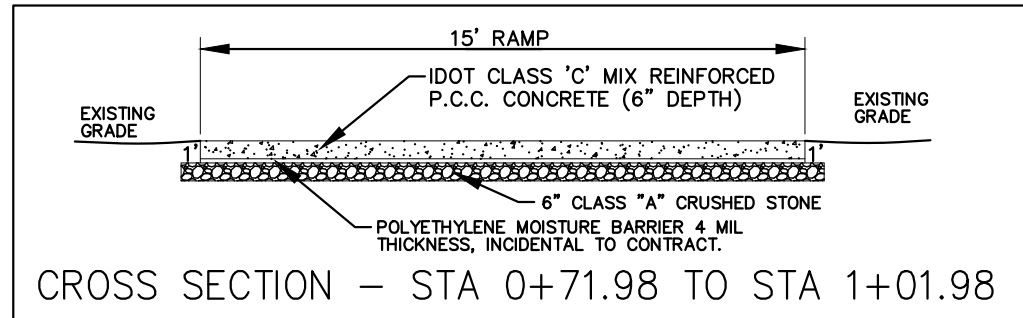
NOTE: BEND ENDS OF ANGLE IN TO FORM BOW OF BOAT AND WELD



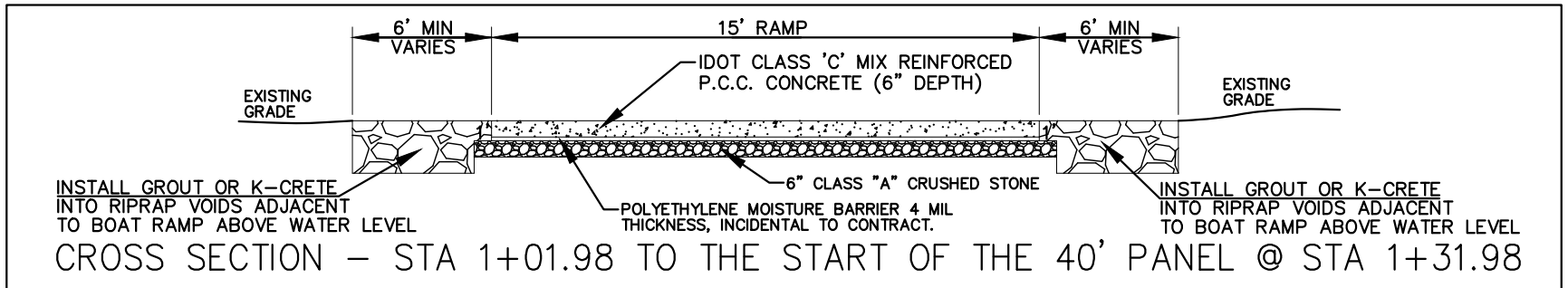
SECTION

NOTE: GROOVING DEVICE IS AVAILABLE FROM DNR CONSTRUCTION INSPECTOR.

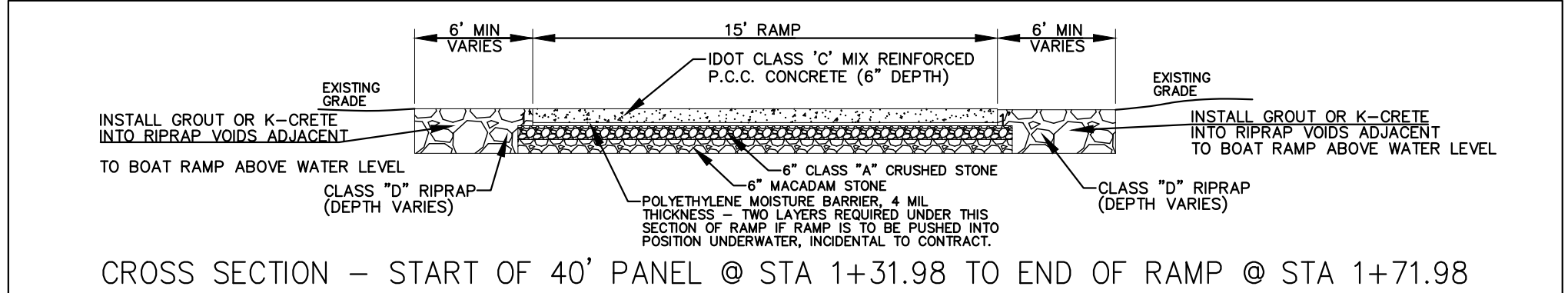
DETAIL OF GROOVING DEVICE
NOT TO SCALE



CROSS SECTION - STA 0+71.98 TO STA 1+01.98



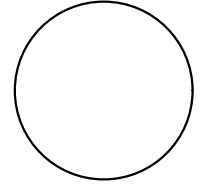
CROSS SECTION - STA 1+01.98 TO THE START OF THE 40' PANEL @ STA 1+31.98



CROSS SECTION - START OF 40' PANEL @ STA 1+31.98 TO END OF RAMP @ STA 1+71.98

EDGE OF CONCRETE WALK TRAVERSE LINE												
No.	Type	Length	Radius	Direction	Start Sta	End Sta	Delta angle	Ch length	Ch Direction	Start Point	End Point	Center Point
1	Line	43.37'		S43° 36' 39"W	0+00.00'	0+43.37'				(4816121.3880',3439003.7050',858.30')	(4816091.4721',3438972.3021',855.00')	
2	Line	5.00'		S14° 48' 53"W	0+43.37'	0+48.37'				(4816091.4721',3438972.3021',855.00')	(4816090.1936',3438967.4683',854.54')	
3	Line	5.71'		N75° 11' 07"W	0+48.37'	0+54.08'				(4816090.1936',3438967.4683',854.54')	(4816084.6777',3438968.9272',854.54')	
4	Line	5.00'		N14° 48' 53"E	0+54.08'	0+59.08'				(4816084.6777',3438968.9272',854.54')	(4816085.9562',3438973.7610',854.97')	
5	Line	45.17'		N43° 36' 39"E	0+59.08'	1+04.25'				(4816085.9562',3438973.7610',854.97')	(4816117.1138',3439006.4673',858.30')	
6	Curve	5.09'	35.00'		1+04.25'	1+09.34'	8.3383 (d)	5.09'	S57° 07' 31"E	(4816117.1138',3439006.4673',858.30')	(4816121.3880',3439003.7050',858.30')	(4816138.1988',3439034.4034')
CONCRETE ADA PARKING SPACE EDGE CONTROL												
No.	Type	Length	Radius	Direction	Start Sta	End Sta	Delta angle	Ch length	Ch Direction	Start Point	End Point	Center Point
1	Curve	16.32'	35.00'		0+00.00'	0+16.32'	26.7095 (d)	16.17'	S47° 56' 23"E	(4816109.3838',3439014.5365',858.30')	(4816121.3880',3439003.7050',858.25')	(4816138.1988',3439034.4034')
2	Line	45.00'		N50° 20' 31"E	0+16.32'	0+61.32'				(4816121.3880',3439003.7050',858.25')	(4816156.0319',3439032.4242',859.15')	
3	Line	16.00'		N39° 39' 29"W	0+61.32'	0+77.32'				(4816156.0319',3439032.4242',859.15')	(4816145.8206',3439044.7421',859.15')	
4	Line	47.33'		S50° 20' 31"W	0+77.32'	1+24.64'				(4816145.8206',3439044.7421',859.15')	(4816109.3838',3439014.5365',858.30')	

CONSULTANT:



IOWA DEPARTMENT OF
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RAMP DETAIL/CONC EDGE CTL

CONSTRUCTION PROJECT FOR:

SPORTSMAN BOAT RAMP

BOONE COUNTY, IOWA

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