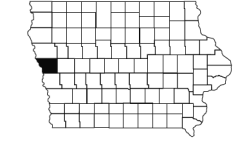


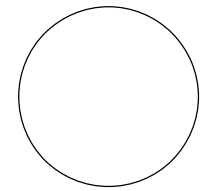
- BEACH AREA
- BOAT RAMP
- CAMPGROUND
- DAY-USE LODGE
- PARK RESIDENCE
- PICNIC AREA
- RESTROOM
- SHELTER
- VISITOR CENTER
- NATURE TRAIL
- HIKING TRAIL



LEWIS & CLARK STATE PARK

PROJECT LOCATION

CONSULTANT:



**IOWA DEPARTMENT OF
NATURAL RESOURCES**

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



PROJECT LOCATION MAP

SHORELINE ARMORING FOR:

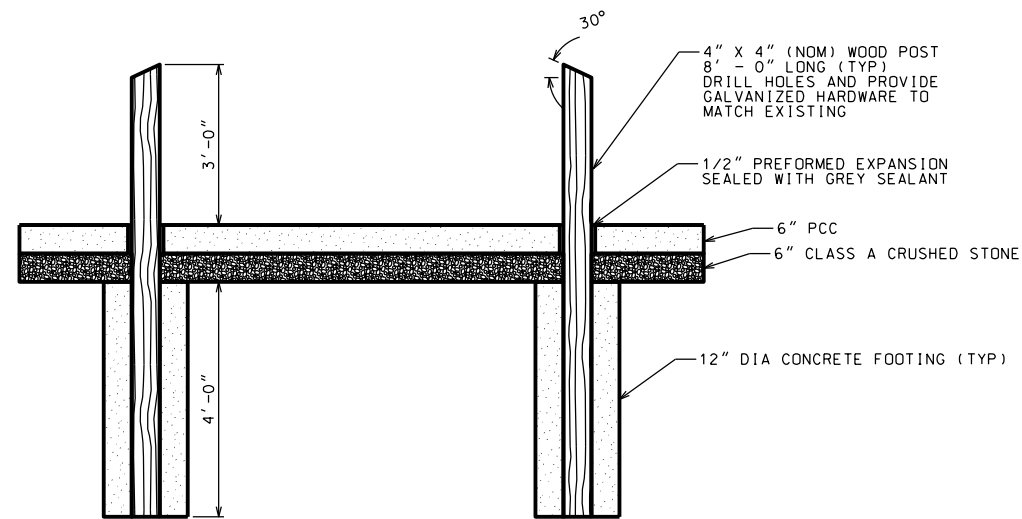
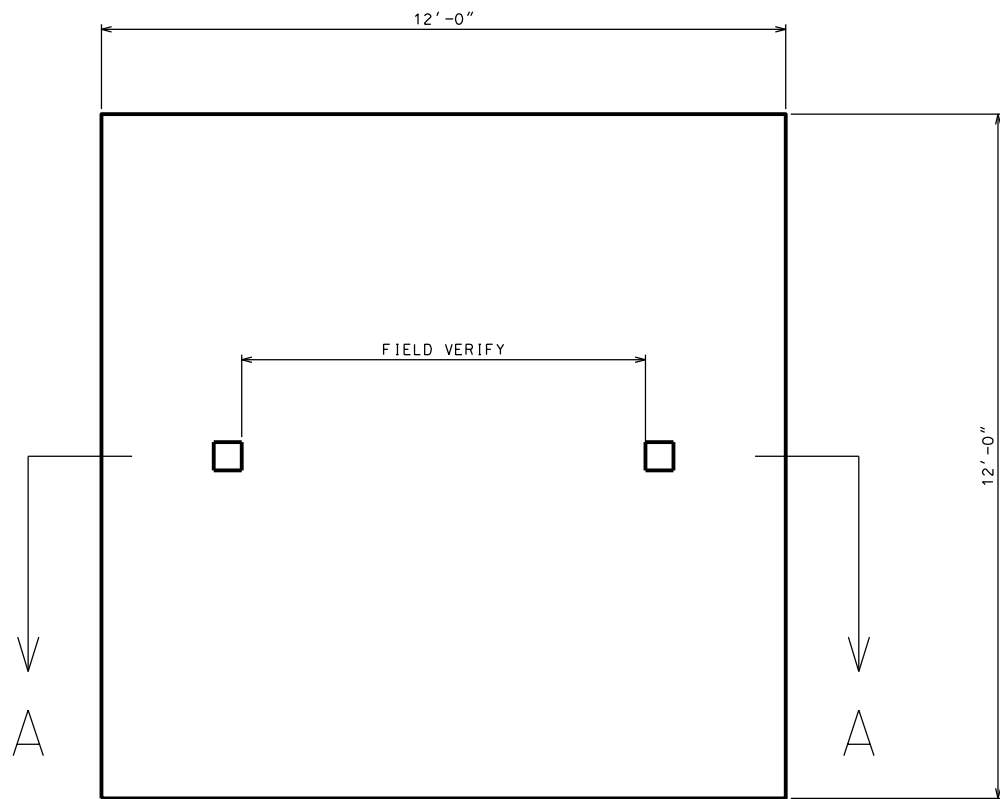
LEWIS AND CLARK STATE PARK

MONONA COUNTY

NO.	BY	REVISION
DRAWN BY:	PROJECT NUMBER: 17-01-67-05	
CHK'D BY:	DATE:	

SHEET NO.:

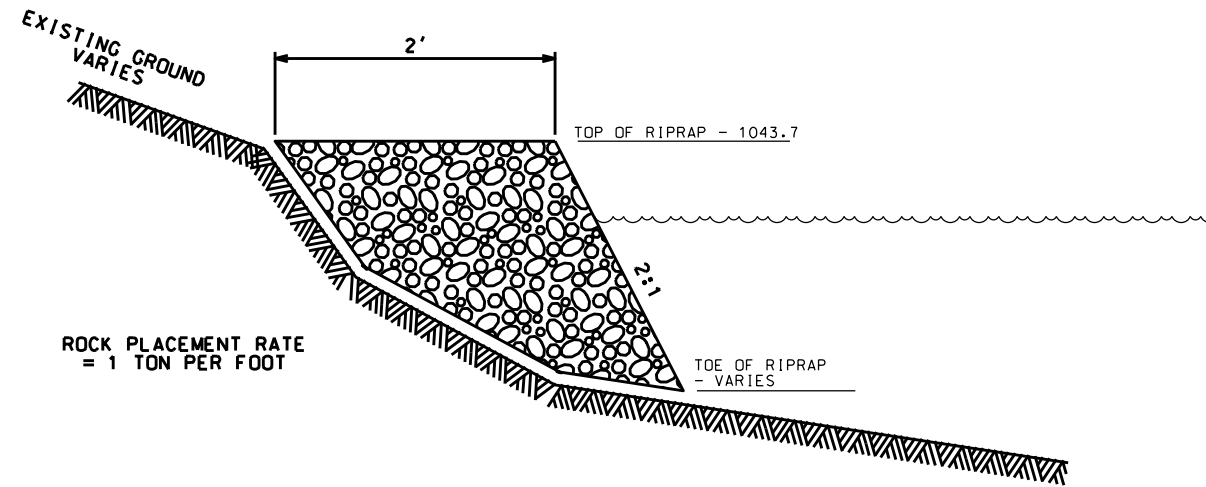
A.02



SECTION A-A

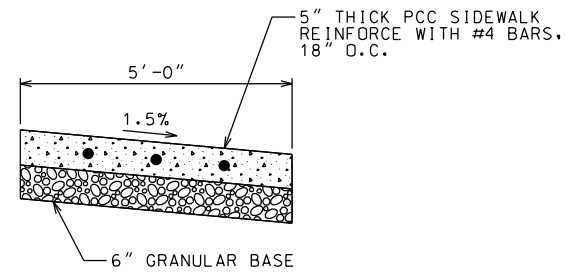
COVERED PICNIC SHELTER
BASE DETAIL

NOT TO SCALE



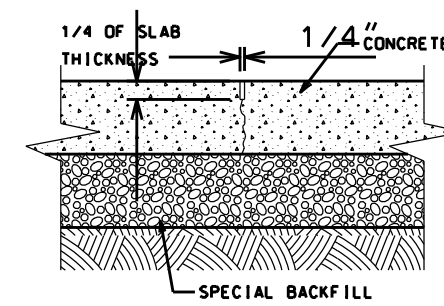
SHORELINE ARMORING

NOT TO SCALE



SIDEWALK

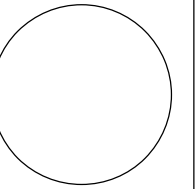
NOT TO SCALE



TYPICAL CONTROL JOINT

NOT TO SCALE

CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

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



TYPICAL CROSS SECTIONS AND DETAILS

SHORELINE ARMORING FOR:

LEWIS AND CLARK STATE PARK

MONONA COUNTY

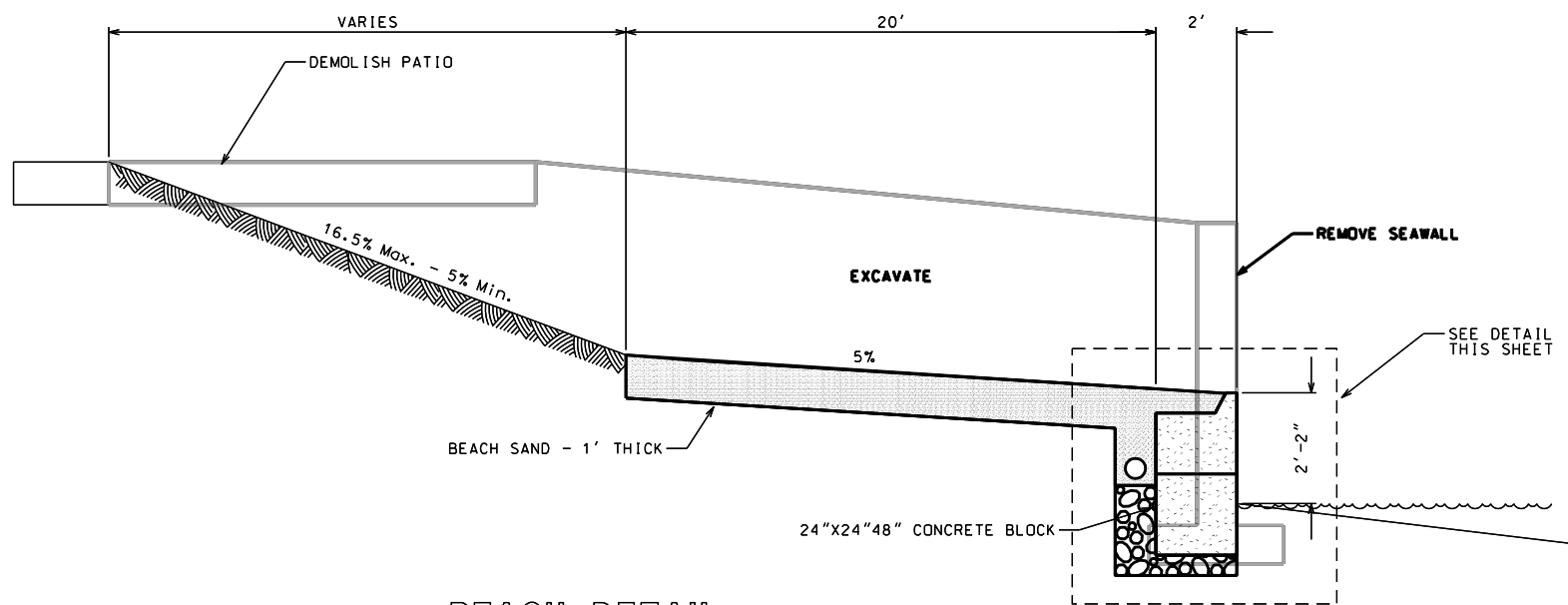
NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
17-01-67-05

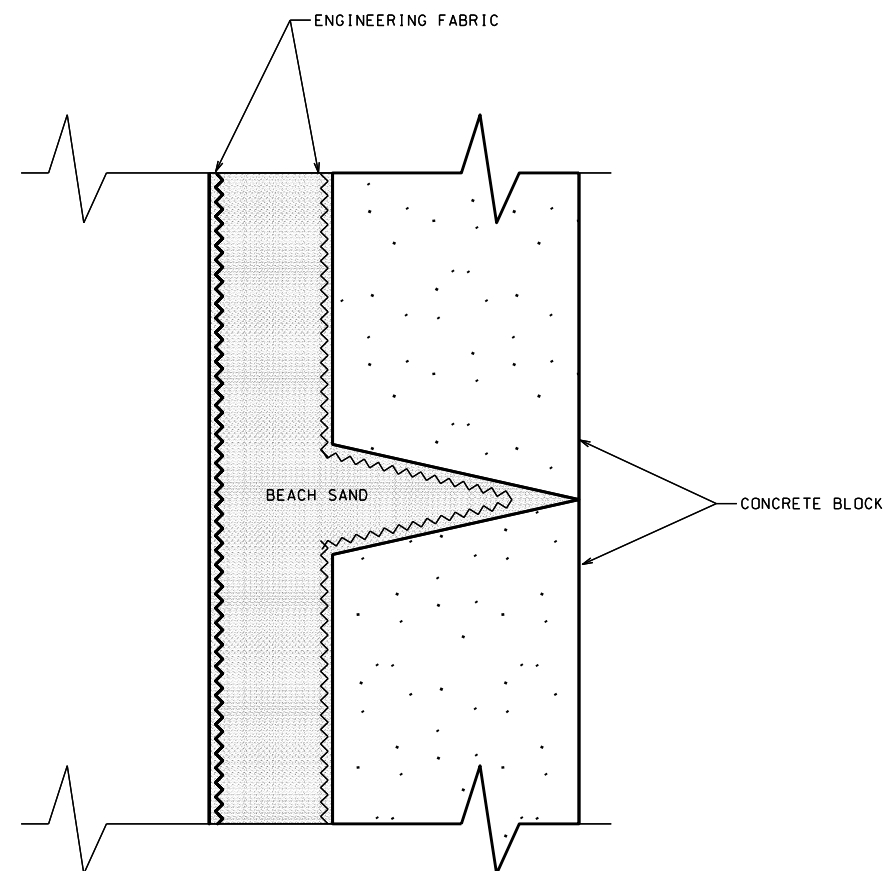
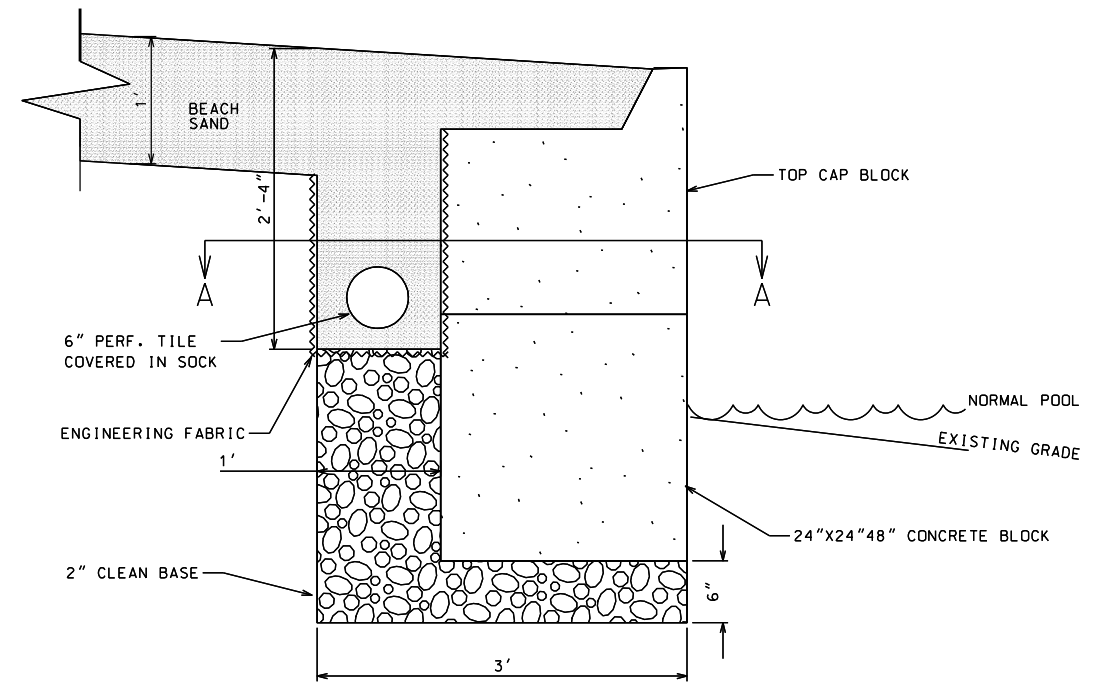
CHK'D BY: DATE:

SHEET No:

B.01

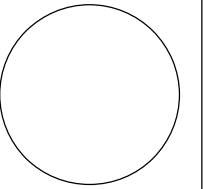


BEACH DETAIL
NOT TO SCALE



SECTION A-A

CONSULTANT:



**IOWA DEPARTMENT OF
NATURAL RESOURCES**

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



TYPICAL CROSS SECTIONS AND DETAILS

SHORELINE ARMORING FOR:

LEWIS AND CLARK STATE PARK

MONONA COUNTY

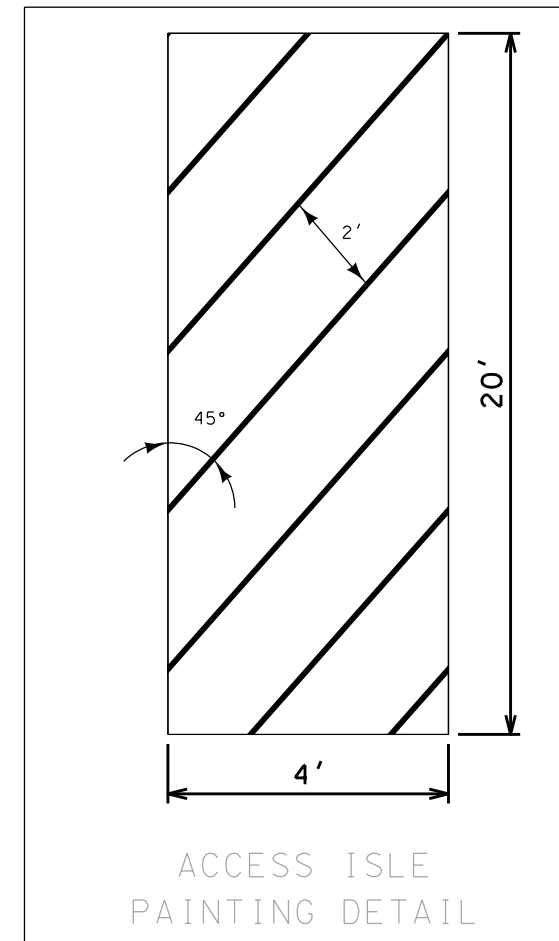
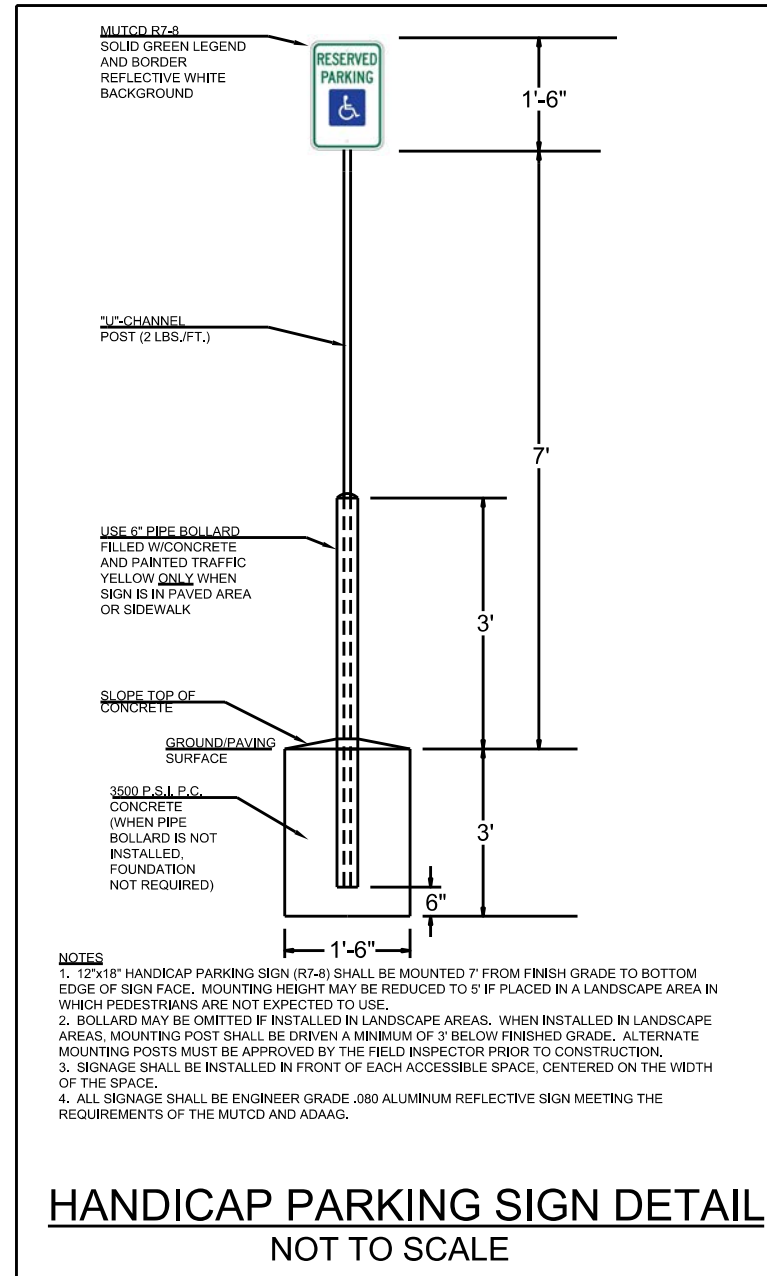
NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
17-01-67-05

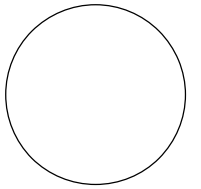
CHK'D BY: DATE:

SHEET No:

B.02



CONSULTANT:



**IOWA DEPARTMENT OF
NATURAL RESOURCES**

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



TYPICAL CROSS SECTIONS AND DETAILS

SHORELINE ARMORING FOR:

LEWIS AND CLARK STATE PARK

MONONA COUNTY

NO.	BY	REVISION
DATE		

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17-01-67-05

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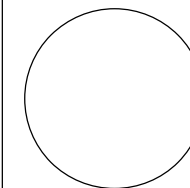
B.03

ESTIMATED PROJECT QUANTITIES			
ITEM NO.	ITEM	UNIT	TOTAL
1	Mobilization	Lump Sum	1
2	Class E Field Stone	Tons	1795
3	Sand	Tons	371
4	Block Retaining Wall	Lin Ft	256
5	Crushed Stone, 2" Clean	Tons	58
6	6" Tile - Perf.	Ft	230
7	6" Tile Outlet	Each	2
8	Excavation, Class 10 (Waste)	CY	410
9	Site Restoration	Lump Sum	1
10	Demolition	Lump Sum	1
11	Relocate Covered Picnic Table	Each	2
12	Cap Utilities	Lump Sum	1
13	5" PCC, Reinforced	SY	91
14	6" PCC	SY	70
15	Granular Subbase	Tons	51
16	Handicap Parking Sign	Each	1
17	Striping	Lump Sum	1

ESTIMATE REFERENCE INFORMATION													
ITEM NO.	DESCRIPTION												
2	A. Material shall meet the requirements of Class E Revetment Stone as described in the Iowa DOT Standard Specifications for Highway and Bridge Construction. B. Material shall be dolomite, quartzite, or granite. Crushed limestone or broken concrete are not allowed.												
3	A. Material shall be clean, washed and screened well-graded natural sand, free from silt, clay, loam, organic materials, and soluble materials. B. Material gradation shall meet the following: <table border="1"> <thead> <tr> <th>SIEVE SIZE</th> <th>% Passing</th> </tr> </thead> <tbody> <tr> <td>3/8"</td> <td>100</td> </tr> <tr> <td>No. 4</td> <td>95-100</td> </tr> <tr> <td>No. 8</td> <td>10-100</td> </tr> <tr> <td>No. 30</td> <td>20-55</td> </tr> <tr> <td>No. 200</td> <td>0-2.5</td> </tr> </tbody> </table> C. Shale and/or coal particles retained on a No. 16 sieve shall not exceed 2.0% D. No more than 40% shall pass one sieve and be retained on the sieve with the next higher number when the material is passed through the following sieve numbers: 4, 8, 16, 50, and 100.	SIEVE SIZE	% Passing	3/8"	100	No. 4	95-100	No. 8	10-100	No. 30	20-55	No. 200	0-2.5
SIEVE SIZE	% Passing												
3/8"	100												
No. 4	95-100												
No. 8	10-100												
No. 30	20-55												
No. 200	0-2.5												
4	A. Retaining wall blocks shall be Monster Block, as manufactured by Midwest Ready Mix & Equipment, located in Vermillion, South Dakota, or approved equal. B. Engineering fabric shall be incidental to this bid item.												
6	A. Perforated tile shall be covered in a sock.												
7	A. Tile outlet shall consist of a 6' minimum length of dual wall HDPE. B. Rodent guards shall be installed at the outlet, and are considered incidental to this bid item.												
8	A. Clean fill material generated by beach grading may be disposed of on site, as directed by the engineer.												
9	A. Site restoration consists of seedbed preparation, stabilizing crop seeding and fertilizing, permanent lawn seeding and fertilizing of all disturbed areas, including the beach area and waste locations. B. Seedbed preparation, seeding and fertilizing activities shall conform to the Iowa DOT Standard Specifications for Highway and Bridge Construction. C. Stabilizing crop seed mix shall conform to the Iowa DOT Standard Specifications for Highway and Bridge Construction. D. Permanent seed mix shall be Iowa DOT Permanent, Urban.												
10	A. This item includes the removal and disposal of the existing sea wall, sidewalk, benches, and covered picnic table pads.												
12	A. This item includes the capping of the existing waterline and sewerline located under the existing patio.												
14	A. This item includes the handicap parking space and covered picnic table pads.												
15	A. This item includes base rock for bid items #13 and #14. B. Material shall meet the requirements of gradation no. 12, 14, 30, 31, or 32 of the Iowa DOT Standard Specifications for Highway and Bridge Construction.												

GENERAL NOTES	
Verify actual locations and elevations with DNR Engineer.	
All work shall conform to and be performed in accordance with all applicable codes and ordinances.	
The contractor shall visit the site and inspect the project area and thoroughly familiarize themselves with the actual job conditions prior to bidding and the start of work. Failure to visit the project site shall not relieve the contractor from performing the work in accordance to the plans, specification, special provisions and contract.	
The contractor shall verify, at the site, all dimensions and conditions shown on the plans and shall notify the DNR Engineer of any discrepancies, omissions, and/or conflicts prior to proceeding with the work.	
It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project. No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans or approved by the DNR Engineer.	
The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service areas will be subject to the approval of the DNR Engineer.	
Where utilities and fixtures are shown as Existing on the plans or encountered within the construction area, it shall be the responsibility of the contractor to notify the DNR Engineer of those utilities prior to the beginning of any construction. The contractor shall be afforded access to these facilities for necessary modification of services. Underground facilities, structures and utilities have been plotted from available surveys and records and therefore their locations must be considered approximate only. It is possible there may be others, the existence of which is presently not known or shown. It is the contractor's responsibility to determine their existence and exact location and to avoid damage thereto. No claims for additional compensation will be allowed to the contractor for any interference or delay caused by such work.	
The contractor shall shape graded area to maintain surface drainage. All elevations are to finish grade.	
The contractor is expected to have materials, equipment, and labor available on a daily basis to install and maintain erosion control features on the project. This may involve seeding, silt fence, rock ditch checks, silt basins or silt dikes.	

CONSULTANT:



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



QUANTITIES AND GENERAL INFORMATION

SHORELINE ARMORING FOR:

LEWIS AND CLARK STATE PARK

MONONA COUNTY

NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
17-01-67-05

CHK'D BY: DATE:

SHEET NO:

C.01

NOTE:
 DUE TO THE EXISTING SANDY SOILS, ROCK PLACING
 ACTIVITIES ARE STRONGLY RECOMMENDED TO
 OCCUR WHILE THE GROUND IS FROZEN.

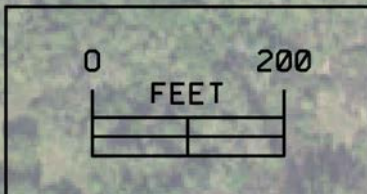
GRADE BEACH

ARMOR SHORELINE - 165 FT

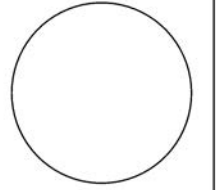
ARMOR SHORELINE - 640 FT

ARMOR SHORELINE - 770 FT

ARMOR SHORELINE - 220 FT



CONSULTANT:



IOWA DEPARTMENT OF
 NATURAL RESOURCES

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



SITE PLAN

SHORELINE ARMORING FOR:

LEWIS AND CLARK STATE PARK

MUSKOGEE COUNTY

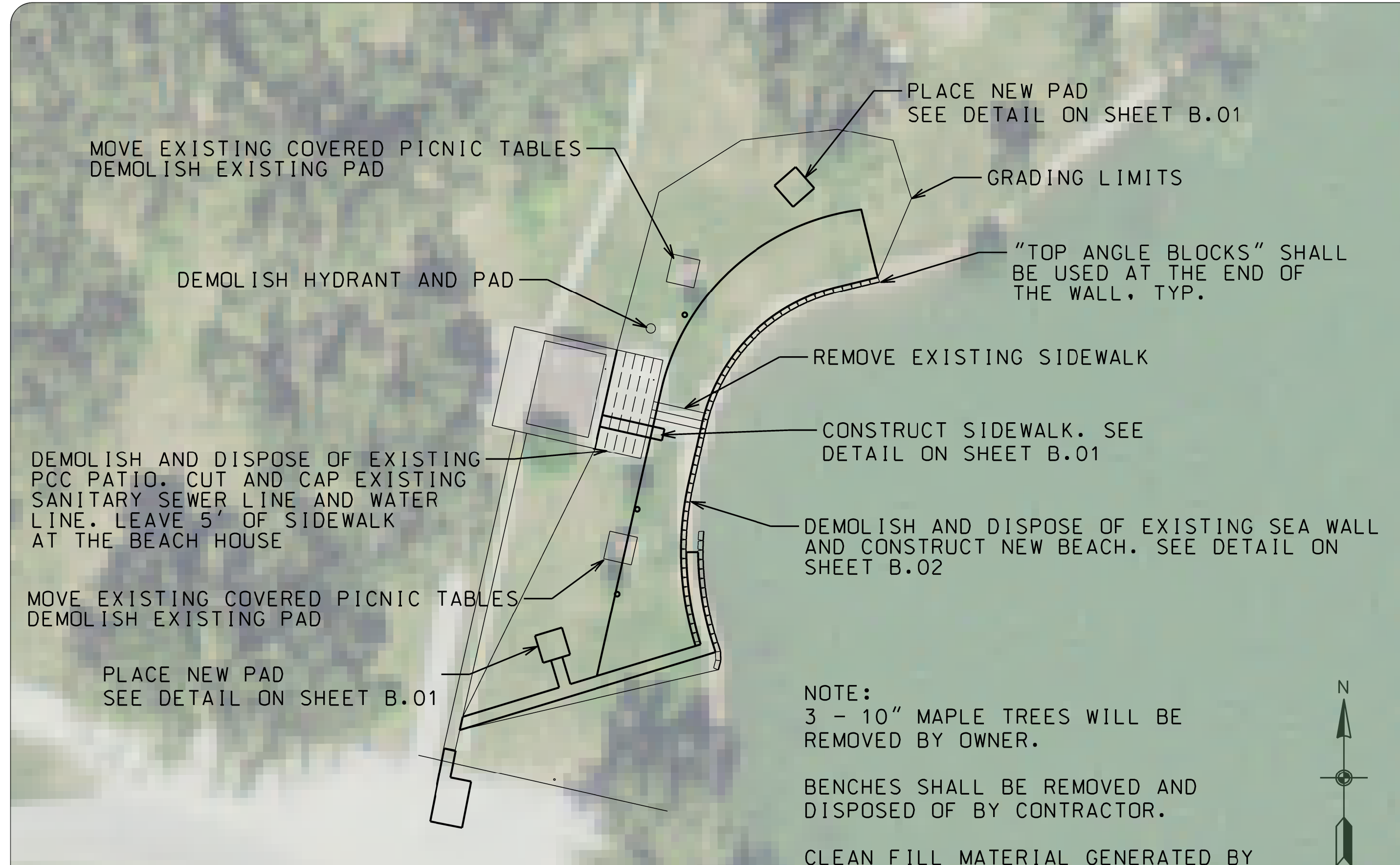
NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
 17-01-67-05

CHK'D BY: DATE:

SHEET NO.:

D.01



MOVE EXISTING COVERED PICNIC TABLES
DEMOLISH EXISTING PAD

DEMOLISH HYDRANT AND PAD

DEMOLISH AND DISPOSE OF EXISTING
PCC PATIO. CUT AND CAP EXISTING
SANITARY SEWER LINE AND WATER
LINE. LEAVE 5' OF SIDEWALK
AT THE BEACH HOUSE

MOVE EXISTING COVERED PICNIC TABLES
DEMOLISH EXISTING PAD

PLACE NEW PAD
SEE DETAIL ON SHEET B.01

PLACE NEW PAD
SEE DETAIL ON SHEET B.01

GRADING LIMITS

"TOP ANGLE BLOCKS" SHALL
BE USED AT THE END OF
THE WALL, TYP.

REMOVE EXISTING SIDEWALK

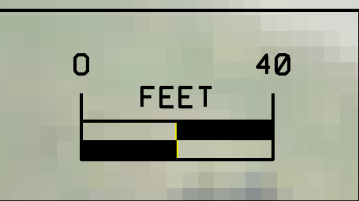
CONSTRUCT SIDEWALK. SEE
DETAIL ON SHEET B.01

DEMOLISH AND DISPOSE OF EXISTING SEA WALL
AND CONSTRUCT NEW BEACH. SEE DETAIL ON
SHEET B.02

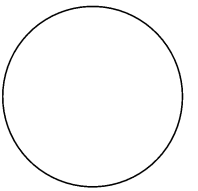
NOTE:
3 - 10" MAPLE TREES WILL BE
REMOVED BY OWNER.

BENCHES SHALL BE REMOVED AND
DISPOSED OF BY CONTRACTOR.

CLEAN FILL MATERIAL GENERATED BY
BEACH GRADING MAY BE DISPOSED OF
ON SITE AS DIRECTED BY THE
ENGINEER. SEE SHEET A.02 FOR
LOCATIONS



CONSULTANT:



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



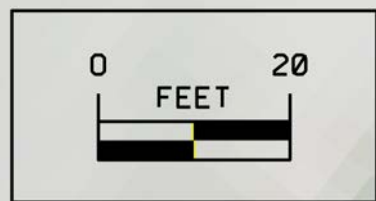
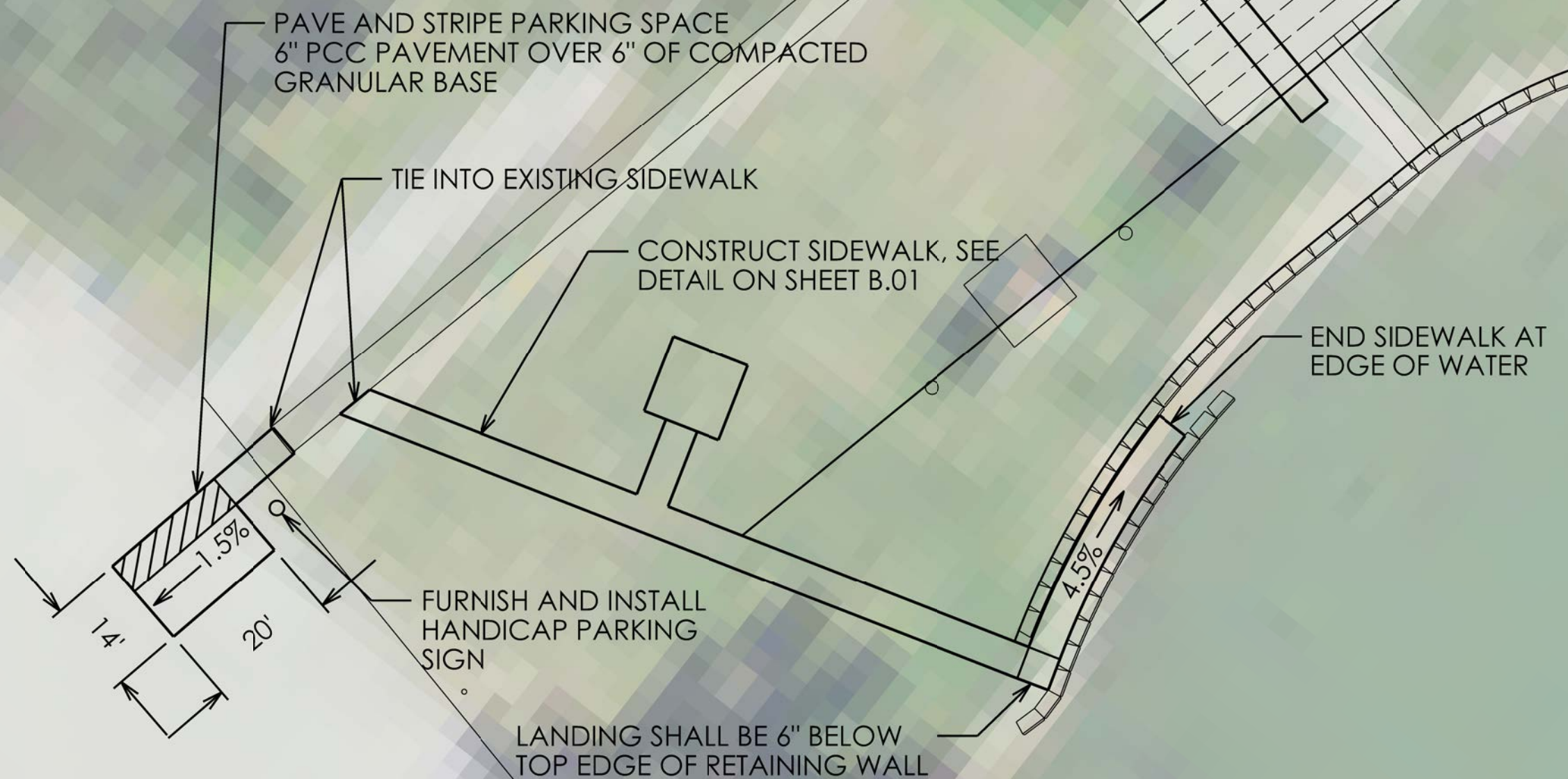
BEACH GRADING PLAN

SHORELINE ARMORING FOR:
LEWIS AND CLARK STATE PARK
MONONA COUNTY

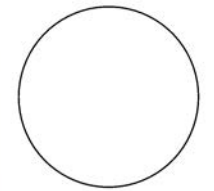
NO.	BY	REVISION

DRAWN BY:	PROJECT NUMBER: 17-01-67-05
CHK'D BY:	DATE:

SHEET No: **D.02**



CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

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



BEACH ACCESS PLAN

SHORELINE ARMORING FOR:
LEWIS AND CLARK STATE PARK

MUSKOGEE COUNTY

NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
17-01-67-05

CHK'D BY: DATE:

SHEET No:
D.03