IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

MIKE NAIG
SECRETARY OF AGRICULTURE

Hoover State Office Building ▪ 1305 E. Walnut Street ▪ Des Moines, IA 50319 ▪ (515) 281.5321 ▪ IowaAgriculture.gov

December 10, 2025

Division of Soil Conservation and Water Quality
1305 E Walnut Street
Des Moines, IA 50319

TO: Prospective Bidders

Subject: **Addendum No. 1** to Bid Documents
WINN981024D Nutrient Reductionl Wetland Project – Bid No. 25-20
Winneshiek County, Iowa

This addendum forms a part of the bidding contract documents and modifies the original bidding documents posted on November 16, 2025. An updated bidding form, Document CC.– Proposal and Schedule of Prices is attached with the addendum acknowledged. This updated bidding form must be used for 25-20 and all bidders must acknowledge this addendum on Page CC-2. **FAILURE TO DO SO WILL SUBJECT BIDDER TO DISQUALIFICATON.**

Description:

DOCUMENT CC– PROPOSAL AND SCHEDULE OF PRICES, 25-20 (See Attachment No.1)

- Please use the updated Document CC, to acknowledge Addendum No. 1 (See Attachment No. 1):

Plans (See Attachment No. 2):

- See revised Plan C01 and D03, with noted changes.

Specifications (See Attachment No. 3):

- See revised Specifications IA CS-031, with noted changes.

Sincerely,

Sara Smith, P.E.

Sara Smith, P.E.
Water Resources Bureau

SS
Attachment No. 1 – Updated Document CC
Attachment No. 2 – Updated Plans C01 and D03.
Attachment No. 3 – Updated Specifications IA CS-031

End of Addendum No. 1

Time and Date for Bid Submissions: 3:00:00 PM, 12/17/2025
BIDDER LOGIN
https://solutions.sciquest.com/apps/Router/SupplierLogin?CustOrg=DASIowa

Time and Date of Bid Opening: 3:00 PM, December 17, 2025

Bid Opening TEAMS: 469-998-7627, 226956253

Project Description and Location: Winn981024D Nutrient Reduction Wetland Project
Section 24, Township 98 North, Range 10 West
Winnisheik County, Iowa

PROPOSAL AND SCHEDULE OF PRICES

Proposal of _____
(PRINT Name of Bidder: COMPANY & CONTACT)

Located at _____ (___)_____
(FULL Mailing Address) (Telephone Number)

Amount of Proposal Guarantee	Description of Work	Specified Completion Date	Liquidated Damages
10% of Base Bid	All Work Except Seeding	November 15, 2026	$175.00 Per Day
	Seeding	December 15, 2026	$125.00 Per Day

The undersigned hereby agrees, if awarded the contract, to execute the proposed contract and to furnish satisfactory Performance Bond in an amount not less than one hundred percent (100%) of the contract award within fourteen (14) days from the date when Notice-of-Award is received, and to provide all supervision, labor, materials, and equipment required to complete the project designated above, for the prices hereinafter set forth, in strict compliance with the Contract Documents prepared by the Division.

Further, the parties agree and acknowledge as follows:

- The amount of loss or damages likely to be incurred by Division are uncertain and said loss is incapable or very difficult to quantify and estimate;
- The amount specified for liquidated damages herein bear a reasonable relationship to, and are not plainly or grossly disproportionate to, the probable loss likely to be incurred by Division in connection with any delay on part of the Contractor;
- The amount of liquidated damages fixed herein bears a reasonable relationship to Division's anticipated losses and/or actual losses;
- The amount of liquidated damages herein fairly approximates Division's loss at the time of making of this Agreement;
- The amount of liquidated damages fixed herein are fair and reasonable and it approximates to the extent possible the actual loss to Division as a result of any delay on the part of Contractor; and
- Division and Contractor are sophisticated parties and negotiated this Agreement at arm's length.

Now therefore, in consideration of the mutual obligations set forth herein, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

- Contractor will commence the work after the Preconstruction Conference and by the Construction Start Date approved by Division in the Construction Progress Schedule.
- Contractor will complete the work within the specified time period identified in the contract, or as amended, or be responsible for liquidated damages per day as set forth in the above table.
- The liquidated damages may be withheld from payments made to the Contractor by the Division upon written notice that liquidated damages have begun to accrue, and such damages are in addition to other remedies available as provided for in this contract and applicable law.

A Proposal Guarantee in the amount stipulated herein is included with this proposal, to be forfeited to the Division, if the undersigned fails or refuses to execute the contract and furnish satisfactory Performance Bond, if awarded the contract.

By _____
(Signed)

_____
(PRINT NAME)

_____
(Title) (Date)

In executing this proposal, Bidder acknowledges receipt of Addendum Number _____ dated _____

In executing this proposal, Bidder acknowledges receipt of Addendum Number _____ dated _____

In executing this proposal, Bidder acknowledges receipt of Addendum Number _____ dated _____

THE FOLLOWING AFFIDAVIT MUST BE COMPLETED AND NOTARIZED, OR THIS BID WILL BE REJECTED

AFFIDAVIT

The signatory, being duly sworn, does depose and say that the undersigned is an authorized representative of:

_____
(Name of Firm)

Located at _____

hereinafter referred to as "Bidder" and does hereby affirm to have personal knowledge that said Bidder has thoroughly examined the Contract Documents, carefully prepared the Proposal and Schedule of Prices form, and has checked the same in detail before submitting; and that said Bidder, or the agents, officers, or employees thereof, have not, either directly or indirectly, entered into any agreement, participated in any collusion or fraud, or otherwise taken any action in restraint of free competitive bidding in connection with this bid.

_____
(Signed)

_____
(PRINT name)

Subscribed and sworn to before me this _____ day

of _____, 20____

_____
(Signed, Notary)

My Commission Expires _____, 20_____

Must include notary stamp

SCHEDULE OF PRICES

Winn981024D Project
Contract No. 25-20
Section 24, Township 98 North, Range 10 West, Winnisheik County, Iowa

Name of Bidder:_____

B&M Item No.	IMPACS Item No.	Work or Material	Spec No. Sheet No.	Est. Qty.	Unit	Unit Price	Total
1	1	Site stripping & preparation	IA CS-001 A.02	1	LS		
2		Crop damage	IA CS-001		AC		
3	2	Structure & channel seeding	IA CS-006 K.01	1.0	AC		
4	3	Buffer seeding	IA CS-006 K.01	7.0	AC		
5	4	Mobilization and demobilization	IA CS-008 A.02	1	LS		
6	5	Drain tile investigation and removal	IA CS-009 A.02	6	HR		
7		Articulated Concrete Block Mattress	IA CS-031 D.03				
7A	6	18” Subgrade Preparation	IA CS-031 D.03	646	SY		
7B	7	Class IV Geotextile	IA CS-031 D.03	646	SY		
7C	8	Cellular Confinement Layer	IA CS-031 D.03	5,816	SF		
7D	9	1” Clean Rock	IA CS-031 D.03	206	TN		
7E	10	Geogrid	IA CS-031 D.03	646	SY		
7F	11	Articulated Concrete Block	IA CS-031 D.03	6,478	SF		
8	12	Excavation	IA CS-021 D.01	2,702	CY		
9	13	Earthfill (General)	IA CS-023 D.02	762	CY		
10	14	Earthfill (General Dam)	IA CS-023 D.02	531	CY		
11	15	Earthfill (Dam Core)	IA CS-023 D.02	809	CY		
12	16	12" Pond Liner	IA CS-023 D.01	19,564	SY		
13	17	Drainfill, fine	IA CS-024 D.02	22	CY		
14	18	Topsoil Strip, Salvage, and Respread	IA CS-026 D.01	3,868	CY		
15C	19	Corrugated Dual-Wall HDPE: 8" Non-Perforated	IA CS-046 M.02	40	LF		
15D	20	Corrugated Dual-Wall HDPE: 8" Perforated	IA CS-046 M.02	440	LF		

B&M Item No.	IMPACS Item No.	Work or Material	Spec No. Sheet No.	Est. Qty.	Unit	Unit Price	Total
15E	21	Corrugated Dual-Wall HDPE: 10" Non-Perforated	IA CS-046 M.01	50	LF		
15F	22	Corrugated Dual-Wall HDPE: 10" Perforated	IA CS-046 M.01	100	LF		
16A	23	Reinforced Concrete Pipe: 12" Diameter	IA CS-031 M.01	108	LF		
17	24	Modified SW-402 Water Control Structure	IA CS-031 B.03, M.01	1	EA		
18	25	Stoplog Storage Structure	IA CS-046 B.03	1	EA		
19	26	Outlet Riser Structure	IA CS-046 B.02, M.01	1	EA		
20A	27	CMP tile outlets (20 LF each): 10" Diameter	IA CS-051 M.02	1	EA		
20B	28	CMP tile outlets (20 LF each): 12" Diameter	IA CS-051 M.01	1	EA		
21	29	Riprap	IA CS-061 D.03, M.01, M.02	48.0	TN		
22	30	Anti-Seep Collars	IA CS-051 M.01	2	EA		
23	31	Reinforced Concrete Apron, Footing, Bar Guard	IA CS-031 M.01	1	EA		
24A	32	Corrugated Single- Wall HDPE: 6" Non-Perforated	IA CS-046 M.02	78	LF		
24B	33	Corrugated Single- Wall HDPE: 6" Perforated	IA CS-046 D.01	386	LF		

TOTAL BASE BID……$_____

Worksheet purposes only. Bids will only be accepted through the on-line Iowa Management of Procurement & Contracts System (IMPACS).

To register and learn about IMPACS, go to:

https://solutions.sciquest.com/apps/Router/SupplierLogin?CustOrg=DASIowa

END OF DOCUMENT CC

IOWA DEPARTMENT OF
AGRICULTURE &
LAND STEWARDSHIP

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Attachment No. 2

(Please see updated Plans C01 and D03)

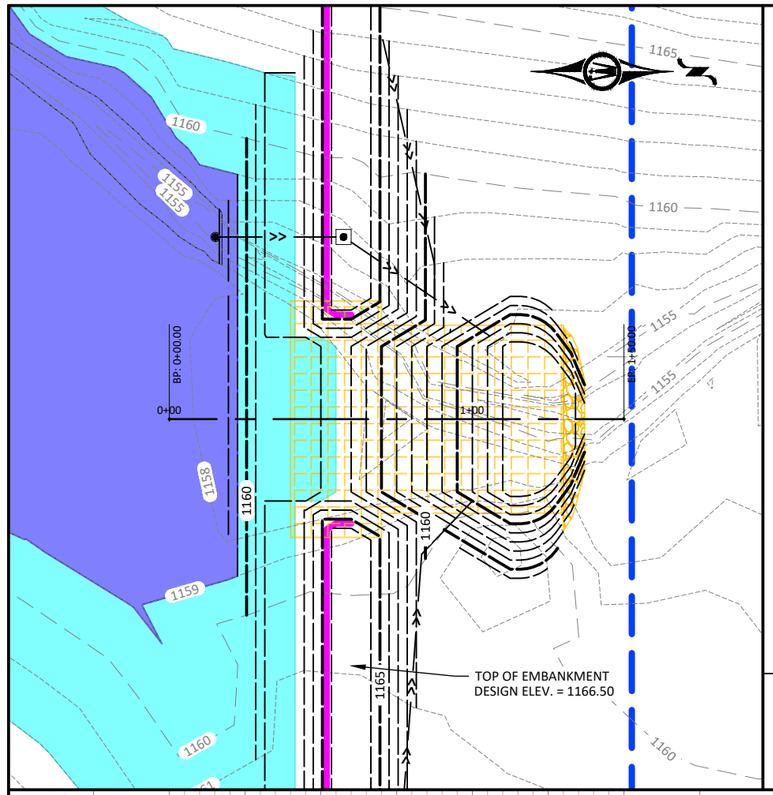
Bid Item	Sub-Item	Description	Specification No.	Plan No.	Estimated Quantities	
					Quantity	Unit
1	-	Site stripping & preparation	IA CS-001	A.02	1	LS
2	-	Crop damage	IA CS-001		0	AC
3	-	Structure & channel seeding	IA CS-006	K.01	1.0	AC
4	-	Buffer seeding	IA CS-006	K.01	7.0	AC
5	-	Mobilization and demobilization	IA CS-008	A.02	1	LS
6	-	Drain tile investigation and removal	IA CS-009	A.02	6	HR
7	-	Articulated Concrete Block Mattress				
	A.	18" Subgrade Preparation	IA CS-031	D.03	646	SY
	B.	Class IV Geotextile	IA CS-031	D.03	646	SY
	C.	Cellular Confinement Layer	IA CS-031	D.03	5816	SF
	D.	1" Clean Rock	IA CS-031	D.03	206	TN
	E.	Geogrid	IA CS-031	D.03	646	SY
	F.	Articulated Concrete Block	IA CS-031	D.03	6478	SF
8	-	Excavation	IA CS-021	D.01	2702	CY
9	-	Earthfill (General)	IA CS-023	D.02	762	CY
10	-	Earthfill (General Dam)	IA CS-023	D.02	531	CY
11	-	Earthfill (Dam Core)	IA CS-023	D.02	809	CY
12	-	12" Pond Liner	IA CS-023	D.01	19564	SY
13	-	Drainfill, fine	IA CS-024	D.02	22	CY
14	-	Topsoil Strip, Salvage, and Respread	IA CS-026	D.01	3868	CY
15	-	Corrugated Dual-Wall HDPE				
	C.	8" Non-Perforated	IA CS-046	M.02	40	LF
	D.	8" Perforated	IA CS-046	M.02	440	LF
	E.	10" Non-Perforated	IA CS-046	M.01	50	LF
	F.	10" Perforated	IA CS-046	M.01	100	LF
16	-	Reinforced Concrete Pipe				
	A.	12" Diameter	IA CS-031	M.01	108	LF
17	-	Modified SW-402 Water Control Structure	IA CS-031	B.03, M.01	1	EA
18	-	Stoplog Storage Structure	IA CS-046	B.03	1	EA
19	-	Outlet Riser Structure	IA CS-046	B.02, M.01	1	EA
20	-	CMP tile outlets (20 LF each):				
	A.	10" Diameter	IA CS-051	M.02	1	EA
	B.	12" Diameter	IA CS-051	M.01	1	EA
21	-	Riprap	IA CS-061	D.03, M.01, M.02	48	TN
22	-	Anti-Seep Collars	IA CS-051	M.01	2	EA
23	-	Reinforced Concrete Apron, Footing, Bar Guard	IA CS-031	M.01	1	EA
24	-	Corrugated Single-Wall HDPE				
	A.	6" Non-Perforated	IA CS-046	M.02	78	LF
	B.	6" Perforated	IA CS-046	D.01	386	LF

BOLTON & MENK
1519 BALTIMORE DRIVE
AMES, IA 50010
Phone: (515) 233-6100
Email: Ames@bolton-menk.com
www.bolton-menk.com

DESIGNED	REV	DESCRIPTION	DATE
BCS	1.1	ADDRESS IDALS COMMENTS	09/26/2025
DRAWN BCS	1.2	BID PLANS	11/12/2025
CHECKED JPR	2.0	ARTICULATED CONCRETE BLOCK MATTRESS	12/09/2025
CLIENT PROJ. NO. 0T7.134539			

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
IDALS PROJ. NO. WINN981024D
ESTIMATE QUANTITIES

SHEET C.01



ACB NOTES:

1. TERMINATION TRENCHES SHALL BE PER MANUFACTURER SPECIFICATIONS AND BACKFILLED WITH 4000 PSI CONCRETE
2. END-TO-END MAT-TO-MAT CONNECTIONS SHALL BE FILLED WITH 4000 PSI CONCRETE. MATS SHALL BE PLACED SIDE BY SIDE WITH NO LONGITUDINAL CONNECTION BETWEEN ADJACENT MATS.
3. SUBGRADE SHALL BE 18" COHESIVE SOIL COMPACTED IN 9" MAX. LIFTS USING METHOD 3 PER SPECIFICATIONS.
4. ACB SECTION SHALL BE PER SPECIFICATIONS AND SHALL INCLUDE GEOTEXTILE, CELLULAR CONFINEMENT SYSTEM, 1" CLEAN ROCK, GEOGRID, AND ARTICULATING CONCRETE BLOCK MAT.
5. PIPE PROTRUSIONS THROUGH MAT SHALL BE PER MANUFACTURER'S DETAILS.

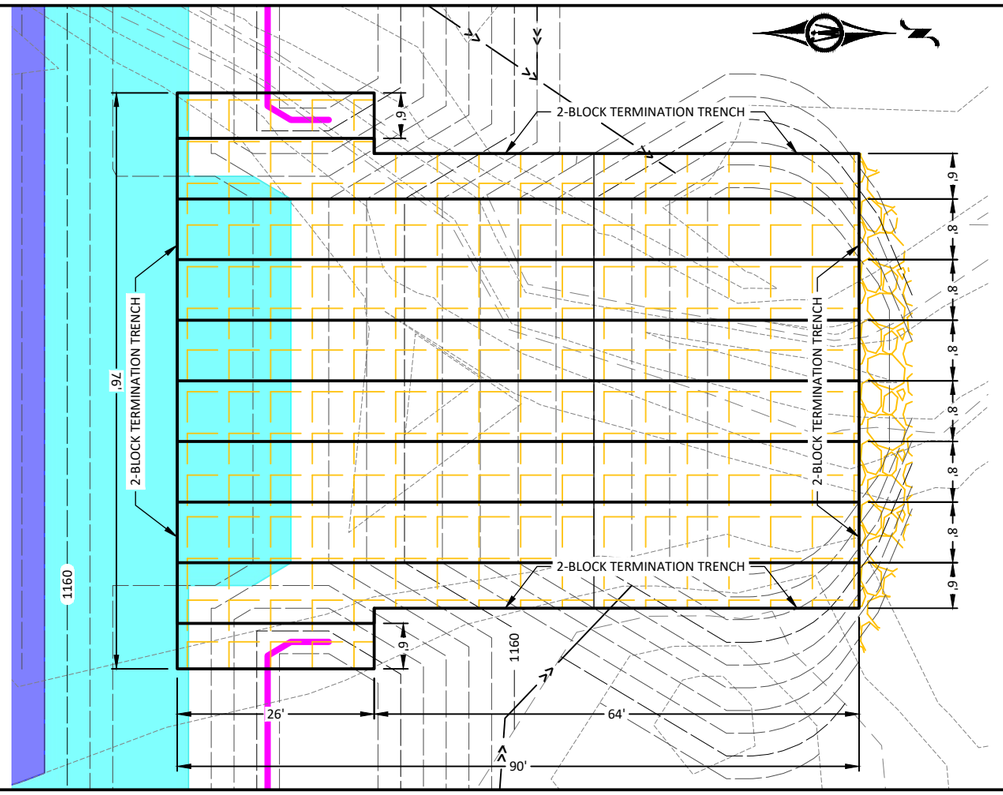
ADDITIONAL NOTES

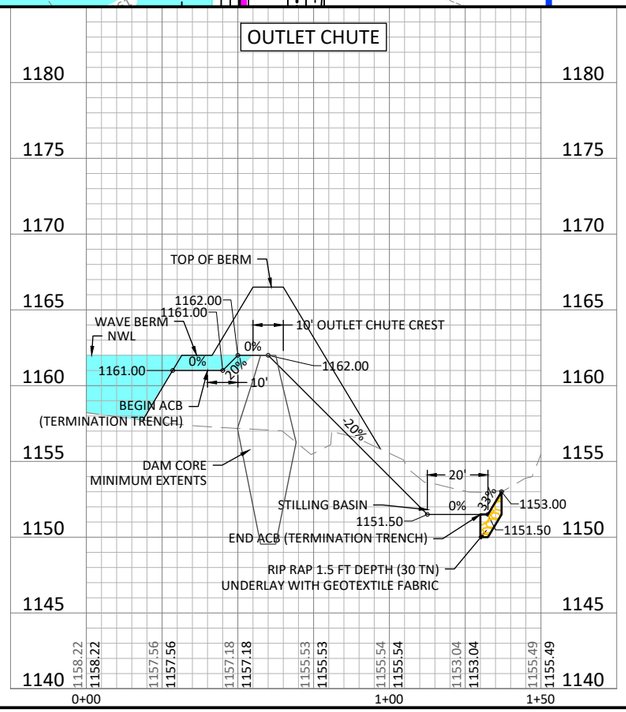
1. 6478 SQ. FT. TOTAL ACB INCLUDES PLAN AREA OF INSTALLATION PLUS 2 FEET OF DOWNTURN AROUND THE PERIMETER.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL MAT SIZES AND QUANTITIES.
3. ENGINEER'S REPRESENTATIVE SHALL BE ON-SITE FOR SUBGRADE PREPARATION AND INSTALLATION OF ALL ACB MATTRESS COMPONENTS.

LEGEND

- NORMAL POOL (1162.00)
- DEEP WATER AREA (<1159.00)
- 100-YEAR HWL
- PROPOSED EASEMENT BOUNDARY

HORZ. SCALE 0 10 20 FEET

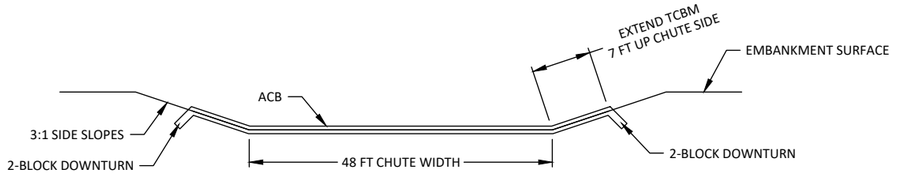




HORZ. SCALE 0 25 50 FEET

VERT. SCALE 0 5 10 FEET

CHUTE CROSS SECTION



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DESIGNED BCS
DRAWN BCS
CHECKED JPR
CLIENT PROJ. NO. 0T7.134539

REV	DESCRIPTION	DATE
1.1	ADDRESS IDALS COMMENTS	09/26/2025
1.2	BID PLANS	11/12/2025
2.0	ARTICULATED CONCRETE BLOCK MATTRESS	12/09/2025

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
IDALS PROJ. NO. WINN981024D
PLAN & PROFILE - CHUTE

SHEET D.03

Attachment No. 3

(Please see updated Technical Specifications IA CS-031)

Construction Specification
000 IA-31 Concrete

1. SCOPE

The work shall consist of furnishing, forming, placing, finishing, and curing Portland cement concrete including steel reinforcement.

2. MATERIALS

Portland Cement shall conform to ASTM C 150 and shall be Type I or Type II.

Fine Aggregates shall conform to ASTM C 33 and shall be composed of clean, uncoated grains of material.

Coarse Aggregates shall be gravel or crushed stone conforming to ASTM C 33 and shall be clean, hard, durable and free from clay or coating of any character. The maximum size of coarse aggregate shall be 1 1/2 inches or as shown on the drawings.

Water shall be clean and free from injurious amounts of oil, acid, salt, alkali, organic matter, or other deleterious substances.

Air entraining agent shall conform to ASTM C 260.

Fly ash may be used as a partial substitution for Portland cement and shall be in strict compliance with ASTM C 618, Class F or C. The loss by ignition shall not exceed 4.0 percent.

Blast-furnace slag may be used as a partial substitution for Portland cement and shall be in conformance with ASTM C 989 for ground granulated blast-furnace slag (GGBF slag).

Water-reducing admixtures shall conform to ASTM C 494 and may be the following types:

1. Type A - Water-reducing admixture
2. Type D - Water-reducing and retarding admixture
3. Type F - Water-reducing, high range admixture (superplasticizer).
4. Type G - water-reducing, high range, and retarding admixture (superplasticizer).

Type D or G admixture may be used when the air temperature is over 80 degrees F. at the time of mixing and/or placement.

Calcium Chloride or other antifreeze compounds or accelerators will not be allowed.

Preformed expansion joint filler shall be a commercially available product made of bituminous, sponge rubber or closed cell foam materials with a minimum thickness of 1/2 inch.

Reinforcing steel shall be free from loose rust, oil, grease, paint, or other deleterious matter. Reinforcing steel shall conform to one or more of the following:

1. Reinforcing Bars - ASTM A 615 or A 996, Grade 40 or greater, deformed.
2. Welded Wire Fabric - ASTM A 185 or A 497.

Waterstops shall be either metallic or nonmetallic. Metallic waterstops shall be fabricated from sheets of copper or galvanized steel. Nonmetallic waterstops shall be made of natural or synthetic rubber or vinyl chloride polymer or copolymer. Rubber, polymer and copolymer waterstops shall have ribbed or bulb-type

anchor flanges and a hollow tubular center bulb, unless otherwise shown on the drawings. All waterstops shall be of the sizes shown on the drawings.

Curing compound shall be a liquid membrane-forming compound suitable for spraying on the concrete surface. The curing compound shall meet the requirements of ASTM C 309 Type 2 (white pigmented).

3. CONCRETE DESIGN MIX

The contractor will be responsible for the determining the design mix proportions in accordance with the requirements included in this paragraph and shall provide a copy of the mix to the NRCS Engineer at Natural Resources Conservation Service least 3 days prior to placing any concrete. The concrete mix shall be of such proportions as to provide a minimum strength of 3500 p.s.i. in 28 days, unless otherwise shown on the drawings. The air content shall be 4 to 8 percent of the volume of the concrete at the time of placement. The slump shall be 2 to 5 inches except when superplasticizer is used. The slump shall be 3 inches or less prior to the addition of superplasticizer admixture and shall not exceed 7 1/2 inches following addition and mixing. The fine aggregate shall be 30-50 percent of the total combined aggregate based on oven dry weights. The contractor shall provide tests to verify that the design mix meets the requirements. In lieu of this, one of the following mix proportions per cubic yard may be used:

Mix Number	Minimum Cement, Pounds	Fly Ash, Pounds	GGBF Slag, Pounds	Maximum **Water, Gallons
1	564	0	0	33
2	470	45-90	0	31-34
3	517	129	0	31*
4	366	114	91	31*
5	259	103	155	31*

** Total of available aggregate moisture, mixing water added at the plant and mixing water added at the job site (one gallon equals 8.33 pounds).
* Requires water reducing admixture.

4. MIXTURES AND MIXING

Ready-mixed concrete shall be batched, mixed and transported in accordance with ASTM C 94. Concrete shall be uniform and thoroughly mixed when delivered to the forms. No mixing water in excess of the amount shown for the design mix or in an amount that would cause the maximum slump to be exceeded shall be added to the concrete during mixing, hauling or after arrival at the point of delivery. The concrete shall be batched and mixed so that the temperature of the concrete at the time of placing shall be between 50 and 90 degrees F.

5. BATCH TICKET

The contractor shall obtain from the supplier a delivery ticket for each batch of concrete before unloading at the site. The following information shall be included on the ticket: name of concrete supplier, job name or location, date, truck number, amount of concrete, time loaded or time of first mixing cement, aggregate, and mixing water added at the plant, type and amount of cement, type and amount of admixtures, oven dry weights of fine and coarse aggregate, and moisture content(%) or weight of water contained in the aggregates.

The following information shall be added to the batch ticket on site: mixing water added on site, time concrete arrived on site and time concrete was unloaded.

Upon completion of the concrete placement, copies of all batch tickets shall be provided to NRCS.

6. REINFORCING STEEL

Before reinforcement is placed, the surfaces of the bars or mesh shall be cleaned to remove any loose, flaky rust, mill scale, oil, grease, or other foreign substances. After placement, the reinforcement shall be maintained in a clean condition until it is completely embedded in the concrete.

Reinforcing bars shall be cut and bent according to ACI Standard 315.

Tack welding of bars shall not be permitted. Reinforcement shall be accurately placed as shown on the drawings and secured in position in a manner that will prevent its displacement during placement of concrete. Metal chairs, metal hangers, metal spacers or concrete chairs shall be used to support reinforcement. Precast concrete chairs shall be manufactured from concrete equal in quality to the concrete being placed. Precast concrete chairs shall be moist at the time concrete is placed

Splices of reinforcing bars shall be made only at the locations shown on the drawings, unless otherwise approved by the NRCS Engineer. All reinforcing splices and placement shall be in accordance with ACI 318 and as shown on the drawings.

After placement of the reinforcement, concrete shall not be placed until the reinforcement has been inspected and approved by NRCS.

7. PREPARATION OF FORMS AND SUBGRADE

Prior to placement of concrete, the forms and subgrade shall be free of woodchips, sawdust, debris, water, ice, snow, extraneous oil, mortar, or other harmful substances or coatings. Any oil on the reinforcing steel or other surfaces required to be bonded to the concrete shall be removed. All surfaces shall be firm and damp prior to placing concrete. Placement of concrete on mud, dried earth, uncompacted fill, or frozen subgrade will not be permitted.

The forms and associated false-work shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and elevations. Forms will be mortar tight. Forms with torn surfaces, worn edges, dents or other defects will not be used. Forms shall be coated with a nonstaining form release agent before being set into place. Excess form coating material shall not stand in puddles in the forms or come in contact with the steel reinforcement or hardened concrete against which fresh concrete is to be placed.

Form accessories to be partially or wholly embedded in the concrete, such as ties and hangers, shall be of a commercially manufactured type. Non fabricated wire shall not be used. Form ties shall be constructed so that the ends or end fasteners can be removed without causing spalling at the surface of the concrete.

Metal form ties used within the forms on structures with a total volume of concrete exceeding fifteen cubic yards shall be equipped with cones or other devices that permit their removal to a depth of at least one inch without damage to the concrete. The holes resulting from cones and other devices shall be patched in accordance with Section 9.

Form ties except those specifically covered by the preceding paragraph shall be broken off flush with the formed surface. Any surface areas which have been spalled or otherwise damaged shall be repaired in accordance with Section 9.

Steel tying and form construction adjacent to new concrete shall not be started until concrete has cured at least 12 hours.

Concrete joints shall be of the type and at the locations shown on the drawings. Splices in metal waterstops shall be brazed, welded or overlapped and bolted.

Splices in nonmetallic waterstops shall be cemented or joined as recommended by the manufacturer.

8. PLACING CONCRETE

Concrete shall not be placed until the subgrade, forms, and steel reinforcement have been inspected and approved by the NRCS Inspector. Any deficiencies are to be corrected before the concrete is delivered for placement.

Concrete shall be delivered to the site and discharged into the forms within 1 1/2 hours after the introduction of the cement to the aggregates. When a superplasticizer is used, the concrete shall be discharged within the manufacturer's recommended time limit for discharge after addition of the admixture. In hot weather or under conditions contributing to quick setup of the concrete, discharge of the concrete shall be accomplished in 45 minutes unless a set-retarding admixture is used, in which case the manufacturer's recommended time limit will apply.

Addition of water at the job site may be done at the beginning of placement of each load of concrete in order to obtain allowable slump, provided that the maximum water content and water/cement ratio in the design mix is not exceeded. Addition of water will not be permitted after placement of the load has started.

The concrete shall be deposited as closely as possible to its final position in the forms and shall be worked into corners and around reinforcement and other embedded items in a manner which prevents segregation. Formed concrete shall be deposited in layers 24 inches or less in depth and shall be continuously deposited so that no concrete will be deposited on concrete which has hardened sufficiently to cause the formation of "cold joints". Concrete containing superplasticizer shall be placed in lifts not exceeding 5 feet in depth. If the surface layer of concrete sets during placement to the degree that it will not flow and merge with the succeeding layer when tamped or vibrated, the contractor shall discontinue placing concrete and install a construction joint. Construction joints shall be completed as shown on the drawings or by one of the following methods:

1. The joint shall be constructed using a 6 inch wide by 1/4 inch steel plate. The surfaces of the construction joint shall be prepared by washing and scrubbing with a wire brush or wire broom to expose coarse aggregate. The steel plate shall be embedded 3" in the concrete.
2. The joint surface shall be cleaned to expose coarse aggregate by sandblasting or air-water cutting after the concrete has gained sufficient strength to prevent displacement of the coarse aggregate or cement fines. The surface of the concrete shall not be cut so deep as to undercut the coarse aggregate. The joint shall be washed to remove all loose material after cutting.

The surfaces of all construction joints shall be kept continuously moist for at least 1 hour prior to placement of the new concrete. The new concrete shall be placed directly on the cleaned and washed surface. New concrete shall not be placed until the hardened concrete has cured at least 12 hours.

Concrete shall not be dropped more than 5 feet vertically unless suitable equipment is used to prevent segregation. Concrete containing superplasticizer shall not be dropped more than 12 feet vertically.

Immediately after the concrete is placed in the forms, it shall be consolidated by vibration, spading or hand tamping as necessary to insure smooth surfaces and dense concrete. Care should be taken not to over-vibrate concrete containing superplasticizer. Vibration shall not be supplied directly to the reinforcing steel, the forms or concrete which has hardened to the degree that it does not insure a monolithic bond with the preceding layer, The use of vibrators to transport concrete in the forms or conveying equipment will not be permitted.

9. FORM REMOVAL AND FINISHING

Forms shall be left in place for at least 24 hours after placing concrete. Forms shall be removed in such a way as to prevent damage to the concrete. Supports shall be removed in a manner that will permit concrete to take the stresses due to its own weight uniformly and gradually.

Immediately after removal of the forms, concrete which is honey combed, damaged or otherwise defective shall be repaired or replaced. All cavities or depressions resulting from form tie removal shall be patched with a non-shrink grout, mortar mix or epoxy-type sealer. Non-shrink grout consists of 1 part cement and 2-1/2 parts sand that will pass a No. 16 sieve. Only enough water shall be added to produce a filling which is at the point of becoming rubbery when the material is solidly packed.

All repaired and patched areas shall be cured as required in Section 10.

10. CURING

Concrete shall be cured for a period of not less than 7 consecutive days by one of the following approved methods:

1. Membrane Curing: Concrete shall be cured with white pigmented curing compound. The compound shall be sprayed on moist concrete as soon as free water has disappeared, but shall not be applied to any surface until patching, repairs and finishing of that surface are completed. Curing compound shall not be applied to surfaces requiring bond to subsequently placed concrete, such as construction joints, shear plates, reinforcing steel, and other embedded items. Surfaces subjected to heavy rainfall or running water within 3 hours after curing compound has been applied or surfaces damaged by subsequent construction operations during the curing period, shall be reapplied in the same manner as the original application.
2. Moist Curing: Concrete shall be cured by maintaining all surfaces continuously wet for the entire curing period.
3. Cover: Adequately cover an exposed structure with burlap mats, or other material and continually soak with water.

11. BACKFILLING

Backfilling may begin when the curing period has ended. Backfill against the structure will be placed in no more than 4-inch layers and compacted by hand tamping or with manually directed power tampers or plate vibrators. Layers compacted in this manner shall extend not less than 2 feet from any part of the concrete structure.

12. HOT AND COLD WEATHER CONCRETING

When the atmospheric temperature may be expected to drop below 40° F. at the time concrete is delivered to the work site, during placement, or at any time during curing period, concrete shall be mixed, placed and protected in accordance with ACI Standard 306, “Recommended Practice for Cold Weather Concreting.”

When climatic or other conditions are such that the temperature of the concrete may reasonably be expected to exceed 90o F. at the time of delivery to the work site, during placement or during the first 24 hours after placement, concrete shall be mixed, placed and protected in accordance with ACI Standard 305, “Recommended Practice for Hot Weather Concreting.”

13. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

1. Subsidiary Item - Concrete

This item shall consist of all necessary concrete, reinforcing steel, formwork, materials, and labor to place poured concrete and reinforced concrete as shown in the drawings including, but not limited to, the Water Control Structure and concrete collars around pipe connections.

No separate payment will be made for Concrete. Compensation for this item will be included in the payment for the Water Control Structure and Tile Installation.

However, concrete structures that meet the Iowa Statewide Urban Design and Specifications (SUDAS), will be paid as discussed below.

2. Bid Item No. 16 – Reinforced Concrete Pipe

This item shall consist of constructing the necessary reinforced concrete pipe that meets SUDAS Division 4, Section 4020 as noted in the drawings. Materials, installation, bedding, measurement, and payment shall be in accordance with the requirements of SUDAS 4020.

3. Bid Item No. 17 – Modified SW-402 Water Control Structure

This item shall consist of constructing and installing the modified SW-402 storm sewer manhole structure that meets the requirements of SUDAS Division 6, Section 6010 and as noted in the drawings. Shop drawings shall be provided to and approved by the engineer prior to ordering structures.

Measurement and payment shall be on a per-unit basis and shall include access hatch, steel channels, stoplogs, excavation, earthfill, sub-base preparation, bedding material, removal of water, concrete collar at joint, erosion controls, all hardware, necessary fittings, adapters, and appurtenances to construct the special structure shown in the drawings.

4. Bid Item No. 7 – Articulated Concrete Block Mattress

The Articulated Concrete Block system shall provide a factor of safety greater than 2.0 for the conditions listed below. A manufacturer's engineer shall provide analysis showing these conditions are met for any alternative product.

- 20% slope
- 12.5 lb/sq. ft. shear stress
- 1.25 ft flow depth

- 22 ft/s flow velocity

The principal spillway chute shall consist of the following:

1. 18” of subgrade with method 3 compaction per IA CS-023
2. Class IV Geotextile
3. 6” Cellular Confinement Layer (BaseLok GeoCell or approved equal)
    a. fill with 1” clean crushed rock
4. Geogrid: Synteen Technical Fabrics SR18, Armortec ArmorGrid, or approved equal.
5. Articulated Concrete Block: Pre-Approved Products are listed below. Alternatives may be approved by the engineer of record.
    a. Contech Armorflex 40-T
    b. Premier Concrete Products ShoreBlock SD-475-OCT
6. Mat-to-mat connections and termination trenches shall be filled with 4000 PSI concrete, subsidiary to ACB. Mat-to-mat connections shall include rebar (1 #4 rod with 18” lap at connections), subsidiary to ACB.

5. Bid Item No. 23 – Reinforced Concrete Apron, Footing, Bar Guard

The work shall consist of constructing the necessary Concrete Apron, RCP Apron Section Footing, and Concrete Pipe Apron Guard that meet SUDAS Division 4, Section 4030 as noted in the drawings. The concrete around the apron shown in the plans is also subsidiary to the apron.

In general, the Concrete Apron shall meet the requirements of SUDAS 4030, unless otherwise stated in the drawings. The excavation for and subsequent installation of the apron shall be as shown in the drawings.

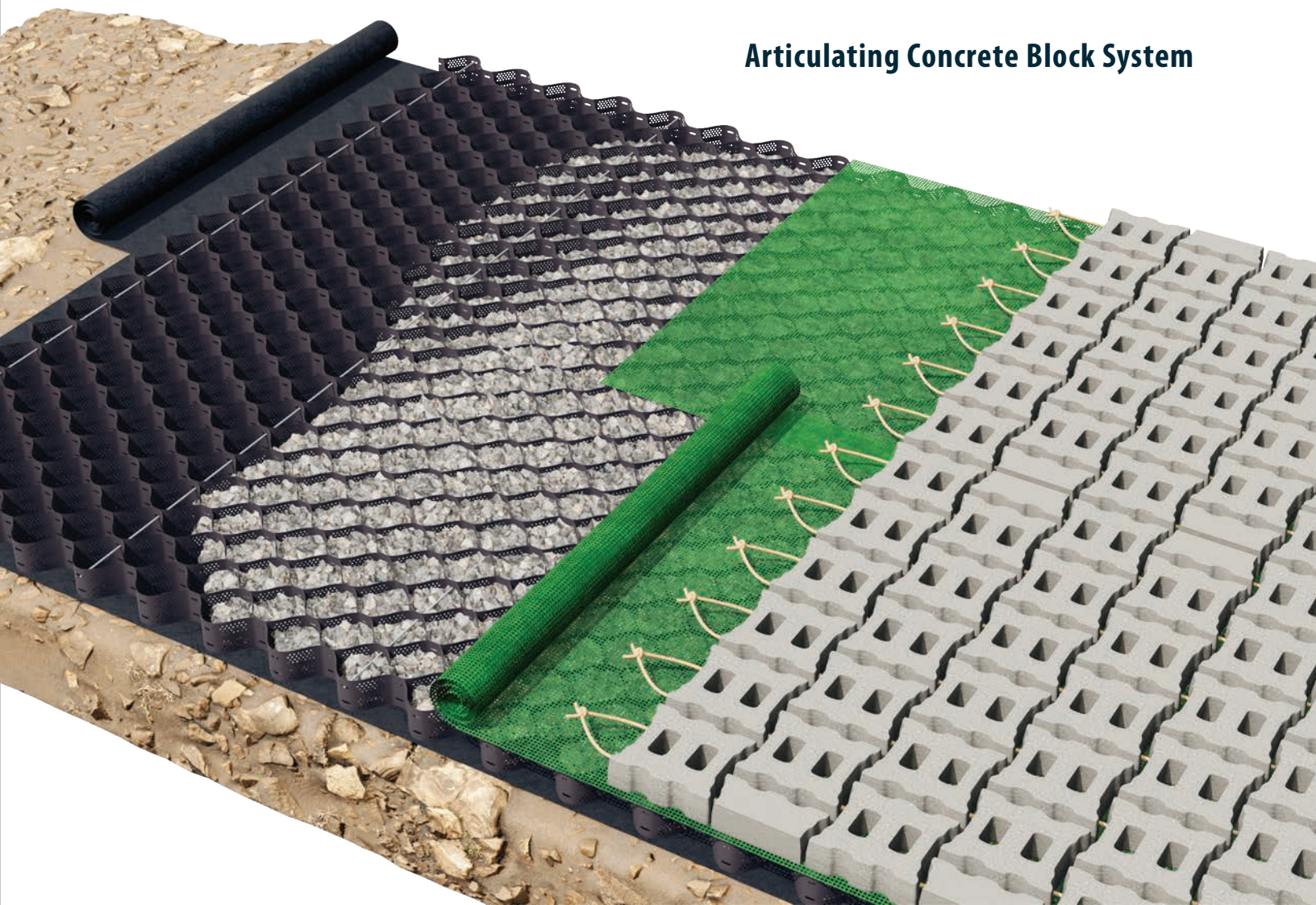
Measurement and payment shall be on a per-unit basis and shall include: all necessary fittings and adapters; excavation; earthfill; sub-base preparation; removal of water; concrete collar at joint; erosion controls; footing; bar guard; concrete and all necessary work and appurtenances to construct the apron shown in the drawings.

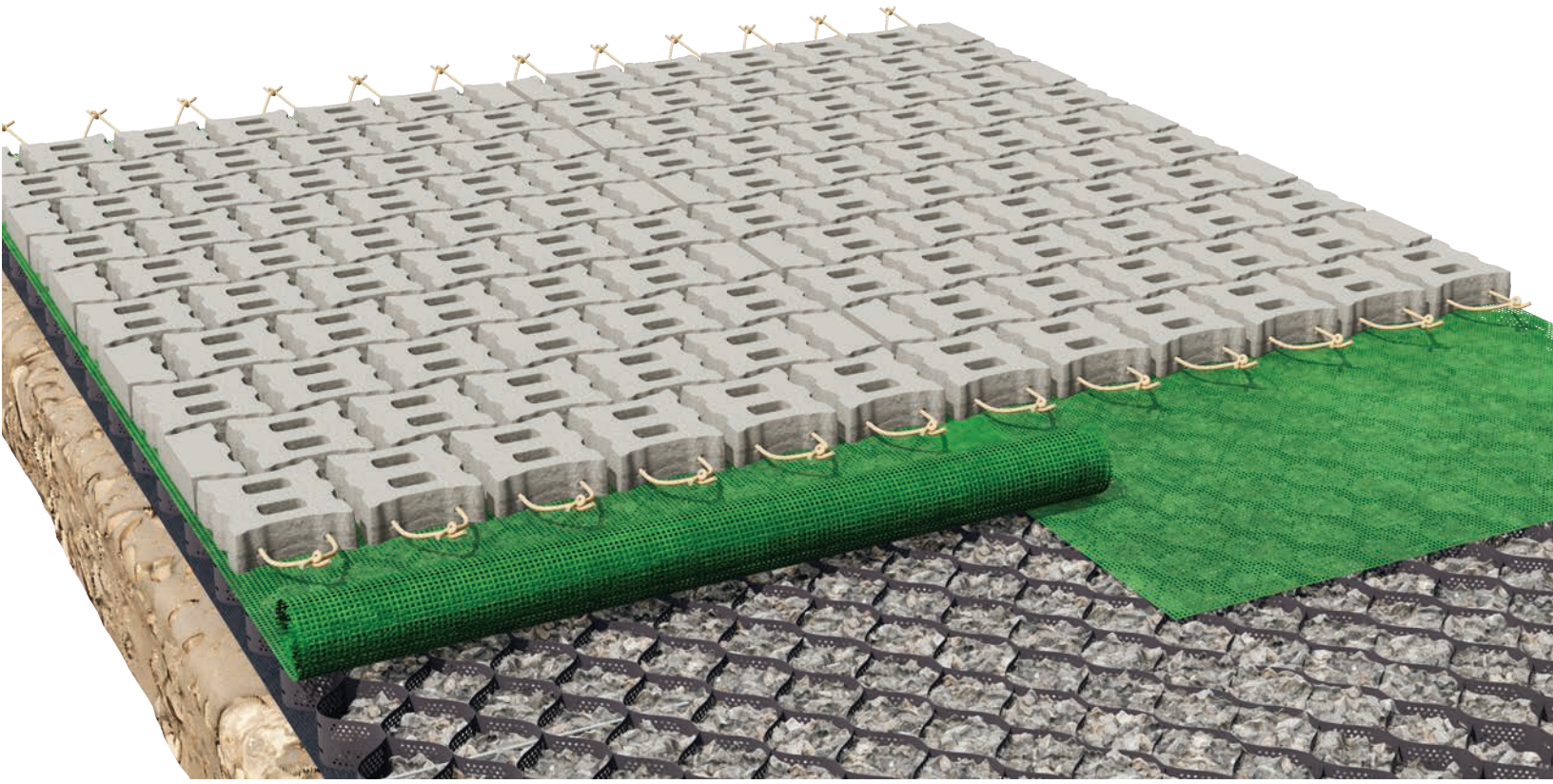
SHORETEC®

EXTREME PERFORMANCE EROSION CONTROL

EPEC SYSTEM

Articulating Concrete Block System





What is EPEC Revetment System?

EPEC is a patented multi-layer revetment system used to reinforce and protect a surface exposed to possible high water velocities, wave attack and/or potential hydraulic jump from super critical flows.

The system includes both a cellular confinement layer and an articulated block layer. Each of these layers are separately known and deployed in various environmental applications. Here, they are deployed together to provide enhanced protection of a ground surface.

- **Cellular Confinement Layer:** this layer is placed on the ground surface and is a matrix of open cells with rigid walls that are designed to be filled with aggregate or sand.
- **Block Layer:** this layer is mounted on top of the cellular confinement layer and includes a mat of blocks connected by cables.
- **Geosynthetic Layers**: These are mounted under the cellular confinement layer on top of the ground surface as well as in between the block layer and cellular confinement layer.

APPLICATIONS

- Dam Overtopping
- Auxiliary Spillways
- Levees
- Diversion Beams

Slope

Channel

Testing & Design

TESTING RESULTS

When testing results were compared to similar systems with unconfined drainage layers, EPEC showed the following improvements:

- 250% performance improvement in Factor of Safety (FOS) on a 3:1 slope
- 366% performance improvement in hydraulic jump stability on a 2:1 slope
- Test reports available upon request.

DESIGN ASSISTANCE - Webinars for design assistance available upon request.

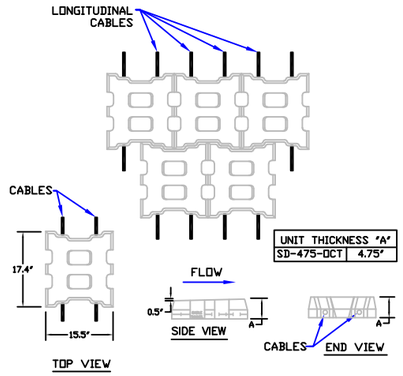
Through trial and testing, it has been shown that stabilizing the stone under ACBs leads to dramatic improvements in hydraulic jump stability with 2.5 - 3x better hydraulic performance when compared to systems with unstabilized stone.

The system meets all requirements of the NEH Part 628 Dans Chapter 54 ACB Armored Spillways design document, as it has been tested to ASTM 7276 and 7277 Standards as well as having undergone Hydraulic Jump Performance Testing on a 2:1 slope.

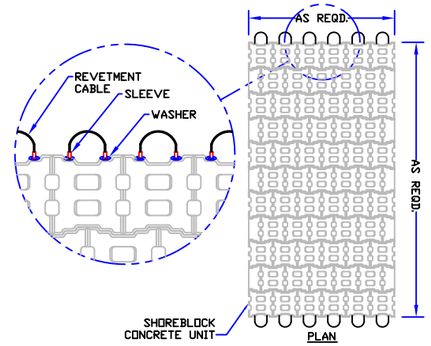
www.shoretec.com

800 575 7293

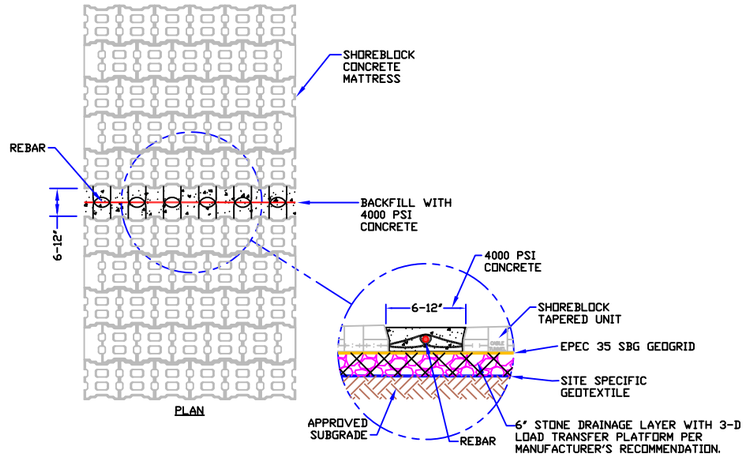
EPEC SYSTEM IS A PATENTED SYSTEM.
PATENT NUMBER: US 10113285 B2



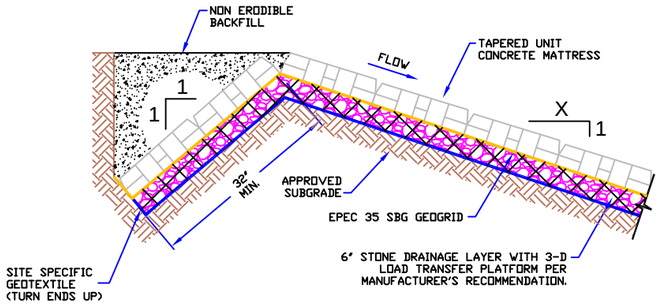
1 SHOREBLOCK® SD-475-OCT BLOCK
NOT TO SCALE



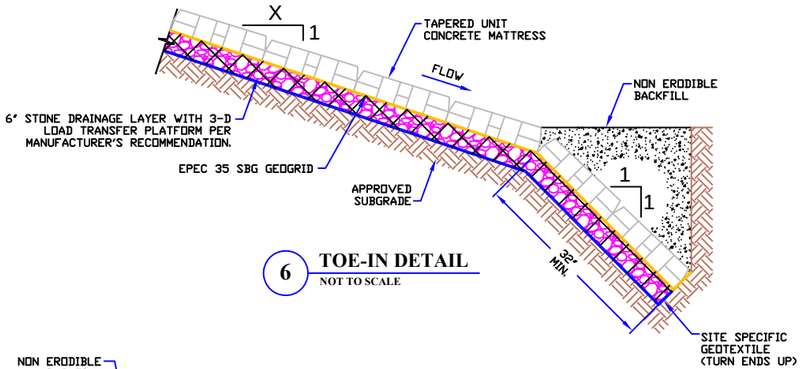
2 SHOREBLOCK® SD-475-OCT MATTRESS
NOT TO SCALE



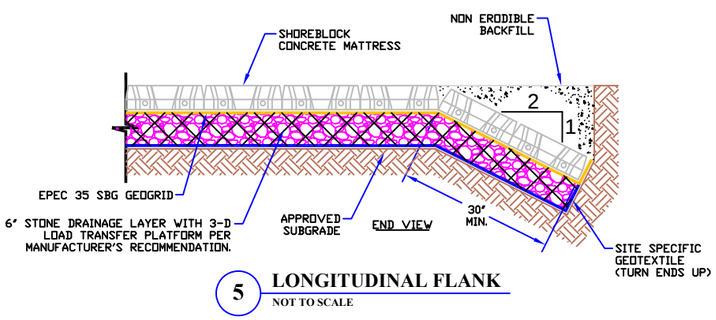
3 MAT TO MAT CONNECTION
NOT TO SCALE



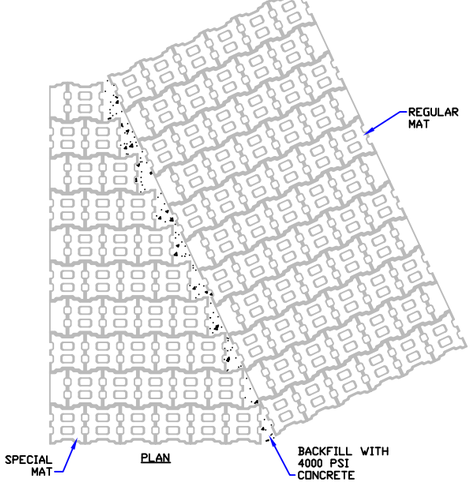
4 TOP OF SLOPE
NOT TO SCALE



6 TOE-IN DETAIL
NOT TO SCALE



5 LONGITUDINAL FLANK
NOT TO SCALE



7 TYP. ANGLE MAT
NOT TO SCALE

NOTE:
SPECIAL MATS WILL BE CONSTRUCTED BY OMITTING THE REQUIRED UNITS SO THE REQUIRED MAT DIMENSIONS CAN BE OBTAINED.

REVISIONS

DATE:	DESCRIPTION:

PROJECT NAME:
STANDARD TAPERED UNIT DETAIL

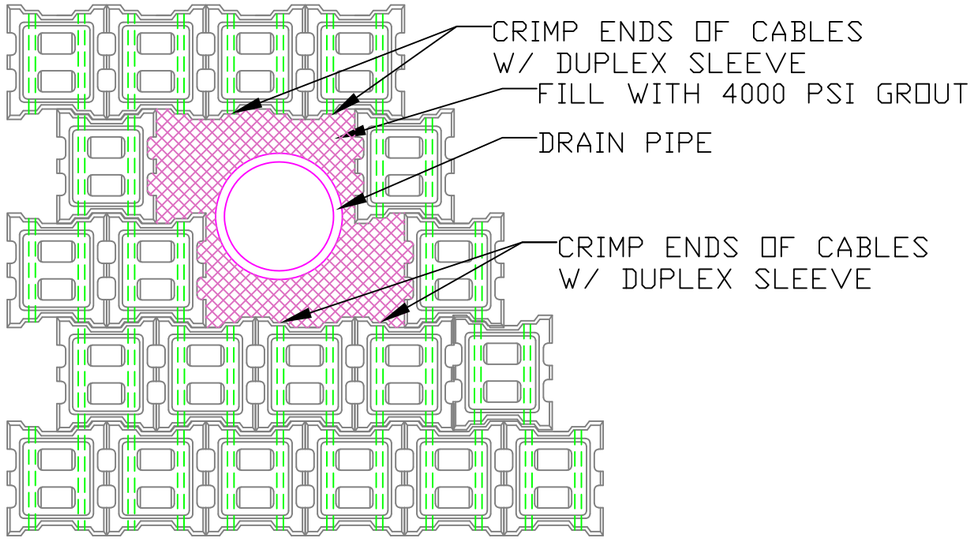
PREPARED BY:
mccoydraftinganddesign.com
McCOY DRAFTING & DESIGN, LLC

PREMIER CONCRETE PRODUCTS
510 O' Neal Lane • Baton Rouge, LA 70819
Phone: 225-273-3511 • Fax: 225-273-9888

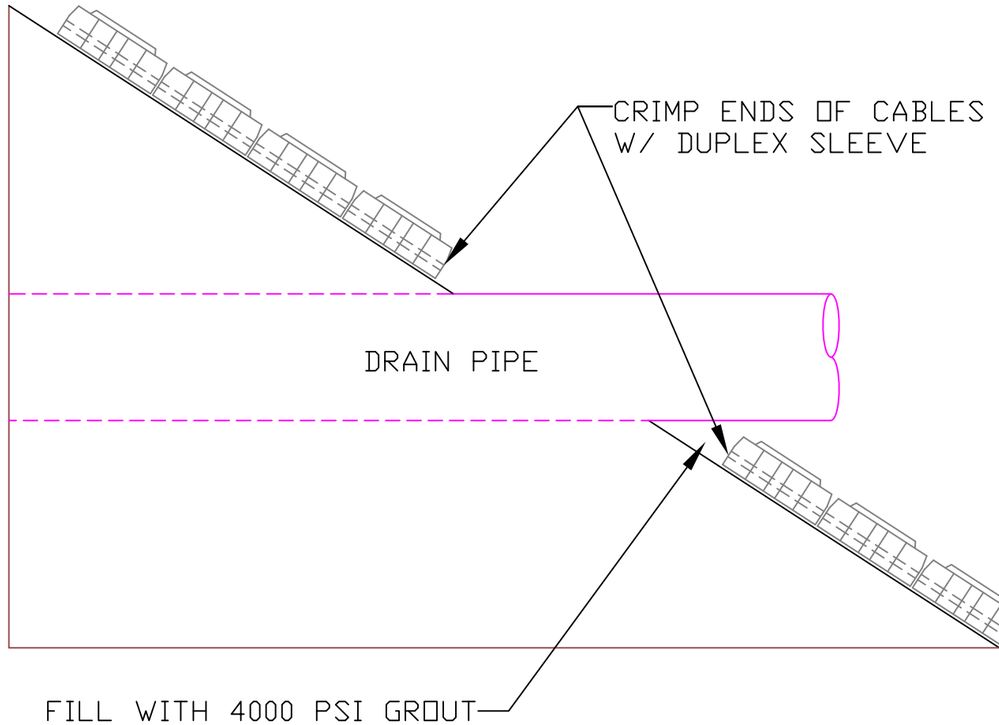
SHOREBLOCK® SD-475-OCT REVETMENT UNIT

DATE:	DRAWING NAME:
5-31-23	TYPICAL DETAILS
CHECKED BY:	SCALE:
JN	NOT TO SCALE

D1.1



PLAN



SECTION

DISCLAIMER:

THE INFORMATION CONTAINED HEREIN HAS BEEN COMPLIED BY SHORETEC® LLC AND TO THE BEST OF OUR KNOWLEDGE, ACCURATELY REPRESENTS THE SHOREBLOCK® PRODUCT USE IN THE APPLICATIONS WHICH ARE ILLUSTRATED. FINAL DETERMINATION OF THE SUITABILITY FOR THE USE CONTEMPLATED AND ITS MANNER OF USE ARE THE SOLE RESPONSIBILITY OF THE USER. STRUCTURAL DESIGN AND ANALYSIS SHALL BE PERFORMED BY A QUALIFIED ENGINEER.

REVISIONS

DATE:	DESCRIPTION:

PROJECT NAME:

PREPARED BY: mccoydraftinganddesign.com
McCOY DRAFTING & DESIGN, LLC

PREMIER
CONCRETE PRODUCTS
510 O' Neal Lane • Baton Rouge, LA 70819
Phone: 225-273-3511 • Fax: 225-273-9888

SHOREBLOCK® SD SERIES

DATE:	DRAWING NAME:
9-7-23	DRAIN PIPE PASSING THRU MAT
CHECKED BY:	SCALE:
JN	NOT TO SCALE

DRAWING NO: 22