BIG LAKE PARK
CULVERT REPAIR

CITY PROJECT NO. PR 24-03
PARKS AND RECREATION DEPARTMENT
CITY OF COUNCIL BLUFFS, IOWA

NOTE:

CONTRACTOR SHALL COORDINATE WITH UNION PACIFIC RAILROAD YARD MASER (712-329-5028) FOR TRUCK ACCESS TO BIG LAKE FROM N. 12TH STREET. SEE BELOW.



– INDICATES PROJECT LOCATION

LOCATION MAP
COUNCIL BLUFFS, IOWA
NO SCALE

INDEX

PAGE NO.	DESCRIPTION
A.01	TITLE SHEET
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C.02	ESTIMATED QUANTITIES AND ESTIMATE REFERENCE NOTES
D.01	SITE PLAN
E.01	SEEDING PLAN

SPECIFICATIONS

THE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS, 2023, AND CITY OF COUNCIL BLUFFS SUPPLEMENTAL SPECIFICATIONS 2023, SHALL APPLY TO THIS PROJECT.

THESE DOCUMENTS SHALL NOT BE SCANNED, COPIED, OR DUPLICATED IN ANY MANNER.

LICENSED PROFESSIONAL ENGINEER
JOHN E. JORGENSEN
12855
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

JOHN E. JORGENSEN 3/2/2023

My license renewal date is December 31, 2024.

Pages or sheets covered by this seal:
A.01, B.01, C.01, C.02, D.01, E.01

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JNS	BJR	JEJ	MAR '23
drawn	designed	approved	date

revision
date

project BIG LAKE CULVERT REPAIR
client CITY OF COUNCIL BLUFFS, PARKS AND RECREATION DEPARTMENT
sheet TITLE SHEET

project no. 151122
sheet A.01

hgm:
fb:

S:\Blue_Team\Projects\151122 BIG LAKE TRAIL REPAIR\Engineering\Dwgs\Design\151122 DESIGN.dwg, 3/2/2023 10:54:49 AM, Adobe PDF

Refer to the contract documents for specific material and placement requirements.

(1) Required only when specified in the contract documents or when directed by the Engineer.

Key

OD = Outside diameter of pipe

D = Inside diameter of pipe

TW = Trench width at top of pipe

d = Depth of bedding material below pipe

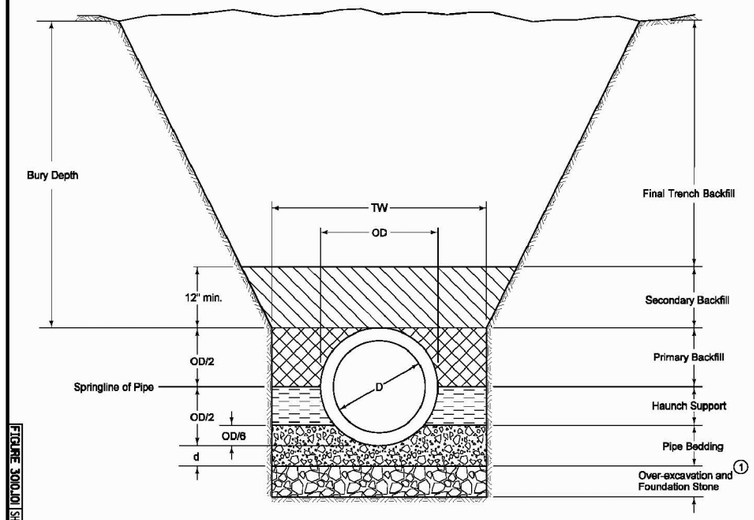


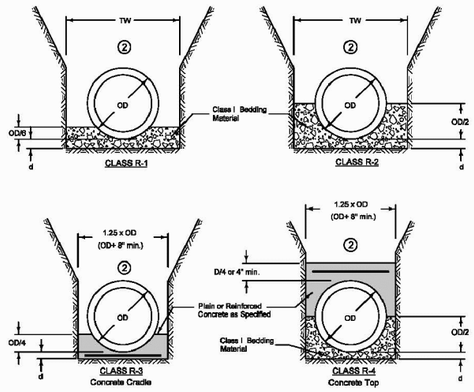
FIGURE 3000.00 | SHEET 1 OF 1

SUDAS	IOWA DOT	REVISION 1 04-17-18
FIGURE 3010.101	STANDARD ROAD PLAN	SW-101
REVISIONS: Replaced Iowa DOT and SUDAS logos.		SHEET 1 of 1

Paul D. Wigant, SUDAS DIRECTOR — Brian Smith, DESIGN METHODS ENGINEER

TRENCH BEDDING AND BACKFILL ZONES

RCP AND VCP CIRCULAR PIPE BEDDING (1)



REINFORCED CONCRETE ARCH AND ELLIPTICAL PIPE BEDDING

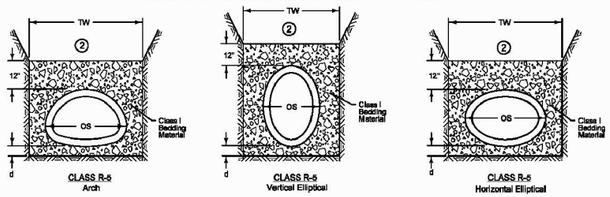


FIGURE 3010.102 | SHEET 1 OF 2

Refer to sheet 2 for bury depth restrictions.

(1) Use Bedding Class R-1 or R-2 unless specified otherwise.

(2) Place remainder of bedding and backfill materials as specified in the contract documents.

Key

OD = Outside diameter of pipe

OS = Outside span of pipe

TW = Trench width at top of pipe:
Min. = OD+18 inches
Max.= 1.25xOD+12 inches OR
54 inches (whichever is greater)

d = Depth of bedding material below pipe:
OD/8 or OS/8, OR 4 inches
(whichever is greater)

SUDAS	IOWA DOT	REVISION 4 04-20-21
FIGURE 3010.102	STANDARD ROAD PLAN	SW-102
REVISIONS: Added note DO NOT USE ON PRIMARY ROADWAYS.		SHEET 1 of 2

Paul D. Wigant, SUDAS DIRECTOR — Mark Nahra, DESIGN METHODS ENGINEER

RIGID GRAVITY PIPE TRENCH BEDDING

ALLOWABLE BURY DEPTH

CLASS III RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	7'	10'	15'	19'	27'
15	8'	10'	16'	19'	27'
18	8'	11'	16'	20'	40'
21	8'	11'	18'	28'	40'
24	8'	12'	23'	36'	40'
27	10'	16'	30'	40'	40'
30	11'	15'	29'	40'	40'
33	11'	15'	28'	40'	40'
36	11'	15'	27'	40'	40'
42	11'	16'	26'	38'	40'
48	11'	15'	26'	36'	40'
54	11'	15'	25'	34'	40'
60	11'	15'	25'	33'	40'
66	11'	15'	24'	32'	40'
72	11'	15'	24'	32'	40'

As = Area of Steel Reinforcing

CLASS IV RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	12'	15'	23'	28'	40'
15	12'	16'	23'	30'	40'
18	13'	16'	28'	40'	40'
21	13'	18'	40'	40'	40'
24	16'	23'	40'	40'	40'
27	19'	30'	40'	40'	40'
30	19'	29'	40'	40'	40'
33	19'	28'	40'	40'	40'
36	19'	28'	40'	40'	40'
42	18'	27'	40'	40'	40'
48	18'	26'	40'	40'	40'
54	18'	25'	40'	40'	40'
60	18'	25'	40'	40'	40'
66	18'	25'	40'	40'	40'
72	18'	24'	40'	40'	40'

As = Area of Steel Reinforcing

CLASS V RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	18'	23'	35'	40'	40'
15	19'	24'	40'	40'	40'
18	19'	30'	40'	40'	40'
21	25'	40'	40'	40'	40'
24	34'	40'	40'	40'	40'
27	40'	40'	40'	40'	40'
30	40'	40'	40'	40'	40'
33	40'	40'	40'	40'	40'
36	40'	40'	40'	40'	40'
42	37'	40'	40'	40'	40'
48	35'	40'	40'	40'	40'
54	33'	40'	40'	40'	40'
60	32'	40'	40'	40'	40'
66	31'	40'	40'	40'	40'
72	31'	40'	40'	40'	40'

As = Area of Steel Reinforcing

EXTRA STRENGTH VCP

Pipe Dia. (in)	Bedding Class				
	R-1	R-2	R-3 & R-4		
			No Steel	As=0.4%	As=1.0%
6	25'	30'	30'	30'	30'
8	20'	26'	30'	30'	30'
10	18'	23'	30'	30'	30'
12	16'	20'	30'	30'	30'
15	15'	19'	28'	30'	30'
18	14'	18'	30'	30'	30'
21	15'	22'	30'	30'	30'
24	18'	28'	30'	30'	30'
27	20'	30'	30'	30'	30'
30	19'	29'	30'	30'	30'
33	20'	30'	30'	30'	30'
36	20'	30'	30'	30'	30'
39	19'	29'	30'	30'	30'
42	18'	26'	30'	30'	30'

As = Area of Steel Reinforcing

CONCRETE ARCH PIPE

Pipe Size (in x in)	Equiv. Dia. (in)	Pipe Class	
		A-III	A-IV
18 x 11	15	6'	11'
22 x 13	18	6'	11'
29 x 15	21	6'	13'
29 x 18	24	7'	15'
36 x 22	30	8'	15'
44 x 27	38	8'	14'
51 x 31	42	8'	15'
58 x 36	48	8'	15'
65 x 40	54	8'	15'
73 x 45	60	8'	14'
88 x 54	72	9'	14'

Based on Class R-6 bedding

HORIZONTAL ELLIPTICAL RCP

Pipe Size (in x in)	Equiv. Dia. (in)	Pipe Class	
		HE-III	HE-IV
14 x 23	18	12'	22'
19 x 30	24	15'	29'
22 x 34	27	15'	28'
24 x 38	30	15'	27'
27 x 42	33	15'	27'
29 x 45	36	15'	26'
32 x 49	39	15'	26'
34 x 54	42	15'	25'
38 x 60	48	15'	25'
43 x 68	54	15'	24'
48 x 76	60	15'	24'
53 x 83	66	15'	24'
58 x 91	72	15'	24'
63 x 98	78	15'	23'
68 x 106	84	15'	23'

Based on Class R-5 bedding

VERTICAL ELLIPTICAL RCP

Pipe Size (in x in)	Equiv. Dia. (in)	Pipe Class			
		VE-III	VE-IV	VE-V	VE-VI
23 x 14	18	10'	15'	22'	33'
30 x 19	24	10'	16'	34'	40'
34 x 22	27	11'	20'	40'	40'
38 x 24	30	12'	23'	40'	40'
42 x 27	33	15'	30'	40'	40'
45 x 29	36	15'	29'	40'	40'
49 x 32	39	15'	29'	40'	40'
54 x 34	42	15'	28'	40'	40'
60 x 38	48	15'	27'	40'	40'
68 x 43	54	15'	27'	40'	40'
76 x 48	60	15'	29'	40'	40'
83 x 53	66	15'	29'	40'	40'
91 x 58	72	15'	29'	40'	40'
98 x 63	78	15'	26'	40'	40'
106 x 68	84	15'	24'	40'	40'

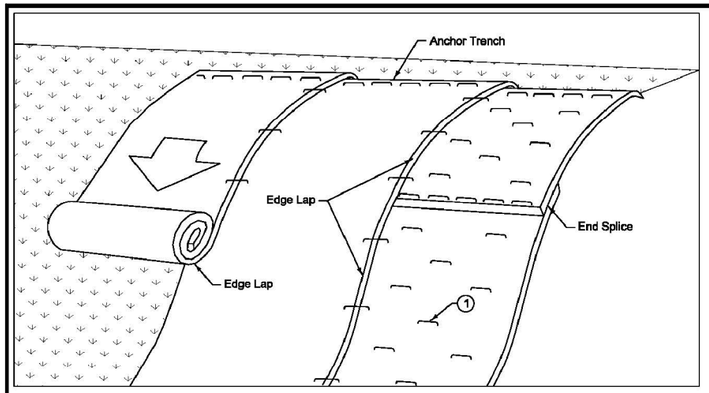
Based on Class R-5 bedding

FIGURE 3010.102 | SHEET 2 OF 2

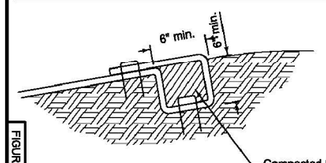
SUDAS	IOWA DOT	REVISION 4 04-20-21
FIGURE 3010.102	STANDARD ROAD PLAN	SW-102
REVISIONS: Added note DO NOT USE ON PRIMARY ROADWAYS.		SHEET 2 of 2

Paul D. Wigant, SUDAS DIRECTOR — Mark Nahra, DESIGN METHODS ENGINEER

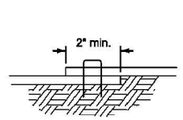
RIGID GRAVITY PIPE TRENCH BEDDING



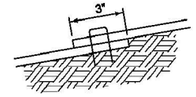
(1) Secure blanket to ground according to manufacturer's recommended anchoring pattern and minimum shown in Table 1.



ANCHOR TRENCH
(12" min. anchor spacing)



EDGE LAP
(4'-0" min. anchor spacing)



END SPLICE
(18" min. anchor spacing)

TABLE 1

Max. slope	Min. anchors
≤ 3:1	1.5/yd²
2:1	2/yd²
1:1	2.5/yd²

SUDAS	REVISION 2 10-21-14
	9040.103
	SHEET 1 of 1

SUDAS Standard Specifications

ROLLED EROSION CONTROL PRODUCT (RECP) INSTALLATION ON SLOPES

FIGURE 9040.103 | SHEET 1 OF 1

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JNS drawn
BJR designed
JEJ approved
MAR '23 date

revision — date

project BIG LAKE CULVERT REPAIR

client CITY OF COUNCIL BLUFFS, PARKS AND RECREATION DEPARTMENT

sheet **SITE DETAILS**

project no. 151122

sheet **B.01**

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GENERAL NOTES

1. UTILITY FACILITIES SHOWN ARE FROM LOCATES OR RECORDS PROVIDED BY OTHERS, AND SHALL BE CONSIDERED APPROXIMATE. OTHER UTILITIES MAY EXIST (EITHER IN SERVICE OR ABANDONED) AND THEIR LOCATION MAY NOT BE PRESENTLY KNOWN OR IDENTIFIED ON THE PLANS. THE ENGINEER MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE CONTRACTOR SHALL NOTIFY THE IOWA ONE-CALL SYSTEM AT 1-800-292-8989 TO IDENTIFY THE LOCATION OF ALL UNDERGROUND UTILITY FACILITIES WITHIN THE CONSTRUCTION AREA.

   THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL PUBLIC AND PRIVATE UTILITY FACILITIES LOCATED WITHIN THE CONSTRUCTION AREA TO AVOID DAMAGE IN ACCORDANCE WITH SECTION 480.4, CODE OF IOWA. DAMAGE TO UTILITIES DUE TO THE CONTRACTOR'S ACTIONS SHALL BE REPAIRED OR REPLACED WITHOUT COST TO THE OWNER OR ENGINEER.

   WHERE EXISTING UTILITY FACILITIES ARE SHOWN IN THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITIES AND CONDUCTING WORK NEAR UTILITY FACILITIES REQUIRED BY SECTION 480.4, CODE OF IOWA.

   THE CONTRACTOR SHALL COOPERATE WITH UTILITY COMPANIES IN THEIR ADJUSTMENT OPERATIONS SO THAT THESE OPERATIONS MAY PROGRESS, THE DUPLICATION OF ADJUSTMENT WORK MAY BE REDUCED, AND THAT SERVICES RENDERED BY THOSE PARTIES WILL NOT BE INTERRUPTED.

   THE CONTRACTOR SHALL REVIEW ALL UTILITIES SHOWN IN THE PLANS AND COORDINATE WITH ALL UTILITY COMPANIES NECESSARY TO SCHEDULE WORK FOR ALL KNOWN AND POTENTIAL CONFLICTS. THE CONTRACTOR SHALL BE AWARE THAT UTILITY SERVICES ARE NOT ROUTINELY LOCATED OR SHOWN ON THE PLANS, HOWEVER MAY BE A CONFLICT WITH THE WORK PERFORMED. DELAYS, INCONVENIENCE, OR DAMAGE CLAIMED BY THE CONTRACTOR DUE TO ANY INTERFERENCE OF UTILITIES SHOWN IN THE PLANS OR SERVICES SHALL NOT BE CONSIDERED A CIRCUMSTANCE FOR ADDITIONAL TIME OR COMPENSATION.

2. REMOVALS OF ABANDONED UTILITIES THAT ARE SHOWN ON THE PLANS AND ENCOUNTERED DURING TRENCH EXCAVATION SHALL BE INCIDENTAL TO THE UNDERGROUND UTILITY BEING INSTALLED AND WILL NOT BE PAID FOR SEPARATELY UNLESS INDICATED OTHERWISE ON THE PLANS.

3. PRIOR TO BEGINNING WORK ON THE FOLLOWING ITEMS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW PLANS FOR BY-PASS PUMPING, TRENCH SHORING, JACKING AND BORING, DEWATERING, TRAFFIC CONTROL, EMERGENCY ACTION PLAN (EAP) FOR WORK IN THE LEVEE CRITICAL ZONE AND PROVIDE SHORING OR SUPPORT DETAILS FOR WATER MAINS AND OTHER MAJOR UTILITY LINES THAT MUST REMAIN IN SERVICE.

4. THE CONTRACTOR SHALL KEEP SANITARY SEWER AND STORM SEWER LINES AND STRUCTURES CLEAN AND FREE OF DEBRIS THAT IS A RESULT OF CONSTRUCTION OPERATIONS. ANY CLEANING AND REMOVAL OF DEBRIS THAT ENTERS AS A RESULT OF CONSTRUCTION OPERATIONS SHALL BE COMPLETED AT THE EXPENSE OF THE CONTRACTOR.

5. THE CONTRACTOR SHALL MAKE ACCESS AVAILABLE TO ADJACENT PROPERTIES IN CASE OF EMERGENCIES. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER (712-890-8296) AND NON-EMERGENCY 911 (712-328-5737), 24 HOURS PRIOR TO CLOSING AND/OR OPENING ANY ROADS TO TRAFFIC. THE CONTRACTOR SHALL ADEQUATELY BARRICADE CLOSED ROADS DURING CONSTRUCTION TO INSURE PUBLIC SAFETY AND PROTECT NEW PAVEMENT FROM DAMAGE. ALL TRAFFIC CONTROL SHALL BE IN COMPLIANCE WITH "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"U.S. DEPARTMENT OF TRANSPORTATION, LATEST EDITION.

6. REMOVAL AND REINSTALLATION OF MAILBOXES AS NECESSARY SHALL BE INCIDENTAL TO THE PROJECT UNLESS SPECIFIED OTHERWISE. THE CONTRACTOR SHALL NOTIFY THE POST OFFICE OF THE STREET CLOSING AND ARRANGE FOR AN ALTERNATE DROP BOX LOCATION AS NECESSARY.

7. SANITARY SEWER LATERALS DISRUPTED BY THE CONTRACTOR SHALL BE RECONNECTED TO THE SEWER DURING THE SAME DAY THAT THEY ARE DISRUPTED.

8. WHEN MILLING OF ASPHALT PAVEMENT IS A BID ITEM IN THE PLANS ALL MILLED ASPHALT PAVEMENT SHALL BE DELIVERED TO THE CITY PUBLIC WORKS YARD AT 1130 2ND AVENUE. CONSTRUCTION PHASING MAY REQUIRE MULTIPLE MOBILIZATIONS FOR MILLING OPERATIONS. OUT OF PHASE MILLING WILL NOT BE ALLOWED UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS. THE COST INVOLVED TO HAUL SALVAGED ITEMS TO THE CITY YARD SHALL BE INCIDENTAL TO REMOVAL FOR WHICH PAYMENT IS MADE.

9. REMOVAL OF EXISTING CITY SIGNS AS NECESSARY SHALL BE INCIDENTAL TO THE PROJECT UNLESS SPECIFIED OTHERWISE. ALL SIGNS SHALL BE REMOVED WITHOUT DAMAGE TO THE SIGNS. ANY DAMAGE TO SIGN(S) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE REQUIRED TO REPLACE IN KIND AND\OR COMPENSATE THE CITY FOR DAMAGED SIGN(S). SIGNS SHALL BE DELIVERED WHEN REMOVED TO THE CITY TRAFFIC DEPARTMENT AT 1001 10TH AVENUE. SIGNS SHALL NOT BE STORED ON PROJECT SITE.

10. ALL SOLID WASTE, AND EXCESS EXCAVATION FROM THE REMOVAL OR INSTALLATION OF PAVEMENT, STORM, AND SANITARY SEWER SYSTEMS, SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR IN COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS. ALL REMOVED ITEMS SHALL BE DISPOSED OF BY THE CONTRACTOR OFF SITE AND SHALL NOT BE INCORPORATED INTO THE WORK.

    PRIOR TO THE COMMENCEMENT OF REMOVALS, THE CONTRACTOR SHALL PROVIDE THE ENGINEER DOCUMENTATION OF THEIR CERTIFIED DISPOSAL SITE(S) FOR ALL ITEMS TO BE REMOVED FROM THE PROJECT. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH LOAD TICKETS FOR ALL ITEMS REMOVED FROM THE PROJECT. PAYMENT WILL NOT BE MADE ON REMOVAL ITEMS WITHOUT APPROPRIATE TICKETS.

11. TO COMPLY WITH THE MIGRATORY BIRD TREATY ACT, TREES SHALL NOT BE REMOVED DURING THE PRIMARY NESTING SEASON DEFINED AS APRIL 1ST THROUGH SEPTEMBER 30TH. EXISTING TREES NOT INDICATED FOR REMOVAL SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. TRIMMING OF TREES WITH TRUNKS LOCATED OUTSIDE OF THE RIGHT OF WAY SHALL NOT BE COMPLETED WITHOUT AUTHORIZATION FROM THE OWNER. WHEN TRIMMING IS REQUIRED ON ANY TREE, THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER AND USE SAWS TO REMOVE ROOTS AND BRANCHES FROM TREES THAT ARE TO REMAIN. NO REMOVAL OF ROOTS OR BRANCHES SHALL BE BY HEAVY EQUIPMENT THAT RESULTS IN TEARS. ALL REMOVALS SHALL LEAVE A SMOOTH CUT FACE.

12. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN PATHWAYS OPEN AND PASSABLE DURING CONSTRUCTION.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COLLECTION AND TRANSPORTATION OF GARBAGE, YARD WASTE, AND RECYCLABLES FROM IN FRONT OF INDIVIDUAL PROPERTIES TO THE ENDS OF THE PROJECT LIMITS FOR PICKUP. AND RETURNED TO THE INDIVIDUAL PROPERTIES THE SAME DAY GARBAGE IS COLLECTED. THE CONTRACTOR SHALL COORDINATE THE PICKUP LOCATION(S) WITH THE GARBAGE COLLECTOR.

14. THE CONTRACTOR SHALL CONFINE ALL OPERATIONS, INCLUDING EQUIPMENT AND MATERIAL STORAGE, WITHIN THE CONSTRUCTION ROW AND/OR EASEMENTS OF THE PROJECT. IF THE CONTRACTOR IS GRANTED PERMISSION TO STORE MATERIALS OR EQUIPMENT ON ADJACENT PRIVATE PROPERTY THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH WRITTEN PROOF OF PERMISSION FROM THE LANDOWNER.

GENERAL NOTES

15. THE CONTRACTOR SHALL MAINTAIN THE PROJECT LIMITS. BY COMMENCING THE WORK IN A GIVEN AREA, THE CONTRACTOR ASSUMES THE RESPONSIBILITY FOR ONGOING REQUIRED MAINTENANCE SUCH AS MOWING AND WEED CONTROL WITHIN THE PROJECT LIMITS.

16. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING.

17. STREETS SHALL NOT BE OPENED TO TRAFFIC UNTIL ALL STREET PAVEMENT HAS REACHED REQUIRED STRENGTH, ALL JOINTS HAVE BEEN SEALED, AND ALL DRIVEWAYS AND SIDEWALKS HAVE BEEN CONSTRUCTED UNLESS INDICATED OTHERWISE ON THE PLANS OR APPROVED BY THE ENGINEER.

18. THE CONTRACTOR WILL BE RESPONSIBLE FOR PAYMENTS ASSOCIATED WITH ALL RETESTING RESULTING FROM FAILURE OF INITIAL COMPACTION TESTS. RETESTING, INCLUDING ASSOCIATED TRIP CHARGES, SHALL BE PAID BY THE CONTRACTOR TO THE OWNER. THE OWNER SHALL DEDUCT AMOUNTS FOR RETESTING FROM PAYMENTS DUE TO THE CONTRACTOR.

19. THE CONTRACTOR SHALL CONTROL CONSTRUCTION DEBRIS, HAZARDOUS WASTE SPILLS, AND CONCRETE TRUCK WASHOUT AREA(S). THE CONTRACTOR SHALL CLEAN-UP AND DISPOSE OF ALL WASTE PROPERLY OFF-SITE AT AN APPROVED DISPOSAL FACILITY. NO CONSTRUCTION MATERIAL WASTES OR UNUSED MATERIALS SHALL BE BURIED, DUMPED, BURNED, OR DISCHARGED WITHIN THE PROJECT LIMITS.

20. THE CONTRACTOR SHALL TAKE STEPS TO CONTROL SOIL EROSION AND FUGITIVE DUST DURING CONSTRUCTION. IF NECESSARY, HAY BALES, CHECK DAMS, SEDIMENT TRAPS OR ADDITIONAL SILT FENCE (NOT INDICATED ON THE PLANS) SHALL BE USED TO RETAIN SILT AND PREVENT SILT FROM ENTERING THE STORM DRAINAGE SYSTEM. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT OPERATIONS IN ACCORDANCE WITH THE POLLUTION PREVENTION PLAN AND ADMINISTER IT THROUGHOUT THE PROJECT DURATION.

21. THE CONTRACTOR SHALL CONSTRUCT THE NECESSARY EROSION CONTROL AND RUNOFF DETENTION STRUCTURES INCLUDED IN THE PLANS AND PER THE STORM WATER POLLUTION PREVENTION PLANS (SWPPP) PRIOR TO ANY GRADING ON THE PROJECT IN ORDER TO PREVENT SILT TRANSPORT AND SOIL TRACKING OUTSIDE OF THE PROJECT LIMITS. THE CONTRACTOR SHALL MAINTAIN AND WATER HAUL ROADS TO CONTROL FUGITIVE DUST.

22. ALL CONCRETE TRUCKS SHALL RETURN TO THE PLANT TO WASH OUT UNLESS THE CONTRACTOR PROVIDES A CONCRETE WASH OUT AREA AS DESCRIBED IN THE PLANS OR AS APPROVED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND CLEAN UP OF THE WASH OUT LOCATION.

23. THE OWNER MAY CHARGE THE CONTRACTOR ACTUAL DAMAGES FOR FAILURE OF THE CONTRACTOR TO COMPLY WITH ANY PART OF THE CONTRACT, INCLUDING INCIDENTAL PROJECT REQUIREMENTS, FOR WHICH THE OWNER INCURS COSTS TO REMEDY. THE OWNER MAY CHARGE UP TO THE ACTUAL COST INCURRED BY THE OWNER FOR SUCH DAMAGES. THE OWNER MAY DEDUCT AMOUNTS FOR DAMAGES FROM PAYMENTS DUE TO THE CONTRACTOR.

24. ALL SIDEWALKS, SHARED USE PATHS, PEDESTRIAN CURB RAMPS, AND DRIVEWAYS SHALL BE CONSTRUCTED TO MEET THE MINIMUM REQUIREMENTS OF DIVISION 7 SECTION 7030 OF THE SUDAS STANDARD SPECIFICATIONS. ALL WORK COMPLETED THAT DOES NOT MEET THESE REQUIREMENTS SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY.

25. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN FINAL GRADING HAS BEEN COMPLETED. THE ENGINEER SHALL PERFORM A FIELD REVIEW OF THE GRADING PRIOR TO ANY SEEDING OR HYDROMULCHING BY THE CONTRACTOR. FAILURE TO COMPLY WITH THE FINAL GRADING REVIEW MAY RESULT IN RE-GRADING, RE-SEEDING AND RE-HYDROMULCHING IN AREAS THAT DO NOT MEET SPECIFICATIONS. ANY ADDITIONAL WORK WILL BE AT THE EXPENSE OF THE CONTRACTOR.

26. THE CONTRACTOR SHALL NOT INSTALL MANHOLE INFILTRATION BARRIERS UNTIL AFTER THE ENGINEER AND CITY REPRESENTATIVE(S) HAVE INSPECTED THE MANHOLE(S). ONCE THE INSPECTION OF MANHOLE(S) HAS BEEN COMPLETED AND IS ACCEPTABLE, THE INFILTRATION BARRIER MAY BE INSTALLED. THE INFILTRATION BARRIER WILL THEN BE INSPECTED BY THE ENGINEER AND CITY REPRESENTATIVE(S) FOR APPROVAL. BACKFILL AROUND THE MANHOLE SHALL NOT BE COMPLETED UNTIL AFTER THE INSPECTION OF THE INFILTRATION BARRIER HAS OCCURRED WHEN USING AN EXTERNAL BARRIER.

27. CONCRETE ADMIXTURES SHALL NOT BE USED UNLESS APPROVED BY THE ENGINEER AND SUBMITTED AS PART OF THE SHOP DRAWING SUBMITTAL FOR THE SPECIFIED MIX DESIGN AS SHOWN IN THE CONTRACT DOCUMENTS.

ABBREVIATIONS

H.M.A.	HOT MIX ASPHALT
E.O.R.	END OF RETURN
B.O.C.	BACK OF CURB
P.C.C.	PORTLAND CEMENT CONCRETE
P.O.B.	POINT OF BEGINNING
U.A.C.	USE AS CONSTRUCTED
SAN.	SANITARY SEWER
STM.	STORM SEWER

VERTICAL CONTROL: NAVD '88

BENCHMARK OF ORIGIN: NGS W182, 1989 NAVD '88 ELEVATION = 1016.21

AT 207 SCOTT STREET, SET VERTICALLY IN THE WEST FACE OF WASHINGTON SCHOOL, 46.3 FEET EAST OF THE CENTER OF THE STREET, 4.6 FEET ABOVE THE GROUND SURFACE AND 1.8 SOUTH OF THE NORTHWEST CORNER OF THE BUILDING.

CONTROL POINT	ELEVATION	LOCATION
C.P. #4	978.40	18.8' NW OF NE CORNER OF THE SOUTH BIG LAKE PARKING LOT, 30.9' W OF WOOD SIGN BASE

LEGEND

	CENTER LINE
	CENTERLINE OF DITCH
	FENCE – BARB
	FENCE – CHAIN LINK
	FENCE – MIXTURE
	FENCE – PRIVACY
	FENCE – SPLIT RAIL
	FENCE – WOVEN
	GUARDRAIL
RW	RETAINING WALL
TOB	TOP OF BANK
TOE	TOE OF BANK
BOC	BACK OF CURB
EOR	END OF RETURN
HMA	HOT MIX ASPHALT
PCC	PORTLAND CEMENT CONCRETE
POB	POINT OF BEGINNING
UAC	USE AS CONSTRUCTED
	BILLBOARD SIGN
	BORING LOCATION
	FLAG POLE
	GUARDRAIL POST
	MAILBOX
	NO PARKING SIGN
	PIEZOMETER
	POST ROUND
	POST SQUARE
STOP	STOP SIGN
	STREET SIGN
CATV	CABLE TELEVISION BOX
	CONTROL CABINET
EB	ELECTRICAL PULL BOX
TP	ELECTRICAL TRANSFORMER
ETB	ELECTRICAL TRANSFORMER BOX
	GUY POLE
	GUY WIRE
	LIGHT POLE
	LUMINAIRE
	POWER POLE
	POWER AND LIGHT POLE
	POWER POLE W/ TRANSFORMER
PB	PULL BOX
TCB	TRAFFIC CONTROL BOX
	TELEPHONE POLE
	TRAFFIC SIGNAL
	TELEPHONE TERMINAL BOX
	YARD LIGHT
G	GAS METER
G	VALVE – GAS
RRB	RAILROAD CONTROL BOX
RR	RAILROAD CROSS BUCKS SIGN
	RAILROAD FROG
	RAILROAD POINT OF SWITCH
	RAILROAD SIGNAL
	RAILROAD TRACK
SAN	SANITARY SEWER
STM	STORM SEWER
	CLEAN-OUT
FES	EXISTING PIPE PLUG
	FLARED END SECTION
	INLET-BEEHIVE
	INLET-COMBINATION
	INLET-GRATE (ROUND)
	INLET-GRATE (SQUARE)
	MANHOLE
	BENCH MARK
	CONTROL POINT
	FOUND CONCRETE MONUMENT
	FOUND IRON PIN
	RIGHT OF WAY RAIL
	SET PIN
	BUSH
	HEDGE
	DECIDUOUS TREE
	EVERGREEN TREE
	STUMP W/ DIAMETER
	CURB STOP (RESIDENTIAL WATER)
	FIRE HYDRANT
MW	MONITORING WELL
	POST INDICATOR VALVE
SCB	SPRINKLER CONTROL BOX
	SPRINKLER HEAD
	VALVE – WATER (MAIN LINE)
W	WATER METER
W	WELL
YH	YARD HYDRANT

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JNS	BJR	JFJ	MAR '23
drawn	designed	approved	date

revision date

project BIG LAKE CULVERT REPAIR

client CITY OF COUNCIL BLUFFS, PARKS AND RECREATION DEPARTMENT

sheet GENERAL NOTES AND LEGEND

project no. 151122

sheet C.01

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ESTIMATED QUANTITIES

ITEM NO.	ITEM CODE	DESCRIPTION	ESTIMATED QUANTITY
1.	2010–1.08–E	EARTHWORK	1.00 LS
2.	4020–1.08–A	STORM SEWER, TRENCHED RCP, 48 INCH DIA., NEW PIPE	40.00 LF
3.	4020–1.08–A	STORM SEWER, TRENCHED RCP, 48 INCH DIA., SALVAGED PIPE	80.00 LF
4.	4020–1.08–D	REMOVAL AND SALVAGE OF STORM SEWER, 48 INCH DIA.	80.00 LF
5.	4020–1.08–D	REMOVAL OF STORM SEWER, 48 INCH DIA.	34.00 LF
6.	7030–1.08–A	REMOVAL OF TRAIL	74.00 SY
7.	7030–1.08–C	TRAIL PAVEMENT, 4 INCH PCC	74.00 SY
8.	9010–1.08–A	CLASS U1 HYDRAULIC SEEDING, FERTILIZING, & MBFM MULCH	0.10 AC
9.	9040–1.08–E	TEMPORARY ROLLED EROSION CONTROL PRODUCTS, TYPE 2.D	80.00 SY
10.	9040–1.08–J	RIP RAP AND ENGINEERING FABRIC	79.00 TN

ESTIMATE REFERENCE NOTES

ITEM NO.	ITEM CODE	DESCRIPTION
1.	2010–1.08–E	EARTHWORK NO EARTHWORK QUANTITIES HAVE BEEN CALCULATED. ITEM SHALL INCLUDE ALL EARTHWORK NECESSARY TO COMPLETE THE GRADING AND SHAPING AS SHOWN ON THE PLANS. MEASUREMENT AND PAYMENT SHALL BE LUMP SUM.
2.	4020–1.08–A	STORM SEWER, TRENCHED, RCP, 48 INCH DIA., NEW PIPE INSTALLATION SHALL INCLUDE CLASS R–1 BEDDING.
3.	4020–1.08–A	STORM SEWER, TRENCHED, RCP, 48 INCH DIA., SALVAGED PIPE ITEM INCLUDED FOR RE–INSTALLING SALVAGED PIPE. ALL PIPE JOINTS ON SALVAGED PIPE SHALL BE SEALED WITH MASTIC AND WRAPPED WITH ENGINEERING FABRIC. PICK HOLES SHALL BE SEALED WITH MASTIC AND PLASTIC PLUGS. INSTALLATION SHALL INCLUDE CLASS R–1 BEDDING.
4.	4020–1.08–D	REMOVAL AND SALVAGE OF STORM SEWER, 48 INCH DIA. CONTRACTOR SHALL TAKE CARE TO SALVAGE AT LEAST 80LF OF EXISTING PIPE THAT CAN BE RE–INSTALLED.
5.	4020–1.08–D	REMOVAL OF STORM SEWER, 48 INCH DIA.
6.	7030–1.08–A	REMOVAL OF TRAIL ITEM INCLUDED FOR THE TRAIL LOCATION SHOWN. CONTRACTOR SHALL LIMIT THE REMOVAL TO THE MINIMUM AMOUNT POSSIBLE.
7.	7030–1.08–C	TRAIL PAVEMENT, 4 INCH PCC TRAIL PAVEMENT SHALL BE REPLACED TO THE PRE–EXISTING GRADES WITH THE CITY OF COUNCIL BLUFFS STANDARD MIX CV–SUD–C15.
8.	9010–1.08–A	CLASS U1 HYDRAULIC SEEDING, FERTILIZING, AND & MBFM MULCH SEED MIXTURES AND RATES SHALL BE PER THE CITY SUPPLEMENTAL SPECIFICATIONS. FERTILIZER MIXTURE AND RATES SHALL BE PER SUDAS, SECTION 9010, PART 2.03. MBFM MULCH REQUIREMENTS AND APPLICATION RATE SHALL BE PER SUDAS, SECTION 9010 PARTS 2.07 AND 3.05.
9.	9040–1.08–E	TEMPORARY ROLLED EROSION CONTROL PRODUCTS, TYPE 2.D TEMPORARY RECP SHALL MEET THE REQUIREMENTS IN SUDAS, SECTION 9040, PART 2.05.
10.	9040–1.08–J	RIP RAP AND ENGINEERING FABRIC RIP RAP IS 24" THICK. MATERIAL SHALL BE EITHER IDOT CLASS D OR CLASS E REVETMENT. ENGINEERING FABRIC IS INCIDENTAL TO THIS BID ITEM.

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BJR	designed		
JEJ	approved		
MAR '23	date	revision	date

project BIG LAKE CULVERT REPAIR

client CITY OF COUNCIL BLUFFS, PARKS AND RECREATION DEPARTMENT

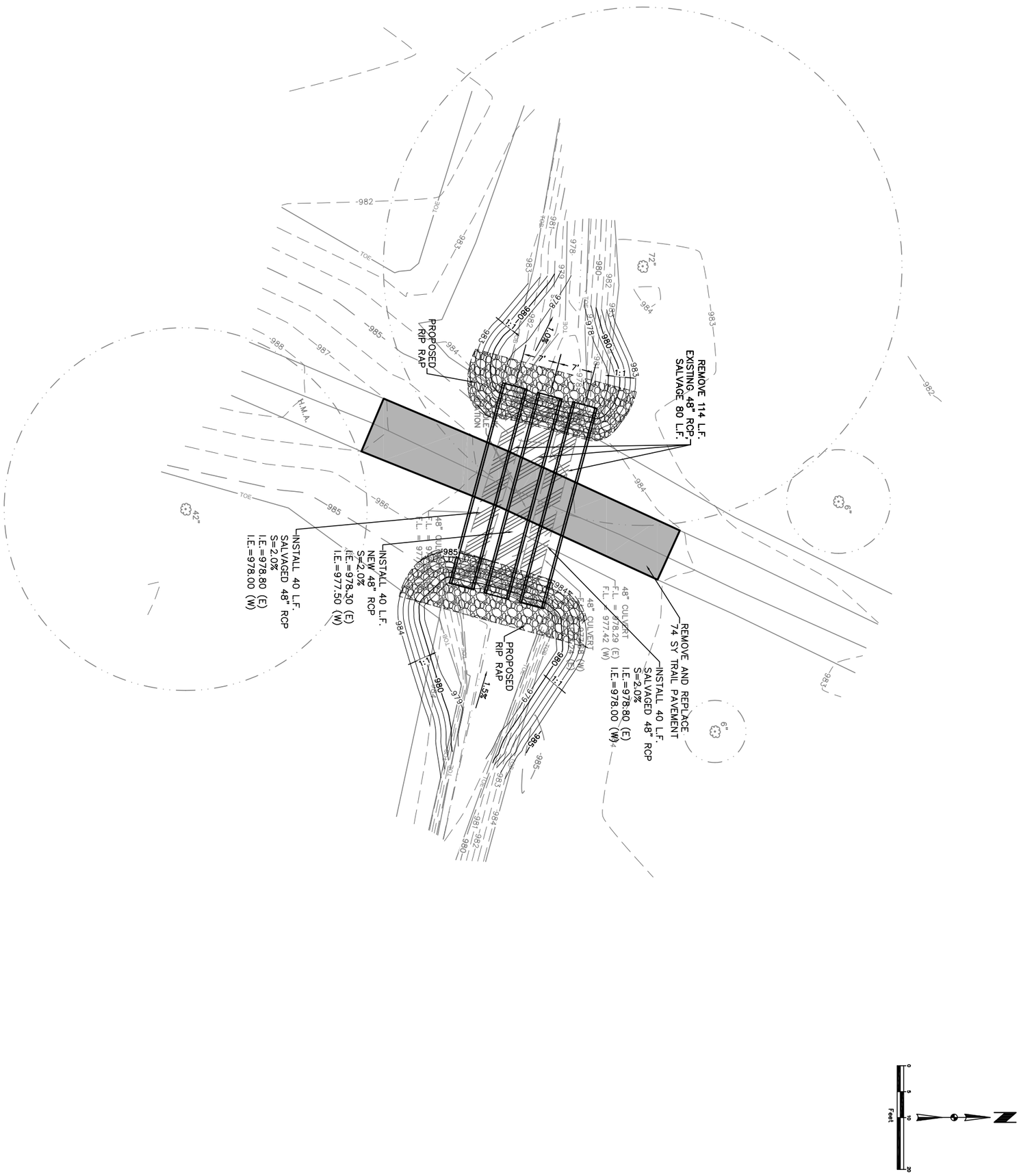
sheet **ESTIMATED QUANTITIES AND ESTIMATE REFERENCE NOTES**

project no. 151122

sheet **C.02**

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sheet SITE PLAN

project no. 151122

sheet D.01

JNS drawn

BJR designed

JEJ approved

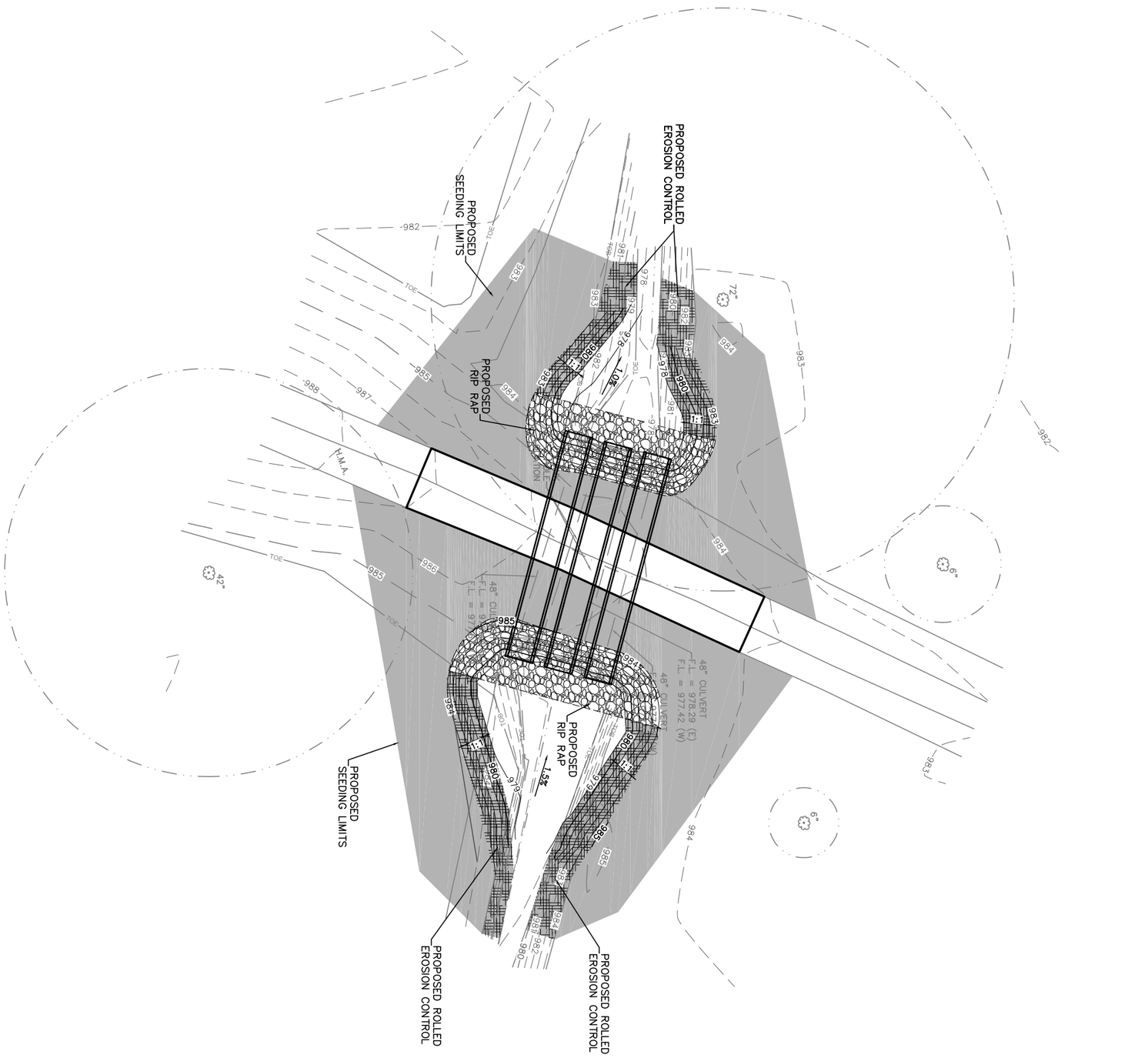
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client CITY OF COUNCIL BLUFFS, PARKS AND RECREATION DEPARTMENT

sheet SEEDING PLAN

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MAR.'23	date	revision date

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