BIG CREEK BEACH WATERSHED BMPS

DNR PROJECT #26-02-77-02

8550 NW 142ND AVE
POLK CITY, IOWA 50226

ENGINEER

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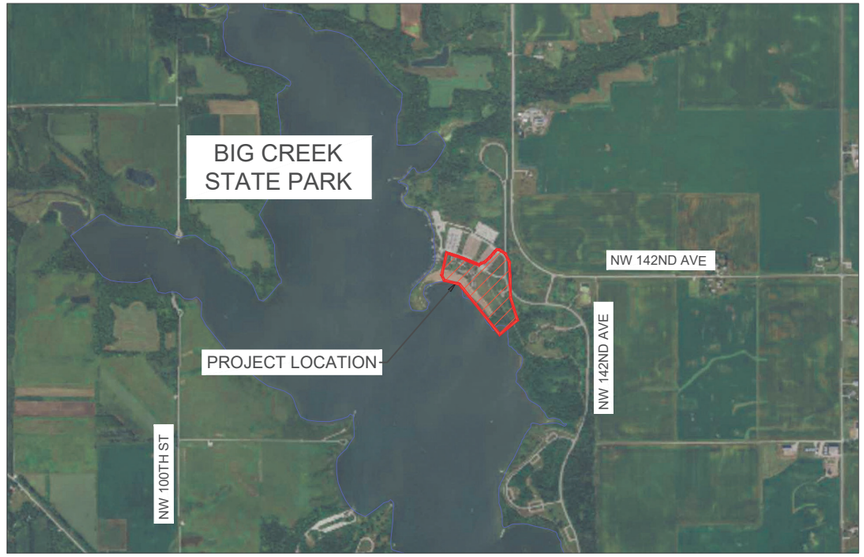

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AUTHORIZATION TO BID

08/05/2026
AUTHORIZATION - PARKS | WILDLIFE | FISHERIES | LAW ENFORCEMENT | FORESTRY — DATE

Digitally signed by Travis Baker
Date: 2026.08.10 08:18:51 -05'00'
ENGINEERING BUREAU CHIEF — DATE

CIVIL ENGINEER

LICENSED PROFESSIONAL ENGINEER
ANTHONY J. HARBAUGH
P26394
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT DESCRIBED BELOW 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.

Signature: 08/03/2026 Date

Printed or typed name: ANTHONY HARBAUGH
License Number: 26394
My License Renewal Date is: DECEMBER 31, 2027

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL:
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DNR

BIG CREEK BEACH
WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
BIG CREEK BEACH

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	20260803
PROJECT NUMBER	2240003070
FIELD BOOK	—

COVER SHEET

C000

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GENERAL NOTES:

1. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP (PUBLIC OR PRIVATE) SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE IOWA STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS), UNLESS OTHERWISE NOTED ON THE DRAWINGS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL AGENCY CODES, STANDARDS AND SPECIFICATIONS.

3. ANY WORK REQUIRED TO COMPLETE THE SCOPE OF THIS PROJECT BUT NOT SPECIFICALLY CALLED OUT, SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. NO ADDITIONAL COMPENSATION TO BE ALLOWED FOR THE COMPLETION OF THIS WORK.

4. WORK WHICH DOES NOT CONFORM TO THE REQUIREMENTS OF THE CONTRACT WILL BE CONSIDERED UNACCEPTABLE. UNACCEPTABLE WORK, WHETHER THE RESULT OF POOR WORKMANSHIP, USE OF DEFECTIVE MATERIALS, DAMAGE THROUGH CARELESSNESS OR ANY OTHER CAUSE, FOUND TO EXIST PRIOR TO THE FINAL ACCEPTANCE OF THE WORK, SHALL BE REMOVED AND REPLACED IN AN ACCEPTABLE MANNER, AS REQUIRED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE. WORK DONE CONTRARY TO THE INSTRUCTIONS OF THE ENGINEER, WORK DONE BEYOND THE LINES SHOWN ON THE PLANS OR ANY EXTRA WORK DONE WITHOUT AUTHORITY WILL NOT BE PAID FOR.

5. STAGING LOCATION FOR CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER.

6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF WORK OF ALL SUBCONTRACTOR(S) INVOLVED IN THE PROJECT.

7. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND LICENSES FROM THE APPLICABLE GOVERNING AUTHORITIES.

8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, COORDINATES, ELEVATIONS, SETBACKS, AND EASEMENTS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES SO THE CONFLICT MAY BE RESOLVED.

9. IF DURING THE COURSE OF CONSTRUCTION THE CONTRACTOR FINDS ANY DISCREPANCIES OR CONFLICTS BETWEEN THE PROPOSED SITE IMPROVEMENTS INDICATED ON THE PLANS AND THE PHYSICAL CONDITIONS OF THE SITE, OR ANY ERRORS OR OMISSIONS WITHIN THE PLANS OR IN THE SITE LAYOUT AS PROVIDED BY THE ENGINEER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMMEDIATELY NOTIFY THE ENGINEER. UNTIL AUTHORIZED TO PROCEED, ANY WORK PERFORMED BY THE CONTRACTOR AFTER SUCH A DISCOVERY WILL BE AT THE CONTRACTOR'S SOLE RISK AND EXPENSE.

10. PROTECT ALL EXISTING FEATURES (INCLUDING BUT NOT LIMITED TO WALLS, TREES, LANDSCAPING, DRIVEWAYS, SIDEWALKS, CURBS, PAVEMENT, UTILITIES, ETC.) NOT SPECIFICALLY NOTED FOR REMOVAL. FEATURES NOT DESIGNATED FOR REMOVAL THAT ARE DAMAGED OR REMOVED RESULTING FROM CONSTRUCTION TRAFFIC AND/OR OPERATIONS SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.

11. CONTRACTOR SHALL ADJUST ALL VALVES, MANHOLES, CASTINGS, GAS VENTS, ETC., TO MATCH THE NEW SURFACE. ADJUSTMENT SHALL BE COORDINATED WITH THE UTILITY COMPANIES AND THE COST FOR ALL ADJUSTMENTS SHALL BE INCIDENTAL TO THE CONSTRUCTION. AT NO ADDITIONAL COST TO THE OWNER, REPAIR ANY DAMAGE TO SAID STRUCTURES AND APPURTENANCES THAT OCCUR DURING CONSTRUCTION.

12. CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST FORTY-EIGHT (48) HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. EXACT LOCATION AND ELEVATION OF ALL UTILITIES MUST BE DETERMINED BY THE CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED SITE IMPROVEMENTS SHOWN ON THE PLANS.

13. IOWA CODE 480, UNDERGROUND FACILITIES INFORMATION, REQUIRES VERBAL NOTICE TO IOWA ONE-CALL BY CALLING 811 OR 1-800-292-8989, NOT LESS THAN 48 HOURS BEFORE EXCAVATING, EXCLUDING WEEKENDS AND HOLIDAYS.

14. CONTRACTOR SHALL SCHEDULE A UTILITY LOCATING SERVICE AND/OR NOTIFY ALL UTILITY COMPANIES (GAS, ELECTRIC, TELEPHONE, CABLE, ETC.) AND THE LOCAL MUNICIPALITY TO DETERMINE THE LOCATION AND HORIZONTAL AND VERTICAL ELEVATION OF UNDERGROUND UTILITIES AND PROPOSED POINTS OF CONNECTION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION IN ORDER TO AVOID POTENTIAL CONFLICTS. IF CONFLICTS ARE FOUND, NOTIFY THE ENGINEER. IT IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING PUBLIC AND PRIVATE UTILITIES WHETHER INDICATED ON THE PLANS OR NOT AND TO HAVE THESE UTILITIES MARKED PRIOR TO CONSTRUCTION.

15. NOTIFY UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN CONSTRUCTION LIMITS PRIOR TO EACH STAGE OF CONSTRUCTION. NOTIFY THE APPROPRIATE PUBLIC AND PRIVATE UTILITY OWNER A MINIMUM OF 48 HOURS PRIOR TO BEGINNING CONSTRUCTION ON ANY FACILITIES OWNED OR OPERATED BY THAT UTILITY.

16. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES/OWNERS REGARDING OUTAGES, RELOCATION, ADJUSTMENT, CONNECTIONS, OR TEMPORARY SUPPORT OF THEIR FACILITIES. COORDINATE ALL UTILITY OUTAGES WITH PROVIDER OF UTILITY A MINIMUM OF 12 BUSINESS DAYS IN ADVANCE.

17. THE MEANS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. AT NO TIME WILL EITHER THE OWNER OR THE ENGINEER TAKE RESPONSIBILITY FOR EITHER THE MEANS OF THE WORK OR THE SAFETY OF THE CONTRACTOR'S EMPLOYEES.

18. ALL OPEN EXCAVATIONS SHALL BE PROTECTED IN ACCORDANCE WITH REGULATORY REQUIREMENTS.

19. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE ON THE SITE THROUGHOUT THE PROJECT DURATION. ANY DAMAGE CAUSED BY A FAILURE TO MAINTAIN POSITIVE DRAINAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

20. ALL EMERGENCY ACCESS LANES WITHIN THE PROJECT AREA SHALL REMAIN IN SERVICE, CLEAN OF DEBRIS, AND ACCESSIBLE FOR USE BY EMERGENCY VEHICLES.

21. SITE CLEAN-UP TO BE PERFORMED ON A DAILY BASIS. SIDEWALKS, PARKING LOTS, ROADWAYS, ETC. WITHIN AND ADJACENT TO PROJECT LIMITS SHALL BE KEPT CLEAN AT ALL TIMES. ALL COSTS FOR CLEANING SHALL BE INCIDENTAL TO THE CONTRACT.

22. ALL INSPECTIONS REQUIRED FOR PUBLIC OR PRIVATE IMPROVEMENTS SHALL BE FACILITATED BY THE CONTRACTOR.

23. CONTACT THE OWNER FOR PROCEDURES FOR HANDLING CONTAMINATED SOILS IF LOCATED ON SITE.

24. PRIOR TO INITIAL ACCEPTANCE BY THE OWNER(S) AND/OR GOVERNING AUTHORITY, ALL WORK SHALL BE REVIEWED AND APPROVED BY THE OWNER OR THEIR REPRESENTATIVE(S). THE CONTRACTOR SHALL GUARANTEE THEIR WORK FOR A PERIOD OF 12 (TWELVE) MONTHS FROM THE DATE OF SUBSTANTIAL COMPLETION AND SHALL BE HELD RESPONSIBLE FOR ANY DEFECTS IN MATERIAL OR WORKMANSHIP OF THIS WORK DURING THAT PERIOD AND UNTIL FINAL ACCEPTANCE IS MADE.

25. ALL TRAFFIC AND PEDESTRIAN CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL PROVIDE TRAFFIC AND PEDESTRIAN CONTROL MEASURES (SIGNS, BARRICADES, FLAGGERS, ETC.) IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) LATEST EDITION.

26. WHEN PERFORMING WORK WITHIN THE PUBLIC RIGHT OF WAY, CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLAN TO CITY ENGINEER AT LEAST SEVEN (7) DAYS PRIOR TO STARTING WORK. IF THE AUTHORITY HAVING JURISDICTION REQUIRES ADDITIONAL TRAFFIC CONTROLS, IT SHALL BE INCIDENTAL TO THE PROJECT.

27. ALL PROPERTY MARKERS AND SURVEY REFERENCE MARKERS SHALL BE CAREFULLY PRESERVED DURING CONSTRUCTION UNTIL THEIR LOCATION HAS BEEN WITNESSED OR OTHERWISE TIED IN BY AN AUTHORIZED AGENT OR PROFESSIONALLY LICENSED SURVEYOR.

GENERAL NOTES (CONTINUED):

28. REPLACE ANY PROPERTY MONUMENTS REMOVED OR DESTROYED BY CONSTRUCTION. MONUMENTS SHALL BE SET BY A LAND SURVEYOR REGISTERED TO PRACTICE IN THE STATE OF IOWA.

29. ALL CONSTRUCTION STAKING, LAYOUT, SCHEDULING, AND PAYMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

30. AFTER COMPLETION OF THE PROPOSED IMPROVEMENTS AND WHEN REQUIRED BY THE GOVERNING AUTHORITY(S), CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH RECORD DRAWINGS, SIGNED AND SEALED BY A PROFESSIONALLY LICENSED ENGINEER OR SURVEYOR AND SHALL INCLUDE AT A MINIMUM (WHERE APPLICABLE TO THE SCOPE OF WORK) THE FOLLOWING ITEMS:
    a. TOPOGRAPHY AND SPOT GRADE ELEVATIONS OF ALL PROPOSED PERMANENT SITE FEATURES INCLUDING ANY STORMWATER FACILITIES OR MODIFICATIONS TO EXISTING STORMWATER FACILITIES.
    b. HORIZONTAL AND VERTICAL LOCATION AND ALIGNMENT OF ALL PROPOSED ROADWAYS, PARKING LOTS, UTILITIES, BUILDINGS OR OTHER PERMANENT SITE FEATURES.
    c. RIM AND INVERT AND/OR TOP OF PIPE ELEVATIONS FOR ALL PROPOSED UTILITIES.
    d. RECORD DRAWING INFORMATION SHALL BE SHOWN ON THE APPROVED ENGINEERING PLANS ISSUED FOR CONSTRUCTION. ANY AND ALL DEVIATIONS FROM THESE APPROVED PLANS SHALL BE SHOWN BY MEANS OF STRIKING THROUGH THE PROPOSED INFORMATION AND CLEARLY INDICATING THE AS-BUILT LOCATIONS AND ELEVATIONS ON THE APPLICABLE PLAN SHEET.

31. PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE SITE AND THE PROJECT PLANS AND SPECIFICATIONS. ANY CONDITIONS THAT ARE NOT SPECIFICALLY CALLED OUT ON THE PLANS OR SPECIFICATIONS BUT ARE APPARENT ON SITE WILL NOT BE GROUNDS FOR ADDITIONAL COMPENSATION TO THE CONTRACTOR.

SITE PREPARATION AND DEMOLITION NOTES:

1. ALL EXISTING BUILDINGS, FOUNDATIONS, CONCRETE OR ASPHALT PAVEMENT OR WALKS, CURB AND GUTTER, AND MISCELLANEOUS STRUCTURES (INCLUDING, BUT NOT LIMITED TO FENCES, POLES, YARD LIGHTS, ELECTRICAL PANELS, WHEEL STOPS, AND MISCELLANEOUS DEBRIS) NOTED TO BE REMOVED AND/OR EXCESS MATERIAL (EXCAVATED MATERIAL OR BROKEN CONCRETE) WHICH IS NOT DESIRABLE TO BE INCORPORATED INTO THE WORK INVOLVED ON THIS PROJECT SHALL BE DEMOLISHED, REMOVED FROM THE SITE, AND LEGALLY DISPOSED OF BY THE CONTRACTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR LEGAL DISPOSAL SITES FOR DEMOLISHED ITEMS. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES. NO MATERIAL SHALL BE PLACED WITHIN THE EASEMENTS, UNLESS SPECIFICALLY STATED IN THE PLANS OR APPROVED BY THE ENGINEER. DISPOSAL SITES MUST BE APPROVED BY THE ENGINEER OR OWNER. CONTRACTOR SHALL APPLY NECESSARY MOISTURE TO THE CONSTRUCTION AREA AND TEMPORARY HAUL ROADS TO PREVENT THE SPREAD OF DUST. OFF-SITE DISPOSAL SHALL BE IN ACCORDANCE WITH THE APPLICABLE GOVERNMENTAL REGULATIONS.

2. WHERE A SECTION OF PAVEMENT, CURB AND GUTTER, OR SIDEWALK IS CUT OR OTHERWISE DAMAGED BY THE CONTRACTOR, THE ENTIRE SECTION SHALL BE REMOVED AND REPLACED. PAVEMENT, CURBS, GUTTERS, AND SIDEWALKS SHALL BE REMOVED A MINIMUM OF TWO FEET BEYOND THE EDGE OF THE TRENCH CUT AND TO THE NEAREST JOINT.

3. DOUBLE SAWCUT EDGES OF PAVEMENT FULL DEPTH PRIOR TO REMOVAL TO PREVENT DAMAGE TO ADJACENT SLABS AND FIXTURES.

4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL TREES AND SHRUBS IN PROJECT AREA FROM DAMAGE DUE TO CONSTRUCTION ACTIVITY UNLESS SHOWN ON THE PLANS OR DIRECTED BY THE OWNER'S REPRESENTATIVE.

5. REMOVAL AND DISPOSAL OF EXISTING TREES AND SHRUBS WITHIN CONSTRUCTION LIMITS SHALL BE INCIDENTAL TO THE PROJECT. STUMPS ARE TO BE GROUND TO TWO FEET BELOW FINISHED GRADE. TREES THAT QUALIFY FOR ENDANGERED BAT HABITAT ARE TO BE FELLED BETWEEN OCTOBER 1ST AND MARCH 31ST.

6. ALL FENCES WHICH ARE IMPACTED BY THIS PROJECT ARE TO BE REMOVED AND REPLACED TO AN EQUAL OR BETTER CONDITION. SALVAGED MATERIALS MAY BE USED UPON APPROVAL OF THE OWNER'S REPRESENTATIVE. FENCES SHALL NOT BE REMOVED UNTIL PROPERTY OWNER HAS BEEN NOTIFIED. TEMPORARY FENCING MAY BE REQUIRED OVERNIGHT DURING CONSTRUCTION AND SHOULD BE INCIDENTAL TO THE PROJECT.

7. CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK WITH THE OWNER'S REPRESENTATIVE TO ENSURE PROTECTION AND MAINTENANCE OF EXISTING SITE FEATURES NOT NOTED FOR REMOVAL.

8. THE DEMOLITION PLAN IS INTENDED TO SHOW REMOVAL OF KNOWN SITE FEATURES AND UTILITIES AS SHOWN ON THE SURVEY PROVIDED TO THE ENGINEER FOR DESIGN. THERE MAY BE OTHER SITE FEATURES, UTILITIES, STRUCTURES, AND MISCELLANEOUS ITEMS BOTH BURIED AND ABOVE GROUND THAT ARE WITHIN THE LIMITS OF WORK THAT MAY REQUIRE REMOVAL FOR THE PROPOSED SITE IMPROVEMENTS BUT THAT ARE NOT SHOWN HEREIN. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF SUCH ITEMS.

9. VOIDS LEFT BY ANY ITEM REMOVED (FENCE POST, UTILITIES, SIGN, ETC.) SHALL BE BACKFILLED IN ACCORDANCE WITH SUDAS SPECIFICATION AND THE PROJECT SPECIFICATIONS AND GEOTECHNICAL ENGINEERING REPORT.

10. AS SOON AS DEMOLITION WORK HAS BEEN COMPLETED, FINAL GRADE OF BACKFILL IN DEMOLITION AREAS SHALL BE COMPACTED PER SUDAS SPECIFICATIONS AND THE GEOTECHNICAL ENGINEERING REPORT TO PRESENT A NEAT, WELL DRAINED APPEARANCE, AND TO PREVENT WATER FROM DRAINING UNNECESSARILY ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL PROVIDE TEMPORARY DIVERSION SWALES OR OTHER MEANS OF MAINTAINING ADEQUATE SITE DRAINAGE.

11. ALL EXISTING SANITARY SEWERS, STORM SEWERS, WATER MAINS OR IRRIGATION LINES AND APPURTENANCES NOTED FOR REMOVAL WITHIN THE AREA OF THE PROPOSED CONSTRUCTION SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR. ALL ABANDONED SEWER LINES SHALL BE PLUGGED AT BOTH ENDS WITH A MINIMUM OF TWO (2) FEET LONG NON-SHRINK CONCRETE MORTAR PLUGS UNLESS OTHERWISE NOTED.

12. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF A FIELD OR DRAIN TILE IS ENCOUNTERED AND SHALL INDICATE THE METHOD OF RESOLVING THE CONFLICT. THE ENGINEER SHALL APPROVE THE PROPOSED METHOD. A RECORD OF THE LOCATION OF ALL FIELD TILE OR DRAIN PIPE ENCOUNTERED SHALL BE KEPT BY THE CONTRACTOR AND TURNED OVER TO THE OWNER AND/OR ENGINEER UPON COMPLETION OF THE PROJECT AND ACCURATELY SHOWN ON THE RECORD DRAWINGS. EXISTING FIELD TILE LINES ENCOUNTERED IN THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR IN ONE OF THE FOLLOWING WAYS:
    a. CONNECT TILE TO THE NEAREST STORM SEWER.
    b. DAYLIGHT TO FINISHED GROUND.
    c. REPAIR TILE AND MAINTAIN SERVICE.

EROSION CONTROL NOTES:

1. USE ALL AVAILABLE MEANS TO MINIMIZE THE AMOUNT OF SOIL EROSION CAUSED BY THE WORK OF THE PROJECT. THIS INCLUDES RESPONSIBILITY FOR MAINTENANCE OF ALL SOIL EROSION CONTROL DEVICES INDICATED.

2. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.

3. CONTROL DUST FROM ALL WORK AND STAGING AREAS.

4. ALL EROSION AND SEDIMENTATION CONTROL MEASURES AND DEVICES SHALL BE INSTALLED AND FUNCTIONAL BEFORE THE SITE IS OTHERWISE DISTURBED. THEY SHALL BE KEPT OPERATIONAL AND MAINTAINED CONTINUOUSLY THROUGHOUT THE PERIOD OF LAND DISTURBANCE UNTIL PERMANENT SITE STABILIZATION HAS BEEN ACHIEVED. SEE PLANS FOR MINIMUM EROSION AND SEDIMENT CONTROL MEASURES.

5. STABILIZE ALL DISTURBED AREAS IMMEDIATELY IF THEY REMAIN INACTIVE FOR 14 DAYS OR MORE WITH A TEMPORARY SEED MIX PER SUDAS SPECIFICATION 9010. TEMPORARY SEEDING SHALL BE INCIDENTIAL TO THE PROJECT.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION, PERIODIC CHECKING AND REINSTALLATION/MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES. EROSION CONTROL DEVICES SHALL BE CHECKED ONCE PER WEEK AND AFTER EACH RAINFALL TO ENSURE WORKING ORDER.

7. EROSION CONTROL, SWPPP, AND NPDES COMPLIANCE SHALL BE EXECUTED AND ADMINISTERED BY THE CONTRACTOR IN CONJUNCTION WITH THE BIG CREEK BEACH WATER QUALITY IMPROVEMENTS PROJECT. SEE BIG CREEK WATER QUALITY IMPROVEMENTS PLANS FOR ADDITIONAL DETAILS.

LEGEND

EXISTING	DESCRIPTION	PROPOSED
CP	CONTROL POINT	
	FLARED END SECTION	
	UTILITY END CAP	
	CLEANOUT	
J	JUNCTION BOX	J
S	SANITARY MANHOLE	S
W	WATER MANHOLE	W
	TRANSFORMER	
D	INTAKE - OPEN SIDED	D
	INTAKE - CIRCLE	
	DECIDUOUS TREE	
	LIGHT POST	
	STRUCTURE	
	SPOT ELEVATION	625.00
	MATCH EXISTING ELEVATION	625.00 ME
	SLOPE ARROW	2%
	FLOW ARROW	
	GRADING LIMITS	
	CLEARING LIMITS	
621	MINOR CONTOUR	621
620	MAJOR CONTOUR	620
E	ELECTRIC - UNDERGROUND	E
W	WATER MAIN	W
	SANITARY SEWER	
	SANITARY FORCE MAIN	
	STORM SEWER	
	CONCRETE SIDEWALK	
	SIDEWALK REMOVAL	
	TREE REMOVAL	
	NO CONSTRUCTION ACTIVITIES ALLOWED	

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DNR

BIG CREEK BEACH
WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES

BIG CREEK BEACH

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	2026/08/03
PROJECT NUMBER	2240003070
FIELD BOOK	–

CONSTRUCTION NOTES

C001

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GRADING NOTES:

1. ALL GRADING AND SITE PREPARATION WORK SHALL CONFORM WITH THE RECOMMENDATIONS AND SPECIFICATIONS CONTAINED IN THE GEOTECHNICAL REPORT AND SUDAS SECTION 2010.
2. GEOTECHNICAL SERVICES AND ALL TESTING, INSPECTION AND SUPERVISION OF SOIL QUALITY, UNSUITABLE SOIL REMOVAL AND ITS REPLACEMENT, AND OTHER SOILS RELATED OPERATIONS SHALL BE PROVIDED BY AN INDEPENDENT TESTING LABORATORY AND PAID FOR BY THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATING ALL TESTING AND INSPECTION SERVICES.
3. PROVIDE COMPACTION TESTS FOR AREAS UNDER PAVING. TESTING TO BE DONE BY AN INDEPENDENT TESTING LABORATORY PAID FOR BY THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATING ALL REQUIRED TESTING AND INSPECTION SERVICES.
4. STRIP EXISTING VEGETATION WITHIN THE PROJECT LIMITS AND AREAS TO RECEIVE FILL. HAUL OFF SITE BY CONTRACTOR.
5. STRIP EXISTING TOPSOIL 6 INCHES DEEP WITHIN THE PROJECT LIMITS AND AREAS TO RECEIVE FILL. STOCKPILE TOPSOIL FOR REUSE. EXCESS TOPSOIL MAY BE STOCKPILED ON SITE AT A LOCATION APPROVED BY THE OWNER'S REPRESENTATIVE. NOTE TOPSOIL DEPTHS MAY VARY ON-SITE.
6. PRIOR TO SUBGRADE PREPARATION, ANY EXISTING GRANULAR FILL SHALL BE REMOVED AND STOCKPILED FOR FUTURE USE.
7. REMOVE AND RECOMPACT AREAS OF SUBGRADE WHICH ARE SOFT OR UNSTABLE TO MEET SPECIFIED LIMITS FOR DENSITY AND MOISTURE CONTENT. PAVED AREAS TO BE COMPACTED TO 95% STANDARD PROCTOR.
8. SCARIFY AND RECOMPACT THE TOP 12 INCHES OF SUBGRADE IN ALL CUT AREAS AFTER ROUGH GRADING IS COMPLETED. COMPACT THE ENTIRE PAVING SUBGRADE TO 95% STANDARD PROCTOR DRY DENSITY TO WITHIN 12 INCHES OF FINAL SUBGRADE.
9. SUBGRADE PREPARATION SHALL BE A MINIMUM OF 1 FOOT DEEP AFTER FINE GRADING OR TRIMMING AND SHALL EXTEND TO A MINIMUM OF 2 FEET BEYOND THE EDGE OF THE PAVEMENT.
10. DO NOT PLACE, SPREAD, OR COMPACT ANY FILL MATERIAL DURING UNFAVORABLE WEATHER CONDITIONS AND DO NOT RESUME COMPACTION OPERATIONS UNTIL MOISTURE CONTENT AND DENSITY OF IN-PLACE FILL MATERIAL ARE WITHIN SPECIFIED LIMITS.
11. PLACE FILL MATERIAL IN 8 INCH MAXIMUM LIFTS. FILL COMPACTED TO 95% STANDARD PROCTOR DENSITY IN PAVED AREAS. FILLS PLACED BELOW LAWN AREAS SHALL BE COMPACTED TO 90% OF MATERIALS MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D698). REFER TO STRUCTURAL PLANS FOR COMPACTION FOR FILL UNDER BUILDING PAD, IF APPLICABLE.
12. FILL MATERIAL SHOULD CONSIST OF APPROVED MATERIALS WHICH SHALL BE SOIL OR SOIL AND ROCK MIXTURE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES. IT SHALL CONTAIN NO ROCKS OR LUMPS OF 6 INCHES IN GREATEST DIMENSION AND NOT MORE THAN 15% OF THE ROCKS OR LUMPS SHALL BE LARGER THAN 2-1/2 INCHES IN GREATEST DIMENSION.
13. MAINTAIN OPTIMUM MOISTURE CONTENT OF FILL MATERIALS TO ATTAIN REQUIRED COMPACTION DENSITY. REFER TO THE GEOTECHNICAL ENGINEERING REPORT FOR OPTIMUM MOISTURE CONTENT RANGES FOR FILL MATERIALS. CONTRACTOR IS RESPONSIBLE FOR CONDITIONING AND RECONDITIONING AS NEEDED. IT IS INCIDENTAL TO THE PROJECT. PLACE FILL MATERIAL OF LOW PLASTICITY COHESIVE SOILS WITHIN -2% TO +3% OF OPTIMUM MOISTURE CONTENT. FOR GRANULAR MATERIAL, THE ACCEPTABLE RANGE IS -3% TO +3% OF OPTIMUM MOISTURE CONTENT. CONTRACTOR IS RESPONSIBLE FOR CONDITIONING/RECONDITIONING AS NEEDED AT NO ADDITIONAL COST TO OWNER.
14. GRADING TOLERANCES ARE AS FOLLOWS:
    a. UNPAVED AREAS NEAR BUILDINGS, PARKING AREAS AND SIDEWALKS: +/- 0.10 FEET
    b. UNPAVED AREAS AWAY FROM BUILDINGS, PARKING AREAS AND SIDEWALKS: +/-0.15 FEET
    c. GRADING SURFACES OF FILL UNDER BUILDING SLAB: +0.04 FEET TO -0.10 FEET
    d. SUBGRADE SURFACES: +/- 0.15 FEET
19. EVENLY RESPREAD TOPSOIL STOCKPILE TO A MINIMUM 6 INCHES DEPTH WITHIN PROPOSED PERVIOUS AREAS.
20. PROPOSED ELEVATIONS INDICATE FINISHED GRADE CONDITIONS. FOR ROUGH GRADING ELEVATIONS ALLOW FOR THE THICKNESS OF THE PROPOSED PAVEMENT SECTION (ROADS, WALKS, DRIVE, ETC.) OR TOPSOIL AS INDICATED ON THE PLANS.
21. CONTRACTOR SHALL PROVIDE UNIFORM SLOPES BETWEEN NEW AND EXISTING GRADES AND AVOID ANY RIDGES AND/OR DEPRESSIONS, UNLESS CALLED OUT ON THE PLANS.
22. FINISH CONTOURS AND SPOT ELEVATIONS SHOWN ARE TO TOP OF PAVEMENT OR TO TOP OF TOPSOIL, UNLESS OTHERWISE NOTED.
23. UNSUITABLE SOILS MAY EXIST IN THE AREAS OF THE SITE REQUIRING FILL. THESE SOILS MAY NEED TO BE REMOVED AND REPLACED WITH STABILIZED SUBGRADE. STABILIZED SUBGRADE MATERIAL SHALL BE APPROVED BY THE ENGINEER/CITY/OWNER. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IF UNSUITABLE SOILS ARE ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION SHALL NOT PROCEED UNTIL UNSUITABLE SOILS ARE PROPERLY REMOVED AND REPLACED BY STABILIZED SUBGRADE MATERIALS TO THE SATISFACTION OF THE OWNER.

GENERAL UTILITY NOTES:

1. ALL UTILITY WORK, PUBLIC OR PRIVATE, SHALL BE DONE IN ACCORDANCE WITH SUDAS STANDARD SPECIFICATIONS AND DNR REQUIREMENTS.
2. TRENCH, EXCAVATION AND BACKFILL SHALL FOLLOW DIVISION 3 SUDAS SPECIFICATION SECTIONS.
3. DEWATERING IS INCIDENTAL TO THE PROJECT. THE CONTRACTOR SHALL MAKE PROVISIONS TO HANDLE WATER ENCOUNTERED DURING CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER'S REPRESENTATIVE OF THE PROPOSED METHOD OF DEWATERING.
4. ALL PROPOSED CONNECTIONS TO EXISTING UTILITY STRUCTURES OR PIPING SHALL BE IN ACCORDANCE WITH THE APPLICABLE GOVERNING AUTHORITY REQUIREMENTS AND SPECIFICATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL STORM FLOW ONSITE UNTIL NEW SYSTEM IS INSTALLED.
6. ALL STORM BENDS AND CONNECTIONS SHALL BE MANUFACTURED CONNECTIONS.
7. CONTACT FIRE DEPARTMENT OF ANY CHANGES THAT AFFECT FIRE/EMERGENCY.
8. THE CONTRACTOR SHALL MAINTAIN A RECORD DRAWING SET WITH WITNESS DIMENSIONS TO ALL CONNECTIONS. THESE DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE.

PAVEMENT GENERAL NOTES:

1. ALL DIMENSIONS AND CURB RADII SHOWN ARE MEASURED FROM BACK OF CURB TO BACK OF CURB/EDGE OF PAVEMENT TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
2. ALL SLOPES IN PAVEMENT SHALL BE UNIFORM TO AVOID PONDING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY ANY AREAS OF EXISTING OR PROPOSED PAVEMENTS THAT HAVE POTENTIAL TO POND WATER AND MAKE ANY ADJUSTMENTS NECESSARY TO ENSURE THAT WATER WILL POSITIVELY DRAIN ACROSS THE PAVING OR OVERLAY.
3. ALL SIDEWALKS SHALL BE CONSTRUCTED PER SUDAS SECTION 7030.
4. ALL PROPOSED PCC PAVEMENT SHALL BE PROTECTED ACCORDING TO SUDAS SECTION 7010-3.04.

STORM SEWER NOTES:

1. ALL STORM SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE NOTES IN THE PLANS AND THE STANDARDS, SPECIFICATIONS, CODES, AND ORDINANCES OF THE LOCAL GOVERNING AUTHORITIES. IN CASE OF CONFLICT, THE MORE STRINGENT CODE SHALL TAKE PRECEDENCE.
2. STORM SEWER PIPE AND STRUCTURES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH SUDAS DIVISIONS 4 AND 6.
3. HDPE AND PVC STORM SEWER PIPE BEDDING SHALL BE SUDAS DIVISION 3, SW-103 CLASS F-2, UNLESS NOTED OTHERWISE ON THE PLANS.

SURFACE RESTORATION:

1. ALL DISTURBED AREAS NOT PAVED OR HARD SURFACE ON THE SITE SHALL RECEIVE 6 INCHES OF TOPSOIL. SCARIFY AREAS TO RECEIVE TOPSOIL TO A DEPTH OF 6 INCHES. REMOVE ALL STONES, WOOD, AND OTHER DEBRIS LARGER THAN 3 INCHES FROM AREAS TO RECEIVE TOPSOIL. DO NOT COMPACT TOPSOIL.
2. ALL DISTURBED AREAS SHALL BE SEEDED, FERTILIZED, AND MULCHED IN ACCORDANCE WITH SUDAS SPECIFICATION SECTION 9010. SPRING SEEDING SHALL BE COMPLETED BETWEEN MARCH 1 AND MAY 31. FALL SEEDING SHALL BE COMPLETED BETWEEN AUGUST 10 AND SEPTEMBER 30.
3. ALL SOD SHALL FOLLOW SUDAS SPECIFICATION SECTION 9020.
4. CONTRACTOR TO SUBMIT PROPOSED SEED MIX, FERTILIZER, AND MULCH PRODUCTS FOR OWNER APPROVAL PRIOR TO APPLICATION.
5. ALL AREAS DISTURBED BY CONSTRUCTION, NOT DESIGNATED AS PLANTED, TO BE SEEDED USING SUDAS TYPE 1 SEED MIX.
6. ALL SEEDED AREAS SHALL BE MULCHED WITH HYDRAULIC MULCHING PER SUDAS SPECIFICATION SECTION 9010.2.07.B.
7. MAINTAIN ANY SEEDED AREAS UNTIL AN ADEQUATE STAND OF GRASS HAS BEEN ESTABLISHED. RESEED ANY AREAS AS NECESSARY DURING MAINTENANCE PERIOD.

PCC PAVEMENT NOTES:

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS AND 3,000 PSI AT 7 DAYS, WITH 6-1/2 PERCENT± 1/2% AIR ENTERTAINMENT AND LIMESTONE AGGREGATE 1-1/2 INCH MAXIMUM SIZE. SLUMP SHALL BE 1/2" - 4". PROVIDE ENGINEER WITH CONCRETE MIX DESIGN FOR APPROVAL.
2. MATERIALS AND MIXING FOR ALL CONCRETE WORK, UNLESS OTHERWISE SPECIFIED, SHALL CONFORM TO SUDAS SPECIFICATION 7010 FOR AIR-ENTRAINED TYPE C-4 MIX WITH TYPE I CEMENT. M-MIX CAN BE USED WITH APPROVAL OF ENGINEER.
3. COARSE AGGREGATE DURABILITY SHALL BE CLASS II.
4. ONE SET OF TEST CYLINDERS REQUIRED FOR EACH 100 C.Y. OR ONE PER DAY IF LESS THAN 100 CY FROM SAME READY MIX PLANT. TESTING TO BE COMPLETED BY AN INDEPENDENT TESTING LABORATORY AND PAID FOR BY OWNER. CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL REQUIRED TESTING AND GEOTECHNICAL WORK. SUBMIT ALL REPORTS TO THE ENGINEER.
5. PER SUDAS SECTION 7010, CONTRACTOR SHALL APPLY WHITE PIGMENT LIQUID CURING COMPOUND IN A FINE SPRAY TO FORM CONTINUOUS UNIFORM FILM AFTER FINISHING AND SURFACE MOISTURE HAS DISAPPEARED, OR WITHIN 30 MINUTES OF PLACEMENT.
6. COLD-WEATHER PLACEMENT: COMPLY WITH SUDAS SECTION 7010 AND AS FOLLOWS. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH THAT COULD BE CAUSED BY FROST, FREEZING ACTIONS, OR LOW TEMPERATURES.
    a. WHEN AVERAGE HIGH AND LOW TEMPERATURE IS EXPECTED TO FALL BELOW 40 DEG F FOR THREE SUCCESSIVE DAYS, MAINTAIN DELIVERED CONCRETE MIXTURE TEMPERATURE WITHIN THE TEMPERATURE RANGE REQUIRED BY SUDAS SECTION 7010.
    b. DO NOT USE FROZEN MATERIALS OR MATERIALS CONTAINING ICE OR SNOW. DO NOT PLACE CONCRETE ON FROZEN SUBGRADE OR ON SUBGRADE CONTAINING FROZEN MATERIALS.
    c. DO NOT USE CALCIUM CHLORIDE, SALT, OR OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS UNLESS OTHERWISE SPECIFIED AND APPROVED IN MIXTURE DESIGNS.
7. CURBS SHALL BE CAST INTEGRAL WITH CONCRETE PAVEMENT UNLESS NOTED OTHERWISE. EDGES SHALL BE ROUNDED BUT NOT ROLLED.
8. THE CONTRACTOR SHALL PROVIDE THE ENGINEER A PAVEMENT POURING DIAGRAM TO THE OWNER AND ENGINEER FOR APPROVAL PRIOR TO PAVEMENT OPERATIONS. DESIGN FILE AND ADDITIONAL PAVEMENT ELEVATIONS AT JOINTS CAN BE COORDINATED WITH ENGINEER TO FACILITATE STAKING, LAYOUT, AND DESIGNED DRAINAGE PATTERNS UPON REQUEST.

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DNR

BIG CREEK BEACH
WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
BIG CREEK BEACH

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	2026/08/03
PROJECT NUMBER	2240003070
FIELD BOOK	—

CONSTRUCTION NOTES

C002

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ESTIMATED PROJECT QUANTITIES

ITEM NO.	SPECIFICATION	ITEM	UNIT	QUANTITIES	AS-BUILT
		BEACH IMPROVEMENTS			
		DIVISION 2 - EARTHWORK			
1	2010, 1.08, C	CLEARING AND GRUBBING	LS	1	
2	2010, 1.08, D, 1	TOPSOIL, ON-SITE	CY	810	
3	2010, 1.08, E	EXCAVATION, CLASS 10, ROUGH GRADING	CY	820	
4	2010, 1.08, G	SUBGRADE PREPARATION	SY	1,203	
5	2010, 1.08, J	SUBBASE, MODIFIED, 6"	SY	868	
6	2010, 1.08, K, 3, A	REMOVAL OF KNOWN TRENCH DRAIN	LS	1	
		DIVISION 4 - SEWERS AND DRAINS			
7	4020, 1.08, A, 1	STORM SEWER, TRENCHED, PVC, 6"	LF	113	
8	4020, 1.08, A, 1	STORM SEWER, TRENCHED, PVC, 12"	LF	1,347	
9	4020, 1.08, A, 1	STORM SEWER, TRENCHED, RCP, 12"	LF	199	
10	4030, 1.08, B	FLARED END SECTION, RCP, 12"	EA	1	
		DIVISION 6 - STRUCTURES FOR SANITARY AND STORM SEWERS			
11	SPECIAL	WATER MAIN ADJUSTMENT	EA	1	
12	6010, 1.08, A	MANHOLE, SW-401, 48"	EA	6	
13	6010, 1.08, B	INTAKE, SW-512, 18"	EA	5	
14	6010, 1.08, B	INTAKE, CLEANOUT	EA	6	
15	SPECIAL	BUILDING ROOF DRAINAGE, GUTTERS, DOWNSPOUTS, AND FASCIA	EA	6	
		DIVISION 7 - STREETS AND RELATED WORK			
16	7030, 1.08, A, 1	REMOVAL OF SIDEWALK	SY	335	
17	7030, 1.08, A, 1	REMOVAL OF ASPHALT TRAIL	SY	620	
18	7030, 1.08, A, 2	SIDEWALK, PCC, 5"	SY	335	
19	7030, 1.08, A, 2	PCC TRAIL, 6"	SY	620	
		DIVISION 9 - SITE WORK AND LANDSCAPING			
20	9010,1.08, A	SEEDING, FERTILIZING, AND MULCHING	AC	1	
21	9040, 1.08, A, 1	SWPPP ADMINISTRATION	LS	1	
22	9040, 1.08, F, 1	WATTLE	LF	810	
23	9040, 1.08, F, 1	INTAKE PROTECTION	EA	6	
24	9040, 1.08, J	RIP RAP, CLASS 'E'	TON	50	
		DIVISION 11 - MISCELLANEOUS			
25	11,020, 1.08, A	MOBILIZATION	LS	1	
		PARKING LOT IMPROVEMENTS			
		DIVISION 2 - EARTHWORK			
26	2010, 1.08, C	CLEARING AND GRUBBING	LS	1	
27	2010, 1.08, D, 1	TOPSOIL, ON-SITE	CY	1,075	
28	2010, 1.08, E	EXCAVATION, CLASS 10, ROUGH GRADING	CY	5,412	
29	2010, 1.08, K, 1	REMOVAL OF 15" RCP FES	EA	1	
30	2010, 1.08, K, 3, A	REMOVAL OF 15" RCP	LF	60	
		DIVISION 4 - SEWERS AND DRAINS			
31	4020, 1.08, A, 1	STORM SEWER, TRENCHED, RCP, 15"	LF	81	
32	4020, 1.08, A, 1	STORM SEWER, TRENCHED, RCP, 24"	LF	24	
33	4030, 1.08, B	FLARED END SECTION, RCP, 15" WITH ORIFICE PLATE	EA	1	
34	4030, 1.08, B	FLARED END SECTION, RCP, 24"	EA	1	
		DIVISION 6 - STRUCTURES FOR SANITARY AND STORM SEWERS			
35	6010, 1.08, A	MANHOLE, SW-401, 48"	EA	1	
36	6010, 1.08, A	MANHOLE, SW-513, 36" X 36"	EA	1	
37	6010, 1.08, E	INTAKE ADJUSTMENT, MINOR SW-511	EA	1	
		DIVISION 7 - STREETS AND RELATED WORK			
38	7030, 1.08, E	PCC PAVEMENT, 6"	SY	128	
39	7040, 1.08, H	PAVEMENT REMOVAL	SY	128	
		DIVISION 9 - SITE WORK AND LANDSCAPING			
40	9010,1.08, A	SEEDING, FERTILIZING, AND MULCHING	AC	1.4	
41	9040, 1.08, A, 1	EROSION CONTROL ITEMS	LS	1	
42	9040, 1.08, A, 2	SWPPP ADMINISTRATION	LS	1	
43	9040, 1.08, J	RIP RAP, CLASS 'E'	TON	280	
		DIVISION 11 - MISCELLANEOUS			
44	11,020, 1.08, A	MOBILIZATION	LS	1	

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DNR

BIG CREEK BEACH
WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
BIG CREEK BEACH

DRAWN BY	DRS
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PROJECT QUANTITIES

C003

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ESTIMATE REFERENCE INFORMATION

ITEM NO.	SPECIFICATION	DESCRIPTION
		BEACH IMPROVEMENTS
1	2010, 1.08, C	**CLEARING AND GRUBBING**
		REFER TO SHEETS CD01 FOR LIMITS. ITEM INCLUDES REMOVING AND DISPOSING ALL MATERIALS AND FURNISHING AND PLACING BACKFILL MATERIAL IN AREA WHERE ROOTS HAVE BEEN REMOVED
2	2010, 1.08, D, 1	**TOPSOIL, ON-SITE**
		REFER TO SHEETS C200-C203 FOR LIMITS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS REQUIRED TO STRIP, STOCKPILE, AND RESPREAD 6" OF TOPSOIL WITHIN THE GRADING LIMITS. PREPARING THE TOPSOIL PLACEMENT AREA BY TILLAGE OR RIPPING; ADDITIONAL TILLAGE TO ADDRESS COMPACTION DURING PLACEMENT; AND REMOVAL OF CLODS, ROOTS, STONES, AND OTHER UNDESIRABLE MATERIALS IS INCIDENTAL TO THIS ITEM.
3	2010, 1.08, E	**EXCAVATION, CLASS 10, ROUGH GRADING**
		REFER TO SHEETS C200-C203 FOR LIMITS AND DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED TO COMPLETE ROUGH GRADING OF THE SITE. SITE PREPARATION FOR, AND THE CONSTRUCTION OF, EMBANKMENT, FILLS, SHOULDER BACKFILL, AND BACKFILL BEHIND CURBS, OVERHAUL, FINISHING THE SOIL SURFACE, REPAIR OR REPLACEMENT OF ANY FENCES THAT HAVE BEEN UNNECESSARILY DAMAGED OR REMOVED IS INCIDENTAL TO THIS ITEM. STRIPPING AND RESPREADING OF TOPSOIL IS NOT INCLUDED IN THIS ITEM.
4	2010, 1.08, G	**SUBGRADE PREPARATION**
		REFER TO SHEET C100-C103 FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EXCAVATING, MANIPULATING, REPLACING, COMPACTING, AND TRIMMING TO THE PROPER GRADE.
5	2010, 1.08, J	**SUBBASE, MODIFIED, 6"**
		REFER TO SHEET C100-C103 FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL FURNISHING, PLACING, COMPACTING, AND TRIMMING TO THE PROPER GRADE.
6	2010, 1.08, K, 3, A	**REMOVAL OF KNOWN TRENCH DRAIN**
		REFER TO SHEET CD01 FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE REMOVAL AND DISPOSAL OF EXISTING TRENCH DRAINS AND ASSOCIATED APPURTENANCES. CAPPING AND ABANDONMENT OF EXISTING STORM SEWER INFRASTRUCTURE SHOWN ON SHEET CD01 SHALL CONSIST OF PERMANENTLY PLUGGING THE PIPE AND ABANDONING IT IN PLACE UNLESS OTHERWISE NOTED. WORK INCLUDES EXCAVATION AS REQUIRED, REMOVAL OF STRUCTURES, PLUGGING OF PIPES, BACKFILLING, COMPACTION, AND SURFACE RESTORATION. ALL MATERIALS, LABOR, AND OPERATIONS NECESSARY TO COMPLETE STORM SEWER CAP AND ABANDONMENT ARE INCIDENTAL TO THIS ITEM, AND NO SEPARATE PAYMENT WILL BE MADE.
7	4020, 1.08, A, 1	**STORM SEWER, TRENCHED, PVC, 6"**
		REFER TO SHEETS C300-C304 FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 6" PVC STORM SEWER PIPE. TRENCH EXCAVATION; DEWATERING; FURNISHING AND INSTALLING PIPE; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; WYES AND OTHER FITTINGS; PIPE JOINTS; PIPE CONNECTIONS; TESTING; AND INSPECTION IS INCIDENTAL TO THIS ITEM.
8	4020, 1.08, A, 1	**STORM SEWER, TRENCHED, PVC, 12"**
		REFER TO SHEETS C300-C304 FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 12" PVC STORM SEWER PIPES. TRENCH EXCAVATION; DEWATERING; FURNISHING AND INSTALLING PIPE; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; WYES AND OTHER FITTINGS; PIPE JOINTS; PIPE CONNECTIONS; TESTING; AND INSPECTION IS INCIDENTAL TO THIS ITEM.
9	4020, 1.08, A, 1	**STORM SEWER, TRENCHED, RCP, 12"**
		REFER TO SHEETS C300-C304 FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 12" RCP WITH TIED JOINTS STORM SEWER PIPES. TRENCH EXCAVATION; DEWATERING; FURNISHING AND INSTALLING PIPE; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; WYES AND OTHER FITTINGS; PIPE JOINTS; PIPE CONNECTIONS; TESTING; AND INSPECTION IS INCIDENTAL TO THIS ITEM. PROVIDE TIED JOINTS FOR RCP AT LOCATIONS PER MANUFACTURER'S RECOMMENDATIONS.
10	4030, 1.08, B	**FLARED END SECTION, RCP, 12"**
		REFER TO SHEETS C300-C304 FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 12" RCP FLARED END SECTION. TRENCH EXCAVATION; DEWATERING; FURNISHING AND INSTALLING THE END SECTION; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; CONNECTORS; AND OTHER APPURTENANCES ARE INCIDENTAL TO THIS ITEM. THE ADDITIONAL DREDGING AROUND AND DOWNSTREAM OF THE FES SHOWN ON C303 AND THE COST TO FURNISH AND INSTALL THE CONCRETE FOOTING ARE ALSO CONSIDERED INCIDENTAL TO THIS ITEM.
11	SPECIAL	**WATER MAIN ADJUSTMENT**
		REFER TO SHEET C302 FOR THE LOCATION. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR ADJUSTMENT OF EXISTING WATER MAIN AND APPURTENANCES AS REQUIRED TO ACCOMMODATE PROPOSED STORM SEWER IMPROVEMENTS. WORK INCLUDES, BUT IS NOT LIMITED TO, TEMPORARY SHUTDOWNS, SAW CUTTING, EXCAVATION, REMOVAL AND REINSTALLATION OR LOWERING OF EXISTING WATER MAIN, FITTINGS, AND APPURTENANCES; TEMPORARY AND PERMANENT SUPPORT; CONNECTIONS; BACKFILL AND COMPACTION; RESTORATION OF DISTURBED AREAS; AND COORDINATION WITH THE WATER UTILITY.
12	6010, 1.08, A	**MANHOLE, SW-401, 48"**
		REFER TO SHEETS C300-C304 FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 48" SW-401 MANHOLE. EXCAVATION; FURNISHING AND INSTALLING PIPE; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; BASE; STRUCTURAL CONCRETE; REINFORCING STEEL; PRECAST UNITS (IF USED); CONCRETE FILLETS; PIPE CONNECTIONS; CASTINGS; AND ADJUSTMENT RINGS ARE INCIDENTAL TO THIS ITEM.
13	6010, 1.08, B	**INTAKE, SW-512, 18"**
		REFER TO SHEETS C300-C304 FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 18" SW-512 INTAKES. EXCAVATION; FURNISHING AND INSTALLING PIPE; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; BASE; STRUCTURAL CONCRETE; REINFORCING STEEL; PRECAST UNITS (IF USED); CONCRETE FILLETS; PIPE CONNECTIONS; CASTINGS; AND ADJUSTMENT RINGS ARE INCIDENTAL TO THIS ITEM.
14	6010, 1.08, B	**INTAKE, CLEANOUT**
		REFER TO SHEETS C300–C304 FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF STORM SEWER CLEANOUT INTAKES. WORK INCLUDES EXCAVATION; FURNISHING AND INSTALLING CLEANOUT STRUCTURES, CASTINGS, AND LIDS; CONNECTION TO STORM SEWER PIPE; BEDDING; BACKFILL AND COMPACTION; AND RESTORATION OF DISTURBED AREAS. ALL INCIDENTAL MATERIALS AND APPURTENANCES NECESSARY TO COMPLETE THE INSTALLATION ARE INCLUDED IN THIS ITEM.
15	SPECIAL	**BUILDING ROOF DRAINAGE, GUTTERS, DOWNSPOUTS, AND FASCIA**
		REFER TO SHEETS C301–C302 FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR REMOVAL OF EXISTING FASCIA AND INSTALLATION OF NEW FASCIA AND BUILDING ROOF DRAINAGE SYSTEMS INCLUDING GUTTERS, DOWNSPOUTS, AND CONNECTIONS TO PROPOSED STORM SEWER. WORK INCLUDES REMOVING AND DISPOSING OF EXISTING FASCIA AND FURNISHING AND INSTALLING NEW FASCIA; FURNISHING AND INSTALLING GUTTERS AND DOWNSPOUTS OF VARYING SIZES AND MATERIALS; CONNECTION TO 6-INCH PVC STORM PIPE BELOW GRADE; FITTINGS; CLEANOUTS; TRENCH EXCAVATION; BACKFILL AND COMPACTION; AND RESTORATION OF DISTURBED AREAS. ALL INCIDENTAL MATERIALS AND APPURTENANCES REQUIRED TO COMPLETE THE WORK ARE INCLUDED IN THIS ITEM.
16	7030, 1.08, A, 1	**REMOVAL OF SIDEWALK**
		REFER TO SHEET CD01 FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE REMOVAL OF SIDEWALK PAVEMENT. SAWING, HAULING, AND DISPOSAL OF MATERIALS REMOVED IS INCIDENTAL TO THIS ITEM.
17	7030, 1.08, A, 1	**REMOVAL OF ASPHALT TRAIL**
		REFER TO SHEET CD01 FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE REMOVAL OF ASPHALT TRAIL. SAWING, HAULING, AND DISPOSAL OF MATERIALS REMOVED IS INCIDENTAL TO THIS ITEM.
18	7030, 1.08, A, 2	**SIDEWALK, PCC, 5"**
		REFER TO SHEET C100-C103 FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE CONSTRUCTION OF 5" PCC SIDEWALK PAVING TO THE GRADES SHOWN ON THE PLAN. MINOR GRADE ADJUSTMENTS AT DRIVEWAYS AND OTHER INTERSECTIONS, FORMWORK, ADDITIONAL THICKNESS AT THICKENED EDGES, DOWELING TO ADJACENT PAVEMENT, JOINTING, SAMPLING, SLOPE AND SMOOTHNESS TESTING AND CORRECTION, AND TESTING ARE INCIDENTAL TO THIS ITEM. SUBGRADE PREPARATION AND SUBBASE ARE PAID FOR UNDER SEPARATE BID ITEMS AND ARE NOT INCLUDED IN THIS ITEM.
19	7030, 1.08, A, 2	**PCC TRAIL, 6"**
		REFER TO SHEET C100-C103 FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE CONSTRUCTION OF 6" PCC TRAIL PAVING TO THE GRADES SHOWN ON THE PLAN. MINOR GRADE ADJUSTMENTS AT DRIVEWAYS AND OTHER INTERSECTIONS, FORMWORK, ADDITIONAL THICKNESS AT THICKENED EDGES, DOWELING TO ADJACENT PAVEMENT, JOINTING, SAMPLING, SLOPE AND SMOOTHNESS TESTING AND CORRECTION, AND TESTING ARE INCIDENTAL TO THIS ITEM. SUBGRADE PREPARATION AND SUBBASE ARE PAID FOR UNDER SEPARATE BID ITEMS AND ARE NOT INCLUDED IN THIS ITEM.
20	9010,1.08, A	**SEEDING, FERTILIZING, AND MULCHING**
		REFER TO SHEET C250 FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR RESTORATION OF DISTURBED AREAS WITH SUDAS TYPE 1 SEEDING. REMOVAL OF ROCK AND OTHER DEBRIS FROM THE AREA; REPAIRING RILLS AND WASHES; PREPARING THE SEEDBED; FURNISHING AND PLACING SEED, INCLUDING ANY TREATMENT REQUIRED; FURNISHING AND PLACING FERTILIZER AND MULCH; AND FURNISHING WATER AND OTHER CARE DURING THE CARE PERIOD; FURNISHING, APPLYING, AND INCORPORATING FERTILIZER TO THE AREA TO BE SEEDED. FURNISHING, APPLYING, AND INCORPORATING MULCH TO THE AREA TO BE SEEDED IS INCIDENTAL TO THIS ITEM. SEEDING, FERTILIZER, AND MULCH REQUIRED FOR THE RESTORATION OF AREAS DISTURBED OUTSIDE OF THE PROJECT LIMITS IS INCIDENTAL TO THIS ITEM.
21	9040, 1.08, A, 1	**SWPPP ADMINISTRATION**
		ALL WORK REQUIRED TO COMPLY WITH THE ADMINISTRATIVE PROVISIONS OF THE IOWA DNR NPDES GENERAL PERMIT NO. 2; INCLUDING RECORD KEEPING, DOCUMENTATION, UPDATING THE SWPPP, FILING THE NOTICE OF DISCONTINUATION, ETC. ITEM ALSO INCLUDES WEEKLY INSPECTIONS REQUIRED TO SATISFY THE PROVISIONS OF GENERAL PERMIT NO. 2, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS. THE SWPPP AND NPDES PERMIT SHALL BE ADMINISTERED AND EXECUTED BY THE CONTRACTOR IN CONJUNCTION WITH THE BIG CREEK BEACH WATERSHED BMPS PROJECT.
22	9040, 1.08, F, 1	**WATTLE**
		REFER TO SHEET C250 FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF EROSION CONTROL WATTLES. ANCHORING STAKES; MAINTENANCE THROUGHOUT CONSTRUCTION; REPAIR AND REPLACEMENT OF DAMAGED OR DEFICIENT WATTLES ARE INCIDENTAL TO THIS ITEM.
23	9040, 1.08, F, 1	**INTAKE PROTECTION**
		REFER TO SHEET C250 FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION TEMPORARY INTAKE PROTECTION. ANCHORING STAKES; MAINTENANCE THROUGHOUT CONSTRUCTION; CLEANOUT; REPAIR AND REPLACEMENT OF DAMAGED OR DEFICIENT INTAKE PROTECTION ARE INCIDENTAL TO THIS ITEM.
24	9040, 1.08, J	**RIP RAP, CLASS 'E'**
		REFER TO SHEETS C300-C304 FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE CONSTRUCTION OF RIP RAP OUTLET PROTECTION AT FLARED END SECTIONS. ENGINEERING FABRIC AND MINOR GRADING AROUND THE FLARED END SECTIONS AS REQUIRED TO PROVIDE COVER OVER THE PIPE AND SMOOTH, POSITIVE CONNECTION TO THE DOWNSTREAM CHANNEL IS INCIDENTAL TO THIS ITEM.
25	11,020, 1.08, A	**MOBILIZATION**
		INCLUDES, BUT NOT LIMITED TO, THE MOVEMENT OF PERSONNEL, EQUIPMENT, AND SUPPLIES TO THE PROJECT SITE; THE ESTABLISHMENT OF OFFICES, BUILDINGS, AND OTHER FACILITIES NECESSARY FOR THE PROJECT; AND BONDING, PERMITS, AND OTHER EXPENSES INCURRED PRIOR TO CONSTRUCTION. TEMPORARY SIGNAGE IS INCIDENTAL TO THIS ITEM.
		PARKING LOT IMPROVEMENTS
26	2010, 1.08, C	**CLEARING AND GRUBBING**
		REFER TO SHEETS CD01 - P FOR THE LIMITS. ITEM INCLUDES REMOVING AND DISPOSING ALL MATERIALS AND FURNISHING AND PLACING BACKFILL MATERIAL IN AREA WHERE ROOTS HAVE BEEN REMOVED
27	2010, 1.08, D, 1	**TOPSOIL, ON-SITE**
		REFER TO SHEET C201 - P FOR THE LIMITS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS REQUIRED TO STRIP, STOCKPILE, AND RESPREAD 6" OF TOPSOIL WITHIN THE GRADING LIMITS. PREPARING THE TOPSOIL PLACEMENT AREA BY TILLAGE OR RIPPING; ADDITIONAL TILLAGE TO ADDRESS COMPACTION DURING PLACEMENT; AND REMOVAL OF CLODS, ROOTS, STONES, AND OTHER UNDESIRABLE MATERIALS IS INCIDENTAL TO THIS ITEM.
28	2010, 1.08, E	**EXCAVATION, CLASS 10, ROUGH GRADING**
		REFER TO SHEET C201 - P FOR THE LIMITS AND DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED TO COMPLETE ROUGH GRADING OF THE SITE. SITE PREPARATION FOR, AND THE CONSTRUCTION OF, EMBANKMENT, FILLS, SHOULDER BACKFILL, AND BACKFILL BEHIND CURBS, OVERHAUL, FINISHING THE SOIL SURFACE, REPAIR OR REPLACEMENT OF ANY FENCES THAT HAVE BEEN UNNECESSARILY DAMAGED OR REMOVED IS INCIDENTAL TO THIS ITEM. STRIPPING AND RESPREADING OF TOPSOIL IS NOT INCLUDED IN THIS ITEM.
29	2010, 1.08, K, 1	**REMOVAL OF 15" RCP FES**
		REFER TO SHEET CD01 - P FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE REMOVAL AND DISPOSAL OF THE FLARED END SECTION.
30	2010, 1.08, K, 3, A	**REMOVAL OF 15" RCP**
		REFER TO SHEET CD01 - P FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE REMOVAL AND DISPOSAL OF THE REINFORCED CONCRETE PIPE.
31	4020, 1.08, A, 1	**STORM SEWER, TRENCHED, RCP, 15"**
		REFER TO SHEET C301 - P FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 15" RCP STORM SEWER PIPE. TRENCH EXCAVATION; DEWATERING; FURNISHING AND INSTALLING PIPE; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; JOINT WRAPPING; WYES AND OTHER FITTINGS; PIPE JOINTS; PIPE CONNECTIONS; TESTING; AND INSPECTION IS INCIDENTAL TO THIS ITEM.
32	4020, 1.08, A, 1	**STORM SEWER, TRENCHED, RCP, 24"**
		REFER TO SHEET C301 - P FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 24" RCP STORM SEWER PIPE. TRENCH EXCAVATION; DEWATERING; FURNISHING AND INSTALLING PIPE; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; JOINT WRAPPING; WYES AND OTHER FITTINGS; PIPE JOINTS; PIPE CONNECTIONS; TESTING; AND INSPECTION IS INCIDENTAL TO THIS ITEM.
33	4030, 1.08, B	**FLARED END SECTION, RCP, 15" WITH ORIFICE PLATE**
		REFER TO SHEET C301 - P FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 15" RCP FLARED END SECTION WITH ORIFICE PLATE FOR FLOW CONTROL. TRENCH EXCAVATION; DEWATERING; FURNISHING AND INSTALLING THE END SECTION AND ORIFICE PLATE; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; CONNECTORS; FASTENERS; SEALANTS; AND OTHER APPURTENANCES REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION ARE INCIDENTAL TO THIS ITEM.
34	4030, 1.08, B	**FLARED END SECTION, RCP, 24"**
		REFER TO SHEET C301- P FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 24" RCP FLARED END SECTION. TRENCH EXCAVATION; DEWATERING; FURNISHING AND INSTALLING THE END SECTION; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; CONNECTORS; FASTENERS; SEALANTS; AND OTHER APPURTENANCES REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION ARE INCIDENTAL TO THIS ITEM.
35	6010, 1.08, A	**MANHOLE, SW-401, 48"**
		REFER TO SHEET C301 - P FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 48" SW-401 MANHOLE. EXCAVATION; FURNISHING AND INSTALLING PIPE; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; BASE; STRUCTURAL CONCRETE; REINFORCING STEEL; PRECAST UNITS (IF USED); CONCRETE FILLETS; PIPE CONNECTIONS; CASTINGS; AND ADJUSTMENT RINGS ARE INCIDENTAL TO THIS ITEM.
36	6010, 1.08, A	**MANHOLE, SW-513, 36" X 36"**
		REFER TO SHEET C301 - P FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF 36" x 36" SW-513 MANHOLE. EXCAVATION; FURNISHING AND INSTALLING PIPE; FURNISHING, PLACING, AND COMPACTING BEDDING AND BACKFILL MATERIAL; BASE; STRUCTURAL CONCRETE; REINFORCING STEEL; PRECAST UNITS (IF USED); CONCRETE FILLETS; PIPE CONNECTIONS; CASTINGS; AND ADJUSTMENT RINGS ARE INCIDENTAL TO THIS ITEM.
37	6010, 1.08, E	**INTAKE ADJUSTMENT, MINOR SW-511**
		REFER TO SHEET C301 - P FOR THE LOCATION AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE MODIFICATION OF EXISTING SW-511 INTAKE STRUCTURE. REMOVAL AND REINSTALLATION OF EXISTING CASTING, ADJUSTMENT RINGS, TOP SECTIONS, AND RISERS; EXCAVATION; CONCRETE AND REINFORCING STEEL OR PRECAST SECTIONS; FURNISHING AND INSTALLING NEW TRASH GUARDS; PLACING BACKFILL MATERIAL; AND COMPACTION.
38	7030, 1.08, E	**PCC PAVEMENT, 6"**
		REFER TO SHEET C201 - P FOR LOCATIONS AND SHEET C501 FOR DETAILS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE CONSTRUCTION OF 6" PCC PAVING TO THE GRADES SHOWN ON THE PLAN. MINOR GRADE ADJUSTMENTS AT DRIVEWAYS AND OTHER INTERSECTIONS, SUBGRADE PREPARATION, FORMWORK, DOWELING TO ADJACENT PAVEMENT, JOINTING, SAMPLING, SLOPE AND SMOOTHNESS TESTING AND CORRECTION, AND TESTING ARE INCIDENTAL TO THIS ITEM.
39	7040, 1.08, H	**PAVEMENT REMOVAL**
		REFER TO SHEET CD01 - P FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE REMOVAL OF ASPHALT AND CONCRETE PAVEMENT. SAWING, HAULING, AND DISPOSAL OF MATERIALS REMOVED IS INCIDENTAL TO THIS ITEM.
40	9010,1.08, A	**SEEDING, FERTILIZING, AND MULCHING**
		REFER TO SHEET C250 - P FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR RESTORATION OF DISTURBED AREAS WITH SUDAS TYPE 1 SEEDING. REMOVAL OF ROCK AND OTHER DEBRIS FROM THE AREA; REPAIRING RILLS AND WASHES; PREPARING THE SEEDBED; FURNISHING AND PLACING SEED, INCLUDING ANY TREATMENT REQUIRED; FURNISHING AND PLACING FERTILIZER AND MULCH; AND FURNISHING WATER AND OTHER CARE DURING THE CARE PERIOD; FURNISHING, APPLYING, AND INCORPORATING FERTILIZER TO THE AREA TO BE SEEDED. FURNISHING, APPLYING, AND INCORPORATING MULCH TO THE AREA TO BE SEEDED IS INCIDENTAL TO THIS ITEM. SEEDING, FERTILIZER, AND MULCH REQUIRED FOR THE RESTORATION OF AREAS DISTURBED OUTSIDE OF THE PROJECT LIMITS IS INCIDENTAL TO THIS ITEM.
41	9040, 1.08, A, 1	**EROSION CONTROL ITEMS**
		REFER TO SHEET C250 - P FOR LOCATIONS. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE INSTALLATION OF EROSION CONTROL WATTLES AND INTAKE PROTECTION. ANCHORING STAKES; MAINTENCENCE THROUGHOUT CONSTRUCTION; REPAIR AND REPLACEMENT OF DAMAGED OR DEFICIENT EROSION CONTROL ITEMS ARE INCIDENTAL TO THIS ITEM.
42	9040, 1.08, A, 2	**SWPPP ADMINISTRATION**
		ALL WORK REQUIRED TO COMPLY WITH THE ADMINISTRATIVE PROVISIONS OF THE IOWA DNR NPDES GENERAL PERMIT NO. 2; INCLUDING RECORD KEEPING, DOCUMENTATION, UPDATING THE SWPPP, FILING THE NOTICE OF DISCONTINUATION, ETC. ITEM ALSO INCLUDES WEEKLY INSPECTIONS REQUIRED TO SATISFY THE PROVISIONS OF GENERAL PERMIT NO. 2, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS. THE SWPPP AND NPDES PERMIT SHALL BE ADMINISTERED AND EXECUTED BY THE CONTRACTOR IN CONJUNCTION WITH THE BIG CREEK BEACH WATERSHED BMPS PROJECT.
43	9040, 1.08, J	**RIP RAP, CLASS 'E'**
		REFER TO SHEET C201 - P FOR THE LOCATION. ITEM INCLUDES ALL EQUIPMENT, LABOR, AND MATERIAL REQUIRED FOR THE CONSTRUCTION OF RIP RAP OUTLET PROTECTION AT FLARED END SECTIONS. ENGINEERING FABRIC AND MINOR GRADING AROUND THE FLARED END SECTIONS AS REQUIRED TO PROVIDE COVER OVER THE PIPE AND SMOOTH, POSITIVE CONNECTION TO THE DOWNSTREAM CHANNEL IS INCIDENTAL TO THIS ITEM.
44	11,020, 1.08, A	**MOBILIZATION**
		INCLUDES, BUT NOT LIMITED TO, THE MOVEMENT OF PERSONNEL, EQUIPMENT, AND SUPPLIES TO THE PROJECT SITE; THE ESTABLISHMENT OF OFFICES, BUILDINGS, AND OTHER FACILITIES NECESSARY FOR THE PROJECT; AND BONDING, PERMITS, AND OTHER EXPENSES INCURRED PRIOR TO CONSTRUCTION. TEMPORARY SIGNAGE IS INCIDENTAL TO THIS ITEM.

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DNR

BIG CREEK BEACH
WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
BIG CREEK BEACH

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	2026/08/03
PROJECT NUMBER	2240003070
FIELD BOOK	—

ESTIMATE REFERENCE INFORMATION

C004

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PROJECT STAGING AREA

PROTECT EXISTING PCC SIDEWALK (TYP)

24" ST (CMP)

15" ST (RCP)

18" ST (RCP)

15" ST (CMP)

PROTECT EXISTING ELECTRIC LINE

REMOVE AND DISPOSE OF EXISTING TREE

NO CONSTRUCTION ACTIVITIES ALLOWED

NO CONSTRUCTION ACTIVITIES ALLOWED

PROTECT EXISTING ACC TRAIL

REMOVE AND DISPOSE EXISTING PAVEMENT (TYP)

PROTECT EXISTING PCC SIDEWALK (TYP)

PROTECT EXISTING PCC SIDEWALK (TYP)

SAWCUT FULL DEPTH, REMOVE, AND DISPOSE OF EXISTING PCC SIDEWALK

PROTECT EXISTING WATER LINE (TYP)

SAWCUT FULL DEPTH, REMOVE, AND DISPOSE OF PAVEMENT

CAP EXISTING STORM SEWER AND ABANDON IN PLACE

GRADING LIMITS (TYP)

REMOVE AND DISPOSE EXISTING TRENCH DRAINS

10" ST (CMP)

PROTECT EXISTING STORM STRUCTURE AND SEWER (TYP)

PROTECT ALL EXISTING VEGETATION OUTSIDE OF PROJECT LIMITS

CLEARING LIMITS

PROTECT EXISTING PCC SIDEWALK (TYP)

REMOVE AND DISPOSE OF EXISTING TREES

REMOVE AND DISPOSE OF EXISTING TREES

PROTECT EXISTING PCC SIDEWALK (TYP)

EXISTING WETLAND AREA

PROTECT EXISTING WATER LINE (TYP)

REMOVE AND DISPOSE OF EXISTING TREES AND STUMPS

NORTH

0 25 50 100

SCALE IN FEET

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IOWA DEPARTMENT OF NATURAL RESOURCES

BIG CREEK BEACH
WATERSHED BMPS

BIG CREEK BEACH

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	2026/08/03
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EXISTING CONDITIONS AND REMOVAL

CD01

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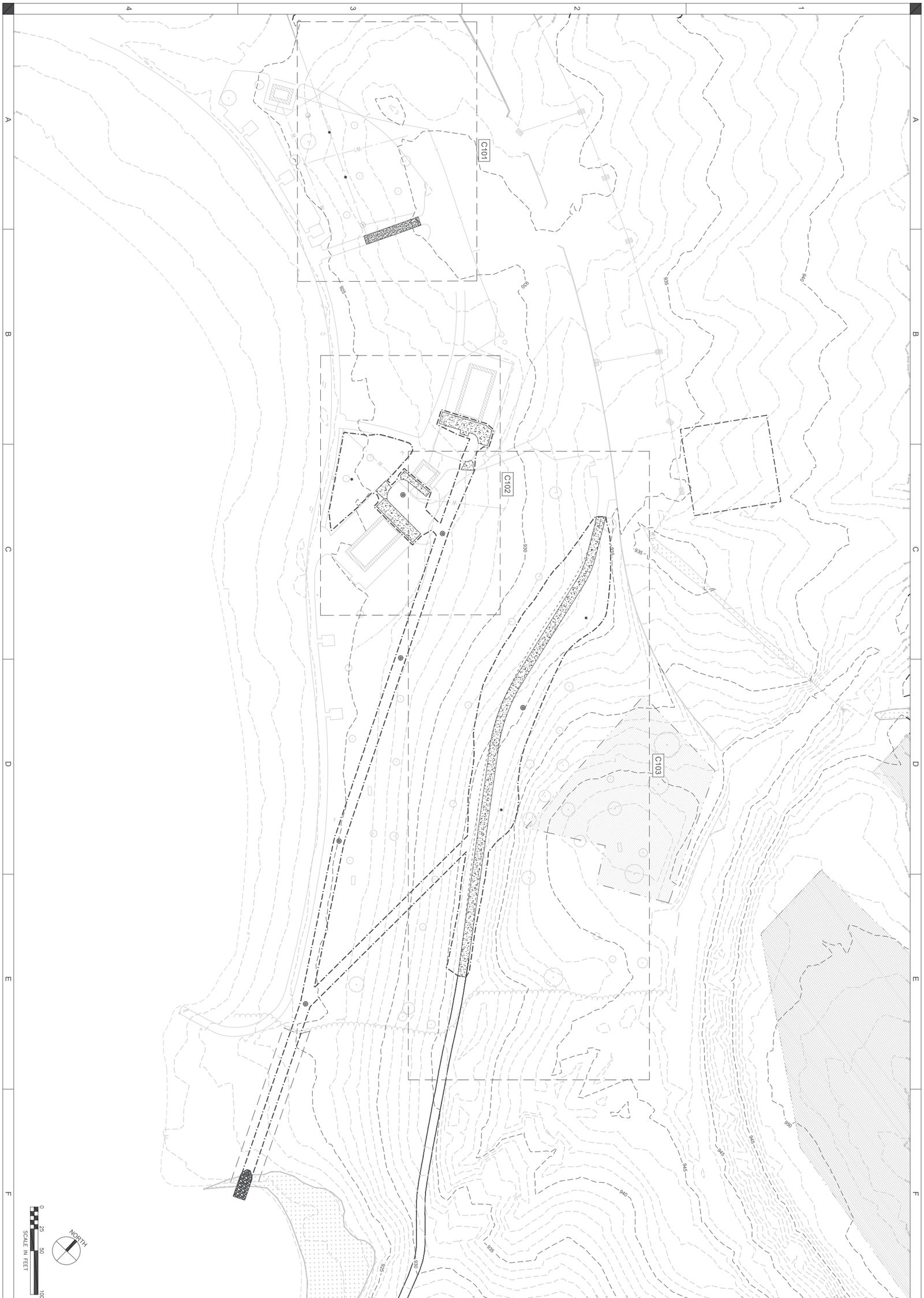

C100

OVERALL SITE PLAN

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	2026/08/03
PROJECT NUMBER	2240003070
FIELD BOOK	—

BIG CREEK BEACH WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES

—

BIG CREEK BEACH

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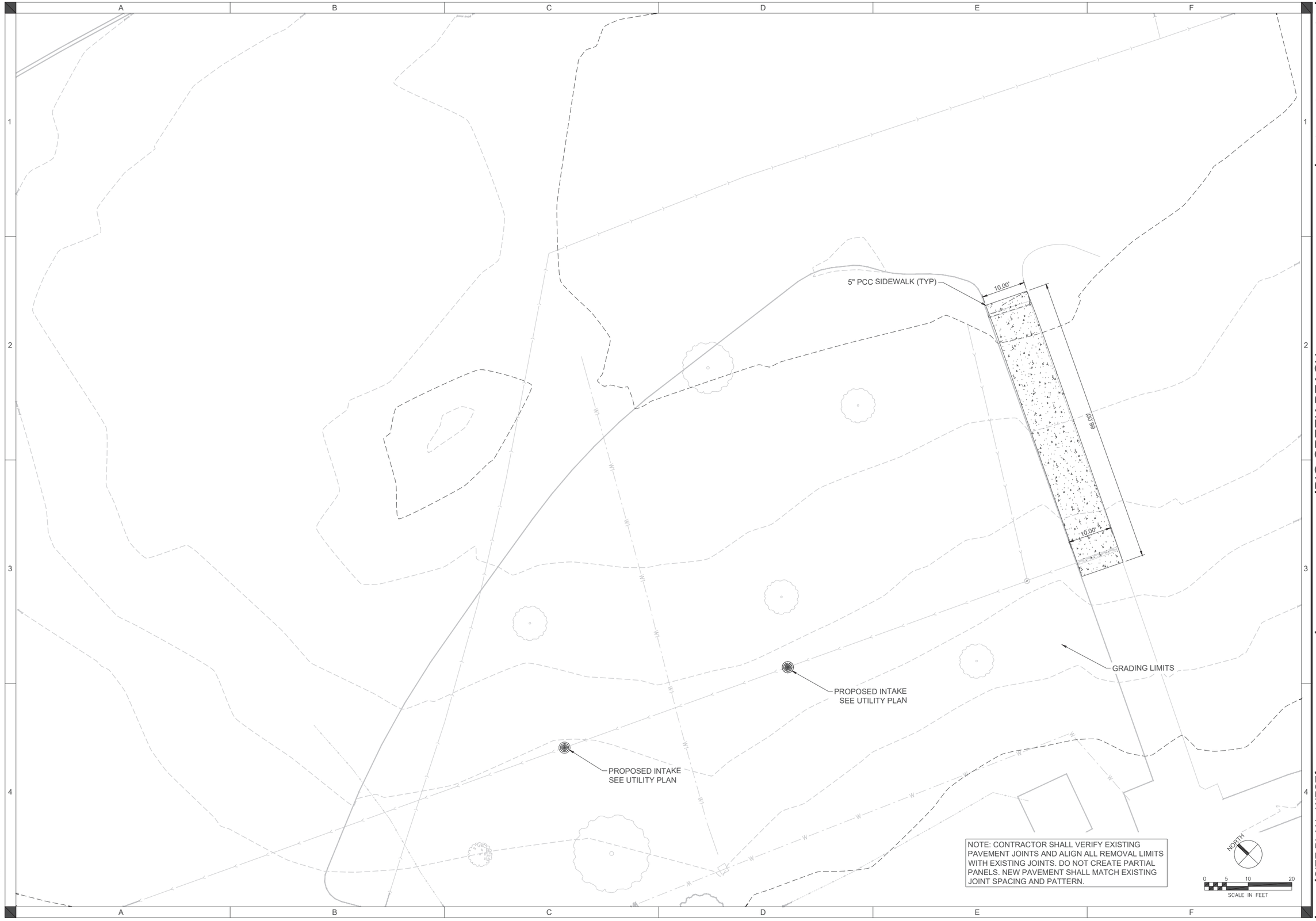

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BIG CREEK BEACH WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
—
BIG CREEK BEACH

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	2026/08/03
PROJECT NUMBER	2240003070
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SITE PLAN - WEST

C101

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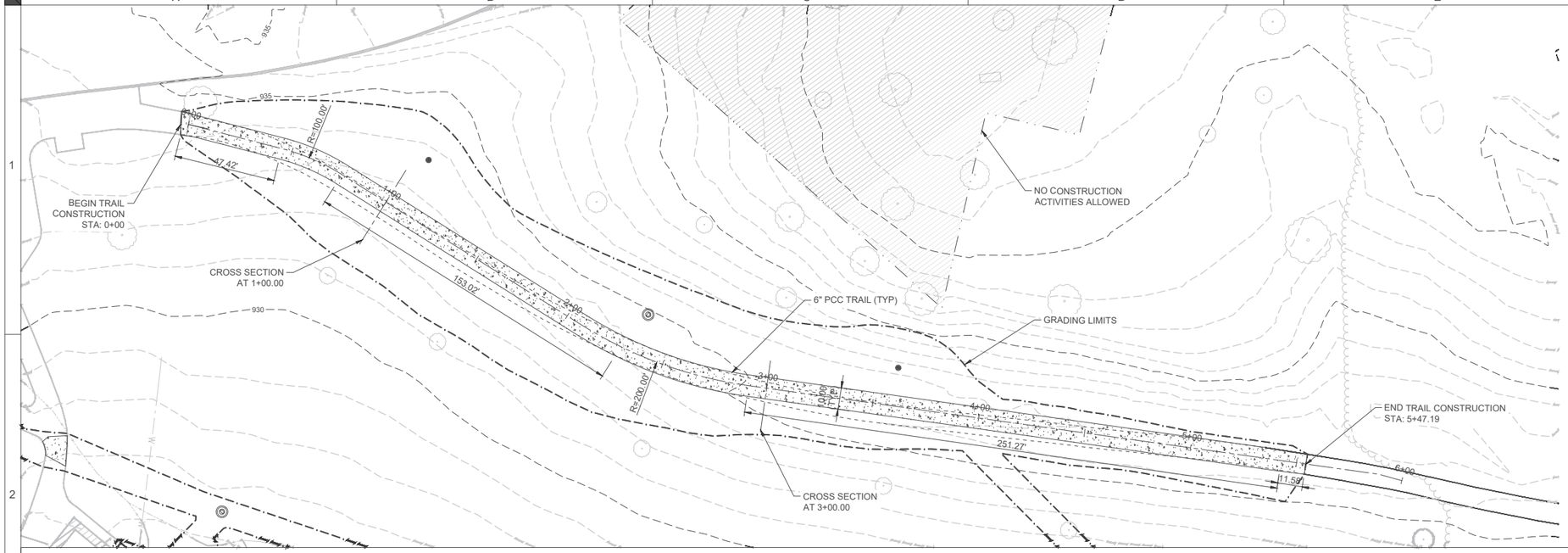
BIG CREEK BEACH WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
—
BIG CREEK BEACH

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	2026/08/03
PROJECT NUMBER	224000/3070
FIELD BOOK	—

SITE PLAN - EAST

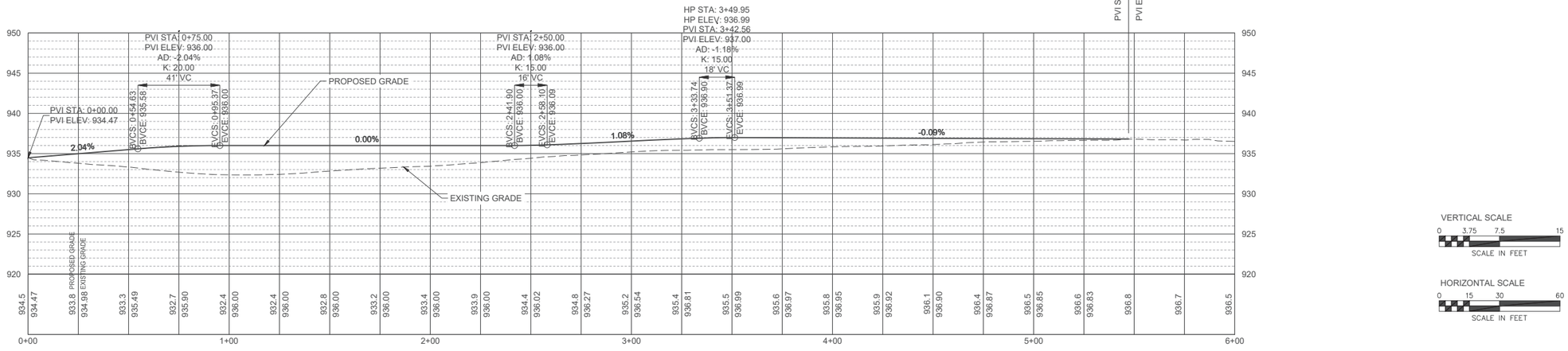
C102



NOTE: CONTRACTOR SHALL VERIFY EXISTING PAVEMENT JOINTS AND ALIGN ALL REMOVAL LIMITS WITH EXISTING JOINTS. DO NOT CREATE PARTIAL PANELS. NEW PAVEMENT SHALL MATCH EXISTING JOINT SPACING AND PATTERN.

NORTH

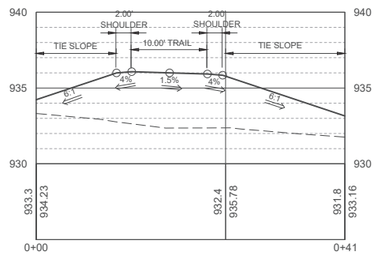
0 15 30 60
SCALE IN FEET



VERTICAL SCALE
0 3.75 7.5 15
SCALE IN FEET

HORIZONTAL SCALE
0 15 30 60
SCALE IN FEET

CROSS SECTION AT 1+00.00

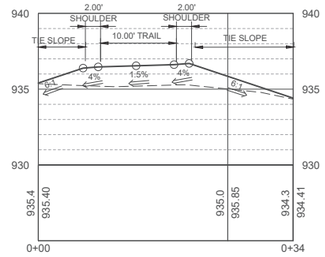


TYPICAL CROSS SECTION FROM 0+00.00 TO 1+40.00

VERTICAL SCALE
0 2.5 5 10
SCALE IN FEET

HORIZONTAL SCALE
0 5 10 20
SCALE IN FEET

CROSS SECTION AT 3+00.00



TYPICAL CROSS SECTION FROM 1+40.00 TO 5+47.19

VERTICAL SCALE
0 2.5 5 10
SCALE IN FEET

HORIZONTAL SCALE
0 5 10 20
SCALE IN FEET

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DNR

BIG CREEK BEACH
WATERSHED BMPS

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BIG CREEK BEACH

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TRAIL PAVING PLAN

C103

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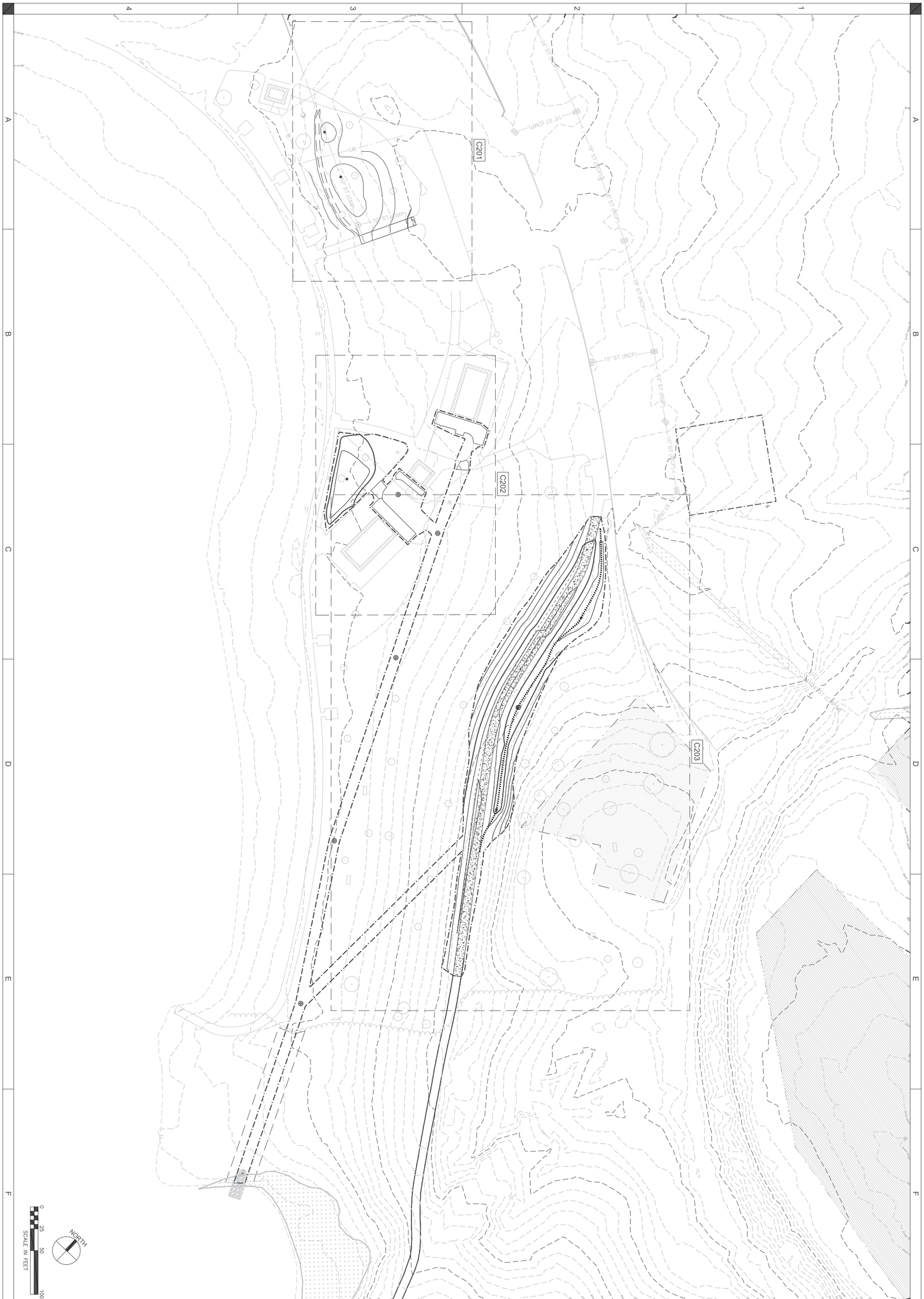

C200

OVERALL GRADING PLAN

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	2026/08/03
PROJECT NUMBER	2240003070
FIELD BOOK	—

BIG CREEK BEACH
WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
—
BIG CREEK BEACH

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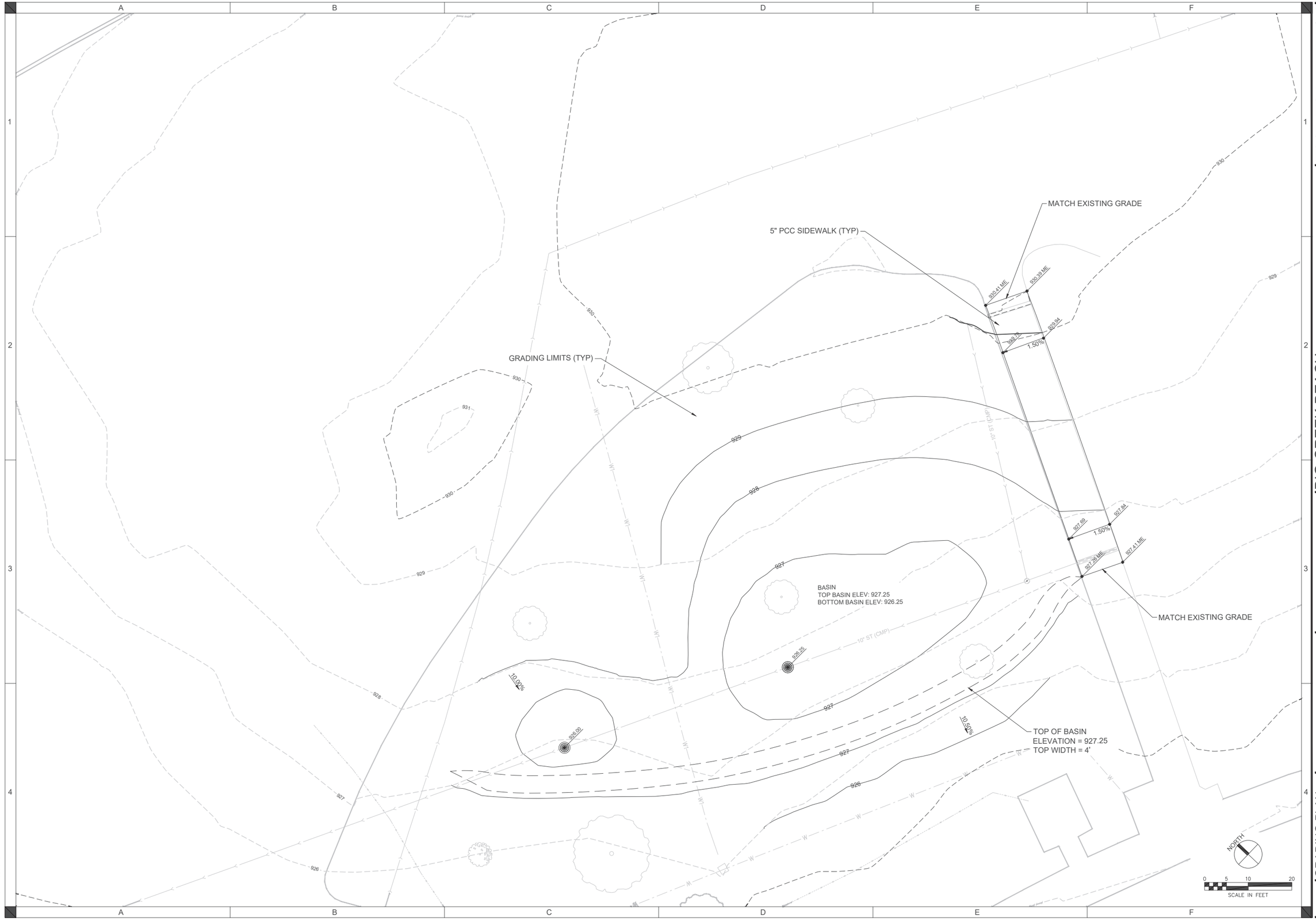

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BIG CREEK BEACH WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
—
BIG CREEK BEACH

DRAWN BY	DRS
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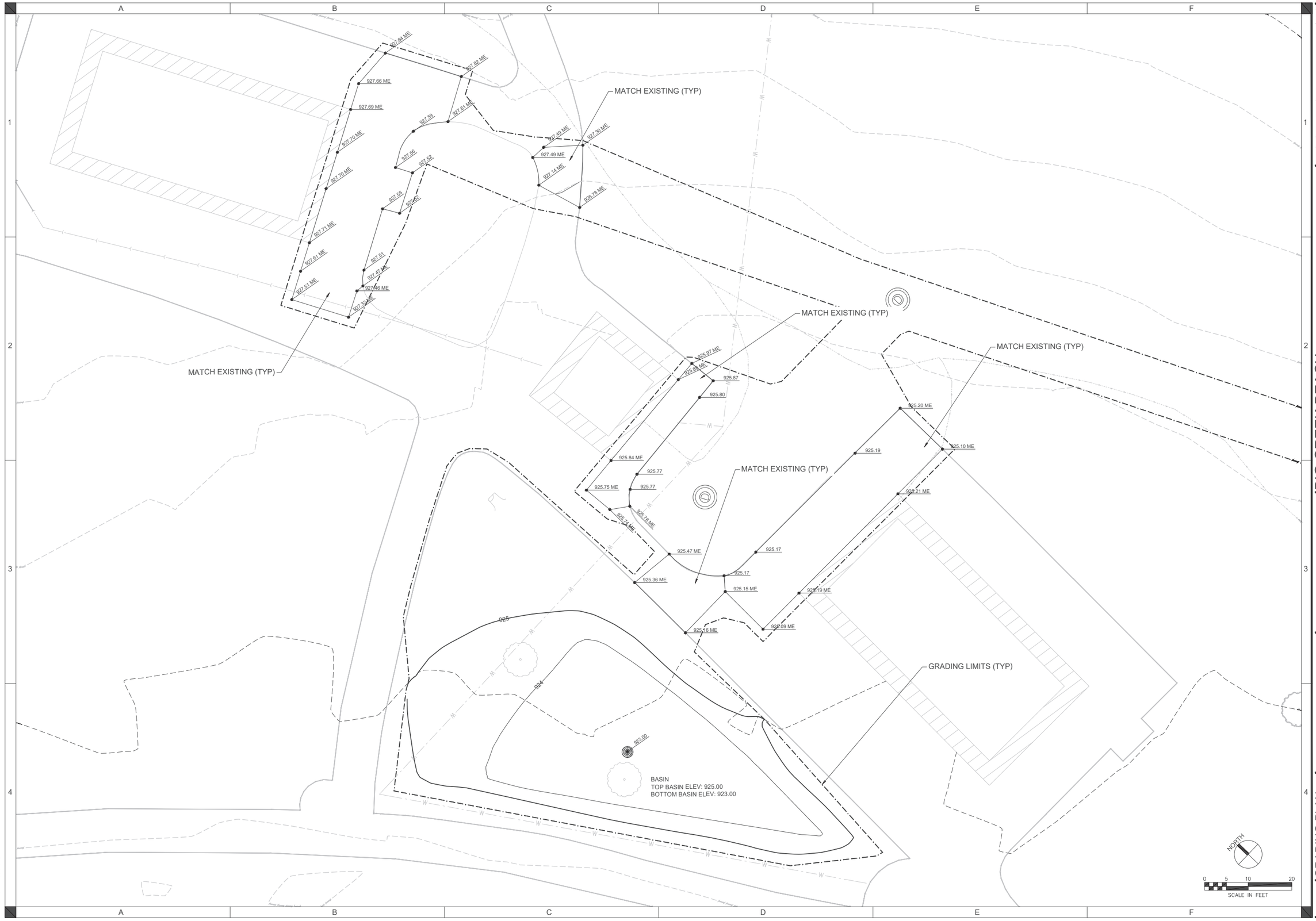
GRADING PLAN - WEST

C201



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DNR

BIG CREEK BEACH WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
—
BIG CREEK BEACH

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	2026/08/03
PROJECT NUMBER	2240003070
FIELD BOOK	—

GRADING PLAN - EAST

C202

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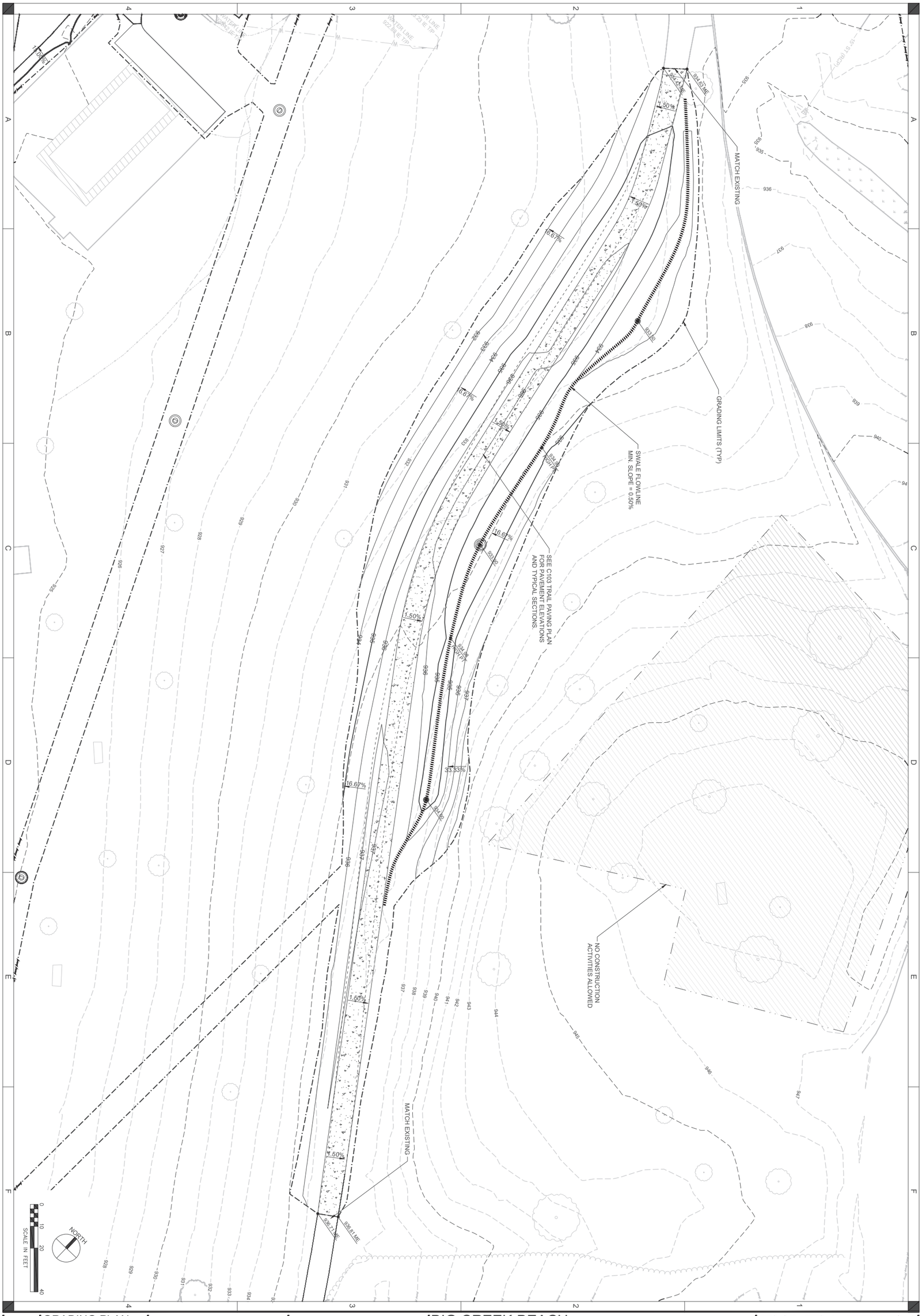

C203

GRADING PLAN - TRAIL

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	2026/08/03
PROJECT NUMBER	22400003070
FIELD BOOK	—

BIG CREEK BEACH WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES

—

BIG CREEK BEACH

DNR

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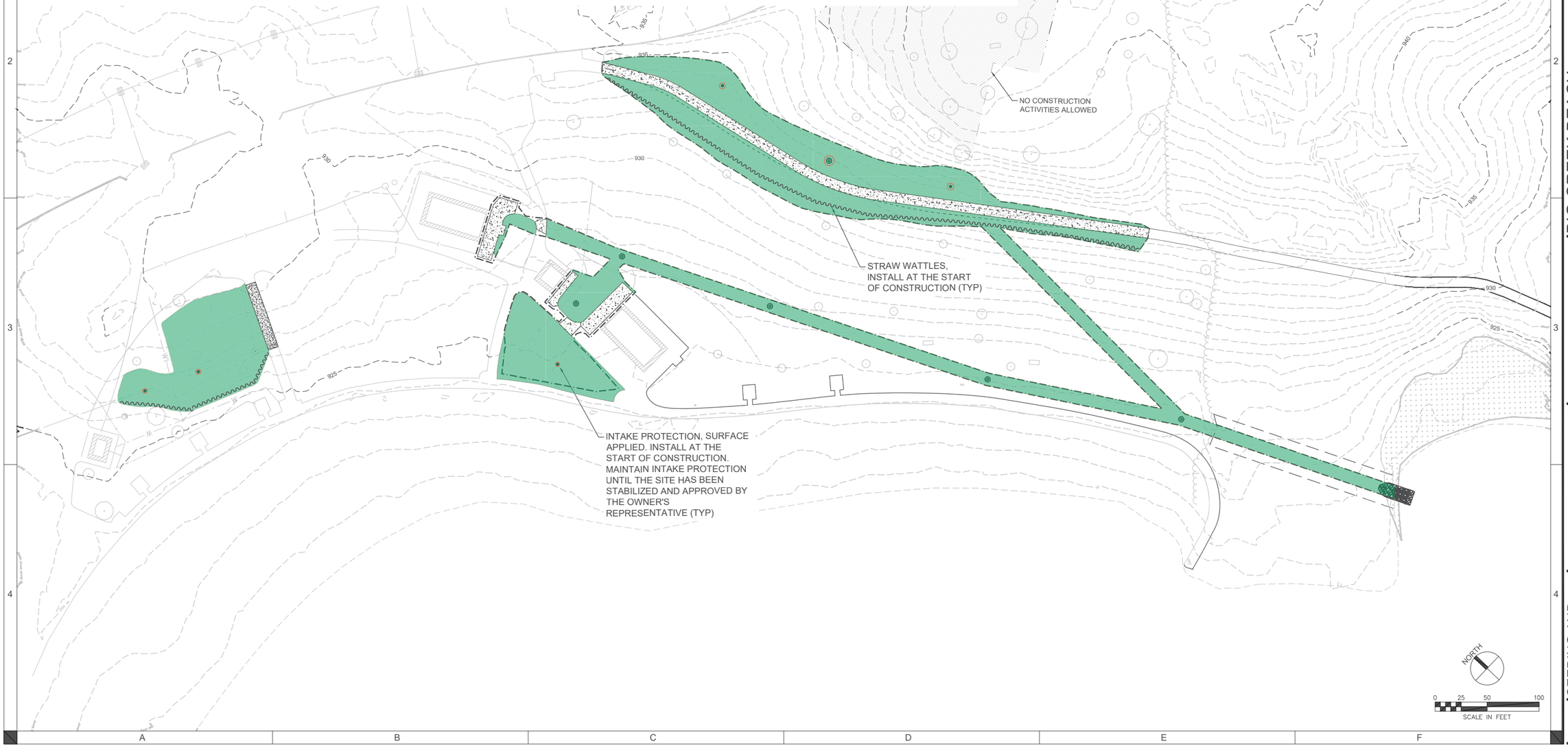
EROSION AND SEDIMENT CONTROL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEPARTMENT OF NATURAL RESOURCES (DNR) NPDES PERMIT AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS AND REQUIRED CONTAINMENT STRUCTURES. THE CONTRACTOR SHALL IMPLEMENT, MAINTAIN, AND UPDATE THE SWPPP AS REQUIRED TO MEET ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
2. CONTRACTORS SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THIS PLAN AND THE SWPPP.
3. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER'S REPRESENTATIVE.
4. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.
5. STAGING LOCATION FOR CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE COORDINATED WITH AND APPROVED BY OWNER'S REPRESENTATIVE.
6. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOATATION BOOMS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
7. DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
8. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
9. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THIS PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE INITIATED AS SOON AS PRACTICABLE.
10. STABILIZATION OF DISTURBED SOIL MUST BE INITIALIZED IMMEDIATELY IF CLEARING, GRADING, EXCAVATING OR OTHER ACTIVITIES WILL NOT RESUME WITHIN 14 CALENDAR DAYS.
11. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
12. ON-SITE & OFFSITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS.
13. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
14. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) TO PREVENT EROSION.
15. ALL CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.
16. AN UPDATED COPY OF THE SWPPP SHALL BE KEPT ONSITE FOR THE DURATION OF THE PROJECT.
17. ALL SUBCONTRACTORS ENGAGED IN ACTIVITIES AT THE CONSTRUCTION SITE THAT COULD IMPACT STORMWATER MUST BE IDENTIFIED AND COMPLETE A CERTIFICATION STATEMENT PRIOR TO CONSTRUCTION.

LEGEND

DESCRIPTION	LINE TYPE
GRADING LIMITS	
MAJOR CONTOUR (EXISTING)	800
MINOR CONTOUR (EXISTING)	801
SEEDING, SUDAS TYPE 1	
PCC PAVING	
STRAW WATTLE	
INLET PROTECTION	



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DNR

BIG CREEK BEACH
WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
—
BIG CREEK BEACH

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APPROVED BY	AJH
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SEEDING AND EROSION CONTROL PLAN

C250

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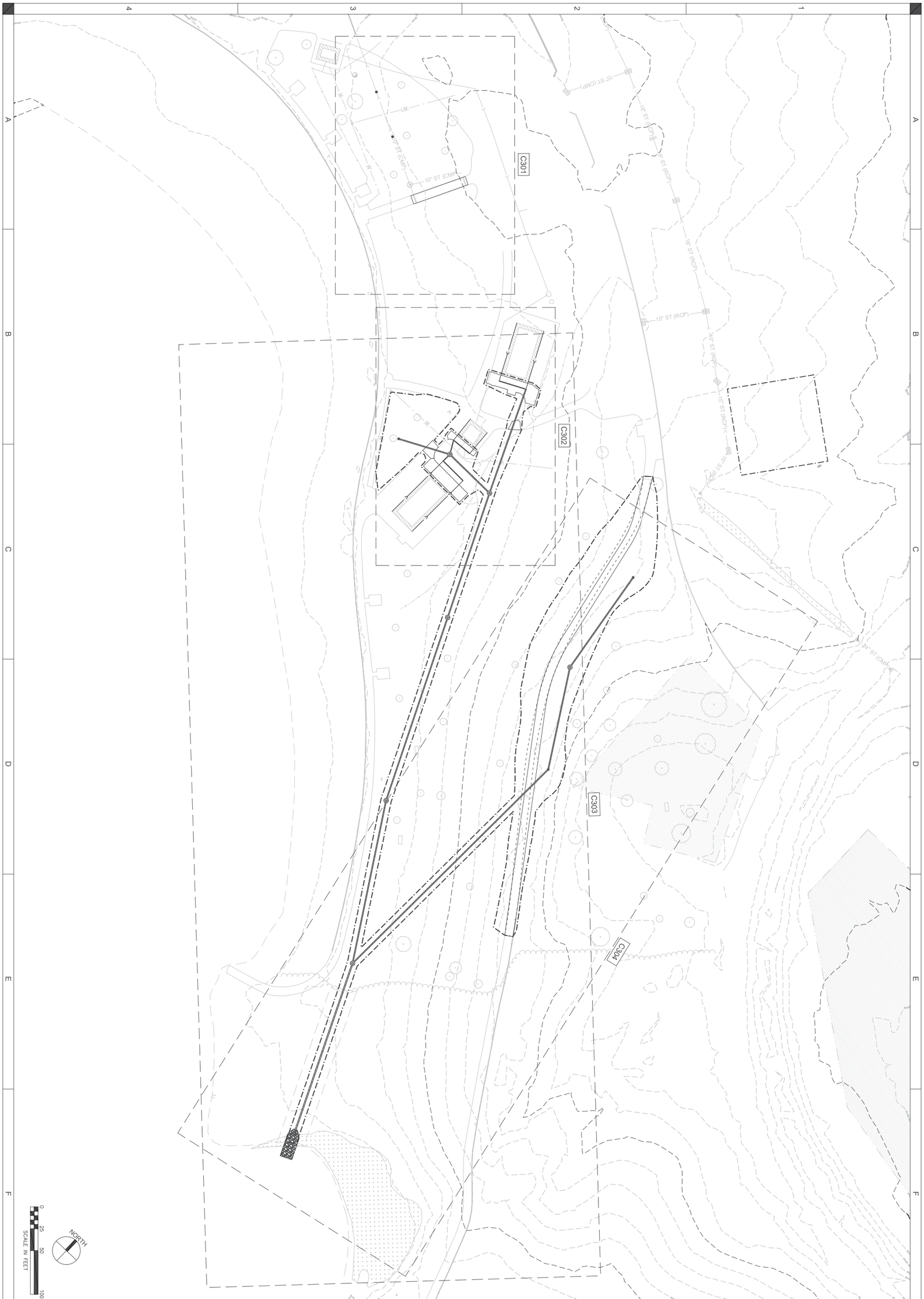

C300

OVERALL UTILITY PLAN

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
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BIG CREEK BEACH
WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
—
BIG CREEK BEACH

DNR

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5" PCC SIDEWALK (TYP)

EXISTING INTAKE
RIM = 927.17
IE = 924.67 10" CMP

INT-1.2 (SW-512 18")
RIM = 926.25
IE = 924.00 10" CMP
CONNECT TO EXISTING
STORM SEWER

INT-1.1 (SW-512 18")
RIM = 926.00
IE = 923.50 10" CMP
CONNECT TO EXISTING
STORM SEWER

NORTH

0 5 10 20
SCALE IN FEET

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IDNR

BIG CREEK BEACH WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
—
BIG CREEK BEACH

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UTILITY PLAN - WEST

C301

CLEANOUT
RIM = 927.76
IE = 922.39

UTILITY CROSSING
BOTTOM ELECTRIC = 925.00
TOP STORM = 921.78

UTILITY CROSSING
CONTRACTOR SHALL REMOVE, LOWER, AND REINSTALL THE EXISTING WATER MAIN AS REQUIRED TO PROVIDE A MINIMUM 18-INCH VERTICAL CLEARANCE BELOW THE PROPOSED STORM SEWER.
BOTTOM STORM = 921.48
TOP OF WATER MAX = 919.98

INT 2.4 (SW-401 (48IN))
RIM = 926.81
IE = 921.13 ST 2.5 W
IE = 921.13 ST 2.5A NW
IE = 921.13 ST 2.4 SE

ST 2.5B 33 LF
6 " PVC @ 1.00%

ST 2.5A 124 LF
12 " PVC @ 1.00%

INSTALL GUTTERS AND DOWNSPOUTS ON EXISTING BUILDINGS. CONNECT TO 6" PVC BELOW GRADE
SEE DOWNSPOUT CONNECTION DETAIL (TYP)

CLEANOUT
RIM = 927.57
IE = 922.71

INSTALL GUTTERS AND DOWNSPOUTS ON EXISTING BUILDINGS. CONNECT TO 6" PVC BELOW GRADE
SEE DOWNSPOUT CONNECTION DETAIL (TYP)

CLEANOUT
RIM = 925.91
IE = 923.20

ST 2.5 60 LF
12 " PVC @ 0.30%

UTILITY CROSSING
BOTTOM STORM = 923.16
TOP WATER = 921.08

INT 2.5 (SW-401 (48IN))
RIM = 925.53
IE = 921.32 ST 2.6 SW
IE = 921.82 ST 2.6C S
IE = 921.82 ST 2.6A NW
IE = 921.32 ST 2.5 E

ST 2.4 147 LF
12 " PVC @ 0.30%

UTILITY CROSSING
CONTRACTOR SHALL REMOVE, LOWER, AND REINSTALL THE EXISTING ELECTRIC LINE AS REQUIRED TO PROVIDE A MINIMUM 12-INCH VERTICAL CLEARANCE ABOVE THE PROPOSED STORM SEWER.
TOP STORM = 923.65
BOTTOM OF ELECTRIC MAX = 924.65

ST 2.6B 24 LF
6 " PVC @ 0.50%

CLEANOUT
RIM = 925.87 IE
= 923.08

CLEANOUT
RIM = 925.62
IE = 922.24

ST 2.6D 32 LF
6 " PVC @ 1.00%

CLEANOUT
RIM = 925.35
IE = 921.92

UTILITY CROSSING
BOTTOM STORM = 922.55
TOP WATER =920.89

ST 2.6A 15 LF
6 " PVC @ 7.50%

ST 2.6C 9 LF
6 " PVC @ 1.00%

ST 2.6 59 LF
12 " PVC @ 0.30%

INSTALL GUTTERS AND DOWNSPOUTS ON EXISTING BUILDINGS. CONNECT TO 6" PVC BELOW GRADE
SEE DOWNSPOUT CONNECTION DETAIL (TYP)

INT 2.6 (SW-512 (18IN))
RIM = 923.00
IE = 921.50 ST 2.6 NE

NORTH

0 5 10 20
SCALE IN FEET

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BIG CREEK BEACH
WATERSHED BMPS

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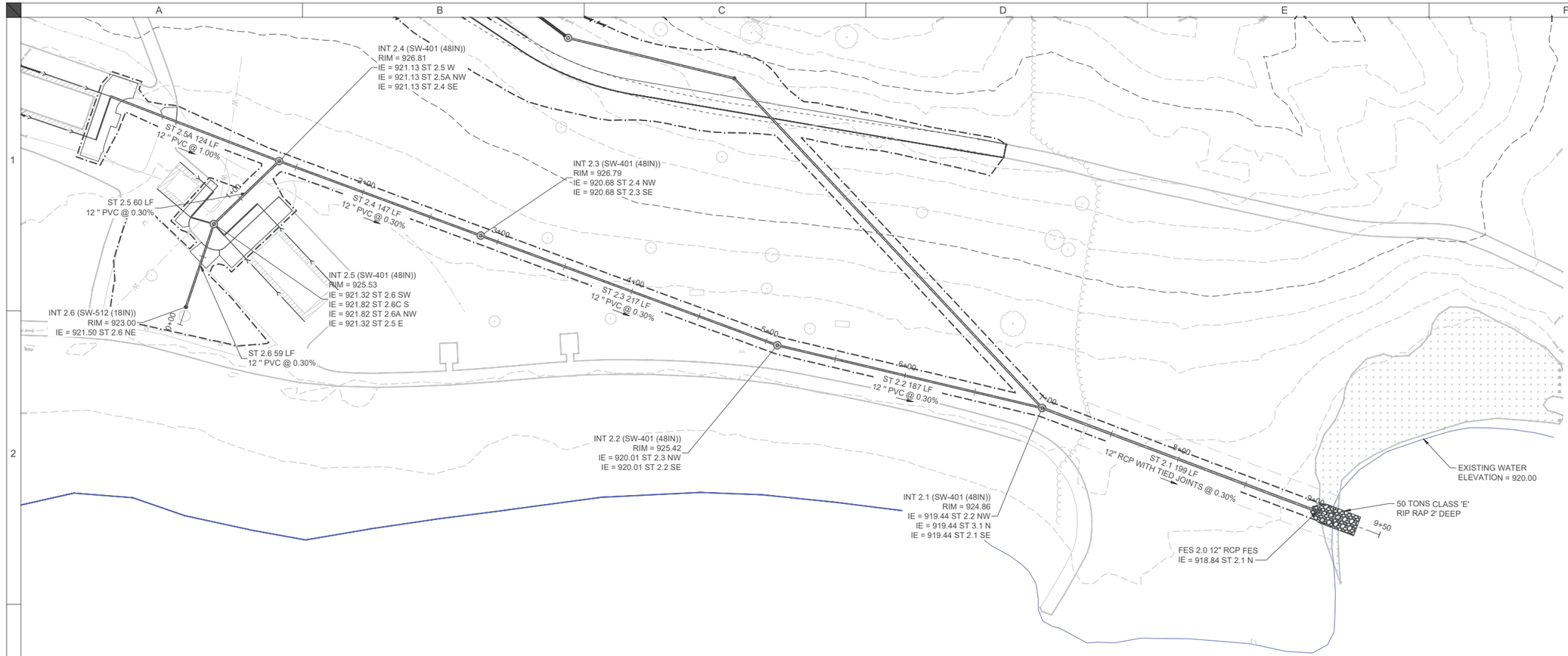
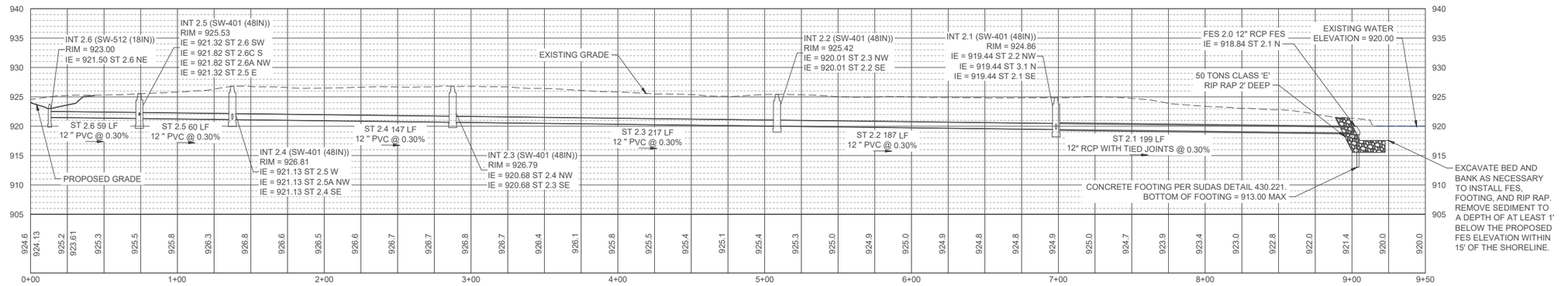
UTILITY PLAN - EAST

C302





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DNR

BIG CREEK BEACH WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
BIG CREEK BEACH

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UTILITY PLAN AND PROFILE - SOUTH

C303

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NO CONSTRUCTION
ACTIVITIES ALLOWED

INT 3.3 (SW-512 (18IN))
RIM = 933.50
IE = 930.00 ST 3.3 S

INT 3.2 (SW-401 (48IN))
RIM = 933.90
IE = 929.37 ST 3.3 N
IE = 929.37 ST 3.2 SE

INT 3.1 (SW-512 (18IN))
RIM = 934.00
IE = 928.78 ST 3.2 NW
IE = 928.78 ST 3.1 S

INT 2.1 (SW-401 (48IN))
RIM = 924.86
IE = 919.44 ST 2.2 NW
IE = 919.44 ST 3.1 N
IE = 919.44 ST 2.1 SE

EXISTING WATER
ELEVATION = 920.00

0+00
1+00
2+00
3+00
4+00
5+00
6+00
6+50

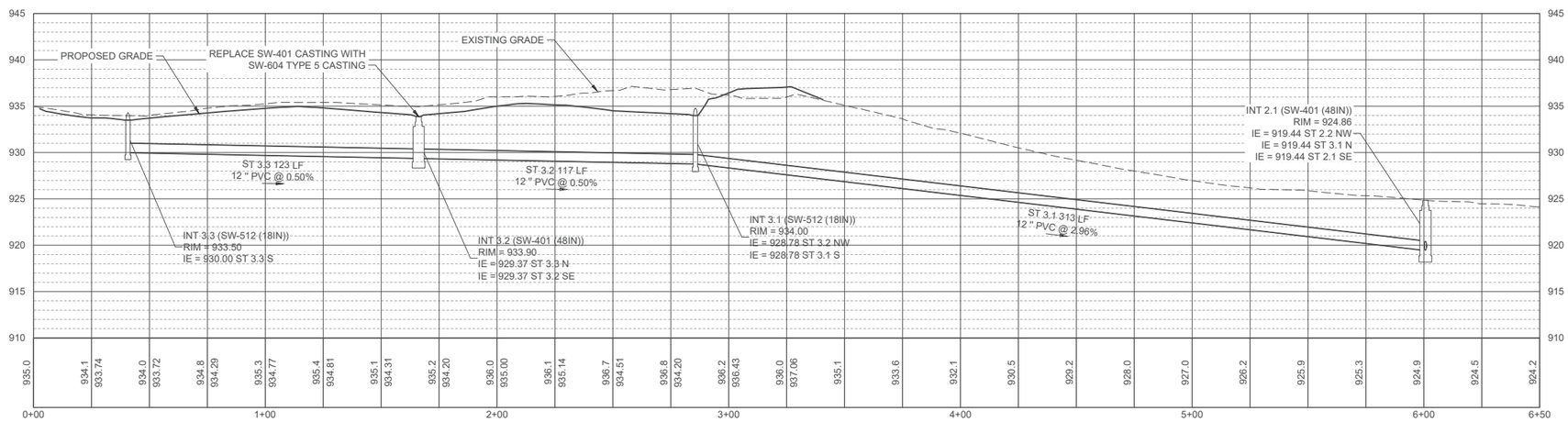
ST 3.3 123 LF
12 " PVC @ 0.50%

ST 3.2 117 LF
12 " PVC @ 0.50%

ST 3.1 313 LF
12 " PVC @ 2.96%

REPLACE SW-401 CASTING WITH
SW-604 TYPE 5 CASTING

NORTH
0 15 30 60
SCALE IN FEET



VERTICAL SCALE
0 3.75 7.5 15
SCALE IN FEET

HORIZONTAL SCALE
0 15 30 60
SCALE IN FEET

UTILITY PLAN AND PROFILE - NORTH

C304

BIG CREEK BEACH WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES
BIG CREEK BEACH

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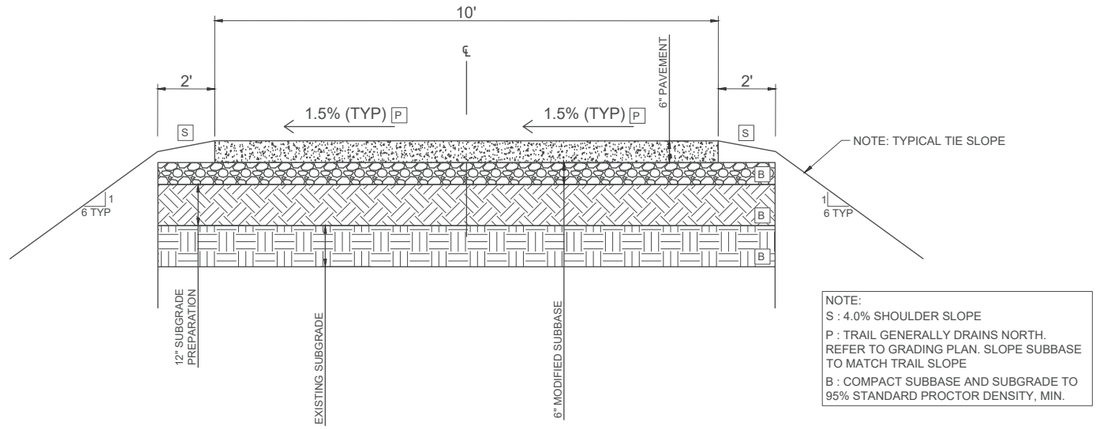


NOTE:
S : 4.0% SHOULDER SLOPE
P : TRAIL GENERALLY DRAINS NORTH. REFER TO GRADING PLAN. SLOPE SUBBASE TO MATCH TRAIL SLOPE
B : COMPACT SUBBASE AND SUBGRADE TO 95% STANDARD PROCTOR DENSITY, MIN.

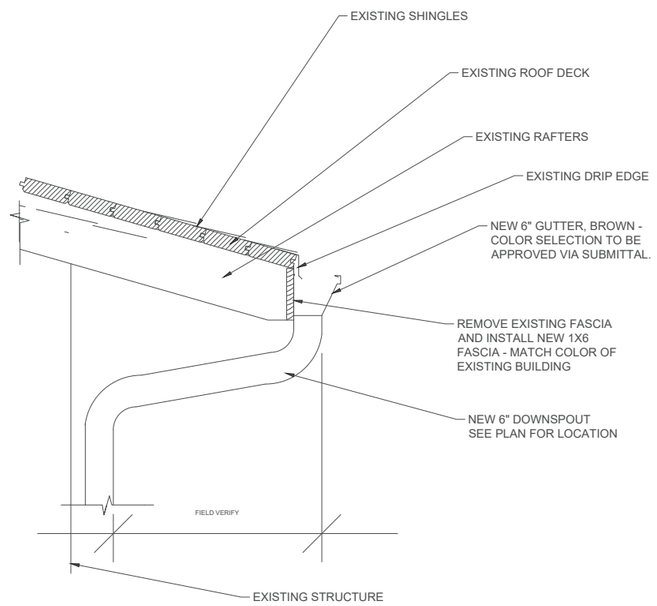
C2 10' TRAIL TYPICAL SECTION
NTS

NOTE:
CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.

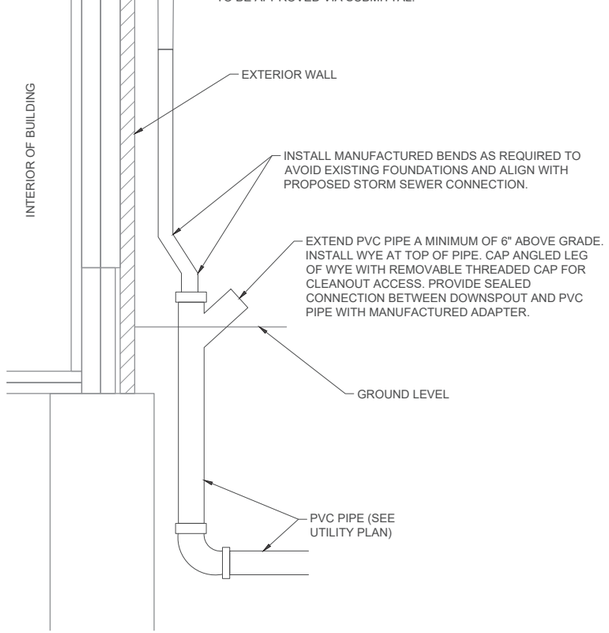
STANDARD SUDAS DETAILS

THE FOLLOWING STANDARD DETAILS APPLY TO CONSTRUCTION WORK ON THIS PROJECT

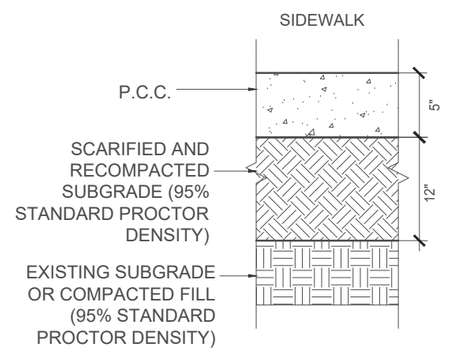
NUMBER	DATE	TITLE
3010.102	04/20/2021	RIGID GRAVITY PIPE TRENCH BEDDING
3010.103	04/21/2021	FLEXIBLE GRAVITY PIPE TRENCH BEDDING
4020.211	04/17/2018	STORM SEWER PIPE CONNECTIONS
4030.221	10/20/2014	RCP APRON SECTION FOOTING
4030.222	04/18/2016	CIRCULAR STORM SEWER MANHOLE
4040.232	04/17/2018	SUBDRAIN CLEANOUT
6010.401	04/20/2021.	CIRCULAR STORM SEWER MANHOLE
6010.512	04/21/2020	CIRCULAR AREA INTAKE, SW-512
6010.604	04/21/2020	CASTINGS FOR AREA INTAKES
9040.110	10/21/2014	RIP RAP FOR PIPE OUTLET ONTO FLAT GROUND



A4 GUTTER/FASCIA DETAIL
NTS



C4 DOWNSPOUT CONNECTION DETAIL
NTS



E4 SIDEWALK CROSS SECTION
NTS

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CONSTRUCTION DETAILS

C501

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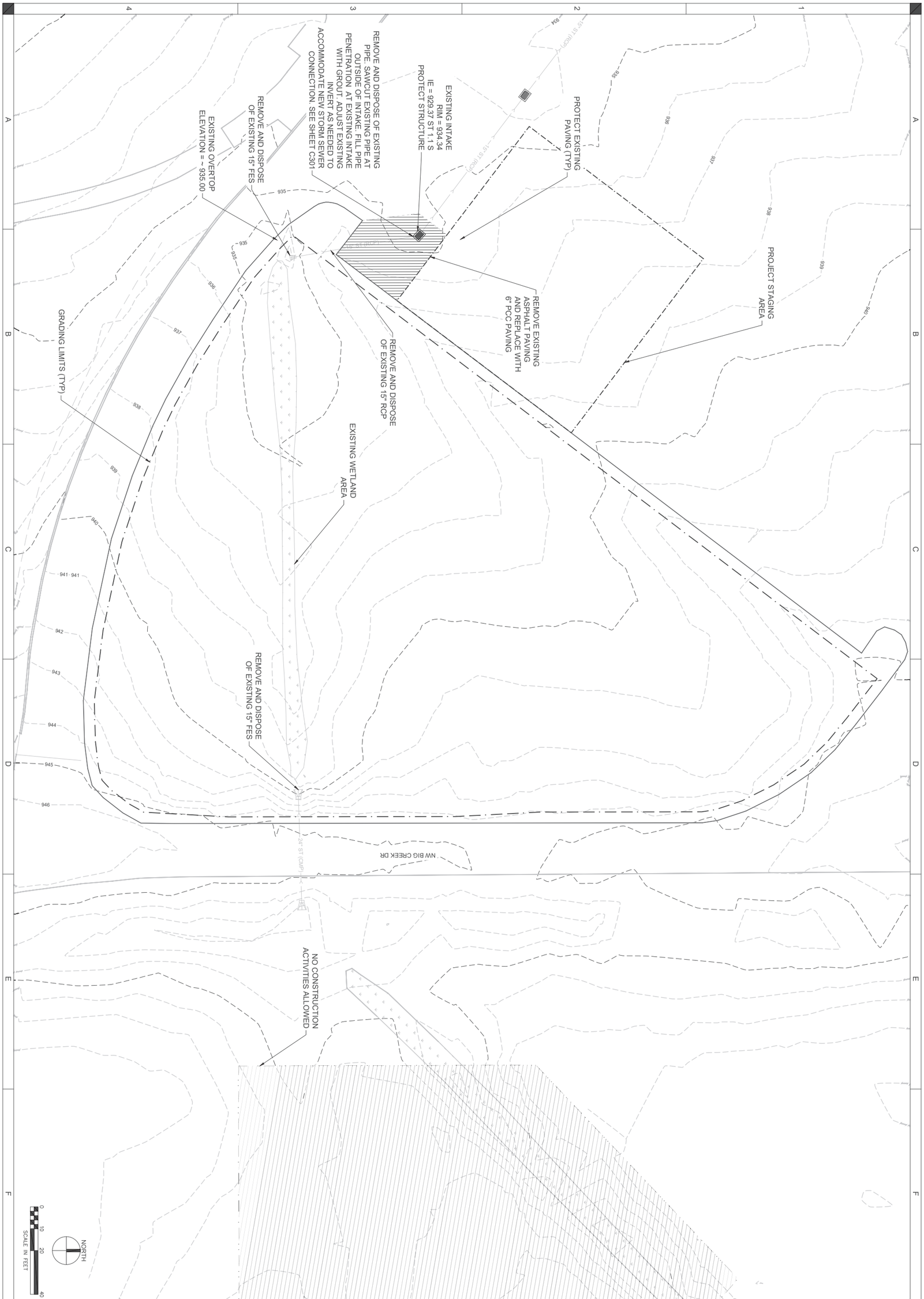

CD01 - P

EXISTING CONDITIONS AND REMOVAL

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BIG CREEK BEACH

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GRADING LIMITS (TYP)

SPILLWAY
CREST = 933.50

2.00%

NW BIG CREEK DR

15" ST (RCP)

16.72'

37.81'

25.96'

34.87'

19.00'

INSTALL 6" PCC
PAVING

EXISTING OVERTOP
ELEVATION = ~ 935.00

PROPOSED BERM
6' TOP WIDTH
TOP ELEVATION = 940.00

16' WIDE EMERGENCY SPILLWAY
WITH 4:1 SIDE SLOPES AT 939.00
SEE DETAIL E3 ON SHEET C501 - P

280 TONS OF CLASS
'E' RIP RAP 2' DEEP

24" ST (CMP)

BOTTOM OF
FOREBAY = 931.00

PROPOSED BERM
5' TOP WIDTH
TOP ELEVATION = 935.00

NO CONSTRUCTION
ACTIVITIES ALLOWED

NORTH

0 10 20 40
SCALE IN FEET

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BIG CREEK BEACH
WATERSHED BMPS

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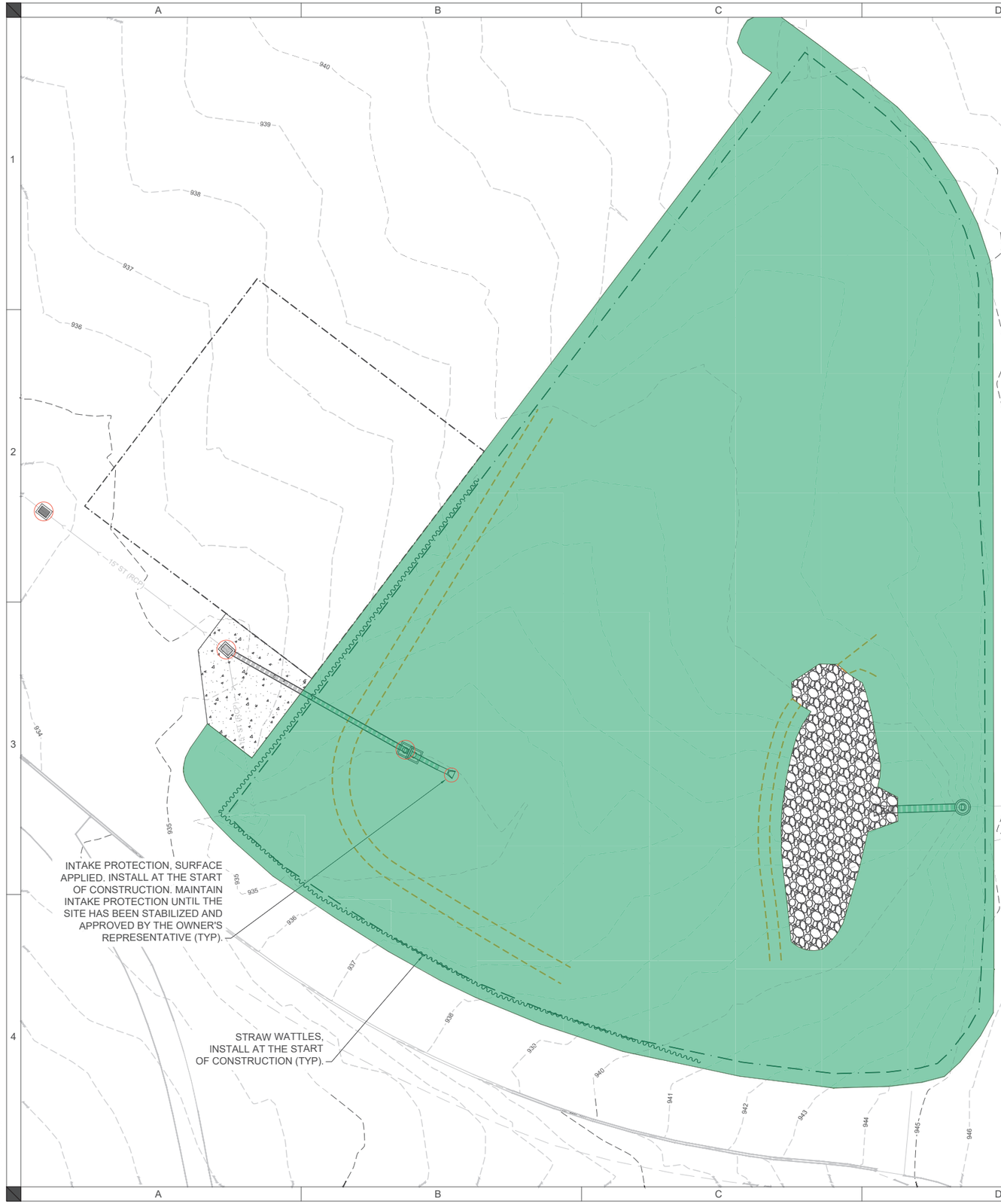
GRADING AND SITE PLAN

C201 - P



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8. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
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10. STABILIZATION OF DISTURBED SOIL MUST BE INITIALIZED IMMEDIATELY IF CLEARING, GRADING, EXCAVATING OR OTHER ACTIVITIES WILL NOT RESUME WITHIN 14 CALENDAR DAYS.
11. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
12. ON-SITE & OFFSITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS.
13. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
14. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) TO PREVENT EROSION.
15. ALL CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.
16. AN UPDATED COPY OF THE SWPPP SHALL BE KEPT ONSITE FOR THE DURATION OF THE PROJECT.
17. ALL SUBCONTRACTORS ENGAGED IN ACTIVITIES AT THE CONSTRUCTION SITE THAT COULD IMPACT STORMWATER MUST BE IDENTIFIED AND COMPLETE A CERTIFICATION STATEMENT PRIOR TO CONSTRUCTION.

LEGEND

DESCRIPTION	LINE TYPE
GRADING LIMITS	
MAJOR CONTOUR (EXISTING)	800
MINOR CONTOUR (EXISTING)	801
SEEDING	
STRAW WATTLE	
INLET PROTECTION	

NORTH

0 10 20 40
SCALE IN FEET

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DNR

BIG CREEK BEACH
WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES

BIG CREEK BEACH

DRAWN BY	DRS
APPROVED BY	AJH
ISSUED FOR	BIDDING
ISSUE DATE	2026/08/03
PROJECT NUMBER	2240003070
FIELD BOOK	-

EROSION CONTROL PLAN

C250 - P

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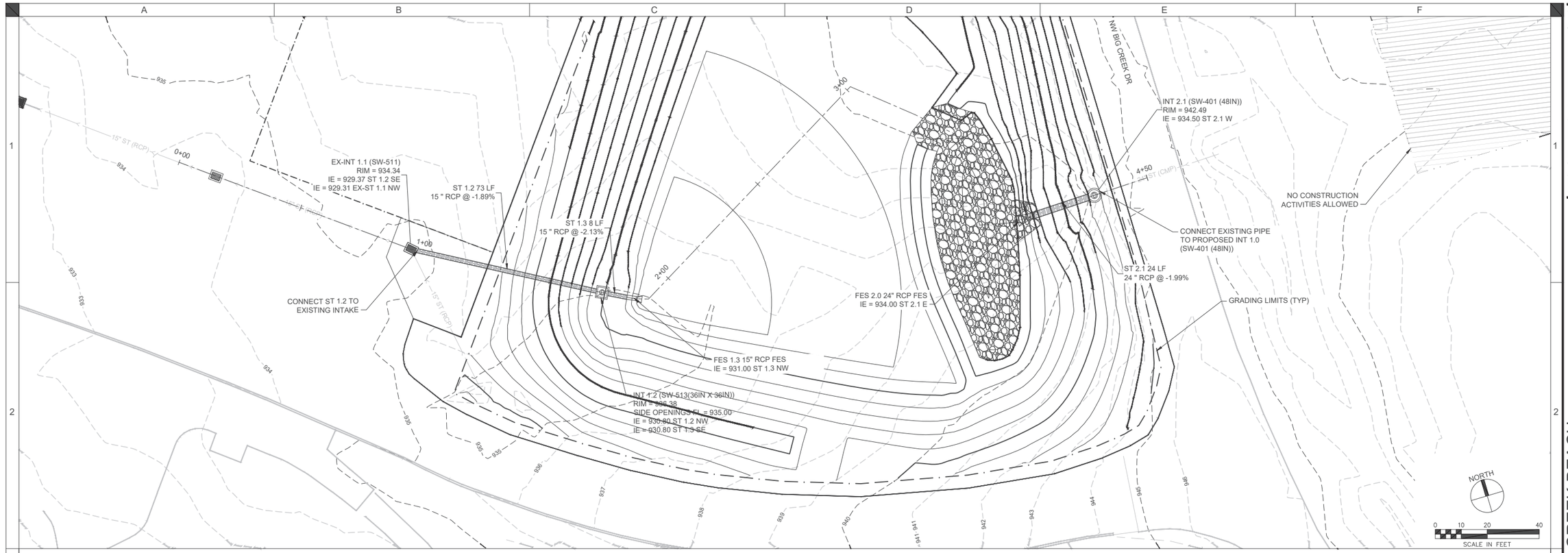

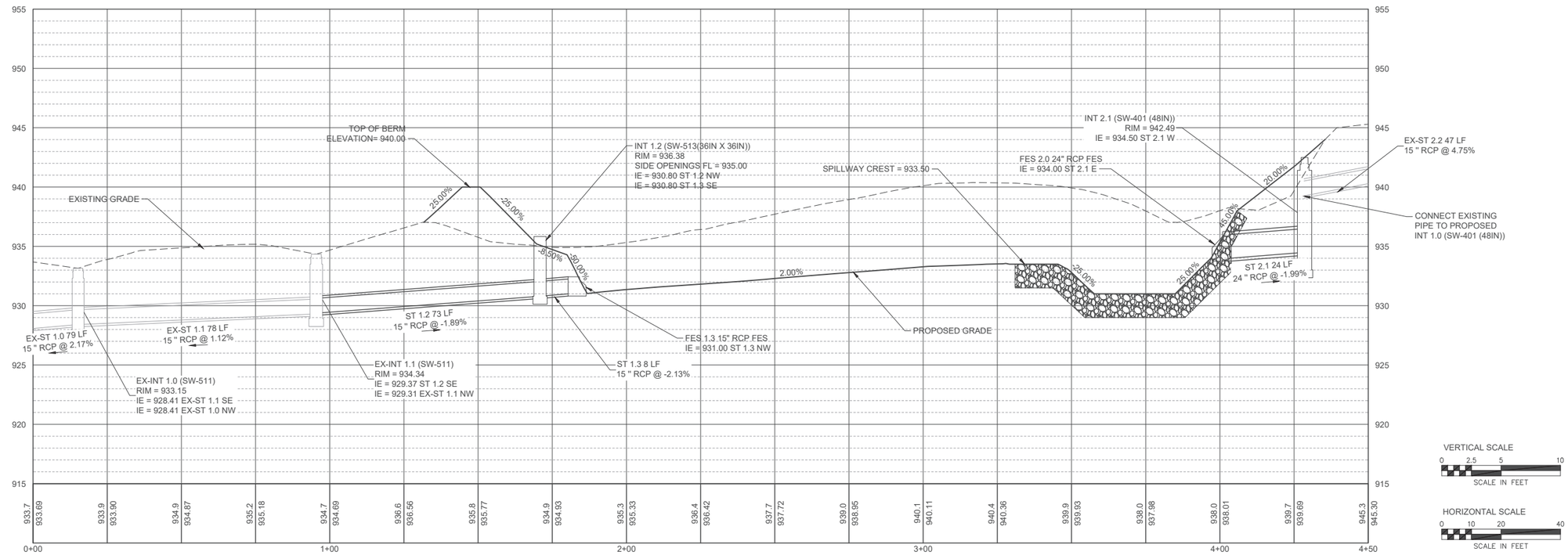

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BIG CREEK BEACH WATERSHED BMPS

IOWA DEPARTMENT OF NATURAL RESOURCES

BIG CREEK BEACH

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UTILITY PLAN

C301 - P

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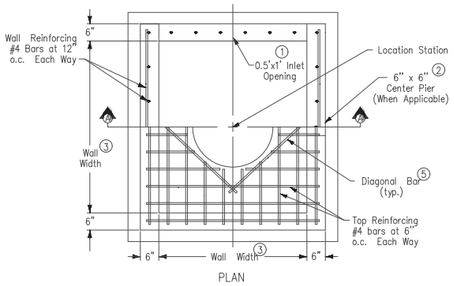
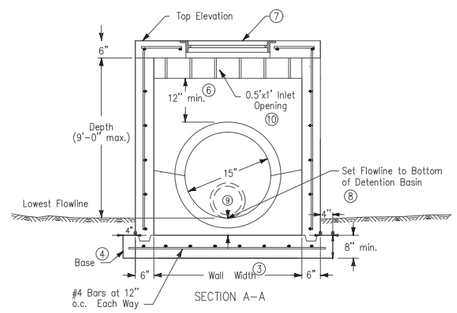
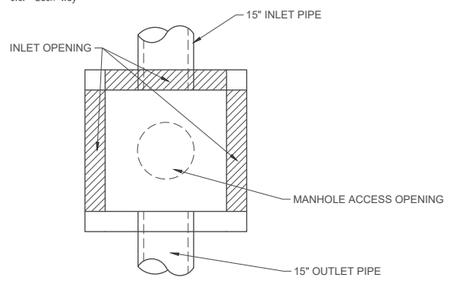


PLAN



SECTION A-A

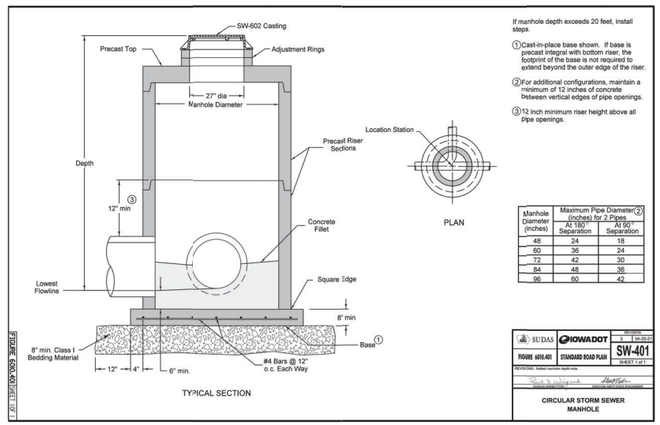


OPENING CONFIGURATION

Structure may be built with openings on any or all sides. Provide openings and orientation as specified in the contract documents. Adjacent walls may have different widths based upon pipe configuration, but structure must be rectangular.

1. Construct inlet opening with 15-inch #4 epoxy-coated bars at 8 inches on center. Embed bars a minimum of 3 inches into walls and top at opening. Opening to be provided as shown on opening configuration.
2. Center pier required at center of any inlet opening with length of 5 feet or greater. Extend wall reinforcing vertically through pier. Install one additional 15-inch #4 bar in pier.
3. Wall widths vary with pipe diameter. Provide 6 inches of wall width (minimum) each side of pipe opening. Minimum wall width is 36 inches. Maximum wall width is 72 inches.
4. Cast-in-place base shown. If base is precast integral with walls, the footprint of base is not required to extend beyond the outer edge of the walls.
5. Install four #4 diagonal bars at all pipe openings.
6. 12" minimum wall height above all pipes.
7. Manhole frame and lid to be Neenah R-6050 or approved equal.
8. 15" Outlet Pipe IE = 930.80
9. Orifice Pipe/Plate (4" orifice pipe): IE = 931.00
10. 0.5' x 1' Inlet Openining IE = 935.00

A4 DETENTION BASIN OUTLET STRUCTURE (SW-513)
NTS

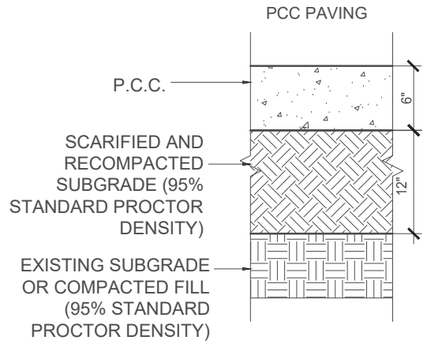


If manhole depth exceeds 20 feet, install steps.

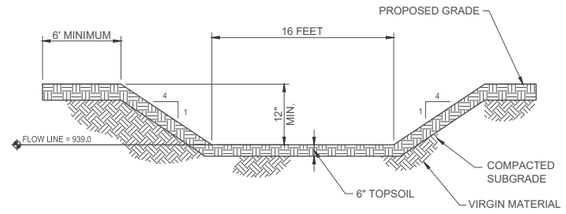
1. Cast-in-place base shown. If base is precast integral with bottom riser, the footprint of the base is not required to extend beyond the outer edge of the riser.
2. For additional configurations, maintain a minimum of 12 inches of concrete between vertical edges of pipe openings.
3. 12 inch minimum riser height above all pipe openings.

Manhole Diameter (inches)	Maximum Pipe Diameter (2) (inches) for 2 Pipes	
	At 180° Separation	At 90° Separation
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42

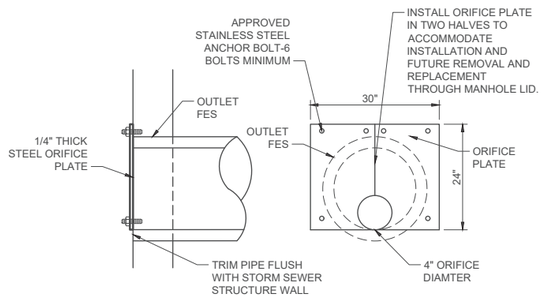
C3 CIRCULAR STORM SEWER MANHOLE (SW-401)
NOT TO SCALE



C4 PARKING LOT PAVEMENT CROSS SECTION
NTS



E3 BASIN AUXILIARY SPILLWAY
NOT TO SCALE



E4 ORIFICE PLATE

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BIG CREEK BEACH

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FIELD BOOK	–

CONSTRUCTION DETAILS

C501 - P

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