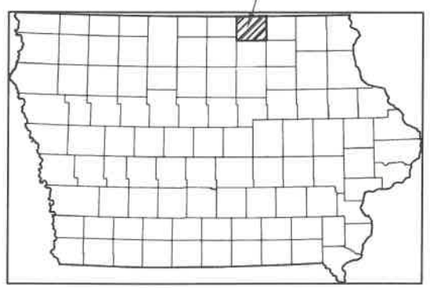
OTRANTO DAM REMOVAL AND ENHANCEMENT PROJECT
MITCHELL COUNTY CONSERVATION BOARD
CEDAR RIVER
OTRANTO, IOWA

SITE LOCATION



LOCATION MAP
NOT TO SCALE

Total Sheets – 11

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DEVELOPER

IOWA DEPARTMENT OF NATURAL RESOURCES

ATTN: GLENN HARMAN, ENVIRONMENTAL SPECIALIST SENIOR
LAND AND WATERS BUREAU, CONSERVATION AND RECREATION DIVISION
COLD SPRINGS FISHERIES MANAGEMENT OFFICE
57744 LEWIS RD.
LEWIS, IA 51544
PH: (515) 971–3962
EMAIL: GLENN.HARMAN@DNR.IOWA.GOV

OWNER

MITCHELL COUNTY CONSERVATION BOARD

ADAM SHIRLEY, DIRECTOR
MILTON R. OWEN NATURE CENTER
18793 HWY 9
OSAGE, IA 50461
(641)732–5204

IOWA ONE CALL
800/292-8989
CALL BEFORE YOU DIG

LICENSED PROFESSIONAL ENGINEER
RICHARD C. BRUMM
18167
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.

Date 11/10/21

RICHARD C. BRUMM

My license renewal date is December 31, 2022

Pages or sheets covered by this seal:
All Sheets

FILE NO.	ENGLISH	DESIGN TEAM Brumm\Hoogeveen\Harman\Shirley	Mitchell Co. Conservation Board COUNTY	PROJECT NUMBER	SHEET NUMBER A.1	TITLE SHEET

GENERAL NOTES:

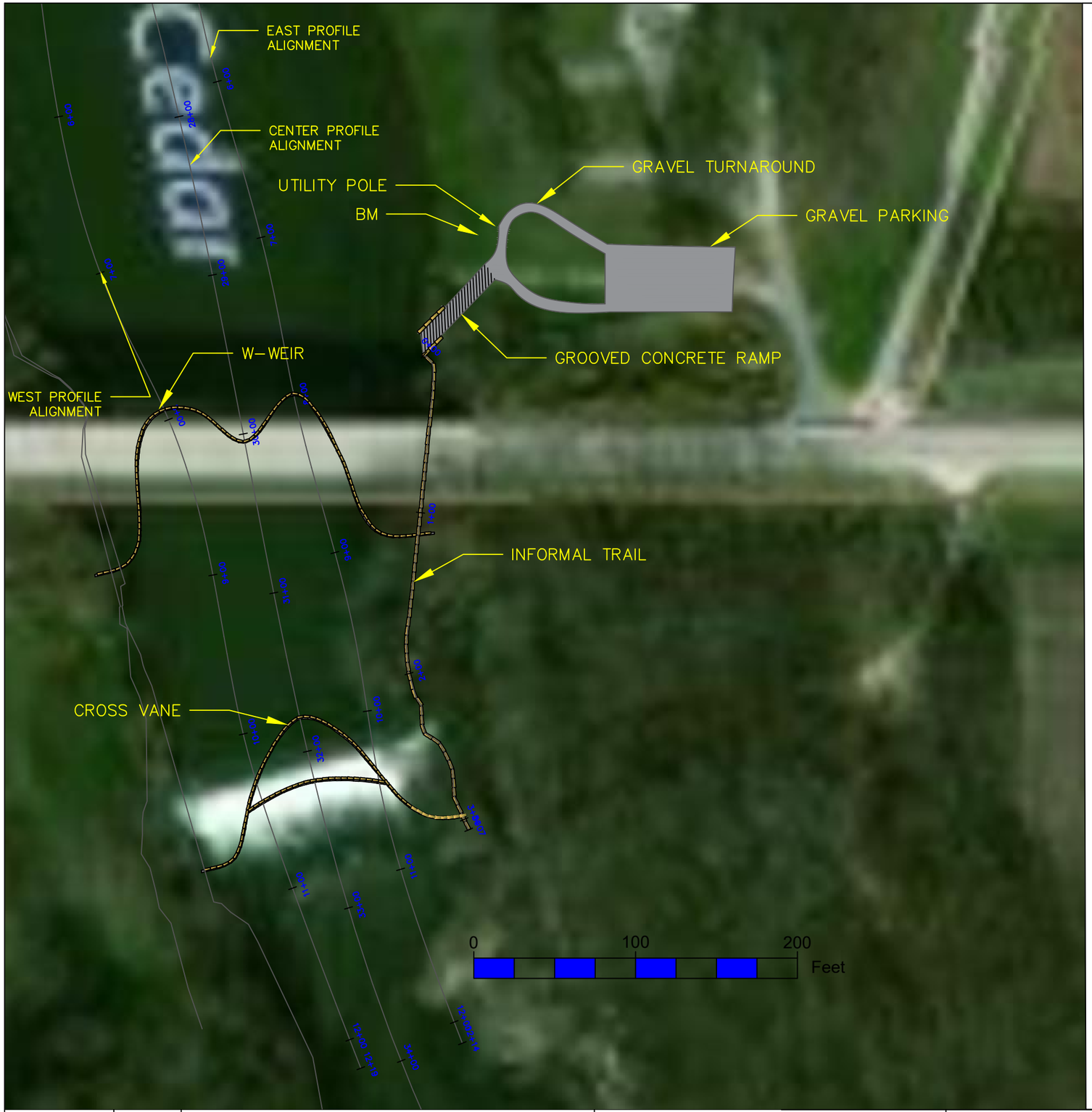
1. PRIOR TO ANY EXCAVATION AT THE SITE, THE CONTRACTOR SHALL EXAMINE ANY APPLICABLE DRAWINGS AVAILABLE FROM THE PROJECT MANAGER/ENGINEER, AND CONSULT WITH PROJECT MANAGER/ENGINEER TO DETERMINE POSSIBLE UTILITY LOCATIONS AND DEPTHS. NO COMPENSATION WILL BE ALLOWED FOR DAMAGE RESULTING FROM FAILURE TO COMPLY WITH THIS REQUIREMENT.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING IOWA ONE CALL 881 OR AT IOWAONECALL.COM TO LOCATE ANY UNDERGROUND UTILITIES.
3. ALL DEBRIS SPILLED ON THE PUBLIC R.O.W. SHALL BE PICKED UP BY THE CONTRACTOR AT THE END OF EACH WORK DAY.
4. ALL WORK SHALL BE IN ACCORDANCE WITH OSHA CODES AND STANDARDS. NOTHING INDICATED ON THESE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ANY APPROPRIATE SAFETY REGULATIONS.
5. FIELD VERIFY EXISTING GRADES AND LOCATIONS OF EXISTING UTILITIES, CONDUIT LINES, POLES, TREES, PAVING, BUILDINGS AND OTHER SITE STRUCTURES PRIOR TO DEMOLITION OR CONSTRUCTION AND IMMEDIATELY INFORM THE PROJECT MANAGER/ENGINEER OF ANY DISCREPANCIES.
6. CONTRACTOR SHALL PROTECT EXISTING UTILITIES, CONDUIT LINES, POLES, TREES, PAVING, BUILDINGS, SHORELINE AND OTHER STRUCTURES.
7. CONTRACTOR TO CONSULT WITH MITCHELL COUNTY CONSERVATION BOARD (OWNER) AND DNR ON: STORAGE LOCATION OF MATERIALS, WORK AREA, JOB OFFICE AND EMPLOYEE PARKING. CONSULT WITH THE MITCHELL COUNTY CONSERVATION BOARD AND DNR IF CONSTRUCTIONS LIMITS NEED TO BE MODIFIED FROM THAT ILLUSTRATED ON THE PLAN.
8. THE CONTRACTOR WILL HOLD OWNER AND DNR HARMLESS FROM ANY AND ALL CLAIMS OF ANY TYPE WHATSOEVER RESULTING FROM DAMAGES TO ADJOINING PUBLIC OR PRIVATE PROPERTY, INCLUDING REASONABLE ATTORNEY FEES INCURRED TO THE OWNER. FURTHER, IF THE CONTRACTOR FAILS TO TAKE NECESSARY STEPS TO PROMPTLY REMOVE EARTH SEDIMENTATION OR DEBRIS WHICH COMES ONTO ADJOINING PUBLIC OR PRIVATE PROPERTY, THE OWNER MAY, BUT NEED NOT, REMOVE SUCH ITEMS AND DEDUCT THE COST THEREOF FROM THE AMOUNTS DUE TO THE CONTRACTOR.
9. IN THE EVENT THAT THERE IS EXCESS SOIL, THAT SOIL SHALL BE SPREAD ON SITE AS PER OWNER AND DNR DIRECTION. ALL EXCESS SPOILS ARE TO BE SPREAD TO A DEPTH OF LESS THAN 6 INCHES AS PER PERMIT REQUIREMENTS.
10. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF THE STREAM, INCLUDING ACCESS PATHS AND OVERBANK AREAS.
11. CONTRACTOR SHALL REPLACE ANY FENCE DISTURBED DURING CONSTRUCTION TO OWNERS SATISFACTION.
12. CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN EROSION CONTROL UNTIL ESTABLISHMENT OF PERMANENT GROUNDCOVER.
13. TRAFFIC CONTROL DEVICES, PROCEDURES, AND LAYOUTS SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD).
14. CONTRACTOR SHALL WORK WITH OWNER TO COORDINATE A SUITABLE AND SAFE ACCESS TO THE PROJECT SITE.
15. DNR TO PROVIDE CONSTRUCTION STAKING AND CONSTRUCTION MANAGEMENT IN CONJUNCTION WITH OWNER.
16. ALL WORK SHALL CONFORM TO THE IOWA DOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015.

EROSION CONTROL NOTES:

1. DISTURB THE LEAST AREA AS POSSIBLE TO COMPLETE THE SCOPE OF THE PROJECT.
2. ALL SEDIMENT AND EROSION CONTROL PRACTICES WILL BE INSPECTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS BY RESPONSIBLE PERSONNEL. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE BEST MANAGEMENT PRACTICES SHALL BE MADE IMMEDIATELY. INSPECTION ARE THE RESPONSIBILITY OF THE CONTRACTOR.
3. SOIL STABILIZATION WILL BE INITIATED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY WILL NOT OCCUR FOR A PERIOD OF MORE THAN 21 CALENDAR DAYS BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED. THIS SEQUENCE SHALL REPEAT AS GROUND COVER IS REMOVED BY SUBSEQUENT CONSTRUCTION ACTIVITY.
4. GENERAL CONTRACTOR SHALL IMPLEMENT ALL EROSION CONTROL ACTIVITY WITH THE ASSISTANCE OF THE UTILITY SUBCONTRACTORS, BUILDING CONTRACTORS AND SUPPLIERS.
5. APPLY FREQUENT LIGHT WATER TO GROUND SURFACE, AS REQUIRED TO CONTROL DUST.
6. UPON COMPLETION AT CONSTRUCTION, SEED ALL DISTURBED AREAS PER PROJECT SPECIFICATIONS.
7. MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES IS THE RESPONSIBILITY OF THE CONTRACTOR.
8. LOCATION OF SOLID WASTE CONTAINER AND PORTABLE RESTROOM TO BE SPECIFIED BY CONTRACTOR AND APPROVED BY EGINEER/PROJECT MANAGER.
9. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRAFFIC ONTO PAVED SURFACES. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISIONS LOTS AS WELL TO LARGER LAND DISTURBING ACTIVITIES.
10. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE IMPLEMENTING AGENCY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENT.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NPDES GENERAL PERMIT #2 AS REQUIRED. CONTRACTOR SHALL PREPARE AND MAINTAIN STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AS ARE REQUIRED.
12. THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL SEEDING WITH 12 LBS PER ACRE WINTER WHEAT AND 12 LBS. PER ACRE VIRGINIA WILD RYE.

SUMMARY OF WORK:

1. MOBILIZE TO SITE.
2. OBTAIN ANY NECESSARY STORMWATER EROSION, AND SEDIMENTATION CONTROL PERMITS.
3. PREPARE TEMPORARY SITE FOR PUSH IN PORTION OF CONCRETE RAMPS.
4. CLEAR AND GRUB ANY TREES IN THE CONSTRUCTION SITE AND CONSTRUCT TEMPORARY ACCESS INTO THE RIVER FOR REMOVAL OF THE DAM.
5. REMOVE DAM IN IT'S ENTIRETY INCLUDING ABUTMENT WALLS. BREAK UP CONCRETE DEBRIS TO BE USED FOR BASE MATERIAL FOR WEIR STRUCTURES.
6. PREPARE ACCESS TO THE RIVER FOR THE W-WEIR AROUND THE BRIDGE.
7. STAKE AND CONSTRUCT W-WEIR FROM THE WEST SIDE OF THE RIVER TO THE EAST SIDE.
8. WHILE BUILDING W-WEIR COMPLETE PORTIONS OF THE PORTAGE TRAIL AND REMOVE EAST OLD BRIDGE PIER DOWN TO THE SECOND COURSE OF STONE. CUT AND ARMOR THE BANK AS DETAILED ON SHEET D.5.
9. COMPLETE CONSTRUCTION OF CROSS VANE WEIR STRUCTURE AT THE OLD DAM SITE.
10. COMPLETE PORTAGE TRAIL.
11. PREPARE SITE FOR PUSH OF SOUTH CONCRETE RAMP.
12. PUSH IN CONCRETE RAMP AND FORM UP REMAINING SECTIONS OF BOAT RAMP ACCORDING TO SPECIFICATIONS.
13. CONSTRUCT OUT OF WATER SECTIONS OF THE CONCRETE RAMP.
14. STABILIZE ALL DISTURBED AREAS THAT ARE NOT RESTORED.
15. PREPARE NORTH BOAT RAMP AND TURNAROUND SITE.
16. DEMOBILIZE FROM SITE.



NOTES:

1. IOWA DNR ENGINEER WILL STAKE LOCATION OF WEIR STRUCTURES.
2. GAPS SHOWN IN TYPICAL DRAWING WILL BE INSPECTED BY IOWA DNR ENGINEER DURING CONSTRUCTION.
3. THE VANE AREA PORTION OF THE STRUCTURE IS 20°–30° MEASURED UPSTREAM FROM THE TANGENT LINE WHERE THE VANE INTERCEPTS THE BANK.
4. THE VANE SLOPE EXTENDING FROM THE INTERCEPT OF THE STRUCTURE WITH THE BANK SHOULD NOT EXCEED 5%.
5. THE STRUCTURE INTERCEPTS THE BANK AT AN ELEVATION OF 1126'.
6. THE ROCK SIZING FOR THE STRUCTURE HAS A MAXIMUM SIZING OF 4.0' AND A MINIMUM SIZING OF 3.0' IN MEDIAL DIAMETER.
7. THE FLATTEST STONES SHOULD BE USED FOR THE TOP OF THE STRUCTURE TO MAINTAIN A CONSISTENT SLOPE ON THE VANE ARM.
8. IRREGULAR STONES CAN BE USED FOR THE FOOTERS.
9. INCORPORATE ESTIMATED 500 TONS OF EXISTING BOULDERS DOWNSTREAM OF THE DAM AND RE-PURPOSE AS FOOTERS FOR THE CROSS VANE STRUCTURE.
10. THE ENTIRE STRUCTURE WILL BE HELD TO A 0.1' TOLERANCE ON THE ELEVATION AND WILL BE INSPECTED BY IOWA DNR THROUGHOUT THE CONSTRUCTION.
11. ROCK SIZING SHOULD BE APPROVED BY IOWA DNR ENGINEER.
12. SMALLER ROCK SIZING IN THE ORDER OF 2'–2.5' MEDIAL DIAMETER CAN BE USED FOR SILLED PORTION OF STRUCTURE, WHICH IS BURIED. REFER TO VANE TYPICAL FOR CLARIFICATION.
13. EXCESS RIP-RAP ALREADY ON SITE IS TO REMAIN IN PLACE UNLESS NECESSARY TO MOVE DURING CONSTRUCTION. THE BANKS SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION AND CONTRACTOR SHALL WORK WITH DNR ENGINEER TO PROVIDE FISHING ACCESS TO CONSTRUCTED WEIR USING EXISTING ROCK ON SITE FOR STEPPING STONES.
14. REFER TO PROFILE VIEW FOR STATION ELEVATION WITH RESPECT TO DISPLAYED ALIGNMENTS – EAST, CENTER AND WEST ALIGNMENTS.
15. IOWA DNR WILL PROVIDE ADDITIONAL BENCHMARKS AT CONTRACTORS REQUEST.

	NORTHING	EASTING	ELEVATION
BM1	3995047.5530'	5059030.398'	1131.09'

FILE NO.	ENGLISH	DESIGN TEAM Brumm\Hoogeveen\Harman\Shirley	Mitchell Co. Conservation Board COUNTY	PROJECT NUMBER	SHEET NUMBER B.2	PROJECT PLAN VIEW

100-1D
10-18-05

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THREE (3) PHASES FOR COMPLETTION. PHASE ONE (1) INVOLVES THE REMOVAL OF THE EXISTING DAM AND RELATED CLEARING, GRUBBING AND BANK STABILIZATION. PHASE TWO (2) INVOLVES THE GRADING AND RELATED WORK TO PLACE THE WEIR STONES IN THE EXISTING RIVER BED AND CONSTRUCTION OF AN INFORMAL TRAIL. PHASE THREE (3) INVOLVES THE REMOVAL AND RELOCATION OF BOAT RAMPS.

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1		MOBILIZATION	LS	1	
2		REMOVE AND REPLACE UTILITY POLE	EACH	1	
3		REMOVAL OF BOAT RAMP	LS	1	
4		PC CONCRETE, CLASS C	CY	32	
5		EROSION CONTROL SEEDING	ACRE	3	
6		CLEARING AND GRUBBING	LS	1	
7		GRADING	LS	1	
8		REMOVAL OF DAM	LS	1	
9		REVETMENT STONE, CLASS B	TON	1440	
10		REVETMENT, CLASS A	TON	350	
11		REVETMENT, CLASS E (RIP-RAP)	TON	22	
12		WEIR STONE, 3'X4'X4'	EACH	325	
13		REMOVE AND REPLACE FENCE	LS	1	
14		MODIFIED SUBBASE	TON	600	

CONSTRUCTION PHASES AND ESTIMATED QUNTITIES

PHASE 1: DAM REMOVAL

1. MOBILIZATION
2. CLEARING AND GRUBBING
3. GRADING
4. DAM REMOVAL
5. REVETMENT, CLASS 'E' RIP-RAP, APPROXIMATELY 100 TON

PHASE 2: WEIRS AND TRAIL

1. CLEARING AND GRUBBING
2. GRADING
3. REMOVAL AND REPLACEMENT OF FENCE
4. WEIR STONES, EST. 325 EACH, APPROXIMATELY 1440 TONS
5. REVETMENT STONE, CLASS 'B', APPROXIMATELY 1440 TONS
6. REVETMENT, CLASS 'A', APPROXIMATELY 300 TONS
7. REVETMENT, CLASS 'E' RIP-RAP, APPROXIMATELY 100 TONS
8. EROSION CONTROL SEEDING

PHASE 3: BOAT RAMPS

1. REMOVAL AND REPLACEMENT OF UTILITY POLE
2. CLEARING AND GRUBBING
3. GRADING
4. REMOVAL OF BOAT RAMP
5. PC CONCRETE, CLASS C, APPROXIMATELY 32 CY
6. REVETMENT, CLASS 'E' RIP-RAP, APPROXIMATELY 20 TONS
7. REVETMENT, CLASS 'A', APPROXIMATELY 50 TONS

232-3A
MODIFIED

EROSION CONTROL SEEDING

Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed areas as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are all incidental to mobilization and will not be paid for separately.

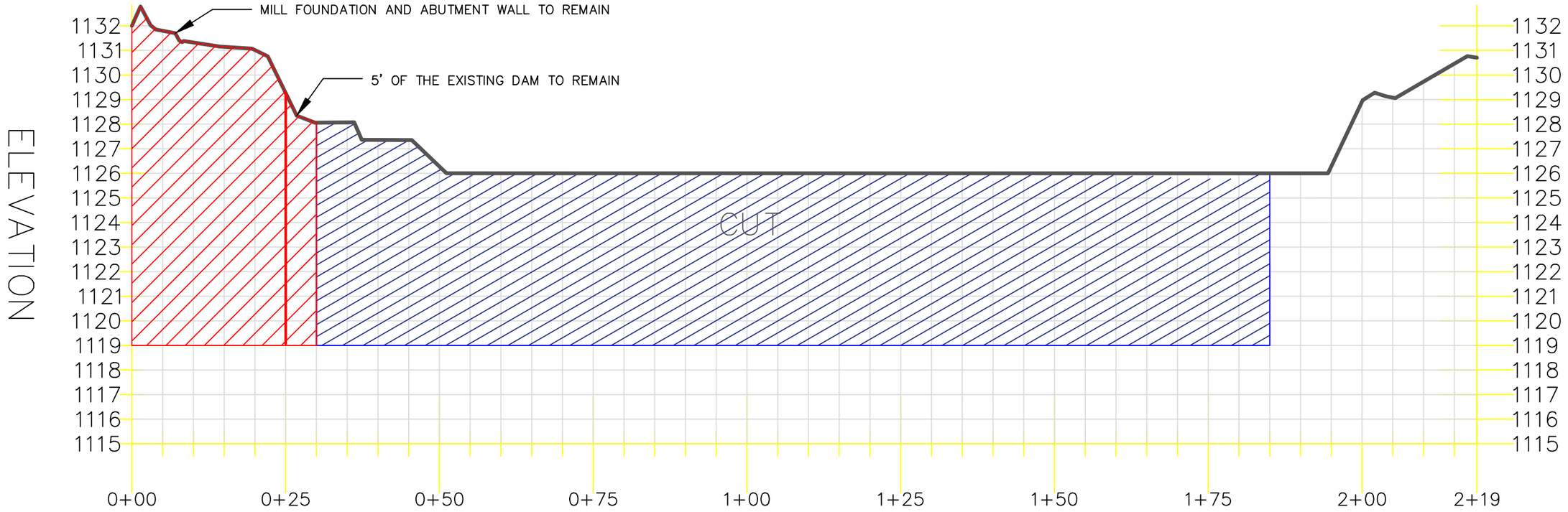
Seed mix shall consist of 12 lb/acre Winter Wheat and 12 lb/acre of Virginia Wild Rye.

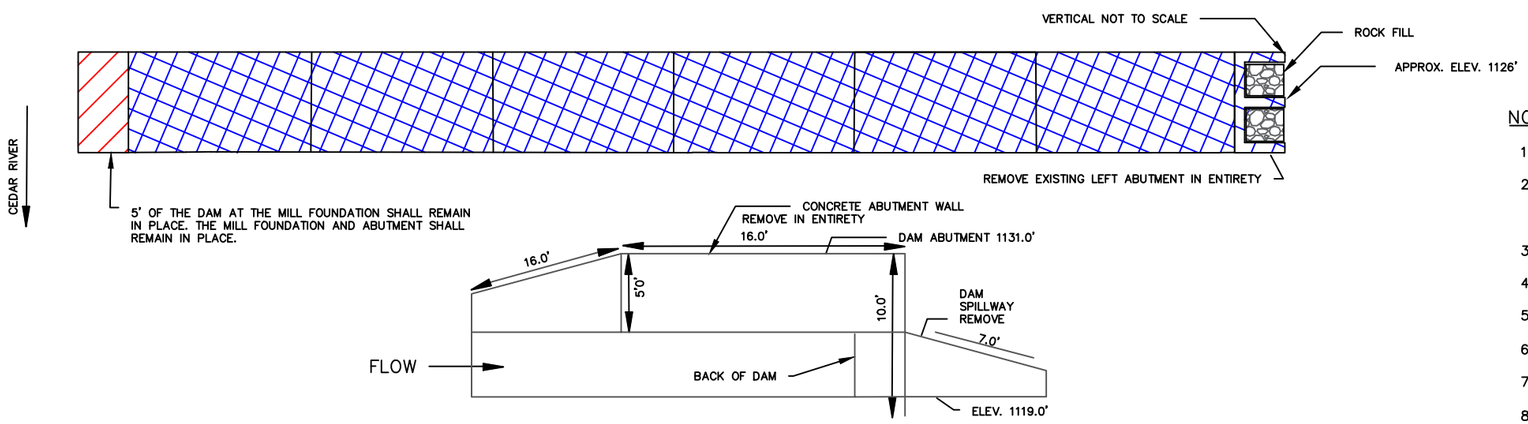
100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
2		REMOVE AND RELPLACE UTILITY POLE - THE EXISTING POLE IS TO BE REMOVED FROM THE NORTH SIDE OF THE EXISTING BOAT RAMP. POLE SHALL BE STORED ON SITE AND RELOCATED TO A NEW LOCATION AS DIRECTED BY THE MITCHELL COUNTY CONSERVATION BOARD.
3		REMOVAL OF BOAT RAMP - EXISTING CONCRETE BOAT RAMP TO BE REMOVED. THE BROKEN CONCRETE MAY BE USED/ WASTED WITHIN THE PROJECT SO LONG AS THE SIZE OF PIECES MEET THE REQUIREMENTS FOR THE TYPE OF ROCK NEEDED. ANY REBAR MUST BE REMOVED FROM THE CONCRETE BEFORE USE, OTHERWISE THE MATERIAL MUST BE DISPOSED OF PER THE DIRECTION OF THE MITCHELL COUNTY CONSERVATION BOARD.
4		PC CONCRETE, CLASS C - ITEM IS USED FOR THE CONSTRUCTION OF BOTH BOAT RAMPS. FORM AND GROOVE PER PLAN. THE MIXED USED MUST MEET A MINUMUM 28 DAY STRENGTH OF 4000 PSI. ALL STEEL REINFORCING, MOISTURE BARRIER, JOINT SEALANTS OR ANY OTHER WORK RELATED TO THE CASTING AND PLACEMENT OF THE CONCRETE BOAT RAMPS IS INCIDENTRAL TO THIS BID ITEM.
5		EROSION CONTROL SEEDING - ALL DISTURBED AREAS OF THE PROJECT ARE TO BE SEEDED USING A MIXTURE CONSISTING OF 8 LB/ACRE ANNUAL RYE AND 18 LB/ACRE VIRGINA WILD RYE. SEE EROSION CONTROL NOTES ON SHEET B.1 AND C.1 FOR MORE INFORMATION.
6		CLEARING AND GRUBBING - ITEM IS FOR THE REMOVAL OF TREES AND MISCELLANEOUS SHRUBBERY FOR EACH PHASE OF THE PROJECT. REMOVE ONLY THE AMOUNT OF TREES NECESSARY FOR THE COMPLETION OF THE PROJECT. TREE REMOVAL WILL BE AT THE DIRECTION OF THE MITCHELL COUNTY CONSERVATION BOARD.
7		GRADING - ITEM IS FOR THE ASSOCIATED REMOVALS AND SHAPING FOR EACH PHASE OF THE PROJECT. ITEM CONSISTS MOSTLY OF SPOILS FROM THE TRAIL CUT AND MINOR MISCELLANEOUS SHAPING. SEE PLAN SHEETS FOR MORE INFORMATION.
8		REMOVAL OF DAM - ITEM IS FOR THE COMPLETE REMOVAL OF THE DAM INCLUDING ANY ABUTMENT WALLS AND FOOTINGS. CONCRETE IS TO BE BROKEN UP (PER PLAN), REBAR REMOVED AND USED FOR THE BASE OF THE WEIR STRUCTURES. SPOIL SITE DETERMINED BY CONTRACTOR.
9		REVETMENT STONE, CLASS 'B' - SHALL MEET THE REQUIREMENTS OF THE IDOT SPECIFICATION FOR CLASS B STONE. SEE SHEETS D.3, D.4, D.7 AND D.9 FOR INFORMATION ON PLACEMENT. ITEM INCLUDES COST FOR DELIVERY AND PLACEMENT. PAYMENT WILL BE BASED ON ACTUAL TONNAGE DELIVERED AND PLACED BASED ON QUARRY SCALE TICKETS.
10		REVETMENT, CLASS 'A' - SHALL MEET THE REQUIREMENTS OF THE IDOT SPECIFICATION FOR CLASS A STONE. SEE SHEET D.5, D.6, D.8, AND D.9 FOR LOCATIONS AND THICKNESS OF PLACEMENT. ITEM IS TO BE USED FOR ALL PARKING, DRIVEWAY AND RAMP ACCESS LOACTIONS. ITEM INCLUDES COSTS FOR DELIVERY AND PLACEMENT. PAYMENT WILL BE BASED ON ACTUAL TONNAGE DELIVERED AND PLACED BASED ON QUARRY SCLAE TICKETS.
11		REVETMENT, CLASS "E" (RIP-RAP) - SHALL MEET THE REQUIREMNTS OF THE IODOT FOR CLASSE E REVETMENT. ITEM IS FOR A 2' COVER OF THE BROKEN CONCRETE FROM THE DAM REMOVAL, FILL STONE FOR THE WEIRS AND STABILIZATION AT THE END OF THE BOAT RAMPS AND TRAIL SLOPES. ITEM INCLUDES COSTS FOR DELIVERY AND PLACEMENT. PAYMENT WILL BE BASED ON ACTUAL TONNAGE DELIVERED AND PLACED BASED ON QUARRY SCALE TICKETS.
12		WEIR STONES 3'X4'X4' (MINIMUM) - WEIR STONES SHALL BE PRODUCED (CUT) FROM ROCK WITH A MINIMUM SPECIFIC GRAVITY OF 2.65. DIMENSIONS SHALL BE A MINIMUM OF 3'X4'X4'. ROCK SIZING SHALL BE APPROVED BY THE DNR PRIOR TO PLACEMENT. SEE SHEETS D.3, D.3 AND D.4 FOR PLACEMENT DETAILS. COST INCLUDES DELIVERY AND PLACEMENT WITHIN 0.1' OF DESIGN ELEVATIONS. PAYMENT WILL BE BASED ON EACH STONE DELIVERED AND PLACED MEETING THE MINIMUM REQUREMENTS.
13		REMOVE AND REPLACEMENT OF FENCE - ANY PRIVATE FENCING DISTURBED DURING THE PROJECT WILL BE REPLACED PER THE FENCE OWNERS SATISFACTION.
14		MODIFIED SUBBASE - SHALL MEET THE REQUIREMENTS OF GRADATION 14 OF THE STANDARD SPECIFICATION.

OTRANTO DAM CROSS SECTION



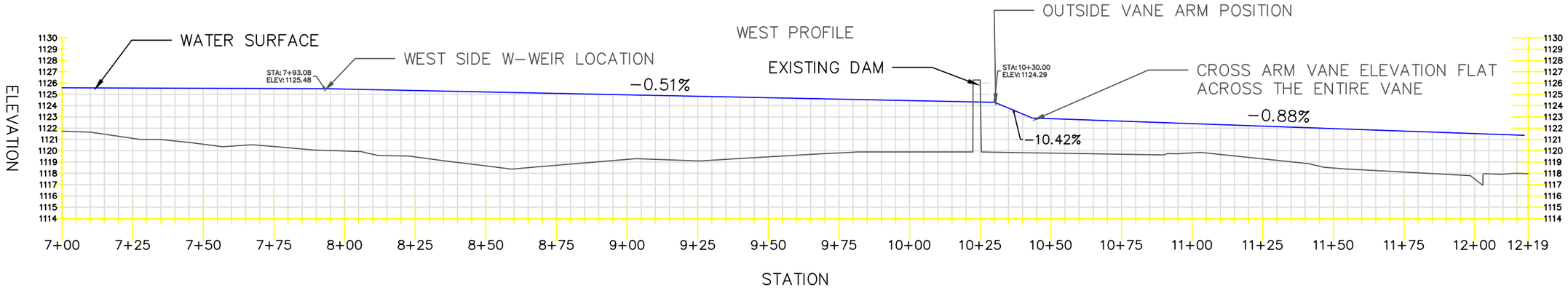


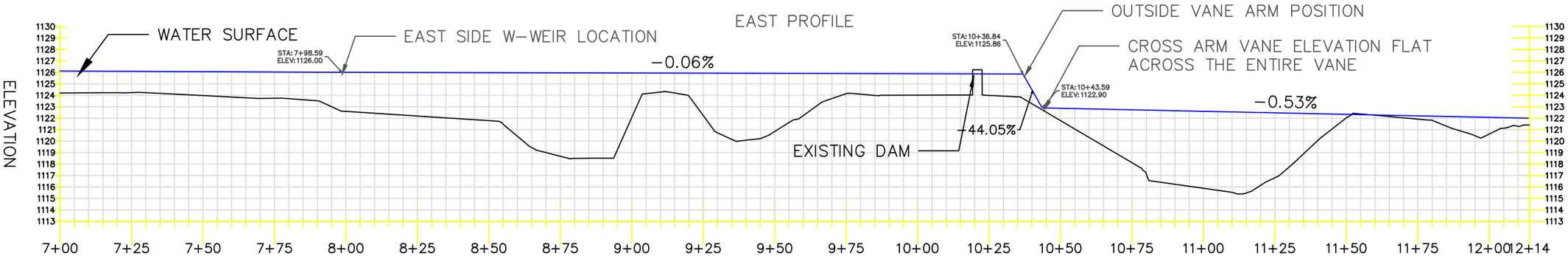
SECTION: EXISTING DAM NOT TO SCALE

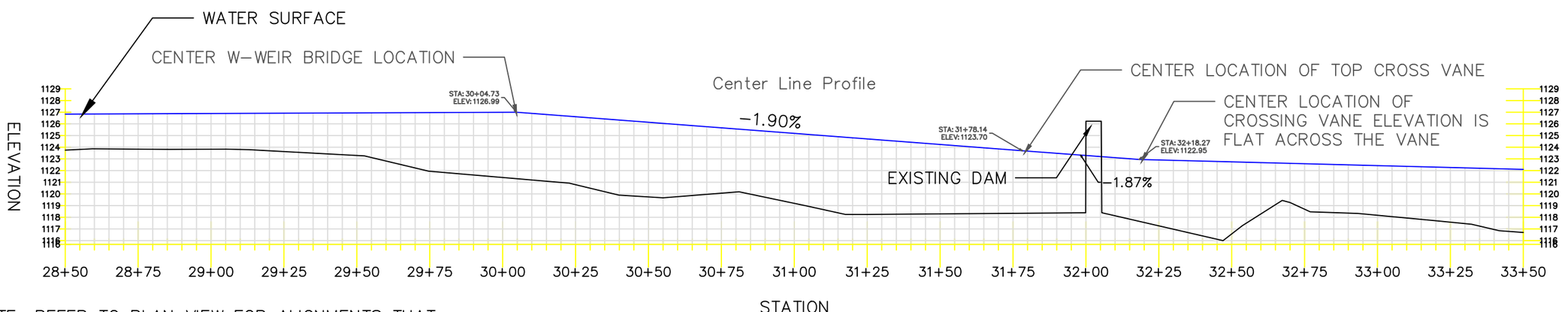
NOTES:

1. DETAILS ON EXISTING DAM SHOWN HERE ARE BASED ON SURVEY DATA, ORIGINAL PLANS, AND RECENT SITE PHOTOGRAPHS. DIMENSIONS ARE NOT TO SCALE BUT ARE BASED ON ORIGINAL PLANS.
2. THE DAM AND THE EAST ABUTMENT WALLS WILL BE REMOVED IN ITS ENTIRETY. THE DAM WILL BE REMOVED TO AN ELEVATION OF 1119'. THE WEST ABUTMENT WALLS, MILL FOUNDATION AND A 5' PORTION OF THE EXISTING DAM WILL REMAIN IN PLACE. THE CROSS VANE STRUCTURE WILL BE BUILT AROUND THE REMAINING PORTION OF THE DAM.
3. ACCORDING TO ORIGINAL PLANS THE DAM IS CONSTRUCTED OF REINFORCED CONCRETE. THE EXACT DEPTH OF THE DAMS FOUNDATION IS APPROXIMATE BUT BASED ON ORIGINAL PLANS.
4. THE CONTRACTOR SHALL VISIT THE SITE AND ASSESS THE WORK REQUIRED TO REMOVE THE EXISTING DAM.
5. SEPARATE ANY REBAR FROM THE CONCRETE PORTIONS OF THE DAM AND USE THE CONCRETE DEBRIS IN THE CONSTRUCTION OF THE WEIR STRUCTURES AS BASE MATERIAL.
6. ALL DAM DEBRIS MUST BE COVERED WITH AT LEAST 2' OF REVETMENT, CLASS A OR 3'X4'X4' WEIR STONE.
7. CONTRACTOR IS RESPONSIBLE FOR WATER CONTROL DURING DAM DEMOLITION. CONTRACTOR MUST LIMIT DRAW DOWN OF UPSTREAM POOL TO A MAXIMUM OF 12" PER DAY.
8. CONSTRUCTION ACCESS IS TO BE REBUILT TO ORIGINAL CONDITION AND ELEVATION.
9. ALL CONSTRUCTION DEBRIS MUST BE COVERED WITH 24" OF TOP SOIL AND SEEDED WITH EROSION SEEDING.

FILE NO.	ENGLISH	DESIGN TEAM Brumm\Hoogeveen\Harman\Shirley	Mitchell Co. Conservation Board COUNTY	PROJECT NUMBER	SHEET NUMBER D.1	DAM DEMOLITION DETAILS

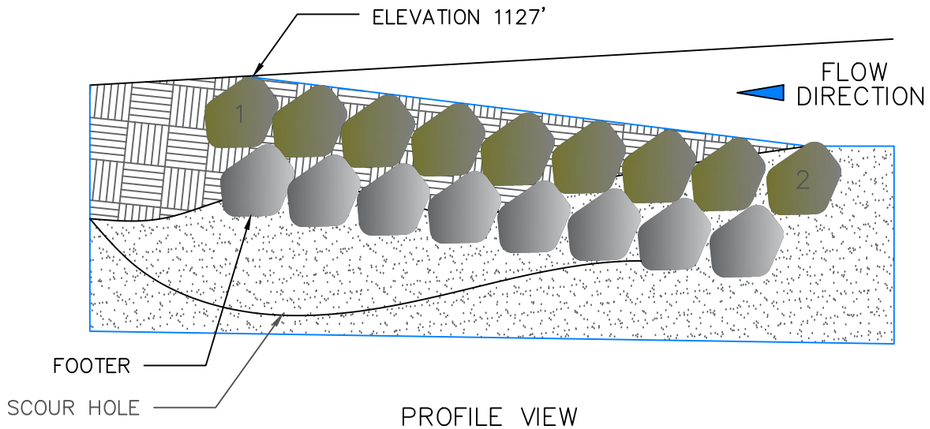




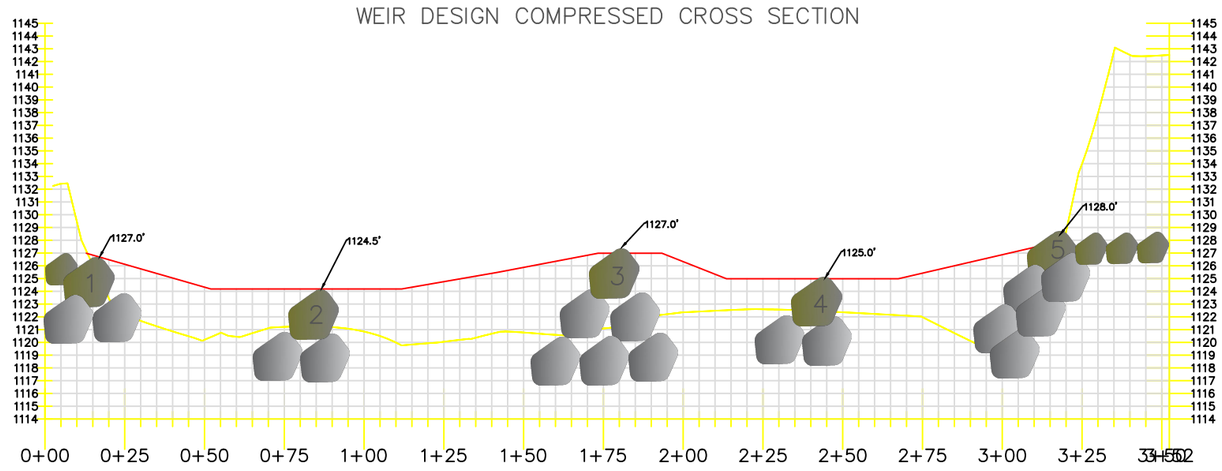


NOTE: REFER TO PLAN VIEW FOR ALIGNMENTS THAT CORRESPOND THE PROFILES STATIONING.

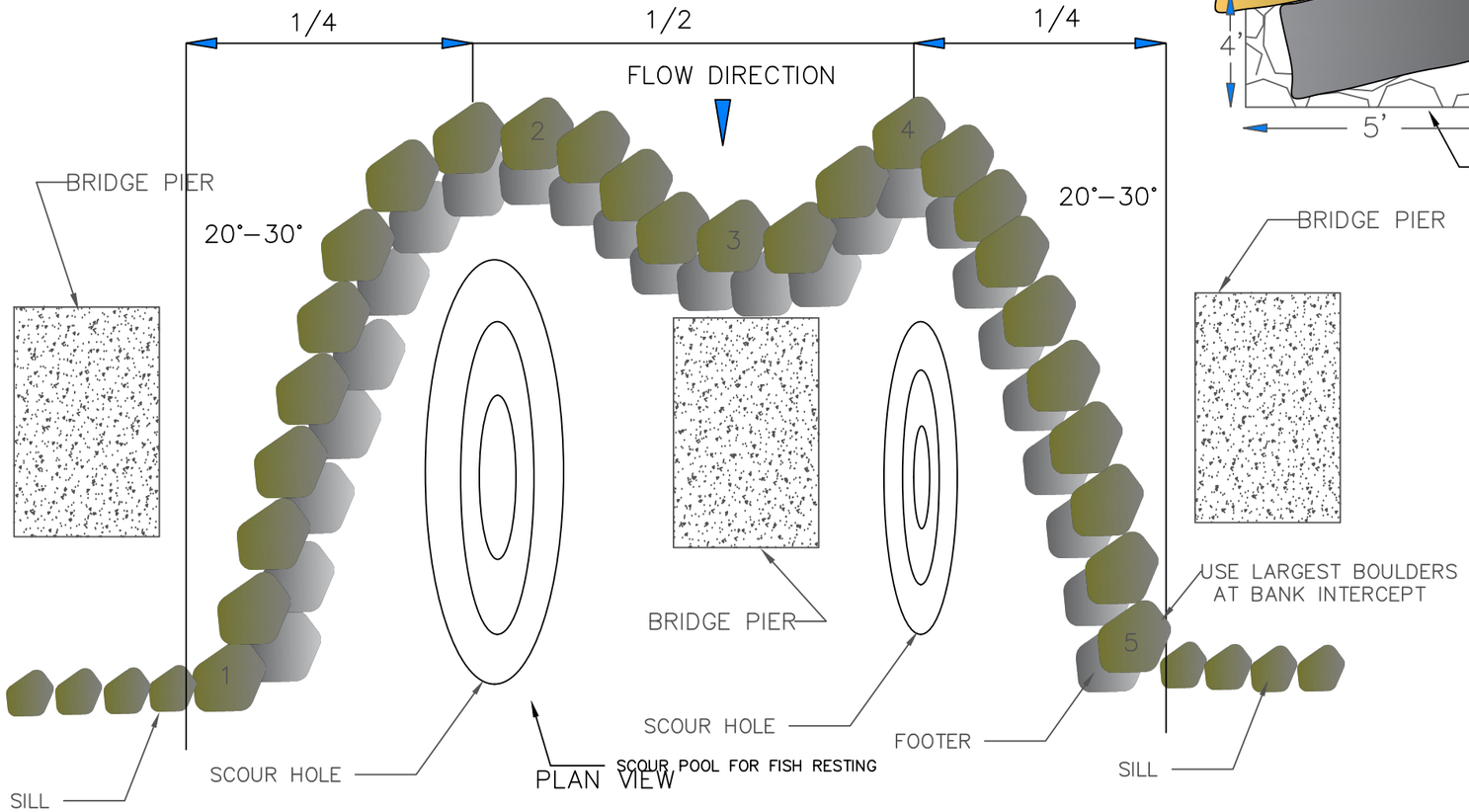
FILE NO.	ENGLISH	DESIGN TEAM Brumm\Hoogeveen\Harman\Shirley	Mitchell Co. Conservation Board COUNTY	PROJECT NUMBER	SHEET NUMBER D.2	DESIGN WEIR PROFILES



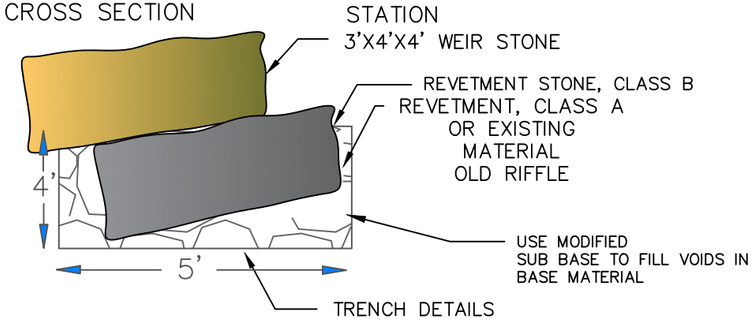
PROFILE VIEW



TYPICAL CROSS SECTION



PLAN VIEW



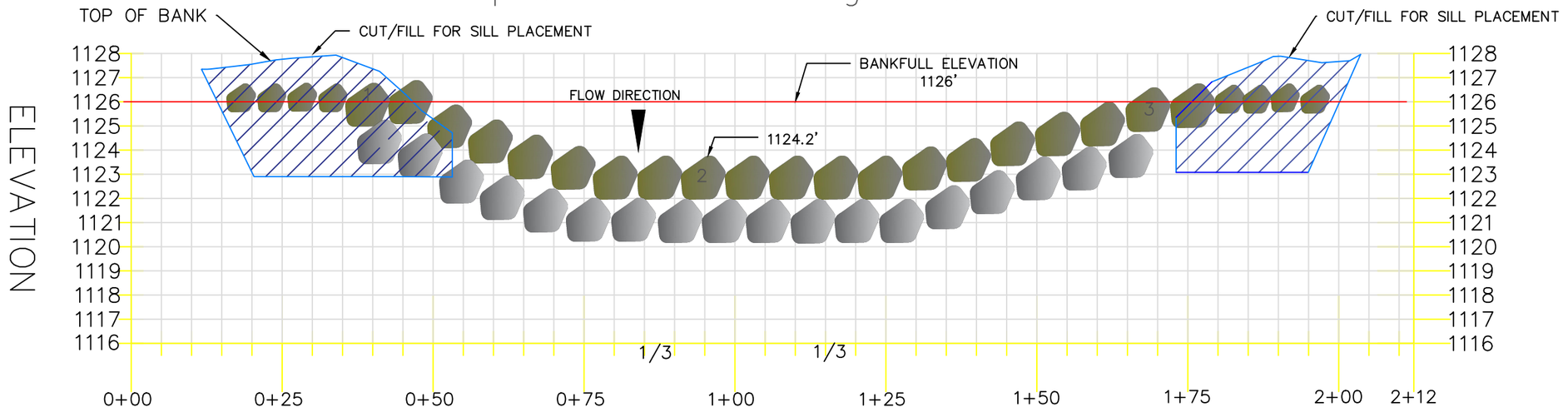
NOTE:
THE W–WEIR IS A GRADE CONTROL STRUCTURE USED TO PROTECT BRIDGE PIERS AND PROVIDE FISH PASSAGE. THE TWO SCOUR HOLES ARE DESIGNED TO PROVIDE RESTING LOCATIONS FOR FISH AND EASY ACCESS FOR ANGLERS. AT NORMAL FLOW, MORE WATER WILL FLOW THROUGH THE RIGHT SIDE TO REDUCE STRESS ON THE RIVERS LEFT CHANNEL AND BANK.

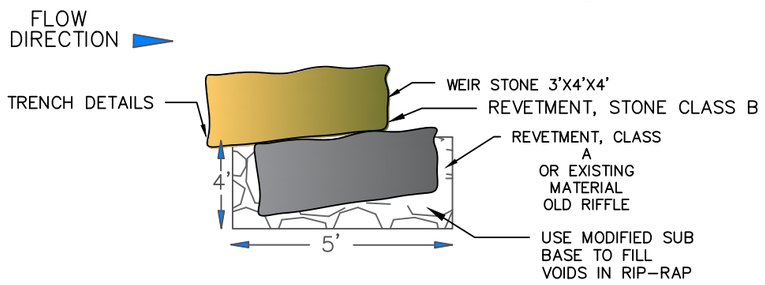
NOTES:

1. IOWA DNR ENGINEER WILL STAKE THE LOCATION OF THE CROSS VANE STRUCTURE.
2. FISH SPACING GAPS WILL BE INSPECTED BY IOWA DNR ENGINEER IN THE FIELD DURING CONSTRUCTION.
3. THE VANE ARM PORTIONS OF THE STRUCTURE IS 20°–30° MEASURED UPSTREAM FROM THE TANGENT LINE WHERE THE VANE INTERCEPTS THE BANK.
4. THE VANE SLOPE EXTENDING FROM THE INTERCEPT OF THE STRUCTURE WITH THE BANK SHOULD NOT EXCEED 7%.
5. THE STRUCTURE INTERCEPTS THE BANK AT AN ELEVATION OF 1128'.
6. THE ROCK SIZING FOR THE STRUCTURE HAS A MAXIMUM SIZING OF 4.0' AND A MINIMUM SIZING OF 3.0' IN MEDIAL DIAMETER.
7. USE 3.0'–4.0' CUT WEIR STONES, WITH A SPECIFIC GRAVITY OF 2.65, FOR THE TOP OF STRUCTURE WITH REVETMENT STONE, CLASS B FOR FOOTER STONE. SURROUND THE REVETMENT STONE, CLASS B WITH REVETMENT, CLASS A SHOWN IN TRENCH DETAIL.
8. THE ENTIRE STRUCTURE WILL BE HELD TO A 0.1' TOLERANCE ON THE ELEVATION AND WILL BE INSPECTED BY IOWA DNR THROUGHOUT THE CONSTRUCTION.
9. ROCK SIZING SHOULD BE APPROVED BY IOWA DNR ENGINEER BEFORE PLACEMENT.
10. SMALLER ROCK SIZING FROM THE REVETMENT STONE, CLASS B IN THE ORDER OF 2'–2.5' MEDIAL DIAMETER CAN BE USED FOR SILLED PORTION OF STRUCTURE.
11. MOVE SEDIMENT IN THE VICINITY OF THE W–WEIR, INCLUDING EXCAVATION OF THE SCOUR HOLE, TO THE DEEP WATER ARE ON THE WEST BANK.

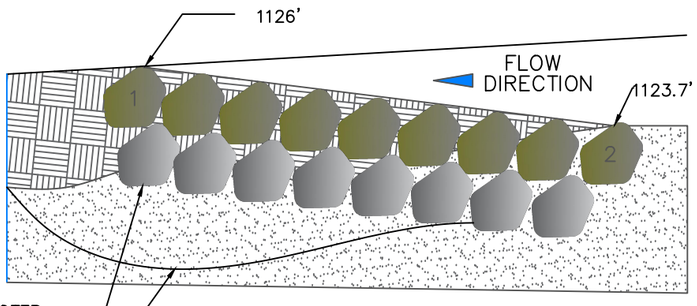
FILE NO.	ENGLISH	DESIGN TEAM Brumm\Hoogeveen\Harman\Shirley	Mitchell Co. Conservation Board COUNTY	PROJECT NUMBER	SHEET NUMBER D.3	TYPICAL DETAIL, W–WEIR

Top Cross Vane Design Profile

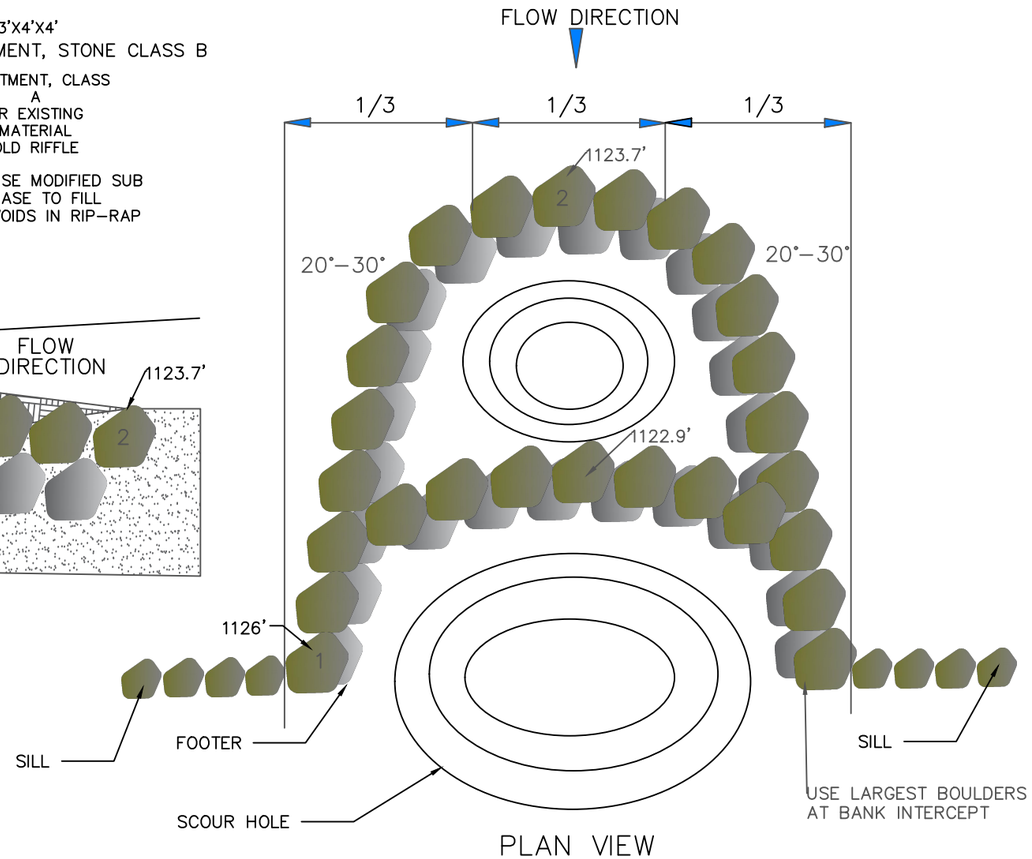




TYPICAL CROSS SECTION



PROFILE VIEW

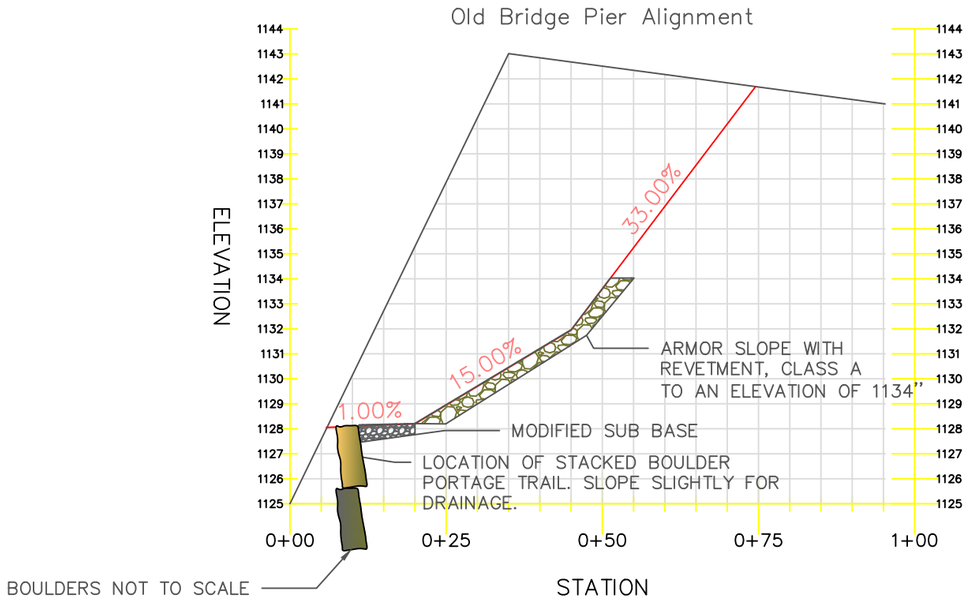


PLAN VIEW

NOTES:

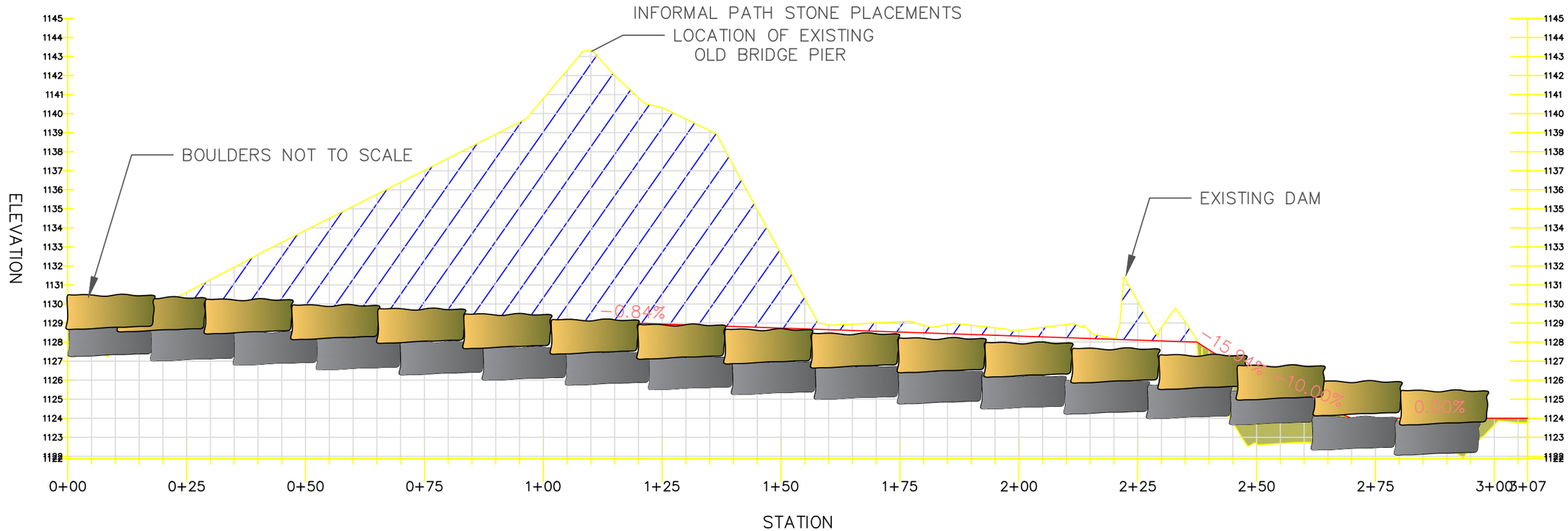
1. IOWA DNR ENGINEER WILL STAKE THE LOCATION OF THE CROSS VANE STRUCTURE.
2. FISH SPACING GAPS WILL BE INSPECTED BY IOWA DNR ENGINEER IN THE FIELD DURING CONSTRUCTION.
3. THE VANE ARM PORTIONS OF THE STRUCTURE IS 20°-30° MEASURED UPSTREAM FROM THE TANGENT LINE WHERE THE VANE INTERCEPTS THE BANK.
4. THE VANE SLOPE EXTENDING FROM THE INTERCEPT OF THE STRUCTURE WITH THE BANK SHOULD NOT EXCEED 5%.
5. THE STRUCTURE INTERCEPTS THE BANK AT AN ELEVATION OF 1126'.
6. THE ROCK SIZING FOR THE STRUCTURE HAS A MAXIMUM SIZING OF 4.0' AND A MINIMUM SIZING OF 3.0' IN MEDIAL DIAMETER.
7. USE 3.0'-4.0' CUT WEIR STONES, WITH A SPECIFIC GRAVITY OF 2.65, FOR THE TOP OF STRUCTURE WITH REVETMENT STONE, CLASS B STONE FOR FOOTER STONE. SURROUND THE REVETMENT STONE, CLASS B WITH REVETMENT, CLASS A AS SHOWN IN TRENCH DETAIL.
8. THE ENTIRE STRUCTURE WILL BE HELD TO A 0.1' TOLERANCE ON THE ELEVATIONS AND WILL BE INSPECTED BY IOWA DNR THROUGHOUT THE CONSTRUCTION.
9. ROCK SIZING SHOULD BE APPROVED BY IOWA DNR ENGINEER BEFORE PLACEMENT.
10. SMALLER ROCK SIZING IN THE ORDER OF 2'-2.5' MEDIAL DIAMETER CAN BE USED FOR SILLED PORTION OF STRUCTURE.

FILE NO.	ENGLISH	DESIGN TEAM Brumm\Hoogeveen\Harman\Shirley	Mitchell Co. Conservation Board COUNTY	PROJECT NUMBER	SHEET NUMBER D.4	TYPICAL DETAIL, CROSS VANE WEIR

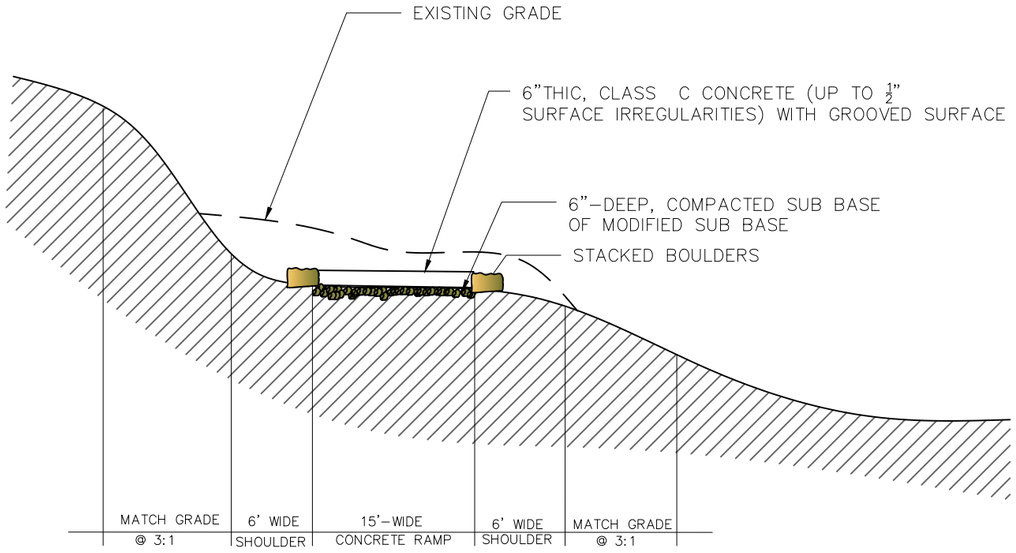


NOTES:

1. INFORMAL TRAIL RUNS FROM UPSTREAM BOAT RAMP TO DOWNSTREAM BOAT RAMP AND RUNS UNDER THE A19 BRIDGE.
2. THE EXISTING OLD ROAD BRIDGE PIER IS TO BE CUT DOWN TO THE SECOND COARSE OF BOLDER ABOVE THE LOW WATER LEVEL AT AN ELEVATION OF 1127'. THE PORTAGE TRAIL WILL BE CONSTRUCTED BEHIND THE REMAINING BOULDERS.
3. REUSE ANY BOULDERS SALVAGED FROM THE OLD BRIDGE PIER.
4. CUT THE MINIMUM AMOUNT OF THE EAST OLD BRIDGE APPROACH AS NEEDED FOR THE PORTAGE TRAIL.
5. PLACE REVETMENT, CLASS A ON THE SLOPE OF THE BANK EAST OF THE PORTAGE TRAIL TO PROTECT THE EXISTING BRIDGE APPROACH AND NEWLY SLOPED BANKS.
6. KEEP REVETMENT, CLASS A TO A MAXIMUM ELEVATION OF 1134'. USE EROSION CONTROL SEEDING ON THE REMAINING PORTIONS OF THE EXPOSED SLOPE.
7. REFER TO CROSS VANE DETAIL ON SHEET D4 FOR PROPER ROCK PLACEMENT.
8. PLACE 6" OF MODIFIED SUB BASE EAST OF THE STACKED BOULDERS TO AN ELEVATION SLIGHTLY LOWER THAN THE TOP OF THE BOULDERS.

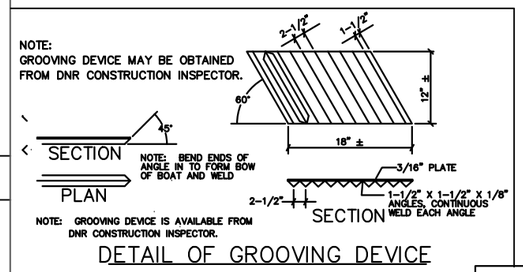


FILE NO.	ENGLISH	DESIGN TEAM Brumm\Hoogeveen\Harman\Shirley	Mitchell Co. Conservation Board COUNTY	PROJECT NUMBER	SHEET NUMBER D.5	TRAIL PROFILE



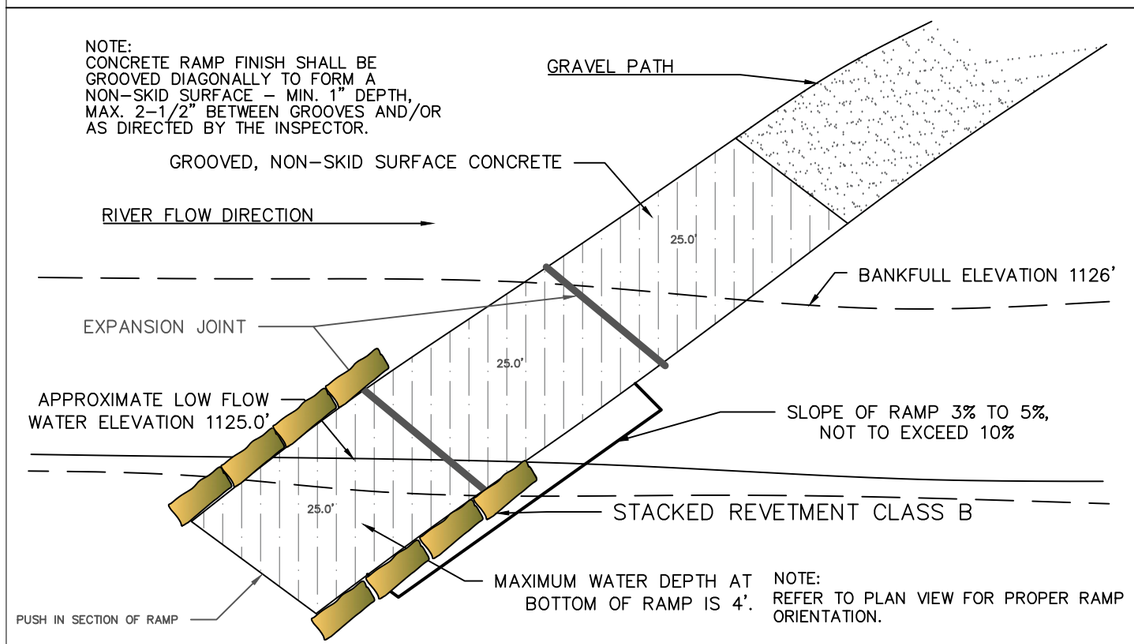
NOTES:
1. PLACE REVETMENT STONE CLASS B IN WATER TO WITHIN SIX INCHES OF THE FINAL SUB GRADE OF CONCRETE SLAB. PLACE GRADE STAKES AND STRING LINE ON POSTS IN WATER TO SET GRADE.
2. PLACE SIX INCHES (6") OF MODIFIED SUB BASE (¾ INCH) ON TOP OF REVETMENT CLASS E AND FILL VOIDS. AFTER FILLING VOIDS THERE SHOULD BE A MINIMUM OF 6" OF MODIFIED SUB BASE ON TOP OF REVETMENT CLASS E RIP–RAP, AND BASE SHOULD BE TO FINAL GRADE.
3. BUILD TEMPORARY FILL TO GRADE FOR POURING THE UNDER WATER PORTION OF THE RAMP. TEMPORARY FILL LOCATION LOCATED NEXT TO RAMP LOCATION. REFER TO PLAN VIEW FOR DETAILS ON LOCATION. SAND FOR TEMPORARY FILL IS LOCATED IN THIS LOCATION
4. PLACE 2" OF MODIFIED SUB BASE ON TOP OF TEMPORARY FILL.
5. POUR CONCRETE (4,000 PSI) FOR SLAB IN PLACE ON TEMPORARY FILL, WITH TWO LAYERS OF 6 MIL POLYETHYLENE ON TOP OF SUB GRADE. TAKE A MINIMUM OF TWO TEST CYLINDERS FOR TESTING.
6. ALLOW PUSHED SECTION CURE FOR A MINIMUM OF TWO WEEKS, UNLESS SEVEN DAY TEST RESULTS EXCEED 3,200 POUNDS.
7. TEST ONE CYLINDER AT SEVEN DAYS FOR COMPRESSIVE STRENGTH; IF GREATER THAN 3,200 PSI THEN RAMP SECTION CAN BE PUSHED INTO PLACE. SECOND CYLINDER WOULD BE USED FOR TEST AT FOURTEEN DAYS IF FIRST CYLINDER DID NOT MEET 3,200 PSI.
8. BEND EXPOSED REBAR AT TOP END OF UNDERWATER SLAB. PLACE WOOD TIMBERS (4" PLANKS ARE USUALLY SUFFICIENT, BUT TIMBERS UP TO 12" X 12" HAVE BEEN USED) UP AGAINST END OF SECTION.
9. USE DOZER, LOADER OR LARGE BACKHOE TO PUSH SECTION INTO PLACE, TAKING CARE TO FOLLOW PROPOSED ALIGNMENT AND GRADE.
10. CHECK FINAL LOCATION AND GRADE AGAINST STRING LINE AND GRADE STAKES. IF SLAB IS NOT TO PROPER GRADE IT CAN BE REMOVED BY PLACING A CABLE AROUND SLAB AND PULLING IT OUT OF THE WATER WITH A DOZER. GRADE CAN THEN BE CORRECTED AND SLAB RE–SET.
11. USE REVETMENT, CLASS E RIP–RAP TO ARMOR EDGES OF BOAT RAMP.
12. CONCRETE RAMP FINISH SHALL BE GROOVED DIAGONALLY TO FORM A NON–SKID SURFACE – MIN 1" DEPTH, MAX. 2–1/2" BETWEEN GROOVES AND OR AS DIRECTED BY THE FIELD ENGINEER.

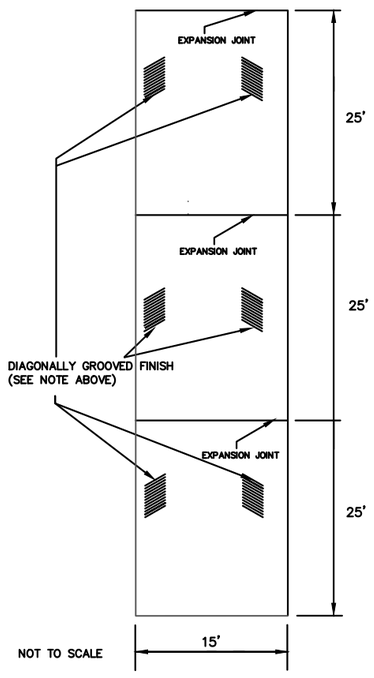
TYPICAL CONCRETE LAUNCH SECTION:

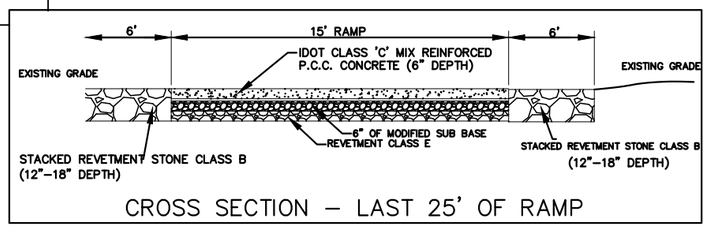


DETAIL OF GROOVING DEVICE

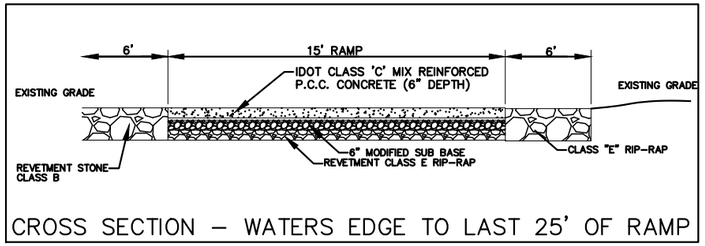
TYPICAL CONCRETE LAUNCH DESIGN:



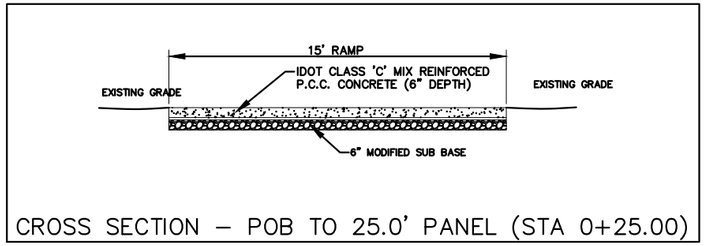




CROSS SECTION – LAST 25' OF RAMP

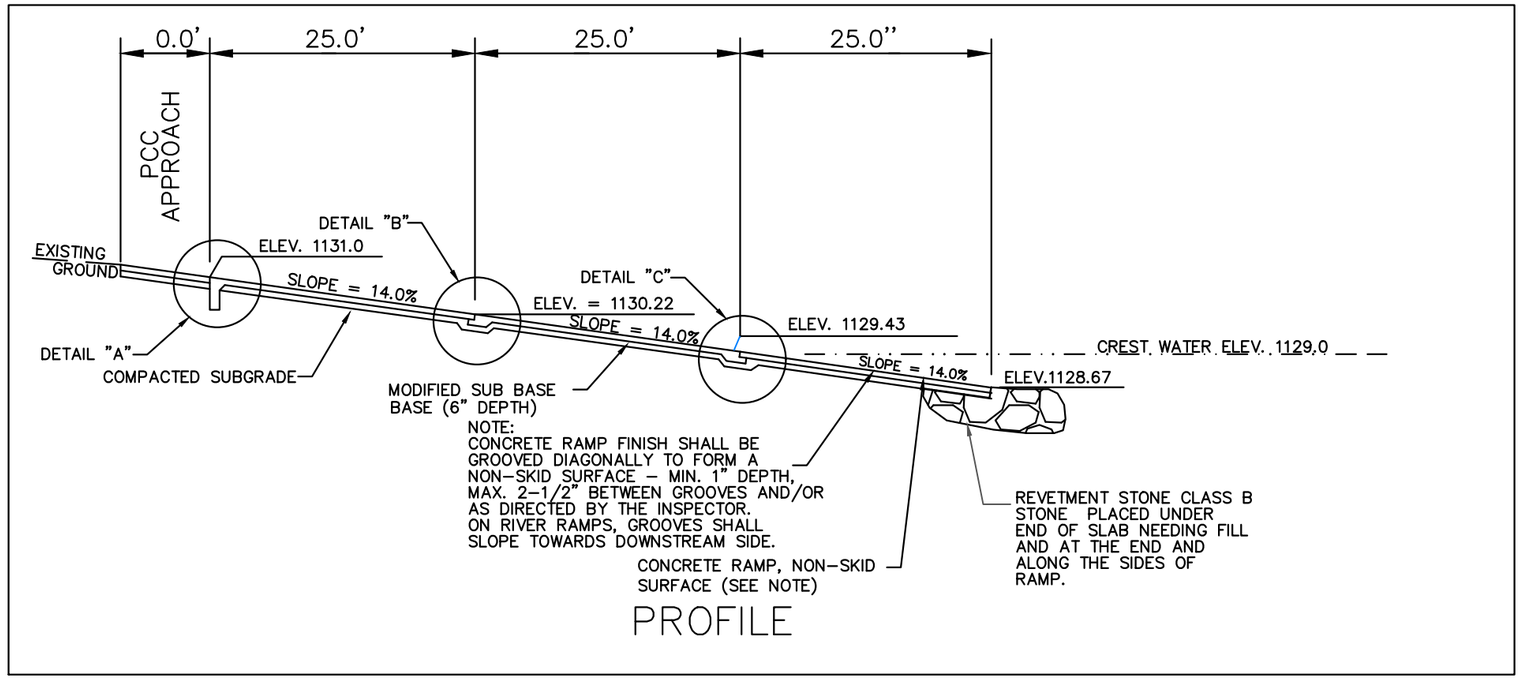


CROSS SECTION – WATERS EDGE TO LAST 25' OF RAMP

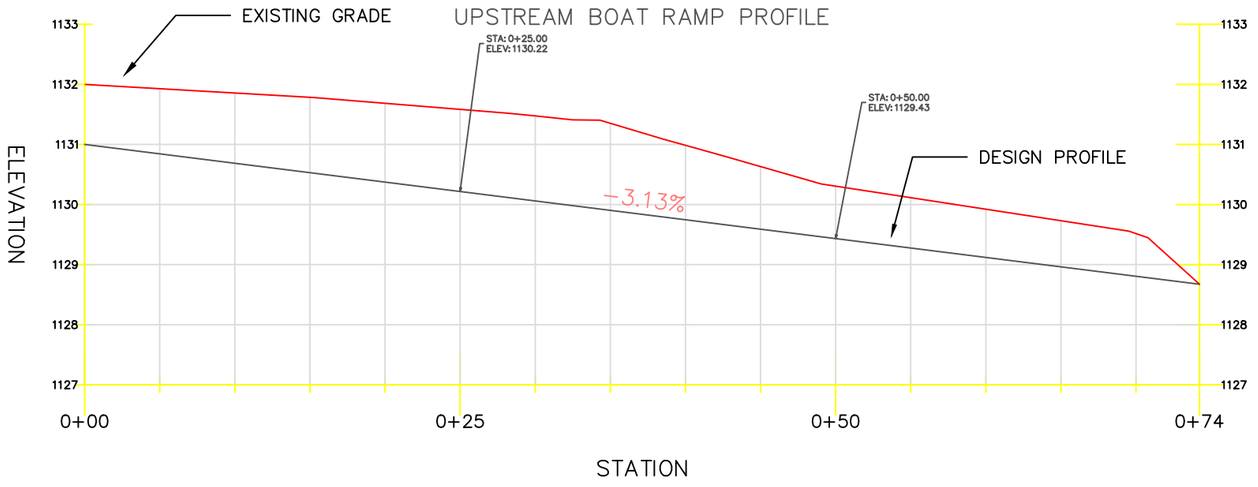


CROSS SECTION – POB TO 25.0' PANEL (STA 0+25.00)

FILE NO.	ENGLISH	DESIGN TEAM Brumm\Hoogeveen\Harman\Shirley	Mitchell Co. Conservation Board COUNTY	PROJECT NUMBER	SHEET NUMBER D.6	NORTH BOAT RAMP, PLANVIEW

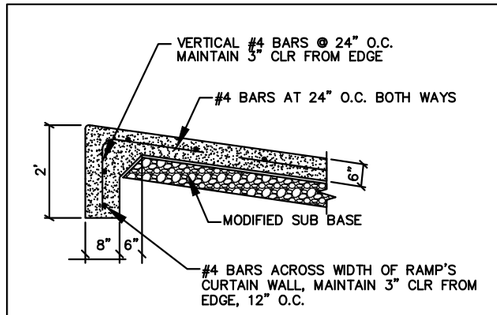


PROFILE

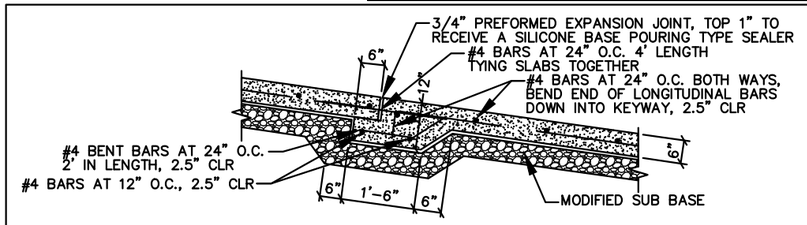


GENERAL NOTES

1. ALL CONCRETE SHALL CONFORM TO CLASS 'C' MIX IDOT SPECIFICATIONS SERIES 2015.
2. ALL EXPOSED EDGES OF CONCRETE TO BE BEVELED WITH 3/4" CHAMFER STRIPS OR 1/2" RADIUS TOOLED EDGE.
3. THE TOP 1" OF ALL EXPANSION JOINTS TO RECEIVE A SILICONE BASE POURING TYPE SEAL.
4. EXPANSION JOINTS – 3/4" PREFORMED RESILIENT FILLER MATERIAL.
5. REINFORCING STEEL – GRADE 40 – DEFORMED EPOXY COATED REBAR.
6. THAT PORTION OF THE RAMP TO BE PLACED BELOW THE WATERLINE MAY BE FORMED ABOVE THE WATERLINE AND CAREFULLY PUSHED INTO POSITION UNDERWATER TO THE LOCATION AND ELEVATION AS SHOWN ON THE PLAN AND AS APPROVED BY THE INSPECTOR. THE REMAINING SECTIONS OF THE RAMP SHALL BE FORMED AND POURED IN PLACE.

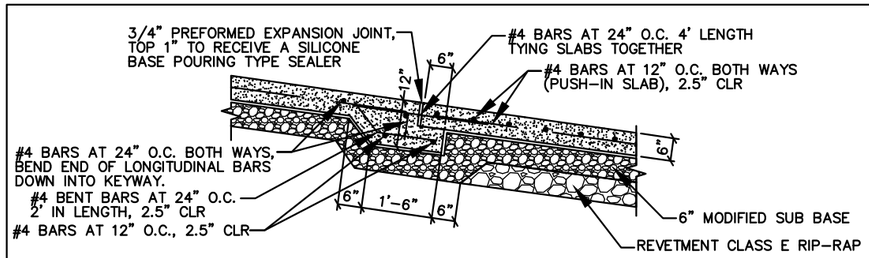


DETAIL "A"
NOT TO SCALE



DETAIL "B"
NOT TO SCALE

NOTE: EXPANSION JOINT MATERIAL, REINFORCING STEEL AND TIE BARS TO BE INCIDENTAL TO CONCRETE BID ITEM.



DETAIL "C"
NOT TO SCALE

FILE NO.	ENGLISH	DESIGN TEAM Brumm\Hoogeveen\Harman\Shirley	Mitchell Co. Conservation Board COUNTY	PROJECT NUMBER	SHEET NUMBER D.7	NORTH BOAT RAMP, PROFILE