Iowa Department of Natural Resources Construction Document

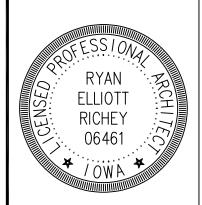
Stair Fabrication and Installation Maquoketa Caves State Park (REBID)

> Jackson County, IA Project #21-06-49-04 Plans prepared by Land and Waters Bureau Conservation and Recreation Division

Al	AUTHORIZATION TO BID			
BUREAU CHIEF - LAND AND WATERS	DATE	PARKS WILDLIFE FISHERIES LAW ENFORCEMENT	DATE	

DIRECTORY						
Architect		DNR Inspector				
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THE STAIRS AT MIDDLE DANCE HALL CAVE HAVE BEEN DETERIORATING FOR SOME TIME AND IN NEED OF REPLACEMENT. IOWA PRISON INDUSTRIES FABRICATED A NEW SET OF STAIRS FOR THIS AREA AND THE CONTRACTOR SHALL DEMOLISH THE EXISTING STAIRS AND INSTALL THESE NEW STAIRS. AT TWIN ARCHES TRAIL, THE STAIRS WERE DAMAGE BY A TREE IN 2019 AND WILL BE DEMOLISHED AND A NEW SET OF STAIRS FABRICATED AND INSTALLED BY THE CONTRACTOR.



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

RYAN E. RICHEY

DATE

My license renewal date is June 30, 2023.

Pages or sheets covered by this seal:

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BID ITEMS

ITEM #	ITEM DESCRIPTION	ITEM NUMBER
1	Stair Demolition, Cleaning, and Painting	2 Each
2	Middle Dance Hall Stair Install	Lump Sum
3	Twin Arches Stair Fabrication	Lump Sum
4	Twin Arches Stair Installation	Lump Sum
5	Treated Posts, Rails, Treads, and Risers	Lump Sum
6	Hardware and Accessory Items	Lump Sum
7	Mobilization	Lump Sum



IOWA DEPARTMENT OF NATURAL RESOURCES



Caves State Park

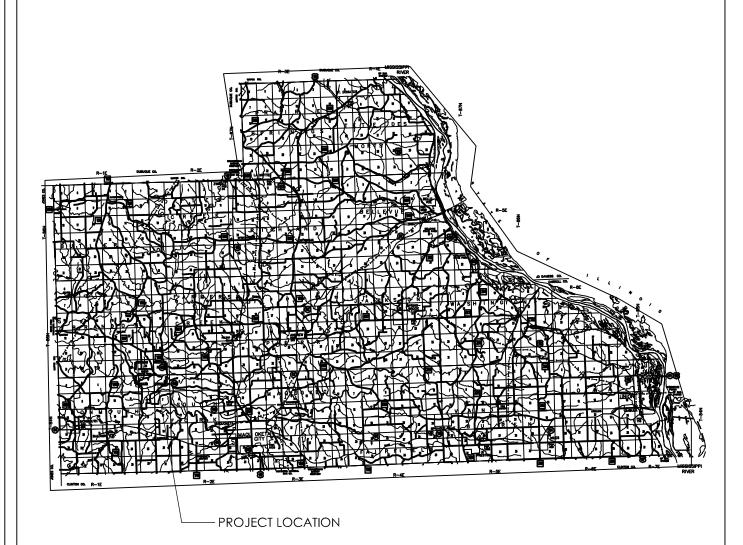
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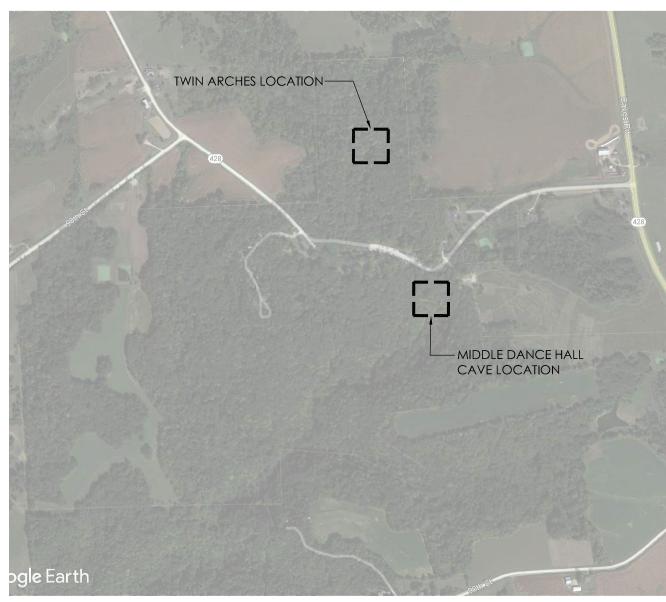
and Install

Stair Fabrication

Maquoketa

PRELIECT NUMBER
21-06-49-04 04.20.2022





STAGING AREA TO BE DETERMINED BY DNR STAFF, INSPECTOR, AND CONTRACTOR AT PRE-CONSTRUCTION MEETING. ALL WORK ZONE AREAS TO BE CORDONED OFF WITH SNOW-FENCE TO PROTECT PARK PATRONS. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THEIR EQUIPMENT AND MATERIALS AND SHALL SECURE THE AREA FROM VANDALISM AND THEFT.

MAQUOKETA CAVES STATE PARK — PROJECT LOCATIONS scale: nts

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(REBID):

and Install

Stair Fabrication

Park

Caves State Maquoketa

9688 Caves Road

PROJECT NUMBER 21-06-49-04 04.20.2022

A-002

JACKSON COUNTY — MAQUOKETA CAVES STATE PARK scale: nts

VERIFY ACTUAL LOCATIONS AND ELEVATIONS WITH DNR ENGINEER.

ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.

THE CONTRACTOR SHALL VISIT THE SITE AND INSPECT THE PROJECT AREA AND THOROUGHLY FAMILIARIZE THEMSELVES WITH THE ACTUAL JOB CONDITIONS PRIOR TO BIDDING AND THE START OF WORK. FAILURE TO VISIT THE PROJECT SITE SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING THE WORK IN ACCORDANCE TO THE PLANS, SPECIFICATION, SPECIAL PROVISIONS AND CONTRACT.

THE CONTRACTOR SHALL VERIFY, AT THE SITE, ALL DIMENSIONS AND CONDITIONS SHOWN ON THE PLANS AND SHALL NOTIFY THE DNR ENGINEER OF ANY DISCREPANCIES. OMISSIONS. AND/OR CONFLICTS PRIOR TO PROCEEDING WITH THE WORK.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL (EXCAVATED MATERIAL OR BROKEN CONCRETE) WHICH IS NOT DESIRABLE TO BE INCORPORATED INTO THE WORK INVOLVED ON THIS PROJECT. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES. NO MATERIAL SHALL BE PLACED WITHIN THE RIGHT-OF-WAY, UNLESS SPECIFICALLY STATED IN THE PLANS OR APPROVED BY THE DNR ENGINEER.

THE CONTRACTOR SHALL NOT DISTURB DESIRABLE GRASS AREAS AND DESIRABLE TREES OUTSIDE THE CONSTRUCTION LIMITS. THE CONTRACTOR WILL NOT BE PERMITTED TO PARK OR SERVICE VEHICLES AND EQUIPMENT OR USE THESE AREAS FOR STORAGE OF MATERIALS. STORAGE, PARKING AND SERVICE AREAS WILL BE SUBJECT TO THE APPROVAL OF THE DNR ENGINEER.

WHERE UTILITIES AND FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE DNR ENGINEER OF THOSE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL BE AFFORDED ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS. THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK.

THE CONTRACTOR SHALL SHAPE GRADED AREA TO MAINTAIN SURFACE DRAINAGE. ALL ELEVATIONS ARE TO FINISH GRADE.

THE CONTRACTOR IS EXPECTED TO HAVE MATERIALS, EQUIPMENT, AND LABOR AVAILABLE ON A DAILY BASIS TO INSTALL AND MAINTAIN EROSION CONTROL FEATURES ON THE PROJECT. THIS MAY INVOLVE SEEDING, SILT FENCE, ROCK DITCH CHECKS, SILT BASINS OR SILT DIKES.

KEYNOTES

- EXISTING 2X6 TREAD AND RISER LUMBER. CAREFULLY REMOVE ALL LUMBER AND STOCKPILE IN AREA DESIGNATED BY DNR INSPECTOR.
- EXISTING 4X4 AND 2X HANDRAIL LUMBER. CAREFULLY REMOVE ALL LUMBER AND STOCKPILE IN AREA DESIGNATED BY DNR INSPECTOR.
- EXISTING STEEL REBAR TO REMAIN IN PLACE. CLEAN AND PREP FOR INSTALL OF NEW WELDABLE BAR COUPLERS AND INSTALL OF NEW STEEL BOX STAIRS.
- NEW STEEL BOX STAIRS. INSTALL PER INSTRUCTIONS IN PROJECT NARRATIVE. TWIN ARCHES STAIR TO BE DESIGNED AND FABRICATED BY CONTRACTOR, SUBMIT SHOP DRAWINGS TO DNR ARCHITECT FOR APPROVAL.
- NEW STEEL BOX LANDING. INSTALL PER INSTRUCTIONS IN PROJECT NARRATIVE. TWIN ARCHES STAIR LANDINGS, WHERE REQUIRED, TO BE DESIGNED AND FABRICATED BY CONTRACTOR, SUBMIT SHOP DRAWINGS TO DNR ARCHITECT FOR APPROVAL.

PROJECT NARRATIVE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL ITEMS WITHIN THIS NARRATIVE, THE DRAWINGS, AND PROJECT MANUAL UNLESS SPECIFICALLY NOTED OTHERWISE. THIS NARRATIVE IS NOT MEANT TO BE A COMPREHENSIVE ACCOUNT OF ALL ITEMS TO BE COVERED BY THE CONTRACT, REVIEW ALL DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND ESTABLISHING ALL QUANTITIES THAT ARE DICTATED AS "LUMP SUM".

THIS PROJECT, FOR MAQUOKETA CAVES STATE PARK — STAIR FABRICATION AND INSTALLATION (REBID), SHALL COMMENCE WHEN ALL CONTRACTS ARE EXECUTED AND IN PLACE. STAIR FABRICATION AND INSTALLATION FOR BOTH STAIRS SHALL BE COMPLETED NO LATER THAN DECEMBER 31, 2022.

THE CONTRACTOR SHALL DEMOLISH THE EXISTING STAIR SYSTEMS, AT BOTH LOCATIONS (MIDDLE DANCE HALL CAVE AND TWIN ARCHES TRAIL). THIS SHALL BE ACCOMPLISHED BY DECONSTRUCTING EACH PART OF THE STRUCTURE. THE OLD METAL SUB FRAME OF THESE STAIRS IS COMPRISED OF 3" CHANNEL IRON AND OTHER LATERAL SUPPORT ANGLE IRON. WHICH HAS BEEN CUSTOM FIT TO EACH STEP AND WELDED TOGETHER. THESE METAL SUB FRAMES WILL NEED TO BE REMOVED WITHOUT CAUSING EXTENSIVE DAMAGE TO THE REBAR SUPPORTS. EACH STEP IS SUPPORTED BY MULTIPLE REBAR SUPPORTS WHICH HAVE BEEN DRIVEN DOWN TO AND INTO BEDROCK AND SHALL REMAIN IN PLACE AND PREPARED FOR INSTALLATION OF NEW STAIR STRUCTURES. CONTRACTOR SHALL WIRE-BRUSH REBAR TO REMOVE CORROSION AND PAINT WITH EXTERIOR EPOXY PAINT. ALL WOOD HAND RAILS, NEWEL POSTS, WOOD TREADS, AND RISER BOARDS SHALL BE SALVAGED AND REMAIN PROPERTY OF IOWA DNR. ALL DEMOLISHED METAL MATERIALS WILL BECOME PROPERTY OF THE CONTRACTOR.

THE CONTRACTOR SHALL FIRST INSTALL THE IPI FABRICATED SECTION OF STAIRS AT MIDDLE DANCE HALL CAVE CONSISTING OF 32 STEPS AND 1 LANDING WITHIN THE SAME FOOTPRINT. MATERIALS HAVE BEEN MANUFACTURED SPECIFICALLY FOR THIS PROJECT AND MUST BE INSTALLED ON SITE.

THE CONTRACTOR SHALL PREP THE AREA AND INSTALL THE STAIR SECTIONS IN THE FOLLOWING MANNER, INSTALLATION OF A WELDABLE BAR LOCK COUPLERS, OF THE SAME SIZE AS THE REBAR, TO EACH SUPPORT ROD, PREFABRICATED METAL SUB FRAMES BE ASSEMBLED FOR EACH INDIVIDUAL STEP USING PROVIDED STAINLESS STEEL HARDWARE, INDIVIDUAL STEP MOUNTED TO COUPLER AND THEN WELDED BY CERTIFIED WELDER, AND WELDS AND DRILL HOLES SHALL BE TREATED WITH EXTERIOR GRADE METAL PROTECTIVE PAINT. THIS PROCESS WILL BE REPEATED FOR ALL 32 STEPS, THEN REPEATED FOR THE 56 STEPS AT TWIN ARCHES.

THE TWIN ARCHES STAIR WHICH WAS DAMAGED BY A TREE WILL HAVE A NEW STEEL STRUCTURE IN THE ORIGINAL LOCATION FOR A NEW STAIR. THIS NEW STAIR WILL FOLLOW THE EXISTING STAIR PATH AND SHALL MATCH THE DESIGN OF THE MIDDLE DANCE HALL CAVE STAIR WHICH WAS FABRICATED BY IOWA PRISON INDUSTRIES. SEE ATTACHED DESIGN OF MIDDLE DANCE HALL CAVE STAIR FOR MORE INFORMATION. SHEETS A-100 - A-105.

THE EXISTING STAIRWAY HAS 56 STAIRS AND THE NEW STAIR SECTIONS SHALL BE DESIGNED AND BUILT TO MATCH THE EXISTING CONFIGURATION. THESE STAIR SECTIONS SHALL BE MADE OF 7GA STEEL CHANNELS WITH SLOTTED HOLES FOR EASE OF INSTALLATION, AND ANGLES, AND 14GA STEEL TUBES, AS SHOWN ON THE ORIGINAL DESIGN DOCUMENTS FOR MIDDLE DANCE HALL CAVE. THE LENGTH AND SIZES OF CHANNELS, TUBES, AND ANGLES SHALL VARY BASED ON EACH TREAD AND LANDING REQUIREMENT, AND SHALL BE DESIGNED AND DETERMINED BY CONTRACTOR. CONTRACTOR SHALL POWDER COAT ALL STEEL STAIR PIECES SATIN BLACK. CONTRACTOR SHALL PROVIDE 316 STAINLESS COLLAR CLAMPS, ANGLES, BOLTS, NUTS, WASHERS, AND ALL ASSOCIATED HARDWARE AT EACH REBAR LOCATION FOR INSTALLATION WELDING. ALL HARDWARE TO MATCH THE PROVIDED MIDDLE DANCE HALL CAVE HARDWARE. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY THE IOWA DNR PRIOR TO COMMENCING FABRICATION. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DESIGN AND FABRICATION AND SHALL USE EXISTING PHOTOS AND SURVEY FOR REFERENCE. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL MEASUREMENTS AND QUANTITIES.

ALL RISERS AND TREADS ON BOTH SETS OF STAIRS SHALL BE #1, GROUND CONTACT TREATED, 2X6 WOODEN BOARDS. THESE RISERS AND TREADS SHALL BE PRE-DRILLED AND COUNTERSUNK FOR INSTALL WITH #10 SELF-TAPPING 3" 316 STAINLESS STEEL DECK SCREWS, SIX (6) PER BOARD, TWO (2) ON EACH END AND TWO (2) MID-SPAN AT SUPPORT STEEL LOCATION, LEAVING A GAP BETWEEN EACH BOARD. THE NEW HAND RAILS AND NEWEL POSTS, SHALL BE REINSTALLED IN A SIMILAR CONFIGURATION TO THE ORIGINAL STAIR. CONTRACTOR SHALL PROVIDE #1 GROUND CONTACT TREATED WOOD POSTS OF SIMILAR LENGTH AND DIMENSION. ALL HARDWARE SHALL BE REPLACED WITH 316 STAINLESS BOLTS, NUTS, AND WASHERS (NOT PROVIDED) OF THE SAME SIZE AND LENGTH AS THE ORIGINAL BOLTS.

A SURVEY WAS CONDUCTED, FOR TWIN ARCHES, ON JUNE 17TH, 2021 AND SHALL BE PROVIDED TO ALL INTERESTED PARTIES IN A .DWG, .DXF, AND .DGN FILE FORMAT. THIS FILE SHOWS EXISTING STAIR TREAD LOCATIONS, DEPTH, RISER LOCATION, HEIGHT, AND REBAR SUPPORT LOCATIONS AND CAN BE USED BY THE CONTRACTOR FOR ASSISTANCE DURING FABRICATION.

THE LOCATION OF THE STAIRS ARE IN VERY DIFFICULT TERRAIN. SMALL OFF-ROAD VEHICLES CAN ACCESS TWIN ARCHES BUT MIDDLE DANCE HALL CAVE IS ONLY ACCESSIBLE BY FOOT. CONTRACTOR WILL NEED PORTABLE TOOLS FOR INSTALL.



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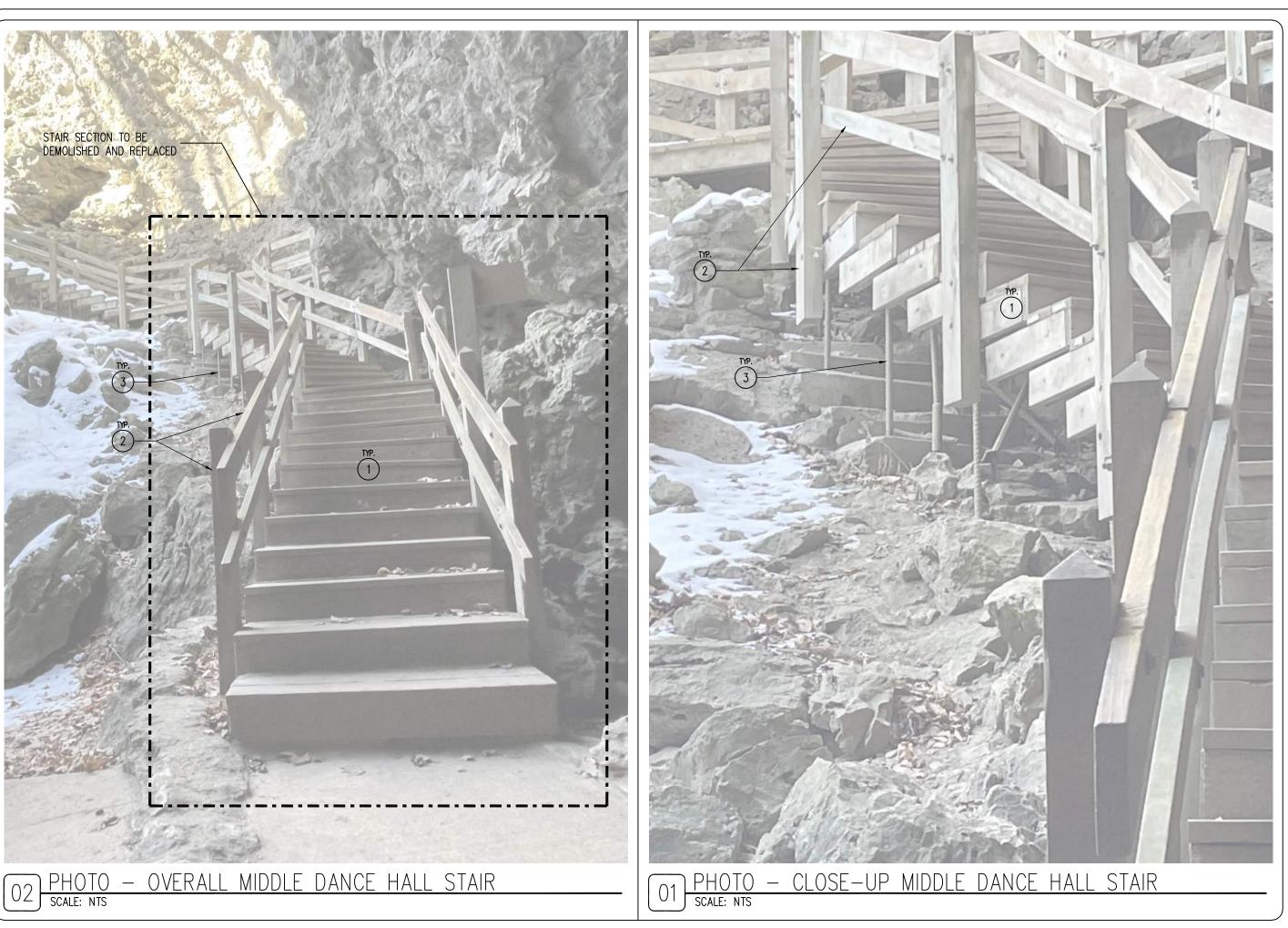
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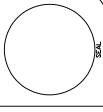
Caves

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A - 003





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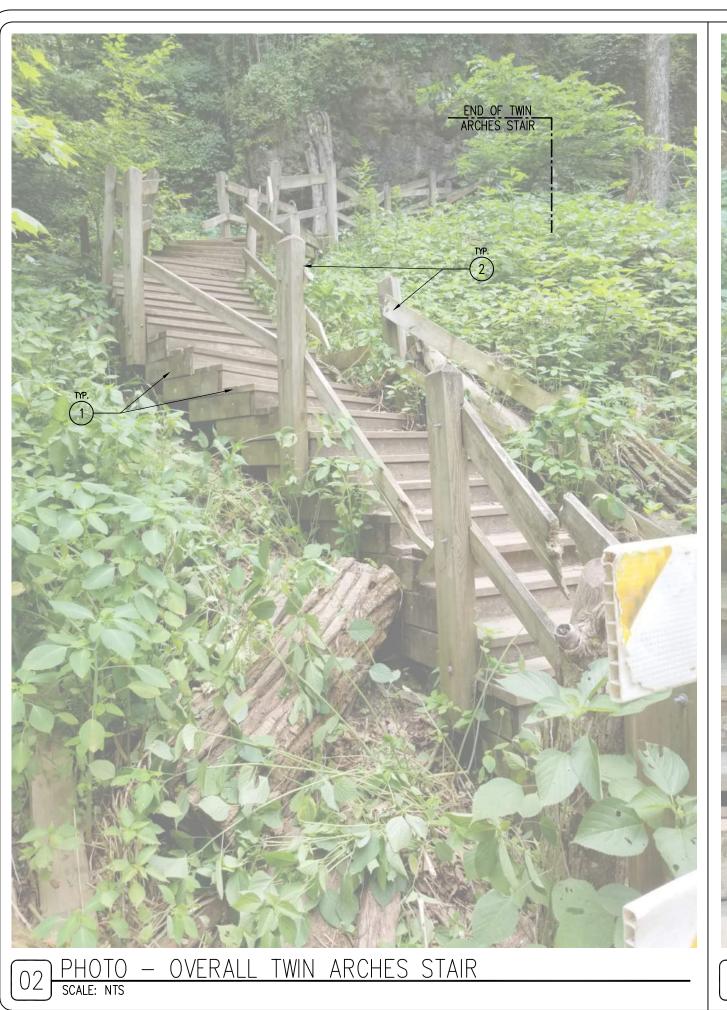
Maquoketa, IA 52060 Caves State Park

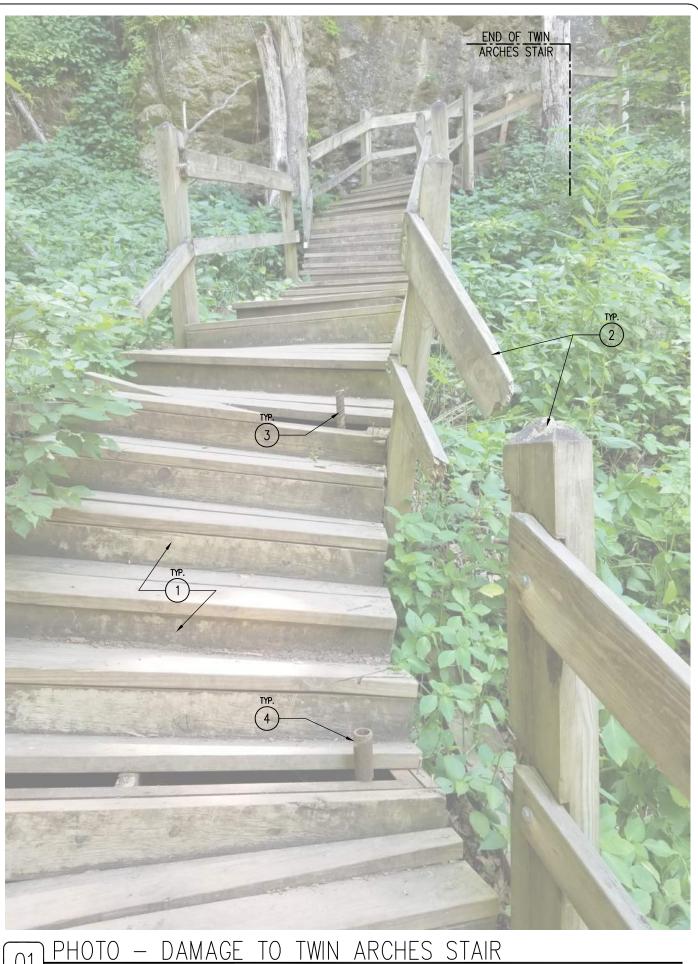
and Install

Stair Fabrication

Maquoketa

9688 Caves Road PRELIECT NUMBER 21-06-49-04 DATE 04.20.2022









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Maquoketa, IA 52060

air Fabrication and Install (REBID): Maquoketa Caves State Park

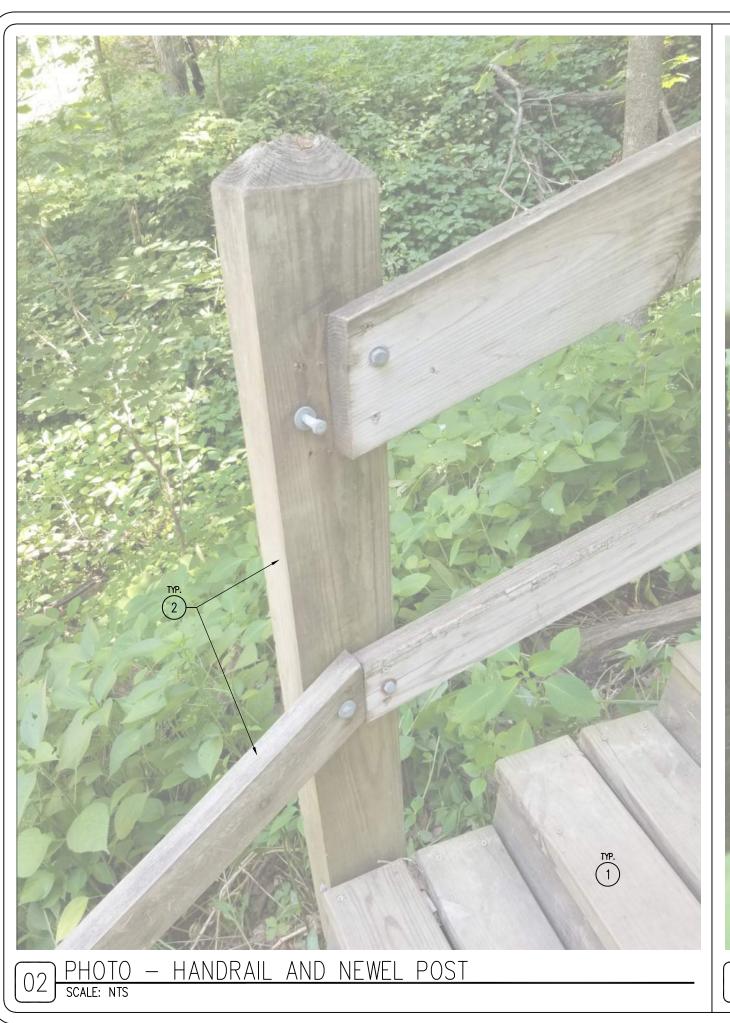
9688 Caves Road

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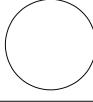
A-051

Stair Fabrication

DATE 04.20.2022







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Maquoketa Caves State Park

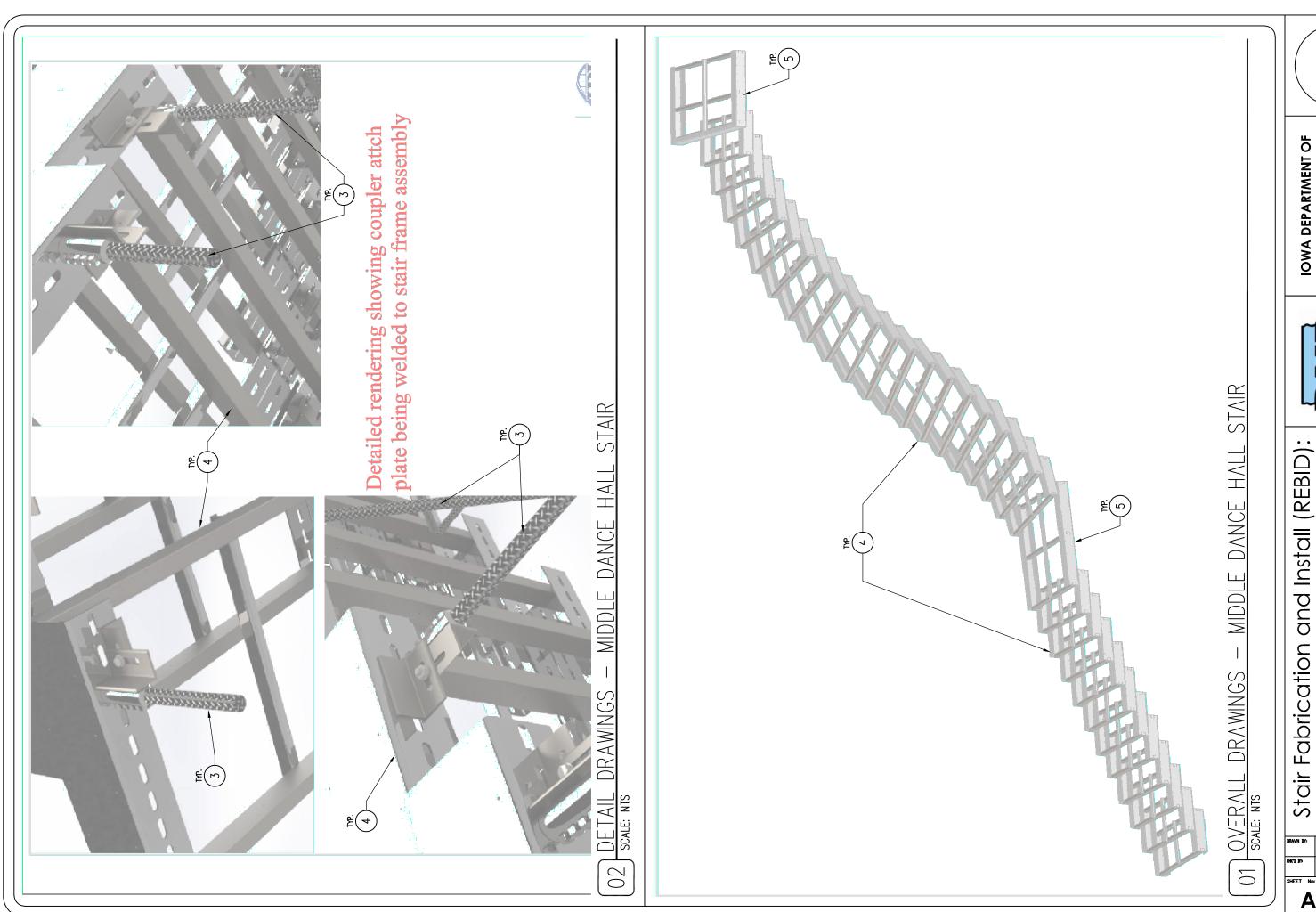
Maquoketa, IA 52060

9688 Caves Road

PRELIECT NUMBER 21-06-49-04 DATE 04.20.2022

A-052

Stair Fabrication and Install (REBID):



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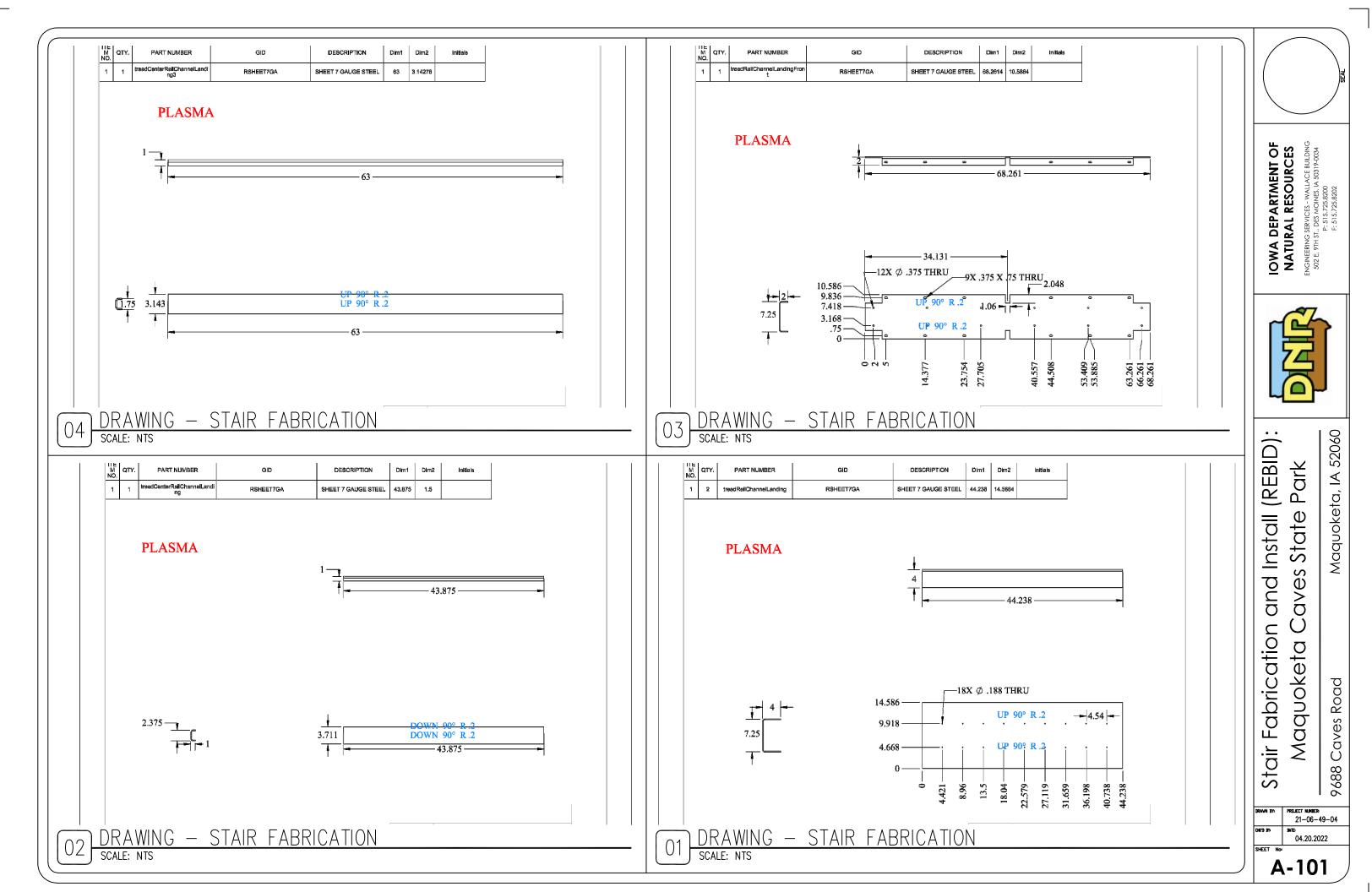
9688 Caves Road PROJECT NUMBER 21-06-49-04

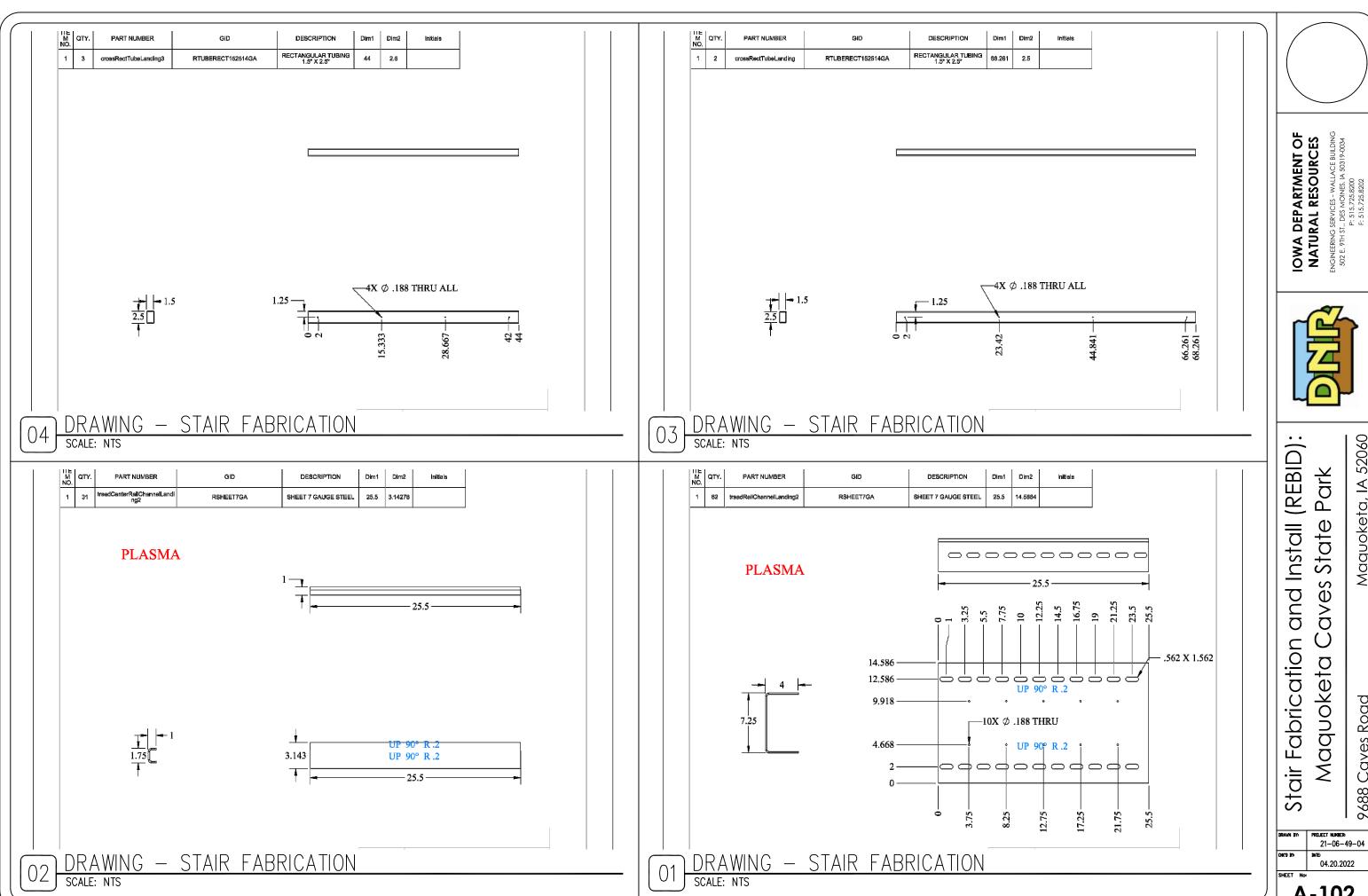
Maquoketa, IA 52060

DATE 04.20.2022

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Maquoketa Caves State Park





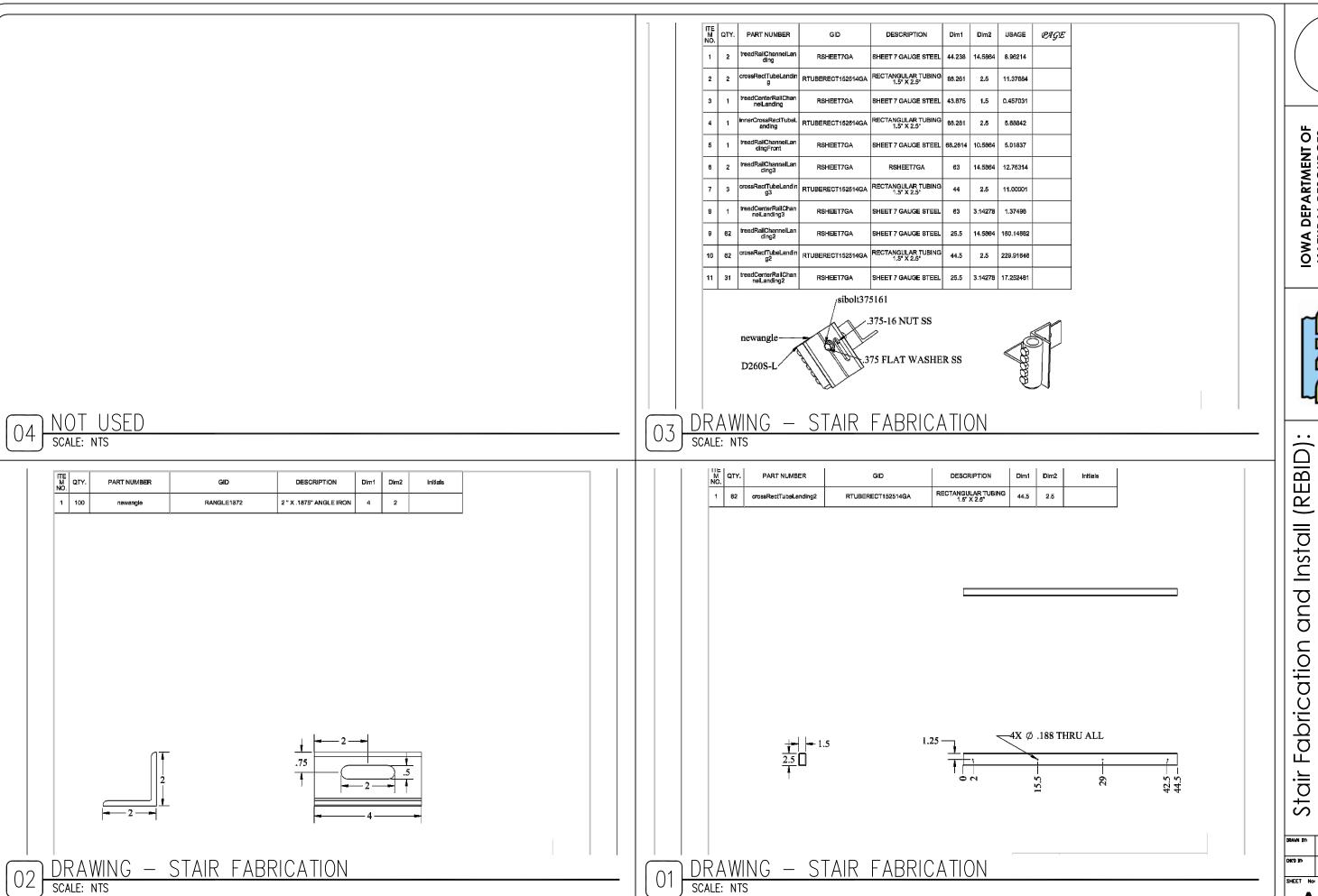




Maquoketa, IA 52060

9688 Caves Road

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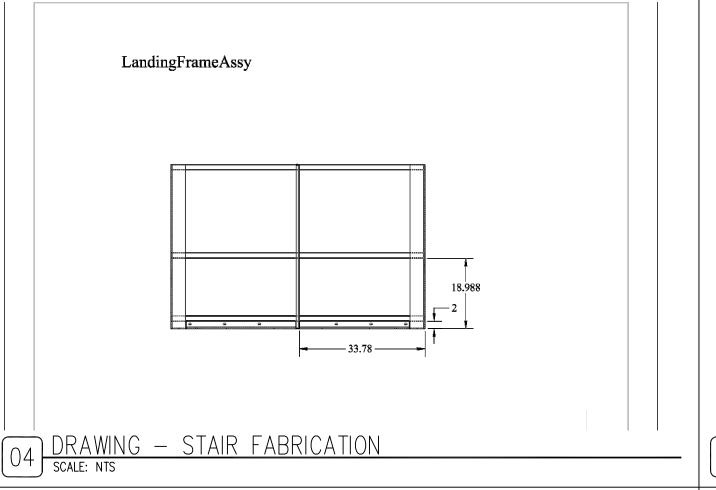


Caves State Park

Maquoketa, IA 52060

Maquoketa 9688 Caves Road

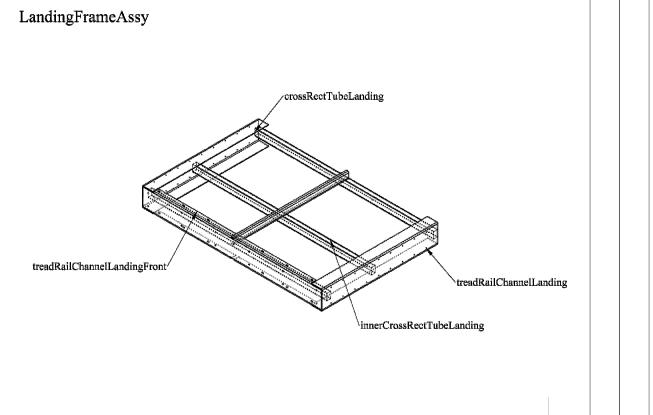
PREJECT NUMBER 21-06-49-04 04.20.2022



LandingFrameAssy3 treadRailChannelLanding3treadCenterRailChannelLanding3 crossRectTubeLanding3

DRAWING — STAIR FABRICATION SCALE: NTS

LandingFrameAssy2 crossRectTubeLanding2 treadRailChannelLanding2 treadCenterRailChannelLanding2



(REBID): Park Caves State and Install Stair Fabrication Maquoketa

Maquoketa, IA 52060

IOWA DEPARTMENT OF NATURAL RESOURCES

9688 Caves Road PROJECT NUMBER 21-06-49-04 04.20.2022

A-104

DRAWING — STAIR FABRICATION SCALE: NTS

DRAWING — STAIR FABRICATION scale: nts

