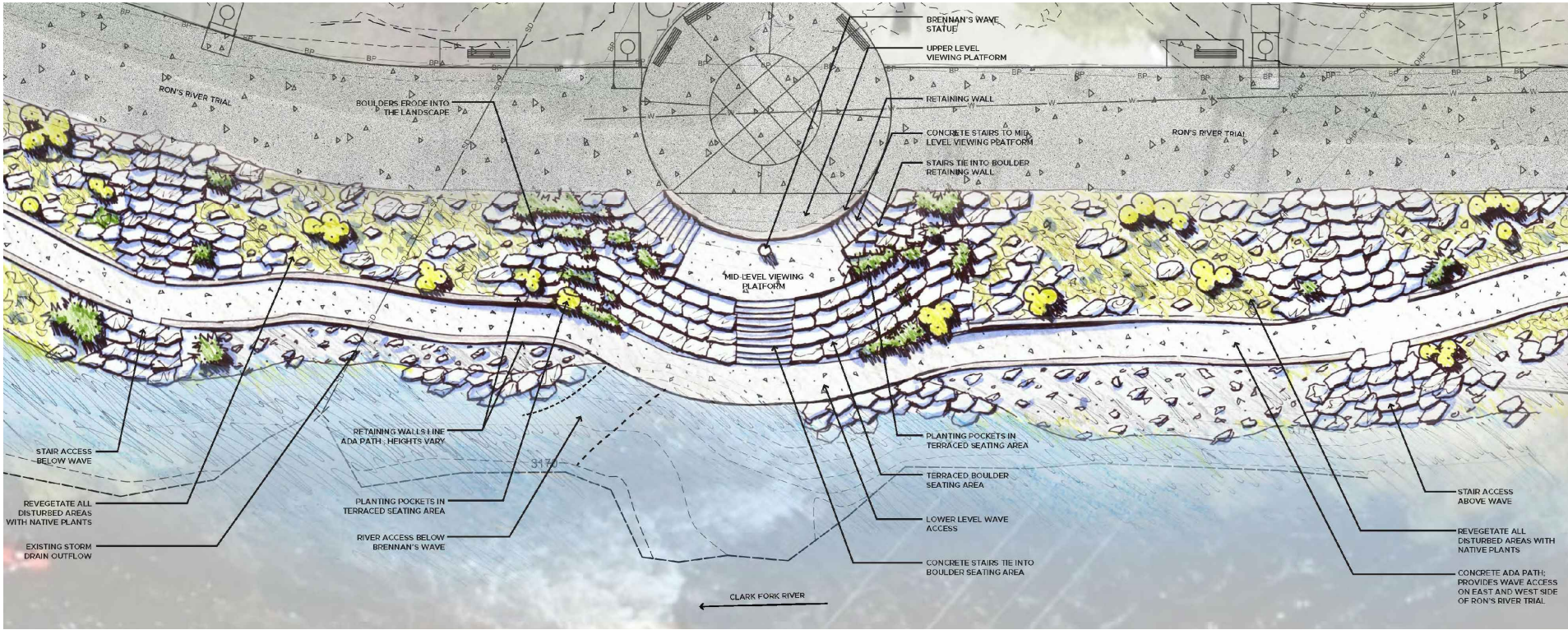
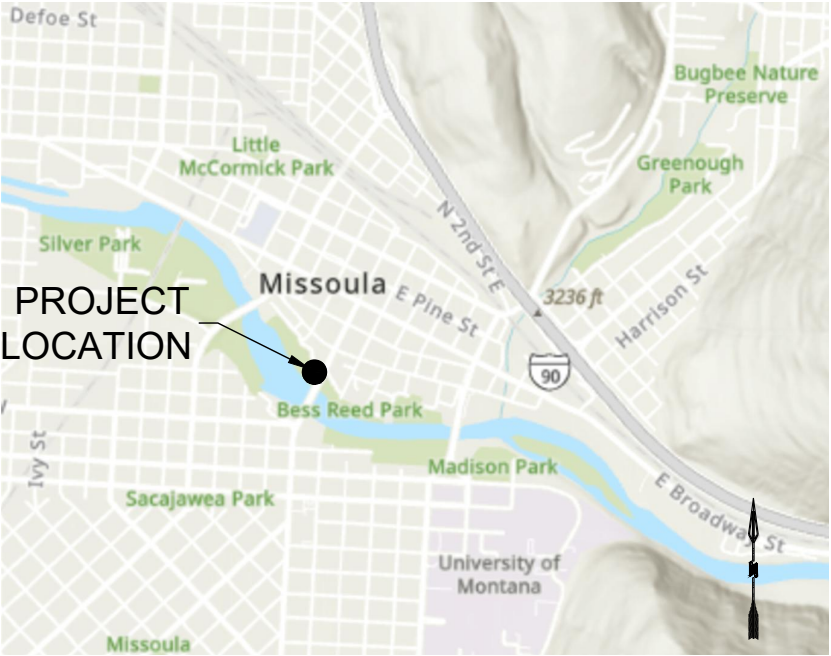


CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK

CITY OF MISSOULA PARKS & RECREATION DEPARTMENT
MISSOULA, MONTANA
March 24
RESPEC PROJECT NO. W0020.23001



***ARCHITECTURAL RENDERING**
N.T.S.
*TO BE UPDATED WITH FINAL DESIGN PLANS



VICINITY MAP

MICHAEL ANTHONY ROTAR
REGISTERED PROFESSIONAL ENGINEER
STATE OF MONTANA NO. PEL-PE-LIC-13285

DATE

REVISION			
DESIGNED	TJW	DRAWN	TJW
CHECKED	MAR	CHECKED	MAR
DATE	Mar-24	DATE	Mar-24
RESPEC WATER & NATURAL RESOURCES 3810 VALLEY COMMONS DR SUITE 4 BOZEMAN, MT 59718 WWW.RESPEC.COM PHONE 409.284.2525			
STAMP 100% REVIEW			
PRELIMINARY NOT FOR CONSTRUCTION 3/2024			
CITY OF MISSOULA PARKS AND RECREATION DEPARTMENT 600 CREGG LANE MISSOULA, MT 59801			
CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS			
COVER			
SHEET NUMBER: G-01 SHEET			

NAME: N:\PROJECTS\W0020.23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEET\SG-00_CARAS PARK_GENERAL.DWG
PLOT DATE: March 25, 2024 3:53 PM, BY: TAYLOR WINKEL

GENERAL NOTES:

1. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND DETERMINE LOCATION OF ALL UNDERGROUND UTILITIES BEFORE COMMENCING WORK. **CALL 811** (OR ONE CALL UTILITY LOCATE: 1-800-424-5555) A MINIMUM OF 72-HOURS BEFORE WORK IS PLANNED. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND PROPERLY REPAIRING ANY AND ALL DAMAGED UTILITIES.
2. ANY UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. ALL UTILITY LOCATIONS ARE SUBJECT TO THE ACCURACY OF THE LOCATION METHOD AND SUBJECT TO RELOCATION FROM THE TIME THAT THESE DRAWINGS WERE PREPARED.
3. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB, ON-SITE AT ALL TIMES.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF ALL PERSONNEL, ALL SITE VISITORS, AND THE GENERAL PUBLIC WHO MAY BE AFFECTED BY THE CONSTRUCTION. THIS INCLUDES BUT IS NOT LIMITED TO GENERAL AND CHANNEL EXCAVATION, SHORING, TRAFFIC CONTROL, AND SECURITY. SHOULD CONSTRUCTION ACTIVITIES NECESSITATE TEMPORARY, FULL, OR PARTIAL CLOSURE OF ROADWAYS AND OR TRAILS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND MANAGING THE CLOSURE.
5. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS FOUND BETWEEN THE CONSTRUCTION PLANS AND CONDITIONS ENCOUNTERED IN THE FIELD.
6. CONTRACTOR SHALL, UNLESS OTHERWISE DIRECTED, REPLACE ALL SIGNS, FENCES, CABLES, APPROACH DELINEATORS, OR OTHER FEATURES THAT MAY BE REMOVED TO ACCESS THE CONSTRUCTION AREA. CONTRACTOR SHALL VERIFY THE NATURE AND EXTENT OF ANY OF THESE FEATURES PRIOR TO BIDDING THE WORK. COST OF THIS WORK SHALL BE INCIDENTAL TO THE PROJECT UNLESS OTHERWISE STATED IN THE CONTRACT DOCUMENTS.
7. CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS AND RESTRICTIONS FOUND IN REGULATORY PERMITS OBTAINED BY THE ENGINEER.
8. LEGAL LOAD LIMIT REQUIREMENTS SHALL BE ADHERED TO ON ALL STATE HIGHWAYS, COUNTY ROADS, AND CITY STREETS.
9. THE CONTRACTOR IS TO PROVIDE THEIR OWN WATER FOR COMPACTION AND DUST ABATEMENT.
10. CONSTRUCTION SHALL COMPLY WITH THESE PLANS IN ADDITION TO THE CONTRACT DOCUMENTS AND SPECIFICATIONS.
11. ALL EQUIPMENT USED ONSITE WILL BE CLEAN AND WASHED PRIOR TO ARRIVAL TO THE PROJECT AREAS. ALL IMPORTED MATERIAL MUST BE CERTIFIED AS WEED FREE.
12. EMERGENCY SPILL KITS WILL BE MAINTAINED ON EACH PIECE OF EQUIPMENT, OR IN AN AREA THAT CAN RAPIDLY BE REACHED.
13. ALL WORK IN OR ADJACENT TO THE RIVER WILL BE DONE DURING LOW FLOWS.
14. STRUCTURAL BMPS, SUCH AS SILT FENCE, STRAW BALES OR WATTLES SHALL BE USED TO ISOLATE CONSTRUCTION ALONG THE ACTIVE CHANNEL AND ALL OTHER WATER BODIES. CONDUCT ONGOING MONITORING AND REPAIR (AS NEEDED) OF SEDIMENT BARRIERS DURING PROJECT IMPLEMENTATION.
15. DURING POST-PROJECT SEDIMENT BARRIER REMOVAL, REMOVE OR PERMANENTLY STABILIZE SEDIMENT TRAPPED BY SEDIMENT BARRIERS.
16. ALL EXPOSED SOILS WILL BE STABILIZED BY CONTRACTOR ONCE CONSTRUCTION IS COMPLETED. SOILS WILL BE STABILIZED USING VARIOUS TECHNIQUES AS DESCRIBED IN THIS PLAN INCLUDING, SEEDING, SOD TRANSPLANT AND PLANTING.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAVING AND PROTECTING ALL EXISTING TREES AND VEGETATION WHERE REMOVAL FOR CONSTRUCTION IS NOT MANDATORY.

18. ALL REMOVED ITEMS SHALL BECOME THE CONTRACTOR'S PROPERTY TO BE DISPOSED OF IN AN APPROVED MANNER IN ACCORDANCE WITH REGULATION BY THE OWNER AT NO ADDITIONAL EXPENSE TO THE OWNER, UNLESS SPECIFIED WITHIN THE PLANS. NO CONCRETE, RUBBLE, OR EXTRA MATERIALS SHALL BE BACKFILLED ON SITE.
19. MATERIAL STOCK PILE AREAS, ACCESS ROUTES, AND EQUIPMENT STORAGE AREAS WILL BE DISCUSSED AND APPROVED DURING THE PRECONSTRUCTION MEETING.
20. MATERIALS STORED ON THE SITE WHICH MIGHT CONTRIBUTE POLLUTANTS TO RUNOFF SHALL BE LOCATED IN AN ENCLOSED, COVERED, AND LOCKABLE CONTAINER. THESE MATERIALS ARE EXPECTED TO CONSIST MAINLY OF FERTILIZERS, FUELS, AND MACHINERY LUBRICANTS.
21. ALL EXISTING AND PROPOSED CONTOURS ARE LABELED IN FEET. ALL SLOPES ARE SHOWN AS DIAGRAMMATIC AND SHALL BE ROUNDED AT THE TOP AND BOTTOM.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANUP OF THE PROJECT SITE AND SURROUNDING AREAS ON A DAILY BASIS AND OF ANY TRASH OR MUD ON THE SITE AS A RESULT OF CONSTRUCTION.
23. THE CONTRACTOR SHALL RESTORE ALL STAGING AND STOCKPILING AREAS TO THEIR ORIGINAL CONDITION OR BETTER THAN EXISTING UPON COMPLETION OF THE PROJECT. THE COST TO RESTORE THESE AREAS SHALL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK.
24. THE CONTRACTOR SHALL MAINTAIN ALL HAUL ROUTES AND RESTORE THEM TO THEIR ORIGINAL CONDITION OR BETTER THAN EXISTING UPON COMPLETION OF USE AT NO EXPENSE TO THE OWNER.
25. ALL PAVED HAUL ROUTES SHALL BE MAINTAINED FREE OF MUD AND DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS.
26. CONTRACTOR IS RESPONSIBLE FOR REPAIRING/REPLACING ALL DAMAGED INFRASTRUCTURE.
27. THE CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM ENGINEER. THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
28. ALL ESTIMATES OF QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR/SUBCONTRACTOR, WHO SHALL BE RESPONSIBLE FOR DETERMINING ALL QUANTITIES AND PROVIDING THE WORK AND MATERIALS AS SHOWN ON THE PLANS. QUANTITY ESTIMATES ARE PROVIDED FOR GUIDANCE PURPOSES ONLY, AND SHOULD NOT BE USED AS A BASIS FOR PRICING.
29. DEWATERING ACTIVITIES MAY BE REQUIRED FOR CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A UNITED STATES ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT 33 TEMPORARY CONSTRUCTION, ACCESS AND DEWATERING PERMIT, ALONG WITH ANY OTHER RELEVANT PERMITS REQUIRED FOR CONSTRUCTION DEWATERING.
30. ALL FLOW RATES REFERENCED IN THE DRAWINGS ARE RELATIVE TO USGS GAGE 12340500 CLARK FORK ABOVE MISSOULA, MT AND DO NOT EQUAL ACTUAL FLOWS AT THE PROJECT SITE.
31. THE CITY OF MISSOULA HAS FEDERALLY AUTHORIZED LEVEES ALONG THE BANKS OF THE CLARK FORK RIVER. THE WORK WILL INCLUDE CONSTRUCTION ON AND OR NEAR THESE FEDERALLY AUTHORIZED LEVEES. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RULES AND REGULATIONS WHILE WORKING ON THESE LEVEES AS WELL AS FOLLOWING SPECIFIC GUIDELINES DETERMINED IN THE PERMITTING PROCESS.

GENERAL LEGEND		
ITEM	EXISTING	PROPOSED
OVERHEAD POWER		
GRADING LIMITS		
MAJOR CONTOUR		
MINOR CONTOUR		
EXISTING MAJOR CONTOUR		
EXISTING MINOR CONTOUR		
SLOPE ARROW		
SLOPE ARROW		
SITE LEGEND		
ITEM	EXISTING	PROPOSED
CONCRETE TRAIL		
RIPRAP		
ROCK STAIR		
BENCH		
METAL FENCE		
WOODEN FENCE		
PLANTING REGION		
TREE		
APPROXIMATE ORDINARY HIGH WATER ELEVATION (OHWE)		

NAME: N:\PROJECTS\W0020_23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEETS\G-00_CARAS PARK_GENERAL.DWG
PLOT DATE: March 25, 2024 3:53 PM, BY: TAYLOR WINKEL

DESIGNED T.J.W.
DRAWN T.J.W.
CHECKED MAR
DATE Mar-24

RESPEC
WATER & NATURAL RESOURCES
3810 VALLEY COMMONS DR SUITE 4
BOZEMAN, MT 59718
WWW.RESPEC.COM PHONE 409.884.2525

REVISION

STAMP
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3/2024

CITY OF MISSOULA
PARKS AND RECREATION
DEPARTMENT
600 CREGG LANE
MISSOULA, MT 59801

CLARK FORK RIVER
RESTORATION AND
ACCESS - CARAS PARK
RIVER ACCESS

GENERAL NOTES
ABBREVIATIONS AND
LEGEND

SHEET NUMBER:
G-02
SHEET

NAME: N:\PROJECTS\W0020_23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEET\SG-00_CARAS PARK_GENERAL.DWG
PLOT DATE: March 25, 2024 3:53 PM, BY: TAYLOR WINKEL

SHEET INDEX TABLE	
SHEET NUMBER	SHEET TITLE
GENERAL	
G-01	COVER
G-02	GENERAL NOTES ABBREVIATIONS AND LEGEND
G-03	SHEET INDEX AND CONSTRUCTION QUANTITIES
CIVIL	
EX-01	EXISTING CONDITIONS
EX-02	DEMOLITION PLAN
EX-03	CONSTRUCTION & TRAFFIC CONTROL
C-01	SITE PLAN
C-02	VIEWING PLATFORM SITE PLAN
C-03	GRADING PLAN
C-04	DETAIL GRADING
C-05	PLAN & PROFILE
C-06	PLAN & PROFILE
C-07	PLAN & PROFILE
C-08	PLAN & PROFILE
C-09	PLAN & PROFILE
C-10	CROSS-SECTIONS OVERVIEW
C-11	CROSS-SECTIONS
C-12	CROSS-SECTIONS
CIVIL DETAILS	
D-01	DETAILS
D-02	DETAILS
D-03	DETAILS
D-04	DETAILS
STRUCTURAL DETAILS	
S-01	STRUCTURAL DETAIL
S-02	STRUCTURAL DETAIL
S-03	STRUCTURAL DETAIL
S-04	STRUCTURAL DETAIL
LANDSCAPING	
L-01	LANDSCAPING

CARAS PARK RIVER ACCESS - CONSTRUCTION QUANTITIES	QUANTITY	UNIT
CLEARING AND GRUBBING	1	LS
SEEDING AREA	3695	SF
TOPSOIL	68	CY
FG-EG CUT (CY)	252	CY
FG-EG FILL (CY)	264	CY
VEGETATED RIPRAP (MDT CLASS III)	222	CY
RIPPRAP (MDT CLASS III)	11	CY
STAIR ACCESS STONES	71	EA
STAIR ACCESS GROUTED STONES	33	EA
STAIR STRINGER BOULDER	110	LF
STAIR ACCESS CONCRETE (3 FT WIDE)	27	LF
STAIR ACCESS CONCRETE (4 FT WIDE)	10	LF
CONCRETE TRAIL (5 FT WIDE) w/ THICKENED EDGE	58	LF
CONCRETE TRAIL (5 FT WIDE) w/o THICKENED EDGE	361	LF
CONCRETE TRAIL (4 FT WIDE) w/ THICKENED EDGE	36	LF
CONCRETE TRAIL (3 FT WIDE)	36	LF
RETAINING WALL A	59	LF
RETAINING WALL B	27	LF
RETAINING WALL C	42	LF
STRINGER WALL	20	LF
COLORED CONCRETE (UPPER LANDING)	238	SF
4" DIAMETER PERFORATED PIPE	117	LF
GEOTEXTILE SEPARATION FABRIC	1686	SF
DRAIN AGGREGATE	32	CY
BEDDING GRAVEL (3/4" MINUS)	56	CY
STRUCTURAL FILL	8	CY
TERRACED BOULDERS 32"	55	EA
LANDSCAPING BOULDERS	160	EA
WOODEN HAND RAIL (LF)	304	LF
METAL HAND RAIL (LF)	772	LF
WILLOW PLANTINGS	495	EA
UPLAND LARGE SHRUB	18	EA
UPLAND MEDIUM SHRUB	37	EA
UPLAND SMALL SHRUB	96	EA
REMOVALS		
WILLOW STUMPS	1	LS
VIEWING PLATFORM	1	EA
EXISTING CONCRETE (CIRCLE FEATURE)	127	SF

DESIGNED
TJW

DRAWN
TJW

CHECKED
MAR

DATE
Mar-24

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PARKS AND RECREATION
DEPARTMENT
600 CREGG LANE
MISSOULA, MT 59801

CLARK FORK RIVER
RESTORATION AND
ACCESS - CARAS PARK
RIVER ACCESS

SHEET INDEX AND
CONSTRUCTION
QUANTITIES

SHEET NUMBER:

G-03

SHEET

NAME: N:\PROJECTS\W0020_23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEET\SEX-01_CARAS PARK_EXISTING CONDITIONS.DWG
PLOT DATE: March 25, 2024 3:53 PM, BY: TAYLOR WINKEL

NOTES:

BASE DRAWING INFORMATION FOR CARAS PARK AREA IS SOURCED FROM "CONSTRUCTION DRAWINGS FOR CARAS OUTFALL STORM WATER INFILTRATION PROJECT AND CARAS PARK PHASE 1 IMPROVEMENTS" COMPLETED BY MORRISON-MAIERLE (MAY 2021) FOR CITY OF MISSOULA (CITY OF MSSOULA PROJECT NO. 2020-021).

LEVEE PRISM

EXISTING CIRCULAR FEATURE (PROTECT IN PLACE)

EXISTING SIDEWALK (PROTECT IN PLACE)

LEVEE (PROTECT IN PLACE)

EXISTING 30" RCP OUTFALL W/ HEADWALL (PROTECT IN PLACE)

CLARK FORK RIVER
FLOW

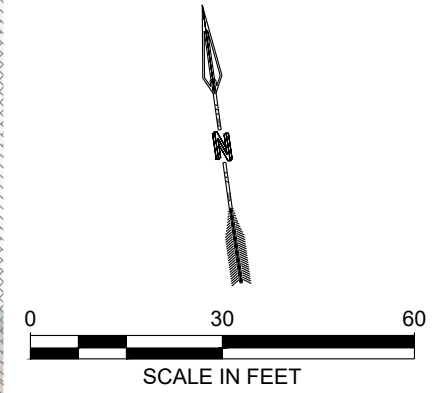
EXISTING OVERLOOK STRUCTURE

CONSTRUCTION LIMITS
(CONTRACTOR RESPONSIBLE FOR DISTURBANCE OUTSIDE THESE LIMITS)

EXISTING CIRCULAR FEATURE (PROTECT IN PLACE)

LEVEE PRISM

APPROXIMATE ORDINARY HIGH WATER ELEVATION (OHWE)



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RESPEC WATER & NATURAL RESOURCES 3810 VALLEY COMMONS DR SUITE 4 BOZEMAN, MT 59718 WWW.RESPEC.COM PHONE 409.884.2525							
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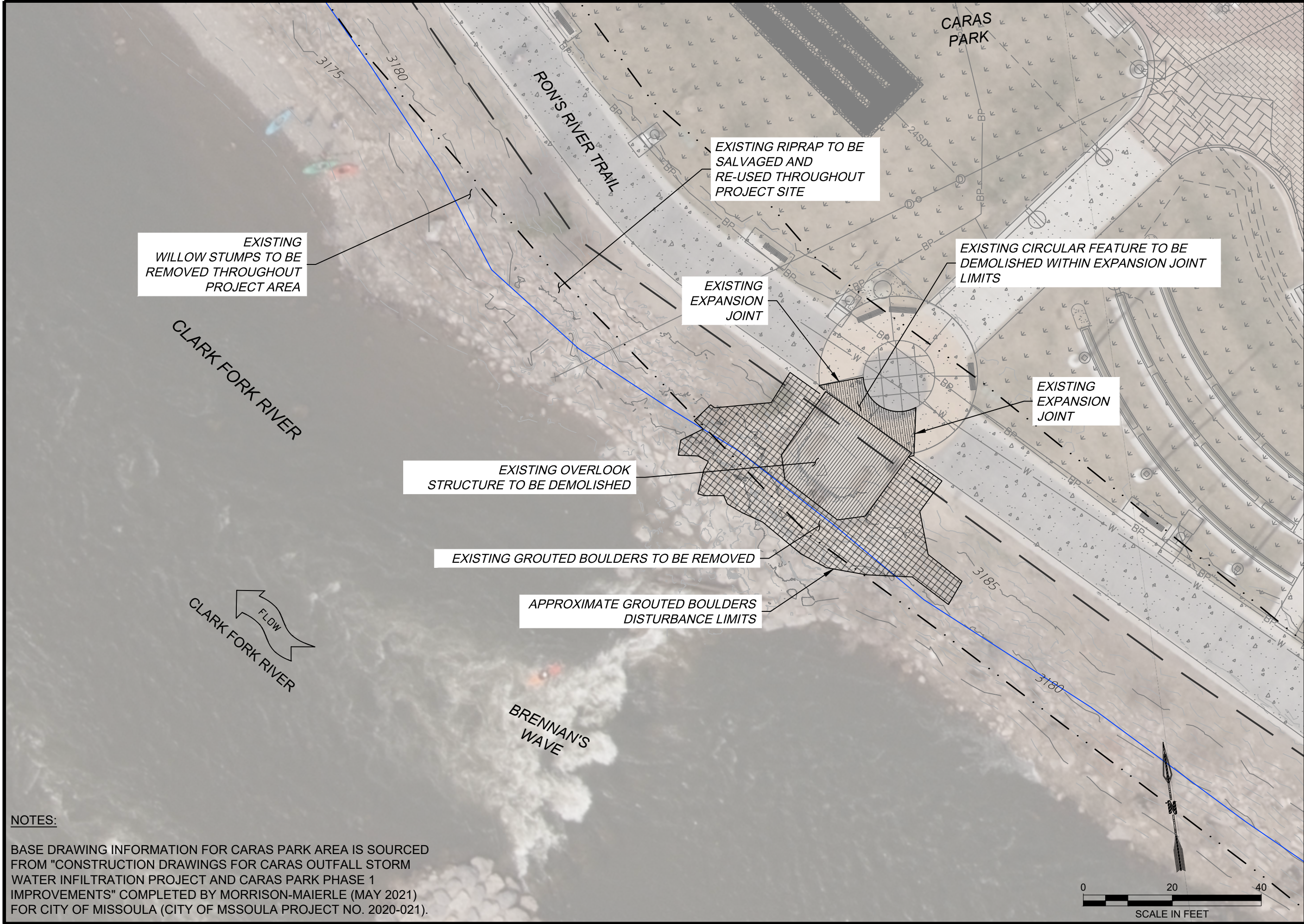
CITY OF MISSOULA
PARKS AND RECREATION
DEPARTMENT
600 CREGG LANE
MISSOULA, MT 59801

CLARK FORK RIVER
RESTORATION AND
ACCESS - CARAS PARK
RIVER ACCESS

EXISTING CONDITIONS

SHEET NUMBER:
EX-01
SHEET

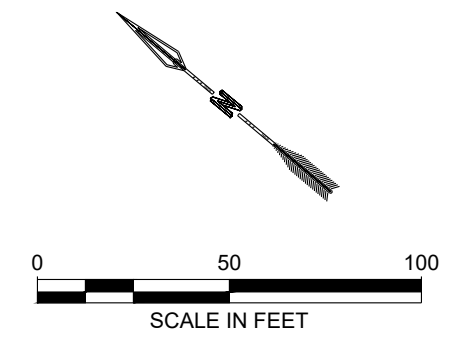
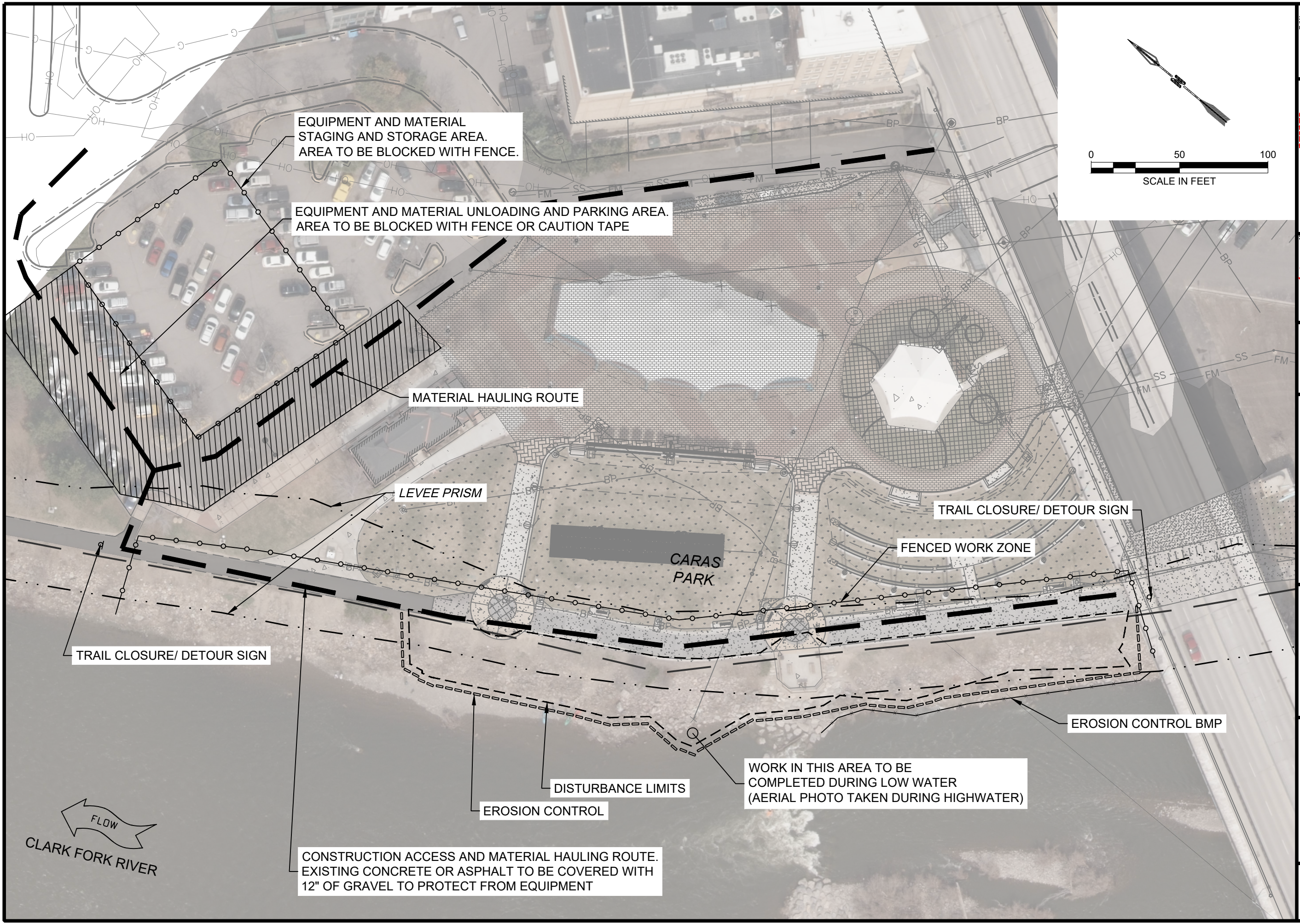
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NOTES:
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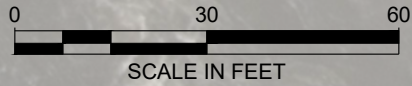
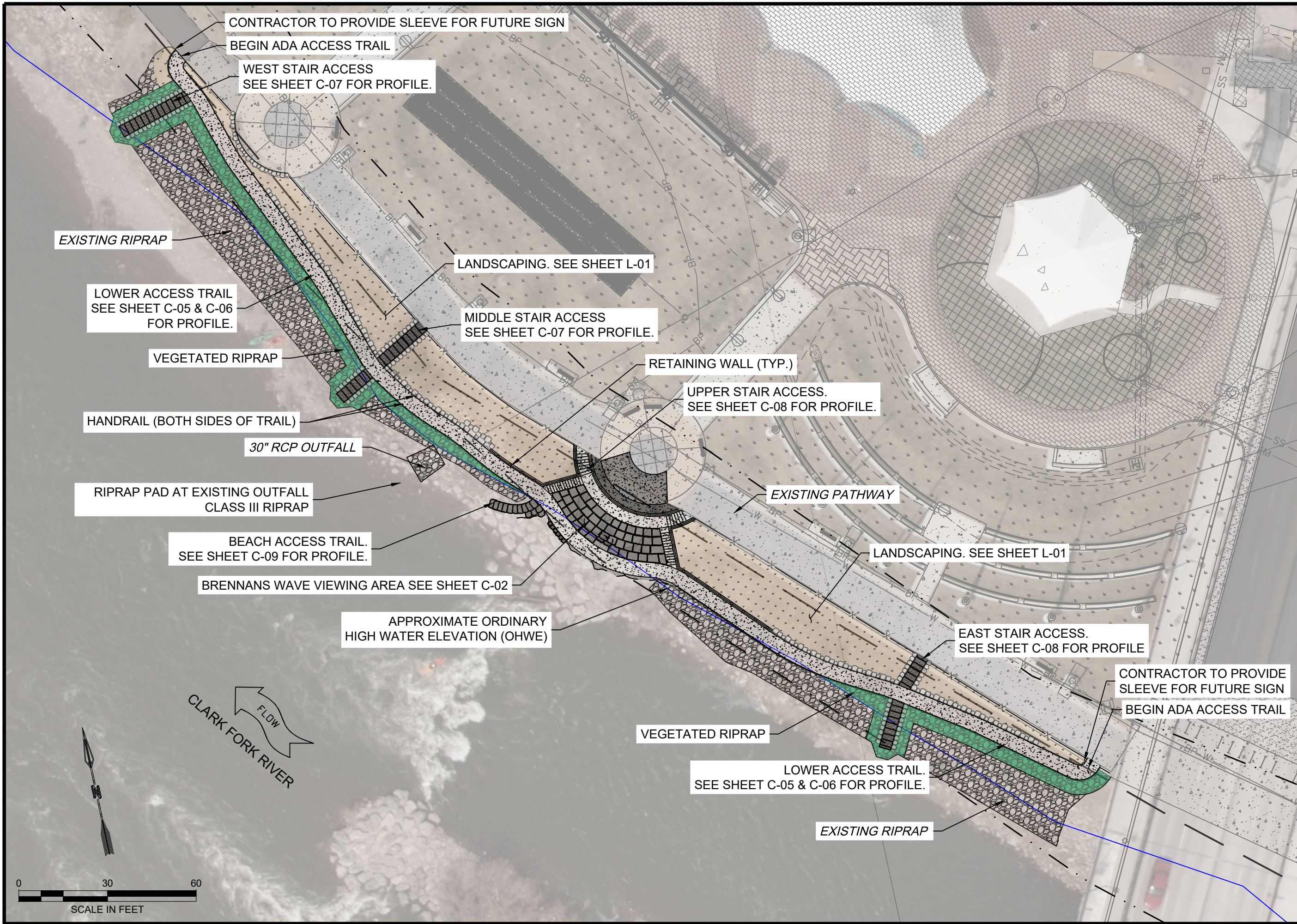
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CITY OF MISSOULA PARKS AND RECREATION DEPARTMENT 600 CREGG LANE MISSOULA, MT 59801				CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS	
DEMOLITION PLAN				SHEET NUMBER: EX-02 SHEET	

NAME: N:\PROJECTS\W0020 23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEET\ST-01_CONSTRUCTION & TRAFFIC CONTROL.DWG
PLOT DATE: March 25, 2024 3:54 PM, BY: TAYLOR WINKEL

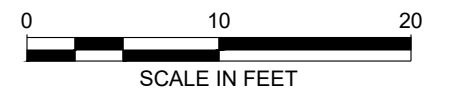


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CONSTRUCTION & TRAFFIC CONTROL				SHEET NUMBER: EX-03 SHEET	

NAME: N:\PROJECTS\W0020 23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEET\SC-03_CARAS PARK_SITE PLAN.DWG
PLOT DATE: March 25, 2024 3:54 PM, BY: TAYLOR WINKEL

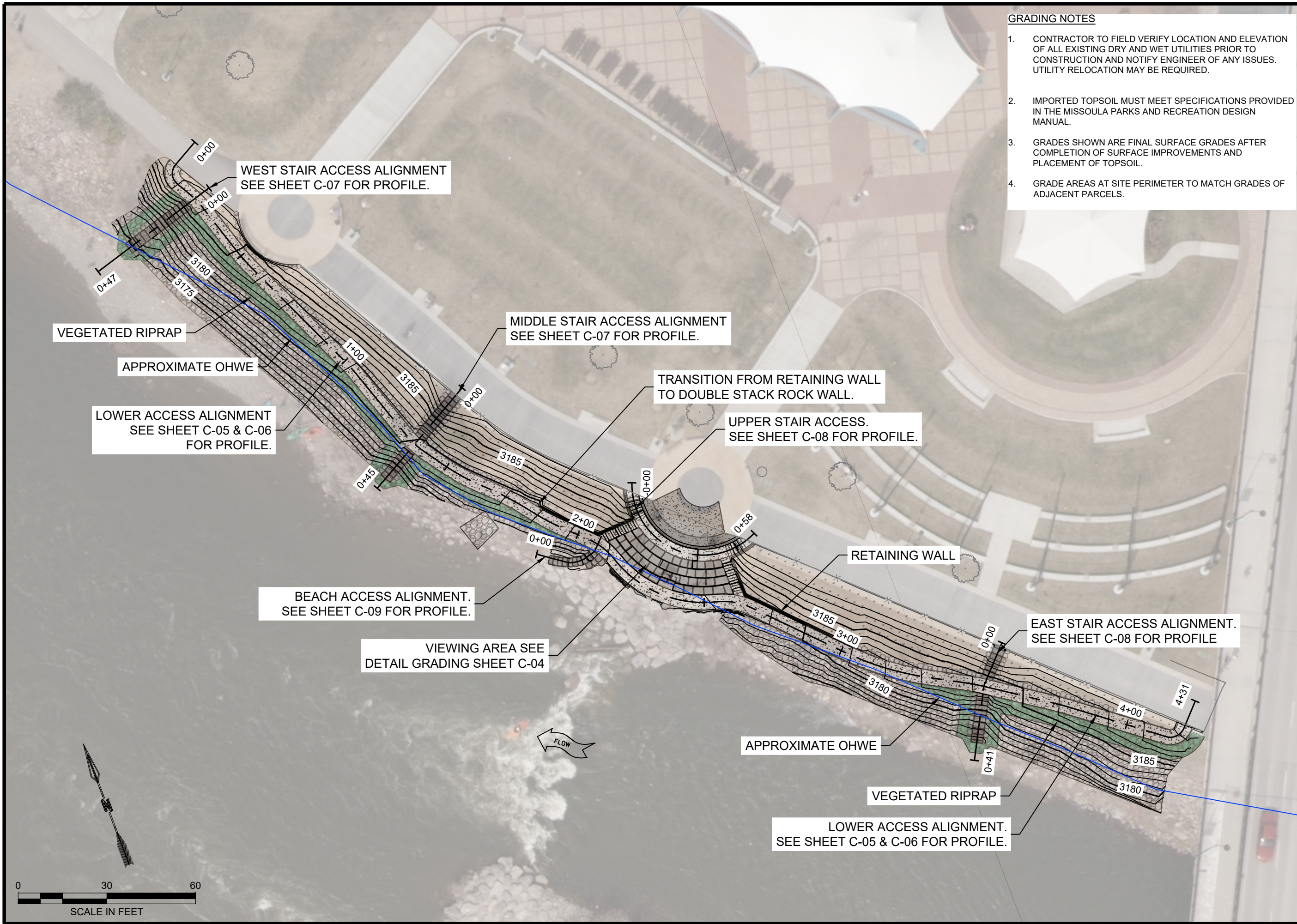


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RESPEC				RESPEC				RESPEC				RESPEC							
WATER & NATURAL RESOURCES				3810 VALLEY COMMONS DR SUITE 4				BOZEMAN, MT 59718				WWW.RESPEC.COM PHONE 409.684.2525							
CITY OF MISSOULA				PARKS AND RECREATION				DEPARTMENT				600 CREGG LANE				MISSOULA, MT 59801			
CLARK FORK RIVER				RESTORATION AND				ACCESS - CARAS PARK				RIVER ACCESS							
SITE PLAN																			
SHEET NUMBER:				C-01															
				SHEET															



SHEET NUMBER:
C-02
SHEET

NAME: N:\PROJECTS\W0020_23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEETS\C-XX-CARAS PARK GRADING PLAN.DWG
PLOT DATE: March 25, 2024 3:55 PM, BY: TAYLOR WINKEL

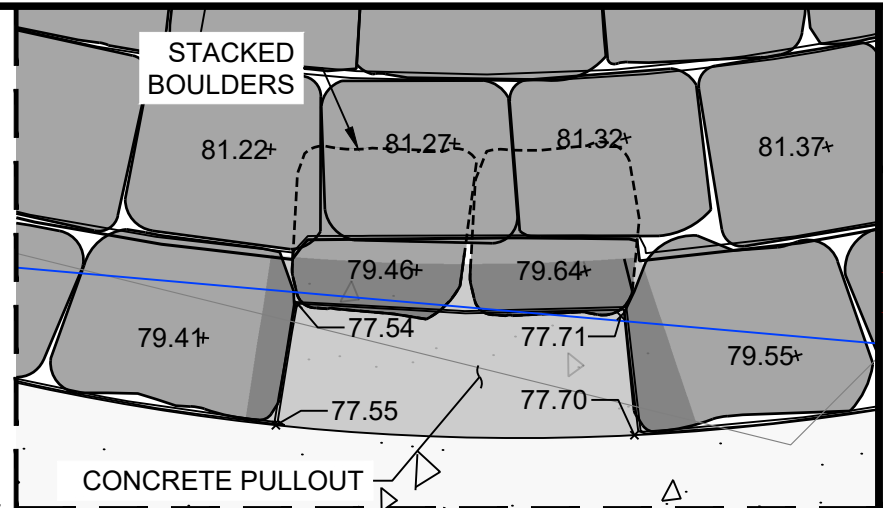
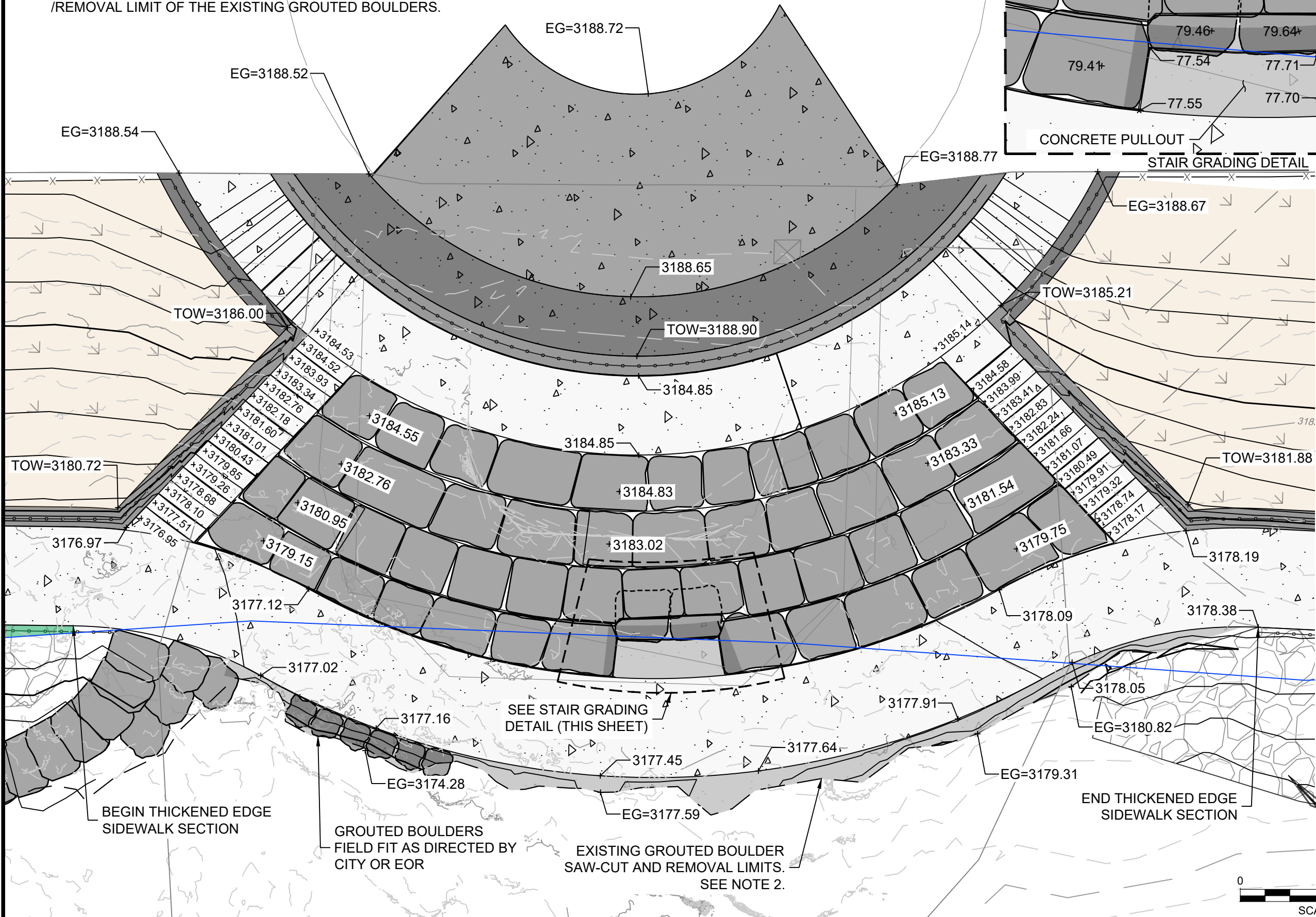


- GRADING NOTES**
1. CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING DRY AND WET UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY ISSUES. UTILITY RELOCATION MAY BE REQUIRED.
 2. IMPORTED TOPSOIL MUST MEET SPECIFICATIONS PROVIDED IN THE MISSOULA PARKS AND RECREATION DESIGN MANUAL.
 3. GRADES SHOWN ARE FINAL SURFACE GRADES AFTER COMPLETION OF SURFACE IMPROVEMENTS AND PLACEMENT OF TOPSOIL.
 4. GRADE AREAS AT SITE PERIMETER TO MATCH GRADES OF ADJACENT PARCELS.

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STAMP 100% REVIEW				
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CITY OF MISSOULA PARKS AND RECREATION DEPARTMENT 600 CREGG LANE MISSOULA, MT 59801				
CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS				
GRADING PLAN				
SHEET NUMBER: C-03 SHEET				

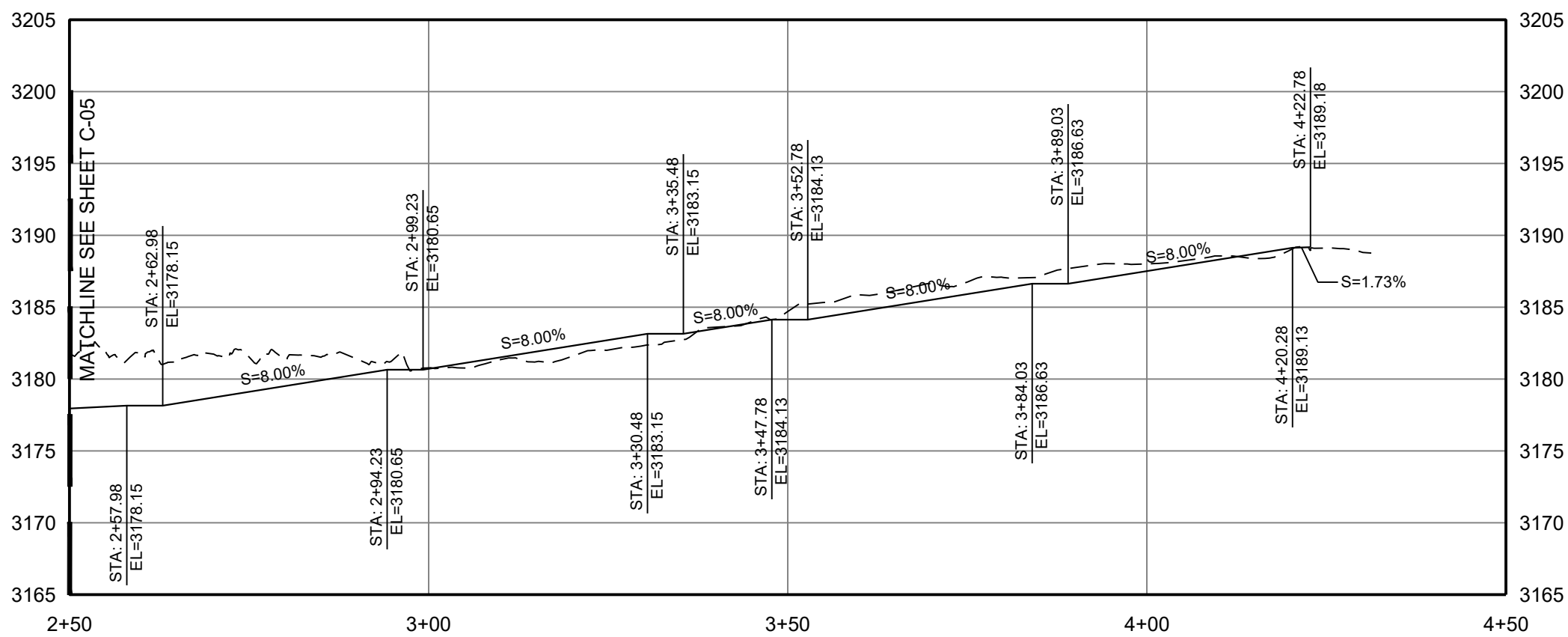
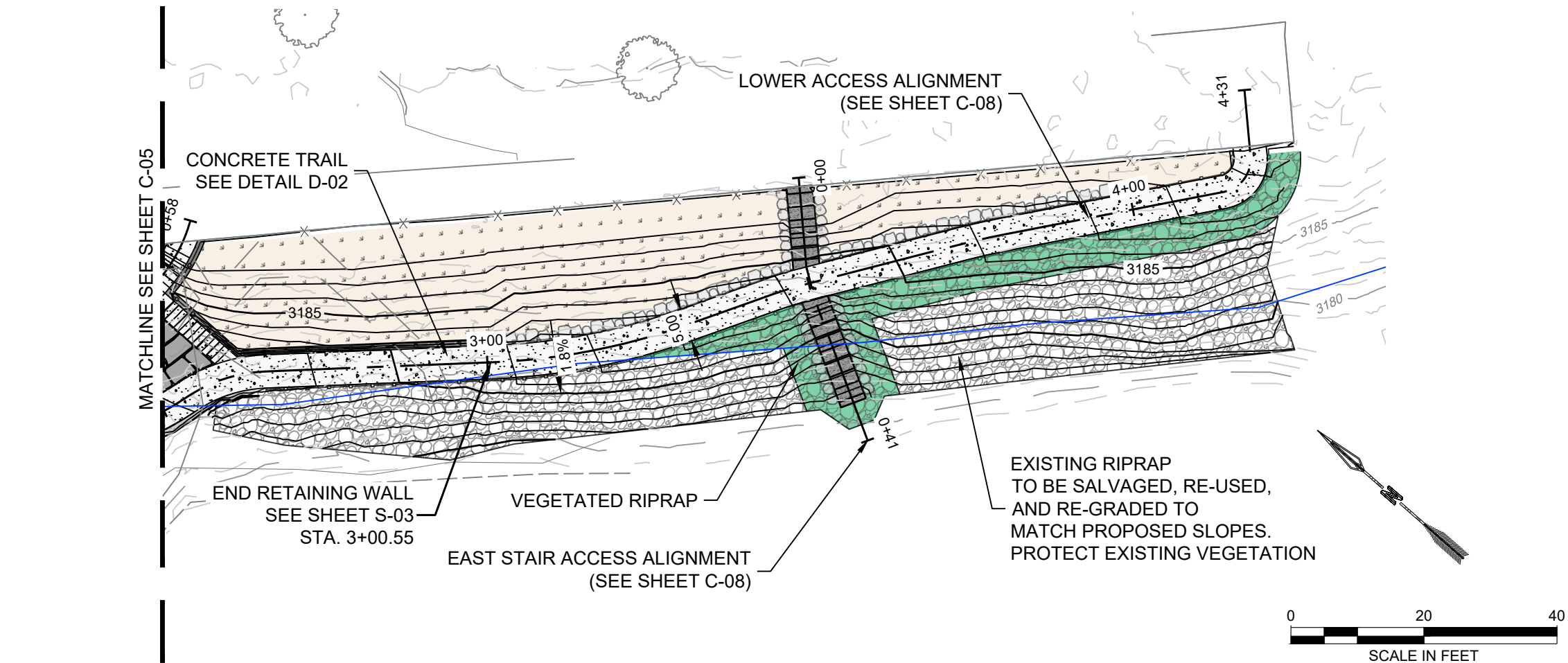
NOTES:

- BOULDER ELEVATIONS AND SIZES ARE SHOWN AS APPROXIMATE. TOP OF BOULDER ELEVATIONS TO VARY +/- 4" FROM ADJACENT BOULDERS WITHIN THE SAME HORIZONTAL ROW. BOULDERS TO HAVE NATURAL (NOT PERFECTLY FLAT) LOOK AND WILL VARY IN SIZE. ELEVATION AND PLACEMENTS WILL BE DIRECTED BY CITY OR EOR.
- SIDEWALK MUST MAINTAIN A MINIMUM 5' WIDTH BETWEEN EXISTING AND PROPOSED BOULDERS. ADDITIONAL CONCRETE WILL BE POURED TO FILL THE VOID BETWEEN THE PROPOSED EDGE OF SIDEWALK AND THE SAW CUT /REMOVAL LIMIT OF THE EXISTING GROUTED BOULDERS.



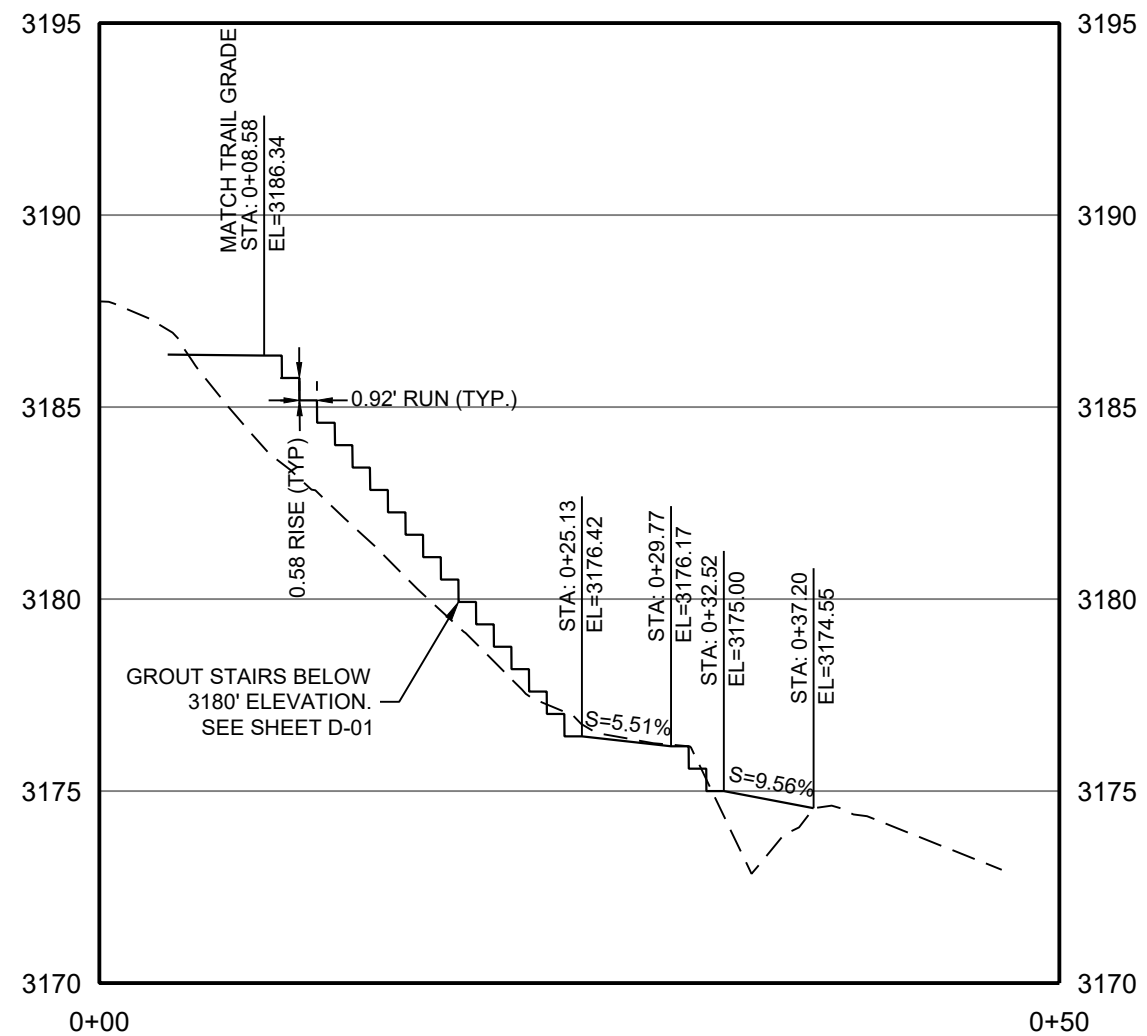
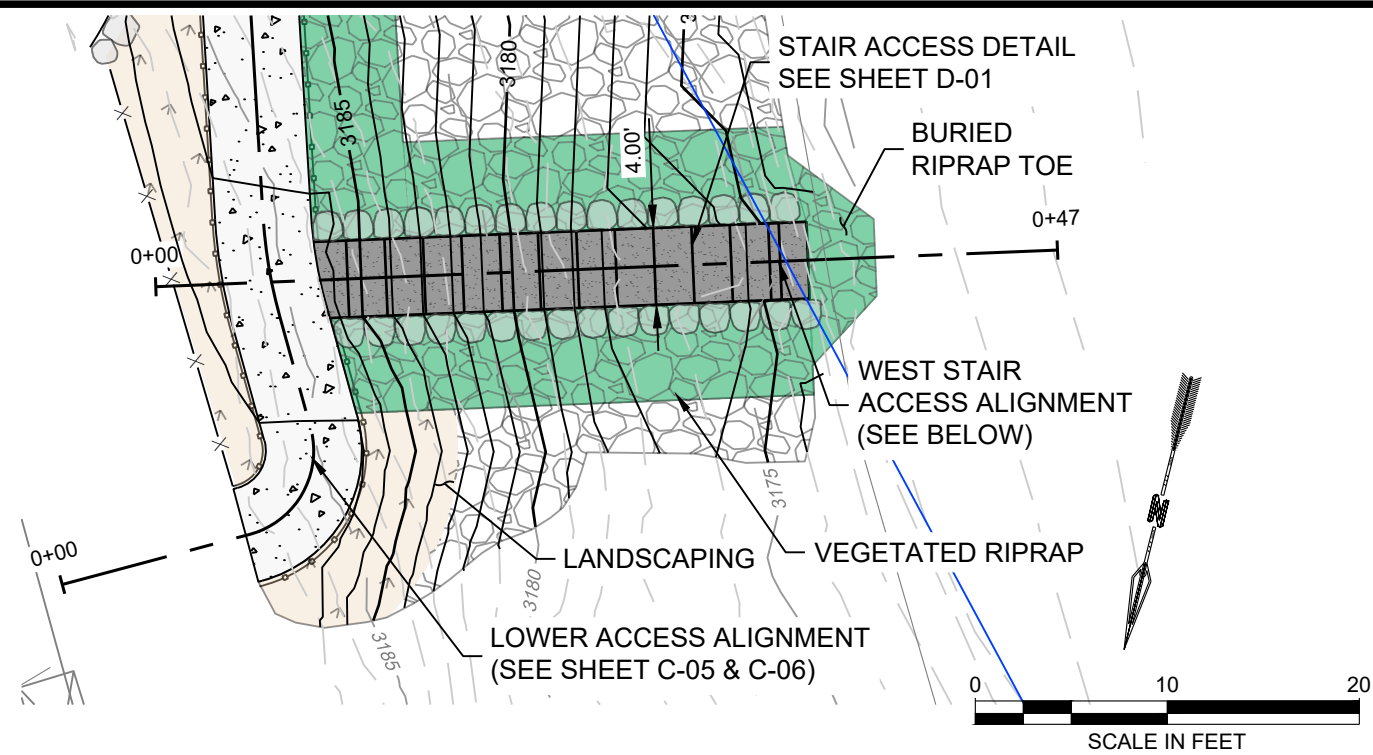
DESIGNED		DRAWN		CHECKED		DATE		REVISION	
TJW		TJW		MAR		MAR-24			
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CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS									
DETAIL GRADING									
SHEET NUMBER: C-04 SHEET									

NAME: N:\PROJECTS\W0020_23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEETS\C-XX-CARAS PARK_PLAN & PROFILE.DWG
PLOT DATE: March 25, 2024 3:56 PM, BY: TAYLOR WINKEL

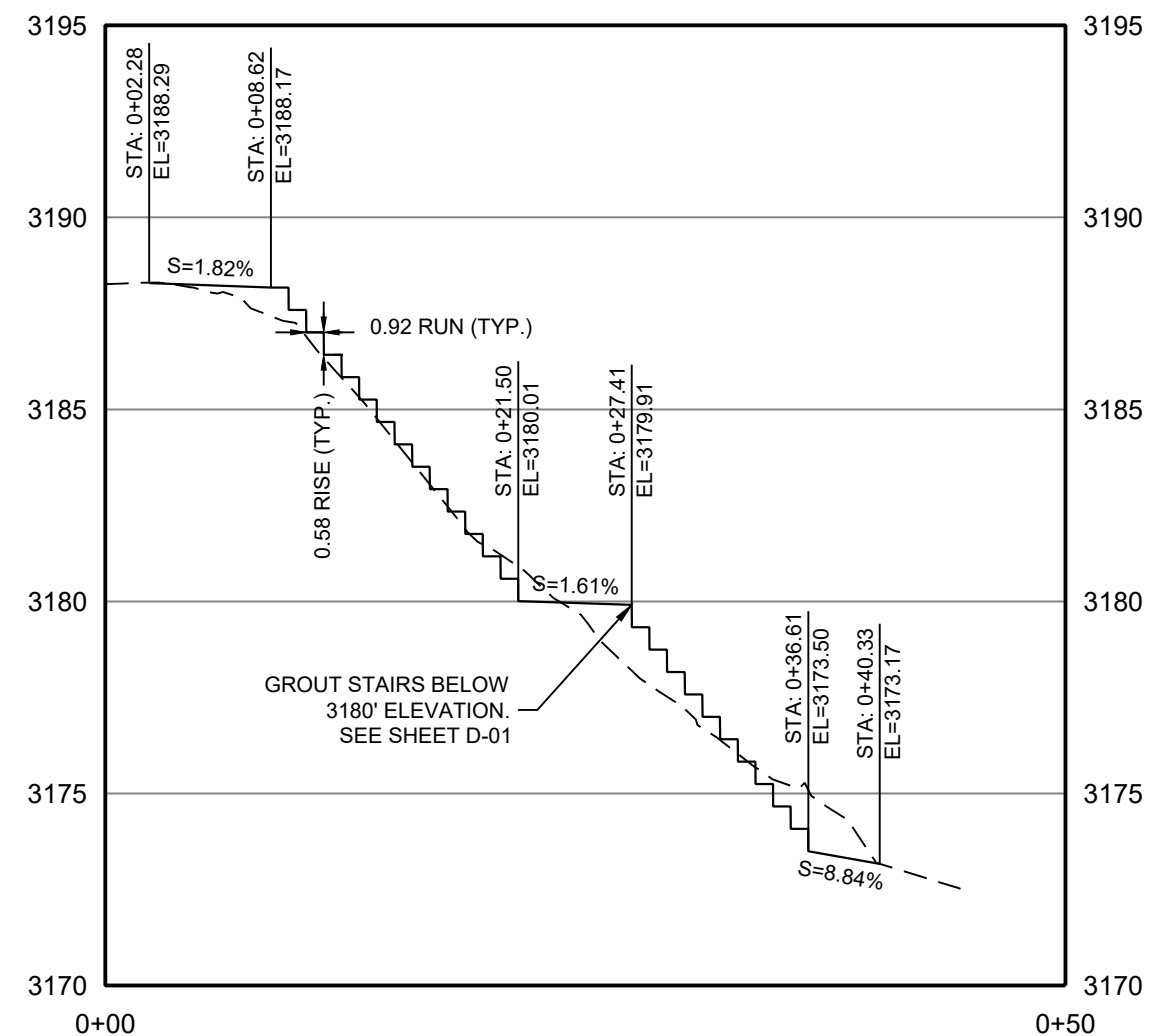
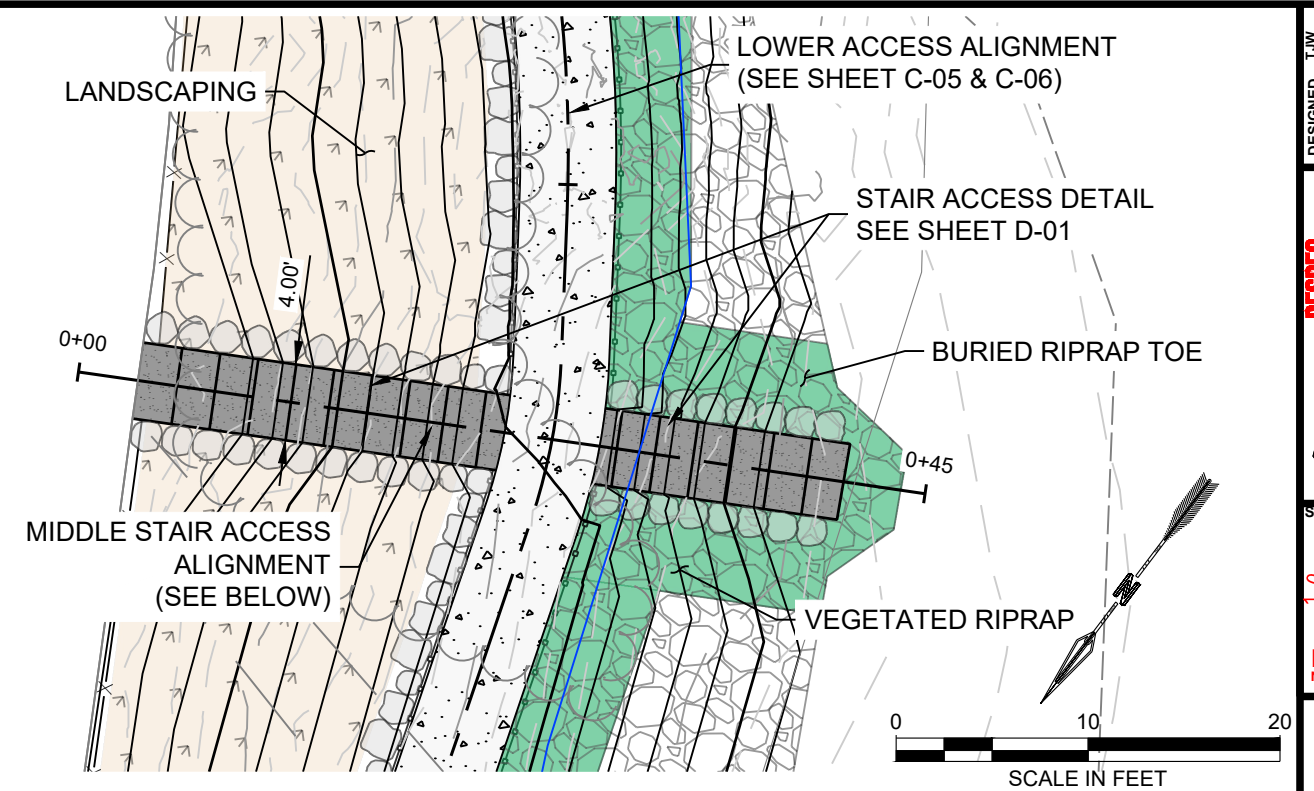


Caras Park - Lower Access PROFILE
HORIZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 5'

DESIGNED				DRAWN				CHECKED				DATE				REVISION			
TJW				TJW				MAR				Mar-24							
RESPEC				RESPEC				RESPEC				RESPEC							
WATER & NATURAL RESOURCES				WATER & NATURAL RESOURCES				WATER & NATURAL RESOURCES				WATER & NATURAL RESOURCES							
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CITY OF MISSOULA				CITY OF MISSOULA				CITY OF MISSOULA				CITY OF MISSOULA							
PARKS AND RECREATION				PARKS AND RECREATION				PARKS AND RECREATION				PARKS AND RECREATION							
DEPARTMENT				DEPARTMENT				DEPARTMENT				DEPARTMENT							
600 CREGG LANE				600 CREGG LANE				600 CREGG LANE				600 CREGG LANE							
MISSOULA, MT 59801				MISSOULA, MT 59801				MISSOULA, MT 59801				MISSOULA, MT 59801							
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ACCESS - CARAS PARK				ACCESS - CARAS PARK				ACCESS - CARAS PARK				ACCESS - CARAS PARK							
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C-06				C-06				C-06				C-06							
SHEET				SHEET				SHEET				SHEET							



Caras Park - West Stair Access PROFILE
HORIZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 5'



Caras Park - Middle Stair Access PROFILE
HORIZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 5'

NAME: N:\PROJECTS\W020.23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEETS\C-X-CARAS PARK_PLAN & PROFILE.DWG
PLOT DATE: March 25, 2024 3:56 PM, BY: TAYLOR WINKEL

DESIGNED

T.W.

DRAWN

MAR

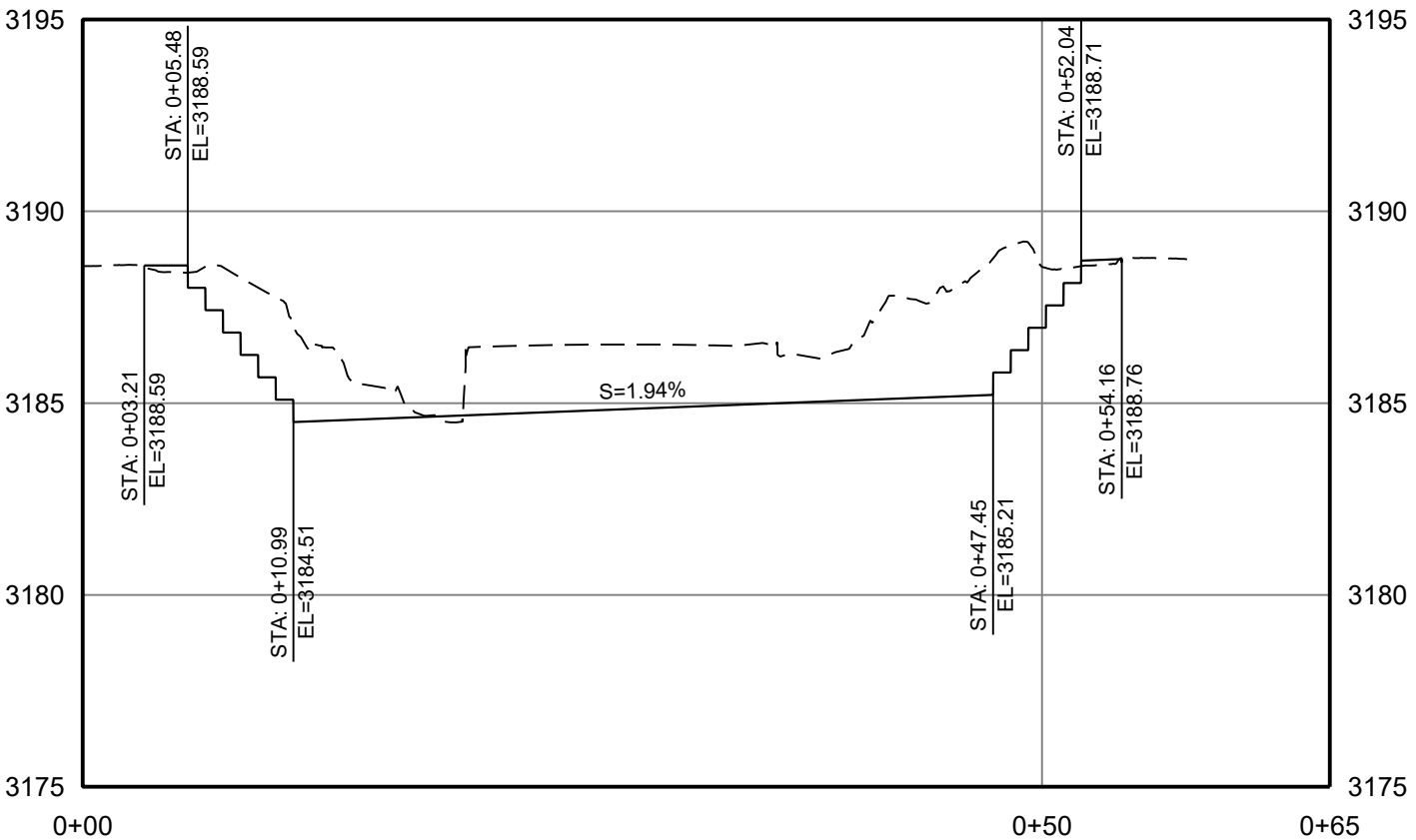
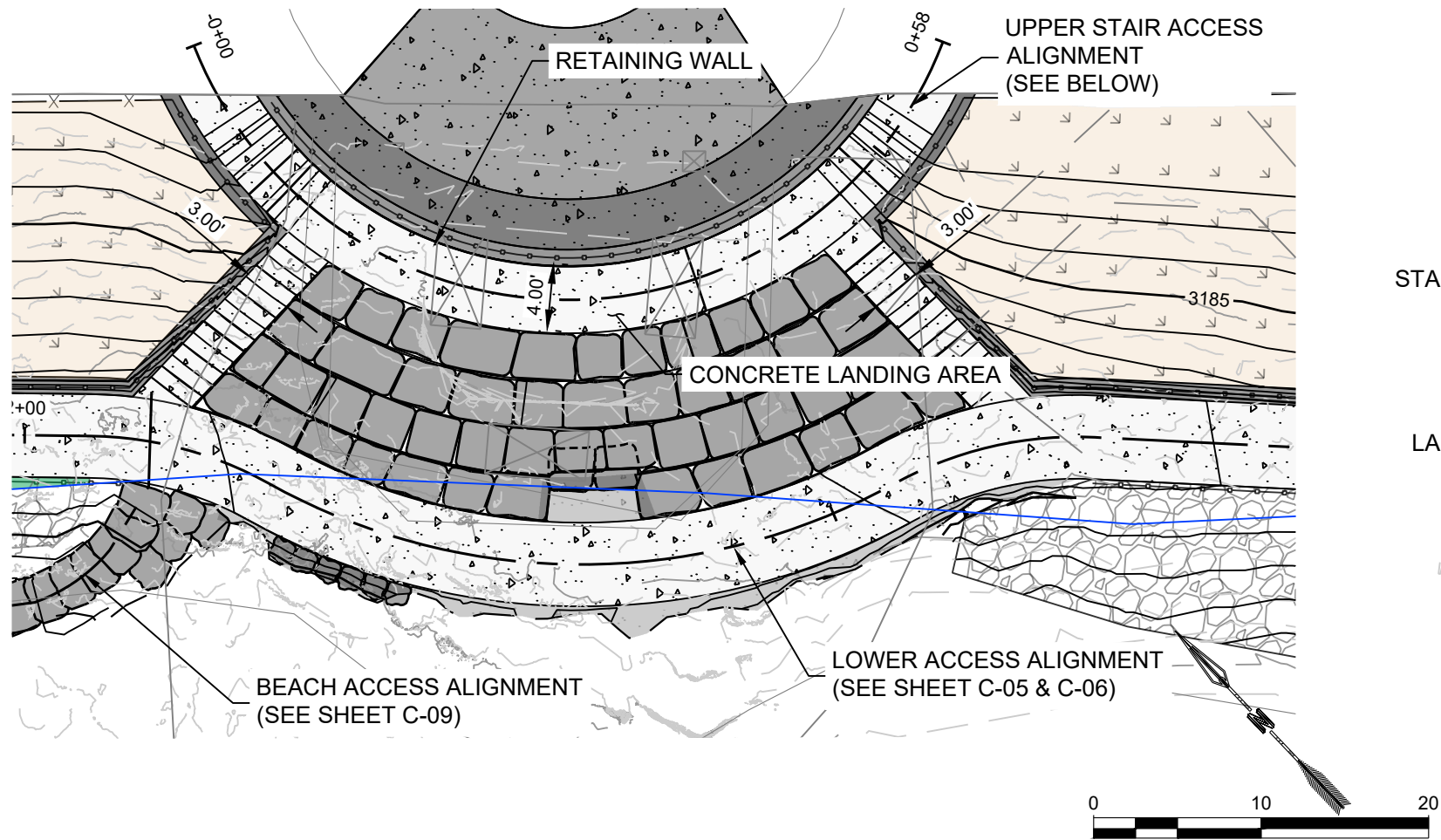
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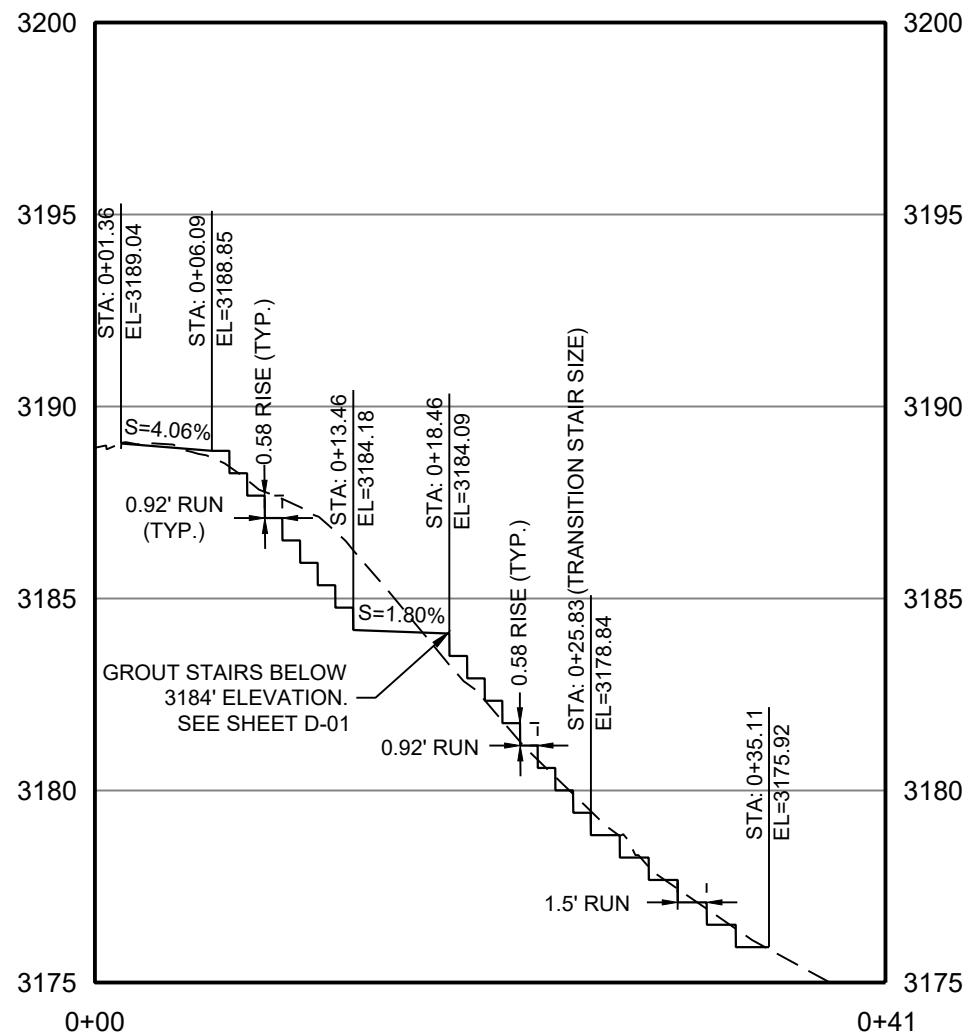
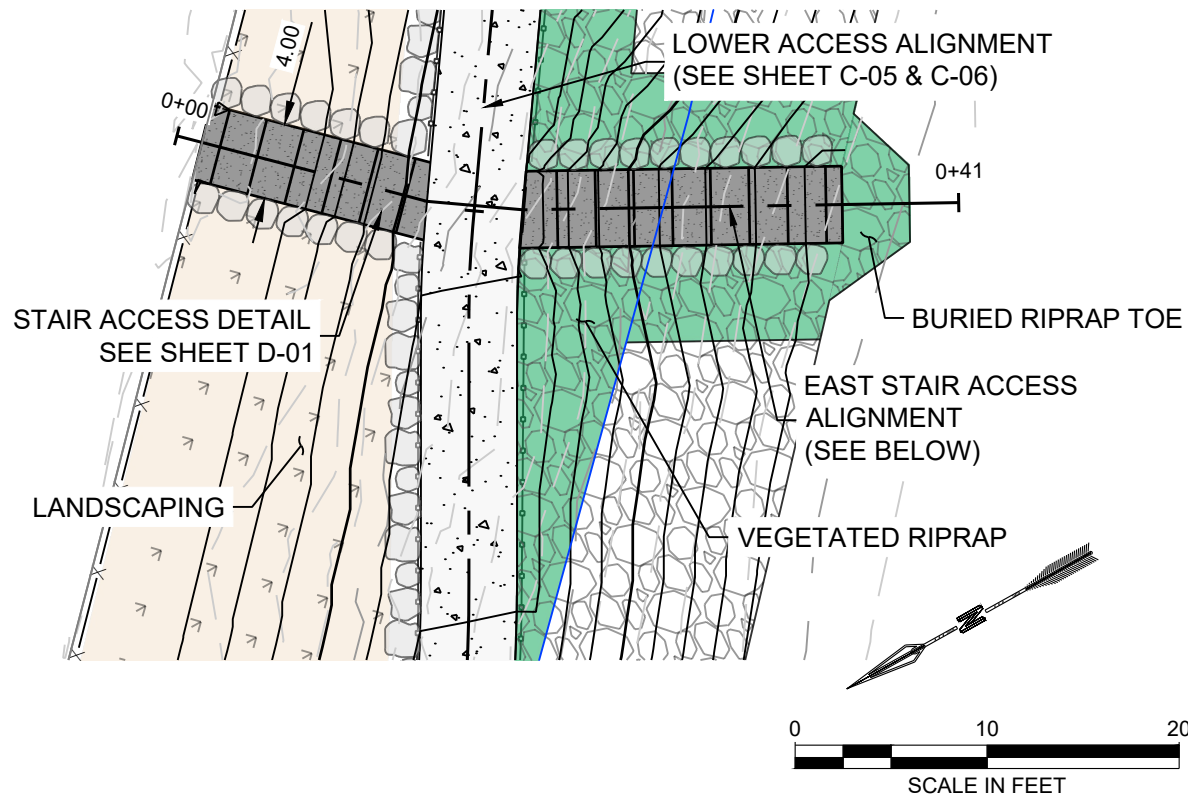
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NAME: N:\PROJECTS\W0020_23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEETS\C-XX-CARAS PARK_PLAN & PROFILE.DWG
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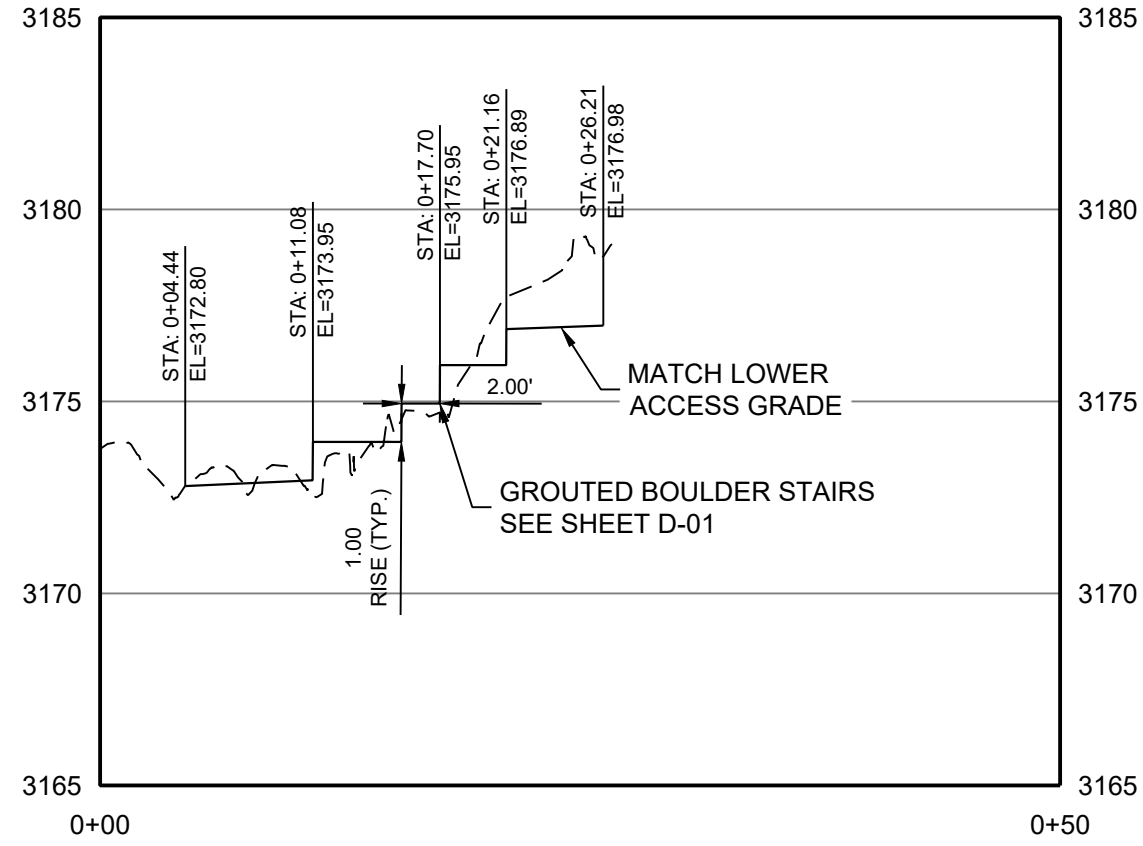
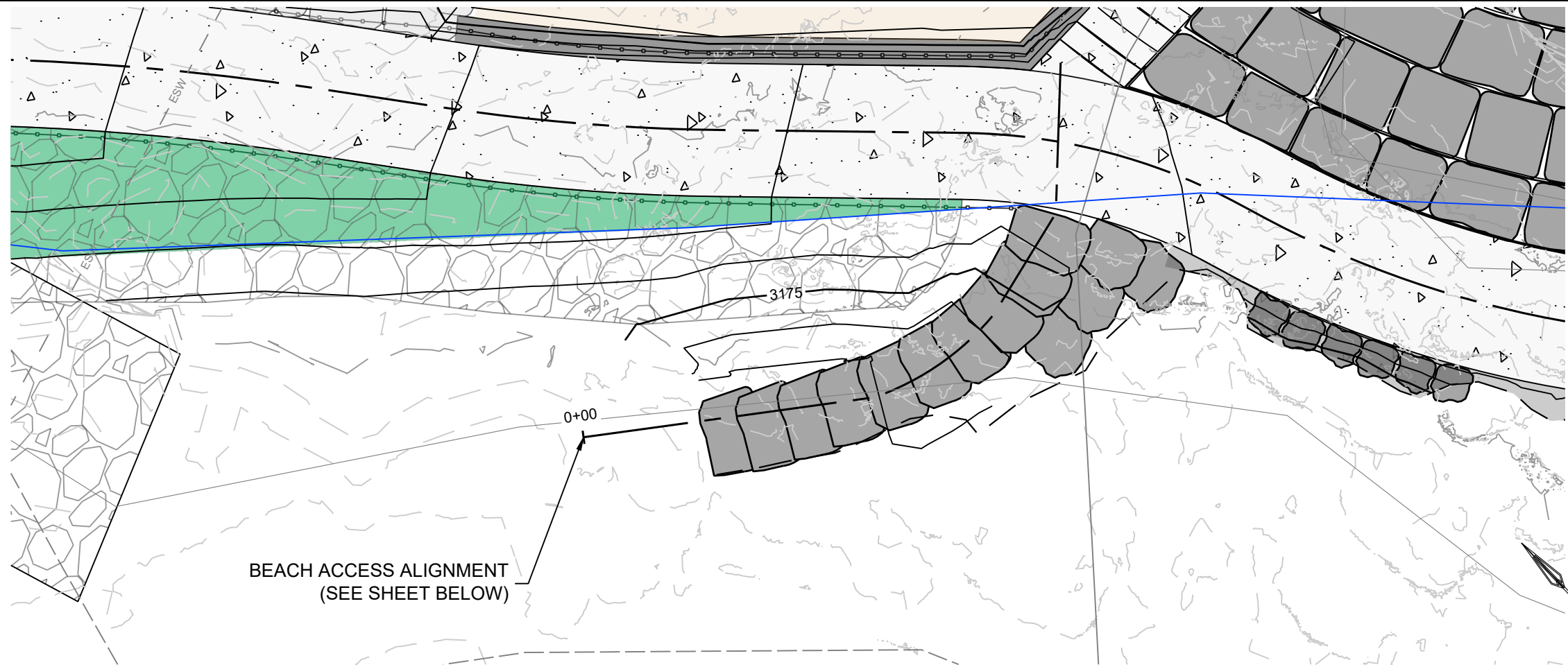
Caras Park - Upper Access PROFILE
HORIZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 5'



Caras Park - East Stair Access PROFILE
HORIZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 5'

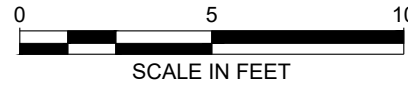
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RESPEC WATER & NATURAL RESOURCES 3810 VALLEY COMMONS DR SUITE 4 BOZEMAN, MT 59718 WWW.RESPEC.COM PHONE 409.284.2525									
RESPEC									
STAMP 100% REVIEW									
PRELIMINARY NOT FOR CONSTRUCTION 3/2024									
CITY OF MISSOULA PARKS AND RECREATION DEPARTMENT 600 CREGG LANE MISSOULA, MT 59801									
CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS									
PLAN & PROFILE									
SHEET NUMBER: C-08									
SHEET									

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Caras Park - Beach Access PROFILE
HORIZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 5'

NOTES:
BEACH ACCESS STAIR GRADES/ALIGNMENT
TO FIT NATURALLY INTO EXISTING GRADES
AND ROCKS. PLACED AT DIRECTION BY
CITY OR EOR



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RESPEC WATER & NATURAL RESOURCES 3810 VALLEY COMMONS DR SUITE 4 BOZEMAN, MT 59718 WWW.RESPEC.COM PHONE 409.284.2525				
STAMP 100% REVIEW				
PRELIMINARY NOT FOR CONSTRUCTION 3/2024				
CITY OF MISSOULA PARKS AND RECREATION DEPARTMENT 600 CREGG LANE MISSOULA, MT 59801				
CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS				
PLAN & PROFILE				
SHEET NUMBER: C-09				
SHEET				

This diagram illustrates a cross-section of a proposed road project. The road profile is shown with a dashed line, and the existing terrain is shown with a solid line. The diagram includes stationing from 0+00 to 4+00, a centerline, and a scale bar indicating 0 to 60 feet. The road profile is shown with a dashed line, and the existing terrain is shown with a solid line. The diagram also includes a north arrow and a scale bar.

CITY OF MISSOULA
PARKS AND RECREATION
DEPARTMENT
600 CREGG LANE
MISSOULA, MT 59801

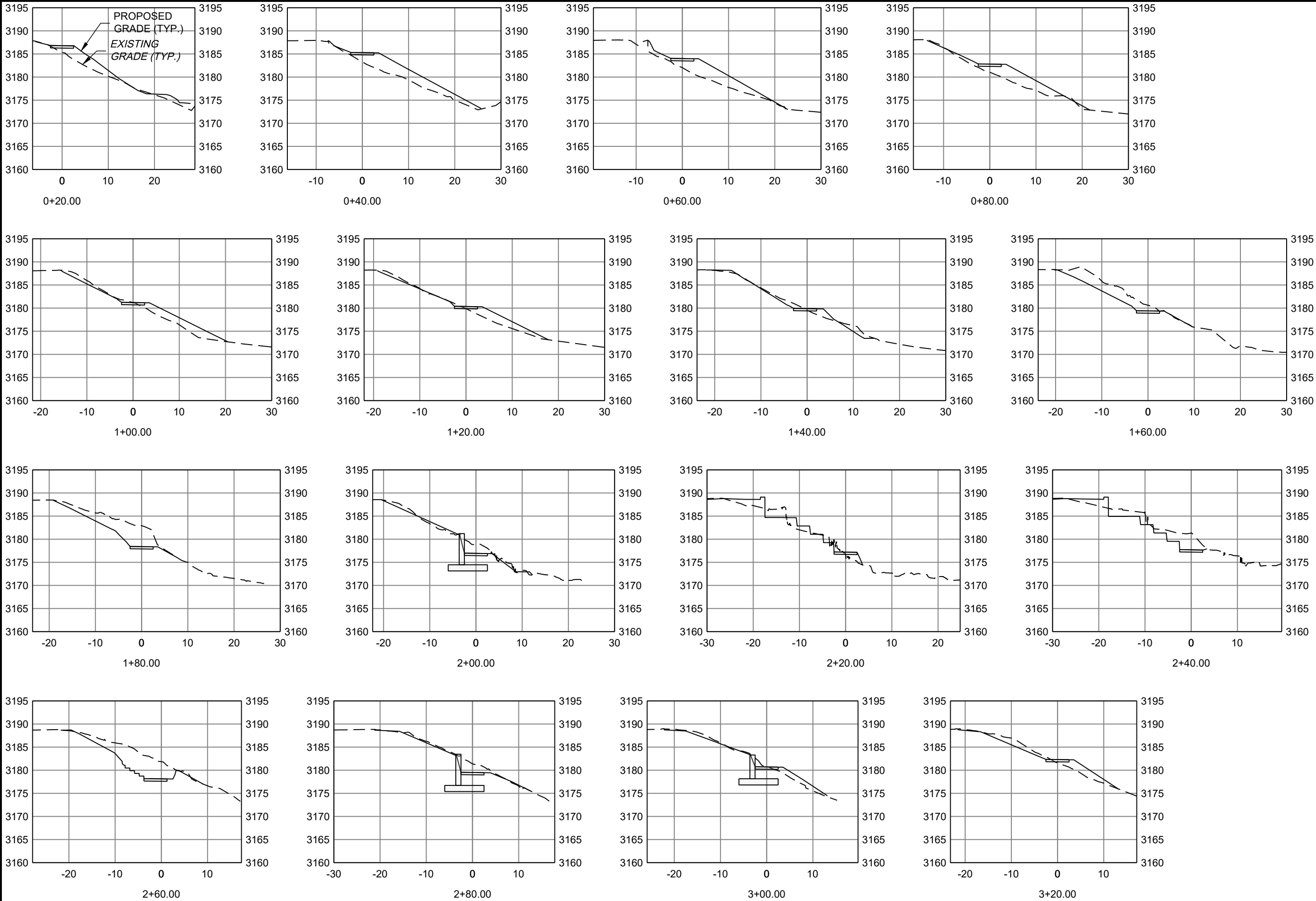
STAMP
100% REVIEW

RESPEC
WATER & NATURAL RESOURCES
3810 VALLEY COMMONS DR SUITE 4
BOZEMAN, MT 59718
WWW.RESPEC.COM PHONE: 406/284-2525

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CHECKED	MAR
DATE	Mar-24

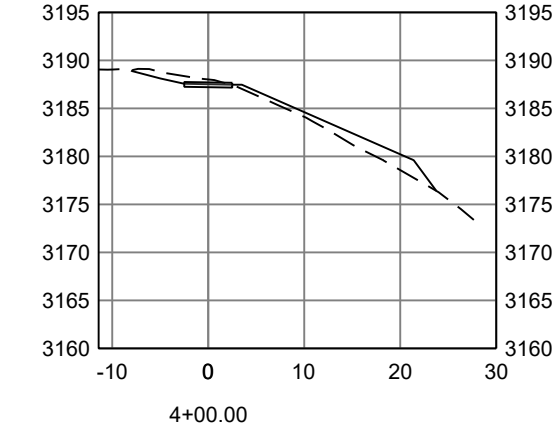
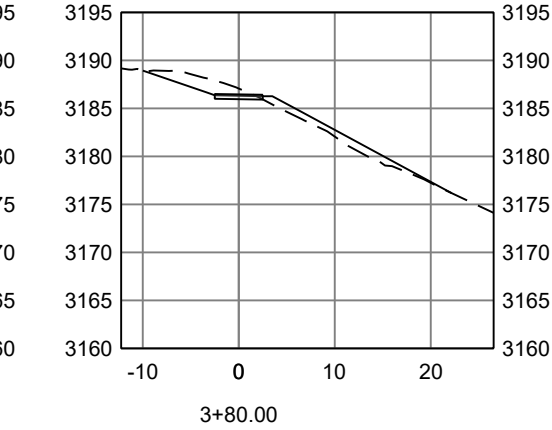
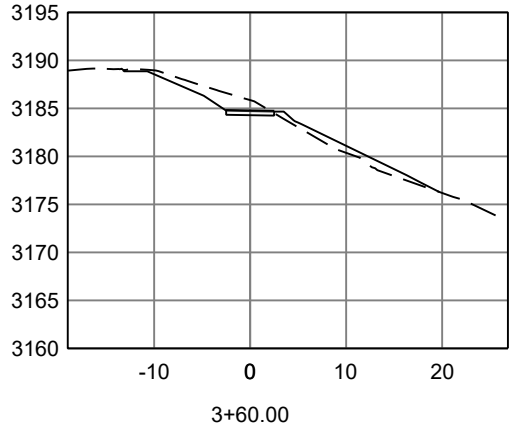
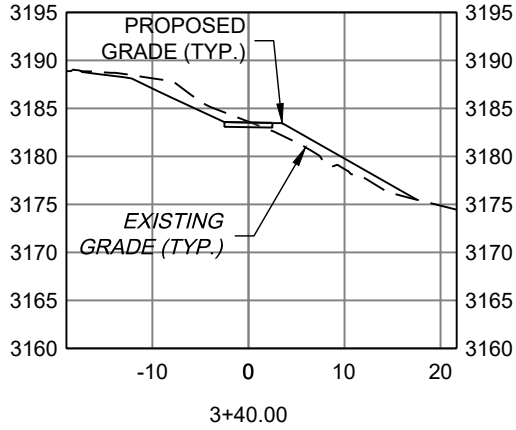
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NAME: N:\PROJECTS\W0020-23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEET\SC-XX-CARAS PARK_CROSS-SECTIONS.DWG
PLOT DATE: March 25, 2024 3:57 PM, BY: TAYLOR WINKEL



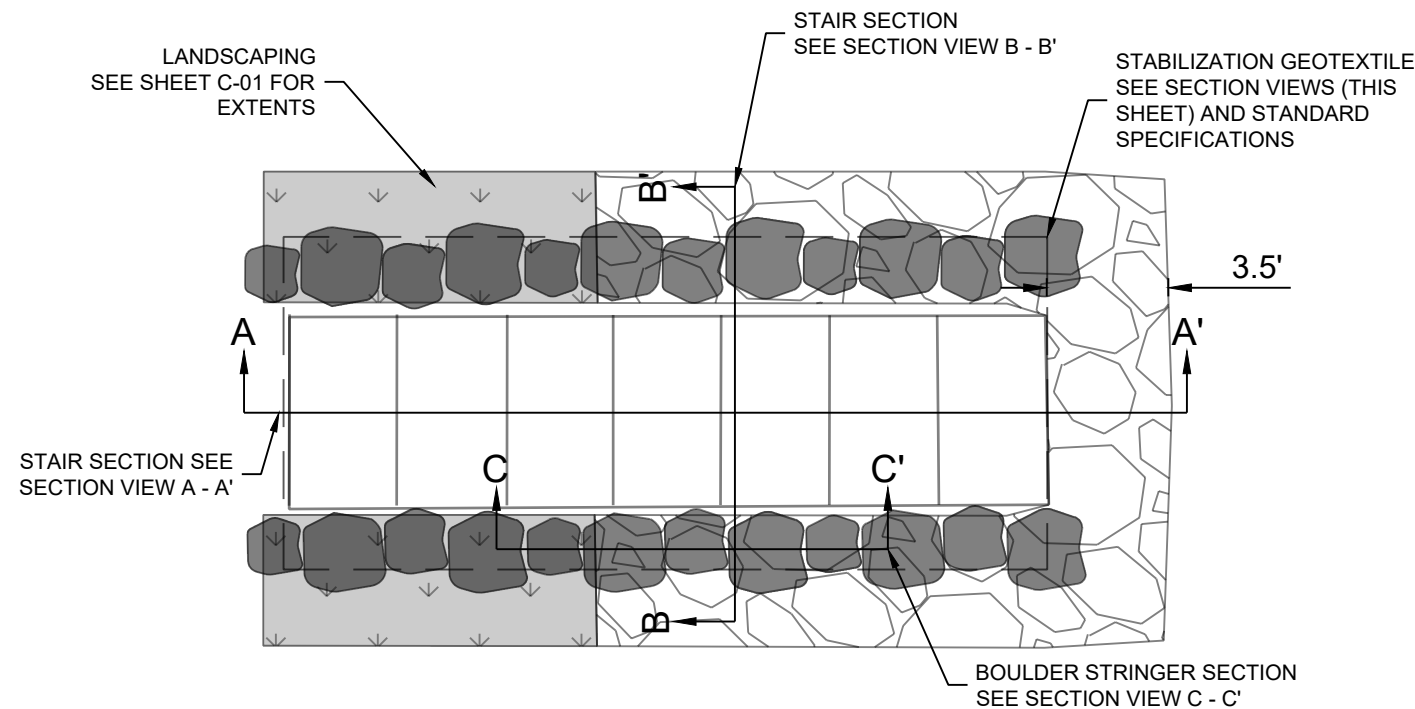
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PRELIMINARY NOT FOR CONSTRUCTION 3/2024				CITY OF MISSOULA PARKS AND RECREATION DEPARTMENT 600 CREGG LANE MISSOULA, MT 59801	
CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS				CROSS-SECTIONS	
SHEET NUMBER: C-11				SHEET	

NAME: N:\PROJECTS\W0020.23\001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEET\SC-XX-CARAS PARK_CROSS-SECTIONS.DWG
PLOT DATE: March 25, 2024 3:57 PM, BY: TAYLOR WINKEL



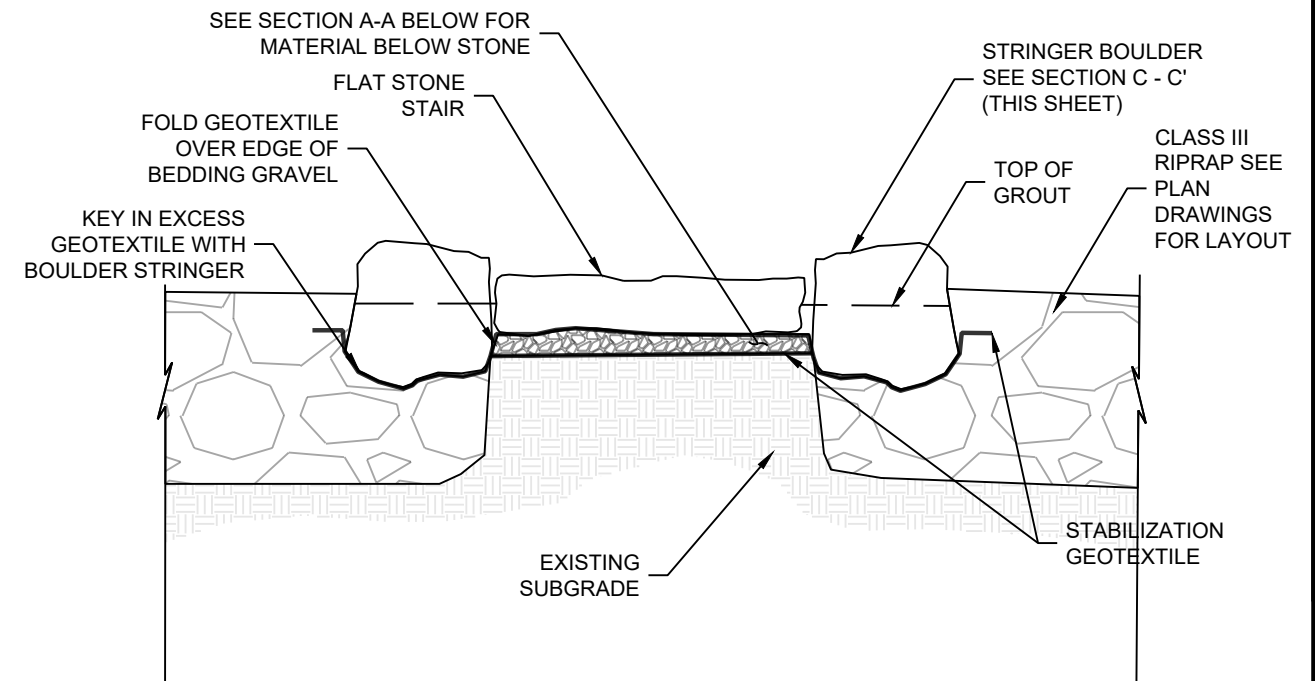
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STAMP 100% REVIEW						
PRELIMINARY NOT FOR CONSTRUCTION 3/2024						
CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS				CITY OF MISSOULA PARKS AND RECREATION DEPARTMENT 600 CREGG LANE MISSOULA, MT 59801		
CROSS-SECTIONS						
SHEET NUMBER: C-12						
SHEET						

NAME: N:\PROJECTS\W0020 23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHETS\1D-XX-CARAS PARK_DETAILS.DWG
PLOT DATE: March 25, 2024 3:57 PM, BY: TAYLOR WINKEL



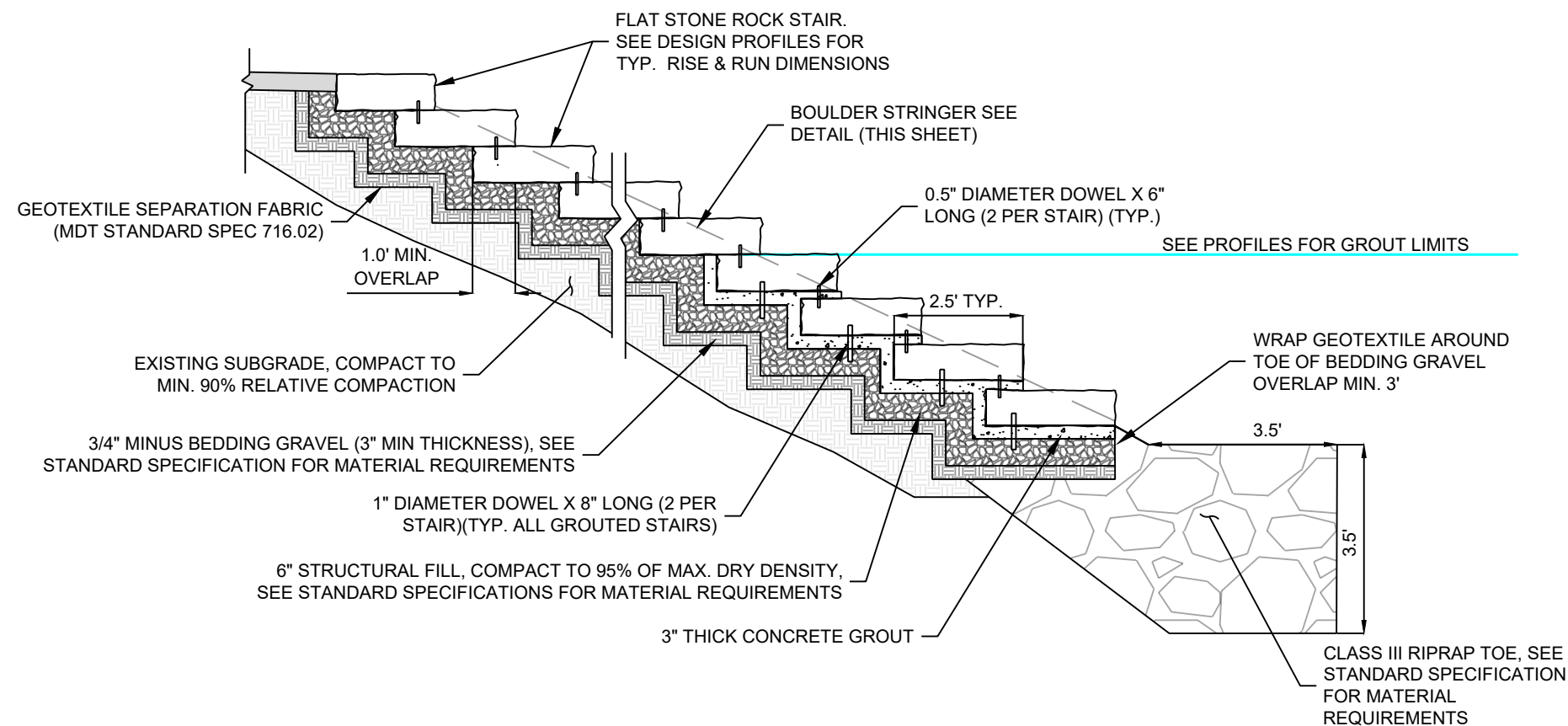
ROCK STAIR ACCESS DETAIL - PLAN VIEW

NOT TO SCALE



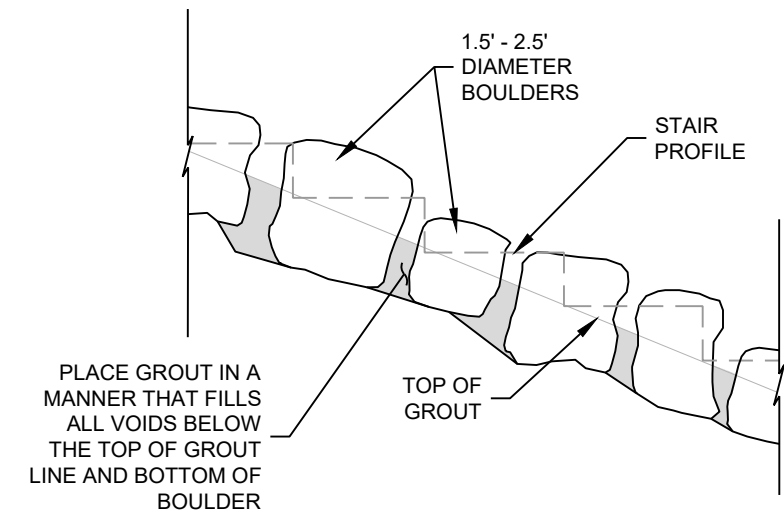
ROCK STAIR ACCESS DETAIL - SECTION B - B'

NOT TO SCALE



ROCK STAIR ACCESS DETAIL - SECTION A-A

NOT TO SCALE



BOULDER STRINGER DETAIL - SECTION C-C

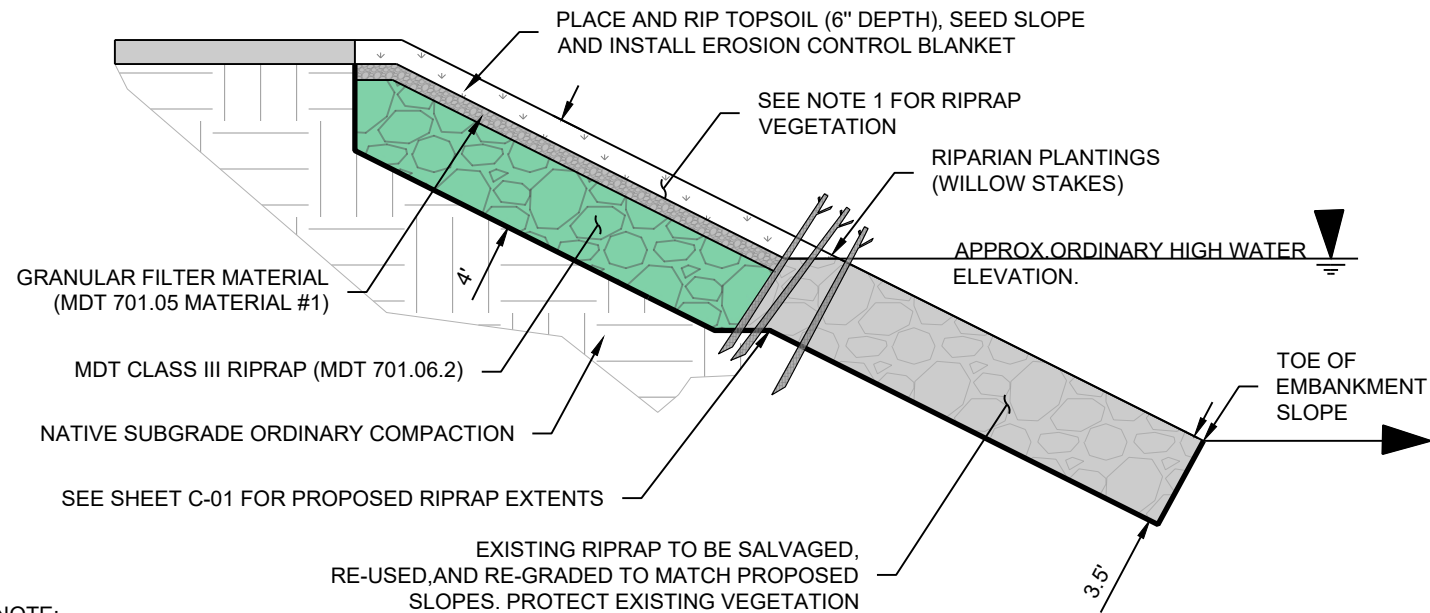
NOT TO SCALE

NOTES

- STONE DIMENSIONS ARE SUBJECT TO SUPPLIER AVAILABILITY. CONTRACTOR WILL COORDINATE WITH ENGINEER OR PARKS PROJECT MANAGER ON STONE SELECTION AND PLACEMENT IN ACCORDANCE WITH PROPOSED ROCK SPECIFICATIONS.
- SURFACES ADJACENT TO THE "BOULDER STRINGER" WILL BE GRADED TO CREATE A SMOOTH TRANSITION UPSTREAM AND DOWNSTREAM OF STAIR ACCESSES.
- PRIOR TO PLACEMENT OF FILL AND/OR GRAVEL SECTION MATERIALS, THE EXPOSED SUBGRADE SOILS WILL BE COMPACTED TO VERIFY THAT STABLE SUBGRADE CONDITIONS EXIST. ANY LOOSE, SOFT, DISTUBRED, OR OTHERWISE UNSUITABLE MATERIALS WILL BE OVEREXCAVATED AND REPLACED WITH STRUCTURAL FILL.
- CONCRETE GROUT TO MEET MDT STANDARD SPEC 713.04

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RESPEC WATER & NATURAL RESOURCES 3810 VALLEY COMMONS DR SUITE 4 BOZEMAN, MT 59718 WWW.RESPEC.COM PHONE 409.884.2525				
STAMP 100% REVIEW				
PRELIMINARY NOT FOR CONSTRUCTION 3/2024				
CITY OF MISSOULA PARKS AND RECREATION DEPARTMENT 600 CREGG LANE MISSOULA, MT 59801				
CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS				
DETAILS				
SHEET NUMBER: D-01 SHEET				

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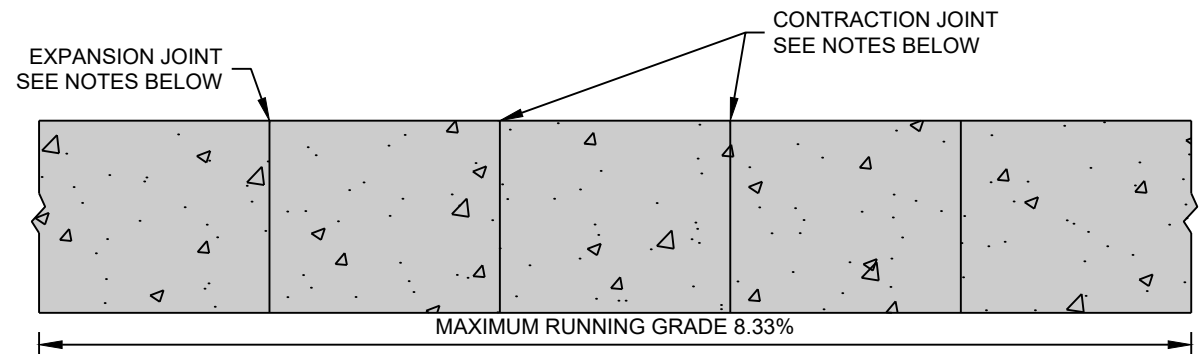
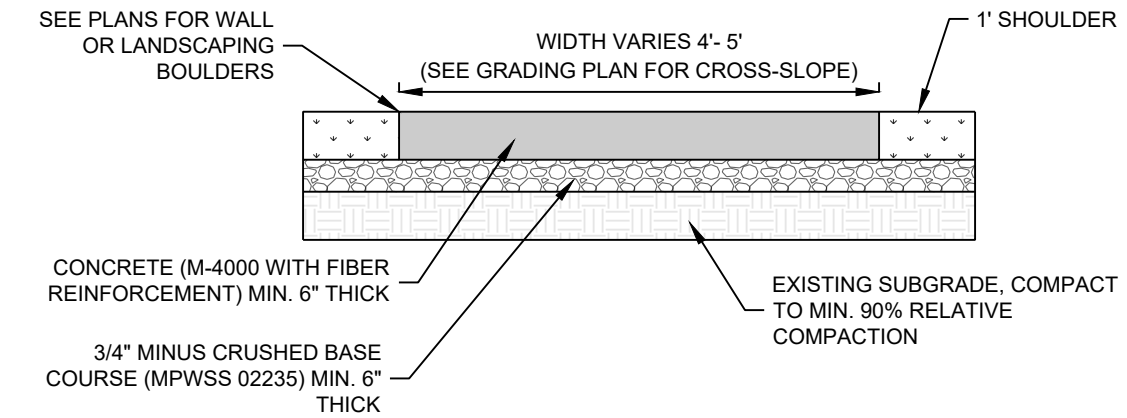
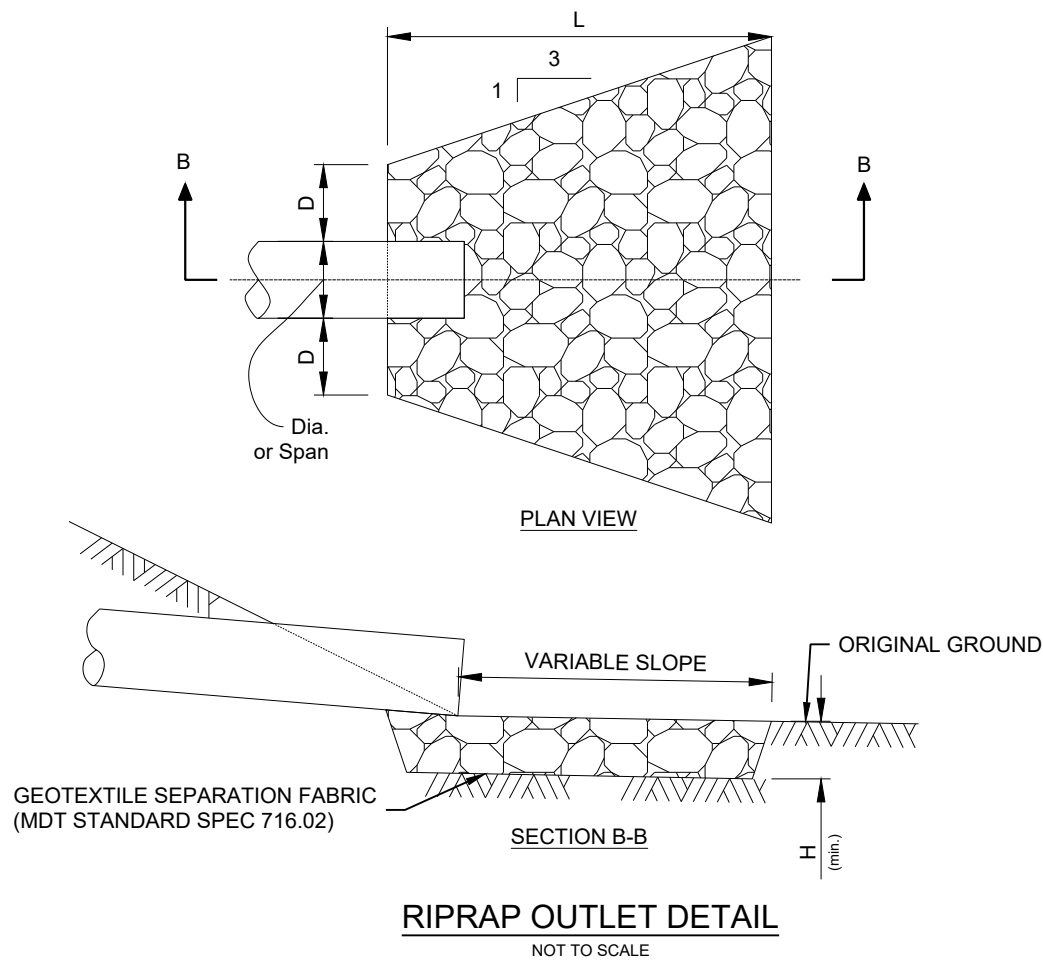


NOTE:

1. RIPRAP REVEGETATION: THIS WORK IS THE CONSTRUCTION REQUIREMENTS FOR REVEGETATION MATERIAL ON RIPRAP SURFACES ABOVE ORDINARY HIGH WATER MARK ELEVATION. CONSTRUCTION REQUIREMENTS ARE TO FILL THE SPACES AND VOIDS BETWEEN THE ROCKS WITH GRANULAR FILTER MATERIAL AND TOPSOIL FOLLOWING PLACEMENT OF RIPRAP, OR AT INTERVALS APPROPRIATE FOR THE SIZE AND CONFIGURATION OF THE INSTALLATION. ACCEPTABLE TOPSOIL TO MATCH MISSOULA PARKS AND RECREATION DESIGN MANUAL SECTION 4 IMPORTED TOPSOIL REQUIREMENTS. CONTRACTOR TO PLACE A SUFFICIENT AMOUNT OF GRANULAR FILTER MATERIAL OVER THE RIPRAP, SO THAT AFTER SETTLING, THE LEVEL OF GRANULAR FILTER MATERIAL COMES TO THE VERY TOP OF THE ROCK. PLACE THE TOPSOIL TO A 6-INCH DEPTH OVER THE GRANULAR FILTER MATERIAL. PLACE MATERIAL IN A MANNER THAT CREATES A SMOOTH, UNIFORM SURFACE FOR SEEDING AND PLACEMENT OF THE EROSION CONTROL BLANKET/MULCH. CONTRACTOR TO HAND BROADCAST SEED THE SOIL IMMEDIATELY AFTER PLACEMENT, REGARDLESS OF TIME OF YEAR, WITH THE SEED MIXTURE AND RATES SPECIFIED BY THE ENGINEER. SCARIFY THE SOIL IMMEDIATELY PRIOR TO AND FOLLOWING SEEDING TO INCORPORATE SEED TO A DEPTH OF 1/2 INCH INTO THE SOIL.

VEGETATED RIPRAP DETAIL - SECTION VIEW

NOT TO SCALE



NOTES:

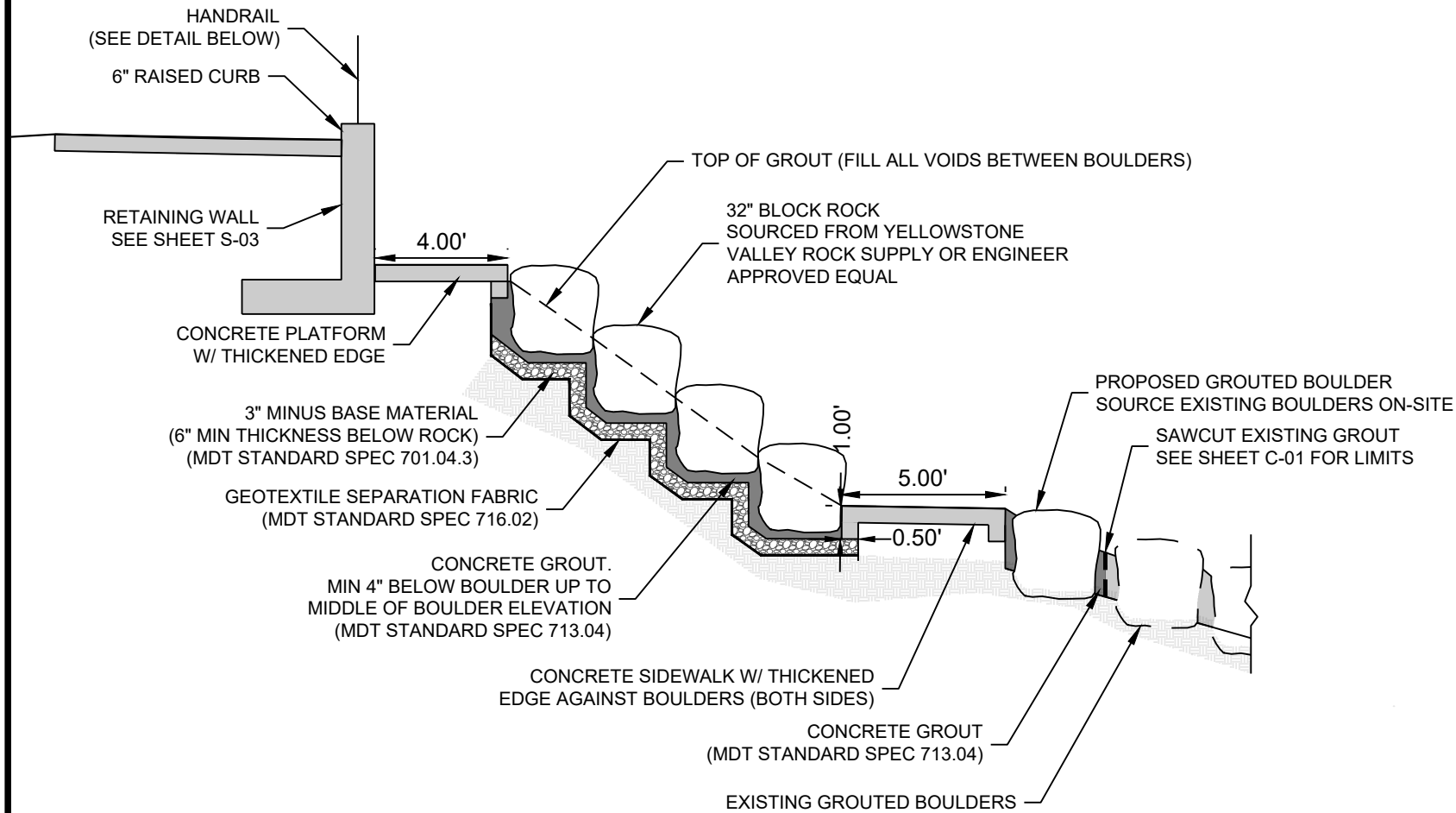
1. MINIMUM OF SIX (6") INCHES OF CONCRETE SIDEWALK (TYPICAL).
2. MINIMUM OF FOUR (4") INCHES OF BASE SHALL BE COMPACTED TO 95% PROCTOR DENSITY.
3. MINIMUM OF SIX (6") INCHES OF SUB GRADE SHALL BE COMPACTED TO 95% PROCTOR DENSITY.
4. CITY ENGINEER MAY REQUIRE ADDITIONAL BASE, DEPENDING ON SUB GRADE MATERIAL.
5. CONTRACTIONS JOINTS SHALL FORM AS NEAR A SQUARE PANEL AS POSSIBLE, NO SINGLE PANEL SHALL EXCEED TEN (10') FEET ON ANY SIDE. LONGITUDINAL JOINTS REQUIRED IF SIDEWALK WIDTH EXCEEDS TEN (10') FEET.
6. CONTRACTION JOINTS SHALL BE ONE-FOURTH (1/4) THE CONCRETE THICKNESS OR A MINIMUM OF ONE (1") INCH DEEP.
7. EXPANSION JOINTS OF ONE-HALF (1/2") INCH THICK MASTIC MATERIAL SHALL BE PLACED AT THE FOLLOWING LOCATIONS
 - 7.A. EVERY FIFTY (50') OF UNINTERRUPTED SIDEWALK.
 - 7.B. P.C.S. AND P.T.S OF CURVES
 - 7.C. GRADE BREAKS
 - 7.D. AT OTHER LOCATIONS AS SPECIFIED BY CITY ENGINEERING DIVISION.
 - 7.E. ALL EXPANSION JOINTS SHALL BE PLACED FLUSH OR JUST BELOW TOP FINISHED SURFACE OF SIDEWALK.
 - 7.F. ALL EXPANSION JOINTS SHALL BE FULL DEPTH, FULL WIDTH AND SECURED IN PLACE BEFORE THE FORMS WILL BE APPROVED.
8. FINISHED SURFACE - 12" MINIMUM SHOULDER UNLESS OTHERWISE APPROVED BY ENGINEER.
9. FINISHED SIDEWALK SURFACE SHALL HAVE MEDIUM-TO-HEAVY BROOM TEXTURE.
10. NO SIDEWALK SHALL BE POURED WITHOUT AN INSPECTION AND APPROVAL OF FORM PLACEMENT BY CITY ENGINEERING DIVISION.
11. CONSTRUCTION MATERIALS AND PROCEDURES SHALL CONFORM TO EXISTING CITY STANDARD SPECIFICATIONS FOR M-4000 CEMENT CONCRETE AND MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS SECTIONS 02528 AND 03310.
12. CITY OF MISSOULA REQUIRES 564 LBS OF PORTLAND CEMENT PER CY OF CONCRETE.

TYPICAL CONCRETE TRAIL DETAIL - SECTION VIEW

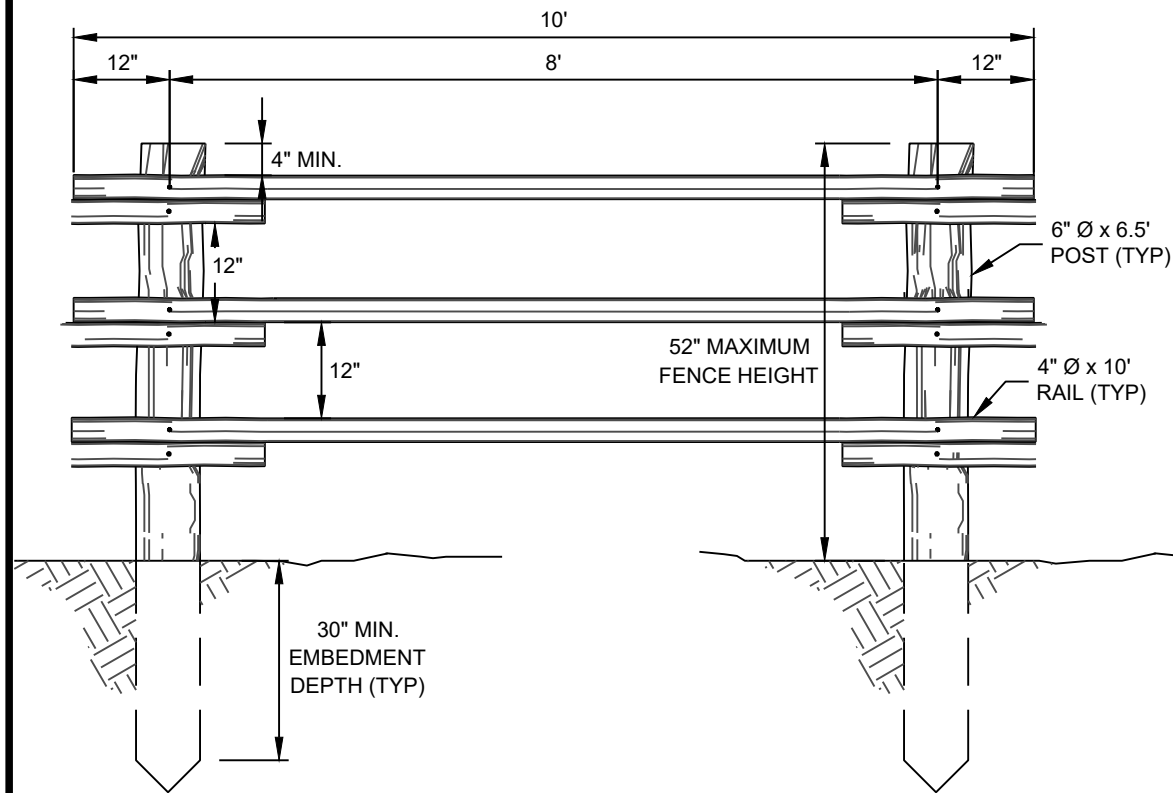
NOT TO SCALE

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RESPEC WATER & NATURAL RESOURCES 3810 VALLEY COMMONS DR SUITE 4 BOZEMAN, MT 59718 WWW.RESPEC.COM PHONE 409.884.2525			
STAMP 100% REVIEW			
PRELIMINARY NOT FOR CONSTRUCTION 3/2024			
CITY OF MISSOULA PARKS AND RECREATION DEPARTMENT 600 CREGG LANE MISSOULA, MT 59801			
CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS			
DETAILS			
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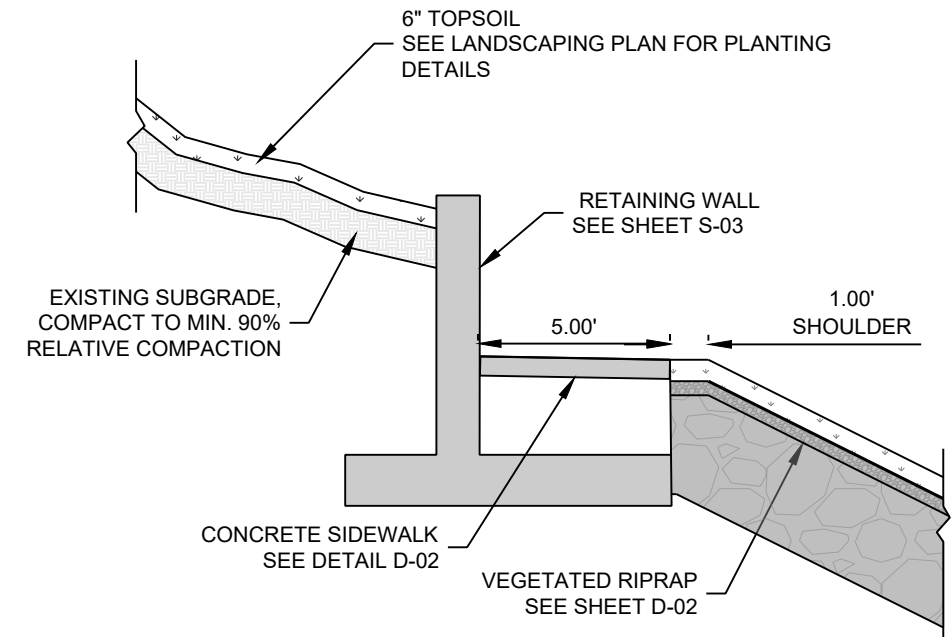
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PLOT DATE: March 25, 2024 3:57 PM, BY: TAYLOR WINKEL



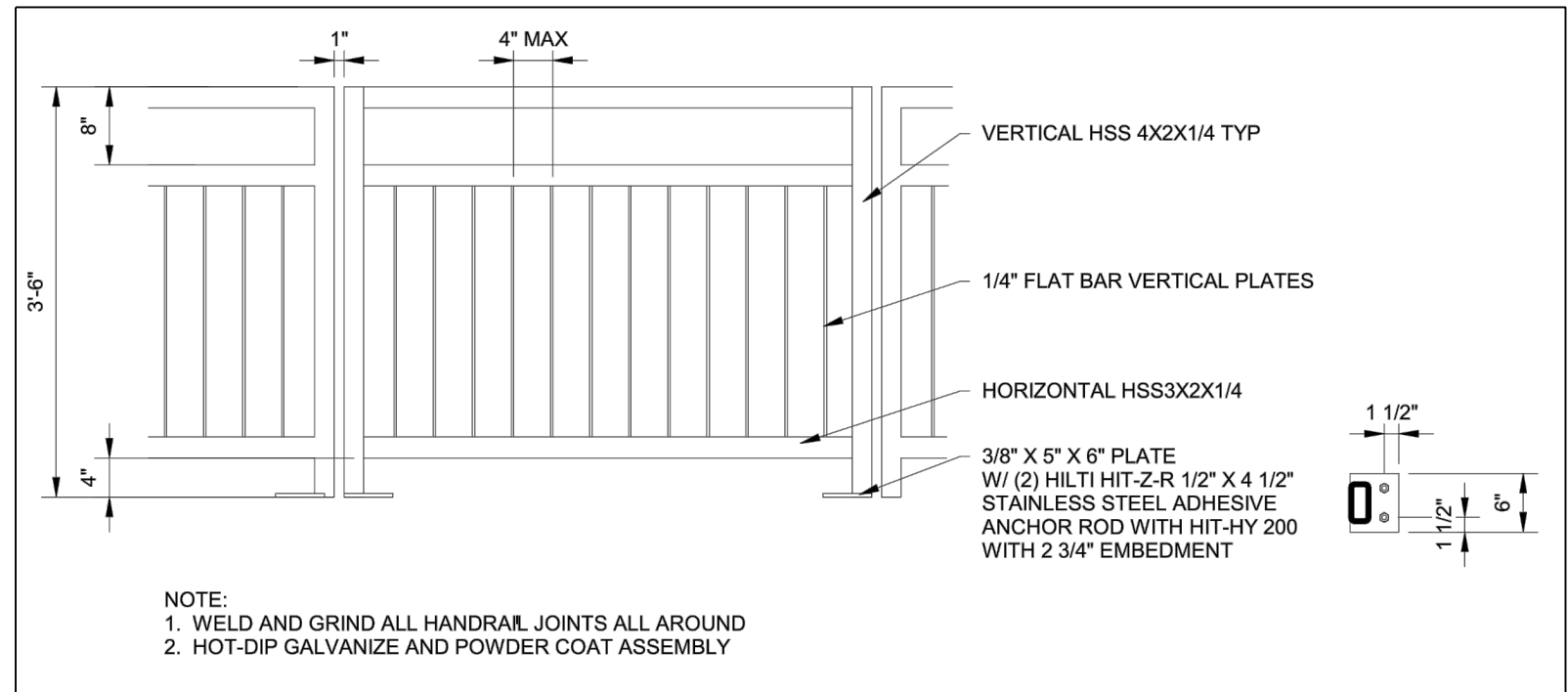
BOULDER TERRACE DETAIL - SECTION VIEW
NOT TO SCALE



WOOD FENCE DETAIL
NOT TO SCALE

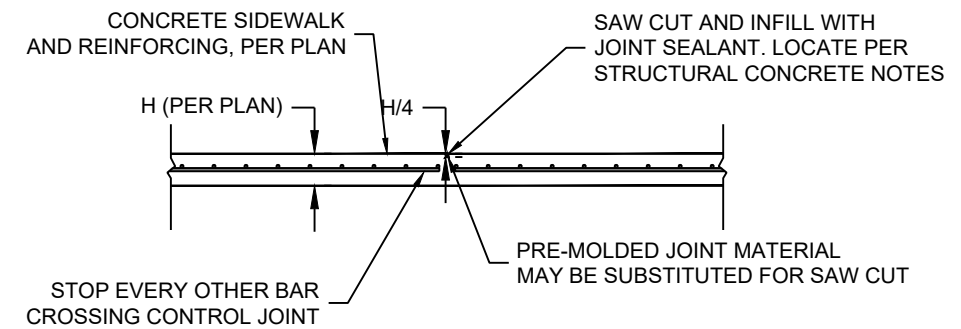
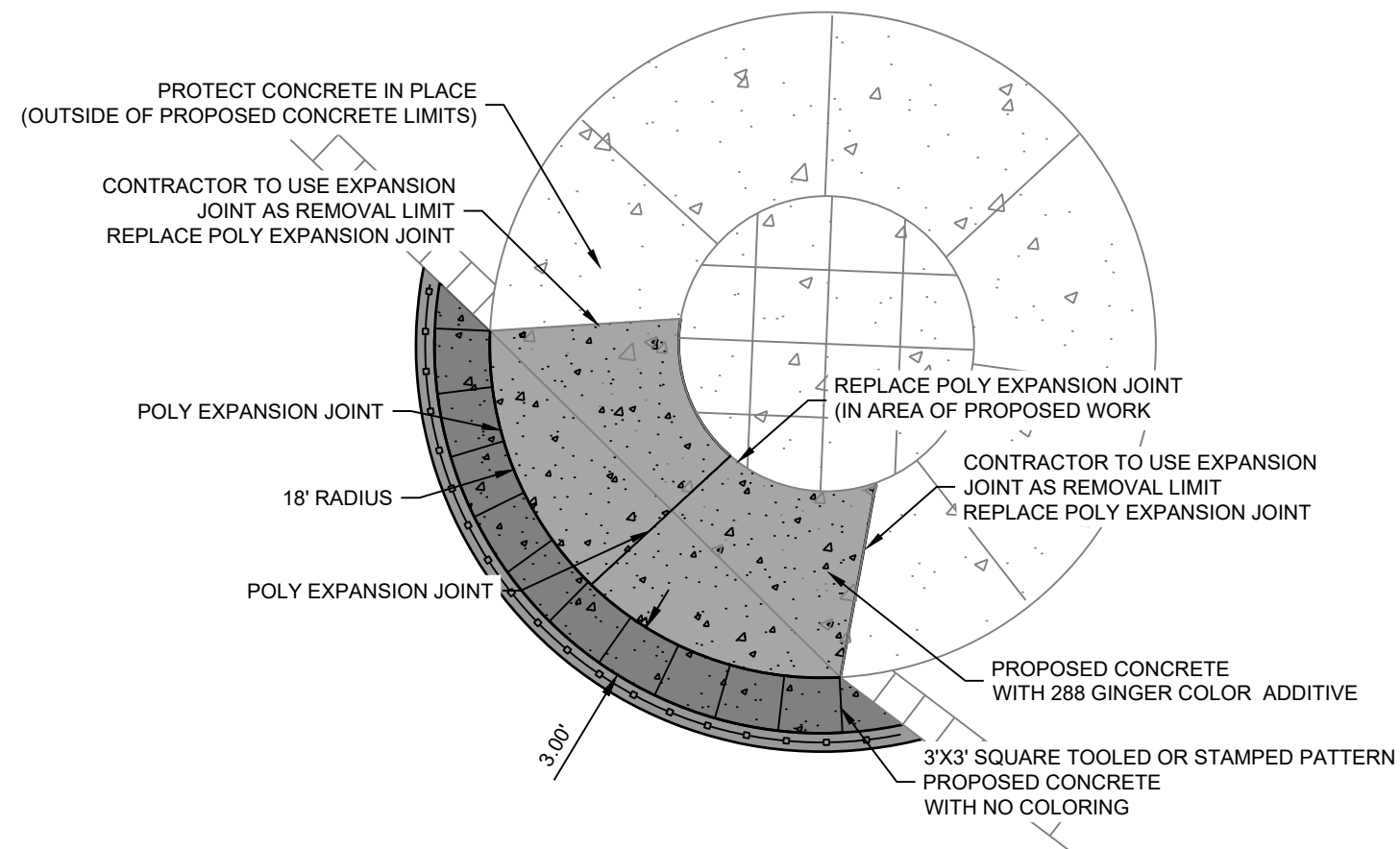


RETAINING WALL DETAIL - SECTION VIEW
NOT TO SCALE



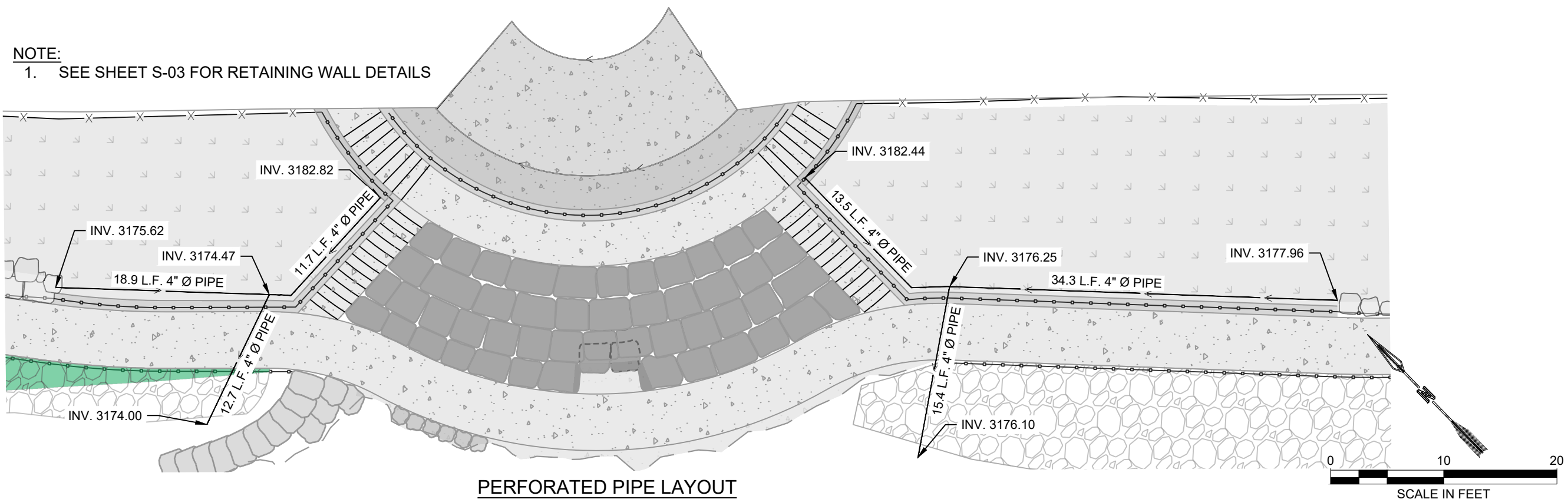
METAL HANDRAIL DETAIL - SECTION VIEW
NOT TO SCALE

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TJW	TJW	MAR	MAR-24	
RESPEC WATER & NATURAL RESOURCES 3810 VALLEY COMMONS DR SUITE 4 BOZEMAN, MT 59718 WWW.RESPEC.COM PHONE 409.884.2525				
STAMP 100% REVIEW				
PRELIMINARY NOT FOR CONSTRUCTION 3/2024				
CITY OF MISSOULA PARKS AND RECREATION DEPARTMENT 600 CREGG LANE MISSOULA, MT 59801				
CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS				
DETAILS				
SHEET NUMBER: D-03 SHEET				



- NOTES:

1. SAWED JOINTS SHALL BE MADE AS SOON AS THE JOINT CAN BE CUT WITHOUT EDGE RAVELING AND WITHIN 24 HOURS OF SLAB PLACEMENT.
2. CONTRACTION JOINTS SHALL FORM AS NEAR A SQUARE PANEL AS POSSIBLE NO SINGLE PANEL SHALL EXCEED TEN (10') FEET ON ANY SIDE.



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PLOT DATE: March 25 2024 3:57 PM BY: TAYLOR WINKEI

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STRUCTURAL GENERAL NOTES

- 1. PERFORM ALL WORK IN COMPLIANCE WITH THE MINIMUM STANDARDS OF THE FOLLOWING CODES:
 - 1.A. THE INTERNATIONAL BUILDING CODE (IBC) 2021 AND ITS REFERENCED STANDARDS, HEREIN REFEREED TO AS "THE CODE," AND OTHER REGULATORY CRITERIA WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK.
- 2. THIS WORK INVOLVES EXISTING STRUCTURES, PERFORM THE FOLLOWING TASKS PRIOR TO STARTING CONSTRUCTION:
 - 2.A. SURVEY AND FIELD VERIFY ALL EXISTING CONDITIONS ASSOCIATED WITH THE WORK.
 - 2.B. INVESTIGATE THE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES, SUCH AS FOUNDATIONS, ETC.
 - 2.C. ALL OMISSIONS OR CONFLICTS BETWEEN ELEMENTS OF THE CONTRACT DOCUMENTS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE BOROUGH'S ENGINEER OF RECORD, PRIOR TO PROCEEDING WITH THE RELATED WORK.
- 3. THE STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION. CONSTRUCTION LOADS MUST NOT EXCEED THE DESIGN LIVE LOADS.

STRUCTURAL FOUNDATION NOTES

- 1. THE FOUNDATION DESIGN IS BASED ON INFORMATION FROM A NEARBY GEOTECHNICAL REPORT BY TETRA TECH DATED NOVEMBER 21ST, 2017
- 2. FOUNDATION DESIGN CRITERIA
 - 2.A. ALLOWABLE BEARING PRESSURE
 - 2.A.A. CONTINUOUS & SPREAD FOOTINGS
 - 2.B. LATERAL EARTH PRESSURES (EQUIVALENT FLUID PRESSURE)
 - 2.B.A. AT REST PRESSURE
 - 2.B.B. ACTIVE PRESSURE
 - 2.B.C. PASSIVE PRESSURE
 - 2.B.D. STATIC COEFFICIENT OF FRICTION
- 3. PLACE PROPERLY COMPACTED STRUCTURAL FILL BELOW ALL FOUNDATION ELEMENTS, UNLESS NOTED OTHERWISE.
- 4. COMPACT ALL FOOTING SUB GRADES, ALL SLAB SUB GRADES, AND ALL BACKFILL AROUND AND ABOVE ALL FOUNDATION ELEMENTS TO 95 PERCENT OF THE MODIFIED PROCTOR DENSITY PER ASTM D-1557.
- 5. REMOVE ALL ORGANIC AND OTHER UNSUITABLE MATERIALS FROM SUB GRADE AND BACKFILL WITH ACCEPTABLE GRANULAR FILL, COMPACTED TO 95 PERCENT OF THE MODIFIED PROCTOR DENSITY PER ASTM D-1557.
- 6. THE CONTRACTOR SHALL PROVIDE THE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED AND IS SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
- 7. PROPERLY BACKFILL ALL EXCAVATIONS.
- 8. DO NOT COMMENCE CONSTRUCTION OF FOUNDATION ELEMENTS UNTIL ALL SEASONAL FROST HAS THAWED OR BEEN REMOVED.
- 9. SIDEWALKS MUST HAVE A MINIMUM OF 4" OF BASE AND MINIMUM OF 6" SUB BASE.
- 10.DRAIN AGGREGATE REQUIREMENTS: DRAIN AGGREGATE SHALL BE FILTER MATERIAL MEETING MDT 701.05

STRUCTURAL CONCRETE NOTES

- 1. PERFORM ALL CONCRETE WORK IN ACCORDANCE WITH CHAPTER 19 OF THE IBC, AND ALL REFERENCED STANDARDS.
- 2. USE NORMAL WEIGHT (150 PCF) CAST-IN-PLACE CONCRETE WITH 28 DAY COMPRESSIVE STRENGTHS (F'C) AS FOLLOWS:

CONDITION	STRENGTH (PSI)	EXPOSURE CATEGORY	W/C RATIO	AIR ENTRAINMENT
FOUNDATIONS	5,000	F3, W1, S0, C2	0.400	4% - 6%

- 3. CONCRETE MATERIAL REQUIREMENTS:
 - 3.A. USE PORTLAND CEMENT CONFORMING TO ASTM STANDARD C-150 AND TYPE I OR III, UNLESS NOTED OTHERWISE.
 - 3.B. USE NORMAL WEIGHT AGGREGATE OF NATURAL SAND AND ROCK CONFORMING TO THE REQUIREMENTS AND TESTS OF ASTM C-33.
 - 3.C. USE ALL AIR ENTRAINING ADMIXTURE CONFORMING TO ASTM C-260 IN ALL CONCRETE PERMANENTLY EXPOSED TO THE WEATHER.
- 4. REINFORCING MATERIAL REQUIREMENTS:
 - 4.A. USE DEFORMED REINFORCING BARS CONFORMING TO THE STANDARDS OF ASTM A615, GRADE 60.
- 5. SPLICE REINFORCING BARS PER SCHEDULE. LAP HORIZONTAL REINFORCING AT CORNERS AND INTERSECTIONS. STAGGER ALL SPLICES UNLESS NOTED OTHERWISE. IF SPLICE LOCATIONS ARE NOT SPECIFICALLY INDICATED, VERIFY PLANNED LOCATION WITH THE EOR.
- 6. DETAIL, FABRICATE, LABEL, SUPPORT, AND SPACE ALL CONCRETE REINFORCEMENT CONFORMING TO THE PROCEDURES AND REQUIREMENTS OF THE LATEST EDITION OF CHAPTER 19 OF THE CODE, ACI 318 AND THE "ACI DETAILING MANUAL: DETAILS AND DETAILING CONCRETE REINFORCEMENT," ACI 315.
- 7. PROVIDE A MINIMUM CONCRETE COVER OVER REINFORCING OF:
 - 7.A. 3" FOR CONCRETE CAST AGAINST EARTH.
 - 7.B. 1 1/2" FOR BARS EXPOSED TO WEATHER AND BEAMS AND COLUMNS.
- 8. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF SHORING, THE DESIGN, REMOVAL, AND RE-SHORING OF FORMWORK MUST CONFORM TO ACI 318, AND IS THE RESPONSIBILITY OF TH CONTRACTOR.
- 9. PROVIDE CONCRETE WITH A MAXIMUM SLUMP OF 8 INCHES ± 1 INCH WITH VERIFIED SLUMP OF 3 INCHES ± 1 INCH BEFORE ADDING HIGH-RANGE WATER REDUCING OR PLASTICIZING ADMIXTURES AT THE PROJECT SITE.
- 10. CONCRETE CURING REQUIREMENTS:
 - 10.A. MAINTAIN CONCRETE ABOVE 50 DEGREES FAHRENHEIT AND IN A MOIST CONDITION FOR A MINIMUM OF SEVEN DAYS AFTER PLACEMENT UNLESS OTHERWISE NOTED.
 - 10.B. WHEN THE TEMPERATURE IS EXPECTED TO FALL BELOW 40 DEGREES (F) FOR THREE CONSECUTIVE DAYS, COMPLY WITH ACI 306.1. DO NOT USE FROZEN MATERIALS, MATERIALS CONTAINING ICE OR SNOW, OR CALCIUM CHLORIDE, SALT, OR OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS. A TEMPERATURE OF 50 DEGREES FAHRENHEIT MUST BE MAINTAINED DURING CURING VIA USE OF TENTING OR OTHER ACCEPTABLE ENCLOSURES.
- 11. CONCRETE EXPANSION JOINT LOCATIONS FOR SIDEWALKS SHALL MEET THE FOLLOWING REQUIREMENTS:
 - 11.A. EVERY 50 FEET OF UNINTERRUPTED SIDEWALK.
 - 11.B. AT GRADE BREAKS.
- 12. CONCRETE WALL EXPANSION JOINT SPACING TO BE AT LEAST 3 TIMES WALL HEIGHT.
- 13. ALL EXPANSION JOINTS SHALL BE PLACED FLUSH OR JUST BELOW THE FINISHED CONCRETE SURFACE.
- 14. ALL EXPANSION JOINTS SHALL BE FULL DEPTH, FULL WIDTH, AND SECURED IN PLACE BEFORE THE FORMS WILL BE APPROVED.
- 15. CONTRACTIONS JOINTS SHALL FORM AS NEAR A SQUARE PANEL AS POSSIBLE, NO SINGLE PANEL SHALL EXCEED TEN (10') FEET ON ANY SIDE. LONGITUDINAL JOINTS REQUIRED IF SIDEWALK WIDTH EXCEEDS TEN (10') FEET.

NAME: N:\PROJECTS\W0020-23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEETS\1D-XX-CARAS PARK_STRUCTURAL_DETAILS.DWG
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BOZEMAN, MT 59718

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CITY OF MISSOULA

PARKS AND RECREATION

DEPARTMENT

600 CREGG LANE

MISSOULA, MT 59801

CLARK FORK RIVER

RESTORATION AND

ACCESS - CARAS PARK

RIVER ACCESS

STRUCTURAL DETAIL

SHEET NUMBER:

S-01

SHEET

NAME: N:\PROJECTS\W0020 23001-CFR RESTORATION & ACCESS - CARAS PARK RIVER ACCESS\CAD\SHEETS\1D-XX-CARAS PARK_STRUCTURAL_DETAILS.DWG
PLOT DATE: March 25, 2024 3:58 PM, BY: TAYLOR WINKEL

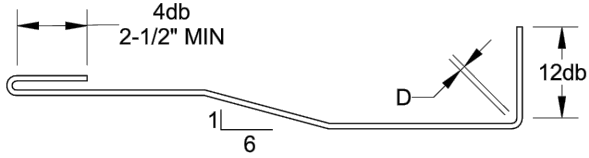
TYPICAL CONCRETE LAP SPLICE SCHEDULE

F'C (PSI)	CLASS "A" TENSION LAP SPLICE									
	BAR SIZE (GR 60)	3	4	5	6	7	8	9	10	11
	BAR DIAMETER (IN)	0.375	0.500	0.625	0.750	0.875	1	1.128	1.270	1.410
	BOTTOM BAR	13	17	22	26	30	34	39	44	48

F'C (PSI)	CLASS "B" TENSION LAP SPLICE									
	BAR SIZE (GR 60)	3	4	5	6	7	8	9	10	11
	BAR DIAMETER (IN)	0.375	0.500	0.625	0.750	0.875	1	1.128	1.270	1.410
	BOTTOM BAR	17	23	28	34	39	45	50	57	63

SCHEDULE NOTES:

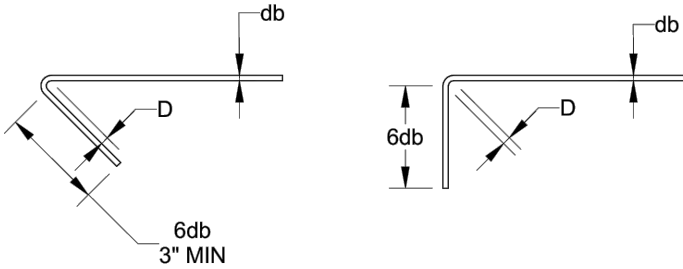
1. REINFORCEMENT CLEAR SPACING OF THE BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN ONE BAR DIAMETER, CLEAR COVER IS NOT LESS THAN ONE BAR DIAMETER.
2. THE ABOVE VALUES ARE EXPRESSED FOR NORMAL-WEIGHT CONCRETE ONLY
3. THE ABOVE VALUES RELATE ONLY TO PLAIN (UNCOATED) DEFORMED REINFORCING.
4. BOTTOM BARS ARE HORIZONTAL REINFORCEMENT WITH LESS THAN 12" OF NEW CONCRETE PLACED BELOW BAR.



US	D
#3 - #8	6db
#9 - #11	8db
#14 - #18	10db

D = BEND DIAMETER
db= BAR DIAMETER

STANDARD HOOKS



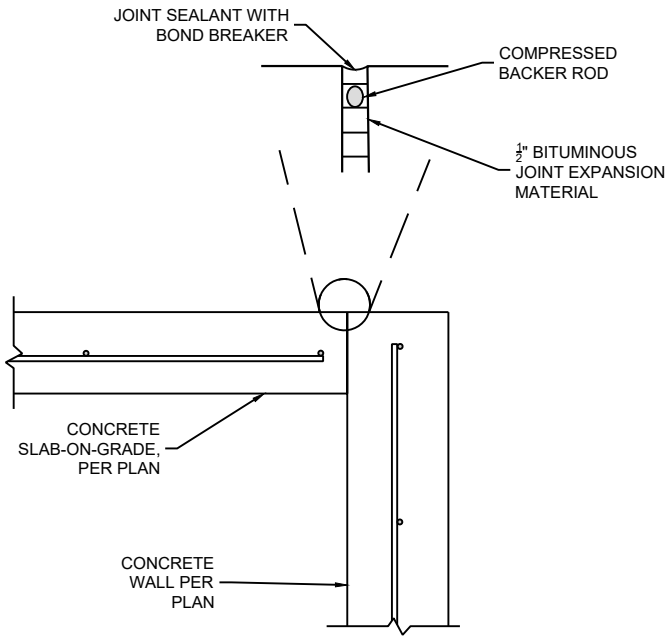
135° HOOK

90° HOOK

TIE AND STIRRUP REINF

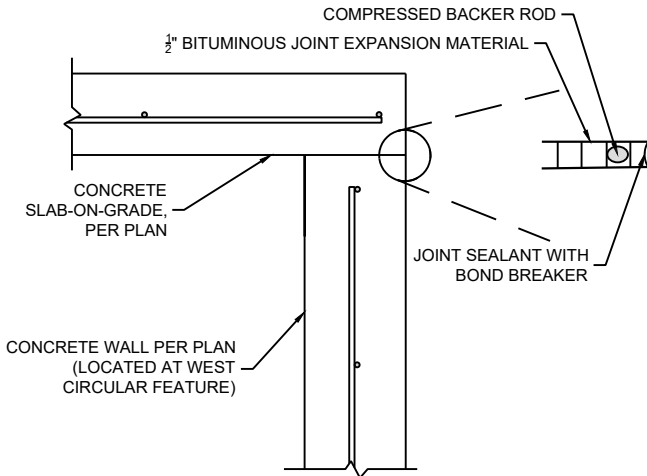
TYPICAL REINFORCING HOOKS

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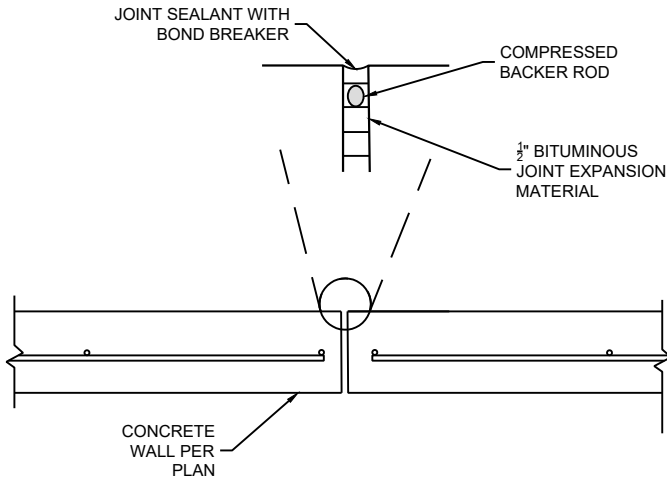
TYPICAL EXPANSION JOINT DETAIL

NOT TO SCALE



EXPANSION JOINT DETAIL

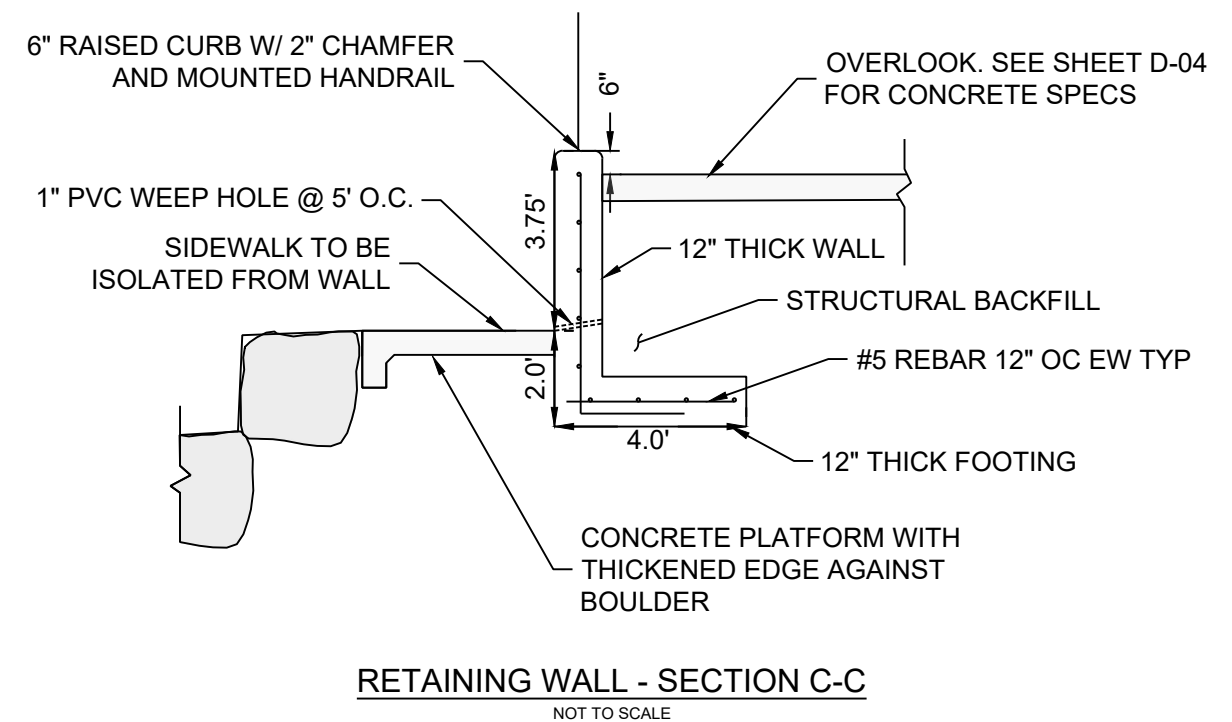
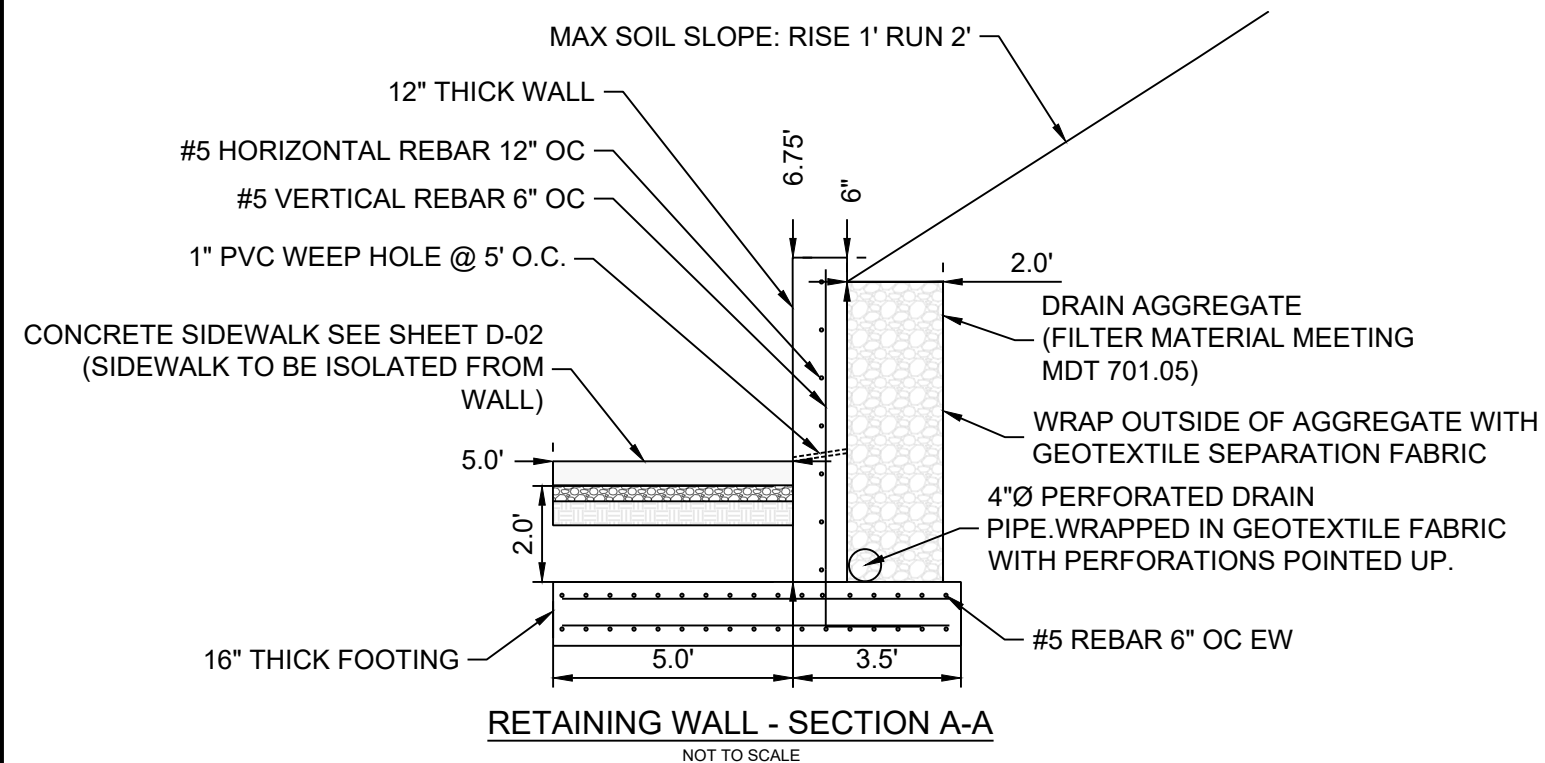
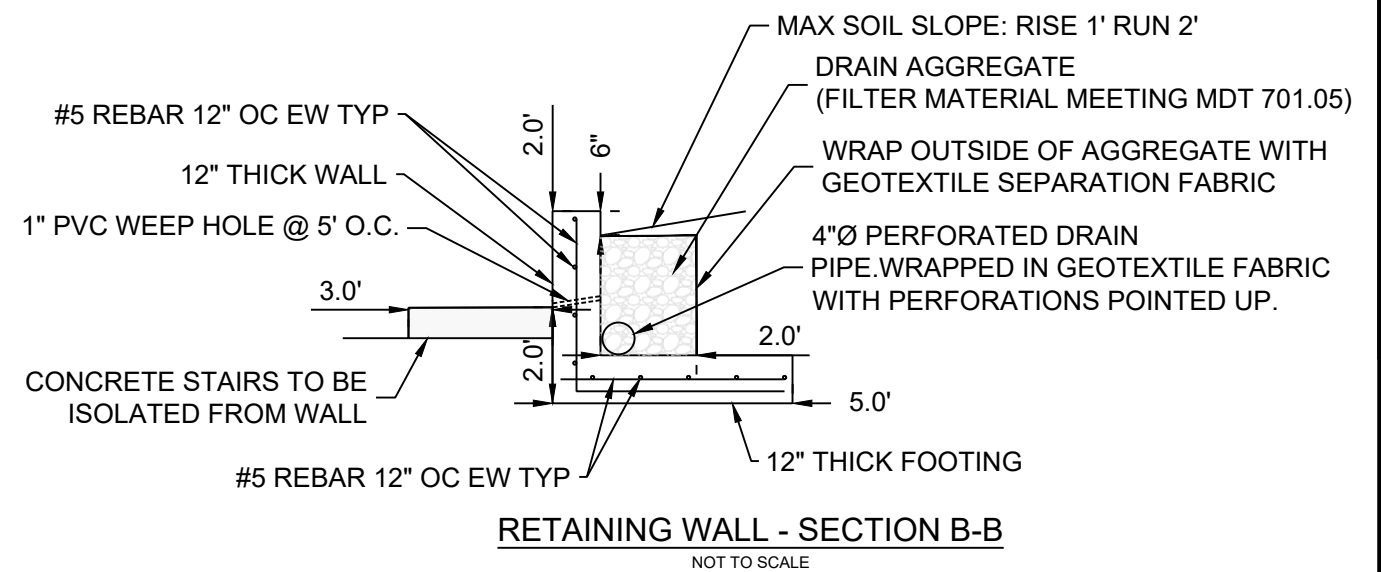
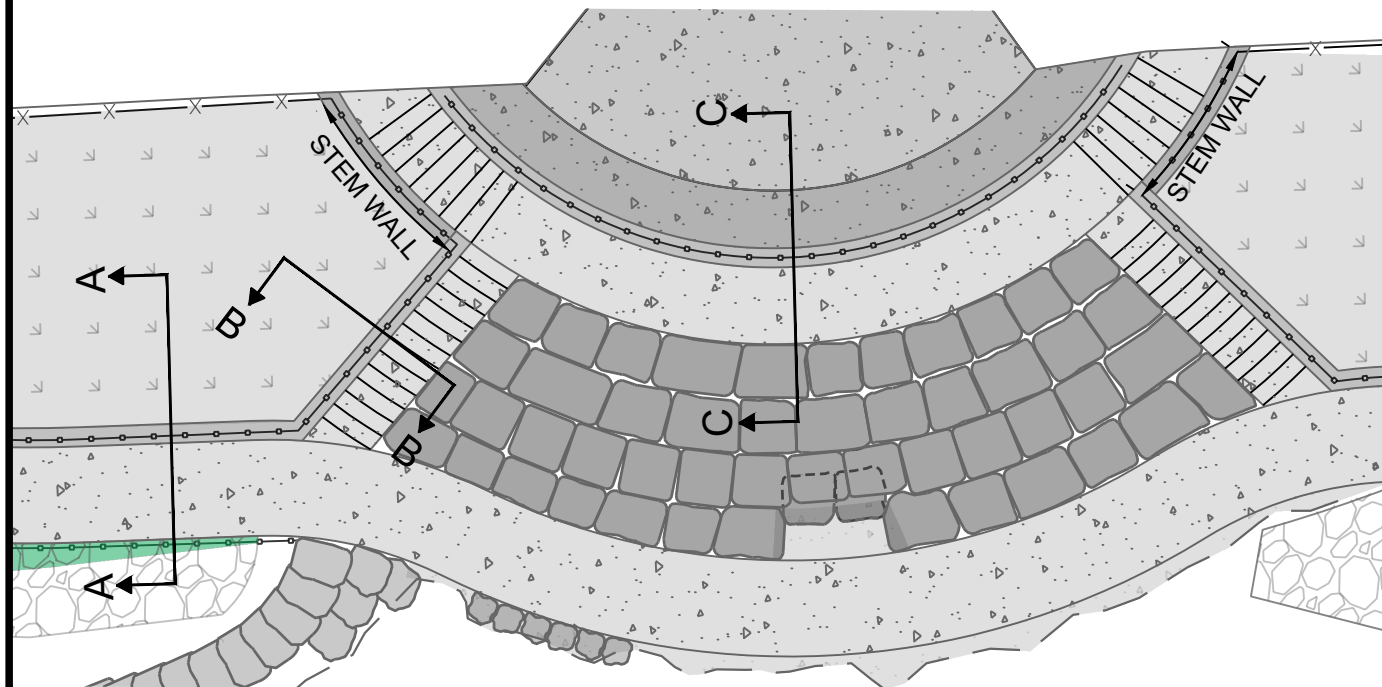
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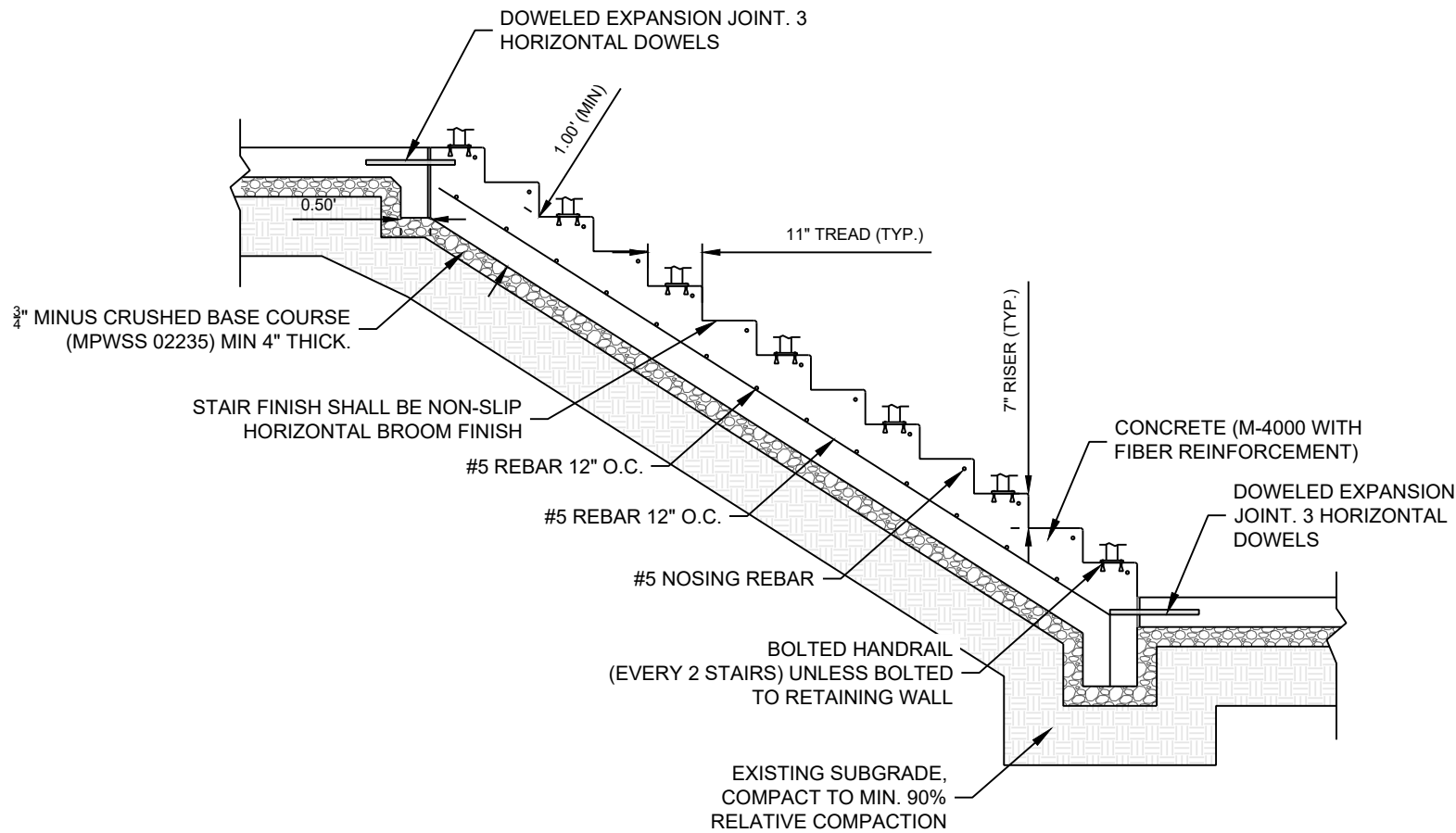
TYPICAL WALL EXPANSION JOINT DETAIL

NOT TO SCALE

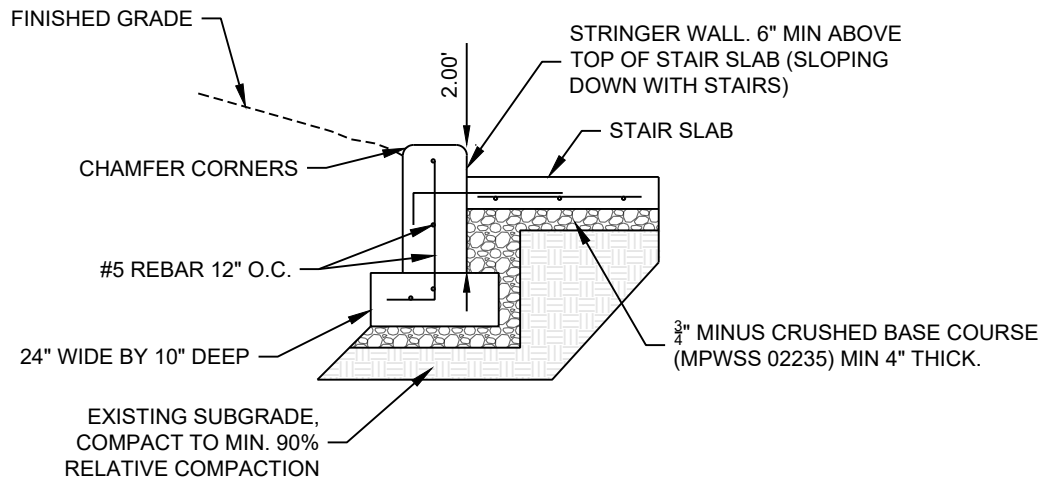
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CLARK FORK RIVER RESTORATION AND ACCESS - CARAS PARK RIVER ACCESS																			
STRUCTURAL DETAIL																			
SHEET NUMBER: S-02 SHEET																			



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CONCRETE STAIRS - TYPICAL DETAIL
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STRINGER WALL - TYPICAL DETAIL
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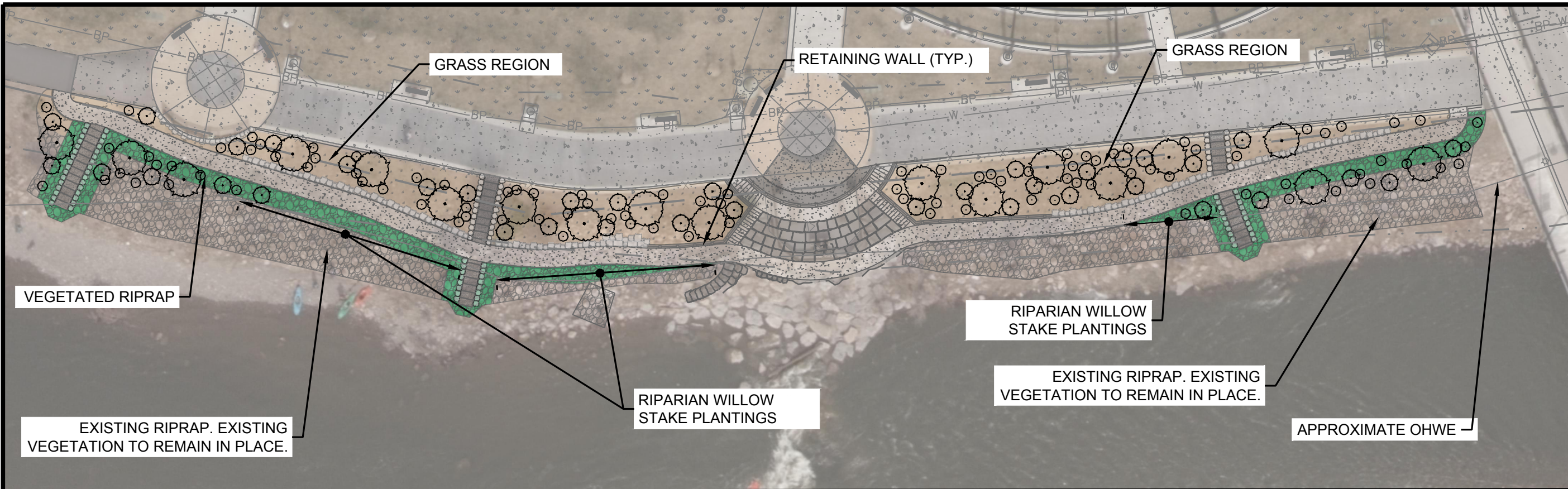
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PARKS AND RECREATION
DEPARTMENT
600 CREGG LANE
MISSOULA, MT 59801

CLARK FORK RIVER
RESTORATION AND
ACCESS - CARAS PARK
RIVER ACCESS

STRUCTURAL DETAIL

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S-04
SHEET

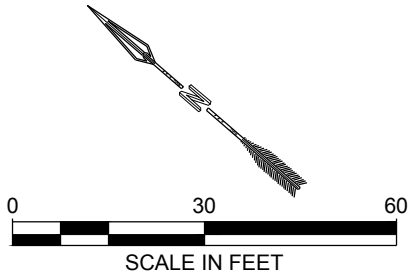
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- UPLAND LARGE SHRUBS
- UPLAND MEDIUM SHRUBS
- UPLAND SMALL SHRUBS

PLANTING LIST					
UPLAND LARGE SHRUBS	UPLAND MEDIUM SHRUBS	UPLAND SMALL SHRUBS	RIPARIAN LARGE SHRUBS	*GRASS MIX	*UPLAND PERENNIALS
SERVICE BERRY	SILVER SAGEBRUSH	CREeping OREGON GRAPE	RED TWIG DOGWOOD	IDAHO FESCUE	GOLDENROD
CHOKEBERRY	RUBBER RABBITBRUSH	WHITE SAGE	SANDBAR WILLOW	PRARIE JUNE GRASS	BLANKETFLOWER
ELDERBERRY	WOODS ROSE	COMMON SNOWBERRY		SANDBERG'S BLUEGRASS	WHITE YARROW
ANTELOPE BITTERBRUSH	GOLDEN CURRENT	WESTERN SNOWBERRY		WESTERN WHEATGRASS	PENSTEMON
	WAX CURRANT	YUCCA			FRINGED SAGE
	NINEBARK				
	BASIN WILD RYE				

* SEED IN BETWEEN PLANTINGS



PLANTING NOTES

- ENSURE ALL BACK FILL, FINE GRADING, AND ADJACENT HARDSCAPE WORK IS COMPLETE AND REVIEWED BY LANDSCAPE ARCHITECT BEFORE SEEDING OR PLANTING.
- EXCAVATION: WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR OBSTRUCTIONS, NOTIFY LANDSCAPE ARCHITECT BEFORE PLANTING.
- COORDINATE INSTALLATION OF PLANTING MATERIALS DURING NORMAL PLANTING SEASONS FOR EACH TYPE OF PLANT MATERIAL REQUIRED.
- ALL PLANTS SHALL BE TRUE TO NAME AND MEET ALL CONDITIONS OF THESE SPECIFICATIONS. ANY PLANT WHICH IS NOT TRUE TO NAME AS INDICATED BY FORM, LEAF, FLOWER, OR FRUITING CHARACTERISTICS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR TO NOTIFY CITY OF MISSOULA PARKS DEPARTMENT TWO WEEKS PRIOR TO PLANT MATERIAL BEING DELIVERED TO THE SITE FOR INSPECTION/APPROVAL.
- COMPOST TO BE INCORPORATED INTO PLANTING PITS FOR ALL TREE AND SHRUB PLANTINGS. SOURCE AND SAMPLE OF COMPOST TO BE APPROVED BY LANDSCAPE ARCHITECT BEFORE INSTALLATION.
- MULCH TO BE REGIONALLY SOURCED AND A SAMPLE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR APPROVAL. MULCH SHALL BE PLACED IN THE FOLLOWING AVERAGE THICKNESS AND FINISH LEVEL WITH ADJACENT FINISH GRADES. MULCH SHALL NOT BE PLACED AGAINST TRUNKS OR STEMS.
 - TREE RINGS: 4" DEPTH OF MULCH (FOR TREE RINGS, MULCH WITH SPECIFIED DEPTH TO THE DRIPLINE). TREE GROUPINGS TO BE MULCHED CONTINUOUSLY.
 - MULCH BACKFILLED SURFACES OF PITS, PLANTED AREAS, NON-IRRIGATED ZONES, AND OTHER AREAS INDICATED. REFER TO PLANT DETAILS
- POSITIVE SURFACE DRAINAGE: FINISH AND FINE GRADE THE PROJECT AREA TO ESTABLISH AN EVEN AND WELL MATCHED GRADIENT OVER THE ENTIRE SURFACE. PROVIDE POSITIVE SURFACE DRAINAGE, WITH NO DEPRESSIONS, SETTLING, OR IRREGULARITIES IN THE FINISHED GRADE.
- TRANSITIONAL AREAS: AT ANY TRANSITIONAL POINT OR LINE WHERE ONE PLANE INTERSECTS ANOTHER, SUCH AS FROM A SLOPING AREA OR BERM TO A LEVEL AREA, A SMOOTH AND GENTLE TRANSITION SHALL BE MADE. THERE SHALL BE NO ABRUPT CHANGES IN GRADE UNLESS SPECIFICALLY NOTED OTHERWISE. MATCH THE GRADES OF NEW WORK WITH EXISTING AREAS OUTSIDE THE PROJECT AREA.
- DEFINITE MORTALITY OF ALL PLANTS IF IRRIGATION AND UPKEEP IGNORED.

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