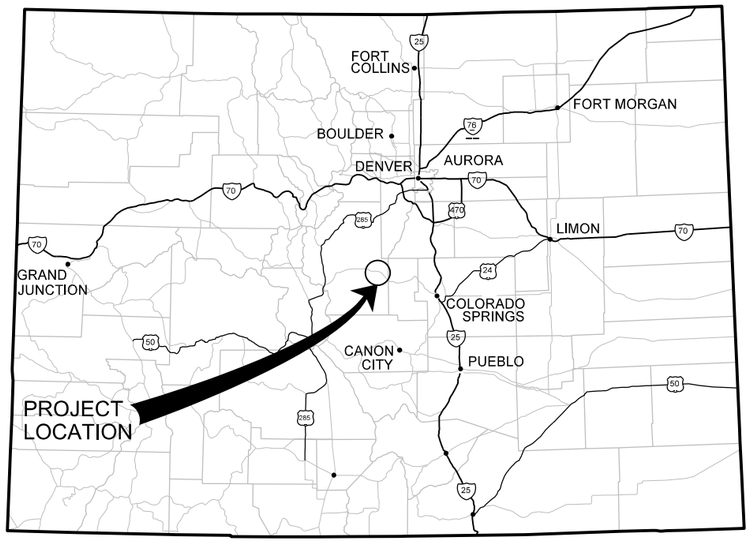
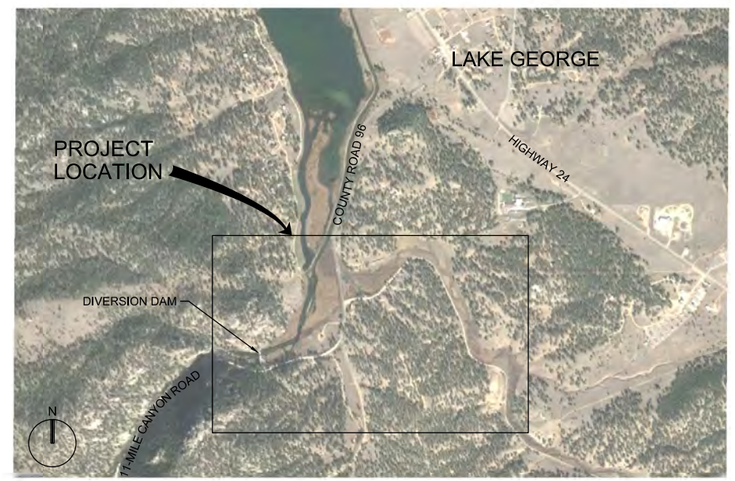
COALITION FOR THE UPPER SOUTH PLATTE
11-MILE CANYON DIVERSION DAM REMOVAL
LAKE GEORGE, COLORADO
70% DRAWINGS
OCTOBER 2020



COLORADO

N

LOCATION MAP



VICINITY MAP

NTS

SHEET INDEX

SHEET NO	DWG NO	DESCRIPTION
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ATTACHMENT 1		FIN-UP HABITAT CONSULTANTS RESTORATION PLANS (13 SHEETS)
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ATTACHMENT 3		FISHING PIER AS-BUILTS (10 SHEETS)

PROJECT PARTNERS

COCO

Colorado Springs Utilities
It's how we're all connected

DENVER WATER

TROUT UNLIMITED

COLORADO 811
KNOW WHAT'S BELOW. CALL BEFORE YOU DIG.

US FOREST SERVICE SIGNATURE BLOCK

CUSP SIGNATURE BLOCK

JACOBS SIGNATURE BLOCK

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DSGN C PAJARES | DR C LAMB | CHK F LAMBRECHTSEN | APVD K HAMILTON

JACOBS

11-MILE CANYON DIVERSION DAM REMOVAL
GENERAL
COVER SHEET AND SHEET INDEX

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	OCT 2020
PROJ	WXXY3000
DWG	G-0001
SHEET	1 of 14

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GENERAL SITE NOTES:

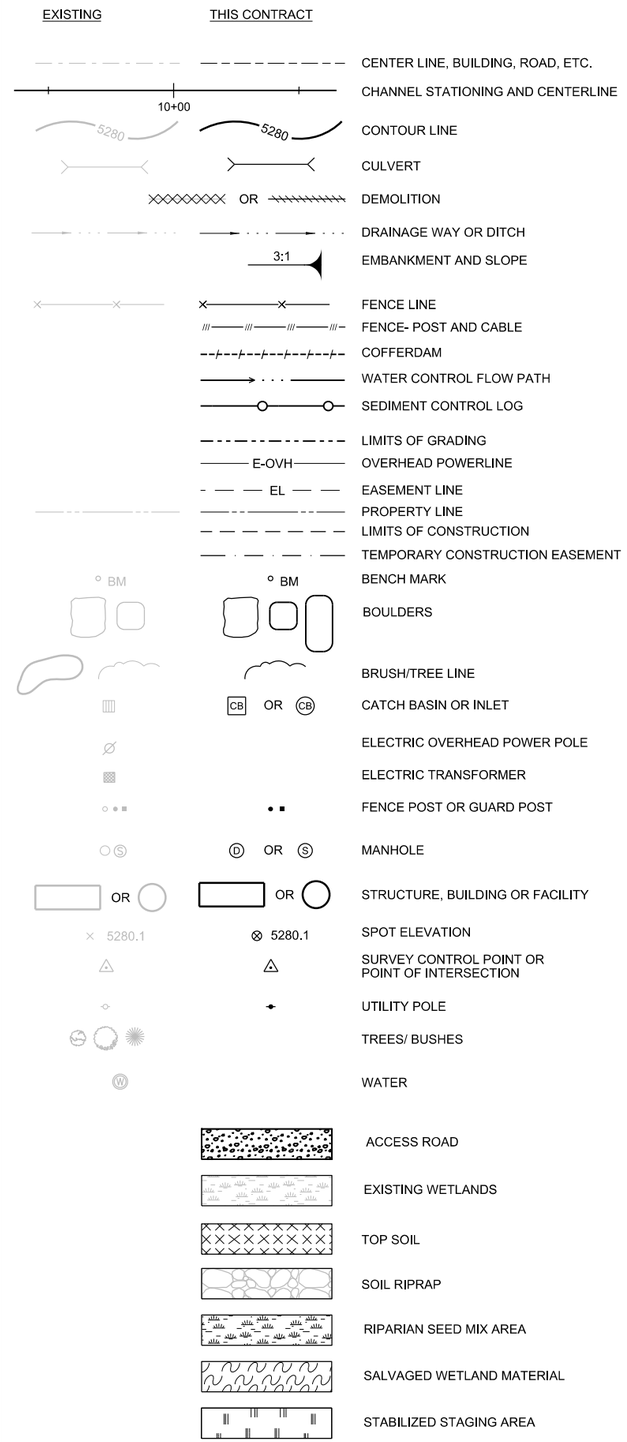
1. SOURCE OF TOPOGRAPHY SHOWN ON THE CIVIL PLANS IS LiDAR PROVIDED BY COLORADO WATER CONSERVATION BOARD IN 2018. EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN ON THESE PLANS. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND ADJUST WORK PLAN ACCORDINGLY PRIOR TO BEGINNING CONSTRUCTION.
2. EXISTING TOPOGRAPHY, STRUCTURES, AND SITE FEATURES ARE SHOWN SCREENED AND/OR LIGHT-LINED. NEW FINISH GRADE, STRUCTURES, AND SITE FEATURES ARE SHOWN HEAVY-LINED UNLESS INDICATED OTHERWISE ON PLANS.
3. STAGING AREA SHALL BE FOR CONTRACTOR'S EMPLOYEE PARKING, CONTRACTOR'S TRAILERS, PARKING FOR PROJECT PARTNERS, AND ON-SITE STORAGE OF MATERIALS. PROVIDE TEMPORARY FENCING AS NECESSARY TO MAINTAIN SECURITY AT ALL TIMES.
4. ELEVATIONS GIVEN ARE TO FINISH GRADE UNLESS OTHERWISE SHOWN.
5. SLOPE UNIFORMLY BETWEEN CONTOURS AND SPOT ELEVATIONS SHOWN.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING EROSION CONTROL DEVICES DURING CONSTRUCTION.
7. SEDIMENT/DEBRIS EXCAVATED FROM WITHIN THE WORK AREA SHALL BE TRANSPORTED IN WATER TIGHT TRUCKS .
8. MEANS, METHODS, AND DESIGN FOR COFFERDAMS AND OTHER APPROACHES TO CONTROL WATER ARE CONTRACTOR'S RESPONSIBILITY, SEE SPECIFICATIONS. LOCATION AND TYPES OF COFFERDAMS AND WATER CONTROL DEVICES ARE AT THE CONTRACTOR'S DISCRETION. ADDITIONAL, OR ALTERNATIVE COFFERDAMS OR WATER CONTROL DEVICES MAY BE CONSTRUCTED WHERE NEEDED, NOT SHOWN. WHAT IS SHOWN IS CONCEPTUAL AND HAS NOT BEEN DIMENSIONED. CONTRACTOR MAY CONSIDER ALTERNATIVES TO COFFERDAMS, SUCH AS TEMPORARY FILL, BUT CONTRACTOR IS SOLELY RESPONSIBLE TO ENSURE SUCH ALTERNATIVES COMPLY WITH ALL REQUIRED PERMITS AND REGULATIONS INCLUDING THOSE PERTAINING TO TEMPORARY FILL AND TURBIDITY.
9. EXCEPT WHEN OTHERWISE SPECIFIED, DEMOLITION PHASING/SEQUENCING IS AT THE CONTRACTOR'S DISCRETION. FOR EXAMPLE, IT MAY BE POSSIBLE TO ACCESS AND ACCOMPLISH SOME OF THE PHASE II DEMOLITION FROM WITHIN THE LIMITS OF PHASE I PLATFORMS.
10. ALL TREES SHALL BE PROTECTED UNLESS SPECIFICALLY IDENTIFIED TO BE REMOVED. AT A MINIMUM, TREE PROTECTION FENCING SHALL BE INSTALLED AS SHOWN. DAMAGED TREES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

ABBREVIATIONS

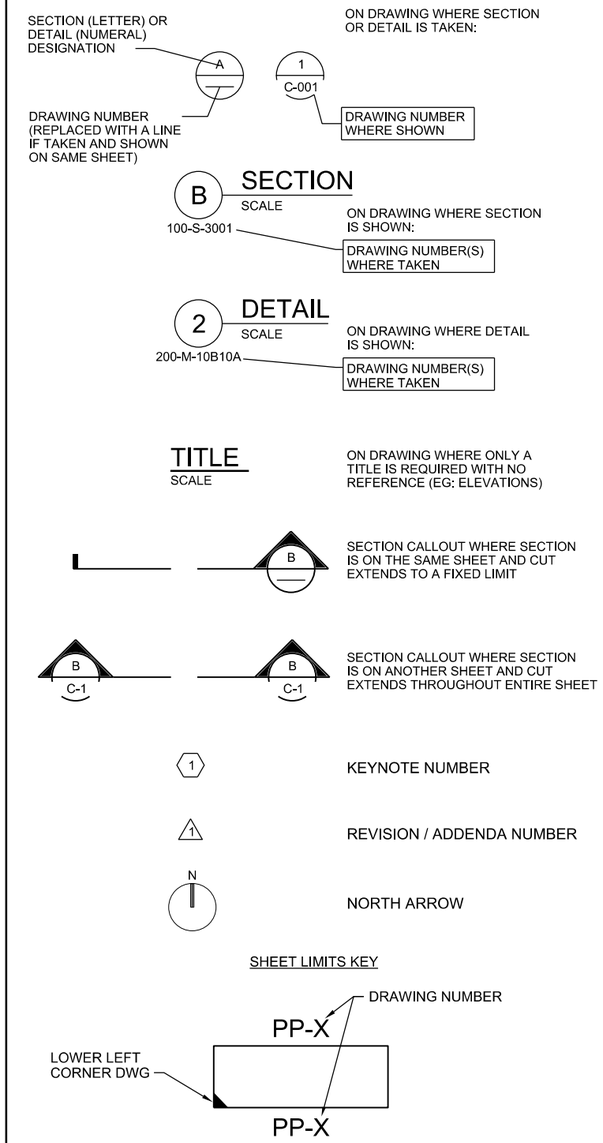
ADDL	ADDITIONAL
ADJ	ADJACENT
AGGR	AGGREGATE
APVD	APPROVED
AVG	AVERAGE
@	AT
BMP(S)	BEST MANAGEMENT PRACTICE(S)
CDPHE	COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
CFS	CUBIC FEET PER SECOND
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CONT	CONTINUED, CONTINOUS, CONTINUATION
COORD	COORDINATE
CS	CROSS SECTION
CPW	COLORADO PARKS AND WILDLIFE
CTR	CENTER
CF, CU FT	CUBIC FOOT
CY, CU YD	CUBIC YARD
DIA	DIAMETER
DT	DETAIL
DWG	DRAWING
EA	EACH
EG	EXAMPLE
EL	ELEVATION, EASEMENT LINE
ESC	EROSION AND SEDIMENT CONTROL
EXST, EXIST	EXISTING
FIG	FIGURE
FG	FINISH GRADE
FL	FLOW LINE
FT	FOOT OR FEET
FHWA	FEDERAL HIGHWAY ADMINISTRATION
FPS	FEET PER SECOND
G, GND	GROUND
GESC	GRADING, EROSION, AND SEDIMENT CONTROL
GPS	GLOBLAL POSITIONING SYSTEM
HORIZ	HORIZONTAL
INV EL	INVERT ELEVATION
IN	INCH
INV, INVT	INVERT
IP	INLET PROTECTION
L	LENGTH
LB	POUND
LF	LINEAR FEET
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS
NAVD	NORTH AMERICAN VERTICAL DATUM
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NO. , #	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
PL	PROPERTY LINE
POB	POINT OF BEGIN
POE	POINT OF END
PROP	PROPERTY
PVI	POINT OF VERTICAL INTERSECTION
R OR RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
REC	RECORDED
REF	REFER OR REFERENCE
REINF	REINFORCED, REINFORCING, REINFORCE
REQD	REQUIRED
SED	SEDIMENTATION
SPEC, SPECS	SPECIFICATIONS
SF, SQ FT	SQUARE FOOT, FEET
SI, SQ IN	SQUARE INCH
SY, SQ YD	SQUARE YARD
ST	STORM DRAIN
STA	STATION
STD	STANDARD
SWMP	STORMWATER MANAGEMENT PLAN
TCE	TEMPORARY CONSTRUCTION EASEMENT
TPZ	TREE PROTECTION ZONE
TYP	TYPICAL
VEL	VELOCITY
VERT	VERTICAL
W/	WITH
WS	WATER SURFACE

PLACEHOLDER FOR
SEED MIX TABLES

CIVIL LEGEND



SECTION / DETAIL DESIGNATIONS



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JACOBS

11-MILE CANYON DIVERSION DAM REMOVAL

GENERAL
ABBREVIATIONS,
GENERAL NOTES, AND LEGEND

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	OCT 2020
PROJ	WXXY3000
DWG	G-0002
SHEET	2 of 14

GENERAL SITE NOTES (CONT'D)

WATER CONTROL AND IMPOUNDED SEDIMENT:

1. SUBMIT WATER CONTROL PLAN IN ACCORDANCE WITH SPECIFICATIONS.
2. IMPLEMENT WATER CONTROL PLAN TO DIVERT RIVER FLOW FOR DAM DEMOLITION AND SEDIMENT EXCAVATION.
3. DEWATERING AREA TO BE ESTABLISHED AT THE DISCRETION OF THE CONTRACTOR AND APPROVED BY THE OWNER, ENGINEER, AND FOREST SERVICE. EXCAVATE SEDIMENT AND OTHER DEBRIS SPECIFIED TO BE REMOVED AND TRANSPORT IN WATER TIGHT TRUCKS TO THE TEMPORARY SEDIMENT DEWATERING AREA.
4. SORT MATERIAL INTO SUITABLE MATERIAL AND UNSUITABLE MATERIAL PER SPECIFICATIONS. DEWATER BOTH MATERIALS PER SPECIFICATIONS.
5. TRANSPORT DEWATERED DESIRABLE MATERIAL FROM SEDIMENT DEWATERING AREA TO FILL AREAS. TRANSPORT DEWATERED UNDESIRABLE MATERIAL FROM SEDIMENT DEWATERING AREA TO OFFSITE APPROVED FACILITY PER SPECIFICATIONS.
6. ISOLATE PORTIONS OF DAM BEHIND COFFERDAM AND DEMOLISH DAM IN PHASES. CONCEPTUAL PHASES SHOWN ON PLAN AND OUTLINED ON DWGS C-2003, C-2004, C-2101, C-2102, AND C-2103.
7. GRADE PROPOSED CHANNEL TO FINISHED GRADE. ONCE FINISHED GRADE IS ESTABLISHED, STABILIZATION MATERIAL IS PLACED IN THE CHANNEL, BED AND BANKS, AND APPROVAL HAS BEEN PROVIDED BY THE OWNER, ENGINEER, AND FOREST SERVICE, CONTRACTOR SHALL RELEASE FLOWS INTO THE CONSTRUCTED CHANNEL.

MOBILIZATION:

1. PREPARE A TRAFFIC CONTROL PLAN FOR VEHICULAR AND PEDESTRIAN TRAFFIC IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD). TRAFFIC CONTROL PLAN SHALL BE SUBMITTED FOR INFORMATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES AND COMPLY WITH SPECIFICATIONS. TRAFFIC CONTROL DEVICES SHALL REMAIN IN PLACE AND PROPERLY MAINTAINED FOR THE DURATION OF THE WORK.
2. INSTALL CONSTRUCTION ENTRANCES AND APPROVED BMPS TO COMPLY WITH THE SWMP.
3. MAINTAIN SILT FENCE AND/OR SEDIMENT CONTROL LOGS, AND INSTALL ADDITIONAL FENCING OR LOGS AT TOES OF DISTURBED SLOPES AS NECESSARY TO PROTECT UNDISTURBED AREAS AND PREVENT SEDIMENT MATERIALS FROM LEAVING THE SITE.
4. VERIFY ALL EXISTING UTILITIES PRIOR TO START OF WORK, AND IMMEDIATELY NOTIFY ENGINEER OF POTENTIAL CONFLICTS WITH PROPOSED WORK.
5. PROTECT EXISTING TREES TO REMAIN DURING CONSTRUCTION PER SPECIFICATIONS. INSTALL TREE PROTECTION FENCE. SEE DWG C-2201.

EROSION AND SEDIMENT CONTROL:

1. AT LEAST ONE WEEK PRIOR TO BEGINNING CONSTRUCTION OPERATIONS, A PRE-CONSTRUCTION MEETING SHALL BE HELD TO DISCUSS THE EROSION AND SEDIMENT CONTROL PLAN AND TO FINALIZE THE PAPERWORK FOR THE SWMP, AS SPECIFIED IN THE CDPHE GENERAL PERMIT FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES.
2. EROSION AND SEDIMENT CONTROL PLANS SHALL BE IMPLEMENTED BY CONTRACTOR PRIOR TO BEGINNING ALL LAND DISTURBANCE ACTIVITIES AND MAINTAINED BY CONTRACTOR THROUGHOUT THE DURATION OF CONSTRUCTION.
3. TEMPORARY DISTURBED AREAS SHALL BE MAINTAINED TO MEET SWMP REQUIREMENTS, PERMANENT FILL AREAS SHALL BE VEGETATED PER SPECIFICATIONS.

PROPOSED PHASING PLAN

PHASING DESCRIBED BELOW IS PROVIDED AS AN EXAMPLE. CONTRACTOR SHALL SUBMIT PROPOSED PHASING PLAN FOR REVIEW AND APPROVAL.

PRE-CONSTRUCTION:

1. CONTRACTOR TO OBTAIN NECESSARY PERMITS FROM COUNTY, STATE, OR FEDERAL ENTITIES.

PHASE 1:

1. ESTABLISH CONSTRUCTION ENTRANCE, STABILIZED STAGING AREA, AND ACCESS ROAD TO DIVERSION DAM, AS WELL AS INSTALL INITIAL BMPS INCLUDING SEDIMENT CONTROL LOGS OR SILT FENCE ALONG THE STAGING AREA PERIMETER AND ALONG THE ESTABLISHED ACCESS ROAD.
2. ESTABLISH A BMP ACROSS THE SOUTH PLATTE RIVER AT THE DOWNSTREAM LIMIT OF THE PROJECT PRIOR TO ANY OTHER CONSTRUCTION ACTIVITIES NEAR OR IN THE RIVER.
3. ESTABLISH A COFFERDAM TO DIVERT THE SOUTH PLATTE RIVER TO THE NORTH HALF OF THE RIVER (OR RIVER LEFT).
4. ONCE THE COFFERDAM IS IN PLACE, REMOVE SEDIMENT UPSTREAM OF THE RIGHT ABUTMENT TO AN ELEVATION, NO LOWER THAN THE PROPOSED GRADE, TO ESTABLISH THE DIVERSION CHANNEL TO BE USED IN PHASE 2.
5. BEGIN DEMOLITION OF THE RIGHT ABUTMENT UP TO THE LIMITS AS DEFINED ON DWG C-2101. REMOVE ALL DIVERSION DAM ELEMENTS INCLUDING, BUT NOT LIMITED TO: RIPRAP, TIMBER PIPE SUPPORTS, 24-INCH STEEL PIPE, SHEET PILE, CONCRETE DIAPHRAGMS, AND SOIL.
6. TRANSPORT SUITABLE MATERIAL TO THE FILL AREAS DEFINED IN THIS DRAWING SET. TRANSPORT UNSUITABLE MATERIAL TO AN APPROVED LANDFILL, TO BE DETERMINED BY CONTRACTOR.
7. REMOVE THE 24-INCH STEEL PIPE TO THE POINT DEFINED ON DWG C-2101 AND CAP THE PIPE PER THE SPECIFICATIONS.

PHASE 2:

1. CONSTRUCT A TEMPORARY STREAM CROSSING OVER THE DIVERSION CHANNEL CONSTRUCTED IN PHASE 1 PRIOR TO ESTABLISHING THE COFFERDAM ON RIVER LEFT.
2. WITH THE TEMPORARY STREAM CROSSING INSTALLED, ESTABLISH THE PHASE 2 COFFERDAM ON RIVER LEFT, TO DIVERT WATER TO RIVER RIGHT.
3. REMOVE ALL DIVERSION DAM ELEMENTS FLUSH WITH THE NATIVE BEDROCK SUBGRADE INCLUDING, BUT NOT LIMITED TO: RIPRAP, CONCRETE WEIR, CONCRETE RETAINING WALLS, SHEET PILE, CONCRETE DIAPHRAGMS, AND DRAIN PIPES BELOW THE WEIR.
4. REMOVE SEDIMENT UPSTREAM OF THE CONCRETE WEIR ON RIVER LEFT TO PROPOSED GRADE.
5. TRANSPORT SUITABLE MATERIAL TO THE FILL AREAS DEFINED IN THIS DRAWING SET. TRANSPORT UNSUITABLE MATERIAL TO AN APPROVED LANDFILL, TO BE DETERMINED BY CONTRACTOR.

PHASE 3:

1. MAINTAIN THE DIVERSION CHANNEL CONSTRUCTED IN PHASE 1, AND REMOVE THE COFFERDAM.
2. PERFORM EARTHWORK ACTIVITIES TO GRADE THE CHANNEL TO PROPOSED GRADE.
3. INSTALL ALL PROPOSED CHANNEL ELEMENTS INCLUDING, BUT NOT LIMITED TO: RIPRAP, CHANNEL ARMORING, WETLAND AND UPLAND SEEDS AND PLANTS, AND PERMANENT EROSION CONTROL BMPS.

PHASE 4:

1. RETURN THE SOUTH PLATTE RIVER TO THE CONSTRUCTED CHANNEL AND GRADE THE DIVERSION CHANNEL TO PROPOSED GRADE.
2. REMOVE THE TEMPORARY ACCESS ROAD.
3. INSTALL UPLAND AND WETLAND SEEDS AND PLANTS AND FINAL EROSION CONTROL BMPS WHERE THE DIVERSION CHANNEL AND TEMPORARY ACCESS ROAD WERE.
4. REMOVE THE BMP AT THE DOWNSTREAM LIMIT OF THE PROJECT.
5. REMOVE THE STABILIZED STAGING AREA AND CONSTRUCTION ENTRANCE AND INSTALL ALL NECESSARY SEED AND PERMANENT BMPS.
6. INSTALL POST AND CABLE FENCE AS DEFINED IN THE STANDARD DETAILS OF THIS DRAWING SET.

POST-CONSTRUCTION:

1. CLOSE ALL PERMITS OBTAINED FROM COUNTY, STATE, OR FEDERAL ENTITIES AS NEEDED.

CONSTRUCTION CONSTRAINTS (TO BE FINALIZED DURING FINAL DESIGN)

THE FOLLOWING CONSTRUCTION CONSTRAINTS SHALL BE COMPLIED WITH FOR THE DURATION OF THE PROJECT. SEE THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

1. SAFETY: CONTRACTOR SHALL PREPARE AND SUBMIT A SAFETY PLAN THAT ADDRESSES VEHICULAR AND PEDESTRIAN SAFETY, INCLUDING VEHICLES AND PEDESTRIANS TRAVELING ALONG THE ROAD, BOATERS IN THE RIVER AND PEDESTRIANS TRAVELING ALONG THE RIVER BANKS. ROADWAY SIGNS, CONSTRUCTION FENCE, AND OTHER CLEAR MEASURES AND BARRIERS SHALL BE INCLUDED IN THE SAFETY PLAN AND MAINTAINED FOR THE DURATION OF THE PROJECT.
2. SOUTH PLATTE RIVER FLOW RATES: THE FLOW RATE RELEASED FROM 11 MILE DAM (LOCATED APPROXIMATELY 10 MILES UPSTREAM OF THE PROJECT SITE) WILL BE REDUCED TO APPROXIMATELY 70 CFS FROM [MONTH, YEAR] TO [MONTH, YEAR].
3. EAGLES: THERE IS AN EXISTING EAGLE'S NEST NORTHWEST OF THE PROJECT SITE. NO HEAVY EQUIPMENT CONSTRUCTION ACTIVITY IS ALLOWED WITHIN [DISTANCE] FEET OF THE NEST FROM [MONTH, YEAR] TO [MONTH, YEAR].
4. FISH:
   A. PRECAUTIONS SHALL BE TAKEN TO NOT TRAP, HARM, OR KILL FISH WITHIN THE LIMITS OF CONSTRUCTION.
   B. CONTRACTOR SHALL NOTIFY CPW IMMEDIATELY AT [PHONE NUMBER] IF FISH ARE TRAPPED WITHIN THE LIMITS OF CONSTRUCTION SO THAT CPW CAN RELOCATE THE FISH.
5. SEDIMENT CONTROL:
   A. SEDIMENT SHALL BE CONTROLLED THROUGH THE USE OF SEDIMENT CONTROL DEVICES, INCLUDING BACKUP MEASURES DETERMINED NECESSARY BY THE CONTRACTOR TO ENSURE THAT SEDIMENT DOES NOT LEAVE THE CONSTRUCTION SITE OR MIGRATE DOWNSTREAM OF THE CHECK DAM SHOWN IN THE DRAWINGS.
   B. PRE-PROJECT AND POST-PROJECT SURVEY DATA WILL BE COLLECTED BY THE OWNER TO CONFIRM THAT NO SEDIMENT MIGRATED DOWNSTREAM DURING CONSTRUCTION. [THIS ITEM WILL BE DISCUSSED WITH THE PROJECT PARTNERS DURING FINAL DESIGN TO BALANCE THE PROS AND CONS OF THIS APPROACH.]

SURVEY DATUM AND CONTROL INFORMATION

SURVEY CONTROL NOTES

1. THE DIVERSION DAM AS-BUILT DRAWINGS INCLUDED IN ATTACHMENT 2 ARE ASSUMED TO BE ON VERTICAL DATUM NGVD29. THIS DRAWING SET IS ON VERTICAL DATUM NAVD88 AND THUS THE AS-BUILT DRAWING ELEVATIONS SHIFT UPWARD APPROXIMATELY 4.26-FEET TO MATCH NAVD88.
2. CONTOURS SHOWN IN THIS DRAWINGS REPRESENT LIDAR DATA, INCLUDING GROUND AND TOP OF WATER SURFACE. CONTOURS DO NOT REPRESENT BATHYMETRY BELOW THE WATER LEVEL AT THE TIME OF CAPTURE.
3. MAINTAIN, RELOCATE, OR REPLACE EXISTING SURVEY MONUMENTS, CONTROL POINTS, AND STAKES WHICH ARE DISTURBED OR DESTROYED DURING CONSTRUCTION. PERFORM THE WORK TO PRODUCE THE SAME LEVEL OF ACCURACY AS THE ORIGINAL MONUMENT(S) IN A TIMELY MANNER, AND AT THE CONTRACTOR'S EXPENSE.

SURVEY CONTROL TABLES
TO BE PROVIDED
DURING FINAL DESIGN

PRELIMINARY NOT FOR CONSTRUCTION

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DSGN F LAMBRETCHSEN | DR F LAMBRECHTSEN | CHK K HAMILTON | APVD K HAMILTON

JACOBS

11-MILE CANYON DIVERSION DAM REMOVAL

GENERAL
PHASING NOTES AND
CONTROL TABLES

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	OCT 2020
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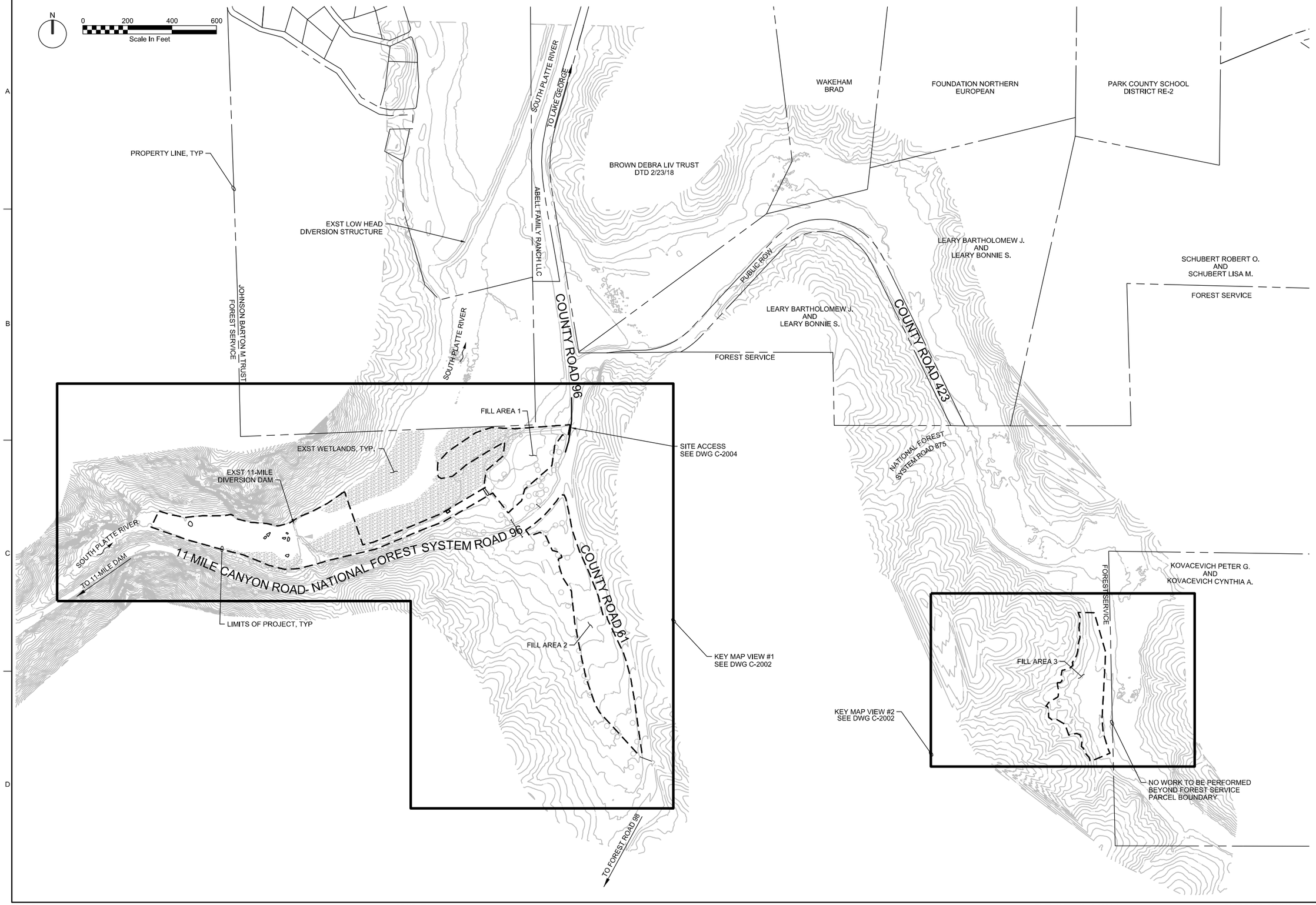
DWG	G-0003
SHEET	3 of 14



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Project Description
Project Location
Client Name
Client Location

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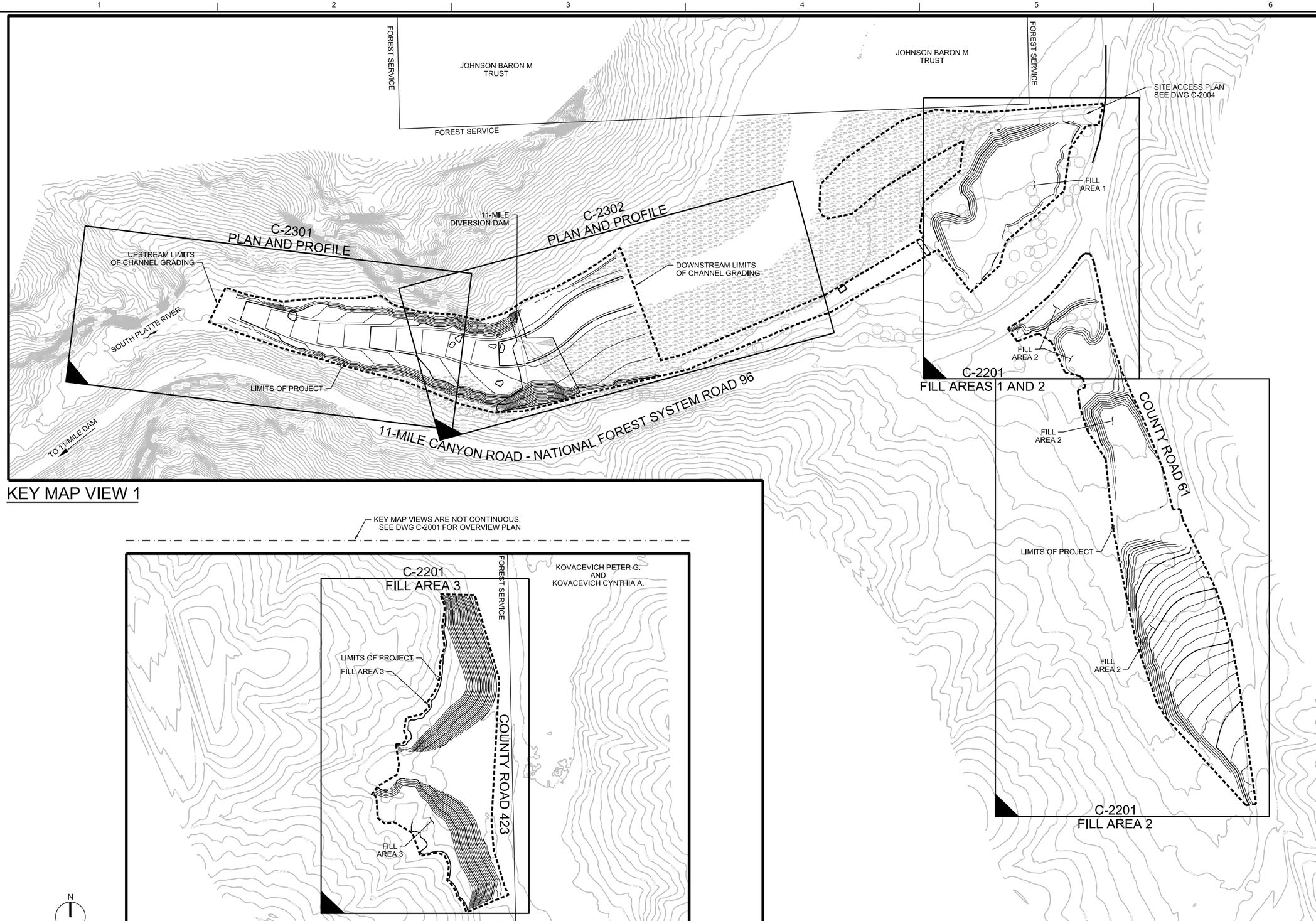
11-MILE CANYON DIVERSION DAM REMOVAL

SITE OVERVIEW

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	APR 2020
PROJ	WXXY3000
DWG	C-2001
SHEET	4 of 14



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C PAJARES	C PAJARES	F LAMBRECHTSEN	K HAMILTON

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11-MILE CANYON DIVERSION DAM REMOVAL

KEY MAP

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	OCT 2020
PROJ	WXXY3000
DWG	C-2002
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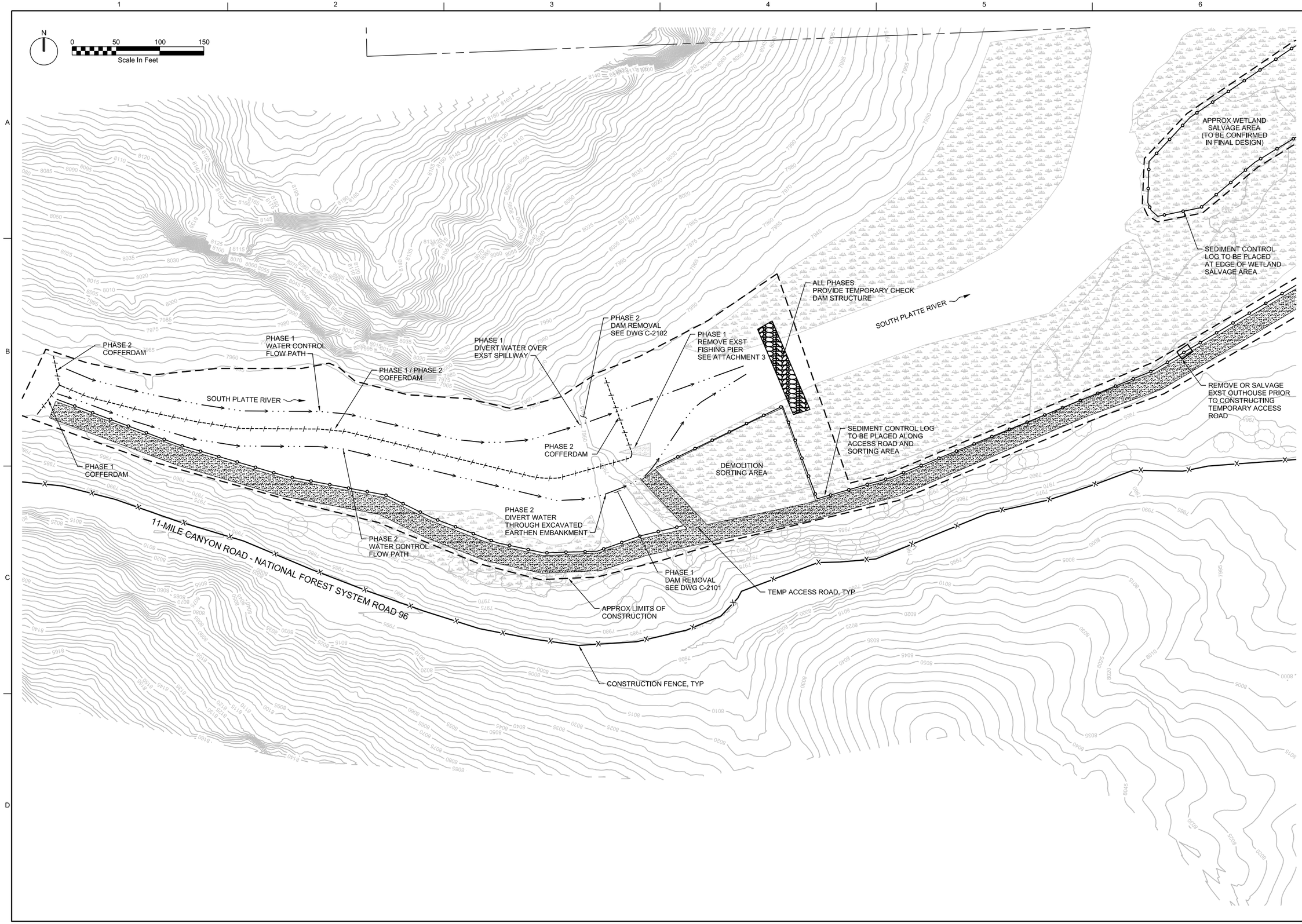

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11-MILE CANYON DIVERSION DAM REMOVAL

WATER, EROSION CONTROL, AND SITE ACCESS PHASING PLAN

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	OCT 2020
PROJ	WXXY3000
DWG	C-2003
SHEET	6 of 14

N

0 50 100 150
Scale In Feet

SOUTH PLATTE RIVER

COUNTY ROAD 96

COLORADO ROAD 423

ROBBINS PATRICIA G
FOREST SERVICE

REMOVE SEDIMENT CONTROL LOG ONLY WHILE TRANSPLANTING WETLANDS

JOHNSON BARTON M TRUST
FOREST SERVICE

SEDIMENT CONTROL LOG TO BE PLACED AT EDGE OF WETLAND SALVAGE AREA

APPROX WETLAND SALVAGE AREA (TO BE CONFIRMED IN FINAL DESIGN)

INSTALL VEHICLE TRACKING CONTROL AT SITE ENTRANCE

POST AND CABLE FENCE TO BE INSTALLED AFTER STAGING AREA IS RESTORED

EXST ACCESS ROAD

ALL DIVERSION DAM CONSTRUCTION ACCESS SHALL BE AT THIS LOCATION

EXST PARKING AREA

LIMITS OF CONSTRUCTION AND TREE REMOVAL TO ACCOMMODATE FILL AREA 1 SEE DWG C-2201

SEE DWG C-2201 FOR TREE PROTECTION AND REMOVAL

REMOVE EXST SIGNS

STAGING AREA

SEDIMENT CONTROL LOG TO BE PLACED ALONG ACCESS ROAD AND STAGING AREA

APPROX EXST TREE, TYP

CONSTRUCTION FENCE, TYP

SOUTH PLATTE RIVER

SALVAGE EXST INFORMATIONAL SIGN

APPROX EXST CULVERT OUTLET

REMOVE OR SALVAGE EXST OUTHOUSE

APPROX EXST CULVERT OUTLET

APPROX LIMITS OF CONSTRUCTION

INSTALL TEMP PIPE FOR DRAINAGE FLOWS

COUNTY ROAD 61

FILL AREA 2, SEE DWG C-2201

APPROX EXST CULVERT INLET

11-MILE CANYON ROAD - NATIONAL FOREST SYSTEM ROAD 96

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY	APVD

DSGN F LAMBRECHTSEN | DR F LAMBRECHTSEN | CHK K HAMILTON | APVD K HAMILTON

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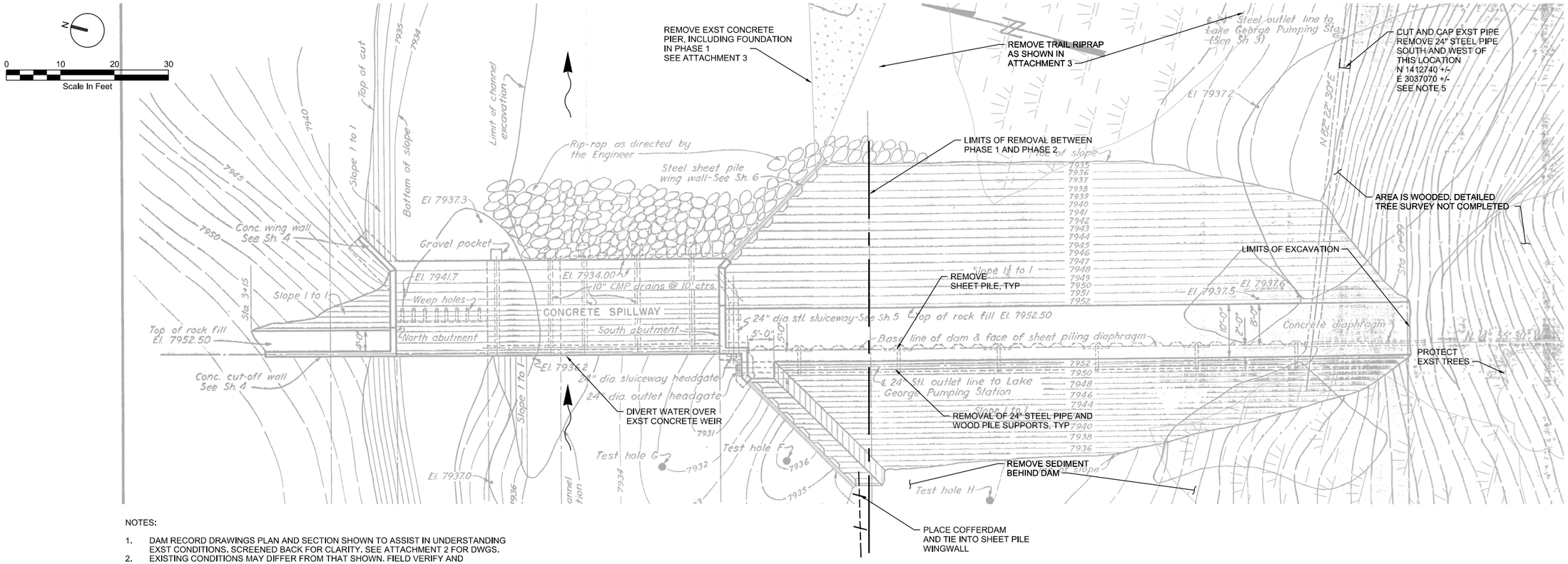
JACOBS

11-MILE CANYON DIVERSION DAM REMOVAL

WATER, EROSION CONTROL, AND SITE ACCESS PHASING PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

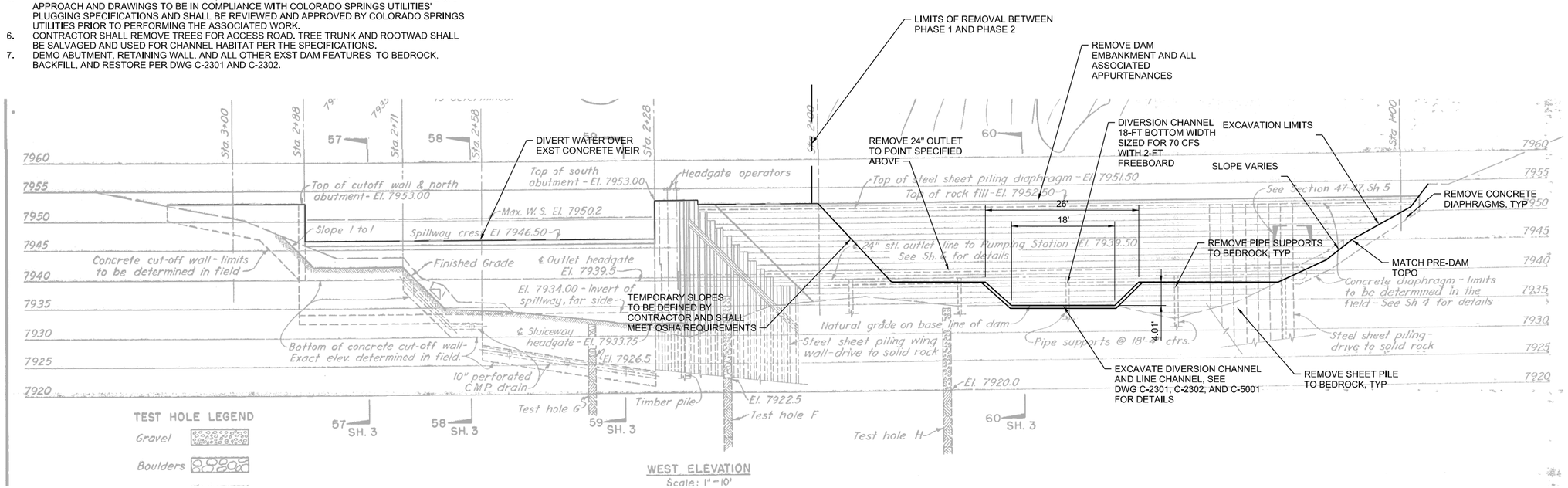
DATE	OCT 2020
PROJ	WXXY3000
DWG	C-2004
SHEET	7 of 14



PLAN VIEW

NOTES:

1. DAM RECORD DRAWINGS PLAN AND SECTION SHOWN TO ASSIST IN UNDERSTANDING EXST CONDITIONS. SCREENED BACK FOR CLARITY. SEE ATTACHMENT 2 FOR DWGS.
2. EXISTING CONDITIONS MAY DIFFER FROM THAT SHOWN. FIELD VERIFY AND IMMEDIATELY REPORT DISCREPANCIES TO THE ENGINEER.
3. CONTRACTOR TO SUBMIT PHASING PLAN. FINAL APPROVAL FROM OWNER, ENGINEER, AND FOREST SERVICE REQUIRED.
4. THIS DWG IS FOR INFORMATION ONLY. FOR PROPOSED GRADE AND DESIGN OF THE RIVER AFTER DEMOLITION SEE C-2301 AND C-2302 DWGS, IN ADDITION TO DRAWINGS PROVIDED IN ATTACHMENT 1.
5. SEE SPECIFICATIONS FOR PIPE CAP REQUIREMENTS. CONTRACTOR SHALL SUBMIT A PIPE CAP APPROACH AND DRAWINGS TO BE IN COMPLIANCE WITH COLORADO SPRINGS UTILITIES' PLUGGING SPECIFICATIONS AND SHALL BE REVIEWED AND APPROVED BY COLORADO SPRINGS UTILITIES PRIOR TO PERFORMING THE ASSOCIATED WORK.
6. CONTRACTOR SHALL REMOVE TREES FOR ACCESS ROAD. TREE TRUNK AND ROOTWAD SHALL BE SALVAGED AND USED FOR CHANNEL HABITAT PER THE SPECIFICATIONS.
7. DEMO ABUTMENT, RETAINING WALL, AND ALL OTHER EXST DAM FEATURES TO BEDROCK, BACKFILL, AND RESTORE PER DWG C-2301 AND C-2302.



SECTION

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY	APVD

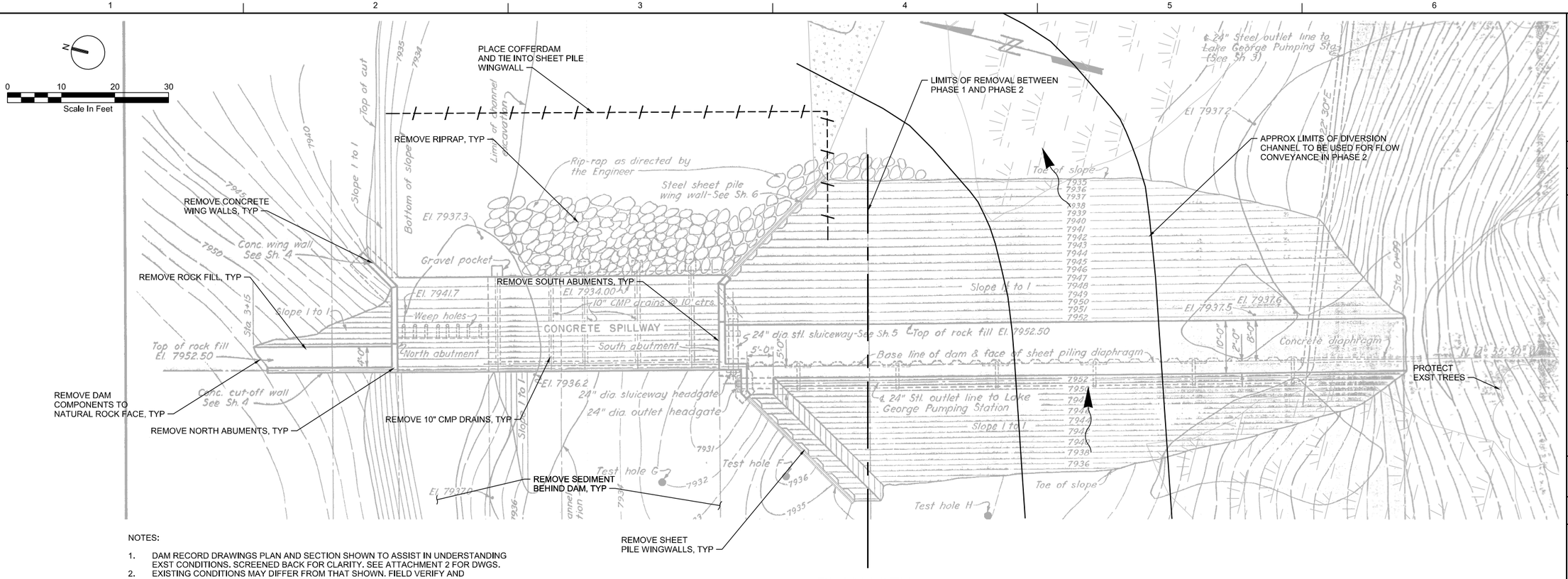
DSGN F LAMBRETCHSEN | DR F LAMBRETCHSEN | CHK K HAMILTON | APVD K HAMILTON

JACOBS

11-MILE CANYON DIVERSION DAM REMOVAL

DAM REMOVAL AND DEMOLITION PLAN PHASE 1

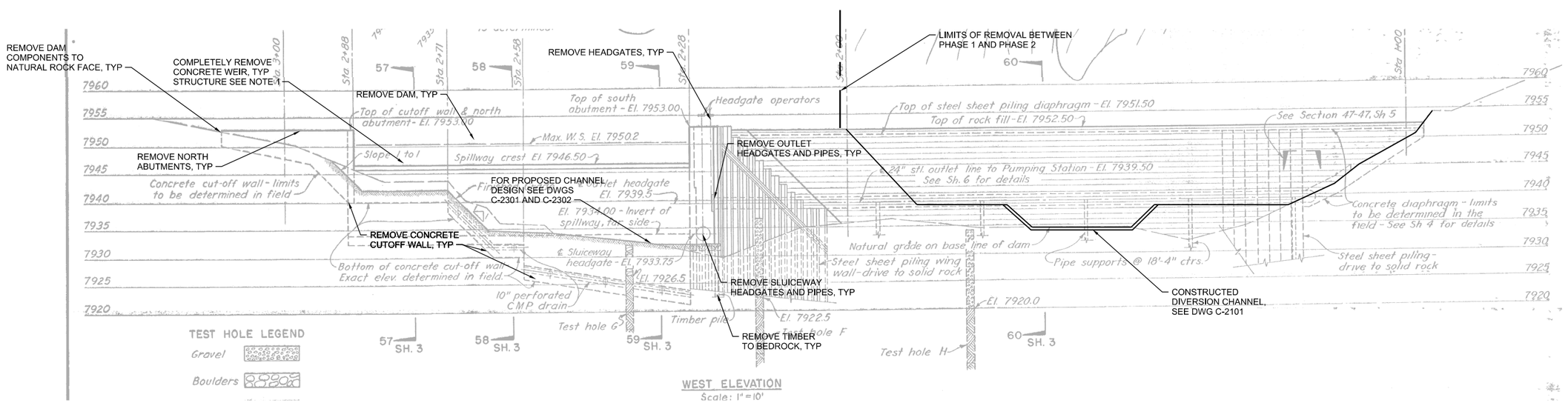
DATE	OCT 2020
PROJ	WXXY3000
DWG	C-2101
SHEET	8 of 14



PLAN VIEW

NOTES:

1. DAM RECORD DRAWINGS PLAN AND SECTION SHOWN TO ASSIST IN UNDERSTANDING EXST CONDITIONS. SCREENED BACK FOR CLARITY. SEE ATTACHMENT 2 FOR DWGS.
2. EXISTING CONDITIONS MAY DIFFER FROM THAT SHOWN. FIELD VERIFY AND IMMEDIATELY REPORT DISCREPANCIES TO THE ENGINEER.
3. CONTRACTOR TO SUBMIT PHASING PLAN. FINAL APPROVAL FROM OWNER, ENGINEER, AND FOREST SERVICE REQUIRED.
4. THIS DWG IS FOR INFORMATION ONLY. FOR PROPOSED GRADE AND DESIGN OF THE RIVER AFTER DEMOLITION SEE C-2301 AND C-2302 DWGS, IN ADDITION TO DRAWINGS PROVIDED IN ATTACHMENT 1.
5. DEMO ABUTMENT, RETAINING WALL, AND ALL OTHER EXST DAM FEATURES TO BEDROCK, BACKFILL, AND RESTORE PER DWG C-2301 AND C-2302.



SECTION

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY	APVD

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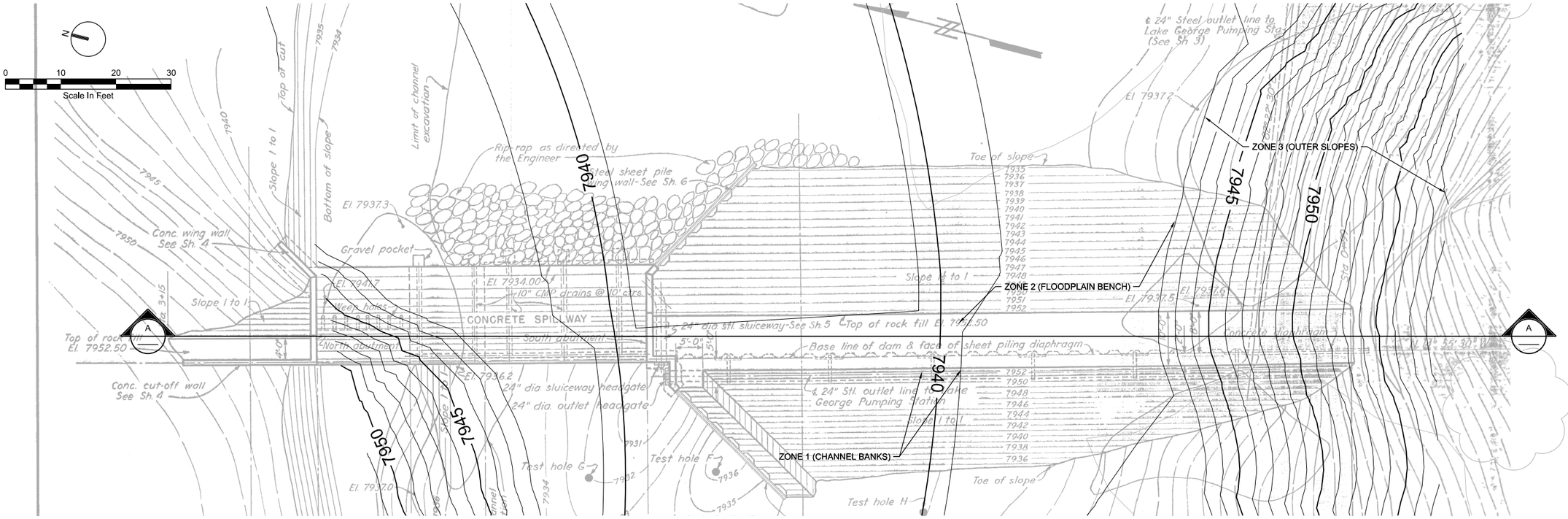
JACOBS

11-MILE CANYON DIVERSION DAM REMOVAL

DAM REMOVAL AND DEMOLITION PLAN PHASE 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

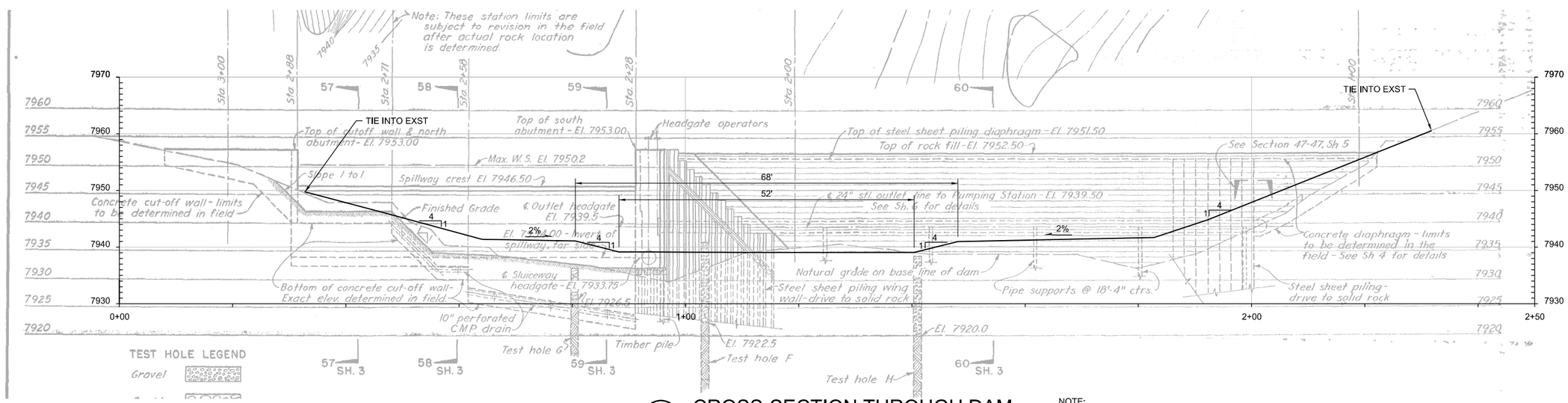
DATE	OCT 2020
PROJ	WXXY3000
DWG	C-2102
SHEET	9 of 14



NOTES:

1. DAM RECORD DRAWINGS PLAN AND SECTION SHOWN TO ASSIST IN UNDERSTANDING EXST CONDITIONS. SCREENED BACK FOR CLARITY. SEE ATTACHMENT 2 FOR DWGS.
2. EXISTING CONDITIONS MAY DIFFER FROM THAT SHOWN. FIELD VERIFY AND IMMEDIATELY REPORT DISCREPANCIES TO THE ENGINEER.
3. CONTRACTOR TO SUBMIT PHASING PLAN. FINAL APPROVAL FROM OWNER, ENGINEER, AND FOREST SERVICE REQUIRED.
4. THIS DWG IS FOR INFORMATION ONLY. FOR PROPOSED GRADE AND DESIGN OF THE RIVER AFTER DEMOLITION SEE C-2301 AND C-2302 DWGS, IN ADDITION TO DRAWINGS PROVIDED IN ATTACHMENT 1.
5. CHANNEL VEGETATION AND RESTORATION TO BE FINALIZED IN FINAL DESIGN. THE FOLLOWING REVEGETATION ZONES ARE ANTICIPATED:
   - ZONE 1 (CHANNEL BANKS): RIPARIAN SEED, PLUGS, AND TRANSPLANTED WETLAND MATERIAL
   - ZONE 2 (FLOODPLAIN BENCH): FLOODPLAIN SEED MIX
   - ZONE 3 (OUTER SLOPES): UPLAND SEED MIX

PLAN VIEW



A CROSS-SECTION THROUGH DAM

H: 1"=20'-0"
V: 1" 10'

NOTE:
AS-BUILT VERTICAL DATUM IS NGVD29. PROPOSED DATUM IS NAVD88.
EQUATION TO ADJUST ELEVATIONS IS NGVD29 + 4.26' = NAVD88.

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY	APVD

DSGN F LAMBRETCHSEN | DR F LAMBRETCHSEN | CHK K HAMILTON | APVD K HAMILTON

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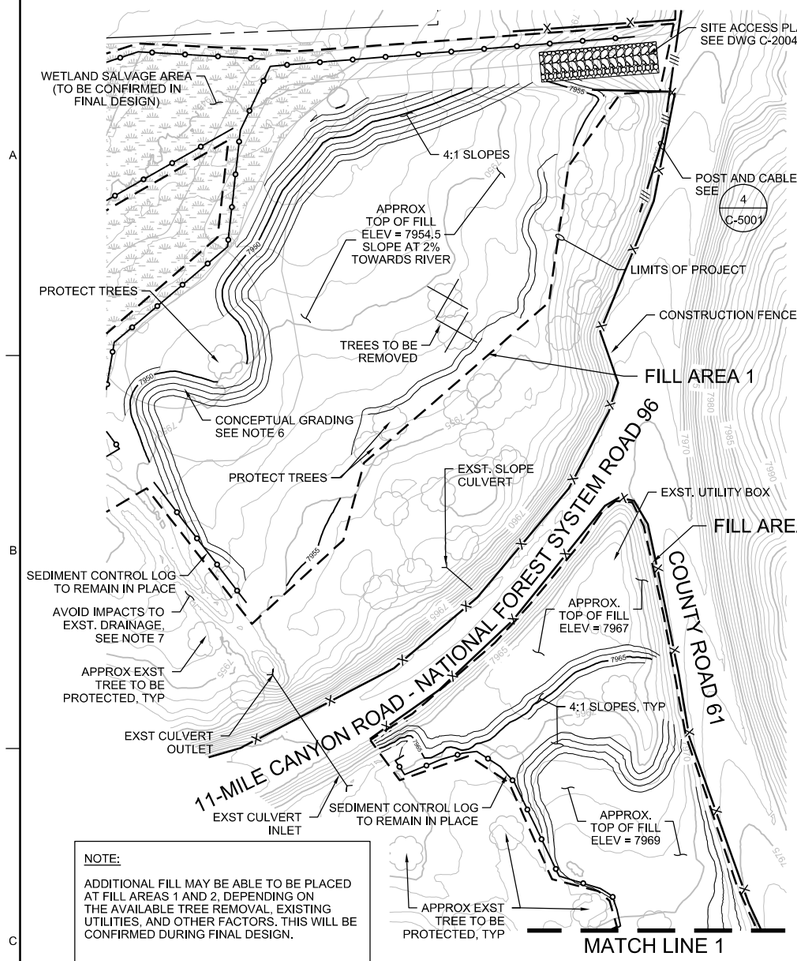
JACOBS

11-MILE CANYON DIVERSION DAM REMOVAL
DAM REMOVAL AND DEMOLITION PLAN
PHASE 3

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	OCT 2020
PROJ	WXXY3000
DWG	C-2103
SHEET	10 of 14



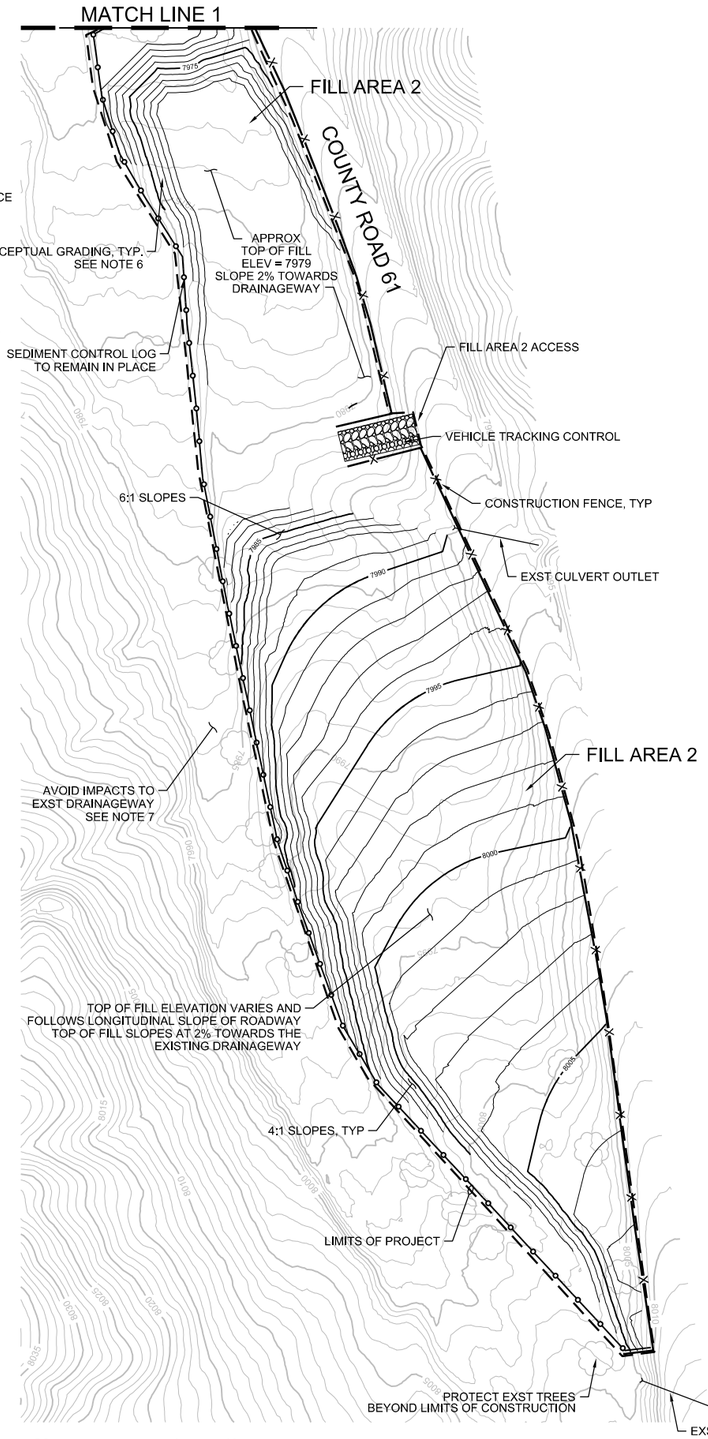
NOTE:

ADDITIONAL FILL MAY BE ABLE TO BE PLACED AT FILL AREAS 1 AND 2, DEPENDING ON THE AVAILABLE TREE REMOVAL, EXISTING UTILITIES, AND OTHER FACTORS. THIS WILL BE CONFIRMED DURING FINAL DESIGN.

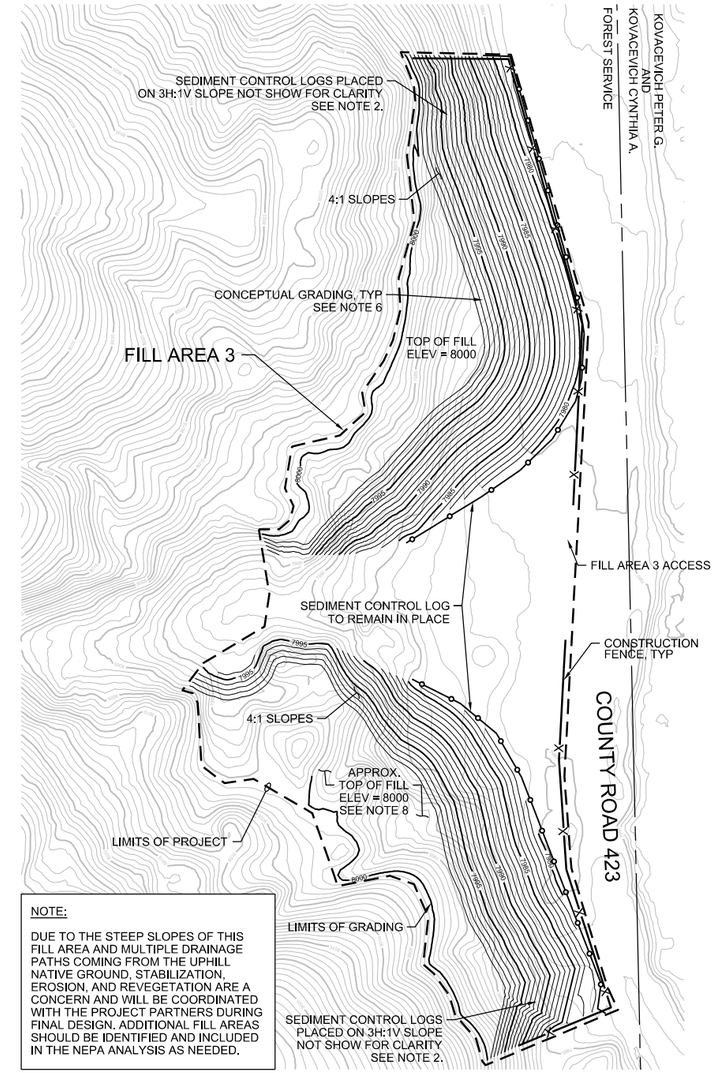
N

0 50 100 150
Scale In Feet

1 FILL AREAS 1 and 2
1"=50'-0"



2 FILL AREA 2
1"=50'-0"



NOTE:

DUE TO THE STEEP SLOPES OF THIS FILL AREA AND MULTIPLE DRAINAGE PATHS COMING FROM THE UPHILL NATIVE GROUND, STABILIZATION, EROSION, AND REVEGETATION ARE A CONCERN AND WILL BE COORDINATED WITH THE PROJECT PARTNERS DURING FINAL DESIGN. ADDITIONAL FILL AREAS SHOULD BE IDENTIFIED AND INCLUDED IN THE NEPA ANALYSIS AS NEEDED.

3 FILL AREA 3
1"=50'-0"

N

0 50 100 150
Scale In Feet

NOTES:

1. THE CONTRACTOR IS REQUIRED TO INSTALL APPROPRIATE EROSION CONTROL MEASURES AROUND THE PROPOSED FILL AREAS AS INDICATED IN THE DRAWINGS.
2. SEDIMENT CONTROL LOGS SHOULD BE PLACED AND STAKED AT EVERY FIFTH CONTOUR OR AT FIVE (5) FT VERTICAL INTERVALS WHEN INSTALLED ON SLOPES STEEPER THAN 4H:1V.
2. ALL FILL AREAS SHOULD BE COMPACTED IN 1-FT LIFTS.
3. PRIOR TO SEEDING DISTURBED AREAS, TOPSOIL SHALL BE CONDITIONED BY THE CONTRACTOR FOLLOWING SPECIFICATIONS SECTIONS 207 AND 212 (AND SUBSEQUENT REVISIONS) OF CDOT'S STANDARD SPECIFICATIONS
4. FOLLOWING SOIL CONDITIONING, SEED SHOULD BE DRILL SEEDED.
5. AVOID PLACING FILL ON ROADS OR AREAS OF CONCENTRATED FLOW.
6. ONLY CONCEPTUAL GRADING IS SHOWN FOR ALL FILL AREAS, FINAL GRADING WILL BE REFINED DURING FINAL DESIGN.
7. CONTRACTOR SHALL AVOID PLACING FILL ON EXISTING DRAINAGEWAYS, AND SHALL REMOVE ANY SEDIMENT OR DEBRIS THAT MAY ENTER THESE DRAINAGEWAYS AT THE END OF EACH DAY.
8. ESTIMATED FILL VOLUMES ARE PROVIDED FOR PRELIMINARY FILL AREAS IN THE TABLE BELOW.

	ESTIMATED FILL VOLUMES			
	FILL AREA 1	FILL AREA 2	FILL AREA 3	TOTAL
QUANTITY (CY)	6,300	17,450	11,000	34,750

9. IT IS ASSUMED THAT ROCK FILL AND EMBANKMENT MATERIAL FROM DAM REMOVAL WILL BE PLACED IN THE IDENTIFIED FILL AREAS. THIS ESTIMATED VOLUME IS PROVIDED IN THE TABLE BELOW.

	ESTIMATED FILL VOLUMES
QUANTITY (CY)	16,500

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY	APVD

DSGN C PAJARES | DR C PAJARES | CHK F LAMBRECHTSEN | APVD K HAMILTON

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JACOBS

11-MILE CANYON DIVERION DAM REMOVAL
FILL AREA GRADING AND EROSION CONTROL

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

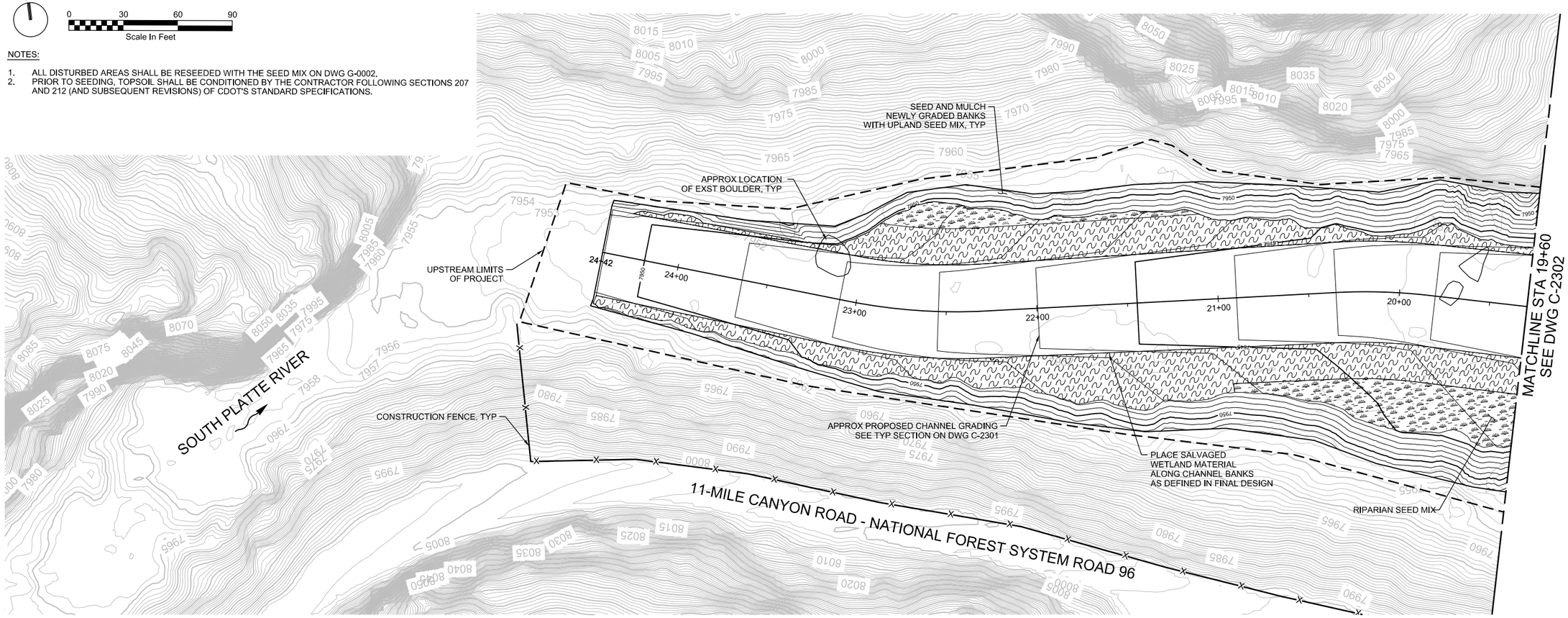
DATE	APR 2020
PROJ	WXXY3000
DWG	C-2201
SHEET	11 of 14

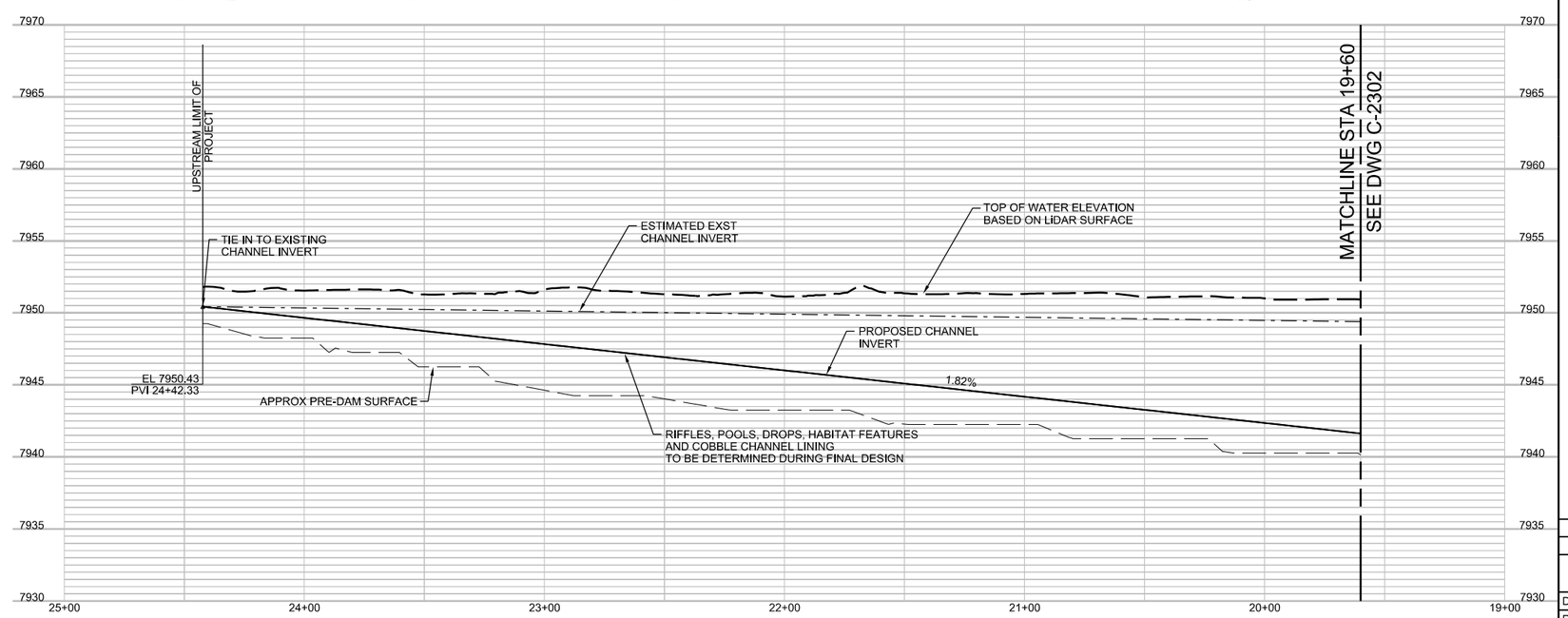
N

0 30 60 90
Scale In Feet

NOTES:

1. ALL DISTURBED AREAS SHALL BE RESEEDED WITH THE SEED MIX ON DWG G-0002.
2. PRIOR TO SEEDING, TOPSOIL SHALL BE CONDITIONED BY THE CONTRACTOR FOLLOWING SECTIONS 207 AND 212 (AND SUBSEQUENT REVISIONS) OF CDOT'S STANDARD SPECIFICATIONS.





PRELIMINARY
NOT FOR
CONSTRUCTION

NO.	DATE	REVISION	BY	APVD

DSGN	DR	CHK	APVD
C PAJARES	C PAJARES	F LAMBRECHTSEN	K HAMLITON

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JACOBS

11-MILE CANYON DIVERSION DAM REMOVAL

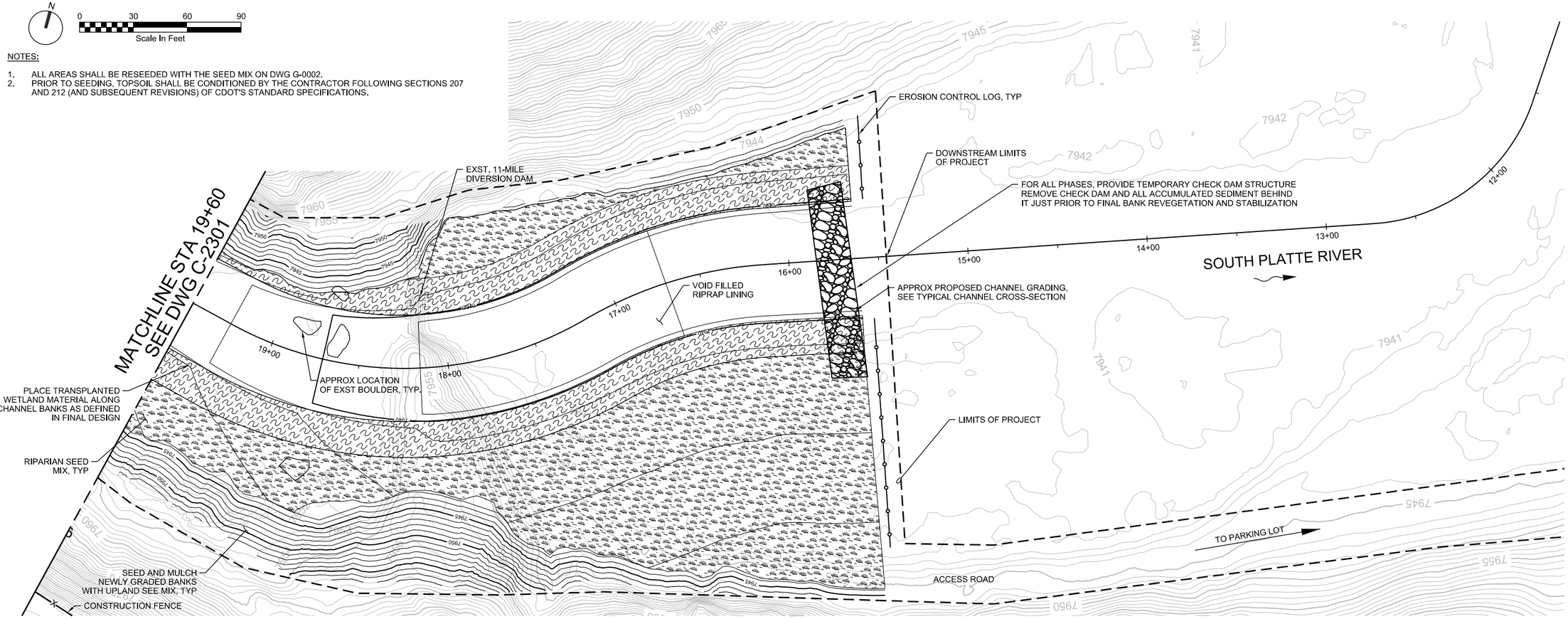
PLAN AND PROFILE

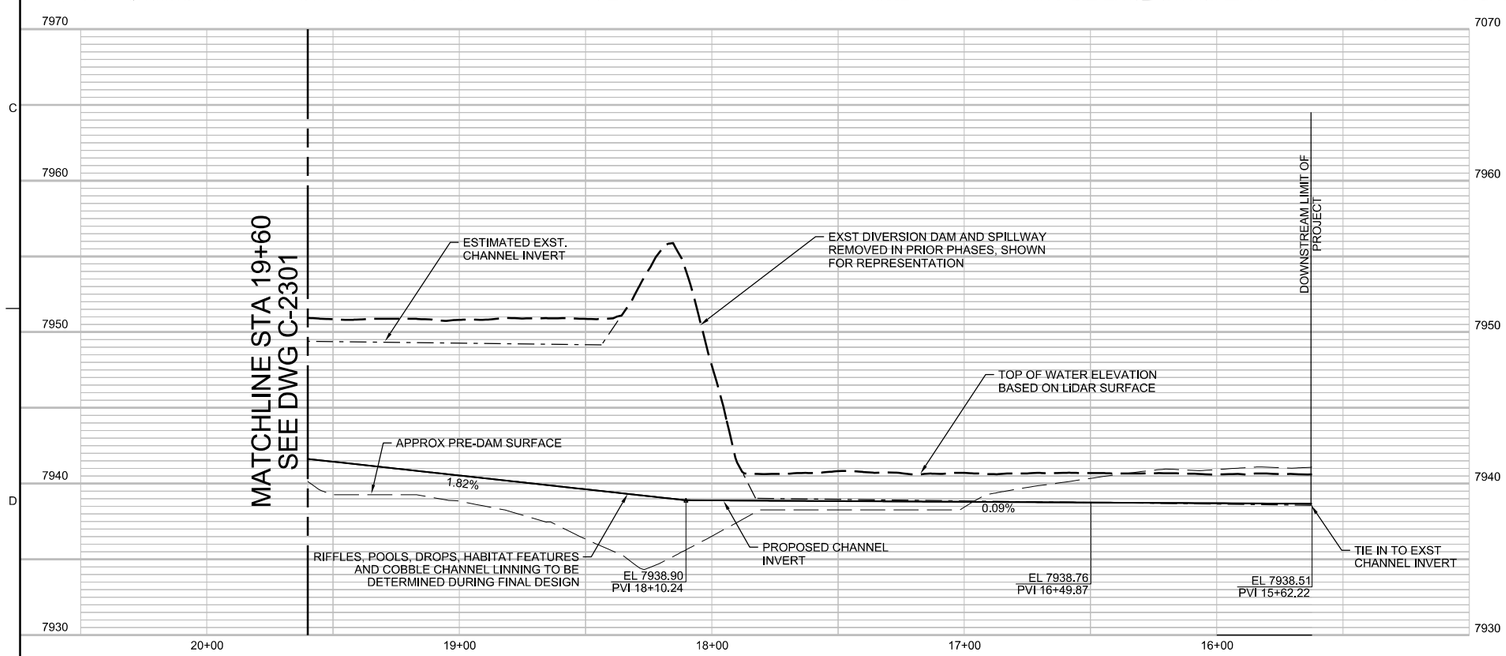
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

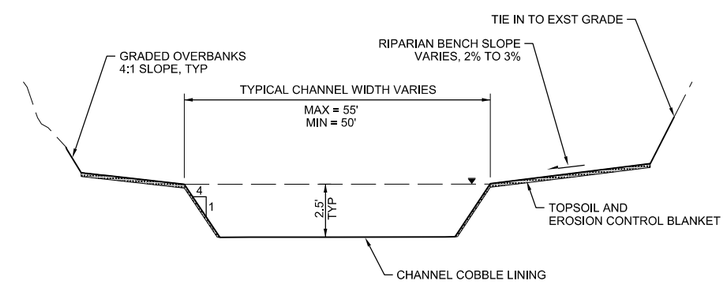
DATE	OCT 2020
PROJ	WXXY3000
DWG	C-2301
SHEET	12 of 14

NOTES:

1. ALL AREAS SHALL BE RESEEDED WITH THE SEED MIX ON DWG G-0002.
2. PRIOR TO SEEDING, TOPSOIL SHALL BE CONDITIONED BY THE CONTRACTOR FOLLOWING SECTIONS 207 AND 212 (AND SUBSEQUENT REVISIONS) OF CDOT'S STANDARD SPECIFICATIONS.







1 TYPICAL CHANNEL CROSS-SECTION

NTS

NOTES:

1. CHANNEL DIMENSIONS ARE BASED ON COORDINATION WITH PETE GALLAGHER AND THE PROJECT PARTNERS. THE FINAL CHANNEL DIMENSIONS, GRADING, HABITAT FEATURES, REVEGETATION, AND EROSION CONTROL WILL BE DETERMINED IN FINAL DESIGN.

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY	APVD

DSGN	DR	CHK	APVD
C PAJARES	C PAJARES	F LAMBRECHTSEN	K HAMILTON

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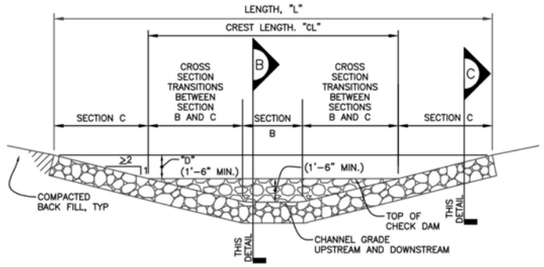
11-MILE CANYON DIVERSION DAM REMOVAL

PLAN AND PROFILE

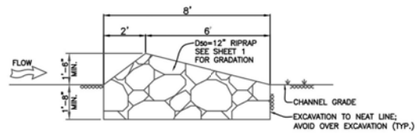
VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

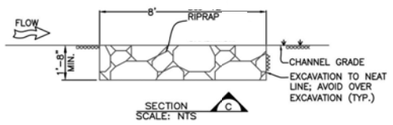
DATE	OCT 2020
PROJ	WXXY3000
DWG	C-2302
SHEET	13 of 14



ELEVATION
SCALE: NTS



SECTION B
SCALE: NTS



SECTION C
SCALE: NTS

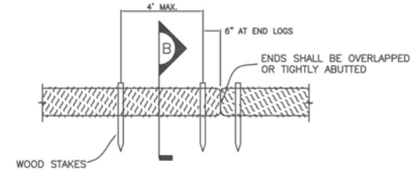
CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR :
   - LOCATION OF CHECK DAMS
   - LENGTH, "L", CREST LENGTH, "CL" AND DEPTH, "D"
2. CHECK DAMS INDICATED ON THE PLANS SHALL BE INSTALLED PRIOR TO ANY UPSTREAM LAND -DISTURBING ACTIVITIES.
3. RIP RAP SHALL BE UTILIZED FOR CHECK DAMS
4. RIP RAP PAD SHALL BE TRENCHED INTO THE CHANNEL BANKS TO ADEQUATELY ANCHOR WITH CENTER OF THE DAM.

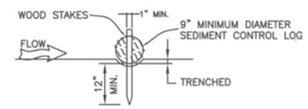
CHECK DAM MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE CONTROL MEASURE.
2. SEDIMENT ACCUMULATED UPSTREAM OF CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CHECK DAM IS WITHIN 1/2 OF THE HEIGHT OF THE CREST.
3. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE OWNER.
4. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACK FILL. ANY DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH EROSION CONTROL BLANKET OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE OWNER.

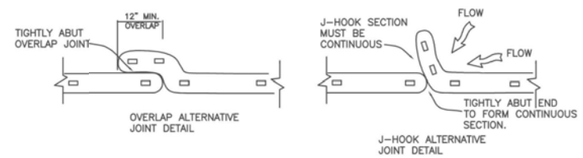
1 CHECK DAM
NTS



DETAIL A
SCALE: NTS



SECTION B
SCALE: NTS



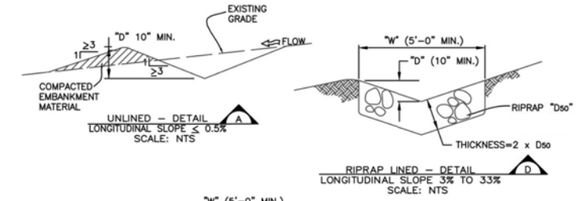
SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF SEDIMENT CONTROL LOG.
2. SEDIMENT CONTROL LOGS INDICATED ON THE EROSION CONTROL PLAN SHALL BE INSTALLED PRIOR TO ANY LAND -DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR, OR COCONUT FIBER.
4. NOT FOR USE IN CONCENTRATED FLOW AREAS.
5. THE SEDIMENT CONTROL LOG SHALL BE TRENCHED-IN APPROPRIATELY.
6. 9" DIAMETER SEDIMENT CONTROL LOGS ARE THE MINIMUM BUT A LARGER DIAMETER MAY BE REQUIRED BY THE OWNER OR INSPECTOR.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

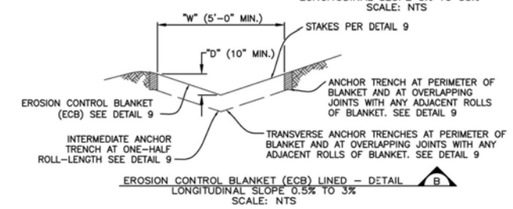
1. THE EROSION CONTROL INSPECTOR SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE CONTROL MEASURE.
2. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOGS SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN 1/2 THE HEIGHT OF THE CREST OF LOG.
3. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE STABILIZED IN A MANNER APPROVED BY THE OWNER OR INSPECTOR.

2 SEDIMENT CONTROL LOG
NTS

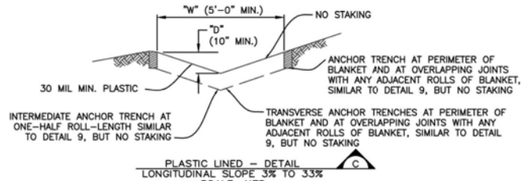


UNLINED – DETAIL A
LONGITUDINAL SLOPE ≤ 0.5%
SCALE: NTS

RIPRAP LINED – DETAIL D
LONGITUDINAL SLOPE 3% TO 33%
SCALE: NTS



EROSION CONTROL BLANKET (ECB) LINED – DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3%
SCALE: NTS



PLASTIC LINED – DETAIL C
LONGITUDINAL SLOPE 3% TO 33%
SCALE: NTS

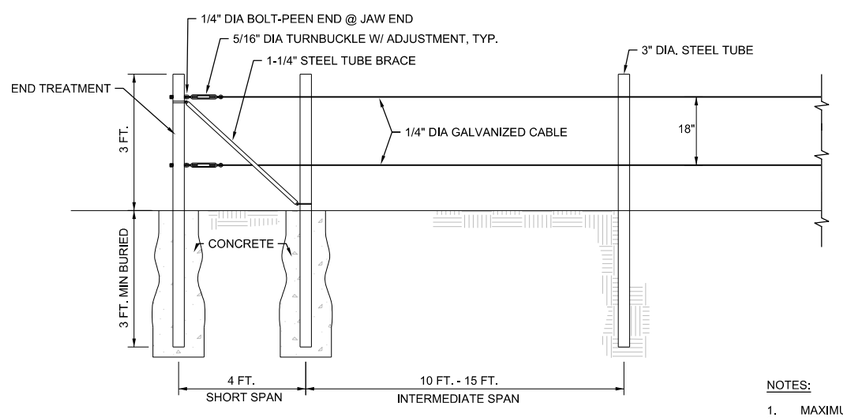
DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB LINED, PLASTIC LINED OR RIP RAP LINED).
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR RIP RAP LINED DITCH, SIZE OF RIP RAP, D50.
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACILITIES OR DIVERSION DITCHES EXCEEDING A 2-YEAR FLOW RATE OF 10CFS.
3. DIVERSION DITCHES INDICATED ON THE EROSION CONTROL PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
4. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT.
5. DIVERSION CHANNEL SHALL BE SIZED AS SHOWN ON DWG C-2302. CONTRACTOR SHALL SUBMIT EROSION CONTROL METHODOLOGY AND ASSOCIATED CALCULATIONS FOR APPROVAL.

DIVERSION DITCH MAINTENANCE NOTES

1. THE EROSION CONTROL INSPECTOR SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE CONTROL MEASURES.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR, IF REQUIRED BY THE OWNER OR INSPECTOR, LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED.

3 DIVERSION DITCH
NTS



4 POST AND CABLE FENCE
NTS

NOTE:

EROSION CONTROL MEASURES AND DETAILS WILL BE FINALIZED DURING FINAL DESIGN, INCLUDING COMPLIANCE CONFIRMATION WITH REQUIRED PERMITS.

NOTES:

1. MAXIMUM DISTANCE BETWEEN TURNBUCKLES SHALL BE 200 FEET ±.
2. CONCRETE FOOTINGS ARE REQUIRED ON SHORT SPAN RUNS AND BETWEEN TURNBUCKLES.
3. CABLE SHALL NOT BE SPLICED BETWEEN INTERMEDIATE TURNBUCKLES AND END POSTS.
4. POSTS TO BE VERTICAL.
5. ALIGNMENT OF HOLES IN POSTS MAY VARY TO CONFORM TO SLOPE.

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY	APVD

DSGN C PAJARES | DR C PAJARES | CHK F LAMBRECHTSEN | APVD K HAMILTON

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

JACOBS

11-MILE CANYON DIVERSION DAM REMOVAL
CIVIL AND EROSION CONTROL DETAILS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

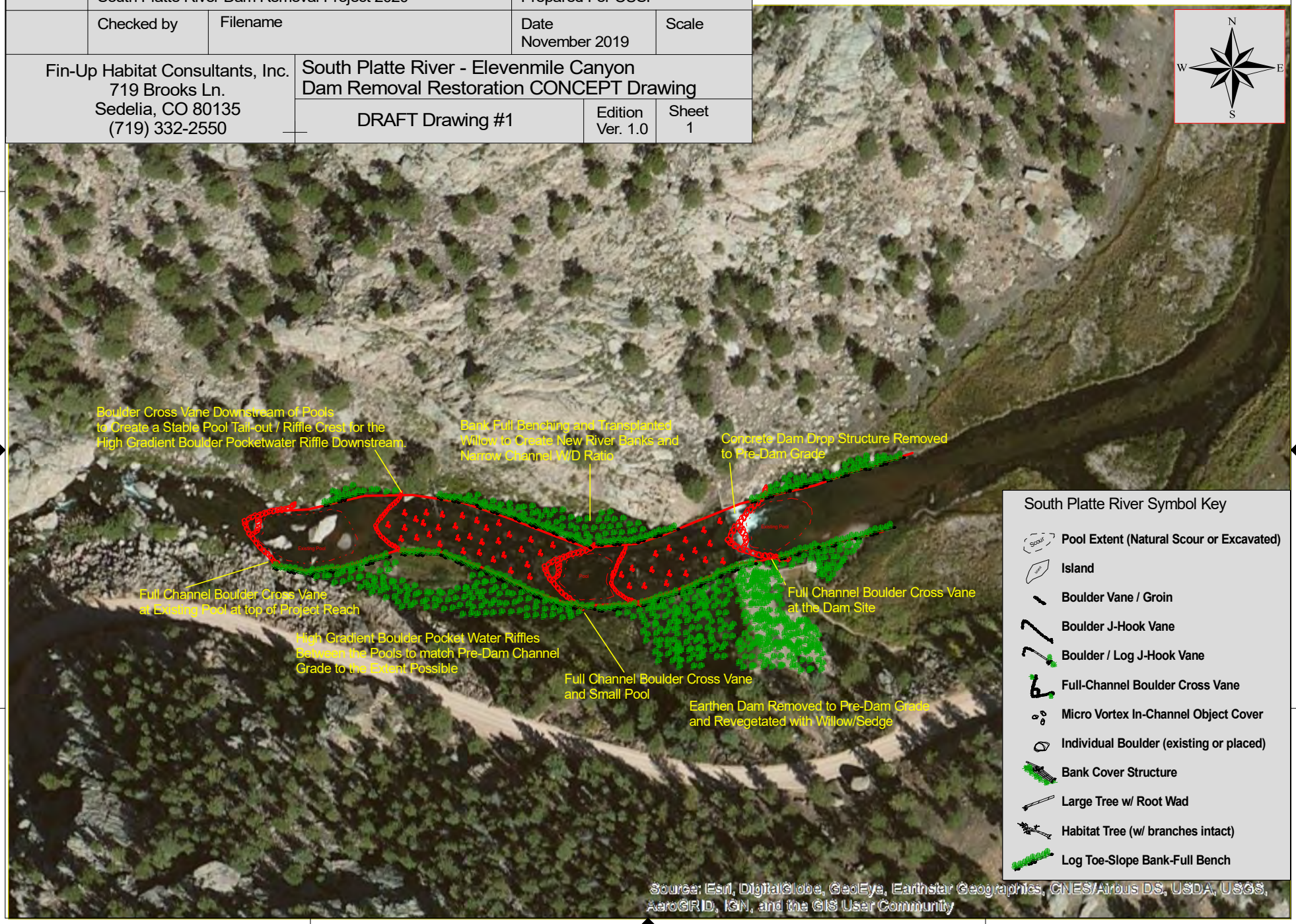
DATE	OCT 2020
PROJ	WXXY3000
DWG	C-5001
SHEET	14 of 14

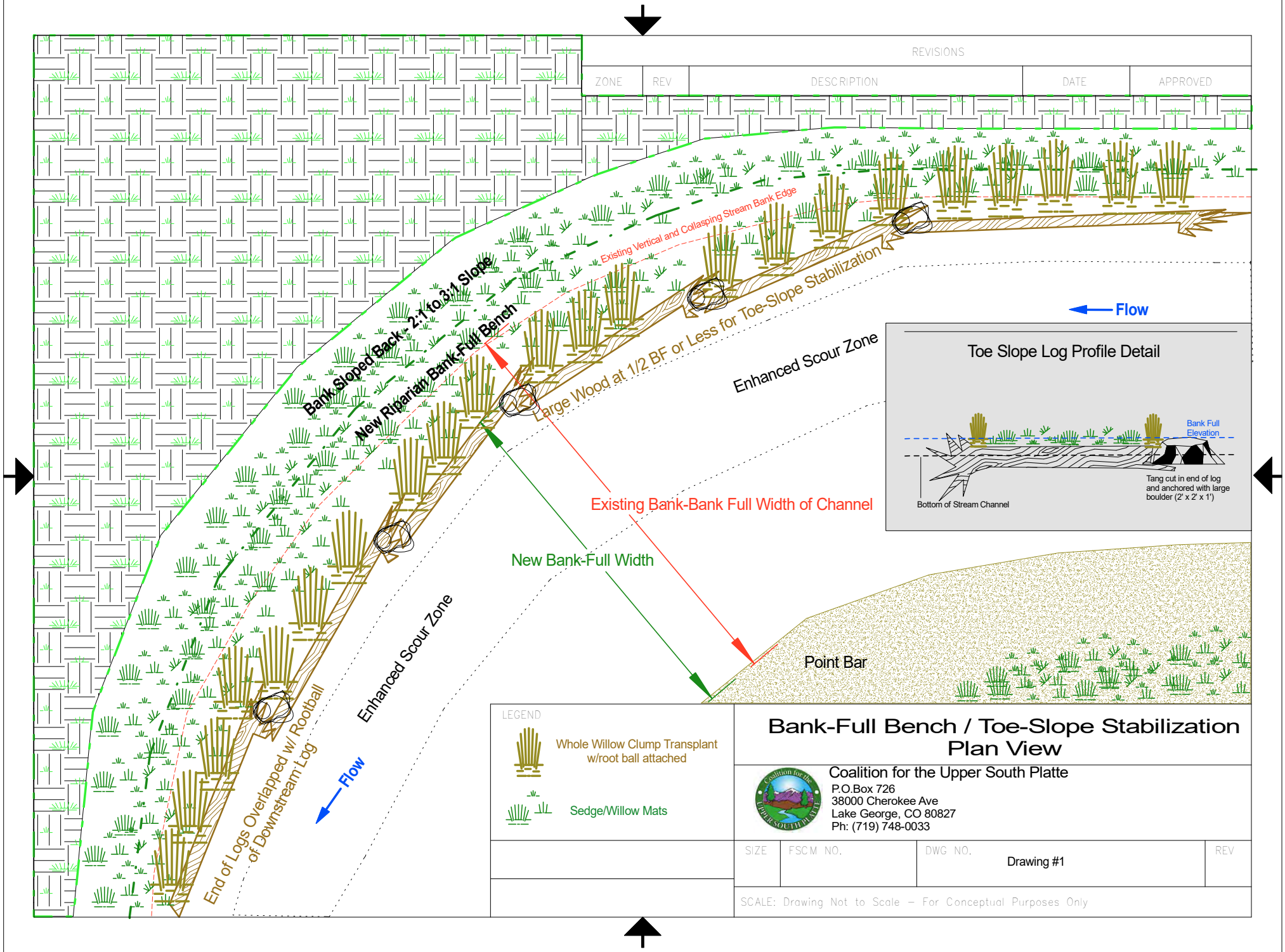
ATTACHMENT 1

FIN-UP HABITAT CONSULTANTS

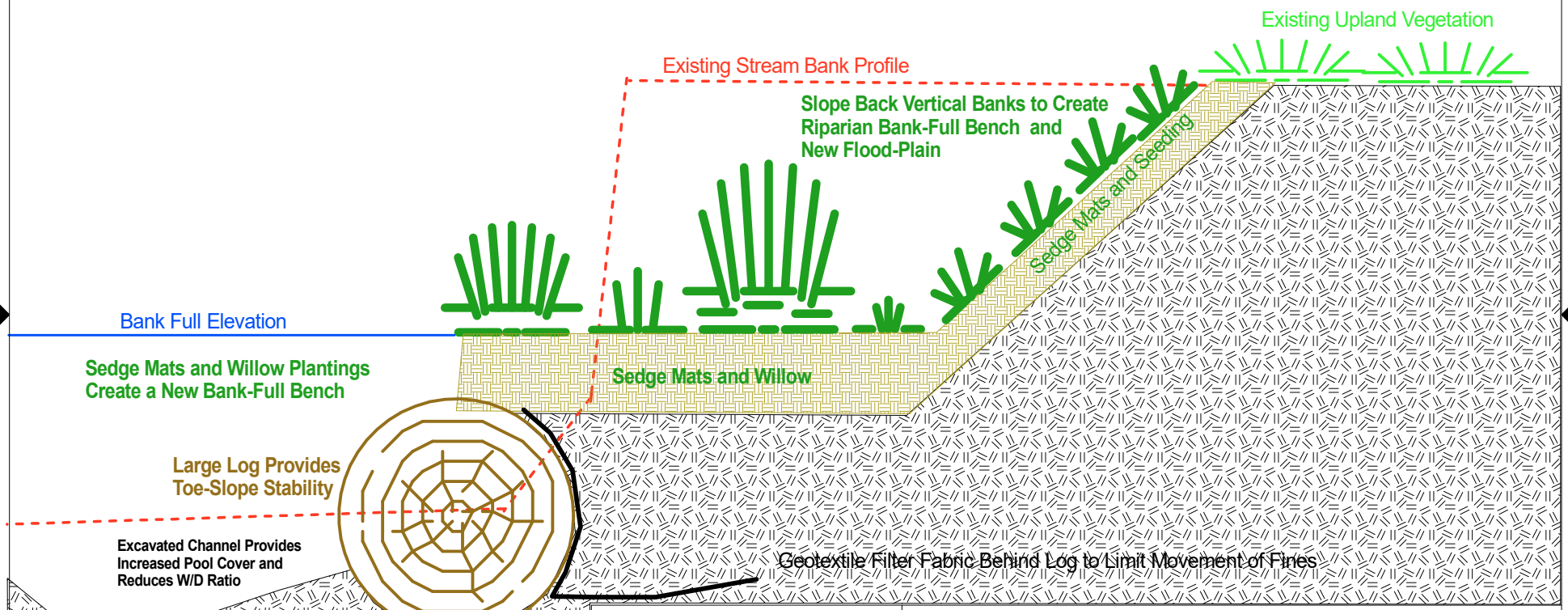
RESTORATION PLANS (13 SHEETS)

	South Platte River Dam Removal Project 2020	Prepared For CUSP	
	Checked by / Filename	Date November 2019	Scale
Fin-Up Habitat Consultants, Inc. 719 Brooks Ln. Sedelia, CO 80135 (719) 332-2550	South Platte River - Elevenmile Canyon Dam Removal Restoration CONCEPT Drawing		
	DRAFT Drawing #1	Edition Ver. 1.0	Sheet 1




REVISIONS
ZONE
REV
DESCRIPTION
DATE
APPROVED
Existing Vertical and Collapsing Stream Bank Edge
Bank Sloped Back 2:1 to 3:1 Slope
New Riparian Bank-Full Bench
Large Wood at 1/2 BF or Less for Toe-Slope Stabilization
Enhanced Scour Zone
Flow
Toe Slope Log Profile Detail
Bank Full Elevation
Tang cut in end of log and anchored with large boulder (2' x 2' x 1')
Bottom of Stream Channel
Existing Bank-Bank Full Width of Channel
New Bank-Full Width
Point Bar
Enhanced Scour Zone
End of Logs Overlapped w/ Rootball of Downstream Log
Flow
LEGEND
Whole Willow Clump Transplant w/root ball attached
Sedge/Willow Mats
Bank-Full Bench / Toe-Slope Stabilization
Plan View
Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033
SIZE
FSCM NO.
DWG NO.
Drawing #1
REV
SCALE: Drawing Not to Scale – For Conceptual Purposes Only

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



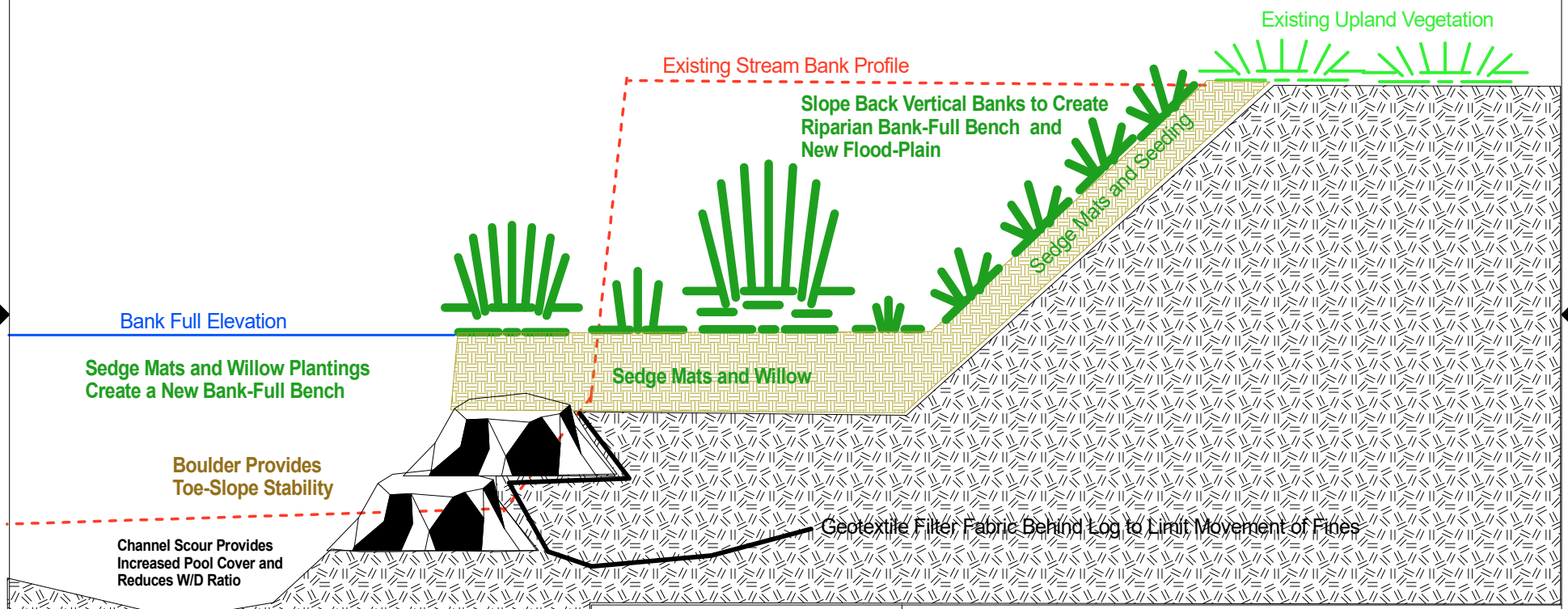
Bank-Full Bench / Toe-Slope Stabilization
Vertical Profile View

Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033

SIZE	FSCM NO.	DWG NO.	REV
		Drawing #2	

SCALE: Drawing Not to Scale – For Conceptual Purposes Only

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



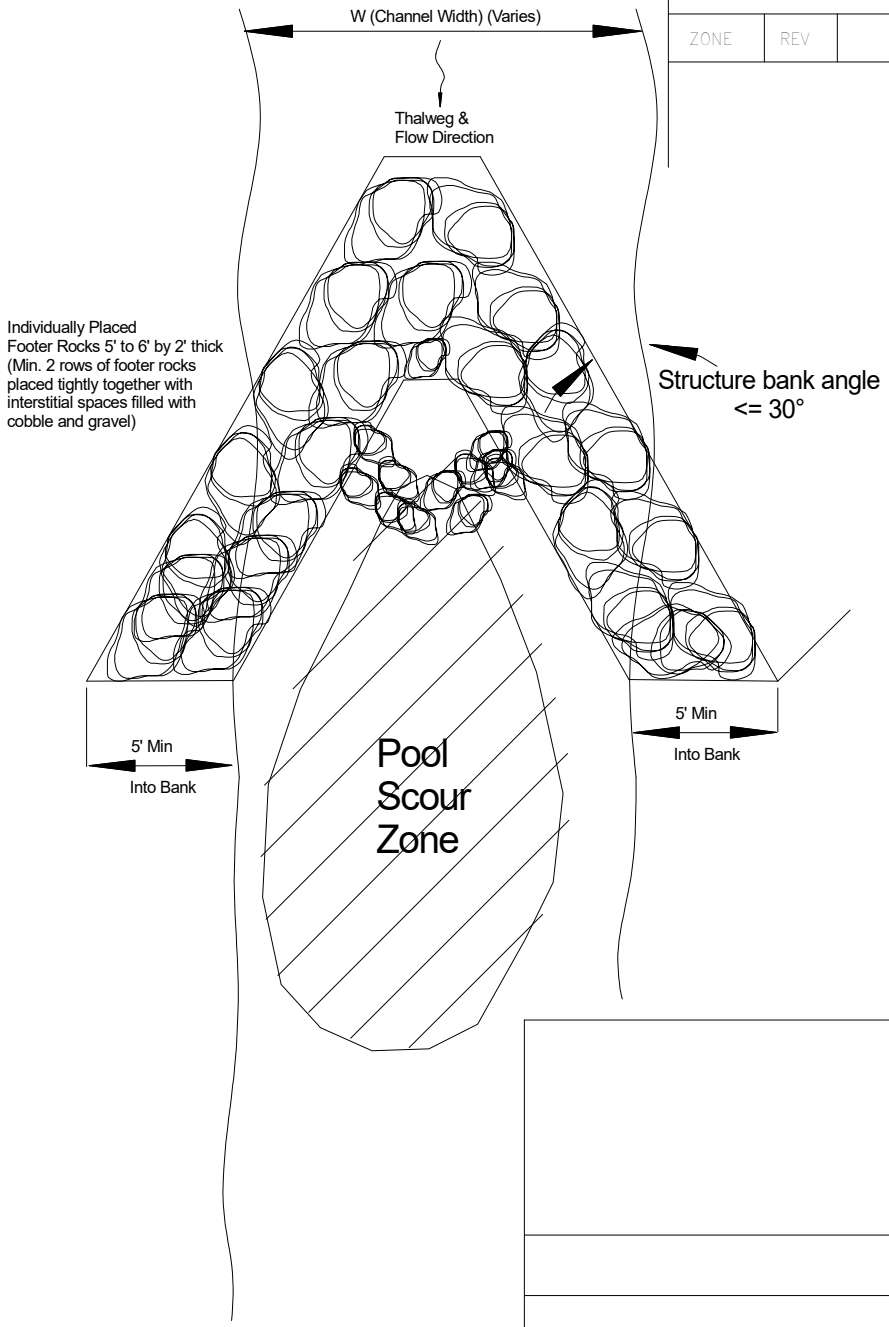
Bank-Full Bench / Toe-Slope Stabilization
Vertical Profile View

Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033

SIZE	FSCM NO.	DWG NO.	REV
		Drawing #3	

SCALE: Drawing Not to Scale – For Conceptual Purposes Only

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



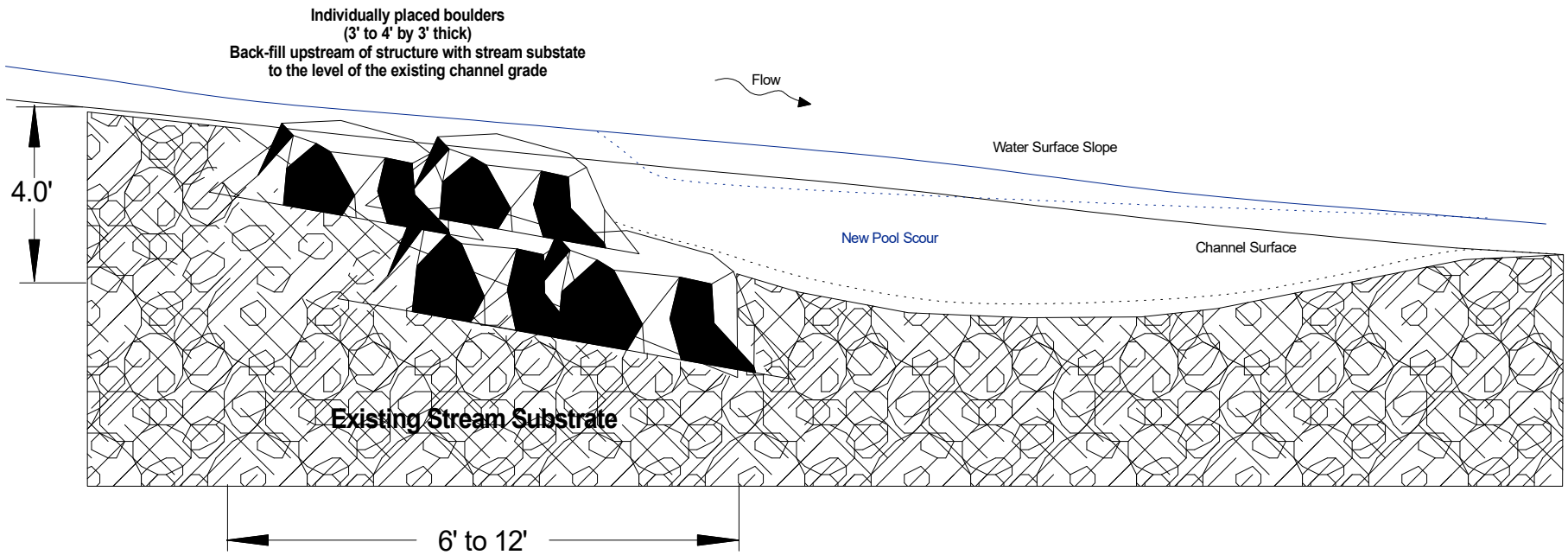
Cross-Vane Plan View

Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033

SIZE	FSCM NO.	DWG NO.	REV
		Drawing #4	

SCALE: Drawing Not to Scale – For Conceptual Purposes Only

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



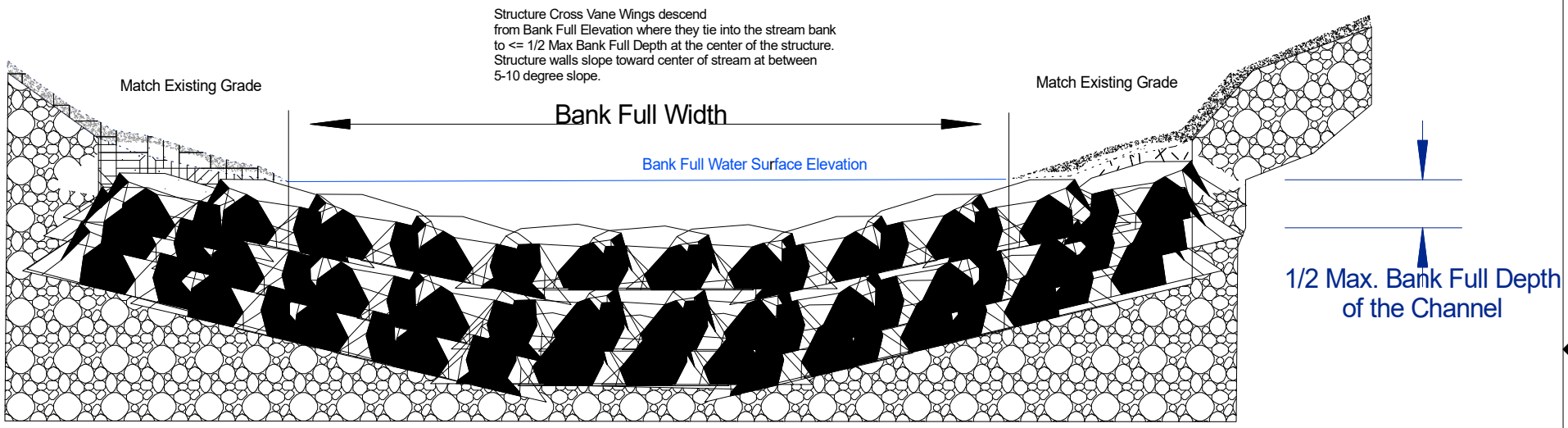
Cross-Vane Vertical Profile (Center of Structure)

Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033

SIZE	FSCM NO.	DWG NO.	REV
		Drawing #5	

SCALE: Drawing Not to Scale – For Conceptual Purposes Only

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

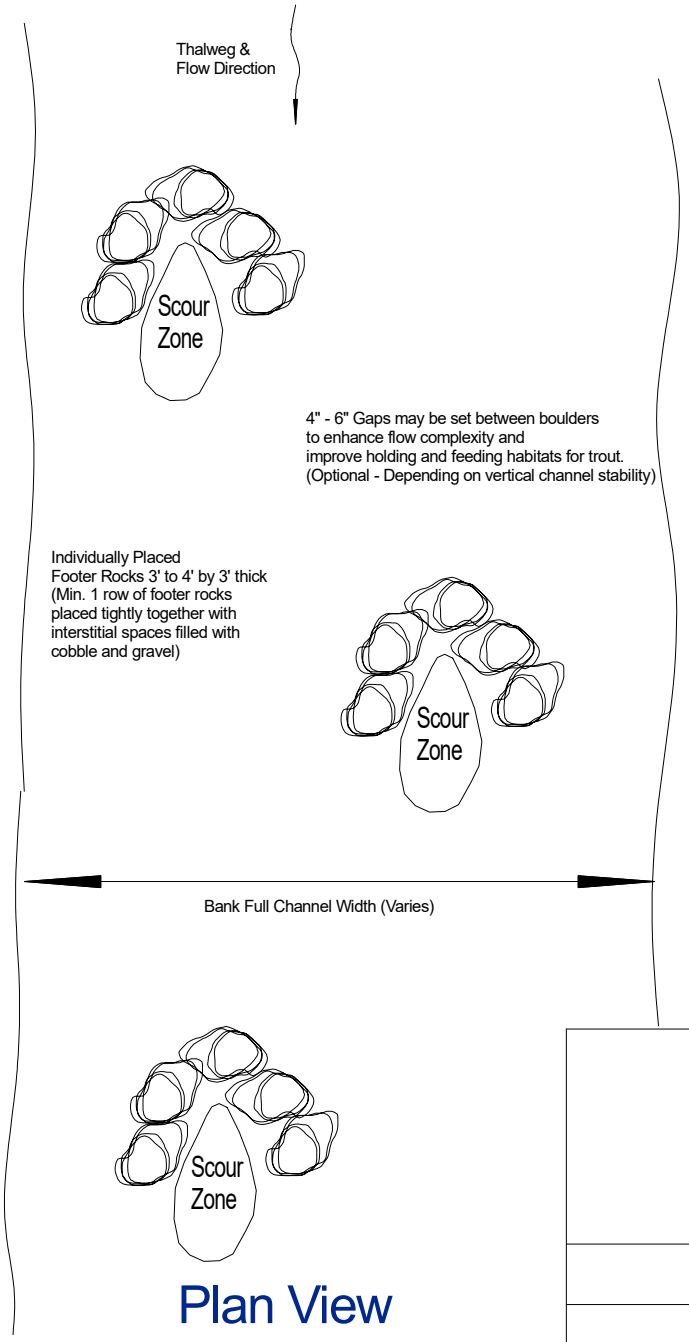


Cross-Vane Vertical Profile
Cross Section Elevations)

Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033

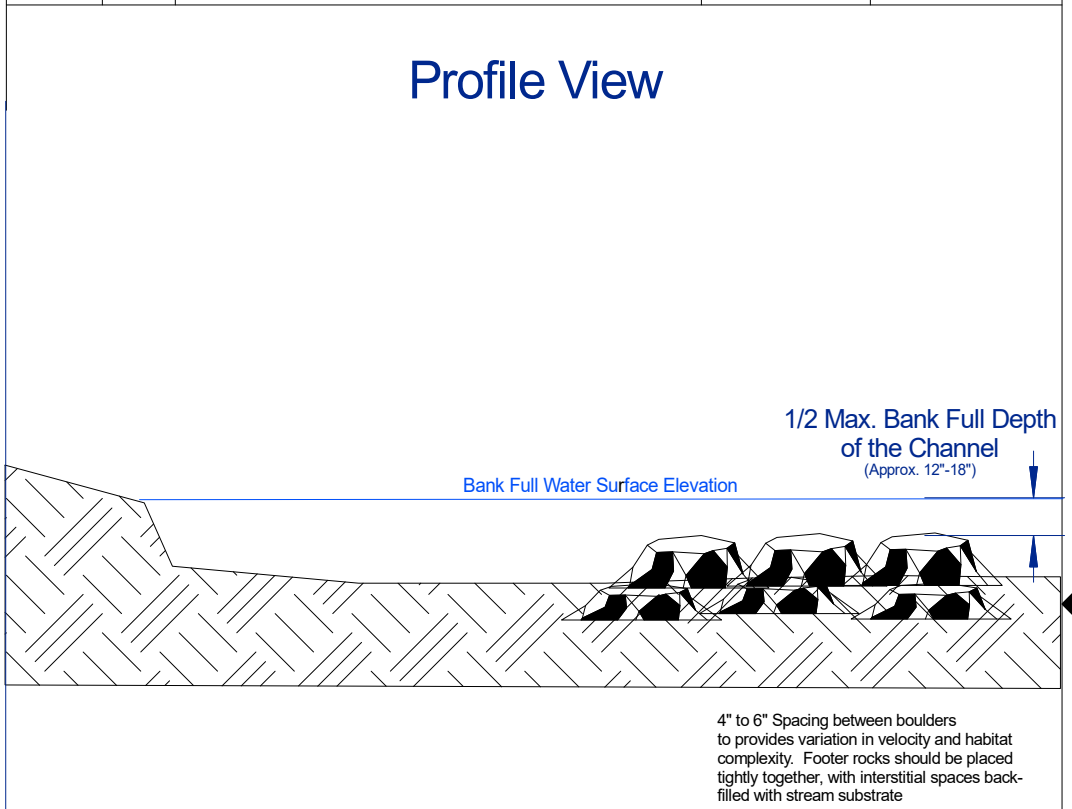
SIZE	FSCM NO.	DWG NO.	REV
		Drawing #6	

SCALE: Drawing Not to Scale – For Conceptual Purposes Only



REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED



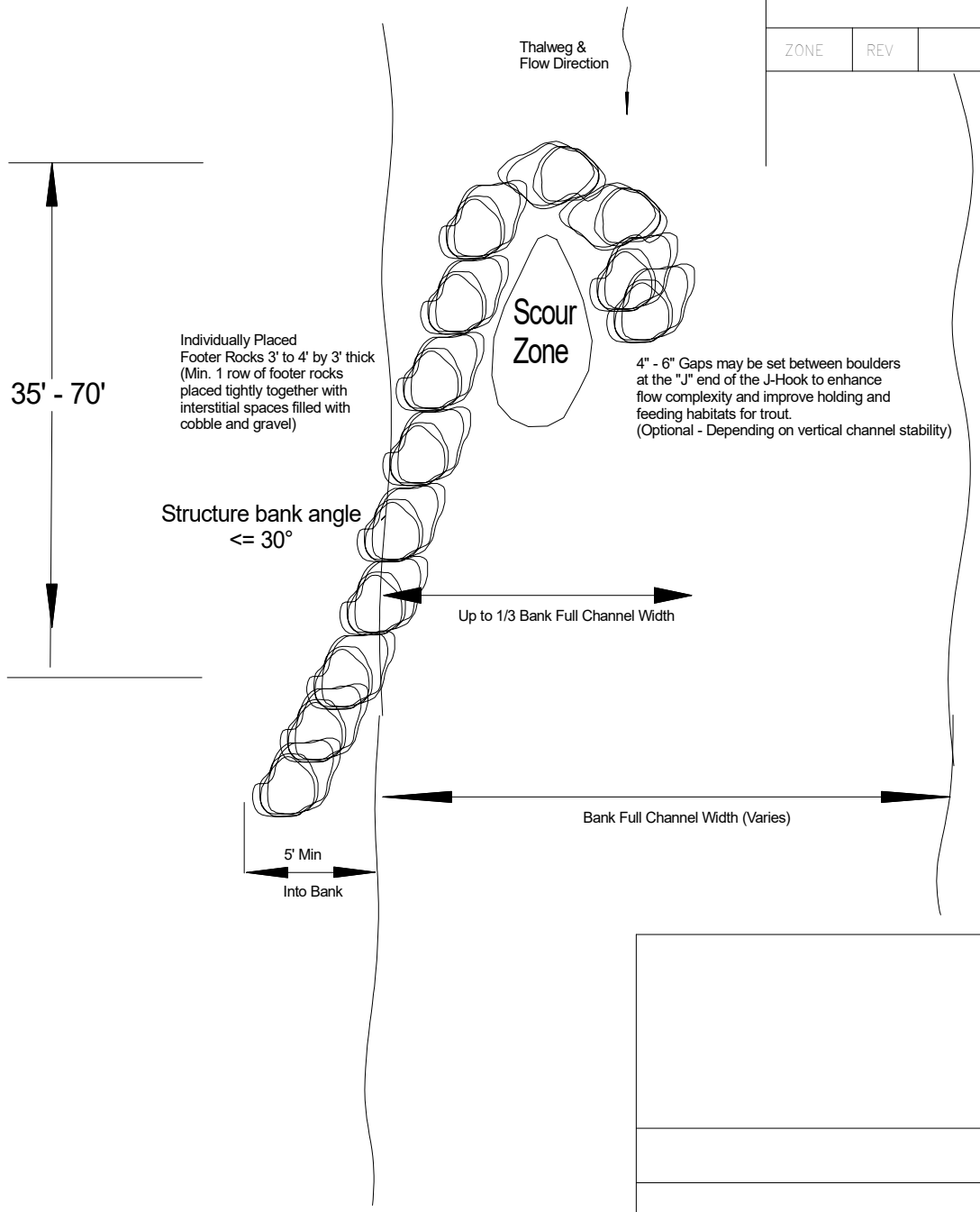
Boulder Cluster Habitat Structure
Plan and Profile View

Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033

SIZE	FSCM NO.	DWG NO.	REV
		Drawing #7	

SCALE: Drawing Not to Scale – For Conceptual Purposes Only

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



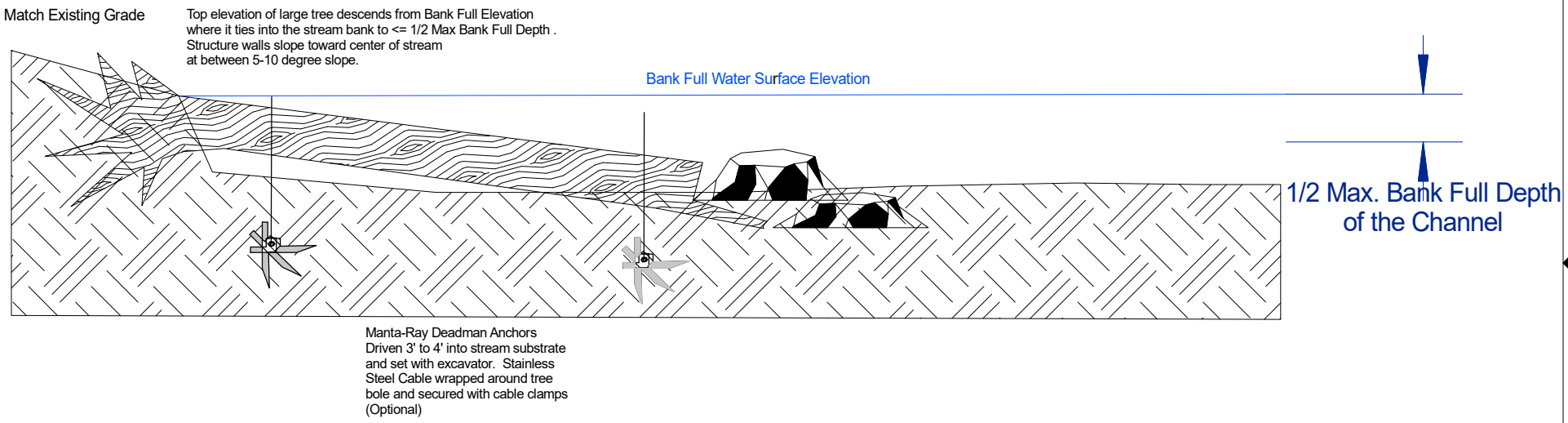
Rock J-Hook Vane - Plan View

Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033

SIZE	FSCM NO.	DWG NO.	REV
		Drawing #8	

SCALE: Drawing Not to Scale – For Conceptual Purposes Only

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



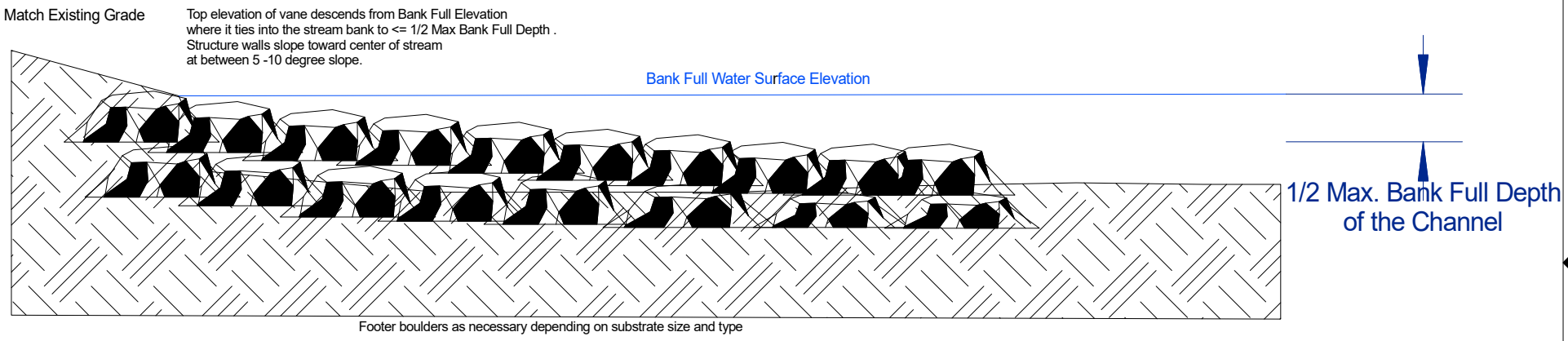
Habitat Tree Anchoring Detail Vertical Profile

Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033

SIZE	FSCM NO.	DWG NO.	REV
		Drawing #9	

SCALE: Drawing Not to Scale – For Conceptual Purposes Only

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



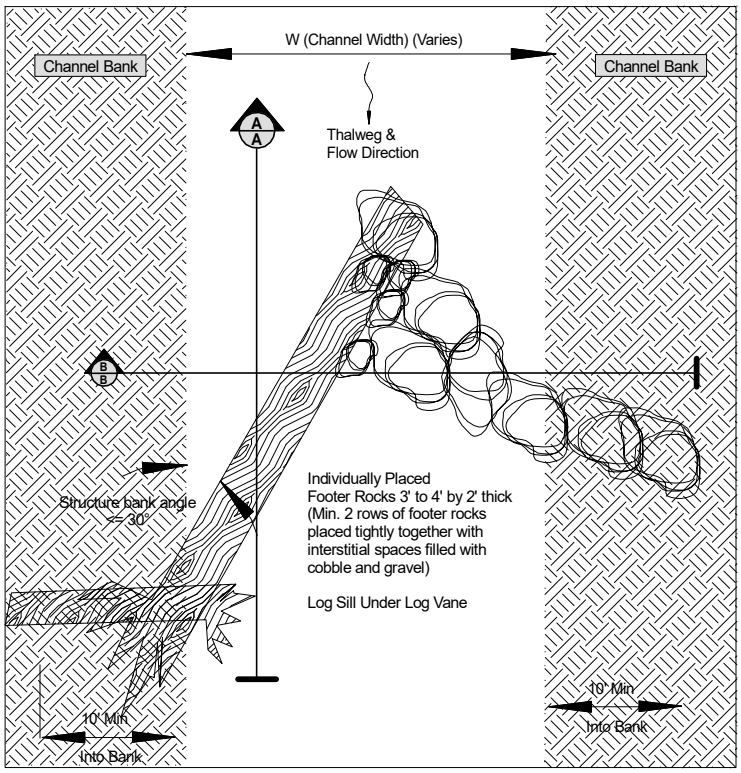
J-Hook / Boulder Vane
Vertical Profile

Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033

SIZE	FSCM NO.	DWG NO.	REV
		Drawing #10	

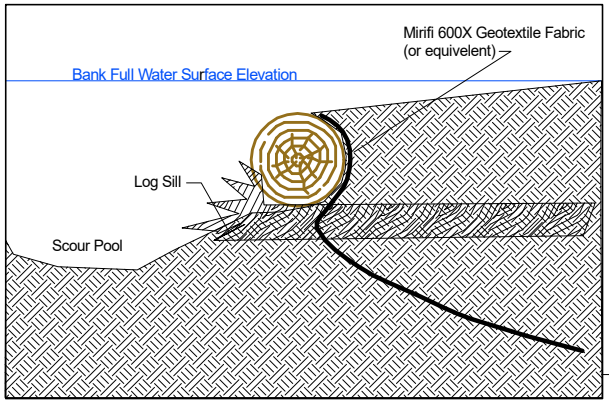
SCALE: Drawing Not to Scale – For Conceptual Purposes Only

RevNo	Revision note	Date	Signature	Checked



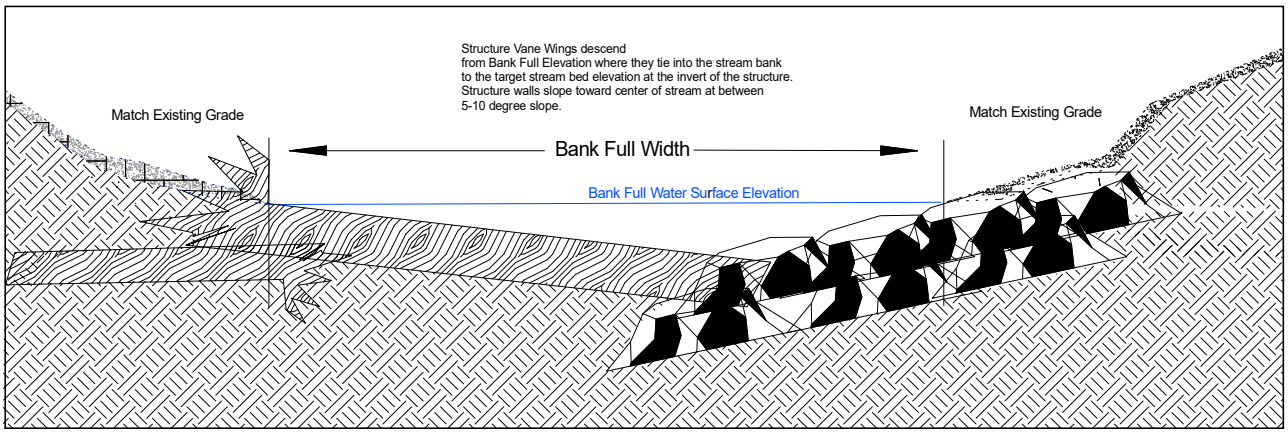
Detail Drawing #11 - Log/ Boulder J-Hook Vane Plan View

Not To Scale



A A Long. A-A Log / Boulder J-Hook Vane Profile

Not To Scale



B B Cross Section B-B Log / Boulder J-Hook Vane Profile

Not To Scale

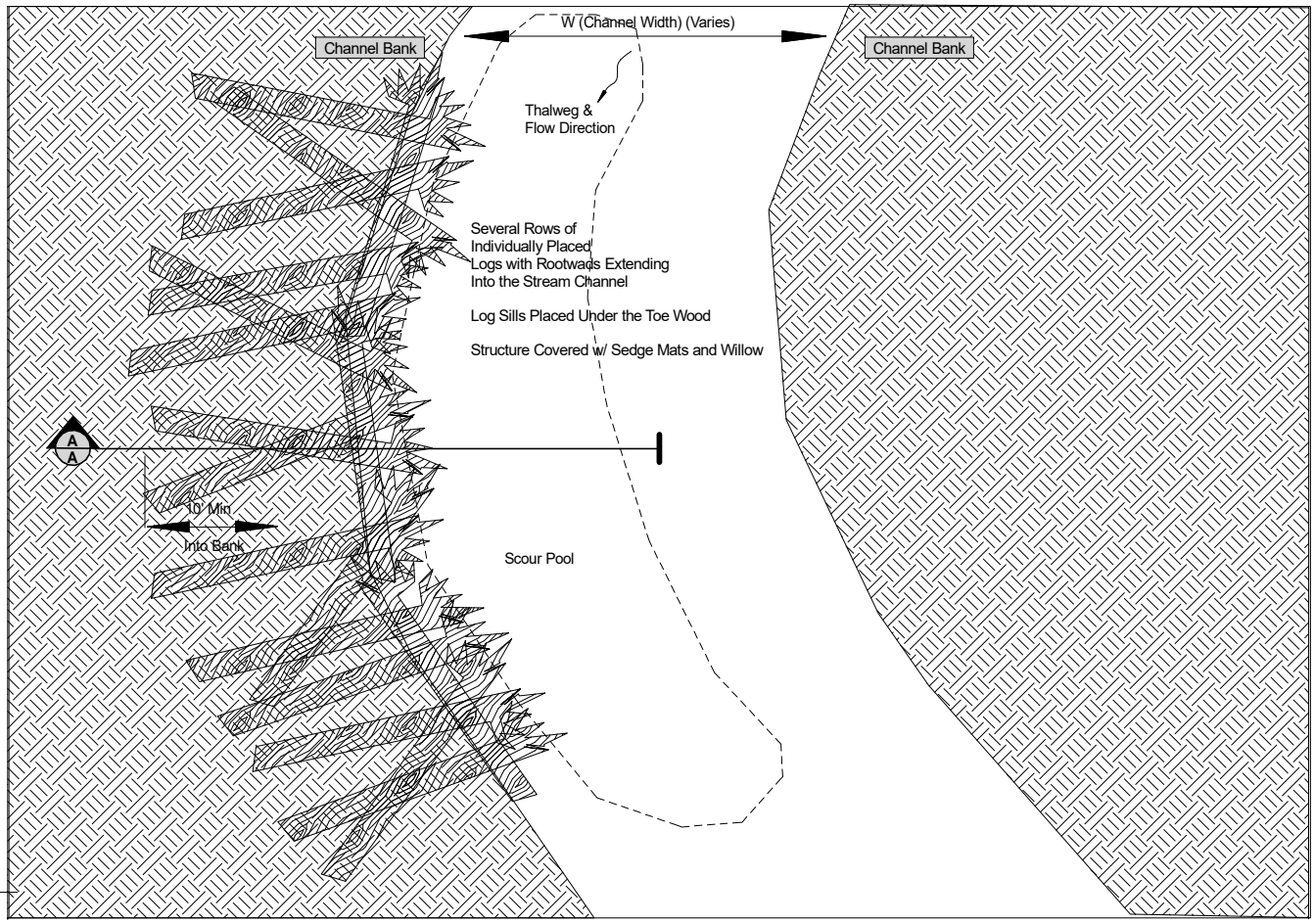
Drafted by	Checked by	Filename		Date	Scale
P. Gallagher - Fin-Up, Inc.		11_LogJHook Detail.SKF		July 16,2014	NTS

Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033

Log / Boulder J-Hook Vane Detail

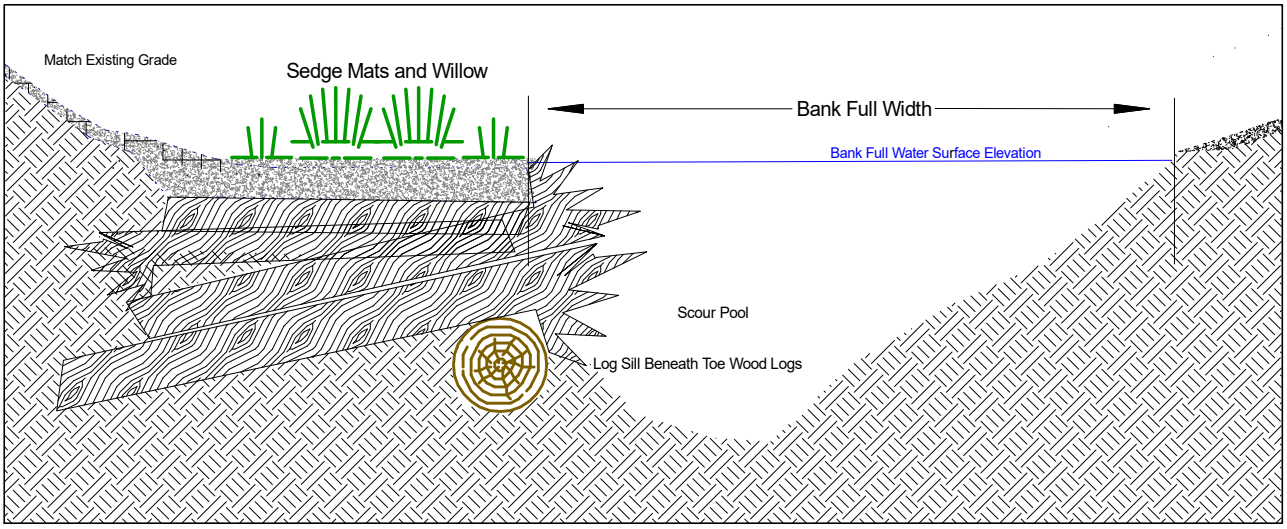
Drawing #11	Edition V3	Sheet

RevNo	Revision note	Date	Signature	Checked



Detail Drawing #12 - Toe Wood Pool Plan View

Not To Scale



A A Cross Section A-A Toe Wood Pool Profile

Not To Scale

Drafted by	Checked by	Filename		Date	Scale
P. Gallagher - Fin-Up, Inc.		12_Toe Wood Detail.SKF		July 16,2014	NTS

Coalition for the Upper South Platte
P.O.Box 726
38000 Cherokee Ave
Lake George, CO 80827
Ph: (719) 748-0033

Toe Wood Detail

Drawing #12	Edition V3	Sheet

ATTACHMENT 2

11-MILE CANYON DIVERSION DAM AS-BUILTS (7 SHEETS)

FOR INFORMATION ONLY, SITE CONDITIONS MAY VARY

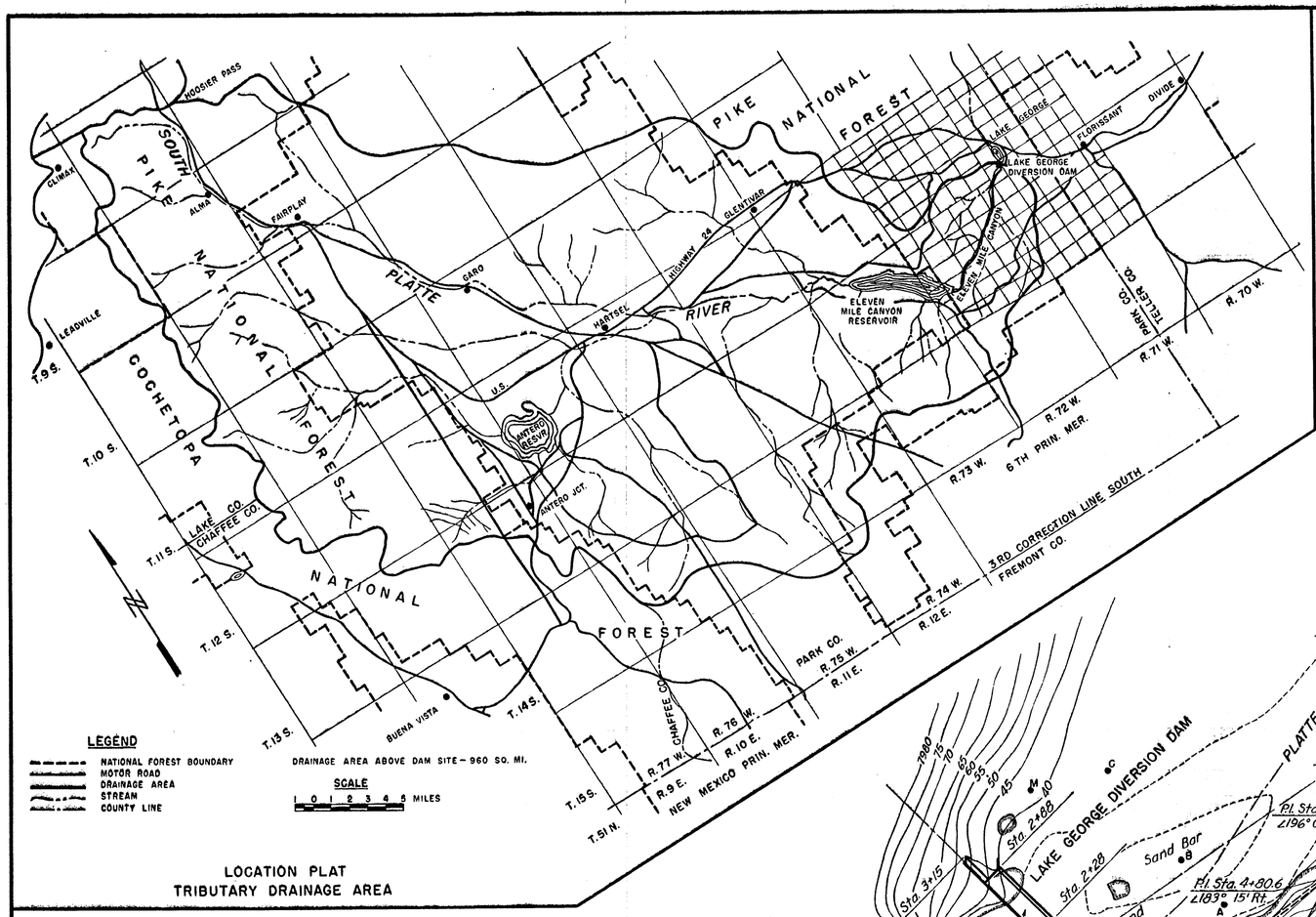
This set microfilmed 011-0625-00012

PLANS FOR
WATER SUPPLY DEVELOPMENT
COLORADO SPRINGS, COLORADO

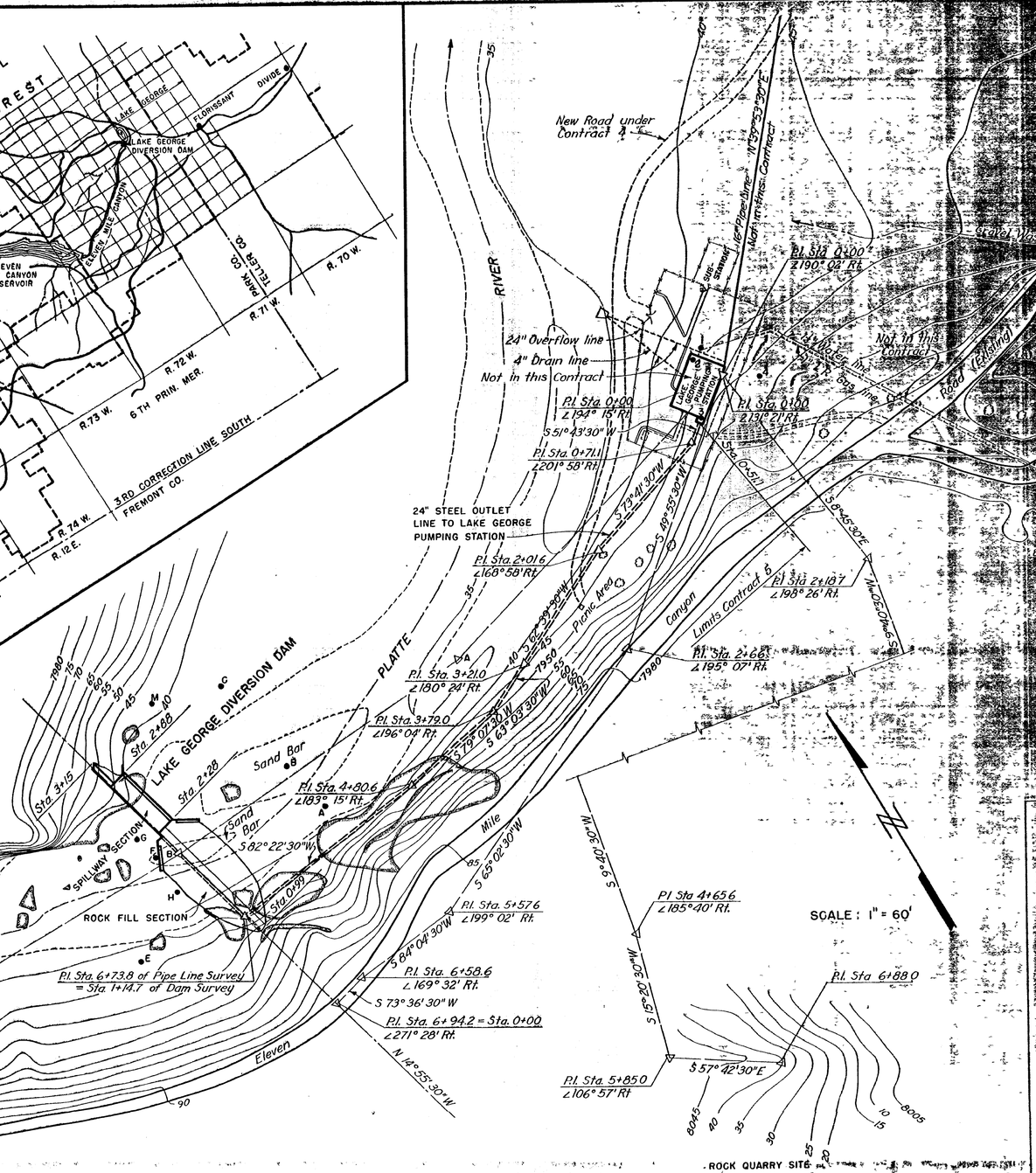
CONTRACT NO. 5

LAKE GEORGE DIVERSION DAM

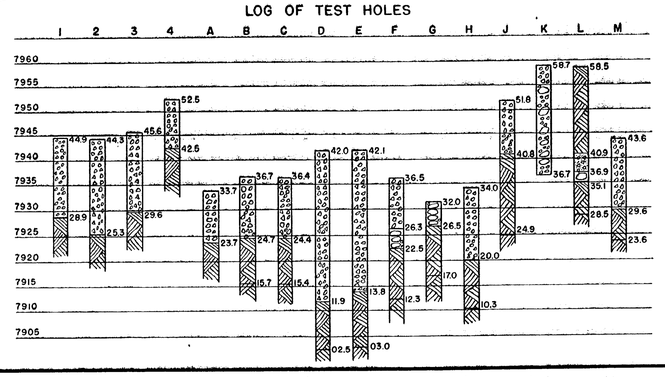
BLACK & VEATCH
CONSULTING ENGINEERS
KANSAS CITY, MO.
1952



LOCATION PLAT
TRIBUTARY DRAINAGE AREA



LOG OF TEST HOLES



CAPACITY TABLE OF RESERVOIR

GAGE HEIGHT	CUBIC FEET	ACRE FEET
0.00	750	0.2
1.00	4,850	0.11
2.00	14,550	0.33
3.00	30,300	0.70
4.00	51,150	1.17
5.00	76,350	1.75
6.00	106,950	2.46
7.00	144,950	3.33
8.00	189,400	4.35
9.00	238,750	5.48
10.00	292,900	6.72
11.00	352,350	8.09
12.00	417,750	9.59
13.00	487,050	11.18
13.75	544,800	12.51

I HEREBY CERTIFY THAT THESE PLANS FOR THE CONSTRUCTION OF THE LAKE GEORGE DIVERSION DAM WERE PREPARED UNDER MY DIRECT SUPERVISION FOR THE OWNERS THEREOF.

(REGISTERED ENGINEER)

SUBSCRIBED AND SWORN TO BEFORE ME THIS 2 DAY OF [illegible] 1952

(NOTARY PUBLIC)

MY COMMISSION EXPIRES ON THE 12 DAY OF January 1952

THESE PLANS FOR THE CONSTRUCTION OF THE LAKE GEORGE DIVERSION DAM ARE HEREBY APPROVED AND ACCEPTED BY THE CITY OF COLORADO SPRINGS, COLORADO (OWNER)

C. Harry Pfeiffer
MAYOR

APPROVED ON THE 30th DAY OF July 1952

M. C. Simmons
STATE ENGINEER

FILE NO. DEPUTY

LAKE GEORGE DIVERSION DAM

IRRIGATION DIVISION NO. 1 WATER DISTRICT NO. 23
PARK COUNTY

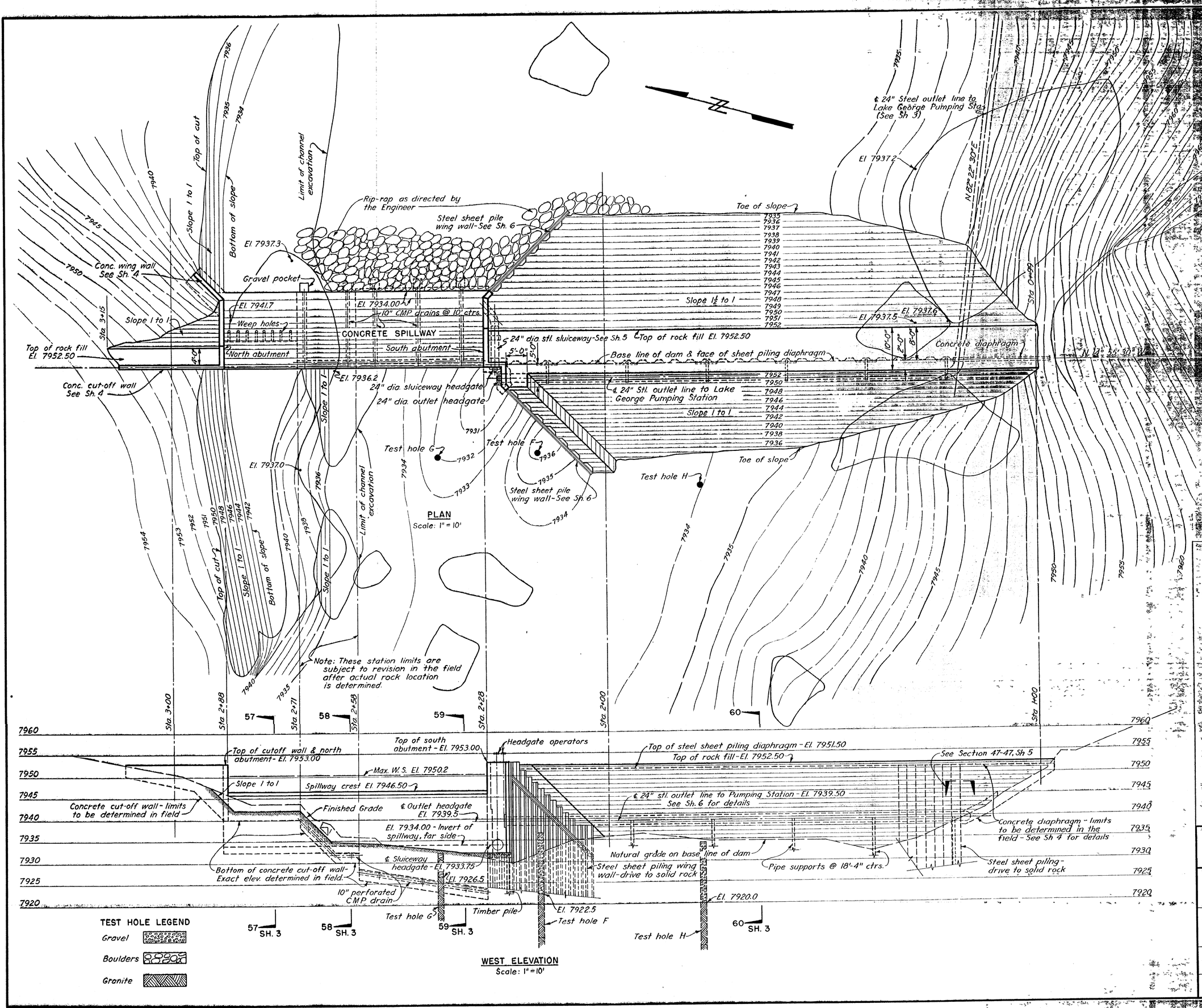
COLORADO SPRINGS, COLORADO WATER SUPPLY DEVELOPMENT

LOCATION PLAT & GENERAL LAYOUT

BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED DPP CHECKED JMW
DETAILED DW MMW APPROVED
TRACED RHP DATE 7-2-52

C-617



CAPACITY OF SPILLWAY

DEPTH IN FEET	CUBIC FEET PER SECOND
10	240
20	679
30	1247
37½	1700

I HEREBY CERTIFY THAT THESE PLANS FOR THE CONSTRUCTION OF THE LAKE GEORGE DIVERSION DAM WERE PREPARED UNDER MY DIRECT SUPERVISION FOR THE OWNERS THEREOF.

(SEAL)

(REGISTERED ENGINEER)

SUBSCRIBED AND SWORN TO BEFORE ME THIS 2 DAY OF July 1952

(SEAL)

(NOTARY PUBLIC)

MY COMMISSION EXPIRES ON THE 12 DAY OF January 1953

THESE PLANS FOR THE CONSTRUCTION OF THE LAKE GEORGE DIVERSION DAM ARE HEREBY APPROVED AND ACCEPTED BY THE CITY OF COLORADO SPRINGS, COLORADO (OWNER)

MAYOR

APPROVED ON THE 30th DAY OF July 1952

STATE ENGINEER

DEPUTY

FILE NO

LAKE GEORGE DIVERSION DAM

IRRIGATION DIVISION NO. 1 - WATER DISTRICT NO. 23
PARK COUNTY

COLORADO SPRINGS, COLORADO

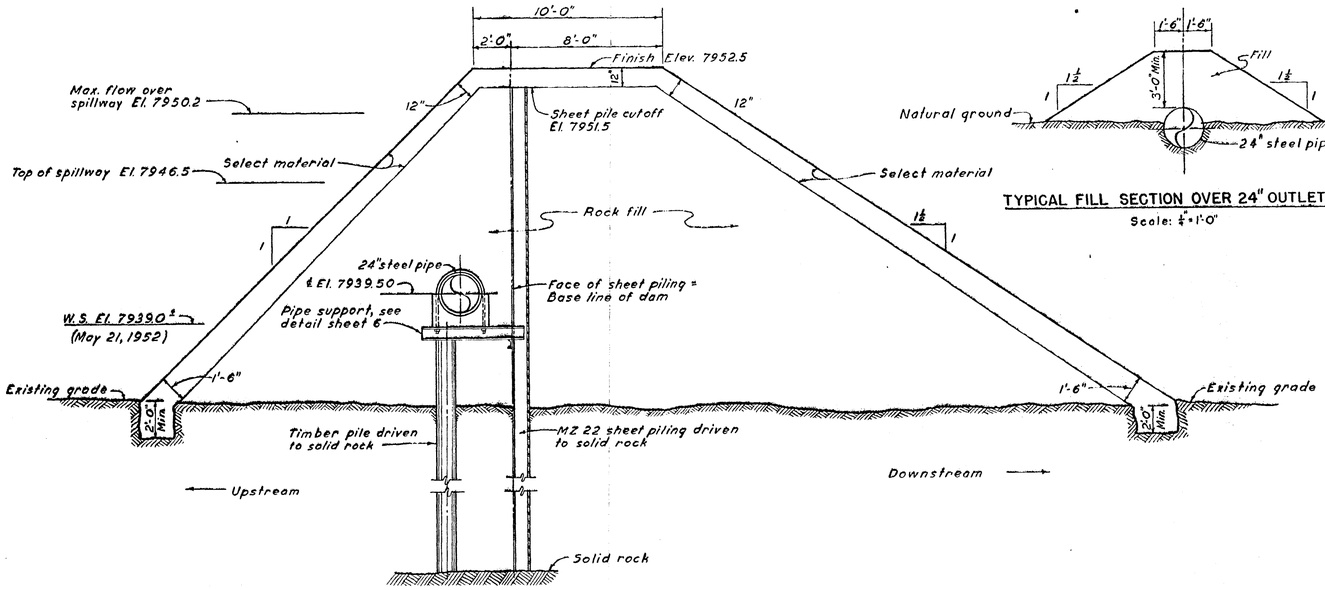
WATER SUPPLY DEVELOPMENT

PLAN & ELEVATION

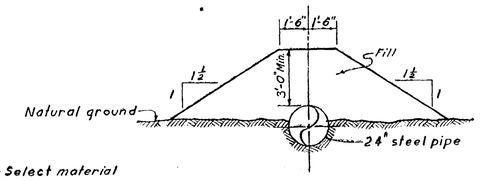
BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED DPP
DETAILED DPP
TRACED RHP
CHECKED J.M.W.
APPROVED N.T. Veatch
DATE 7-22-52

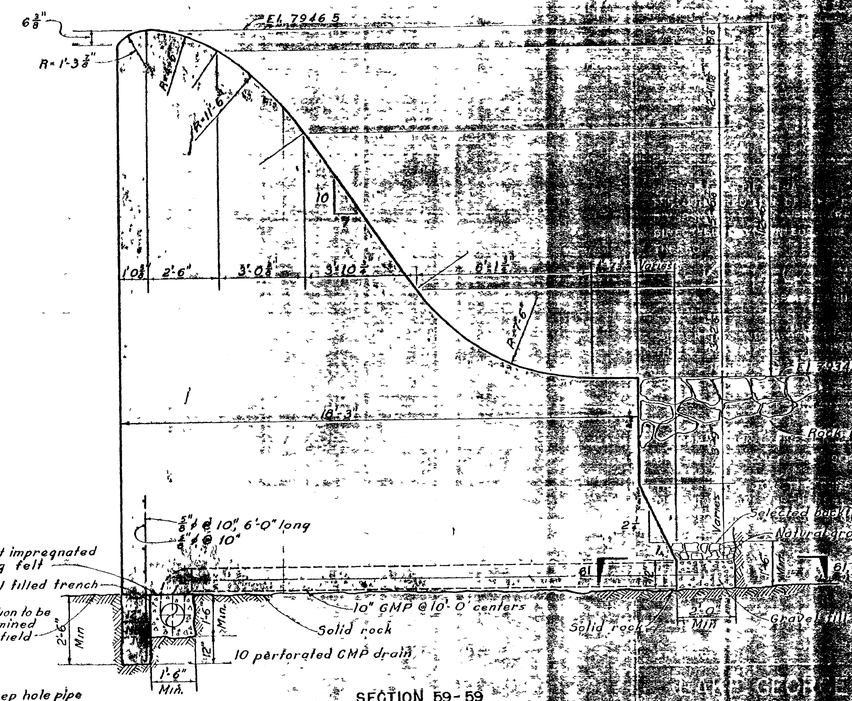
C-617



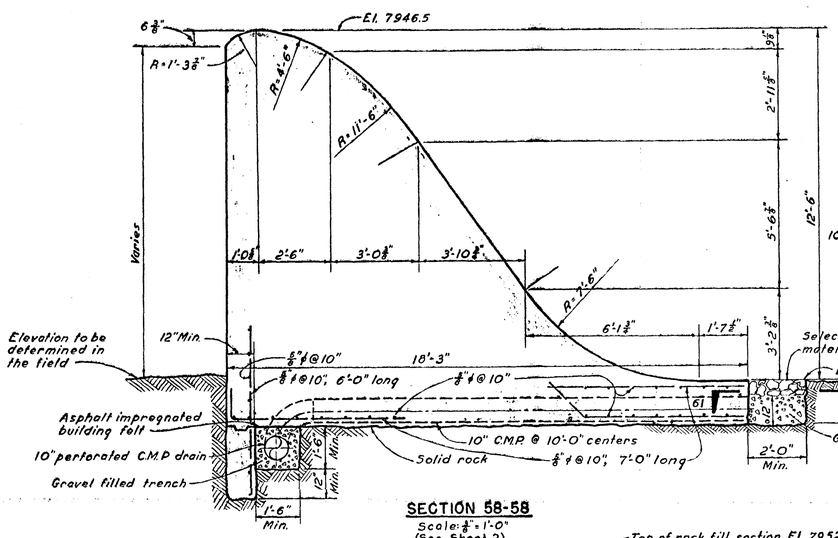
SECTION 60-60
Scale: 1/4" = 1'-0"
(See Sheet 2)



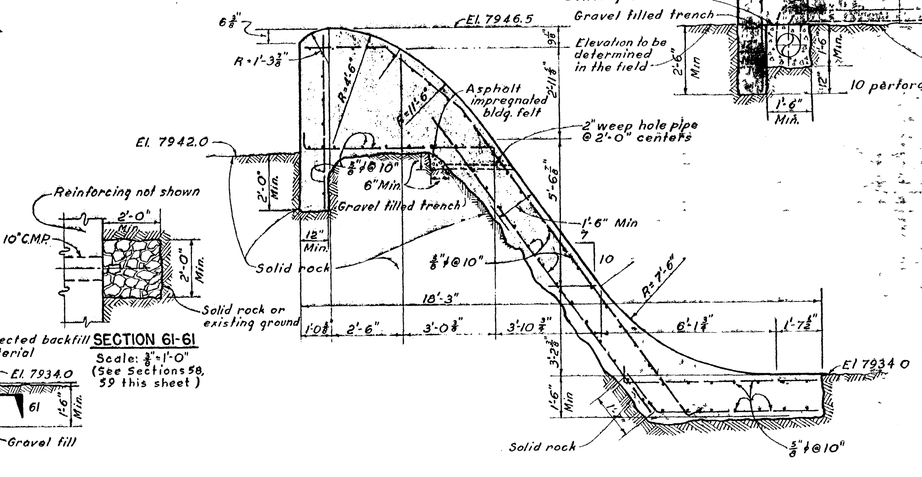
TYPICAL FILL SECTION OVER 24" OUTLET LINE
Scale: 1/4" = 1'-0"



SECTION 59-59
Scale: 1/4" = 1'-0"
(See Sheet 2)

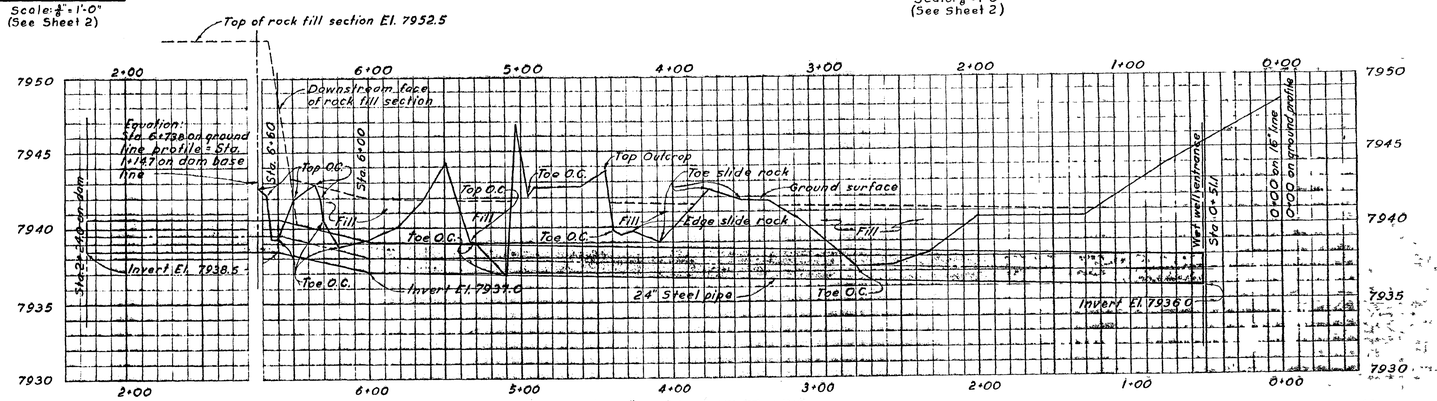


SECTION 58-58
Scale: 1/4" = 1'-0"
(See Sheet 2)



SECTION 57-57
Scale: 1/4" = 1'-0"
(See Sheet 2)

SECTION 61-61
Scale: 1/8" = 1'-0"
(See Sections 58, 59 this sheet)



PROFILE OF 24" STEEL OUTLET LINE
Scales: 1" = 5' Vert. 1" = 50' Horiz.

I HEREBY CERTIFY THAT THESE PLANS FOR THE CONSTRUCTION OF THE LAKE GEORGE DIVERSION DAM WERE PREPARED UNDER MY DIRECT SUPERVISION FOR THE OWNERS THEREOF.

(REGISTERED ENGINEER)

SUBSCRIBED AND SWORN TO BEFORE ME THIS 2 DAY OF 1952

(NOTARY PUBLIC)

MY COMMISSION EXPIRES ON THE 22 DAY OF 1952

THESE PLANS FOR THE CONSTRUCTION OF THE LAKE GEORGE DIVERSION DAM ARE HEREBY APPROVED AND ACCEPTED BY THE CITY OF COLORADO SPRINGS, COLORADO (OWNER).

MAYOR

APPROVED ON THE 30th DAY OF July 1952

STATE ENGINEER

DEPUTY

FILE NO

LAKE GEORGE DIVERSION DAM

IRRIGATION DIVISION NO. 1, WATER DISTRICT NO. 23
PARK COUNTY

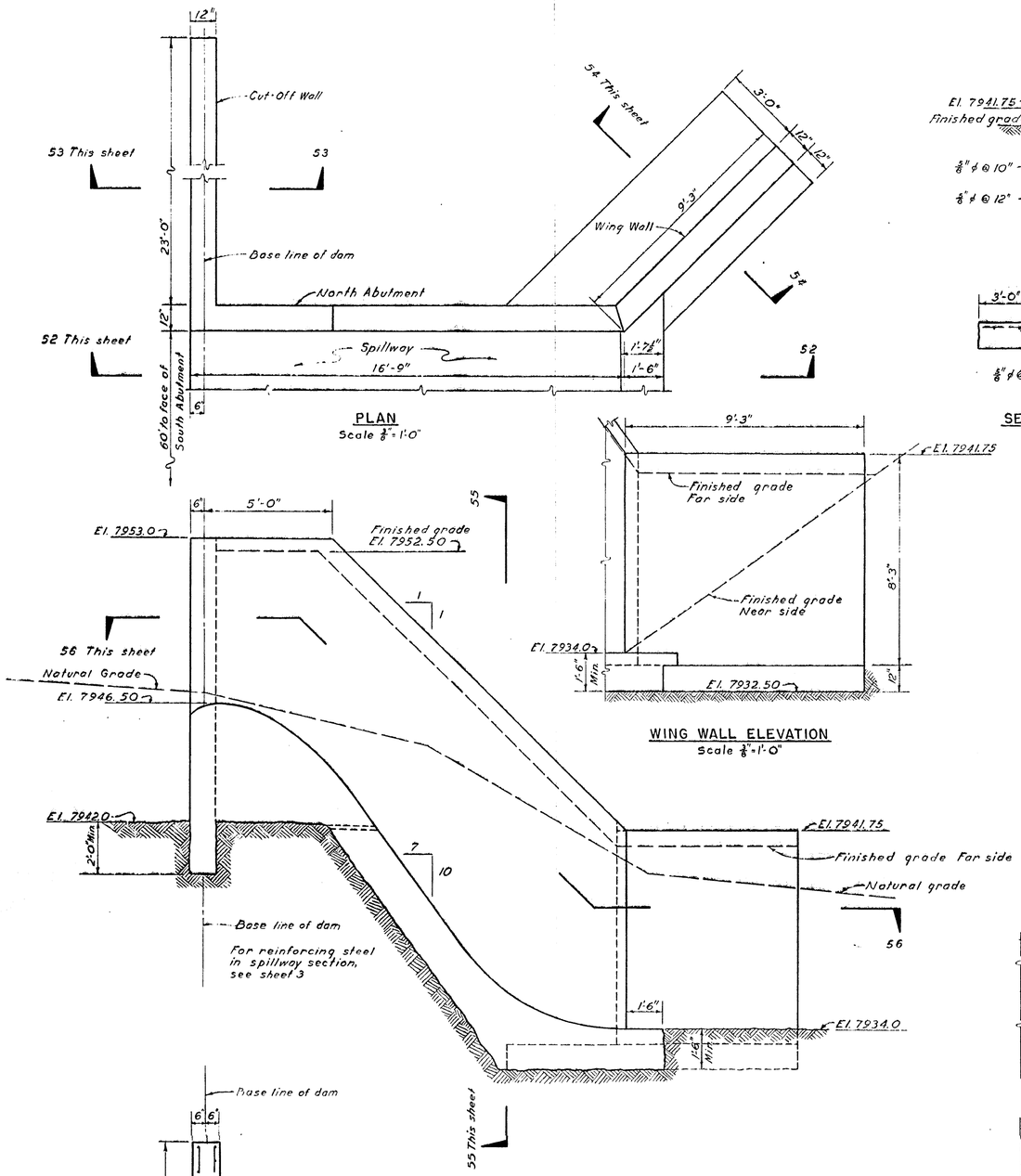
COLORADO SPRINGS, COLORADO WATER SUPPLY DEVELOPMENT

TYPICAL DAM SECTIONS

BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED DPR — CHECKED JMWA
DETAILED HLW — APPROVED
TRACED RUS — DATE

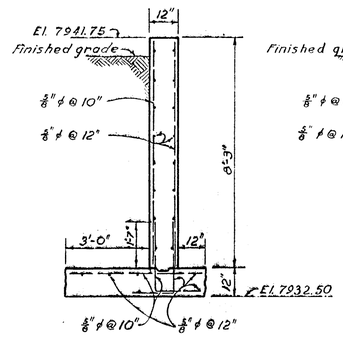
C-617



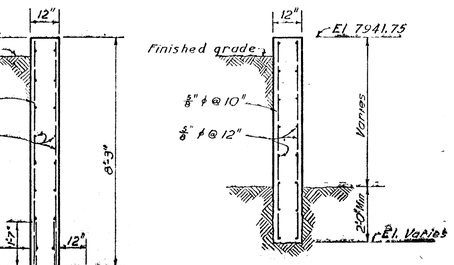
PLAN
Scale $\frac{3}{8}$"=1'-0"

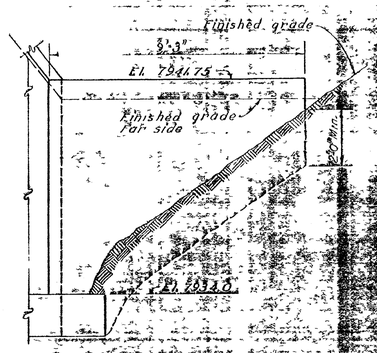
SECTION 52-52
Scale $\frac{3}{8}$"=1'-0"

WING WALL ELEVATION
Scale $\frac{3}{8}$"=1'-0"

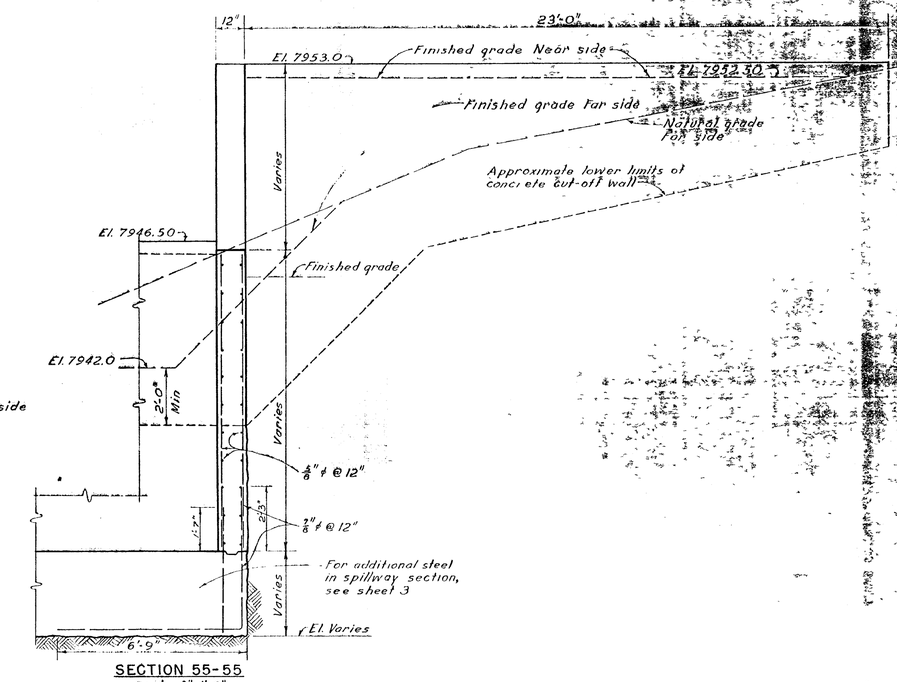


SECTION 54-54
Scale $\frac{3}{8}$"=1'-0"

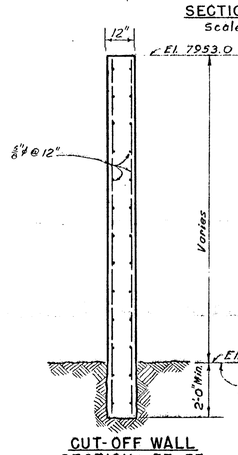




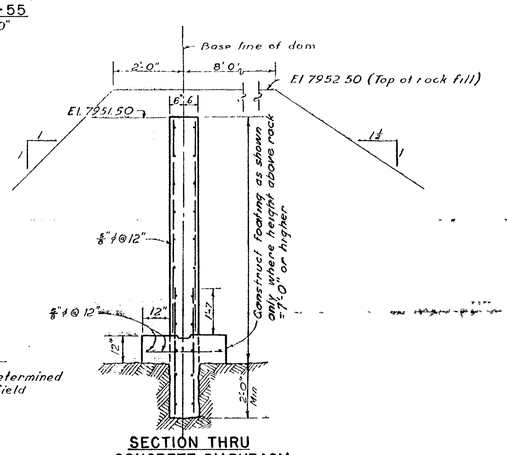
ALTERNATE WING WALL FOR ROCK
Scale $\frac{3}{8}$"=1'-0"



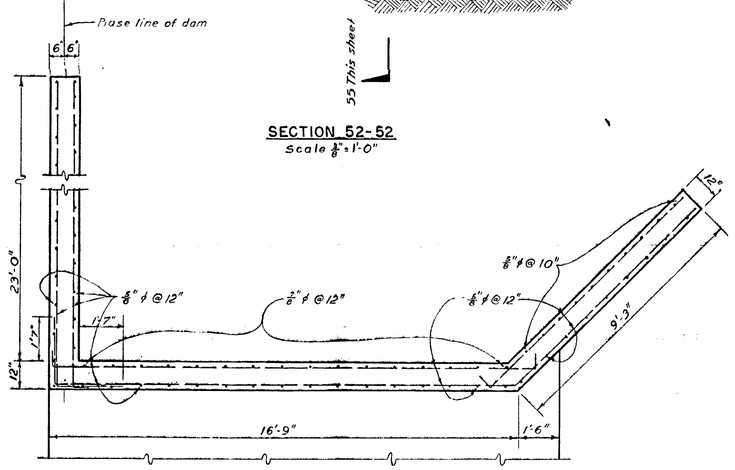
SECTION 55-55
Scale $\frac{3}{8}$"=1'-0"



CUT-OFF WALL
SECTION 53-53
Scale $\frac{3}{8}$"=1'-0"



SECTION THRU
CONCRETE DIAPHRAGM
Scale $\frac{3}{8}$"=1'-0"



SECTION 56-56
Scale $\frac{3}{8}$"=1'-0"

LAKE GEORGE DIVERSION DAM
EXCAVATION & CONCRETE SUPPLEMENT

I HEREBY CERTIFY THAT THESE PLANS FOR THE CONSTRUCTION OF THE LAKE GEORGE DIVERSION DAM WERE PREPARED UNDER MY DIRECT SUPERVISION FOR THE OWNERS THEREOF.

(REGISTERED ENGINEER)

SUBSCRIBED AND SWORN TO BEFORE ME THIS 2 DAY OF 1952

(NOTARY PUBLIC)

MY COMMISSION EXPIRES ON THE 12 DAY OF 1956

THESE PLANS FOR THE CONSTRUCTION OF THE LAKE GEORGE DIVERSION DAM ARE HEREBY APPROVED AND ACCEPTED BY THE CITY OF COLORADO SPRINGS, COLORADO (OWNER)

MAYOR

APPROVED ON THE 30th DAY OF July 1952

STATE ENGINEER

FILE NO. DEPUTY

LAKE GEORGE DIVERSION DAM
IRRIGATION DIVISION NO. 1 WATER DISTRICT NO. 23
PARK COUNTY

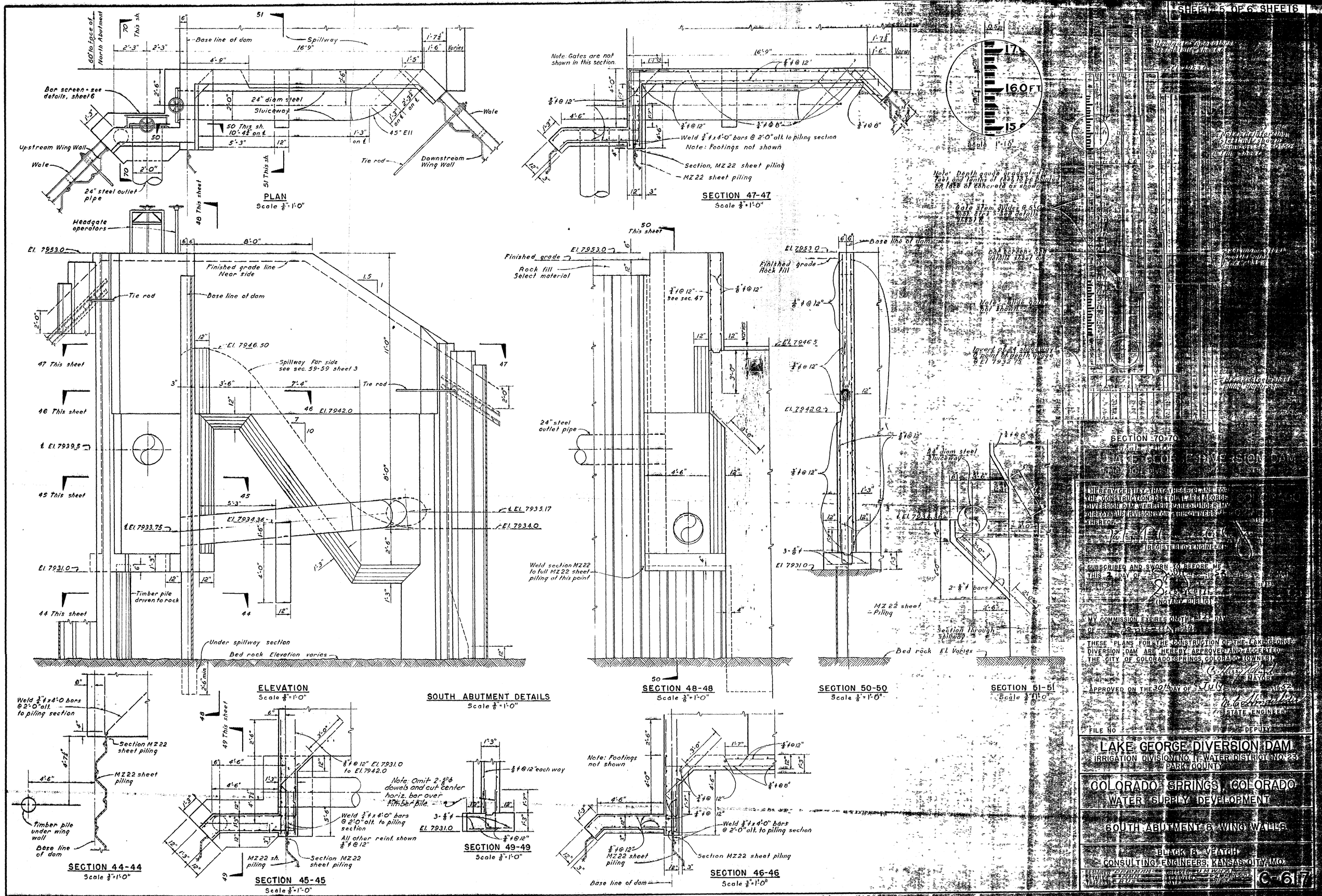
COLORADO SPRINGS, COLORADO
WATER SUPPLY DEVELOPMENT

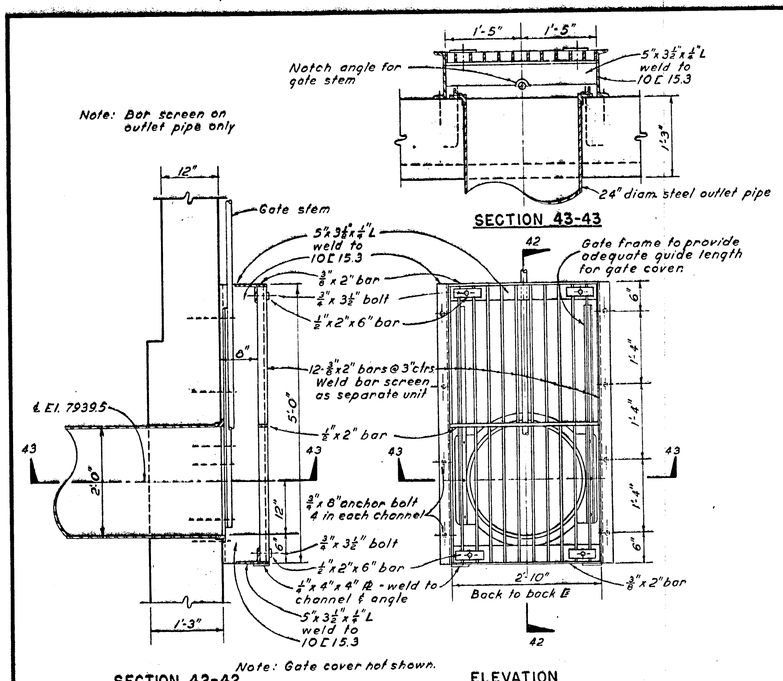
NORTH ABUTMENT & WING WALLS

BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED DPP
DETAILED MMM
TRACED
CHECKED JMW
APPROVED
DATE

C-6 7


PLAN
Scale 3/8" = 1'-0"
SECTION 47-47
Scale 3/8" = 1'-0"
ELEVATION
Scale 3/8" = 1'-0"
SOUTH ABUTMENT DETAILS
Scale 3/8" = 1'-0"
SECTION 44-44
Scale 3/8" = 1'-0"
SECTION 45-45
Scale 3/8" = 1'-0"
SECTION 49-49
Scale 3/8" = 1'-0"
SECTION 48-48
Scale 3/8" = 1'-0"
SECTION 46-46
Scale 3/8" = 1'-0"
SECTION 50-50
Scale 3/8" = 1'-0"
SECTION 51-51
Scale 3/8" = 1'-0"
SECTION 70-70
Scale 3/8" = 1'-0"
Base line of dam
Spillway
Bar screen - see details, sheet 6
24" diam steel Sluiceway
45° Ell
Wale
Upstream Wing Wall
Downstream Wing Wall
24" steel outlet pipe
Tie rod
Headgate operators
Finished grade line Near side
Spillway far side see sec. 59-59 sheet 3
Timber pile driven to rock
Under spillway section
Bed rock Elevation varies
Section MZ22 sheet piling
MZ22 sheet piling
Timber pile under wing wall
Weld section MZ22 to full MZ22 sheet piling at this point
Note: Gates are not shown in this section.
Note: Footings not shown
Section through spillway
Bed rock El. Varies
Note: Omit 2-5/16" dowels and cut center horiz. bar over timber pile.
All other reinf. shown 3/8"ϕ @ 12"
Weld section MZ22 to full MZ22 sheet piling at this point
Section MZ22 sheet piling
Base line of dam
LAKE GEORGE DIVERSION DAM
IRRIGATION DIVISION NO. 1, WATER DISTRICT NO. 23
PARK COUNTY
COLORADO SPRINGS, COLORADO
WATER SUPPLY DEVELOPMENT
SOUTH ABUTMENT & WING WALLS
BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.
C-617

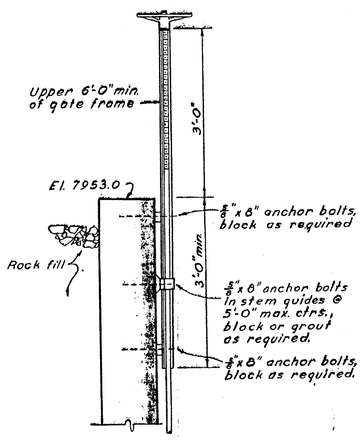


SECTION 43-43

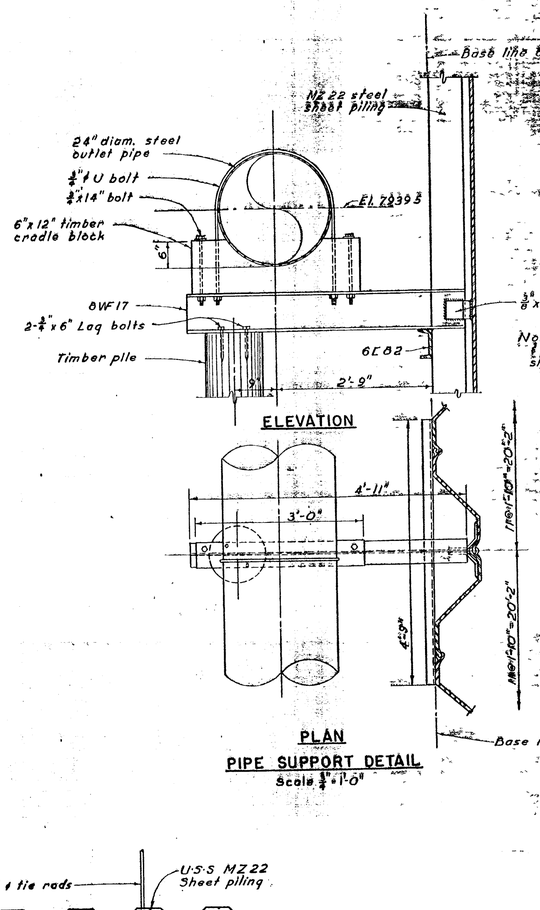
SECTION 42-42

ELEVATION

BAR SCREEN DETAILS
Scale: ¾" = 1'-0"



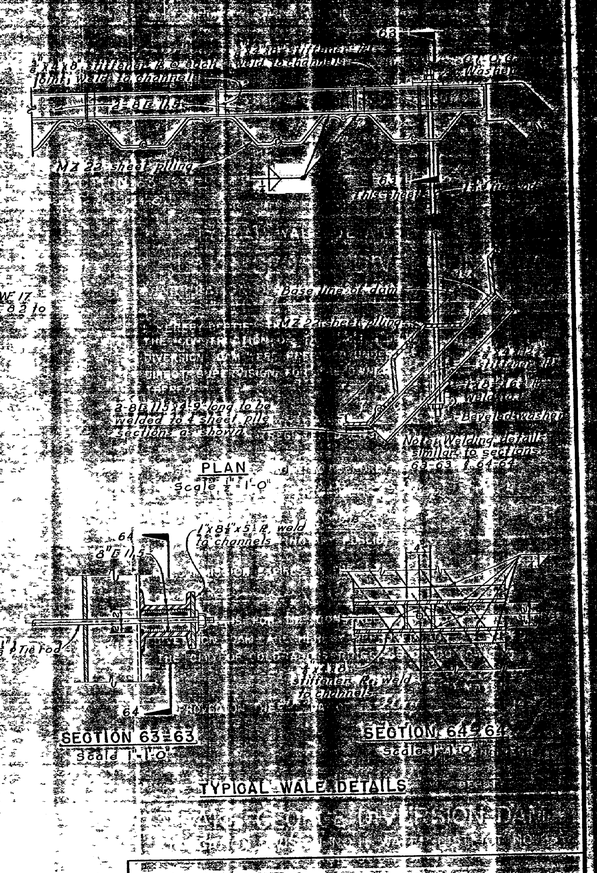
GATE LIFT DETAIL
Scale ¾" = 1'-0"



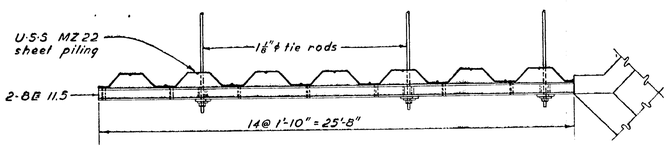
ELEVATION

PLAN

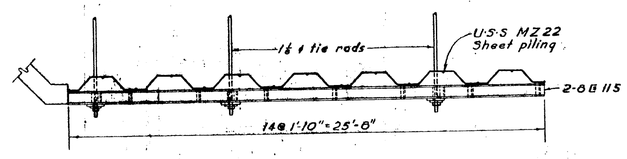
PIPE SUPPORT DETAIL
Scale ¾" = 1'-0"



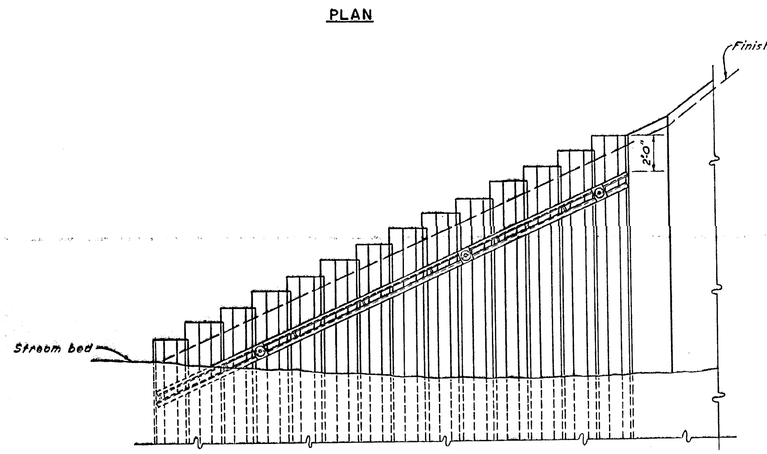
TYPICAL WALE DETAILS



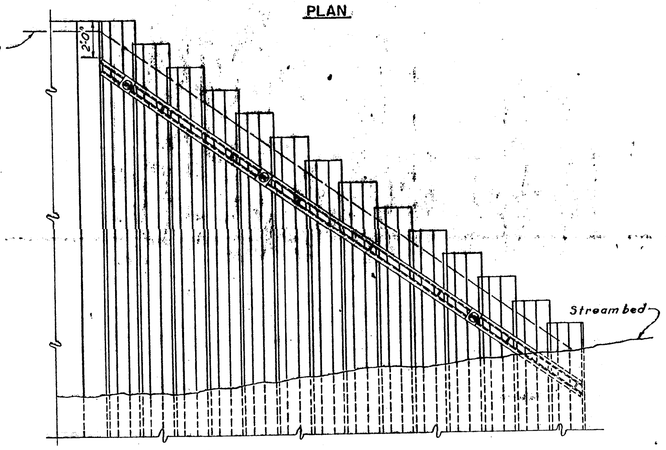
PLAN



PLAN



DOWNSTREAM



UPSTREAM

WING WALL ELEVATIONS
Scale ¼" = 1'-0"

I HEREBY CERTIFY THAT THESE PLANS FOR THE CONSTRUCTION OF THE LAKE GEORGE DIVERSION DAM WERE PREPARED UNDER MY DIRECT SUPERVISION FOR THE OWNERS THEREOF.

(SEAL)

(REGISTERED ENGINEER)

SUBSCRIBED AND SWORN TO BEFORE ME THIS 2 DAY OF July, 1952

(SEAL)

(NOTARY PUBLIC)

MY COMMISSION EXPIRES ON THE 12 DAY OF January, 1953

THESE PLANS FOR THE CONSTRUCTION OF THE LAKE GEORGE DIVERSION DAM ARE HEREBY APPROVED AND ACCEPTED BY THE CITY OF COLORADO SPRINGS, COLORADO (OWNER)

MAYOR

APPROVED ON THE 30th DAY OF July, 1952

STATE ENGINEER

DEPUTY

FILE NO

LAKE GEORGE DIVERSION DAM

IRRIGATION DIVISION NO. 1, WATER DISTRICT NO. 25
PARK COUNTY

COLORADO SPRINGS, COLORADO
WATER SUPPLY DEVELOPMENT

MISCELLANEOUS DETAILS

BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

DESIGNED	DPP	CHECKED	JMW
DETAILED	HHH	APPROVED	BLK
TRACED	BJS	DATE	7-2-52

C-617

ATTACHMENT 3

FISHING PIER AS-BUILTS (10 SHEETS)

FOR INFORMATION ONLY, SITE CONDITIONS MAY VARY

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE – REGION 2

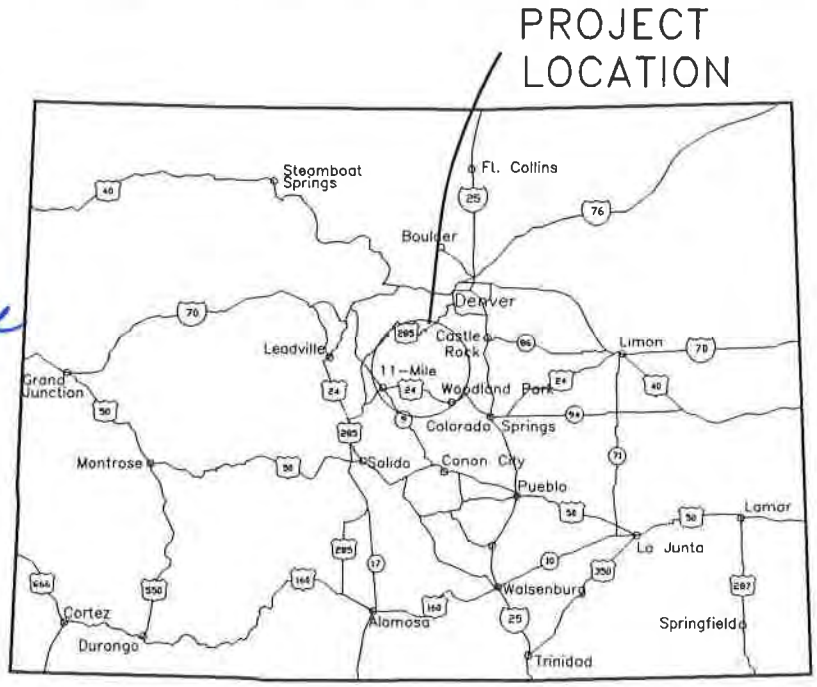
PIKE & SAN ISABEL NATIONAL FORESTS
CIMARRON & COMANCHE NATIONAL GRASSLANDS

DRAWINGS FOR PROPOSED

ELEVENMILE ACCESS TRAIL AND FISHING DOCK

NAME

total sq yardage of fill.



KEY MAP OF COLORADO SHOWING LOCATION OF PROJECT

PREPARED BY:

CIVIL ENGINEER DATE

FOREST ENGINEER DATE

DISTRICT RANGER DATE

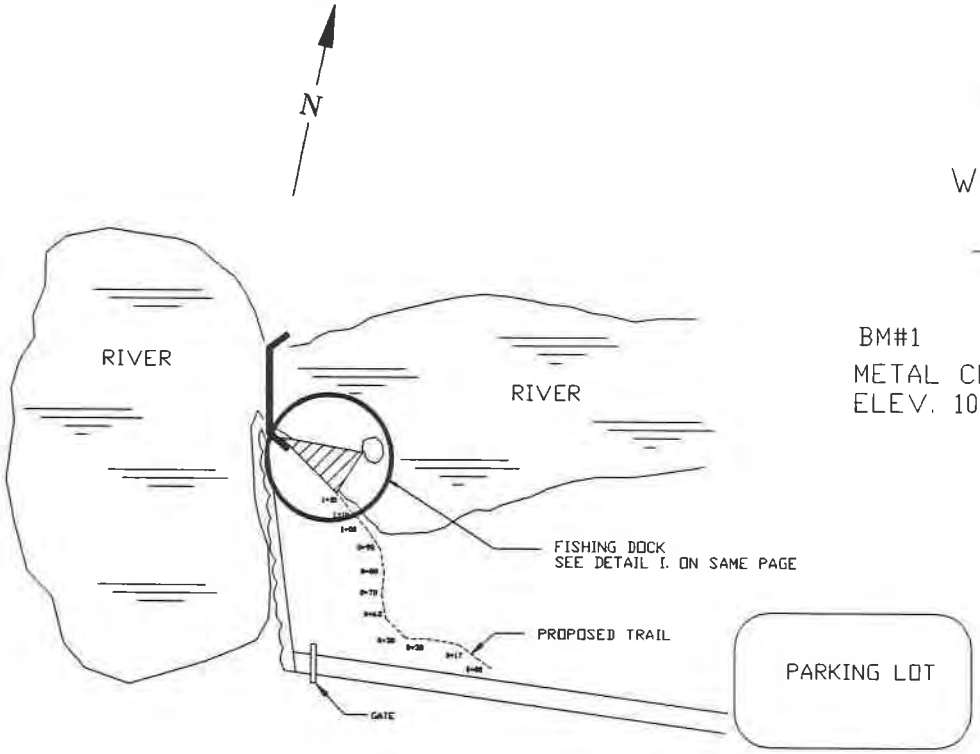
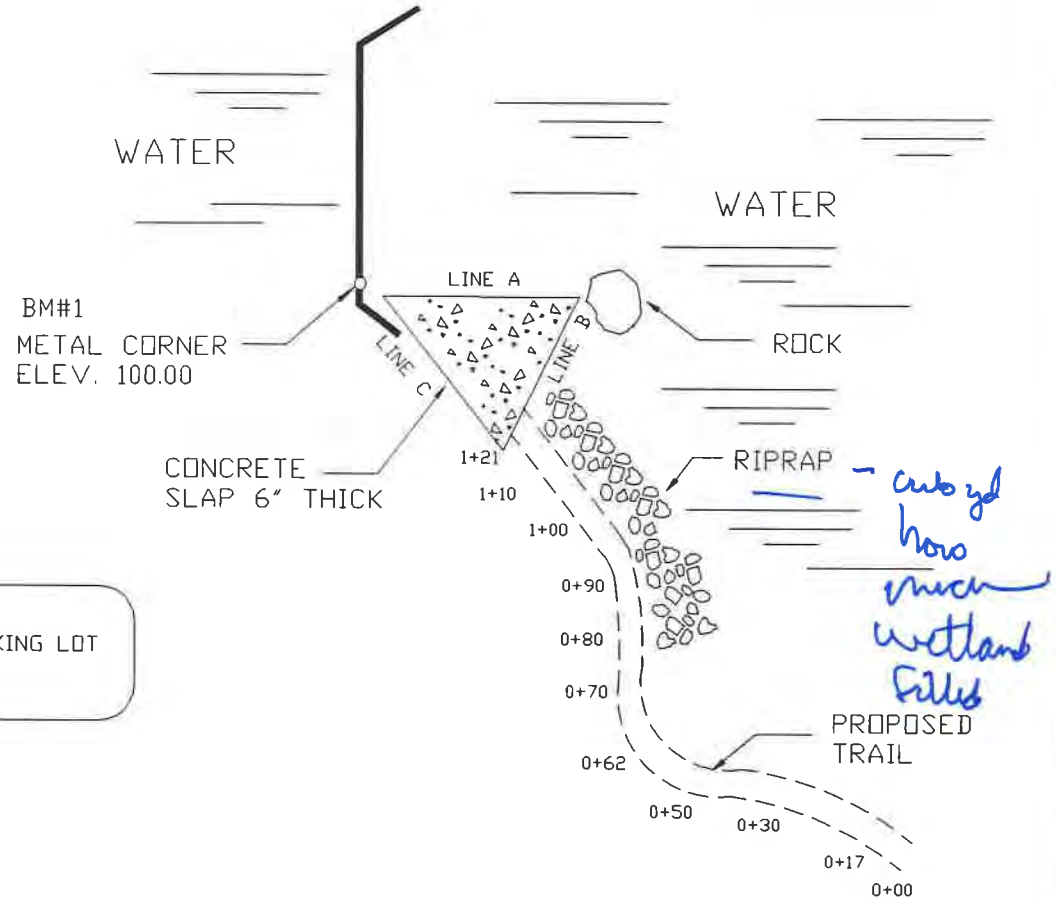


FIGURE I. PLAN VIEW OF ELEVEN MILE FISHING DOCK SITE



cub yd how much wetland fills

DETAIL I. PLAN VIEW OF PROPOSED TRAIL & CONCRETE FISHING DOCK

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Drawn	M. GURULE
Design	M. GURULE
Checked	
Reviewed	

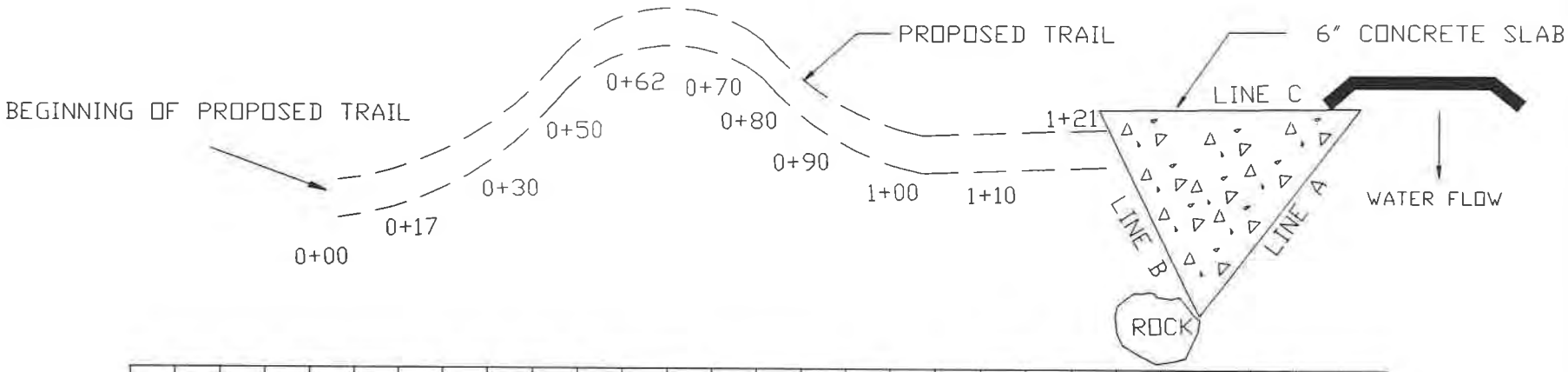
Forest: PIKE NATIONAL FOREST

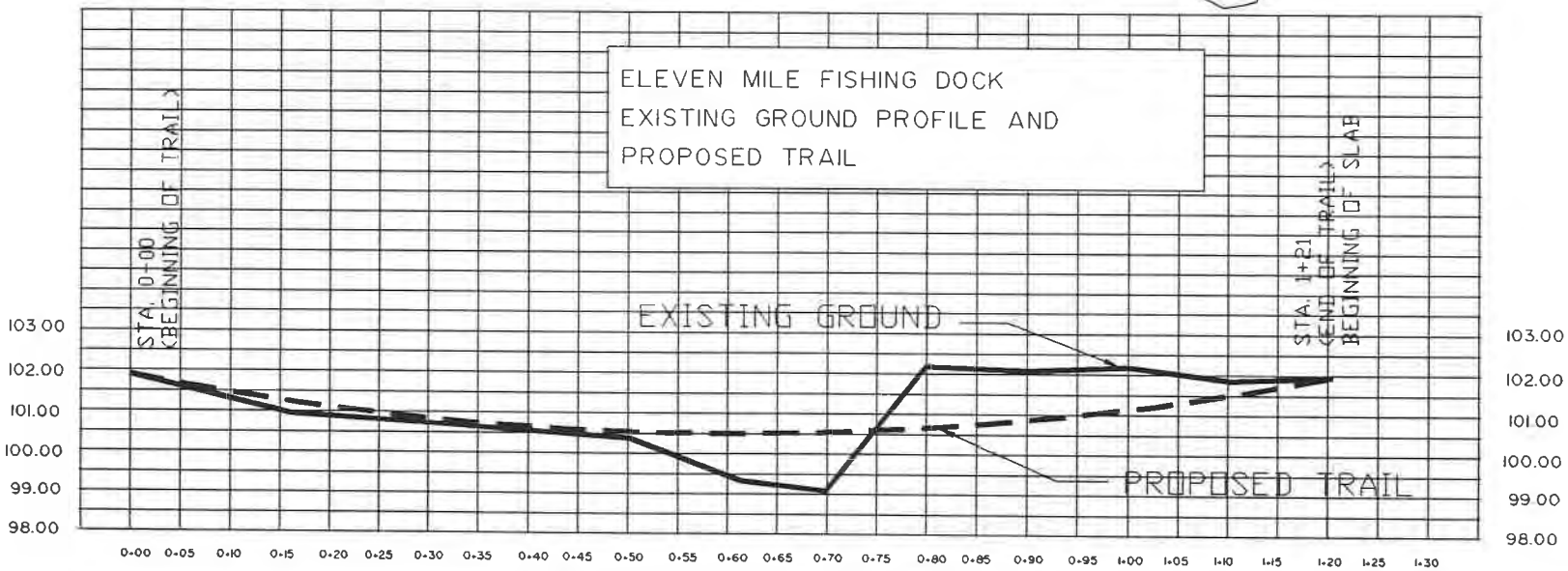
Project Name: ELEVEN MILE FISHING DOCK

Sheet Title: D-1 PLAN VIEW OF PROJECT

Scale: NO SCALE

Sheet 2 of 10



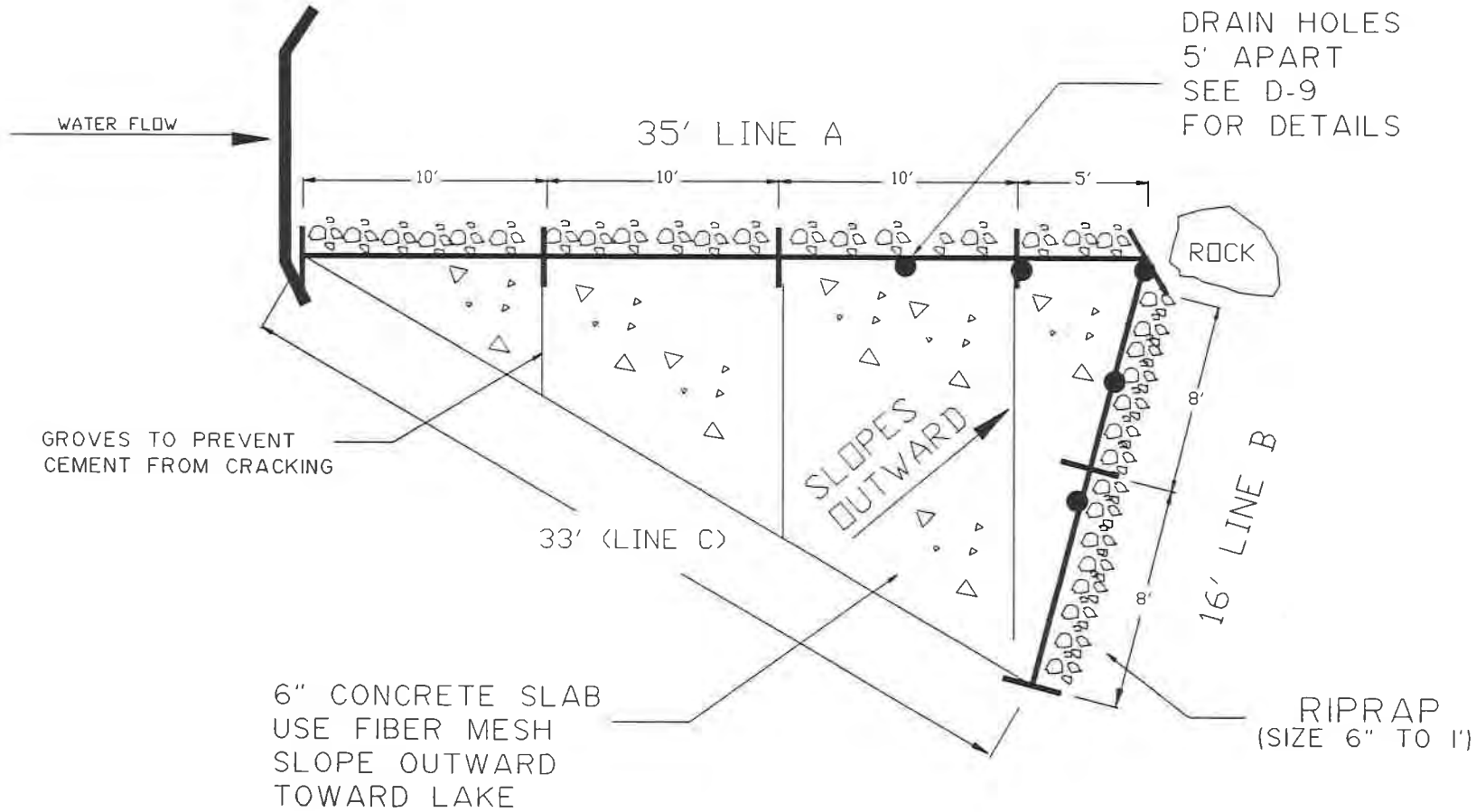


U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Drawn: K. GURULE
Design: K. GURULE
Checked:
Reviewed:

Forest: PIKE NATIONAL FOREST
Project Name: ELEVEN MILE FISHING DOCK

Sheet Title: D-2
PLAN/PROFILE/TRAIL
Scale: NO SCALE
Sheet 3 of 10



PLAN VIEW OF SLAB

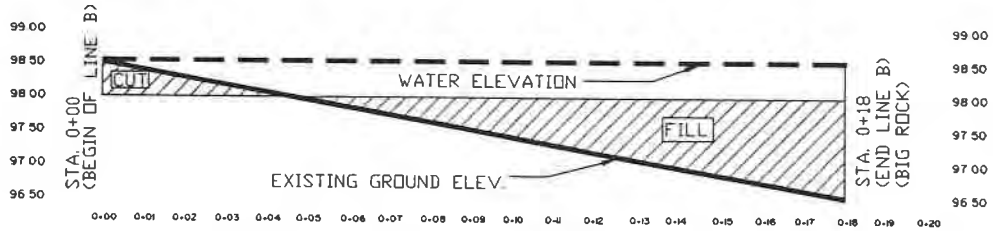
(NOT TO SCALE)

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Drawn: M. GURULE
Design: M. GURULE
Checked:
Reviewed:

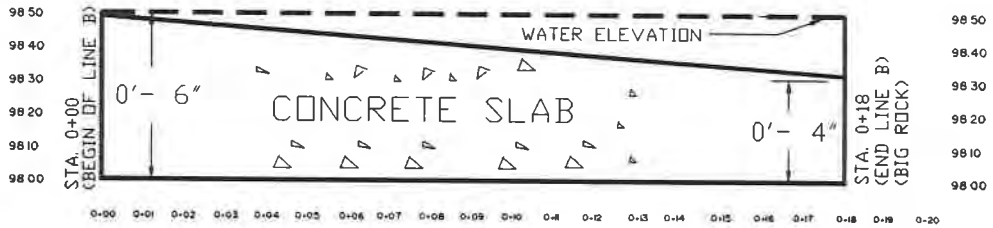
Forest: PIKE NATIONAL FOREST
Project Name: ELEVEN MILE FISHING DOCK

Sheet Title: D-4 PLAN OF SLAB
Scale: NO SCALE
Sheet 5 of 10



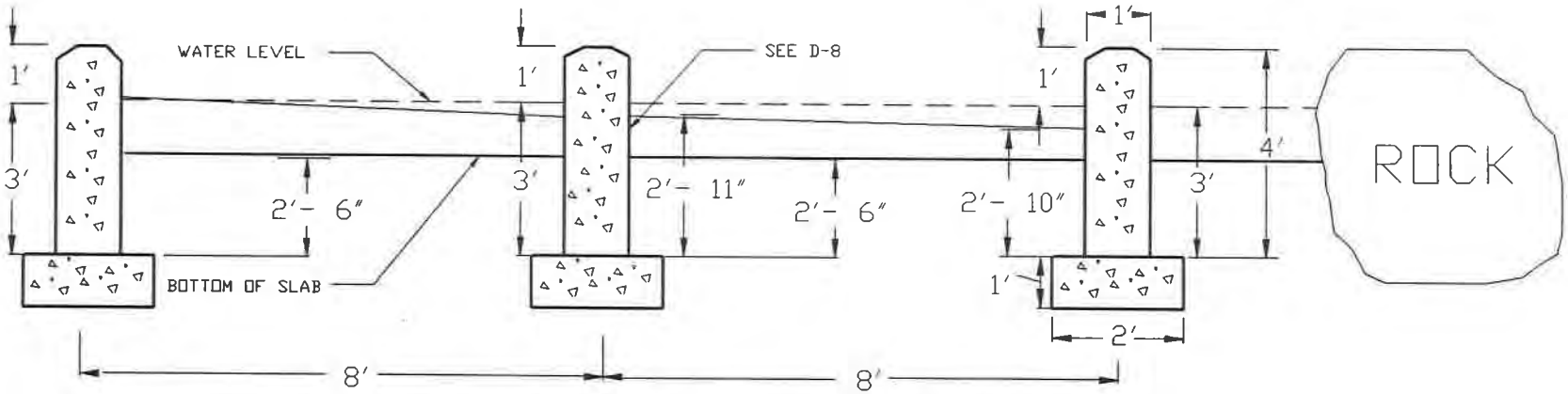
PROFILE OF LINE B

(DIFFERENT VERTICLE SCALE THAN PROFILE OF SLAB)



PROFILE OF CONCRETE

(DIFFERENT VERTICLE SCALE THAN PROFILE LINE B)



PROFILE OF FOOTERS FOR LINE B

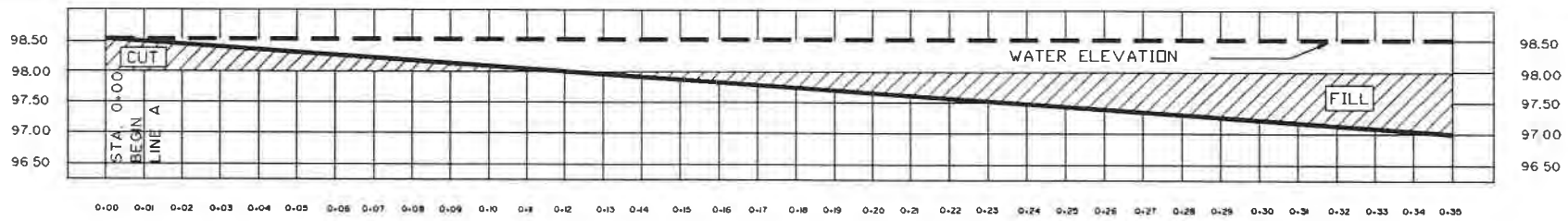
(NOT TO SCALE)

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Drawn M. GURULE
Design M. GURULE
Checked
Reviewed

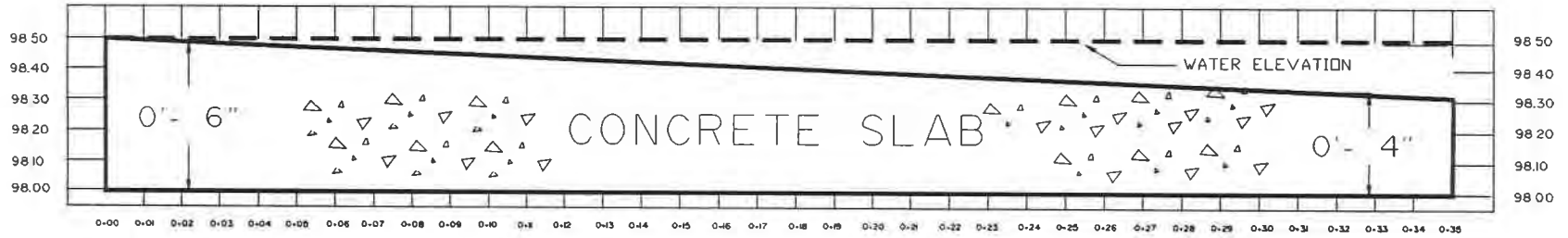
Forest: PIKE NATIONAL FOREST
Project Name: ELEVEN MILE FISHING DOCK

Sheet Title: D-5 PLAN/PROFILE/FOOTERS/LINE B
Scale: NO SCALE
Sheet 6 of 10



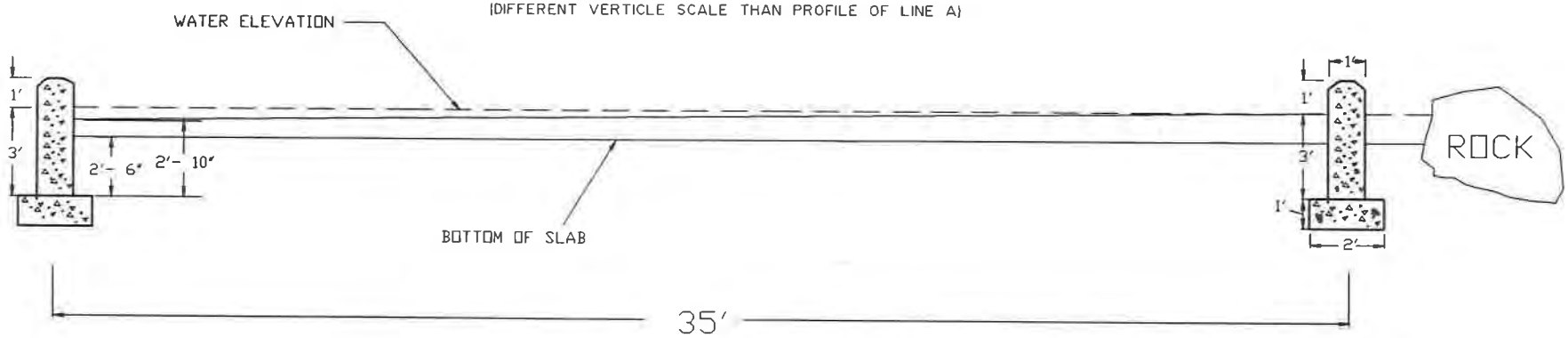
PROFILE OF LINE A

(DIFFERENT VERTICLE SCALE THAN PROFILE OF SLAB)



PROFILE OF LINE A

(DIFFERENT VERTICLE SCALE THAN PROFILE OF LINE A)



FOOTERS FOR LINE A

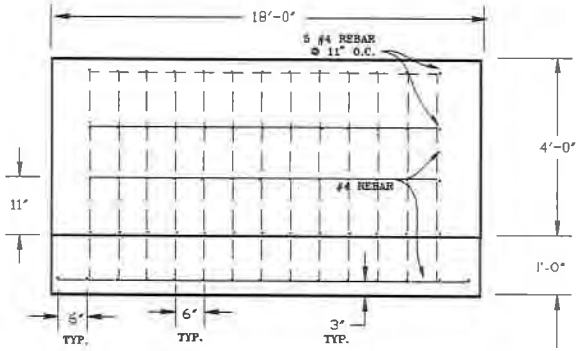
(NOT TO SCALE)

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

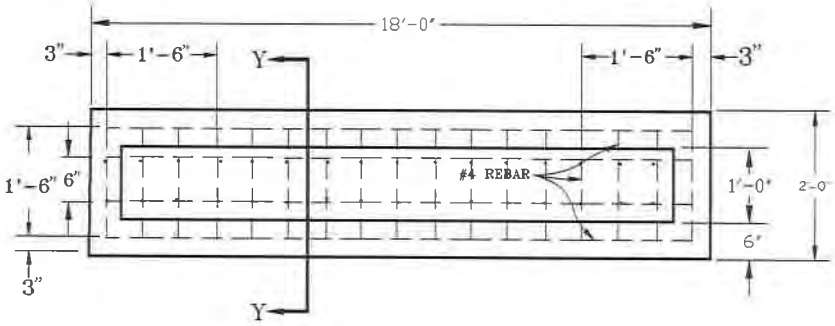
Drawn: H. GURULE
Design: H. GURULE
Checked:
Reviewed:

Forest: PIKE NATIONAL FOREST
Project Name: ELEVEN MILE FISHING DOCK

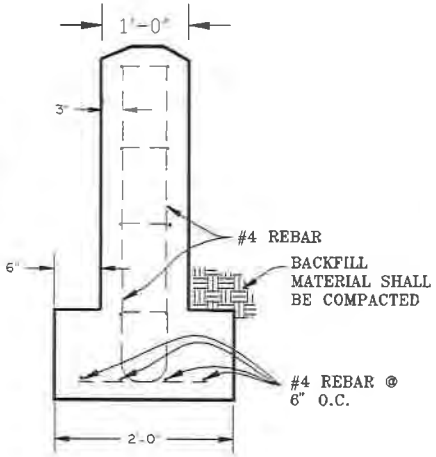
Sheet Title: D-6 PROFILE/FOOTERS/LINE A
Scale: NO SCALE
Sheet 7 of 10



FOOTING/PIER PROFILE FOR LINE B



FOOTING/PIER PLAN FOR LINE B



SECTION Y-Y

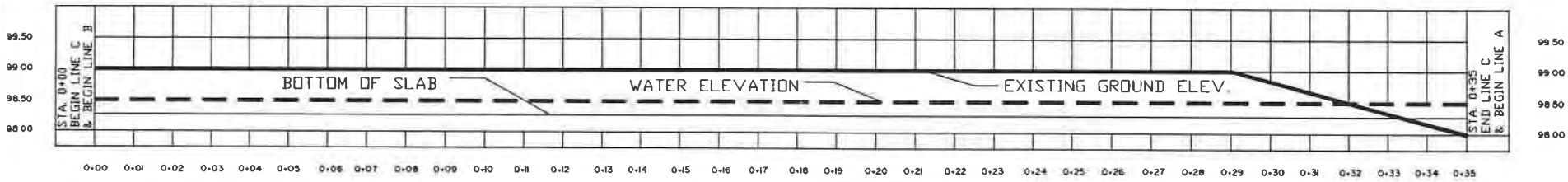
FISHING DOCK FOOTING/PIER PLAN AND PROFILE

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Drawn: M. GURULE
Design: M. GURULE
Checked:
Reviewed:

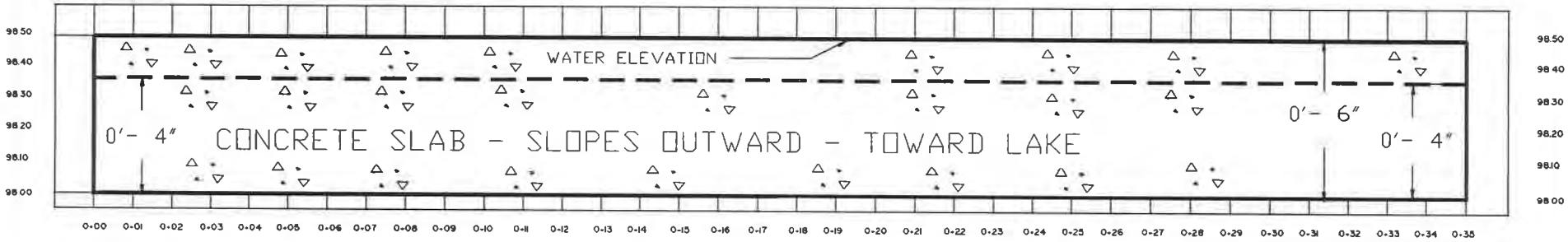
Forest: PIKE NATIONAL FOREST
Project Name: ELEVEN MILE FISHING DOCK

Sheet Title: D-8 FOOTING/PIER PLAN/PROFILE
Scale: NO SCALE
Sheet 9 of 10



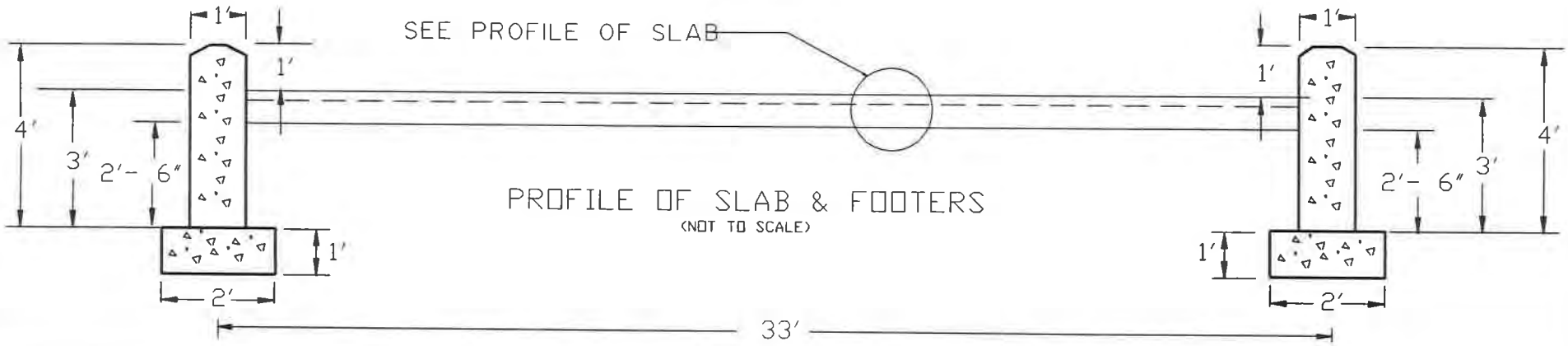
PROFILE OF LINE C

(DIFFERENT VERTICLE SCALE THAN PROFILE OF SLAB)



PROFILE OF SLAB

(DIFFERENT VERTICLE SCALE THAN PROFILE OF LINE C)



PROFILE OF SLAB & FOOTERS

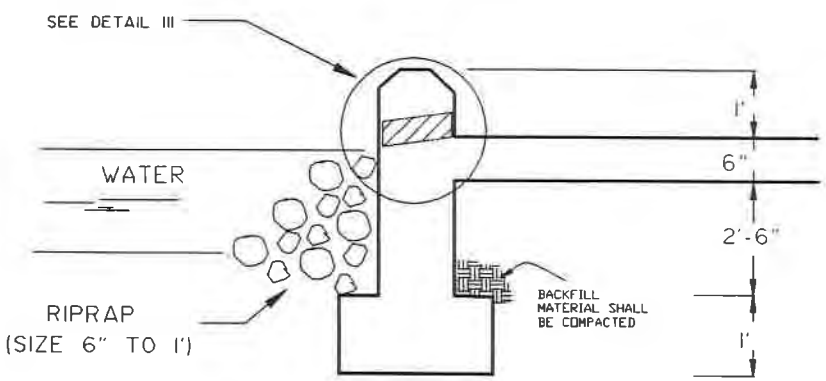
(NOT TO SCALE)

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

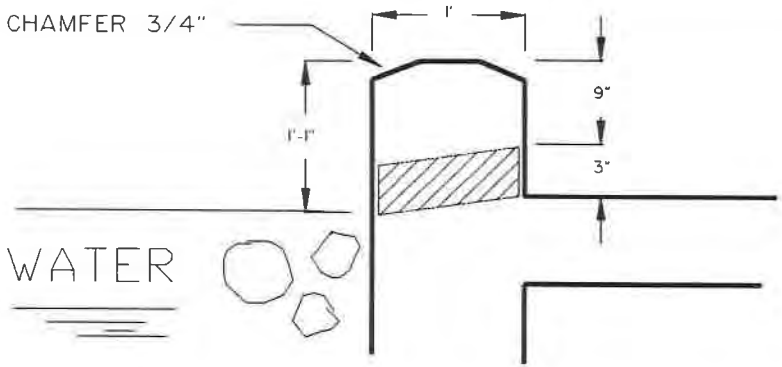
Drawn: M. GURULE
Design: M. GURULE
Checked:
Reviewed:

Forest: PIKE NATIONAL FOREST
Project Name: ELEVEN MILE FISHING DOCK

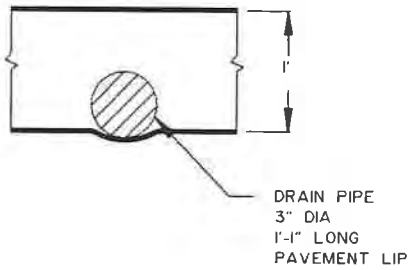
Sheet Title: D-7 PROFILE/PROPOSED/LINE C
Scale: NO SCALE
Sheet 8 of 10



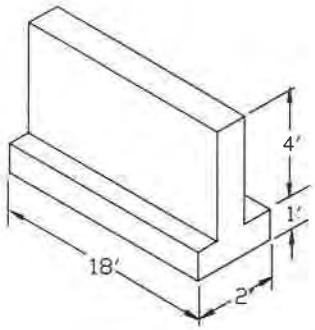
DETAIL I. CROSS-SECTION OF FOOTER & SLAB



DETAIL III. CROSS-SECTION OF DRAIN PIPE



DETAIL II. FRONT VIEW OF DRAIN PIPE



DETAIL IV. ISOMETRIC OF FOOTER FOR LINE B

NOTE: DRAIN PIPES INSTALLED EVERY 5' REFER TO D-4

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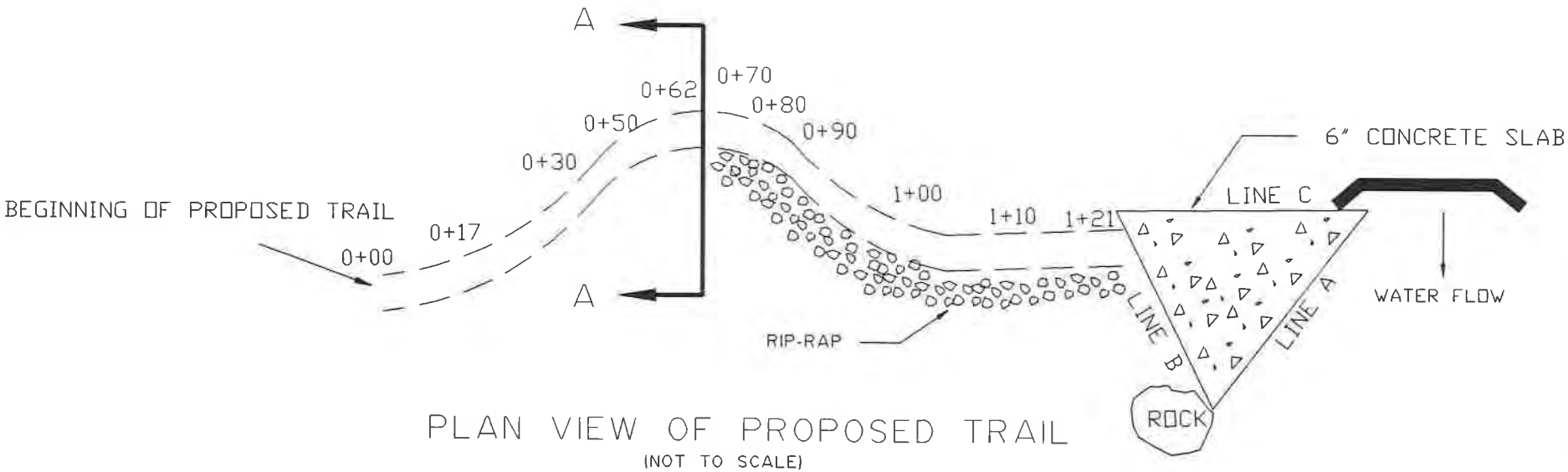
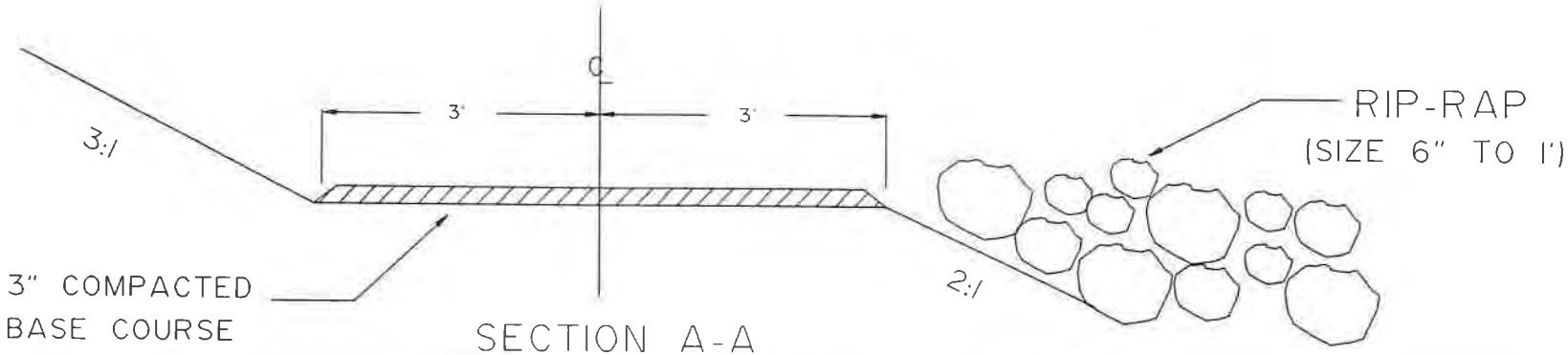
Forest: PIKE NATIONAL FOREST
Project Name: ELEVEN MILE FISHING DOCK

Sheet Title: D-9 SLAB/FOOTER/DRAIN PIPE
Scale: NO SCALE
Sheet 10 of 10



PLAN VIEW OF PROPOSED TRAIL

(NOT TO SCALE)



SECTION A-A

(NOT TO SCALE)

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ROCKY MOUNTAIN REGION

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Reviewed:

Forest: PIKE NATIONAL FOREST
Project Name: ELEVEN MILE FISHING DOCK

Sheet Title: D-3 CROSS-SECTION/TRAIL
Scale: NO SCALE
Sheet 4 of 10