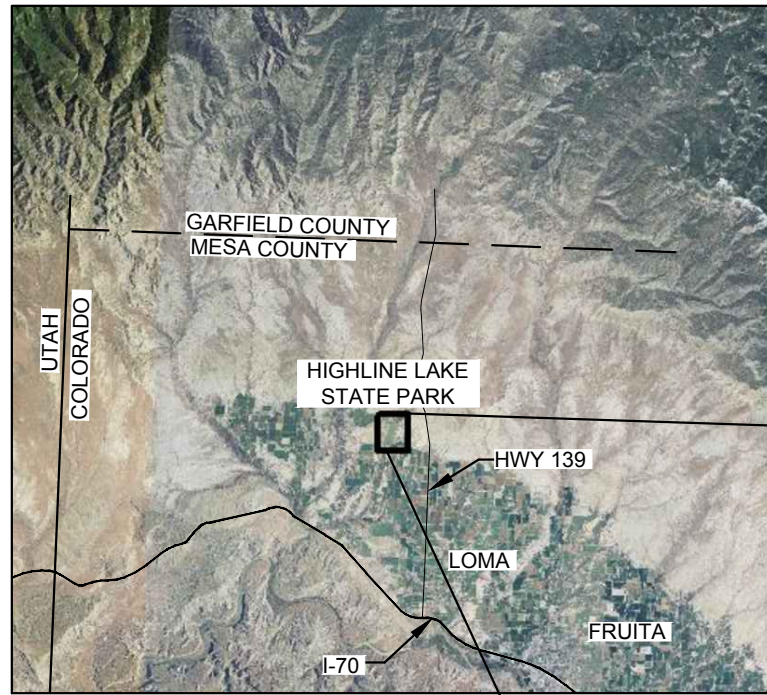
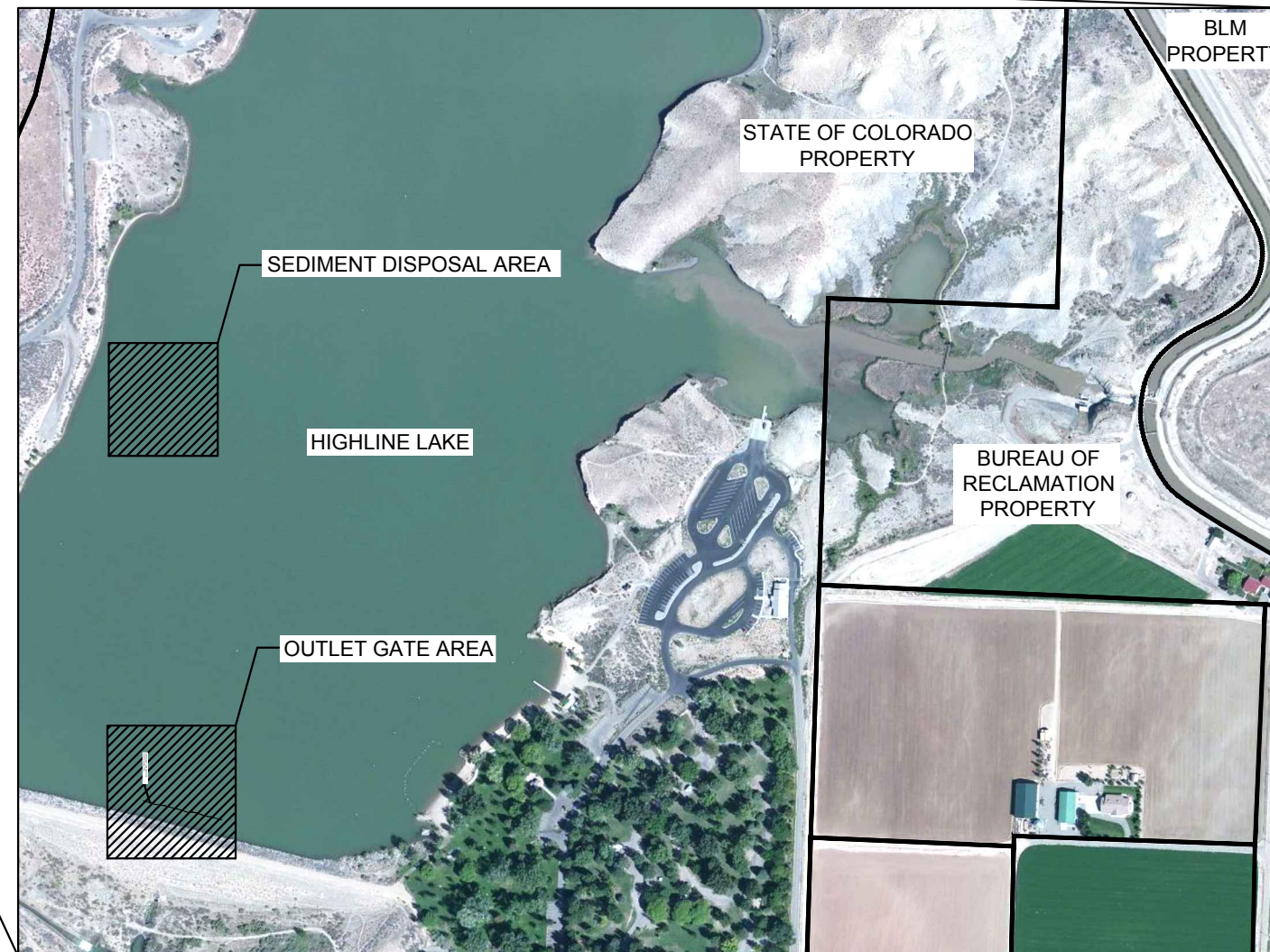


COLORADO PARKS AND WILDLIFE HIGHLINE LAKE OUTLET GATE AREA DREDGING LOMA, COLORADO



NOT TO SCALE

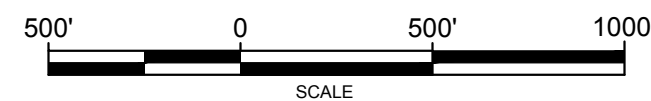


INDEX OF SHEETS

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- C-2 NOTES, LEGENDS & ABBREVIATIONS
- C-3 EXISTING CONDITIONS
- C-4 OUTLET GATE AREA DREDGING PLAN
- C-5 CROSS-SECTIONS
- C-6 DETAILS
- C-7 OUTLET GATE DETAILS

LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- AREA OF INTEREST



PREPARED FOR:



Colorado Parks and Wildlife
P.O. Box 700
Clifton, Colorado 81520 USA
P 970.434.6696

PREPARED BY:



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820 16th Street, Suite 400
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P 303.573.5545 F 303.573.5525

CONTACT:
BRADLEY A. COLEMAN, P.E.
KEVIN J. LEMMER, P.E.

BRADLEY A. COLEMAN
COLORADO P.E. NO. 28723

1	05-24-13	90% PACKAGE FOR 404 PERMIT SUBMITTAL			DRAWN: JAL	PROJECT NO: WA-001973-0001-10	 Environmental Scientists and Engineers, LLC an ecology and environment company Walsh Environmental Scientists and Engineers 820 16th Street, Suite 400 Denver, CO 80202 USA P 303.573.5545 F 303.573.5525	 Colorado Parks and Wildlife P.O. Box 700 Clifton, Colorado 81520 USA P 970.434.6696	HIGHLINE LAKE STATE PARK OUTLET GATE AREA DREDGING LOMA, COLORADO	COVER SHEET	DRAWING NO:
						AS NOTED					C-1
						BAC					1
NO.	DATE	REVISIONS	BY	CHK	DATE:	DATE:					7

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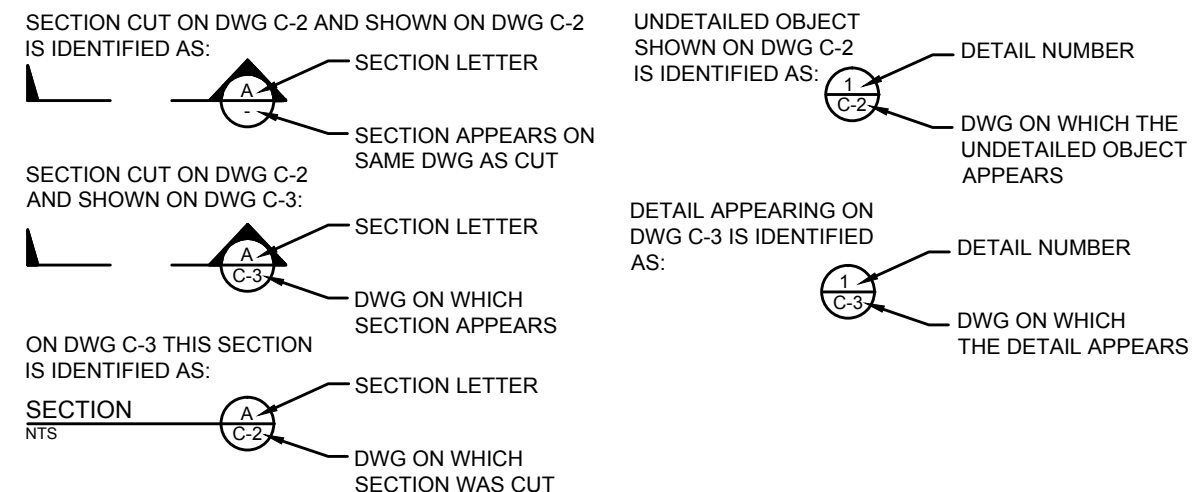
GENERAL NOTES

ABBREVIATIONS:

1. WHERE NEW WORK MEETS EXISTING FEATURES TO REMAIN, FIELD CHECK ALL DIMENSIONS AND ELEVATIONS BEFORE PROCEEDING WITH CONSTRUCTION. NOTIFY PROJECT MANAGER IMMEDIATELY OF ANY DISCREPANCIES IN WRITING.
2. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THESE DRAWINGS, SPECIFICATIONS AND CONTRACT DOCUMENTS EXCEPT AS APPROVED BY THE PROJECT MANAGER. CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2011 SHALL SUPPLEMENT THESE CONSTRUCTION DOCUMENTS AND BE REFERENCED TO AS NECESSARY AND APPROVED BY THE PROJECT MANAGER.
3. PROVIDE SMOOTH VERTICAL CURVES THROUGH HIGH AND LOW POINTS. PROVIDE UNIFORM SLOPES BETWEEN NEW AND EXISTING GRADES. AVOID RIDGES AND DEPRESSIONS NOT CALLED FOR ON DRAWINGS.
4. ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE UNITED STATES ARMY CORPS OF ENGINEERS (USACE) INDIVIDUAL PERMIT ISSUED TO THE PROJECT MANAGER AND INCLUDED IN THE CONSTRUCTION DOCUMENTS. THE PROJECT MANAGER MAINTAINS THE RIGHT TO TERMINATE ANY WORK THAT IS NOT IN COMPLIANCE WITH THE USACE INDIVIDUAL PERMIT.
5. ALL APPLICABLE PROVISIONS OF THE CURRENT OCCUPATIONAL SAFETY AND HEALTH ACT ARE HEREIN INCORPORATED BY REFERENCE.
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7. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES. THE CONTRACTOR SHALL HAVE ONE (1) COPY OF ALL PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES.
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11. AS-BUILT SURVEYING, CONSTRUCTION SURVEYING, GRADING LAYOUT AND STAKING SHALL BE PERFORMED UNDER THE RESPONSIBLE CHARGE OF A COLORADO REGISTERED, PROFESSIONAL LAND SURVEYOR (PLS) USING GEO-REFERENCED DESIGN DATA.
12. EXISTING SITE FEATURES ARE SHOWN AS HALF-TONED OR SCREENED BACK.
13. NEW CONSTRUCTION AT THE SITE SHOWN ON THE DRAWINGS ARE SHOWN AS FULL-TONE LINES.
14. LEGENDS ON INDIVIDUAL DRAWINGS TAKE PRECEDENCE OVER SYMBOLS AND LINETYPES SHOWN ON THIS DRAWING.

AMSL	ABOVE MEAN SEA LEVEL
BLM	BUREAU OF LAND MANAGEMENT
BMP	BEST MANAGEMENT PRACTICES
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
CDPHE	COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
CDPS	COLORADO DISCHARGE PERMIT SYSTEM
CPW	COLORADO PARKS AND WILDLIFE
CQA	CONSTRUCTION QUALITY ASSURANCE
CY	CUBIC YARDS
D50	DIAMETER AT WHICH 50 PERCENT OF MATERIAL WILL PASS THROUGH A SIEVE OF THE SAME SIZE
DEM	DIGITAL ELEVATION MODEL
DIA	DIAMETER
DWG	DRAWING
EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY
GIS	GEOGRAPHIC INFORMATION SYSTEM
HDPE	HIGH DENSITY POLYETHYLENE
NAVD	NORTH AMERICAN VERTICAL DATUM
NRCS	NATIONAL RESOURCE CONSERVATION SERVICE
NTS	NOT TO SCALE
PE	PROFESSIONAL ENGINEER
PLS	PROFESSIONAL LAND SURVEYOR
R.O.W	RIGHT-OF-WAY
USDA	UNITED STATES DEPARTMENT OF AGRICULTURE

TYPICAL DETAIL AND SECTION ABBREVIATION



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1	05-24-13	90% PACKAGE FOR 404 PERMIT SUBMITTAL	-	-	DRAWN: JAL	PROJECT NO: WA-001973-0001-10
					ENGINEER: BAC	SCALE: AS NOTED
					CHECKED: KJL	APPROVED: BAC
NO.	DATE	REVISIONS	BY	CHK	DATE: 05-24-13	DATE: 05-24-13

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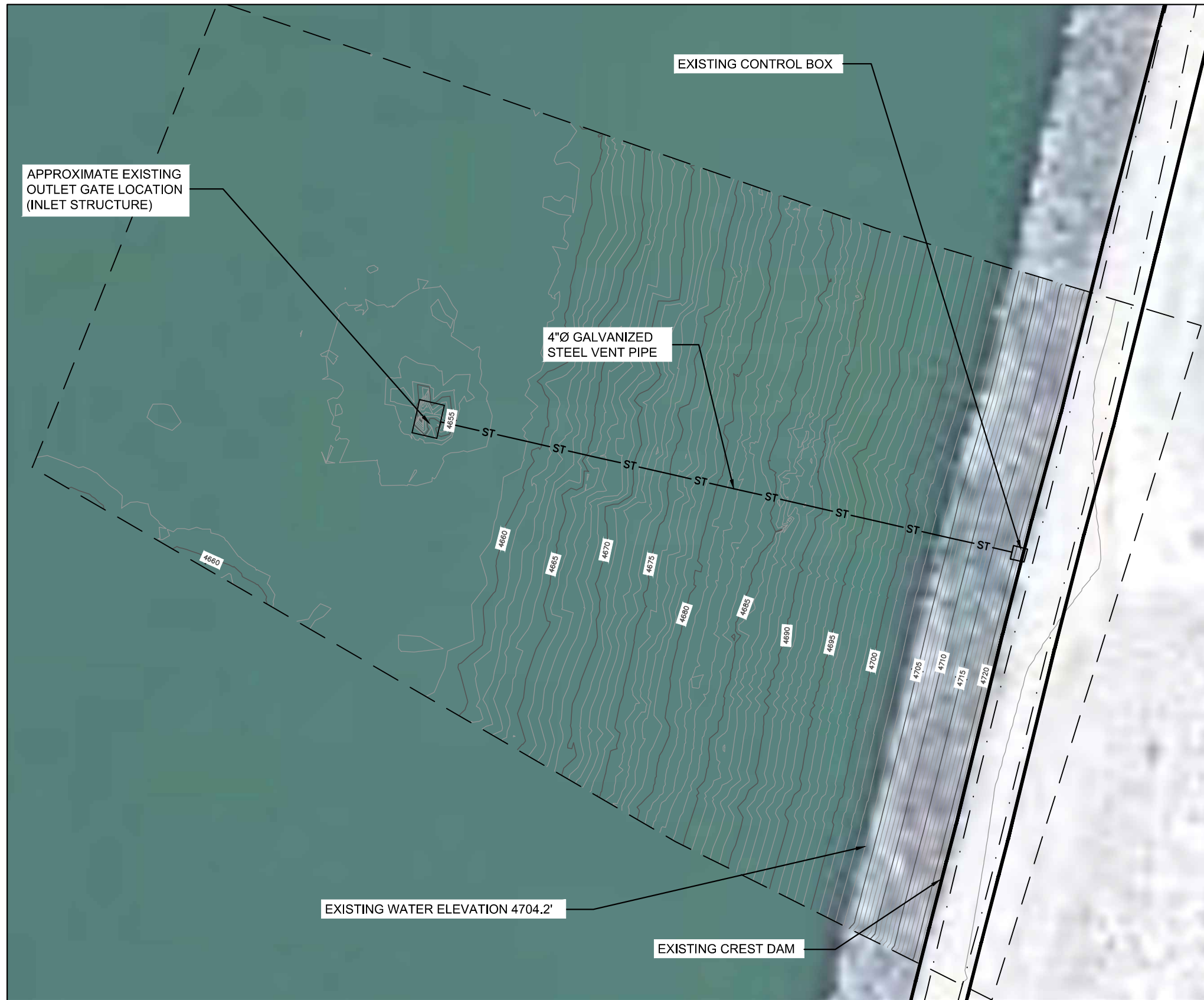
**HIGHLINE LAKE STATE PARK
OUTLET GATE
AREA DREDGING
LOMA, COLORADO**

NOTES, LEGENDS
& ABBREVIATIONS

DRAWING NO:	C-2
	2
	7

BRADLEY A. COLEMAN
COLORADO P.E. NO. 28723

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LEGEND:

- 4705 EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- LIMITS OF SURVEY (APRIL 20, 2012)
- ST EXISTING PIPELINE
- CREST DAM GRADE CHANGE
- TRAIL

NOTES:

1. TOP OF SEDIMENT SONAR SURVEY CONTOURS WITHIN LIMITS OF SURVEY GENERATED FROM SURVEY PERFORMED BY GREEN GLOBE INC. ON APRIL 17, 2012.
2. TOP OF SEDIMENT SURFACE CONTOURS OBTAINED USING HYDROLITE SINGLE BEAM SONAR OPERATING AT 200kHz.
3. WATER ELEVATION SURVEYED ON APRIL 19, 2012.
4. THE OUTLET GATE ELEVATION IS APPROXIMATELY 4648.2 FEET AMSL. APPROXIMATE SPILLWAY ELEVATION IS 4703.7 FEET AMSL.



BRADLEY A. COLEMAN
COLORADO P.E. NO. 28723

NO.	DATE	REVISIONS	BY	CHK
1	05-24-13	90% PACKAGE FOR 404 PERMIT SUBMITTAL		

DRAWN:	JAL	PROJECT NO:	WA-001973-0001-10
ENGINEER:	BAC	SCALE:	AS NOTED
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**HIGHLINE LAKE STATE PARK
OUTLET GATE
AREA DREDGING
LOMA, COLORADO**

EXISTING CONDITIONS

DRAWING NO: C-3
3
7

LEGEND:

- 4705 —— EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- 4705 —— DESIGN CONTOURS MAJOR
- DESIGN CONTOURS MINOR
- - - - - LIMITS OF SURVEY (APRIL 20, 2012)
- ST —— EXISTING PIPELINE
- ⊠ CORE/GRAB SAMPLE LOCATIONS

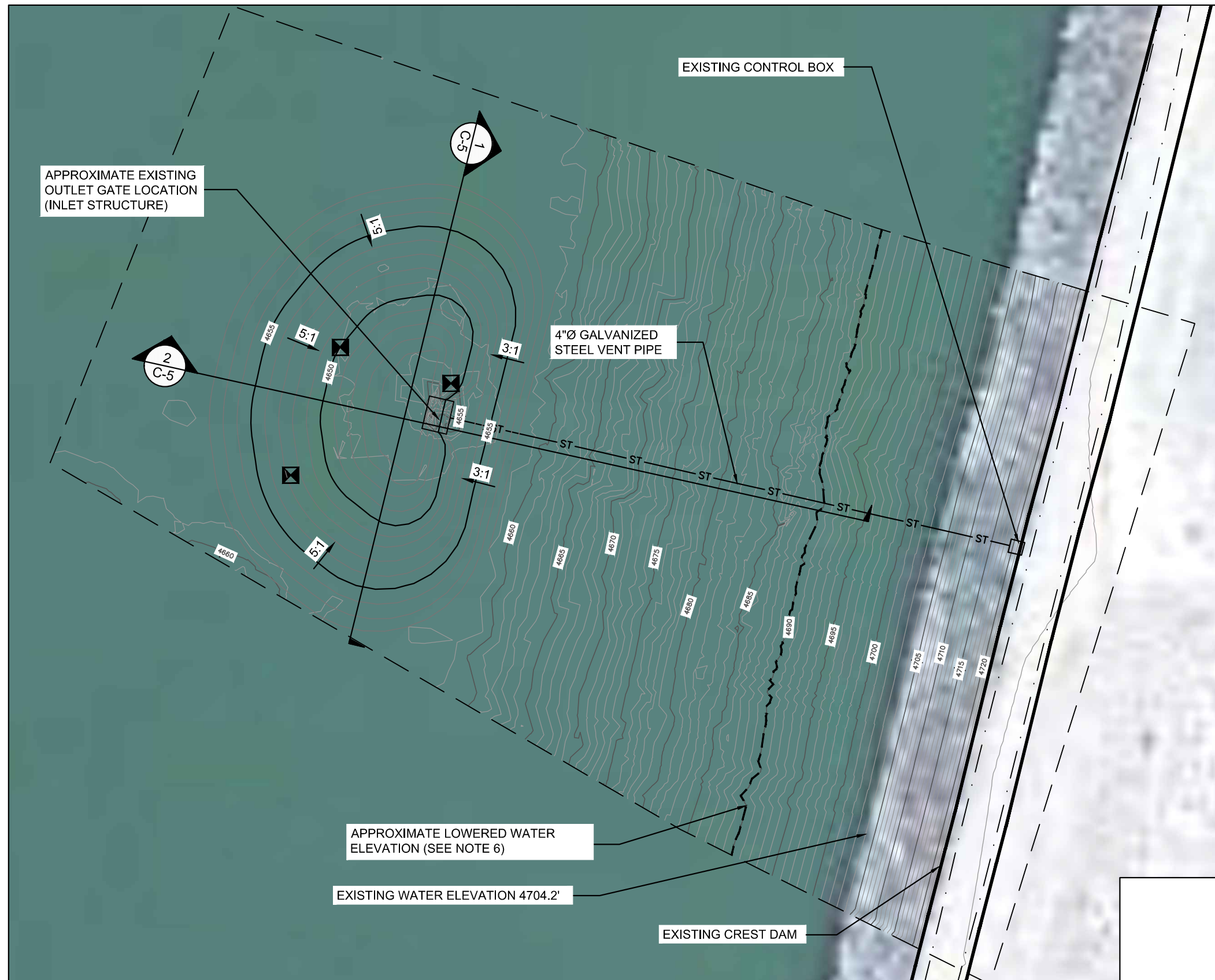
VOLUME	
AMOUNT OF CUT	2,800 CY
AMOUNT OF FILL	0 CY
NET CUT	2,800 CY

NOTES:

1. TOP OF SEDIMENT SONAR SURVEY CONTOURS WITHIN LIMITS OF SURVEY GENERATED FROM SURVEY PERFORMED BY GREEN GLOBE INC. ON APRIL 17, 2012.
2. TOP OF SEDIMENT SURFACE CONTOURS OBTAINED USING HYDROLITE SINGLE BEAM SONAR OPERATING AT 200kHz.
3. WATER ELEVATION SURVEYED ON APRIL 19, 2012.
4. THE OUTLET GATE ELEVATION IS APPROXIMATELY 4648.2 FEET AMSL. APPROXIMATE SPILLWAY ELEVATION IS 4703.7 FEET AMSL.
5. CORE SAMPLE DATA, COLLECTED FROM LOCATIONS SHOWN ON THESE DRAWINGS, IS AVAILABLE IN THE SITE CHARACTERIZATION REPORT BY WALSH ENVIRONMENTAL DATED MAY 30, 2012.
6. ACTUAL LOWERED WATER ELEVATION WILL BE BETWEEN 4685 AND 4695 FEET AMSL.



SCALE



BRADLEY A. COLEMAN
COLORADO P.E. NO. 28723

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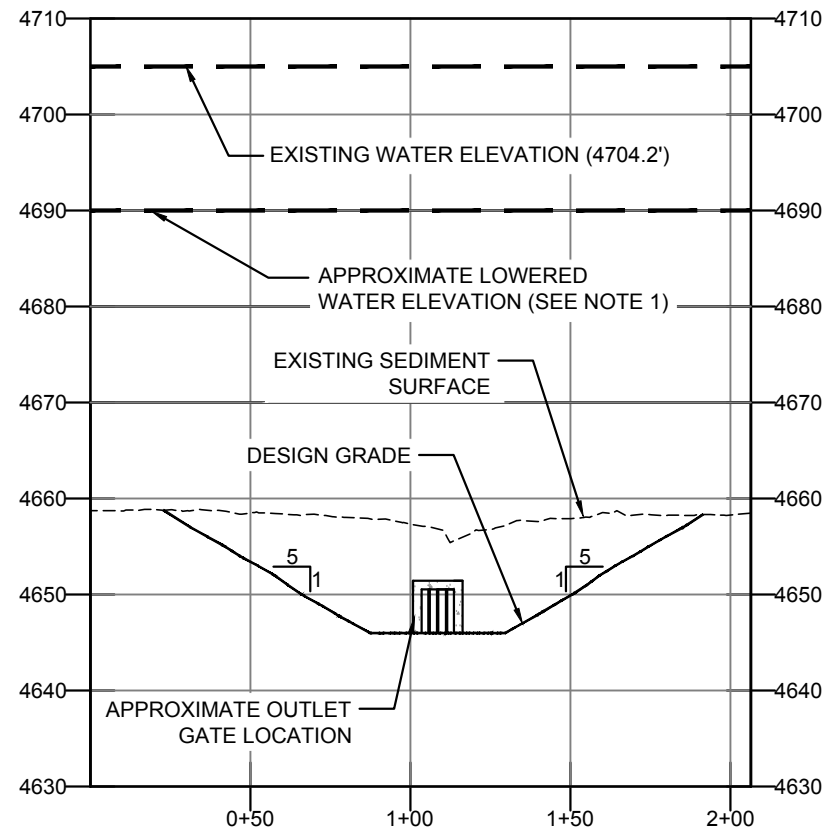
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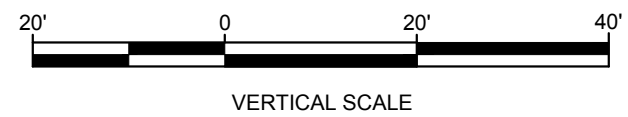
**HIGHLINE LAKE STATE PARK
OUTLET GATE
AREA DREDGING
LOMA, COLORADO**

**OUTLET GATE AREA
DREDGING PLAN**

DRAWING NO:
C-4
4
7

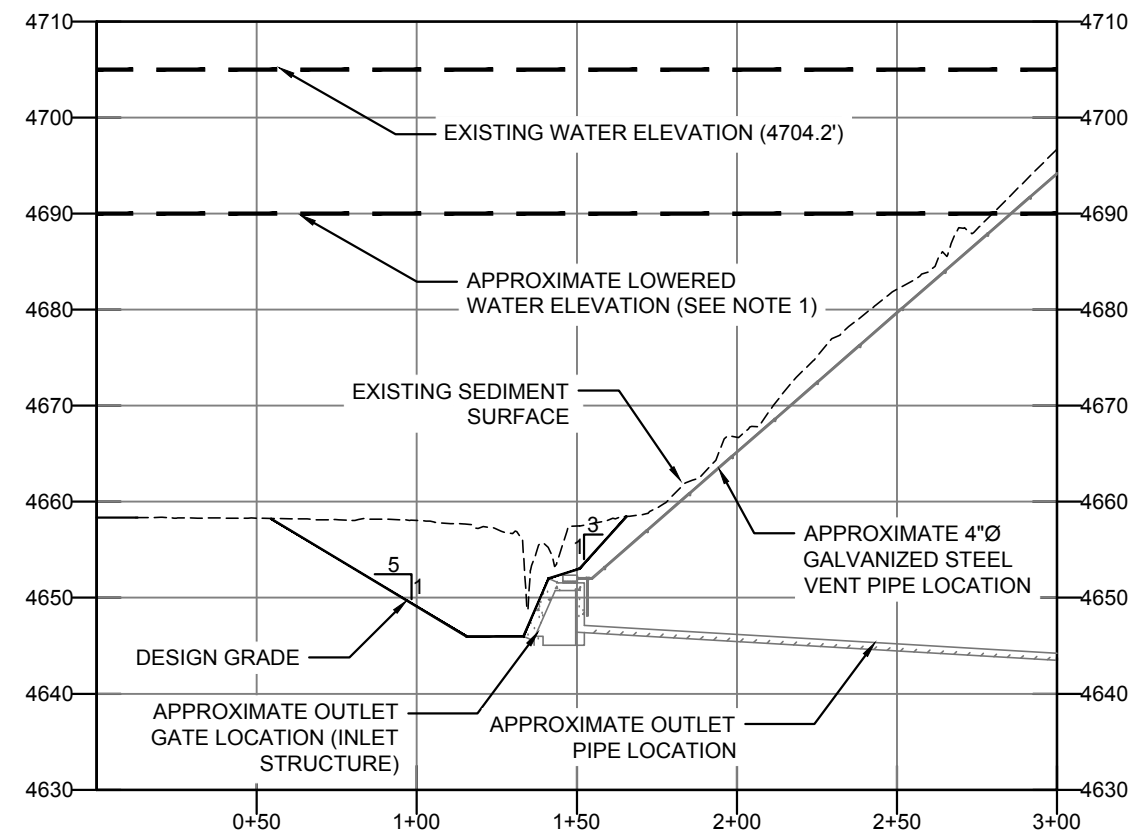


1 OUTLET GATE AREA DREDGING - SECTION VIEW
C-6



NOTES:

1. ACTUAL LOWERED WATER ELEVATION WILL BE BETWEEN 4685 AND 4695 FEET AMSL.
2. SECTIONS ARE SHOWN WITH 3:1 HORIZONTAL:VERTICAL EXAGGERATION.
3. CONTRACTOR SHALL TAKE CARE TO AVOID DAMAGING THE OUTLET GATE STRUCTURE AND ASSOCIATED COMPONENTS.



2 OUTLET GATE AREA DREDGING - SECTION VIEW
C-6

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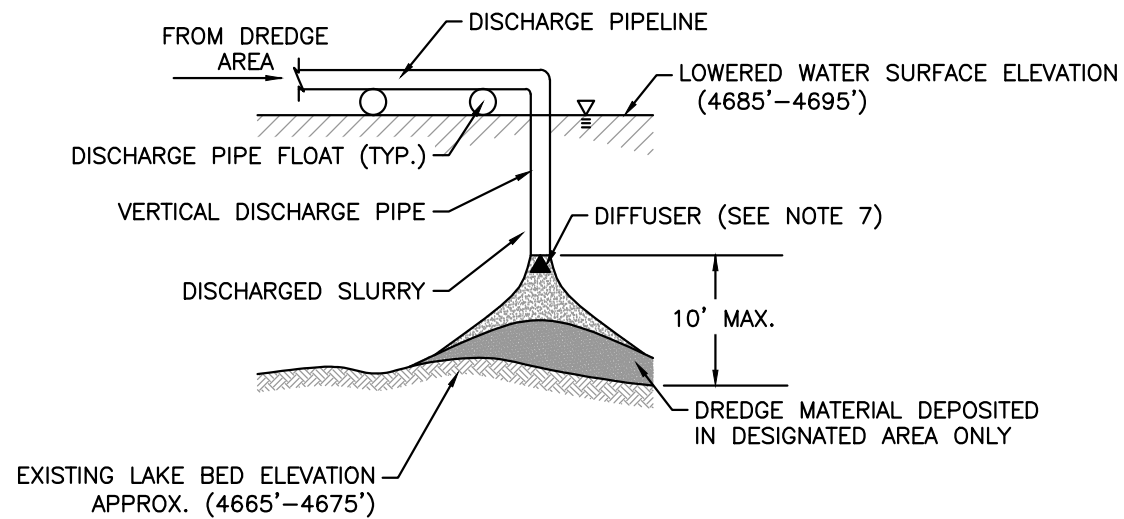
**HIGHLINE LAKE STATE PARK
OUTLET GATE
AREA DREDGING
LOMA, COLORADO**

CROSS-SECTIONS

BRADLEY A. COLEMAN
COLORADO P.E. NO. 28723

DRAWING NO:
C-5
5
7

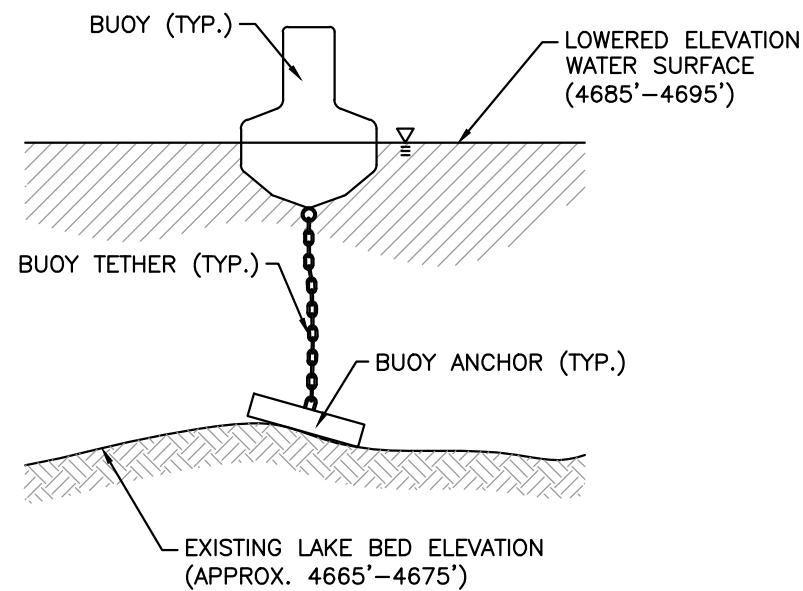
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1 DISCHARGE PIPELINE DETAIL
C-6 NOT TO SCALE

NOTES:

1. IN ACCORDANCE WITH THE SPECIFICATIONS, THE CONTRACTOR SHALL PREPARE AND SUBMIT A DETAILED WORK PLAN DESCRIBING THE SEDIMENT DREDGING AND DISPOSAL EQUIPMENT, MATERIALS, AND METHODOLOGY.
2. DISCHARGE PIPELINE SHALL BE 10"Ø OR 12"Ø HEAVY WALL CONSTRUCTED ROLL-FLAT BUTYL RUBBER OR PVC LINED OR AN EQUIVALENT LIGHTWEIGHT AND DURABLE PIPE APPROVED BY THE PROJECT MANAGER.
3. BOUYS AND PIPE FLOATS SHALL BE FLUORESCENT ORANGE OR YELLOW, OR ALTERNATE APPROVED BY THE PROJECT MANAGER.
4. BOUYS SHALL BE PLACED AT A MAXIMUM OF 200' INTERVALS ALONG THE SEDIMENT DISCHARGE PIPELINE. BOUYS PLACED ALONG THE PIPELINE SHALL BE A MAXIMUM OF 20 FEET FROM PIPE CENTERLINE.
5. BUOY TETHER LENGTH TO BE DETERMINED BY THE CONTRACTOR BASED ON WATER DEPTH AND APPROVED BY THE PROJECT MANAGER.
6. CONTRACTOR SHALL PROPOSE A DISCHARGE PIPE ALIGNMENT FROM THE OUTLET GATE DREDGE AREA TO THE SEDIMENT DISPOSAL AREA TO BE APPROVED BY THE PROJECT MANAGER. ALL DREDGE MATERIAL CONVEYANCE STRUCTURES AND SUPPORT SHALL MEET PROJECT SPECIFICATIONS.
7. DISCHARGE SHALL BE DONE IN A MANNER TO MINIMIZE SEDIMENT SUSPENSION TO THE MAXIMUM DEGREE PRACTICAL. A DIFFUSER OR ALTERNATE FLOW CONTROLS SHALL BE USED AT THE DISCHARGE POINT.



2 BUOY DETAIL
C-6 NOT TO SCALE

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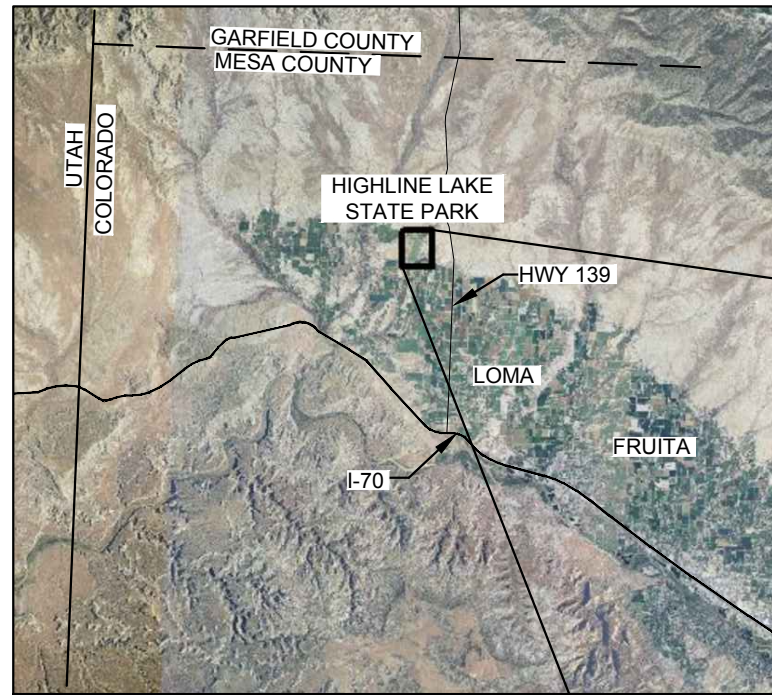
**HIGHLINE LAKE STATE PARK
OUTLET GATE
AREA DREDGING
LOMA, COLORADO**

DETAILS

BRADLEY A. COLEMAN
COLORADO P.E. NO. 28723

DRAWING NO:	C-6
	6
	7

COLORADO PARKS AND WILDLIFE HIGHLINE LAKE EAST BAY AREA DREDGING LOMA, COLORADO



NOT TO SCALE



INDEX OF SHEETS

- C-1 COVER SHEET
- C-2 NOTES, LEGENDS & ABBREVIATIONS
- C-3 EXISTING CONDITIONS
- C-4 EAST BAY AREA DREDGING PLAN
- C-5 SEDIMENT DISPOSAL ARE OPERATIONS PLAN
- C-6 CROSS SECTIONS
- C-7 DETAILS

LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- AREA OF INTEREST

PREPARED FOR:



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SCALE

BRADLEY A. COLEMAN
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**HIGHLINE LAKE STATE PARK
EAST BAY AREA DREDGING
LOMA, COLORADO**

COVER SHEET

DRAWING NO:
C-1
1
7

Y:\PROJECTS\WA-001973-0001-CP&W-Highline Dredging\Drawings\CAD\East Bay\HIGHLINE_EB_DESIGN.dwg

GENERAL NOTES

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4. ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) PERMITTING PROCESS FOR "STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES". OBTAIN A COLORADO DISCHARGE PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY SEE <http://www.cdphe.state.co.us/wq/permitsunit/permits/construction/cor030000renewalblankform.pdf> FOR THE CDPS GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY. SUBMIT COPIES OF PERMIT AND ALL SUBMITTALS TO PROJECT MANAGER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENTATION CONTROL.

5. ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE UNITED STATES ARMY CORPS OF ENGINEERS (USACE) INDIVIDUAL PERMIT ISSUED TO THE PROJECT MANAGER AND INCLUDED IN THE CONSTRUCTION DOCUMENTS. THE PROJECT MANAGER MAINTAINS THE RIGHT TO TERMINATE ANY WORK THAT IS NOT IN COMPLIANCE WITH THE USACE INDIVIDUAL PERMIT.

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13. EXISTING SITE FEATURES ARE SHOWN AS HALF-TONED OR SCREENED BACK.

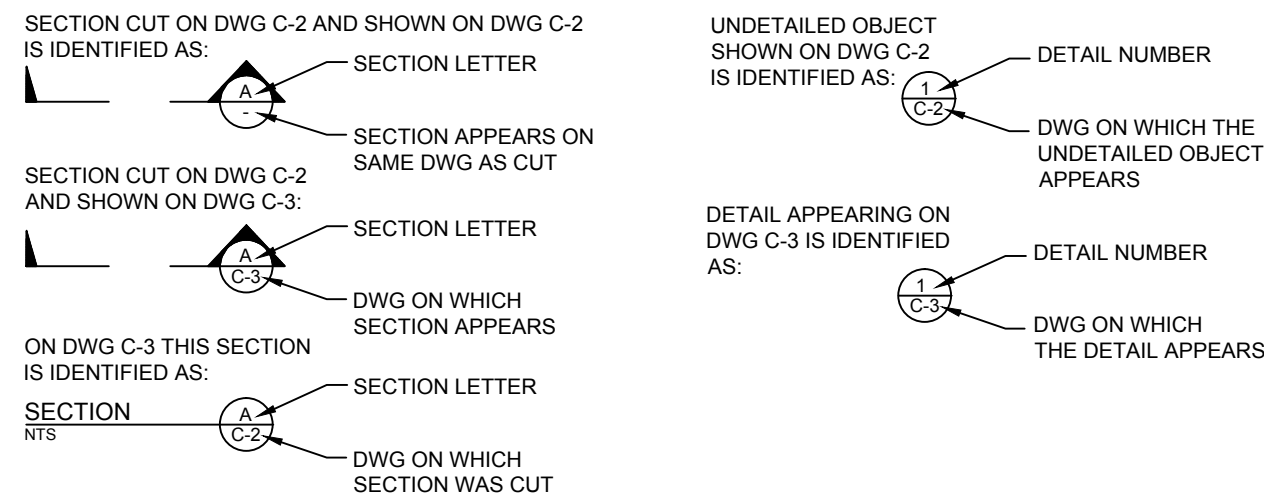
14. NEW CONSTRUCTION AT THE SITE SHOWN ON THE DRAWINGS ARE SHOWN AS FULL-TONE LINES.

15. LEGENDS ON INDIVIDUAL DRAWINGS TAKE PRECEDENCE OVER SYMBOLS AND LINETYPES SHOWN ON THIS DRAWING.

ABBREVIATIONS:

- AMSL ABOVE MEAN SEA LEVEL
- BLM BUREAU OF LAND MANAGEMENT
- BMP BEST MANAGEMENT PRACTICES
- CDOT COLORADO DEPARTMENT OF TRANSPORTATION
- CDPHE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
- CDPS COLORADO DISCHARGE PERMIT SYSTEM
- CPW COLORADO PARKS AND WILDLIFE
- CQA CONSTRUCTION QUALITY ASSURANCE
- CY CUBIC YARDS
- D50 DIAMETER AT WHICH 50 PERCENT OF MATERIAL WILL PASS THROUGH A SIEVE OF THE SAME SIZE
- DEM DIGITAL ELEVATION MODEL
- DIA DIAMETER
- DWG DRAWING
- EPA U.S. ENVIRONMENTAL PROTECTION AGENCY
- GIS GEOGRAPHIC INFORMATION SYSTEM
- HDPE HIGH DENSITY POLYETHYLENE
- NAVD NORTH AMERICAN VERTICAL DATUM
- NRCS NATIONAL RESOURCE CONSERVATION SERVICE
- NTS NOT TO SCALE
- PE PROFESSIONAL ENGINEER
- PLS PROFESSIONAL LAND SURVEYOR
- R.O.W RIGHT-OF-WAY
- USDA UNITED STATES DEPARTMENT OF AGRICULTURE

TYPICAL DETAIL AND SECTION ABBREVIATION



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					ENGINEER: BAC	SCALE: AS NOTED
					CHECKED: KJL	APPROVED: BAC
					DATE: 05-24-13	DATE: 05-24-13
NO.	DATE	REVISIONS	BY	CHK		

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PHONE: 303.733.1111 FAX: 303.733.1111

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**HIGHLINE LAKE STATE PARK
EAST BAY AREA DREDGING
LOMA, COLORADO**

NOTES, LEGENDS & ABBREVIATIONS

DRAWING NO:	C-2
	2
	7

BRADLEY A. COLEMAN
COLORADO P.E. NO. 28723

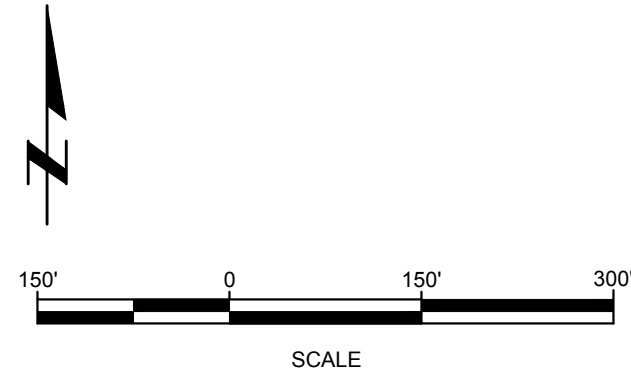


LEGEND:

- 4705 ———— EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- - - - - LIMITS OF SURVEY (APRIL 20, 2012)
- ==== EXISTING ACCESS ROAD
- ===== EXISTING SEDIMENT CONTROL LOG
- ⌵ EXISTING CULVERT
- ⌞ IMPROVED BRIDGE

NOTES:

1. TOP OF SEDIMENT SONAR SURVEY CONTOURS WITHIN LIMITS OF SURVEY GENERATED FROM SURVEY PERFORMED BY GREEN GLOBE INC. ON APRIL 17, 2012.
2. TOP OF SEDIMENT SURFACE CONTOURS OBTAINED USING HYDROLITE SINGLE BEAM SONAR OPERATING AT 200kHz.
3. WATER ELEVATION SHOWN WAS SURVEYED ON APRIL 19, 2012.
4. ADDITIONAL TOPOGRAPHY SHOWN OUTSIDE THE "LIMITS OF SURVEY" WAS PROVIDED BY CPW IN A CAD FILE TITLED 'HIDATA20 HIGHLINE TOPOGRAPHY 07-27-00.DWG'
5. SEDIMENT DISPOSAL AREA EXISTING CONTOURS AND ASSOCIATED TEMPORARY ACCESS ROAD FEATURES ARE SHOWN AS DESIGNED FOR BORROW MATERIAL ACTIVITIES. BORROW AREA AND TEMPORARY ACCESS ROAD HAVE NOT BEEN CONSTRUCTED AS OF THIS WRITING BUT WILL BE IN PLACE PRIOR TO BEGINNING THIS PROJECT. ACTUAL POST-BORROW MATERIAL REMOVAL CONDITIONS MAY VARY.
6. BMP'S ASSOCIATED WITH BORROW MATERIAL REMOVAL SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL THE WORK IS COMPLETE.



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**HIGHLINE LAKE STATE PARK
EAST BAY AREA DREDGING
LOMA, COLORADO**

EXISTING CONDITIONS PLAN

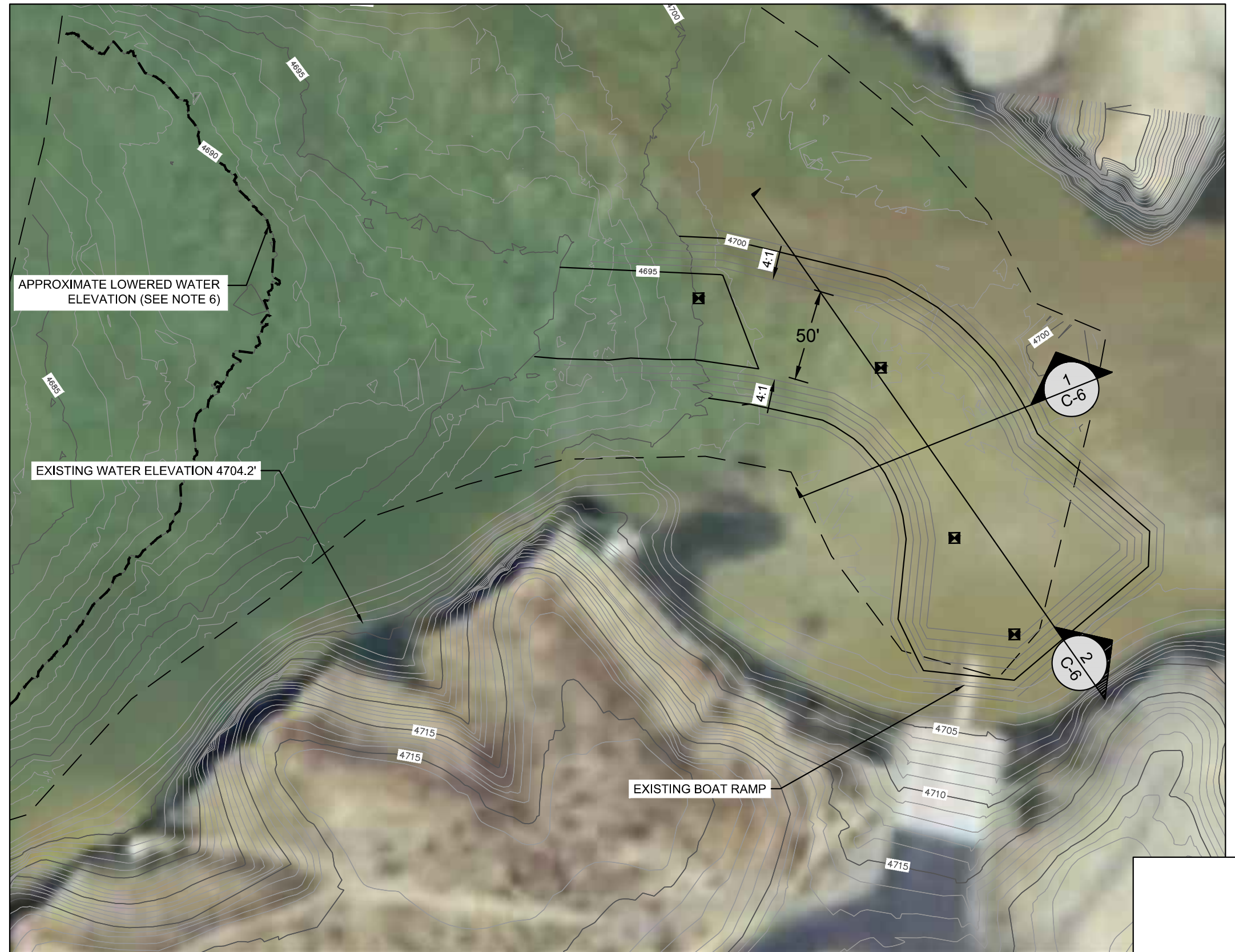
DRAWING NO:	C-3
	3
	7

LEGEND:

- 4700 — EXISTING CONTOURS MAJOR
- — — EXISTING CONTOURS MINOR
- 4700 — DESIGN CONTOURS MAJOR
- — — DESIGN CONTOURS MINOR
- — — LIMITS OF SURVEY (APRIL 20, 2012)
- ☒ CORE/GRAB SAMPLE LOCATIONS

VOLUME	
AMOUNT OF CUT	5,800 CY
AMOUNT OF FILL	0 CY
NET CUT	5,800 CY

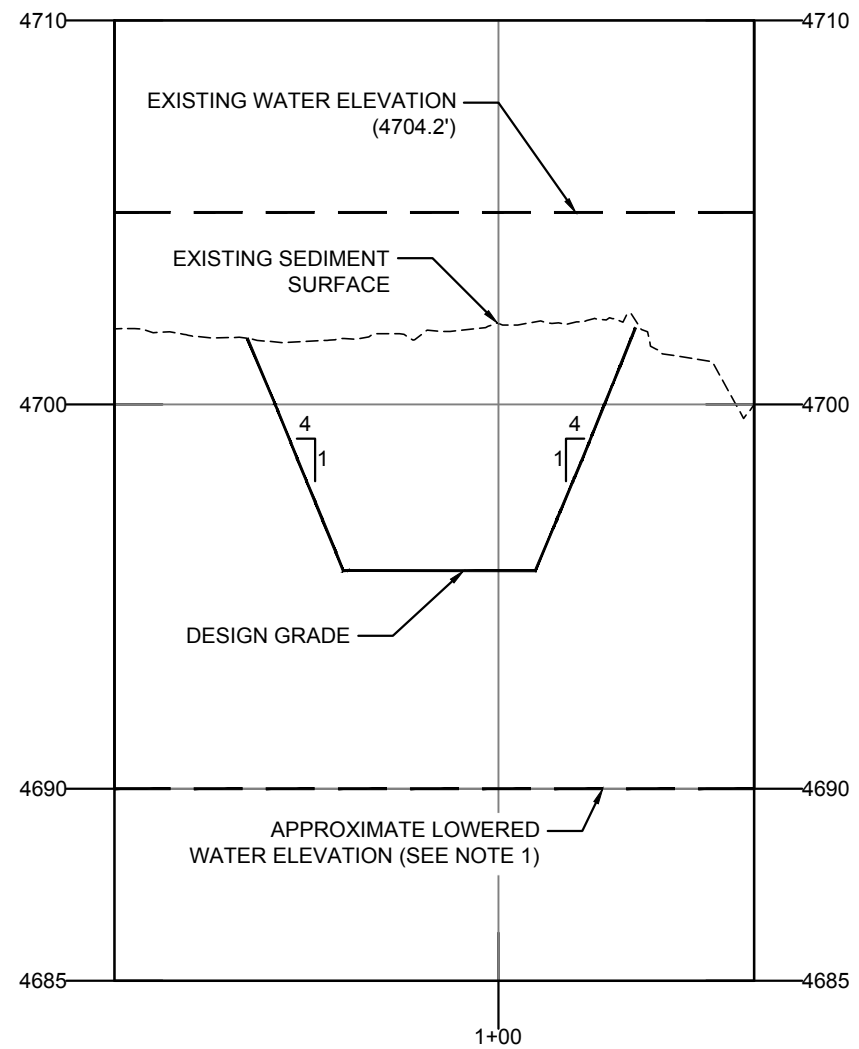
- NOTES:
- TOP OF SEDIMENT SONAR SURVEY CONTOURS WITHIN LIMITS OF SURVEY GENERATED FROM SURVEY PERFORMED BY GREEN GLOBE INC. ON APRIL 17, 2012.
 - TOP OF SEDIMENT SURFACE CONTOURS OBTAINED USING HYDROLITE SINGLE BEAM SONAR OPERATING AT 200kHz.
 - ADDITIONAL TOPOGRAPHY SHOWN OUTSIDE THE "LIMITS OF SURVEY" WAS PROVIDED BY CPW IN A CAD FILE TITLED 'HIDATA20 HIGHLINE TOPOGRAPHY 07-27-00.DWG'.
 - WATER ELEVATION SURVEYED ON APRIL 19, 2012.
 - CORE SAMPLE DATA, COLLECTED FROM LOCATIONS SHOWN ON THESE DRAWINGS, IS AVAILABLE IN THE SITE CHARACTERIZATION REPORT BY WALSH ENVIRONMENTAL DATED MAY 30, 2012.
 - ACTUAL LOWERED WATER ELEVATION WILL BE BETWEEN 4685 AND 4695 FEET AMSL.



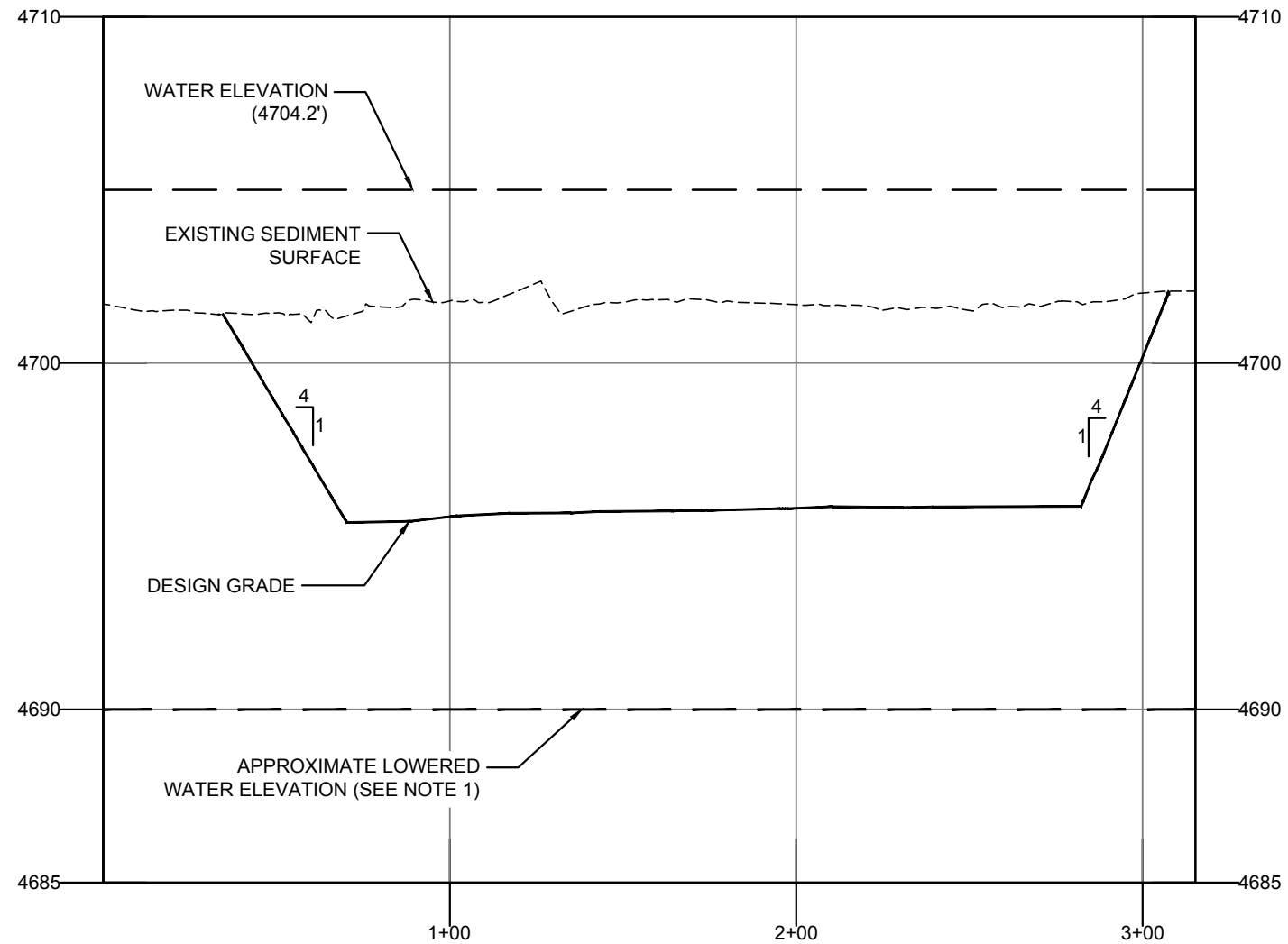
BRADLEY A. COLEMAN
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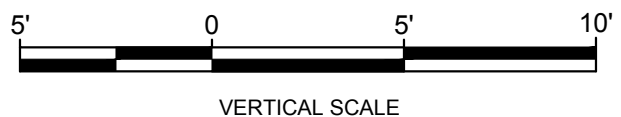
1	05-24-13	90% PACKAGE FOR 404 PERMIT SUBMITTAL	-	-	DRAWN: JAL	PROJECT NO: WA-001973-0001-10	<p>Walsh Environmental Scientists and Engineers 820 16th Street, Suite 400 Denver, CO 80202 USA P 970.434.6696</p>	<p>Colorado Parks and Wildlife P.O. Box 700 Clifton, Colorado 81520 USA P 970.434.6696</p>	<p>HIGHLINE LAKE STATE PARK EAST BAY AREA DREDGING LOMA, COLORADO</p>	<p>EAST BAY AREA DREDGING PLAN</p>	DRAWING NO:
				ENGINEER: BAC	SCALE: AS NOTED	C-4					
				CHECKED: KJL	APPROVED: BAC	4					
				DATE: 05-24-13	DATE: 05-24-13	7					



1 EAST BAY AREA DREDGING - SECTION VIEW
C-6



2 EAST BAY AREA DREDGING - SECTION VIEW
C-6



- NOTES:
 1. ACTUAL LOWERED ELEVATION WILL BE BETWEEN 4685 AND 4695 FEET AMSL.
 2. SECTIONS SHOWN WITH 10:1 HORIZONTAL:VERTICAL EXAGGERATION.

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 COLORADO P.E. NO. 28723

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**HIGHLINE LAKE STATE PARK
 EAST BAY AREA DREDGING**
 LOMA, COLORADO

CROSS-SECTIONS

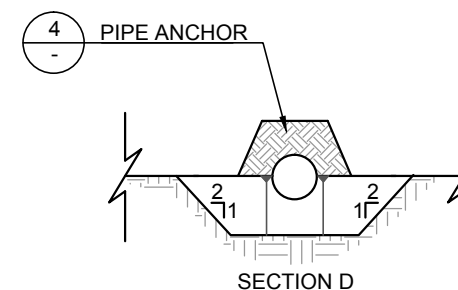
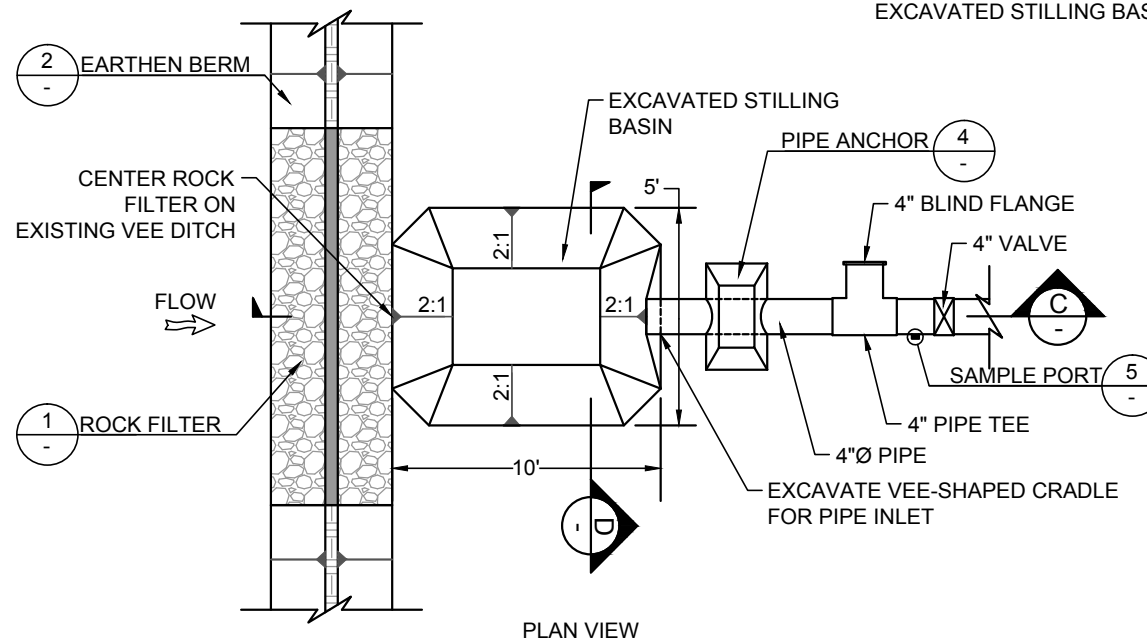
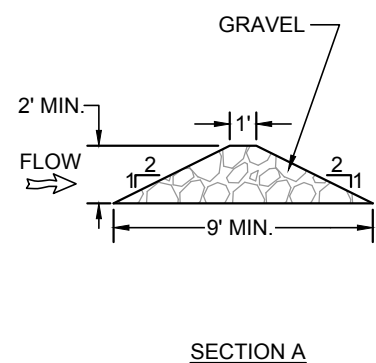
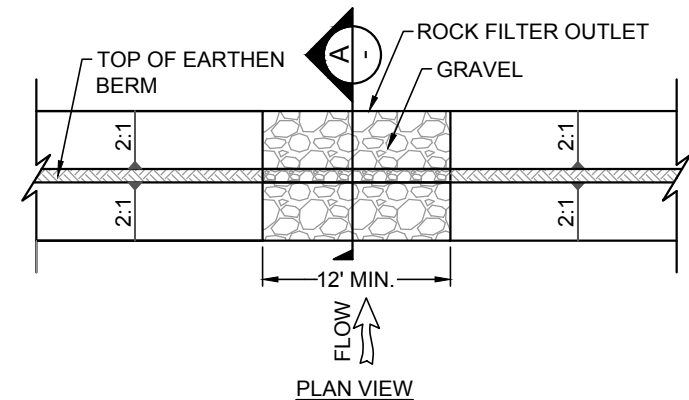
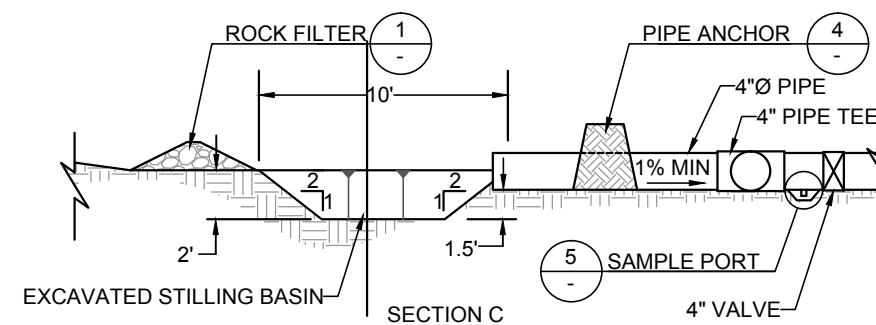
DRAWING NO:
 C-6
 6
 7

NOTES:

- ROCK FILTER AND EARTHEN BERM SIDE SLOPES SHALL BE 2:1 (H:V) OR FLATTER.
- ROCK FILTER AND PIPE SHALL BE PLACED IN THE EXISTING VEE DITCH ALIGNMENT.
- GRAVEL SHALL BE CDOT CLASS A OR B FILTER MATERIAL (SEE TABLE HEREON) OR ALTERNATE APPROVED BY THE PROJECT MANAGER.
- PIPE ANCHORS SHALL BE CONSTRUCTED USING ONSITE SOILS OR ALTERNATE MATERIAL APPROVED BY THE PROJECT MANAGER. ANCHORS SHALL NOT CONTAIN ANY LARGE COBBLES, BOULDERS OR DEBRIS THAT MAY DAMAGE THE PIPE.
- PIPE ANCHORS SHALL BE PLACED ALONG THE PIPE, A MINIMUM EVERY 100 LINEAR FEET OR AS APPROVED BY THE PROJECT MANAGER.
- PIPE SHALL BE INSTALLED TO THE LAKE SHORE AND ALLOW FOR FLOW DURING ALL SEASONS OF OPERATION. TRENCHING OR AN ALTERNATE APPROVED BY THE PROJECT MANAGER MAY BE NECESSARY TO PREVENT FREEZING DEPENDING ON FLOW AND ENVIRONMENTAL CONDITIONS TO MAINTAIN A MINIMUM 1% SLOPE.
- PIPE MATERIAL SHALL MEET THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS.

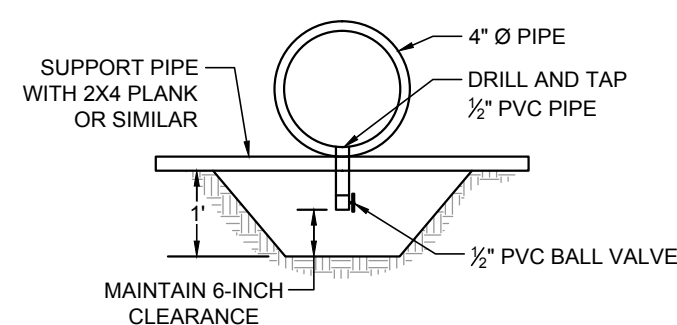
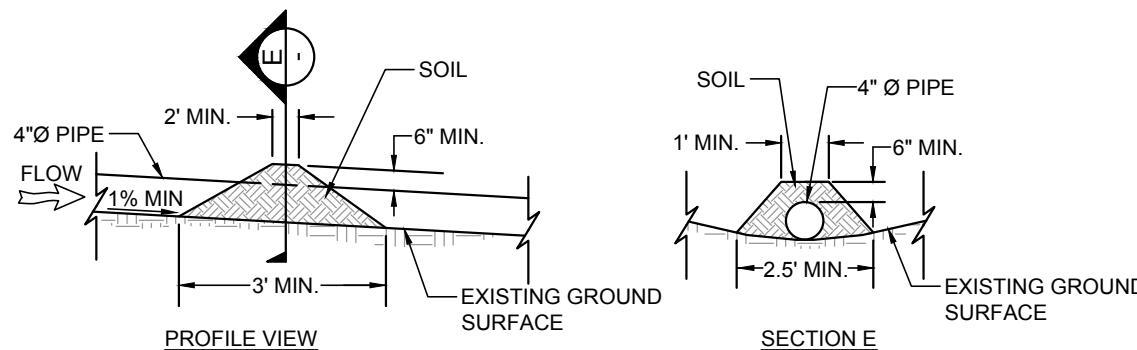
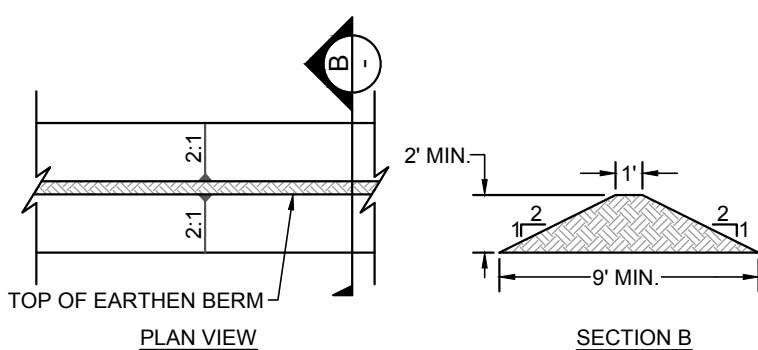
CDOT FILTER MATERIAL

SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES	
	CLASS A	CLASS B
75 mm (3")	100	100
37.5 mm (1 1/2")		100
19.0 mm (3/4")	20-90	
4.75 mm (No. 4)	0-20	20-60
1.18 μm (No. 16)		10-30
300 μm (No. 50)		0-10
150 μm (No. 100)		
75 μm (No. 200)	0-3	0-3



1 ROCK FILTER DETAIL
C-7 NOT TO SCALE

3 PIPE INLET DETAIL
C-7 NOT TO SCALE



2 EARTHEN BERM DETAIL
C-7 NOT TO SCALE

4 PIPE ANCHOR DETAIL
C-7 NOT TO SCALE

5 SAMPLE PORT DETAIL
C-7 NOT TO SCALE

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DETAILS

DRAWING NO:
C-7
7
7

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