

JOINT
PUBLIC NOTICE

CHARLESTON DISTRICT, CORPS OF ENGINEERS
1835 Assembly Street, Room 865B-1
Columbia, South Carolina 29201
and
THE S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
Office of Environmental Quality Control
Water Quality Certification and Wetlands Programs Section
2600 Bull Street
Columbia, South Carolina 29201

REGULATORY DIVISION

Refer to: P/N # SAC 2013-00233-5C

September 22, 2014

Pursuant to Sections 401 and 404 of the Clean Water Act (33 U.S.C. 1341), an application has been submitted to the Department of the Army and the South Carolina Department of Health and Environmental Control by

City of Spartanburg
c/o Joseph Barkevich
W.K. Dickson & Co., Inc.
1320 Main Street, Suite 400
Columbia, South Carolina 29201

for a permit to place fill material in

an unnamed tributary to Beaverdam Creek and unnamed tributaries to Fairforest Creek and adjacent wetlands

at the existing Spartanburg Downtown Memorial Airport located at 500 Ammons Road, Spartanburg, Spartanburg County, South Carolina (Latitude 34.918882°N, Longitude 81.953831°W).

In order to give all interested parties an opportunity to express their views

NOTICE

is hereby given that written statements regarding the proposed work will be received by the **Corps** until

15 Days from the Date of this Notice,

and **SCDHEC** will receive written statements regarding the proposed work until

30 Days from the Date of this Notice

from those interested in the activity and whose interests may be affected by the proposed work.

The proposed work consists of the placement of fill material in waters of the U.S. for the expansion and extension of a runway, parallel taxiway, and Runway Safety Areas (RSAs). In detail, the applicant proposes to fill 1,582 linear feet of streams, pipe 1,177 linear feet of streams, and fill 0.95 acres of freshwater wetlands to improve and extend an existing runway, parallel taxiway, and RSAs at the Spartanburg Downtown Memorial Airport. Furthermore, the existing localizer (radio transmitter for navigation) would be moved 1000 feet beyond the proposed northeastern runway end, and a portion of Airport Road would be permanently closed. As stated

by the applicant, the purpose is to improve the safety of the airfield for approaching and departing aircraft that currently utilize the airport on a regular basis. The applicant has stated that avoidance and minimization efforts have been accomplished through evaluating on-site alternatives, configuring borrow areas to avoid streams and incorporate stream buffers, creating the maximum feasible grading slopes, and utilizing a retaining wall, twin box culverts, rip-rap pads and plunge pools. On-site alternatives that were considered by the applicant included shifting south and lowering the elevation of the runway, turning the runway alignment, tunneling SC Highway 295, extending the southwest end of the runway in combination with placing Engineered Material Arresting System (EMAS) pads at the northeastern end of the runway, extending the runway at both ends, and constructing additional retaining walls. The applicant has provided an alternatives analysis that is available upon request. According to the applicant, the required mitigation credits for this project are 16,669.2 stream credits and 9.3 wetland credits. The applicant has provided a conceptual compensatory mitigation plan that includes a combination of the purchase of available credits from Arrowhead Farms Mitigation Bank and the implementation of a Permittee-Responsible Mitigation (PRM) plan at two sites. The applicant proposes to purchase 10,718 stream credits and 9.3 wetland credits from Arrowhead Farms Mitigation Bank. The applicant has proposed a conceptual PRM plan to restore approximately 1,860 linear feet of Greenville Branch, a tributary to Fairforest Creek, and to preserve stream and enhance stream buffers along approximately 2,050 linear feet of an unnamed tributary to Lawsons Fork Creek in the Converse Heights neighborhood. The Greenville Branch restoration site is located north of the intersection of College and Howard Street in downtown Spartanburg, an urban and residential setting encompassing several city blocks and a textile mill site, Spartan Mill. Stream restoration would be accomplished by daylighting the channel by removing the underground pipe, using natural channel design techniques to construct the channel, creating a new floodplain at a lower elevation, and constructing public access areas and a greenway trail system with indigenous vegetation as part of the Northside Initiative neighborhood revitalization project. The Converse Heights stream preservation and buffer enhancement site would originate at the intersection of Boyd Street and Sherwood Circle at the base of an existing culvert outlet. Buffer enhancement would be accomplished by the removal of exotic species within the 60-80 foot wide forested riparian buffer along each bank of the stream between the existing road crossing culverts, which would remain in place. The applicant states that the proposed PRM plan could provide 5,952 stream restoration credits and an undetermined amount of additional stream preservation credits. The District Engineer has not reached a decision as to the proposed mitigation plan's compliance with the 2008 Final Compensatory Mitigation Rule and the Charleston District's Guidelines for Preparing a Compensatory Mitigation Plan. The proposed conceptual compensatory mitigation plan is available upon request. Jurisdictional determinations have not been verified for the project site or for the proposed PRM sites.

The District Engineer has concluded that the discharges associated with this project, both direct and indirect, should be reviewed by the South Carolina Department of Health and Environmental Control in accordance with provisions of Section 401 of the Clean Water Act. As such, this notice constitutes a request, on behalf of the applicant, for certification that this project will comply with applicable effluent limitations and water quality standards. The District Engineer will not process this application to a conclusion until such certification is received. The applicant is hereby advised that supplemental information may be required by the State to facilitate the review. Persons wishing to comment or object to Water Quality Certification must submit all comments in writing to the S.C. Department of Health and Environmental Control at the above address within thirty (30) days of the date of this notice.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Implementation of the proposed project would impact 2.38 acres of freshwater habitat well inland of estuarine substrates and emergent wetlands utilized by various life stages of species comprising the red drum, shrimp, and snapper-grouper management complexes. Our initial determination is that the proposed action would not have a substantial individual or cumulative adverse impact on EFH or fisheries managed by the South Atlantic Fishery Management Council and the National Marine Fisheries Service (NMFS). Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

The District Engineer has consulted the most recently available information and has determined that the project will have no effect on any Federally endangered, threatened, or proposed species and will not result in the destruction or adverse modification of designated or proposed critical habitat. This public notice serves as a request to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service for any additional information they may have on whether any listed or proposed endangered or threatened species or designated or proposed critical habitat may be present in the area which would be affected by the activity, pursuant to Section 7(c) of the Endangered Species Act of 1973 (as amended).

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), this public notice also constitutes a request to Indian Tribes to notify the District Engineer of any historic properties of religious and cultural significance to them that may be affected by the proposed undertaking.

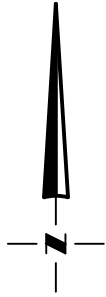
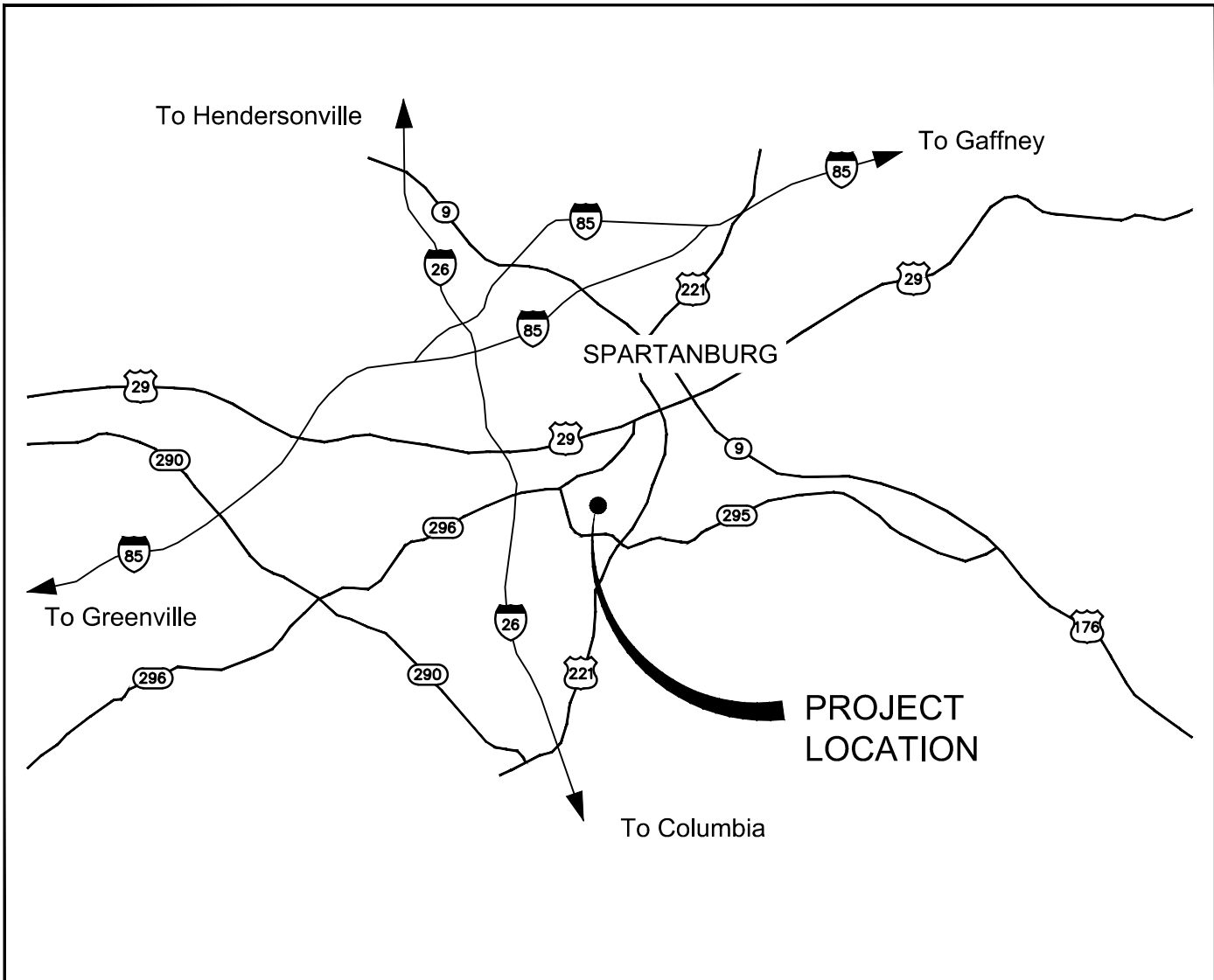
In accordance with the NHPA, the District Engineer has also consulted the latest published version of the National Register of Historic Places for the presence or absence of registered properties, or properties listed as being eligible for inclusion therein, and this worksite is not included as a registered property or property listed as being eligible for inclusion in the Register. To insure that other cultural resources that the District Engineer is not aware of are not overlooked, this public notice also serves as a request to the State Historic Preservation Office to provide any information it may have with regard to historic and cultural resources.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state, with particularity, the reasons for holding a public hearing.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the activity on the public interest and will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency (EPA), under authority of Section 404(b) of the Clean Water Act and, as appropriate, the criteria established under authority of Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the project must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the project will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production and, in general, the needs and welfare of the people. A permit will be granted unless the District Engineer determines that it would be contrary to the public interest. In cases of conflicting property rights, the Corps of Engineers cannot undertake to adjudicate rival claims.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this project. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

If there are any questions concerning this public notice, please contact Amy Cappellino at 803-253-3992.



SCALE: 1" = 20,000'

WK DICKSON
 community infrastructure consultants
 1320 MAIN STREET, SUITE 400
 COLUMBIA, SOUTH CAROLINA 29223
 (t) :803.786.4261
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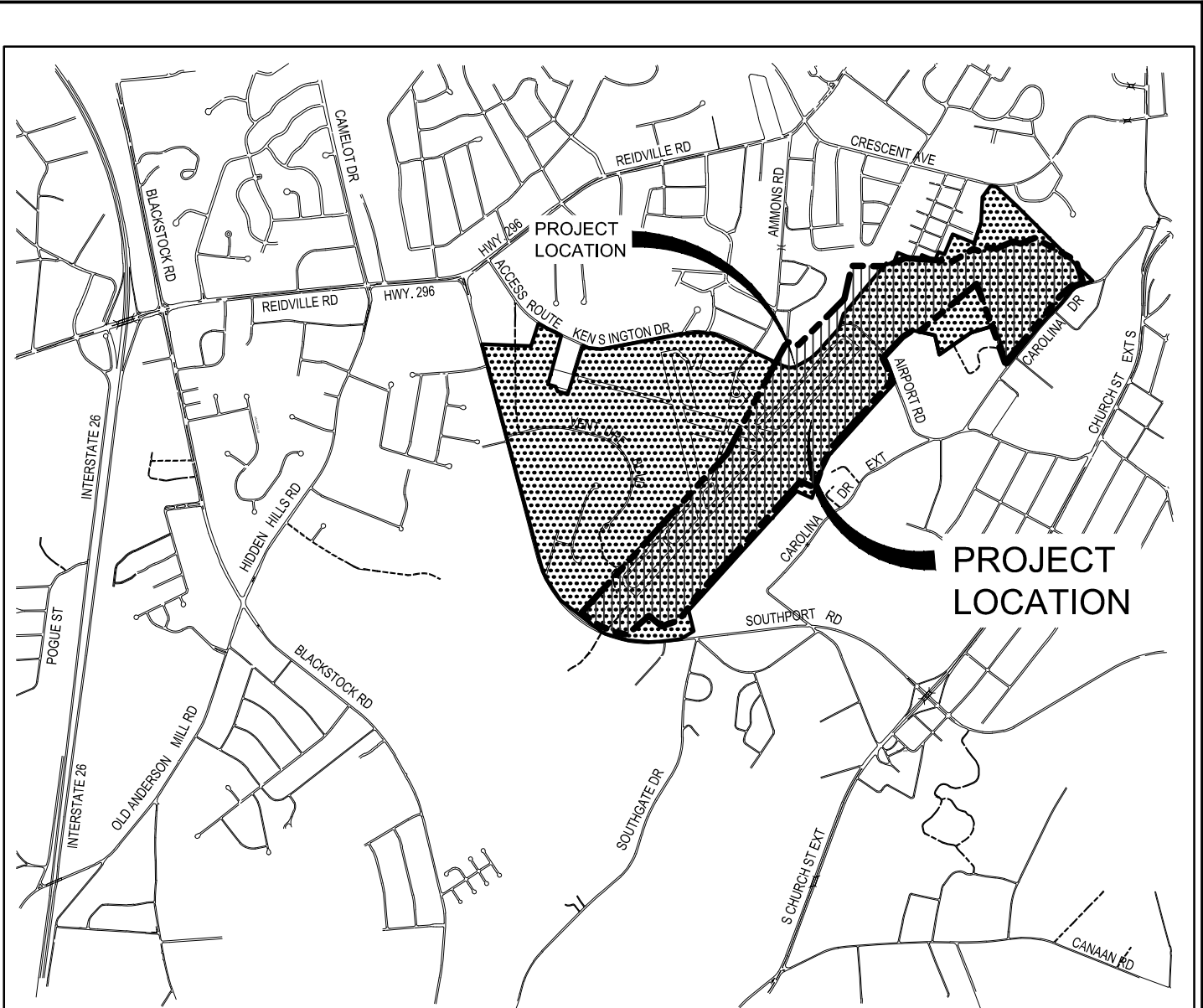
CITY OF SPARTANBURG
 SPARTANBURG MEMORIAL DT AIRPORT
 RUNWAY RSA EXTENSION
 SPARTANBURG, SPARTANBURG COUNTY, S.C.
 APPLICANT TRACKING # SAC-2013-00233-5C

PROJ. MGR: KCH
 DRAWN BY: NS
 DATE: 6/20/14

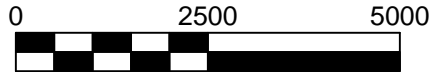
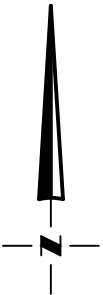
VICINITY MAP

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
 DRAWING NO. **SHT. 1 OF 48**



**PROJECT
LOCATION**



SCALE: 1" = 2,500'



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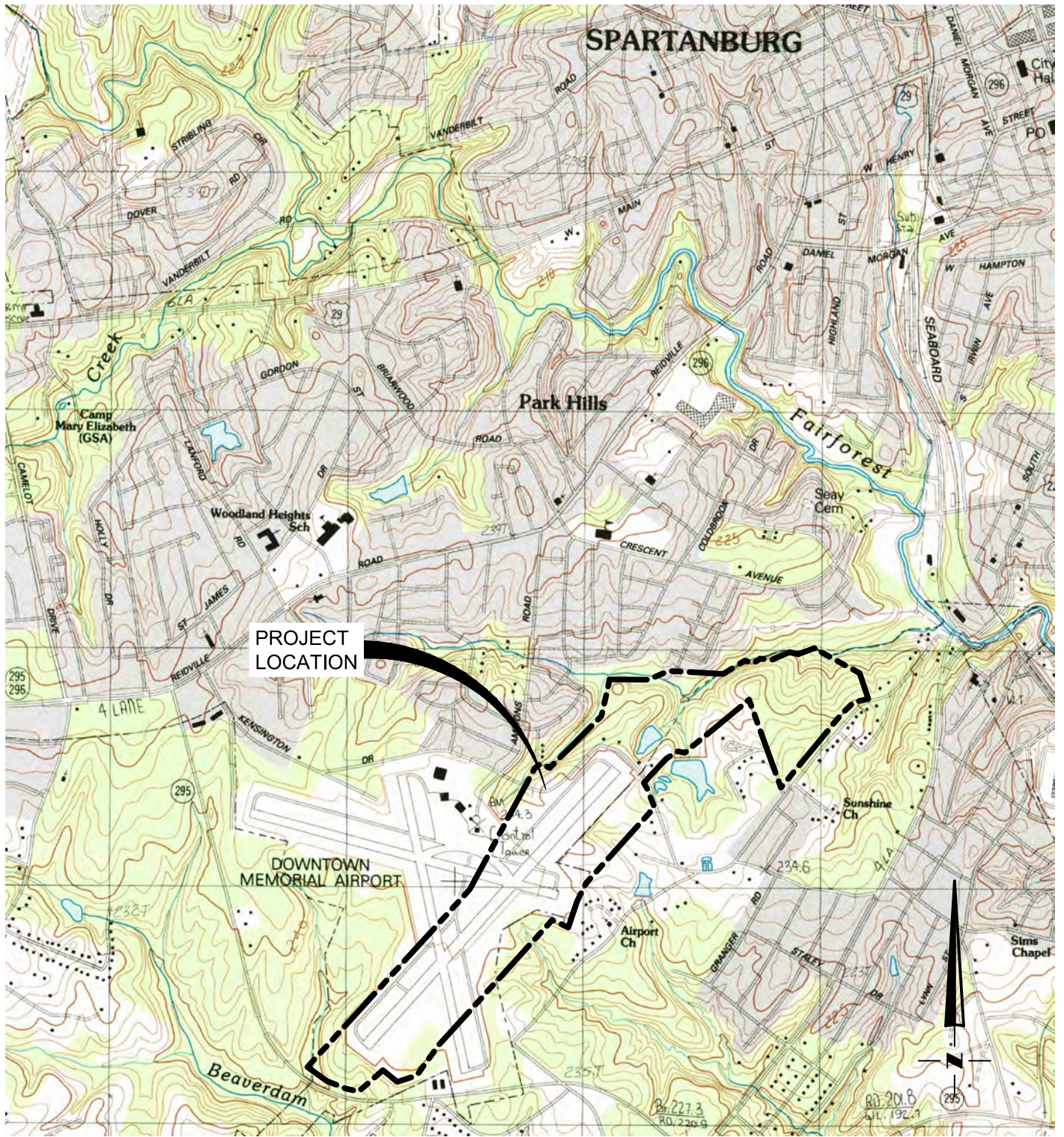
PROJ. MGR: KCH
DRAWN BY: NS
DATE: 6/20/14

LOCATION MAP

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO. **SHT. 2 OF 48**



SCALE: 1" = 2,000'



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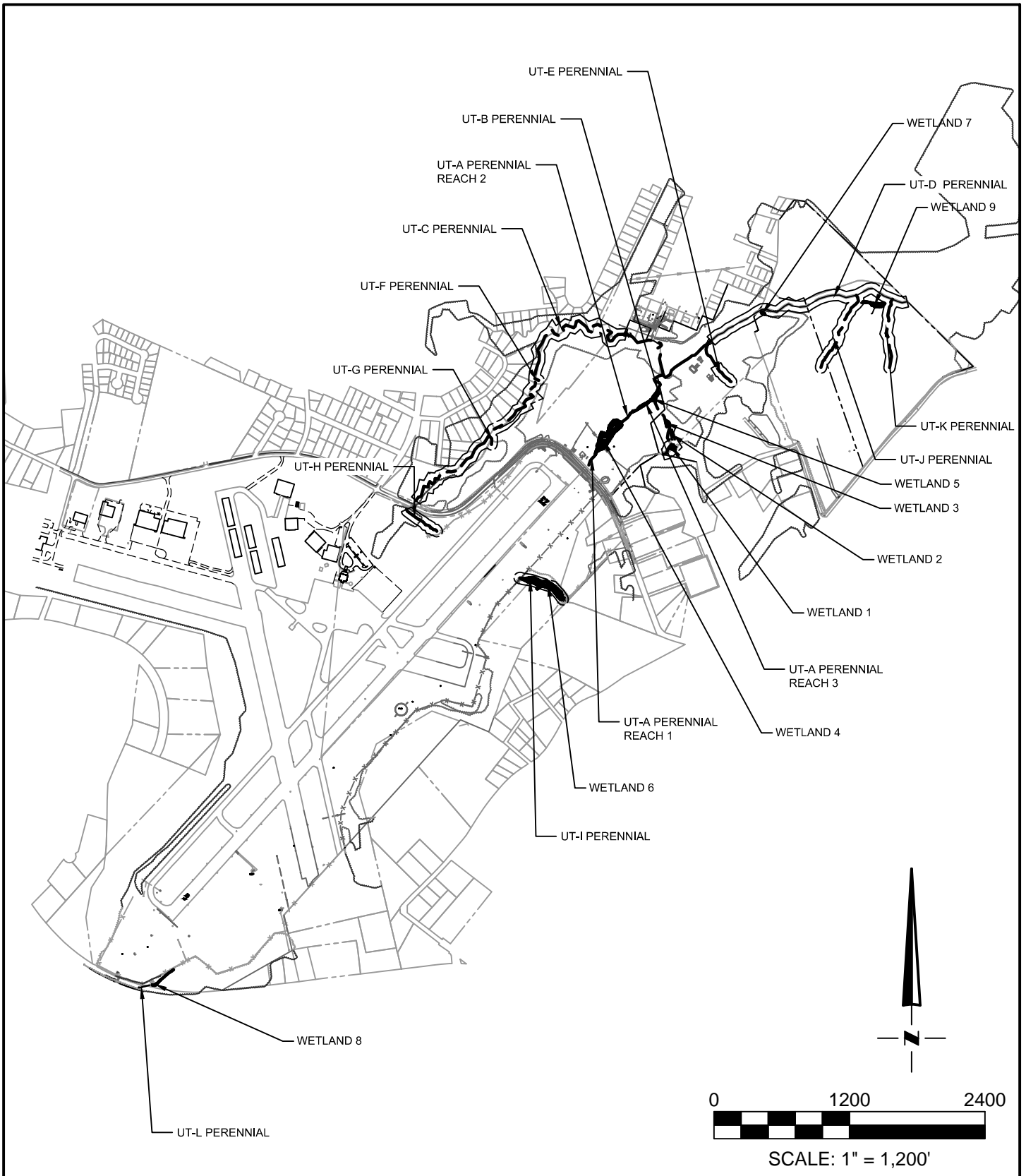
PROJ. MGR: KCH
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USGS TOPOGRAPHICAL
 MAP

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO. **SHT. 3 OF 48**



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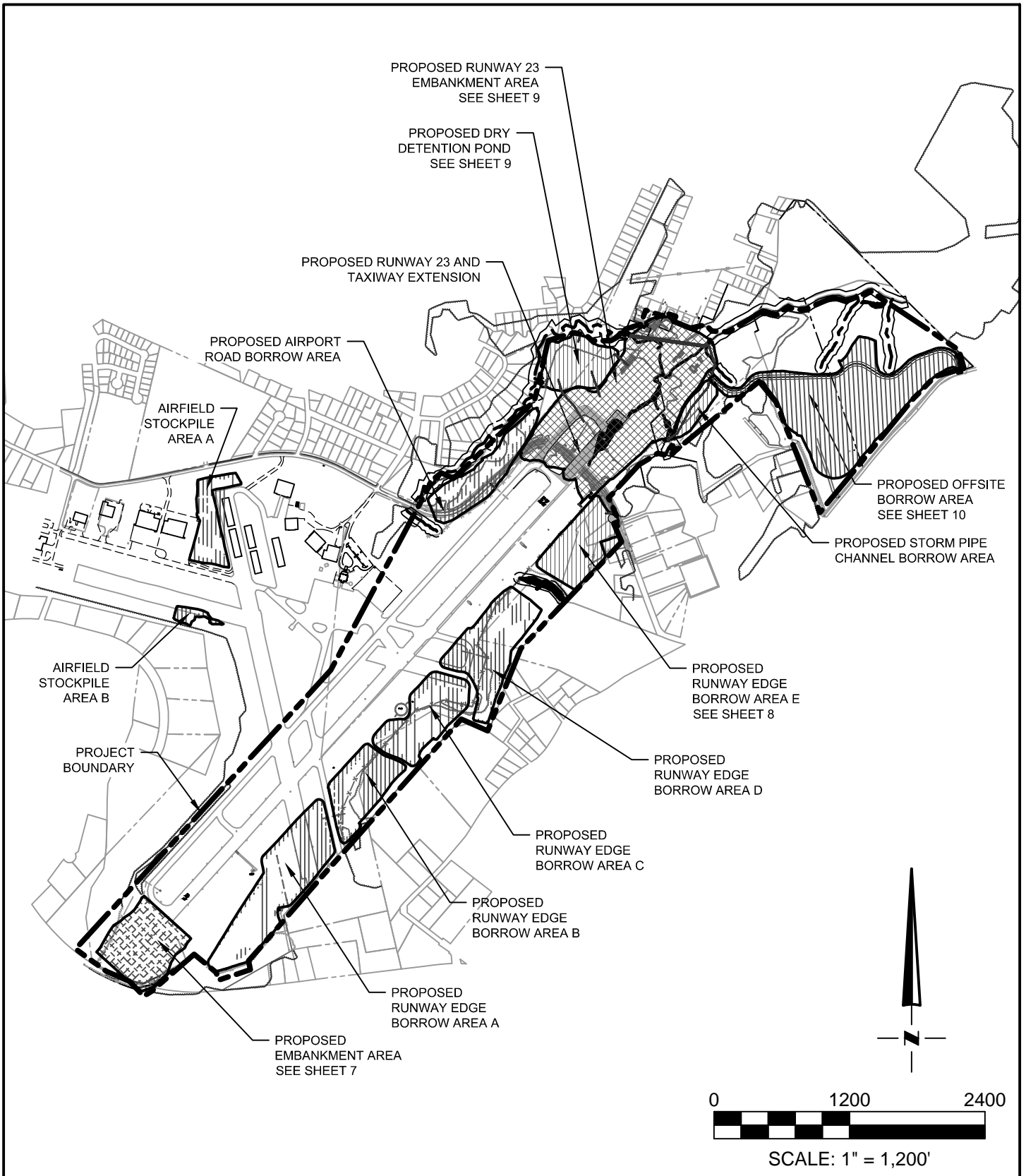
PROJ. MGR: KCH
 DRAWN BY: NS
 DATE: 6/20/14

OVERALL EXISTING
 PLAN

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO. **SHT. 4 OF 48**



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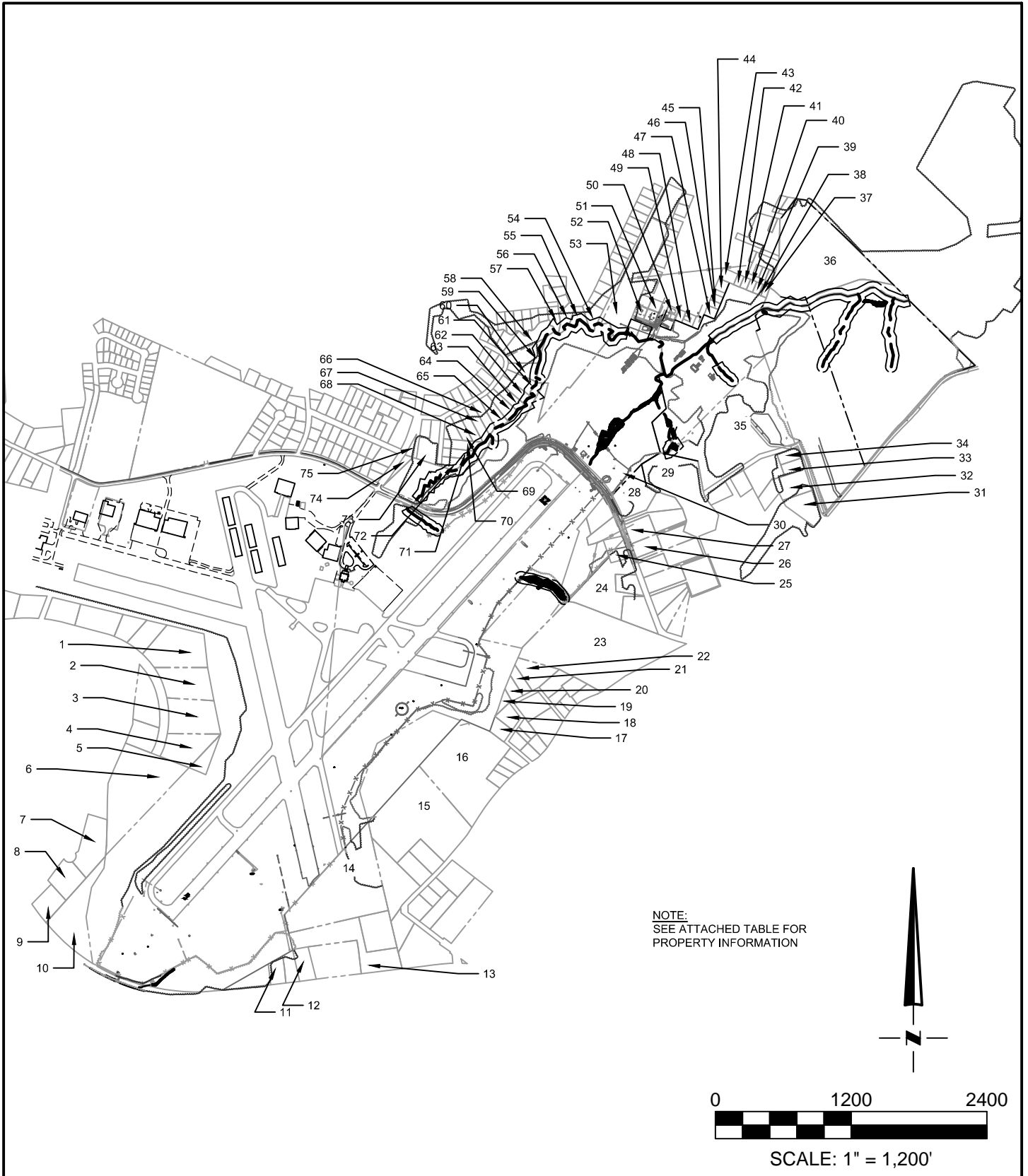
PROJ. MGR: KCH
 DRAWN BY: NS
 DATE: 6/20/14

OVERALL PROPOSED
 DEVELOPMENT PLAN

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO. **SHT. 5 OF 48**



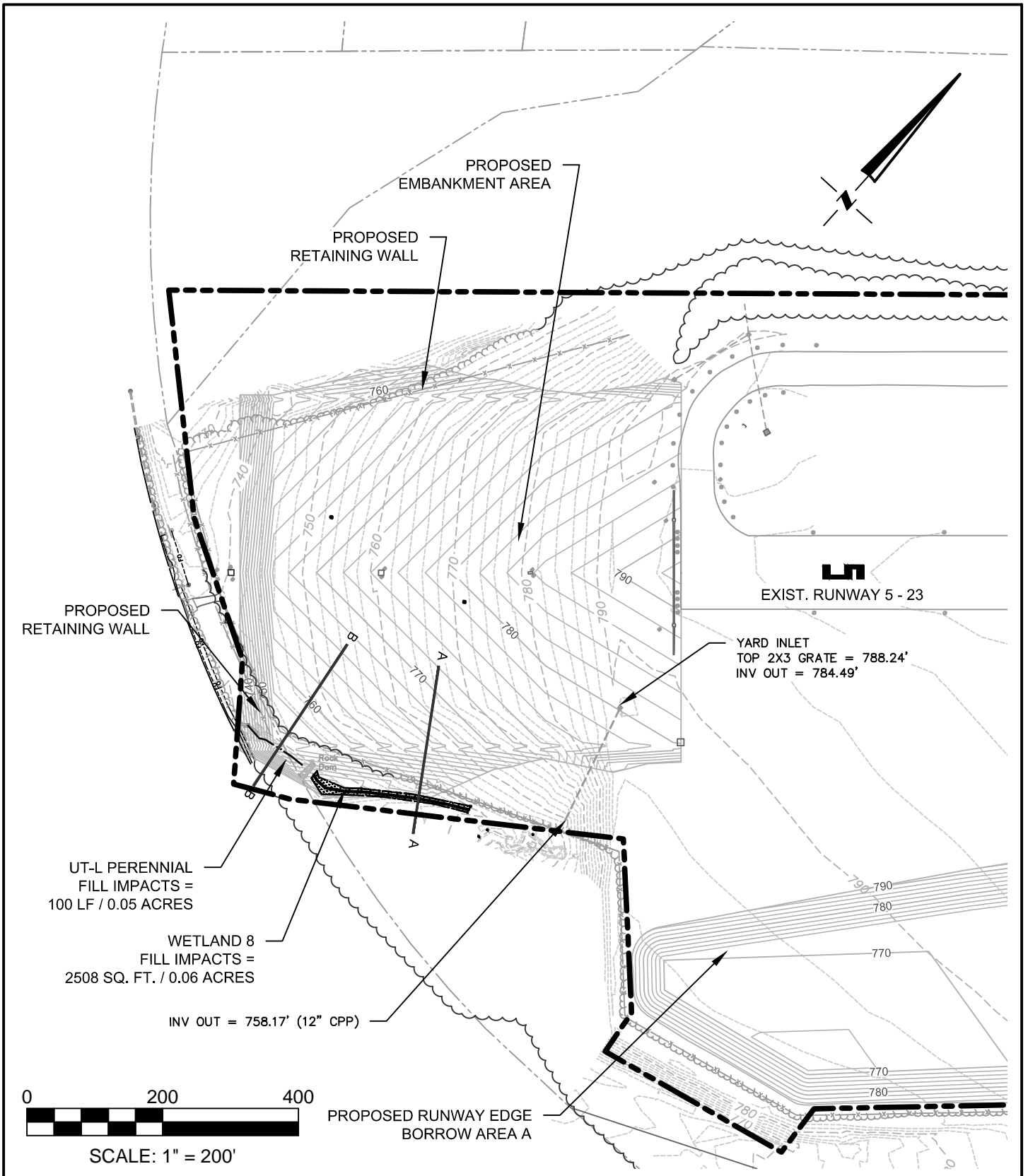
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PROJ. MGR: KCH
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DATE: 6/20/14

ADJACENT
PROPERTIES

REV	DATE	DESCRIPTION
WKD PROJ. NO: 20130127.00.CA		
DRAWING NO.		SHT. 6 OF 48



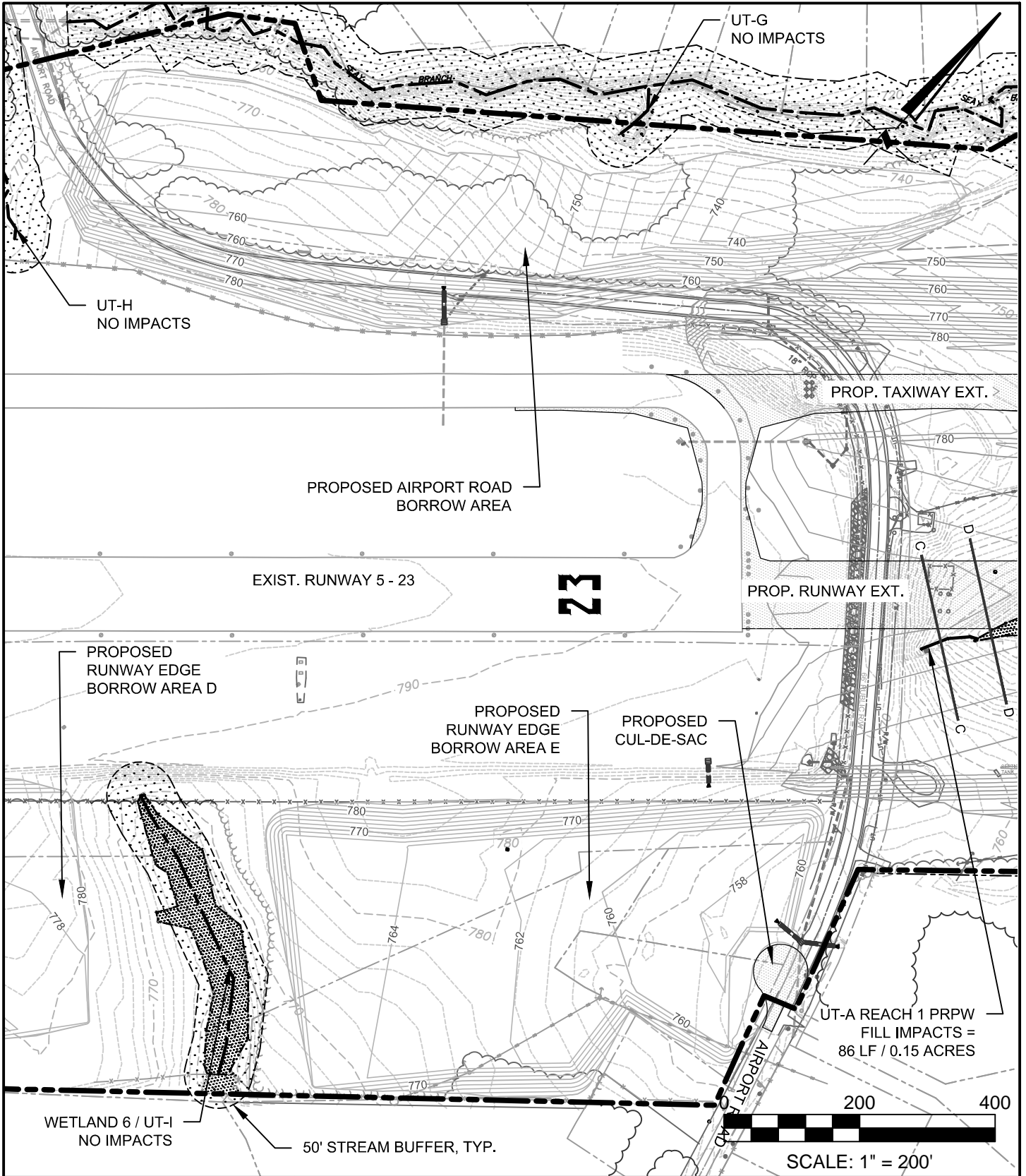
community infrastructure consultants
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PLAN VIEW
RUNWAY 5 END

REV	DATE	DESCRIPTION
WKD PROJ. NO: 20130127.00.CA		
DRAWING NO.		SHT. 7 OF 48



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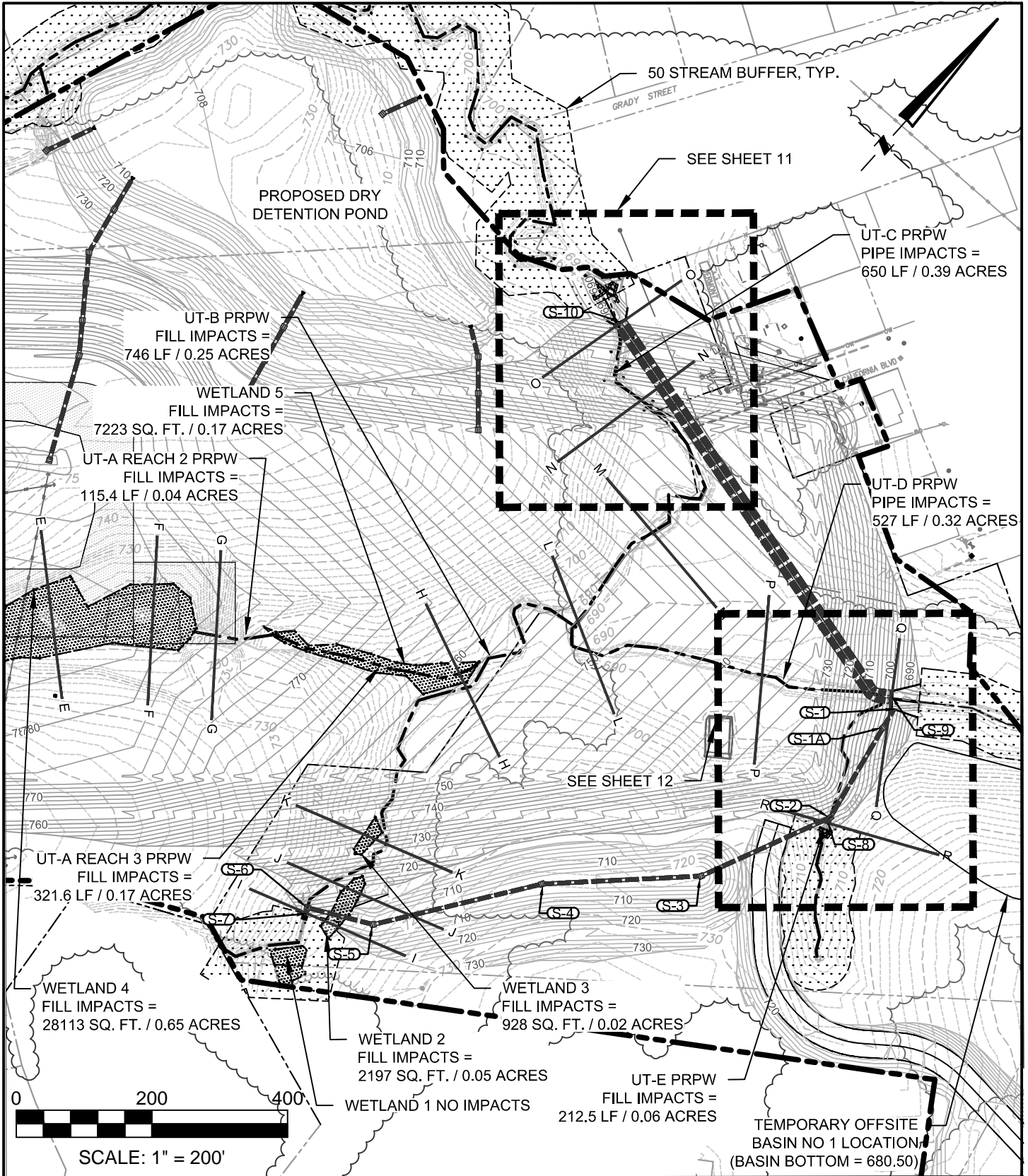
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 APPLICANT TRACKING # SAC-2013-00233-5C

PROJ. MGR: KCH
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 DATE: 6/20/14

PLAN VIEW
 ONSITE BORROW

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
 DRAWING NO. **SHT. 8 OF 48**



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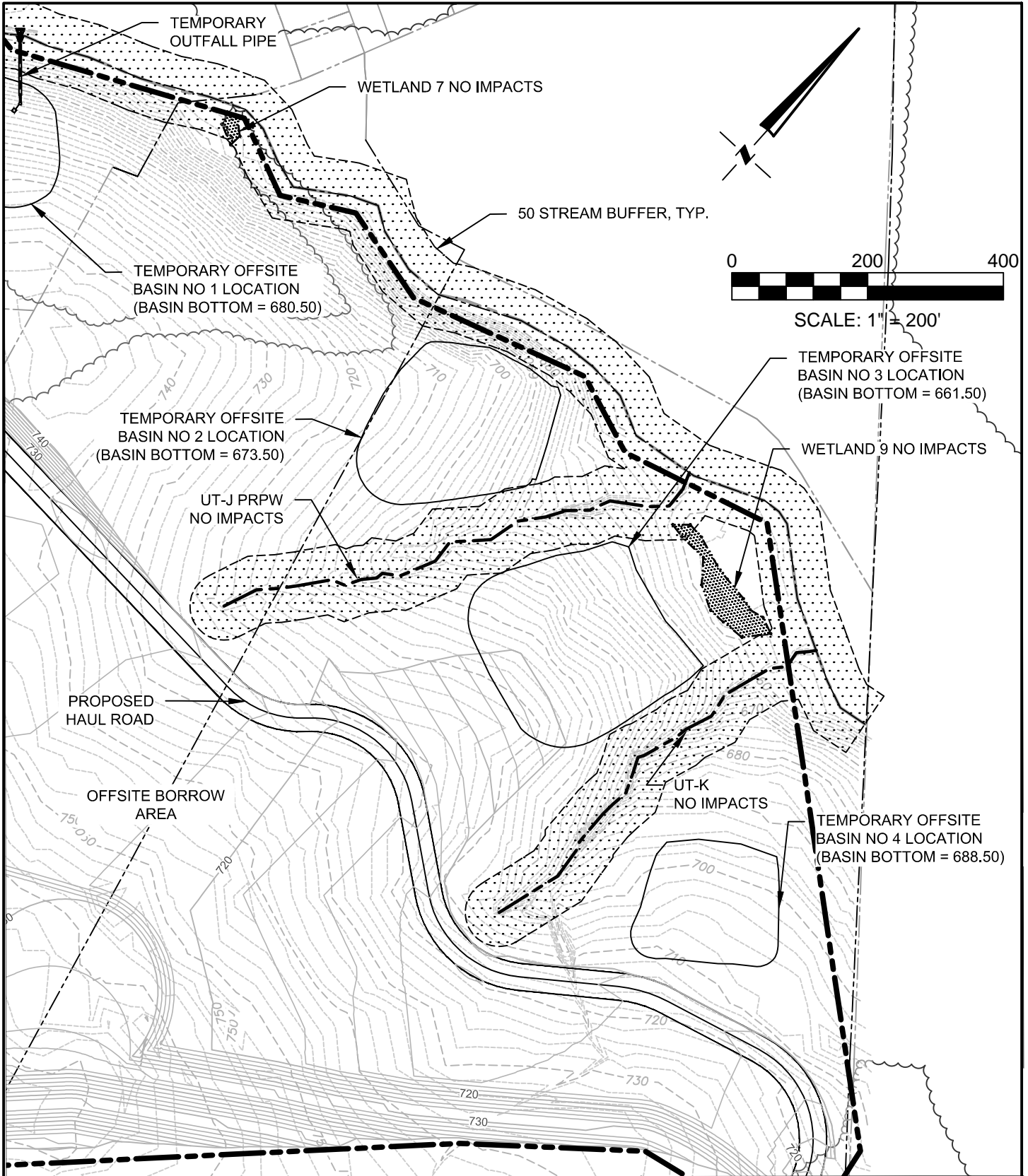
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PROJ. MGR: KCH
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PLAN VIEW
RUNWAY 23 END

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
DRAWING NO. **SHT. 9 OF 48**



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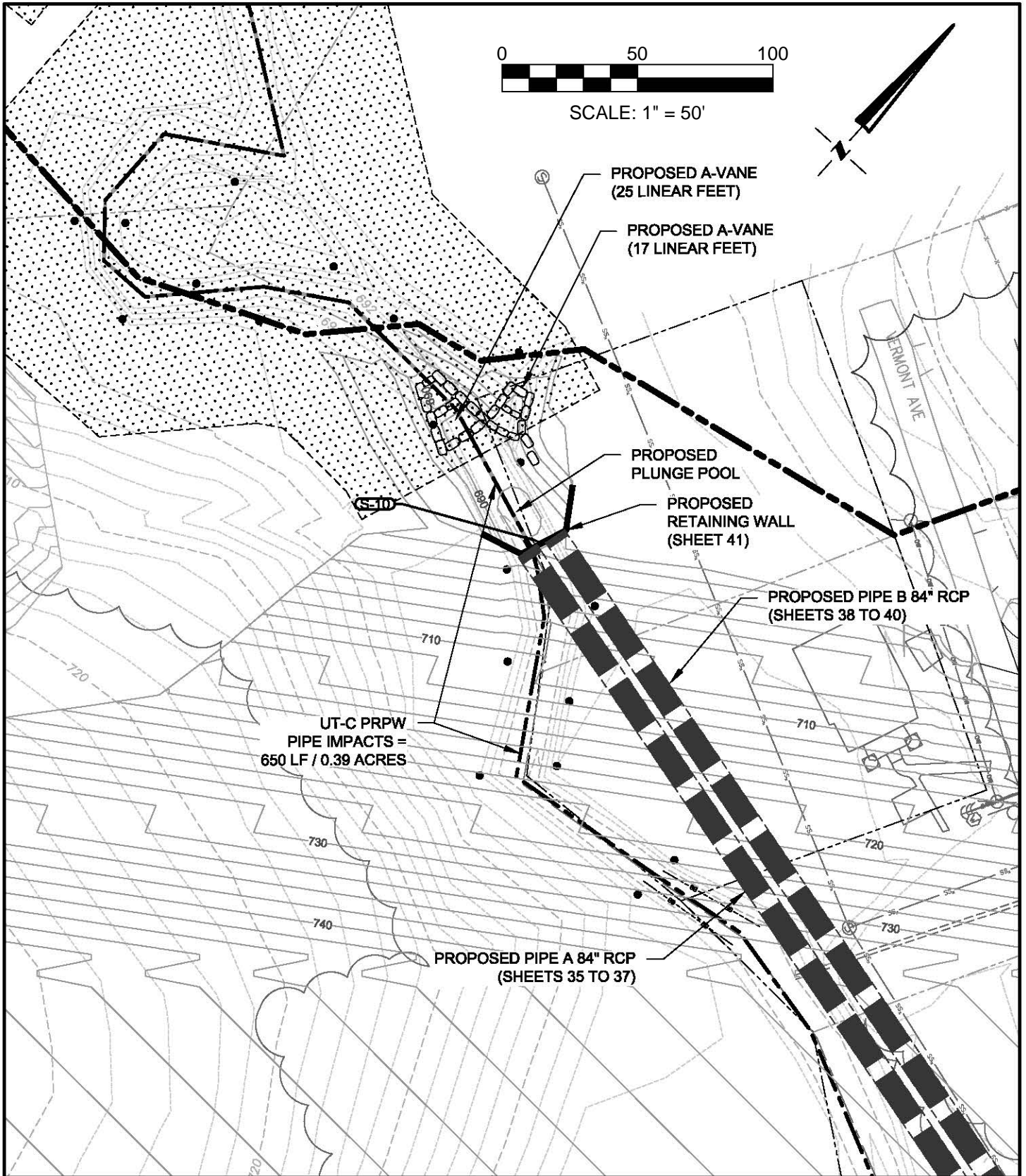
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 DRAWN BY: NS
 DATE: 6/20/14

**OFFSITE
 BORROW AREA**

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO. **SHT. 10 OF 48**



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PROJ. MGR: KCH
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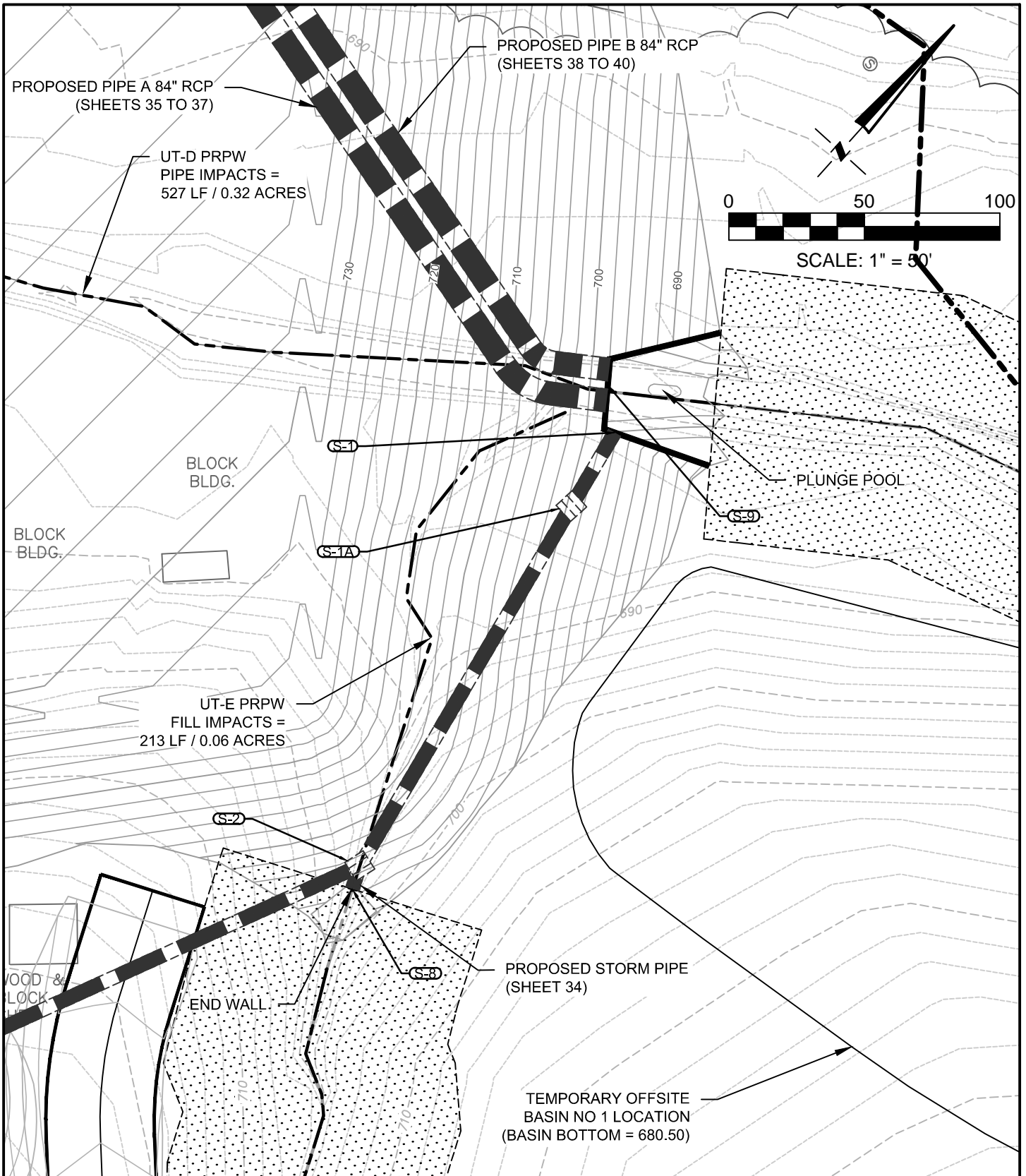
UPSTREAM RETAINING
WALL AREA


REV	DATE	DESCRIPTION

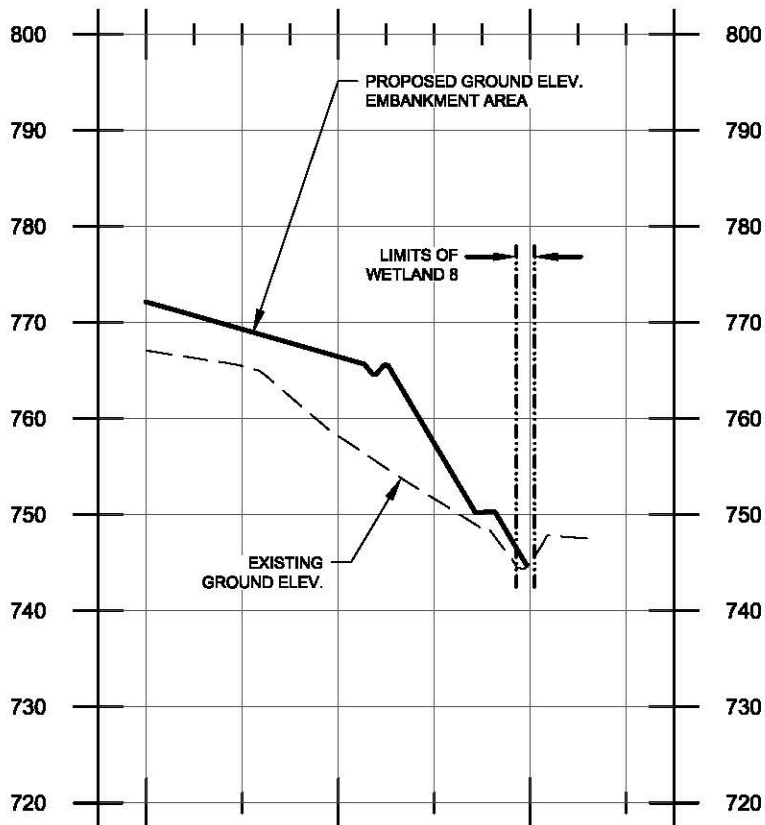
WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 11 OF 48



 <p>community infrastructure consultants 1320 MAIN STREET, SUITE 400 COLUMBIA, SOUTH CAROLINA 29223 (t) :803.786.4261 (f) :803.786.4263</p>	<p>CITY OF SPARTANBURG SPARTANBURG MEMORIAL DT AIRPORT RUNWAY RSA EXTENSION SPARTANBURG, SPARTANBURG COUNTY, S.C. APPLICANT TRACKING # SAC-2013-00233-5C</p>		REV	DATE	DESCRIPTION
	PROJ. MGR:	KCH	<p>WKD PROJ. NO: 20130127.00.CA DRAWING NO. SHT. 12 OF 48</p>		
	DRAWN BY:	NS			
DATE:	6/20/14	<p>DOWNSTREAM RETAINING WALL AREA</p>			



CROSS SECTION A

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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PROJ. MGR: KCH
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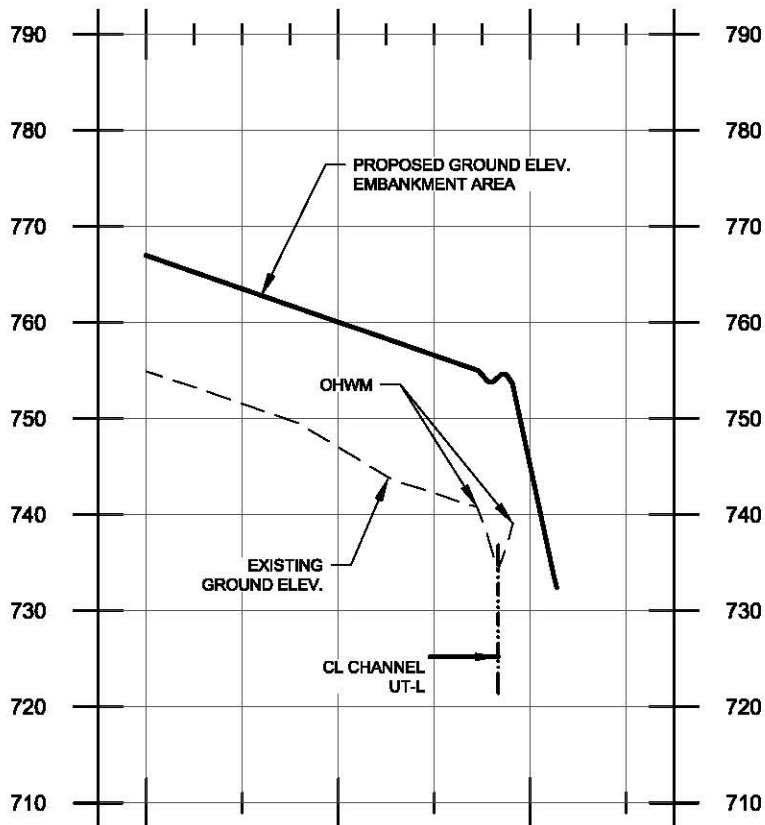
CROSS SECTION A

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 13 OF 48



CROSS SECTION B

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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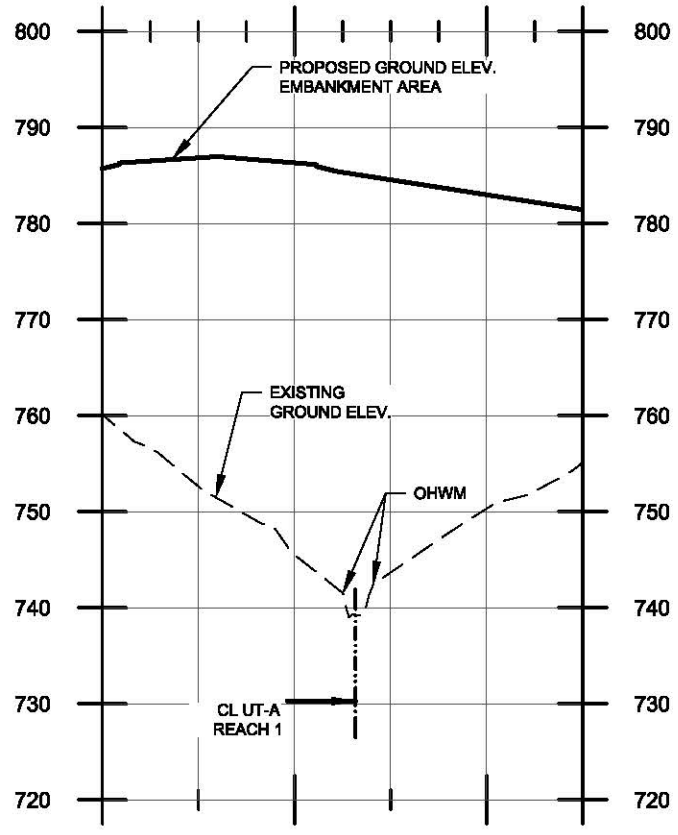
CROSS SECTION B

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 14 OF 48



CROSS SECTION C

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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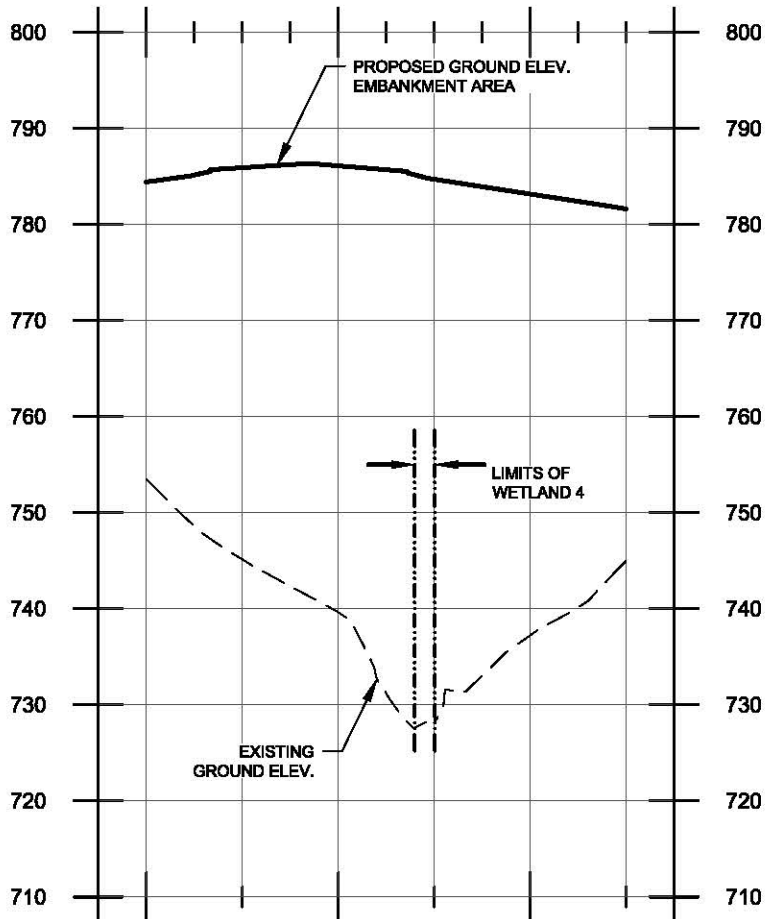
CROSS SECTION C

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 15 OF 48



CROSS SECTION D

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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SPARTANBURG, SPARTANBURG COUNTY, S.C.
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PROJ. MGR: KCH
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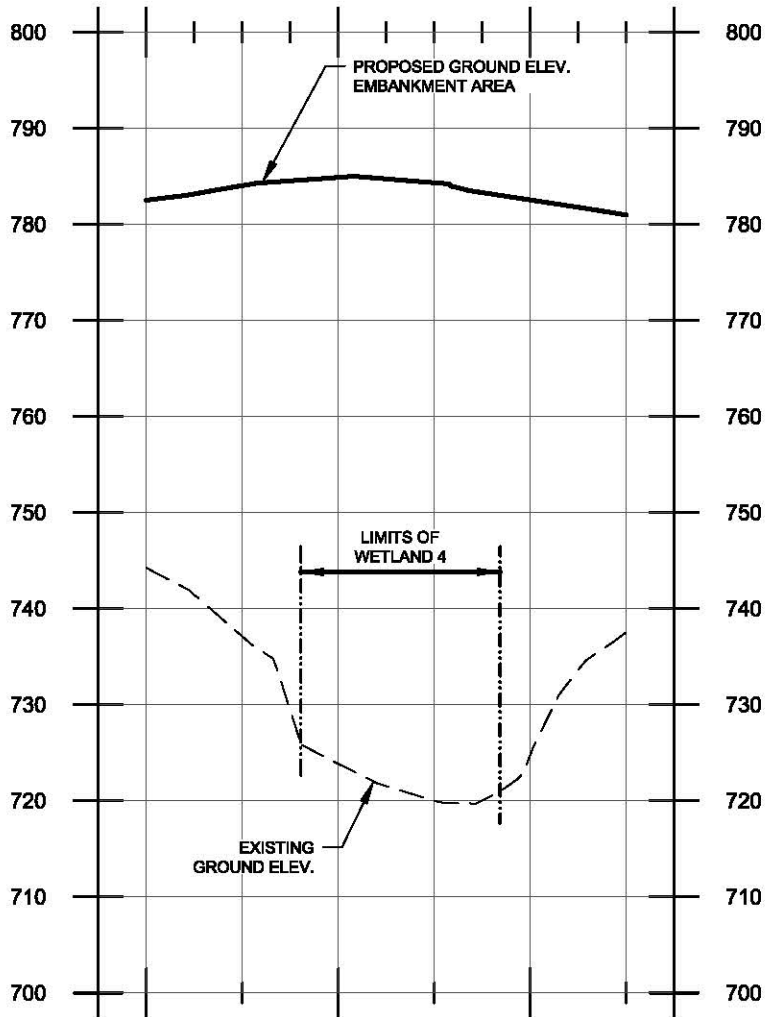
CROSS SECTION D

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 16 OF 48



CROSS SECTION E

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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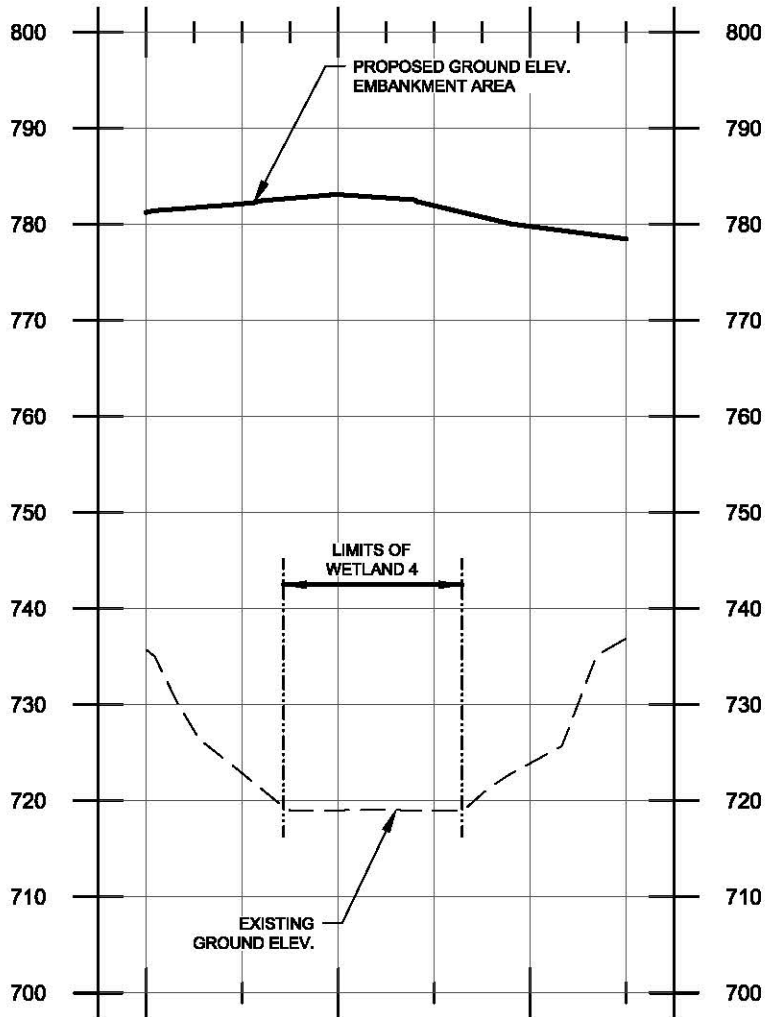
CROSS SECTION E

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 17 OF 48



CROSS SECTION F

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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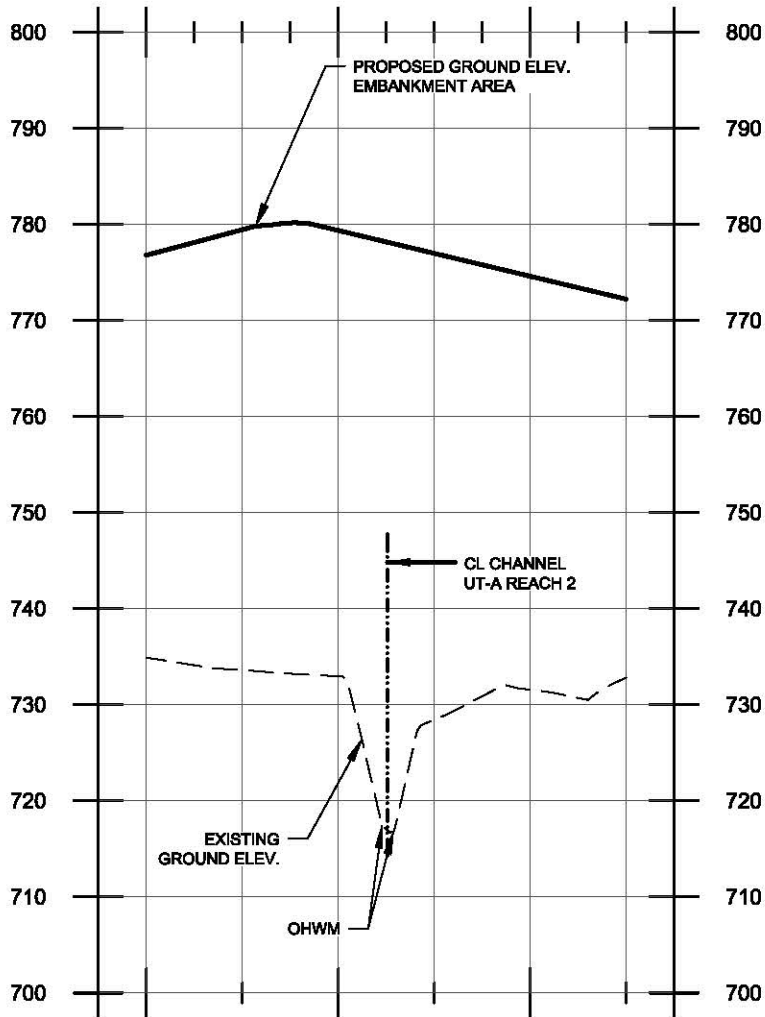
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REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 18 OF 48



CROSS SECTION G

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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SPARTANBURG, SPARTANBURG COUNTY, S.C.
APPLICANT TRACKING # SAC-2013-00233-5C

PROJ. MGR: KCH
DRAWN BY: NS
DATE: 6/20/14

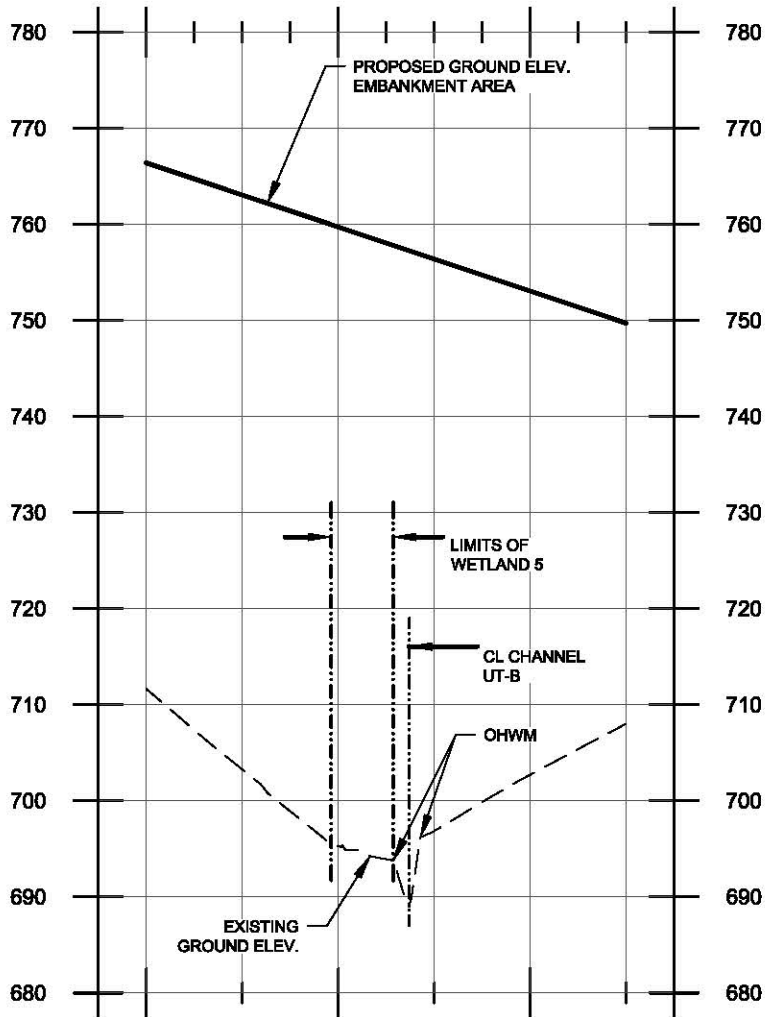
CROSS SECTION G

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 19 OF 48



CROSS SECTION H

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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DRAWN BY: NS
DATE: 6/20/14

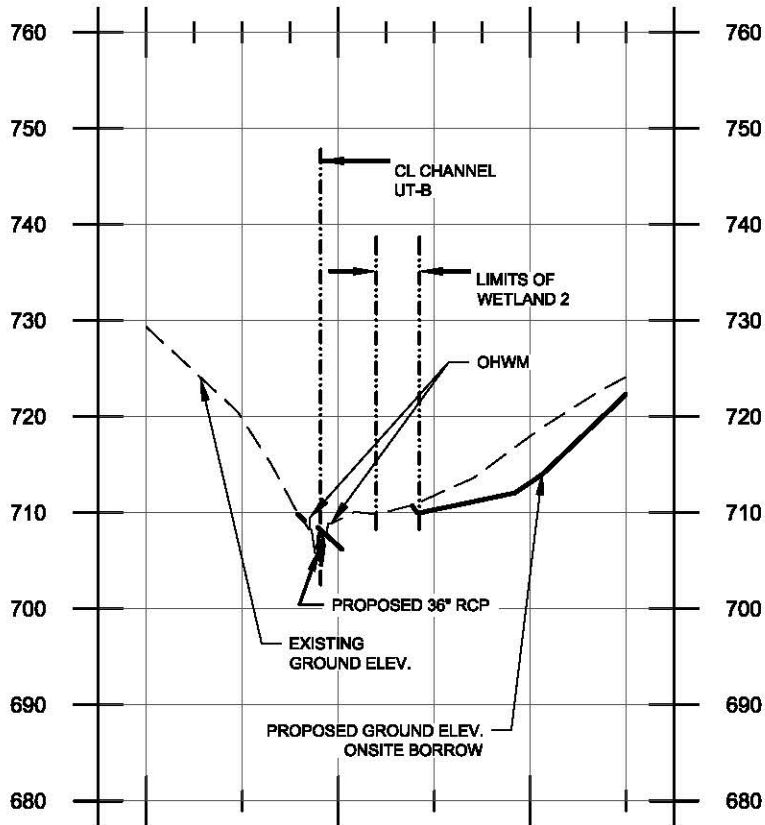
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REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 20 OF 48



CROSS SECTION I

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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PROJ. MGR: KCH
DRAWN BY: NS
DATE: 6/20/14

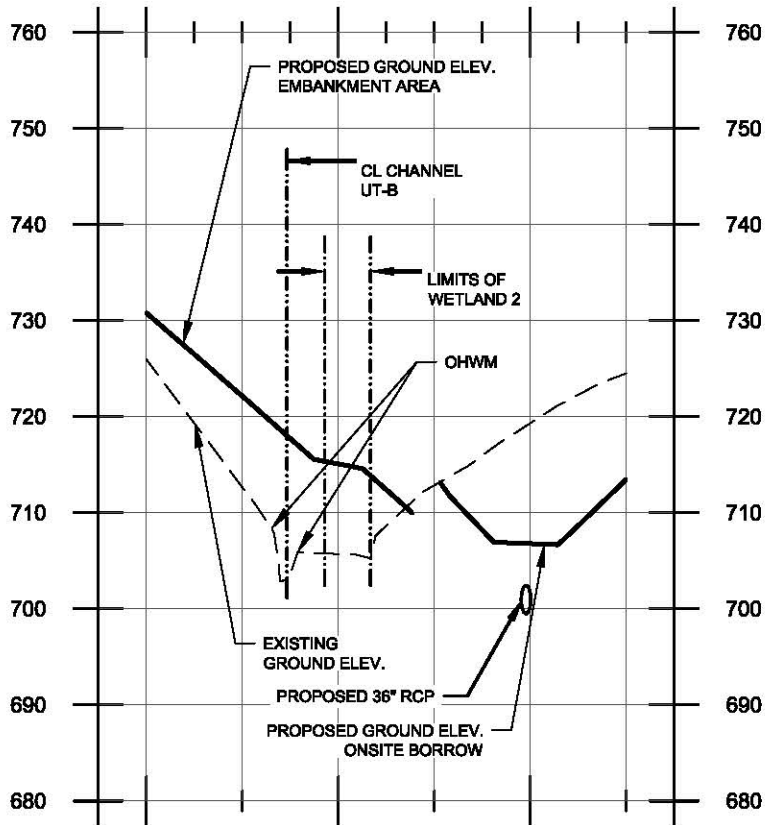
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REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 21 OF 48



CROSS SECTION J

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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DATE: 6/20/14

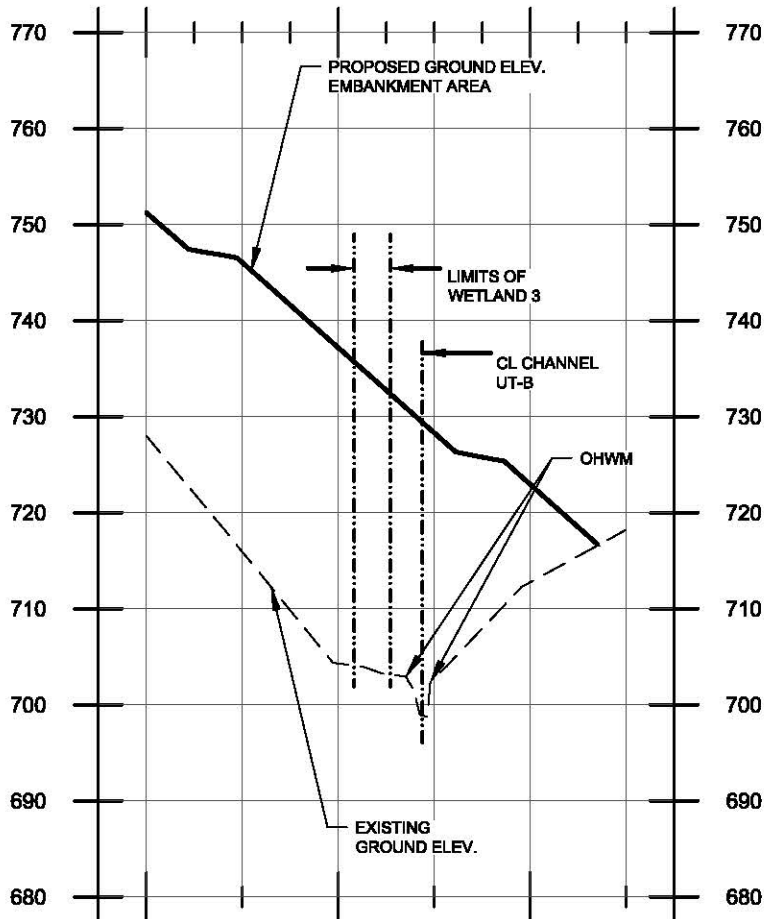
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REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 22 OF 48



CROSS SECTION K

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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PROJ. MGR: KCH
DRAWN BY: NS
DATE: 6/20/14

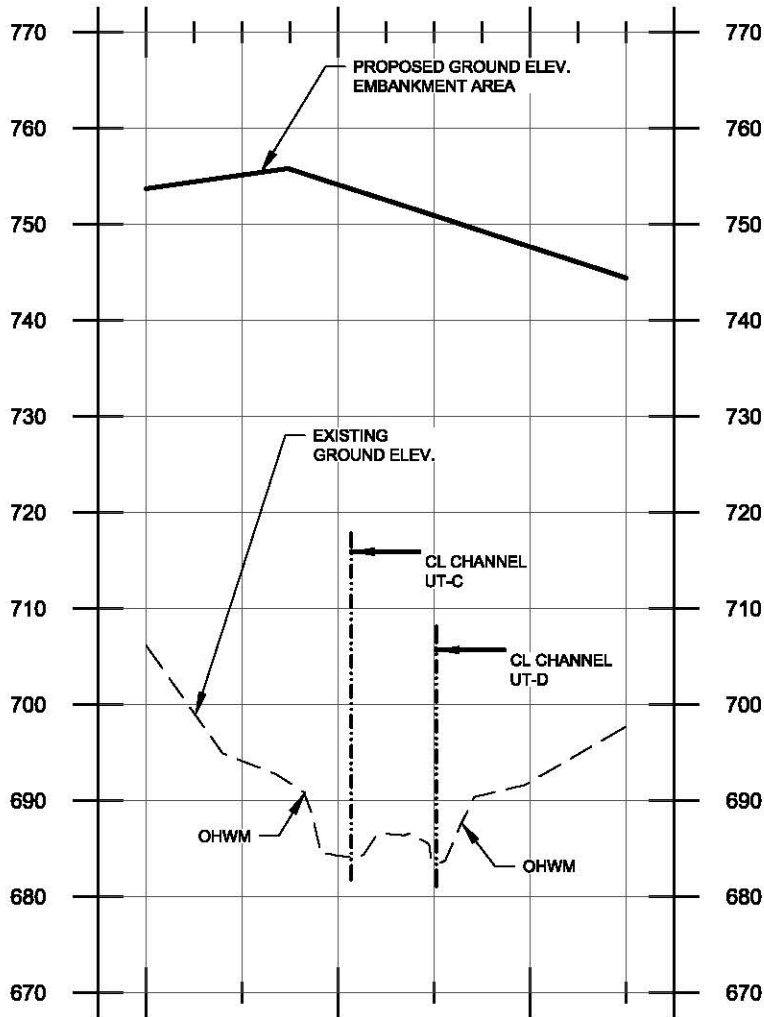
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REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 23 OF 48



CROSS SECTION L

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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DATE: 6/20/14

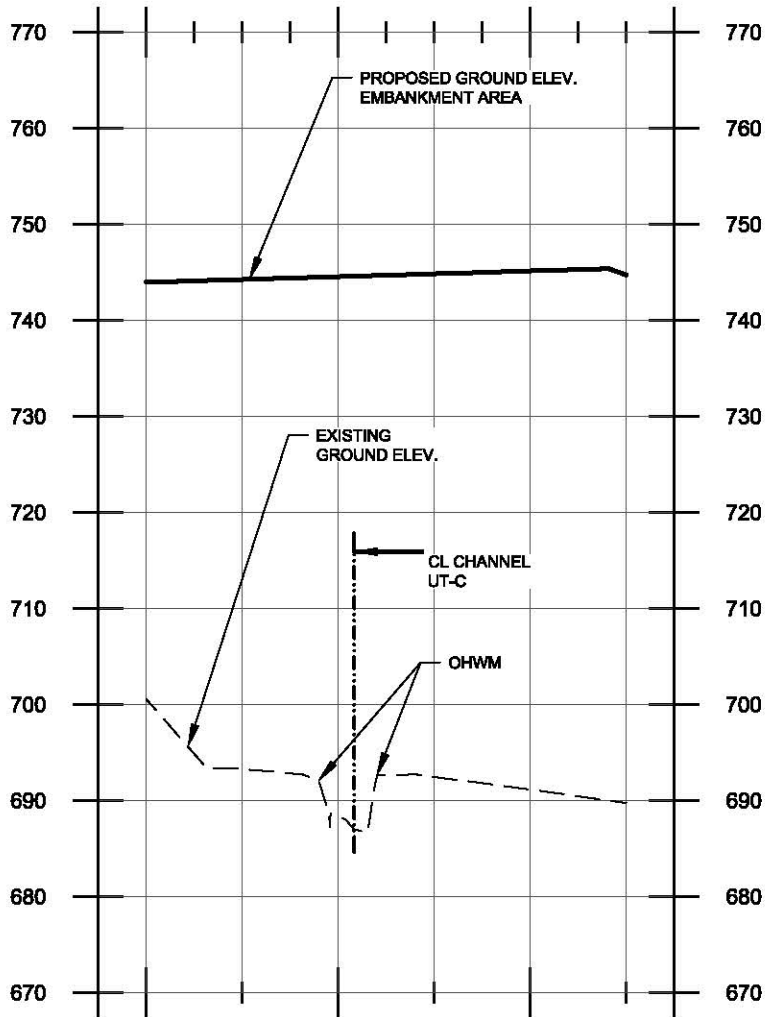
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REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 24 OF 48



CROSS SECTION M

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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DATE: 6/20/14

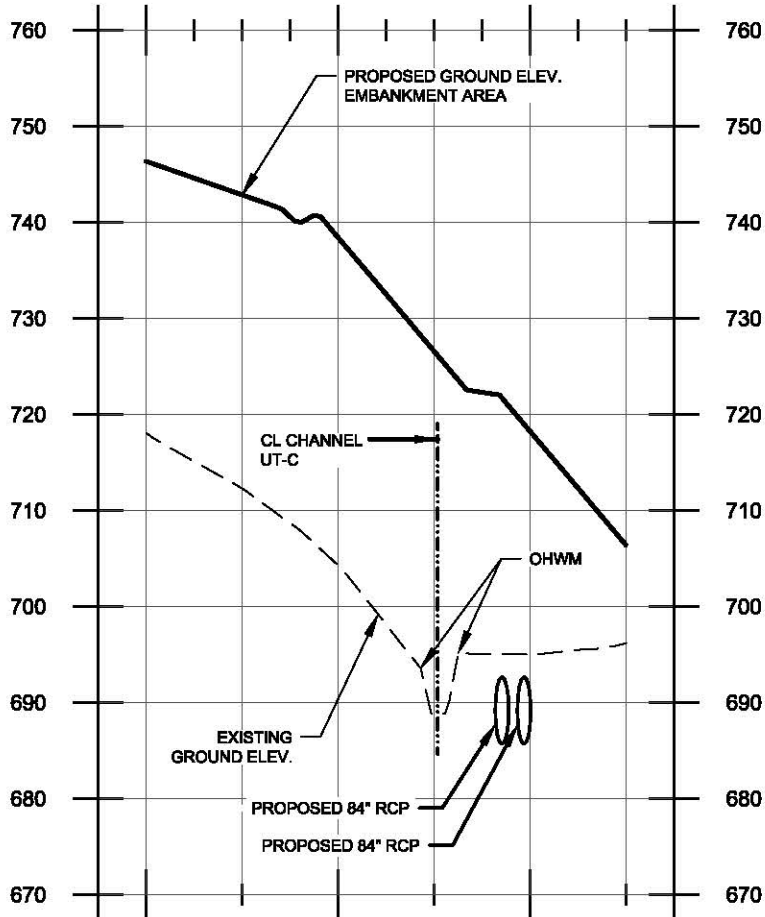
CROSS SECTION M

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 25 OF 48



CROSS SECTION N

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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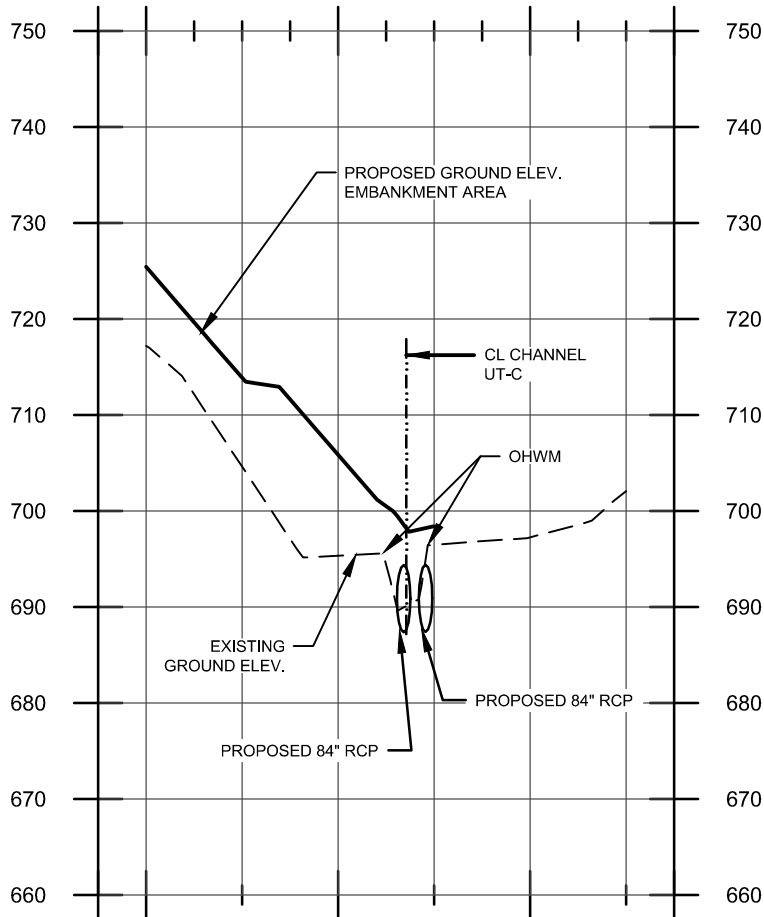
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DRAWN BY: NS
DATE: 6/20/14

CROSS SECTION N

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO. **SHT. 26 OF 48**



CROSS SECTION O

SCALE: 1"=100' HORIZ.
1"=20' VERT.

NOTE:

SEE SHEET 41 FOR RETAINING
WALL CROSS SECTION



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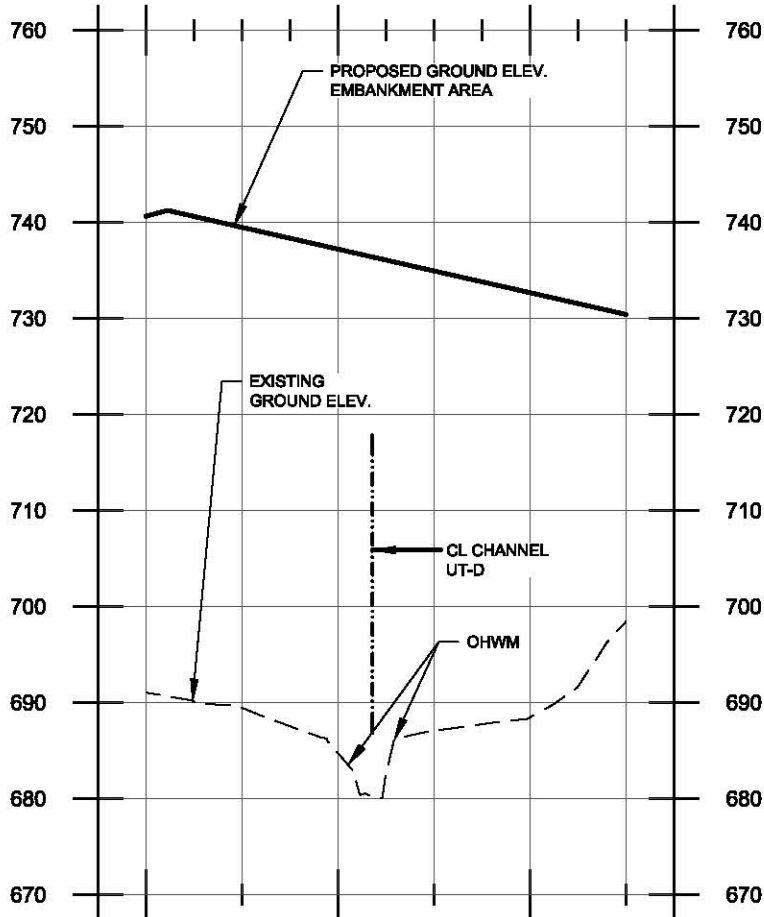
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DRAWN BY: NS
DATE: 6/20/14

CROSS SECTION O

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO. **SHT. 27 OF 48**



CROSS SECTION P

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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DRAWN BY: NS
DATE: 6/20/14

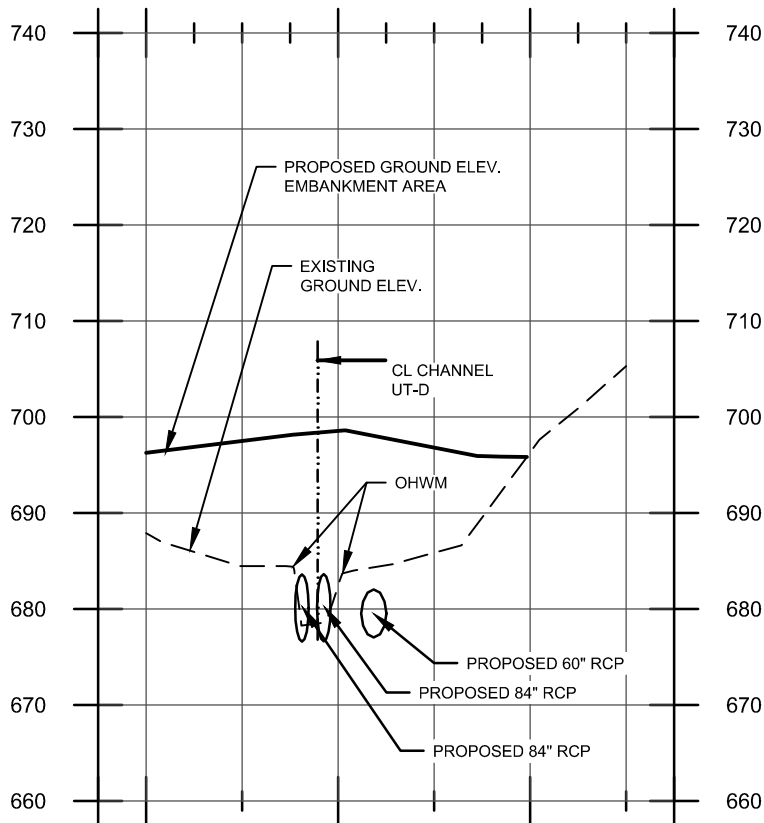
CROSS SECTION P

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 28 OF 48



CROSS SECTION Q

SCALE: 1"=100' HORIZ.
1"=20' VERT.

NOTE:

SEE SHEET 42 FOR RETAINING
WALL CROSS SECTION



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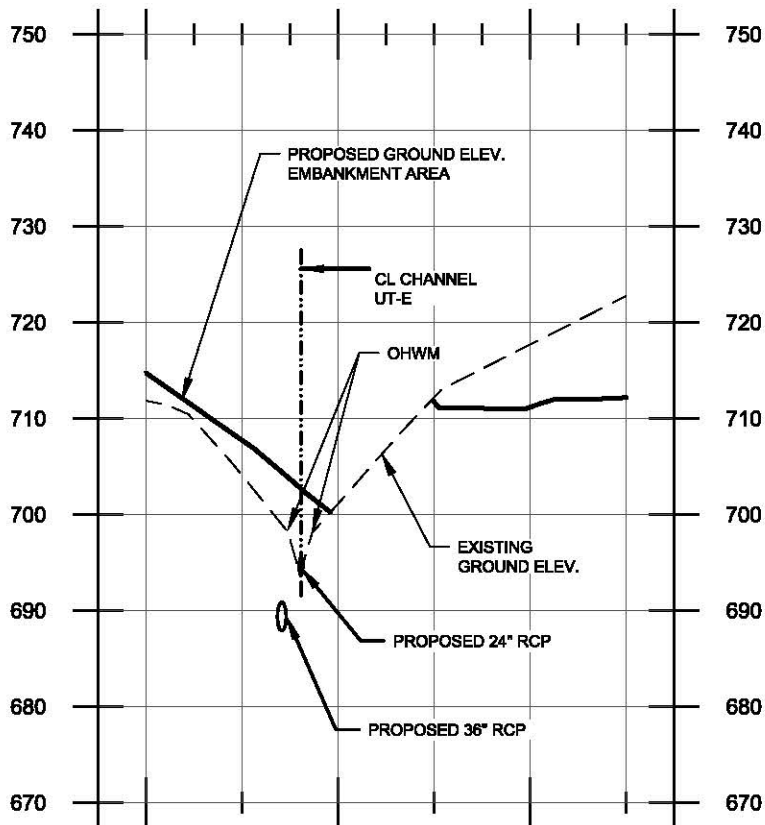
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DRAWN BY: NS
DATE: 6/20/14

CROSS SECTION Q

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO. **SHT. 29 OF 48**



CROSS SECTION R

SCALE: 1"=100' HORIZ.
1"=20' VERT.



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PROJ. MGR: KCH
DRAWN BY: NS
DATE: 6/20/14

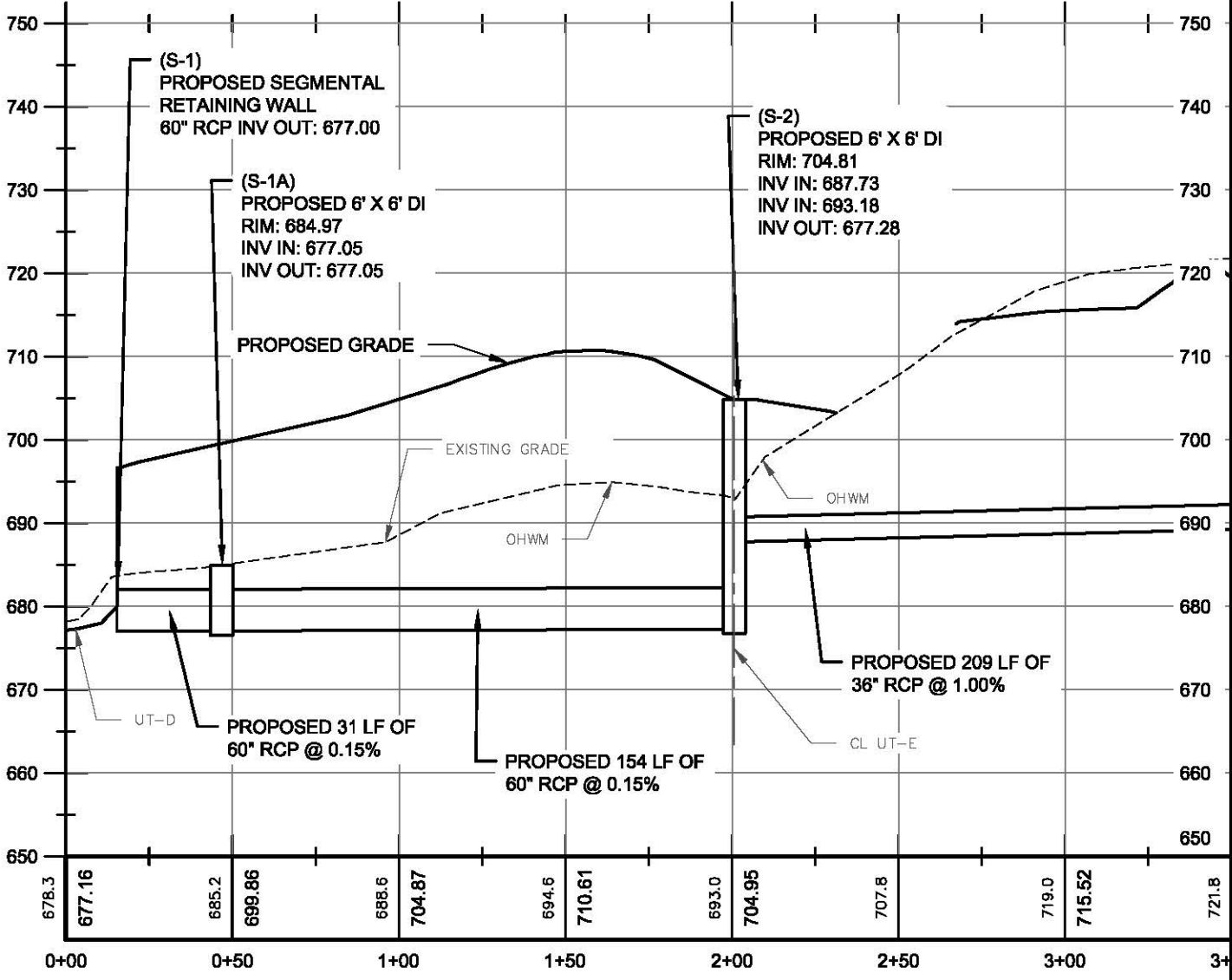
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REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

DRAWING NO.

SHT. 30 OF 48



S-1 TO S-7 PIPE PROFILE (STA 0+00 TO 3+50)

SCALE: HOR 1"=50' ; VERT 1" = 20'



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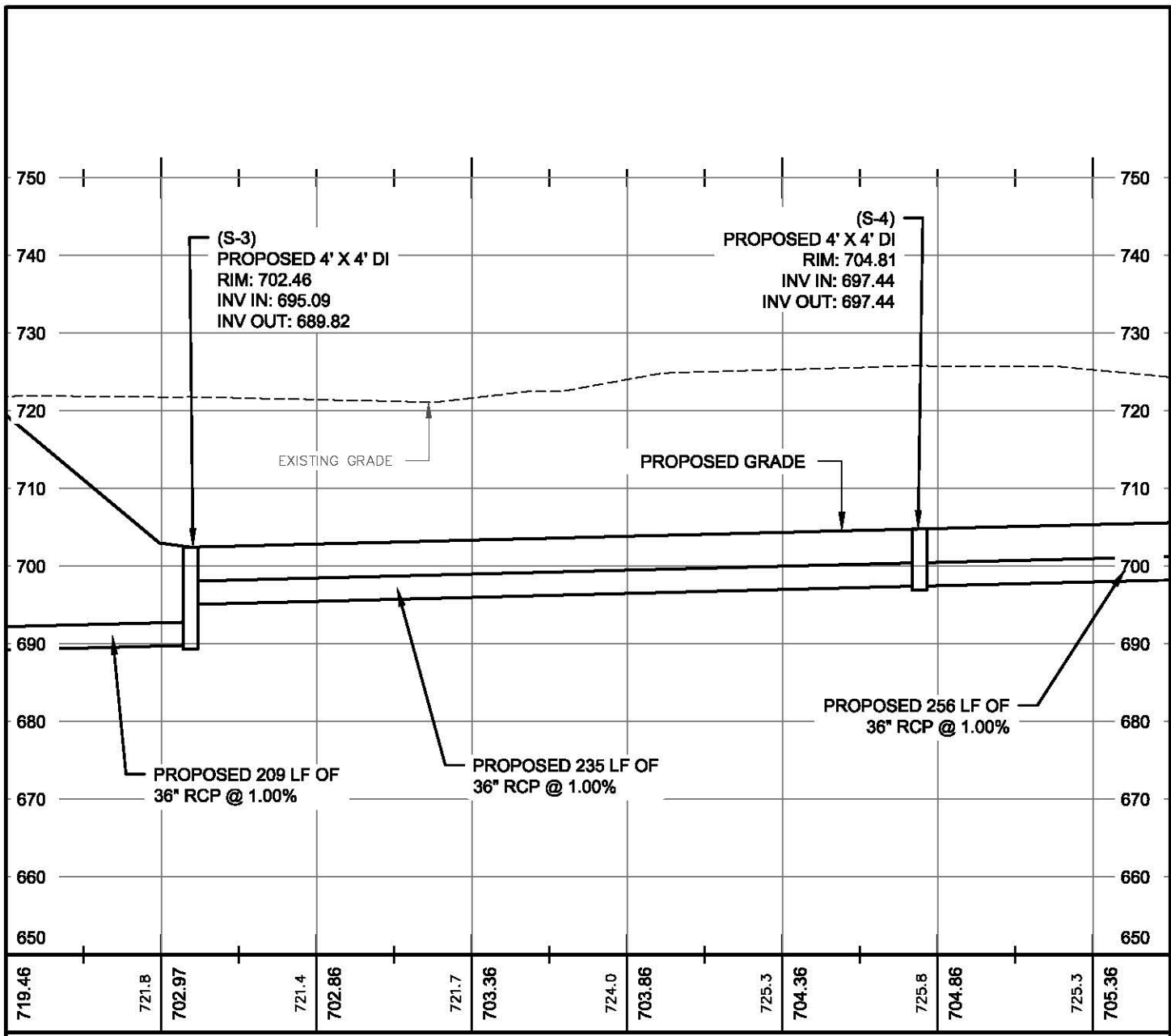
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 APPLICANT TRACKING # SAC-2013-00233-5C

PROJ. MGR: KCH
 DRAWN BY: NS
 DATE: 6/20/14

**PIPE PROFILES -
 SHEET 1**


REV	DATE	DESCRIPTION

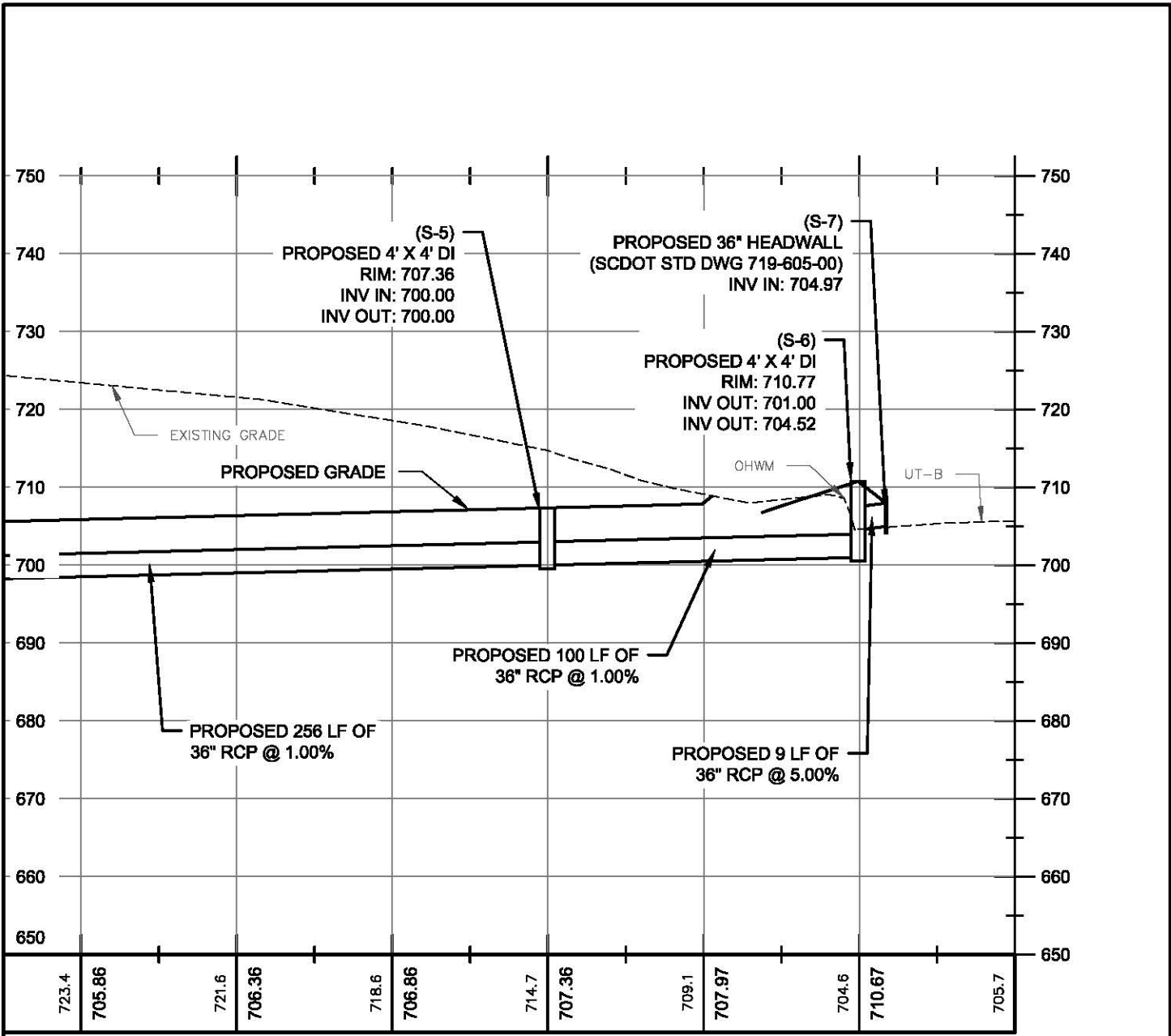
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 DRAWING NO. **SHT. 31 OF 48**



S-1 TO S-7 PIPE PROFILE (STA 3+50 TO 7+25)

SCALE: HOR 1"=50' ; VERT 1" = 20'

 <p>community infrastructure consultants 1320 MAIN STREET, SUITE 400 COLUMBIA, SOUTH CAROLINA 29223 (t) :803.786.4261 (f) :803.786.4263</p>	CITY OF SPARTANBURG SPARTANBURG MEMORIAL DT AIRPORT RUNWAY RSA EXTENSION SPARTANBURG, SPARTANBURG COUNTY, S.C. APPLICANT TRACKING # SAC-2013-00233-5C		REV	DATE	DESCRIPTION
	PROJ. MGR:	KCH			
	DRAWN BY:	NS			
	DATE:	6/20/14			
PIPE PROFILES - SHEET 2			WKD PROJ. NO: 20130127.00.CA DRAWING NO. SHT. 32 OF 48		



S-1 TO S-7 PIPE PROFILE (STA 7+25 TO 10+50)
 SCALE: HOR 1"=50' ; VERT 1" = 20'

WK DICKSON
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 1320 MAIN STREET, SUITE 400
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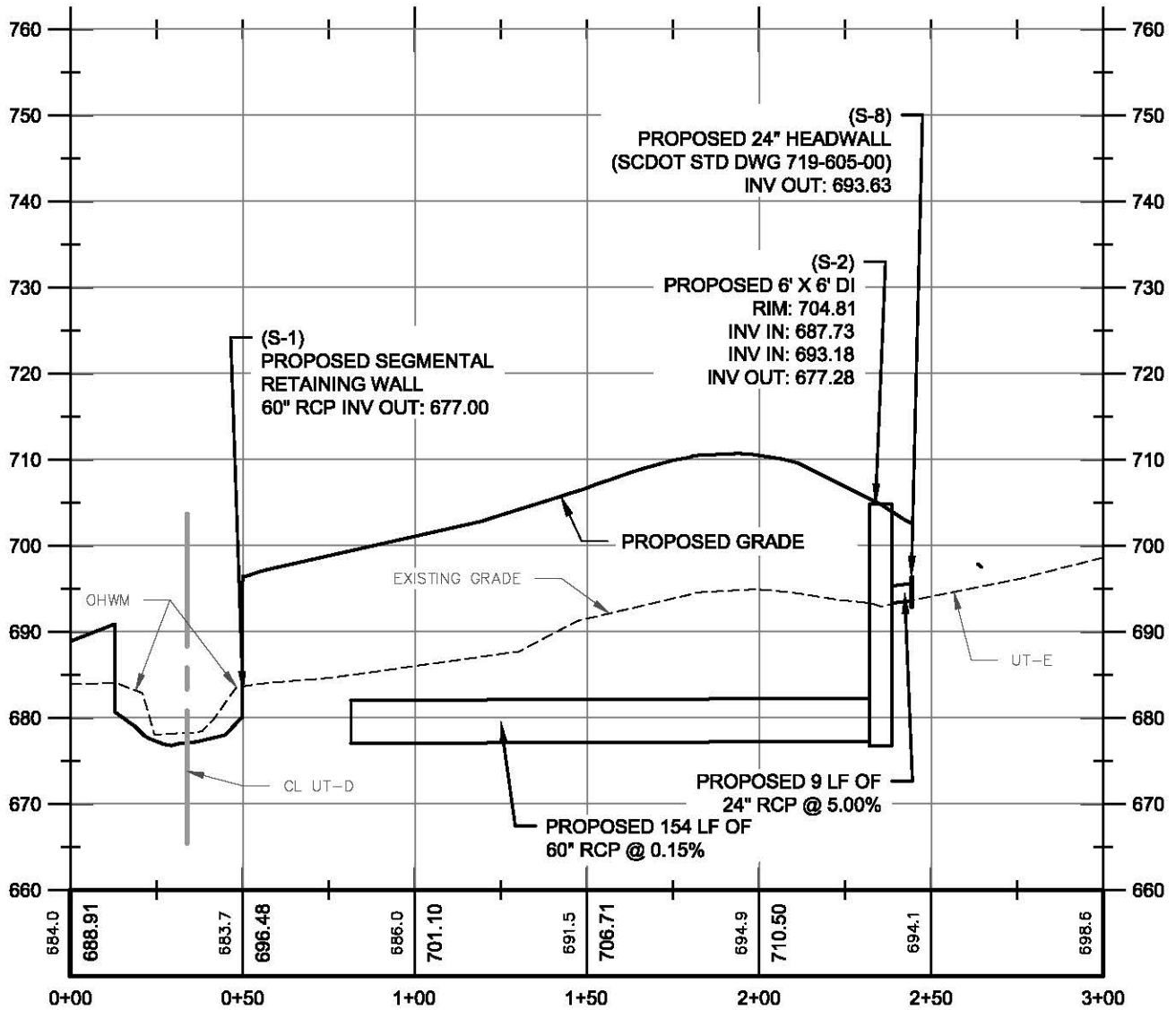
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 APPLICANT TRACKING # SAC-2013-00233-5C

PROJ. MGR:	KCH
DRAWN BY:	NS
DATE:	6/20/14

PIPE PROFILES - SHEET 3

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
 DRAWING NO. **SHT. 33 OF 48**



S-1 TO S-8 PIPE PROFILE

SCALE: HOR 1"=50' ; VERT 1" = 20'



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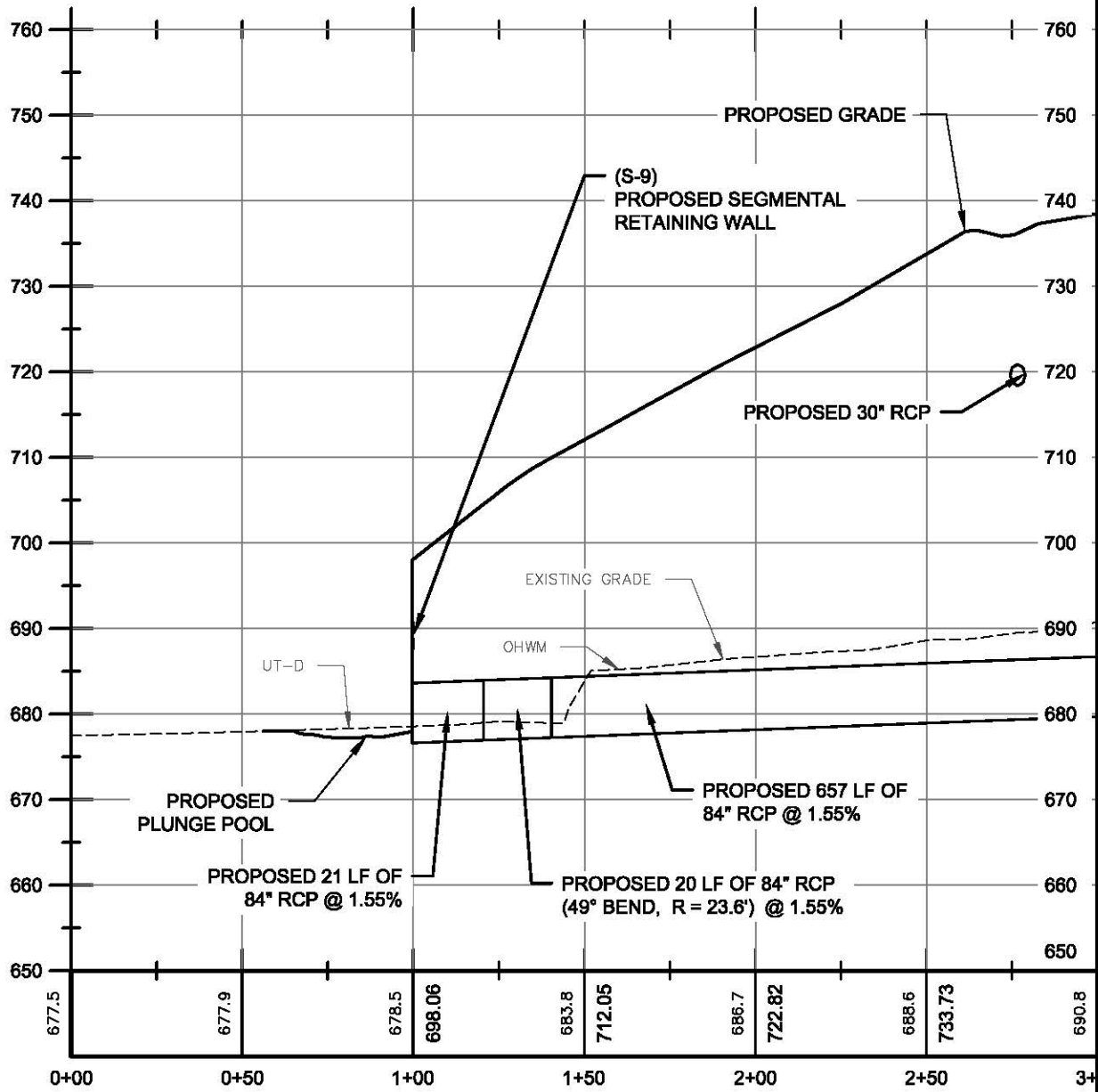
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**PIPE PROFILES -
 SHEET 4**

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
 DRAWING NO. **SHT. 34 OF 48**



S-9 TO S-10 PIPE A PROFILE (STA 0+00 TO 3+00)
 SCALE: HOR 1"=50' ; VERT 1" = 20'



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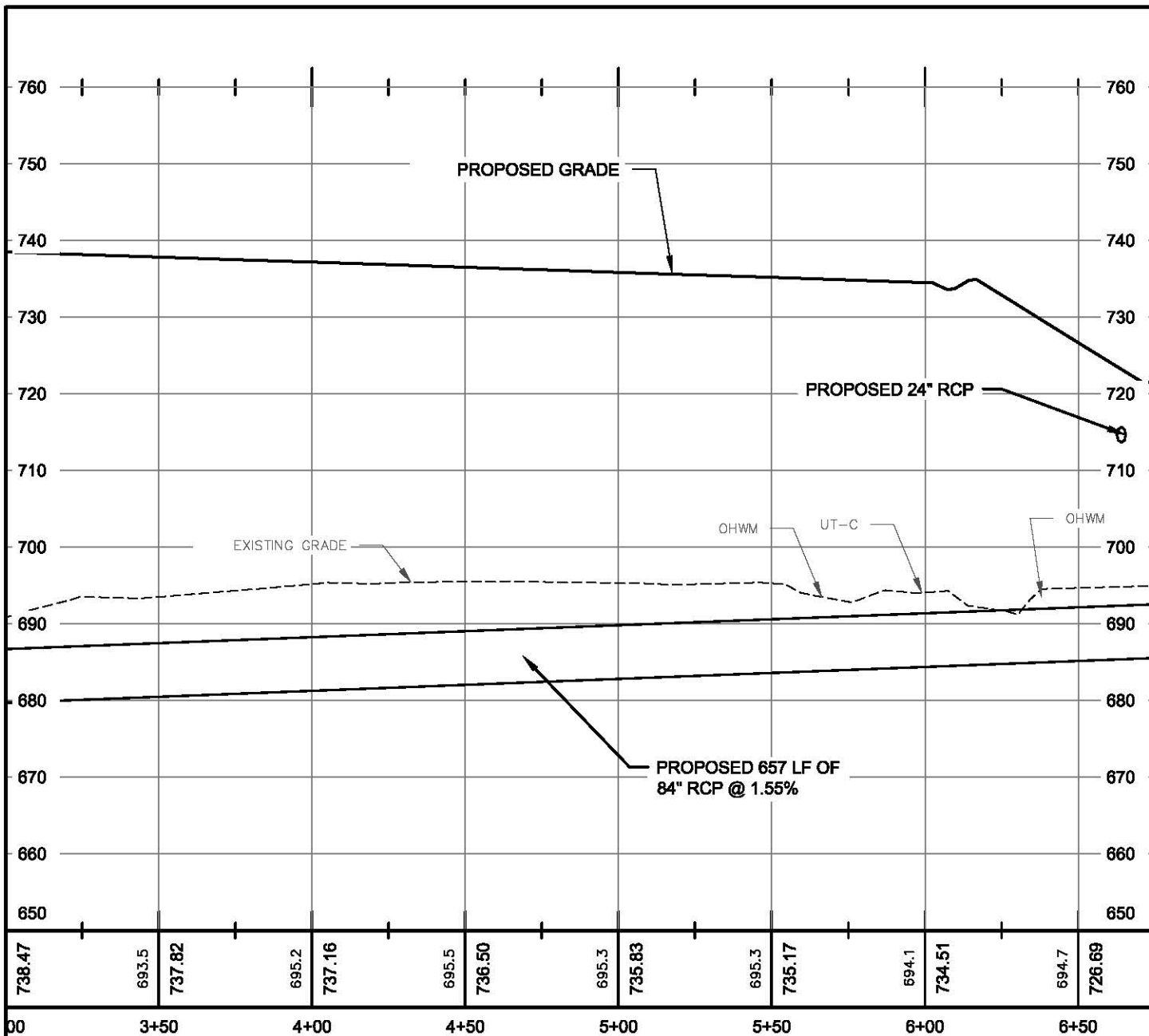
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PIPE PROFILES -
 SHEET 5

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
 DRAWING NO. **SHT. 35 OF 48**



S-9 TO S-10 PIPE A PROFILE (STA 3+00 TO 6+75)

SCALE: HOR 1"=50' ; VERT 1" = 20'



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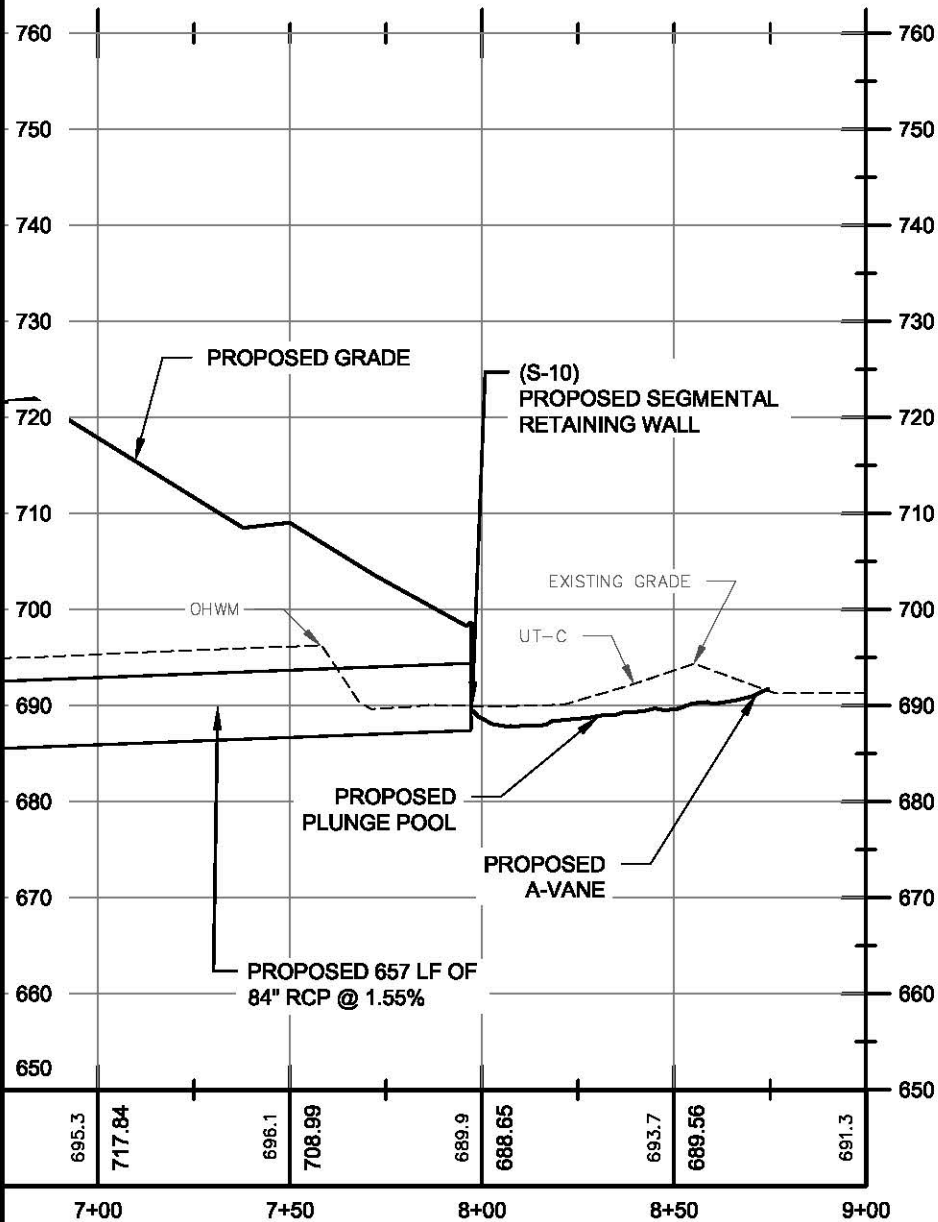
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PIPE PROFILES -
 SHEET 6

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
 DRAWING NO. **SHT. 36 OF 48**



S-9 TO S-10 PIPE A PROFILE (STA 6+75 TO 9+00)

SCALE: HOR 1"=50' ; VERT 1" = 20'

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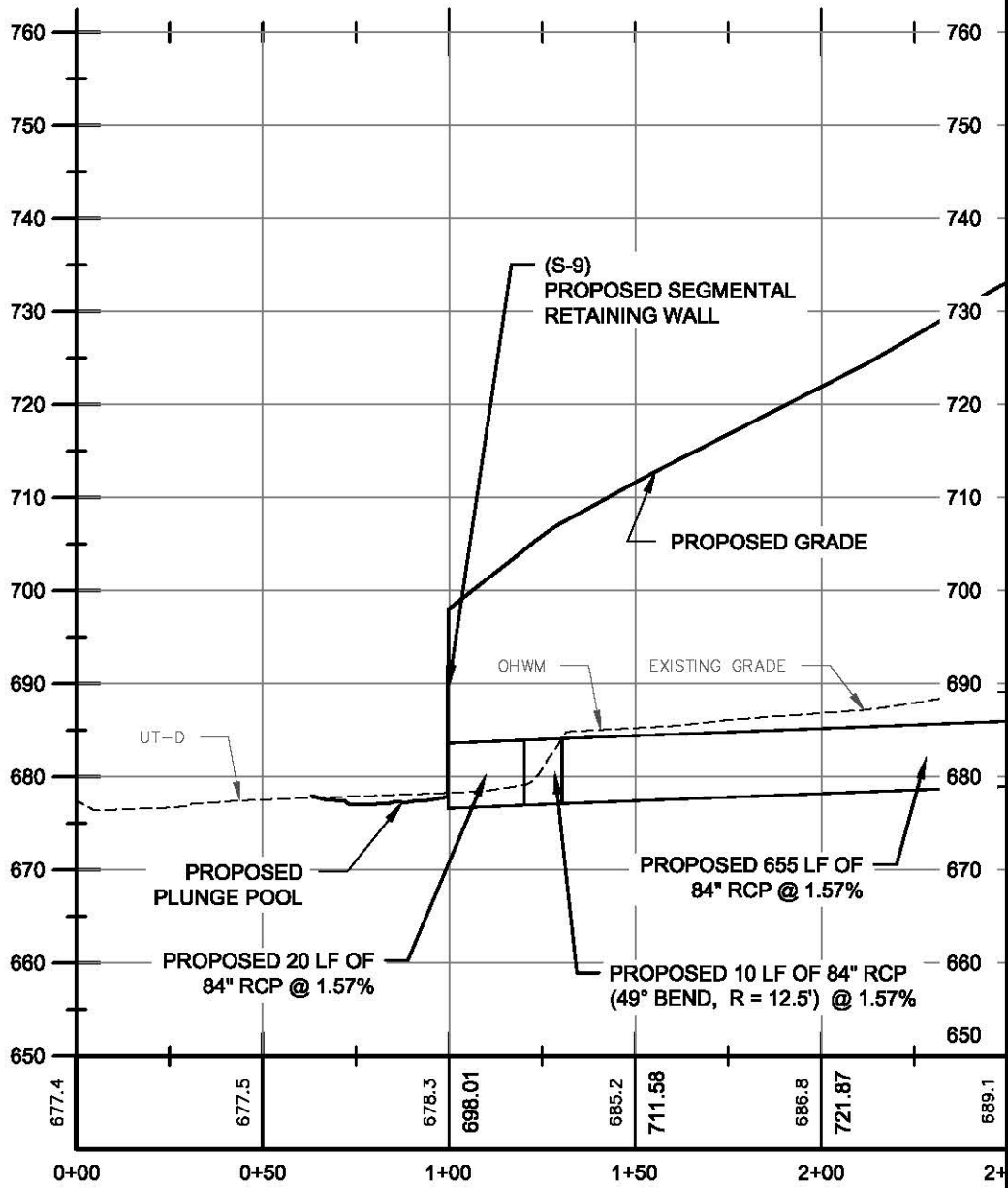
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PIPE PROFILES -
 SHEET 7

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
 DRAWING NO. **SHT. 37 OF 48**



S-9 TO S-10 PIPE B PROFILE (STA 0+00 TO 2+50)

SCALE: HOR 1"=50' ; VERT 1" = 20'



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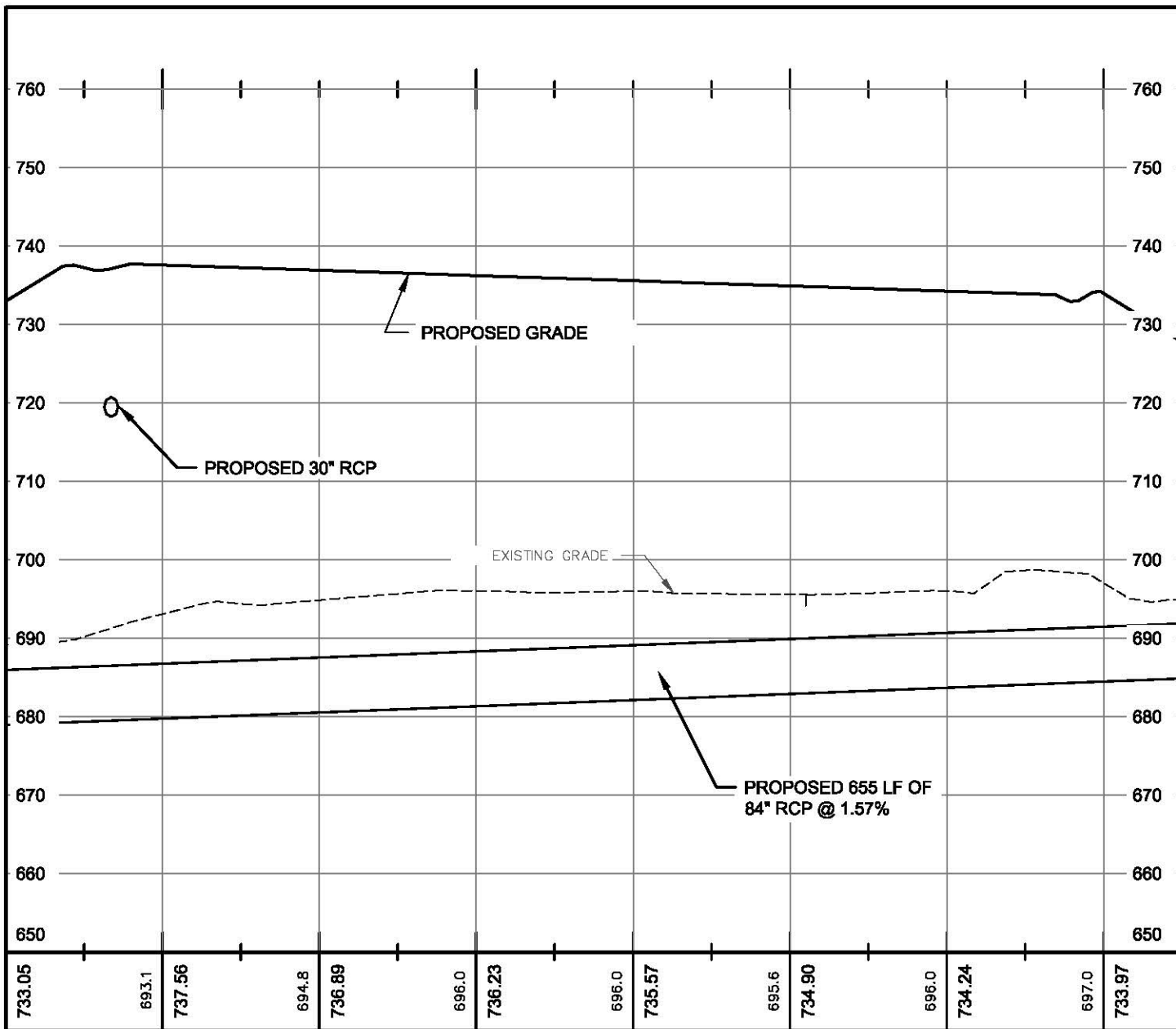
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PROJ. MGR: KCH
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PIPE PROFILES -
 SHEET 8

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
 DRAWING NO. **SHT. 38 OF 48**



S-9 TO S-10 PIPE B PROFILE (STA 2+50 TO 6+25)

SCALE: HOR 1"=50' ; VERT 1" = 20'



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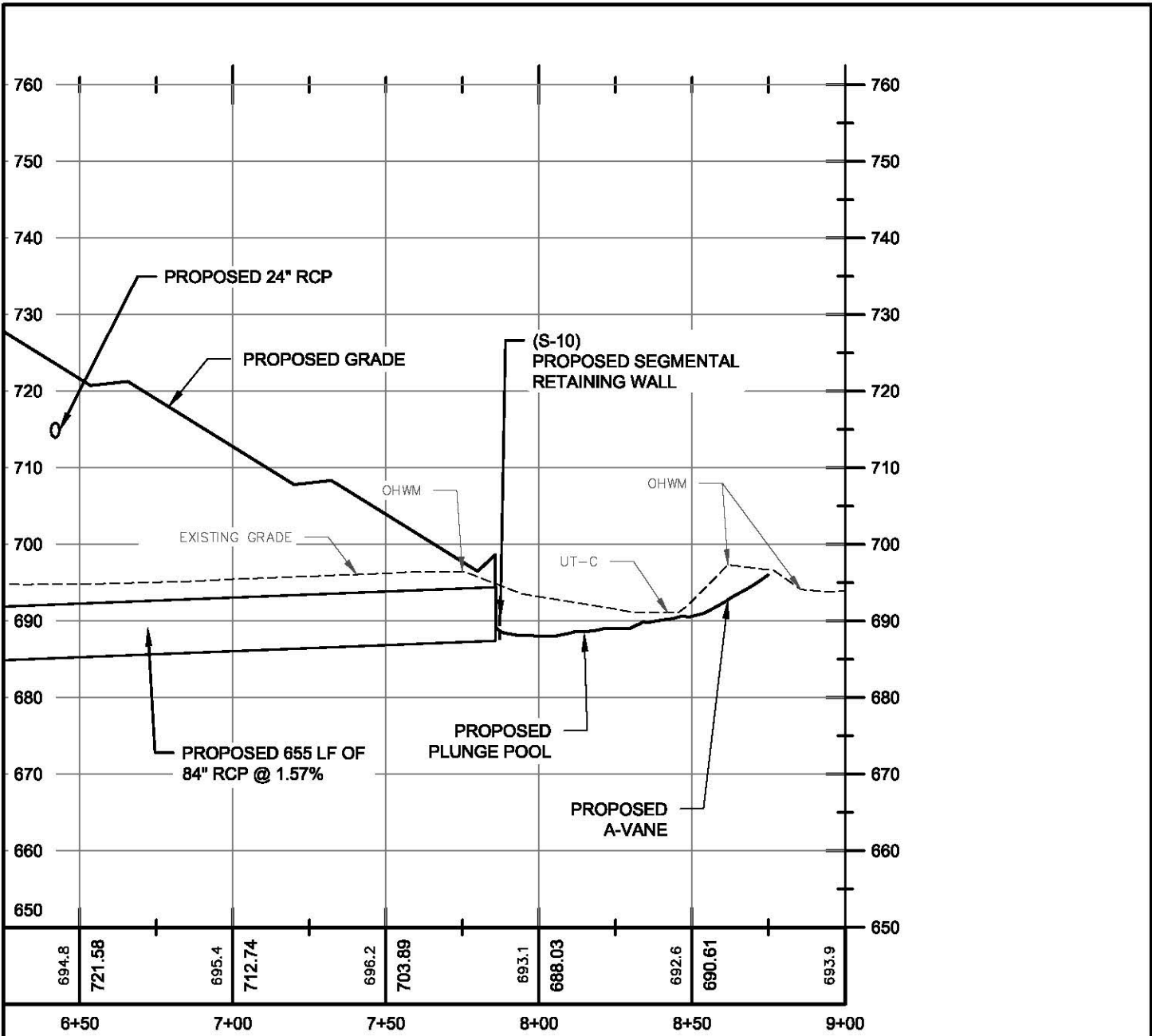
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PIPE PROFILES -
 SHEET 9

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
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S-9 TO S-10 PIPE B PROFILE (STA 6+25 TO 9+00)

SCALE: HOR 1"=50' ; VERT 1" = 20'



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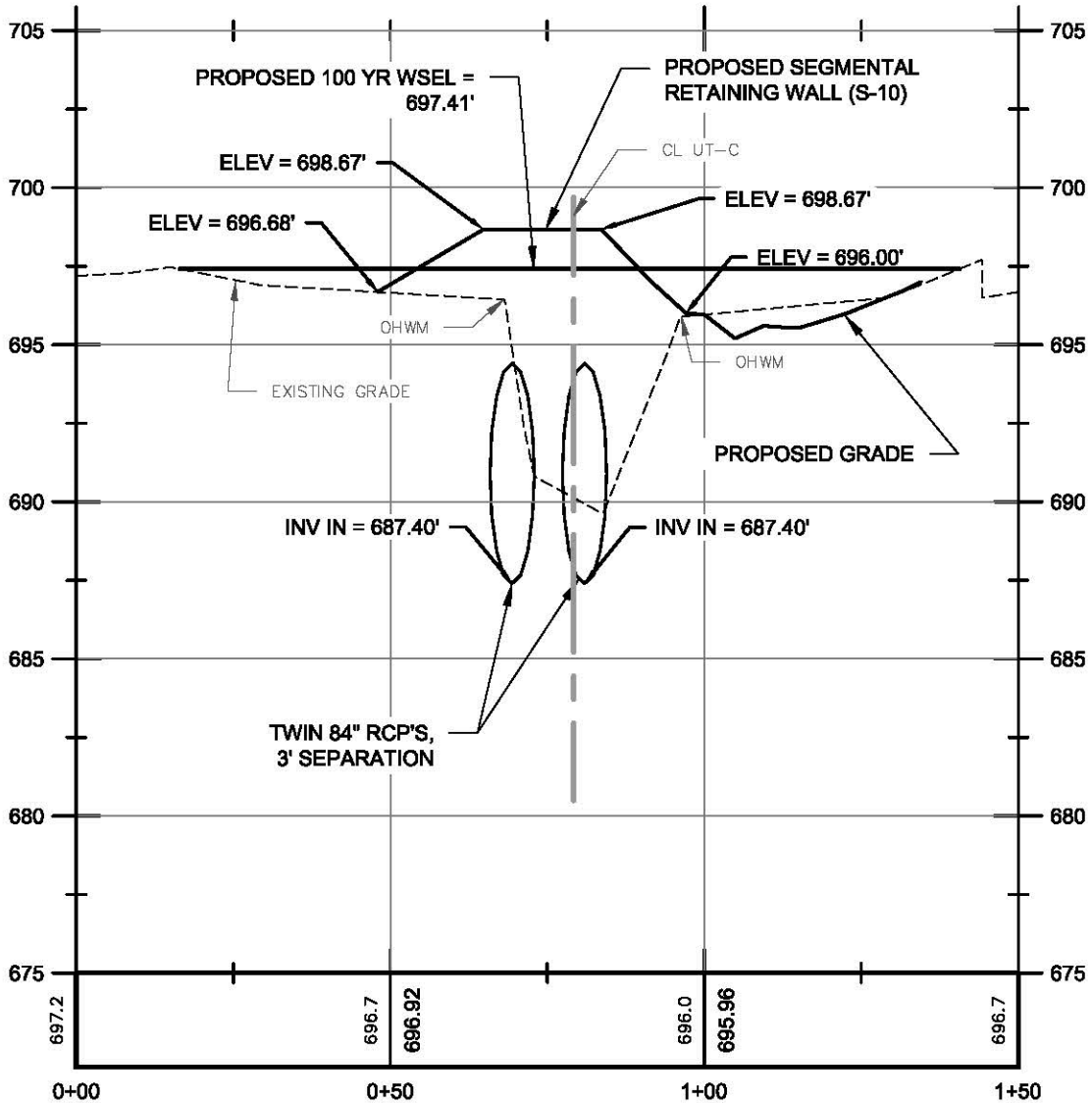
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PIPE PROFILES -
 SHEET 10

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
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UPSTREAM RETAINING WALL CROSS SECTION

SCALE: HOR 1"=30'; VERT 1"=6'



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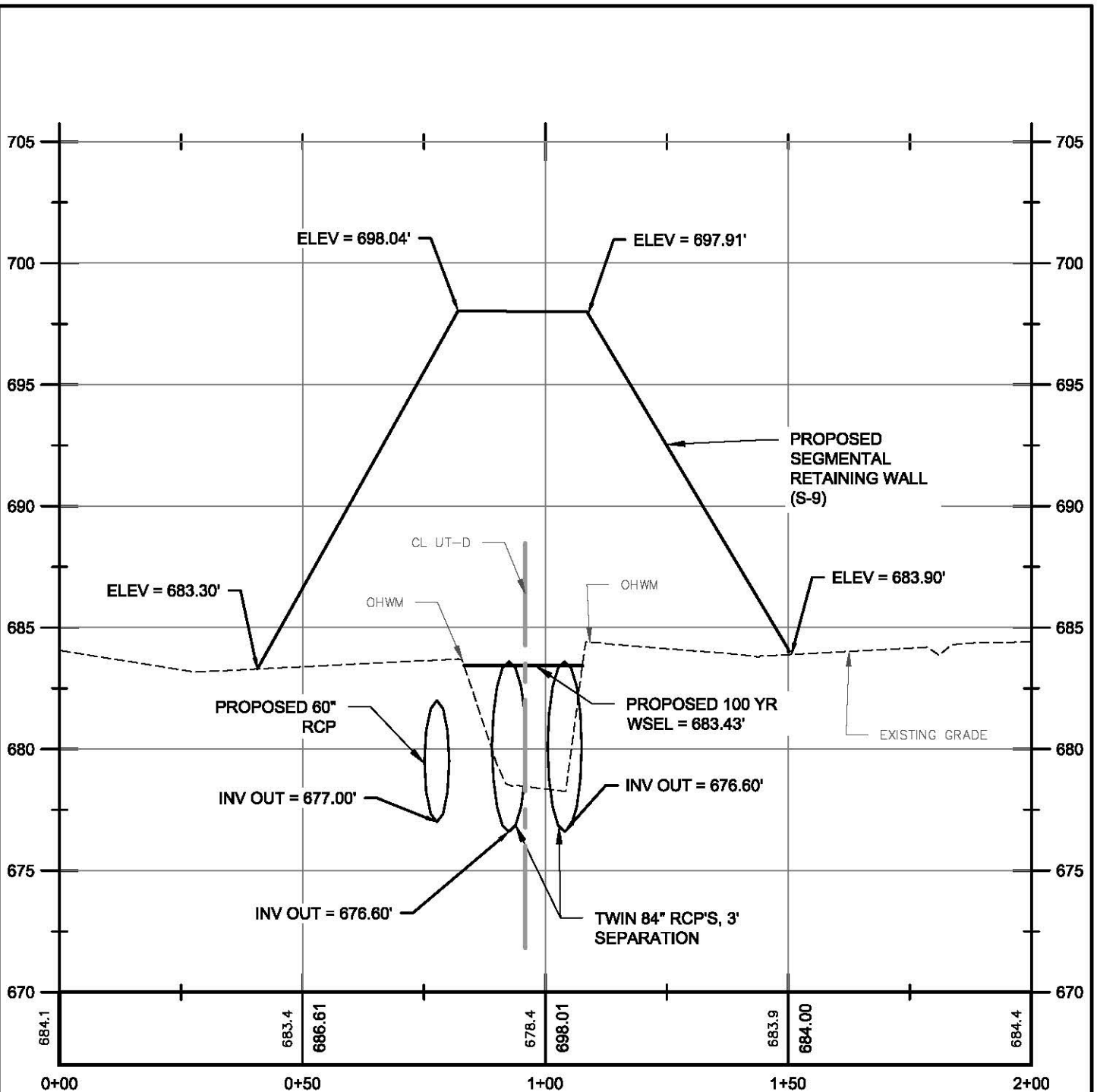
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PROJ. MGR: KCH
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**WALL CROSS SECTION
 - SHEET 1**

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
 DRAWING NO. **SHT. 41 OF 48**



DOWNSTREAM RETAINING WALL CROSS SECTION

SCALE: HOR 1"=30'; VERT 1"=6'



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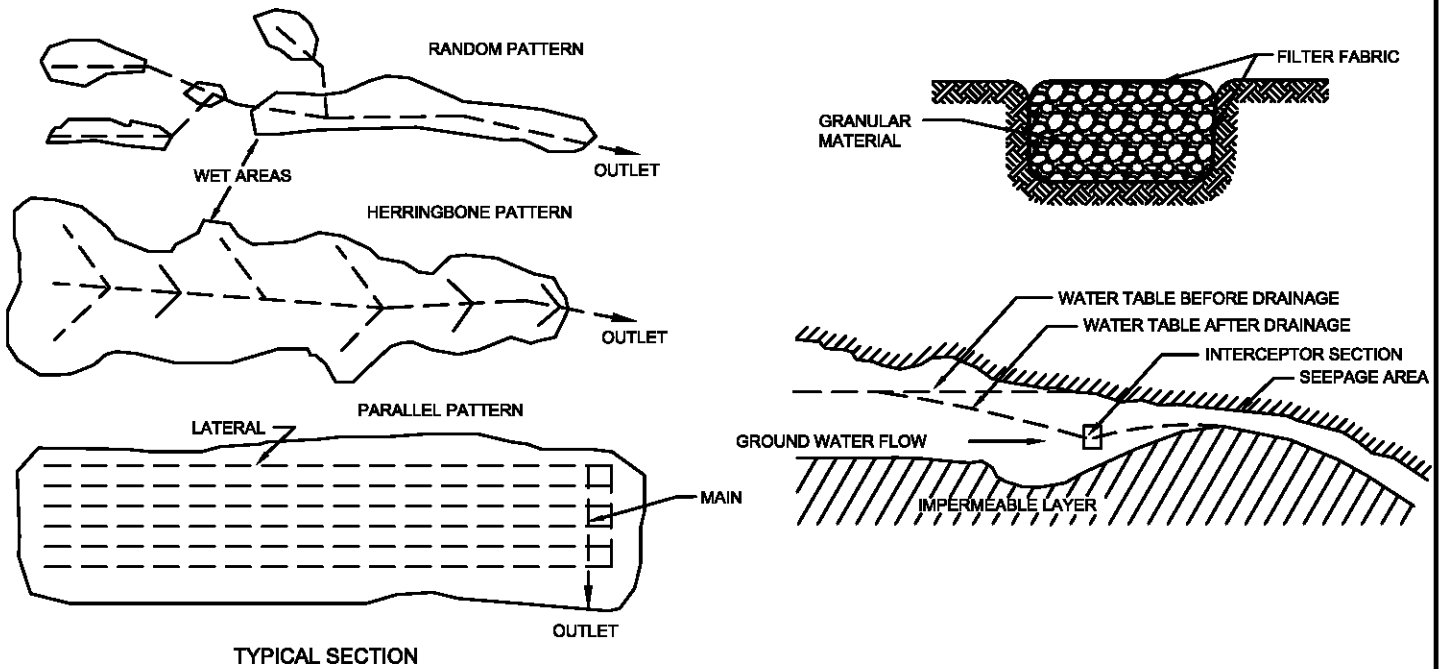
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**WALL CROSS SECTION
 - SHEET 2**

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA
 DRAWING NO. **SHT. 42 OF 48**

SUBSURFACE DRAIN LAYOUT



NOTES:

1. GRANULAR MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF ASTM D 2321 FOR CLASS IA, IB, OR II MATERIALS, OR SHALL MEET THE REQUIREMENTS OF AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES SECTION 30.
2. THE FILTER FABRIC SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 288-99, CLASS 2.
3. LOCATIONS AND DIMENSIONS OF SUBSURFACE DRAINAGE TO BE DETERMINED IN THE FIELD WITH THE ENGINEER.

SUBSURFACE DRAINAGE
NOT TO SCALE



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RUNWAY RSA EXTENSION
SPARTANBURG, SPARTANBURG COUNTY, S.C.
APPLICANT TRACKING # SAC-2013-00233-5C

PROJ. MGR: KCH
DRAWN BY: NS
DATE: 6/20/14

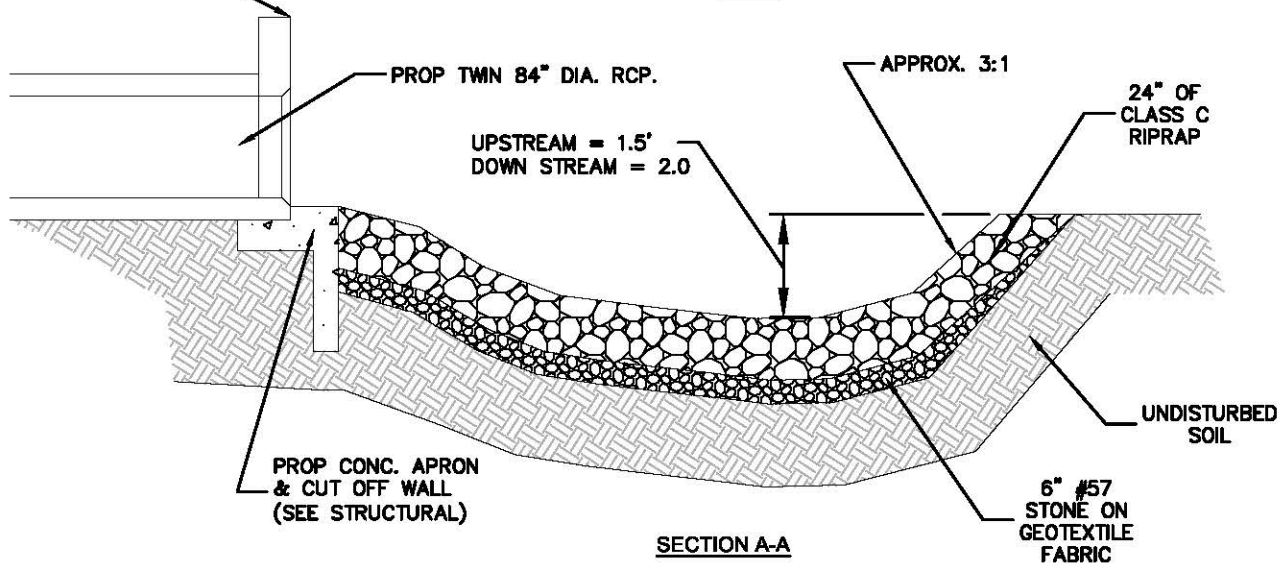
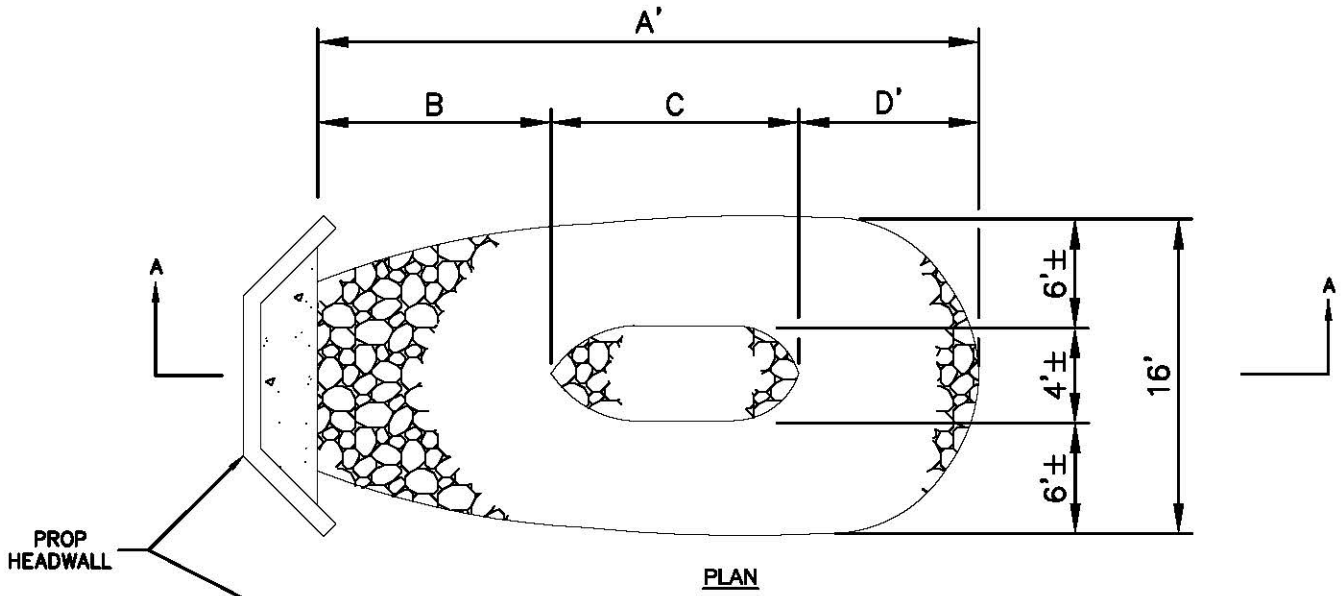
DETAILS - SHEET 1

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA


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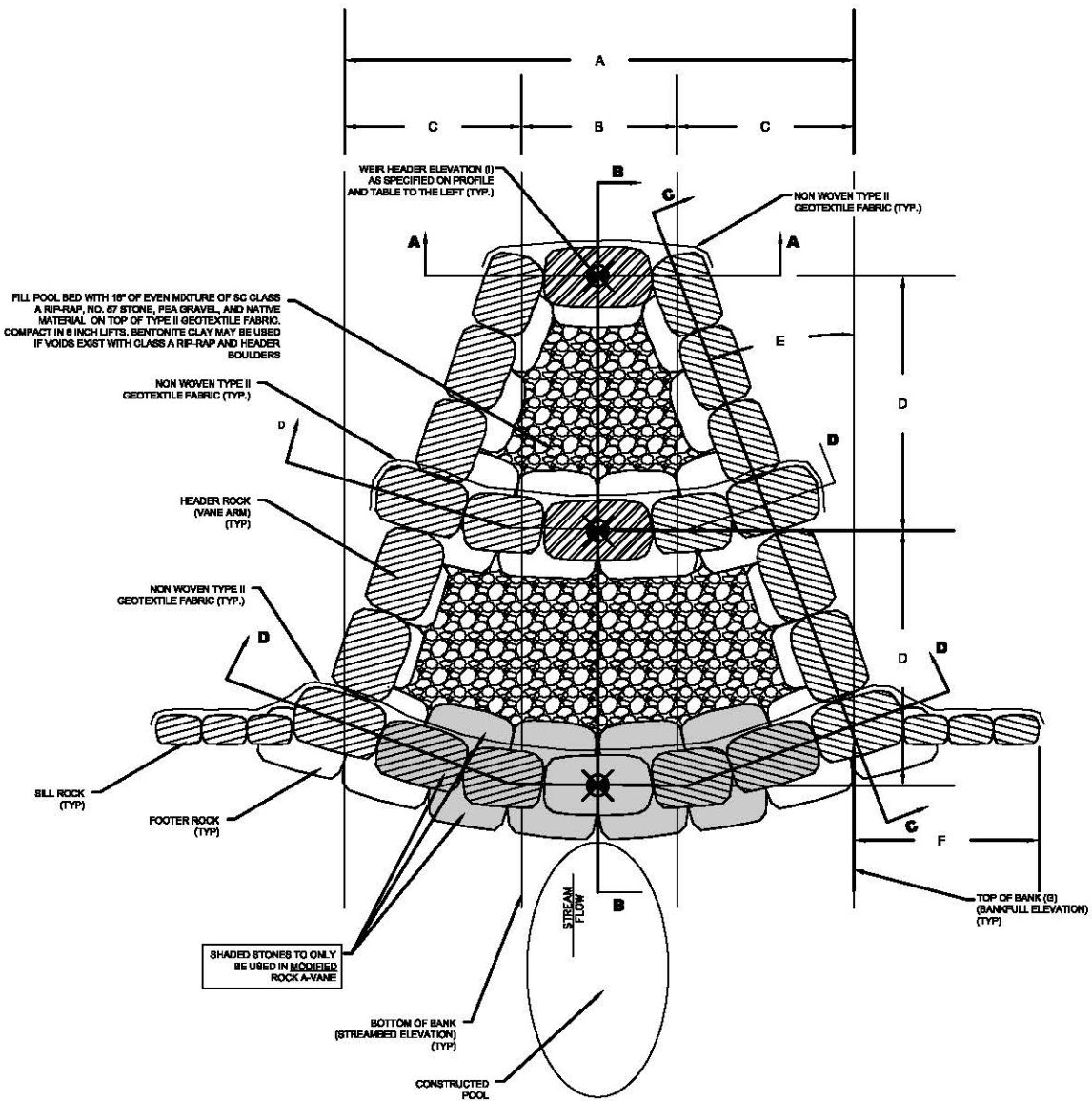
SHT. 43 OF 48



RIP-RAP SCHEDULE				
PLUNGE POOL	LENGTH, A (FT)	B (FT)	C (FT)	D (FT)
UPSTREAM	25	10	5	10
DOWNSTREAM	40	14	12	14

RIP-RAP PLUNGE POOL DETAIL
NOT TO SCALE

 community infrastructure consultants 1320 MAIN STREET, SUITE 400 COLUMBIA, SOUTH CAROLINA 29223 (t) :803.786.4261 (f) :803.786.4263	CITY OF SPARTANBURG SPARTANBURG MEMORIAL DT AIRPORT RUNWAY RSA EXTENSION SPARTANBURG, SPARTANBURG COUNTY, S.C. APPLICANT TRACKING # SAC-2013-00233-5C		REV	DATE	DESCRIPTION
	PROJ. MGR:	KCH			
	DRAWN BY:	NS			
	DATE:	6/20/14			
DETAILS - SHEET 2			WKD PROJ. NO:	20130127.00.CA	
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MODIFIED ROCK A-VANE PLAN VIEW

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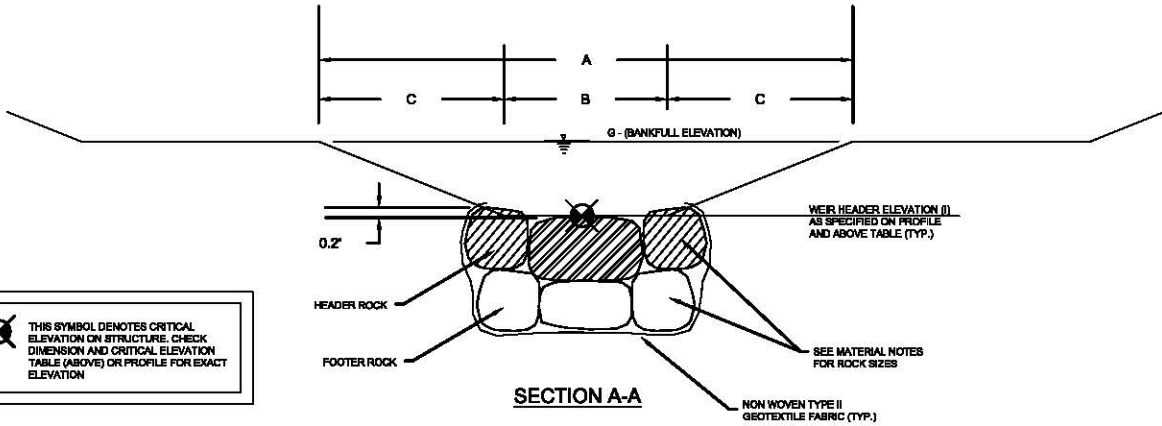
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REV	DATE	DESCRIPTION

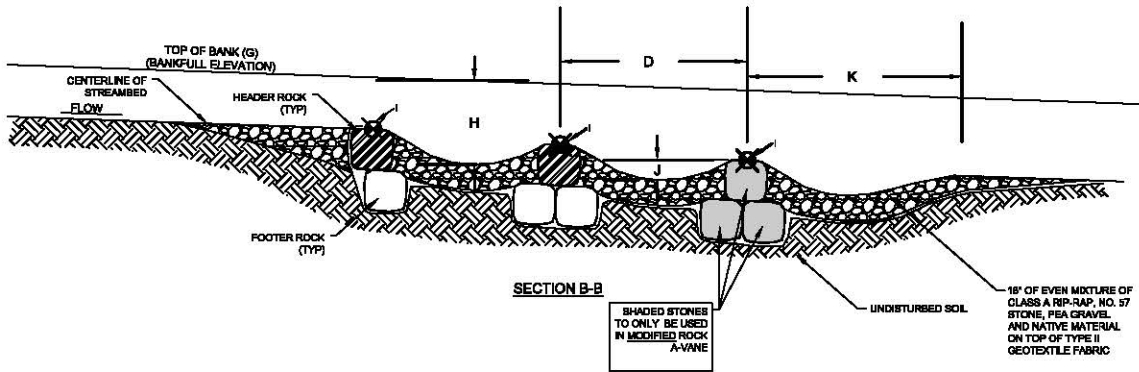
WKD PROJ. NO: 20130127.00.CA

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THIS SYMBOL DENOTES CRITICAL ELEVATION ON STRUCTURE. CHECK DIMENSION AND CRITICAL ELEVATION TABLE (ABOVE) OR PROFILE FOR EXACT ELEVATION



MATERIALS NOTES:

1. ROCKS MUST HAVE AN INTERMEDIATE DIAMETER (Z) OF AT LEAST 24" FOR HEADERS AND 24-30" FOR FOOTERS. SILL ROCKS SHALL HAVE AN INTERMEDIATE DIAMETER OF AT LEAST 18". ALL ROCKS SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. WIDTH OF HEADER AND FOOTER ROCKS (X) MUST BE AT LEAST 36". DEPTH OF HEADER AND FOOTER ROCKS (Y) MUST BE AT LEAST 24". WIDTH AND DEPTH OF SILL ROCKS MUST BE AT LEAST 10-12"
3. ROCKS SHALL BE COMPRISED OF ANGULAR, FLAT OR CUBED ROCK OBTAINED FROM A SOURCE THAT IS APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION
4. ROCK SHALL BE OF SUFFICIENT HARDNESS TO RESIST WEATHERING AND SHALL BE FREE OF CRACKS AND OTHER STRUCTURAL FAULTS. IN NO INSTANCE SHALL CONCRETE BE ALLOWED
5. GEOTEXTILE FABRIC SHALL MEET SPECIFICATIONS FOR TYPE 2 BCDOT GEOTEXTILE FABRIC ACCORDING TO BCDOT STANDARD SPECIFICATION 804.11

MODIFIED ROCK A-VANE SECTIONS

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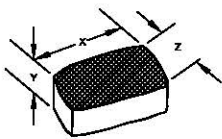
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DRAWN BY: NS
DATE: 6/20/14

DETAILS - SHEET 4

REV	DATE	DESCRIPTION

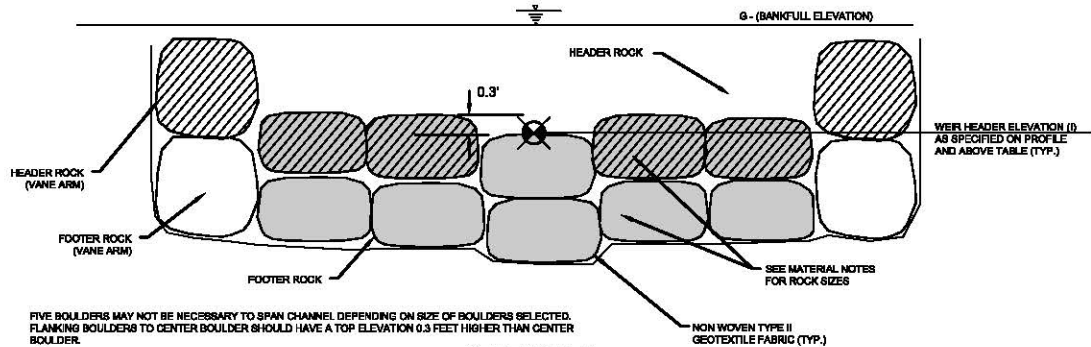
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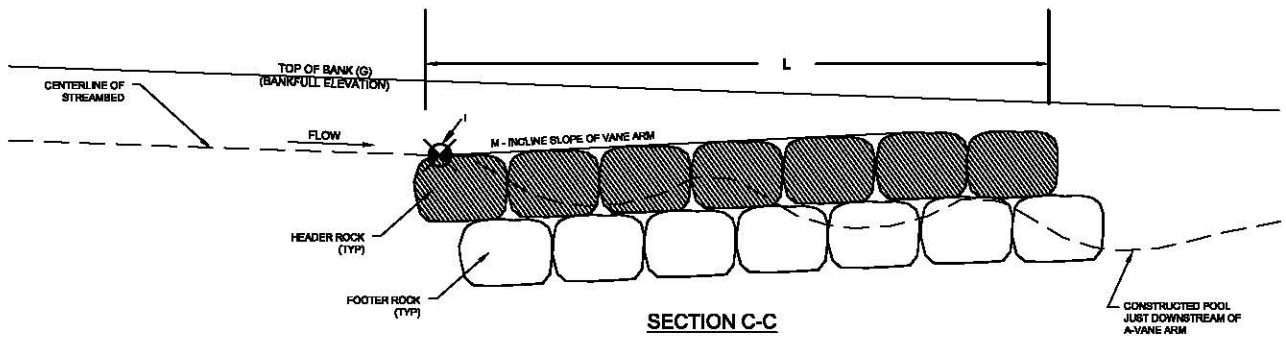


3 PRIMARY ROCK DIMENSIONS:

- X LONGEST DIMENSION
- Y SHORTEST DIMENSION
- Z INTERMEDIATE DIMENSION



SECTION D-D



SECTION C-C

MODIFIED ROCK A-VANE SECTIONS

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DETAILS - SHEET 5

REV	DATE	DESCRIPTION

WKD PROJ. NO: 20130127.00.CA

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