TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.transportation.ky.gov/

Steven L. Beshear
Governor

Michael W. Hancock, P.E.
Secretary

April 13, 2011

CALL NO. 101
CONTRACT ID NO. 111313
ADDENDUM # 1

Subject: Jefferson County, HPP 0163 (032)
Letting April 22, 2011

(1)Revised – Specifications – Pages 139-140, 145-148, 322, 331, 341, 344, 346, 350, 364-374(a) of 471
(2)Added – Special Note – Pages 426(a)-426(b) of 471
(3)Added – Addendum No.1 - Pages 426(c)-426(f) of 471
(4)Revised – Plan Sheets – C-7001, C-7002, SP-1001, SP-2001, SW-1001, SW-2001, SW-3001, & SW-6001.

Proposal revisions are available at http://transportation.ky.gov/contract/.
Plan revisions are available at http://www.lynnimaging.com/kytransportation/.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

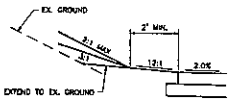
Ryan Griffith

Ryan Griffith
Director
Division of Construction Procurement

RG:ks
Enclosures

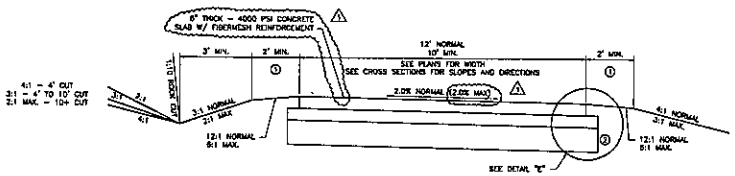
Kentucky UNBRIDLED SPIRIT

An Equal Opportunity Employer M/F/D



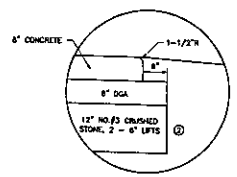
LOUISVILLE LOOP
SHOULDER DETAIL
HILLSIDE WITHOUT DITCH
(SEE CROSS SECTIONS)

SCALE: 1/2"=1'



LOUISVILLE LOOP: TYPICAL UNSTABLE SOILS SUBGRADE SECTION

SCALE: 1/2"=1'

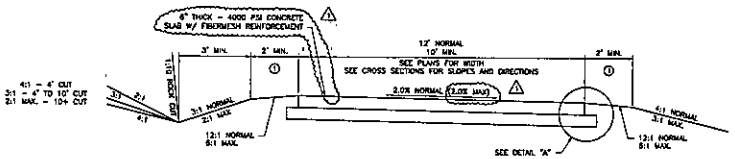


DETAIL "E"

SCALE: 1"=1'

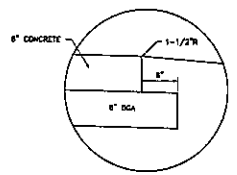
① COMPACTED TO 95% STANDARD PROCTOR.

② SOME AREAS MAY CONTAIN EXCEPTIONALLY WEAK SUBGRADE MATERIALS WHICH WILL REQUIRE ADDITIONAL SOIL STABILIZATION MEASURES PER DIRECTION OF GEOTECHNICAL CONSULTANT, AND SUBJECT TO APPROVAL OF LANDSCAPE ARCHITECT AND PROJECT ENGINEER.



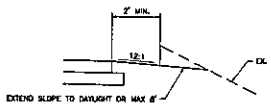
LOUISVILLE LOOP: TYPICAL CROSS SECTION

SCALE: 1/2"=1'



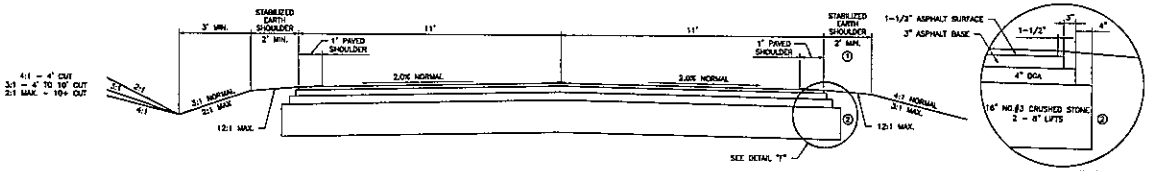
DETAIL "A"

SCALE: 1-1/2"=1'



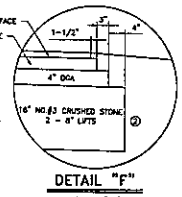
LOUISVILLE LOOP
SHOULDER DETAIL
WITHOUT DITCH
(SEE CROSS SECTIONS)

SCALE: 1/2"=1'



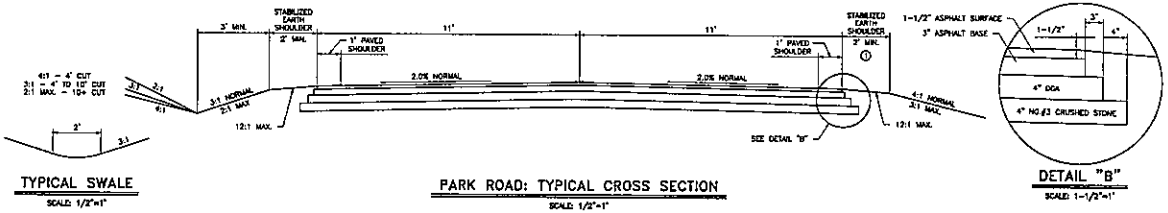
PARK ROAD: TYPICAL UNSTABLE SOILS SUBGRADE SECTION

SCALE: 1/2"=1'



DETAIL "F"

SCALE: 1"=1'



PARK ROAD: TYPICAL CROSS SECTION

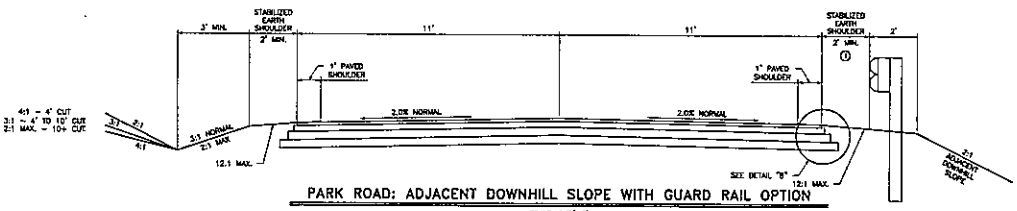
SCALE: 1/2"=1'

DETAIL "B"

SCALE: 1-1/2"=1'

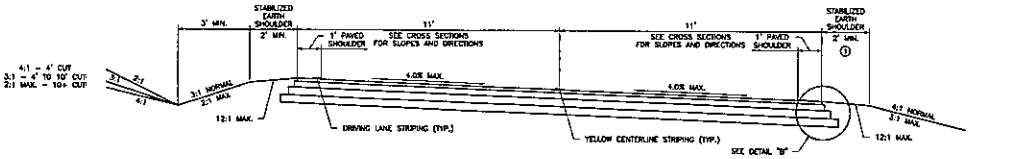
TYPICAL SWALE

SCALE: 1/2"=1'



PARK ROAD: ADJACENT DOWNHILL SLOPE WITH GUARD RAIL OPTION

SCALE: 1/2"=1'



PARK ROAD: SUPERELEVATED CROSS SECTION

SCALE: 1/2"=1'

BURGESS & NIPLE
400 BLANKENBAKER PARKWAY, SUITE 300
LOUISVILLE, KENTUCKY 40243
PH. (502) 254-5344 FAX (502) 254-5009

Wallace Roberts & Todd, LLC
1700 Market Street
28th Floor
Philadelphia, PA 19103
tel 215.732.5215
fax 215.732.2551

WRT
LANDSCAPE ARCHITECT

Civil Engineer

The Parklands of Floyds Fork - Project 2A
Beckley Creek Park - North
Louisville, Kentucky

Owner:
21st Century Parks, Inc.
471 W. Main St., Suite 202
Louisville, Kentucky 40202

NO.#	DATE	DESCRIPTION
1	4/5/2011	ADDENDUM 1

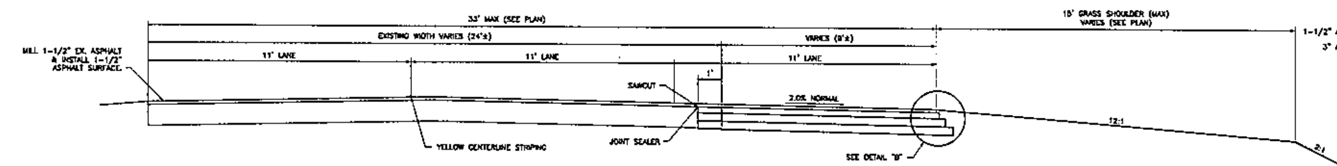
Job No. 08736.06
Date 3/25/11
Scale AS NOTED
Drawn by
Checked by

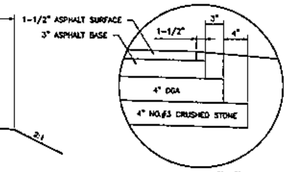
Drawing Title
TYPICAL SECTIONS PARK ROAD & LOUISVILLE LOOP

Drawing No.
C-7001

PLOTTED: 4/6/2011 2:56:44 PM

P:\WRT_PTL\15307_N_Roads\cad\C-7001.dwg 4/6/2011 2:55:41 PM Herrick, Bruce





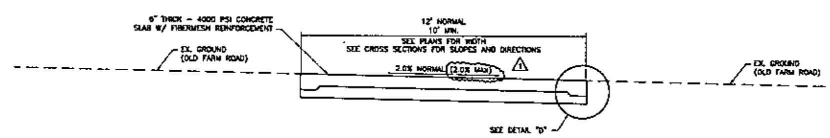
BLUE HERON ROAD: PAVEMENT WIDENING

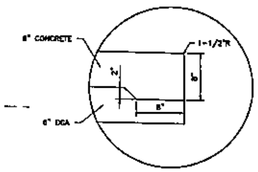
SCALE: NONE

DETAIL "B"

SCALE: 1-1/2"=1'

NOTES:
1. CONCRETE TO BE SCORED IN SQUARES EQUAL TO WIDTH FOR PLACEMENT OF CONTRACTION JOINTS BUT NOT TO EXCEED 10' SPACING BETWEEN JOINTS.
2. PLACE EXPANSION JOINTS ALONG THE CONCRETE AT REGULAR INTERVALS NOT MORE THAN 30' APART AS WELL AS BETWEEN ALL RIGID FIXED OBJECTS AND THE NEW CONCRETE.
3. THE CONTRACTOR SHALL INSURE THAT THE SECTION DOES NOT EXCEED THE 2% MAXIMUM CROSS-SLOPE CRITERIA (ADA REQUIREMENT). IF EXISTING GRADES IN THE FIELD DICTATE A STEEPER CROSS-SLOPE, THEN THE LOWER SIDE OF THE SECTION SHALL MATCH EXISTING GRADE, AND THE COMPACTED SUBGRADE SHOULDERS SHALL BE TRANSITIONED (3:1) TO MAINTAIN THE 2% MAX. CROSS-SLOPE REQUIREMENT ACROSS THE SECTION.



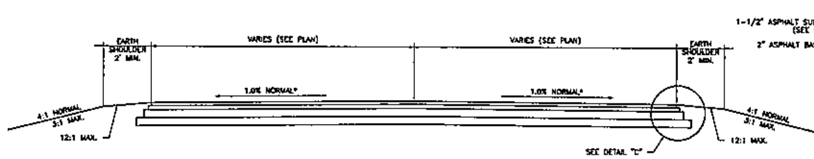


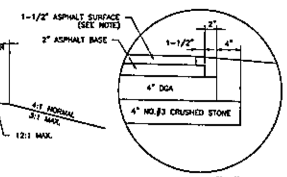
LOUISVILLE LOOP: TYPICAL CROSS SECTION STA. 37+50± TO STA. 73+00±

SCALE: 1/2"=1' WITHIN FLOYDS FORK FLOODPLAIN

DETAIL "D"

SCALE: 1-1/2"=1'



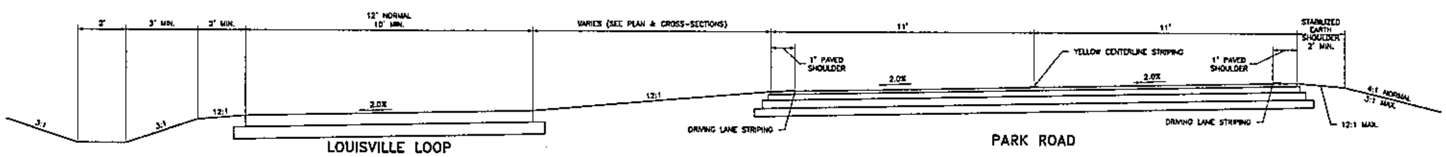


PARKING PAVEMENT: TYPICAL CROSS SECTION

SCALE: NONE
* SEE PLAN FOR ACTUAL GRADING

DETAIL "C"

SCALE: NONE



PARK ROAD AND LOUISVILLE LOOP

SCALE: 1/2"=1'

The Parklands of Floyds Fork - Project 2A
Beckley Creek Park - North
Louisville, Kentucky

Owner:
21st Century Parks, Inc.
471 W. Main St., Suite 202
Louisville, Kentucky 40202

Civil Engineer
BURGESS & NIPLE
400 BLANKENBAKER PARKWAY, SUITE 300
LOUISVILLE, KENTUCKY 40243
PH. (502) 254-2344 FAX (502) 254-3008

LANDSCAPE ARCHITECT
Wallace Roberts & Todd, LLC
1700 Market Street
28th Floor
Philadelphia, PA 19103
tel 215 732 5215
fax 215 732 2551

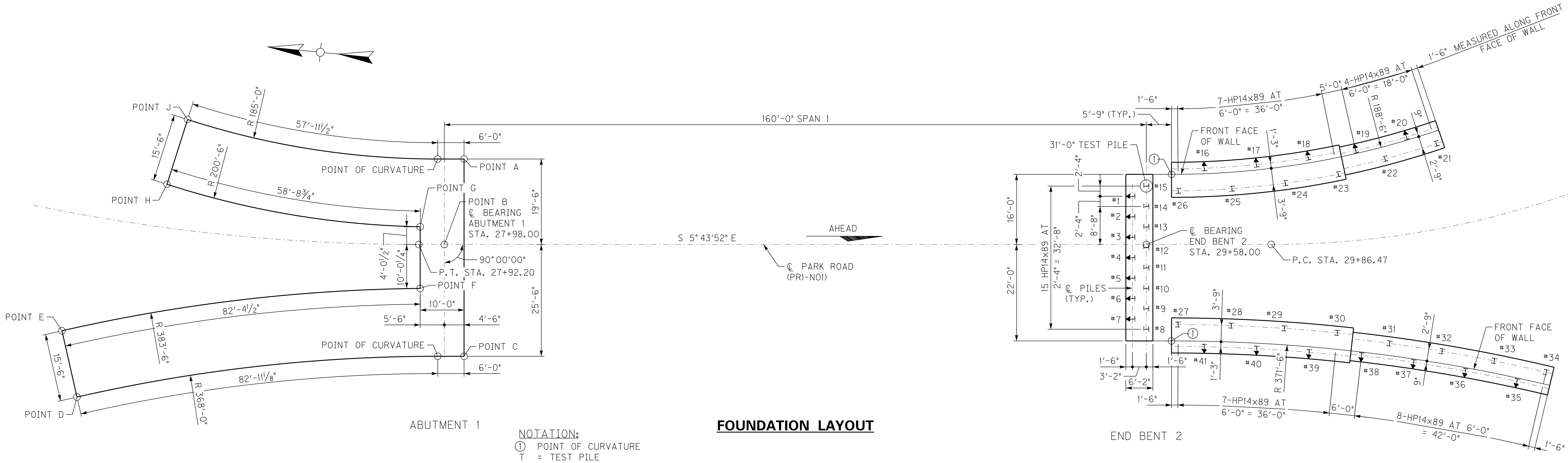
REV #	DATE	DESCRIPTION
	3/25/11	ISSUED FOR BID
1	4/6/2011	ADDENDUM 1

Scale: AS NOTED

Drawing Title:
TYPICAL SECTIONS PARK ROAD & LOUISVILLE LOOP

Drawing No.:
C-7002

PLOTTED: 4/8/2011 1:21:06 PM



FOUNDATION LAYOUT

NOTATION:
① POINT OF CURVATURE
T = TEST PILE
▼ - INDICATES DIRECTION OF 1:3 BATTER

SPREAD FOOTING ABUTMENT 1

POINT	PLAN FOOTING ELEVATION	AS-BUILT FOOTING ELEVATION
A	565.278	
B	•	
C		
D		
E		
F		
G		
H	•	
J	565.278	

FOOTING IS DESIGNED FOR A MAXIMUM FACTORED PRESSURE OF 21.0 KSF.

THE MAXIMUM FACTORED STRENGTH LIMIT STATE BEARING RESISTANCE IS 85 KSF.

NOTE

AFTER ALL FOUNDATIONS HAVE BEEN PLACED, THE PROJECT RESIDENT ENGINEER SHALL RECORD THE BOTTOM OF FOOTING ELEVATION "AS-BUILT" AND SHALL SUBMIT ONE COPY OF THIS SHEET WITH THIS DATA TO 21ST CENTURY PARKS, INC.

IF THE SPREAD FOOTING FOUNDATION IS STEPPED DUE TO UNSUITABLE MATERIAL FOUND AT THE GIVEN ELEVATION, THE LOCATION AND ELEVATION OF THE STEP SHALL BE SHOWN ON THIS SHEET AND SUBMITTED ALONG WITH AS-BUILT ELEVATIONS.

DURING FOOTING CONSTRUCTION A 1.5 INCH DIAMETER PERCUSSION TEST HOLE SHALL BE DRILLED TO A DEPTH OF AT LEAST 5 FEET BELOW THE PROPOSED BOTTOM OF FOOTING ELEVATION TO DOCUMENT THE SOUNDNESS OF THE UNDERLYING ROCK AND TO IDENTIFY ANY WEATHERED ZONES, CLAY SEAMS, AND VOIDS THAT MIGHT AFFECT FOUNDATION SUPPORT. EACH HOLE SHALL BE INSPECTED BY A QUALIFIED ENGINEER OR TECHNICIAN USING A "HOOKED" PROBE TO DETERMINE IF SOUND ROCK, FREE OF VOIDS AND COMPRESSIBLE (CLAY) ZONES, IS PRESENT DIRECTLY BENEATH EACH FOUNDATION ELEMENT. ANY ZONES OF QUESTIONABLE BEARING CAPACITY ENCOUNTERED IN THE 5 FEET PERCUSSION HOLES SHALL BE EVALUATED BY A QUALIFIED GEOTECHNICAL ENGINEER AND THE PROPOSED BEARING ELEVATIONS ADJUSTED ACCORDINGLY.

PILE RECORD FOR POINT BEARING PILES

PILE NUMBER	PILE CUT-OFF ELEVATION	APPROXIMATE TIP OF PILE ELEVATION	TIP OF PILE ELEVATION AS DRIVEN	LENGTH OF PILE IN PLACE	DESIGN AXIAL LOAD	REQUIRED FIELD BEARING	CALCULATED FIELD BEARING
	FEET	FEET	FEET	FEET	TONS	TONS	TONS
1	584.069	555.300			164.6	170	
2	•	•			•	•	
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14	•				•		
15T	584.069				164.6		
16	579.569				150.3		
17	•				150.3		
18					150.3		
19					108.9		
20					•		
21					•		
22					108.9		
23					150.3		
24					•		
25							
26							
27							
28							
29					•		
30					150.3		
31					108.9		
32					•		
33							
34							
35							
36							
37					•		
38					108.9		
39					150.3		
40	•	•			150.3	•	
41	579.569	555.300			150.3	170	

DEFINITIONS OF TERMS

PILE CUT-OFF ELEVATION: ELEVATION OF THE TOP OF THE PILE IN THE FINISHED STRUCTURE.

PILE LENGTH IN PLACE: ACTUAL PILE LENGTH BELOW THE PILE CUT-OFF ELEVATION IN THE FINISHED STRUCTURE.

POINT OF PILE ELEVATION AS DRIVEN: ACTUAL POINT OF PILE ELEVATION IN THE FINISHED STRUCTURE.

DESIGN AXIAL LOAD: FACTORED LOAD CARRIED BY EACH PILE AS ESTIMATED FROM STRUCTURAL DESIGN CALCULATIONS.

REQUIRED FIELD BEARING: PILE BEARING VALUE REQUIRED TO ACHIEVE "REFUSAL" FOR THE SIZE OF PILE USED. ACCORDING TO THE DIVISION OF CONSTRUCTION GUIDANCE MANUAL THIS VALUE IS TAKEN AS 170 TONS FOR 14-INCH STEEL H-PILES.

CALCULATED FIELD BEARING: PILE BEARING VALUE IN PLACE CALCULATED USING THE APPROPRIATE PILE DRIVING FORMULA IN SECTION 604.03.07(B) OF THE STANDARD SPECIFICATIONS, OR THE GATES FORMULA.

DRIVING CRITERIA

DRIVING CRITERIA: DRIVE POINT BEARING PILES TO REFUSAL AND VERIFY THAT THE CALCULATED FIELD BEARINGS EQUALS OR EXCEEDS THE REQUIRED FIELD BEARING.

FIELD DATA

FOR EACH PILE, THE PROJECT ENGINEER SHALL RECORD THE FOLLOWING ON THE SHEET: PILE LENGTH IN PLACE, POINT OF PILE ELEVATION AS DRIVEN, AND THE CALCULATED FIELD BEARING.

SUBMIT THIS RECORD TO 21ST CENTURY PARKS, INC. AT THE ADDRESS SHOWN IN THE TITLEBLOCK.

THIS PILE RECORD DOES NOT REPLACE OTHER PILE RECORDS THE PROJECT ENGINEER IS REQUIRED TO KEEP AND SUBMIT.

USE HP 14x89 IN ACCORDANCE WITH BPS-011, C.E.

PILE POINTS

END BENT 2 REQUIRES 14 INCH PILE POINTS. THE PILE POINTS SHALL BE THE TYPE CAPABLE OF KEYING INTO SLOPING ROCK SURFACES AND SEATING THE PILES INTO ROCK. PILE POINTS SHALL BE PLACED IN ACCORDANCE WITH SUBSECTION 604.03.04(C) OF THE STANDARD SPECIFICATIONS.

PILE DRIVING SYSTEM

ANY COMMONLY USED HAMMER ALLOWED BY THE KYTC DIVISION OF CONSTRUCTION WILL BE ADEQUATE TO DRIVE THE PILES INTO BEDROCK WITHOUT ENCOUNTERING EXCESSIVE BLOW COUNTS AND OVERSTRESSING THE PILES, AND PER THE GEOTECHNICAL REPORT THIS IS WITH A HAMMER ENERGY OF 20 FT-KIPS.

THE CONTRACTOR SHALL SUBMIT THEIR PILE DRIVING SYSTEM TO 21ST CENTURY PARKS, INC. FOR APPROVAL PRIOR TO THE INSTALLATION OF THE FIRST PILE. APPROVAL OF THE PILE DRIVING SYSTEM BY THE ENGINEER WILL BE SUBJECT TO SATISFACTORY FIELD PERFORMANCE OF THE PILE DRIVING PROCEDURES.

Key Plan

Seals
STATE OF KENTUCKY BURLEIGH D. LAW 22880 LICENSED PROFESSIONAL ENGINEER
SIGNED

LANDSCAPE ARCHITECT
Wallace Roberts & Todd, LLC
1700 Market Street
28th Floor
Philadelphia, PA 19103
tel 215.732.5215
fax 215.732.2551

Structural Engineer, Permitting
HNTB
One Riverfront Plaza,
401 West Main Street, Suite 601
Louisville, Kentucky 40202
Bus (502) 581-0985
Fax (502) 581-0987

The Parklands of Floyds Fork - Project 2A
Beckley Creek Park - North
Louisville, Kentucky

Owner:
21st Century Parks, Inc.
471 W. Main St., Suite 202
Louisville, Kentucky 40202

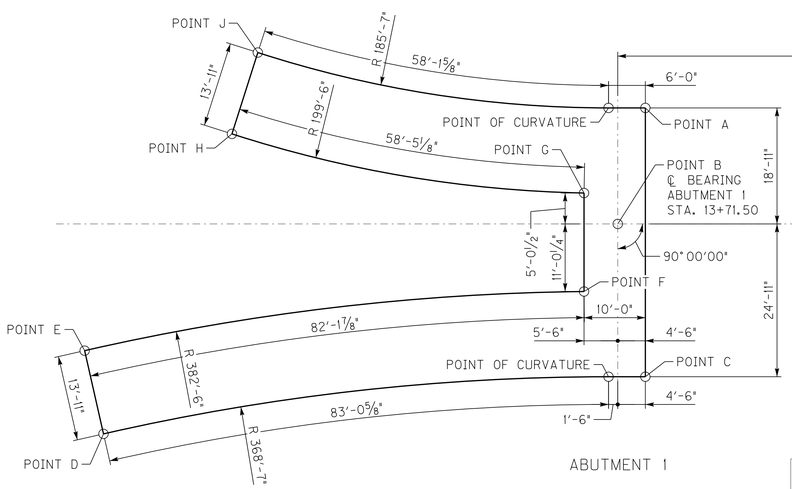
REV #	DATE	DESCRIPTION
	3/25/11	ISSUED FOR BID
1	4/5/11	ADDED COLUMN TO TABLE

Job No:	49733-DS-001
Date:	March 25, 2011
Scale:	1" = 10'-0"
Drawn By:	CPM
Checked By:	BDL

Drawing Title:
FOUNDATION LAYOUT BRIDGE F-101

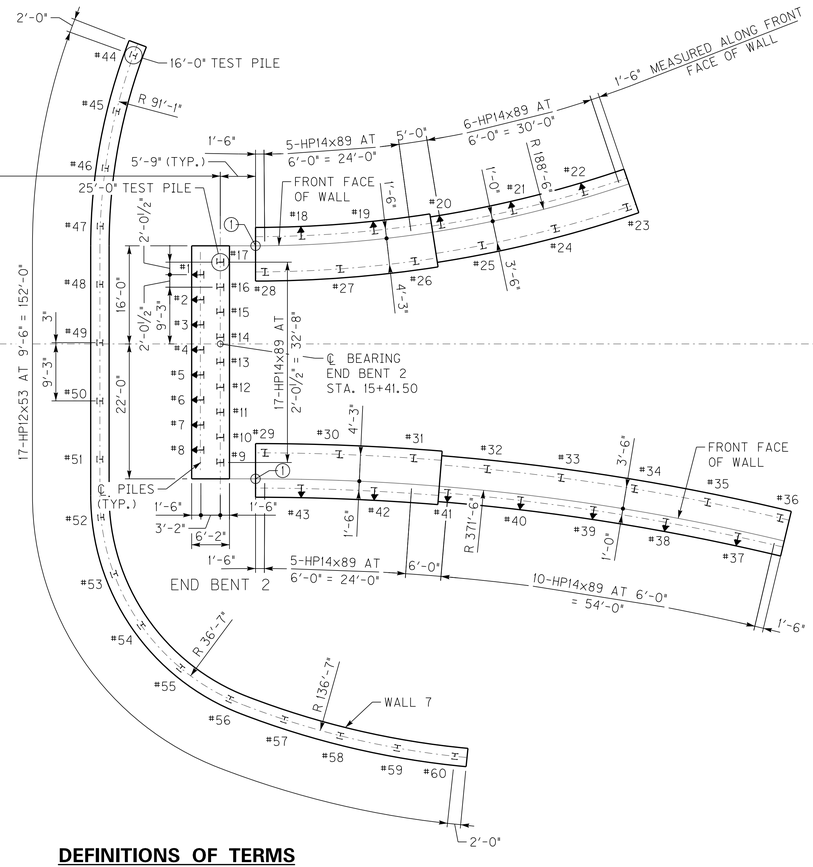
Drawing No:
SP-1001

NOTATION:
① POINT OF CURVATURE
T = TEST PILE
▼ - INDICATES DIRECTION OF 1:3 BATTER



170'-0" SPAN 1

S 2°29'07" E AHEAD ℄ PARK ROAD (PR1-N05)



FOUNDATION LAYOUT

SPREAD FOOTING ABUTMENT 1

POINT	PLAN FOOTING ELEVATION	AS-BUILT FOOTING ELEVATION	POINT	PLAN FOOTING ELEVATION	AS-BUILT FOOTING ELEVATION
A	560.107		F	560.107	
B	●		G	●	
C			H	●	
D	●		J	560.107	
E	560.107				

FOOTING IS DESIGNED FOR A MAXIMUM FACTORED PRESSURE OF 16.7 KSF.

THE MAXIMUM FACTORED STRENGTH LIMIT STATE BEARING RESISTANCE IS 85 KSF.

NOTE

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PILE RECORD FOR POINT BEARING PILES

PILE NUMBER	PILE CUT-OFF ELEVATION	APPROXIMATE TIP OF PILE ELEVATION	TIP OF PILE ELEVATION AS DRIVEN	LENGTH OF PILE IN PLACE	DESIGN AXIAL LOAD	REQUIRED FIELD BEARING	CALCULATED FIELD BEARING
	FEET	FEET	FEET	FEET	TONS	TONS	TONS
1	580.159	548.600			140.1	170	
2	●	●			●	●	
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16	●				●		
17T	580.159				140.1		
18	575.659				169.6		
19	●				169.6		
20					108.7		
21					●		
22							
23							
24					●		
25					108.7		
26					169.6		
27					●		
28							
29							
30					●		
31					169.6		
32					108.7		
33					●		
34							
35							
36							
37							
38							
39							
40					●		
41					108.7		
42	●	●			169.6	●	
43	575.659	548.600			169.6	170	

PILE RECORD FOR POINT BEARING PILES

PILE NUMBER	PILE CUT-OFF ELEVATION	APPROXIMATE TIP OF PILE ELEVATION	TIP OF PILE ELEVATION AS DRIVEN	LENGTH OF PILE IN PLACE	DESIGN AXIAL LOAD	REQUIRED FIELD BEARING	CALCULATED FIELD BEARING
	FEET	FEET	FEET	FEET	TONS	TONS	TONS
44T	571.366	548.600			62.2	100	
45	●	●			●	●	
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59	●	●			●	●	
60	571.366	548.600			62.2	100	

DEFINITIONS OF TERMS

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PILE LENGTH IN PLACE: ACTUAL PILE LENGTH BELOW THE PILE CUT-OFF ELEVATION IN THE FINISHED STRUCTURE.

POINT OF PILE ELEVATION AS DRIVEN: ACTUAL POINT OF PILE ELEVATION IN THE FINISHED STRUCTURE.

DESIGN AXIAL LOAD: FACTORED LOAD CARRIED BY EACH PILE AS ESTIMATED FROM STRUCTURAL DESIGN CALCULATIONS.

REQUIRED FIELD BEARING: PILE BEARING VALUE REQUIRED TO ACHIEVE "REFUSAL" FOR THE SIZE OF PILE USED. ACCORDING TO THE DIVISION OF CONSTRUCTION GUIDANCE MANUAL THIS VALUE IS TAKEN AS 100 TONS FOR 12-INCH STEEL H-PILES AND 170 TONS FOR 14-INCH STEEL H-PILES.

CALCULATED FIELD BEARING: PILE BEARING VALUE IN PLACE CALCULATED USING THE APPROPRIATE PILE DRIVING FORMULA IN SECTION 604.03.07(B) OF THE STANDARD SPECIFICATIONS, OR THE GATES FORMULA.

DRIVING CRITERIA

DRIVING CRITERIA: DRIVE POINT BEARING PILES TO REFUSAL AND VERIFY THAT THE CALCULATED FIELD BEARING EQUALS OR EXCEEDS THE REQUIRED FIELD BEARING.

FIELD DATA

FOR EACH PILE, THE PROJECT ENGINEER SHALL RECORD THE FOLLOWING ON THE SHEET: PILE LENGTH IN PLACE, POINT OF PILE ELEVATION AS DRIVEN, AND THE CALCULATED FIELD BEARING.

SUBMIT THIS RECORD TO 21ST CENTURY PARKS, INC. AT THE ADDRESS SHOWN IN THE TITLEBLOCK.

THIS PILE RECORD DOES NOT REPLACE OTHER PILE RECORDS THE PROJECT ENGINEER IS REQUIRED TO KEEP AND SUBMIT.

USE HP 12x53 IN ACCORDANCE WITH BPS-003, C.E., AND HP 14x89 IN ACCORDANCE WITH BPS-011, C.E.

PILE POINTS

END BENT 2 REQUIRES 14 INCH PILE POINTS AND WALL 7 REQUIRES 12 INCH PILE POINTS. THE PILE POINTS SHALL BE THE TYPE CAPABLE OF KEYING INTO SLOPING ROCK SURFACES AND SEATING THE PILES INTO ROCK. PILE POINTS SHALL BE PLACED IN ACCORDANCE WITH SUBSECTION 604.03.04(C) OF THE STANDARD SPECIFICATIONS.

PILE DRIVING SYSTEM

ANY COMMONLY USED HAMMER ALLOWED BY THE KYTC DIVISION OF CONSTRUCTION WILL BE ADEQUATE TO DRIVE THE PILES INTO BEDROCK WITHOUT ENCOUNTERING EXCESSIVE BLOW COUNTS AND OVERSTRESSING THE PILES, AND PER THE GEOTECHNICAL REPORT THIS IS WITH A HAMMER ENERGY OF 20 FT-KIPS.

THE CONTRACTOR SHALL SUBMIT THEIR PILE DRIVING SYSTEM TO 21ST CENTURY PARKS, INC. FOR APPROVAL PRIOR TO THE INSTALLATION OF THE FIRST PILE. APPROVAL OF THE PILE DRIVING SYSTEM BY THE ENGINEER WILL BE SUBJECT TO SATISFACTORY FIELD PERFORMANCE OF THE PILE DRIVING PROCEDURES.

Key Plan

Seals

COMMONWEALTH OF KENTUCKY · BURLEIGH D. LAW · 22880 · LICENSED PROFESSIONAL ENGINEER
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Louisville, Kentucky 40202
Phone (502) 561-0900
Fax (502) 581-0987

The Parklands of Floyds Fork - Project 2A
Beckley Creek Park - North
Louisville, Kentucky

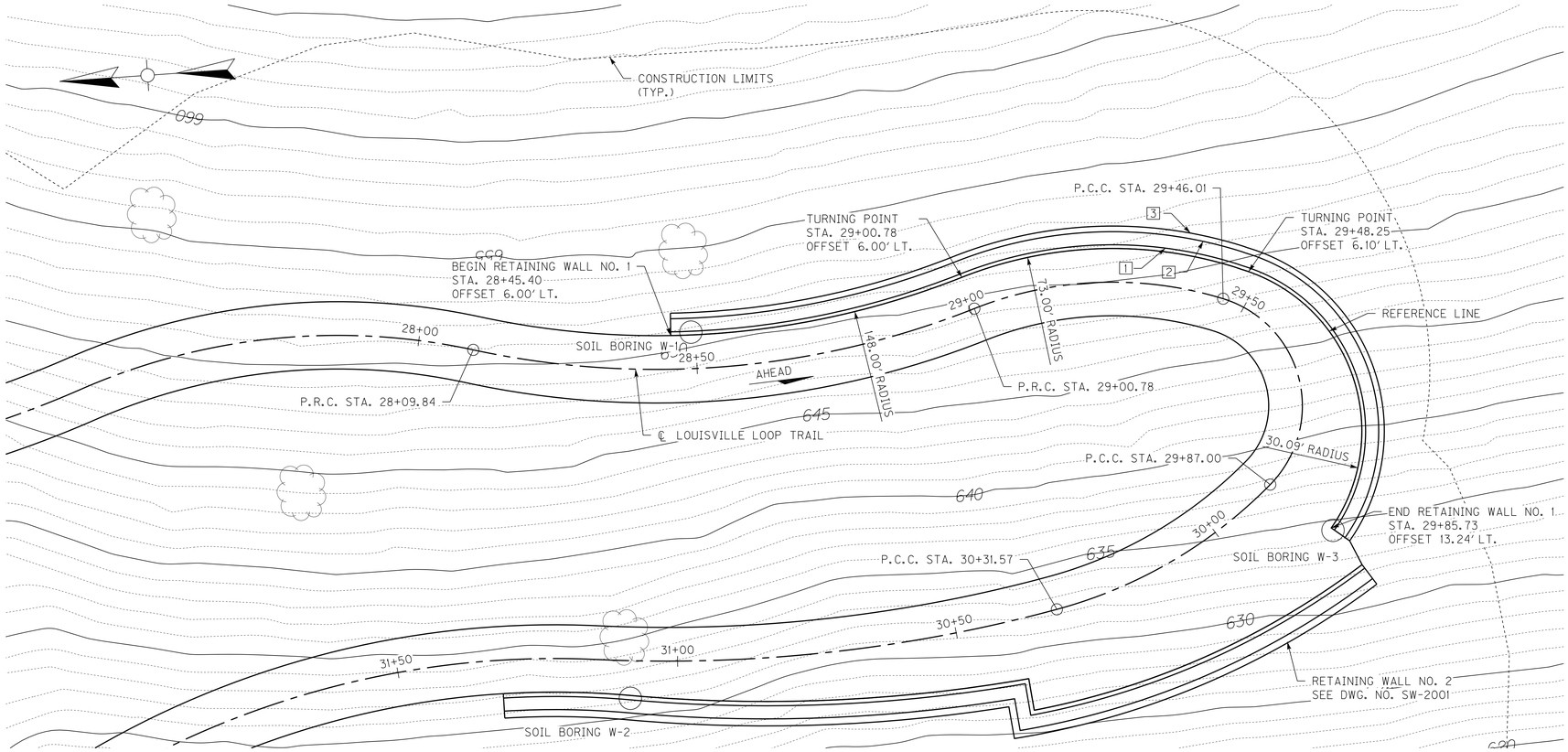
Owner:
21st Century Parks, Inc.
471 W. Main St., Suite 202
Louisville, Kentucky 40202

REV #	DATE	DESCRIPTION
	3/25/11	ISSUED FOR BID
1	4/5/11	ADDED COLUMN TO TABLE

Job No: 49733-DS-001
Date: March 25, 2011
Scale: 1" = 10'-0"
Drawn By: CPM
Checked By: BDL

Drawing Title:
FOUNDATION LAYOUT
BRIDGE F-102

Drawing No:
SP-2001



PLAN – RETAINING WALL NO. 1

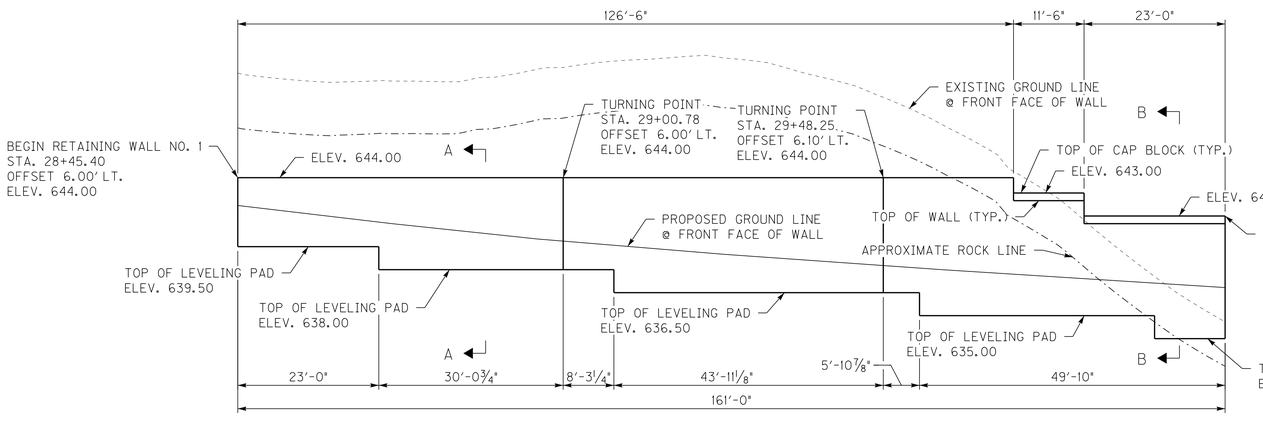
SCALE: 1" = 10'-0"

LOUISVILLE LOOP (LL1–NO1) HORIZONTAL CURVE DATA

P.I. STA. 28+56.68
R = 154.00'
Δ = 33°49'57" LT.
Dc = 37°12'18"
T = 46.84'
L = 90.94'
C = 89.62'
M = 6.66'
E = 6.96'
e = NORMAL CROWN

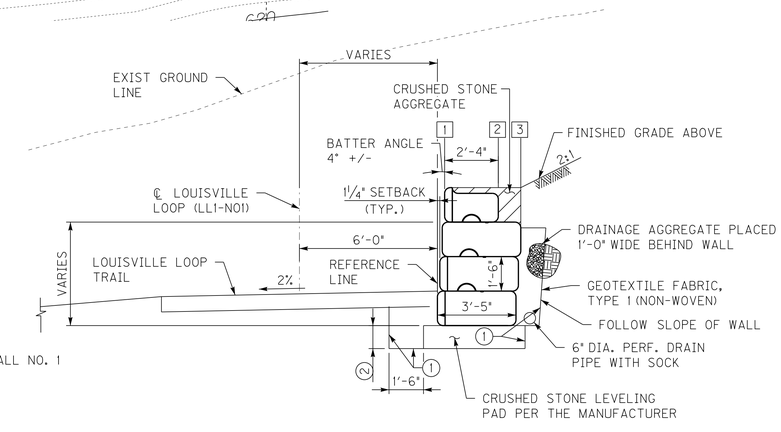
P.I. STA. 29+24.30
R = 67.00'
Δ = 38°41'04" RT.
Dc = 85°30'58"
T = 23.52'
L = 45.24'
C = 44.38'
M = 3.78'
E = 4.01'
e = NORMAL CROWN

P.I. STA. 29+78.92
R = 20.00'
Δ = 117°25'36" RT.
Dc = 286°28'44"
T = 32.91'
L = 40.99'
C = 34.18'
M = 9.61'
E = 18.51'
e = NORMAL CROWN



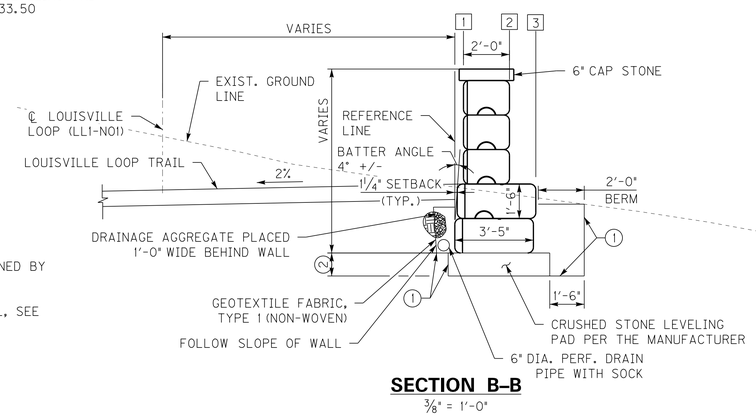
ELEVATION – RETAINING WALL NO. 1

VERTICAL SCALE: ¼" = 1'-0"
HORIZONTAL SCALE: 1" = 10'-0"
(LOOKING EAST TO SOUTHEAST)



SECTION A–A

⅜" = 1'-0"



SECTION B–B

⅜" = 1'-0"

NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED OFF OF THE LOUISVILLE LOOP TRAIL ℄.
2. ALL SEGMENT LENGTHS ARE MEASURED ALONG THE REFERENCE LINE AND FRONT FACE OF BOTTOM BLOCK.
3. ALL STATIONS AND OFFSETS ARE TO THE REFERENCE LINE AND FRONT FACE OF BOTTOM BLOCK.
4. THE MAXIMUM FACTORED SOIL BEARING RESISTANCE FOR WALL 1 = 3.0 KSF. FOR DESIGN SOIL PARAMETERS, SEE THE GEOTECHNICAL REPORT.

1

5. THE WALL BLOCK SYSTEM SHALL BE THE LEDGESTONE SERIES WITH COLOR SCHEME "KENTUCKIANA BUFF" AS MANUFACTURED BY REDI-ROCK OF KENTUCKIANA, MT. WASHINGTON, KY., OR APPROVED EQUAL.
6. 6" DIAMETER PERFORATED DRAIN PIPE TO RUN LENGTH OF WALL, SLOPE 2% MINIMUM DOWNWARD AND TERMINATE WHERE IT DAYLIGHTS AT EXISTING SIDE SLOPE.
7. FOR LOUISVILLE LOOP TRAIL DETAILS, SEE DRAWING NO. CS-1004, CG-1004, C-2032, AND C-7001.

NOTATION:

(1) LIMITS OF EXCAVATION
(2) LEVELING PAD SIZE TO BE DETERMINED BY MANUFACTURER
[X] REFERENCE POINTS AT TOP OF WALL, SEE SECTION A-A & B-B.

Key Plan

Seals

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The Parklands of Floyds Fork - Project 2A
Beckley Creek Park - North
Louisville, Kentucky

Owner:
21st Century Parks, Inc.
471 W. Main St., Suite 202
Louisville, Kentucky 40202

REV'#	DATE	DESCRIPTION
1	3/25/11	ISSUED FOR BID
	4/5/11	REVISED NOTE

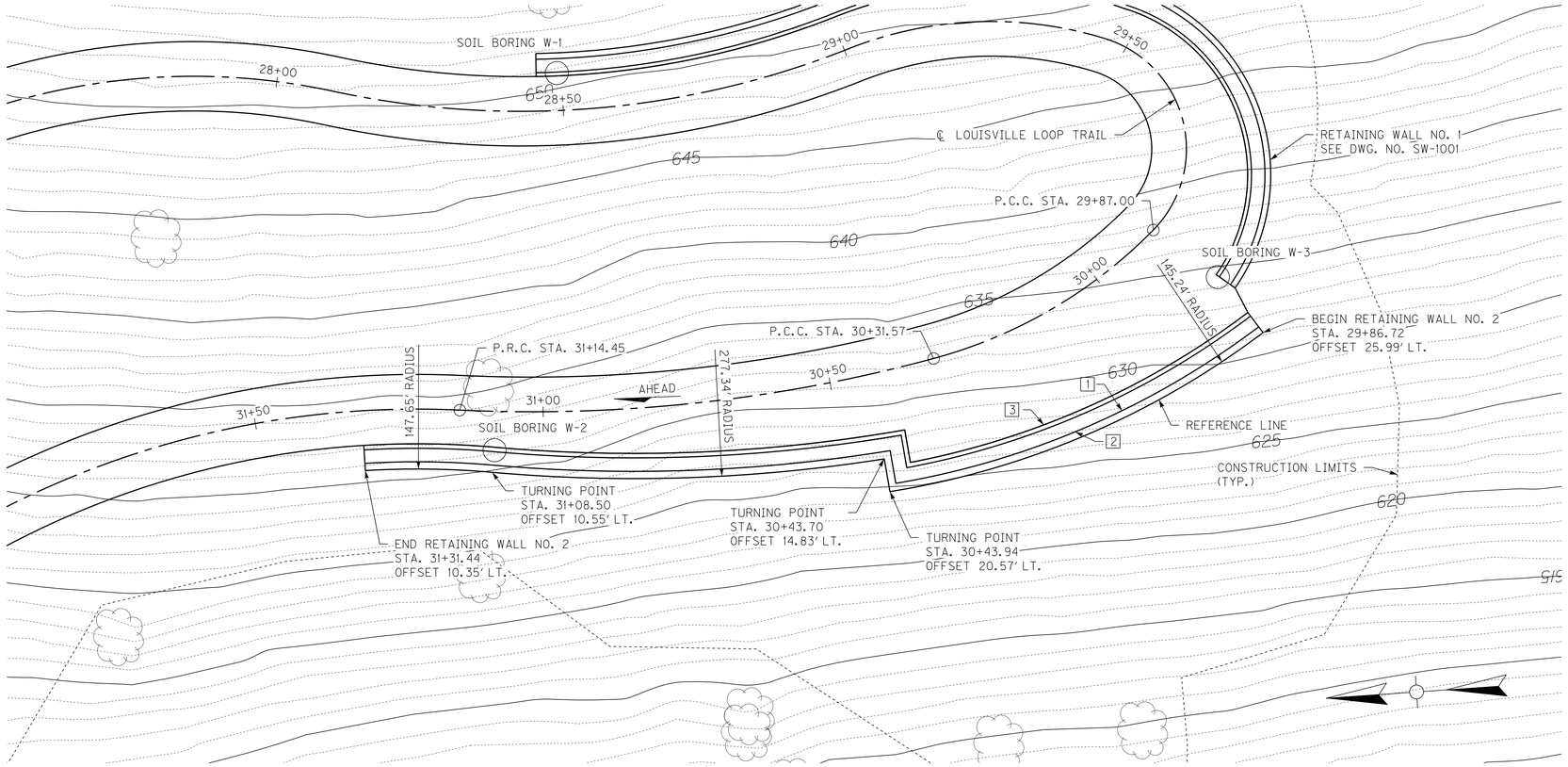
Job No:	49733-DS-001
Date:	March 25, 2011
Scale:	AS SHOWN
Drawn By:	AKS
Checked By:	BDL

Drawing Title:

WALL 1 LAYOUT & DETAILS

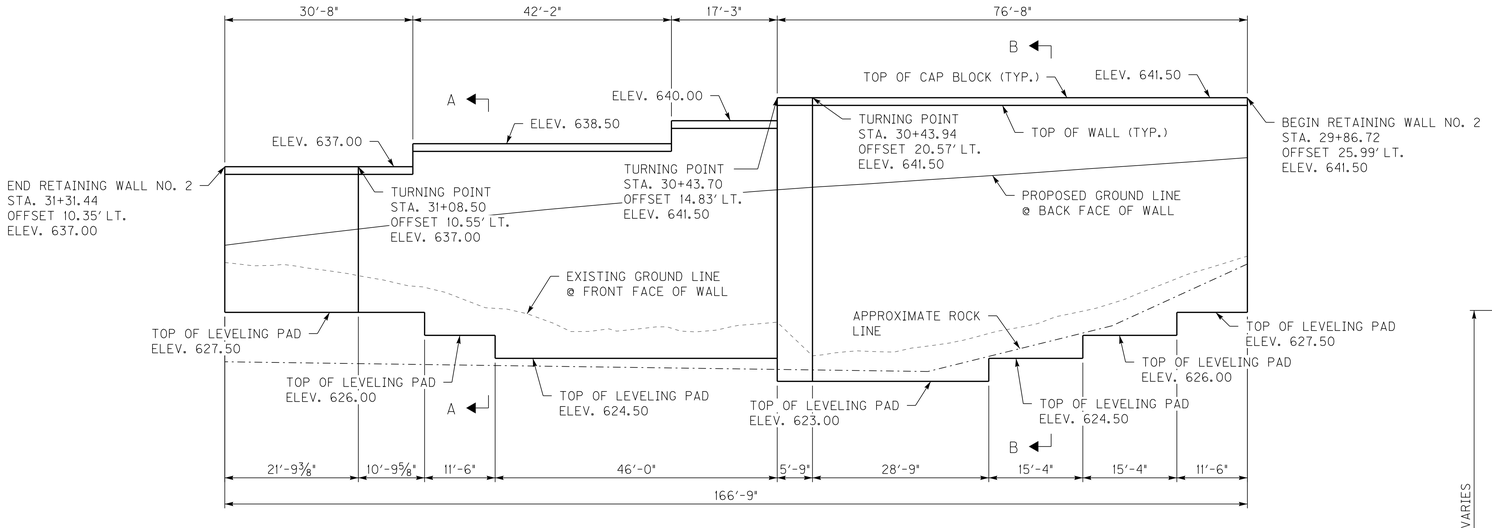
Drawing No:

SW–1001



PLAN – RETAINING WALL NO. 2

SCALE: 1" = 10'-0"



ELEVATION – RETAINING WALL NO. 2

VERTICAL SCALE: ¼" = 1'-0"
HORIZONTAL SCALE: 1" = 10'-0"
(LOOKING EAST)

NOTES:

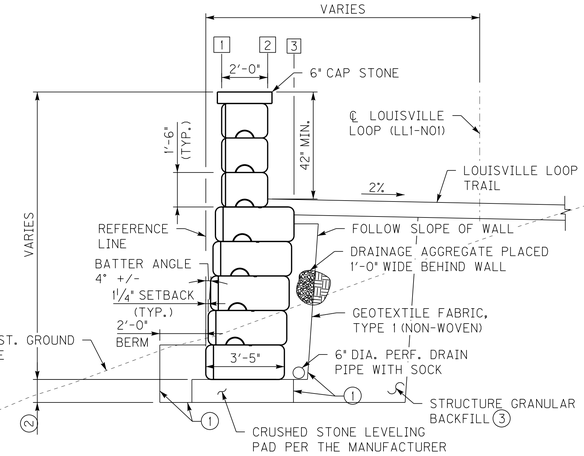
1. ALL STATIONS AND OFFSETS ARE BASED OFF OF THE LOUISVILLE LOOP TRAIL ℄.
2. ALL SEGMENT LENGTHS ARE MEASURED ALONG THE REFERENCE LINE AND FRONT FACE OF BOTTOM BLOCK.
3. ALL STATIONS AND OFFSETS ARE TO THE REFERENCE LINE AND FRONT FACE OF BOTTOM BLOCK.
4. THE MAXIMUM FACTORED SOIL BEARING RESISTANCE FOR WALL 2 = 3.0 KSF. FOR DESIGN SOIL PARAMETERS, SEE THE GEOTECHNICAL REPORT.
5. THE WALL BLOCK SYSTEM SHALL BE THE LEDGESTONE SERIES WITH COLOR SCHEME "KENTUCKIANA BUFF" AS MANUFACTURED BY REDI-ROCK OF KENTUCKIANA, MT. WASHINGTON, KY., OR APPROVED EQUAL. (1)
6. 6" DIAMETER PERFORATED DRAIN PIPE TO RUN LENGTH OF WALL, SLOPE 2% MINIMUM DOWNWARD AND TERMINATE WHERE IT DAYLIGHTS AT EXISTING SIDE SLOPE.
7. FOR LOUISVILLE LOOP TRAIL DETAILS, SEE DRAWING NO. CS-1004, CG-1004, C-2032, AND C-7001.

NOTATION:

(1) LIMITS OF EXCAVATION
(2) LEVELING PAD SIZE TO BE DETERMINED BY MANUFACTURER
(3) REQUIRED ONLY IF WALL SYSTEM REQUIRES GEOGRID REINFORCEMENT
[X] REFERENCE POINTS AT TOP OF WALL, SEE SECTION A-A & B-B.

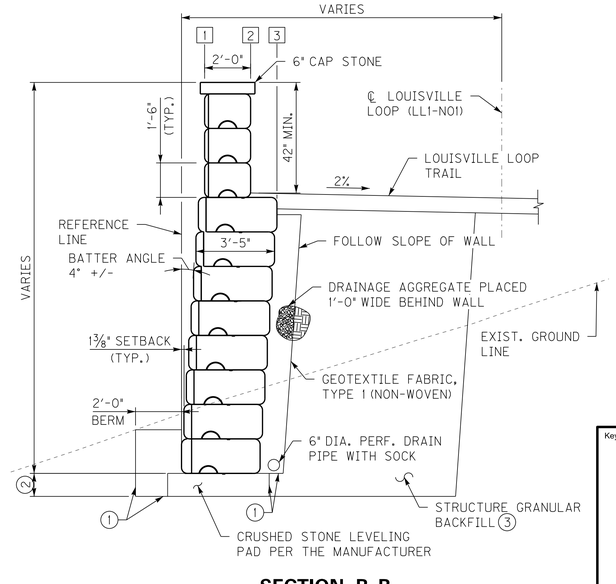
LOUISVILLE LOOP (LL1–NO1) HORIZONTAL CURVE DATA

P.I. STA. 29+78.92	P.I. STA. 30+73.35
R = 20.00'	R = 267.00'
Δ = 117°25'36" RT.	Δ = 17°47'07" RT.
Dc = 286°28'44"	Dc = 21°27'33"
T = 32.91'	T = 41.78'
L = 40.99'	L = 82.88'
C = 34.18'	C = 82.55'
M = 9.61'	M = 3.21'
E = 18.51'	E = 3.25'
e = NORMAL CROWN	e = NORMAL CROWN
P.I. STA. 30+09.83	P.I. STA. 31+71.39
R = 84.00'	R = 158.00'
Δ = 30°24'08" RT.	Δ = 39°37'56" LT.
Dc = 68°12'33"	Dc = 36°15'47"
T = 22.82'	T = 56.93'
L = 44.57'	L = 109.29'
C = 44.05'	C = 107.12'
M = 2.94'	M = 9.36'
E = 3.05'	E = 9.94'
e = NORMAL CROWN	e = NORMAL CROWN



SECTION A–A

⅜" = 1'-0"



SECTION B–B

⅜" = 1'-0"

Seals

STATE OF KENTUCKY
BURLEIGH D. LAW
22880
LICENSED PROFESSIONAL ENGINEER
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The Parklands of Floyds Fork - Project 2A
Beckley Creek Park - North
Louisville, Kentucky

Owner:
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471 W. Main St., Suite 202
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REV #	DATE	DESCRIPTION
1	3/25/11	ISSUED FOR BID
	4/5/11	REVISED NOTE

Job No:	49733-DS-001
Date:	March 25, 2011
Scale:	AS SHOWN
Drawn By:	AKS
Checked By:	BDL

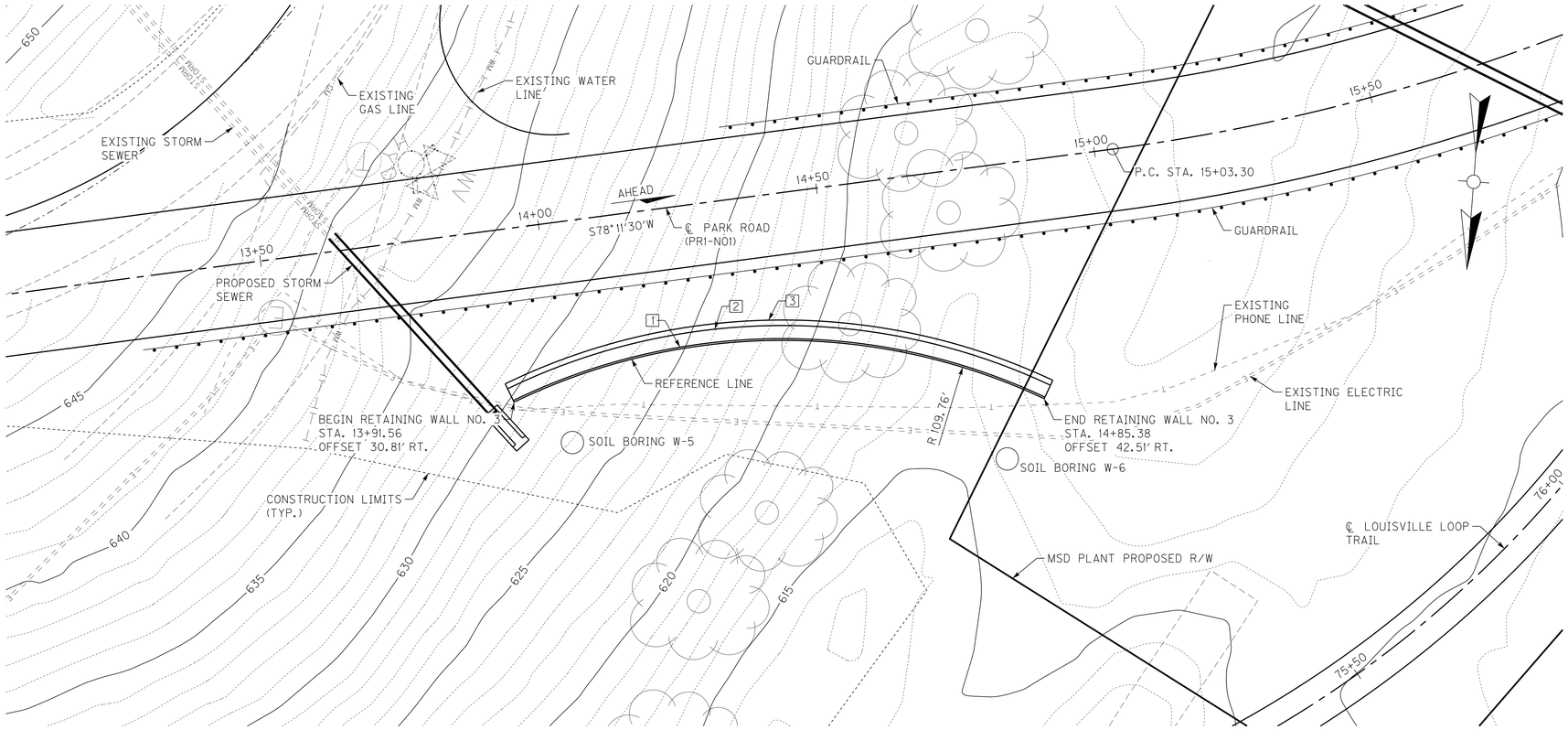
Key Plan

Drawing Title:

WALL 2 LAYOUT & DETAILS

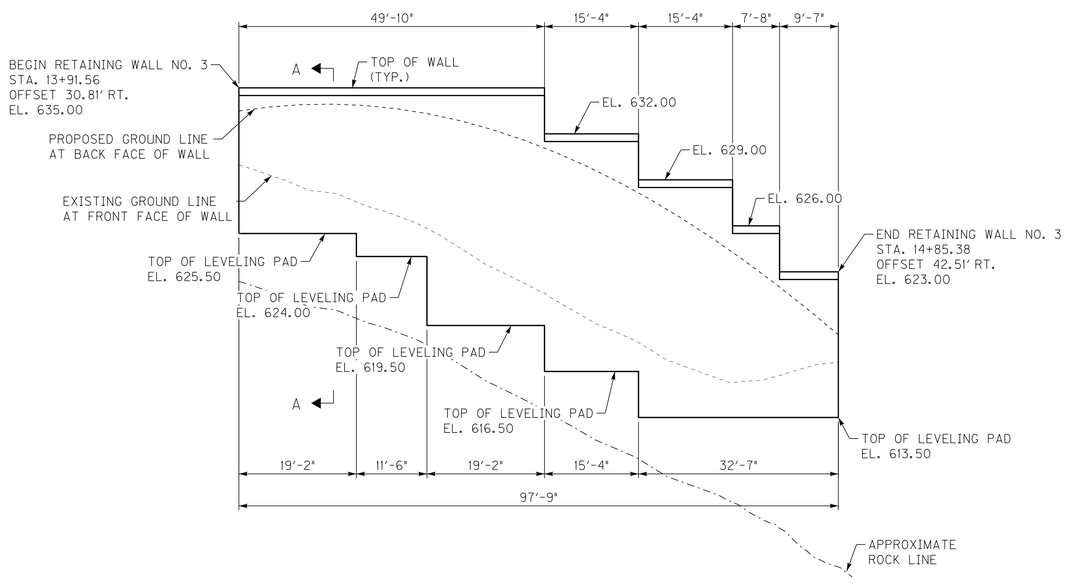
Drawing No:

SW–2001



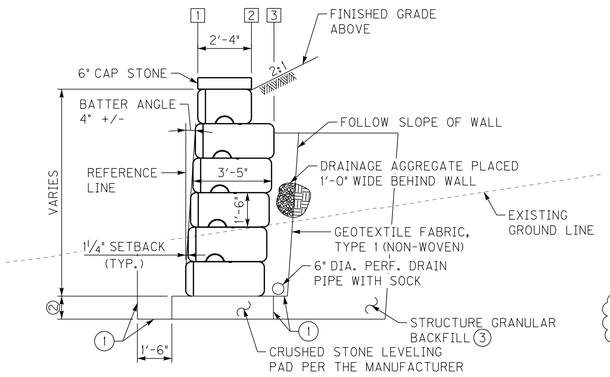
PLAN – RETAINING WALL NO. 3

SCALE: 1" = 10'-0"



ELEVATION – RETAINING WALL NO. 3

VERTICAL SCALE: 1/4" = 1'-0"
HORIZONTAL SCALE: 1" = 10'-0"



SECTION A–A

3/8" = 1'-0"

PARK ROAD (PR1–N01) HORIZONTAL CURVE DATA

P.I. STA. 15+63.12
R = 350.00'
△ = 19°23'55" LT.
Dc = 16°22'13"
T = 59.82'
L = 118.50'
C = 117.93'
M = 5.00'
E = 5.08'
e = NORMAL CROWN

NOTATION:

(1) LIMITS OF EXCAVATION

(2) LEVELING PAD SIZE TO BE DETERMINED BY MANUFACTURER

(3) REQUIRED ONLY IF WALL SYSTEM REQUIRES GEOGRID REINFORCEMENT

[X] REFERENCE POINTS AT TOP OF WALL, SEE SECTION A-A.

NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED OFF OF THE PARK ROAD ℄.
2. ALL SEGMENT LENGTHS ARE MEASURED ALONG THE REFERENCE LINE AND FRONT FACE OF BOTTOM BLOCK.
3. ALL STATIONS AND OFFSETS ARE TO THE REFERENCE LINE AND FRONT FACE OF BOTTOM BLOCK.
4. THE MAXIMUM FACTORED SOIL BEARING RESISTANCE FOR WALL 3 = 3.0 KSF. FOR DESIGN SOIL PARAMETERS, SEE THE GEOTECHNICAL REPORT.
5. THE WALL BLOCK SYSTEM SHALL BE THE LEDGESTONE SERIES WITH COLOR SCHEME "KENTUCKIANA BUFF" AS MANUFACTURED BY REDI-ROCK OF KENTUCKIANA, MT. WASHINGTON, KY., OR APPROVED EQUAL. (1)
6. 6" DIAMETER PERFORATED DRAIN PIPE TO RUN LENGTH OF WALL, SLOPE 2% MINIMUM DOWNWARD AND TERMINATE WHERE IT DAYLIGHTS AT EXISTING SIDE SLOPE.
7. FOR PARK ROAD DETAILS, SEE DRAWING NO. CS-1013, CG-1013, C-2001, AND C-7001.
8. ALL EXISTING UTILITIES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

Key Plan

Seals

PROFESSIONAL ENGINEER STATE OF KENTUCKY BURLEIGH D. LAW 22880 LICENSED
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The Parklands of Floyds Fork - Project 2A
Beckley Creek Park - North
Louisville, Kentucky

Owner:
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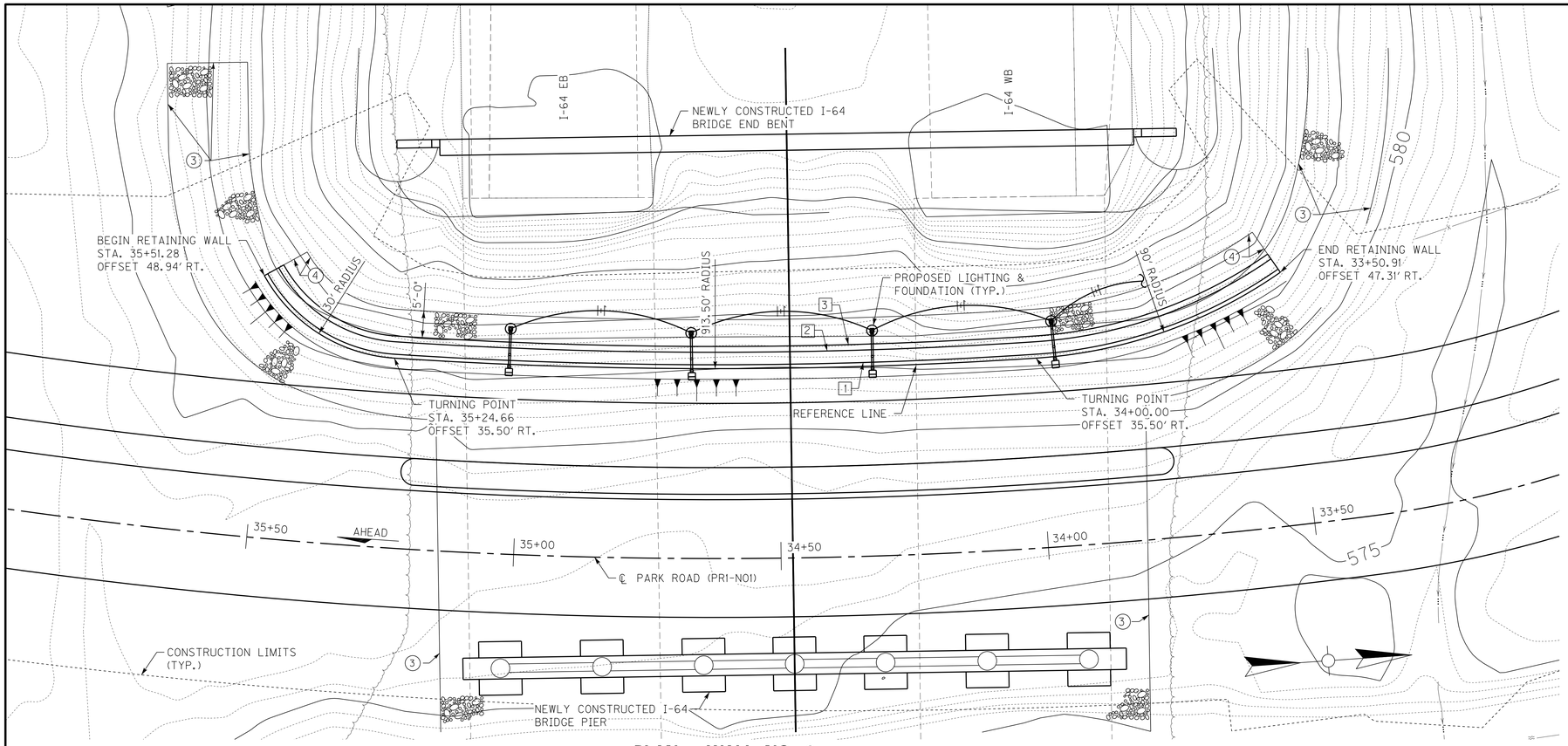
471 W. Main St., Suite 202
Louisville, Kentucky 40202

REV #	DATE	DESCRIPTION
	3/25/11	ISSUED FOR BID
1	4/5/11	REVISED NOTE

Job No:	49733-DS-001
Date:	March 25, 2011
Scale:	AS SHOWN
Drawn By:	AKS
Checked By:	BDL

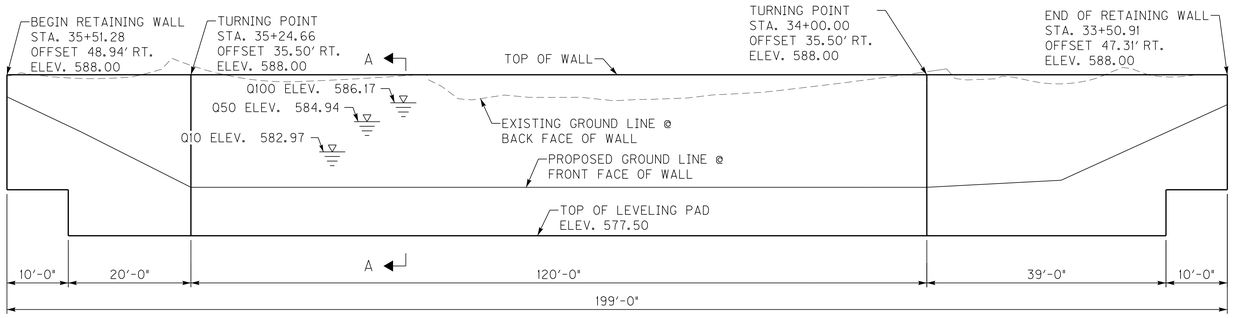
Drawing Title:
WALL 3 LAYOUT & DETAILS

Drawing No:
SW–3001



PLAN – WALL NO. 6

SCALE: 1" = 10'-0"

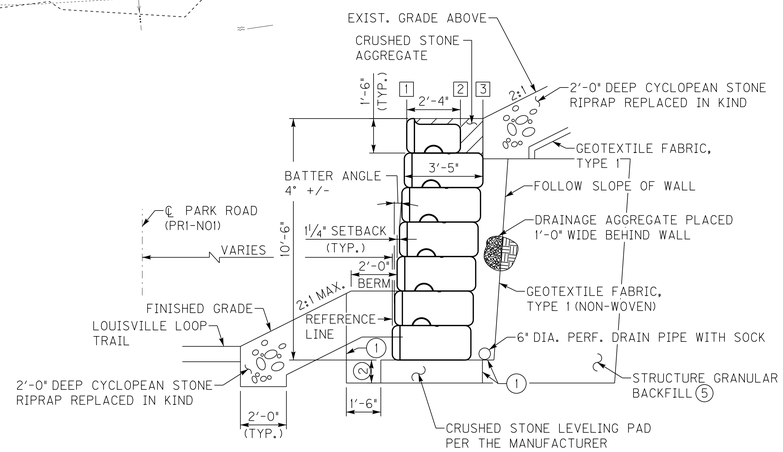


ELEVATION – RETAINING WALL NO. 6

VERTICAL SCALE: 1/4" = 1'-0"
HORIZONTAL SCALE: 1" = 10'-0"

PARK ROAD (PR1–NO1) HORIZONTAL CURVE DATA

P.I. STA. 35+00.23
R = 949.00'
△ = 19°16'47" RT.
Dc = 6°02'15"
T = 161.19'
L = 319.33'
C = 317.83'
M = 13.40'
E = 13.59'
e = NORMAL CROWN



SECTION A–A

SCALE: 3/8" = 1'-0"

NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED OFF OF THE PARK ROAD ℄.
2. ALL SEGMENT LENGTHS ARE MEASURED ALONG THE REFERENCE LINE AND FRONT FACE OF BOTTOM BLOCK.
3. ALL STATIONS AND OFFSETS ARE TO THE REFERENCE LINE AND FRONT FACE OF BOTTOM BLOCK.
4. THE MAXIMUM FACTORED SOIL BEARING RESISTANCE FOR WALL 6 = 1.8 KSF. FOR DESIGN SOIL PARAMETERS, SEE THE GEOTECHNICAL REPORT.
5. THE WALL BLOCK SYSTEM SHALL BE THE LEDGESTONE SERIES WITH COLOR SCHEME "KENTUCKIANA BUFF" AS MANUFACTURED BY REDI-ROCK OF KENTUCKIANA, MT. WASHINGTON, KY., OR APPROVED EQUAL. (1)
6. 6" DIAMETER PERFORATED DRAIN PIPE TO RUN LENGTH OF WALL, SLOPE 2% DOWNWARD BOTH WAYS FROM ℄ I-64, AND TERMINATE WHERE IT DAYLIGHTS AT EXISTING SIDE SLOPE.
7. FOR LIGHTING DETAILS, SEE DRAWING NO. UE-101.
8. FOR PARK ROAD AND LOUISVILLE LOOP TRAIL DETAILS, SEE DRAWING NO. CS-1015, CG-1015, C-2002, C-4005, C-4006, C-7001, AND C-7002.
9. FOR I-64 BRIDGE PLANS, SEE DRAWING NO. 26206 FOR ITEM NO. 5-65.11 ON FILE WITH THE KENTUCKY TRANSPORTATION CABINET.

NOTATION:

(1) LIMITS OF EXCAVATION
(2) LEVELING PAD SIZE TO BE DETERMINED BY MANUFACTURER
(3) LIMITS OF CYCLOPEAN STONE RIPRAP FROM KYTC CONSTRUCTION OF NEW I-64 BRIDGES
(4) LIMITS OF REUSED CYCLOPEAN STONE RIPRAP FROM RIPRAP REMOVED FOR CONSTRUCTION OF LOUISVILLE LOOP TRAIL AND PARK ROAD
(5) REQUIRED ONLY IF WALL SYSTEM REQUIRES GEOGRID REINFORCEMENT
[X] REFERENCE POINTS AT TOP OF WALL, SEE SECTION A-A

Key Plan

Seals

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Louisville, Kentucky

Owner:
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471 W. Main St., Suite 202
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REV #	DATE	DESCRIPTION
1	3/25/11	ISSUED FOR BID
2	4/5/11	REVISED NOTE

Job No:	49733-DS-001
Date:	March 25, 2011
Scale:	AS SHOWN
Drawn By:	NJK
Checked By:	BDL

Drawing Title:
WALL 6 LAYOUT & DETAILS

Drawing No:
SW–6001

SECTION 00800

INFORMATION AVAILABLE TO BIDDERS

1.1 SUMMARY

A. Document Includes:
1. Subsurface investigation report.
2. Design Team CAD Files

1.2 SUBSURFACE INVESTIGATION REPORT

A. A copy of a geotechnical reports for the bridges, Park Road, Louisville Loop and retaining walls is available for viewing at the following FTP site:
http://link.wrtdesign.com/05j

B. This report identifies properties of below-grade conditions and offers recommendations for design of foundations, prepared primarily for use of Architect/Engineer.

C. Recommendations described are not requirements of this Contract, unless specifically referenced in the Contract Documents.

D. This report, by its nature, cannot reveal all conditions existing on the site. Should subsurface conditions be found to vary substantially from this report, changes in design and construction of foundations will be made, with resulting credits or expenditures to Contract Price/Sum accruing to Owner.

1.3 DESIGN TEAM CAD FILES

A. CAD files (both AutoCAD – civil and bioengineering work and Micro Station – structural work) will be made available through an FTP site provided by Wallace Roberts and Todd. The CAD files will be for information only. Please send an email request to Charles Neer (cneer@ph.wrtdesign.com) for a CAD release form which must be signed and returned to Charles. Since some of the base files use LOGIC there will be a LOGIC request waiver that will also need to be signed. Upon receipt of the signed release forms, Charles will email an FTP link where the files can be downloaded.

THE PARKLANDS OF FLOYDS FORK – PROJECT 2A
BECKLEY CREEK PARK - NORTH

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Work covered by the Contract Documents.
2. Type of the Contract.
3. Work under other contracts.
4. Use of premises.
5. Specification formats and conventions.

B. Related Sections include Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: The Parklands at Floyds Fork – Project 2A, Beckley Creek Park – North.

1. Project Location: 15712 Shelbyville Rd, Louisville, Kentucky 40245.

B. Owner: 21st Century Parks, Inc..

1. Owner's Representative: Joseph Daley, 471 W. Main Street, Suite 202, Louisville, KY 40202.

C. Architect:

1. Prime: Wallace Roberts & Todd, LLC., 1700 Market St., 28th Floor, Philadelphia, PA 19103.
2. Local Architect: Bravura Corporation, 111 W. Washington Street, Suite 200, Louisville KY 40202.

D. The Work consists of the following:

THE PARKLANDS OF FLOYDS FORK – PROJECT 2A
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24” Dry Laid Creekstone Headwall	Each	_____
23”x14” Dry Laid Creekstone Headwall	Each	_____
30”x19” Dry Laid Creekstone Headwall	Each	_____
Bumper Block (Installed)	Each	_____
Erosion Control Blanket	Per Sq. Yd.	_____
Silt Fencing	Per Lin. Ft.	_____
Reinforced Silt Fencing	Per Lin. Ft.	_____
Stone Bag Inlet Protection	Each	_____
Winged Headwall Inlet Protection	Each	_____
Straight Headwall Inlet Protection	Each	_____
Stone Bag Check Dam in Small Ditch	Each	_____
Rock Ditch Check	Each	_____
Stabilized Construction Entrance	Per Sq. Yd.	_____
Tree Protection Fencing	Per Lin. Ft.	_____
12” Headwall - KDOH RDH-030-03	Each	_____
12” Headwall - KDOH RDH-030-03	Each	_____
15” Headwall - KDOH RDH-030-03	Each	_____
18” Headwall - KDOH RDH-030-03	Each	_____
24” Headwall - KDOH RDH-020-03	Each	_____
23”x14” Headwall - MSD DH-01-01	Each	_____
23”x14” Headwall - KDOH RDH-010-02	Each	_____
30”x19” Headwall - KDOH RDH-010-02	Each	_____
Trench Rock Removal (Mechanical)	Per Cu. Ft.	_____
Trench Rock Removal (Blasting)	Per Cu. Ft.	_____
Site Rock Removal (Mechanical)	Per Cu. Ft.	_____
Site Rock Removal (Blasting)	Per Cu. Ft.	_____

RETAINING WALLS

Structure Granular Backfill	Cu. Yd.	_____
Fabric – Geotextile, Type I	Sq. Yd.	_____
Retaining Wall – Segmental	Sq. Yd.	_____
Retaining Wall Erection – Segmental	Sq. Yd.	_____
Leveling Pad, Crushed Aggregate	Lin. Ft.	_____
Structure Excavation, Common	Cu. Yd.	_____
Structure Excavation, Rock	Cu. Yd.	_____

THE PARKLANDS OF FLOYDS FORK – PROJECT 2A
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BRIDGE F-101

Structure Granular Backfill	Cu. Yd.	_____
Channel Lining Class IA	Ton	_____
Fabric – Geotextile, Type I	Sq. Yd.	_____
Retaining Wall – Gabion	Cu. Yd.	_____
Masonry Coating	Sq. Yd.	_____
Structure Excavation, Common	Cu. Yd.	_____
Structure Excavation, Rock	Cu. Yd.	_____
Cofferdam	Lump Sum	_____
6” Reinforced Concrete Slopewall	Sq. Yd.	_____
Cyclopean Stone Riprap	Ton	_____
Test Pile	Lin. Ft.	_____
Pre-Drilling for Piles	Lin. Ft.	_____
Piles-Steel HP14x89	Lin. Ft.	_____
Pile Points, 14”	Each	_____
Concrete Class “A”	Cu. Yd.	_____
Concrete Class “AA”	Cu. Yd.	_____
Steel Reinforcement	Lbs.	_____
Steel Reinforcement, Epoxy Coated	Lbs.	_____
Structural Steel (Lbs given in plans)	Lump Sum	_____
Shear Connectors (Lbs given in plans)	Lump Sum	_____
Armored Edge	Lin. Ft.	_____
Approach Slab	Sq. Yd.	_____
Stainless Steel Railing	Lin. Ft.	_____
Variegated Limestone Blocks	Ton	_____
Roughback Finish Limestone Blocks	Ton	_____
Smooth Finish Limestone Blocks	Ton	_____
Cold Fluid-Applied Waterproofing	Sq. Yd.	_____

BRIDGE F-102

Structure Granular Backfill	Cu. Yd.	_____
Channel Lining Class IA	Ton	_____
Fabric – Geotextile, Type I	Sq. Yd.	_____
Retaining Wall – Gabion	Cu. Yd.	_____
Masonry Coating	Sq. Yd.	_____

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Structure Excavation, Common	Cu. Yd.	_____
Structure Excavation, Rock	Cu. Yd.	_____
Cofferdam	Lump Sum	_____
6" Reinforced Concrete Slopewall	Sq. Yd.	_____
Cyclopean Stone Riprap	Ton	_____
Test Pile	Lin. Ft.	_____
Pre-Drilling for Piles	Lin. Ft.	_____
Piles-Steel HP12x53	Lin. Ft.	_____
Piles-Steel HP14x89	Lin. Ft.	_____
Pile Points, 12"	Each	_____
Pile Points, 14"	Each	_____
Concrete Class "A"	Cu. Yd.	_____
Concrete Class "AA"	Cu. Yd.	_____
Steel Reinforcement	Lbs.	_____
Steel Reinforcement, Epoxy Coated	Lbs.	_____
Structural Steel (Lbs given in plans)	Lump Sum	_____
Shear Connectors (Lbs given in plans)	Lump Sum	_____
Armored Edge	Lin. Ft.	_____
Approach Slab	Sq. Yd.	_____
Stainless Steel Railing	Lin. Ft.	_____
Variegated Limestone Blocks	Ton	_____
Roughback Finish Limestone Blocks	Ton	_____
Smooth Finish Limestone Blocks	Ton	_____
Cold Fluid-Applied Waterproofing	Sq. Yd.	_____

<u>BIOENGINEERING AT THE BRIDGES</u>

Canopy Trees 4 – 5 ft Container	Each	_____
Midstory Trees 4 – 5 ft Container	Each	_____
Shrubs 3 - 4 ft Container	Each	_____
Native Seed	Lbs.	_____
Coir Matting	Sq. Yd.	_____
Geotextile	Sq. Yd.	_____
12-foot long Concrete Forms	Each	_____
Live Branches	Per Lin. Ft.	_____
Rock Toe	Per Lin. Ft.	_____

THE PARKLANDS OF FLOYDS FORK – PROJECT 2A
BECKLEY CREEK PARK - NORTH

ELECTRICAL

Sch. 80 PVC Conduit (1-1/4”) in trench with DGA backfill (installed) Per Lin. Ft.		_____
Concrete Pole Base (Installed)	Each	_____
Outdoor Pull Box (Installed)	Each	_____
Concrete Encased Sch. 40 PVC Conduit (4”) Duct Bank (installed)	Per Lin. Ft.	_____

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012200

1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Owner and then only after acceptable temporary utility services have been provided.

1. Provide a minimum 72-hours' notice to the Owner and receive written notice to proceed before interrupting any utility.
2. Protect existing utilities that are to remain.

B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shutoff services if lines are active.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.

B. Satisfactory Soil Materials: ASTM D 2487 soil classification groups CL, CH, GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 2 inches (50 mm) in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.

C. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, SC, ML, MH, OL, OH, and PT.

D. Backfill and Fill Materials: Satisfactory soil materials.

E. Subbase and Base Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand, ASTM D 2940, with at least 95 percent passing a 1-1/2 inch (38 mm) sieve and not more than 8 percent passing a No. 200 (75 micrometer) sieve.

F. Engineered Fill: Subbase or base materials and fill for over-excavated locations.

G. Bedding Material: Subbase or base materials with 100 percent passing a 1 inch (25 mm) sieve and not more than 8 percent passing a No. 200 (75 micrometer) sieve.

H. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D 448, coarse aggregate grading size 57, with 100 percent passing a 1-1/2 inch (38 mm) sieve and not more than 5 percent passing a No. 8 (2.36 mm) sieve.

I. Filtering Material: Evenly graded mixture of natural or crushed gravel or crushed stone and natural sand, with 100 percent passing a 1-1/2 inch (38 mm) sieve and 0 to 5 percent passing a No. 50 (300 micrometer) sieve.

3.22 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property.

3.23 USE OF EXPLOSIVES

A. The Use of Explosives is allowed. The contractor will be responsible for verifying and coordinating with the Louisville Metropolitan Sewer District any restrictions for performing blasting adjoining or within the site of the Floyds Fork Water Quality Treatment Center or any utilities that serve the Center. The contractor shall also conform to all local and public agency restrictions for performing any blasting.

B. Per the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, Section 107, Legal Relations and Responsibility To Public, Subsection 107.11, Use of Explosives and Section 112, Maintenance and Control of Traffic During Construction, Subsection 112.03.09, Blasting.

END OF SECTION 312000

1.4 QUALITY ASSURANCE

A. Concrete Standards: Comply with provisions of the following standards, except where more stringent requirements are indicated.

1. American Concrete Institute (ACI) 301, "Specifications for Structural Concrete for Buildings."
2. ACI 318, "Building Code Requirements for Reinforced Concrete."
3. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice."

B. Concrete Testing Service: The Owner will engage a qualified independent testing agency to perform materials evaluation tests. The Contractor shall coordinate with the testing service to have samples obtained.

PART 2 - PRODUCTS

2.1 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other acceptable panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.

1. Use flexible or curved forms for curves of 100-foot or less radius.

B. Form Release Agent: Provide commercial formulation form-release agent with a maximum of 350 g/L volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.2 REINFORCING MATERIALS

A. Reinforcing Bars and Tie Bars: ASTM A 615, Grade 60, deformed.

B. Welded Steel Wire Fabric: ASTM A 185.

1. Furnish in flat sheets, not rolls, unless otherwise acceptable to Architect.

C. Supports for Reinforcement: Chairs, spacers, dowel bar supports and other devices for spacing, supporting, and fastening reinforcing bars, welded wire fabric, and dowels in place. Use wire bar-type supports complying with CRSI specifications.

1. Use supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

1. Preformed backup rods shall be used to control the depth of the sealant, to achieve the desired shape factor, to support the sealant against indentation and sag, and shall be a non-moisture absorbing resilient material.
2. Backup materials (backer rods) shall be manufactured from closed cell polyethylene (resilient) foam rubber compatible with the sealant, and recommended for such use by the sealant manufacturer, shall not adhere to the sealant, shall be compressible without extruding the sealant, and shall recover to maintain contact with the joint faces when the joint is open and shall be subject to approval by the Architect.
3. For 3/8 inch wide joints, use 1/2 inch diameter backer rods and for 3/4 inch wide joints, use 1" diameter backer rods, (unless otherwise shown on the Plans or approved by the Architect) so that the backer rods are always compressed in its installed position between the concrete joint surfaces.

2.10 FIBER REINFORCEMENT

A. Synthetic Fiber: 100 percent virgin monofilament polypropylene fibers engineered and design for use in concrete paving copying with ASTM C 1116/C116M, Type III 1/2 to 1 ½ inches long.

1. Provide fibers that have a specific gravity of 0.9, a minimum tensile strength of 70 ksi, graded per manufacturer specifically manufactured to an optimum gradation for use as concrete secondary reinforcement.
2. Uniformly disperse in concrete mixture at manufacturers recommended rate but not less than 1.5 lb/cu.

B. Louisville Loop: All concrete pavements shall have fiber reinforcement.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Proof-roll prepared subbase surface to check for unstable areas or poor soils conditions and verify need for additional compaction or removal and replacement of subbase material. Do not remove unsuitable subbase soils until reviewed, approved, and measured by the Owner or Architect. Do not begin paving work until such conditions have been corrected and are ready to receive paving.

B. Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for paving to required lines, grades, and elevations. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.

B. Check completed formwork and screeds for grade and alignment to following tolerances:

C. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than 1/2 hour, unless paving terminates at isolation joints.

1. Provide preformed galvanized steel or plastic keyway-section forms or bulkhead forms with keys, unless indicated otherwise. Embed keys at least 1-1/2 inches into concrete.
2. Continue reinforcement across construction joints unless indicated otherwise. Do not continue reinforcement through sides of strip paving unless indicated.
3. Provide tie bars at sides of paving strips where indicated.
4. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.
5. Louisville Loop construction joints: Install lateral construction joints 10’ from the last contraction joint or no more than 30’ from the last expansion joint. Use a felt matt material in construction joints; pour epoxy waver felt in joint and screed.

D. Isolation Joints: Form isolation joints of preformed joint filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of 30 feet, or as shown on drawings.
2. Extend joint fillers full width and depth of joint, not less than 1/2 inch or more than 1 inch below finished surface where joint sealant is indicated. Place top of joint filler flush with finished concrete surface when no joint sealant is required.
3. Furnish joint fillers in one-piece lengths for full width being placed wherever possible. Where more than one length is required, lace or clip joint filler sections together.
4. Protect top edge of joint filler during concrete placement with a metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

3.5 PREPARATION OF JOINTS

A. Immediately before sealing, the temporary backer rods shall be removed; the joints shall be thoroughly cleaned of all laitance, curing compound, protrusions or hardened concrete, dirt, dust, vegetation and other foreign material. Cleaning shall be accomplished by high pressure water blasting, or sandblasting except that sandblasting equipment shall not be used to clean joints located in the vicinity of aircraft, or ground equipment (exclusive of Contractor's equipment).

B. When the surfaces are clean and dry, and just prior to placement of the sealant, compressed air shall be used to blow out the joint and remove all residual dust. The joint faces shall be sound and surface dry when the seal is applied.

C. When sealing Portland cement concrete-to-asphaltic concrete joints, the surface preparation and application shall be in strict accordance with the sealer's manufacturer written instructions, subject to the Project Engineer's approval.

a. Water.
b. Continuous water-fog spray.
c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with a 12-inch lap over adjacent absorptive covers.

2. Curing Compound (option): Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

E. Boiled Linseed Oil Treatment (Horizontal Surfaces): Apply boiled linseed oil mixture no sooner than 28 days after placement to clean dry concrete surfaces free of oil, dirt, or other foreign material. Apply in 2 sprayed applications at rate of 40 sq. yd. per gallon for the first application and 60 sq. yd. per gallon for the second application. Allow complete drying between applications. All concrete pavement surfaces shall receive the Boiled Linseed Oil Treatment.

3.10 FIELD QUALITY CONTROL TESTING

A. The Owner will employ a qualified testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include the following:

1. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.

a. Slump: ASTM C 143; one test at point of placement for each compressive-strength test but no less than one test for each day's pour of each type of concrete. Additional tests will be required when concrete consistency changes.
b. Air Content: ASTM C 231, pressure method; one test for each compressive-strength test but no less than one test for each day's pour of each type of air-entrained concrete.
c. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each set of compressive-strength specimens.
d. Compression Test Specimens: ASTM C 31; one set of four standard cylinders for each compressive-strength test, unless directed otherwise. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.

2. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.
3. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.

THE PARKLANDS OF FLOYDS FORK – PROJECT 2A
BECKLEY CREEK PARK - NORTH

SECTION 323223 – SEGMENTAL RETAINING WALLS

PART 1 - GENERAL

1.1 Scope

This work shall consist of furnishing materials and placement of segmental retaining wall (SRW) units with or without ground reinforcement in accordance with the KYTC Standard Specifications 105.04.

The Contractor shall perform the necessary work to verify that the foundation is at the correct elevation, that the wall is constructed to the correct alignment, and that the work is in accordance with the specified tolerances. The checking of alignments and tolerances shall include verifying that the plumbness of the SRW units is in accordance with Part 3.4 over the entire height of the wall. Alignment shall be checked at each layer of SRW units after the backfill behind the SRW units has been compacted, and the results shall be recorded.

1.2 General Design Requirements

The SRW shall consist of an aggregate leveling pad, concrete SRW units and when specified, ground reinforcement elements that are to be mechanically connected to the facing units. Ground reinforcement shall have sufficient strength, frictional resistance, and quantity as required by design.

All SRW units shall be constructed in accordance with the approved plans and shop drawings based on the requirements herein. The recommendations of the wall system supplier shall not override the minimum performance requirements shown herein.

If the wall manufacturer needs additional information to complete the design, the Contractor shall be responsible for obtaining such information.

All appurtenances behind, in front of, under, mounted upon, or passing through the wall such as drainage structures, utilities, or other appurtenances shown on the plans shall be accounted for in the stability design of the wall.

The SRW design shall follow the general dimensions of the wall envelope shown on the plans. The plans will locate the leveling pad at or below the theoretical leveling pad. The top of the SRW unit shall be at or above the top of the wall elevation shown on the plans.

The top of the SRW shall be designed to prevent the removal of the top course of blocks. Cast-in-place concrete will not be an acceptable replacement for any SRW unit within the areas noted by the wall envelope.

SRW units shall be designed to accommodate differential settlement of 1 linear unit in 100. Where shown on the plans, slip joints to accommodate excessive or differential settlement shall be included.

1.3 Design Criteria

The design by the manufacturer shall be in accordance with the requirements for the internal and the external stability of the wall mass, the bearing pressure, and overturning. The design shall be in accordance with the applicable requirements of the AASHTO Standard Specifications for Highway Bridges unless otherwise specified herein.

External loads which affect the internal stability shall be accounted for in the design. The size of all structural elements shall be determined such that the design load stresses do not exceed the allowable stresses found in the AASHTO Standard Specifications for Highway Bridges, unless otherwise shown on the plans.

SRW units shall be the Ledgestone Series with “Kentuckiana Buff” color scheme as manufactured by Redi-Rock® as produced by a licensed manufacturer or approved equal.

The phi, (ϕ), angle for the internal design of the volume shall be assumed to be 34°. The (ϕ) angle of the backfill behind the segmental retaining earth mass shall be assumed to be 30°. Before construction begins, the structure granular backfill selected shall be tested by the Contractor to confirm compliance with the frictional requirement. The wall supplier shall be furnished a copy of the testing results for the backfill. The friction angle of the foundation soils shall be assumed to be 30°.

The wall shall be defined by the wall envelope shown on the plans. For design purposes, the height of wall H shall be measured from the theoretical top of the leveling pad to the top of the wall. For a level surcharge situation, the top of the wall shall be measured to the top of the coping or to the gutter line of the traffic barrier. The top of the wall shall be the theoretical top of the segmental retaining wall units only when a coping or barrier is not used. For an abutment face, the design height H shall be defined as the height measured from the top of the leveling pad to the top of the roadway surface. For a wall with a sloping surcharge the top of the wall shall be measured at a point 0.3H back from the face where the design height is H and the actual wall height is H.

~~SRW units shall be dry stacked in a running bond configuration.~~ Vertically adjacent units shall be connected with approved shear connections or interlocking by means of integral lugs or lips, pins, or clips.

The ground reinforcement shall be the same length from the bottom to the top of each SRW section. Differing ground reinforcement elements shall be clearly marked for ease of construction. The minimum length of the ground reinforcement shall be 8 ft (2.44 m) or 0.7H for a wall without sloping surcharges, 0.7H for a wall with sloping surcharges, or in accordance with the AASHTO Standard Specifications for Highway Bridges for an abutment on a spread footing.

The ground reinforcement for SRW sections shall be sized using the lesser of the allowable forces for each specific connection and each specific reinforcing element. The connection's allowable force shall be taken as 2/3 of the connection test load at the allowable pullout deformation limit of 1/2 in. (13 mm) or 1/2 of the ultimate load, whichever is less.

The ground reinforcement length shall be as required for internal design or as shown on the plans. The length shall exceed the minimum noted as required for design consideration. One hundred percent of the ground reinforcement, which is designed and placed in the reinforced earth volume, shall extend to and shall be connected to the SRW units.

Where the presence of opposing walls limits the length of ground reinforcing, the design shall account for the reduced length and internal and external stability calculations shall be made to check for adequate factor of safety.

The actual applied bearing pressures under the stabilized mass for each reinforcement length shall be clearly indicated on the shop drawings and shall be equal to or less than the maximum allowable soil pressure shown on the plans. Passive pressure in front of the wall mass will be assumed to be zero for design purposes.

Design Intent: The SRW walls are intended to look similar in color and texture to the natural variegated limestone walls of the bridges.

The SRW wall pattern shall comply with the following design criteria for pattern, texture, module and color:

Pattern: random, irregular, rectangular coursing with joint depths 2-1/2" to 5-1/2". Pattern shall position the "stone" units in a typical "stone" unit coursing of "one over two/two over one". Pattern shall contain a minimum of 27 different sizes stones in 8 different block patterns to create the random pattern. The random spacing between "stones" in the pattern shall vary from ½" x 1-1/2".

Texture: shall be a weathered stone face to appear similar to coarse split-face natural stone.

Module: modules shall be designed in several patterns so that they reduce the appearance of the repetitive modules so as not to create an artificial look. The size of each unit shall be approximately 46-1/8”L x 18” H x 40-1/2”W.

Color: integral coloring, with a variegated/mottle appearance of grey and red/yellow mix similar to the native limestone units at the bridges.

1.4 Submittals

The Contractor shall submit one copy of the design computations for approval. An analysis of settlement, sliding, bearing capacity and overall slope stability shall be included with the design computations. If the computations are computer generated, one sample set of hand calculations, for one wall location, shall also be submitted. The Contractor shall submit eight (8) sets of design drawings for approval after the design computations are approved and before beginning wall construction operations. Design computations and design drawings shall be signed and sealed by a professional engineer in the State of Kentucky.

(a) The design drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the wall and shall include, but shall not be limited to, the following:

1. A plan and elevation sheet or sheets for each wall

2. An elevation view of the wall which shall include the elevation at the top of the wall at all horizontal and vertical break points at least every 50 ft (15 m) along the face of the wall, all steps in the leveling pads, the designation as to the type of SRW unit, the length of ground reinforcement (if required), the distance along the face of the wall to where changes in length of the ground reinforcement occur, and an indication of the original and final ground lines and maximum bearing pressures.

3. A plan view of the wall that indicates the offsets from the construction centerline to the face of the wall at all changes in horizontal alignment. A plan view and elevation view which detail the placing position and connection of all ground reinforcing elements in areas where piling, utility, or other structures are near the wall.

4. A typical cross-section or cross-sections showing elevation relationship between ground conditions and proposed grades.

5. All general notes required for constructing the wall.

6. All horizontal and vertical curve data affecting the wall.

7. A listing of the summary of quantities on the elevation sheet for each wall.

(b) All SRW units shall show all dimensions necessary to construct the element and the location of soil reinforcing system devices embedded in the units.

(c) The details for construction of walls around drainage facilities.

(d) All details of the architectural treatment.

(e) The details for diverting ground reinforcement around obstructions such as piles, catch basins, landscape plantings where the bottom of the root ball extends below the top level of ground reinforcement, and other utilities shall be submitted for approval.

(f) The details for mechanical connection between the SRW unit and the ground reinforcement.

Design calculations and shop drawings shall be submitted to the Engineer for review and approval.

PART 2 - PRODUCTS

2.1 Materials

The Contractor shall make arrangements to supply the materials described herein, including concrete SRW units, fasteners, joint materials, ground reinforcement, and all necessary incidentals.

Materials shall be in accordance with the following:

Coarse Aggregate, Class A or Higher, Size No. 8* or 91 805
Concrete Admixtures** 802
Concrete 601
Coarse Aggregate, Size No. 23 805
Fly Ash 801
Geotextile 843
Portland Cement 801
Structure Granular Backfill 805.11
Water 803

* Coarse aggregate No. 8 used as drainage fill shall consist of 100% crushed stone.
** Admixtures in accordance with ASTM C 1372 may be used for the SRW if approved by the Engineer.

Backfill material used in the SRW volume shall be structure granular backfill in accordance with 805.11. Where ground reinforcement is required, nominal size aggregate No. 30 shall not be used.

The internal friction or ϕ angle of the structure granular backfill in the reinforced backfill shall be not less than 34° in accordance with AASHTO T 236 or AASHTO T 297 under consolidated drained conditions. Testing for the ϕ angle shall be performed on the portion finer than No. 8 (2.36 mm) sieve, using a sample of the material compacted to 95% in accordance with AASHTO T 99, methods C, or D. No testing for the ϕ angle is required when 80% of the materials are greater than No. 4 (4.75 mm) sieve. An approved geotechnical laboratory shall perform the tests.

Structure granular backfill criteria shall be as follows:

Property	*Criteria*	*Test Method*
pH	*5 < pH < 10*	*AASHTO T 289*
Organic Content	*1 % max.*	*AASHTO T 267*
Permeability & Gradation	*30 ft/day*	*AASHTO T 215*
	(9 m/day) (min.)	*AASHTO T11 & T27*

All of the above tests shall be run a minimum of once per 2 calendar years per source.

(a) Concrete Segmental Retaining Wall Units

Concrete SRW units shall be in accordance with ASTM C 1372 and shall have a minimum compressive strength of 4000 psi (27.5 MPa) at 28 days. SRW units utilizing type I or II cement will be considered acceptable for placement in the wall when 7-day strengths exceed 3500 psi (24.1 MPa).

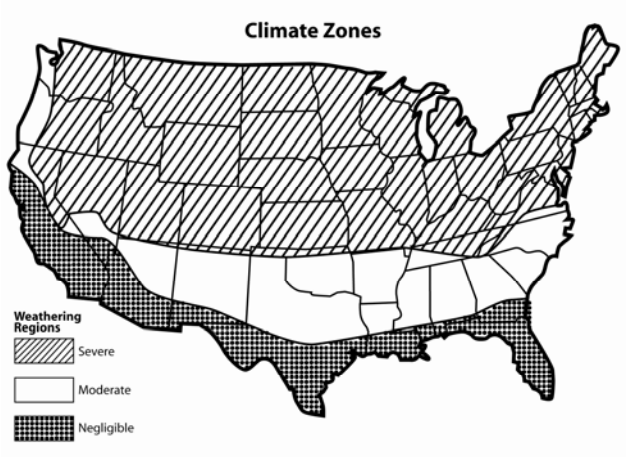
Retarding agents, accelerating agents, coloring pigments, or additives containing chloride shall not be used without approval.

THE PARKLANDS OF FLOYDS FORK – PROJECT 2A
BECKLEY CREEK PARK - NORTH

Wall units shall be made with Ready-Mixed concrete in accordance with ASTM C94, latest revision, and per the following chart:

Climate	Air Content	28 Day Compressive Strength, psi	Slump*
Negligible	1½%-4½%	4000	5" ±1 ½"
Moderate	3%-6%	4000	5" ±1 ½"
Severe	4½%-7½%	4000	5" ±1 ½"

*Higher slumps are allowed if achieved by use of appropriate admixtures.
Notwithstanding anything stated above, all material used in the wall units must meet applicable ASTM and local requirements for exterior concrete.



Exterior block dimensions shall be uniform and consistent. Maximum dimensional deviations shall be 1% excluding the architectural surface. Maximum width (face to back) deviation including the architectural surface shall be 1.0 inch.

Exposed face shall be finished as specified. Other surfaces to be smooth form type. Dime-size bug holes on the block face may be patched and/or shake-on color stain can be used to blend into the remainder of the block face.

1. Testing and Inspection

a. Material properties shall be in accordance with the requirements of Part 2.1 in lieu of Section 4.

b. Table 1, "Strength and Absorption Requirements", shall be modified to require that the average compressive strength, when sampled and tested in accordance with ASTM C 140, of a three CMU compressive strength sample shall be 4000 psi (27.5 MPa) with no individual unit less than 3500 psi (24.1 MPa). Maximum absorption shall be 6%.

c. The SRW unit's compressive strength shall be considered acceptable regardless of curing age when compressive test results indicate that the compressive strength is in accordance with Part 2.1(a).

d. Freeze-thaw durability testing shall be completed in accordance with Section 8.3 by a laboratory approved by the KYTC. Test results shall have been completed in accordance with ASTM C 1372 and be within 12 months prior to delivery. Certification in accordance with the KYTC Division of Material's

requirements for the freeze-thaw durability testing shall be submitted to the Engineer prior to use of the blocks.

e. Sampling and testing of the manufacturer's production lots will be conducted by the Engineer in accordance with ASTM C 140. If the compressive strength test result does not meet the requirements of Part 2.1(a), the production lot units may not be used. The manufacturer may resample the same production lot in the presence of the Engineer for retesting. The Engineer will test the additional samples in accordance with ASTM C 140. If the retested samples meet the requirements of Part 2.1(a), the production lot may be used. If the retested samples do not meet the requirements of Part 2.1(a), all the units from the production lot may not be used.

2. Rejection
Units shall be subject to rejection due to failure to be in accordance with the requirements specified above. In addition, the following defects may be sufficient cause for rejection.

a. Defects which indicate imperfect molding.

b. Defects which indicate honeycombed or open texture concrete.

c. Defects in the physical characteristics of the concrete, such as broken or chipped concrete, or color variations or dunnage marks on the front face due to excessive form oil or other reasons.

The Engineer will determine whether spalled, honeycombed, chipped, or otherwise defective concrete shall be repaired or be cause for rejection. Repair of concrete, if permitted, shall be completed in a satisfactory manner. Repair to concrete surfaces, which are to be exposed to view after completion of construction shall be subject to approval.

3. Marking
The date of manufacture, the production lot number, and the place mark shall be clearly scribed on the rear face of each unit or on each shipping pallet.

4. Handling, Storage, and Shipping
All SRW units shall be handled, stored, and shipped so as to eliminate the danger of chipping, cracks, fractures, and excessive bending stresses.

Contractor shall check the materials upon delivery to assure proper material has been received.

Contractor shall prevent excessive mud, wet cement and like materials from coming in contact with the SRW units.

Contractor shall protect the materials from damage. Damaged material shall not be incorporated in the project.

(b) Aggregate Leveling Pad
Aggregate for the leveling pad shall be compacted aggregate No. 53 and shall be in accordance with the applicable requirements of 302.

(c) Ground Reinforcement
The ground reinforcement, if required, shall be geogrid. The ground reinforcement used shall be consistent with that used in the pullout test and shall be consistent throughout the project.

Certification in accordance with the KYTC Division of Material’s requirements for geogrids shall be submitted

to the Engineer prior to use of the materials.

Geogrid shall be on a regular network of integrally connected polymer tensile elements with aperture geometry sufficient to permit significant mechanical interlock with the surrounding material. The geogrid structure shall be dimensionally stable and shall be able to retain its geometry under construction stresses. The geogrid structure shall have a resistance to damage during construction, ultraviolet degradation, and all forms of chemical and biological degradation encountered in the soil being placed on.

Geogrid shall be in accordance with the property requirements as specified in the Geosynthetic Research Institute Standard Test Methods GG1, GG3, GG4, and ASTM D 5262.

During periods of shipment and storage, the geogrid shall be protected from temperatures greater than 140°F (60°C), mud, dirt, dust, and debris. Each geogrid roll shall be labeled or tagged to provide product identification. The manufacturer's recommendations shall be followed with regard to protection from direct sunlight. At the time of installation, the geogrid will be rejected if it has defects, tears, punctures, flaws, deterioration, or damage incurred during manufacture, transportation, or storage. All damaged portions of geogrid for the entire width shall be replaced.

Only geogrids selected from the KYTC list of approved Geogrids shall be used. No relabeled materials will be considered for approval.

A specified material shown on the approved list will not be listed under more than one name. The geogrid shall be in accordance with the property requirements for the type specified as follows:

1) Type I

PROPERTY	TEST METHOD	UNIT	VALUE, Min.
Aperture	Calibered	In. (mm)	0.5x0.5 (13x13)
Open Area	COE, CWO2215	Percent	> 50.0, ≤ 80.0
Tensile Modulus, machine direction cross machine direction	ASTM D 6637[1,2,3]	 lb/ft (N/m) lb/ft (N/m)	 10,000 (146,000) 10,000 (146,000)
Ultimate Strength, machine direction cross machine direction	ASTM D 6637[2,3]	 lb/ft (N/m) lb/ft (N/m)	 800 (11,670) 800 (11,670)
1. Secant modulus at 5% elongation. 2. Results for machine direction, MD, and cross machine direction, CMD, are required. 3. Minimum average roll values shall be in accordance with ASTM D 4759.			

2) Type II

PROPERTY	TEST METHOD	UNIT	VALUE, Min.
Open Area	COE, CWO2215	Percent	> 50.0, ≤ 80.0
Tensile Modulus, machine direction	ASTM D 6637[1,2]	lb/ft (N/m)	49,300 (720,000)
Creep Limited Strength, machine direction at 5% strain	ASTM D 5262	lb/ft (N/m)	1090 (16,000)
1. Secant modulus at 2% elongation. 2. Minimum average roll values shall be in accordance with ASTM D 4759.			

Fiberglass rod used in the Type 1AT Geogrid connection shall be 7/16" diameter. Only fiberglass rod obtained from an authorized Redi-Rock® dealer or approved equal shall be used.

(d) Backfill Material

Backfill material used in the SRW structure volume shall be structure granular backfill.

Certification in accordance with the KYTC Division of Material's requirements for the structure granular backfill shall be furnished prior to use of the materials. One copy of all test results performed by the Contractor, which are necessary to demonstrate compliance with the specifications, shall be furnished to the Engineer.

Drainage fill used behind the SRW, as shown on the plans, shall be coarse aggregate No. 8 (2.36 mm) in accordance with 805. Free draining backfill material shall be washed stone and shall be placed to a minimum of 1' width behind the back of the wall and shall extend vertically from the leveling pad to an elevation 4" below the top of wall.

Backfill material shall be approved by the geotechnical engineer. Site excavated soils may be used if approved unless otherwise specified in the drawings. Unsuitable soils with a PL>6, organic soils and frost susceptible soils shall not be used within a 1 to 1 influence area.

Non-woven geotextile cloth shall be placed between the free draining backfill and retained soil, if required.

Where additional fill is needed, Contractor shall submit sample and specifications to the Engineer for approval.

PART 3 - EXECUTION

3.1 General Requirements

The wall supplier representative shall provide technical instruction, guidance in pre-construction activities including the preconstruction conference, and on-site technical assistance to the Contractor during construction.

3.2 Foundation Preparation

The foundation for the structure shall be graded level for the width shown on the plans. Prior to wall construction, the foundation, if not in rock, shall be compacted in accordance with 603. The base of the wall excavation shall be proofrolled with approved compacting equipment. If unsuitable foundation material is encountered, it shall be removed, replaced, and compacted in accordance with 603.04.07 and 613.03.02.

At each foundation level, an aggregate leveling pad shall be provided as shown on the plans.

Native foundation soil shall be compacted to 95% of standard proctor or 90% of modified proctor prior to placement of the Leveling Pad material.

In-situ foundation soil shall be examined by the Engineer to ensure that the actual foundation soil strength meets or exceeds assumed design strength. Soil not meeting the required strength shall be removed and replaced with acceptable, compacted material.

3.3 Retaining Wall Excavation

This work shall consist of the excavation of material whose removal is necessary for the construction of the SRW sections in accordance with the plans and the requirements herein. Excavation shall include the construction and subsequent removal of all necessary bracing, shoring, sheeting, cribbing, all pumping, bailing, and draining.

Prior to starting excavation operations at the wall site, clearing and grubbing shall be in accordance with 202. The Contractor shall clear and grub the area for the excavation in accordance with the limits shown on the plans. All timber, stumps, and debris shall be disposed of in accordance with 202.

The Contractor shall notify the Engineer a sufficient time before beginning the excavation so that measurements may be taken of the undisturbed ground.

Where necessary for safety, the excavation shall be shored or braced in accordance with State and local safety standards. Excavation and related work shall be performed such that no portion of the wall is endangered by subsequent operations.

Where excavation for the wall is adjacent to a traveled way, the method for shoring, sheeting, or bracing the excavation opening shall be approved before beginning the excavation. The Contractor shall submit 5 copies of drawings in accordance with 603.03.06 showing details of the proposed method of excavation protection.

After the excavation for each wall location has been performed, the Contractor shall notify the Engineer. The aggregate leveling pad shall not be placed until the Engineer has approved the depth of the excavation and the foundation material.

All sheeting and bracing shall be removed as the backfilling progresses.

All material for backfill shall be subject to approval and shall be free from large or frozen lumps, wood, or other undesirable material. All backfill shall be compacted in accordance with 603 and 613.

3.4 Leveling Pad Placement

Leveling pad shall be placed as shown on the construction drawings.

Leveling pad shall be placed on undisturbed native soils or suitable replacement fills.

Leveling pad shall be compacted to 95% of standard proctor or 90% of modified proctor to ensure a level, hard surface on which to place the first course blocks. Pad shall be constructed to the proper elevation to ensure the final elevation shown on the plans.

Leveling pad shall have a 6 inch minimum depth for walls under 8 feet in height and a 12 inch minimum depth for walls over 8 feet. Pad dimensions shall extend beyond the blocks in all directions to a distance at least equal to the depth of the pad or as designed by the wall manufacturer.

For steps and pavers, a minimum of 1” - 1 ½” of free draining sand shall be screeded smooth to act as a placement bed for the steps or pavers.

3.4 Wall Erection

The first course of wall units shall be placed on the prepared Leveling Pad with the aesthetic surface facing out and the front edges tight together. All units shall be checked for level and alignment as they are placed.

Ensure that units are in full contact with leveling pad. Proper care shall be taken to develop straight lines and smooth curves on base course as per wall layout.

The backfill in front and back of entire base row shall be placed and compacted to firmly lock them in place. Check all units again for level and alignment. All excess material shall be swept from top of units.

Install next course of wall units on top of base row. Position blocks to be offset from seams of blocks below. Blocks shall be placed fully forward so knob and groove are engaged. Check each block for proper alignment and level. Backfill to 12 inch width behind block with free draining backfill. Spread backfill in uniform lifts not exceeding 8 inches. Employ methods using lightweight compaction equipment that will not disrupt the stability or batter of the wall. Hand-operated plate compaction equipment shall be used around the block and with-

in 3 feet of the wall to achieve consolidation. Compact backfill to 95% of standard proctor (ASTM D 698, AASHTO T-99) density within 2% of its optimum moisture content.

Install each subsequent course in like manner. Repeat procedure to the extent of wall height.

Allowable construction tolerance at the wall face is 2 degrees vertically and 1 inch in 10 feet horizontally.

SRW units placed in contact with the ground or covered by standing water shall have face discoloration removed by means of a chemical wash. SRW units shall be stored to minimize contact with the ground or being covered by standing water.

Ground reinforcement shall be placed normal to the face of the wall, unless otherwise shown on the plans and shall be constructed in accordance with 304. Backfill shall be compacted in accordance with Part 3.5.

All walls shall be installed in accordance with the KYTC Standard Specifications for Road and Bridge Construction, and where applicable, the local building codes and requirements.

3.5 Backfill Placement

Backfill placement shall closely follow erection of each course of SRW units with or without ground reinforcement. Backfill shall be placed so as to avoid damage or disturbance to the wall materials or misalignment of the SRW units. Wall materials that become damaged or disturbed during backfill placement shall be removed and replaced or corrected as directed. All misalignment or distortion of the SRW units due to placement of backfill outside the limits described herein shall be corrected as directed.

The work shall also include backfilling beyond the theoretical length of the ground reinforcement in accordance with the details shown on the plans and the disposal of surplus of unsuitable excavated materials as permitted.

Structure granular backfill shall be compacted to 95% of the maximum dry density in accordance with AASHTO T 99. Compaction equipment shall be in accordance with 403. Density of the compacted aggregate will be determined in accordance with 302. If coarse aggregate No. 8 backfill material is used, compaction shall consist of 4 passes with a vibratory roller, and 1 pass with the same roller in static mode. A vibratory roller shall be equipped with a variable amplitude system, a speed control device, and have a minimum vibration frequency of 1000 vibrations per min. A roller in accordance with 403 may be used. All displacement or rutting of the aggregate shall be repaired prior to placing subsequent material.

The maximum loose lift thickness shall not exceed 8 in. (200 mm) except that lifts 3 ft (0.9 m) from the wall or closer shall not exceed 5 in. (125 mm) in loose thickness. This lift thickness shall be decreased if necessary, to obtain the specified density.

Compaction within 3 ft (0.9 m) of the back face of the SRW units shall be achieved by means of a minimum of 5 passes with a lightweight mechanical tamper, roller, or vibratory system.

At the end of each day's operation, the last level of backfill shall be sloped away from the SRW units. In addition, surface runoff from adjacent areas shall not be permitted to enter the wall construction site.

Cutting or altering of the basic structural section of the ground reinforcing at the site will be prohibited, unless the cutting is preplanned and detailed on the approved design drawings. Cutting shall only be considered if adequate additional ground reinforcement is provided to produce the required ground reinforcement strength shown in the approved calculations.

3.6 Method of Measurement

There will be no measurement for any quantities associated with segmental retaining wall units. In the event of either additional work or deletions from the Contract Lump Sum bid, quantities will be measured as follows: segmental retaining wall units with or without ground reinforcement will be measured by the square yard (square meter) of wall surface area; erection of segmental retaining wall units will be measured by the square yard (square meter) of wall surface area; structure excavation common and structure excavation solid rock will be measured by the cubic yard (cubic meter) in accordance with 603.04 to the neat lines shown on the plans; and structure granular backfill and unsuitable foundation materials, if found, will be measured by the cubic yard (cubic meters) in accordance with Special Provision 69 – *Embankment at Bridge End Bent Structures*.

The measurement, included in the Contract Lump Sum bid, for concrete segmental retaining wall units and wall erection will be based on the neat line limits of the wall envelope shown on the plans and not that of the wall system supplier. The wall envelope limits will be considered to be the vertical distance from the top of the leveling pad to the top of the wall, and the horizontal distance from the beginning to the end of the leveling pad.

Clearing and grubbing, compacted aggregate No. 53, and compacted aggregate No. 8 will not be measured. Geotextile materials, if used in accordance with Part 2.1, will not be measured.

3.7 Basis of Payment

All quantities associated with segmental retaining walls will not be paid for separately but will be considered incidental to the Contract Lump Sum bid. In the event of either additional work or deletions from the Contract Lump Sum bid, quantities will be paid for or reimbursed as follows: segmental retaining wall units with or without ground reinforcement at the contract unit price per square yard (square meter) of wall surface area; erection of segmental retaining wall units by the square yard (square meter) of wall surface area; structure excavation common and structure excavation solid rock at the contract unit price per cubic yard (cubic meter) in accordance with 603.05 to the neat lines shown on the plans; and structure granular backfill and unsuitable foundation materials, if found, at the contract unit price per cubic yard (cubic meter) in accordance with Special Provision 69 – *Embankment at Bridge End Bent Structures*.

Payment by or reimbursement to 21st Century Parks, Inc. will be made under:

Pay Item	**Pay Unit Symbol**
Segmental Retaining Wall	SYS (m2)
Segmental Retaining Wall with Ground Reinforcement	SYS (m2)
Segmental Retaining Wall Erection	SYS (m2)
Structure Granular Backfill	CYS (m3)

The cost of aggregate and geotechnical testing shall be included in the Contract Lump Sum bid.

The cost of segmental retaining wall units including ground reinforcing, fasteners, repair or replacement of units damaged or removed due to backfill placement, and incidentals shall be included in the Contract Lump Sum bid.

The cost of all labor and materials required to prepare the wall foundation, place the ground reinforcing, and erect the segmental retaining wall units shall be included in the Contract Lump Sum bid.

The cost of performing the laboratory tests by an approved geotechnical laboratory for structural granular backfill shall be included in the Contract Lump Sum bid.

The cost of all labor and materials for geotextile materials shall be included in the Contract Lump Sum bid.

The cost of cutting or altering the ground reinforcing at the site shall be included in the Contract Lump Sum bid.

The cost of all segmental retaining wall materials including segmental retaining wall units, compressive strength retesting if required, and incidentals shall be included in the Contract Lump Sum bid.

The cost of clearing and grubbing, compacted aggregate No. 53, compacted aggregate No. 8, ground reinforcement, or replacement materials damaged during backfill placement if required, shall be included in the Contract Lump Sum bid.

The cost of retesting or replacing failed segmental retaining wall units will be included in the Contract Lump Sum bid.

END OF SECTION 323223

SPECIAL NOTE FOR CONTRACT COMPLETION DATE, LIQUIDATED DAMAGES PAY ON "A"+ "B" BIDDING CONTRACT

The procedure for evaluation of bids on this project involves an "A"+"B" concept.

The "A" component of the bid involves the dollar amount for all work required to be performed under the contract.

The "B" component of the bid involves the total number of calendar days required for completion of the project.

Preparation of Bid Proposal

The bidder shall establish the number of calendar days necessary to complete the work in accordance with the plans and specifications and show this number in the bid proposal. The product of this number of calendar days multiplied by $1,000 per day shall be added to the total base bid. The product of calendar days times the daily cost ***shall not*** be considered in determining mobilization and demobilization costs.

The maximum number of calendar days permitted will be 365 calendar days. Bids will not be accepted for any proposal wherein the bidder establishes calendar days necessary to complete the work in excess of 365 calendar days.

Proposal Guaranty

It ***will not*** be necessary for the Proposal Guaranty to include an amount necessary to cover the product of calendar days times the daily cost.

Consideration of Bids

Each bid submitted shall consist of two parts:

A. The dollar amount for all work to be performed under the contract.
B. The total number of calendar days required for completion of the project.

The lowest bid will be determined as the lowest combination of (A) and (B) according to the following formula:

(A) + [(B) x ($1,000)]

The above formula ***shall be used only for determination of the lowest bidder and shall not be used to determine the final contract amount to the contractor.***

Commencement Date

As stated in the Standard Form of Agreement Between Owner and Contractor, the Commencement Date will be determined and provided by the Owner to the Contractor.

Late Completion of Work

As stated in the Standard Form of Agreement Between Owner and Contractor, failure to achieve Substantial Completion within the Contract Time shall result in liquidated damages imposed upon the Contractor equal to $1,000 per calendar day. The Date of Substantial Completion will be based on the calendar days “B” established for the selection of lowest bidder.

ADDENDUM NO. 1
April 12, 2011

THE PARKLANDS OF FLOYDS FORK – PROJECT 2A
BECKLEY CREEK PARK - NORTH

This addendum shall be attached to the specifications and/or drawings of the above mentioned project and shall become part of the contract documents. All statements made herein shall supersede statements in the main body of the specifications and items shown on the drawings with which they are in conflict. Work and materials not specifically mentioned herein shall be as described in the main body of the specifications and as shown on the drawings. **The bidder must acknowledge the receipt of this Addendum on the Bid Form where indicated**.

MODIFICATIONS TO CONTRACT DOCUMENTS:

Modifications to the Specifications, Proposal, Contract and Bond:

Section #/Page	Description
General	The SPECIAL NOTE FOR CONTRACT COMPLETION DATE, LIQUIDATED DAMAGES PAY ON "A" + "B" BIDDING CONTRACT is attached herewith.
00800-1	Paragraph 1.1.A, add the following: 2. Design Team CAD Files Add the following Paragraph: 1.3 DESIGN TEAM CAD FILES A. CAD files (both AutoCAD – civil and bioengineering work and Micro Station – structural work) will be made available through an FTP site provided by Wallace Roberts and Todd. The CAD files will be for information only. Please send an email request to Charles Neer (cneer@ph.wrtdesign.com) for a CAD release form which must be signed and returned to Charles. Since some of the base files use LOGIC there will be a LOGIC request waiver that will also need to be signed. Upon receipt of the signed release forms, Charles will email an FTP link where the files can be downloaded.
011000-1	Paragraph 1.3.A, delete "Project 1, The Creekside Playground at the Creekside Center" and replace with "Project 2A, Beckley Creek Park – North."
012200-3	Paragraph 1.5.A SITE WORK, add the following: Trench Rock Removal (Mechanical) Per Cu. Ft. _____ Trench Rock Removal (Blasting) Per Cu. Ft. _____

Site Rock Removal (Mechanical)	Per Cu. Ft.	_____
Site Rock Removal (Blasting)	Per Cu. Ft.	_____

312000-3 Paragraph 2.1.B: Add the letters "CL, CH," to the paragraph to read: "Satisfactory Soil Materials: ASTM D 2487 soil classification groups CL, CH, GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 2 inches (50 mm) in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter."

312000-3 Paragraph 2.1.C: Delete the letters "CL, CH," from the paragraph to read: "Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, SC, ML, MH, OL, OH, and PT."

312000-12 Add the following Paragraphs: "3.23 USE OF EXPLOSIVES

A. The Use of Explosives is allowed. The contractor will be responsible for verifying and coordinating with the Louisville Metropolitan Sewer District concerning any restrictions for performing blasting adjoining or within the site of the Floyds Fork Water Quality Treatment Center or any utilities that serve the Center. The contractor shall also conform to all local and public agency restrictions for performing blasting.

B. Per the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, Section 107, Legal Relations and Responsibility To Public, Subsection 107.11, Use of Explosives and Section 112, Maintenance and Control of Traffic During Construction, Subsection 112.03.09, Blasting."

321313-2 Paragraph 1.4.B: Delete the words "and to design concrete mixes" from the first sentence to read "The Owner will engage a qualified independent testing agency to perform materials evaluation tests."

321313-5 Paragraph 2.9, Fiber Reinforcement: There is already a paragraph 2.9; change the paragraph number to 2.10, add the following paragraph at end: "B. Louisville Loop: All concrete pavement shall have fiber reinforcement."

321313-7 Paragraph 3.4.C.5: Delete the sentence "Install lateral construction joints 30' o.c." and insert the sentence "Install lateral construction joints 10' from the last contraction joint or no more than 30' from the last expansion joint."

321313-11 Paragraph 3.9.E: At end of the paragraph add the following sentence "All concrete pavement surfaces shall receive the Boiled Linseed Oil Treatment."

323223-1 Replaced third paragraph of Section 1.3 Design Criteria with the following: SRW units shall be the Ledgestone Series with "Kentuckiana Buff" color scheme as manufactured by Redi-Rock® as produced by a licensed manufacturer, or approved equal.

323223-2 Delete first sentence of sixth paragraph for Section 1.3 Design Criteria.

323223-2 & -3 Add the following to the end of Section 1.3 Design Criteria:

Design Intent: The SRW walls are intended to look similar in color and texture to the natural variegated limestone walls of the bridges.

The SRW wall pattern shall comply with the following design criteria for pattern, texture, module and color:

Pattern: random, irregular, rectangular coursing with joint depths 2-1/2" to 5-1/2". Pattern shall position the "stone" units in a typical "stone" unit coursing of "one over two/two over one". Pattern shall contain a minimum of 27 different sizes stones in 8 different block patterns to create the random pattern. The random spacing between "stones" in the pattern shall vary from ½" x 1-1/2".

Texture: shall be a weathered stone face to appear similar to coarse split-face natural stone.

Module: modules shall be designed in several patterns so that they reduce the appearance of the repetitive modules so as not to create an artificial look. The size of each unit shall be approximately 46-1/8"L x 18" H x 40-1/2"W.

Color: integral coloring, with a variegated/mottle appearance of grey and red/yellow mix similar to the native limestone units at the bridges.

323223-7 Replaced and revised Table 1) and 2) under Section 2.1(c)

Modifications to the Drawings:

Sheet #	Description
C-7001	Typical Sections LOUISVILLE LOOP: TYPICAL UNSTABLE SOILS SUBGRADE SECTION and LOUISVILLE LOOP: TYPICAL SECTION: Change "(5.0% MAX)" slope to "(2.0% MAX)". Also add note "6" THICK – 4000 PSI CONCRETE SLAB 2/ FIBERMESH REINFORCEMENT".
C-7002	Typical Section LOUISVILLE LOOP: TYPICAL CROSS SECTION STA. 37+50± TO STA. 73+00±: Change "(5.0% MAX)" slope to "(2.0% MAX)".
SP-1001	Added column with values for Approximate Tip of Pile Elevation in Pile Record table.
SP-2001	Added column with values for Approximate Tip of Pile Elevation in Pile Record table.

SW-1001	Revised note to read "The wall block system shall be the Ledgestone series with color scheme "Kentuckiana Buff" as manufactured by Redi-Rock of Kentuckiana, Mt. Washington, KY., or approved equal.
SW-2001	Revised note to read "The wall block system shall be the Ledgestone series with color scheme "Kentuckiana Buff" as manufactured by Redi-Rock of Kentuckiana, Mt. Washington, KY., or approved equal.
SW-3001	Revised note to read "The wall block system shall be the Ledgestone series with color scheme "Kentuckiana Buff" as manufactured by Redi-Rock of Kentuckiana, Mt. Washington, KY., or approved equal.
SW-6001	Revised note to read "The wall block system shall be the Ledgestone series with color scheme "Kentuckiana Buff" as manufactured by Redi-Rock of Kentuckiana, Mt. Washington, KY., or approved equal.

Attachments:

Specifications, Proposals, Contract and Bond Sections

Special Note	SPECIAL NOTE FOR CONTRACT COMPLETEION DATE, LIQUIDATED DAMAGES PAY ON "A" + "B" BIDDING CONTRACT
00800-1	INFORMATION AVAILABLE TO BIDDERS
011000-1	SUMMARY
012200-3	UNIT PRICES
312000_3-12	EARTHWORK
321313_2-5-7-11	PORTLAND CEMENT CONCRETE PAVING
323223_1-2-3-7	SEGMENTAL RETAINING WALL

Plan Sheets

C-7001	Reissued Plan Sheet with Addendum No. 1 items noted.
C-7002	Reissued Plan Sheet with Addendum No. 1 items noted.
S-1001	Reissued Plan Sheet with Addendum No. 1 items noted.
S-2001	Reissued Plan Sheet with Addendum No. 1 items noted.
SW-1001	Reissued Plan Sheet with Addendum No. 1 items noted.
SW-2001	Reissued Plan Sheet with Addendum No. 1 items noted.
SW-3001	Reissued Plan Sheet with Addendum No. 1 items noted.
SW-4001	Reissued Plan Sheet with Addendum No. 1 items noted.

END OF ADDENDUM NO. 1