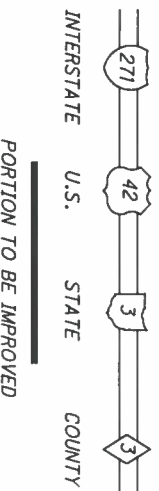
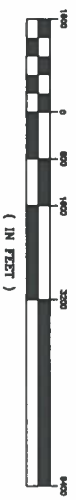




LOCATION PLAN



DESIGN DESIGNATION

CURRENT A.D.T. N/A  
 DESIGN YEAR N/A  
 D.H.V. N/A  
 D. N/A  
 T. N/A  
 DESIGN SPEED 20 M.P.H. (TOWPATH TRAIL)  
 14 M.P.H. (CONNECTOR TRAIL)  
 25 M.P.H. (STREETS)  
 DESIGN EXCEPTION NONE

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES  
 CALL TWO WORKING DAYS  
 BEFORE YOU DIG  
 CALL 1-800-362-2164  
 (TOLL FREE)  
 OHIO UTILITIES PROTECTION SERVICE  
 NON-MEMBERS  
 MUST BE CALLED DIRECTLY  
 OIL & GAS PRODUCERS PROTECTIVE  
 SERVICE CALL: 1-800-925-0988

PLAN PREPARED BY:

CUYAHOGA COUNTY

# CUY-TOWPATH TRAIL, STAGE 3

TOWPATH TRAIL  
FROM STEELYARD COMMONS TO LITERARY RD

DECEMBER 8, 2015  
FINAL DESIGN  
REVISED SUBMITTAL

INDEX OF SHEETS:

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	111 - 115A	STRUCTURES (OVERLOOK STRUCTURES)	

NOT USED: 23, 159, 195

ENGINEERS SEAL:	ENGINEERS SEAL:	ENGINEERS SEAL:	ENGINEERS SEAL:	ENGINEERS SEAL:
MICHAEL BAKER INTERNATIONAL	MICHAEL BAKER INTERNATIONAL	ENVIRONMENTAL DESIGN GROUP	BRANDSTETTER CARROLL, INC.	ISAAC LEWIN & ASSOC.
ROADWAY TRAIL PLANS	STRUCTURAL PLANS	LANDSCAPE PLANS	ARCHITECTURAL PLANS	OVERLOOK STRUCTURE PLANS
SIGNED: _____	SIGNED: _____	SIGNED: _____	SIGNED: _____	SIGNED: _____
DATE: _____	DATE: _____	DATE: _____	DATE: _____	DATE: _____

STATE OF OHIO STANDARD CONSTRUCTION DRAWINGS				CUYAHOGA COUNTY STANDARD DRAWINGS			
NUMBER	DATE	NUMBER	DATE	NUMBER	DATE	NUMBER	DATE
AS-1-15	01-17-2015	F-1.1	07-19-2013	TC-22.20	01-17-2014	BP-2.5C	10-31-2013
AS-1-81	01-18-2013			TC-41.20	10-18-2013	BP-4.1C	10-31-2013
		HW-2.2	07-17-2015	TC-42.20	10-18-2013	MH-10.C	10-31-2013
BP-1.1	07-28-2000	MGS-1.1	07-19-2013	TC-51.11	01-17-2014		
BP-2.1	07-17-2015	MGS-4.1	07-19-2013	TC-51.12	01-17-2014	CB-3C	10-31-2013
BP-2.2	07-18-2008	MSS-4.2	07-19-2013	TC-52.10	10-18-2013	MD-1C	10-31-2013
BP-2.5	07-19-2013			TC-71.10	01-17-2014	MD-6C	10-31-2013
BP-3.1	07-18-2014	MH-1.1	01-18-2013				
BP-5.1	07-19-2013	MH-1.2	01-18-2013	WO-1.1	01-18-2013		
BP-7.1	07-18-2014	MH-1.3	01-18-2013				
CB-1.1	01-18-2013	MT-101.60	07-19-2013				
CB-1.2	01-18-2013						
DM-1.1	01-18-2013	RM-5.1	07-18-2016				
DM-4.2	07-20-2012	RM-5.2	01-17-2014				

ODOT SUPPLEMENTAL SPECIFICATIONS			
NUMBER	DATE	NUMBER	DATE
832	01-17-2014	10-41	01-18-2013
836	01-18-2013	1055	01-18-2013
840	07-17-2015	1073	04-16-2010
863	10-17-2014	1083	10-17-2014
1035	01-18-2013		

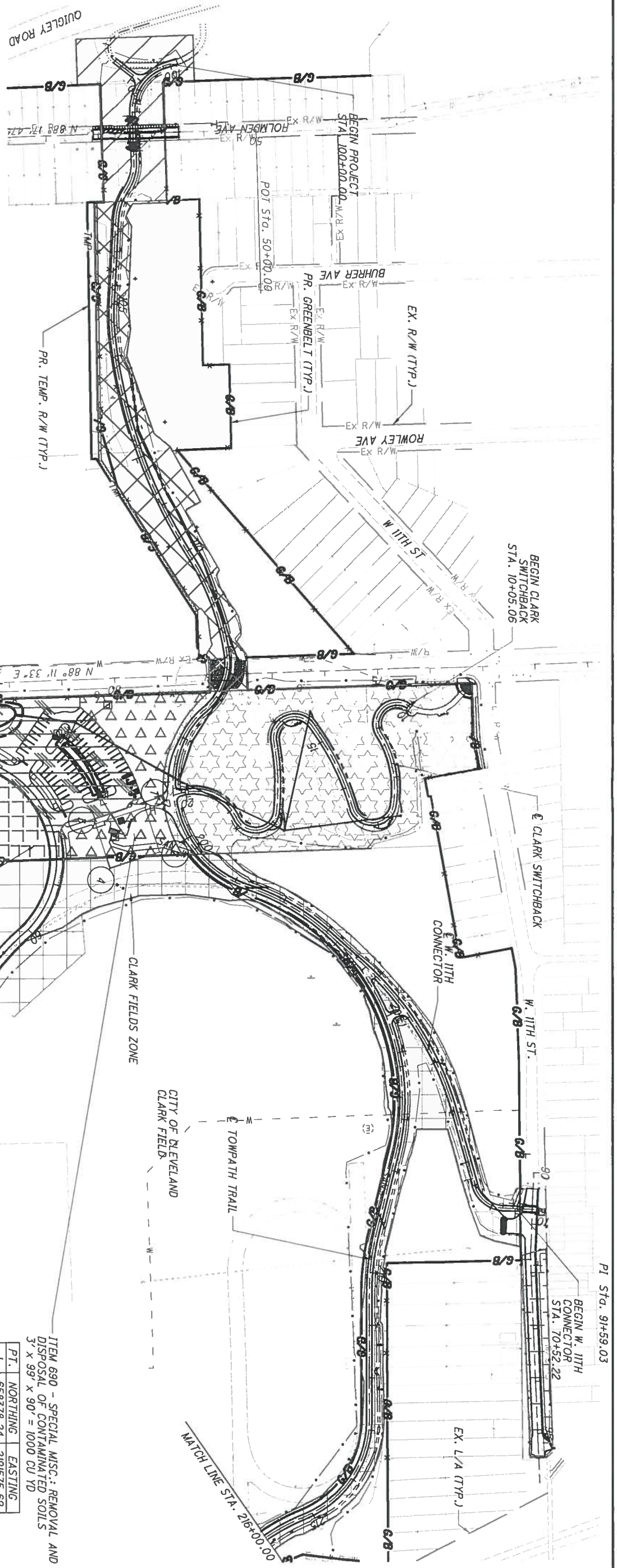
**Michael Baker INTERNATIONAL**  
 THE HALL BUILDING  
 1228 EUCLID AVENUE, SUITE 1050  
 CLEVELAND, OHIO 44115

**Environmental Design Group**  
 450 Genl. Street  
 Akron, OH 44311  
 Phone: 330.375.1390  
 Fax: 330.375.1390  
 www.environmentalgroup.com

**BRANDSTETTER CARROLL INC.**  
 ARCHITECTS, ENGINEERS, PLANNERS  
 912 21st Ave  
 Cleveland, OH 44115  
 www.brandstettercarroll.com

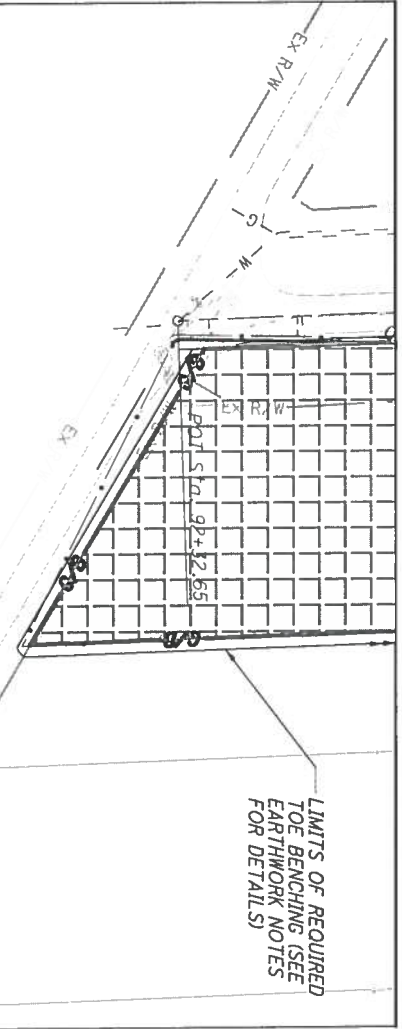
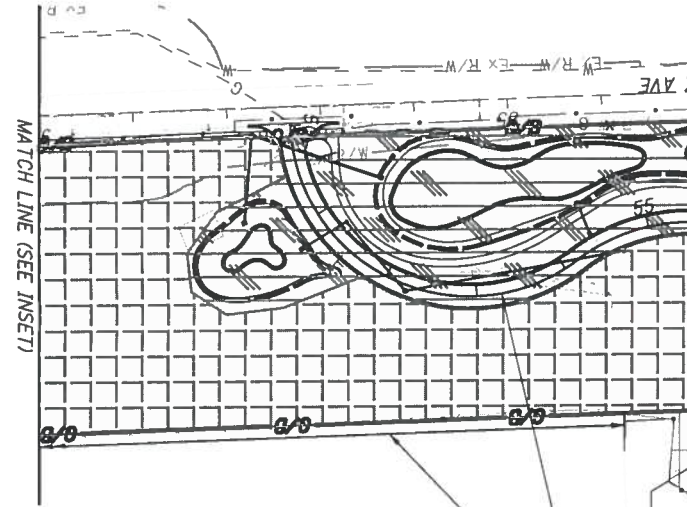
**LEGEND**

	PR. TOWPATH TRAIL GREENBELT		TRAILHEAD EARTHWORK ZONE (A)
	TEMPORARY EASEMENT		TRAILHEAD EARTHWORK ZONE (B)
	EXISTING RIGHT-OF-WAY		TRAILHEAD EARTHWORK ZONE (C)
	HILLSIDE EARTHWORK ZONE		TRAILHEAD EARTHWORK ZONE (D)
	HOLMDEN EARTHWORK ZONE		CLARK FIELD EARTHWORK ZONE
	TRAILHEAD EARTHWORK ZONE (A)		WEST 11TH EARTHWORK ZONE



ITEM 690 - SPECIAL MISC.: REMOVAL AND DISPOSAL OF CONTAMINATED SOILS  
3' x 99' x 90' = 1000 CU YD

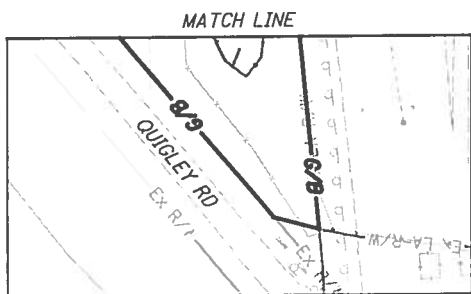
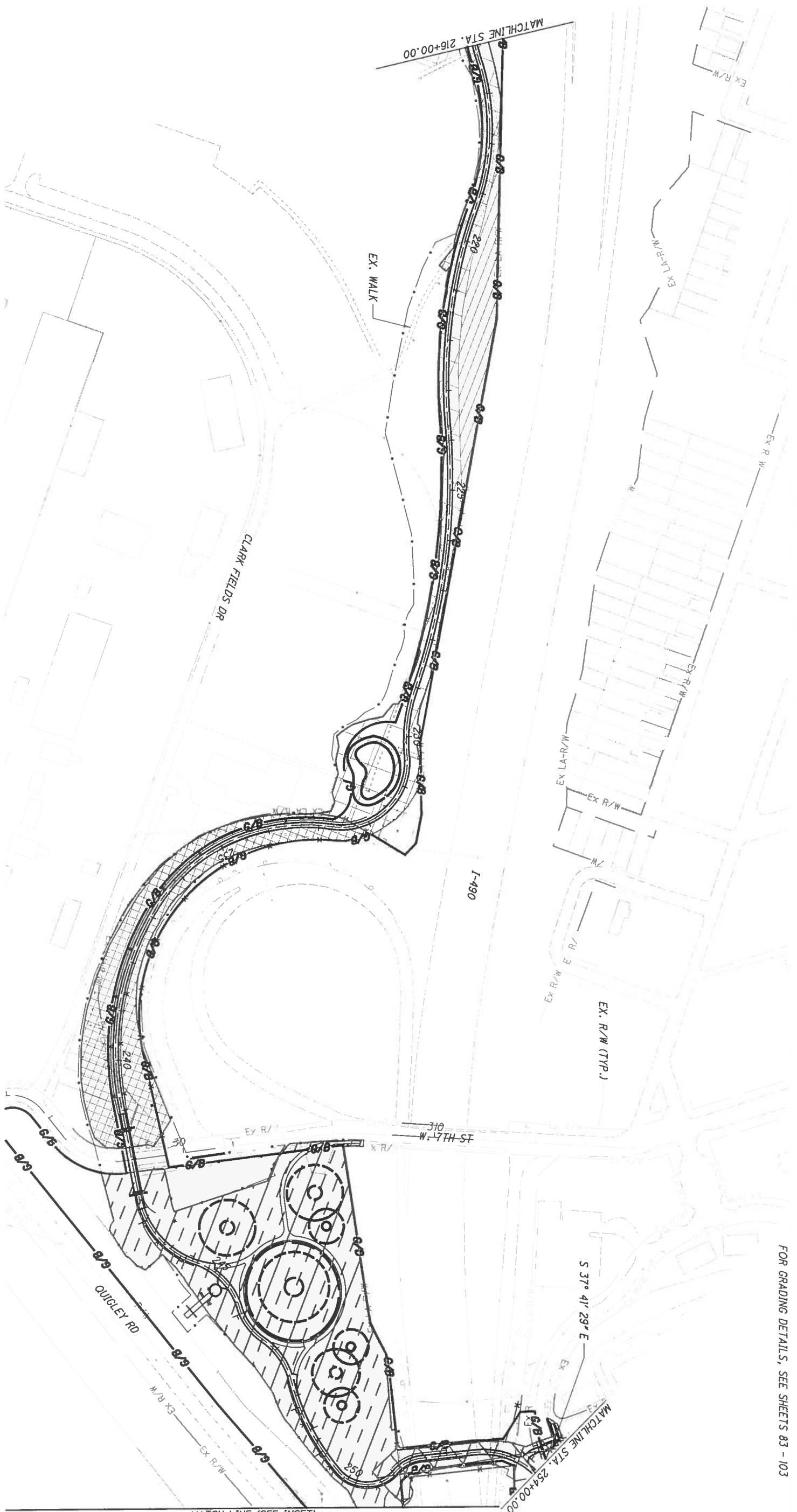
PT.	NORTHING	EASTING
1	658378.24	2191575.69
2	658463.95	2191548.24
3	658408.43	2191659.97
4	658494.14	2191642.53



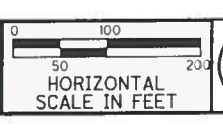
FOR GRADING DETAILS, SEE SHEETS 83 - 103

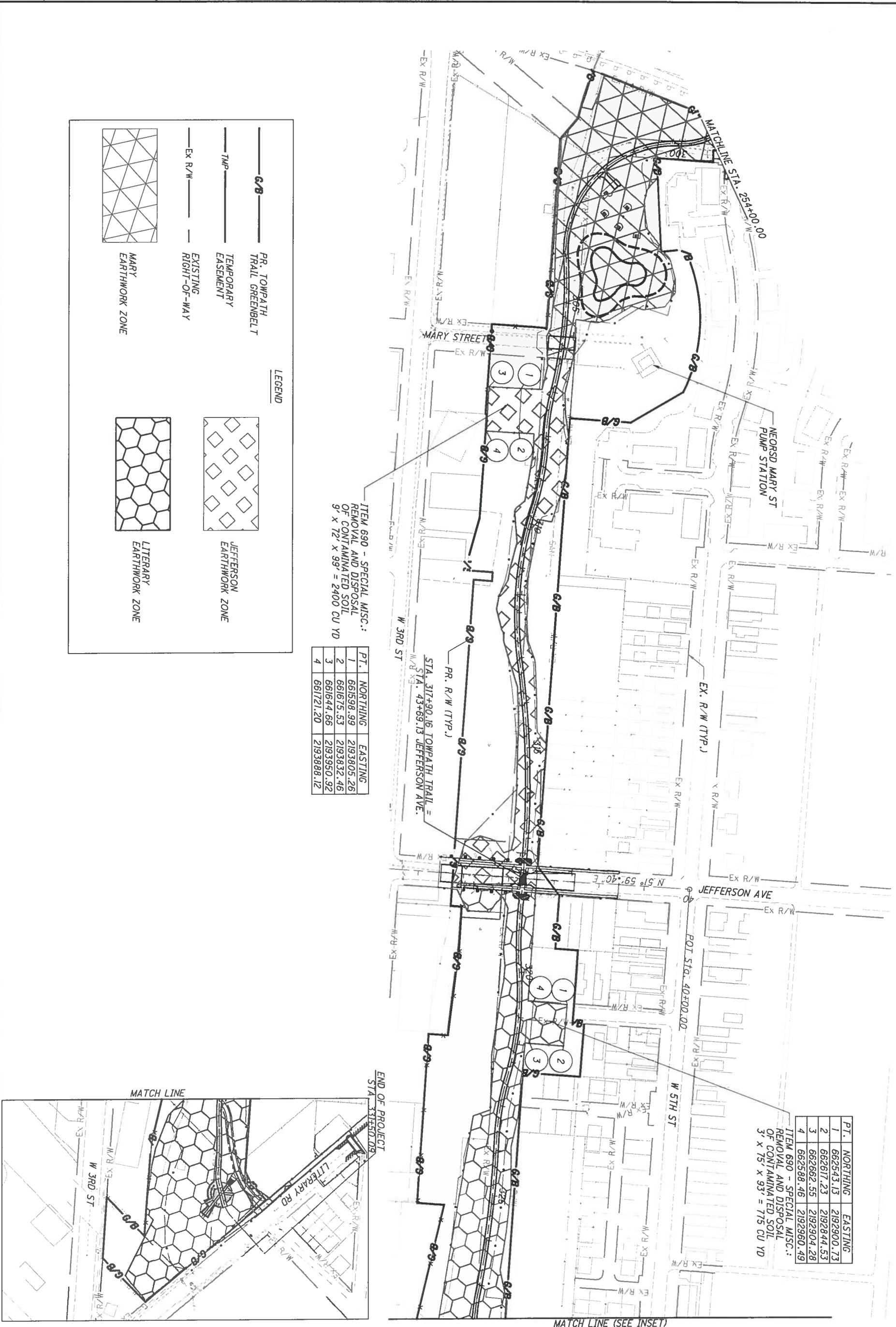
**LEGEND**

	PR. TOWPATH TRAIL GREENBELT
	TEMPORARY EASEMENT
	EXISTING RIGHT-OF-WAY
	CLARK FIELD EARTHWORK ZONE
	W. 7TH ST. EARTHWORK ZONE
	BLUFFS EARTHWORK ZONE
	MARY EARTHWORK ZONE
	CLARK FIELDS PERMANENT STOCKPILE AREA (SEE EARTHWORK NOTES)



FOR GRADING DETAILS, SEE SHEETS 83 - 103





**LEGEND**

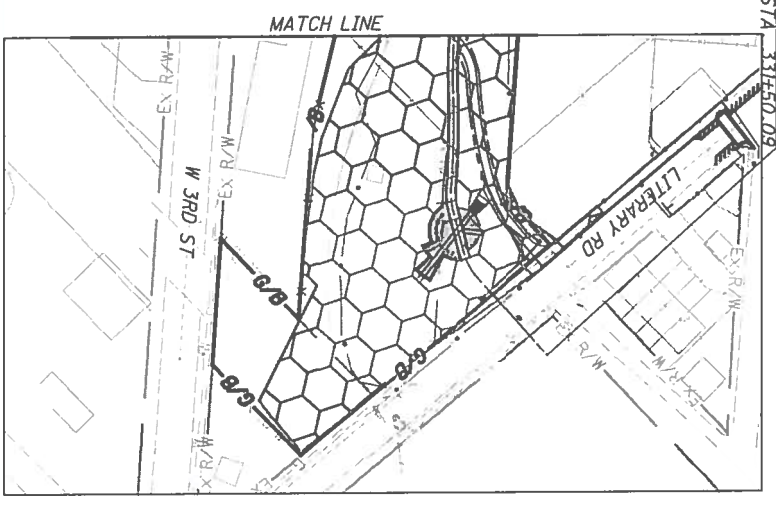
- PR. TOWPATH TRAIL GREENBELT
- TEMPORARY EASEMENT
- EXISTING RIGHT-OF-WAY
- JEFFERSON EARTHWORK ZONE
- LITERARY EARTHWORK ZONE
- MARY EARTHWORK ZONE

ITEM 690 - SPECIAL MISC.:  
REMOVAL AND DISPOSAL  
OF CONTAMINATED SOIL  
9' x 72' x 99' = 2400 CU YD

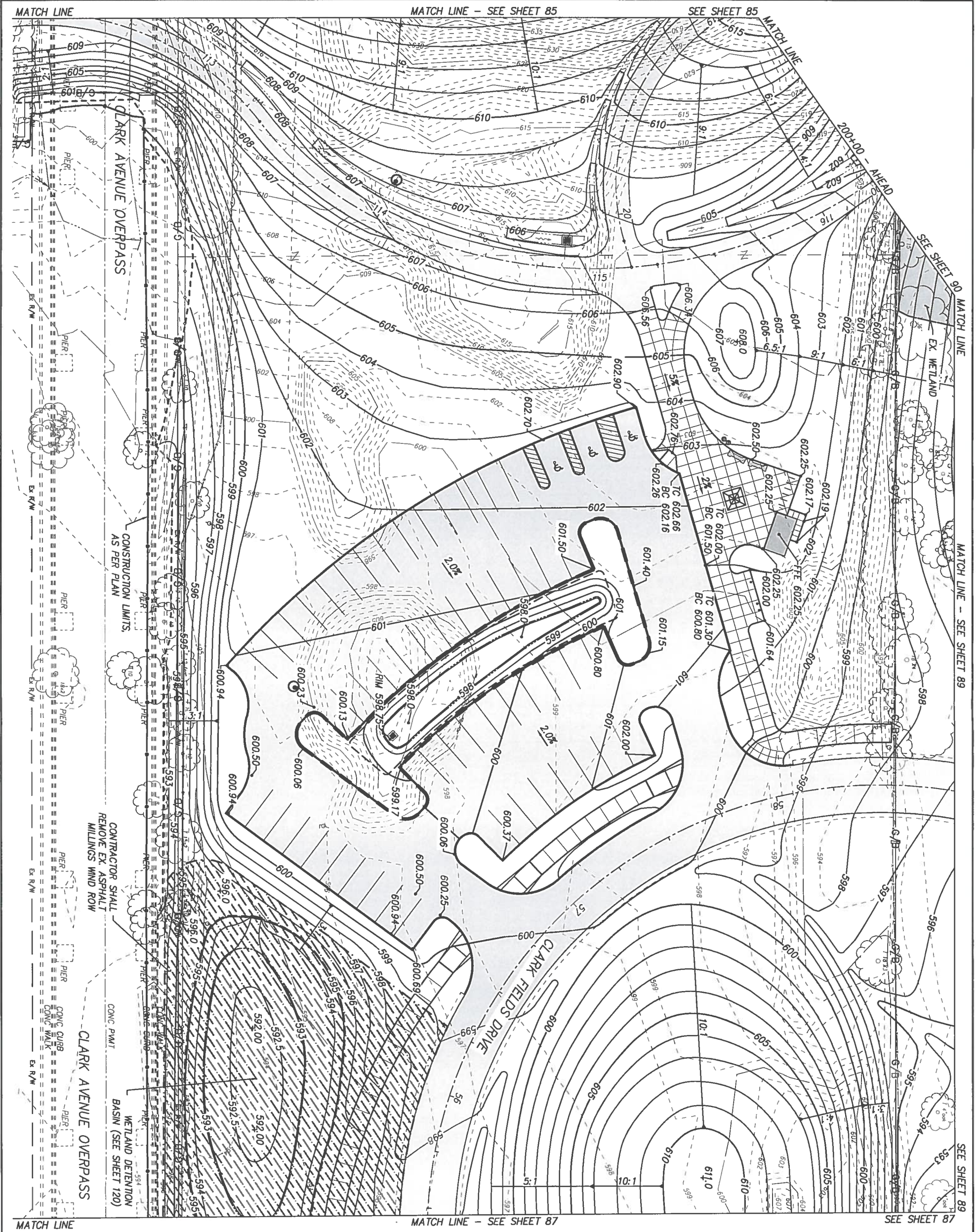
PT.	NORTHING	EASTING
1	661598.99	2193805.26
2	661675.53	2193832.46
3	661644.66	2193950.92
4	661721.20	2193888.12

ITEM 690 - SPECIAL MISC.:  
REMOVAL AND DISPOSAL  
OF CONTAMINATED SOIL  
3' x 75' x 93' = 775 CU YD

PT.	NORTHING	EASTING
1	662543.13	2192900.73
2	662617.23	2192844.53
3	662662.55	2192904.28
4	662588.46	2192960.49



FOR GRADING DETAILS, SEE SHEETS 83 - 103



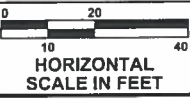
- NOTES:
1. SEE PLAN & PROFILE SHEETS FOR STORM SEWERS, STRUCTURES, CLARK FIELD DRIVE ALIGNMENT AND TRAIL ALIGNMENT.
  2. ALL SPOT ELEVATIONS SHOWN ARE BOTTOM OF CURB PAYMENT ELEVATION. SEE SHEET 260 FOR MORE INFORMATION ABOUT CROSSWALK RAMPS.
  3. SEE SHEETS 233-242 FOR MORE INFORMATION ABOUT LAYOUT AND AMENITIES.
  4. CONTRACTOR SHALL REMOVE EX. ASPHALT MILLINGS WIND ROW

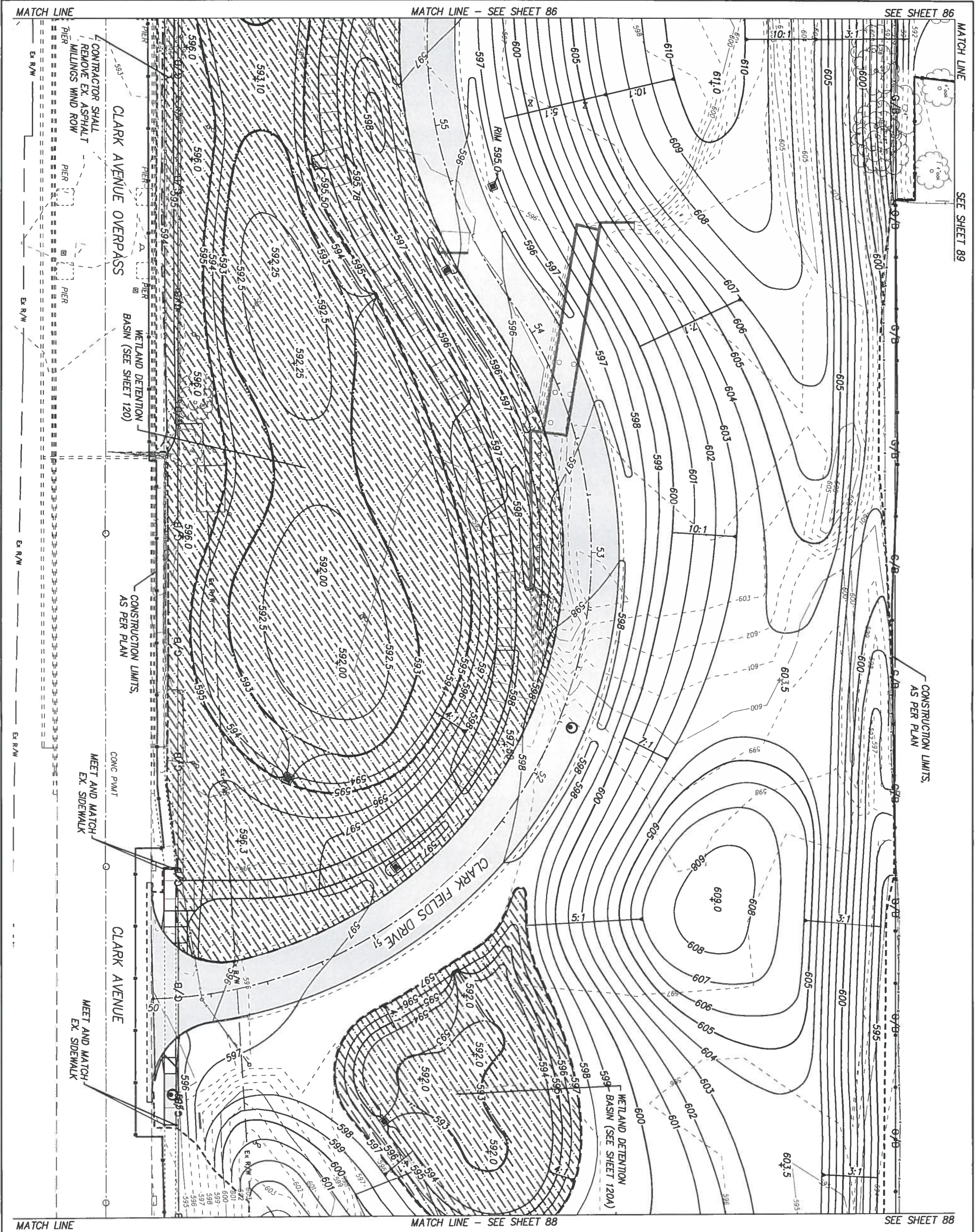
LIMITS OF PROPOSED GEOSYNTHETIC CLAY LINER. SEE DRAINAGE DETAILS AND EARTHWORK NOTES. PAID AS SPECIAL. GEOTEXTILE FABRIC.

**CUY-TOWPATH TRAIL, STAGE 3**

**GRADING PLAN CLARK AVE TRAILHEAD**

CALCULATED TR,CR  
CHECKED KL,GN





- NOTES:**
1. SEE PLAN & PROFILE SHEETS FOR STORM SEWERS, STRUCTURES, CLARK FIELD DRIVE ALIGNMENT AND TRAIL ALIGNMENT.
  2. SEE SHEET 260 FOR MORE INFORMATION ABOUT CROSSWALK RAMPS.
  3. SEE SHEETS 233-242 FOR MORE INFORMATION ABOUT LAYOUT AND AMENITIES.
- LIMITS OF PROPOSED GEOSYNTHETIC CLAY LINER. SEE DRAINAGE DETAILS AND EARTHWORK NOTES. PAID AS SPECIAL - GEOTEXTILE FABRIC.

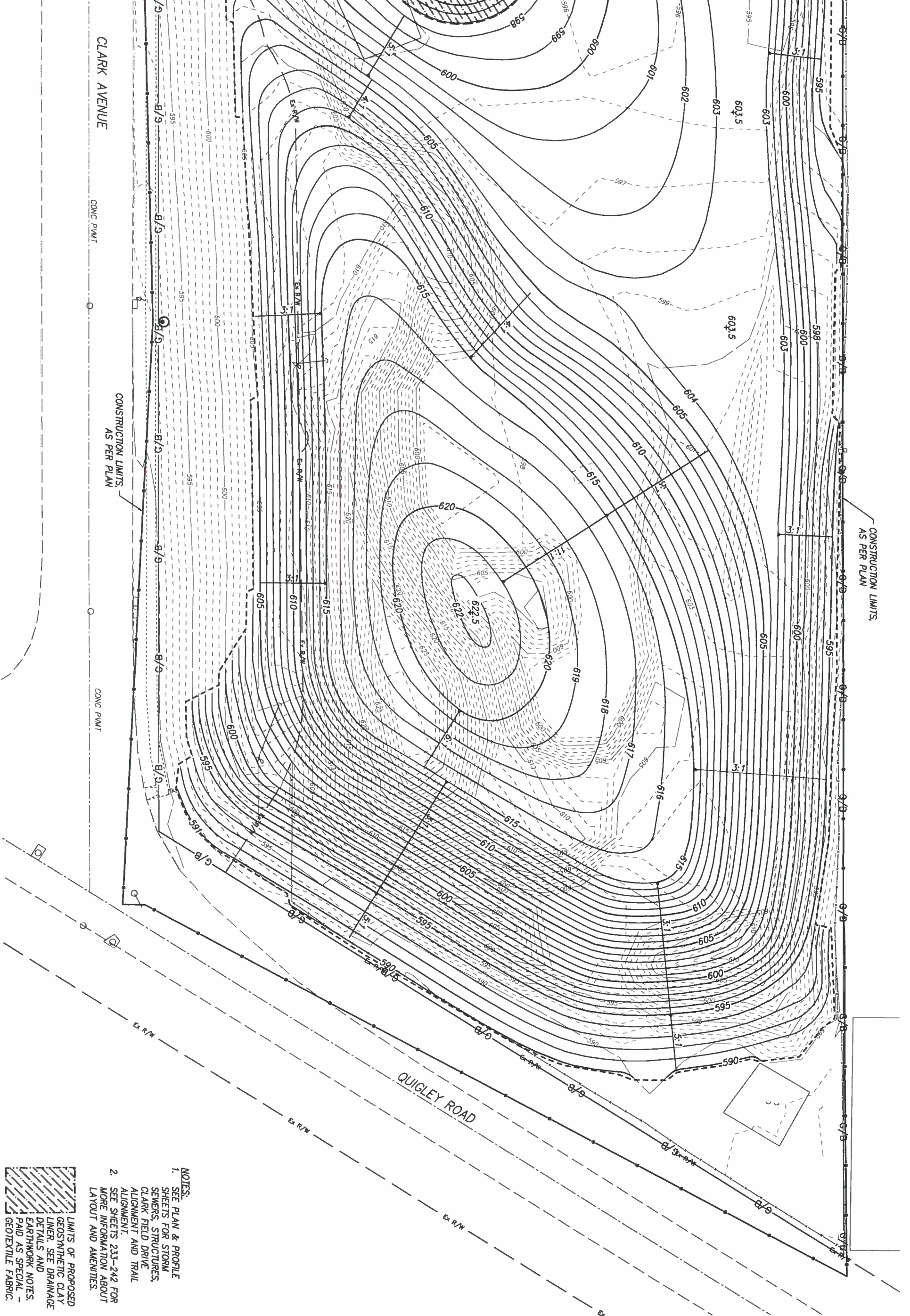
**CUY-TOWPATH TRAIL, STAGE 3**

**GRADING PLAN  
CLARK AVE TRAILHEAD AT CLARK FIELDS DRIVE**

CALCULATED  
TR,CR  
CHECKED  
KL,GN



MATCH LINE MATCH LINE - SEE SHEET 87 SEE SHEET 87



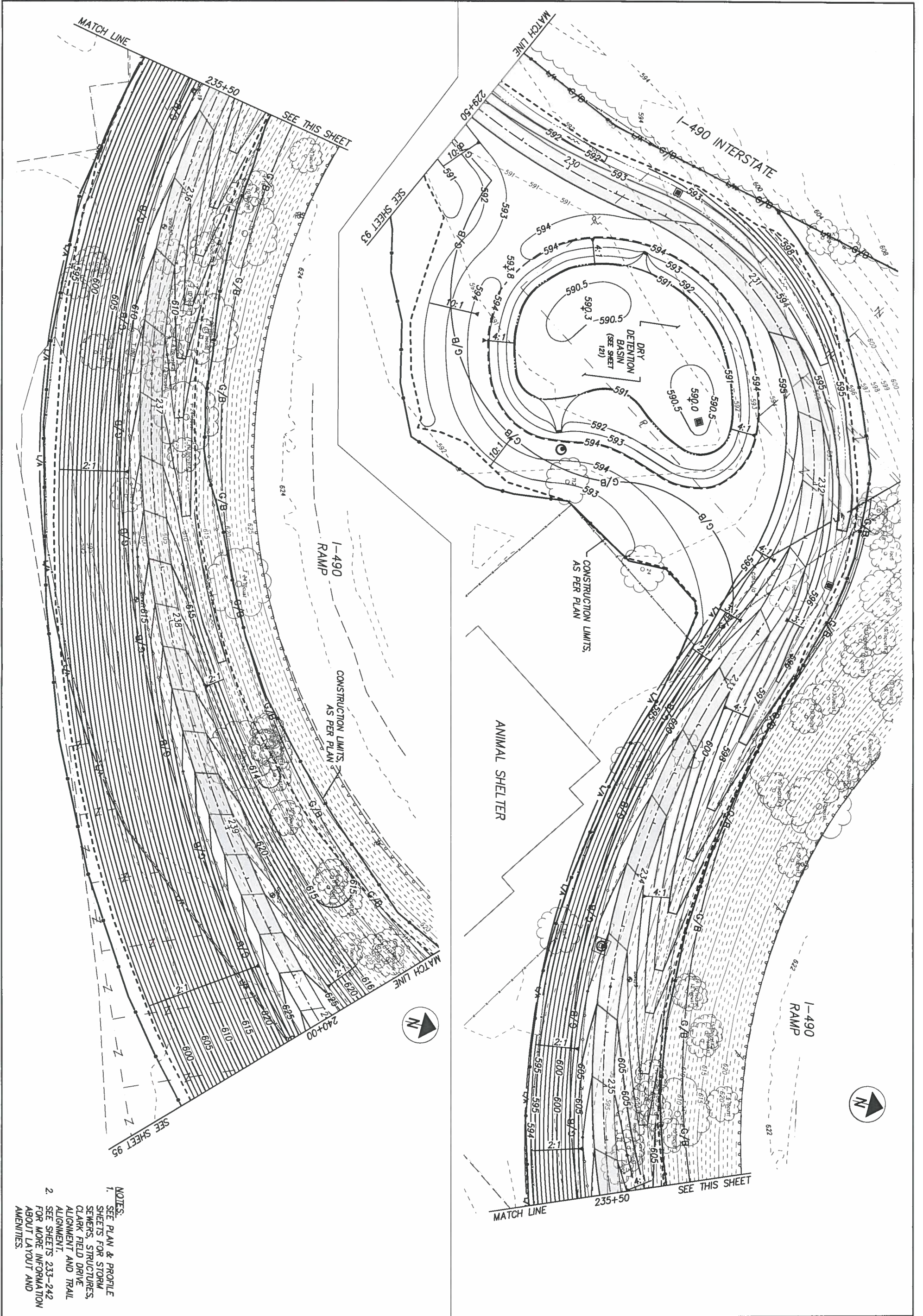
- NOTES:**
1. SEE PLAN & PROFILE SHEETS FOR STORM SEWERS, STRUCTURES, CLARK FIELD DRIVE ALIGNMENT AND TRAIL ALIGNMENT.
  2. SEE SHEETS 233-242 FOR MORE INFORMATION ABOUT LAYOUT AND AMENITIES.
- LIMITS OF PROPOSED GEOSYNTHETIC CLAY LINER, SEE DRAINAGE DETAILS AND EARTHWORK NOTES, PAID AS SPECIAL - GEOTEXTILE FABRIC.**

**CUY-TOWPATH TRAIL, STAGE 3**

**GRADING PLAN  
CLARK AVE TRAILHEAD AT CLARK AVE & QUIGLEY RD**

CALCULATED  
TR,CR  
CHECKED  
KL,GN





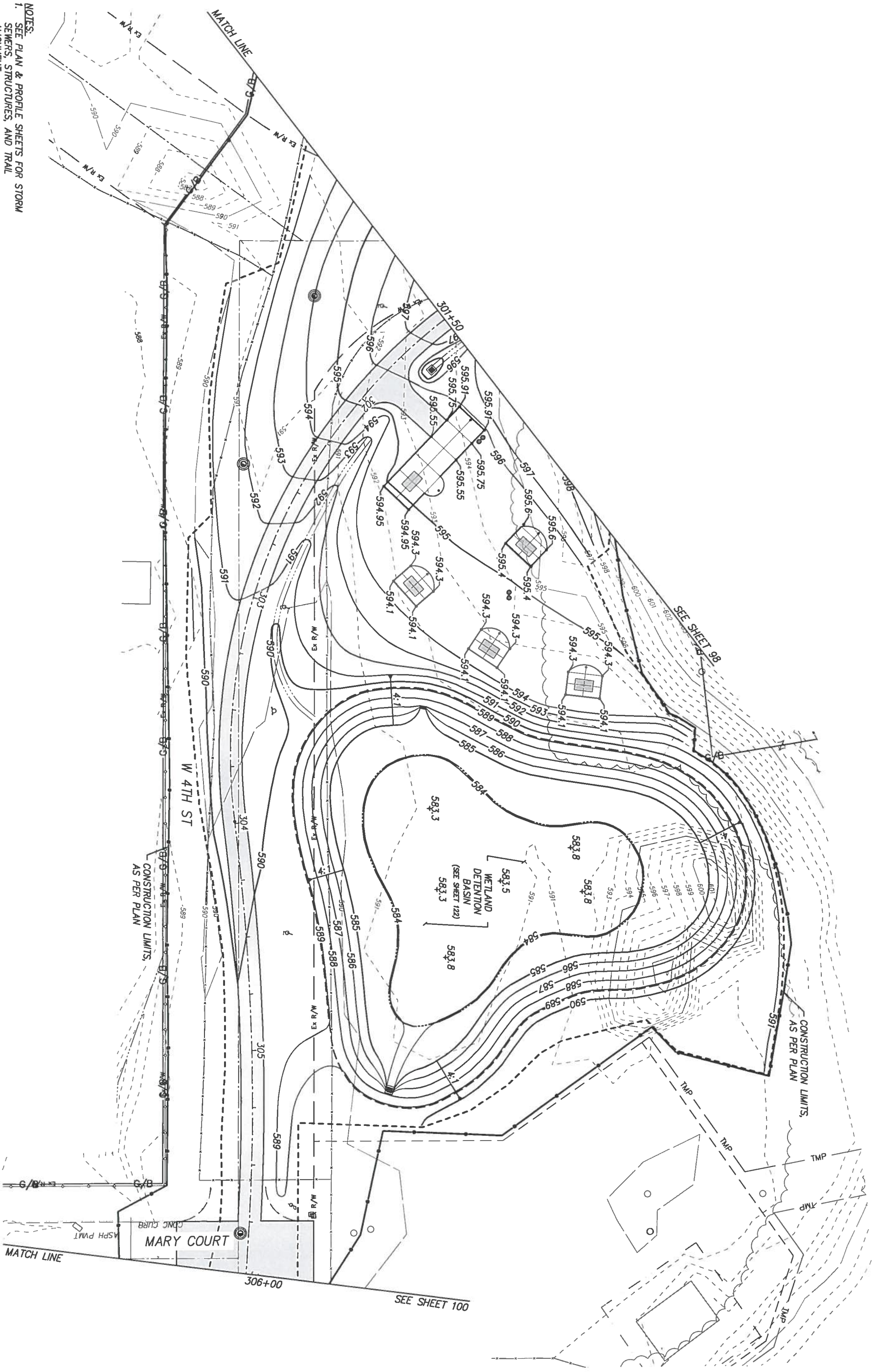
- NOTES:
1. SEE PLAN & PROFILE SHEETS FOR STORM SEWERS, STRUCTURES, CLARK FIELD DRIVE ALIGNMENT AND TRAIL ALIGNMENT.
  2. SEE SHEETS 233-242 FOR MORE INFORMATION ABOUT LAYOUT AND AMENITIES.

**CUY-TOWPATH TRAIL, STAGE 3**

**GRADING PLAN**  
 STA 229+50 TO STA 240+00 - CLARK FIELDS

CALCULATED TR,CR CHECKED KL,GN	0 10 20 40 HORIZONTAL SCALE IN FEET
---	---

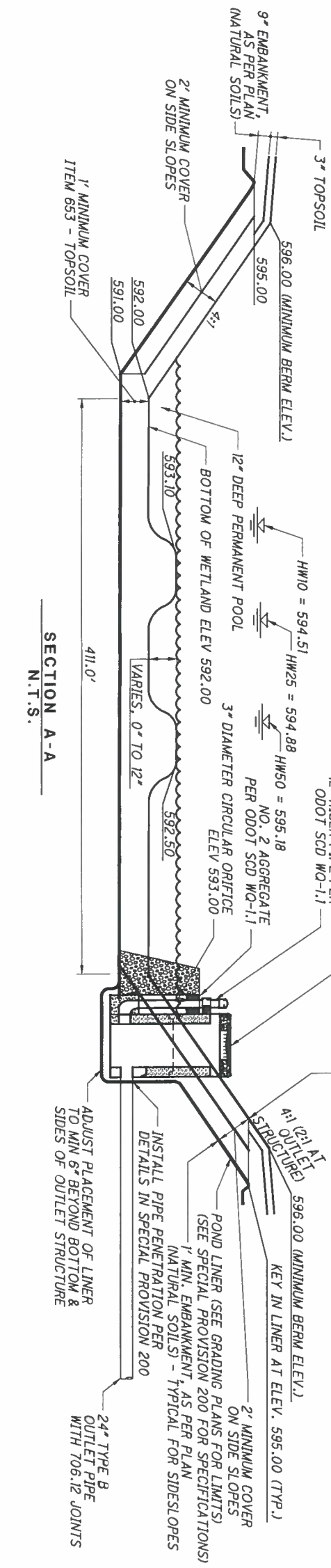
- NOTES:
1. SEE PLAN & PROFILE SHEETS FOR STORM SEWERS, STRUCTURES, AND TRAIL ALIGNMENT.
  2. SEE SHEETS 233-242 FOR MORE INFORMATION ABOUT LAYOUT AND AMENITIES.



	<p><b>GRADING PLAN</b> STA 301+50 TO STA 306+00 - W 4TH ST &amp; MARY CT</p>	<p>CALCULATED TR,CR CHECKED KL,GN</p>	<p>0 20 10 HORIZONTAL SCALE IN FEET</p>
<p>99 337</p>	<p><b>CUY-TOWPATH TRAIL, STAGE 3</b></p>		

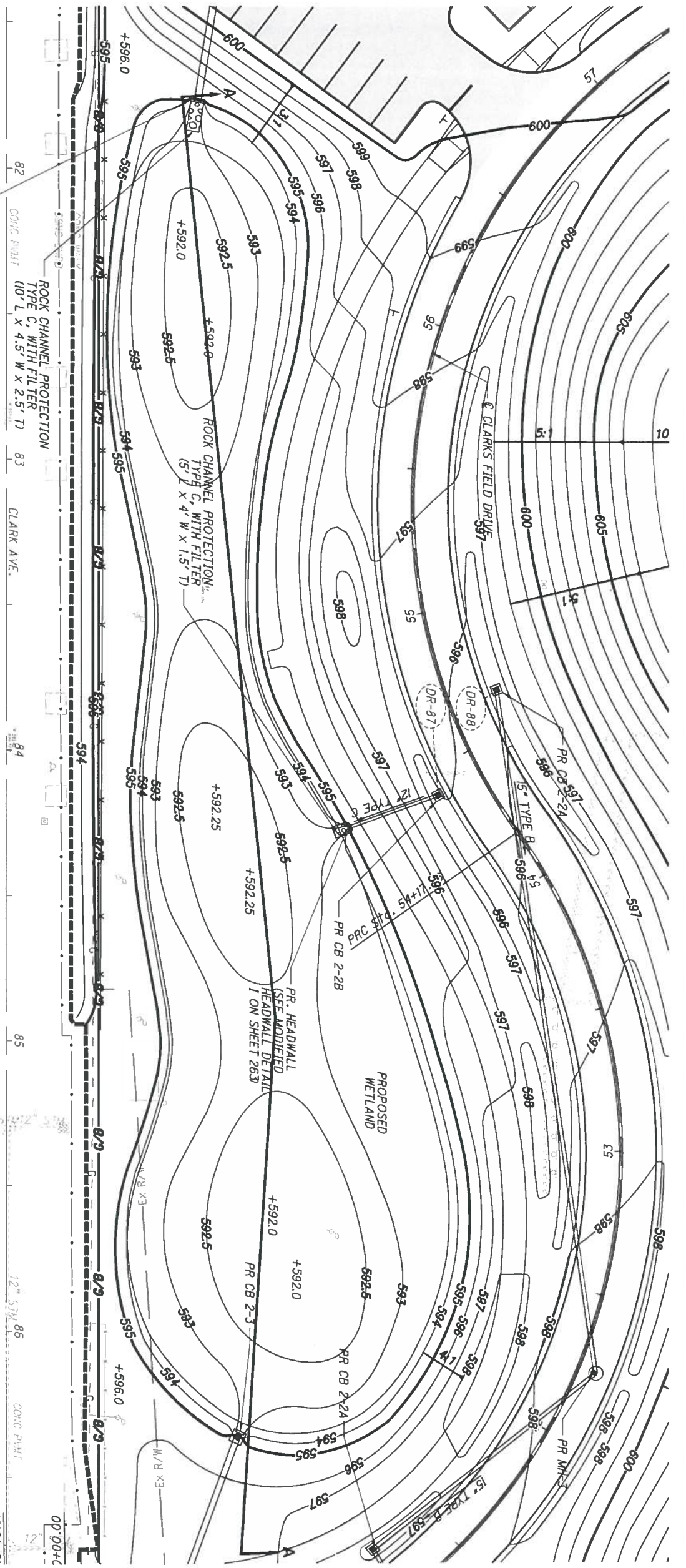
HYDRAULIC DESIGN TABLE	
DRAINAGE AREA	15.82 AC
HW0V	593.43
HW5	594.28
HW10	594.51
HW25	594.88
HW50	595.18
QIN-5	31.37 CFS
QOUT-5	2.95 CFS
QIN-10	40.43 CFS
QOUT-10	7.08 CFS
QIN-25	54.50 CFS
QOUT-25	18.17 CFS
QIN-50	66.44 CFS
QOUT-50	23.28 CFS

NOTES:  
 1. FOR GRADING AND POND LINER LIMITS, SEE SHEETS 86 & 87



CB 2-3 (ODOT)  
 STA. 51+05.30, 77.70' LT  
 GRATE EL. 594.50  
 24" INV. (SE) = 591.00

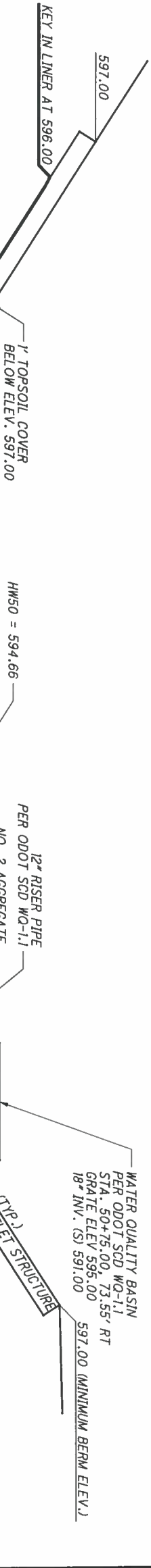
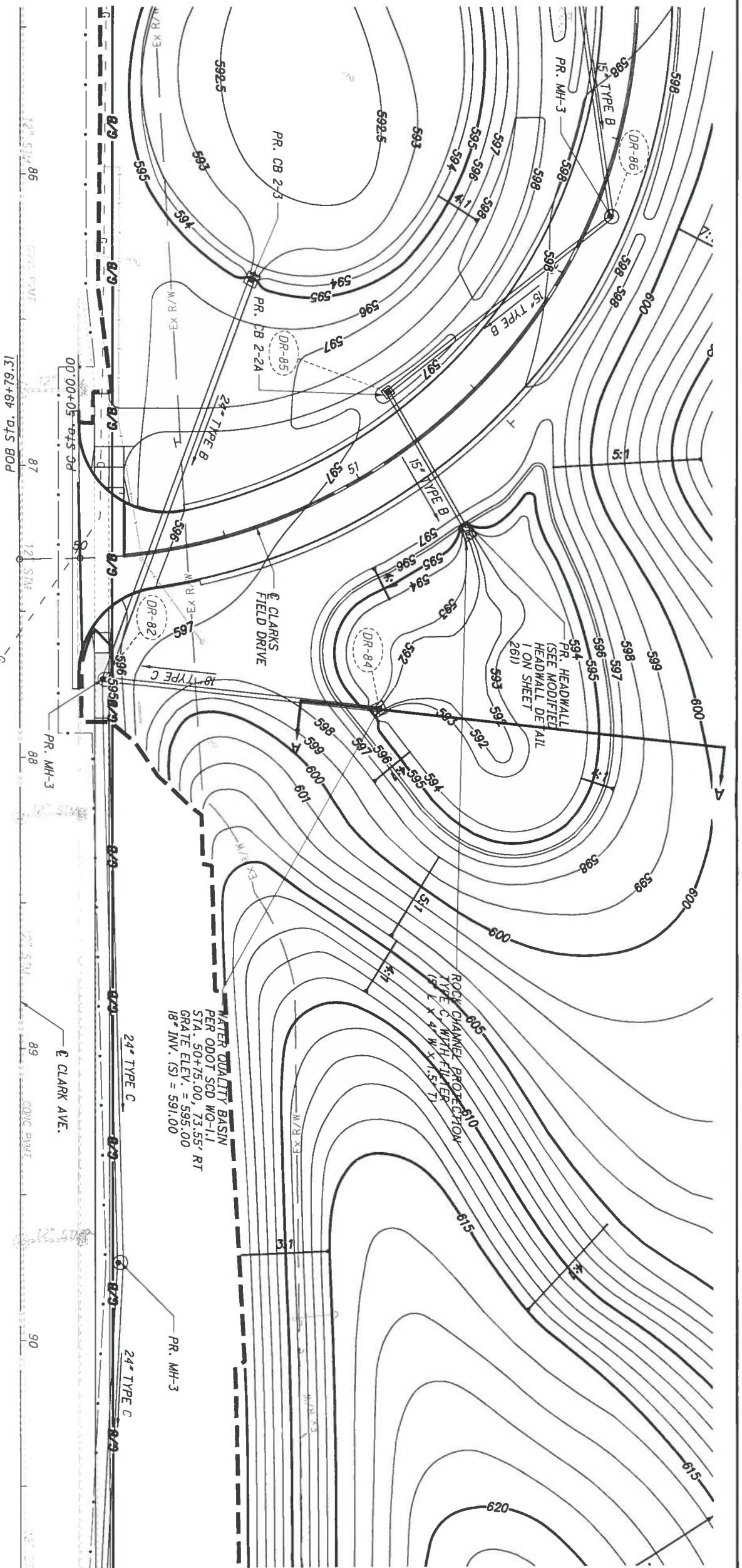
PR. HEADWALL  
 (SEE MODIFIED  
 HEADWALL DETAIL  
 ON SHEET 263)



HYDRAULIC DESIGN TABLE	
DRAINAGE AREA	2.24 AC
HWS	593.65
HW10	593.94
HW25	594.33
HW50	594.66
QIN-5	4.01 CFS
QOUT-5	0.65 CFS
QIN-10	5.26 CFS
QOUT-10	0.86 CFS
QIN-25	7.14 CFS
QOUT-25	1.08 CFS
QIN-50	8.79 CFS
QOUT-50	1.23 CFS

NOTE:  
 PROVIDE ITEM 670 SLOPE AND EROSION PROTECTION ON INTERIOR BASIN SIDE SLOPES. SEE SWPPP FOR GRADING SEE SHEET 87

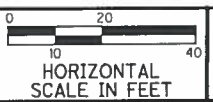
PAYMENT:  
 GRADING IS PAID ON EARTHWORK PLANS. THE CONSTRUCTION OF A NEW CB INTO A WATER QUALITY BASIN AS SHOWN ON THIS SHEET, INCLUDING NO. 2 AGGREGATE, RISER PIPE AND ALL INCIDENTALS, IS PAID AT THE CONTRACT PRICE FOR:  
 ITEM 611 - WATER QUALITY BASIN, DETENTION



CUY-TOWPATH TRAIL, STAGE 3

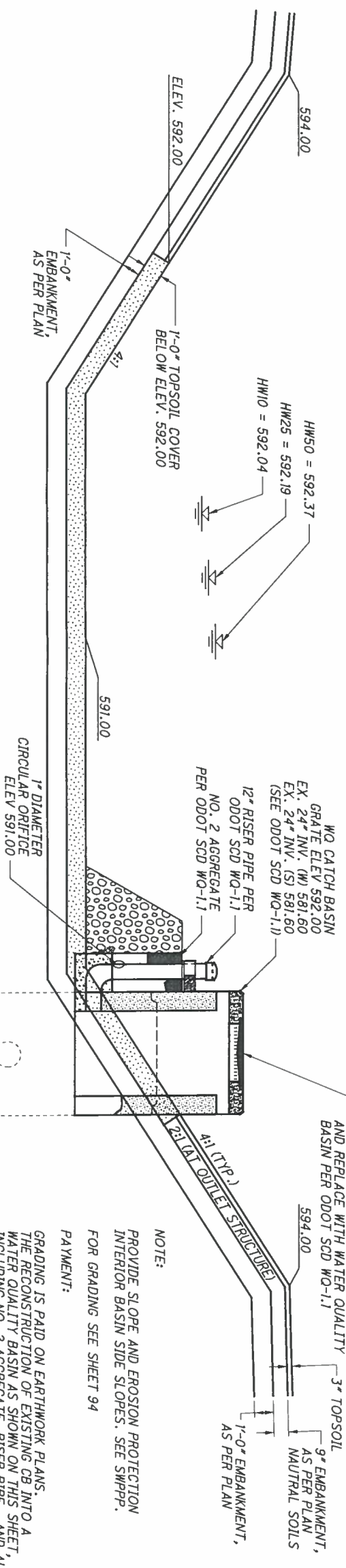
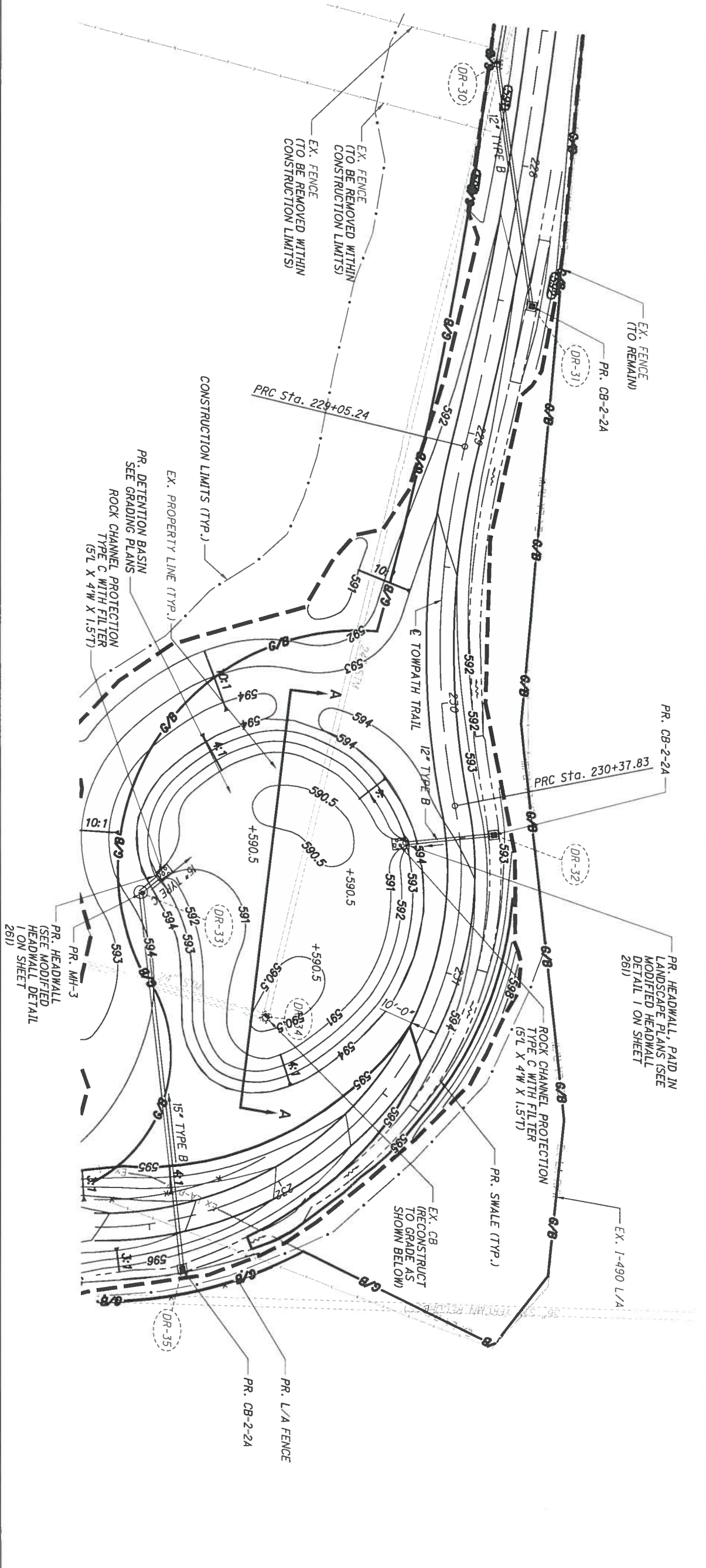
DRAINAGE DETAILS - EAST WETLAND  
 DETENTION BASIN - CLARK AVE.

CALCULATED  
 AK  
 CHECKED  
 DAB



120A  
 337

HYDRAULIC DESIGN TABLE	
DRAINAGE AREA	2.87 AC
HWMOV	591.28
HMS	592.01
HM10	592.04
HM25	592.19
HM50	592.37
QIN-5	4.87 CFS
QOUT-5	0.14 CFS
QIN-10	6.44 CFS
QOUT-10	0.46 CFS
QIN-25	8.79 CFS
QOUT-25	1.92 CFS
QIN-50	10.88 CFS
QOUT-50	4.55 CFS



SECTION A-A  
N.T.S.

NOTE:  
PROVIDE SLOPE AND EROSION PROTECTION INTERIOR BASIN SIDE SLOPES. SEE SWPPP FOR GRADING SEE SHEET 94

PAYMENT:  
GRADING IS PAID ON EARTHWORK PLANS. THE RECONSTRUCTION OF EXISTING CB INTO A WATER QUALITY BASIN AS SHOWN ON THIS SHEET, INCLUDING NO. 2 AGGREGATE, RISER PIPE, AND ALL INCIDENTALS IS PAID AT THE CONTRACT PRICE FOR ITEM 611 - WATER QUALITY BASIN, DETENTION

CUY-TOWPATH TRAIL, STAGE 3

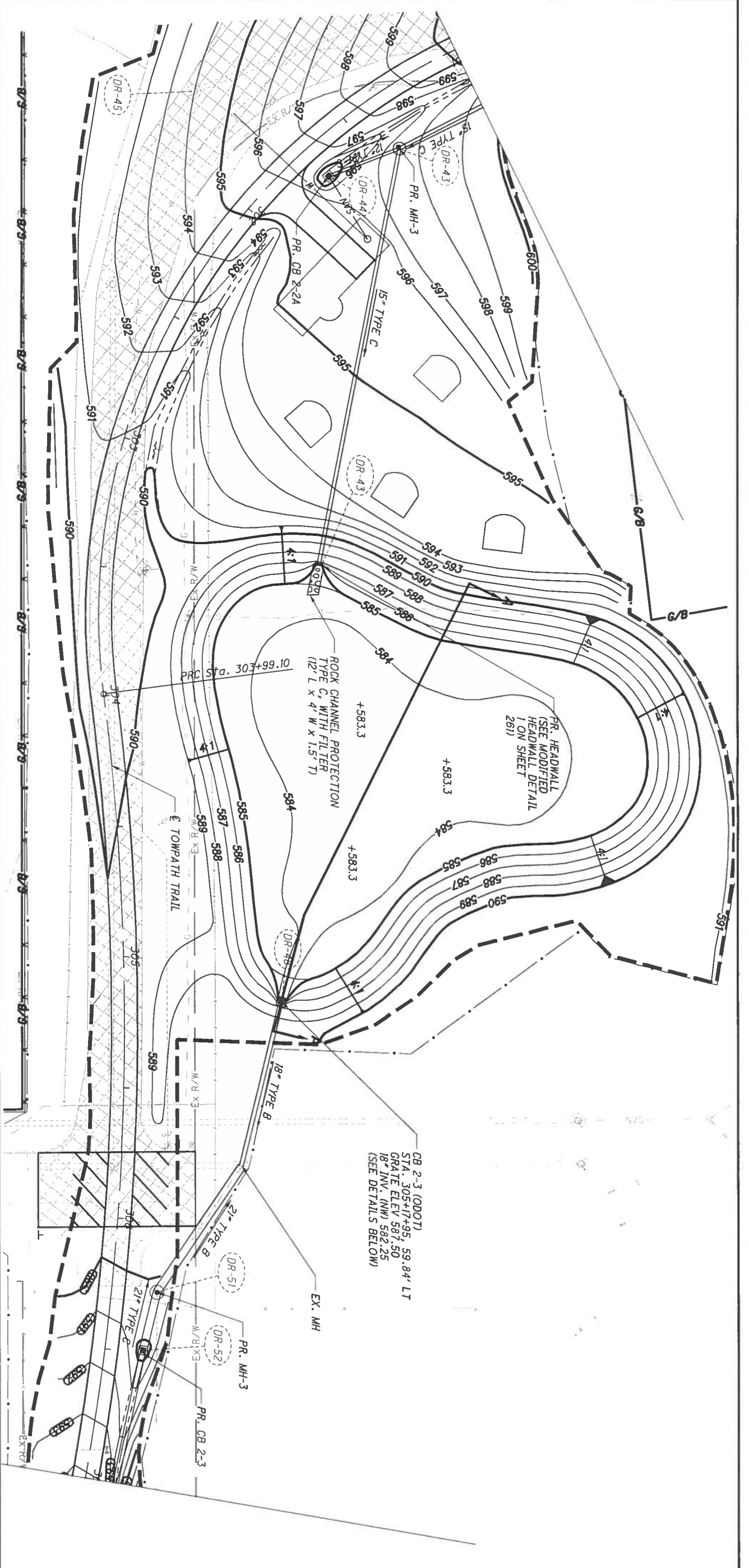
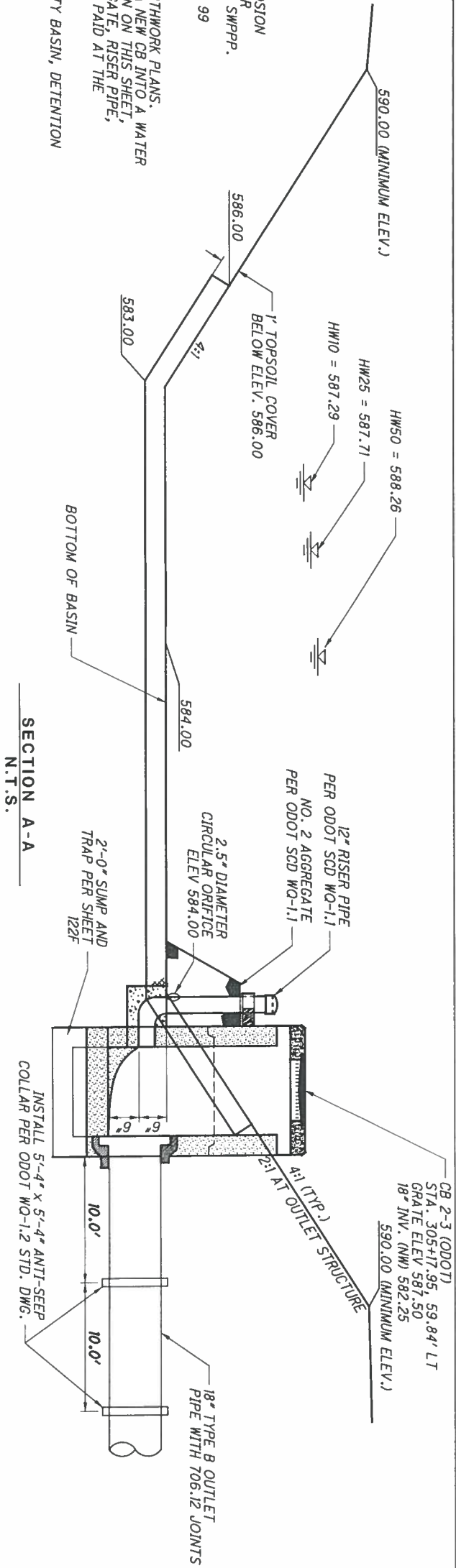
DRAINAGE DETAILS  
DRY DETENSION BASIN - TOWPATH TRAIL

CALCULATED AK CHECKED DAB	0 20 40 HORIZONTAL SCALE IN FEET	
------------------------------------	-------------------------------------	--

HYDRAULIC DESIGN TABLE	
DRAINAGE AREA	15.47 AC
HWMOV	586.86
HWS	587.09
HW10	587.29
HW25	587.71
HWS0	588.26
QIN-5	30.68 CFS
QOUT-5	1.10 CFS
QIN-10	39.53 CFS
QOUT-10	3.10 CFS
QIN-25	53.29 CFS
QOUT-25	12.34 CFS
QIN-50	64.97 CFS
QOUT-50	15.97 CFS

NOTE:  
 PROVIDE SLOPE AND EROSION PROTECTION ON INTERIOR BASIN SIDE SLOPES. SEE SWPPP.  
 FOR GRADING SEE SHEET 99

PAYMENT:  
 GRADING IS PAID ON EARTHWORK PLANS. THE CONSTRUCTION OF A NEW CB INTO A WATER QUALITY BASIN AS SHOWN ON THIS SHEET, INCLUDING NO. 2 AGGREGATE, RISER PIPE, AND ALL INCIDENTALS IS PAID AT THE CONTRACT PRICE FOR:  
 ITEM 611 - WATER QUALITY BASIN, DETENTION

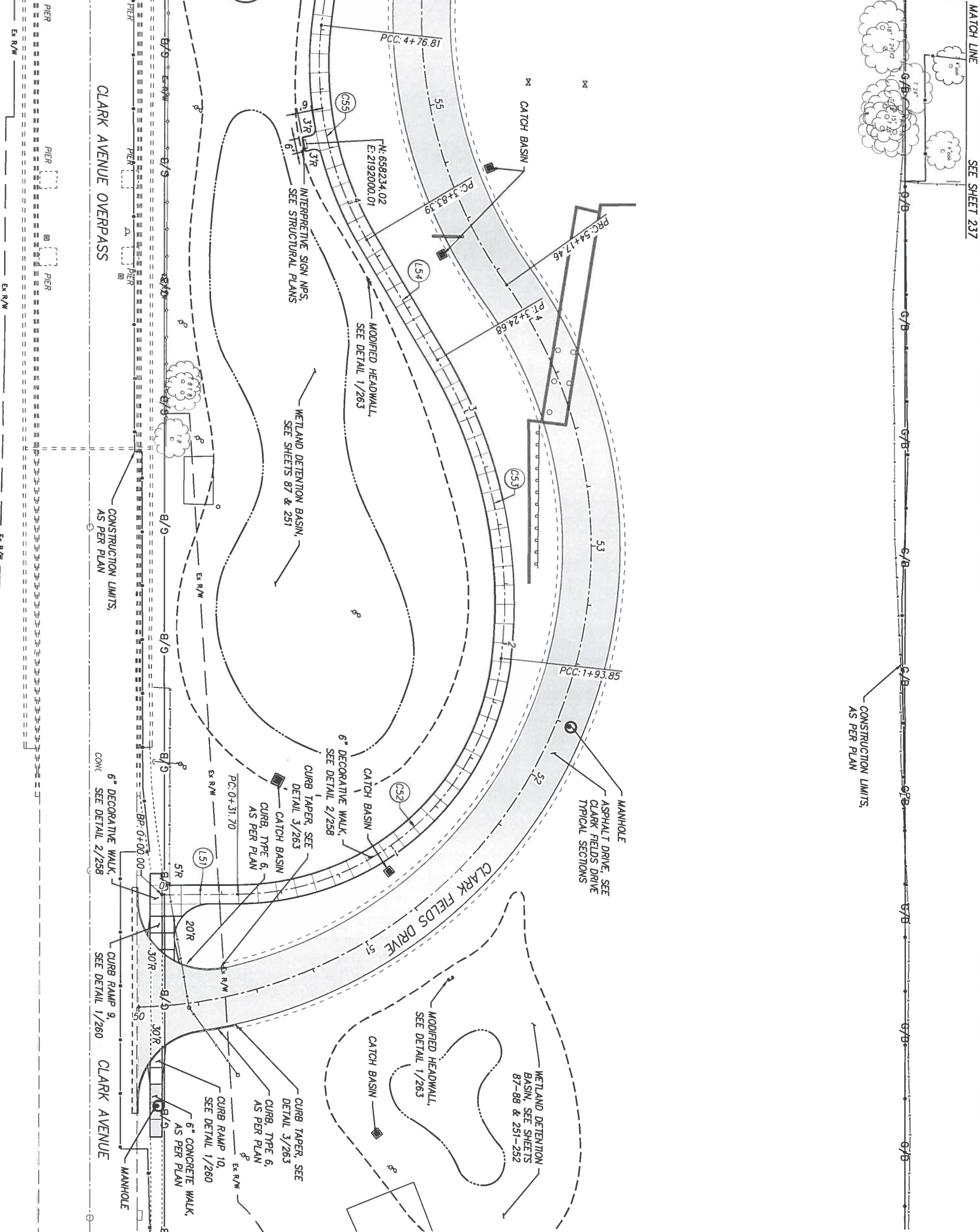




MATCH LINE

MATCH LINE - SEE SHEET 235

SEE SHEET 235

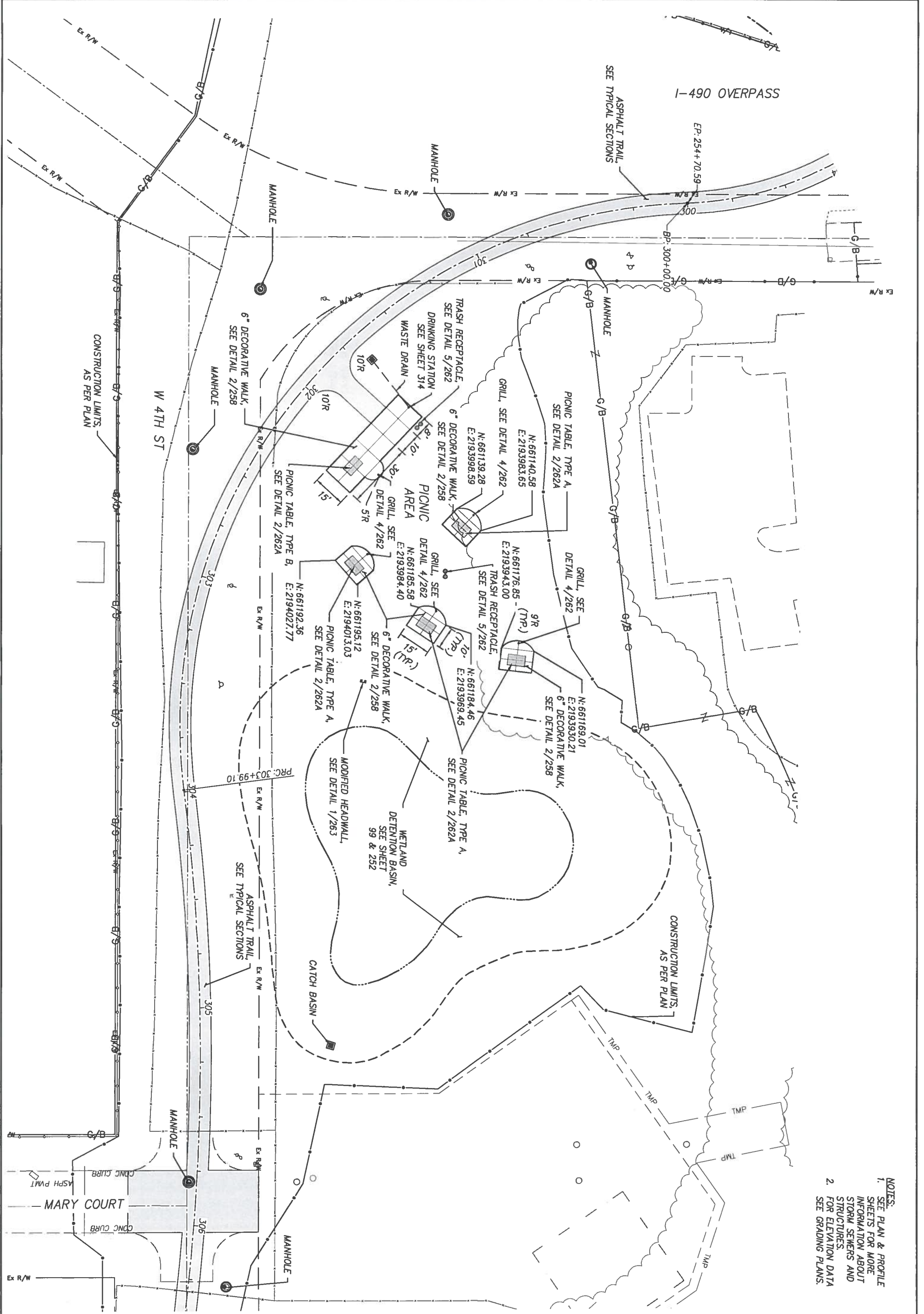


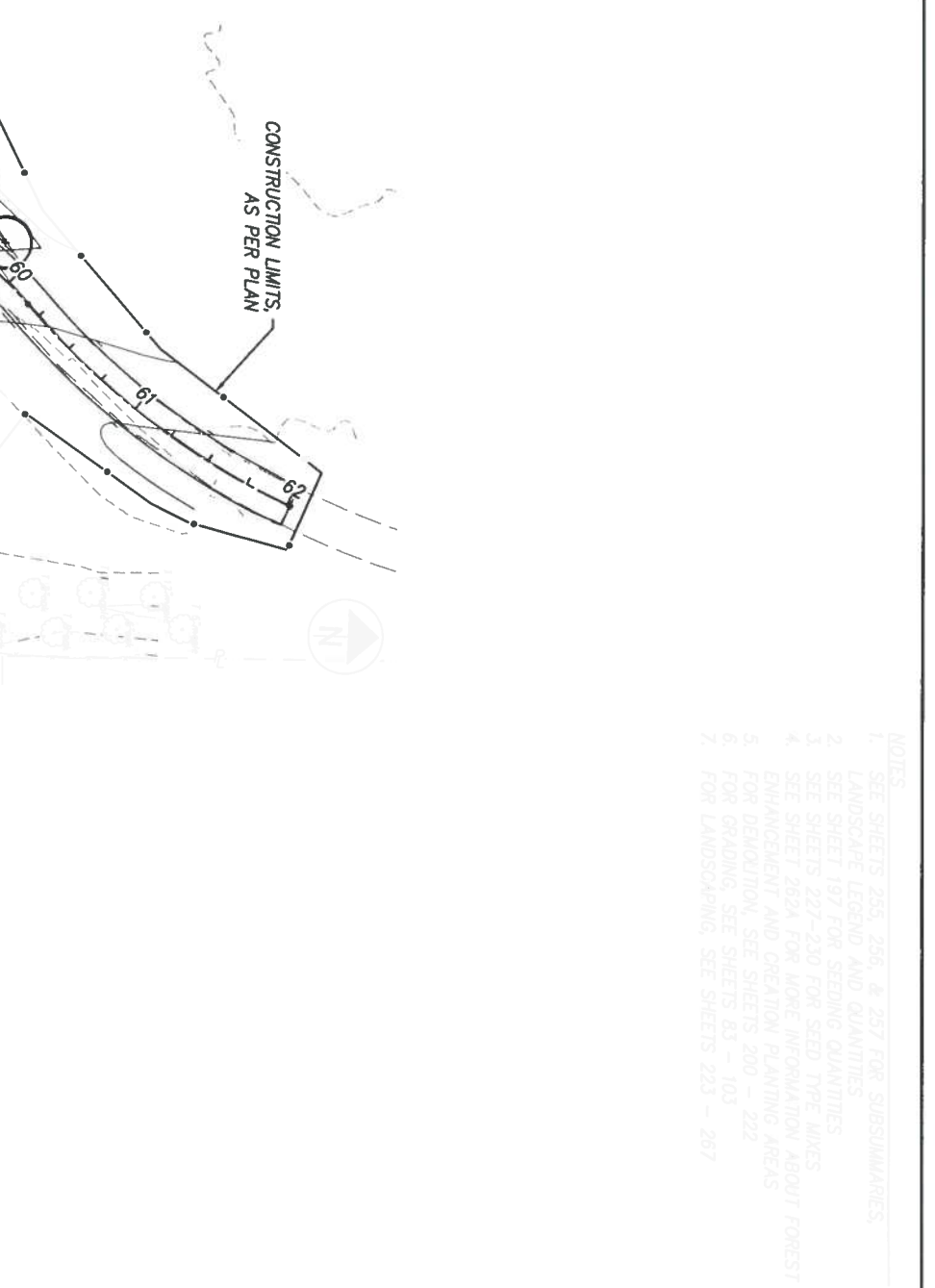
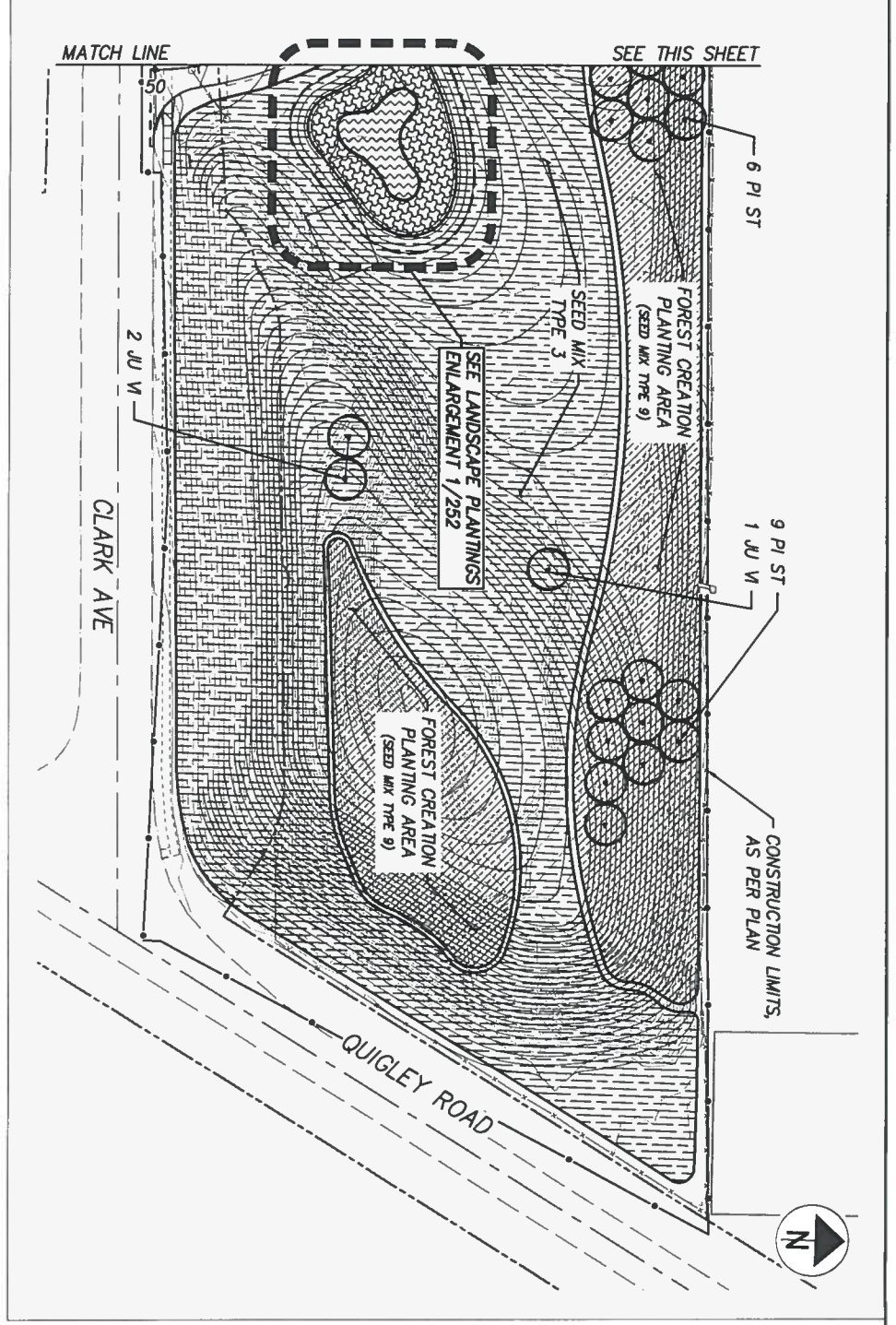
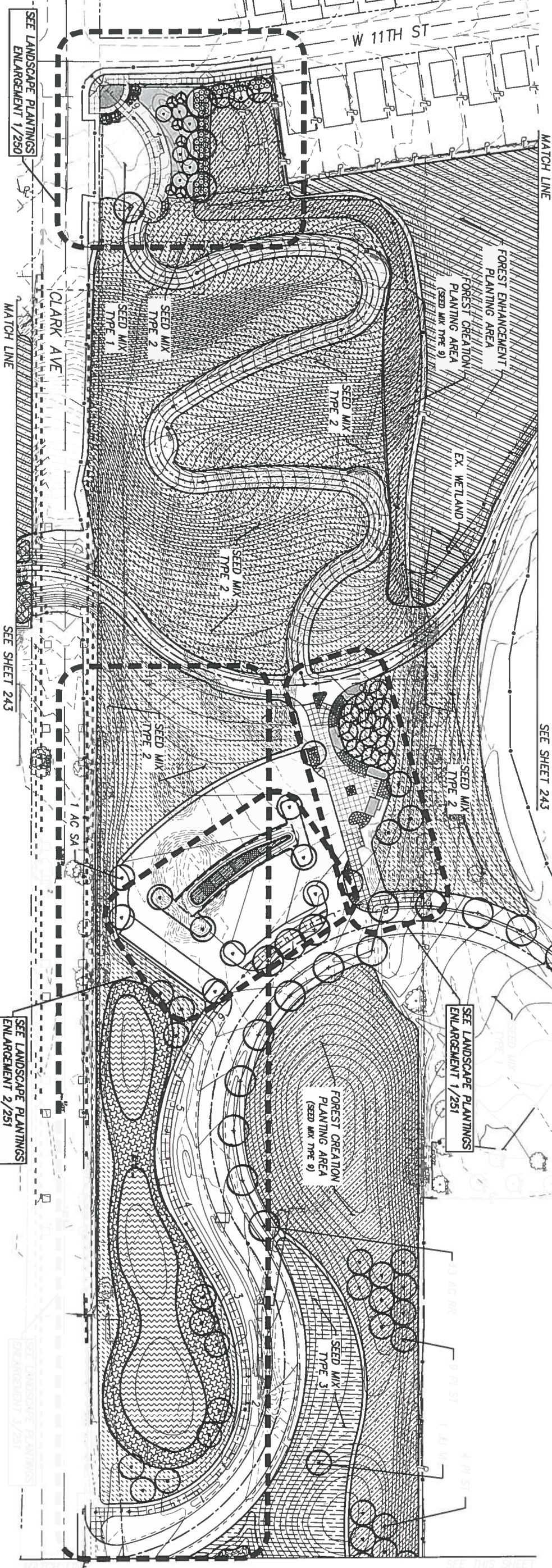
CLARK AVENUE OVERPASS

CLARK FIELDS DRIVE

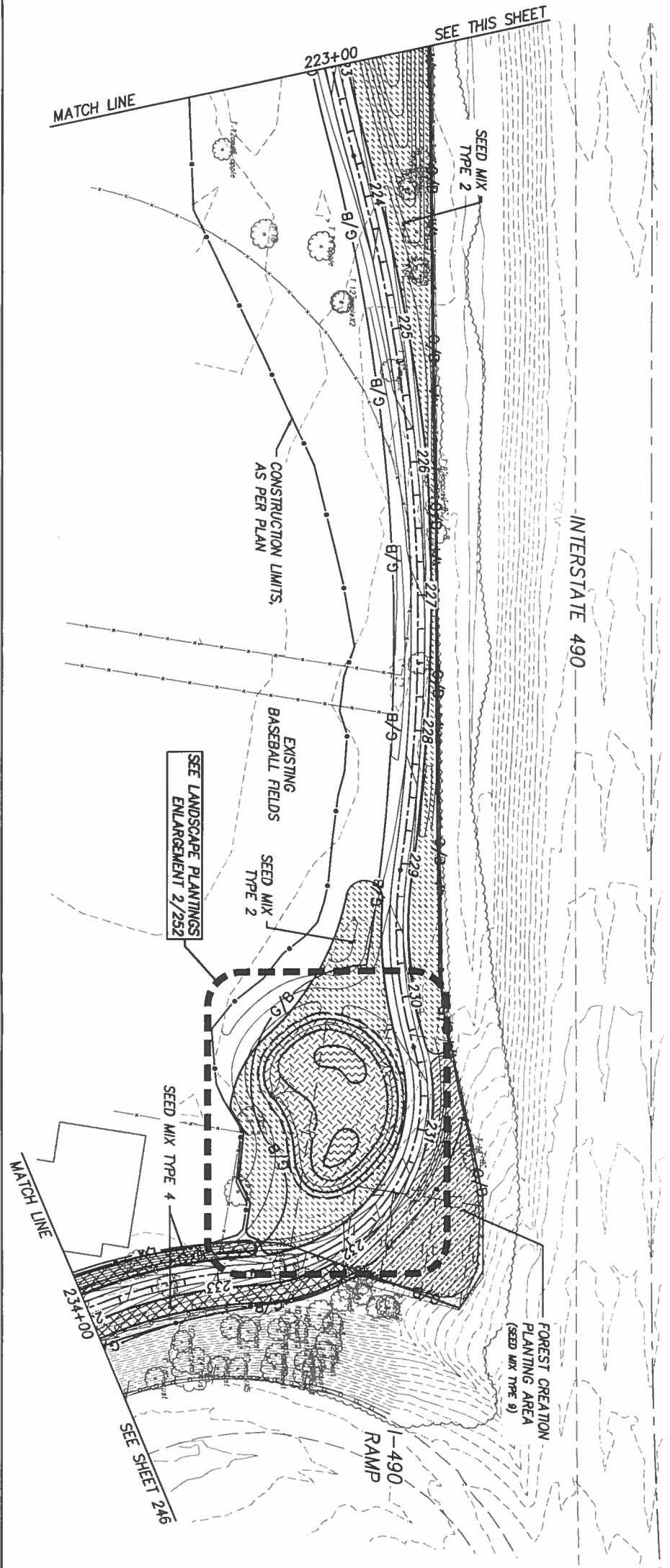
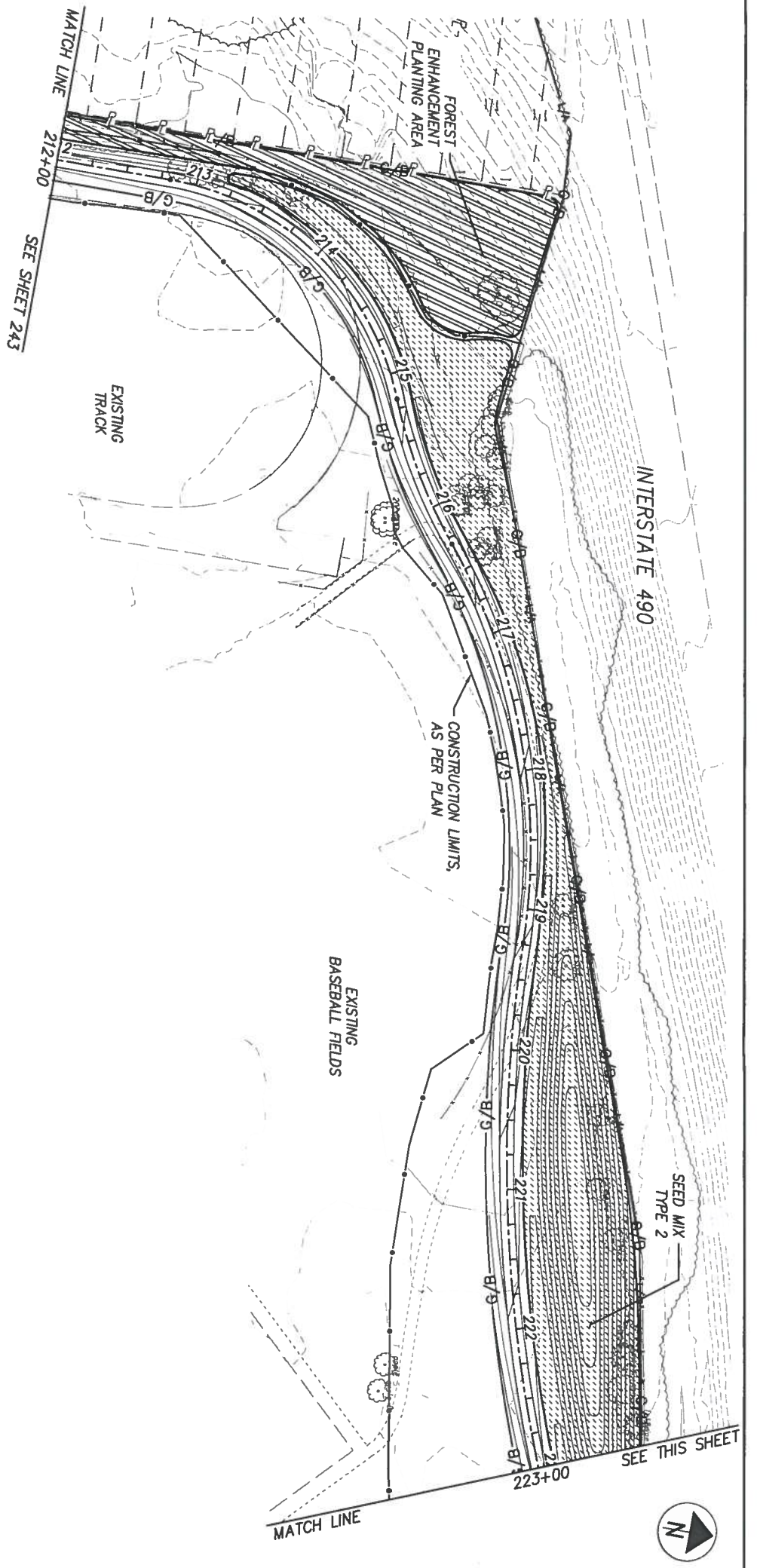
CLARK AVENUE

NOTES:  
 1. SEE SHEET 242 FOR SIDEWALK CENTERLINE SEGMENT DATA TABLES.  
 2. SEE PLAN & PROFILE SHEETS FOR MORE INFORMATION ABOUT STORM SEWERS AND STRUCTURES.  
 3. SEE ELEVATION DATA FOR GRADING PLANS.

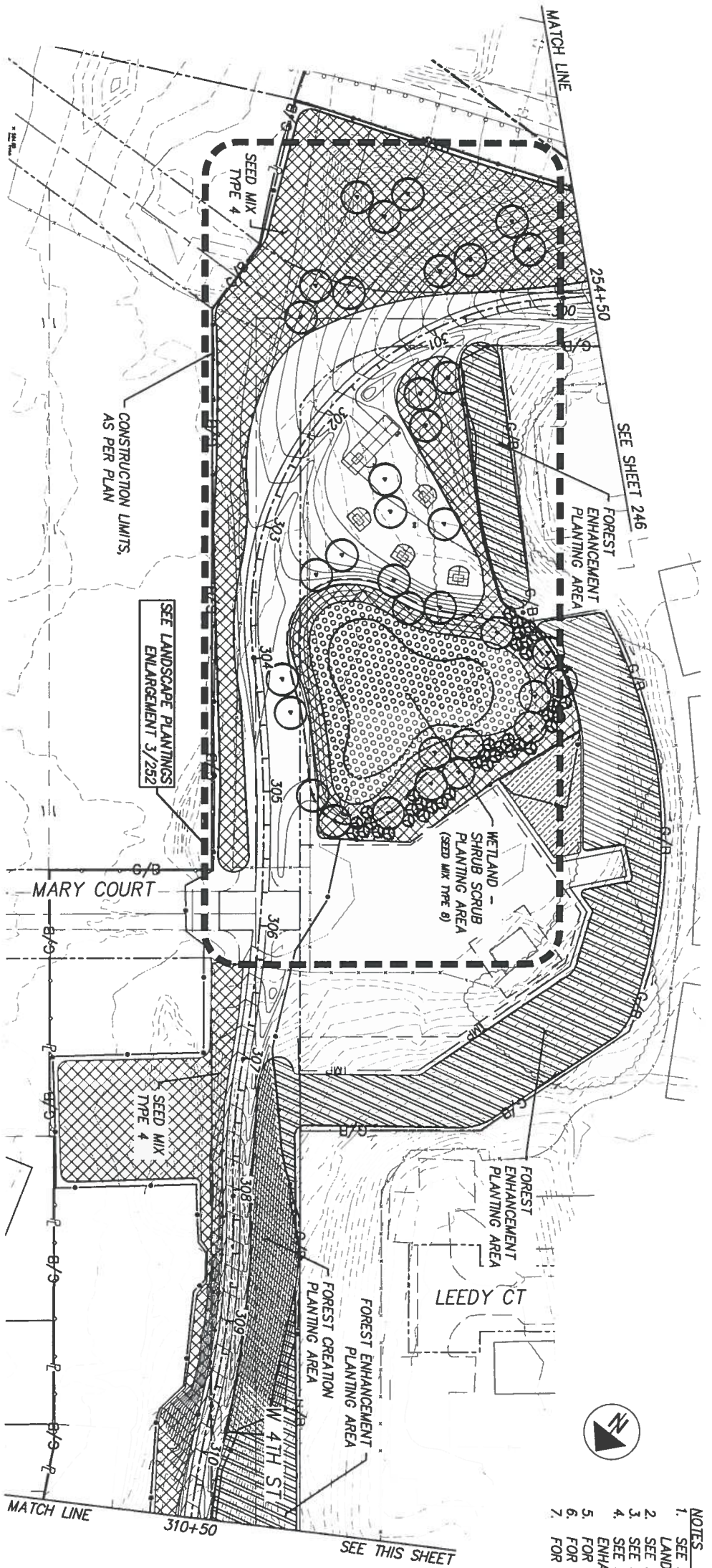
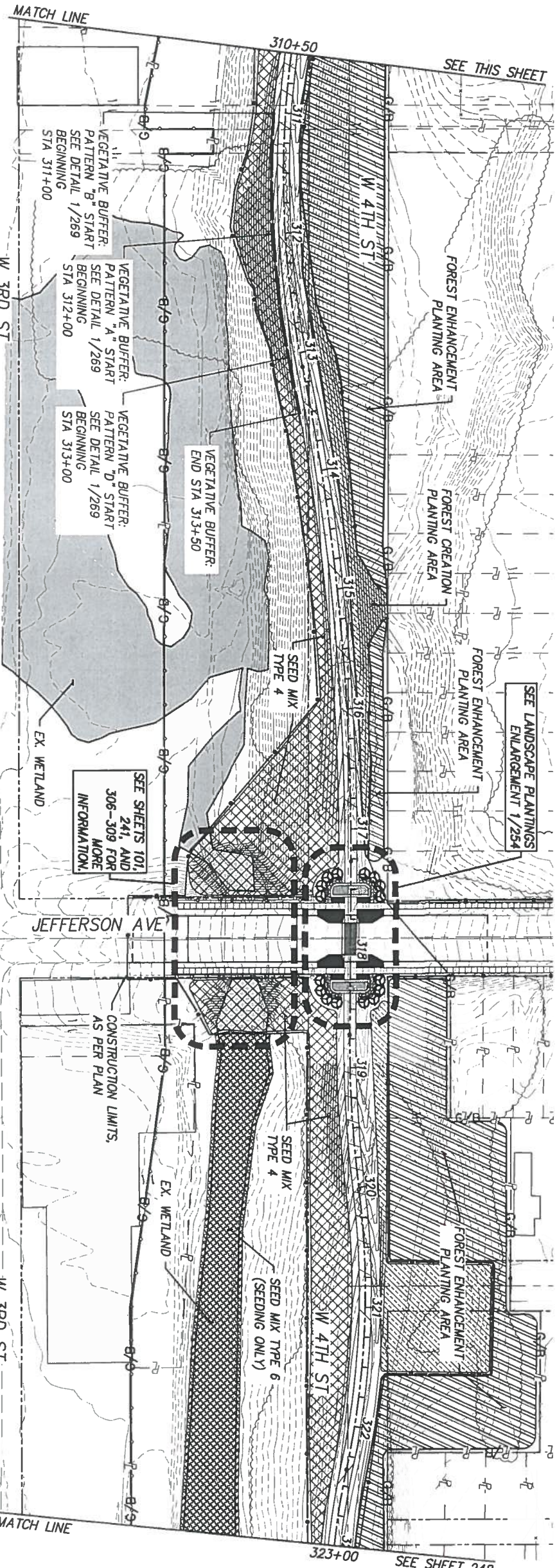




- NOTES:
1. SEE SHEETS 243, 244, & 245 FOR DIMENSIONS.
  2. SEE SHEET 243 FOR SEEDING QUANTITIES.
  3. SEE SHEETS 244 AND 245 FOR SEED TYPE AREAS.
  4. SEE SHEET 244 FOR MORE INFORMATION ABOUT FOREST ENHANCEMENT AND CREATION PLANTING AREAS.
  5. FOR DETAILING, SEE SHEETS 249 - 252.
  6. FOR BRIDGING, SEE SHEETS 83 - 103.
  7. FOR LANDSCAPING, SEE SHEETS 223 - 247.



- NOTES:
1. SEE SHEETS 255, 256, & 257 FOR SUBSUMMARIES, LANDSCAPE LEGEND AND QUANTITIES
  2. SEE SHEET 197 FOR SEEDING QUANTITIES
  3. SEE SHEETS 227-230 FOR SEED TYPE MIXES
  4. SEE SHEET 262A FOR MORE INFORMATION ABOUT FOREST ENHANCEMENT AND CREATION PLANTING AREAS
  5. FOR DEMOLITION, SEE SHEETS 200 - 222
  6. FOR GRADING, SEE SHEETS 83 - 103
  7. FOR LANDSCAPING, SEE SHEETS 223 - 267

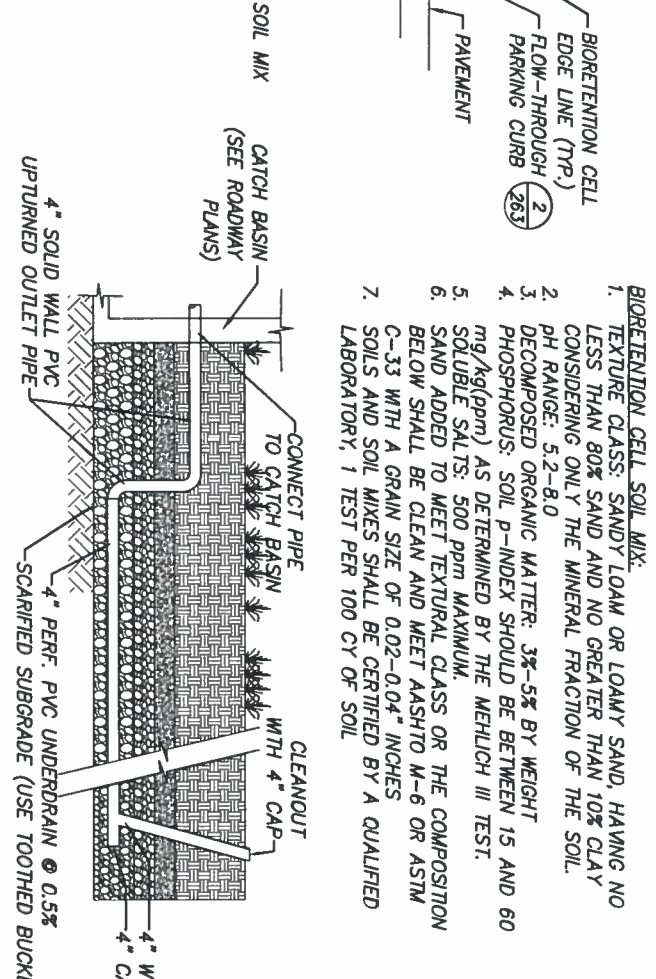
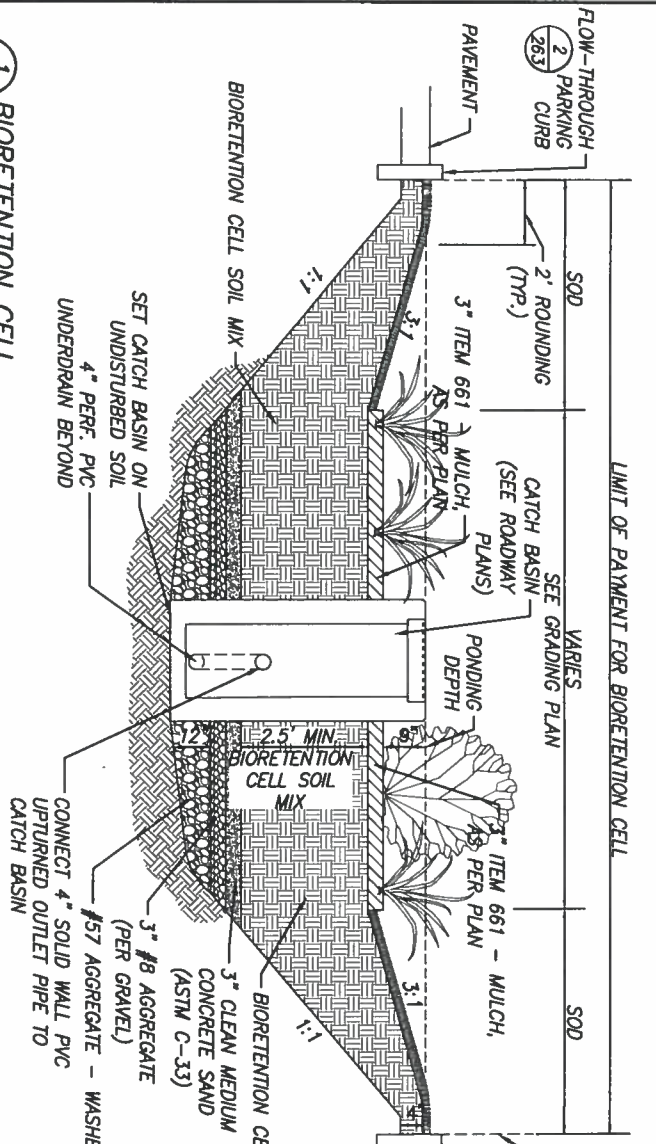


- NOTES
1. SEE SHEETS 255, 256, & 257 FOR SUBSUMMARIES.
  2. LANDSCAPE LEGEND AND QUANTITIES.
  3. SEE SHEET 197 FOR SEEDING QUANTITIES.
  4. SEE SHEETS 227-230 FOR SEED TYPE MIXES.
  5. SEE SHEET 262A FOR MORE INFORMATION ABOUT FOREST ENHANCEMENT AND CREATION PLANTING AREAS.
  6. FOR DEMOLITION, SEE SHEETS 200 - 222.
  7. FOR GRADING, SEE SHEETS 83 - 103.
  8. FOR LANDSCAPING, SEE SHEETS 223 - 267.







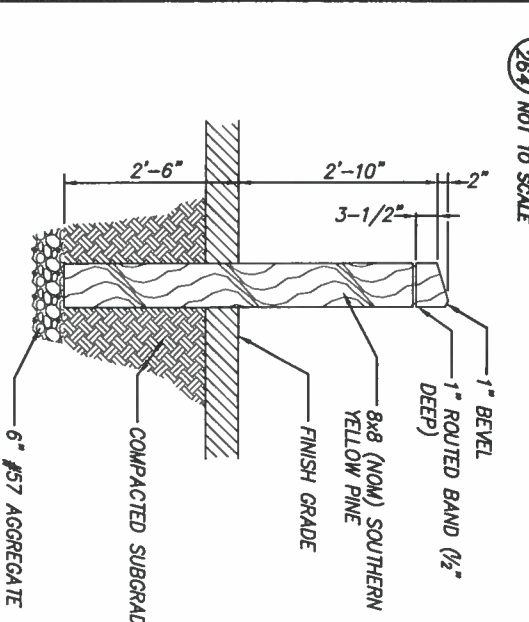


**BIORETENTION CELL SOIL MIX:**

1. TEXTURE CLASS: SANDY LOAM OR LOAMY SAND, HAVING NO LESS THAN 80% SAND AND NO GREATER THAN 10% CLAY CONSIDERING ONLY THE MINERAL FRACTION OF THE SOIL.
2. PH RANGE: 5.2-8.0
3. DECOMPOSED ORGANIC MATTER: 3%-5% BY WEIGHT
4. PHOSPHORUS: SOIL P-INDEX SHOULD BE BETWEEN 15 AND 60 mg/kg(ppm) AS DETERMINED BY THE MEHLICH III TEST.
5. SOLUBLE SALTS: 500 ppm MAXIMUM.
6. SAND ADDED TO MEET TEXTURAL CLASS OR THE COMPOSITION BELOW SHALL BE CLEAN AND MEET ASTM M-6 OR ASTM C-33 WITH A GRAIN SIZE OF 0.02-0.04" INCHES
7. SOILS AND SOIL MIXES SHALL BE CERTIFIED BY A QUALIFIED LABORATORY, 1 TEST PER 100 CY OF SOIL

**NOTES:**

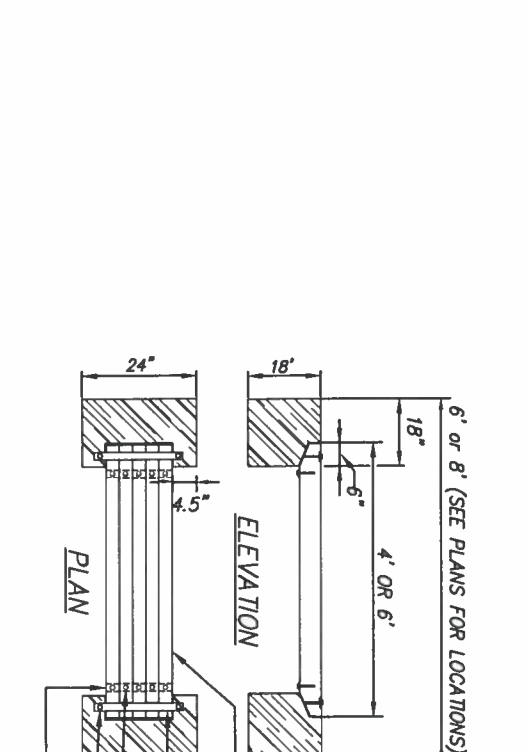
1. ALL WORK ON THIS DETAIL, INCLUDING BIORETENTION CELL SOIL MIX LAYER, SOD, AGGREGATE LAYERS, AND BIORETENTION UNDERDRAINS, SHALL BE PAID UNDER ITEM 203 - SPECIAL - BIORETENTION CELL, UNLESS OTHERWISE NOTED.
2. SEE SHEETS 251 & 255 FOR BIORETENTION CELL PLANTS.
3. FOR GRADING PLANS, SEE SHEETS 83-103.
4. FOR UTILITY INFORMATION, SEE SHEETS 68-69.
5. PIPES FOR UPRTURNED UNDERDRAIN TO BE SOLID WALL PIPE. ENSURE INVERT IS 18" BELOW BIORETENTION CELL SURFACE. CONTRACTOR SHALL USE TOOTHED BUCKET INSTEAD OF SMOOTH BUCKET TO EXCAVATE THE BOTTOM OF BIORETENTION CELL (SCARIFICATION).
6. FLOW-THROUGH PARKING CURB SHALL BE PAID UNDER ITEM 609 - CURB, MISC.; FLOW-THROUGH PARKING CURB, RECYCLED CONCRETE AGGREGATE OR SLAG ARE NOT ACCEPTABLE.
7. FURNISH AND PLACE SOD PER ITEM 660, EXCEPT DO NOT PLACE TOPSOIL OR ANY MATERIAL OTHER THAN BIORETENTION CELL SOIL MIX TO EVEN OR LEVEL SUBSURFACE PRIOR TO SOD PLACEMENT. WHEN TAMPING SOD, DO NOT TO COMPACT BIORETENTION CELL SOIL MIX. PAYMENT FOR SOD SHALL BE PAID UNDER ITEM SPECIAL - BIORETENTION CELL.



**WOOD BOLLARD**

**NOTES:**

1. ALL TIMBERS SHALL BE AS SPECIFIED IN ODOT 711.26. TIMBERS SHALL BE TREATED #1 SOUTHERN YELLOW PINE TREATED WITH 0.15#/CF OF CA IN ACCORDANCE WITH THE AMERICAN WOOD PRESERVERS ASSOCIATION, AND DRESSED S4S IN ACCORDANCE WITH THE SOUTHERN FOREST PRODUCTS ASSOCIATION OR WESTERN WOOD PRODUCTS ASSOCIATION. CONTRACTOR SHALL APPLY TWO (2) COATS OF SOLID EXTERIOR WOOD STAIN FOLLOWING THE MANUFACTURER'S REQUIREMENTS FOR APPLICATION TO ALL TIMBER SURFACES. ENGINEER WILL SELECT THE COLOR FROM SAMPLES PROVIDED BY THE CONTRACTOR. ACCEPTABLE MANUFACTURERS: BENJAMIN MOORE, ICI DULUX PAINTS, SHERWIN WILLIAMS, OR APPROVED EQUAL.
2. CONTRACTOR SHALL APPLY TWO (2) COATS OF SOLID EXTERIOR WOOD STAIN FOLLOWING THE MANUFACTURER'S REQUIREMENTS FOR APPLICATION TO ALL TIMBER SURFACES. ENGINEER WILL SELECT THE COLOR FROM SAMPLES PROVIDED BY THE CONTRACTOR. ACCEPTABLE MANUFACTURERS: BENJAMIN MOORE, ICI DULUX PAINTS, SHERWIN WILLIAMS, OR APPROVED EQUAL.



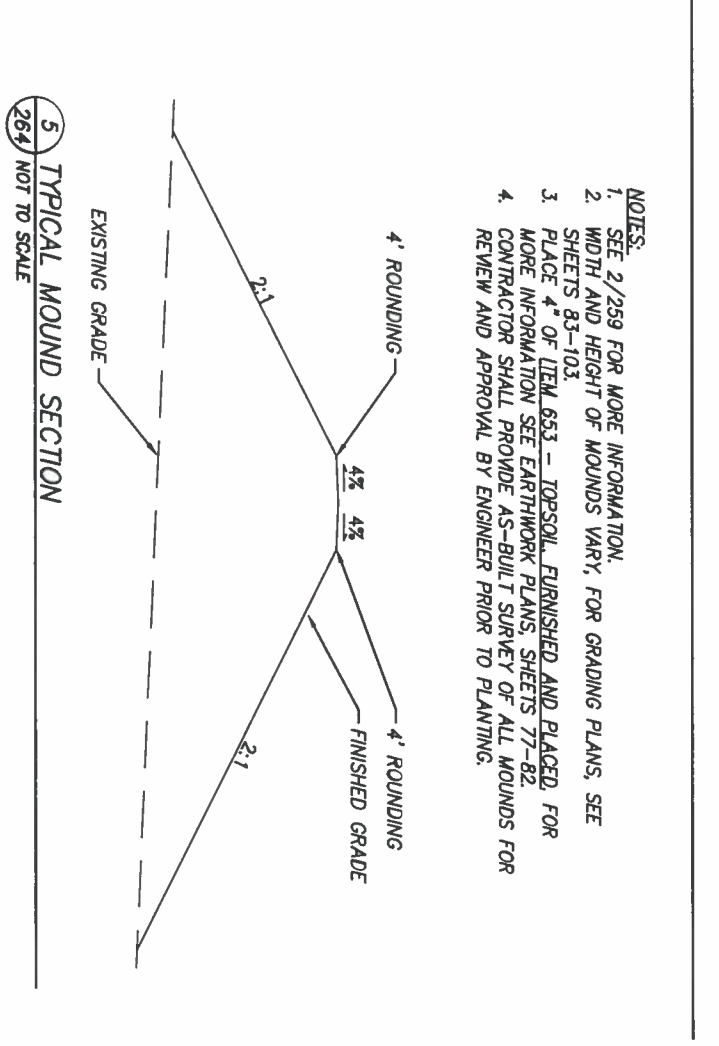
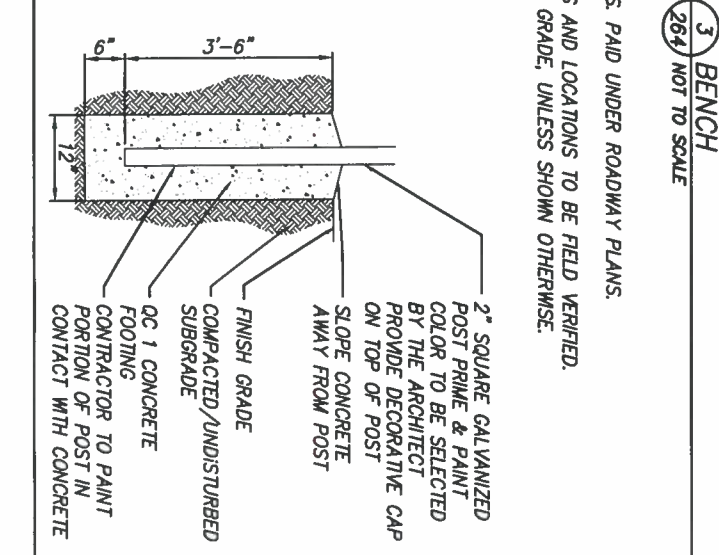
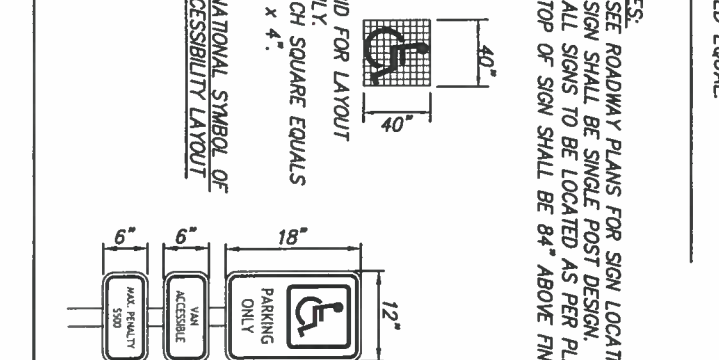
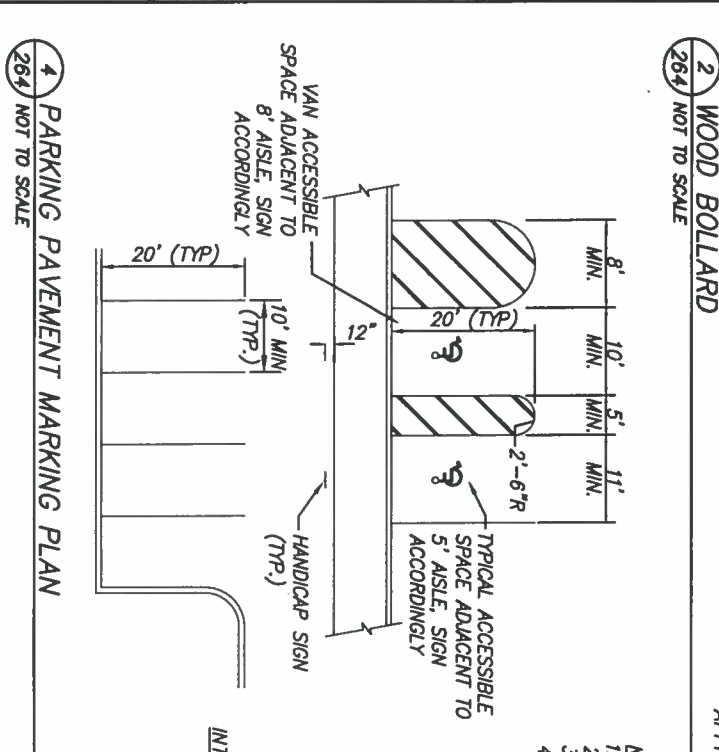
**BENCH**

**NOTES:**

1. SEE 2/259 FOR MORE INFORMATION.
2. WIDTH AND HEIGHT OF MOUNDS VARY, FOR GRADING PLANS, SEE SHEETS 83-103.
3. PLACE 4" OF ITEM 653 - TOPSOIL, FURNISHED AND PLACED, FOR MORE INFORMATION SEE EARTHWORK PLANS SHEETS 77-82.
4. CONTRACTOR SHALL PROVIDE AS-BUILT SURVEY OF ALL MOUNDS FOR REVIEW AND APPROVAL BY ENGINEER PRIOR TO PLANTING.

**NOTES:**

1. ALL WORK ON THIS DETAIL, INCLUDING ASSEMBLY, IPE TIMBERS, PAINT, STEEL STRAPS, EPOXY, PRECAST CONCRETE BLOCKS, AND HARDWARE, SHALL BE PAID UNDER ITEM SPECIAL - MISC.: BENCH, 6' OR BENCH 8', UNLESS OTHERWISE NOTED.
2. 5,000 PSI PRECAST CONCRETE BLOCK
3. 3/16" THICK x 2" WIDE STEEL STRAP
4. 1 1/2" x 2" LONG 316 SS LAG SCREW
5. 1/2" x 3" LONG 316 SS LAG SCREW (EPOXY SET LAG SCREWS INTO CONC. BLOCK)
6. 3/16" THICK x 2" WIDE STEEL STRAP
7. PAINTED BLACK (UNDER TIMBERS)



## Towpath Trail – Stage 3

NEORSD Grant Supplemental Information

Michael Baker International

January 13, 2016

The Towpath Trail, Stage 3, project encompasses over 40 acres of urban land. Modern stormwater quality and quantity treatment is provided to the overall benefit of the region's water quality.

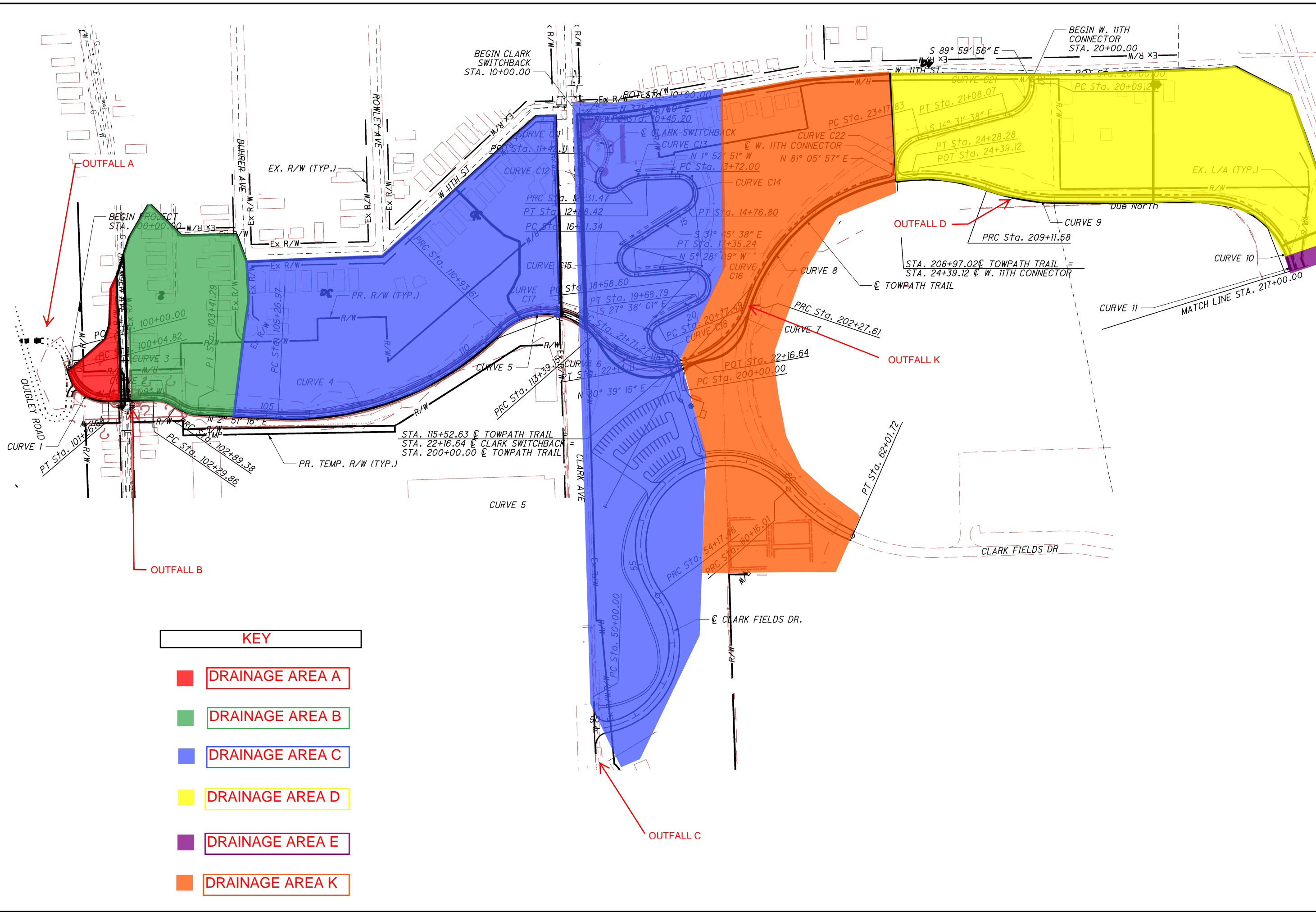
The majority of the project area drains into combined sewers, both in the existing and proposed conditions. Separating the project runoff and constructing new storm-only sewers is unfortunately infeasible for this landlocked project. However, the project provides a significant benefit to NEORSD's combined sewer system through two primary improvements:

1. Overall improvement to project-wide runoff coefficient. The project's new impervious area (trail paving, parking lot, plaza areas, etc.) is offset by the restoration of the former Osborne asphalt plant (approximately half of Drainage Area C in the attached exhibits) to meadow, forest, and wetland. See attached exhibits for additional details.
2. Three proposed BMP systems (a combination of wetland and detention ponds) perform substantial peak flow reduction to the combined sewer system. See the CSO Analysis table on the final page of the attached exhibit for a summary. Given the infeasibility to separate from the combined sewer system, the project reduces 25-year storm runoff volume by approximately 8700 cubic feet (65,000 gallons). A combined (all affected CSOs) 10-year storm peak flow reduction of 43 CFS is provided by the project. This positively affects NEORSD's CSO system by spreading peak flows over longer periods of time, allowing more runoff to reach the water treatment plants, reducing the project area's contribution to CSO overflows.

The EPA Stormwater Calculator was used to prepare the data included with the Towpath Trail, Stage 3, NEORSD grant application. This calculator provides an excellent baseline for comparison between projects. However, the calculator did not appear to take into account the substantial detention (and therefore, peak spreading) benefits of the project.

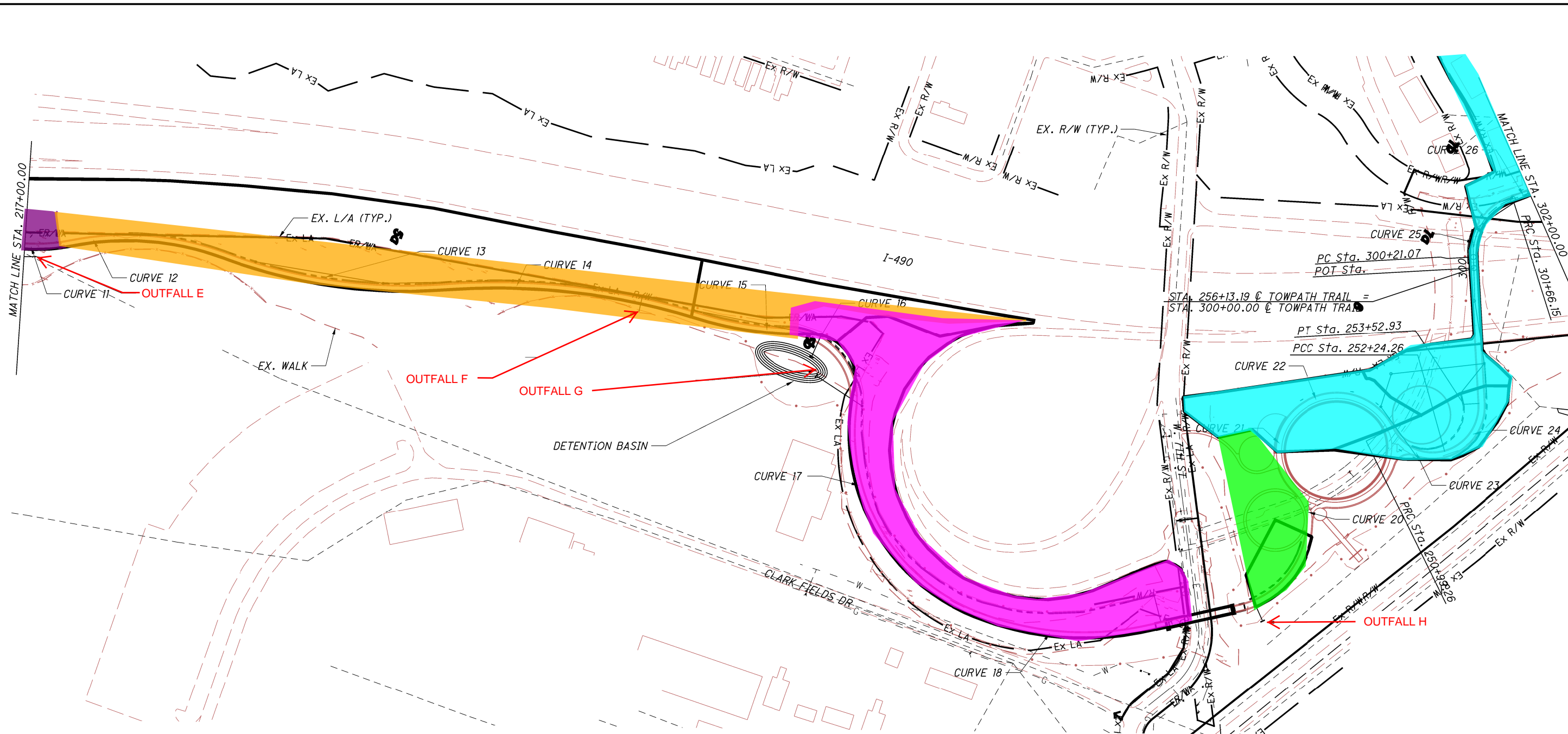
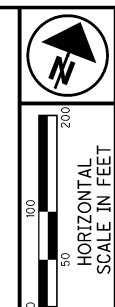
Please see the attached exhibits for the project-wide runoff calculations. We suggest that these calculations may provide a more complete summary of the project benefits.






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KEY	
<span style="color: red;">■</span>	DRAINAGE AREA A
<span style="color: green;">■</span>	DRAINAGE AREA B
<span style="color: blue;">■</span>	DRAINAGE AREA C
<span style="color: yellow;">■</span>	DRAINAGE AREA D
<span style="color: purple;">■</span>	DRAINAGE AREA E
<span style="color: orange;">■</span>	DRAINAGE AREA K

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KEY	
	DRAINAGE AREA E
	DRAINAGE AREA F
	DRAINAGE AREA G
	DRAINAGE AREA H
	DRAINAGE AREA I

**PROPOSED DRAINAGE AREAS**

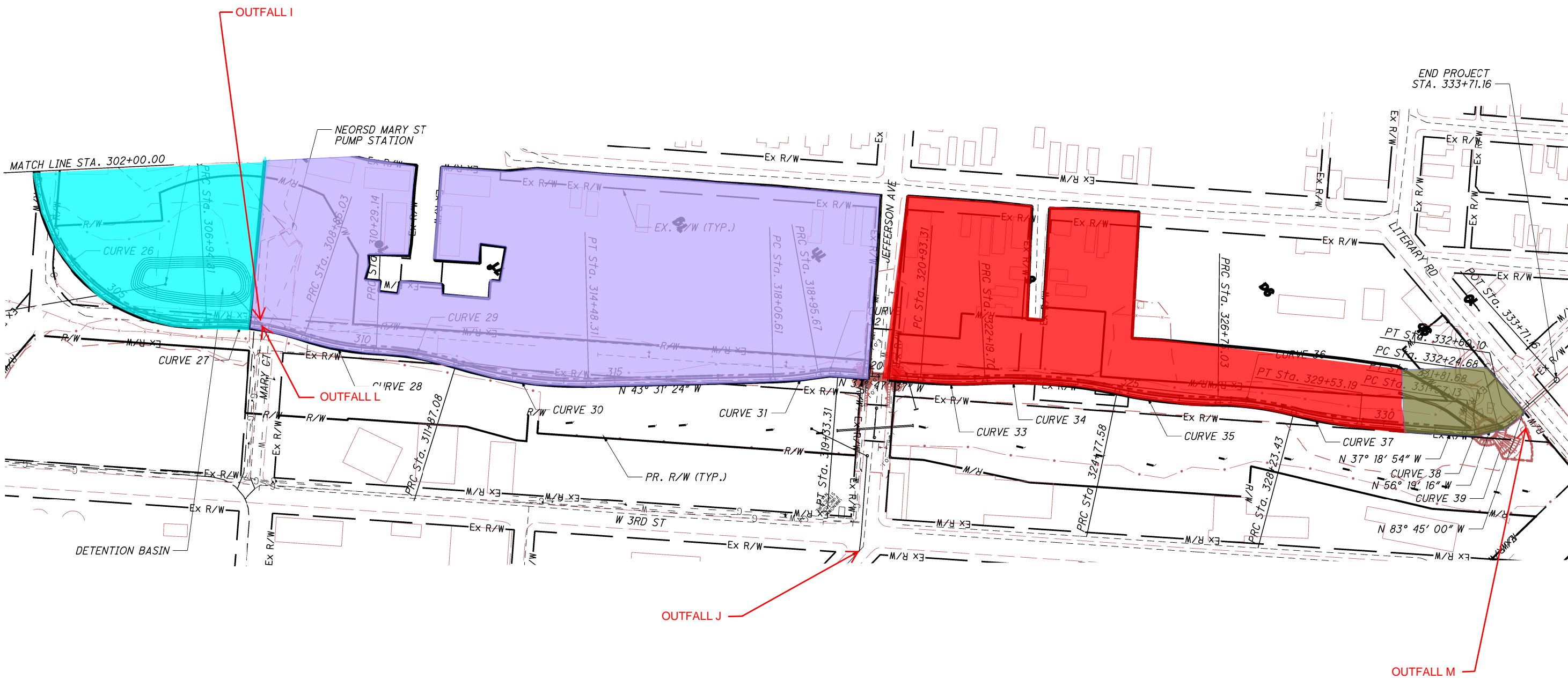
**CUY-TOWPATH TRAIL, STAGE 3**

GB102  
TOTAL

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0 50 100 200  
HORIZONTAL  
SCALE IN FEET



KEY	
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<span style="display:inline-block; width:15px; height:15px; background-color:lightcoral; border:1px solid black;"></span>	DRAINAGE AREA J
<span style="display:inline-block; width:15px; height:15px; background-color:lightpurple; border:1px solid black;"></span>	DRAINAGE AREA L
<span style="display:inline-block; width:15px; height:15px; background-color:lightgreen; border:1px solid black;"></span>	DRAINAGE AREA M

PROPOSED DRAINAGE AREAS

CUY-TOWPATH TRAIL, STAGE 3

GB103  
TOTAL

Table 1: Pre-construction vs. Post-construction Hydrologic Analysis (NRCS Method)

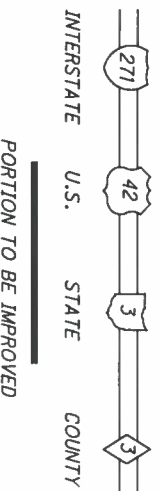
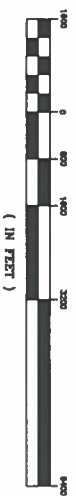
Drainage Area	Existing CSO Sewershed	Proposed CSO Sewershed	Upstream/Downstream Of Regulator	Existing Drainage Area (acres)	Proposed Drainage Area (acres)	Curve Number - Existing, CN	Curve Number - Proposed CN	Existing 25 yr Runoff Volume (CF)	Proposed 25 yr Runoff Volume (CF)	Change in Runoff Volume (25 yr) (CF)	Percent Change in Runoff Volume	Existing Time of Conc. (Tc) (mins)	Proposed time of conc. (Tc) (mins)	Peak Flow, Q (cfs)									% WQv Treated			
														Rainfall Depth (in)			Existing			Proposed-Via Proposed Detention Basin				Proposed-No Detention Basin		
														5 yr	10 yr	25 yr	5 yr	10 yr	25 yr	5 yr	10 yr	25 yr		5 yr	10 yr	25 yr
Drainage Area A: Ex. Storm system at Quigley Avenue underpass	86	86	Up	0.35	0.35	79	82	2,615	2,920	305	12%	5	5	2.92	3.4	4.09	0.6	0.8	1.1				0.7	0.9	1.2	0
Drainage Area B: Ex. storm system at Holmden Avenue	86	86	Up	2.65	2.65	83	83	22,785	22,785	0	0%	6.1	5	2.92	3.4	4.09	5.4	7.0	9.3				5.4	7.0	9.3	0
Drainage Area C: Constructed wetland to Quigley Avenue sewer	86	86	Up	19.70	19.70	84	80	175,285	151,765	-23,520	-13%	15.7	305	2.92	3.4	4.09	34.5	44.5	58.9	3.6	8.0	19.3				20
Drainage Area D: Ex. Clark Fields storm system	86	86	Up	6.75	6.75	77	78	46,175	48,135	1,960	4%	5	5	2.92	3.4	4.09	10.0	13.7	19.1				10.6	14.4	19.9	0
Drainage Area E: Ex. Clark Fields storm system	87	87	Down	0.40	0.40	76	79	2,615	2,965	350	13%	5	5	2.92	3.4	4.09	0.6	0.8	1.1				0.7	0.9	1.2	100
Drainage Area F: Ex. Clark Fields storm system	86	86	Up	1.20	1.20	76	83	7,885	10,325	2,440	31%	5	5	2.92	3.4	4.09	1.7	2.3	3.3				2.5	3.2	4.3	100
Drainage Area G: Clark Fields detention pond to ex. storm system	86	86	Up	2.35	2.35	76	78	15,465	16,770	1,305	8%	5	244	2.92	3.4	4.09	3.3	4.5	6.4	0.2	0.5	1.9				100
Drainage Area H: Slope outlet/overland flow to Quigley Ave. sewer	86	86	Up	0.95	0.95	76	77	6,275	6,490	215	3%	5	5	2.92	3.4	4.09	1.3	1.8	2.6				1.4	1.9	2.7	0
Drainage Area I: Mary Court detention pond to CSO-86 outfall	86	86	Up	6.20	6.20	79	81	45,915	46,610	695	2%	10.9	244	2.92	3.4	4.09	6.6	12.4	17.2	0.1	0.15	0.2				100
Drainage Area J: Ex. Jefferson Avenue sewer	82	240	Up	5.10	5.10	82	84	42,255	45,480	3,225	8%	11.3	5	2.92	3.4	4.09	8.8	11.6	15.6				10.9	14.1	18.8	0
Drainage Area K: Ex. Clark Fields storm system	86	86	Up	3.25	3.25	78	79	23,175	24,090	915	4%	5	5	2.92	3.4	4.09	5.1	6.9	9.6				5.3	7.1	9.9	100
Drainage Area L: Proposed storm to CSO-86	86	86	Up	10.20	10.20	81	82	81,460	84,640	3,180	4%	12.5	5	2.92	3.4	4.09	16.1	21.3	29.0				19.9	25.9	34.8	0
Drainage Area M: Slope outlet to CSO-82 outfall	82	82	Up	0.70	0.70	76	79	4,620	5,185	565	12%	5	5	2.92	3.4	4.09	1.0	1.4	1.9				1.2	1.6	2.1	0

CSO ANALYSIS	Net change in volume to CSO-82 (25 yr) =		-41,690	CF
	Net change in volume to CSO-86 (25 yr) =		-12,505	CF
	Net change in volume to CSO-87 (25 yr) =		350	CF *
	Net change in volume to CSO-240 (25yr) =		45,480	CF
	Net change in peak flow to CSO-82 (10 yr) =		-11.4	CFS
	Net change in peak flow to CSO-86 (10 yr) =		-46	CFS
Net change in peak flow to CSO-87 (10 yr) =		0.1	CFS *	
Net change in peak flow to CSO-240 (10 yr) =		14	CFS	

\* This flow enters the CSO-87 outfall downstream of any regulators.



**LOCATION PLAN**



**DESIGN DESIGNATION**

CURRENT A.D.T. N/A  
 DESIGN YEAR N/A  
 D.H.V. N/A  
 D. N/A  
 T. N/A  
 DESIGN SPEED 20 M.P.H. (TOWPATH TRAIL)  
 14 M.P.H. (CONNECTOR TRAIL)  
 25 M.P.H. (STREETS)  
 NONE  
 DESIGN EXCEPTION

**UNDERGROUND UTILITIES**

CONTACT BOTH SERVICES  
 CALL TWO WORKING DAYS  
 BEFORE YOU DIG  
 CALL 1-800-362-2164  
 (TOLL FREE)  
 OHIO UTILITIES PROTECTION SERVICE  
 NON-MEMBERS  
 MUST BE CALLED DIRECTLY  
 OIL & GAS PRODUCERS PROTECTIVE  
 SERVICE CALL: 1-800-925-0988

PLAN PREPARED BY:

CUYAHOGA COUNTY

# CUY-TOWPATH TRAIL, STAGE 3

TOWPATH TRAIL  
 FROM STEELYARD COMMONS TO LITERARY RD

DECEMBER 8, 2015  
 FINAL DESIGN  
 REVISED SUBMITTAL

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		JEFFERSON AVENUE BRIDGE			310 - 337A
		STRUCTURES (OVERLOOK STRUCTURES)			

NOT USED: 23, 159, 195

ENGINEERS SEAL:	ENGINEERS SEAL:	ENGINEERS SEAL:	ENGINEERS SEAL:
MICHAEL BAKER INTERNATIONAL	MICHAEL BAKER INTERNATIONAL	ENVIRONMENTAL DESIGN GROUP	BRANDSTETTER CARROLL, INC.
ROADWAY TRAIL PLANS	STRUCTURAL PLANS	LANDSCAPE PLANS	ARCHITECTURAL PLANS
SIGNED: _____	SIGNED: _____	SIGNED: _____	SIGNED: _____
DATE: _____	DATE: _____	DATE: _____	DATE: _____

NUMBER	DATE	NUMBER	DATE
CR-1	04-14-2008	164-ME	07-08-2008
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CD-1	04-14-2008	A-605	06-21-2012
MH-1	07-08-2008	A-695	10-01-1997
CB-1	07-08-2008	MB-1C	01-15-1998
PR-1	07-08-2008	146-ME	07-08-2008

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836	01-18-2013	1055	01-18-2013
840	07-17-2015	1073	04-16-2010
863	10-17-2014	1083	10-17-2014
1035	01-18-2013		

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840	07-17-2015	1073	04-16-2010
863	10-17-2014	1083	10-17-2014
1035	01-18-2013		

NUMBER	DATE	NUMBER	DATE
832	01-17-2014	1041	01-18-2013
836	01-18-2013	1055	01-18-2013
840	07-17-2015	1073	04-16-2010
863	10-17-2014	1083	10-17-2014
1035	01-18-2013		

NUMBER	DATE	NUMBER	DATE
832	01-17-2014	1041	01-18-2013
836	01-18-2013	1055	01-18-2013
840	07-17-2015	1073	04-16-2010
863	10-17-2014	1083	10-17-2014
1035	01-18-2013		

NUMBER	DATE	NUMBER	DATE
832	01-17-2014	1041	01-18-2013
836	01-18-2013	1055	01-18-2013
840	07-17-2015	1073	04-16-2010
863	10-17-2014	1083	10-17-2014
1035	01-18-2013		

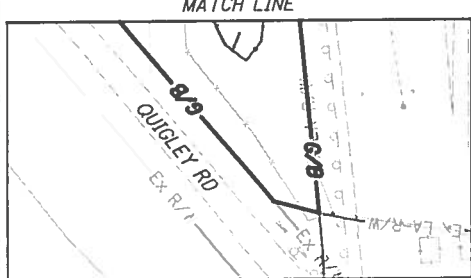
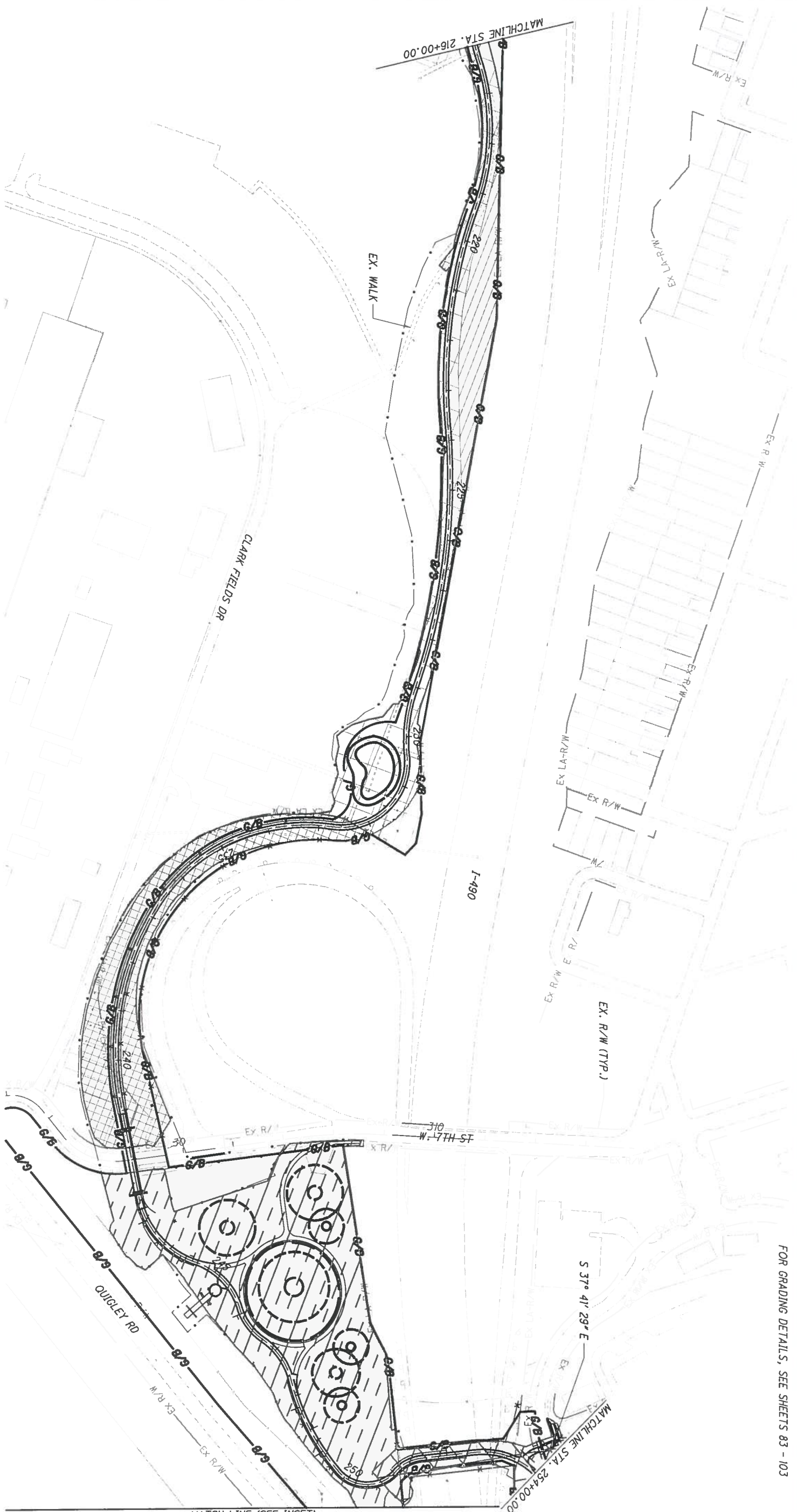
NUMBER	DATE	NUMBER	DATE
832	01-17-2014	1041	01-18-2013
836	01-18-2013	1055	01-18-2013
840	07-17-2015	1073	04-16-2010
863	10-17-2014	1083	10-17-2014
1035	01-18-2013		

NUMBER	DATE	NUMBER	DATE
832	01-17-2014	1041	01



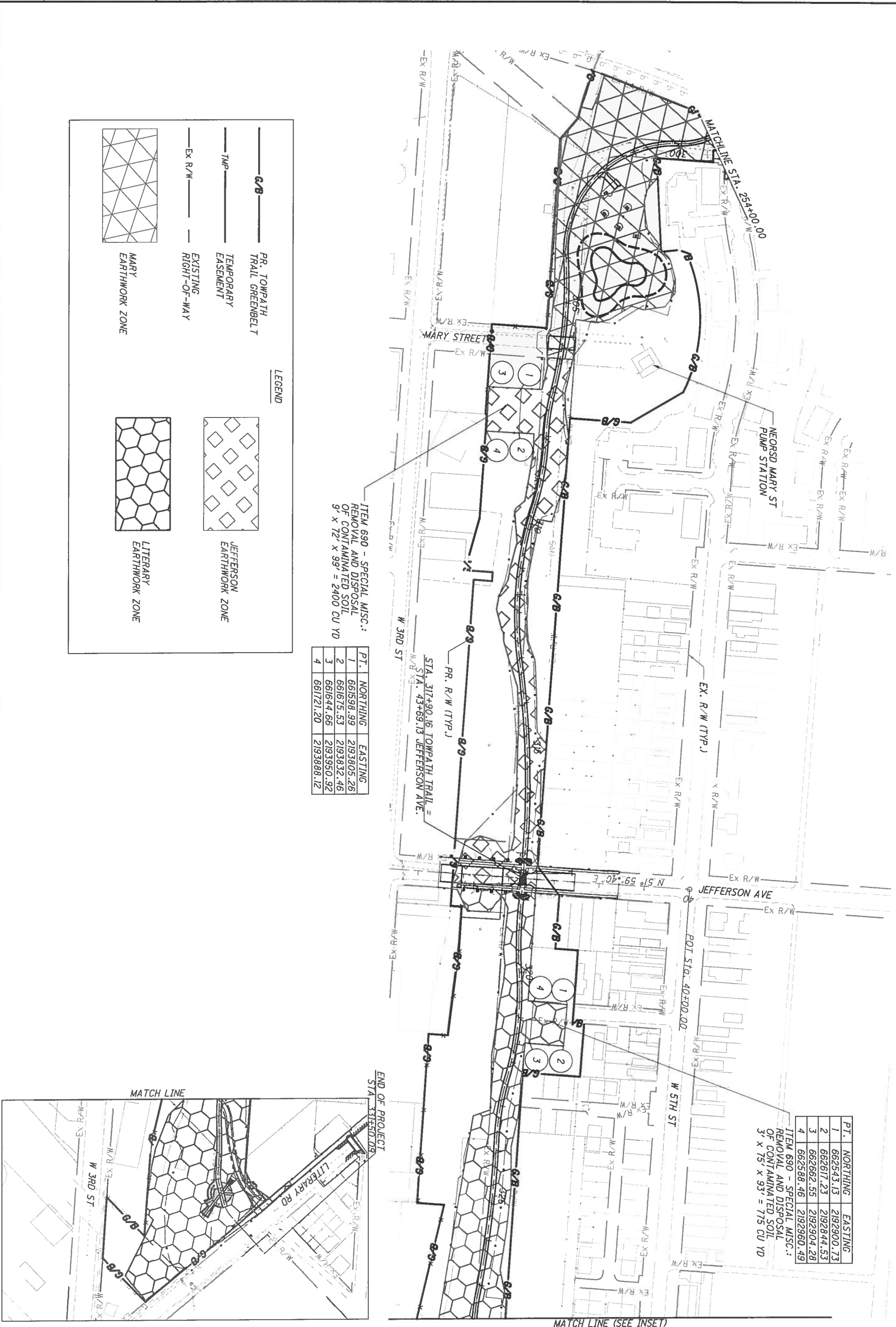
**LEGEND**

	PR. TOWPATH TRAIL GREENBELT
	TEMPORARY EASEMENT
	EXISTING RIGHT-OF-WAY
	CLARK FIELD EARTHWORK ZONE
	W. 7TH ST. EARTHWORK ZONE
	BLUFFS EARTHWORK ZONE
	MARY EARTHWORK ZONE
	CLARK FIELDS PERMANENT STOCKPILE AREA (SEE EARTHWORK NOTES)



FOR GRADING DETAILS, SEE SHEETS 83 - 103





**LEGEND**

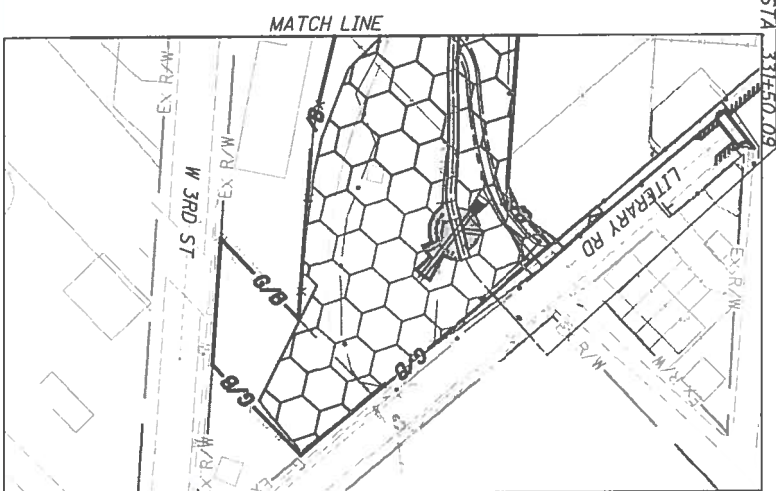
- PR. TOWPATH TRAIL GREENBELT
- TEMPORARY EASEMENT
- EXISTING RIGHT-OF-WAY
- MARY EARTHWORK ZONE
- JEFFERSON EARTHWORK ZONE
- LITERARY EARTHWORK ZONE

ITEM 690 - SPECIAL MISC.:  
REMOVAL AND DISPOSAL  
OF CONTAMINATED SOIL  
9' x 72' x 99' = 2400 CU YD

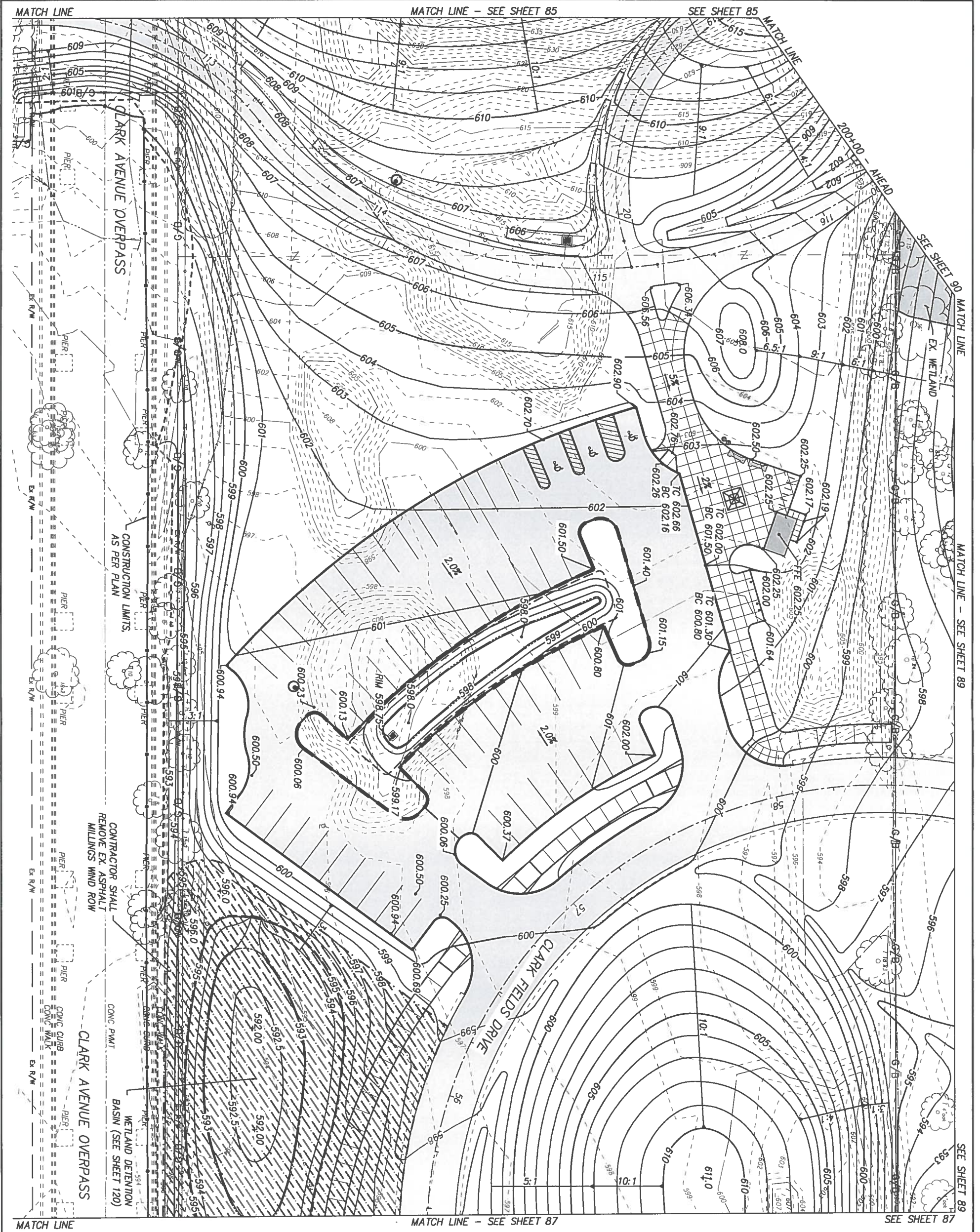
PT.	NORTHING	EASTING
1	661598.99	2193805.26
2	661675.53	2193832.46
3	661644.66	2193950.92
4	661721.20	2193888.12

ITEM 690 - SPECIAL MISC.:  
REMOVAL AND DISPOSAL  
OF CONTAMINATED SOIL  
3' x 75' x 93' = 775 CU YD

PT.	NORTHING	EASTING
1	662543.13	2192900.73
2	662617.23	2192844.53
3	662662.55	2192904.28
4	662588.46	2192960.49



FOR GRADING DETAILS, SEE SHEETS 83 - 103

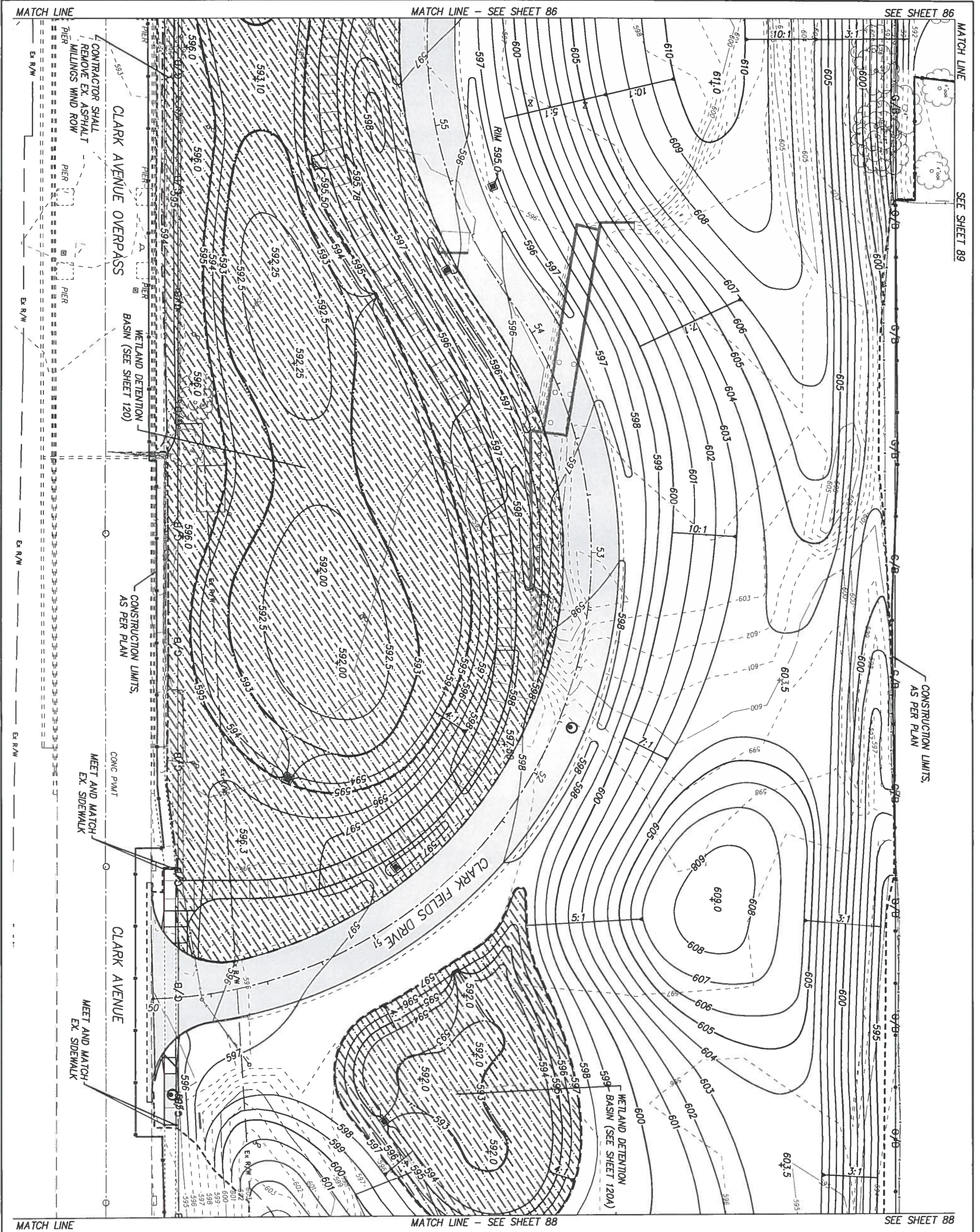


- NOTES:**
1. SEE PLAN & PROFILE SHEETS FOR STORM SEWERS, STRUCTURES, CLARK FIELD DRIVE ALIGNMENT AND TRAIL ALIGNMENT.
  2. ALL SPOT ELEVATIONS SHOWN ARE BOTTOM OF CURB PAYMENT ELEVATION. SEE SHEET 260 FOR MORE INFORMATION ABOUT CROSSWALK RAMPS.
  3. SEE SHEETS 233-242 FOR MORE INFORMATION ABOUT LAYOUT AND AMENITIES.
  4. LIMITS OF PROPOSED GEOSYNTHETIC CLAY LINER. SEE DRAINAGE DETAILS AND EARTHWORK NOTES. PAID AS SPECIAL. GEOTEXTILE FABRIC.

**CUY-TOWPATH TRAIL, STAGE 3**

**GRADING PLAN CLARK AVE TRAILHEAD**

CALCULATED TR,CR CHECKED KL,GN	0 10 20 HORIZONTAL SCALE IN FEET	
---	-------------------------------------	--



- NOTES:**
1. SEE PLAN & PROFILE SHEETS FOR STORM SEWERS, STRUCTURES, CLARK FIELD DRIVE ALIGNMENT AND TRAIL ALIGNMENT.
  2. SEE SHEET 260 FOR MORE INFORMATION ABOUT CROSSWALK RAMPS.
  3. SEE SHEETS 233-242 FOR MORE INFORMATION ABOUT LAYOUT AND AMENITIES.
- LIMITS OF PROPOSED GEOSYNTHETIC CLAY LINER. SEE DRAINAGE DETAILS AND EARTHWORK NOTES. PAID AS SPECIAL - GEOTEXTILE FABRIC.

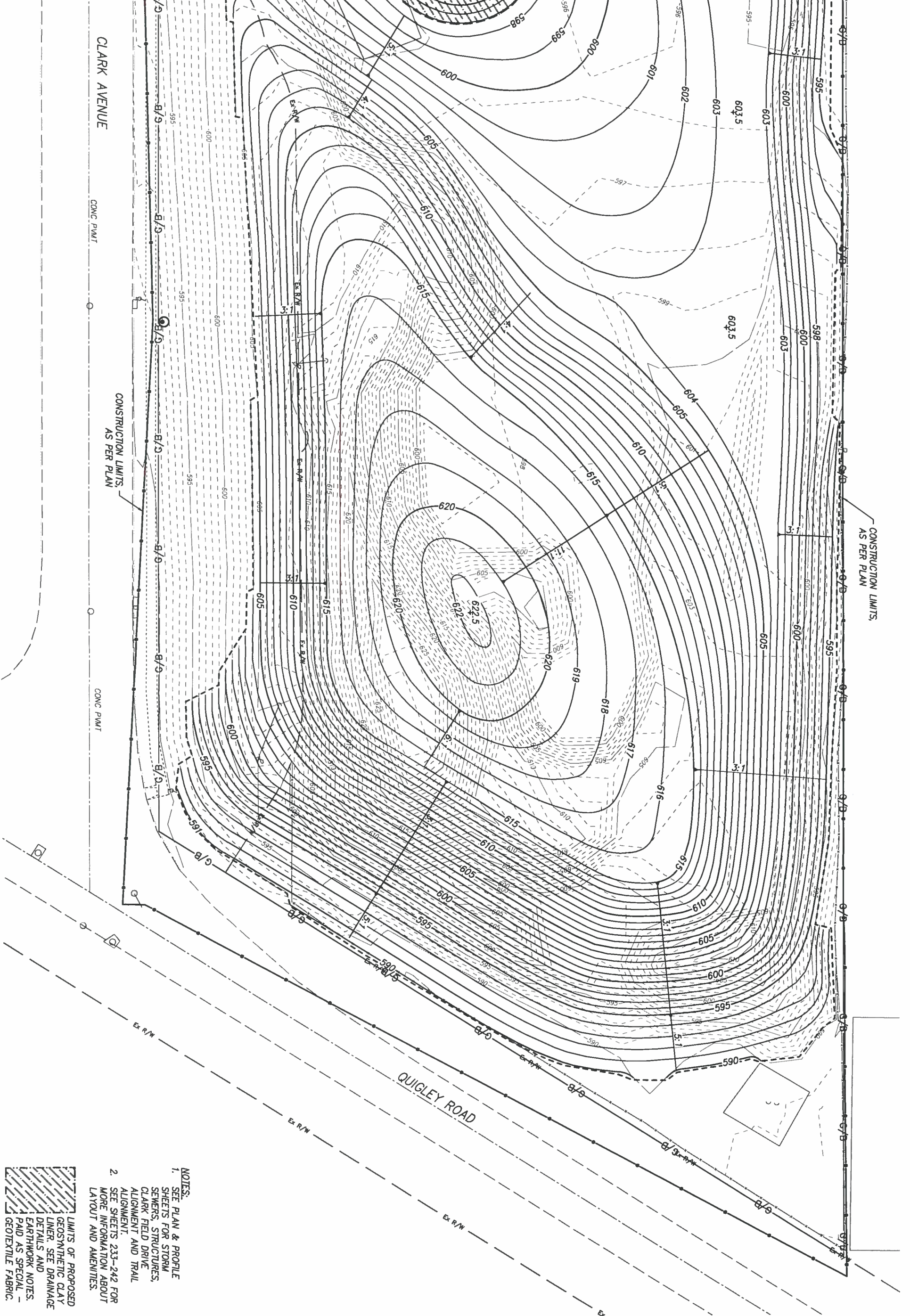
**CUY-TOWPATH TRAIL, STAGE 3**

**GRADING PLAN  
CLARK AVE TRAILHEAD AT CLARK FIELDS DRIVE**

CALCULATED  
TR,CR  
CHECKED  
KL,GN



MATCH LINE MATCH LINE - SEE SHEET 87 SEE SHEET 87

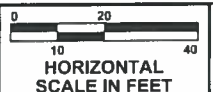


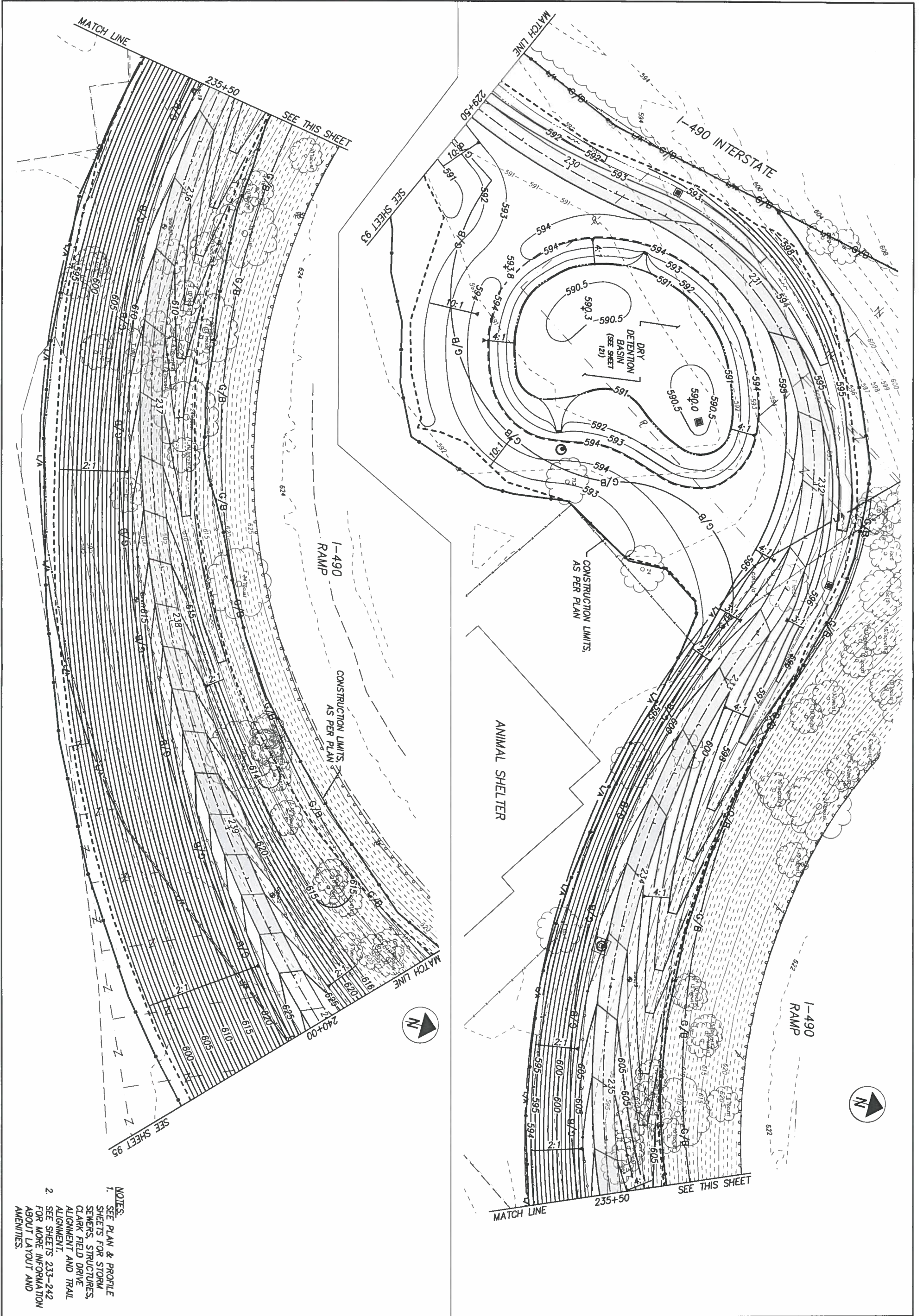
- NOTES:**
1. SEE PLAN & PROFILE SHEETS FOR STORM SEWERS, STRUCTURES, CLARK FIELD DRIVE ALIGNMENT AND TRAIL.
  2. SEE SHEETS 233-242 FOR MORE INFORMATION ABOUT LAYOUT AND AMENITIES.
- LIMITS OF PROPOSED GEOSYNTHETIC CLAY LINER, SEE DRAINAGE DETAILS AND EARTHWORK NOTES, PAID AS SPECIAL - GEOTEXTILE FABRIC.**

**CUY-TOWPATH TRAIL, STAGE 3**

**GRADING PLAN  
CLARK AVE TRAILHEAD AT CLARK AVE & QUIGLEY RD**

CALCULATED  
TR,CR  
CHECKED  
KL,GN





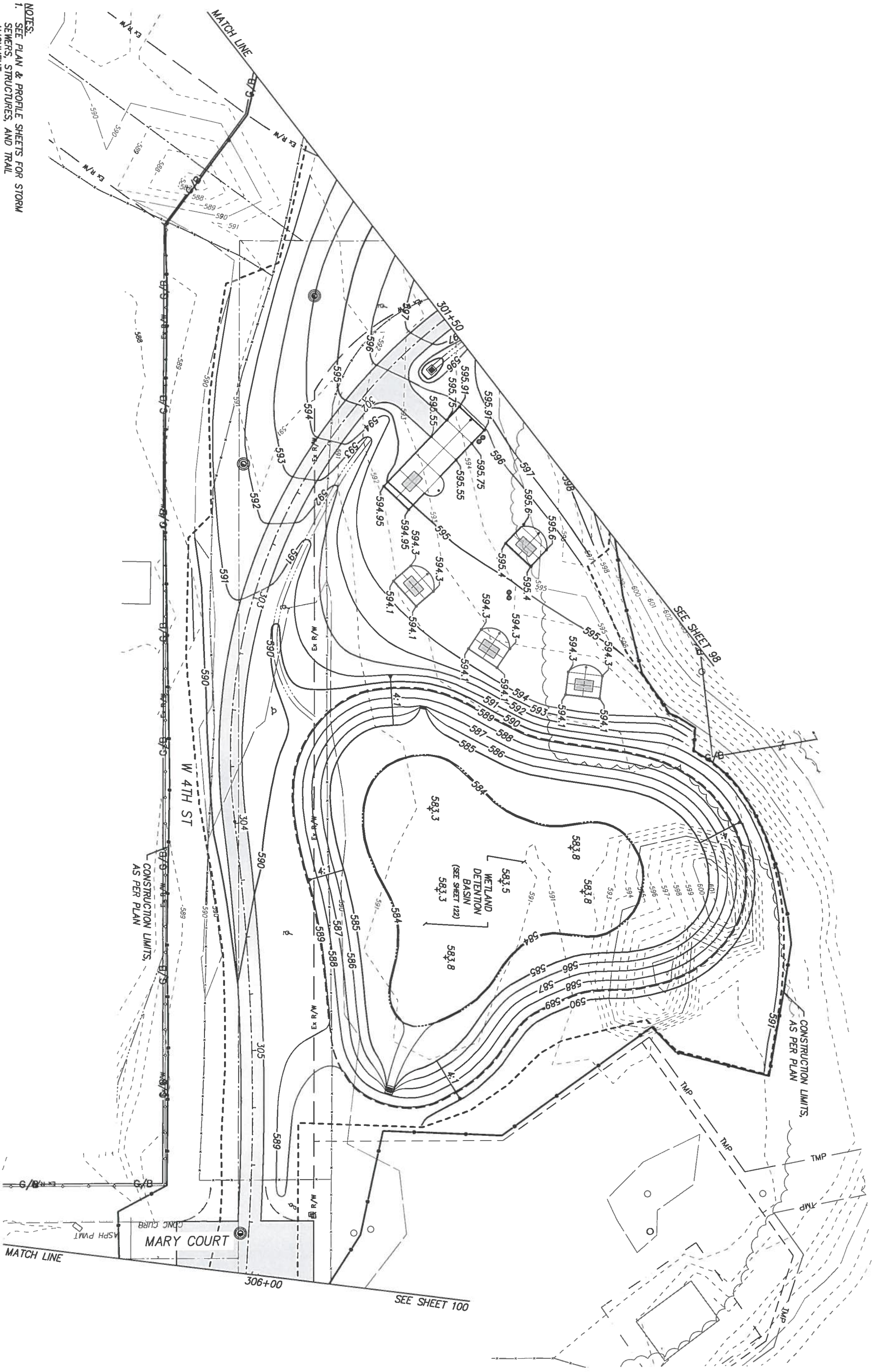
- NOTES:
1. SEE PLAN & PROFILE SHEETS FOR STORM SEWERS, STRUCTURES, CLARK FIELD DRIVE ALIGNMENT AND TRAIL ALIGNMENT.
  2. SEE SHEETS 233-242 FOR MORE INFORMATION ABOUT LAYOUT AND AMENITIES.

**CUY-TOWPATH TRAIL, STAGE 3**

**GRADING PLAN**  
 STA 229+50 TO STA 240+00 - CLARK FIELDS

CALCULATED TR,CR	0 20 40
CHECKED KL,GN	10 HORIZONTAL SCALE IN FEET

- NOTES:
1. SEE PLAN & PROFILE SHEETS FOR STORM SEWERS, STRUCTURES, AND TRAIL ALIGNMENT.
  2. SEE SHEETS 233-242 FOR MORE INFORMATION ABOUT LAYOUT AND AMENITIES.



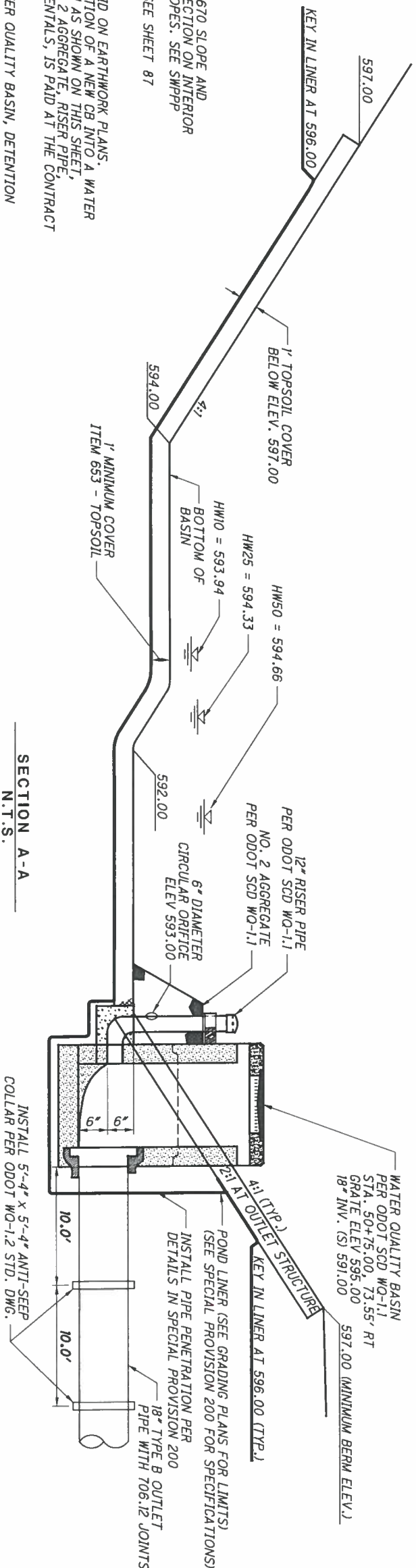
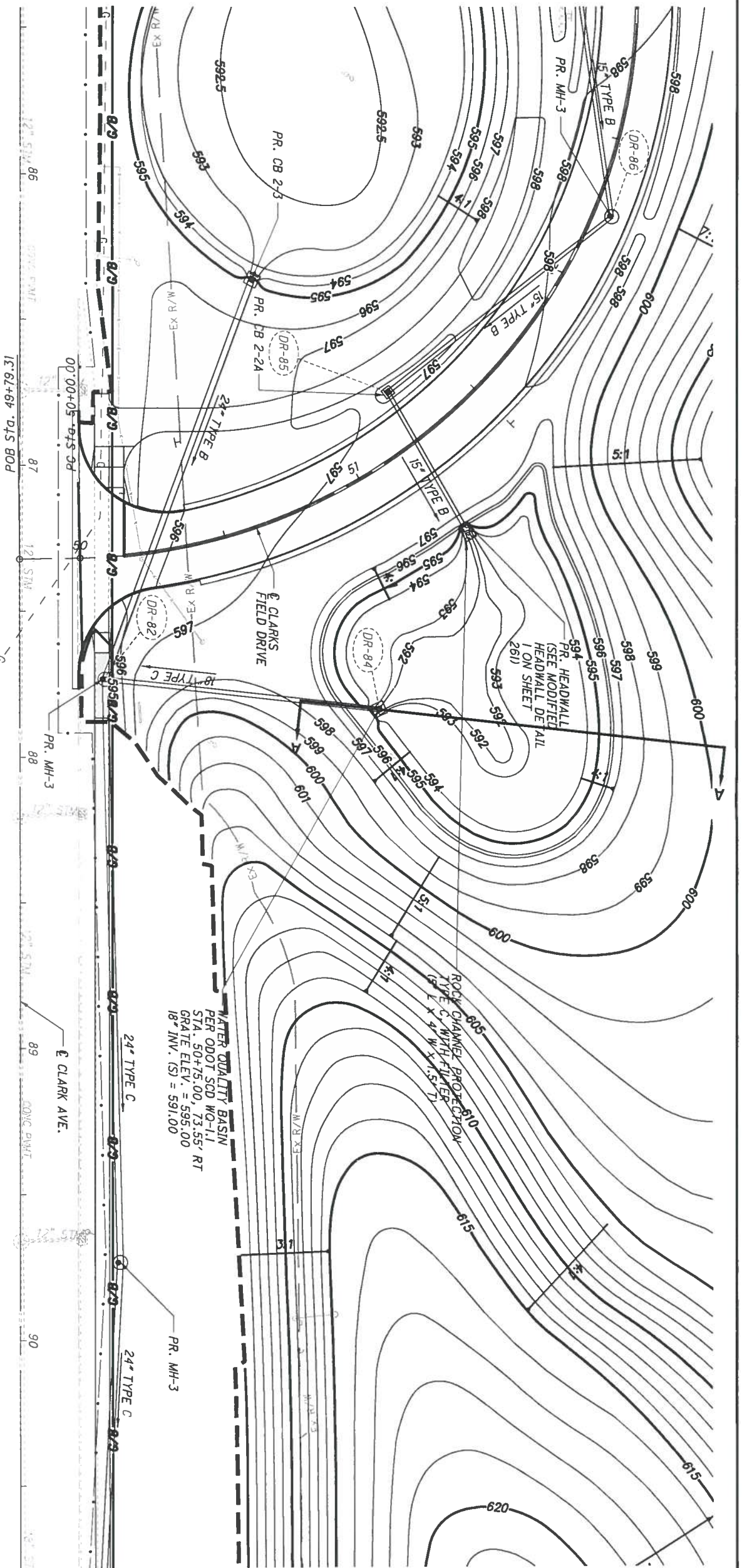
	<p><b>GRADING PLAN</b></p> <p>STA 301+50 TO STA 306+00 - W 4TH ST &amp; MARY CT</p>	<p>0 10 20</p> <p>HORIZONTAL SCALE IN FEET</p>	<p>CALCULATED TR,CR</p> <p>CHECKED KL,GN</p>
---	---	--	--



HYDRAULIC DESIGN TABLE	
DRAINAGE AREA	2.24 AC
HWS	593.65
HW10	593.94
HW25	594.33
HW50	594.66
QIN-5	4.01 CFS
QOUT-5	0.65 CFS
QIN-10	5.26 CFS
QOUT-10	0.86 CFS
QIN-25	7.14 CFS
QOUT-25	1.08 CFS
QIN-50	8.79 CFS
QOUT-50	1.23 CFS

NOTE:  
 PROVIDE ITEM 670 SLOPE AND EROSION PROTECTION ON INTERIOR BASIN SIDE SLOPES. SEE SWPPP FOR GRADING SEE SHEET 87

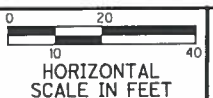
PAYMENT:  
 GRADING IS PAID ON EARTHWORK PLANS. THE CONSTRUCTION OF A NEW CB INTO A WATER QUALITY BASIN AS SHOWN ON THIS SHEET, INCLUDING NO. 2 AGGREGATE, RISER PIPE AND ALL INCIDENTALS, IS PAID AT THE CONTRACT PRICE FOR:  
 ITEM 611 - WATER QUALITY BASIN, DETENTION



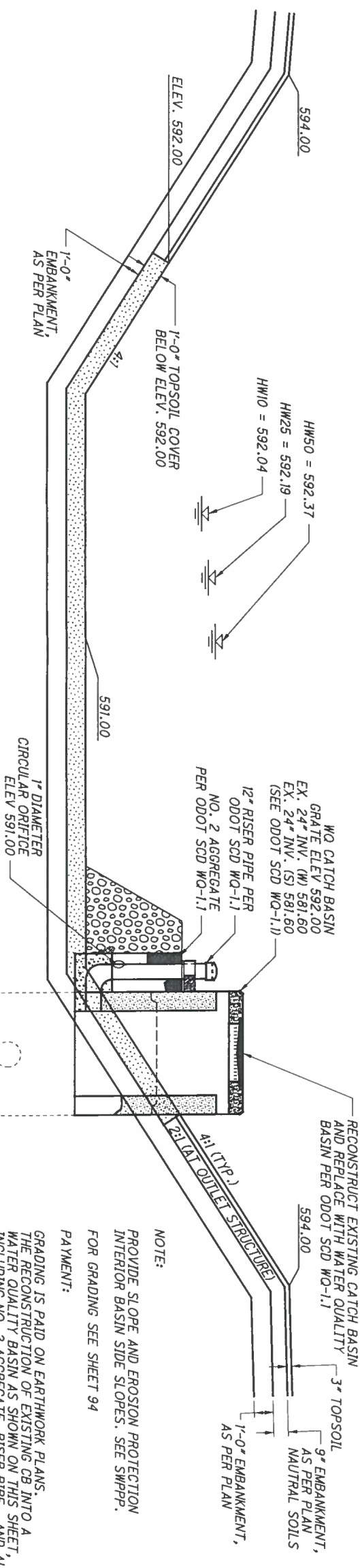
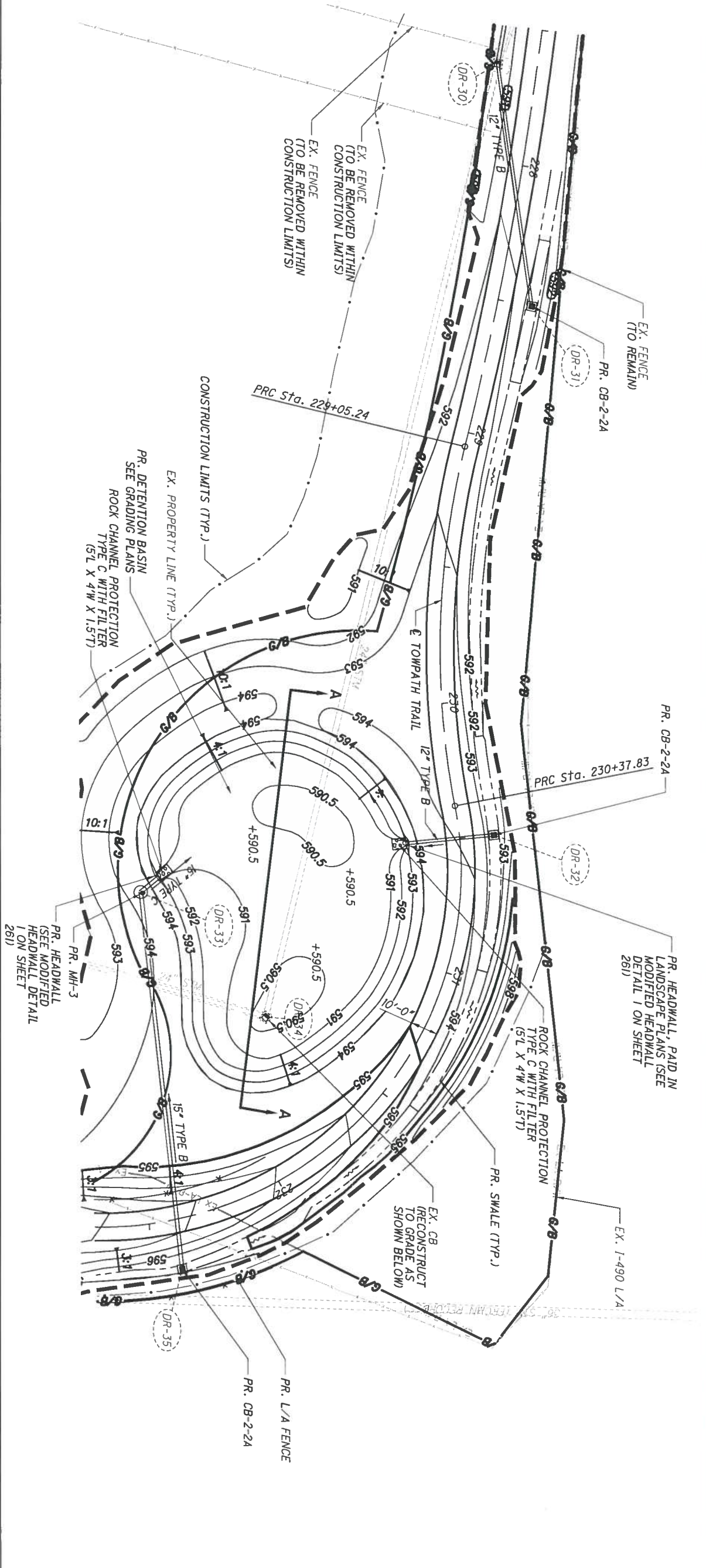
**CUY-TOWPATH TRAIL, STAGE 3**

**DRAINAGE DETAILS - EAST WETLAND DETENTION BASIN - CLARK AVE.**

CALCULATED  
 AK  
 CHECKED  
 DAB



HYDRAULIC DESIGN TABLE	
DRAINAGE AREA	2.87 AC
HWMOV	591.28
HMS	592.01
HM10	592.04
HM25	592.19
HM50	592.37
QIN-5	4.87 CFS
QOUT-5	0.14 CFS
QIN-10	6.44 CFS
QOUT-10	0.46 CFS
QIN-25	8.79 CFS
QOUT-25	1.92 CFS
QIN-50	10.88 CFS
QOUT-50	4.55 CFS



SECTION A-A  
N.T.S.

NOTE:  
PROVIDE SLOPE AND EROSION PROTECTION  
INTERIOR BASIN SIDE SLOPES. SEE SWPPP.  
FOR GRADING SEE SHEET 94

PAYMENT:  
GRADING IS PAID ON EARTHWORK PLANS.  
THE RECONSTRUCTION OF EXISTING CB INTO A  
WATER QUALITY BASIN AS SHOWN ON THIS SHEET,  
INCLUDING NO. 2 AGGREGATE, RISER PIPE, AND ALL  
INCIDENTALS IS PAID AT THE CONTRACT PRICE FOR  
ITEM 611 - WATER QUALITY BASIN, DETENTION

**CUY-TOWPATH  
TRAIL, STAGE 3**

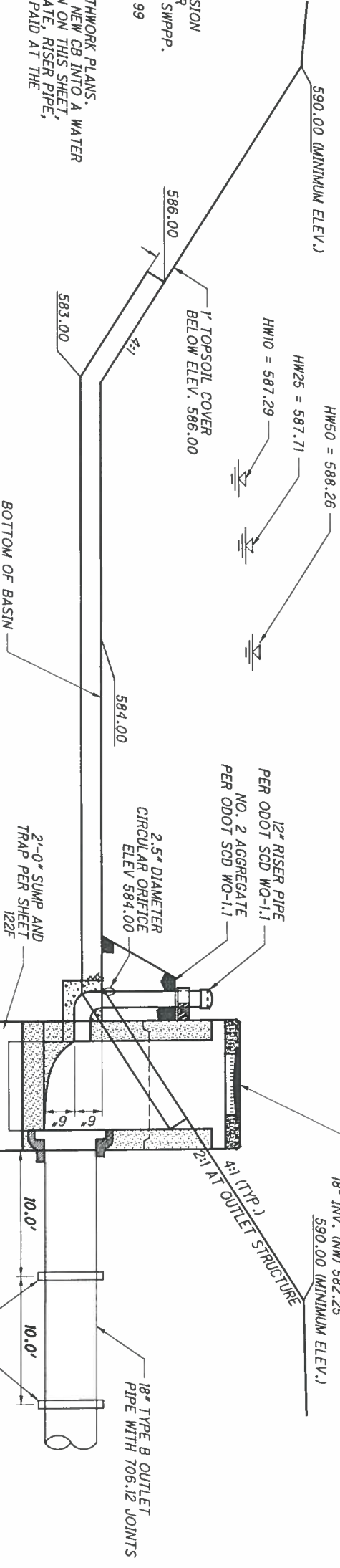
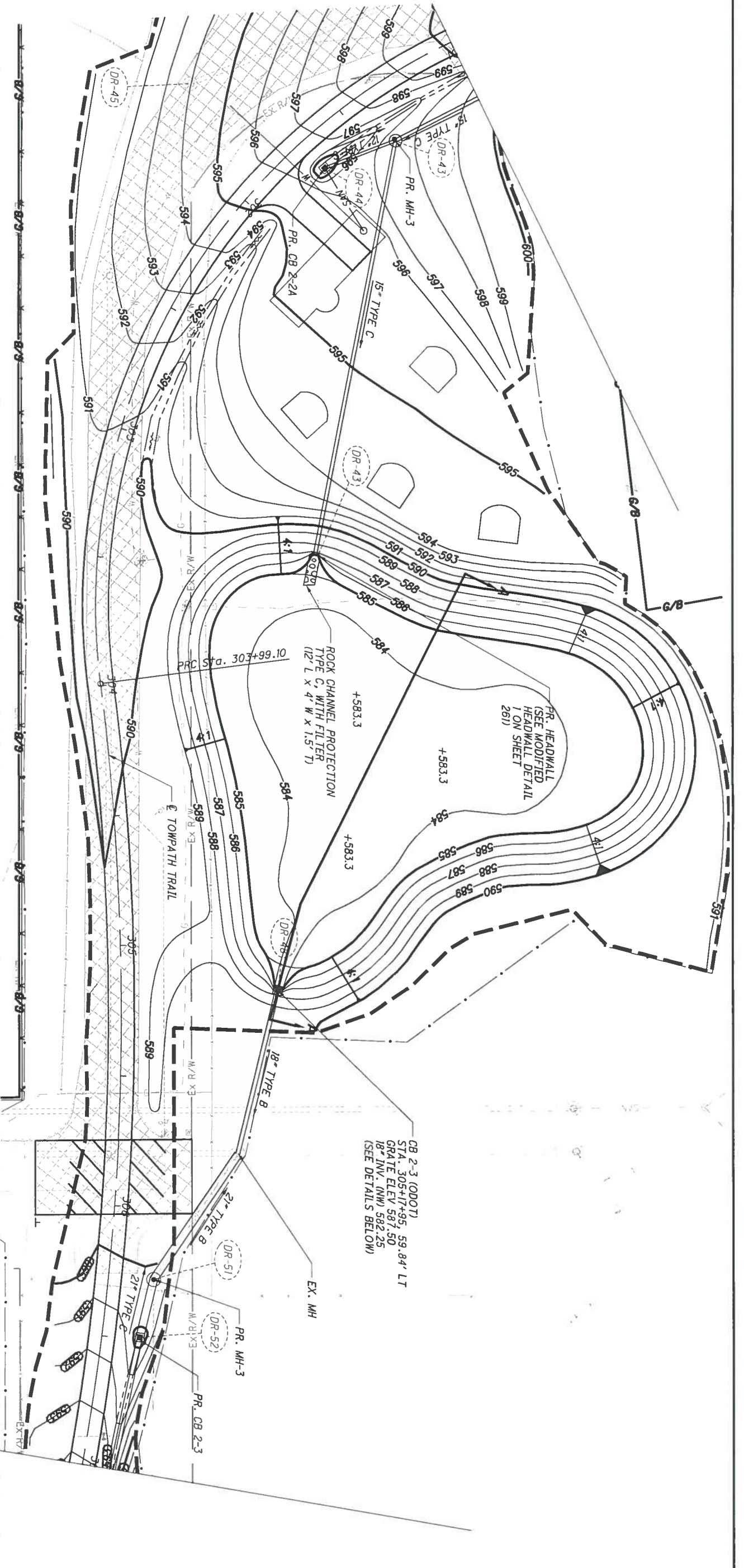
**DRAINAGE DETAILS  
DRY DETENTION BASIN - TOWPATH TRAIL**

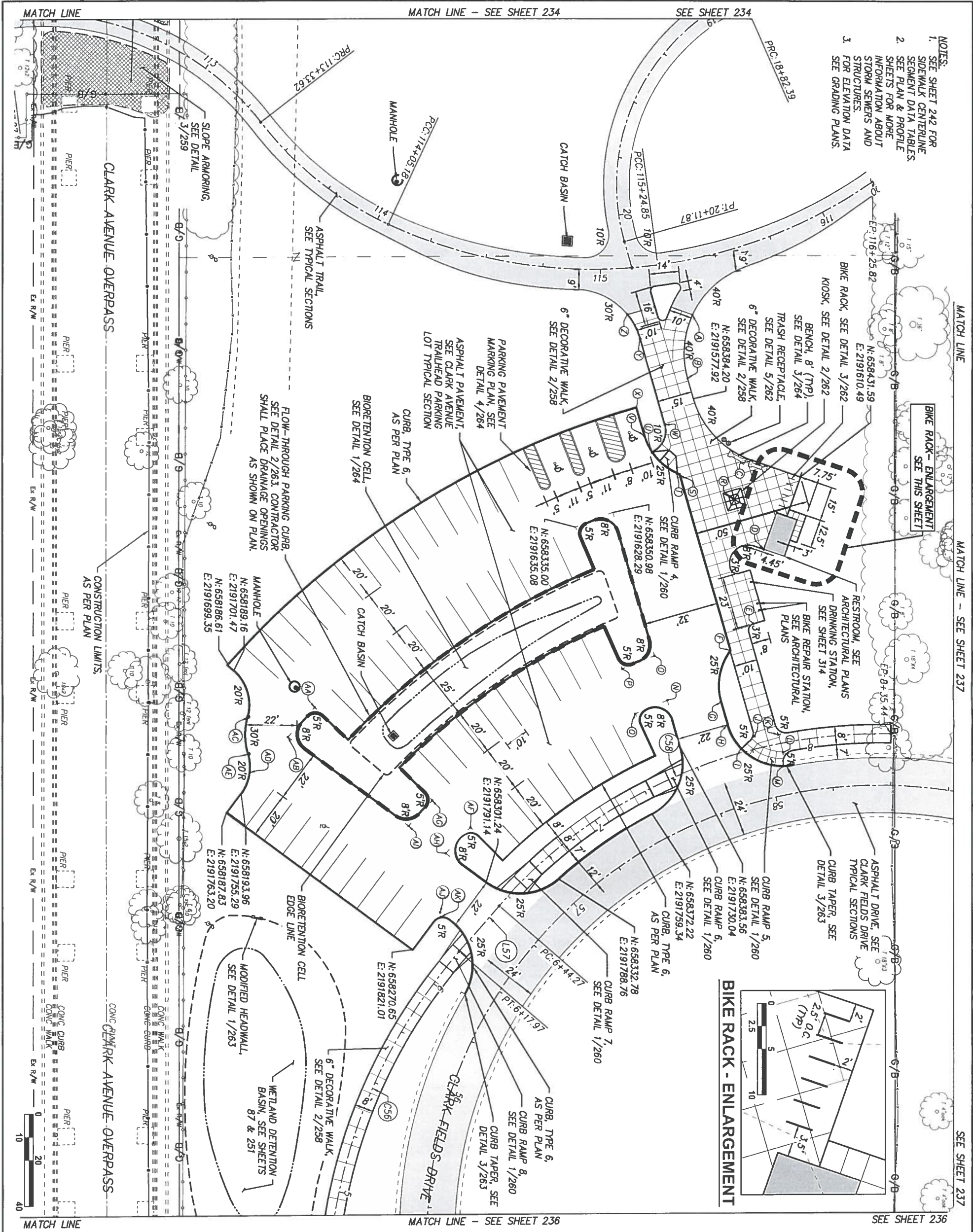
CALCULATED AK CHECKED DAB	0 20 40 HORIZONTAL SCALE IN FEET	
------------------------------------	--	--

HYDRAULIC DESIGN TABLE	
DRAINAGE AREA	15.47 AC
HWMOV	586.86
HWS	587.09
HW10	587.29
HW25	587.71
HWS0	588.26
QIN-5	30.68 CFS
QOUT-5	1.10 CFS
QIN-10	39.53 CFS
QOUT-10	3.10 CFS
QIN-25	53.29 CFS
QOUT-25	12.34 CFS
QIN-50	64.97 CFS
QOUT-50	15.97 CFS

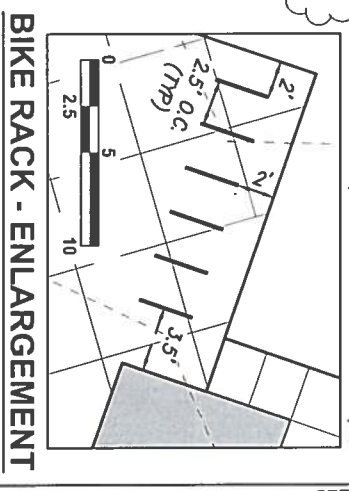
NOTE:  
 PROVIDE SLOPE AND EROSION PROTECTION ON INTERIOR BASIN SIDE SLOPES. SEE SWPPP.  
 FOR GRADING SEE SHEET 99

PAYMENT:  
 GRADING IS PAID ON EARTHWORK PLANS. THE CONSTRUCTION OF A NEW CB INTO A WATER QUALITY BASIN AS SHOWN ON THIS SHEET, INCLUDING NO. 2 AGGREGATE, RISER PIPE, AND ALL INCIDENTALS IS PAID AT THE CONTRACT PRICE FOR:  
 ITEM 611 - WATER QUALITY BASIN, DETENTION





- NOTES:**
1. SEE SHEET 242 FOR SIDEWALK CENTERLINE SEGMENT DATA TABLES. SEE PLAN & PROFILE SHEETS FOR MORE INFORMATION ABOUT STORM SEWERS AND STRUCTURES.
  2. SEE ELEVATION DATA FOR GRADING PLANS.
  3. SEE SHEET 242 FOR SIDEWALK CENTERLINE SEGMENT DATA TABLES. SEE PLAN & PROFILE SHEETS FOR MORE INFORMATION ABOUT STORM SEWERS AND STRUCTURES.

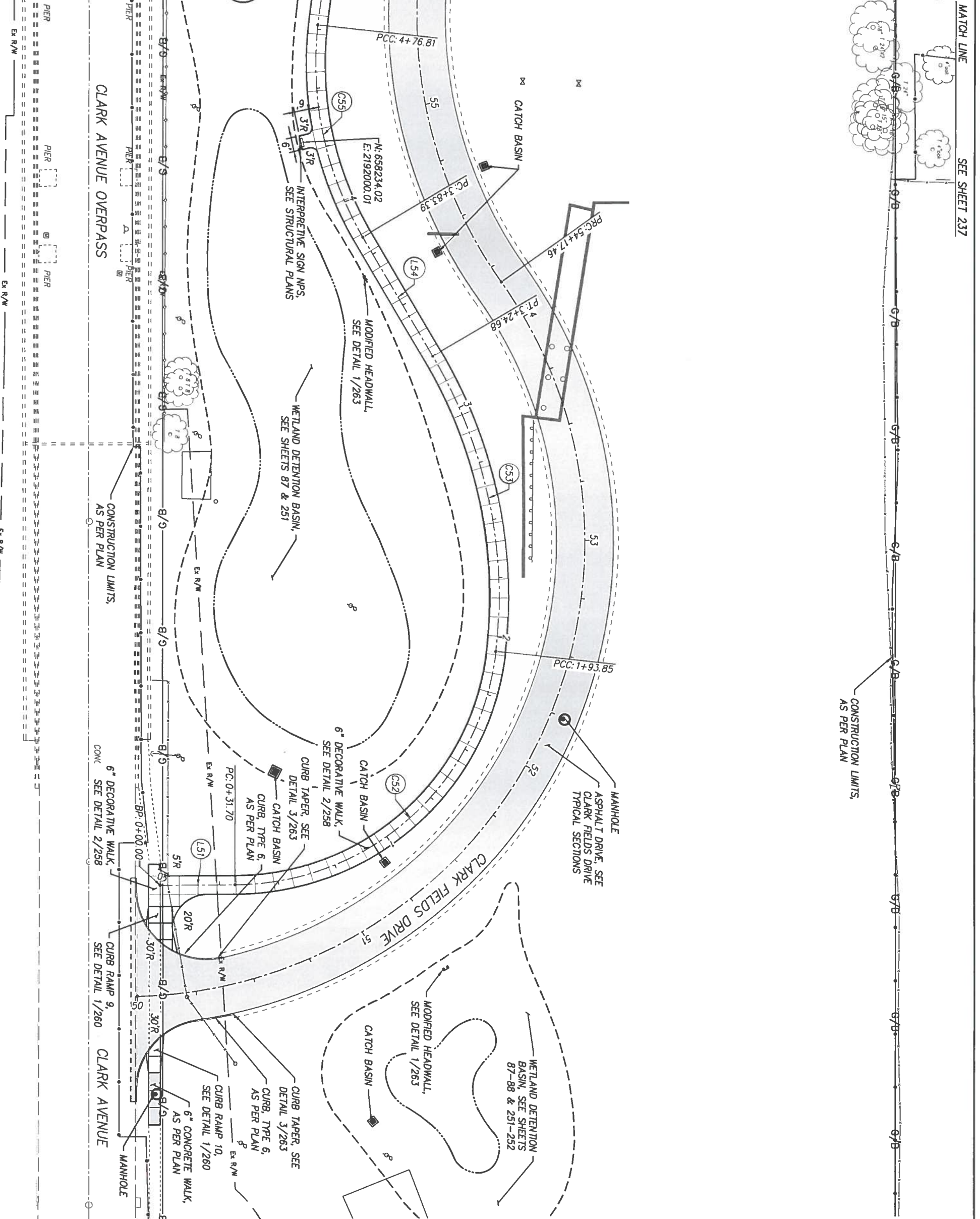


MARK	NORTHING	EASTING
A	N: 658382.68	E: 2191541.51
B	N: 658381.43	E: 2191569.27
C	N: 658410.44	E: 2191603.93
D	N: 658416.68	E: 2191642.53
E	N: 658413.24	E: 2191675.17
F	N: 658403.39	E: 2191687.03
G	N: 658400.11	E: 2191709.59
H	N: 658403.28	E: 2191719.47
I	N: 658409.66	E: 2191729.78
J	N: 658415.24	E: 2191724.04
K	N: 658425.40	E: 2191722.98
L	N: 658427.77	E: 2191730.65
M	N: 658427.99	E: 2191736.83
N	N: 658377.04	E: 2191709.45
O	N: 658370.85	E: 2191690.36
P	N: 658357.16	E: 2191696.47
Q	N: 658363.34	E: 2191715.71
R	N: 658403.29	E: 2191621.13
S	N: 658379.05	E: 2191611.01
T	N: 658378.02	E: 2191610.61
U	N: 658366.97	E: 2191601.85
V	N: 658363.27	E: 2191594.54
W	N: 658372.18	E: 2191589.58
X	N: 658359.51	E: 2191582.79
Y	N: 658360.37	E: 2191552.69
Z	N: 658354.52	E: 2191542.24
AA	N: 658224.51	E: 2191716.63
AB	N: 658213.37	E: 2191729.81
AC	N: 658195.84	E: 2191721.39
AD	N: 658197.49	E: 2191745.55
AE	N: 658196.56	E: 2191737.59
AF	N: 658293.62	E: 2191767.04
AG	N: 658276.75	E: 2191755.79
AH	N: 658283.28	E: 2191778.61
AI	N: 658266.82	E: 2191767.12
AJ	N: 658281.64	E: 2191804.29
AK	N: 658282.02	E: 2191806.37

MATCH LINE

MATCH LINE - SEE SHEET 235

SEE SHEET 235



CLARK AVENUE OVERPASS

CLARK FIELDS DRIVE

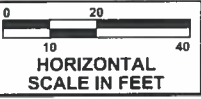
CLARK AVENUE

NOTES:  
 1. SEE SHEET 242 FOR SIDEWALK CENTERLINE SEGMENT DATA TABLES.  
 2. SEE PLAN & PROFILE SHEETS FOR MORE INFORMATION ABOUT STORM SEWERS AND STRUCTURES.  
 3. SEE ELEVATION DATA FOR GRADING PLANS.

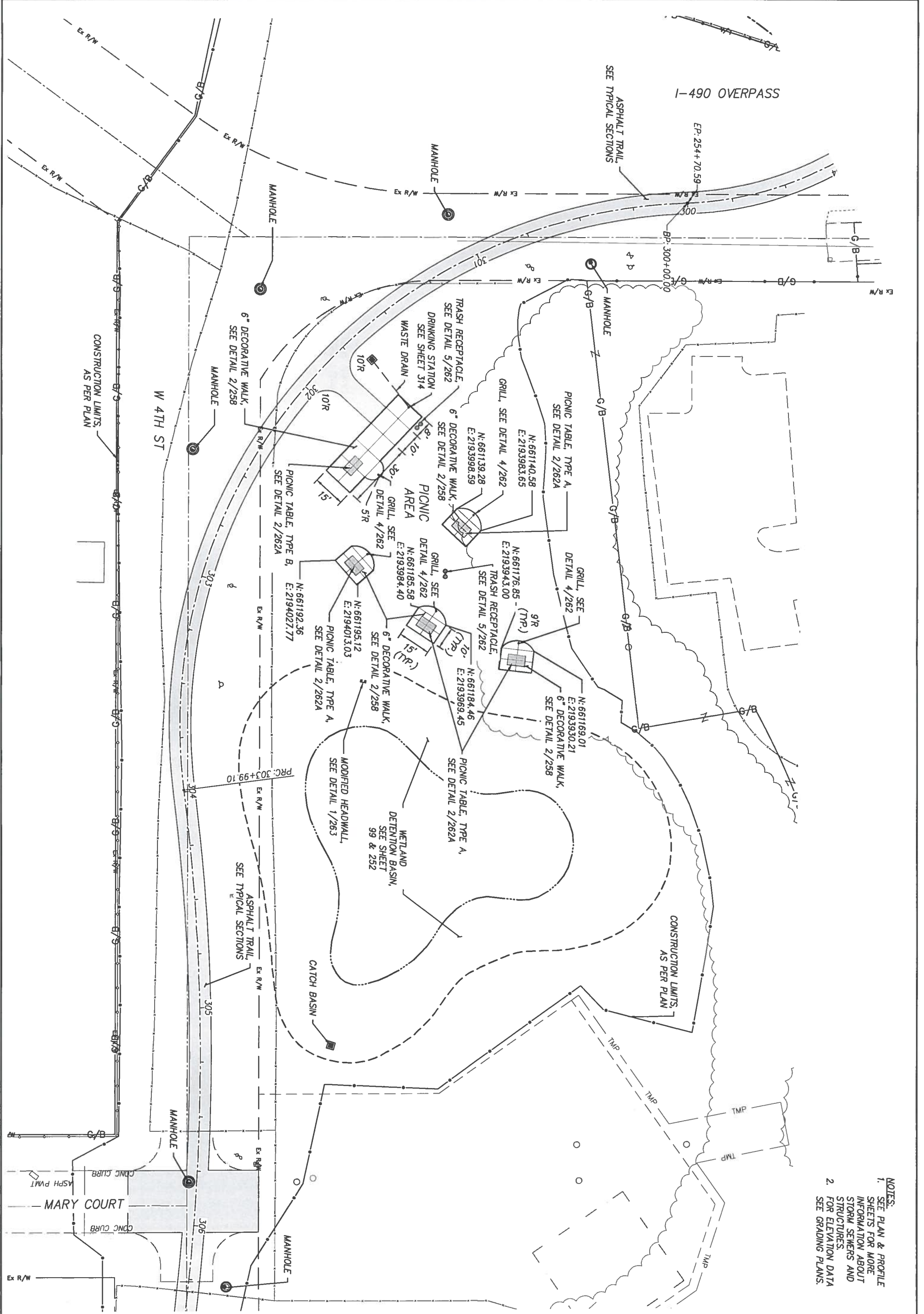
CUY-TOWPATH TRAIL, STAGE 3

LANDSCAPE PLAN - SITE IMPROVEMENTS  
 CLARK AVE TRAILHEAD AT CLARK FIELDS DRIVE

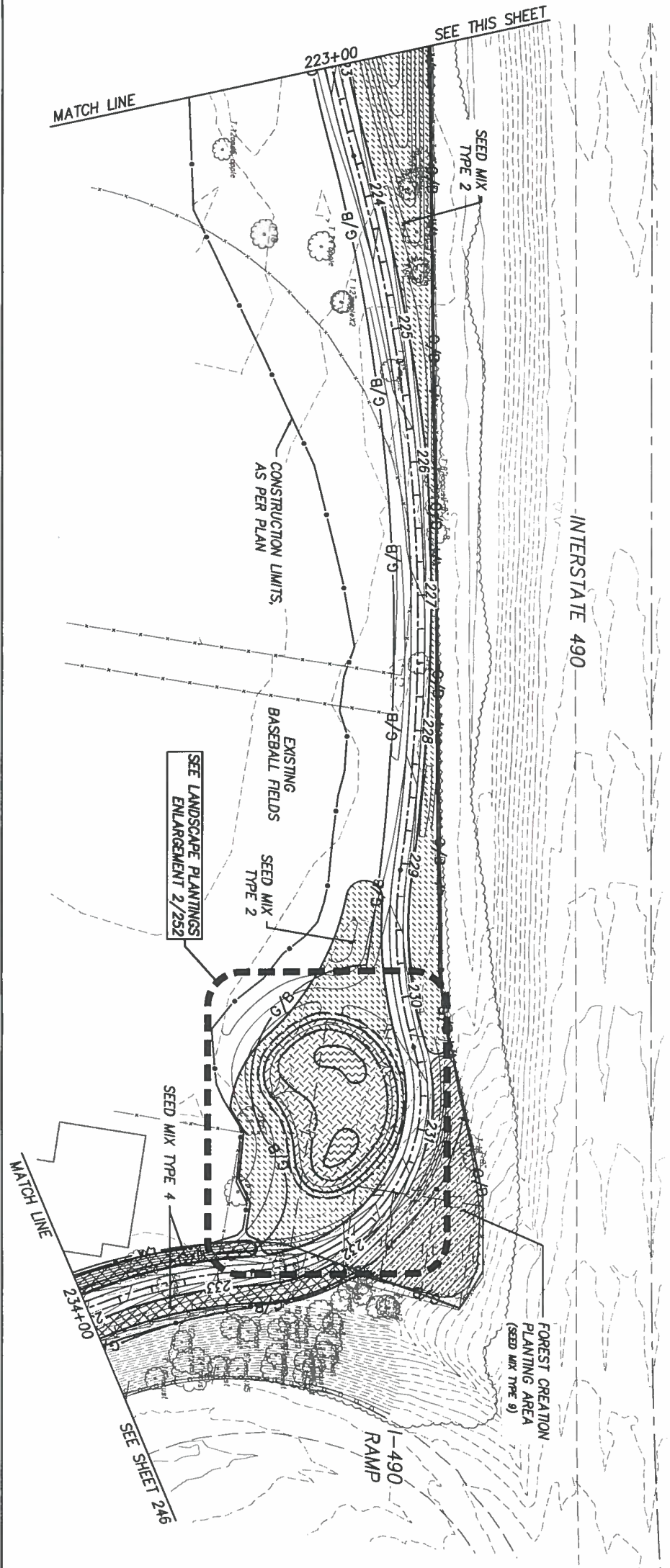
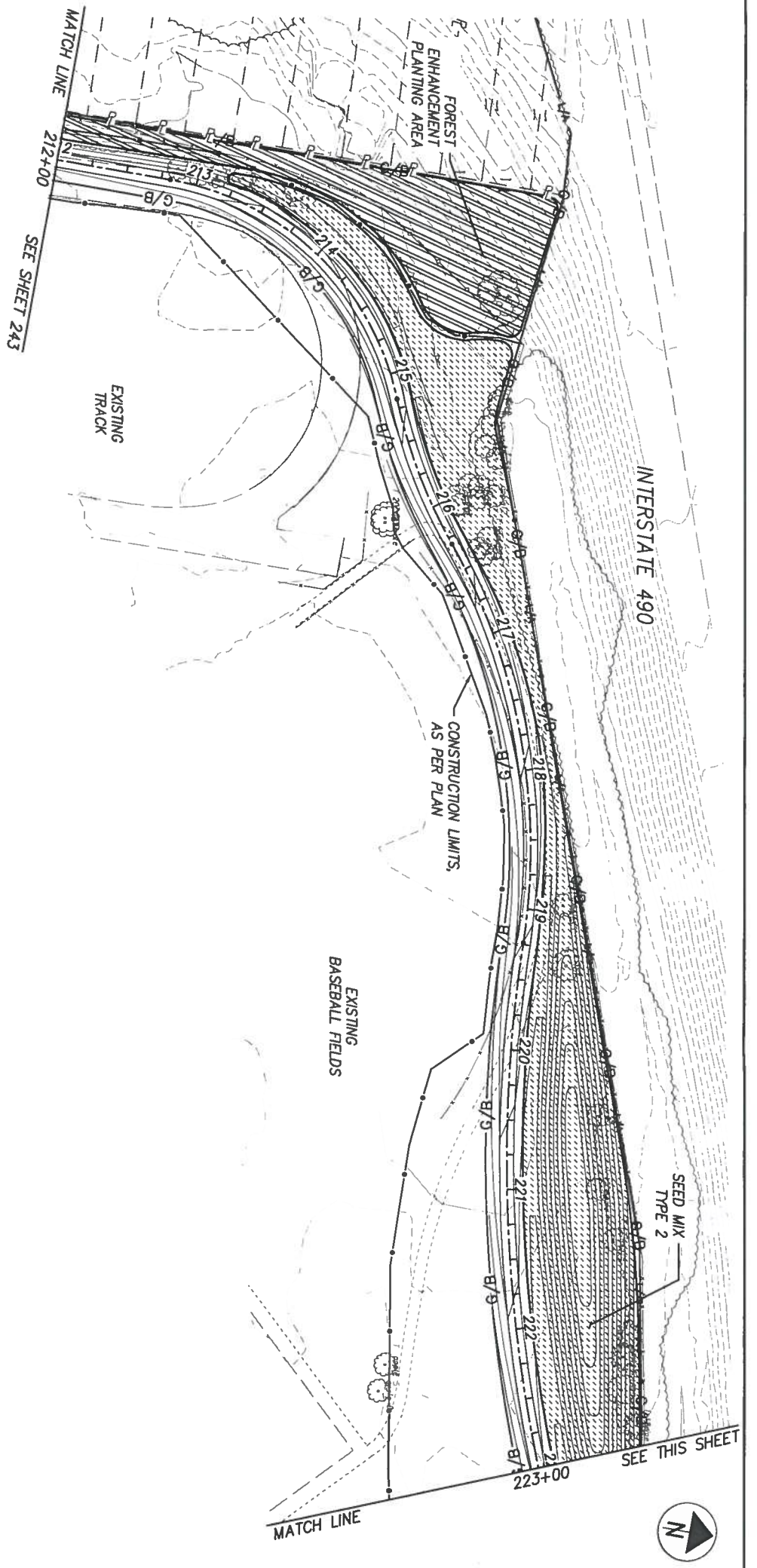
CALCULATED TR,CR  
 CHECKED KL,GN



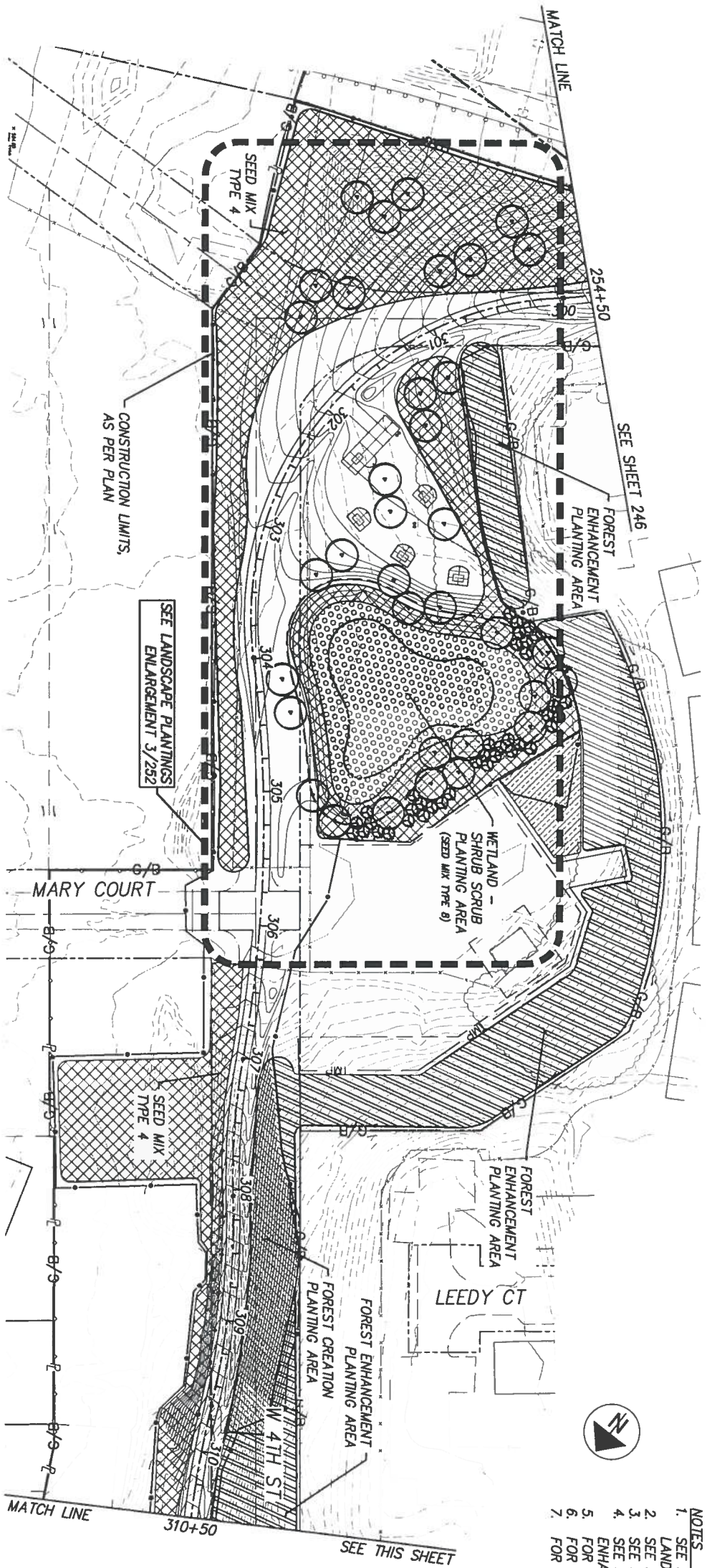
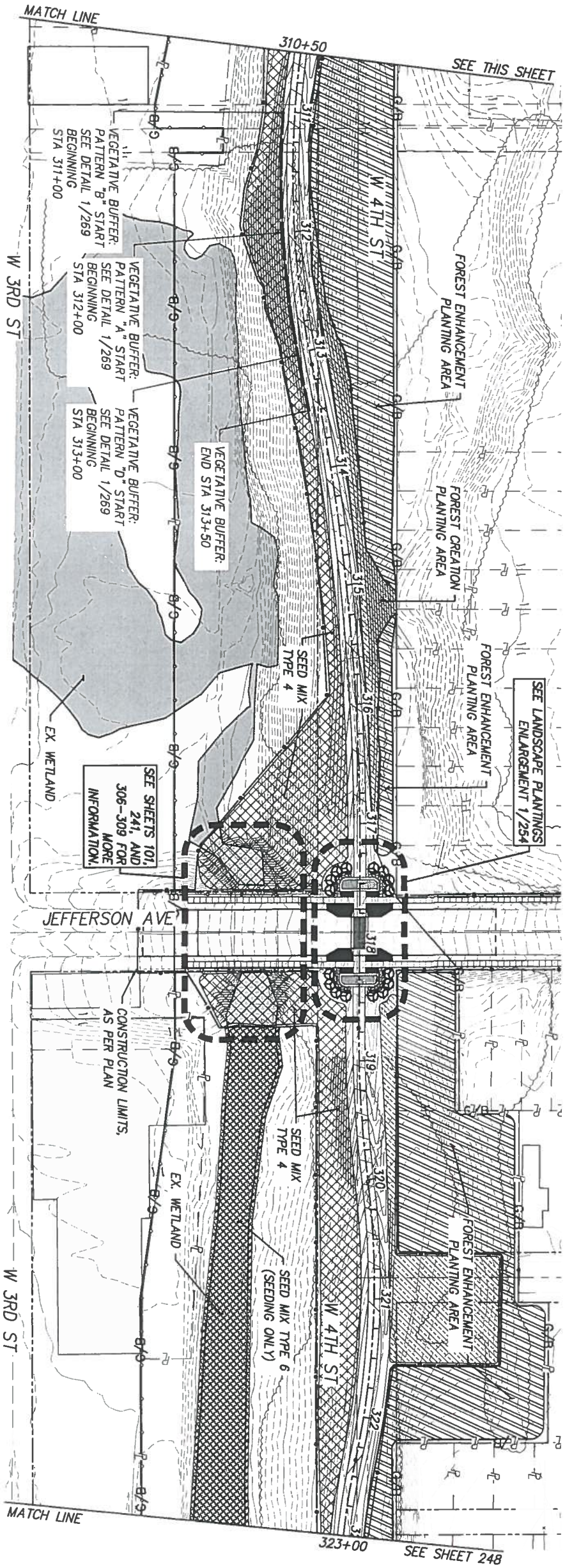
236  
 337







- NOTES:
1. SEE SHEETS 255, 256, & 257 FOR SUBSUMMARIES, LANDSCAPE LEGEND AND QUANTITIES
  2. SEE SHEET 197 FOR SEEDING QUANTITIES
  3. SEE SHEETS 227-230 FOR SEED TYPE MIXES
  4. SEE SHEET 262A FOR MORE INFORMATION ABOUT FOREST ENHANCEMENT AND CREATION PLANTING AREAS
  5. FOR DEMOLITION, SEE SHEETS 200 - 222
  6. FOR GRADING, SEE SHEETS 83 - 103
  7. FOR LANDSCAPING, SEE SHEETS 223 - 267



- NOTES**
1. SEE SHEETS 255, 256, & 257 FOR SUBSUMMARIES.
  2. LANDSCAPE LEGEND AND QUANTITIES.
  3. SEE SHEET 197 FOR SEEDING QUANTITIES.
  4. SEE SHEETS 227-230 FOR SEED TYPE MIXES.
  5. SEE SHEET 262A FOR MORE INFORMATION ABOUT FOREST ENHANCEMENT AND CREATION PLANTING AREAS.
  6. FOR DEMOLITION, SEE SHEETS 200 - 222.
  7. FOR GRADING, SEE SHEETS 83 - 103.
  8. FOR LANDSCAPING, SEE SHEETS 223 - 267.

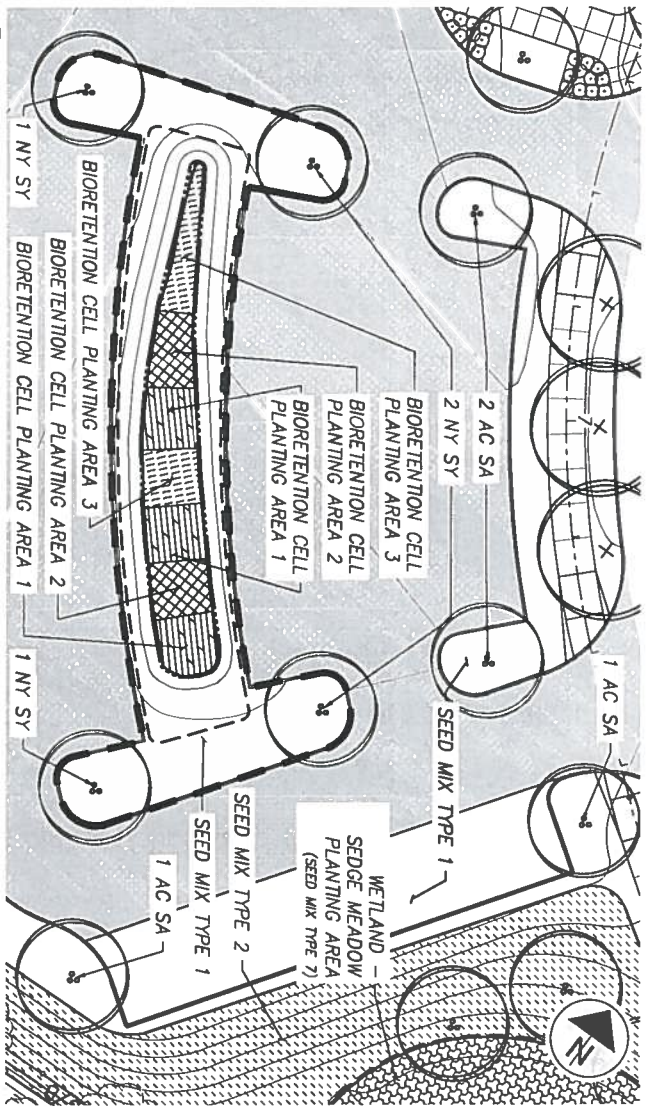
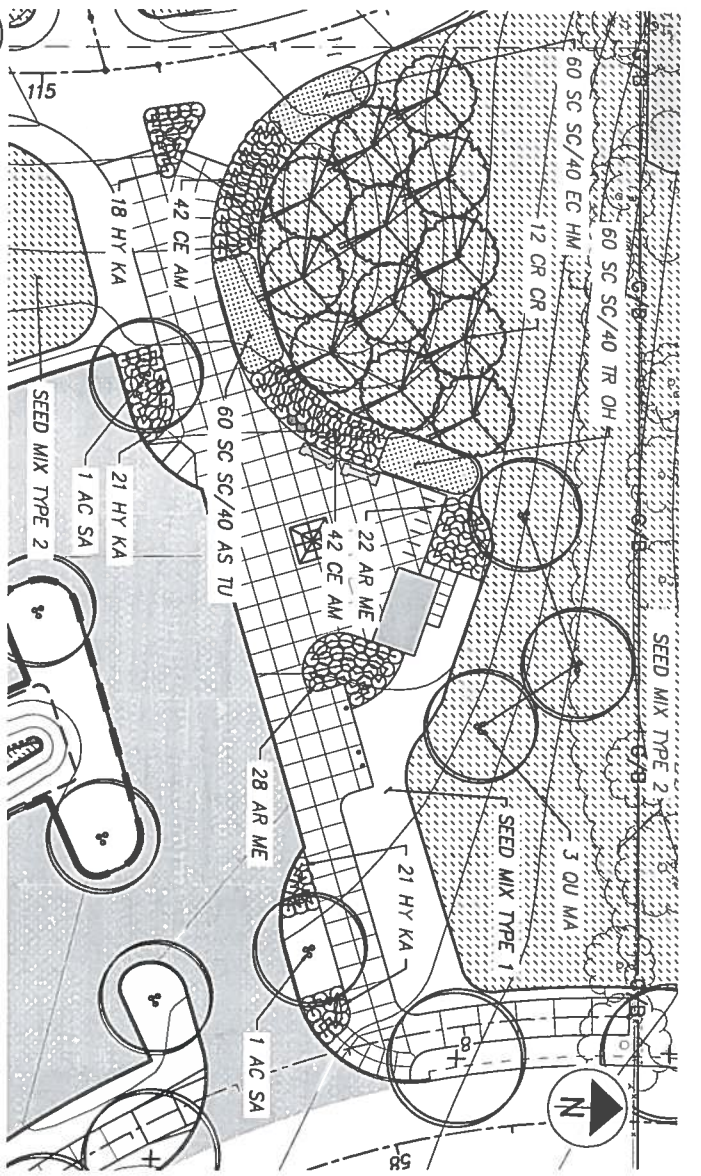


247  
337

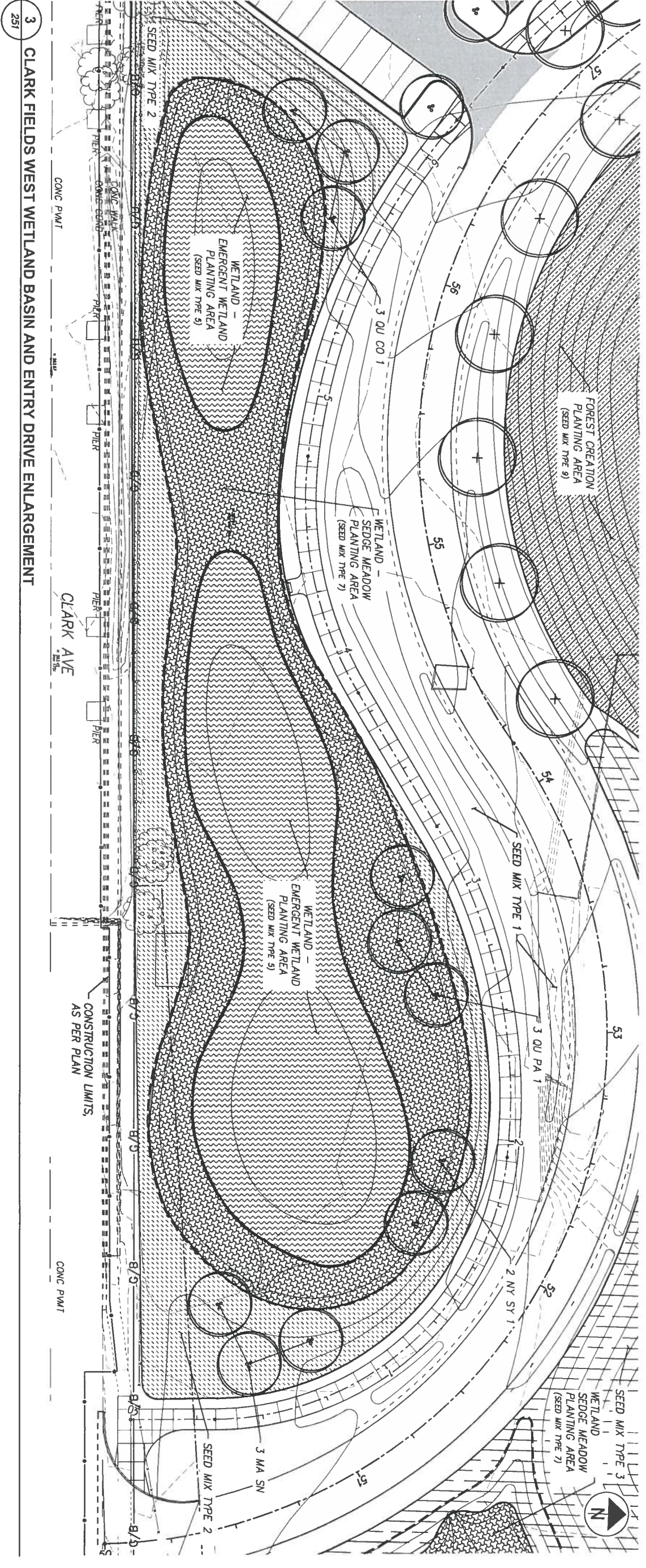
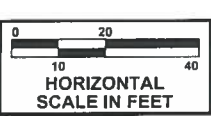
**CUY-TOWPATH TRAIL, STAGE 3**

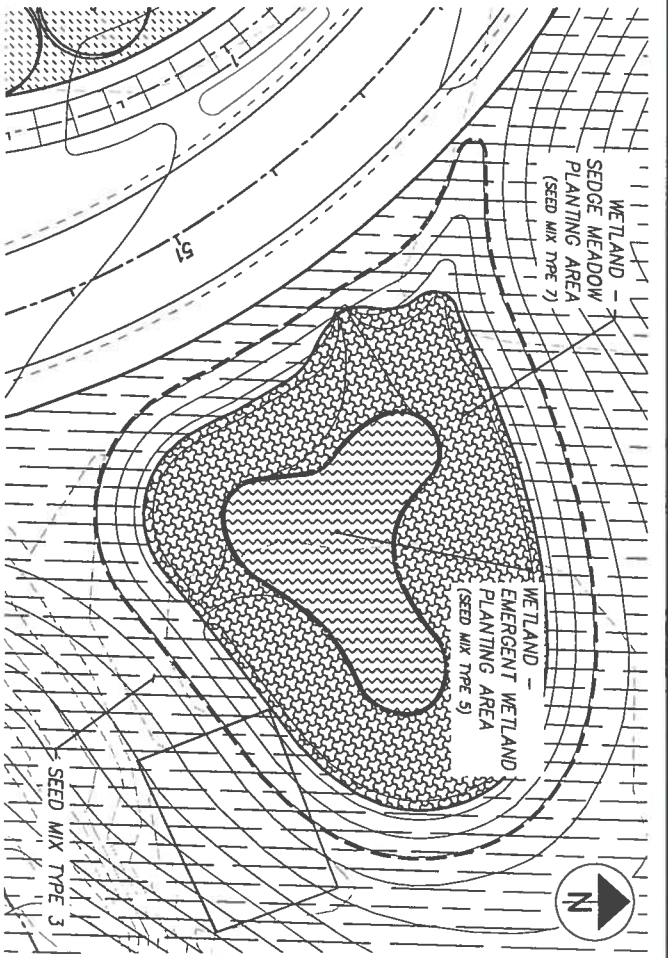
**LANDSCAPE PLAN - PLANTINGS**  
STA 254+50 TO STA 323+00 - CHMA HOUSING AREA & W 4TH ST

CALCULATED TR,CR	0 50 25 100 HORIZONTAL SCALE IN FEET
CHECKED KL,GN	

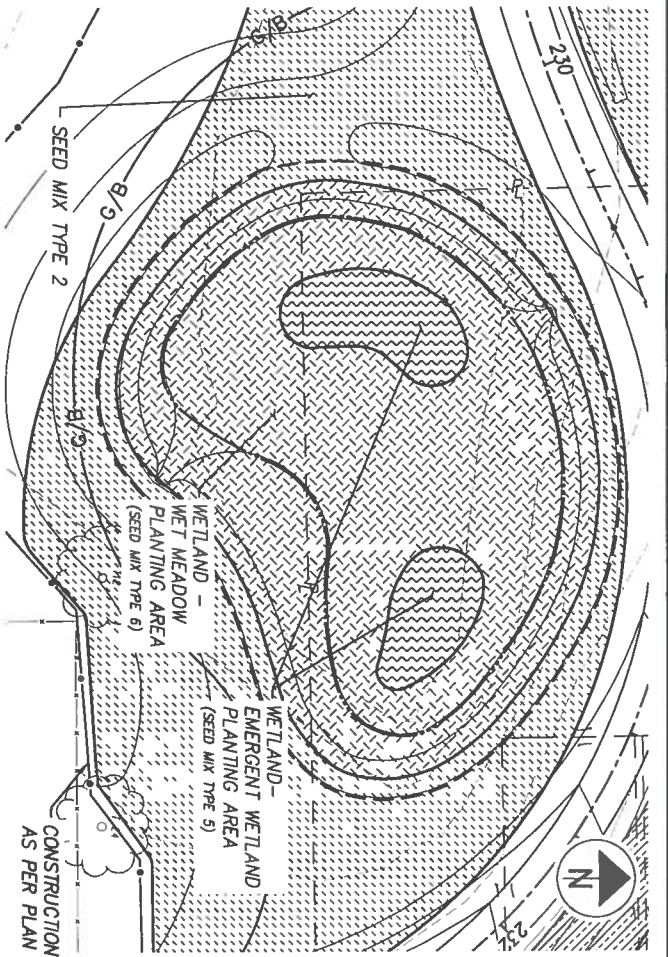


- NOTES
1. SEE SHEETS 255, 256, & 257 FOR SUBSUMMARIES, LANDSCAPE LEGEND AND QUANTITIES
  2. SEE SHEET 197 FOR SEEDING QUANTITIES
  3. SEE SHEETS 227-230 FOR SEED TYPE MIXES
  4. SEE SHEET 262A FOR MORE INFORMATION ABOUT FOREST ENHANCEMENT AND CREATION PLANTING AREAS
  5. FOR DEMOLITION, SEE SHEETS 200 - 222
  6. FOR GRADING, SEE SHEETS 83 - 103
  7. FOR LANDSCAPING, SEE SHEETS 223 - 267
  8. CONTRACTOR SHALL NOT DIG DEEPER THAN 18" IN CLARK FIELDS WEST WETLAND BASIN AND ENTRY DRIVE ENLARGEMENT. THIS AREA HAS GEOSYNTHETIC CLAY LINER. SEE GRADING PLAN SHEET 86-88 AND EARTHWORK SHEETS 78-80 FOR MORE INFORMATION.

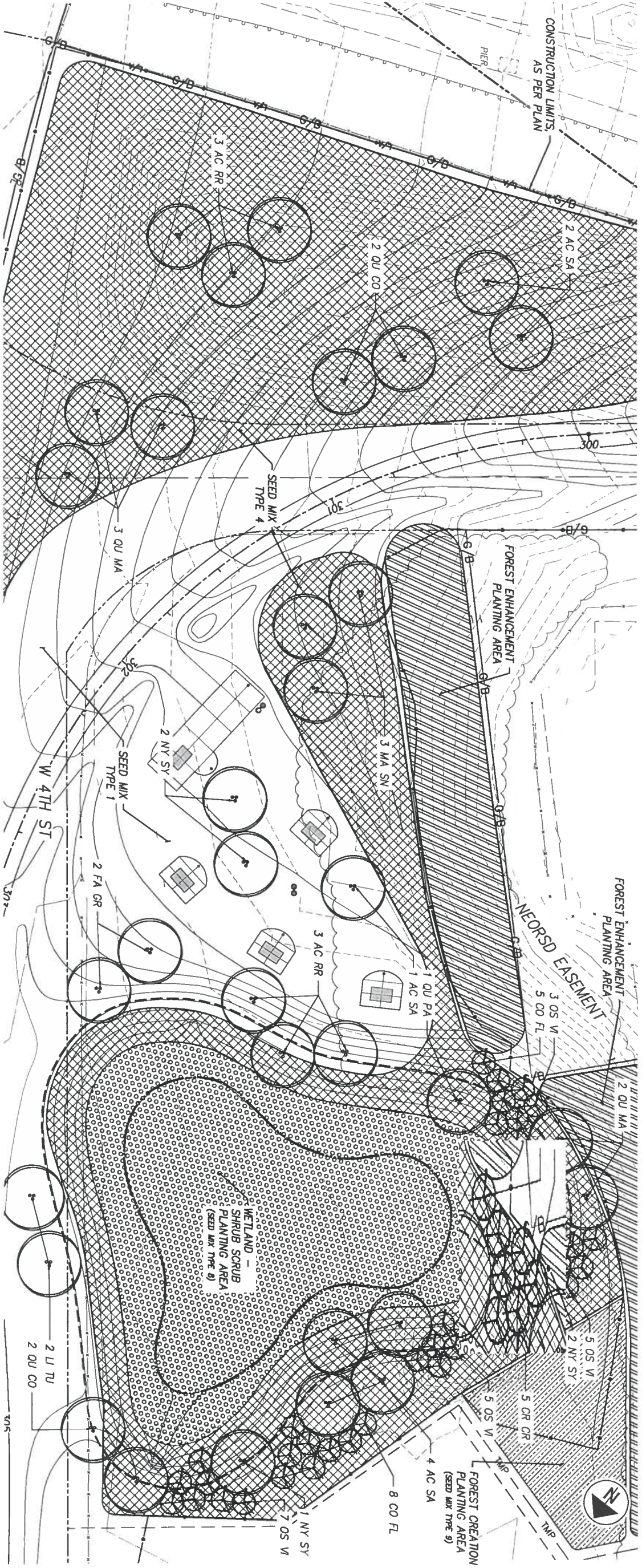




252 1 CLARK FIELDS EAST WETLAND BASIN ENLARGEMENT



252 2 CLARK FIELDS NORTH WETLAND BASIN & STORM WATER BASIN ENLARGEMENT



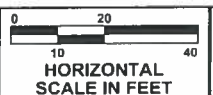
252 3 CHIMA HOUSING WETLAND BASIN ENLARGEMENT

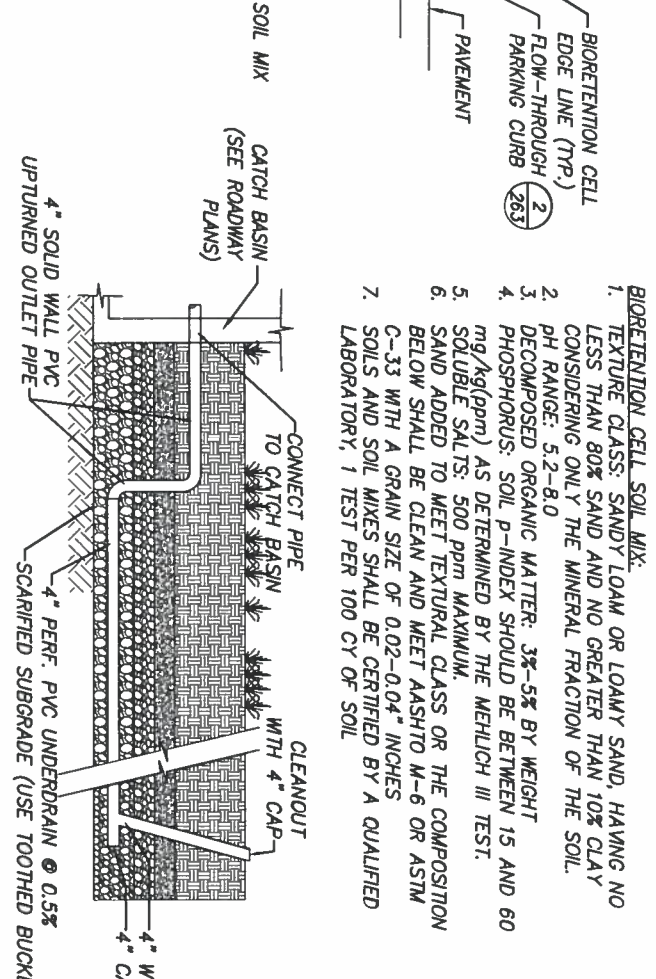
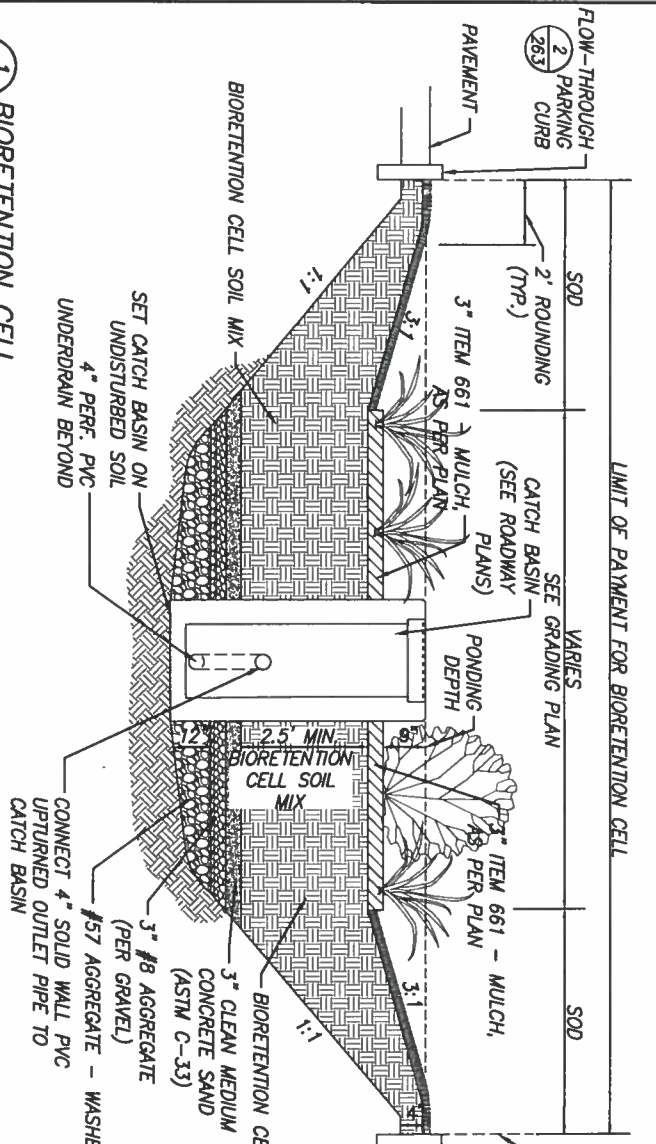
- NOTES:
1. SEE SHEETS 255, 256, & 257 FOR SUBSUMMARIES, LANDSCAPE LEGEND AND QUANTITIES
  2. SEE SHEET 197 FOR SEEDING QUANTITIES
  3. SEE SHEETS 227-230 FOR SEED TYPE MIXES
  4. SEE SHEET 262A FOR MORE INFORMATION ABOUT FOREST ENHANCEMENT AND CREATION PLANTING AREAS
  5. FOR DEMOLITION, SEE SHEETS 200 - 222
  6. FOR GRADING, SEE SHEETS 83 - 103
  7. FOR LANDSCAPING, SEE SHEETS 223 - 267

CUY-TOWPATH TRAIL, STAGE 3

LANDSCAPE PLAN - PLANTINGS  
ENLARGEMENT - CLARK FIELDS AREA & THE BLUFFS AREA

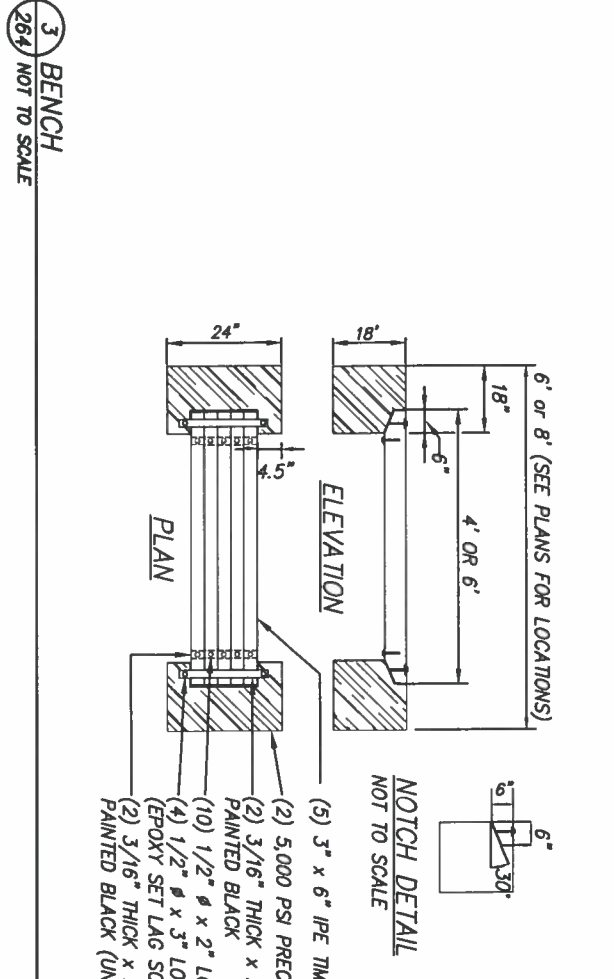
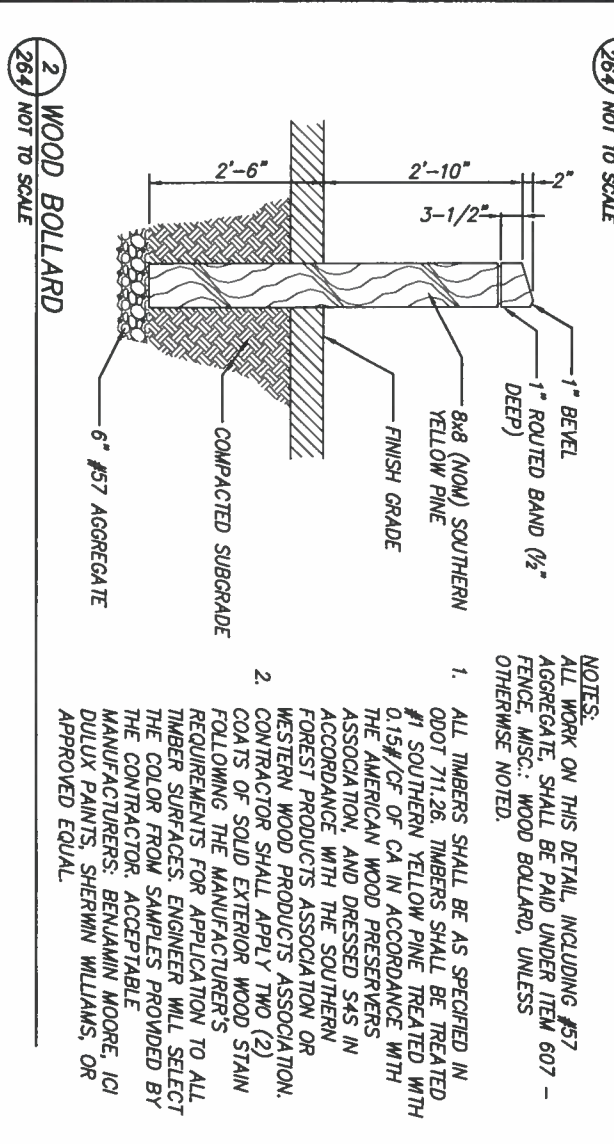
CALCULATED TR,CR  
CHECKED KL,GN





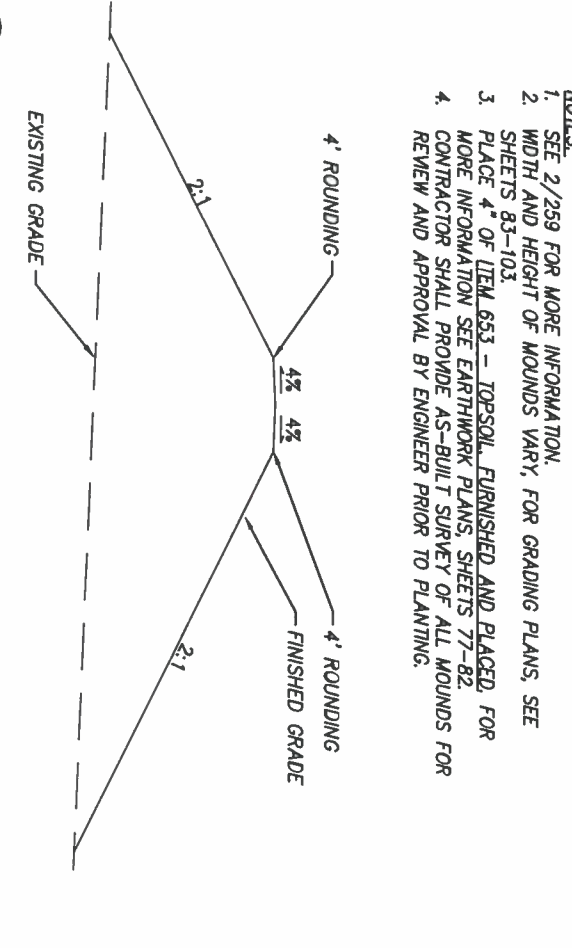
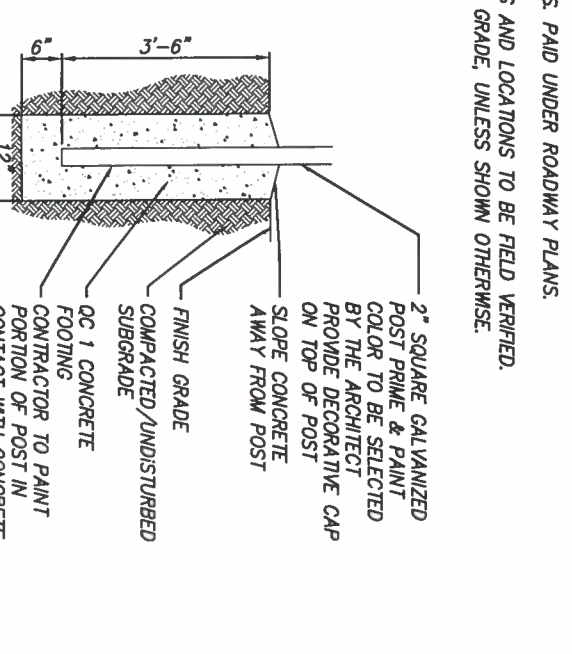
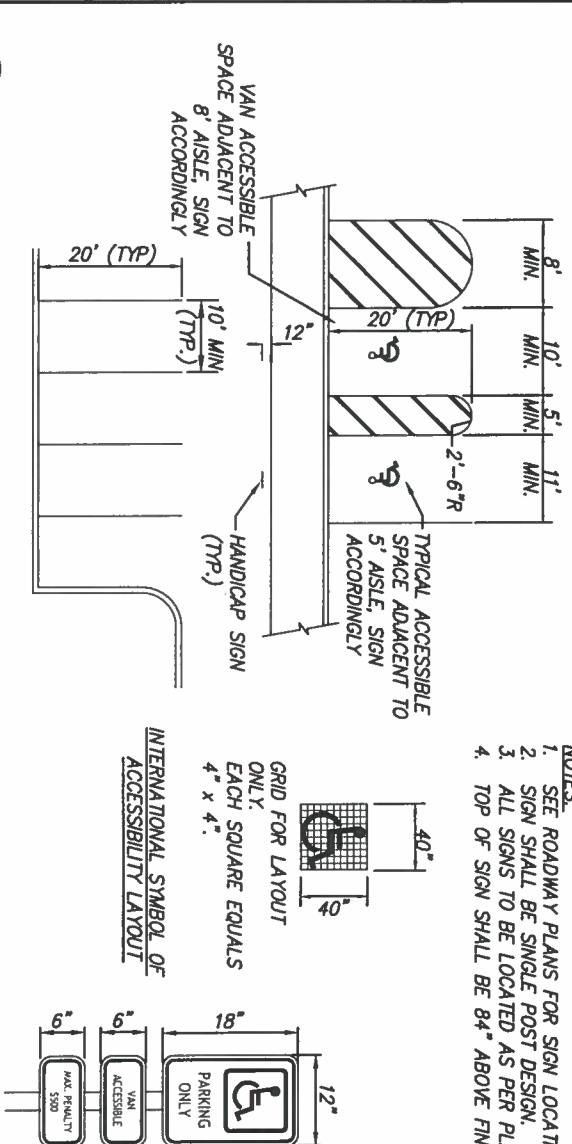
**NOTES:**  
 ALL WORK ON THIS DETAIL, INCLUDING BIORETENTION CELL SOIL MIX LAYER, SOD, AGGREGATE LAYERS, AND BIORETENTION UNDERDRAINS, SHALL BE PAID UNDER ITEM 203 - SPECIAL - BIORETENTION CELL, UNLESS OTHERWISE NOTED.

- SEE SHEETS 251 & 255 FOR BIORETENTION CELL PLANTS.
- FOR GRADING PLANS, SEE SHEETS 83-103.
- FOR UTILITY INFORMATION, SEE SHEETS 68-69.
- PIPES FOR UPRTURNED UNDERDRAIN TO BE SOLID WALL PIPE. ENSURE INVERT IS 18" BELOW BIORETENTION CELL SURFACE. CONTRACTOR SHALL USE TOOTHED BUCKET INSTEAD OF SMOOTH BUCKET TO EXCAVATE THE BOTTOM OF BIORETENTION CELL (SCARIFICATION).
- FLOW-THROUGH PARKING CURB SHALL BE PAID UNDER ITEM 609 - CURB, MISC.; FLOW-THROUGH PARKING CURB.
- RECYCLED CONCRETE AGGREGATE OR SLAG ARE NOT ACCEPTABLE.
- FURNISH AND PLACE SOD PER ITEM 660, EXCEPT DO NOT PLACE TOPSOIL OR ANY MATERIAL OTHER THAN BIORETENTION CELL SOIL MIX TO EVEN OR LEVEL SUBSURFACE PRIOR TO SOD PLACEMENT. WHEN TAMPING SOD, DO NOT TO COMPACT BIORETENTION CELL SOIL MIX. PAYMENT FOR SOD SHALL BE PAID UNDER ITEM SPECIAL - BIORETENTION CELL.



**NOTES:**  
 ALL WORK ON THIS DETAIL, INCLUDING ASSEMBLY, IPE TIMBERS, PAINT, STEEL STRAPS, EPOXY, PRECAST CONCRETE BLOCKS, AND HARDWARE, SHALL BE PAID UNDER ITEM SPECIAL - MISC.; BENCH, 6' OR BENCH 8', UNLESS OTHERWISE NOTED.

- SEE 2/259 FOR MORE INFORMATION.
- WIDTH AND HEIGHT OF MOUNDS VARY, FOR GRADING PLANS, SEE SHEETS 83-103.
- PLACE 4" OF ITEM 653 - TOPSOIL, FURNISHED AND PLACED, FOR MORE INFORMATION SEE EARTHWORK PLANS SHEETS 77-82.
- CONTRACTOR SHALL PROVIDE AS-BUILT SURVEY OF ALL MOUNDS FOR REVIEW AND APPROVAL BY ENGINEER PRIOR TO PLANTING.



**1 BIORETENTION CELL**  
 264 NOT TO SCALE

**2 WOOD BOLLARD**  
 264 NOT TO SCALE

**3 BENCH**  
 264 NOT TO SCALE

**4 PARKING PAVEMENT MARKING PLAN**  
 264 NOT TO SCALE

**5 TYPICAL MOUND SECTION**  
 264 NOT TO SCALE