

**PRIVATE DETENTION BASIN /  
STORMWATER QUALITY BEST MANAGEMENT PRACTICE  
MAINTENANCE AGREEMENT AND EASEMENT**

This PRIVATE DETENTION BASIN / STORMWATER QUALITY BEST MANAGEMENT PRACTICE MAINTENANCE AGREEMENT AND EASEMENT (Agreement) is made by and between EL PASO COUNTY by and through THE BOARD OF COUNTY COMMISSIONERS OF EL PASO COUNTY, COLORADO (Board or County) and Eagle Development Company, Lorson South Land Corp, Babcock Land Corp., and Colo Windermere #2, LLC (collectively, "Developers"), Yes Antelope Ridge, LLC ("Yes") and THE SANDS METROPOLITAN DISTRICT NO. 4 (Metro District), a quasi-municipal corporation and political subdivision of the State of Colorado. The above may occasionally be referred to herein singularly as "Party" and collectively as "Parties."

Recitals

A. WHEREAS, the District provides various municipal services to certain real property in El Paso County, Colorado referred to as Windermere Filing No. 1; and

B. WHEREAS, Developer is the owner of certain real estate (the Property or Subdivision) in El Paso County, Colorado, which Property is legally described in Exhibit A attached hereto and incorporated herein by this reference; and

C. WHEREAS, Developer desires to plat and develop on the Property a subdivision to be known as Windermere Filing No. 1; and

D. WHEREAS, the development of this Property will substantially increase the volume of water runoff and will decrease the quality of the stormwater runoff from the Property, and, therefore, it is in the best interest of public health, safety and welfare for the County to condition approval of this subdivision on Developer's promise to construct adequate drainage, water runoff control facilities, and stormwater quality structural Best Management Practices ("BMPs") for the subdivision; and

E. WHEREAS, Chapter 8, Section 8.4.5 of the El Paso County Land Development Code, as periodically amended, promulgated pursuant to Section 30-28-133(1), Colorado Revised Statutes (C.R.S.), requires the County to condition approval of all subdivisions on a developer's promise to so construct adequate drainage, water runoff control facilities, and BMPs in subdivisions; and

F. WHEREAS, the Drainage Criteria Manual, Volume 2, as amended by Appendix I of the El Paso County Engineering Criteria Manual (ECM), as each may be periodically amended, promulgated pursuant to the County's Colorado Discharge Permit System General Permit (MS4 Permit) as required by Phase II of the National Pollutant Discharge Elimination System (NPDES), which MS4 Permit requires that the County take measures to protect the quality of stormwater from sediment and other contaminants, requires subdividers, developers, landowners, and owners of facilities located in the County's rights-of-way or easements to provide adequate permanent stormwater quality BMPs with new development or significant redevelopment; and

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El Paso County, CO



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G. WHEREAS, Section 2.9 of the El Paso County Drainage Criteria Manual provides for a developer's promise to maintain a subdivision's drainage facilities in the event the County does not assume such responsibility; and

H. WHEREAS, developers in El Paso County have historically chosen water runoff detention basins as a means to provide adequate drainage and water runoff control in subdivisions, which basins, while effective, are less expensive for developers to construct than other methods of providing drainage and water runoff control; and

I. WHEREAS, Developer desires to construct for the subdivision two detention basin/stormwater quality BMP(s) ("detention basin/BMP(s)") as the means for providing adequate drainage and stormwater runoff control and to meet requirements of the County's MS4 Permit, and to provide for operating, cleaning, maintaining and repairing such detention basin/BMP(s); and

J. WHEREAS, Developer desires to construct the detention basin(s)/BMP(s) on property that is or will be platted as Tract A, Chateau at Antelope Ridge Filing No. 2, as described in Exhibit B attached hereto, and on that to be platted as Tracts A and B, Windermere Filing No. 1 as indicated on the final plat of the subdivision, within the easements legally described and depicted in Exhibits C, D, E and F, attached hereto; and

K. WHEREAS, Developer shall be charged with the duty of constructing the detention basin(s)/BMP(s) and the Metro District shall be charged with the duties of operating, maintaining and repairing the detention basin/BMP(s) on the portions of the Property as described and depicted in Exhibits B, C, D, E and F; and

L. WHEREAS, it is the County's experience that subdivision developers and property owners historically have not properly cleaned and otherwise not properly maintained and repaired these detention basins/BMPs, and that these detention basins/BMPs, when not so properly cleaned, maintained, and repaired, threaten the public health, safety and welfare; and

M. WHEREAS, the County, in order to protect the public health, safety and welfare, has historically expended valuable and limited public resources to so properly clean, maintain, and repair these detention basins/BMPs when developers and property owners have failed in their responsibilities, and therefore, the County desires the means to recover its costs incurred in the event the burden falls on the County to so clean, maintain and repair the detention basin/BMP(s) serving this Subdivision due to the Developer's or the Metro District's failure to meet its obligations to do the same; and

N. WHEREAS, the County conditions approval of this Subdivision on the Developer's promise to so construct the detention basin/BMP(s), and further conditions approval on the Metro District's promise to reimburse the County in the event the burden falls upon the County to so clean, maintain and/or repair the detention basin/BMP(s) serving this Subdivision; and

O. WHEREAS, the County could condition subdivision approval on the Developer's promise to construct a different and more expensive drainage, water runoff control system and BMPs than those proposed herein, which more expensive system would not create the possibility of the burden of cleaning, maintenance and repair expenses falling on the County; however, the County is willing to forego such right upon the performance of Developer's and the Metro District's promises contained herein; and

P. WHEREAS, the County, in order to secure performance of the promises contained herein, conditions approval of this Subdivision upon the Developer's grant herein of a perpetual Easement over a portion of the Property for the purpose of allowing the County to periodically access, inspect, and, when so necessary, to clean, maintain and/or repair the detention basin/BMP(s); and

Q. WHEREAS, Pursuant to Colorado Constitution, Article XIV, Section 18(2) and Section 29-1-203, Colorado Revised Statutes, governmental entities may cooperate and contract with each other to provide any function, services, or facilities lawfully authorized to each.

### Agreement

NOW, THEREFORE, in consideration of the mutual Promises contained herein, the sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Incorporation of Recitals: The Parties incorporate the Recitals above into this Agreement.
2. Covenants Running with the Land: Developer and the Metro District agree that this entire Agreement and the performance thereof shall become a covenant running with the land, which land is legally described in Exhibit A attached hereto, and that this entire Agreement and the performance thereof shall be binding upon themselves, their respective successors and assigns.
3. Construction: Developer shall construct on those portion of the Property described in Exhibits B, C and D attached hereto and incorporated herein by this reference, two detention basin/BMP(s). Developer shall not commence construction of the detention basin/BMP(s) until the El Paso County Planning and Community Development Department (PCD) has approved in writing the plans and specifications for the detention basin/BMP(s) and this Agreement has been signed by all Parties and returned to the PCD. Developer shall complete construction of the detention basin/BMP(s) in substantial compliance with the County-approved plans and specifications for the detention basin/BMP(s). Failure to meet these requirements shall be a material breach of this Agreement and shall entitle the County to pursue any remedies available to it at law or in equity to enforce the same. Construction of the detention basin/BMP(s) shall be substantially completed within one (1) year (defined as 365 days), which one year period will commence to run on the date the approved plat of this Subdivision is recorded in the records of the El Paso County Clerk and Recorder. Rough grading of the detention basin/BMP(s) must be completed and inspected by the El Paso County Planning and Community Development Department prior to commencing road construction.

In the event construction is not substantially completed within the one (1) year period, then the County may exercise its discretion to complete the project and shall have the right to seek reimbursement from the Developer and its respective successors and assigns, for its actual costs and expenses incurred in the process of completing construction. The term actual costs and expenses shall be liberally construed in favor of the County, and shall include, but shall not be limited to, labor costs, tool and equipment costs, supply costs, and engineering and design costs, regardless of whether the County uses its own personnel, tools, equipment and supplies, etc. to correct the matter. In the event the County initiates any litigation or engages the services of legal counsel in order to enforce the Provisions arising herein, the County shall be entitled to its damages and costs, including reasonable attorney fees, regardless of whether the County contracts with outside legal counsel or utilizes in-house legal counsel for the same.

4. **Maintenance:** The Metro District agrees for itself and its successors and assigns, that it will regularly and routinely inspect, clean and maintain the detention basin/BMP(s), and otherwise keep the same in good repair, all at its own cost and expense. No trees or shrubs that will impair the structural integrity of the detention basin/BMP(s) shall be planted or allowed to grow on the detention basin/BMP(s).

5. **Creation of Easement:** Yes hereby grants Developers, the Metro District, and the County a non-exclusive perpetual easement upon and across its property described in Exhibit B. Developers hereby grant the County and the Metro District a non-exclusive perpetual easement upon and across those portions of the Property described in Exhibits C and D. The purposes of the two easements are to allow the Developers to construct and the County and the Metro District to access, inspect, clean, repair and maintain the detention basin/BMP(s); however, the creation of the easements does not expressly or implicitly impose on the County a duty to so inspect, clean, repair or maintain the detention basin/BMP(s).

Developers hereby grant Yes a non-exclusive perpetual drainage easement upon and across their property described in Exhibit C to accommodate developed stormwater runoff from the property owned by Yes.

6. **County's Rights and Obligations:** Any time the County determines, in the sole exercise of its discretion, that the detention basin/BMP(s) is not properly cleaned, maintained and/or otherwise kept in good repair, the County shall give reasonable notice to the Developers, the Metro District and their respective successors and assigns, that the detention basin/BMP(s) needs to be cleaned, maintained and/or otherwise repaired. The notice shall provide a reasonable time to correct the problem(s). Should the responsible parties fail to correct the specified problem(s), the County may enter upon the Property to so correct the specified problem(s). Notice shall be effective to the above by the County's deposit of the same into the regular United States mail, postage pre-paid. Notwithstanding the foregoing, this Agreement does not expressly or implicitly impose on the County a duty to so inspect, clean, repair or maintain the detention basin/BMP(s).

7. **Reimbursement of County's Costs / Covenant Running With the Land:** The Developer and the Metro District agree and covenant, for themselves, their respective successors and assigns, that they will reimburse the County for its costs and expenses incurred in the process of completing construction of, cleaning, maintaining, and/or repairing the detention basin/BMP(s) pursuant to the provisions of this Agreement.

The term "actual costs and expenses" shall be liberally construed in favor of the County, and shall include, but shall not be limited to, labor costs, tools and equipment costs, supply costs, and engineering and design costs, regardless of whether the County uses its own personnel, tools, equipment and supplies, etc. to correct the matter. In the event the County initiates any litigation or engages the services of legal counsel in order to enforce the provisions arising herein, the County shall be entitled to its damages and costs, including reasonable attorney's fees, regardless of whether the County contracts with outside legal counsel or utilizes in-house legal counsel for the same.

8. **Contingencies of Subdivision Approval:** Developer's and the Metro District's execution of this Agreement is a condition of subdivision approval. Additional conditions of this Agreement include, but are not limited to, the following:

- a. Conveyance of easements over portions of Tracts A and B, as specified in Exhibits C, D, E and F, from Developer to the Metro District (which will include a reservation of easement

in favor of the County for purposes of accessing, inspecting, cleaning, maintaining, and repairing the detention basin/BMP(s)), and recording of the Deed for the same; and

- b. A copy of the Covenants of the Subdivision, if applicable, establishing that the Metro District is obligated to inspect, clean, maintain, and repair the detention basin/BMP(s).

The County shall have the right, in the sole exercise of its discretion, to approve or disapprove any documentation submitted to it under the conditions of this Paragraph, including but not limited to, any separate agreement or amendment, if applicable, identifying any specific maintenance responsibilities not addressed herein. The County's rejection of any documentation submitted hereunder shall mean that the appropriate condition of this Agreement has not been fulfilled.

9. Agreement Monitored by El Paso County Planning and Community Development Department and/or El Paso County Department of Public Works: Any and all actions and decisions to be made hereunder by the County shall be made by the Director of the El Paso County Planning and Community Development Department and/or the Director of the El Paso County Department of Public Works. Accordingly, any and all documents, submissions, plan approvals, inspections, etc. shall be submitted to and shall be made by the Director of the Planning and Community Development Department and/or the Director of the El Paso County Department of Public Works.

10. Indemnification and Hold Harmless: To the extent authorized by law, Developers and the Metro District agree, for themselves, their respective successors and assigns, that they will indemnify, defend, and hold the County and Yes harmless from any and all loss, costs, damage, injury, liability, claim, lien, demand, action and causes of action whatsoever, whether at law or in equity, arising from or related to their respective intentional or negligent acts, errors or omissions or that of their agents, officers, servants, employees, invitees and licensees in the construction, operation, inspection, cleaning (including analyzing and disposing of any solid or hazardous wastes as defined by State and/or Federal environmental laws and regulations), maintenance, and repair of the detention basin/BMP(s), and such obligation arising under this Paragraph shall be joint and several. Nothing in this Paragraph shall be deemed to waive or otherwise limit the defense available to the County pursuant to the Colorado Governmental Immunity Act, Sections 24-10-101, *et seq.* C.R.S., or as otherwise provided by law.

11. Severability: In the event any Court of competent jurisdiction declares any part of this Agreement to be unenforceable, such declaration shall not affect the enforceability of the remaining parts of this Agreement.

12. Third Parties: This Agreement does not and shall not be deemed to confer upon or grant to any third party any right to claim damages or to bring any lawsuit, action or other proceeding against either the County, Yes, the Developer, the Metro District, or their respective successors and assigns, because of any breach hereof or because of any terms, covenants, agreements or conditions contained herein.

13. Solid Waste or Hazardous Materials: Should any refuse from the detention basin/BMP(s) be suspected or identified as solid waste or petroleum products, hazardous substances or hazardous materials (collectively referred to herein as "hazardous materials"), the Developer and the Metro District shall take all necessary and proper steps to characterize the solid waste or hazardous materials and properly dispose of it in accordance with applicable State and/or Federal environmental laws and regulations, including, but not limited to, the following: Solid Wastes Disposal Sites and Facilities Acts, §§ 30-20-

100.5 – 30-20-119, C.R.S., Colorado Regulations Pertaining to Solid Waste Disposal Sites and Facilities, 6 C.C.R. 1007-2, et seq., Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992k, and Federal Solid Waste Regulations 40 CFR Ch. I. The County shall not be responsible or liable for identifying, characterizing, cleaning up, or disposing of such solid waste or hazardous materials. Notwithstanding the previous sentence, should any refuse cleaned up and disposed of by the County be determined to be solid waste or hazardous materials, the Developer and the Metro District, but not the County or Yes, shall be responsible and liable as the owner, generator, and/or transporter of said solid waste or hazardous materials.

14. Applicable Law and Venue: The laws, rules, and regulations of the State of Colorado and El Paso County shall be applicable in the enforcement, interpretation, and execution of this Agreement, except that Federal law may be applicable regarding solid waste or hazardous materials. Venue shall be in the El Paso County District Court.

15. Limitation on Developer’s Obligation and Liability: The obligation and liability of the Developer hereunder shall only continue until such time as the Final Plat as described in Paragraph Three (3) of the Recitals set forth above is recorded and the Developer completes the construction of the detention basin/BMP(s) and transfers all applicable maintenance and operation responsibilities to the Metro District. By execution of this agreement, the Metro District agrees to accept all responsibilities and to perform all duties assigned to it, including those of the Developer, as specified herein, upon transfer of portions of Tract A and Tract B, further specified by Exhibits B and D from Developer to the Metro District.

IN WITNESS WHEREOF, the Parties affix their signatures below.

Executed this 21st day of April, 2022, by:

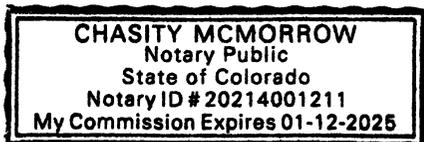
Eagle Development Company

By: [Signature]  
Jeff Mark (Vice President)

The foregoing instrument was acknowledged before me this 21 day of April, 2022 by Jeff Mark, as Vice President of Eagle Development Company.

Witness my hand and official seal.

My commission expires: 01-12-2025



[Signature]  
Notary Public

Executed this 21<sup>st</sup> day of April, 2022, by:

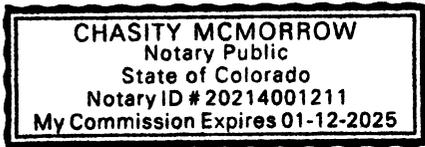
Lorson South Land Corp.

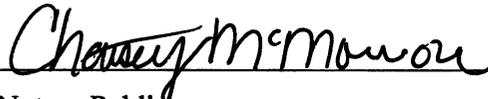
By:   
Jeff Mark, Vice President

The foregoing instrument was acknowledged before me this 21<sup>st</sup> day of April, 2022, by Jeff Mark, Vice President of Lorson South Land Corp.

Witness my hand and official seal.

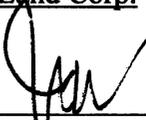
My commission expires: 01-12-2025



  
Notary Public

Executed this 21<sup>st</sup> day of April, 2022, by:

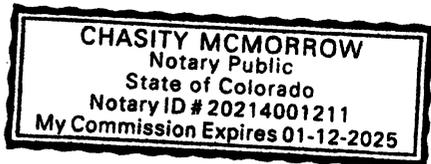
Babcock Land Corp.

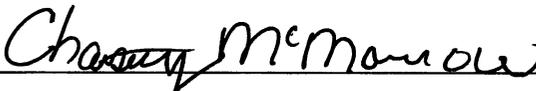
By:   
Jeff Mark, Vice President

The foregoing instrument was acknowledged before me this 21<sup>st</sup> day of April, 2022, by Jeff Mark, Vice President of Babcock Land Corp.

Witness my hand and official seal.

My commission expires: 01-12-2025



  
Notary Public

Executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by:

Colo Windermere #2, LLC

By: \_\_\_\_\_  
James Todd Stephens, Manager

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by James Todd Stephens

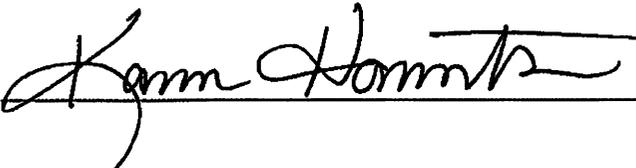
Witness my hand and official seal.

My commission expires: \_\_\_\_\_

\_\_\_\_\_  
Notary Public

Executed this 26<sup>th</sup> day of April, 2022, by:

Yes Antelope Ridge, LLC.

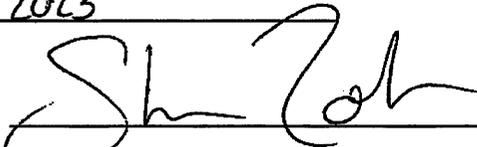
By: 

The foregoing instrument was acknowledged before me this 26<sup>th</sup> day of April, 2022 by Karen Hamilton of Yes Antelope Ridge, LLC.

Witness my hand and official seal.

My commission expires: 02-26-2023

**SHANNON ZOHN**  
Notary Public  
State of Colorado  
Notary ID # 20194007963  
My Commission Expires 02-26-2023

  
Notary Public

Executed this 25<sup>th</sup> day of April, 2022, by:

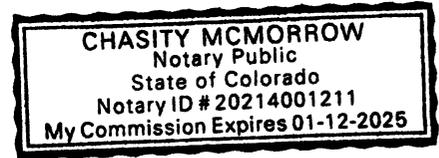
Colo Windermere #2, LLC

By: [Signature]  
James Todd Stephens, Manager

The foregoing instrument was acknowledged before me this 25<sup>th</sup> day of April, 2022, by James Todd Stephens

Witness my hand and official seal.

My commission expires: 01-12-2025



[Signature]  
Notary Public

Executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by:

Yes Antelope Ridge, LLC.

By: \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by \_\_\_\_\_ of Yes Antelope Ridge, LLC.

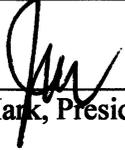
Witness my hand and official seal.

My commission expires: \_\_\_\_\_

\_\_\_\_\_  
Notary Public

Executed this 21<sup>st</sup> day of April, 20 22, by:

THE SANDS METROPOLITAN DISTRICT NO. 4

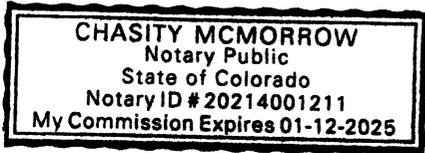
By:   
Jeff Mark, President

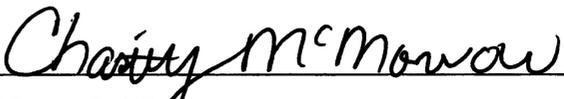
Attest:  
By:   
Alan Vancil, Director

The foregoing instrument was acknowledged before me this 21<sup>st</sup> day of April,  
20 22, by Jeff Mark, President, and Alan Vancil, Director, THE SANDS METROPOLITAN DISTRICT NO. 4

Witness my hand and official seal.

My commission expires: 01-12-2025



  
Notary Public

Executed this 5<sup>th</sup> day of May, 2022, by:

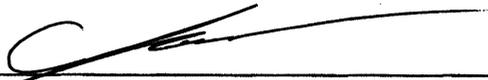
BOARD OF COUNTY COMMISSIONERS  
OF EL PASO COUNTY, COLORADO

By:   
Craig Dossey, Executive Director  
KEVIN MASTIN Planning and Community Development Department  
Authorized signatory pursuant to LDC

The foregoing instrument was acknowledged before me this 5<sup>th</sup> day of May, 2022, by Kevin Mastin, Executive Director of El Paso County Planning and Community Development Department.

Witness my hand and official seal.

My commission expires: October 11, 2022

  
\_\_\_\_\_  
Notary Public

Tara Joy Younger  
Notary Public  
State of Colorado  
Notary ID 20184040076  
My Commission Expires October 11, 2022

Approved as to Content and Form:

Yori L. Seago  
\_\_\_\_\_  
Assistant County Attorney

## **Exhibits**



1800 38<sup>th</sup> St. • Boulder, CO 80301 • 303-442-4338 • 303-442-4373 fax  
3 South 7th St. • Colorado Springs, CO 80905 • 719-260-0887 • 719-260-8352 fax  
Greeley, CO 80631 • 970-351-0645

## EXHIBIT A

D&C Project: 21187-01

LEGAL DESCRIPTION - PROPOSED WINDERMERE FILING No. 1

MARCH 11, 2022

A PARCEL OF LAND LOCATED WITHIN THE EAST HALF OF SECTION 29, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF LOT 1, CHATEAU AT ANTELOPE RIDGE FILING NO. 2, AS SHOWN ON THE PLAT THEREOF RECORDED UNDER RECEPTION NO. 202192387, OF THE RECORDS OF THE COUNTY OF EL PASO, STATE OF COLORADO, SAID CORNER ALSO BEING ON THE EAST RIGHT-OF-WAY LINE OF ANTELOPE RIDGE DRIVE AND CONSIDERING THE SOUTH LINE OF SAID LOT 1, AS SHOWN ON SAID PLAT, TO BEAR N89°56'53"E, WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO; THENCE THE FOLLOWING TEN (10) COURSES ALONG THE SOUTH LINE OF CHATEAU AT ANTELOPE RIDGE FILING NO. 2:

1. N89°56'53"E, 670.94 FEET;
2. S77°13'21"W, 296.79 FEET;
3. S14°41'09"E, 81.11 FEET;
4. S77°39'54"E, 397.87 FEET;
5. N63°24'07"E, 97.95 FEET;
6. N47°01'52"E, 173.02 FEET TO A POINT OF NON-TANGENT CURVE CONCAVE TO THE SOUTH, FROM WHICH THE RADIAL LINE BEARS S26°27'56"E, 50.64 FEET;
7. 54.06 FEET ALONG THE ARC OF SAID CURVE, SAID ARC HAVING A RADIUS OF 50.64 FEET, A CENTRAL ANGLE OF 61°10'00", AND BEING SUBTENDED BY A CHORD THAT BEARS S85°52'56"E, 51.53 FEET;
8. S50°34'05"E, 287.41 FEET;
9. N03°10'04"W, 254.58 FEET;
10. N89°56'53"E, 70.30 FEET;

THENCE N89°24'24"E, 58.36 FEET TO THE WEST RIGHT-OF-WAY LINE OF MARKSHEFFEL ROAD AS DESCRIBED IN THAT DOCUMENT RECORDED UNDER RECEPTION NO. 209071394 OF THE RECORDS OF EL PASO COUNTY; THENCE THE FOLLOWING SEVEN (7) COURSES ALONG THE SAID WEST RIGHT-OF-WAY LINE:

1. S00°36'10"E, 53.57 FEET TO A POINT OF CURVE TO THE RIGHT;
2. 460.83 FEET ALONG THE ARC OF SAID CURVE TO A POINT TANGENT, SAID ARC HAVING A RADIUS OF 7920.00 FEET, A CENTRAL ANGLE OF 03°20'02", AND BEING SUBTENDED BY A CHORD THAT BEARS S01°03'51"W, 460.76 FEET;
3. S02°43'52"W, 207.46 FEET TO A POINT OF CURVE TO THE LEFT;
4. 447.12 FEET ALONG THE ARC OF SAID CURVE, SAID ARC HAVING A RADIUS OF 8580.00 FEET, CENTRAL ANGLE OF 02°59'09" AND BEING SUBTENDED BY A CHORD THAT BEARS S01°14'18"W, 447.07 FEET;
5. S00°15'17"E, 943.87 FEET;
6. S29°00'24"W, 54.00 FEET;
7. S59°08'42"W, 73.00 FEET TO THE NORTH RIGHT-OF-WAY LINE OF NORTH CAREFREE CIRCLE AS DESCRIBED IN THAT DOCUMENT RECORDED UNDER RECEPTION NO. 205015091 OF THE RECORDS OF EL PASO COUNTY; THENCE THE FOLLOWING THREE (3) COURSES ALONG SAID NORTH RIGHT-OF-WAY LINE:

Civil, Transportation, & Water Resources Engineering  
Land Surveying • Geomatics • Mapping  
www.drexelbarrell.com

1. S89°48'47"W, 113.86 FEET TO A POINT OF CURVE TO THE LEFT;
2. 407.83 FEET ALONG THE ARC OF SAID CURVE TO A POINT OF REVERSE CURVE, SAID ARC HAVING A RADIUS OF 1060.00 FEET, A CENTRAL ANGLE OF 22°02'40" AND BEING SUBTENDED BY A CHORD THAT BEARS S78°47'28"W, 405.32 FEET;
3. 288.60 FEET ALONG THE ARC OF SAID REVERSE CURVE TO THE EAST RIGHT-OF-WAY LINE OF ANTELOPE RIDGE DRIVE, SAID ARC HAVING A RADIUS OF 940.00 FEET, A CENTRAL ANGLE OF 17°35'28" AND BEING SUBTENDED BY A CHORD THAT BEARS S76°33'51"W, 287.47 FEET;

THENCE THE FOLLOWING FOUR (4) COURSES ALONG THE EAST RIGHT-OF-WAY LINE OF SAID ANTELOPE RIDGE DRIVE:

1. N00°00'18"W, 712.88 FEET TO A POINT OF CURVE TO THE LEFT;
2. 762.65 FEET ALONG THE ARC OF SAID CURVE TO A POINT OF REVERSE CURVE; SAID ARC HAVING A RADIUS OF 1280.00 FEET, A CENTRAL ANGLE OF 34°08'17" AND BEING SUBTENDED BY A CHORD THAT BEARS N17°04'26"W, 751.42 FEET;
3. 928.37 FEET ALONG THE ARC OF SAID REVERSE CURVE TO A POINT TANGENT, SAID ARC HAVING A RADIUS OF 1560.00 FEET, A CENTRAL ANGLE OF 34°05'50" AND BEING SUBTENDED BY A CHORD THAT BEARS N17°05'40"W, 914.73 FEET;
4. N00°09'38"W, 35.51 FEET TO THE POINT OF BEGINNING.

THE ABOVE PARCEL CONTAINS AN AREA OF 2,268,352 SQUARE FEET (52.074 ACRES) OF LAND, MORE OR LESS.

I, JOHN C. DAY, A PROFESSIONAL LAND SURVEYOR, LICENSED IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE ABOVE LEGAL DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CHECKING.

JOHN C. DAY PLS 29413  
FOR AND ON BEHALF OF  
DREXEL, BARRELL & CO.  
3 SOUTH 7<sup>TH</sup> STREET  
COLORADO SPRINGS, COLORADO 80905  
719-260-0887





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3 South 7th St. • Colorado Springs, CO 80905 • 719-260-0887 • 719-260-8352 fax  
Greeley, CO 80631 • 970-351-0645

## EXHIBIT B

DBC Project: 21187-01  
March 11, 2022

LEGAL DESCRIPTION - YES ANTELOPE RIDGE, LLC PROPERTY

A PARCEL OF LAND LOCATED WITHIN THE EAST HALF OF SECTION 29, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: TRACT A, CHATEAU AT ANTELOPE RIDGE FILING NO. 2, AS SHOWN ON THE PLAT THEREOF RECORDED UNDER RECEPTION NO. 202192387, OF THE RECORDS OF THE COUNTY OF EL PASO, STATE OF COLORADO, CONTAINING 3.15 ACRES MORE OR LESS.

I, JOHN C. DAY, A PROFESSIONAL LAND SURVEYOR, LICENSED IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE ABOVE LEGAL DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CHECKING.

JOHN C. DAY PLS 29413  
FOR AND ON BEHALF OF  
DREXEL, BARRELL & CO.  
3 SOUTH 7<sup>TH</sup> STREET  
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Greeley, CO 80631 • 970-351-0645

## EXHIBIT C

DBC Project: 21187-01

March 11, 2022

### LEGAL DESCRIPTION - EASEMENT FOR EXTENDED DETENTION BASIN NORTH

A PARCEL OF LAND BEING A PART OF THAT TRACT OF LAND AS DESCRIBED IN THAT DOCUMENT RECORDED UNDER RECEPTION NUMBER 220210591, IN THE RECORDS OF THE OFFICE OF THE EL PASO COUNTY CLERK AND RECORDER, SAID TRACT LOCATED WITHIN THE EAST HALF OF SECTION 29, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF LOT 1, CHATEAU AT ANTELOPE RIDGE FILING NO. 2, AS SHOWN ON THE PLAT THEREOF RECORDED UNDER RECEPTION NO. 202192387, OF THE RECORDS OF THE COUNTY OF EL PASO, STATE OF COLORADO, SAID CORNER ALSO BEING ON THE EAST RIGHT-OF-WAY LINE OF ANTELOPE RIDGE DRIVE AND CONSIDERING THE SOUTH LINE OF SAID LOT 1, AS SHOWN ON SAID PLAT, TO BEAR N89°56'53"E AND WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO; THENCE N89°56'53"E, 331.33 FEET ALONG SAID SOUTH LINE TO THE POINT OF BEGINNING;

THENCE THE FOLLOWING TEN (10) COURSES ALONG THE SOUTH LINE OF CHATEAU AT ANTELOPE RIDGE FILING NO. 2:

1. N89°56'53"E, 339.61 FEET;
2. S77°13'21"W, 296.79 FEET;
3. S14°41'09"E, 81.11 FEET;
4. S77°39'54"E, 397.87 FEET;
5. N63°24'07"E, 97.95 FEET;
6. N47°01'52"E, 173.02 FEET TO A POINT OF NON-TANGENT CURVE CONCAVE TO THE SOUTH, FROM WHICH THE RADIAL LINE BEARS S26°27'56"E, 50.64 FEET;
7. 54.06 FEET ALONG THE ARC OF SAID CURVE, SAID ARC HAVING A RADIUS OF 50.64 FEET, A CENTRAL ANGLE OF 61°10'00", AND BEING SUBTENDED BY A CHORD THAT BEARS S85°52'56"E, 51.53 FEET;
8. S50°34'05"E, 287.41 FEET;
9. N03°10'04"W, 254.58 FEET;
10. N89°56'53"E, 70.30 FEET;

THENCE N89°24'24"E, 15.00 FEET; THENCE S00°15'53"E, 496.65; THENCE S56°15'31"W, 191.84 FEET; THENCE N37°33'43"W, 112.60 FEET; THENCE N45°12'10"W, 112.60 FEET; THENCE N40°58'37"W, 120.00 FEET TO A NON-TANGENT CURVE CONCAVE TO THE SOUTHWEST, FROM WHICH THE RADIAL LINE BEARS S40°58'37"W, 725.00 FEET; THENCE 30.01 FEET ALONG THE ARC OF SAID CURVE, SAID ARC HAVING A RADIUS OF 725.00 FEET, A CENTRAL ANGLE OF 02°22'18", AND BEING SUBTENDED BY A CHORD THAT BEARS N50°12'32"W, 30.01 FEET;

THENCE N38°36'19"E, 120.00 FEET; THENCE N55°35'50"W, 123.85 FEET; THENCE N63°48'41"W, 118.23 FEET; THENCE N72°01'32"W, 123.85 FEET; THENCE N80°02'56"W, 112.60 FEET; THENCE N83°09'00"W, 119.32 FEET; THENCE S84°38'15"W, 121.73 FEET;

THENCE N09°54'52"W, 50.77 FEET; THENCE N00°03'07"W, 178.36 FEET TO THE POINT OF BEGINNING.

THE ABOVE PARCEL CONTAINS AN AREA OF 227,419 SQUARE FEET (5.2208 ACRES) OF LAND, MORE OR LESS.

I, JOHN C. DAY, A PROFESSIONAL LAND SURVEYOR, LICENSED IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE ABOVE LEGAL DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CHECKING.

JOHN C. DAY PLS 29413  
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3 SOUTH 7<sup>TH</sup> STREET  
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Greeley, CO 80631 • 970-351-0645

## EXHIBIT D

DBC Project: 21187-01

March 11, 2022

### LEGAL DESCRIPTION - EASEMENT FOR EXTENDED DETENTION BASIN SOUTH

A PARCEL OF LAND BEING A PART OF THAT TRACT OF LAND AS DESCRIBED IN THAT DOCUMENT RECORDED UNDER RECEPTION NUMBER 220210591, IN THE RECORDS OF THE OFFICE OF THE EL PASO COUNTY CLERK AND RECORDER, SAID TRACT LOCATED WITHIN THE EAST HALF OF SECTION 29, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF LOT 1, CHATEAU AT ANTELOPE RIDGE FILING NO. 2, AS SHOWN ON THE PLAT THEREOF RECORDED UNDER RECEPTION NO. 202192387, OF THE RECORDS OF THE COUNTY OF EL PASO, STATE OF COLORADO, SAID CORNER ALSO BEING ON THE EAST RIGHT-OF-WAY LINE OF ANTELOPE RIDGE DRIVE AND CONSIDERING THE SOUTH LINE OF SAID LOT 1, AS SHOWN ON SAID PLAT, TO BEAR N89°56'53"E AND WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO, THENCE THE FOLLOWING TEN (10) COURSES ALONG THE SOUTH LINE OF CHATEAU AT ANTELOPE RIDGE FILING NO. 2:

1. N89°56'53"E, 670.94 FEET;
2. S77°13'21"W, 296.79 FEET;
3. S14°41'09"E, 81.11 FEET;
4. S77°39'54"E, 397.87 FEET;
5. N63°24'07"E, 97.95 FEET;
6. N47°01'52"E, 173.02 FEET TO A POINT OF NON-TANGENT CURVE CONCAVE TO THE SOUTH, FROM WHICH THE RADIAL LINE BEARS S26°27'56"E, 50.64 FEET;
7. 54.06 FEET ALONG THE ARC OF SAID CURVE, SAID ARC HAVING A RADIUS OF 50.64 FEET, A CENTRAL ANGLE OF 61°10'00", AND BEING SUBTENDED BY A CHORD THAT BEARS S85°52'56"E, 51.53 FEET;
8. S50°34'05"E, 287.41 FEET;
9. N03°10'04"W, 254.58 FEET;
10. N89°56'53"E, 70.30 FEET;

THENCE N89°24'24"E, 15.00 FEET; THENCE S00°15'53"E, 938.32 FEET; THENCE S00°15'58"E, 257.75 FEET; THENCE S00°15'48"E, 525.31 FEET TO THE POINT OF BEGINNING;

THENCE S00°15'48"E, 408.86 FEET TO THE NORTH RIGHT-OF-WAY LINE OF NORTH CAREFREE CIRCLE AS DESCRIBED IN THAT DOCUMENT RECORDED UNDER RECEPTION NO. 205015091 OF THE RECORDS OF EL PASO COUNTY, COLORADO;

THENCE THE FOLLOWING THREE (3) COURSES ALONG SAID NORTH RIGHT-OF-WAY LINE:

1. S29°00'24"W, 32.99 FEET;
2. S59°08'42"W, 73.00 FEET;

Civil, Transportation, & Water Resources Engineering  
Land Surveying • Geomatics • Mapping  
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3. S89°48'47"W, 61.17 FEET;

THENCE N00°14'54"W, 474.75 FEET; THENCE N89°45'06"E, 140.02 FEET TO THE POINT OF BEGINNING.

THE ABOVE PARCEL CONTAINS AN AREA OF 64,509 SQUARE FEET (1.4809 ACRES) OF LAND, MORE OR LESS.

I, JOHN C. DAY, A PROFESSIONAL LAND SURVEYOR, LICENSED IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE ABOVE LEGAL DESCRIPTION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CHECKING.

JOHN C. DAY PLS 29413  
FOR AND ON BEHALF OF  
DREXEL, BARRELL & CO.  
3 SOUTH 7<sup>TH</sup> STREET  
COLORADO SPRINGS, COLORADO 80905  
719-260-0887



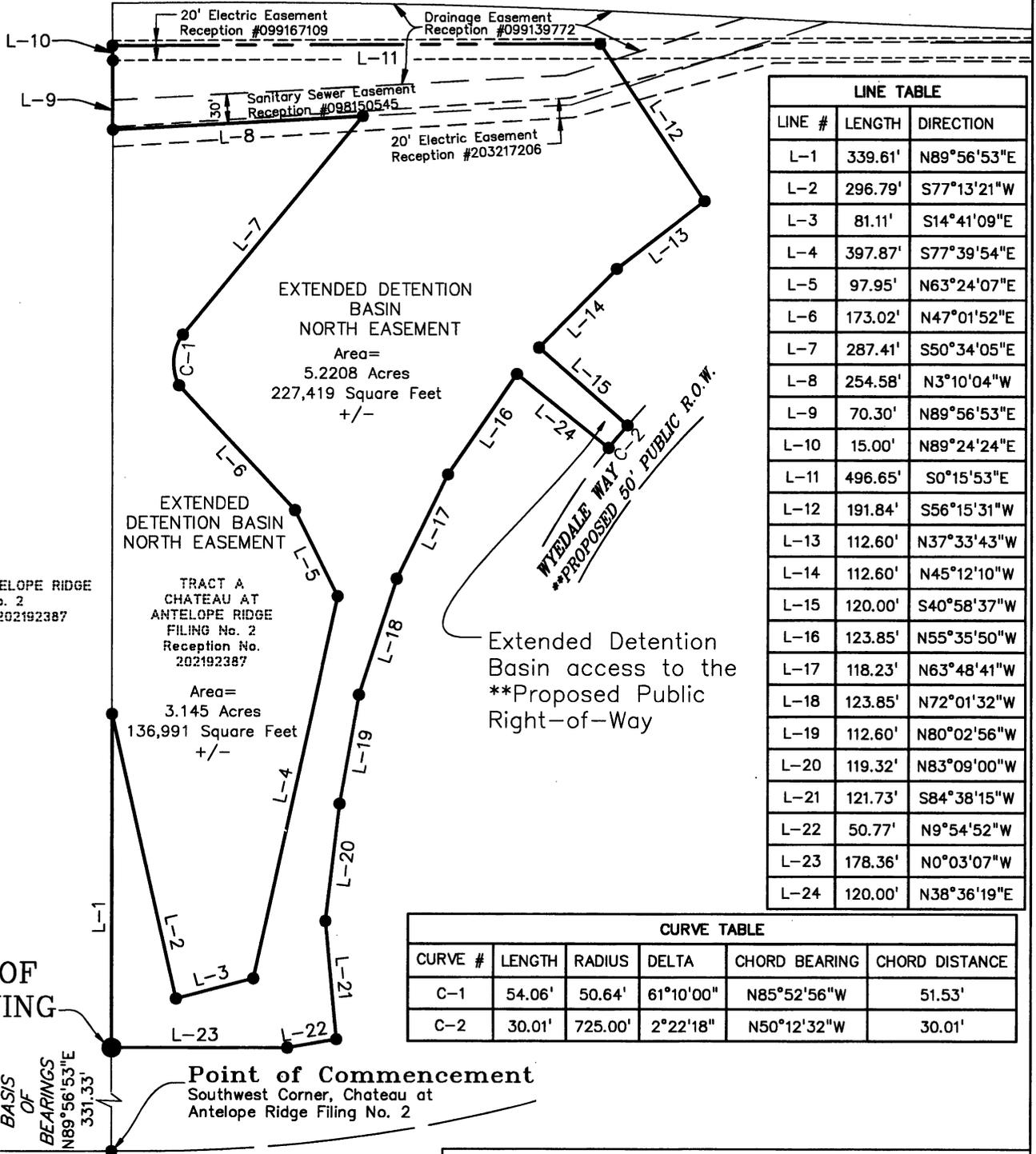
# EXHIBIT E

## EXTENDED DETENTION BASIN NORTH EASEMENT



SCALE: 1"=150'

MARKSHEFFEL ROAD



LINE TABLE		
LINE #	LENGTH	DIRECTION
L-1	339.61'	N89°56'53"E
L-2	296.79'	S77°13'21"W
L-3	81.11'	S14°41'09"E
L-4	397.87'	S77°39'54"E
L-5	97.95'	N63°24'07"E
L-6	173.02'	N47°01'52"E
L-7	287.41'	S50°34'05"E
L-8	254.58'	N3°10'04"W
L-9	70.30'	N89°56'53"E
L-10	15.00'	N89°24'24"E
L-11	496.65'	S0°15'53"E
L-12	191.84'	S56°15'31"W
L-13	112.60'	N37°33'43"W
L-14	112.60'	N45°12'10"W
L-15	120.00'	S40°58'37"W
L-16	123.85'	N55°35'50"W
L-17	118.23'	N63°48'41"W
L-18	123.85'	N72°01'32"W
L-19	112.60'	N80°02'56"W
L-20	119.32'	N83°09'00"W
L-21	121.73'	S84°38'15"W
L-22	50.77'	N9°54'52"W
L-23	178.36'	N0°03'07"W
L-24	120.00'	N38°36'19"E

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C-1	54.06'	50.64'	61°10'00"	N85°52'56"W	51.53'
C-2	30.01'	725.00'	2°22'18"	N50°12'32"W	30.01'

PREPARED BY:



**Drexel, Barrell & Co. Engineers/Surveyors**  
 3 SOUTH 7TH STREET COLORADO SPRINGS, COLORADO 80905 (719)280-0887  
 1800 38TH STREET BOULDER, COLORADO 80501 (303)442-4338  
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Revisions - Date	Date	Drawn By	Job No.
	03-11-22	AYC	21187-01
	Scale	Checked By	Drawing No.
	1" = 150'	JCD	21187-01_N. ESMT DET BASIN

\*\* PROPOSED PLAT OF WINDERMERE FILING NO. 1, PCD FILE SF-21 26

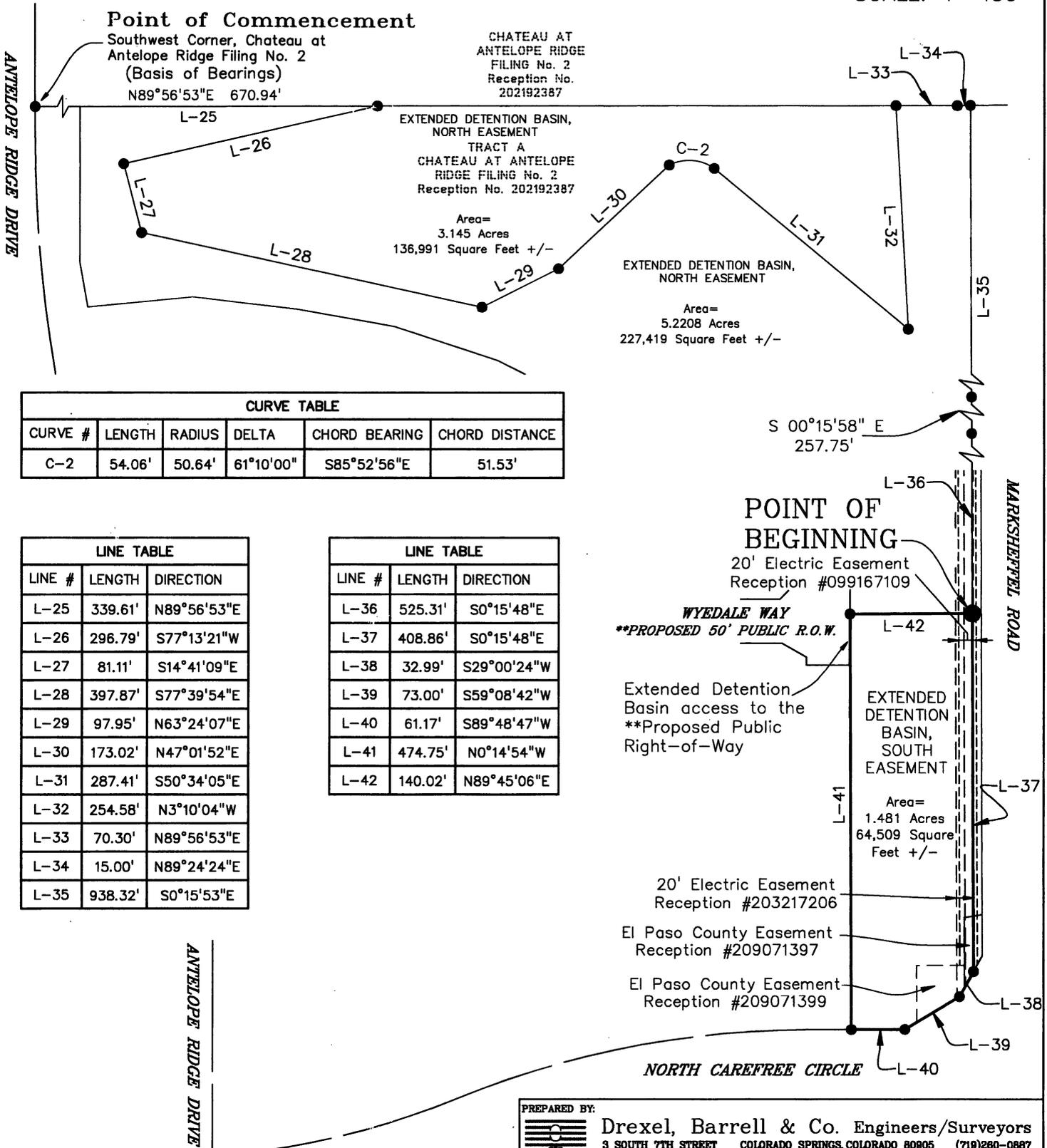
NOTE: THIS MAP IS NOT A LAND SURVEY PLAT OR AN IMPROVEMENT SURVEY PLAT. THE PURPOSE OF THIS MAP IS TO DEPICT THE ATTACHED LEGAL DESCRIPTION.

# EXHIBIT F

## EXTENDED DETENTION BASIN SOUTH EASEMENT



SCALE: 1"=150'



CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C-2	54.06'	50.64'	61°10'00"	S85°52'56"E	51.53'

LINE TABLE		
LINE #	LENGTH	DIRECTION
L-25	339.61'	N89°56'53"E
L-26	296.79'	S77°13'21"W
L-27	81.11'	S14°41'09"E
L-28	397.87'	S77°39'54"E
L-29	97.95'	N63°24'07"E
L-30	173.02'	N47°01'52"E
L-31	287.41'	S50°34'05"E
L-32	254.58'	N3°10'04"W
L-33	70.30'	N89°56'53"E
L-34	15.00'	N89°24'24"E
L-35	938.32'	S0°15'53"E

LINE TABLE		
LINE #	LENGTH	DIRECTION
L-36	525.31'	S0°15'48"E
L-37	408.86'	S0°15'48"E
L-38	32.99'	S29°00'24"W
L-39	73.00'	S59°08'42"W
L-40	61.17'	S89°48'47"W
L-41	474.75'	N0°14'54"W
L-42	140.02'	N89°45'06"E

\*\* PROPOSED PLAT OF WINDERMERE FILING NO. 1, PCD FILE SF-21 26  
 NOTE: THIS MAP IS NOT A LAND SURVEY PLAT OR AN IMPROVEMENT SURVEY PLAT. THE PURPOSE OF THIS MAP IS TO DEPICT THE ATTACHED LEGAL DESCRIPTION.

PREPARED BY:  
**Drexel, Barrell & Co. Engineers/Surveyors**  
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 GREELEY, COLORADO 80631 (971)351-0845

Revisions - Date	Date	Drawn By	Job No.
	03-11-22	ABC	21187-01
	Scale	Checked By	Drawing No.
	1" = 150'	JCD	21187-01_S_ESMT DET BASIN

**OPERATIONS & MAINTENANCE PLAN (O&M)**

**EXTENDED DETENTION BASIN**

for

**WINDERMERE**

N. Marksheffel Rd., and N. Carefree Cir.  
Colorado Springs, Colorado

**February 9, 2022**

**PCD File No. SF-21-026**

Prepared for:

**Eagle Development Company**  
212 N. Wahsatch Ave., Suite #301  
Colorado Springs, CO 80903  
Contact: Jeff Mark  
(719) 635-3200

Prepared by:

**Drexel, Barrell & Co.**  
3 South Seventh Street  
Colorado Springs, CO 80905  
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(719) 260-0887

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**3.0 MAINTAINING EXTENDED DETENTION BASINS ..... 11**

**APPENDIX**

VICINITY MAP  
GRADING & EROSION CONTROL PLAN SET

## **OPERATIONS & MAINTENANCE PLAN (O&M)**

### **EXTENDED DETENTION BASIN**

for

### **WINDERMERE**

Colorado Springs, Colorado

#### **1.0 BACKGROUND**

This document provides General Guidelines and Standard Operating Procedures for Operation and Maintenance of stormwater facilities.

Extended Detention Basins (EDBs) are one of the most common types of Stormwater BMPs utilized within the Front Range of Colorado. An EDB is a sedimentation basin designed to "extend" the runoff detention time, but to drain completely dry sometime after stormwater runoff ends. The EDB's drain time for the water quality portion of the facility is typically 40 hours. The basins are considered to be "dry" because the majority of the basin is designed not to have a significant permanent pool of water remaining between runoff events.

EDBs are an adaptation of a detention basin used for flood control, with the primary difference is the addition of forebays, micropools and a slow release outlet design. Forebays are shallow concrete "pans" located at the inflow point to the basin and are provided to facilitate sediment removal within a contained area prior to releasing into the pond. These forebays collect and briefly hold stormwater runoff resulting in a process called sedimentation, dropping sediment out of the stormwater. The stormwater is then routed from the forebay into the concrete trickle channel and upper basin, the large grassy portion of the basin. The EDB uses a much smaller outlet that extends the emptying time of the more frequently occurring runoff events to facilitate pollutant removal. An EDB should have a small micropool just upstream of the outlet. This micropool is designed to hold a small amount of water to keep sediment and floatables from blocking the outlet orifices.

#### **2.0 SITE SPECIFIC INFORMATION**

Windermere Filing No. 1 is located at the northwest corner of N. Carefree Cir. and Marksheffel Rd. and is bound on the west by Antelope Ridge Dr., on the north by the Chateau at Antelope Ridge subdivision, on the east by Marksheffel Rd., and on the south by N. Carefree Cir. The development is approximately 52.1 acres in size and is proposed as a single-family home subdivision. Two EDBs are proposed for the development.

The northern facility is a 12.6 ac-ft Extended Detention Basin that captures and treats the northern portion of the Windermere subdivision, as well as offsite flow from the Chateau

at Antelope Ridge to the north and a portion of the offsite flow from the Antelope Ridge Drive on the west.

The southern facility is a 1.2 ac-ft Extended Detention Basin that captures and treats the southern portion of the Windermere subdivision.

**3.0 INSPECTING EXTENDED DETENTION BASINS**

Access & Easements

Inspection or maintenance personnel may utilize the figures located in the appendix containing the location(s) of the access points and potential maintenance easements of the EDB(s) within this development.

Features

EDBs have a number of features that are designed to serve a particular function. Many times the proper function of one feature depends on another. For example, if a forebay is not properly maintained, it could negatively affect the performance of a feature downstream (trickle channel, micropool, etc.). Therefore, it is critical that each feature of the EDB is properly inspected and maintained to ensure that the overall facility functions as it was intended. Below is a list and description of the most common features within an EDB and the corresponding maintenance inspection items that can be anticipated:

Typical Inspection & Maintenance Requirements Matrix

<b>EDB Features</b>	<b>Sediment Removal</b>	<b>Mowing/ Weed control</b>	<b>Trash &amp; Debris Removal</b>	<b>Erosion</b>	<b>Overgrown Vegetation Removal</b>	<b>Standing Water (mosquito/ algae control)</b>	<b>Structure Repair</b>
<b>Inflow Points (outfalls)</b>	X		X	X	X		X
<b>Forebay</b>	X		X			X	X
<b>Low-flow channel</b>	X		X	X	X		X
<b>Bottom Stage</b>	X	X	X	X	X	X	
<b>Micropool</b>	X		X		X	X	X
<b>Outlet Works</b>	X		X			X	X
<b>Emergency Spillway</b>			X	X	X		X
<b>Upper Stage</b>		X	X	X	X		
<b>Embankment</b>		X	X	X	X		

Inflow Points

Inflow Points or Outfalls into EDBs are the point source of the stormwater discharge into the facility. An inflow point is commonly a storm sewer pipe with a flared end section that

discharges into the EDB. In some instances, an inflow point could be a drainage channel or ditch that flows into the facility.

An energy dissipater (riprap or hard armor protection) is typically immediately downstream of the discharge point into the EDB to protect from erosion. In some cases, the storm sewer outfall can have a toe-wall or cut-off wall immediately below the structure to prevent undercutting of the outfall from erosion.

*The typical maintenance items that are found with inflow points are as follows:*

a. *Riprap Displaced* – Many times, because the repeated impact/force of water, the riprap can shift and settle. If any portion of the riprap apron appears to have settled, soil is present between the riprap, or the riprap has shifted, maintenance may be required to ensure future erosion is prevented.

b. *Erosion Present/Outfall Undercut* – In some situations, the energy dissipater may not have been sized, constructed, or maintained appropriately and erosion has occurred. Any erosion within the vicinity of the inflow point will require maintenance to prevent damage to the structure(s) and sediment transport within the facility.

c. *Sediment Accumulation* – Because of the turbulence in the water created by the energy dissipater, sediment often deposits immediately downstream of the inflow point. To prevent a loss in hydraulic performance of the upstream infrastructure, sediment that accumulates in this area must be removed in a timely manner.

d. *Structural Damage* – Structural damage can occur at anytime during the life of the facility. Typically, for an inflow, the structural damage occurs to the pipe flared end section (concrete or steel). Structural damage can lead to additional operating problems with the facility, including loss of hydraulic performance.

e. *Woody Growth/Weeds Present* – Undesirable vegetation can grow in and around the inflow area to an EDB that can significantly affect the performance of the drainage facilities discharging into the facility. This type of vegetation includes trees (typically cottonwoods) and dense areas of shrubs (willows). If woody vegetation is not routinely mowed/removed, the growth can cause debris/sediment to accumulate, resulting in blockage of the discharge. Also, tree roots can cause damage to the structural components of the inflow. Routine maintenance is essential for trees (removing a small tree/sapling is much cheaper and "quieter" than a mature tree). In addition, noxious weeds growing in the facility can result in the loss of desirable native vegetation and impact adjacent open spaces/land.

### Forebay

A forebay is a solid surface (pad), typically constructed of concrete, immediately downstream of the inflow point. The forebay is designed to capture larger particles and trash to prevent them from entering the main portion of the EDB. The solid surface is designed to facilitate mechanical sediment removal (skid steer). The forebay typically includes a small diameter discharge pipe or v-notch weir on the downstream end and designed to drain the forebay in a specified period of time to promote sedimentation.

The forebays vary in size and depth depending on the design and site constraints.

*The typical maintenance items that are found with forebays are as follows:*

a. *Sediment/Debris Accumulation* – Because this feature of the EDB is designed to provide the initial sedimentation, debris and sediment frequently accumulate in this area. If the sediment and debris is not removed from the forebay on a regular basis, it can significantly affect the function of other features within the EDB. Routine sediment removal from the forebay can significantly reduce the need for dredging of the main portion of the EDB using specialized equipment (long reach excavators). Routine removal of sediment from the forebay can substantially decrease the long-term sediment removal costs of an EDB.

b. *Concrete Cracking/Failing* – The forebay is primarily constructed of concrete, which cracks, spalls, and settles. Damage to the forebay can result in decreased performance and impact maintenance efforts.

c. *Drain Pipe/Weir Clogged* – Many times the drainpipe or weir can be clogged with debris, and prevent the forebay from draining properly. If standing water is present in the forebay (and there is not a base flow), the forebay is most likely not draining properly. This can result in a decrease in performance and create potential nuisances with stagnant water (mosquitoes).

d. *Weir/Drain Pipe Damaged* – Routine maintenance activities, vandalism, or age may cause the weir or drain pipe in the forebay to become damaged. Weirs are typically constructed of concrete, which cracks and spalls. The drainpipe is typically smaller in diameter and constructed with plastic, which can fracture.

#### Trickle Channel (Low-Flow)

The trickle channel conveys stormwater from the forebay to the micro-pool of the EDB. The trickle channel is typically made of concrete. However, grass lined (riprap sides protected) is also common and can provide for an additional means of water quality within the EDB. The trickle channel is typically 6-9 inches in depth and can vary in width.

*The typical maintenance items that are found with trickle channels are as follows:*

a. *Sediment/Debris Accumulation* – Trickle channels are typically designed with a relatively flat slope that can promote sedimentation and the collection of debris. Also, if a trickle channel is grass lined it can accumulate sediment and debris at a much quicker rate. Routine removal of accumulated sediment and debris is essential in preventing flows from circumventing the trickle channel and affecting the dry storage portion of the pond.

b. *Concrete/Riprap Damage* – Concrete can crack, spall, and settle and must be repaired to ensure proper function of the trickle channel. Riprap can also shift over time and must be replaced/repaired as necessary.

c. *Woody Growth/Weeds Present* – Because of the constant moisture in the area

surrounding the trickle channel, woody growth (cottonwoods/willows) can become a problem. Trees and dense shrub type vegetation can affect the capacity of the trickle channel and can allow flows to circumvent the feature.

d. *Erosion Outside of Channel* – In larger precipitation events, the trickle channel capacity will likely be exceeded. This can result in erosion immediately adjacent to the trickle channel and must be repaired to prevent further damage to the structural components of the EDB.

### Bottom Stage

The bottom stage is at least 1.0 to 2.0 feet deeper than the upper stage and is located in front of the outlet works structure. The bottom stage is designed to store the smaller runoff events, assists in keeping the majority of the basin bottom dry resulting in easier maintenance operations, and enhances the facilities pollutant removal capabilities. This area of the EDB may develop wetland vegetation.

*The typical maintenance items that are found with the bottom stage are as follows:*

a. *Sediment/Debris Accumulation* – The micro-pool can frequently accumulate sediment and debris. This material must be removed to maintain pond volume and proper function of the outlet structure.

b. *Woody Growth/Weeds Present* - Because of the constant moisture in the soil surrounding the micro-pool, woody growth (cottonwoods/willows) can create operational problems for the EDB. If woody vegetation is not routinely mowed/removed, the growth can cause debris/sediment to accumulate outside of the micro-pool, which can cause problems with other EDB features. Also, tree roots can cause damage to the structural components of the outlet works. Routine management is essential for trees (removing a small tree/sapling is much cheaper and “quieter” than a mature tree).

c. *Bank Erosion* – The micro-pool is usually a couple feet deeper than the other areas of the ponds. Erosion can be caused by water dropping into the micro-pool if adequate protection/armor is not present. Erosion in this area must be mitigated to prevent sediment transport and other EDB feature damage.

d. *Mosquitoes/Algae Treatment* – Nuisance created by stagnant water can result from improper maintenance/treatment of the micro-pool. Mosquito larvae can be laid by adult mosquitoes within the permanent pool. Also, aquatic vegetation that grows in shallow pools of water can decompose causing foul odors. Chemical/mechanical treatment of the micro-pool may be necessary to reduce these impacts to adjacent homeowners.

e. *Petroleum/Chemical Sheen* – Many indicators of illicit discharges into the storm sewer systems will be present in the micro-pool area of the EDB. These indicators can include sheens, odors, discolored soil, and dead vegetation. If it is suspected that an illicit discharge has occurred, contact the supervisor immediately. Proper removal/mitigation of contaminated soils and water in the EDB is necessary to minimize any environmental impacts downstream.

## Micro-pool

The micro-pool is a concrete or grouted boulder walled structure directly in front of the outlet works. At a minimum, the micropool is 2.5 feet deep and is designed to hold water. The micro-pool is critical in the proper function of the EDB; it allows suspended sediment to be deposited at the bottom of the micro-pool and prevents these sediments from being deposited in front of the outlet works causing clogging of the outlet structure, which results in marshy areas within the top and bottom stages.

*The typical maintenance items that are found with micro-pools are as follows:*

a. *Sediment/Debris Accumulation* – The micro-pool can frequently accumulate sediment and debris. This material must be removed to maintain pond volume and proper function of the outlet structure.

b. *Woody Growth/Weeds Present* - Because of the constant moisture in the soil surrounding the micro-pool, woody growth (cottonwoods/willows) can create operational problems for the EDB. If woody vegetation is not routinely mowed/removed, the growth can cause debris/sediment to accumulate outside of the micro-pool, which can cause problems with other EDB features. Also, tree roots can cause damage to the structural components of the outlet works. Routine management is essential for trees (removing a small tree/sapling is much cheaper and “quieter” than a mature tree).

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## Outlet Works

The outlet works is the feature that drains the EDB in specified quantities and periods of time. The outlet works is typically constructed of reinforced concrete into the embankment of the EDB. The concrete structure typically has steel orifice plates anchored/embedded into it to control stormwater release rates. The larger openings (flood control) on the outlet structure typically have trash racks over them to prevent clogging. The water quality orifice plate (smaller diameter holes) will typically have a well screen covering it to prevent smaller materials from clogging it. The outlet structure is the single most important feature in the EDB operation. Proper inspection and maintenance of the outlet works is essential in ensuring the long-term operation of the EDB.

*The typical maintenance items that are found with the outlet works are as follows:*

a. *Trash Rack/Well Screen Clogged* – Floatable material that enters the EDB will most likely make its way to the outlet structure. This material is trapped against the trash racks and well screens on the outlet structure (which is why they are there). This material must be removed on a routine basis to ensure the outlet structure drains in the specified design period.

b. *Structural Damage* - The outlet structure is primarily constructed of concrete, which can crack, spall, and settle. The steel trash racks and well screens are also susceptible to damage.

c. *Orifice Plate Missing/Not Secure* – Many times residents, property owners, or maintenance personnel will remove or loosen orifice plates if they believe the pond is not draining properly. Any modification to the orifice plate(s) will significantly affect the designed discharge rates for water quality and/or flood control. Modification of the orifice plates is not allowed without approval from El Paso County.

d. *Manhole Access* – Access to the outlet structure is necessary to properly inspect and maintain the facility. If access is difficult or not available to inspect the structure, chances are it will be difficult to maintain as well.

e. *Woody Growth/Weeds Present* - Because of the constant moisture in the soil surrounding the outlet works, woody growth (cottonwoods/willows) can create operational problems for the EDB. If woody vegetation is not routinely mowed/removed, the growth can cause debris/sediment to accumulate around the outlet works, which can cause problems with other EDB features. Also, tree roots can cause damage to the structural components of the outlet works. Routine management is essential for trees (removing a small tree/sapling is much cheaper and “quieter” than a mature tree).

### Emergency Spillway

An emergency spillway is typical of all EDBs and designed to serve as the overflow in the event the volume of the pond is exceeded. The emergency spillway is typically armored with riprap (or other hard armor) and is sometimes buried with soil. The emergency spillway is typically a weir (notch) in the pond embankment. Proper function of the emergency spillway is essential to ensure flooding does not affect adjacent properties.

*The typical maintenance items that are found with emergency spillways are as follows:*

a. *Riprap Displaced* – As mentioned before, the emergency spillway is typically armored with riprap to provide erosion protection. Over the life of an EDB, the riprap may shift or dislodge due to flow.

b. *Erosion Present* – Although the spillway is typically armored, stormwater flowing through the spillway can cause erosion damage. Erosion must be repaired to ensure the integrity of the basin embankment, and proper function of the spillway.

c. *Woody Growth/Weeds Present* – Management of woody vegetation is essential in the proper long-term function of the spillway. Larger trees or dense shrubs can capture larger debris entering the EDB and reduce the capacity of the spillway.

d. *Obstruction Debris* – The spillway must be cleared of any obstruction (man-made or natural) to ensure the proper design capacity.

#### Upper Stage (Dry Storage)

The upper stage of the EDB provides the majority of the water quality flood detention volume. This area of the EDB is higher than the micro-pool and typically stays dry, except during storm events. The upper stage is the largest feature/area of the basin. Sometimes, the upper stage can be utilized for park space and other uses in larger EDBs. With proper maintenance of the micro-pool and forebay(s), the upper stage should not experience much sedimentation; however, bottom elevations should be monitored to ensure adequate volume.

*The typical maintenance items that are found with upper stages are as follows:*

a. *Vegetation Sparse* – The upper basin is the most visible part of the EDB, and therefore aesthetics is important. Adequate and properly maintained vegetation can greatly increase the overall appearance and acceptance of the EDB by the public. In addition, vegetation can reduce the potential for erosion and subsequent sediment transport to the other areas of the pond.

b. *Woody Growth/Undesirable Vegetation* – Although some trees and woody vegetation may be acceptable in the upper basin, some thinning of cottonwoods and willows may be necessary. Remember, the basin will have to be dredged to ensure volume, and large trees and shrubs will be difficult to protect during that operation.

c. *Standing Water/Boggy Areas* – Standing water or boggy areas in the upper stage is typically a sign that some other feature in the pond is not functioning properly. Routine maintenance (mowing, trash removal, etc) can be extremely difficult for the upper stage if the ground is saturated. If this inspection item is checked, make sure you have identified the root cause of the problem.

d. *Sediment Accumulation* – Although other features within the EDB are designed to capture sediment, the upper storage area will collect sediment over time. Excessive amounts of sedimentation will result in a loss of storage volume. It may be more difficult to determine if this area has accumulated sediment without conducting a field survey.

Below is a list of indicators:

1. Ground adjacent to the trickle channel appears to be several inches higher than concrete/riprap
2. Standing water or boggy areas in upper stage
3. Uneven grades or mounds
4. Micro-pool or Forebay has excessive amounts of sediment

e. *Erosion (banks and bottom)* – The bottom grades of the dry storage are typically flat

enough that erosion should not occur. However, inadequate vegetative cover may result in erosion of the upper stage. Erosion that occurs in the upper stage can result in increased dredging/maintenance of the micro-pool.

f. *Trash/Debris* – Trash and debris can accumulate in the upper area after large events, or from illegal dumping. Over time, this material can accumulate and clog the EDB outlet works.

g. *Maintenance Access* – Most EDBs typically have a gravel/concrete maintenance access path to either the upper stage or forebay. This access path should be inspected to ensure the surface is still drivable. Some of the smaller EDBs may not have maintenance access paths; however, the inspector should verify that access is available from adjacent properties.

### Miscellaneous

There are a variety of inspection/maintenance issues that may not be attributed to a single feature within the EDB.

a. *Access* – Access needs to be maintained.

b. *Graffiti/Vandalism* – Damage to the EDB infrastructure can be caused by vandals. If criminal mischief is evident, the inspector should forward this information to the local enforcement agency.

c. *Public Hazards* – Public hazards include items such as vertical drops of greater than 4-feet, containers of unknown/suspicious substances, exposed metal/jagged concrete on structures. If any hazard is found within the facility area that poses an immediate threat to public safety, contact the local emergency services at 911 immediately.

d. *Burrowing Animals/Pests* – Prairie dogs and other burrowing rodents may cause damage to the EDB features and negatively affect the vegetation within the EDB.

## **4.0 MAINTAINING EXTENDED DETENTION BASINS**

### Maintenance Personnel

Maintenance personnel must be qualified to properly maintain EDBs. Inadequately trained personnel can cause additional problems resulting in additional maintenance costs.

### Equipment

It is imperative that the appropriate equipment and tools are taken to the field with the operations crew. The types of equipment/tools will vary depending on the task at hand. Below is a list of tools, equipment, and material(s) that may be necessary to perform maintenance on an EDB:

1. Loppers/Tree Trimming Tools

2. Mowing Tractors
3. Trimmers (extra string)
4. Shovels
5. Rakes
6. All Surface Vehicle (ASVs)
7. Skid Steer
8. Back Hoe
9. Track Hoe/Long Reach Excavator
10. Dump Truck
11. Jet-Vac Machine
12. Engineers Level (laser)
13. Riprap (Minimum - Type M)
14. Filter Fabric
15. Erosion Control Blanket(s)
16. Seed Mix (Native Mix)
17. Illicit Discharge Cleanup Kits
18. Trash Bags
19. Tools (wrenches, screw drivers, hammers, etc)
20. Chain Saw
21. Confined Space Entry Equipment
22. Approved Inspection and Maintenance Plan

Some of the items identified above may not be needed for every maintenance operation. However, this equipment should be available to the maintenance operations crews should the need arise.

### Safety

Vertical drops may be encountered in areas located within and around the facility. Avoid walking on top of retaining walls or other structures that have a significant vertical drop. Note if a vertical drop is identified within the EDB that is greater than 48" in height.

### **Maintenance Categories and Activities**

A typical EDB Maintenance Program will consist of three broad categories of work: Routine, Restoration (minor), and Rehabilitation (major). Within each category of work, a variety of maintenance activities can be performed on an EDB. A maintenance activity can be specific to each feature within the EDB, or general to the overall facility. This section of the SOP explains each of the categories and briefly describes the typical maintenance activities for an EDB.

A variety of maintenance activities are typical of EDBs. The maintenance activities range in magnitude from routine trash pickup to the reconstruction of drainage infrastructure. Below is a description of each maintenance activity, the objectives, and frequency of actions:

#### Routine Maintenance Activities

The majority of this work consists of regularly scheduled mowing and trash and debris pickups for stormwater management facilities during the growing season. This includes

items such as the removal of debris/material that may be clogging the outlet structure

<b>Maintenance Activity</b>	<b>Minimum Frequency</b>	<b>Look for:</b>	<b>Maintenance Action</b>
<b>Mowing</b>	Twice annually	Excessive grass height/aesthetics	Mow grass to a height of 4" to 6"
<b>Trash/Debris Removal</b>	Twice annually	Trash & debris in EDB	Remove and dispose of trash and debris
<b>Outlet Works Cleaning</b>	As needed -after significant rain events – twice annually min.	Clogged outlet structure; ponding water	Remove and dispose of debris/trash/sediment to allow outlet to function properly
<b>Weed control</b>	Minimum twice annually	Noxious weeds; Unwanted vegetation	Treat w/ herbicide or hand pull; Consult the local weed specialist
<b>Mosquito Treatment</b>	As needed	Standing water/mosquito habitat	Treat w/ EPA approved chemicals
<b>Algae Treatment</b>	As needed	Standing water/ Algal growth/green color	Treat w/ EPA approved chemicals

well screens and trash racks. It also includes activities such as includes weed control, mosquito treatment, and algae treatment. These activities normally will be performed numerous times during the year.

The Maintenance Activities are summarized below, and further described in the following sections.

### **Summary of Restoration Maintenance Activities**

#### Mowing

Occasional mowing is necessary to limit unwanted vegetation and to improve the overall appearance of the EDB. Native vegetation should be mowed to a height of 4-to-6 inches tall. Grass clippings should be collected and disposed of properly.

*Frequency* – Routine - Minimum of twice annually or depending on aesthetics.

### Trash/Debris Removal

Trash and debris must be removed from the entire EDB area to minimize outlet clogging and to improve aesthetics. This activity must be performed prior to mowing operations.

*Frequency* – Routine – Prior to mowing operations and minimum of twice annually.

### Outlet Works Cleaning

Debris and other materials can clog the outlet work's well screen, orifice plate(s) and trash rack. This activity must be performed anytime other maintenance activities are conducted to ensure proper operation.

*Frequency* - Routine – After significant rainfall event or concurrently with other maintenance activities.

### Weed Control

Noxious weeds and other unwanted vegetation must be treated as needed throughout the EDB. This activity can be performed either through mechanical means (mowing/pulling) or with herbicide. Consultation with the local Weed Inspector is highly recommended prior to the use of herbicide.

*Frequency* – Routine – As needed based on inspections.

### Mosquito/Algae Treatment

Treatment of permanent pools is necessary to control mosquitoes and undesirable aquatic vegetation that can create nuisances. Only EPA approved chemicals/materials can be used in areas that are warranted.

*Frequency* – As needed.

### **Restoration Maintenance Activities**

This work consists of a variety of isolated or small-scale maintenance or operational problems. Most of this work can be completed by a small crew, tools, and small equipment.

<b>Maintenance Activity</b>	<b>Minimum Frequency</b>	<b>Look for:</b>	<b>Maintenance Action</b>
<b>Sediment Removal</b>	As needed; typically every 1 –2 years	Sediment build-up; decrease in pond volume	Remove and dispose of sediment
<b>Erosion Repair</b>	As needed, based upon inspection	Rills/gullies forming on side slopes, trickle channel, other areas	Repair eroded areas Revegetate; address source of erosion

<b>Vegetation Removal/Tree Thinning</b>	As needed, based upon inspection	Large trees/wood vegetation in lower chamber of pond	Remove vegetation; restore grade and surface
<b>Drain Cleaning/Jet Vac</b>	As needed, based upon inspection	Sediment build-up /non draining system	Clean drains; Jet Vac if needed

### Major Sediment Removal

Major sediment removal consists of removal of large quantities of sediment or removal of sediment from vegetated areas. Care shall be given when removing large quantities of sediment and sediment deposited in vegetated areas. Large quantities of sediment need to be carefully removed, transported and disposed of. Vegetated areas need special care to ensure design volumes and grades are preserved.

*Frequency* – Nonroutine – Repair as needed based upon inspections.

### Major Erosion Repair

Major erosion repair consist of filling and revegetating areas of severe erosion. Determining the cause of the erosion as well as correcting the condition that caused the erosion should also be part of the erosion repair. Care should be given to ensure design grades and volumes are preserved.

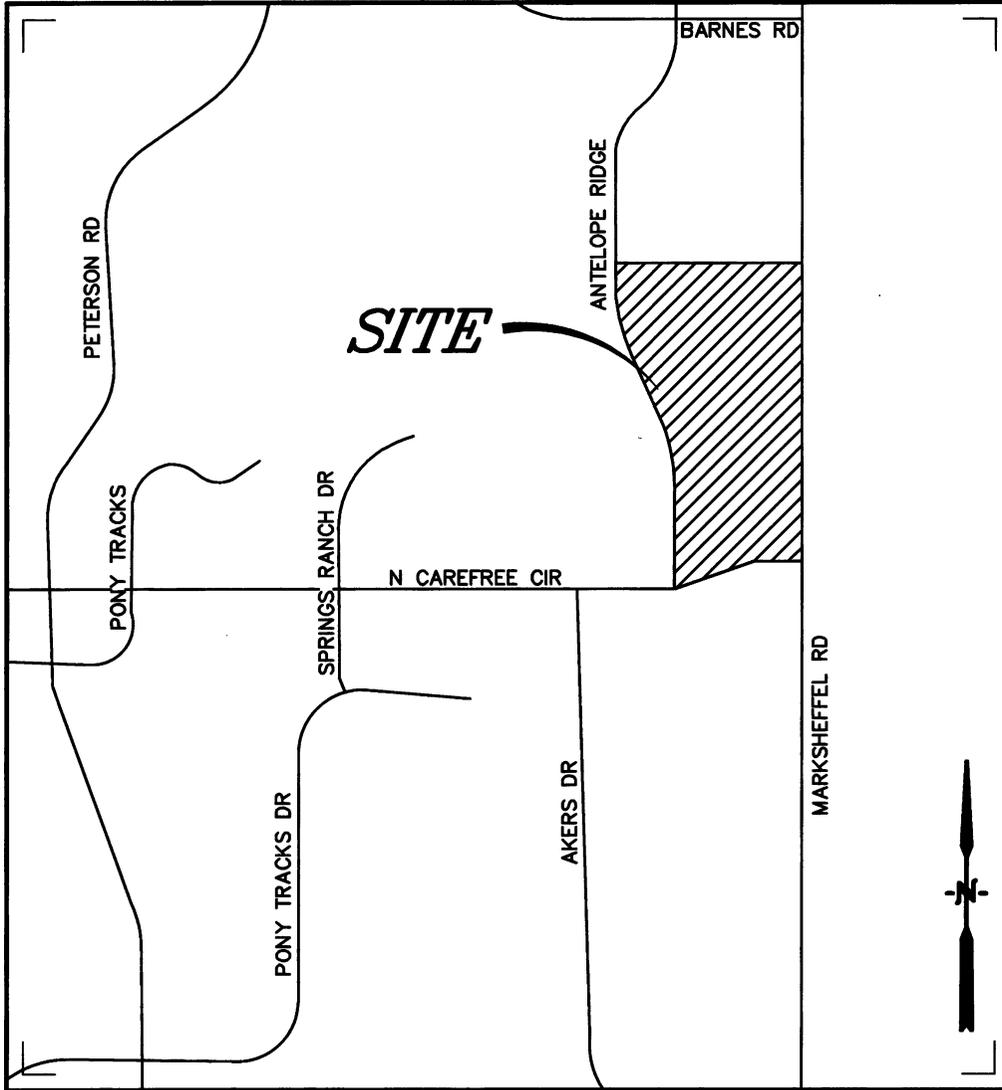
*Frequency* – Nonroutine – Repair as needed based upon inspections.

### Structural Repair

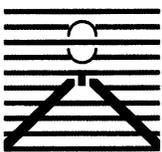
An EDB includes a variety of structures that can deteriorate or be damaged during the course of routine maintenance. These structures are constructed of steel and concrete that can degrade or be damaged and may need to be repaired or re-constructed from time to time. These structures include items like outlet works, trickle channels, forebays, inflows and other features. Inhouse operations staff can perform some of the minor structural repairs. Major repairs to structures may require input from a structural engineer and specialized contractors.

*Frequency* – Nonroutine – Repair as needed based upon inspections.

## **APPENDIX**



*Vicinity Map*  
Not to scale



**WINDERMERE  
COLORADO SPRINGS, CO  
VICINITY MAP**

**Drexel, Barrell & Co.**  
Engineers • Surveyors

DATE: \_\_\_\_\_  
JOB NO:  
**21187-00CSCV**

DWG. NO.  
**VMAP**  
SHEET 1 OF 1





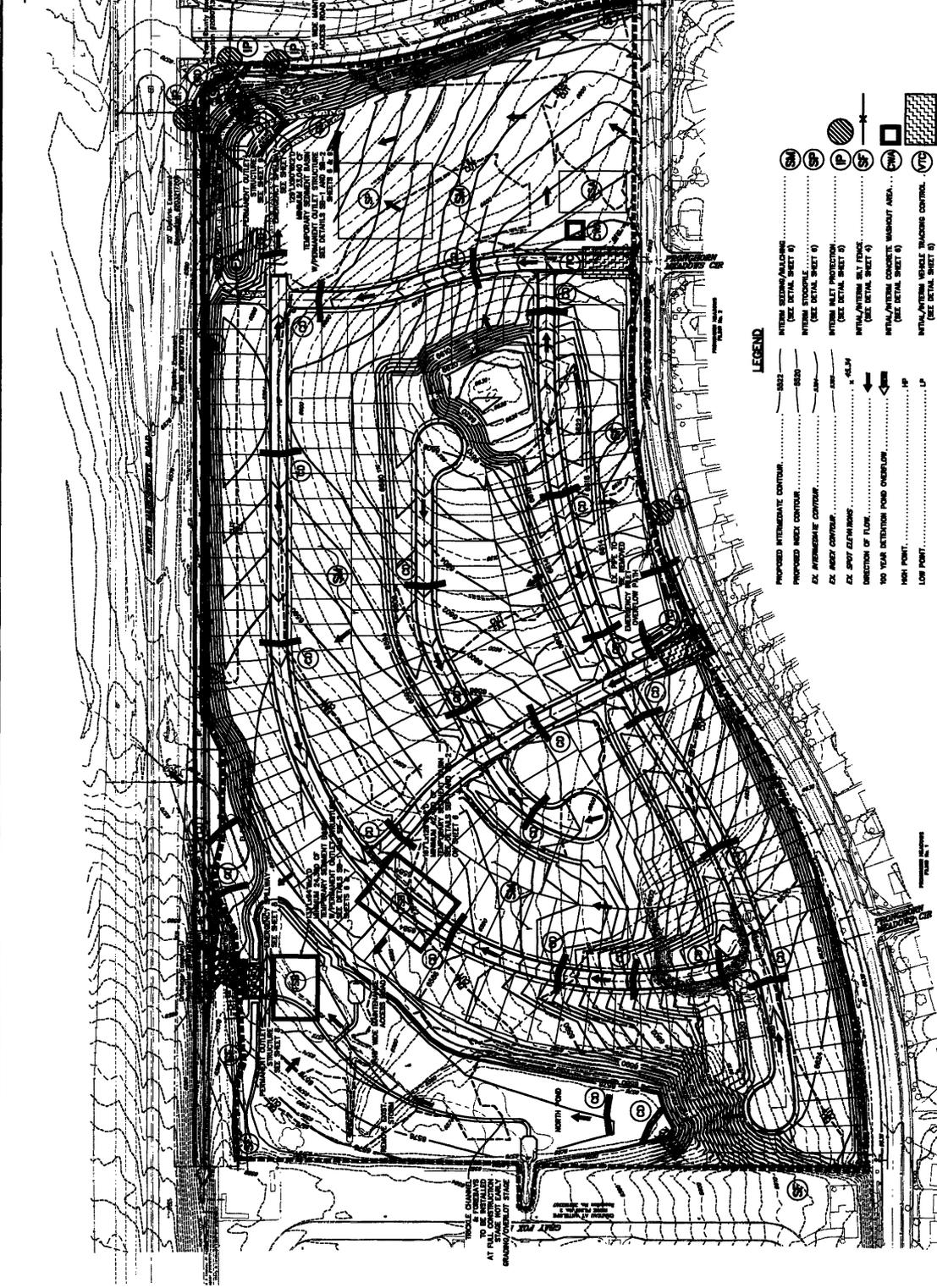
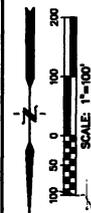
PREPARED BY:  
**DREWEL BARRELL & CO.**  
 ENGINEERS & ARCHITECTS  
 270 N. MARSHALL AVE. SUITE 200  
 COLORADO SPRINGS, CO 80905  
 CONTRACT: TRM D. MARCHETTI, P.E.  
 WINDERMERE GRADING & EROSION CONTROL

CLIENT:  
**THE LANDINGS COMMUNITY**  
 270 N. MARSHALL AVE. SUITE 200  
 COLORADO SPRINGS, CO 80905  
 CONTRACT: 827 MARK

**WINDERMERE GRADING & EROSION CONTROL**  
 N. MARKSHEFFEL ROAD  
 EL PASO COUNTY, COLORADO

ISSUE	DATE
ISSUE NO.	DATE
1	11/17/02
2	11/17/02
3	11/17/02
4	11/17/02
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19	11/17/02
20	11/17/02

DESIGNED BY: CSB  
 DRAWN BY: CSB  
 CHECKED BY: TRM  
 FILE NAME: 2707-0202  
 PROJECT NO.: 0202  
 SPECIAL THANKS TO: J. & G.  
 DEWALD SCALE:  
 HORIZONTAL: 1" = 100'  
 VERTICAL: 1/4"  
**INITIAL/INTERIM EROSION CONTROL PLAN**  
 PROJECT NO. 2707-0202  
 DRAWING NO. **EC03**



- LEGEND**
- PROPOSED INTERMEDIATE CONTOUR..... 1000
  - PROPOSED INDEX CONTOUR..... 8000
  - EXISTING INTERMEDIATE CONTOUR..... 1000
  - EXISTING INDEX CONTOUR..... 1000
  - EXISTING SPOT ELEVATIONS..... 45.24
  - DIRECTION OF FLOW.....
  - 100 YEAR DETENTION POND OVERFLOW.....
  - HIGH POINT..... HP
  - LOW POINT..... LP
  - PROPOSED INLET.....
  - PROPOSED MANHOLE.....
  - CONTRIBUTION SITE BOUNDARY.....
  - OUT/FALL LINE.....
  - INTERIM SEDIMENT ALLOWING..... (SEE DETAIL SHEET 6)
  - INTERIM STODDLE..... (SEE DETAIL SHEET 6)
  - INTERIM SLOTTED..... (SEE DETAIL SHEET 6)
  - INTERIM SILT PROTECTION..... (SEE DETAIL SHEET 6)
  - INITIAL/INTERIM SILT FENCE..... (SEE DETAIL SHEET 4)
  - INITIAL/INTERIM CONCRETE WASHOUT AREA..... (SEE DETAIL SHEET 6)
  - INITIAL/INTERIM VEGET. TRACKING CONTROL..... (SEE DETAIL SHEET 6)
  - INITIAL/INTERIM CHECK DAM..... (SEE DETAIL SHEET 6)
  - INITIAL/INTERIM SODDING STYING AREA..... (SEE DETAIL SHEET 6)
  - INITIAL/INTERIM TEMPORARY SEDIMENT BARR. (SEE DETAIL SHEET 7)

**811**  
 Know what's below.  
 Call before you dig.  
 CALL 3-DIGITEL DIAL 811  
 BEFORE YOU DIG, DRILL, OR  
 EXCAVATE. YOU WILL SAVE TIME,  
 MONEY AND PREVENT DAMAGE TO  
 UNDERGROUND UTILITIES.

**NOTES**

1. EXISTING SPOT ELEVATIONS ARE TO BE USED AND WILL BE CONTAINED IN THE PLAN ONCE DETERMINED BY THE CONTRACTOR.
2. THE LOCATION OF THE POND IS TO BE DETERMINED BY THE CONTRACTOR.
3. THE SLOPE OF THE POND IS TO BE DETERMINED BY THE CONTRACTOR.
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PREPARED BY:  
  
**DREXEL, BARRETT & CO.**  
 CIVIL ENGINEERS  
 1500 N. UNIVERSITY STREET  
 COLORADO BELL COMBINATION AREA  
 CONTRACT NO. 17-117-1000  
 PROJECT NO. 17-117-1000  
 SHEET NO. 8 OF 10

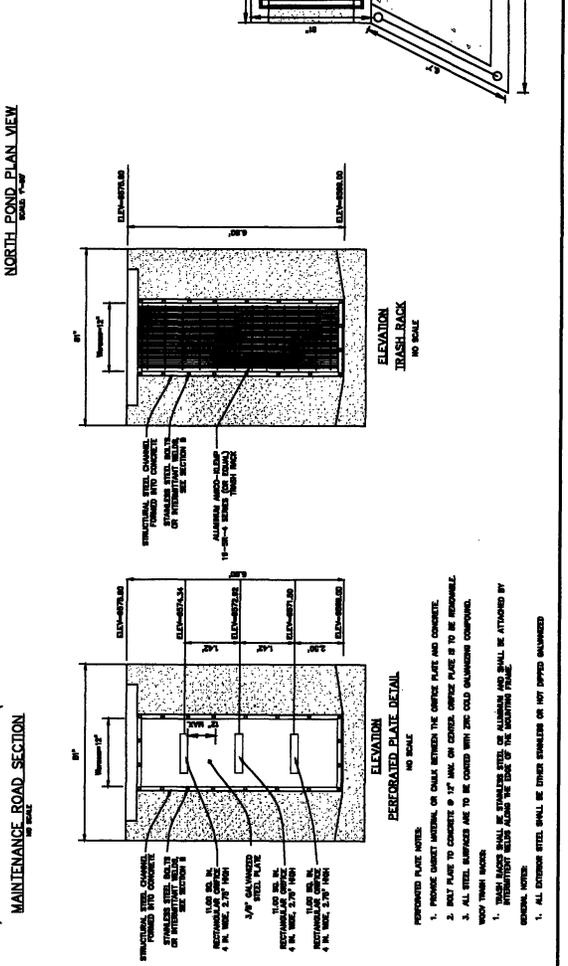
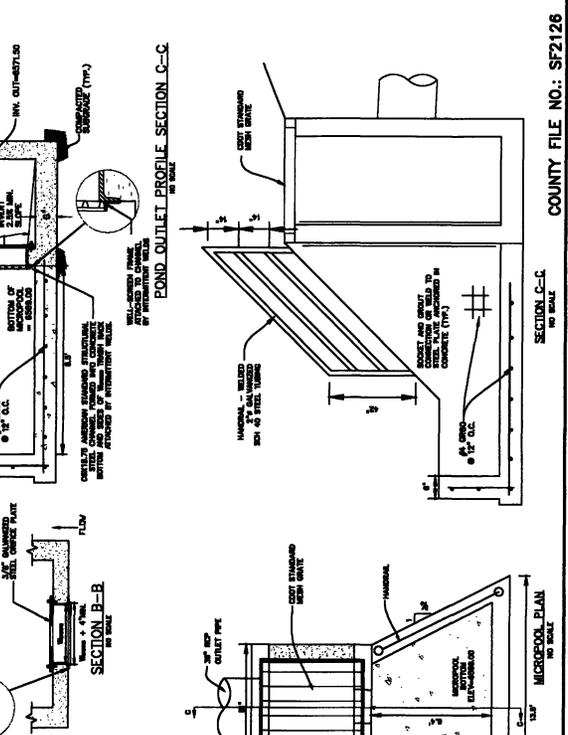
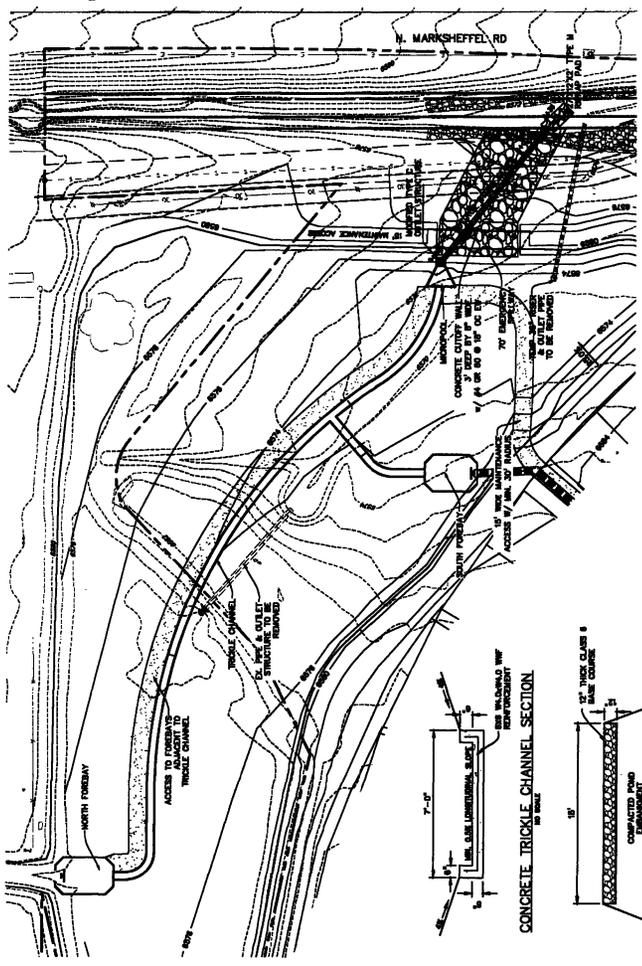
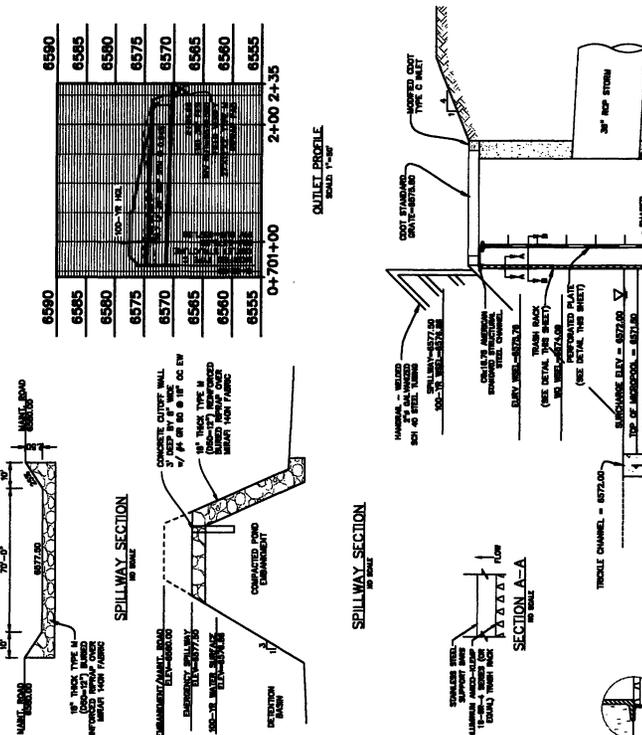
CLIENT:  
  
**THE LARIOSUS COMPANY**  
 202 N. WASHINGTON AVE. 600  
 COLORADO BELL COMBINATION AREA  
 CONTRACT NO. 17-117-1000  
 SHEET NO. 8 OF 10

**WINDERMERE GRADING & EROSION CONTROL**  
 N. MARKSHEFFEL ROAD  
 EL PASO COUNTY, COLORADO

ISSUE	DATE
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ISSUE NO. 2	7/27/98
ISSUE NO. 3	7/27/98
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ISSUE NO. 17	7/27/98
ISSUE NO. 18	7/27/98
ISSUE NO. 19	7/27/98
ISSUE NO. 20	7/27/98

DESIGNER: DREXEL, BARRETT & CO.  
 PROJECT NO. 17-117-1000  
 SHEET NO. 8 OF 10

**PD-1**  
 COUNTY FILE NO.: SF2126



PREPARED BY: DREXEL, BARRETT & CO.  
 PROJECT NO. 17-117-1000  
 SHEET NO. 8 OF 10

DESIGNER: DREXEL, BARRETT & CO.  
 PROJECT NO. 17-117-1000  
 SHEET NO. 8 OF 10

CONCRETE TRICKLE CHANNEL SECTION: 3' HIGH CURB & 12" O.C. REINFORCEMENT.

OUTLET PROFILE: 3' HIGH CURB & 12" O.C. REINFORCEMENT.

SECTION A-A: 3' HIGH CURB & 12" O.C. REINFORCEMENT.

SECTION B-B: 3' HIGH CURB & 12" O.C. REINFORCEMENT.

SECTION C-C: 3' HIGH CURB & 12" O.C. REINFORCEMENT.

ELEVATION TRASH BACK: 3' HIGH CURB & 12" O.C. REINFORCEMENT.

ELEVATION PERFORATED PLATE DETAIL: 3' HIGH CURB & 12" O.C. REINFORCEMENT.

ELEVATION MICROCOOL PLAN: 3' HIGH CURB & 12" O.C. REINFORCEMENT.

GENERAL NOTES:  
 1. ALL EXTERIOR STEEL SHALL BE EITHER GALVANIZED OR HOT DIPPED GALVANIZED.

PREPARED BY:  
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CLIENT:  
**THE LANDINGS**  
 COMMUNITY  
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 COLORADO SPRINGS, CO 80902  
 CONTACT: JOY MARK

**WINDERMERE**  
 GRADING & EROSION CONTROL  
 N. MARKSHEFFEL ROAD  
 EL PASO COUNTY, COLORADO

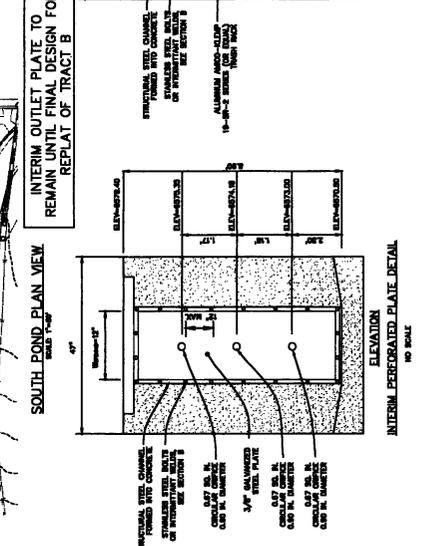
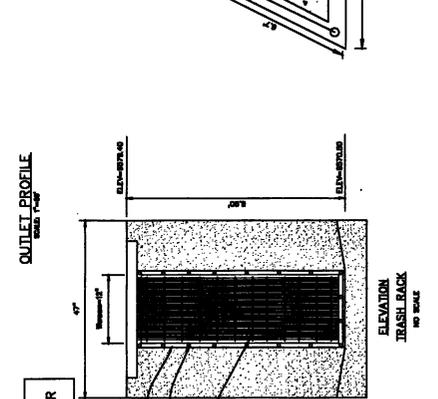
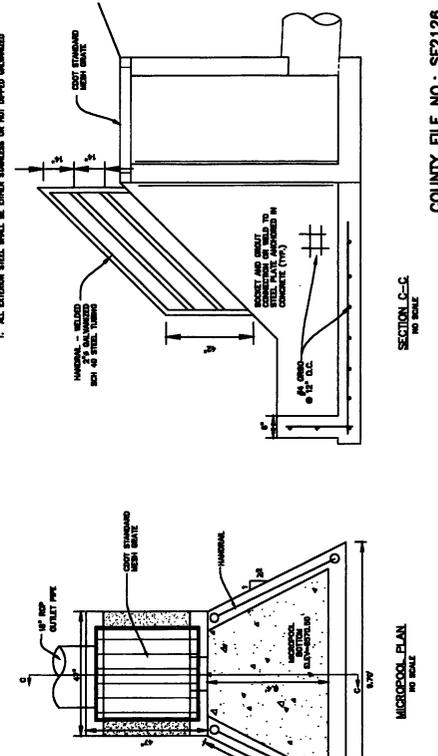
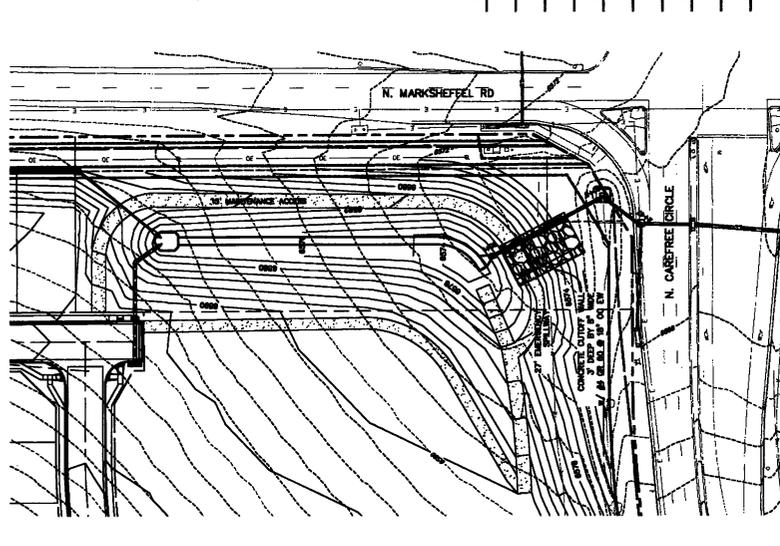
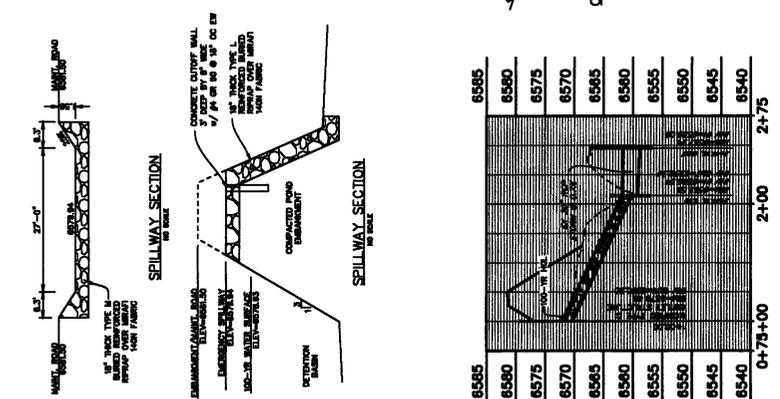
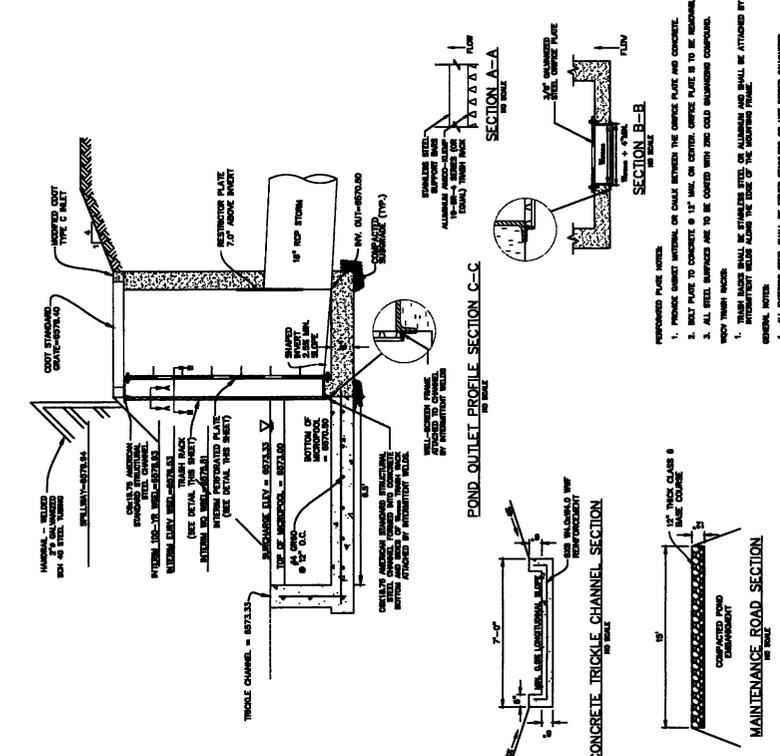
ISSUE	DATE
INITIAL ISSUE	2/27/78
LATEST ISSUE	3/7/78

DESIGNED BY: DSW/STP  
 CHECKED BY: TDM  
 FILE NAME: 2107-0107D  
 PREPARED UNDER BY: DREWES, BAIRD & CO.  
 PROJECT NO.: 2107-0107D  
 DRAWING NO.:



SCALE: N/A  
 HORIZONTAL: N/A  
 VERTICAL: N/A  
**SOUTH POND INTERIM OUTLET DETAILS**

**PD-2**  
 SHEET: 9 OF 10



PREPARED BY: **DREWEL BARRELL & CO.**  
 CIVIL ENGINEERS & ARCHITECTS  
 210 N. WINDMERE AVE. SUITE 200  
 COLORED SPRINGS, CO. 81002  
 CONTACT: ART MARK

CLIENT: **THE LANDINGS COMPANY**  
 210 N. WINDMERE AVE. SUITE 200  
 COLORED SPRINGS, CO. 81002  
 CONTACT: ART MARK

WINDMERE GRADING & EROSION CONTROL  
 N. MARKSHEFFEL ROAD  
 EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/27/79
LATEST ISSUE	3/27/79

REVISION	BY	DATE
1	DMB	10/7
2	DMB	10/7
3	DMB	10/7
4	DMB	10/7
5	DMB	10/7
6	DMB	10/7
7	DMB	10/7
8	DMB	10/7
9	DMB	10/7
10	DMB	10/7

PREPARED UNDER CONTRACT NO. 2117-078  
 DRAWING NO. 2117-078-01  
 DREWEL BARRELL & CO.

QUALITY SEAL:  
 HORIZONTAL: N/A  
 VERTICAL: N/A

FOREBAY DETAILS

PROJECT NO. 2117-078  
 DRAWING NO.

**FB**

SHEET: 10 OF 10

