

FINAL DRAINAGE LETTER
FOR
TIMBERLINE STORAGE YARD
EL PASO COUNTY, COLORADO

JUNE 2018

Prepared for:
Timberline Landscaping, Inc.
20625 Andalusian View
Pueblo, CO 81008
(719)-638-1000

Prepared by:



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Colorado Springs, CO 80903
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Project #43-095
PCD Project No. PPR-18-000

COM-18-012



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Colorado Springs, CO 80901
719.955.5485

June 8, 2018

Attn: Jennifer Irvine, P.E.
El Paso County Engineer
2880 International Circle
Colorado Springs, Colorado 80910

RE: Final Drainage Letter for Timberline Storage

The submitted site plan update showed six other buildings. What is the plan for access to the buildings and the surfacing used? All the proposed improvements shall be part of the analysis.

Dear Jennifer,

The purpose of this letter is to show that there shall be no negative drainage effects associated with the existing development of Timberline Storage Yard under PPR-17-018 with the proposed addition of a 40'x50' wash bay with concrete aprons. This final drainage letter is being submitted concurrently for the approval of a Site Improvement Plan, Grading and Drainage Plan.

Property Description:

Timberline Storage Yard is located in the southeast quarter of the southwest quarter of Section 28, Township 13 South, Range 65 West of the 6th P.M. in El Paso County, Colorado. The site is currently zoned "M" which is associated with the industrial development. The parcel is bound to the north, south, and east by other vacant parcels of land. Adjacent to the southwest corner of the site, is an existing development that consists of a light industrial/storage and a maintenance yard. As shown on the associated FIRM panel, a channel known as the East Fork of Sand Creek Sub-tributary flows from east to west along the northern boundary of the site. Due to the presence of an existing railroad embankment, the sub-tributary does not influence the subject site. The site is located with the greater Sand Creek Drainage Basin and is tributary to the Sand Creek Channel via the East Fork Sand Creek Sub-Tributary.

Existing Drainage Characteristics:

The parent parcel housing the existing development is approximately 37.95 acres in size and is currently zoned "M" for industrial. The total 37.95 acres parcel, approximately 11.48 acres was developed with the Timberline Storage Yard, which consist of a large gravel storage yard, an office/warehouse building, with asphalt and gravel parking areas, lighting, landscaping, and access entryways.

Runoff produced north of the development area mimics the historic drainage patterns by sheet flowing to the north development boundary where it combines with runoff generated onsite within the gravel storage yard and from the north half of the warehouse building. Earthen swales with rip rap lined rundown convey the collected runoff to a proposed 0.9 acre Full Spectrum Detention pond located along the southern boundary of the site.

Floodplain Statement:

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel No. 08041C0543 F, effective date March 17, 1997 no portion of this site is located within the 100- year floodplain.

Proposed drainage characteristics:

The proposed project includes the addition of a 40'x50' wash bay with (2) 20'x40' concrete pads to the existing Timberline Storage Yard site. The proposed wash bay is design to be constructed within the existing gravel storage yard area north of the existing warehouse.

FOUR STEP PROCESS

Step1 Employ Runoff Reduction Practices – The project does not provide any runoff reduction practices.

Step 2 Stabilize Drainageways – The Timberline Storage Yard site has an existing Full Spectrum Detention (FSD) pond to control developed runoff that is discharging to the historic drainage way that crosses the vacant parcel located to the south of the subject site. The FSD outlet structure was designed to drain the water quality event storm in 40 hours, while reducing the 100 year peak discharge to approximately 90% of the predevelopment conditions.

Step 3 Provide Water Quality Capture Volume – An existing Full Spectrum Detention Basin reduces the peak discharge rates and provides water quality treatment. The WQCV is designed to release over a 40 hour period while larger event storms releases in periods of times between 64-80 hours.

Step4 Consider Need for Industrial and Commercial BMP's – This submittal provides a Site Plan, Drainage and Grading plan. The original BMPS are still place from the construction of the warehouse and (FSD) pond to mitigate the potential for erosion across the site.

Water Quality Provisions:

The existing full spectrum detention (FSD) pond functions to provide detention and water quality for the existing storage yard development as well as all runoff tributary to it. This includes runoff produced onsite, north of the development and parcel, as well as offsite flows adjacent to the west boundary of the parcel. This full spectrum detention pond is designed to function to treat approximately 20.0 acres by providing 0.216 acre-feet of storage for the water quality event 0.516 acre feet of storage at the EURV event storm and 1.88 acre-feet of storage in the 100-year event. The existing full spectrum detention basin is private and is maintained by the property owner. Access has been granted to the owner and El Paso County for access and maintenance of the private WQCV facility.

The wash bay's additional flows shall insignificantly increase the Basin A (as determined in the Final Drainage Report for Timberline Storage Yard" prepared by M&S Civil Consultants approved February 13, 2018.

Revised Basin A, 8.3 acres, (Q5=9.4cfs, Q100=25.1cfs, Original) (Q5=9.5cfs, Q100=25.2cfs Including wash bay addition), consists primarily of a proposed gravel storage yard as well as the north half of the proposed office/warehouse building, concrete aprons, and asphalt parking areas....

Identify the change in the c-value and the FSD watershed imperviousness due to the addition of all the proposed improvements shown on the site plan.

Private Water Quality Facility - Cost Estimate:

No additional costs are required to the existing Private Water Quality Facility: **\$0.00**

Drainage fees:

No drainage fees are due as the site is not being platted at this time.

Conclusion:

No negative drainage effects associated with addition of a 40'x50' wash bay with (2) 20'x40' concrete pads to the existing Timberline Storage Yard site. The additional flows generated from the additional wash bay are negligible and are within the margin of error of the Final Drainage Report for Timberline Storage Yard.

This proposal does not conflict or change the specifications as previously detailed within the "Final Drainage Report for Timberline Storage Yard" prepared by M&S Civil Consultants approved February 13, 2018

This letter has been prepared according to the County drainage criteria and is being submitted for approval. If you have any question about this submittal, please feel free to call me at 719-491-0818 or email me at Virgils@mscivil.com

Sincerely,

Virgil A. Sanchez

**DRAINAGE LETTER
FOR
TIMBERLINE STORAGE YARD
DRAINAGE PLAN STATEMENTS**

ENGINEERS STATEMENT

The attached drainage plan and report was prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the applicable master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors of omission on my part in preparing this report.

Virgil A. Sanchez, P.E. #37160
For and on Behalf of M&S Civil Consultants, Inc

DEVELOPER'S STATEMENT

I, the developer have read and will comply with all the requirements specified in this drainage report and plan.

BY: _____

TITLE: _____

DATE: _____

ADDRESS: Timberline Landscaping, Inc.
20625 Andalusian View
Pueblo, CO 81008

EL PASO COUNTY'S STATEMENT

Filed in accordance with the requirements of El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and the El Paso County Engineering Criteria Manual, as amended.

BY: _____ DATE: _____

Jennifer Irvine, P.E.
County Engineer / ECM Administrator

CONDITIONS:

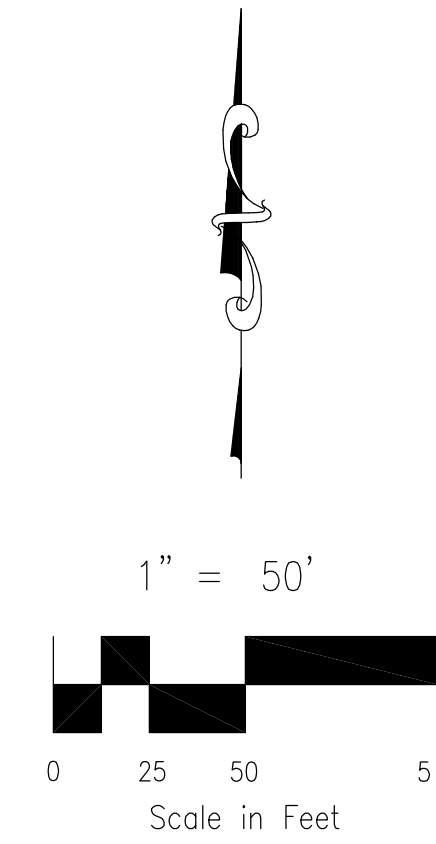
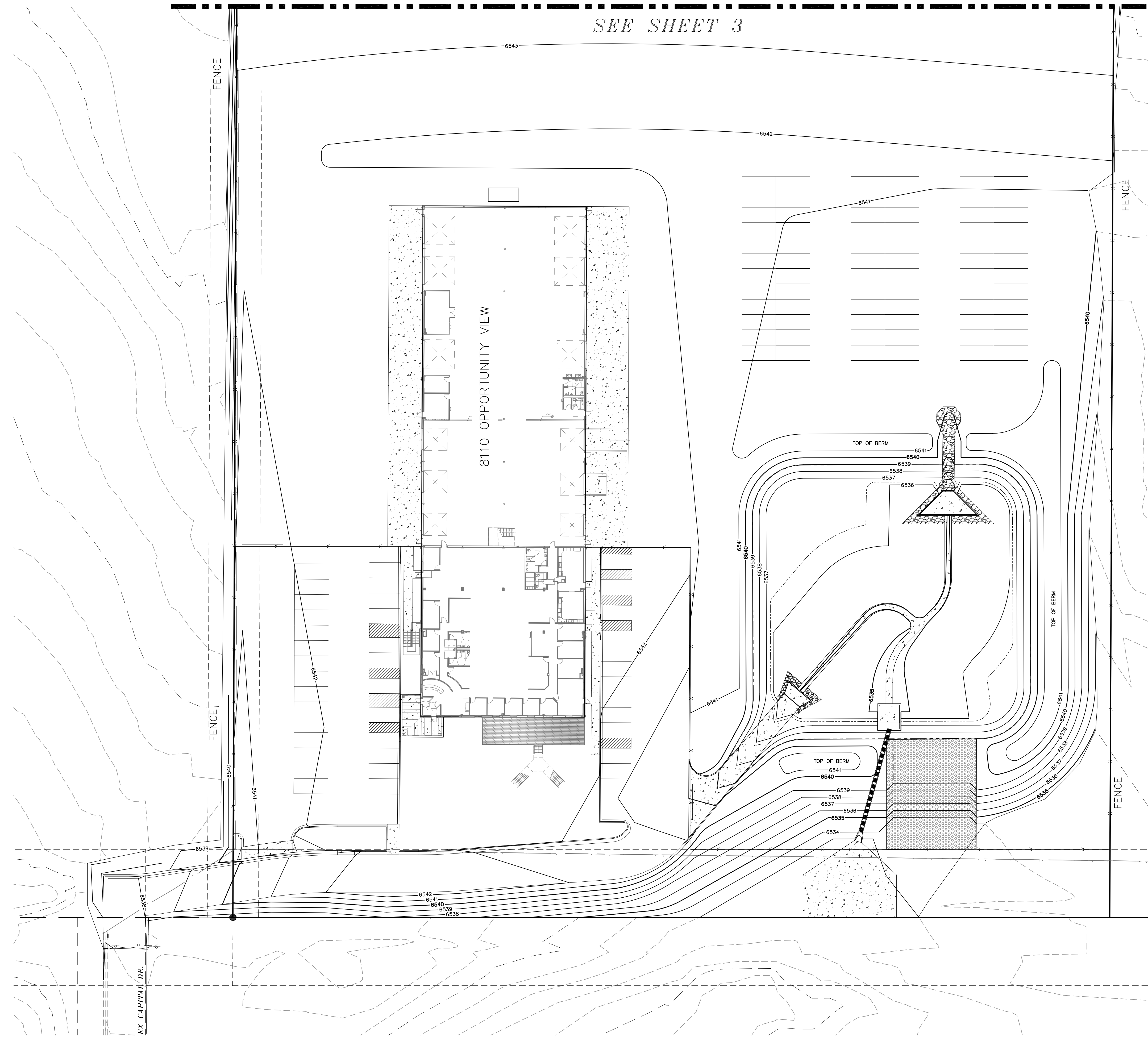
Move the signature page after the cover sheet.

SITE PLAN, GRADING AND DRAINAGE PLAN

TIMBERLINE STORAGE YARD

SITE PLAN, GRADING AND DRAINAGE PLAN

SEE SHEET 3



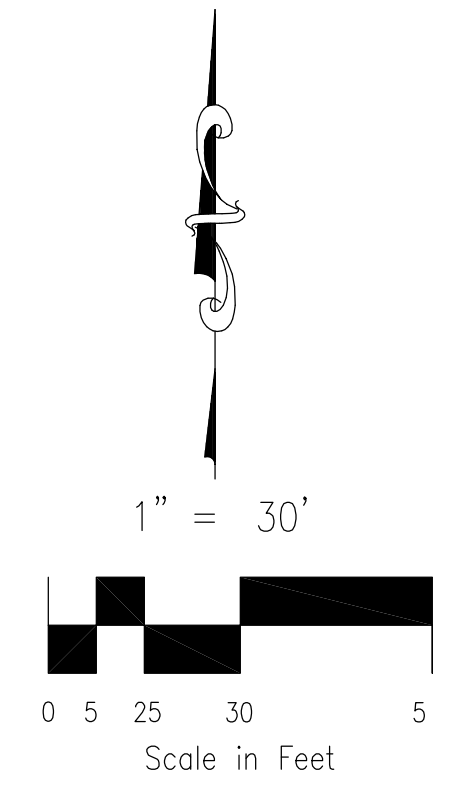
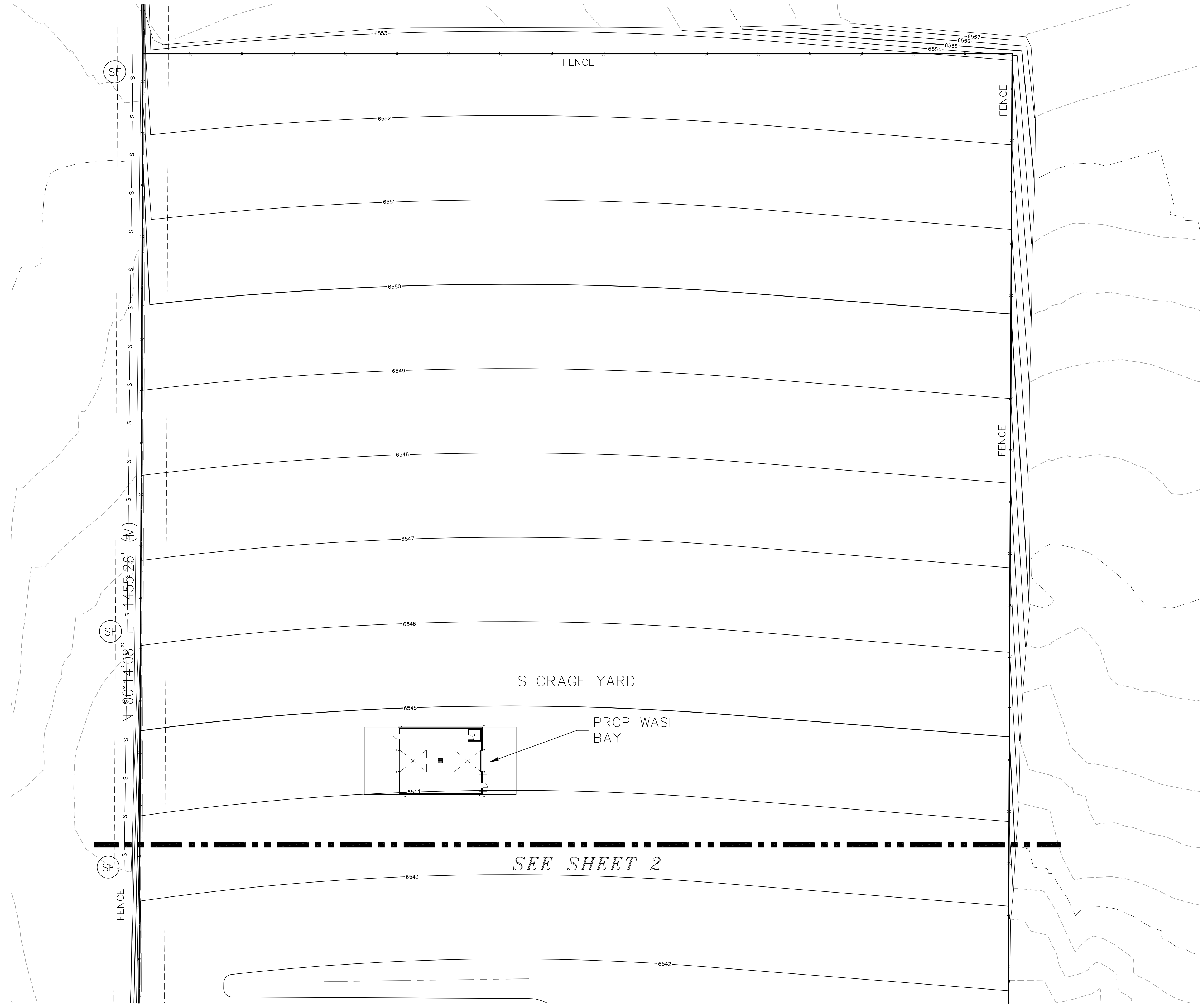
File: 0:\43095A\Tim Enrick\eng\Over Plan\Grading Plan with Wash Bay\43095 Grading Plan M&S BAY.dwg Plotstamp: 6/1/2018 8:27 AM

REVISIONS: NO. DATE BY DESCRIPTION APPROVED BY DATE		M&S CIVIL CONSULTANTS, INC. 20 BOULDER CRESCENT, SUITE 110 COLORADO SPRINGS, CO 80903 PHONE: 719.555.5485	TIMBERLINE STORAGE YARD	
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.			SITE PLAN, GRADING AND DRAINAGE PLAN	
CAUTION		PROJECT NO. 43-095		DATE: 6/01/2018
DESIGNED BY: GW		SCALE: HORIZONTAL: 1"=50'		SHEET 2 OF 3
DRAWN BY: GW		VERTICAL: N/A		
CHECKED BY:		VAS		GR02

EL PASO COUNTY FILE NO. PPR 17-018

TIMBERLINE STORAGE YARD

SITE PLAN, GRADING AND DRAINAGE PLAN



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TIMBERLINE STORAGE YARD	
SITE PLAN, GRADING AND DRAINAGE PLAN	
PROJECT NO. 43-095 DESIGNED BY: GW DRAWN BY: GW CHECKED BY: VAS	SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A DATE: 6/01/2018 SHEET 3 OF 3 GR03
20 BOULDER CRESCENT, SUITE 110 COLORADO SPRINGS, CO 80903 PHONE: 719.555.4485	
CIVIL CONSULTANTS, INC.	
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.	
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160	
REVISIONS: NO. DATE BY DESCRIPTION APPROVED BY DATE	THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS. CAUTION