



March 1, 2022

**Via Electronic Mail**

Ms. Stephanie Fancher-English  
Loveland Ready-Mix Concrete, Inc.  
644 Namaqua Road  
Loveland, Colorado 80537

**Subject: Cell 4 – Green-Croissant Pit  
Reclamation Slope Evaluation Version 2**

Dear Stephanie:

This letter:

- Corrects typos, and mis-interpretation of the Rule to address comments by DRMS (Hays, 2022)
- Summarizes our evaluation of the existing reclamation slopes at the above referenced mine cell
- Compares our analysis to that provided by Ms. McGill (McGill, 2021)
- Evaluates the Division of Reclamation, Mining and Safety's (DRMS's) correspondence intimating a regrade requirement of Zones 9, 20, 25, 26 and part of 27 (Hays, 2021)

## **CRITERIA**

According to LRM's reclamation plan, the overall reclamation slope for the site is 3H:1V. We take that slope to be from the crest of the slope to the pit bottom. DRMS in their comment letter (Hays, Loveland Ready-Mix Concrete, Inc., Green/Croissant Property Sand and Gravel Mine, File No. M-2001-022, Cell 4 Reclamation Slope Evaluation Review, 2022) highlights this requirement. Rule 3.1.5(7) (i.e., the Rule) is the other set of criteria for which DRMS evaluates reclamation slopes, and it reads:

*Maximum slopes and slope combinations shall be compatible with the configuration of surrounding conditions and selected land use. In all cases where a lake or pond is produced as a portion of the Reclamation Plan, all slopes, unless otherwise approved by the Board or Office, shall be no steeper than a ratio of 2:1 (horizontal to vertical ratio), except from 5 feet above to 10 feet below the expected water line where slopes shall be no steeper than 3:1. If a swimming area is proposed as a portion of the Reclamation Plan, the slope, unless otherwise*

---

### **Colorado Office (Corporate)**

750 14<sup>th</sup> Street SW  
Loveland, Colorado 80537  
970-484-7704 / 970-484-7789 (FAX)

### **New Mexico Office**

1303 Pope Street  
Silver City, New Mexico 88061  
575-538-5620 / 575-538-5625 (FAX)

*approved by the Board or Office, shall be no steeper than 5:1 throughout the area proposed for swimming, and a slope no steeper than 2:1 elsewhere in the pond.*

## **METHODOLOGY**

### ***Existing Reclamation Slopes***

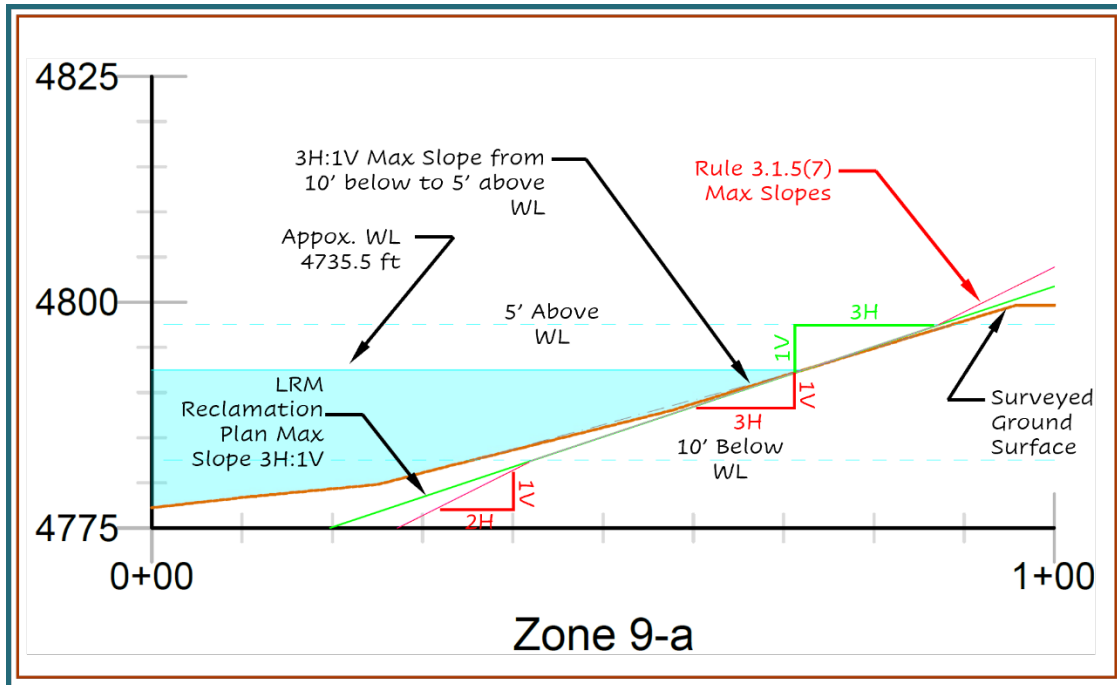
On July 13, 2021, PLS Corporation performed a bathymetric topographical survey of the ground surface below the water in Cell 4 (referred to as the pond, Attachment1). PLS Corporation utilized a remotely controlled boat fitted with global positioning system (GPS) surveying equipment and sonar detection. They calibrated the machine by wading into the pond and calibrating with the hand-held GPS collector. The boat floated circuitous patterns throughout the pond collecting elevational point measurements. PLS Corporation surveyors supplemented the bathymetric point data with topographic survey points collected around the pond perimeter, beneath the water to wading depth, at the water's edge, slope crest and approximately 15 feet off the crest. They collected data using a hand operated, survey-grade GPS rod and data collector. Overall, PLS Corporation collected over 2,100 highly accurate elevation points in their survey.

We reviewed the survey and finding no anomalies in the data, produced a ground-surface model utilizing Auto Desk's Civil 3D program. We then created 38 cross-sections, perpendicular to the topographic contours, utilizing Civil 3D's alignment and profile tools. On the cross-sections, we placed the approximate water surface elevation<sup>1</sup> reported by PLS Corporation, and lines representing LRM's reclamation plan slope (3H:1V in green) and approved reclamation slopes as described in Rule 3.1.5(7) (CMLRB, 2019) in magenta. We also calculated the average slope from 10' to 5' above the water surface elevation (to compare to the Rule), and the average overall slope to compare to LRM's reclamation plan (Table 1).

We placed a cross section in each zone as labeled in the "King Survey" (Attachment 2). In zones where the King Survey indicated potential variation from Rule 3.1.5(7), we placed two cross-sections. We evaluated each cross-section for its compliance with LRM's reclamation plan and Rule 3.1.5(7) as shown in Figure 1 and documented in Table 1.

---

<sup>1</sup> We refer to the water surface elevation as "approximate" because it is constantly fluctuating based on time of day, wind patterns, river stage elevation and upgradient groundwater conditions



**Figure 1 Evaluation Approach Explanation**

### **King Survey Comparison**

We chose Zones 12, 19 and 20 for comparison purposes. The King Survey shows, generally, that slopes in Zone 12 are gentle, Zone 19 are right at Rule slopes, and Zone 20 is steeper. This allowed a range of slope estimation comparison. We overlaid the images provided in the King Survey that showed their slope estimates into AutoCad. We then placed sections, perpendicular to the topographic contours near the King Survey evaluation locations and repeated the process described in the previous section. We placed the cross sections such that King's point closest to the water's edge runs through the cross section. Then on each cross section, we plotted King's reported slope by percentage. We also repeated the comparison in Zone 25 at the maximum slope indicated by King.

## **RESULTS AND DISCUSSION**

### **Existing Reclamation Slopes**

Sheet 1 and Table 1 show the results of the 38 cross sections evaluated. For Zones 9, 20, 25, 26 and part of 27:

- Zone 9: Both sections (Zone 9-a and Zone 9-b) show the overall reclamation slopes at or shallower than 3H:1V. In terms of the Rule, Zone 9-a is shallower and 9-b is within 2% of 3H:1V
- Zone 20: Both sections (Zone 20-a and 20-b) show slope compliance for LRM's reclamation slope and the Rule
- Zone 25: Section Zone 25-a is shallower than LRM's reclamation plan and Rule requirement. Section Zone 25-b is within 15% and 5% for the Rule requirement below the water surface and LRM's reclamation plan, respectively
- Zone 26: Zone 26-a mimics the shape of Zone 25-b and is within 21% and 4% for the Rule requirement below the water surface and LRM's reclamation plan, respectively. Zone 26-b meets the requirements except for the Rule below the water surface elevation where it is within 12%
- Part of Zone 27: Meets all criteria

The common factor with the Zones 20 through 27 is the presence of shoreline erosion, providing irregular topography along the slope. The irregular topography over short distances has not affected the overall average slope as shown in the cross sections with the exception of the area between Zones 25-b and 26-a. These erosional features are commonplace in all similar ponds along the Front Range where wind generated waves either pound and erode the shoreline, or where retreating water erodes the bank. Our experience is that they are limited in depth and heal over time. They do not typically result in deterioration of the entire slope, especially after vegetation establishment.

Based on comparison with LRM's reclamation plan, the 38 sections show that overall reclamation slopes are shallower than 3H:1V, with the exceptions of Zones 9-b, 25-b, and 26-a. The differences in these zones are 5% or less, which is indistinguishable to livestock or wildlife under the post-mining land use.

Zones 25-b, 26-a, and 26-b for 10 feet below the water surface elevation are noticeably steeper than the Rule requirement, and yet shallower than 2H:1V. Given that the slopes are significantly shallower above the water surface and the overall slope is shallow, there are no stability concerns. However, you may wish to request a variance from DRMS as allowed in the Rule for these small areas.



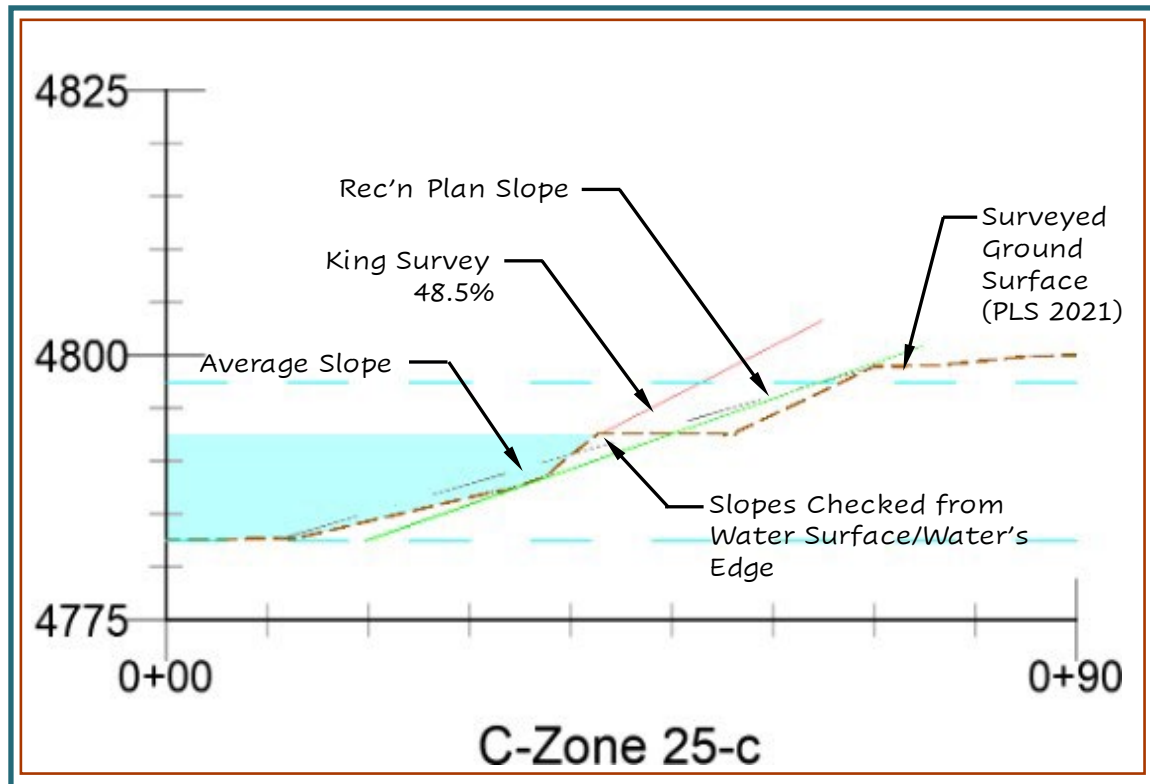
**Table 1 Average Slopes**

| Zone | WL to 10' Below | WL to 5' Above | Overall  | Zone | WL to 10' Below | WL to 5' Above | Overall  |
|------|-----------------|----------------|----------|------|-----------------|----------------|----------|
| 1-a  | 4.68H:1V        | 4.59H:1V       | 4.65H:1V | 18   | 5.93H:1V        | 4.54H:1V       | 5.47H:1V |
| 1-b  | 4.70H:1V        | 2.68H:1V       | 4.03H:1V | 19-a | 5.51H:1V        | 2.84H:1V       | 4.66H:1V |
| 2    | 5.13H:1V        | 5.05H:1V       | 5.10H:1V | 19-b | 8.91H:1V        | 3.26H:1V       | 6.84H:1V |
| 3    | 4.29H:1V        | 4.24H:1V       | 4.28H:1V | 20-a | 8.71H:1V        | 3.00H:1V       | 6.64H:1V |
| 4    | 4.52H:1V        | 4.90H:1V       | 4.65H:1V | 20-b | 5.61H:1V        | 3.00H:1V       | 4.72H:1V |
| 5    | 4.05H:1V        | 3.93H:1V       | 4.01H:1V | 21   | 8.33H:1V        | 3.00H:1V       | 6.55H:1V |
| 6    | 5.38H:1V        | 4.89H:1V       | 5.22H:1V | 22   | 6.56H:1V        | 5.73H:1V       | 6.26H:1V |
| 7    | 5.30H:1V        | 4.95H:1V       | 5.19H:1V | 23-a | 7.38H:1V        | 5.34H:1V       | 6.65H:1V |
| 8    | 4.44H:1V        | 3.69H:1V       | 4.19H:1V | 23-b | 6.49H:1V        | 4.64H:1V       | 5.80H:1V |
| 9-a  | 3.67H:1V        | 3.29H:1V       | 3.54H:1V | 24-a | 8.59H:1V        | 3.27H:1V       | 6.50H:1V |
| 9-b  | 3.62H:1V        | 2.93H:1V       | 3.40H:1V | 24-b | 4.67H:1V        | 7.29H:1V       | 5.52H:1V |
| 10   | 3.98H:1V        | 3.86H:1V       | 3.94H:1V | 25-a | 3.00H:1V        | 4.09H:1V       | 3.36H:1V |
| 11   | 4.40H:1V        | 4.80H:1V       | 4.54H:1V | 25-b | 2.54H:1V        | 3.39H:1V       | 2.86H:1V |
| 12   | 4.57H:1V        | 7.50H:1V       | 5.43H:1V | 26-a | 2.38H:1V        | 3.91H:1V       | 2.89H:1V |
| 13   | 5.25H:1V        | 4.25H:1V       | 4.94H:1V | 26-b | 2.64H:1V        | 8.21H:1V       | 4.50H:1V |
| 14   | 5.28H:1V        | 4.55H:1V       | 5.04H:1V | 27   | 3.35H:1V        | 7.99H:1V       | 4.90H:1V |
| 15   | 4.38H:1V        | 6.98H:1V       | 5.15H:1V | 28-a | 3.99H:1V        | 5.40H:1V       | 4.46H:1V |
| 16   | 5.04H:1V        | 10.28H:1V      | 5.96H:1V | 28-b | 5.56H:1V        | 3.37H:1V       | 4.83H:1V |
| 17   | 6.33H:1V        | 5.41H:1V       | 6.04H:1V | 29   | 6.29H:1V        | 3.96H:1V       | 5.50H:1V |

### King Survey Comparison

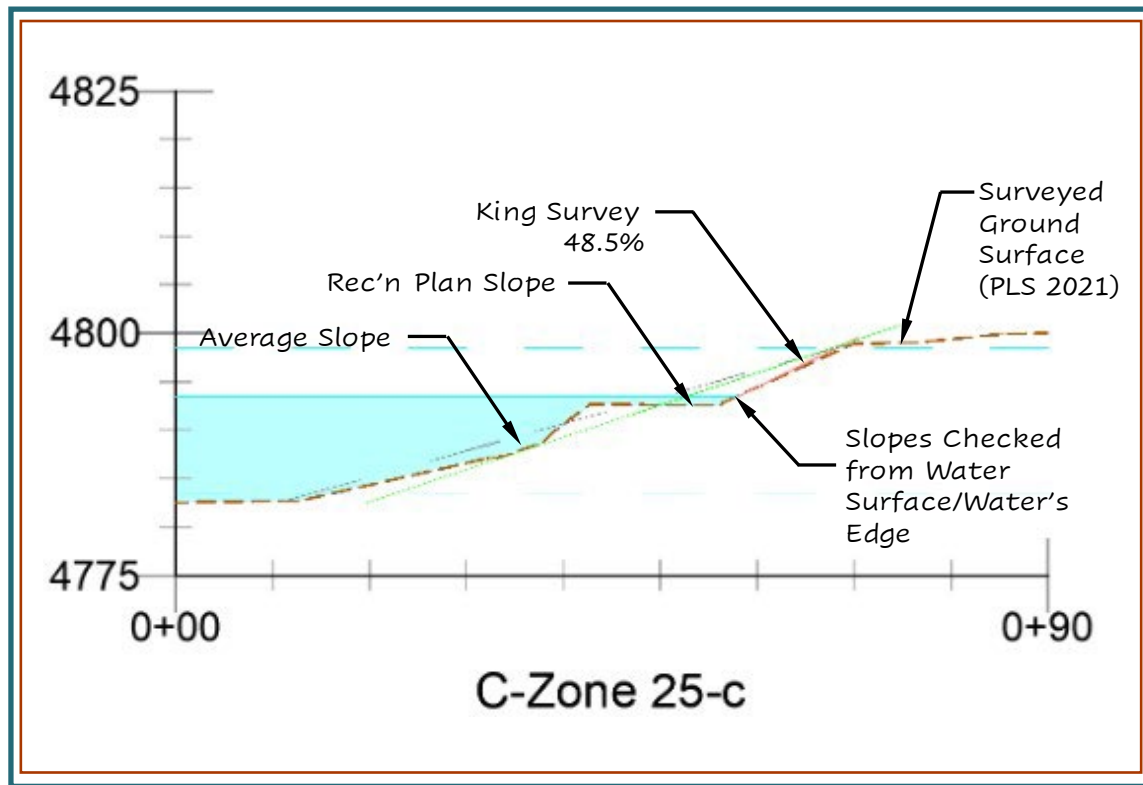
Most of the reported slopes in the King Survey were too short and biased by local irregularities (e.g., plow lines from drill seeding and cross ripping placed for soil retention and seed germination) for us to use in comparison. To calculate slopes, the approach should utilize the Rule's slopes 5 feet above and 10 feet below the water surface. Thus, we used the few King Survey slope calculations that were of appropriate length in our comparison. Sheet 2 summarizes the comparison between the King Survey and the PLS Corporation survey and our interpretation. Zones 12 and 19 show that the beginning and ending points the King Survey used for slope calculations generally agree with the PLS Corporation survey. In Zone 20, the King Survey shows slightly steeper slopes than those based on the PLS Corporation survey. The information provided on the King Survey (McGill, 2021) is in PDF format with no vector information, and some of the images appeared to be at a skewed angle. This could account for some of the discrepancy between the surveys in that the section location we attempted to mimic could be off slightly.

Zone 25-c<sup>2</sup> in Sheet 2 is near King's indicated 48.5% slope (2:06H:1V), which, from visual inspection, is their common result in Zone 25. Figure 2 shows the evaluation of the slopes at King's indicated average. It could be that when the King survey was completed, the water level was 0.5 to 1 foot higher as shown in Figure 3. Regardless if one examines the section as in Figure 2 or Figure 3, the average overall slope from crest to toe is 3.61H:1V (grey dashed line in figures), meeting compliance with the reclamation plan.



**Figure 2 Slope Evaluation at King's Maximum Indicated Slope**

<sup>2</sup> Mis-labeled as 25-a in version 1 of this letter

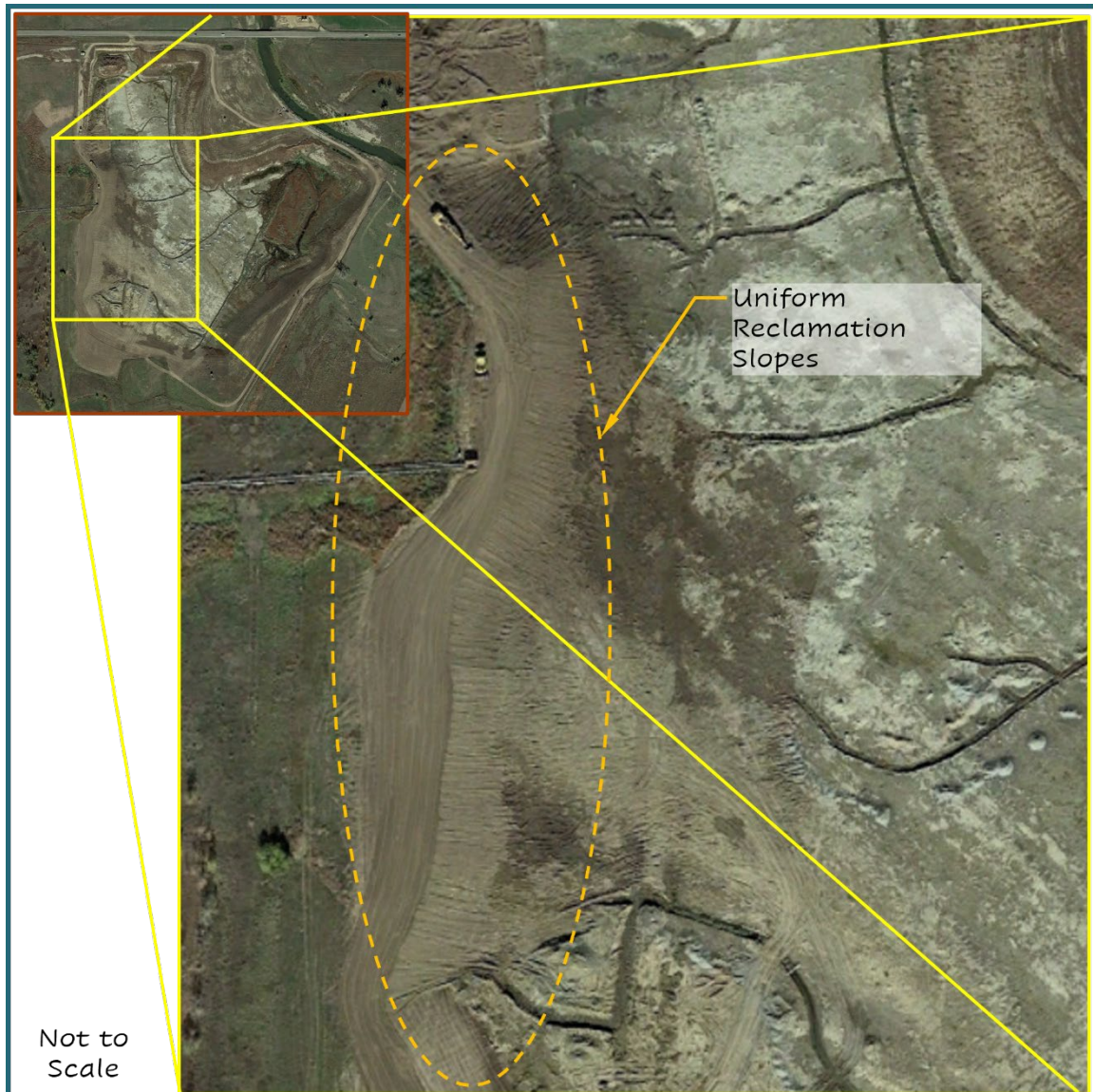


**Figure 3 Potential Conditions During King Survey**

The cross section shown in Figures 3 and 4 (and others shown in Sheet 1) result from erosion at the water's edge, which is a very natural occurrence in ponds along the Front Range as previously mentioned. Wave action erodes some of the bank above the water level, and deposits sediments immediately below the water surface, resulting in a "bench" and irregularities in the slope (Figure 5). Sometimes a high groundwater table helps exacerbate the problem (as is the case on the west side of Pit 4). We know that the walls of Pit 4 met slope requirements at the time of closure, and the slopes were "smooth" as indicated by:

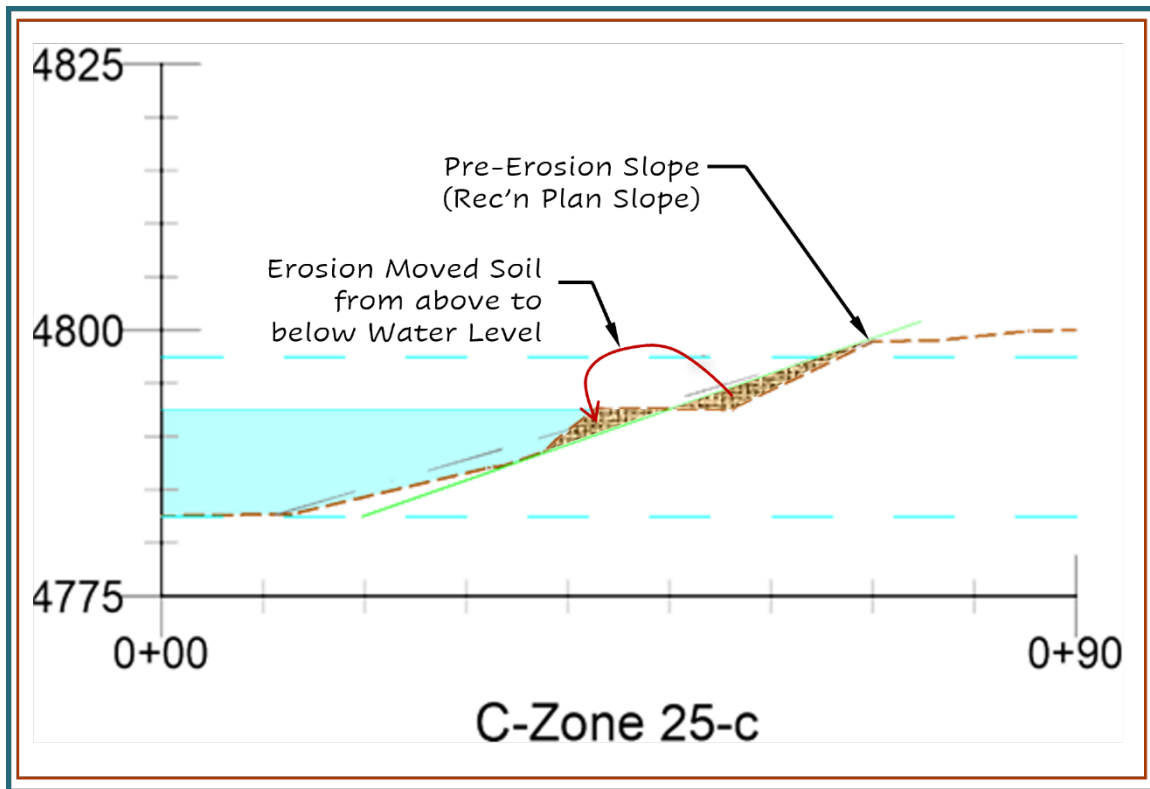
- Recollection of reclamation (Fancher, 2021)
- An aerial photograph dated October 2017 (USGS, 2021), displayed in Figure 4
- Topographical survey of the above water level bank 1/2/2019 (CDS, 2019) as summarized in Attachment 4

The intent of the Rule is to ensure that during mining and reclamation that the constructed banks are stable. After filling with water, the pond is in a post-reclamation state and it does not appear that the rule is intended for long-term maintenance of the banks. Regardless, the resulting bench from the erosional process and vegetation of the slopes ensures that the bank remains stable even in the post-reclamation state.



**Figure 4 National Agricultural Imagery Program (NAIP) October 2017**

Sometimes this erosional process results in a bank that is locally steep and may be up to three feet tall. For the post-mining land use of wildlife habitat and pasture, these features are completely safe. In fact, ponds with post-mining land use of recreation and that the public frequents also exhibit these features as shown in Figure 6.



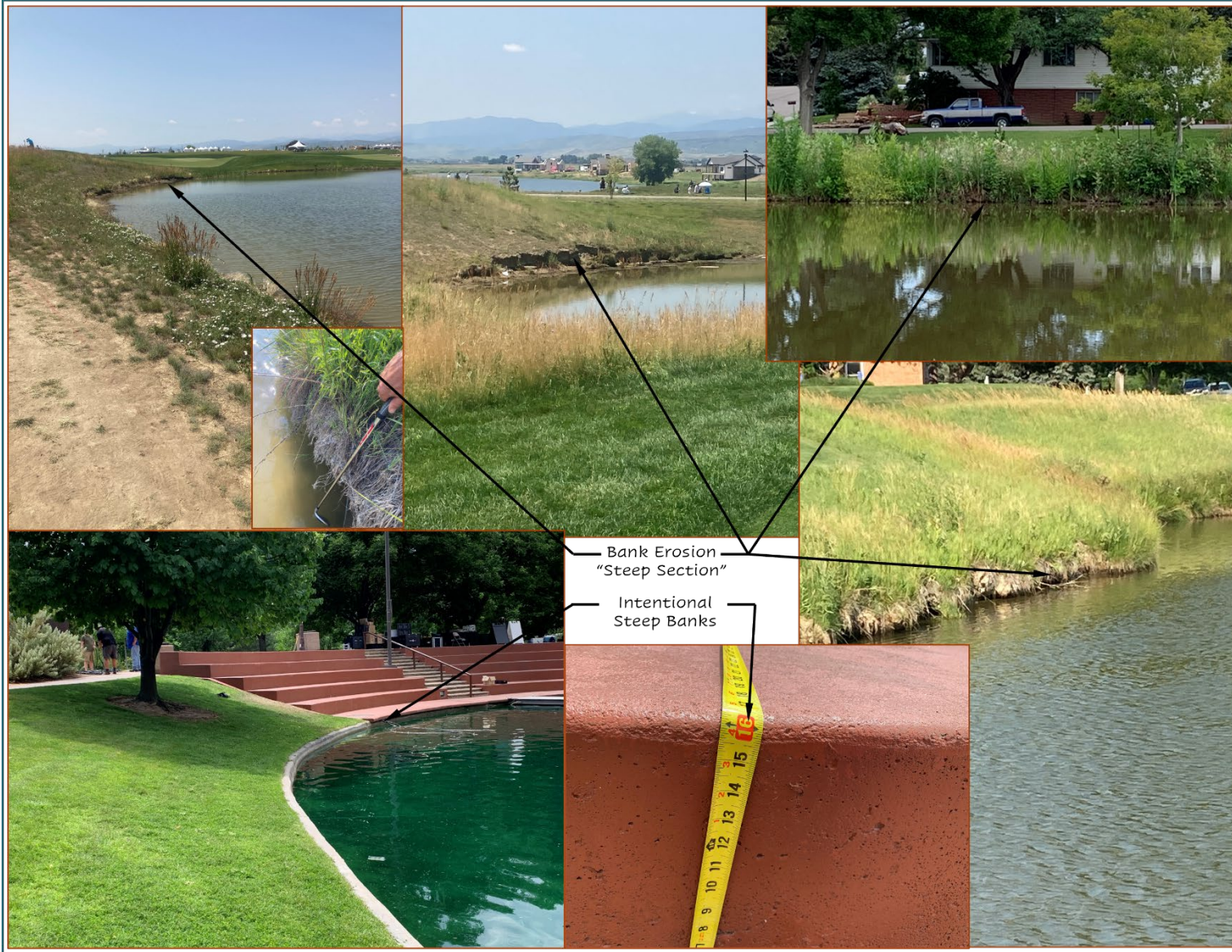
**Figure 5** Natural Pond Erosion at Water's Edge

### ***Regrading Evaluation***

Based on the evaluation presented previously, Cell 4 met Loveland Ready-Mix Concrete, Inc.'s (LRM's) reclamation plan requirements and the Rule because completed reclamation grading at slopes gentler than those required. The existing topography, even after being exposed to erosional forces, still meets the average slope requirements as exhibited in Sheet 1. Thus, regrading of the slopes is not needed and would set back the excellent vegetation establishment existing on the banks. Most of the areas mentioned in DRMS's letter for Zones 9, 20, 25, 26 and part of 27, are at 3H:1V and regrading would simply be removing a few inches of topsoil without enhancing slope stability.

The questionable areas of Zone 25 and 26 shown in the cross sections (Sheet 1) are stable and shallower than 2H:1V. If DRMS required LRM to regrade the upper portion of the slope, the design would be to excavate the excess at the crest and haul stockpile it nearby (you would not want to push it into the pond as it would settle at angle of repose, exacerbating the slope issue). This would result in an approximately 10-foot cut into the existing road.





**Figure 6** Typical Ponds - City of Loveland, Cattail Creek, TPC

The current landowner is utilizing this road as the main access to their newly constructed house, and as one portion of the active road encircling the pond. Weld County Records (Attachment 5) show an upgrade at the entrance, and north-side pond road for a more permanent installation. Disturbance to the existing vegetation and roadway would be more harmful than any benefit gained from the regrading. Thus, we suggest that LRM request DRMS grant a variance for this limited area.

## CONCLUSIONS AND RECOMMENDATIONS

Our evaluation of the reclamation (Attachment 4) and existing slopes (Sheet 1) shows that the Green-Croissant Cell 4 meets the average slope requirements dictated by the reclamation plan and Rule 3.1.5(7). The slopes surveyed by King Surveyors as provided (McGill, 2021) generally mimic those from the PLS Survey (Attachment1), but the interpretations and conclusions drawn by Ms. McGill that the pit does not comply with Rule 3.1.5(7) are incorrect when considering the Rule's intent and application. Any regrading of the slopes would result in vegetation disturbance, starting the reclamation clock from zero, potentially removing infrastructure (road), for no benefit to slope stability or improvement to the postmining land use of wildlife habitat and pasture, whatsoever.

We recommend that LRM complete their vegetation care and maintenance of the site and request financial assurance release as soon as vegetation establishment is confirmed. We recommend that visual monitoring of the area continue until released.

Sincerely,

*Telesto Solutions, Inc.*

A handwritten signature in black ink, reading "Walter L. Niccoli". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Walter L. Niccoli, PE Colo. #33826

Principal/Senior Engineer

WLN

## REFERENCES

- CDS. (2019). *Loveland Ready-Mix Pond Survey. Sites Exhibit. A Tract of Land Located in the North 1/2 of Section 30, Township 5 North, Range 67 West of the 6th Principal Meridian, County of Larimer, Colorado*. Loveland, Colorado: CDS Engineering Corporation. January 2, 2019.
- CMLRB. (2019). *Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials*. Denver, Colorado: Office of Mined Land Reclamation. July 15, 2019.
- Fancher, B. (2021, 07 22). Green-Croissant Cell 4 Reclamation Slopes. (W. Niccoli, Interviewer)
- Hays, P. (2021, June 25). Christensen's Survey Results. *Email to Stephanie Fancher-English LRM*. Denver, Colorado: Colorado Division of Reclamation, Mining, and Safety.
- Hays, P. (2022). *Loveland Ready-Mix Concrete, Inc., Green/Croissant Property Sand and Gravel Mine, File No. M-2001-022, Cell 4 Reclamation Slope Evaluation Review*. Denver, Colorado: Department of Reclamation, Mining and Safety. February 3, 2022.
- McGill, J. (2021, June 14). Explanation of Slope on Map on our request for reconsidering your decisions. *Email from Jamie McGill to DRMS Staff*. Denver, Colorado: Colorado Division of Reclamation, Mining, and Safety.
- USGS. (2021, 07 21). *Results*. Retrieved from Earth Explorer: <https://earthexplorer.usgs.gov/>

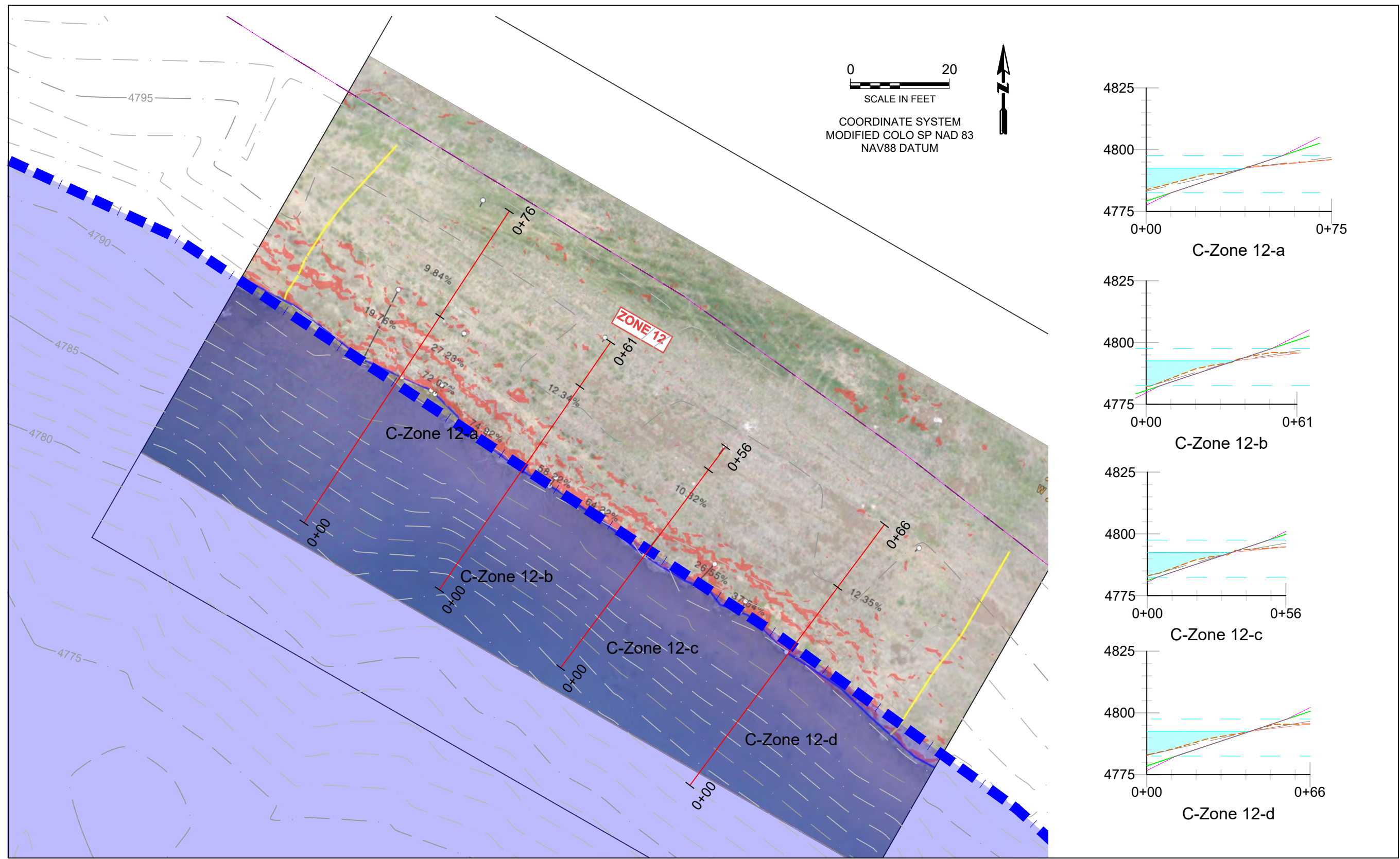


## Drawings

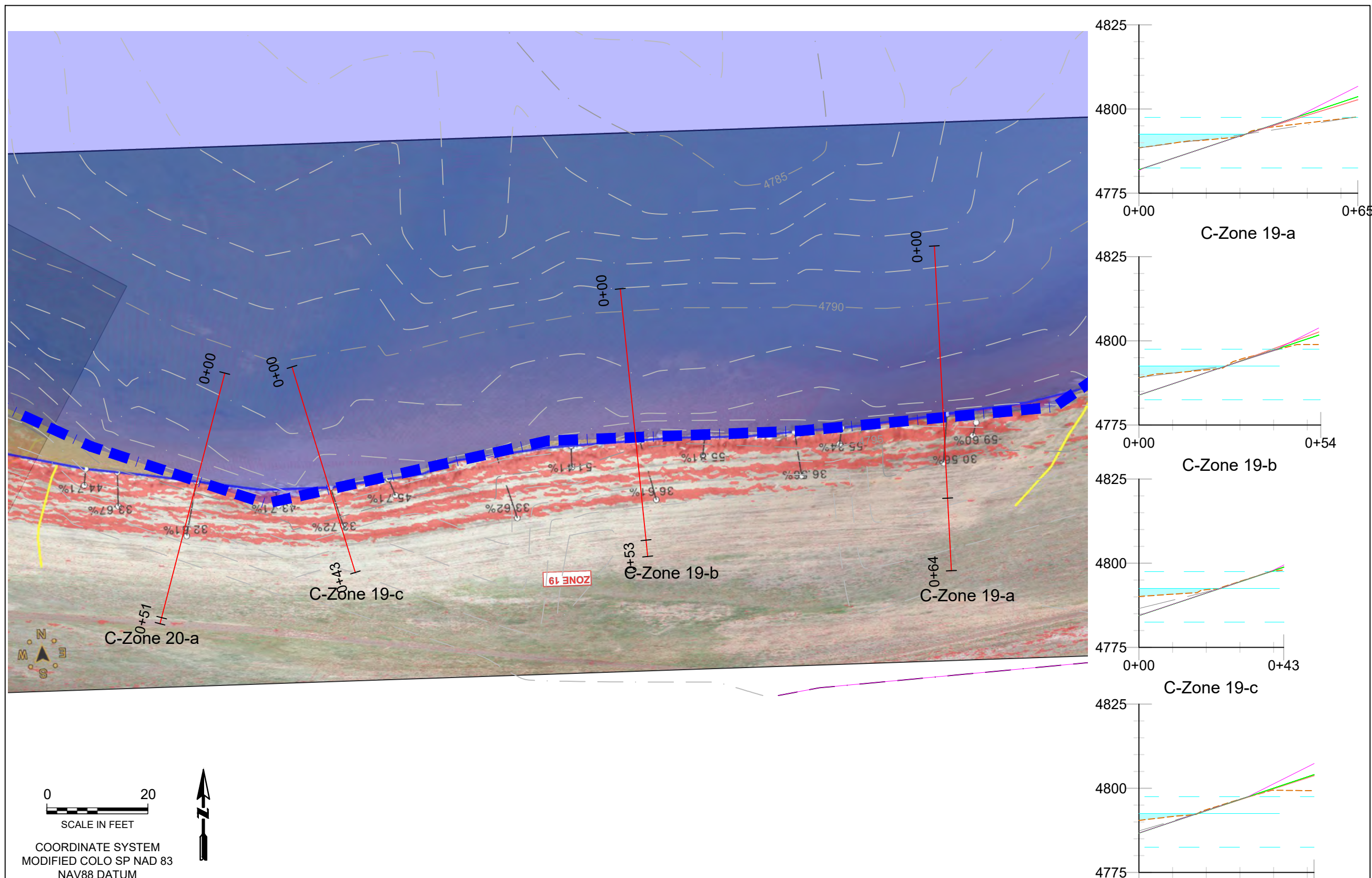




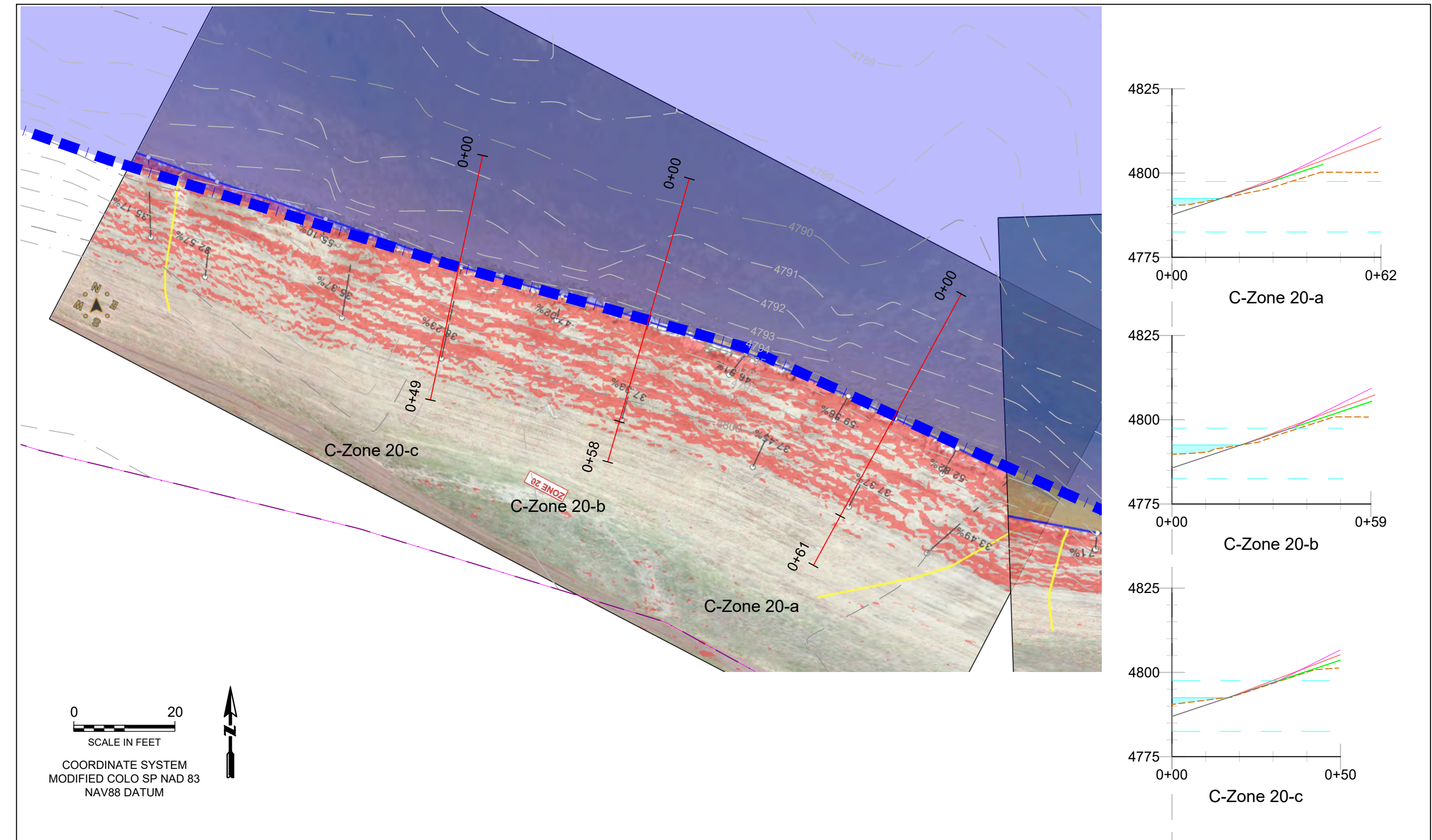




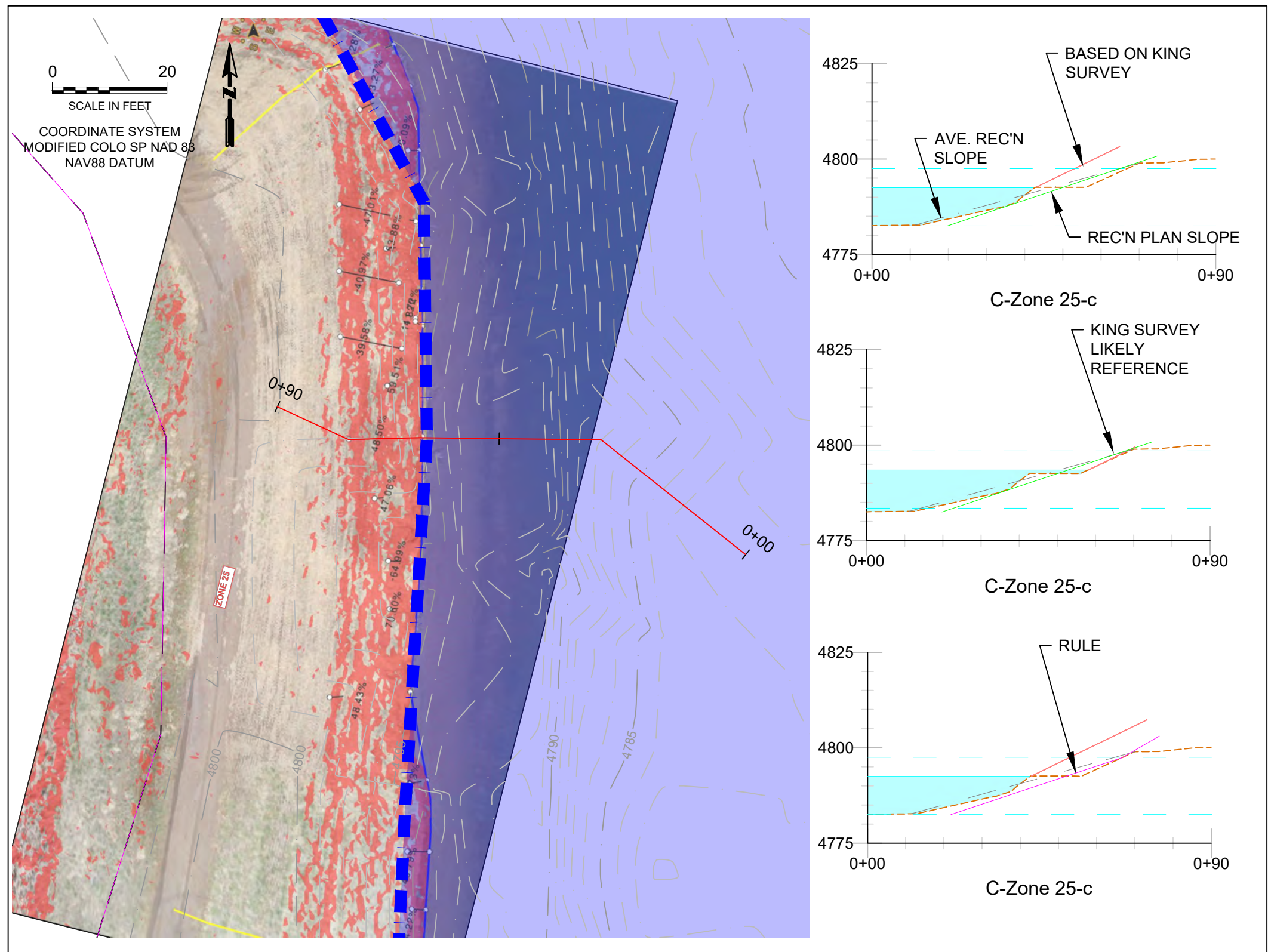
ZONE 12 COMPARISON



ZONE 19 COMPARISON



ZONE 20 COMPARISON



ZONE 25 COMPARISON

**LEGEND / NOTES**  
TOPOGRAPHICAL AND BATHYMETRIC ELEVATION SURVEY  
BY:  
PLS CORPORATION  
JULY 13, 2021  
  
IMAGE AND "ZONES" FROM"  
JAMIE MCGILL  
<jam2finance@yahoo.com> EMAIL TO  
COLORADO DRMS STAFF DATED  
JUNE 14, 2021  
  
SECTIONS VIEWS SCALE AS  
SHOWN, NO VERTICAL  
EXAGGERATION, NUMBERED  
CLOCKWISE AROUND POND  
  
APPROX. WATER  
LEVEL (WL) ELEV.  
KING  
SURVEY  
SLOPE  
  
EXIST. GRND.  
SURFACE  
FROM 7/13/21  
SURVEY  
  
ALLOWED  
RECL'N SLOPE  
3H:1V ABOVE WL  
2H:1V BELOW WL  
  
LINES OF EQUAL  
ELEVATION (FT)  
1 FT INTERVALS

| REVISIONS |                      |         |     |          |  |
|-----------|----------------------|---------|-----|----------|--|
| #         | DESCRIPTION          | DATE    | BY  | APPROVED |  |
| 1         | REVIEW DRAFT         | 7/22/21 | WLN | WLN      |  |
| 2         | REVISION 2 SUBMITTAL | 3/1/22  | WLN | WLN      |  |
|           |                      |         |     |          |  |
|           |                      |         |     |          |  |
|           |                      |         |     |          |  |
|           |                      |         |     |          |  |

|                  |            |
|------------------|------------|
| DATE             | 3/1/22     |
| PROJECT          | 360100-001 |
| TASK NUMBER      | 04         |
| DRAWN BY         | WLN        |
| PROJECT ENGINEER | WLN        |
| CHECKED BY       | WLN        |

DRAWING

**CELL 4  
GREEN-CROSSANT PIT  
RECLAMATION SLOPES  
KING SURVEY  
COMPARISON**

SHEET NUMBER: 2 REVISION NUMBER: 1

PREPARED BY:

TELESTO SOLUTIONS INC. CORPORATION

PREPARED FOR: LOVELAND READY MIX CONCRETE



# **Attachment1**

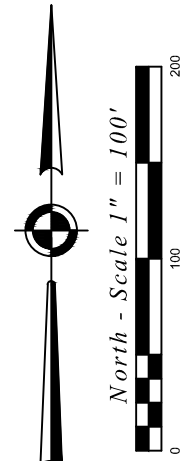
## **PLS Group Topographical and Bathymetric Survey**

NW corner of NE-1/4 of Section 30-T5N-R67W aka North 1/4 Corner  
found iron rod and aluminum cap, elev. = 4803.06'

## Weld County Road 54

north line of NE-1/4 of Section 30

west line of NE-1/4 of Section 30



### Notes:

- This is not an ALTANSPS Land Title Survey.
- This is not a monumented land survey.
- No title search was performed by surveyor. There may be matters of record not shown on this survey.
- No wetlands determinations were made this date.
- No improvements, other than those shown, were located this date.
- Any utilities shown are based on surface evidence only.
- No underground improvements or utilities were located this date.
- Address: n/a
- No offsite improvements, other than those shown, were located this date.
- The purpose of this survey is to represent slopes above and below the waterline of the subject pond.
- Elevations are based on NAVD88 Datum using GPS static observations processed through the NGS OPUS program.
- OPUS base stations used:
  - DG7429 P041 MARSHALL FIELD CORS ARP
  - DL2742 COFC FORT COLLINS CORS ARP
- OPUS solution verified by 2 Trimble VRS observation elevations within 0.03 feet.
- Topographic elevations were derived from GPS observed ellipsoid heights with Geoid18 corrections applied.
- Ground survey points (above the water level) were obtained by RTK (Real-Time Kinematic) GPS methods.
- Hydrographic survey points (below the water level) were obtained by use of a Seafloor HydroLite Single Frequency Echosounder equipment for water depths. Which were combined with RTK GPS observations for X, Y and a base Z elevation. Depth Accuracy: 1cm/ 0.1% of depth

### SURVEYOR'S STATEMENT

I, M. Bryan Short, a duly registered Professional Land Surveyor in the State of Colorado, do hereby state that this Topographic Survey Plat truly and correctly represents the results of a topographic survey made by me under my direction.



**NOTICE:** According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event, may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

P:\Project\2021\21050\new\21050-nsf.dwg July 23, 2021 - 4:47pm

| REVISIONS  |          |                   |
|------------|----------|-------------------|
| Date _____ | By _____ | Description _____ |
| Date _____ | By _____ | Description _____ |
| Date _____ | By _____ | Description _____ |

|             |               |     |     |
|-------------|---------------|-----|-----|
| Field Date  | July 13, 2021 | ST  | ADS |
| Party Chief | ADS           | PM  | MBS |
| Print Date  | July 23, 2021 | PLS | MBS |

CLIENT  
Loveland Ready Mix Concrete Inc.

PLS Corporation  
532 West 66th Street, Loveland, Colorado 80538  
Phone: 970.669.2100 - Info@plscorporation.com

TITLE  
Topographic Survey  
Cell 4 at Green Croissant Sand and Gravel Mine  
Section 30, Township 5 North, Range 67 West, 6th P .M., Larimer County, Colorado

PROJECT NO.  
21050.001

SHEET NO.  
1

NO. OF SHEETS  
1



## **Attachment 2**

### **King Survey**

STATE OF  
COLORADO

Ebert - DNR, Jared &lt;jared.ebert@state.co.us&gt;

---

## Explanation of Slope on Map on our request for reconsidering your decisions

---

JAMIE MCGILL &lt;jam2finance@yahoo.com&gt;

Mon, Jun 14, 2021 at 8:41 AM

To: Jared Ebert - DNR &lt;jared.ebert@state.co.us&gt;, Peter Hays - DNR &lt;peter.hays@state.co.us&gt;, Dc\_construction &lt;dc\_construction@ymail.com&gt;

Good Morning,

Here is a letter on how the slope information was obtained as you requested we are submitting this information as appealing your decision under rule 1.4.11. This reclamation is a Wildlife and pasture land under performance standards 3.1.1 and also the description that LRM used on its reclamation application that has already been provided to DRMS. We are asking you to reconsider your decision in regards to passing LRM on the current slope of the lake. We are providing you the information proving that LRM does not meet the states minimum guidelines stated in rule 3.1.5. #7 where it states "Maximum slopes and slope combinations shall be compatible with the configuration of surrounding conditions and selected land use. In all cases where a lake or pond is produced as a portion of the reclamation plan, all slopes, unless otherwise approved by the Board or Office, shall be no steeper than a ratio of 2:1 (horizontal to vertical ratio). except from 5 feet above to 10 feet below the expected water line where slopes shall be not steeper than 3:1. If a swimming area is proposed as a portion of the Reclamation Plan, the slope, unless otherwise approved by the Board or Office, shall be no steeper than 5:1 throughout the area proposed for swimming, and a slope no steeper than 2:1 elsewhere in the pond." page 43 of mining rules and regulations.

The other violations not addressed we provided pictures and in person with both of you should the several sink holes and actual 5 foot divot on the river from where LRM pumped water from the river to the lake to fill it in 2018. I have given you maps and pictures to show you that these areas were changed from excavations, trenches and other disturbances and you ignore the evidence again. Under Surface Reclamation Page 85 of the rules it states 5.5.2 Specific Requirements (d) "mud pits, excavations, trenches, or other disturbance shall be backfilled and graded to blend with the surrounding land surface." This has not been enforced and is being ignored as well and I just do not understand why.

I have submitted copies of their reclamation plan where LRM stated they would control weeds and mow and keep a neat appearance, that has not been enforced either. Can you please explain why they do not have to mow?

It has now been confirmed by Jared that no inspection was done in 2017 prior to fill the lake. I filled a complaint in 2018 in regards to the slope and in fact still no survey was required or inspection completed until June 26th of 2019. I understand the only survey that LRM submitted was 1/2/2019, if I am wrong please provide me their current survey. They had til July 24th to make the corrections requested on June 24th inspection. LRM submitted a letter written by Stephanie Francher English stating that they complied and fixed the eroding slope dated July 17, 2019 and they inspected the slope and had an engineer confirm off of a drawing. We provided you pictures time stamped and date July 23, 2019 and they were not even half way through with the fix and this was acceptable as well.

We are asking you evaluate all the evidence that we have provided and reconsidered your decisions and include all violations that are not be performed or completed by LRM according to the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction materials dated and effective July 15, 2019. There are 29 zones in our exhibit so I will have to send several emails to make sure you get every picture, my computer will not send a file that is that large. Sorry for any inconvenience.

Sincerely  
Jamie and Dustin Christensen  
785-230-8400  
970-420-5137

[jam2finance@yahoo.com](mailto:jam2finance@yahoo.com)

---

### 5 attachments

scan.pdf  
393K





**Index Map.pdf**  
106K



**Zone 1.pdf**  
136K

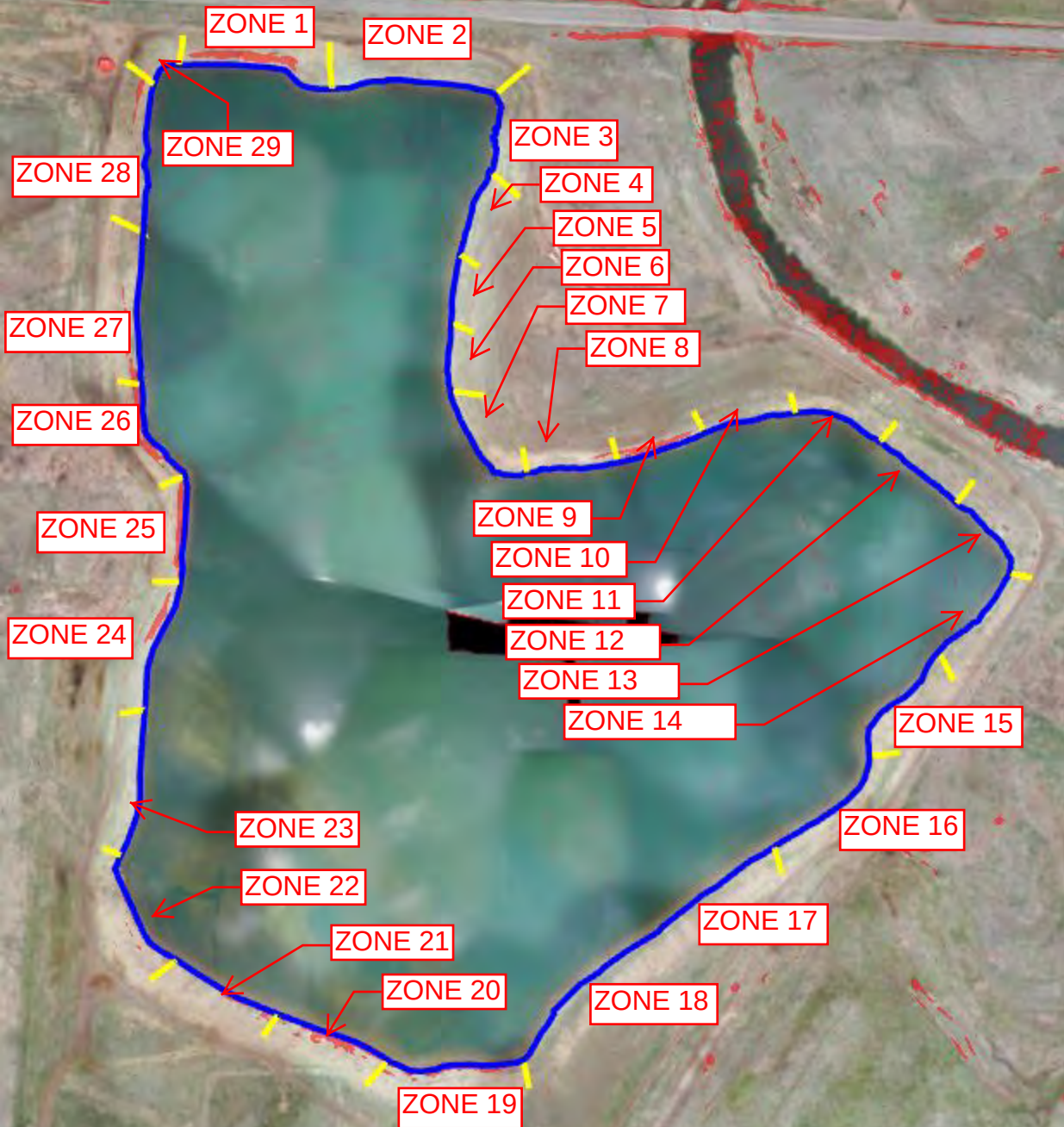


**Zone 2.pdf**  
149K



**Zone 3.pdf**  
160K

INDEX MAP







# KING SURVEYORS

## **Narrative of Slope Analysis Processes**

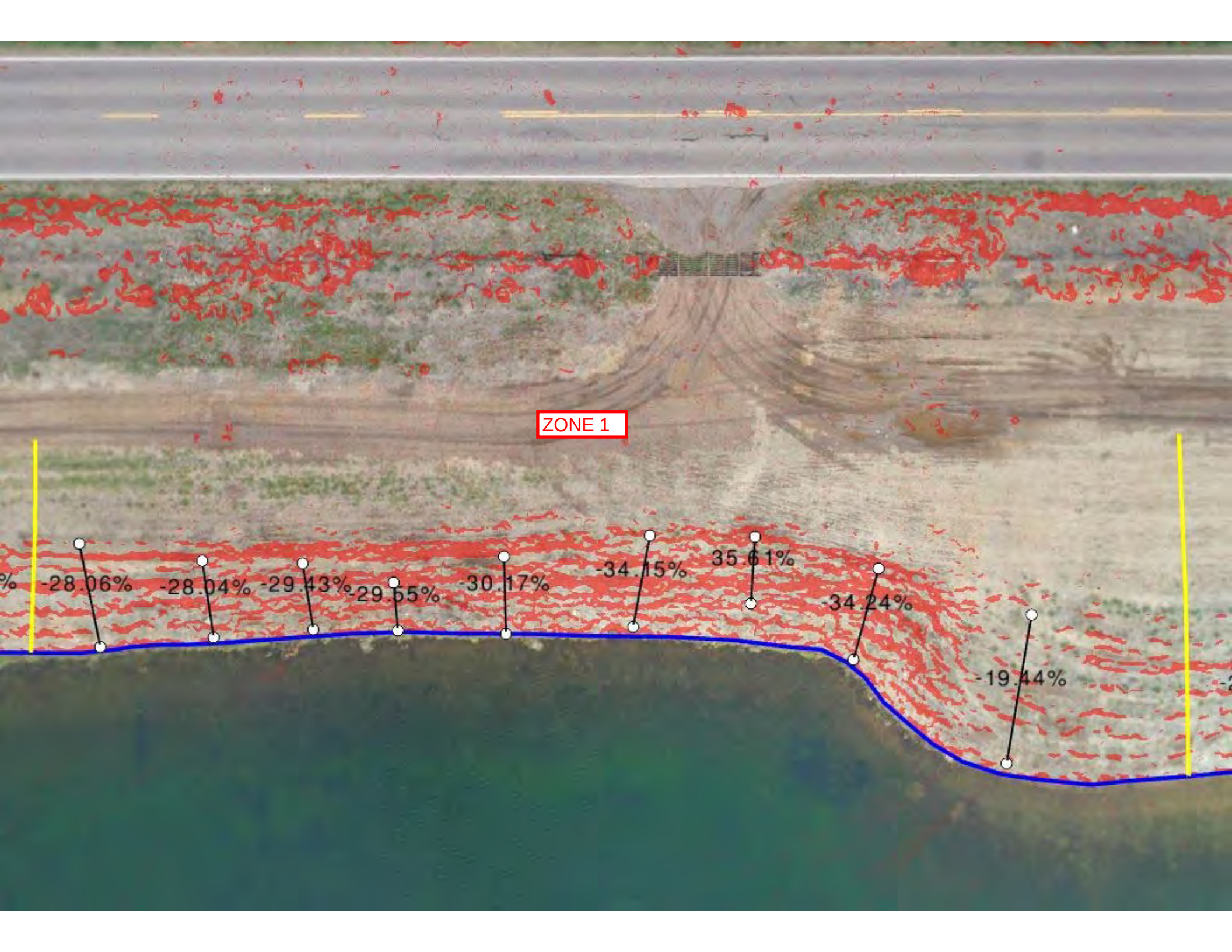
This is not a Land Survey Plat or an Improvement Survey Plat. The purpose of these exhibits is to depict the areas where the side slopes exceed 33.33% (3:1 Slope).

The DSM (Digital Surface Model) used for the basis for these calculations was derived from photogrammetric methods applied to aerial imagery obtain on May 4, 2021.

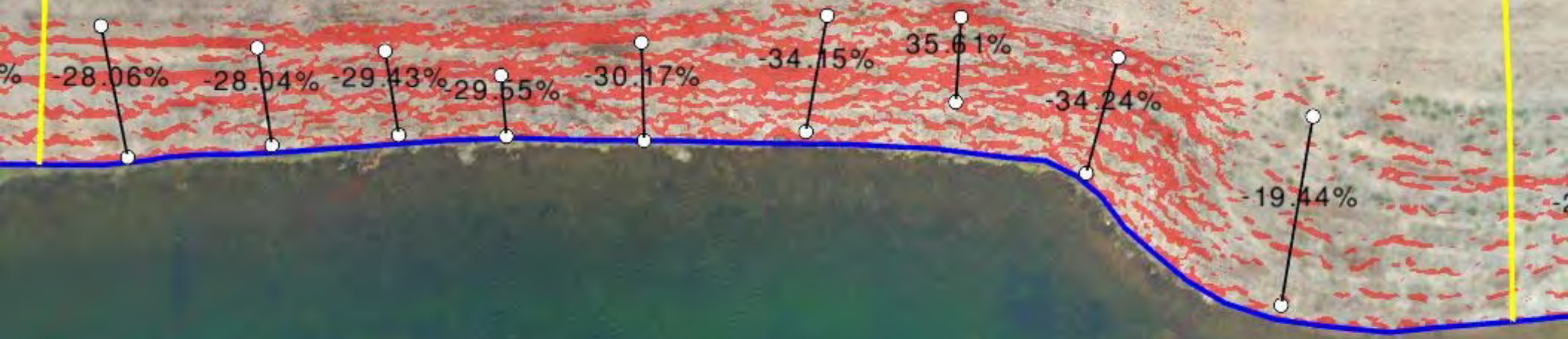
All horizontal coordinates are based on the Colorado State Plane Coordinate System-North Zone-NAD 83 2011. All vertical elevations are reference to the North American Datum 1988 (NAVD88).

The computer generated analysis shows areas where the slope exceeds 3:1 in RED.

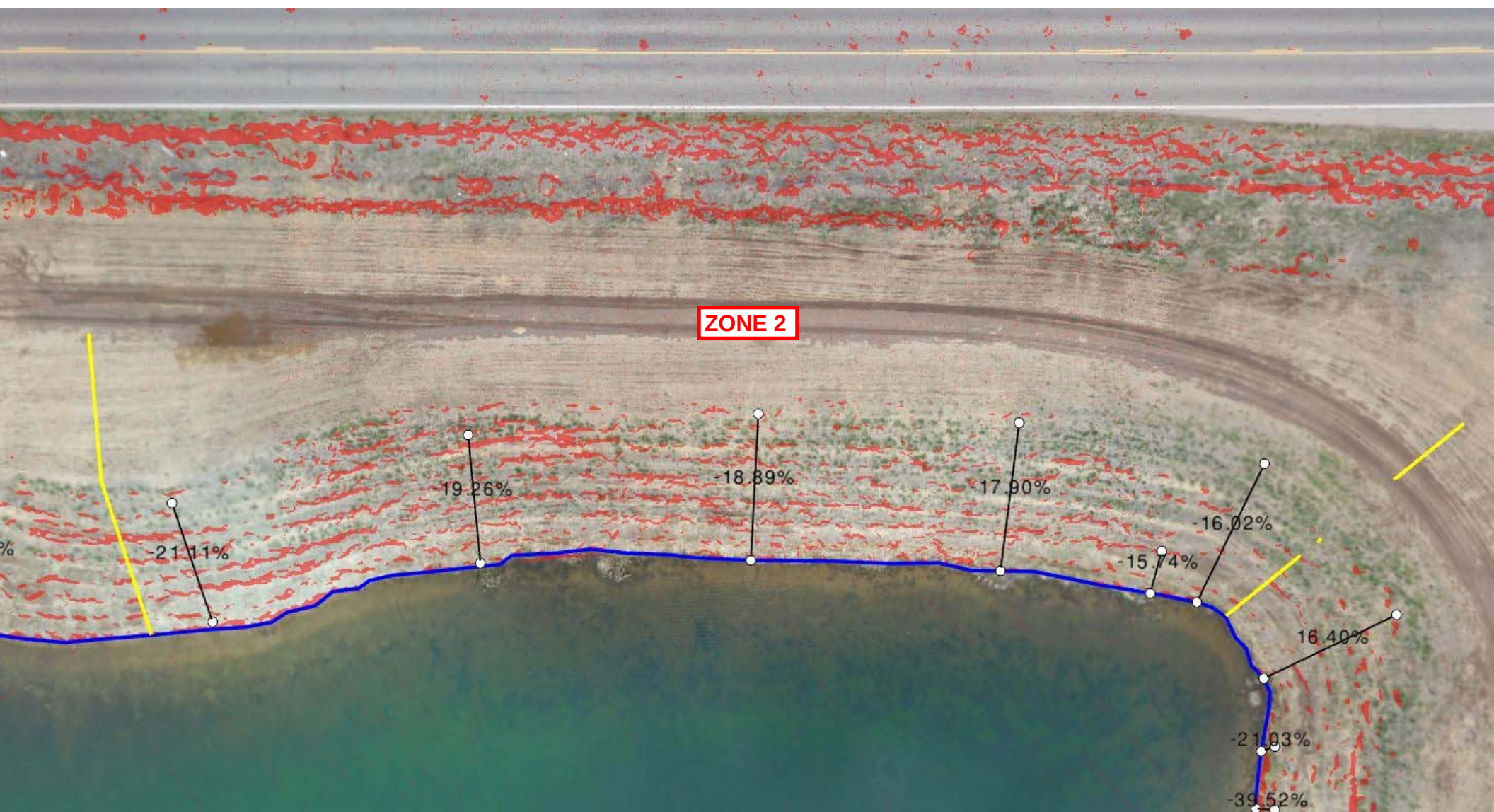
The model indicates wind and wave erosion on the graded slopes along the waters' edge resulting in near vertical faces in some areas. Additionally, there are long slopes where it exceeds 3:1.



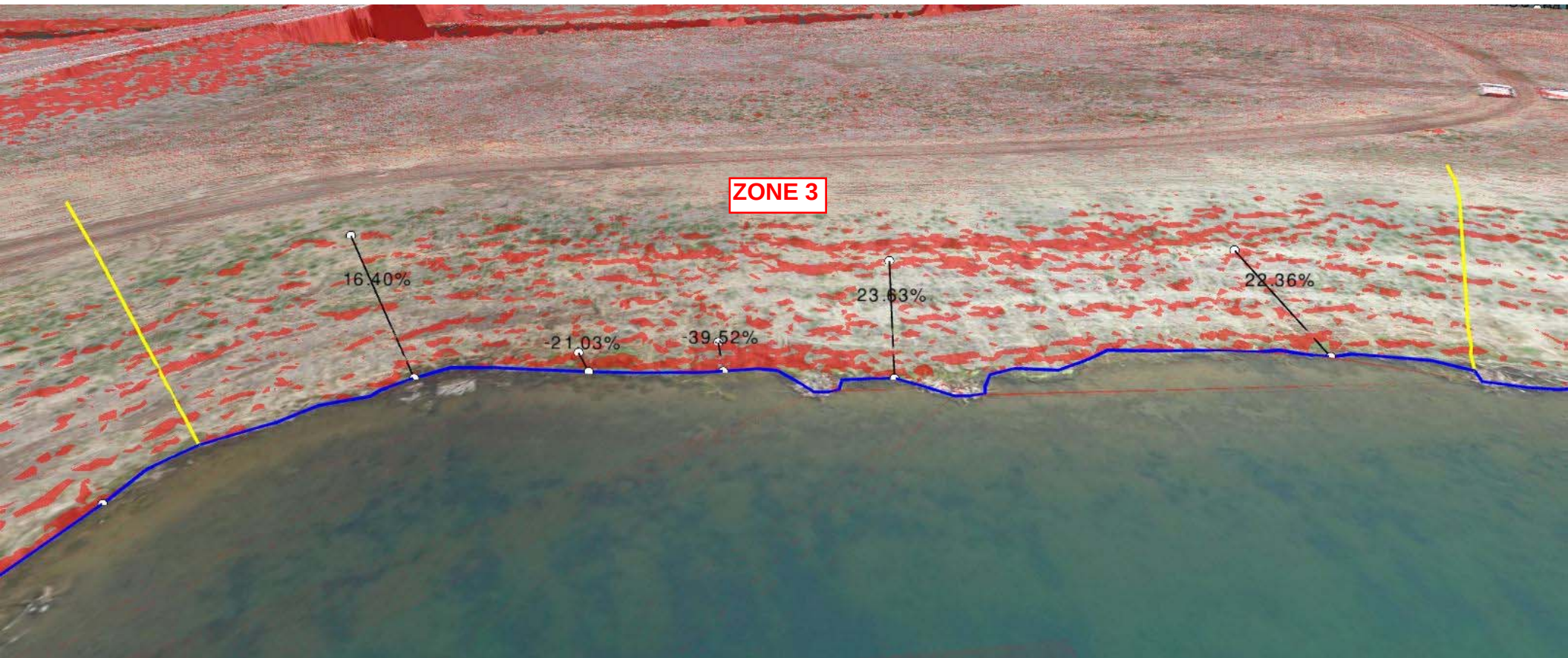
ZONE 1













STATE OF  
COLORADO

Ebert - DNR, Jared <jared.ebert@state.co.us>

---

## digital pictures of slope

---

**JAMIE MCGILL** <jam2finance@yahoo.com>

Mon, Jun 14, 2021 at 8:44 AM

To: Jared Ebert - DNR <jared.ebert@state.co.us>, Peter Hays - DNR <peter.hays@state.co.us>, Dc\_construction <dc\_construction@ymail.com>

Jared and Peter,

Here are zones 4 thru 13.

Sincerely  
Jamie Christensen

---

### 10 attachments



**Zone 4.pdf**  
196K



**Zone 5.pdf**  
164K



**Zone 6.pdf**  
302K



**Zone 7.pdf**  
322K



**Zone 8.pdf**  
269K



**Zone 9.pdf**  
262K



**Zone 10.pdf**  
254K



**Zone 11.pdf**  
160K



**Zone 12.pdf**  
148K



**Zone 13.pdf**  
220K





**ZONE 4**

20.47%

21.84%

27.16%

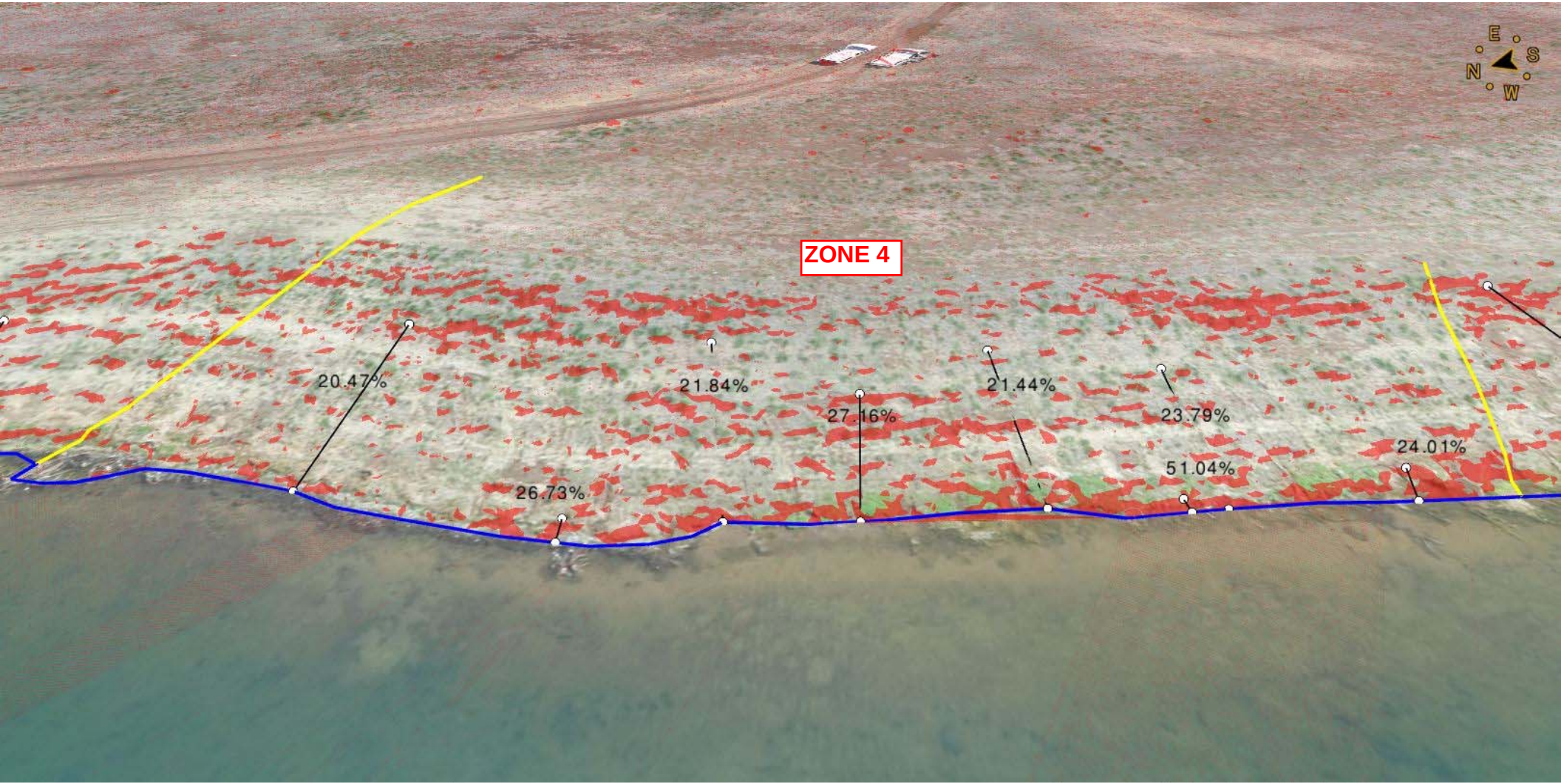
21.44%

23.79%

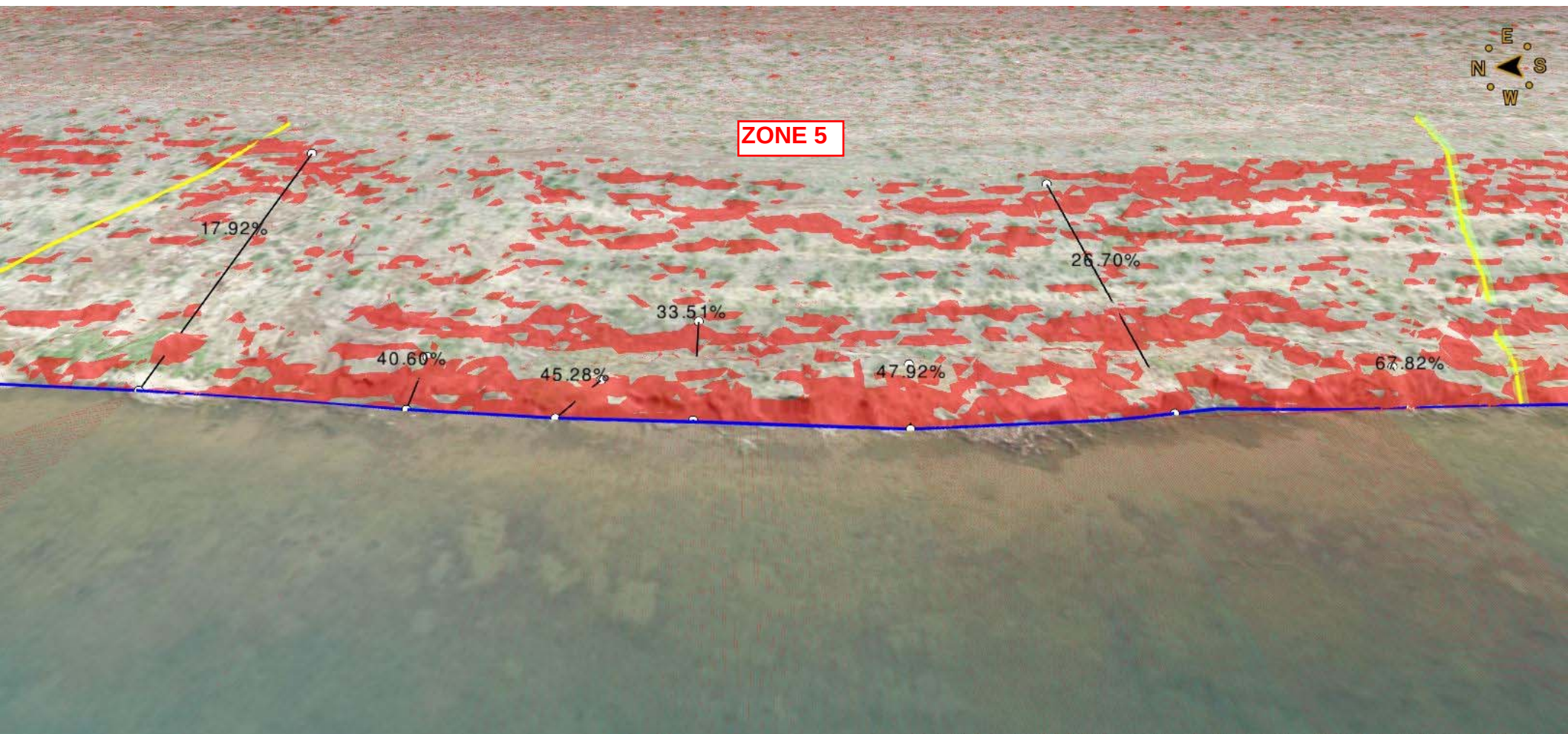
26.73%

51.04%

24.01%



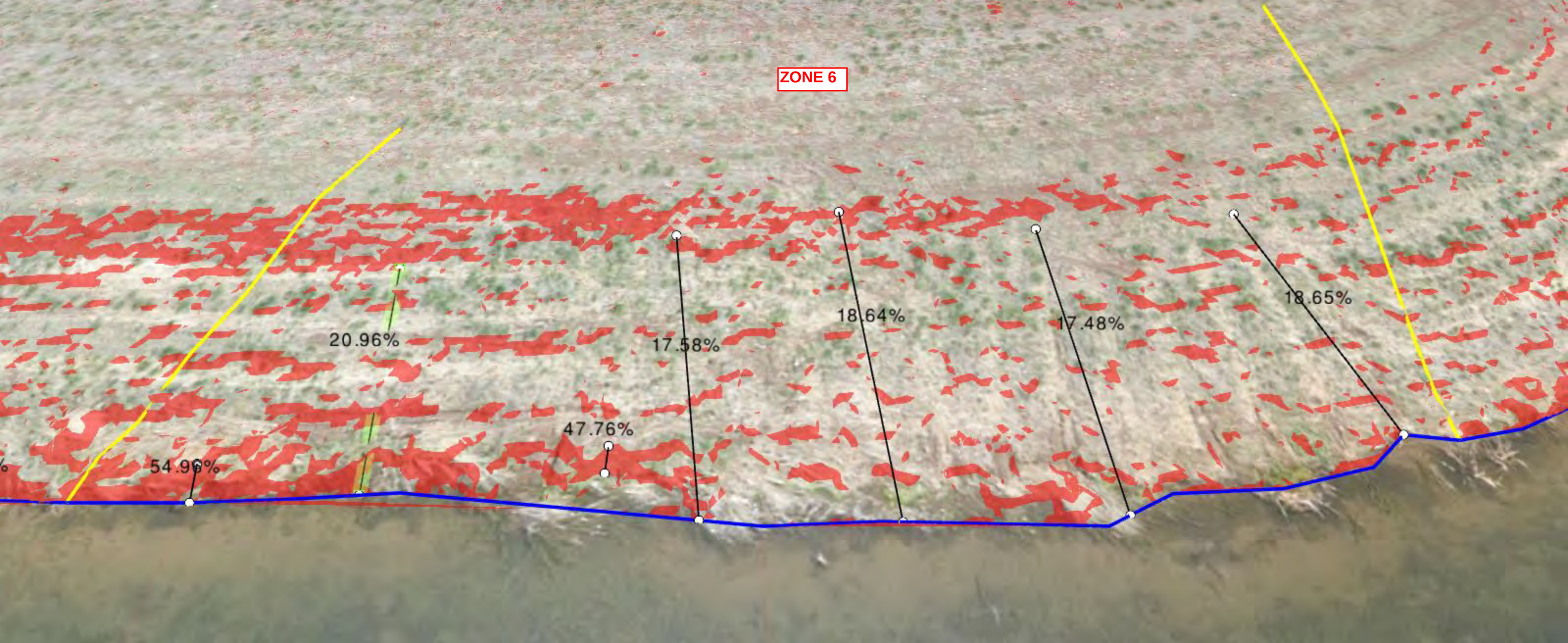




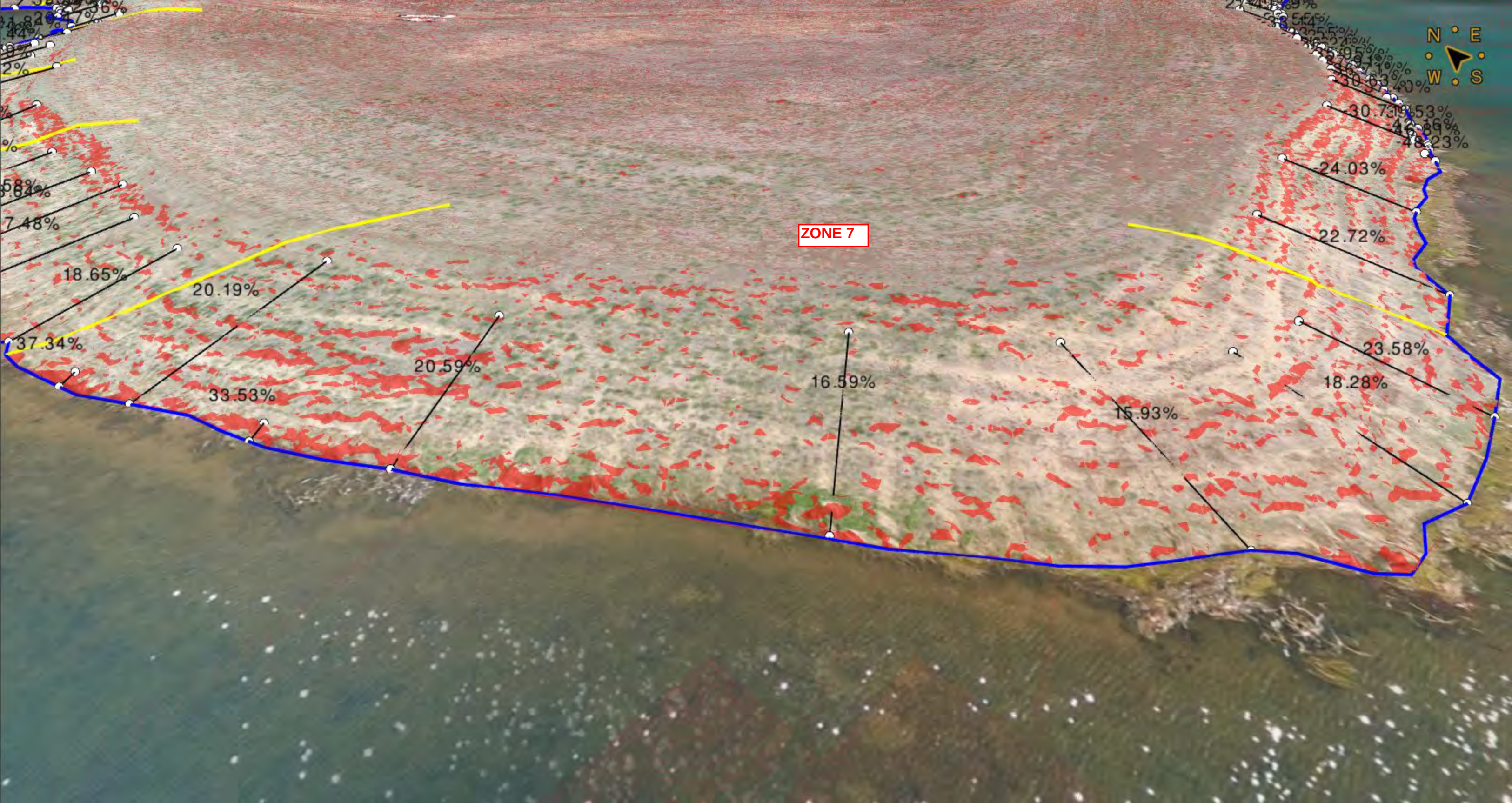




ZONE 6











**ZONE 8**







ZONE 9







ZONE 10















ZONE 13

8.68%

9.56%

8.44%

11.43%

16.06%

-38.71%

-80.40%

-75.90%

-89.83%

-56.17%

-43.95%

73.21%

-90.96%

-52.99%





STATE OF  
COLORADO

Ebert - DNR, Jared <jared.ebert@state.co.us>

---

## pictures of slope measurements

---

JAMIE MCGILL <jam2finance@yahoo.com>

Mon, Jun 14, 2021 at 8:51 AM

To: Jared Ebert - DNR <jared.ebert@state.co.us>, Peter Hays - DNR <peter.hays@state.co.us>, Dc\_construction <dc\_construction@ymail.com>

Jared and Peter,

Zones 19,20,21,22,23 is where the violation on the June 24th report was asked to be corrected as you can see it has not been corrected to the standard of 3:1 set by state.

Sincerely  
Jamie and Dustin Christensen

---

### 10 attachments

**Zone 14.pdf**  
270K

**Zone 15.pdf**  
270K

**Zone 16.pdf**  
265K

**Zone 17.pdf**  
237K

**Zone 18.pdf**  
315K

**Zone 19.pdf**  
252K

**Zone 20.pdf**  
296K

**Zone 21.pdf**  
286K

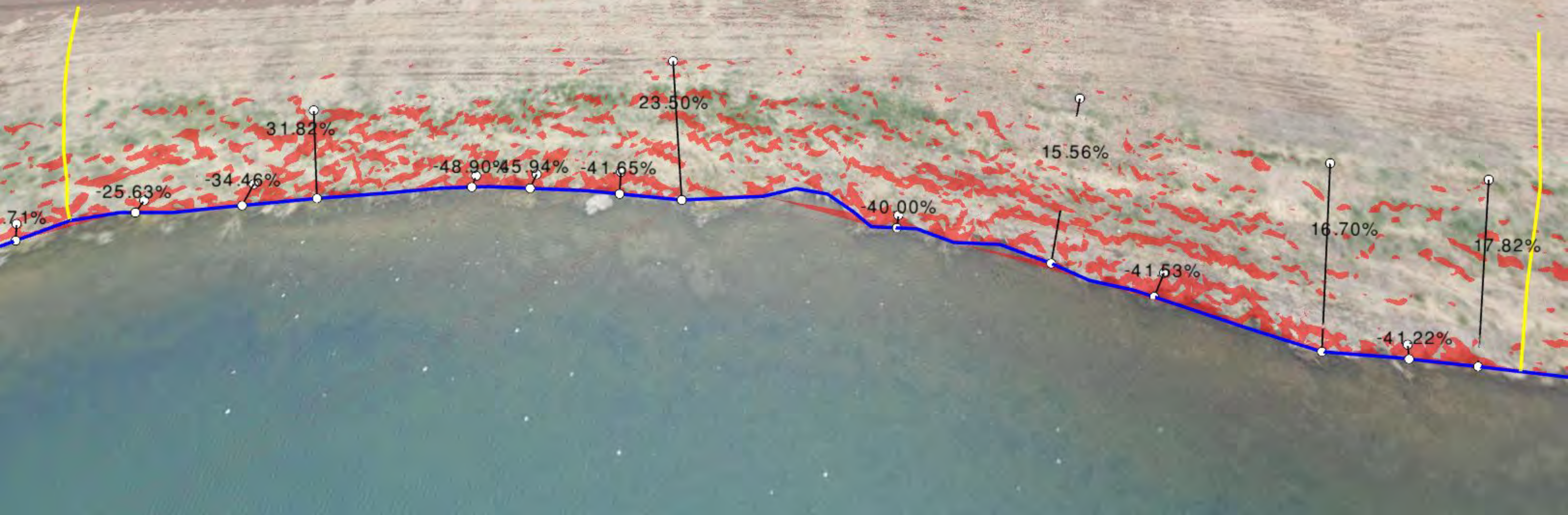
**Zone 22.pdf**  
293K

**Zone 23.pdf**  
294K





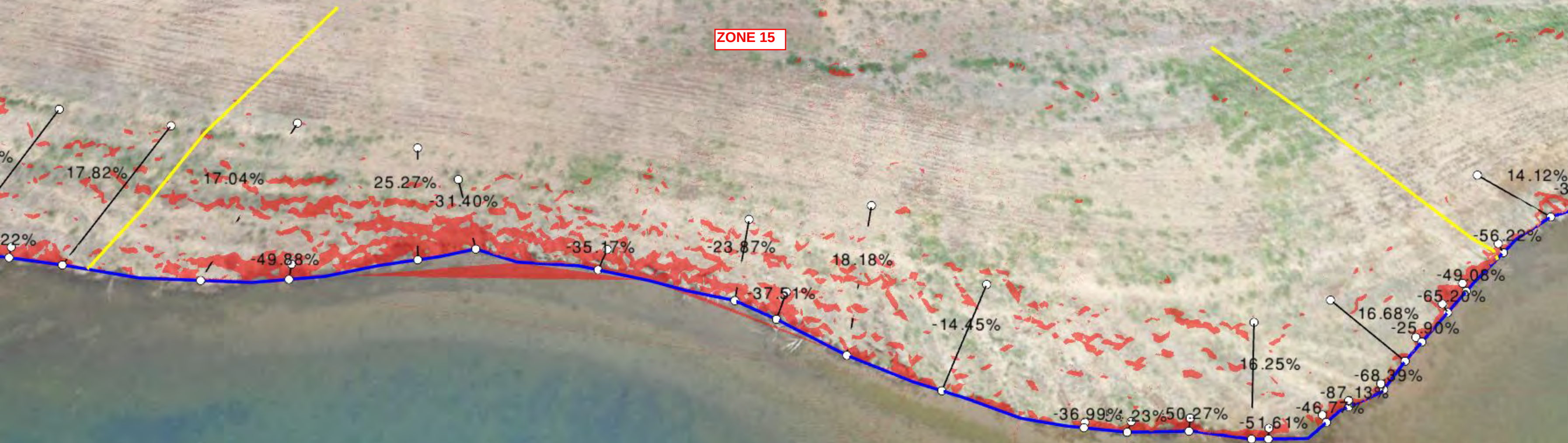
ZONE 14







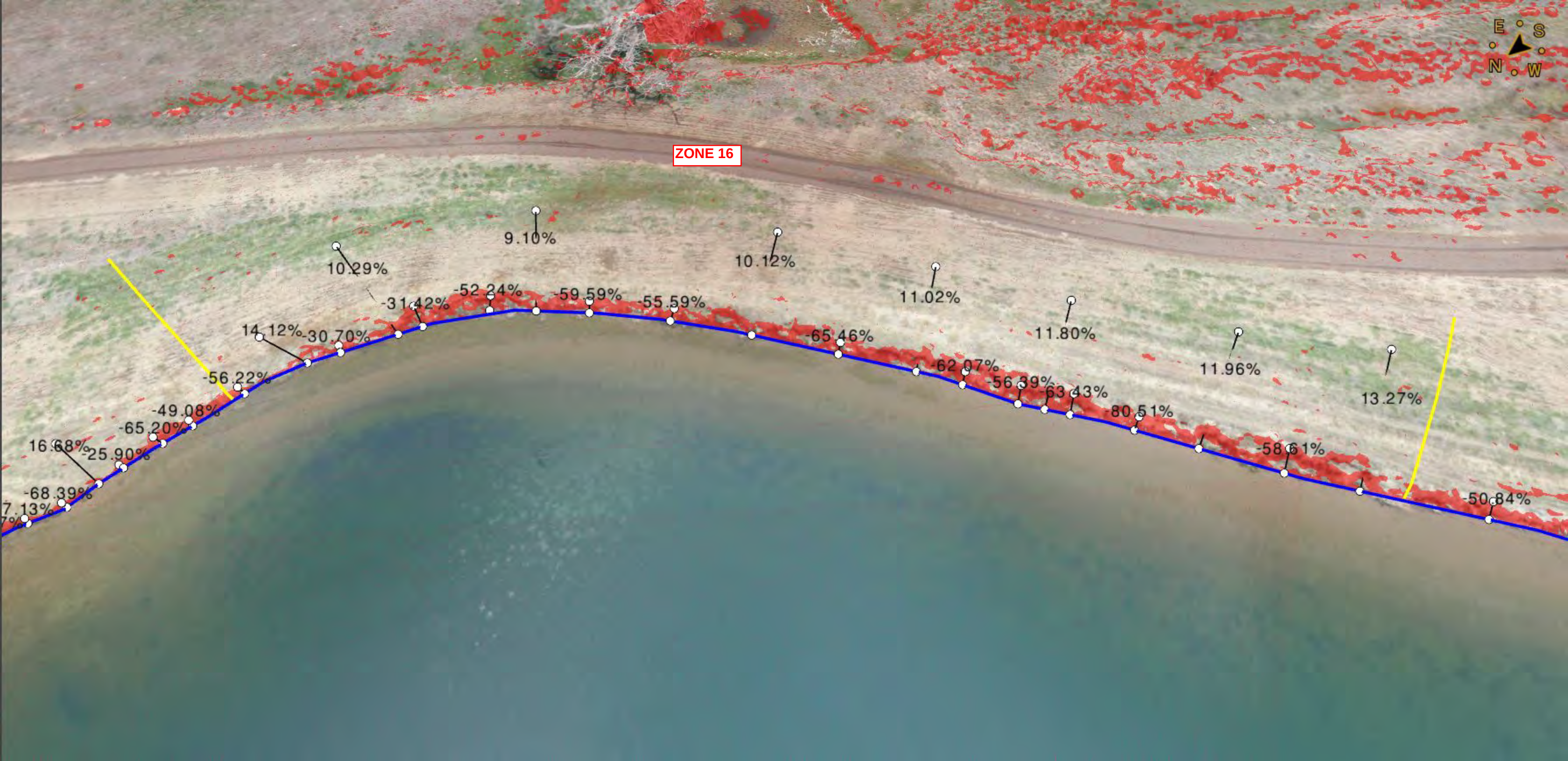
ZONE 15







ZONE 16







ZONE 17







ZONE 18







ZONE 19







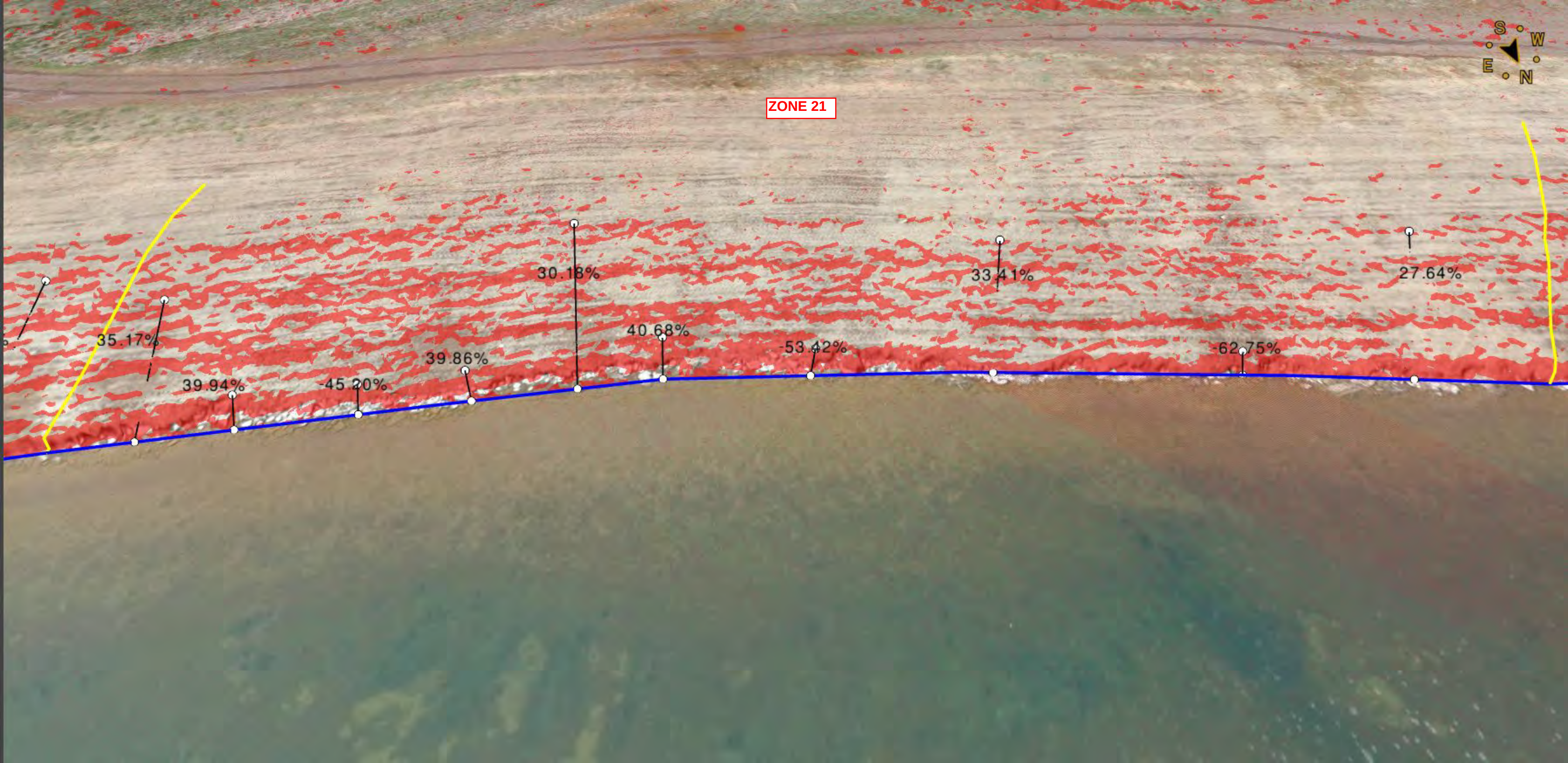
ZONE 20







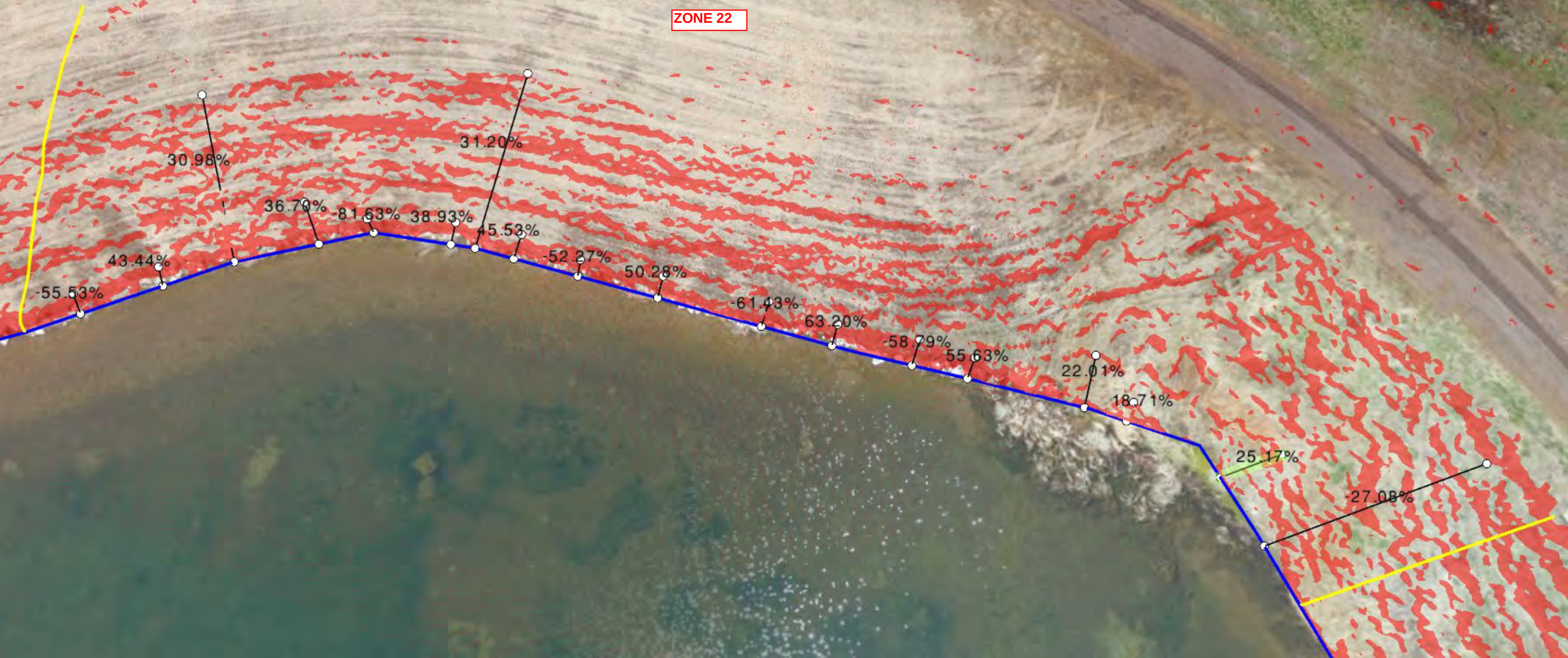
ZONE 21







ZONE 22







ZONE 23







STATE OF  
COLORADO

Ebert - DNR, Jared <jared.ebert@state.co.us>

---

## final digital measurements of the slope

---

**JAMIE MCGILL** <jam2finance@yahoo.com>

Mon, Jun 14, 2021 at 8:55 AM

To: Jared Ebert - DNR <jared.ebert@state.co.us>, Peter Hays - DNR <peter.hays@state.co.us>, Dc\_construction <dc\_construction@ymail.com>

Jared and Peter,

Here are the final pictures and these areas are actually dangerous. There are 3 feet of straight drop off of shoreline into the lake making impossible to reach the waters edge without falling in.

Sincerely  
Jamie Christensen

---

### 6 attachments

**Zone 24.pdf**  
273K

**Zone 25.pdf**  
298K

**Zone 26.pdf**  
245K

**Zone 27.pdf**  
252K

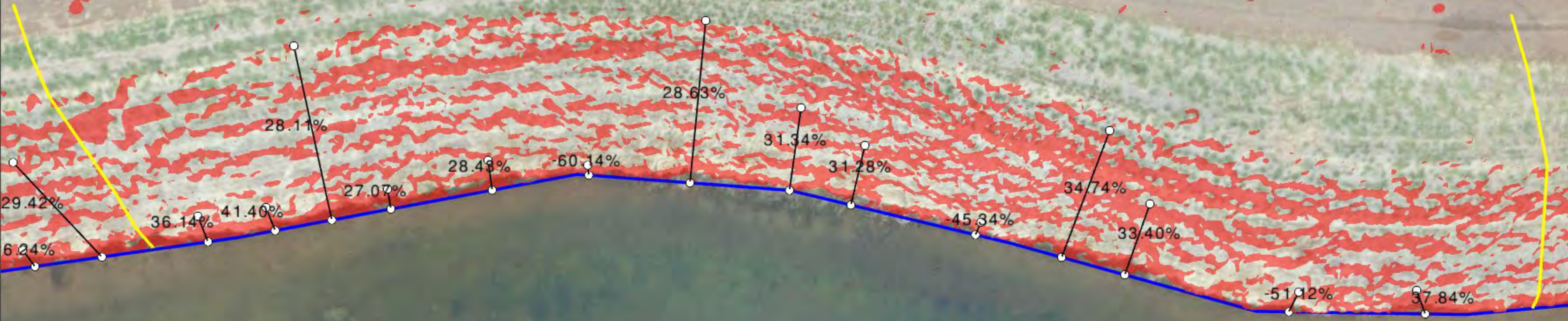
**Zone 28.pdf**  
255K

**Zone 29.pdf**  
311K





ZONE 24



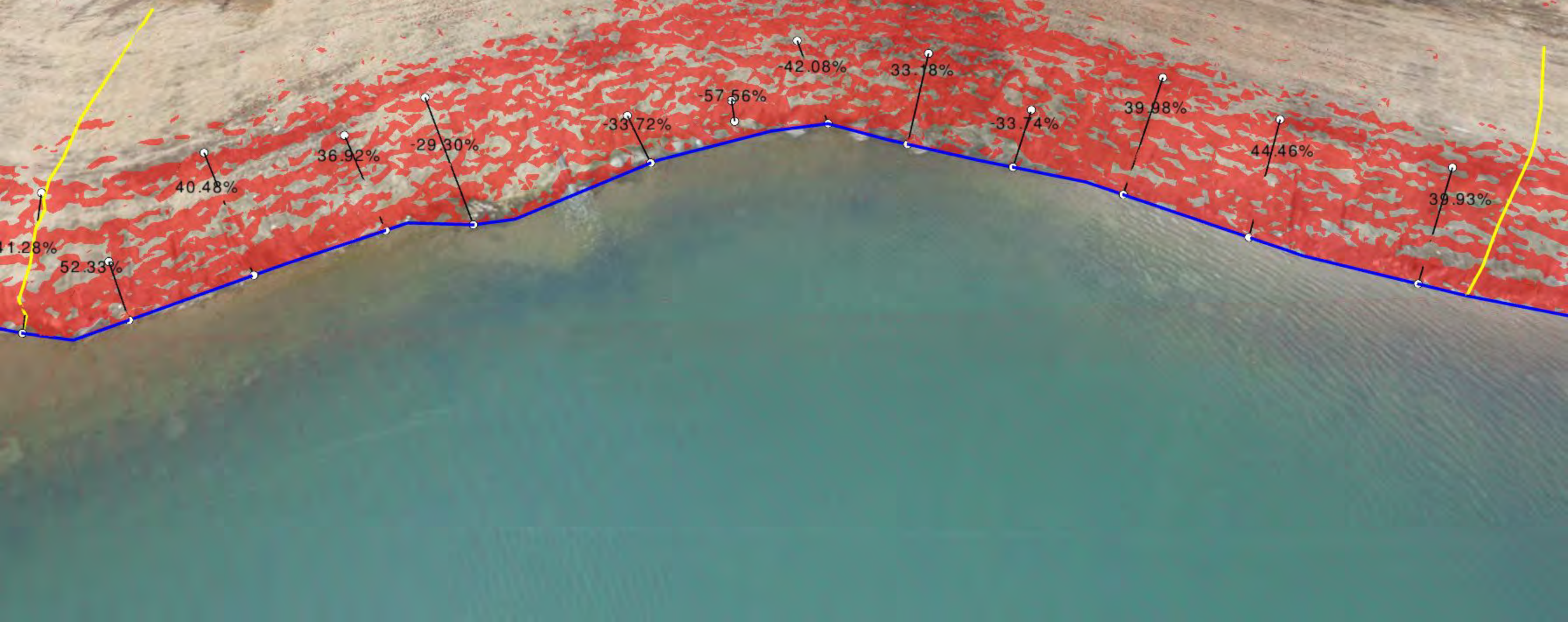








ZONE 26







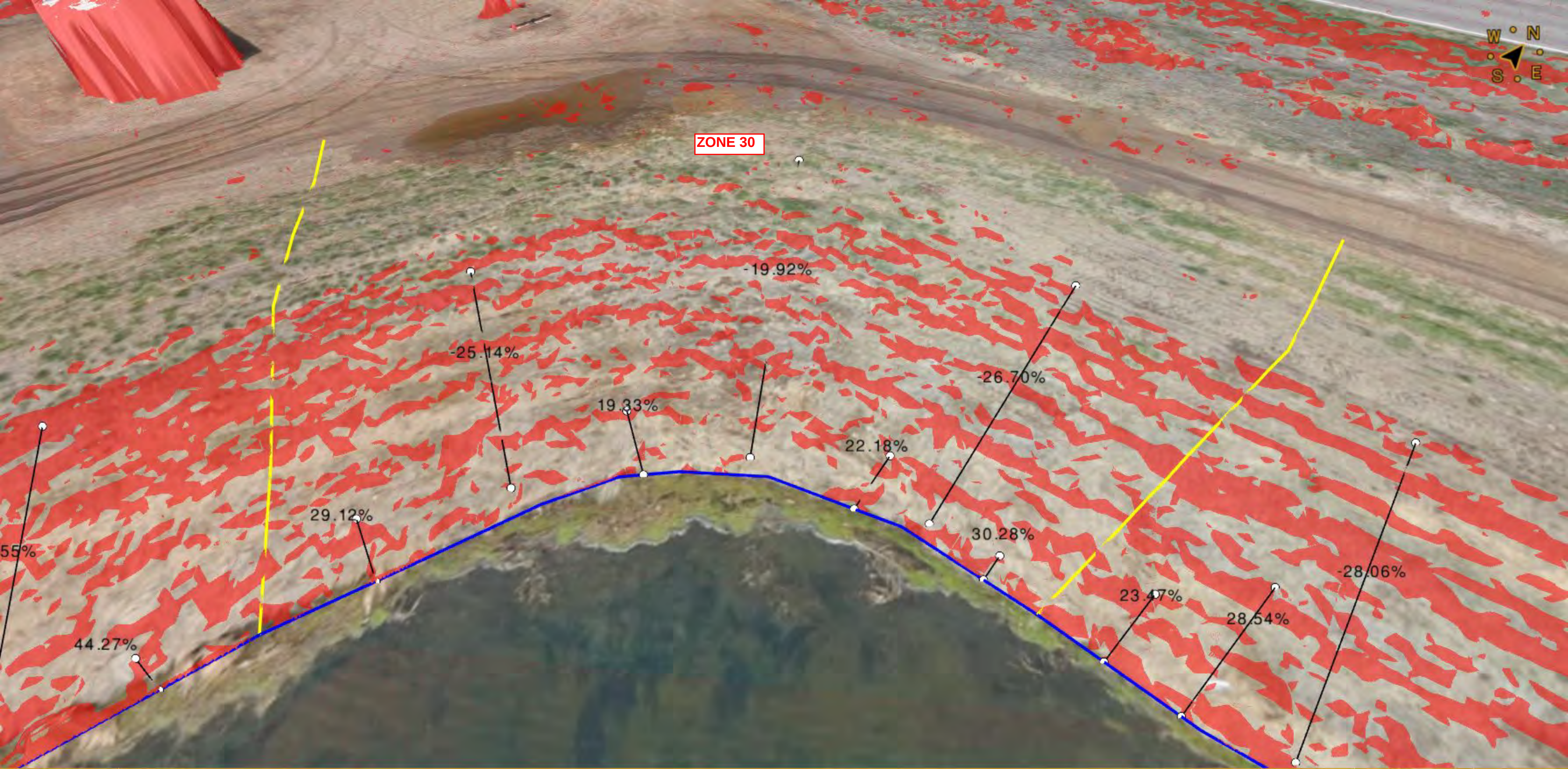
ZONE 27













# **Attachment 3**

## **DRMS Correspondence to LRM**



1: From: Hays - DNR, Peter <peter.hays@state.co.us>  
2: Sent: Friday, June 25, 2021 8:34 AM  
3: To: Stephanie Fancher-English <stephanief@lrmconcrete.com>  
4: Subject: Christensen's Survey Results  
5:  
6: Stephanie,  
7:  
8: A copy of the survey results from the Christensen's for Cell 4 of the Green Croissant  
site is  
9: attached. Based on a review of the results, the Division will require Loveland Ready M  
to  
10: regrade Zones 9, 20, 25, 26, and the south end of Zone 27 to comply with Rule 3.1.5(7)  
which  
11: requires slopes to be 3H:1V 5 feet above to 10 feet below the water line.  
12:  
13: What is the timeline for the below water survey of Cell 4? Please let me know.  
14:  
15: Please let me know if you have any questions.  
16:  
17:  
18: Peter S. Hays  
19: Environmental Protection Specialist  
20:  
21: I am working remotely and can be reached at 970.703.3767.  
22:  
23: P 303.866.3567 Ext. 8124 | F 303.832.8106  
24: 1313 Sherman St., Room 215, Denver, CO 80203  
25: peter.hays@state.co.us | <https://drms.colorado.gov>  
26:  
27:



# **Attachment 4**

## **Summary of 2019 CDS Survey**





April 8, 2021

**Via Electronic Mail**

Mrs. Stephanie Fancher-English  
Loveland Ready-Mix Concrete, Inc.  
644 Namaqua Road  
Loveland, Colorado 80537

**Subject: Green/Croissant Cell 4  
Reclamation Slopes**

Dear Stephanie:

This letter responds to your request that I evaluate the topographical survey information of the reclamation slopes for Cell 4 of Loveland Ready-Mix Concrete, Inc.'s (LRM's) Green/Croissant mine (DRMS No. M2001022). CDS Engineering Corporation (CDS) generated the survey information on 1/2/2019 from elevational point measurements. It is my professional opinion that the survey was performed correctly and with more than enough points to accurately reflect the reclamation slopes present on 1/2/2019.

My analysis is summarized in the series of cross-sections shown in the attached figure. The maximum bank slope is 3.1H:1V (Section A) and the minimum is at Section J (<5H:1V). It is my professional opinion that given the native soils in the area, these reclamation slopes should be stable in the long-term, especially considering the additional rip-rap protection LRM placed and the stability enhancement expected from vegetation growth.

Please let me know if you need anything further on this issue.

Sincerely,  
**Telesto Solutions, Inc.**



Walter L. Niccoli, PE  
Principal/Senior Engineer

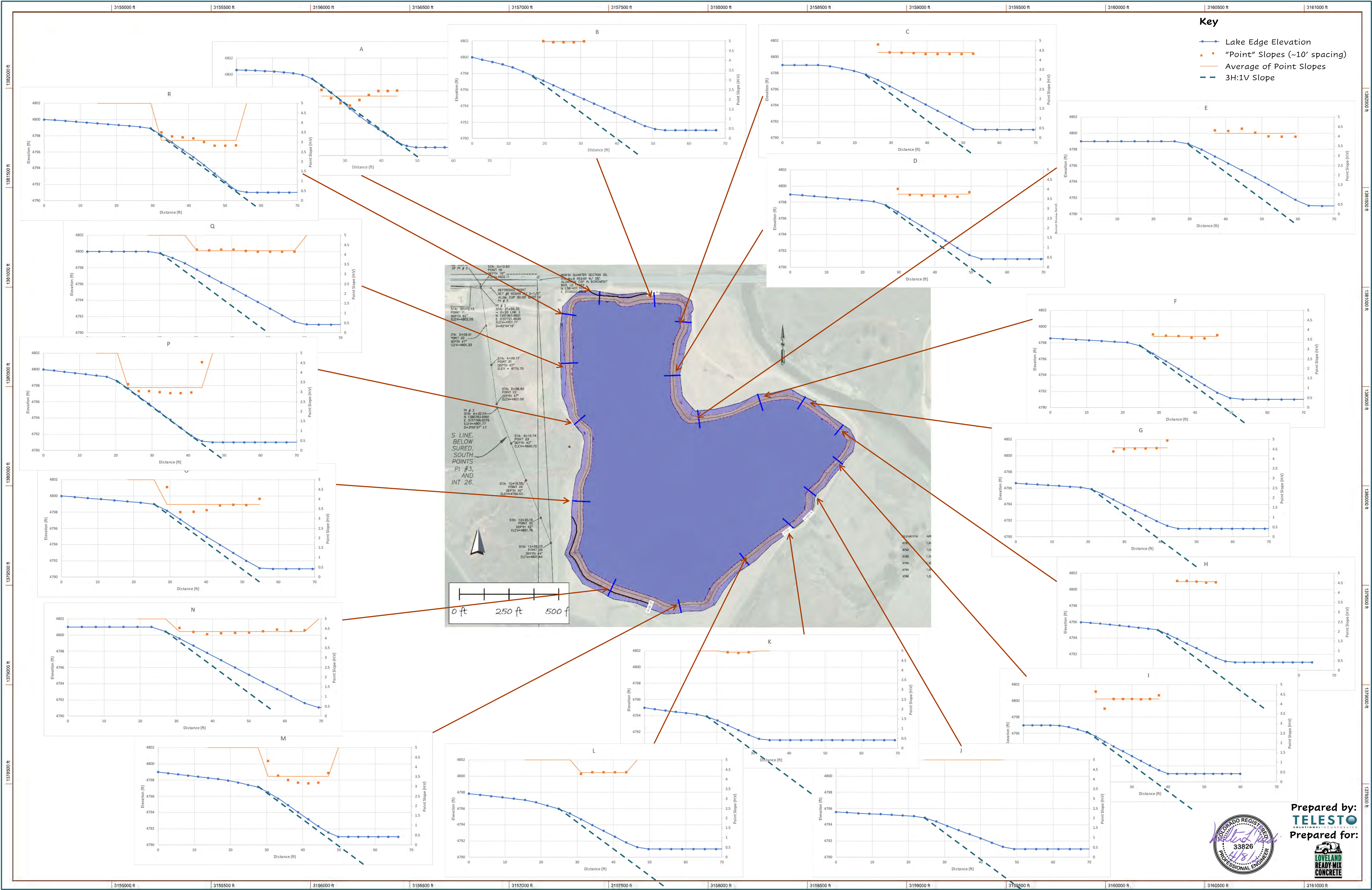
---

**Colorado Office (Corporate)**  
750 14<sup>th</sup> Street SW  
Loveland, Colorado 80537  
970-484-7704 / 970-484-7789 (FAX)

**Grand Junction**  
751 Horizon Court, Suite 109  
Grand Junction, Colorado 81506  
970-697-1550

**New Mexico Office**  
1303 Pope Street  
Silver City, New Mexico 88061  
575-538-5620 / 575-538-5625 (FAX)





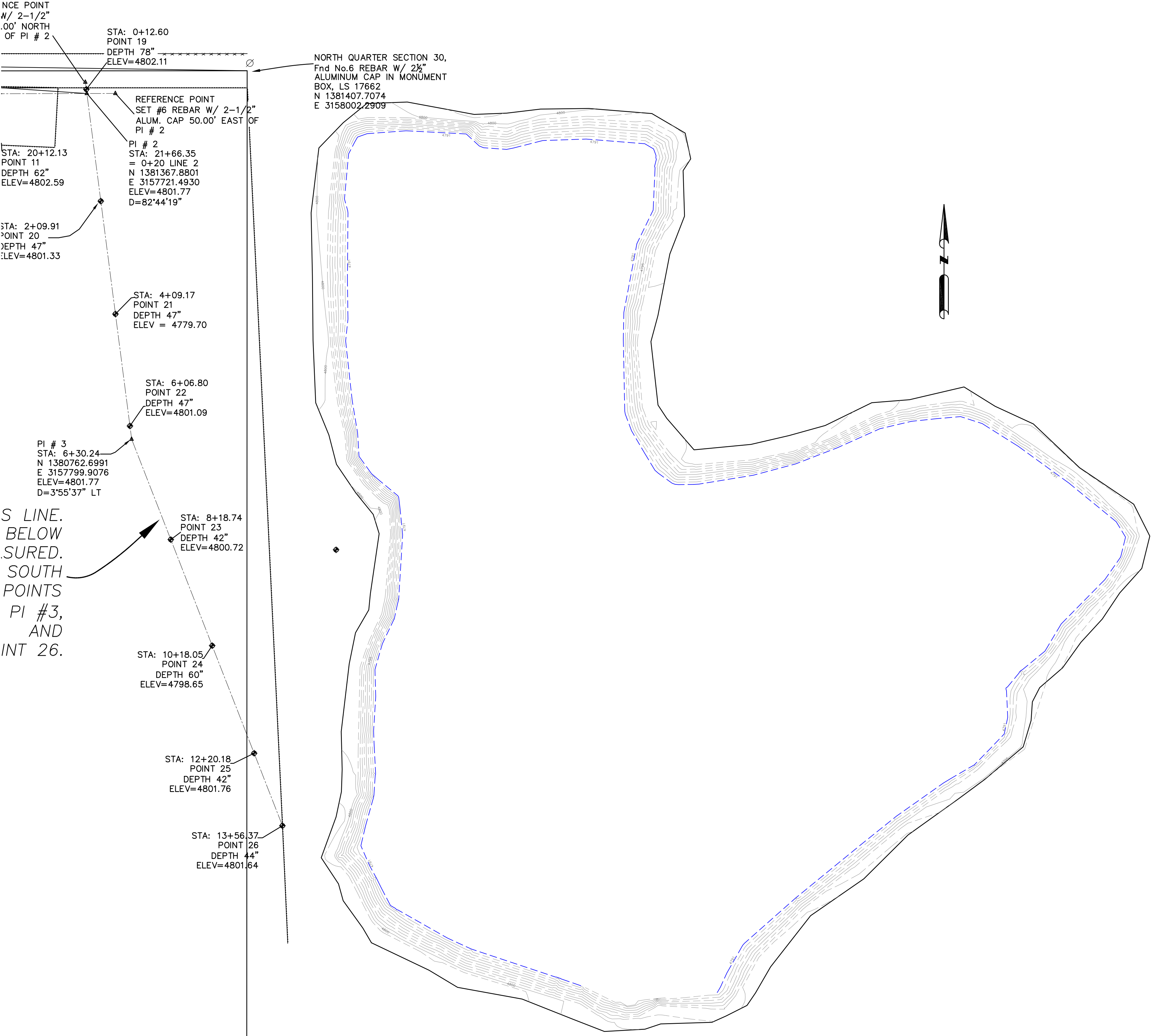
Prepared by:  
**TELESTO**  
SOLUTIONS CONSULTANTS  
Prepared for:  
**LOVELAND READY-MIX CONCRETE**



# LOVELAND READY MIX POND SURVEY

## SITES EXHIBIT

A TRACT OF LAND LOCATED IN THE NORTH 1/2 OF SECTION 30, TOWNSHIP 5 NORTH, RANGE 67 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF LARIMER, STATE OF COLORADO



| ELEVATION | AREA      | FEET/CU    | VOULME GAL    |
|-----------|-----------|------------|---------------|
| 4791      | 1,205,400 | 2,434,045  | 18,206,656.60 |
| 4792      | 1,228,645 | 2,477,660  | 18,532,896.80 |
| 4793      | 1,249,015 | 2,518,783  | 18,840,496.84 |
| 4794      | 1,269,768 | 2,564,457  | 19,182,138.36 |
| 4795      | 1,294,689 | 2,617,613  | 19,579,745.24 |
| 4796      | 1,322,924 |            |               |
| Total     |           | 12,612,558 | 94,341,933.84 |

| No. | Revisions: | By: | Date: |
|-----|------------|-----|-------|
|     |            |     |       |
|     |            |     |       |
|     |            |     |       |
|     |            |     |       |
|     |            |     |       |
|     |            |     |       |
|     |            |     |       |
|     |            |     |       |
|     |            |     |       |

Engineering Corporation

165 2nd St. S.W. Loveland, Colorado 80537 Tele: (970) 667-8810

Civil, Structural, Mechanical, Electrical, and Foundation Engineers

DAMS AND RESERVOIRS, LAND AND MUNICIPAL PLANNING, LAND AND CONSTRUCTION SURVEYS

SOILS, CONCRETE, URBAN, AND TRANSPORTATION

|                  |                  |                           |
|------------------|------------------|---------------------------|
| DATE<br>1/2/2019 | SCALE<br>1"=100' | REVIEWED BY<br>T. Everett |
| DESIGNED BY      |                  |                           |
| DRAWN BY         |                  |                           |

LOVELAND READY MIX  
WELD COUNTY ROAD 13



# **Attachment 5**

## **Weld County Drawings**



Plot Date: 8/2/2021 2:39 PM Plotted By: Kevin T. Smith Path: \\JUB-001\CENTRAL\CLIENTS\CO WELD COUNTY\PROJECTS\17-19-010-WCR54 BRIDGE\THOMPSON DESIGN\CAD\EXHIBIT\CHRISTENSEN.DWG



Know what's below.  
Call before you dig.

Print Date: 8/2/2021  
Scale: As Shown



4745 Boardwalk Drive Building D, Suite 200  
Fort Collins, CO 80525  
Phone: 970.377.3602

0000

### Sheet Revisions

| Date: | Comments | Init. |
|-------|----------|-------|
|       |          |       |
|       |          |       |
|       |          |       |
|       |          |       |



1111 H Street  
Greeley, CO 80631  
Phone: (970) 400-3750  
Fax: (970) 304-6497

### Preliminary Design

No Revisions:

Revised:

Void:

### CHRISTENSEN DRIVEWAY EXHIBIT DIMENSIONS ONLY

Designer:

Detailer:

Sheet Subset:

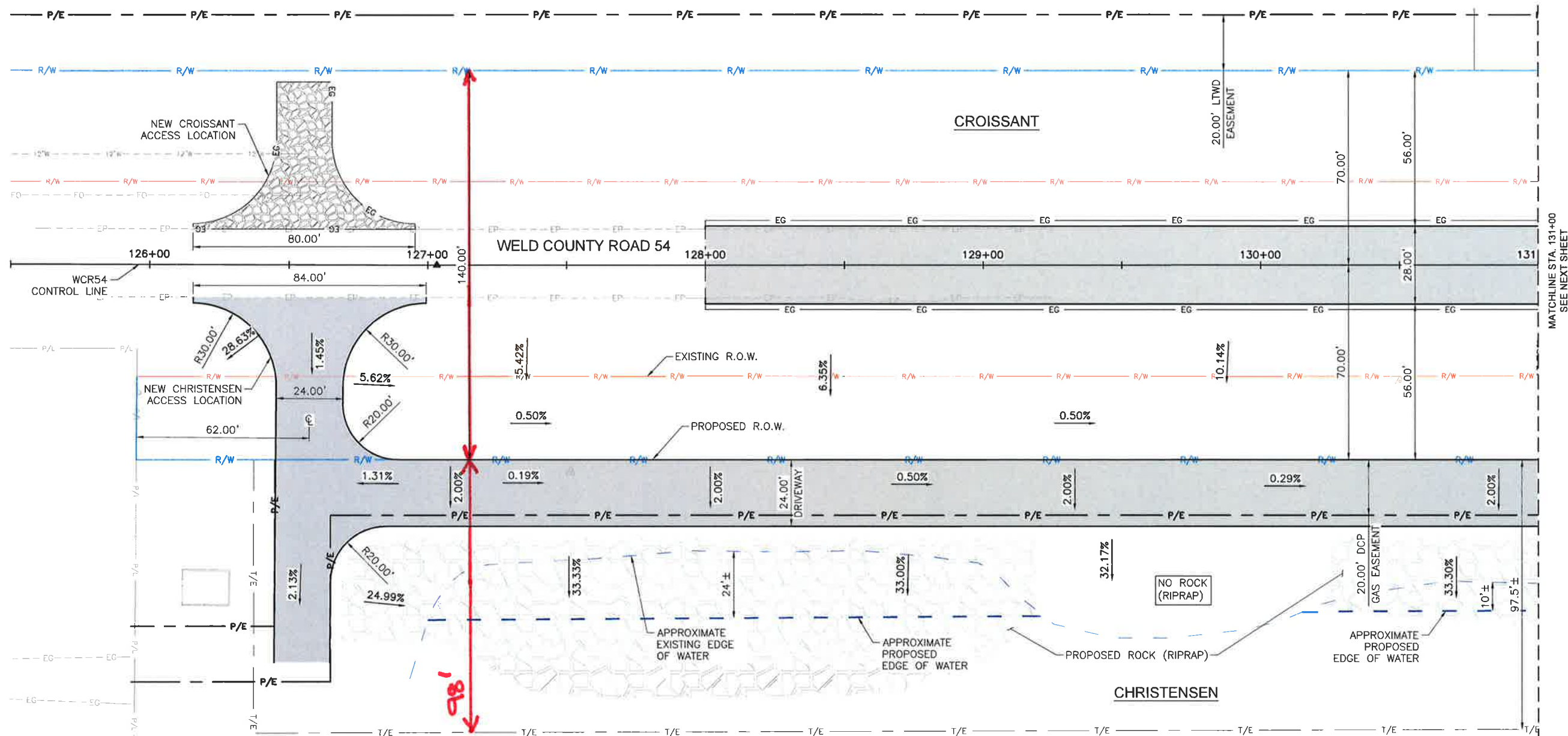
Structure  
Numbers

Subset Sheets: 1 of 2

Project No.

Drawing Number

Sheet Number 2 of



EXHIBIT



Plot Date: 8/2/2021 2:40 PM Plotted By: Kevin T. Smith  
Date Created: 8/2/2021 Path: \\JUB-CDM\CENTRAL\CLIENTS\CDM\WELD COUNTY\PROJECTS\87-19-010-WCR54 BRIDGE\BOTHOMPSON DESIGN\CAO EXHIBIT\CHRISTENSEN POND\87-19-010-010-010.DWG



Know what's below.  
Call before you dig.

Print Date: 8/2/2021  
Scale: As Shown



4745 Boardwalk Drive Building D, Suite 200  
Fort Collins, CO 80525  
Phone: 970.377.3602

0000

### Sheet Revisions

| Date: | Comments | Init. |
|-------|----------|-------|
|       |          |       |
|       |          |       |
|       |          |       |
|       |          |       |



1111 H Street  
Greeley, CO 80631  
Phone: (970) 400-3750  
Fax: (970) 304-6497

### Preliminary Design

No Revisions:

Revised:

Void:

### CHRISTENSEN DRIVEWAY EXHIBIT DIMENSIONS ONLY

Designer:

Detailer:

Sheet Subset:

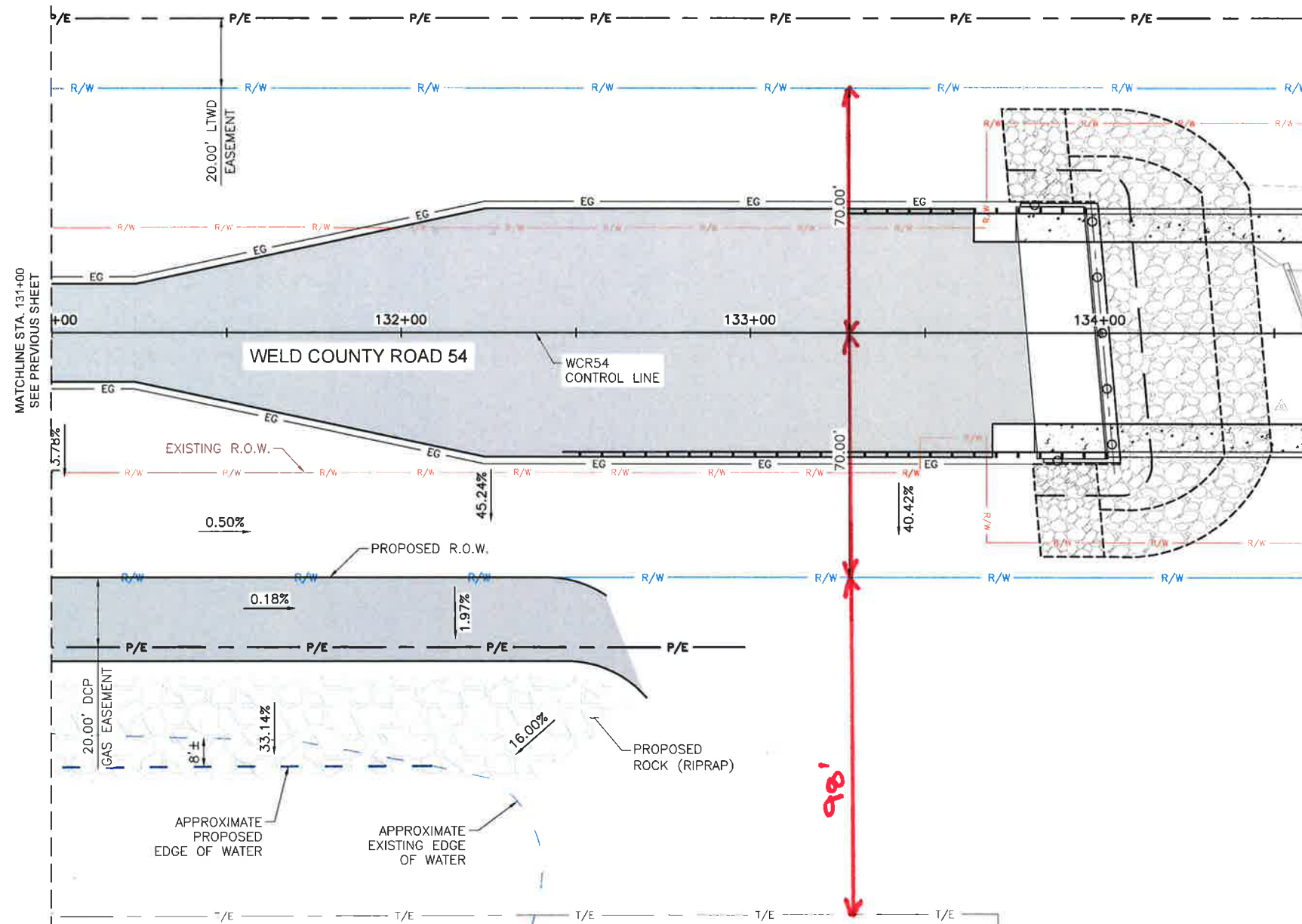
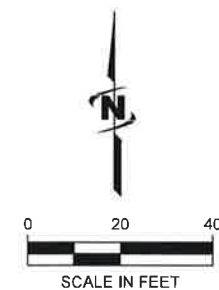
Structure  
Numbers

Subset Sheets: 2 of 2

Project No.

Drawing Number

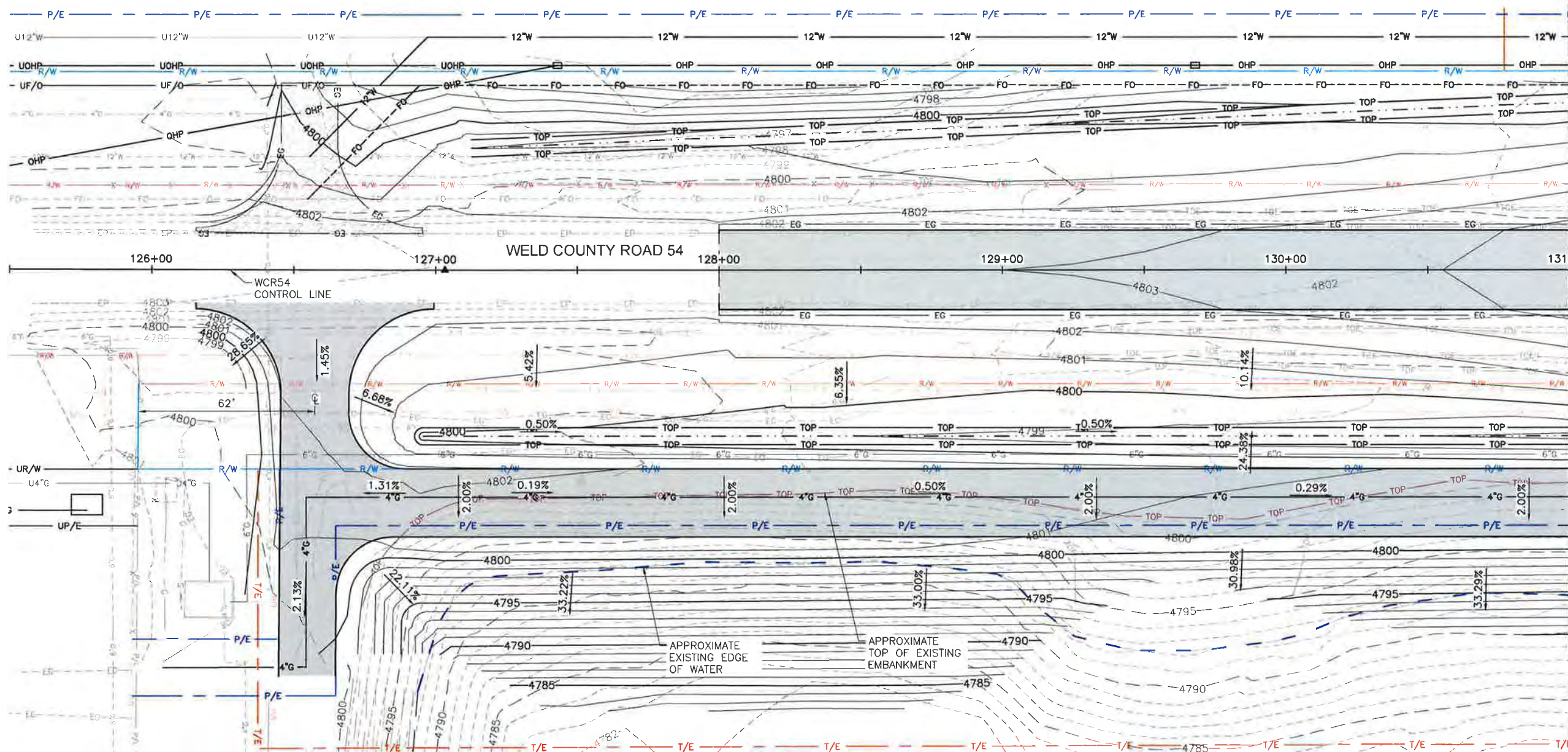
Sheet Number 3 of



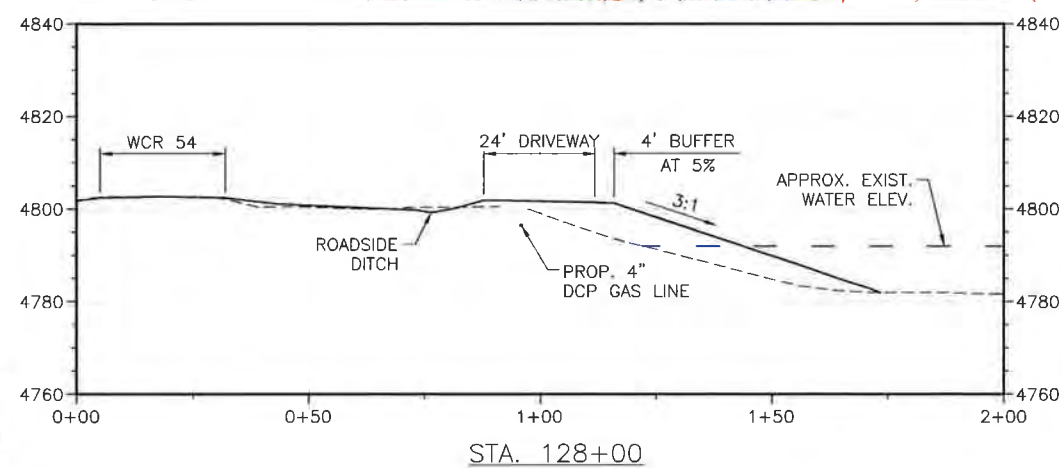
EXHIBIT



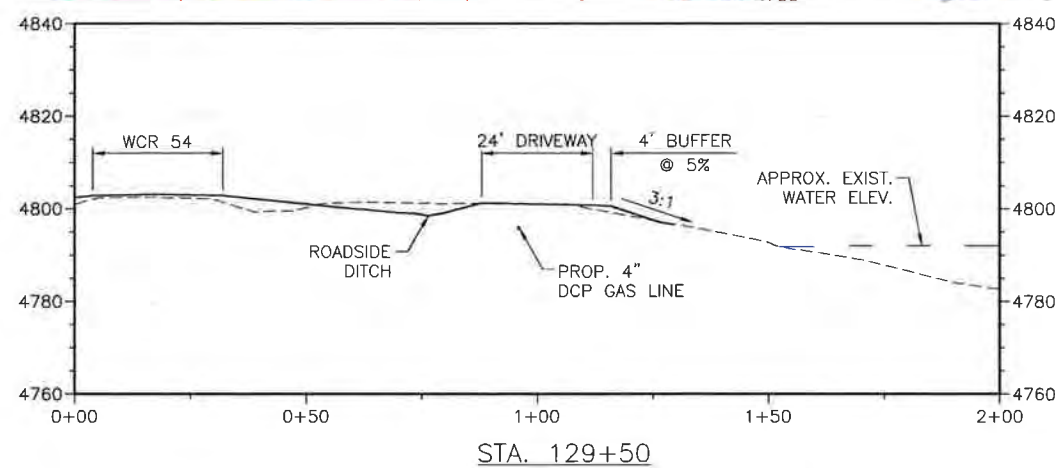
Plot Date: 8/2/2021 2:39 PM Plotted By: Kevin T. Smith  
Date Created: 7/28/2021 Path: \\JUB-GCN-CENTRAL\CLIENTS\CO WELDCOUNTY\PROJECTS\87-19-010-WCR54 BRIDGE IMPROVEMENTS\87-19-010-POND EXHIBIT.DWG



MATCHLINE STA. 131+00  
SEE NEXT SHEET



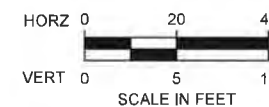
STA. 128+00



STA. 129+50

LEGEND:

- - - - -4790- - - - - EXISTING MAJOR CONTOUR
- - - - -4791- - - - - EXISTING MINOR CONTOUR
- 4790————— PROPOSED MAJOR CONTOUR
- 4791————— PROPOSED MINOR CONTOUR
- R/W— EXISTING R.O.W.
- R/W— PROPOSED R.O.W.



Know what's below.  
Call before you dig.

Print Date: 8/2/2021

Scale: AS NOTED



4745 Boardwalk Drive Building D, Suite 200  
Fort Collins, CO 80525  
Phone: 970.377.3602

0000

Sheet Revisions

| Date: | Comments | Init. |
|-------|----------|-------|
|       |          |       |
|       |          |       |
|       |          |       |



1111 H Street  
Greeley, CO 80631  
Phone: (970) 400-3750  
Fax: (970) 304-6497

Preliminary Design

No Revisions:

Revised:

Void:

WCR54 BRIDGE IMPROVEMENTS  
CHRISTENSEN POND EXHIBIT

Designer: KSMITH  
Detailer: KSMITH  
Sheet Subset: EXHIBIT

Structure  
Numbers

Subset Sheets: 1 of 2

Project No.

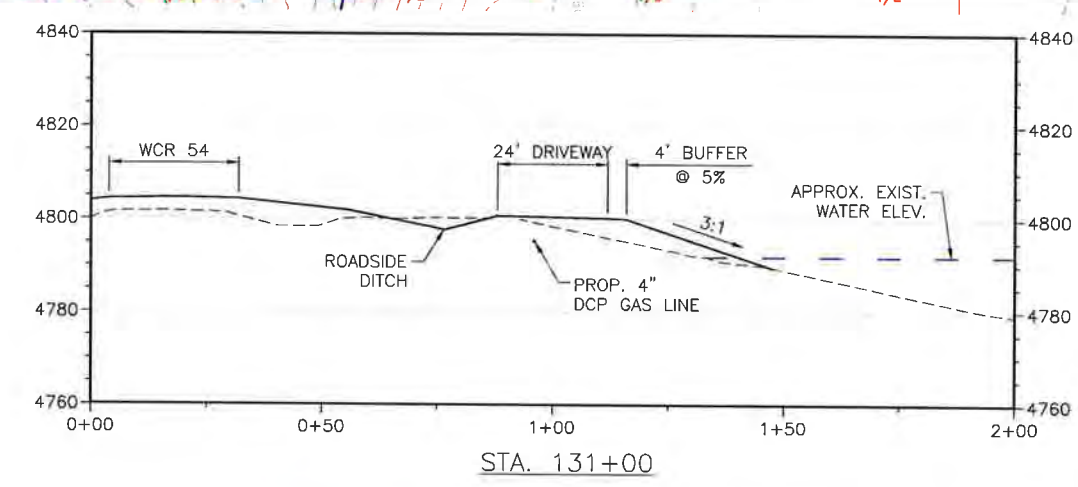
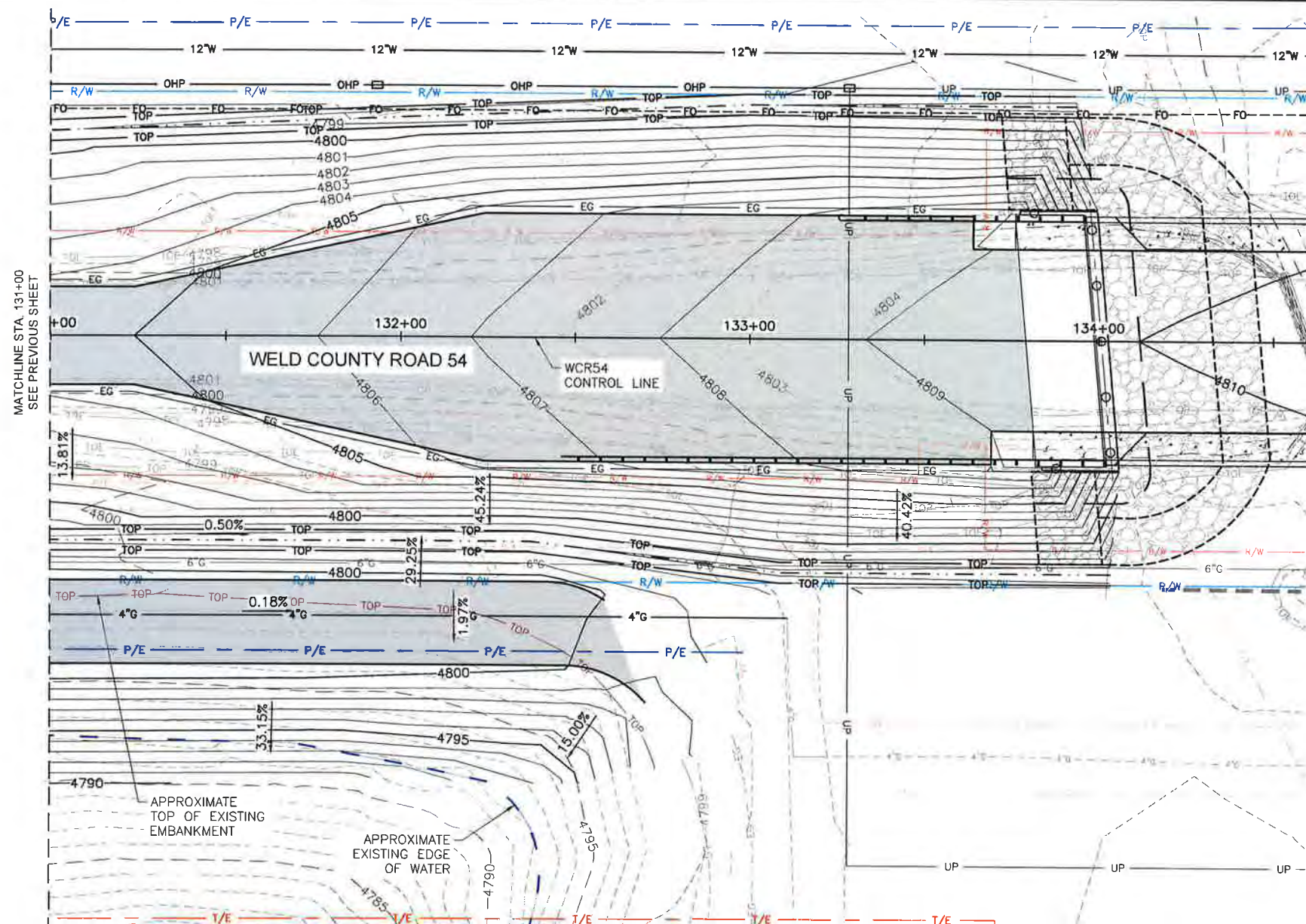
EN1802-PH2

Drawing Number POND 1

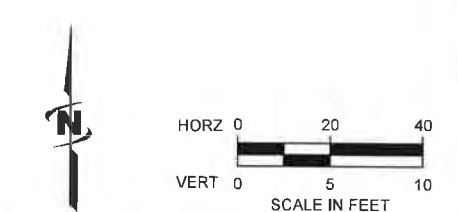
Sheet Number 1 of 2

EXHIBIT





- LEGEND:**
- - - 4790 - - - EXISTING MAJOR CONTOUR
  - - - 4791 - - - EXISTING MINOR CONTOUR
  - 4790 — PROPOSED MAJOR CONTOUR
  - 4791 — PROPOSED MINOR CONTOUR
  - R/W — EXISTING R.O.W.
  - R/W — PROPOSED R.O.W.



Plot Date: 8/2/2021 2:38 PM Plotted By: Kevin T. Smith  
 Date Created: 7/28/2021 Path: \\JUB-CDM-CENTRAL\CLIENTS\CO WELD COUNTY\PROJECTS\87-19-D10-WCR54 BRIDGE\BOTHOMPSON DESIGN\CAD\EXHIBIT CHRISTENSEN POND\87-19-D10-POND PROFILE.DWG



Print Date: 8/2/2021

Scale: AS NOTED

**JUB** ENGINEERS, INC.

4745 Boardwalk Drive Building D, Suite 200  
 Fort Collins, CO 80525  
 Phone: 970.377.3602

| Sheet Revisions |          |       |
|-----------------|----------|-------|
| Date:           | Comments | Init. |
|                 |          |       |
|                 |          |       |
|                 |          |       |
|                 |          |       |

**WELD** 1864

1111 H Street  
 Greeley, CO 80631  
 Phone: (970) 400-3750  
 Fax: (970) 304-6497

|                    |  |                                                       |  |                           |  |
|--------------------|--|-------------------------------------------------------|--|---------------------------|--|
| Preliminary Design |  | WCR54 BRIDGE IMPROVEMENTS<br>CHRISTENSEN POND EXHIBIT |  | Project No.<br>EN1802-PH2 |  |
| No Revisions:      |  | Designer: KSMITH                                      |  | Structure Numbers         |  |
| Revised:           |  | Detailer: KSMITH                                      |  | Drawing Number POND 2     |  |
| Void:              |  | Sheet Subset: EXHIBIT                                 |  | Subset Sheets: 2 of 2     |  |
|                    |  |                                                       |  | Sheet Number 2 of 2       |  |

EXHIBIT