




**MINERALS PROGRAM INSPECTION REPORT**  
**PHONE: (303) 866-3567**

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

<b>MINE NAME:</b> Strang Gravel Pit	<b>MINE/PROSPECTING ID#:</b> M-1977-425	<b>MINERAL:</b> Sand and gravel	<b>COUNTY:</b> Larimer
<b>INSPECTION TYPE:</b> Monitoring	<b>INSPECTOR(S):</b> Amy Eschberger, Rob Zuber	<b>INSP. DATE:</b> February 13, 2020	<b>INSP. TIME:</b> 14:00
<b>OPERATOR:</b> Larimer County	<b>OPERATOR REPRESENTATIVE:</b> Justin Hersh	<b>TYPE OF OPERATION:</b> 112c - Construction Regular Operation	
<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> None	<b>BOND AMOUNT:</b> No Bond Held	
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None	
<b>WEATHER:</b> Clear	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> March 12, 2020	

**GENERAL INSPECTION TOPICS**

This list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each. No problems or possible violations were noted during the inspection. The mine operation was found to be in full compliance with Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and/or for Hard Rock, Metal and Designated Mining Operations. Any person engaged in any mining operation shall notify the office of any failure or imminent failure, as soon as reasonably practicable after such person has knowledge of such condition or of any impoundment, embankment, or slope that poses a reasonable potential for danger to any persons or property or to the environment; or any environmental protection facility designed to contain or control chemicals or waste which are acid or toxic-forming, as identified in the permit.

(AR) RECORDS----- <u>Y</u>	(FN) FINANCIAL WARRANTY----- <u>NA</u>	(RD) ROADS----- <u>Y</u>
(HB) HYDROLOGIC BALANCE----- <u>N</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>N</u>
(PW) PROCESSING WASTE/TAILING---- <u>Y</u>	(SF) PROCESSING FACILITIES----- <u>Y</u>	(TS) TOPSOIL----- <u>Y</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>Y</u>	(FW) FISH & WILDLIFE----- <u>N</u>	(RV) REVEGETATION---- <u>Y</u>
(SM) SIGNS AND MARKERS----- <u>Y</u>	(SP) STORM WATER MGT PLAN---- <u>Y</u>	(RS) RECL PLAN/COMP-- <u>Y</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>Y</u>	(SC) EROSION/SEDIMENTATION--- <u>Y</u>	(ST) STIPULATIONS----- <u>N</u>
(AT) ACID OR TOXIC MATERIALS----- <u>N</u>	(OD) OFF-SITE DAMAGE----- <u>N</u>	

Y = Inspected and found in compliance / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

## **OBSERVATIONS**

This was a normal monitoring inspection of the Strang Gravel Pit (Permit No. M-1977-425) conducted by Amy Eschberger and Rob Zuber of the Division of Reclamation, Mining and Safety (Division). The operator was represented by Justin Hersh during the inspection. The site is located at the eastern edge of Fort Collins, CO in Larimer County. Access to the site is from the east off County Road 7. **Photos 1-26** taken during the inspection are included with this report.

This is a 112c operation permitted for 160 acres (see enclosed Google Earth image of site) to mine sand and gravel for use in county road construction and maintenance. The affected lands and mineral rights are owned by the county. The site is situated just west/southwest of the Cache La Poudre River. The permit area is bisected by the Boxelder Ditch, which runs northwest-southeast across the property. The mining plan includes mining the site through six primary phases, starting in the southeastern portion of the site (see enclosed mining plan map). Mining phases 1-4 are located south of the ditch, while mining phases 5 and 6 are located north of the ditch. No more than five acres will be actively mined at any time. Salvaged topsoil and excess overburden will be stockpiled on undisturbed land until needed for reclamation. Mining areas will be dewatered prior to mining via dewatering ditches constructed around the perimeter of the area. Water from dewatering operations will either be discharged to an established lower pond or into the Boxelder Ditch under a CDPHE discharge permit. As cells are mined out, a dike will be constructed of overburden to impound the water at increasingly higher levels to maintain a water level relative to the original ground elevation. These dikes will separate the mined cells. Mined material will be processed on site near the active pit.

The approved post-mining land use for the site is recreation. The area will eventually be included in an Open Space Plan for a recreation area with bicycle, pedestrian, and horse trails along the nearby river. The reclamation plan for the site includes leaving a total of nine mined cells, seven of which will be located south of the Boxelder Ditch, and the other two located north of the ditch (see enclosed reclamation plan map). These cells will remain as unlined groundwater ponds. All disturbed land, including pit slopes, will be graded to 3H:1V or flatter. Disturbed land around the cells, including pond slopes down to the anticipated water level, will be retopsoiled and revegetated with a grass seed mixture consisting of Green Needlegrass, Western Wheatgrass, Buffalograss, Sideoats Grama, Indian Ricegrass, and Blue Grama (seed mixture revised in 2014 with Technical Revision No. 1). The main access road will remain for reclamation. The reclamation plan mentions a 24 inch culvert pipe with a length of approximately 650 lineal feet; however, no details are provided regarding the proposed culvert location.

At the time of the inspection, the weather was clear and the ground was partially covered with snow. The permit boundary was delineated with barbed wire fencing. An appropriate mine identification sign was posted at the main site entrance off County Road 7. The site was not active during the inspection. However, according to the operator, the site is active every year in accordance with its intermittent status. Various mining trucks and equipment were stored on site. The southern half of the site can be accessed via the main access road which runs along the southern edge of the Boxelder Ditch. The northern half of the permit area can be accessed internally via a ditch crossing and a haul road constructed along the northern edge of the ditch.

The operation has completed mining the area south of the ditch, leaving a total of seven open pits (Cells A-G). These cells are in various stages of reclamation. Cells A and B, which were mined first, are open groundwater ponds with well vegetated slopes. These ponds were reclaimed many years ago. Cell C was mined most recently and is where the mobile processing plant is currently located. The operator anticipates the rest of the mined material stockpiled in Cell C will be crushed this year, and the county will continue hauling off from this material for some time. Much of the pit slopes of Cell C have been graded to 3H:1V, but only the southern and eastern slopes have been revegetated. Construction of the overburden dike along the western edge of Cell C has

not yet been completed. Therefore, Cell C is still partially connected to the adjacent Cell F. The dewatering trench remains around the inside perimeter of Cell C. Additionally, two elongated sediment ponds are present along the eastern edge of Cell C, from which, water is discharged to the nearby ditch. This discharge point is regulated under the operator's CDPHE discharge permit. The operation discharges to the ditch at a rate of approximately one acre-foot per year. The operator indicated there are buried pipelines connecting at least some of the pits. As mentioned previously, the approved permit mentioned a 24 inch culvert pipe, but did not specify where or for what purpose this pipeline would be installed.

Cells D, E, F, and G are approximately 10-15 feet deep, and their side slopes are graded to 3H:1V with good vegetative cover. These cells have wetland vegetation growing on the pit floor, and dewatering trenches remain around the inside perimeter of these cells. It appears that Cells D, E, F, and G have been reclaimed as wetlands rather than as open groundwater ponds per the approved reclamation plan. The dikes constructed between the cells have side-slopes graded to 3H:1V or flatter and good grass cover. No significant erosion issues were observed in these areas. However, the ground surface was obscured in some areas by the snow.

The operation has not begun mining the area north of the Boxelder Ditch, which is comprised of mining phases 5 and 6 (and Cells H and I). This area is currently being used for truck/equipment storage as well as storage of topsoil, overburden, and material stockpiles. A topsoil berm has been constructed along the northern and eastern edges of this area for a visual/noise screen from the adjacent roads. Two old farm silos remain in the northeastern portion of this area. All other structures associated with the old farm have been demolished or removed from the site. The approved mining and reclamation plans do not specify whether the old silos will also be removed for the operation. The operator is not sure at this time when mining operations will move into the area north of the ditch, as there is enough material stockpiled on site to meet their needs for a while.

According to a comment from the Division of Water Resources (DWR) submitted to our office on October 7, 2010, groundwater was exposed in Cell A prior to January 1, 1981 (pre-1981) and therefore, does not require replacement of evaporative depletions. Post-1980 exposed groundwater in cells B, D, and E is covered by the augmentation plan approved for the site by Division 1 Water Court in Case No. 1990CW071. As of the date of the comment, a well permit had not been obtained from DWR for the exposed groundwater on site. The operator later provided the Division with a copy of an approved well permit obtained for the site on October 25, 2010 (well permit no. 74587-F). This permit covers a total exposed groundwater surface area of 98.7 acres for the site, including 3.2 acres of pre-1981 exposed groundwater in Cell A.

The Division estimates current groundwater exposure at the site to consist of approximately 17.8 acres, including 3.45 acres in Cell A, 13.8 acres in Cell B, and 0.55 acre in Cell C sediment ponds. While this estimate does not include dewatering trenches, it is significantly less than the 98.7 acres of total exposed groundwater covered under the operator's augmentation plan. Therefore, it appears the site is in compliance with regard to the amount of exposed groundwater on site at this time. The Division observed wetland vegetation on the pit floors of Cells D-G during the inspection, but did not observe significant ponding in these cells. The operator should be advised, the appropriate water rights must be in place for any exposed groundwater at the site, including wetlands.

During the inspection, the operator inquired about not leaving all nine unlined groundwater ponds at the site for final reclamation as described in the approved reclamation plan. The operator may instead want to leave a combination of unlined groundwater ponds (Cells A and B), wetlands, and open space for the recreational post-mining land use. These changes to the reclamation plan would reduce the overall exposed groundwater liability for the site. To revise the approved reclamation plan, the operator would need to submit a Technical Revision or Amendment application to the Division detailing the proposed changes, and including an updated reclamation plan map. If the proposed changes do not increase the acreage of the affected land or have a significant effect

upon the approved reclamation plan, the operator may submit a Technical Revision (see enclosed form) rather than an Amendment application. The Division recommends any future revision submittal also provide more details on features not adequately described in the current approved permit, including any buried pipelines and/or other water management structures installed or proposed to be installed, whether the old farm silos will remain for reclamation, and whether any additional roads other than the main access road will remain for reclamation.

This concludes the report.

*Any questions or comments regarding this inspection report should be forwarded to Amy Eschberger at the Colorado Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, via telephone at 303-866-3567, ext. 8129, or via email at [amy.eschberger@state.co.us](mailto:amy.eschberger@state.co.us).*

## PHOTOGRAPHS



**Photo 1.** View of mine identification sign posted at main site entrance off Co Rd 7.



**Photo 2.** View looking southeast across Cell C where material processing is occurring.





**Photo 3.** View looking south across Cell C where material processing is occurring.



**Photo 4.** View looking northwest across northern pit slope of Cell C graded to 3H:1V but not yet revegetated.





**Photo 5.** View looking west at one of two sediment ponds (in foreground) located along eastern edge of Cell C. Note large material stockpile stored in Cell C (in background).



**Photo 6.** View looking southeast across reclaimed southern pit slope of Cell C. Note dewatering trench around inside perimeter of pit.





**Photo 7.** View looking northeast across Cell C from its southwestern corner. Note reclaimed western pit slope (in foreground). Material processing and stockpiling continues in northern portion of pit (in background).



**Photo 8.** View looking east across reclaimed Cell A groundwater pond from its northwestern corner.





**Photo 9.** View looking southwest across reclaimed Cell B groundwater pond from its northern edge.



**Photo 10.** View looking west across reclaimed Cell B groundwater pond from its eastern edge.





**Photo 11.** View looking north across reclaimed dike constructed between Cells B and D.



**Photo 12.** View looking north across eastern edge of Cell D with pit slopes graded 3H:1V and stable with good vegetative cover. Note wetland vegetation on pit floor.





**Photo 13.** View looking north across center of Cell D with pit slopes graded 3H:1V and stable with good vegetative cover. Note wetland vegetation on pit floor.



**Photo 14.** View looking north across reclaimed dike constructed between Cells D and E.





**Photo 15.** View looking north across Cell E from its southern edge, showing pit slopes graded 3H:1V and stable with good vegetative cover. Note wetland vegetation on pit floor. Also note dewatering trench left around inside perimeter of pit.



**Photo 16.** View looking east across Cell E from its western edge, showing wetland vegetation on pit floor. Note dewatering trench left around inside perimeter of pit.





**Photo 17.** View looking east across northern edge of Cell E, showing pit slopes graded 3H:1V and stable with good vegetative cover.



**Photo 18.** View looking west across northern edge of Cell G with pit slopes graded 3H:1V and stable with good vegetative cover. Note wetland vegetation on pit floor.





**Photo 19.** View looking west across center of Cell G with pit slopes graded 3H:1V and stable with good vegetative cover. Note wetland vegetation on pit floor.



**Photo 20.** View looking southwest across western portion of Cell G with pit slopes graded 3H:1V and stable with good vegetative cover. Note wetland vegetation on pit floor.





**Photo 21.** View looking north showing trucks and equipment stored in permit area north of Boxelder Ditch (in foreground). Note two existing farm silos in background, right.



**Photo 22.** View looking north across permit area north of Boxelder Ditch which has not been mined yet.



**Photo 23.** View looking northeast at topsoil berm placed along northern edge of permit area north of Boxelder Ditch.



**Photo 24.** View looking southeast at overburden stockpile stored in permit area north of Boxelder Ditch.





**Photo 25.** View looking south at topsoil stockpiles stored in permit area north of Boxelder Ditch.



**Photo 26.** View looking northwest at Boxelder Ditch which bisects the permit area.

**Inspection Contact Address**

Justin Hersh  
Larimer County  
P.O. Box 1190  
Fort Collins, CO 80522

Encls: Google Earth image of site  
Approved Mining Plan Map  
Approved Reclamation Plan Map  
Technical Revision form

CC: Rob Zuber, DRMS  
Michael Cunningham, DRMS



# M-1977-425 / Strang Gravel Pit / Larimer County (112c)

Red outline = 160 acres = Approved permit area (location approximated based on approved permit maps)

Blue outline = 17.80 acres = Current exposed groundwater, not including dewatering trenches (17.25 ac Cells A and B + 0.55 ac Cell C sediment ponds)

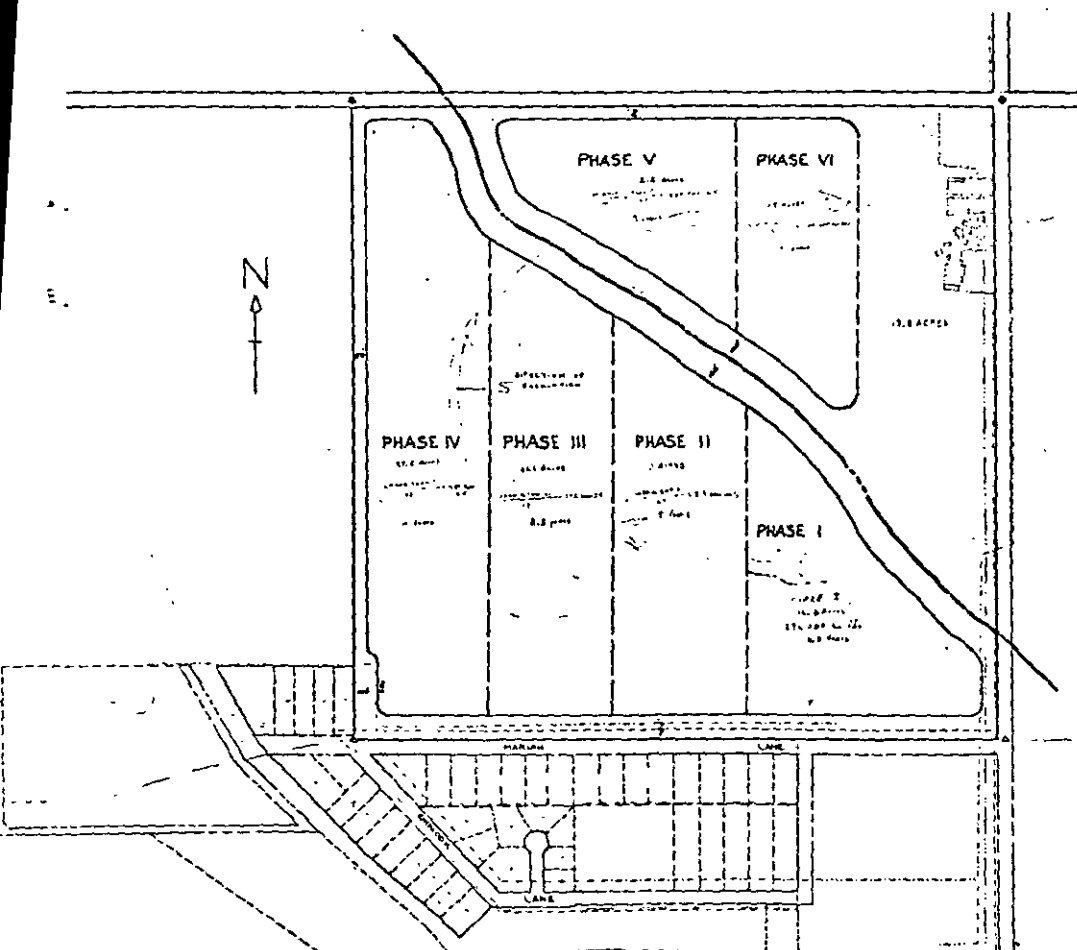
Purple outline = 55.76 acres = Current open pits to be left as groundwater ponds per the approved reclamation plan (Cells C-G)

Two additional groundwater ponds are to be left in the area north of the Boxelder Ditch - these pits have not yet been excavated.

(Image data from 7/17/2019)







PHASE	CRUDE TONN	HAZEL	WALL OF
I	555,000	10.0	0.0
II	2,000,000	12.0	2.0
III	500,000	15.0	0.0
IV	1,000,000	10.0	0.0
V	1,000,000	10.0	0.0
VI	1,000,000	10.0	0.0
TOTALS	10,000,000	10.0	2.0
WATER SOURCE		10.0	
WATER		10.0	
SEASON		10.0	
SEASON		10.0	
TOTAL ACRES		10.0	

OWNER  
LARIMER COUNTY

APPROVAL  
CHAIRMAN, BOARD OF COUNTY COMMISSIONERS

REVIEW  
DATE

EXHIBIT C  
MINING  
PLAN

LARIMER COUNTY ROAD  
STRANG GRAVEL PIT

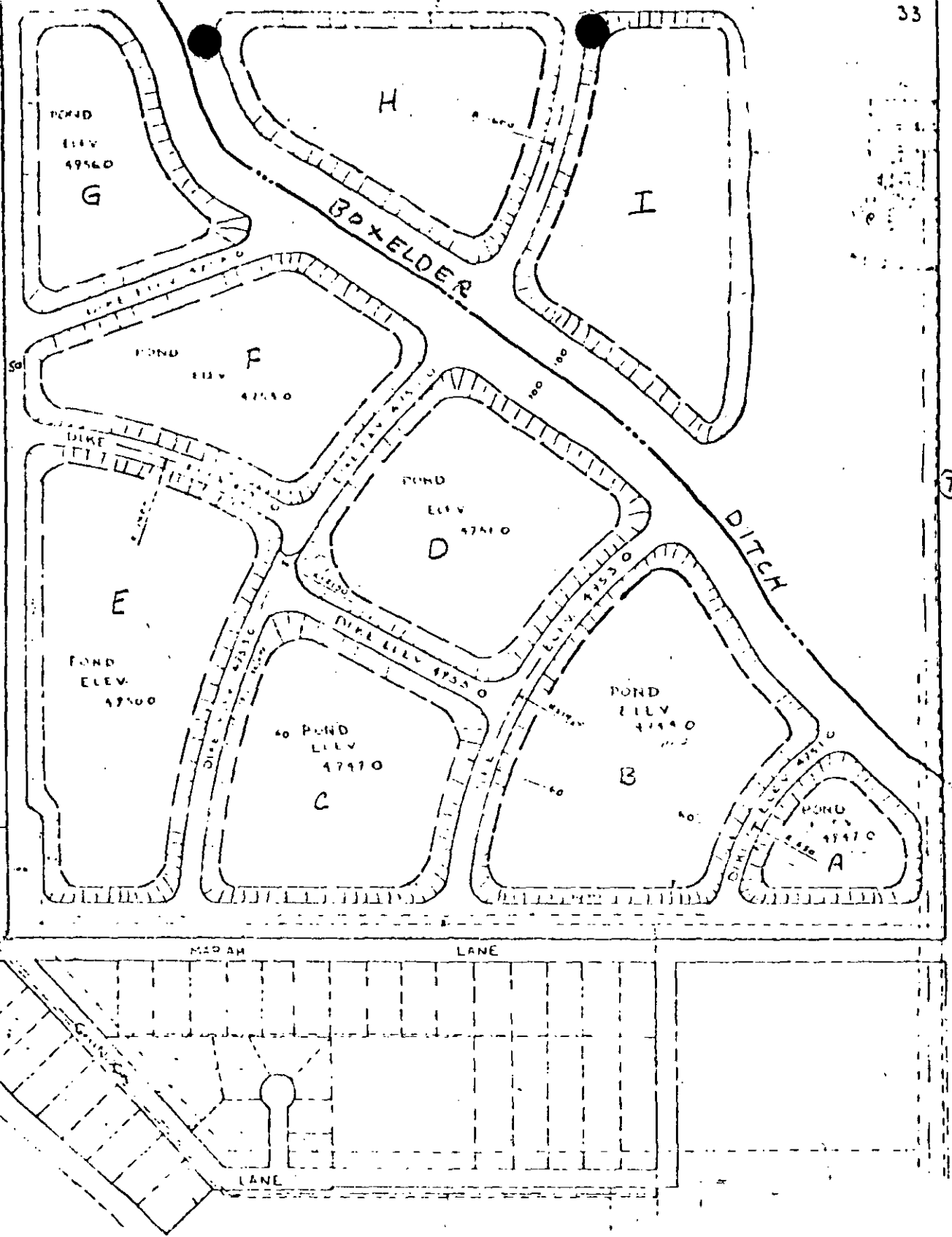
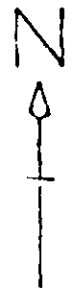
EXCAVATION PLAN

Submitted By: [Signature] JAN 1972  
COUNTY ENGINEER

1" = 800'

Wm H. Campton  
County Engineer





LARHER COUNTY ROADS  
STRANG GRAVELPIT

RECLAMATION PLAN

SCALE 1"=800'  
BY W.-W. CAMPION  
COUNTY ENGINEER

JAN 1975  
EXHIBIT B



## COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY

1313 Sherman Street, Room 215, Denver, Colorado 80203 ph(303) 866-3567

### REQUEST FOR TECHNICAL REVISION (TR) COVER SHEET

File No.: M- \_\_\_\_\_ Site Name: \_\_\_\_\_

County \_\_\_\_\_ TR# \_\_\_\_\_ (DRMS Use only)

Permittee: \_\_\_\_\_

Operator (If Other than Permittee): \_\_\_\_\_

Permittee Representative: \_\_\_\_\_

Please provide a brief description of the proposed revision: \_\_\_\_\_

As defined by the Minerals Rules, a Technical Revision (TR) is: “a change in the permit or application which does not have more than a minor effect upon the approved or proposed Reclamation or Environmental Protection Plan.” The Division is charged with determining if the revision as submitted meets this definition. If the Division determines that the proposed revision is beyond the scope of a TR, the Division may require the submittal of a permit amendment to make the required or desired changes to the permit.

The request for a TR is not considered “filed for review” until the appropriate fee is received by the Division (as listed below by permit type). Please submit the appropriate fee with your request to expedite the review process. After the TR is submitted with the appropriate fee, the Division will determine if it is approvable within 30 days. If the Division requires additional information to approve a TR, you will be notified of specific deficiencies that will need to be addressed. If at the end of the 30 day review period there are still outstanding deficiencies, the Division must deny the TR unless the permittee requests additional time, in writing, to provide the required information.

There is no pre-defined format for the submittal of a TR; however, it is up to the permittee to provide sufficient information to the Division to approve the TR request, including updated mining and reclamation plan maps that accurately depict the changes proposed in the requested TR.

Required Fees for Technical Revision by Permit Type - Please mark the correct fee and submit it with your request for a Technical Revision.

<u>Permit Type</u>	<u>Required TR Fee</u>	<u>Submitted</u> (mark only one)
110c, 111, 112 construction materials, and 112 quarries	\$216	<input type="checkbox"/>
112 hard rock (not DMO)	\$175	<input type="checkbox"/>
110d, 112d(1, 2 or 3)	\$1006	<input type="checkbox"/>