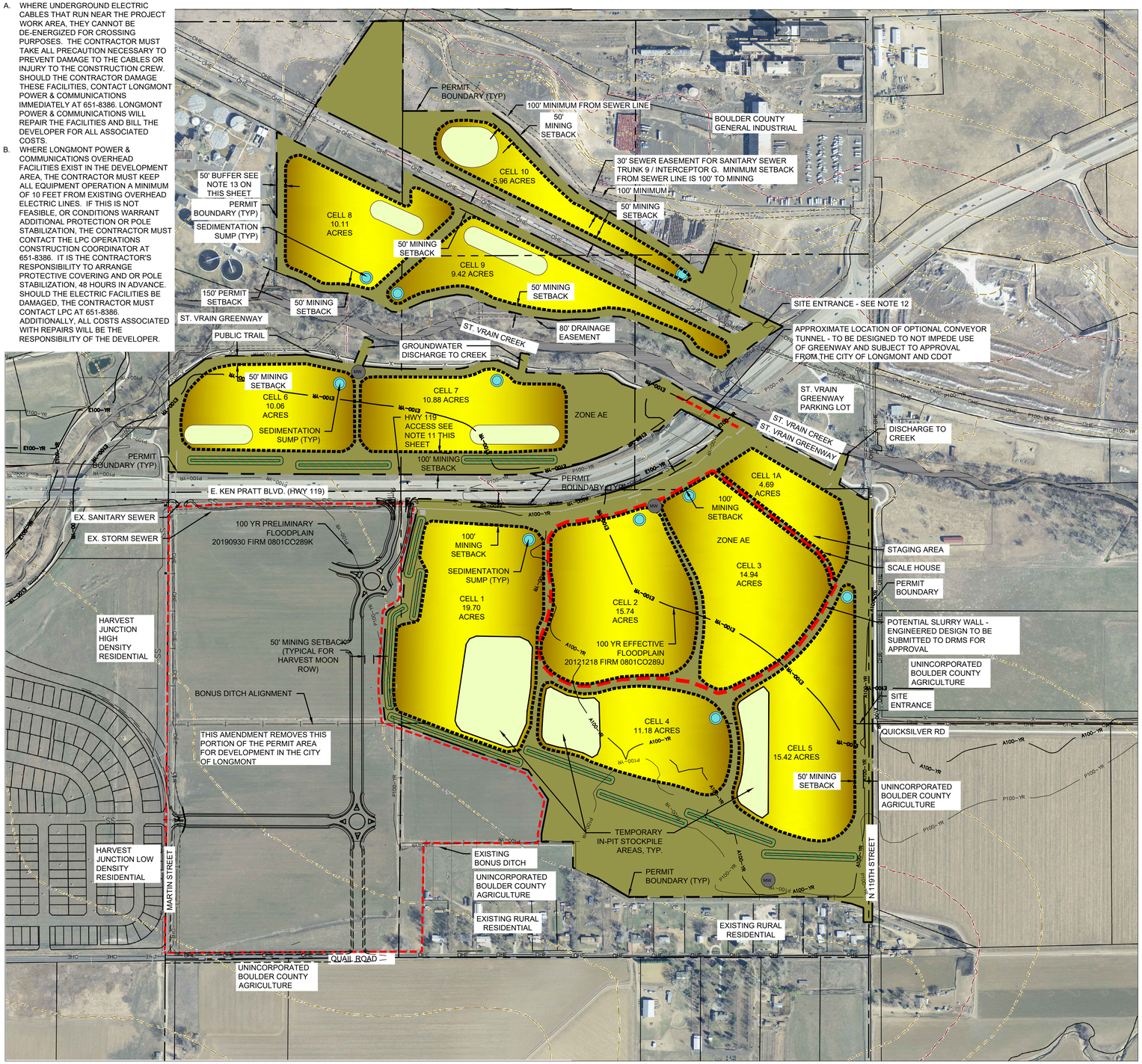
IRWIN/THOMAS MINE

NOTE:

A. WHERE UNDERGROUND ELECTRIC CABLES THAT RUN NEAR THE PROJECT WORK AREA, THEY CANNOT BE DE-ENERGIZED FOR CROSSING PURPOSES. THE CONTRACTOR MUST TAKE ALL PRECAUTION NECESSARY TO PREVENT DAMAGE TO THE CABLES OR INJURY TO THE CONSTRUCTION CREW. SHOULD THE CONTRACTOR DAMAGE THESE FACILITIES, CONTACT LONGMONT POWER & COMMUNICATIONS IMMEDIATELY AT 651-8386. LONGMONT POWER & COMMUNICATIONS WILL REPAIR THE FACILITIES AND BILL THE DEVELOPER FOR ALL ASSOCIATED COSTS.

B. WHERE LONGMONT POWER & COMMUNICATIONS OVERHEAD FACILITIES EXIST IN THE DEVELOPMENT AREA, THE CONTRACTOR MUST KEEP ALL EQUIPMENT OPERATION A MINIMUM OF 10 FEET FROM EXISTING OVERHEAD ELECTRIC LINES. IF THIS IS NOT FEASIBLE, OR CONDITIONS WARRANT ADDITIONAL PROTECTION OR POLE STABILIZATION, THE CONTRACTOR MUST CONTACT THE LPC OPERATIONS CONSTRUCTION COORDINATOR AT 651-8386. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE PROTECTIVE COVERING AND OR POLE STABILIZATION, 48 HOURS IN ADVANCE. SHOULD THE ELECTRIC FACILITIES BE DAMAGED, THE CONTRACTOR MUST CONTACT LPC AT 651-8386. ADDITIONALLY, ALL COSTS ASSOCIATED WITH REPAIRS WILL BE THE RESPONSIBILITY OF THE DEVELOPER.



LEGEND

- PERMIT BOUNDARY
- SECTION LINE
- EXISTING PARCELS
- EXISTING 5 FOOT CONTOUR
- EXISTING 25 FOOT CONTOUR
- EXISTING MONITORING WELL LOCATION
- SCREENING BERMS - TOPSOIL/OVERBURDEN STOCKPILE
- SLURRY WALL
- SEDIMENTATION SUMP
- TEMPORARY IN-PIT STOCKPILE AREAS
- 100 YR EFFECTIVE FLOOD PLANE
- 100 YR PRELIMINARY FLOOD PLANE
- 100 YR PROPOSED FLOOD PLANE

NOTES

1. THE PROPOSED IRWIN/THOMAS MINE PERMIT AREA IS COMPRISED OF 4 DISTINCT MINING AREAS SEPARATED BY COLORADO HIGHWAY 119, ST. VRAIN CREEK, AND THE BURLINGTON NORTHERN AND SANTA FE (BNSF) RAILROAD. MINING AREA 1 (MA1) IS LOCATED SOUTH OF HWY 119, MINING AREA 2 (MA2) IS NORTH OF HWY 119 AND SOUTH OF ST. VRAIN CREEK, MINING AREA 3 IS NORTH OF ST. VRAIN CREEK AND SOUTH OF THE BNSF RAILROAD, AND MINING AREA 4 IS NORTH OF THE RAILROAD.
2. THE PROPOSED PERMIT BOUNDARY ENCOMPASSES APPROXIMATELY 211.7 ACRES WITH ONLY ABOUT 128.1 ACRES CURRENTLY PLANNED FOR MINING. HOWEVER, THE AFFECTED LAND BOUNDARY ESSENTIALLY FOLLOWS THE PERMIT BOUNDARY TO ALLOW FOR RECLAMATION ACTIVITIES AND FUTURE POTENTIAL MINING OPERATIONS. AREAS NOT DISTURBED BY MINING MAY BE DISTURBED BY ACCESS ROADS, MATERIAL CONVEYING, STOCKPILES, OR OTHER MINING RELATED ACTIVITIES. THE REMAINING AREA WILL CONSIST OF SETBACKS AND ROAD AND UTILITY RIGHT-OF-WAYS.
3. IN ADDITION TO AREAS DISTURBED BY MINING, ACCESS ROADS, MATERIAL CONVEYING, STOCKPILES, OR OTHER MINING RELATED ACTIVITIES MAY OCCUR IN AREAS NOT SUBJECT TO MINING AND RIPARIAN SETBACKS AND BUFFERS. AREAS NOT DISTURBED BY MINING MAY BE DISTURBED BY ACCESS ROADS, MATERIAL CONVEYING, STOCKPILES, OR OTHER MINING RELATED ACTIVITIES. THE REMAINING AREA WILL CONSIST OF SETBACKS AND ROAD AND UTILITY RIGHT-OF-WAYS
4. SETBACKS FROM THE MINE PIT TOP OF SLOPE TO THE PROPOSED PERMIT BOUNDARY OR MAN-MADE STRUCTURES NOT OWNED BY THE APPLICANT WILL BE 50 FEET OR GREATER.
5. ITEMS OWNED BY THE APPLICANT OR PROPERTY OWNER LOCATED WITHIN THE PERMIT AREA SUCH AS UN-IMPROVED ROADS, IRRIGATION LATERALS, FENCES, WATER WELLS AND ASSOCIATED PUMPS, AND OTHER STRUCTURES MAY BE REMOVED OR RELOCATED DURING MINING AND RECLAMATION.
6. TEST PITS HAVE VERIFIED THAT COMMERCIAL DEPOSITS OF SAND AND GRAVEL EXIST UP TO 25 FEET BELOW THE SURFACE OF THE GROUND.
7. MINING IS EXPECTED TO ENCOUNTER GROUNDWATER WITHIN FIVE FEET OF THE GROUND SURFACE. THE DEPOSIT WILL BE DRY MINED USING DEWATERING TRENCHES, PUMPS, SUMPS, & RECHARGE PONDS.
8. DURING MINING ADJACENT TO THE ST. VRAIN CREEK RIPARIAN AREA, PRECAUTIONS WILL BE TAKEN TO NOT DISTURB THE CREEK CHANNEL AND DESIRABLE VEGETATION.
9. A MINE OFFICE/SCALE HOUSE TRAILER MAY BE ESTABLISHED NEAR SITE ENTRANCES BOTH NORTH AND SOUTH OF ST. VRAIN CREEK.
10. BEST MANAGEMENT PRACTICES WILL BE USED TO LIMIT DISCHARGE OF STORMWATER AND SEDIMENT ONTO ADJACENT PROPERTIES AND WATERWAYS.
11. THE EXISTING HWY 119 ACCESS WILL CONTINUE TO FUNCTION FOR AGRICULTURE ACCESS AND MAINTENANCE. ONCE MINING AND RECLAMATION BEGIN, ACTIVITY ASSOCIATED WITH THE HWY 119 ACCESS WILL INCLUDE BRINGING EQUIPMENT INTO THE SITE, THE EQUIPMENT OPERATORS VEHICLE, ANY REQUIRED MAINTENANCE OF THE EQUIPMENT AND VEGETATION MANAGEMENT. MINED MATERIAL MAY BE TRANSPORTED VIA THE CONVEYOR AS SHOWN ON THE MINING PLAN OR VIA HAUL TRUCKS UTILIZING DIRECT ACCESS ONTO HWY 119 AT THE CONTROLLED INTERSECTION. SPECIFIC DETAILS REGARDING TRANSPORT OF MATERIAL FROM THE HWY 119 ACCESS OR VIA THE CONVEYOR SHALL BE REVIEWED AND APPROVED BY CDOT AND THE CITY OF LONGMONT.
12. ACCESS TO CELLS 8,9 AND 10 WILL BE VIA AN EXISTING ACCESS EASEMENT TO NORTH 119TH ST. SPECIFIC CONFIGURATION, REQUIRED IMPROVEMENTS AND AN APPROVED HAUL ROUTE TO BE APPROVED BY THE CITY PRIOR TO MINING THESE CELLS. THE OPERATOR WILL ENTER INTO A ROAD MAINTENANCE AGREEMENT WITH THE CITY PRIOR TO MINING THOSE CELLS.
13. THE EXISTING SWALE ON THE WEST SIDE OF CELL 8 IS A MAJOR DRAINAGE CONVEYANCE AND DISCHARGE FOR THE WATER TREATMENT PLANT. THE CHANNEL CANNOT BE IMPACTED AND MUST REMAIN OPERATIONAL AT ALL TIMES. FIELD VERIFY PRIOR TO ANY MINING ACTIVITIES THAT THE 50' PROPOSED BUFFER IS ADEQUATE TO PROTECT THE EXISTING SWALE, AND IF IT IS NOT, INCREASE THE BUFFER AMOUNT TO ENSURE PROPER OPERATION OF THE SWALE.

MINING SEQUENCE NOTES

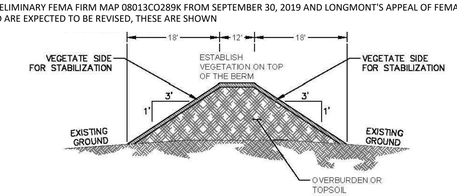
1. IN MA1, MINING CELL 1A SHALL BE MINED FIRST. MINING AND BACKFILL OF CELL 1A SHALL OCCUR DURING THE NON-FLOOD PRONE SEASON OF OCTOBER THROUGH APRIL. PRIOR TO MINING IN CELLS 2 AND 3, CELL 1A SHALL BE BACKFILLED. MINING IN CELL 1 MAY PROCEED CONCURRENT WITH CELL 1A.
2. THE SCALE HOUSE AND STAGING AREA IN MA1 MAY BE ESTABLISHED ON THE MINED AND BACKFILLED AREA OF CELL 1A.
3. IN MA2 AND MA3, THE AREAS OF THE MINING CLOSEST TO ST. VRAIN CREEK SHALL BE MINED FIRST. THE MINE CELLS WITHIN 200 FEET OF THE CREEK SHALL BE MINED AND BACKFILLED DURING THE NON-FLOOD PRONE SEASON OF OCTOBER THROUGH APRIL.
4. PRIOR TO AFFECTING LAND WITHIN MA2, MA3 OR MA4 THE DIVISION OF RECLAMATION, MINING AND SAFETY (THE DIVISION) SHALL BE NOTIFIED IN WRITING.
5. IF COMPLETED MINE CELL SLOPES ARE TO BE WITHIN A RESERVOIR OR POND, THE DIVISION SHALL BE NOTIFIED FOR INSPECTION PRIOR TO FILLING THE RESERVOIR/POND WITH WATER
6. IF SOIL TESTING IS NECESSARY FOR RECLAMATION, TEST RESULTS AND ANY PROPOSED SOIL AMENDMENTS SHALL BE SUBMITTED TO THE DIVISION.
7. PRIOR TO MINING MA3 AND MA4, MONITORING WELLS SHALL BE INSTALLED AND MONITORED FOR FIVE QUARTERS TO ESTABLISH BASELINE GROUND WATER ELEVATIONS .
8. IF OFF SITE STRUCTURAL FILL IS TO BE IMPORTED, THE DIVISION SHALL BE NOTIFIED ACCORDING TO THE MINERAL RULES AND REGULATIONS RULE 3.1.5(9)
9. A TEMPORARY ABOVE GROUND FUEL STORAGE FACILITY MAY BE PLACED IN MA1 DURING MINING.

FLOOD PLAIN NOTES

FLOODPLAIN INFORMATION PER FIRM FLOOD INSURANCE RATE MAP NO 08013C0287J DATED DECEMBER 18, 2012 AND FIRM FLOOD INSURANCE RATE MAP NO 08013C0289J DATED DECEMBER 18, 2012.

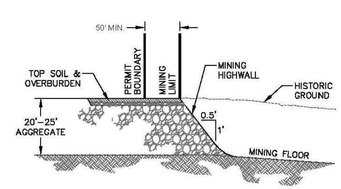
- THIS PROPERTY LIES IN AREAS DETERMINED TO BE WITHIN
  OTHER AREAS - AREAS OUTSIDE THE 2% ANNUAL CHANCE FLOOD
- ZONE X - AREAS OF 25 % ANNUAL CHANCE OF FLOOD OR AREAS WITH 1% ANNUAL CHANCE OF FLOOD WITH AVERAGE DEPTHS OF LESS THAN ONE FOOT OR WITHIN DRAINAGE AREAS LESS THAN ONE SQUARE MILE AND AREAS PROTECTED BY LEVEES FROM THE 100 YEAR FLOOD.
- ZONE AE - SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL FLOOD CHANCE, BASE FLOOD ELEVATIONS DETERMINED.
- ZONE AH - SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL FLOOD CHANCE, FLOOD DEPTHS OF 1 TO 3 FEET, (USUALLY AREAS OF PONDING) BASE FLOOD ELEVATIONS DETERMINED.

THE ADDITIONAL FLOODPLAINS SHOWN ARE BASED ON PRELIMINARY FEMA FIRM MAP 08013C0289K FROM SEPTEMBER 30, 2019 AND LONGMONT'S APPEAL OF FEMA'S PRELIMINARY FIRM MAP. THESE MAPS ARE NOT FINAL AND ARE EXPECTED TO BE REVISED, THESE ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY.



TYPICAL BERMING SECTION

N.T.S.



TYPICAL MINING SECTION AT PERMIT BOUNDARY

N.T.S.

REVISIONS

DESCRIPTION	DATE	BY

DRAWN PDB
CHECKED BW
DESIGNED BW
FILENAME 1241.0001 DRMS

IRWIN/THOMAS MINE
EXHIBIT C-4

PRE-MINING MAP

TST
TST, INC.
CONSULTING ENGINEERS
748 Whalers Way
Suite 200 Fort Collins
Colorado 80525
Phone: 970.226.0557

JOB NO. 1241.0001.02
SCALE 1"=300'
DATE JULY 2022
SHEET 4 of 5

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