Stantec

Memo

To:	Tim Cazier	From:	Paul Kos
	DRMS	Cc:	Jerald Schnabel, Riverbend
Project/File:	Pikeview Quarry Reclamation Project	Date:	November 17, 2023

Reference: Responses to Preliminary Adequacy Review for Technical Revision (TR-22), Pikeview Quarry, M-1977-211

Mr. Cazier,

Riverbend Industries Inc. (Riverbend) is in the process of reclaiming the Pikeview Quarry located northwest of Colorado Springs, Colorado. As part of the detailed design process and recent communications with staff with City of Colorado Springs (City), Division of Reclamation, Mining, and Safety (DRMS), United States Forest Service (USFS), and construction and revegetation contractors, Riverbend requested the following Technical Revisions (TR) on September 19, 2023:

- The species available for revegetating the site has been increased to promote biological diversity and provide alternatives based on plants available during the reclamation process. This TR is intended to be reviewed with Exhibit E of the Amendment 4.
- Drainage from the buttress area has been routed to the north, and the South Channel has been eliminated. This TR contains updated information and is intended to be reviewed with Exhibit G of the Amendment 4 for model input parameters and background information.
- Updates to the weed control plan (see attached memorandum from Riverbend).

On October 9, 2023, DRMS provided comments following their preliminary adequacy review of the TR. This memorandum summarizes the comments and Riverbend's and Stantec's responses to those comments. The revised hydrologic model reports have been included as attachments.

Comment 1. Seed Mix: The DRMS suggests the use of smooth brome and crested wheatgrass in the seed mix be limited.

Response: Riverbend acknowledges the recommendation and will limit the use of smooth brome and crested wheatgrass.

Comment 2. North Channel: The DRMS believes the Middle North Channel, Lower Middle North Channel and Lower North Channel may be undersized.

Response: The HEC-HMS model has been updated to clearly show the watersheds and drainage network. See attached model reports and flow summary table. The updated model reports are attached to this response.

- ***Lower North Channel***: The downstream connection was changed from F2 to J-F2 which was an added junction before J-Out. J-F2 was used to size the Lower North Channel.

- ***Lower Middle North Channel****:* Assuming the last "F3" mentioned in the comment is supposed to be referring to F1, the downstream connection for F-1 was changed to J-F1-1, which was an added junction before J-F1. J-F1-1 was used to size the Lower Middle North Channel. The change in flow caused the riprap size to increase from 12-in to 18-in d50.

- ***Middle North Channel***: No changes were made to the downstream connection of Subbasin C3 because the basin is graded such that it drains to the new minor channel at station 12+00 and then is routed directly to the point J-C2.

Comment 3. Terrace Channels: Please provide rationale for how the terrace channel design flow was obtained and revise if appropriate. Also, revise the design or explain why a terrace channel was not included north side of the North Channel at Sta. 18+00.

Response: The HEC-HMS model has been updated to clearly show the watersheds and drainage network. See attached model reports and flow summary table. The maximum flow from the minor channels is 39.3 cfs, so 40 cfs was used as the design flow for the minor channels. A terrace channel has been added on the north side of the channel at STA. 18+00. Runoff collects on the bench and is diverted to the North Channel. Another terrace channel was added on the north side of the North Channel, and this channel collects runoff from the lower bench and diverts it to the North Channel.

Comment 4. Upper South Channel, Riprap Quarry: Provide rationale for how the two-foot channel depth was determined and provide some discussion as to why plunge pools to dissipate the energy on each of the flat receiving benches were not included.

Response: The Upper South Channel was assessed using the minimum channel slope as freeboard is the governing design parameter (because no riprap will be placed on the bedrock channel). The table has been updated to show the minimum channel slope. Channel maximum slope remains "not applicable" because the channel will be excavated into bedrock rather than riprap lined, and thus does not require a calculation to determine riprap size.

The channel includes a series of cascades excavated into bedrock, and the field conditions confirm competent rock. The narrow bench width limits the area available for a plunge pool, and there would be negligible energy dissipation in a small plunge pool. This, combined with there being another chute immediately below the bench, results in the plunge pools providing essentially no benefit. There is a plunge pool located at the bottom of the riprap quarry area, and this pool will be used to dissipate energy before the water flows into the downstream channel.

Comment 5. Weed Control Plan: Provide a commitment to and a means of documenting observed locations (mapping perhaps) and treated/removed Myrtle spurge in order to track success in dealing with a List A noxious weed.

Response: Riverbend will maintain a map of the Myrtle spurge locations and keep a log of spraying and weed removal. The map will document the active and treated/removed Myrtle spurge locations.

TABLE 1: PIKEVIEW QUARRY RECLAMATION CHANNEL SUMMARY									
Channel	**100-yr, 24-hr Peak Flow (cfs)**	**100-yr, 24-hr Flow Depth (ft)**	**Channel Depth (ft)**	**Channel Lining**	**Bottom Width (ft)**	**Side Slope (xH:1V)**	**Rock D50 (inch)**	**Minimum Channel Slope (%)**	**Maximum Channel Slope (%)**
Cross Channel	114	1.0	2.0	Riprap	10	2	18	12	27
Lower North Channel	686	1.9	2.5	Riprap	20	2	18	14	14.5
Lower Middle North Channel	545	1.4	2.5	Riprap	20	2	18	13.8	14.5
Middle North Channel	492	1.3	2.5	Riprap	20	2	18	15.8	18.3
Upper Middle North Channel	492	1.5	2.5	Riprap	20	2	24	25.4	36
Upper North Channel	404	1.7	2.5	Riprap	20	2	6	15.3	19.7
Lower South Channel 1	141	1.0	2.3	Riprap	10	2	18	5.4	25.2
Lower South Channel 2	141	1.2	2.3	Riprap	10	2	12	10	12
Middle South Channel	59	1.0	2.0	Riprap	10	2	12	2.2	23.6
Upper South Channel	44	0.5	2.0	Bedrock	10	2	N/A	26.5	N/A
South Channel 1A	67	1.3	2.3	Riprap	10	2	6	0.8	5.6
C4 Channel	47	1.2	2.3	Riprap	10	2	6	0.4	17.9
Terrace	Up to 40	1.3	2.0	Riprap	0	2/10	3	2	2

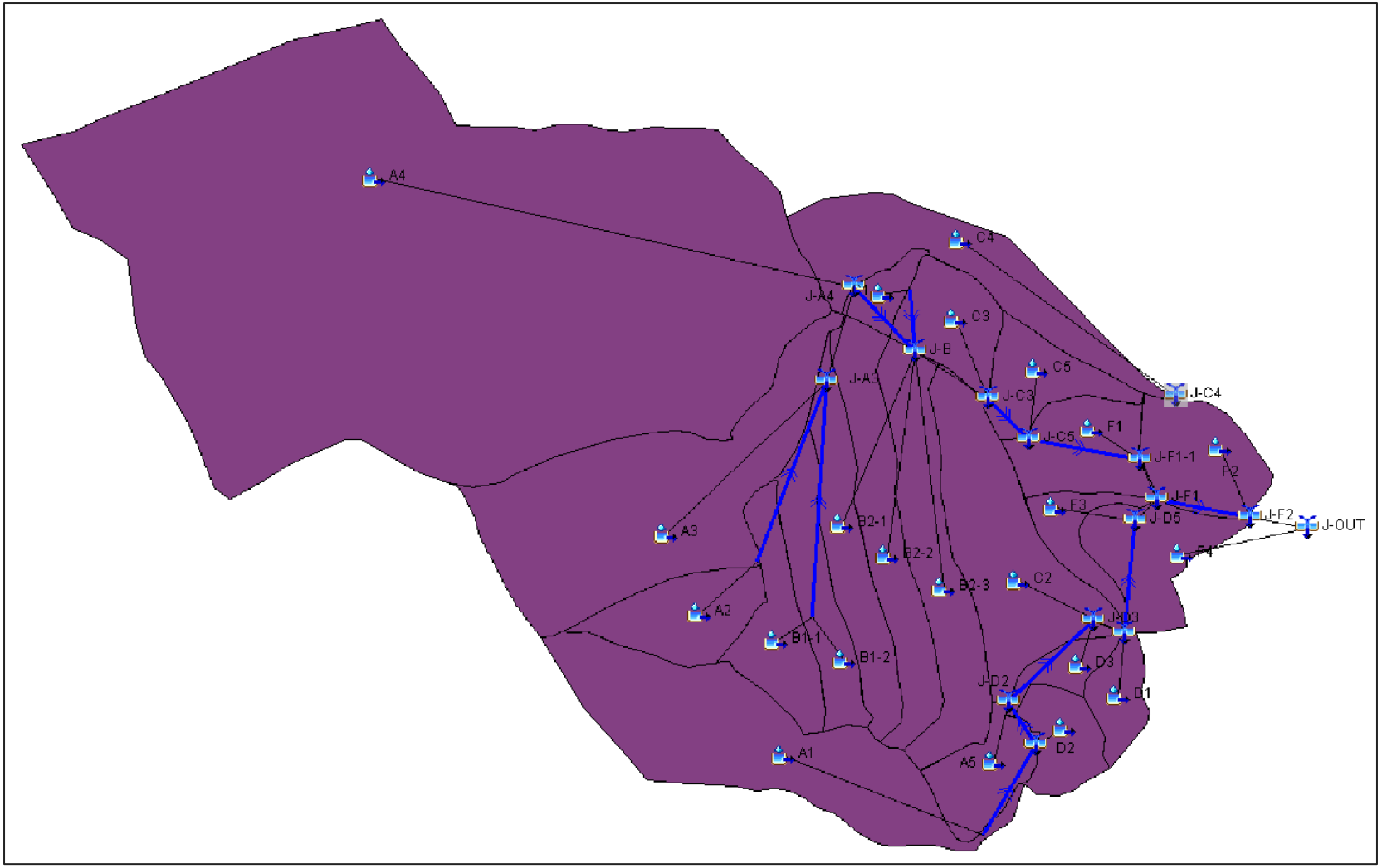
Notes:

- Major Channels were designed to accommodate at least a 0.5-ft freeboard
- Riprap was sized to have a minimum factor of safety of 1.3
- Bedrock may be encountered throughout the site and may provide erosion protection in more channel segments than indicated.

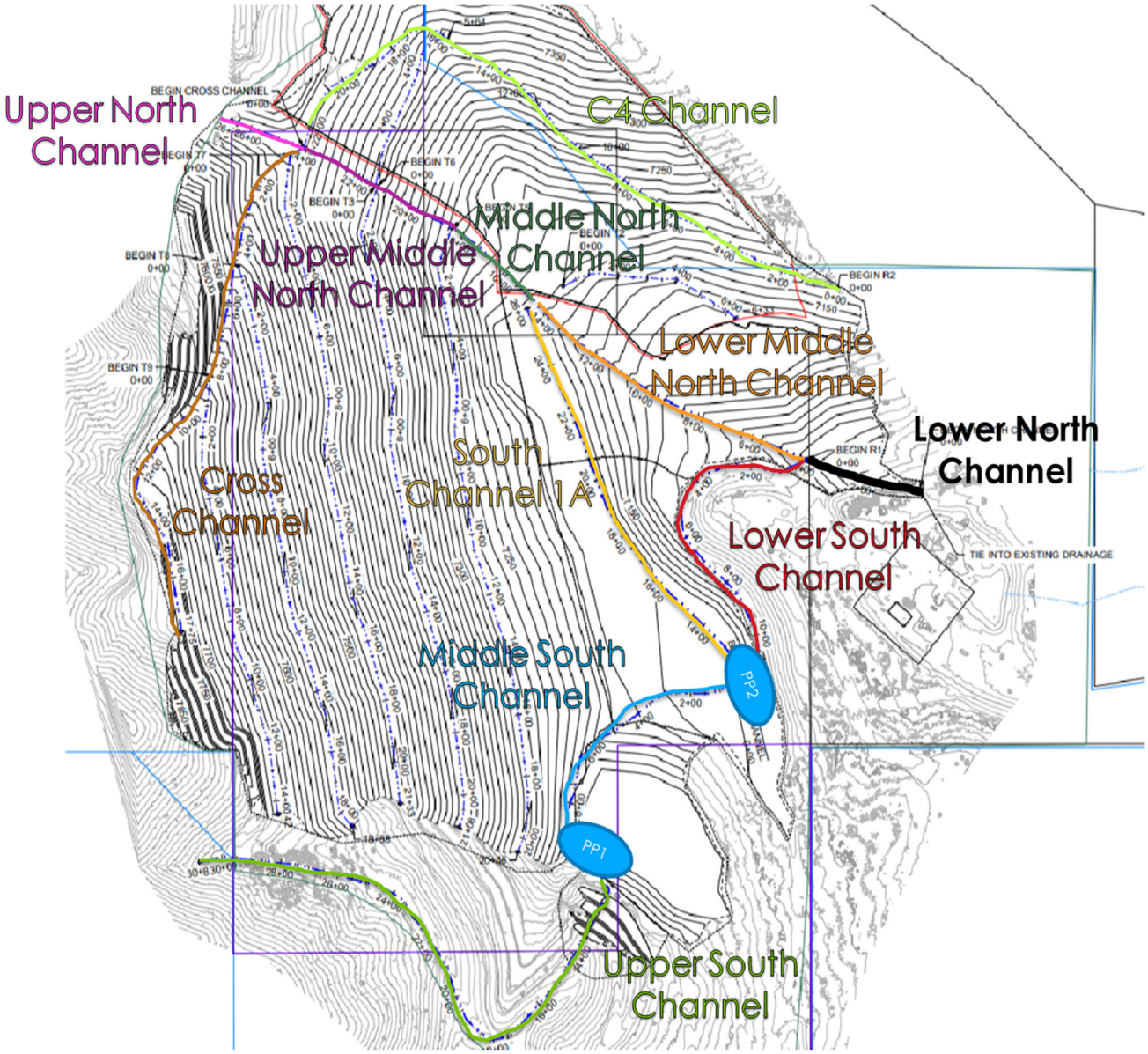
Reference: Technical Revision

HEC-HMS Model Reports

HEC-HMS Model



Major Channels

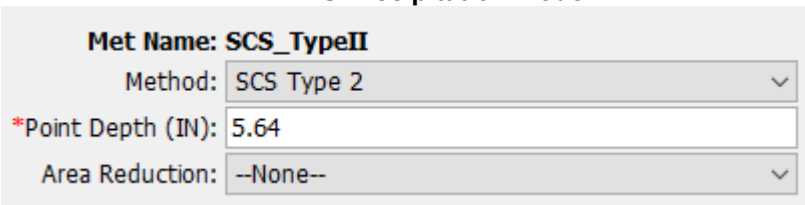


Reference: **Technical Revision**

HEC-HMS Subbasin Input Parameters

Subbasin	Area (ac)	Area (mi2)	Curve Number	Lag Time (min)
A1	25.4	0.040	63.7	22.2
A2	7.7	0.012	63.2	16.7
A3	31.8	0.050	64.4	20.7
A4	161.0	0.252	63.5	19.7
A5	5.7	0.009	74.0	5.4
B1-1	8.0	0.013	72.1	7.9
B1-2	8.1	0.013	72.1	8.2
B2-1	10.3	0.016	73.9	10.5
B2-2	12.0	0.019	73.0	11.3
B2-3	11.4	0.018	73.9	12.2
C1	2.3	0.004	73.8	3.6
C2	17.4	0.027	74.0	7.5
C3	6.4	0.010	71.6	10.4
C4	14.3	0.022	72.0	9.3
C5	5.9	0.009	71.6	10.7
D1	3.5	0.005	73.0	20.7
D2	4.6	0.007	73.1	33.5
D3	2.4	0.004	73.4	8.1
F1	7.7	0.012	73.0	10.4
F2	8.0	0.013	72.1	9.7
F3	3.6	0.006	73.0	8.1
F4	7.9	0.012	73.0	12.3

HEC-HMS Precipitation Model



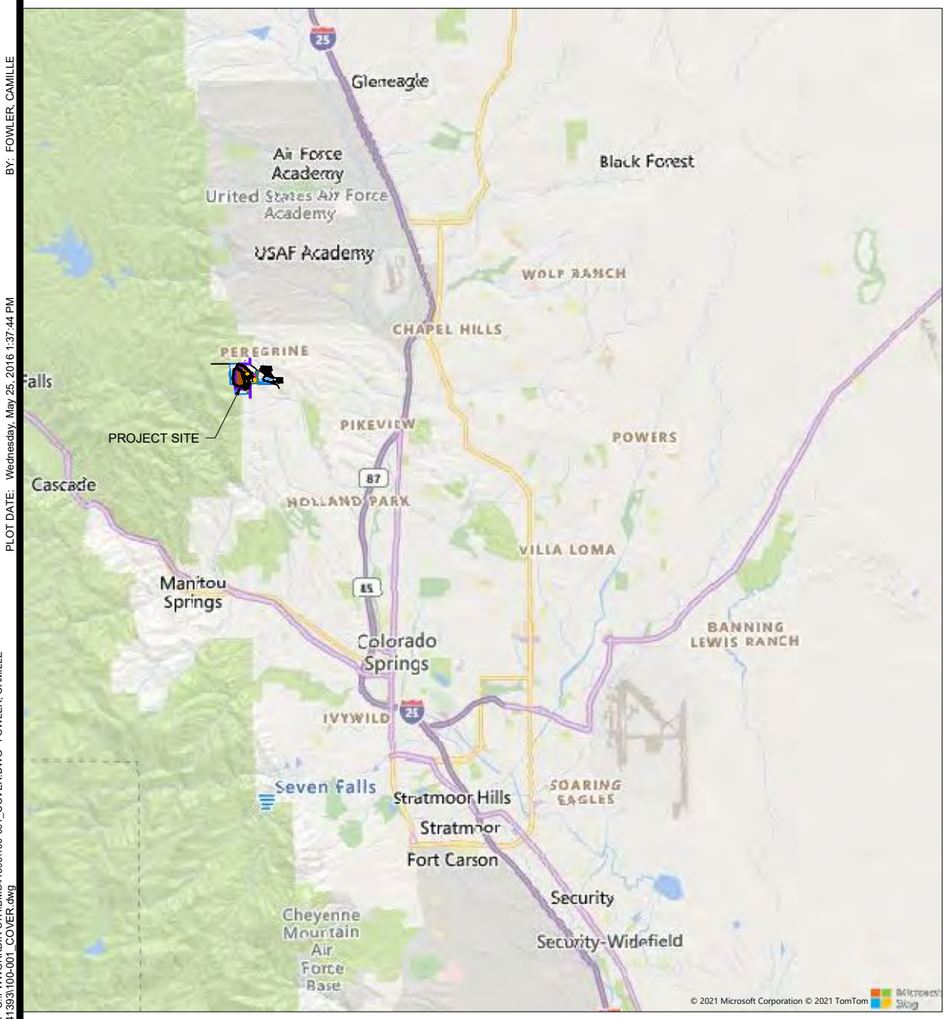
Reference: **Technical Revision**

HEC-HMS Model Results

Hydrologic Element	Drainage Area (mi2)	Peak Discharge (cfs)	Time of Peak	Volume (acre-ft)
A1	0.040	44.0	01Jan2000, 12:15	5.0
A2	0.012	15.5	01Jan2000, 12:10	1.5
A3	0.050	58.6	01Jan2000, 12:15	6.4
A4	0.252	293.7	01Jan2000, 12:15	31.6
A5	0.009	23.5	01Jan2000, 12:00	1.5
B1-1	0.013	28.7	01Jan2000, 12:00	2.0
B1-2	0.013	28.4	01Jan2000, 12:00	2.0
B2-1	0.016	35.0	01Jan2000, 12:05	2.7
B2-2	0.019	39.3	01Jan2000, 12:05	3.1
B2-3	0.018	36.7	01Jan2000, 12:05	3.0
C1	0.004	9.9	01Jan2000, 11:55	0.6
C2	0.027	67.2	01Jan2000, 12:00	4.6
C3	0.010	20.5	01Jan2000, 12:05	1.6
C4	0.022	47.4	01Jan2000, 12:05	3.6
C5	0.009	19.0	01Jan2000, 12:05	1.5
D1	0.005	8.3	01Jan2000, 12:15	0.9
D2	0.007	8.1	01Jan2000, 12:25	1.2
D3	0.004	8.9	01Jan2000, 12:00	0.6
F1	0.012	25.7	01Jan2000, 12:05	2.0
F2	0.013	26.4	01Jan2000, 12:05	2.0
F3	0.006	12.9	01Jan2000, 12:00	0.9
F4	0.012	24.8	01Jan2000, 12:05	2.0
J-A3	0.087	112.8	01Jan2000, 12:05	12.0
J-A4	0.338	400.8	01Jan2000, 12:10	43.6
J-B	0.395	491.8	01Jan2000, 12:10	53.0
J-C3	0.405	508.2	01Jan2000, 12:10	54.6
J-C4	0.022	47.4	01Jan2000, 12:05	3.6
J-C5	0.414	521.8	01Jan2000, 12:10	56.0
J-D1	0.047	50.6	01Jan2000, 12:15	6.2
J-D2	0.056	55.6	01Jan2000, 12:15	7.7
J-D3	0.060	58.8	01Jan2000, 12:05	8.3
J-D4	0.092	124.8	01Jan2000, 12:05	13.8
J-D5	0.098	141.3	01Jan2000, 12:05	14.7
J-F1	0.524	664.7	01Jan2000, 12:10	72.7
J-F1-1	0.426	544.6	01Jan2000, 12:10	58.0
J-F2	0.536	686.1	01Jan2000, 12:10	74.7
J-OUT	0.549	708.2	01Jan2000, 12:10	76.7

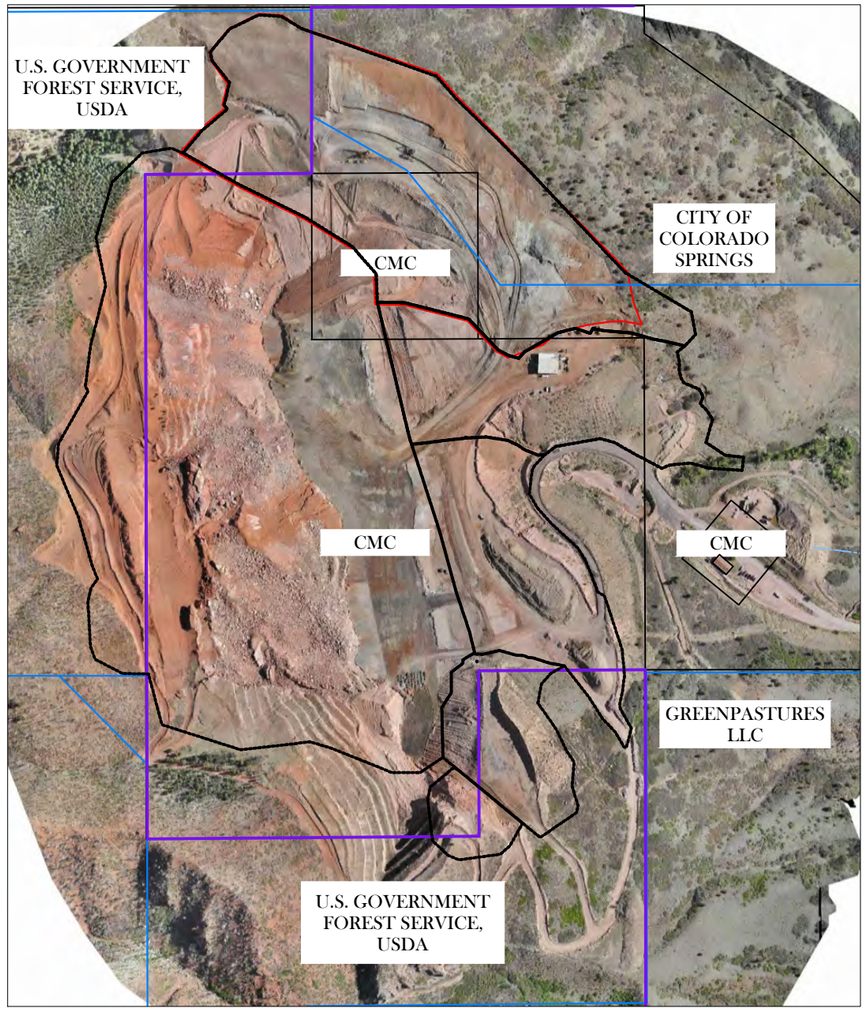
PIKEVIEW QUARRY RECLAMATION PROJECT

NOVEMBER 2023



SITE VICINITY MAP

NOT TO SCALE



SITE MAP

0 250 500

SCALE IN FEET

CONTOUR INTERVAL = N/A

SHEET NUMBER	SHEET TITLE
100-001	COVER SHEET
100-002	GENERAL NOTES AND ABBREVIATIONS
100-003	SITE PLAN- AERIAL
100-004	PROJECT SITE PLAN EXISTING CONTOURS AND CONTROL POINTS
100-005	OVERAL GRADING PLAN
100-008	PARCEL AND OWNERSHIP PLAN
200-001	BUTTRESS AREA GRADING PLAN
200-002	BUTTRESS AREA SECTIONS
200-004	NORTHERN BORROW AREA GRADING PLAN
200-005	NORTHERN BORROW AREA SECTIONS
200-007	LOWER BORROW AREA GRADING PLAN
200-008	LOWER BORROW AREA SECTIONS
200-010	SOUTHERN BORROW AREA GRADING PLAN
200-011	SOUTHERN BORROW AREA SECTIONS
300-001	OVERALL CHANNEL PLAN
300-002	CROSS CHANNEL PLAN AND PROFILE
300-003	NORTH CHANNEL PLAN AND PROFILE
300-004	SOUTH CHANNEL PLAN AND PROFILE
300-005	TYPICAL CHANNEL DETAILS
300-006	TRANSITION ZONE NORTH CHANNEL
400-001	SEEDING PLAN
400-002	REVEGETATION PLAN
500-001	EXISTING PRISM LOCATIONS
500-002	RECLAMATION PRISM LOCATIONS

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T. LEIDICH

DRAWN J. VERNER

CHECKED P. KOS

Stantec

PROJECT: PIKEVIEW QUARRY RECLAMATION PROJECT

COVER SHEET

SHEET: 100-001

JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: FOWLER, CAMILLE

Thursday, July 13, 2023 2:14:15 PM C:\PWWORKDIR-STA\DMS\41393\100-001_COVER.DWG FOWLER, CAMILLE

DWG FILE: C:\pwworkdir-sta\dms\41393\100-001_COVER.dwg

GENERAL

1. THE CONTRACTOR WILL REFER TO THE CONSTRUCTION DRAWINGS, PROJECT MANUAL, CONTRACT, PERMITS, PROJECT DOCUMENTS (MEETING MINUTES, PUNCH LISTS, ETC.) FOR COMPLETE INFORMATION ABOUT THE REQUIRED WORK. ANY ONE OF THESE PARTS OF THE "CONSTRUCTION DOCUMENTS" MAY NOT CONTAIN ALL OF THE INFORMATION REQUIRED TO COMPLETE THE WORK.
2. FOR ANY INCONSISTENCIES ENCOUNTERED IN THE PLAN SET OR BETWEEN PLAN AND SPECIFICATION, CONTRACTOR SHALL POINT THESE OUT TO ENGINEER AND SEEK FURTHER DIRECTION/RESOLUTION.
3. PRIOR TO CLEARING AND GRUBBING, CONTRACTOR SHALL STAKE OUT LIMITS OF DISTURBANCE.
4. CONTRACTOR MAY ONLY EXTEND LIMITS OF DISTURBANCE WITH THE WRITTEN APPROVAL OF ENGINEER.
5. CONTRACTOR SHALL MINIMIZE IMPACTS TO ADJACENT TREES AND VEGETATION.
6. GRADING TO ACHIEVE SPECIFIED CONTOURS AND MINIMUM DIMENSIONS SHOWN
   - AS GRADES ARE FINAL AND INCLUDE TOPSOIL AND CHANNEL ARMORING
   - CHANNEL DEPTH/WIDTH, BANK SLOPE, CROSS SECTIONAL AREA SHALL BE WITHIN 0.1' OF DESIGN.
   - ALL GRADING WILL BE WITHIN 1.0' OF THE REQUIRED HORIZONTAL LOCATION(S) SHOWN ON THE PLANS AND TYPICAL SECTIONS UNLESS OTHERWISE SPECIFIED.
7. ALL DIMENSIONS ARE IN FEET UNLESS NOTED OTHERWISE.
8. SLOPES BETWEEN PROPOSED BENCHES AND EXISTING GROUND SHALL BE GRADED TO PROVIDE A SMOOTH AND NATURAL TRANSITION.
9. NATURAL VARIABILITY AT THE SITE MAY REQUIRE ADAPTATION OF THE DRAWINGS, NOTES, QUANTITIES, ETC., AND WILL NOT NECESSARILY CONSTITUTE A CHANGE IN THE WORK. ANY REQUESTED CHANGE IN PRICE WILL BE IDENTIFIED, SPECIFIED IN WRITING, AND APPROVED BY THE OWNER PRIOR TO THE START OF THE CHANGE.
10. THE QUANTITY OF ANY ITEM SHOWN ON THE DRAWINGS OR PROJECT MANUAL MAY BE ADJUSTED BY THE OWNER'S REPRESENTATIVE BASED ON FIELD CONDITIONS AT THE TIME THE WORK IS PERFORMED AND PER APPROVAL OF THE ENGINEER AND WILL NOT NECESSARILY CONSTITUTE A CHANGE IN THE WORK.
11. EXISTING SITE CONDITIONS SHOWN ON THE PLANS ARE BASED ON AERIAL IMAGES AND FIELD SURVEY DATA 05/31/2022, AND AS SUCH DOES NOT REFLECT CHANGES TO THE SITE THAT HAVE OCCURRED SINCE THEY WERE PERFORMED.
12. AFTER CONSTRUCTION, ACCESS ROADS LEADING TO THE PROJECT SITE SHALL BE RESTORED TO AS GOOD OR BETTER CONDITION THAN BEFORE CONSTRUCTION.
13. EXISTING TOPOGRAPHY AND AERIAL PHOTOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/31/2022.
14. SITE COORDINATE SYSTEM - STATE PLAN, COLORADO CENTRAL, NAD83 (NSRS2011).

UTILITIES

1. NO SUBSURFACE PLANS ARE AVAILABLE FOR THIS PROJECT. THE CONTRACTOR SHALL MAKE THEIR OWN INVESTIGATION TO DETERMINE SUBSURFACE CONDITIONS.
2. THE UTILITY/INFRASTRUCTURE FACILITIES/INFORMATION SHOWN ON THESE PLANS IS PROVIDED FOR INFORMATIONAL PURPOSES. COMPLIANCE WITH THESE NOTES AND PLANS DOES NOT CONSTITUTE RESPONSIBILITY BY THE OWNER, THEIR REPRESENTATIVE(S), AND/OR THE UTILITY/INFRASTRUCTURE FACILITY OWNER.
3. THE CONTRACTOR IS RESPONSIBLE FOR DIRECT COORDINATION WITH UTILITY/INFRASTRUCTURE FACILITY OWNERS AND SHALL NOTIFY THE OWNER AND ENGINEER OF ANY COORDINATION ACTIVITIES.
4. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THE ACTUAL LOCATION OF UTILITY AND INFRASTRUCTURE FACILITIES WITHIN THE PROJECT LIMITS INCLUDING PROJECT ACCESS, STAGING, AND CONSTRUCTION AREAS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING DAMAGE TO OR INTERFERENCE WITH EXISTING POWER LINES, COMMUNICATIONS FACILITIES, ROADWAYS, BURIED CABLES, AND OTHER FACILITIES ADJACENT TO OR CROSSING THE PROJECT AREA, FROM CONSTRUCTION ACTIVITIES RELATED TO THE PROPOSED WORK.
6. ANY REMEDIAL ACTION, RESULTING FROM THE CONSTRUCTION ACTIVITIES, REQUIRED BY THE UTILITY/INFRASTRUCTURE OWNER(S), SHALL BE AT THE CONTRACTOR'S SOLE COST AND EXPENSE.

SWPPP CONSTRUCTION NOTES

1. CONTRACTOR SHALL DEVELOP, OBTAIN, AND MANAGE SWPPP.
2. CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT, OR ROCK TRACKED FROM THE EXCAVATED AREA.
3. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
4. CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER.
   - DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
   - AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
   - STRUCTURAL CONTROL MEASURES.
   - LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.
5. CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND/OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES.
6. PRIOR TO ANY CONSTRUCTION ACTIVITY, INCLUDING CLEARING AND GRUBBING, BMPS SHALL BE ESTABLISHED PER SWPPP.

HEALTH AND SAFETY

1. IN ALL CONSTRUCTION ACTIVITIES SAFETY OF LIFE SHALL OUTWEIGH ALL OTHER CONSIDERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF THEIR EMPLOYEES, THEIR SUB-CONTRACTED EMPLOYEES AND OWNER'S REPRESENTATIVE INSPECTORS.
2. ALL OPERATIONS SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S (OSHA) "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION" AS WELL AS ANY APPLICABLE LOCAL, STATE, OR FEDERAL SAFETY REQUIREMENTS.
3. THE CONTRACTOR IS REQUIRED TO SUBMIT A "SAFETY PLAN" IN WRITING TO THE OWNER FOR REVIEW FIFTEEN (15) BUSINESS DAYS PRIOR TO ANY SITE ACTIVITY. THE OWNER IS NOT REQUIRED TO REVIEW AND/OR APPROVE THE CONTRACTOR'S SAFETY PLAN.
4. THE OWNER'S REPRESENTATIVE MAY REQUEST ADDITIONAL SAFETY MEASURES AT THAT TIME AND/OR ANY TIME THROUGHOUT THE DURATION OF THE PROJECT.
5. THE CONTRACTOR SHALL POST A COPY OF ALL APPLICABLE SAFETY RULES AND REGULATIONS ON-SITE. THE CONTRACTOR SHALL MAINTAIN A COPY OF THE "SAFETY PLAN" ON-SITE THROUGHOUT CONSTRUCTION.
6. THE CONTRACTOR SHALL CONDUCT AN ON-SITE PRE-CONSTRUCTION SAFETY MEETING FOR ALL EMPLOYEES AND SUBCONTRACTOR EMPLOYEES WORKING ON THE PROJECT SITE. THE CONTRACTOR SHALL REVIEW THE SAFETY PLAN AT THE PRE-CONSTRUCTION SAFETY MEETING. THE OWNER, ENGINEER, AND/OR FACILITY OWNER(S) SHALL BE NOTIFIED TEN (10) CALENDAR DAYS PRIOR TO THE PRE-CONSTRUCTION SAFETY MEETING SO THAT THEIR REPRESENTATIVE(S) MAY ATTEND.
7. WORK DONE ADJACENT TO UTILITIES/FACILITIES/HIGHWAYS SHALL COMPLY WITH SAFETY AND CONSTRUCTION PRACTICES REQUIRED BY THE UTILITY/FACILITY/HIGHWAY DEPARTMENT, IN ADDITION TO THOSE REQUIRED BY LOCAL, STATE AND FEDERAL LAWS.
8. THE CONTRACTOR SHALL HOLD SAFETY MEETINGS WITH ALL EMPLOYEES ON A REGULAR BASIS AND PROVIDE THE OWNER'S REPRESENTATIVE WITH A COPY OF THE MEETING MINUTES.
9. THE CONTRACTOR SHALL MAINTAIN ON-SITE A "SAFETY SIGN-IN SHEET" OF ALL EMPLOYEES AND SUB-CONTRACTOR EMPLOYEES ATTENDING THE PRE-CONSTRUCTION SAFETY MEETING. ANY CONTRACTOR AND SUB-CONTRACTOR EMPLOYEES ADDED DURING THE DURATION OF THE PROJECT SHALL ATTEND AN "ON-SITE" CONSTRUCTION SITE SAFETY MEETING PRIOR TO
10. STARTING WORK. IN ADDITION, THEIR NAMES SHALL BE ADDED TO THE "SAFETY SIGN-IN SHEET".
11. A VISITOR "SIGN-IN" LOG SHALL BE KEPT ON-SITE BY THE CONTRACTOR. THE LOG SHALL AT A MINIMUM IDENTIFY THE NAME, ORGANIZATION, DATE, TIME OF ARRIVAL AND THE TIME OF DEPARTURE.

LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- EXISTING ROAD
- PROPOSED ROAD
- MAIN CHANNEL
- MINOR CHANNEL
- ISOPACH CUT CONTOURS
- ISOPACH FILL CONTOURS
- EXISTING ROADS
- EXISTING BUILDING
- EXISTING POWER LINES
- EXISTING STREAMS
- EXISTING TOP SOIL STOCKPILE
- CDRMS PERMIT BOUNDARY
- CITY OF COLORADO SPRINGS PERMIT BOUNDARY
- 7850-1 RECLAIMED PRISM LOCATION
- 7850-1 EXISTING PRISM LOCATION
- USFS LAND SEED MIX (20 AC)
- PRIVATE SURFACE SEED MIX (110 AC)
- HIGHWALL (6.2 AC)
- PONDEROSA PINE & DOUGLAS FIR (30.39 AC) (30 STEMS PER AC.REVEGETATED) (43 STEMS/AC. PLANTED)
- ROCKY MOUNTAIN JUNIPER & GRASS (37.52 AC) (21-42 TREES REVEGETATED) (30-60 TREES PLANTED)
- MTN MAHOGANY/GAMBEL OAK (69.40 AC)
- LOWER BORROW AREA ADDITIONAL MATERIAL
- PRIME DESIGNATED WORK AREA
- PARCEL LINE
- USFS PROPERTY BOUNDARY

COLORADO LICENSED
PAUL J. KOS
40848
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PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT: PIKEVIEW QUARRY RECLAMATION PROJECT
GENERAL NOTES AND ABBREVIATIONS

SHEET: 100-002
JobNumber

U.S. GOVERNMENT FOREST SERVICE, USDA

NORTH BORROW AREA

SEE SHEET 200-005

SHOP AREA

SEE SHEET 200-008

BUTTRESS CUT/FILL AREA

LOWER BORROW AREA

LOWER BORROW AREA (ADDITIONAL MATERIAL IF NECESSARY)

U.S. GOVERNMENT FOREST SERVICE, USDA

SEE SHEET 200-001

SEE SHEET 200-011

SOUTH BORROW AREA

RIPRAP QUARRY AREA

SEE SHEET 200-014

U.S. GOVERNMENT FOREST SERVICE, USDA

0 200 400
SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT

LEGEND

- EXISTING CONTOURS
- AREA BOUNDARY
- EXISTING ROADS
- EXISTING BUILDING
- EXISTING POWER LINES
- EXISTING STREAMS
- EXISTING TOP SOIL STOCKPILE
- USFS PROPERTY BOUNDARY
- CDRMS PERMIT BOUNDARY
- CITY OF COLORADO SPRINGS PERMIT BOUNDARY
- LOWER BORROW AREA ADDITIONAL MATERIAL
- PRIME DESIGNATED WORK AREA
- PARCEL LINE

NOTES

1. EXISTING TOPOGRAPHY AND AERIAL PHOTOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.

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PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT: PIKEVIEW QUARRY RECLAMATION PROJECT

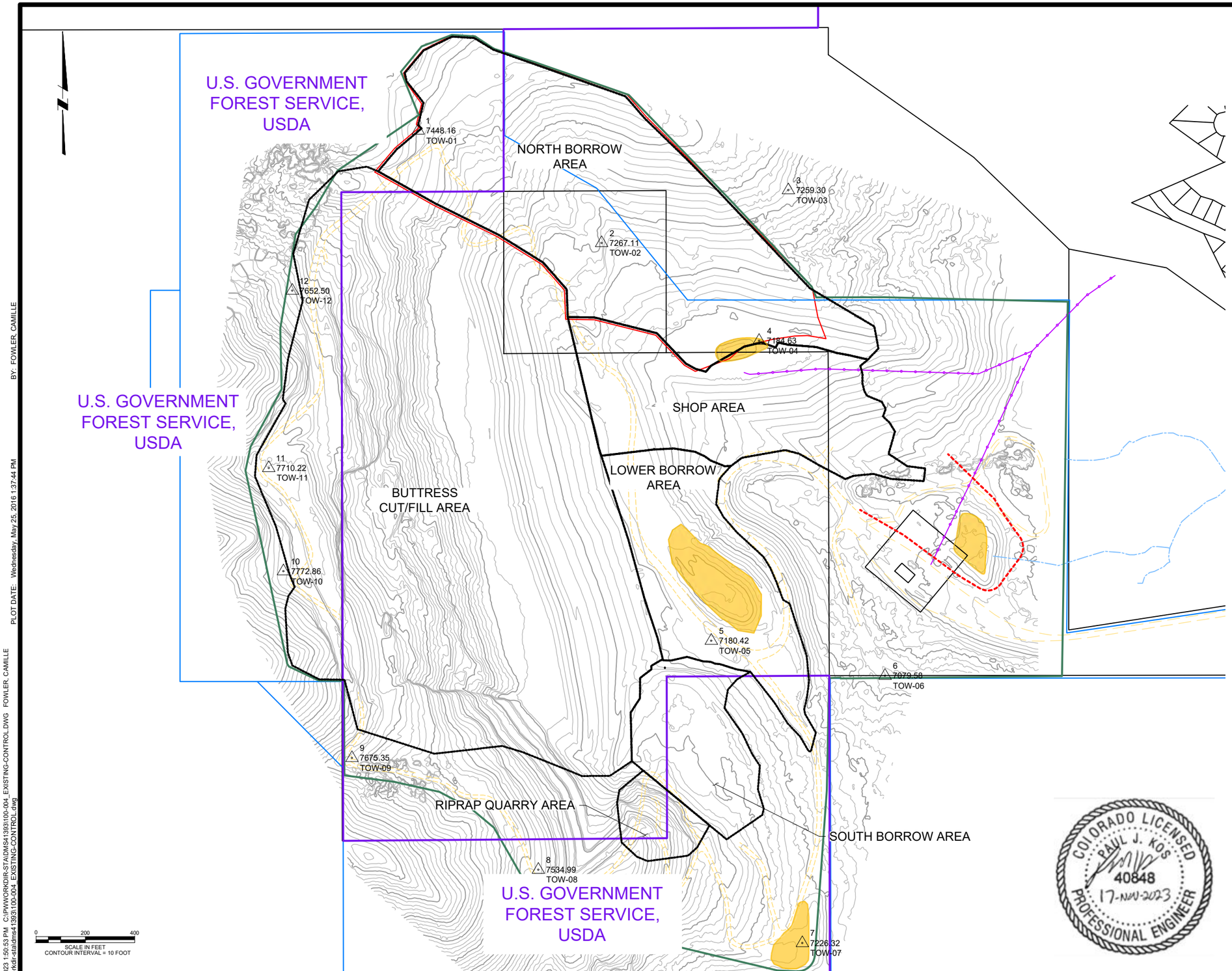
SITE PLAN - AERIAL

SHEET: 100-003

JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: FOWLER, CAMILLE

Thursday, July 13, 2023 1:49:01 PM C:\PWWORKDIR-STA\DMS413931\100-003_SITEPLAN.DWG FOWLER, CAMILLE
DWG FILE: C:\pwworkdir-sta\dms413931\100-003_SITEPLAN.dwg



LEGEND

- EXISTING CONTOURS
- AREA BOUNDARY
- EXISTING ROADS
- EXISTING BUILDING
- EXISTING POWER LINES
- EXISTING STREAMS
- EXISTING TOP SOIL STOCKPILE
- CDRMS PERMIT BOUNDARY
- CITY OF COLORADO SPRINGS PERMIT BOUNDARY
- LOWER BORROW AREA ADDITIONAL MATERIAL
- PRIME DESIGNATED WORK AREA
- PARCEL LINE
- USFS PROPERTY BOUNDARY

NOTES

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.
2. DESIGN TOPOGRAPHY IS THE FINAL GRADE FOR TOPSOIL

CONTROL POINT TABLE

POINT	NORTHING	EASTING	ELEVATION (FT)	DESCRIPTION
1	1403340.35	3172780.52	7448.16	TOW-01
2	1402884.75	3173524.61	7267.11	TOW-02
3	1403098.91	3174281.57	7259.30	TOW-03
4	1402487.60	3174162.95	7184.63	TOW-04
5	1401271.01	3173969.48	7180.42	TOW-05
6	1401129.05	3174674.10	7079.58	TOW-06
7	1400045.02	3174338.42	7226.32	TOW-07
8	1400341.98	3173267.89	7534.99	TOW-08
9	1400795.80	3172512.04	7675.35	TOW-09
10	1401552.76	3172233.99	7772.86	TOW-10
11	1401971.86	3172174.20	7710.22	TOW-11
12	1402691.11	3172269.59	7652.50	TOW-12

COLORADO LICENSED PAUL J. KOS 40848 17-NOV-2023 PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

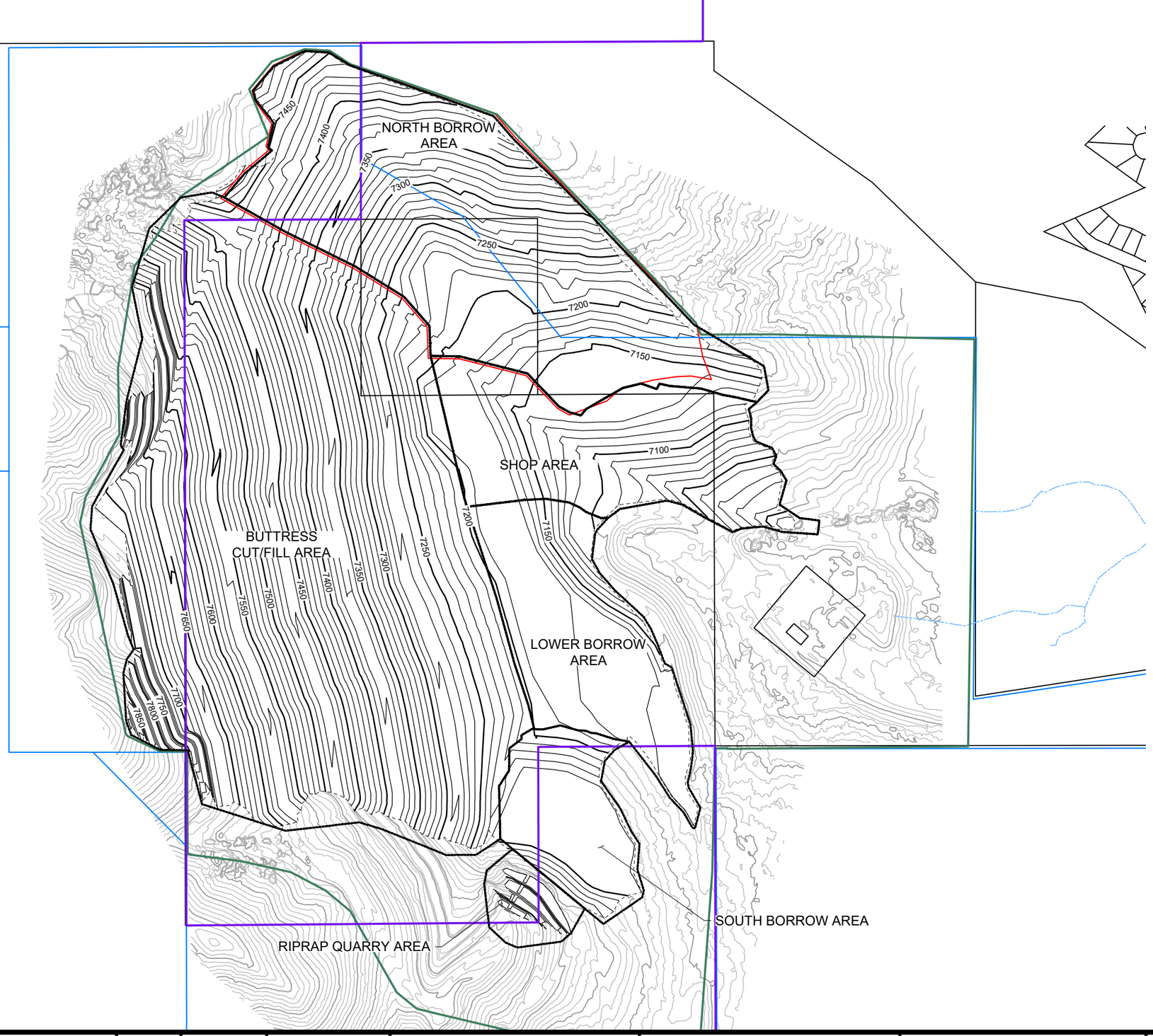
DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT: PIKEVIEW QUARRY RECLAMATION PROJECT
PROJECT SITE PLAN, EXISTING CONTOURS AND CONTROL POINTS

SHEET: 100-004
JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: FOWLER, CAMILLE
Thursday, July 13, 2023 1:50:53 PM C:\PWWORKDIR-STA\DMS4\1393\100-004_EXISTING-CONTROL.DWG FOWLER, CAMILLE
DWG FILE: C:\pwworkdir-sta\dms4\1393\100-004_EXISTING-CONTROL.dwg



LEGEND

- EXISTING CONTOURS
- PROPOSED DESIGN CONTOURS
- AREA BOUNDARY
- EXISTING STREAMS
- CDRMS PERMIT BOUNDARY
- CITY OF COLORADO SPRINGS PERMIT BOUNDARY
- USFS PROPERTY BOUNDARY
- PRIME DESIGNATED WORK AREA
- PARCEL LINE

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.

0 200 400
SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
OVERALL GRADING PLAN

SHEET
100-005
JobNumber

Monday, July 10, 2023 6:04:37 PM C:\PWWORKDIR\DMS\41393\100-005_OVERALL GRADING PLAN.DWG VERNER, JUSTIN
DWG FILE: C:\pwworkdir\dms\41393\100-005_OVERALL GRADING PLAN.dwg
PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: VERNER, JUSTIN

U.S. GOVERNMENT FOREST SERVICE, USDA

CMC

CITY OF COLORADO SPRINGS

CITY OF COLORADO SPRINGS

CMC

CMC

GREENPASTURES LLC

U.S. GOVERNMENT FOREST SERVICE, USDA

0 200 400
SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT

LEGEND

- EXISTING CONTOURS
- AREA BOUNDARY
- PERMIT BOUNDARY
- CITY OF COLORADO SPRINGS PERMIT BOUNDARY
- PRIME DESIGNATED WORK AREA
- USFS PROPERTY BOUNDARY
- PARCEL LINE

NOTES

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.

COLORADO LICENSED PAUL J. KOS 40848 17-MAY-2023 PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

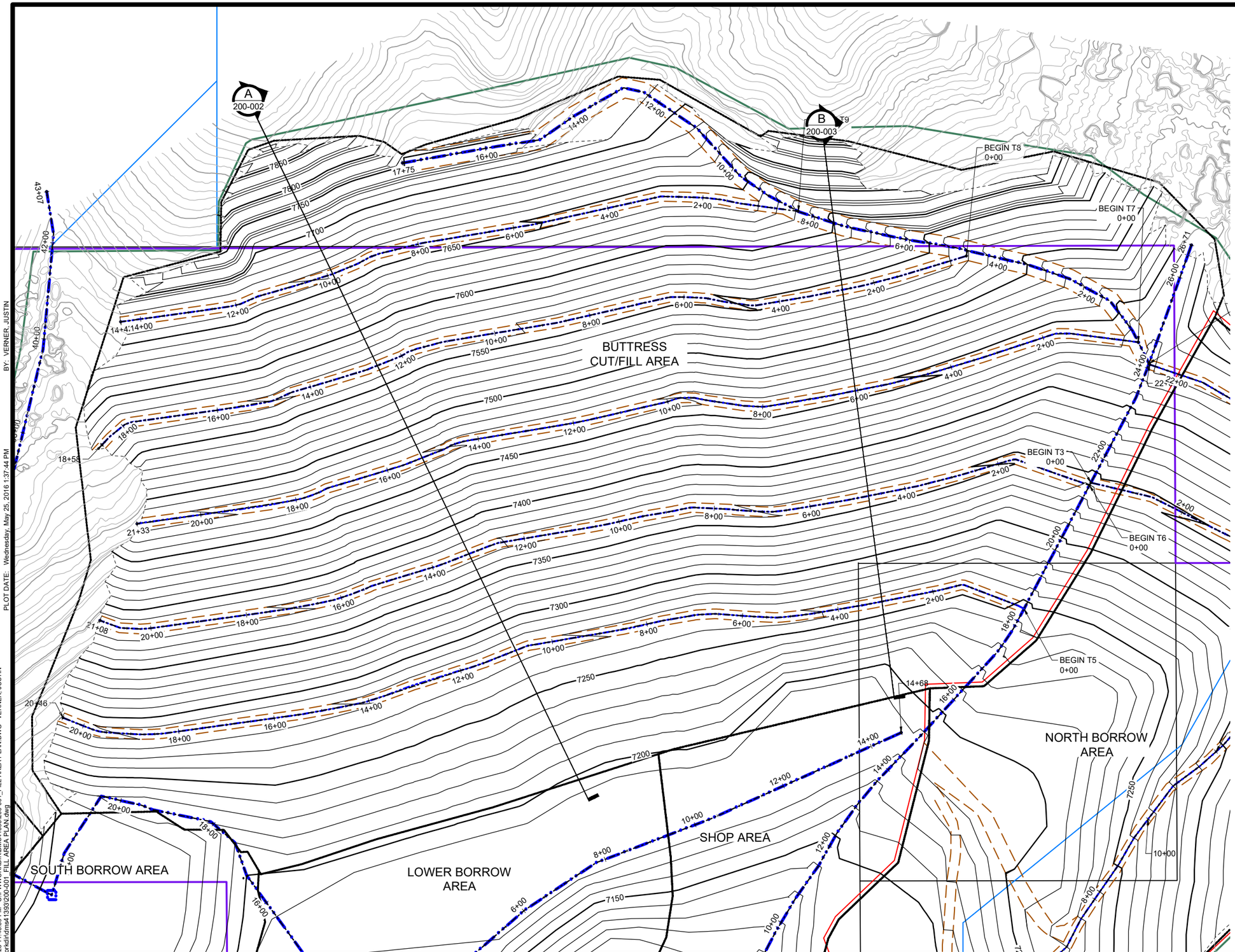
PROJECT: PIKEVIEW QUARRY RECLAMATION PROJECT

PARCEL AND OWNERSHIP PLAN

SHEET: 100-008 JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: VERNER, JUSTIN

Monday, July 10, 2023 11:10:51 PM C:\PWWORKDIR\DMS41393\100-008_PARCEL.DWG VERNER, JUSTIN
DWG FILE: C:\pwworkdir\dms41393\100-008_PARCEL.dwg



LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- ROAD
- MAIN CHANNEL
- MINOR CHANNEL
- EXISTING POWER LINES
- CDRMS PERMIT BOUNDARY
- CITY OF COLORADO SPRINGS PERMIT BOUNDARY
- USFS PROPERTY BOUNDARY

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

0 100 200
SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

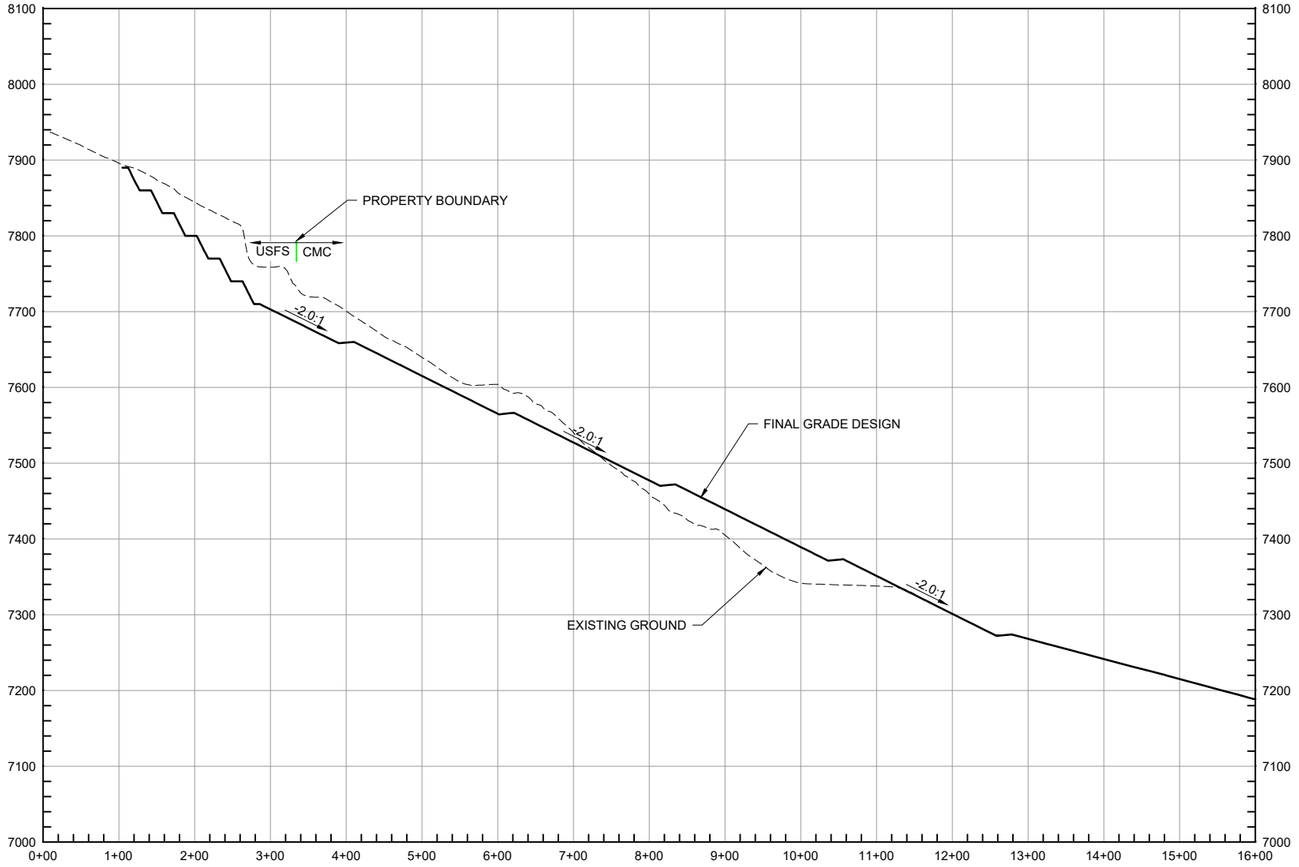
DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
BUTTRESS AREA GRADING PLAN

SHEET
200-001
JobNumber

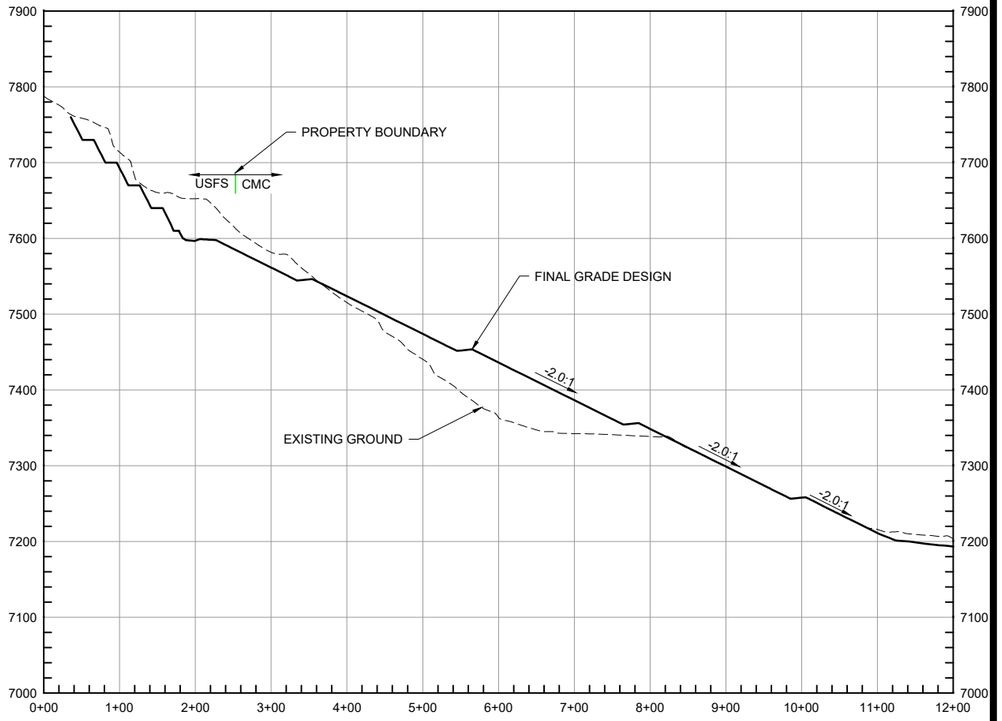
PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: VERNER, JUSTIN
DWG FILE: C:\pwworkdir\dms41393\200-001_FILL AREA PLAN.DWG VERNER, JUSTIN
Monday, July 10, 2023 11:48:59 PM C:\PWWORKDIR\DMS41393\200-001_FILL AREA PLAN.dwg



A SECTION
200-001

HORZ 0 100 200
VERT 0 100 200
SCALE IN FEET

1. DESIGN SURFACE SHOWN IS FINAL GRADE SUBGRADE IS 6" LOWER.



B SECTION
200-001

HORZ 0 100 200
VERT 0 100 200
SCALE IN FEET

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

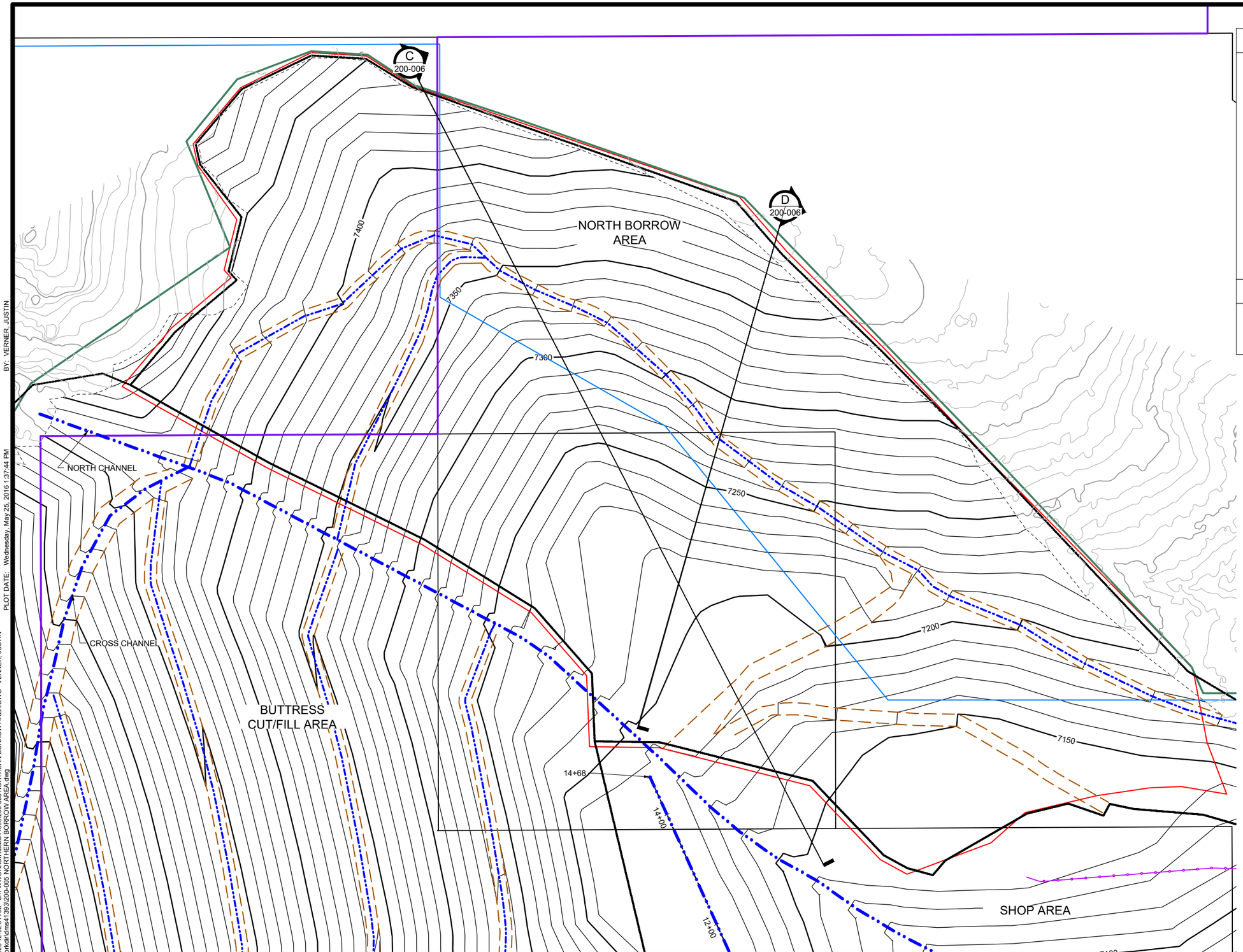
DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
OVERALL DRAINAGE PLAN

SHEET
200.002
JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: VERNER, JUSTIN
DWG FILE: C:\pwworkd\rdms41393\200-001_FILL AREA PLAN.DWG VERNER, JUSTIN
Monday, July 10, 2023 11:48:14 PM C:\PWWORKD\RDMS41393\200-001_FILL AREA PLAN.dwg



LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- PROPOSED ROAD
- MAIN CHANNEL
- MINOR CHANNEL
- USFS PROPERTY BOUNDARY

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

N

0 80 160
SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

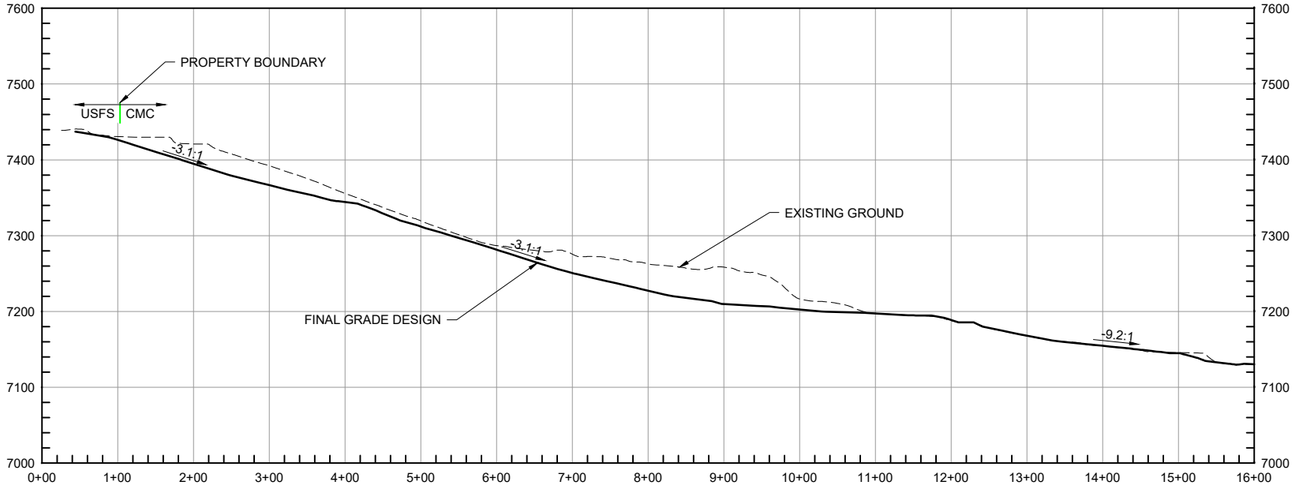
DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
NORTHERN BORROW AREA GRADING PLAN

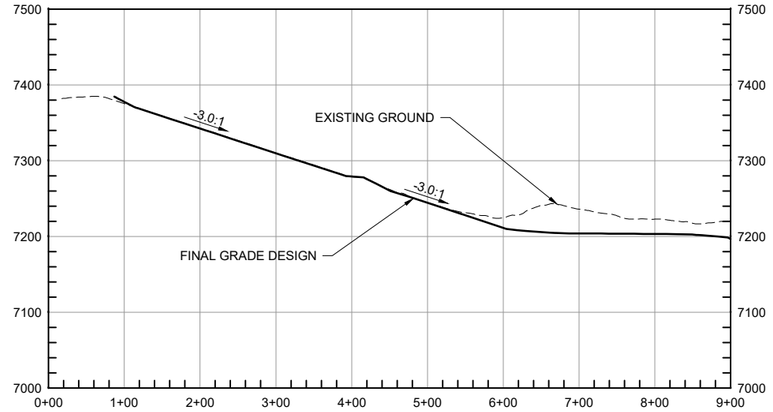
SHEET
200-004
JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: VERNER, JUSTIN
DWG FILE: C:\pwworkdir\dms41393\200-005 NORTHERN BORROW AREA.dwg
Tuesday, July 11, 2023 12:02:01 AM C:\PWWORKDIR\DMS41393\200-005 NORTHERN BORROW AREA.DWG VERNER, JUSTIN



C SECTION
200-005

HORZ 0 100 200
VERT 0 100 200
SCALE IN FEET



D SECTION
200-005

HORZ 0 100 200
VERT 0 100 200
SCALE IN FEET

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

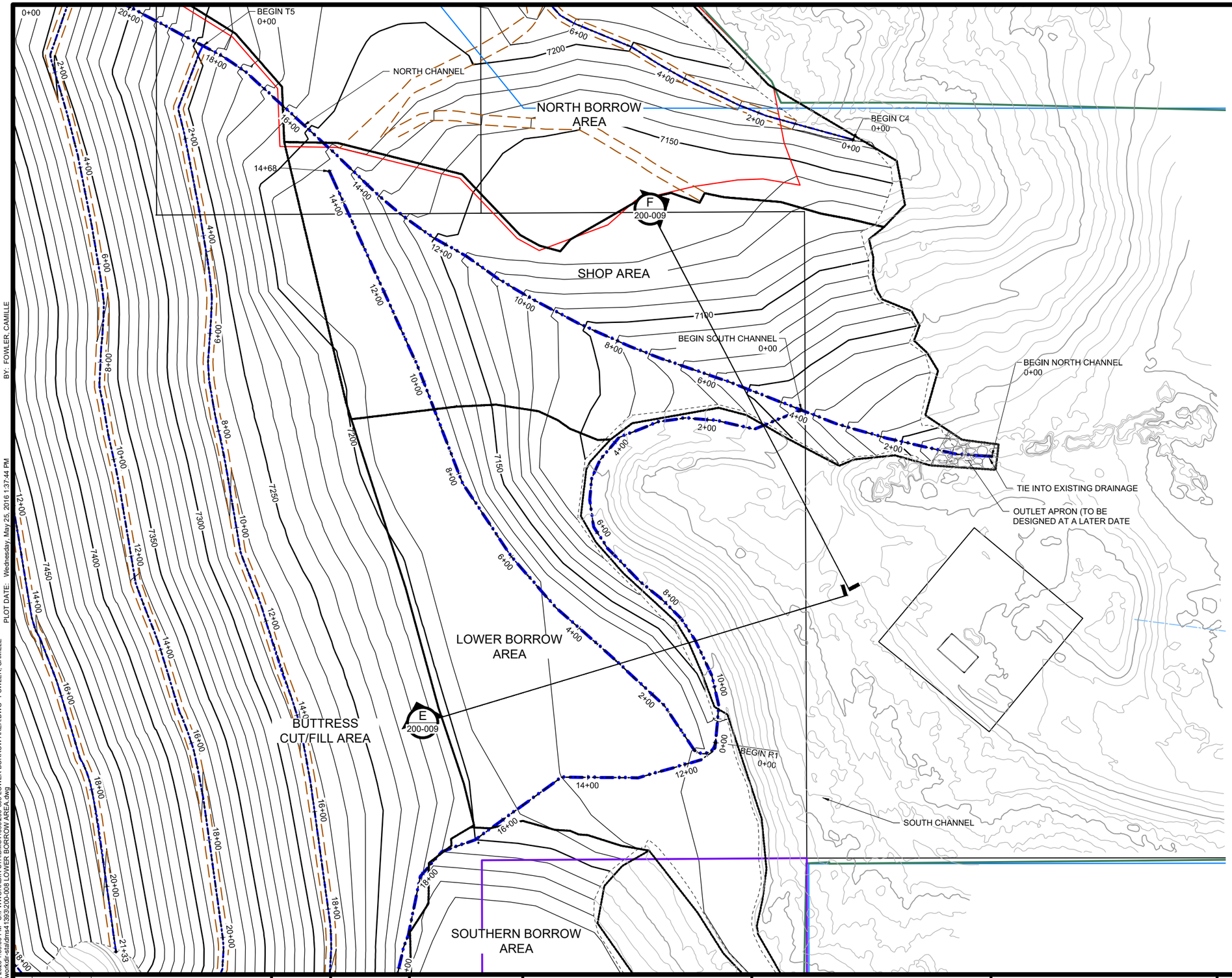
DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
NORTHERN BORROW AREA SECTIONS

SHEET
200.005
JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: VERNER, JUSTIN
DWG FILE: C:\pwworkdir\dms41393\200-005 NORTHERN BORROW AREA.dwg
Tuesday, July 11, 2023 12:04:46 AM C:\PWWORKDIR\DMS41393\200-005 NORTHERN BORROW AREA.DWG VERNER, JUSTIN



LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- PROPOSED ROAD
- MAIN CHANNEL
- MINOR CHANNEL
- USFS PROPERTY BOUNDARY

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

0 80 160
SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

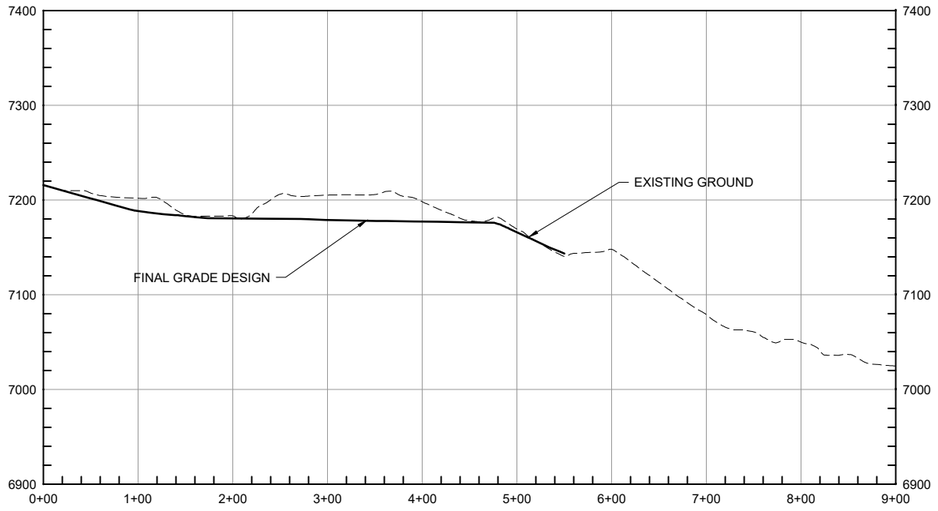
DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
LOWER BORROW AREA GRADING PLAN

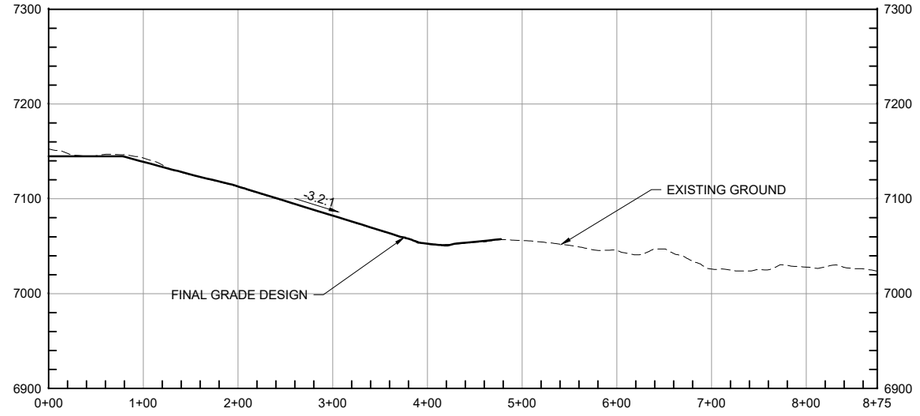
SHEET
200-007
JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: FOWLER, CAMILLE
Thursday, July 13, 2023 1:59:00 PM C:\PWWORKDIR-STA\DMS41393\200-008 LOWER BORROW AREA.DWG FOWLER, CAMILLE
DWG FILE: C:\pwworkdir-sta\dms41393\200-008 LOWER BORROW AREA.dwg



E SECTION
200-008

HORZ 0 80 160
VERT 0 80 160
SCALE IN FEET



F SECTION
200-008

HORZ 0 80 160
VERT 0 80 160
SCALE IN FEET

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
LOWER BORROW AREA SECTIONS

SHEET
200.008
JobNumber

BUTTRESS CUT/FILL AREA

LOWER BORROW AREA

SOUTHERN BORROW AREA

RIPRAP QUARRY AREA

PLUNGE POOL
(40' LONG, 24' WIDE, 6' DEEP
1H:1V SIDESLOPE

14+00
16+00
18+00
20+00
22+00
26+00
16+00
18+00
20+00
7250
7300
7350
7400

H
200-012

K
200-015

LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- EXISTING ROAD
- MAIN CHANNEL
- MINOR CHANNEL
- USFS PROPERTY BOUNDARY

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2022.

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

N

0 50 100
SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

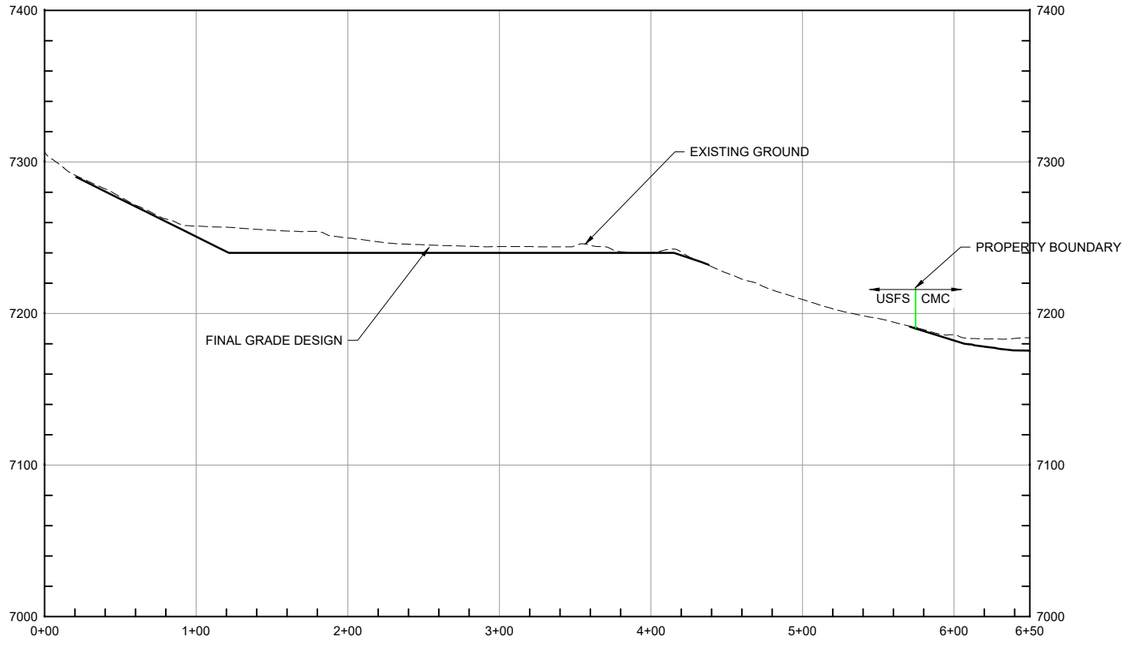
DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
SOUTHERN BORROW AREA GRADING PLAN

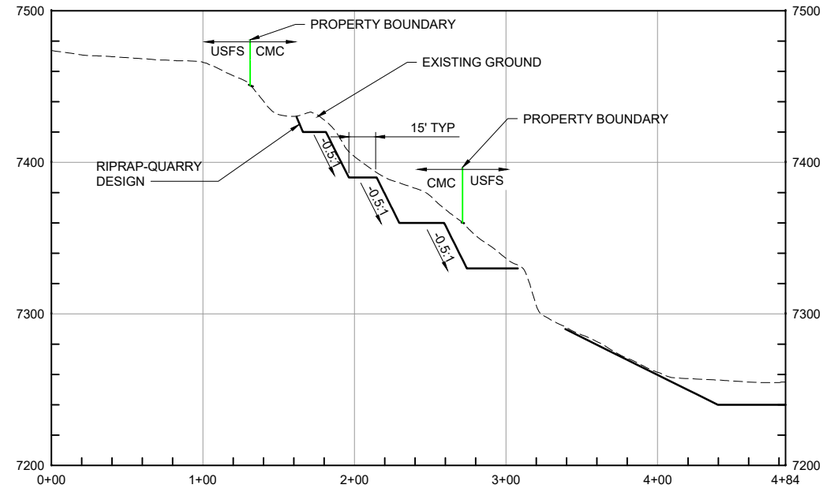
SHEET
200-010
JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: VERNER, JUSTIN
DWG FILE: C:\pwworkdir\dms41393\200-011 SOUTHERN BORROW AREA.dwg Tuesday, July 11, 2023 12:50:31 AM C:\PWWORKDIR\DMS41393\200-011 SOUTHERN BORROW AREA.DWG VERNER, JUSTIN



H SECTION
200-011

HORZ 0 50 100
VERT 0 50 100
SCALE IN FEET



K SECTION
200-011

HORZ 0 50 100
VERT 0 50 100
SCALE IN FEET

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

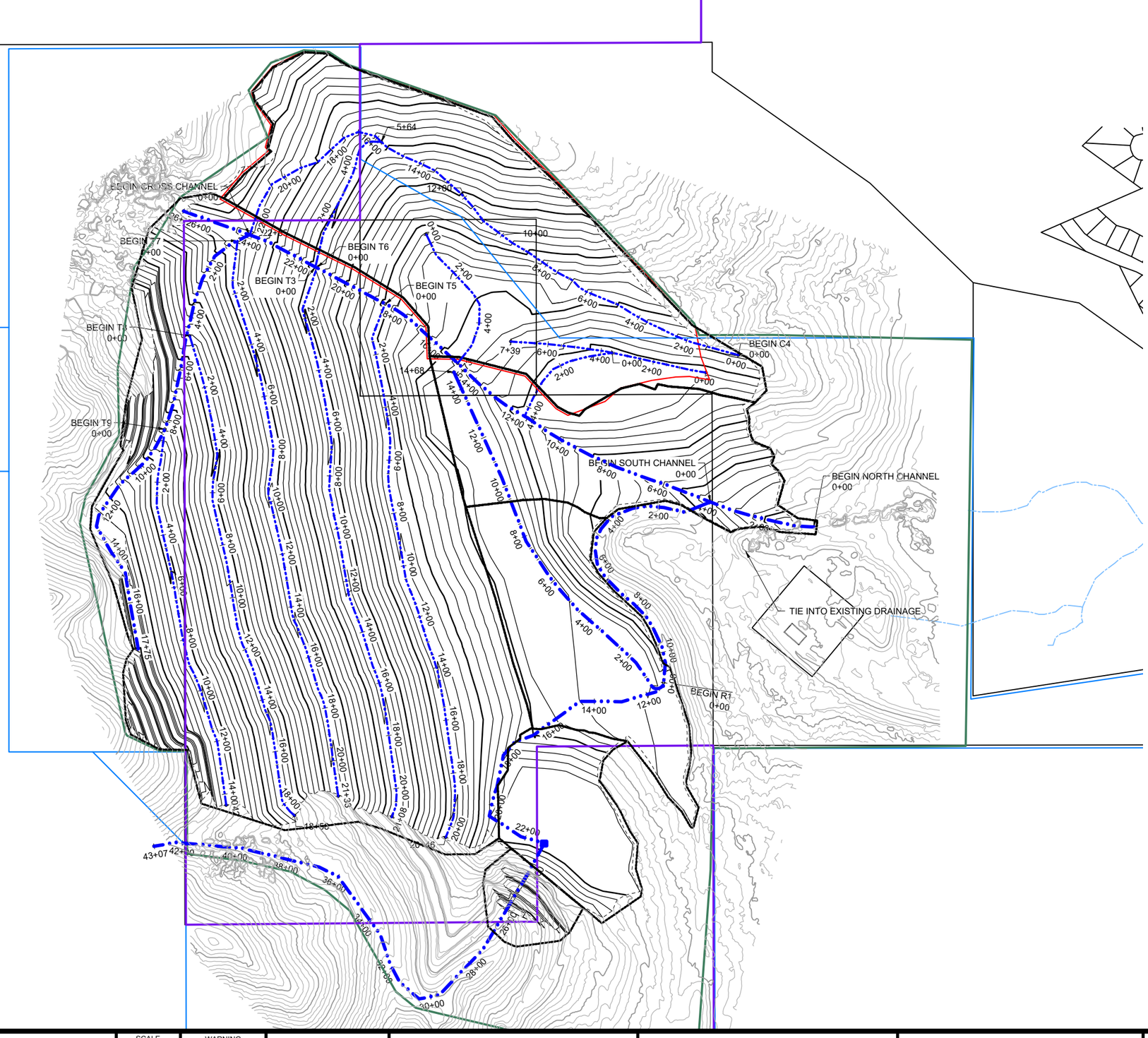
DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
SOUTHERN BORROW AREA SECTIONS

SHEET
200.011
JobNumber

Tuesday, July 11, 2023 12:53:22 AM C:\PWWORKDIR\DMS41393\200-011 SOUTHERN BORROW AREA.DWG VERNER, JUSTIN
DWG FILE: C:\pwworkdir\dms41393\200-011 SOUTHERN BORROW AREA.dwg
PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM
BY: VERNER, JUSTIN



LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- MAIN CHANNEL
- MINOR CHANNEL
- USFS PROPERTY BOUNDARY

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

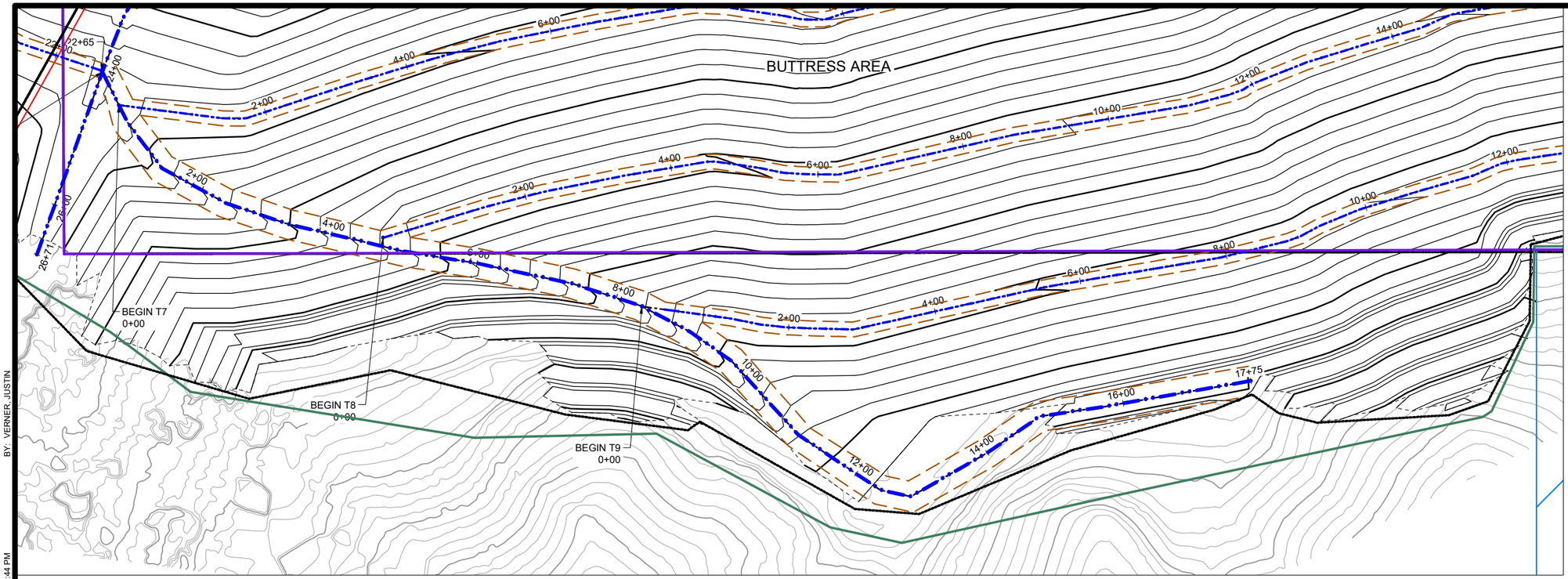
DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
OVERALL CHANNEL PLAN

SHEET
300-001
JobNumber

Wednesday, November 15, 2023 8:43:29 AM C:\PWWORKDIR-STA\DMS413393300-002_OVERALL CHANNEL PLAN.DWG FOWLER, CAMILLE
DWG FILE: C:\pwworkdir-sta\dms413393300-002_OVERALL CHANNEL PLAN.dwg
PLOT DATE: Wednesday, November 15, 2023 8:41:47 AM BY: FOWLER, CAMILLE



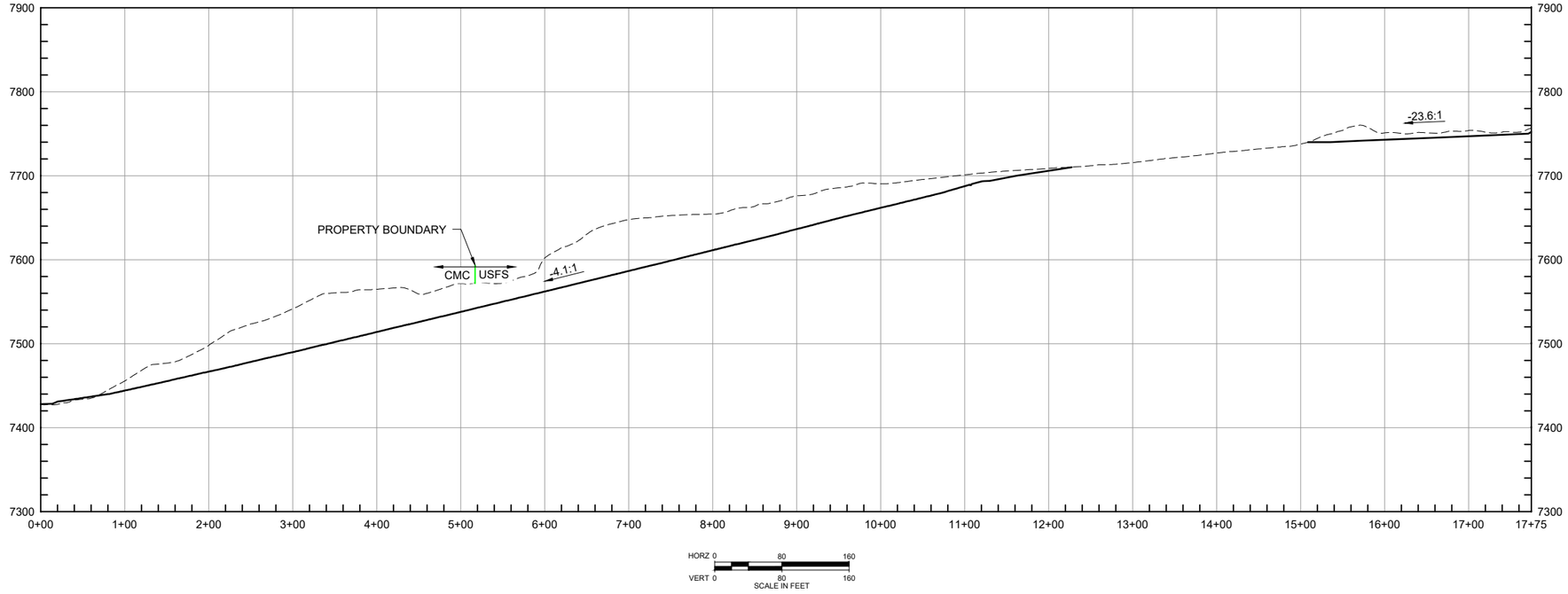
LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- EXISTING ROAD
- MAIN CHANNEL
- MINOR CHANNEL
- USFS PROPERTY BOUNDARY

NOTES

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.
2. SEE TYPICAL CHANNEL DETAIL AND SIZING TABLE ON SHEET 300-009.

0 80 160
SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT



HORZ 0 80 160
VERT 0 80 160
SCALE IN FEET

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

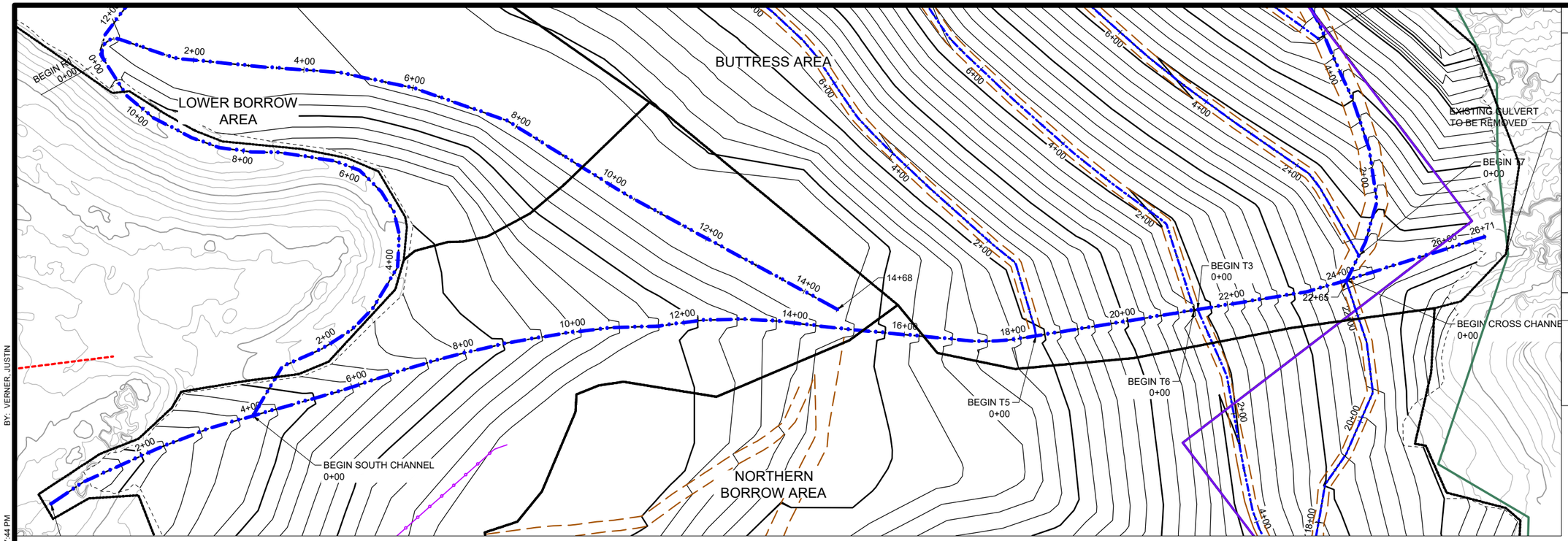
DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
CROSS CHANNEL PLAN AND PROFILE

SHEET
300-002
JobNumber

Tuesday, July 11, 2023 11:23:07 AM C:\PW\WORKDIR\DMS41393\300-005_CROSS CHANNEL PLAN AND PROFILE.DWG VERNER, JUSTIN
DWG FILE: C:\pw\workdir\dms41393\300-005_CROSS CHANNEL PLAN AND PROFILE.dwg PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM
BY: VERNER, JUSTIN



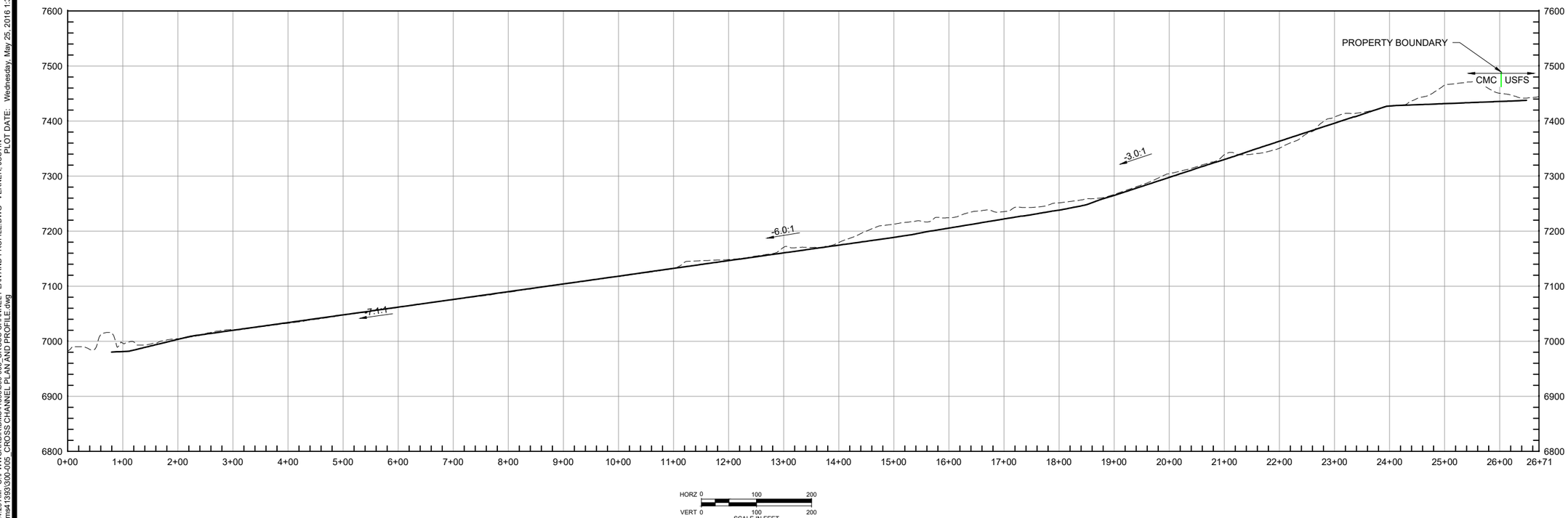
LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- EXISTING ROAD
- MAIN CHANNEL
- MINOR CHANNEL

NOTES

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.
2. SEE TYPICAL CHANNEL DETAIL AND SIZING TABLE ON SHEET 300-009.

0 100 200
SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT



HORZ 0 100 200
VERT 0 100 200
SCALE IN FEET

COLORADO LICENSED
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

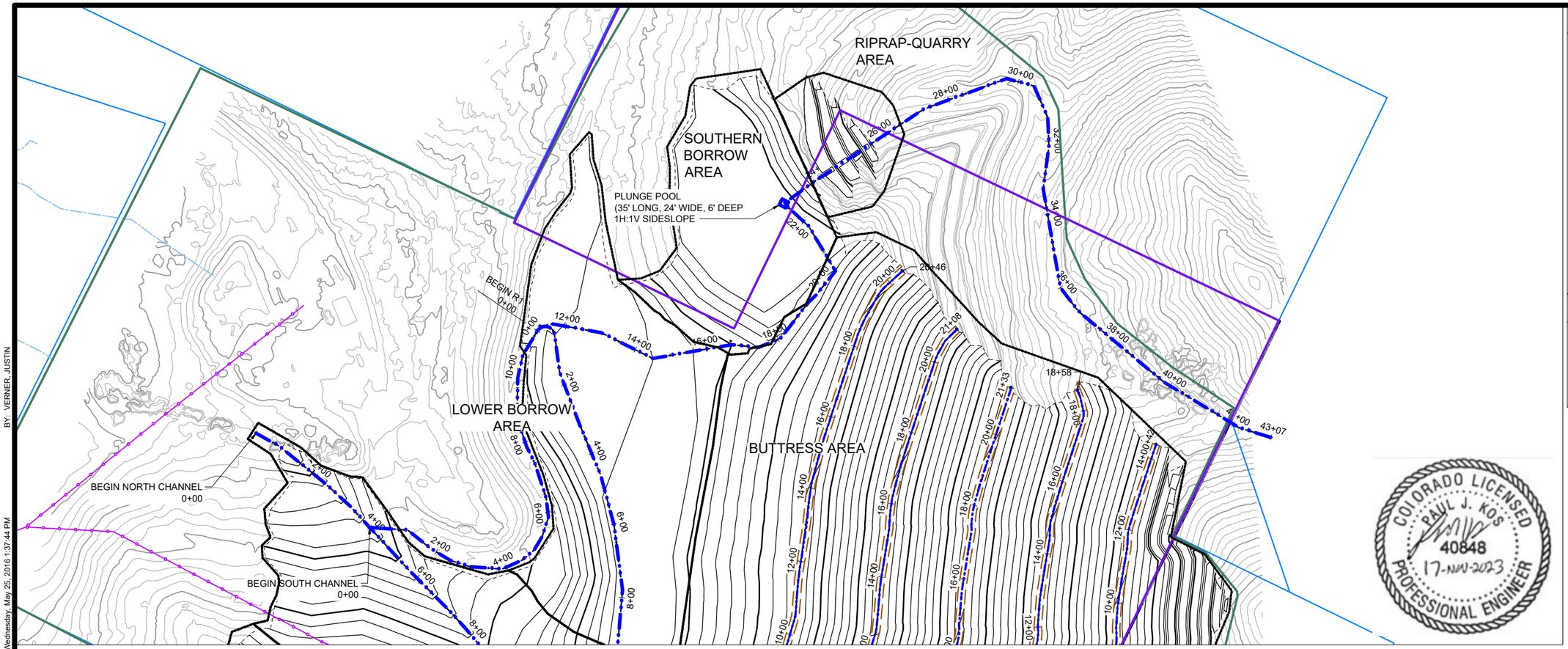
DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

Stantec

PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
NORTH CHANNEL PLAN AND PROFILE

SHEET
300-003
JobNumber

Tuesday, July 11, 2023 11:24:29 AM C:\PWWORKDIR\DMS41393\300-005_CROSS CHANNEL PLAN AND PROFILE.DWG VERNER, JUSTIN
DWG FILE: C:\pwworkdir\dms41393\300-005_CROSS CHANNEL PLAN AND PROFILE.dwg
PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM
BY: VERNER, JUSTIN



LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- EXISTING ROAD
- MAIN CHANNEL
- MINOR CHANNEL

NOTES

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.
2. SEE TYPICAL CHANNEL DETAIL AND SIZING TABLE ON SHEET 300-009.

SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT

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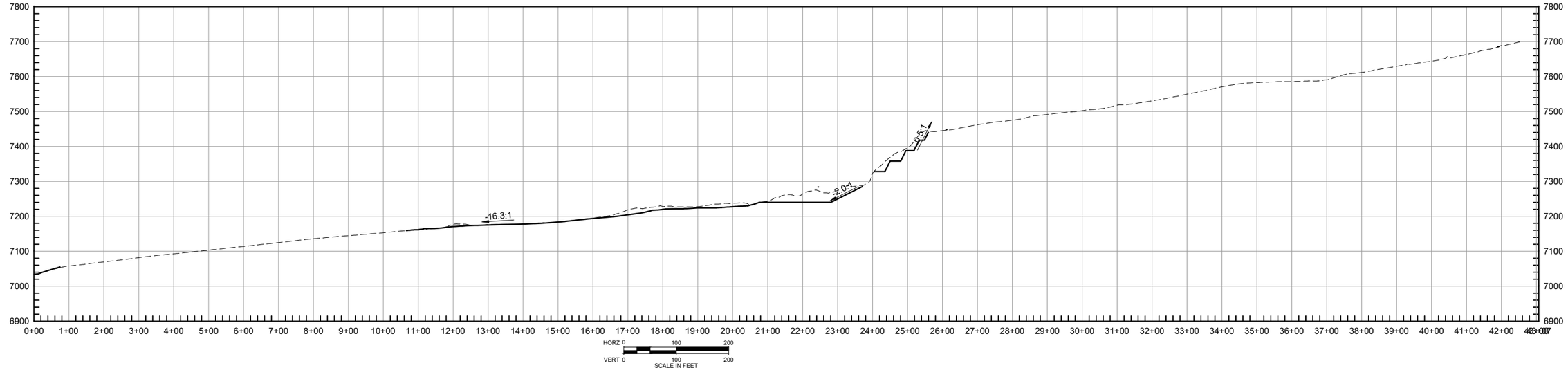
PAUL J. KOS
40848
17-NOV-2023
PROFESSIONAL ENGINEER



REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

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PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
SOUTH CHANNEL PLAN AND PROFILE

SHEET
300-004
JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: VERNER, JUSTIN
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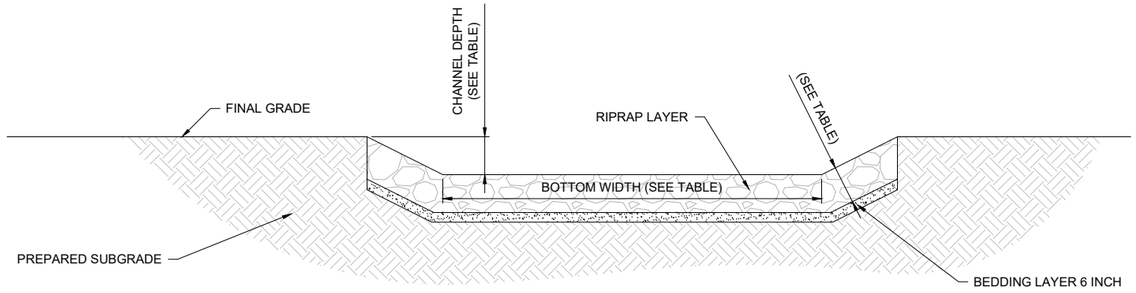
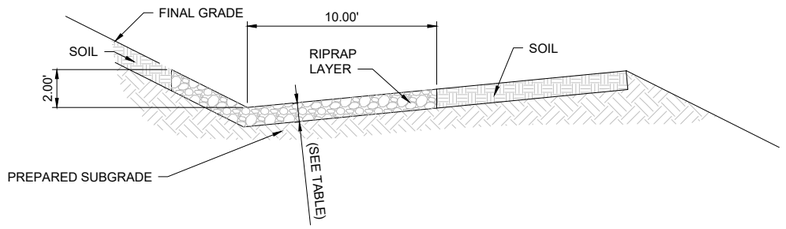
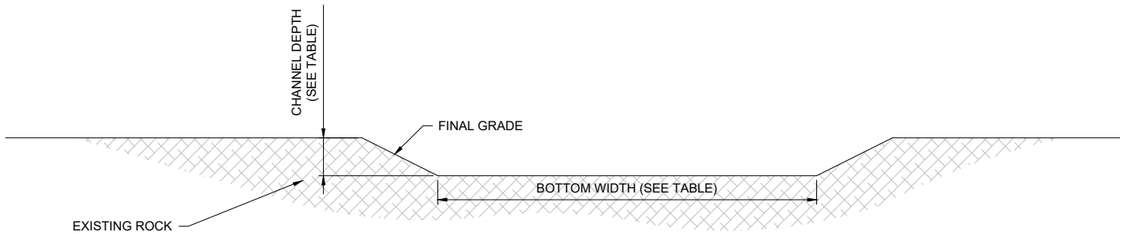


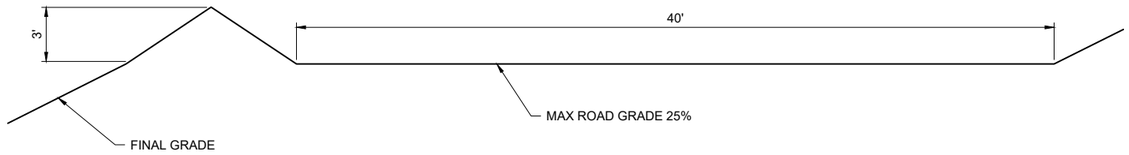
1 - TYPICAL CHANNEL DETAIL
N.T.S



3 - TYPICAL MINOR CHANNEL DETAIL
N.T.S



2 - TYPICAL ROCK CUT CHANNEL DETAIL
N.T.S



4 - TYPICAL TWO WAY HAUL ROAD CROSS-SECTION
N.T.S

CHANNEL SIZING TABLE

Channel	Channel Depth [ft]	Channel Lining	Bottom Width [ft]	Left Side Slope [xH:1V]	Right Side Slope [xH:1V]	Initial Station	Terminating Station	Channel Length (ft)	Rock D50 [inch]	"Riprap Layer Thickness (2 x D50) [ft]"	Minimum Channel Slope [%]	Maximum Channel Slope [%]
Cross Channel	2.0	Riprap	10.0	2.0	2.0	0+00	17+75	1775.0	18.0	3.0	12.0	27.0
Lower North Channel	2.5	Riprap	20.0	2.0	2.0	0+00	4+00	400.0	18.0	3.0	14.0	14.5
Lower Middle North Channel	2.5	Riprap	20.0	2.0	2.0	4+00	14+00	1000.0	18.0	3.0	13.8	14.5
Middle North Channel	2.5	Riprap	20.0	2.0	2.0	14+00	18+00	400.0	18.0	3.0	15.8	18.3
Upper Middle North Channel	2.5	Riprap	20.0	2.0	2.0	18+00	24+00	600.0	24.0	4.0	25.4	36.0
Upper North Channel	2.5	Riprap	20.0	2.0	2.0	24+00	26+00	200.0	6.0	1.0	15.3	19.7
Lower South Channel 1	2.3	Riprap	10.0	2.0	2.0	0+00	2+00	200.0	18.0	3.0	5.4	25.2
Lower South Channel 2	2.3	Riprap	10.0	2.0	2.0	2+00	11+64.54	964.5	12.0	2.0	10.0	12.0
Middle South Channel	2.0	Riprap	10.0	2.0	2.0	11+64.54	22+73	1108.5	12.0	2.0	2.2	23.6
Upper South Channel	2.0	Rockcut	10.0	2.0	2.0	22+73	43+07	2034.0				
South Channel 1A (R1)	2.3	Riprap	10.0	2.0	2.0	0+00	14+35	1435.0	6.0	1.0	0.8	5.6
C4 Channel	2.3	Riprap	10.0	2.0	2.0	0+00	22+65	2265.0	6.0	1.0	0.4	17.9
Minor Channel	2.0	RipRap	0.0	2.0	10.0	-	-	10000.0	3.0	0.5	2.0	2.0

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REV	DATE	BY	DESCRIPTION
F	01/11/2023	JTV	DESIGN REVISION
E	07/15/2022	JTV	DESIGN REVISION
D	06/2022	JTV	REVISION
C	03/2022	JTV	REVISION
B	11/2021	JTV	ISSUED FOR TENDER - REVISED

SCALE
AS NOTED

WARNING
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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DRAWN J. VERNER
CHECKED P. KOS

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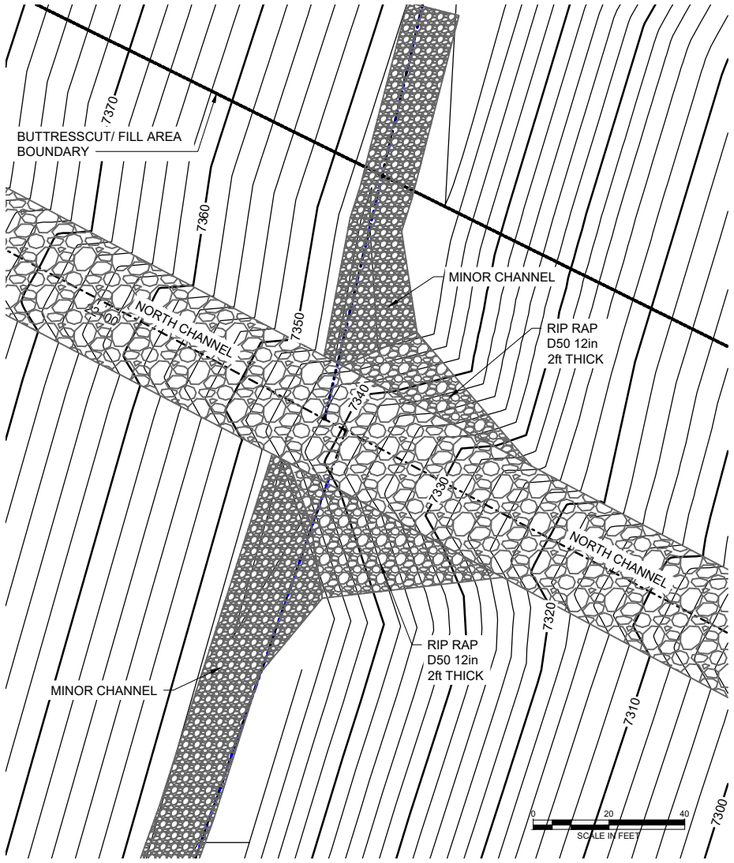
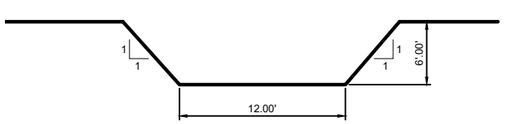
PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
TYPICAL CHANNEL DETAILS

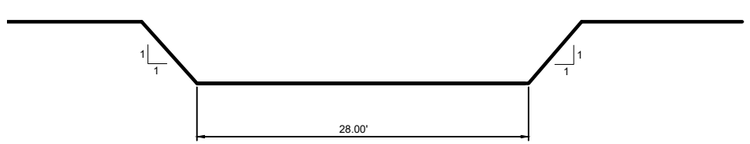
SHEET
300-005
JobNumber



1 - TYPICAL TRANSITION ZONE NORTH CHANNEL
RIPRAP DETAIL



A - PLUNGE POOL CROSS SECTION
(N.T.S.)



B - PLUNGE POOL CROSS SECTION
(N.T.S.)

GENERAL SHEET NOTES

1. PLUNGE POOL TO BE LOCATED AT TOE OF SLOPE.
2. PLUNGE POOL TO BE EXCAVATED INTO BEDROCK.

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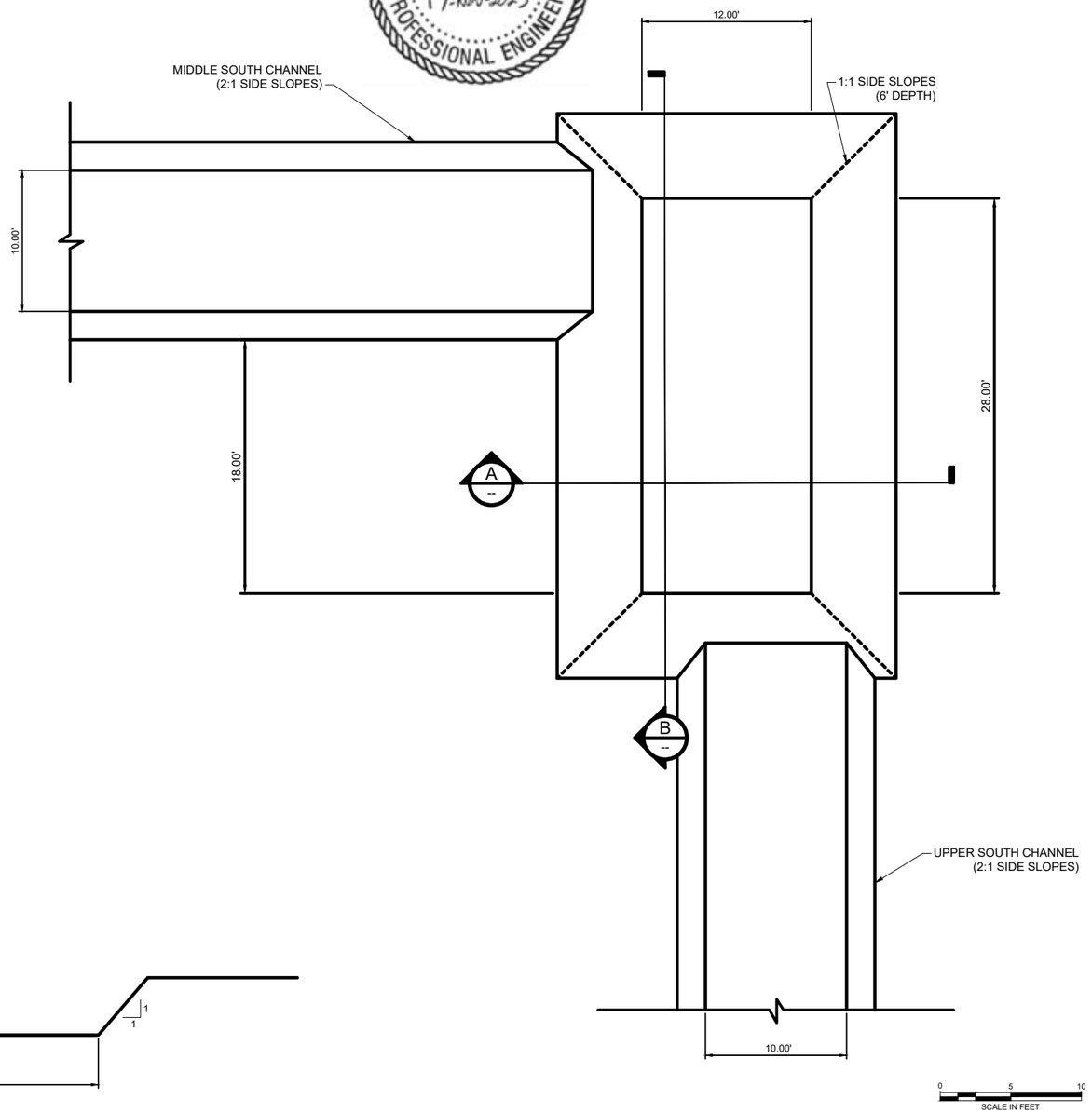

2 - PLUNGE POOL (PLAN VIEW)
TYPICAL DETAIL

REV	DATE	BY	DESCRIPTION
B	02/2023	FT	PLUNGE POOL DETAIL ADDED
A	01/2023	FT	ISSUED FOR REVIEW

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T. LEIDICH
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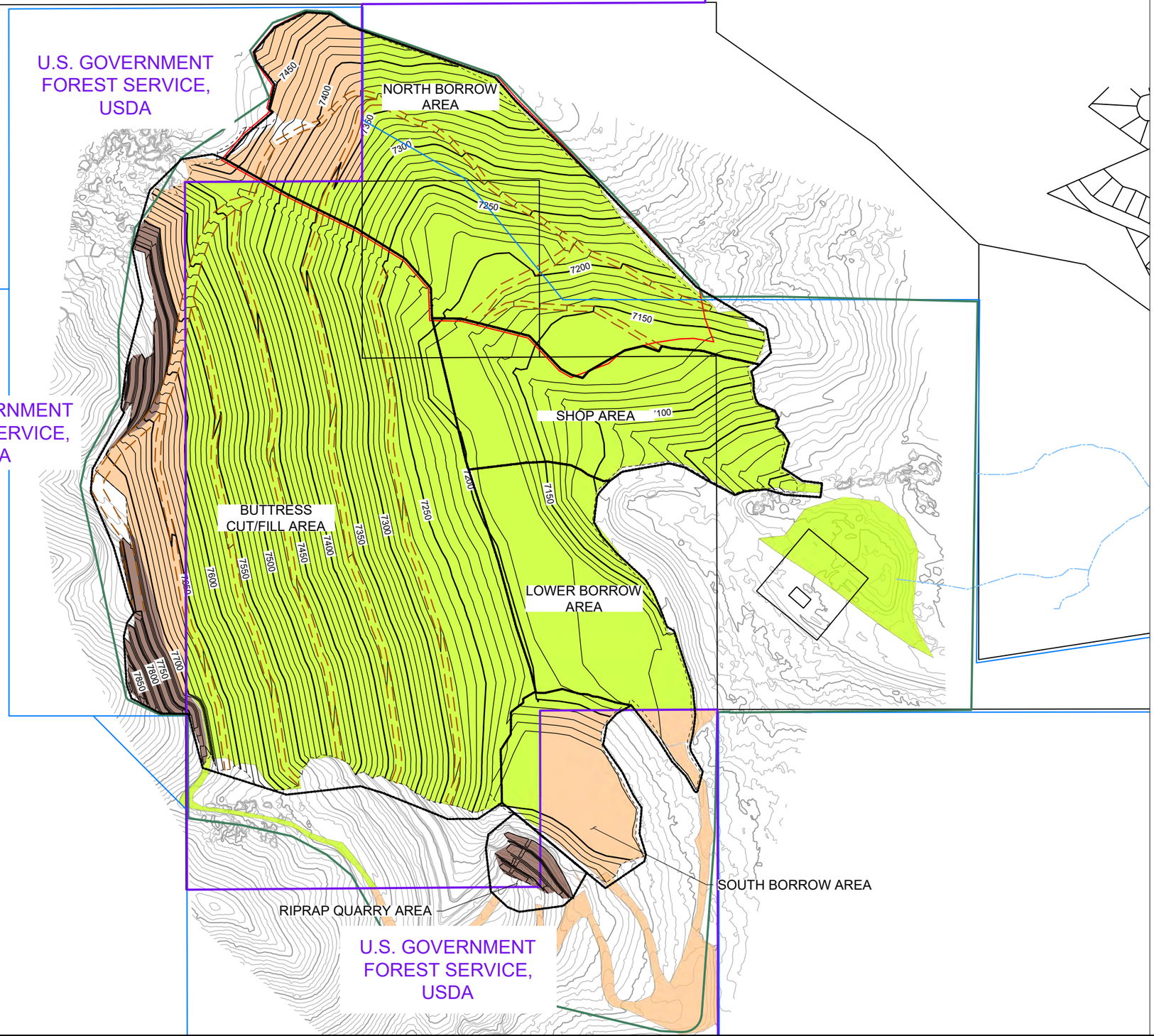
PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
TRANSITION ZONE NORTH CHANNEL

SHEET
300-006
JobNumber



LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- MAIN CHANNEL
- MINOR CHANNEL
- EXISTING POWER LINES
- USFS PROPERTY BOUNDARY
- EXISTING STREAMS
- CDRMS PERMIT BOUNDARY
- CITY OF COLORADO SPRINGS PERMIT BOUNDARY
- USFS LAND SEED MIX (20 AC)
- PRIVATE SURFACE SEED MIX (110 AC)
- HIGHWALL (6.2 AC)

NOTES

1. ALL SLOPES 3H:1V OR STEEPER WILL BE COVERED WITH EROSION MAT. HIGHWALL SLOPES WILL NOT REQUIRE EROSION MAT.
2. HIGHWALL BENCHES TO BE REVEGETATED.

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REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

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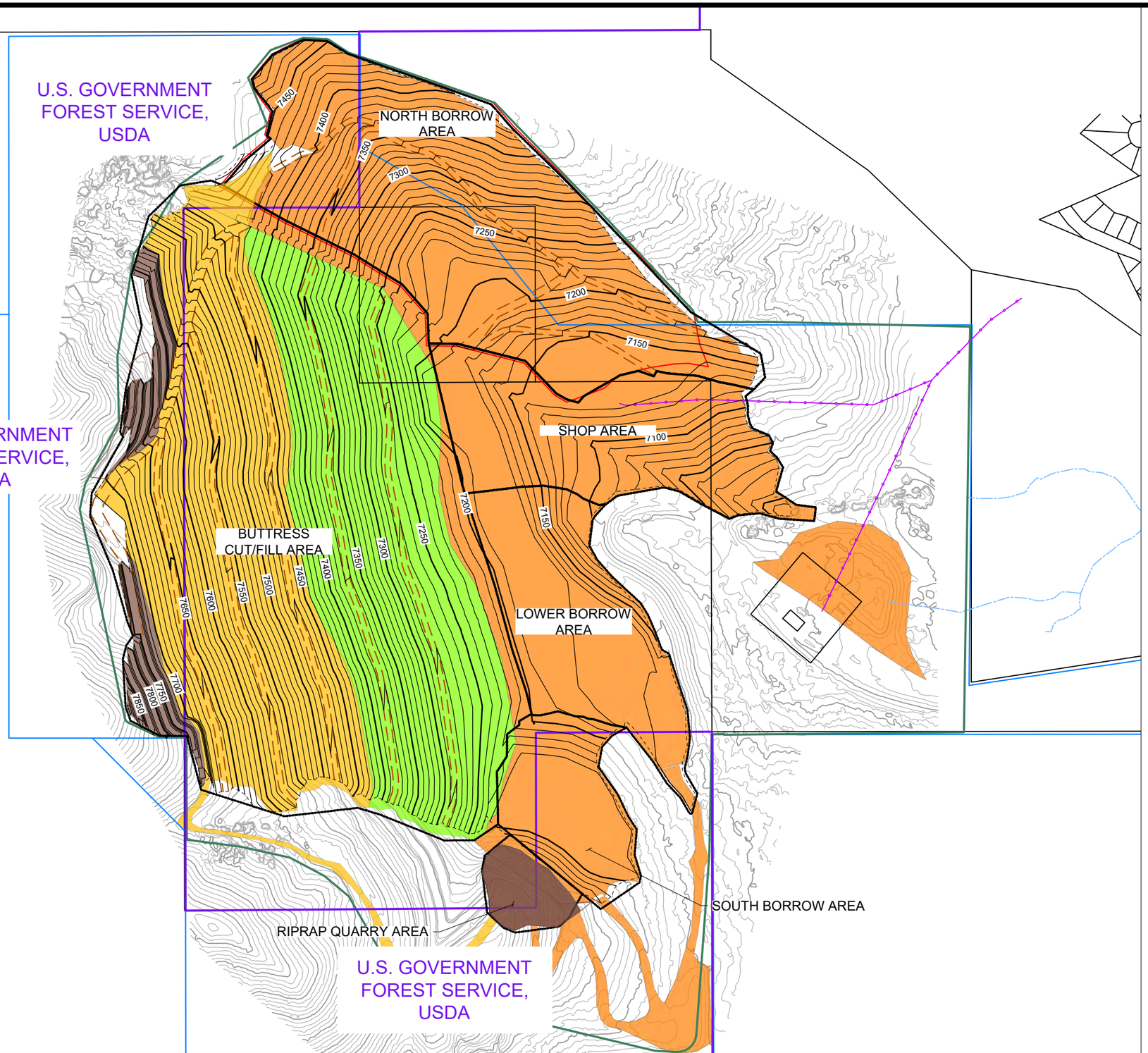
PROJECT: PIKEVIEW QUARRY RECLAMATION PROJECT
SEEDING PLAN

SHEET: 400-001
JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: VERNER, JUSTIN
Tuesday, July 11, 2023 12:23:04 PM C:\PWWORKDIR\DMS\41393\400-001_SEEDING PLAN.DWG VERNER, JUSTIN
DWG FILE: C:\pwworkdir\dms\41393\400-001_SEEDING PLAN.dwg



LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- EXISTING POWER LINES
- EXISTING STREAMS
- CITY OF COLORADO SPRINGS PERMIT BOUNDARY
- CDRMS PERMIT BOUNDARY
- USFS PROPERTY BOUNDARY
- HIGHWALL (6.2 AC)
- PONDEROSA PINE & DOUGLAS FIR (30.39 AC) (30 STEMS PER AC.REVEGETATED) (43 STEMS/AC. PLANTED)
- ROCKY MOUNTAIN JUNIPER & GRASS (37.52 AC) (21-42 TREES REVEGETATED) (30-60 TREES PLANTED)
- MTN MAHOGANY/GAMBEL OAK (69.40 AC)

NOTES

1. HIGHWALL BENCHES TO BE REVEGETATED .

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17-NOV-2023
PROFESSIONAL ENGINEER

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED T. LEIDICH
DRAWN J. VERNER
CHECKED P. KOS

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PROJECT: PIKEVIEW QUARRY RECLAMATION PROJECT
REVEGETATION PLAN

SHEET: 400-002
JobNumber

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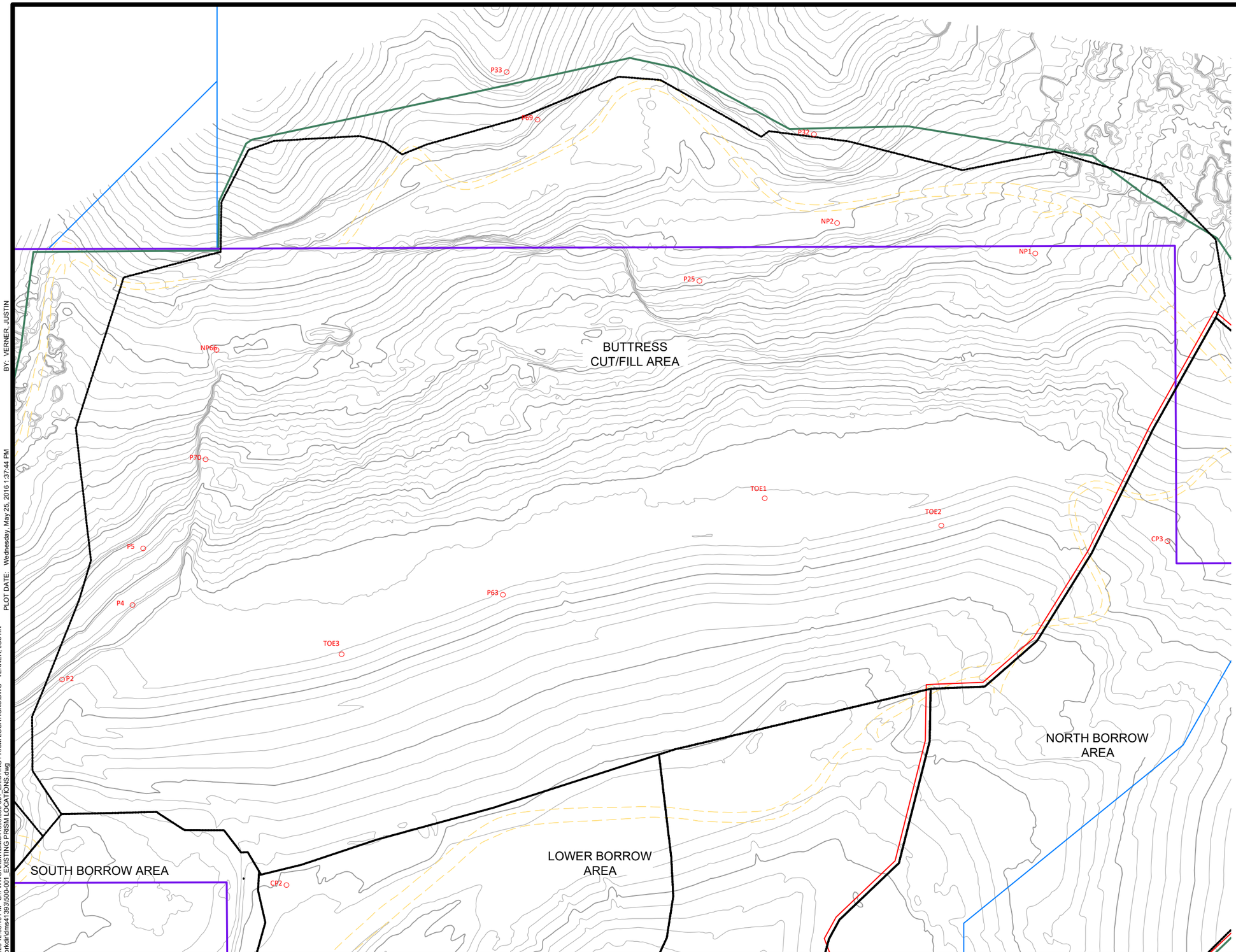

LEGEND

- EXISTING CONTOURS
- AREA BOUNDARY
- EXISTING ROADS
- EXISTING BUILDING
- CITY OF COLORADO SPRINGS PERMIT BOUNDARY
- CDRMS PERMIT BOUNDARY
- 7850-1 EXISTING PRISM LOCATION
- USFS PROPERTY BOUNDARY

NOTES

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.

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17-NOV-2023
PROFESSIONAL ENGINEER

0 100 200
SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

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PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
EXISTING PRISM LOCATIONS

SHEET
500-001
JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: VERNER, JUSTIN
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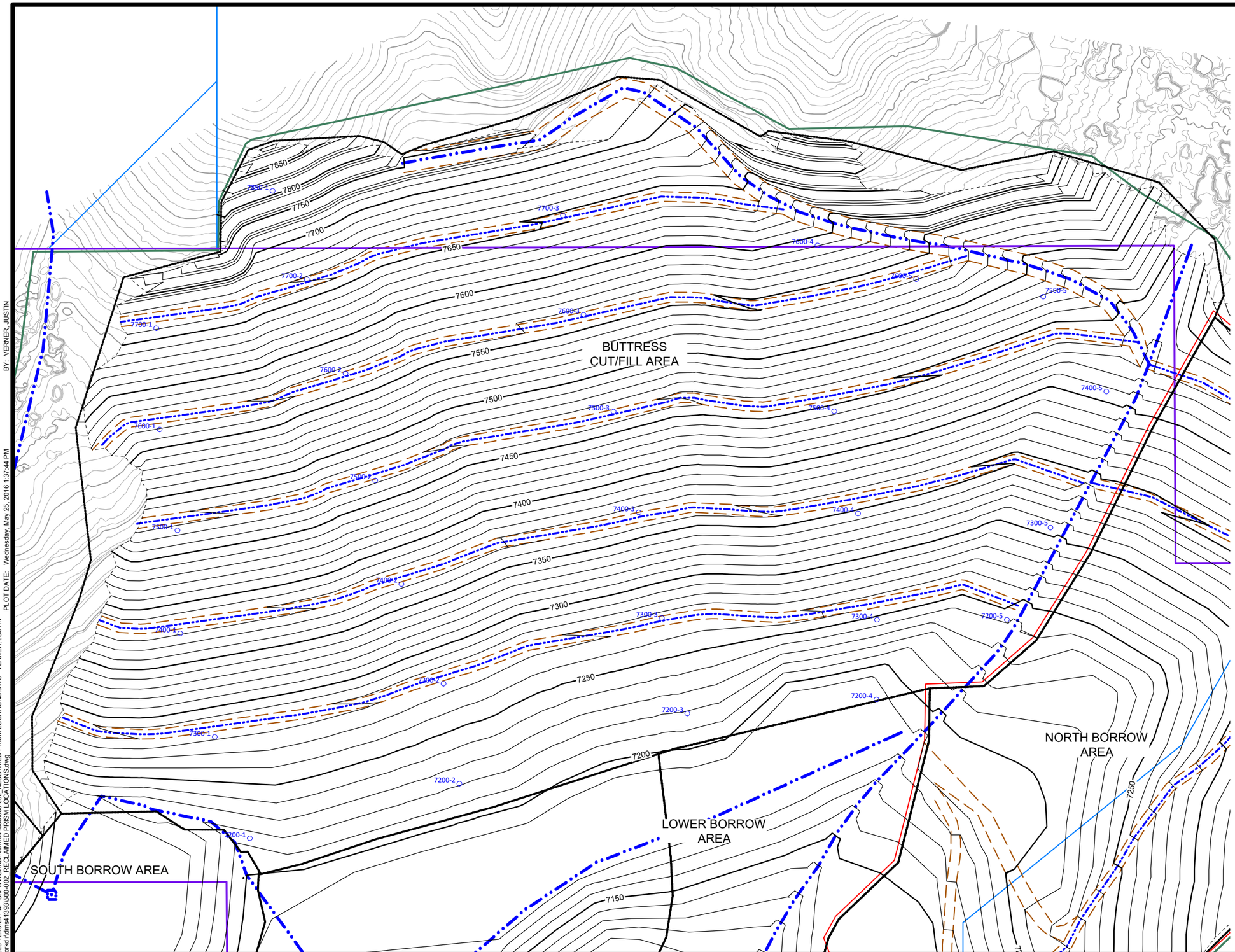

LEGEND

- EXISTING CONTOURS
- DESIGN CONTOURS
- AREA BOUNDARY
- PROPOSED ROAD
- MAIN CHANNEL
- MINOR CHANNEL
- 7850-1 RECLAIMED PRISM LOCATION
- CDRMS PERMIT BOUNDARY
- CITY OF COLORADO SPRINGS PERMIT BONDARY
- USFS PROPERTY BOUNDARY

1. EXISTING TOPOGRAPHY PROVIDED BY CLIENT WITH FLYOVER DATE OF 05/30/2023.

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40848
17-NOV-2023
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0 100 200
SCALE IN FEET
CONTOUR INTERVAL = 10 FOOT

REV	DATE	BY	DESCRIPTION
G	07/2023	JTV	DESIGN REVISION

SCALE: AS NOTED

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PROJECT
PIKEVIEW QUARRY RECLAMATION PROJECT
RECLAIMED PRISM LOCATIONS

SHEET
500-002
JobNumber

PLOT DATE: Wednesday, May 25, 2016 1:37:44 PM BY: VERNER, JUSTIN
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