



SITE Aurora State Airport Aurora State Airport

- MA34:11 - 12/80/0102

ENGINEERING GEOLOGIST

KUPER CONSULTING LLC ENGINEERING GEOLOGY CONSULTANTS 3575 RUNNING DEER DRIVE HELENA, MT 59602 TIGARD, OREGON (503)638–9722 HELENA, MONTANA (406)475–3244

1.7803-001.186. ENGINEERING/3. CAD/PRODUCTION/2. PAPA/2803001-PAPA_FIG1.DWG

PERMITEE/OPERATOR:

CADMAN MATERIALS INC.

7554 185TH AVENUE NE REDMOND, WASHINGTON 98052

WESTLAKE CONSULTANTS INC.

VICINITY MAP

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CHECKED BY DRAWN BY REVISION

2803-001

JOB NO.

08/2019

CADMAN - CANBY PHASE 4 EXPANSION AREA canby, orecon

FIGURE 2

- 41E07 TL1902, ZONE EFU
- 41E07 TL1501, ZONE EFU
- 41E07 TL2402, ZONE EFU
- 41E07 TL2400, ZONE FF10

- 41E07 TL1102, ZONE FF10
- 41E07 TL200, ZONE FF10

- 41E07 TL1300, ZONE EFU

- 41E07 TL2300, ZONE FF10
- 41E07 TL1101, ZONE FF10
- 41E07 TL1001, ZONE FF10

- 41E07 TL6100, ZONE EFU
 - 41E06 TL2000, ZONE EFU (13)
 - 41E07 TL3501, ZONE EFU 41E07 TL3500, ZONE EFU 14)
 - 15) 41E07 TL3600, ZONE EFU
 - 41E07 TL3700, ZONE EFU

 - 18)
 - 41E07 TL4400, ZONE EFU
 - 41E07 TL4401, ZONE EFU
 - 41E07 TL5401, ZONE EFU

NULE:
DRAWING SCALES INDICATED APPLY TO 11"x17"
DRAWING SHEETS. SCALE MAY NOT BE ACCURATE IF
DRAWING PLOTS ARE LESS THAN THIS SIZE. USE BAR
SCALE FOR REFERENCE ON REDUCED SIZE SHEET.

NOTES

- ONSITE TAX LOT AREAS ARE OBTAINED FROM PROJECT SURVEYOR, S&F LAND SERVICES.
- 2. ADJACENT TAX LOT AREAS ARE OBTAINED FROM CLACKAMAS COUNTY GIS ONLINE MAPPING SHAPEFILES (http://www.clackamas.us/gis/dataportal.html).
- 3. ADJACENT TAX LOTS DEPICTED ARE FOR ILLUSTRATIVE PURPOSE ONLY, NOT TO BE USED AS A SURVEYED LOCATION BOUNDARY/AREA.
- 4. AERIAL IMAGE SOURCE IS NOAA DATA ACCESS VIEWER, 2016 (https://coast.noaa.gov/dataviewer/#).
- 5. MAO OVERLAY DEPICTED PER EXHIBITS PROVIDED BY CLACKAMAS COUNTY DATED AUGUST 9, 2017.

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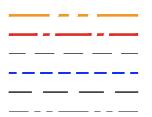
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ENGINEERING GEOLOGY CONSULTANTS 3575 RUNNING DEER DRIVE HELENA, MT 59602

TIGARD, OREGON (503)638-9722 HELENA, MONTANA (406)475-3244

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APPROXIMATE CURRENTLY PERMITTED MINING BOUNDARY APPROXIMATE PROPOSED MINING PERMIT BOUNDARY (PHASE 4)

MINING EXCAVATION BOUNDARY

APPROXIMATE TAX LOT BOUNDARY

1500' IMPACT AREA

EFU FF10 RURAL INDUSTRIAL DISTRICT EXCLUSIVE FARM USE DISTRICT

FARM FOREST 10-ACRE

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4 EXPANSION / - CANBY PHASE 4

MAP

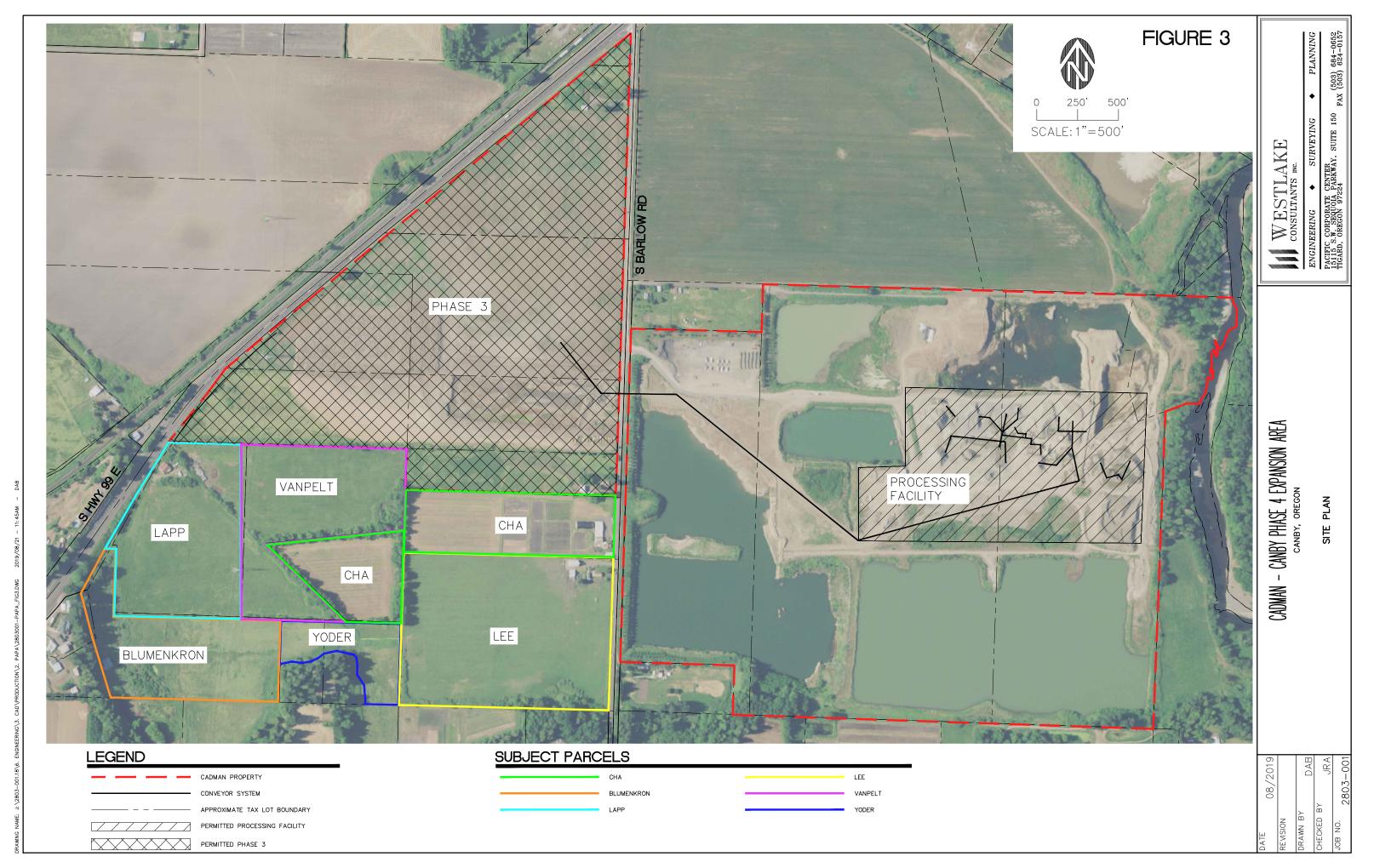
CADMAN -

(503) 684-0652 FAX (503) 624-0157

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SUITE

CORPORATE CENTER.W. SEQUOIA PARKWAY, OREGON 97224



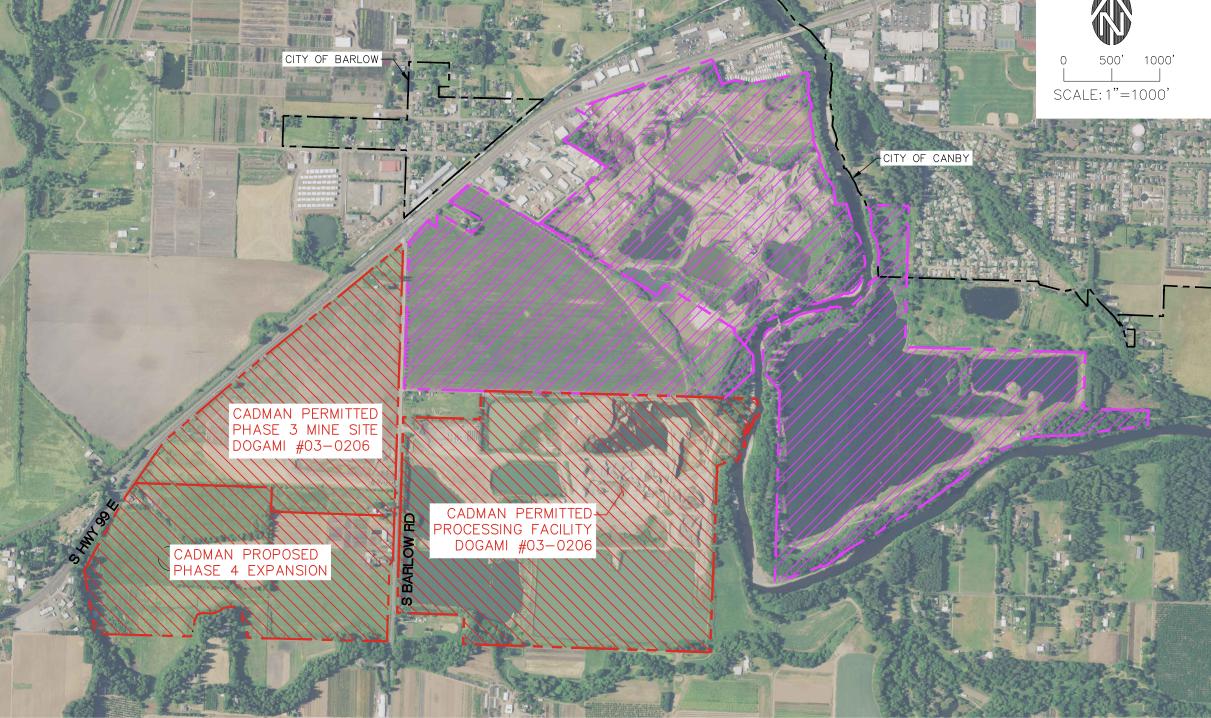
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- CANBY PHASE 4 EXPANSION AREA CANBY, OREGON CADMAN

NOTE:

1. DRAWING SCALES INDICATED APPLY TO 11"x17" DRAWING SHEETS. SCALE MAY NOT BE ACCURATE IF DRAWING PLOTS ARE LESS THAN THIS SIZE. USE BAR SCALE FOR REFERENCE ON REDUCED SIZE SHEET.

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- 3. PROPERTY LINES DEPICTED ARE FOR ILLUSTRATIVE PURPOSE ONLY, NOT TO BE USED AS A SURVEYED LOCATION BOUNDARY/AREA.



LEGEND



CITY BOUNDARY

PERMITTED AND PROPOSED CADMAN MATERIALS INC. MINE SITES

OTHER PERMITTED MINE SITES

PERMITEE/OPERATOR:

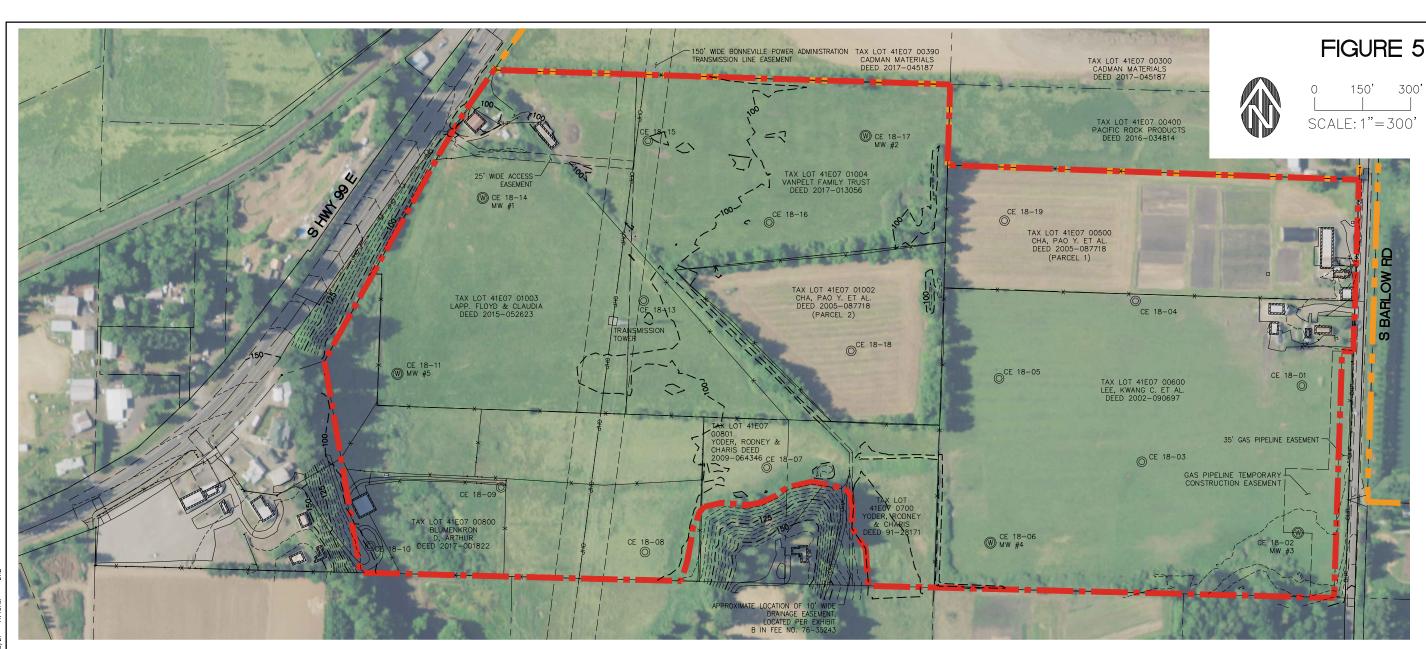
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NOTES

- PROPERTY LEGAL DESCRIPTION:
 TAX MAP 41E07 TAX LOT 500, 600, 700, 800, 801, 1002, 1003 AND 1004
 ZONED EXCLUSIVE FARM USE (EFU) IN CLACKAMAS COUNTY.
- 2. ALL UTILITY EASEMENT LOCATIONS AND WIDTHS TO BE CONFIRMED (SURVEYED) IN THE FIELD IN COORDINATION WITH THE UTILITY COMPANIES
- 3. TOPOGRAPHIC SURVEY INFORMATION WAS PROVIDED BY S&F LAND SERVICES. THIS EXISTING CONDITIONS FIGURE 5 IS FOR ILLUSTRATIVE PURPOSES ONLY.
- 4. ADJACENT TAX LOT AREAS ARE OBTAINED FROM CLACKAMAS COUNTY GIS ONLINE MAPPING SHAPEFILES (http://www.clackamas.us/gis/dataportal.html).
- 5. ADJACENT TAX LOTS DEPICTED ARE FOR ILLUSTRATIVE PURPOSE ONLY, NOT TO BE USED AS A SURVEYED LOCATION BOUNDARY/AREA.
- 6. AERIAL IMAGE SOURCE IS NOAA DATA ACCESS VIEWER, 2016 $({\tt https://coast.noaa.gov/dataviewer/\#}).$
- 7. THERE ARE 18 BORING LOCATIONS AND 5 OF THESE INCLUDE MONITORING

UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO QUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

VERTICAL DATUM

NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BASED ON STATIC GNSS OBSERVATIONS PROCESSED THROUGH NATIONAL GEODETIC SURVEY (NGS) ONLINE POSITIONING USER SERVICES (OPUS) AND ADJUSTED BY THE LEAST SQUARES METHOD IN TRIMBLE BUSINESS CENTER.

HORIZONTAL DATUM

OREGON NORTH STATE PLANE COORDINATE SYSTEM NAD83 (2011) (EPOCH 2010.0). BASED ON STATIC GNSS OBSERVATIONS PROCESSED THROUGH NATIONAL GEODETIC SURVEY (NGS) ONLINE POSITION USER SERVICES (OPUS) AND ADJUSTED BY LEAST SQUARES METHOD IN TRIMBLE BUSINESS CENTER.

DISTANCES SHOWN HEREON ARE GROUND DISTANCES, INTERNATIONAL FEET. SCALE FACTOR = 0.9998936734 GROUND DISTANCE * 1.0001063266 = GRID DISTANCE

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KUPER CONSULTING LLC ENGINEERING GEOLOGY CONSULTANTS

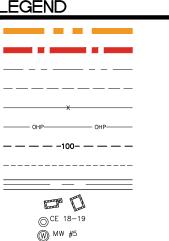
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LEGEND



APPROXIMATE CURRENTLY PERMITTED MINING BOUNDARY APPROXIMATE PROPOSED MINING PERMIT BOUNDARY (PHASE 4)

APPROXIMATE TAX LOT BOUNDARY

EXISTING EASEMENT

EXISTING FENCE

APPROXIMATE TAX LOT BOUNDARY

EXISTING 25' MAJOR CONTOUR EXISTING 5' MINOR CONTOUR

EXISTING ROW

EXISTING STRUCTURE

TEST BORE LOCATION MONITORING WELL LOCATION

NOTE: DRAWING SCALES INDICATED APPLY TO 11"x17" DRAWING SHEETS. SCALE MAY NOT BE ACCURATE IF DRAWING PLOTS ARE LESS THAN THIS SIZE. USE BAR SCALE FOR REFERENCE ON REDUCED SIZE SHEET.

CORPORATE CENTER. W. SEQUOIA PARKWAY, OREGON 97224

684-0652 624-0157

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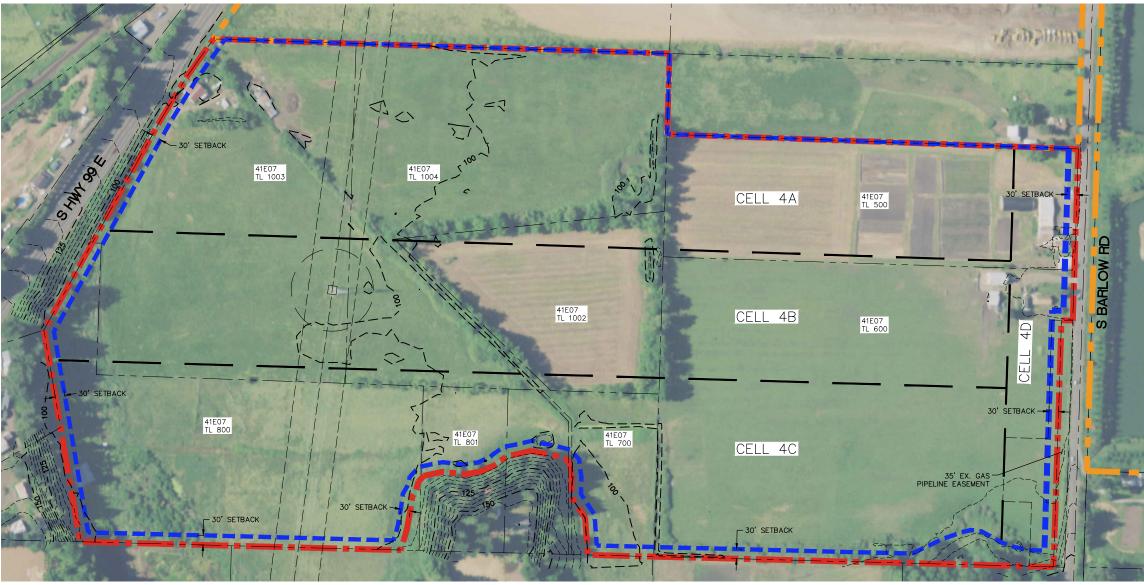
150 SUITE

4 EXPANSION / PHASE CANBY

EXISTING

- 1 CADMAN

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NOTES

- THE PROPOSED MINING IS IN CLACKAMAS COUNTY. THE SITE IS ZONED EXCLUSIVE FARM USE (EFU). A MINERAL AND AGGREGATE OVERLAY ZONE (MAO) WILL BE APPLIED TO THE FUTURE DOGAMI PERMIT BOUNDARY.
- 2. THE OPERATIONAL LIFE OF THE MINE IS APPROXIMATELY 8-10 YEARS.
- 3. EXCAVATIONS AND MINING OPERATIONS ARE RESTRICTED TO THE HOURS OF: 7:00 AM TO 6:00 PM MON - FRI AND 8:00 AM TO 5:00 PM SAT

NO OPERATION SHALL TAKE PLACE ON SUNDAYS OR THE FOLLOWING LEGAL HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, AND CHRISTMAS DAY.

- PROPERTY LINE SETBACK DISTANCES:
- 30.0' FROM ANY PROPERTY LINE 30.0' FROM S HIGHWAY 99 E.
- 30.0' FROM S BARLOW ROAD
- 5. PROPOSED HAUL ROADS SHALL BE WATERED FOR DUST SUPPRESSION.
- 6. THE APPLICANT SHALL FLAG OR OTHERWISE MARK THE BOUNDARIES OF THE REQUIRED EXCAVATION SETBACKS FROM PROPERTY BOUNDARIES BEFORE BEGINNING EXCAVATION AT THE AGGREGATE SITE.
- 7. ACCESS ROADS TO AGGREGATE SITE SHALL BE GATED AND LOCKED WHEN NOT IN OPERATION.
- 8. ADJACENT TAX LOTS ARE OBTAINED FROM CLACKAMAS COUNTY GIS ONLINE MAPPING SHAPEFILES AND AFRIAL IMAGE WERE OBTAINED FROM NOAA DATA ACCESS VIEWER BY CONSULTANTS INC. ADJACENT TAX LOTS ARE APPROXIMATE ONLY AND ARE FOR ILLUSTRATIVE PURPOSE ONLY. NOT TO BE USED AS A SURVEYED LOCATION OF BOUNDARY/AREA.
- MINING OPERATIONS TO BE IN ACCORDANCE WITH CLACKAMAS COUNTY ZONING DEVELOPMENT
- 10. BERMS AND NOISE BARRIERS WILL RANGE FROM 10' TO 35' HIGH WITH 1½:1 SLOPES. BERMS WILL BE LOCATED WITHIN THE 30' SETBACK. REFER TO NOISE STUDY FOR BERM AND BARRIER

PHASING

- DEPTH OF FLOOR RANGES FROM 35 FEET IN THE WESTERN PORTION TO 70 FEET IN THE EASTERN PORTION BELOW PRESENT SURFACE ELEVATIONS.
- 2. THE TIMING FOR MINING IS DEPENDENT ON MARKET CONDITIONS. MINING WILL START IN THE NORTHERN PORTIONS OF THE SITE AND WILL GRADUALLY MOVE TOWARD THE SOUTH.
- 3. DEWATERING WILL LOWER PRESENT GROUNDWATER LEVELS IN THE PHASE 4 AREA APPROXIMATELY 10 FEET.
- 4. EXCAVATED MATERIAL WILL BE CONVEYED VIA A CULVERT UNDERNEATH S BARLOW ROAD TO ADJACENT CADMAN PROCESSING AREA.
- 5. RECLAMATION TO BE PERFORMED DURING AND AFTER MINING OPERATIONS HAVE BEEN COMPLETED. RECLAMATION WILL HAVE 3:1 SLOPES TO 6 FEET BELOW WATER TABLE AND 1½:1 SLOPES BELOW 16 FEET FROM GROUND SURFACE.
- 6. AS MINING PROCEEDS ACROSS THE SITE, VEGETATION WILL BE HARVESTED AND REMOVED. THE OVERBURDEN WILL BE STRIPPED AND STOCKPILED FOR USE IN NOISE BERMS AND RECLAMATION.
- 7. ALL OVERBURDEN AND REJECT ARE TO BE STOCKPILED (WHERE FEASIBLE) IN SETBACK AREAS, AS PERIMETER BERMS AND EQUIPMENT AREAS ON SITE OR USED IN RECLAMATION. THE STOCKPILES AND BERMS ARE TO BE GRADED WITH $1\frac{1}{2}$:1 SIDE SLOPES. THEY ARE TO RECEIVE 6" OF TOPSOIL AND BE SEEDED.

STORMWATER

- 1. STORMWATER WILL BE ALLOWED TO INFILTRATE INTO THE PHASE 4 AND 3 (CURRENT STORMWATER WILL BE ALLOWED TO INFILIRATE INTO THE PHASE 4 AND 3 (CURRENT MINING TO THE NORTH), WHERE PHASE 3 IS NOT BROUGHT BACK UP TO ELEVATION. STORMWATER WILL BE PUMPED FROM PHASE 4 TO THE CURRENT STORMWATER PONDS ON THE EAST SIDE OF S BARLOW ROAD. WATER WILL BE PUMPED VIA THE SAME PIPING SYSTEM THAT IS IN USE CURRENTLY WHICH RUNS THROUGH THE CONVEYOR TUNNEL UNDER S BARLOW ROAD.
- THE CURRENT MINE SITE HAS A 1200-A NPDES STORMWATER PERMIT. AS MINING PROGRESS ACROSS THE SITE, THE STORMWATER PERMIT/PLAN WILL BE UPDATED AS NECESSARY; WORKING WITH DOGAMI AND DEQ.
- 3. FIELD CONDITIONS SHALL BE VERIFIED PRIOR TO CONSTRUCTION OF ANY STORMWATER
- 4. STORMWATER AND EROSION CONTROL TO BE CONDUCTED IN ACCORDANCE WITH DOGAMI BEST MANAGEMENT PRACTICES FOR RECLAIMING SURFACE MINES IN OREGON.
- MODIFICATIONS TO THE STORMWATER FACILITIES SHALL BE MADE TO BRING STORMWATER QUALITY INTO COMPLIANCE SHOULD IT NOT MEET THE PERMIT REQUIREMENTS.

LEGEND

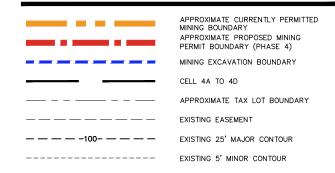


FIGURE 6

684-0652 624-0157

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FAX

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SUITE

ATE OIA 972 CORPORA W SEQUI OREGON

AREA

EXPANSION

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PIASE

CANBY

CADMAN

OPERATION

AND

MINING



150' 300 SCALE: 1"=300

REFERENCES:

- ARCHAEOLOGICAL AND CULTURAL SURVEY: HERITAGE RESOURCES ASSOCIATES, INC.
- 2. GROUNDWATER: H. G. SCHLICKER & ASSOCIATES, INC.
- 3. NOISE: ABD ENGINEERING & DESIGN
- 4. SIGNIFICANCE REPORT: H. G. SCHLICKER & ASSOCIATES, INC.
- 5. TRAFFIC: SANDOW ENGINEERING, LLC.
- 6. AERIAL IMAGE: NOAA DATA ACCESS VIEWER, 2016.

NOTES

PROPERTY LEGAL DESCRIPTION:
TAX MAP 41E07 TAX LOT 500, 600, 700, 800, 801, 1002, 1003 AND 1004 ZONED EXCLUSIVE FARM USE (EFU) IN CLACKAMAS COUNTY.

ALL UTILITY EASEMENT LOCATIONS AND WIDTHS TO BE CONFIRMED (SURVEYED) IN THE FIELD IN COORDINATION WITH THE UTILITY COMPANIES PRIOR TO MINING.

DRAWING SCALES INDICATED APPLY TO 11"x17"
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MINE SITE STATISTICS:

AREAS:

TAX LOT MINING AREA	AREA PER SURVE
TAX MAP 41E07 TAX LOT 500	± 11.26 AC*
TAX MAP 41E07 TAX LOT 600	± 26.90 AC
TAX MAP 41E07 TAX LOT 700	± 3.88 AC**
TAX MAP 41E07 TAX LOT 800	± 14.19 AC*
TAX MAP 41E07 TAX LOT 801	± 1.59 AC**
TAX MAP 41E07 TAX LOT 1002	± 7.29 AC
TAX MAP 41E07 TAX LOT 1003	± 16.80 AC*
TAX MAP 41E07 TAX LOT 1004	± 16.63 AC
PROPOSED MINING / MAO AREA	± 98.5 AC*

PROPOSED MINING / MAO AREA PROPOSED MINING EXCAVATION AREA

± 93.6 AC

* AREAS USED IN REPORTS AND EXHIBITS
** A PORTION OF TAX LOT INCLUDED IN PROPOSED MINING AREA.

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REVISION	
DRAWN BY	
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JOB NO. 2803-001	

FIGURE 7



150'

SCALE: 1"=300'

SUITE ACIFIC CORPORATE CENTER 5115 S.W. SEQUOIA PARKWAY, IGARD, OREGON 97224 Z is

(503) 684-0652 (503) 624-0157

FAX (

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- CANBY PHASE 4 EXPANSION AREA CANBY, OREGON CADMAN

NOTES:

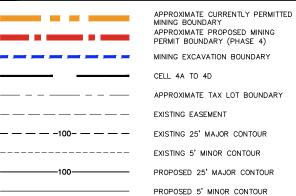
- 1. CONCURRENT RECLAMATION TO BE PERFORMED, WHERE POSSIBLE.
- 2. POST MINING LAND USE IS A LAKE.
- 3. APPROXIMATE GRADING SHOWN.
- 4. ALL ACTIVITIES SHALL COMPLY WITH THE CLACKAMAS COUNTY CONDITIONS OF
- 5. MINING DEPTHS WILL VARY ACROSS THE SITE FROM 35 FEET IN THE WEST TO APPROXIMATELY 70 FEET IN THE EAST.

PLANTING NOTES / REVEGETATION PLAN:

- TOPSOIL/OVERBURDEN TO BE PLACED ON UPPER MINED SLOPES TO NOMINAL THICKNESS OF 18 INCHES
- 2. SHORELINE TO BE PLANTED TO PROTECT AGAINST EROSION

NON-DESIRABLE VEGETATION SUCH AS BLACKBERRIES WILL BE REMOVED AS NECESSARY AND TEMPORARY EROSION COVER WILL BE ACCOMPLISHED WITH THE APPROPRIATE SPECIES (E.G. STERILE WHEAT OR OTHER CEREAL GRAIN) AT THE TIME TREE PLANTINGS OCCUR.

LEGEND



PERMITEE/OPERATOR:

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ENGINEERING GEOLOGIST:

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Legend ■ 10 foot safety barrier 20 foot barrier 25 foot barrier 35 foot barrier Single FEL Restriction Area South-to-North Excavation **Direction Area** Image (c) 2018 Google

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NOTES

THIS IS CREDITED TO ABD ENGINEERING & DESIGN REPORT, DATED AUGUST 30, 2019.

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