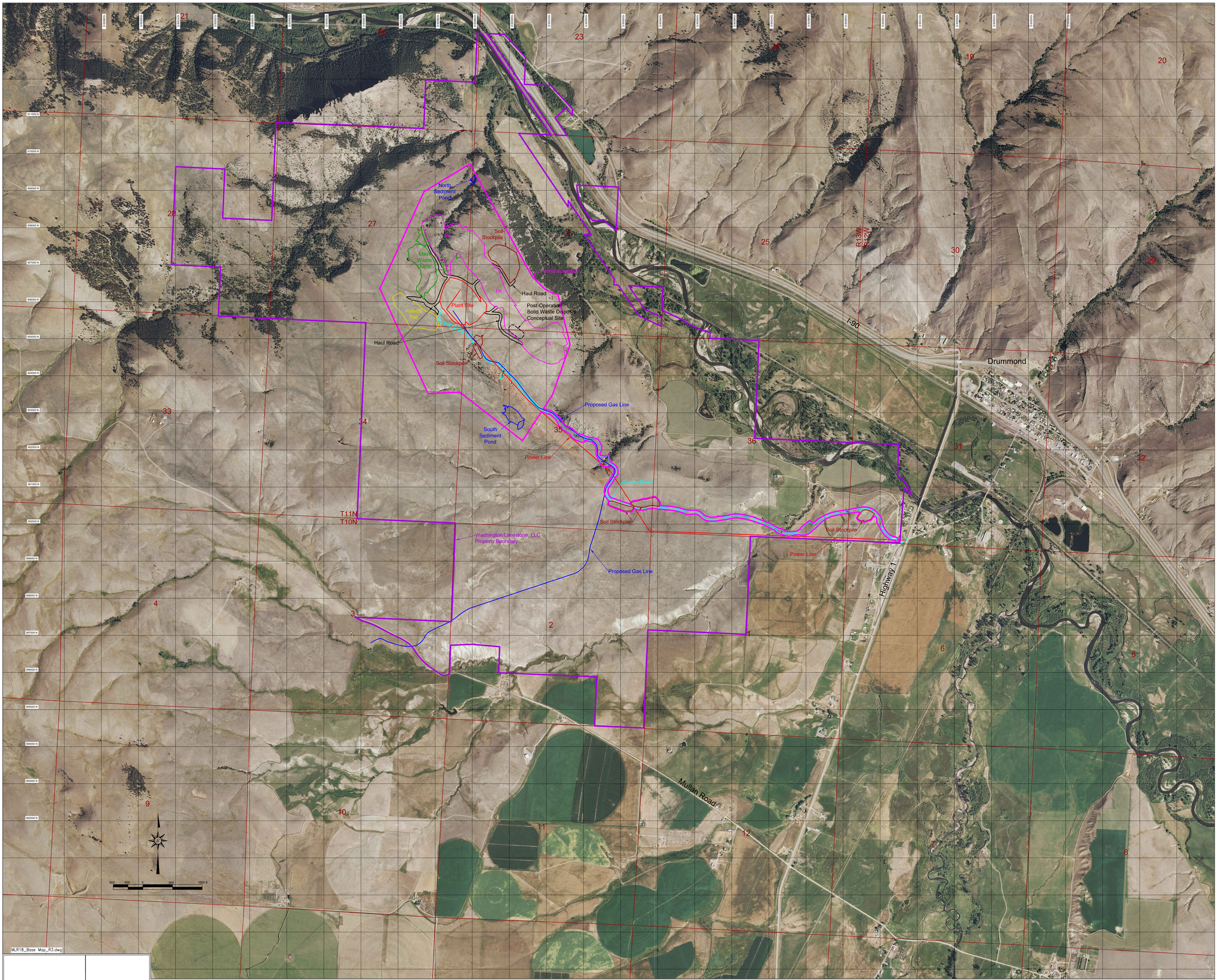
OPERATING PERMIT APPLICATION

MONTANA LIMESTONE RESOURCES

EXHIBITS

Exhibit 1-1	Project Overview Map (Revised September 2017, February 2018, June 2018)
Exhibit 3-1	MLR Mine Plan Map (Revised September 2017)
Exhibit 3-2	Ultimate Disturbance Map (Revised September 2017)
Exhibit 3-3	End-of-Year 1 Mining Disturbance
Exhibit 3-4	End-of-Year 5 Mining Disturbance (Revised September 2017)
Exhibit 3-5	Lime Plant Site Map (Revised February 2018)
Exhibit 3-6	Lime Plant Flow Sheets
Exhibit 3-7	Soils Salvage Map (Revised September 2017, February 2018)
Exhibit 4-1	Post-Mining Topography Map (Revised September 2017)
Exhibit 4-2	Revegetation Map (Revised September 2017, February 2018)



CONCEPTUAL DESIGN
NOT FOR CONSTRUCTION

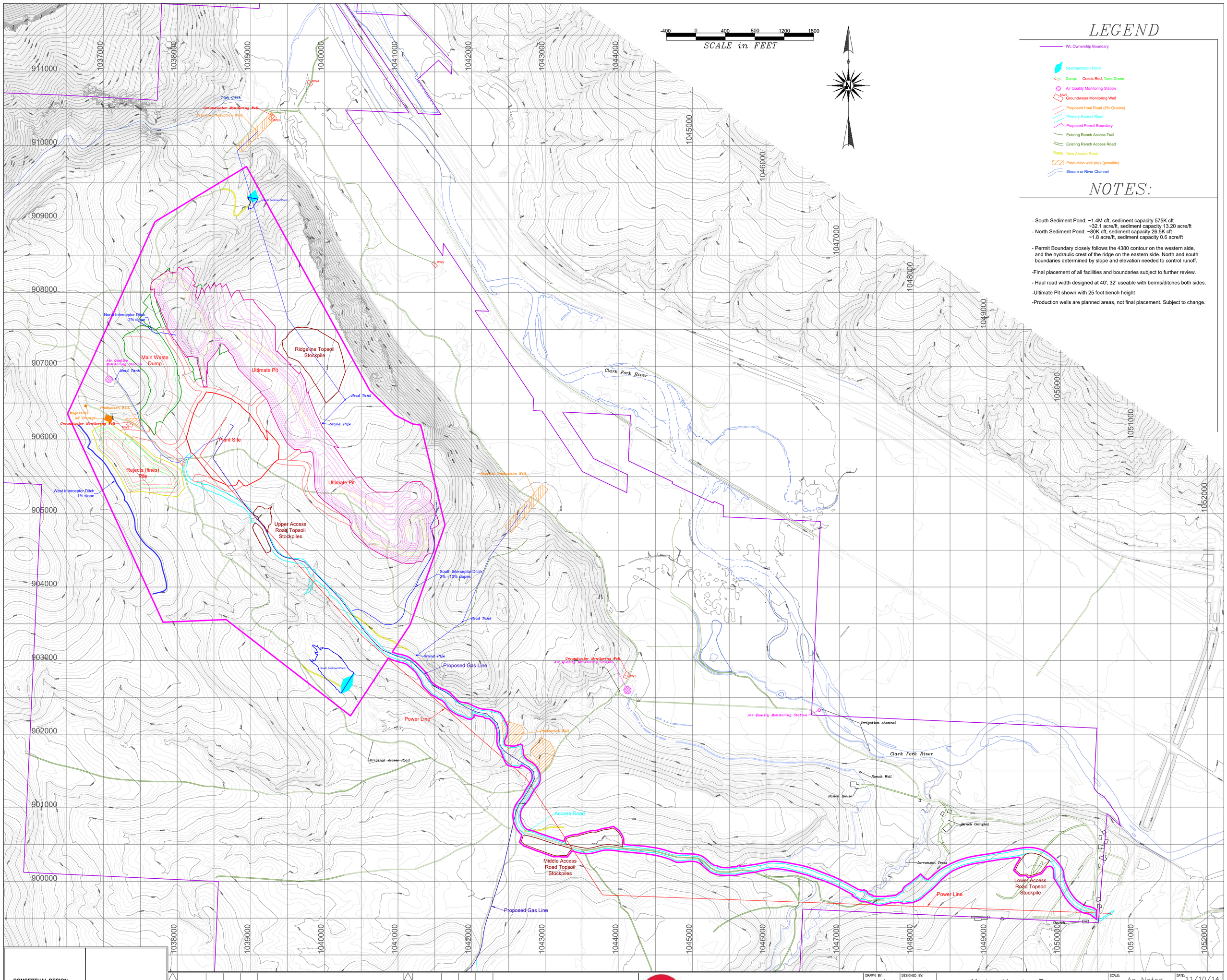
REV	DATE	DRAWN	CHECK	DISP	DESCRIPTION
3	4/19/18	DC	DC		Added Post-Operation Solid Waste Disposal Conceptual Site
2	2/15/18	DC	DC		Added Site Grid
1	8/31/17	DC	DC		Updated Property Boundary

Montana Limestone Resources

DRAWN BY: SEH
DESIGNED BY:
CHECKED BY: SJC
DISCIPLINE APPR:
PROJECT ENG:
OPERATIONS APPR:

Montana Limestone Resources
Project Overview Map
Drummond, MT

SCALE: 1"=800'
DATE: 11/10/14
DRAWING NUMBER: Exhibit 1-1
REV: 3
SHEET: 1 OF: 1
PROJECT No.:



NOTES:

- South Sediment Pond: ~1.4M cft, sediment capacity 575K cft
  ~32.1 acre/ft, sediment capacity 13.20 acre/ft
- North Sediment Pond: ~80K cft, sediment capacity 26.5K cft
  ~1.8 acre/ft, sediment capacity 0.6 acre/ft

- Permit Boundary closely follows the 4380 contour on the western side, and the hydraulic crest of the ridge on the eastern side. North and south boundaries determined by slope and elevation needed to control runoff.

-Final placement of all facilities and boundaries subject to further review.

- Haul road width designed at 40', 32' useable with berms/ditches both sides.

-Ultimate Pit shown with 25 foot bench height

-Production wells are planned areas, not final placement. Subject to change.

CONCEPTUAL DESIGN
NOT FOR CONSTRUCTION

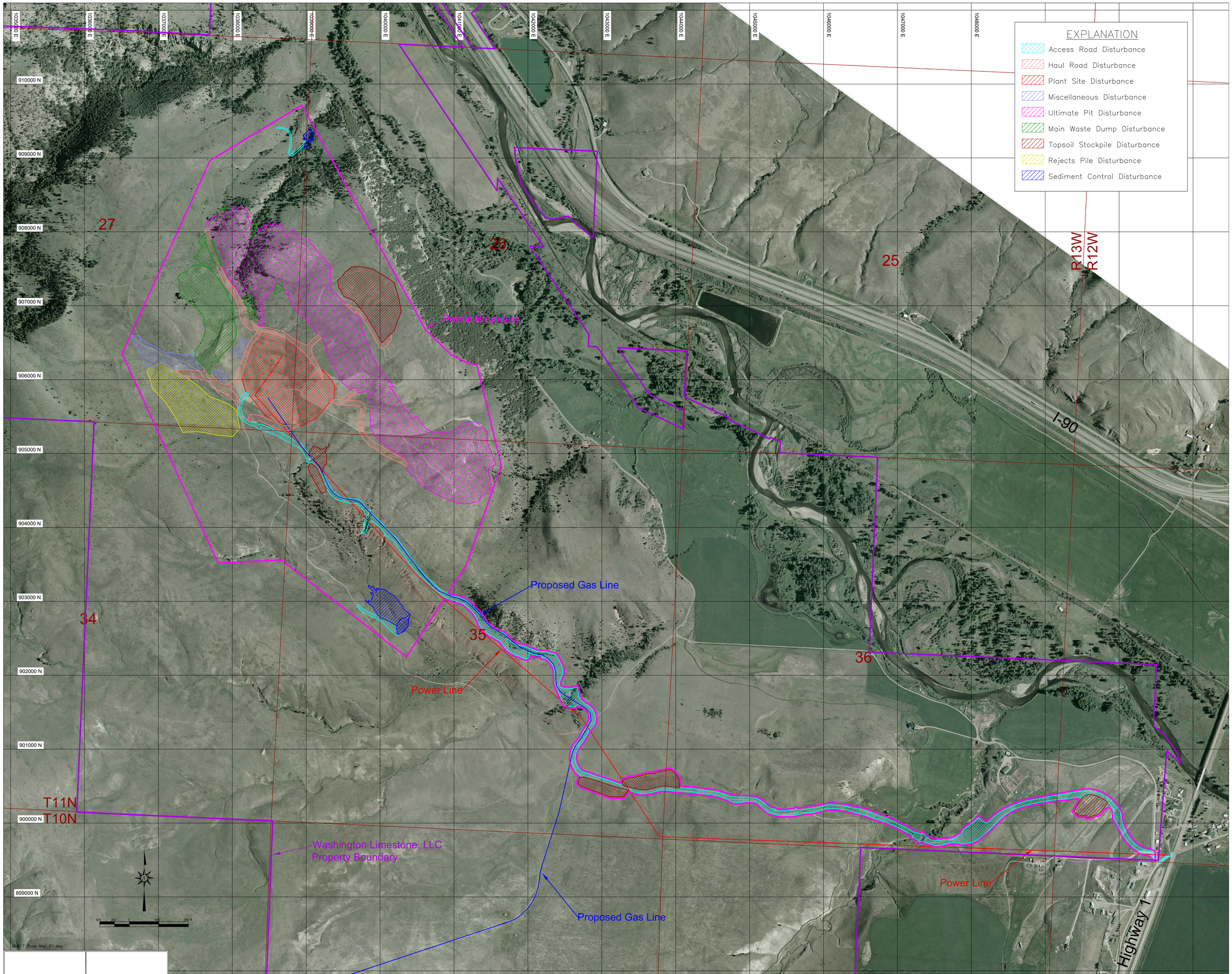
REV	DATE	DRAWN	CHECK	DISP	DESCRIPTION
1	09/07/17	DC	DC		Revised labels, updated property boundaries

Montana Limestone Resources

DRAWN BY: SDN/SEH	DESIGNED BY:
CHECKED BY: SJC	DISCIPLINE APPR:
PROJECT ENG:	OPERATIONS APPR:

Montana Limestone Resources
Mine Plan Map
Drummond, MT

SCALE: As Noted	DATE: 11/10/14
DRAWING NUMBER: Exhibit 3-1	REV: 1
SHEET: 1 OF: 1	PROJECT No.:



CONCEPTUAL DESIGN
NOT FOR CONSTRUCTION

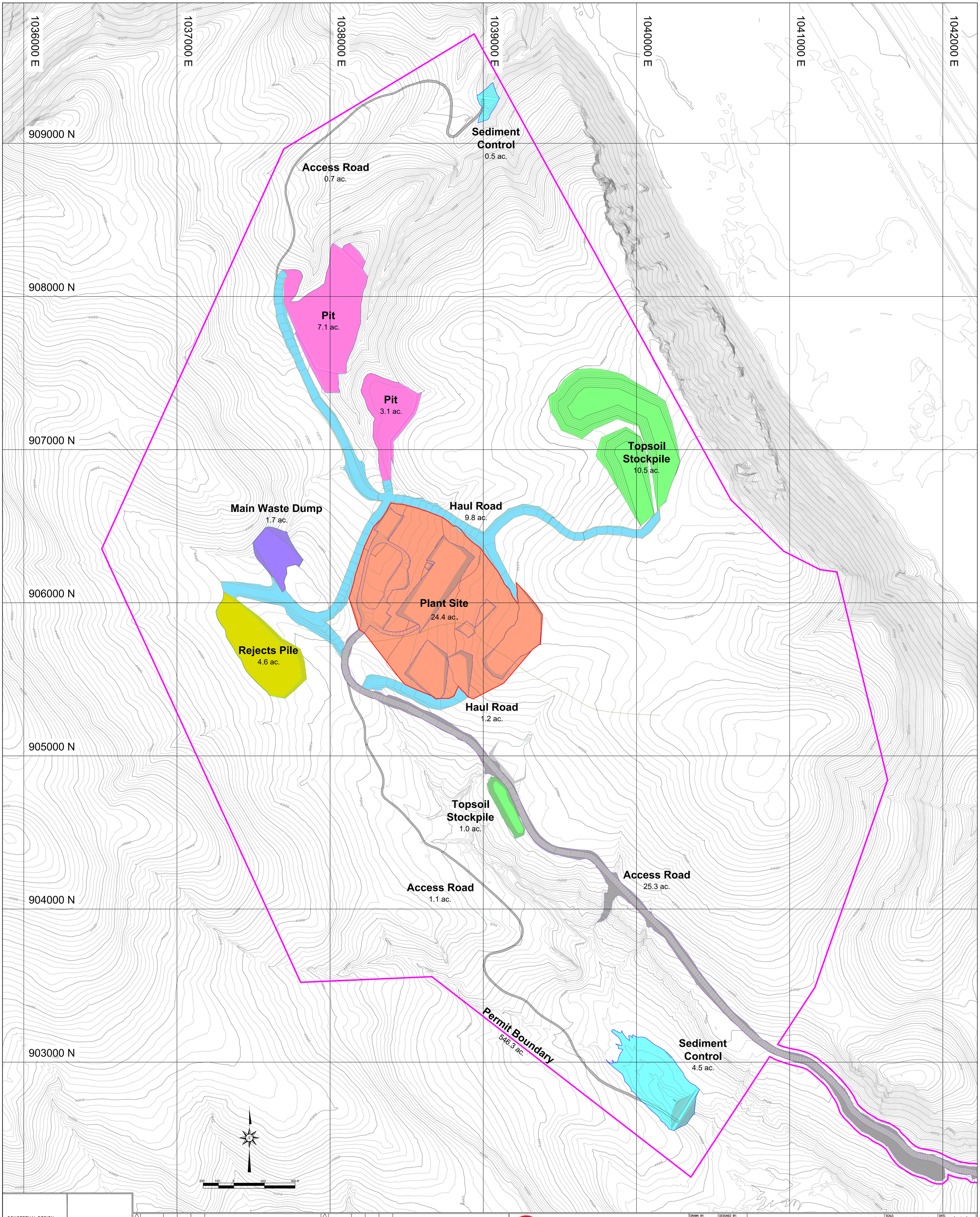
REV	DATE	DRAWN	CHECK	DISP	DESCRIPTION
1	8/31/17	DC	DC		Updated Property Boundary

Montana Limestone Resources

DRAWN BY: SEH	DESIGNED BY:
CHECKED BY: SJC	DISCIPLINE APPR:
PROJECT ENG:	OPERATIONS APPR:

Montana Limestone Resources
Ultimate Disturbance Map
Drummond, MT

SCALE: As Noted	DATE: 11/10/14
DRAWING NUMBER: Exhibit 3-2	REV: 1
SHEET: 1 OF: 1	PROJECT No.:



CONCEPTUAL DESIGN
NOT FOR CONSTRUCTION

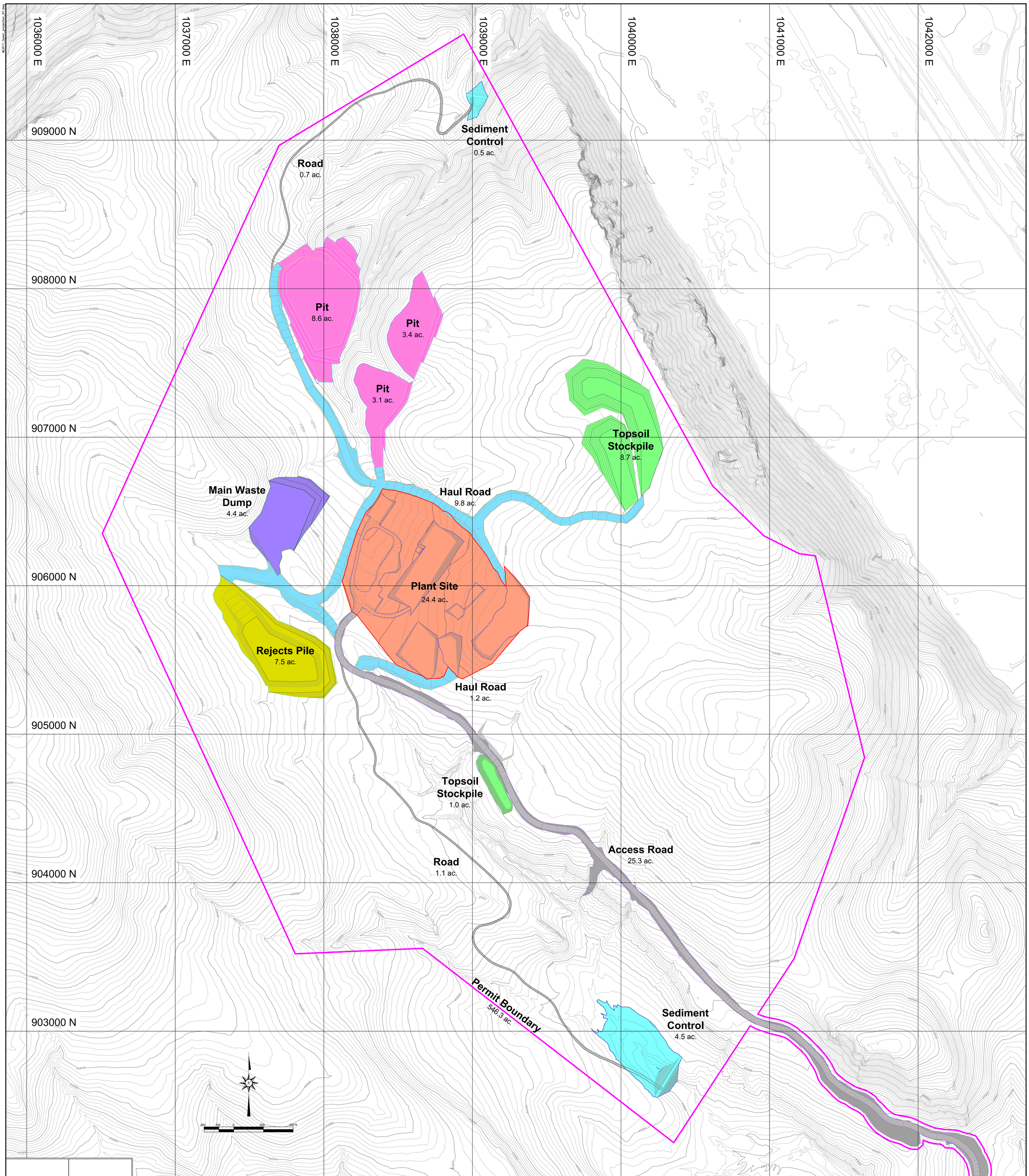
REV	DATE	DRAWN	CHECK	DISP	DESCRIPTION	REV	DATE	DRAWN	CHECK	DISP	DESCRIPTION

Montana Limestone Resources LLC

DRAWN BY: SEH
DESIGNED BY:
CHECKED BY: SJC
DISCIPLINE APPR:
PROJECT ENG:
OPERATIONS APPR:

Montana Limestone Resources
End-of-Year 1 Mining Disturbance
Drummond, MT

SCALE: As Noted
DATE: 11/10/14
DRAWING NUMBER: Exhibit 3-3
REV:
SHEET: 1 OF: 1
PROJECT No.:



CONCEPTUAL DESIGN
NOT FOR CONSTRUCTION

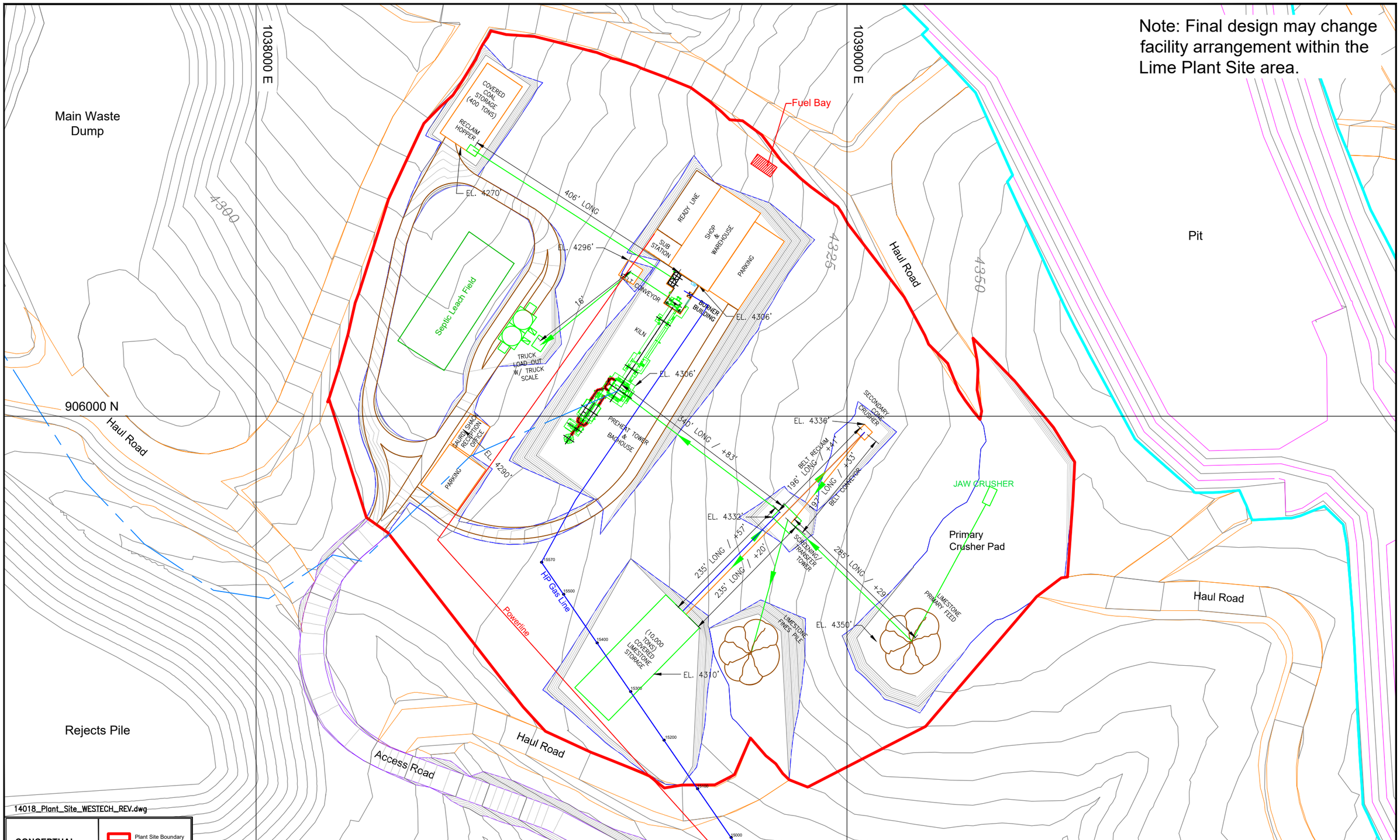
REV	DATE	DRAWN	CHECK	DISP	DESCRIPTION
1	8/31/17	JS/DC	DC		Revised rejects pile topography

Montana Limestone Resources

DRAWN BY: SEH
DESIGNED BY:
CHECKED BY: SJC
DISCIPLINE APPR:
PROJECT ENG:
OPERATIONS APPR:

Montana Limestone Resources
End-of-Year 5 Mining Disturbance
Drummond, MT

SCALE: As Noted
DATE: 11/10/14
DRAWING NUMBER: Exhibit 3-4
REV: 1
SHEET: 1 OF: 1
PROJECT No.:



14018_Plant_Site_WESTECH_REV.dwg

CONCEPTUAL DESIGN NOT FOR CONSTRUCTION

Plant Site Boundary
Proposed Quarry

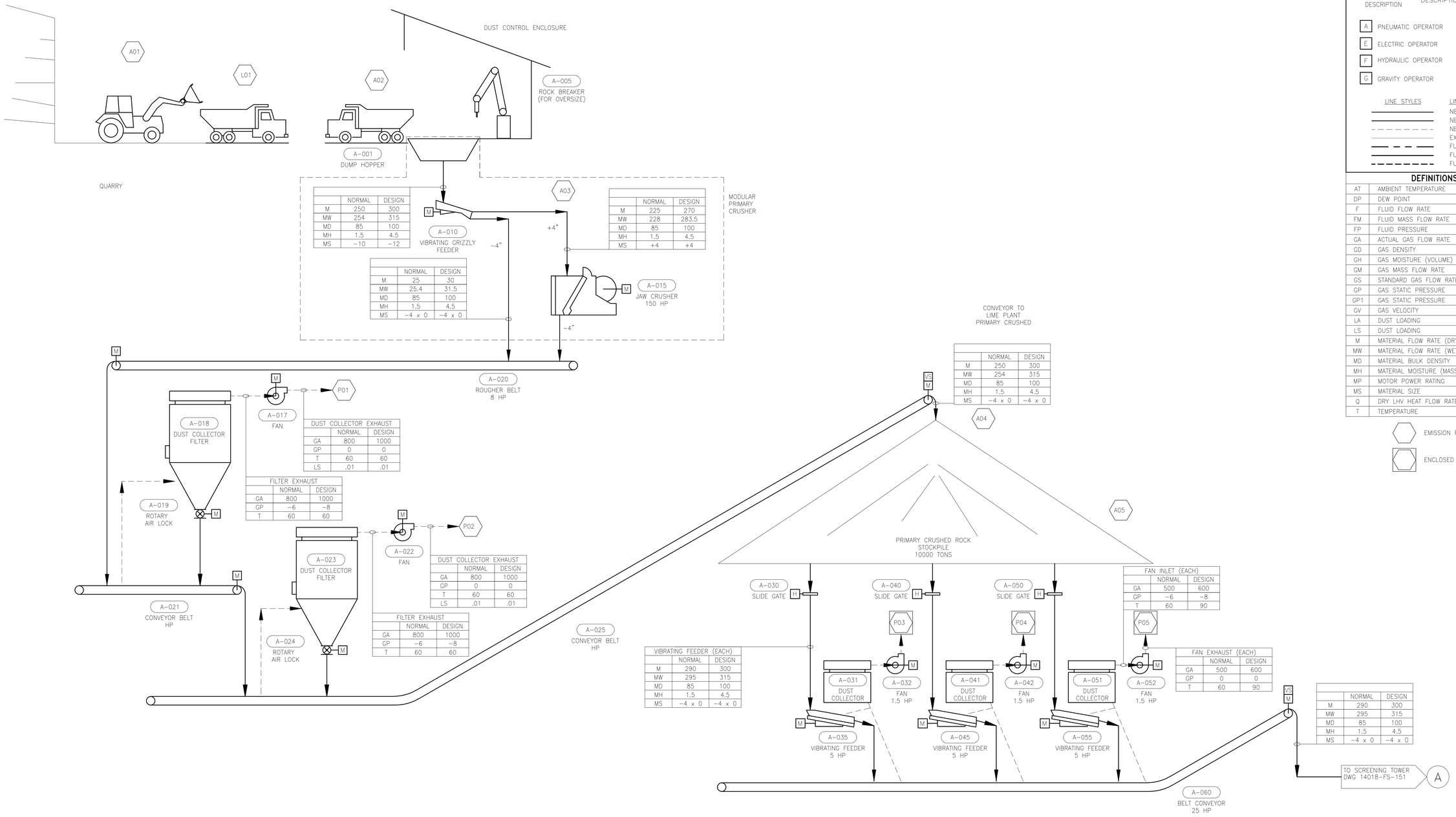
REV	DATE	DRAWN	CHECK	DISP	DESCRIPTION	REV	DATE	DRAWN	CHECK	DISP	DESCRIPTION
						2	2/15/18	DC	LL		Added Site Grid
						1	11/9/14	DC	LL		REVISED SITE PLAN
						0	9/15/14	JTC	JDM		ISSUED FOR PERMIT

Montana Limestone Resources LLC

DRAWN BY: SDN
CHECKED BY: SJC
PROJECT ENG:
DESIGNED BY:
DISCIPLINE APPR:
OPERATIONS APPR:

Montana Limestone Resources
Lime Plant Site Map
Drummond, MT

SCALE: 1"=150'
DATE: 6/25/14
DRAWING NUMBER: Exhibit 3-5
REV: 2
SHEET: 1 OF: 1
PROJECT No.:



	NORMAL	DESIGN
M	250	300
MW	254	315
MD	85	100
MH	1.5	4.5
MS	−10	−12

	NORMAL	DESIGN
M	225	270
MW	228	283.5
MD	85	100
MH	1.5	4.5
MS	+4	+4

	NORMAL	DESIGN
M	25	30
MW	25.4	31.5
MD	85	100
MH	1.5	4.5
MS	−4 x 0	−4 x 0

	NORMAL	DESIGN
M	250	300
MW	254	315
MD	85	100
MH	1.5	4.5
MS	−4 x 0	−4 x 0

DUST COLLECTOR EXHAUST		
	NORMAL	DESIGN
GA	800	1000
GP	0	0
T	60	60
LS	.01	.01

FILTER EXHAUST		
	NORMAL	DESIGN
GA	800	1000
GP	−6	−8
T	60	60

DUST COLLECTOR EXHAUST		
	NORMAL	DESIGN
GA	800	1000
GP	0	0
T	60	60
LS	.01	.01

FILTER EXHAUST		
	NORMAL	DESIGN
GA	800	1000
GP	−6	−8
T	60	60

VIBRATING FEEDER (EACH)		
	NORMAL	DESIGN
M	290	300
MW	295	315
MD	85	100
MH	1.5	4.5
MS	−4 x 0	−4 x 0

FAN INLET (EACH)		
	NORMAL	DESIGN
GA	500	600
GP	−6	−8
T	60	90

FAN EXHAUST (EACH)		
	NORMAL	DESIGN
GA	500	600
GP	0	0
T	60	90

	NORMAL	DESIGN
M	290	300
MW	295	315
MD	85	100
MH	1.5	4.5
MS	−4 x 0	−4 x 0

LEGEND

EQPMT−NO
DESCRIPTION
EQUIPMENT NUMBER WITH DESCRIPTION

- A — PNEUMATIC OPERATOR
- E — ELECTRIC OPERATOR
- F — HYDRAULIC OPERATOR
- G — GRAVITY OPERATOR
- H — MANUAL OPERATOR
- C — COMBUSTION ENGINE
- M — ELECTRIC MOTOR
- VS — VARIABLE SPEED

LINE STYLES	LINE DEFINITIONS
———	NEW EQUIPMENT
———	NEW MATERIAL FLOW
- - - -	NEW FUGITIVE DUST COLLECTION
———	EXISTING EQUIPMENT & FLOW
— — —	FUTURE EQUIPMENT
———	FUTURE MATERIAL FLOW
- - - -	FUTURE FUGITIVE DUST COLL.

DEFINITIONS OF UNITS

AT	AMBIENT TEMPERATURE	°F
DP	DEW POINT	°F
F	FLUID FLOW RATE	gpm
FM	FLUID MASS FLOW RATE	lb/min
FP	FLUID PRESSURE	psi
GA	ACTUAL GAS FLOW RATE	acfm
GD	GAS DENSITY	lb/ft3
GH	GAS MOISTURE (VOLUME)	%
GM	GAS MASS FLOW RATE	lb/min
GS	STANDARD GAS FLOW RATE (70°F)	scfm
GP	GAS STATIC PRESSURE	in WG
GP1	GAS STATIC PRESSURE	psi
GV	GAS VELOCITY	ft/min
LA	DUST LOADING	gr/acf
LS	DUST LOADING	gr/scf
M	MATERIAL FLOW RATE (DRY)	stph
MW	MATERIAL FLOW RATE (WET)	stph
MD	MATERIAL BULK DENSITY	lb/ft3
MH	MATERIAL MOISTURE (MASS)	%
MP	MOTOR POWER RATING	hp
MS	MATERIAL SIZE	in
Q	DRY LHV HEAT FLOW RATE	10^6 Btu/hr
T	TEMPERATURE	°F

EMISSION POINT

ENCLOSED EMISSION POINT

RELEASED FOR PERMIT
DATE: 9/12/2014 BY: JTC

REV	DESCRIPTION	DATE	DSGNR	MGR
0	RELEASED FOR PERMIT	9−12−2014	JTC	JDM

DRN. BY: JTC
SCALE: NONE
PROJECT NO: 14018

STATUS: PERMIT

Phoenix
Process Engineering, Inc.
1053 Cave Springs Road, Suite 305
Saint Peters, Missouri 63376
Phone 636-441-9708
phoenix@phoenixprocess.com
FAX 636-441-9737

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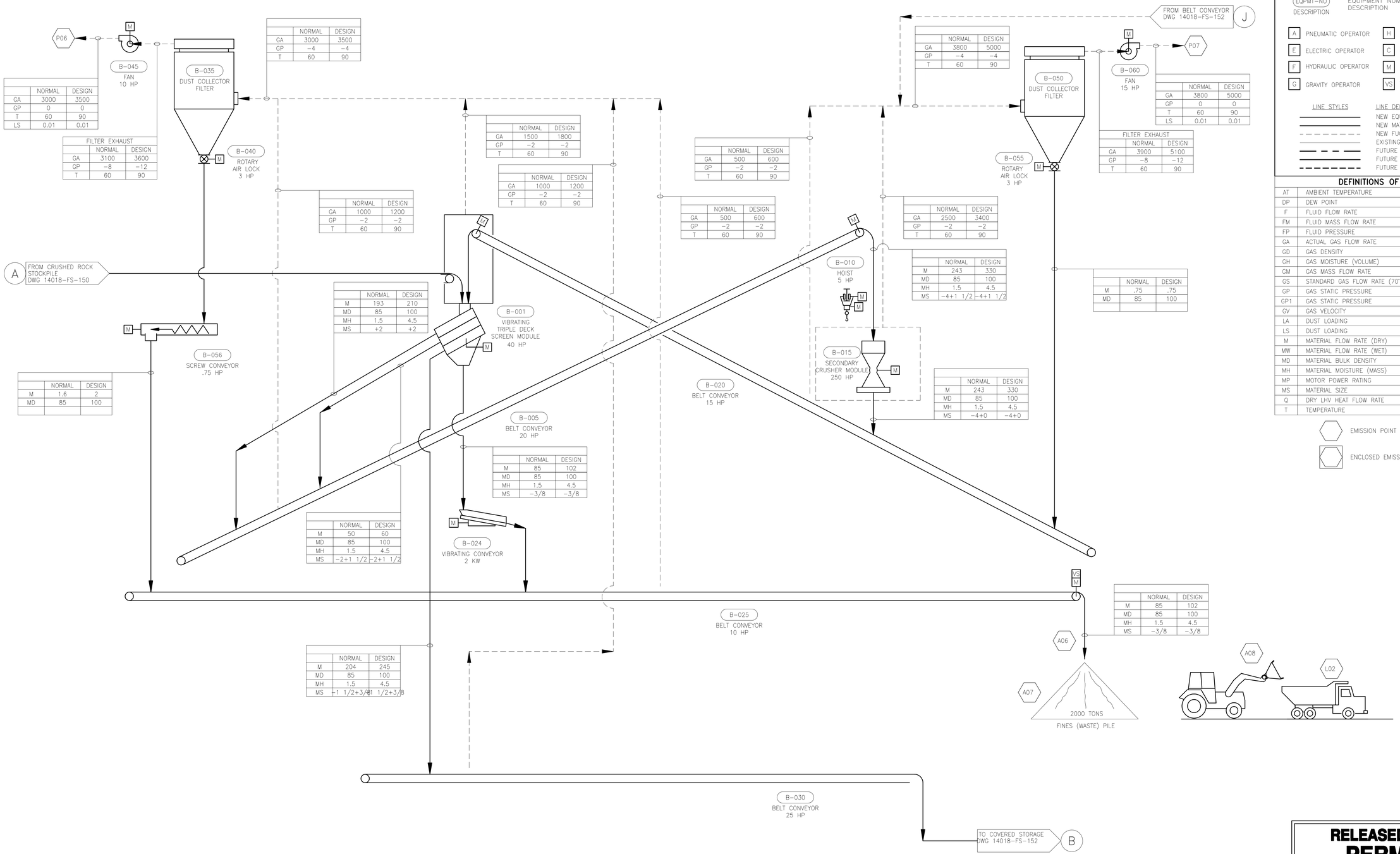
CLIENT: MONTANTA LIMESTONE, LLC
PROJECT: NEW LIME PLANT − PHASE II
LOCATION: DRUMMOND, MONTANA
DWG NAME: FLOW DIAGRAM
350 TPD LIME PLANT
PRIMARY CRUSHING

DATE	DRAWING NUMBER	REVISION
08−12−2014	14018−FS−150	0



	NORMAL	DESIGN
GA	3000	3500
GP	0	0
T	60	90
LS	0.01	0.01

FILTER EXHAUST	NORMAL	DESIGN
GA	3100	3600
GP	-8	-12
T	60	90

	NORMAL	DESIGN
GA	3000	3500
GP	-4	-4
T	60	90

	NORMAL	DESIGN
GA	1500	1800
GP	-2	-2
T	60	90

	NORMAL	DESIGN
GA	1000	1200
GP	-2	-2
T	60	90

	NORMAL	DESIGN
GA	1000	1200
GP	-2	-2
T	60	90

	NORMAL	DESIGN
M	193	210
MD	85	100
MH	1.5	4.5
MS	+2	+2

	NORMAL	DESIGN
M	1.6	2
MD	85	100

	NORMAL	DESIGN
M	50	60
MD	85	100
MH	1.5	4.5
MS	-2+1 1/2	-2+1 1/2

	NORMAL	DESIGN
M	204	245
MD	85	100
MH	1.5	4.5
MS	-1 1/2+3/8	-1 1/2+3/8

	NORMAL	DESIGN
M	85	102
MD	85	100
MH	1.5	4.5
MS	-3/8	-3/8

	NORMAL	DESIGN
GA	500	600
GP	-2	-2
T	60	90

	NORMAL	DESIGN
GA	500	600
GP	-2	-2
T	60	90

	NORMAL	DESIGN
GA	2500	3400
GP	-2	-2
T	60	90

	NORMAL	DESIGN
M	243	330
MD	85	100
MH	1.5	4.5
MS	-4+1 1/2	-4+1 1/2

	NORMAL	DESIGN
M	.75	.75
MD	85	100

	NORMAL	DESIGN
M	243	330
MD	85	100
MH	1.5	4.5
MS	-4+0	-4+0

	NORMAL	DESIGN
M	85	102
MD	85	100
MH	1.5	4.5
MS	-3/8	-3/8

	NORMAL	DESIGN
GA	3800	5000
GP	-4	-4
T	60	90

	NORMAL	DESIGN
GA	3800	5000
GP	0	0
T	60	90
LS	0.01	0.01

FILTER EXHAUST	NORMAL	DESIGN
GA	3900	5100
GP	-8	-12
T	60	90

LEGEND

EQPMT-NO / DESCRIPTION — EQUIPMENT NUMBER WITH DESCRIPTION

- A — PNEUMATIC OPERATOR
- E — ELECTRIC OPERATOR
- F — HYDRAULIC OPERATOR
- G — GRAVITY OPERATOR
- H — MANUAL OPERATOR
- C — COMBUSTION ENGINE
- M — ELECTRIC MOTOR
- VS — VARIABLE SPEED

LINE STYLES	LINE DEFINITIONS
	NEW EQUIPMENT
	NEW MATERIAL FLOW
	NEW FUGITIVE DUST COLLECTION
	EXISTING EQUIPMENT & FLOW
	FUTURE EQUIPMENT
	FUTURE MATERIAL FLOW
	FUTURE FUGITIVE DUST COLL.

DEFINITIONS OF UNITS

AT	AMBIENT TEMPERATURE	°F
DP	DEW POINT	°F
F	FLUID FLOW RATE	gpm
FM	FLUID MASS FLOW RATE	lb/min
FP	FLUID PRESSURE	psi
GA	ACTUAL GAS FLOW RATE	acfm
GD	GAS DENSITY	lb/ft3
GH	GAS MOISTURE (VOLUME)	%
GM	GAS MASS FLOW RATE	lb/min
GS	STANDARD GAS FLOW RATE (70°F)	scfm
GP	GAS STATIC PRESSURE	in WG
GP1	GAS STATIC PRESSURE	psi
GV	GAS VELOCITY	ft/min
LA	DUST LOADING	gr/acf
LS	DUST LOADING	gr/scf
M	MATERIAL FLOW RATE (DRY)	stph
MW	MATERIAL FLOW RATE (WET)	stph
MD	MATERIAL BULK DENSITY	lb/ft3
MH	MATERIAL MOISTURE (MASS)	%
MP	MOTOR POWER RATING	hp
MS	MATERIAL SIZE	in
Q	DRY LHV HEAT FLOW RATE	10^6 Btu/hr
T	TEMPERATURE	°F

EMISSION POINT

ENCLOSED EMISSION POINT

RELEASED FOR PERMIT

DATE: 9/12/2014 BY: JTC

REV	DESCRIPTION	DATE	DSGNR	MGR
0	RELEASED FOR PERMIT	9-12-2014	JTC	JDM

DRN. BY: JTC
SCALE: NONE
PROJECT NO: 14018

STATUS: PERMIT

Phoenix Process Engineering, Inc.
1053 Cave Springs Road, Suite 305
Saint Peters, Missouri 63376
phoenix@phoenixprocess.com
Phone 636-441-9708
FAX 636-441-9737

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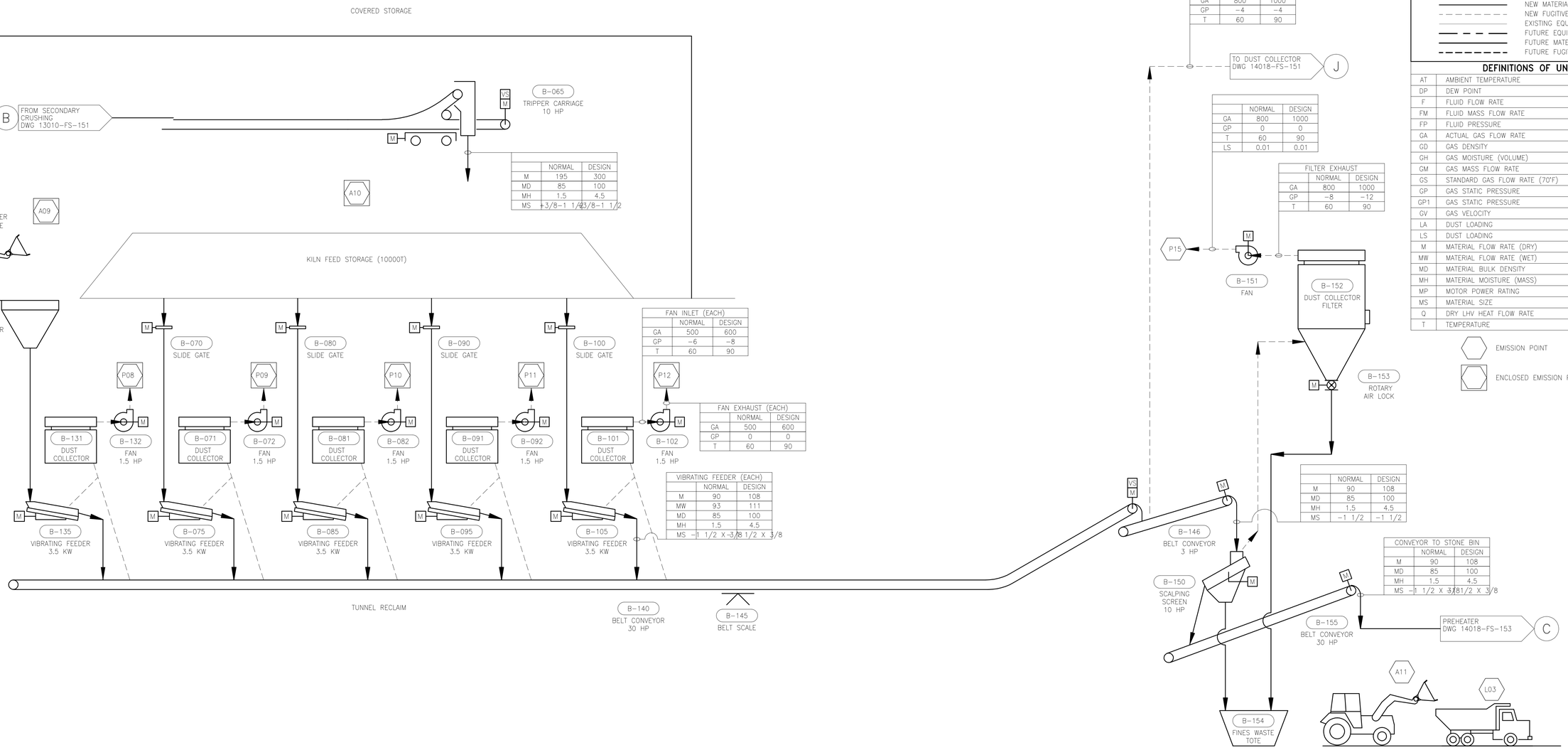
CLIENT: MONTANTA LIMESTONE, LLC
PROJECT: NEW LIME PLANT – PHASE II
LOCATION: DRUMMOND, MONTANA
DWG NAME: FLOW DIAGRAM 350 TPD LIME PLANT SECONDARY CRUSHING

DATE	DRAWING NUMBER	REVISION
08-12-2014	14018-FS-151	0



	NORMAL	DESIGN
GA	800	1000
GP	−4	−4
T	60	90

	NORMAL	DESIGN
GA	800	1000
GP	0	0
T	60	90
LS	0.01	0.01

FILTER EXHAUST	NORMAL	DESIGN
GA	800	1000
GP	−8	−12
T	60	90

	NORMAL	DESIGN
M	195	300
MD	85	100
MH	1.5	4.5
MS	−3/8−1 1/2	3/8−1 1/2

FAN INLET (EACH)	NORMAL	DESIGN
GA	500	600
GP	−6	−8
T	60	90

FAN EXHAUST (EACH)	NORMAL	DESIGN
GA	500	600
GP	0	0
T	60	90

VIBRATING FEEDER (EACH)	NORMAL	DESIGN
M	90	108
MW	93	111
MD	85	100
MH	1.5	4.5
MS	−1 1/2 X −3/8	1/2 X 3/8

	NORMAL	DESIGN
M	90	108
MD	85	100
MH	1.5	4.5
MS	−1 1/2	−1 1/2

CONVEYOR TO STONE BIN	NORMAL	DESIGN
M	90	108
MD	85	100
MH	1.5	4.5
MS	−1 1/2 X −3/8	1/2 X 3/8

LEGEND

EQPMT−NO DESCRIPTION — EQUIPMENT NUMBER WITH DESCRIPTION

- A — PNEUMATIC OPERATOR
- E — ELECTRIC OPERATOR
- F — HYDRAULIC OPERATOR
- G — GRAVITY OPERATOR
- H — MANUAL OPERATOR
- C — COMBUSTION ENGINE
- M — ELECTRIC MOTOR
- VS — VARIABLE SPEED

LINE STYLES	LINE DEFINITIONS
———	NEW EQUIPMENT
———	NEW MATERIAL FLOW
- - - - -	NEW FUGITIVE DUST COLLECTION
———	EXISTING EQUIPMENT & FLOW
— — —	FUTURE EQUIPMENT
———	FUTURE MATERIAL FLOW
- - - - -	FUTURE FUGITIVE DUST COLL.

DEFINITIONS OF UNITS

AT	AMBIENT TEMPERATURE	°F
DP	DEW POINT	°F
F	FLUID FLOW RATE	gpm
FM	FLUID MASS FLOW RATE	lb/min
FP	FLUID PRESSURE	psi
GA	ACTUAL GAS FLOW RATE	acfm
GD	GAS DENSITY	lb/ft3
GH	GAS MOISTURE (VOLUME)	%
GM	GAS MASS FLOW RATE	lb/min
GS	STANDARD GAS FLOW RATE (70°F)	scfm
GP	GAS STATIC PRESSURE	in WG
GP1	GAS STATIC PRESSURE	psi
GV	GAS VELOCITY	ft/min
LA	DUST LOADING	gr/acf
LS	DUST LOADING	gr/scf
M	MATERIAL FLOW RATE (DRY)	stph
MW	MATERIAL FLOW RATE (WET)	stph
MD	MATERIAL BULK DENSITY	lb/ft3
MH	MATERIAL MOISTURE (MASS)	%
MP	MOTOR POWER RATING	hp
MS	MATERIAL SIZE	in
Q	DRY LHV HEAT FLOW RATE	10^6 Btu/hr
T	TEMPERATURE	°F

EMISSION POINT

ENCLOSED EMISSION POINT

RELEASED FOR PERMIT

DATE: 9/12/2014 BY: JTC

REV	DESCRIPTION	DATE	DSGNR	MGR
0	RELEASED FOR PERMIT	9−12−2014	JTC	JDM

DRN. BY: JTC
SCALE: NONE
PROJECT NO: 14018

STATUS: PERMIT

Phoenix Process Engineering, Inc.
1053 Cave Springs Road, Suite 305
Saint Peters, Missouri 63376
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Phone 636-441-9708
FAX 636-441-9737

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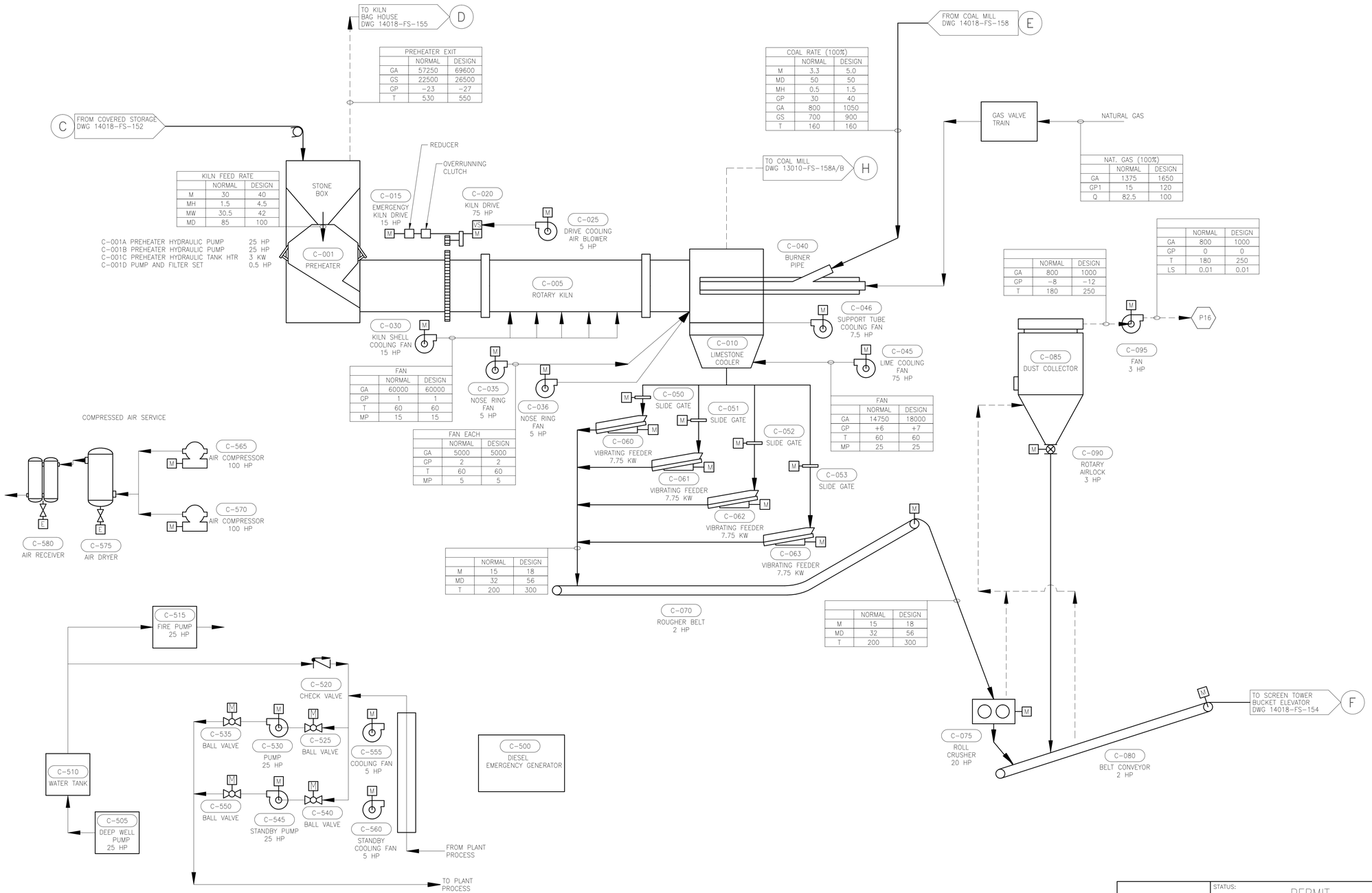
CLIENT: MONTANTA LIMESTONE, LLC

PROJECT: NEW LIME PLANT − PHASE II

LOCATION: DRUMMOND, MONTANA

DWG NAME: FLOW DIAGRAM
350 TPD LIME PLANT
LIMESTONE STORAGE AND RECLAIM

DATE	DRAWING NUMBER	REVISION
08−12−2014	14018−FS−152	0



PREHEATER EXIT	NORMAL	DESIGN
GA	57250	69600
GS	22500	26500
GP	-23	-27
T	530	550

COAL RATE (100%)	NORMAL	DESIGN
M	3.3	5.0
MD	50	50
MH	0.5	1.5
GP	30	40
GA	800	1050
GS	700	900
T	160	160

KILN FEED RATE	NORMAL	DESIGN
M	30	40
MH	1.5	4.5
MW	30.5	42
MD	85	100

C-001A PREHEATER HYDRAULIC PUMP 25 HP
C-001B PREHEATER HYDRAULIC PUMP 25 HP
C-001C PREHEATER HYDRAULIC TANK HTR 3 KW
C-001D PUMP AND FILTER SET 0.5 HP

NAT. GAS (100%)	NORMAL	DESIGN
GA	1375	1650
GP1	15	120
Q	82.5	100

	NORMAL	DESIGN
GA	800	1000
GP	0	0
T	180	250
LS	0.01	0.01

	NORMAL	DESIGN
GA	800	1000
GP	-8	-12
T	180	250

FAN	NORMAL	DESIGN
GA	60000	60000
GP	1	1
T	60	60
MP	15	15

FAN EACH	NORMAL	DESIGN
GA	5000	5000
GP	2	2
T	60	60
MP	5	5

FAN	NORMAL	DESIGN
GA	14750	18000
GP	+6	+7
T	60	60
MP	25	25

	NORMAL	DESIGN
M	15	18
MD	32	56
T	200	300

	NORMAL	DESIGN
M	15	18
MD	32	56
T	200	300

LEGEND

EQPMT-NO DESCRIPTION — EQUIPMENT NUMBER WITH DESCRIPTION

- A PNEUMATIC OPERATOR
- H MANUAL OPERATOR
- E ELECTRIC OPERATOR
- C COMBUSTION ENGINE
- F HYDRAULIC OPERATOR
- M ELECTRIC MOTOR
- G GRAVITY OPERATOR
- VS VARIABLE SPEED

LINE STYLES	LINE DEFINITIONS
	NEW EQUIPMENT
	NEW MATERIAL FLOW
	NEW FUGITIVE DUST COLLECTION
	EXISTING EQUIPMENT & FLOW
	FUTURE EQUIPMENT
	FUTURE MATERIAL FLOW
	FUTURE FUGITIVE DUST COLL.

DEFINITIONS OF UNITS

AT	AMBIENT TEMPERATURE	°F
DP	DEW POINT	°F
F	FLUID FLOW RATE	gpm
FM	FLUID MASS FLOW RATE	lb/min
FP	FLUID PRESSURE	psi
GA	ACTUAL GAS FLOW RATE	acfm
GD	GAS DENSITY	lb/ft3
GH	GAS MOISTURE (VOLUME)	%
GM	GAS MASS FLOW RATE	lb/min
GS	STANDARD GAS FLOW RATE (70°F)	scfm
GP	GAS STATIC PRESSURE	in WG
GP1	GAS STATIC PRESSURE	psi
GV	GAS VELOCITY	ft/min
LA	DUST LOADING	gr/acf
LS	DUST LOADING	gr/scf
M	MATERIAL FLOW RATE (DRY)	stph
MW	MATERIAL FLOW RATE (WET)	stph
MD	MATERIAL BULK DENSITY	lb/ft3
MH	MATERIAL MOISTURE (MASS)	%
MP	MOTOR POWER RATING	hp
MS	MATERIAL SIZE	in
Q	DRY LHV HEAT FLOW RATE	10^6 Btu/hr
T	TEMPERATURE	°F

EMISSION POINT

ENCLOSED EMISSION POINT

RELEASED FOR PERMIT

DATE: 9/12/2014 BY: JTC

REV	DESCRIPTION	DATE	DSGNR	MGR
0	RELEASED FOR PERMIT	9-12-2014	JTC	JDM

DRN. BY: JTC
SCALE: NONE
PROJECT NO: 14018

STATUS: PERMIT

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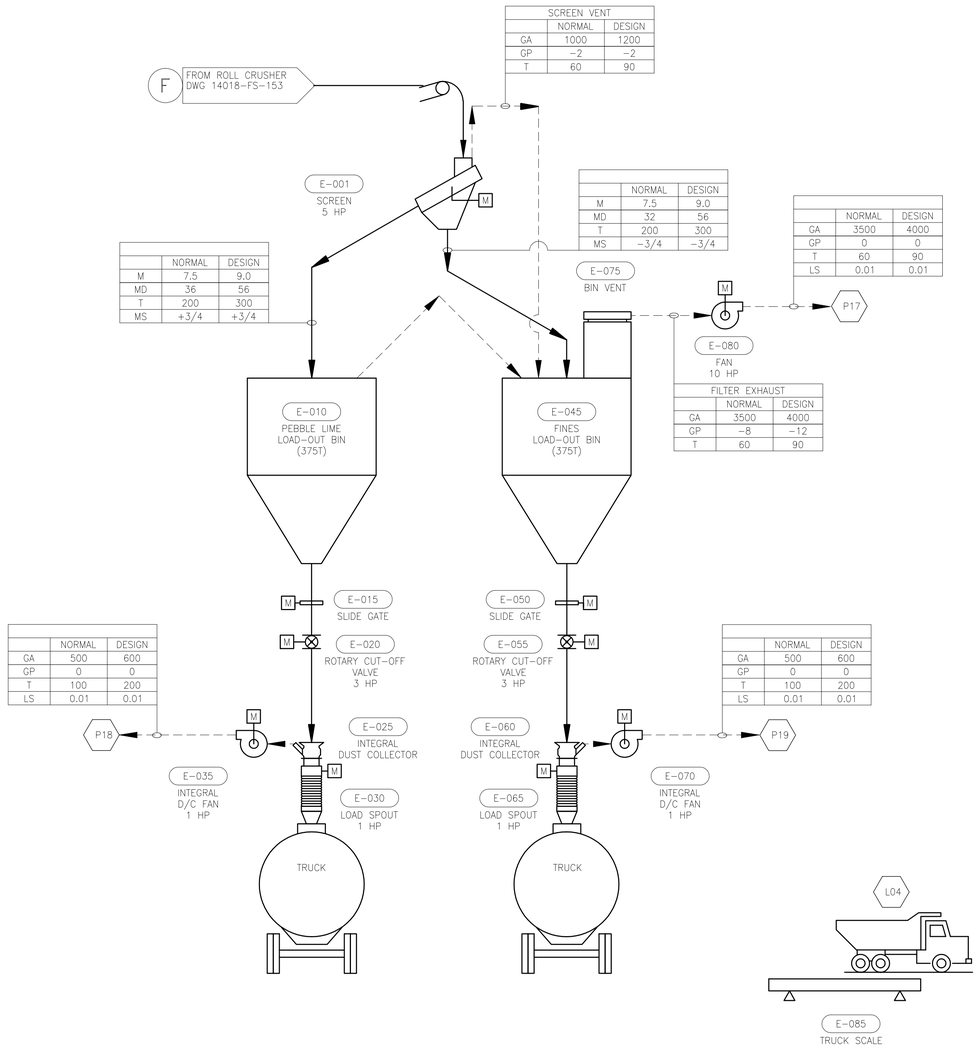
CLIENT: MONTANTA LIMESTONE, LLC
PROJECT: NEW LIME PLANT – PHASE II
LOCATION: DRUMMOND, MONTANA
DWG NAME: FLOW DIAGRAM 350 TPD LIME PLANT KILN FEED

DATE	DRAWING NUMBER	REVISION
08-12-2014	14018-FS-153	0



SCREEN VENT	NORMAL	DESIGN
GA	1000	1200
GP	−2	−2
T	60	90

	NORMAL	DESIGN
M	7.5	9.0
MD	32	56
T	200	300
MS	−3/4	−3/4

	NORMAL	DESIGN
M	7.5	9.0
MD	36	56
T	200	300
MS	+3/4	+3/4

	NORMAL	DESIGN
GA	3500	4000
GP	0	0
T	60	90
LS	0.01	0.01

FILTER EXHAUST	NORMAL	DESIGN
GA	3500	4000
GP	−8	−12
T	60	90

	NORMAL	DESIGN
GA	500	600
GP	0	0
T	100	200
LS	0.01	0.01

	NORMAL	DESIGN
GA	500	600
GP	0	0
T	100	200
LS	0.01	0.01

LEGEND

EQPMT-NO
DESCRIPTION — EQUIPMENT NUMBER WITH DESCRIPTION

- A — PNEUMATIC OPERATOR
- E — ELECTRIC OPERATOR
- F — HYDRAULIC OPERATOR
- G — GRAVITY OPERATOR
- H — MANUAL OPERATOR
- C — COMBUSTION ENGINE
- M — ELECTRIC MOTOR
- VS — VARIABLE SPEED

LINE STYLES	LINE DEFINITIONS
———	NEW EQUIPMENT
———	NEW MATERIAL FLOW
- - - - - -	NEW FUGITIVE DUST COLLECTION
———	EXISTING EQUIPMENT & FLOW
— — —	FUTURE EQUIPMENT
———	FUTURE MATERIAL FLOW
- - - - - -	FUTURE FUGITIVE DUST COLL.

DEFINITIONS OF UNITS

AT	AMBIENT TEMPERATURE	°F
DP	DEW POINT	°F
F	FLUID FLOW RATE	gpm
FM	FLUID MASS FLOW RATE	lb/min
FP	FLUID PRESSURE	psi
GA	ACTUAL GAS FLOW RATE	acfm
GD	GAS DENSITY	lb/ft3
GH	GAS MOISTURE (VOLUME)	%
GM	GAS MASS FLOW RATE	lb/min
GS	STANDARD GAS FLOW RATE (70°F)	scfm
GP	GAS STATIC PRESSURE	in WG
GP1	GAS STATIC PRESSURE	psi
GV	GAS VELOCITY	ft/min
LA	DUST LOADING	gr/acf
LS	DUST LOADING	gr/scf
M	MATERIAL FLOW RATE (DRY)	stph
MW	MATERIAL FLOW RATE (WET)	stph
MD	MATERIAL BULK DENSITY	lb/ft3
MH	MATERIAL MOISTURE (MASS)	%
MP	MOTOR POWER RATING	hp
MS	MATERIAL SIZE	in
Q	DRY LHV HEAT FLOW RATE	10^6 Btu/hr
T	TEMPERATURE	°F

EMISSION POINT

ENCLOSED EMISSION POINT

RELEASED FOR PERMIT
DATE: 9/12/2014 BY: JTC

REV	DESCRIPTION	DATE	DSGNR	MGR
0	RELEASED FOR PERMIT	9-12-2014	JTC	JDM

DRN. BY: JTC
SCALE: NONE
PROJECT NO: 14018

STATUS: PERMIT

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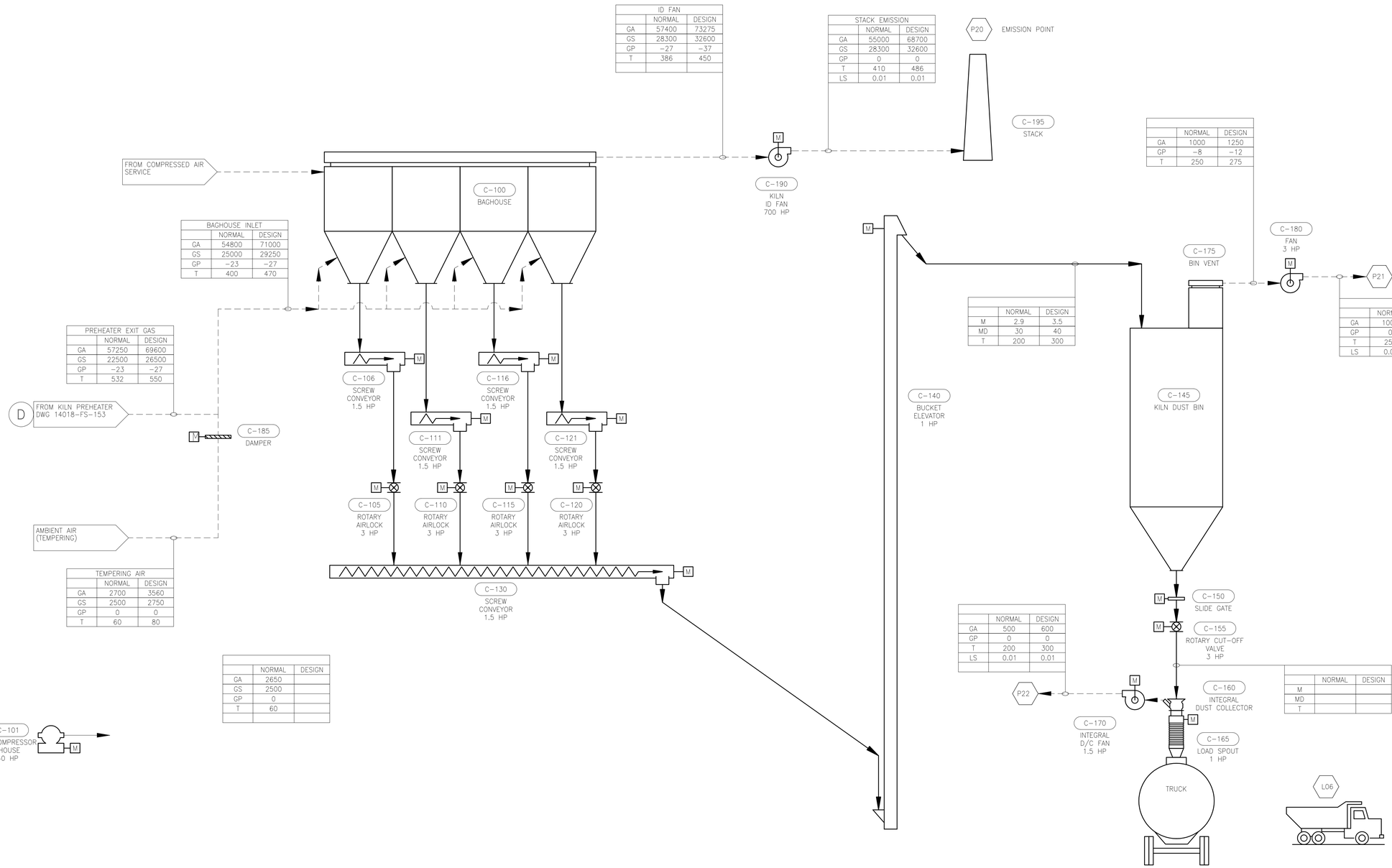
CLIENT: MONTANTA LIMESTONE, LLC
PROJECT: NEW LIME PLANT – PHASE II
LOCATION: DRUMMOND, MONTANA
DWG NAME: FLOW DIAGRAM 350 TPD LIME PLANT TRUCK LOAD OUT

DATE	DRAWING NUMBER	REVISION
08-12-2014	14018-FS-154	0



ID FAN	NORMAL	DESIGN
GA	57400	73275
GS	28300	32600
GP	-27	-37
T	386	450

STACK EMISSION	NORMAL	DESIGN
GA	55000	68700
GS	28300	32600
GP	0	0
T	410	486
LS	0.01	0.01

BAGHOUSE INLET	NORMAL	DESIGN
GA	54800	71000
GS	25000	29250
GP	-23	-27
T	400	470

PREHEATER EXIT GAS	NORMAL	DESIGN
GA	57250	69600
GS	22500	26500
GP	-23	-27
T	532	550

TEMPERING AIR	NORMAL	DESIGN
GA	2700	3560
GS	2500	2750
GP	0	0
T	60	80

	NORMAL	DESIGN
GA	2650	
GS	2500	
GP	0	
T	60	

	NORMAL	DESIGN
GA	1000	1250
GP	-8	-12
T	250	275

	NORMAL	DESIGN
M	2.9	3.5
MD	30	40
T	200	300

	NORMAL	DESIGN
GA	1000	1250
GP	0	0
T	250	273
LS	0.01	0.01

	NORMAL	DESIGN
GA	500	600
GP	0	0
T	200	300
LS	0.01	0.01

	NORMAL	DESIGN
M		
MD		
T		

LEGEND

EQPMT-NO DESCRIPTION — EQUIPMENT NUMBER WITH DESCRIPTION

- A — PNEUMATIC OPERATOR
- E — ELECTRIC OPERATOR
- F — HYDRAULIC OPERATOR
- G — GRAVITY OPERATOR
- H — MANUAL OPERATOR
- C — COMBUSTION ENGINE
- M — ELECTRIC MOTOR
- VS — VARIABLE SPEED

LINE STYLES	LINE DEFINITIONS
	NEW EQUIPMENT
	NEW MATERIAL FLOW
	NEW FUGITIVE DUST COLLECTION
	EXISTING EQUIPMENT & FLOW
	FUTURE EQUIPMENT
	FUTURE MATERIAL FLOW
	FUTURE FUGITIVE DUST COLL.

DEFINITIONS OF UNITS

AT	AMBIENT TEMPERATURE	°F
DP	DEW POINT	°F
F	FLUID FLOW RATE	gpm
FM	FLUID MASS FLOW RATE	lb/min
FP	FLUID PRESSURE	psi
GA	ACTUAL GAS FLOW RATE	acfm
GD	GAS DENSITY	lb/ft3
GH	GAS MOISTURE (VOLUME)	%
GM	GAS MASS FLOW RATE	lb/min
GS	STANDARD GAS FLOW RATE (70°F)	scfm
GP	GAS STATIC PRESSURE	in WG
GP1	GAS STATIC PRESSURE	psi
GV	GAS VELOCITY	ft/min
LA	DUST LOADING	gr/acf
LS	DUST LOADING	gr/scf
M	MATERIAL FLOW RATE (DRY)	stph
MW	MATERIAL FLOW RATE (WET)	stph
MD	MATERIAL BULK DENSITY	lb/ft3
MH	MATERIAL MOISTURE (MASS)	%
MP	MOTOR POWER RATING	hp
MS	MATERIAL SIZE	in
Q	DRY LHV HEAT FLOW RATE	10^6 Btu/hr
T	TEMPERATURE	°F

EMISSION POINT

ENCLOSED EMISSION POINT

RELEASED FOR PERMIT

DATE: 9/25/2014 BY: JTC

REV	DESCRIPTION	DATE	DSGNR	MGR
1	CORRECTED FAN AND STACK FLOW	9-25-2014	BJH	JDM
0	RELEASED FOR PERMIT	9-12-2014	JTC	JDM

DRN. BY: JTC
SCALE: NONE
PROJECT NO: 14018

STATUS: PERMIT

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CLIENT: MONTANTA LIMESTONE, LLC

PROJECT: NEW LIME PLANT – PHASE II

LOCATION: DRUMMOND, MONTANA

DWG NAME: FLOW DIAGRAM
350 TPD LIME PLANT
KILN BAG HOUSE

DATE	DRAWING NUMBER	REVISION
08-12-2014	14018-FS-155	1

LEGEND

EQPMT-NO
DESCRIPTION — EQUIPMENT NUMBER WITH DESCRIPTION

A	PNEUMATIC OPERATOR	H	MANUAL OPERATOR
E	ELECTRIC OPERATOR	C	COMBUSTION ENGINE
F	HYDRAULIC OPERATOR	M	ELECTRIC MOTOR
G	GRAVITY OPERATOR	VS	VARIABLE SPEED

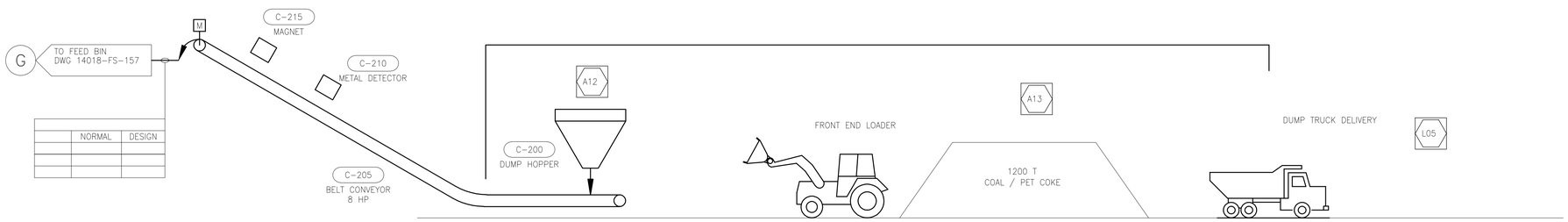
LINE STYLES	LINE DEFINITIONS
———	NEW EQUIPMENT
———	NEW MATERIAL FLOW
- - - - - -	NEW FUGITIVE DUST COLLECTION
———	EXISTING EQUIPMENT & FLOW
— — —	FUTURE EQUIPMENT
———	FUTURE MATERIAL FLOW
- - - - - -	FUTURE FUGITIVE DUST COLL.

DEFINITIONS OF UNITS

AT	AMBIENT TEMPERATURE	°F
DP	DEW POINT	°F
F	FLUID FLOW RATE	gpm
FM	FLUID MASS FLOW RATE	lb/min
FP	FLUID PRESSURE	psi
GA	ACTUAL GAS FLOW RATE	acfm
GD	GAS DENSITY	lb/ft3
GH	GAS MOISTURE (VOLUME)	%
GM	GAS MASS FLOW RATE	lb/min
GS	STANDARD GAS FLOW RATE (70°F)	scfm
GP	GAS STATIC PRESSURE	in WG
GP1	GAS STATIC PRESSURE	psi
GV	GAS VELOCITY	ft/min
LA	DUST LOADING	gr/acf
LS	DUST LOADING	gr/scf
M	MATERIAL FLOW RATE (DRY)	stph
MW	MATERIAL FLOW RATE (WET)	stph
MD	MATERIAL BULK DENSITY	lb/ft3
MH	MATERIAL MOISTURE (MASS)	%
MP	MOTOR POWER RATING	hp
MS	MATERIAL SIZE	in
Q	DRY LHV HEAT FLOW RATE	10^6 Btu/hr
T	TEMPERATURE	°F

EMISSION POINT

ENCLOSED EMISSION POINT



	NORMAL	DESIGN

RELEASED FOR PERMIT
DATE: 9/12/2014 BY: JTC

REV	DESCRIPTION	DATE	DSGNR	MGR
0	RELEASED FOR PERMIT	9-12-2014	JTC	JDM

DRN. BY: JTC
SCALE: NONE
PROJECT NO: 14018

STATUS: PERMIT

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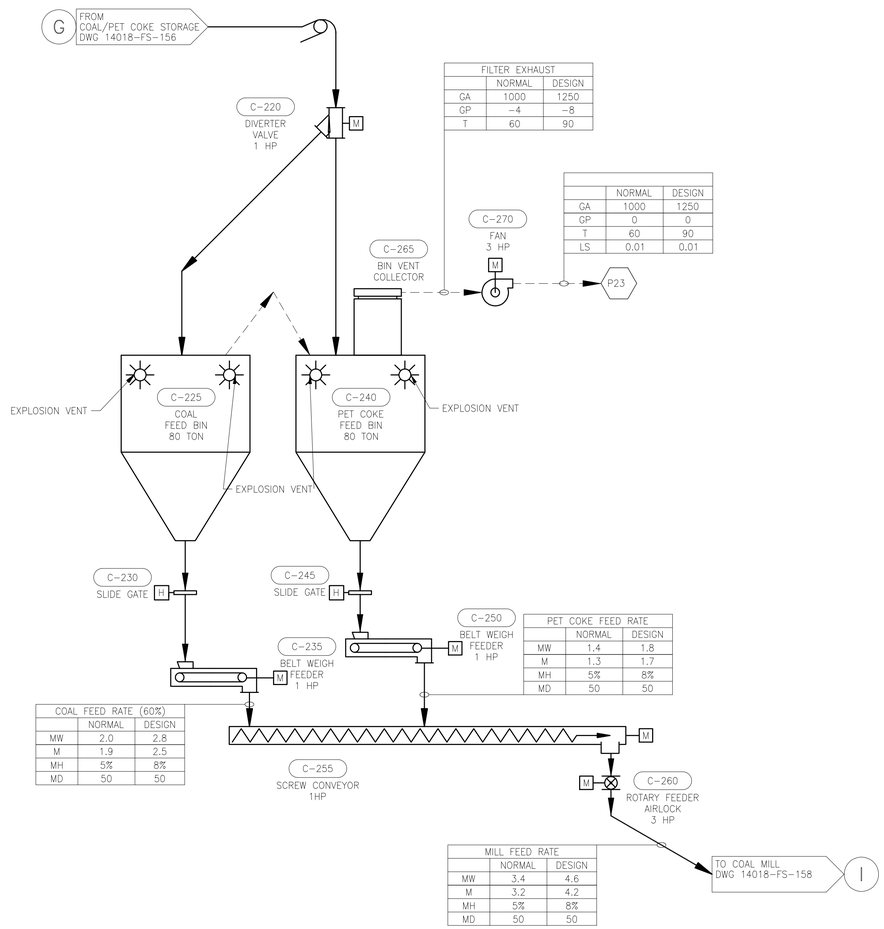
CLIENT: MONTANTA LIMESTONE, LLC
PROJECT: NEW LIME PLANT – PHASE II
LOCATION: DRUMMOND, MONTANA
DWG NAME: FLOW DIAGRAM
350 TPD LIME PLANT
COAL/PET COKE STORAGE AND RECLAIM

DATE	DRAWING NUMBER	REVISION
08-12-2014	14018-FS-156	0



FILTER EXHAUST	NORMAL	DESIGN
GA	1000	1250
GP	-4	-8
T	60	90

	NORMAL	DESIGN
GA	1000	1250
GP	0	0
T	60	90
LS	0.01	0.01

PET COKE FEED RATE	NORMAL	DESIGN
MW	1.4	1.8
M	1.3	1.7
MH	5%	8%
MD	50	50

COAL FEED RATE (60%)	NORMAL	DESIGN
MW	2.0	2.8
M	1.9	2.5
MH	5%	8%
MD	50	50

MILL FEED RATE	NORMAL	DESIGN
MW	3.4	4.6
M	3.2	4.2
MH	5%	8%
MD	50	50

LEGEND

(EQPMT-NO) DESCRIPTION — EQUIPMENT NUMBER WITH DESCRIPTION

- A — PNEUMATIC OPERATOR
- E — ELECTRIC OPERATOR
- F — HYDRAULIC OPERATOR
- G — GRAVITY OPERATOR
- H — MANUAL OPERATOR
- C — COMBUSTION ENGINE
- M — ELECTRIC MOTOR
- VS — VARIABLE SPEED

LINE STYLES	LINE DEFINITIONS
———	NEW EQUIPMENT
———	NEW MATERIAL FLOW
- - - - - -	NEW FUGITIVE DUST COLLECTION
———	EXISTING EQUIPMENT & FLOW
— — —	FUTURE EQUIPMENT
———	FUTURE MATERIAL FLOW
- - - - - -	FUTURE FUGITIVE DUST COLL.

DEFINITIONS OF UNITS

AT	AMBIENT TEMPERATURE	°F
DP	DEW POINT	°F
F	FLUID FLOW RATE	gpm
FM	FLUID MASS FLOW RATE	lb/min
FP	FLUID PRESSURE	psi
GA	ACTUAL GAS FLOW RATE	acfm
GD	GAS DENSITY	lb/ft3
GH	GAS MOISTURE (VOLUME)	%
GM	GAS MASS FLOW RATE	lb/min
GS	STANDARD GAS FLOW RATE (70°F)	scfm
GP	GAS STATIC PRESSURE	in WG
GP1	GAS STATIC PRESSURE	psi
GV	GAS VELOCITY	ft/min
LA	DUST LOADING	gr/acf
LS	DUST LOADING	gr/scf
M	MATERIAL FLOW RATE (DRY)	stph
MW	MATERIAL FLOW RATE (WET)	stph
MD	MATERIAL BULK DENSITY	lb/ft3
MH	MATERIAL MOISTURE (MASS)	%
MP	MOTOR POWER RATING	hp
MS	MATERIAL SIZE	in
Q	DRY LHV HEAT FLOW RATE	10^6 Btu/hr
T	TEMPERATURE	°F

EMISSION POINT

ENCLOSED EMISSION POINT

RELEASED FOR PERMIT

DATE: 9/12/2014 BY: JTC

REV	DESCRIPTION	DATE	DSGNR	MGR
0	RELEASED FOR PERMIT	9-12-2014	JTC	JDM

DRN. BY: JTC
SCALE: NONE
PROJECT NO: 14018

STATUS: PERMIT

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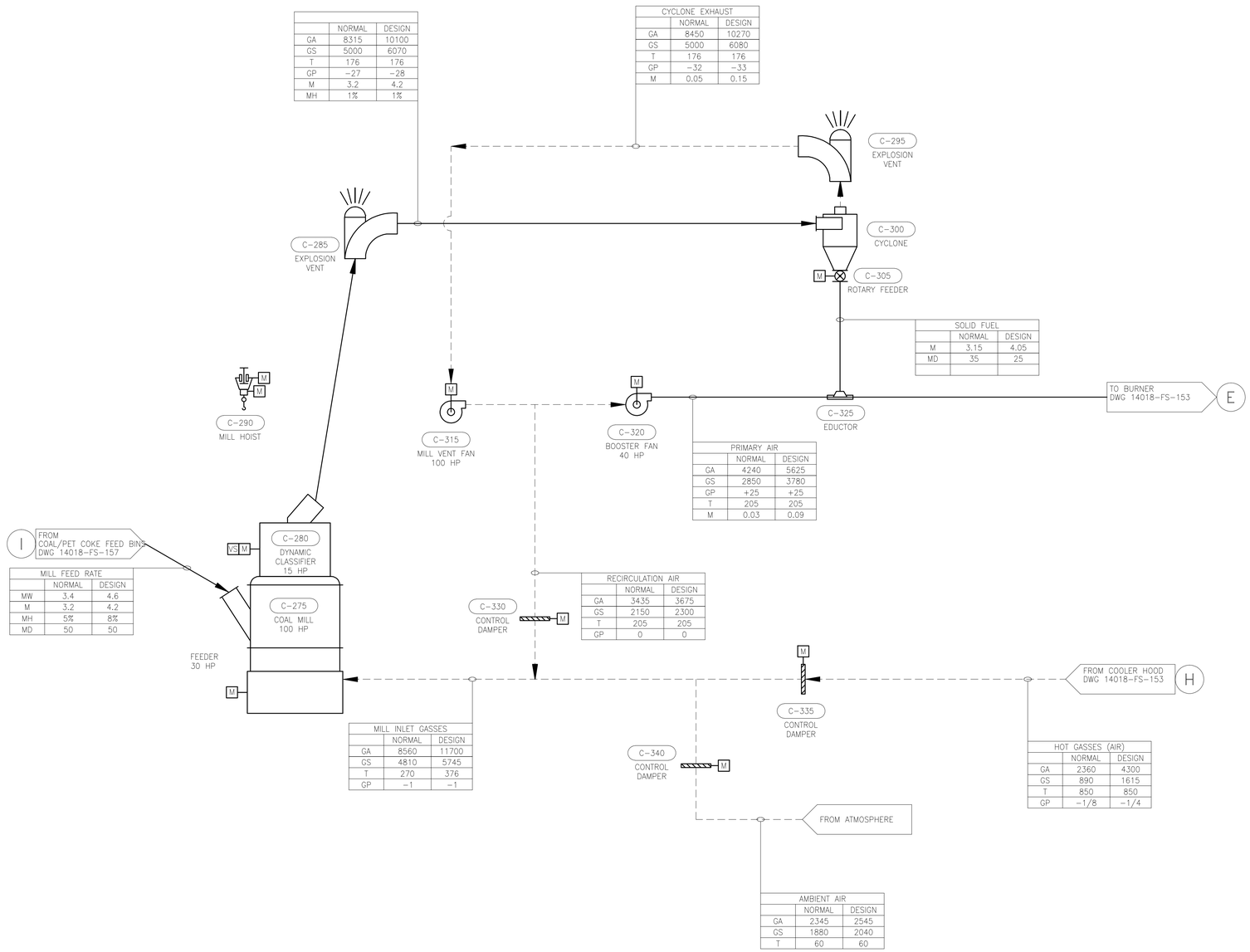
CLIENT: MONTANTA LIMESTONE, LLC
PROJECT: NEW LIME PLANT – PHASE II
LOCATION: DRUMMOND, MONTANA
DWG NAME: FLOW DIAGRAM
350 TPD LIME PLANT
COAL/PET COKE STORAGE AND RECLAIM

DATE	DRAWING NUMBER	REVISION
08-12-2014	14018-FS-157	0



	NORMAL	DESIGN
GA	8315	10100
GS	5000	6070
T	176	176
GP	−27	−28
M	3.2	4.2
MH	1%	1%

CYCLONE EXHAUST	NORMAL	DESIGN
GA	8450	10270
GS	5000	6080
T	176	176
GP	−32	−33
M	0.05	0.15

SOLID FUEL	NORMAL	DESIGN
M	3.15	4.05
MD	35	25

PRIMARY AIR	NORMAL	DESIGN
GA	4240	5625
GS	2850	3780
GP	+25	+25
T	205	205
M	0.03	0.09

MILL FEED RATE	NORMAL	DESIGN
MW	3.4	4.6
M	3.2	4.2
MH	5%	8%
MD	50	50

RECIRCULATION AIR	NORMAL	DESIGN
GA	3435	3675
GS	2150	2300
T	205	205
GP	0	0

MILL INLET GASSES	NORMAL	DESIGN
GA	8560	11700
GS	4810	5745
T	270	376
GP	−1	−1

HOT GASSES (AIR)	NORMAL	DESIGN
GA	2360	4300
GS	890	1615
T	850	850
GP	−1/8	−1/4

AMBIENT AIR	NORMAL	DESIGN
GA	2345	2545
GS	1880	2040
T	60	60

LEGEND

EQPMT-NO
DESCRIPTION
EQUIPMENT NUMBER WITH DESCRIPTION

- A PNEUMATIC OPERATOR
- E ELECTRIC OPERATOR
- F HYDRAULIC OPERATOR
- G GRAVITY OPERATOR
- H MANUAL OPERATOR
- C COMBUSTION ENGINE
- M ELECTRIC MOTOR
- VS VARIABLE SPEED

LINE STYLES	LINE DEFINITIONS
	NEW EQUIPMENT
	NEW MATERIAL FLOW
	NEW FUGITIVE DUST COLLECTION
	EXISTING EQUIPMENT & FLOW
	FUTURE EQUIPMENT
	FUTURE MATERIAL FLOW
	FUTURE FUGITIVE DUST COLL.

DEFINITIONS OF UNITS

AT	AMBIENT TEMPERATURE	°F
DP	DEW POINT	°F
F	FLUID FLOW RATE	gpm
FM	FLUID MASS FLOW RATE	lb/min
FP	FLUID PRESSURE	psi
GA	ACTUAL GAS FLOW RATE	acfm
GD	GAS DENSITY	lb/ft3
GH	GAS MOISTURE (VOLUME)	%
GM	GAS MASS FLOW RATE	lb/min
GS	STANDARD GAS FLOW RATE (70°F)	scfm
GP	GAS STATIC PRESSURE	in WG
GP1	GAS STATIC PRESSURE	psi
GV	GAS VELOCITY	ft/min
LA	DUST LOADING	gr/acf
LS	DUST LOADING	gr/scf
M	MATERIAL FLOW RATE (DRY)	stph
MW	MATERIAL FLOW RATE (WET)	stph
MD	MATERIAL BULK DENSITY	lb/ft3
MH	MATERIAL MOISTURE (MASS)	%
MP	MOTOR POWER RATING	hp
MS	MATERIAL SIZE	in
Q	DRY LHV HEAT FLOW RATE	10^6 Btu/hr
T	TEMPERATURE	°F

EMISSION POINT

ENCLOSED EMISSION POINT

RELEASED FOR PERMIT
DATE: 9/12/2014 BY: JTC

REV	DESCRIPTION	DATE	DSGNR	MGR
0	RELEASED FOR PERMIT	9-12-2014	JTC	JDM

DRN. BY: JTC
SCALE: NONE
PROJECT NO: 14018

STATUS: PERMIT

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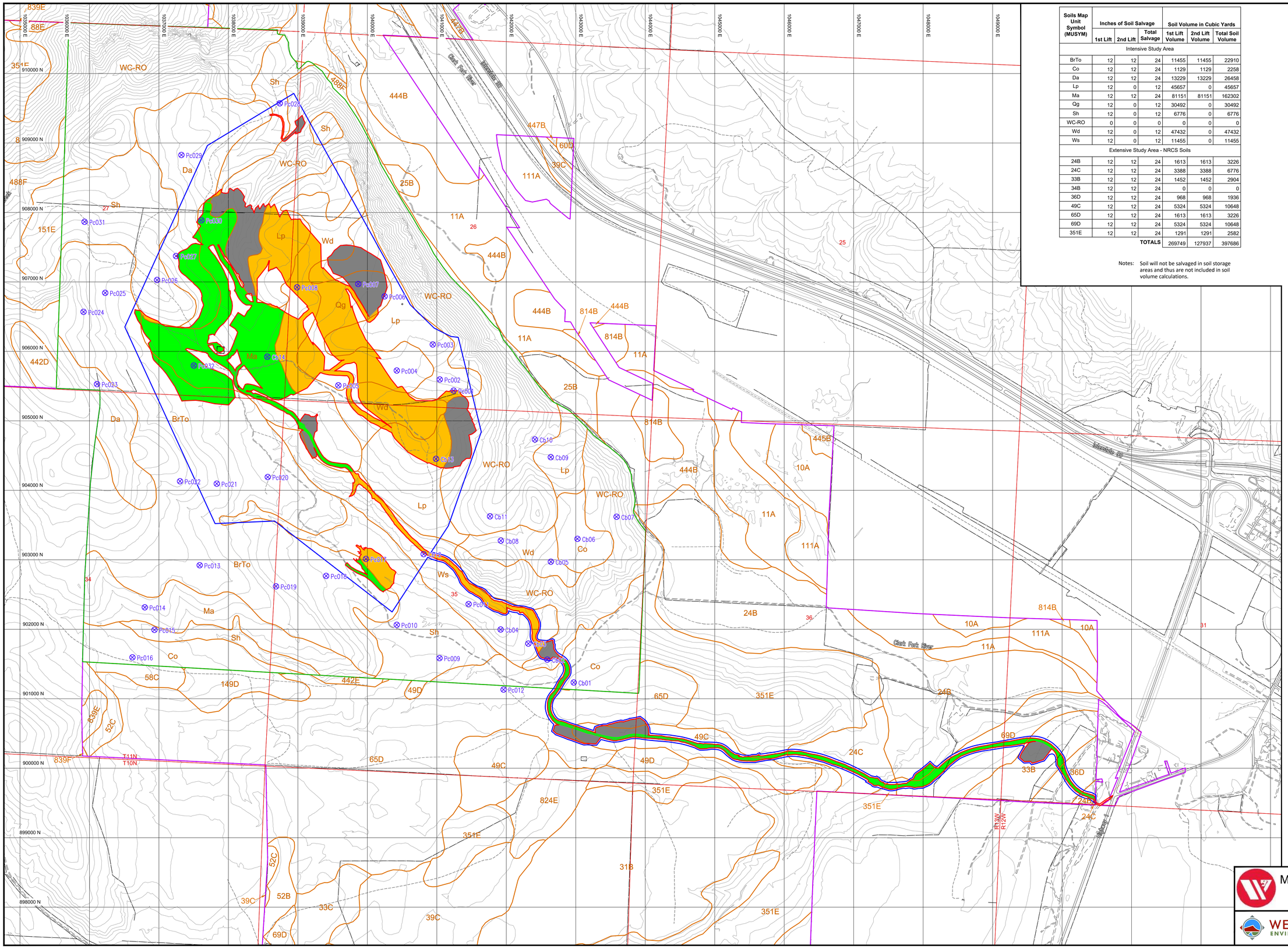
CLIENT: MONTANTA LIMESTONE, LLC
PROJECT: NEW LIME PLANT – PHASE II
LOCATION: DRUMMOND, MONTANA
DWG NAME: FLOW DIAGRAM
350 TPD LIME PLANT
COAL MILL

DATE	DRAWING NUMBER	REVISION
08-12-2014	14018-FS-158	0



Soils Map Unit Symbol (MUSYM)	Inches of Soil Salvage			Soil Volume in Cubic Yards		
	1st Lift	2nd Lift	Total Salvage	1st Lift Volume	2nd Lift Volume	Total Soil Volume
Intensive Study Area						
BrTo	12	12	24	11455	11455	22910
Co	12	12	24	1129	1129	2258
Da	12	12	24	13229	13229	26458
Lp	12	0	12	45657	0	45657
Ma	12	12	24	81151	81151	162302
Qg	12	0	12	30492	0	30492
Sh	12	0	12	6776	0	6776
WC-RO	0	0	0	0	0	0
Wd	12	0	12	47432	0	47432
Ws	12	0	12	11455	0	11455
Extensive Study Area - NRCS Soils						
24B	12	12	24	1613	1613	3226
24C	12	12	24	3388	3388	6776
33B	12	12	24	1452	1452	2904
34B	12	12	24	0	0	0
36D	12	12	24	968	968	1936
49C	12	12	24	5324	5324	10648
65D	12	12	24	1613	1613	3226
69D	12	12	24	5324	5324	10648
351E	12	12	24	1291	1291	2582
			TOTALS	269749	127937	397686

Notes: Soil will not be salvaged in soil storage areas and thus are not included in soil volume calculations.

Intensive Study Area Soils

Symbol	Name	Acres	Percent of Area
BrTo	Braziel-Tolbert loams, 5-25%	274	20.5
Co	Coben clay loam, 5-15%	81	6.0
Da	Danvers silty clay loam, 5-25%	87	6.5
Lp	Lap gravelly loam, 5-50%	121	9.0
Ma	Martinsdale gravelly loam, 2-15%	125	9.4
Qg	Quigley silt loam, 2-15%	40	3.0
Sh	Shawmut gravelly loam, 2-15%	154	11.5
WC-RO	Whitecow - Rock Outcrop, 15-60%	331	24.8
Wd	Windham skeletal loam, 2-15%	70	5.2
Ws	Winspect skeletal loam, 2-50%	53	4.0
	Totals	1336	100

Extensive Study Area NRCS Soils

Symbol	Name	Acres	Percent of Area
10A	Mccabe-Canarway complex, impacted, 0-2%, occasionally flooded	26	1.2
11A	Mccabe-Canarway complex, 0-2%, occasionally flooded	146	6.7
24B	Con loam, 0-4%	172	7.9
24C	Con loam, 4-8%	30	1.4
25B	Straw silty clay loam, 0-4%	27	1.2
31B	Varney clay loam, 0-4%	154	7.1
33B	Rothiemay loam, 2-4%	61	2.8
33C	Rothiemay loam, 4-8%	18	0.8
33D	Rothiemay loam, 8-15%	7	0.3
34B	Cetrack loam, 0-4%	2	0.1
36B	Varney-Con loams, 0-4%	34	1.6
36D	Varney-Con loams, 8-15%	11	0.5
39C	Winspect gravelly loam, 4-8%	63	2.9
42E	Windham gravelly loam, 15-35%	69	3.1
49C	Danvers clay loam, 4-8%	53	2.4
49D	Danvers clay loam, 8-15%	52	2.4
52B	Martinsdale loam, 0-4%	9	0.4
52C	Martinsdale loam, 4-8%	14	0.6
58C	Coben clay loam, 4-8%	7	0.3
65D	Tanna loam, 8-15%	271	12.4
69C	Boxwell loam, 4-8%	4	0.2
69D	Boxwell loam, 8-15%	41	1.9
88E	Whitecow gravelly loam, 15-35%	1	0.1
88F	Whitecow gravelly loam, 35-60%	48	2.2
111A	Canarway-Mccabe complex, 0-2%, occasionally flooded	84	3.8
149D	Danvers cobbly loam, 8-15%	17	0.8
151E	Shawmut cobbly loam, 15-35%	44	2.0
169F	Doney-Dolus complex, 15-45%	37	1.7
351E	Roy-Shawmut-Danvers complex, 15-35%	287	13.1
442D	Braziel-Tolbert gravelly loams, 8-15%	9	0.4
442E	Braziel-Tolbert complex, 15-35%	2	0.1
444B	Gregson silt loam, 0-4%, rarely flooded	137	6.3
445B	Saypo silt loam, 0-4%, rarely flooded	3	0.2
447B	Kleinschmidt gravelly loam, cool, 0-4%, rarely flooded	3	0.1
488F	Whitecow gravelly loam, cool, 35-60%	131	6.0
814B	Bandy loam, 0-4%, rarely flooded	16	0.7
824E	Con-Sixbeacon cobbly loams, 15-35%	23	1.1
839E	Windham-Lap-Rock outcrop complex, 15-35%	17	0.8
839F	Windham-Lap-Rock outcrop complex, 35-60%	32	1.5
855A	Mannixlee-Blossberg complex, 0-2%, rarely flooded	13	0.6
915	Welded tuff	10	0.5
	Totals	2185	100

LEGEND

- Permit Boundary
- Disturbance Boundary
- Intensive Study Area
- Extensive Study Area
- Soil Type Boundary
- Cb01 Soil Sample Site
- 0" Total Salvage Depth
- 12" Total Salvage Depth
- 24" Total Salvage Depth

N

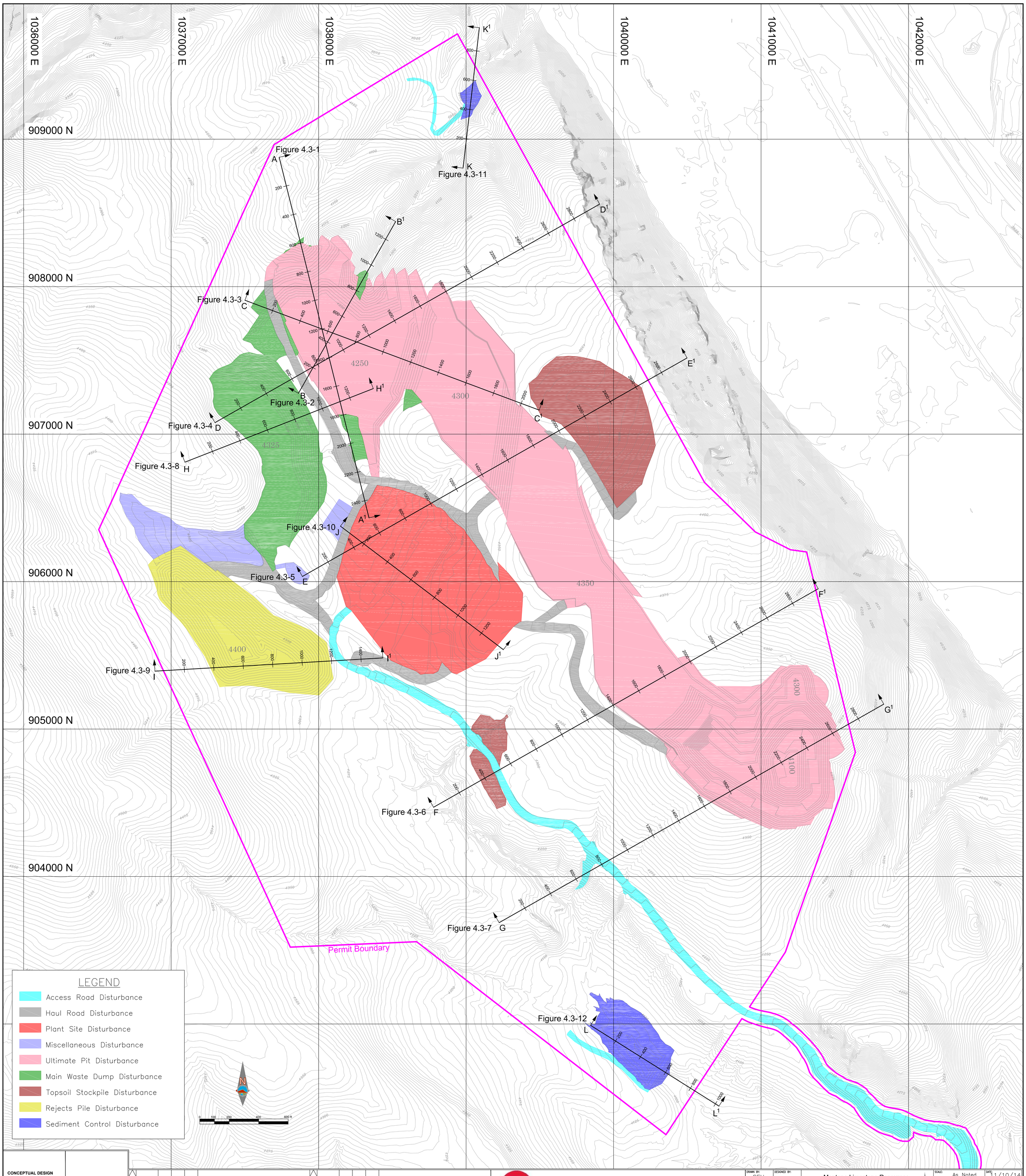
0 300 600 1200
Feet

Montana Limestone Resources
Soils Salvage Map

WESTECH ENVIRONMENTAL

SCALE: 1"=600'
DATE: 11/11/14 Rev. 02/15/18
DRAWN BY: DC
CHECKED BY: CB
FILE: MLR18 Soils Salvage R2.dwg

EXHIBIT
3-7
SHEET: 1 of 1



CONCEPTUAL DESIGN
NOT FOR CONSTRUCTION

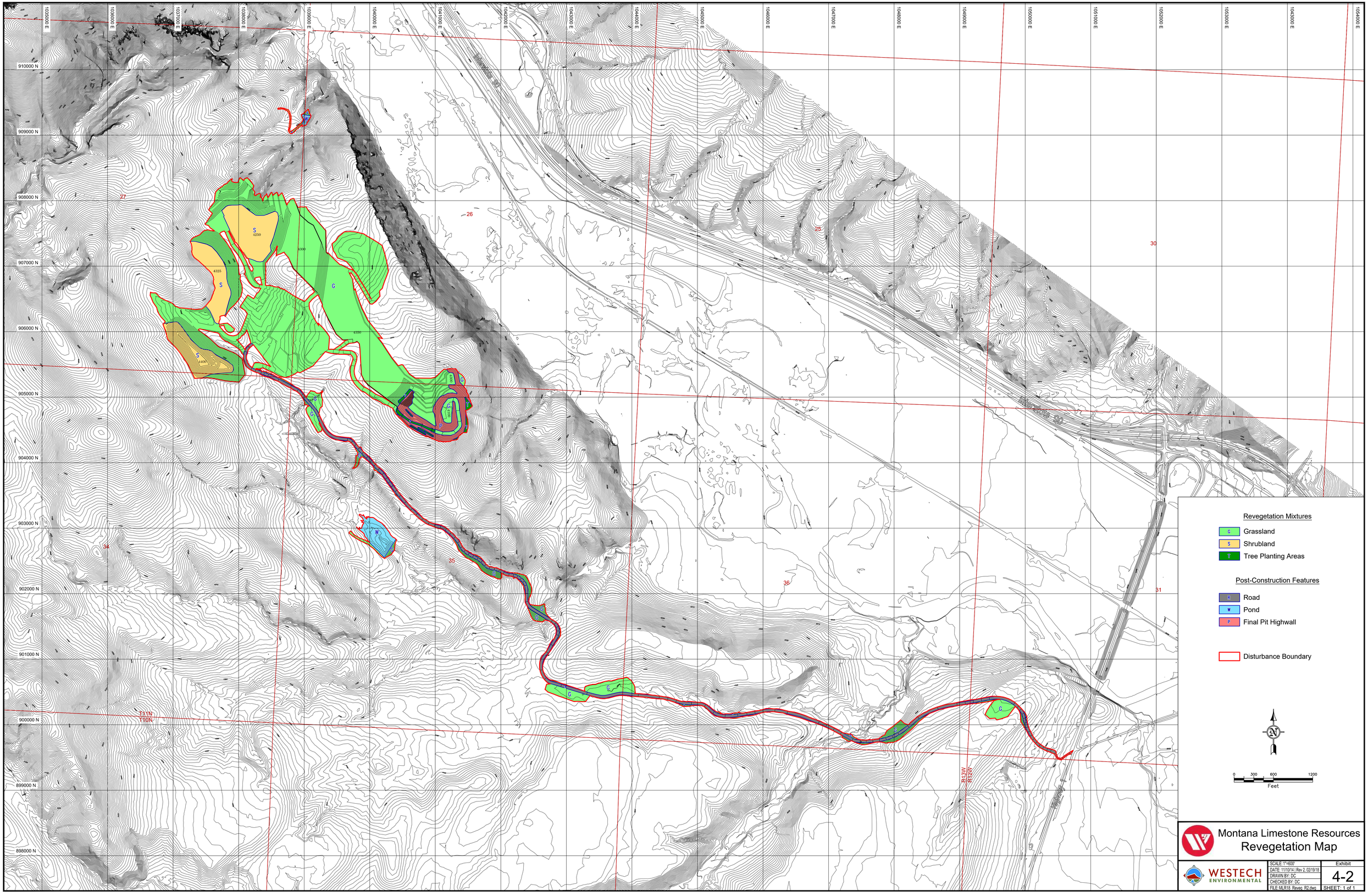
REV	DATE	DRAWN	CHECK	DISP	DESCRIPTION
1	08/30/17	DC	LL		DEQ Comments

Montana Limestone Resources

DRAWN BY: SEH
CHECKED BY: SJC
PROJECT ENG:
DESIGNED BY:
DISCIPLINE APPR:
OPERATIONS APPR:

Montana Limestone Resources
Post-Mine Topography Map
Drummond, MT

SCALE: As Noted
DATE: 11/10/14
DRAWING NUMBER: Exhibit 4-1
REV: 1
SHEET: 1 OF: 1
PROJECT No.:


Revegetation Mixtures
Grassland
Shrubland
Tree Planting Areas
Post-Construction Features
Road
Pond
Final Pit Highwall
Disturbance Boundary
0 300 600 1200
Feet
Montana Limestone Resources
Revegetation Map
WESTECH ENVIRONMENTAL
SCALE: 1"=600'
DATE: 11/10/14 | Rev 2, 02/19/18
DRAWN BY: DC
CHECKED BY: DC
FILE: MLR18_Reveg_R2.dwg
Exhibit
4-2
SHEET: 1 of 1
T11N
T10N
R13W
R12W
Highway 200