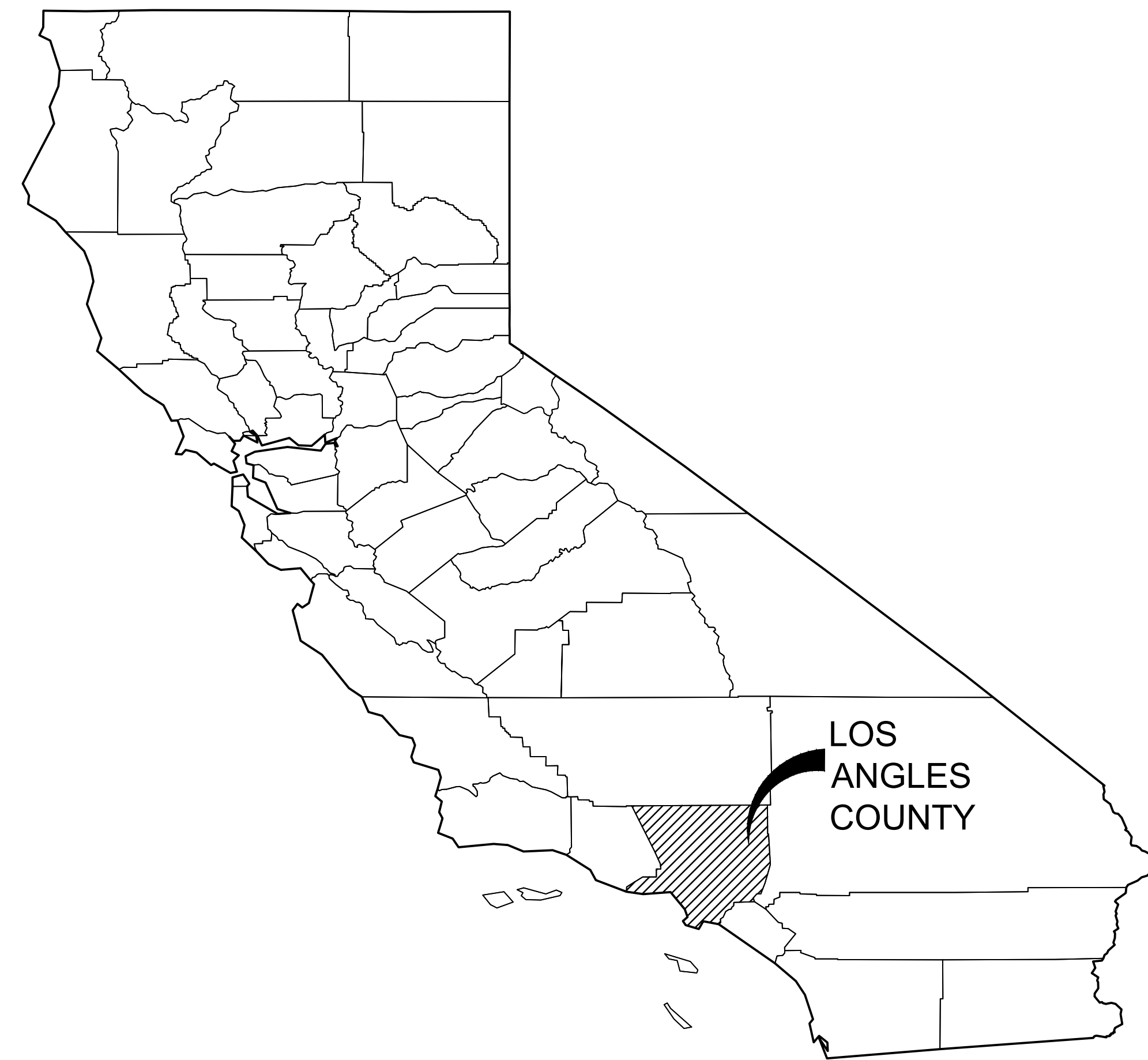
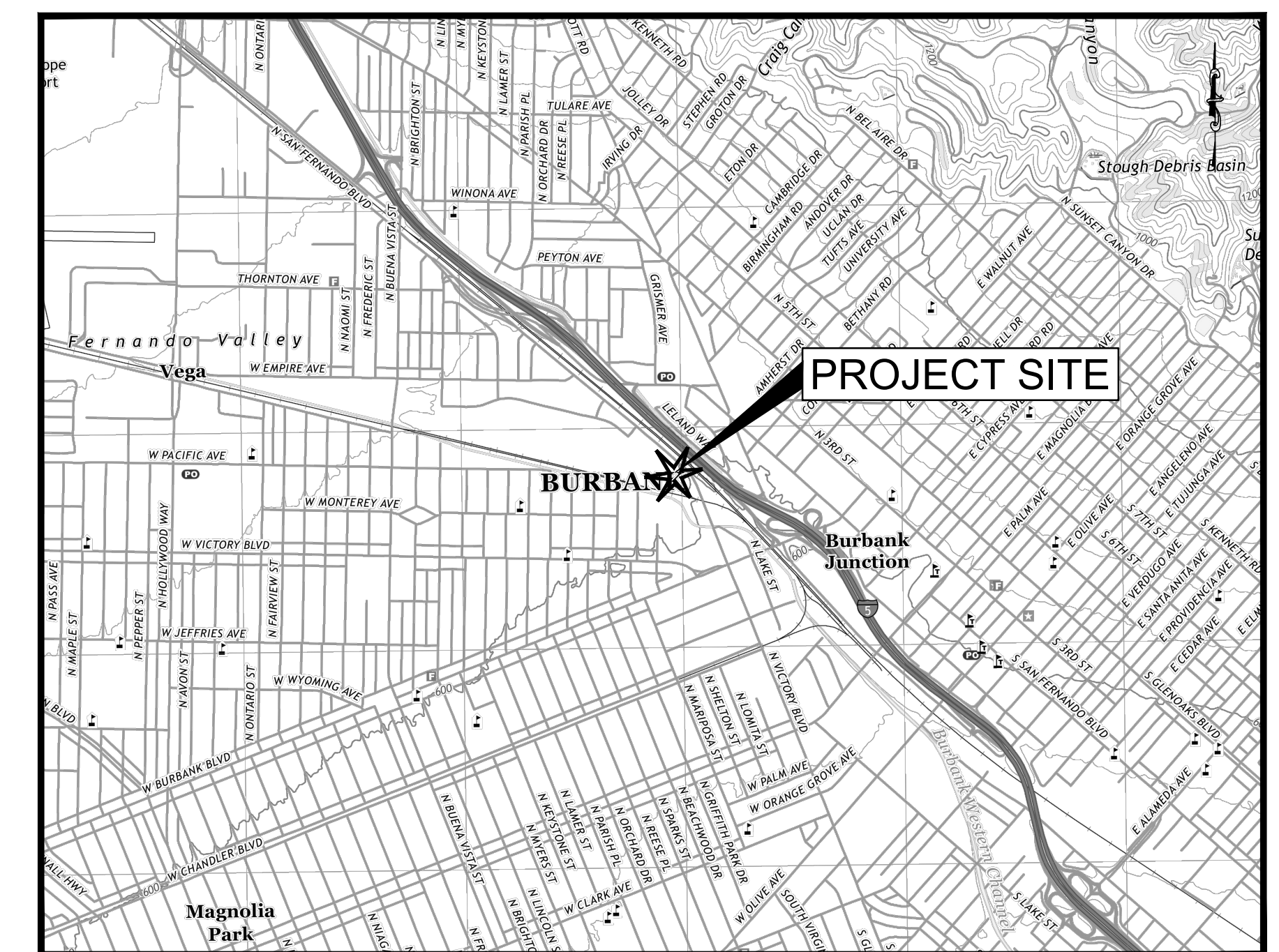


FORMER B-1 PLANT SOIL VAPOR SYSTEM FOR LOCKHEED MARTIN CORPORATION 1705 NORTH VICTORY PLACE BURBANK, CALIFORNIA 91504



CALIFORNIA LOCATION MAP
NOT TO SCALE

INDEX OF DRAWINGS	
SHEET NO.	SHEET DESCRIPTION
G-1.0	COVER SHEET
G-2.0	SYMBOLS, ABBREVIATIONS & GENERAL NOTES
C-1.0	EXISTING SITE FEATURES
C-2.0	PROPOSED SITE FEATURES
C-3.0	SVE TREATMENT COMPOUND PAD - PLAN VIEW
C-4.0	SVE TREATMENT COMPOUND PAD - ELEVATION VIEWS
C-5.0	SVE TREATMENT COMPOUND PAD - CONCRETE STRUCTURAL DETAILS I
C-6.0	SVE TREATMENT COMPOUND PAD - CONCRETE STRUCTURAL DETAILS II
C-7.0	SVE TREATMENT COMPOUND FENCE - DETAIL
M-1.0	DEMOLITION AND PIPE ABANDONMENT PLAN
M-2.0	CONNECTION TO EXISTING PIPE - PLAN VIEW
M-3.0	CONNECTION TO EXISTING PIPE - ELEVATION VIEWS
M-4.0	SYSTEM SYMBOLS, ABBREVIATIONS & GENERAL NOTES
M-5.0	PROCESS FLOW DIAGRAM WITH C3 UNIT
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M-9.0	C3 SVE SYSTEM LAYOUT PLANS
M-10.0	SYSTEM MECHANICAL PROCESS PIPING DETAILS
M-11.0	SVE SYSTEM MECHANICAL DETAILS
M-12.0	LIST OF C3 SYSTEM EQUIPMENT CONTROL AND VALVE SCHEDULE
M-13.0	LIST OF SVE SYSTEM EQUIPMENT CONTROL AND VALVE SCHEDULE
E-1.0	ELECTRICAL SINGLE-LINE DRAWING
E-2.0	ELECTRICAL SITE PLAN
E-3.0	INSTRUMENTATION AND CONTROL SYSTEM



SOURCE: U.S.G.S. 7.5 Minute Topo Quad of Burbank, CA. 2018

AREA TOPOGRAPHICAL MAP
SCALE: 1" = 2000'

PROJECT INFORMATION

PROJECT LOCATION 1705 NORTH VICTORY PLACE
BURBANK, CALIFORNIA 91504

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SHEET NUMBER
G-1.0

PROJECT #25597
DATE: 04/27/2021

REVISIONS		
NO.	DATE	DESCRIPTION

LEGEND:

APN	ASSESSOR'S PARCEL NUMBER
BFV	BACK-FLOW VALVE
CB	CATCH BASIN
ℓ	CENTER LINE
∅	DIAMETER OF EXISTING TREE
DI	DRAIN INLET
EPB	ELECTRIC PULL BOX
EV	ELECTRIC VAULT
FF	FINISH FLOOR
FS	FINISH SURFACE
HCR	HANDICAP RAMP
INV	INVERT
NG	NATURAL GROUND
ℓ	PROPERTY LINE
R/W	RIGHT OF WAY
SDV	STORM DRAIN VAULT
TC	TOP OF CURB
TE	TRASH ENCLOSURE
TR	TELCO RISER
TYP	TYPICAL
WM	WATER METER
WPB	WATER PULL BOX
WV	WATER VAULT
	EXISTING ASPHALT PAVEMENT
	EXISTING CAR STOP
	EXISTING CONCRETE PAVEMENT
	EXISTING CONTROL POINT
	EXISTING FIRE DEPARTMENT CONNECTION
	EXISTING FIRE HYDRANT
	FLOW DIRECTION
	EXISTING FOUND MONUMENT AS NOTED
	EXISTING GATE
	EXISTING GUARD POST
	EXISTING HANDICAP
	EXISTING LIGHT STANDARD
	EXISTING MONITORING WELL
	EXISTING POST INDICATOR VALVE
	EXISTING SEWER CLEAN OUT
	EXISTING SEWER MANHOLE
	EXISTING SIGN
	EXISTING STORM DRAIN MANHOLE
	EXISTING STREET LIGHT
	EXISTING TREE (TYPICAL)
	EXISTING WATER VALVE
	EXISTING BLOCK WALL
	EXISTING CENTER LINE
	EXISTING CHAIN LINK FENCE
	EXISTING CONCRETE/RETAINING WALL
	EXISTING EDGE OF PAVEMENT
	EXISTING ELECTRIC LINE PAINTED
	EXISTING FLOW LINE
	EXISTING GAS LINE PAINTED
	EXISTING INTERIOR LOT LINE
	EXISTING MONUMENT LINE
	EXISTING PROPERTY LINE
	EXISTING RIGHT-OF-WAY
	EXISTING SANITARY SEWER LINE
	EXISTING SANITARY SEWER LINE PAINTED
	EXISTING STORM DRAIN LINE
	EXISTING STORM DRAIN LINE PAINTED
	EXISTING UNKNOWN LINE PAINTED
	EXISTING WATER LINE PAINTED
	EXISTING UNDERGROUND ELECTRIC
	EXISTING GAS
	EXISTING WATER
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EXISTING SCH 80 PVC (BURIED)
	PROPERTY BOUNDARY
	PROPOSED SVE SYSTEM PIPE (BURIED)
	EXISTING PIPING TO BE ABANDONED AND CAPPED
	EXISTING PIPING TO BE DEMOLISHED
	CONDENSATE USTS, PIPING, AND EXISTING SVE BUILDINGS TO BE DEMOLISHED BY OTHERS
	PROPOSED ELECTRICAL SERVICE TO SVE TREATMENT COMPOUND
	PROPOSED INSTRUMENT AIR TO BRANCH LINE VAULTS
	PROPOSED FENCE
	PROPOSED BLOCK WALL

GENERAL ABBREVIATIONS

AC	ASPHALT CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASBESTOS CEMENT PIPE
AGG	AGGREGATES
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWWA	AMERICAN WATER WORK ASSOCIATION
BC	BUILDING CORNER
BOC	BACK OF CURB
BUSH	BUSH/SHRUB
CAL/OSHA	CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CalTrans	CALIFORNIA DEPARTMENT OF TRANSPORTATION
CATV	CABLE/TV
CB	CATCH BASIN
C/C	CENTER TO CENTER
CF	CUBIC FOOT
CFS	CUBIC FOOT PER SECOND
CI	CURB INLET
CL	CENTER LINE
CLR	CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CO	CLEAN OUT
CONC	CONCRETE
CONST	CONSTRUCT, CONSTRUCTION
CR	CABLE RISER
CSP	CORRUGATED STEEL PIPE
CTB	CEMENT TREATED BASE
CV	CHECK VALVE
CY	CUBIC YARD
D	DIAMETER OR LOAD OF PIPE
DIA	DIAMETER
DWG	DRAWING
EA	EACH
ELEV	ELEVATION
EM	ELECTRIC METER
EOA	EDGE OF ASPHALT
EOP	EDGE OF PAVEMENT
EX	EXISTING
EXP	EXPANSION
ER	ELECTRICAL RISER
EV	ELECTRICAL VAULT
F	FLANGE
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FN	FENCE
FOC	FACE OF CURB
GA	GAUGE
GALV	GALVANIZED
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GL	GAS LINE
GM	GAS METER
GP	GUY POLE
GR	GUARD RAIL
GV	GAS VALVE
GW	GUY WIRE
H	HIGH OR HEIGHT
HEX	HEXAGONAL
HORIZ	HORIZONTAL
HT	HEIGHT
ID	INSIDE DIAMETER OR IDENTIFICATION JOINT
IE	INVERT ELEVATION
JOINT	JOINT
LAP	OVERLAP
LOL	LAYOUT LINE
LP	LIGHT POLE
MAX	MAXIMUM
MH	MANHOLE
MHSAS	SANITARY SEWER MANHOLE
MHSTS	STORM SEWER MANHOLE
MHE	ELECTRIC MANHOLE
MHT	TELEPHONE MANHOLE
MHW	WATER MANHOLE
MJ	MECHANICAL JOINT
MIN	MINIMUM
MW	MONITORING WELL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OHE	OVERHEAD ELECTRIC
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PCC	POINT OF COMPOUND CURVATURE
PCF	POUND PER CUBIC FOOT
PCR	POINT OF CURB RETURN
PL	PROPERTY LINE
PO	PUSH ON

PSF	POUND PER SQUARE FOOT
PUD	PUBLIC UTILITIES DEPARTMENT
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCV	REMOTE CONTROL VALVE
R/W	RIGHT-OF-WAY
REINF	REINFORCED OR REINFORCEMENT
S	SLOPE
SD	STORM DRAIN
SP	WATER SPIGOT
SQFT	SQUARE FOOT
STD	STANDARD
STR	STRAIGHT
SVE	SOIL VAPOR EXTRACTION
SW	SIDEWALK
TOT	TOTAL
TYP	TYPICAL
UGUT	UNDERGROUND UTILITIES
VERT	VERTICAL
W	WATER
WM	WATER METER
WR	WATER REDUCER
WW	WATER VALVE
W/	WITH
WWF	WELDED WIRE FABRIC

NOTES:

- ALL REMOVALS, CONSTRUCTIONS, AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH FEDERAL, STATE, AND CITY OF BURBANK REQUIREMENTS.
- CONTRACTOR SHALL CALL DIGALERT (UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA OR USA/SC) PRIOR TO START OF WORK TO MARK ALL UTILITY LINES. IF CONTRACTOR ENCOUNTERS ANY UTILITIES NOT IDENTIFIED ON DRAWINGS, IMMEDIATELY NOTIFY THE ENGINEER AND REPORT THE DEPTH, LOCATION, AND THE TYPE OF UTILITY LINE TO ENGINEER THROUGH THE RFI PROCESS.
- CONTRACTOR TO FIELD SURVEY ALL UTILITIES IN AREAS WHERE EXCAVATION WILL OCCUR OR SOIL IS OTHERWISE DISTURBED.
- CONTRACTOR TO COMPLY WITH BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND STORMWATER RUNOFF REQUIREMENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.
- CONTRACTOR TO PROVIDE SITE SECURITY AND TRAFFIC CONTROLS DURING CONSTRUCTION IN ACCORDANCE WITH THE CITY OF BURBANK REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING BENCHMARKS IDENTIFIED IN SHEET C-1.0 AND PROTECTING BENCHMARKS. IF BENCHMARKS ARE TO BE DISTURBED OR REMOVED AS PART OF THE DEMOLITION OR CLEARING ACTIVITIES, CONTRACTOR SHALL HAVE A CALIFORNIA LICENSED SURVEYOR ESTABLISH ANOTHER BENCHMARK AT THE LOCATION OUT OF HARMS WAY.
- WORK TO INCLUDE PIPE ABANDONMENT/EXCAVATION, CONSTRUCTION OF SVE TREATMENT COMPOUND, FENCE, AND EXTENSION OF EXISTING SVE LINES TO THE SVE TREATMENT COMPOUND.
- DEWATER EXCAVATIONS AS NEEDED TO CONDUCT WORK.
- CONTRACTOR SHALL REPORT ANY DISCREPANCIES IN LAYOUT DIMENSIONS TO ENGINEER AND LOCKHEED MARTIN THROUGH REQUEST FOR INFORMATION. CONTRACTOR SHALL RECEIVE APPROVAL FROM ENGINEER PRIOR TO PROCEEDING WITH WORK AT THAT LOCATION.
- ALL EQUIPMENT WILL BE VENDOR SELECTED WITH APPROVAL. ALL EQUIPMENT TO BE INSTALLED AND ASSEMBLED IN ACCORDANCE WITH ALL MANUFACTURER'S REQUIRED SPECIFICATIONS.
- THE DRAWINGS INCLUDE TWO VAPOR TREATMENT SYSTEMS: A GEO CRYOGENIC-COMPRESSION-CONDENSATION C3 SYSTEM AND A CARBON ADSORPTION SYSTEM. OPERATION OF THE SYSTEM WILL BEGIN USING THE C3 SYSTEM TO TREAT CONCENTRATED VAPORS EXTRACTED FROM THE SUBSURFACE. AFTER VAPOR CONCENTRATIONS IN THE EXTRACTED VAPORS DECREASE TO A POINT WHEREBY THE C3 SYSTEM IS NO LONGER THE MOST EFFICIENT TREATMENT TECHNOLOGY, THE C3 SYSTEM CAN BE SWITCHED TO THE VAPOR-PHASE CARBON-BASED ADSORPTION SYSTEM.
- ALL PIPING CONNECTIONS ON SVE SKID AND C3 TRAILER ARE TO BE PRE-PIPED TO THE DEGREE POSSIBLE PRIOR TO ARRIVAL ON SITE.

REVISIONS	
(INTL)	
#	DATE
	TEXT

SCALE: AS SHOWN
DATE: 04/27/2021

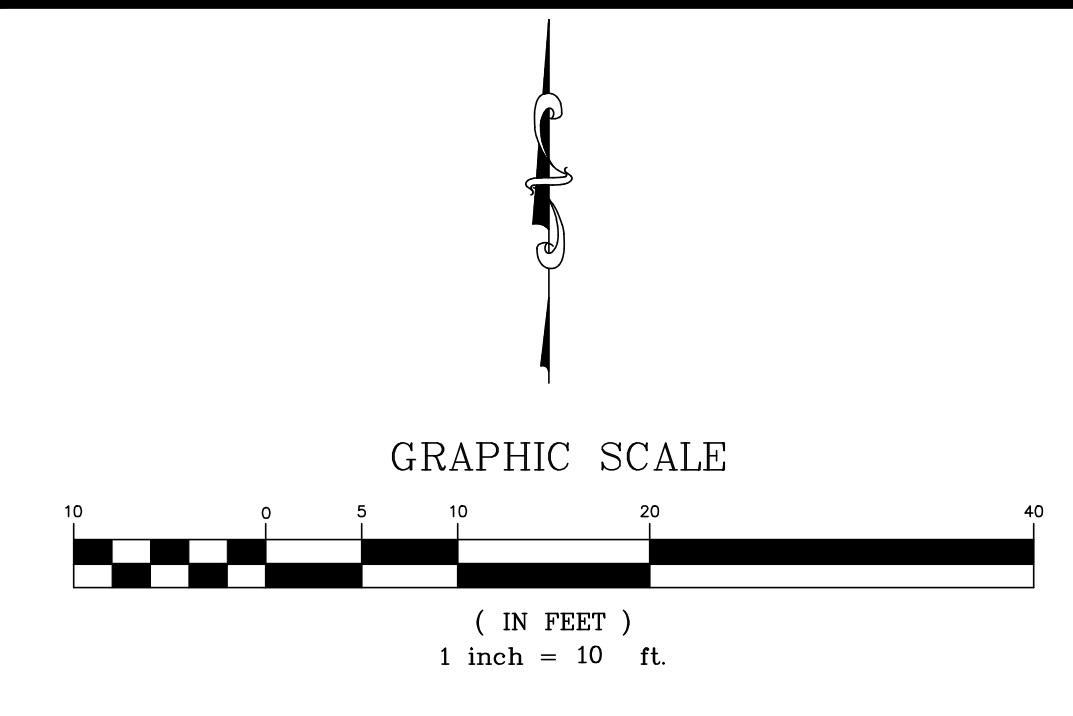
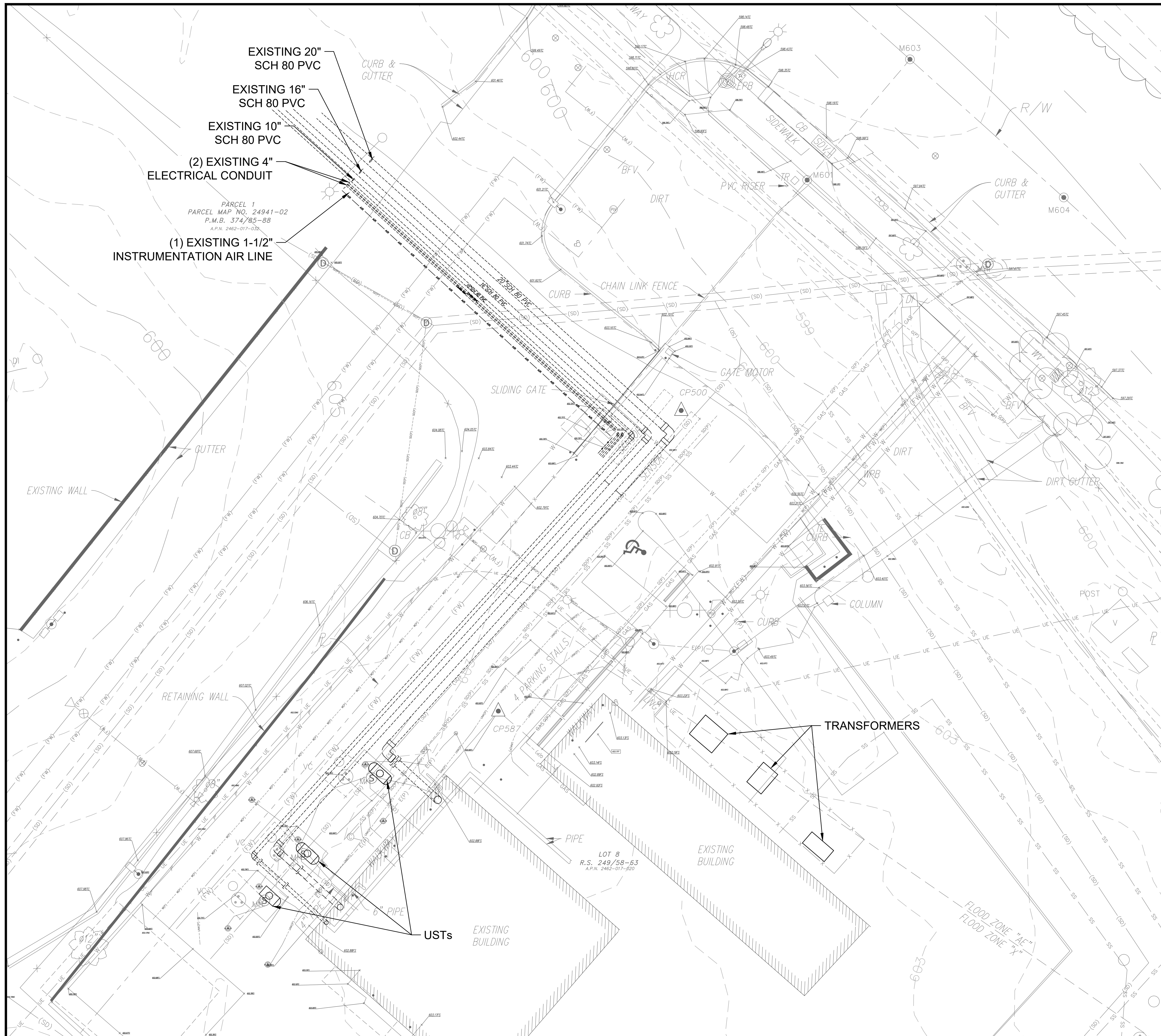
DESIGNED: ENSAFE
DRAWN BY: CC
REVIEWED BY: RZ
PROJECT NO: 088825587

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SYMBOLS, ABBREVIATIONS & GENERAL NOTES
FORMER B-1 PLANT
SOIL VAPOR EXTRACTION SYSTEM
FOR
LOCKHEED MARTIN CORPORATION
1705 NORTH VICTORIA PLACE
BURBANK, CALIFORNIA 91504
NOVEMBER 2018

SHEET
G-2.0

R:\lockheed martin\25597 sar sve design\03 project exec\CAD\01 master\100% submittal revised 11-21-2021\SYMBOLS, ABBREVIATIONS & GENERAL NOTES.dwg 2/12/2021 3:09:57 PM



CONTROL POINTS

CP#	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP500	48778.35'	22082.26'	602.73'	SET MAGNETIC NAIL
CP587	48711.96'	22041.87'	602.89'	TBM CLIENT

MONUMENT NOTES

MON.#	DESCRIPTION
M601	FD 2" IRON PIPE STAMPED, NO REF., ACCEPTED AS PROPERTY CORNER PER PMB 374/85-88
M603	FD SPIKE & WASHER STAMPED "LS 4016", PER PWFB 1818-1012
M604	FD SPIKE & WASHER STAMPED "LS 4016", PER PWFB 1818-1012

UTILITY STATEMENT

BURIED UTILITIES AND/OR PIPELINES SHOWN HEREON ARE PER VISIBLE AND APPARENT SURFACE EVIDENCE, MARKINGS PROVIDED BY AN INDEPENDENT LOCATING CONTRACTOR (SOUTHWEST GEOPHYSICS). NO GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED, IS MADE AS TO THE ACCURACY OR THOROUGHNESS OF SUCH INFORMATION. IF MORE ACCURATE LOCATIONS OF UNDERGROUND UTILITIES OR PIPE LINES ARE REQUIRED, THE UTILITY OR PIPELINE WILL HAVE TO BE VERIFIED BY FIELD POT-HOLING. CALVADA SURVEYING, INC. AND THE SURVEYOR OF RECORD SHALL NOT BE HELD LIABLE FOR THE LOCATION OF OR THE FAILURE TO NOTE THE LOCATION OF NON-VISIBLE UTILITIES OR PIPELINES.

BASIS OF BEARINGS (PER CLIENTS INFO)

THE BEARINGS SHOWN HEREON ARE BASED ON THE SOUTHEASTERLY LINE OF PARCEL 1 AS SHOWN ON PARCEL MAP 24941-02, FILED IN PARCEL MAP BOOK 374, PAGES 85-88, BEING NORTH 40° 26' 24" EAST.

BENCHMARK

ELEVATIONS SHOWN HEREON ARE BASED UPON CITY OF BURBANK BENCHMARK #1806-1, ELEVATION 615.87 FEET (NAVD 88).

DESCRIPTION:

2.5" BRASS CAP STAMPED CITY OF BURBANK BENCHMARK 1806-1 AT THE NORTHEAST QUADRANT OF THE INTERSECTION OF SAN FERNANDO BOULEVARD AND AMHERST DRIVE ABOUT 139 FEET NORTH OF THE CENTERLINE OF SAN FERNANDO BOULEVARD AND ABOUT 37 FEET EAST OF THE CENTERLINE OF AMHERST DRIVE. SET IN THE TOP NE CORNER OF A CATCH BASIN ON THE EAST SIDE OF AMHERST DRIVE

NOTES:

- EXISTING SVE LINES HAVE NOT BEEN LOCATED AND SURVEYED. DEPTHS ARE ESTIMATED TO BE BETWEEN 13 AND 15 FEET BELOW THE EXISTING GROUND SURFACE. LOCATIONS SHOWN ARE BASED ON AS-BUILT DRAWINGS. CONTRACTOR TO DETERMINE LOCATIONS AND DEPTHS OF PIPES THROUGH AIR KNIFING OR ALTERNATE APPROVED METHODS PRIOR TO CONNECTING TO NEW SVE LINES AND ABANDONING LINES AS SHOWN ON DRAWING M-1.0. CONTRACTOR TO REPORT DEPTH AND LOCATION OF EXISTING SUBSURFACE PROCESS PIPES TO ENGINEER THROUGH THE RFI PROCEDURE IN THE CONTRACT.

REVISIONS

#	DATE	TEXT	(INTL)

SCALE: AS SHOWN

DATE: 04/27/2021

DESIGNED: ENSAFE

DRAWN BY: CC

REVIEWED BY: RZ

PROJECT NO: 088825587

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EXISTING SITE FEATURES

FORMER B-1 PLANT

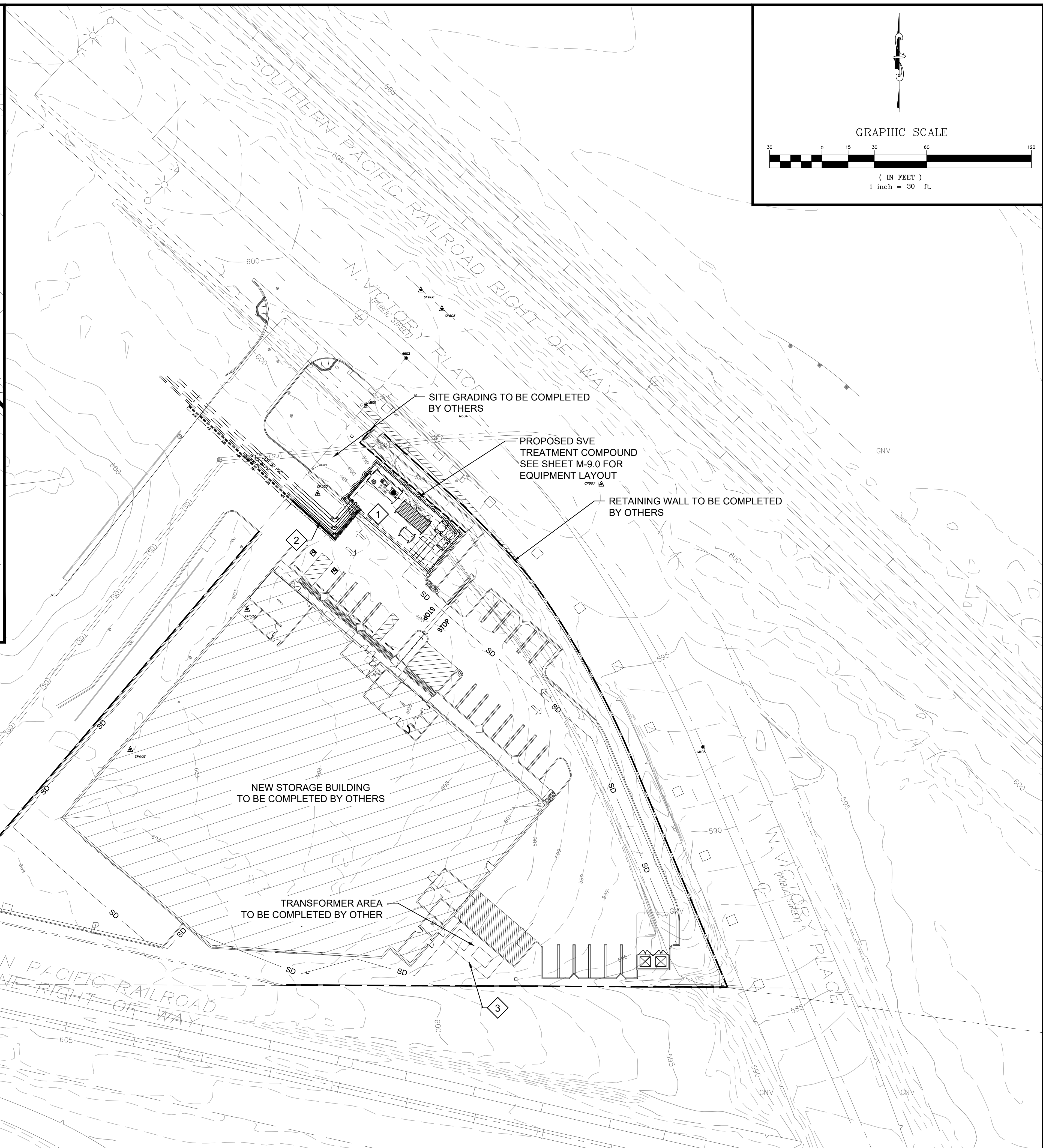
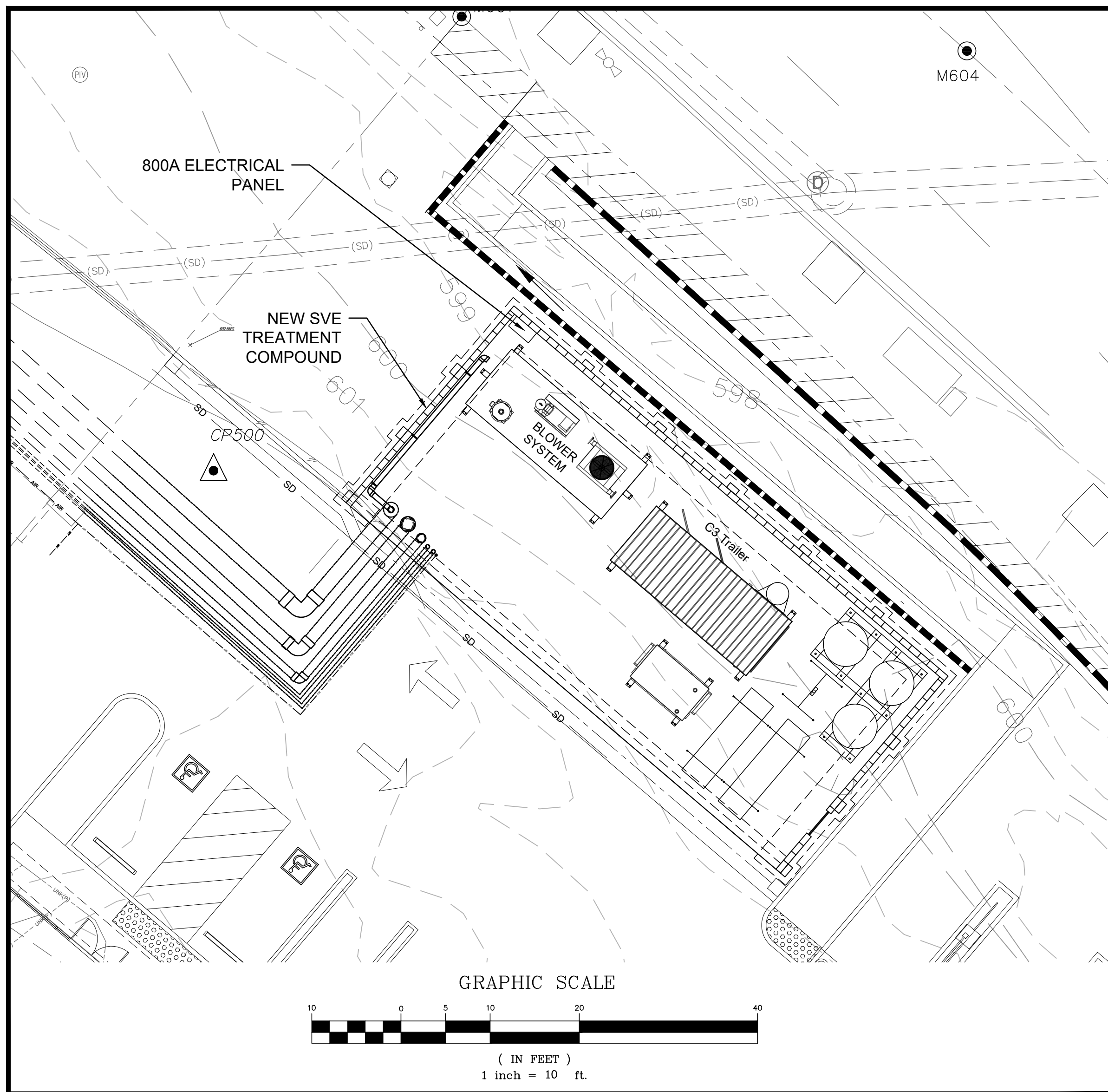
FOR

SOIL VAPOR EXTRACTION SYSTEM

LOCKHEED MARTIN CORPORATION
1705 NORTH VICTORY PLACE
BURBANK, CALIFORNIA 91504
NOVEMBER 2018

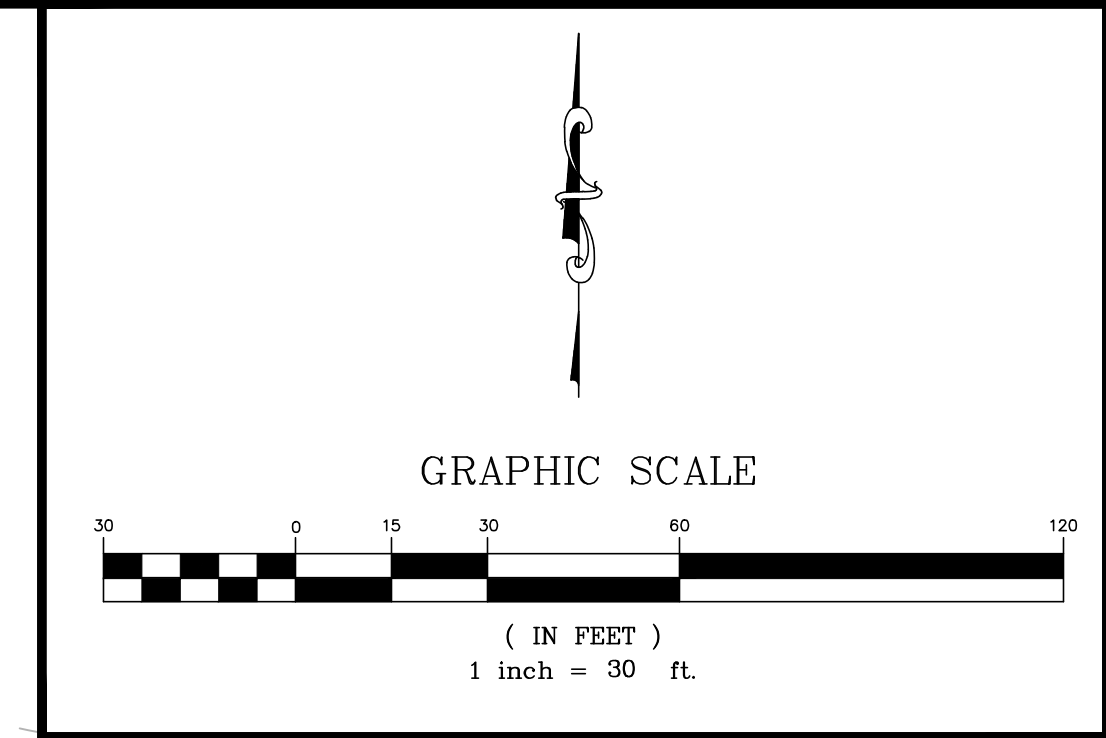
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SHEET
C-1.0



NOTES

1. SVE TREATMENT COMPOUND FOR GEO C3 (COMPRESSION, COOLING, AND CONDENSATION) SVE SYSTEM, 500 SCFM. SHALL BE COMPLETED BY OTHERS.
2. NEW SVE HIGH-VACUUM AND LOW-VACUUM INFLUENT PIPING (AS WELL AS AIR INJECTION PIPING THAT COULD ALSO BE USED AS ADDITIONAL EXTRACTION LINE) TO BE CONNECTED TO EXISTING UNDERGROUND HEADER PIPING WHERE SHOWN AND CONTINUED UNDERGROUND TO STUB-UP AREA NEAR SVE UNIT.
3. 20" SVE INFLUENT PIPING TO BE STUBBED UP TO ABOVEGROUND, WHERE A TEE WILL BE INSTALLED, WITH THE VAPORS ROUTED TO THE SVE UNIT.
4. ON TOP OF THE TEE A TOP-DRIVE PISTON PUMP WILL BE INSTALLED TO REMOVE ANY CONDENSATE THAT MAY COLLECT IN THE BASE OF THE STUBBED-UP PIPING. ANY CONDENSATE WILL BE PUMPED TO AN ABOVEGROUND STORAGE TANK FOR TEMPORARY STORAGE AND DISPOSAL.
5. EXISTING INSTRUMENT AIR LINE FROM VAULTS TO BE STUBBED UP TO TREATMENT PAD FOR POTENTIAL FUTURE USE.
6. ELECTRICAL POWER TO THE SVE UNIT WILL BE ROUTED UNDERGROUND FROM THE NEW TRANSFORMER AREA ON THE EAST SIDE OF THE NEW STORAGE BUILDING.
7. SITE ELEVATIONS ARE SHOWN FOLLOWING COMPLETION OF CONSTRUCTION OF RETAINING WALL.
8. EXISTING SVE LINES HAVE NOT BEEN LOCATED AND SURVEYED. DEPTHS ARE ESTIMATED TO BE BETWEEN 13 AND 15 FEET BELOW THE EXISTING GROUND SURFACE. LOCATIONS SHOWN ARE BASED ON AS BUILT DRAWINGS. CONTRACTOR TO DETERMINE LOCATIONS AND DEPTHS OF PIPES THROUGH AIR KNIFING OR ALTERNATE APPROVED METHODS PRIOR TO CONNECTING TO NEW SVE LINES AND ABANDONING LINES AS SHOWN ON DRAWING M-1.0
9. RETAINING WALL AND SIDEWALK NORTH OF SVE TREATMENT COMPOUND SHOWN ON SHEET C-2.0 SHALL BE CONSTRUCTED BY OTHERS PRIOR TO CONSTRUCTION OF THE SVE TREATMENT COMPOUND. ROUGH GRADING SOUTH OF THE RETAINING WALL AND UNDER THE SVE TREATMENT COMPOUND.
10. EXISTING SVE, ELECTRICAL CONDUIT, AND AIR LINES SHALL BE CONNECTED NEW PIPELINES EXTENDED TO SVE TREATMENT COMPOUND AS SHOWN IN SHEETS M-2.0 AND M-3.0.
11. CONTRACTOR SHALL CALL USA PRIOR TO START OF WORK TO MARK ALL UTILITY LINES.
12. CONTRACTOR SHALL PREPARE EXCAVATION PLAN IN ACCORDANCE WITH SPECIFICATION 31 23 00.00 20 PRIOR TO ANY EXCAVATION ACTIVITIES.



REVISIONS	
#	DATE

SCALE: AS SHOWN	DATE: 04/27/2021
DESIGNED: ENSAFE	DRAWN BY: CC
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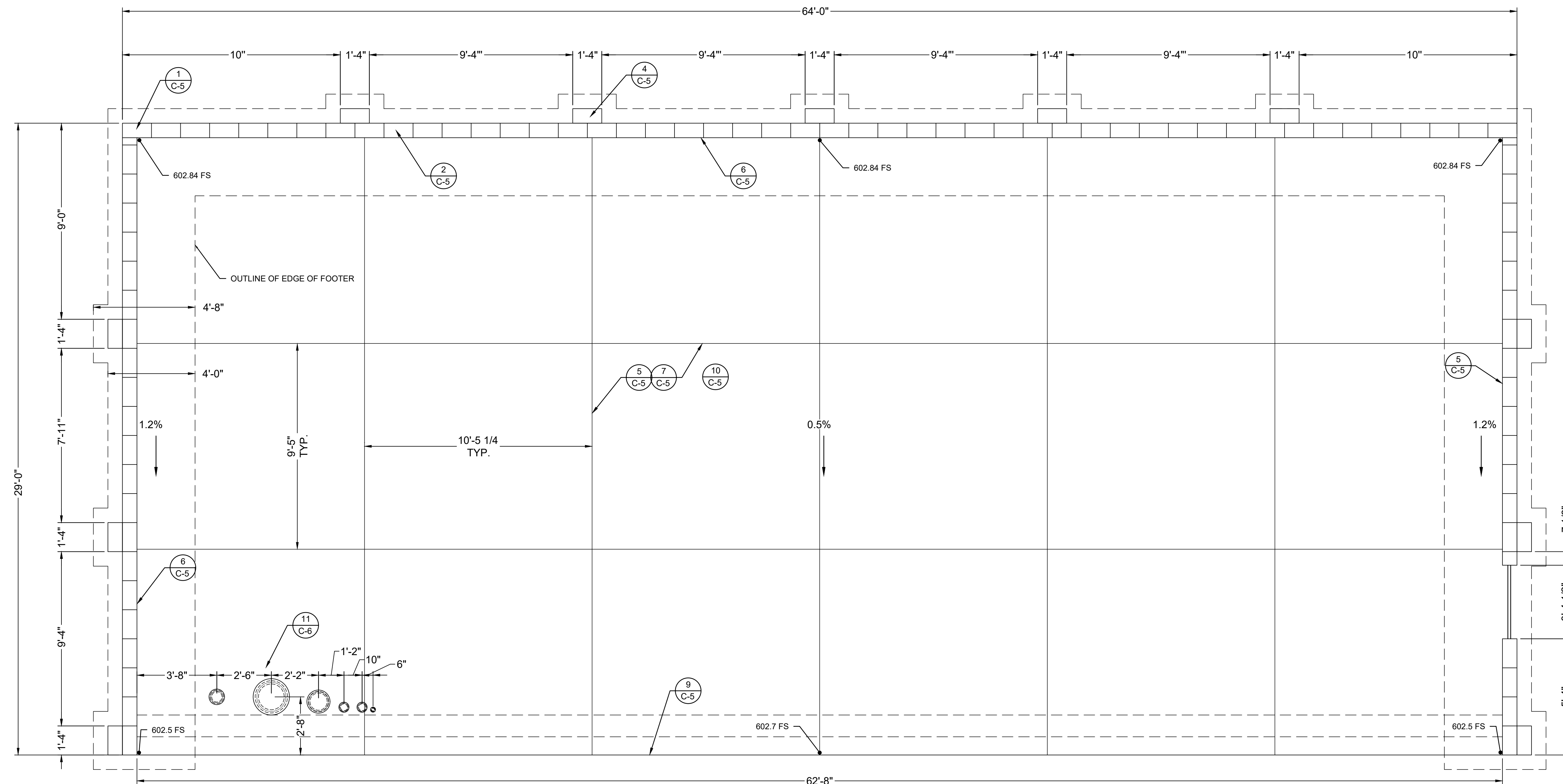
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PROPOSED SITE FEATURES

FORMER B-1 PLANT
FOR
SOIL VAPOR EXTRACTION SYSTEM

LOCKHEED MARTIN CORPORATION
1705 NORTH VICTORY PLACE
BURBANK, CALIFORNIA 91504
NOVEMBER 2018



PROPOSED SVE TREATMENT PAD - PLAN
3/8" = 1'-0"

GENERAL NOTES FOR REINFORCED CONCRETE AND FOUNDATIONS

1. STANDARD DETAILS

THE DETAILS SHOWN ON THE STANDARD DRAWINGS SHALL BE USED WHERE APPLICABLE, INCLUDING DETAILS INCLUDED ON SHEET C-5.0.

2. CODES AND SPECIFICATIONS

A. CONCRETE DESIGN, MATERIALS AND CONSTRUCTION SHALL CONFORM TO ACI STANDARD, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI-318-19.
B. DESIGN LOADS SHALL BE IN ACCORDANCE WITH THE 2019 CALIFORNIA BUILDING CODE (CBC) AND THE AMERICAN SOCIETY OF CIVIL ENGINEERS' MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES (ASCE 7).

3. MATERIALS

UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS, MATERIALS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
A. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60.
B. UNLESS OTHERWISE NOTED ON THE DRAWINGS, CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL NOT BE LESS THAN THE FOLLOWING:
ALL STRUCTURAL MEMBERS 4,000 PSI
SLABS ON GRADE 4,000 PSI
FOOTERS 3,000 PSI

4. CONSTRUCTION

A. MINIMUM CONCRETE PROTECTION FOR REINFORCING STEEL IN CAST-IN-PLACE CONCRETE SHALL BE AT LEAST EQUAL TO THE BAR DIAMETER (EXCEPT FOR SLABS AND JOISTS), BUT NOT LESS THAN THE FOLLOWING:
CONCRETE DEPOSITED AGAINST THE GROUND 3 IN.
SURFACES EXPOSED TO WEATHER OR IN CONTACT WITH GROUND AFTER REMOVAL OF FORMS:
FOR #5 BARS OR SMALLER 1 1/2 IN.
SURFACES NOT EXPOSED TO WEATHER OR GROUND:
WALLS 3/4 IN.
SUPPORT AND PEDESTALS 1 1/2 IN.
B. LAP SPLICES OF REINFORCING BARS SHALL BE AS SHOWN ON THE DRAWINGS.
C. LOCATION OF CONSTRUCTION AND OTHER JOINTS SHALL BE AS SHOWN ON THE DRAWINGS. ADDITIONAL JOINTS AND/OR CHANGES IN JOINT LOCATIONS SHALL BE AS APPROVED BY THE ENGINEER.
D. CONSTRUCTION JOINTS SHALL BE PROVIDED WITH KEYS WHERE SHOWN, OR THE CONTACT SURFACE SHALL BE ROUGHENED. SLAB SHALL HAVE NO HORIZONTAL CONSTRUCTION JOINTS. FOR PERMITTED JOINT LOCATIONS AND REQUIREMENTS OF MONOLITHICALLY PLACED CONCRETE, SEE ACI 318.
E. OUTSIDE CONCRETE WALKWAYS, APRONS AND SLABS SHALL HAVE NON-SLIP COARSE BROOM FINISH.
F. OUTSIDE CORNERS OF CONCRETE EXPOSED TO SIGHT SHALL BE CHAMFERED 3/4".
G. V-GUTTER TO BE INSTALLED BY OTHERS IN FRONT OF THE SLAB IS REQUIRED FOR DRAINAGE.
H. REQUIREMENTS FOR EQUIPMENT ANCHORAGE TO THE CONCRETE SLAB ARE PROVIDED ON SHEET M-9.0.

5. FOUNDATIONS

A. ALLOWABLE SOIL BEARING PRESSURES, EXCAVATION AND BACKFILL FOR FOUNDATIONS AND STRUCTURES SHALL BE AS DESCRIBED IN THE GEOTECHNICAL EVALUATION REPORT DATED OCTOBER 23, 2019 BY TWINNING.
B. ALL EXCAVATIONS SHALL BE CARRIED OUT IN THE DRY, AND PROVISIONS SHALL BE MADE TO PREVENT THE BOTTOM OF ALL EXCAVATIONS FROM FLOODING AT ALL TIMES.
C. BOTTOM ELEVATION OF ALL FOUNDATIONS BELOW FINISHED GRADE SHALL BE AS SHOWN ON SHEET C-4.0.
D. UNLESS OTHERWISE NOTED IN THE DESIGN DRAWINGS, ALL FOUNDATIONS SHALL BE CONSTRUCTED IN EXCAVATIONS FREE OF STANDING WATER.
E. BACKFILL MATERIAL, PLACING AND COMPACTION OF BACKFILL SHALL BE AS DESCRIBED IN THE GEOTECHNICAL EVALUATION REPORT DATED OCTOBER 23, 2019 BY TWINNING.
F. ROUGH AND FINISHED GRADE SHALL BE SLOPED (MIN. 2%) AWAY FROM ALL BUILDINGS AND STRUCTURES, UNLESS SPECIFIED OTHERWISE.

WIND DESIGN DATA

1. BASIC DESIGN WIND SPEED: $V = 95$ MPH
2. RISK CATEGORY: II
3. WIND EXPOSURE: D
4. APPLICABLE INTERNAL PRESSURE COEFFICIENT: NA
5. DESIGN WIND PRESSURES: 15.1 PSF

EARTHQUAKE DESIGN DATA

1. RISK CATEGORY: II
2. SEISMIC IMPORTANCE FACTOR $I_e = 1.0$
- 3a. MAPPED SPECTRAL ACCELERATION PARAMETER AT PERIOD OF 0.2 SECOND, $S_{0.2} = 2.01$
- 3b. MAPPED SPECTRAL ACCELERATION PARAMETER AT PERIOD 1-SECOND, $S_1 = 0.686$
4. SITE CLASS: D
- 5a. DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETER, $S_{DS} = 1.34$
- 5b. DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETER, $S_{D1} = 0.777$
6. SEISMIC DESIGN CATEGORY: E
7. BASIC SEISMIC FORCE-RESISTING SYSTEM: ASCE 7-16, TABLE 12.2.1, B.16.
8. DESIGN BASE SHEAR: 336.8 PLF
9. SEISMIC RESPONSE COEFFICIENT: $C_s = 1.257$
10. RESPONSE MODIFICATION COEFFICIENT: $R = 2.5$

DESIGN LOAD BEARING VALUES

1. BLOWER SYSTEM PACKAGE - 6,600 LBS
2. C3 SYSTEM - 12,000 LBS
3. ROTARY POSITIVE DISPLACEMENT BLOWER - 900 LBS
4. AIR/HEAT EXCHANGER - 100 LBS
5. AIR COMPRESSOR - 6,500 LBS
6. AIR/WATER SEPARATOR - 1,450 LBS
7. CONDENSATE TANK - 10,365 LBS
8. CHEMICAL TANK - 10,365 LBS
9. SURGE TANK - 2,815 LBS
10. PPZ VESSEL - 4,900 LBS
11. GAC VESSEL 1 - 4,900 LBS
12. GAC VESSEL 2 - 4,900 LBS

REVISIONS	
#	DATE
	TEXT
	(INTL)

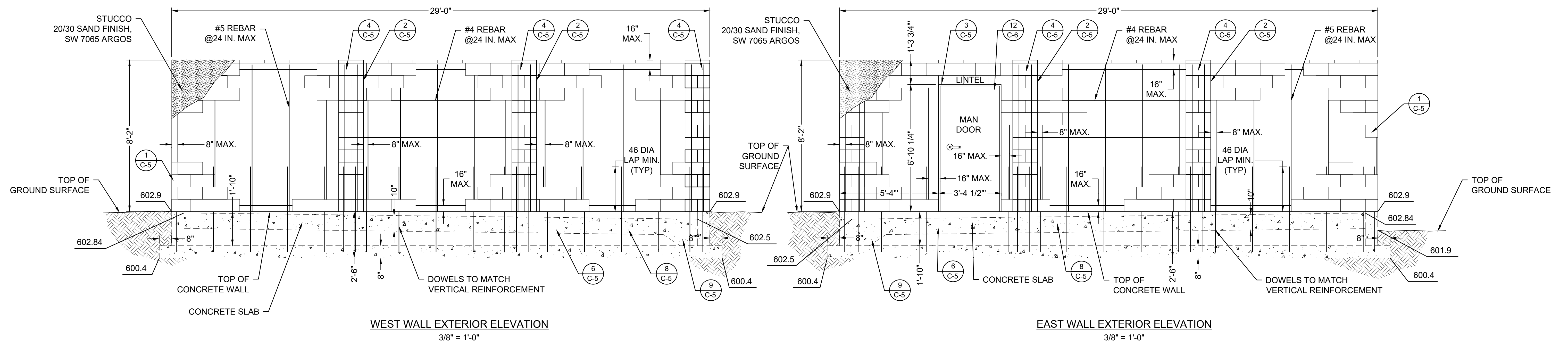
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DRAWN BY: CC/BY OTHERS	DATE: 04/27/2021
REVIEWED BY: RZ	PROJECT NO: 088825587

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SVE TREATMENT COMPOUND PAD - PLAN VIEW
FORMER B-1 PLANT
FOR
SOIL VAPOR EXTRACTION SYSTEM
FOR
LOCKHEED MARTIN CORPORATION
1705 NORTH VICTORY PLACE
BURBANK, CALIFORNIA 91504
NOVEMBER 2018

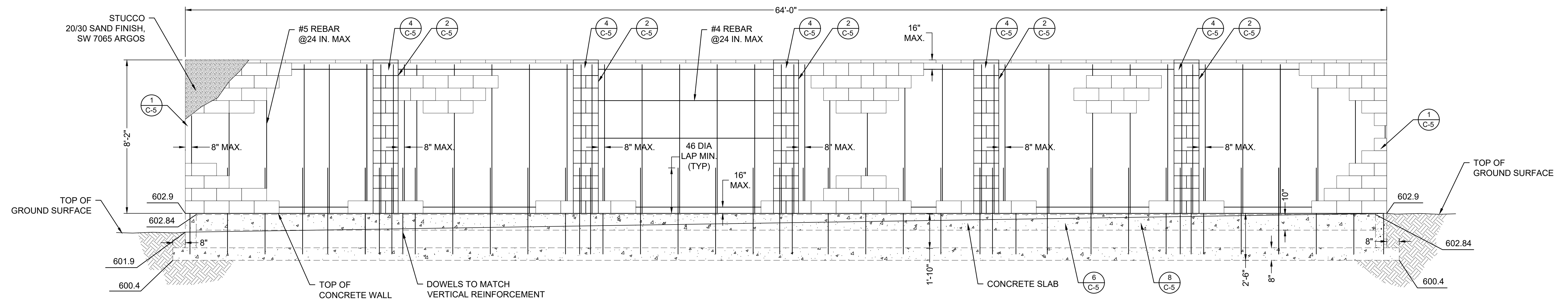
SHEET
C-3.0

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WEST WALL EXTERIOR ELEVATION
3/8" = 1'-0"

EAST WALL EXTERIOR ELEVATION
3/8" = 1'-0"



NORTH WALL EXTERIOR ELEVATION
3/8" = 1'-0"

NOTES

1. LAYOUT ALL UTILITY LINES PRIOR TO INSTALLATION OF FOOTER.
2. PROVIDE SCH 80 PVC SLEEVES FOR ALL CONCRETE SLAB PENETRATIONS, USE 8" DIA SLEEVE FOR 6" DIA LINE, 20" SLEEVE FOR 16" DIA LINE, 12" DIA SLEEVE FOR 10" DIA LINE, 5" DIA SLEEVE FOR (2) 4" DIA LINES, AND 2-1/2" DIA LINE FOR 1-1/2" DIA LINE.
3. PROTECT ALL UTILITY LINES DURING INSTALLATION OF FOUNDATION, WALLS, AND CONCRETE SLAB.
4. INSTALL FOOTERS AND FOUNDATION WALLS AS INDICATED.
5. REBAR IS CONTINUOUS BETWEEN MASONRY JOINTS.
6. CONSTRUCT AND GROUT BLOCK WALLS AS INDICATED.
7. ALL HORIZONTAL REBAR IS TO BE HOOKED AT ENDS/CORNERS.
8. INSTALL CONCRETE SLAB AS INDICATED.
9. MOUNT EQUIPMENT TO SLAB AS INDICATED ON SHEETS M-9.0 AND M-10.0.

REVISIONS	
#	DATE

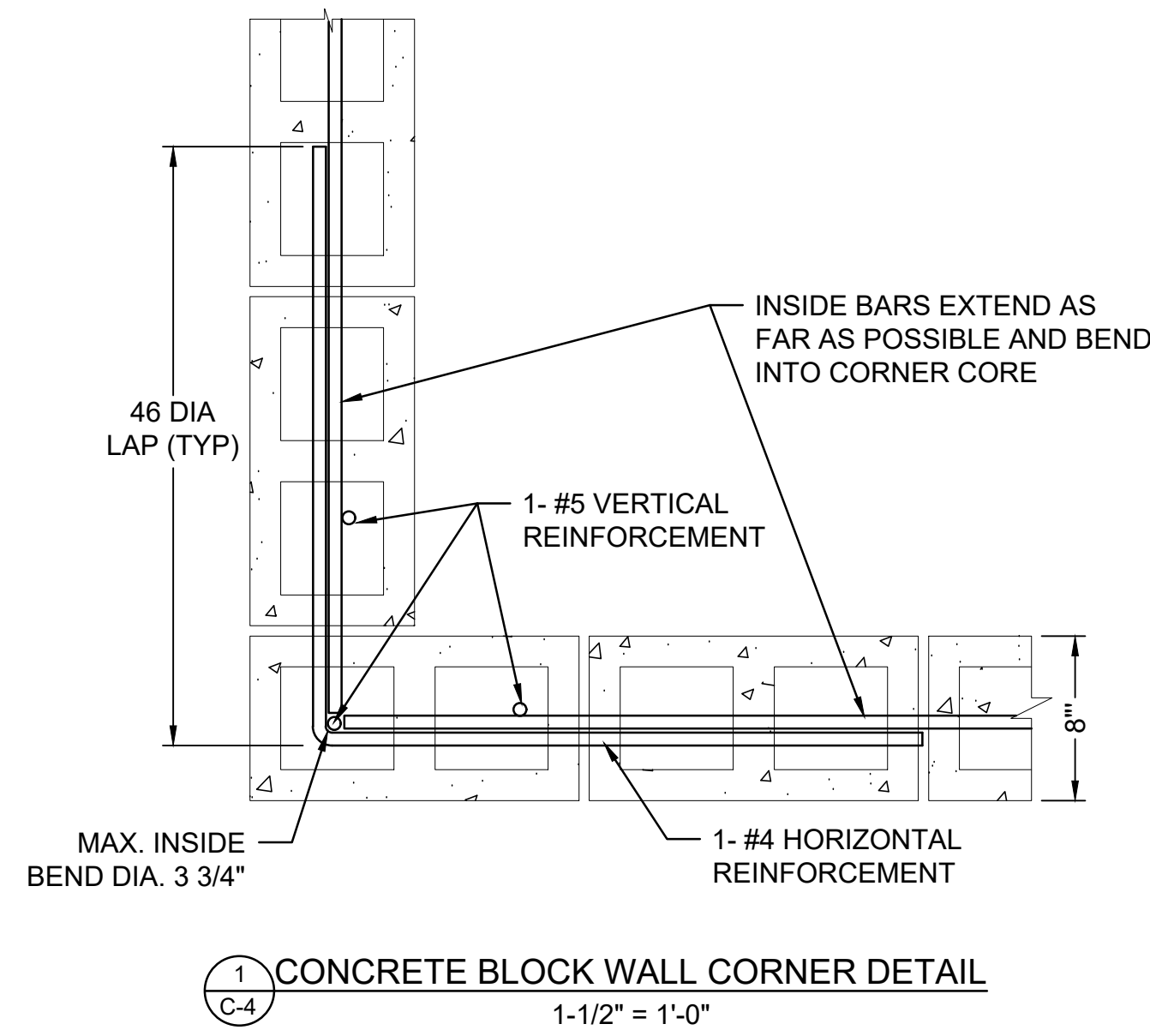
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DRAWN BY: CC/BY OTHERS	DATE: 04/27/2021
REVIEWED BY: RZ	PROJECT NO: 088825587

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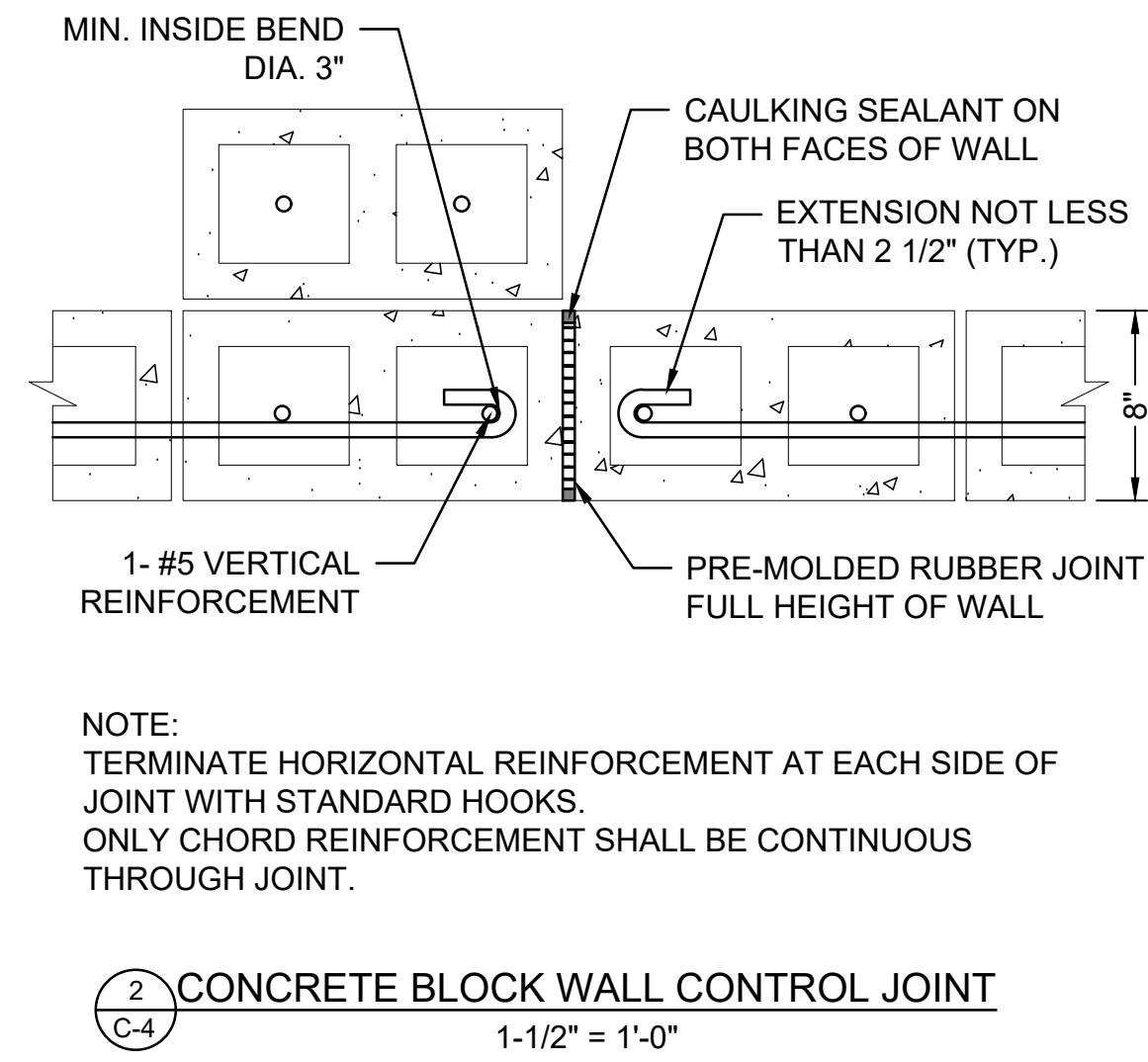
SVT TREATMENT COMPOUND PAD - ELEVATION VIEWS	FORMER B-1 PLANT FOR SOIL VAPOR EXTRACTION SYSTEM
	LOCKHEED MARTIN CORPORATION 1705 NORTH VICTORY PLACE BURBANK, CALIFORNIA 91504 NOVEMBER 2018

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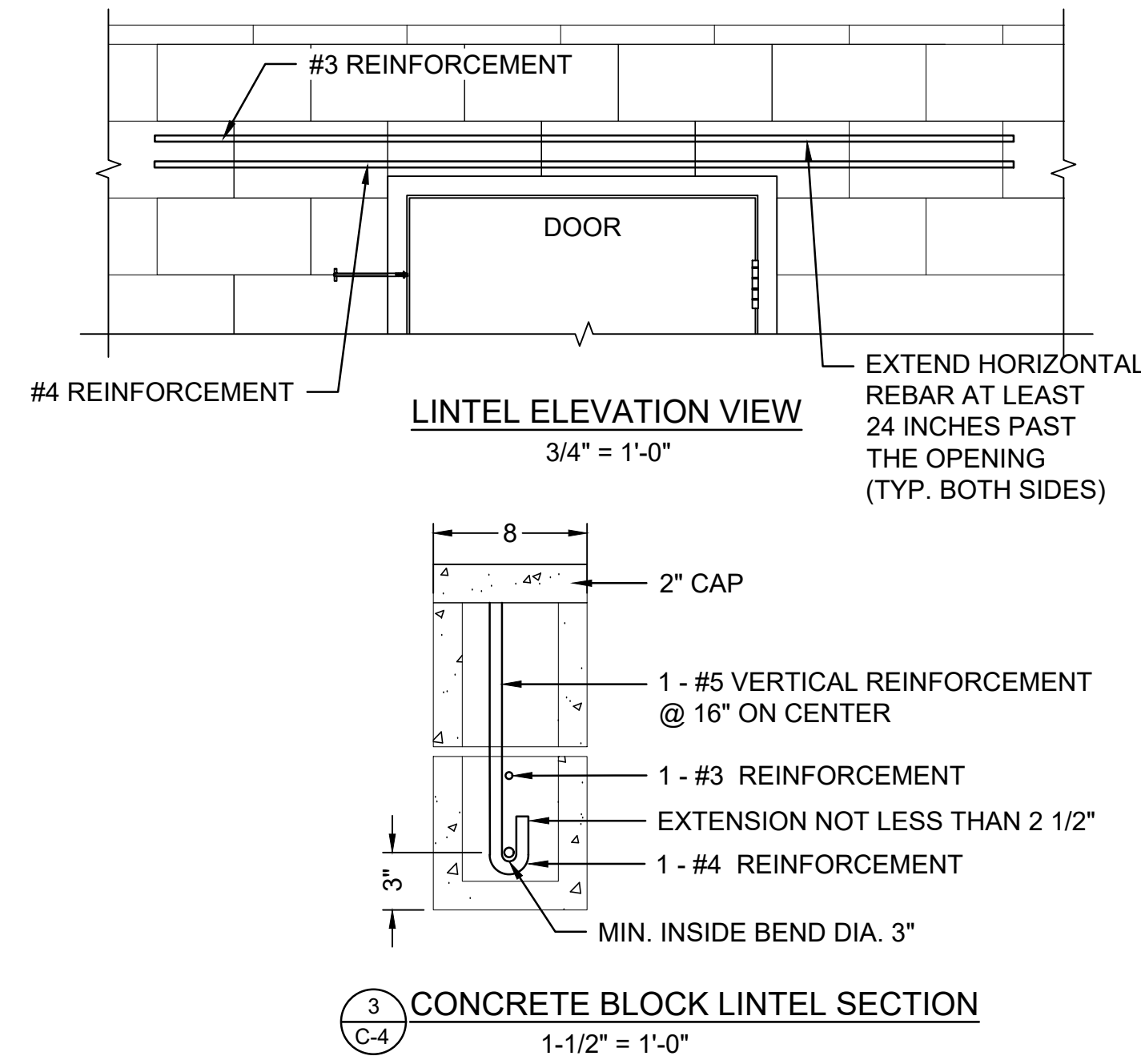
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C-4.0



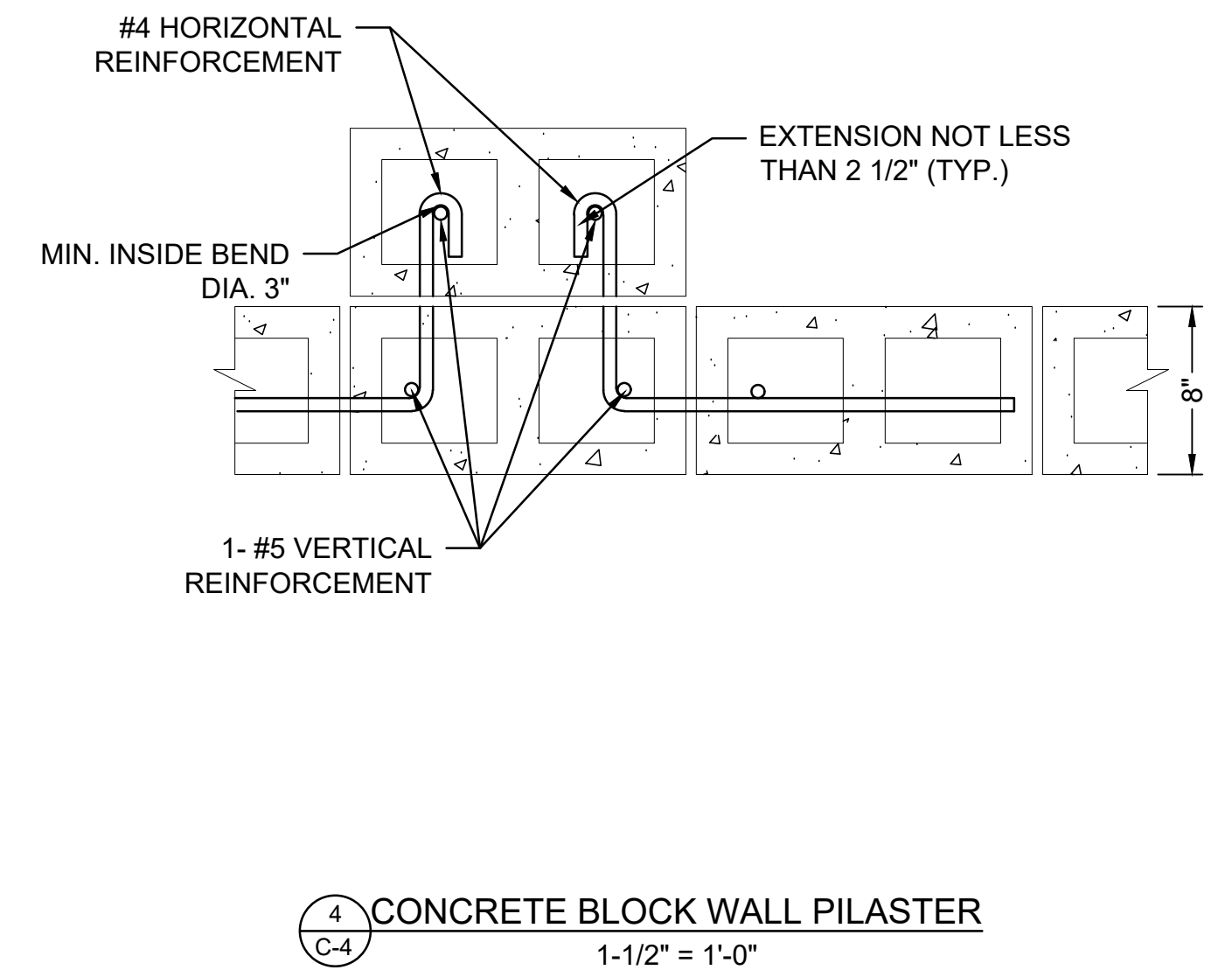
1 CONCRETE BLOCK WALL CORNER DETAIL
1-1/2" = 1'-0"



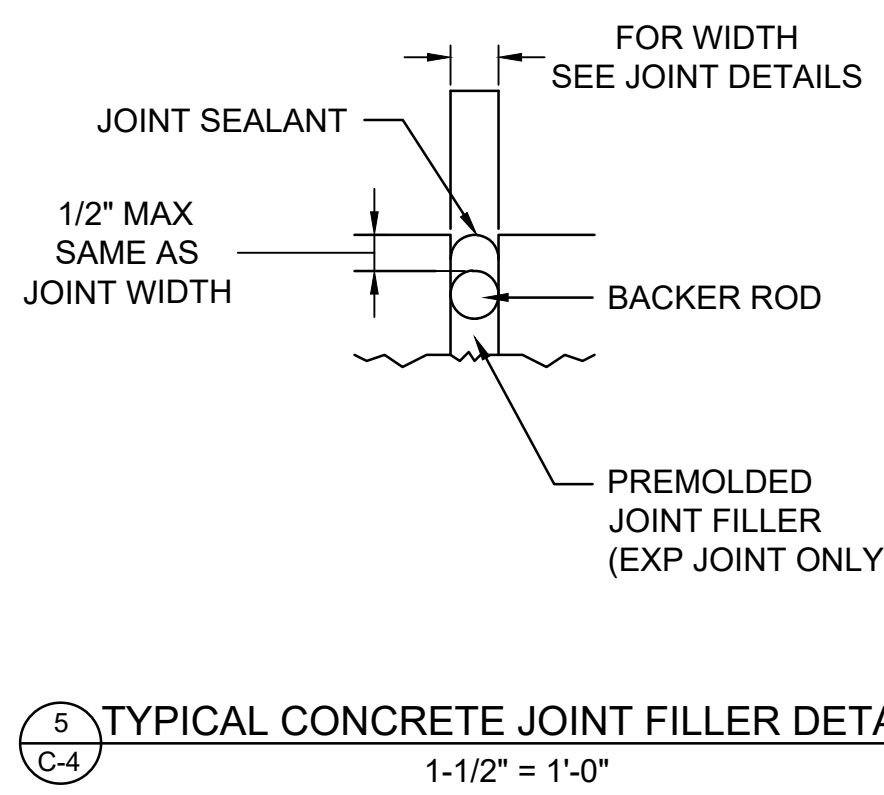
2 CONCRETE BLOCK WALL CONTROL JOINT
1-1/2" = 1'-0"



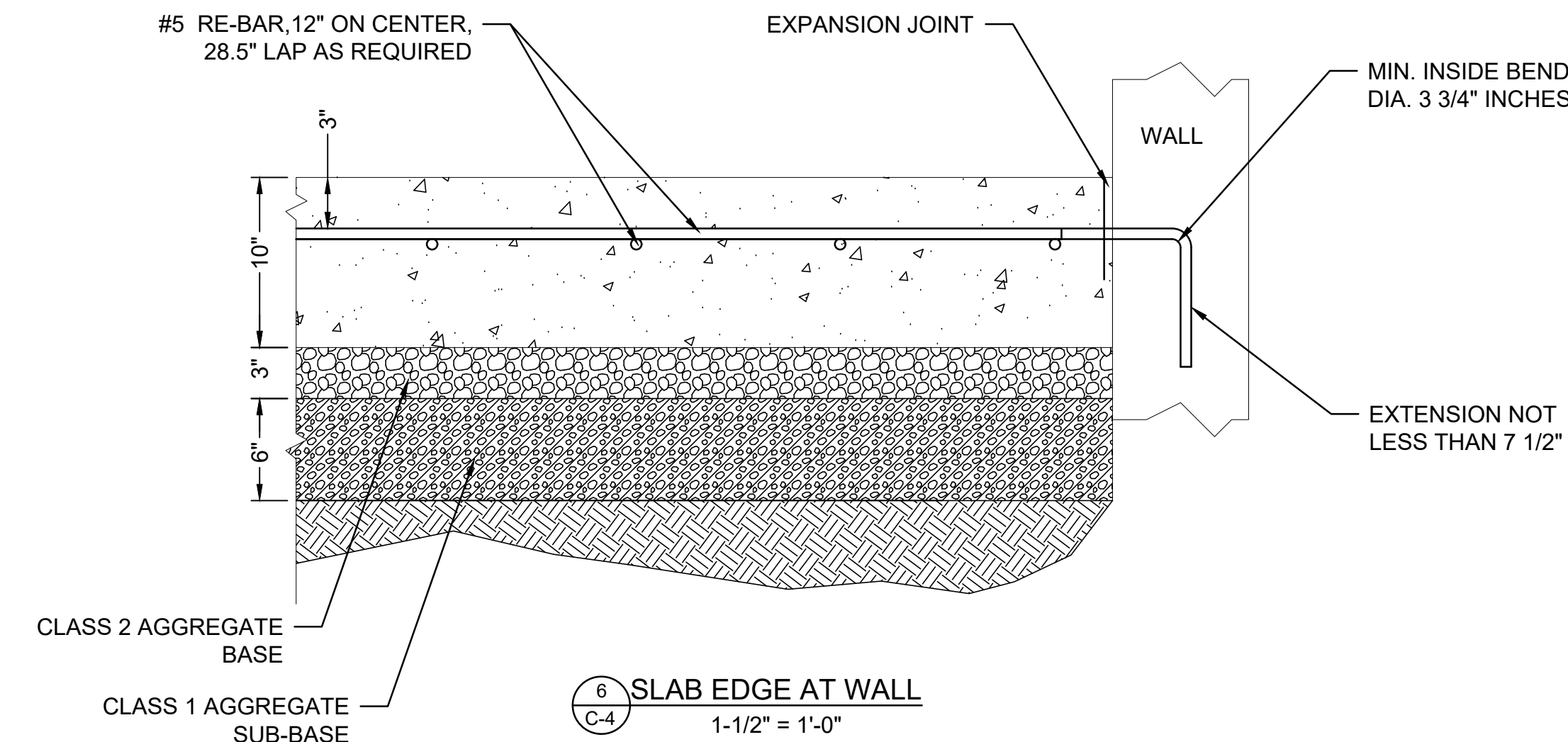
3 CONCRETE BLOCK LINTEL SECTION
1-1/2" = 1'-0"



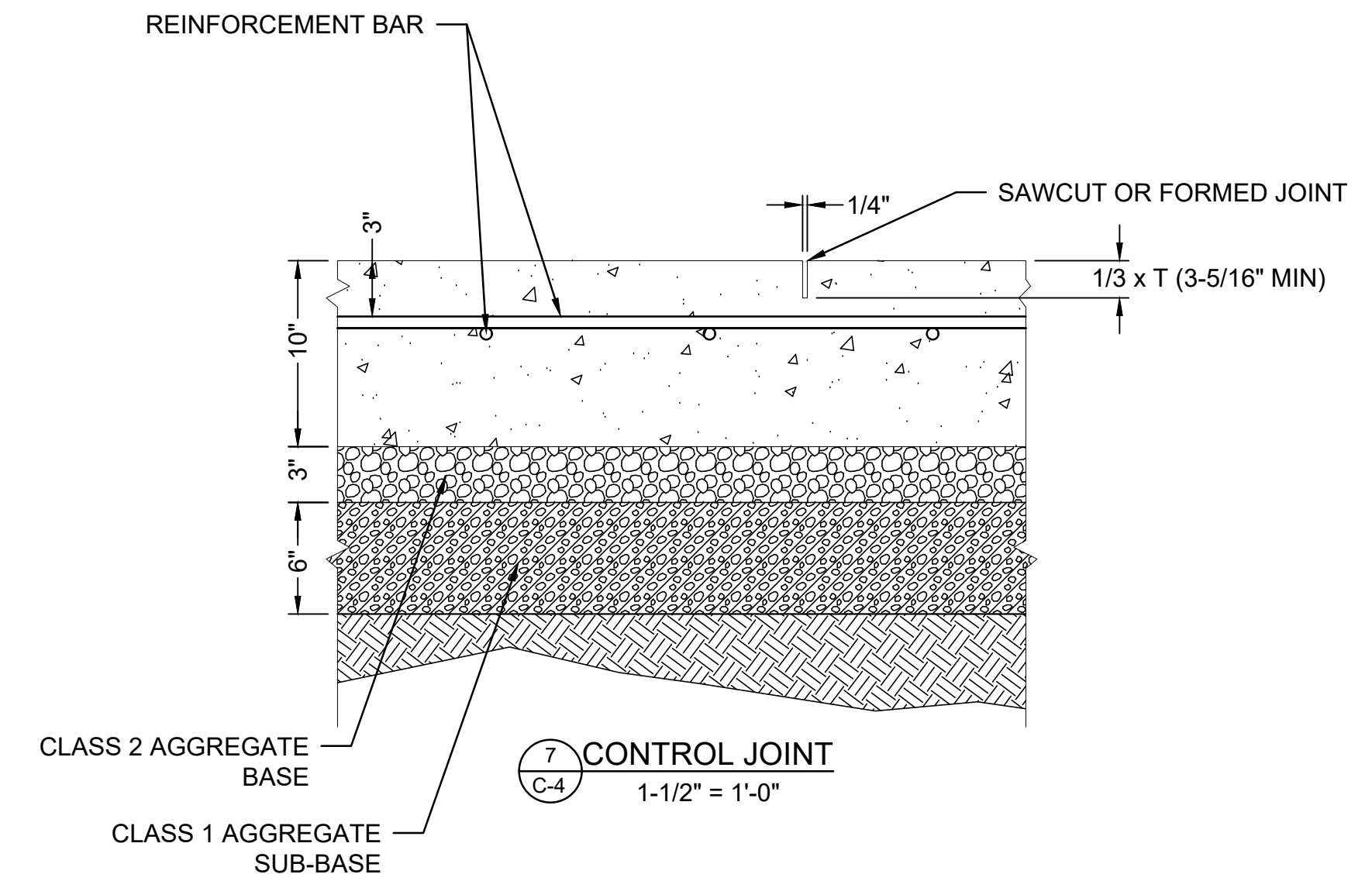
4 CONCRETE BLOCK WALL PILASTER
1-1/2" = 1'-0"



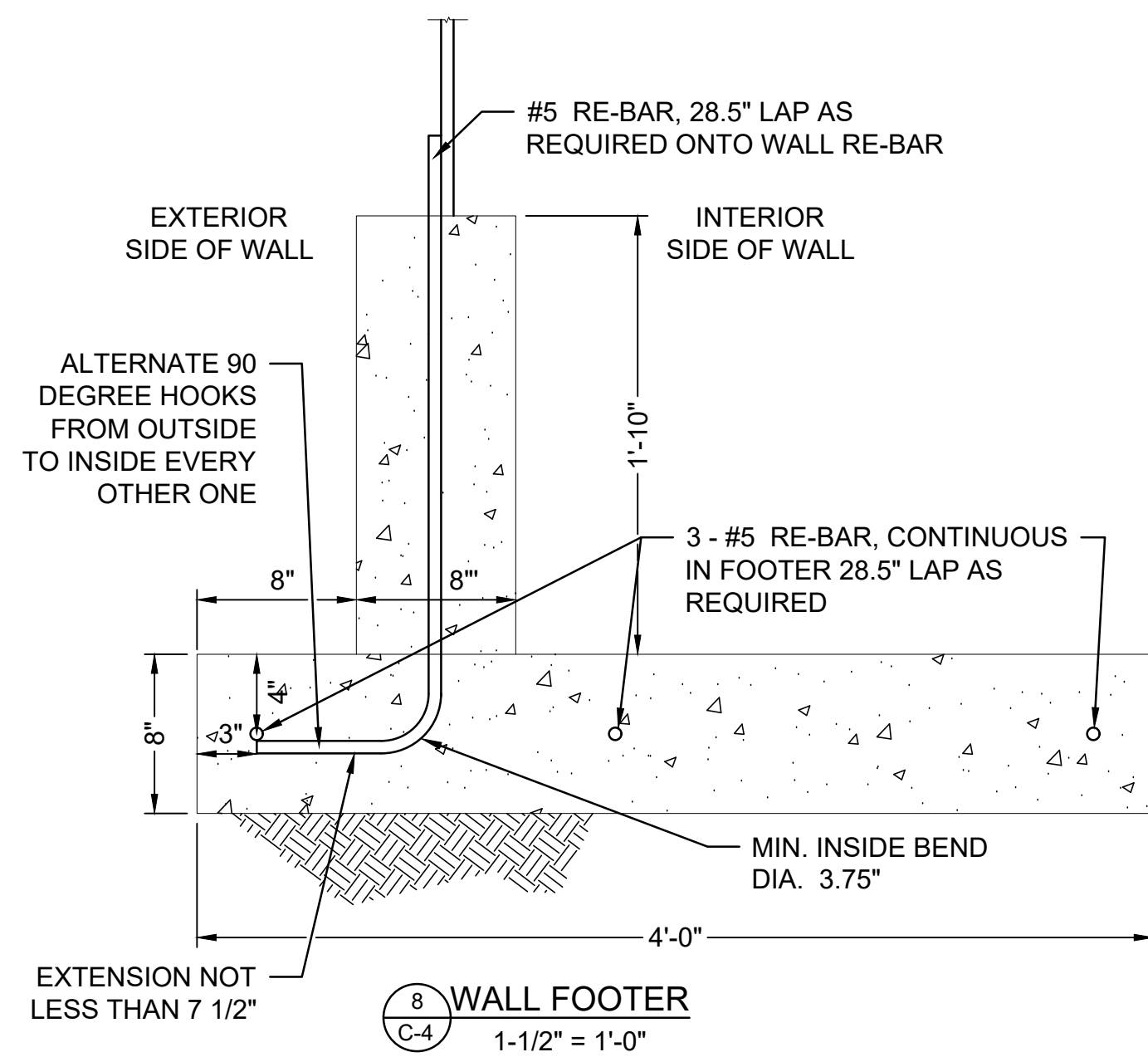
5 TYPICAL CONCRETE JOINT FILLER DETAIL
1-1/2" = 1'-0"



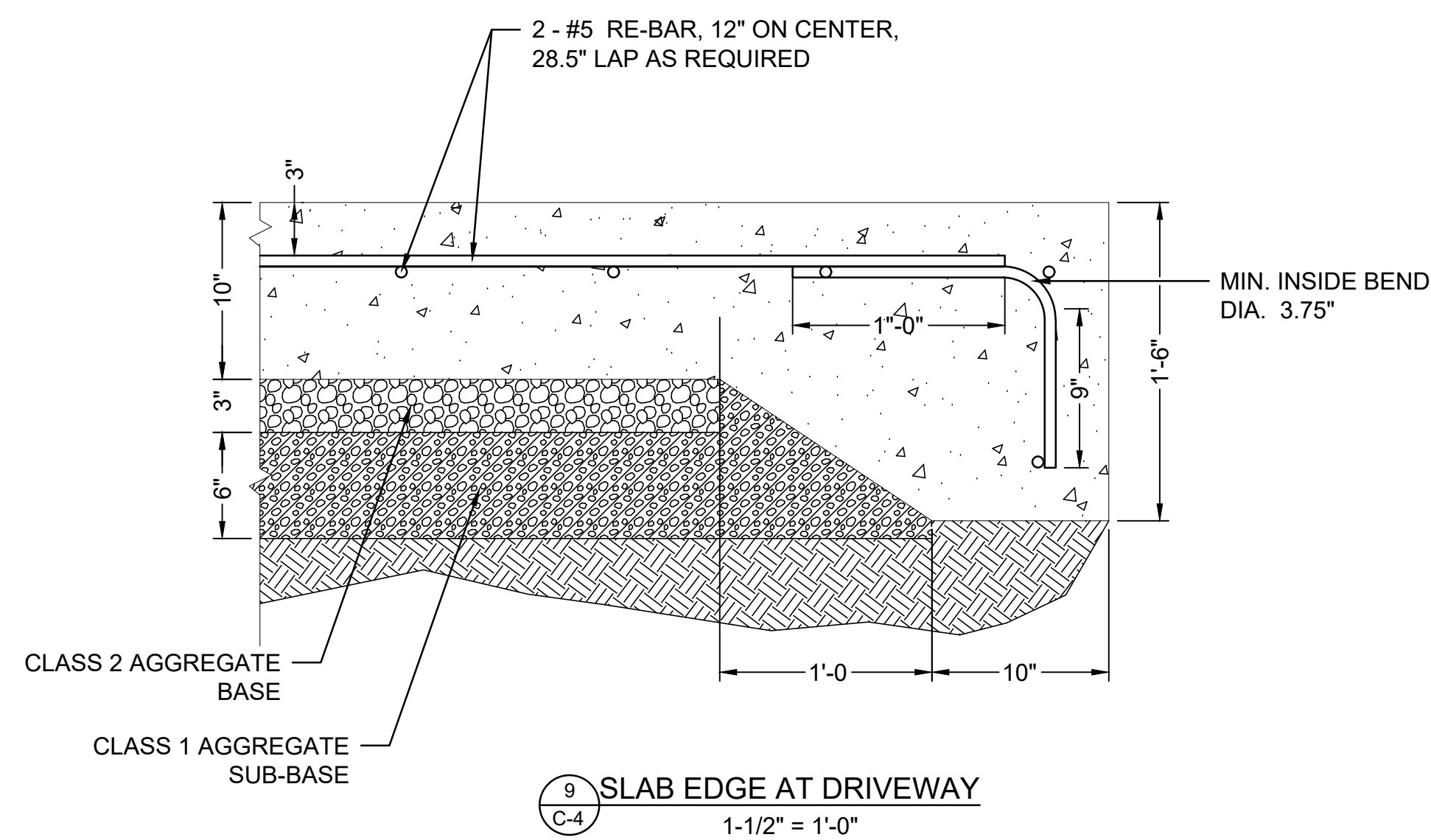
6 SLAB EDGE AT WALL
1-1/2" = 1'-0"



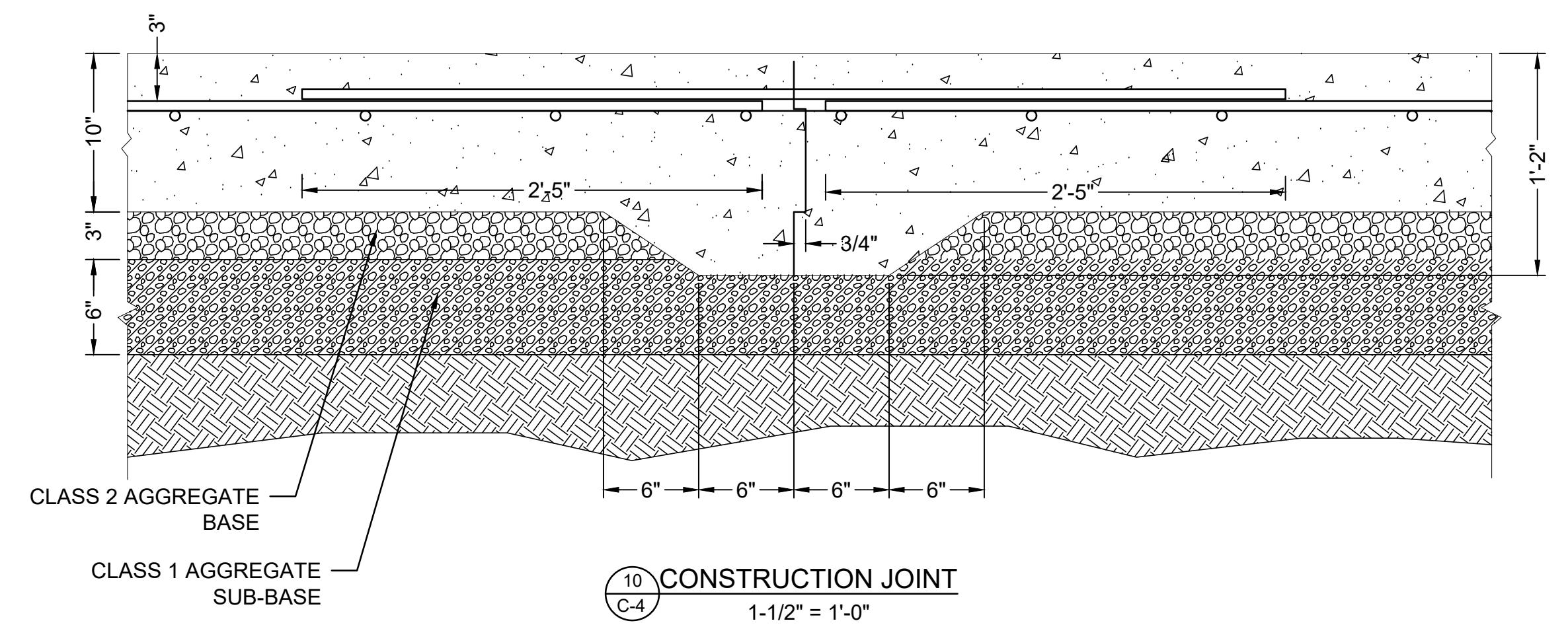
7 CONTROL JOINT
1-1/2" = 1'-0"



8 WALL FOOTER
1-1/2" = 1'-0"



9 SLAB EDGE AT DRIVEWAY
1-1/2" = 1'-0"



10 CONSTRUCTION JOINT
1-1/2" = 1'-0"

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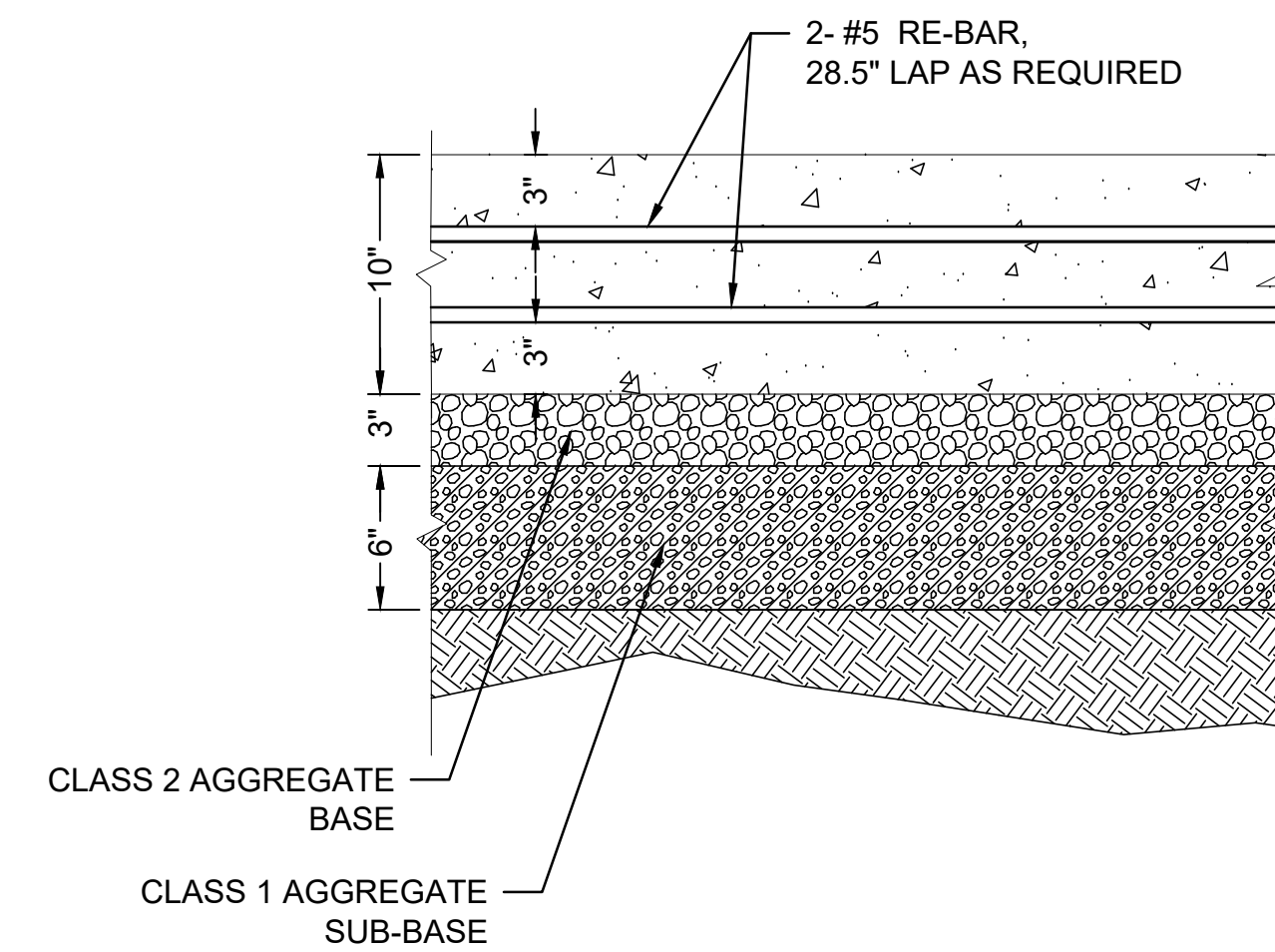
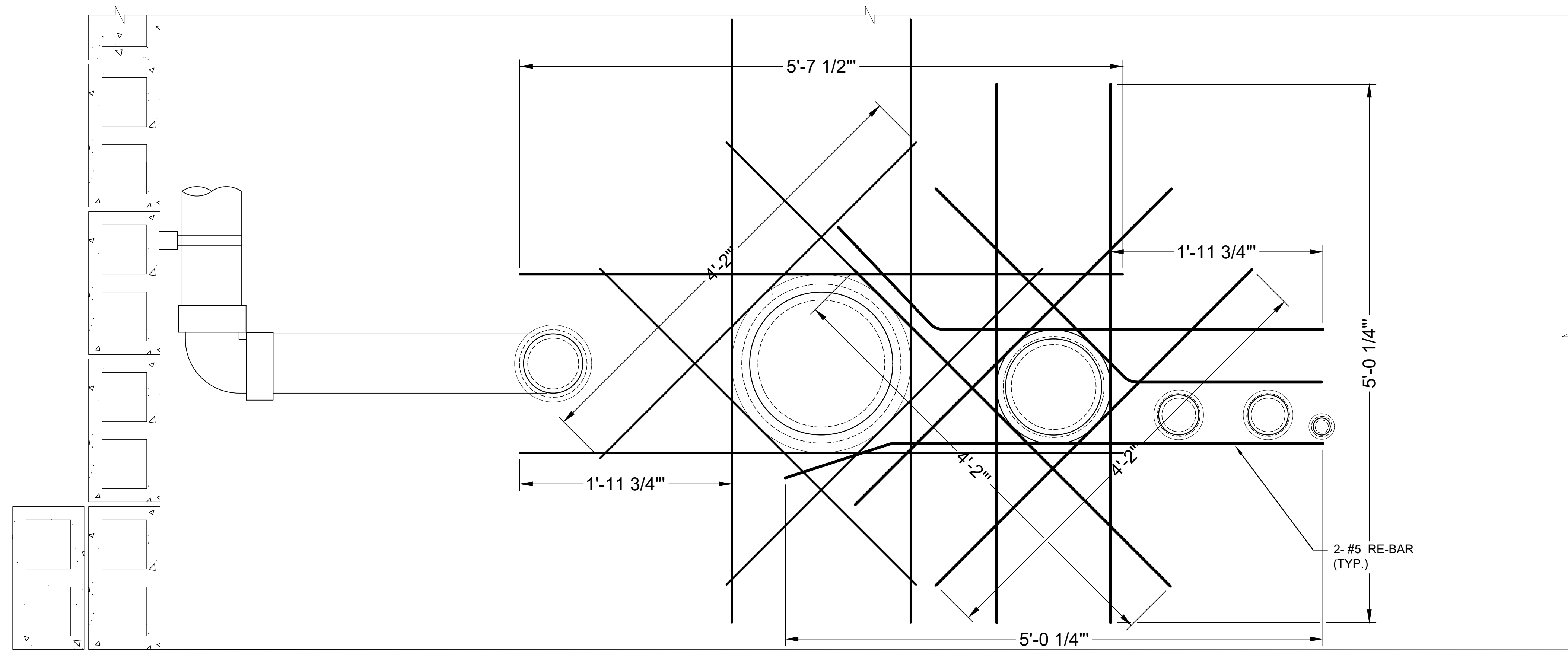
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PROJECT NO: 088825587	

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SVE TREATMENT COMPOUND PAD CONCRETE STRUCTURAL DETAILS I
FORMER B-1 PLAN
SOIL VAPOR EXTRACTION SYSTEM
FOR
LOCKHEED MARTIN CORPORATION
1705 NORTH VICTORY PLACE
BURBANK, CALIFORNIA 91504
NOVEMBER 2018

SHEET
C-5.0

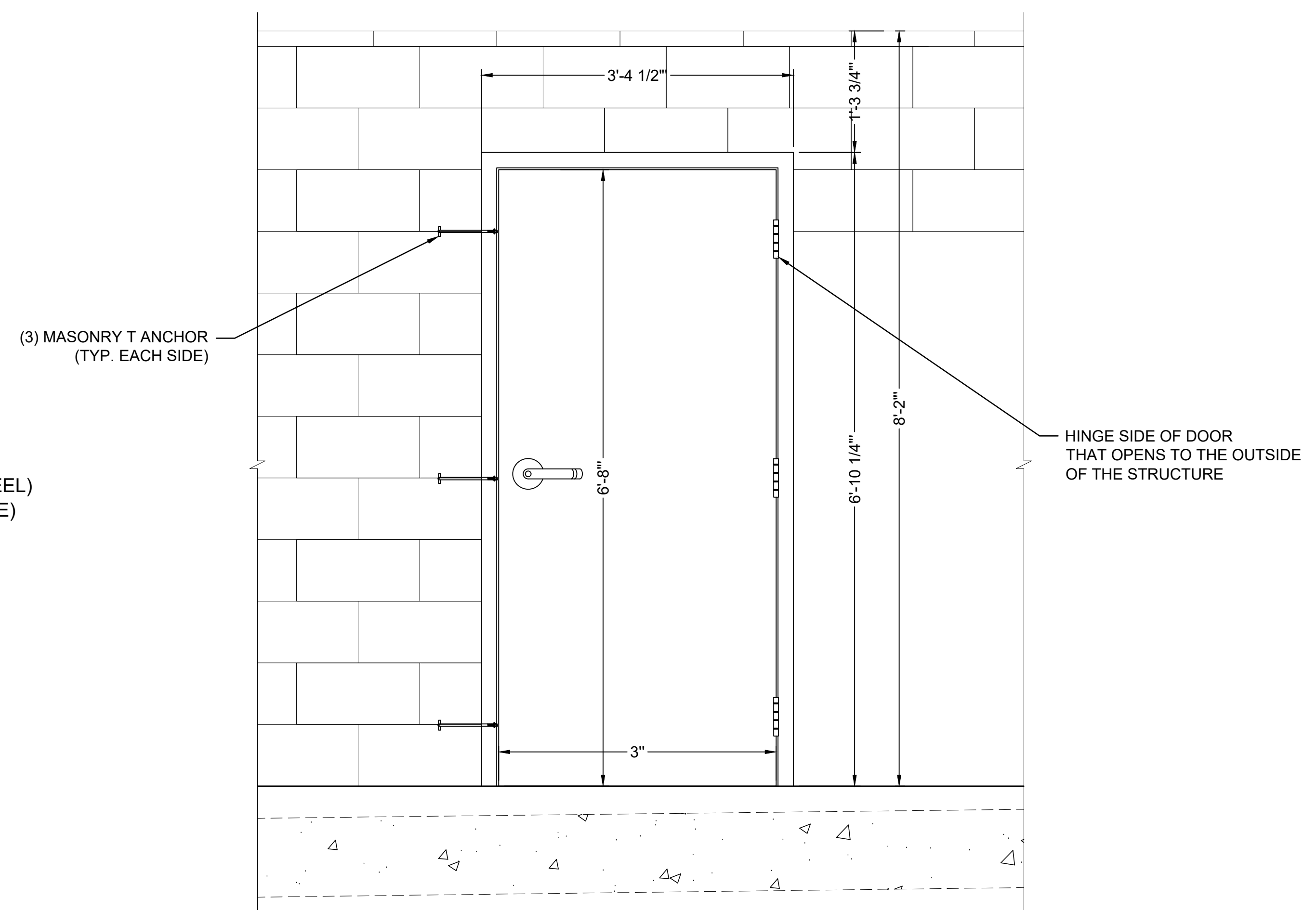
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11 CONCRETE SLAB PENETRATION REINFORCEMENT
C-3 1-1/2" = 1'-0"

DOOR MATERIALS LIST - MANUFACTURER - TRUDOOR

QUANTITY	ITEM/DESCRIPTION
1	F16 HOLLOW METAL FRAME - 16GA - 3'-0"x6'-8" - 7 3/4" JAMB DEPTH (6 3/4" THROAT) LH RHR
6	MASONRY T ANCHOR, 7 3/4" JD
2	ADJUSTABLE BASE ANCHOR
1	HOLLOW METAL DOOR - 18GA - 3'-0"x6'-8" - 1 3/4" (ACTUAL SIZE 35 3/4"x79 1/8") - 161 LOCK PREP
3	IVES 5BB1 NRP (NON-REMOVABLE PIN) 5 KNUCKLE BALL BEARING HINGE - 4.5"x4.5" - US32D (630 - STAINLESS STEEL)
1	SCHLAGE AL53PD SAT (SATURN) ENTRY LEVEL LOCKSET - GRADE-2 - 2 3/4" B.S. - C KEYWAY - 626 (SATIN CHROME)
1	PEMCO 171A SADDLE THRESHOLD - 36"x1/2" HX5"W - MILL FINISH ALUMINUM (ADA COMPLIANT)
1	PEMCO 315CN 36" DOOR SWEEP - CLEAR ANODIZED ALUMINUM W/ NEOPRENE SEAL
1	PEMCO 303AV PERIMETER JAMB WEATHERSTRIP SET - 36"x84" - VINYL X MILL FINISH ALUMINUM
1	PEMCO 346C OVERHEAD RAIN DRIP CAP - 40"x2 1/2" - CLEAR ANODIZED ALUMINUM
3	RUBBER DOOR SILENCER - GRAY



12 DOOR JAM DETAIL
C-4 1" = 1'-0"

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#	DATE

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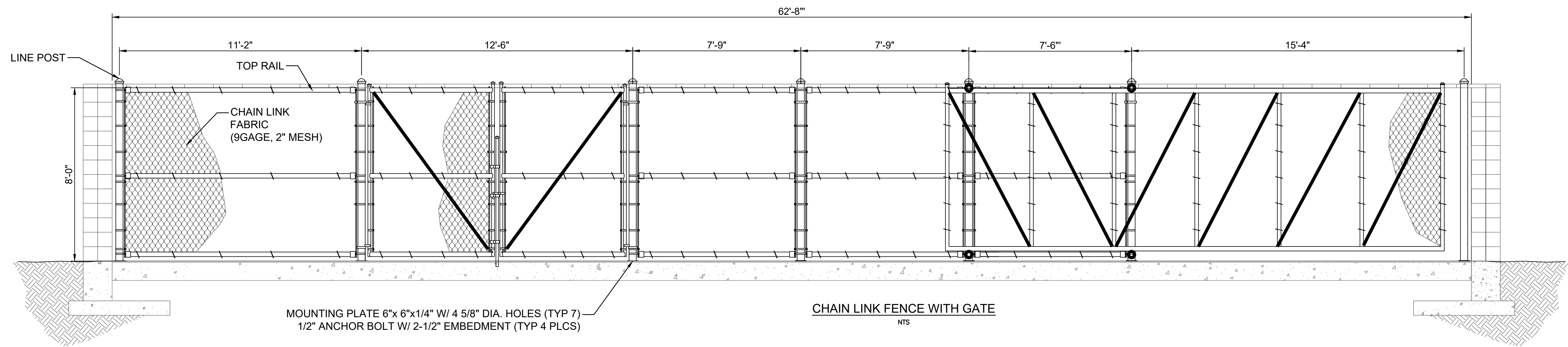
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SVE TREATMENT COMPOUND PAD
CONCRETE STRUCTURAL DETAILS II
FORMER B-1 PLAN
FOR
SOIL VAPOR EXTRACTION SYSTEM
LOCKHEED MARTIN CORPORATION
1705 NORTH VICTORY PLACE
BURBANK, CALIFORNIA 91504
NOVEMBER 2018

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LINE OF FENCE NOTES:

FABRIC: 96" 9 GA GAW (2" MESH) KT CHAIN-LINK FABRIC.

TOP AND BOTTOM RAILS: 2 1/2" O.D. LG-40 PIPE.
3.12 LBS. PER FOOT. RAILS JOINED WITH 2 1/2" (6" LONG) PS SLEEVE.

LINE POST: 4" O.D. LG-40 PIPE
CUT POST, 9.11 LBS. PER FOOT. LINE POSTS SET AS DIMENSIONED.
MOUNTING PLATE: 6" x 6" x 1/4" W/ FOUR 5/8" DIA. HOLES.

TERMINAL POST: 4" O.D. LG-40 PIPE.
CUT POST, 9.11 LBS. PER FOOT.
MOUNTING PLATE: 6" x 6" x 1/4" W/ FOUR 5/8" DIA. HOLES.

BRACING: 1 5/8" O.D. LG-40 PIPE, 1.82 LBS. PER FOOT, USED FOR THE DIAGONAL BRACING.

FITTINGS: PS PLAIN BRACE BAND & CARRIAGE BOLT W/NUT, PS COMBO RAIL END, PS LINE RAIL CLAMP,
PS LOOP CAP, PS DOME CAP, 3/4" PS TENSION BAR, PS PLAIN TENSION BAND & CARRIAGE BOLT W/NUT.

TIE WIRE: 8 1/4" STEEL CUT/HOOK 11 GA. TIE WIRE & 6 1/2" STEEL CUT/HOOK 11 GA. TIE WIRE SPACE 15"
ON CENTER FOR LINE POST & 24" ON CENTER FOR RAILS.

12'-6" DOUBLE GATE AND 15' CANTILEVER GATE NOTES:

FABRIC: 96" 9 GA GAW (2" MESH) KT CHAIN-LINK FABRIC.

BRACING: 1 5/8" O.D. LG-40 PIPE, 1.82 LBS. PER FOOT, USED FOR THE DIAGONAL BRACING.

GATES: TOP AND BOTTOM FRAMEWORK OF 2 1/2" LG-40 PIPE, 3.12 LBS. PER FOOT. UPRIGHT
FRAMEWORK OF 2" LG-40 PIPE, 2.72 LBS. PER FOOT. GATES BRACED WITH DIAGONAL BRACING.
SAME FABRIC AS FENCE.

GATE POST: 4" O.D. LG-40 PIPE CUT POST, 9.11 LBS. PER FOOT. MOUNTING PLATE: 6" x 6" x 1/4" W/
FOUR 5/8" DIA. HOLES.

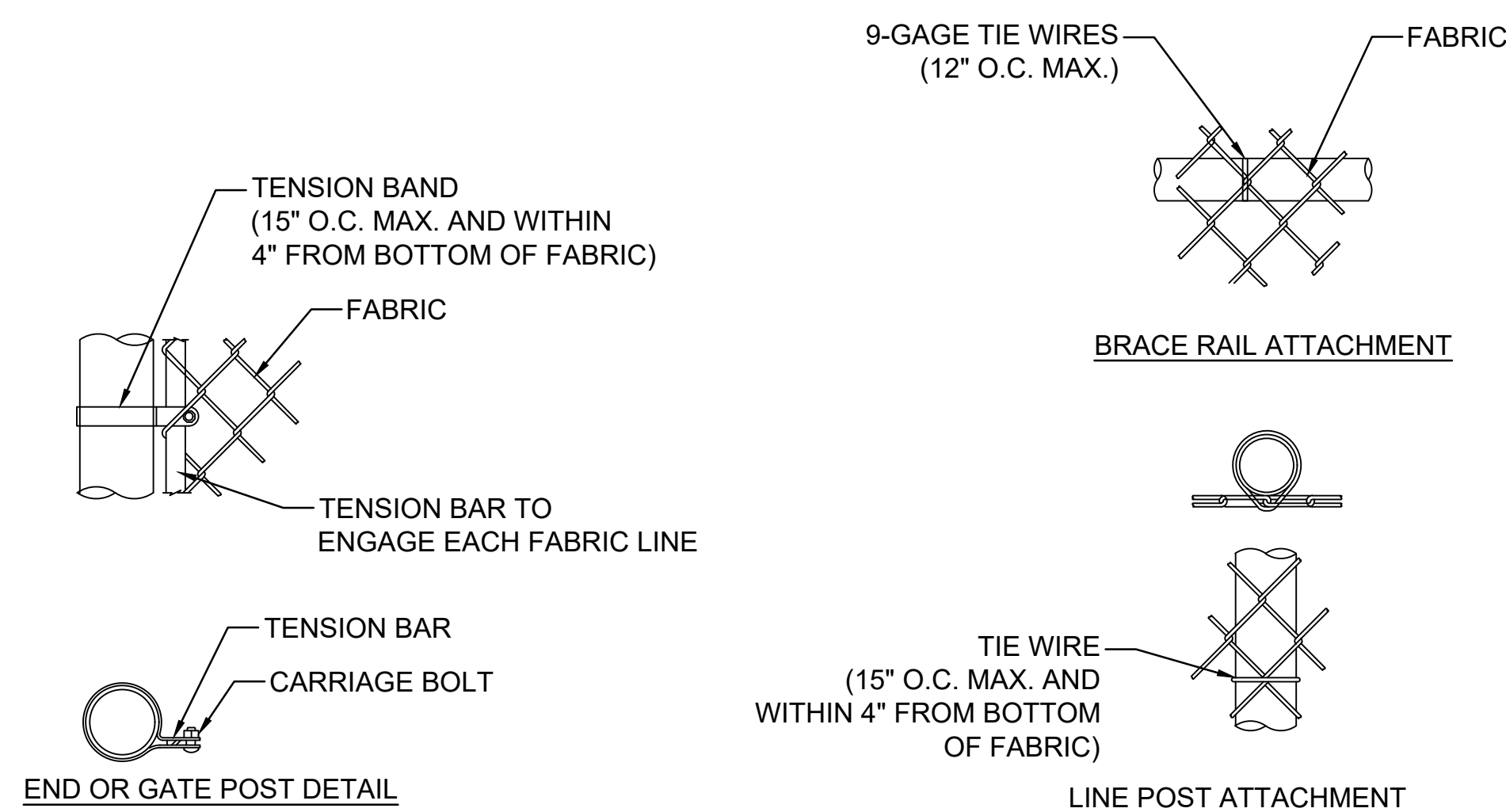
FITTINGS: PS PLAIN BRACE BAND & CARRIAGE BOLT W/NUT, PS COMBO RAIL END, PS LINE RAIL CLAMP,
PS LOOP CAP, PS DOME CAP, 3/4" PS TENSION BAR, PS PLAIN TENSION BAND & CARRIAGE BOLT W/NUT.

TIE WIRE: 8 1/4" STEEL CUT/HOOK 11 GA. TIE WIRE & 6 1/2" STEEL CUT/HOOK 11 GA. TIE WIRE SPACE 15"
ON CENTER FOR LINE POST & 24" ON CENTER FOR RAILS.

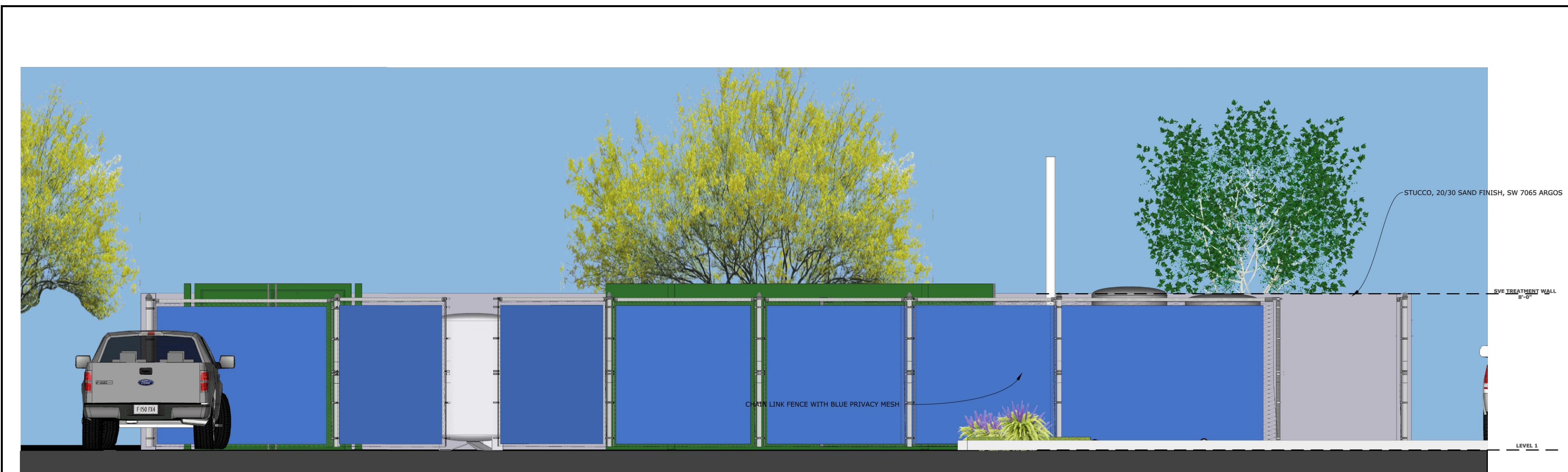
PROVIDE LOCKING MECHANISM FOR BOTH THE SWING GATES AND THE CANTILEVER GATE.

GENERAL NOTE

THE LANDSCAPE FEATURES WILL BE INSTALLED BY OTHERS AND MAY OCCUR AFTER CONSTRUCTION OF THE
SVE TREATMENT COMPOUND.



FASTENING DETAILS
NTS



SOUTH ELEVATION (OPEN)



SOUTH ELEVATION (CLOSED)

SHEET 16
CONCEPT ELEVATIONS
(SVE TREATMENT COMPOUND)

REVISIONS	
#	DATE

SCALE: AS SHOWN	DATE: 04/27/2021
DESIGNED: ENSAFE	DRAWN BY: CC
REVIEWED BY: RZ	PROJECT NO: 088825587

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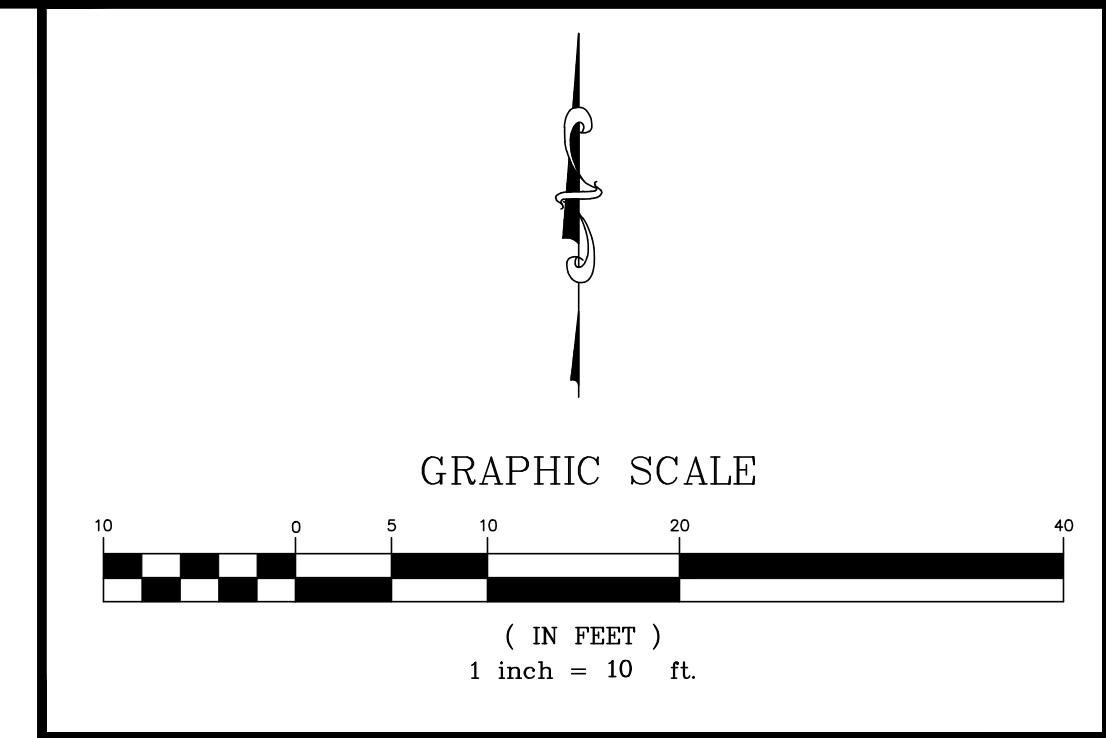
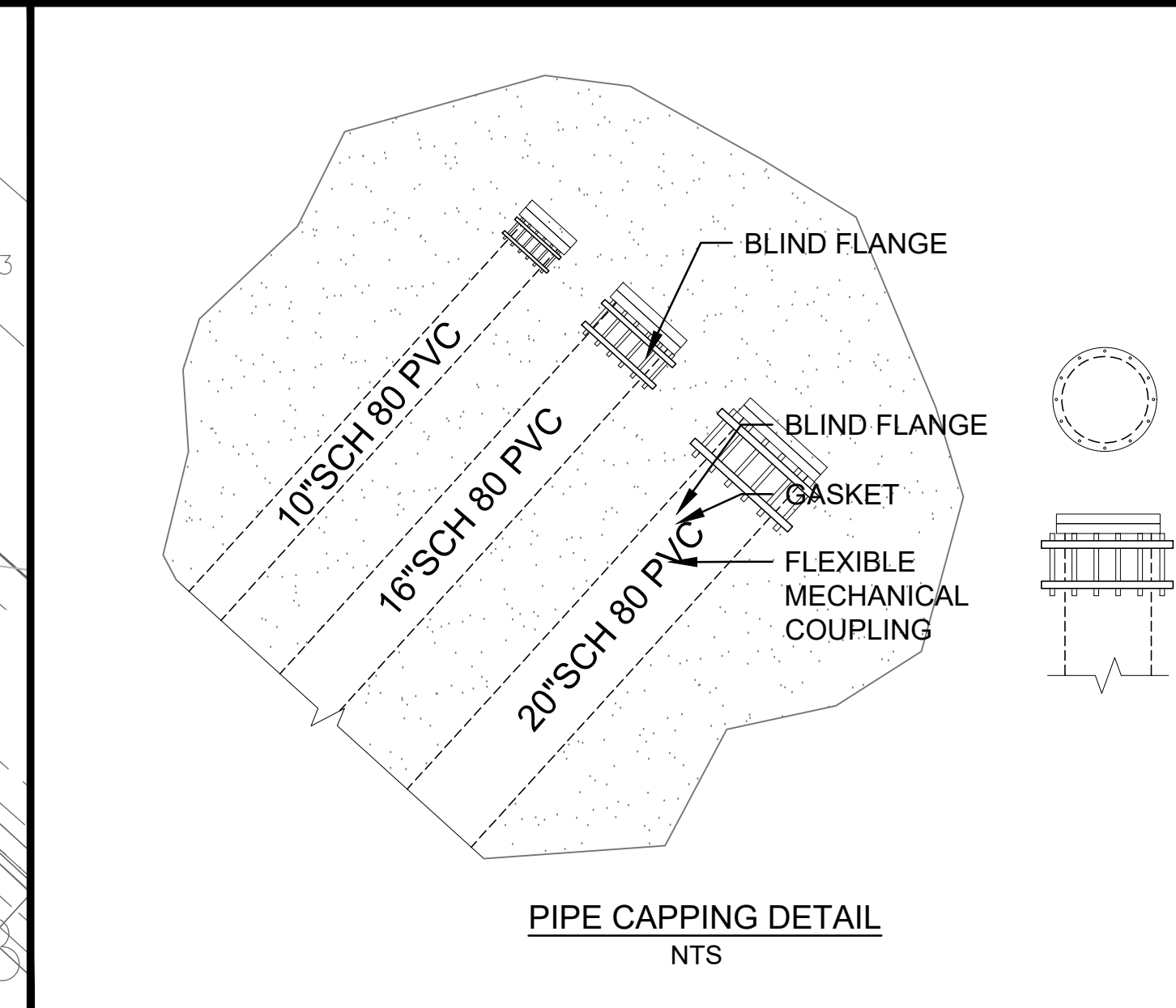
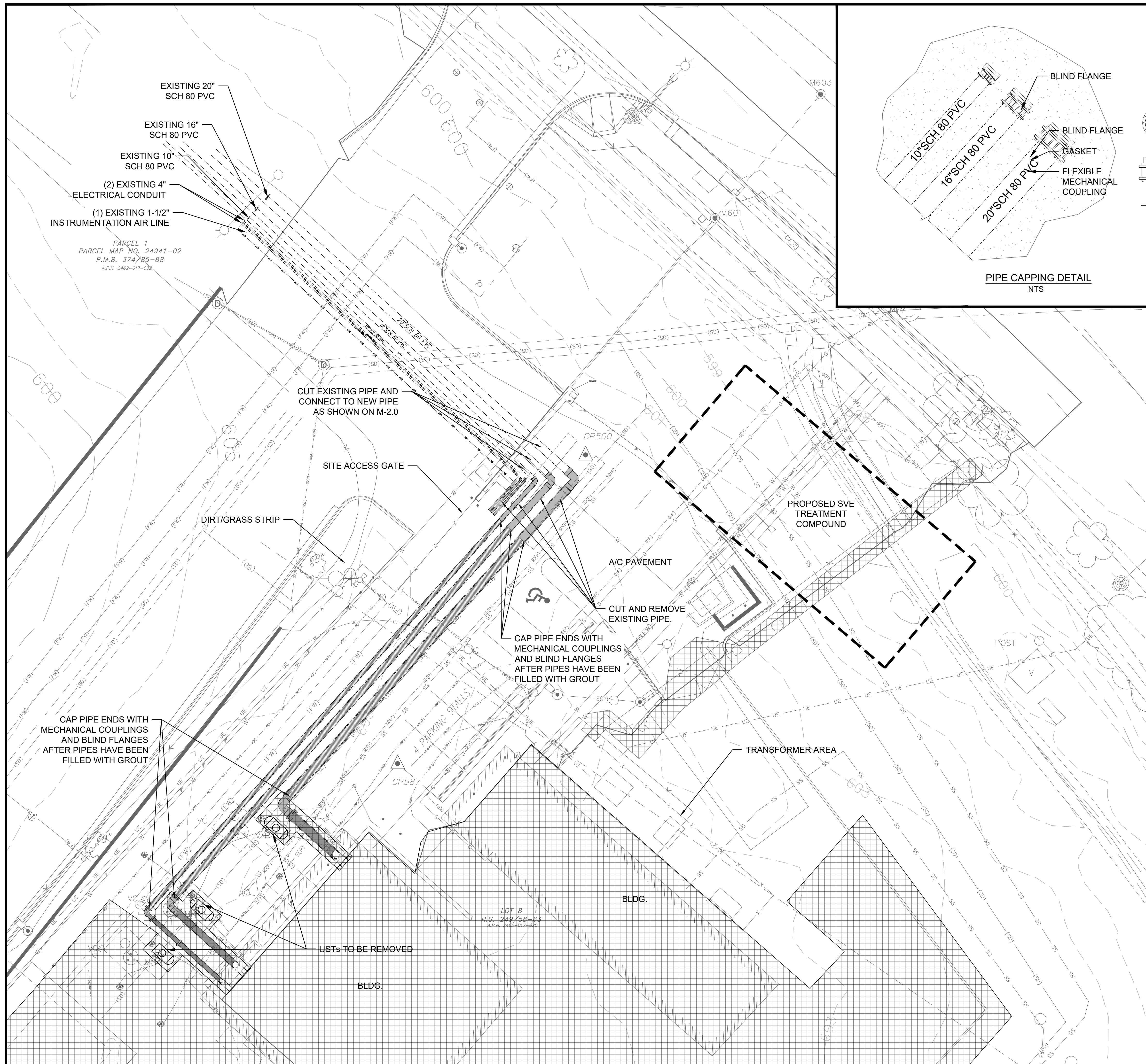
SVE TREATMENT COMPOUND FENCE - DETAIL

FORMER B-1 PLANT
FOR
SOIL VAPOR EXTRACTION SYSTEM

LOCKHEED MARTIN CORPORATION
1705 NORTH VICTORY PLACE
BURBANK, CALIFORNIA 91504
NOVEMBER 2018

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C-7.0

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NOTES:

- SUBMIT PIPE ABANDONMENT/EXCAVATION SIDE STABILIZATION PLAN TO ENGINEER FOR APPROVAL PER SPECIFICATION 31 23 00.00 20 EXCAVATION AND FILL DESCRIBING THE MATERIALS AND METHODS USED TO ABANDON EXISTING 20-INCH, 16-INCH, AND 10-INCH PIPES IN PLACE AND CONNECT EXISTING SVE PIPE TO NEW SVE PIPE. CONTRACTOR SHALL BE RESPONSIBLE TO STABILIZE THE SIDES OF ALL EXCAVATIONS ON BOTH THE NORTH END AND SOUTH END OF THE PIPES TO BE ABANDONED. PROTECT ALL EXISTING PIPES FROM DAMAGE. SHORING/SIDE STABILIZATION MATERIALS AND METHODS SHALL BE PROVIDED IN THE PIPE ABANDONMENT/EXCAVATION SIDE STABILIZATION PLAN.
- THE LOCATIONS OF THE PIPES ARE APPROXIMATE AND BASED ON HISTORICAL INFORMATION. THE DEPTHS OF THE PIPES ARE ESTIMATED TO BE BETWEEN 13 TO 15 FEET BELOW THE GROUND SURFACE.
- THE SOUTH SIDES OF THE PIPES TO BE ABANDONED WILL BE EXCAVATED AND CAPPED BY OTHERS DURING REMOVAL OF UNDERGROUND STORAGE TANKS. THE FINAL TERMINATIONS OF THE SOUTH END OF THE PIPES TO BE ABANDONED WILL BE DETERMINED AFTER UNDERGROUND STORAGE TANK REMOVAL. PIPES SHALL BE PRESSURE GROUTED WITH FLOWABLE FILL PER SPECIFICATION 33 11 00.19.
- VENT/FILL PIPES TO BE USED FOR PRESSURE GROUTING TO BE INSTALLED BY OTHERS DURING UST REMOVAL. VENT PIPE TO BE OPEN TO ATMOSPHERE ABOVE GROUND SURFACE. VENT PIPES TO ALLOW FOR COMPLETE FILLING OF PIPES.
- EXCAVATIONS SHALL BE BACKFILLED WITH SUITABLE BACKFILL AND COMPACTED AS SPECIFIED IN SECTION 31 23 00.00 20 EXCAVATION AND FILL.
- THE NORTH ENDS OF THE EXISTING PIPES TO BE ABANDONED SHALL BE COMPLETED WITH A MECHANICAL COUPLING AND BLIND FLANGE.
- CONTRACTOR SHALL PREPARE EXCAVATION PLAN PREPARED AND STAMPED BY LICENSED GEOTECHNICAL ENGINEER IN ACCORDANCE WITH SPECIFICATION 31 23 00.00 20 PRIOR TO ANY EXCAVATION ACTIVITIES. EXCAVATION PLAN TO PROVIDE DETAILS OF EXCAVATION SIDE STABILIZATION METHODS INCLUDING SHORING, BENCHING, TRENCH BOXES, OR ALTERNATE PROPOSED METHODS. CONTRACTOR SHALL NOT BEGIN EXCAVATION ACTIVITIES UNTIL RECEIVING APPROVAL FROM LOCKHEED MARTIN.
- EXISTING SVE LINES HAVE NOT BEEN LOCATED AND SURVEYED. DEPTHS ARE ESTIMATED TO BE BETWEEN 13 AND 15 FEET BELOW THE EXISTING GROUND SURFACE. LOCATIONS SHOWN ARE BASED ON AS BUILT DRAWINGS. CONTRACTOR TO DETERMINE LOCATIONS AND DEPTHS OF PIPES THROUGH AIR KNIFING OR ALTERNATE APPROVED METHODS PRIOR TO CONNECTING TO NEW SVE LINES AND ABANDONING LINES.
- UNDERGROUND STORAGE TANKS AND PIPING DEMOLITION SHOWN IN WORK TO BE DONE BY OTHERS WILL BE COMPLETED PRIOR TO EXISTING SVE PIPE ABANDONMENT AND BACKFILLED.
- COMPLETE PIPE ABANDONMENT BY CAPPING BOTH ENDS AND SURVEYING THE LOCATIONS AND DEPTHS OF BOTH END CAPS.
- SUBMIT PIPE ABANDONMENT/EXCAVATION SIDE STABILIZATION PLAN FOR APPROVAL DESCRIBING THE MATERIALS AND METHODS USED TO ABANDON EXISTING 20-INCH, 16-INCH, AND 10-INCH PIPES IN PLACE.
- CONTRACTOR SHALL BE RESPONSIBLE TO STABILIZE THE SIDES OF ALL EXCAVATIONS ON BOTH THE NORTH END AND SOUTH END OF THE PIPES TO BE ABANDONED. PROTECT ALL EXISTING PIPES FROM DAMAGE. SHORING/SIDE STABILIZATION MATERIALS AND METHODS SHALL BE PROVIDED IN THE PIPE ABANDONMENT/EXCAVATION SIDE STABILIZATION PLAN.
- VENT PIPES TO ALLOW FOR COMPLETE FILLING OF PIPES.
- DEWATER EXCAVATION AS NEEDED TO CONDUCT WORK.
- BACKFILL TO GRADE PER SPECIFICATION 31 23 00.00 20 FOLLOWING PRESSURE GROUTING PIPES
- CLEAN AND DISPOSE OF CONSTRUCTION DEBRIS PER SPECIFICATION 01 74 19 CONSTRUCTION WASTE MANAGEMENT.
- UTILITY LINES IN AREAS TO BE EXCAVATED TO BE ABANDONED BY OTHER PRIOR TO PIPE ABANDONMENT.

REVISIONS	
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REVIEWED BY: RZ	PROJECT NO: 088625597

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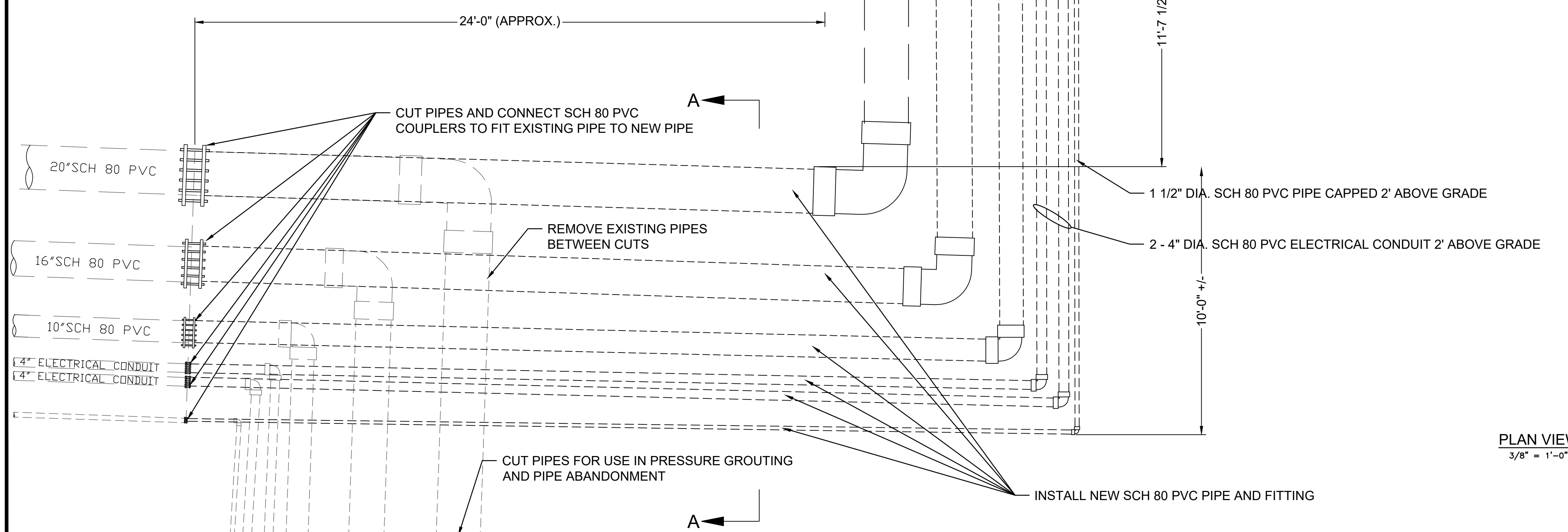
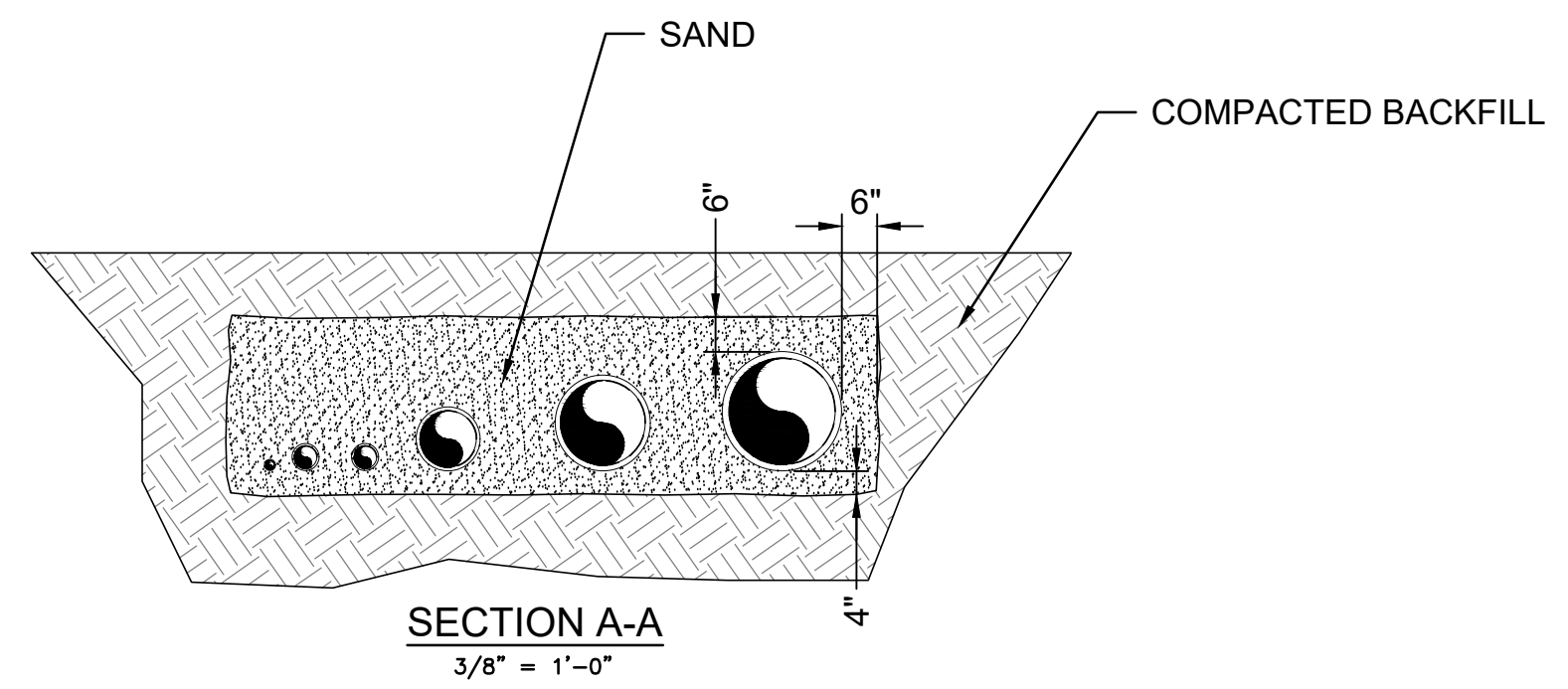
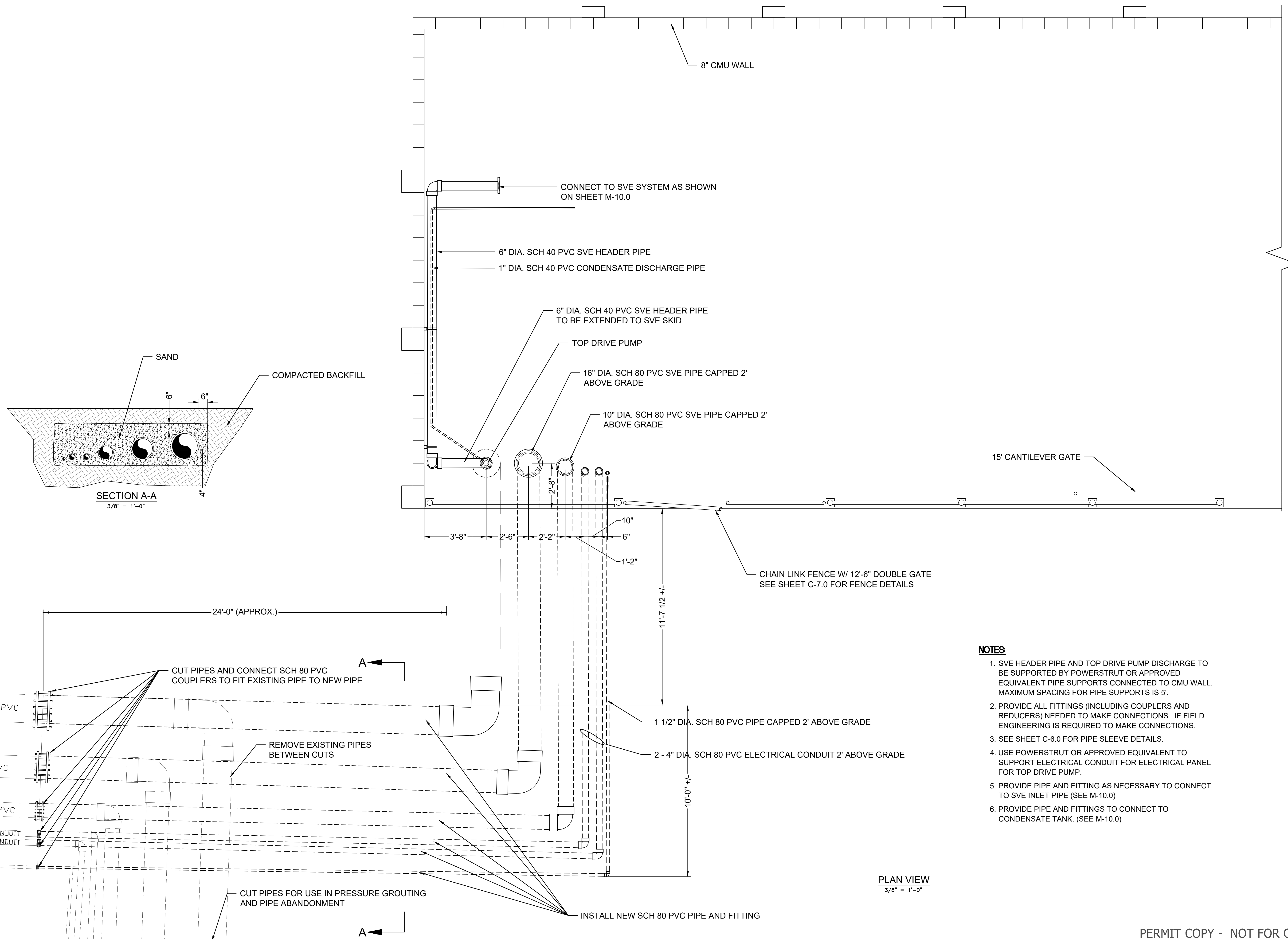
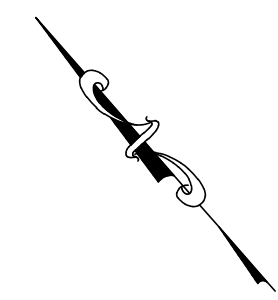
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DEMOLITION AND PIPE ABANDONMENT PLAN
FORMER B-1 PLANT
 FOR
SOIL VAPOR EXTRACTION SYSTEM
 LOCKHEED MARTIN CORPORATION
 1705 NORTH VICTORY PLACE
 BURBANK, CALIFORNIA 91504
 NOVEMBER 2018

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M-1.0



- NOTES:**
- SVE HEADER PIPE AND TOP DRIVE PUMP DISCHARGE TO BE SUPPORTED BY POWERSTRUT OR APPROVED EQUIVALENT PIPE SUPPORTS CONNECTED TO CMU WALL. MAXIMUM SPACING FOR PIPE SUPPORTS IS 5'.
 - PROVIDE ALL FITTINGS (INCLUDING COUPLERS AND REDUCERS) NEEDED TO MAKE CONNECTIONS. IF FIELD ENGINEERING IS REQUIRED TO MAKE CONNECTIONS.
 - SEE SHEET C-6.0 FOR PIPE SLEEVE DETAILS.
 - USE POWERSTRUT OR APPROVED EQUIVALENT TO SUPPORT ELECTRICAL CONDUIT FOR ELECTRICAL PANEL FOR TOP DRIVE PUMP.
 - PROVIDE PIPE AND FITTING AS NECESSARY TO CONNECT TO SVE INLET PIPE (SEE M-10.0)
 - PROVIDE PIPE AND FITTINGS TO CONNECT TO CONDENSATE TANK. (SEE M-10.0)

PLAN VIEW
3/8" = 1'-0"

REVISIONS	
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DESIGNED: ENSAFE	SCALE: AS SHOWN
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REVIEWED BY: RZ	
PROJECT NO: 088825587	

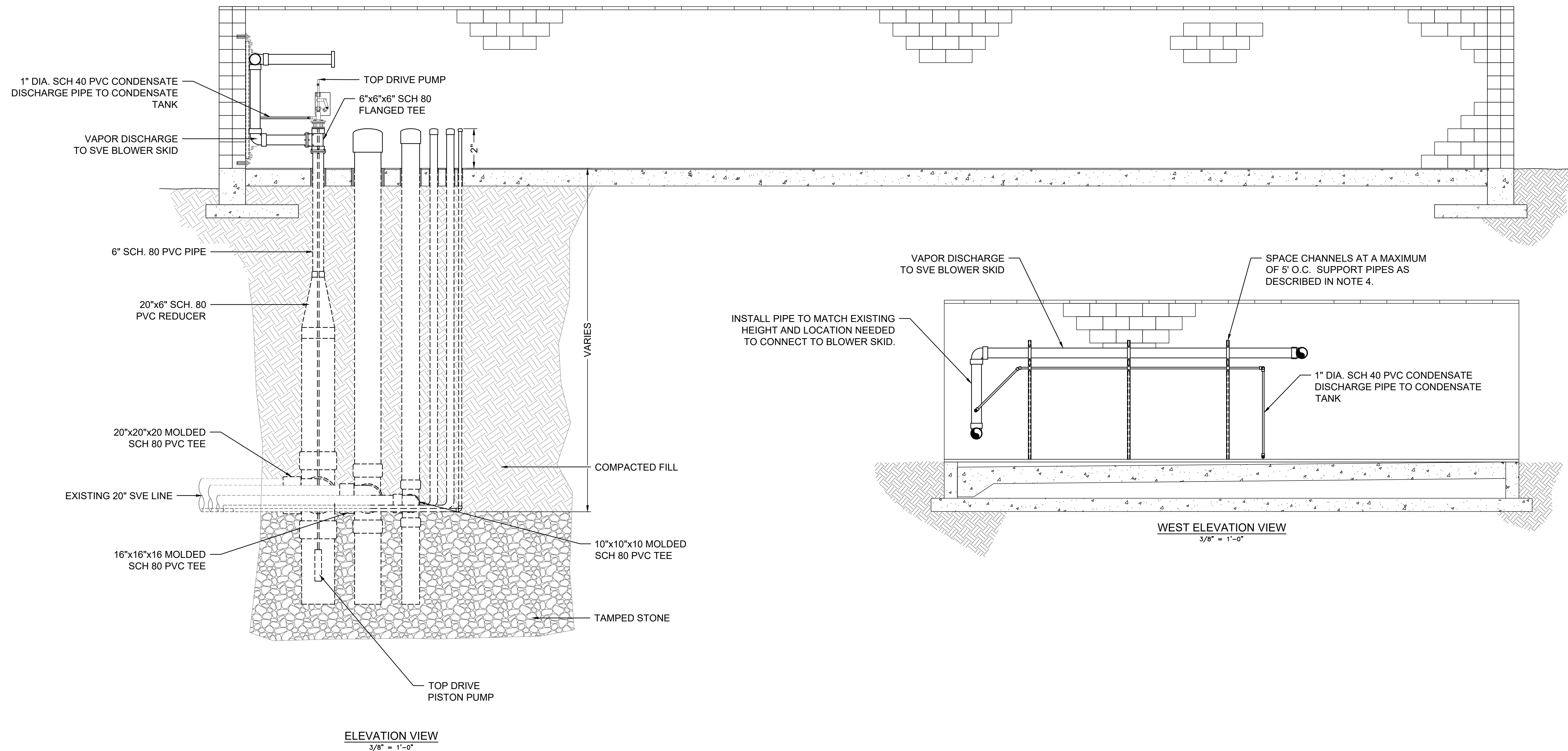

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CONNECTION TO EXISTING PIPE - PLAN VIEW
FORMER B-1 PLANT
SOIL VAPOR EXTRACTION SYSTEM
 FOR
 LOCKHEED MARTIN CORPORATION
 1705 NORTH VICTORY PLACE
 BURBANK, CALIFORNIA 91504
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NOTES

1. BOTTOM OF RISER PIPES OF 20", 16", AND 10" PIPES WILL BE 5 FEET BELOW BOTTOM OF EXISTING PIPE TO PROVIDE SUMP FOR PUMP TO REMOVE WATER FROM LINES.
2. SVE 16", 10", 4", ELECTRICAL CONDUIT, AND INSTRUMENTATION AIR LINE SHALL BE CAPPED 2' ABOVE GRADE. SEE SHEET C-6.0 FOR PIPE SLEEVE DETAILS.
3. INSTALL TOP DRIVE PISTON PUMP (BLACKHAWK MODEL AC102 OR APPROVED EQUAL) ON 20" VAPOR LINE PER MANUFACTURER'S RECOMMENDED INSTRUCTIONS.
4. PIPE SUPPORTS SHALL BE POWERSTRUT, OR APPROVED EQUIVALENT. CHANNELS SHALL BE POWERSTRUT PS 300 SPACED AT 3/8" X 3" ANCHOR SLEEVES.

REVISIONS			
#	DATE	TEXT	(INTL)

DESIGNED: ENSAFE	SCALE: AS SHOWN
DRAWN BY: CC	DATE: 04/27/2021
REVIEWED BY: RZ	
PROJECT NO: 088825587	


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CONNECTION TO EXISTING PIPE - ELEVATION VIEWS
FORMER B-1 PLANT
 FOR
SOIL VAPOR EXTRACTION SYSTEM
 LOCKHEED MARTIN CORPORATION
 1705 NORTH VICTORY PLACE
 BURBANK, CALIFORNIA 91504
 NOVEMBER 2018

SHEET
M-3.0

PROCESS AND PIPING LEGEND:

PIPING SYMBOLS

- PROCESS LINE (PRIMARY VAPOR)
- CONDENSATE LINE
- NAPL LINE
- REGENERATIVE AIR LINE
- C3 SYSTEM PIPING

VALVE SYMBOLS

- BALL VALVE
- GATE VALVE
- BUTTERFLY VALVE
- AIR ACTUATED PISTON VALVE
- Y STRAINER
- CHECK VALVE

MISCELLANEOUS SYMBOLS

- SAMPLE PORT
- VAPOR FLOW METER
- PRESSURE INDICATOR
- TEMPERATURE SENSOR
- LEVEL SWITCH
- DIFFERENTIAL PRESSURE GAUGE

EQUIPMENT LIST

- | | |
|--|--|
| 1 AIR/WATER SEPARATOR | INTERLOCKS |
| 2 BLOWER INLET FILTER | I-1 TRIGGERED IF LIQUID IN AIR/WATER SEPARATOR EXCEEDS LSW1 LEVEL. LSW1 INITIATES KO PUMP ON UNTIL LSW2 DISENGAGES STOPPING PUMP |
| 3 ROTARY POSITIVE DISPLACEMENT BLOWER | |
| 4 MOTOR | I-2 AIR TO AIR HEAT EXCHANGER STARTS AUTOMATICALLY WHEN BLOWER RUNNING |
| 5 AIR/AIR HEAT EXCHANGER | I-3 BLOWER RUNNING SIGNAL TO C3 PLC ALLOWS COMPRESSOR TO RUN |
| 6 COMPRESSOR | I-4 BLOWER SYSTEM ALARM STATE FROM BLOWER SYSTEM AUX RELAY TO ALLOW C3 TO RUN |
| 7 REFRIGERATED DRYER | I-5 C3 SYSTEM ALARM STATE FROM C3 AUX RELAY TO ALLOW BLOWER SYSTEM TO RUN |
| 8 FLOW METER | |
| 9 STAINLESS STEEL DRAIN | |
| 10 CONDENSATE TANK | |
| 11 OVA SENSOR | |
| 12 AMBIENT AIR OVA MOUNTED ON SIDE WALL | |
| 13 CHEMICAL TANK | |
| 14 SURGE TANK | |
| 15 3/4 HP CENTRIFUGAL PUMP | |
| 16 CHEMICAL CATCH CAN | |
| 17 BACK PRESSURE REGULATOR | |
| 18 POTASSIUM PERMANGANATE ZEOLITE (PPZ) VESSEL | |
| 19 GAC VESSEL 1 | |
| 20 GAC VESSEL 2 | |
| 21 LEL SENSOR | |
| 22 3/8 HP TOP DRIVE PUMP | |

GENERAL SYSTEM NOTES

- ALL EQUIPMENT WILL BE VENDOR SELECTED WITH APPROVAL. ALL EQUIPMENT TO BE INSTALLED AND ASSEMBLED IN ACCORDANCE WITH ALL MANUFACTURER'S REQUIRED SPECIFICATIONS.
- ALL EQUIPMENT, VALVES, GAUGES, PORTS, ETC. WILL BE LABELED IN ACCORDANCE WITH SHEET M-7.0 PIPING AND INSTRUMENTATION DIAGRAM. (P&ID)
- OPERATION OF THE SYSTEM WILL BEGIN USING THE C3 SYSTEM TO TREAT CONCENTRATED VAPORS EXTRACTED FROM THE SUBSURFACE. AFTER VAPOR CONCENTRATIONS IN THE EXTRACTED VAPORS DECREASE TO A POINT WHEREBY THE C3 SYSTEM IS NO LONGER THE MOST EFFICIENT TREATMENT TECHNOLOGY, THE C3 SYSTEM CAN BE SWITCHED TO THE VAPOR-PHASE CARBON-BASED ADSORPTION SYSTEM.
- CONTRACTOR SUBMITTALS DURING REMEDY IMPLEMENTATION SHALL FOLLOW THE AMERICAN NATIONAL STANDARD ANSI/ISA-5.1-2009 INSTRUMENTATION SYMBOLS AND IDENTIFICATION FOR SYMBOLS AND LOOP NUMBERS, AND THE LOS ANGELES DEPARTMENT OF WATER & POWER DEVICE ID DEVELOPMENT STANDARDS (ELEC_STND_3_R34_2020 OR MOST RECENT VERSION), AND INCLUDE A DESCRIPTION OF THE INTERFACE TO THE SUPERVISORY CONTROL AND DATA ACQUISITION/HUMAN MACHINE INTERFACE (SCADA/HMI) ON THE P&ID DIAGRAMS.

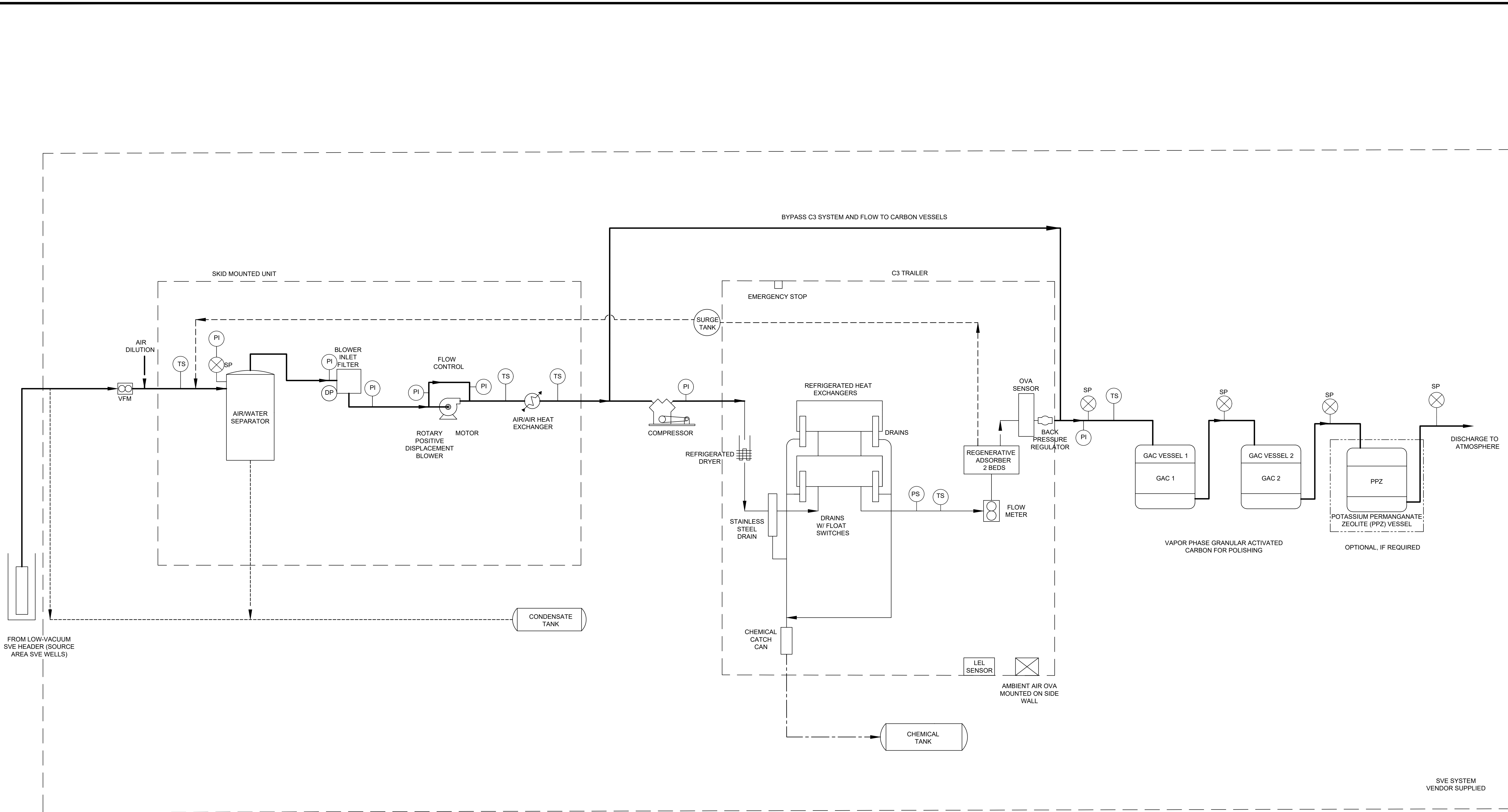
GENERAL PIPING NOTES

- ALL PIPE, PIPE FITTINGS, VALVES, AND PIPE SUPPORTS TO BE INSTALLED IN ACCORDANCE WITH SECTION 4005 13 OF THE TECHNICAL SPECIFICATIONS.
- ALL VALVE HANDLES TO BE PER SECTION 4005 13 OF THE TECHNICAL SPECIFICATIONS.
- FIELD VERIFY ALL CONNECTIONS POINTS PRIOR TO INSTALLATION OF PLUMBING.
- ALL PIPING CONNECTIONS ON SVE SKID AND C3 TRAILER ARE TO BE PRE-PIPED PRIOR TO ARRIVAL ON SITE. PIPING BETWEEN EQUIPMENT ON SKID NOT SHOWN

GENERAL ABBREVIATIONS

- | | |
|------|------------------------------------|
| BCP | BLOWER CONTROL PANEL |
| C3 | CRYOGENIC-COMPRESSION-CONDENSATION |
| C3CP | C3 SYSTEM CONTROL PANEL |
| CP | CONTROL PANEL |
| DP | DIFFERENTIAL PRESSURE GAUGE |
| HP | HORSE POWER |
| GAC | GRANULAR ACTIVATED CARBON |
| GALV | GALVANIZED PIPE |
| KO | KNOCKOUT TANK |
| LSW | LEVEL SWITCH |
| NAPL | NON-AQUEOUS PHASE LIQUIDS |
| OVA | ORGANIC VAPOR ANALYZER |
| P&ID | PIPING AND INSTRUMENTATION DIAGRAM |
| PI | PRESSURE INDICATOR |
| PS | PRESSURE SENSOR |
| PPZ | PERMANGANATE-IMPREGNATED ZEOLITE |
| PSI | POUNDS PER SQUARE INCH |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PVC | POLYVINYL CHLORIDE |
| RPM | REVOLUTIONS PER MINUTE |
| SCFM | STANDARD CUBIC FEET PER MINUTE |
| SP | SAMPLE PORT |
| SVE | SOIL VAPOR EXTRACTION |
| TS | TEMPERATURE SENSOR |
| VFM | VAPOR FLOW METER |

SYSTEM SYMBOLS, ABBREVIATIONS & GENERAL NOTES	FORMER B-1 PLANT	
	SOIL VAPOR EXTRACTION SYSTEM	
FOR LOCKHEED MARTIN CORPORATION 1705 NORTH VICTORY PLACE BURBANK, CALIFORNIA 91504 NOVEMBER 2018		
DESIGNED: ENSAFE	SCALE: AS SHOWN	REVISIONS
DRAWN BY: CC	DATE: 04/27/2021	#
REVIEWED BY: RZ		DATE
PROJECT NO: 088825587		TEXT
		(INTL)



- NOTE**
- REFER TO SHEET M-4.0 FOR SYSTEM SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
 - CONTRACTOR SUBMITTALS DURING REMEDY IMPLEMENTATION SHALL FOLLOW THE AMERICAN NATIONAL STANDARD ANSI/ISA-5.1-2009 INSTRUMENTATION SYMBOLS AND IDENTIFICATION FOR SYMBOLS AND LOOP NUMBERS, AND THE LOS ANGELES DEPARTMENT OF WATER & POWER DEVICE ID DEVELOPMENT STANDARDS (ELEC STND 3_R34, 2020 OR MOST RECENT VERSION), AND INCLUDE A DESCRIPTION OF THE INTERFACE TO THE SUPERVISORY CONTROL AND DATA ACQUISITION/HUMAN MACHINE INTERFACE (SCADA/HMI) ON THE P&ID DIAGRAMS.

REVISIONS	
#	DATE

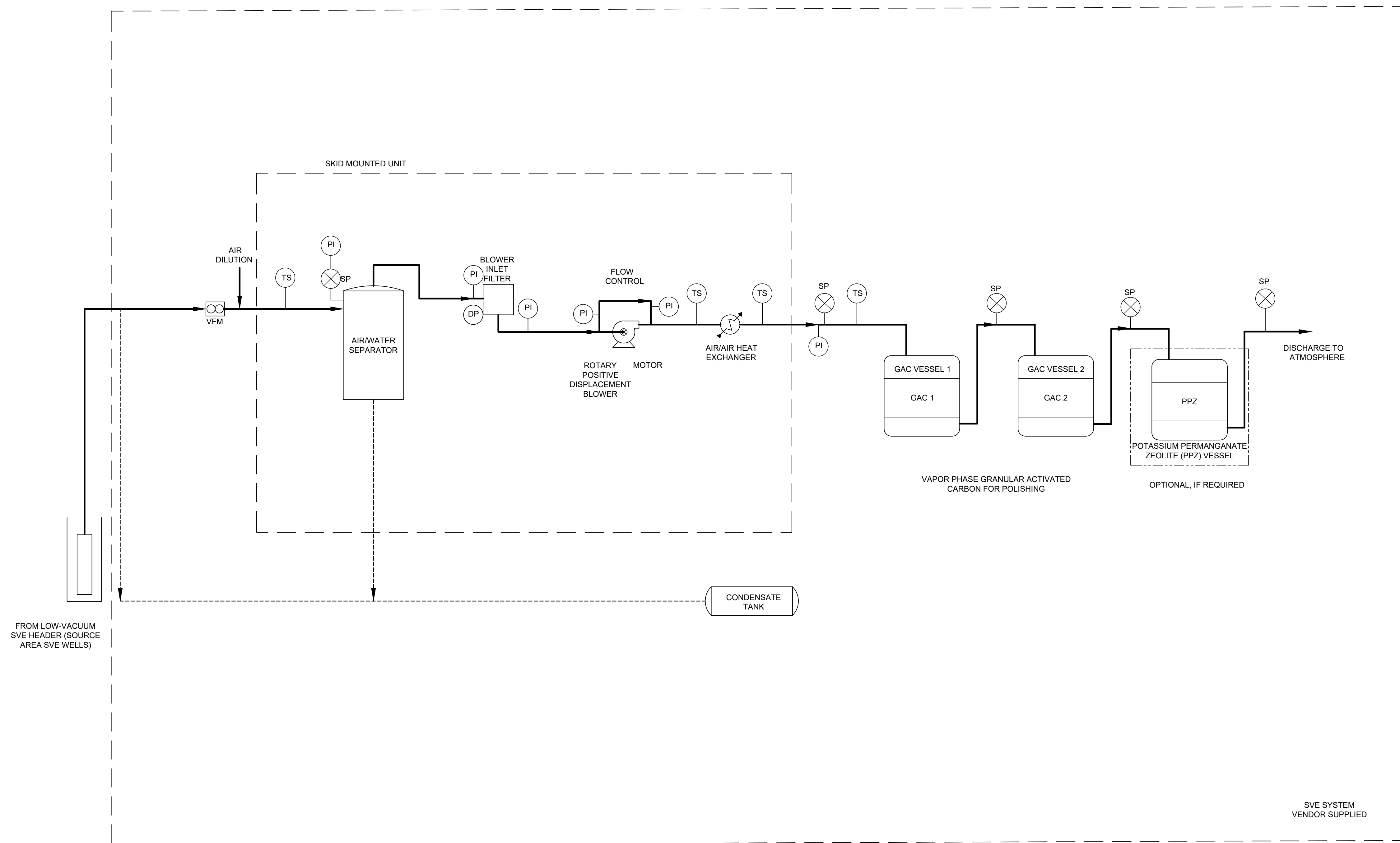
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REVIEWED BY: RZ	
PROJECT NO: 088825597	

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PROCESS FLOW DIAGRAM WITH C3 UNIT
FORMER B-1 PLANT
 FOR
SOIL VAPOR EXTRACTION SYSTEM
 LOCKHEED MARTIN CORPORATION
 1705 NORTH VICTORY PLACE
 BURBANK, CALIFORNIA 91504
 NOVEMBER 2018

SHEET
M-5.0

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NOTES

- THIS DRAWING IS PRESENTED FOR INFORMATION PURPOSES ONLY FOR FUTURE CARBON-ONLY CONFIGURATION; CONSTRUCTION OF THE COMPOUND WILL FOLLOW M-5.0
1. REFER TO SHEET M-4.0 FOR SYSTEM SYMBOLS, ABBREVIATIONS AND GENERAL NOTES
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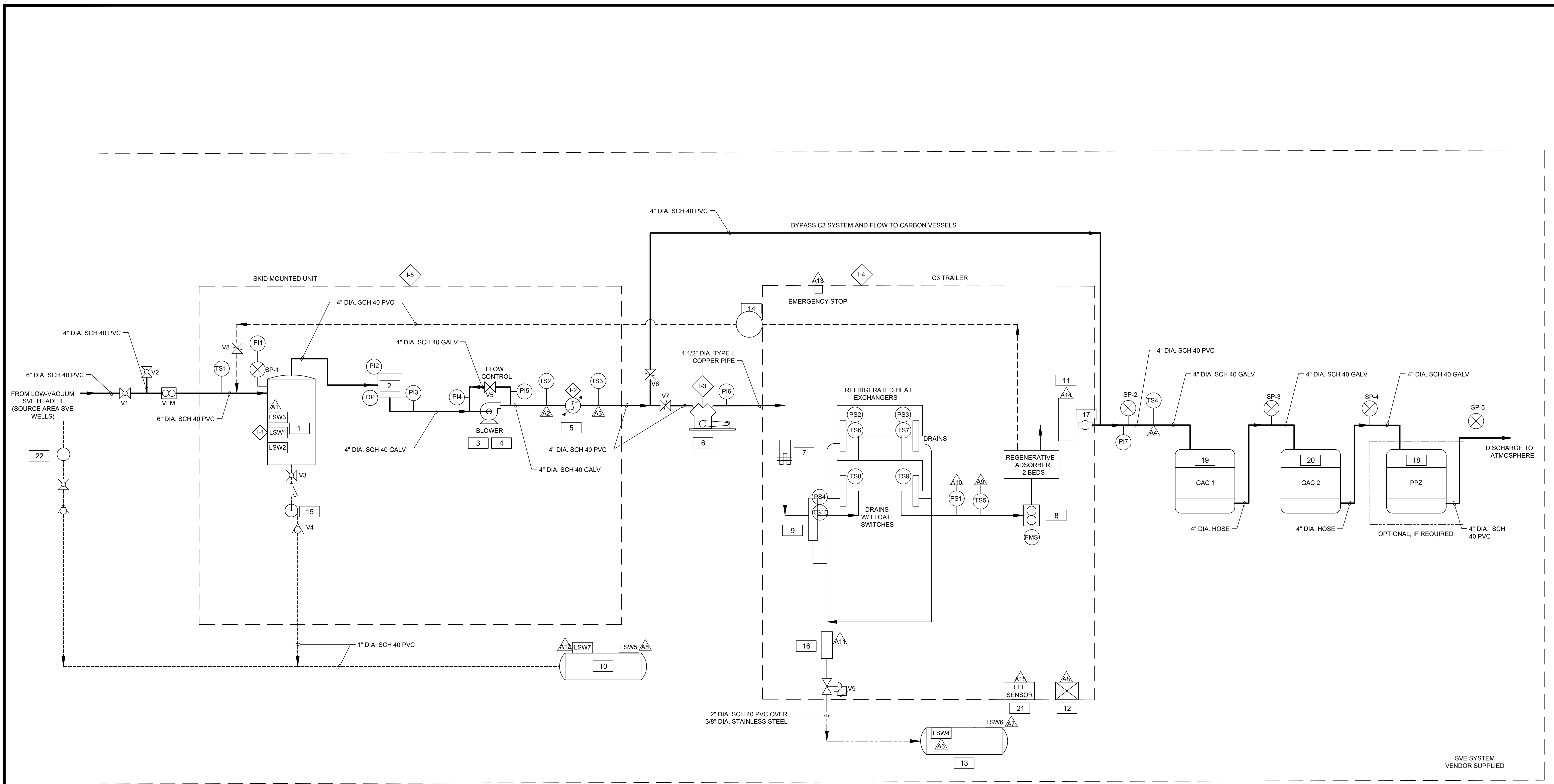
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PROCESS FLOW DIAGRAM WITH CARBON
FORMER B-1 PLANT
 FOR
SOIL VAPOR EXTRACTION SYSTEM
 LOCKHEED MARTIN CORPORATION
 1705 NORTH VICTORY PLACE
 BURBANK, CALIFORNIA 91504
 NOVEMBER 2018

SHEET
M-6.0



NOTE

1. REFER TO SHEET M-4.0 FOR SYSTEM SYMBOLS, ABBREVIATIONS AND GENERAL NOTES
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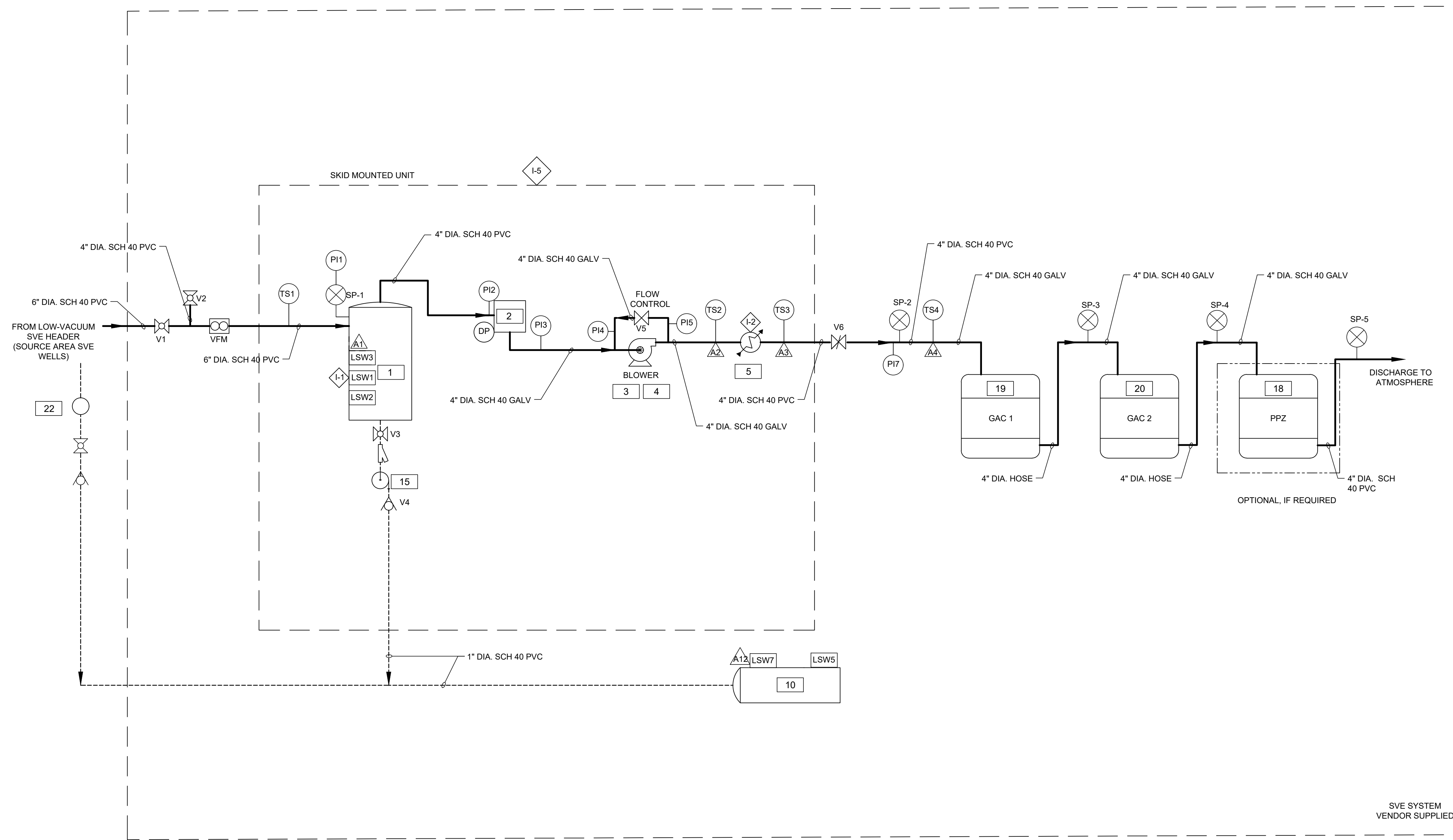
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PIPING & INSTRUMENTATION DIAGRAM WITH C3 UNIT
FORMER B-1 PLANT
 FOR
SOIL VAPOR EXTRACTION SYSTEM
 LOCKHEED MARTIN CORPORATION
 1705 NORTH VICTORY PLACE
 BURBANK, CALIFORNIA 91504
 NOVEMBER 2018

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NOTES

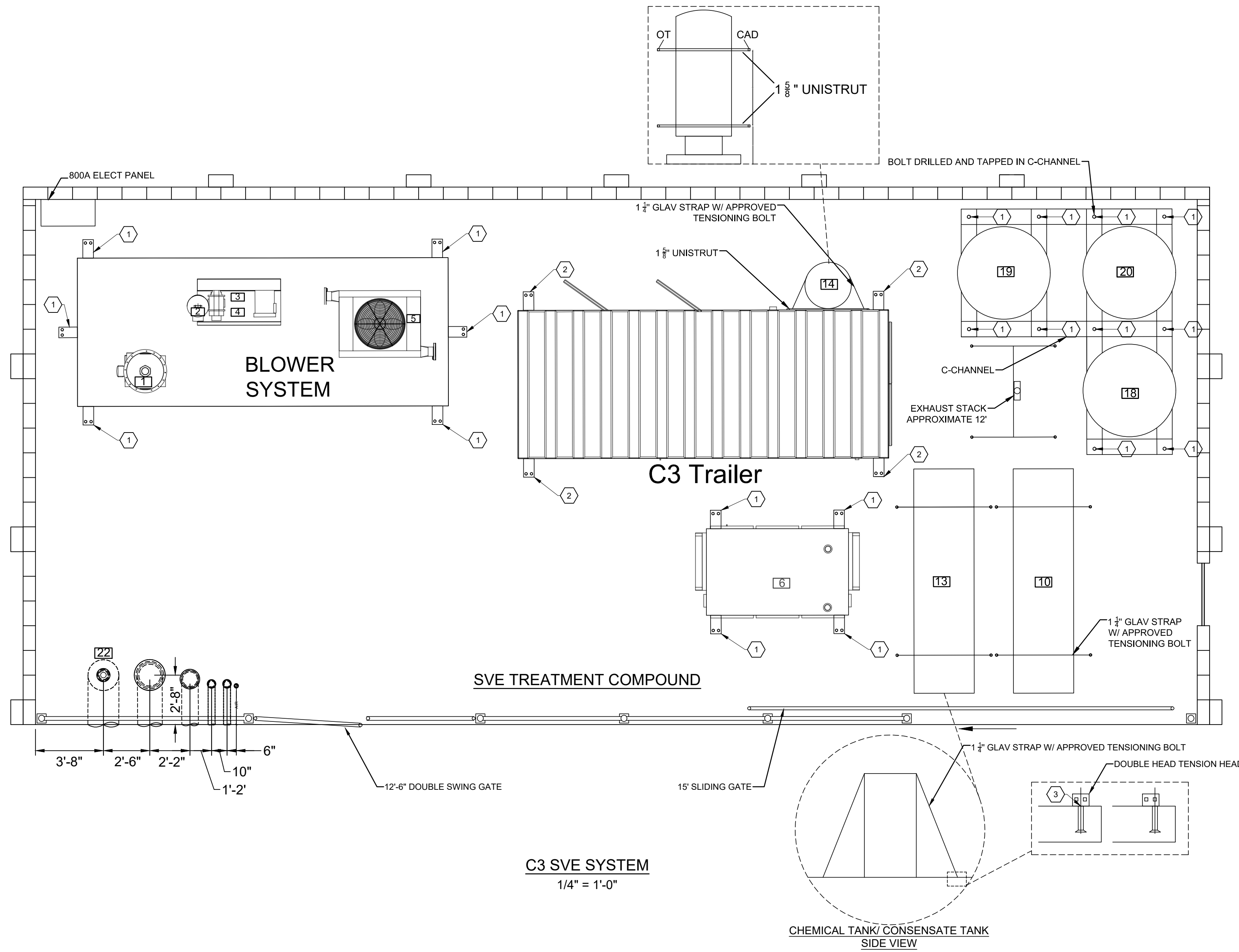
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PIPING & INSTRUMENTATION DIAGRAM WITH CARBON
FORMER B-1 PLANT
 FOR
SOIL VAPOR EXTRACTION SYSTEM
 LOCKHEED MARTIN CORPORATION
 1705 NORTH VICTORY PLACE
 BURBANK, CALIFORNIA 91504
 NOVEMBER 2018



LEGEND

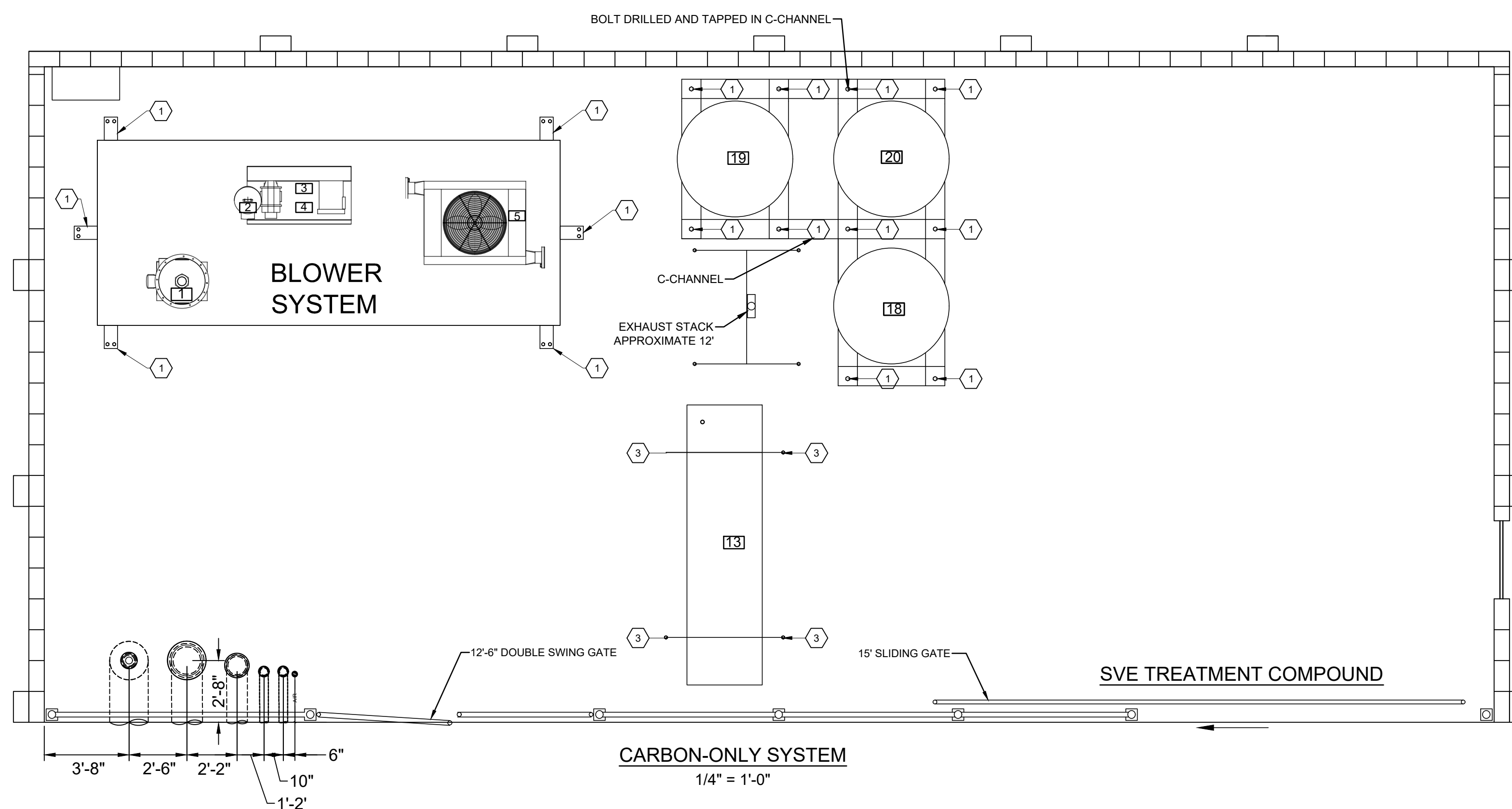
- 1 AIR/WATER SEPARATOR
- 2 BLOWER INLET FILTER
- 3 ROTARY POSITIVE DISPLACEMENT BLOWER
- 4 MOTOR
- 5 AIR/AIR HEAT EXCHANGER
- 6 COMPRESSOR
- 10 CONDENSATE TANK
- 13 CHEMICAL TANK
- 14 SURGE TANK
- 15 3/4 HP CENTRIFUGAL PUMP
- 18 POTASSIUM PERMANGANATE ZEOLITE (PPZ) VESSEL
- 19 GAC VESSEL 1
- 20 GAC VESSEL 2
- 22 3/8 HP TOP DRIVE PUMP

EQUIPMENT MOUNTING

- 1 HILTI ANCHORING SYSTEM: HIT-HY 200 ADHESIVE HIS-RN 1/2" x 5" STAINLESS STEEL INTERNALLY THREADED INSERTS. HAS-R 304 1/2"x6-1/2" STAINLESS STEEL THREADED ANCHOR RODS WITH AISI TYPE 304 STAINLESS STEEL NUTS AND WASHERS.
- 2 SEA BOX SB1470.EP DECK MOUNT TWISTLOCK WITH RAISED END PLATE, 2 HOLE MOUNTED WITH SEA BOX SB3417 HARDWARE PACKAGE
- 3 OLIVER TECHNOLOGIES, INC. MODEL # OTCADP.

NOTE

- 1. SEE SHEETS M-9.0 AND M-10.0 FOR PIPING DETAILS.



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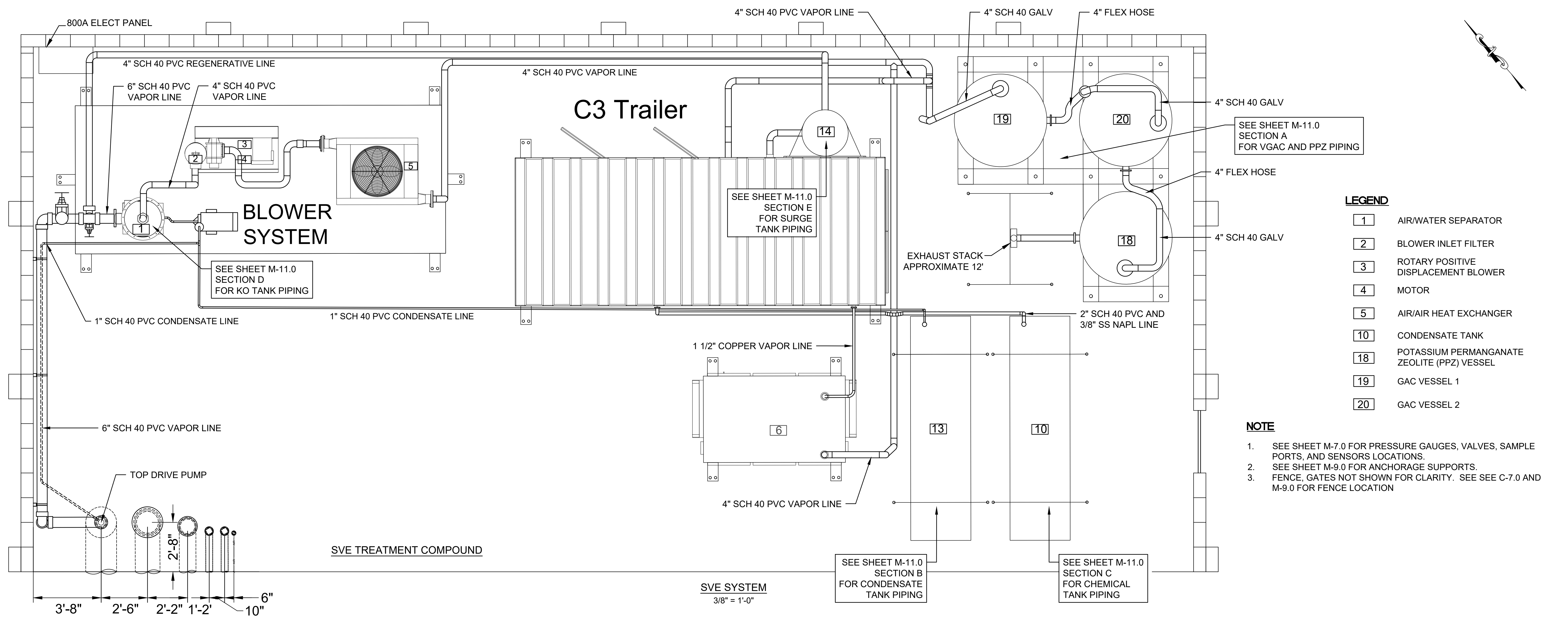
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C3 SVE SYSTEM LAYOUT PLANS
FORMER B-1 PLANT
FOR
SOIL VAPOR EXTRACTION SYSTEM
FOR
LOCKHEED MARTIN CORPORATION
1705 NORTH VICTORY PLACE
BURBANK, CALIFORNIA 91504
NOVEMBER 2018

SHEET
M-9.0

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LEGEND

- 1 AIR/WATER SEPARATOR
- 2 BLOWER INLET FILTER
- 3 ROTARY POSITIVE DISPLACEMENT BLOWER
- 4 MOTOR
- 5 AIR/AIR HEAT EXCHANGER
- 10 CONDENSATE TANK
- 18 POTASSIUM PERMANGANATE ZEOLITE (PPZ) VESSEL
- 19 GAC VESSEL 1
- 20 GAC VESSEL 2

NOTE

1. SEE SHEET M-7.0 FOR PRESSURE GAUGES, VALVES, SAMPLE PORTS, AND SENSORS LOCATIONS.
2. SEE SHEET M-9.0 FOR ANCHORAGE SUPPORTS.
3. FENCE, GATES NOT SHOWN FOR CLARITY. SEE SHEET C-7.0 AND M-9.0 FOR FENCE LOCATION

REVISIONS	
#	TEXT

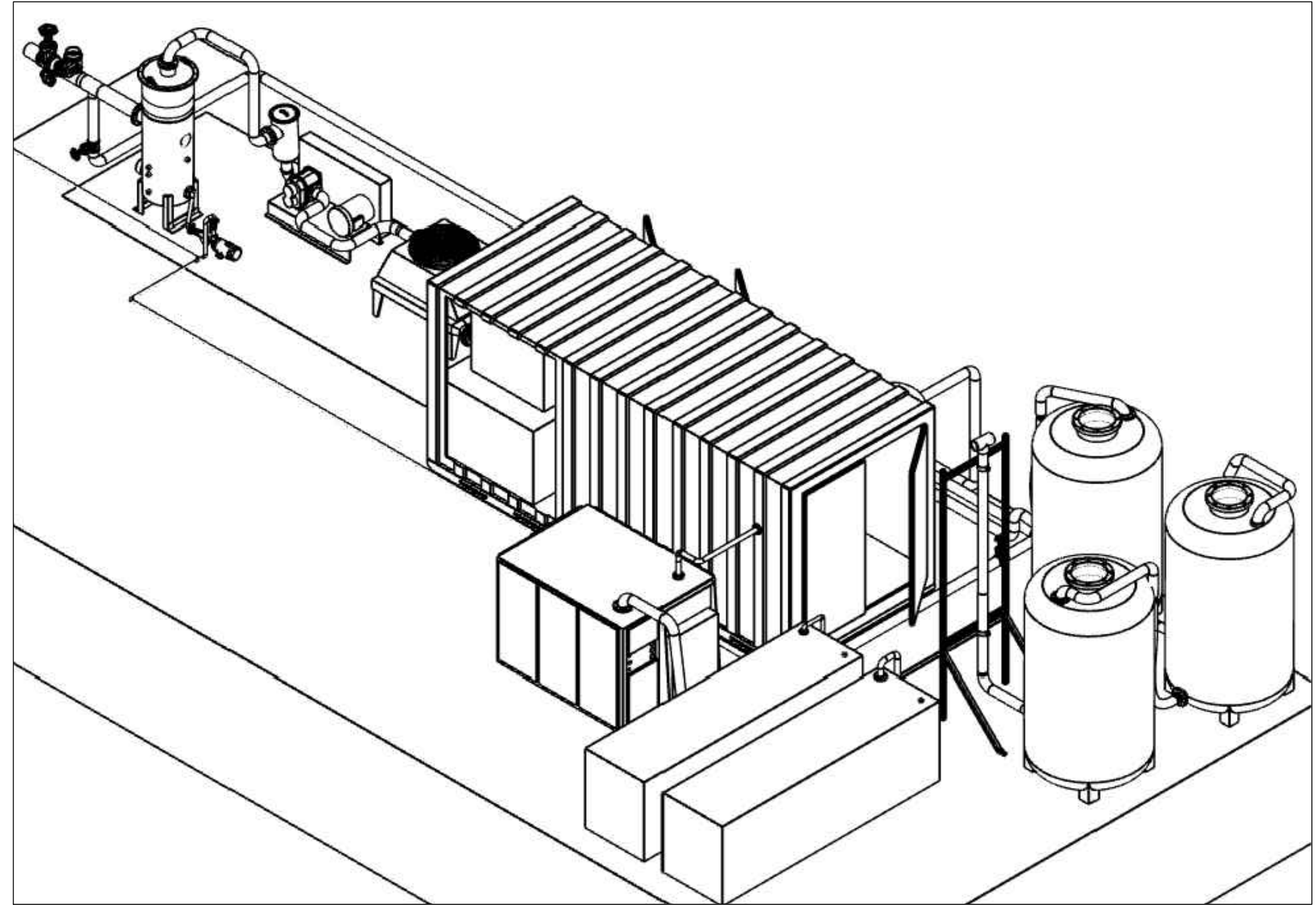
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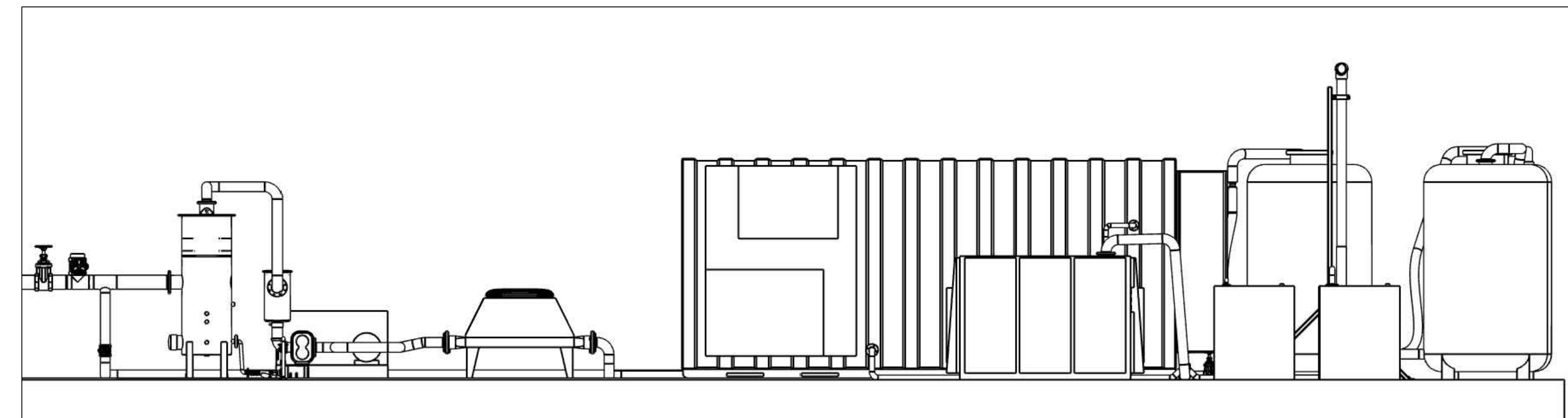
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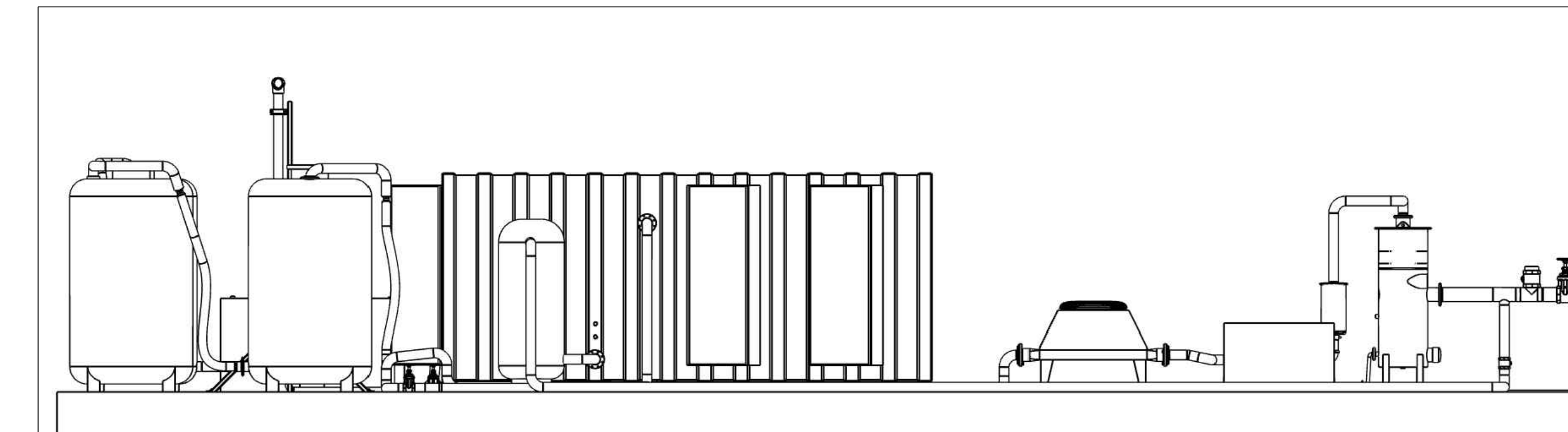
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ISOMETRIC PROJECTION
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SOUTH ELEVATION
NTS



NORTH ELEVATION
NTS

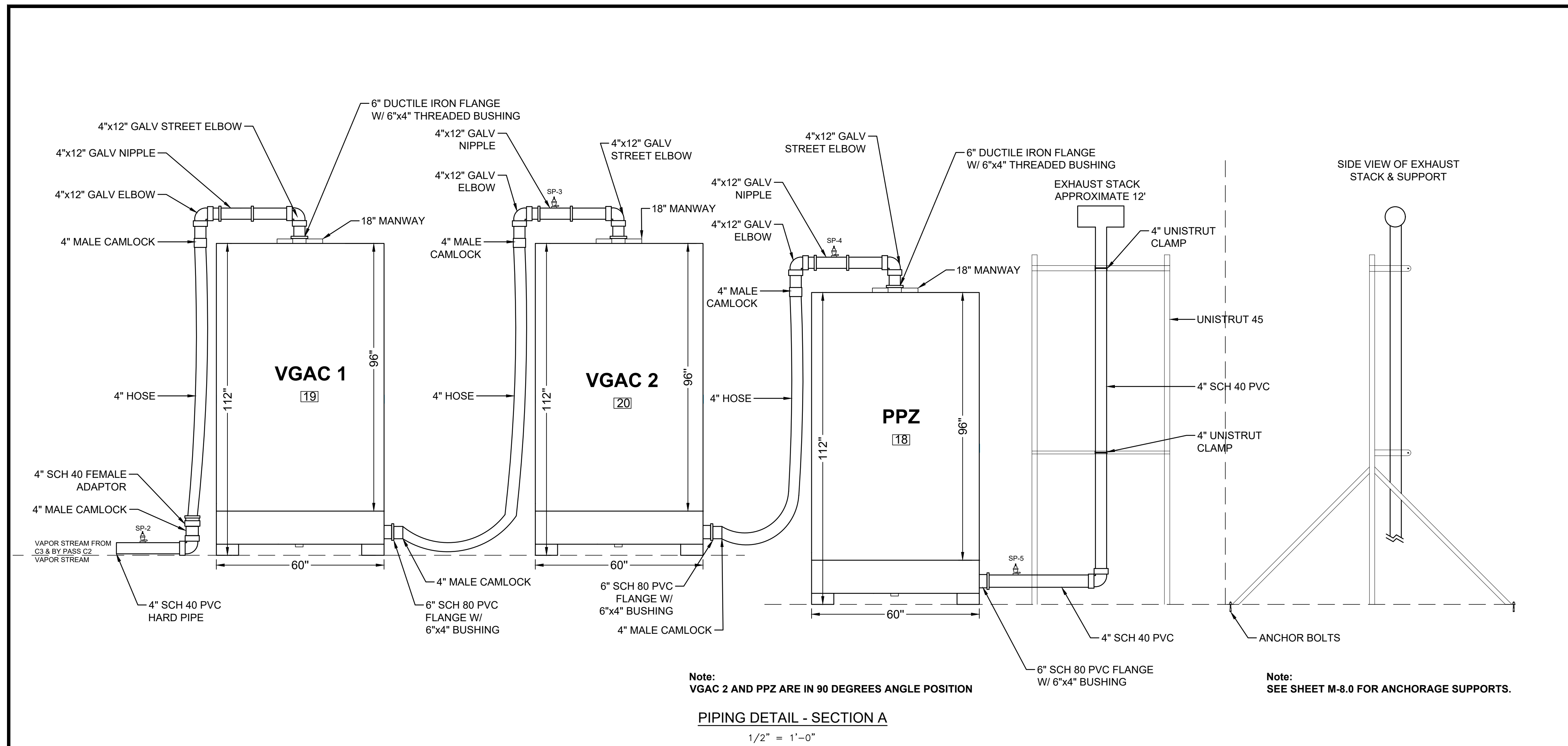
SYSTEM MECHANICAL PROCESS PIPING DETAILS

FORMER B-1 PLANT
FOR
SOIL VAPOR EXTRACTION SYSTEM

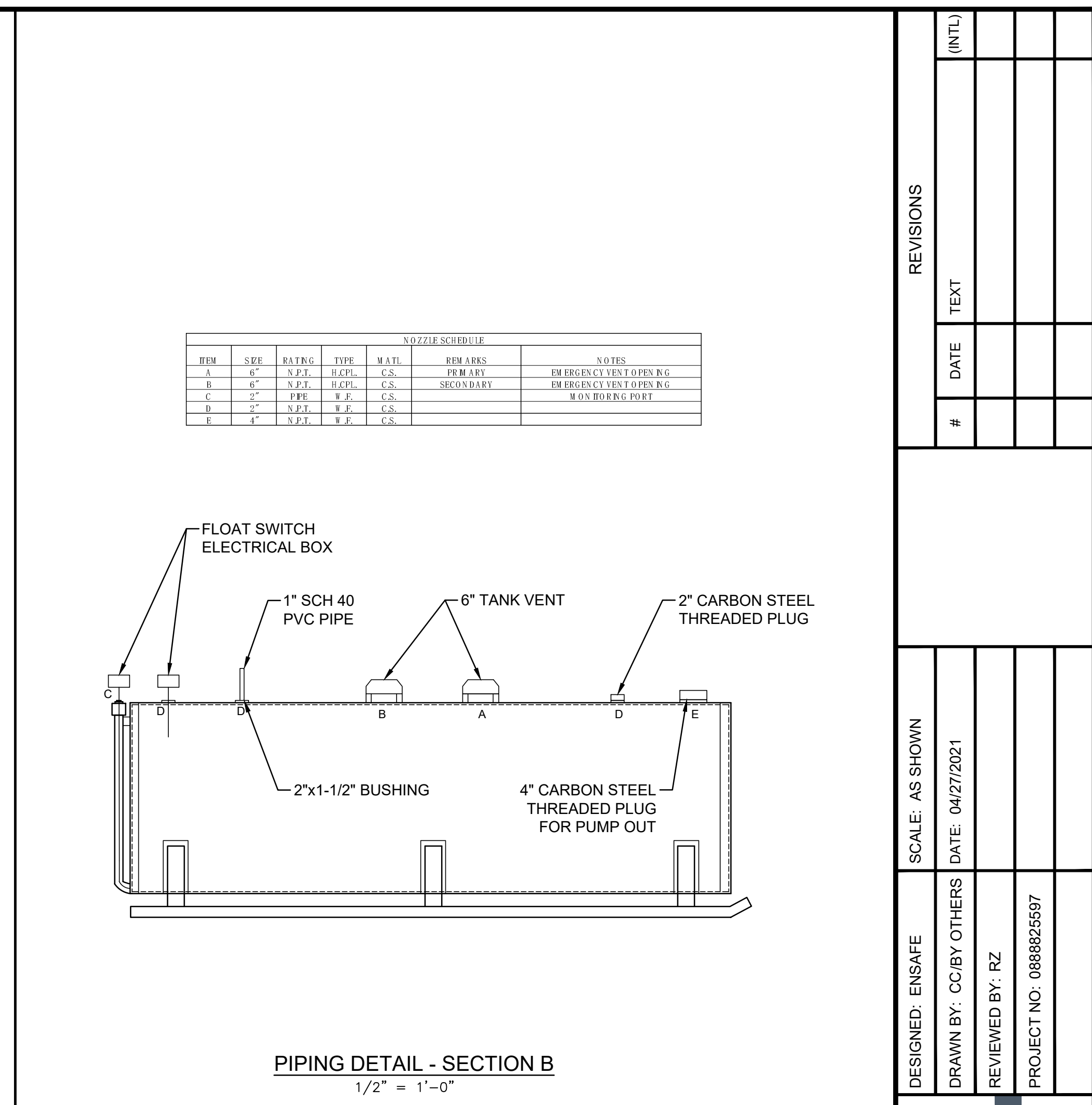
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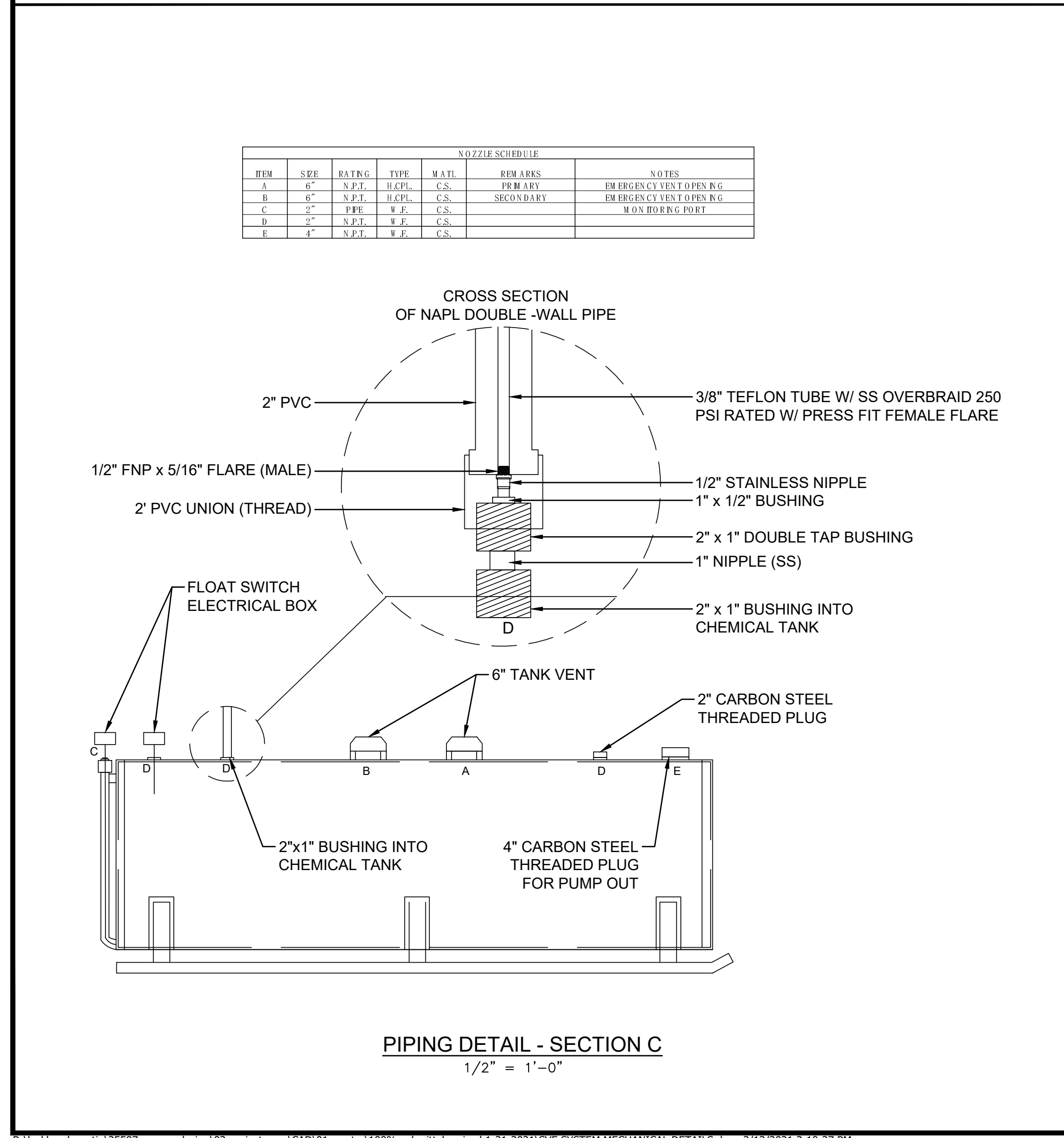
SHEET
M-10.0



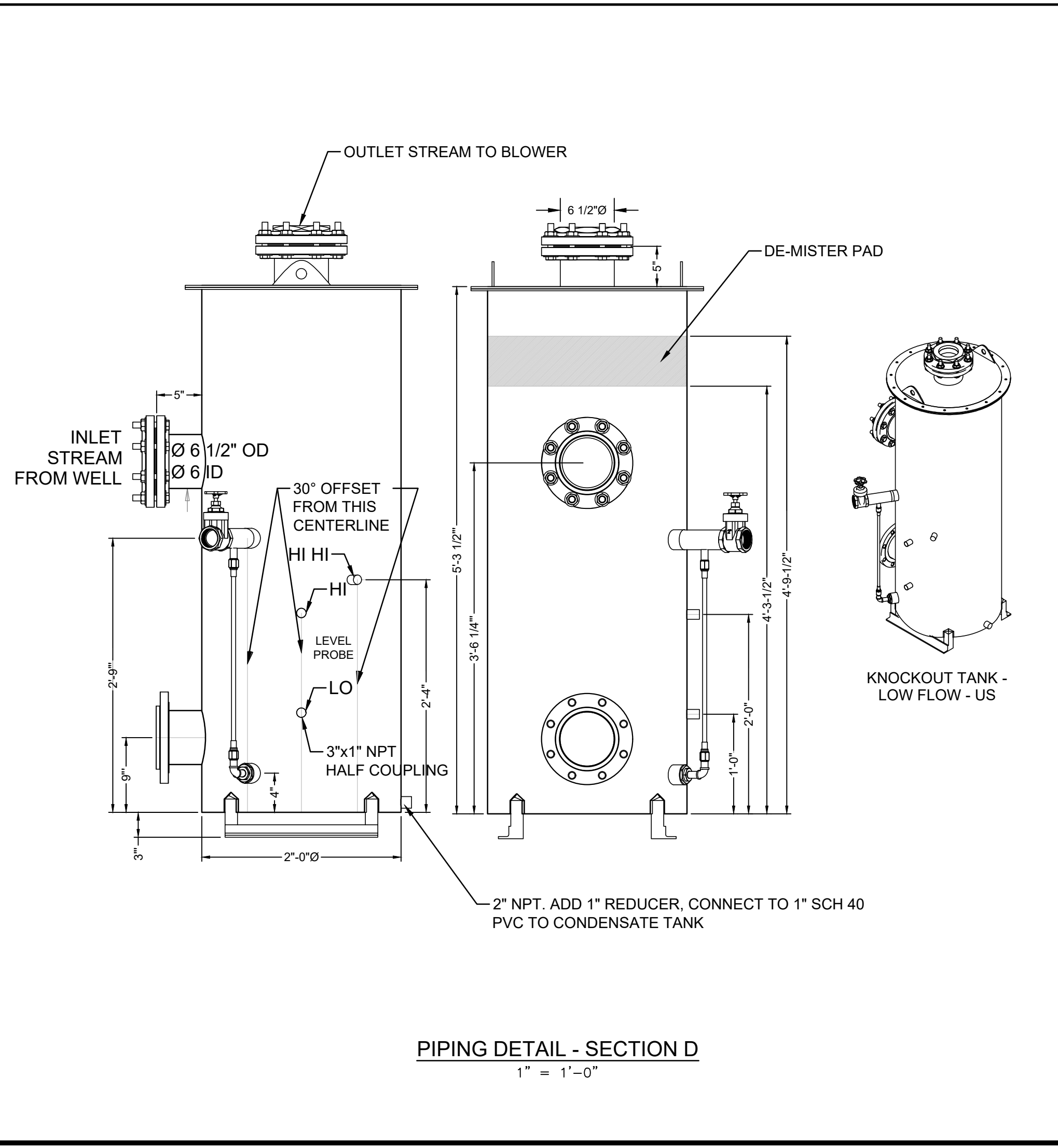
Note: VGAC 2 AND PPZ ARE IN 90 DEGREE ANGLE POSITION
PIPING DETAIL - SECTION A
 1/2" = 1'-0"



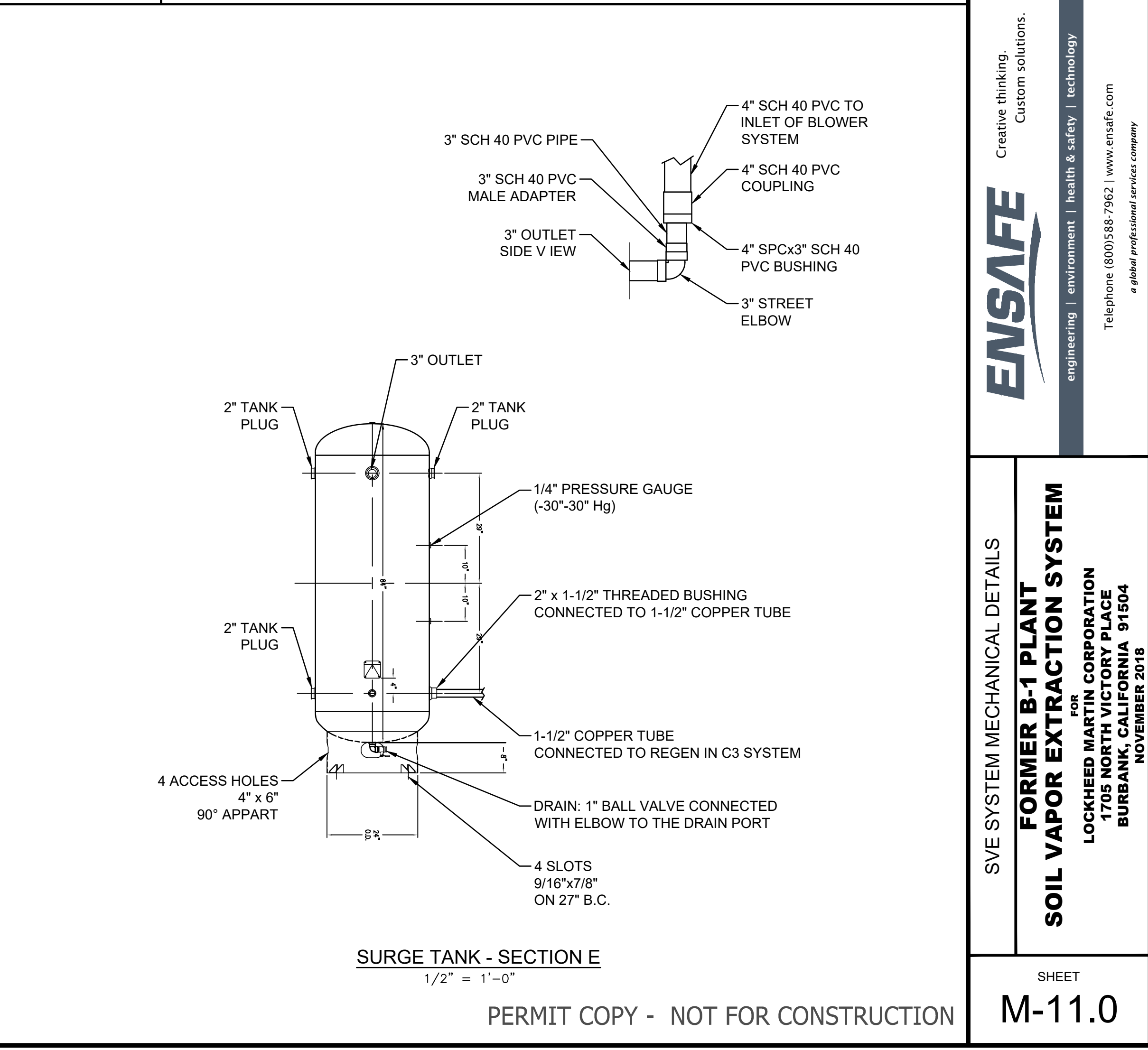
PIPING DETAIL - SECTION B
 1/2" = 1'-0"



PIPING DETAIL - SECTION C
 1/2" = 1'-0"



PIPING DETAIL - SECTION D
 1" = 1'-0"



SURGE TANK - SECTION E
 1/2" = 1'-0"

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SVE SYSTEM MECHANICAL DETAILS

FORMER B-1 PLANT

FOR
SOIL VAPOR EXTRACTION SYSTEM

LOCKHEED MARTIN CORPORATION
1705 NORTH VICTORY PLACE
BURBANK, CALIFORNIA 91504
NOVEMBER 2018

SHEET
M-11.0

EQUIPMENT # (On P&ID)	EQUIPMENT DESCRIPTION	EQUIPMENT (BRAND MODEL)	LOCATION	FUNCTION	CONTROL POINT	CAPACITY OR RANGE	DIMENSIONS (INCHES)	WEIGHT (POUNDS)	CONTROL NOTES AND INTERLOCKS
SYSTEM PACKAGE									
	BLOWER SYSTEM PACKAGE						Length: 240; Width: 96; Height: 96	Tare Weight: 4,696	
	C3 SYSTEM						96; Height: Approximate 105	12,000	
BLOWERS & PUMPS									
3	ROTARY POSITIVE DISPLACEMENT BLOWER	Roots 59 (20 HP)	Blower System Enclosure	Supply of ground vapor to compressor	Blower System PLC	500 scfm, 9" Hg	Length: 38; Width: 24; Height: 24	900	
4	MOTOR 20HP, 1720RPM, 3PH, 60HZ, 25GT, 0960M, TEFC	Baldor Reliance ADD EFM2334T	Blower System Enclosure	Drive blower	Blower System PLC	20 HP			
15	3/4 HP CENTRIFUGAL PUMP	Liquid Discharge Pump	Blower System Enclosure	Transfer waste condensates from KO to condensate tank	Blower System PLC	3/4 HP			
21	3/8 HP PISTON PUMP	Liquid Discharge Pump	20" PIPE	Transfer groundwater in conveyance pipe to condensate tank	Blower System PLC	3/8 HP			
HEAT EXCHANGER									
5	AIR/AIR HEAT EXCHANGER	X Changer AA-500	Outside of Blower System Enclosure	Cool the stream after blower	Blower System PLC	500 scfm	Length: 40; Width: 29; Height: 33	100	
COMPRESSOR									
6	COMPRESSOR	Quincy CSI-500	Before C3 System	Compress vapor stream	C3 System PLC	500 scfm @ 160 psi	Length: 92; Width: 56; Height: 58.75	6,500	I-2 is triggered by compressor alarm state
VESSELS									
1	AIR/WATER SEPARATOR (KO)	GEO H2O KO	Blower System Enclosure	Separate free liquid from influent vapor steam	Blower System PLC	54 gal	Diameter: 24; Height: 72	630, empty	I-1 is triggered if liquid in air/water separator exceeds LSW3 level
10	CONDENSATE TANK	Superior Storage Tanks	System Area	Storage of recovered product from C3 process	Blower System PLC	1,000 gal	Length: 118; Width: 42; Height: 54	2,025, empty	A6 is triggered if liquid in chemical tank exceeds LSW4 level
13	CHEMICAL TANK	Superior Storage Tanks	System Area	Storage of recovered product from C3 process	C3 System PLC	1,000 gal	Length: 118; Width: 42; Height: 54	2,025, empty	
14	SURGE TANK	Manchester Tank	Outside of C3 System	Depressurization of C3 regen cycle	C3 System PLC	240 gal	Diameter: 30; Height: 84	670, empty	
16	CHEMICAL CATCH CAN	Custom Fabrication	C3 System	Collect recovered chemicals and transfer to chemical tank	C3 System PLC				A11 is triggered if liquid in catch can exceeds drain level sensors
18	OPTIONAL POTASSIUM PERMANGANATE ZEOLITE (PPZ) VESSEL	Pure Effect PEV-3000	After GAC Vessel 2	Polish air outstream		fill capacity 3,000 lb. Vapor Phase Unit, maximum pressure: 35 psi	Diameter: 60; Height: 112	4,900, filled	
19	GAC VESSEL 1	Pure Effect PEV-3000	After C3 System	Polish air outstream		fill capacity 3,000 lb. Vapor Phase Unit, maximum pressure: 35 psi	Diameter: 60; Height: 112	4,900, filled	
20	GAC VESSEL 2	Pure Effect PEV-3000	After GAC Vessel 1	Polish air outstream		fill capacity 3,000 lb. Vapor Phase Unit, maximum pressure: 35 psi	Diameter: 60; Height: 112	4,900, filled	
FLOW METERS & FILTER									
VFM	INLET FLOW METER	STS1 Mass Flow Meter	Before Blower System Package	Read inlet vapor flowrates					
2	BLOWER INLET FILTER	SOLBERG Vacuum Filter	Before Blower	5u particle filter to remove debris from the vapor stream		500 scfm			
8	FLOW METER (CDI METER)	CDI S400 Flow Meter	C3 System	Read high flowrates	C3 System PLC				
SENSORS									
LSW1	HORIZONTAL FLOAT SWITCH	Dwyer L6 Series	KO	High Level Switch	Blower System PLC				Initiates pump to drain tank
LSW2	HORIZONTAL FLOAT SWITCH	Dwyer L6 Series	KO	Low Level Switch	Blower System PLC				Stops pump when level is achieved
LSW3	HORIZONTAL FLOAT SWITCH	Dwyer L6 Series	KO	HIHI Level Switch; Initiates alarm if level is above switch	Blower System PLC				
LSW4	VERTICAL FLOAT SWITCH	Madison M5000	Chemical Tank	HI Level Switch; Initiates alarm if level is above switch	C3 System PLC				
LSW5	VERTICAL FLOAT SWITCH	Madison M5000	Condensate Tank	HI Level Switch; Initiates alarm if level is above switch	Blower System PLC				
LSW6	VERTICAL FLOAT SWITCH	Madison M5000	Chemical Tank Secondary Containment	HI Level Switch; Initiates alarm if level is above switch	C3 System PLC				
LSW7	VERTICAL FLOAT SWITCH	Madison M5000	Condensate Tank Secondary Containment	HI Level Switch; Initiates alarm if level is above switch	Blower System PLC				
11	ORGANIC VAPOR ANALYZER (OVA) SENSORS	Multi-Channel Toxic/Combustible Gas Detector	C3 System	Detect and indicate vapors level in the C3 process area.	C3 System PLC				A8 is triggered if OVA indicates permitted levels have been exceeded
EQUIPMENT # (On P&ID) EQUIPMENT DESCRIPTION EQUIPMENT (BRAND MODEL) LOCATION FUNCTION CONTROL POINT CAPACITY OR RANGE DIMENSIONS (INCHES) WEIGHT (POUNDS) CONTROL NOTES AND INTERLOCKS									
ALARMS									
A1	KO HIGH HIGH	LSW3	KO1	Triggered if liquid in KO1 exceeds high-high level	Blower System PLC				Complete system shutdown indicated on HMI panel screen and sends email
A2	BLOWER HIGH TEMP	TS2	Blower Discharge	System shutdown	Blower System PLC				Triggered when Delta T of blower is beyond spec; complete system shutdown indicated on HMI panel screen and sends email
A3	COMPRESSOR HIGH TEMP	TS3	Compressor Inlet	System shutdown	Blower System PLC				Triggered when temperature exceeds 90°F; complete system shutdown indicated on HMI panel screen and sends email
A4	CARBON INLET HIGH TEMP	TS4	Carbon Inlet	System shutdown	Blower System PLC				Triggered when temperature exceeds 90°F; complete system shutdown indicated on HMI panel screen and sends email
A5	CONDENSATE TANK HIGH LEVEL	LSW5	Condensate Tank	System shutdown	Blower System PLC				Triggered when tank level exceeds float switch level; complete system shutdown indicated on HMI panel screen and sends email
A6	CHEMICAL TANK HIGH LEVEL	LSW6	Chemical Tank	System shutdown	C3 System PLC				Triggered when tank level exceeds float switch level; complete system shutdown indicated on HMI panel screen and sends email
A7	CHEMICAL TANK SECONDARY CONTAINMENT HIGH LEVEL	LSW7	Chemical Tank	System shutdown	C3 System PLC				Triggered when containment is breached from tank; complete system shutdown indicated on HMI panel screen and sends email
A8	PROCESS AREA OVA	OVA SENSOR	C3 process area	System shutdown	C3 System PLC				Triggered when concentrations of contaminants exceeds permissible levels; complete system shutdown indicated on HMI panel screen and sends email
A9	C3 HIGH TEMPERATURE	TS5	C3 System	System shutdown	C3 System PLC				Triggered when C3 process is above 0°F for more than five minutes; complete system shutdown indicated on HMI panel screen and sends email
A10	C3 LOW PRESSURE	C3 PS	C3 System	System shutdown	C3 System PLC				Triggered when C3 process is below 100 psi for more than five minutes; complete system shutdown indicated on HMI panel screen and sends email

A11	C3 CATCH CAN HIGH HIGH	C3 Chemical Catch Can	C3 System	System Shutdown	C3 System PLC				
A12	CONDENSATE TANK CONTAINMENT HIGH	LSW7	Condensate Tank Secondary Containment	System shutdown	C3 System PLC				
	C3 E STOP ALARM	C3	C3 System	System shutdown	C3 System PLC				
A14	C3 IN-LINE OVA (ORGANIC VAPOR ANALYZER) CONCENTRATION	C3 IN-LINE OVA	C3 System	Detect and indicate vapors level in the C3 process area					
A15	C3 LEL SENSOR	C3 LEL	C3 System	Detect and indicate vapors level in the C3 process area					
TEMPERATURE SENSORS									
TS1	K TYPE THERMOCOUPLE PROBE	6" Probe	KO Inlet	Monitor inlet temperature	Blower System PLC				0-204 °C
TS2	K TYPE THERMOCOUPLE PROBE	6" Probe	Blower Discharge	Monitor blower discharge temperature	Blower System PLC				0-204 °C
TS3	K TYPE THERMOCOUPLE PROBE	6" Probe	Aftercooler Discharge	Monitor Aftercooler discharge temperature	Blower System PLC				0-204 °C
TS4	K TYPE THERMOCOUPLE PROBE	6" Probe	Carbon Inlet	Monitor carbon inlet temperature	Blower System PLC				0-204 °C
TS5-10	RTD	ProSense RTD	C3 System	Monitor the temperature of the C3 System	C3 System PLC				
GAUGES									
PI1	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	Inlet of KO	Monitor vacuum at inlet to treatment system					-30-30" Hg
PI2	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	Before Blower Inlet Filter	Monitor vacuum at inlet to filter					-30-30" Hg
PI3	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	After Blower Inlet Filter	Monitor pressure from discharge of filter					-30-30" Hg
PI4	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	Before Blower	Monitor vacuum at inlet to blower					-30-30" Hg
PI5	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	After Blower	Monitor pressure from discharge of blower to after cooler					-30-30" Hg
PI6	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	After Compressor	Monitor compressor discharge pressure					0-200 psi
PI7	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	Carbon Inlet	Monitor pressure at carbon inlet					0-100" H ₂ O
PRESSURE SENSORS									
PS1-4	PRESSURE SENSOR	GEO	C3 System	Monitor the pressure of the C3 System					
SAMPLE PORTS									
SP-1	SAMPLING PORT	Petcock	KO	Sample from inlet of treatment system					
SP-2	SAMPLING PORT	Petcock	After C3 System	Sample after C3 Trailer					
SP-3	SAMPLING PORT	Petcock	After GAC1 Vessel	Sample after GAC1 vessel					
SP-4	SAMPLING PORT	Petcock	After GAC2 Vessel	Sample after GAC2 vessel					
SP-5	SAMPLING PORT	Petcock	After PPZ Vessel	Sample after PPZ vessel					
VALVES									
V1	BALL VALVE	6" Dixon BVFW600	Between Manifold and System Inlet	Isolates manifold from SVE treatment system; normally open					6"
V2	BALL VALVE	4" Schedule 40 PVC Ball Valve	Between V1 and KO	Allows fresh air dilution to the treatment system; normally closed					4"
V3	BALL VALVE	2" Brass Ball Valve	Between KO and Pump	Isolate liquid in KO; normally open					2"
V4	CHECK VALVE	1" Brass Check Valve	Between Pump and Condensate Tank	Control condensate from flowing into KO; auto					1"
V5	GATE VALVE	2" Brass Gate Valve	Between After Cooler Discharge and Blower Filter Inlet	Controls flow from blower to C3 System and Carbon System; normally open					2"
V6	BUTTERFLY VALVE	4" Dixon BVFW400	Between After Cooler Discharge and V7	Vapor stream bypass of C3 System to carbon; normally Close					4"
V7	BUTTERFLY VALVE	4" Dixon BVFW400	Between V6 and C3 System Compressor	Isolates compressor from vapor stream; normally open					4"
V8	BALL VALVE	4" Schedule 40 PVC Ball Valve	Between Surge Tank and Inlet to KO	Isolate C3 system regen from treatment stream and reduce regen pressure swing; normally open					4"
V9	AIR ACTUATED PISTON VALVE	1/2" Asco Pneumatic Piston Valve	C3 System Chemical Catch Can	Allows collected product to be transferred to storage tank with system pressure; auto					1/2"
OTHER									
	PLC								
	E STOP								

NOTES:

- ALL EQUIPMENT WILL BE VENDOR SELECTED WITH APPROVAL. ALL EQUIPMENT TO BE INSTALLED AND ASSEMBLED IN ACCORDANCE WITH ALL MANUFACTURER'S REQUIRED SPECIFICATIONS.
- ALL EQUIPMENT, VALVES, GAUGES, PORTS, ETC. WILL BE LABELED IN ACCORDANCE WITH THE DESIGN DRAWING SHEET M-7.0 PIPING AND INSTRUMENTATION DIAGRAMS (P&ID).
- ALL PIPE MEASUREMENTS ARE INTERIOR DIAMETERS.

REVISIONS	
(INTL)	
#	DATE
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DESIGNED: ENSAFE	SCALE: AS SHOWN
DRAWN BY: CC	DATE: 04/27/2021
REVIEWED BY: RZ	
PROJECT NO: 0886825587	

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LIST OF C3 SYSTEM EQUIPMENT CONTROL AND VALVE SCHEDULE
FORMER B-1 PLANT
SOIL VAPOR EXTRACTION SYSTEM
FOR
LOCKHEED MARTIN CORPORATION
1705 NORTH VICTORY PLACE
BURBANK, CALIFORNIA 91504
NOVEMBER 2018

EQUIPMENT # (On P&ID)	EQUIPMENT DESCRIPTION	EQUIPMENT (BRAND MODEL)	LOCATION	FUNCTION	CONTROL POINT	CAPACITY OR RANGE	DIMENSIONS (INCHES)	WEIGHT (POUNDS)	CONTROL NOTES AND INTERLOCKS	MANUALS AND DRAWINGS
SYSTEM PACKAGE										
	BLOWER SYSTEM PACKAGE						Length: 240; Width: 96; Height: 96	Tare Weight: 4,696		
BLOWERS & PUMPS										
3	ROTARY POSITIVE DISPLACEMENT BLOWER	Roots 59 (20 HP)	Blower System Enclosure	Supply of ground vapor to compressor	Blower System PLC	500 scfm, 9" Hg	Length: 38 Width: 24 Height: 24	900		OM&M Plan Appendix 9
4	MOTOR 20HP, 1770RPM, 3PH, 60HZ, 256T, 0960M, TEFC	Baldor Reliance ADD EFM2334T	Blower System Enclosure	Drive blower	Blower System PLC	20 HP				OM&M Plan Appendix 10
15	3/4 HP CENTRIFUGAL PUMP	Liquid Discharge Pump	Blower System Enclosure	Transfer waste condensates from KO to chemical tank.	Blower System PLC	3/4 HP				OM&M Plan Appendix 11
21	3/8 HP PISTON PUMP	Liquid Discharge Pump	20" PIPE	Transfer groundwater in conveyance pipe to condensate tank	Blower System PLC	3/8 HP				OM&M Plan Appendix 22
HEAT EXCHANGER										
5	AIR/AIR HEAT EXCHANGER	X Changer AA-500	Outside of Blower System Enclosure	Cool the stream after blower	Blower System PLC	500 scfm	Length: 40; Width: 29; Height: 33	100		OM&M Plan Appendix 7
VESSELS										
1	AIR/WATER SEPARATOR (KO)	GEO H2O KO	Blower System Enclosure	Separate free liquid from influent vapor steam	Blower System PLC	54 gal	Diameter: 24; Height: 72	630, empty	I-1 is triggered if liquid in air/water separator exceeds LSW3 level	OM&M Plan Appendix 1
10	CONDENSATE TANK	Newberry Tanks 1000 Gallon 45 1/2" I.D. x 12'-0" O.A.L. Double Wall Skid Tank	System Area	Storage of recovered product from C3 process	Blower System PLC	1,000 gal	Length: 118; Width: 42; Height: 54	2,025, empty		OM&M Plan Appendix 6
18	OPTIONAL POTASSIUM PERMANGANATE ZEDULTE (PP2) VESSEL	Pure Effect PEV-3000	After GAC Vessel 2	Polish air outstream		fill capacity 3,000 lb. Vapor Phase Unit, maximum pressure: 35 psi	Diameter: 60; Height: 112	4,900, filled		OM&M Plan Appendix 4
19	GAC VESSEL 1	Pure Effect PEV-3000	After C3 System	Polish air outstream		fill capacity 3,000 lb. Vapor Phase Unit, maximum pressure: 35 psi	Diameter: 60; Height: 112	4,900, filled		OM&M Plan Appendix 5
20	GAC VESSEL 2	Pure Effect PEV-3000	After GAC Vessel 1	Polish air outstream		fill capacity 3,000 lb. Vapor Phase Unit, maximum pressure: 35	Diameter: 60; Height: 112	4,900, filled		
FLOW METERS & FILTER										
FIT	INLET FLOW METER	ST51 Mass Flow Meter	Before Blower System Package	Read inlet vapor flowrates						OM&M Plan Appendix 21
2	BLOWER INLET FILTER	SOLBERG Vacuum Filter	Before Blower	5um particle filter to remove debris from the vapor stream		500 scfm				OM&M Plan Appendix 13
SENSORS										
LSW1	HORIZONTAL FLOAT SWITCH	Dwyer L6 Series	KO	High Level Switch	Blower System PLC				Initiates pump to drain tank	
LSW2	HORIZONTAL FLOAT SWITCH	Dwyer L6 Series	KO	Low Level Switch	Blower System PLC				Stops pump when level is achieved	OM&M Plan Appendix 14
LSW3	HORIZONTAL FLOAT SWITCH	Dwyer L6 Series	KO	HHH Level Switch: Initiates alarm if level is above switch	Blower System PLC					
LSW5	VERTICAL FLOAT SWITCH	Madison M5000	Condensate Tank	Hi Level Switch: Initiates alarm if level is above switch	Blower System PLC					
LSW7	VERTICAL FLOAT SWITCH	Madison M5000	Condensate Tank Secondary Containment	Hi Level Switch: Initiates alarm if level is above switch	Blower System PLC					
EQUIPMENT # (On P&ID)										
ALARMS										
A1	KO HIGH HIGH	LSW3	KO1	Triggered if liquid in KO1 exceeds high level	Blower System PLC				Complete system shutdown indicated on HMI panel screen and sends email	
A2	BLOWER HIGH TEMP	TS2	Blower Discharge	System Shutdown	Blower System PLC				Triggered when Delta T of blower is beyond spec complete system shutdown indicated on HMI panel screen and sends email	
A4	CARBON INLET HIGH TEMP	TS4	Carbon Inlet	System Shutdown	Blower System PLC				Triggered when temperature exceeds 90°F complete system shutdown indicated on HMI panel screen and sends email	
A5	CONDENSATE TANK HIGH LEVEL	LSW5	Condensate Tank	System Shutdown	Blower System PLC				Triggered when tank level exceeds float switch level complete system shutdown indicated on HMI panel screen and sends email	
A12	CONDENSATE TANK CONTAINMENT HIGH LEVEL	LSW7	Condensate Tank Secondary Containment	System Shutdown	C3 System PLC				Triggered when containment is breeched from condensate tank complete system shutdown indicated on HMI panel screen and sends email	
TS1	K TYPE THERMOCOUPLE PROBE	6" Probe	KO Inlet	Monitor inlet temperature	Blower System PLC	0-204°C				
TS2	K TYPE THERMOCOUPLE PROBE	6" Probe	Blower Discharge	Monitor blower discharge temperature	Blower System PLC	0-204°C				OM&M Plan Appendix 20
TS4	K TYPE THERMOCOUPLE PROBE	6" Probe	Carbon Inlet	Monitor carbon inlet temperature	Blower System PLC	0-204°C				

GAUGES										
PI1	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	KO Inlet	Monitor Vacuum at Inlet to Treatment System						
PI2	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	Before Blower Inlet Filter	Monitor Vacuum at inlet to filter						
PI3	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	After Blower Inlet Filter	Monitor pressure from discharge of filter						OM&M Plan Appendix 17
PI4	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	Before Blower	Monitor Vacuum at inlet to blower						
PI5	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	After Blower	Monitor pressure from discharge of blower to after cooler						
PI7	PRESSURE INDICATOR (GAUGE)	ProSense Stainless Steel Pressure Gauge	Carbon Inlet	Monitor pressure at carbon inlet					0-100" H ₂ O	C3 Component
SAMPLE PORTS										
SP-1	SAMPLING PORT	Petcock	KO	Sample from inlet of SVE treatment system						
SP-2	SAMPLING PORT	Petcock	Before GAC1 vessel	Sample before GAC1 vessel						
SP-3	SAMPLING PORT	Petcock	After GAC1 Vessel	Sample after GAC1 vessel						
SP-4	SAMPLING PORT	Petcock	After GAC2 Vessel	Sample after GAC2 vessel						
SP-5	SAMPLING PORT	Petcock	After PPZ Vessel	Sample after PPZ vessel						
VALVES										
V1	BALL VALVE	6" Dixon BVFW600	Between Manifold and System Inlet	Isolates manifold from SVE treatment System. Normally Opened.					6"	Manual Actuation
V2	BALL VALVE	4" Schedule 40 PVC Ball Valve	Between V1 and KO	Allows fresh air dilution to the treatment system. Normally Closed.					4"	Manual Actuation
V3	BALL VALVE	2" Brass Ball Valve	Between KO and Pump	Isolate liquid in KO. Normally Opened.					2"	Manual Actuation
V4	CHECK VALVE	1" Brass Check Valve	Between Pump and Condensate Tank	Control condensate from flowing into KO. Auto.					1"	Automatic
V5	GATE VALVE	2" Brass Gate Valve	Between After Cooler Discharge and Blower Filter Inlet	Control flow from blower to C3 System and Carbon System. Normally Closed.					2"	Manual Actuation

NOTES:

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- ALL EQUIPMENT, VALVES, GAUGES, PORTS, ETC. WILL BE LABELED IN ACCORDANCE WITH THE DESIGN DRAWING SHEET M-8.0 PIPING AND INSTRUMENTATION DIAGRAMS (P&ID).
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DESIGNED: ENSAFE	DRAWN BY: CC
REVIEWED BY: RZ	PROJECT NO: 088825587

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LIST OF SVE SYSTEM EQUIPMENT CONTROL AND VALVE SCHEDULE
FORMER B-1 PLANT
 FOR
SOIL VAPOR EXTRACTION SYSTEM
 LOCKHEED MARTIN CORPORATION
 1705 NORTH VICTORY PLACE
 BURBANK, CALIFORNIA 91504
 NOVEMBER 2018

ELECTRICAL GENERAL NOTES

1. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) AND BEAR THEIR LABEL, OR LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING AUTHORITY WHERE UL DOES NOT HAVE A LISTING...

WHERE THE CODES HAVE DIFFERENT LEVELS OF REQUIREMENTS, THE MOST STRINGENT RULE SHALL APPLY.

2. THE CONTRACTOR SHALL VISIT THE SITE INCLUDING ALL AREAS INDICATED ON THE DRAWINGS. HE SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AND BY SUBMITTING A BID, ACCEPTS THE CONDITIONS UNDER WHICH HE SHALL BE REQUIRED TO PERFORM HIS WORK.

3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COMPLETE SET OF CONTRACT DOCUMENTS, INCLUDING DRAWINGS AND SPECIFICATIONS. HE SHALL CHECK THE DRAWINGS OF THE OTHER TRADES AND SHALL CAREFULLY READ THE ENTIRE SPECIFICATIONS AND DETERMINE HIS RESPONSIBILITY. FAILURE TO DO SO SHALL NOT RELEASE THE CONTRACTOR FROM DOING THE WORK IN COMPLETE ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

4. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, CHARGES, AND INCIDENTAL COSTS NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK, INCLUDING ALL CHARGES BY STATE, COUNTY AND LOCAL GOVERNMENT AGENCIES.

5. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES AT THE SITE. ANY COSTS TO INSTALL WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE DRAWINGS SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF WORK. CLARIFICATION, ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO THE START OF WORK SHALL BE SUBJECT TO THE INTERPRETATION OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.

6. THE CONTRACTOR SHALL PROVIDE AND KEEP UP-TO-DATE A COMPLETE RECORD SET OF DRAWINGS. THESE PRINTS SHALL BE CORRECTED DAILY AND SHOW EVERY CHANGE FROM THE ORIGINAL DRAWINGS. THIS SET OF DRAWINGS SHALL BE KEPT ON THE JOB SITE AND SHALL BE USED ONLY AS A RECORD SET. THIS SHALL NOT BE CONSTRUED AS AUTHORIZATION FOR THE CONTRACTOR TO MAKE CHANGES IN THE LAYOUT WITHOUT THE ARCHITECT'S WRITTEN CONSENT. ANY ALTERATION OF THE WORK, A SET OF REPRODUCIBLE CONTRACT DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AND ALL CHANGES AS NOTED ON THE RECORD SET OF DRAWINGS SHALL BE UNDERSTANDABLE AND PROFESSIONAL MANNER. FAILURE TO KEEP RECORD DRAWING UP-TO-DATE SHALL CONSTITUTE CAUSE FOR WITHHOLDING OF PROGRESS PAYMENTS.

7. ALL INTERRUPTION OF ELECTRICAL POWER SHALL BE KEPT TO A MINIMUM. HOWEVER, WHEN AN INTERRUPTION IS NECESSARY, THE SHUTDOWN MUST BE COORDINATED WITH THE OWNER AND ENGINEER 14 DAYS PRIOR TO THE OUTAGE. ANY OVERTIME PAY SHALL BE INCLUDED IN THE CONTRACTOR'S BID. WORK IN EXISTING FIRE ALARM CONTROL PANEL, SWITCHBOARDS OR PANELBOARDS SHALL BE COORDINATED WITH THE OWNER PRIOR TO REMOVING ACCESS PANELS OR DOORS.

8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TEMPORARY POWER FACILITIES AND CONNECTIONS FOR ALL FEEDERS OR SYSTEMS BEING DISCONNECTED IN ORDER TO MAINTAIN SYSTEMS IN OPERATION OR WHERE SAID FEEDERS OR SYSTEMS REQUIRE EMERGENCY STANDBY POWER.

9. SHOP DRAWINGS SHALL BE SUBMITTED WITHIN THIRTY DAYS AFTER AWARD OF THE CONTRACT. THE CONTRACTOR SHALL SUBMIT EIGHT COPIES OF A COMPLETE LIST OF MATERIALS AND EQUIPMENT INCLUDING MANUFACTURER AND MODEL NUMBER PROPOSED FOR THE JOB. SHOP DRAWINGS SHALL INCLUDE JOB DESCRIPTION, ARCHITECT AND ENGINEER IDENTIFICATION, AND ALL DATA CAPACITIES, SIZES, DIMENSIONS, CATALOG NUMBERS, AND MANUFACTURER'S BROCHURES. SHOP DRAWINGS SHALL BE SUBMITTED FOR ITEMS LISTED IN SPECIFICATIONS, PARTIAL, INCOMPLETE, OR UNBOUND SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.

10. AFTER ALL REQUIREMENTS OF THE SPECIFICATIONS AND/OR THE DRAWINGS HAVE BEEN FULLY COMPLETED, REPRESENTATIVES OF THE OWNER WILL INSPECT THE WORK. THE CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM TO THE FULL SATISFACTION OF EACH REPRESENTATIVE. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE OWNER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.

11. THE CONTRACTOR SHALL FURNISH A ONE YEAR WRITTEN GUARANTEE OF MATERIALS AND WORKMANSHIP FROM THE DATE OF SUBSTANTIAL COMPLETION.

12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND TO COORDINATE WITH THE MECHANICAL, FIRE PROTECTION AND PLUMBING DRAWINGS FOR DUCTS, LINES AND EQUIPMENT.

13. ALL EQUIPMENT MOUNTED ON ROOF FOR CONNECTION OF HVAC EQUIPMENT SHALL BE MOUNTED ON UNBURY STANDS UTILIZING APPROVED PITCH POCKETS, FLASHING, ETC.

14. ALL FINAL CONNECTIONS TO OWNER FURNISHED EQUIPMENT SHALL BE MADE BY THE CONTRACTOR.

15. COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT. SUPPLY POWER AND MAKE CONNECTION TO MOTORS AND EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AS INDICATED ON THE SINGLE LINE DIAGRAM. ELECTRICAL DRAWINGS, AND DRAWINGS OF OTHER TRADES. REVIEW THE DRAWINGS OF OTHER TRADES FOR CONFLICTS, DISCREPANCIES AND LOCATION OF EQUIPMENT. DISCONNECT SWITCHES, STARTERS, CIRCUIT BREAKERS, CONTROLS, AND CONDUIT FOR MECHANICAL AND PLUMBING OPERATIONS SHALL BE PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING MANUFACTURER'S SHOP DRAWINGS PRIOR TO INSTALLING IN ALL CONDUIT TO THIS EQUIPMENT.

16. EXACT METHOD AND LOCATION OF CONDUIT PENETRATION AND OPENINGS IN CONCRETE WALLS OR FLOORS OR STRUCTURAL STEEL MEMBERS SHALL BE AS DIRECTED BY THE STRUCTURAL ENGINEER. PERFORM CORING, SAWCUTTING, PATCHING, AND REFINISHING OF EXISTING WALLS AND SURFACES WHEREVER IT IS NECESSARY TO PENETRATE. OPENINGS SHALL BE SEALED IN AN APPROVED METHOD TO MEET THE FIRE RATINGS OF THE PARTICULAR WALL, FLOOR OR CEILING. EXACT METHOD AND LOCATION OF CONDUIT PENETRATIONS AND OPENINGS IN CONCRETE WALLS OR FLOORS SHALL BE UL APPROVED.

17. CONNECTIONS TO VIBRATING EQUIPMENT AND SEISMIC SEPARATIONS: LIQUID-TIGHT FLEXIBLE STEEL CONDUIT IN DRY INTERIOR LOCATIONS.

PROVIDE A SEPARATE INSULATED EQUIPMENT GROUNDING CONDUCTOR IN FLEXIBLE CONDUIT RUNS. MAXIMUM LENGTH SHALL BE SIX FEET UNLESS OTHERWISE NOTED.

18. EQUIPMENT OUTLETS, LIGHTING FIXTURES, CONDUIT, WIRE, AND CONNECTION METHODS IN HVAC AIR-FLEXIBLES SHALL BE APPROVED FOR USE IN FLEXIBLES AND SHALL CONFORM TO THE DEC.

19. ROUTE EXPOSED CONDUIT AND CONDUIT ABOVE ACCESSIBLE CEILING SPACES PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT CEILING. EXACT METHOD AND LOCATION OF CONDUIT PENETRATIONS AND OPENINGS IN CONCRETE WALLS OR FLOORS SHALL BE UL APPROVED.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAWCUTTING, TRENCHING, BACKFILLING, COMPACTION AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO PERFORM HIS WORK. ATTENTION IS CALLED TO THE FACT THAT THERE ARE EXISTING UNDERGROUND UTILITY LINES. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN TRENCHING FOR HIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER AND APPROVED REPAIR OF ANY AND ALL DAMAGES CAUSED BY HIM OR HIS WORK.

21. WHENEVER A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT DEVICES, CIRCUIT BREAKERS, GROUND FAULT PROTECTION SYSTEMS, ETC. (ALL MATERIALS), ARISES ON THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO ENSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE OWNER AND ARCHITECT/ENGINEER.

22. UTILITY PENETRATIONS OF ANY KIND IN FIRE AND SMOKE PARTITIONS AND CEILING ASSEMBLIES, SHALL BE PRESTOPPED AND SEALED WITH AN APPROVED MATERIAL, SECURELY INSTALLED.

STEEL ELECTRICAL OUTLET BOXES WHICH DO NOT EXCEED 16 SQUARE INCHES IN AREA, NEED NOT BE PROTECTED IN ONE HOUR OR TWO HOUR FIRE RATED WALLS, PARTITIONS, CEILINGS, OR AREA SEPARATION UNLESS THEY:

OCCUR ON OPPOSITE SIDES OF THE WALL WITHIN 24 INCH HORIZONTAL DISTANCE OF ONE ANOTHER. IN THIS CASE, ONLY ONE OUTLET BOX NEED TO BE PROTECTED BY AN APPROVED FIRESTOP MATERIAL, OR DETAIL TO CORRECT THIS CONDITION.

OCCUR IN COMBINATION WITH OUTLET BOXES OF ANY SIZE SUCH THAT THE AGGREGATE AREA OF UNPROTECTED OUTLET BOXES EXCEEDS 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF WALL AREA. IN THIS CASE, ONLY A SUFFICIENT NUMBER OF OUTLET BOXES NEED BE PROTECTED BY AN APPROVED MATERIAL OR DETAIL TO DECREASE THE AGGREGATE AREA OF UNPROTECTED UTILITY BOXES TO LESS THAN 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF WALL.

STEEL ELECTRICAL OUTLET BOXES WHICH EXCEED 16 SQUARE INCHES IN AREA, AND ALL OTHER STEEL UTILITY OUTLET BOXES REGARDLESS OF SIZE, SHALL BE PROTECTED BY AN APPROVED FIRESTOP MATERIAL AS LISTED OR EQUAL.

FIRESTOPPING MATERIAL: MFR-1 MOLDABLE PUTTY PADS 3M CONTRACTOR PRODUCTS MINNEAPOLIS, MN 3M TEST REPORT NO. 1167 DATED AUGUST 21, 1987 FSP FIRESTOP PUTTY PADS HEV-DUTY NELSON PRODUCTS TULSA, OK FLAMEMATE FSP 1077 FIRESTOP PADS INTERNATIONAL PROTECTIVE COATINGS DOKHURST, NJ

STEEL UTILITY BOXES WHICH EXCEED 100 SQUARE INCHES IN AREA SHALL BE PROTECTED BY ENGAGEMENT.

23. UTILITY AND ELECTRICAL OUTLETS OR BOXES SHALL BE SECURELY FASTENED TO THE STUD OF THE WALL, PARTITION OR CEILING ASSEMBLY. THE OPENING IN THE GYPSUM BOARD FACING SHALL BE CUT SO THAT THE CLEARANCE BETWEEN THE BOX AND THE GYPSUM BOARD DOES NOT EXCEED 1/8 INCH. IN SMOKE WALLS OR PARTITIONS, THE 1/8 INCH CLEARANCE SHALL BE FILLED WITH AN APPROVED FIRE RATED SEALANT.

24. REFER TO SINGLE LINE DIAGRAM AND FEEDER SCHEDULES FOR CONDUIT AND CONDUCTOR SIZE TO PANELS, MECHANICAL AND PLUMBING EQUIPMENT, ETC. CONDUIT RUNS MAY NOT BE SHOWN ON DRAWINGS, BUT ARE PART OF THIS CONTRACT.

25. STRAIGHT FEEDER, BRANCH CIRCUIT, AND CONDUIT RUNS SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES OR JUNCTION BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE RUN TO 100 FEET. PULL BOXES SHALL BE SIZED PER CODE OR AS INDICATED ON DRAWINGS. LOCATIONS SHALL BE DETERMINED IN THE FIELD OR AS INDICATED ON THE DRAWINGS.

26. MAXIMUM NUMBER OF CONDUCTORS IN OUTLET OR JUNCTION BOXES SHALL CONFORM TO THE CALIFORNIA ELECTRICAL CODE, ARTICLE 310.6, BUT IN NO CASE SHALL CONTAIN MORE THAN THE FOLLOWING NUMBER OF #12 AWG CONDUCTORS FOR THE SIZE OF BOX INDICATED. THE MINIMUM SIZE OUTLET OR JUNCTION BOX PERMITTED IN A WALL IS FOUR INCHES SQUARE BY 1-1/2 INCHES DEEP.

80 BY 1-1/2" D = 9 CONDUCTORS 80 BY 2-1/8" D = 13 CONDUCTORS 80 BY 1-1/2" D = 11 CONDUCTORS 80 BY 2-1/8" D = 18 CONDUCTORS

ALL OUTLET BOXES CONTAINING MORE THAN ONE DEVICE SHALL BE GANGED. TWO DEVICES DOUBLE GANGED, MINIMUM.

27. IDENTIFICATION NAMEPLATES SHALL BE MC9ARTA 1/8 INCH THICK AND OF APPROVED SIZE WITH BEVELLED EDGES AND ENGRAVED WHITE LETTERS A MINIMUM OF 1/4 INCH HIGH ON BLACK BACKGROUND. NAMEPLATES SHALL BE PROVIDED FOR ALL CIRCUITS IN THE SERVICE DISTRIBUTION AND POWER DISTRIBUTION SWITCHBOARDS OR PANELBOARDS, MOTOR CONTROL CENTERS, LIGHTING DISTRIBUTION PANELBOARDS, SEPARATELY MOUNTED SWITCHES, DISCONNECT SWITCHES, MOTOR CONTROL, PUSHBUTTON STATIONS, SELECTOR SWITCHES, TRANSFORMERS, TERMINAL CABINETS, TELEPHONE CABINETS, ETC. ALL NAMEPLATES SHALL BE ATTACHED WITH SCREWS. PULL BOXES, JUNCTION BOXES, AND DEVICE BOXES SHALL BE MARKED WITH A PERMANENT MARKER.

28. DRAWINGS ARE DIAGRAMMATIC ONLY. ROUTING OF RACEWAYS SHALL BE AT THE OPTION OF THE CONTRACTOR UNLESS OTHERWISE NOTED AND SHALL BE COORDINATED WITH OTHER SECTIONS. DO NOT SCALE THE ELECTRICAL DRAWINGS FOR LOCATIONS OF ANY ELECTRICAL, ARCHITECTURAL, STRUCTURAL, CIVIL OR MECHANICAL ITEMS OR FEATURES.

29. THE EQUIPMENT GROUNDING CONDUCTOR SHOWN ON CONDUIT RUNS SHALL RUN CONTINUOUS FROM PANEL TO LAST OUTLET. THIS WIRE SHALL BE INSTALLED IN EACH OUTLET FOR CONNECTION TO BOX AND DEVICE SO THAT IF DEVICE IS REMOVED, GROUND WILL NOT BE INTERRUPTED. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSULATED GREEN CONDUCTORS - ALTERNATE METHODS OF IDENTIFICATION SHALL NOT BE USED. CONTRACTOR SHALL NOTIFY ELECTRICAL ENGINEER TO EXAMINE CONDUCTOR INSTALLATION PRIOR TO INSTALLATION OF DEVICES.

30. REFER TO ARCHITECTURE AND STRUCTURAL DRAWINGS FOR HOUSEKEEPING PADS.

31. INDICATED ON THE DRAWINGS, PANELBOARDS SHALL COMPLY WITH NEMA STANDARD FOR PANELBOARDS AND FEDERAL SPECIFICATION W-P-115A. PANELBOARDS SHALL BE COMPLETE WITH COPPER BUS BARS AND 40 DEGREE CELSIUS THERMAL MAGNETIC BOLT-ON TYPE CIRCUIT BREAKERS AS INDICATED ON DRAWINGS. PANELBOARDS SHALL BE SQUARE OR ROUND BY WESTINGHOUSE, GENERAL ELECTRIC, OR SQUARE D.

32. CONDUIT TYPE ALUMINUM OR STEEL ELECTRICAL METALLIC TUBING (EMT) MAY BE USED IN WALLS OR CEILING SPACES WHERE NOT SUBJECT TO MECHANICAL DAMAGE. PVC SCHEDULE 40 MAY BE INSTALLED BENEATH SLAB OR BELOW GRADE. FLEXIBLE STEEL CONDUIT MAY BE USED AT FIXTURE AND OUTLET CONNECTIONS WITH NO RUNS LONGER THAN SIX FEET. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED IN ALL CONDUIT RUNS.

33. RIGID GALVANIZED STEEL CONDUIT FITTINGS SHALL BE THREADED AND THOROUGHLY GALVANIZED. ELECTRICAL METALLIC TUBING (EMT) CONDUIT FITTINGS SHALL BE STEEL, RANTIGHT THREADLESS COMPRESSION TYPE. DIE CAST, SET SCREW OR INDENT TYPE TYPES ARE NOT ACCEPTABLE. FLEXIBLE STEEL CONDUIT FITTINGS SHALL BE MALLEABLE IRON CLAMP, SQUEEZE TYPE OR STEEL, TWIST IN TYPE WITH INSULATED THROAT. SET SCREW TYPE IS NOT ACCEPTABLE.

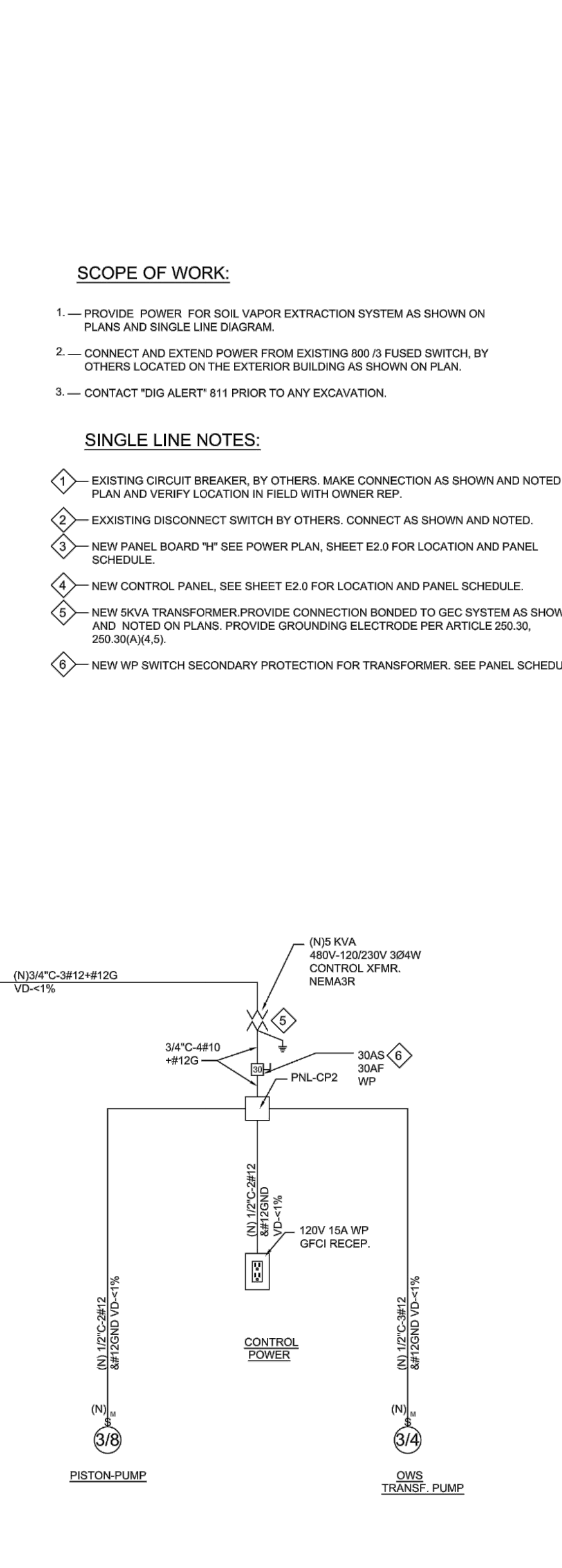
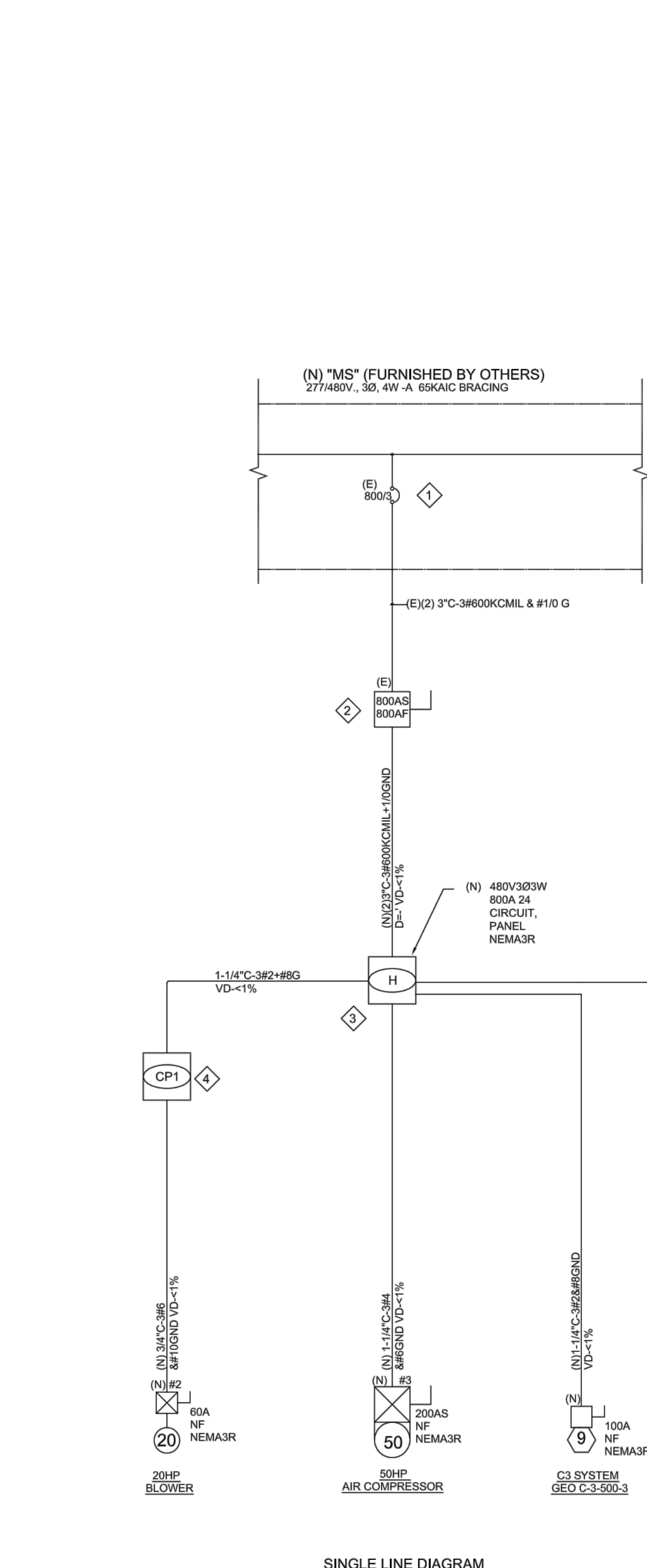
34. FOR SMALL AC MOTORS NOT HAVING BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE MANUAL MOTOR STARTERS WITH OVERLOAD HEATER ELEMENTS SIZED TO THE NAMEPLATE CURRENT RATING OF THE MOTOR. SMALL AC MOTORS WITH BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE A HORSEPOWER RATED TOGGLE TYPE DISCONNECT SWITCH.

35. SAFETY SWITCHES SHALL BE HEAVY DUTY NEMA TYPE HD BY SQUARE D, GENERAL ELECTRIC OR WESTINGHOUSE. SWITCHES SHALL BE RATED FOR THE NUMBER OF POLES, VOLTAGE, CURRENT AND HORSEPOWER RATING AS REQUIRED. PROVIDE FUSE PROTECTION BASED ON THE MOTOR NAMEPLATE RATINGS.

36. ALL CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM SIZE, TYPE THINWALL THERMOPLASTIC, 900 VOLT, 75 DEGREE CELSIUS WET AND 90 DEGREE CELSIUS DRY AND IS LISTED AS NOTED OTHERWISE. CONDUCTORS #12 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS # 10 AWG AND LARGER SHALL BE STRANDED.

37. JUNCTION AND PULL BOXES: FOR INTERIOR DRY LOCATIONS, BOXES SHALL BE GALVANIZED ONE-PIECE, DRAWN STEEL, KNOCKOUT TYPE WITH REMOVABLE MACHINE SCREW SECURED COVERS. FOR OUTSIDE, DAMP, OR SURFACE LOCATIONS, BOXES SHALL BE HEAVY CAST ALUMINUM OR CAST IRON WITH REMOVABLE, GASKETED, NON-FERROUS MACHINE SCREW SECURED COVERS. BOXES SHALL BE SIZED FOR THE NUMBER AND SIZES OF CONDUCTORS AND CONDUIT ENTERING THE BOX AND EQUIPPED WITH PLASTER EXTENSION RINGS WHERE REQUIRED. BOXES SHALL BE LABELED TO INDICATE PANELS AND CIRCUIT NUMBER, OR TYPE OF SIGNAL OR COMMUNICATIONS SYSTEM.

38. "CURRENT CODES ARE 2014 CEC, CEC AND CALIFORNIA ENERGY CODE".



General Notes and Specifications Single Line-Panel Schedule PERMIT COPY - NOT FOR CONSTRUCTION Site Plan & Vicinity Map

ELECTRICAL SYMBOL LIST

- TELEPHONE CONDUIT 3/4" C. UNLESS NOTED OTHERWISE
--- HOME RUN
--- CONDUIT CONCEALED IN WALL OR CEILING UNLESS NOTED
--- CONDUIT CONCEALED IN WALL, FLOOR UNDERGROUND OR UNDER FLOOR UNLESS NOTED
--- EXISTING CONDUIT
--- 2 NO. 12-1/2" CONDUIT UNLESS OTHERWISE NOTED
--- 3 NO. 12-1/2" CONDUIT
--- 4 NO. 12-3/4" CONDUIT
--- 5 NO. 12-3/4" CONDUIT
--- ROOM NUMBER
--- FIXTURE TYPE
--- WEATHER TYPE
--- BOX
--- V.L. VERIFY LOCATION

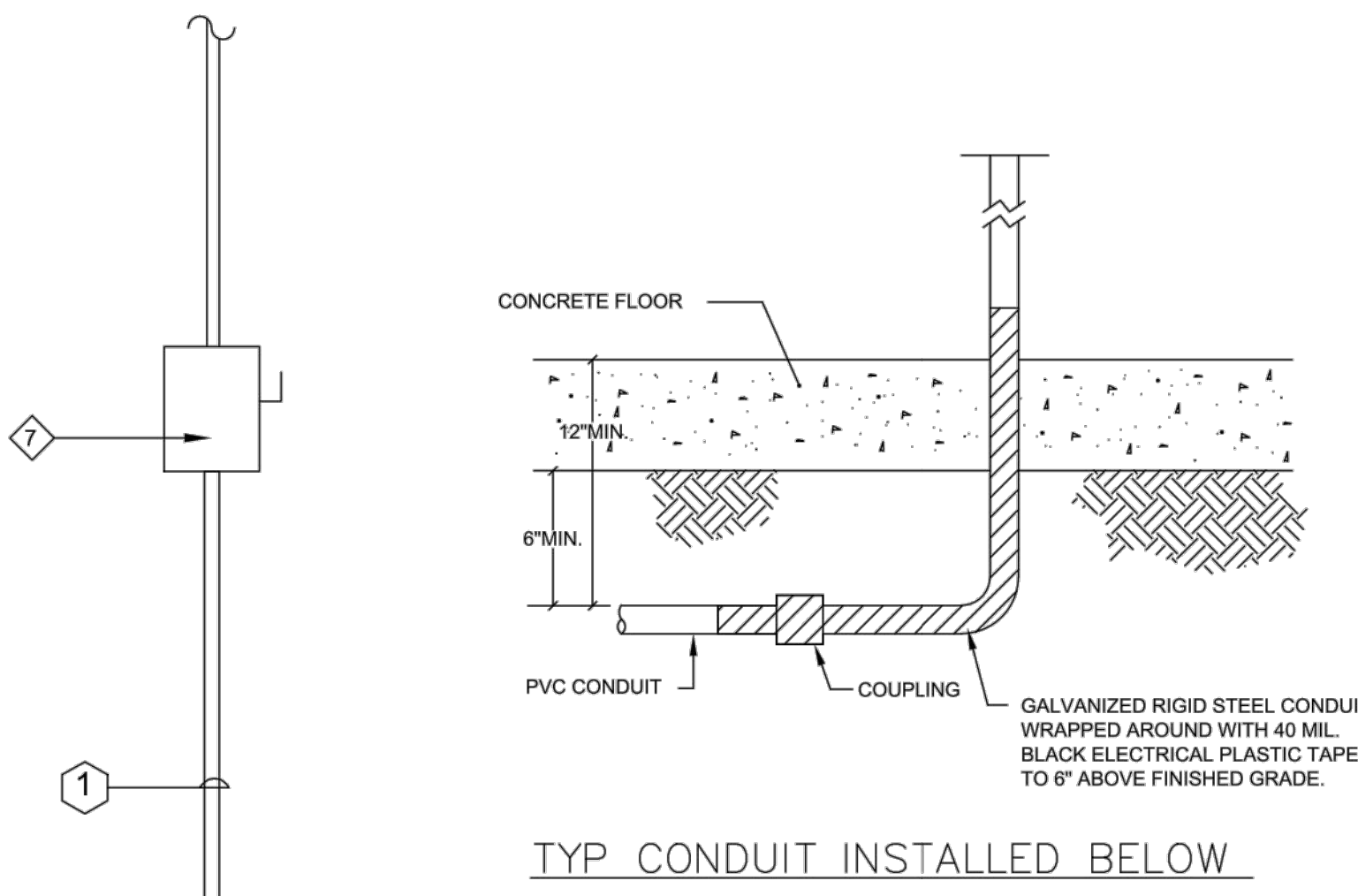
Table with columns: WALL, CEILING, DESCRIPTION. Includes entries for LIGHTING PANEL, POWER PANEL, TELEPHONE TERMINAL CABINET, MOTOR CONTROLLER NO. INDICATES SIZE, DISCONNECT SW. UNFUSED UNLESS NOTED, TRANSFORMER, SINGLE POLE TOGGLE SWITCH +4' UNLESS NOTED.

DESIGNED: ENSAFE SCALE: AS SHOWN
DRAWN BY: CC/BY OTHERS DATE: 04/27/2021
REVIEWED BY: RZ PROJECT NO.: 0886265587

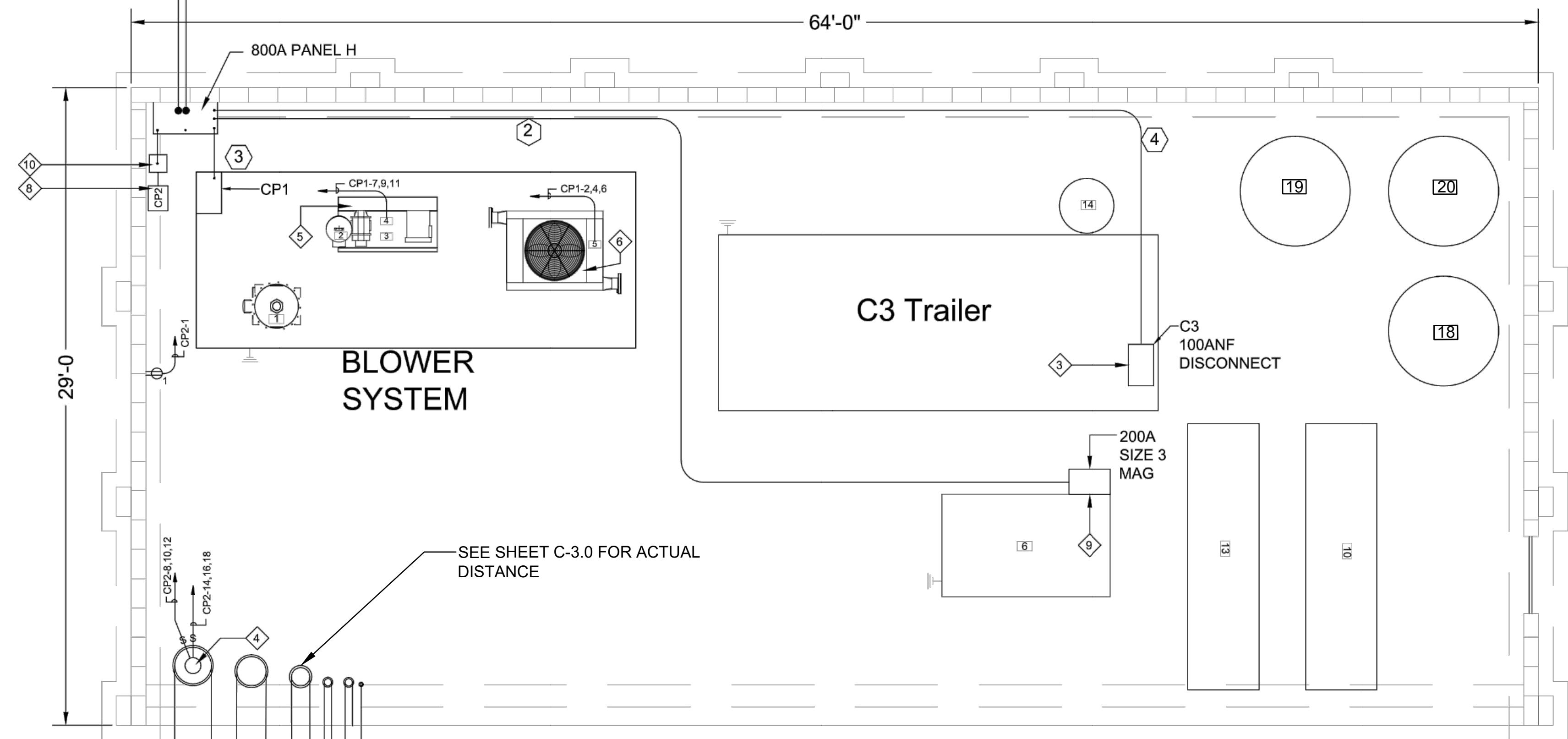
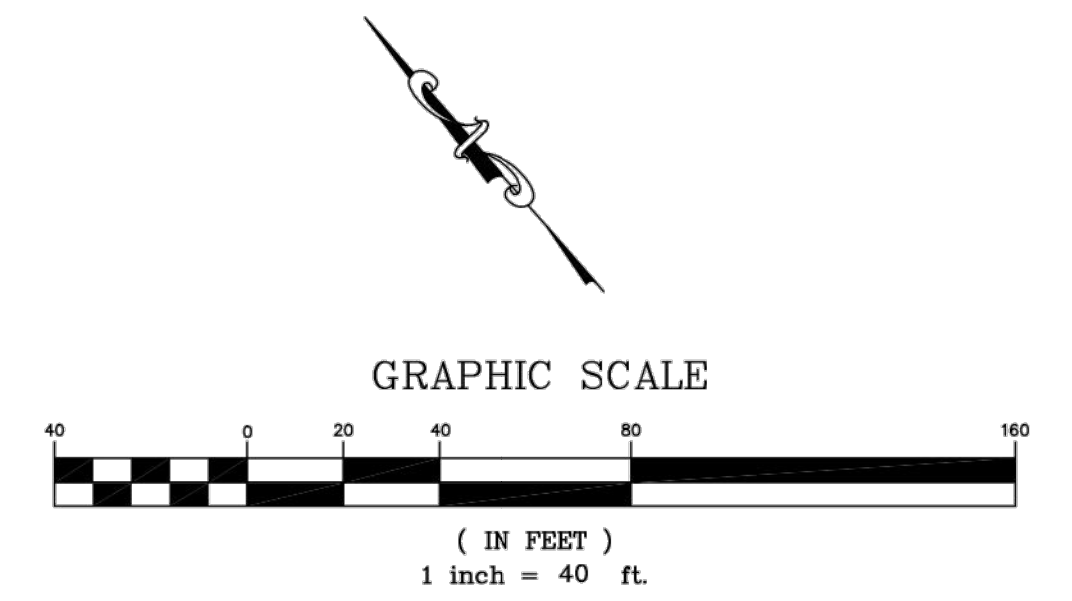
ENS SAFE logo and company information: engineering | environment | health & safety | technology. Creative thinking. Custom solutions. Telephone: 800.558.7962 | www.ensafe.com. Lockheed Martin Corporation for SOIL VAPOR EXTRACTION SYSTEM, 1705 NORTH VICTORY PLACE, BURBANK, CALIFORNIA 91504, NOVEMBER 2018.

ELECTRICAL SINGLE-LINE DRAWING FORMER B-1 PLANT FOR SOIL VAPOR EXTRACTION SYSTEM

REVISIONS table with columns: #, DATE, TEXT. Includes revision notes like '1. REVISED FOR PERMIT'. Also contains project details: SHEET E-1.0, SCALE: Noted, and footer information: R:\lockheed martin\25597 sar sve design\03 project exec\CAD\01 master\100% submittal revised 1-21-2021\ELECTRICAL SINGLE-LINE DRAWING.dwg 2/12/2021 3:56:34 PM.



- 1 PANEL CP1, 480V3Ø3W, SEE SINGLE LINE FOR CONNECTION DETAILS.
- 2 50HP 480V3Ø COMPRESSOR. SEE PLAN AND SINGLE LINE FOR CONNECTION DETAILS.
- 3 C3 TRAILER, 480V3Ø. PROVIDE DISCONNECT AS SHOWN ON PLAN AND SEE SINGLE LINE FOR CONNECTION DETAILS.
- 4 PROVIDE POWER TO 3/8HP 240V3Ø PISTON PUMP AND 3/4HP TRANSFER PUMP AS SHOWN ON PLAN AND SINGLE LINE. VERIFY LOCATION AND INSTALLATION WITH OWNER REP.
- 5 PROVIDE POWER TO 20HP 480V3Ø BLOWER. COORDINATE WITH OWNER REP.
- 6 PROVIDE POWER TO 3/4HP 480V3Ø HEAT EXCHANGER. COORDINATE INSTALLATION WITH OWNER REP.
- 7 MAKE CONNECTION, AS SHOWN IN SINGLE LINE TO 800A 480V3Ø DISCONNECT, FURNISHED BY OTHERS AND CONNECT TO PANEL H AS SHOWN ON PLAN. VERIFY LOCATION IN FIELD WITH OWNER REP.
- 8 PANEL CP2 240V3Ø4W. VERIFY LOCATION WITH OWNER REP.
- 9 50HP 480V3Ø COMPRESSOR. SEE SINGLE LINE FOR CONNECTION DETAILS.
- 10 5KVA 480-120/24V3Ø4W TRANSFORMER. SEE SINGLE



- FEEDER SCHEDULE:
- 1 (2)3"C-3#600KCMIL+#1/0G.
 - 2 1"C-3#4+8G
 - 3 2"C-3#2/0+#6G
 - 4 1-1/2"C-3#2/0+#6G

- LEGEND
- 1 AIR/WATER SEPARATOR
 - 2 BLOWER INLET FILTER
 - 3 ROTARY POSITIVE DISPLACEMENT BLOWER
 - 4 MOTOR
 - 5 AIR/AIR HEAT EXCHANGER
 - 6 COMPRESSOR
 - 10 CONDENSATE TANK
 - 13 CHEMICAL TANK
 - 18 POTASSIUM PERMANGANATE ZEOLITE (PPZ) VESSEL
 - 19 GAC VESSEL 1
 - 20 GAC VESSEL 2

SURFACE MOUNTED 65KAIC BREAKERS		PANEL "H" 480 VOLTS 3 PHASE 3 WIRE						MS MAIN: LUGS BUS: 800A								
LTS. RECP.	MISC. LCL	DESCRIPTION	LOADS			POLE	AMPS	CTK	PHASE	LOADS			DESCRIPTION	LCL	MISC. RECP.	LTS.
			A	B	C					A	B	C				
1		(N)PANEL CP1	7792			3	100	1	A	2			SPACE			
				7792			3	B	4							
					7792			5	C	6						
1		(N) 50HP COMPRESSOR	17983			3	150	7	A	8	15	3	1535	Skva Transf. Pnl-CP2	1	
				17983				9	B	10			935			
					17983			11	C	12						
1		(N) C3 SYSTEM	14663			3	100	13	A	14				Space		
				14663				15	B	16						
					14663			17	C	18						
		SPACE						19	A	20						
								21	B	22						
*TOTAL LCL: 53,939			25% OF LCL: 13,485			TOTAL: 138,204			138,204 / 830			167 AMPS				
PHASE A 41,973			PHASE B 41,373			PHASE C 41,373										

SURFACE MOUNTED 65KAIC BREAKERS		PANEL "CP1" 480 VOLTS 3 PHASE 3 WIRE						Fed from "H" MAIN: LUGS BUS: 100A								
LTS. RECP.	MISC. LCL	DESCRIPTION	LOADS			POLE	AMPS	CTK	PHASE	LOADS			DESCRIPTION	LCL	MISC. RECP.	LTS.
			A	B	C					A	B	C				
1		Spare				3	15	1	A	2	15	3	322	1HP HEAT EXCHANGER	1	
								3	B	4			322			
								5	C	6						
1		20 HP BLOWER	7470			3	50	7	A	8						
				7470				9	B	10						
					7470			11	C	12						
		SPACE						13	A	14						
								15	B	16						
								17	C	18						
								19	A	20						
								21	B	22						
*TOTAL LCL: 22,410			25% OF LCL: 5,603			TOTAL: 28,979			28,979 / 830			35 AMPS				
PHASE A 7,792			PHASE B 7,792			PHASE C 7,792										

SURFACE MOUNTED 65KAIC BREAKERS		PANEL "CP2" 120/230 VOLTS 3 PHASE 4 WIRE						Fed from "H" MAIN: 40A MCB BUS: 100A								
LTS. RECP.	MISC. LCL	DESCRIPTION	LOADS			POLE	AMPS	CTK	PHASE	LOADS			DESCRIPTION	LCL	MISC. RECP.	LTS.
			A	B	C					A	B	C				
1		RECEP GFCl WP	600			1	20	1	A	2	15	3	324	ROTARY DISP. BLOWER	1	
		SPACE						3	B	4			324			
								5	C	6						
								7	A	8	15	3	252	PISTON PUMP	1	
								9	B	10			252		1	
								11	C	12						
								13	A	14	15	3	359	OWS 3/4HP TRANSF PUMP	1	
								15	B	16			359			
								17	C	18						
								19	A	20						
								21	B	22						
*TOTAL LCL: 1,710			25% OF LCL: 428			TOTAL: 3,833			3,833 / 415			9 AMPS				
PHASE A 1,535			PHASE B 935			PHASE C 935										

ELECTRICAL SITE PLAN

REVISIONS

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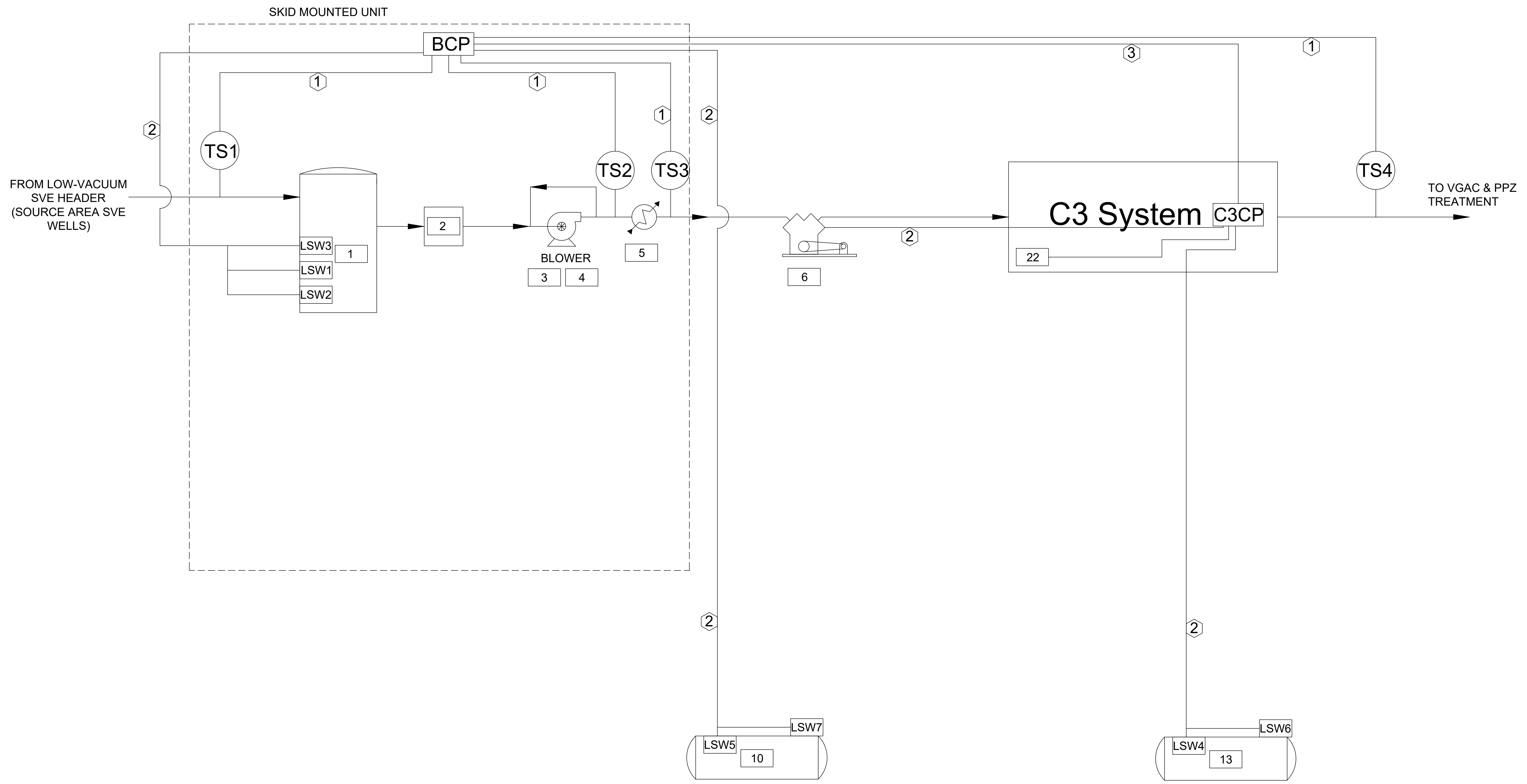
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PROJECT NO: 088825597

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ELECTRICAL SITE PLAN
FORMER B-1 PLANT
FOR
SOIL VAPOR EXTRACTION SYSTEM
LOCKHEED MARTIN CORPORATION
1705 NORTH VICTORY PLACE
BURBANK, CALIFORNIA 91504
NOVEMBER 2018

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LEGEND

BCP	BLOWER CONTROL PANEL	1	AIR/WATER SEPARATOR	13	CHEMICAL TANK
C3CP	C3 SYSTEM CONTROL PANEL	2	BLOWER INLET FILTER	22	C3 ALARMS BOX: LOW PRESSURE ALARMS, AMBIENT OVA ALARM, IN-LINE OVA ALARM, LEL ALARM, CHEMICAL TANK HIGH LEVEL ALARM, CHEMICAL TANK SECONDARY CONTAINMENT HIGH LEVEL ALARM, CATCH CAN HIGH LEVEL ALARM
—	SYSTEM PIPING	3	ROTARY POSITIVE DISPLACEMENT BLOWER		
—	CONTROL PANEL CONTROL LINE	4	MOTOR		
⊙	TEMPERATURE SENSOR	5	AIR/AIR HEAT EXCHANGER		
□	LEVEL SENSOR SWITCH	6	COMPRESSOR		
		10	CONDENSATE TANK		

CABLE LEGEND

①	20 GA K TYPE THERMOCOUPLE CABLE W/ FEMALE MINI PLUG WIRED IN 3/4" EMT (ELECTRICAL METALLIC TUBING) CONDUITS
②	18-4 NON SHIELDED STANDARD LV CABLE WIRED IN 3/4" EMT (ELECTRICAL METALLIC TUBING) CONDUITS
③	SHIELDED CAT 6 ETHERNET CABLE (TYP.) WIRED IN 1" EMT (ELECTRICAL METALLIC TUBING) CONDUITS

NOTES:

- All EMT CONDUITS RUN WITH PLUMBING PIPES.
- THERE IS NO FIELD ANALOG OR DIGITAL SIGNALS..
- BCP AND C3CP CONTROL VOLTAGE (120V AC) WILL BE FROM AN ON-LINE DOUBLE-CONVERSION UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEM.

REVISIONS	
#	DATE

SCALE: AS SHOWN	DATE: 04/27/2021
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INSTRUMENTATION AND CONTROL SYSTEM
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