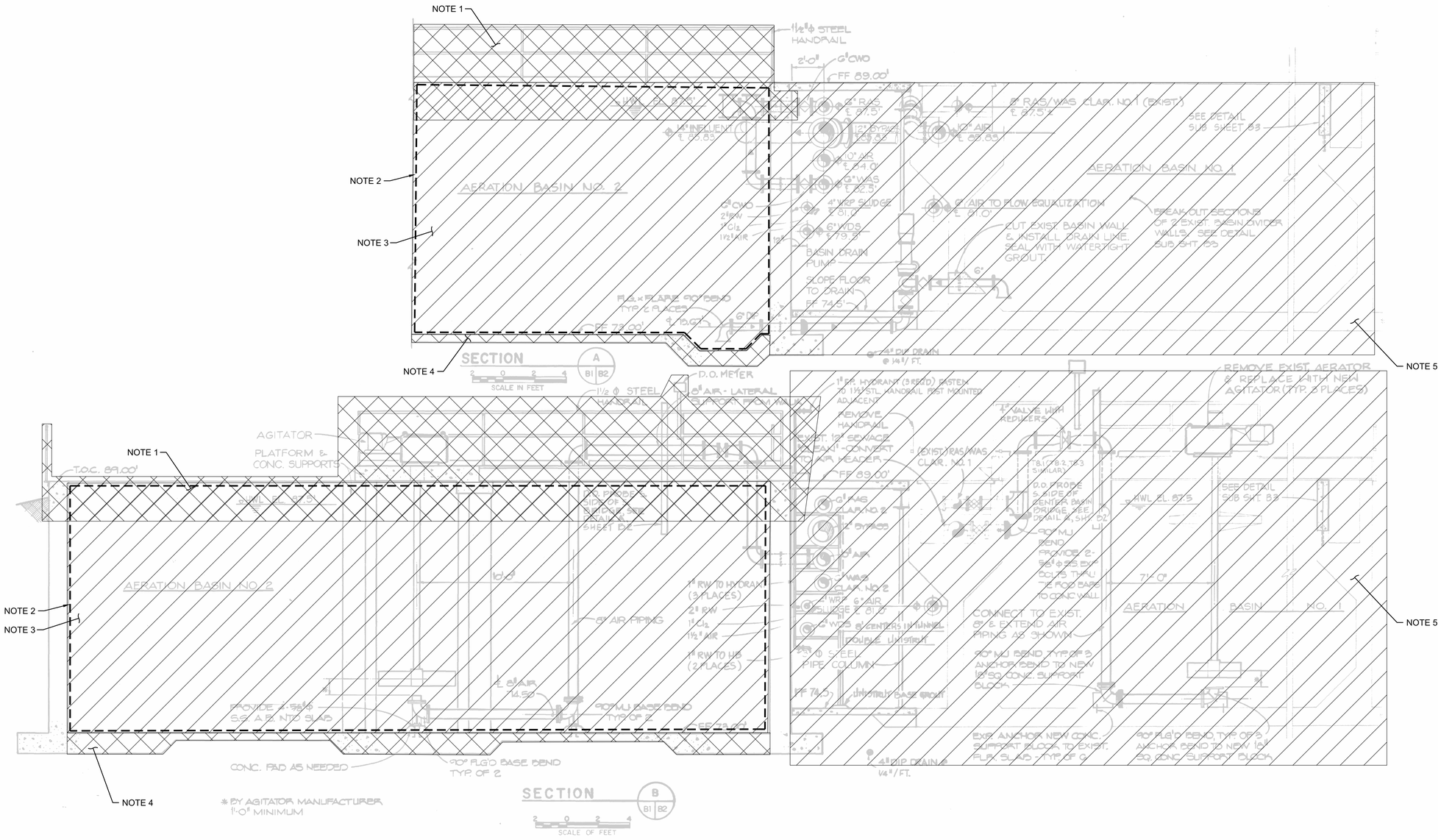


GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

B. FOR BUILDINGS UNDER DEMOLITION AND PARTIAL CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR LATERAL BRACING OF WALLS DUE TO LATERAL SOIL PRESSURE AFTER REMOVAL OF FLOOR SLAB DURING DEMOLITION AND FILLING PROCESSES. LATERAL BRACING TO INCLUDE, BUT NOT LIMITED TO, SHORING, STABILIZERS, AND STRUTS.

SHEET NOTES

1. STRUCTURAL DEMOLITION TO COMPLY WITH 02 41 00, DEMOLITION.
2. REMOVE ALL EQUIPMENT FROM FACILITY.
3. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL.
4. CORE DRILL 1' DIAMETER HOLES THROUGH BASE SLAB AT 10' OC EACH DIRECTION.
5. SEE PIPE GALLERY SHEETS FOR WORK IN THIS AREA.

GRCA-257282

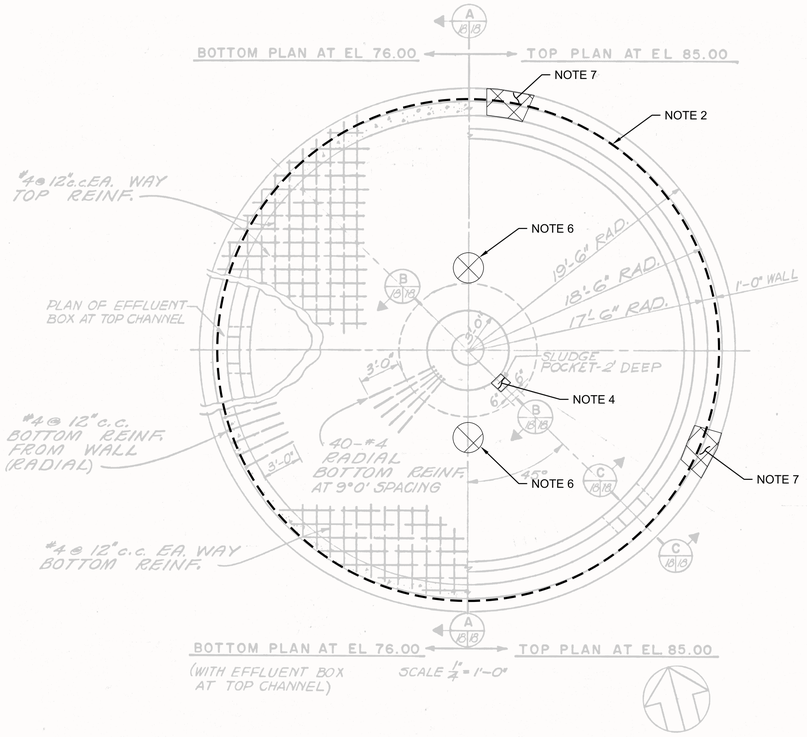
100% COMPLETE CONSTRUCTION DOCUMENTS

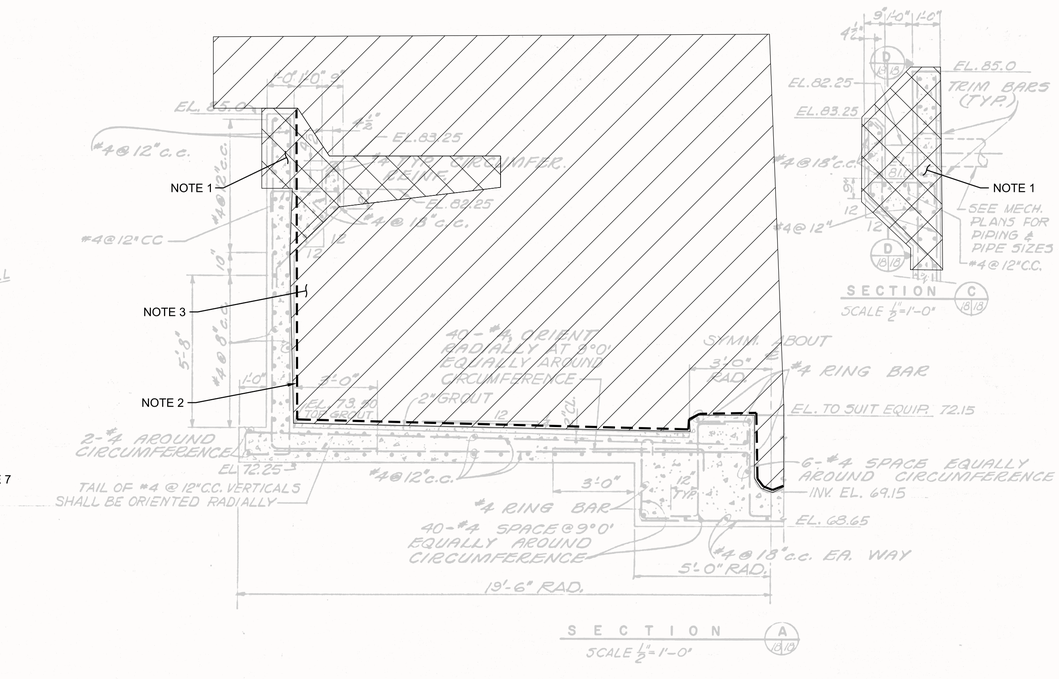
PLOT DATE: 16-JUN-2025 PLOT TIME: 19:17 SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06X1112_D3167666.dgn

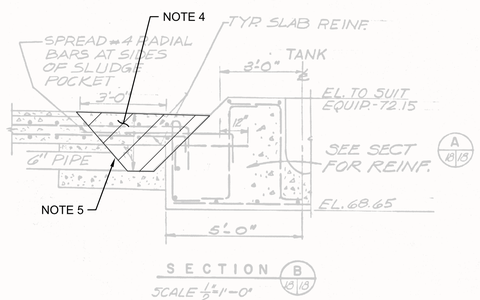
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

NO SCALE

	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO.: 06X1112	TITLE OF SHEET: CIVIL DEMOLITION 92B - AERATION BASINS SECTIONS E-W, GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 64 OF 401







GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

B. FOR BUILDINGS UNDER DEMOLITION AND PARTIAL CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR LATERAL BRACING OF WALLS DUE TO LATERAL SOIL PRESSURE AFTER REMOVAL OF FLOOR SLAB DURING DEMOLITION AND FILLING PROCESSES. LATERAL BRACING TO INCLUDE, BUT NOT LIMITED TO, SHORING, STABILIZERS, AND STRUTS.

SHEET NOTES

1. STRUCTURAL DEMOLITION TO COMPLY WITH 02 41 00, DEMOLITION.
2. REMOVE ALL EQUIPMENT FROM FACILITY.
3. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL.
4. CLSM BACKFILL.
5. PLUG PIPE WITH 2' OF LOW STERNGTH CONCRETE AND LEAVE IN PLACE.
6. CORE DRILL 1' DIAMETER HOLE THROUGH BASE SLAB.
7. DEMOLISH CONCRETE WALL TO COMPLY WITH 31 23 23.15; TRENCH BACKFILL, FOR NEW PIPE ALIGNMENT.

GRCA-257282

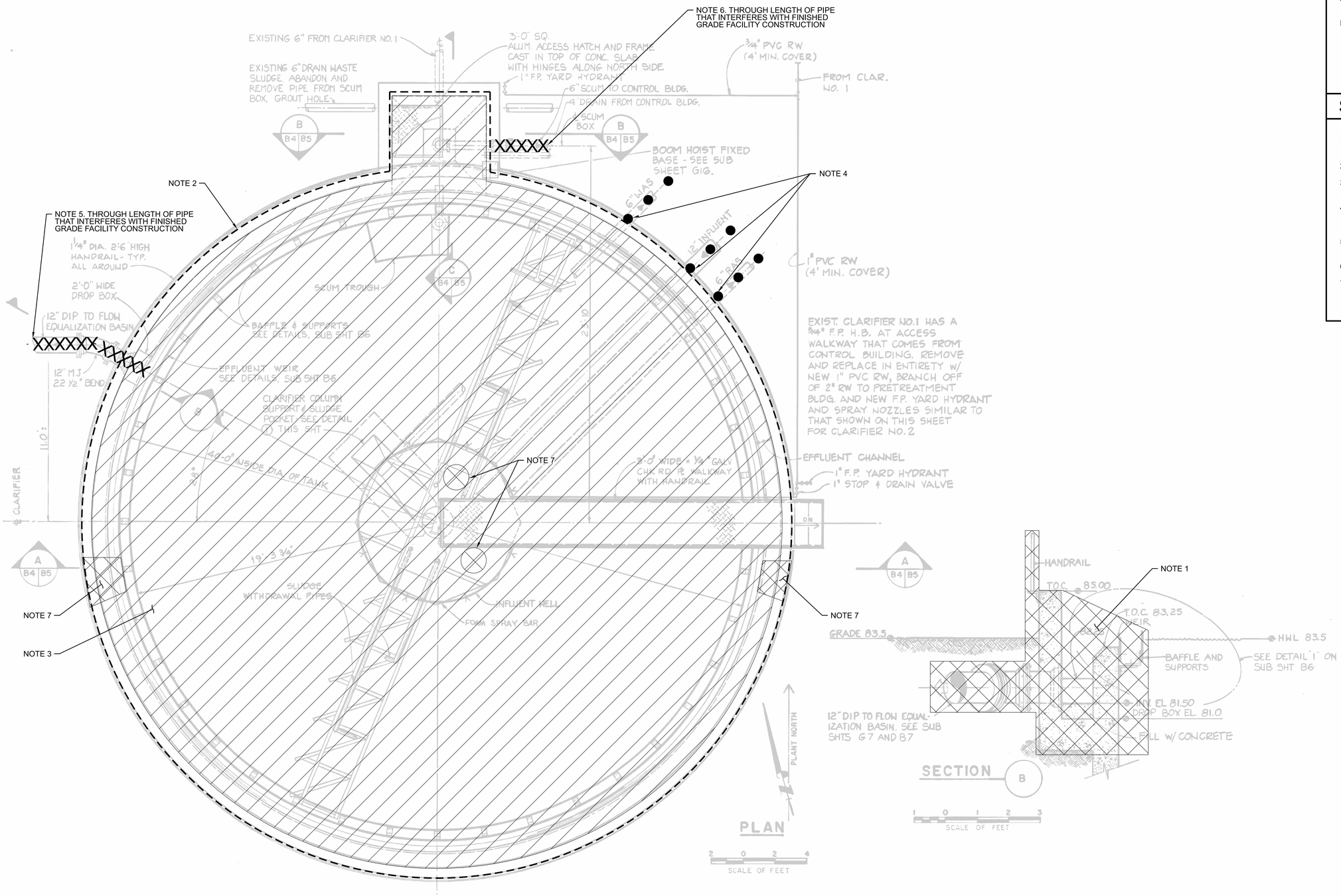
100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:19 SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06X1113_D3167666.dgn

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

NO SCALE

REGISTERED PROFESSIONAL ENGINEER CERTIFICATE NO. 83022 KAYLA D. ARCHER STATE OF ARIZONA U.S.A.	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO.: 06X1113	TITLE OF SHEET: CIVIL DEMOLITION 93 - FINAL SED. TANK PLAN, SECTIONS & DETAILS GRAND CANYON, SOUTH RIM	DRAWING NO.: 113 175376 PMIS/PKG NO.: 257282 SHEET: 65 OF 401



GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

B. FOR BUILDINGS UNDER DEMOLITION AND PARTIAL CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR LATERAL BRACING OF WALLS DUE TO LATERAL SOIL PRESSURE AFTER REMOVAL OF FLOOR SLAB DURING DEMOLITION AND FILLING PROCESSES. LATERAL BRACING TO INCLUDE, BUT NOT LIMITED TO, SHORING, STABILIZERS, AND STRUTS.

SHEET NOTES

1. STRUCTURAL DEMOLITION TO COMPLY WITH 02 41 00, DEMOLITION.
2. REMOVE ALL EQUIPMENT FROM FACILITY.
3. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL.
4. ABANDON PIPE IN PLACE. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.
5. DEMOLISH UTILITY. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.
6. CORE DRILL 1' DIAMETER HOLE THROUGH BASE SLAB.
7. DEMOLISH CONCRETE WALL TO COMPLY WITH 31 23 23.15; TRENCH BACKFILL, FOR NEW PIPE ALIGNMENT.

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

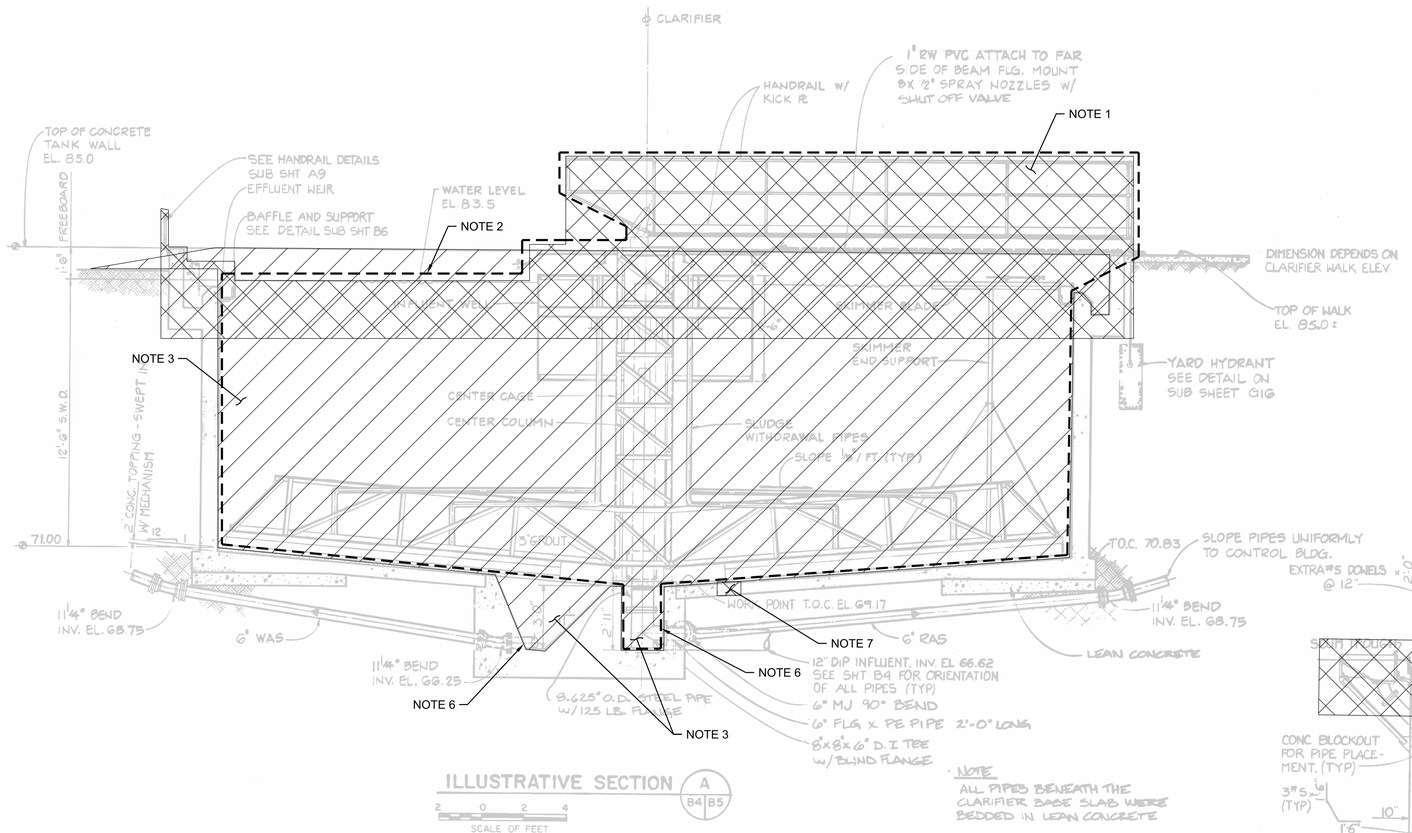
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06X1114	TITLE OF SHEET CIVIL DEMOLITION 94 - SECONDARY CLARIFIER PLAN AND DETAILS GRAND CANYON, SOUTH RIM	NO SCALE DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 66 OF 401	

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:17 SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06X1114_D3167666.dgn

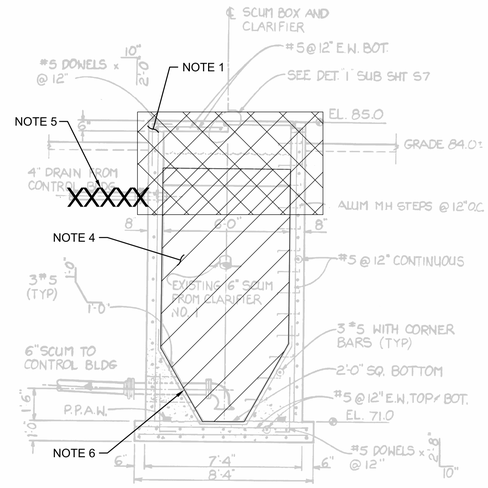
PLOT DATE: 16-JUN-2025 PLOT TIME: 19:18 SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06X1115_D3167666.dgn



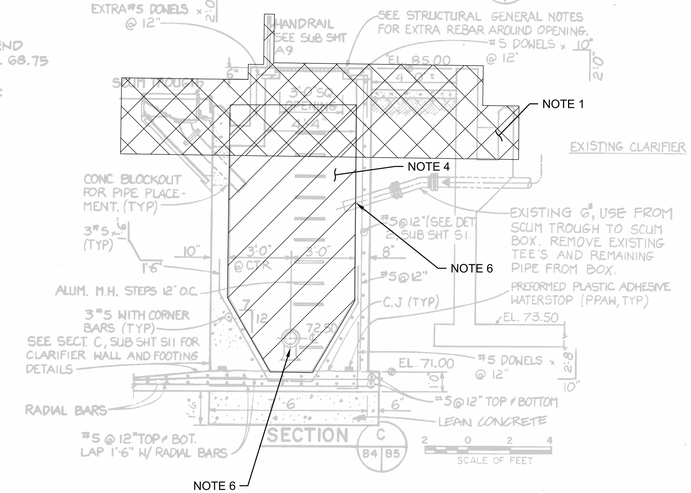
ILLUSTRATIVE SECTION A (B4 | B5)

SCALE OF FEET: 2 0 2 4

NOTE
SEE O AND M EQUIPMENT MANUALS FOR ACTUAL CLARIFIER MECHANISM LAYOUT AND DETAILS



SECTION B (B4 | B5)



SECTION C (B4 | B5)

SCALE OF FEET: 2 0 2 4

GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

B. FOR BUILDINGS UNDER DEMOLITION AND PARTIAL CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR LATERAL BRACING OF WALLS DUE TO LATERAL SOIL PRESSURE AFTER REMOVAL OF FLOOR SLAB DURING DEMOLITION AND FILLING PROCESSES. LATERAL BRACING TO INCLUDE, BUT NOT LIMITED TO, SHORING, STABILIZERS, AND STRUTS.

SHEET NOTES

1. STRUCTURAL DEMOLITION TO COMPLY WITH 02 41 00, DEMOLITION.
2. REMOVE ALL EQUIPMENT FROM FACILITY.
3. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL.
4. CLSM BACKFILL.
5. DEMOLISH UTILITY. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.
6. PLUG PIPE WITH OF LOW STRENGTH CONCRETE AND LEAVE IN PLACE.
7. CORE DRILL 1' DIAMETER HOLE THROUGH BASE SLAB.

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

NO SCALE

ARIZONA BOARD OF TECHNICAL REGISTRATION CERTIFICATE NO. 83022 KAYLA D. ARCHER Date Signed 6/27/2025 ARIZONA U.S.A.
Kylak

A/E FIRM
JACOBS GOVERNMENT SERVICES COMPANY
GREENWOOD VILLAGE, CO

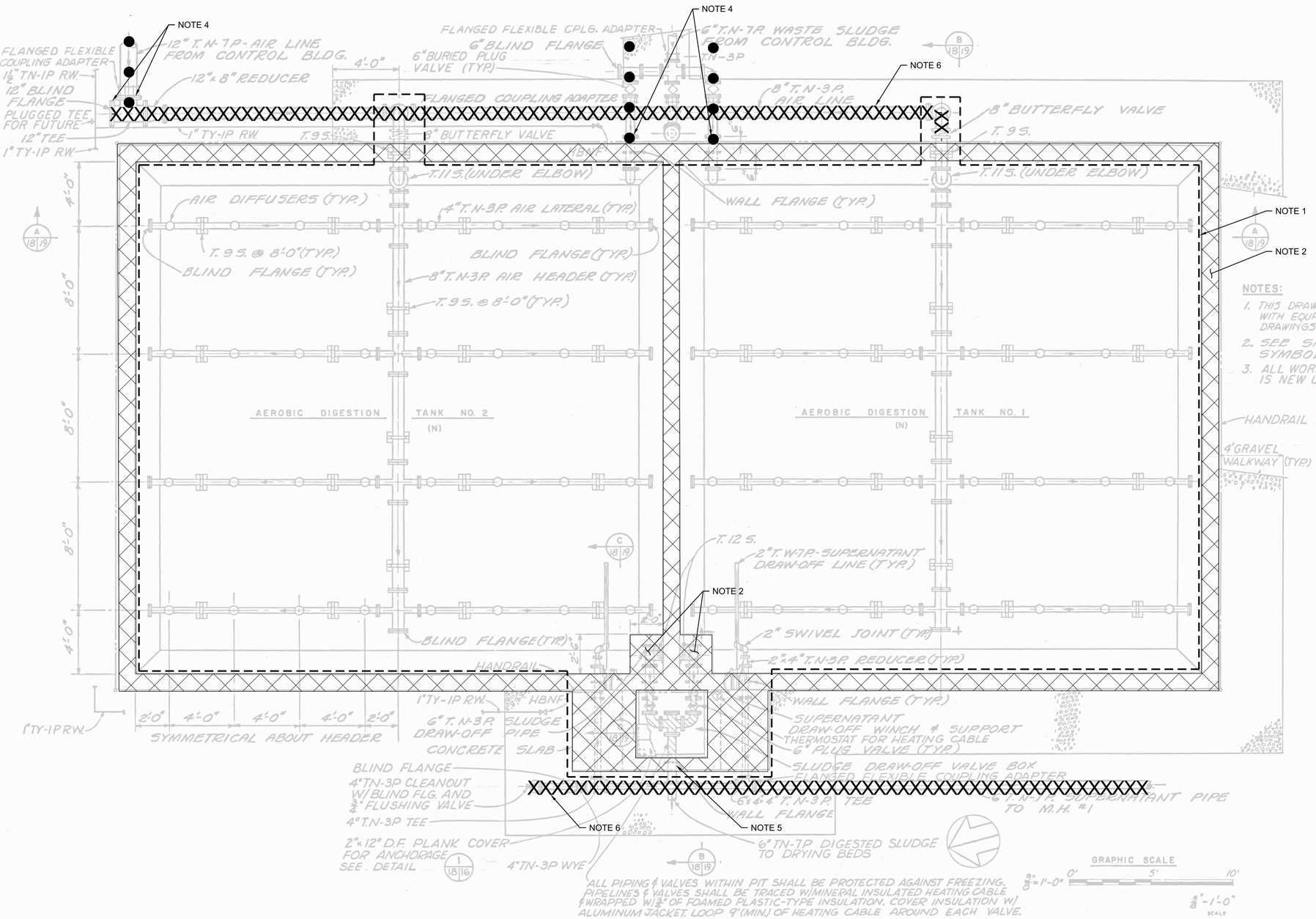
DESIGNED: K ARCHER
CADD: B GYAOUROVA
TECH. REVIEW: D PETERSON
DATE: 06/2025

SUB SHEET NO. 06X1115

TITLE OF SHEET
CIVIL
DEMOLITION
94 - SECONDARY CLARIFIER SECTIONS
GRAND CANYON, SOUTH RIM

DRAWING NO. 113 / 175376
PMIS/PKG NO. 257282
SHEET 67 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS



GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

B. FOR BUILDINGS UNDER DEMOLITION AND PARTIAL CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR LATERAL BRACING OF WALLS DUE TO LATERAL SOIL PRESSURE AFTER REMOVAL OF FLOOR SLAB DURING DEMOLITION AND FILLING PROCESSES. LATERAL BRACING TO INCLUDE, BUT NOT LIMITED TO, SHORING, STABILIZERS, AND STRUTS.

SHEET NOTES

1. REMOVE ALL EQUIPMENT FROM FACILITY.
2. DEMOLISH CONCRETE.
3. DEMOLISH UTILITY.
4. ABANDON PIPE IN PLACE. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OFF.
5. PLUG PIPE WITH 2' LOW STRENGTH CONCRETE AND LEAVE IN PLACE.
6. DEMOLISH UTILITY. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.

GRCA-257282

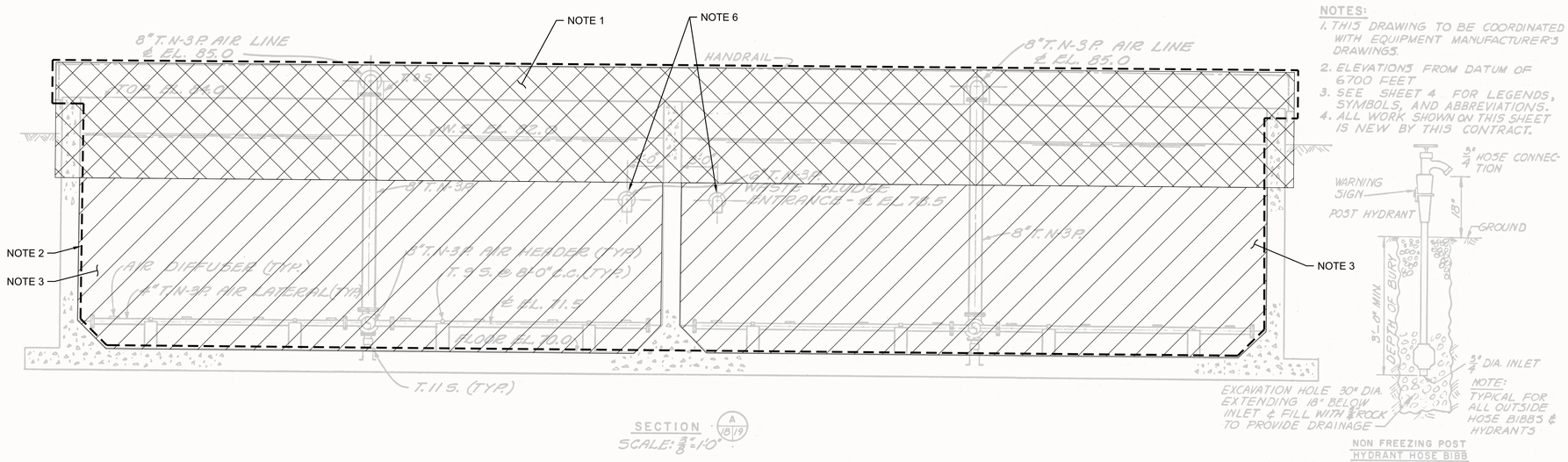
100% COMPLETE CONSTRUCTION DOCUMENTS

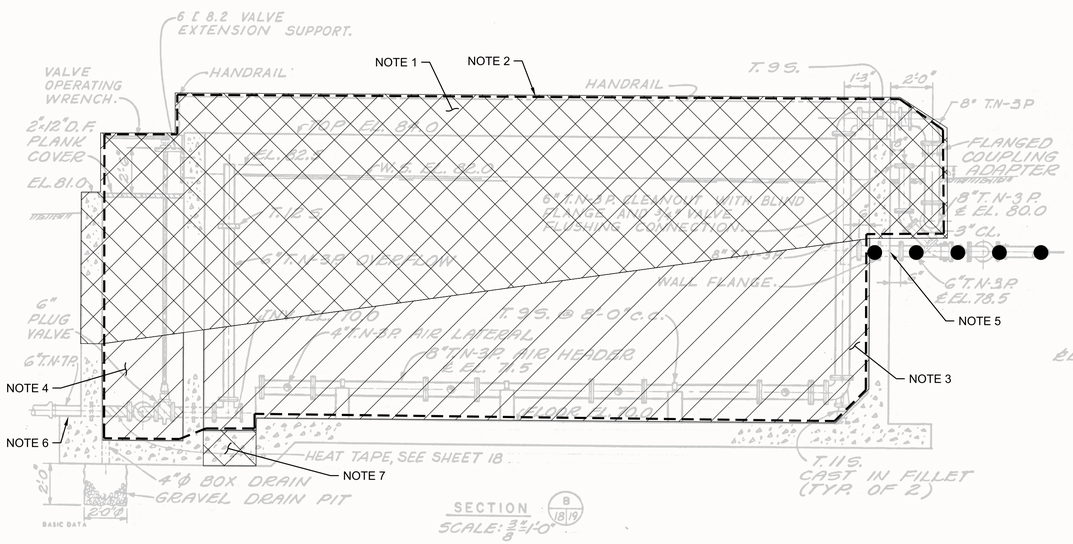
PLOT DATE: 16-JUN-2025 PLOT TIME: 19:17 SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06X1116_D3167666.dgn

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

NO SCALE

	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO.: 06X1116	TITLE OF SHEET: CIVIL DEMOLITION 96 - AEROBIC DIG. TANKS PLAN, GRAND CANYON, SOUTH RIM	DRAWING NO.: 113 / 175376 PMIS/PKG NO.: 257282 SHEET: 68 OF 401





GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

SHEET NOTES

1. STRUCTURAL DEMOLITION TO COMPLY WITH 02 41 00, DEMOLITION.
2. REMOVE ALL EQUIPMENT FROM FACILITY.
3. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL.
4. CLSM BACKFILL.
5. ABANDON PIPE IN PLACE. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.
6. PLUG PIPE AND LEAVE IN PLACE.
7. SAWCUT AND REMOVE CONCRETE BASE SLAB AS SHOWN.

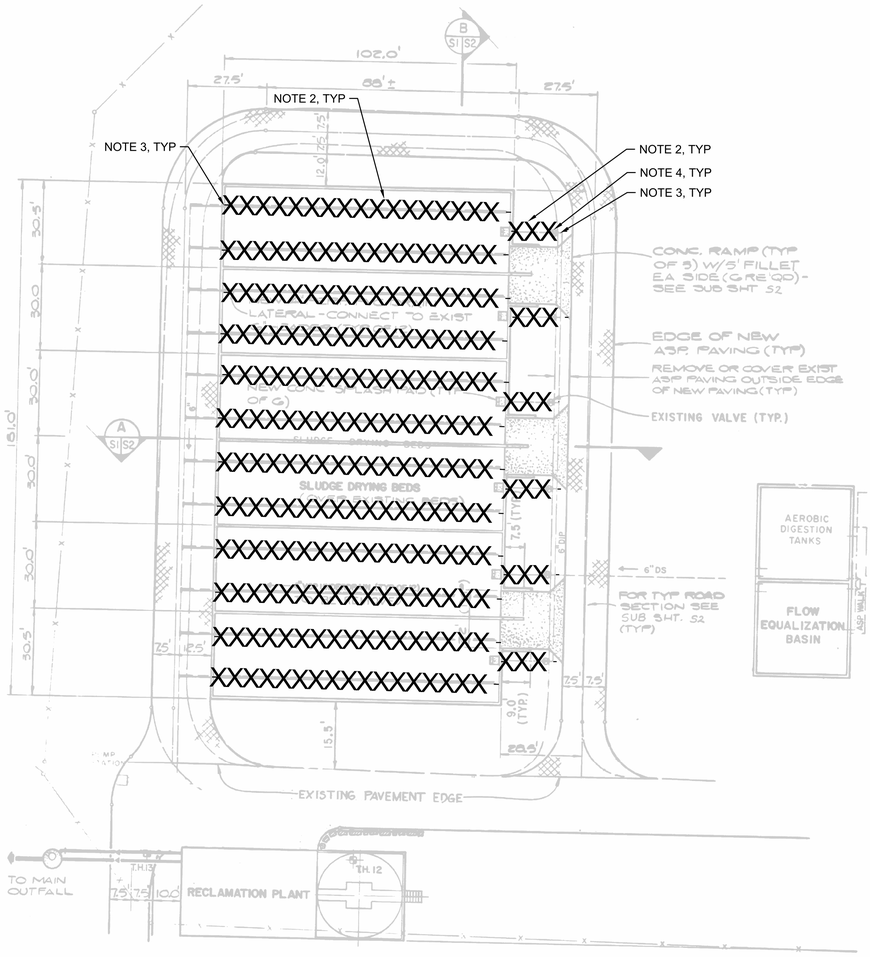
GRCA-257282

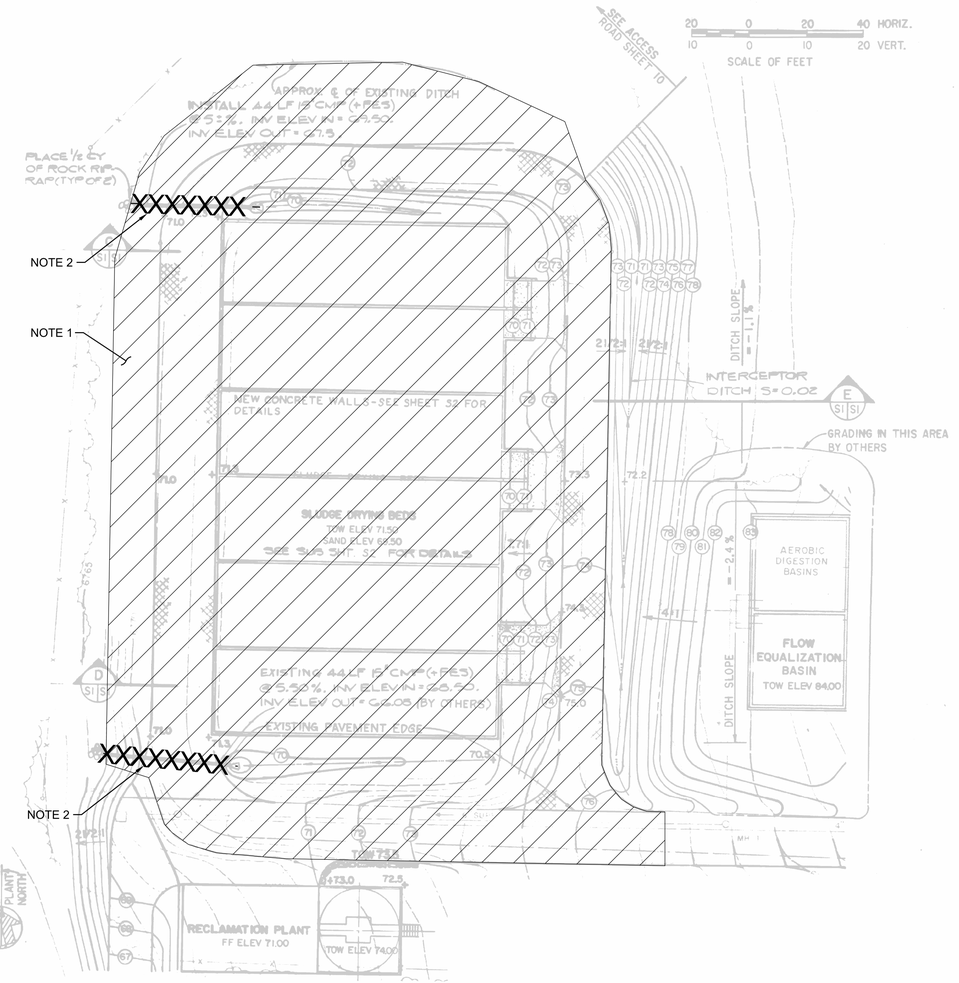
100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:18 SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06X1117_D3167666.dgn

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06X1117	TITLE OF SHEET: CIVIL DEMOLITION 96 - AEROBIC DIG. TANKS SECTIONS AND DETAILS, GRAND CANYON, SOUTH RIM	NO SCALE DRAWING NO. 113 / 175376 PMIS/PKG NO. 257282 SHEET 69 OF 401





GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

SHEET NOTES

1. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL. SEE GRADING LIMITS ON DWG 06C2400.
2. DEMOLISH UTILITY. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.
3. CUT AND NO CAP ON PIPE. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.
4. DEMOLISH VALVE.

GRCA-257282

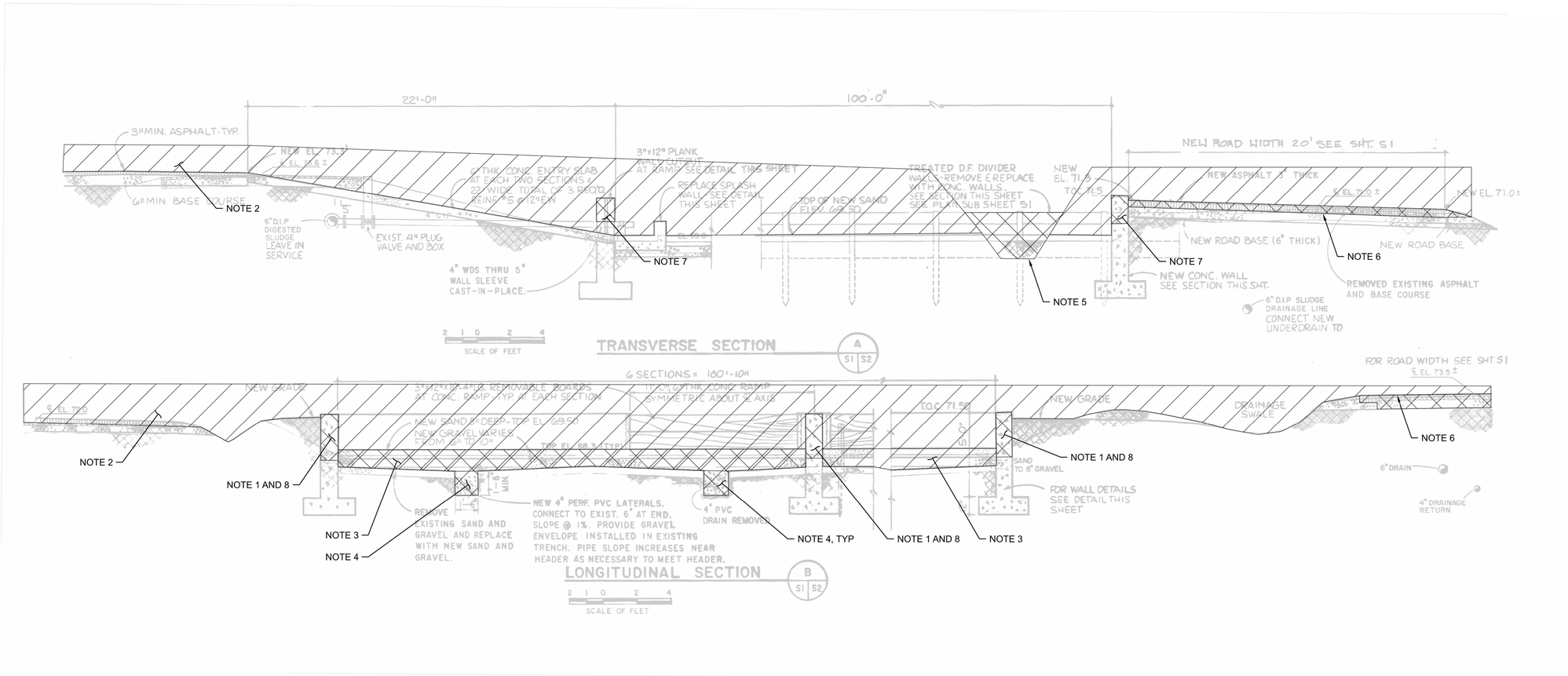
100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:17 SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06X1118_D3167666.dgn

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

NO SCALE

83022 KAYLA D. ARCHER REGISTERED PROFESSIONAL ENGINEER ARIZONA, U.S.A.	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO.: 06X1118	TITLE OF SHEET: CIVIL DEMOLITION 97 - SLUDGE DRYING BEDS SITE AND GRADING PLAN, GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 70 OF 401



GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

SHEET NOTES

1. STRUCTURAL DEMOLITION TO COMPLY WITH 02 41 00, DEMOLITION.
2. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL.
3. REMOVE SAND AND GRAVEL FILL AS APPROPRIATE FOR WASTE MATERIAL.
4. DEMOLISH UTILITY. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.
5. EXCAVATE AND DEMOLISH CONCRETE FOR ENTIRE LIMITS OF SWALE.
6. WHERE NEW ROAD FINISHED ELEVATION COMES WITHIN 8" OF EXISTING ROAD ELEVATION, DEMOLISH EXISTING ASPHALT AND THEN PLACE BASE COURSE AND ASPHALT CONCRETE PER DETAIL 3212-210.
7. WHERE NEW ROAD IS PLACED OVER THE WALLS OF THE DRYING BEDS, DEMOLISH CONCRETE TO MIN 18" BELOW SUBGRADE.
8. WHERE FACILITY 12 AND THE STORAGE STRUCTURE ARE PLACED OVERTOP OF THIS EXISTING FACILITY, DEMOLISH RAMP AND WALLS MIN 18" BELOW BOTTOM OF FOOTING.

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

Registered Professional Engineer (Civil) CERTIFICATE NO. 83022 KAYLA D. ARCHER Date Signed 9-23-2025 ARIZONA, U.S.A.	A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06X1119	TITLE OF SHEET CIVIL DEMOLITION 97 - SLUDGE DRYING BEDS SECTIONS AND DETAILS GRAND CANYON, SOUTH RIM	NO SCALE DRAWING NO. 113 / 175376 PMIS/PKG NO. 257282 SHEET 71 OF 401

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:18 SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06X1119_D3167666.dgn

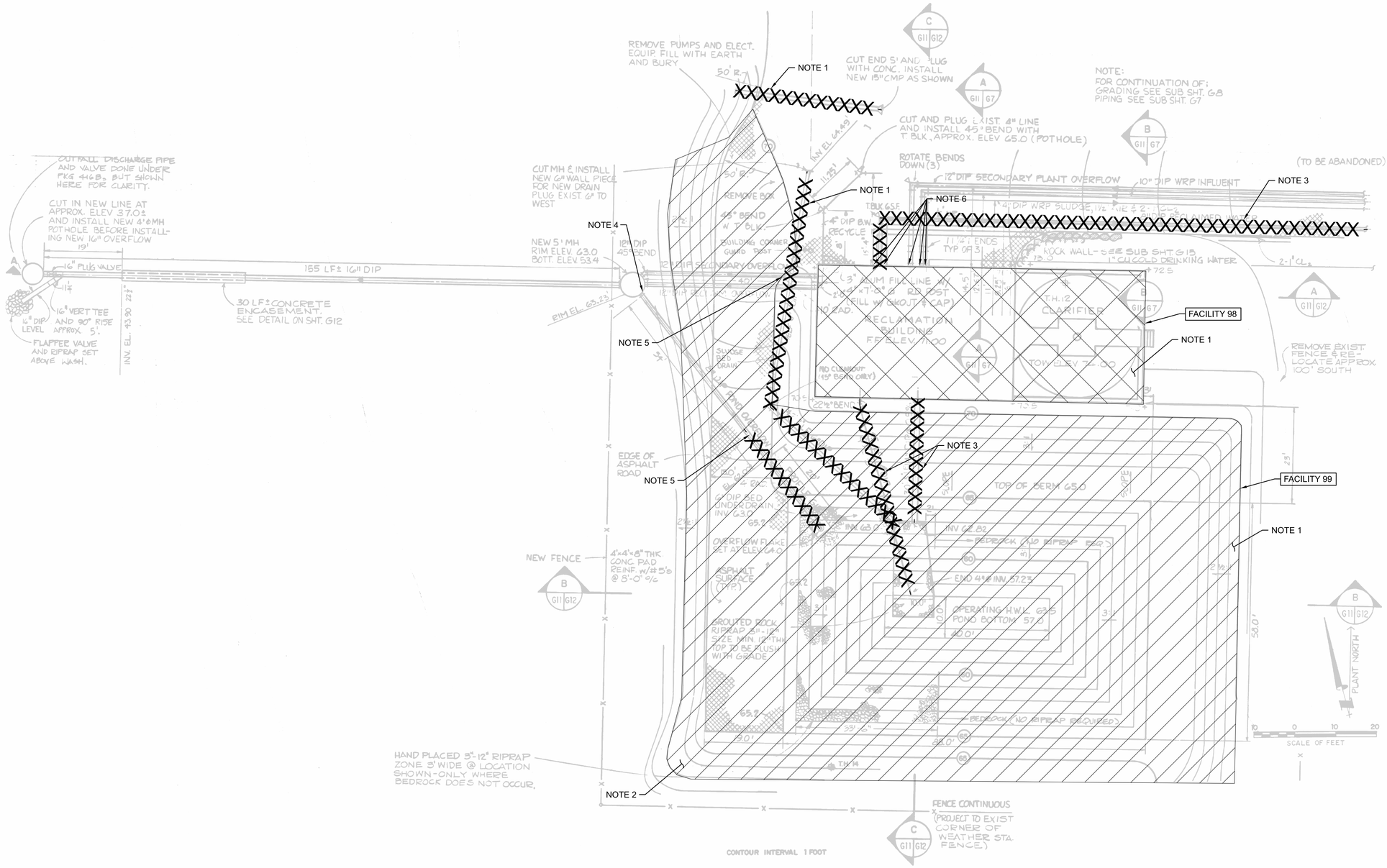
PLOT DATE: 16-JUN-2025 PLOT TIME: 19:17 SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06X1120_D3167666.dgn

GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

SHEET NOTES

1. STRUCTURAL DEMOLITION TO COMPLY WITH 02 41 00, DEMOLITION.
2. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL. SEE GRADING LIMITS ON DWG 06C2400.
3. DEMOLISH UTILITY. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.
4. PLUG AND REPAIR MANHOLE AFTER PIPE DEMOLITION.
5. DEMOLISH PIPE UP UNTIL MANHOLE TIE-IN LOCATION, AS SHOWN ON SHEET 07Y2000.
6. CUT AND NO CAP ON PIPE.



NO SCALE

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY; GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER; CADD: B GYAOUROVA; TECH. REVIEW: D PETERSON; DATE: 06/2025	SUB SHEET NO. 06X1120	TITLE OF SHEET: CIVIL DEMOLITION 98/99 - BACKWASH POND PIPING AND GRADING, GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376; PMIS/PKG NO. 257282; SHEET 72 OF 401

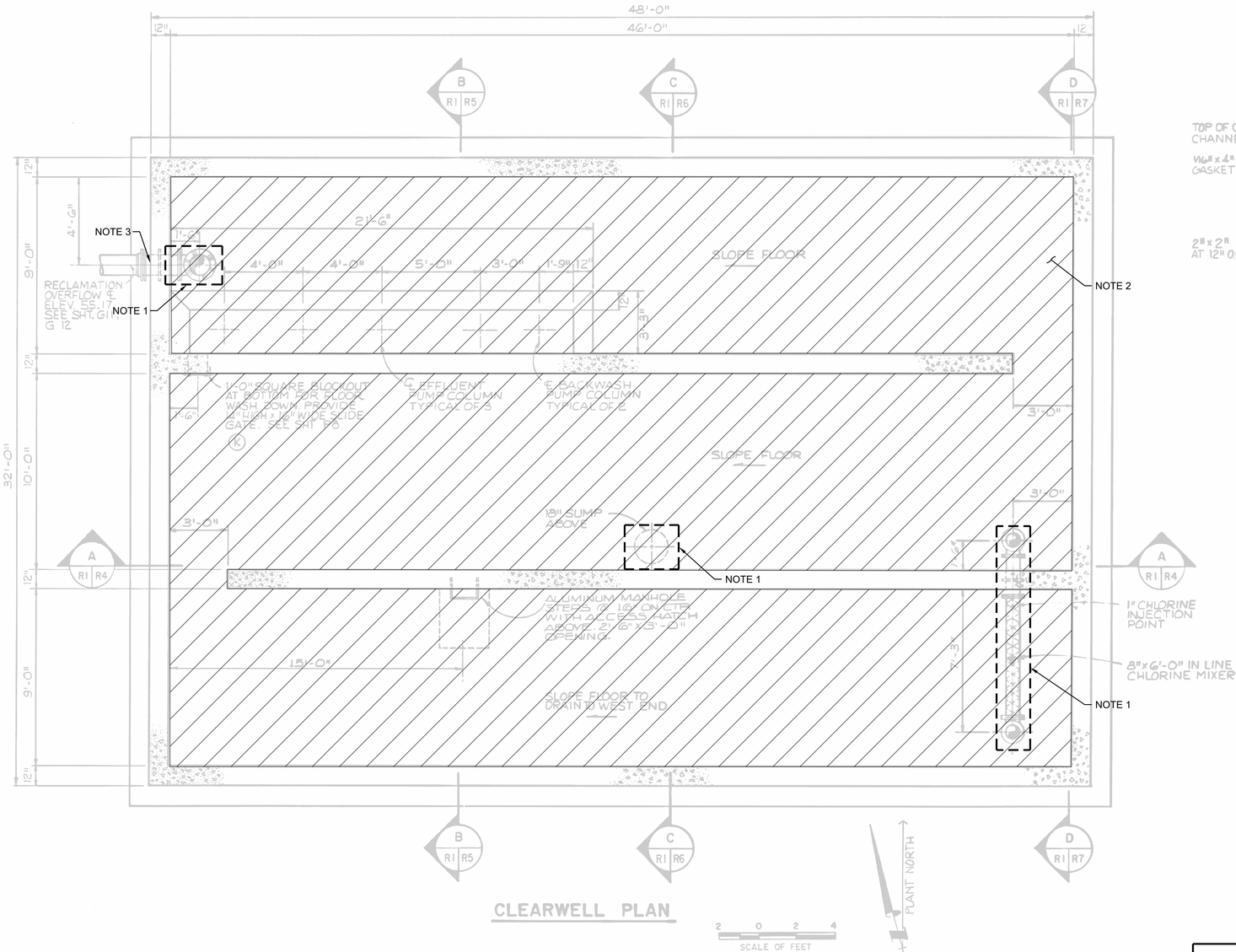
100% COMPLETE CONSTRUCTION DOCUMENTS

GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

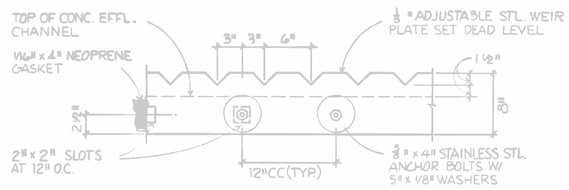
SHEET NOTES

1. REMOVE ALL EQUIPMENT FROM FACILITY.
2. CLSM BACKFILL IN ALL LOWEST FLOOR ROOMS.
3. PLUG PIPE WITH 2' LOW STRENGTH CONCRETE AND LEAVE IN PLACE.



CLEARWELL PLAN

SCALE OF FEET



WEIR PLATE DETAIL

SCALE OF INCHES

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

Registered Professional Engineer Certificate No. 83022 KAYLA D. ARCHER Date Signed 6-23-2025 ARIZONA, U.S.A.	A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06X1121	TITLE OF SHEET CIVIL DEMOLITION 98 - RECLAMATION PLANT CLEARWELL PLAN GRAND CANYON, SOUTH RIM	NO SCALE DRAWING NO. 113 / 175376 PMIS/PKG NO. 257282 SHEET 73 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

GRCA-257282

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:18 SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06X1121_D3167666.dgn

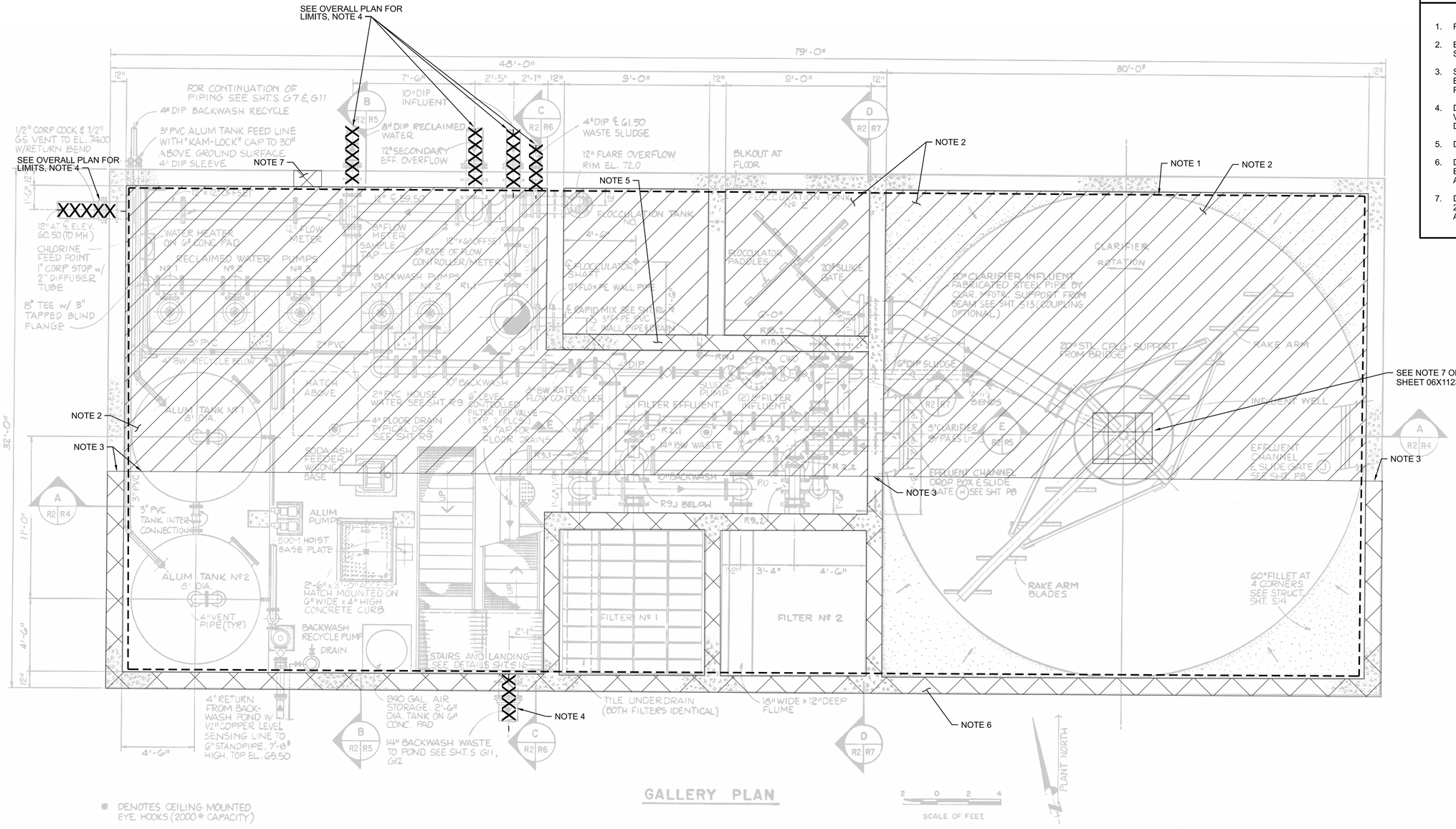
GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

B. FOR BUILDINGS UNDER DEMOLITION AND PARTIAL CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR LATERAL BRACING OF WALLS DUE TO LATERAL SOIL PRESSURE AFTER REMOVAL OF FLOOR SLAB DURING DEMOLITION AND FILLING PROCESSES. LATERAL BRACING TO INCLUDE, BUT NOT LIMITED TO, SHORING, STABILIZERS, AND STRUTS.

SHEET NOTES

1. REMOVE ALL EQUIPMENT FROM FACILITY.
2. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL.
3. SEE GRADING PLANS FOR DEMOLITION AND BACKFILL LIMITS REQUIRED FOR STORMWATER POND PLACEMENT.
4. DEMOLISH UTILITY. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.
5. DEMOLISH CONCRETE.
6. DEMOLISH SOUTHERN WALL ON FIRST LEVEL BASEMENT TO ALLOW FOR DRAINAGE TO OCCUR AFTER BACKFILL.
7. DEMOLISH CONCRETE WALL TO COMPLY WITH 31 23 23.15; TRENCH BACKFILL, FOR NEW PIPE ALIGNMENT.



* DENOTES CEILING MOUNTED EYE HOOKS (2000# CAPACITY)

GALLERY PLAN

SCALE OF FEET 2 0 2 4

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG 0" 1"

NO SCALE

	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY; GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER; CADD: B GYAOUROVA; TECH. REVIEW: D PETERSON; DATE: 06/2025	SUB SHEET NO. 06X1122	TITLE OF SHEET: CIVIL DEMOLITION 98 - RECLAMATION PLANT GALLERY PLAN; GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376; PMIS/PKG NO. 257282; SHEET 74 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:17 SS6iV8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA257282\Microstation V8i Drawings\CIVIL\06X1122_D3167666.dgn

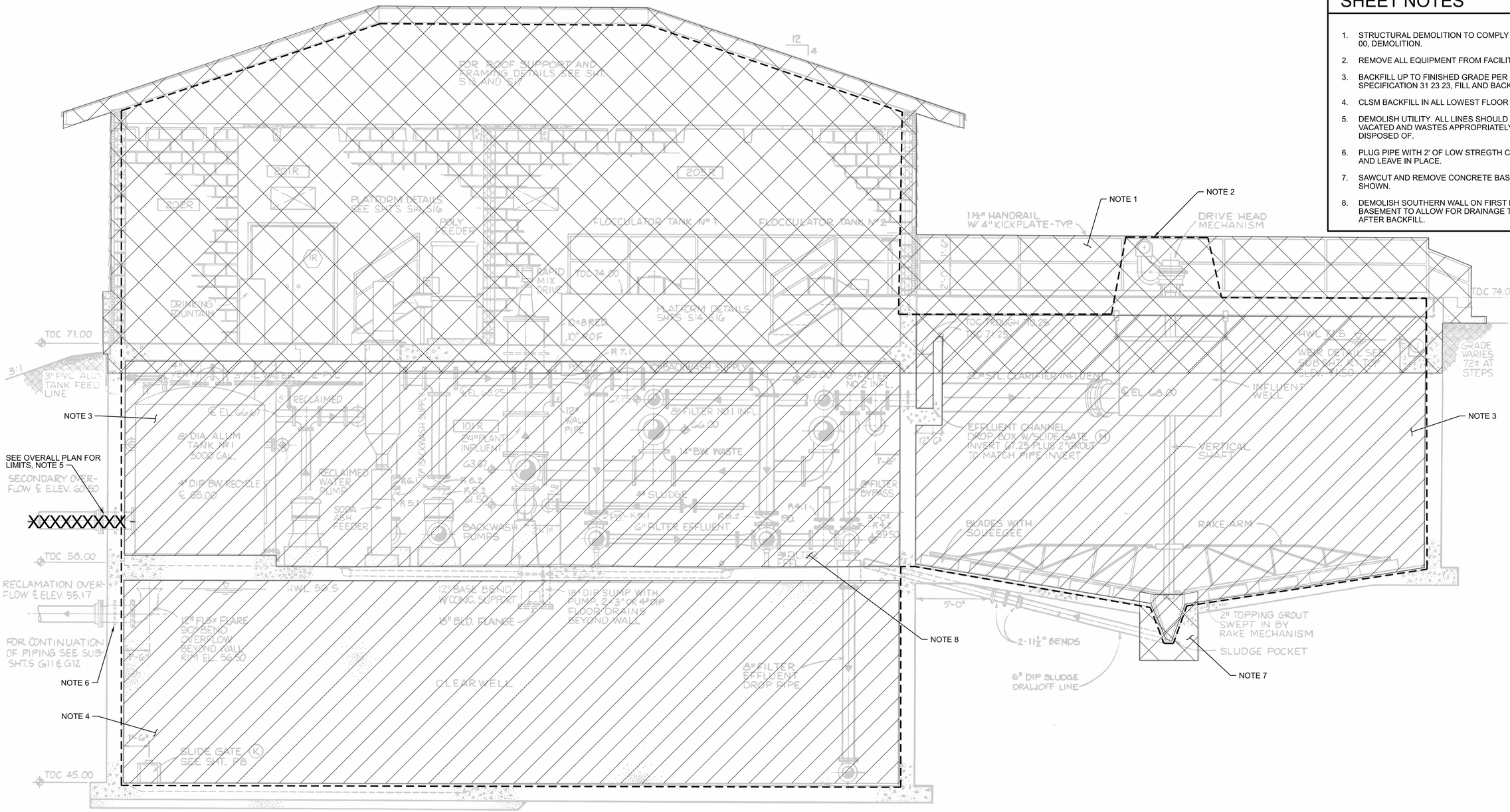
GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

B. FOR BUILDINGS UNDER DEMOLITION AND PARTIAL CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR LATERAL BRACING OF WALLS DUE TO LATERAL SOIL PRESSURE AFTER REMOVAL OF FLOOR SLAB DURING DEMOLITION AND FILLING PROCESSES. LATERAL BRACING TO INCLUDE, BUT NOT LIMITED TO, SHORING, STABILIZERS, AND STRUTS.

SHEET NOTES

1. STRUCTURAL DEMOLITION TO COMPLY WITH 02 41 00, DEMOLITION.
2. REMOVE ALL EQUIPMENT FROM FACILITY.
3. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL.
4. CLSM BACKFILL IN ALL LOWEST FLOOR ROOMS.
5. DEMOLISH UTILITY. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.
6. PLUG PIPE WITH 2' OF LOW STREGTH CONCRETE AND LEAVE IN PLACE.
7. SAWCUT AND REMOVE CONCRETE BASE SLAB AS SHOWN.
8. DEMOLISH SOUTHERN WALL ON FIRST LEVEL BASEMENT TO ALLOW FOR DRAINAGE TO OCCUR AFTER BACKFILL.



SECTION A
R1,R2,R3 | R4
2 0 2 4
SCALE OF FEET

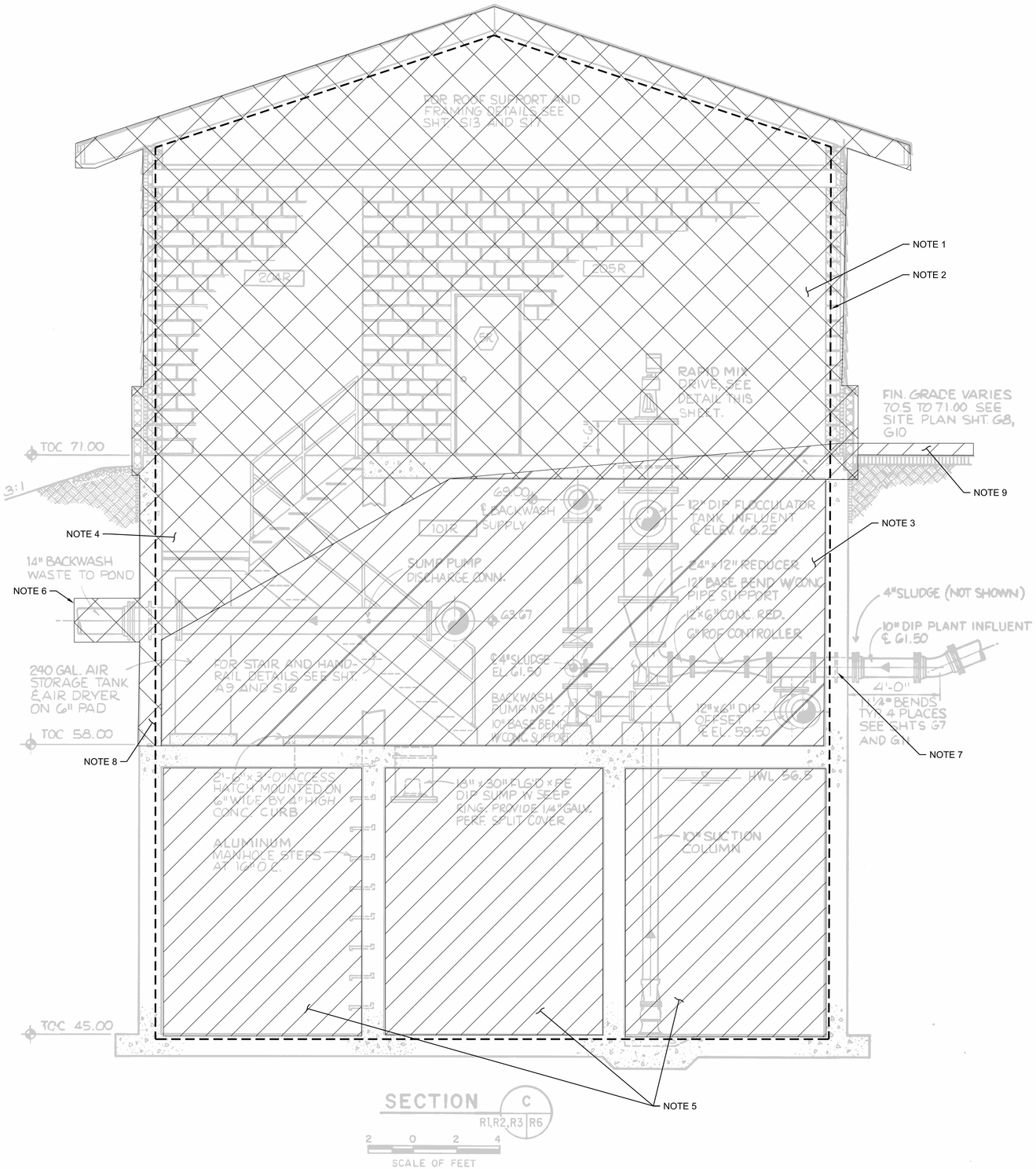
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

83022 KAYLA D. ARCHER	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06X1123	TITLE OF SHEET: CIVIL DEMOLITION 98 - RECLAMATION PLANT SECTION E-W, GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 75 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:18 SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8I Drawings\CIVIL\06X1123_D3167666.dgn



GENERAL SHEET NOTES

A. NGVD29 DATUM (AS-BUILTS) IS 3.25 FEET LOWER THAN NAVD88 (2025 SET).

B. FOR BUILDINGS UNDER DEMOLITION AND PARTIAL CONSTRUCTION, CONTRACTOR IS RESPONSIBLE LATERAL BRACING LATERAL BRACING OF WALLS DUE TO LATERAL SOIL PRESSURE AFTER REMOVAL OF FLOOR SLAB DURING DEMOLITION AND FILLING PROCESSES. LATERAL BRACING TO INCLUDE, BUT NOT LIMITED TO, SHORING, STABILIZERS, AND STRUTS.

SHEET NOTES

1. STRUCTURAL DEMOLITION TO COMPLY WITH 02 41 00, DEMOLITION.
2. REMOVE ALL EQUIPMENT FROM FACILITY.
3. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL.
4. COMPLETELY DEMOLISH AND REMOVE ALL STRUCTURAL ELEMENTS WHERE NEW STORMWATER POND IS PLANNED TO BE EXCAVATED TO.
5. CLSM BACKFILL IN ALL LOWEST FLOOR ROOMS.
6. DEMOLISH UTILITY. ALL LINES SHOULD BE VACATED AND WASTES APPROPRIATELY DISPOSED OF.
7. PLUG PIPE WITH 2' OF LOW STRENGTH CONCRETE AND LEAVE IN PLACE.
8. DEMOLISH SOUTHERN WALL ON FIRST LEVEL BASEMENT TO ALLOW FOR DRAINAGE TO OCCUR AFTER BACKFILL.
9. WHERE NEW ROAD FINISHED ELEVATION COMES WITHIN 8" OF EXISTING ROAD ELEVATION, DEMOLISH EXISTING ASPHALT AND THEN PLACE BASE COURSE AND ASPHALT CONCRETE PER DETAIL 3212-210.

GRCA-257282

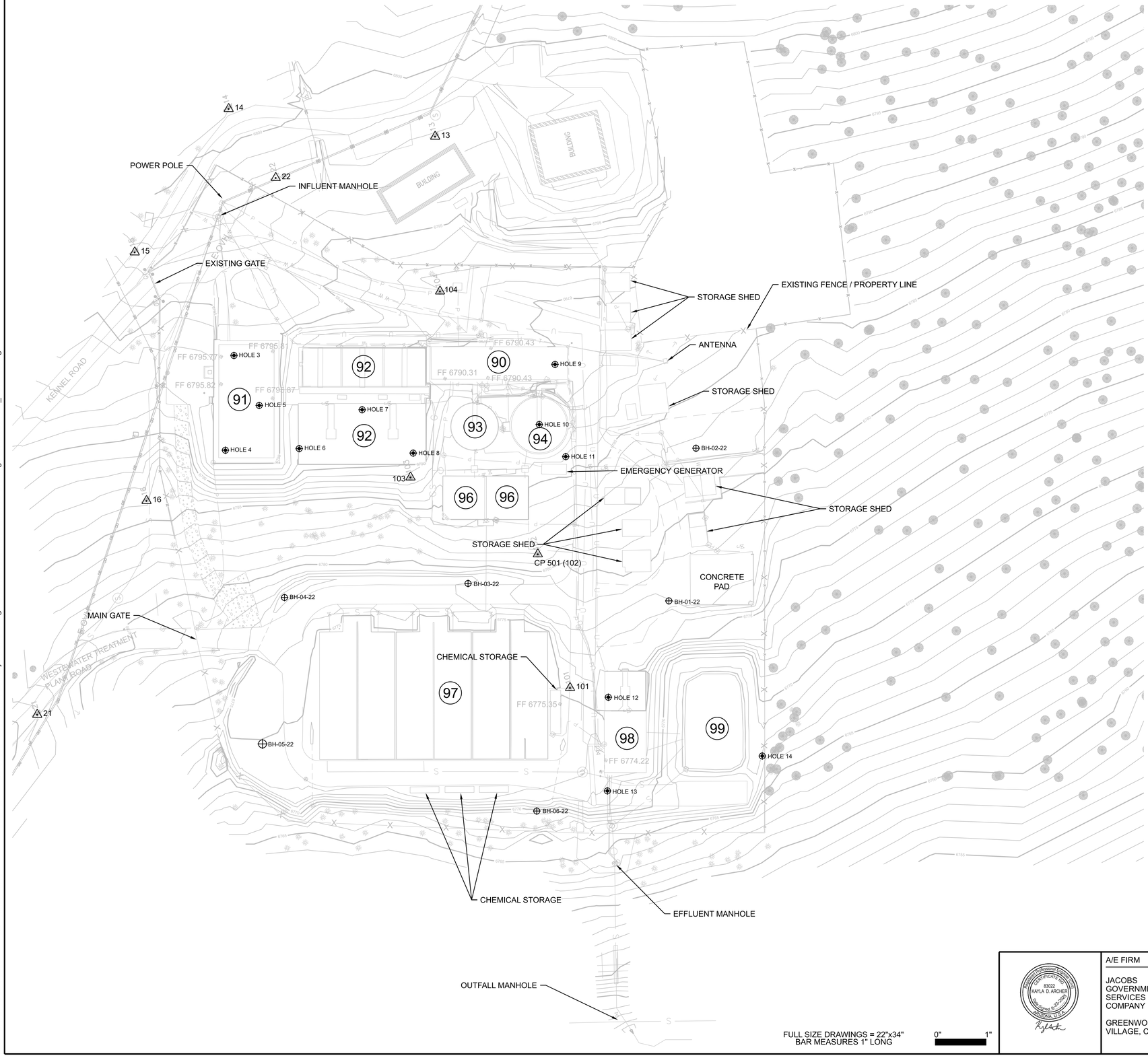
100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:17 SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i DrawingsICIVILL06X1124_D3167666.dgn

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

NO SCALE

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO.: 06X1124	TITLE OF SHEET: CIVIL DEMOLITION 98 - RECLAMATION PLANT SECTION N-S GRAND CANYON, SOUTH RIM	DRAWING NO.: 113 175376 PMIS/PKG NO.: 257282 SHEET: 76 OF 401	



N

0 40 80 120
Scale In Feet

GENERAL SHEET NOTES

A. THE CHEN & ASSOCIATES BORING INFORMATION IS INCLUDED AS AN APPENDIX TO THE 2022 SHANNON AND WILSON REPORT

FACILITIES LEGEND

- 90 CONTROL BUILDING
- 91 PRETREATMENT, BLOWER, AND DIGESTER BUILDING
- 92 AERATION TANKS
- 93 CLARIFIER NO. 1
- 94 CLARIFIER NO. 2
- 96 FLOW EQUALIZATION TANKS
- 97 SLUDGE DRYING BEDS 1-6
- 98 RECLAMATION PLANT
- 99 BACKWASH HOLDING POND

GEOTECHNICAL EXPLORATION LEGEND

- 1986 CHEN & ASSOCIATES BORING
- 2022 SHANNON AND WILSON BORING

SURVEY CONTROL

PT#	NORTHING	EASTING	ELEV	DESCRIPTION
CP 501	1837408.94	630936.82	6781.95	2" ALUM CAP MARKED "BOHANNAN HUSTON INC 22 177 01 CONTROL POINT
13	1837408.12	631274.28	6797.28	CNPT SET 60D
14	1837560.03	631334.41	6800.58	CNPT SET 60D
15	1837658.61	631242.98	6797.74	CNPT SET 60D
16	1837696.67	631051.50	6786.08	CNPT SET 60D
21	1837820.31	630909.40	6784.02	CNPT 21 SET MAG
22	1837537.23	631273.00	6797.99	TBM
101	1837409.71	630828.96	6775.33	FND MAGSPK
102	1837408.99	630936.82	6781.86	FND ALCAP
103	1837491.32	631019.39	6788.53	FND HUB + MAG
104	1837433.73	631155.45	6792.10	FND MAGSPK

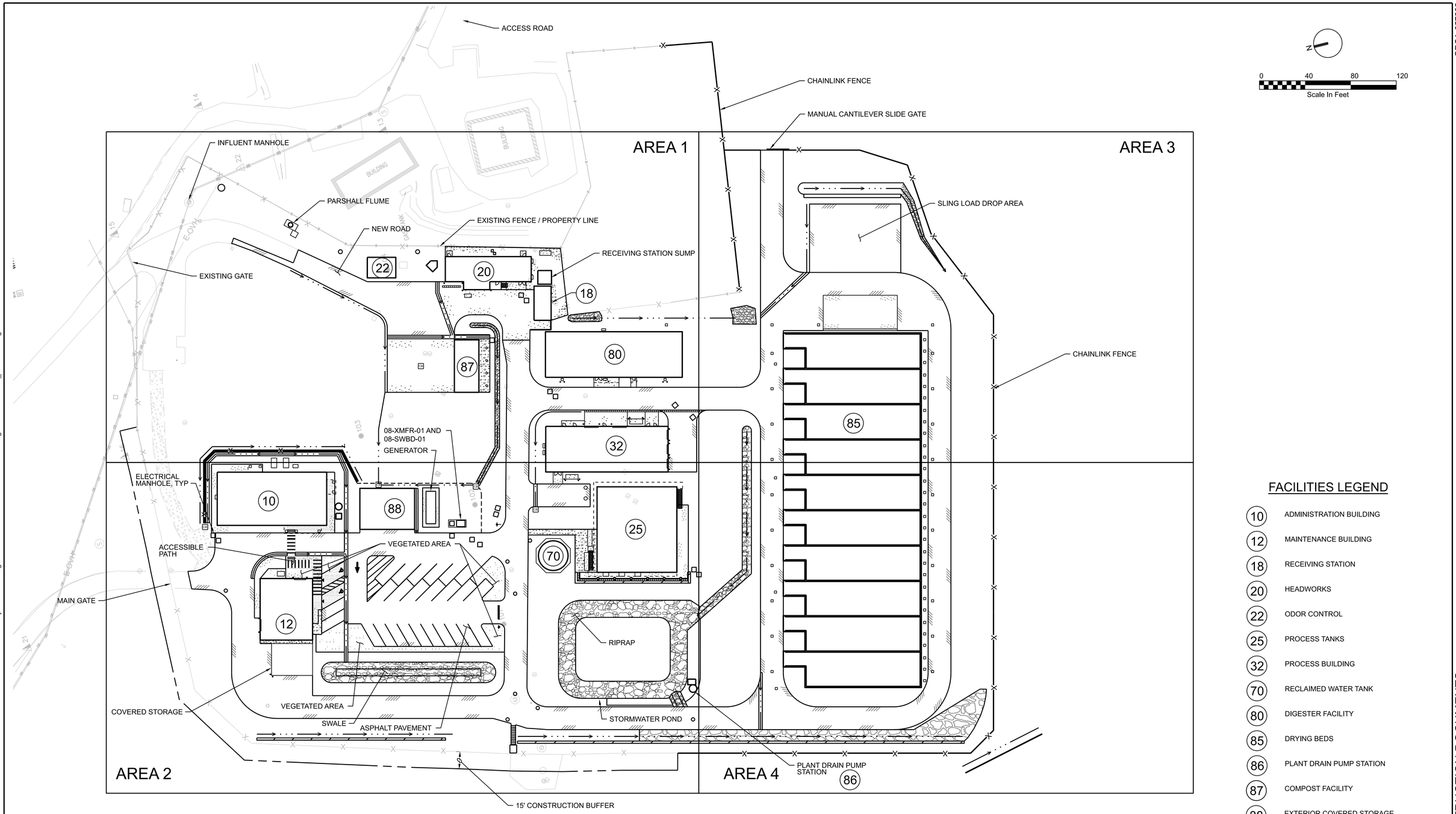
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06C1000	TITLE OF SHEET CIVIL EXISTING SITE PLAN GRAND CANYON, SOUTH RIM	DRAWING NO. 113 / 175376 PMIS/PKG NO. 257282 SHEET 77 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

GRCA-257282

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C1000_D3167666.dgn



FACILITIES LEGEND

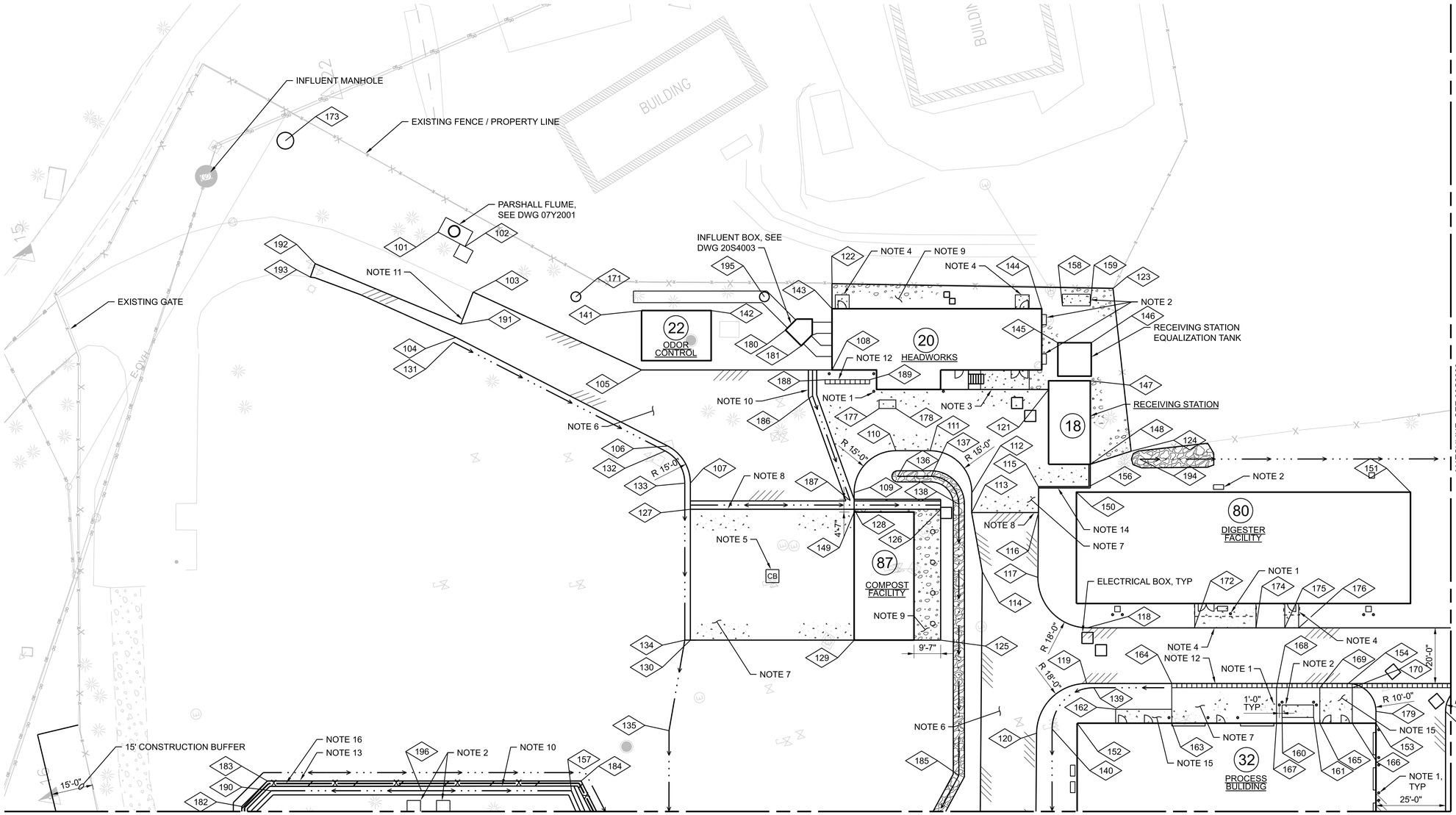
10	ADMINISTRATION BUILDING
12	MAINTENANCE BUILDING
18	RECEIVING STATION
20	HEADWORKS
22	ODOR CONTROL
25	PROCESS TANKS
32	PROCESS BUILDING
70	RECLAIMED WATER TANK
80	DIGESTER FACILITY
85	DRYING BEDS
86	PLANT DRAIN PUMP STATION
87	COMPOST FACILITY
88	EXTERIOR COVERED STORAGE

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

83022 KAYLA D. ARCHER REGISTERED LANDSCAPE ARCHITECT ARIZONA, U.S.A. 6-30-2026	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06C2000	TITLE OF SHEET: CIVIL SITE PLAN OVERALL GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 78 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 17-JUN-2025 PLOT TIME: 13:48 SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2000_D3167666.dgn



0 20 40 60
Scale In Feet

GENERAL SHEET NOTES

A. REFERENCE LANDSCAPE SHEETS FOR LOCATIONS OF PLANTING, GRASS SEEDING, VEGETATED AREAS AND OTHER LANDSCAPE DETAILS.

SHEET NOTES

1. BOLLARD (3305-954) TYP, 18 THIS SHEET
2. HVAC PAD (0330-056G)
3. STAIR LANDING, SEE SHEET 20S1030
4. DOOR LANDING (3213-220)
5. CATCH BASIN (3344-780) SEE SHEET 06C2401
6. ASPHALT PAVEMENT (3212-210)
7. CONCRETE PAVEMENT (3213-240)
8. ASPHALT TO CONCRETE CONNECTION (3213-250)
9. CRUSHED GRAVEL (3215-260)
10. VALLEY GUTTER (3216-330)
11. PAVEMENT CONNECTION (3212-215)
12. TRENCH DRAIN (3344-790)
13. MODULAR BLOCK GRAVITY RETAINING WALL, SEE SPECIFICATION 32 32 17
14. CONCRETE CURB (3216-315)
15. CONCRETE SIDEWALK (3213-220)
16. 4' CHAINLINK FENCE. CORE DRILL AND PLACE STAINLESS STEEL SLEEVE, GROUT IN PLACE. FENCE TO FOLLOW SPECIFICATION 32 31 13.

COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
101	PARSHALL FLUME CORNER	1837512.52	631215.09
102	PARSHALL FLUME CORNER	1837504.36	631207.71
103	EDGE OF PAVEMENT	1837505.43	631191.13
104	EDGE OF PAVEMENT	1837515.43	631176.86
105	EDGE OF PAVEMENT	1837453.50	631149.39
106	EDGE OF PAVEMENT, PC	1837450.97	631120.64
107	EDGE OF PAVEMENT, PT	1837446.27	631105.72
108	EDGE OF PAVEMENT	1837387.09	631132.89
109	EDGE OF PAVEMENT, PC	1837389.98	631088.27
110	EDGE OF PAVEMENT, PT	1837371.81	631099.22
111	EDGE OF PAVEMENT, PC	1837359.90	631096.26
112	EDGE OF PAVEMENT, PT	1837348.99	631077.96
113	END OF CONC PAVEMENT	1837350.76	631071.10
114	EDGE OF PAVEMENT	1837352.16	631049.62
115	EDGE OF PAVEMENT	1837325.14	631074.34
116	END OF CONC PAVEMENT	1837327.46	631065.31
117	EDGE OF PAVEMENT, PC	1837333.27	631042.78
118	EDGE OF PAVEMENT, PT	1837320.17	631020.82
119	EDGE OF PAVEMENT, PC	1837325.44	631001.56
120	EDGE OF PAVEMENT, PT	1837347.21	630988.58
121	EDGE OF PAVEMENT	1837313.28	631107.34
122	EDGE OF GRAVEL	1837379.62	631162.96

COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
123	EDGE OF GRAVEL	1837282.05	631137.00
124	EDGE OF GRAVEL	1837289.85	631078.69
125	EDGE OF GRAVEL	1837372.60	631029.31
126	EDGE OF GRAVEL	1837361.27	631074.93
127	CORNER OF CONCRETE SLAB	1837448.53	631096.60
128	CORNER OF CONCRETE SLAB	1837391.44	631082.42
129	CORNER OF CONCRETE SLAB	1837402.77	631036.81
130	CORNER OF CONCRETE SLAB	1837459.86	631050.99
131	DITCH CL	1837516.74	631175.35
132	DITCH CL, PC	1837452.28	631119.13
133	DITCH CL, PT	1837448.21	631106.20
134	DITCH CL	1837461.81	631051.47
135	DITCH CL	1837475.13	631021.28
136	DITCH CL	1837373.46	631090.14
137	DITCH CL, PC	1837361.79	631087.24
138	DITCH CL, PT	1837354.49	631075.12
139	DITCH CL, PC	1837323.33	630999.45
140	DITCH CL, PT	1837341.46	630988.68
141	BUILDING CORNER-22	1837448.33	631170.11
142	BUILDING CORNER-22	1837424.07	631164.09
143	BUILDING CORNER-20	1837381.78	631154.24
144	BUILDING CORNER-20	1837308.67	631136.08

COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
145	BUILDING CORNER-18	1837306.00	631122.83
146	BUILDING CORNER-18	1837294.35	631119.94
147	BUILDING CORNER-18	1837297.97	631106.75
148	BUILDING CORNER-18	1837305.20	631077.64
149	BUILDING CORNER-87	1837391.68	631081.45
150	BUILDING CORNER-80	1837312.46	631069.14
151	BUILDING CORNER-80	1837196.00	631040.21
152	BUILDING CORNER-32	1837332.22	630988.53
153	BUILDING CORNER-32	1837228.06	630962.65
154	EDGE OF PAVEMENT, PT	1837234.32	630978.90
155	EDGE OF PAVEMENT, PC	1837202.77	630960.75
156	FACE OF CURB	1837307.61	631070.00
157	VALLEY GUTTER CL	1837514.38	631008.67
158	CONCRETE SLAB CORNER	1837301.21	631135.32
159	CONCRETE SLAB CORNER	1837291.51	631132.91
160	CONCRETE SLAB CORNER	1837260.28	630972.78
161	CONCRETE SLAB CORNER	1837249.29	630970.05
162	CONCRETE SIDEWALK CORNER	1837317.59	630990.04
163	CONCRETE PAVEMENT EDGE	1837299.23	630980.33
164	BEGIN TRENCH DRAIN	1837295.79	630994.16

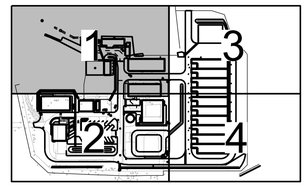
COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
165	CONCRETE SIDEWALK	1837247.63	630967.51
166	CONCRETE SIDEWALK	1837236.31	630964.70
167	CONCRETE PAVEMENT EDGE	1837262.72	630971.26
168	CONCRETE PAVEMENT EDGE	1837259.65	630983.63
169	CONCRETE SIDEWALK	1837244.56	630979.88
170	CONCRETE SIDEWALK	1837233.23	630977.07
171	CENTER OF MANHOLE	1837470.04	631180.59
172	CONCRETE SIDEWALK/AC	1837282.97	631011.58
173	CENTER OF MANHOLE	1837557.8	631260.17
174	CONCRETE SIDEWALK/AC	1837261.62	631006.28
175	CONCRETE SIDEWALK/AC	1837251.59	631003.79

COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
176	CONCRETE SIDEWALK/AC	1837246.74	631002.58
177	CONCRETE SLAB CORNER	1837374.02	631115.40
178	CONCRETE SLAB CORNER	1837368.17	631113.94
179	EDGE OF PAVEMENT, PC	1837227.03	630966.78
180	INFLUENT BOX CORNER	1837399.83	631150.84
181	INFLUENT BOX CORNER	1837395.71	631143.98
182	RETAINING WALL CORNER	1837630.65	631031.83
183	RETAINING WALL CORNER	1837619.54	631038.52
184	RETAINING WALL CORNER	1837510.16	631011.35
185	DITCH CL	1837377.98	630980.58
186	VALLEY GUTTER CL	1837396.11	631125.59

NOTE: FOR ADDITIONAL COORDINATE TABLES, SEE DWG 06C2020



KEY PLAN

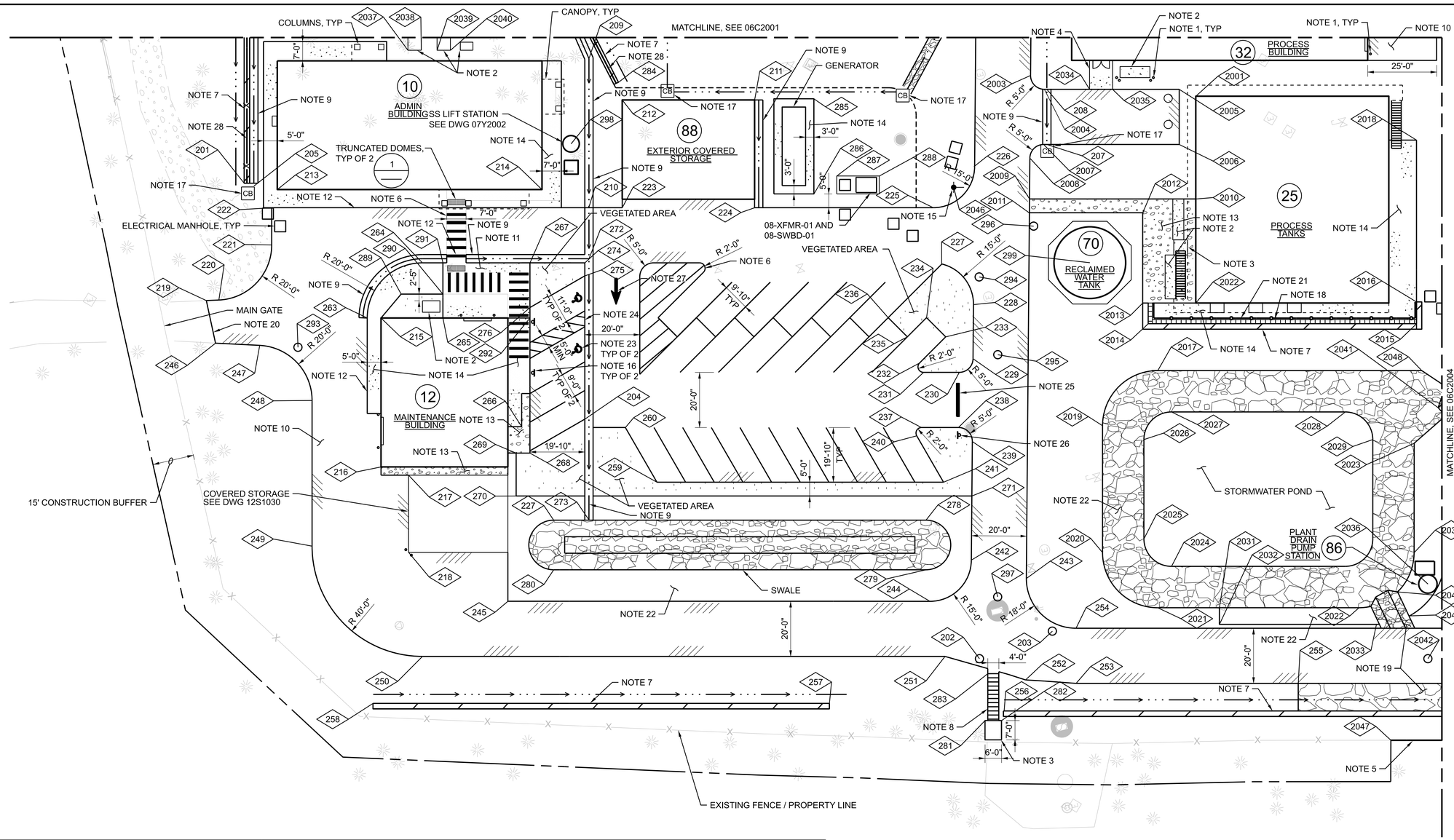
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY
	GREENWOOD VILLAGE, CO
DESIGNED:	K ARCHER
CADD:	B GYAOUROVA
TECH. REVIEW:	D PETERSON
DATE:	06/2025
SUB SHEET NO.	06C2001
TITLE OF SHEET	CIVIL SITE PLAN AREA 1
	GRAND CANYON, SOUTH RIM
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	79 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2001_D3167666.dgn



GENERAL SHEET NOTES

A. HATCHING SHOWN FOR SOME VEGETATED AREAS. REFERENCE LANDSCAPE SHEETS FOR LOCATIONS OF PLANTINGS, GRASS SEEDING, VEGETATED AREAS AND OTHER LANDSCAPE DETAILS.

SHEET NOTES

1. BOLLARD (3305-954)
2. EQUIPMENT PAD (0330-056G)
3. STAIR LANDING, SEE 25S1020
4. DOOR LANDING (3213-220)
5. CHAINLINK FENCE (3231-410)
6. CROSSWALK STRIPING. LONGITUDINAL LINES SHOULD BE 12 TO 24 IN WIDE AND SPACED 12 TO 60 IN APART. AVOID WHEEL PATHS WHERE POSSIBLE. SEE SPECIFICATION 32 17 23
7. MODULAR BLOCK GRAVITY RETAINING WALL, SEE SPECIFICATION 32 32 17
8. CONCRETE STAIRS ON GRADE (0330-049)
9. VALLEY GUTTER (3216-330)
10. ASPHALT PAVEMENT (3212-210)
11. CONCRETE PAVEMENT (3213-240)
12. ASPHALT TO CONCRETE CONNECTION (3213-250)
13. CRUSHED GRAVEL (3215-260)
14. CONCRETE SIDEWALK (3213-220)
15. FIRE HYDRANT (3312-770)
16. HANDICAPPED SIGNPOST (1014-004) AND SPECIFICATION SECTION 10 14 00
17. CATCH BASIN (3344-780) SEE SHEET 06C2402
18. TRENCH DRAIN (3344-790)
19. 12" DEEP CLASS 1 GROUTED RIPRAP WITH UNDERLYING GEOTEXTILE
20. PAVEMENT CONNECTION (3212-215)
21. ALUMINUM RAILING (0552-001)
22. SEE LANDSCAPE PLANS
23. HANDICAPPED SYMBOL (3217-370)
24. ACCESS AISLE. DELINEATE WITH 4" WIDE WHITE TRAFFIC PAINT AT 45° ANGLE, 24" ON CENTER. SEE SPECIFICATION 32 17 23.
25. STOP BAR. DELINEATE WITH 12" WIDE WHITE TRAFFIC PAINT ACROSS AISLE. SEE SPECIFICATION 32 17 23.
26. S-19 AND SIGNPOST, SEE SPECIFICATION SECTION 10 14 00.
27. TRAFFIC ARROW. DELINEATE WITH 9'-6" LONG WHITE TRAFFIC PAINT. SEE SPECIFICATION 32 17 23.
28. 4' CHAINLINK FENCE. CORE DRILL AND PLACE STAINLESS STEEL SLEEVE, GROUT IN PLACE. FENCE TO FOLLOW SPECIFICATION 32 31 13.

COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
201	RETAINING WALL END	1837643.83	630978.81
202	CENTER OF MANHOLE	1837426.64	630747.19
203	CENTER OF MANHOLE	1837398.57	630750.51
204	EDGE OF GRASS AREA	1837544.65	630865.97
205	VALLEY GUTTER CL	1837640.68	630976.97
206	DITCH CL	1837627.61	631029.58
207	VALLEY GUTTER CL	1837357.95	630922.28
208	VALLEY GUTTER CL	1837353.14	630941.69
209	VALLEY GUTTER CL	1837511.59	630992.56
210	VALLEY GUTTER CL	1837524.63	630940.05
211	BUILDING CORNER-88	1837456.92	630963.49
212	BUILDING CORNER-88	1837503.50	630975.06
213	BUILDING CORNER-10	1837632.73	630973.69
214	BUILDING CORNER-10	1837539.56	630950.54
215	BUILDING CORNER-12	1837607.45	630919.41
216	BUILDING CORNER-12	1837620.47	630867.00
217	SLAB CORNER	1837611.49	630861.68
218	SLAB CORNER	1837618.24	630834.51
219	EDGE OF PAVEMENT	1837667.40	630940.82
220	EDGE OF PAVEMENT	1837662.96	630939.91
221	EDGE OF PAVEMENT	1837639.53	630954.68
222	EDGE OF PAVEMENT	1837636.28	630967.79
223	EDGE OF PAVEMENT	1837512.92	630937.14
224	EDGE OF PAVEMENT	1837466.34	630925.57

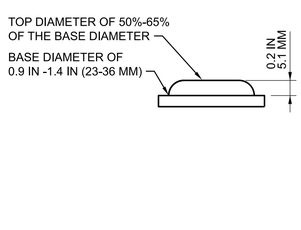
COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
225	EDGE OF PAVEMENT, PC	1837403.46	630909.95
226	EDGE OF PAVEMENT, PT	1837385.32	630920.77
227	EDGE OF PAVEMENT, PC	1837405.45	630889.33
228	EDGE OF PAVEMENT, PT	1837397.78	630872.35
229	EDGE OF PAVEMENT, PC	1837402.67	630853.33
230	EDGE OF PAVEMENT, PT	1837408.72	630849.73
231	EDGE OF PAVEMENT, PC	1837421.29	630852.85
232	EDGE OF PAVEMENT, PT	1837421.84	630856.51
233	EDGE OF PAVEMENT	1837410.38	630863.41
234	EDGE OF PAVEMENT	1837415.45	630871.84
235	EDGE OF PAVEMENT	1837423.87	630866.76
236	EDGE OF PAVEMENT	1837428.94	630875.19
237	EDGE OF PAVEMENT, PT	1837426.82	630833.62
238	EDGE OF PAVEMENT, PC	1837413.78	630830.38
239	EDGE OF PAVEMENT, PT	1837410.15	630824.28
240	EDGE OF PAVEMENT	1837429.22	630831.12
241	EDGE OF PAVEMENT	1837423.85	630812.44
242	EDGE OF PAVEMENT, PC	1837420.87	630782.61
243	EDGE OF PAVEMENT,PC	1837403.10	630771.42
244	EDGE OF PAVEMENT,PT	1837439.05	630771.70
245	EDGE OF PAVEMENT	1837587.57	630808.63
246	EDGE OF PAVEMENT	1837667.90	630925.03
247	EDGE OF PAVEMENT, PC	1837652.55	630920.39
248	EDGE OF PAVEMENT,PT	1837638.92	630896.42

COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
249	EDGE OF PAVEMENT,PC	1837651.66	630845.15
250	EDGE OF PAVEMENT,PT	1837622.48	630796.69
251	EDGE OF PAVEMENT	1837438.58	630751.00
252	EDGE OF PAVEMENT	1837412.29	630735.69
253	EDGE OF PAVEMENT	1837394.82	630730.05
254	EDGE OF PAVEMENT,PT	1837390.01	630749.47
255	EDGE OF RIPRAP/AC	1837316.61	630710.63
256	RETAINING WALL END	1837422.53	630726.64
257	RETAINING WALL END	1837483.35	630744.58
258	RETAINING WALL END	1837643.98	630784.48
259	EDGE OF PAVEMENT	1837524.71	630837.50
260	EDGE OF PAVEMENT	1837531.04	630859.51
261	EDGE OF PAVEMENT	1837615.81	630885.77
262	EDGE OF PAVEMENT	1837620.66	630886.97
263	BEGIN VALLEY GUTTER	1837612.30	630920.62
264	EDGE OF CONCRETE	1837588.07	630935.20
265	EDGE OF CONCRETE PAVEMENT	1837585.67	630914.00
266	EDGE OF CONCRETE	1837567.46	630868.86
267	EDGE OF GRAVEL	1837550.22	630925.80
268	EDGE OF GRAVEL	1837566.86	630858.84
269	EDGE OF GRASS AREA	1837571.71	630860.04
270	EDGE OF GRASS AREA	1837575.46	630844.95
271	EDGE OF GRASS AREA	1837415.08	630805.11
272	VALLEY GUTTER CL	1837529.09	630922.10

NOTE: FOR ADDITIONAL COORDINATE TABLES, SEE DRAWING 06C2020



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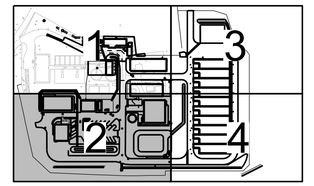
NTS



KEY PLAN

FULL SIZE DRAWINGS = 22"x34" BAR MEASURES 1" LONG

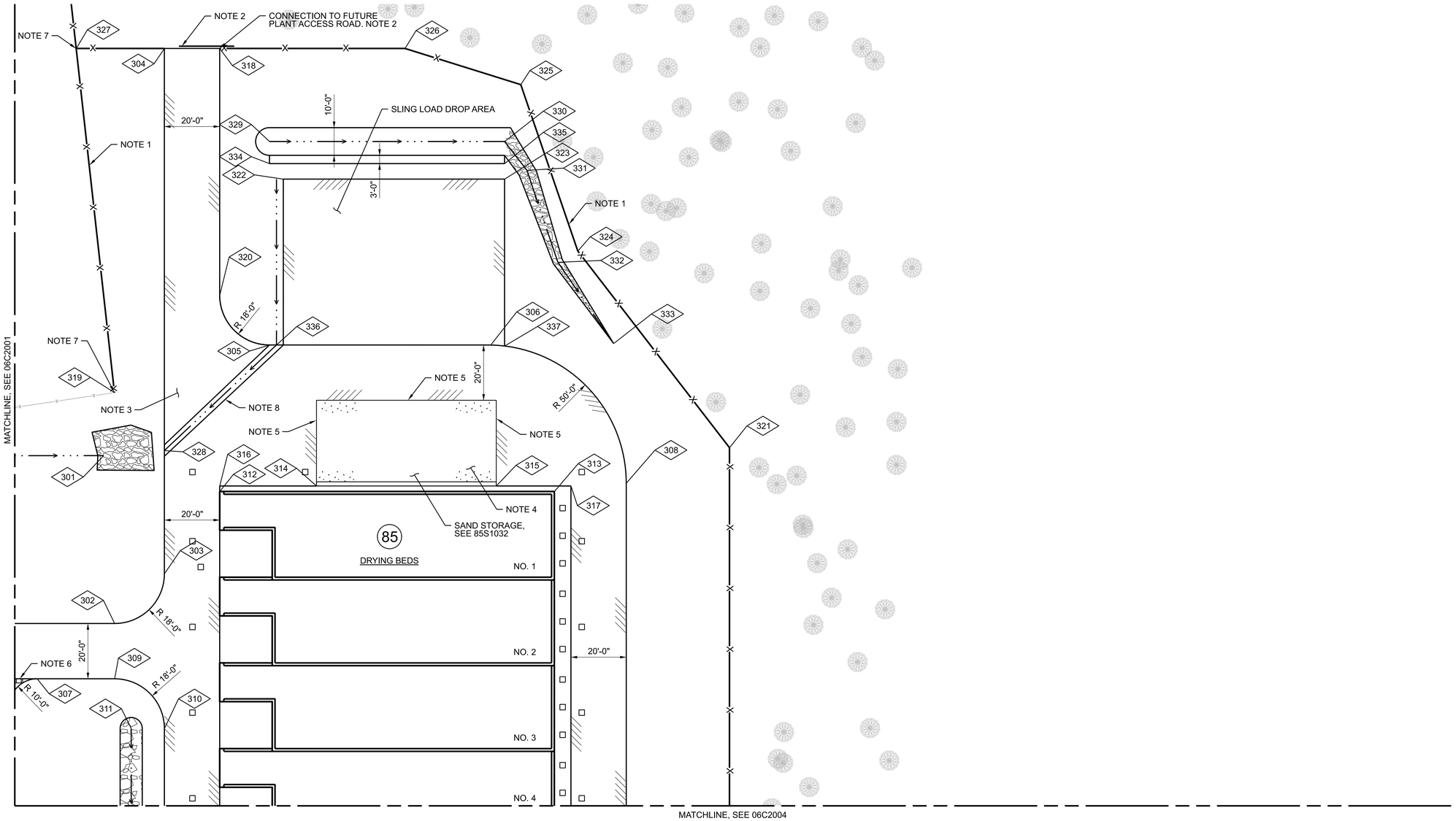
0" 1"

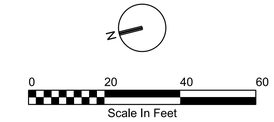
A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO
DESIGNED:	K ARCHER
CADD:	B GYAOUROVA
TECH. REVIEW:	D PETERSON
DATE:	06/2025
SUB SHEET NO.	06C2002
TITLE OF SHEET	CIVIL SITE PLAN AREA 2
	GRAND CANYON, SOUTH RIM
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	80 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2002_D3167666.dgn





SHEET NOTES

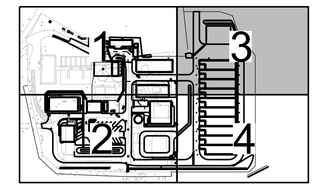
1. CHAINLINK FENCE (3231-410)
2. 20' WIDE CANTILEVER SLIDE GATE (3231-425)
3. ASPHALT PAVEMENT (3212-210)
4. CONCRETE PAVEMENT (3213-240)
5. CONCRETE TO ASPHALT TRANSITION (3212-250)
6. TRENCH DRAIN (3344-790)
7. CONNECT TO EXISTING FENCE POST
8. VALLEY GUTTER (3216-330)

COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
301	DITCH CL, PC	1837147.87	631040.59
302	EDGE OF PAVEMENT, PC	1837158.66	630980.70
303	EDGE OF PAVEMENT, PT	1837136.85	630993.83
304	EDGE OF PAVEMENT, PC	1837091.04	631178.23
305	EDGE OF PAVEMENT, PT	1837080.02	631064.97
306	EDGE OF PAVEMENT, PC	1837002.38	631045.67
307	EDGE OF PAVEMENT, PT	1837190.65	630968.04
308	EDGE OF PAVEMENT, PT	1836966.88	630985.34
309	EDGE OF PAVEMENT, PC	1837163.48	630961.29
310	EDGE OF PAVEMENT, PT	1837150.35	630939.48
311	DITCH CL	1837162.00	630942.36
312	DRYING BEDS CORNER-85	1837110.27	631017.87
313	DRYING BEDS CORNER-85	1836992.84	630988.70
314	CORNER OF CONCRETE SLAB	1837075.82	631011.38
315	CORNER OF CONCRETE SLAB	1837012.74	630995.71
316	EDGE OF GRAVEL	1837109.79	631019.81
317	EDGE OF GRAVEL	1836986.53	630989.20
318	EDGE OF PAVEMENT	1837071.63	631173.40
319	FENCE -CONNECT TO EXST	1837138.58	631061.75
320	EDGE OF PAVEMENT, PC	1837093.15	631086.78
321	CORNER OF FENCE	1836927.56	630988.82

COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
322	EDGE OF PAVEMENT	1837060.70	631121.99
323	EDGE OF PAVEMENT	1836983.06	631102.71
324	CORNER OF FENCE	1836963.64	631071.07
325	CORNER OF FENCE	1836969.13	631134.46
326	CORNER OF FENCE	1837006.61	631157.25
327	CORNER OF FENCE	1837121.99	631185.91
328	VALLEY GUTTER CL	1837126.11	631037.07
329	DITCH CL	1837062.28	631136.41
330	DITCH CL	1836979.78	631115.92
331	DITCH CL	1836974.45	631103.83
332	DITCH CL	1836971.61	631068.86
333	DITCH CL	1836959.13	631035.49
334	TOP OF BERM	1837064.20	631128.64
335	TOP OF BERM	1836981.71	631108.15
336	VALLEY GUTTER CL	1837077.57	631064.36
337	EDGE OF PAVEMENT	1836997.62	631044.12



KEY PLAN

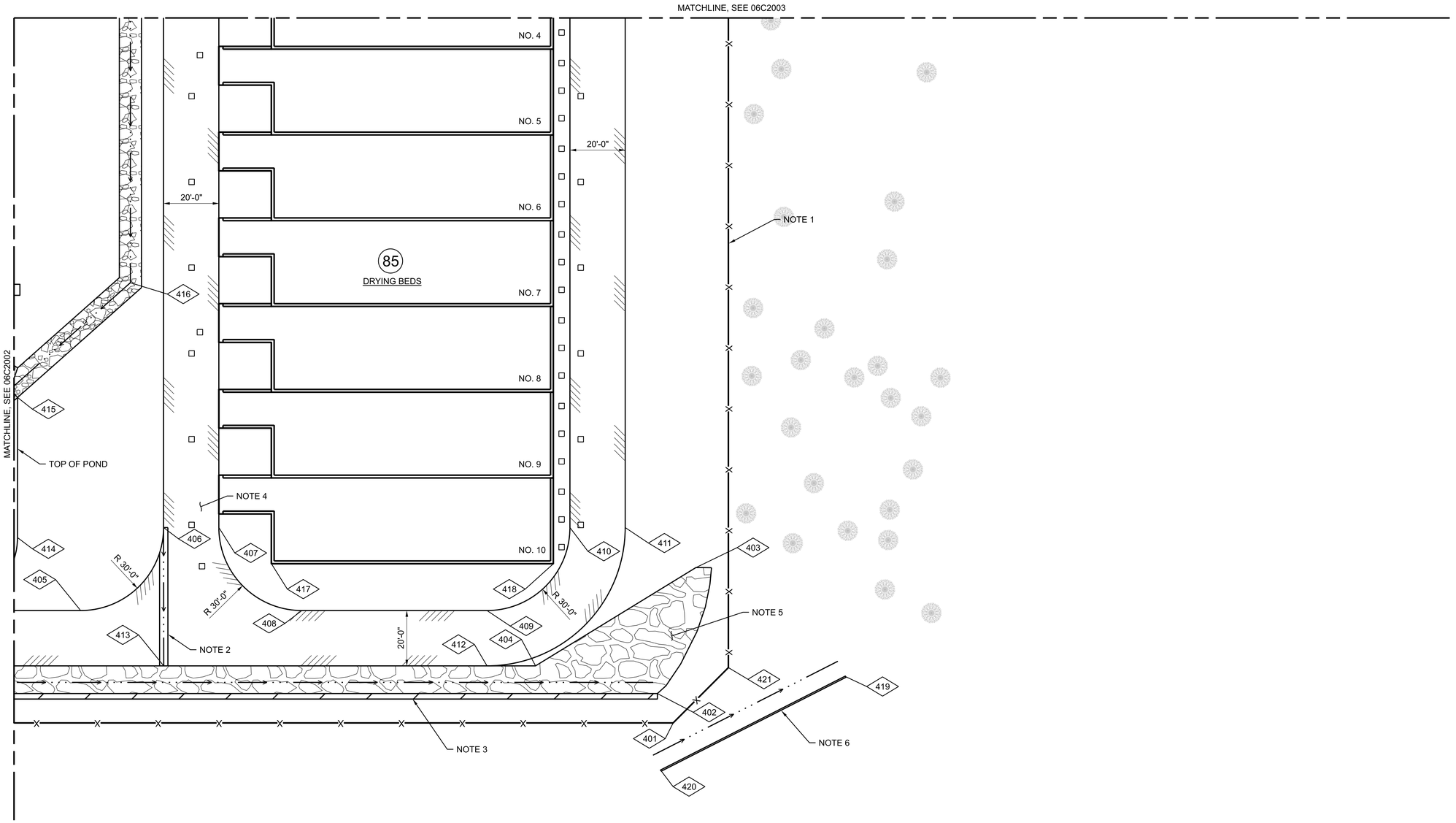
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

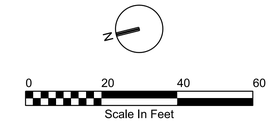
A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06C2003	TITLE OF SHEET CIVIL SITE PLAN AREA 3 GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 81 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

GRCA-257282

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2003_D3167666.dgn



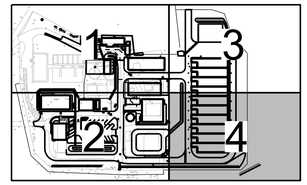


SHEET NOTES

1. CHAINLINK FENCE (3231-410)
2. VALLEY GUTTER (3216-330)
3. MODULAR BLOCK GRAVITY RETAINING WALL, SEE SPECIFICATION 32 32 17
4. ASPHALT PAVEMENT (3212-210)
5. 12" DEEP CLASS I GROUTED RIPRAP WITH UNDERLYING GEOTEXTILE
6. LEVEL SPREADER. SEE DRAWING 06C2404

COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
401	CORNER OF FENCE	1837039.64	630620.57
402	RETAINING WALL END	1837042.60	630632.25
403	EDGE OF RIPRAP	1837018.10	630673.09
404	EDGE OF RIPRAP	1837082.97	630652.58
405	EDGE OF PAVEMENT, PC	1837237.85	630711.67
406	EDGE OF PAVEMENT, PT, VALLEY GUTTER	1837201.51	630733.55
407	EDGE OF PAVEMENT, PC	1837182.10	630728.73
408	EDGE OF PAVEMENT, PT, BEGIN GRAVEL	1837160.21	630692.38
409	EDGE OF PAVEMENT, PC	1837095.19	630676.23
410	EDGE OF PAVEMENT, PT	1837058.84	630698.11
411	EDGE OF PAVEMENT, PC	1837039.43	630693.29
412	EDGE OF PAVEMENT, PT	1837100.01	630656.82
413	VALLEY GUTTER CL	1837213.50	630685.02
414	TOP OF BERM, PC	1837253.66	630742.78
415	TOP OF BERM	1837241.41	630791.90
416	DITCH CL	1837191.81	630822.35
417	CORNER OF DRYING BEDS-85	1837166.81	630711.47
418	CORNER OF DRYING BEDS-85	1837067.82	630686.87
419	END OF TIMBER	1836975.03	630621.75
420	END OF TIMBER	1837048.11	630604.91
421	CORNER OF FENCE	1837015.41	630635.16



KEY PLAN

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06C2004	TITLE OF SHEET CIVIL SITE PLAN AREA 4 GRAND CANYON, SOUTH RIM	DRAWING NO. 113 / 175376 PMIS/PKG NO. 257282 SHEET 82 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

GRCA-257282

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2004_D3167666.dgn

COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
187	VALLEY GUTTER CL	1837392.06	631085.75
188	TRENCH DRAIN	1837390.36	631130.10
189	TRENCH DRAIN	1837374.83	631126.24
190	VALLEY GUTTER CL	1837618.98	631034.77
191	EDGE OF PAVEMENT	1837512.50	631181.03
192	EDGE OF PAVEMENT	1837558.06	631214.71
193	EDGE OF PAVEMENT	1837560.89	631210.42
194	DITCH CL	1837287.59	631075.17
195	CENTER OF MANHOLE	1837404.32	631164.26
196	VALLEY GUTTER CL	1837566.69	631021.78

COORDINATE TABLE

POINT NO.	DESCRIPTION	NORTHING	EASTING
273	VALLEY GUTTER CL	1837551.93	630830.16
274	EDGE OF GRASS AREA	1837530.91	630921.00
275	EDGE OF GRASS AREA/AC	1837532.05	630916.42
276	EDGE OF GRASS AREA/AC	1837554.13	630910.07
277	BIOSWALE TOP	1837564.38	630833.17
278	BIOSWALE TOP	1837433.36	630800.62
279	BIOSWALE TOP	1837437.70	630783.16
280	BIOSWALE TOP	1837568.72	630815.70
281	STAIR LANDING	1837430.09	630724.93
282	STAIR LANDING	1837424.27	630723.48
283	STAIRS TOP	1837425.02	630741.19
284	RETAINING WALL END	1837503.28	630981.61
285	CONCRETE SLAB CORNER	1837435.95	630958.72
286	CONCRETE SLAB CORNER	1837444.27	630925.24
287	CONCRETE SLAB CORNER	1837434.66	630929.55
288	CONCRETE SLAB CORNER	1837419.70	630925.83
289	EDGE OF CONCRETE	1837598.28	630926.06
290	EDGE OF CONCRETE	1837583.58	630922.41
291	EDGE OF CONCRETE PAVEMENT	1837580.85	630933.41
292	EDGE OF CONCRETE PAVEMENT	1837555.04	630906.39
293	CENTER OF MANHOLE	1837639.25	630916.37
294	CENTER OF MANHOLE	1837393.37	630881.57
295	CENTER OF MANHOLE	1837393.61	630852.58
296	CENTER OF MANHOLE	1837369.74	630894.70
297	CENTER OF MANHOLE	1837414.82	630767.35
298	CENTER OF LIFT STATION	1837525.35	630964.10
299	CORNER OF WATER TANK	1837353.16	630876.92
2001	BUILDING CORNER	1837301.33	630926.24
2002	BUILDING CORNER	1837319.41	630853.45
2003	EDGE OF PAVEMENT	1837357.65	630948.01
2004	EDGE OF PAVEMENT	1837354.02	630941.91
2005	EDGE OF PAVEMENT	1837306.55	630930.11
2006	EDGE OF PAVEMENT	1837311.37	630910.70
2007	EDGE OF PAVEMENT	1837359.08	630922.56
2008	EDGE OF PAVEMENT	1837365.13	630918.95
2009	EDGE OF GRAVEL	1837368.82	630904.62
2010	EDGE OF GRAVEL	1837310.31	630890.08
2011	EDGE OF GRAVEL	1837370.07	630899.77
2012	EDGE OF GRAVEL	1837330.20	630889.87
2013	EDGE OF GRAVEL	1837338.09	630858.09
2014	RETAINING WALL	1837337.96	630850.33
2015	RETAINING WALL	1837243.54	630826.88
2016	RETAINING WALL	1837241.64	630834.54
2017	STORMWATER POND, TOP	1837338.72	630833.00
2018	EDGE OF CONCRETE	1837227.49	630891.50
2019	STORMWATER POND TOP, PC	1837362.95	630818.42
2020	STORMWATER POND TOP, PT	1837374.04	630773.77
2021	STORMWATER POND TOP, PC	1837359.45	630749.54
2022	STORMWATER POND TOP	1837288.63	630731.95
2023	END OF BERM TOP	1837254.79	630785.02
2024	STORMWATER POND BOTTOM, PC	1837350.98	630762.89
2025	STORMWATER POND BOTTOM, PT	1837358.28	630775.01
2026	STORMWATER POND BOTTOM, PC	1837349.60	630809.95
2027	STORMWATER POND BOTTOM, PT	1837337.48	630817.24
2028	STORMWATER POND BOTTOM, PC	1837276.34	630802.05
2029	STORMWATER POND BOTTOM, PT	1837269.05	630789.94
2030	STORMWATER POND TOP	1837264.40	630746.52
2031	BEGIN BERM TOP	1837337.74	630744.15
2032	BEGIN BERM TOP	1837339.19	630738.28
2033	TOP OF BERM	1837282.89	630724.32
2034	CONCRETE LANDING	1837338.11	630937.95
2035	CONCRETE LANDING	1837330.28	630936.01
2036	CENTER OF PUMP STATION	1837262.29	630734.27
2037	CORNER OF CONCRETE SLAB	1837574.57	631011.29
2038	CORNER OF CONCRETE SLAB	1837569.88	631010.13
2039	CORNER OF CONCRETE SLAB	1837564.32	631008.74
2040	CORNER OF CONCRETE SLAB	1837559.63	631007.58
2041	DITCH CL	1837243.27	630795.45
2042	CENTER OF MANHOLE	1837268.82	630707.98
2043	STORMWATER POND, TOP	1837273.63	630734.14
2044	TOP OF BERM TOP	1837271.73	630724.60
2045	STORMWATER POND TOP	1837238.83	630802.30
2046	FIRE HYDRANT	1837394.49	630915.33
2047	FENCE, CONNECT TO EXST	1837288.98	630682.51
2048	STORMWATER POND, TOP	1837245.79	630809.92

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2020_D3167666.dgn

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

CERTIFICATE OF AUTHORIZATION
83022
KAYLA D. ARCHER
EXPIRATION: 6/30/2026
VIRGINIA, U.S.A.

A/E FIRM
JACOBS GOVERNMENT SERVICES COMPANY
GREENWOOD VILLAGE, CO

DESIGNED: K ARCHER
CADD: B GYAOUROVA
TECH. REVIEW: D PETERSON
DATE: 06/2025

SUB SHEET NO. 06C2020

TITLE OF SHEET
CIVIL
COORDINATE TABLES
GRAND CANYON, SOUTH RIM

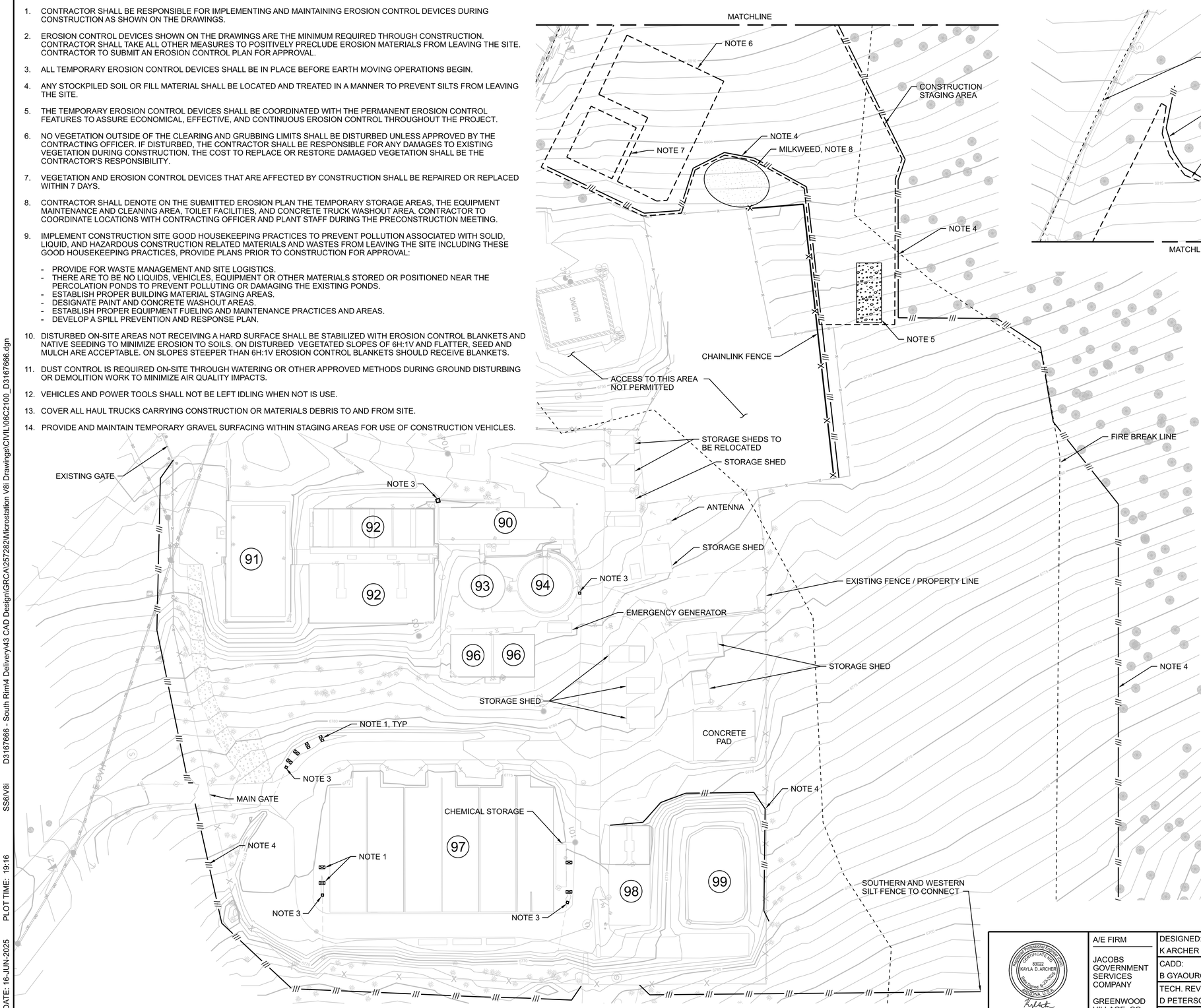
NO SCALE

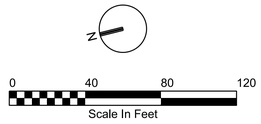
DRAWING NO. 113 175376
PMIS/PKG NO. 257282
SHEET 83 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

EROSION CONTROL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING EROSION CONTROL DEVICES DURING CONSTRUCTION AS SHOWN ON THE DRAWINGS.
2. EROSION CONTROL DEVICES SHOWN ON THE DRAWINGS ARE THE MINIMUM REQUIRED THROUGH CONSTRUCTION. CONTRACTOR SHALL TAKE ALL OTHER MEASURES TO POSITIVELY PRECLUDE EROSION MATERIALS FROM LEAVING THE SITE. CONTRACTOR TO SUBMIT AN EROSION CONTROL PLAN FOR APPROVAL.
3. ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE IN PLACE BEFORE EARTH MOVING OPERATIONS BEGIN.
4. ANY STOCKPILED SOIL OR FILL MATERIAL SHALL BE LOCATED AND TREATED IN A MANNER TO PREVENT SILTS FROM LEAVING THE SITE.
5. THE TEMPORARY EROSION CONTROL DEVICES SHALL BE COORDINATED WITH THE PERMANENT EROSION CONTROL FEATURES TO ASSURE ECONOMICAL, EFFECTIVE, AND CONTINUOUS EROSION CONTROL THROUGHOUT THE PROJECT.
6. NO VEGETATION OUTSIDE OF THE CLEARING AND GRUBBING LIMITS SHALL BE DISTURBED UNLESS APPROVED BY THE CONTRACTING OFFICER. IF DISTURBED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING VEGETATION DURING CONSTRUCTION. THE COST TO REPLACE OR RESTORE DAMAGED VEGETATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
7. VEGETATION AND EROSION CONTROL DEVICES THAT ARE AFFECTED BY CONSTRUCTION SHALL BE REPAIRED OR REPLACED WITHIN 7 DAYS.
8. CONTRACTOR SHALL DENOTE ON THE SUBMITTED EROSION PLAN THE TEMPORARY STORAGE AREAS, THE EQUIPMENT MAINTENANCE AND CLEANING AREA, TOILET FACILITIES, AND CONCRETE TRUCK WASHOUT AREA. CONTRACTOR TO COORDINATE LOCATIONS WITH CONTRACTING OFFICER AND PLANT STAFF DURING THE PRECONSTRUCTION MEETING.
9. IMPLEMENT CONSTRUCTION SITE GOOD HOUSEKEEPING PRACTICES TO PREVENT POLLUTION ASSOCIATED WITH SOLID, LIQUID, AND HAZARDOUS CONSTRUCTION RELATED MATERIALS AND WASTES FROM LEAVING THE SITE INCLUDING THESE GOOD HOUSEKEEPING PRACTICES, PROVIDE PLANS PRIOR TO CONSTRUCTION FOR APPROVAL:
   - PROVIDE FOR WASTE MANAGEMENT AND SITE LOGISTICS.
   - THERE ARE TO BE NO LIQUIDS, VEHICLES, EQUIPMENT OR OTHER MATERIALS STORED OR POSITIONED NEAR THE PERCOLATION PONDS TO PREVENT POLLUTING OR DAMAGING THE EXISTING PONDS.
   - ESTABLISH PROPER BUILDING MATERIAL STAGING AREAS.
   - DESIGNATE PAINT AND CONCRETE WASHOUT AREAS.
   - ESTABLISH PROPER EQUIPMENT FUELING AND MAINTENANCE PRACTICES AND AREAS.
   - DEVELOP A SPILL PREVENTION AND RESPONSE PLAN.
10. DISTURBED ON-SITE AREAS NOT RECEIVING A HARD SURFACE SHALL BE STABILIZED WITH EROSION CONTROL BLANKETS AND NATIVE SEEDING TO MINIMIZE EROSION TO SOILS. ON DISTURBED VEGETATED SLOPES OF 6H:1V AND FLATTER, SEED AND MULCH ARE ACCEPTABLE. ON SLOPES STEEPER THAN 6H:1V EROSION CONTROL BLANKETS SHOULD RECEIVE BLANKETS.
11. DUST CONTROL IS REQUIRED ON-SITE THROUGH WATERING OR OTHER APPROVED METHODS DURING GROUND DISTURBING OR DEMOLITION WORK TO MINIMIZE AIR QUALITY IMPACTS.
12. VEHICLES AND POWER TOOLS SHALL NOT BE LEFT IDLING WHEN NOT IS USE.
13. COVER ALL HAUL TRUCKS CARRYING CONSTRUCTION OR MATERIALS DEBRIS TO AND FROM SITE.
14. PROVIDE AND MAINTAIN TEMPORARY GRAVEL SURFACING WITHIN STAGING AREAS FOR USE OF CONSTRUCTION VEHICLES.





GENERAL SHEET NOTES

A. ADDITIONAL CONTRACTOR STAGING AREAS AS WELL AS OPERATIONS STORAGE WILL BE LOCATED OFF SITE. COORDINATE WITH CONTRACTING OFFICER FOR LOCATIONS. SEE SPECIFICATION 01 11 00, SUMMARY OF WORK.

B. SILT FENCE, PLACED 10' OFF OF EDGE OF ROAD, TO EXTEND ALONG ACCESS ROAD TO CAPTURE ALL RUNOFF FROM THE STAGING AREA.

C. CONSTRUCTION BUFFER 15' OFF EXISTING FENCELINE OF WASTEWATER RECLAMATION PLANT.

D. CONTRACTOR TO MANAGE STORMWATER RUNOFF TO MEET SPECIFICATIONS.

E. FOR TREE PROTECTION DETAILS, SEE 06L5001.

SHEET NOTES

1. CHECK DAM EVERY 20' (3125-160)
2. NOT USED
3. INLET PROTECTION (3125-186)
4. SILT FENCE (3125-165)
5. CONSTRUCTION ENTRANCE (3125-130)
6. CONTRACTOR TO PROVIDE ADEQUATE PARKING SPACE WITHIN STAGING AREA FOR PARKS STAFF DURING CONSTRUCTION ACTIVITIES.
7. RELOCATE EXISTING ELECTRICAL AND I&C CONNEX BOXES AT AN ACCESSIBLE LOCATION FOR PARKS STAFF DURING CONSTRUCTION.
8. PROTECT FROM CONSTRUCTION ACTIVITIES. SEE SPECIFICATION 01 35 00; ENVIRONMENTAL PROTECTION AND SPECIAL CONTROLS.

EXISTING FACILITIES LEGEND

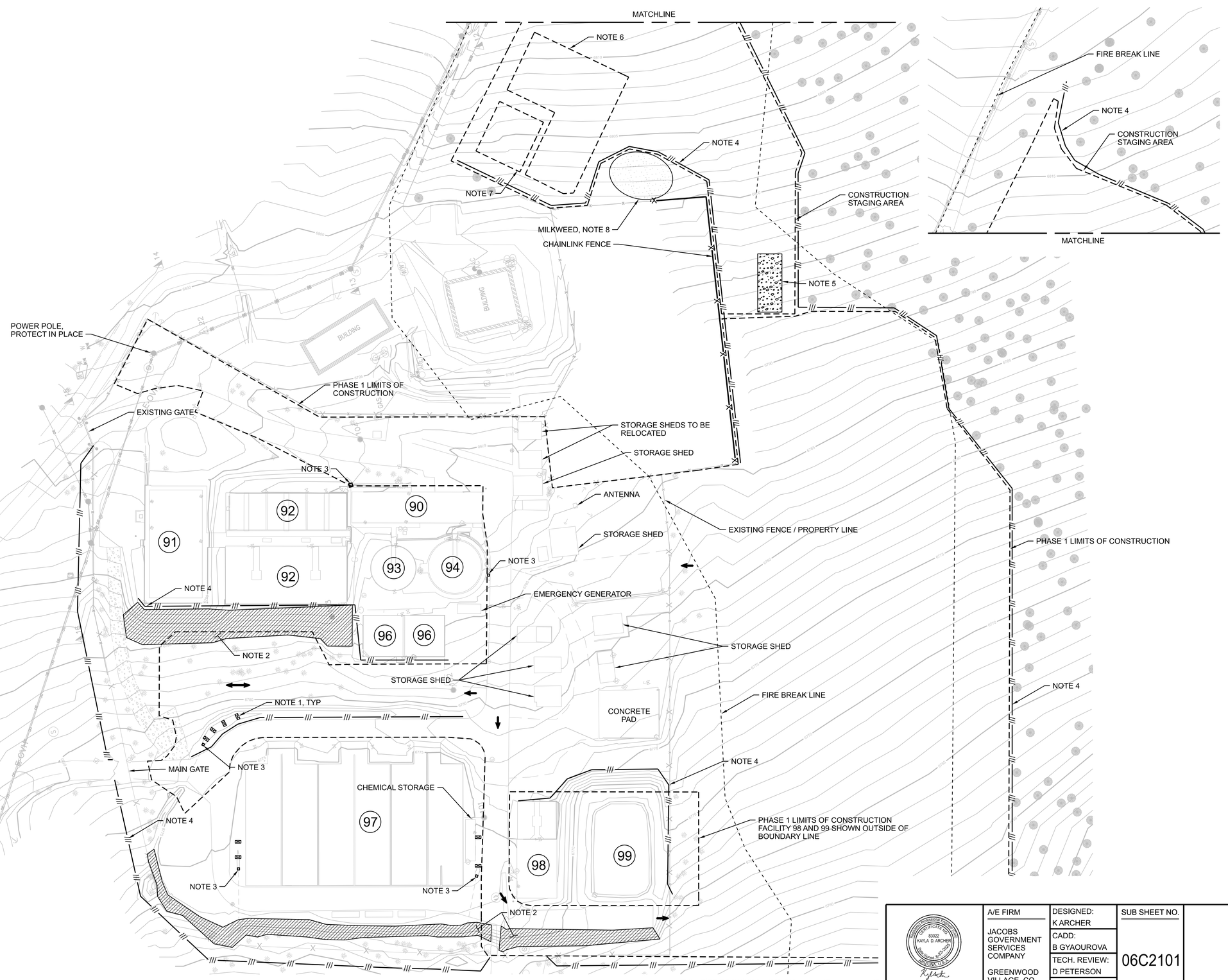
90	CONTROL BUILDING
91	PRETREATMENT, BLOWER, AND DIGESTER BUILDING
92	AERATION TANKS
93	CLARIFIER NO. 1
94	CLARIFIER NO. 2
96	FLOW EQUALIZATION TANKS
97	SLUDGE DRYING BEDS 1-6
98	RECLAMATION PLANT
99	BACKWASH HOLDING POND

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6\V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8I Drawings\CIVIL\06C2100_D3167666.dgn

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06C2100	TITLE OF SHEET: CIVIL TESC PLAN PRECONSTRUCTION GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 84 OF 401	



0 40 80 120
Scale In Feet

GENERAL SHEET NOTES

A. ADDITIONAL CONTRACTOR STAGING AREAS AS WELL AS OPERATIONS STORAGE WILL BE LOCATED OFF SITE. COORDINATE WITH CONTRACTING OFFICER FOR LOCATIONS. SEE SPECIFICATION 01 11 00, SUMMARY OF WORK.

B. SILT FENCE, PLACED 10' OFF OF EDGE OF ROAD, TO EXTEND ALONG CONSTRUCTION ACCESS ROAD TO CAPTURE ALL RUNOFF FROM THE STAGING AREA.

C. CONSTRUCTION BUFFER 15' OFF EXISTING FENCE LINE OF WASTE WATER RECLAMATION PLANT.

D. CONTRACTOR TO MANAGE STORMWATER RUNOFF TO MEET SPECIFICATIONS.

E. FOR TREE PROTECTION DETAILS, SEE 06L5001.

SHEET NOTES

1. CHECK DAM (3125-160)
2. EROSION CONTROL BLANKET (3125-150)
3. INLET PROTECTION (3125-186)
4. SILT FENCE (3125-165)
5. CONSTRUCTION ENTRANCE (3125-130)
6. CONTRACTOR TO PROVIDE ADEQUATE PARKING SPACE WITHIN STAGING AREA FOR PARKS STAFF DURING CONSTRUCTION ACTIVITIES.
7. RELOCATE EXISTING ELECTRICAL AND I&C CONNEX BOXES AT AN ACCESSIBLE LOCATION FOR PARKS STAFF DURING CONSTRUCTION.
8. PROTECT FROM CONSTRUCTION ACTIVITIES. SEE SPECIFICATION 01 35 00; ENVIRONMENTAL PROTECTION AND SPECIAL CONTROLS.

EXISTING FACILITIES LEGEND

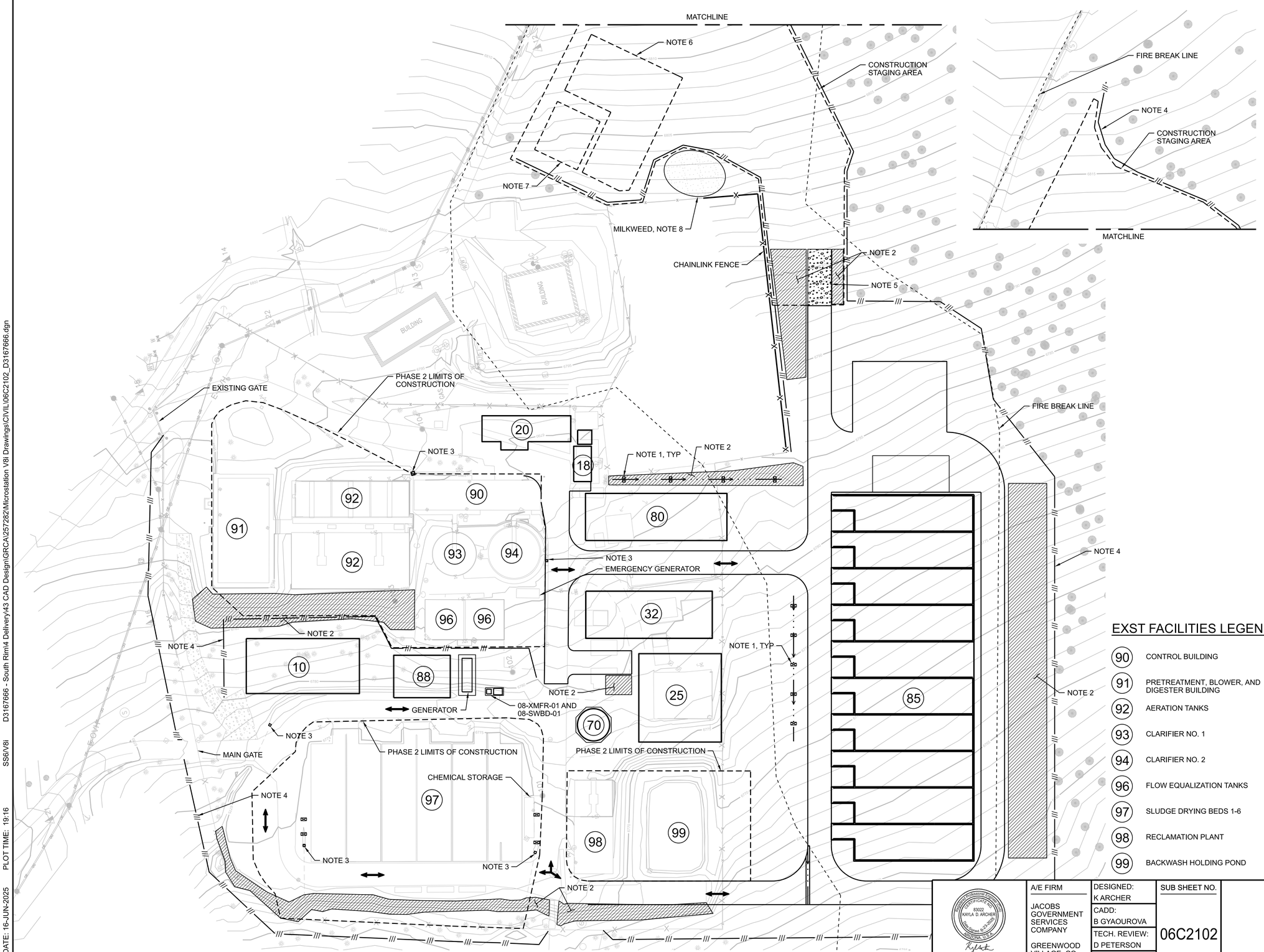
90	CONTROL BUILDING
91	PRETREATMENT, BLOWER, AND DIGESTER BUILDING
92	AERATION TANKS
93	CLARIFIER NO. 1
94	CLARIFIER NO. 2
96	FLOW EQUALIZATION TANKS
97	SLUDGE DRYING BEDS 1-6
98	RECLAMATION PLANT
99	BACKWASH HOLDING POND

A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06C2101	TITLE OF SHEET CIVIL TESC PLAN PHASE 1 GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 85 OF 401	

100% COMPLETE CONSTRUCTION DOCUMENTS

GRCA-257282

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2101_D3167666.dgn



N

0 40 80 120
Scale In Feet

GENERAL SHEET NOTES

A. ADDITIONAL CONTRACTOR STAGING AREAS AS WELL AS OPERATIONS STORAGE WILL BE LOCATED OFF SITE. COORDINATE WITH CONTRACTING OFFICER FOR LOCATIONS. SEE SPECIFICATION 01 11 00, SUMMARY OF WORK.

B. SILT FENCE, PLACED 10' OFF OF EDGE OF ROAD, TO EXTEND ALONG CONSTRUCTION ACCESS ROAD TO CAPTURE ALL RUNOFF FROM THE STAGING AREA.

C. CONSTRUCTION BUFFER 15' OFF EXISTING FENCE LINE OF WASTE RECLAMATION PLANT.

D. CONTRACTOR TO MANAGE STORMWATER RUNOFF TO MEET SPECIFICATIONS.

E. FOR TREE PROTECTION DETAILS, SEE 06L5001.

SHEET NOTES

1. CHECK DAM (3125-160)
2. EROSION CONTROL BLANKET (3125-150)
3. INLET PROTECTION (3125-186)
4. SILT FENCE (3125-165)
5. CONSTRUCTION ENTRANCE (3125-130)
6. CONTRACTOR TO PROVIDE ADEQUATE PARKING SPACE WITHIN STAGING AREA FOR PARKS STAFF DURING CONSTRUCTION ACTIVITIES.
7. RELOCATE EXISTING ELECTRICAL AND I&C CONNEX BOXES AT AN ACCESSIBLE LOCATION FOR PARKS STAFF DURING CONSTRUCTION.
8. PROTECT FROM CONSTRUCTION ACTIVITIES. SEE SPECIFICATION 01 35 00; ENVIRONMENTAL PROTECTION AND SPECIAL CONTROLS.

FACILITIES LEGEND

10	ADMINISTRATION BUILDING
12	MAINTENANCE BUILDING
18	RECEIVING STATION
20	HEADWORKS
22	ODOR CONTROL
25	PROCESS TANKS
32	PROCESS BUILDING
70	RECLAIMED WATER TANK
80	DIGESTER FACILITY
85	DRYING BEDS
86	PLANT DRAIN PUMP STATION
87	COMPOST FACILITY
88	EXTERIOR COVERED STORAGE

EXST FACILITIES LEGEND

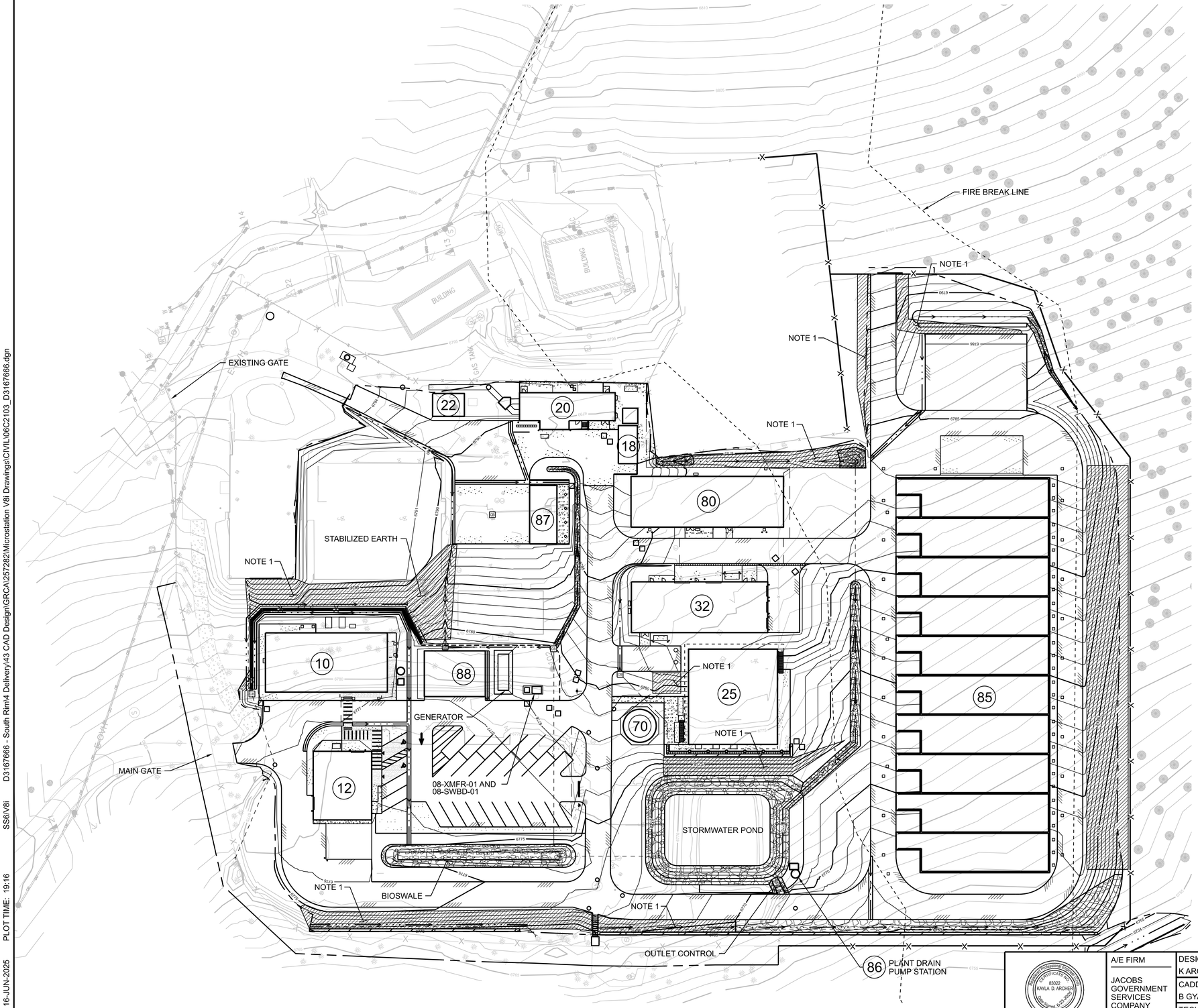
90	CONTROL BUILDING
91	PRETREATMENT, BLOWER, AND DIGESTER BUILDING
92	AERATION TANKS
93	CLARIFIER NO. 1
94	CLARIFIER NO. 2
96	FLOW EQUALIZATION TANKS
97	SLUDGE DRYING BEDS 1-6
98	RECLAMATION PLANT
99	BACKWASH HOLDING POND

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6\V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2102_D3167666.dgn

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO.: 06C2102	TITLE OF SHEET: CIVIL TESC PLAN PHASE 2 GRAND CANYON, SOUTH RIM	DRAWING NO.: 113 175376 PMIS/PKG NO.: 257282 SHEET: 86 OF 401	



0 30 60 90
Scale In Feet

GENERAL SHEET NOTES

A. SURFACE RESTORATION FOR CONSTRACTOR STAGING AREA. CONTRACTOR STAGING AREA SHALL BE RETURNED TO PREDEVLOPMENT CONDITIONS.

B. SEE CIVIL AND LANDSCAPE DRAWINGS FOR SITE RESTORATION.

SHEET NOTES

1. EROSION CONTROL BLANKET (3125-150)

FACILITIES LEGEND

(10) ADMINISTRATION BUILDING
(12) MAINTENANCE BUILDING
(18) RECEIVING STATION
(20) HEADWORKS
(22) ODOR CONTROL
(25) PROCESS TANKS
(32) PROCESS BUILDING
(70) RECLAIMED WATER TANK
(80) DIGESTER FACILITY
(85) DRYING BEDS
(86) PLANT DRAIN PUMP STATION
(87) COMPOST FACILITY
(88) EXTERIOR COVERED STORAGE

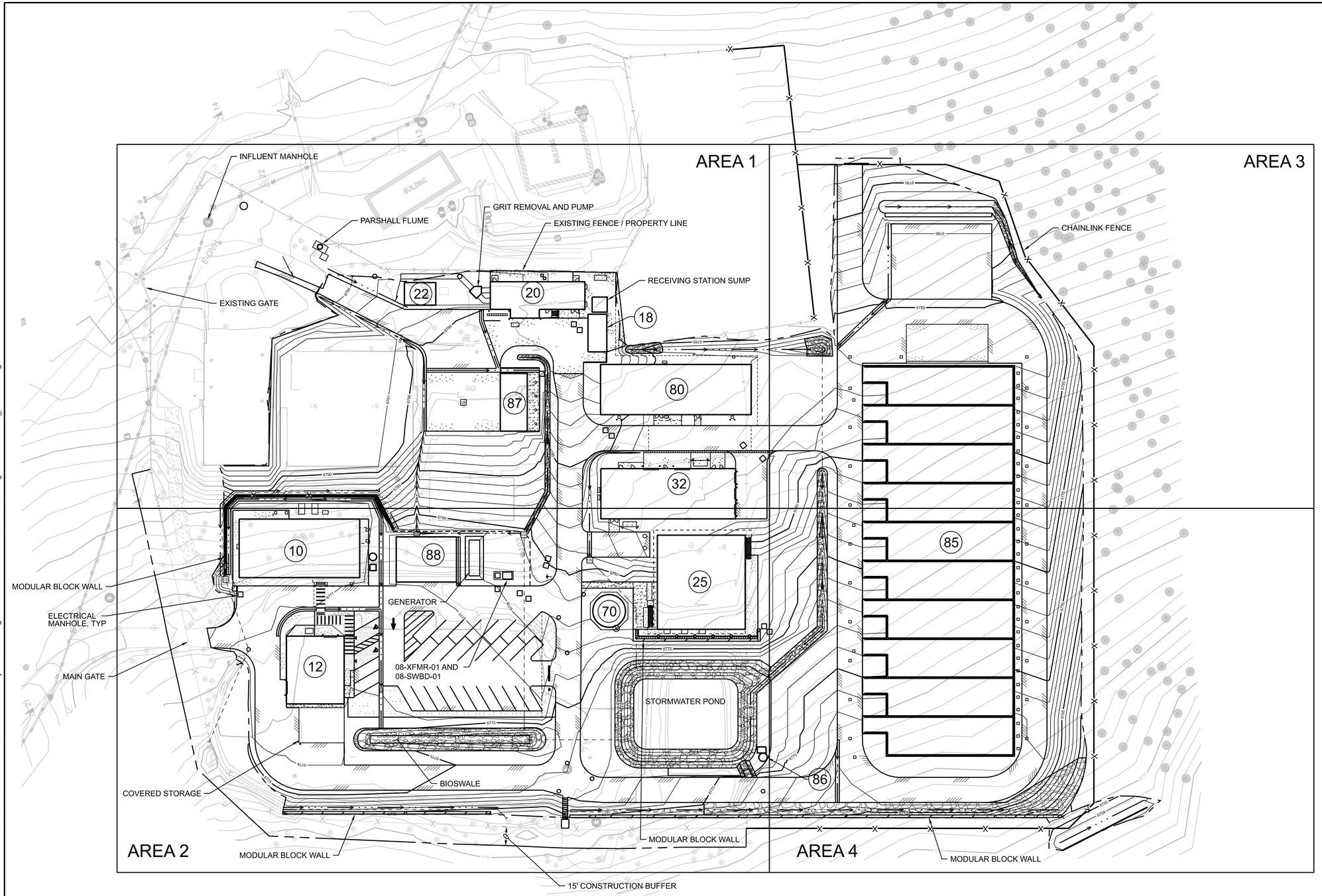
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY; GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06C2103	TITLE OF SHEET: CIVIL TESC PLAN PERMANENT STABILIZATION; GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 87 OF 401	

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6\V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8I Drawings\CIVIL\06C2103_D3167666.dgn

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS



0 40 80 120
Scale In Feet

FACILITIES LEGEND

10	ADMINISTRATION BUILDING
12	MAINTENANCE BUILDING
18	RECEIVING STATION
20	HEADWORKS
22	ODOR CONTROL
25	PROCESS TANKS
32	PROCESS BUILDING
70	RECLAIMED WATER TANK
80	DIGESTER FACILITY
85	DRYING BEDS
86	PLANT DRAIN PUMP STATION
87	COMPOST FACILITY
88	EXTERIOR COVERED STORAGE

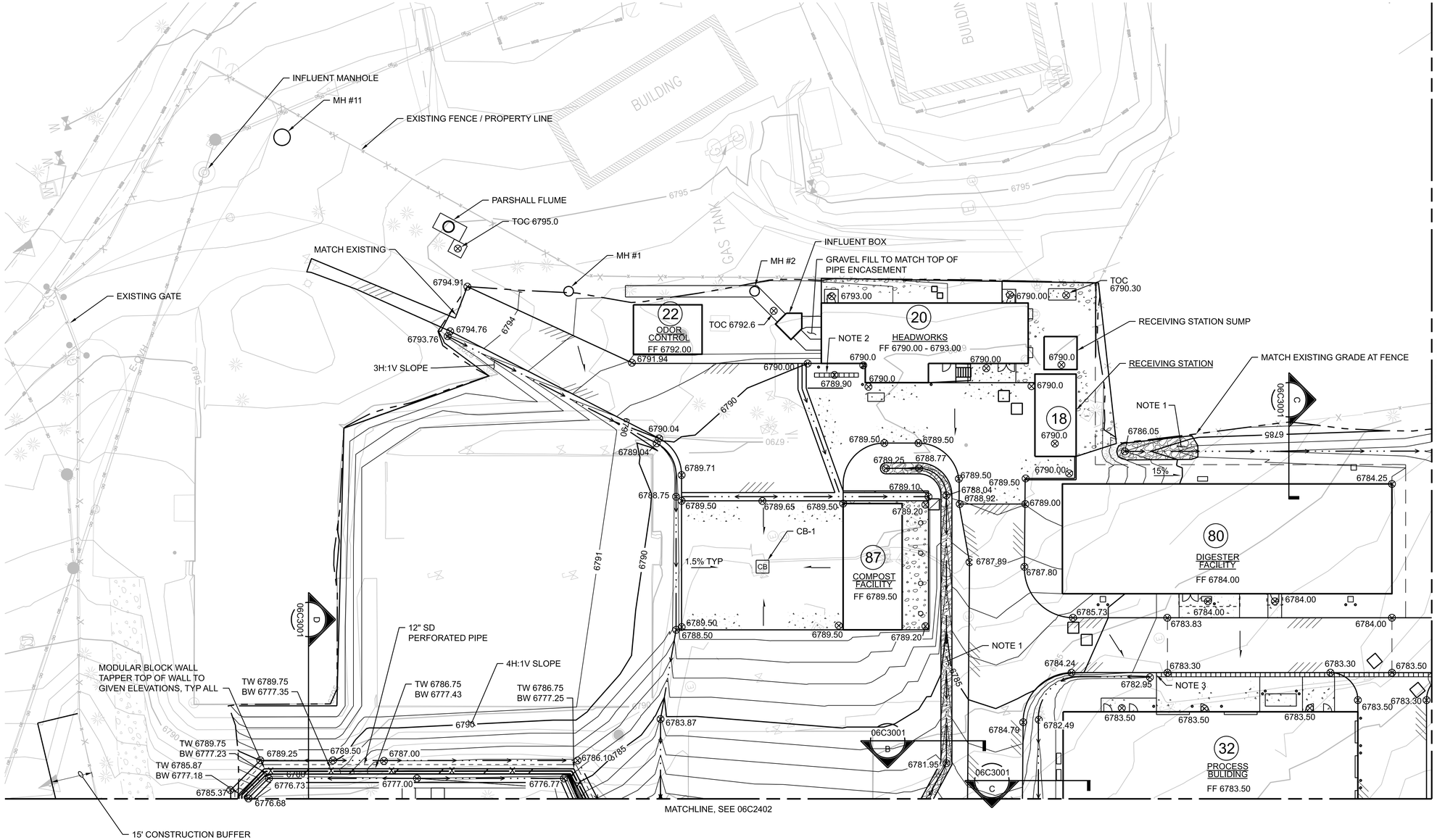
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY; GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER; CADD: B GYAOUROVA; TECH. REVIEW: D PETERSON; DATE: 06/2025	SUB SHEET NO. 06C2400	TITLE OF SHEET: CIVIL GRADING PLAN OVERALL; GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376; PMIS/PKG NO. 257282; SHEET 88 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2400_D3167666.dgn



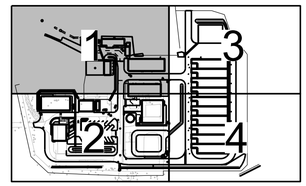
0 20 40 60
Scale In Feet

SHEET NOTES

1. 12" DEEP CLASS I LOOSE RIPRAP WITH UNDERLYING GEOTEXTILE.
2. SEE DRAWING 07Y2001 FOR DISCHARGE PIPING.
3. SLOPE BOTTOM OF TRENCH DRAIN FOR OPEN DISCHARGE AT ENDS.

CATCH BASIN TABLE

NAME	TOG EL	NORTHING	EASTING
CB-1	6789.06	1837425.71	631066.20



KEY PLAN

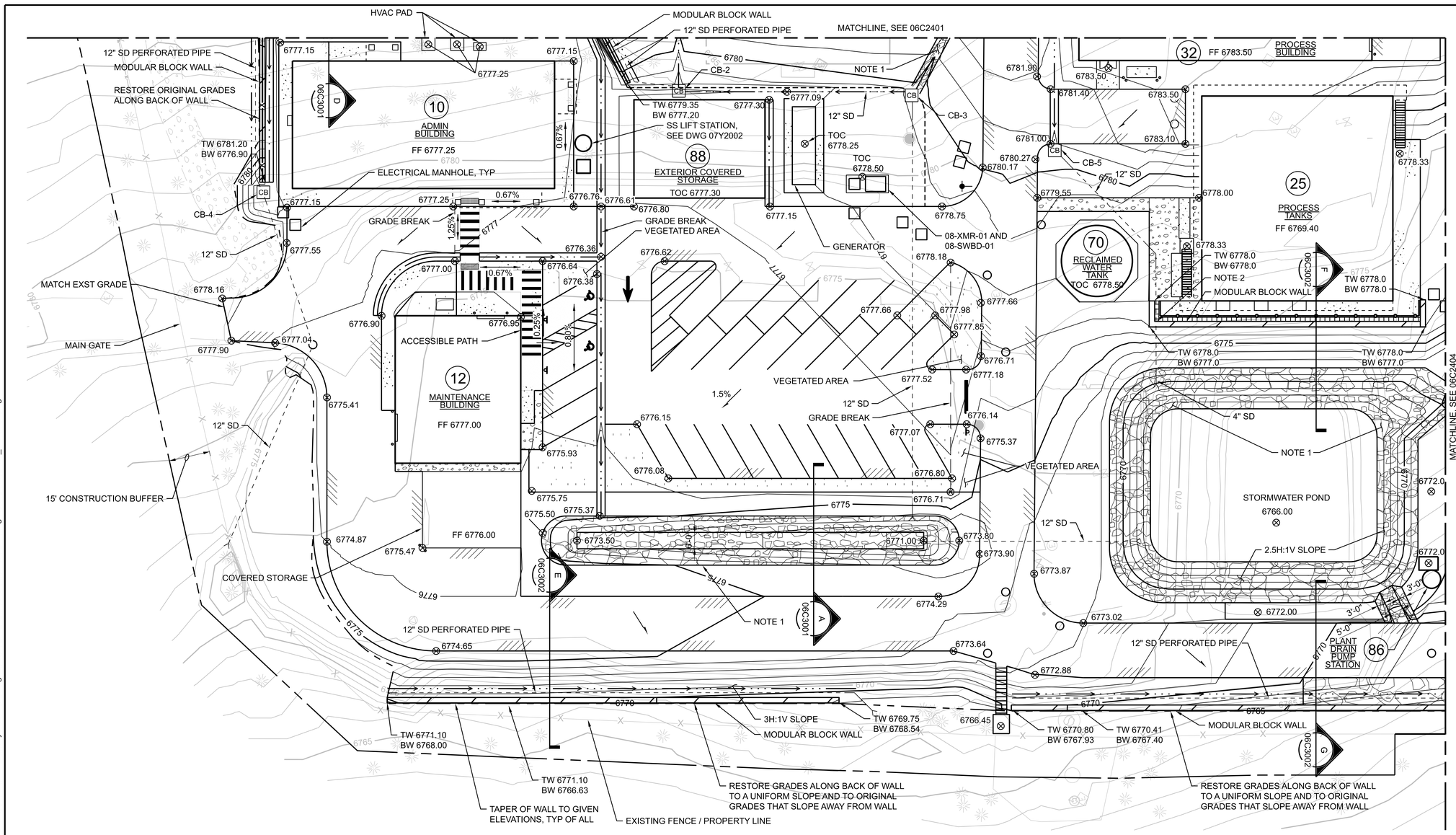
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY; GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER; CADD: B GYAOUROVA; TECH. REVIEW: D PETERSON; DATE: 06/2025	SUB SHEET NO. 06C2401	TITLE OF SHEET: CIVIL GRADING PLAN AREA 1; GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376; PMIS/PKG NO. 257282; SHEET 89 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2401_D3167666.dgn

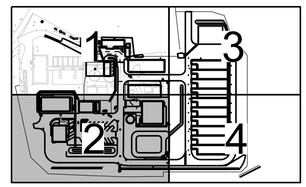


SHEET NOTES

1. 12" DEEP CLASS I LOOSE RIPRAP WITH UNDERLYING GEOTEXTILE
2. SEE DRAWING 07Y2002 FOR DISCHARGE PIPING

CATCH BASIN TABLE

NAME	TOG EL	NORTHING	EASTING
CB-2	6776.88	1837486.85	630974.27
CB-3	6779.17	1837404.47	630952.13
CB-4	6776.41	1837643.46	630974.92
CB-5	6780.90	1837358.38	630919.93



KEY PLAN

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM
JACOBS GOVERNMENT SERVICES COMPANY
GREENWOOD VILLAGE, CO

DESIGNED: K ARCHER
CADD: B GYAOUROVA
TECH. REVIEW: D PETERSON
DATE: 06/2025

SUB SHEET NO. 06C2402

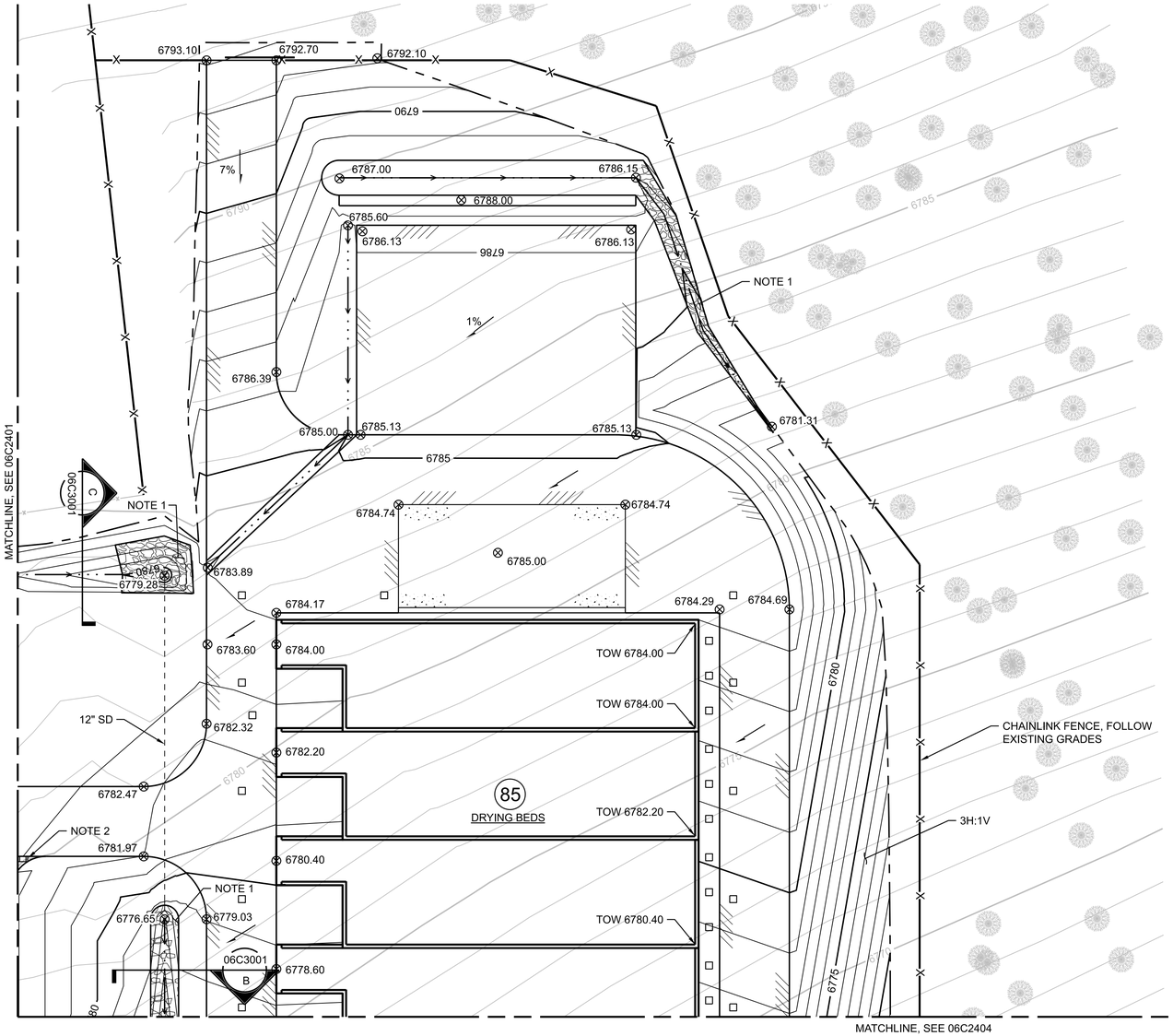
TITLE OF SHEET
CIVIL
GRADING PLAN
AREA 2
GRAND CANYON, SOUTH RIM

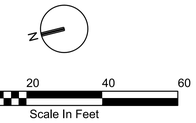
DRAWING NO. 113 175376
PMIS/PKG NO. 257282
SHEET 90 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

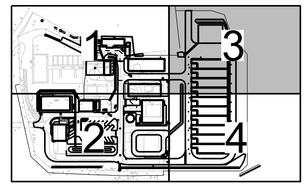
PLOT DATE: 17-JUN-2025 PLOT TIME: 13:32 SS6iV8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2402_D3167666.dgn





SHEET NOTES

1. 12" DEEP CLASS I LOOSE RIPRAP WITH UNDERLYING GEOTEXTILE
2. SLOPE BOTTOM OF TRENCH DRAIN FOR OPEN DISCHARGE AT ENDS



KEY PLAN

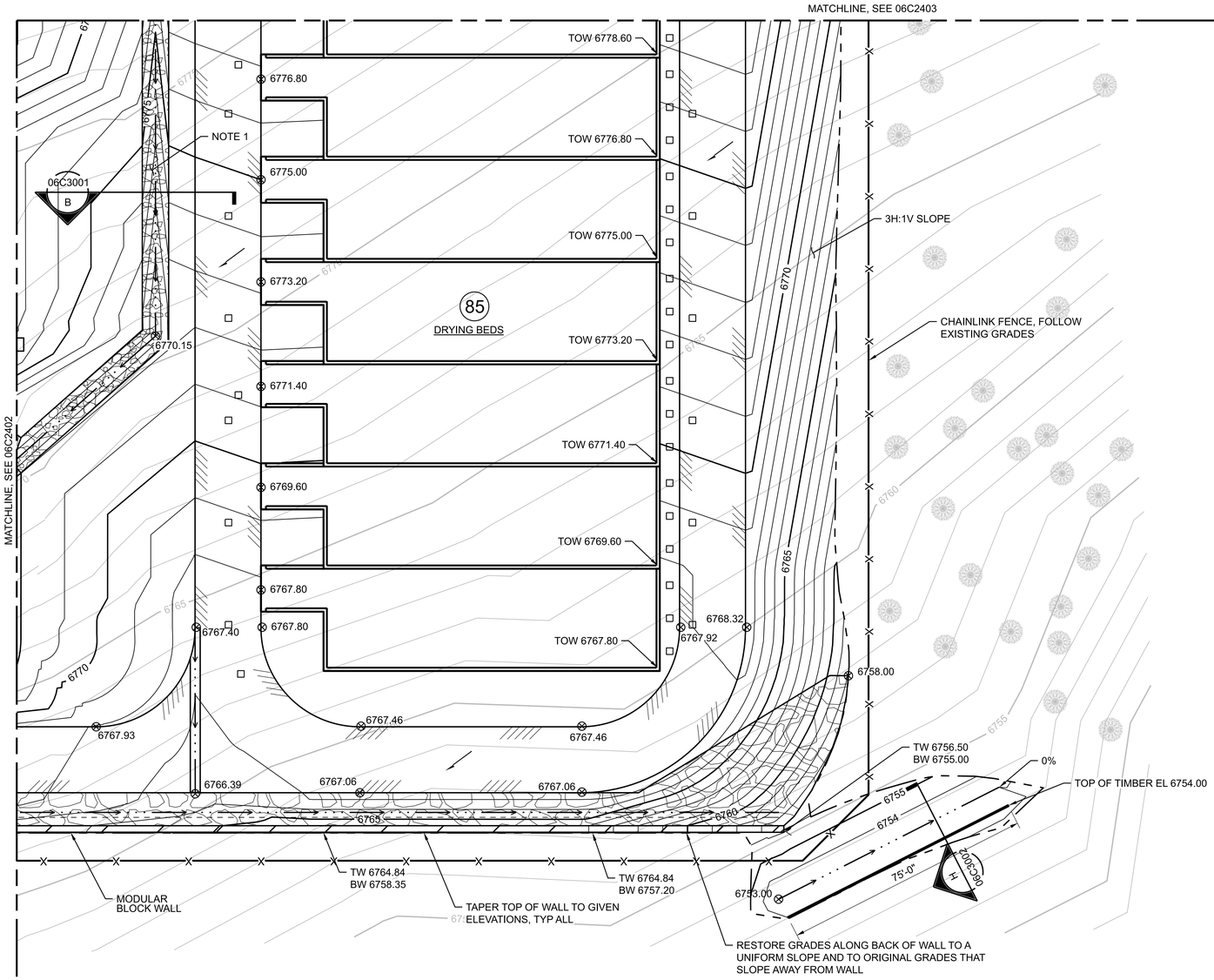
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER	SUB SHEET NO. 06C2403	TITLE OF SHEET: CIVIL GRADING PLAN AREA 3	DRAWING NO. 113 175376
	CADD: B GYAOUROVA			PMIS/PKG NO. 257282
	TECH. REVIEW: D PETERSON		GRAND CANYON, SOUTH RIM	SHEET 91 OF 401
	DATE: 06/2025			

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2403_D3167666.dgn

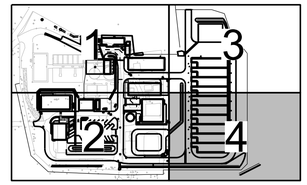


N

0 20 40 60
Scale In Feet

SHEET NOTES

1. 12" DEEP CLASS I LOOSE RIPRAP WITH UNDERLYING GEOTEXTILE



KEY PLAN

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER	SUB SHEET NO. 06C2404	TITLE OF SHEET: CIVIL GRADING PLAN AREA 4	DRAWING NO. 113 175376
	CADD: B GYAOUROVA			PMIS/PKG NO. 257282
	TECH. REVIEW: D PETERSON		GRAND CANYON, SOUTH RIM	SHEET 92 OF 401
	DATE: 06/2025			

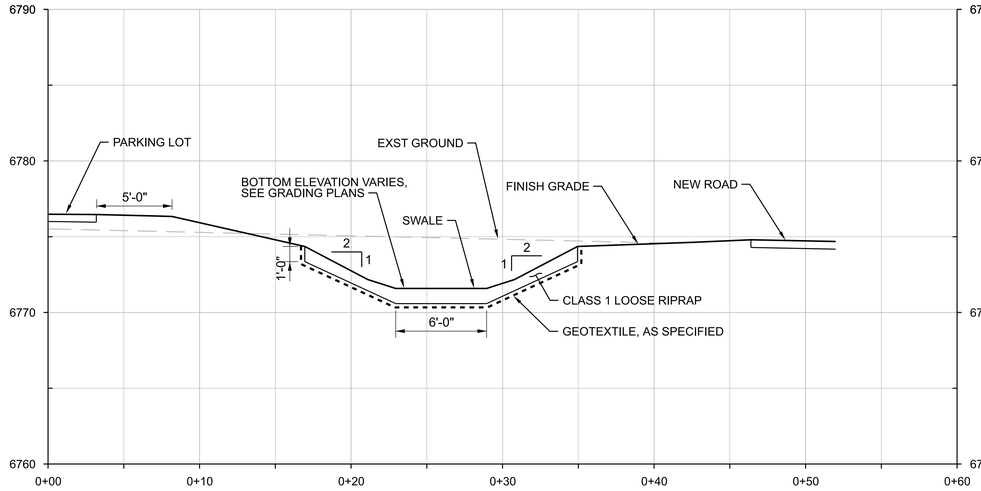
GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:16 SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C2404_D3167666.dgn

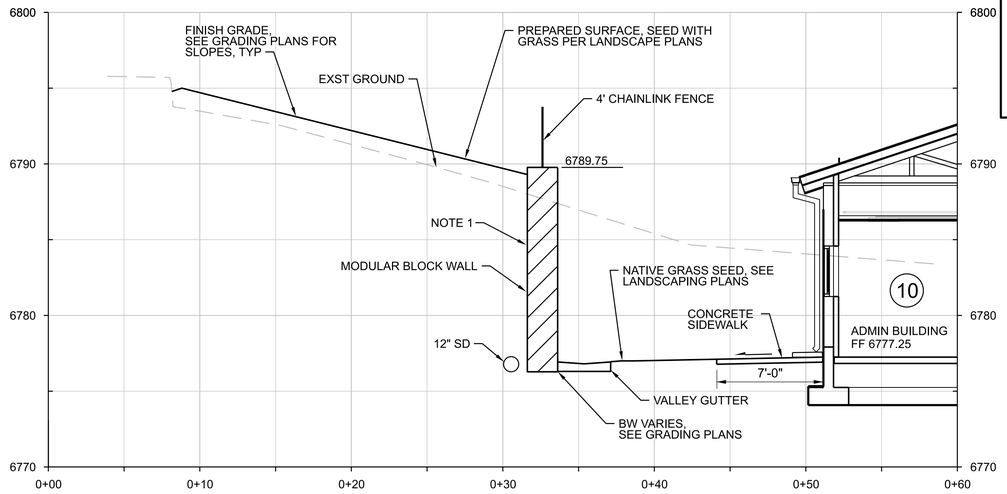
SHEET NOTES

1. MAXIMUM BEARING CAPACITY FOR FOUNDATIONS ON BEDROCK IS 10,000 PSF. MAXIMUM BEARING CAPACITY FOR FOUNDATIONS ON COMPACTED GRAVEL IS 4,000 PSF.



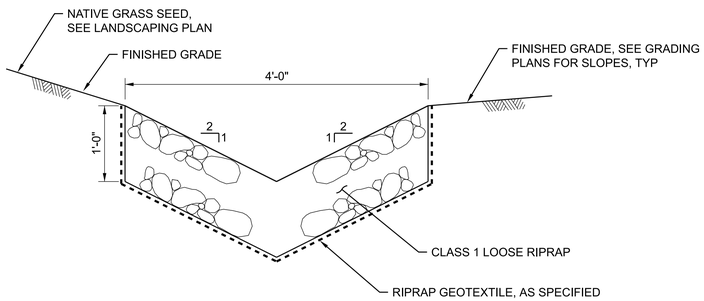
A SECTION
1"=5'-0"
06C2402

HORIZONTAL: 0 5 10 15 1"=5'-0"
VERTICAL: 0 5 10 15 1"=5'-0"



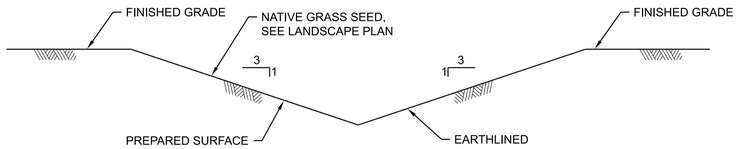
D SECTION
1"=5'-0"
06C2401
06C2402

HORIZONTAL: 0 5 10 15 1"=5'-0"
VERTICAL: 0 5 10 15 1"=5'-0"



B TYPICAL RIPRAP DITCH SECTION
1"=1'-0"
06C2401
06C2402
06C2403
06C2404

0 1 2 3
1"=1'-0"



C TYPICAL EARTHLINED DITCH SECTION
1"=1'-0"
06C2401
06C2403

0 1 2 3
1"=1'-0"

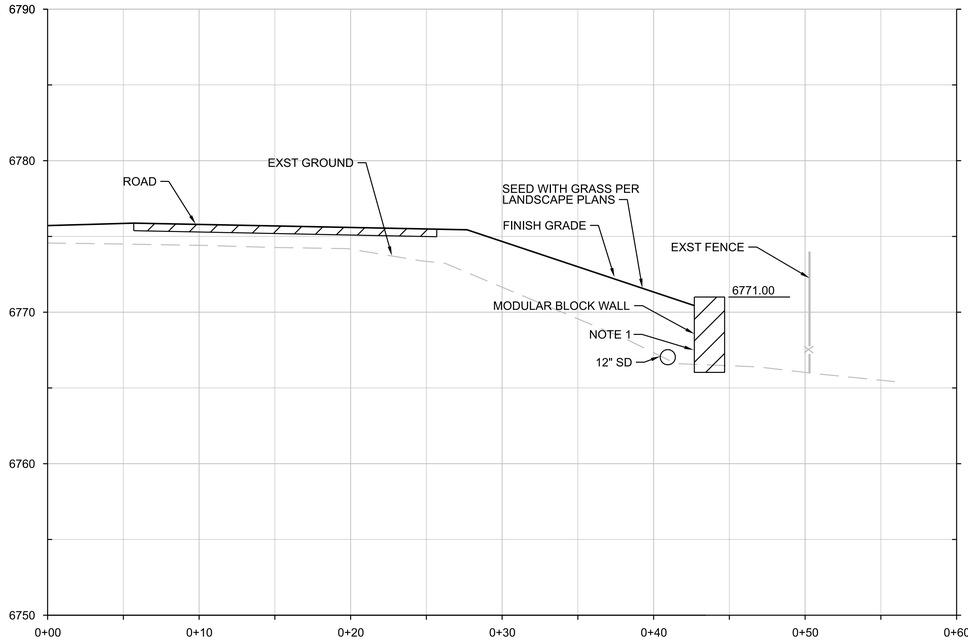
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 06C3001	TITLE OF SHEET CIVIL CROSS SECTIONS GRAND CANYON, SOUTH RIM	DRAWING NO. 113 / 175376 PMIS/PKG NO. 257282 SHEET 93 OF 401

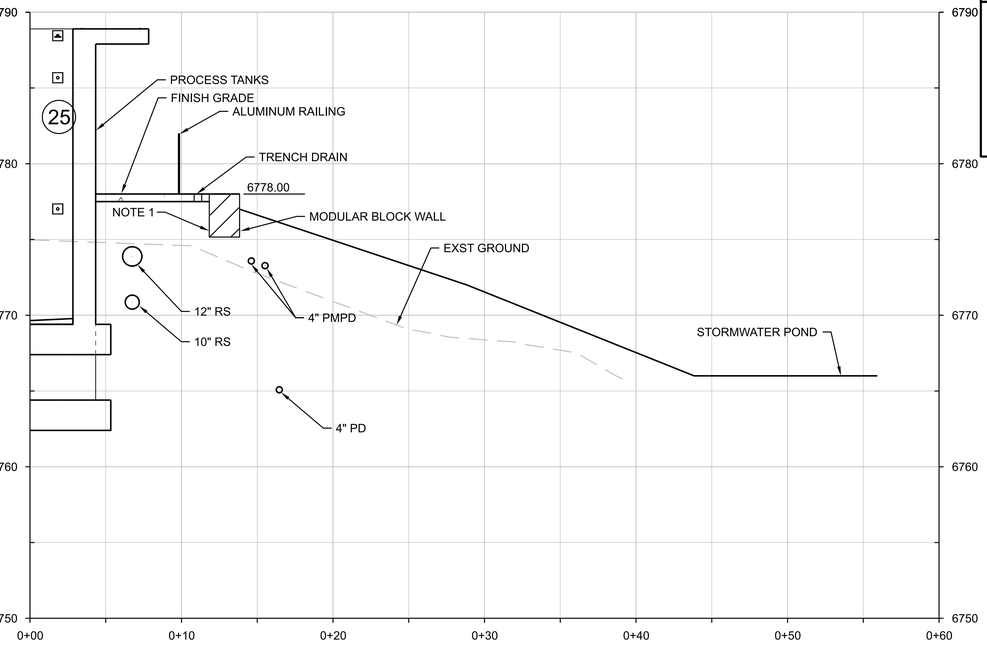
100% COMPLETE CONSTRUCTION DOCUMENTS

GRCA-257282

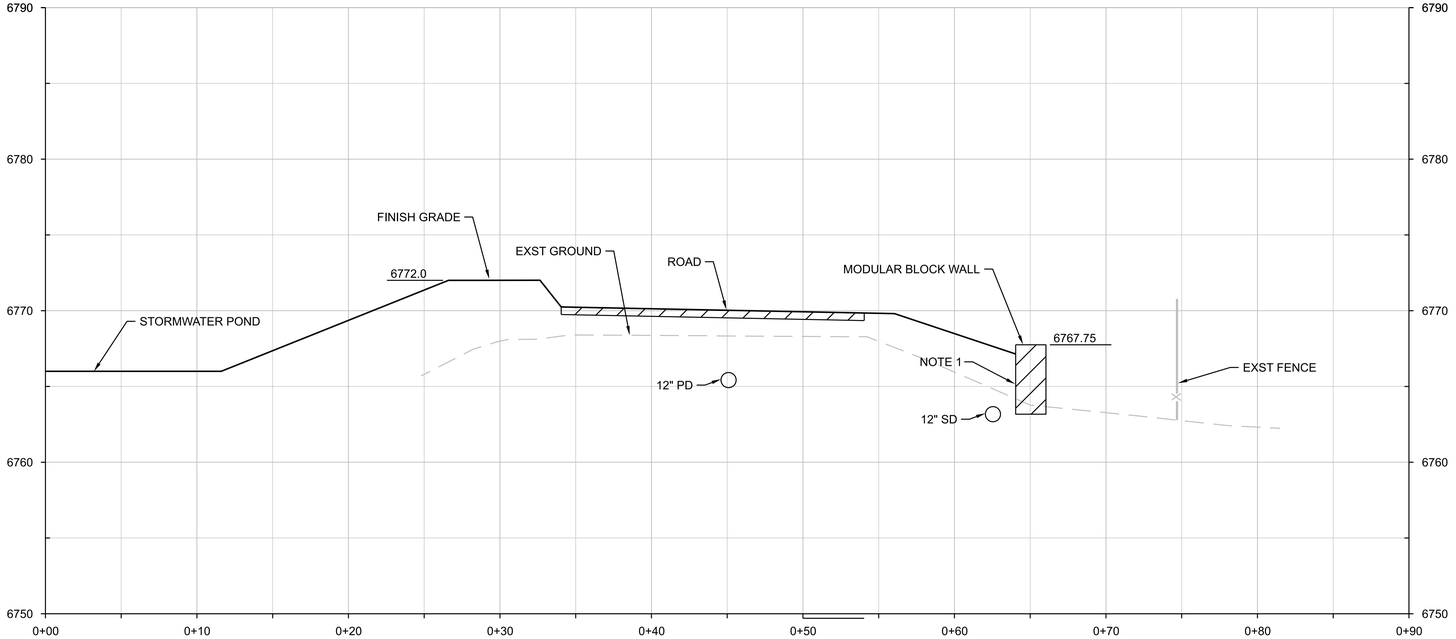
PLOT DATE: 16-JUN-2025 PLOT TIME: 19:18 SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06C3001_D3167666.dgn



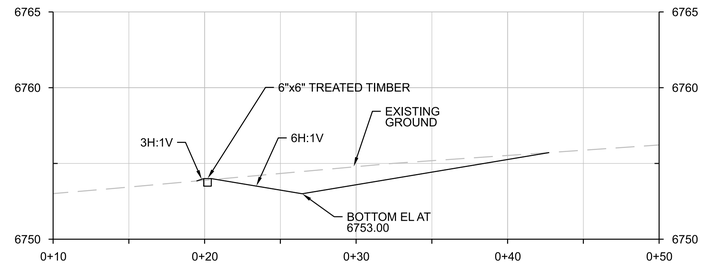
E SECTION
1"=5'-0"
06C2402



F SECTION
1"=5'-0"
06C2402



G SECTION
1"=5'-0"
06C2402



H SECTION
1"=5'-0"
06C2404

SHEET NOTES

1. MAXIMUM BEARING CAPACITY FOR FOUNDATIONS ON BEDROCK IS 10,000 PSF. MAXIMUM BEARING CAPACITY FOR FOUNDATIONS ON COMPACTED GRAVEL IS 4,000 PSF.

HORIZONTAL: 0 5 10 15 — 1"=5'-0"

VERTICAL: 0 5 10 15 — 1"=5'-0"

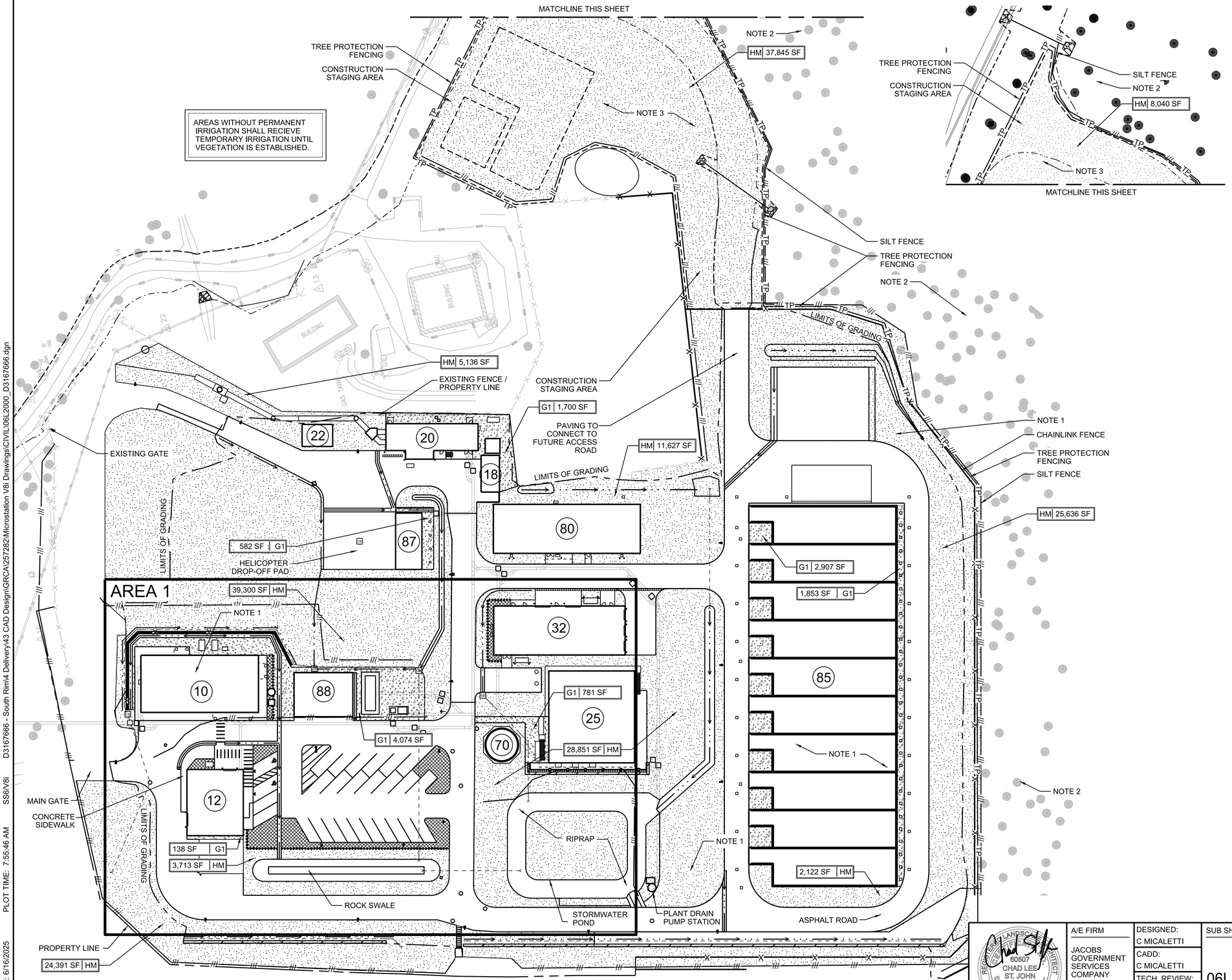
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER	SUB SHEET NO. 06C3002	TITLE OF SHEET: CIVIL CROSS SECTIONS	DRAWING NO. 113 175376
	CADD: B GYAOUROVA			PMIS/PKG NO. 257282
	TECH. REVIEW: D PETERSON			SHEET 94 OF 401
	DATE: 06/2025		GRAND CANYON, SOUTH RIM	

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:18 SS6\V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8I Drawings\CIVIL\06C3002_D3167666.dgn



GENERAL SHEET NOTES

A. REFERENCE LANDSCAPE PLAN AREA 1 FOR PLAN ENLARGEMENT OF INDIVIDUAL PLANTINGS.

B. REFERENCE LANDSCAPE DETAILS AND NOTES FOR TREE PROTECTION NOTES AND DETAILS.

C. REFERENCE IRRIGATION SHEETS FOR IRRIGATION LAYOUT AND CONNECTIONS.

SHEET NOTES

1. EXISTING TREES AND VEGETATION WITHIN LIMITS OF CONSTRUCTION TO BE REMOVED. ALL NATURAL AREAS DISTURBED WITHIN OR ADJACENT TO THESE LIMITS SHALL BE RESTORED TO EXISTING CONDITIONS USING SALVAGED ON-SITE TOPSOIL AND HYDROMULCH OR OTHER LANDSCAPING AS NOTED. SEEDED AREAS TO RECEIVE TEMPORARY IRRIGATION UNTIL ESTABLISHED.
2. EXISTING TREES AND VEGETATION TO REMAIN SHALL BE PROTECTED WITH TREE PROTECTION FENCING DURING CONSTRUCTION. TREES OR OTHER EXISTING LANDSCAPING TO REMAIN OUTSIDE LIMITS OF WORK THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE RESTORED OR REPLACED AT THE CONTRACTOR'S EXPENSE. THIS ITEM IS SUBSIDIARY TO ALL OTHER CONSTRUCTION ACTIVITIES.
3. THIS AREA IS FOR CONSTRUCTION STAGING. ALL EXISTING TREES IN THIS AREA SHALL BE CLEARED AND REMOVED. TREE PROTECTION FENCING SHALL BE PLACED AT ITS OUTER LIMITS TO PROTECT SURROUNDING TREES TO REMAIN.

LEGEND:

- HM 186,661 SF — HYDROMULCH / SEED MIX
- G1 12,035 SF — GRAVEL
- LANDSCAPE BED AREA; REF. AREA 1 LANDSCAPE PLAN FOR PLANTINGS; 3,497 SF
- — TP — TREE PROTECTION FENCING; REF. DETAILS

FACILITIES LEGEND

10	ADMINISTRATION BUILDING
12	MAINTENANCE BUILDING
18	RECEIVING STATION
20	HEADWORKS
22	ODOR CONTROL
25	PROCESS TANKS
32	PROCESS BUILDING
70	RECLAIMED WATER TANK
80	DIGESTER FACILITY
85	DRYING BEDS
86	PLANT DRAIN PUMP STATION
87	COMPOST FACILITY
88	EXTERIOR COVERED STORAGE

N 0 40 80 120 1"=40'

FULL SIZE DRAWINGS = 22"x34" BAR MEASURES 1" LONG 0" 1"

REGISTERED LANDSCAPE ARCHITECT 60507 CHAD LEE ST. JOHN Date Signed 2025.06.20 ARIZONA, U.S.A.
EXP. DATE: 2027.09.30

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY; GREENWOOD VILLAGE, CO	DESIGNED: C MICALETTI	SUB SHEET NO. 06L2000	TITLE OF SHEET: LANDSCAPE PLAN OVERALL	DRAWING NO. 113 175376
	CADD: C MICALETTI			PMIS/PKG NO. 257282
	TECH. REVIEW: C STJOHN			SHEET 95 OF 401
	DATE: 06/2025		GRAND CANYON, SOUTH RIM	

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 7:55:46 AM SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06L2000_D3167666.dgn

GENERAL SHEET NOTES

A. REFERENCE LANDSCAPE DETAILS AND NOTES FOR PLANT SCHEDULE AND DETAILS.

B. REFERENCE LANDSCAPE IRRIGATION SHEETS FOR IRRIGATION LAYOUT AND CONNECTIONS.

C. AREAS WITHOUT PERMANENT IRRIGATION SHALL RECIEVE TEMPORARY IRRIGATION UNTIL VEGETATION IS ESTABLISHED.

SHEET NOTES

1. ALL LANDSCAPED AREAS AS NOTED SHALL RECEIVE 1 1/2-3" ROCK MULCH, FULL COVERAGE; REF. LANDSCAPE SCHEDULE

LEGEND:

HYDROMULCH / SEED MIX

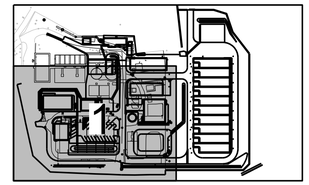
GRAVEL; REF. OVERALL LANDSCAPE PLAN

SHRUBS

OE 14	DESERT PRICKLY PEAR /	*Opuntia engelmannii*
CM 41	FERNBUSH /	*Chamaebatiaria millefolium*
FP 8	APACHE PLUME /	*Fallugia paradoxa*
EN 42	RUBBER RABBITBRUSH /	*Ericameria nauseosa*
AU 19	UTAH AGAVE /	*Agave utahensis*
E1 310 LF	STEEL EDGING	

FACILITIES LEGEND

10	ADMINISTRATION BUILDING
12	MAINTENANCE BUILDING
25	PROCESS TANKS
32	PROCESS BUILDING
70	RECLAIMED WATER TANK
80	DIGESTER FACILITY
87	COMPOST FACILITY
88	EXTERIOR COVERED STORAGE



KEY PLAN

AREAS WITHOUT PERMANENT IRRIGATION SHALL RECIEVE TEMPORARY IRRIGATION UNTIL VEGETATION IS ESTABLISHED.

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0 20 40 60
1"=20'
0" 1"

REGISTERED LANDSCAPE ARCHITECT
90507
CHAD LEE ST. JOHN
Date Signed 2025.06.20
ARIZONA, U.S.A.
EXP. DATE: 2027.09.30

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: C MICALETTI CADD: C MICALETTI TECH. REVIEW: C STJOHN DATE: 06/2025	SUB SHEET NO.: 06L2001	TITLE OF SHEET: LANDSCAPE PLAN AREA 1 GRAND CANYON, SOUTH RIM	DRAWING NO.: 113 175376 PMIS/PKG NO.: 257282 SHEET: 96 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 7:55:52 AM SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06L2001_D3167666.dgn

LANDSCAPE SCHEDULE

*ALL PLANT MATERIAL TO BE PROVIDED BY THE GOVERNMENT

SHRUBS

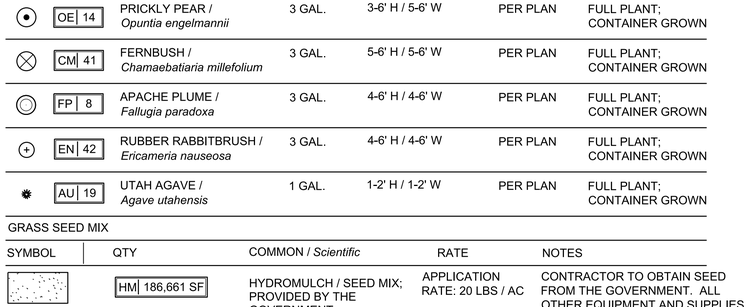
SYMBOL	QTY	COMMON / *Scientific*	SIZE AT PLANTING	MATURE HEIGHT / SPREAD	SPACING	NOTES
⊙	OE 14	PRICKLY PEAR / *Opuntia engelmannii*	3 GAL.	3-6' H / 5-6' W	PER PLAN	FULL PLANT; CONTAINER GROWN
⊗	CM 41	FERNBUSH / *Chamaebatiaria millefolium*	3 GAL.	5-6' H / 5-6' W	PER PLAN	FULL PLANT; CONTAINER GROWN
◯	FP 8	APACHE PLUME / *Fallugia paradoxa*	3 GAL.	4-6' H / 4-6' W	PER PLAN	FULL PLANT; CONTAINER GROWN
⊕	EN 42	RUBBER RABBITBRUSH / *Ericameria nauseosa*	3 GAL.	4-6' H / 4-6' W	PER PLAN	FULL PLANT; CONTAINER GROWN
✸	AU 19	UTAH AGAVE / *Agave utahensis*	1 GAL.	1-2' H / 1-2' W	PER PLAN	FULL PLANT; CONTAINER GROWN

GRASS SEED MIX

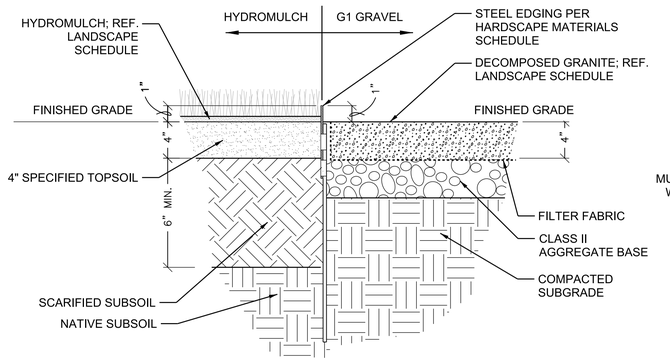
SYMBOL	QTY	COMMON / *Scientific*	RATE	NOTES
	HM 186,661 SF	HYDROMULCH / SEED MIX; PROVIDED BY THE GOVERNMENT	APPLICATION RATE: 20 LBS / AC	CONTRACTOR TO OBTAIN SEED FROM THE GOVERNMENT. ALL OTHER EQUIPMENT AND SUPPLIES NECESSARY TO COMPLETE THIS APPLICATION TO BE PROVIDED BY CONTRACTOR.

HARDSCAPE MATERIALS

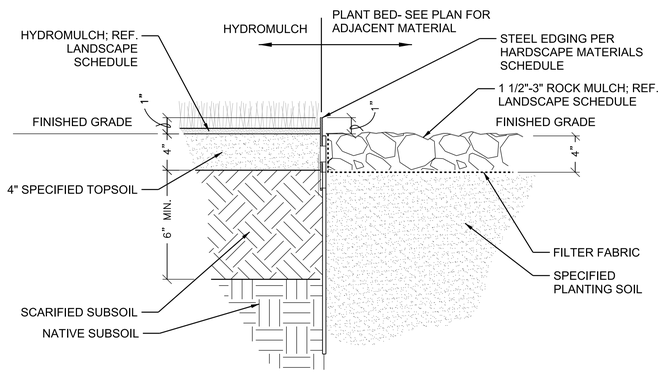
SYMBOL	QTY	DESCRIPTION	SIZE	COLOR	NOTES
	G1 12,035 SF AT 4" DEPTH (149 CY)	DECOMPOSED GRANITE	1/4" - 3/8"	YAVAPAI PINK CORAL	MANUFACTURER.: ARIZONA SAND AND GRAVEL.
N/A LANDSCAPED AREAS AS NOTED ON PLAN	3,497 SF AT 4" DEPTH (43 CY)	RIVER ROCK MULCH	1 1/2" - 3"	DECORATIVE NATURAL LANDSCAPE RIVER ROCK	APPLY AS MULCH IN ALL PLANT BEDS; FULL COVERAGE; MANUFACTURER.: ARIZONA SAND AND GRAVEL.
	E1 310 LF	LANDSCAPE STEEL EDGING	5" DEPTH	BROWN	INSTALL PER MANUFACTURER'S RECOMMENDATIONS



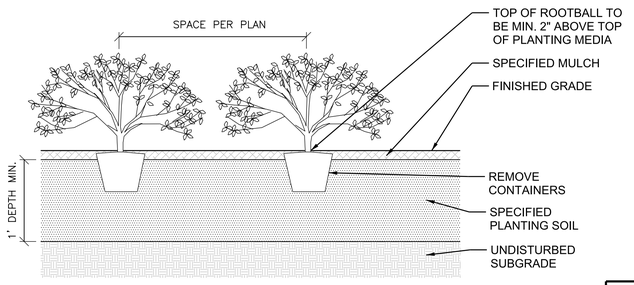
1 TOPSOIL DETAIL FOR ALL DISTURBED AREAS
NO SCALE



2 TYPICAL G1 GRAVEL SECTION
NO SCALE



3 TYPICAL PLANTING BED SECTION
NO SCALE



4 TYPICAL SHRUB PLANTING DETAIL
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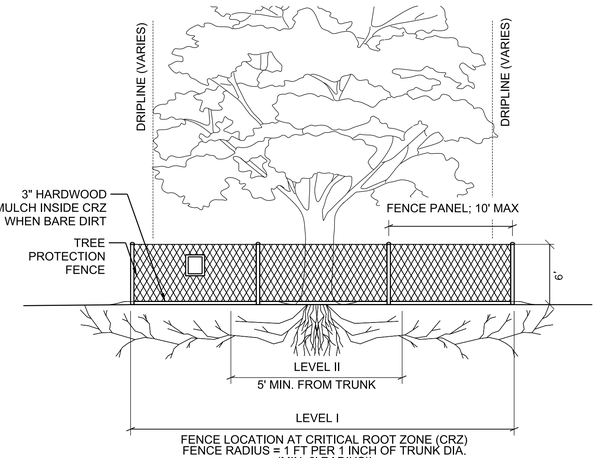
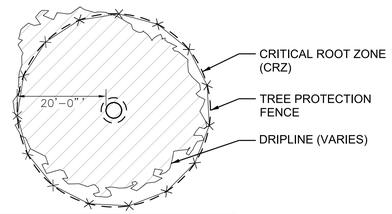
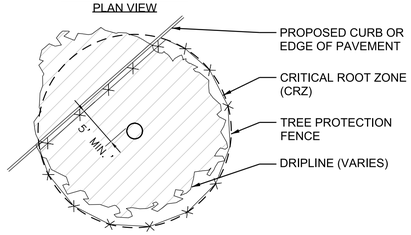


LEVEL I PROTECTION
PLAN VIEW



FENCING SHOWN IN DETAILS IS DIAGRAMMATIC ONLY AND SHALL CONFORM TO THE ACTUAL TREE DRIPLINE AND BE LIMITED TO THE PROJECT BOUNDARY

LEVEL II PROTECTION
PLAN VIEW



WHEN CONSTRUCTION OCCURS IN CRZ, ESTABLISH FENCE PROTECTION A MINIMUM OF 5' FROM TRUNK.

5 TREE PROTECTION DETAILS
NO SCALE

GENERAL SHEET NOTES

1. CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND MARKING OF ALL UNDERGROUND OR ABOVE GROUND UTILITIES WITHIN THE PROJECT.
2. ALL LANDSCAPE BED AREAS TO BE IRRIGATED AS SHOWN ON IRRIGATION PLAN.
3. AREAS WITH NO PERMANENT IRRIGATION SHALL RECEIVE TEMPORARY IRRIGATION UNTIL VEGETATION IS ESTABLISHED.
4. LANDSCAPE AREAS SHALL BE KEPT FREE OF TRASH, LITTER, WEEDS AND OTHER MATERIALS OF PLANTS NOT A PART OF THE ORIGINAL LANDSCAPING.
5. ALL LANDSCAPE AREAS SHALL BE PROTECTED FROM VEHICULAR TRAFFIC THROUGH THE USE OF CONCRETE CURBS, WHEEL STOPS OR OTHER PERMANENT BARRIERS.
6. ALL LANDSCAPE AREAS SHALL BE CONSTRUCTED, INSTALLED, AND MAINTAINED SO AS NOT TO OBSTRUCT VIEW OF MOTORISTS BETWEEN THE STREET AND ACCESS DRIVES. VISIBILITY SHALL REMAIN UNOBSTRUCTED AT ALL TIMES.
7. ALL PERMEABLE SURFACES NOT OCCUPIED BY SHRUBS, PLANTING BEDS, SIGNS, AND OTHER PERMITTED ITEMS OR FIXTURES SHALL BE LAWN OR GRAVEL UNLESS NOTED OTHERWISE.
8. REFERENCE ARCHITECTURAL AND CIVIL PLANS FOR DETAILED BUILDING LAYOUT, RAMPS, STAIRS AND WALKS.
9. REFERENCE CIVIL PLANS FOR PROPOSED GRADES.
10. FINAL LOCATION OF PLANT MATERIAL MAY VARY DUE TO ACTUAL FIELD CONDITIONS AND PROPOSED GRADES. GENERAL INTENT SHALL BE MET.
11. EXISTING TREES TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION BY METHODS SHOWN HEREIN.

TREE PROTECTION NOTES

1. A ROOT PROTECTION ZONE WILL BE ESTABLISHED AROUND EACH TREE OR ANY VEGETATION TO BE PRESERVED TO MEET THE LANDSCAPE OR TREE PRESERVATION ORDINANCES. THE ROOT PROTECTION ZONE SHALL BE AN AREA DEFINED BY THE RADIUS EXTENDING OUTWARD FROM THE TRUNK OF THE TREE A DISTANCE OF ONE (1) LINEAR FOOT FOR EACH INCH DIAMETER INCH AT BREAST HEIGHT (4.5 ') OF THE TREE. A 10-INCH DIAMETER TREE WILL HAVE A 10 FOOT RADIUS ROOT PROTECTION ZONE.
2. NO WORK SHALL BEGIN WHERE TREE PROTECTION FENCING HAS NOT BEEN COMPLETED AND APPROVED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING CONSTRUCTION. THE FENCING WILL BE A MINIMUM OF 6' HEIGHT.
3. ALL ROOTS LARGER THAN ONE-INCH IN DIAMETER ARE TO BE CUT CLEANLY AND OAK WOUNDS PAINTED WITHIN 30 MINUTES.
4. EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE WORK DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
5. NO EQUIPMENT, VEHICLES OR MATERIALS SHALL BE OPERATED OR STORED WITHIN THE ROOT PROTECTION ZONE. NO CLEAN-OUT AREAS WILL BE CONSTRUCTED SO THAT THE MATERIAL WILL BE IN OR MIGRATE TO THE ROOT PROTECTION ZONE.
6. NO GRADE CHANGE MORE THAN 3" IS ALLOWED WITHIN THE ROOT PROTECTION ZONE.
7. ROOTS OR BRANCHES IN CONFLICT WITH CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. ALL OAK WOUNDS SHALL BE PAINTED WITHIN 30 MINUTES TO PREVENT OAK WILT INFECTION.
8. TREES WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED.
9. TREES MUST BE MAINTAINED IN GOOD HEALTH THROUGHOUT THE CONSTRUCTION PROCESS. MAINTENANCE MAY INCLUDE WATERING THE ROOT PROTECTION ZONE AND OR WASHING FOLIAGE.
10. NO WIRES, NAILS OR OTHER MATERIALS MAY BE ATTACHED TO PROTECTED TREES.
11. AVOID TRENCHING THROUGH THE CRZ OF PROTECTED TREES. ALTER ROUTES OF UNDERGROUND INFRASTRUCTURE OR USE ALTERNATE METHODS SUCH AS PIPE BORING OR HAND TRENCHING. DO NOT TRENCH OR EXCAVATE THE SOIL WITHIN THE CRZs. TUNNEL OR BORE AT LEAST 18 INCHES BENEATH CRZs TO INSTALL UTILITY LINES.
12. TREE PLANTING AND MAINTENANCE: ALL PRESERVED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATING, FERTILIZING, PRUNING, AND OTHER MAINTENANCE AS NEEDED. TREES THAT DIE WITHIN TWELVE MONTHS SHALL BE REPLACED WITH A TREE OF COMPARABLE SIZE AND SPECIES.

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

NO SCALE

REGISTERED LANDSCAPE ARCHITECT
60507
CHAD LEE ST. JOHN
Date Signed 2025.06.20
ARIZONA, U.S.A.
EXP. DATE: 2027.09.30

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY
	GREENWOOD VILLAGE, CO
DESIGNED:	C MICALETTI
CADD:	C MICALETTI
TECH. REVIEW:	C STJOHN
DATE:	06/2025
SUB SHEET NO.	06L5001

TITLE OF SHEET
LANDSCAPE SCHEDULE NOTES AND DETAILS
GRAND CANYON, SOUTH RIM

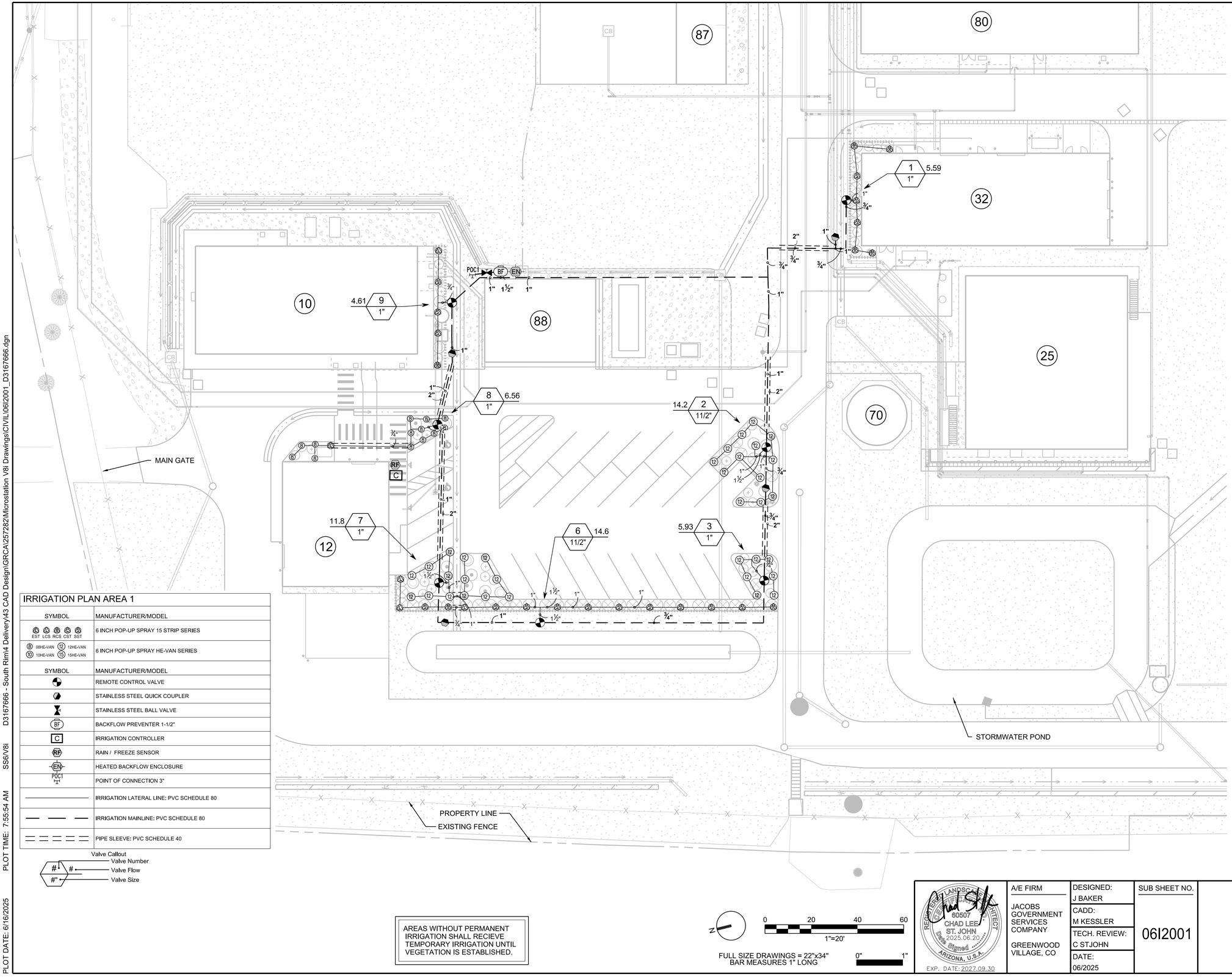
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	97 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 7:55:11 AM SS6V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\C\VIL\06L5001_D3167666.dgn

PLOT DATE: 6/16/2025 PLOT TIME: 7:55:54 AM SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06I2001_D3167666.dgn



IRRIGATION PLAN AREA 1

SYMBOL	MANUFACTURER/MODEL
EST LCS RCS CST SST	6 INCH POP-UP SPRAY 15 STRIP SERIES
08 08HE-VAN 12 12HE-VAN 10 10HE-VAN 15 15HE-VAN	6 INCH POP-UP SPRAY HE-VAN SERIES
SYMBOL	**MANUFACTURER/MODEL**
	REMOTE CONTROL VALVE
	STAINLESS STEEL QUICK COUPLER
	STAINLESS STEEL BALL VALVE
BF	BACKFLOW PREVENTER 1-1/2"
C	IRRIGATION CONTROLLER
RF	RAIN / FREEZE SENSOR
EN	HEATED BACKFLOW ENCLOSURE
POC1 1"	POINT OF CONNECTION 3"
	IRRIGATION LATERAL LINE: PVC SCHEDULE 80
	IRRIGATION MAINLINE: PVC SCHEDULE 80
	PIPE SLEEVE: PVC SCHEDULE 40

Valve Callout
- # — Valve Number
- # — Valve Flow
- #" — Valve Size

AREAS WITHOUT PERMANENT IRRIGATION SHALL RECIEVE TEMPORARY IRRIGATION UNTIL VEGETATION IS ESTABLISHED.

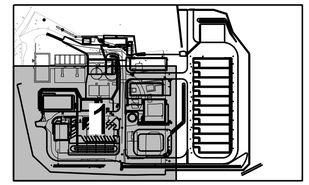
N

0 20 40 60
1"=20'

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

IRRIGATION NOTES

1. IRRIGATION PLAN IS SCHEMATIC. ALL PIPING HEADS,VALVES, ETC, SHALL BE LOCATED AS SHOWN ON THE DETAILS. REPORT ANY DISCREPANCIES BETWEEN ACTUAL AND PROPOSED SITE CONDITIONS TO THE GOVERNMENT. DO NOT PROCEED WITH WORK UNTIL SAID DISCREPANCIES ARE RESOLVED.
2. VERIFY THAT THE WORK OF OTHER CONTRACTORS/TRADES IS SUFFICIENTLY COMPLETE TO ALLOW COMMENCEMENT OF IRRIGATION INSTALLATION PRIOR TO BEGINNING WORK. CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL IRRIGATION SLEEVES UNDER PAVEMENT WITH OTHER CONTRACTORS.
3. EXPENSE FOR ADDITIONAL MATERIALS, LABOR, ETC. ABOVE AND BEYOND THE CURRENT CONTRACT SHALL BE ADDRESSED THROUGH A WRITTEN CHANGE ORDER, SUPPLIED BY THE CONTRACTOR, AND APPROVED BY THE GOVERNMENT PRIOR TO THE START OF SUCH WORK.
4. ELECTRIC CONTROL VALVES SHALL BE SIZED AS SHOWN ON PLAN. VALVES SHALL BE INSTALLED IN VALVE BOXES LARGE ENOUGH TO PERMIT MANUAL OPERATION, REMOVAL OF SOLENOID AND/OR VALVE COVER WITHOUT ANY EARTH EXCAVATION.
5. AUTOMATIC CONTROLLER SHALL BE INSTALLED AT LOCATION SHOWN.
6. ALL SLEEVES TO BE SCHEDULE 40 PVC. SLEEVES SHALL BE INSTALLED WHEREVER PIPES RUN UNDER PAVEMENT. SLEEVES MUST BE 2 SIZES LARGER THAN THE SUM OF ALL PIPES INSIDE SLEEVE.
7. TEN DAYS PRIOR TO START OF CONSTRUCTION, LANDSCAPE OR IRRIGATION CONTRACTOR SHALL VERIFY STATIC WATER PRESSURE. IF STATIC PRESSURE IS LESS THAN 70 P.S.I., DO NOT WORK UNTIL NOTIFIED TO DO SO BY THE GOVERNMENT.
8. ALL MAIN LINE PIPING TO HAVE A MINIMUM OF 18 INCHES OF COVER. ALL LATERAL PIPING TO HAVE A MINIMUM OF 12 INCHES OF COVER. ALL PIPING UNDER PAVING SHALL HAVE A MINIMUM OF 18" OF COVER BELOW BOTTOM OF PAVED SURFACE.
9. THE IRRIGATION CONTRACTOR SHALL COORDINATE INSTALLATION OF THE SYSTEM WITH THE LANDSCAPE CONTRACTOR SO THAT ALL PLANT MATERIAL WILL BE WATERED IN ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS.
10. IRRIGATION SYSTEM INSTALLATION TO BE PERFORMED IN ACCORDANCE WITH ALL PERTINENT CODES AND ORDINANCES.
11. NO PIPING SHALL BE LOCATED UNDER TREE ROOT BALLS.
12. NO MACHINE TRENCHING IS TO BE DONE WITHIN DRIPLINE OF EXISTING PRESERVED TREES. TRENCHING IS TO BE DONE BY HAND OR BY TUNNELING UNDER ROOT SYSTEM BY METHOD APPROVED BY THE GOVERNMENT.
13. PIPING LAYOUT IS DIAGRAMMATIC, IT SHALL BE ROUTED AROUND EXISTING PLANT MATERIAL TO AVOID DAMAGE TO EXISTING PLANTS/TREES. DO NOT CUT ANY ROOT OVER 3/4" DIAMETER. ANY CUTS MADE SHALL BE CLEAN AND WITHOUT FRAYED ENDS.
14. THE IRRIGATION CONTRACTOR SHALL ADJUST ALL NOZZLES TO ENSURE NO OVERSPRAY ONTO HARD SURFACES.
15. SEE IRRIGATION DETAILS FOR ADDITIONAL INFORMATION.
16. IRRIGATION CONTRACTOR MUST COORDINATE POWER CONNECTION TO IRRIGATION CONTROLLER.
17. IRRIGATION CONTRACTOR MUST COORDINATE POTABLE WATER CONNECTION TO IRRIGATION SYSTEM.



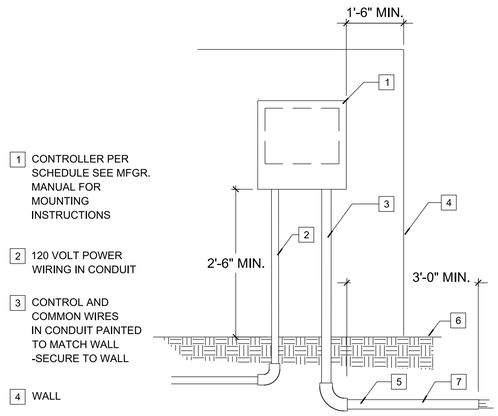
KEY PLAN

REGISTERED LANDSCAPE ARCHITECT 60507 CHAD LEE ST. JOHN 2025.06.20 ARIZONA, U.S.A.
EXP. DATE: 2027.09.30

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO
DESIGNED:	J BAKER
CADD:	M KESSLER
TECH. REVIEW:	C STJOHN
DATE:	06/2025
SUB SHEET NO.	06I2001
TITLE OF SHEET	IRRIGATION PLAN AREA 1
	GRAND CANYON, SOUTH RIM
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	98 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 7:55:42 AM SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\06I5001_D3167666.dgn



1 CONTROLLER PER SCHEDULE SEE MFGR. MANUAL FOR MOUNTING INSTRUCTIONS

2 120 VOLT POWER WIRING IN CONDUIT

3 CONTROL AND COMMON WIRES IN CONDUIT PAINTED TO MATCH WALL -SECURE TO WALL

4 WALL

5 2" CONDUIT SWEEP TO OUTSIDE PAINTED TO MATCH WALL

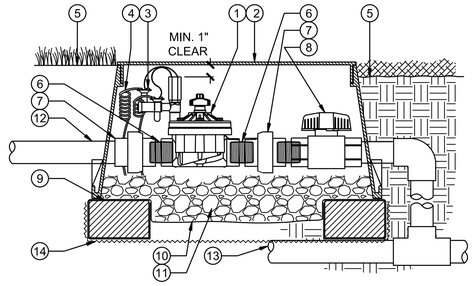
6 FINISHED GRADE

7 UF. DIRECT BURIAL WIRES TO REMOTE CONTROL VALVES CONDUIT TO 3' FROM CONTROLLER

1 IRRIGATION CONTROLLER

NOTES

1. REMOTE CONTROL VALVE (ICV) WITH FLOW CONTROL
2. IRRIGATION VALVE BOX: HEAT STAMP LID WITH 'RCV' IN 2" LETTERS
3. WATERPROOF CONNECTORS (2)
4. 18"-24" COILED WIRE TO CONTROLLER
5. FINISH GRADE AT ADJACENT SURFACE (TURF OR MULCH)
6. SCH. 80 CLOSE NIPPLE, MATCH SIZE TO VALVE
7. FPT X FPT UNION
8. STAINLESS STEEL BALL VALVE
9. BRICK SUPPORTS (4)
10. FILTER FABRIC - WRAP TWICE AROUND BRICK SUPPORTS
11. 1/2" LIMESTONE GRAVEL - 4" MIN. DEPTH
12. IRRIGATION LATERAL
13. MAINLINE AND FITTINGS
14. 1/2" WIRE CLOTH GOPHER SCREEN, WRAP UP SIDES



4 IN-LINE VALVE WITH PRESSURE REGULATION AND ISOLATION VALVE

VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
1	REMOTE CONTROL VALVE	1"	SHRUB SPRAY	5.59	344.6	35.8	41.1	1.8 in/h
2	REMOTE CONTROL VALVE	1"	SHRUB SPRAY	14.21	320.2	36.6	49.3	2.16 in/h
3	REMOTE CONTROL VALVE	1"	SHRUB SPRAY	5.93	262.5	36.0	38.8	2.07 in/h
6	REMOTE CONTROL VALVE	1"	SHRUB SPRAY	14.55	147.5	37.9	46.2	1.98 in/h
7	REMOTE CONTROL VALVE	1"	SHRUB SPRAY	11.84	86.2	36.7	41.3	1.63 in/h
8	REMOTE CONTROL VALVE	1"	SHRUB SPRAY	6.56	82.8	36.4	37.1	2.07 in/h
9	REMOTE CONTROL VALVE	1"	SHRUB SPRAY	4.61	136.3	35.7	35.8	2.05 in/h
	Common Wire				649.0			

POC-1 CRITICAL ANALYSIS

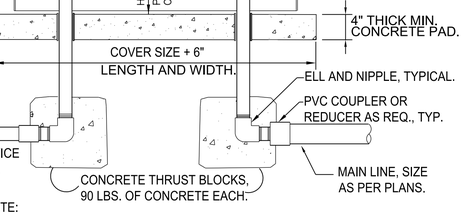
Generated:	2025-05-21 21:40
P.O.C. NUMBER: 01	
Water Source Information:	Pressure and flow is assumed for prelimanary design contractor to verify on site
FLOW AVAILABLE	
Point of Connection Size:	3"
Flow Available	220.07 GPM
PRESSURE AVAILABLE	
Static Pressure at POC:	60 PSI
Pressure Available:	60 PSI
DESIGN ANALYSIS	
Maximum Station Flow:	14.55 GPM
Flow Available at POC:	220.07 GPM
Residual Flow Available:	205.52 GPM
Critical Station:	2
Design Pressure:	30 PSI
Friction Loss:	1.07 PSI
Fittings Loss:	0.06 PSI
Elevation Loss:	0 PSI
Loss through Valve:	1.9 PSI
Pressure Req. at Critical Station:	36.6 PSI
Loss for Fittings:	0.89 PSI
Loss for Main Line:	8.94 PSI
Loss for POC to Valve Elevation:	0 PSI
Loss for Backflow:	12.3 PSI
Critical Station Pressure at POC:	58.8 PSI
Pressure Available:	60 PSI
Residual Pressure Available:	1.22 PSI

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
EST LCS RCS CST SST	6 INCH POP-UP SPRAY 15 STRIP SERIES POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET, 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	28	30
8 08HE-VAN 12 12HE-VAN 10 10HE-VAN 15 15HE-VAN	6 INCH POP-UP SPRAY HE-VAN SERIES POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET, 1/2IN. NPT FEMALE THREADED INLET. WITH PRESSURE REGULATING DEVICE.	47	30

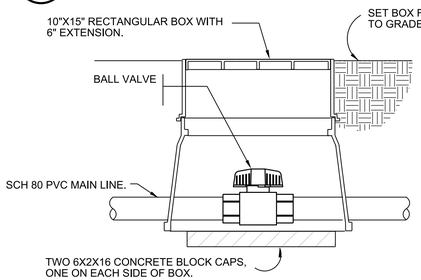
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	REMOTE CONTROL VALVE 1IN., 1-1/2IN., 2IN. ELECTRIC REMOTE CONTROL VALVE, GLOBE. WITH PRESSURE REGULATOR MODULE.	7
	STAINLESS STEEL QUICK COUPLER 1IN. FPT INLET, STAINLESS STEEL. PURPLE LOCKING CAP (NON-POTABLE WATER). CONTRACTOR TO ALSO PROVIDE 3/4IN. STAINLESS STEEL HOSE SWIVELS AND QUICK COUPLING STAINLESS STEEL VALVE KEYS FOR SITE USE	4
	STAINLESS STEEL BALL VALVE 1/2IN., 3/4IN., 1IN., 1-1/4IN., 1-1/2IN., 2IN., 2-1/2IN., 3IN. FULL PORT STAINLESS STEEL BALL VALVE. SUITABLE FOR A FULL RANGE OF LIQUIDS AND GASES IN RESIDENTIAL AND COMMERCIAL APPLICATIONS.	1
BF	BACKFLOW PREVENTER 1-1/2" REDUCED PRESSURE BACKFLOW PREVENTER	1
C	IRRIGATION CONTROLLER 12 STATION TRADITIONALLY-WIRED, COMMERCIAL CONTROLLER. INDOOR/OUTDOOR, PLASTIC WALL-MOUNT ENCLOSURE. INSTALL IN METAL, POWDER COATED TO MATCH BUILDING COLOR, WALL-MOUNTED CABINET.	1
RP	RAIN / FREEZE SENSOR WIRELESS RAIN AND FREEZE SENSOR COMBO, INCLUDES 1 RECEIVER AND 1 RAIN/FREEZE SENSOR TRANSMITTER.	1
EN	HEATED BACKFLOW ENCLOSURE 21IN. W X 33IN. L X 25IN. H, FIBERGLASS FLIP TOP STANDARD ENCLOSURE WITH 60W, 120V SINGLE PHASE SELF REGULATING HEAT TRACE TAPE 12FT. LONG.	1
POC1	POINT OF CONNECTION 3" PRESSURE AND FLOW IS ASSUMED FOR PRELIMANARY DESIGN CONTRACTOR TO VERIFY ON SITE	1
	IRRIGATION LATERAL LINE: PVC SCHEDULE 80	784.1 LF
	IRRIGATION MAINLINE: PVC SCHEDULE 80	658.4 LF
	PIPE SLEEVE: PVC SCHEDULE 40	191.7 LF

Valve Callout
Valve Number
Valve Flow
#" Valve Size

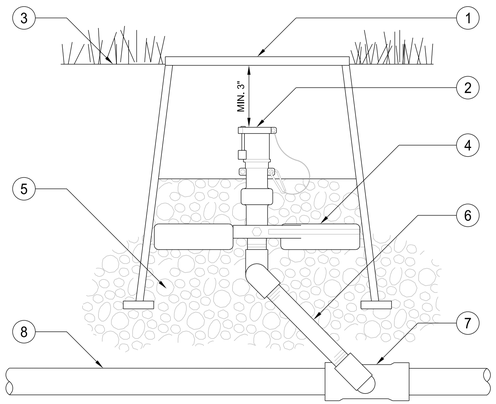


NOTE:
INSTALL PER LOCAL CODES AND MANUFACTURER'S RECOMMENDATIONS.
INSULATE AS REQUIRED. ALL ABOVE GRADE PIPING MUST BE D.I. PIPE.
DIELECTRIC FITTINGS REQUIRED WHERE DISSIMILAR METALS ARE JOINED.

2 STAINLESS STEEL BACKFLOW
NTS

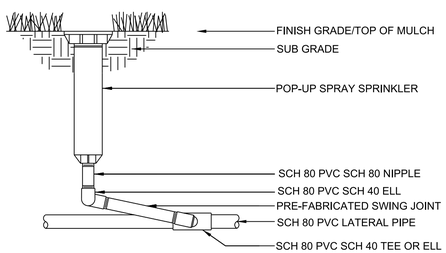


3 TRUE UNION BALL VALVE
NTS



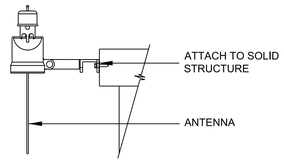
1 10" DIAMETER ROUND VALVE BOX
2 STAINLESS STEEL QUICK COUPLER VALVE
3 FINISHED GRADE
4 QUICK COUPLER STABILIZER
5 3/4" CRUSHED AGGREGATE
6 1" TRIPLE SWING JOINT WITH TEFLON TAPE
7 SERVICE TEE (SIZED PER MAINLINE)
8 MAINLINE PIPE

5 STAINLESS STEEL QUICK COUPLER
NTS



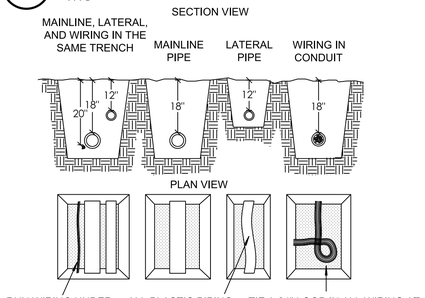
6 POP-UP SPRAY HEAD
NTS

NOTE:
1. MOUNT VERTICALLY WITHIN 200' OF CONTROLLER
2. AVOID PLACEMENT UNDER EVE OR TREE CANOPY
3. INSTALL 10' HIGH OR MORE TO AVOID VANDALISM



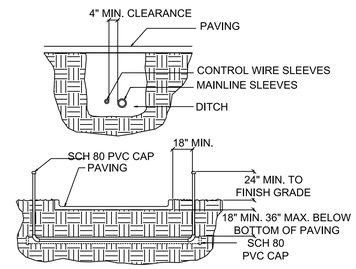
PIPE QUANTITIES ARE APPROXIMATE BASED ON DIAGRAMMATIC DRAWINGS

7 WIRELESS RAIN/FREEZE SENSOR
NTS



NOTE:
SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH SCHEDULE 40 PVC 2 TIMES THE DIAMETER OF THE PIPE WITHIN.

8 PIPE AND WIRE TRENCHING
NTS



1. ALL IRRIGATION SLEEVING TO BE SCH. 40 SCH 80 PVC
2. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
3. WHERE THERE IS MORE THAN ONE SLEEVE, EXTEND SMALLER SLEEVE TO 24" MIN. ABOVE FINISH GRADE.
4. MECHANICALLY TAMP TO 95% PROCTOR.

9 IRRIGATION SLEEVING
NTS

NO SCALE

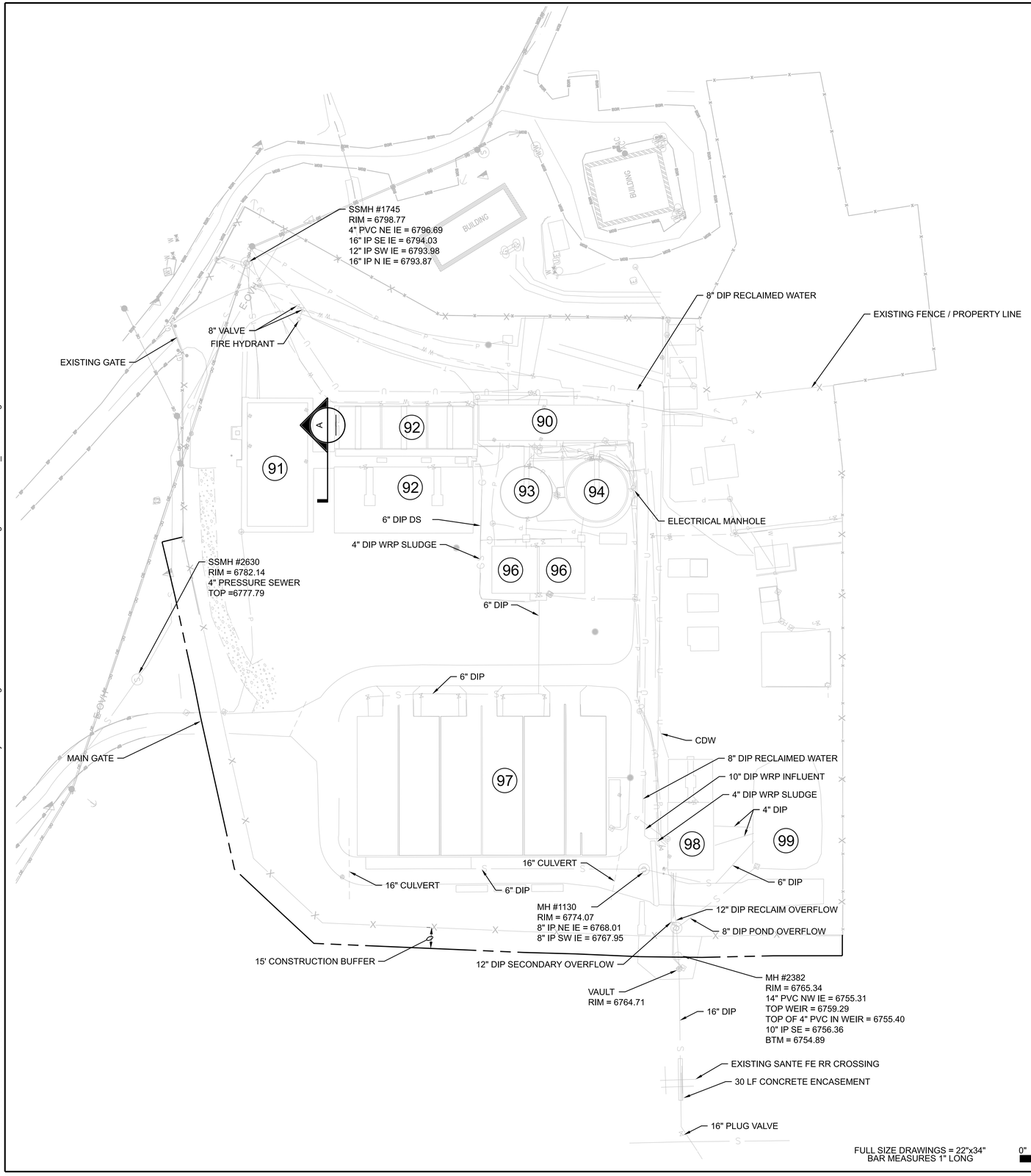
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

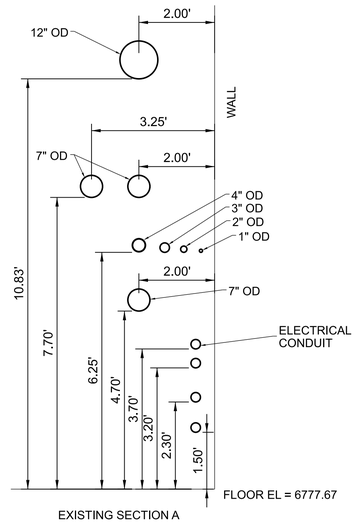
0" 1"

REGISTERED LANDSCAPE ARCHITECT 60507 CHAD LEE ST. JOHN 2025.06.20 Date Signed ARIZONA, U.S.A.
EXP. DATE: 2027.09.30

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY; GREENWOOD VILLAGE, CO	DESIGNED: J BAKER	SUB SHEET NO. 06I5001	TITLE OF SHEET: IRRIGATION SCHEDULE AND DETAILS	DRAWING NO. 113 175376
	CADD: M KESSLER			PMIS/PKG NO. 257282
	TECH. REVIEW: C STJOHN			SHEET 99 OF 401
	DATE: 06/2025		GRAND CANYON, SOUTH RIM	

100% COMPLETE CONSTRUCTION DOCUMENTS





1 EXISTING SECTION A

1/2"=1'-0"

N

0 40 80 120

Scale In Feet

GENERAL SHEET NOTES

A. SEE DRAWING 06X1003 FOR DEMOLITION OF EXISTING UTILITIES.

EXISTING FACILITIES LEGEND

90 CONTROL BUILDING

91 PRETREATMENT, BLOWER, AND DIGESTER BUILDING

92 AERATION TANKS

93 CLARIFIER NO. 1

94 CLARIFIER NO. 2

96 FLOW EQUALIZATION TANKS

97 SLUDGE DRYING BEDS 1-6

98 RECLAMATION PLANT

99 BACKWASH HOLDING POND

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

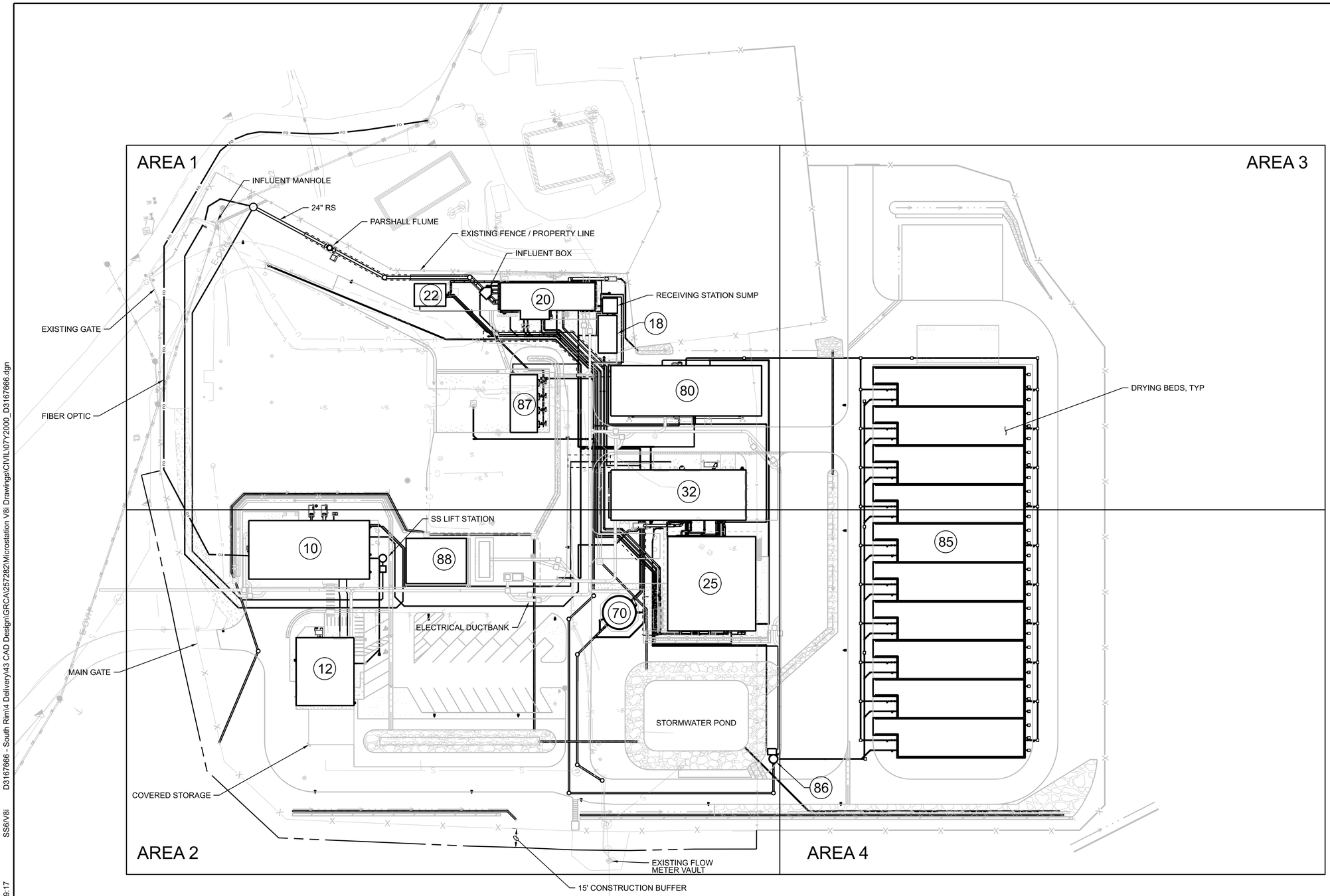
Registered Professional Engineer
CERTIFICATE NO.
83022
KAYLA D. ARCHER
State Expires 6-30-2026
ARIZONA, U.S.A.

A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 07Y1000	TITLE OF SHEET YARD PIPING EXISTING UTILITIES PLAN OVERALL GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 100 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:19 SS6/V8I D3167666 - South Rim4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\07Y1000_D3167666.dgn



N

0 40 80 120

Scale In Feet

GENERAL NOTES

A. FIELD VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES. PROTECT UTILITIES NOT DESIGNATED FOR DEMOLITION. NOTIFY CONTRACTING OFFICER IF A CONFLICT WITH PROPOSED WORK IS FOUND.

FACILITIES LEGEND

10	ADMINISTRATION BUILDING
12	MAINTENANCE BUILDING
18	RECEIVING STATION
20	HEADWORKS
22	ODOR CONTROL
25	PROCESS TANKS
32	PROCESS BUILDING
70	RECLAIMED WATER TANK
80	DIGESTER FACILITY
85	DRYING BEDS
86	PLANT DRAIN PUMP STATION
87	COMPOST FACILITY
88	EXTERIOR COVERED STORAGE

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

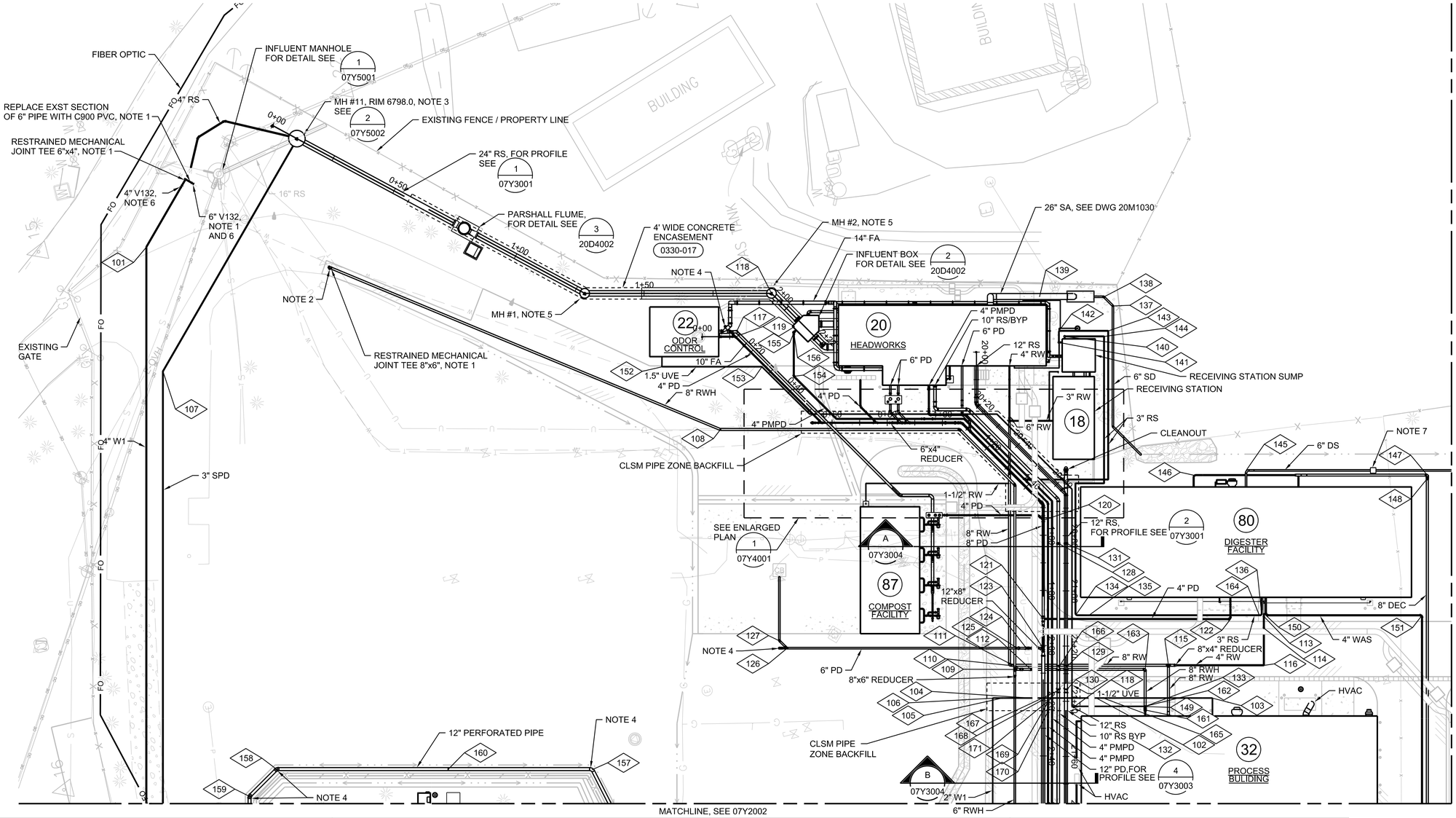
0" 1"

ARIZONA BOARD OF TECHNICAL REGISTRATION CERTIFICATE NO. 83022 KAYLA D. ARCHER REGISTERED ARCHITECT ARIZONA U.S.A. 6/30/2026	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO.: 07Y2000	TITLE OF SHEET: YARD PIPING PLAN OVERALL GRAND CANYON, SOUTH RIM	DRAWING NO.: 113 175376 PMIS/PKG NO.: 257282 SHEET: 101 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

GRCA-257282

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:17 SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\07Y2000_D3167666.dgn



GENERAL SHEET NOTES

A. FIELD VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES. PROTECT UTILITIES NOT DESIGNATED FOR DEMOLITION. NOTIFY CONTRACTING OFFICER IF A CONFLICT WITH PROPOSED WORK IS FOUND.

SHEET NOTES

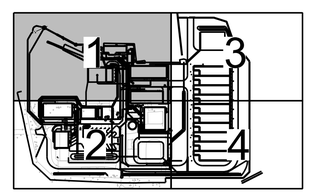
1. VERIFY EXISTING PIPE SIZE
2. MAINTAIN VALVE, REPLACE EXISTING SECTION OF 6" RW WITH C900 PVC
3. CAST IN PLACE MANHOLE BASE (3305-710)
4. CLEANOUT (2240-101)
5. 42" PRECAST MANHOLE, SEE (3305-710)
6. BURIED GATE VALVE (4027-640)
7. PROCESS LINE CLEANOUT (4027-187)

PIPING COORDINATE TABLE

POINT NO.	DESCRIPTION	CL ELEV	NORTHING	EASTING
101	4" W1, 30° BEND	6792.98	1837620.24	631235.20
102	2" W1, 45° BEND UP	6777.81	1837325.31	630993.52
103	2" W1, 90° BEND	6780.33	1837284.51	630983.39
104	2" W1, 11.25° BEND UP	6779.88	1837347.97	630999.15
105	2" W1, 11.25° BEND DOWN	6782.05	1837358.58	631001.79
106	2" W1, 90° BEND	6782.05	1837361.83	631002.58
107	3" SPD, 30° BEND	6791.26	1837625.27	631190.05
108	8" RWH, 22.5° BEND	6786.24	1837434.22	631120.85
109	8" RWH, TEE	6780.51	1837351.54	631010.74
110	8" RW, 90° BEND	6776.98	1837353.03	631012.69
111	8" RWH, 45° BEND DOWN	6780.51	1837349.26	631010.18
112	8" RWH, 45° BEND UP	6777.00	1837345.85	631009.33
113	4" RW, 45° BEND DOWN	6781.17	1837259.26	631007.64
114	4" RW, 45° BEND UP	6776.97	1837260.28	631003.57
115	8" RW, TEE	6776.97	1837297.13	630998.76
116	4" RW, 90° BEND	6776.97	1837263.54	630990.42
117	10" FA, 90° BEND UP	6787.00	1837420.01	631153.80
118	1.5" UVE, 45° BEND UP	6777.78	1837333.80	630992.53
119	4" PD, LATERAL TO CLEANOUT	6785.53	1837420.80	631152.17
120	8" PD, WYE	SP	1837328.51	631060.74
121	8"x4" PD, TEE	SP	1837337.13	631025.99
122	4" PD, 90° BEND	6779.83	1837271.29	631009.57
123	8"x6" PD, TEE	SP	1837339.69	631015.70
124	6" PD, 45° BEND UP	6779.16	1837345.61	631017.18
125	6" PD, 45° BEND DOWN	6782.53	1837348.76	631017.96
126	6" PD, LATERAL TO CLEANOUT	6783.37	1837429.88	631038.11
127	6" PD, 45° BEND	6783.39	1837431.89	631041.39
128	10" RS/BYP, 4.5° DEFLECTION DWN	6783.83	1837325.22	631051.26
129	10" RS, 22.5 BEND DOWN	SP	1837333.37	631006.98
130	12" RS, 22.5 BEND UP	SP	1837335.38	630998.89
131	12" RS, 4.5 DEFLECTION DOWN	SP	1837322.51	631050.66
132	1.5" UVE, 90° BEND ROLL 45° DWN	6778.65	1837334.65	630992.74
133	1.5" UVE, 90° BEND UP	6777.78	1837308.90	630986.34
134	3" RS, 90° BEND ROLL 11.25° DOWN	6783.12	1837325.48	631024.47
135	3" RS, 22.5° BEND UP	6781.09	1837320.80	631023.31
136	3" RS, 90° BEND	6780.22	1837259.92	631008.18
137	6" RD, 45° BEND	6786.64	1837285.27	631130.01
138	6" RD, 45° BEND	6786.66	1837287.67	631134.00
139	6" RD, 90° BEND	6786.78	1837310.32	631139.62
140	3" RS, 90° BEND UP	6786.67	1837304.92	631123.51
141	3" RS, 90° BEND UP	6786.67	1837307.46	631121.89
142	3" RS, 90° BEND UP	6786.67	1837306.46	631125.95
143	3" RS, 90° BEND	6786.67	1837289.10	631121.64
144	3" RS, 90° BEND	6786.67	1837291.04	631120.06
145	6" DS, 90° BEND	6780.95	1837252.79	631060.51
146	8" DEC, 90° BEND	6779.00	1837271.64	631063.43
147	8" DEC, 90° BEND ROLL 45° DOWN	6779.00	1837189.41	631043.00
148	8" DEC, 45° BEND UP	6777.75	1837189.70	631041.83
149	1.5" UVE, 90° BEND DOWN	6779.01	1837308.90	630986.34
150	4" WAS, 90° BEND	6780.22	1837258.47	631007.82
151	4" WAS, 90° BEND	6780.22	1837203.52	630994.17
152	1.5" UVE, 90° BEND	6787.81	1837449.28	631148.02
153	1.5" UVE, 45° BEND	6787.63	1837414.12	631139.28
154	4" PMPD, 45° BEND	SP	1837403.71	631133.15
155	4" PMPD, 90° BEND UP	SP	1837399.88	631148.57
156	4" PMPD, 90° BEND DOWN	SP	1837399.88	631148.57
157	12" SD, 60° BEND	6775.10	1837509.03	631012.62
158	12" SD, 45° BEND	6776.28	1837619.99	631040.19
159	12" SD, 45° BEND	6775.79	1837631.93	631032.98
160	12" SD, MIDPOINT	6777.52	1837559.66	631025.20
161	8" RWH, 45° BEND UP	6776.97	1837308.99	630985.99
162	8" RWH, 45° BEND DOWN	6777.89	1837309.21	630985.10
163	8" RWH, 90° BEND	6776.97	1837305.67	630999.35
164	3" RS, 90° VERT BEND	6781.09	1837260.76	631008.39
165	2" W1, 45° BEND DOWN	6780.33	1837322.87	630992.92
166	10" RS/BYP, 22.5 BEND DOWN	6780.41	1837336.08	631007.56
167	10" RS/BYP, 22.5 BEND UP	6776.21	1837338.08	630999.52
168	2" W1, 45° BEND DOWN	6779.87	1837343.14	630997.95
169	4" PMPD,45 ° BEND UP	6780.14	1837343.54	630993.10
170	4" PMPD,45 ° BEND DOWN	6780.90	1837342.73	630996.36
171	2" W1, 45° BEND UP	6777.81	1837341.13	630997.46

SP=SEE PROFILE

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"



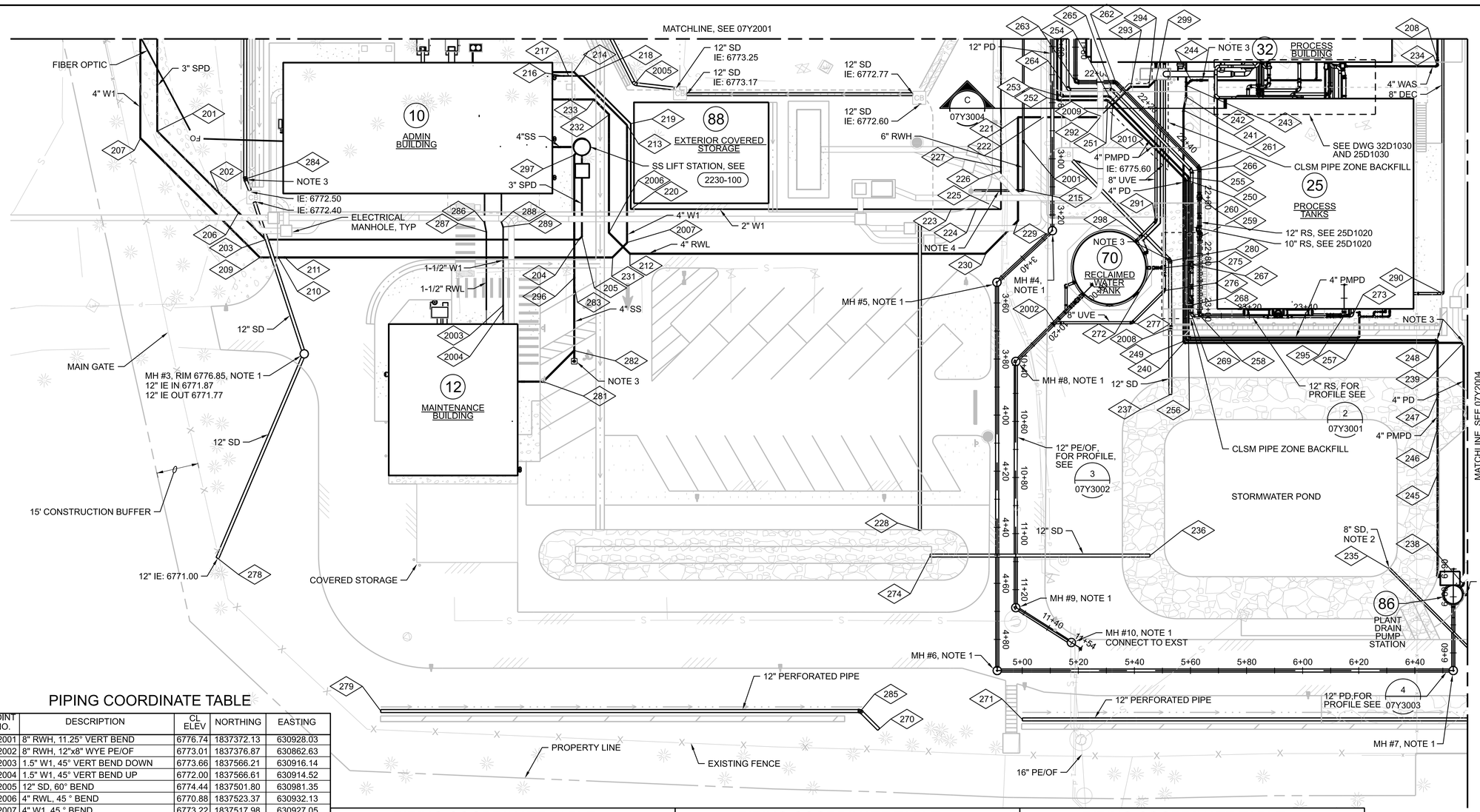
KEY PLAN

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO
DESIGNED:	K ARCHER
CADD:	B GYAOUROVA
TECH. REVIEW:	D PETERSON
DATE:	06/2025
SUB SHEET NO.	07Y2001
TITLE OF SHEET	YARD PIPING PLAN AREA 1
	GRAND CANYON, SOUTH RIM
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	102 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

D3167666 - South Rim4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\07Y2001_D3167666.dgn
SS6/V8i
PLOT TIME: 10:31:35 PM
PLOT DATE: 06\24\2025



GENERAL SHEET NOTES

A. FIELD VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES. PROTECT UTILITIES NOT DESIGNATED FOR DEMOLITION. NOTIFY CONTRACTING OFFICER IF A CONFLICT WITH PROPOSED WORK IS FOUND.

SHEET NOTES

1. 36" PRECAST MANHOLE, SEE DETAIL 3305-710
2. CONCRETE COLLAR 3 07Y5002
3. CLEANOUT 2240-101
4. CONNECT TO FIRE HYDRANT 3312-770
5. WATERTIGHT MANHOLE FRAME AND COVER 3305-726

PIPING COORDINATE TABLE

POINT NO.	DESCRIPTION	CL ELEV	NORTHING	EASTING
2001	8" RWH, 11.25° VERT BEND	6776.74	1837372.13	630928.03
2002	8" RWH, 12"x8" WYE PE/OF	6773.01	1837376.87	630862.63
2003	1.5" W1, 45° VERT BEND DOWN	6773.66	1837566.21	630916.14
2004	1.5" W1, 45° VERT BEND UP	6772.00	1837566.61	630914.52
2005	12" SD, 60° BEND	6774.44	1837501.80	630981.35
2006	4" RWL, 45 ° BEND	6770.88	1837523.37	630932.13
2007	4" W1, 45 ° BEND	6773.22	1837517.98	630927.05
2008	12" SD, 12"x4" TEE	6770.80	1837337.34	630850.82
2009	4" RWL, 45 BEND UP	6773.02	1837343.02	630930.13
2010	4" RWL, 45 BEND DOWN	6778.81	1837338.06	630933.11
201	3" SPD, 45° BEND	6779.38	1837670.97	631006.11
202	3" SPD, 11.25° BEND	6776.70	1837654.77	630979.20
203	3" SPD, 45° BEND	6771.53	1837642.74	630959.22
204	3" SPD, 45° BEND	6770.97	1837534.39	630932.30
205	3" SPD, 45° BEND	6770.96	1837533.06	630933.10
206	3" SPD, 22.5° BEND	6771.71	1837649.83	630970.98
207	4" W1, 45° BEND	6777.85	1837677.41	631005.15
208	4" WAS, 45° VERT BEND	6780.22	1837221.71	630920.98
209	4" W1, 45° BEND	6770.86	1837646.34	630953.57
210	4" W1, 45° BEND UP	6770.86	1837639.95	630951.98
211	4" W1, 45° BEND DOWN	6773.22	1837637.66	630951.41
212	4" RWL, 45° BEND	6770.87	1837517.92	630923.04
213	4" W1, 45° BEND	6773.22	1837507.86	630967.80
214	4" W1, 45° BEND	6772.00	1837521.64	630990.69
215	8" RWH, 90 BEND	6772.46	1837376.35	630911.07
216	2" W1, 45° BEND UP	6772.00	1837525.45	630990.25
217	2" W1, 45° BEND DOWN	6773.66	1837523.84	630989.84
218	2" W1, 45° BEND	6773.66	1837518.84	630988.60
219	2" W1, 45° BEND	6773.66	1837506.44	630968.00
220	2" W1, 90° BEND	6773.66	1837513.80	630938.37
221	4" RWL, 90° BEND ROLL 11.25° DWN	6774.76	1837371.89	630936.91
222	4" RWL, 11.5° BEND UP	6773.02	1837363.40	630934.82
223	2" W1, 11.25° BEND UP	6773.66	1837402.99	630910.83
224	2" W1, 11.25° BEND DOWN	6775.43	1837394.38	630908.69
225	2" W1, 90° BEND	6775.43	1837385.68	630906.52
226	2" W1, 11.25° BEND UP	6775.43	1837382.39	630919.79
227	2" W1, 11.25° BEND DOWN	6776.78	1837382.07	630921.11
228	12" SD, PIPE OUTLET	6771.60	1837441.36	630802.34

PIPING COORDINATE TABLE

POINT NO.	DESCRIPTION	CL ELEV	NORTHING	EASTING
229	4" RWL, 45° BEND	6773.27	1837380.78	630901.10
230	4" RWL, 45° BEND	6770.87	1837394.99	630892.50
231	4" W1, 90° BEND	6773.22	1837524.29	630923.25
232	4" RWL, 45° BEND	6773.41	1837513.19	630973.05
233	4" RWL, 45° BEND	6773.41	1837517.08	630979.51
234	4" WAS, 90° BEND	6777.63	1837222.33	630918.47
235	8" SD, PIPE INLET	6766.35	1837282.28	630748.98
236	12" SD, PIPE OUTLET	6768.92	1837363.93	630773.85
237	12" SD, PIPE OUTLET	6770.42	1837342.99	630827.85
238	4" PD, 45° BEND	6763.77	1837257.83	630736.89
239	4" PD, 90° BEND	6764.63	1837237.06	630820.52
240	4" PD, 90° BEND	6765.61	1837333.97	630844.57
241	4" PD, 11.25° BEND	6766.44	1837314.01	630925.15
242	4" PD, 11.25° BEND	6766.47	1837311.93	630929.55
243	4" PD, WYE	6766.51	1837310.95	630933.51
244	4" PD, 45° BEND	6766.54	1837308.81	630934.82
245	4" PMPD, 11.25° BEND DOWN	6768.34	1837257.37	630777.29
246	4" PMPD, 11.25° BEND UP	6765.05	1837253.37	630793.37
247	4" PMPD, 22.5° BEND UP	6765.05	1837250.63	630804.39
248	4" PMPD, 90° BEND ROLL 22.5° DWN	6773.27	1837245.84	630823.66
249	4" PMPD, 90° BEND	6773.27	1837332.91	630845.29
250	4" PMPD, 45° BEND	6775.52	1837319.16	630900.86
251	4" PMPD, 45° BEND	6777.17	1837339.44	630935.10
252	4" PMPD, 90° BEND	6778.11	1837356.85	630939.42
253	4" PMPD, 90° BEND	6778.08	1837355.17	630940.44
254	4" PMPD, 45° BEND	6777.11	1837338.43	630936.28
255	4" PMPD, 45° BEND	6775.55	1837318.01	630901.52
256	4" PMPD, 90° BEND	6773.59	1837331.82	630845.95

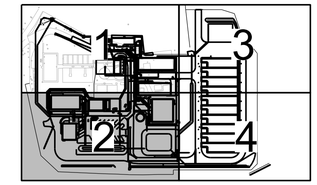
PIPING COORDINATE TABLE

POINT NO.	DESCRIPTION	CL ELEV	NORTHING	EASTING
257	4" PMPD, 90° BEND	6773.58	1837272.70	630831.26
258	12" RS, 90° BEND	SP	1837326.14	630852.64
259	12" RS, 45° BEND	SP	1837319.37	630879.89
260	12" RS, 90° BEND UP	SP	1837315.84	630894.10
261	12" RS, 45° BEND	SP	1837313.45	630903.75
262	12" RS, 45° BEND	SP	1837335.14	630940.71
263	12" RS, 90° BEND	SP	1837348.97	630944.15
264	10" RS/BYP, 90° BEND	6776.09	1837352.34	630942.12
265	10" RS/BYP, 45° BEND	6775.85	1837336.92	630938.29
266	10" RS/BYP, 45° BEND	6774.55	1837316.36	630903.47
267	10" RS/BYP, 90° BEND UP	6774.55	1837324.43	630871.00
268	10" RS/BYP, 90° BEND UP	6770.86	1837327.89	630857.04
269	10" RS/BYP, 90° BEND	6770.86	1837328.82	630853.30
270	12" SD, PIPE OUTLET	6765.85	1837472.69	630737.01
271	12" SD, PIPE INLET	6764.34	1837422.16	630728.12
272	8" UVE, 90° BEND UP	6773.01	1837337.86	630873.12
273	10" RS/BYP, 90° BEND	6770.86	1837273.21	630839.49
274	12" SD, PIPE INLET	6771.27	1837439.99	630792.75
275	8" PE/BYP, TEE	6773.01	1837334.16	630872.20
276	8" PE/BYP, 45° BEND	6773.01	1837336.12	630864.33
277	8" PE/BYP, 45° BEND	6773.01	1837350.01	630855.96
278	12" SD, PIPE OUTLET	6771.66	1837686.85	630853.15
279	12" SD, PIPE INLET	6767.63	1837643.47	630786.16
280	12" SD, 45° BEND	6771.18	1837331.57	630874.22
281	4" SS, 45° BEND	6772.91	1837558.95	630886.22

SP=SEE PROFILE

PIPING COORDINATE TABLE

POINT NO.	DESCRIPTION	CL ELEV	NORTHING	EASTING
282	4" SS, LATERAL TO CLEANOUT	6772.83	1837545.51	630894.31
283	4" SS, 45° BEND DOWN	6772.65	1837539.93	630916.78
284	12" SD, 22.5° BEND	6773.13	1837644.62	630982.02
285	12" SD, 45° BEND	6765.92	1837477.46	630744.92
286	1.5" RWL, 11.25° BEND	6770.00	1837565.59	630946.16
287	1.5" RWL, 11.25° BEND	6770.00	1837565.74	630942.93
288	1.5" W1, 11.25° BEND	6772.00	1837559.68	630945.03
289	1.5" W1, 11.25° BEND	6773.66	1837559.50	630943.15
290	8" DCNT, 90° BEND	6771.69	1837240.00	630839.35
291	8" UVE, 45° BEND	6773.00	1837333.08	630889.01
292	4" RWL, 45° BEND	6773.02	1837343.47	630929.86
293	4" RWL, 45° BEND	6778.81	1837330.37	630937.75
294	4" RWL, 45° BEND	6779.41	1837323.99	630936.19
295	14" RS, 90° BEND	SP	1837276.08	630840.20
296	4" SS, 45° BEND UP	6769.75	1837539.24	630919.54
297	4" SS, 45° BEND	6769.39	1837528.70	630961.97
298	8" UVE, 90° BEND UP	6773.00	1837339.67	630885.04
299	4" RWL, 45° BEND	6779.41	1837320.89	630938.06



KEY PLAN

FULL SIZE DRAWINGS = 22"x34" BAR MEASURES 1" LONG

0" 1"

A/E FIRM
JACOBS GOVERNMENT SERVICES COMPANY
GREENWOOD VILLAGE, CO

DESIGNED: K ARCHER
CADD: B GYAOUROVA
TECH. REVIEW: D PETERSON
DATE: 06/2025

SUB SHEET NO. 07Y2002

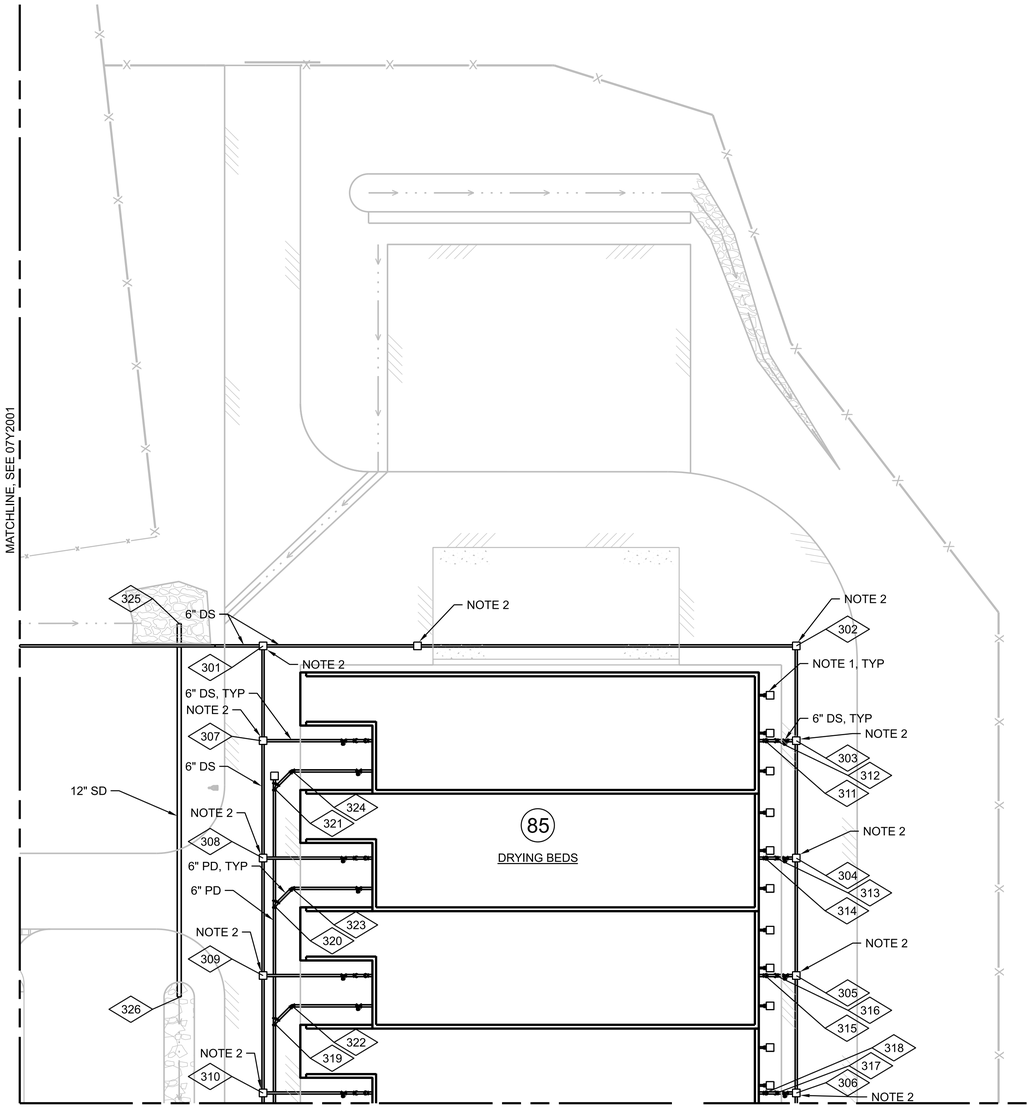
TITLE OF SHEET
YARD PIPING PLAN AREA 2
GRAND CANYON, SOUTH RIM

DRAWING NO. 113 175376
PMIS/PKG NO. 257282
SHEET 103 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 17-JUN-2025 PLOT TIME: 13:39 SS6iV8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\07Y2002_D3167666.dgn



PIPING COORDINATE TABLE

POINT NO.	DESCRIPTION	CL ELEV	NORTHING	EASTING
301	6" DS, TEE	6780.95	1837118.14	631027.06
302	6" DS, 90° BEND	6780.95	1836981.53	630993.12
303	6" DS, TEE	6779.50	1836987.56	630968.84
304	6" DS, TEE	6777.70	1836995.03	630938.76
305	6" DS, TEE	6775.90	1837002.50	630908.67
306	6" DS, TEE	6774.10	1837009.98	630878.59
307	6" DS, TEE	6779.50	1837124.17	631002.78
308	6" DS, TEE	6777.70	1837131.65	630972.69
309	6" DS, TEE	6775.90	1837139.12	630942.61
310	6" DS, TEE	6774.10	1837146.59	630912.52
311	6" DS, 45° BEND DOWN	6782.50	1836995.54	630970.83
312	6" DS, 45° BEND UP	6779.50	1836992.63	630970.10
313	6" DS, 45° BEND UP	6777.70	1837000.10	630940.02
314	6" DS, 45° BEND DOWN	6780.70	1837003.02	630940.74
315	6" DS, 45° BEND DOWN	6778.90	1837010.49	630910.65
316	6" DS, 45° BEND UP	6775.90	1837007.58	630909.93
317	6" DS, 45° BEND UP	6774.10	1837015.05	630879.85
318	6" DS, 45° BEND DOWN	6777.10	1837017.96	630880.57
319	6" PD, WYE	6773.98	1837139.25	630929.63
320	6" PD, WYE	6775.78	1837131.78	630959.71
321	6" PD, LATERAL TO CLEANOUT	6777.58	1837124.30	630989.80
322	6" PD, 45° BEND	6774.06	1837133.63	630933.00
323	6" PD, 45° BEND	6775.86	1837126.15	630963.09

PIPING COORDINATE TABLE

POINT NO.	DESCRIPTION	CL ELEV	NORTHING	EASTING
324	6" PD, 45° BEND	6777.66	1837118.68	630993.17
325	12" SD, PIPE INLET, IE 6778.80	N/A	1837138.21	631038.09
326	12" SD, PIPE OUTLET, IE 6776.80	N/A	1837161.96	630942.48

N

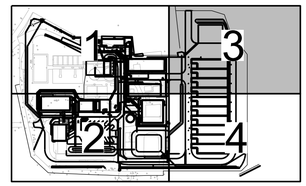
0 20 40 60
Scale In Feet

GENERAL SHEET NOTES

A. FIELD VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES. PROTECT UTILITIES NOT DESIGNATED FOR DEMOLITION. NOTIFY CONTRACTING OFFICER IF A CONFLICT WITH PROPOSED WORK IS FOUND.

SHEET NOTES

1. CLEANOUT (2240-101)
2. PROCESS LINE CLEANOUT (4027-187)



KEY PLAN

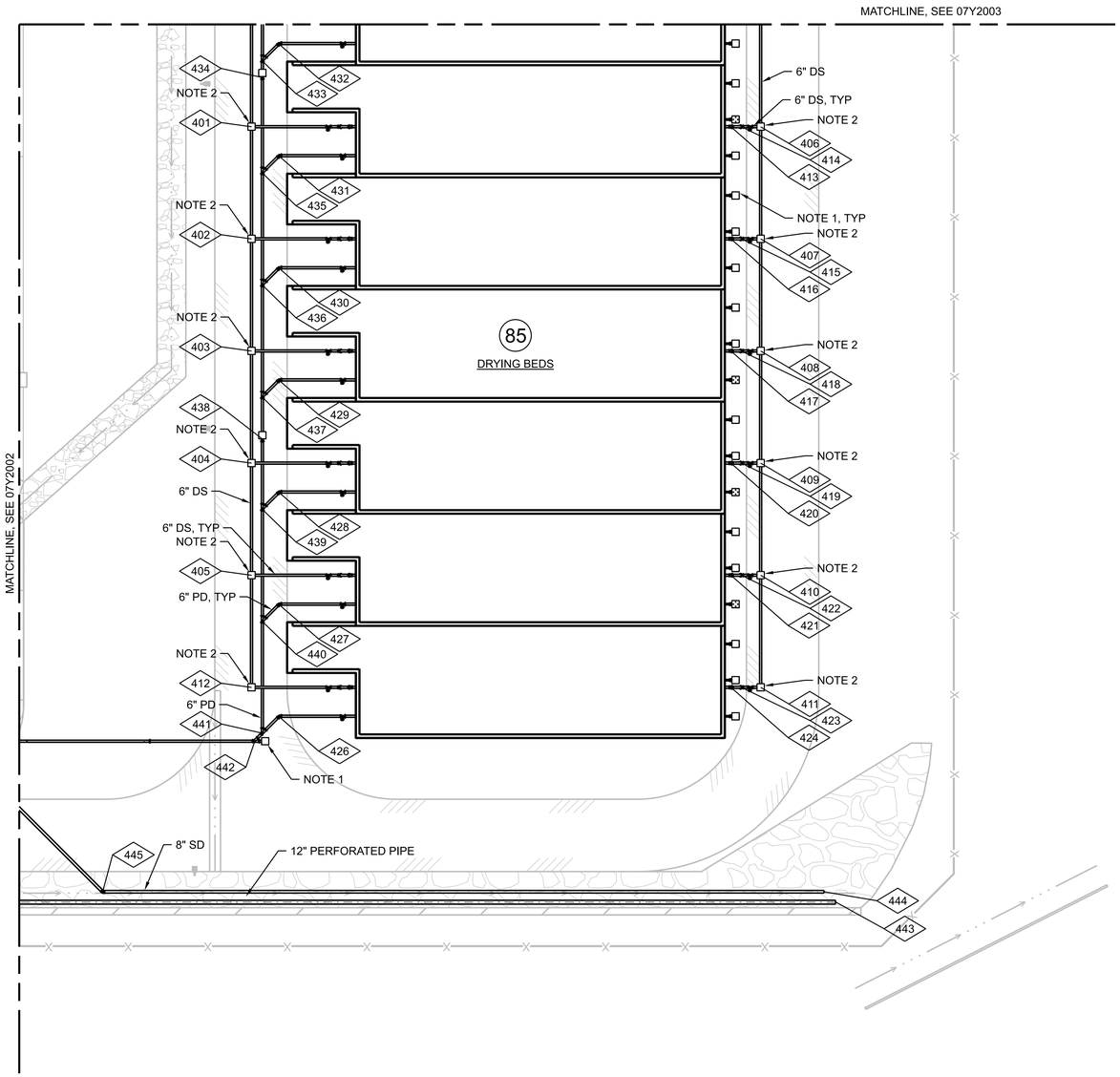
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO
DESIGNED:	K ARCHER
CADD:	B GYAOUROVA
TECH. REVIEW:	D PETERSON
DATE:	06/2025
SUB SHEET NO.	07Y2003
TITLE OF SHEET	YARD PIPING PLAN AREA 3 GRAND CANYON, SOUTH RIM
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	104 OF 401

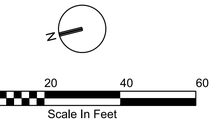
GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:18 SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\07Y2003_D3167666.dgn



PIPING COORDINATE TABLE					PIPING COORDINATE TABLE				
POINT NO.	DESCRIPTION	CL ELEV	NORTHING	EASTING	POINT NO.	DESCRIPTION	CL ELEV	NORTHING	EASTING
401	6" DS, TEE	6772.30	1837154.07	630882.44	424	6" DS, 45° BEND DOWN	6766.30	1837062.81	630700.06
402	6" DS, TEE	6770.50	1837161.54	630852.35	425	6" PD, 45° BEND UP	6765.82	1837051.16	630741.47
403	6" DS, TEE	6768.70	1837169.01	630822.27	426	6" PD, 45° BEND	6761.42	1837185.94	630722.40
404	6" DS, TEE	6766.90	1837176.49	630792.18	427	6" PD, 45° BEND	6763.22	1837178.47	630752.49
405	6" DS, TEE	6765.10	1837183.96	630762.10	428	6" PD, 45° BEND	6765.02	1837171.00	630782.57
406	6" DS, TEE	6772.30	1837017.45	630848.50	429	6" PD, 45° BEND	6766.82	1837163.52	630812.66
407	6" DS, TEE	6770.50	1837024.93	630818.41	430	6" PD, 45° BEND	6768.62	1837156.05	630842.74
408	6" DS, TEE	6768.70	1837032.40	630788.33	431	6" PD, 45° BEND	6770.42	1837148.57	630872.83
409	6" DS, TEE	6766.90	1837039.87	630758.24	432	6" PD, 45° BEND	6772.22	1837141.10	630902.92
410	6" DS, TEE	6765.10	1837047.35	630728.16	433	6" PD, WYE	6772.18	1837146.73	630899.54
411	6" DS, 90° BEND	6763.30	1837054.82	630698.07	434	6" PD, LATERAL TO CLEANOUT	6771.90	1837147.87	630894.92
412	6" DS, 90° BEND	6763.30	1837191.44	630732.01	435	6" PD, WYE	6770.38	1837154.20	630869.46
413	6" DS, 45° BEND DOWN	6775.30	1837025.44	630850.48	436	6" PD, WYE	6768.58	1837161.67	630839.37
414	6" DS, 45° BEND UP	6772.30	1837022.52	630849.76	437	6" PD, WYE	6766.78	1837169.15	630809.28
415	6" DS, 45° BEND UP	6770.50	1837030.00	630819.67	438	6" PD, LATERAL TO CLEANOUT	6766.09	1837171.75	630797.63
416	6" DS, 45° BEND DOWN	6773.50	1837032.91	630820.40	439	6" PD, WYE	6764.98	1837176.62	630779.20
417	6" DS, 45° BEND DOWN	6771.70	1837040.39	630790.31	440	6" PD, WYE	6763.18	1837184.10	630749.11
418	6" DS, 45° BEND UP	6768.70	1837037.47	630789.59	441	6" PD, WYE	6761.38	1837191.57	630719.02
419	6" DS, 45° BEND UP	6766.90	1837044.95	630759.50	442	6" PD, LATERAL TO CLEANOUT	6761.25	1837194.31	630717.38
420	6" DS, 45° BEND DOWN	6769.90	1837047.86	630760.23	443	12" SD, PIPE OUTLET, IE 6759.19	-	1837049.03	630635.43
421	6" DS, 45° BEND DOWN	6768.10	1837055.33	630730.14	444	8" SD, PIPE OUTLET, IE 6759.52	-	1837051.44	630639.01
422	6" DS, 45° BEND UP	6765.10	1837052.42	630729.42	445	8" SD, 45° BEND, IE 6761.51	-	1837245.00	630687.05
423	6" DS, 45° BEND UP	6763.30	1837059.89	630699.33					

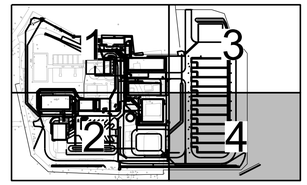


GENERAL SHEET NOTES

A. FIELD VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES. PROTECT UTILITIES NOT DESIGNATED FOR DEMOLITION. NOTIFY CONTRACTING OFFICER IF A CONFLICT WITH PROPOSED WORK IS FOUND.

SHEET NOTES

1. CLEANOUT (2240-101)
2. PROCESS LINE CLEANOUT (4027-187)



KEY PLAN

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY; GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER; CADD: B GYAOUROVA; TECH. REVIEW: D PETERSON; DATE: 06/2025	SUB SHEET NO. 07Y2004	TITLE OF SHEET: YARD PIPING PLAN AREA 4; GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376; PMIS/PKG NO. 257282; SHEET 105 OF 401

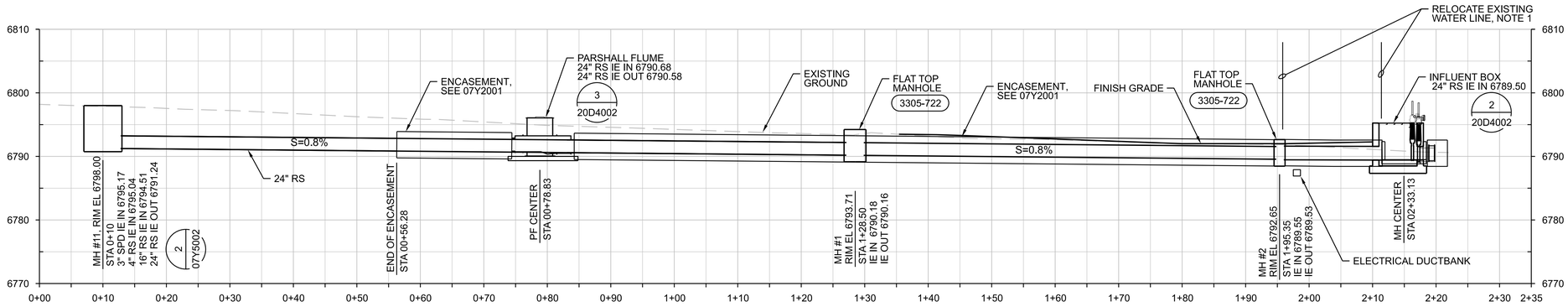
GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:20 SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\07Y2004_D3167666.dgn

SHEET NOTES

1. DEPTH UNKNOWN, FIELD VERIFY.
2. TRENCH PIPE CROSSING PER DETAIL 3123-120



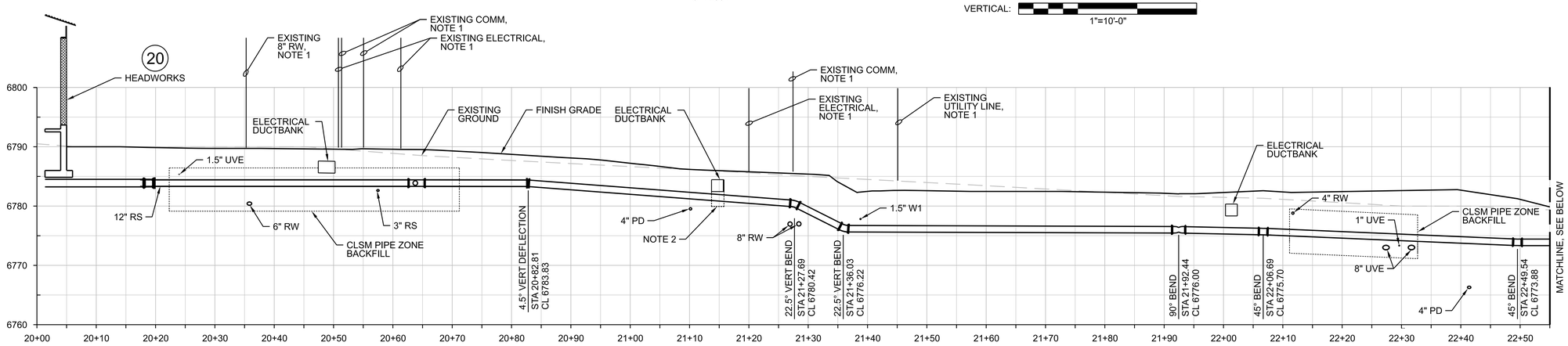
1 24" RS PROFILE

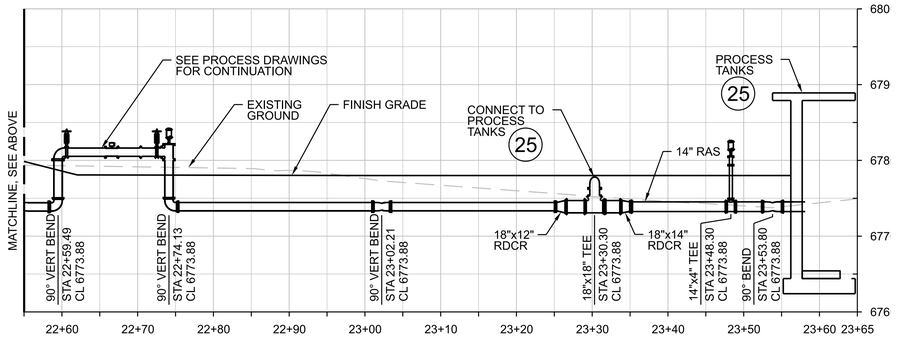
1"=10-0"

07Y2001

HORIZONTAL: 0 10 20 30 — 1"=10'-0"

VERTICAL: 0 10 20 30 — 1"=10'-0"





2 12" RS PROFILE

1"=10-0"

07Y2001
07Y2002

HORIZONTAL: 0 10 20 30 — 1"=10'-0"

VERTICAL: 0 10 20 30 — 1"=10'-0"

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY; GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 07Y3001	TITLE OF SHEET: YARD PIPING PIPE PROFILES GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 106 OF 401

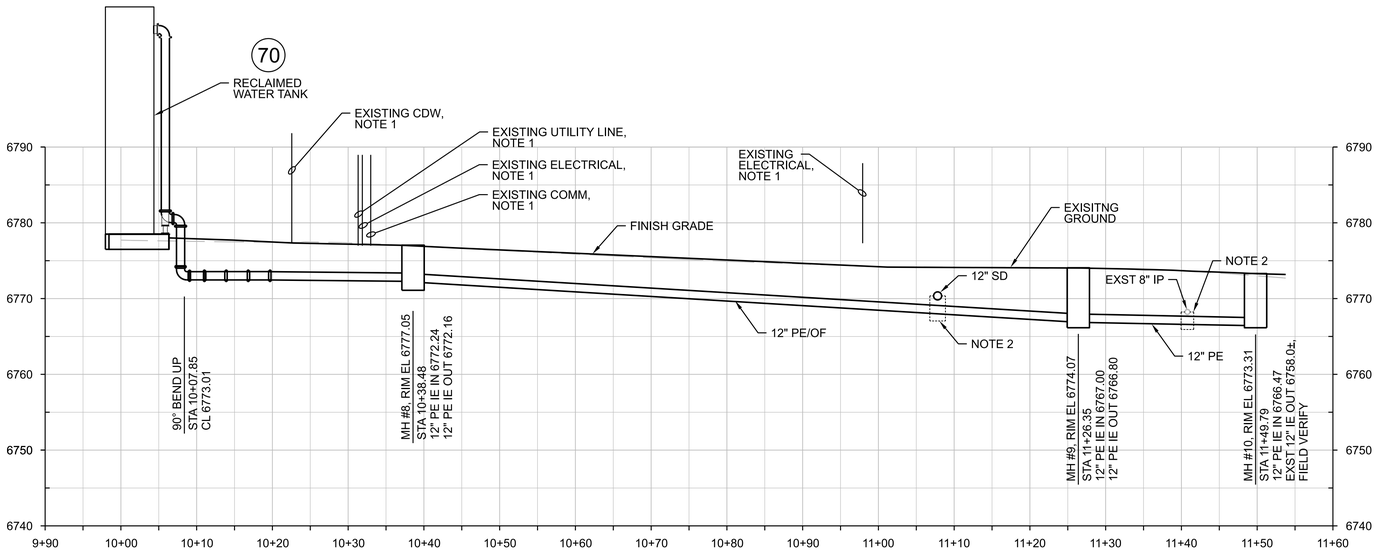
GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 17-JUN-2025 PLOT TIME: 13:49 SS6/V8I

SHEET NOTES

1. DEPTH UNKNOWN, FIELD VERIFY.
2. TRENCH PIPE CROSSING PER DETAIL 3123-120



3 12" PE/OF PROFILE
1"=10-0"
07Y2002

HORIZONTAL: 0 10 20 30 1"=10'-0"
VERTICAL: 0 10 20 30 1"=10'-0"

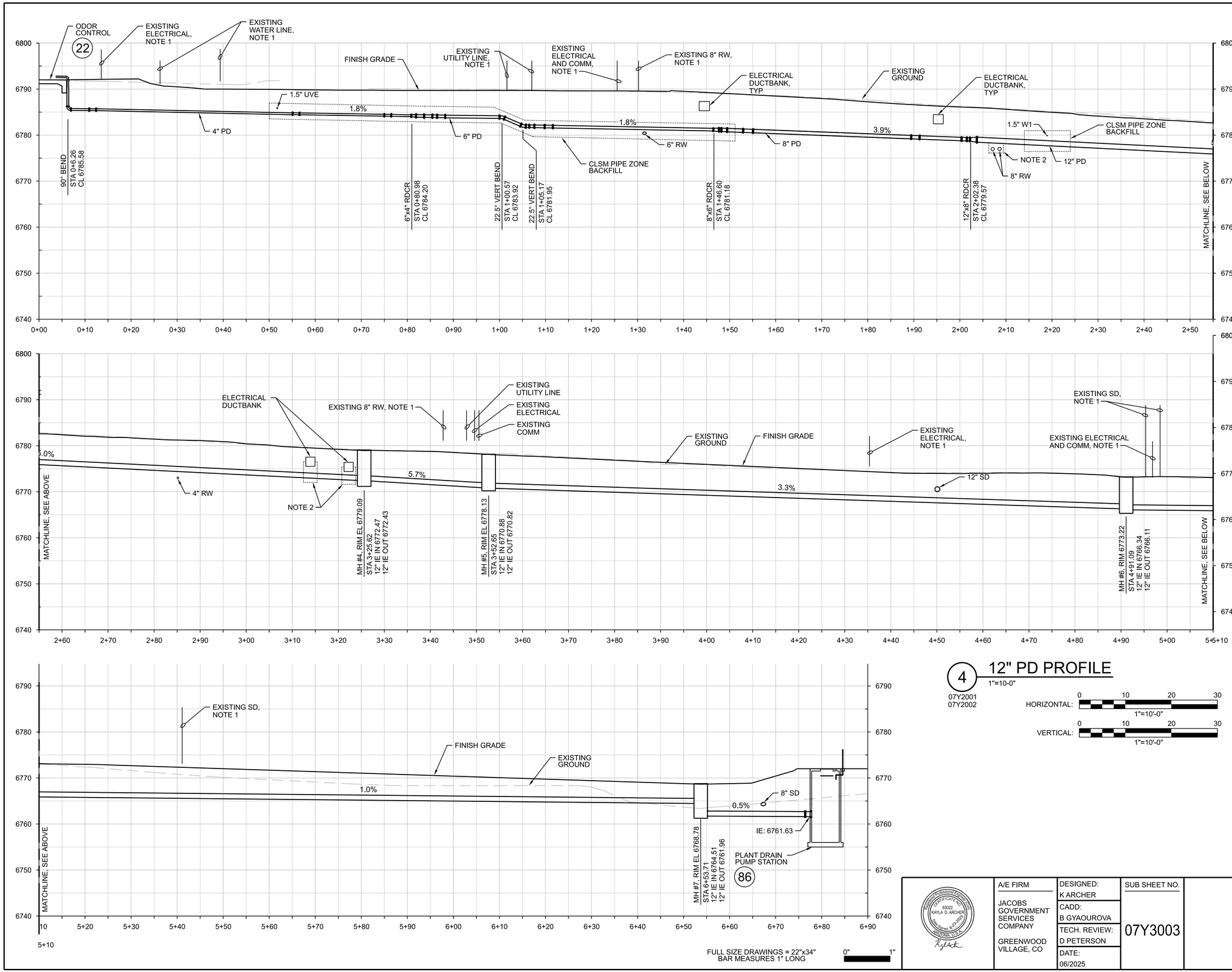
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 07Y3002	TITLE OF SHEET YARD PIPING PIPE PROFILE GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 107 OF 401	

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:17 SS6/V8I



4 12" PD PROFILE
1"=10-0"
07Y2001
07Y2002

HORIZONTAL: 0 10 20 30 1"=10'-0"
VERTICAL: 0 10 20 30 1"=10'-0"

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

SHEET NOTES

1. DEPTH UNKNOWN, FIELD VERIFY.
2. TRENCH PIPE CROSSING 3123-120

GRCA-257282

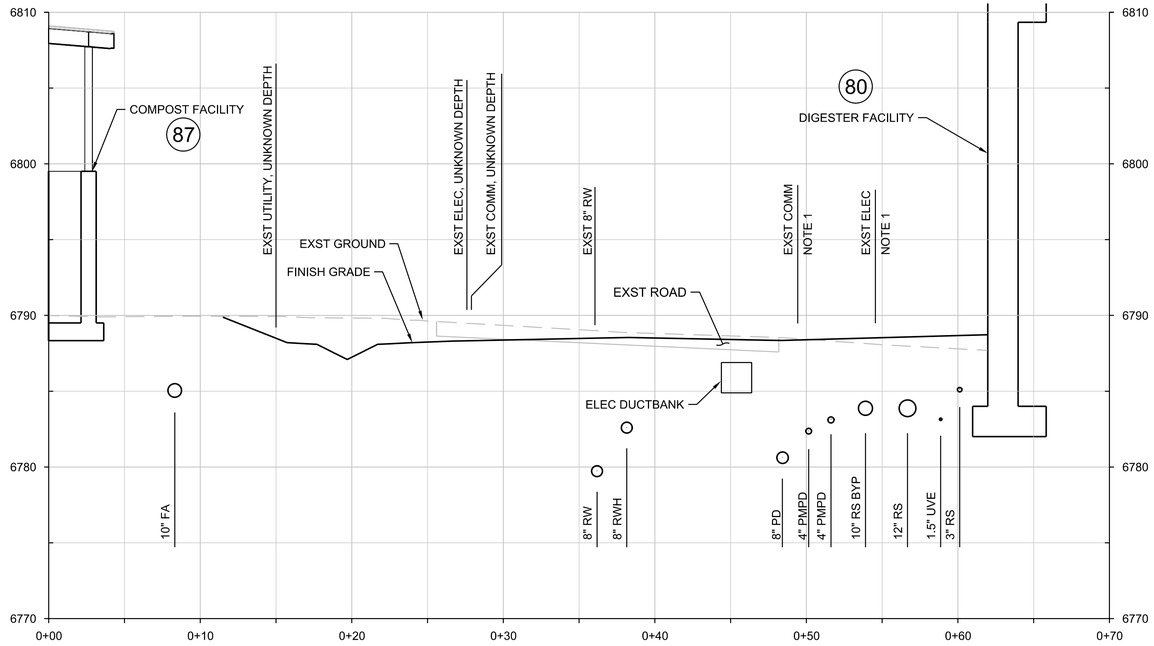
100% COMPLETE CONSTRUCTION DOCUMENTS

A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 07Y3003	TITLE OF SHEET YARD PIPING PIPE PROFILE GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 108 OF 401

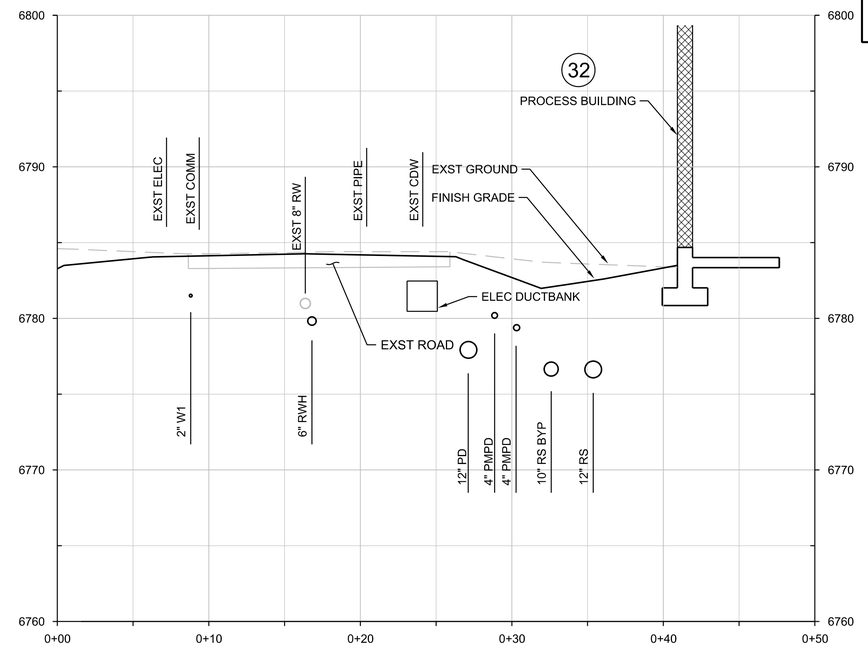
PLOT DATE: 16-JUN-2025 PLOT TIME: 19:18 SS6/V8i

SHEET NOTES

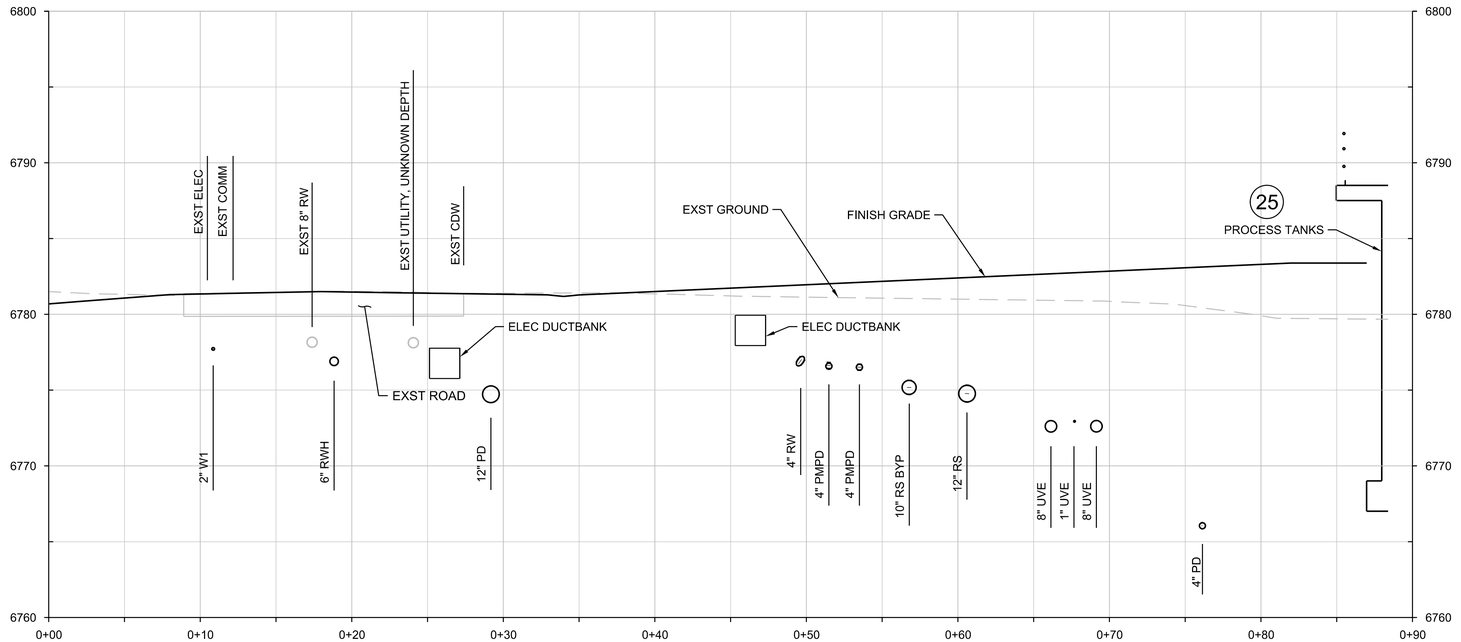
1. PROTECT AND MAINTAIN EXISTING LINE. RELOCATE UTILIZING A BYPASS AS NECESSARY.



A SECTION
1"=10'-0"
07Y2001



B SECTION
1"=10'-0"
07Y2001



C SECTION
1"=10'-0"
07Y2002

HORIZONTAL: 0 10 20 30 1"=10'-0"

VERTICAL: 0 10 20 30 1"=10'-0"

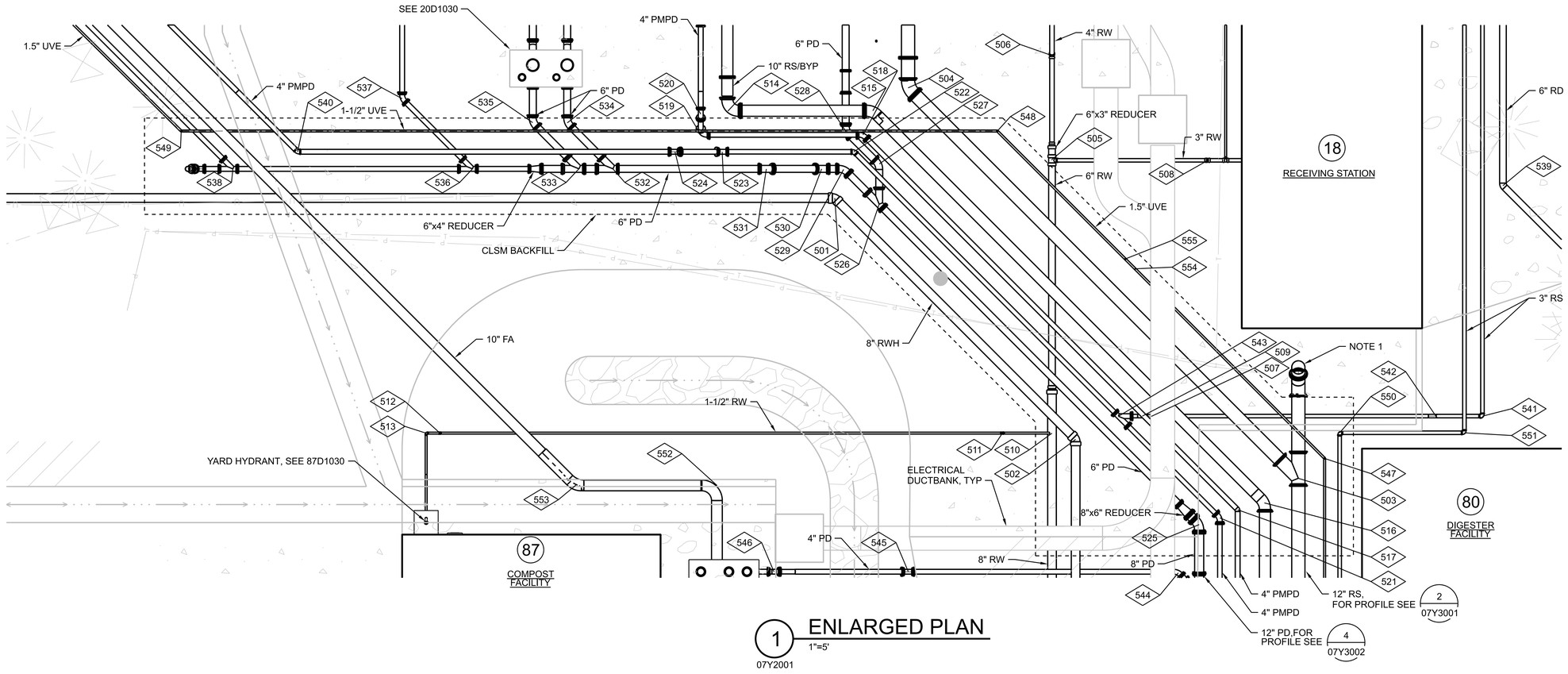
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 07Y3004	TITLE OF SHEET YARD PIPING SECTIONS GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 109 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

GRCA-257282

PLOT DATE: 06\17\2025 PLOT TIME: 12:14:53 PM SS6/V8i $FILEL$



1 ENLARGED PLAN
1"=5'
07Y2001

SHEET NOTES

1. CLEANOUT (2240-101)

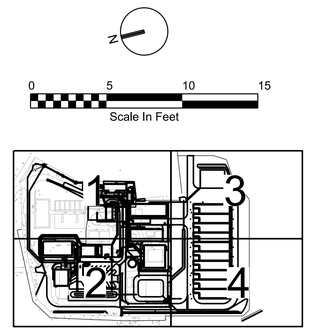
PIPING COORDINATE TABLE

POINT NO.	DESCRIPTION	CL ELEV	NORTHING	EASTING
501	8" RWH, 45° BEND	6783.47	1837350.00	631099.93
502	8" RWH, 45° BEND	6783.47	1837335.39	631075.64
503	12" RS, LATERAL TO CLEANOUT	SP	1837318.20	631068.03
504	12" RS, 45° BEND	SP	1837341.88	631107.35
505	6"x3" RW, TEE	6780.41	1837331.72	631098.62
506	4" RW, 45° BEND UP	6780.41	1837329.61	631107.08
507	3" RS, 45° BEND UP	6782.63	1837328.90	631076.01
508	3" RW, 45° BEND DWON	6785.80	1837319.13	631095.49
509	3" RS, 45° BEND DOWN	6783.25	1837329.50	631076.16
510	8"x1.5" RW, TAP	6780.57	1837337.18	631076.61
511	1.5" RW, 45° BEND DOWN	6784.79	1837341.19	631077.60
512	1.5" RW, 22.5° BEND UP	6784.79	1837386.58	631088.88
513	1.5" RW, 90° BEND ROLL 22.5° DWN	6785.27	1837387.70	631089.16
514	10" RS/BYP, 90° BEND	6783.87	1837356.93	631109.13
515	10" RS/BYP, 45° BEND	6783.87	1837345.18	631106.21
516	10" RS/BYP, 45° BEND	6783.87	1837321.39	631066.70
517	4" PMPD, 45° BEND	6784.02	1837323.73	631066.70
518	4" PMPD, 45° BEND	6783.98	1837346.46	631104.47
519	4" PMPD, 90° BEND 45° ROLL UP	6783.98	1837359.56	631107.72
520	4" PMPD, 45° BEND DOWN	6785.71	1837359.14	631109.39
521	4" PD, 45° BEND	6782.87	1837325.33	631066.41
522	4" PMPD, 45° BEND	6784.22	1837347.42	631103.12
523	4" PMPD, 22.5° BEND UP	6784.35	1837358.17	631105.92
524	4" PMPD, 22.5° BEND DOWN	6786.02	1837361.97	631106.87
525	8" PD, 45° BEND	SP	1837327.13	631066.28
526	6" PD, WYE	SP	1837346.54	631098.55
527	6" PD, 45° BEND	6781.98	1837345.74	631101.75
528	6" PD, 45° BEND	6781.99	1837347.78	631105.10
529	6" PD, 45° BEND	SP	1837348.68	631102.10
530	6" PD, 22.5° BEND UP	SP	1837350.48	631102.55
531	6" PD, 22.5° BEND DOWN	SP	1837354.95	631103.66
532	6" PD, WYE	SP	1837367.32	631106.73
533	6" PD, WYE	SP	1837370.07	631107.41
534	6" PD, 45° BEND	6784.19	1837370.09	631111.37
535	6" PD, 45° BEND	6784.22	1837372.88	631112.08
536	4" PD, WYE	SP	1837378.67	631109.55
537	4" PD, 45° BEND	6784.42	1837382.93	631116.63
538	4" PD, LATERAL TO CLEANOUT	SP	1837398.01	631114.35
539	6" RD, 45° BEND	6786.42	1837295.82	631087.53
540	4" PMPD, 45° BEND	6786.33	1837392.44	631114.44

PIPING COORDINATE TABLE

POINT NO.	DESCRIPTION	CL ELEV	NORTHING	EASTING
541	3" RS, 90° BEND 45° ROLL	6786.67	1837302.09	631069.35
542	3" RS, 45° BEND UP	6782.63	1837306.03	631070.33
543	4"x3" WYE	6783.24	1837331.49	631076.64
544	4" PD, 45° BEND	6780.90	1837329.82	631062.90
545	4" PD, 11.25° BEND UP	6781.16	1837351.60	631068.31
546	4" PD, 11.25° BEND DOWN	6783.37	1837362.40	631071.00
547	1.5" UVE, 45° BEND	6784.52	1837315.68	631069.10
548	1.5" UVE, 45° BEND	6785.35	1837335.54	631102.08
549	1.5" UVE, 45° BEND	6785.35	1837401.42	631118.44
550	3" RS, 90° BEND	6786.67	1837313.95	631070.87
551	3" RS, 90° BEND	6786.67	1837303.88	631068.37
552	10" FA, 90° BEND	6785.11	1837365.28	631079.11
553	10" FA, 45° BEND	6785.34	1837376.72	631081.95
554	1.5" UVE, 22.5° BEND UP	6784.89	1837327.18	631088.20
555	1.5" UVE, 22.5° BEND DOWN	6785.38	1837327.78	631089.19

SP = SEE PROFILE



KEY PLAN

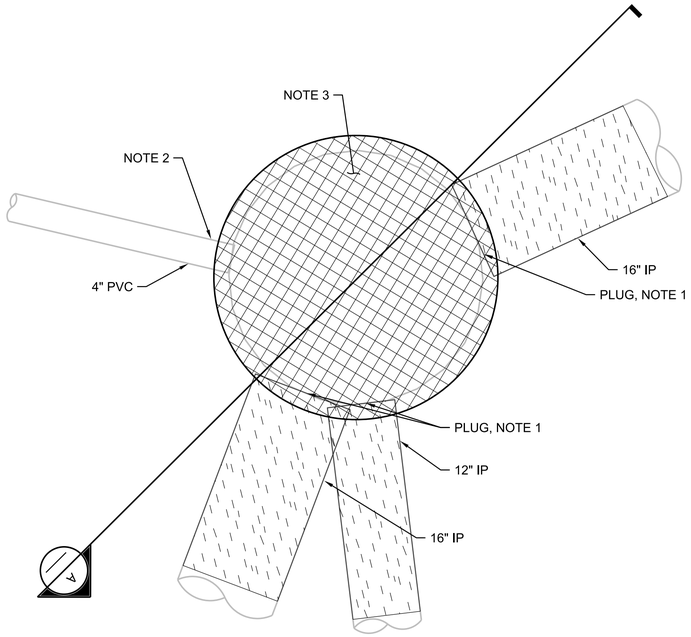
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY; GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER	SUB SHEET NO. 07Y4001	TITLE OF SHEET: YARD PIPING ENLARGED PLAN; GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376
	CADD: B GYAOUROVA			PMIS/PKG NO. 257282
	TECH. REVIEW: D PETERSON			SHEET 110 OF 401
	DATE: 06/2025			

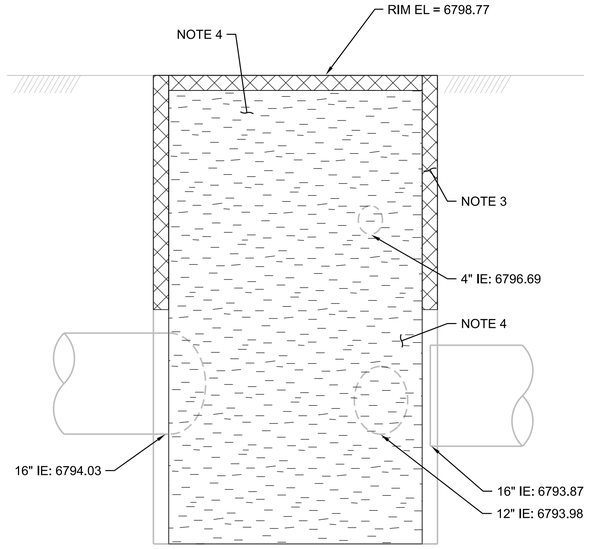
PLOT DATE: 17-JUN-2025 PLOT TIME: 13:45 SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\07Y4001_D3167666.dgn
GRCA-257282
100% COMPLETE CONSTRUCTION DOCUMENTS

SHEET NOTES

1. AFTER STARTUP, PLUG PIPE USING A 36" LONG NON-SHRINK GROUT PLUG AND ABANDON IN PLACE.
2. DEMOLISH PIPE, SEE SHEET 06X1003 FOR LIMITS.
3. AFTER STARTUP DEMOLISH MH PER SPEC 02 41 00, DEMOLITION.
4. BACKFILL UP TO FINISHED GRADE PER SPECIFICATION 31 23 23, FILL AND BACKFILL.



PLAN
1"=1'-0"



A SECTION
1"=1'-0"

1 INFLUENT MANHOLE DETAIL
1"=1'-0"
07Y2001

0 1 2 3
1"=1'-0"

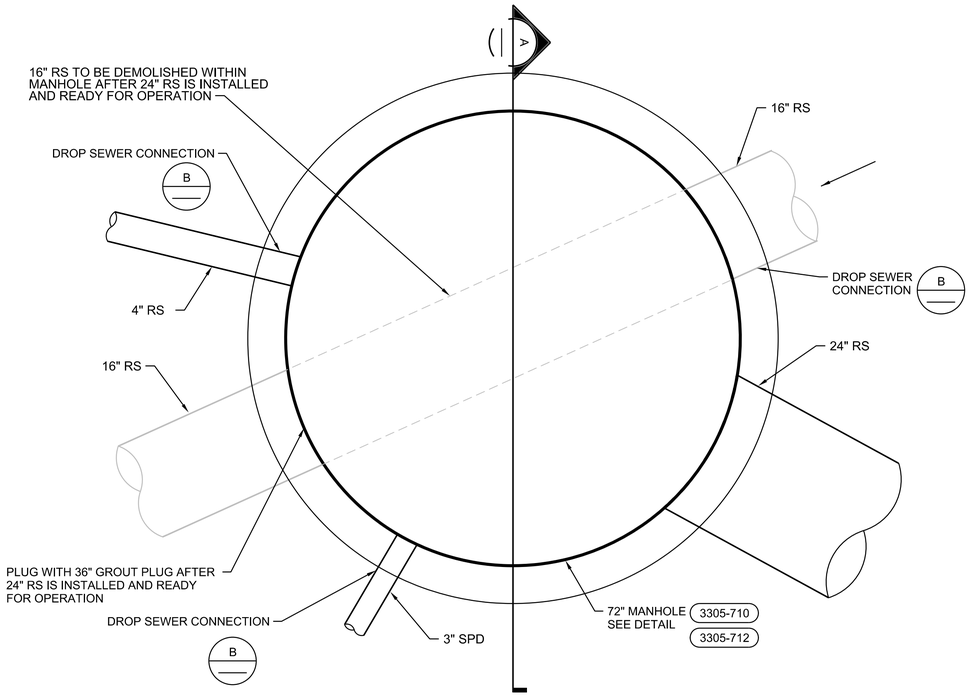
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

	A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER CADD: B GYAOUROVA TECH. REVIEW: D PETERSON DATE: 06/2025	SUB SHEET NO. 07Y5001	TITLE OF SHEET: YARD PIPING INFLUENT MANHOLE DETAIL GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 111 OF 401

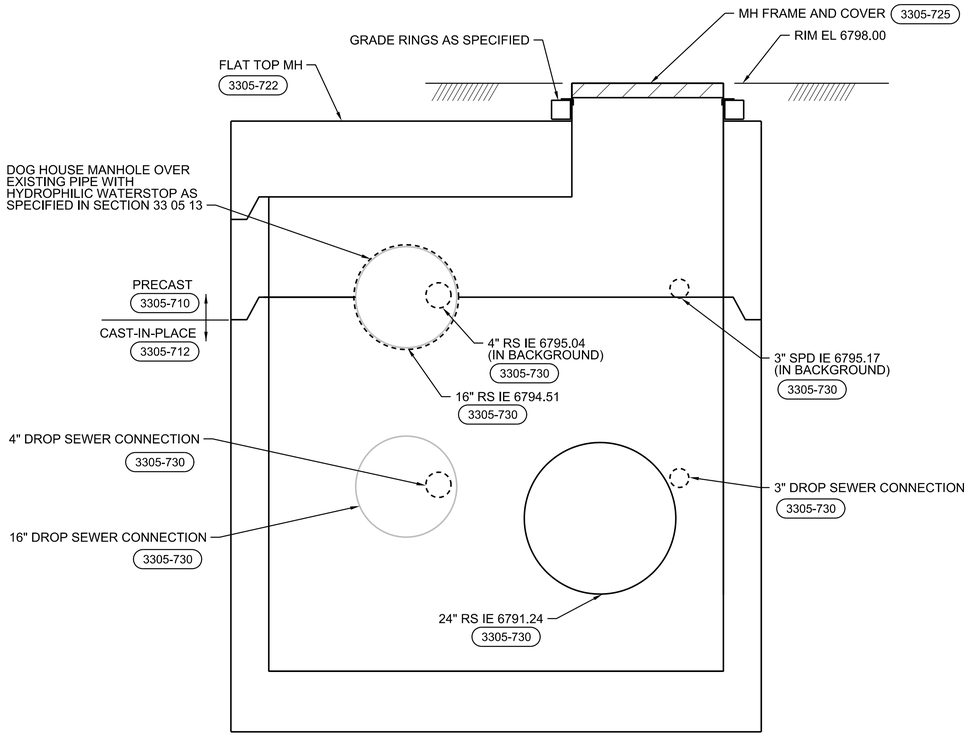
GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 16-JUN-2025 PLOT TIME: 19:19 SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\CIVIL\07Y5001_D3167666.dgn



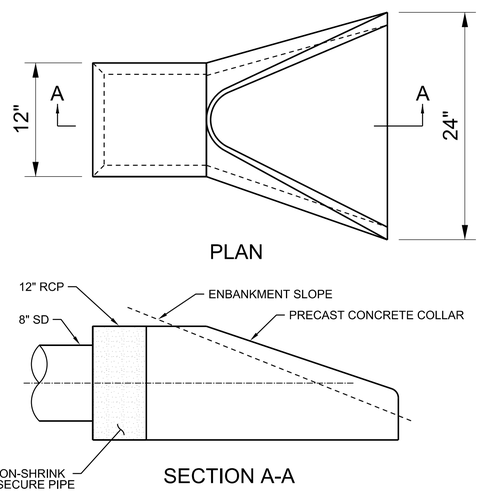
PLAN
1"=1'-0"



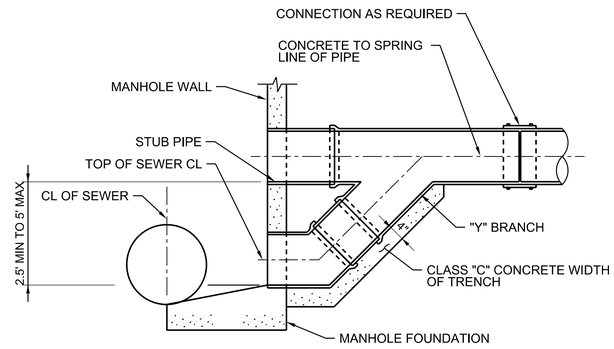
A SECTION
1"=1'-0"

2 MANHOLE 11 DETAIL
1"=1'-0"
07Y2001

0 1 2 3
1"=1'-0"



3 CONCRETE FLARED END SECTION
NTS
07Y2002



B DROP SEWER CONNECTION DETAIL
NTS

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

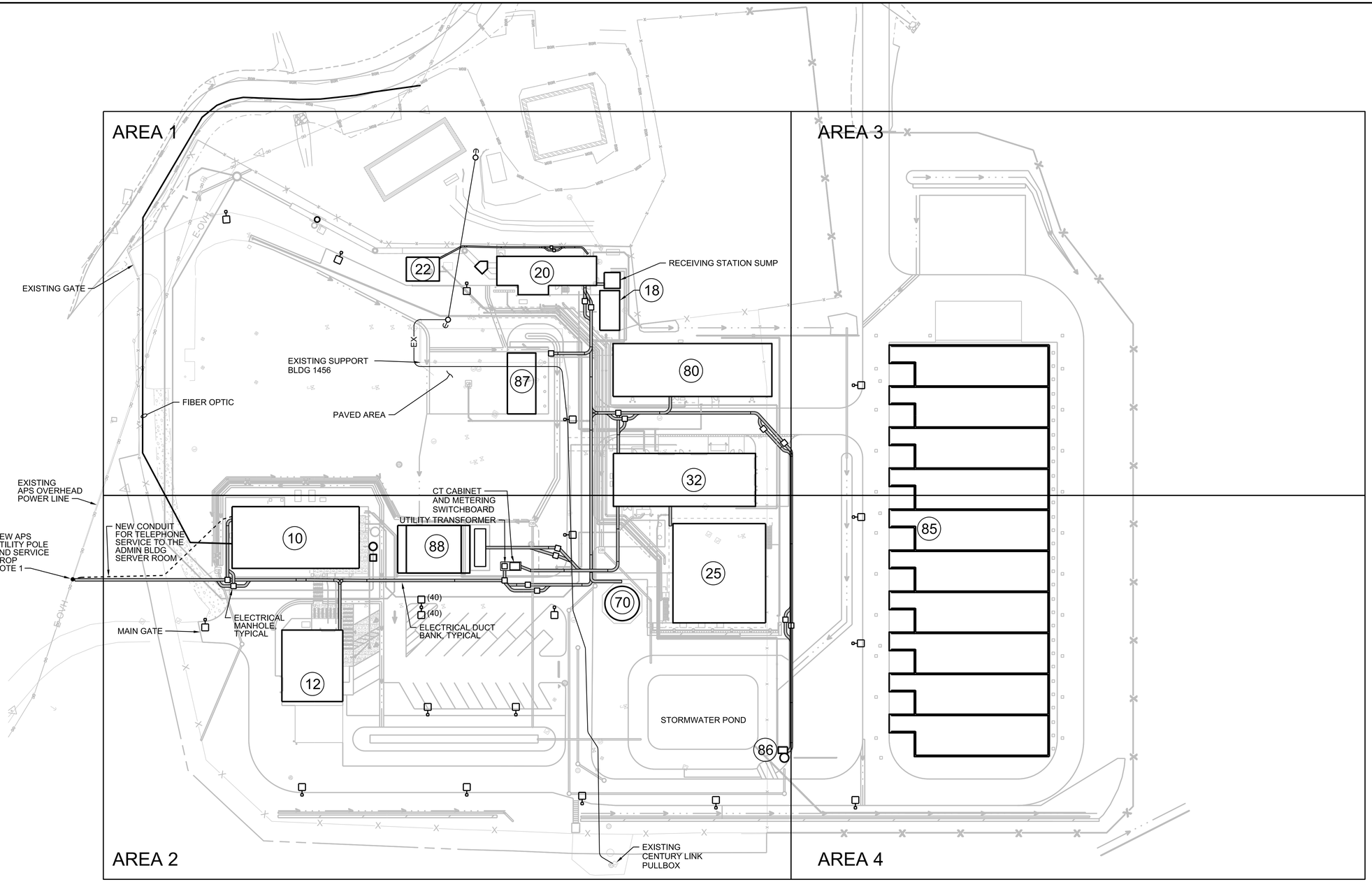
A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: K ARCHER	SUB SHEET NO. 07Y5002	TITLE OF SHEET: YARD PIPING DETAILS	DRAWING NO. 113 / 175376
	CADD: B GYAOUROVA			PMIS/PKG NO. 257282
	TECH. REVIEW: D PETERSON			SHEET 112 OF 401
	DATE: 06/2025		GRAND CANYON, SOUTH RIM	

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 06\17\2025 PLOT TIME: 12:48:49 PM SS6V8i $FILEL$

PLOT DATE: 6/16/2025 PLOT TIME: 11:37:33 PM SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i DrawingsIELEC\08E2000_D3167666.dgn



GENERAL SHEET NOTES

1. COORDINATE ELECTRICAL UTILITY SERVICE WITH APS.
2. NUMBERS SHOWN IN PARENTHESIS, (N), ADJACENT TO LIGHTS AND RECEPTACLES DENOTE CIRCUIT NUMBERS IN FACILITY PANELBOARD 12-LP-01 UNLESS OTHERWISE NOTED. PROVIDE #12 CONDUCTORS FOR 20A OR 15A CIRCUITS LESS THAN 75 FEET. PROVIDE #10 CONDUCTORS FOR CIRCUITS GREATER THAN 75 FEET. REFER TO PANELBOARD SCHEDULES.
3. COMBINE RECEPTACLE AND LIGHTING CIRCUITS IN A SINGLE CONDUIT TO MINIMIZE LENGTH OF CONDUCTORS AND CONDUIT. CIRCUITS COMBINED INTO A SINGLE CONDUIT SHALL BE SIZED FOR NEC DERATING AND CONDUIT FILL REQUIREMENTS.
4. FOR INFORMATION ON EXTERIOR LIGHTING CONTROLS, SEE CONTROL DIAGRAM.
5. FOR LUMINAIRE SCHEDULE AND NOTES, SEE DRAWING 08E6001.
6. FOR DEMOLITION AND PHASING, REFER TO DEMOLITION DRAWINGS 06X1000 THROUGH 06X1124 INCLUSIVE.

SHEET NOTES

1. PROVIDE SERVICE RISER CONDUITS FOR MEDIUM VOLTAGE UTILITY SERVICE. REFER TO APS INSTALLATION MANUAL ONLINE.

N

0 40 80 120
Scale In Feet

FACILITIES LEGEND

10	ADMINISTRATION
12	MAINTENANCE BUILDING
18	RECEIVING STATION
20	HEADWORKS
22	ODOR CONTROL
25	PROCESS TANKS
32	PROCESS BUILDING
70	RECLAIMED WATER TANK
80	DIGESTER FACILITY
85	DRYING BEDS
86	PLANT DRAIN PUMP STATION
87	COMPOSTER FACILITY
88	EXTERIOR COVERED STORAGE

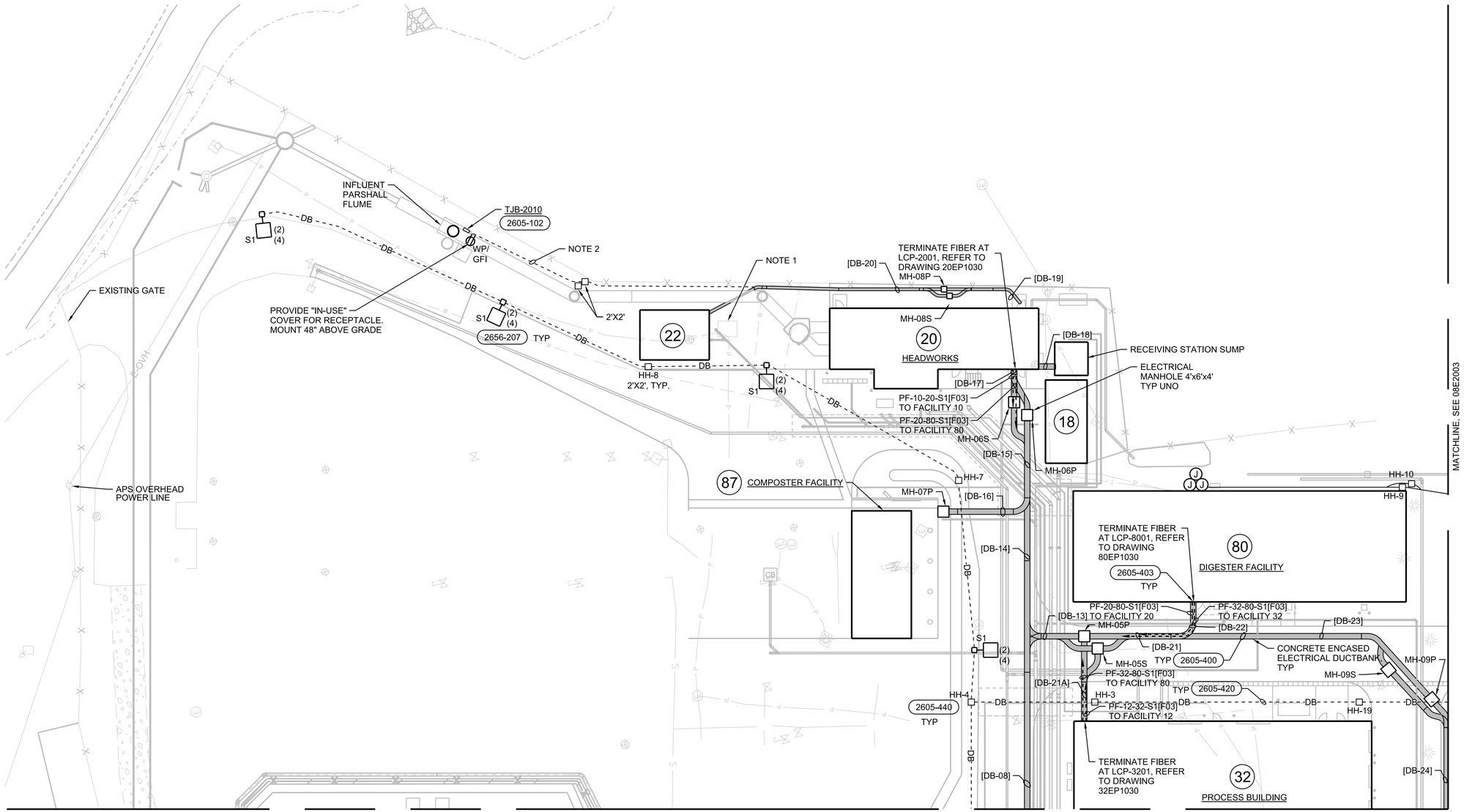
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

Registered Professional Engineer (Retired) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6/19/2025 ARIZONA, U.S.A.

JUNE 19, 2025

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: D BURGER CADD: J GARIBAY TECH. REVIEW: J LANDMAN DATE: 06/2025	SUB SHEET NO. 08E2000	TITLE OF SHEET: SITE ELECTRICAL PLAN OVERALL GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 113 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS



GENERAL SHEET NOTES

A. REFER TO I&C SHEETS 09N0001 THROUGH 09N0007 INCLUSIVE FOR REQUIRED FIBER AND COPPER CABLING BETWEEN FACILITY AREAS AND WITHIN FACIILITY AREAS.

B. PULLBOXES, HANDHOLES, AND VAULTS MUST BE LISTED PER NATIONAL ELECTRICAL CODE OR CABLES LISTED FOR WET LOCATION OR DIRECT BURIAL.

C. ALL GROUND RINGS, AND BURIED GROUND CABLES ARE 4/0 BARE COPPER UNLESS NOTED OTHERWISE.

SHEET NOTES

1. MAINTAIN AND PROTECT EXISTING ELECTRICAL SERVICE, TRANSFORMER, AND DISTRIBUTION TO TREATMENT SYSTEMS UNTIL NEW SERVICE AND EQUIPMENT ARE ONLINE AND PROVIDING TREATMENT OF WASTEWATER. REMOVE AFTER NEW TREATMENT SYSTEM IS OPERATIONAL. REFER TO PHASING SHEETS 06X1001 AND 06X1002.

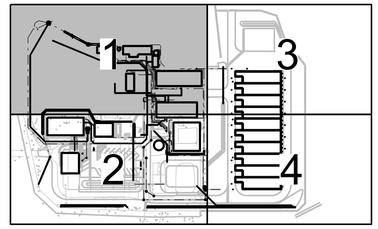
2. PROVIDE POWER FOR INFLUENT SAMPLER SAM-2014 AND FIT-2071, REFER TO SHEET 20EP1030 AND P&ID SHEET 09N2001:

   POWER: FROM 20-ULP-01, 1- 1/4" CONDUIT WITH 3#4, 1#4 GROUND, TRANSITION TO #12 WIRE AT EACH END TO MAKE TERMINATIONS TO RECPETACLE, FLOW TRANSMITTER, AND PANELBOARD.

   INSTRUMENTATION: FROM LCP-2001, 2071-S1[A31], 2014-S1[A31], 2014-C1[C4]. MAINTAIN 24 INCH MINIMUM SEPARATION FROM POWER RUNS.

N

0 20 40 60
Scale In Feet



KEY PLAN

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

Registered Professional Engineer (Electrical) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6-19-2025 ARIZONA, U.S.A.

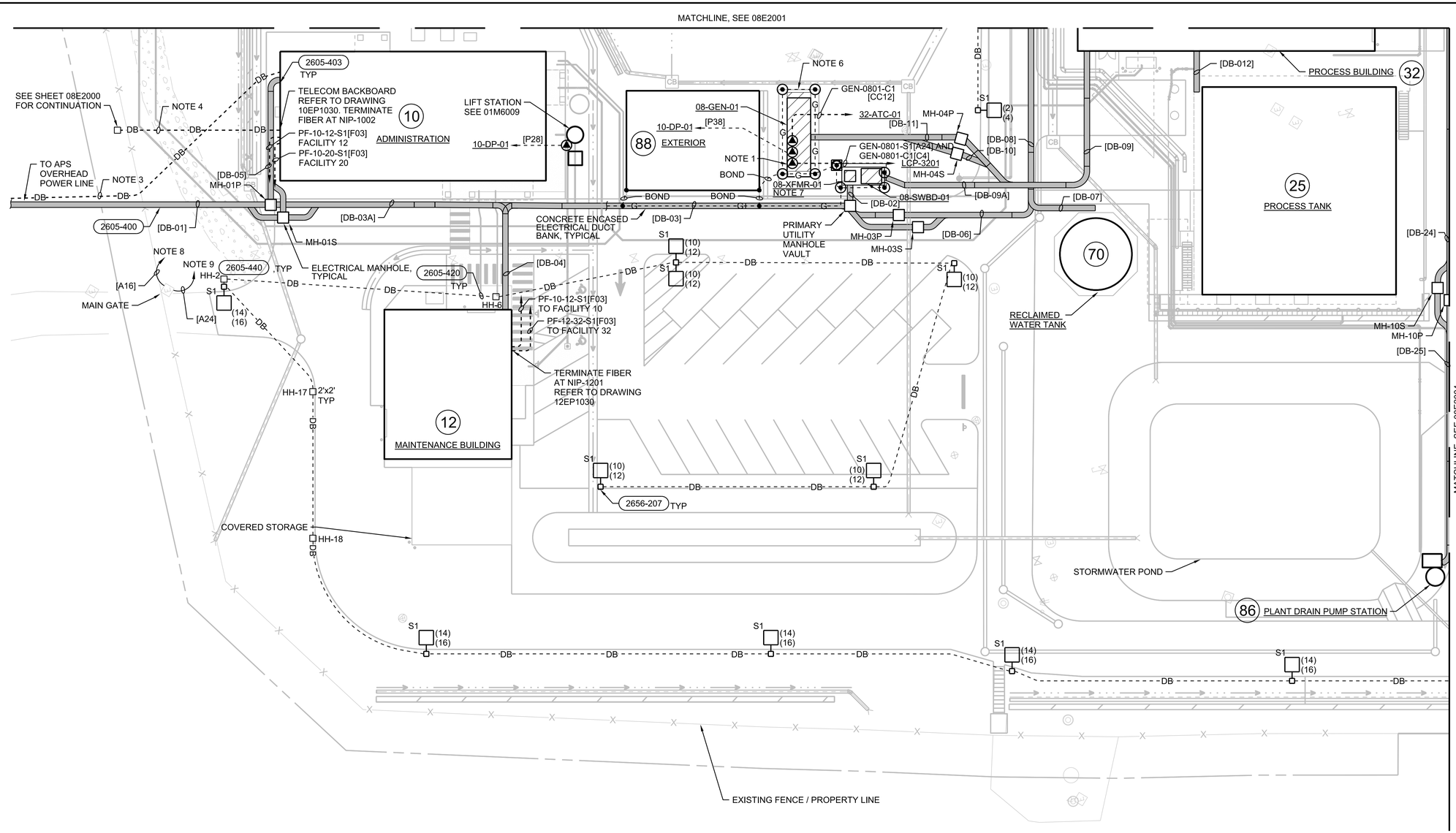
JUNE 19, 2025

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO	DESIGNED: D BURGER	SUB SHEET NO. 08E2001	TITLE OF SHEET: SITE ELECTRICAL PLAN AREA 1	DRAWING NO. 113 175376
	CADD: J GARIBAY			PMIS/PKG NO. 257282
	TECH. REVIEW: J LANDMAN		GRAND CANYON, SOUTH RIM	SHEET 114 OF 401
	DATE: 06/2025			

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 11:38:24 PM SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\ELEC\08E2001_D3167666.dgn



GENERAL SHEET NOTES

A. PROVIDE CONCRETE PAD FOR UTILITY TRANSFORMER AND SWITCHGEAR PER APS REQUIREMENTS.

B. PROVIDE DEDICATED DUCTS AND PULLBOXES FOR APS MEDIUM VOLTAGE SERVICE. REFER TO APS UNDERGROUND INSTALLATION MANUAL ONLINE.

C. REFER TO I&C SHEETS 09N0001 THROUGH 09N0007 INCLUSIVE FOR REQUIRED FIBER AND COPPER CABLING BETWEEN FACILITY AREAS AND WITHIN FACIILITY AREAS.

D. PULLBOXES, HANDHOLES, AND VAULTS MUST BE LISTED PER NATIONAL ELECTRICAL CODE OR CABLES LISTED FOR WET LOCATION OR DIRECT BURIAL.

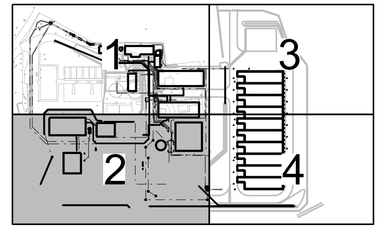
E. ALL GROUND RINGS, AND BURIED GROUND CABLES ARE 4/0 BARE COPPER UNLESS NOTED OTHERWISE.

SHEET NOTES

1. PROVIDE CAT 6 CABLE IN 1" CONDUIT TO LCP-3201 IN BUILDING 32.
2. 1-1/2"C WITH 1 TYPE 3 CABLE RATED FOR WET LOCATION.
3. 2-4"C FROM CENTURY LINK TERMINATION BOX 36"BELOW FINISH GRADE. MAINTAIN 5'-0" SEPARATIONFROM UNDERGROUND APS MEDIUM VOLTAGE ELECTRIC LINE EXCEPT AT UTILITY POLE. COORDINATE TERMINATION LOCATION WITH CENTURY LINK.
4. PROVIDE 2-4" CONDUIT AND PULLBOX FOR FUTURE FIBER. INSTALL 48" BELOW FINISHED GRADE TO TOP OF CONDUIT.
5. PROVIDE 5#10 IN 1" CONDUIT TO BUILDING 10 PANEL 10-LP-02 FOR BATTERY CHARGER, LIGHTS AND SERVICE RECEPTACLES. PROVIDE 7#10 IN 1 1/2" CONDUIT TO BUILDING 10 PANEL 10-DP-01 FOR JACKET HEATERS.
6. PROVIDE GROUND RING AND GENERATOR ENCLOSURE BONDING.
7. PROVIDE GROUND RING AND BONDING OF UTILITY TRANSFORMER AND ELECTRICAL SERVICE EQUIPMENT.
8. EXTEND POWER AND CONTROLS FOR EXISTING ENTRY GATE TO ADMINISTARTION BUILDING ELECTRICAL ROOM PANEL 10-LP-01
9. EXTEND CONTROL AND COMMUNICATION CABLE TO BUILDING 10 SCADA ROOM.

N

0 20 40 60
Scale In Feet



KEY PLAN

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

Registered Professional Engineer (Electrical) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6-19-2025 ARIZONA, U.S.A.
JUNE 19, 2025

A/E FIRM	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	D BURGER CADD: J GARIBAY TECH. REVIEW: J LANDMAN DATE: 06/2025	08E2002	SITE ELECTRICAL PLAN AREA 2 GRAND CANYON, SOUTH RIM	113 175376 PMIS/PKG NO. 257282 SHEET 115 OF 401

PLOT DATE: 6/16/2025 PLOT TIME: 11:39:32 PM SS6/V8i D3167866 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i DrawingsIELEC\08E2002_D3167666.dgn

100% COMPLETE CONSTRUCTION DOCUMENTS

GRCA-257282

MATCHLINE, SEE 08E2001

HH-16

HH-15
2'x2", TYP

DB

HH-14

HH-13

DB

HH-12

HH-11

DB

2656–207

(6)
(8)
S1

DB

DB

HH-5

DB

2605–440

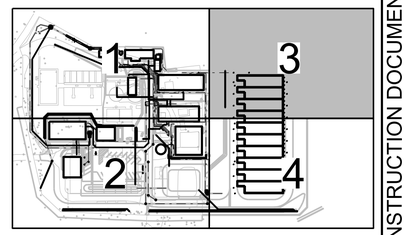
DB

85
DRYING BEDS

MATCHLINE, SEE 08E2004

N

0 20 40 60
Scale In Feet



KEY PLAN

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

Registered Professional Engineer (Electrical)
CERTIFICATE NO.
81240
DAVID
BURGER
Date Signed 6-19-2025
ARIZONA, U.S.A.

JUNE 19, 2025

A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: D BURGER CADD: J GARIBAY TECH. REVIEW: J LANDMAN DATE: 06/2025	SUB SHEET NO. 08E2003	TITLE OF SHEET SITE ELECTRICAL PLAN AREA 3 GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 116 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 11:38:36 PM SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\ELEC\08E2003_D3167666.dgn

MATCHLINE, SEE 08E2003

MATCHLINE, SEE 08E2002

S1
(6)
(8)

DB

DB

85
DRYING BEDS

2656–207 TYP

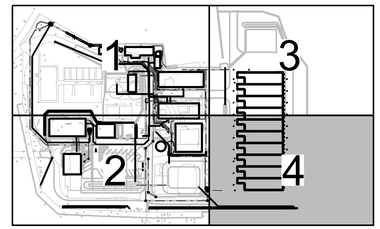
S1
(6)
(8)

S1
(14)
(16)

DB

N

0 20 40 60
Scale In Feet



KEY PLAN

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

Registered Professional Engineer (Electrical)
CERTIFICATE NO.
81240
DAVID
BURGER
Date Signed 6-19-2025
ARIZONA, U.S.A.

JUNE 19, 2025

A/E FIRM JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO	DESIGNED: D BURGER CADD: J GARIBAY TECH. REVIEW: J LANDMAN DATE: 06/2025	SUB SHEET NO. 08E2004	TITLE OF SHEET SITE ELECTRICAL PLAN AREA 4 GRAND CANYON, SOUTH RIM	DRAWING NO. 113 175376 PMIS/PKG NO. 257282 SHEET 117 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 11:38:28 PM SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\ELEC\08E2004_D3167666.dgn

LUMINAIRE SCHEDULE

TYPE	VOLTAGE	INPUT WATTS	DESCRIPTION	LAMPS	MOUNTING
A1	120	33	PHYSICAL: 4 FOOT LINEAR STRIP. STEEL, PAINTED HIGH-GLOSS WHITE ENAMEL. DIFFUSE, OPAQUE LENS. FUNCTIONAL: LED, 80 CRI. NOMINAL LUMENS: 7000. MULTI-VOLTAGE. 0-10 VOLT 10% DIMMABLE DRIVER. BATTERY BACKUP WHERE INDICATED ON PLANS, 7-10 WATT WITH TEST SWITCH. DAMP LOCATION LISTED. SYMMETRIC REFLECTOR. BUY AMERICAN ACT APPROVED. PERFORMANCE: NONE.	LED 4000K	SUSPENDED
A2	120	42	SIMILAR TO TYPE A1, EXCEPT 5000 LUMENS	LED 4000K	SUSPENDED
B1	120	33	PHYSICAL: 4 FOOT LINEAR STRIP. INJECT-MOLDED POLYCARBONATE, WHITE. DIFFUSE, GASKETED, POLYCARBONATE LENS. LATCHES: STAINLESS STEEL. FUNCTIONAL: LED, 80 CRI. NOMINAL LUMENS: 5000. MULTI-VOLTAGE. 0-10 VOLT 10% DIMMABLE DRIVER. BATTERY BACKUP WHERE INDICATED ON PLANS, 7-10 WATT WITH TEST SWITCH. WET LOCATION LISTED. SYMMETRIC REFLECTOR. BUY AMERICAN ACT APPROVED. PERFORMANCE: NONE	LED 4000K	SUSPENDED
B2	120	49	SIMILAR TO TYPE B1, EXCEPT 6000 LUMENS	LED 4000K	SUSPENDED
D1	120	8	PHYSICAL: 6" ROUND RECESSED DOWNLIGHT GALVANIZED STEEL TRIM: CLEAR, SPECULAR FUNCTIONAL: LED, 80 CRI. NOMINAL LUMENS: 500. MULTI-VOLTAGE. 0-10 VOLT 10% DIMMABLE DRIVER. BATTERY BACKUP WHERE INDICATED ON PLANS, 7-10 WATT WITH TEST SWITCH. WET LOCATION IP55 LISTED. SYMMETRIC REFLECTOR. BUY AMERICAN ACT APPROVED. PERFORMANCE: NONE.	LED 4000K	RECESSED
D2	120	10	SIMILAR TO TYPE D1, EXCEPT 1000 LUMENS	LED 4000K	RECESSED
E1	120	36	PHYSICAL: 2'X2', DIRECT/INDIRECT RECESSED TROFFER. STEEL, PAINTED HIGH-GLOSS WHITE. ACRYLIC REFLECTOR. FUNCTIONAL: LED, 80 CRI. NOMINAL LUMENS: 2000. MULTI-VOLTAGE. 0-10 VOLT 10% DIMMABLE DRIVER. BATTERY BACKUP WHERE INDICATED ON PLANS, 1200 LUMENS MINIMUM WITH TEST SWITCH. SYMMETRIC REFLECTOR. BUY AMERICAN ACT APPROVED. PERFORMANCE: UNIFIED GLARE RATING OF 18	LED 4000K	RECESSED
E2	120	20	SIMILAR TO TYPE E1, EXCEPT 2000 LUMENS.	LED 4000K	RECESSED
F1	120	30	PHYSICAL: 2'X2', DIRECT/INDIRECT RECESSED TROFFER. STEEL, PAINTED HIGH-GLOSS WHITE. ACRYLIC REFLECTOR. FUNCTIONAL: LED, 80 CRI. NOMINAL LUMENS: 3000. MULTI-VOLTAGE. 0-10 VOLT 10% DIMMABLE DRIVER. BATTERY BACKUP WHERE INDICATED ON PLANS, 1200 LUMENS MINIMUM WITH TEST SWITCH. DAMP LOCATION IP5X LISTED. SYMMETRIC REFLECTOR. BUY AMERICAN ACT APPROVED. PERFORMANCE: UNIFIED GLARE RATING OF 18.	LED 4000K	RECESSED
F2	120	17	SIMILAR TO TYPE F1, EXCEPT 2000 LUMENS.	LED 4000K	RECESSED

GENERAL SHEET NOTES

A. FOR EXACT LOCATION OF RECESSED INTERIOR LUMINAIRES, SEE ARCHITECTURAL REFLECTED CEILING PLAN.

B. FOR LOCATION OF EXTERIOR MOUNTED LUMINAIRES, SEE ARCHITECTURAL ELEVATIONS.

C. FOR CEILING TYPES, SEE ARCHITECTURAL DRAWINGS AND/OR SPECIFICATIONS.

D. ALL DIMENSIONS INDICATED ARE "NOMINAL DIMENSIONS."

E. FOR CONTINUOUS ROW MOUNTING OF LUMINAIRES USE SLOTTED SUPPORT CHANNEL AS REQUIRED.

F. SYMBOL ▭● : LUMINAIRES WITH DOT INDICATES INTEGRAL EMERGENCY BATTERY PACK/DRIVER. PROVIDE ADDITIONAL UNSWITCHED CONDUCTORS SO THAT LUMINAIRES WILL COME ON DURING POWER FAILURE. WIRE PER MANUFACTURER'S RECOMMENDATIONS SO THAT THE LUMINAIRES CAN BE SWITCHED ON/OFF AND THE BATTERIES WILL STILL MAINTAIN THEIR CHARGE. FOR ADDITIONAL INFORMATION SEE SPECIFICATIONS.

G. CONNECT EXIT SIGN TO CIRCUIT CONNECTED TO LIGHT FIXTURES IN AREA SERVED. CONNECT TO UNSWITCHED PHASE CONDUCTOR.

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 11:37:34 PM SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i DrawingsIELEC\08E6001_D3167666.dgn

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

Registered Professional Engineer (Electrical) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6/23/2025 ARIZONA, U.S.A.

JUNE 23, 2025

A/E FIRM: JACOBS GOVERNMENT SERVICES COMPANY, GREENWOOD VILLAGE, CO

DESIGNED: D BURGER
CADD: J GARIBAY
TECH. REVIEW: J LANDMAN
DATE: 06/2025

SUB SHEET NO. 08E6001

TITLE OF SHEET
SITE ELECTRICAL
LUMINAIRE SCHEDULE

GRAND CANYON, SOUTH RIM

DRAWING NO. 113 175376
PMIS/PKG NO. 257282
SHEET 118 OF 401

LUMINAIRE SCHEDULE

TYPE	VOLTAGE	INPUT WATTS	DESCRIPTION	LAMPS	MOUNTING
G1 ○	120	119	PHYSICAL: 14"-16" (NOMINAL) HIGH BAY. PENDENT MOUNTED. CAST ALUMINUM HOUSING (LESS THAN 0.7% COPPER CONTENT). FINISH: POWDER COAT WHITE. LENS: GLASS LENS SECURED WITH STAINLESS STEEL SCREWS FUNCTIONAL: LED, 80 CRI. NOMINAL LUMENS: 18000. 120 VOLT AC. INTEGRAL OCCUPANCY SENSOR 0-10 VOLT 10% DIMMABLE DRIVER. CLASS 1 DIV 2 GROUPS A,B,C,D LISTED. NEMA 4X RATED. BUY AMERICAN ACT APPROVED. PERFORMANCE: OPTICS: WIDE THROW	LED 4000K	SUSPENDED
H1 ○	120	83	PHYSICAL: 20"-24" (NOMINAL) HIGH BAY. PENDENT MOUNTED. CAST ALUMINUM HOUSING (LESS THAN 0.7% COPPER CONTENT). FINISH: THERMOSET POWDER COAT WHITE. LENS: GLASS LENS SECURED WITH STAINLESS STEEL SCREWS FUNCTIONAL: LED, 80 CRI. NOMINAL LUMENS: 12000. 120 VOLT AC. INTEGRAL OCCUPANCY SENSOR 0-10 VOLT 10% DIMMABLE DRIVER. NEMA 4X OR IP65 RATED. BUY AMERICAN ACT APPROVED. PERFORMANCE: OPTICS: WIDE THROW.	LED 4000K	SUSPENDED
M1 ▭	120	12	PHYSICAL: ARCHITECTURAL TRAPAZOIDAL WALL SCONCE. NOMINAL DIMENSIONS; 8.5"H x 17"W x 10"D CAST ALUMINUM HOUSING (LESS THAN 0.7% COPPER CONTENT) WITH BACK BOX. FINISH: DARK BRONZE. LENS: GLASS LENS SECURED WITH STAINLESS STEEL SCREWS FUNCTIONAL: LED, 80 CRI. NOMINAL LUMENS: 1500. 120 VOLT AC. INTEGRAL BI-LEVEL OCCUPANCY SENSOR 0-10 VOLT 10% DIMMABLE DRIVER. BATTERY BACKUP WHERE INDICATED ON PLANS, 18 WATT (NOMINAL). NEMA 4X OR IP65 RATED. BUY AMERICAN ACT APPROVED. PERFORMANCE: CUTOFF NIGHT SKY FRIENDLY OPTICS.	LED 3000K	WALL MOUNT
M2 ▭	120	25	SIMILAR TO TYPE M1, EXCEPT 3000 LUMENS	LED 3000K	WALL MOUNT
N1 ○	120	24	PHYSICAL: SURFACE MOUNT ROUND LOW PROFILE. NOMINAL DIMENSIONS: 13" DIAMETER, 3" DEEP MARINE GRADE CAST ALUMINUM. FINISH: DARK BRONZE. LENS: POLYCARBONATE, GASKETED FUNCTIONAL: LED, 80 CRI. NOMINAL LUMENS: 1500. 120 VOLT AC. INTEGRAL BI-LEVEL OCCUPANCY SENSOR 0-10 VOLT 10% DIMMABLE DRIVER. BATTERY BACKUP WHERE INDICATED ON PLANS. BUY AMERICAN ACT APPROVED. PERFORMANCE: FULL CUTOFF IDA APPROVED DARK SKY.	LED 3000K	SURFACE
S1 ▭ OR S1 ▭	208 OR 120 SEE PLANS	71	PHYSICAL: ARCHITECTURAL POLE MOUNT EXTERIOR. DIE CAST ALUMINUM. FINISH: DARK BRONZE THERMOSET POWDER COAT, 3 MIL THICKNESS MINIMUM. LENS: GLASS OR SILICONE. 20' x 4" SQUARE DARK BRONZE ALUMINUM POLE. FUNCTIONAL: LED. VOLTAGE: AS INDICATED ON PLANS. 0-10V DIMMABLE, PIR INTEGRATED MOTION SENSOR. WET LOCATION LISTED, IP66. DRIVER RATED -40 DEGREE CELCIUS. BUY AMERICAN ACT APPROVED. PERFORMANCE: FULL CUTOFF, DARK SKY FRIENDLY CONSISTANT WITH LEED CRITERIA.	LED 3000K	POLE OR WALL MOUNT
X1 ⊗ OR X1 ⊗	120	1	PHYSICAL: SURFACE MOUNT EXIT SIGN. THERMOPLASTIC CONVERTABLE SINGLE TO DOUBLE FACE. FINISH: WHITE WITH GREEN LETTERS FUNCTIONAL: LED 120 VOLT AC. DAMP LOCATION LISTED. BATTERY BACKUP NICKLE CADMIUM BUY AMERICAN ACT APPROVED. PERFORMANCE: NONE	LED	SURFACE

LUMINAIRE SCHEDULE

TYPE	VOLTAGE	INPUT WATTS	DESCRIPTION	LAMPS	MOUNTING
X1 ⊗ OR X1 ⊗	120	23	PHYSICAL: ARCHITECTURAL POLE MOUNT EXTERIOR. DIE CAST ALUMINUM. FINISH: DARK BRONZE THERMOSET POWDER COAT, 3 MIL THICKNESS MINIMUM. LENS: GLASS OR SILICONE. 10' - 0" x 4" SQUARE DARK BRONZE ALUMINUM HINGED POLE. FUNCTIONAL: LED. VOLTAGE: AS INDICATED ON PLANS. 0-10V DIMMABLE, PIR INTEGRATED MOTION SENSOR. WET LOCATION LISTED, IP66. DRIVER RATED -40 DEGREE CELCIUS. BUY AMERICAN ACT APPROVED. PERFORMANCE: FULL CUTOFF, DARK SKY FRIENDLY CONSISTANT WITH LEED CRITERIA.	LED 3000K	POLE MOUNT
X2 ⊗ OR X2 ⊗	120	1	PHYSICAL: SURFACE MOUNT EXIT SIGN. THERMOPLASTIC CONVERTABLE SINGLE TO DOUBLE FACE. FINISH: WHITE WITH GREEN LETTERS FUNCTIONAL: LED 120 VOLT AC. DAMP LOCATION LISTED. BATTERY BACKUP NICKLE CADMIUM BUY AMERICAN ACT APPROVED. PERFORMANCE: NONE	LED	SURFACE
P1 ▭	120	1	PHYSICAL: SURFACE MOUNT HAZARDOUS AREA EXIT SIGN. CAST ALUMINUM , LESS THAN 0.4% COPPER.. FINISH: THERMOSET EPOXCY POWDER COAT. SIGN: ACRYLIC WITH GREEN LETTERS HARDWARE: STAINLES STEEL FUNCTIONAL: LED 120 VOLT AC. UL844 CLASS 1 DIV 2 GROUPS A,B,C,D LISTED. UL1598 WET LOCATION LISTED BATTERY BACKUP NICKLE CADMIUM BUY AMERICAN ACT APPROVED. PERFORMANCE: NONE	LED	SURFACE

GENERAL SHEET NOTES

A. FOR EXACT LOCATION OF RECESSED INTERIOR LUMINAIRES, SEE ARCHITECTURAL REFLECTED CEILING PLAN.

B. FOR LOCATION OF EXTERIOR MOUNTED LUMINAIRES, SEE ARCHITECTURAL ELEVATIONS.

C. FOR CEILING TYPES, SEE ARCHITECTURAL DRAWINGS AND/OR SPECIFICATIONS.

D. ALL DIMENSIONS INDICATED ARE "NOMINAL DIMENSIONS."

E. FOR CONTINUOUS ROW MOUNTING OF LUMINAIRES USE SLOTTED SUPPORT CHANNEL AS REQUIRED.

F. SYMBOL ▭● : LUMINAIRES WITH DOT INDICATES INTEGRAL EMERGENCY BATTERY PACK/DRIVER. PROVIDE ADDITIONAL UNSWITCHED CONDUCTORS SO THAT LUMINAIRES WILL COME ON DURING POWER FAILURE. WIRE PER MANUFACTURER'S RECOMMENDATIONS SO THAT THE LUMINAIRES CAN BE SWITCHED ON/OFF AND THE BATTERIES WILL STILL MAINTAIN THEIR CHARGE. FOR ADDITIONAL INFORMATION SEE SPECIFICATIONS.

G. CONNECT EXIT SIGN TO CIRCUIT CONNECTED TO LIGHT FIXTURES IN AREA SERVED. CONNECT TO UNSWITCHED PHASE CONDUCTOR.

GRCA-257282

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

Registered Professional Engineer (Retired) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6-19-2025 ARIZONA, U.S.A.

JUNE 19, 2025

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO
DESIGNED:	D BURGER
CADD:	J GARIBAY
TECH. REVIEW:	J LANDMAN
DATE:	06/2025
SUB SHEET NO.	08E6002
TITLE OF SHEET	SITE ELECTRICAL LUMINAIRE SCHEDULE
	GRAND CANYON, SOUTH RIM
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	119 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 11:40:16 PM SS6\V8I D3167666 - South Rim4 Delivery\43 CAD Design\GRCA\257282\Microstation V8I DrawingsIELEC\08E6002_D3167666.dgn

DUCTBANK SCHEDULE

DUCTBANK ID	CONDUIT FROM	CONDUIT TO	CONDUIT QUANTITY	CONDUIT SIZE (INCHES)	CONDUCTORS	TYPE	INSTALLATION CONSTRUCTION TYPE (DB/CE)	ORIGIN	DESTINATION	NOTES
DB-01	EXISTING PRIMARY UTILITY POWER	PRIMARY UTILITY MANHOLE VAULT			UTILITY CONDUCTORS	PVC	CE	UTILITY	08-XFMR-01	
			1	4"	SPARE	PVC		UTILITY	08-XFMR-01	SPARE
DB-02	PRIMARY UTILITY MANHOLE VAULT	08-XFMR-01			UTILITY CONDUCTORS	PVC	CE	UTILITY	08-XFMR-01	
			1	4"	SPARE	PVC		UTILITY	08-XFMR-01	SPARE
DB-03	MH-03P	DB-03A	2	3 1/2"	4#350KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	10-DP-01	TELEPHONE CONDUITS SHALL BE SEPARATED AT LEAST 1'-0" FROM UTILITY SERVICE IN TRENCH
		DB-04	1	4"	4#500KCMIL, 1#1/0G	PVC		32-SWBD-01	12-DP-01	
	DB-03A	PRIMARY UTILITY MANHOLE VAULT			UTILITY CONDUCTORS	PVC		UTILITY	08-XFMR-01	
	DB-04	MH-03S	1		F03	PVC		NIP-1201	LCP-3201	
	MH-03S	DB-03A	1		F03	PVC		LCP-2001	NIP-1002	
DB-03A	DB-03	MH-01P	2	3 1/2"	4#350KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	10-DP-01	TELEPHONE CONDUITS SHALL BE SEPARATED AT LEAST 1'-0" FROM UTILITY SERVICE IN TRENCH
	MH-01P	DB-03			UTILITY CONDUCTORS	PVC		UTILITY	08-XFMR-01	
	MH-01S	DB-04	1		F03	PVC		NIP-1002	NIP-1201	
	DB-03	MH-01S	1		F03	PVC		LCP-2001	NIP-1002	
DB-04	DB-03	12-DP-01	1	4"	4#500KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	12-DP-01	
			1	4"	SPARE	PVC		32-SWBD-01	12-DP-01	
	DB-03A	NIP-1201	1		F03	PVC		NIP-1002	NIP-1201	
	NIP-1201	DB-03	1		F03	PVC		NIP-1201	LCP-3201	
DB-05	MH-01P	10-DP-01	2	3 1/2"	4#350KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	10-DP-01	
	NIP-1002	MH-01S	1		F03	PVC		NIP-1002	NIP-1201	
	MH-01S	NIP-1002	1		F03	PVC		LCP-2001	NIP-1002	
DB-06	DB-08	MH-03P	2	3 1/2"	4#350KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	10-DP-01	
			1	4"	4#500KCMIL, 1#1/0G	PVC		32-SWBD-01	12-DP-01	
	MH-03S	DB-08	1		F03	PVC		NIP-1201	LCP-3201	
	DB-08	MH-03S	1		F03	PVC		LCP-2001	NIP-1002	
DB-07	DB-08	JBX-7001	1		P16	PVC	CE	32-LP-01	JBX-7001	
	DB-08	JBX-7002	1		P16	PVC		32-LP-01	JBX-7002	
	DB-08	LIT-7051	1		A1	PVC		LCP-3201	LIT-7051	
DB-08	DB-13	DB-06	2	3 1/2"	4#350KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	10-DP-01	
	DB-13	DB-06	1	4"	4#500KCMIL, 1#1/0G	PVC		32-SWBD-01	12-DP-01	
	DB-06	DB-13	1		F03	PVC		NIP-1201	LCP-3201	
	DB-14	DB-06	1		F03	PVC		LCP-2001	NIP-1002	
	DB-13	DB-07	1		P16	PVC		32-LP-01	JBX-7001	
	DB-13	DB-07	1		P16	PVC		32-LP-01	JBX-7002	
	DB-13	DB-07	1		A1	PVC		LCP-3201	LIT-7051	
DB-09	DB-09A	32-SWBD-01	7	4"	4#500KCMIL, 1#250G	PVC	CE	08-SWBD-01	32-SWBD-01	
			1	4"	SPARE	PVC		08-SWBD-01	32-SWBD-01	
	DB-10	32-SWBD-01	7	4"	4#500KCMIL, 1#250G	PVC		08-GEN-01	32-SWBD-01	
			1	4"	SPARE	PVC		08-GEN-01	32-SWBD-01	
		32-ATC-01	1	1"	1-12C TYPE 1	PVC		08-GEN-01	32-ATC-01	
		LCP-3201	1	1"	1-TYPE 30	PVC		08-GEN-01	LCP-3201	
			2	1"	SPARE	PVC		08-GEN-01	LCP-3201	
DB-09A	08-SWBD-01	DB-09	7	4"	4#500KCMIL, 1#250G	PVC	CE	08-SWBD-01	32-SWBD-01	
			1	4"	SPARE	PVC		08-SWBD-01	32-SWBD-01	
DB-10	MH-04P	DB-09	7	4"	4#500KCMIL, 1#250G	PVC	CE	08-GEN-01	32-SWBD-01	
			1	4"	SPARE	PVC		08-GEN-01	32-SWBD-01	
	MH-04S		1	1"	1-12C TYPE 1	PVC		08-GEN-01	32-ATC-01	
			1	1"	1-TYPE 30	PVC		08-GEN-01	LCP-3201	
			2	1"	SPARE	PVC		08-GEN-01	LCP-3201	
DB-11	08-GEN-01	MH-04P	7	4"	4#500KCMIL, 1#250G	PVC	CE	08-GEN-01	32-SWBD-01	
			1	4"	SPARE	PVC		08-GEN-01	32-SWBD-01	
		MH-04S	1	1"	1-12C TYPE 1	PVC		08-GEN-01	32-ATC-01	
			1	1"	1-TYPE 30	PVC		08-GEN-01	LCP-3201	
			2	1"	SPARE	PVC		08-GEN-01	LCP-3201	

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

Registered Professional Engineer (Electrical) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6-23-2025 ARIZONA, U.S.A.

JUNE 23, 2025

A/E FIRM
JACOBS GOVERNMENT SERVICES COMPANY
GREENWOOD VILLAGE, CO

DESIGNED: D BURGER
CADD: J GARIBAY
TECH. REVIEW: J LANDMAN
DATE: 06/2025

SUB SHEET NO. 08E7001

TITLE OF SHEET
SITE ELECTRICAL DUCTBANK SCHEDULE 1

GRAND CANYON, SOUTH RIM

DRAWING NO. 113 175376
PMIS/PKG NO. 257282
SHEET 120 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 11:38:58 PM SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\ELEC\08E7001_D3167666.dgn

DUCTBANK SCHEDULE

DUCTBANK ID	CONDUIT FROM	CONDUIT TO	CONDUIT QUANTITY	CONDUIT SIZE (INCHES)	CONDUCTORS	CONDUIT TYPE	INSTALLATION CONSTRUCTION TYPE (DB/CE)	ORIGIN	DESTINATION	NOTES
DB-12	32-MCC-01	MIX-2613	1		P19	PVC	CE	32-MCC-01	MIX-2613	CONTROL CIRCUITS CAN BE COMBINED AS NEEDED TO REDUCE CONDUIT COUNT. CONDUIT SIZING CALCULATIONS WILL NEED TO PERFORMED IF THE CONTRACTOR ELECTS TO USE THIS OPTION.
	32-MCC-01	MIX-2614	1		P19	PVC		32-MCC-01	MIX-2614	
	32-MCC-01	MIX-2713	1		P19	PVC		32-MCC-01	MIX-2713	
	32-MCC-01	MIX-2714	1		P19	PVC		32-MCC-01	MIX-2714	
	32-MCC-01	MIX-2813	1		P19	PVC		32-MCC-01	MIX-2813	
	32-MCC-01	MIX-2814	1		P19	PVC		32-MCC-01	MIX-2814	
	32-MCC-01	FUTURE MIXER 1	1	2"	SPARE	PVC		32-MCC-01	FUTURE MIXER 1	
	32-MCC-01	FUTURE MIXER 1	1	2"	SPARE	PVC		32-MCC-01	FUTURE MIXER 1	
	32-MCC-01	PMP-2511	1		P14, P19	PVC		32-MCC-01	PMP-2511	
	32-MCC-01	PMP-2512	1		P14, P19	PVC		32-MCC-01	PMP-2512	
	LCP-3201	JBX-2550	1		C8	PVC		LCP-3201	JBX-2550	
	LCP-3201	JBX-2554	1		C4	PVC		LCP-3201	JBX-2554	
	LCP-3201	JBX-3450	1		A1, C4	PVC		LCP-3201	JBX-3450	
	32-DP-01	SG-3220-DSC	1		P16	PVC		32-DP-01	SG-3220-DSC	
	LCP-3201	SG-3220-DSC	1		C10	PVC		LCP-3201	SG-3220-DSC	
	32-LP-01	JBX-3650	1		P12	PVC		32-LP-01	JBX-3650	
	LCP-3201	JBX-3650	1		A1, C4	PVC		LCP-3201	JBX-3650	
	LCP-3201	LIT-2551	1		A1	PVC		LCP-3201	LIT-2551	
	32-LP-01	LIT-2551	1		P2	PVC		32-LP-01	LIT-2551	
	LCP-3201	LIT-2553	1		A1	PVC		LCP-3201	LIT-2553	
	32-LP-01	LIT-2553	1		P2	PVC		32-LP-01	LIT-2553	
	LCP-3201	FE/FIT-3214	1		A1	PVC		LCP-3201	FE/FIT-3214	
	32-LP-01	FE/FIT-3214	1		P2	PVC		32-LP-01	FE/FIT-3214	
	LCP-3201	FCV-3213	1		A4, C4	PVC		LCP-3201	FCV-3213	
	32-DP-02	FCV-3213	1		P3	PVC		32-DP-02	FCV-3213	
	32-LP-01	AIT-2680	1		P2	PVC		32-LP-01	AIT-2680	
	32-LP-01	AIT-2780	1		P2	PVC		32-LP-01	AIT-2780	
	32-LP-01	AIT-2880	1		P2	PVC		32-LP-01	AIT-2880	
	32-DP-01	FCV-2621-DSC	1		P3	PVC		32-DP-01	FCV-2621-DSC	
	32-DP-01	FCV-2721-DSC	1		P3	PVC		32-DP-01	FCV-2721-DSC	
	32-DP-01	FCV-2821-DSC	1		P3	PVC		32-DP-01	FCV-2821-DSC	
	LCP-3201	FCV-2621	1		A2, C4	PVC		LCP-3201	FCV-2621	
	LCP-3201	FCV-2721	1		A2, C4	PVC		LCP-3201	FCV-2721	
	LCP-3201	FCV-2821	1		A2, C4	PVC		LCP-3201	FCV-2821	
	32-LP-01	FIT-2671	1		P2	PVC		32-LP-01	FIT-2671	
	LCP-3201	FIT-2671	1		A1	PVC		LCP-3201	FIT-2671	
	32-LP-01	FIT-2771	1		P2	PVC		32-LP-01	FIT-2771	
	LCP-3201	FIT-2771	1		A1	PVC		LCP-3201	FIT-2771	
	32-LP-01	FIT-2871	1		P2	PVC		32-LP-01	FIT-2871	
	LCP-3201	FIT-2871	1		A1	PVC		LCP-3201	FIT-2871	
	LCP-2004	TJB-3320	1		C12, C20	PVC		LCP-2004	TJB-3320	
	LCP-2004	TJB-3350	2		C20	PVC		LCP-2004	TJB-3350	
	32-MCC-01	PMP-3211-DSC	1		P14	PVC		32-MCC-01	PMP-3211-DSC	
	32-MCC-01	PMP-3212-DSC	1		P14	PVC		32-MCC-01	PMP-3212-DSC	
	32-LP-01	HT-2505	1		P202	PVC		32-LP-01	HT-2505	
	32-LP-01	HT-2503	1		P16	PVC		32-LP-01	HT-2503	
	LCP-2001	FE/FIT-2573	1		A1	PVC		LCP-2001	FE/FIT-2573	
	32-LP-01	FE/FIT-2573	1		P2	PVC		32-LP-01	FE/FIT-2573	
	LCP-2001	FE/FIT-2573	1		A1	PVC		LCP-2001	FE/FIT-2573	
	32-LP-01	FE/FIT-2573	1		P2	PVC		32-LP-01	FE/FIT-2573	
	LCP-3201	FE/FIT-2574	1		A1	PVC		LCP-3201	FE/FIT-2574	
	32-LP-01	FE/FIT-2574	1		P15	PVC		32-LP-01	FE/FIT-2574	
	32-DP-01	FCV-2523-DSC	1		P16	PVC		32-DP-01	FCV-2523-DSC	
	LCP-3201	FCV-2523	1		A2, C2	PVC		LCP-3201	FCV-2523	
	32-LP-01	HT-2501	1		P16	PVC		32-LP-01	HT-2501	
	32-LP-01	FIT-2572	1		P2	PVC		32-LP-01	FIT-2572	
	LCP-3201	FIT-2572	1		A1	PVC		LCP-3201	FIT-2572	
	LCP-3201	JBX-2521	1		A3	PVC		LCP-3201	JBX-2521	
	32-DP-02	FCV-2521-DSC	1		P16	PVC		32-DP-02	FCV-2521-DSC	
	LCP-3201	FCV-2521	1		C20	PVC		32-DP-02	FCV-2521	

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

Registered Professional Engineer (Retired) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6-19-2025 ARIZONA, U.S.A.

JUNE 19, 2025

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO
DESIGNED:	D BURGER
CADD:	J GARIBAY
TECH. REVIEW:	J LANDMAN
DATE:	06/2025
SUB SHEET NO.	08E7002
TITLE OF SHEET	SITE ELECTRICAL DUCTBANK SCHEDULE 2
	GRAND CANYON, SOUTH RIM
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	121 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 11:44:01 PM SS6\V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i DrawingsIELEC\08E7002_D3167666.dgn

DUCTBANK SCHEDULE

DUCTBANK ID	CONDUIT FROM	CONDUIT TO	CONDUIT QUANTITY	CONDUIT SIZE (INCHES)	CONDUCTORS	TYPE	INSTALLATION CONSTRUCTION TYPE (DB/CE)	ORIGIN	DESTINATION	NOTES
DB-13	MH-05P	DB-08	2	3 1/2"	4#350KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	10-DP-01	
			1	4"	4#500KCMIL, 1#1/0G	PVC		32-SWBD-01	12-DP-01	
	MH-05P	DB-14	1	4"	4#500KCMIL, 1#1/0G	PVC		32-SWBD-01	20-MCC-01	
	DB-08	MH-05S	1		F03	PVC		NIP-1201	LCP-3201	
	MH-05S	DB-14	1		F03	PVC		LCP-8001	LCP-2001	
	MH-05P	DB-08	1		P16	PVC		32-LP-01	JBX-7001	
	MH-05P	DB-08	1		P16	PVC		32-LP-01	JBX-7002	
	MH-05S	DB-08	1		A1	PVC		LCP-3201	LIT-7051	
DB-14	DB-13	DB-15	1	4"	4#500KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	20-MCC-01	
	DB-13	DB-15	1		F03	PVC		LCP-8001	LCP-2001	
	DB-15	DB-13	1		F03	PVC		LCP-2001	NIP-1002	
DB-15	DB-14	MH-06P	1	4"	4#500KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	20-MCC-01	
	MH-06P	DB-17	1		P227	PVC		20-MCC-01	JBX-8711	
	MH-06P	DB-17	1		P227	PVC		20-MCC-01	JBX-8712	
	MH-06P	DB-17	1		P227	PVC		20-MCC-01	JBX-8713	
	MH-06P	DB-17	1		P227	PVC		20-MCC-01	JBX-8714	
	MH-06P	DB-17	2		P15	PVC		20-LP-01	RECEPTACLES	
	DB-14	MH-06S	1		F03	PVC		LCP-8001	LCP-2001	
	MH-06S	DB-14	1		F03	PVC		LCP-2001	NIP-1002	
DB-16	DB-15	MH-07P	1		P227	PVC	CE	20-MCC-01	JBX-8711	
	DB-15	MH-07P	1		P227	PVC		20-MCC-01	JBX-8712	
	DB-15	MH-07P	1		P227	PVC		20-MCC-01	JBX-8713	
	DB-15	MH-07P	1		P227	PVC		20-MCC-01	JBX-8714	
	DB-15	MH-07P	2		P15	PVC		20-LP-01	RECEPTACLES	
DB-17	20-MCC-01	MH-06P	1		P227	PVC	CE	20-MCC-01	JBX-8711	
	20-MCC-01	MH-06P	1		P227	PVC		20-MCC-01	JBX-8712	
	20-MCC-01	MH-06P	1		P227	PVC		20-MCC-01	JBX-8713	
	20-MCC-01	MH-06P	1		P227	PVC		20-MCC-01	JBX-8714	
	20-LP-01	MH-06P	2		P15	PVC		20-LP-01	RECEPTACLES	
	MH-06P	20-MCC-01	1	4"	4#500KCMIL, 1#1/0G	PVC		32-SWBD-01	20-MCC-01	
	MH-06S	LCP-2001	1		F03	PVC		LCP-8001	LCP-2001	
	LCP-2001	MH-06S	1		F03	PVC		LCP-2001	NIP-1002	
DB-18	20-LP-01	JBX-1801	1		P161	PVC	CE	20-LP-01	JBX-1801	
	LCP-2001	LCP-1801	1		N1	PVC		LCP-2001	LCP-1801	
	20-MCC-01	LCP-1801	1		P28	PVC		20-MCC-01	LCP-1801	
	20-MCC-01	MTE-1805	1		P14	PVC		20-MCC-01	MTE-1805	
	20-MCC-01	MTE-1805	1		C9	PVC		20-MCC-01	MTE-1805	
	LCP-2001	LIT-1852	1		A1	PVC		LCP-2001	LIT-1852	
	20-ULP-01	LIT-1852	1		P2	PVC		LCP-2001	LIT-1852	
	20-LP-01	RECEPTACLE	1		P15	PVC		LCP-2001	RECEPTACLE	
DB-19	20-MCC-01	MH-08P	1		AFD10	PVC	CE	20-MCC-01	FAN-2215-DSC	
	20-MCC-01	MH-08P	1		AFD10	PVC		20-MCC-01	FAN-2216-DSC	
	LCP-2001	MH-08S	1		A2	PVC		LCP-2001	JBX-2261	
	20-ULP-01	MH-08P	1		P201	PVC		20-ULP-01	LCP-2201	
	LCP-2001	MH-08S	1		A1	PVC		LCP-2001	LCP-2201	
	LCP-2001	MH-08S	1		C4	PVC		LCP-2001	LCP-2201	
	20-LP-01	MH-08P	1		P201	PVC		20-LP-01	JBX-2202	
	20-LP-01	MH-08P	1		P15	PVC		20-LP-01	RECEPTACLE	
DB-20	MH-08P	FAN-2215-DSC	1		AFD10	PVC	CE	20-MCC-01	FAN-2215-DSC	
	MH-08P	FAN-2216-DSC	1		AFD10	PVC		20-MCC-01	FAN-2216-DSC	
	MH-08S	JBX-2261	1		A2	PVC		LCP-2001	JBX-2261	
	MH-08P	LCP-2201	1		P201	PVC		20-ULP-01	LCP-2201	
	MH-08S	LCP-2201	1		A1	PVC		LCP-2001	LCP-2201	
	MH-08S	LCP-2201	1		C4	PVC		LCP-2001	LCP-2201	
	MH-08P	JBX-2202	1		P201	PVC		20-LP-01	JBX-2202	
	MH-08P	RECEPTACLE	1		P15	PVC		20-LP-01	RECEPTACLE	

PLOT DATE: 6/16/2025 PLOT TIME: 11:40:13 PM SS6\V8i D31667666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\ELEC\08E7003_D31667666.dgn

100% COMPLETE CONSTRUCTION DOCUMENTS

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG

0" 1"

Registered Professional Engineer (Retired) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6-19-2025 ARIZONA, U.S.A.

JUNE 19, 2025

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO
DESIGNED:	D BURGER
CADD:	J GARIBAY
TECH. REVIEW:	J LANDMAN
DATE:	06/2025
SUB SHEET NO.	08E7003
TITLE OF SHEET	SITE ELECTRICAL DUCTBANK SCHEDULE 3
	GRAND CANYON, SOUTH RIM
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	122 OF 401

DUCTBANK SCHEDULE

DUCTBANK ID	CONDUIT FROM	CONDUIT TO	CONDUIT QUANTITY	CONDUIT SIZE (INCHES)	CONDUCTORS	TYPE	INSTALLATION CONSTRUCTION TYPE (DB/CE)	ORIGIN	DESTINATION	NOTES
DB-21	MH-05P	DB-22	2	4"	4#500KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	80-MCC-01	
	MH-05S	DB-22	1		F03	PVC		LCP-3201	LCP-8001	
	DB-22	MH-05S	1		F03	PVC		LCP-8001	LCP-2001	
	MH-05P	DB-23	1		P16	PVC		32-LP-01	JBX-8602	
	MH-05P	DB-23	1		P16	PVC		32-ULP-01	MTE-8612	
	MH-05P	DB-23	1		AFD10	PVC		32-MCC-01	PMP-8611-DSC	
	MH-05S	DB-23	1		C10	PVC		32-MCC-01	PMP-8611-DSC	
	MH-05P	DB-23	1		AFD10	PVC		32-MCC-01	PMP-8612-DSC	
	MH-05S	DB-23	1		C10	PVC		32-MCC-01	PMP-8612-DSC	
	MH-05P	DB-23	1		P21	PVC		32-LP-02	RECEPTACLE	
	MH-05S	DB-23	1		A2	PVC		LCP-3201	LIT-8651	
	MH-05S	DB-23	1		C4	PVC		LCP-3201	MTE-8611	
DB-21A	32-SWBD-01	MH-05P	2	3 1/2"	4#350KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	10-DP-01	
			1	4"	4#500KCMIL, 1#1/0G	PVC		32-SWBD-01	12-DP-01	
			1	4"	4#500KCMIL, 1#1/0G	PVC		32-SWBD-01	20-MCC-01	
			2	4"	4#500KCMIL, 1#1/0G	PVC		32-SWBD-01	80-MCC-01	
	MH-05S	LCP-3201	1		F03	PVC		NIP-1201	LCP-3201	
	LCP-3201	MH-05S	1		F03	PVC		LCP-3201	LCP-8001	
	32-LP-01	MH-05P	1		P16	PVC		32-LP-01	JBX-7001	
	32-LP-01	MH-05P	1		P16	PVC		32-LP-01	JBX-7002	
	LCP-7051	MH-05S	1		A1	PVC		LCP-3201	LIT-7051	
	32-LP-01	MH-05P	1		P16	PVC		32-LP-01	JBX-8602	
	32-ULP-01	MH-05P	1		P16	PVC		32-ULP-01	MTE-8612	
	32-MCC-01	MH-05P	1		AFD10	PVC		32-MCC-01	PMP-8611-DSC	
	32-MCC-01	MH-05S	1		C10	PVC		32-MCC-01	PMP-8611-DSC	
	32-MCC-01	MH-05P	1		AFD10	PVC		32-MCC-01	PMP-8612-DSC	
	32-MCC-01	MH-05S	1		C10	PVC		32-MCC-01	PMP-8612-DSC	
	32-LP-02	MH-05P	1		P21	PVC		32-LP-02	RECEPTACLE	
	LCP-3201	MH-05S	1		A2	PVC		LCP-3201	LIT-8651	
	LCP-3201	MH-05S	1		C4	PVC		LCP-3201	MTE-8611	
DB-22	DB-21	80-MCC-01	2	4"	4#500KCMIL, 1#1/0G	PVC	CE	32-SWBD-01	80-MCC-01	
	DB-21	LCP-8001	1		F03	PVC		LCP-3201	LCP-8001	
	LCP-8001	DB-21	1		F03	PVC		LCP-8001	LCP-2001	
DB-23	DB-21	MH-09P	1		P16	PVC	CE	32-LP-01	JBX-8602	
	DB-21	MH-09P	1		P16	PVC		32-ULP-01	MTE-8612	
	DB-21	MH-09P	1		AFD10	PVC		32-MCC-01	PMP-8611-DSC	
	DB-21	MH-09S	1		C10	PVC		32-MCC-01	PMP-8611-DSC	
	DB-21	MH-09P	1		AFD10	PVC		32-MCC-01	PMP-8612-DSC	
	DB-21	MH-09S	1		C10	PVC		32-MCC-01	PMP-8612-DSC	
	DB-21	MH-09P	1		P21	PVC		32-LP-02	RECEPTACLE	
	DB-21	MH-09S	1		A2	PVC		LCP-3201	LIT-8651	
	DB-21	MH-09S	1		C4	PVC		LCP-3201	MTE-8611	
DB-24	MH-09P	MH-10P	1		P16	PVC	CE	32-LP-01	JBX-8602	
	MH-09P	MH-10P	1		P16	PVC		32-ULP-01	MTE-8612	
	MH-09P	MH-10P	1		AFD10	PVC		32-MCC-01	PMP-8611-DSC	
	MH-09S	MH-10S	1		C10	PVC		32-MCC-01	PMP-8611-DSC	
	MH-09P	MH-10P	1		AFD10	PVC		32-MCC-01	PMP-8612-DSC	
	MH-09S	MH-10S	1		C10	PVC		32-MCC-01	PMP-8612-DSC	
	MH-09P	MH-10P	1		P21	PVC		32-LP-02	RECEPTACLE	
	MH-09S	MH-10S	1		A2	PVC		LCP-3201	LIT-8651	
	MH-09S	MH-10S	1		C4	PVC		LCP-3201	MTE-8611	
DB-25	MH-10P	JBX-8602	1		P16	PVC	CE	32-LP-01	JBX-8602	
	MH-10P	MTE-8612	1		P16	PVC		32-ULP-01	MTE-8612	
	MH-10P	PMP-8611-DSC	1		AFD10	PVC		32-MCC-01	PMP-8611-DSC	
	MH-10S	PMP-8611-DSC	1		C10	PVC		32-MCC-01	PMP-8611-DSC	
	MH-10P	PMP-8612-DSC	1		AFD10	PVC		32-MCC-01	PMP-8612-DSC	
	MH-10S	PMP-8612-DSC	1		C10	PVC		32-MCC-01	PMP-8612-DSC	
	MH-10P	RECEPTACLE	1		P21	PVC		32-LP-02	RECEPTACLE	
	MH-10S	LIT-8651	1		A2	PVC		LCP-3201	LIT-8651	
	MH-10S	MTE-8611	1		C4	PVC		LCP-3201	MTE-8611	

NOTES:
1. REFER TO ELECTRICAL SITE PLANS FOR DUCTBANK ID CALLOUTS.

2. CE = REINFORCED CONCRETE ENCASED. DB = DIRECT BURIED CONDUIT.

3. WHERE DB/CE IS CALLED OUT, INSTALL CE ONLY FOR PORTIONS OF DUCT BANK UNDER ROADWAYS AND STRUCTURAL FOUNDATIONS AND SLABS.

4. SITE LIGHTING AND SITE RECEPTACLE CONDUITS AND CIRCUITS ARE NOT INCLUDED IN THIS SCHEDULE. PROVIDE CONDUITS AS REQUIRED FOR CIRCUITS NOT IDENTIFIED IN DUCT BANK SCHEDULE.

5. SOME INFORMATION IN THIS SCHEDULE, SUCH AS CONDUIT OR CONDUCTOR INFORMATION, MAY BE REPEATED ON THE DRAWINGS, ESPECIALLY IN CABLE BLOCK DIAGRAMS. WHERE DISCREPANCIES ARE FOUND, INFORM CONTRACTING OFFICER BEFORE INSTALLATION.

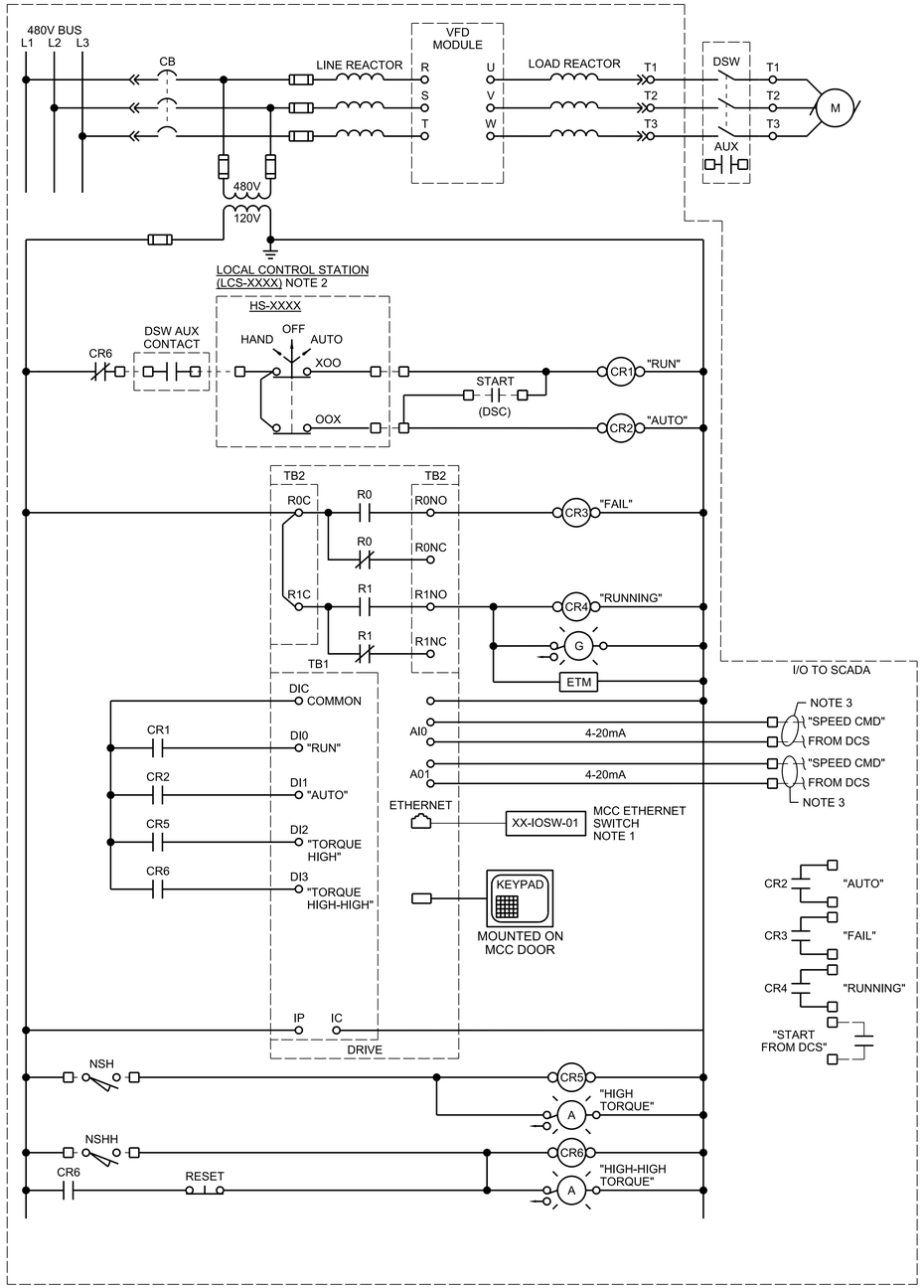
FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

Registered Professional Engineer (Electrical) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6-19-2025 ARIZONA, U.S.A.
JUNE 19, 2025

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO
DESIGNED:	D BURGER
CADD:	J GARIBAY
TECH. REVIEW:	J LANDMAN
DATE:	06/2025
SUB SHEET NO.	08E7004
TITLE OF SHEET	SITE ELECTRICAL DUCTBANK SCHEDULE 4
	GRAND CANYON, SOUTH RIM
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	123 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 11:39:32 PM SS6/V8i D3167866 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Drawings\ELEC\08E7004_D3167866.dgn

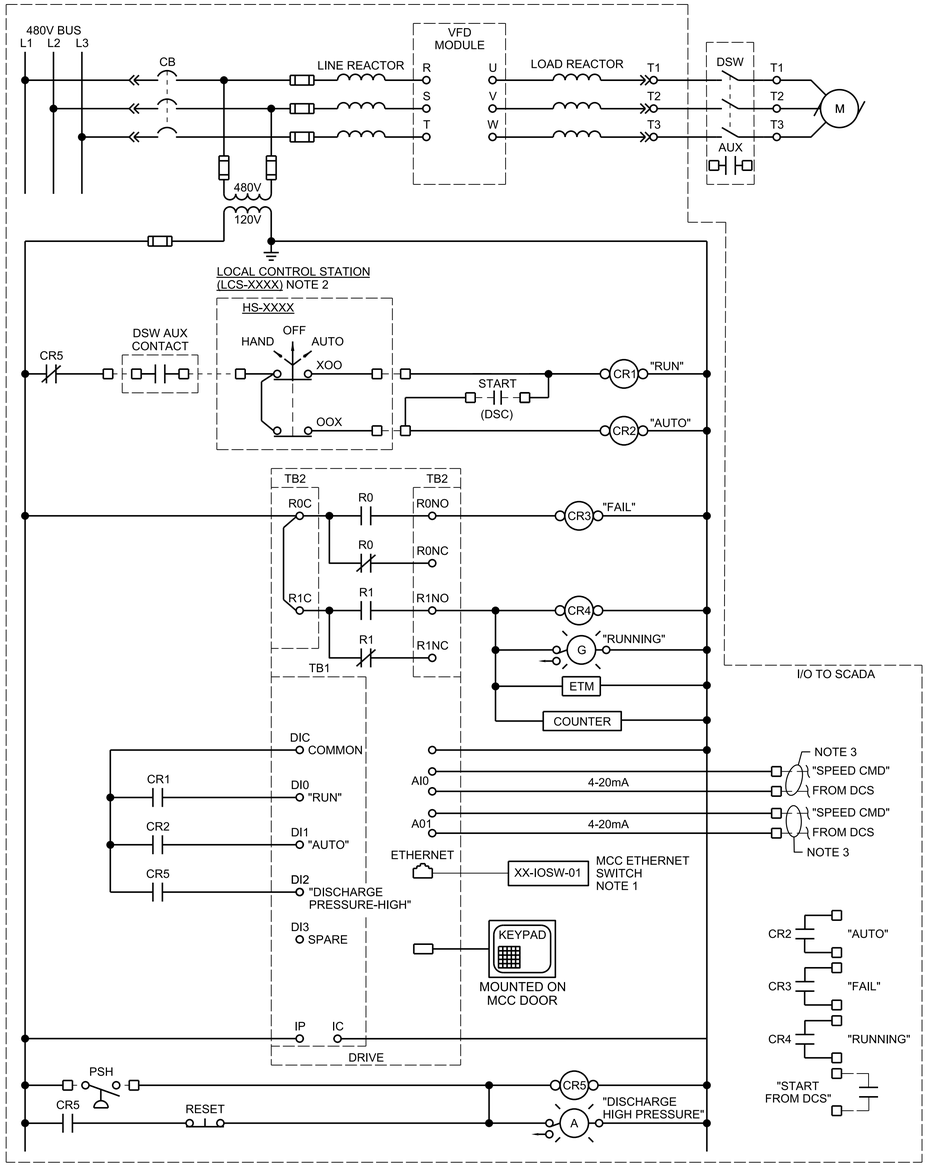


NOTES:

1. TORQUE SWITCHES INTEGRAL TO MIXER.
2. PASS SIGNAL OF NSH AND NSHH TO SCADA OVER INTERNET.
3. MOTOR CONTROL DIAGRAMS SHOW THE INTENDED FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED THAT PROVIDE THE IDENTIFIED FUNCTION. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DIAGRAM.
4. IF DI1 IS FALSE, DO NOT RESPOND TO START COMMANDS FROM SCADA.

V1 MOTOR CONTROL DIAGRAM

PUMP TAG	VFD TAG	MIXER NAME	NSH	NSHH	LCS TAG	HS TAG
MXR-8111	VFD-8111	DIGESTER 1 MIXER 1	NSH-8111	NSHH-8111	LCS-8111	HS-8111
MXR-8112	VFD-8112	DIGESTER 1 MIXER 2	NSH-8112	NSHH-8112	LCS-8112	HS-8112
MXR-8211	VFD-8211	DIGESTER 2 MIXER 1	NSH-8211	NSHH-8211	LCS-8211	HS-8113
MXR-8212	VFD-8212	DIGESTER 2 MIXER 2	NSH-8212	NSHH-8212	LCS-8212	HS-8114



NOTES:

1. PRESSURE SWITCHES LOCATED ADJACENT TO MOTOR.
2. PASS SIGNAL OF PSH TO SCADA OVER ETHERNET.
3. MOTOR CONTROL DIAGRAMS SHOW THE INTENDED FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED THAT PROVIDE THE IDENTIFIED FUNCTION. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DIAGRAM.
4. IF DI1 IS FALSE, DO NOT RESPOND TO START COMMANDS FROM SCADA.

V2 MOTOR CONTROL DIAGRAM

PUMP TAG	VFD TAG	PUMP NAME	LCS TAG	HS TAG	PSH TAG
PMP-3311	VFD-3311	RAS PUMP 1	LCS-3311	HS-3311	PSH-3311B
PMP-3411	VFD-3411	RAS PUMP 2	LCS-3411	HS-3411	PSH-3411B
PMP-3511	VFD-3511	RAS PUMP 3	LCS-3511	HS-3511	PSH-3511B

GENERAL SHEET NOTES

A. MOTOR CONTROL DIAGRAMS SHOW THE GENERAL FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED THAT PROVIDES THE IDENTIFIED AND SPECIFIED FUNCTIONS. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DRAWING.

B. REFER TO PIPING AND INSTRUMENTATION (P&ID) DIAGRAMS FOR EXTERNAL PANEL DESIGNATIONS.

C. FOR MOTOR RATING, SEE INFORMATION PROVIDED BY THE MANUFACTURER OF THE DRIVEN EQUIPMENT. REFER TO ONE-LINE DIAGRAMS FOR MCC INFORMATION.

D. VARIABLE SPEED DRIVES SHALL BE 18-PULSE STANDARD EXCEPT WHERE ALLOWED BY PROJECT SPECIFICATION 26 29 23, LOW VOLTAGE ADJUSTABLE FREQUENCY DRIVES SYSTEM.

E. ALL LINE AND LOAD REACTORS TO BE 3 UNLESS OTHERWISE NOTED.

F. ALL DRIVES LESS THAN 18-PULSE SHALL HAVE LINE REACTORS TO REDUCE HARMONICS.

G. ALL DRIVES SHALL HAVE LOAD REACTORS TO PROTECT MOTORS AND CABLES UNLESS OTHERWISE NOTED.

SHEET NOTES

1. PROVIDED WITH MOTOR CONTROL CENTER. SEE I&C COMMUNICATION NETWORK DRAWINGS FOR DESIGNATION. COORDINATE IP ADDRESS AND SETTINGS WITH CONTRACTING OFFICER AND CONFIGURE PRIOR TO SHIPPING FROM FACTORY.
2. LCS LOCATED REMOTE NEAR DRIVEN EQUIPMENT. SEE JACOBS DETAIL 2624-010 FOR CONROL STATION.
3. GROUND CABLE SHIELD AT DCS ONLY.

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

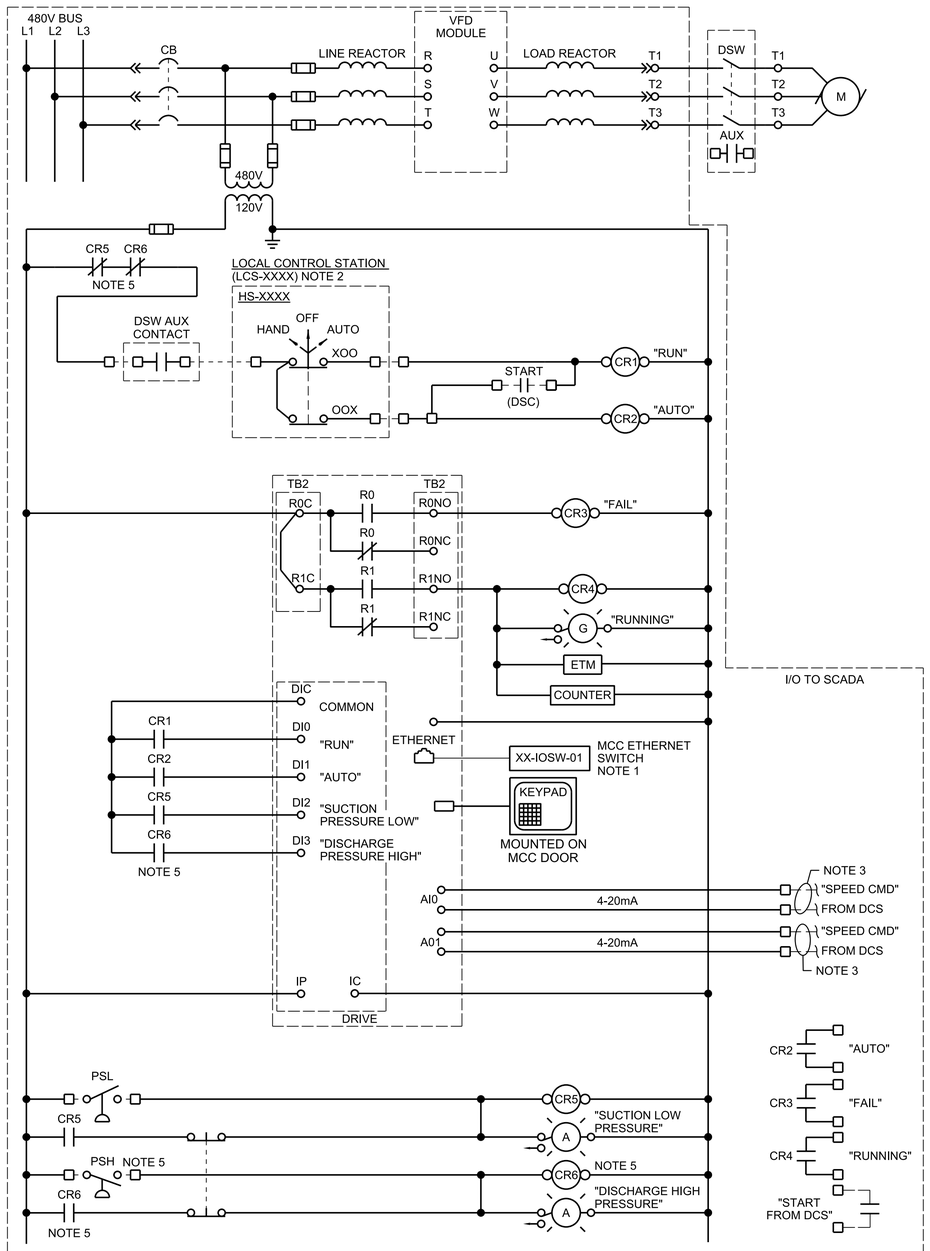
Registered Professional Engineer (Electrical) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6-19-2025 ARIZONA, U.S.A.
JUNE 19, 2025

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO
DESIGNED:	D BURGER
CADD:	J GARIBAY
TECH. REVIEW:	J LANDMAN
DATE:	06/2025
SUB SHEET NO.	08E7100
TITLE OF SHEET	SITE ELECTRICAL MOTOR CONTROL DIAGRAM
	GRAND CANYON, SOUTH RIM
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	124 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 11:42:05 PM SS6/V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i Dre

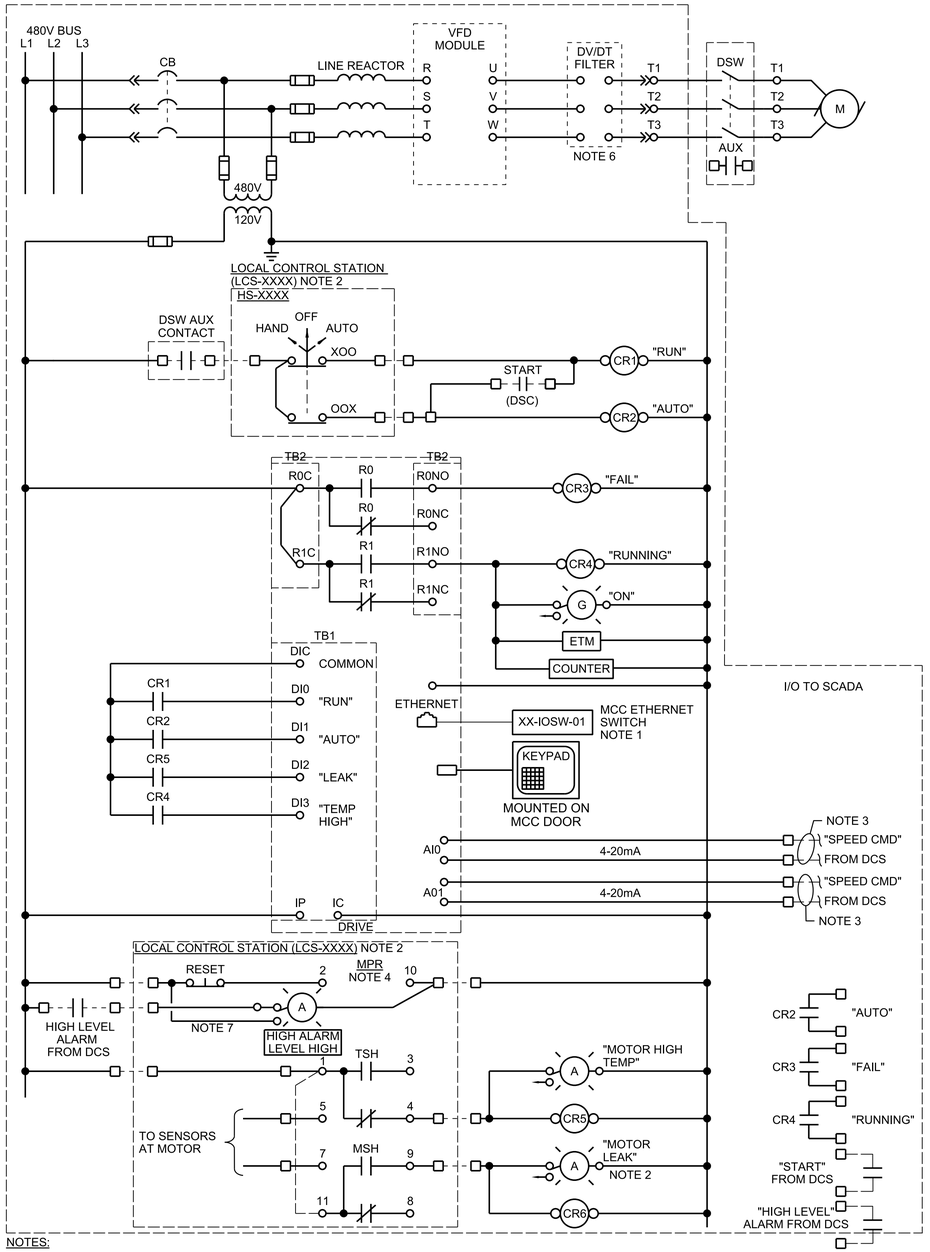


NOTES:

1. MOTOR CONTROL DIAGRAMS SHOW THE INTENDED FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED THAT PROVIDE THE IDENTIFIED FUNCTION. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DIAGRAM.
2. IF DI1 IS FALSE, DO NOT RESPOND TO START COMMANDS FROM SCADA.

V3 MOTOR CONTROL DIAGRAM

PUMP TAG	VFD TAG	LCS TAG	PSL	EQUIPEMNT NAME	PSL TAG	PSH TAG	HS TAG
PMP-3213	VFD-3213	LCS-3213	PSL-3312	UV EFFLUENT PUMP 1	PSL-3261	-	HS-3213
PMP-3214	VFD-3214	LCS-3214	PSL-3412	UV EFFLUENT PUMP 2	PSL-3263	-	HS-3214
PMP-3212	VFD-3312	-	PSL-3512	PERMEATE PUMP 1	PSL-3362	PSH-3363	-
PMP-3412	VFD-3412	-	PSL-3612	PERMEATE PUMP 2	PSL-3462	PSH-3463	-
PMP-3512	VFD-3512	-	PSL-3612	PERMEATE PUMP 3	PSL-3562	PSH-3463	-



NOTES:

1. MOTOR CONTROL DIAGRAMS SHOW THE INTENDED FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED THAT PROVIDE THE IDENTIFIED FUNCTION. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DIAGRAM.
2. IF DI1 IS FALSE, DO NOT RESPOND TO START COMMANDS FROM SCADA.

V4 MOTOR CONTROL DIAGRAM

PUMP TAG	VFD TAG	PUMP NAME	MPR TAG	LCS TAG	HS TAG
PMP-8611	VFD-8611	PLANT DRAIN PUMP 1	MPR-8611	LCS-8611	HS-8611A
PMP-8612	VFD-8612	PLANT DRAIN PUMP 2	MPR-8612	LCS-8612	HS-8612A
PMP-2511	VFD-2511	TANK DRAIN PUMP 1	MPR-2511	LCS-2511	HS-2511
PMP-2512	VFD-2512	TANK DRAIN PUMP 2	MPR-2512	LCS-2512	HS-2512

GENERAL SHEET NOTES

A. MOTOR CONTROL DIAGRAMS SHOW THE GENERAL FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED THAT PROVIDES THE IDENTIFIED AND SPECIFIED FUNCTIONS. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DRAWING.

B. REFER TO PIPING AND INSTRUMENTATION (P&ID) DIAGRAMS FOR EXTERNAL PANEL DESIGNATIONS.

C. FOR MOTOR RATING, SEE INFORMATION PROVIDED CIRCUIT BY THE MANUFACTURER OF THE DRIVEN EQUIPMENT. REFER TO ONE-LINE DIAGRAMS FOR MCC INFORMATION.

D. VARIABLE SPEED DRIVES SHALL BE 18-PULSE STANDARD EXCEPT WHERE ALLOWED BY PROJECT SPECIFICATION 26 29 23, LOW VOLTAGE ADJUSTABLE FREQUENCY DRIVES SYSTEM.

E. ALL LINE AND LOAD REACTORS TO BE 3% UNLESS OTHERWISE NOTED.

F. ALL DRIVES LESS THAN 18-PULSE SHALL HAVE LINE REACTORS TO REDUCE HARMONICS.

G. ALL DRIVES SHALL HAVE LOAD REACTORS TO PROTECT MOTORS AND CABLES UNLESS OTHERWISE NOTED.

SHEET NOTES

1. PROVIDED WITH MOTOR CONTROL CENTER. SEE I&C COMMUNICATION NETWORK DRAWINGS FOR DESIGNATION. COORDINATE IP ADDRESS AND SETTINGS WITH CONTRACTING OFFICER AND CONFIGURE PRIOR TO SHIPPING FROM FACTORY.
2. LCS LOCATED REMOTE NEAR DRIVEN EQUIPMENT. SEE JACOBS DETAIL 2624-010 FOR CONROL STATION.
3. GROUND CABLE SHIELD AT DCS ONLY.
4. CONTRACTOR TO MODIFY WIRE TERMINATIONS FOR VENDOR SPECIFIC MOISTURE AND THERMAL OVERLOAD RELAYS.
5. CONTROL RELAY CR6 AND PSH CIRCUIT APPLY TO PERMEATE PUMPS ONLY.
6. PROVIDE DV/DT FILTER FOR PLANT DRAIN PUMPS AND 3% LOAD REACTOR FOR TANK DRAIN PUMPS.
7. HIGH LEVEL ALARM NOT REQUIRED FOR TANK DRAIN PUMPS.

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

Registered Professional Engineer (Electrical) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6-19-2025 ARIZONA, U.S.A.

JUNE 19, 2025

A/E FIRM
JACOBS GOVERNMENT SERVICES COMPANY
GREENWOOD VILLAGE, CO

DESIGNED: D BURGER
CADD: J GARIBAY
TECH. REVIEW: J LANDMAN
DATE: 06/2025

SUB SHEET NO. 08E7101

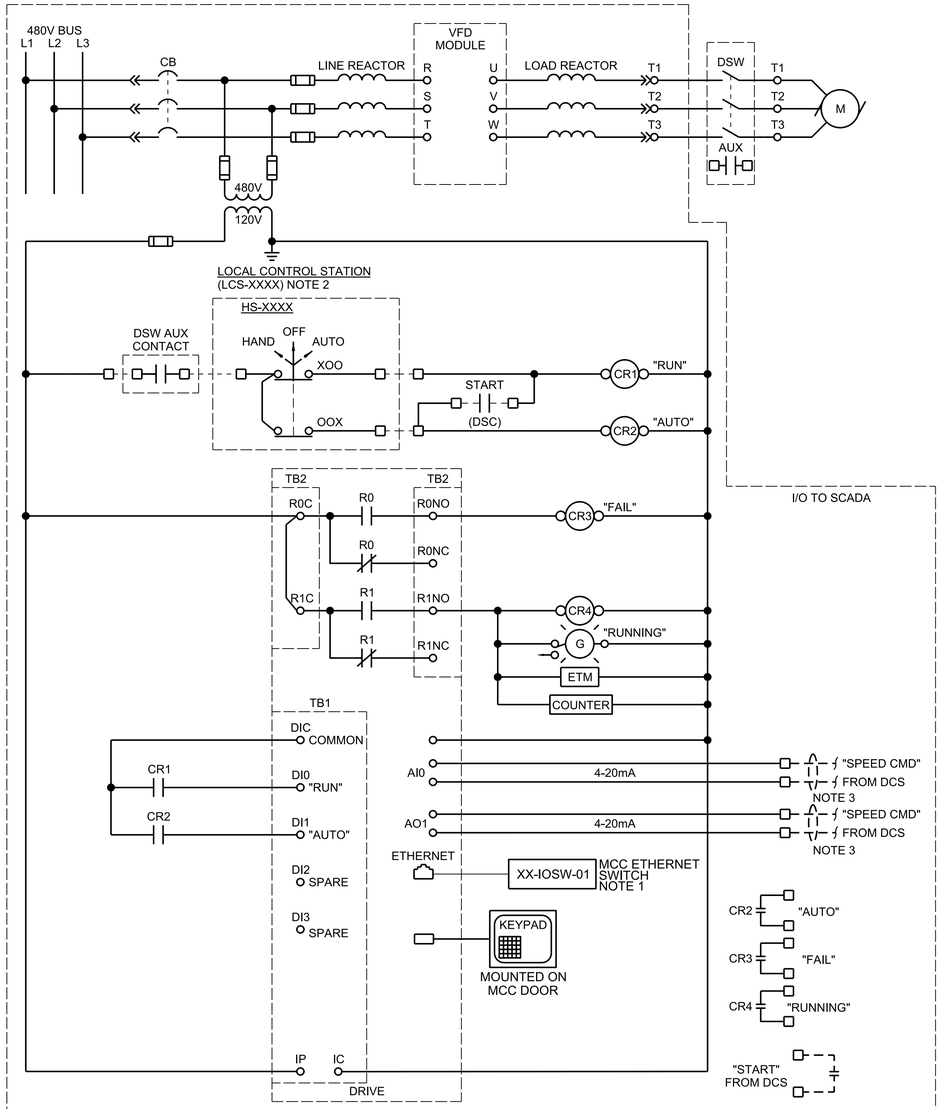
TITLE OF SHEET
SITE ELECTRICAL MOTOR CONTROL DIAGRAM
GRAND CANYON, SOUTH RIM

DRAWING NO. 113 175376
PMIS/PKG NO. 257282
SHEET 125 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 11:41:02 PM SS6\V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8I DrawingsIELEC\08E7101_D3167666.dgn

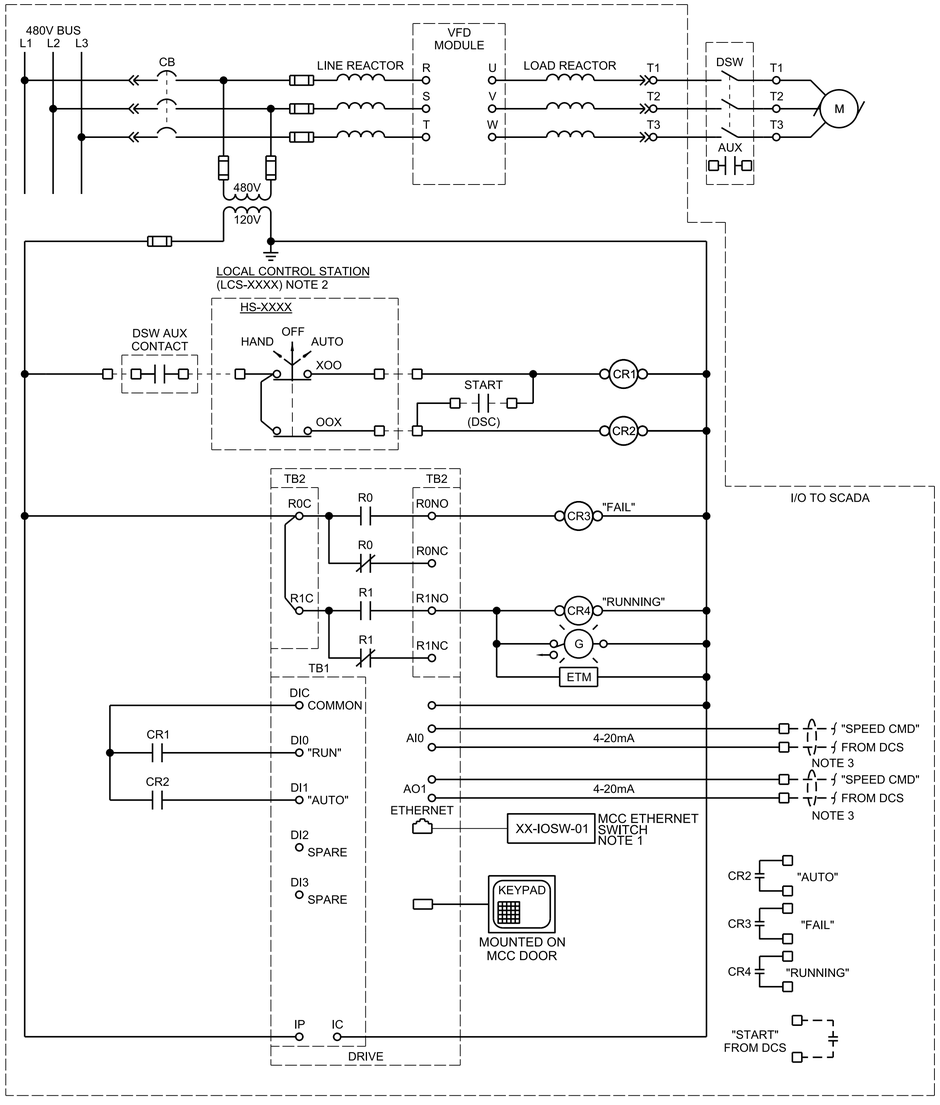


NOTES:

1. IF DI1 IS FALSE, DO NOT RESPOND TO START COMMANDS FROM SCADA.
2. MOTOR CONTROL DIAGRAMS SHOW THE INTENDED FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED THAT PROVIDE THE IDENTIFIED FUNCTION. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DIAGRAM.

V5 MOTOR CONTROL DIAGRAM

PUMP TAG	VFD TAG	PUMP NAME	LCS TAG	HS TAG
PMP-3320	VFD-3320	RECLAIMED WATER PUMP 1	LCS-3320	HS-3320
PMP-3420	VFD-3420	RECLAIMED WATER PUMP 2	LCS-3420	HS-3420
PMP-3520	VFD-3520	RECLAIMED WATER PUMP 3	LCS-3520	HS-3520



NOTES:

1. MOTOR CONTROL DIAGRAMS SHOW THE INTENDED FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED THAT PROVIDE THE IDENTIFIED FUNCTION. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DIAGRAM.
2. 1.IF DI1 IS FALSE, DO NOT RESPOND TO START COMMANDS FROM SCADA.

V6 MOTOR CONTROL DIAGRAM

EQUIP TAG	VFD TAG	EQUIPMENT NAME	LCS TAG	HS TAG
FAN-2215	VFD-2215	ODOR CONTROL FAN 1	LCS-2215	HS-2215
FAN-2216	VFD-2216	ODOR CONTROL FAN 2	LCS-2216	HS-2216
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GENERAL SHEET NOTES

A. MOTOR CONTROL DIAGRAMS SHOW THE GENERAL FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED THAT PROVIDEDS THE IDENTIFIED AND SPECIFIED FUNCTIONS. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DRAWING.

B. REFER TO PIPING AND INSTRUMENTATION (P&ID) DIAGRAMS FOR EXTERNAL PANEL DESIGNATIONS.

C. FOR MOTOR RATING, SEE INFORMATION PROVIDED BY THE MANUFACTURER OF THE DRIVEN EQUIPMENT. REFER TO ONE-LINE DIAGRAMS FOR MCC INFORMATION.

D VARIABLE SPEED DRIVES SHALL BE 18-PULSE STANDARD EXCEPT WHERE ALLOWED BY PROJECT SPECIFICATION 26 29 23, LOW VOLTAGE ADJUSTABLE FREQUENCY DRIVES SYSTEM.

E. ALL LINE AND LOAD REACTORS TO BE 3% UNLESS OTHERWISE NOTED.

F. ALL DRIVES LESS THAN 18-PULSE SHALL HAVE LINE REACTORS TO REDUCE HARMONICS.

G. ALL DRIVES SHALL HAVE LOAD REACTORS TO PROTECT MOTORS AND CABLES UNLESS OTHERWISE NOTED.

SHEET NOTES

1. PROVIDED WITH MOTOR CONTROL CENTER. SEE I&C COMMUNICATION NETWORK DRAWINGS FOR DESIGNATION. COORDINATE IP ADDRESS AND SETTINGS WITH CONTRACTING OFFICER AND CONFIGURE PRIOR TO SHIPPING FROM FACTORY.
2. LCS LOCATED REMOTE NEAR DRIVEN EQUIPMENT. SEE JACOBS DETAIL 2624-010 FOR CONROL STATION.
3. GROUND CABLE SHIELD AT DCS ONLY.

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

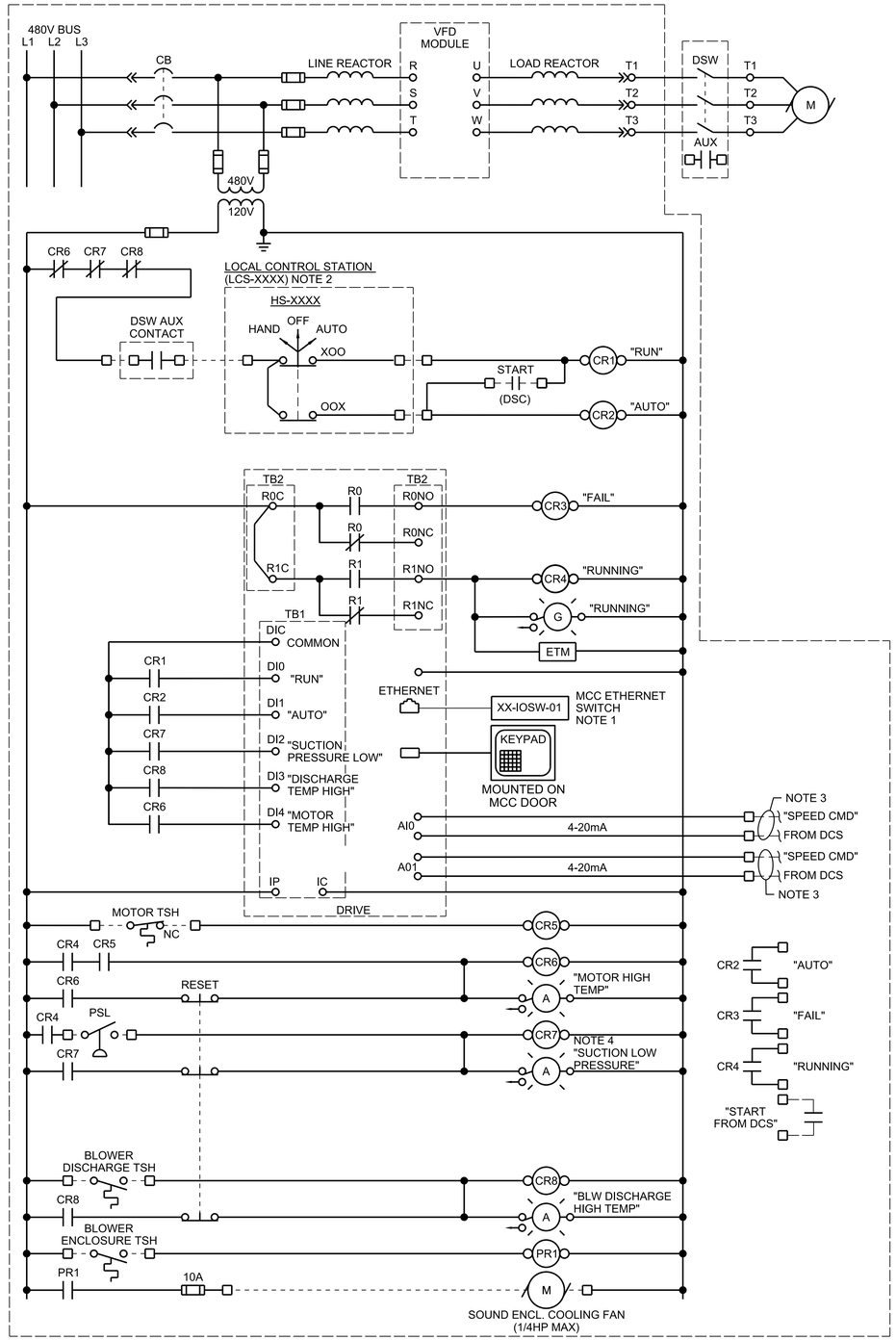
Registered Professional Engineer (Electrical) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6-19-2025 ARIZONA, U.S.A.
JUNE 19, 2025

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO
DESIGNED:	D BURGER
CADD:	J GARIBAY
TECH. REVIEW:	J LANDMAN
DATE:	06/2025
SUB SHEET NO.	08E7102
TITLE OF SHEET	SITE ELECTRICAL MOTOR CONTROL DIAGRAM
	GRAND CANYON, SOUTH RIM
DRAWING NO.	113 175376
PMIS/PKG NO.	257282
SHEET	126 OF 401

100% COMPLETE CONSTRUCTION DOCUMENTS

GRCA-257282

PLOT DATE: 6/16/2025 PLOT TIME: 11:39:10 PM SS6/V8i D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i DrawingsIELEC\08E7102_D3167666.dgn



NOTES:

1. MOTOR CONTROL DIAGRAMS SHOW THE INTENDED FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED THAT PROVIDE THE IDENTIFIED FUNCTION. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DIAGRAM.
2. PR1: OPEN POWER RELAY. 30A, 1.5HP AT 120V, DPDT, 120V CONTROL VOLTAGE.
3. IF DI1 IS FALSE, DO NOT RESPOND TO START COMMANDS FROM SCADA.

GENERAL SHEET NOTES

A. MOTOR CONTROL DIAGRAMS SHOW THE GENERAL FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED THAT PROVIDES THE IDENTIFIED AND SPECIFIED FUNCTIONS. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DRAWING.

B. REFER TO PIPING AND INSTRUMENTATION (P&ID) DIAGRAMS FOR EXTERNAL PANEL DESIGNATIONS.

C. FOR MOTOR RATING, SEE INFORMATION PROVIDED BY THE MANUFACTURER OF THE DRIVEN EQUIPMENT. REFER TO ONE-LINE DIAGRAMS FOR MCC INFORMATION.

D. VARIABLE SPEED DRIVES SHALL BE 18-PULSE STANDARD EXCEPT WHERE ALLOWED BY PROJECT SPECIFICATION 26 29 23, LOW VOLTAGE ADJUSTABLE FREQUENCY DRIVES SYSTEM.

E. ALL LINE AND LOAD REACTORS TO BE 3 UNLESS OTHERWISE NOTED.

F. ALL DRIVES LESS THAN 18-PULSE SHALL HAVE LINE REACTORS TO REDUCE HARMONICS.

G. ALL DRIVES SHALL HAVE LOAD REACTORS TO PROTECT MOTORS AND CABLES UNLESS OTHERWISE NOTED.

SHEET NOTES

1. PROVIDED WITH MOTOR CONTROL CENTER. SEE I&C COMMUNICATION NETWORK DRAWINGS FOR DESIGNATION. COORDINATE IP ADDRESS AND SETTINGS WITH CONTRACTING OFFICER AND CONFIGURE PRIOR TO SHIPPING FROM FACTORY.
2. LCS LOCATED REMOTE NEAR DRIVEN EQUIPMENT. SEE JACOBS DETAIL 2624-010 FOR CONROL STATION.
3. GROUND CABLE SHIELD AT DCS ONLY.
4. 0-15 SEC DELAY ADJUSTABLE.

V7 MOTOR CONTROL DIAGRAM

BLOWER TAG	VFD TAG	BLOWER NAME	PSL	MOTOR TSH	DISCH TSH	ENCL TSH	ENCL FAN	LCS	HS TAG
BLR-8011	VFD-8011	DIGESTER BLOWER 1	PSL-8011	TSH-8011M	TSH-8011D	TSH-8011E	FAN-8011	LCS-8011	HS-8011
BLR-8012	VFD-8012	DIGESTER BLOWER 2	PSL-8012	TSH-8012M	TSH-8012D	TSH-8012E	FAN-8012	LCS-8012	HS-8012
BLR-8013	VFD-8013	DIGESTER BLOWER 3	PSL-8013	TSH-8013M	TSH-8013D	TSH-8013E	FAN-8013	LCS-8013	HS-8013
BLR-8014	VFD-8014	DIGESTER BLOWER 4	PSL-8014	TSH-8014M	TSH-8014D	TSH-8014E	FAN-8014	LCS-8014	HS-8014
BLR-3312	VFD-3312	AERATION BLOWER 1	PSL-3312	TSH-3312M	TSH-3312D	TSH-3312E	FAN-3312	LCS-3312	LCS-3312
BLR-3412	VFD-3412	AERATION BLOWER 2	PSL-3412	TSH-3412M	TSH-3412D	TSH-3412E	FAN-3412	LCS-3412	LCS-3412
BLR-3512	VFD-3512	AERATION BLOWER 3	PSL-3512	TSH-3512M	TSH-3512D	TSH-3512E	FAN-3512	LCS-3512	LCS-3512
BLR-3612	VFD-3612	AERATION BLOWER 4	PSL-3612	TSH-3612M	TSH-3612D	TSH-3612E	FAN-3612	LCS-3612	LCS-3612
BLR-3314	VFD-3314	AIR SCOUR BLOWER 1	PSL-3314	TSH-3314M	TSH-3314D	TSH-3314E	FAN-3314	LCS-3314	LCS-3314
BLR-3414	VFD-3414	AIR SCOUR BLOWER 2	PSL-3414	TSH-3414M	TSH-3414D	TSH-3414E	FAN-3414	LCS-3414	LCS-3414
BLR-3414	VFD-3514	AIR SCOUR BLOWER 2	PSL-3514	TSH-3514M	TSH-3514D	TSH-3514E	FAN-3514	LCS-3514	LCS-3514

FULL SIZE DRAWINGS = 22"x34"
BAR MEASURES 1" LONG
0" 1"

Registered Professional Engineer (Inactive) CERTIFICATE NO. 81240 DAVID BURGER Date Signed 6-19-2025 ARIZONA, U.S.A.
JUNE 19, 2025

A/E FIRM	JACOBS GOVERNMENT SERVICES COMPANY GREENWOOD VILLAGE, CO
DESIGNED:	D BURGER
CADD:	J GARIBAY
TECH. REVIEW:	J LANDMAN
DATE:	06/2025
SUB SHEET NO.	08E7103

TITLE OF SHEET
SITE ELECTRICAL MOTOR CONTROL DIAGRAM
GRAND CANYON, SOUTH RIM

DRAWING NO. 113 175376
PMIS/PKG NO. 257282
SHEET 127 OF 401

GRCA-257282

100% COMPLETE CONSTRUCTION DOCUMENTS

PLOT DATE: 6/16/2025 PLOT TIME: 11:38:52 PM SS6\V8I D3167666 - South Rim\4 Delivery\43 CAD Design\GRCA\257282\Microstation V8i DrawingsIELEC\08E7103_D3167666.dgn