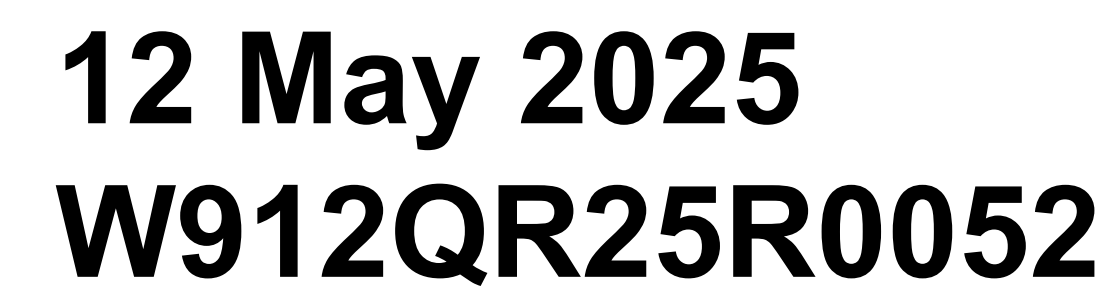




JOINT VENTURE TEAM

DETROIT ARSENAL, MICHIGAN
MANNED/UNMANNED TACTICAL VEHICLE LAB
FY 2025
P2# 506474




SOLICITATION NO.:
CONTRACT NO.:
ISSUE DATE: SEPTEMBER 20, 2024
VOLUME: VOLUME 1 OF 2

<p>CIVIL ENGINEER</p> 	<p>STRUCTURAL ENGINEER</p> 	<p>ARCHITECT</p> 
<p>FIRE PROTECTION ENGINEER</p> 	<p>PLUMBING ENGINEER</p> 	<p>MECHANICAL ENGINEER</p> 
<p>ELECTRICAL ENGINEER</p> 	<p>TECHNOLOGY ENGINEER</p> 	<p></p>



US Army Corps
of Engineers ®

[illegible]

U.S. ARMY CORPS OF ENGINEERS 600 DR MARTIN LUTHER JR PL LOUISVILLE, KENTUCKY	 BENHAM & Hunt	Mead & Hunt	D. BRENNER R. DREWOUR R. DICKMAN CHECKED BY: SUBMITTED BY: M. BUTLER SIZE: ANSID	SEPTEMBER 20, 2024 SOLICITATION NO.: CONTRACT NO.: ORDER NO.:	<i>DE</i> <i>UW</i>
--	---	----------------	---	--	------------------------

DETROIT ARSENAL MI
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
PZ#: 506474
00 - GENERAL
COVER SHEET - VOLUME 1

SHEET ID

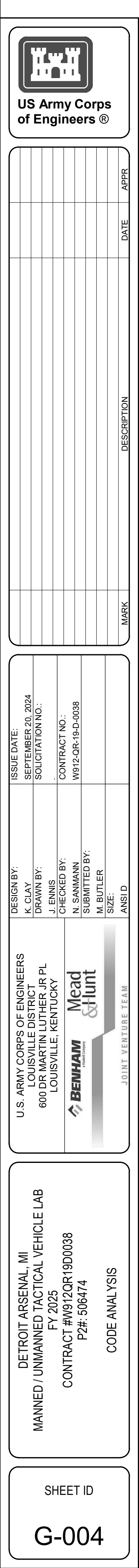
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CERTIFIED FINAL SUBMITTAL

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[illegible]

U.S. ARMY CORPS OF ENGINEERS	BENHAM	Mead & Hunt			
LOUISVILLE DISTRICT IN PL					
600 NORTH MAIN STREET					
LOUISVILLE, KENTUCKY					
	DRAWN BY:	CHECKED BY:	CONTRACT NO.:		
	K. CLAY	J. ENNIS	N. SAMMANN		
	SOLICITATION NO.:		SUBMITTED BY:		
	SEPTEMBER 20, 2024		W912-QF-19-D-0038		
				SIZE:	
				ANSI D	
					JOINT VENTURE TEAM

DETROIT ARSENAL, MI
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
CONTRACT #W912QR19D00038
P2#: 506474
CODE COMPLIANCE SITE PLAN

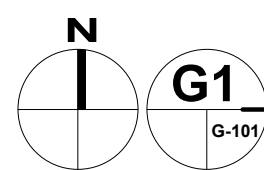
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Plot Date: 9/18/2024 9:11:11 AM File Path:







CERTIFIED FINAL SUBMITTAL W912QR25R0052_Plans_Vol1-0000



G1 CODE COMPLIANCE SITE PLAN

$$1'' = 30'-0''$$


LIFE SAFETY LEGEND

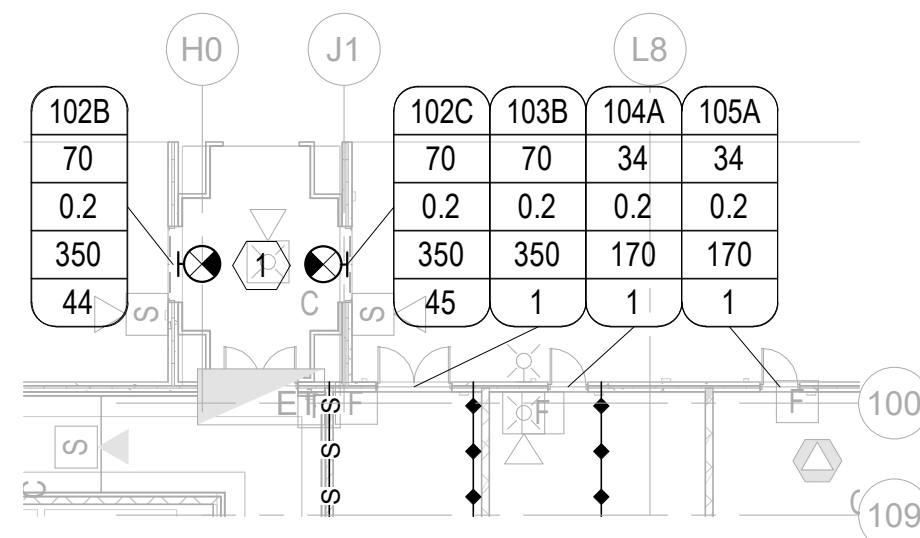
- | | |
|---|----------------------------|
|  | UNDERGROUND WATER LINE |
|  | HOSE LAY LENGTH < 350 FT |
|  | FIRE HYDRANT |
|  | FIRE DEPARTMENT CONNECTION |
|  | KEYED LOCK BOX |
|  | POST INDICATOR VALVE |

KEYED NOTES #:

1. MORE THAN 20 FEET WIDE, WHICH IS SUFFICIENT FOR FIRE DEPARTMENT APPARATUS ACCESS.
2. FLOW DATA:
 - DATE: 10-13-2022
 - PERFORMED BY: K. CLAY
 - STATIC: 47 PSI
 - RESIDUAL: 39 PSI
 - FLOW: 876 GPM
 - FIRE FLOW IS 1,125 GPM AT 20 PSI FOR 2 HOURS

THIS DRAWING IS FOR REFERENCE ONLY. IT IS NOT PART OF THE CONSTRUCTION CONTRACT
AND ALL INFORMATION CONTAINED HERE IS LOCATED ON CONSTRUCTION DOCUMENTS.




















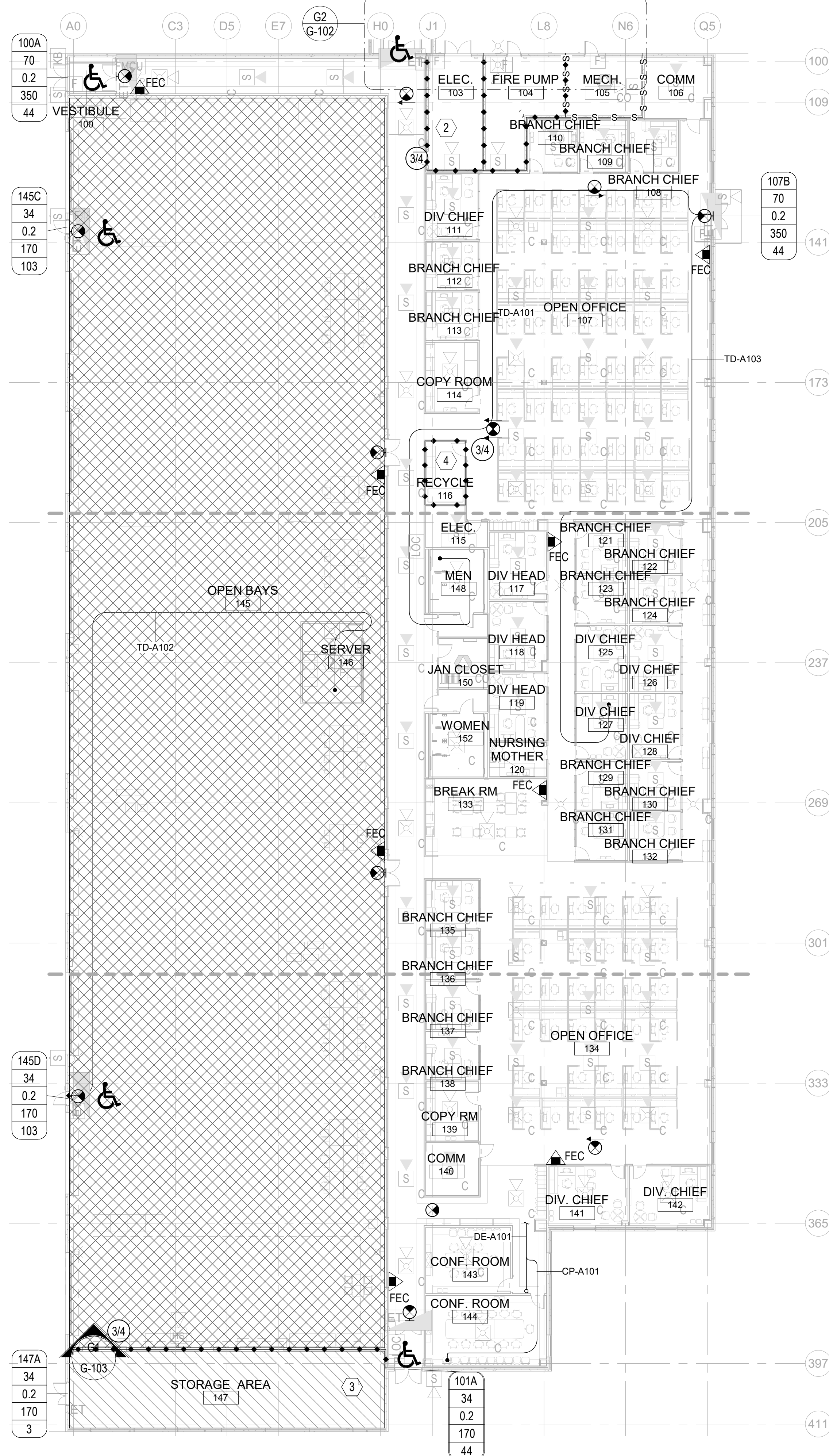
G2 LIFE SAFETY - AREA 4 PLAN



FIRE ALARM / MNS SYMBOLS LEGEND:

SYMBOL	DESCRIPTION
 C	CEILING MOUNTED FIRE ALARM/MNS SPEAKER/STROBE, XX INDICATES CD RATING
 C	WALL MOUNTED FIRE ALARM/MNS SPEAKER/STROBE, XX INDICATES CD RATING
 C	CEILING MOUNTED FIRE ALARM/MNS SPEAKER
	WALL MOUNTED FIRE ALARM/MNS SPEAKER
	WALL MOUNTED FIRE ALARM/MNS STROBE, XX INDICATES CD RATING
 C	CEILING MOUNTED FIRE ALARM/MNS STROBE, XX INDICATES CD RATING
	EMERGENCY TEXT SIGN
	LOUDSPEAKER (UL 1480 TYPE F)
	MANUAL PULL STATION
	SMOKE DETECTOR - PHOTOELECTRIC
 R	DUCT SMOKE DETECTOR; XX INDICATES ASSOCIATED UNIT; R=RETURN, S=SUPPLY
 CO	CARBON MONOXIDE DETECTOR
 KB	KEYED LOCK BOX
 LOC	LOCAL OPERATING CONSOLE
 FMCU	FIRE ALARM / MNS CONTROL UNIT

G1 LIFE SAFETY PLAN - COMPOSITE





KEYED NOTES :

1. BUILDINGS CONNECT BY PEDESTRIAN WALKWAYS SHALL BE CONSIDERED TO BE SEPARATE STRUCTURES (IBC §3104.2). THE PEDESTRIAN WALKWAYS IS NOT REQUIRED TO BE SEPARATED BY A 2-HOUR FIRE BARRIER AS THE DISTANCE BETWEEN THE BUILDINGS IS MORE THAN 10 FEET AND THE PEDESTRIAN WALKWAY AND CONNECTED BUILDINGS ARE EQUIPPED THROUGHOUT WITH AUTOMATIC SPRINKLER SYSTEM, AND THE ROOF OF THE WALKWAY IS NOT MORE THAN 55 FEET ABOVE GRADE CONNECTING TO THE FIFTH, OR LOWER, STORY ABOVE GRADE PLANE, OF EACH BUILDING (IBC §3104.5.2).
2. WHERE TRANSFORMERS ARE PROTECTED WITH AUTOMATIC SPRINKLER SYSTEM, A MINIMUM 1-HOUR FIRE-RATED CONSTRUCTION IS REQUIRED PER UFC 3-600-01 §4-40.4.
3. STORAGE AREA MUST BE SEPARATED BY A MINIMUM 1-HOUR FIRE-RATED CONSTRUCTION PER UFC 3-600-01 §4-48.5.2.
4. RECYCLING ROOMS MUST BE SEPARATED BY A MINIMUM 1-HOUR FIRE-RATED CONSTRUCTION PER UFC 3-600-01 §4-46.2.

LIFE SAFETY LEGEND

- | | |
|--|---------------------------------|
| | TRAVEL DISTANCE |
| | COMMON PATH |
| | DEAD END DISTANCE |
| | ACCESSIBLE ENTRANCE/EXIT |
| | EXIT LIGHT CEILING MOUNT |
| | EXIT LIGHT WALL MOUNT |
| | 1-HOUR FIRE BARRIER |
| | SMOKE PARTITION |
| | FIRE EXTINGUISHER CABINET (FEC) |
| | FIRE EXTINGUISHER BRACKET (FEB) |

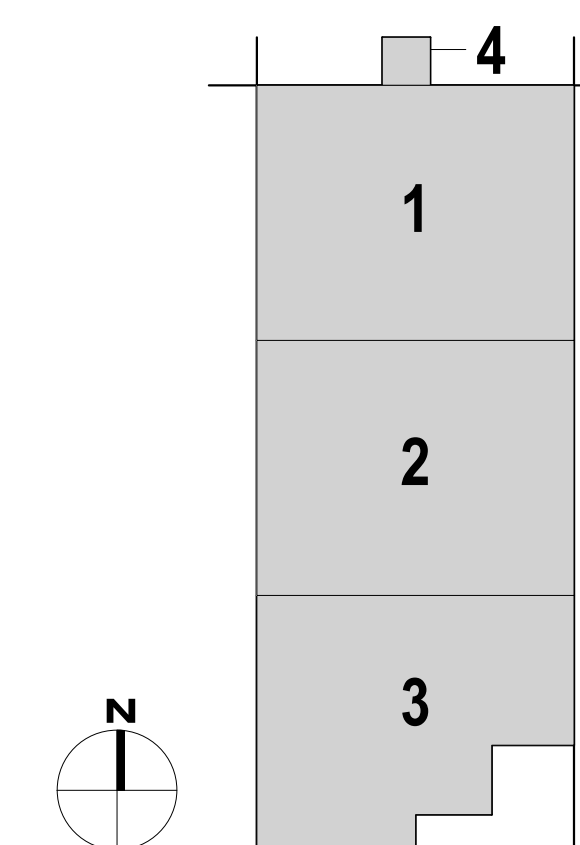
OCCUPANCY CLASSIFICATION

- | | |
|---|--|
|  | NFPA 101: BUSINESS
IBC: BUSINESS |
|  | NFPA 101: STORAGE
IBC: STORAGE LOW-HAZARD (S-2) |

- NFPA 101: INDUSTRIAL
IBC: FACTORY (F-1)

- | | |
|------|----------------------------|
| XXXX | ← DOOR NUMBER |
| XX" | ← CLEAR WIDTH |
| .X | ← EXIT CAPACITY FACTOR |
| XXX | ← CALCULATED EXIT CAPACITY |
| XX | ← ASSIGNED EXIT CAPACITY |

TRAVEL PATH, COMMON PATH, AND DEAD-END LIMIT SUMMARY TABLE			
PATH TYPE	PATH TAG	ACTUAL DISTANCE	PERMITTED DISTANCE
TRAVEL DISTANCE	TD-A101	202' - 6"	300'
TRAVEL DISTANCE	TD-A102	199' - 6"	250'
TRAVEL DISTANCE	TD-A103	169' - 0"	300'
COMMON PATH	CP-A101	51' - 6"	100'
DEAD END PATH	DE-A101	15' - 0"	50'



THIS DRAWING IS FOR REFERENCE ONLY. IT IS NOT PART OF THE
CONSTRUCTION CONTRACT AND ALL INFORMATION CONTAINED
HERE IS LOCATED ON CONSTRUCTION DOCUMENTS.



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of Engineers®**

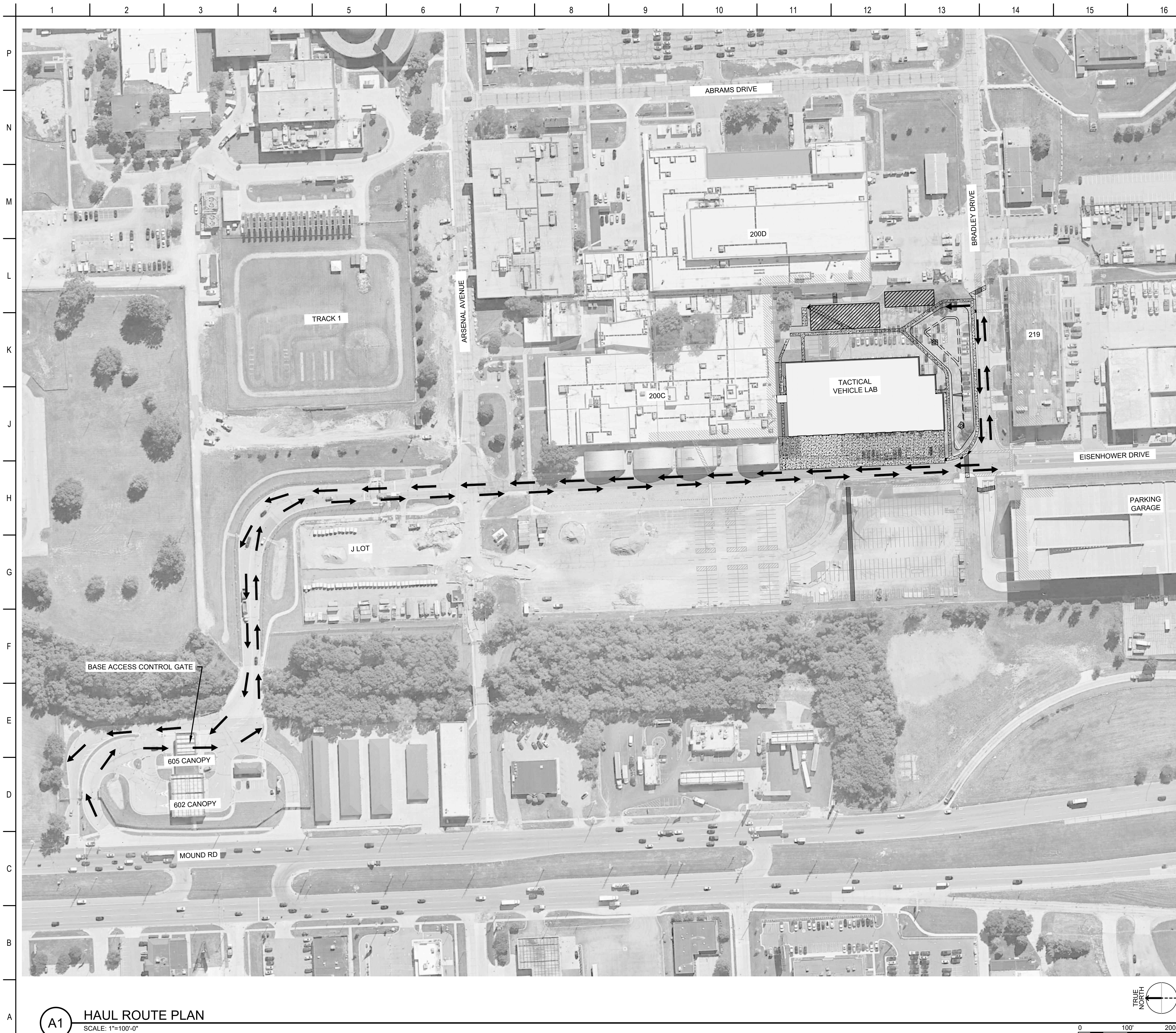
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U.S. ARMY CORPS OF ENGINEERS 600 DR MARTIN LUTHER JR PL LOUISVILLE, KENTUCKY	DESIGN BY: K CLAY DRAWN BY: J ENNIS CHECKED BY: M. BUTLER SUBMITTED BY: M BUTLER SIZE:	ISSUE DATE: SEPTEMBER 20, 2024 SOLICITATION NO: CONTRACT NO: WY2-GR-19-0038
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DETROIT ARSENAL, MI
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
CONTRACT #W912QR19D0038
P2#: 506474
LIFE SAFETY PLAN

SHEET ID

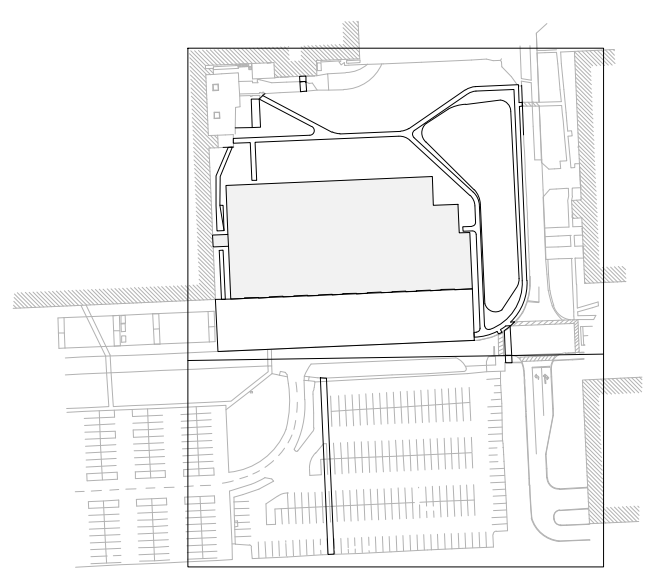
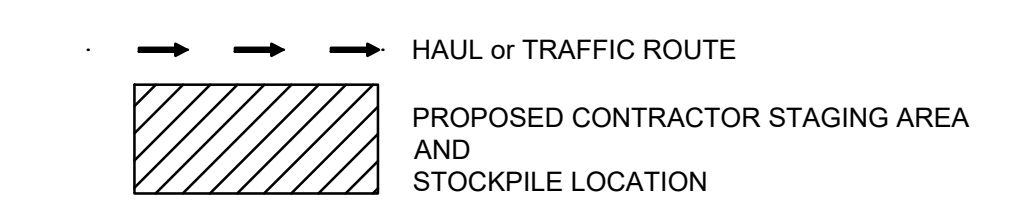
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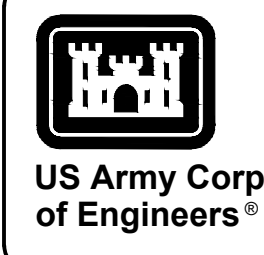
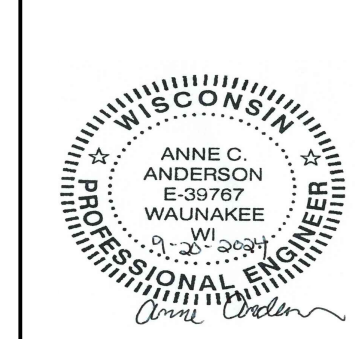
HAUL ROUTE GENERAL SHEET NOTES

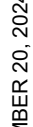
1. ALL CONTRACTOR PERSONNEL AND VEHICLES MAY BE SUBJECT TO INSPECTION AT ENTRANCE GATE PRIOR TO ENTERING PROPERTY.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL GOVERNMENT PROPERTY INCLUDING PAVEMENT, FENCING AND UTILITIES ARE IN EQUIVALENT OR BETTER CONDITION AFTER COMPLETION OF THE PROJECT THAN BEFORE THE START OF CONSTRUCTION.
3. PROPOSED STAGING AREA IS WITHIN PROJECT CONSTRUCTION LIMITS. PROPOSED SIDEWALK, STORM SEWER AND TURF AREAS ARE TO BE PHASED SUCH THAT THEY ARE NOT DAMAGED DURING CONSTRUCTION OF BUILDING AND SURROUNDING PAVEMENT.
4. EROSION CONTROL SHALL BE MAINTAINED THROUGHOUT PROJECT. ALL EXISTING AND PROPOSED STORM SEWER STRUCTURES ARE TO BE PROTECTED THROUGHOUT CONSTRUCTION. ANY WASTE SITES OR MATERIAL STOCKPILES ARE TO BE CONTAINED IN DESIGNATED AREAS.
5. ALL EXCESS SOIL AND CONSTRUCTION WASTE SHALL GO TO A STATE CERTIFIED LANDFILL. NO SOIL DISPOSAL OR BORROW SITE IS LOCATED AT THE DETROIT ARSENAL.

SHEET LEGEND



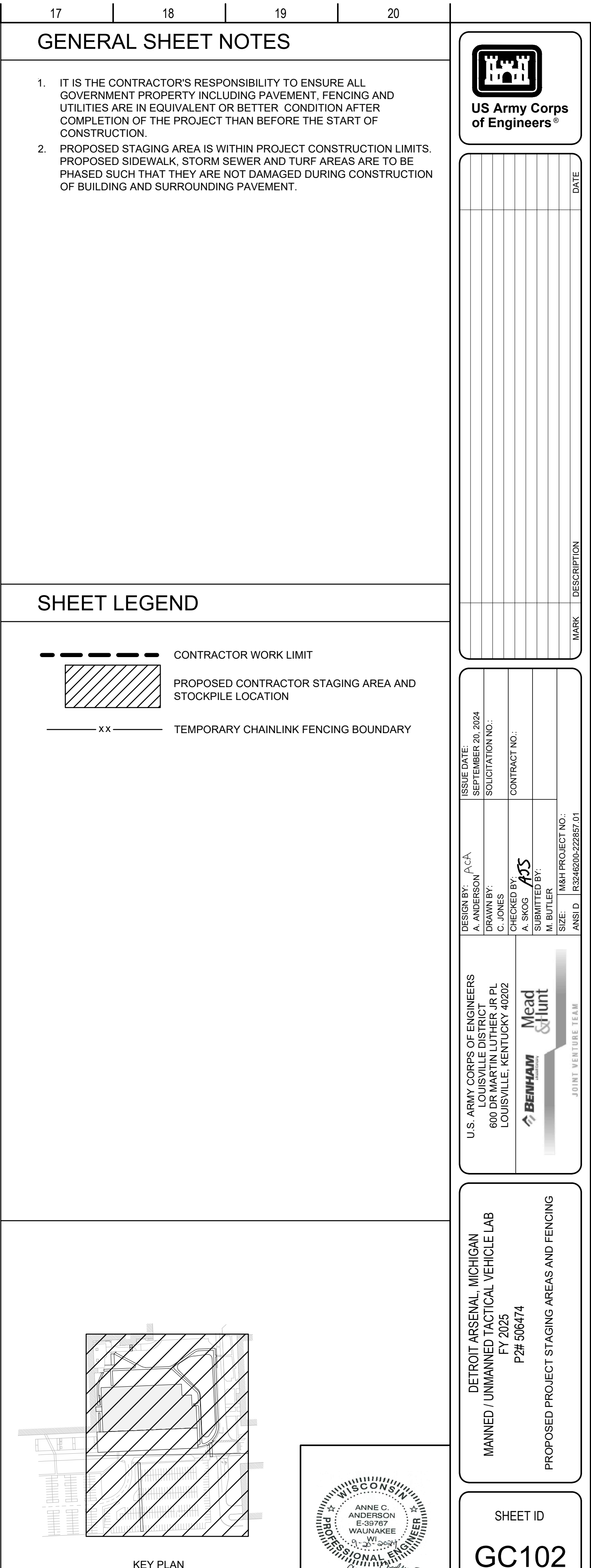
KEY PLAN

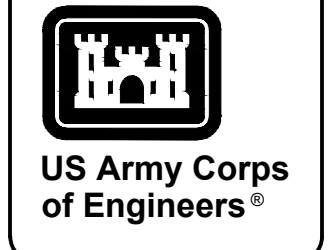
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
U.S. ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT 600 DR MARTIN LUTHER JR PL LOUISVILLE, KENTUCKY 40202	DESIGN BY: ACA A. ANDERSON DRAWN BY: C. JONES CHECKED BY: ASS A. SKOG SUBMITTED BY: M. BUTLER	ISSUE DATE: SEPTEMBER 20, 2024 SOLICITATION NO.: CONTRACT NO.:
		SIZE: 1/8"X PROJECT NO.: ANS D: F3246200-222897-01
JOINT VENTURE TEAM		

DETROIT ARSENAL, MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
P2# 506474
HAUL ROUTE PLAN

SHEET ID
GC101



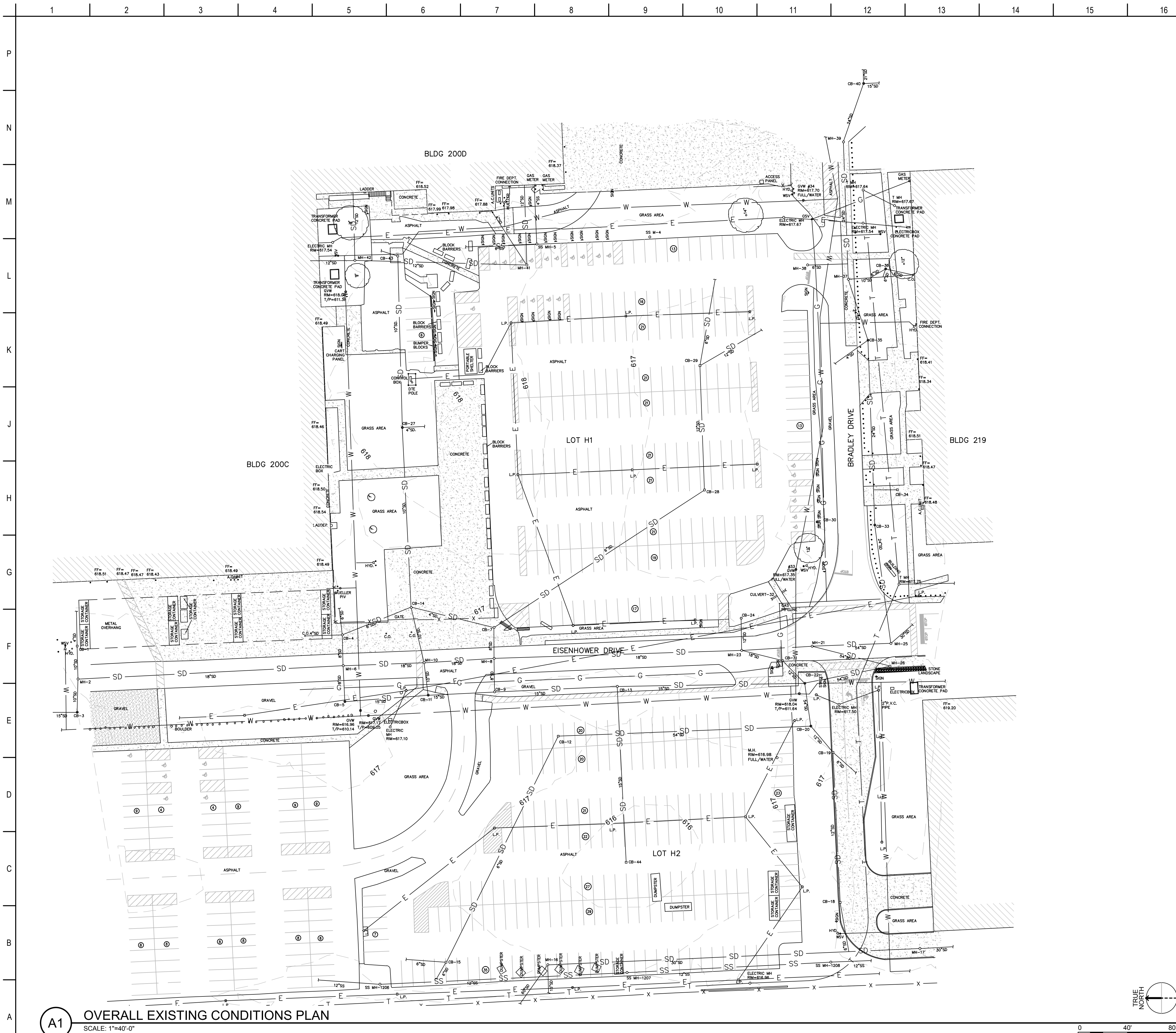


U.S. ARMY CORPS OF ENGINEERS JOINT VENTURE TEAM	DESIGN BY: AC&A	ISSUE DATE: SEPTEMBER 20, 2024
 Beiham <small>INCORPORATED</small>  Mead & Hunt <small>INCORPORATED</small>	DRAWN BY: C. JONES	SOLICITATION NO.:
	CHECKED BY: ACS	CONTRACT NO.:
	SUBMITTED BY: M. BUTLER	
	SIZE: R&H PROJECT NO.:	
	ANSID: R3246200-222857.01	

DETROIT ARSENAL, MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
P2# 506474
SITE PHOTOS

SHEET ID

GR102



EXISTING CONDITIONS SHEET NOTES

1. CONTOUR INTERVALS SHOWN ARE 1.0'.
2. ALL PUBLIC UTILITY LINES, AS SHOWN HEREON, ARE TAKEN FROM THE BEST AVAILABLE RECORDS AS DISCLOSED BY THE VARIOUS UTILITY COMPANIES AND / OR MUNICIPALITIES. OTHER UTILITY INFORMATION WAS NOT AVAILABLE AT THE TIME OF SURVEY. NO GUARANTEE CAN BE GIVEN BY AS TO THE ACCURACY OR COMPLETENESS THEREOF.
3. SEE SHEET VF601 FOR STORM AND SANITARY STRUCTURE TABLES.
4. CONTRACTOR TO CONDUCT FIELD UTILITY SURVEY PRIOR TO CONSTRUCTION.

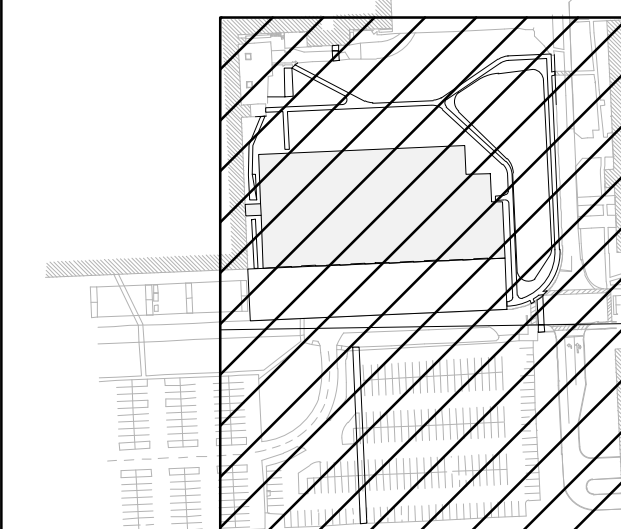
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COORDINATE SYSTEM	NAD 83 MICHIGAN STATE PLANES SOUTH ZONE
VERTICAL DATUM	USGS NAVD 88
UNITS	INTERNATIONAL FEET
SURVEYOR	GEORGE JEROME & CO.
MDOTCORS	NAD 83(2011) MYCS1 WITH A GRS80 ELLIPSOID

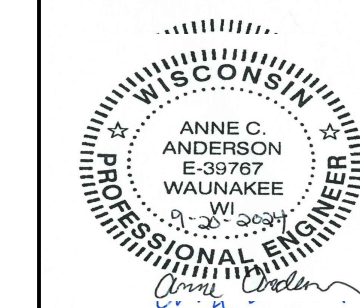
SHEET LEGEND

R. _____ RECORD
M. _____ MEASURED
C. _____ CALCULATED
F.I.R. _____ FOUND IRON ROD
H. _____ HEARNE BROTHERS
F.C.M. _____ FOUND CONCRETE MONUMENT
S.I.R. _____ SET IRON ROD
S.P.K. _____ SET P.K. NAIL
F.P.K. _____ FOUND P.K. NAIL
T/C _____ TOP OF CURB
G _____ GUTTER
FF _____ FINISHED FLOOR
T/W _____ TOP OF WALL
T/P _____ TOP OF PIPE
C CB _____ CATCH BASIN
J U.P. _____ UTILITY POLE
O MH _____ MANHOLE
O C.O. _____ CLEAN OUT
O D.S. _____ DOWNSPOUT
☆ L.P. _____ LIGHT POLE
O L.L. _____ LANDSCAPE LIGHT
⊗ GWV _____ GATE VALVE AND WELL
⊗ WSV _____ WATER STOP VALVE
⊗ HYD. _____ FIRE HYDRANT
● BOL. _____ BOLLARD
O M.W. _____ MONITORING WELL
I _____ SIGN
① _____ NUMBER PARKING SPACES
Ⓡ _____ HANDICAP PARKING

€ G.W. _____ GUY WIRE
— X _____ X — FENCE
— SS _____ SANITARY/COMBINED SEWER
— SD _____ **STORM DRAIN**
— W _____ WATER MAIN
— OHW _____ OVERHEAD UTILITY LINES
— E _____ UNDER GROUND ELECTRIC WIRES
— T _____ COMMUNICATION LINE




KEY PLAN



**US Army Corps
of Engineers®**

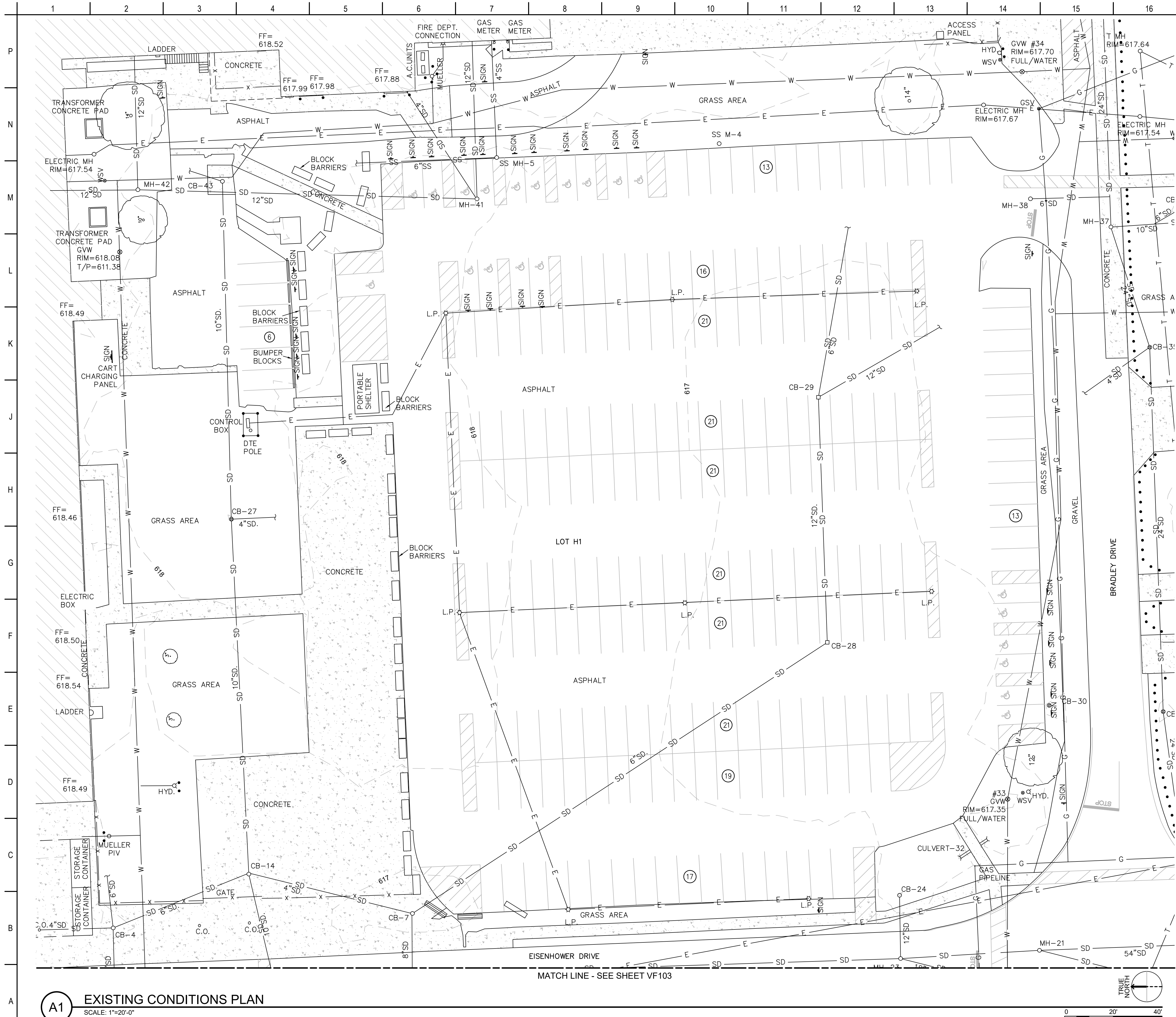
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U.S. ARMY CORPS OF ENGINEERS U.S. ARMY DISTRICT OFFICE 600 DR MARTIN LUTHER JR PL LOUISVILLE, KENTUCKY 40202	DESIGN BY: <i>A-CA</i> DRAWN BY: C. JONES A. SOKO. <i>A35</i> SUBMITTED BY: M. BUTLER	ISSUE DATE: SEPTEMBER 20, 2024 SOLICITATION NO.: CONTRACT NO.:
 Bentham & Hunt		SIZE: M&H PROJECT NO.:

DETROIT ARSENAL, MICHIGAN
UNMANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
P2# 506474
OVERALL EXISTING CONDITIONS PLAN

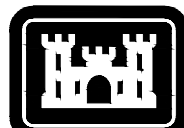
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VF101



EXISTING CONDITIONS SHEET NOTES

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3. SEE SHEET VF601 FOR STORM AND SANITARY STRUCTURE TABLES.
4. CONTRACTOR TO CONDUCT FIELD UTILITY SURVEY PRIOR TO CONSTRUCTION.



**US Army Corps
of Engineers®**

SURVEY DATA

SURVEY DATE(S)	2022
COORDINATE SYSTEM	NAD 83 MICHIGAN STATE PLANES SOUTH ZONE
VERTICAL DATUM	USGS NAVD 88
UNITS	INTERNATIONAL FEET
SURVEYOR	GEORGE JEROME & CO.

SHEET LEGEND

— RECORD
 M. — MEASURED
 C. — CALCULATED
 F.I.R. — FOUND IRON ROD
 H. — HEARNE BROTHERS
 F.C.M. — FOUND CONCRETE MONUMENT
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 T/P — TOP OF PIPE
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 O C.O. — CLEAN OUT
 O D.S. — DOWNSPOUT
 ☆ L.P. — LIGHT POLE
 O L.L. — LANDSCAPE LIGHT
 ♂ W.V. — GATE VALVE AND WELL
 ♂ WSV — WATER STOP VALVE
 ♂ H.Y.D. — FIRE HYDRANT
 • BOL. — BOLLARD
 O M.W. — MONITORING WELL
 † — SIGN
 Ⓢ — NUMBER PARKING SPACES
 Ⓢ — HANDICAP PARKING
 ← G.W. — GUY WIRE
 — X — FENCE
 — SS — SANITARY/COMBINED SEWER
 — SD — STORM DRAIN
 — W — WATER MAIN
 — OHW — OVERHEAD UTILITY LINES
 — E — UNDER GROUND ELECTRIC WIRES
 — T — COMMUNICATION LINE

A. ANDERSON	SEPTEMBER 20, 2024
DRAWN BY: C. JONES	SOLICITATION NO.:
CHECKED BY: A. SKOG	CONTRACT NO.:
SUBMITTED BY:	

U.S. ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR MARTIN LUTHER JR PL
LOUISVILLE, KENTUCKY 40202

ARMED / UNMANNED TACTICAL VEHICLE L
DETROIT ARSENAL, MICHIGAN
FY 2025
P2# 506474
EXISTING CONDITIONS PLAN

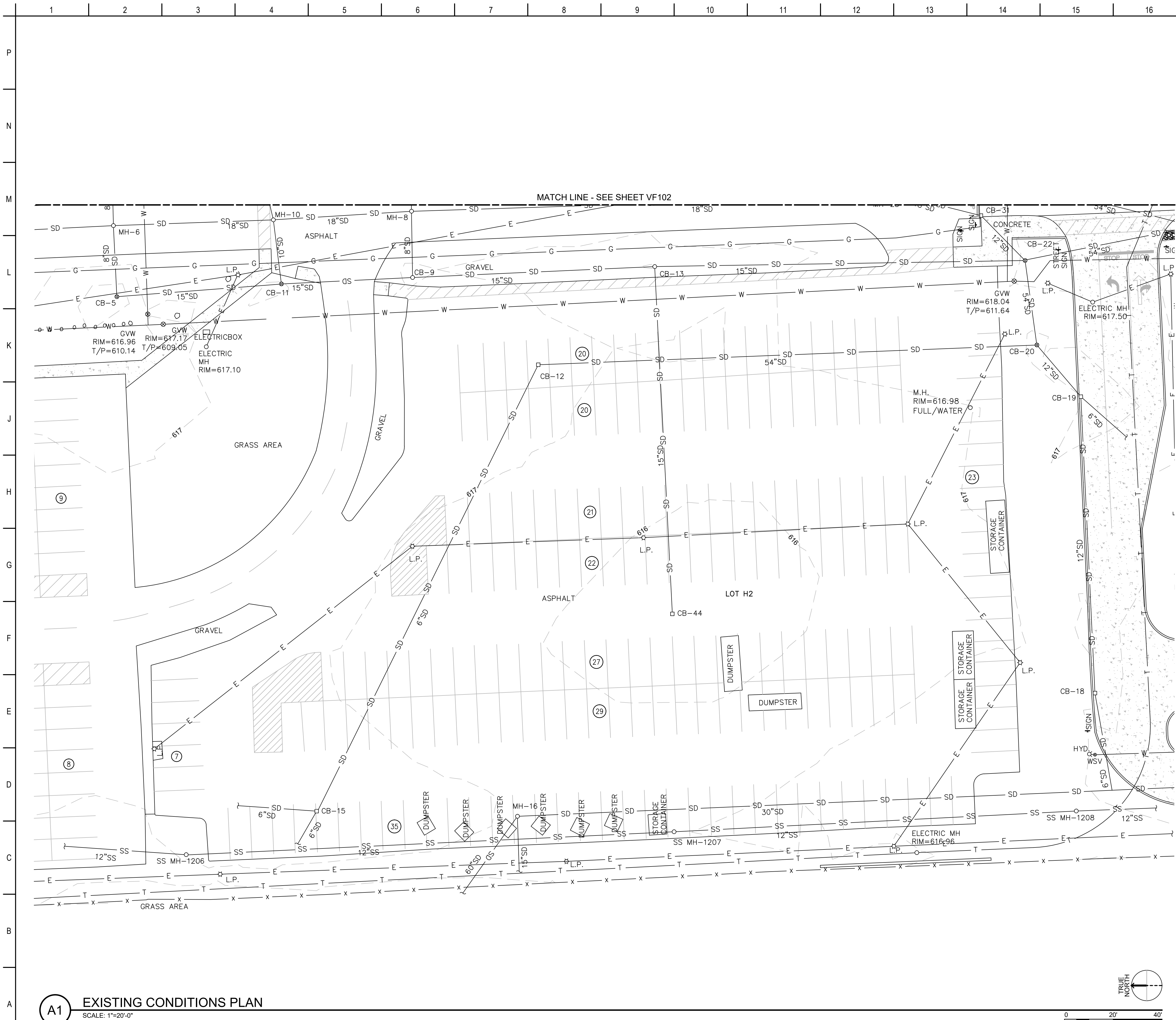
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VF102

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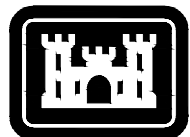
Plot Date: 9/18/2024

CERTIFIED FINAL SUBMITTAL



EXISTING CONDITIONS SHEET NOTES

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3. SEE SHEET VF601 FOR STORM AND SANITARY STRUCTURE TABLES.
4. CONTRACTOR TO CONDUCT FIELD UTILITY SURVEY PRIOR TO CONSTRUCTION.



**US Army Corps
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SURVEY DATA

SURVEY DATE(S)	2022
COORDINATE SYSTEM	NAD 83 MICHIGAN STATE PLANES SOUTH ZONE
VERTICAL DATUM	USGS NAVD 88
UNITS	INTERNATIONAL FEET
SURVEYOR	GEORGE JEROME & CO.

SHEET LEGEND

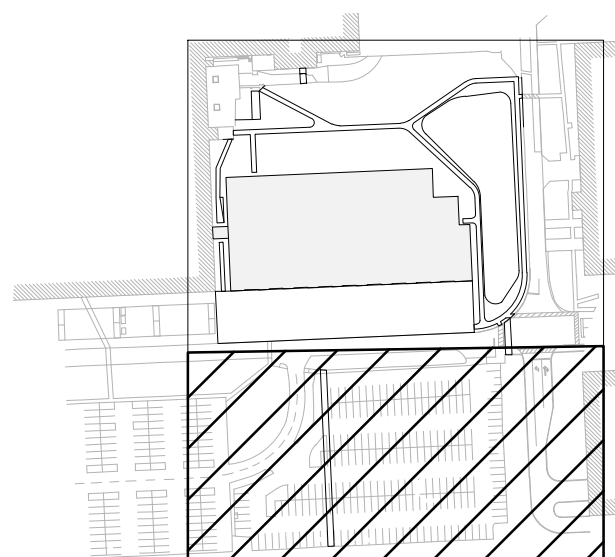
- RECORD
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 F.I.R. — FOUND IRON ROD
 H. — HEARNE BROTHERS
 F.C.M. — FOUND CONCRETE MONUMENT
 S.I.R. — SET IRON ROD
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 ♂ WSV — WATER STOP VALVE
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 — W — WATER MAIN
 — OHW — OVERHEAD UTILITY LINES
 — E — UNDER GROUND ELECTRIC WIRES
 — T — COMMUNICATION LINE

SEPTEMBER 20, 2024	A. ANDERSON
SOLICITATION NO.:	DRAWN BY: C. JONES
CONTRACT NO.:	CHECKED BY: A. SKOG SUBMITTED BY: AS

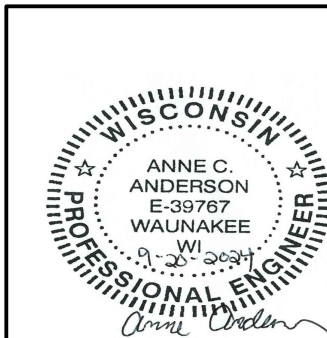
LOUISVILLE DISTRICT
U.S. ARMY CORPS OF ENGINEERS
600 DR MARTIN LUTHER JR PL
LOUISVILLE, KENTUCKY 40202

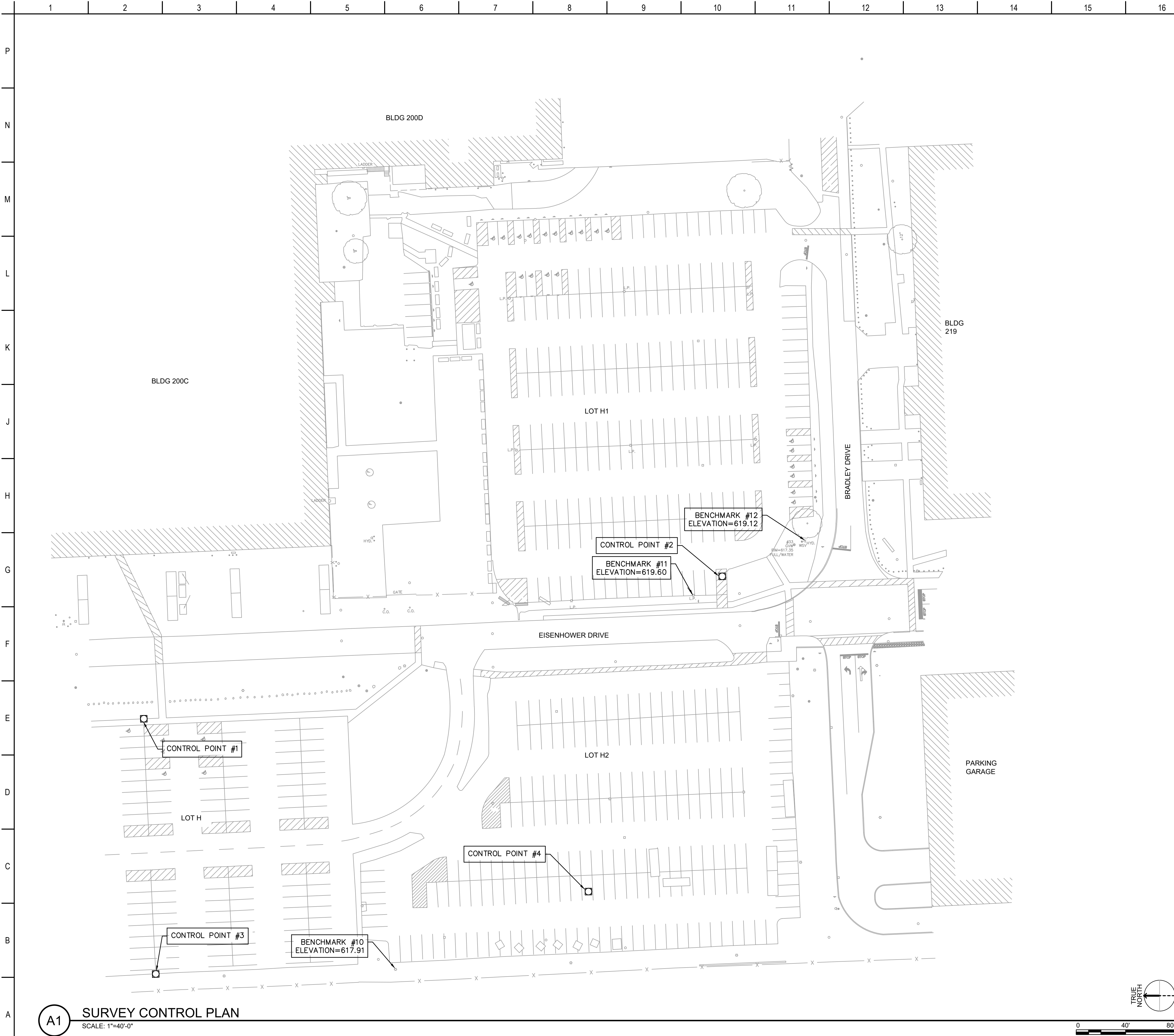
ARMED / UNMANNED TACTICAL VEHICLE L
DETROIT ARSENAL, MICHIGAN
FY 2025
P2# 506474
EXISTING CONDITIONS PLAN

SHEET ID
VF103



KEY PLAN





A1 SURVEY CONTROL PLAN
SCALE: 1"=40'-0"

GENERAL SHEET NOTES

- ALL PUBLIC UTILITY LINES, AS SHOWN HEREON, ARE TAKEN FROM THE BEST AVAILABLE RECORDS AS DISCLOSED BY THE VARIOUS UTILITY COMPANIES AND / OR MUNICIPALITIES. OTHER UTILITY INFORMATION WAS NOT AVAILABLE AT THE TIME OF SURVEY. NO GUARANTEE CAN BE GIVEN BY AS TO THE ACCURACY OR COMPLETENESS THEREOF.
- SEE SHEET VF601 FOR STORM AND SANITARY STRUCTURE TABLES.
- CONTRACTOR TO CONDUCT FIELD UTILITY SURVEY PRIOR TO CONSTRUCTION.



US Army Corps of Engineers®

SITE BENCHMARKS

- BENCHMARK #10**
CHISELED "X" ON EAST CORNER OF LAMP POST BASE.
ELEV: 617.91 (NAVD88)
- BENCHMARK #11**
CHISELED "X" ON EAST CORNER OF LAMP POST BASE.
ELEV: 619.60 (NAVD88)
- BENCHMARK #12**
ARROW ON HYD. LOCATED EAST SIDE OF FLANGE
ELEV: 619.12 (NAVD88)

CONTROL POINTS

- CONTROL POINT #1**
N: 366323.79 E: 13480151.41
- CONTROL POINT #2**
N: 365855.46 E: 13480266.69
- CONTROL POINT #3**
N: 366314.12 E: 13479944.78
- CONTROL POINT #4**
N: 365963.81 E: 13480011.47

SURVEY DATA

- SURVEY DATE(S) 2022
- COORDINATE SYSTEM NAD 83 MICHIGAN STATE PLANES SOUTH ZONE
- VERTICAL DATUM USGS NAVD 88
- UNITS INTERNATIONAL FEET
- SURVEYOR GEORGE JEROME & CO.

DESIGN BY: A.C.A. A. ANDERSON	ISSUE DATE: SEPTEMBER 20, 2024
DRAWN BY: C. JONES	SOLICITATION NO.:
CHECKED BY: A. SKOG	CONTRACT NO.:
SUBMITTED BY: M. BUTLER	
SIZE: 1/8" X 11"	PROJECT NO.: R324200-222857-01

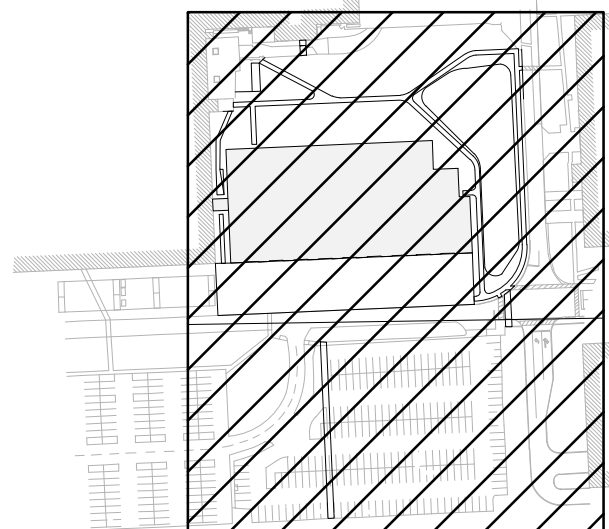
U.S. ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER JR. PL.
LOUISVILLE, KENTUCKY 40202

BEAUFAM
Mead & Hunt

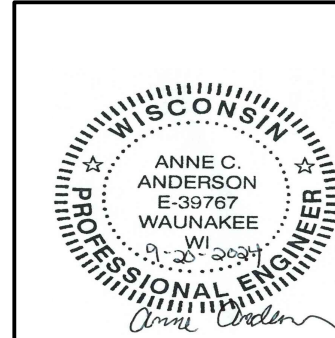
JOINT VENTURE TEAM

DETROIT ARSENAL MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
PZ# 506474
SURVEY CONTROL PLAN

SHEET ID
VF104

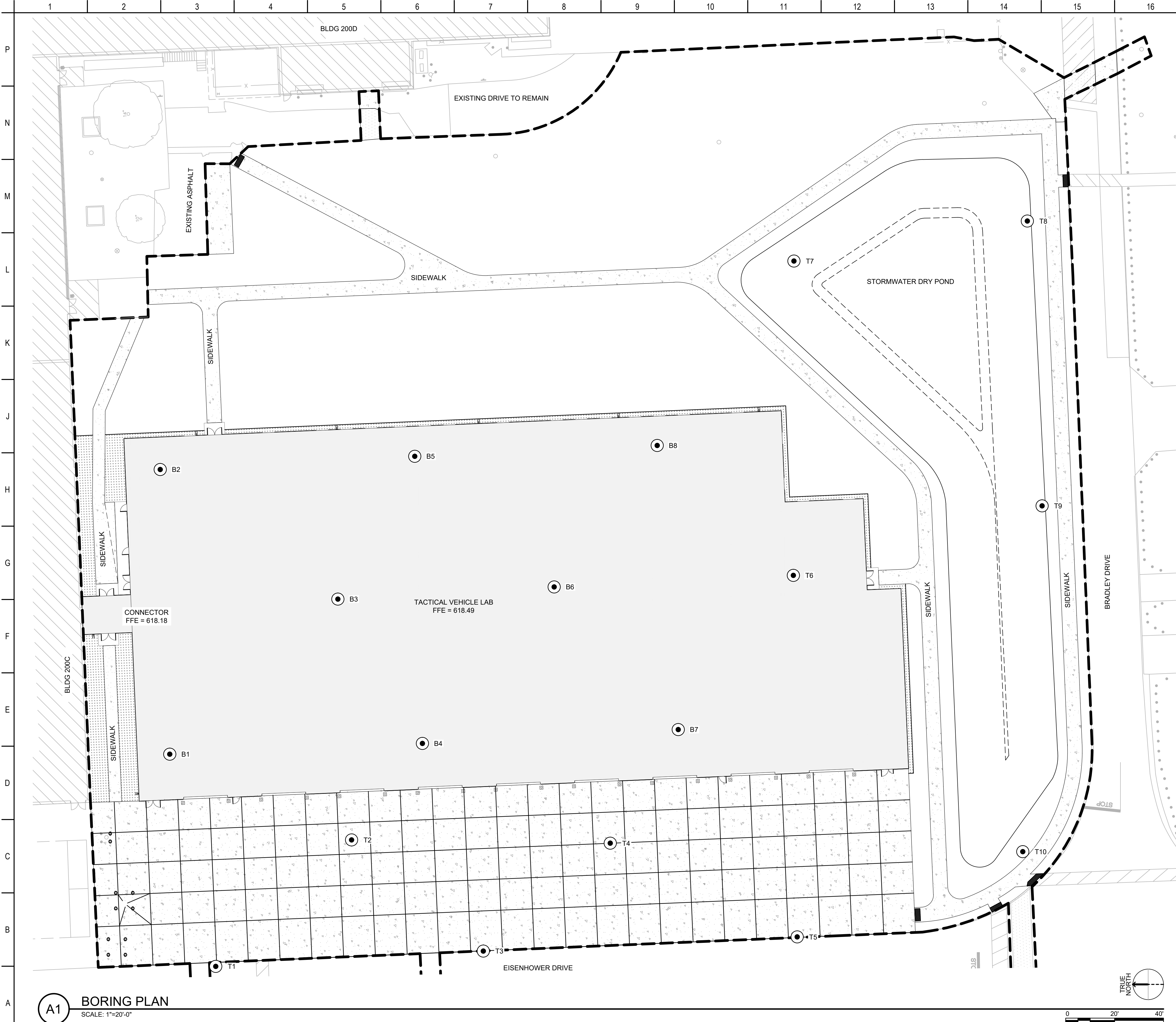


KEY PLAN









A1 BORING PLAN
SCALE: 1"=20'-0"

GENERAL SHEET NOTES

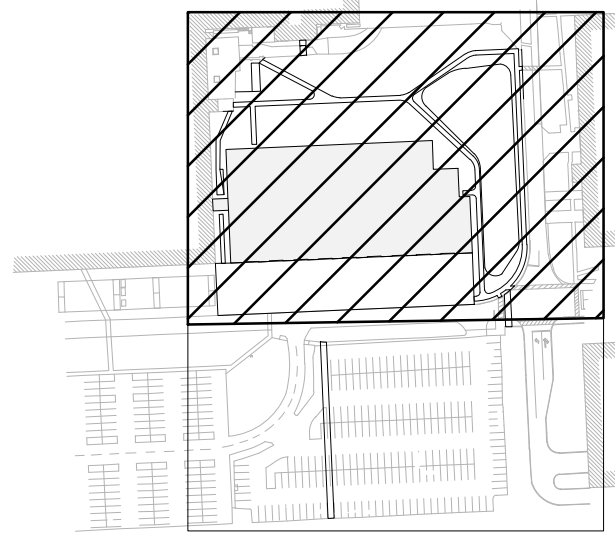
1. SOIL BORINGS PERFORMED IN JANUARY AND FEBRUARY OF 2023 BY TESTING ENGINEERS AND CONSULTANTS, INC.



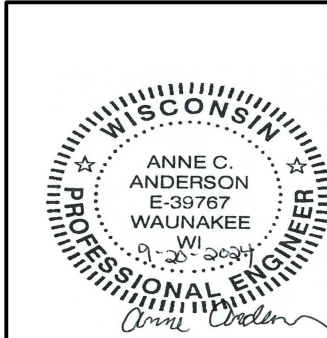
**US Army Corps
of Engineers®**

SHEET LEGEND

- SOIL BORING
- CONTRACTOR WORK LIMIT



KEY PLAN

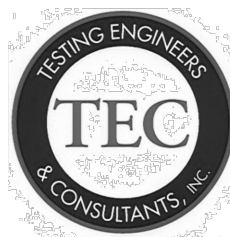


DETROIT ARSENAL MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
P# 506474
BORING PLAN

SHEET ID
BB101

DESIGN BY: A. ANDERSON	ISSUE DATE: SEPTEMBER 20, 2024
DRAWN BY: C. JONES	SOLICITATION NO.:
CHECKED BY: A. SKOG	CONTRACT NO.:
SUBMITTED BY: M. BUTLER	
SIZE: ANSI D	TM&H PROJECT NO.:
	RS3246200222857.01





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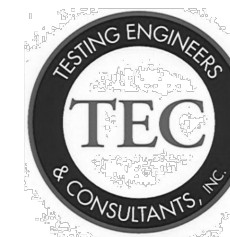
1343 Rochester Road - PO Box 249 - Troy, Michigan - 48099-0249
(248) 588-6200 or (313) T-E-S-T-I-N-G
Fax (248) 588-6232

Boring No.: 4	Job No.: 63229	Project: Detroit Arsenal Manned-Unmanned Tactical Vehicle Laboratory			
Client: Benham		Location: Warren, Michigan			
Type of Rig: Truck		Drilled By: I. Mickle			
Drilling Method: Solid Stem Augers		Started: 2/16/2023			
Ground Surface Elevation: 618		Completed: 2/16/2023			

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			26				
27.5				Stiff Moist Gray CLAY With Some Silt & Trace Of Gravel			
30.0	SS	5 8 10	30		12.1	135	7030
32.5				Bottom of Boring at 30'			
35.0							
37.5							
40.0							
42.5							
45.0							
47.5							

<p>"N" - Standard Penetration Resistance SS - 2" I.D. Split Spoon Sample LS - Sectional Limer Sample ST - Shelby Tube Sample AS - Auger Sample</p> <p>w - H₂O, % of dry weight d - Bulk Density, pcf qu - Unconfined Compression, pcf DP - Direct Push RC - Rock Core</p>	<p>Water Encountered: None</p> <p>At Completion: None</p>
--	---

Boring No. 4
PAGE 2 OF 2



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Boring No.: 5		Job No.: 63229		Project: Detroit Arsenal Manned-Unmanned Tactical Vehicle Laboratory			
Client: Benham				Location: Warren, Michigan			
Type of Rig: Truck				Drilled By: I. Mickle			
Drilling Method: Solid Stem Augers				Started: 2/16/2023			
Ground Surface Elevation: 618				Completed: 2/16/2023			

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
2.5	SS	5	1.2	Moist Dark Brown Sandy TOPSOIL	15.0		
		6	2.3				
	SS	3		Medium Compact Moist Brown Fine SAND	21.9	128	6380
5.0	SS	5		Stiff Moist Brown Oxidized CLAY With Some Silt	19.0	132	7200
		7					
	SS	5			19.7	129	5480
7.5	SS	6	7.5		11.8	135	5260
		7					
	SS	4		Stiff Moist Brown CLAY With Some Silt	12.2	141	6610
10.0		7					
	SS	10	10.5		11.7	143	3760
		4					
12.5		5		Firm Moist Gray CLAY With Some Silt, Trace Of Gravel & Wet Sand Seam			
		6	13				
	SS	3		Stiff Moist Gray CLAY With Some Silt & Trace Of Gravel	11.6	141	5400
15.0		4					
		6					
	SS	4			13.8	132	6380
20.0		6					
		9					
	SS	4					
22.5		5					
		7			14.7	133	7840
	SS	4					

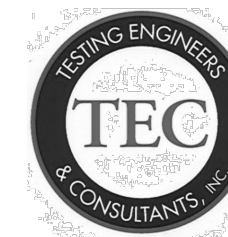
"N" - Standard Penetration Resistance
 SS - 2" I.D. Split Spoon Sample
 LS - Sectional Liner Sample
 ST - Shelby Tube Sample
 AS - Auger Sample

w - H₂O % of dry weight
 d - Bulk Density, g/d
 qu - Unconfined Compression, psf
 DP - Direct Push
 RC - Rock Core

Water Encountered: 126" & 270"

At Completion: 260"

Boring No. 5 PAGE 1 OF 2



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Boring No.: 5 Job No.: 63229			Project: Detroit Arsenal Manned-Unmanned Tactical Vehicle Laboratory		
Client: Benham			Location: Warren, Michigan		
Type of Rig: Truck			Drilled By: I. Mickle		
Drilling Method: Solid Stem Augers			Started: 2/16/2023		
Ground Surface Elevation: 618			Completed: 2/16/2023		

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
27.5	SS	7 9 12	27		10.0	144	5480
30.0				Stiff Moist Gray CLAY With Some Silt, Trace Of Gravel & Wet Sand Seam			
32.5				Bottom of Boring at 30'			
35.0							
37.5							
40.0							
42.5							
45.0							
47.5							

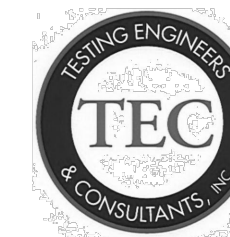
N - Standard Penetration Resistance
 SS - 2" I.D. Split Spoon Sample
 LS - Sectional Limer Sample
 ST - Shelby Tube Sample
 AS - Auger Sample

w - H₂O, % of dry weight
 d - Bulk Density, pcf
 qu - Unconfined Compression, psf
 DP - Direct Push
 RC - Rock Core

Water Encountered: 126" & 270"

At Completion: 260"

Boring No. 5 **PAGE 2 OF 2**



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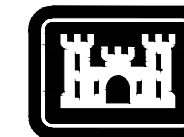
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Fax (248) 588-6232

Boring No.: 6		Job No.: 63229		Project: Detroit Arsenal Manned-Unmanned Tactical Vehicle Laboratory			
Client: Benham				Location: Warren, Michigan			
Type of Rig: Truck				Drilled By: I. Mickle			
Drilling Method: Solid Stem Augers				Started: 2/24/2023			
Ground Surface Elevation: 617				Completed: 2/24/2023			

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
	LS	9	2.1	ASPHALT (2 1/2")	12.6		
2.5	LS	7	2	Medium Compact Moist To Wet Crushed Concrete-FILL	27.5	119	3790
	LS	4		Firm Moist Brown Oxidized CLAY With Some Silt	26.2	117	2390
5.0	LS	3			25.7	119	3710
	LS	4					
7.5	ST	5	8.5				
	LS	3		Firm Moist Brown CLAY With Some Silt & Sand Seam	23.9	125	2720
10.0	LS	7	11	Shelby Tube 7.5' - 9' = 1.5' Recovery	12.0	139	7830
	LS	9		Unconfined Compressive Strength 3,430 psf			
12.5		10	13	LL=23 PL=16 PI=7			
	LS	6		Stiff Moist Brown CLAY With Some Silt			
15.0		8		Stiff Moist Gray CLAY With Some Silt & Trace Of Gravel	11.7	142	5360
		11					
17.5							
	LS	4			11.1	139	5440
20.0		7					
		9					
22.5							
	LS	5			13.7	134	5600
		6					
		8					

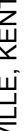
"N" - Standard Penetration Resistance SS - 2" I.D. Split Spoon Sample LS - Sectional Liner Sample ST - Shelby Tube Sample AS - Auger Sample	w - H2O, % of dry weight d - Bulk Density, pcf qu - Unconfined Compression, psf DP - Direct Push RC - Rock Core	Water Encountered: 20" At Completion: 210"
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Boring No. 6	PAGE 1 OF 2
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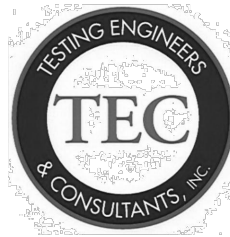
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U.S. ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT 600 DR MARTIN LUTHER JR PL LOUISVILLE, KENTUCKY 40202	DESIGN BY: A&A A. ANDERSON C. ANDERSON DRAWN BY: CHECKED BY: A. SKOG SUBMITTED BY: M. BUTLER	ISSUE DATE: SEPTEMBER 20, 2024 SOLICITATION NO.: CONTRACT NO.:
		SIZE: 1/8" H PROJECT NO.: ANS/D B324670-022867.01

DETROIT ARSENAL MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
P# 506474
BORING LOGS

SHEET ID

BB103



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Boring No.: 6	Job No.: 63229	Project: Detroit Arsenal Manned-Unmanned Tactical Vehicle Laboratory			
Client: Benham		Location: Warren, Michigan			
Type of Rig: Truck		Drilled By: I. Mickle			
Drilling Method: Solid Stem Augers		Started: 2/24/2023			
Ground Surface Elevation: 617		Completed: 2/24/2023			

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
			26				
27.5				Firm Moist Gray CLAY With Some Silt & Trace Of Gravel			
30.0	LS	5 6 7	30		15.9	130	3540
32.5				Bottom of Boring at 30'			
35.0							
37.5							
40.0							
42.5							
45.0							
47.5							

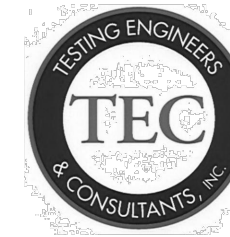
"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Limer Sample
ST - Shelby Tube Sample
AS - Auger Sample

w - H₂O, % of dry weight
d - Bulk Density, pcf
qu - Unconfined Compression, pcf
DP - Direct Push
RC - Rock Core

Water Encountered: 20"

At Completion: 210"

Boring No. 6
PAGE 2 OF 2



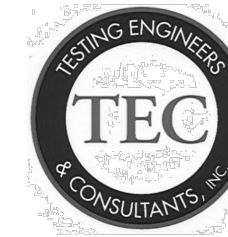
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Fax (248) 588-6232

Boring No. 7		Job No.: 63229		Project: Detroit Arsenal Manned-Unmanned Tactical Vehicle Laboratory			
Client: Benham				Location: Warren, Michigan			
Type of Rig: Truck				Drilled By: I. Mickle			
Drilling Method: Solid Stem Augers				Started: 2/24/2023			
Ground Surface Elevation: 617				Completed: 2/24/2023			

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
2.5	LS	17 8 7	2.2	ASPHALT (2")	11.0	138	
	LS	4 4 4		Medium Compact Moist To Wet Brown Sand With Crushed Concrete-FILL	31.1	111	
	LS	3 4 4		Firm Moist Brown CLAY With Some Silt	26.7	119	3210
5.0	LS	4 3 9	6		28.7	121	
	ST	11		Extremely Stiff Moist Brown Oxidized CLAY With Some Silt & Trace Of Gravel Shelly Tube 7.5" - 8.3" = Very Poor Recovery LL=23 PL=16 PI=7			
7.5	LS	7 10 13	13		12.2	136	9480
10.0	LS	10 12 14			11.1	142	9480
12.5	LS	7 8 11			14.0	131	9720
15.0	LS	5 9 11			11.3	135	6260
17.5	LS	5 8 10	16	Extremely Stiff Moist Gray CLAY With Some Silt & Trace Of Gravel			
20.0	LS	5 9 11		Stiff Moist Gray CLAY With Some Silt & Trace Of Gravel			
22.5	LS	5 8 10			13.1	132	6260

"N" - Standard Penetration Resistance SS - 2" I.D. Split Spoon Sample LS - Sectional Limer Sample ST - Shelby Tube Sample AS - Auger Sample	w - H ₂ O % of dry weight d - Bulk Density, pcf qu - Unconfined Compression, psf DP - Direct Push RC - Rock Core	Water Encountered: 20" At Completion: 234" Boring No. 7 PAGE 1 OF 2
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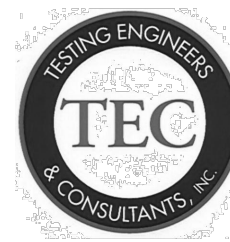
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Plot Date: 9/18/2024

W912QR25R0052 Plans Vol1-0000

CERTIFIED FINAL SUBMITTAL



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Fax (248) 588-6232



Boring No.: T-1		Job No.: 63229		Project: Detroit Arsenal Manned-Uhmanned Tactical Vehicle Laboratory		
Client: Benham				Location: Warren, Michigan		
Type of Rig: Truck				Drilled By: I. Mickle		
Drilling Method: Solid Stem Augers				Started: 1/27/2023		
Ground Surface Elevation: 617				Completed: 1/27/2023		

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
2.5	LS	16 9 4	.75	CONCRETE (9")	12.8	136	
			2	Medium Compact Moist Brown Sand With Trace Of Crushed Concrete-FILL			
5.0	LS	4 5 5	5.5	Stiff Moist Brown Oxidized CLAY With Some Silt	19.4	122	5030
				Extremely Stiff Moist Brown CLAY With Some Silt	13.1	134	9480
7.5	LS	6 8 11	8	Stiff Moist Brown CLAY With Some Silt	11.6	138	7990
10.0			10	Bottom of Boring at 10'			
12.5							
15.0							
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance SS - 2" I.D. Split Spoon Sample LS - Sectional Line Sample ST - Shelby Tube Sample AS - Auger Sample	w - H ₂ O, % of dry weight d - Bulk Density, pcf qu - Unconfined Compression, psf DP - Direct Push RC - Rock Core	Water Encountered: None At Completion: None Boring No. T-1
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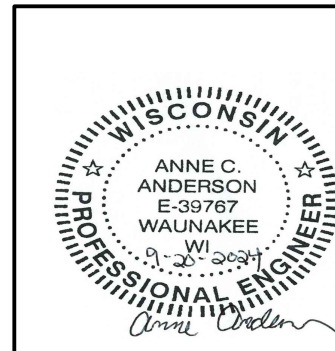
Testing Engineers & Consultants, Inc.

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Fax (248) 588-6232

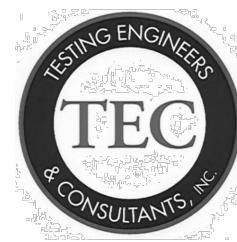
Boring No.: T-4			Job No.: 63229			Project: Detroit Arsenal Manned-Uhmanned Tactical Vehicle Laboratory		
Client: Benham			Location: Warren, Michigan			Drilled By: I. Mickle		
Type of Rig: Truck			Started: 2/2/2023			Completed: 2/2/2023		
Drilling Method: Solid Stem Augers								
Ground Surface Elevation: 618								

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
2.5	LS	11 6 4	25	ASPHALT (3")	9.6	132	
			2	Medium Compact Moist Brown Sand With Crushed Concrete-FILL			
			3	Plastic Moist Gray CLAY With Some Silt			
5.0	LS	2 4 5	8	Firm Moist Brown CLAY With Some Silt LL=52 PL=25 PI=27	21.5	128	
7.5	LS	3 4 6	10	Stiff Moist Brown CLAY With Some Silt	9.9	135	3630
10.0	LS	6 10 14	10	Moved 17 East Due To Utilities Bottom of Boring at 10'	12.0	138	7000
12.5							
15.0							
17.5							
20.0							
22.5							

"N" - Standard Penetration Resistance SS - 2" I.D. Split Spoon Sample LS - Sectional Limer Sample ST - Shelby Tube Sample AS - Auger Sample	w - H ₂ O, % of dry weight d - Bulk Density, pcf qu - Unconfined Compression, pcf DP - Direct Push RC - Rock Core	Water Encountered: None At Completion: None Boring No. T-4
---	--	---



SHEET ID
BB104



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Boring No.: T-7			Job No.: 63229			Project: Detroit Arsenal Manned-Unmanned Tactical Vehicle Laboratory		
Client: Benham						Location: Warren, Michigan		
Type of Rig: Truck						Drilled By: I. Mickle		
Drilling Method: Solid Stem Augers						Started: 2/16/2023		
Ground Surface Elevation: 617						Completed: 2/16/2023		

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu	
2.5	SS	7	1.5	ASPHALT (18")	13.1			
		7						
	SS	4	2	Medium Compact Moist To Wet Crushed Concrete-FILL	25.5	117	3210	
		4						
5.0	SS	3	5.5	Firm Moist Brown Oxidized CLAY With Some Silt	26.3	120	2130	
		4						
	SS	2		7	Stiff Moist Brown CLAY With Some Silt & Occasional Sand Seams	11.1	143	4260
		3						
7.5	SS	7	10	Extremely Stiff Moist Brown CLAY With Some Silt & Occasional Sand Seams	11.4	134	8750	
		9						
	SS	12						
		6						
10.0	SS	11	10	Bottom of Boring at 10'	10.7	138	10150	
		15						
		5						
		11						
12.5		13						
15.0								
17.5								
20.0								
22.5								

"N" - Standard Penetration Resistance
SS - 2" I.D. Split Spoon Sample
LS - Sectional Line Sample
ST - Shelby Tube Sample
AG - Auger Sample

w - H₂O, % of dry weight
d - Bulk Density, pcf
qc - Unconfined Compression, psf
DP - Direct Push
RC - Rock Core

Water Encountered: 2'0"

At Completion: 8'0"

Boring No. T-7

Boring No.: T-10	Job No.: 63229	Project: Detroit Arsenal Manned-Unmanned Tactical Vehicle Laboratory			
Client: Benham			Location: Warren, Michigan		
Type of Rig: Truck			Drilled By: I. Mickle		
Drilling Method: Solid Stem Augers			Started: 2/23/2023		
Ground Surface Elevation: 617			Completed: 2/23/2023		

Depth (ft)	Sample Type	N	Strata Change	Soil Classification	w	d	qu
2.5	LS	3	2	Firm Moist Brown Clay With Some Silt & Sand Seams-FILL	18.0	129	2970
		4					
		5					
	LS	3			16.7	124	
5.0		3	3.5	Loose Moist Brown Sand With Trace Of Gravel & Clayey Seams-FILL	20.5	127	
		2					
	LS	6					
		15					
5.0			4.7	Medium Compact Moist To Wet Brown SAND			
7.5				Bottom of Boring at 4.7'			
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							

*N - Standard Penetration Resistance
 SS - 2" I.D. Split Spoon Sample
 LS - Sectional Line Sample
 ST - Shelby Tube Sample
 AS - Auger Sample

w - H₂O, % of dry weight
 d - Bulk Density, pcf
 qu - Unconfined Compression, pcf
 DP - Direct Push
 RC - Rock Core

Water Encountered: 4'0"

At Completion: Caved In 4'2"

Boring No. T-10

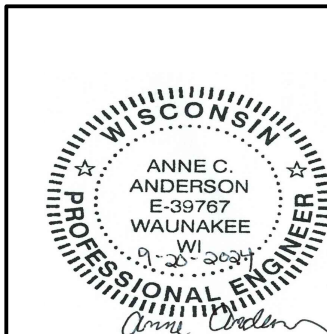
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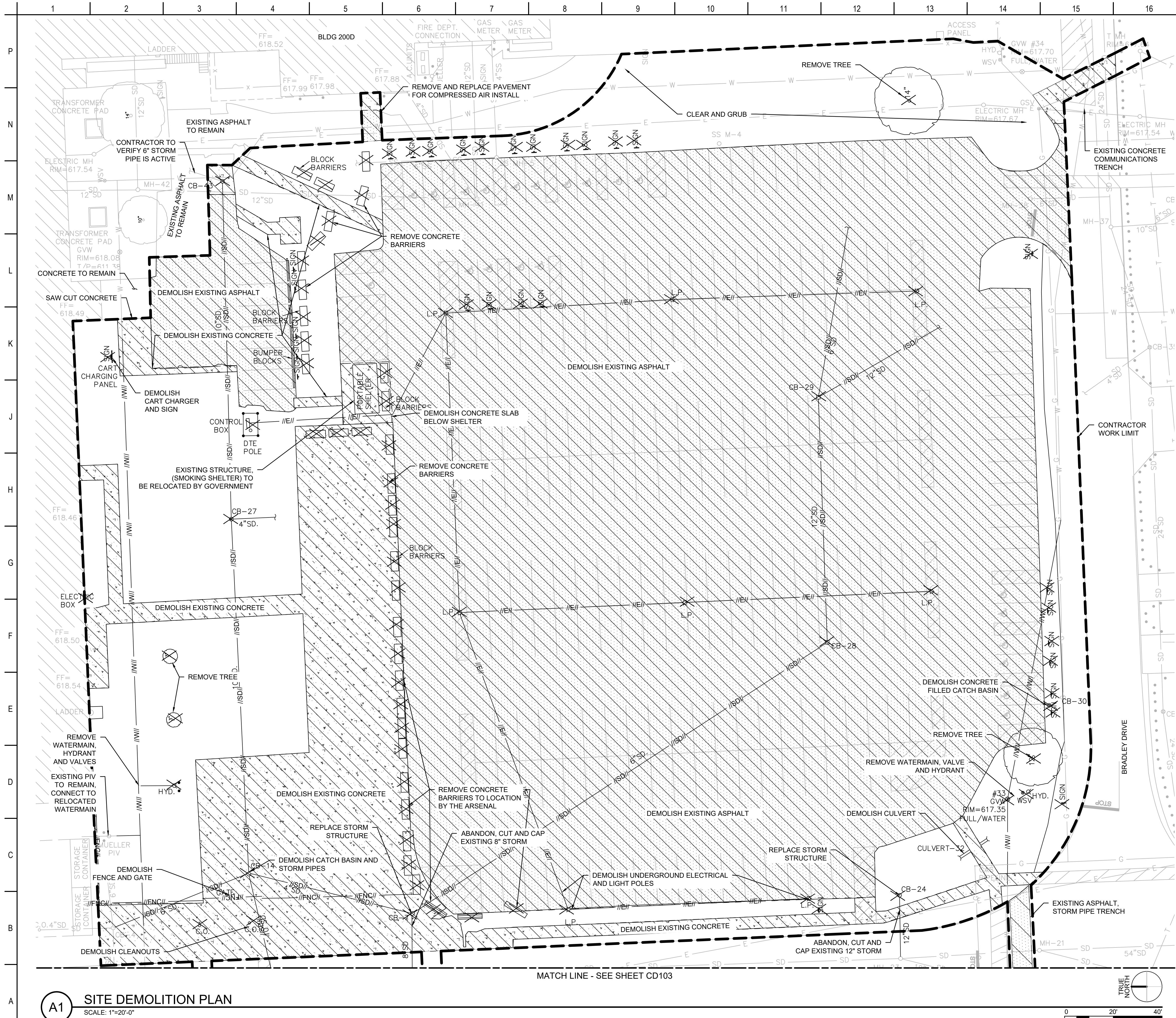
U.S. ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT 600 DR MARTIN LUTHER JR PL LOUISVILLE, KENTUCKY 40202	DESIGN BY: A. ANDERSON	ISSUE DATE: SEPTEMBER 20, 2024
	DRAWN BY: C. JONES	SOLICITATION NO.:
	CHECKED BY: A. SKOG	CONTRACT NO.:
	SUBMITTED BY: M. BUTLER	
	SIZE: M&H PROJECT NO.:	
	ANSID R3246200-222857.01	

JOINT VENTURE TEAM

DETROIT ARSENAL, MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
PZ# 506474
BORING LOGS

SHEET ID
BB105

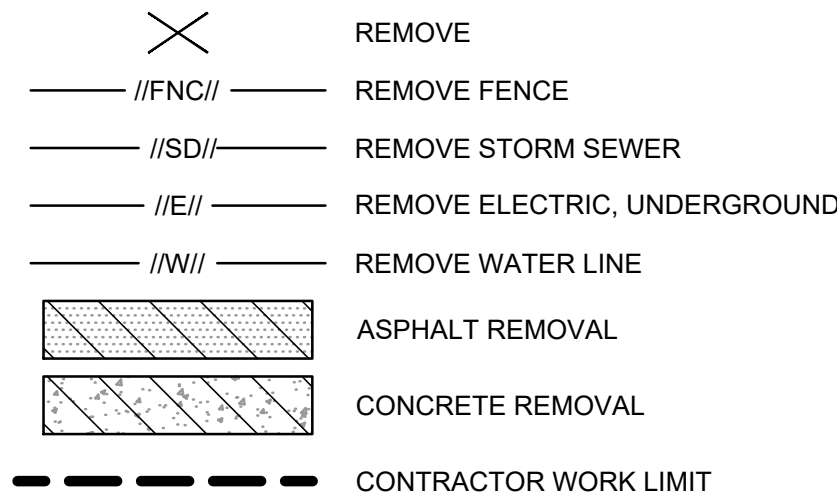




GENERAL SHEET NOTES

1. CONTRACTOR SHALL PROTECT ALL ITEMS NOT SHOWN FOR DEMOLITION.
2. CONTRACTOR SHALL SAW CUT AT ALL PAVEMENT REMOVAL LIMITS. TEMPORARY GRAVEL MAY BE REQUIRED FOR OPEN TRAFFIC OR FOR GENERAL SAFETY.

SHEET LEGEND



**US Army Corps
of Engineers®**

[illegible]

A. ANDERSON	SEPTEMBER 20, 2024
DRAWN BY: C. JONES	SOLICITATION NO.:
CHECKED BY: A. SKOG <i>ASS</i>	CONTRACT NO.:
SUBMITTED BY: M. BUTLER	
SIZE: M&H PROJECT NO.: ANSI D R3246200-222857 01	

LOUISVILLE DISTRICT
600 DR MARTIN LUTHER JR PL
LOUISVILLE, KENTUCKY 40202

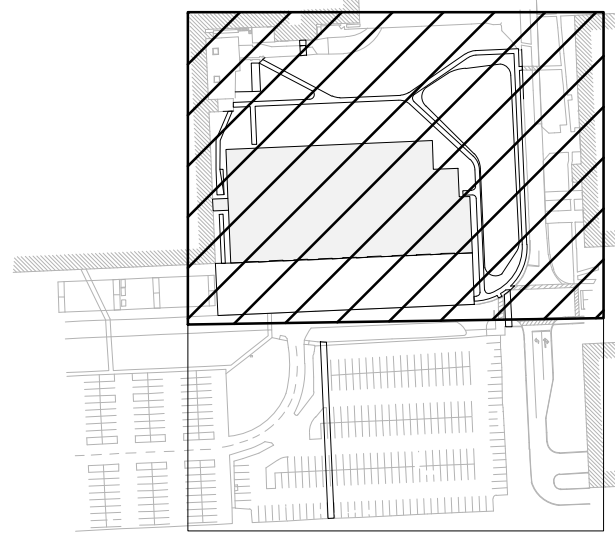


DETROIT ARSENAL, MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE I
FY 2025
P2# 506474

SITE DEMOLITION PLAN

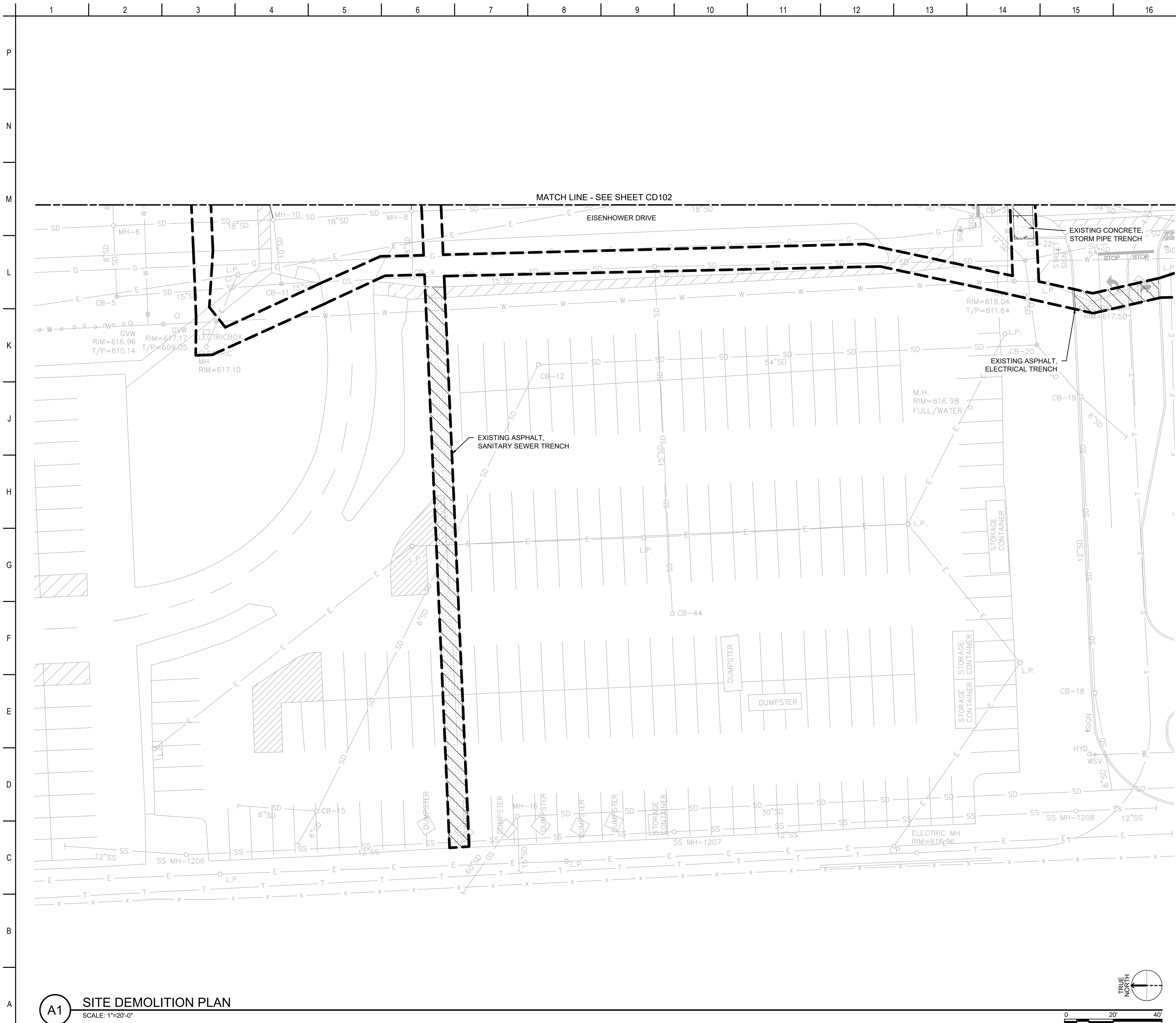
SHEET ID

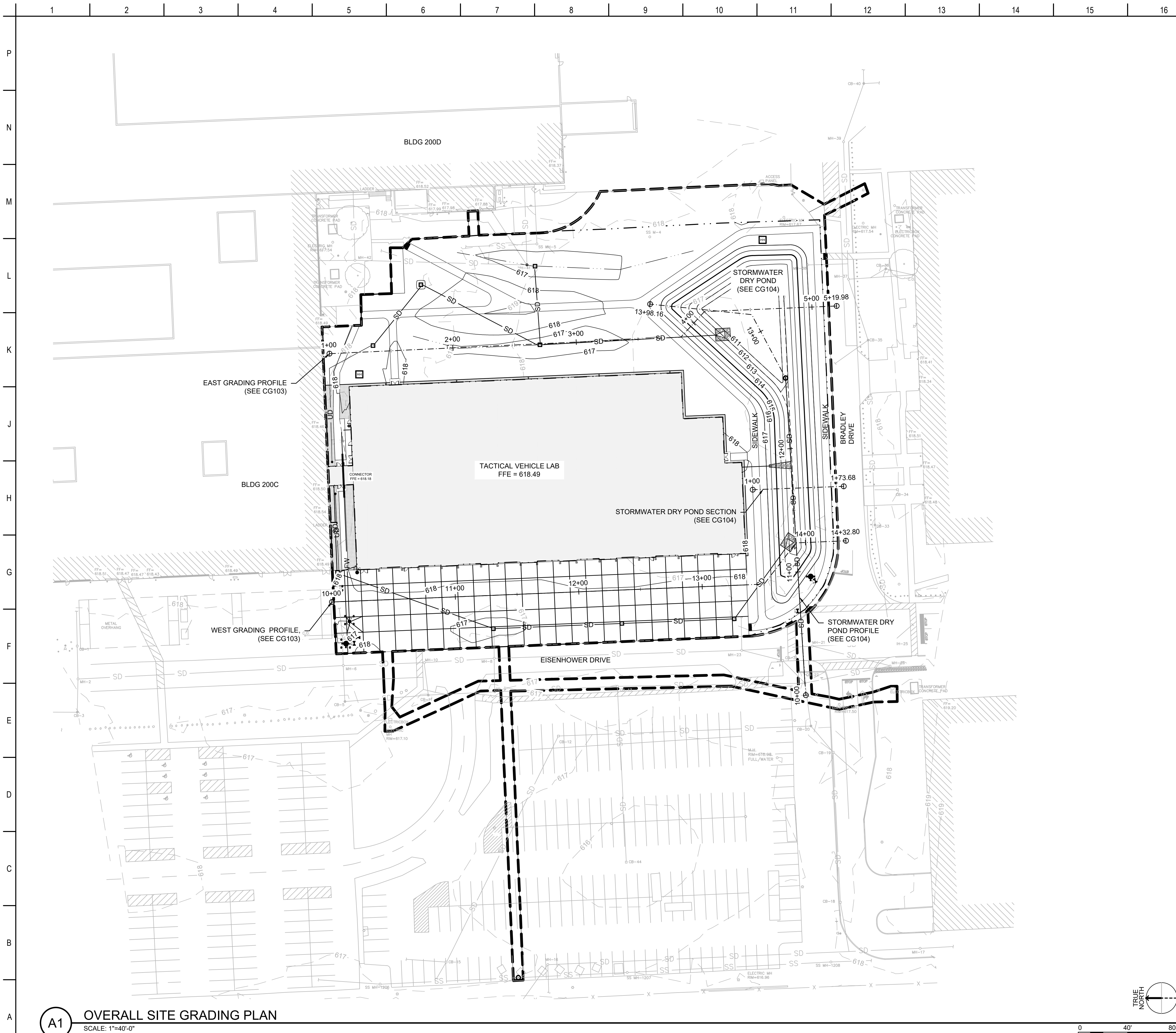
CD102



KEY PLAN

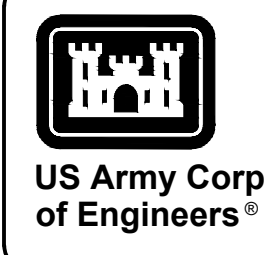







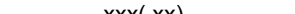
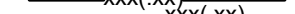




GENERAL SHEET NOTES

1. FOR SITE SLOPES, SEE CG102.
2. FOR SITE PROFILES, SEE CG103.
3. FOR POND PROFILES, SEE CG104.

[illegible]

SHEET LEGEND

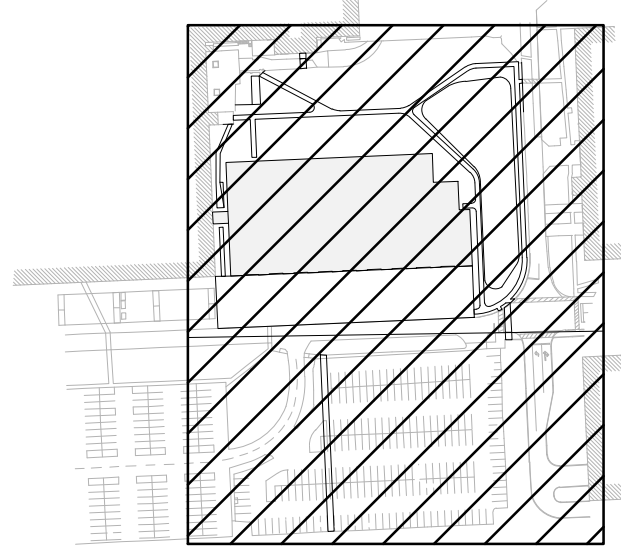
- | | |
|---|------------------------------------|
|  | EXISTING CONTOUR LINES |
|  | PROPOSED CONTOUR LINES |
|  | GRADING LIMITS |
|  | FINISHED / PROPOSED SPOT ELEVATION |
|  | FINISHED / PROPOSED SLOPE |
|  | |

 Benham <small>INDUSTRIES</small> Mead & Hunt <small>LABORATORY</small>	U.S. ARMY CORPS OF ENGINEERS	DESIGN BY: <i>ACA</i>	ISSUE DATE:
	LOUISVILLE DISTRICT	A. ANDERSON	SEPTEMBER 20, 2024
	600 DR MARTIN LUTHER JR PL	DRAWN BY:	SOLICITATION NO.:
	LOUISVILLE, KENTUCKY 40202	C. JONES	
		CHECKED BY:	CONTRACT NO.:
		A. SKOG	
		SUBMITTED BY:	
	M. BUTLER		
	SIZE:	1/8" H PROJECT NO.:	
			ANSI D 152/46200-222857.01

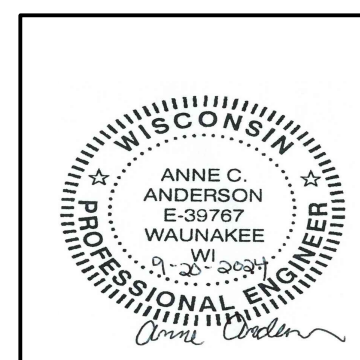


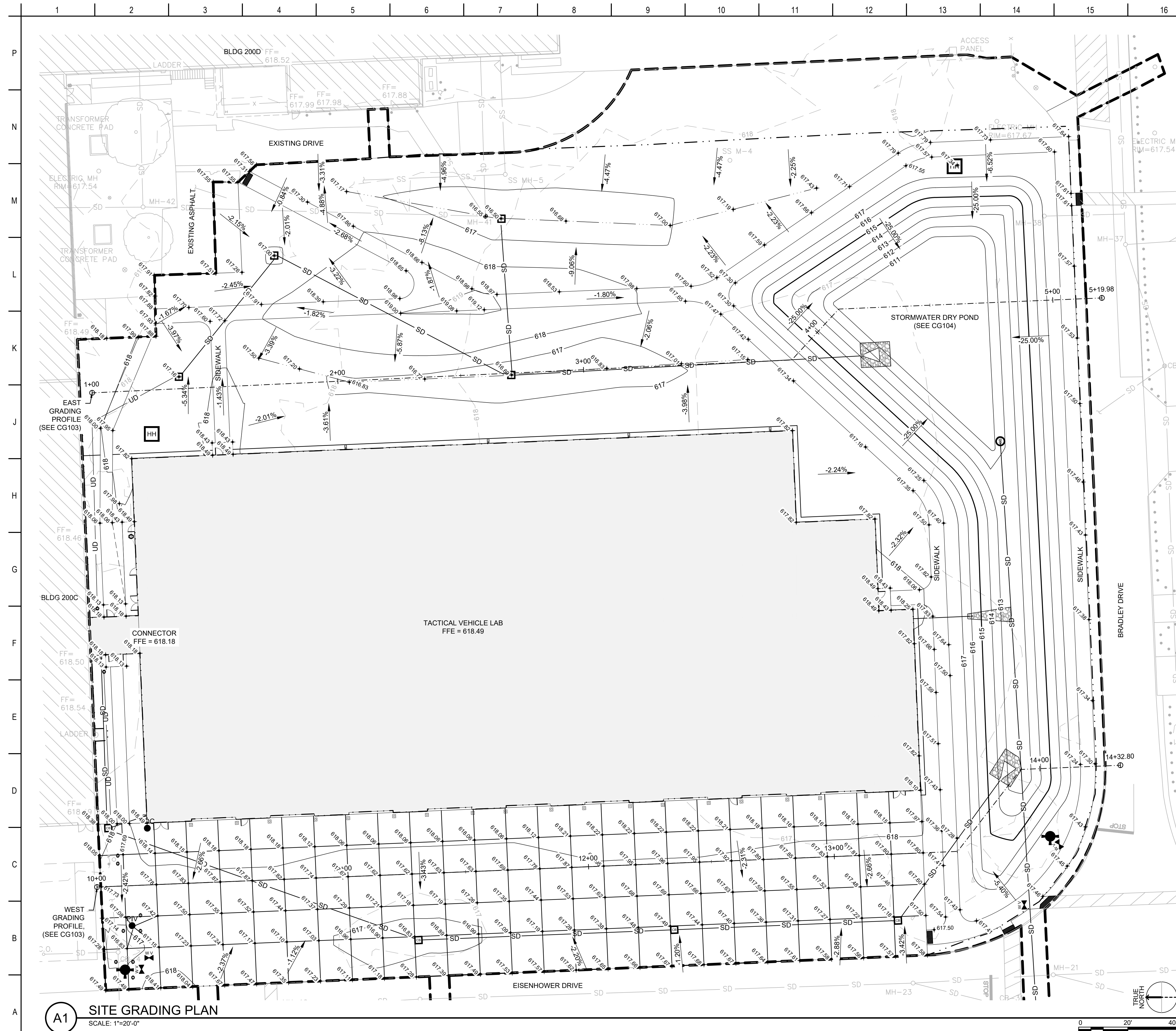
DETROIT ARSENAL, MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
P2# 506474
OVERALL SITE GRADING PLAN

SHEET ID
CG101



KEY PLAN





GENERAL SHEET NOTES


1. FOR SITE PROFILES, SEE CG103.
2. FOR POND PROFILES, SEE CG104.




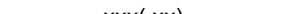
US Army Corps
of Engineers®

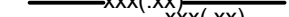
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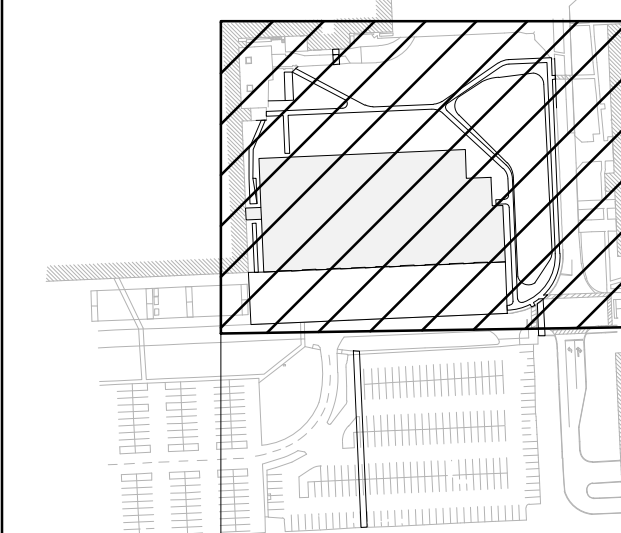

EXISTING CONTOUR LINES


PROPOSED CONTOUR LINES

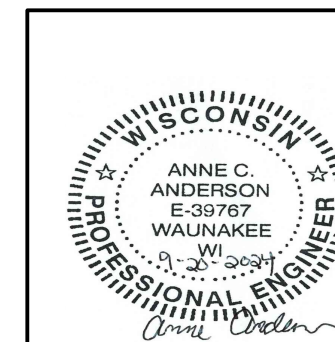

GRADING LIMITS


FINISHED / PROPOSED SPOT ELEVATION


FINISHED / PROPOSED SLOPE



KEY PLAN



U.S. ARMY CORPS OF ENGINEERS
 LOUISVILLE DISTRICT
 600 DR MARTIN LUTHER JR PL
 LOUISVILLE, KENTUCKY 40202

DESIGN BY: A.C.A.
A. ANDERSON
DRAWN BY:
C. JONES
CHECKED BY:
A. SKOG *AJS*
SUBMITTED BY:
M. BUTLER
SIZE: 1/8" & PROJE

DETROIT ARSENAL, MICHIGAN
UNMANNED / UNMANNED TACTICAL VEHICLE LAUNCHER
FY 2025
P2# 506474
SITE GRADING PLAN

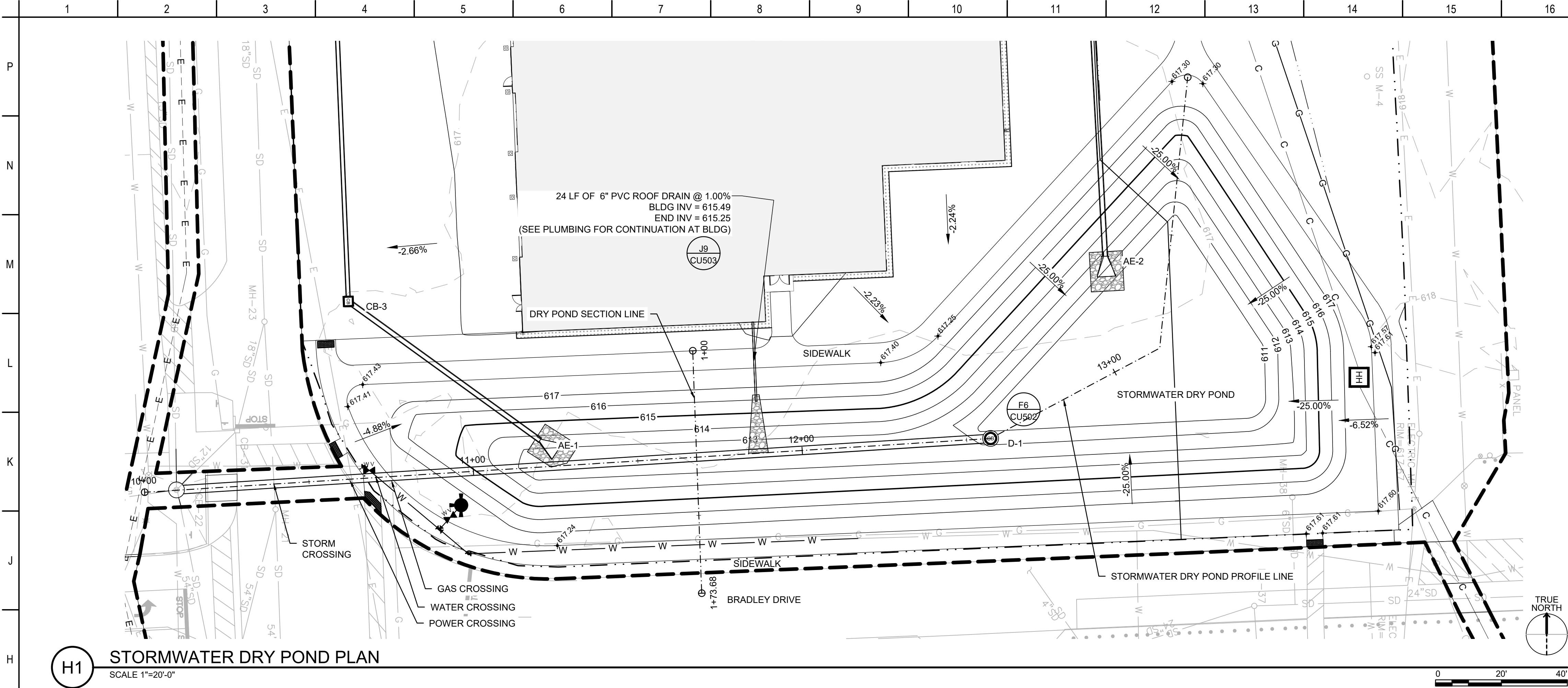
SHEET ID
CG102

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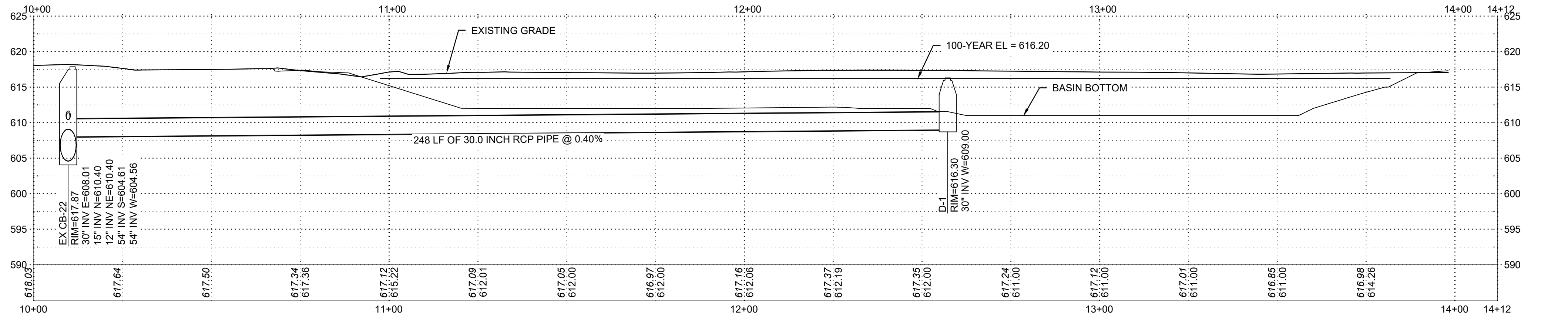
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CERTIFIED FINAL SUBMITTAL

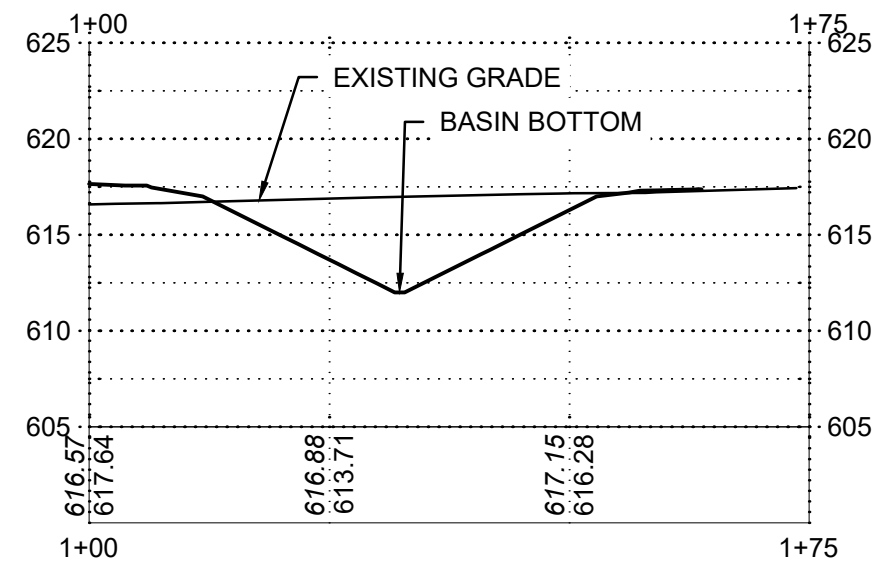
W912QR25R0052_Plans_Vol1-0000



H1 STORMWATER DRY POND PLAN
SCALE 1"=20'-0"



D1 STORMWATER DRY POND PROFILE
SCALE: H 1"=20'-0" V 1"=10'-0"



A7 STORMWATER DRY POND SECTION
SCALE: H 1"=20'-0" V 1"=10'-0"

GENERAL SHEET NOTES

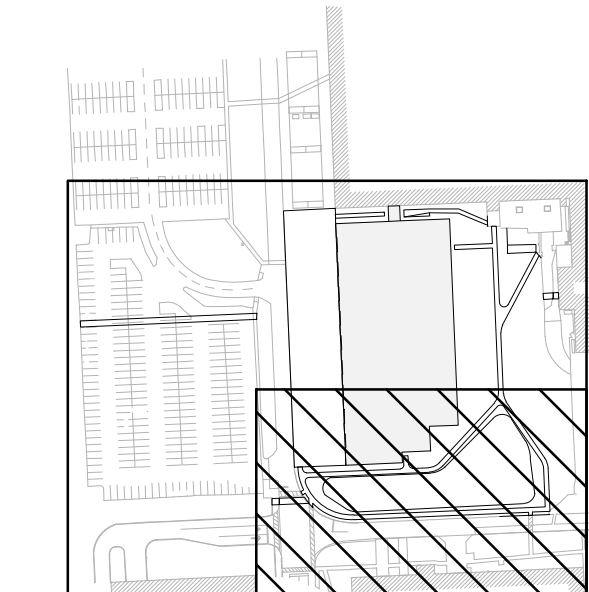
- FOR SITE PROFILES, SEE CG103.
- FOR POND PROFILES, SEE CG104.



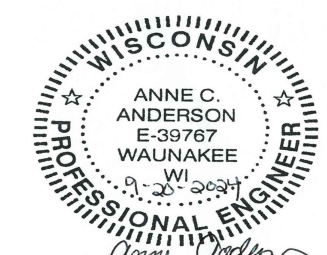
US Army Corps
of Engineers®

SHEET LEGEND

- FIRE HYDRANT
- SANITARY SEWER MANHOLE
- STORM CATCH BASIN
- STORMWATER OVERFLOW STRUCTURE
- HANDHOLE
- WATER VALVE
- GAS
- ELECTRIC, UNDERGROUND
- SANITARY SEWER
- STORM DRAIN
- COMMUNICATIONS LINE
- WATER
- CONTRACTOR WORK LIMIT



KEY PLAN

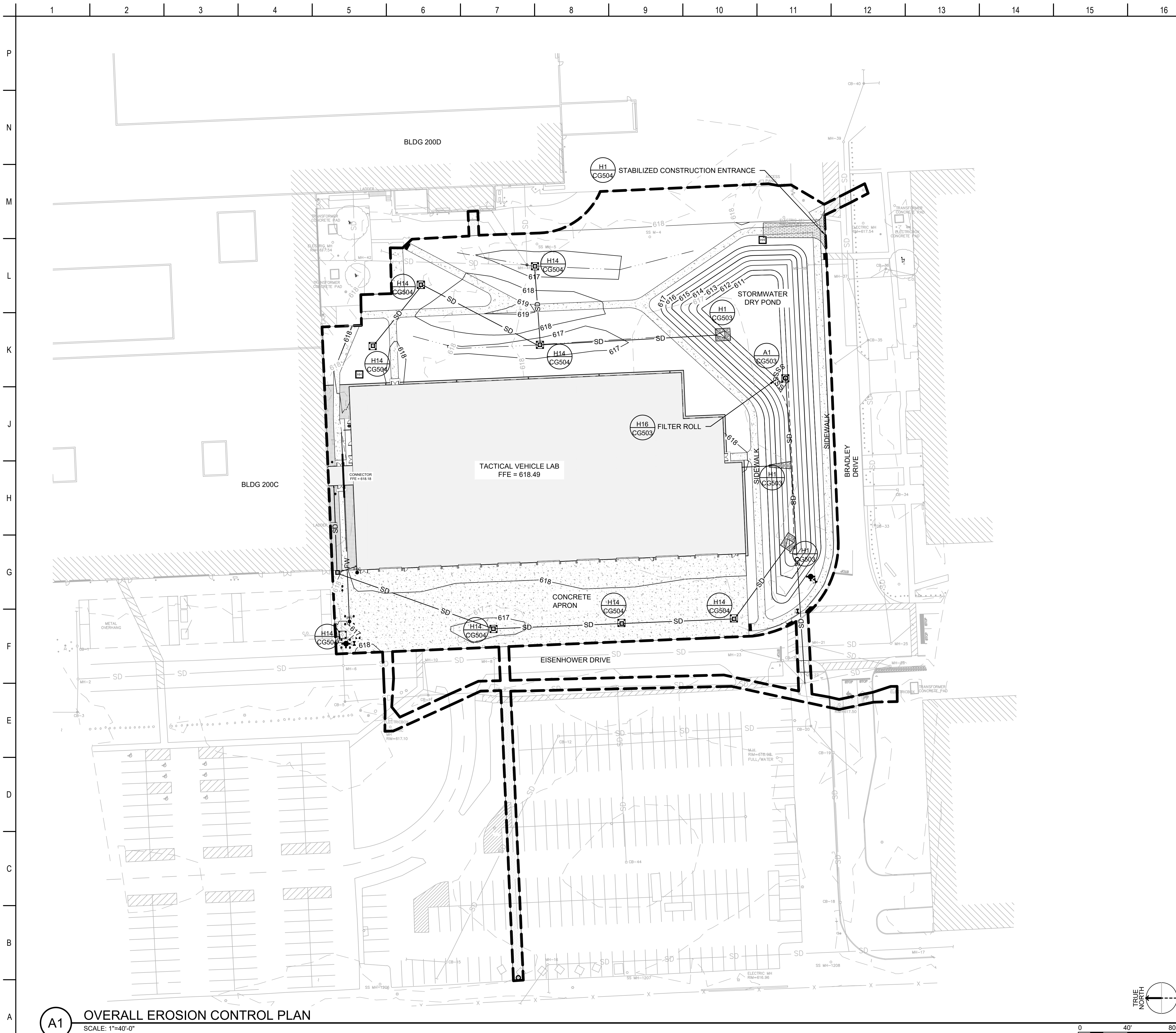


DESIGN BY: A.C.A.	ISSUE DATE: SEPTEMBER 20, 2024
DRAWN BY: C. JONES	SOLICITATION NO.:
CHECKED BY: A. SKOG	CONTRACT NO.:
SUBMITTED BY: M. BUTLER	
SIZE: 1/8" X 11"	M&H PROJECT NO.: IR324R200222857.01
ANSI D: IR324R200222857.01	



DETROIT ARSENAL, MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
PZ# 506474
STORMWATER DRY POND PLAN AND PROFILE

SHEET ID
CG104



A1 OVERALL EROSION CONTROL PLAN
SCALE: 1"=40'-0"

EROSION CONTROL NOTES

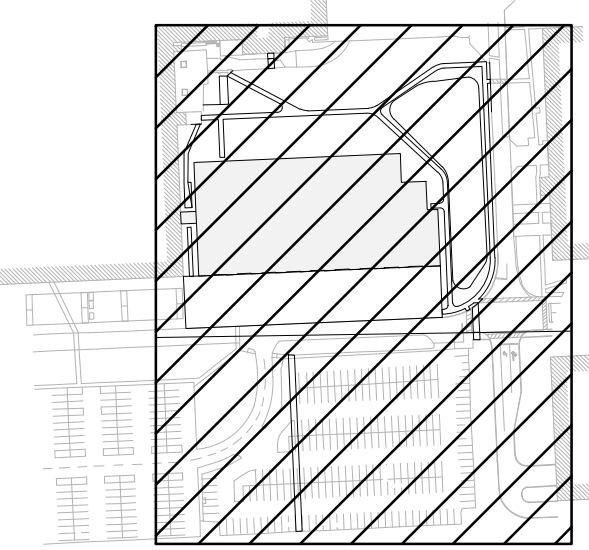
1. ALL WORK SHALL COMPLY WITH THE APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL (SESC) RULES AND REGULATIONS (SOIL EROSION AND SEDIMENTATION CONTROL – 1994 PA 451, PART 91, AS AMENDED, MCL 324.9101 ET SEQ.).
2. ALL EARTH CHANGES OF ONE ACRE OR MORE OR WITHIN 500 FEET OF WATERS OF THE STATE REQUIRE A SESC PERMIT. IF A SESC PERMIT IS REQUIRED THE PROFESSIONAL SERVICES CONTRACTOR (DESIGN CONSULTANT) SHALL PREPARE AN SESC PLAN. THE SESC PLAN SHALL ADDRESS BOTH WIND AND WATER EROSION AND SEDIMENTATION.
3. THE CONTRACTOR SHALL REVIEW THE DESIGN CONSULTANT'S SESC PLAN IN ORDER TO PREPARE AND ISSUE FOR APPROVAL AN "SESC IMPLEMENTATION PLAN", WHICH INDICATES THE CONTRACTOR'S INTENDED IMPLEMENTATION OF THE SESC PLAN FOR THE PROJECT, INCLUDING A SCHEDULE.
4. THE DTMB SESC PROGRAM, UPON APPROVAL OF THE IMPLEMENTATION PLAN, WILL ISSUE THE CONTRACTOR AN "AUTHORIZATION TO PROCEED WITH EARTH CHANGE", WHICH IS TO BE POSTED AT THE JOB SITE. THIS DOCUMENT IS ISSUED IN LIEU OF A PERMIT FROM THE COUNTY OR OTHER LOCAL ENFORCING AGENCY.
5. THE CONTRACTOR SHALL IMPLEMENT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED BY THE PROJECT'S SESC PLAN, SESC IMPLEMENTATION PLAN, DTMB'S SOIL EROSION AND SEDIMENTATION CONTROL GUIDEBOOK, DATED FEBRUARY 2005, AND AS DIRECTED BY THE PROFESSIONAL SERVICES CONTRACTOR, DTMB SESC INSPECTOR, AND/OR DTMB PROJECT DIRECTOR. THE DTMB SESC INSPECTOR SHALL INSPECT THE SITE WEEKLY AND AFTER SIGNIFICANT RAIN EVENTS.
6. THE CONTRACTOR SHALL INSTALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES PRIOR TO OR UPON COMMENCEMENT TO EARTHWORK ACTIVITIES.
7. THE CONTRACTOR WILL PERFORM SWEEPING AS NEEDED TO REMOVE ANY SEDIMENT TRACKED OFF SITE. FREQUENCY OF SWEEPING WILL BE BASED ON SITE CONDITIONS.
8. THE CONTRACTOR WILL PERFORM DUST CONTROL AS NEEDED BASED ON SITE CONDITIONS.
9. DISTURBED AREAS THAT WILL REMAIN IDLE DURING CONSTRUCTION MUST BE TEMPORARILY STABILIZED, INCLUDING SOIL STOCKPILES, USING DTMB SESC BEST MANAGEMENT PRACTICES.
10. THE CONTRACTOR SHALL MAINTAIN AND INSPECT SESC MEASURES THROUGHOUT THE COURSE OF THE PROJECT. RECOMMEND INSPECTING AND MAINTAINING EROSION AND SEDIMENTATION CONTROLS ON A DAILY BASIS. AT A MINIMUM, THE CONTRACTOR SHALL INSPECT AND MAINTAIN SESC MEASURES ONCE A WEEK AND AFTER RAIN EVENTS.
11. THE CONTRACTOR SHALL CORRECT NON-CONFORMING SESC MEASURES WITHIN 24 HOURS, IF WATERS OF THE STATE ARE BEING IMPACTED OR WITHIN 48 HOURS FOR ROUTINE MAINTENANCE ITEMS. OTHER SESC MAINTENANCE SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NEVER MORE THAN FIVE (5) DAYS AFTER DETECTION.
12. THE CONTRACTOR SHALL COMPLETE PERMANENT SOIL EROSION CONTROL MEASURES FOR ANY DISTURBED LAND AREA WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. THE CONTRACTOR SHALL MAINTAIN TEMPORARY CONTROL MEASURES UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IN PLACE AND THE AREA IS STABILIZED.
13. THE CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER PERMANENT SOIL EROSION MEASURES ARE IN PLACE AND THE AREA IS STABILIZED. CARE SHALL BE TAKEN DURING REMOVAL TO PREVENT SOIL EROSION AND SEDIMENTATION.
14. AFTER THE COMPLETION OF THE PROJECT, PERMANENT SESC MEASURES WILL BE MAINTAINED BY THE PROPERTY OWNER.

PROJECT SEQUENCE:

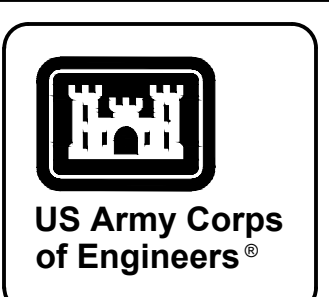
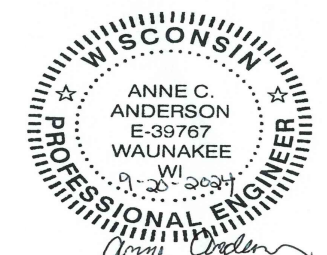
- 1) INSTALL INLET PROTECTION AND SEDIMENT LOG BARRIER
- 2) PIPE DEMOLITION AND UTILITY INSTALLATION
- 3) INSTALL INLET PROTECTION ON NEW INLETS.
- 4) REMOVE PAVEMENT, INSTALL STABILIZED CONSTRUCTION ENTRANCE, MASS GRADING, AND INSTALLATION OF BUILDING FOUNDATION. TEMPORARY SEED IF SITE IS LEFT MORE THAN 5 DAYS.
- 4) ROUGH GRADE BIORETENTION POND WITHOUT THE ENGINEERED SOIL, UNDERDRAIN, AND SAND LAYERS
- 5) FINISH GRADE SITE, INSTALLATION OF SEED AND EROSION MAT.
- 6) ONCE 75% OF SITE IS STABILIZED, INSTALL SAND, UNDERDRAIN, AND ENGINEERED SOIL IN BIORETENTION POND
- 7) INSTALL SEDIMENT LOG ON THE TOE OF THE SLOPE AND RIP RAP AT PIPE OUTFALLS
- 8) PLANT BOTTOM VEGETATION IN BIORETENTION POND
- 9) ONCE VEGETATION IS ESTABLISHED, REMOVE SEDIMENT LOGS, INLET PROTECTION AND RESTORE AS NEEDED

SHEET LEGEND

- INLET PROTECTION H14/CG504
- EXISTING CONTOUR LINES
- PROPOSED CONTOUR LINES
- FILTER ROLL H16/CG503
- STABILIZED CONSTRUCTION ENTRANCE H1/CG504
- CONTRACTOR WORK LIMIT



KEY PLAN



DATE	DESCRIPTION	MARK

DESIGN BY: A.C.A. A. ANDERSON	ISSUE DATE: SEPTEMBER 20, 2024
DRAWN BY: C. JONES	SOLICITATION NO.:
CHECKED BY: A. SKOG A.S.	CONTRACT NO.:
SUBMITTED BY: M. BUTLER	
SIZE: 1/8" x 11"	M&H PROJECT NO.: IR3246200222857.01
ANSI D	

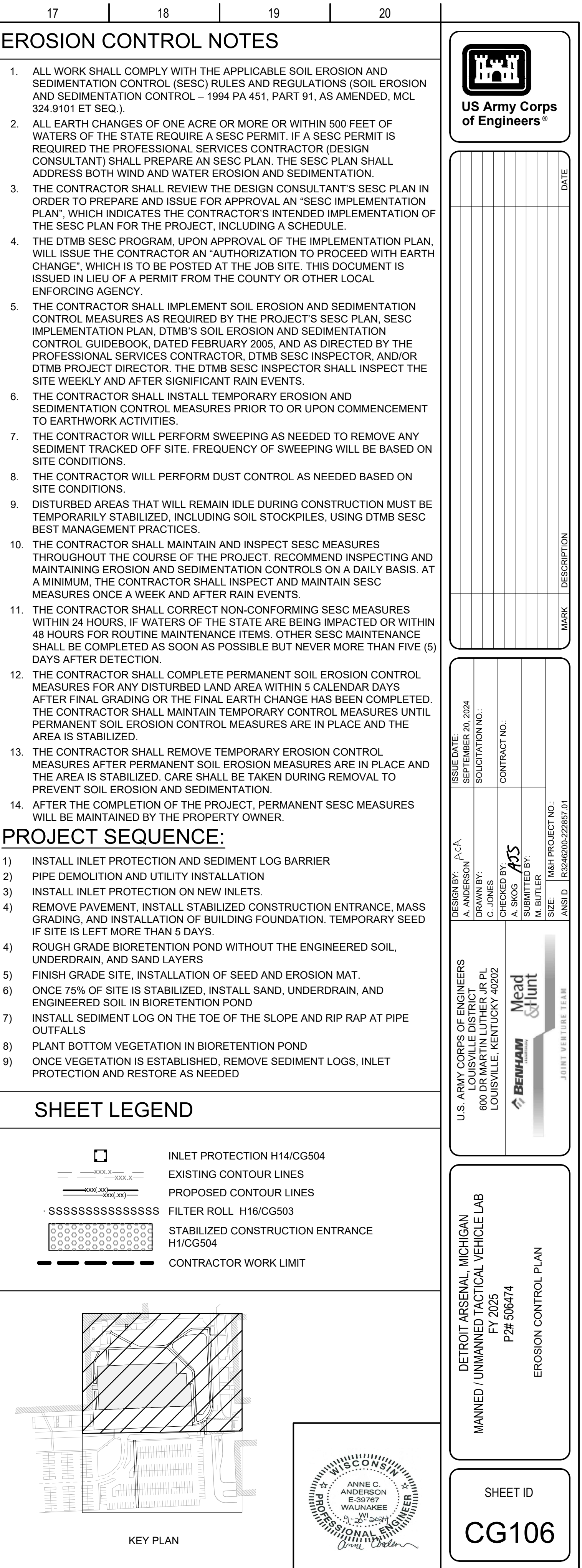
U.S. ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARY W. LUTHER JR. PL.
LOUISVILLE, KENTUCKY 40202

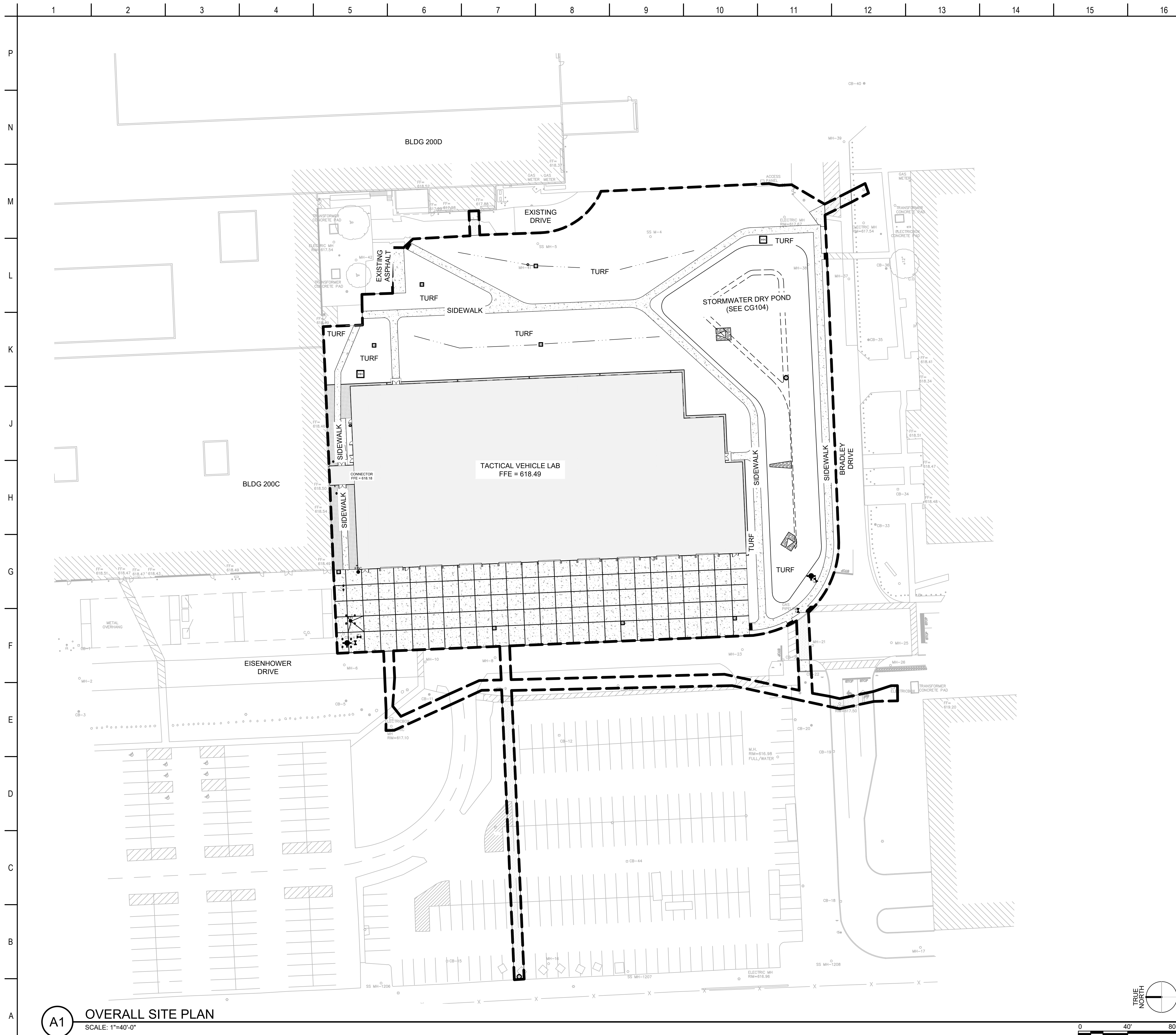
Benham
Mead & Hunt

JOINT VENTURE TEAM

DETROIT ARSENAL MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
P# 506474
OVERALL EROSION CONTROL PLAN

SHEET ID
CG105

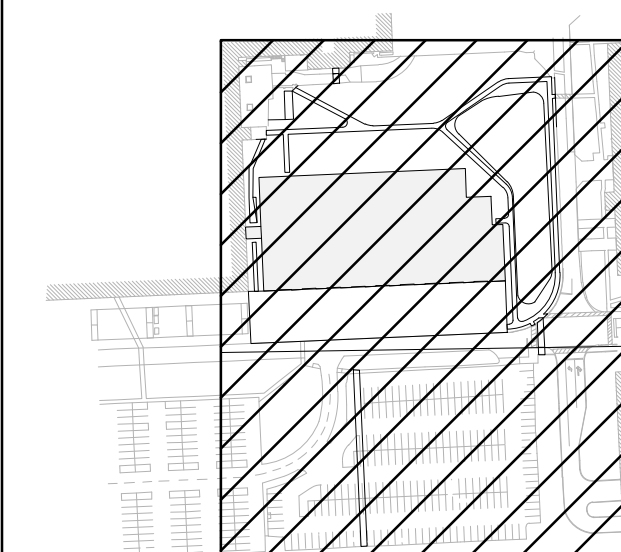
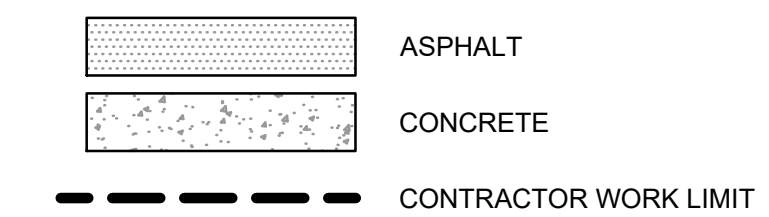




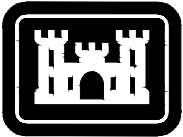
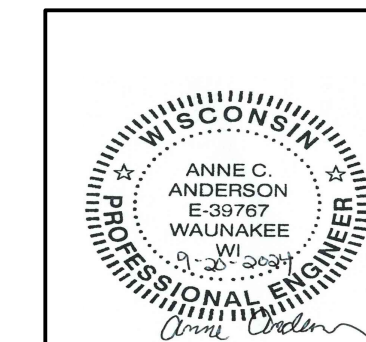
GENERAL SHEET NOTES

1. CONTRACTOR SHALL REPLACE ALL PAVEMENT DISTURBED BY PROJECT. CARE SHALL BE TAKEN TO PROTECT PAVEMENT OUTSIDE OF THE PROJECT LIMIT BOUNDARY.
2. CONTRACTOR SHALL PHASE CONCRETE AND PAVING TO AVOID TRAFFIC DELAYS TO THE EXTENT PRACTICAL.
3. FOR PAVEMENT PATCHING, CONTRACTOR SHALL MATCH PAVEMENT TYPE AND DEPTH OF EXISTING PAVEMENT AS WELL AS COURSE.
4. CONCRETE SIDEWALK JOINTING SHALL BE 5' MINIMUM.
5. ALL PAVEMENT STRIPING DISTURBED SHALL BE RE-ESTABLISHED TO MATCH EXISTING PAINT TYPE AND MARKINGS.

SHEET LEGEND

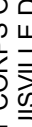


KEY PLAN



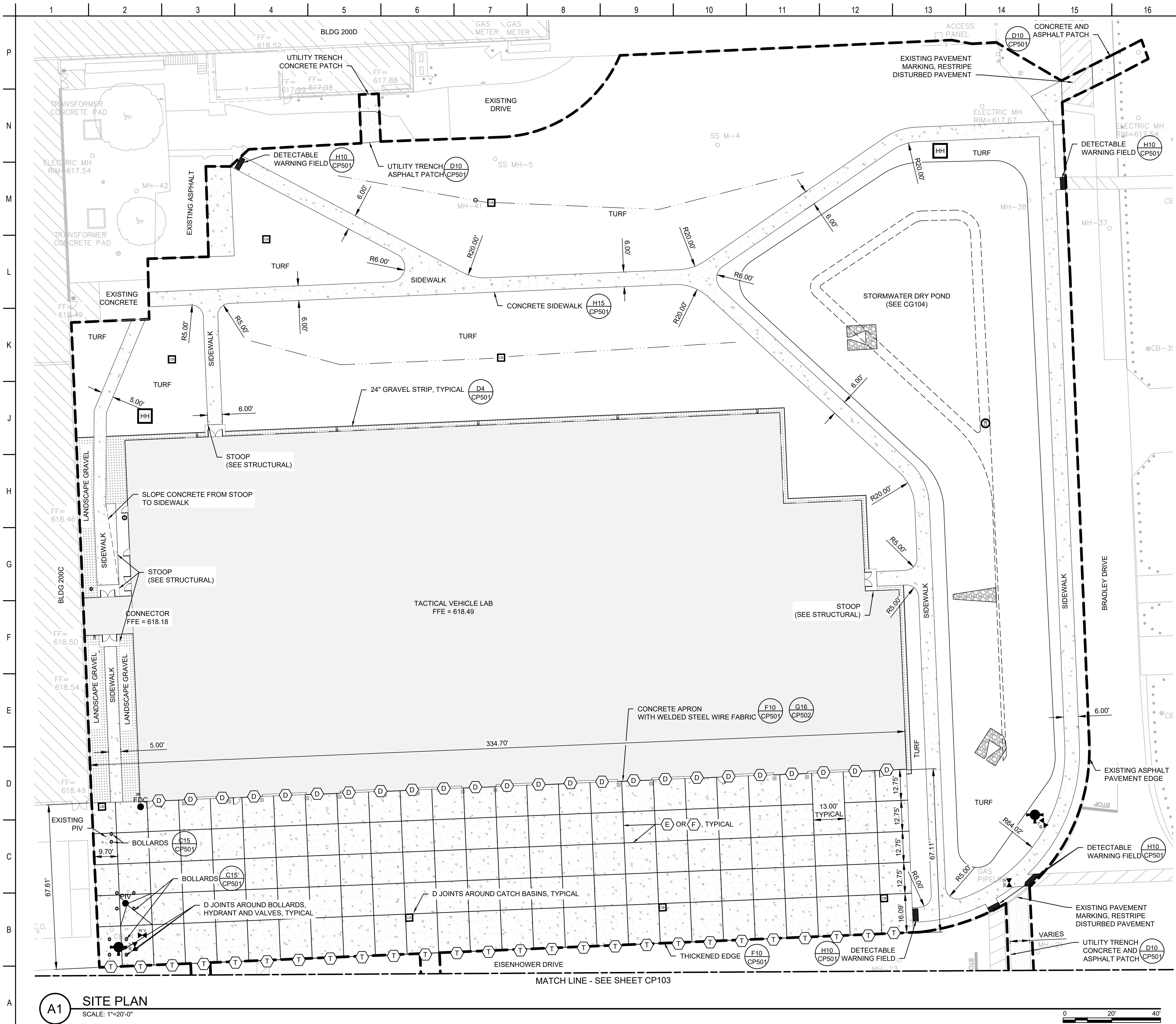
**US Army Corps
of Engineers®**

[illegible]

U.S. ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT 600 DR MARTIN LUTHER JR PL LOUISVILLE, KENTUCKY 40202	DESIGN BY: ACA A. ANDERSON CHECKED BY: C. JONES SUBMITTED BY: A. SIKOG DATE: 11/1/03	ISSUE DATE: SEPTEMBER 20, 2004 SOLICITATION NO.: CONTRACT NO.:
		
JOINT VENTURE TEAM SIZE: 12' x 12' x 12' UTM PROJECT NO: ANSI: R324620-222857.01		

DETROIT ARSENAL, MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
PZ# 506474
OVERALL SITE PLAN

SHEET ID
CP101



A1 SITE PLAN
SCALE: 1"=20'-0"

GENERAL SHEET NOTES

1. CONTRACTOR SHALL REPLACE ALL PAVEMENT DISTURBED BY PROJECT. CARE SHALL BE TAKEN TO PROTECT PAVEMENT OUTSIDE OF THE PROJECT LIMIT BOUNDARY.

2. CONTRACTOR SHALL PHASE CONCRETE AND PAVING TO AVOID TRAFFIC DELAYS TO THE EXTENT PRACTICAL.

3. FOR PAVEMENT PATCHING, CONTRACTOR SHALL MATCH PAVEMENT TYPE AND DEPTH OF EXISTING PAVEMENT AS WELL AS COURSE.

4. CONCRETE SIDEWALK JOINTING SHALL BE 5' MINIMUM.

5. ALL PAVEMENT STRIPING DISTURBED SHALL BE RE-ESTABLISHED TO MATCH EXISTING PAINT TYPE AND MARKINGS.

SHEET KEY NOTES

D EXPANSION JOINT

E CONSTRUCTION JOINT

F SAWED CONTRACTION JOINT

T THICKENED EDGE

K12

CP502

G1

CP502

G1

CP502

G1

CP502

F10

CP502

SHEET LEGEND

ASPHALT

CONCRETE

CONTRACTOR WORK LIMIT

KEY PLAN

WISCONSIN

ANNE C. ANDERSON

REGISTERED PROFESSIONAL ENGINEER

NO. 1000000000

WISCONSIN

US Army Corps of Engineers

ISSUE DATE: SEPTEMBER 20, 2024

SOLICITATION NO.:

CONTRACT NO.:

DESIGN BY: A. ANDERSON

DRAWN BY: C. JONES

CHECKED BY: A. SKOG

SUBMITTED BY: M. BUTLER

SIZE: 11x17

PROJECT NO.:

ANSID: R3246200222857.01

U.S. ARMY CORPS OF ENGINEERS

LOUISVILLE DISTRICT

600 DR. MARTIN LUTHER JR. PL.

LOUISVILLE, KENTUCKY 40202

Meade & Hunt

ENGINEERS

DETROIT ARSENAL MICHIGAN

MANNED / UNMANNED TACTICAL VEHICLE LAB

FY 2025

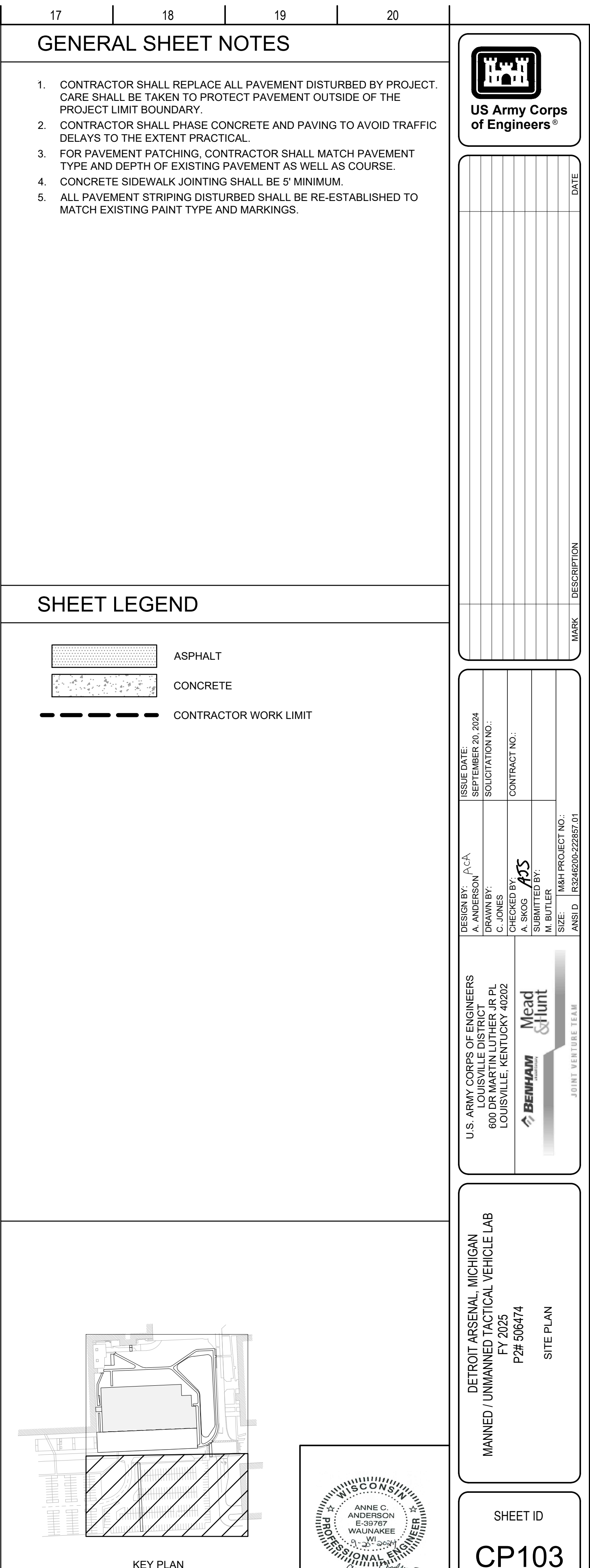
P# 506474

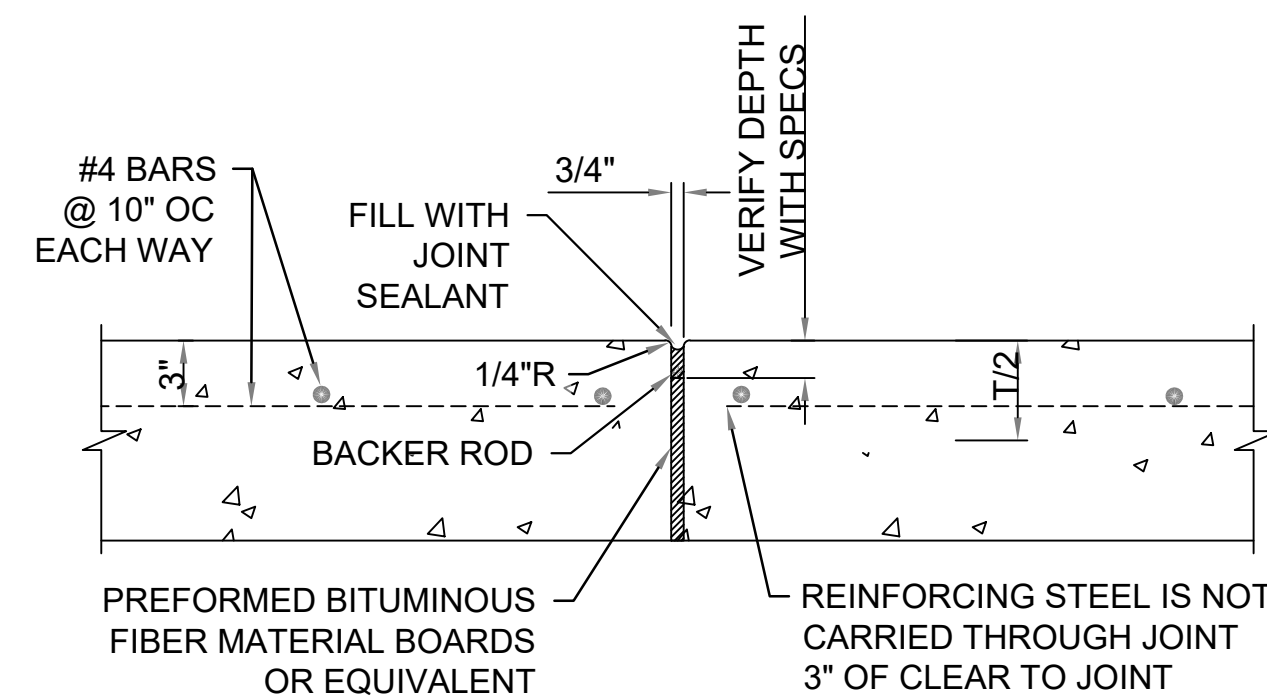
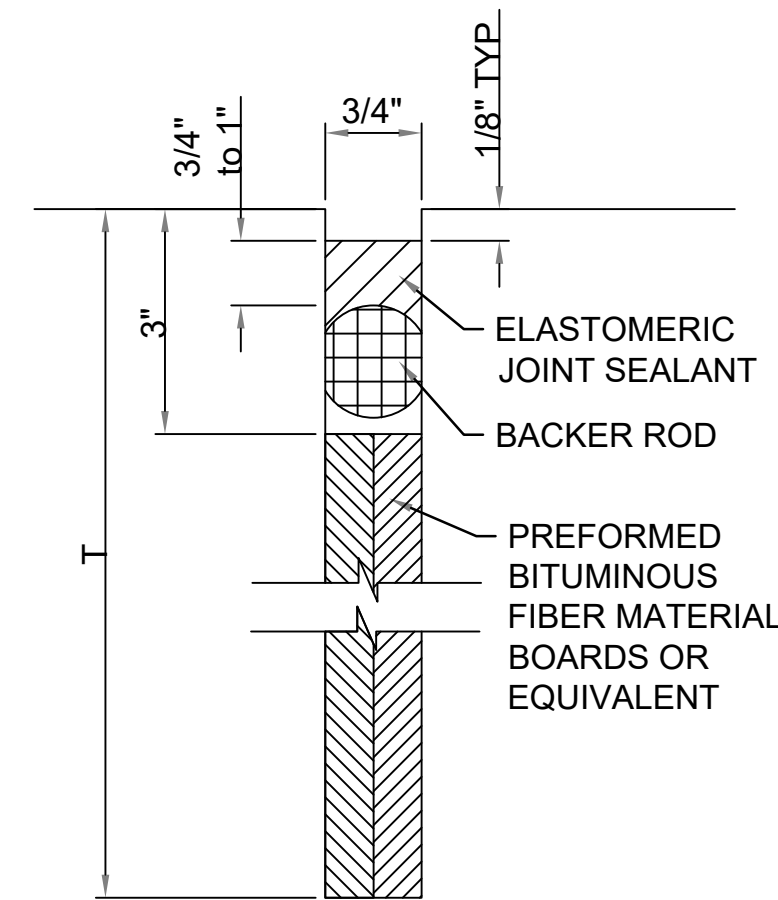
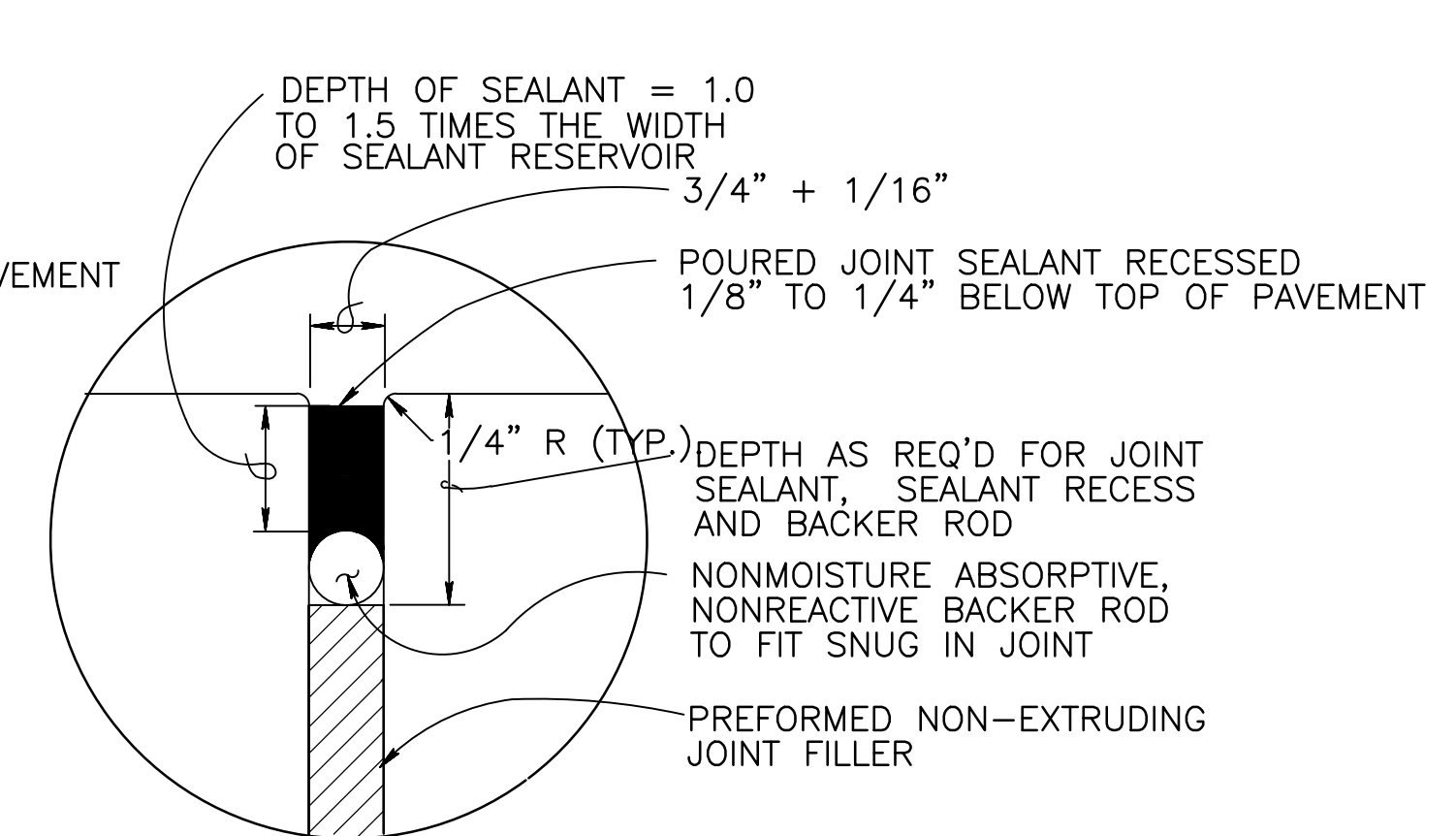
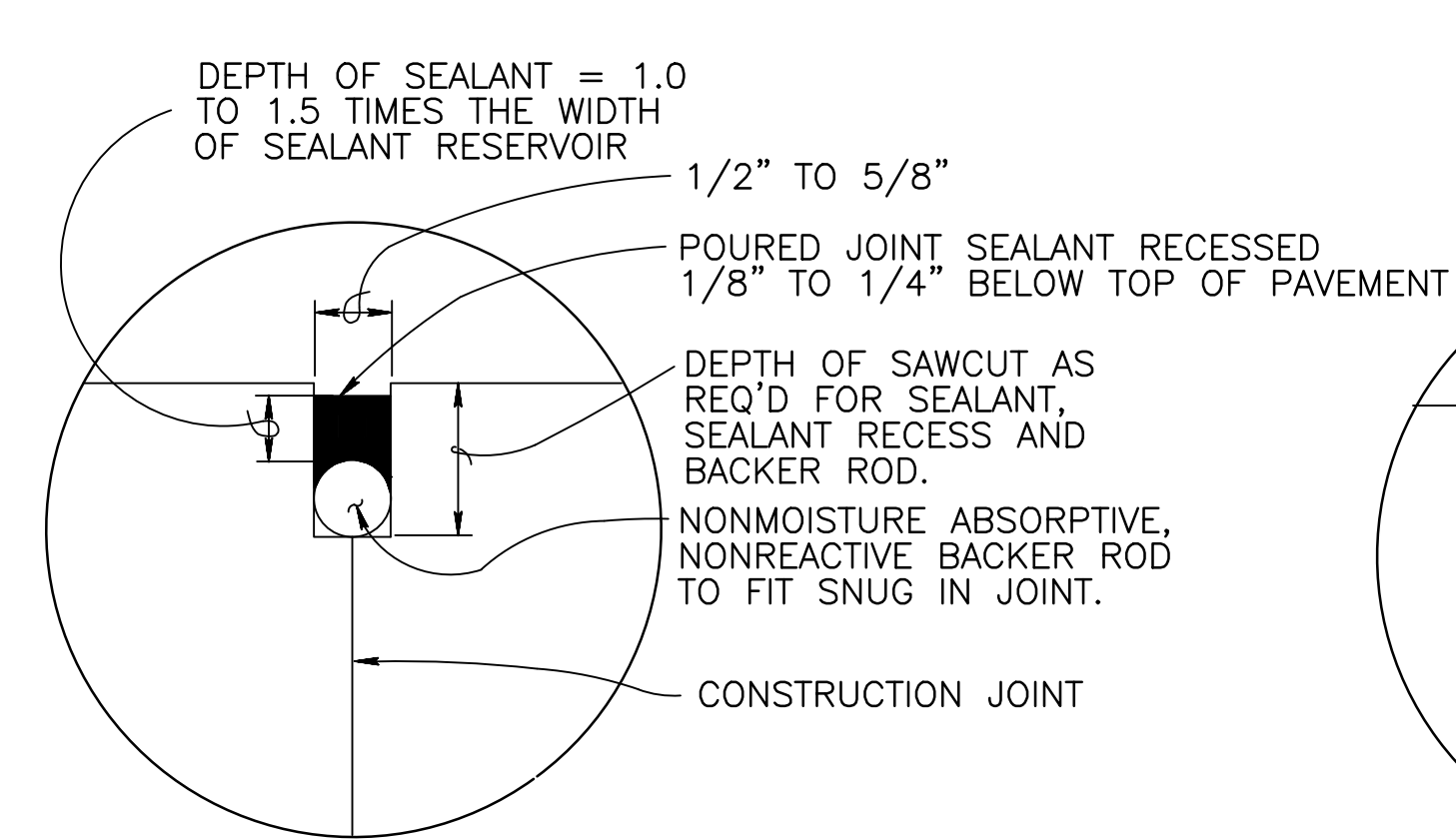
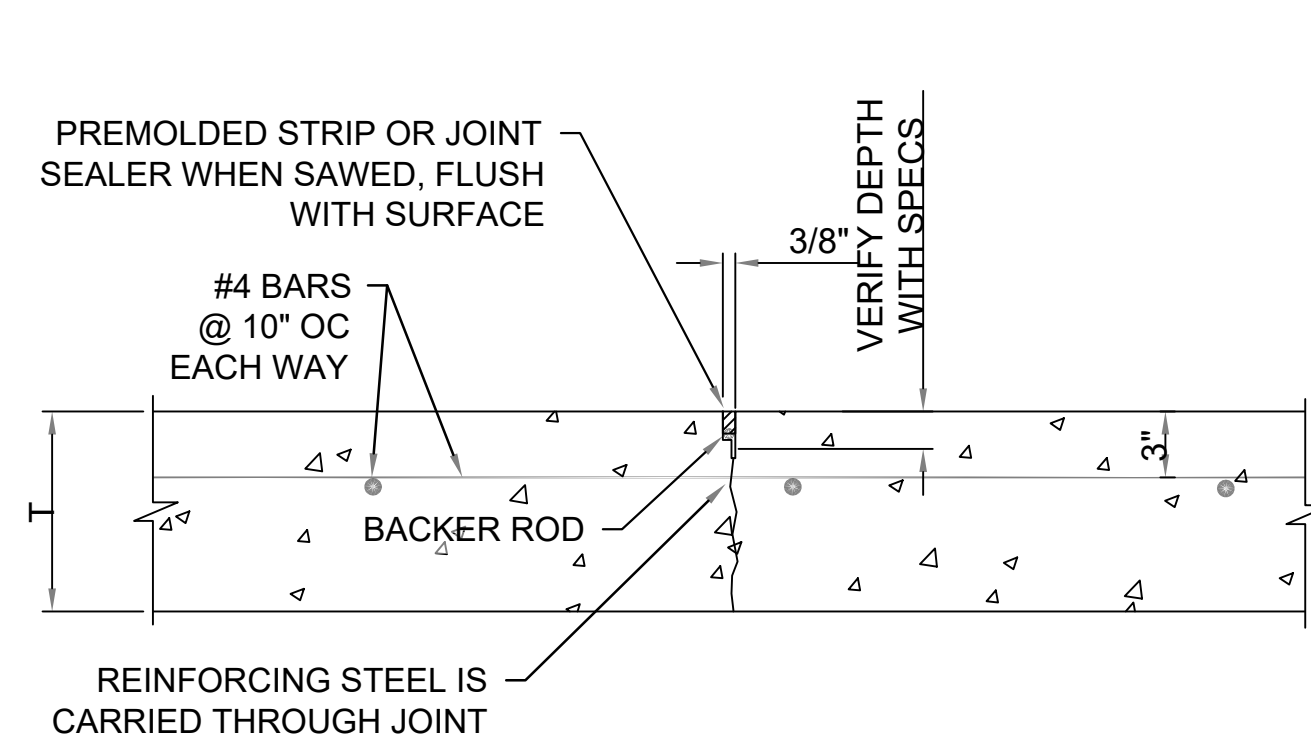
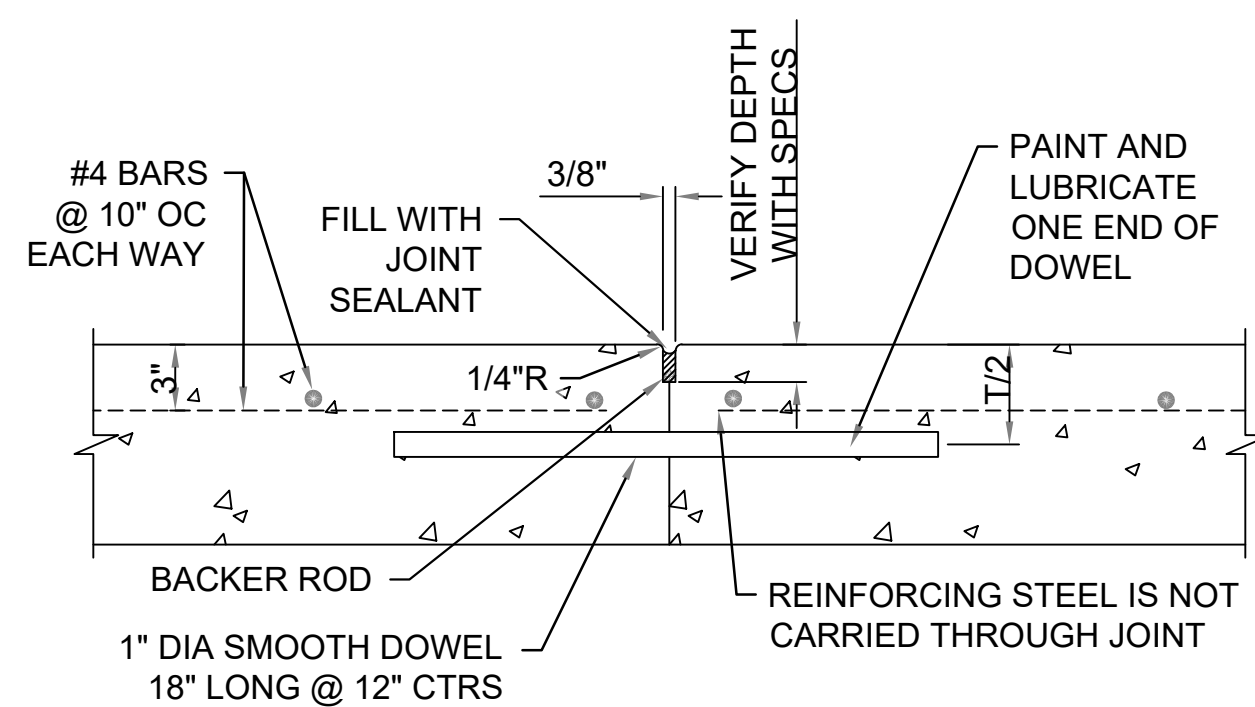
SITE PLAN

SHEET ID

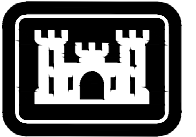
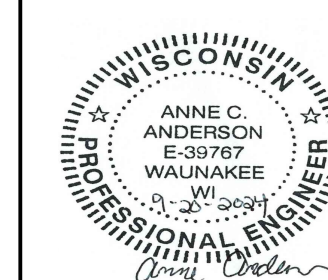
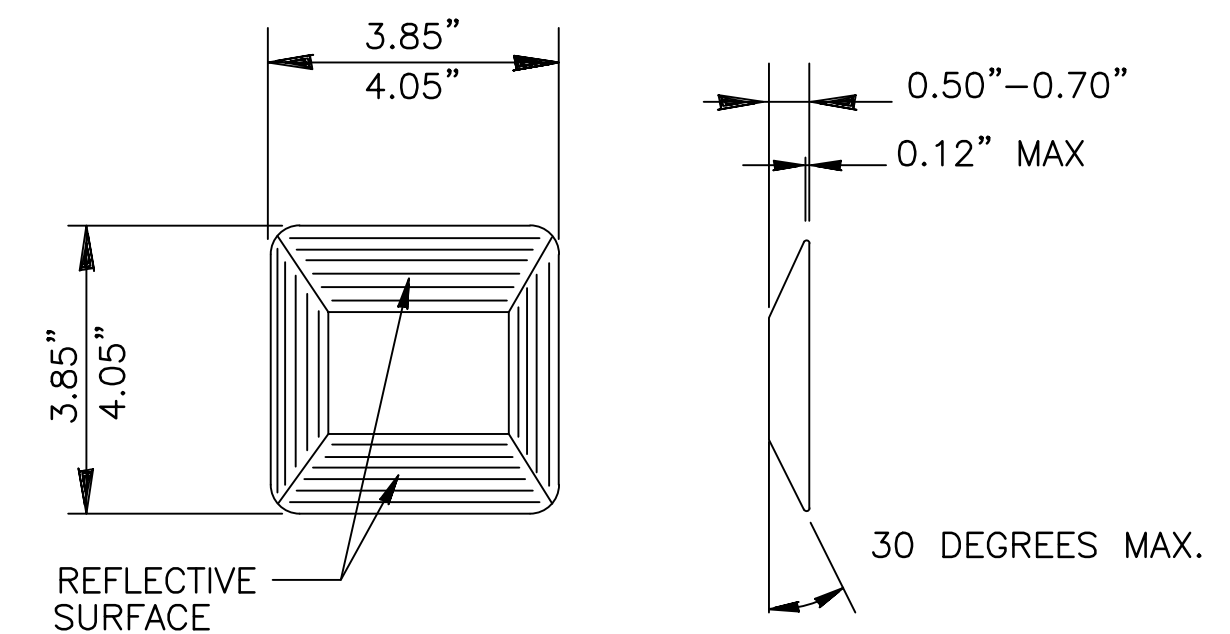
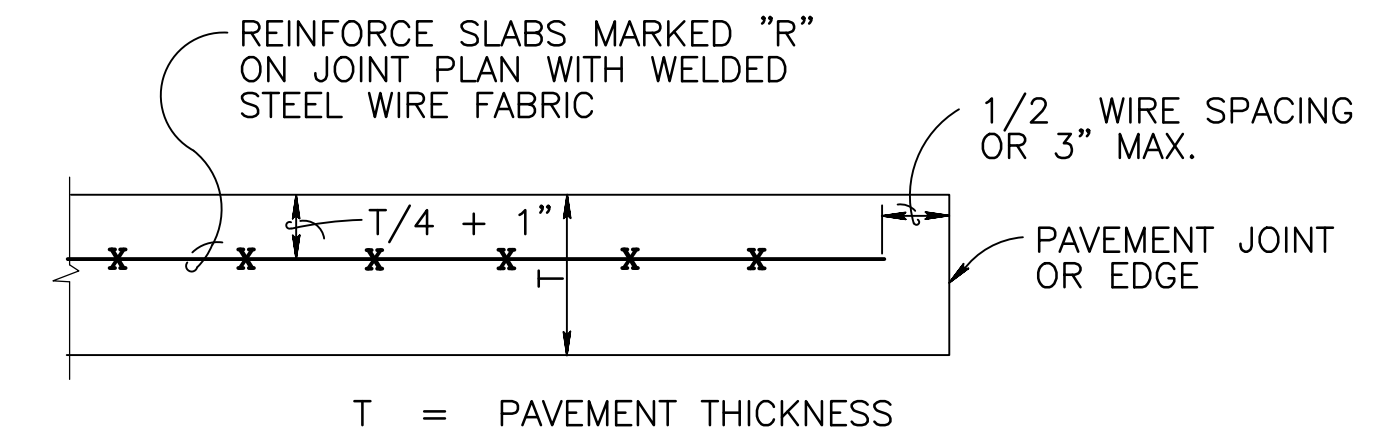
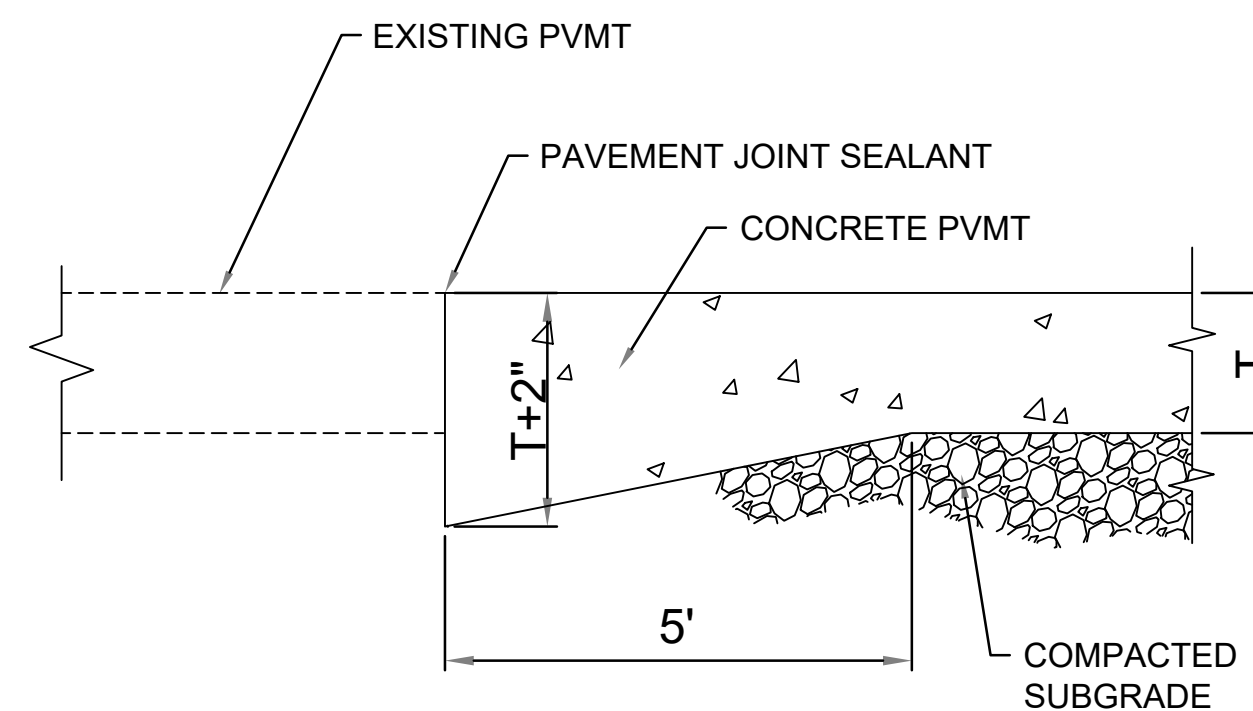
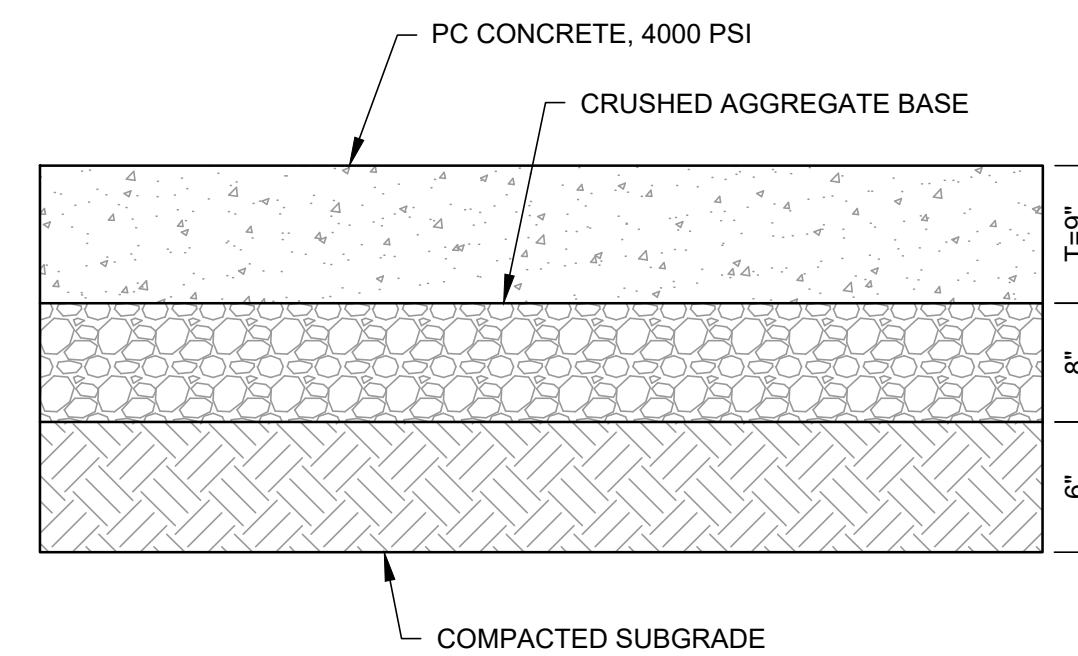
CP102


ARIMS: 200A Disposition: Maintain for 15yrs after construction





G1 PAVEMENT JOINT DETAILS
NOT TO SCALE

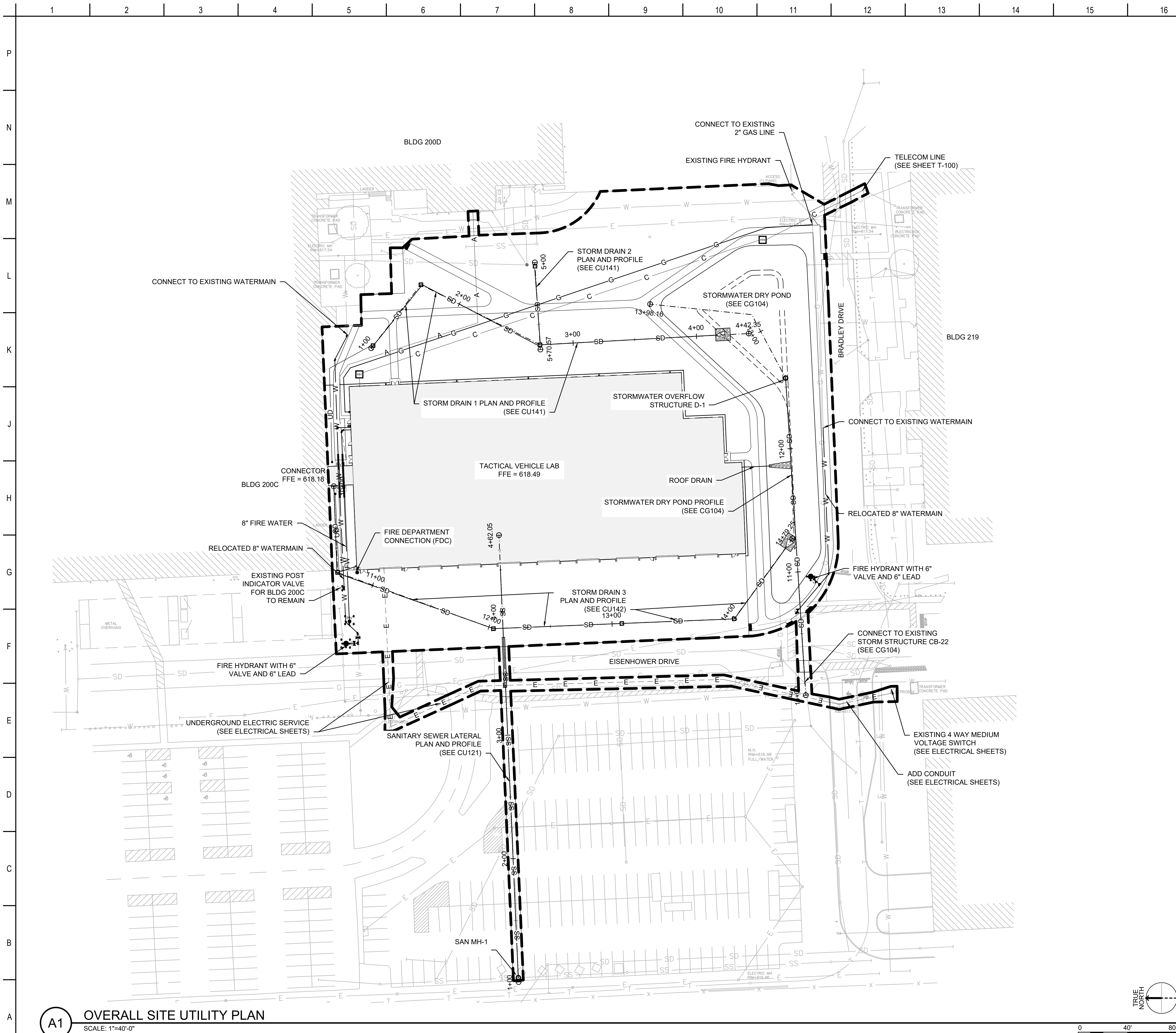
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 BENHAM & Hunt JOINT VENTURE TEAM	U.S. ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT 800 DR MARTIN LUTHER JR PL LOUISVILLE, KENTUCKY 40002	DESIGN BY: <i>ACA</i> A. ANDERSON	ISSUE DATE: SEPTEMBER 20, 2024
		DRAWN BY: CHECKED BY: <i>A35</i> A. SROG. SUBMITTED BY: M. BUTLER	SOLICITATION NO.: CONTRACT NO.:
		SIZE: 1/8"=1'-0" ANS D R3246200-222857.01	

DETROIT ARSENAL MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
P2# 506474
SITE DETAILS

SHEET ID

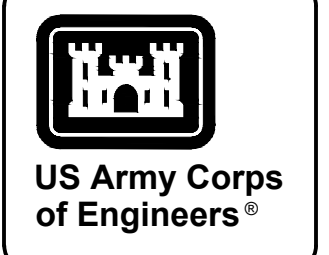
CP502



A1 OVERALL SITE UTILITY PLAN
SCALE: 1"=40'-0"

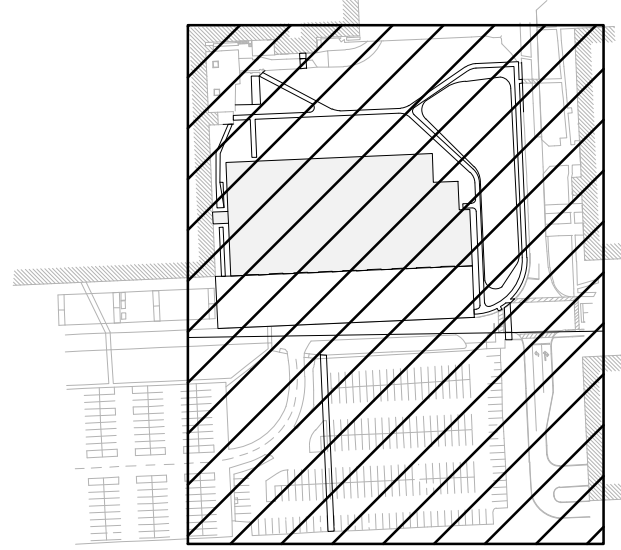
GENERAL SHEET NOTES

1. CONTRACTOR SHALL EXPOSE ALL EXISTING UTILITIES BEFORE INSTALLING UTILITY CROSSINGS TO VERIFY THERE IS NO CONFLICT.
2. CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION OF UTILITY OWNERS PRIOR TO CROSSING VARIOUS UTILITIES.

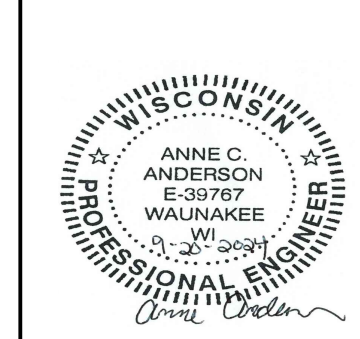


SHEET LEGEND

- FIRE HYDRANT
- SANITARY SEWER MANHOLE
- STORM CATCH BASIN
- STORMWATER OVERFLOW STRUCTURE
- HANDHOLE
- WATER VALVE
- UNDERGROUND COMPRESSED AIR
- GAS
- ELECTRIC, UNDERGROUND
- SANITARY SEWER
- STORM DRAIN
- DRAIN TILE
- COMMUNICATIONS LINE
- FIRE WATER
- WATER



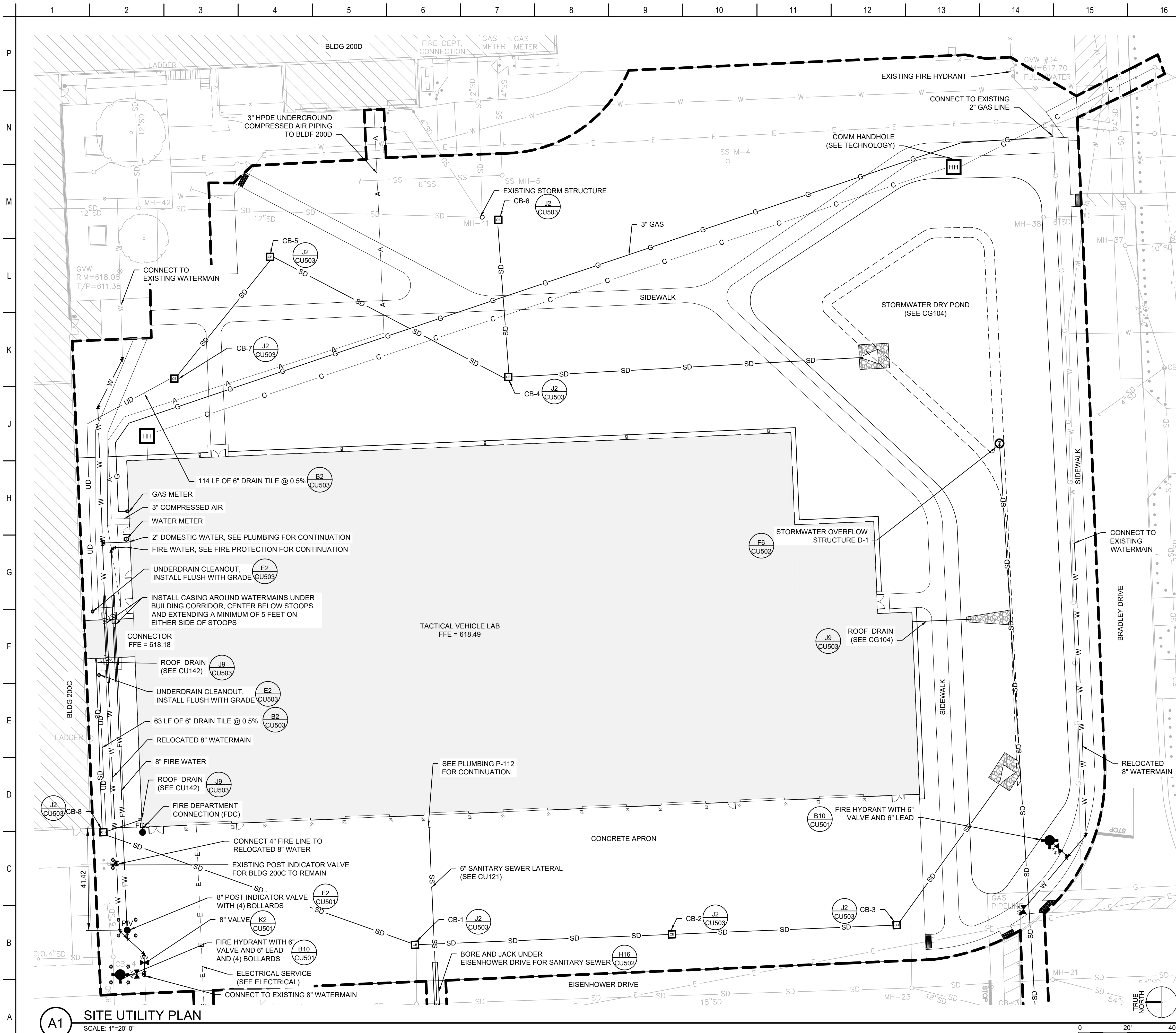
KEY PLAN



DESIGN BY: A.C.A.	ISSUE DATE: SEPTEMBER 20, 2024
DRAWN BY: C. JONES	SOLICITATION NO.:
CHECKED BY: A. SKOG	CONTRACT NO.:
SUBMITTED BY: M. BUTLER	
SIZE: 1/8" x 11"	TM&H PROJECT NO.: RS242020-222857-01
ANSI D: RS242020-222857-01	

DETROIT ARSENAL MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
PZ# 506474
OVERALL SITE UTILITY PLAN

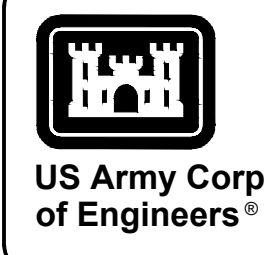
SHEET ID
CU101



A1 SITE UTILITY PLAN
SCALE: 1"=20'-0"

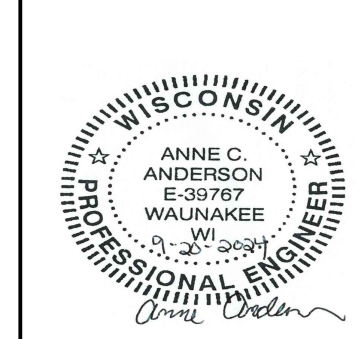
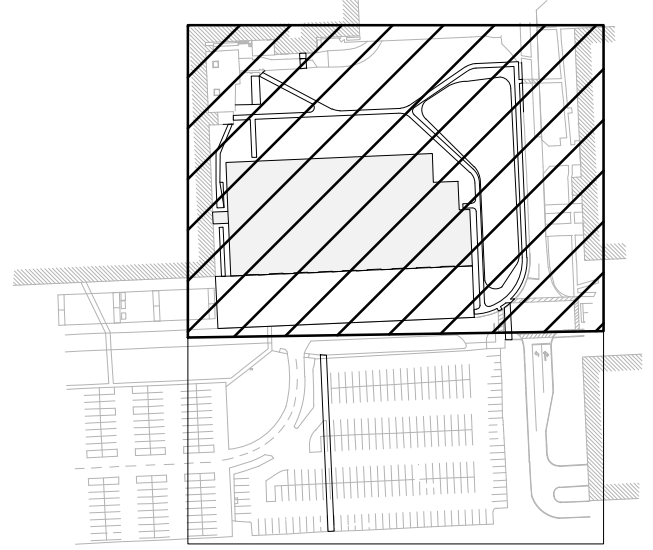
GENERAL SHEET NOTES

1. CONTRACTOR SHALL EXPOSE ALL EXISTING UTILITIES BEFORE INSTALLING UTILITY CROSSINGS TO VERIFY THERE IS NO CONFLICT.
2. CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION OF UTILITY OWNERS PRIOR TO CROSSING VARIOUS UTILITIES.



SHEET LEGEND

- FIRE HYDRANT
- SANITARY SEWER MANHOLE
- STORM CATCH BASIN
- STORMWATER OVERFLOW STRUCTURE
- HANDHOLE
- WATER VALVE
- UNDERGROUND COMPRESSED AIR
- GAS
- ELECTRIC, UNDERGROUND
- SANITARY SEWER
- STORM DRAIN
- DRAIN TILE
- COMMUNICATIONS LINE
- FIRE WATER
- WATER



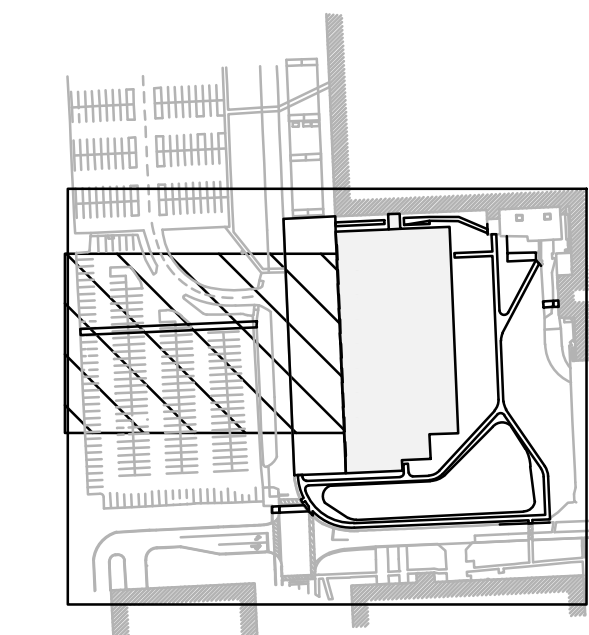
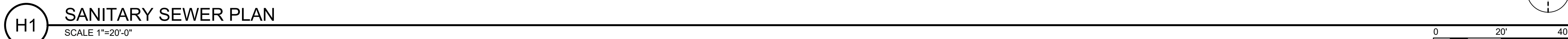
DESIGN BY: A.C.A.
DRAWN BY: A. ANDERSON
CHECKED BY: C. JONES
SUBMITTED BY: A. SKOG
M&H PROJECT NO.: RS324200-222857-01
ANSI D 15.2-2004

U.S. ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER JR. PL.
LOUISVILLE, KENTUCKY 40202

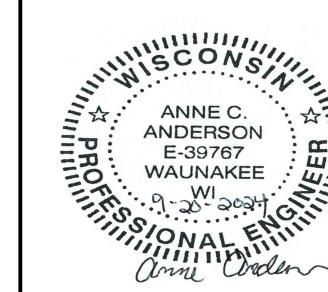
Mead & Hunt
ENGINEERS

DETROIT ARSENAL MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
P# 506474
SITE UTILITY PLAN

SHEET ID
CU102



KEY PLAN



SHEET ID
CU12

CERTIFIED FINAL SUBMITTAL

W912QR25R0052_Plans_Vol1-0000

Plot Date: 9/18/2024

File Path: X:\3246200\222857.01\TECH\CAD\506474 CU121.DWG

ARIMS: 200A Disposition: Maintain for 15yrs after construction

File Path: X:\3246200\222857.01\TECH\CAD\506474 CU121.DWG



NOT TO SCALE

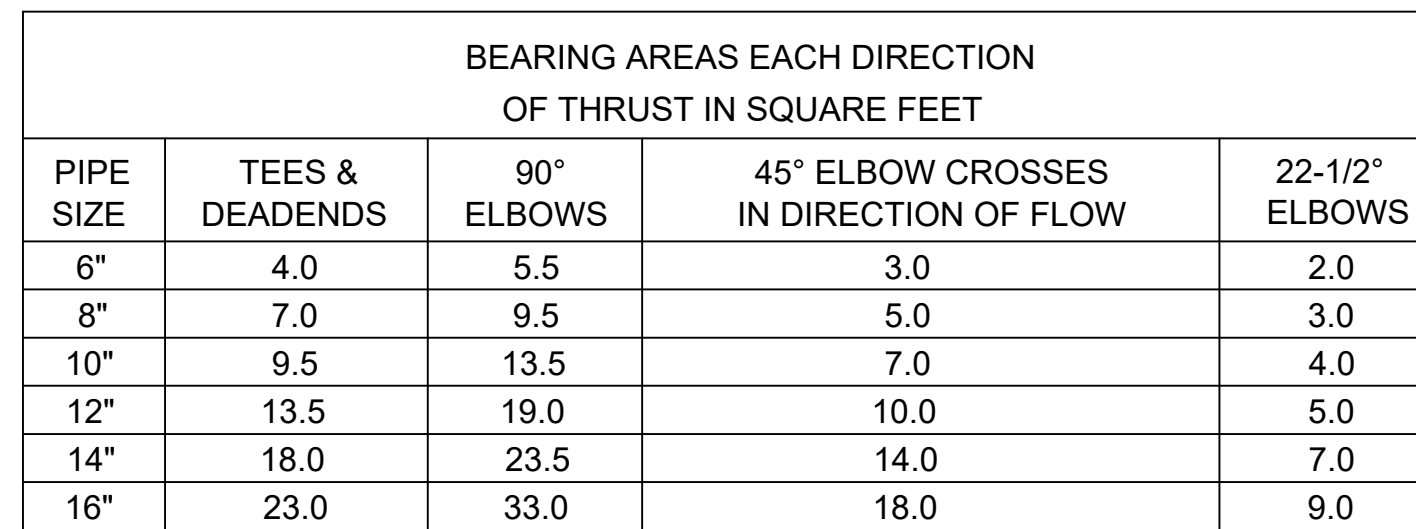


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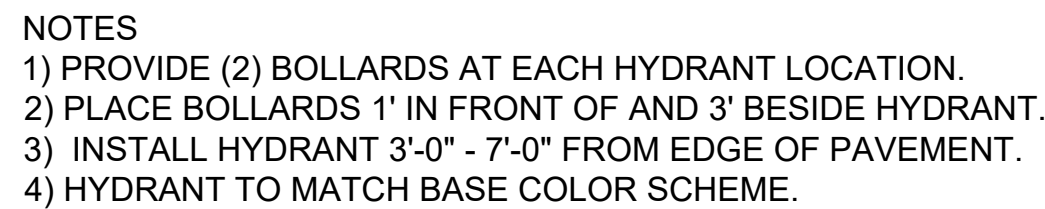


- NOTES:
1. PROVIDE BEDDING IN ACCORDANCE WITH THE SPECIFICATIONS.
 2. PROVIDE CLASS II BACKFILL.

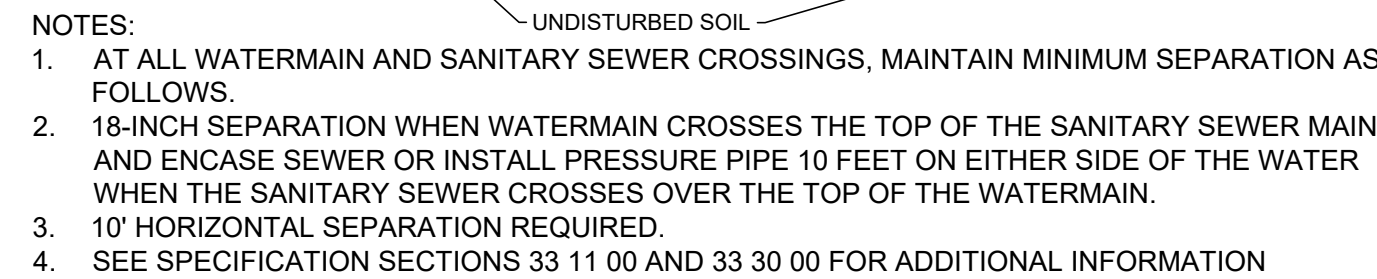
NOT TO SCALE



NOT TO SCALE



NOT TO SCALE



NOT TO SCALE



- NOTES:
1. ALL WATER MAINS SHALL HAVE A MIN. COVER OF 48".
 2. ALL TRENCH BACKFILL AND PATCHING SHALL CONFORM TO THE SPECIFICATIONS.

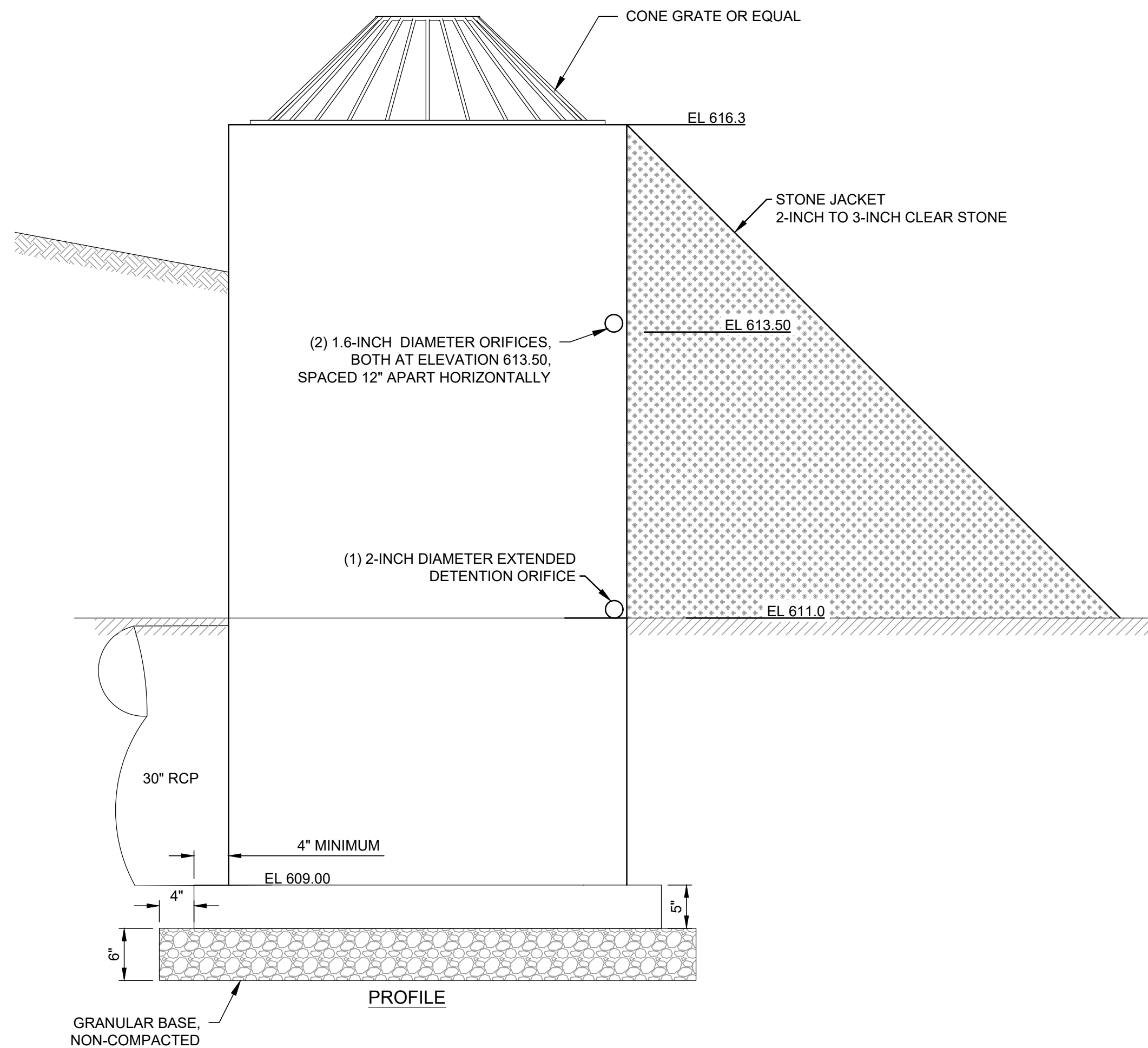
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SHEET ID

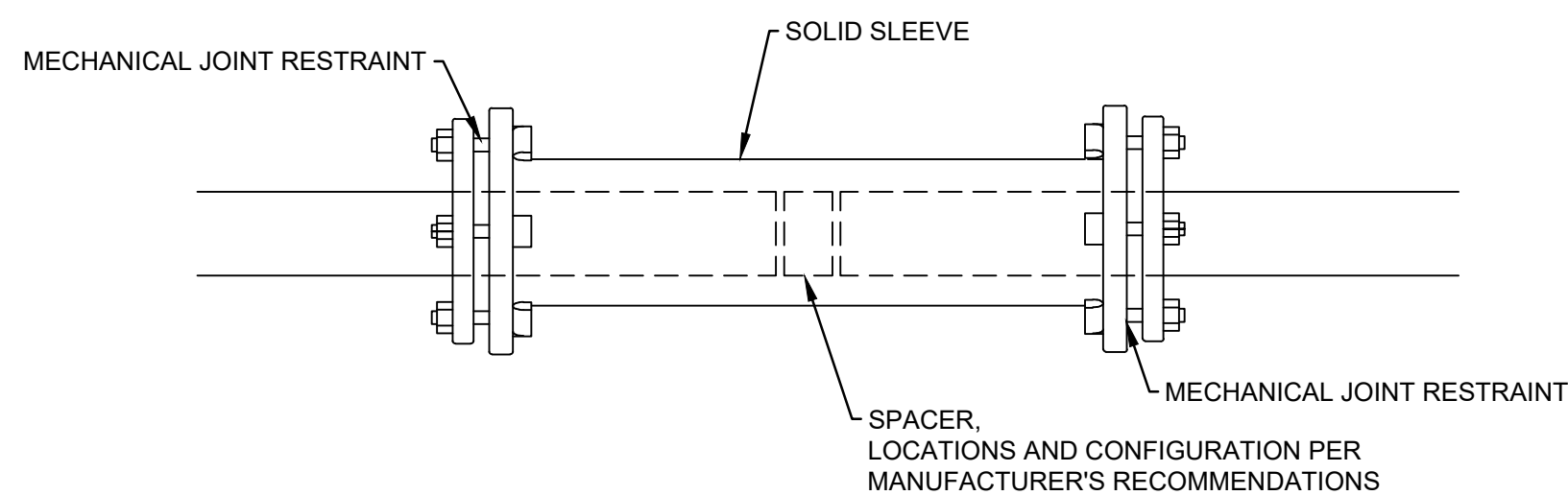
CU501



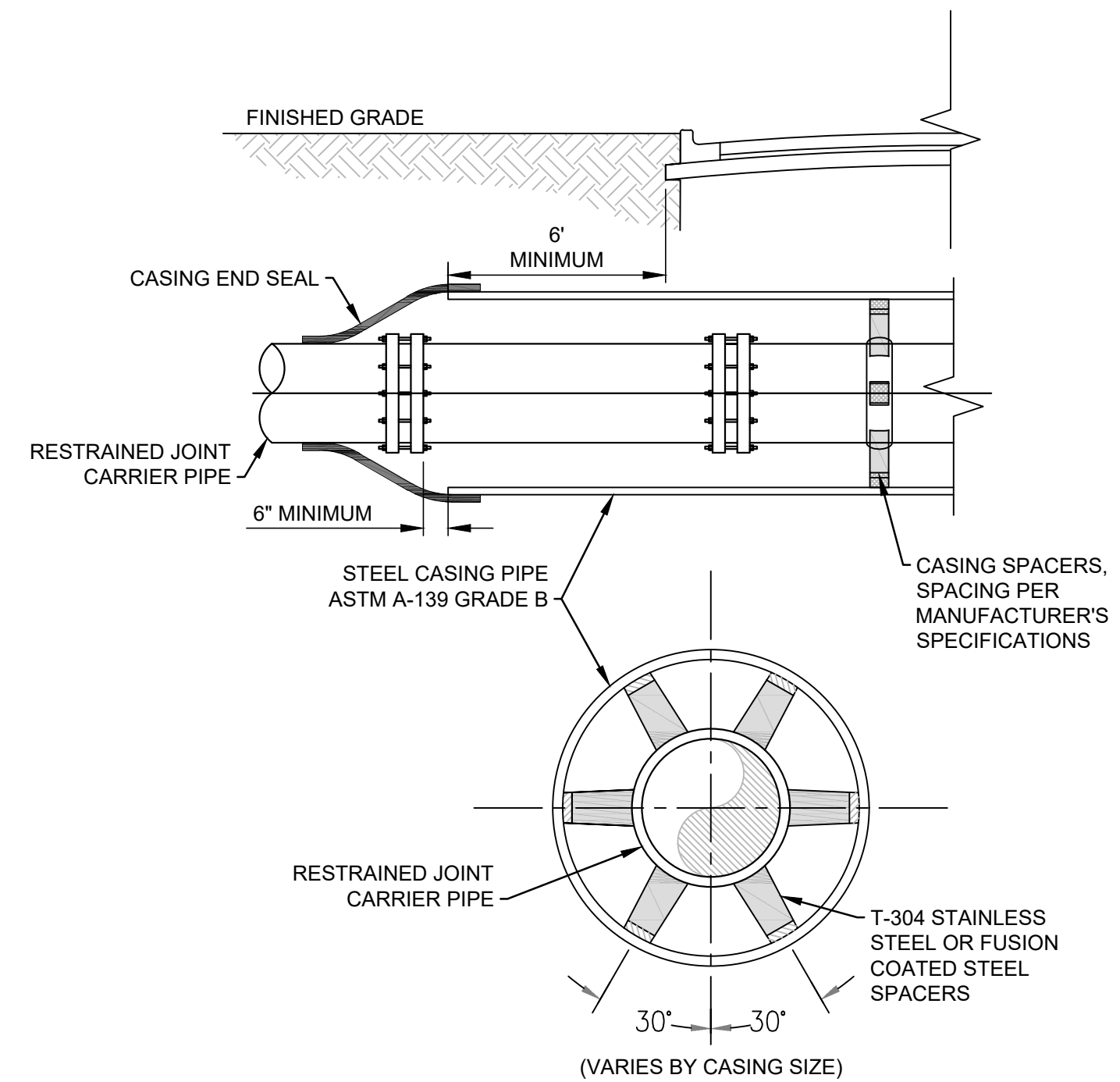


- NOTES:**
1. PRECAST INLET IN ACCORDANCE WITH ASTM C478.
 2. BASE SHALL BE MONOLITHIC WITH THE RISER SECTION BOTTOM A MINIMUM OF 24 INCHES HIGH.
 3. COVER SHALL BE RATED FOR HS-20 LOADING.

F6 STORMWATER OVERFLOW STRUCTURE DETAIL
NOT TO SCALE

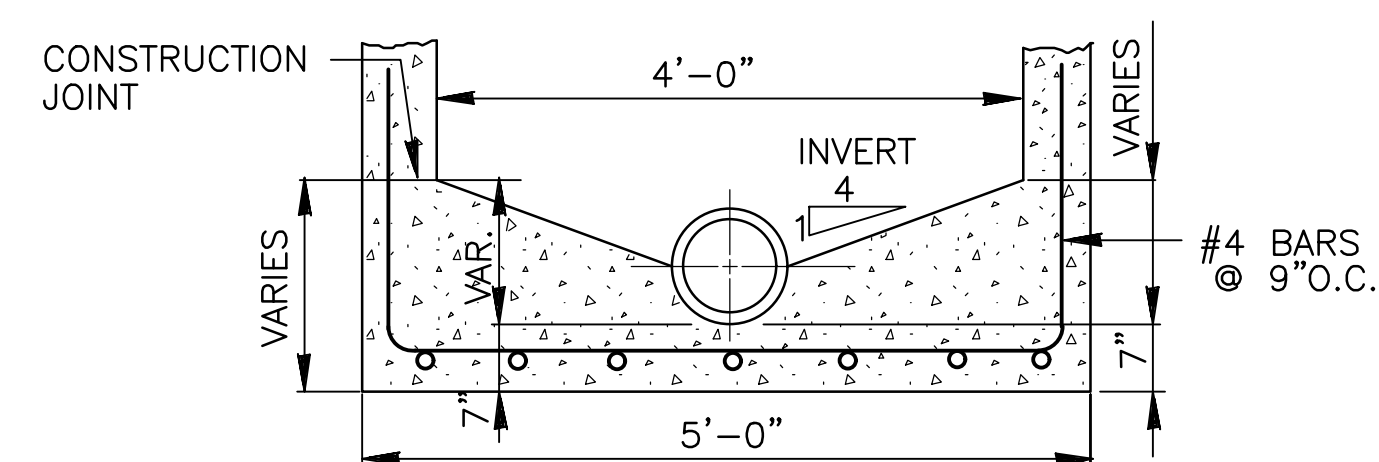


C6 SOLID CASING SLEEVE DETAIL
NOT TO SCALE

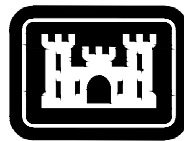


- NOTES:**
1. DISTANCE BETWEEN SPACERS TO BE PER MANUFACTURER'S SPECIFICATIONS.
 2. NO FLOWABLE FILL BETWEEN THE ANULAR SPACE OF THE CASING OR CARRIER PIPE.

BORE AND JACK DETAIL
NOT TO SCALE




**SANITARY MANHOLE
SECTION THRU BASE DETAIL**



**US Army Corps
of Engineers®**

[illegible]

 BENHAM Mead & Hunt	U.S. ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT 600 DR MARTIN LUTHER JR PL LOUISVILLE, KENTUCKY 40202	DESIGN BY: A&A A. ANDERSON DRAWN BY: CHECKED BY: A. SKOG, A35 SUBMITTED BY: M. BUTLER	ISSUE DATE: SEPTEMBER 20, 2024 SOLICITATION NO.: CONTRACT NO.:
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SIZE: M&H PROJECT NO: 13246P00-222847.01
 NSN: P246P00-222847.01

JOINT VENTURE TEAM

DETROIT ARSENAL MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAB
FY 2025
P2# 506474
SITE UTILITY DETAILS

SHEET ID

CU502

File Path: X:\3246200\222857.01\TECH\CAD\506474 CU501.DWG

Plot Date: 9/18/2024

CERTIFIED FINAL SUBMITTAL

ARIMS: 200A Disposition: Maintain for 15yrs after construction

12 CATCH BASIN DETAIL

J2 NOT TO SCALE

E2 CLEANOUT TO GRADE

NOT TO SCALE

B2 DRAIN TILE DETAIL

NOT TO SCALE

10 ROOF DRAIN DETAIL

NOT TO SCALE

NOTES:

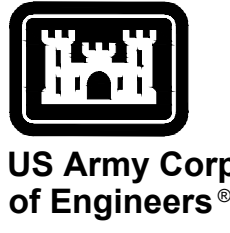
MANHOLE FRAME AND COVER DETAIL

NOT TO SCALE

H15 PRECAST STORM DRAIN MANHOLE DETAIL


NOT TO SCALE

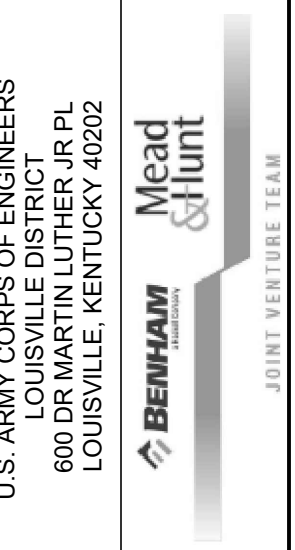
NOTES:



**US Army Corps
of Engineers®**

[illegible]

 BENHAM Mead & Hunt		JOINT VENTURE TEAM	
U.S. ARMY CORPS OF ENGINEERS 800 DR MARTIN LUTHER JR PL LOUISVILLE, KENTUCKY 40202	A. ANDERSON DRAWN BY: C. JONES CHECKED BY: 475 SUBMITTED BY: M. BUTLER	SEPTEMBER 20, 2024 SOLICITATION NO.: CONTRACT NO.: M&H PROJECT NO.: SIZE:	R5246200-222857.01



DETROIT ARSENAL, MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LA
FY 2025

P2# 506474

SITE UTILITY DETAILS

SHEET ID

CU503

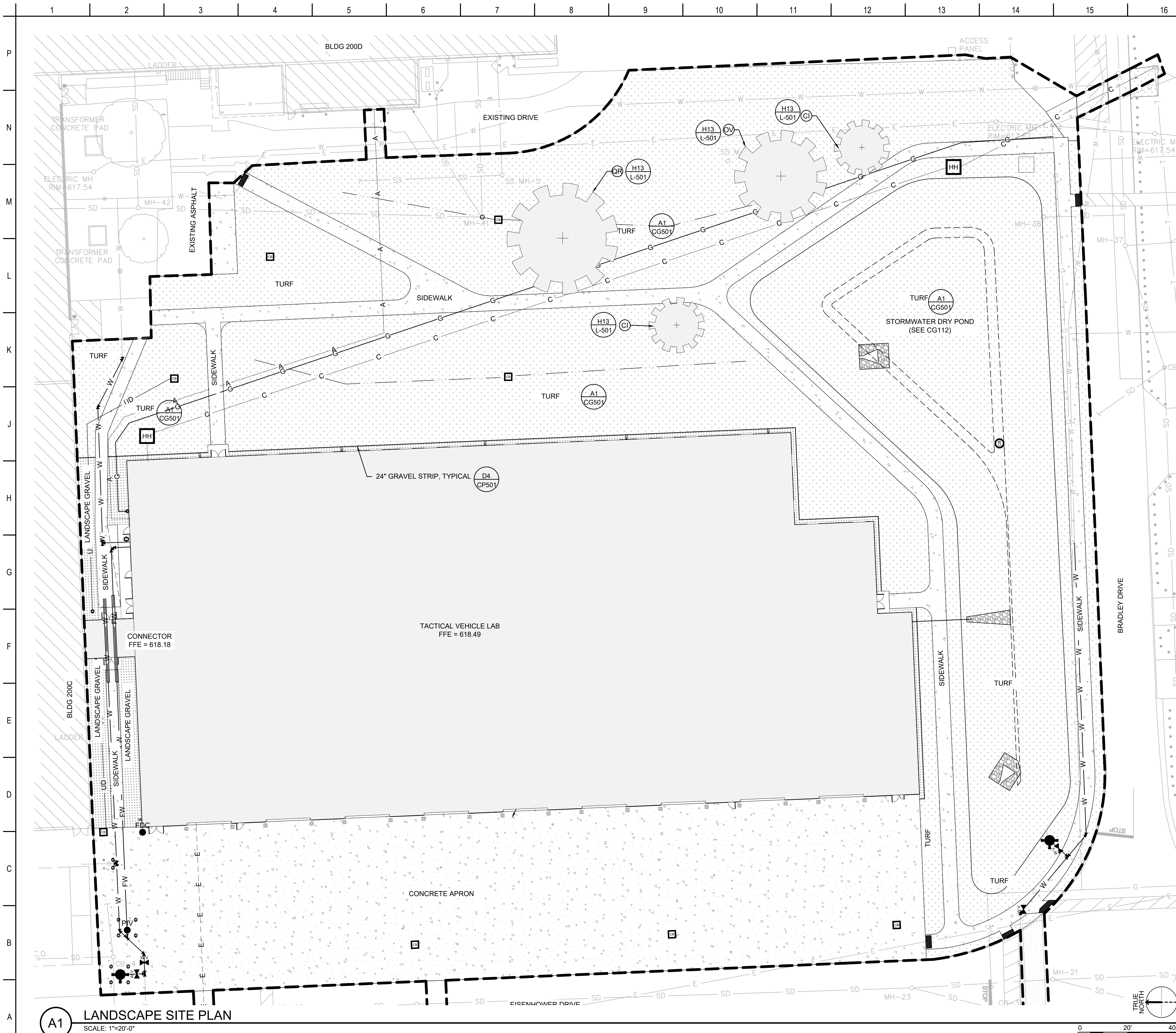
Plot Date: 9/18/2024

W912QR25R0052_Plans_Vol1-0000

CERTIFIED FINAL SUBMITTAL

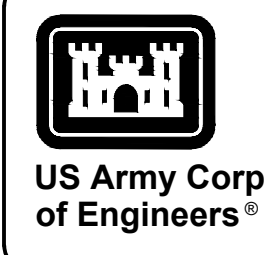
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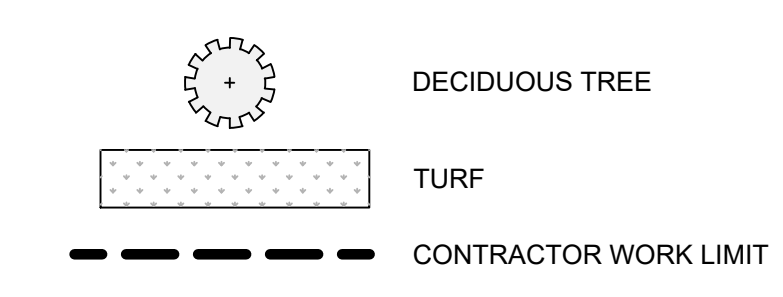


GENERAL SHEET NOTES

1. CARE SHALL BE TAKEN TO AVOID DAMAGE TO GRADING AND NEW PAVEMENTS.

[illegible]

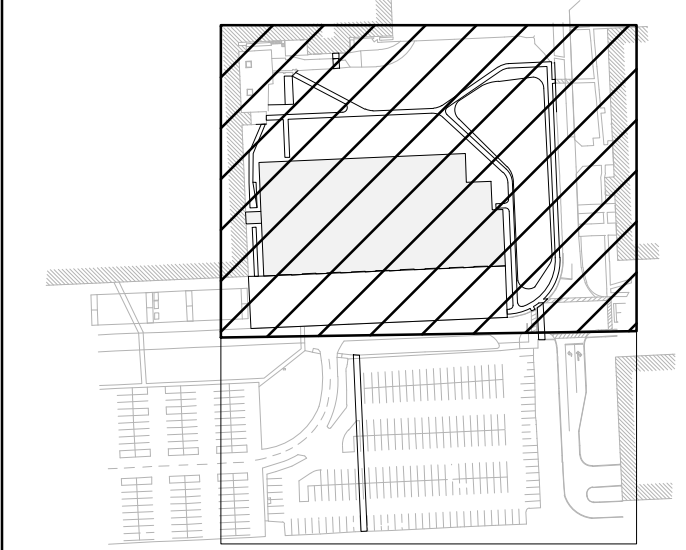
SHEET LEGEND



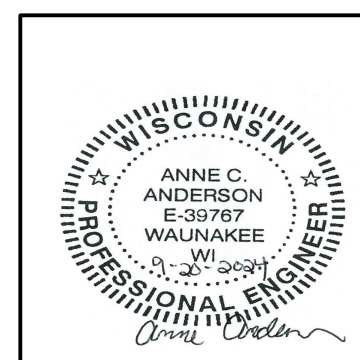
CALLOUT

CODE	QTY	COMMON NAME	BOTANICAL NAME	SIZE
CI	2	COCKSPUR THORNLESS HAWTHORN	<i>Crataegus crusgalli</i> var <i>Inermis</i>	2"B&B
OV	1	IRONWOOD	<i>Ostrya virginiana</i>	2"B&B
QR	1	NORTHERN RED OAK	<i>Quercus rubra</i>	2"B&B

U.S. ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT 600 DR MARTIN LUTHER JR PL LOUISVILLE, KENTUCKY 40202	DESIGN BY:	ACCA	ISSUE DATE:
	DRAWN BY:		SEPTEMBER 20, 2024
	CHECKED BY:		SOLICITATION NO.:
	A. SKOG	AS3	CONTRACT NO.:
	SUBMITTED BY:		
	M. BUTLER		
 Benham & Hunt CONSULTING ENGINEERS		SIZE:	M&H PROJECT NO.:
			R3246200-222857.01
JOINT VENTURE TEAM			



KEY PLAN



DETROIT ARSENAL, MICHIGAN
MANNED / UNMANNED TACTICAL VEHICLE LAUNCHER
FY 2025
P2# 506474
LANDSCAPE SITE PLAN

SHEET ID
LS101



NOT TO SCALE

