

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DANVILLE STORAGE 2022-1	VERMILION	9	1
		ILLINOIS	CONTRACT NO. 70F84	

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3

TOWNSHIP:
VERMILION: DANVILLE

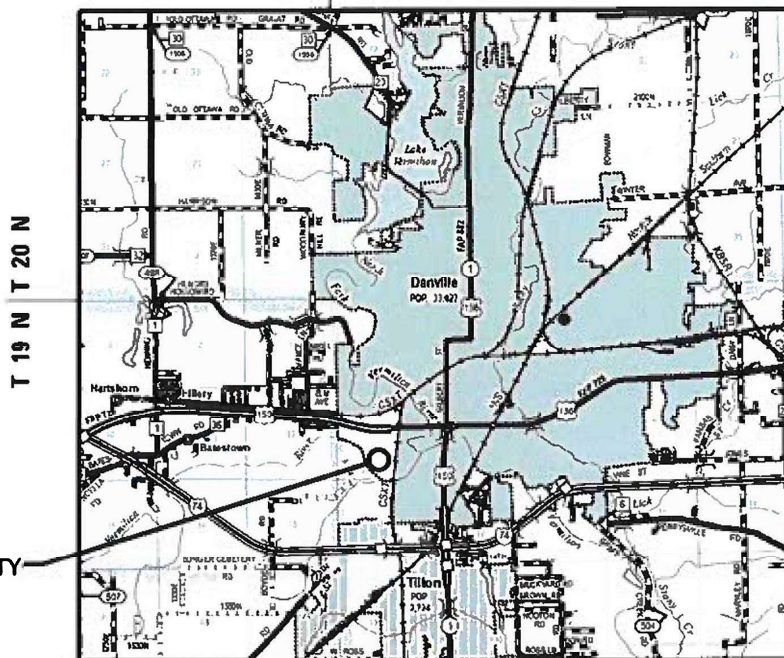
**PROPOSED
HIGHWAY PLANS**

**DANVILLE STORAGE FACILITY
SECTION DANVILLE STORAGE 2022-1
MISCELLANEOUS PROJECTS
VERMILION COUNTY**

C-95-035-22

**SALT BRINE CONTAINMENT AND PUSH WALL
AT DANVILLE STORAGE FACILITY**

R 12 W R 11 W



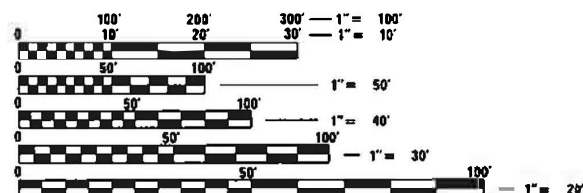
DANVILLE STORAGE FACILITY
510 AVENUE "C"
DANVILLE, IL 61832

LOCATION MAP
SCALE: 1" = 1 MILE

GROSS LENGTH = N/A FT. = N/A MILE
NET LENGTH = N/A FT. = N/A MILE



LOCATION OF SECTION INDICATED THUS: - [black rectangle] -



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
DR 611

PROJECT ENGINEER: RYAN T. CARROLL, P.E.
PROJECT MANAGER: SAMUEL K. MEGLI, P.E.
PHONE: 217-466-7223
CONTRACT NO. 70F84



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 3/24 2022
Kenneth G. Karmetzky
REGIONAL ENGINEER

May 13, 2022 [Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

May 13, 2022 [Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX OF SHEETS, HIGHWAY STANDARDS,
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- 3 SUMMARY OF QUANTITIES
- 4 SCHEDULES OF QUANTITIES
- 5 OVERALL SITE PLAN
- 6-7 ENLARGED SITE PLANS
- 8 CONTAINMENT DETAILS
- 9 PUSHWALL DETAILS

LIST OF STANDARDS

- 000001-08 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001-02 AREAS OF REINFORCEMENT BARS
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 602401-07 PRECAST MANHOLE TYPE A 4' DIAMETER
- 602601-06 PRECAST REINFORCED CONCRETE FLAT SLAP TOP
- 604001-05 FRAME AND LIDS TYPE 1
- 701901-08 TRAFFIC CONTROL DEVICES

GENERAL NOTES

G.N.-100A
ELECTRONIC FILES AND/OR ELECTRONIC SURVEY INFORMATION INCLUDING CADD FILES WILL NOT BE AVAILABLE TO THE CONTRACTOR.

G.N.-105.09A
ALL ELEVATIONS SHOWN IN THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988. (NAVD 88)

G.N.-503 SPL
SYNTHETIC FIBERS SHALL BE TYPE III ACCORDING TO ASTM C 1116. THE SYNTHETIC FIBER SHALL BE A MONOFILAMENT OR BUNDLED MONOFILAMENT WITH A MINIMUM LENGTH OF 1.0 INCH (25MM) AND A MAXIMUM LENGTH OF 2.5 INCH (63MM), AND SHALL HAVE A MAXIMUM ASPECT RATION (LENGTH DIVIDED BY THE EQUIVALENT DIAMETER OF THE FIBER) OF 150. THE MINIMUM QUANTITY OF SYNTHETIC FIBER(S) ADDED TO THE CONCRETE MIXTURE SHALL BE ACCORDING TO THE DEPARTMENT'S QUALIFIED PRODUCT LIST OF SYNTHETIC FIBERS. THE SYNTHETIC FIBERS SHALL BE ADDED TO THE CONCRETE AND MIXED PER THE MANUFACTURER'S RECOMMENDATION. THE SYNTHETIC FIBERS SHALL BE INCLUDED IN THE COST OF CONCRETE STRUCTURES.

COMMITMENTS

THERE ARE NO COMMITMENTS

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PLOT DATE = 3/16/2022	DATE - 3/3/2022	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, HIGHWAY STANDARDS,
GENERAL NOTES & COMMITMENTS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DANVILLE STORAGE 2022-1	VERMILION	9	2
			CONTRACT NO. 70F84	
		ILLINOIS	FED. AID PROJECT	

SCALE: SHEET NO. 1 OF 1 SHEETS STA. TO STA.

LOCATION OF WORK:		DANVILLE	DANVILLE	
		IDOT STORAGE FACILITY		
		URBAN	URBAN	
COUNTY:		VERMILION	VERMILION	
FUNDING BREAKOUT:		STATE 100%	STATE 100%	
CONSTRUCTION TYPE CODE:		0044	0044	
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	QUANTITY
20200100	EARTH EXCAVATION	CU YD	527	527
44000100	PAVEMENT REMOVAL	SQ YD	102	102
50300225	CONCRETE STRUCTURES	CU YD	98.3	98.3
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1	1
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	8230	8230
60218400	MANHOLES, TYPF A, 4'-DIAMFTFR, TYPE 1 FRAME, CLOSED LID	EACH	1	1
* 66900200	NON-SPECIAL WASTE DISPOSAL	CU YD	458	458
* 66900530	SOIL DISPOSAL ANALYSIS	EACH	1	1
* 66901001	REGULATED SUBSTANCES PRE CONSTRUCTION PLAN	L SUM	1	1
* 66901003	REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT	L SUM	1	1
* 66901006	REGULATED SUBSTANCES MONITORING	CAL DA	7	7
67100100	MOBILIZATION	L SUM	1	1
* Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1

* DENOTES SPECIALTY ITEMS

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PLOT DATE = 3/24/2022	DATE - 3/3/2022	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DANVILLE STORAGE 2022-1	VERMILION	9	3
			CONTRACT NO. 70F84	
		ILLINOIS	FED. AID PROJECT	

20200100 EARTH EXCAVATION

			20200100
LOCATION	DESCRIPTION	VOLUME (CU YD)	QUANTITY (CU YD)
DANVILLE	CONTAINMENT STRUCTURE	305	305
DANVILLE	PUSH WALL SLAB	222	222
TOTAL =			527
USE =			527

44000100 PAVEMENT REMOVAL

			44000100
LOCATION	DESCRIPTION	AREA (SQ YD)	QUANTITY (SQ YD)
DANVILLE	CONTAINMENT STRUCTURE	49	49
DANVILLE	PUSH WALL SLAB	53	53
TOTAL =			102
USE =			102

50300225 CONCRETE STRUCTURES

			50300225
LOCATION	DESCRIPTION	VOLUME (CU YD)	QUANTITY (CU YD)
DANVILLE	CONTAINMENT STRUCTURE	49.5	49.5
DANVILLE	PUSH WALL SLAB	48.8	48.8
TOTAL =			98.3
USE =			98.3

66900200 NON-SPECIAL WASTE DISPOSAL

			66900200
LOCATION	DESCRIPTION	VOLUME (CU YD)	QUANTITY (CU YD)
DANVILLE	CONTAINMENT STRUCTURE	264	264
DANVILLE	PUSH WALL SLAB	194	194
TOTAL =			458
USE =			458

50800205 REINFORCEMENT BARS, EPOXY COATED

			50800205
LOCATION	DESCRIPTION	WEIGHT (POUND)	QUANTITY (POUND)
DANVILLE	CONTAINMENT STRUCTURE	4850	4850
DANVILLE	PUSH WALL SLAB	3380	3380
TOTAL =			8230
USE =			8230

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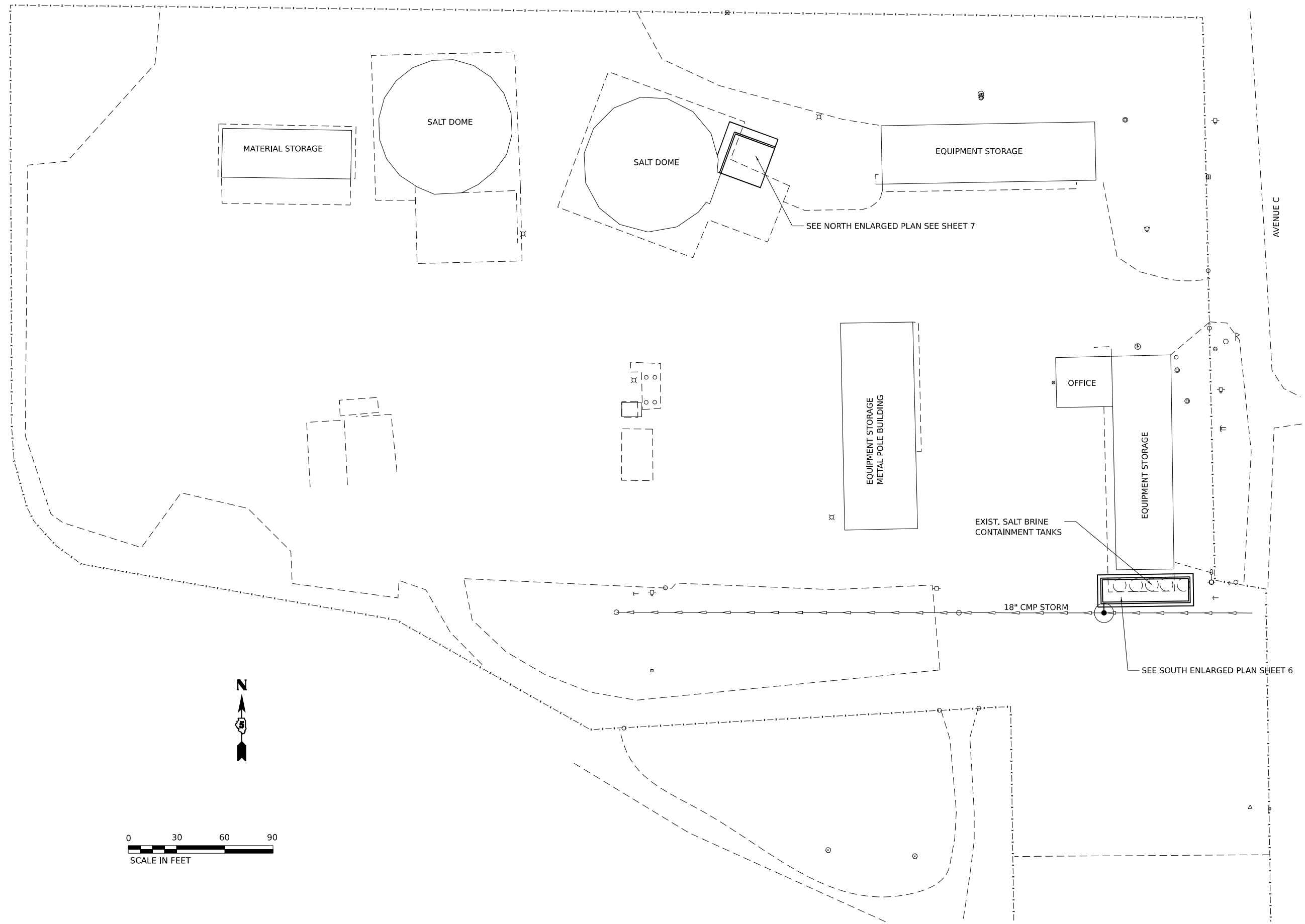
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PLOT DATE = 3/23/2022	DATE - 3/23/2022	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SCHEDULES OF QUANTITIES

SCALE: SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DANVILLE STORAGE 2022-1	VERMILION	9	4
ILLINOIS FED. AID PROJECT			CONTRACT NO. 70F84	

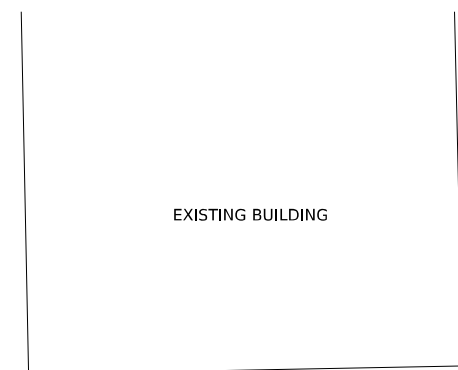


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PLOT DATE = 3/23/2022	DATE - 3/16/2022	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

OVERALL PLAN DANVILLE STORAGE FACILITY			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
DANVILLE STORAGE 2022-1	VERMILION	9	5
CONTRACT NO. 70F84			
ILLINOIS FED. AID PROJECT			



VOLUME CALCULATIONS

EPA REQUIREMENTS
 10% OF THE TOTAL VOLUME OR
 100% OF THE SINGLE LARGEST CONTAINER
 WHICHEVER IS GREATER

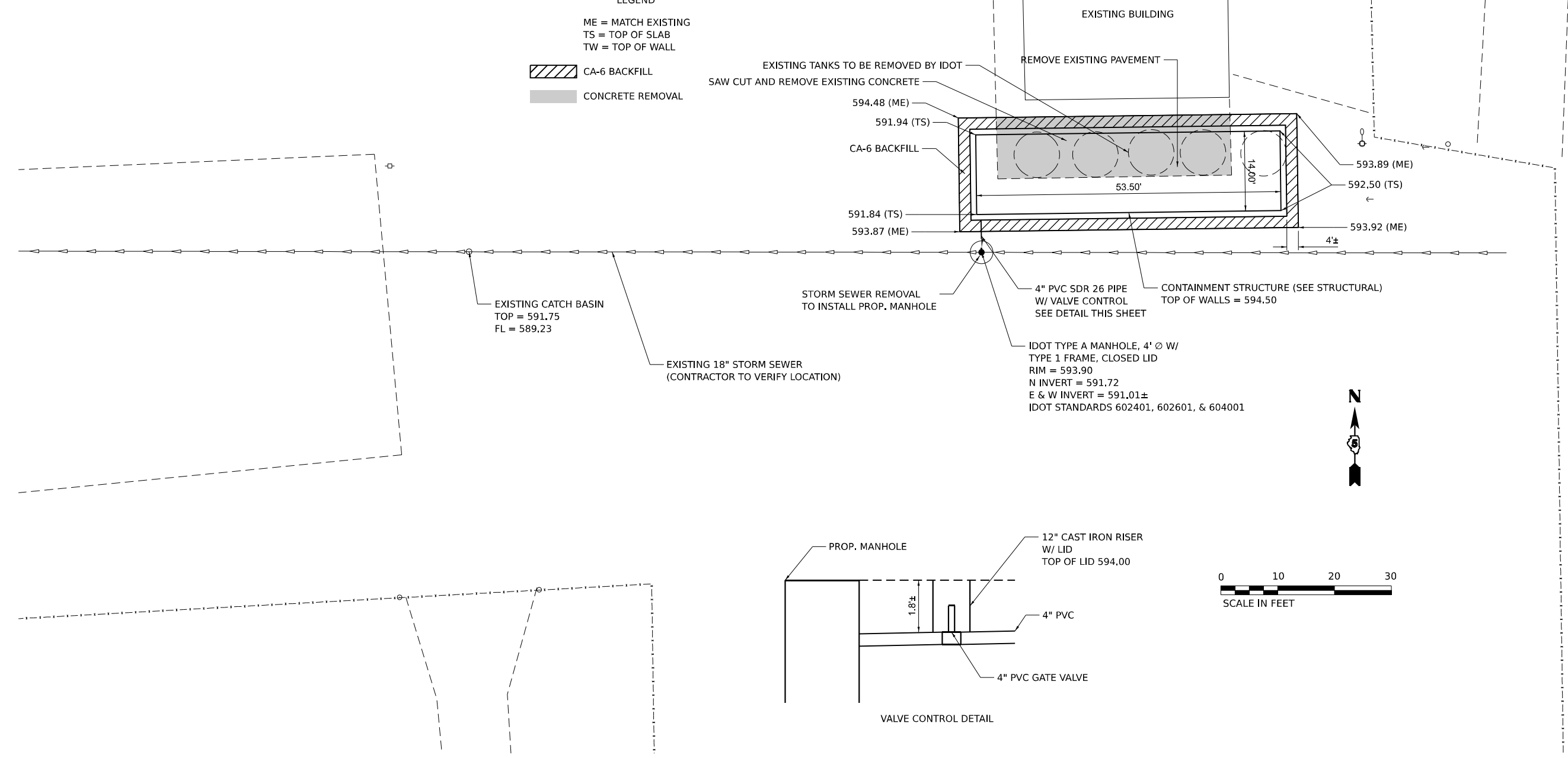
STORAGE VOLUME REQUIRED
 4 - 6,000 GALLON TANKS
 24,000 GALLONS
 10% OF 24,000 GALLONS = 2,400 GALLONS
 100% OF 6,000 GALLONS = 6,000 GALLONS

STORAGE VOLUME PROVIDED
 53'-6" X 14'-0" X 1'-3" AVG. DEPTH TO LOW BEAM = 936 CU FT
 936 CU FT = 6,993 GALLONS
 LOW BEAM ELEV = 593.5'
 594.5' - 593.5' - 0.5' ADDITIONAL RAINFALL STORAGE = 0.5' FREEBOARD

LEGEND

ME = MATCH EXISTING
 TS = TOP OF SLAB
 TW = TOP OF WALL

CA-6 BACKFILL
 CONCRETE REMOVAL



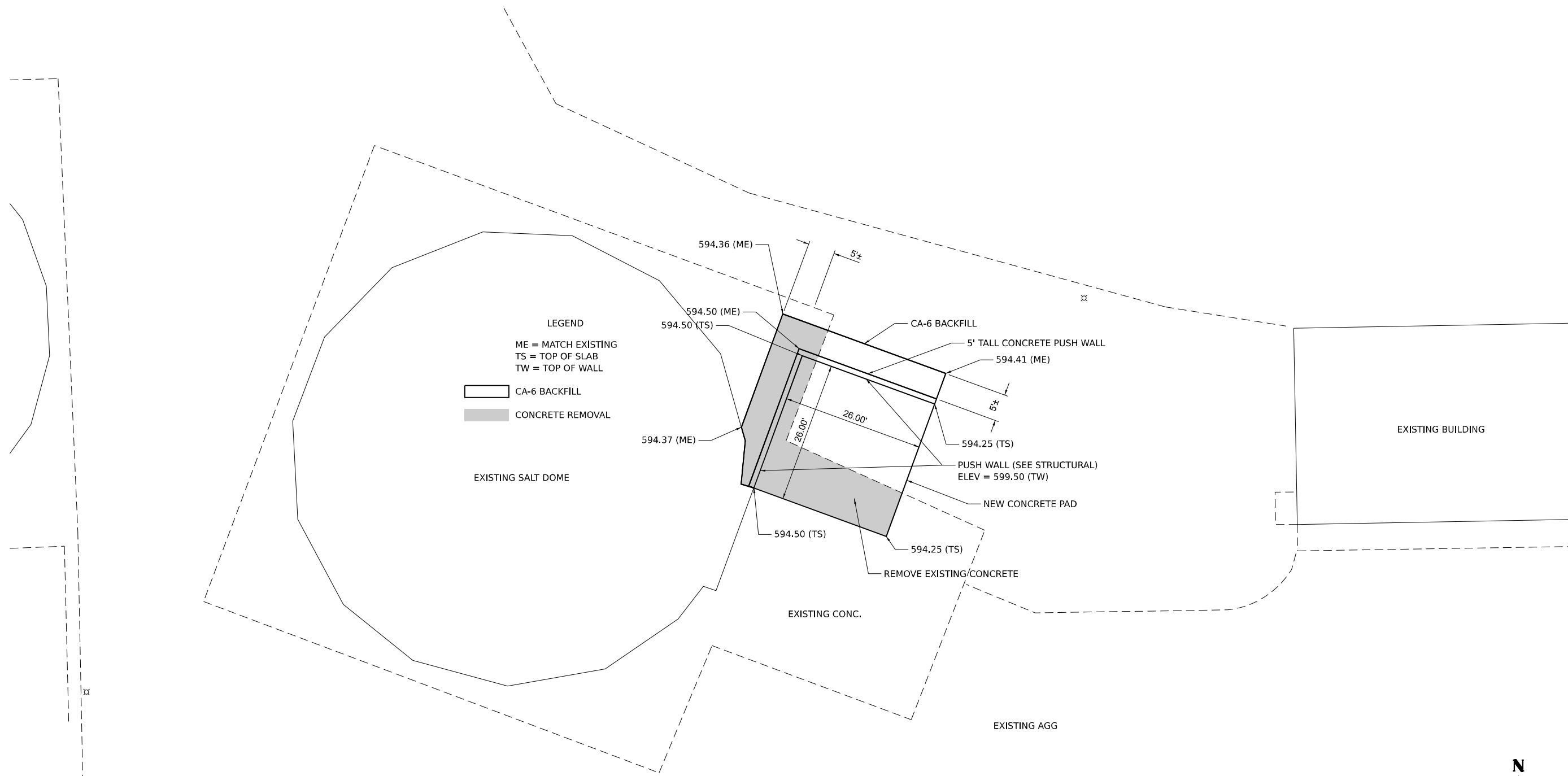
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PLOT DATE = 3/23/2022	DATE - 3/16/2022	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**SOUTH ENLARGED PLAN
 DANVILLE STORAGE FACILITY**

SCALE: SHEET OF SHEETS STA. TO STA.

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
DANVILLE STORAGE 2022-1	VERMILION	9	6
CONTRACT NO. 70F84			
ILLINOIS FED. AID PROJECT			



LEGEND
 ME = MATCH EXISTING
 TS = TOP OF SLAB
 TW = TOP OF WALL

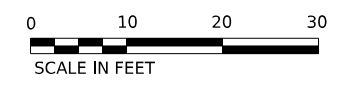
CA-6 BACKFILL
 CONCRETE REMOVAL

EXISTING SALT DOME

EXISTING CONC.

EXISTING AGG.

EXISTING BUILDING



EXISTING BUILDING

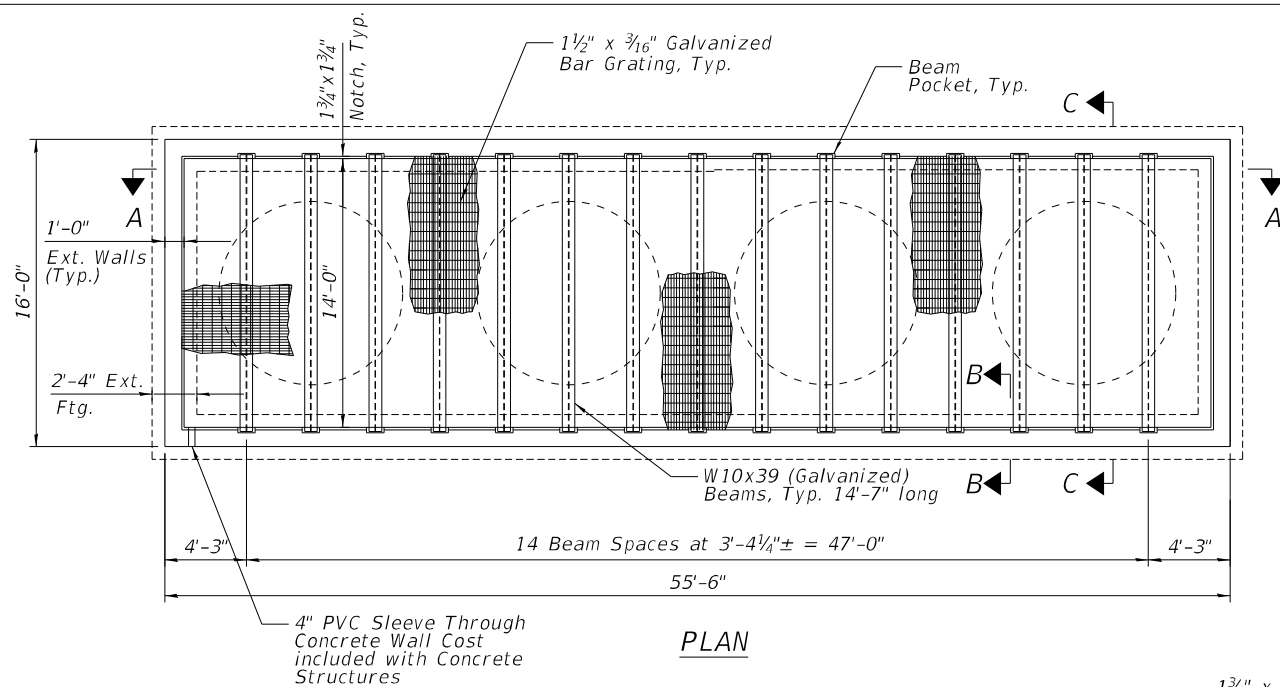


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PLOT DATE = 3/23/2022	DATE - 3/16/2022	REVISED -

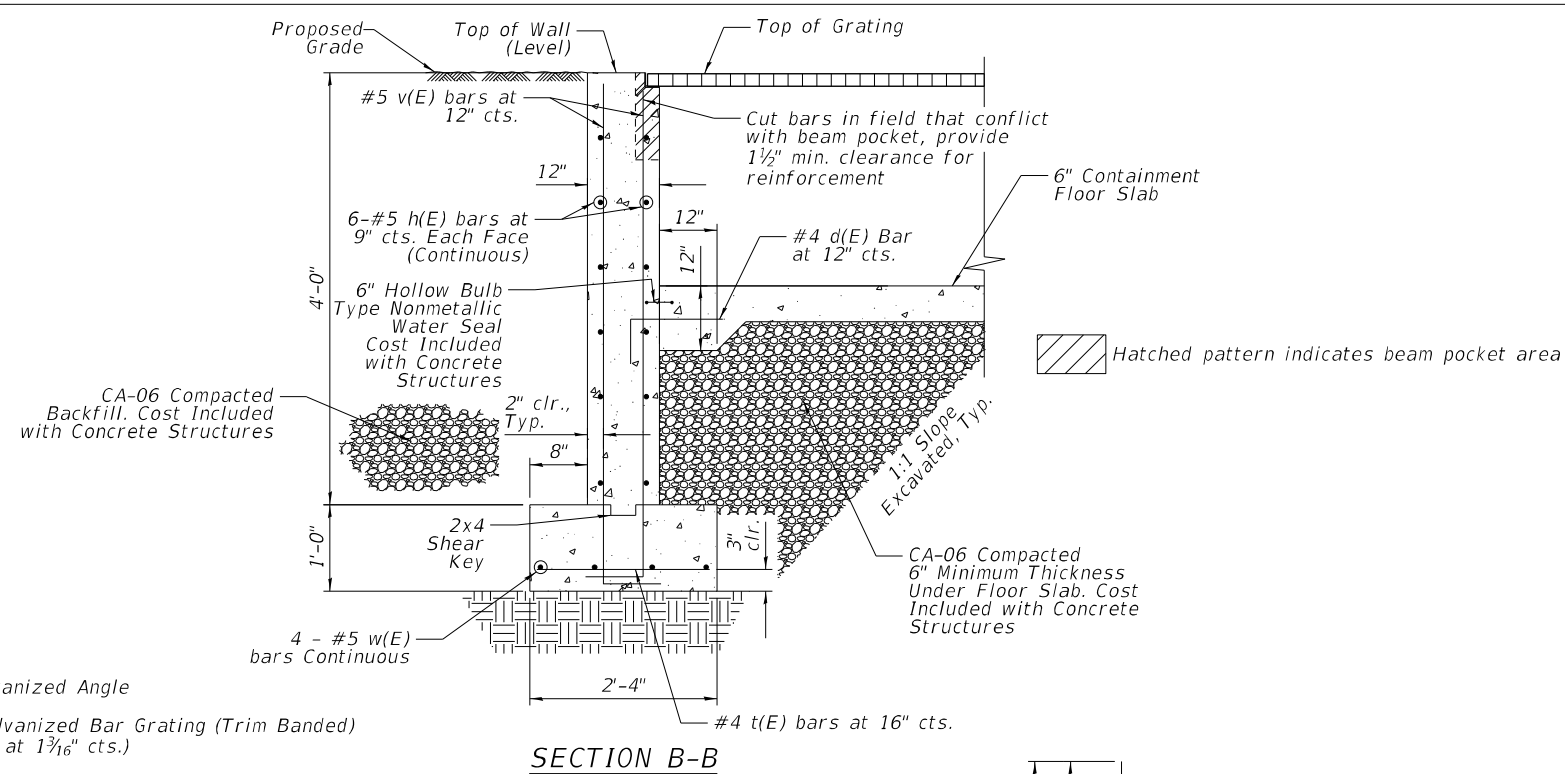
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

NORTH ENLARGED PLAN DANVILLE STORAGE FACILITY			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

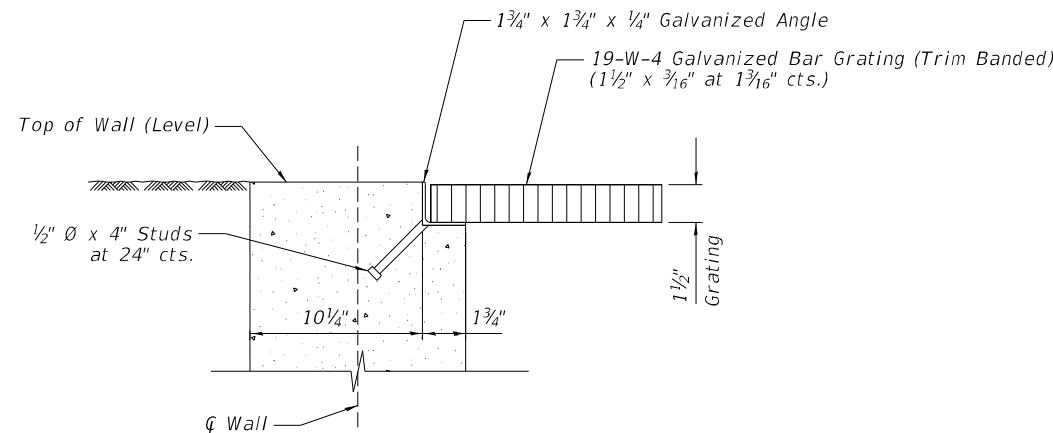
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
DANVILLE STORAGE 2022-I	VERMILION	9	7
CONTRACT NO. 70F84			
ILLINOIS FED. AID PROJECT			



PLAN



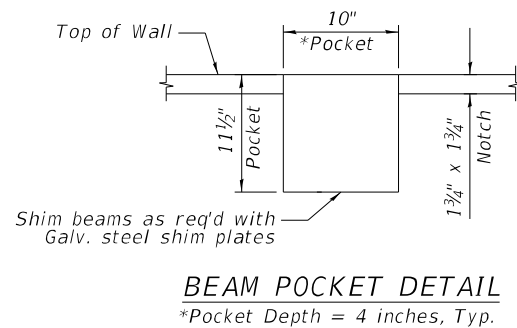
SECTION B-B



EMBEDDED GALVANIZED ANGLE DETAIL

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	136	#4	2'-0"	—
h(E)	120	#5	15'-8"	—
t(E)	108	#4	2'-0"	—
v(E)	280	#5	6'-4"	—
w(E)	40	#5	17'-0"	—
Furnishing and Erecting Structural Steel	L. Sum		1	
Concrete Structures	Cu. Yd.		49.5	
Reinforcement Bars, Epoxy Coated	Pound		4,850	
Earth Excavation	Cu. Yd.		305	
Non-Special Waste Disposal	Cu. Yd.		264	
Pavement Removal	Sq. Yd.		49	



BEAM POCKET DETAIL

DESIGN STRESSES

FIELD UNITS

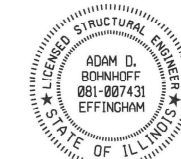
f'c = 3,500 psi
 fy = 60,000 psi (Reinforcement)
 fy = 36,000 psi (ASTM A36, Angles)
 fy = 50,000 psi (M270 Grade 50, beams)

Min. Bar Lap

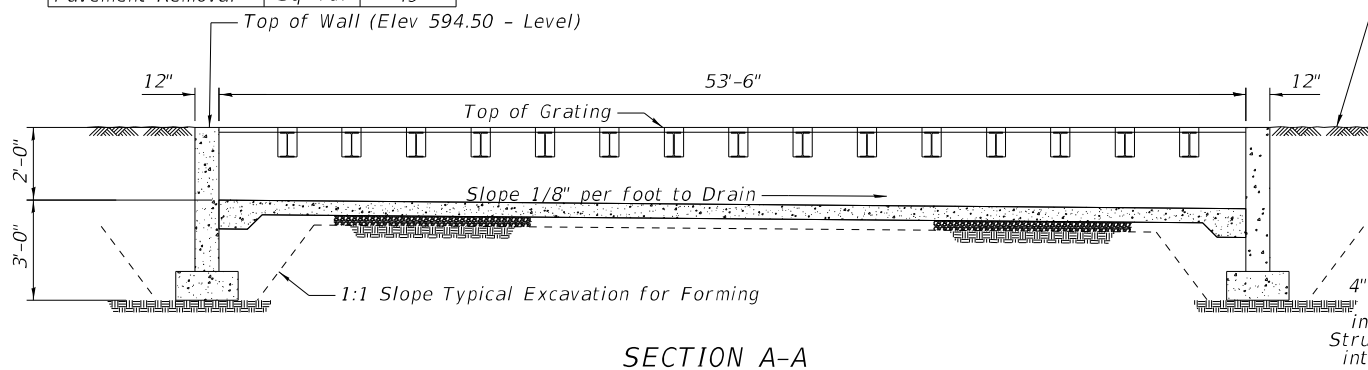
#5 Bar = 2'-5"

GENERAL NOTES

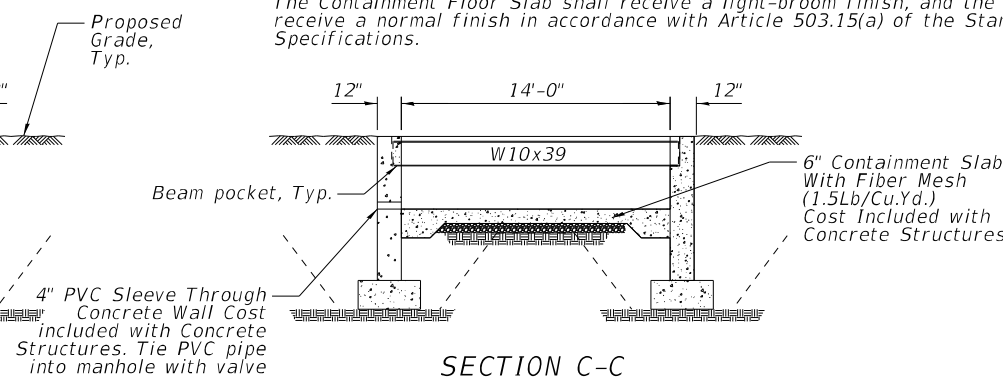
Calculated weight of Structural Steel:
 Bar Grating for Concrete Containment Structure = 8,750 lbs.
 Steel Beams and Embedded Angles for Concrete Containment Structure = 8,930 lbs.
 All Structural Steel shall be AASHTO M 270 Grade 36 for plates, channels, and angles; AASHTO M 270 Grade 50 for the steel beams; & ASTM A500, Gr B for HSS.
 No field welding is permitted except as specified in the contract documents.
 Reinforcement bars designated (E) shall be epoxy coated.
 All Structural Steel, Bar Grating, and Hardware shall be galvanized according to AASHTO M111 or M232 as applicable.
 The Containment Floor Slab shall receive a light-broom finish, and the walls shall receive a normal finish in accordance with Article 503.15(a) of the Standard Specifications.



Signature: *Adam D. Bohnhoff*
 Date: 3-22-22
 Licensed Structural Engineer
 State of Illinois No. 081-007431
 Expires 11-30-2022



SECTION A-A



SECTION C-C



CIVIL DESIGN, INC.
 WBE / DBE
 EFFINGHAM, IL
 LICENSE #184.003222

USER NAME = abohnhoff
 PLOT SCALE = 10:0.0000 1" / 10'
 PLOT DATE = 3/22/2022

DESIGNED - ADB
 DRAWN - WMK
 CHECKED - ADB
 DATE - 3/16/2022

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CONTAINMENT STRUCTURE
 DANVILLE STORAGE FACILITY

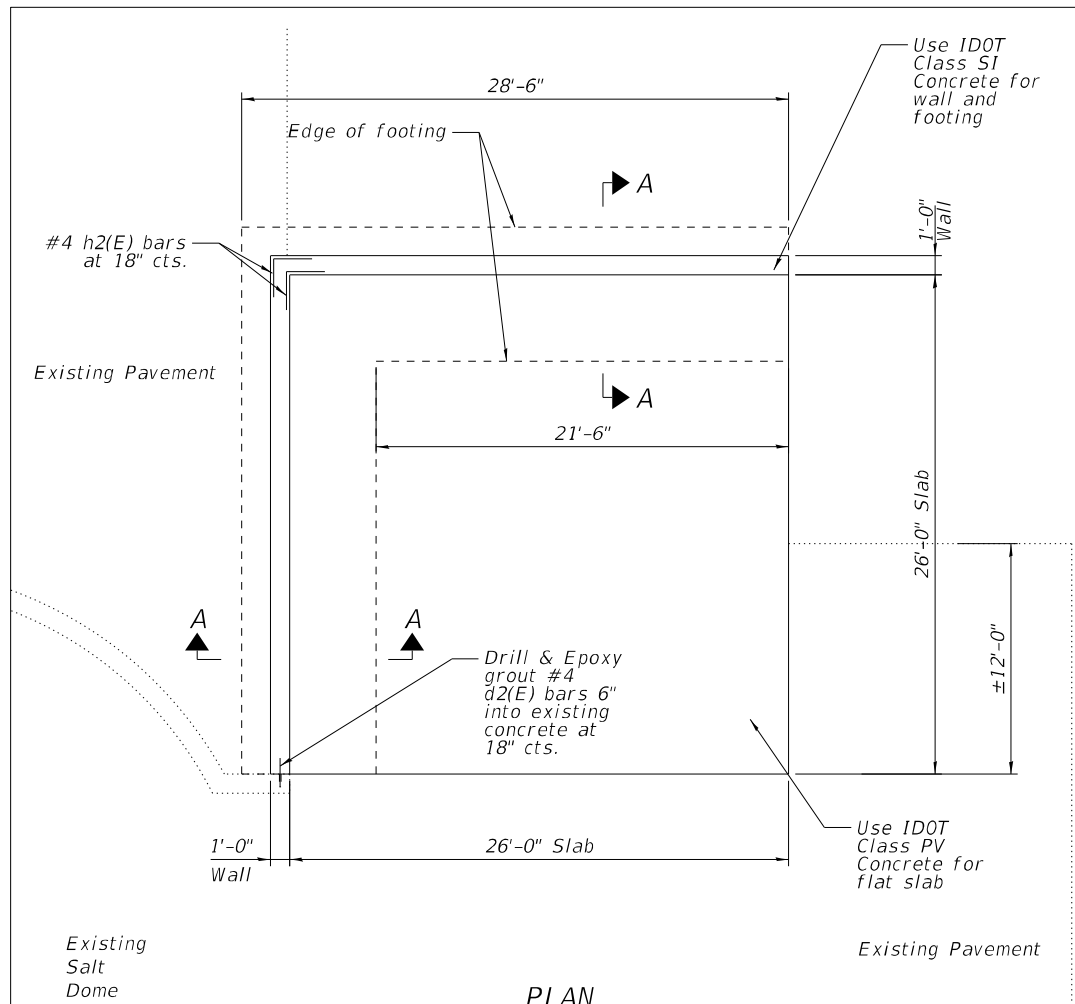
SCALE: SHEET OF SHEETS STA. TO STA.

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
DANVILLE STORAGE 2022-1	VERMILION	9	8
			CONTRACT NO. 70F84

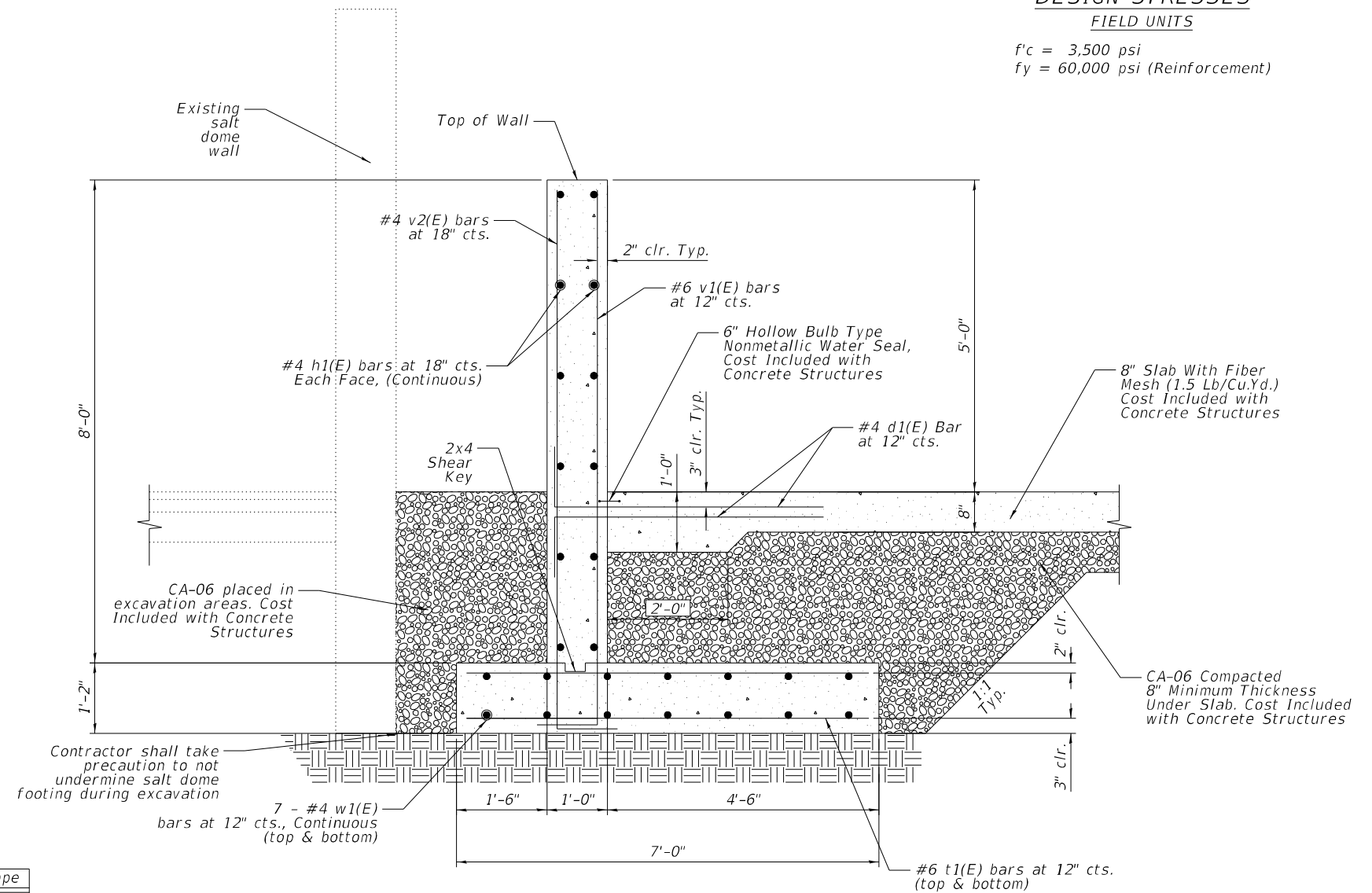
ILLINOIS FED. AID PROJECT

DESIGN STRESSES
FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)



PLAN



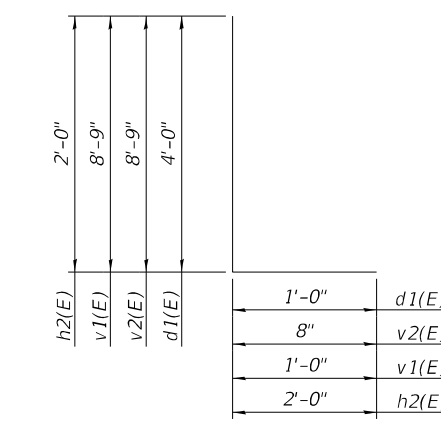
SECTION A-A

BILL OF MATERIAL

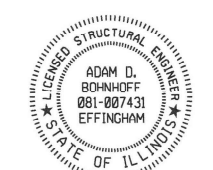
Bar	No.	Size	Length	Shape
d1(E)	108	#4	5'-0"	—
d2(E)	6	#4	2'-0"	—
h1(E)	24	#4	26'-8"	—
h2(E)	12	#4	4'-0"	—
t1(E)	102	#6	6'-8"	—
v1(E)	54	#6	9'-9"	—
v2(E)	37	#4	9'-5"	—
w1(E)	28	#4	26'-8"	—
Concrete Structures		Cu. Yd.	48.8	
Reinforcement Bars, Epoxy Coated		Pound	3,380	
Earth Excavation		Cu. Yd.	222	
Non-Special Waste Disposal		Cu. Yd.	194	
Pavement Removal		Sq. Yd.	53	

GENERAL NOTES

- Reinforcement bars designated (E) shall be epoxy coated.
- The Push wall slab shall receive a light-broom finish, and the walls shall receive a normal finish in accordance with Article 503.15 of the Standard Specifications.
- The Push wall is designed for a 2,000 plf service load at 2' above the concrete slab.
- Maximum Applied Service Bearing Pressure Q_{max} , 1,500 psf.



BARS d1(E), v1(E), v2(E), & h2(E)



Adam Bohnhoff
Signature:
Date: 3-22-22

Licensed Structural Engineer
State of Illinois No. 081-007431
Expires 11-30-2022



USER NAME = abohnhoff	DESIGNED - ADB	REVISED -
PLOT SCALE = 10:0.0000 1" / 10'	DRAWN - WMK	REVISED -
PLOT DATE = 3/22/2022	CHECKED - ADB	REVISED -
	DATE - 3/16/2022	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PUSH WALL
DANVILLE STORAGE FACILITY
SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
DANVILLE STORAGE 2022-1	VERMILION	9	9
		CONTRACT NO. 70F84	
ILLINOIS FED. AID PROJECT			