

DESIGN & CONSTRUCT LAGOON EXPANSION WAPPAPELLO TRAINING SITE WAPPAPELLO, MISSOURI

OWNER:

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

MISSOURI NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
FACILITIES MANAGEMENT OFFICE

PROJECT
MANAGEMENT:

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

DESIGNER:

Klingner & Associates, PC

PROJECT NUMBER:

T2317-01

SITE NUMBER:
ASSET NUMBER:

6325
7016325013

SHEET NUMBER:

G001

1 OF 15 SHEETS



PROJECT LOCATION



PROJECT LOCATION MAP
NTS

SHEET NUMBER	SHEET NAME	CURRENT REVISION DATE
G001	COVER SHEET	11/9/2023
G002	GENERAL NOTES AND LEGENDS	11/9/2023
C100	EXISTING SITE LAYOUT	11/9/2023
C101	PROPOSED SITE SEWER MODIFICATIONS	11/9/2023
C102	SEWER PLAN AND PROFILES RUNS 1 & 2	11/9/2023
C103	SEWER PLAN AND PROFILES RUNS 3 & 4	11/9/2023
C104	SEWER PLAN AND PROFILES RUNS 5-7	11/9/2023
C200	PROPOSED LAGOON MODIFICATIONS	11-09-2023
C201	PROPOSED LAGOON MODIFICATION COORDINATE TABLES	11/9/2023
C202	CELL 1 MODIFICATION DETAILS & COORDINATE TABLE	11/9/2023
C203	CELLS 2 & 3 MODIFICATION DETAILS AND COORDINATE TABLES	11/9/2023
C204	PROPOSED FENCE DETAILS	11/9/2023
C205	STORM WATER POLLUTION PREVENTION PLAN	11/9/2023
C206	LAGOON INLET DETAILS	11/9/2023
C501	MISCELLANEOUS DETAILS	11/9/2023

THE CONTRACTOR(S) SHALL COMPLY WITH THE LATEST EDITION OF APPLICABLE CODES AND STANDARDS INCLUDING BUT NOT LIMITED TO:
 - THE AMERICANS WITH DISABILITIES ACT (ADAAG)
 - INTERNATIONAL BUILDING CODE (IBC)
 - NATIONAL ELECTRIC CODE (NEC)
 - INTERNATIONAL PLUMBING CODE (IPC)
 - LIFE SAFETY CODE (NFPA 101)
 - AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
 - AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
 - AMERICAN CONCRETE INSTITUTE (ACI)
 - MISSOURI DEPARTMENT OF TRANSPORTATION (MODOT)
 - MISSOURI DEPARTMENT OF NATURAL RESOURCES (MODNR)

GENERAL NOTES

- ALL DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
- ANY DISCREPANCIES BETWEEN SPECIFICATIONS, DRAWINGS, AND/OR SITE CONDITIONS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- ALL AREAS DESIGNATED TO REMAIN UNDISTURBED SHALL BE PROTECTED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR STAKING THE LOCATION OF ALL PROPOSED IMPROVEMENTS, INCLUDING ROUGH AND FINISHED ELEVATIONS AND ALL OTHER PROPOSED IMPROVEMENTS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL VERIFY THAT ALL APPLICABLE LOCAL, STATE, & FEDERAL CODES ARE FOLLOWED. ALL APPLICABLE LOCAL AND STATE NOTIFICATIONS AND PERMITS SHALL BE ACQUIRED PRIOR TO CONSTRUCTION, INCLUDING ALL NECESSARY UTILITY CONNECTION PERMITS FROM THE RESPECTIVE UTILITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND SERVICES REQUIRED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL REFERENCE POINTS, BENCHMARKS, MONUMENTS, STAKES, AND PROPERTY CORNERS DURING CONSTRUCTION. REPLACEMENT OF LOST REFERENCE POINTS SHALL BE AT THE CONTRACTORS EXPENSE.
- REMOVE ALL STRUCTURES, FOUNDATIONS, WALLS, PAVEMENTS, AND ALL OTHER ITEMS IN CONFLICT WITH PROPOSED IMPROVEMENTS IN ACCORDANCE WITH THE SPECIFICATIONS.
- THE MEANS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- NO WORK SHALL BE PERFORMED BEYOND THE LIMITS OF CONSTRUCTION WITHOUT OWNER APPROVAL.
- SITE CLEAN-UP SHALL BE PERFORMED ON A DAILY BASIS. SIDEWALKS, PARKING LOTS, ROADWAYS, AND THE PROJECT SITE SHALL BE KEPT CLEAN AT ALL TIMES. CONTROL DUST IN AND AROUND ALL WORK AND STAGING AREAS.
- ALL OPEN EXCAVATIONS SHALL BE PROTECTED.
- MAINTAIN POSITIVE DRAINAGE ON THE SITE THROUGHOUT THE PROJECT DURATION.
- IF A DISCREPANCY IN THE SPOT ELEVATIONS IS NOTED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONSTRUCTING. IF THERE IS A DISCREPANCY BETWEEN THE SPOT ELEVATIONS AND CONTOURS, THE CONTOURS SHALL GOVERN.
- IF SOIL OR GROUNDWATER IS ENCOUNTERED WHICH EMITS A PETROLEUM ODOR OR IS DISCOLORED THE CONTRACTOR SHALL STOP EXCAVATION AND NOTIFY THE OWNER IMMEDIATELY. THE OWNER WILL COORDINATE ENVIRONMENTAL EFFORTS TO HANDLE THE IMPACTED SOIL OR GROUNDWATER IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL TAKE APPROPRIATE ACTION TO ENSURE PUBLIC AND EMPLOYEE SAFETY.
- ALL QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO DO THEIR OWN TAKE-OFFS.

UTILITY NOTES

- THE LOCATION OF EXISTING PUBLIC AND PRIVATE UTILITIES IN CONSTRUCTION AREAS SHALL BE FIELD VERIFIED BY THE CONTRACTOR BY CONTACTING THE MISSOURI ONE CALL SYSTEM, INC. OR THE INDIVIDUAL UTILITIES NOT PARTICIPATING IN THIS SYSTEM. EXISTING PUBLIC AND PRIVATE UTILITIES TO REMAIN SHALL BE PROTECTED. ANY REPAIR OR RELOCATION REQUIRED, AS A RESULT OF DAMAGE BY CONSTRUCTION ACTIVITIES SHALL BE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL PAY UTILITY PERMIT AND/OR INSPECTION FEES.
- UTILITY TRENCHES WITHIN PAVEMENT AREAS SHALL BE BACKFILLED WITH APPROVED COMPACTED GRANULAR BACKFILL.
- ADJUST ALL VALVES, MANHOLES, CASTINGS, GAS VENTS, ETC., TO MATCH THE NEW SURFACE. MANHOLES TO EXTEND 6" ABOVE GRADE. ADJUSTMENT SHALL BE COORDINATED WITH THE UTILITY COMPANIES AND THE COST FOR ALL ADJUSTMENTS SHALL BE INCIDENTAL TO THE CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER. REPAIR ANY DAMAGE TO SAID STRUCTURES AND APPURTENANCES THAT OCCUR DURING CONSTRUCTION.
- THE DRAWINGS INDICATE THE BEST KNOWLEDGE OF THE OWNER AND ENGINEER/ARCHITECT ON THE GENERAL LOCATION AND NATURE OF THE EXISTING AND OR PROPOSED UNDERGROUND UTILITIES IN THE AREA OF CONSTRUCTION. EXPLORATORY EXCAVATIONS AT THE SITE TO DETERMINE INSITU LOCATIONS WERE NOT CONDUCTED. QUALITY LEVEL D IN ACCORDANCE WITH CI/ASCE 38-02, STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA, WAS UTILIZED. REGARDLESS OF THE LEVEL OF INVESTIGATION, THE UTILITIES SHOWN SHOULD NOT BE CONSIDERED A WARRANTY OR GUARANTEE OF ACTUAL PRESENCE OR LOCATION AND THE CONTRACTOR REMAINS RESPONSIBLE FOR THE LOCATION, VERIFICATION, AND PROPER NOTIFICATION OF POTENTIAL UTILITIES.

QUALITY LEVELS: B

QUALITY LEVEL A - PROVIDES THE HIGHEST LEVEL OF ACCURACY. BY LOCATING OR POTHOLING UTILITIES IN ADDITION TO QUALITY LEVELS B, C, AND D TASKS. THE LOCATED UTILITY INFRASTRUCTURE IS SURVEYED AND MAPPED TO DEVELOP PLAN AND PROFILE INFORMATION.

QUALITY LEVEL B - INVOLVES DESIGNATING THE HORIZONTAL POSITION OF SUBSURFACE UTILITIES THROUGH SURFACE DETECTION METHODS AND RECORDING THE INFORMATION THROUGH A SURVEY METHOD. IN ADDITION TO QUALITY LEVEL C AND D TASKS.

QUALITY LEVEL C - INVOLVES SURVEYING VISIBLE SUBSURFACE UTILITY STRUCTURES SUCH AS MANHOLES, HAND-HOLES, UTILITY VALVES AND METERS, FIRE HYDRANTS, PEDESTALS AND UTILITY MARKERS, AND THEN CORRELATING THE INFORMATION WITH EXISTING UTILITY RECORDS TO CREATE COMPOSITE DRAWINGS. IN ADDITION TO QUALITY LEVEL D TASKS

QUALITY LEVEL D - INVOLVES COLLECTING DATA FROM EXISTING UTILITY RECORDS, THAT MAY INCLUDE AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICE MAPS, EXISTING GEOGRAPHIC INFORMATION SYSTEM DATABASE, CONSTRUCTION PLANS, ETC. DATABASES, CONSTRUCTION PLANS, ETC.

EROSION CONTROL NOTES

- EROSION CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, THE DETAILS IN THESE PLANS, AND THE MISSOURI DEPARTMENT OF NATURAL RESOURCES STANDARDS AND REQUIREMENTS FOR EROSION AND SEDIMENT CONTROL.
- THE EROSION CONTROL SHOWN ON THIS SET OF PLANS SHALL BE CONSIDERED THE MINIMUM ACCEPTABLE FOR THIS PROJECT. THERE MAY BE ADDITIONAL EROSION CONTROL REQUIRED DUE TO THE VARIOUS CONSTRUCTION TECHNIQUES, WHICH MAY BE USED. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING AND MAINTAINING ALL THE RUNOFF FROM THE SITE, IN A MANNER WHICH KEEPS ALL SILT ON SITE.
- A LAND DISTURBANCE PERMIT **WILL BE** HANDLED WITH A LAND BLANKET DISTURBANCE PERMIT. CONTRACTOR STILL RESPONSIBLE FOR SWPPP.
- ALL INLET PROTECTION AND TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED UPON COMPLETION OF PAVING OPERATIONS AND FINAL STABILIZATION OF LANDSCAPED AND SEED AREAS.

ABBREVIATIONS

- FL FLOWLINE ELEVATION
- TC TOP OF CURB ELEVATION
- GL GUTTER LINE ELEVATION
- TG TOP OF GRATE ELEVATION
- STA STATION
- FES FLARED END SECTION
- SWI STORM WATER INLET
- FFE FINISH FLOOR ELEVATION
- HP HIGH POINT
- LP LOW POINT
- TW TOP OF WALL ELEVATION
- BW BOTTOM OF WALL ELEVATION
- DS DOWNSPOUT
- EP EDGE OF PAVEMENT
- (NIC) NOT IN CONTRACT
- (M) MATCH EXISTING

LEGEND

EXISTING	PROPOSED	
---	---	PROPERTY LINE
---	---	LOT LINE
---	---	RIGHT OF WAY LINE
---	---	CENTERLINE
---	---	EASEMENT
---	---	BUILDING SETBACK
---	---	CONSTRUCTION LIMITS
---	---	FENCE LINE
---	---	CHAIN LINK FENCE
---	---	FENCE W/ SQUARE POSTS
---	---	STREAM
---	---	STRUCTURE
---	---	PAVEMENT MARKINGS
---	---	EDGE OF PAVEMENT
---	---	CURB AND GUTTER
---	---	RAILROAD TRACKS
---	---	WATER LINE
---	---	FIRE PROTECTION
---	---	GAS LINE
---	---	OVERHEAD ELECTRIC
---	---	UNDERGROUND ELECTRIC
---	---	OVERHEAD TELEPHONE
---	---	UNDERGROUND TELEPHONE
---	---	CABLE TELEVISION
---	---	FIBER OPTIC
---	---	COMMUNICATION LINE
---	---	STORM SEWER
---	---	SANITARY SEWER
---	---	FORCE MAIN
---	---	COMBINED SEWER
---	---	IRRIGATION SYSTEM
---	---	MAST ARM SIGNAL (3 SIGNALS)
---	---	MAST ARM SIGNALS (2 SIGNALS)
---	---	UTILITY TRAFFIC SIGN
---	---	SIGN
---	---	MANHOLE
---	---	STORM WATER INLET
---	---	CATCH BASIN
---	---	CLEANOUT
---	---	CULVERT
---	---	BOX CULVERT
---	---	WATER VALVE
---	---	FIRE HYDRANT
---	---	POST INDICATOR VALVE
---	---	WATER METER
---	---	GAS VALVE
---	---	GAS METER
---	---	TELEPHONE PEDESTAL
---	---	CABLE TV PEDESTAL
---	---	ELECTRIC METER
---	---	UTILITY POLE
---	---	LIGHT STANDARD
---	---	LIGHT POLE
---	---	GUY WIRE
---	---	SUMMIT / HIGH POINT
---	---	CONTOURS
---	---	INDEX CONTOURS
---	---	DIRECTION OF DRAINAGE
---	---	SPOT ELEVATION
---	---	DECIDUOUS SHRUB
---	---	DECIDUOUS TREE
---	---	CONIFEROUS SHRUB
---	---	CONIFEROUS TREE



NOTE
 UTILITY INFORMATION IS FOR THE CONVENIENCE OF THE CONTRACTOR. BEFORE CONSTRUCTION BEGINS THE CONTRACTOR SHALL CONTACT MISSOURI ONE CALL SYSTEM, INC. AT 811 OR 1-800-344-7483 AND THE INDIVIDUAL UTILITIES NOT INCLUDED IN THIS SYSTEM FOR THE LOCATION OF ALL EXISTING UTILITIES.

STATE OF MISSOURI
 MICHAEL L. PARSON,
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JOSHUA D. HARTSOCK-ENGINEER
 MO # PE 202000048

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OFFICE OF ADMINISTRATION
 DIVISION OF FACILITIES
 MANAGEMENT,
 DESIGN AND CONSTRUCTION

DESIGN AND CONSTRUCT
 LAGOON EXPANSION

461 COUNTY ROAD 517
 WAPPAPELLO, MO 63966

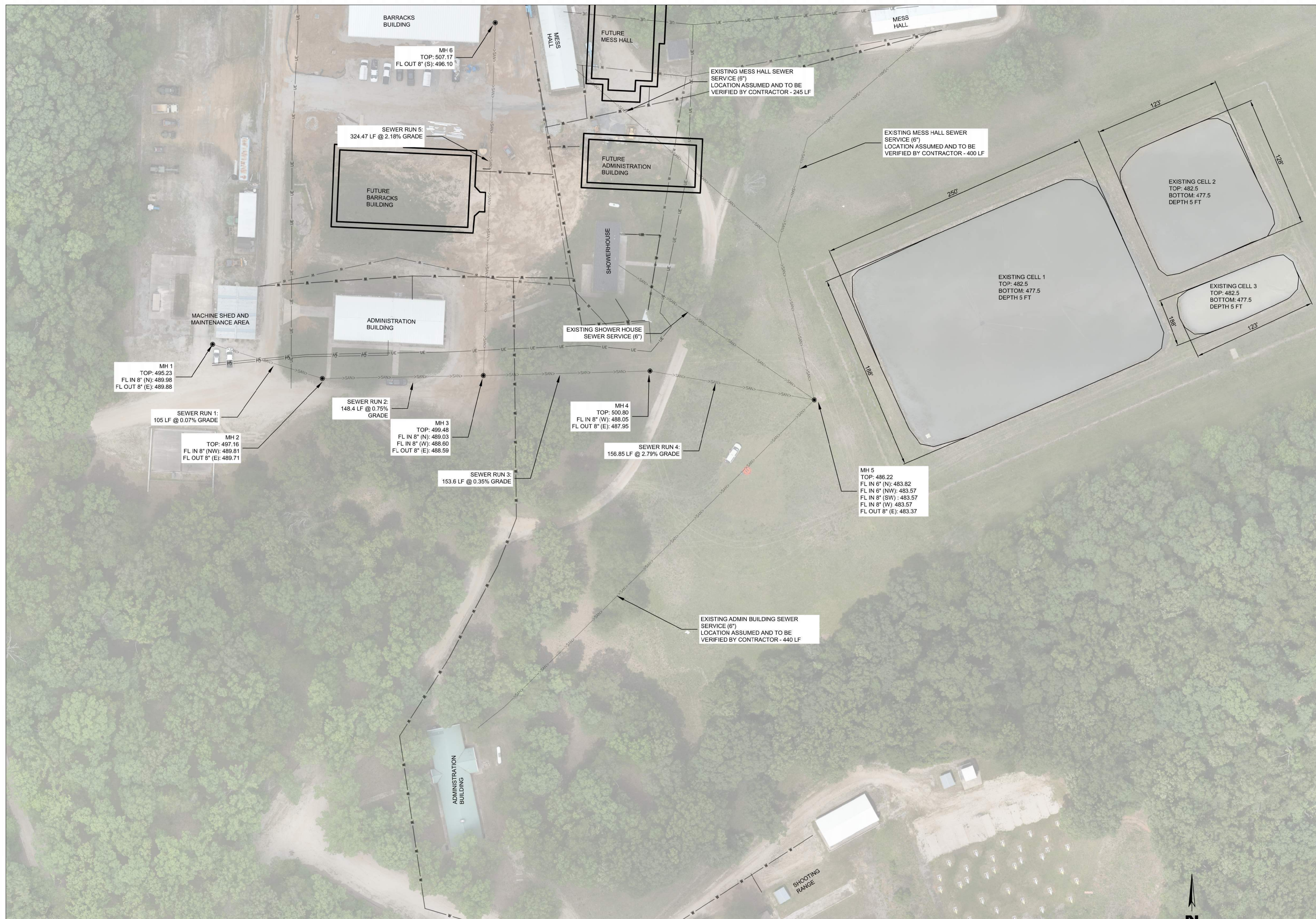
PROJECT # T2317-01
 SITE # 6325
 ASSET # 7016325013

REVISION: _____
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 REVISION: _____
 DATE: _____
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 DATE: _____
 ISSUE DATE: 11-09-2023

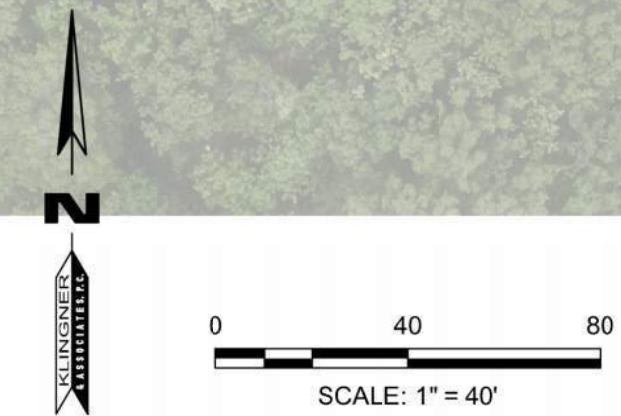
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 DRAWING BY: JDH/MCB
 CHECKED BY: MCB/JJN
 DESIGNED BY: JDH/MCB/JJN

SHEET TITLE:
**GENERAL NOTES
 AND LEGENDS**

SHEET NUMBER:
G002



1 EXISTING SITE SEWER LAYOUT
1"=40'



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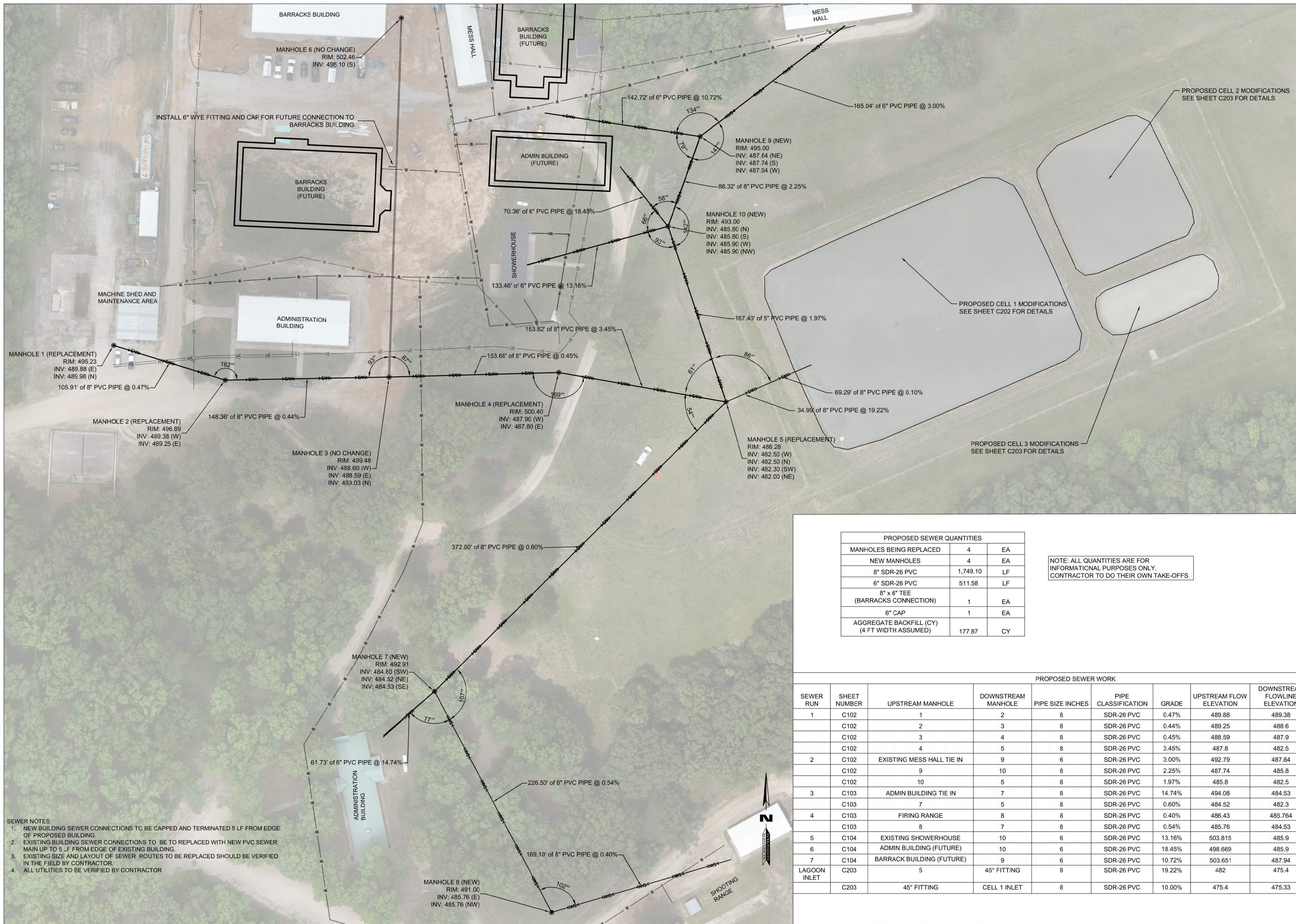
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DRAWING BY: JDH/MCB
CHECKED BY: MCB/JJN
DESIGNED BY: JDH/MCB/JJN

SHEET TITLE:
**EXISTING SITE
LAYOUT**

SHEET NUMBER:
C100

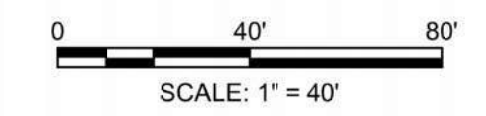


- SEWER NOTES:
1. NEW BUILDING SEWER CONNECTIONS TO BE CAPPED AND TERMINATED 5 LF FROM EDGE OF PROPOSED BUILDING.
 2. EXISTING BUILDING SEWER CONNECTIONS TO BE REPLACED WITH NEW PVC SEWER MAIN UP TO 5 LF FROM EDGE OF EXISTING BUILDING.
 3. EXISTING SIZE AND LAYOUT OF SEWER ROUTES TO BE REPLACED SHOULD BE VERIFIED IN THE FIELD BY CONTRACTOR.
 4. ALL UTILITIES TO BE VERIFIED BY CONTRACTOR.

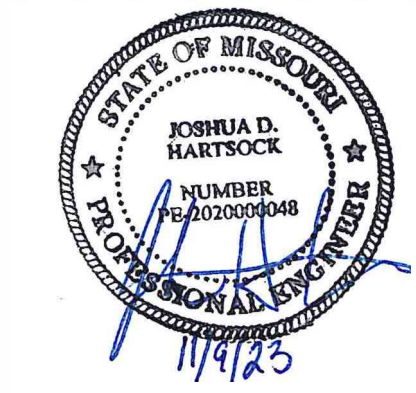
PROPOSED SEWER QUANTITIES		
MANHOLES BEING REPLACED	4	EA
NEW MANHOLES	4	EA
8" SDR-26 PVC	1,749.10	LF
6" SDR-26 PVC	511.58	LF
8" x 6" TEE (BARRACKS CONNECTION)	1	EA
6" CAP	1	EA
AGGREGATE BACKFILL (CY) (4 FT WIDTH ASSUMED)	177.87	CY

NOTE: ALL QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO DO THEIR OWN TAKE-OFFS

PROPOSED SEWER WORK										
SEWER RUN	SHEET NUMBER	UPSTREAM MANHOLE	DOWNSIDE MANHOLE	PIPE SIZE INCHES	PIPE CLASSIFICATION	GRADE	UPSTREAM FLOW ELEVATION	DOWNSIDE FLOWLINE ELEVATION	LENGTH	
1	C102	1	2	8	SDR-26 PVC	0.47%	489.88	489.38	105.91	
		2	3	8	SDR-26 PVC	0.44%	489.25	488.6	148.36	
	C102	3	4	8	SDR-26 PVC	0.45%	488.59	487.9	153.68	
		4	5	8	SDR-26 PVC	3.45%	487.8	482.5	153.82	
2	C102	EXISTING MESS HALL TIE IN	9	6	SDR-26 PVC	3.00%	492.79	487.84	165.04	
			10	8	SDR-26 PVC	2.25%	487.74	485.8	86.32	
	C102	ADMIN BUILDING TIE IN	7	8	SDR-26 PVC	14.74%	494.08	484.53	61.73	
			5	8	SDR-26 PVC	0.60%	486.43	485.764	169.1	
3	C103	7	5	8	SDR-26 PVC	0.60%	484.52	482.3	372	
		8	7	8	SDR-26 PVC	0.54%	485.76	484.53	226.5	
4	C103	FIRING RANGE	8	8	SDR-26 PVC	0.40%	486.43	485.764	169.1	
			7	8	SDR-26 PVC	0.54%	485.76	484.53	226.5	
5	C104	EXISTING SHOWERHOUSE	10	6	SDR-26 PVC	13.16%	503.815	485.9	133.46	
		ADMIN BUILDING (FUTURE)	10	6	SDR-26 PVC	18.45%	498.669	485.9	70.36	
6	C104	ADMIN BUILDING (FUTURE)	10	6	SDR-26 PVC	18.45%	498.669	485.9	70.36	
		BARRACK BUILDING (FUTURE)	9	6	SDR-26 PVC	10.72%	503.651	487.94	142.72	
7	C104	BARRACK BUILDING (FUTURE)	9	6	SDR-26 PVC	10.72%	503.651	487.94	142.72	
			5	45" FITTING	8	SDR-26 PVC	19.22%	482	475.4	34.99
LAGOON INLET	C203		45" FITTING	CELL 1 INLET	8	SDR-26 PVC	10.00%	475.4	475.33	69.29



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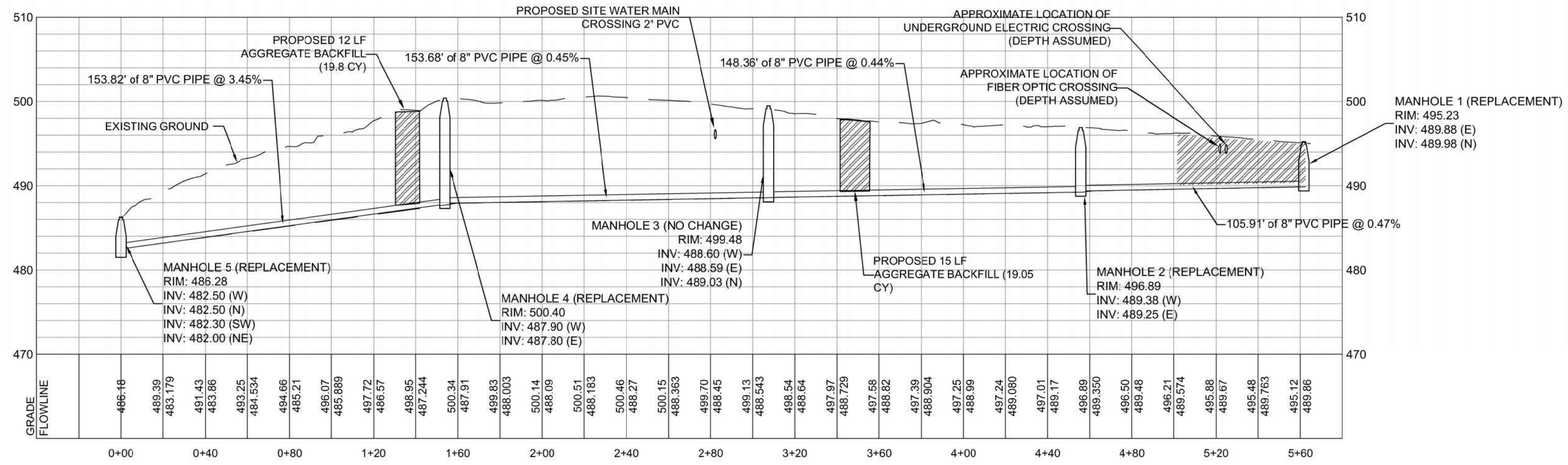
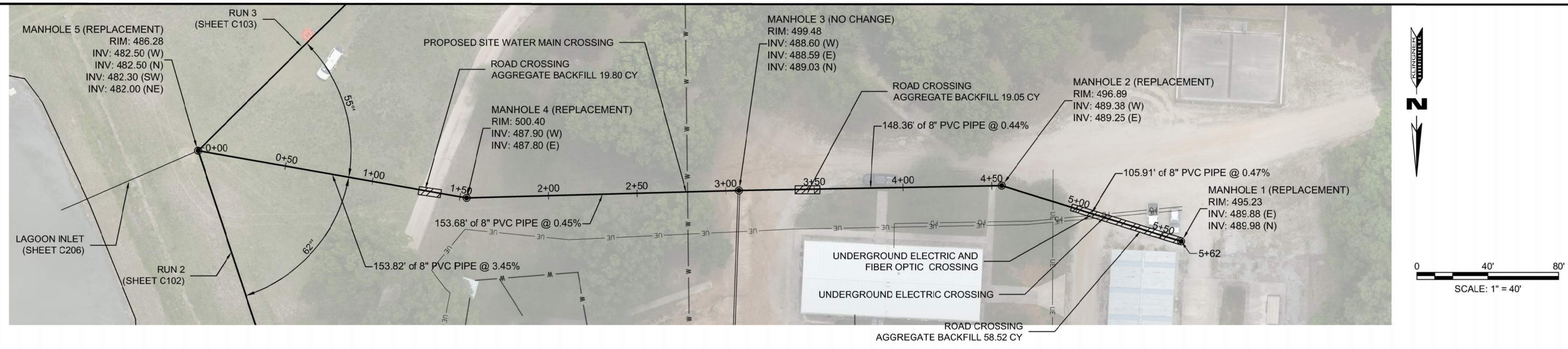
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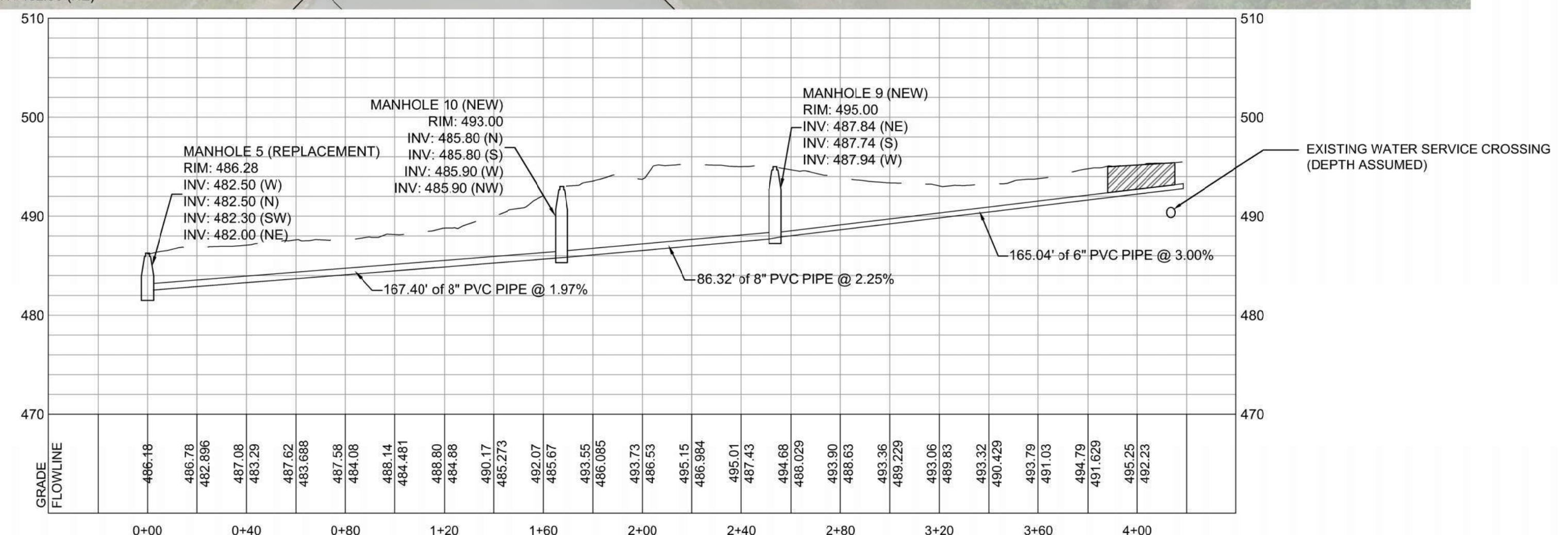
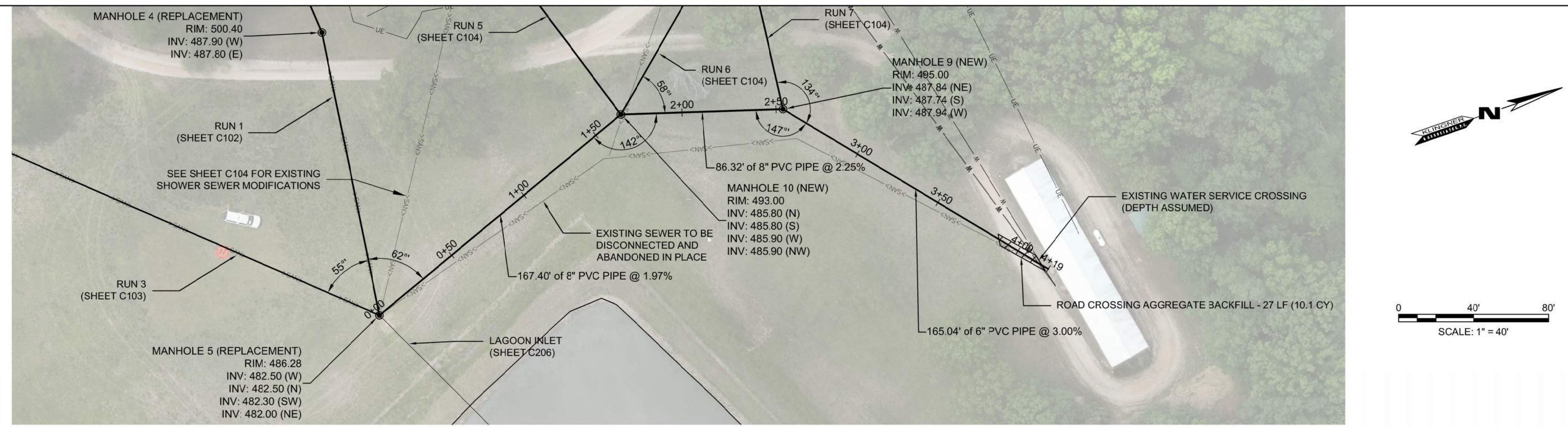
SHEET TITLE:
**PROPOSED SITE
SEWER
MODIFICATIONS**

SHEET NUMBER:
C101

RUN 1



RUN 2



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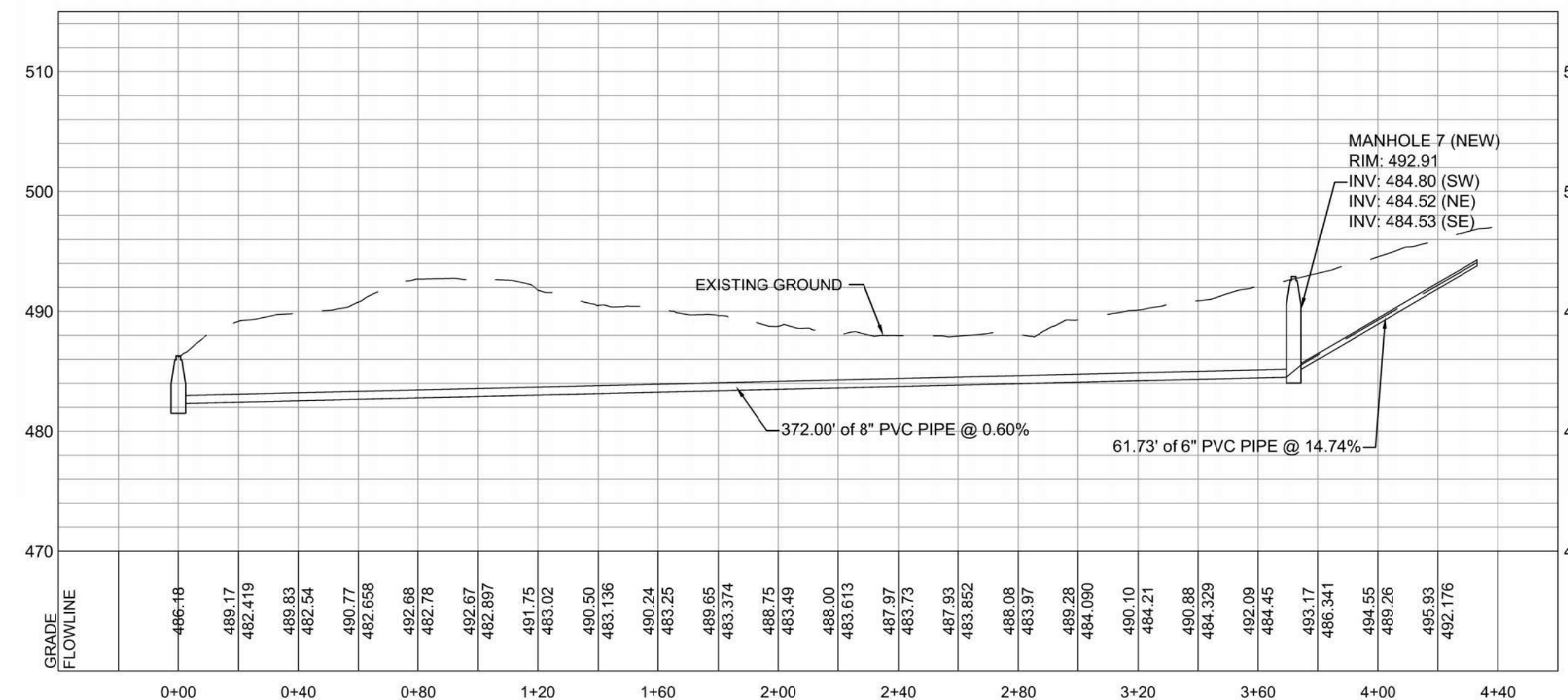
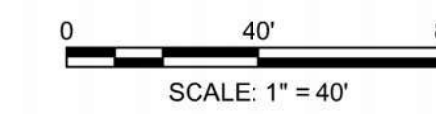
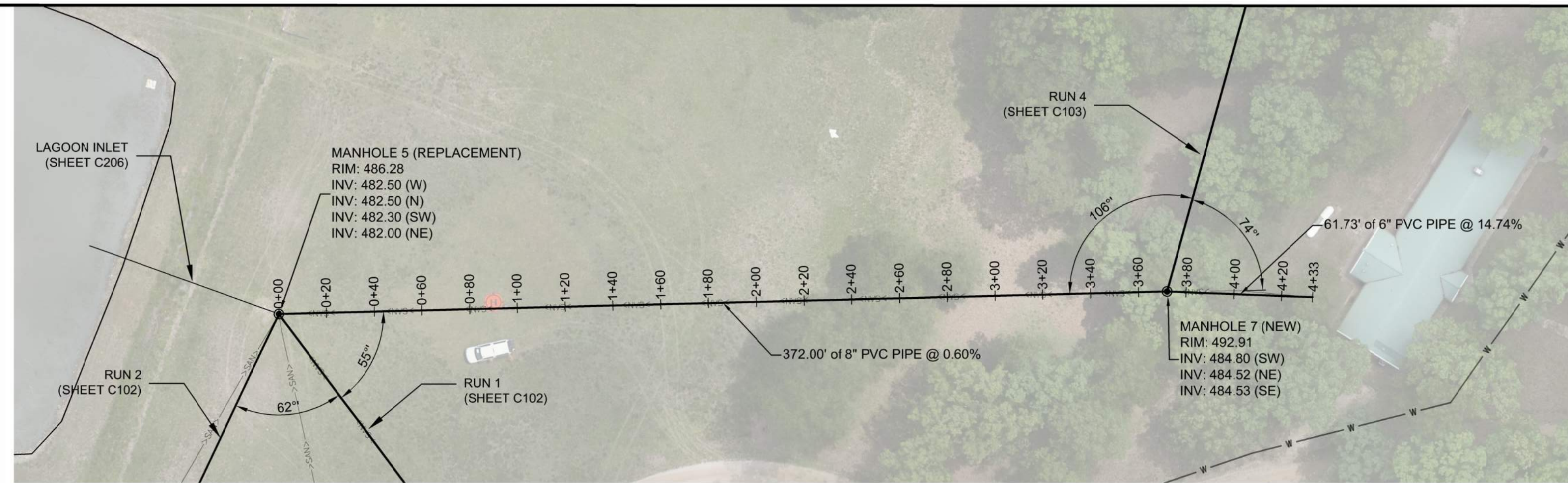
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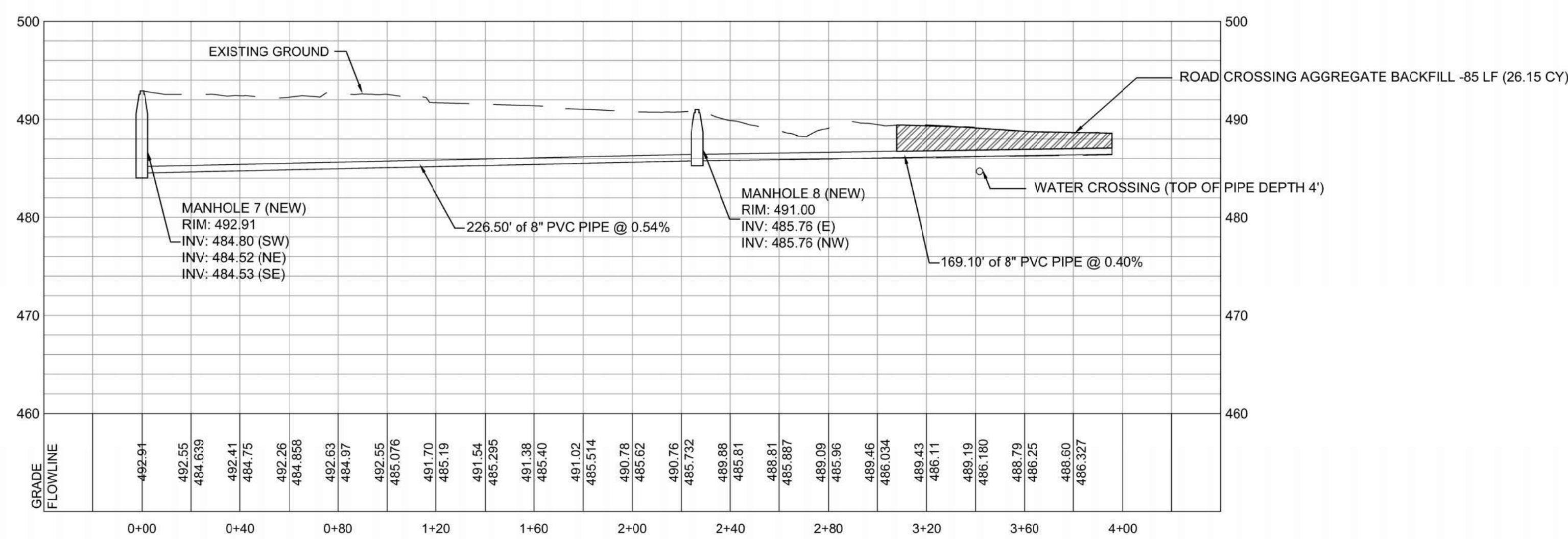
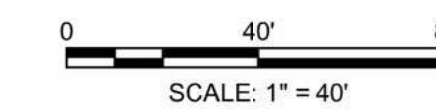
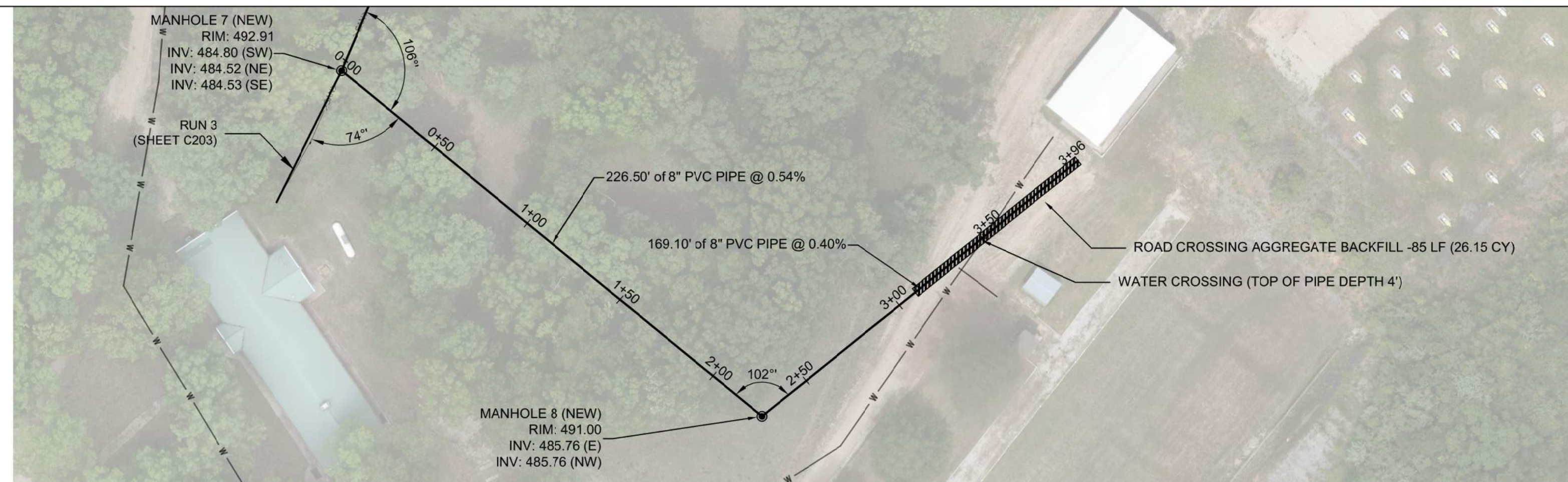
SHEET TITLE:
SEWER PLAN & PROFILES RUNS 1 & 2

SHEET NUMBER:
C102

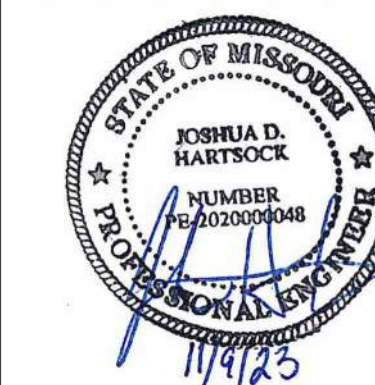
RUN 3



RUN 4



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SHEET TITLE:
**SEWER PLAN &
PROFILES RUNS 3
& 4**

SHEET NUMBER:

C103



JOSHUA D. HARTSOCK-ENGINEER
MO # PE 202000048

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MISSOURI STATE CERTIFICATE OF AUTHORITY #000866
ENGINEERING

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DESIGN AND CONSTRUCT
LAGOON EXPANSION

461 COUNTY ROAD 517
WAPPAPELLO, MO 63966

PROJECT # T2317-01
SITE # 6325
ASSET # 7016325013

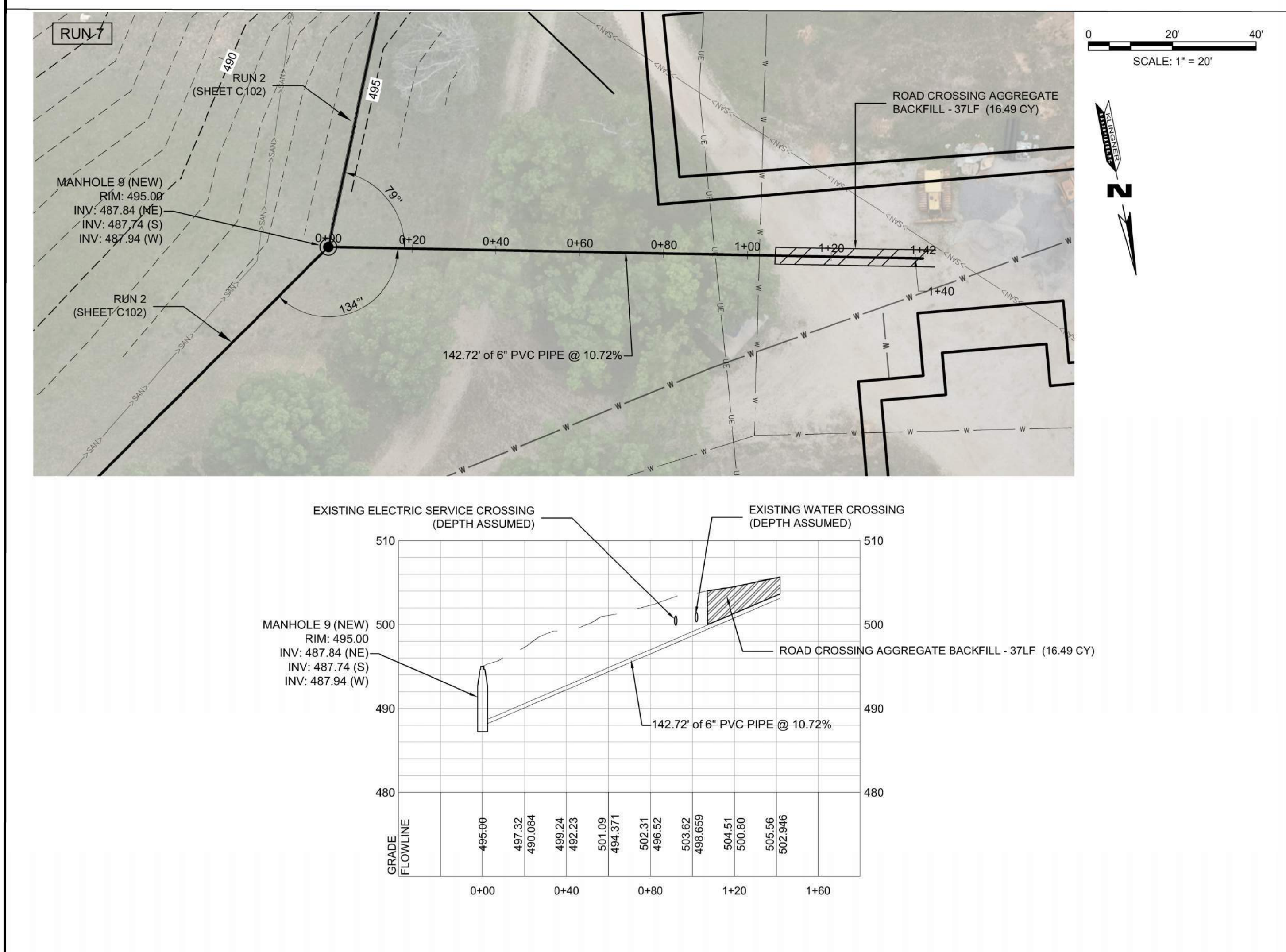
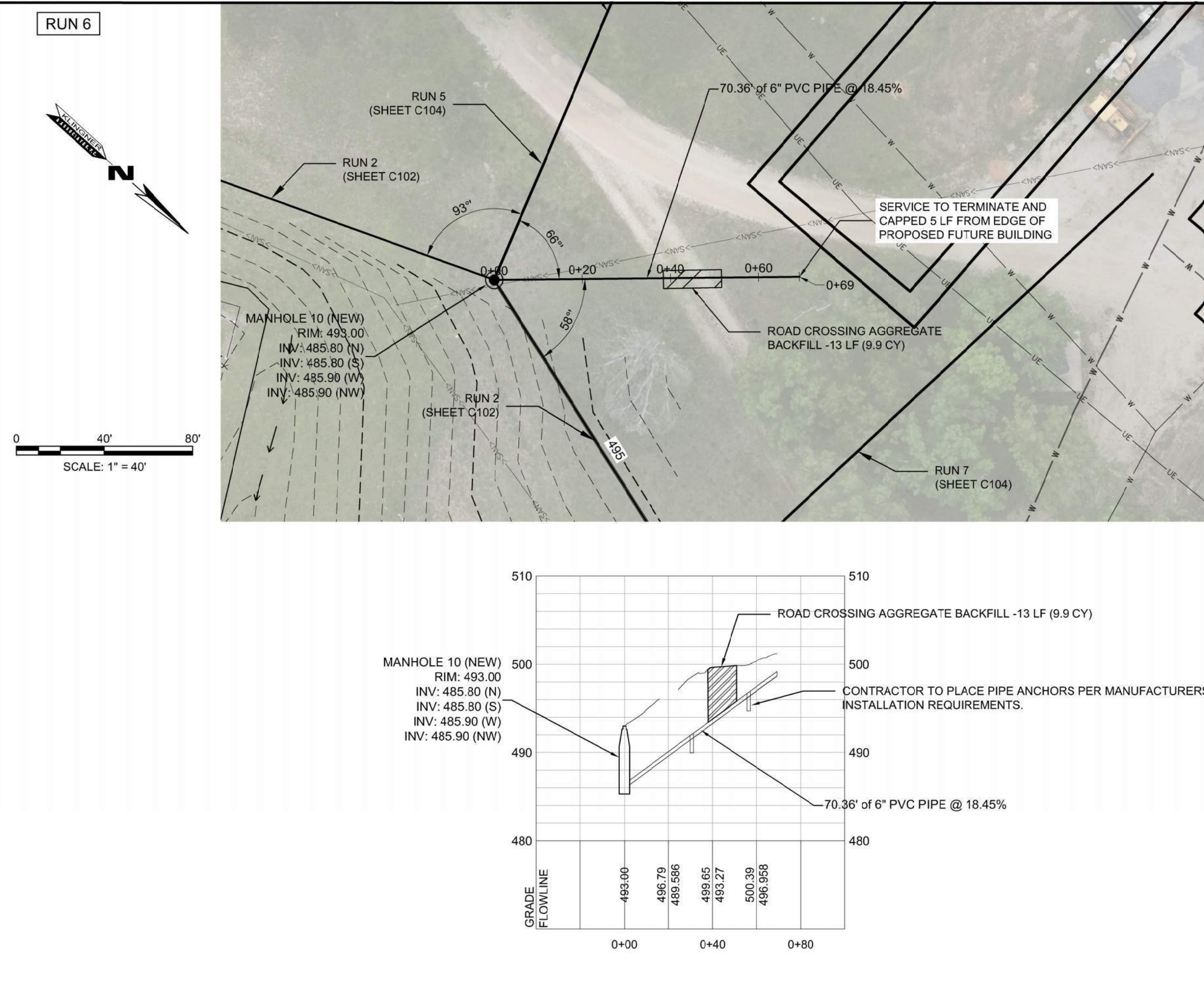
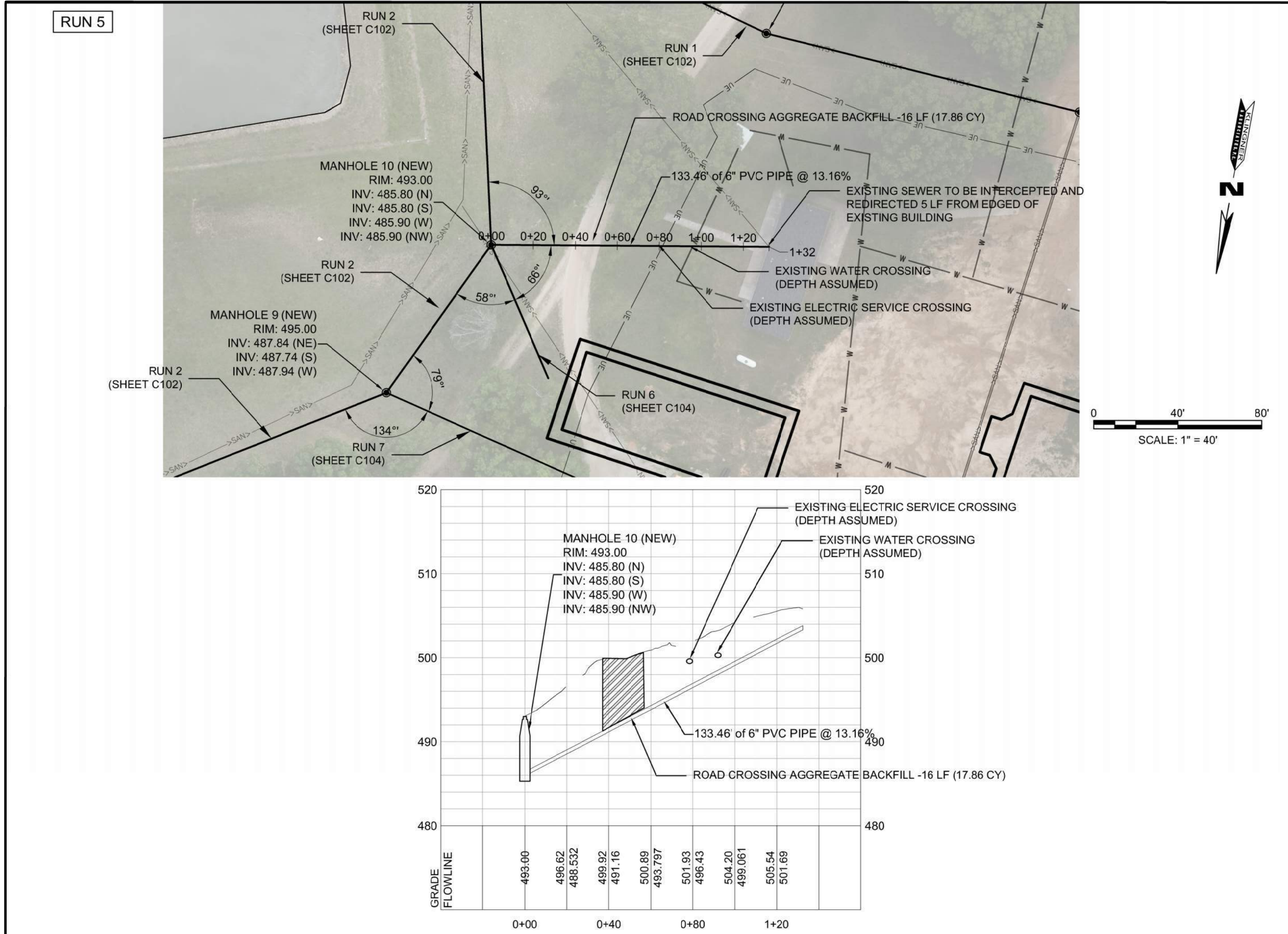
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DATE: _____
ISSUE DATE: 11-09-2023

CAD DWG FILE: _____
DRAWING BY: JDH/MCB
CHECKED BY: MCB/JIN
DESIGNED BY: JDH/MCB/JIN

SHEET TITLE:
**SEWER PLAN &
PROFILES RUNS
5-7**

SHEET NUMBER:

C104





JOSHUA D. HARTSOCK-ENGINEER
MO # PE 202000048

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DESIGN AND CONSTRUCT
LAGOON EXPANSION

461 COUNTY ROAD 517
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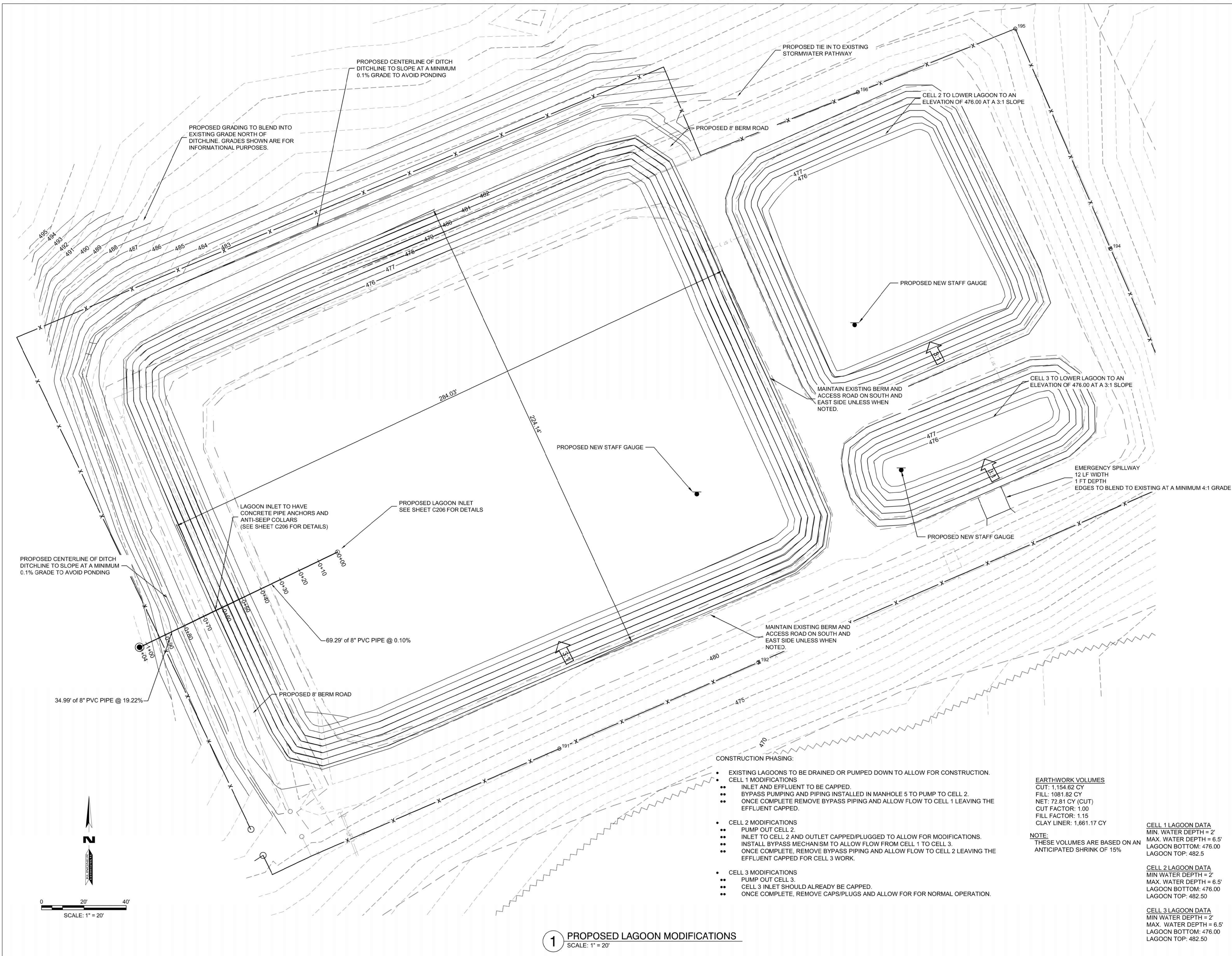
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 11-09-2023

CAD DWG FILE: _____
DRAWING BY: JDH/MCB
CHECKED BY: MCB/JJN
DESIGNED BY: JDH/MCB/JJN

SHEET TITLE:
**PROPOSED
LAGOON
MODIFICATIONS**

SHEET NUMBER:

C200



- CONSTRUCTION PHASING:
- EXISTING LAGOONS TO BE DRAINED OR PUMPED DOWN TO ALLOW FOR CONSTRUCTION.
 - CELL 1 MODIFICATIONS
 - INLET AND EFFLUENT TO BE CAPPED.
 - BYPASS PUMPING AND PIPING INSTALLED IN MANHOLE 5 TO PUMP TO CELL 2.
 - ONCE COMPLETE, REMOVE BYPASS PIPING AND ALLOW FLOW TO CELL 1 LEAVING THE EFFLUENT CAPPED.
 - CELL 2 MODIFICATIONS
 - PUMP OUT CELL 2.
 - INLET TO CELL 2 AND OUTLET CAPPED/PLUGGED TO ALLOW FOR MODIFICATIONS.
 - INSTALL BYPASS MECHANISM TO ALLOW FLOW FROM CELL 1 TO CELL 3.
 - ONCE COMPLETE, REMOVE BYPASS PIPING AND ALLOW FLOW TO CELL 2 LEAVING THE EFFLUENT CAPPED FOR CELL 3 WORK.
 - CELL 3 MODIFICATIONS
 - PUMP OUT CELL 3.
 - CELL 3 INLET SHOULD ALREADY BE CAPPED.
 - ONCE COMPLETE, REMOVE CAPS/PLUGS AND ALLOW FOR FOR NORMAL OPERATION.

EARTHWORK VOLUMES
OUT: 1,154.62 CY
FILL: 1081.82 CY
NET: 72.81 CY (CUT)
CUT FACTOR: 1.00
FILL FACTOR: 1.15
CLAY LINER: 1,861.17 CY

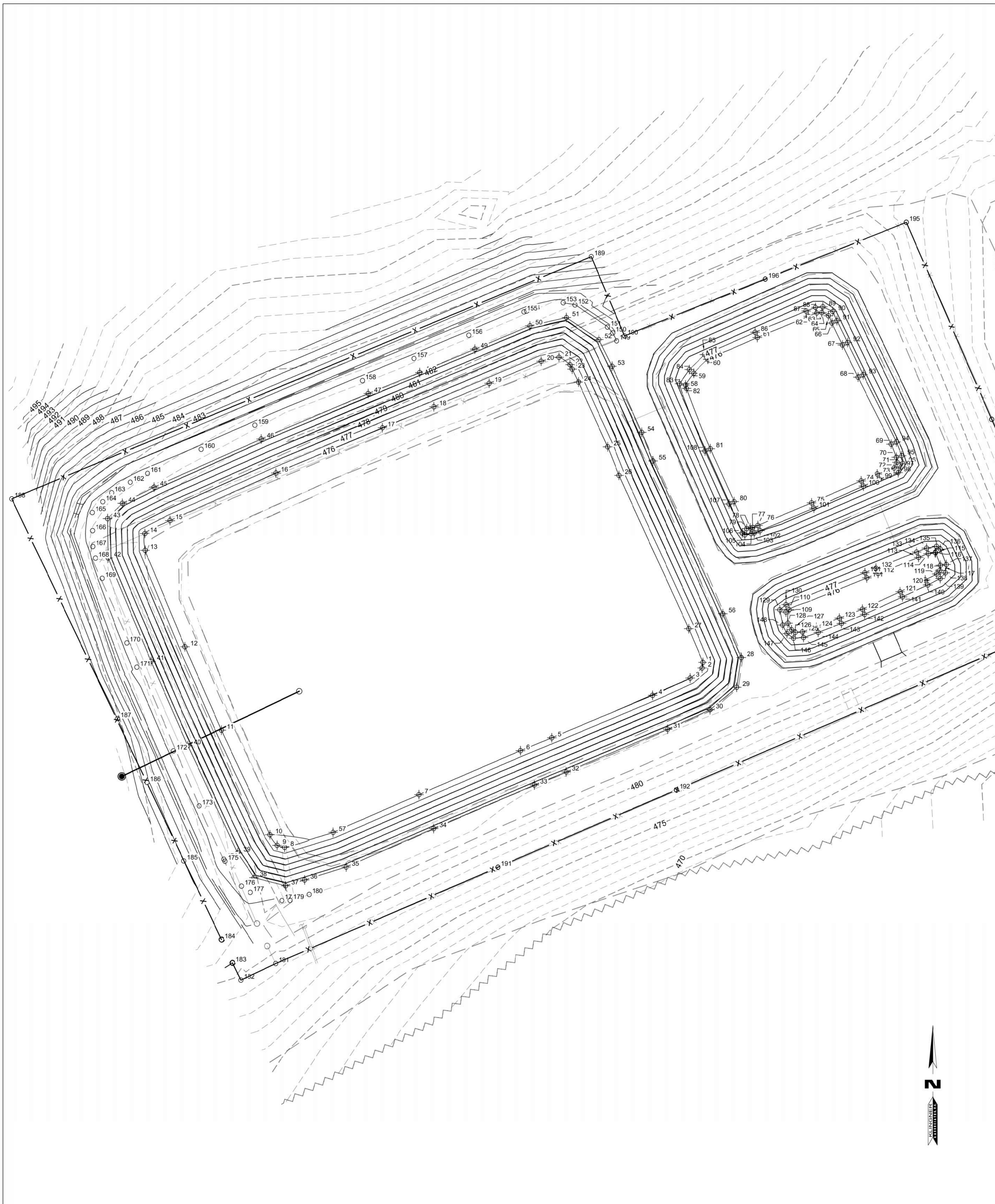
NOTE:
THESE VOLUMES ARE BASED ON AN
ANTICIPATED SHRINK OF 15%

CELL 1 LAGOON DATA
MIN. WATER DEPTH = 2'
MAX. WATER DEPTH = 6.5'
LAGOON BOTTOM: 476.00
LAGOON TOP: 482.5

CELL 2 LAGOON DATA
MIN. WATER DEPTH = 2'
MAX. WATER DEPTH = 6.5'
LAGOON BOTTOM: 476.00
LAGOON TOP: 482.50

CELL 3 LAGOON DATA
MIN. WATER DEPTH = 2'
MAX. WATER DEPTH = 6.5'
LAGOON BOTTOM: 476.00
LAGOON TOP: 482.50

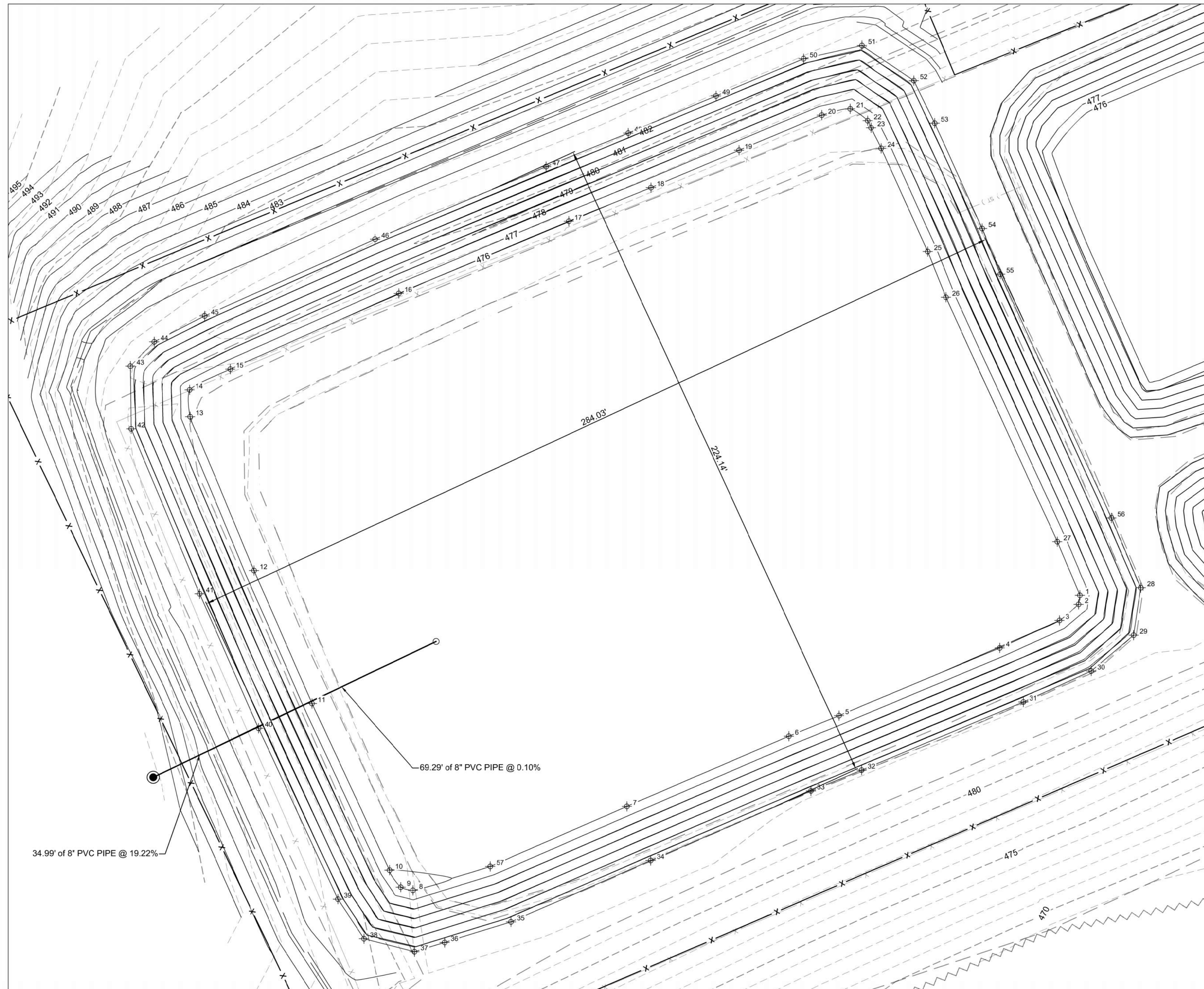
1 PROPOSED LAGOON MODIFICATIONS
SCALE: 1" = 20'



COORDINATE POINTS				
POINT #	ELEV	DESC.	NORTHING	EASTING
1	476.0	CELL 1	388698.8364	881389.8199
2	476.0	CELL 1	388695.8594	881389.3687
3	476.0	CELL 1	388690.5554	881383.0372
4	476.0	CELL 1	388681.4851	881363.2962
5	476.0	CELL 1	388659.1211	881310.2624
6	476.0	CELL 1	388652.3144	881293.6723
7	476.0	CELL 1	388629.1684	881240.2290
8	476.0	CELL 1	388601.4215	881169.5943
9	476.0	CELL 1	388602.4664	881165.5308
10	476.0	CELL 1	388608.0776	881161.8145
11	476.0	CELL 1	388663.1070	881136.2661
12	476.0	CELL 1	388707.0102	881117.0734
13	476.0	CELL 1	388757.8133	881095.9826
14	476.0	CELL 1	388766.6782	881095.8357
15	476.0	CELL 1	388773.5073	881109.2252
16	476.0	CELL 1	388798.5256	881164.8846
17	476.0	CELL 1	388822.3588	881221.0262
18	476.0	CELL 1	388833.4349	881248.1440
19	476.0	CELL 1	388845.7601	881277.2327
20	476.0	CELL 1	388857.3612	881304.6116
21	476.0	CELL 1	388859.4833	881313.9326
22	476.0	CELL 1	388855.5489	881319.7386
23	476.0	CELL 1	388853.2082	881320.8767
24	476.0	CELL 1	388846.4244	881324.1750
25	476.0	CELL 1	388812.3410	881339.5741
26	476.0	CELL 1	388797.2575	881345.5339
27	476.0	CELL 1	388716.5530	881382.3243
28	482.5	CELL 1	388701.3609	881409.9253
29	482.5	CELL 1	388685.6919	881407.5503
30	482.5	CELL 1	388673.8484	881393.5302
31	482.5	CELL 1	388663.6275	881371.1344
32	482.5	CELL 1	388641.1165	881317.7520
33	482.5	CELL 1	388634.2539	881301.0257
34	482.5	CELL 1	388611.3058	881248.0504
35	482.5	CELL 1	388591.0403	881201.9328
36	482.5	CELL 1	388584.2372	881180.0121
37	482.5	CELL 1	388581.1589	881170.0933
38	482.5	CELL 1	388585.4479	881153.4133
39	482.5	CELL 1	388598.5339	881144.7463
40	482.5	CELL 1	388654.9624	881118.5447
41	482.5	CELL 1	388699.3657	881099.1333
42	482.5	CELL 1	388753.8054	881076.5329
43	482.5	CELL 1	388774.4979	881076.2649
44	482.5	CELL 1	388782.5509	881084.1239
45	482.5	CELL 1	388791.0879	881100.7738
46	482.5	CELL 1	388816.3953	881157.0765
47	482.5	CELL 1	388840.3606	881213.5294
48	482.5	CELL 1	388851.4388	881240.6534
49	482.5	CELL 1	388863.7148	881269.6249
50	482.5	CELL 1	388875.9907	881298.5963
51	482.5	CELL 1	388880.3767	881317.8613
52	482.5	CELL 1	388868.7658	881334.9952
53	482.5	CELL 1	388854.7038	881341.8322
54	482.5	CELL 1	388819.9369	881357.5402
55	482.5	CELL 1	388804.8808	881363.4777
56	482.5	CELL 1	388724.3989	881400.1783
57	476.0	CELL 1	388609.3368	881195.0986
58	476.0	CELL 2	388844.8787	881380.6198
59	476.0	CELL 2	388851.0018	881384.9367
60	476.0	CELL 2	388858.3579	881392.3616
61	476.0	CELL 2	388869.8530	881418.4568
62	476.0	CELL 2	388881.0142	881445.2771
63	476.0	CELL 2	388882.7730	881449.7189
64	476.0	CELL 2	388882.9569	881452.3717
65	476.0	CELL 2	388881.3169	881455.7869

COORDINATE POINTS				
POINT #	ELEV	DESC.	NORTHING	EASTING
66	476.0	CELL 2	388877.4488	881457.6477
67	476.0	CELL 2	388885.9268	881463.1905
68	476.0	CELL 2	388848.9694	881471.4665
69	476.0	CELL 2	388813.7008	881488.8436
70	476.0	CELL 2	388806.8395	881491.5200
71	476.0	CELL 2	388804.1708	881491.9530
72	476.0	CELL 2	388801.1531	881490.3696
73	476.0	CELL 2	388798.0168	881481.4733
74	476.0	CELL 2	388794.3876	881473.0608
75	476.0	CELL 2	388792.7915	881446.9697
76	476.0	CELL 2	388770.9349	881418.7187
77	476.0	CELL 2	388769.7926	881415.9682
78	476.0	CELL 2	388759.5628	881414.7083
79	476.0	CELL 2	388759.2023	881412.7315
80	476.0	CELL 2	388783.4601	881406.1615
81	476.0	CELL 2	388811.3226	881393.6626
82	476.0	CELL 2	388843.0645	881381.1026
83	477.0	CELL 2	388845.5074	881377.3925
84	477.0	CELL 2	388852.9467	881382.6373
85	477.0	CELL 2	388850.8796	881390.6443
86	477.0	CELL 2	388872.6108	881417.2757
87	477.0	CELL 2	388883.8035	881444.0798
88	477.0	CELL 2	388885.7337	881449.0471
89	477.0	CELL 2	388896.0046	881452.9554
90	477.0	CELL 2	388883.5658	881458.0341
91	477.0	CELL 2	388878.7494	881460.3511
92	477.0	CELL 2	388887.2198	881465.8976
93	477.0	CELL 2	388850.2954	881474.1576
94	477.0	CELL 2	388814.9111	881491.5917
95	477.0	CELL 2	388807.6336	881494.4304
96	477.0	CELL 2	388803.5838	881495.0874
97	477.0	CELL 2	388801.7384	881494.0036
98	477.0	CELL 2	388798.7295	881492.5192
99	477.0	CELL 2	388795.2244	881482.5664
100	477.0	CELL 2	388791.6397	881474.2647
101	477.0	CELL 2	388790.0374	881448.1595
102	477.0	CELL 2	388788.1644	881419.8694
103	477.0	CELL 2	388786.8989	881416.8224
104	477.0	CELL 2	388786.6115	881415.2466
105	477.0	CELL 2	388785.9789	881411.7780
106	477.0	CELL 2	388786.9783	881410.4531
107	477.0	CELL 2	388782.2184	881403.4305
108	477.0	CELL 2	388810.1219	881390.9132
109	476.0	CELL 3	388725.2943	881433.4737
110	476.0	CELL 3	388726.5982	881435.0693
111	476.0	CELL 3	388743.2988	881476.1493
112	476.0	CELL 3	388745.6416	881481.9528
113	476.0	CELL 3	388754.1359	881503.3715
114	476.0	CELL 3	388756.0812	881508.3097
115	476.0	CELL 3	388756.7315	881511.9708
116	476.0	CELL 3	388756.5299	881512.2470
117	476.0	CELL 3	388749.9819	881514.7782
118	476.0	CELL 3	388747.2567	881514.4729
119	476.0	CELL 3	388745.3783	881512.7925
120	476.0	CELL 3	388742.2297	881506.7612
121	476.0	CELL 3	388736.0350	881493.6014
122	476.0	CELL 3	388726.8358	881473.7110
123	476.0	CELL 3	388722.1244	881461.5727
124	476.0	CELL 3	388717.4395	881449.5029
125	476.0	CELL 3	388714.8733	881442.1655
126	476.0	CELL 3	388714.6277	881438.3124
127	476.0	CELL 3	388716.0247	881436.3584
128	476.0	CELL 3	388719.4440	881434.5359
129	477.0	CELL 3	388726.4983	881430.2060
130	477.0	CELL 3	388729.2071	881433.5209

COORDINATE POINTS				
POINT #	ELEV	DESC.	NORTHING	EASTING
131	477.0	CELL 3	388746.0793	881475.0228
132	477.0	CELL 3	388748.4269	881480.8383
133	477.0	CELL 3	388756.9013	881502.2785
134	477.0	CELL 3	388758.9824	881507.4894
135	477.0	CELL 3	388759.9090	881512.7055
136	477.0	CELL 3	388758.4339	881514.7274
137	477.0	CELL 3	388750.3782	881517.8413
138	477.0	CELL 3	388745.9706	881517.3475
139	477.0	CELL 3	388742.9714	881514.6646
140	477.0	CELL 3	388739.5417	881508.0948
141	477.0	CELL 3	388733.3164	881494.8699
142	477.0	CELL 3	388724.0733	881474.8846
143	477.0	CELL 3	388719.3276	881462.6582
144	477.0	CELL 3	388714.6317	881450.5383
145	477.0	CELL 3	388711.9056	881442.7673
146	477.0	CELL 3	388711.5658	881437.4368
147	477.0	CELL 3	388713.9932	881434.0416
148	477.0	CELL 3	388718.4467	881431.6680
149	482.5	EDGE OF ROAD	388868.0640	881344.2319
150	482.5	EDGE OF ROAD	388872.2638	881342.1899
151	482.5	EDGE OF ROAD	388875.3884	881339.4831
152	482.5	EDGE OF ROAD	388886.9993	881322.3491
153	482.5	EDGE OF ROAD	388883.1771	881316.0854
154	482.5	EDGE OF ROAD	388883.7911	881296.8204
155	482.5	EDGE OF ROAD	388883.3568	881295.4751
156	482.5	EDGE OF ROAD	388871.0808	881266.5037
157	482.5	EDGE OF ROAD	388858.8252	881237.5803
158	482.5	EDGE OF ROAD	388847.1705	881210.4378
159	482.5	EDGE OF ROAD	388823.6920	881153.7966
160	482.5	EDGE OF ROAD	388810.9962	881125.5516
161	482.5	EDGE OF ROAD	388798.3004	881097.3069
162	482.5	EDGE OF ROAD	388793.6870	881088.3086
163	482.5	EDGE OF ROAD	388788.1384	881078.3985
164	482.5	EDGE OF ROAD	388783.3924	881073.7668
165	482.5	EDGE OF ROAD	388777.7113	881068.2226
166	482.7	EDGE OF ROAD	388768.1586	881068.3414
167	482.5	EDGE OF ROAD	388759.8107	881068.4544
168	482.5	EDGE OF ROAD	388753.7189	881069.8563
169	482.5	EDGE OF ROAD	388743.0741	881073.4737
170	482.5	EDGE OF ROAD	388709.0854	881066.4362
171	482.5	EDGE OF ROAD	388696.2984	881091.7447
172	482.5	EDGE OF ROAD	388652.2242	881111.0122
173	482.5	EDGE OF ROAD	388623.2658	881124.4421
174	482.5	EDGE OF ROAD	388595.1647	881137.4904
175	482.5	EDGE OF ROAD	388594.1164	881138.0765
176	482.5	EDGE OF ROAD	388581.0304	881146.7435
177	482.5	EDGE OF ROAD	388577.6999	881151.4210
178	482.5	EDGE OF ROAD	388573.4109	881168.1010
179	482.5	EDGE OF ROAD	388573.5184	881172.4645
180	482.5	EDGE OF ROAD	388576.5967	881182.3833
181	480.5	FENCE	388540.2499	881164.7957
182	480.5	FENCE	388531.5137	881146.4435
183	480.5	FENCE	388540.5887	881142.1235
184	480.5	FENCE	388552.8054	881136.3080
185	483.0	FENCE	388594.2854	881116.4572
186	480.5	FENCE	388635.5433	881097.0697
187	485.0	FENCE	388669.2318	881081.5825
188	493.0	FENCE	388784.9122	881025.8171
189	480.5	FENCE	388912.4331	881330.8785
190	480.5	FENCE	388870.6777	881348.4269
191	478.0	FENCE	388590.9609	881281.8741
192	480.5	FENCE	3886	



CELL 1 MODIFICATION COORDINATE POINTS

COORDINATE POINTS				
POINT #	ELEV	DESC.	NORTHING	EASTING
1	475.0	CELL 1	388698.8364	881389.8199
2	476.0	CELL 1	388695.8594	881389.3687
3	476.0	CELL 1	388690.5554	881383.0372
4	476.0	CELL 1	388681.4851	881363.2962
5	476.0	CELL 1	388659.1211	881310.2624
6	476.0	CELL 1	388652.3144	881293.6723
7	476.0	CELL 1	388628.1684	881240.2290
8	476.0	CELL 1	388601.4215	881169.5943
9	476.0	CELL 1	388602.4664	881165.5308
10	476.0	CELL 1	388608.0776	881161.8145
11	476.0	CELL 1	388663.1070	881136.2661
12	476.0	CELL 1	388707.0102	881117.0734
13	476.0	CELL 1	388757.8133	881095.9826
14	476.0	CELL 1	388766.6782	881095.8357
15	476.0	CELL 1	388773.5073	881109.2252
16	476.0	CELL 1	388798.5256	881164.8846
17	476.0	CELL 1	388822.3588	881221.0262
18	476.0	CELL 1	388833.4349	881248.1440
19	476.0	CELL 1	388845.7601	881277.2327
20	476.0	CELL 1	388857.3612	881304.6116
21	476.0	CELL 1	388859.4833	881313.9326
22	476.0	CELL 1	388855.5489	881319.7386
23	476.0	CELL 1	388853.2082	881320.8767
24	476.0	CELL 1	388846.4244	881324.1750
25	476.0	CELL 1	388812.3410	881339.5741
26	476.0	CELL 1	388797.2575	881345.5339
27	476.0	CELL 1	388716.5530	881382.3243
28	482.5	CELL 1	388701.3609	881409.9253
29	482.5	CELL 1	388685.6919	881407.5503
30	482.5	CELL 1	388673.8484	881393.5302
31	482.5	CELL 1	388663.6275	881371.1344
32	482.5	CELL 1	388641.1165	881317.7520
33	482.5	CELL 1	388634.2539	881301.0257
34	482.5	CELL 1	388611.3058	881248.0504
35	482.5	CELL 1	388591.0403	881201.9328
36	482.5	CELL 1	388584.2372	881180.0121
37	482.5	CELL 1	388581.1589	881170.0933
38	482.5	CELL 1	388585.4479	881153.4133
39	482.5	CELL 1	388598.5339	881144.7463
40	482.5	CELL 1	388654.9624	881118.5447
41	482.5	CELL 1	388699.3657	881099.1333
42	482.5	CELL 1	388753.8054	881076.5329
43	482.5	CELL 1	388774.4979	881076.2649
44	482.5	CELL 1	388782.5509	881084.1239
45	482.5	CELL 1	388791.0879	881100.7738
46	482.5	CELL 1	388816.3953	881157.0765
47	482.5	CELL 1	388840.3606	881213.5294
48	482.5	CELL 1	388851.4388	881240.6534
49	482.5	CELL 1	388863.7148	881269.6249
50	482.5	CELL 1	388875.9907	881298.5963
51	482.5	CELL 1	388880.3767	881317.8613
52	482.5	CELL 1	388868.7658	881334.9952
53	482.5	CELL 1	388854.7038	881341.8322
54	482.5	CELL 1	388819.9369	881357.5402
55	482.5	CELL 1	388804.8808	881363.4777
56	482.5	CELL 1	388724.3989	881400.1783
57	476.0	CELL 1	388609.3368	881195.0986

1 CELL 1 MODIFICATION COORDINATES
SCALE: 1" = 20'

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



JOSHUA D. HARTSOCK-ENGINEER
MO # PE 2020000048

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

Columbia, Missouri
3622 Endeavor Avenue, Suite 110
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Burlington, IA, Pella, IA, Davenport, IA

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MISSOURI STATE CERTIFICATE OF AUTHORITY #000866

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DESIGN AND CONSTRUCT
LAGOON EXPANSION

461 COUNTY ROAD 517
WAPPAPPELLO, MO 63966

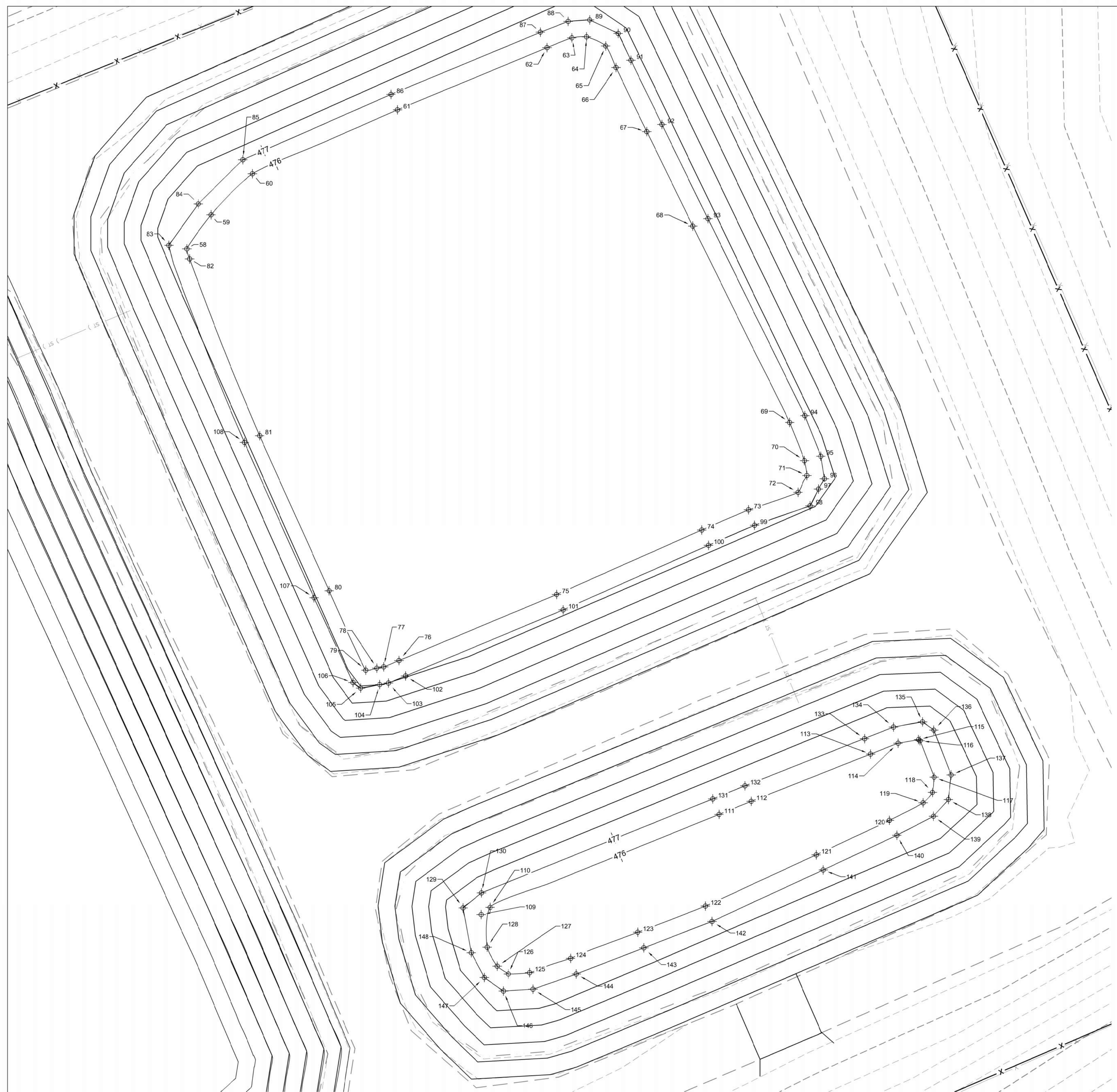
PROJECT # T2317-01
SITE # 6325
ASSET # 7016325013

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 11-09-2023

CAD DWG FILE: _____
DRAWING BY: JDH/MCB
CHECKED BY: MCB/JJN
DESIGNED BY: JDH/MCB/JJN

SHEET TITLE:
**CELL 1 MODIFICATION
DETAILS &
COORDINATE TABLE**

SHEET NUMBER:
C202



CELL 2 MODIFICATION COORDINATE POINTS

COORDINATE POINTS				
POINT #	ELEV	DESC.	NORTHING	EASTING
58	476.0	CELL 2	388844.8787	881380.6198
59	476.0	CELL 2	388851.0018	881384.9367
60	476.0	CELL 2	388858.3579	881392.3616
61	476.0	CELL 2	388869.8530	881418.4568
62	476.0	CELL 2	388881.0142	881445.2771
63	476.0	CELL 2	388882.7730	881449.7189
64	476.0	CELL 2	388882.9569	881452.3717
65	476.0	CELL 2	388881.3169	881455.7869
66	476.0	CELL 2	388877.4488	881457.6477
67	476.0	CELL 2	388865.9268	881463.1905
68	476.0	CELL 2	388848.9694	881471.4665
69	476.0	CELL 2	388813.7008	881488.8436
70	476.0	CELL 2	388806.8395	881491.5200
71	476.0	CELL 2	388804.1708	881491.9530
72	476.0	CELL 2	388801.1531	881490.3696
73	476.0	CELL 2	388798.0168	881481.4733
74	476.0	CELL 2	388794.3876	881473.0608
75	476.0	CELL 2	388782.7915	881446.9697
76	476.0	CELL 2	388770.9349	881418.7187
77	476.0	CELL 2	388769.7926	881415.9682
78	476.0	CELL 2	388769.5628	881414.7083
79	476.0	CELL 2	388769.2023	881412.7315
80	476.0	CELL 2	388783.4601	881406.1615
81	476.0	CELL 2	388811.3226	881393.6626
82	476.0	CELL 2	388843.0645	881381.1026
83	477.0	CELL 2	388845.5074	881377.3925
84	477.0	CELL 2	388852.9467	881382.6373
85	477.0	CELL 2	388860.8796	881390.8443
86	477.0	CELL 2	388872.6108	881417.2757
87	477.0	CELL 2	388883.8035	881444.0798
88	477.0	CELL 2	388885.7337	881449.0471
89	477.0	CELL 2	388886.0046	881452.9554
90	477.0	CELL 2	388883.5658	881458.0341
91	477.0	CELL 2	388878.7494	881460.3511
92	477.0	CELL 2	388867.2198	881465.8976
93	477.0	CELL 2	388850.2954	881474.1576
94	477.0	CELL 2	388814.9111	881491.5917
95	477.0	CELL 2	388807.6336	881494.4304
96	477.0	CELL 2	388803.5838	881495.0874
97	477.0	CELL 2	388801.7384	881494.0036
98	477.0	CELL 2	388798.7295	881492.5192
99	477.0	CELL 2	388795.2244	881482.3664
100	477.0	CELL 2	388791.6397	881474.2647
101	477.0	CELL 2	388780.0374	881448.1595
102	477.0	CELL 2	388768.1644	881419.8694
103	477.0	CELL 2	388766.8989	881416.8224
104	477.0	CELL 2	388766.6115	881415.2466
105	477.0	CELL 2	388765.9789	881411.7780
106	477.0	CELL 2	388766.9783	881410.4531
107	477.0	CELL 2	388782.2184	881403.4305
108	477.0	CELL 2	388810.1219	881390.9132

CELL 3 MODIFICATION COORDINATE POINTS

COORDINATE POINTS				
POINT #	ELEV	DESC.	NORTHING	EASTING
109	476.0	CELL 3	388725.2943	881433.4737
110	476.0	CELL 3	388726.5982	881435.0693
111	476.0	CELL 3	388743.2988	881476.1493
112	476.0	CELL 3	388745.6416	881481.9528
113	476.0	CELL 3	388754.1359	881503.3715
114	476.0	CELL 3	388756.0812	881508.3097
115	476.0	CELL 3	388756.7315	881511.9708
116	476.0	CELL 3	388756.5299	881512.2470
117	476.0	CELL 3	388749.9819	881514.7782
118	476.0	CELL 3	388747.2567	881514.4729
119	476.0	CELL 3	388745.3783	881512.7925
120	476.0	CELL 3	388742.2297	881506.7612
121	476.0	CELL 3	388736.0350	881493.6014
122	476.0	CELL 3	388726.8358	881473.7110
123	476.0	CELL 3	388722.1244	881461.5727
124	476.0	CELL 3	388717.4395	881449.5029
125	476.0	CELL 3	388714.8733	881442.1655
126	476.0	CELL 3	388714.6277	881438.3124
127	476.0	CELL 3	388716.0247	881436.3584
128	476.0	CELL 3	388719.4440	881434.5359
129	477.0	CELL 3	388726.4983	881430.2060
130	477.0	CELL 3	388729.2071	881433.5209
131	477.0	CELL 3	388746.0793	881475.0228
132	477.0	CELL 3	388748.4269	881480.8383
133	477.0	CELL 3	388756.9013	881502.2785
134	477.0	CELL 3	388758.9824	881507.4894
135	477.0	CELL 3	388759.9090	881512.7055
136	477.0	CELL 3	388758.4339	881514.7274
137	477.0	CELL 3	388750.3782	881517.8413
138	477.0	CELL 3	388745.9706	881517.3475
139	477.0	CELL 3	388742.9714	881514.6646
140	477.0	CELL 3	388739.5417	881508.0948
141	477.0	CELL 3	388733.3164	881494.8699
142	477.0	CELL 3	388724.0733	881474.8846
143	477.0	CELL 3	388719.3276	881462.6582
144	477.0	CELL 3	388714.6317	881450.5383
145	477.0	CELL 3	388711.9056	881442.7673
146	477.0	CELL 3	388711.5658	881437.4368
147	477.0	CELL 3	388713.9932	881434.0416
148	477.0	CELL 3	388718.4467	881431.6680

1 CELL 2 & CELL 3 MODIFICATION COORDINATES
SCALE: 1" = 10'

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



JOSHUA D. HARTSOCK-ENGINEER
MO # PE 2020000048

KLINGNER & ASSOCIATES, P.C.
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MISSOURI STATE CERTIFICATE OF AUTHORITY #000866

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DESIGN AND CONSTRUCT
LAGOON EXPANSION

461 COUNTY ROAD 517
WAPPAPPELLO, MO 63966

PROJECT # T2317-01
SITE # 6325
ASSET # 7016325013

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 11-09-2023

CAD DWG FILE: _____
DRAWING BY: JDH/MCB
CHECKED BY: MCB/JJN
DESIGNED BY: JDH/MCB/JJN

SHEET TITLE:
**CELLS 2 & 3
MODIFICATION DETAILS
& COORDINATE TABLES**

SHEET NUMBER:
C203



JOSHUA D. HARTSOCK-ENGINEER
MO # PE 2020000048

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461 COUNTY ROAD 517
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PROJECT # T2317-01
SITE # 6325
ASSET # 7016325013

REVISION: _____
DATE: _____
REVISION: _____
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REVISION: _____
DATE: _____
ISSUE DATE: 11-09-2023

CAD DWG FILE: _____
DRAWING BY: JDH/MCB
CHECKED BY: MCB/JJN
DESIGNED BY: JDH/MCB/JJN

SHEET TITLE:
**PROPOSED FENCE
DETAILS**

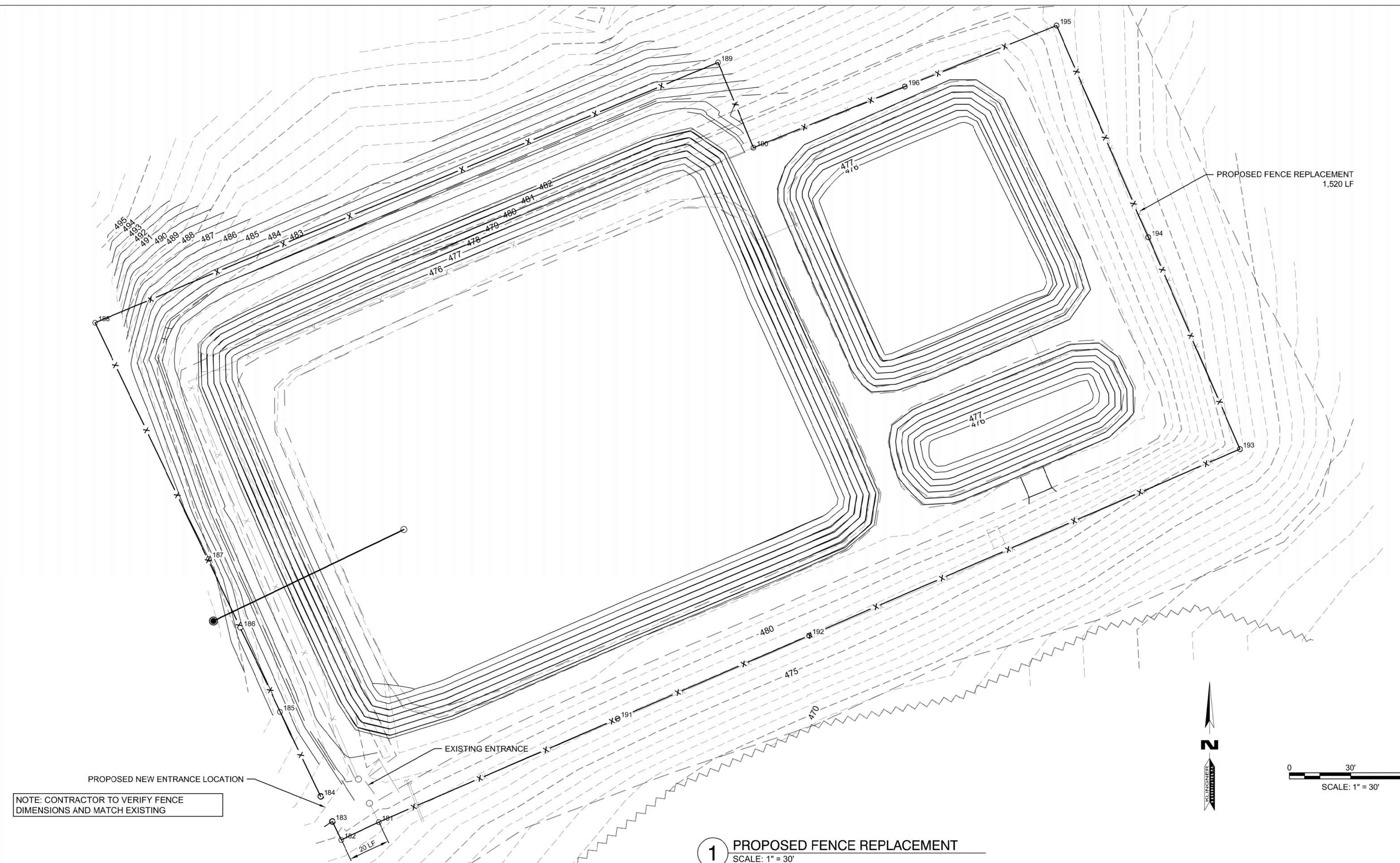
SHEET NUMBER:
C204

FENCE MODIFICATION COORDINATE POINTS

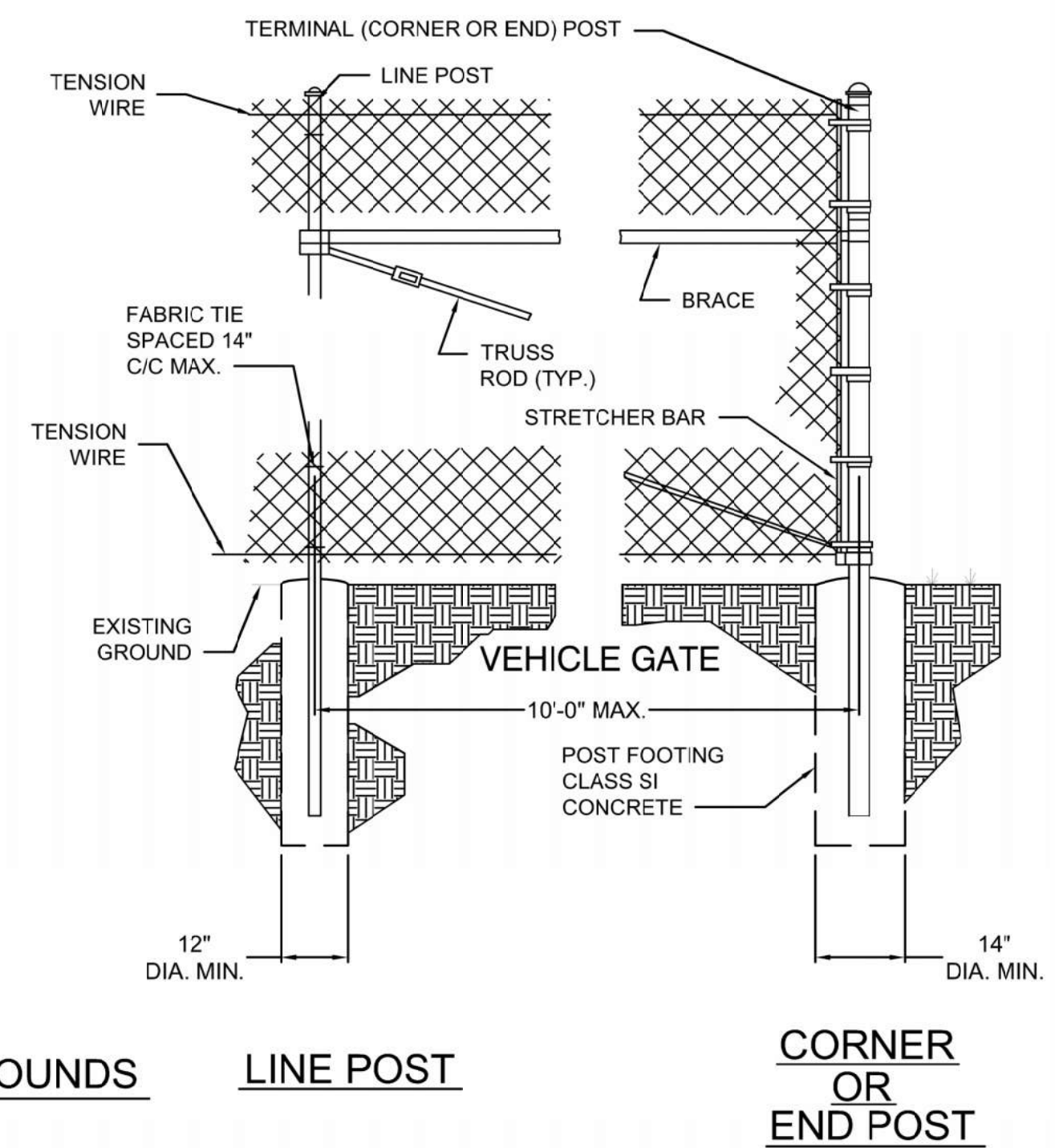
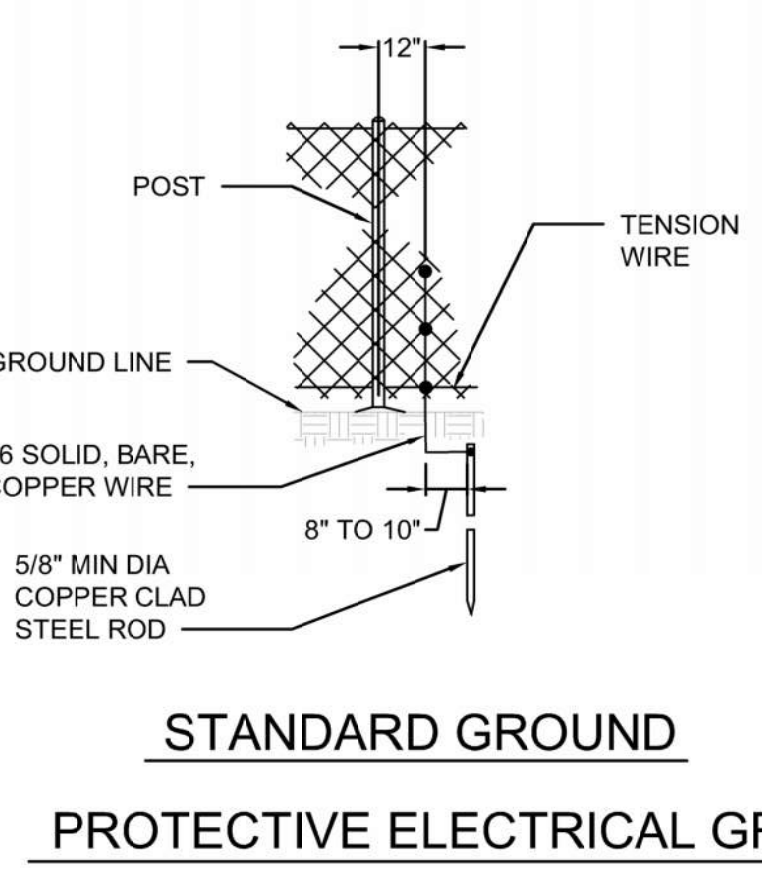
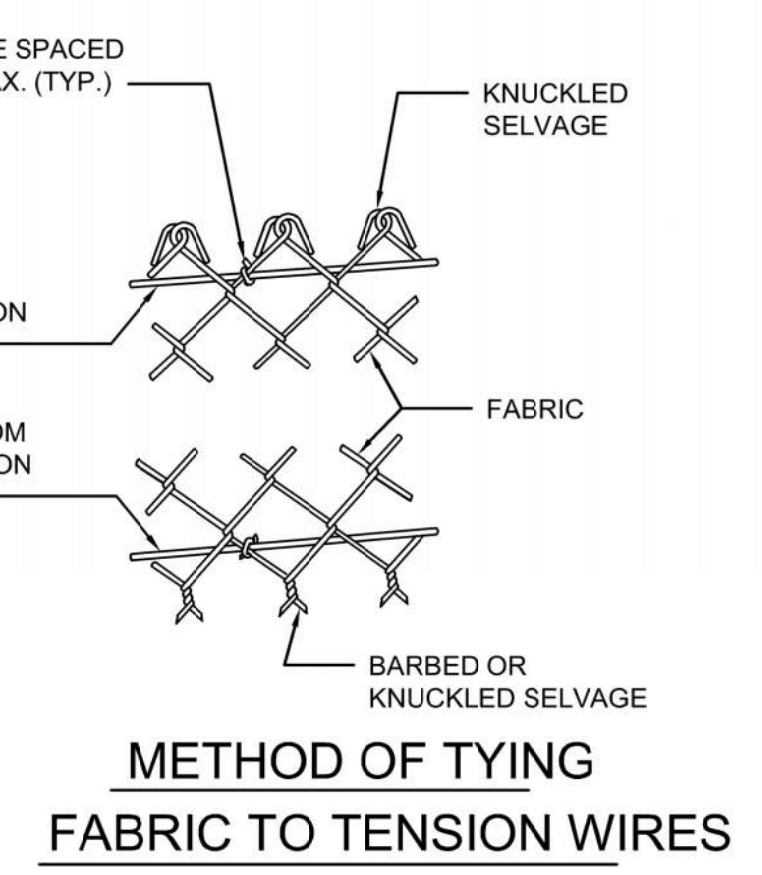
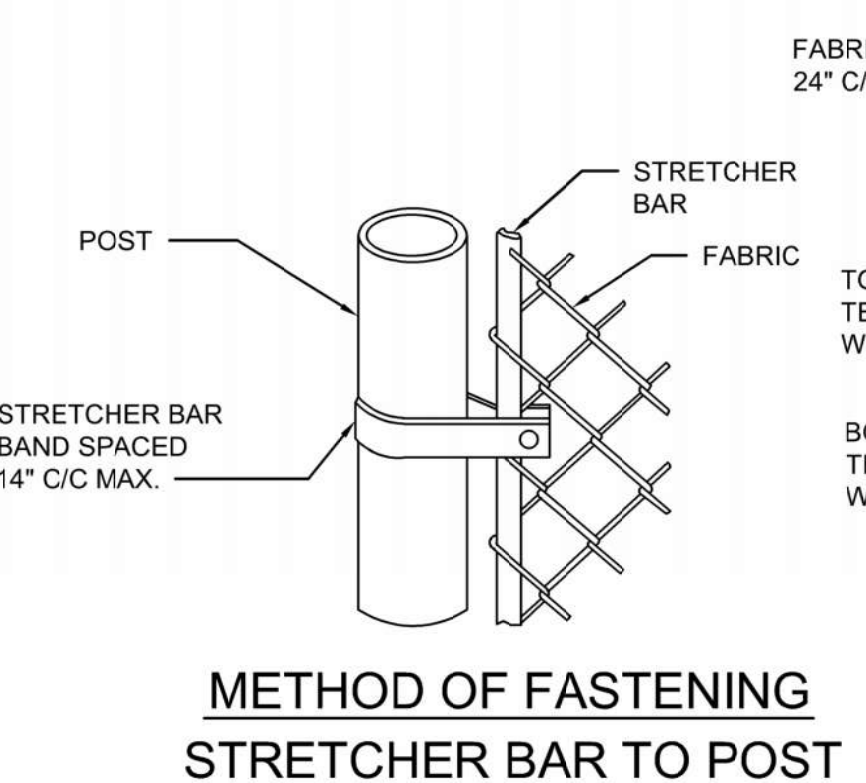
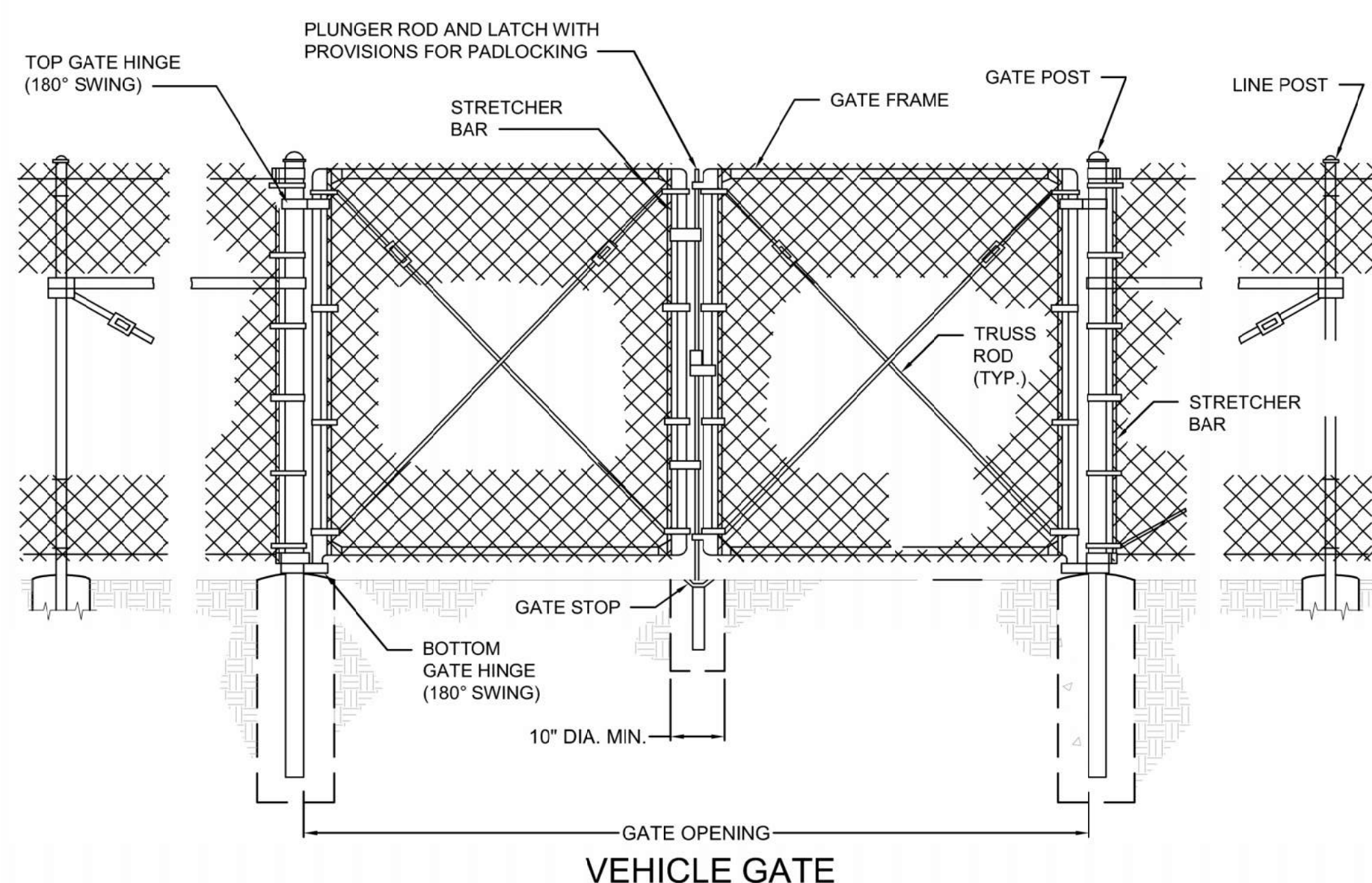
COORDINATE POINTS			
POINT #	DESC.	NORTHING	EASTING
181	FENCE	388540.2499	881164.7957
182	FENCE	388531.5137	881146.4435
183	FENCE	388540.5887	881142.1235
184	FENCE	388552.8054	881136.3080
185	FENCE	388594.2854	881116.4572
186	FENCE	388635.5433	881097.0697
187	FENCE	388659.2318	881081.5825
188	FENCE	388784.9122	881025.8175
189	FENCE	388912.4331	881330.9781
190	FENCE	388870.6777	881348.4269
191	FENCE	388590.9609	881281.8741
192	FENCE	388631.6417	881375.7814
193	FENCE	388723.0066	881586.7048
194	FENCE	388826.7618	881541.7854
195	FENCE	388930.5171	881496.8660
196	FENCE	388900.5957	881422.6421

2 PROPOSED FENCE COORDINATES
SCALE: N.T.S.

1 PROPOSED FENCE REPLACEMENT
SCALE: 1" = 30'



NOTE: CONTRACTOR TO VERIFY FENCE DIMENSIONS AND MATCH EXISTING



3 6' HIGH CHAIN LINK FENCE DETAIL
N.T.S.

CERTIFICATION STATEMENTS

STORM WATER POLLUTION PREVENTION PLAN

This plan and certifications are a part of the Storm Water Pollution Prevention Plan for the project described below.
PROJECT INFORMATION:
 Site: Wappapello Army National Guard Training Site Location: 461 County Road 517, Wappapello, MO 63966
 City: Wappapello, Missouri County: Wayne County

PERMITTEE (OWNER) CERTIFICATION-CONTRACTOR CERTIFICATION STATEMENT certify under penalty of law that this document and all attachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I certify under penalty of law that I understand the terms.

OWNER (PERMITTEE): SIGNATURE: _____ PRINT NAME: _____ STREET ADDRESS: _____ City _____ State _____ Zip _____ TELEPHONE NUMBER: _____ FAX NUMBER: _____ DATE: _____	CONTRACTOR: SIGNATURE: _____ PRINT NAME: _____ STREET ADDRESS: _____ City _____ State _____ Zip _____ TELEPHONE NUMBER: _____ FAX NUMBER: _____ DATE: _____
---	--

STORM WATER POLLUTION PLAN

The following plan is established and incorporated in the project to aid the contractor in the placement of temporary erosion control systems and to provide a storm sewer water pollution prevention plan for compliance under MODNR.

The purpose of this plan is to minimize erosion within the construction site and to limit sediments from leaving the construction site by utilizing proper temporary erosion control systems and providing ground cover within a reasonable amount of time.

Certain erosion control facilities shall be installed by the contractor at the beginning of construction. Other items shall be installed by the contractor as deemed necessary, on a case-by-case situation, depending on the contractor's sequence of activities, time of year and expected weather conditions.

The contractor shall install permanent erosion control systems and seeding within a time frame specified herein. Therefore minimizing the amount of area susceptible to erosion and reducing the amount of temporary seeding. Contractor shall further determine if any temporary erosion control systems shown in the plan can be deleted and if any additional temporary erosion control systems which are not included in this plan shall be added.

SITE DESCRIPTION.

- The project consists of site work to expand the existing wastewater lagoons and replacement of the sewer collection system.
- Construction includes earth excavation, embankment, and other miscellaneous items of construction.

DESCRIPTION OF INTENDED SEQUENCE FOR MAJOR CONSTRUCTION ACTIVITIES, WHICH WILL DISTURB SOILS FOR MAJOR PORTIONS OF THE CONSTRUCTION SITE.

- Placement, maintenance, removal and proper clean-up of temporary erosion control, such as perimeter erosion control barriers; temporary ditch checks; siltation basins, temporary seeding, etc.
- Topsoil removal and stockpiling.
- Excavation and embankment at the job site to achieve the proposed site contours.
- Utility work.
- Final grading, seeding, and other miscellaneous items.

Placement of permanent erosion control such as riprapped ditches, erosion control blanket, seeding, etc.

AREA OF CONSTRUCTION SITE:

- The total area of the construction is estimated to be 9 acres of which 2.25 acres will be disturbed by excavation, grading, and other activities.

OTHER REPORTS, STUDIES AND PLANS WHICH AID IN THE DEVELOPMENT OF THE STORM WATER POLLUTION PREVENTION PLAN AS REFERENCED DOCUMENTS:

- Project plan documents, specifications, hydraulic reports, and plan drawings indicate drainage patterns and approximate slopes anticipated after grading activities were utilized for the proposed placement of the temporary erosion control systems.

DRAINAGE TRIBUTARIES AND SENSITIVE AREAS RECEIVING RUNOFF FROM THIS CONSTRUCTION SITE:

- The names of receiving water(s) is a tributary to the Saint Francis River.
- Location of any sensitive areas (i.e. wetlands, habitats)

CONTROLS-EROSION CONTROLS AND SEDIMENT CONTROL:

- DESCRIPTION OF STABILIZATION PRACTICES AT THE BEGINNING OF CONSTRUCTION
 The drawings and specifications should ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices include temporary seeding, mulching, protection of trees, preservation of mature vegetation, and other appropriate measures. Stabilization measures shall be initiated immediately in portions of the site where construction activities have temporarily or permanently ceased, and completed in no more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased. Allowances to the seven (7) day completion period for temporary and permanent stabilization may be made due to weather and equipment malfunctions. The allowances shall be documented in the SWPPP.
 - Areas of existing vegetation, wood and grasslands; outside the proposed construction limits shall be identified for preserving and shall be protected from construction activities.
 - Dead, diseased, or unsuitable vegetation within the site shall be removed, along with required tree removal.

As soon as reasonable access is available to all locations where water drains away from the project, temporary ditch checks, inlet and pipe protection, and perimeter erosion barrier shall be installed as called out in this plan.

- Bare and sparsely vegetated ground in high erodible areas shall be temporarily seeded at the beginning of construction where not construction activities are expected within seven days.
- Immediately after tree removal or stripping is completed, areas which are highly erodible shall be temporarily seeded when no construction activities are expected within seven days.
- At locations where a significant amount of water drains into the construction zone from outside areas (adjacent landowners), temporary ditch checks or silt fencing will be utilized to locally divert water, reduce flow rates, and collect outside siltation inside the site.

Establishment of these temporary erosion control measures will have additional benefits to the project. Desirable grass seed will become established in these areas and will spread seeds onto the construction site until permanent seeding/mowing and overseeding can be completed.

2. DESCRIPTION OF STABILIZATION PRACTICES DURING CONSTRUCTION

During construction, areas outside the construction limits as outlined previously herein shall be protected. The contractor shall not use this area for staging (except as described on the plans) and parking of vehicles or construction equipment, storage of materials, or other construction related activities.

- Within the construction limits, areas which may be susceptible to erosion, shall remain undisturbed until full scale construction is underway to prevent unnecessary soil erosion.
- Earth stockpiles shall be temporarily seeded immediately if they are to remain unused for more than fourteen (14) days.

- As construction proceeds, the contractor shall institute the following:
 - Place temporary erosion control facilities at locations shown on the plans.
 - Temporarily seed erodible bare earth on a weekly basis to minimize the amount of erodible surface area within the contract limits.
 - Construct ditches and provide temporary erosion control systems including ditch lining and ditch stops.
 - Temporarily divert water around culvert locations.
 - Build necessary embankments at culvert locations and then excavate and place culvert.
 - Continue building up the embankment to the proposed grade while at the same time, placing permanent erosion control such as riprap ditch lining and conducting final shaping to the slopes.
- Excavated areas and embankment shall be permanently seeded immediately after final grading. If not, they shall be temporarily seeded immediately if no construction activity in the area is planned for 7 days.
- Construction equipment shall be stored and fueled only at designated locations. All necessary measures shall be taken to contain any fuel or other pollutant in accordance with EPA water quality regulations. Leaking equipment or supplies shall be immediately repaired or removed from the site.
- The contractor shall inspect the project daily during construction activities. Inspection shall also be done weekly and after heavy rains.
- Sediment collected during construction of the various temporary erosion control systems shall be disposed of on the site on a regular basis.
- The temporary erosion control systems shall be removed after use is no longer or no longer functioning.

3. DESCRIPTION OF STRUCTURAL PRACTICES AFTER FINAL GRADING

- Temporary erosion control systems shall be left in place with proper maintenance until permanent erosion control is in place and working properly and all proposed turf areas seeded and established.
- Once permanent erosion control systems as proposed in the plans are functional and established, temporary items shall be removed, cleaned up, and disturbed turf reseeded.

MAINTENANCE AFTER CONSTRUCTION

- Construction is complete after acceptance by the Owner. Maintenance up to this date will be by the Contractor.

MISCELLANEOUS

- Temporary ditch checks shall be located at every 1.5 ft. fall/rise in ditch grade.
- Temporary erosion control seeding shall be applied at a rate of 100 lbs/acre.
- Straw bales, hay bales, perimeter erosion barrier and silt fences will not be permitted for permanent ditch checks. Ditch checks shall be composed of aggregate, silt panels, rolled excelsior, geotextile web grids and/or other equal materials.
- Sediment collected during construction by the various temporary erosion control systems shall be disposed on the site on a regular basis.

INSPECTIONS.

- The Permittee (or a representative of the permittee) shall conduct regularly scheduled inspections at least once every seven calendar days. These inspections shall be conducted by a qualified personnel, one who is responsible for environmental matters at the site, or a person directly supervised by the person responsible for environmental matters. For disturbed areas that have not been finally stabilized, all installed BMP's and other pollution control measures shall be inspected for proper installation, operation and maintenance. All stormwater outfalls shall be inspected 50 feet downstream of the outfall. Any structural or maintenance problems shall be noted in an inspection report and corrected within seven calendar days of the inspection. If a rainfall causes stormwater runoff to occur on-site, the BMP's must be inspected within reasonable time period after the rainfall event has ceased. These inspections must occur within 48 hours after the rain event has ceased during a normal work day and within 72 hours if the rain event ceases during a non-work day, such as a weekend or a holiday.

ON SITE INSPECTOR NAME: _____
 COMPANY NAME: _____
 STREET ADDRESS: _____
 City _____ State _____ Zip _____
 TELEPHONE NUMBER: _____
 FAX NUMBER: _____

DATE: _____

- Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off site sediment tracking.
- Based on the results of the inspection, the description of potential pollutant sources identified herein and pollution prevention measures identified herein shall be revised as appropriate as soon as practicable after such inspection. Any changes to this plan resulting from the required inspections shall be implemented within 7 calendar days following the inspection.
- A report summarizing the scope of the inspection, names(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of this storm water pollution prevention plan, and actions taken shall be made and retained as part of the plan for at least three (3) years after the date of the Letter of Termination. The report shall be signed in accordance with Requirements and Guidelines of the general permit.
 - a description of discharge and cause of noncompliance, and
 - the period of noncompliance, including exact dates and times or, if not corrected, the anticipated the noncompliance is expected to continue in and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.
- Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

The report of noncompliance shall be mailed to the following address:

Missouri Department of Natural Resources
 St. Louis Regional Office
 7545 S. Lindbergh, Suite 210
 St. Louis, Missouri 63125
 (314) 416-2960
 (314) 416-2960 fax

Special Provision
 For
 National Pollutant Discharge Elimination System

This project will result in a disturbance of one (1) or more acres of total land area and will require compliance with the National Pollutant Discharge Elimination System (NPDES) Storm Water Permit.

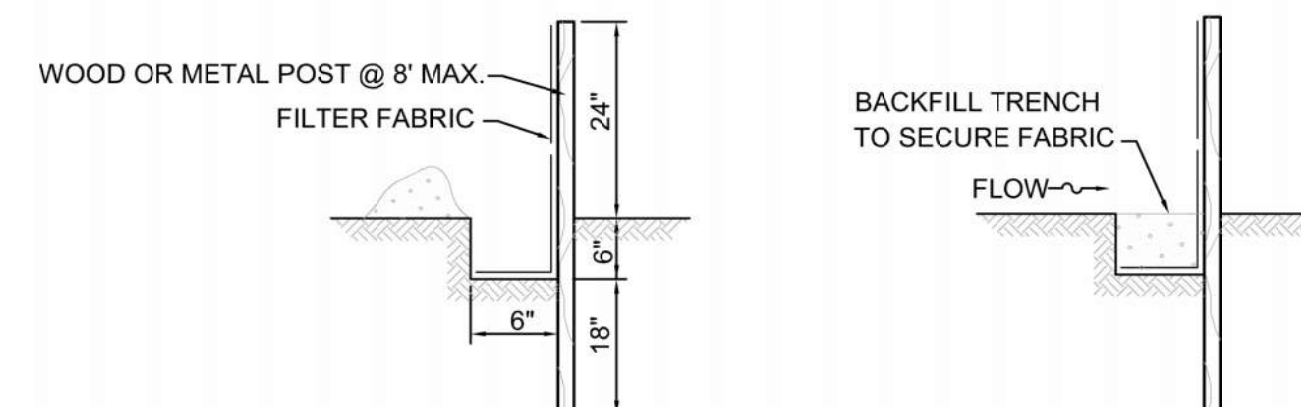
The Owner is the PERMITTEE and the Contractors and Subcontractors will be required to certify that they understand and will comply with all requirements of the permit.

A storm water pollution plan shall be cooperatively developed by the PERMITTEE and contractor for this project using good engineering practices. The plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges. In addition, the plan shall describe and ensure the implementation of practices which will be used to reduce the pollutants in storm water discharges associated with this project and assure compliance with the terms and conditions of the Storm Water Permit.

The EPERMITTING process on the Missouri Department of Natural Resource (MoDNR) website shall be completed in order to receive the Land Disturbance Permit. At the completion of the project stabilization the following form shall be completed and submitted to the MoDNR:

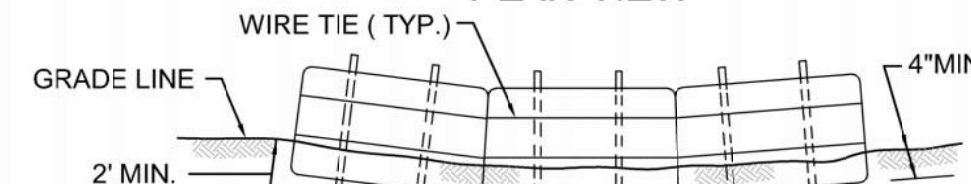
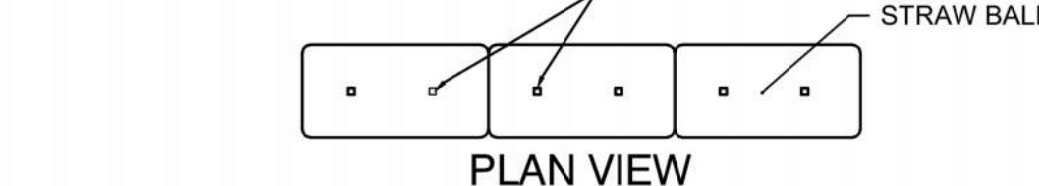
FORM H - REQUEST FOR TERMINATION OF A GENERAL PERMIT

The Contractor shall prepare a stormwater management plan which is certified by both the Owner and Contractor. The Contractor shall be responsible for obtaining the NPDES permit including but not limited to the permitting application for Land Disturbance Permit, Posting a copy of the public notification sign on the site and Request for Termination as well as maintaining the Stormwater Management Plan and maintenance records on-site.



FILTER FENCE AND POST INSTALLATION SECTION

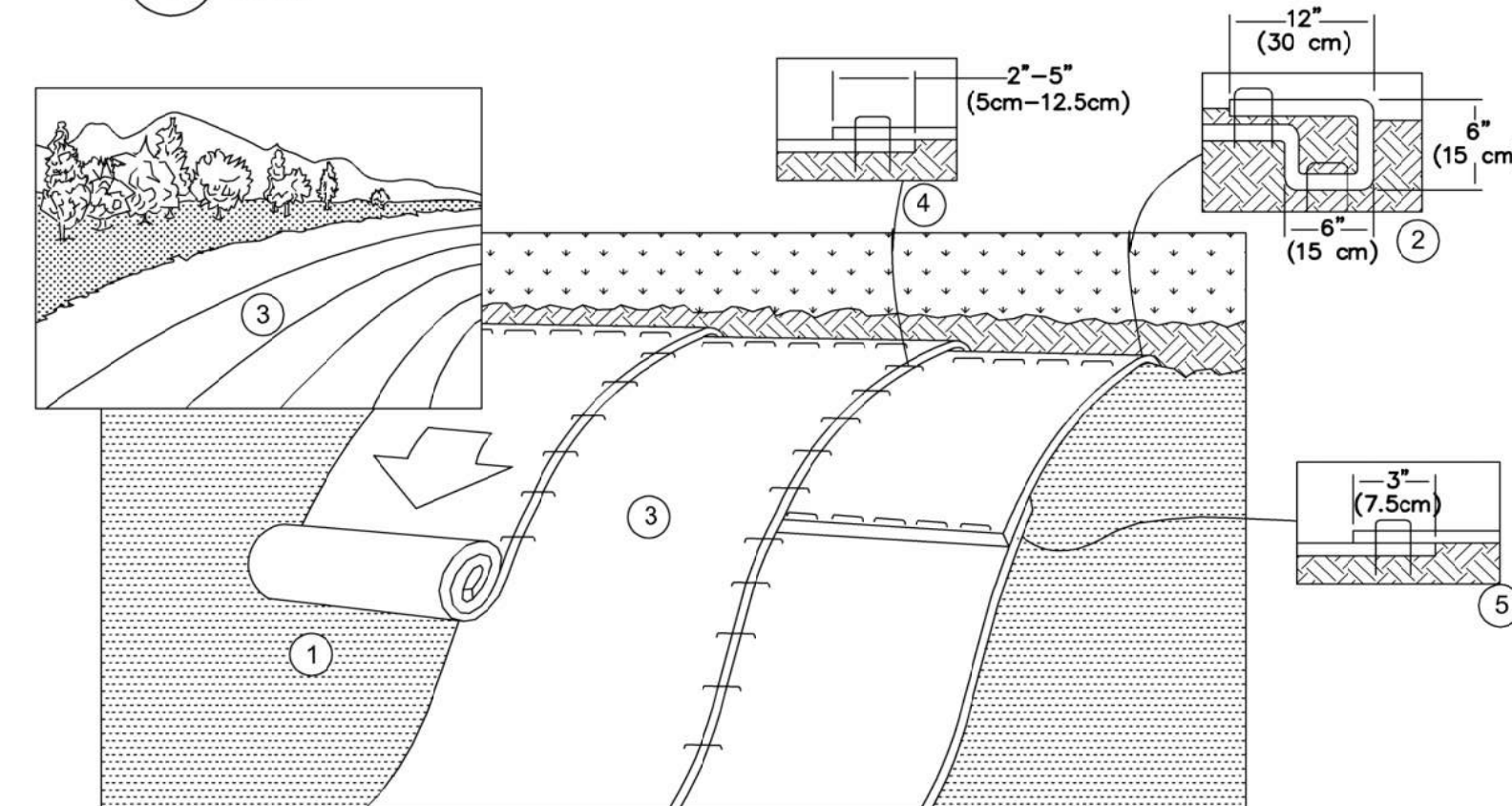
FOR EACH STRAW BALE, DRIVE 2 NO. 5 REBARS, STEEL PICKETS, OR 2"x 2" WOODEN STAKES INTO THE GROUND. ANGLE FIRST STAKE TOWARD PREVIOUSLY PLACED BALE.



SECTION VIEW
 STRAW BALE INSTALLATION

- STRAW BALES TO BE STACKED IN A SINGLE ROW & EMBEDDED IN THE SOIL TO A DEPTH OF 4 INCHES MINIMUM
- ALL BALES ARE TO BE SECURELY BOUND WITH WIRE OR STRING.
- LENGTH OF SEDIMENT BARRIER AS INDICATED ON THE PLANS
- SCATTER LOOSE STRAW OVER THE AREA IMMEDIATELY UPSLOPE FROM SEDIMENT BARRIERS. FILL GAPS BETWEEN BALES WITH LOOSE STRAW.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SEDIMENT BARRIERS IN A CONDITION THAT IS SATISFACTORY TO THE CONTRACTING OFFICER UNTIL FINAL ACCEPTANCE OF WORK.

1 TEMPORARY EROSION CONTROL BARRIER DETAILS
 N.T.S.

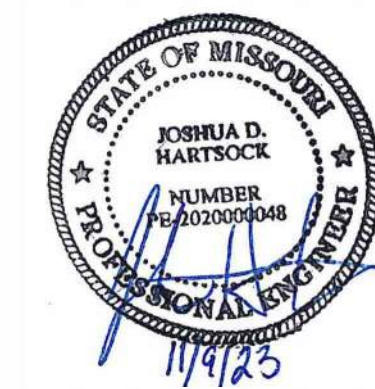


- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. SEEDING WILL BE COMPLETED BY THE OWNER, CONTRACTOR TO COORDINATE WITH OWNER TO ALLOW PROPER TIMING AND COORDINATION FOR THE SEEDING AND EROSION BLANKET INSTALLATION.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30CM) OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP'S.
- ROLL THE RECP'S (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROXIMATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROXIMATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 54" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECP'S TYPE.
- CONSECUTIVE RECP'S SPliced DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP'S WIDTH.
 NOTE:
 IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.
- EROSION CONTROL BLANKET SHALL BE USED ON ALL SLOPES 4:1 AND STEEPER.

2 EROSION CONTROL BLANKET INSTALLATION DETAILS

PROJECT RECORD DOCUMENTS
 MARCH 2018

STATE OF MISSOURI
 MICHAEL L. PARSON,
 GOVERNOR



JOSHUA D. HARTSOCK-ENGINEER
 MO # PE 202000048

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MISSOURI STATE CERTIFICATE OF AUTHORITY #000866
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OFFICE OF ADMINISTRATION
 DIVISION OF FACILITIES
 MANAGEMENT,
 DESIGN AND CONSTRUCTION

DESIGN AND CONSTRUCT
 LAGOON EXPANSION

461 COUNTY ROAD 517
 WAPPAPELLO, MO 63966

PROJECT # T2317-01
 SITE # 6325
 ASSET # 7016325013

REVISION: _____
 DATE: _____
 REVISION: _____
 DATE: _____
 REVISION: _____
 DATE: _____
 ISSUE DATE: 11-09-2023

CAD DWG FILE: _____
 DRAWING BY: JDH/MCB
 CHECKED BY: MCB/JJN
 DESIGNED BY: JDH/MCB/JJN

SHEET TITLE:

STORM WATER
 POLLUTION
 PREVENTION PLAN

SHEET NUMBER:

C205



JOSHUA D. HARTSOCK-ENGINEER
MO # PE 202000048

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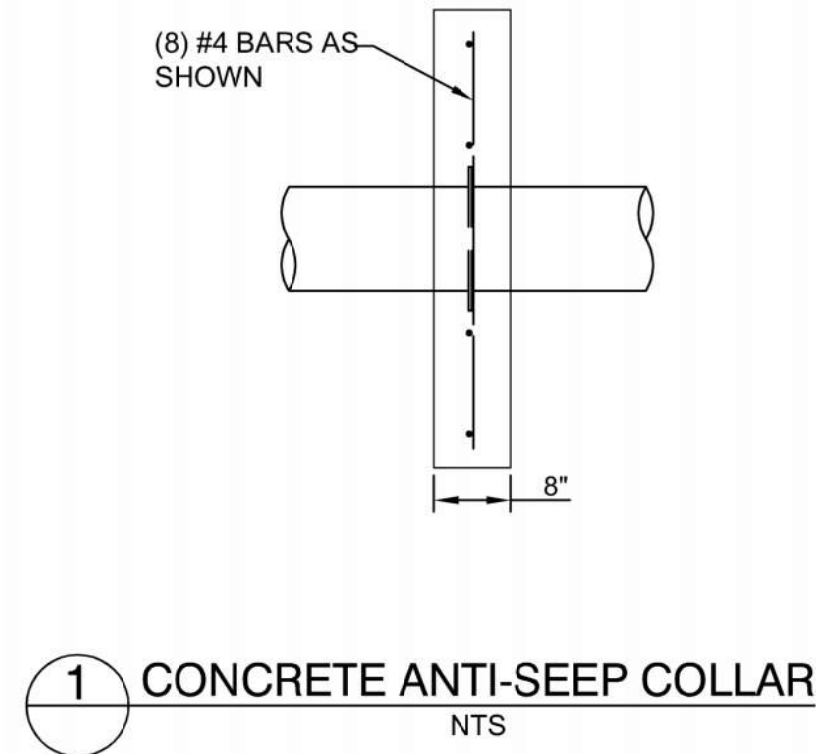
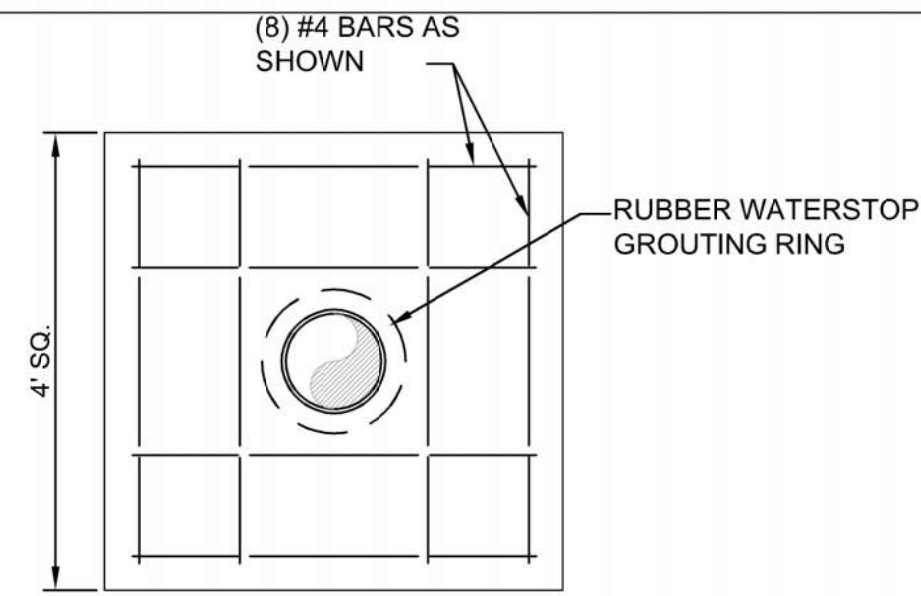
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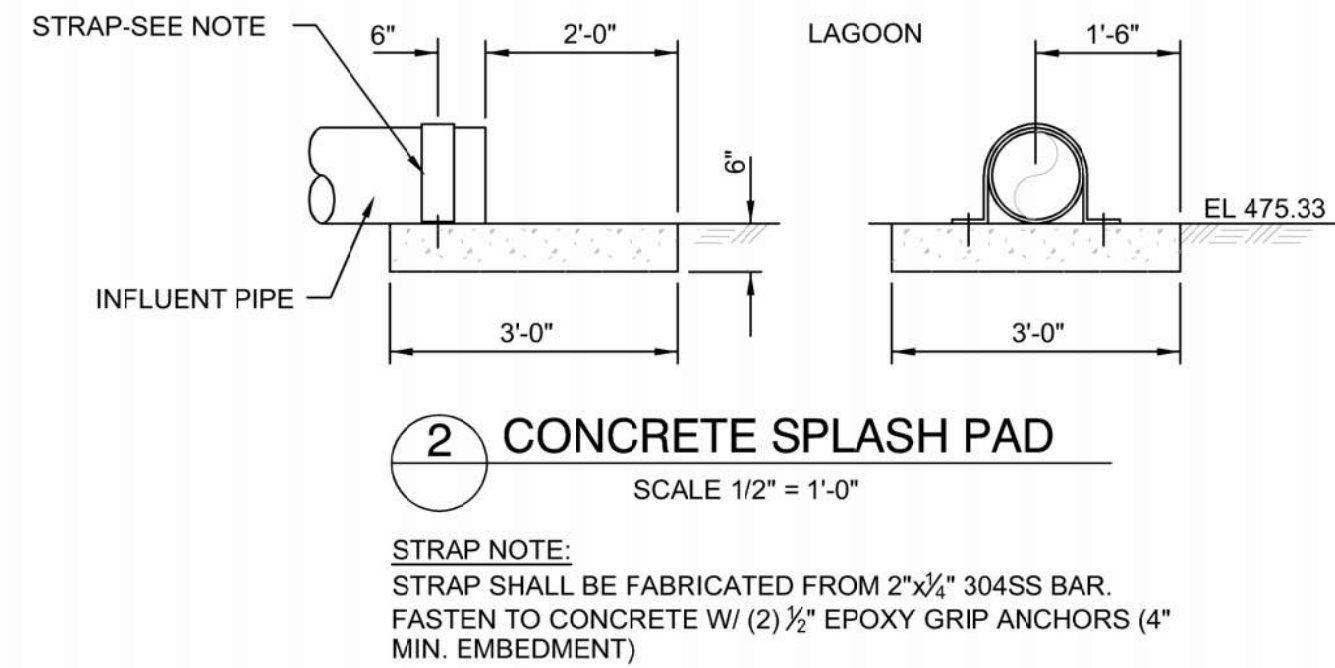
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DRAWING BY: JDH/MCB
CHECKED BY: MCB/JJN
DESIGNED BY: JDH/MCB/JJN

SHEET TITLE:
**LAGOON INLET
DETAILS**

SHEET NUMBER:
C206

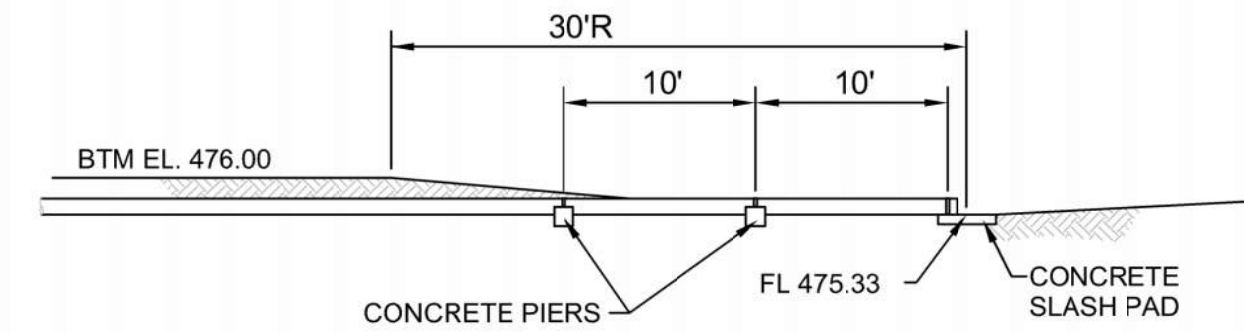


1 CONCRETE ANTI-SEEP COLLAR
NTS

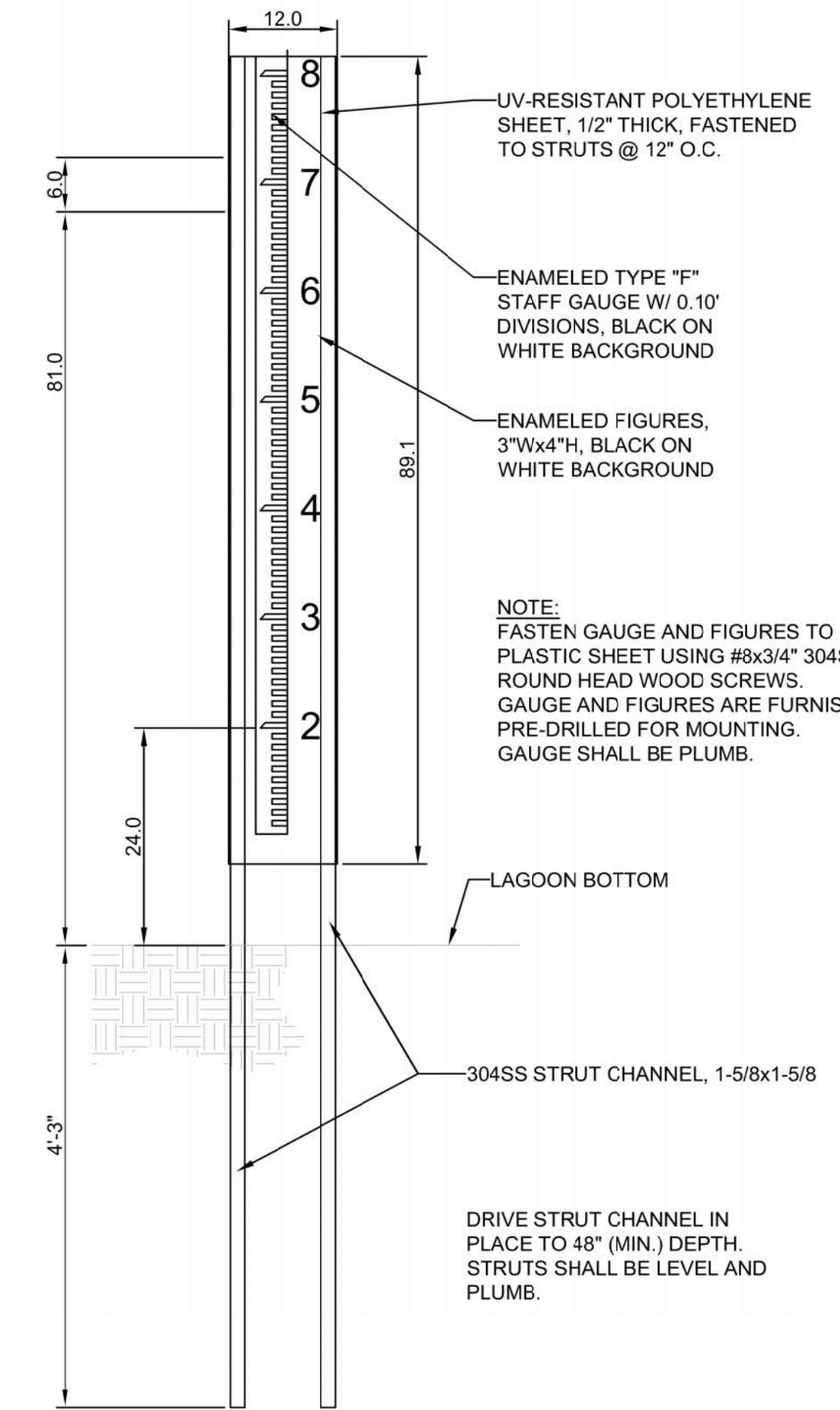


2 CONCRETE SPLASH PAD
SCALE 1/2" = 1'-0"

STRAP NOTE:
STRAP SHALL BE FABRICATED FROM 2"x1/4" 304SS BAR,
FASTEN TO CONCRETE W/ (2) 1/2" EPOXY GRIP ANCHORS (4"
MIN. EMBEDMENT)



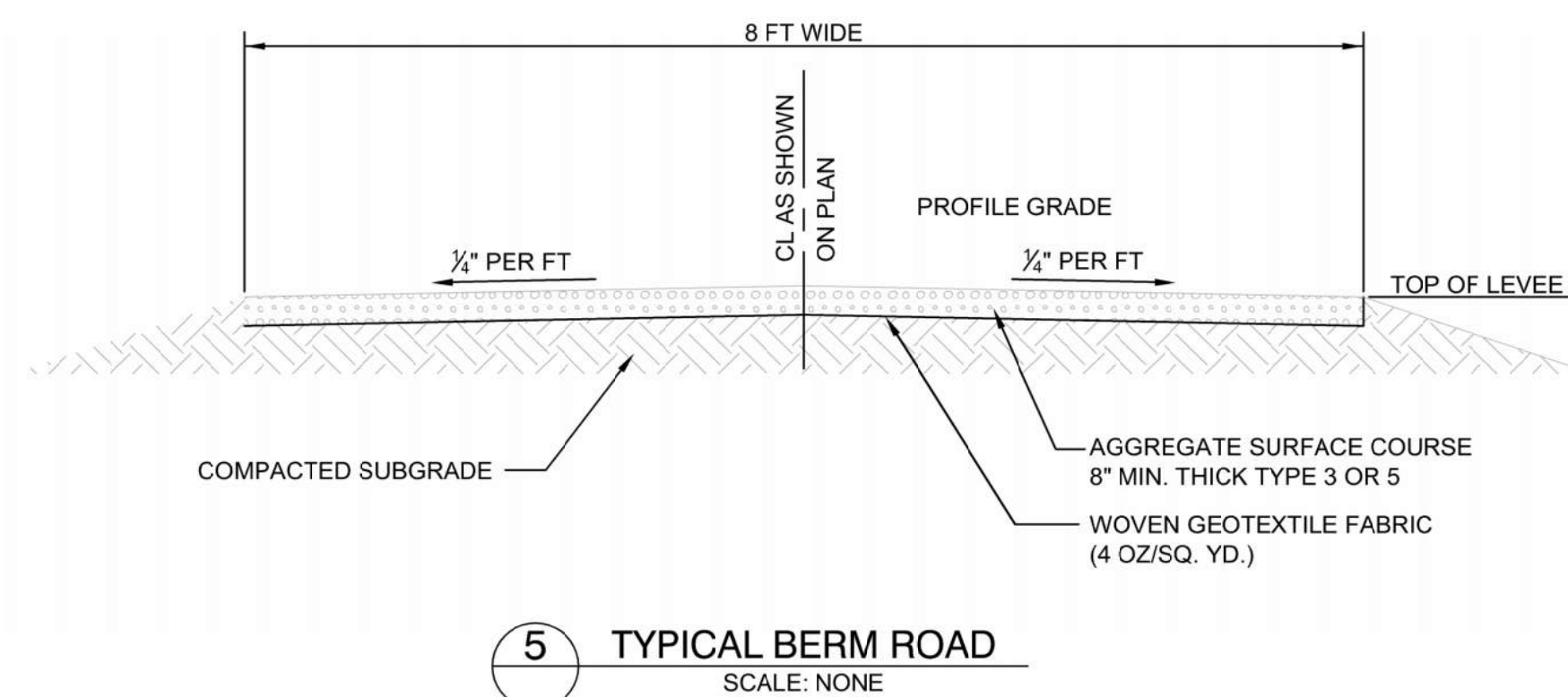
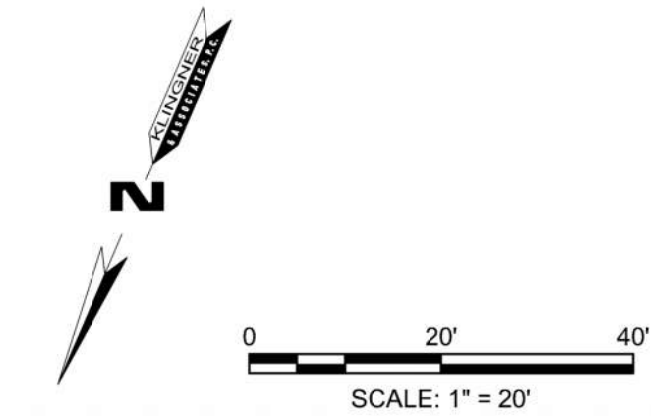
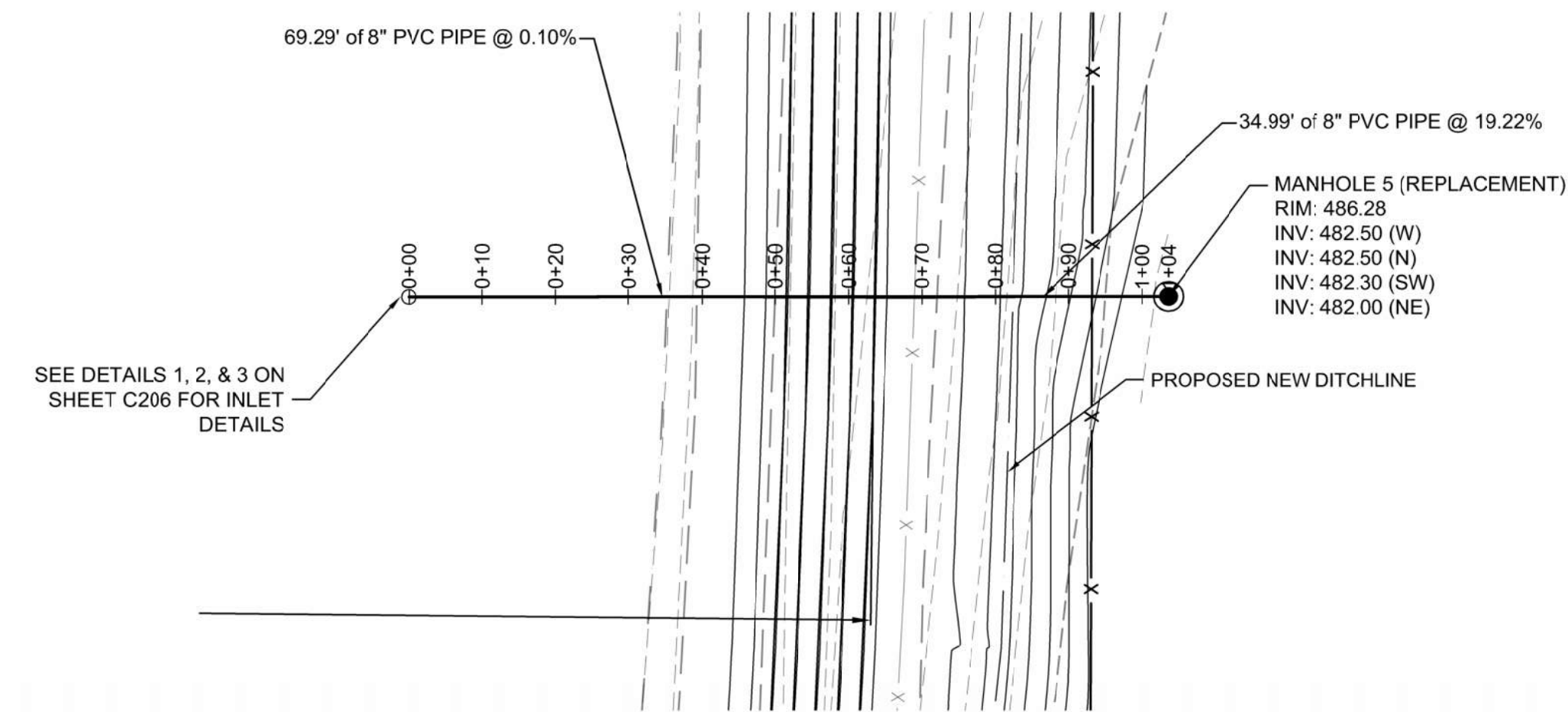
3 SECTION - INFLUENT PIPE, LAGOON
SCALE: 1"=10"



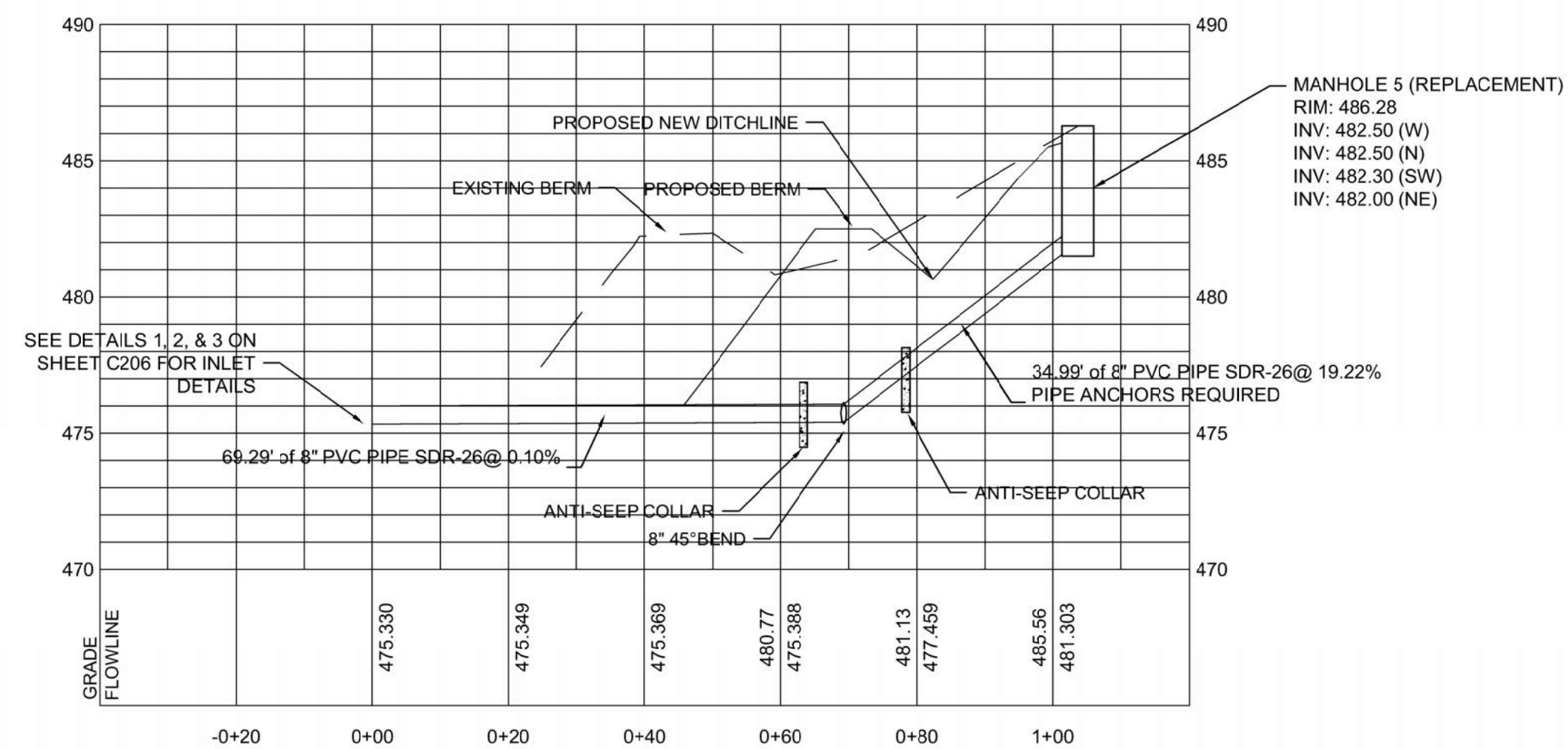
4 STAFF GAUGE
NTS

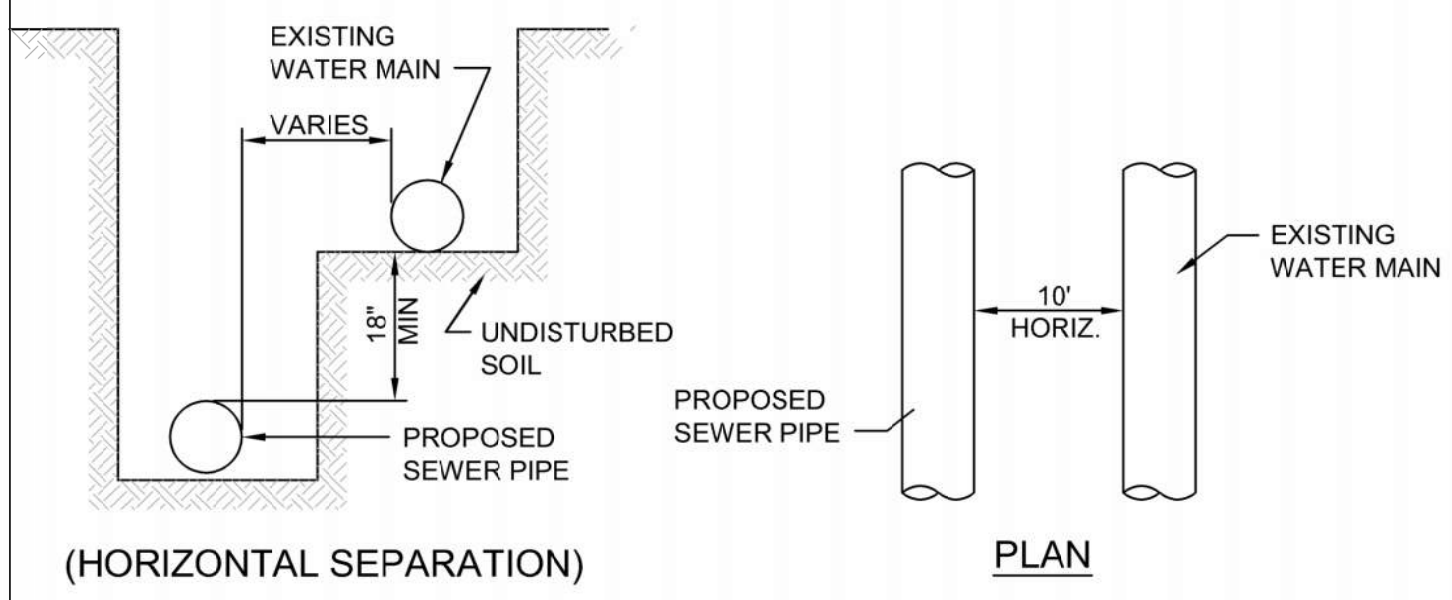
NOTE:
FASTEN GAUGE AND FIGURES TO
PLASTIC SHEET USING #8x3/4" 304SS
ROUND HEAD WOOD SCREWS.
GAUGE AND FIGURES ARE FURNISHED
PRE-DRILLED FOR MOUNTING.
GAUGE SHALL BE PLUMB.

DRIVE STRUT CHANNEL IN
PLACE TO 48" (MIN.) DEPTH.
STRUTS SHALL BE LEVEL AND
PLUMB.



5 TYPICAL BERM ROAD
SCALE: NONE

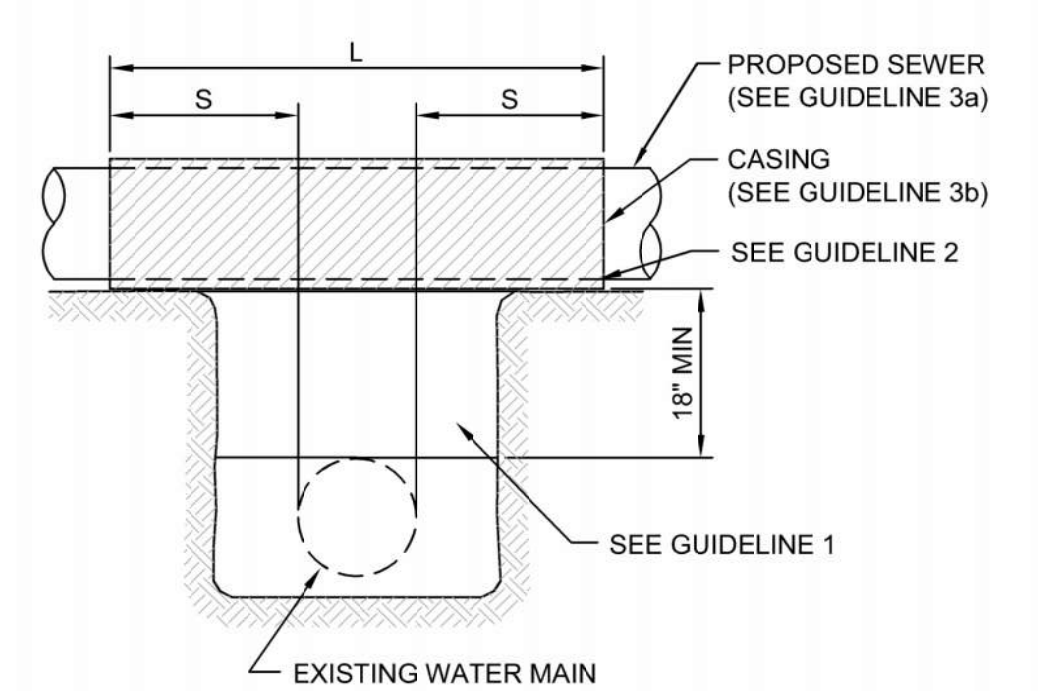




WHEN PROPOSED SEWER IS LOCATED LESS THAN 10 FEET FROM EXISTING WATER, DETAIL ABOVE SHALL APPLY.

WHEN PROPOSED SEWER IS LOCATED 10 FEET OR MORE FROM EXISTING WATER, NO SPECIAL CONSTRUCTION REQ'D

A - WATER AND SEWER SEPARATION REQUIREMENTS

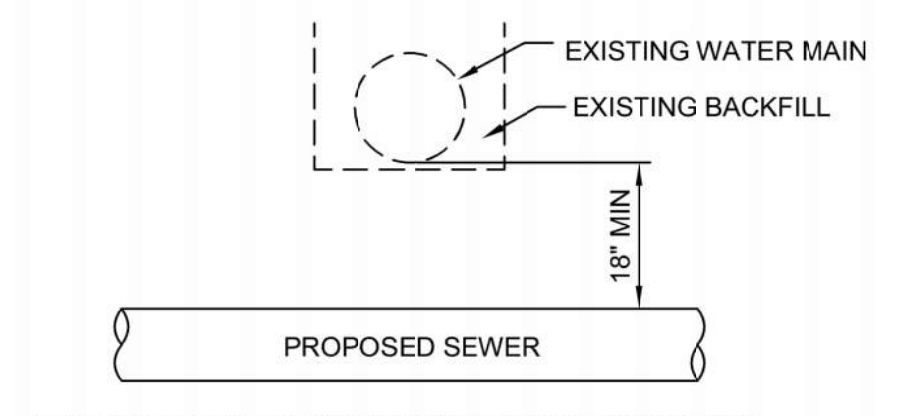


GUIDELINES

- IF SELECT GRANULAR BACKFILL EXISTS: REMOVE WITHIN WIDTH OF SEWER TRENCH & REPLACE WITH SELECT EXCAVATED MAT'L (CLASS IV) & COMPACT.
- OMIT SELECT GRANULAR EMBEDMENT & GRANULAR BACKFILL TO (1) FOOT OVER TOP OF SEWER & USE SELECT EXCAVATED MAT'L (CLASS IV) & COMPACT THE LENGTH OF "L" FEET.
- a. CONSTRUCT "L" FEET OF PROPOSED SEWER OF WATER MAIN MAT'L AND PRESSURE TEST, (OR);
b. USE "L" FEET OF WATER MAIN MAT'L FOR CASING OF PROPOSED SEWER & SEAL ENDS OF CASING

NOTE: "S" IS THE LENGTH NECESSARY TO PROVIDE 10 FEET OF SEPARATION AS MEASURED PERPEND. TO THE EXISTING WATER MAIN

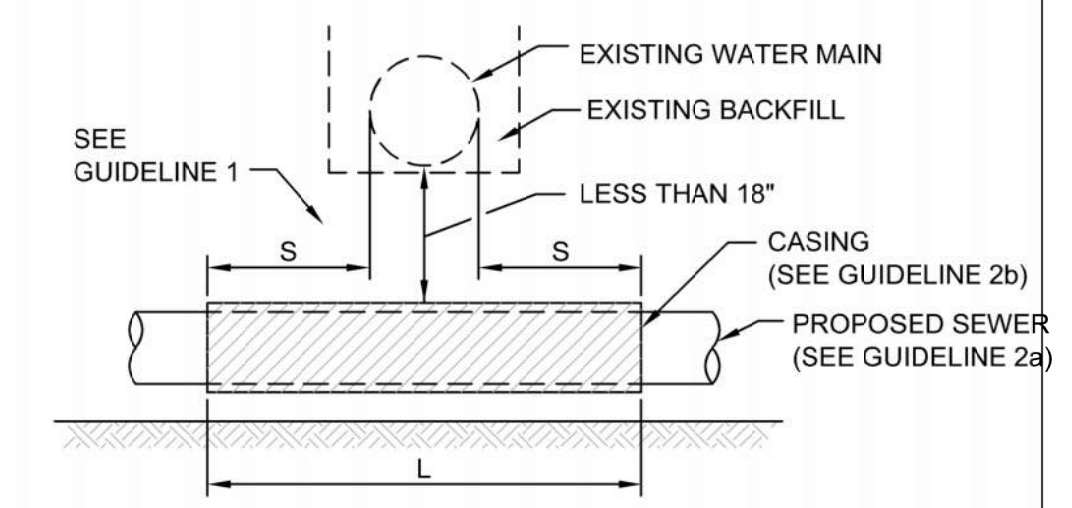
B - WATER AND SEWER SEPARATION REQUIREMENTS



GUIDELINES

- PROVIDE ADEQUATE SUPPORT FOR EXISTING WATER MAIN TO PREVENT DAMAGE DUE TO SETTLEMENT OF SEWER TRENCH.

C - WATER AND SEWER SEPARATION REQUIREMENTS



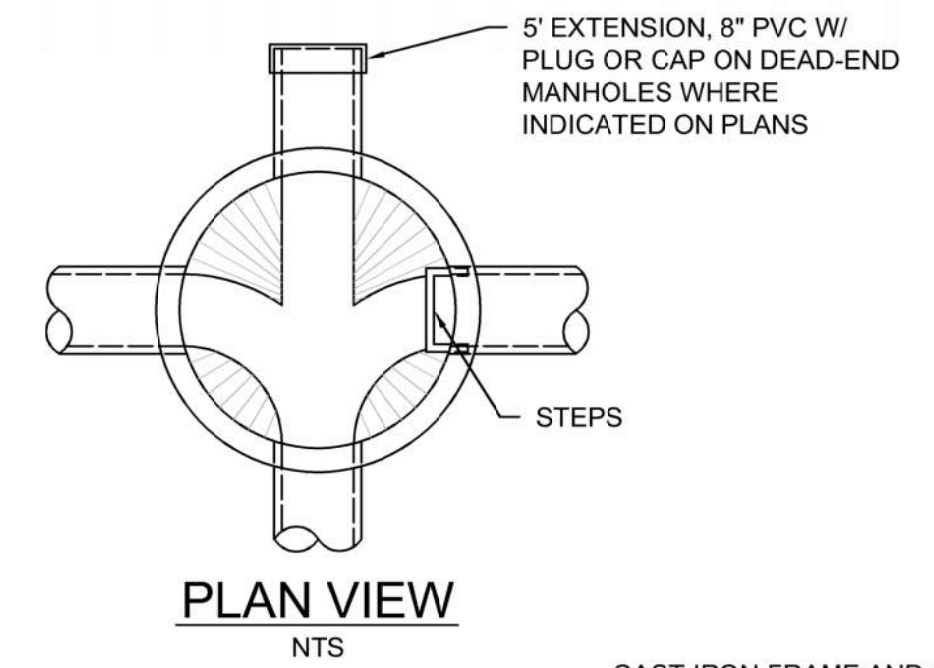
GUIDELINES

- OMIT SELECT GRANULAR EMBEDMENT & GRANULAR WITHIN BACKFILL TO (1) FOOT OVER TOP OF SEWER & USE SELECT EXCAVATED MAT'L (CLASS IV) & COMPACT FOR "S" FT. ON EA. SIDE OF WATER MAIN
- a. CONSTRUCT "L" FEET OF PROPOSED SEWER OF WATER MAIN MAT'L & PRESSURE TEST, (OR);
b. USE "L" FEET OF WATER MAIN MAT'L FOR CASING OF PROPOSED SEWER & SEAL ENDS OF CASING
- PROVIDE ADEQUATE SUPPORT FOR EXISTING WATER MAIN TO PREVENT DAMAGE DUE TO SETTLEMENT OF SEWER TRENCH

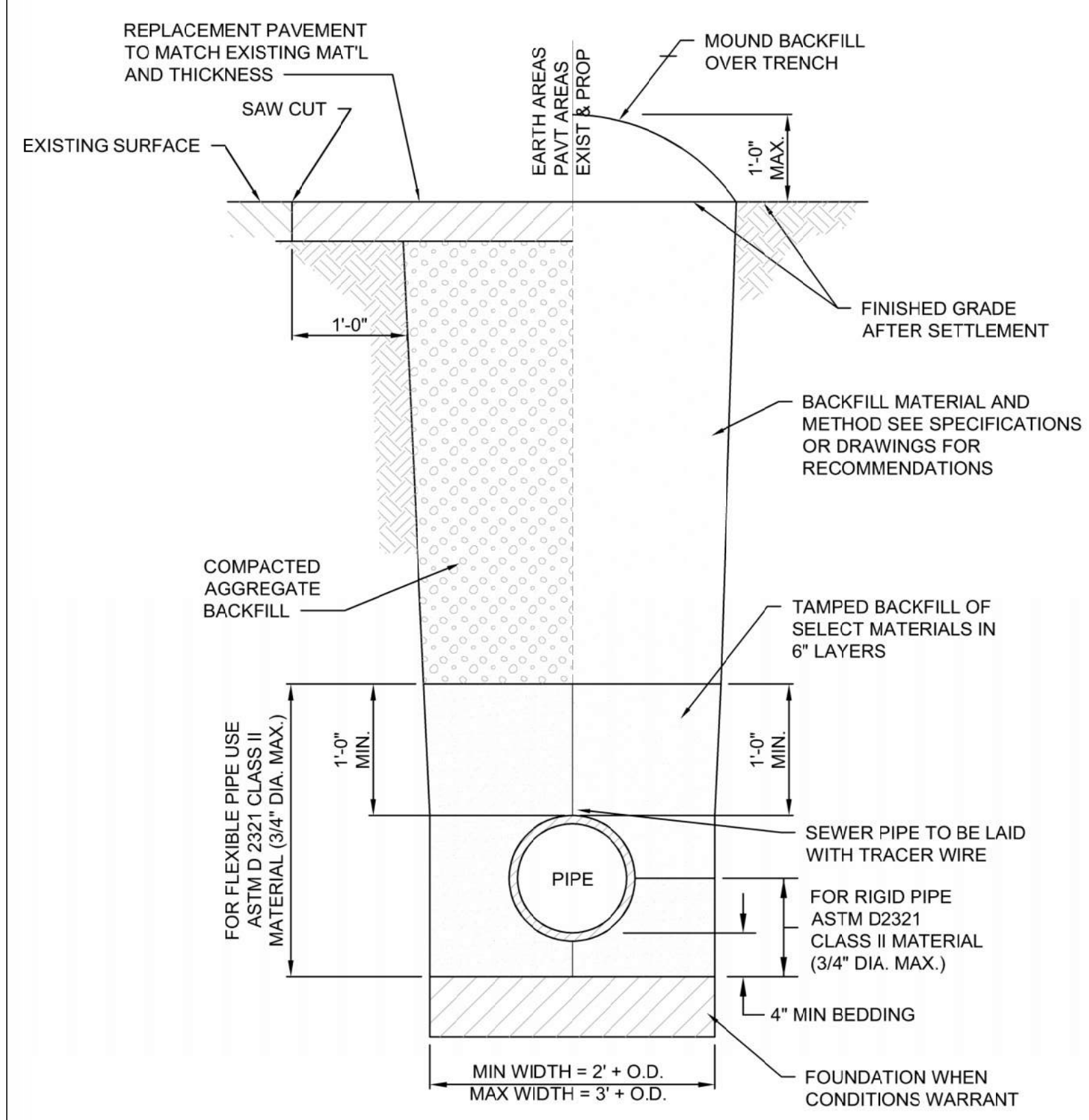
NOTE: "S" IS THE LENGTH NECESSARY TO PROVIDE 10 FEET OF SEPARATION AS MEASURED PERPEND. TO THE EXISTING WATER MAIN

D - WATER AND SEWER SEPARATION REQUIREMENTS

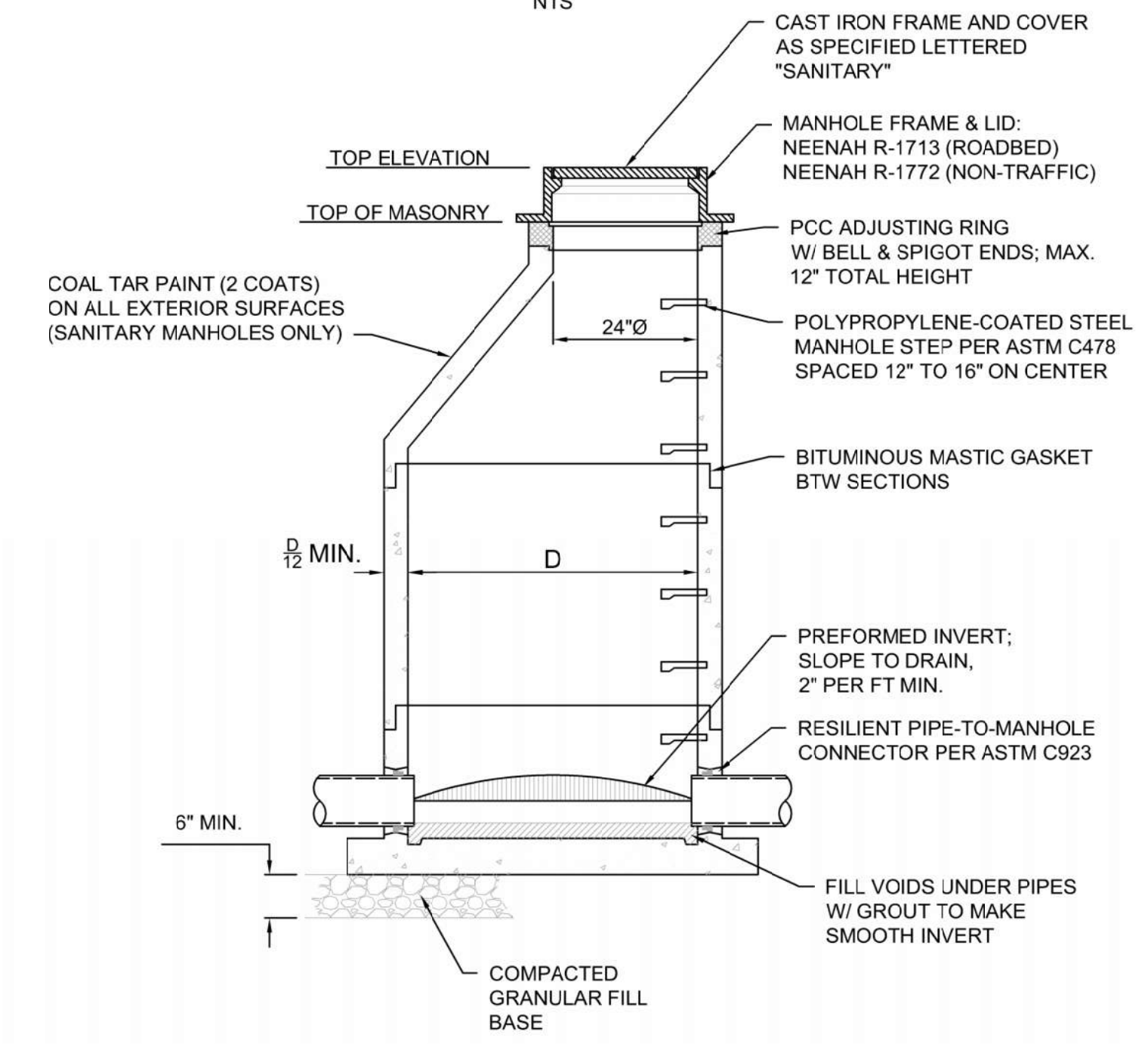
1 WATER & SEWER SEPARATION REQUIREMENTS
N.T.S.



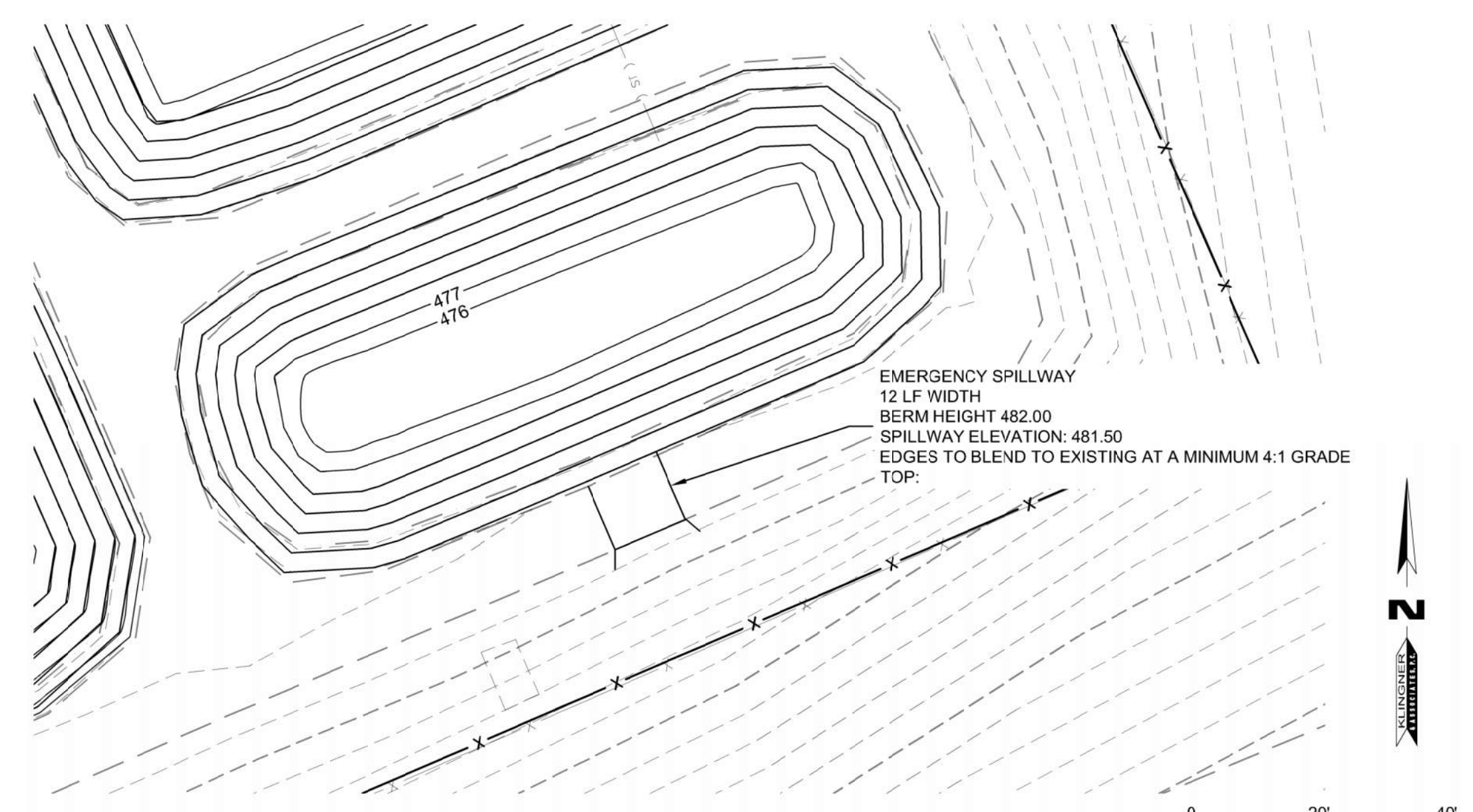
PLAN VIEW
N.T.S.



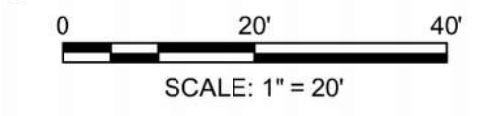
2 SEWER TRENCH DETAIL
N.T.S.



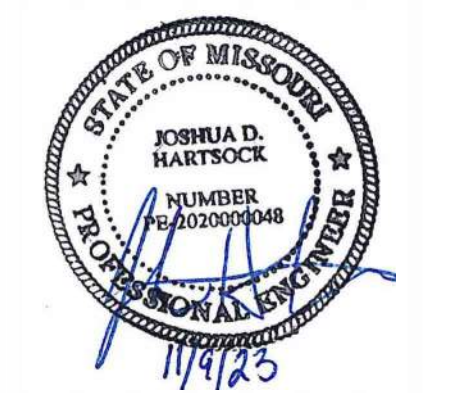
3 STANDARD MANHOLE DETAIL
N.T.S.



4 EMERGENCY SPILLWAY
SCALE: 1" = 20'



STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



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SHEET TITLE:
**MISCELLANEOUS
DETAILS**

SHEET NUMBER:
C500