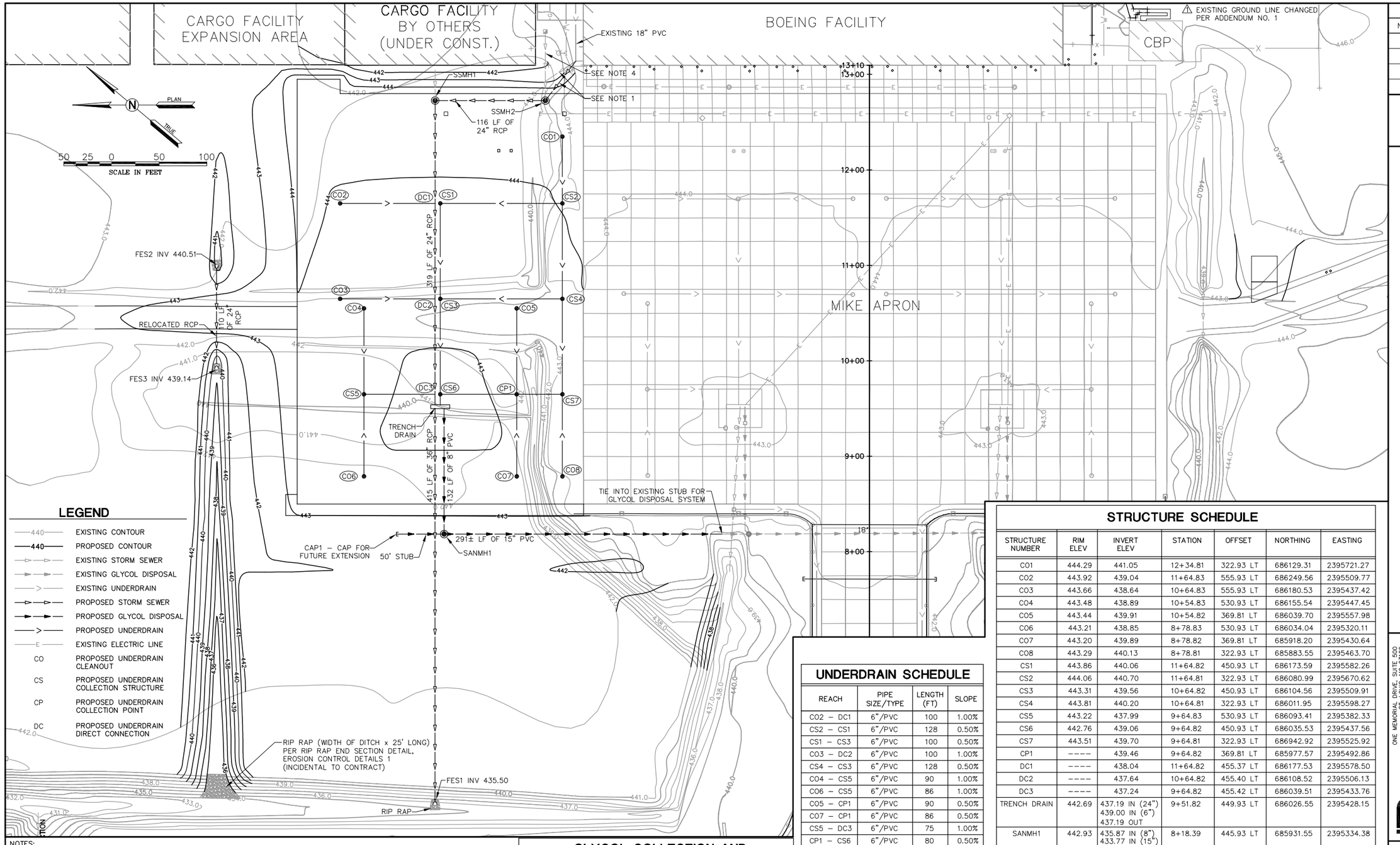

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING STORM SEWER
- EXISTING GLYCOL DISPOSAL
- EXISTING UNDERDRAIN
- PROPOSED STORM SEWER
- PROPOSED GLYCOL DISPOSAL
- PROPOSED UNDERDRAIN
- EXISTING ELECTRIC LINE
- CO — PROPOSED UNDERDRAIN CLEANOUT
- CS — PROPOSED UNDERDRAIN COLLECTION STRUCTURE
- CP — PROPOSED UNDERDRAIN COLLECTION POINT
- DC — PROPOSED UNDERDRAIN DIRECT CONNECTION

NOTES:

1. REMOVE APPROX 38 LF OF 24" PVC BETWEEN CONNECTION WITH 18" PVC AND EXISTING OUTLET. REPLACE PIPE BEGINNING AT CONNECTION POINT WITH 18" PVC TO ELEVATION AND SLOPE SHOWN ON PLANS. THE CONTRACTOR MAY REUSE THE EXISTING PIPE IF IN GOOD CONDITION AS DETERMINED BY THE ENGINEER. IF PCC PAVING BY OTHERS IS ALREADY COMPLETE AT THE TIME OF THE ISSUANCE OF THE NTP, THIS WORK SHALL BE REDUCED TO EXTENDING AND CONNECTING THE ALREADY RELOCATED 24" PVC TO THE PROPOSED STORM SEWER MANHOLE. THIS WORK SHALL BE INCIDENTAL TO STORM SEWER MANHOLE INSTALLATION REGARDLESS OF THE AMOUNT OF WORK COMPLETED BY OTHERS.
2. COLLECTION POINTS CONSIST OF A 4-WAY PVC FITTING AND SHALL BE CONSIDERED INCIDENTAL TO THE UNDERDRAIN WORK.
3. DIRECT CONNECTIONS SHALL BE CONSIDERED INCIDENTAL TO THE UNDERDRAIN WORK.
4. PIPE UNDER CONSTRUCTION BY OTHERS. IF PIPE IS ALREADY IN PLACE, VERIFY ELEVATION IN FIELD AND CONNECT TO THE MANHOLE.
5. THE EXISTING GROUND MAY BE LOWERED IN PROPOSED CUT AREAS PRIOR TO THE START OF CONSTRUCTION DUE TO EARTHWORK OPERATIONS ADJACENT TO THIS PROJECT. IF THE EXISTING GROUND DOES CHANGE, THE GROUND WILL BE SURVEYED BY THE ENGINEER PRIOR TO THE START OF GRADING OPERATIONS FOR THIS CONTRACT AND THE EXISTING GROUND LINE ON THE CROSS SECTIONS WILL BE UPDATED.

GLYCOL COLLECTION AND STORM SEWER SCHEDULE

REACH	PIPE SIZE/TYPE	LENGTH FOR PAYMENT (FT)	LENGTH W/ FES (FT)	SLOPE
TRENCH DRAIN – SANMH1	8"/PVC	132	--	1.00%
SANMH1 – EXISTING STUB	15"/PVC	291	--	0.31%
TRENCH DRAIN – FES1	36"/RCP	407	415	0.41%
FES2 – FES3	24"/RCP	98	110	1.25%
SSMH2 – SSMH1	24"/RCP	116	--	0.97%
SSMH1 – TRENCH DRAIN	24"/RCP	319	--	0.40%
CAP1 – SANMH1	15"/PVC	50	--	0.30%
18" PVC – SSMH2	24"/PVC	53	--	3.37%

UNDERDRAIN SCHEDULE

REACH	PIPE SIZE/TYPE	LENGTH (FT)	SLOPE
CO2 – DC1	6"/PVC	100	1.00%
CS2 – CS1	6"/PVC	128	0.50%
CS1 – CS3	6"/PVC	100	0.50%
CO3 – DC2	6"/PVC	100	1.00%
CS4 – CS3	6"/PVC	128	0.50%
CO4 – CS5	6"/PVC	90	1.00%
CO6 – CS5	6"/PVC	86	1.00%
CO5 – CP1	6"/PVC	90	0.50%
CO7 – CP1	6"/PVC	86	0.50%
CS5 – DC3	6"/PVC	75	1.00%
CP1 – CS6	6"/PVC	80	0.50%
CS3 – CS6	6"/PVC	100	0.50%
CO1 – CS2	6"/PVC	70	0.50%
CS2 – CS4	6"/PVC	100	0.50%
CS4 – CS7	6"/PVC	100	0.50%
CS7 – CP1	6"/PVC	48	0.50%
CO8 – CS7	6"/PVC	86	0.50%
CS6 – TRENCH DRAIN	6"/PVC (NON-PERF)*	11	0.50%

*NOTE: PROVIDE 6" DUCTILE IRON PIPE (DIP) PENETRATION AT TRENCH DRAIN WALL. COST OF DIP PENETRATION AND 11 LF OF NON-PERFORATED PVC SHALL BE INCLUDED UNDER ITEM AR705526 – 6" PERFORATED UNDERDRAIN W/SOCK.

STRUCTURE SCHEDULE

STRUCTURE NUMBER	RIM ELEV	INVERT ELEV	STATION	OFFSET	NORTHING	EASTING
CO1	444.29	441.05	12+34.81	322.93 LT	686129.31	2395721.27
CO2	443.92	439.04	11+64.83	555.93 LT	686249.56	2395509.77
CO3	443.66	438.64	10+64.83	555.93 LT	686180.53	2395437.42
CO4	443.48	438.89	10+54.83	530.93 LT	686155.54	2395447.45
CO5	443.44	439.91	10+54.82	369.81 LT	686039.70	2395557.98
CO6	443.21	438.85	8+78.83	530.93 LT	686034.04	2395320.11
CO7	443.20	439.89	8+78.82	369.81 LT	685918.20	2395430.64
CO8	443.29	440.13	8+78.81	322.93 LT	685883.55	2395463.70
CS1	443.86	440.06	11+64.82	450.93 LT	686173.59	2395582.26
CS2	444.06	440.70	11+64.81	322.93 LT	686080.99	2395670.62
CS3	443.31	439.56	10+64.82	450.93 LT	686104.56	2395509.91
CS4	443.81	440.20	10+64.81	322.93 LT	686011.95	2395598.27
CS5	443.22	437.99	9+64.83	530.93 LT	686093.41	2395382.33
CS6	442.76	439.06	9+64.82	450.93 LT	686035.53	2395437.56
CS7	443.51	439.70	9+64.81	322.93 LT	686942.92	2395525.92
CP1	----	439.46	9+64.82	369.81 LT	685977.57	2395492.86
DC1	----	438.04	11+64.82	455.37 LT	686177.53	2395578.50
DC2	----	437.64	10+64.82	455.40 LT	686108.52	2395506.13
DC3	----	437.24	9+64.82	455.42 LT	686039.51	2395433.76
TRENCH DRAIN	442.69	437.19 IN (24") 439.00 IN (6") 437.19 OUT	9+51.82	449.93 LT	686026.55	2395428.15
SANMH1	442.93	435.87 IN (8") 433.77 IN (15") 433.67 OUT	8+18.39	445.93 LT	685931.55	2395334.38
EX STUB	----	432.78±	8+18.36±	155± LT**	----	----
SSMH1	444.55	438.62 IN 438.52 OUT	12+72.63	455.34 LT	686251.93	2395656.52
FES1	----	435.50	5+34.02	455.43 LT	685742.11	2395122.08
FES2	----	440.51	11+00.71	684.43 LT	686298.98	2395373.98
FES3	----	439.14	9+90.71	684.43 LT	686223.05	2395294.39
SSMH2	444.57	440.23 IN (24") 441.85 IN (12") 439.75 OUT	12+72.62	339.76 LT	686168.31	2395736.30
CAP1	----	433.92	8+18.39	495.93 LT	685967.72	2395299.86

**NOTE: FIELD VERIFY LOCATION OF EXISTING SEWER STUB

REVISIONS		
NUMBER	BY	DATE
1	BWG	1/3/12

0 1 2
THIS BAR IS EQUAL TO 2" AT FULL SCALE (34X22). PLOT 1

MIDAMERICA ST. LOUIS AIRPORT
ST. CLAIR COUNTY, ILLINOIS

MIKE APRON EXPANSION
BASE BID

CMT
CRAWFORD, MURPHY & TILLY, INC.
CONSULTING ENGINEERS
ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102
(314) 436-5500

IL PROJECT: BLV-4061
AIP PROJ. 3-17-0146-029-2011

FILE: 19_GRADING.dwg
DESIGN BY: LEW
DRAWN BY: ASA
CHECKED BY: MJD/CET
APPROVED BY: BWG
DATE: NOVEMBER 28, 2011
JOB No: 10098-01

GRADING AND DRAINAGE PLAN