

CENTENE DATA CENTER

A TRACT OF LAND BEING ADJUSTED LOT A OF THE BOUNDARY ADJUSTMENT PLAT OF LOT A AND COMMON GROUND AND DETENTION EASEMENT OF PROGRESS POINT, AS RECORDED IN PLAT BOOK 41, PAGE 83, LOCATED IN U.S. SURVEY 1669, TOWNSHIP 46 NORTH, RANGE 3 EAST OF THE 5TH PRINCIPAL MERIDIAN, CITY OF O'FALLON, ST. CHARLES COUNTY, MISSOURI

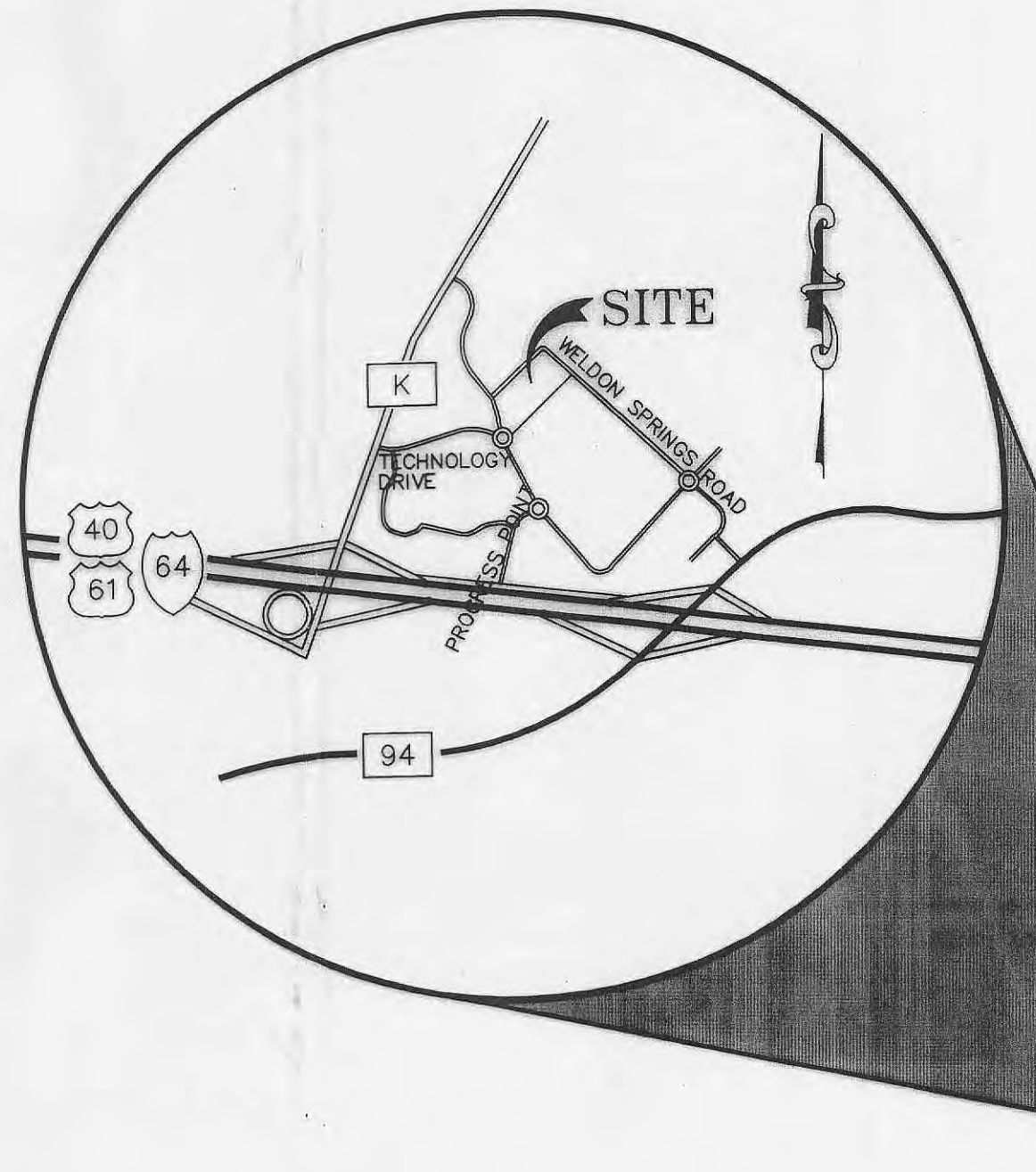
IMPROVEMENT PLANS AS BUILT

SHEET INDEX

C1	TITLE SHEET
C2	SPECIFICATIONS SHEET
C3	EXISTING CONDITIONS PLAN
C4	STORMWATER POLLUTION PREVENTION PLAN
C5	S.W.P.P.P. DETAILS
C6	SITE GRADING PLAN
C7	SITE GEOMETRIC PLAN
C8	SITE UTILITY PLAN
C9	SITE WARPING DETAILS
C10	CONSTRUCTION DETAILS
C11	SEWER PROFILES
C12	STORM SEWER DETAILS
C13-13A	SANITARY SEWER DETAILS
C14	WATERLINE DETAILS
C15	WATER QUALITY DETAILS
C16	EXISTING DRAINAGE AREA MAP
C17	PROPOSED DRAINAGE AREA MAP
C18	TRAFFIC CONTROL PLAN
C19-21	WELDON SPRING ROAD CROSS SECTIONS

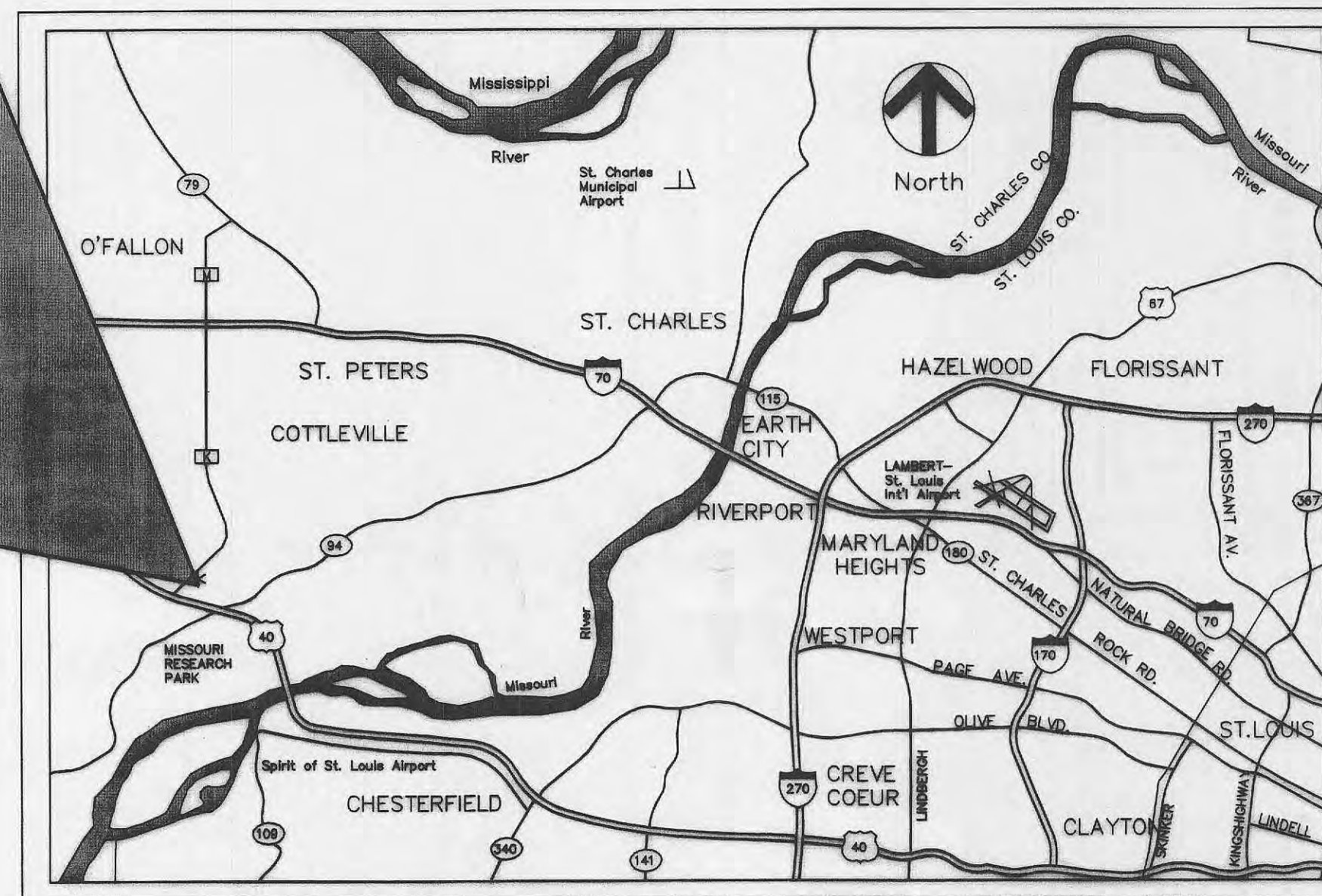
LEGEND

EXISTING CONTOURS	---	520
PROPOSED CONTOURS	---	520
EXISTING SANITARY SEWERS	---	SS
EXISTING STORM SEWERS	---	SS
PROPOSED SANITARY SEWERS	---	SS
PROPOSED STORM SEWERS	---	SS
EXISTING RIGHT-OF-WAY	---	
PROPOSED RIGHT-OF-WAY	---	
CENTERLINE	---	
EASEMENT	---	
NON-REINFORCED CONCRETE PAVEMENT	---	
REINFORCED CONCRETE PAVEMENT	---	
EXISTING SPOT ELEVATION	+	EX 520.15
PROPOSED SPOT ELEVATION	+	520.10
SWALE	---	
TO BE REMOVED	T.B.R.	
TO BE REMOVED & RELOCATED	T.B.R. & R.	
TO BE REMOVED & RELOCATED BY OTHERS	T.B.R. & R.B.O.	
TO BE USED IN PLACE	U.I.P.	
BACK OF CURB	B.C.	
FACE OF CURB	F.C.	
TRASH ENCLOSURE	⊗	
LIGHT STANDARD	☆	
GAS MAIN	G	
WATER MAIN	W	
UNDERGROUND TELEPHONE	T	
FIRE HYDRANT	⊗	
POWER POLE	⊗	
SILTATION CONTROL	---	



SITE DEVELOPMENT PLAN CONDITIONS

- PROVIDE REVISED PHOTOMETRIC CALCULATIONS TO THE PROPERTY LINE, NOT TO EXCEED 0.5 FOOT CANDLES AT THE PROPERTY LINE.
- PROVIDE A 15' WIDE ROADWAY DEDICATION AND IMPROVE 13'-FEET OF THE SOUTHERN PORTION OF WELDON SPRING ROAD FROM THE CENTERLINE ALONG THE LENGTH OF THE PROPERTY.
- MOVE THE BIKE RACK TO THE EAST END OF THE INTERNAL SIDEWALK.
- THE SHOULDER SHALL BE CHIP AND SEAL NOT GRAVEL.



LOCATION MAP

(NOT TO SCALE)

Subject property lies within Flood Zone "X" (areas determined to be outside the 500-year floodplain) per National Flood Insurance Program Flood Insurance Rate Map for St. Charles County, Missouri, and Incorporated Areas. The map is identified as Map No. 29183C0430E with an effective date of August 2, 1996.

SITE INFORMATION

SITE ACREAGE
OWNER: = 8.561 Acres ±
= CRG - PP LOT A LLC
2199 Innerbelt Business Center Drive

SITE ADDRESS:
= 6430 WELDON SPRING ROAD
O'FALLON, MISSOURI 63368

EXISTING ZONING
FIRE DISTRICT = "HTCD" HIGH TECH CORRIDOR DISTRICT
SCHOOL DISTRICT = COTTEVILLE FIRE PROTECTION
SEWER DISTRICT = FRANCIS HOWELL
WATER SERVICE = DUCKETT CREEK SANITARY SEWER DIST.
GAS SERVICE = MISSOURI AMERICAN WATER COMPANY
ELECTRIC SERVICE = LACLEDE GAS
PHONE SERVICE = AMEREN U.E.
WATERSHED = AT&T
WUNNENBERG'S NO. = DARDENNE CREEK
= PG. 56 GRID RR-23



MoDOT LOCATE (314) 340-4100

MISSOURI DEPT. OF NATURAL RESOURCES

PERMIT NO. - MOR10D339
EXPIRATION DATE: FEBRUARY 7, 2012

UTILITY LOCATES

MISSOURI ONE-CALL
1 800 344-7483
CITY OF O'FALLON
TRAFFIC
(636) 379-5602
ENGINEERING
(636) 379-5556
CONSTRUCTION INSPECTION
(636) 379-5596

PERMITTEE NOTE:

THE PERMITTEE SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. THE PERMITTEE SHALL USE WHATEVER MEANS NECESSARY TO CONTROL EROSION AND SILTATION INCLUDING, BUT NOT LIMITED TO, STAKED STRAW BALES AND/OR SILTATION FABRIC FENCES (POSSIBLE METHODS OF CONTROL ARE DETAILED IN THE PLAN). CONTROL SHALL COMMENCE WITH GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE CITY OF O'FALLON AND MODOT AS NECESSARY. THE PERMITTEE'S RESPONSIBILITIES INCLUDE ALL DESIGN AND IMPLEMENTATION AS REQUIRED TO PREVENT EROSION AND THE DEPOSITING OF SILT. THE CITY OF O'FALLON AND AS REQUIRED BY MODOT MAY AT THEIR OPTION DIRECT THE PERMITTEE IN HIS METHODS AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS. ANY DEPOSITING OF SILT OR MUD ON NEW OR EXISTING PAVEMENT SHALL BE REMOVED IMMEDIATELY. ANY DEPOSITING OF SILT OR MUD IN NEW OR EXISTING STORM SEWERS OR SWALES SHALL BE REMOVED AFTER EACH RAIN AND AFFECTED AREAS CLEANED TO THE SATISFACTION OF THE CITY OF O'FALLON AND AS REQUIRED BY MODOT.

OWNER NOTE:

ONCE THE CONTRACTOR DELIVERS THE PROPERTY TO THE OWNER, THE OWNER SHALL BE RESPONSIBLE TO MAINTAIN ANY CONTROL MEASURE THAT IS TO REMAIN AS A PERMANENT STRUCTURE TO CONTROL SILTATION AND EROSION.

SITE DEVELOPMENT PLAN

DIVISION FILE NUMBER:	99104.14
APPROVAL DATE:	06-03-2010
2010-12-21	REVISION 1
2010-11-12	CONSTRUCTION SET
2010-11-03	FOR PERMIT
2010-07-21	REVISED PER CITY & PWSO COMMENTS
2010-06-30	REVISED PER CITY COMMENTS
2010-16-09	PROGRESS PRINTING #2
2010-05-24	REVISED PER SEWER DISTRICT COMMENTS

TITLE SHEET

CENTENE DATA CENTER

STOCK & ASSOCIATES
Consulting Engineers, Inc.

257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

NOV. 12, 2010

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

DATE CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	05/07/10	G.M.S. 05/07/10	209-4511 C1 of 21

ABBREVIATIONS

C.O.	- CLEANOUT
DB.	- DEED BOOK
E	- ELECTRIC
FL	- FLOWLINE
FT	- FEET
FND.	- FOUND
G	- GAS
M.H.	- MANHOLE
N/F	- NOW OR FORMERLY
PB.	- PLAT BOOK
PG.	- PAGE
P.V.C.	- POLYVINYL CHLORIDE PIPE
P.O.B.	- POINT OF BEGINNING
P.O.C.	- POINT OF COMMENCEMENT
R.C.P.	- REINFORCED CONCRETE PIPE
SQ.	- SQUARE
T	- TELEPHONE CABLE
V.C.P.	- VETRIFIED CLAY PIPE
W	- WATER
(66'W)	- RIGHT-OF-WAY WIDTH

DNR BENCHMARK

BENCHMARK STATION: SC-18
ELEVATION = 611.55

DESCRIPTION: BOTH THE STATION AND THE AZIMUTH MARK ARE STANDARD MO DNR ALLUMINUM GRIS DISK. THE STATION IS STAMPED "SC-18, 1999". THE AZIMUTH IS STAMPED "SC-12, 1990". BOTH DISK ARE SET IN 12 INCH DIAMETER BY 30 INCH DEEP CONCRETE MONUMENTS FLUSH WITH THE GROUND.

STATION, AZIMUTH MARKS AND REFERENCE TIES: THE STATION IS LOCATED AT THE SOUTHWEST CORNER OF THE PARKING LOT FOR THE AHDEN KNIGHT HAMPTON MEMORIAL LAKE. IT IS 89.0 FT. SOUTHWEST OF THE NORTHWEST CORNER POST OF A RAIL FENCE AROUND THE PARKING LOT; 46.2 FT.

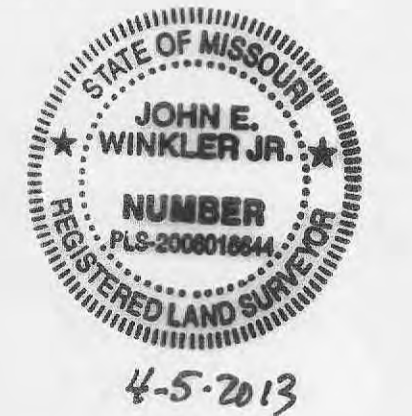
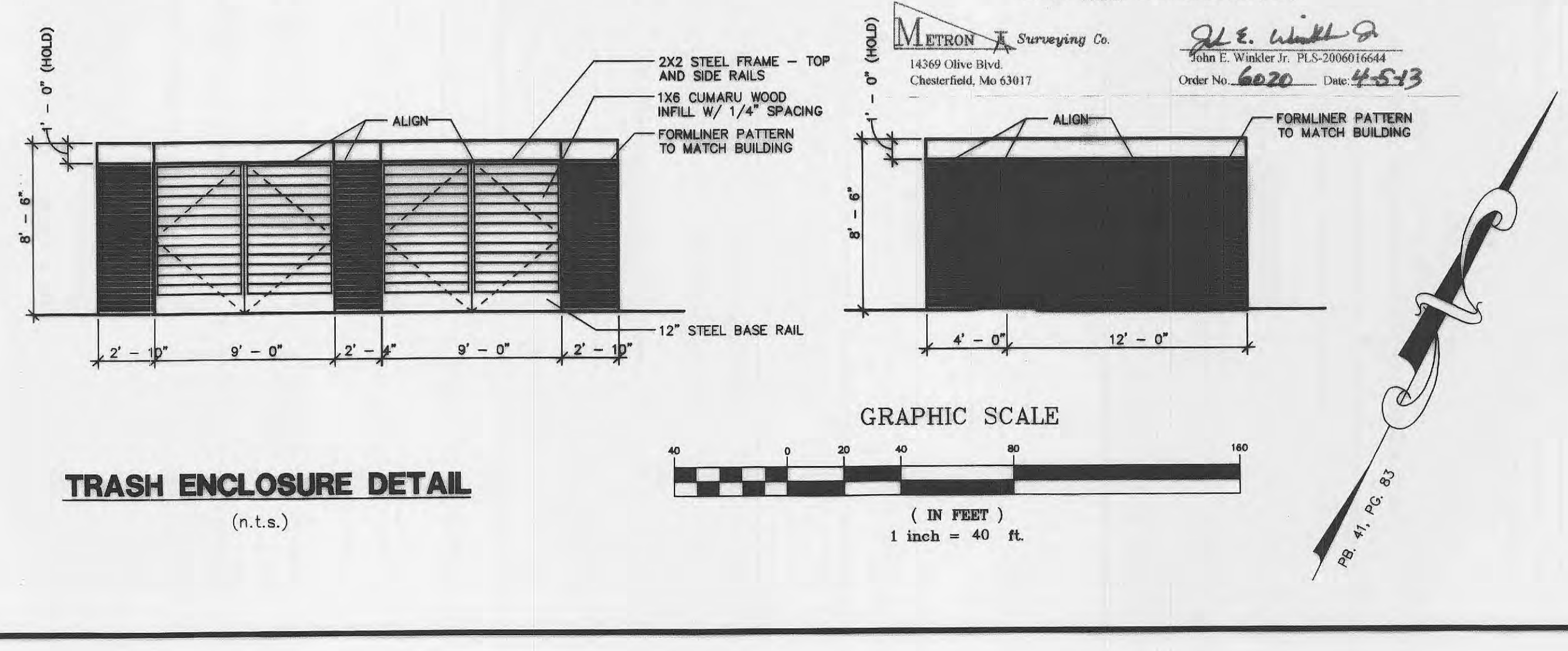
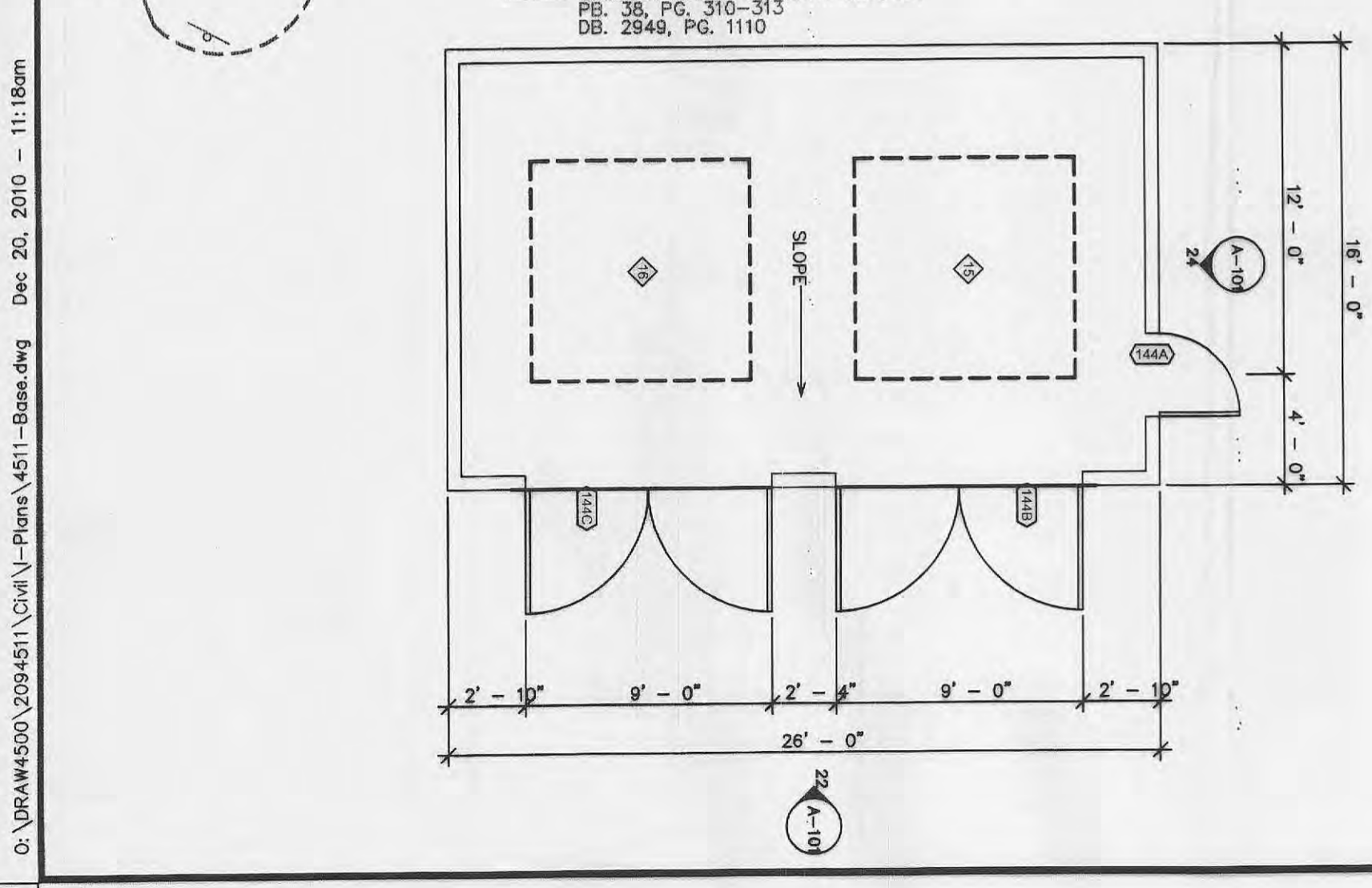
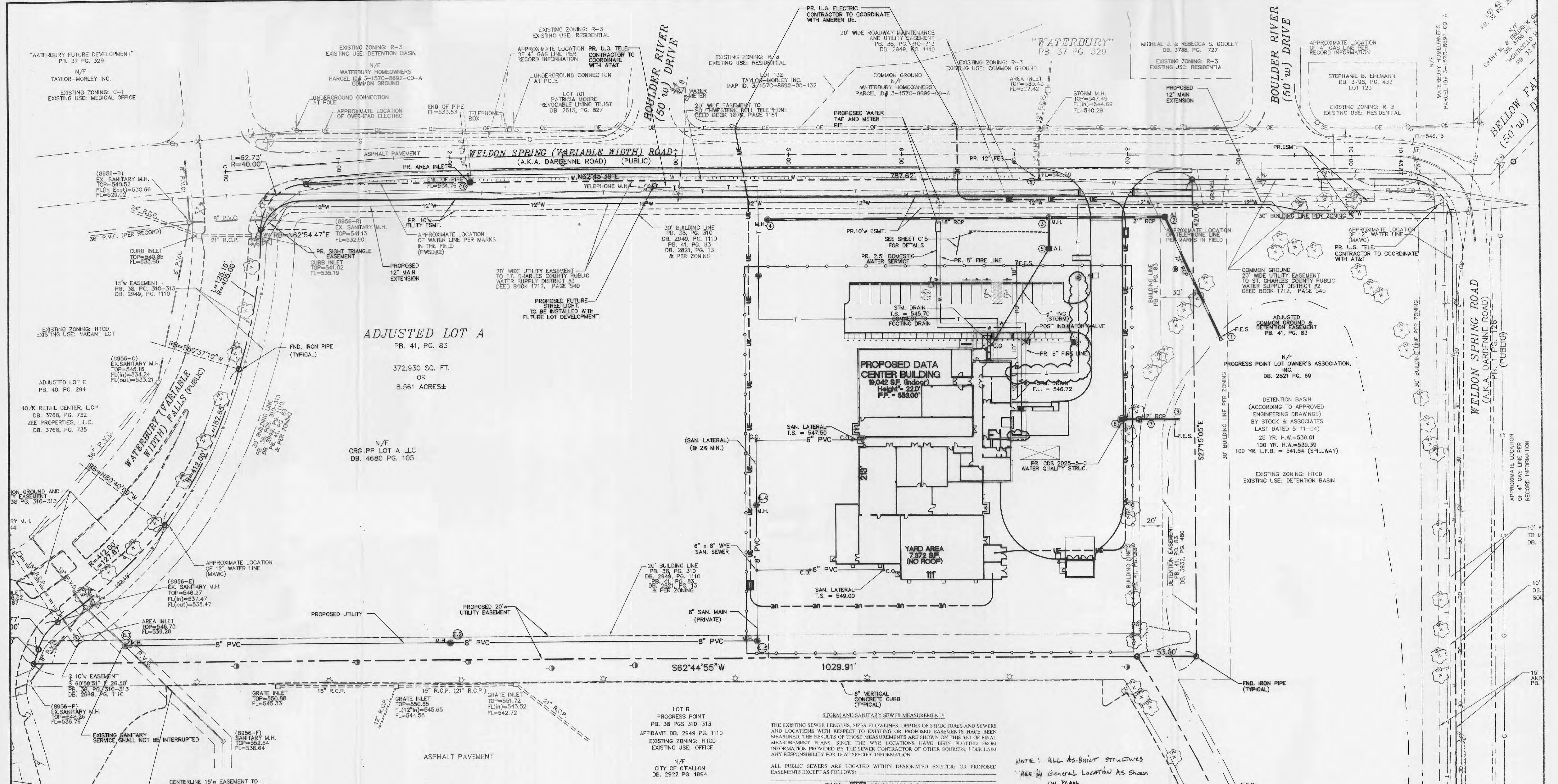
SITE BENCHMARK

ELEV.=532.44
"SQ" OUT ON CONCRETE HEADWALL AS SHOWN HEREON.

PREPARED FOR:
CLAYCO REALTY GROUP
2199 INNERBELT BUSINESS CENTER DRIVE
ST. LOUIS, MISSOURI 63114
PHONE: (314) 429-5100
FAX: (314) 592-2102

2013

RECEIVED
APR - 6 2013
BY:



2010-12-21	REVISION 1
2010-11-12	CONSTRUCTION SET
2010-11-03	FOR PERMIT
2010-07-21	REVISED PER CITY & PWS COMMENTS
2010-06-30	REVISED PER CITY COMMENTS
2010-16-09	PROGRESS PRINTING #2
2010-05-24	REVISED PER SEWER DISTRICT COMMENTS

NOV. 12, 2010

SITE UTILITY PLAN
CENTENE DATA CENTER

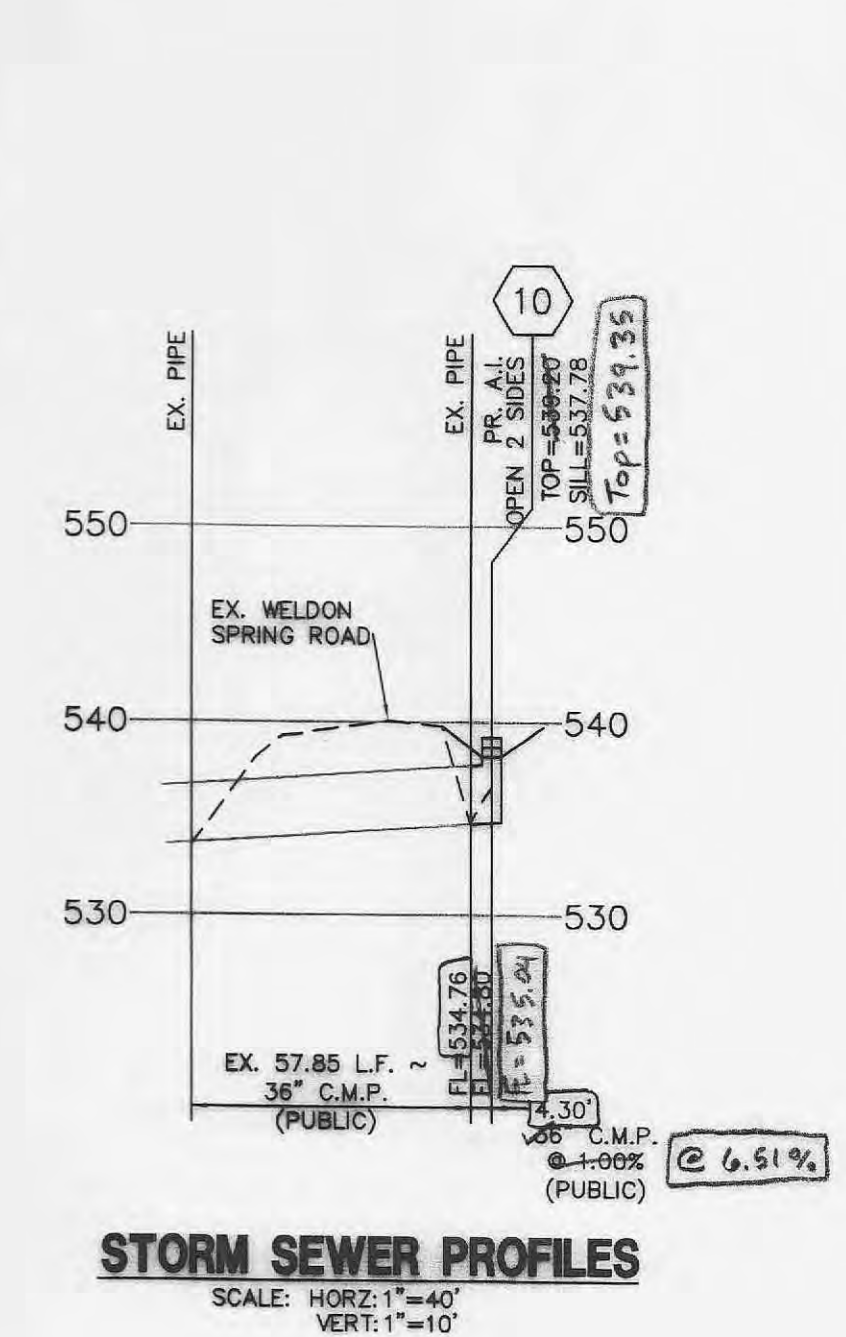
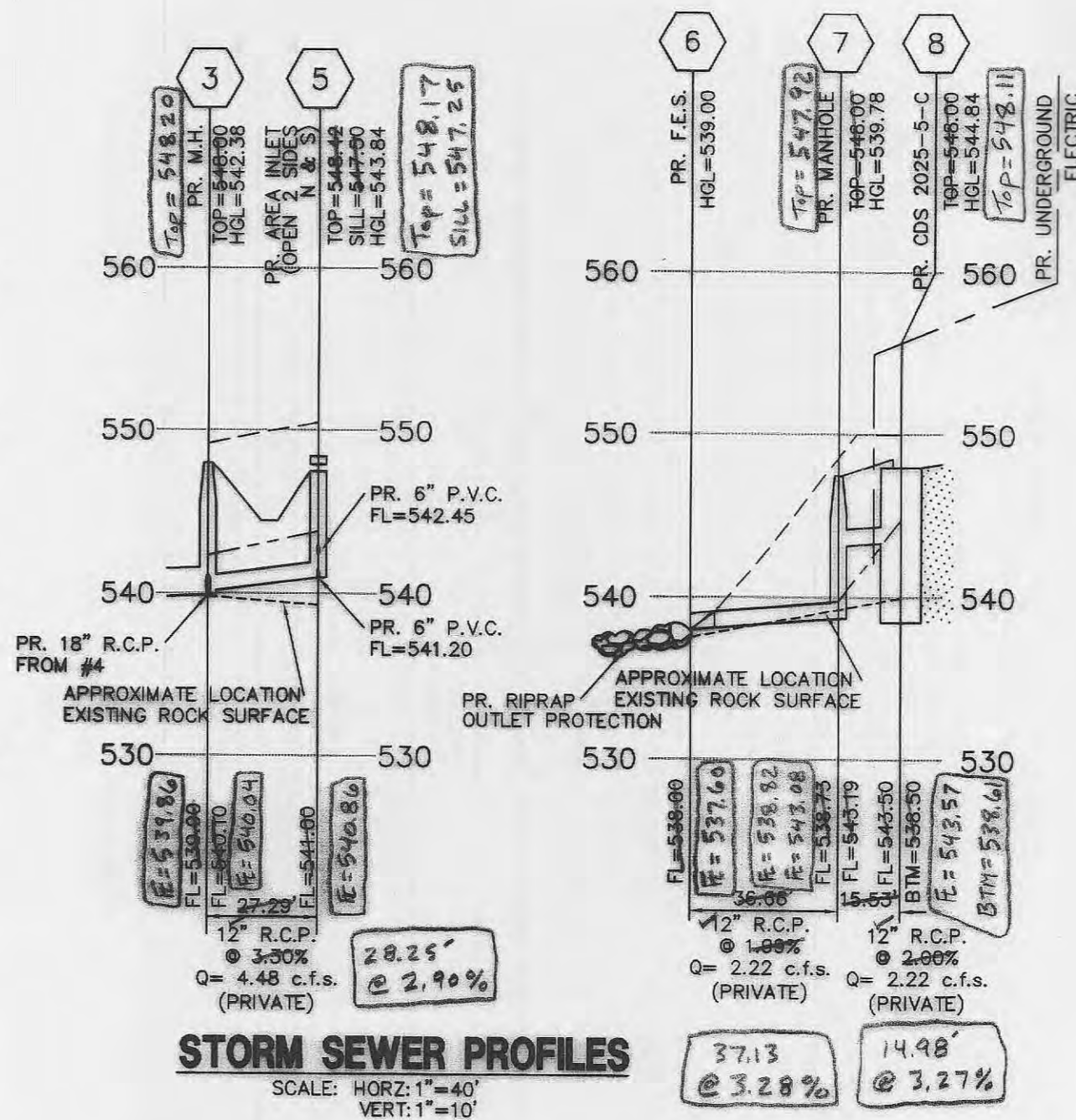
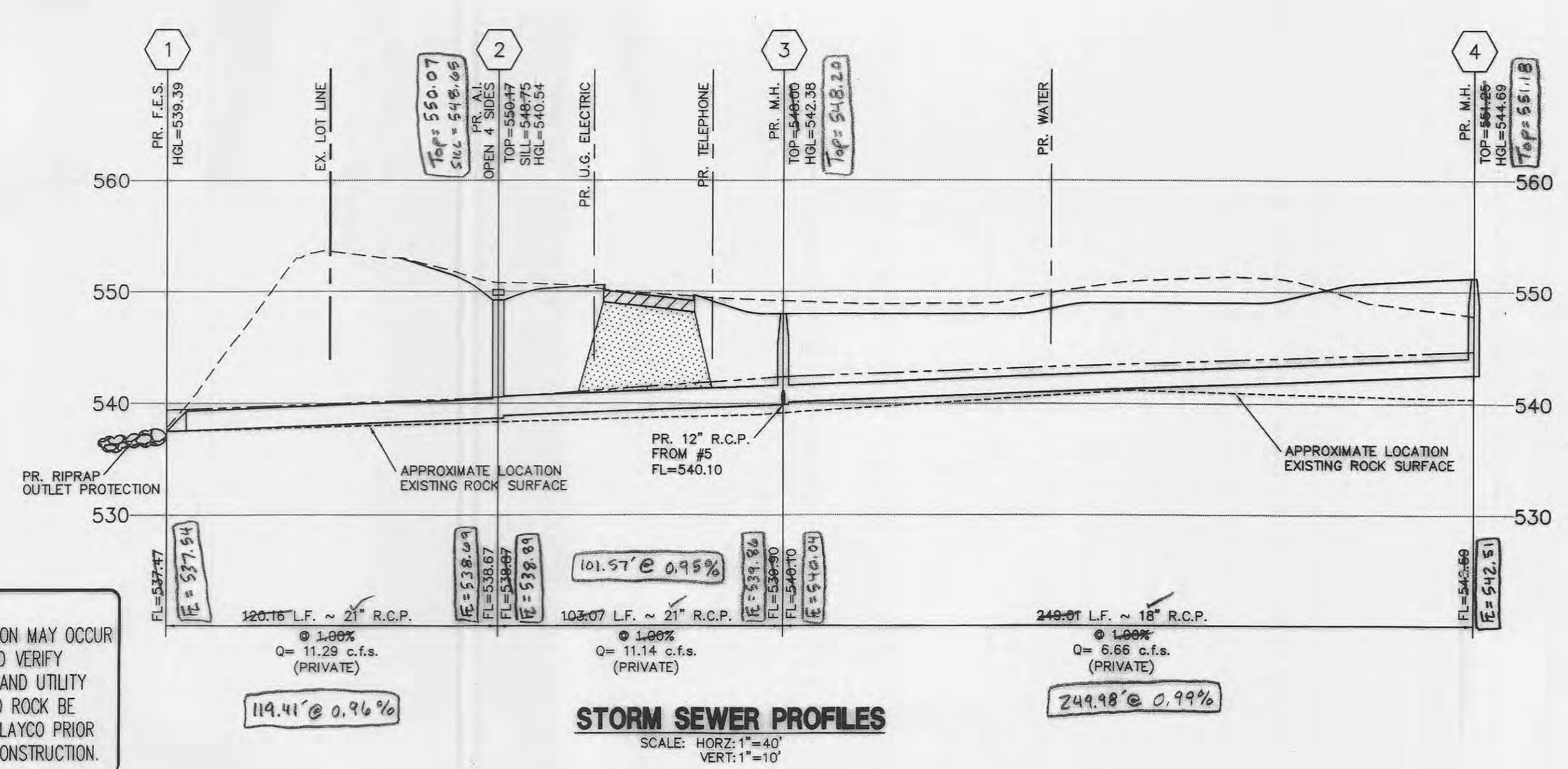
STOCK & ASSOCIATES
Consulting Engineers, Inc.

257 Chesterfield Business Parkway
 St. Louis, MO 63005
 PH. (636) 530-9100
 FAX (636) 530-9130
 e-mail: general@stockassoc.com
 Web: www.stockassoc.com

GEORGE M. STOCK E-25116
 CIVIL ENGINEER
 CERTIFICATE OF AUTHORITY
 NUMBER: 000996

DATE CHECKED BY: G.M.S. 05/07/10
 DATE JOB NUMBER: 209-4511
 SHEET: C8 of 21

D:\PRA\4500_2094511_Civil\4511-Base.dwg Dec 20, 2010 11:18am



FES #1 - SECTION A-A

FIND DEPTH OF WATER AND WIDTH OF THE CHANNEL:

INPUT:
Top of bank Elevation = 539.47
Bot. Elevation = 537.47
Stream Slope = 0.01 (R/R)
Side Slope = 0.04
Horizontal (H) = 3
Vertical (V) = 1

OUTPUT:
Depth = 0.93 (ft)
Velocity = 2.55 (ft/sec)
Water Surface Elev = 538.40
Free Board = 1.07 (ft)

Water Surface Width = 7.56 (ft)
R^{2/3} = 0.68
Perimeter = 7.86 (ft)
Cross section Area = 4.43 (ft²)

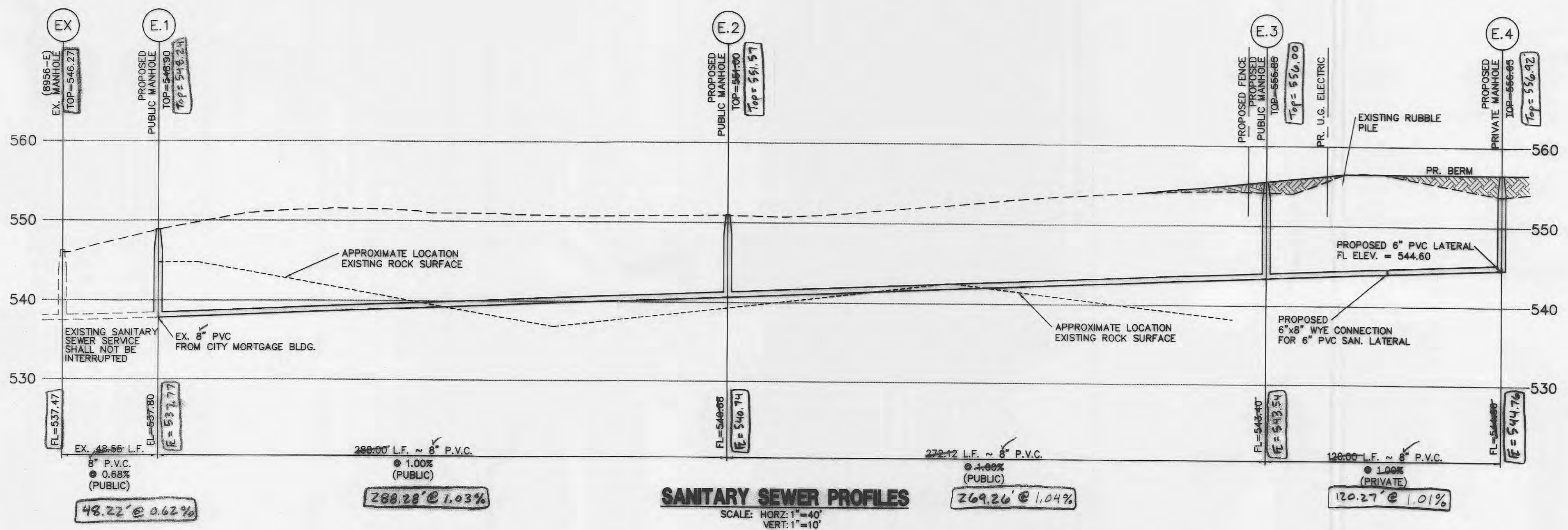
FES #6 - SECTION A-A

FIND DEPTH OF WATER AND WIDTH OF THE CHANNEL:

INPUT:
Top of bank Elevation = 538.47
Bot. Elevation = 537.47
Stream Slope = 0.01 (R/R)
Side Slope = 0.04
Horizontal (H) = 3
Vertical (V) = 1

OUTPUT:
Depth = 0.42 (ft)
Velocity = 1.55 (ft/sec)
Water Surface Elev = 537.89
Free Board = 0.59 (ft)

Water Surface Width = 4.49 (ft)
R^{2/3} = 0.44
Perimeter = 4.63 (ft)
Cross section Area = 1.35 (ft²)



POTENTIAL ROCK EXCAVATION MAY OCCUR CONTRACTOR TO FIELD VERIFY PRIOR TO EXCAVATION AND UTILITY INSTALLATION. SHOULD ROCK BE ENCOUNTERED, NOTIFY CLAYCO PRIOR TO COMMENCEMENT OF CONSTRUCTION.

LINETYPE LEGEND

- EXISTING GRADE.....
- PROPOSED GRADE.....
- HYDRAULIC GRADE.....
- PROPOSED PAVEMENT.....
- GRANULAR BACKFILL.....
- COMPACTED FILL.....

STORM SEWER NOTE

ALL DETAILS SHOWN ON THIS SHEET ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE DETAILS ARE TO BE VERIFIED PER METROPOLITAN ST. LOUIS SEWER DISTRICT STANDARDS FOR STORM SEWERS, & CITY OF FALLON CONSTRUCTION SPECIFICATIONS. ALL METHODS, MEANS AND MATERIALS SHALL CONFORM TO M.S.D. CURRENT STANDARD CONSTRUCTION SPECIFICATIONS.

SANITARY SEWER NOTE

ALL DETAILS SHOWN ON THIS SHEET ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE DETAILS ARE TO BE VERIFIED PER DUCKETT CREEK SANITARY SEWER DISTRICT STANDARDS FOR SANITARY SEWERS, & CITY OF FALLON CONSTRUCTION SPECIFICATIONS. ALL METHODS, MEANS AND MATERIALS SHALL CONFORM TO D.C.S.D. CURRENT STANDARD CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION NOTES:

- ALL R.C.P. SHALL BE CLASS III UNLESS NOTED OTHERWISE.
 - ALL P.V.C. SHALL BE SDR 35 UNLESS NOTED OTHERWISE.
 - ALL SEWERS SHOWN ARE PRIVATE, UNLESS OTHERWISE NOTED.
- ENGINEER APPROVED SHOP DRAWINGS MUST BE SUBMITTED TO THE CITY OF FALLON AND/OR DUCKETT CREEK SANITARY SEWER DISTRICT.

LINE	FLOW LINE	Length	Flowline	Pipe Size	Full Flow	Total (Q)	Mean Full Flow	Bend	Curve	Velocity	Q _v	Pipe Coef.	Hr	Junction	Bend	Curve	Total	Upper F.L.	Lower H.E.	Lower H.E.	Upper	Structure	Free	Structure			
Number	structure	structure	structure	Structure	(ft)	Grade ft/ft	(in.)	Cap. (cfs)	(cfs)	Vel. (ft/s)	Coef.	Coef.	Head (V _n) (ft)	(ft ³ /s)	(n)	(ft)	(ft)	(ft)	H _m	+ Dia.	+ Hr	H.E. + H _m	Elevation	Board	Structure		
8	8	7	543.50	543.19	15.53	0.0200	12	5.05	2.22	2.83	0.00	0.00	0.12	0.28	0.013	0.06	0.17	0.17	0.00	0.34	544.50	544.25	544.19	544.84	548.00	3.16	8
7	7	6	538.73	538.00	36.66	0.0199	12	5.04	2.22	2.83	0.40	0.00	0.12	0.28	0.013	0.14	0.00	0.05	0.00	0.05	539.73	539.14	539.00	539.78	547.50	7.72	7
6	6		538.00																				539.00			6	
ASSUME TOP OF PIPE=																											
4	4	3	542.59	540.10	249.01	0.0100	18	10.53	6.66	3.77	0.00	0.00	0.22	1.47	0.013	1.00	0.29	0.31	0.00	0.60	544.09	542.60	541.60	544.69	551.25	6.56	4
3	3	2	539.90	538.87	103.07	0.0100	21	15.88	11.14	4.63	0.00	0.00	0.33	3.71	0.013	0.51	0.27	0.47	0.00	0.73	541.65	541.13	540.62	542.38	548.00	5.62	3
2	2	1	538.67	537.47	120.16	0.0100	21	15.88	11.29	4.69	0.30	0.00	0.34	3.86	0.013	0.61	0.02	0.10	0.00	0.12	540.42	540.00	539.39	540.54	550.17	9.63	2
1	1		537.47																				539.39			1	
ASSUME 100 YR POND HCL=																											
5	5	3	541.00	540.10	27.29	0.0330	12	6.49	4.48	5.70	0.70	0.00	0.51	2.26	0.013	0.43	0.67	0.35	0.00	1.03	542.00	542.81	542.38	543.84	548.42	4.58	5
3	3		540.10																				542.38			3	
STRUCTURE #3=																											

MEAN FULL FLOW VELOC V = Q_{ACT}/A_{PIPE}

FRICTION LOSS (H_f): H_f = 2.87 n² (LV^{4.75}/d^{5.49})

VELOCITY HEAD: V_n = V²/2g

JUNCTION LOSSES (JUNC.) = [Q_{out}V_{hout} - Sum (Q_{in}V_{in})]x1.33/[Q_{out}]

BEND LOSSES (BEND) = (V³) * ANGLE COEFFICIENT

CURVE LOSS = V_n * CURVE COEFFICIENT

Note: 1. IF MORE THAN ONE INCOMING LINE, CALC. EACH BEND LOSS AND ADD TOGETHER.
2. NO STRUCTURE LOSSES TO BE CALCULATED AT A DROPP
3. IF Q_{V(in)} > Q_{V(out)}, NO JUNCTION LOSSES TO BE CALCULATED.

METRON Surveying Co.
14369 Olive Blvd
Chesterfield, Mo 63017

John E. Winkler Jr.
Order No. 6020 Date: 4-5-13



NOV. 12, 2010

SEWER PROFILES
CENTENE DATA CENTER

STOCK & ASSOCIATES
Consulting Engineers, Inc.

257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 00996

DRAWN BY: J.M.B. DATE: 05/07/10
CHECKED BY: G.M.S. DATE: 05/07/10
JOB NUMBER: 209-4511
SHEET: C11 of 21