# IMMANUEL ROAD MIXED USE

# PRELIMINARY PLAN ONLY -NOT FOR RECORDATION-DECEMBER 2022

# **PROJECT**

# **VICINITY MAP** SCALE: 1" = 1,000'

### LEGAL DESCRIPTION:

BEING A 10.342 ACRE (450,484 SQ. FT.) TRACT OF LAND SITUATED IN THE **ALEXANDER WALTERS SURVEY, ABSTRACT 791, TRAVIS COUNTY, TEXAS;** AND BEING ALL OF A CALLED 10.343 ACRE TRACT OF LAND DESCRIBED TO NTC & CO. FBO JAMES E. CAMPBELL IRA, AS SHOWN ON INSTRUMENT RECORDED UNDER DOCUMENT NO. 2008015038 OF THE OFFICIAL PUBLIC **RECORDS OF TRAVIS COUNTY, TEXAS.** 

**SHEET INDEX** 

	SHEET LIST TABLE
SHEET NO.	DESCRIPTION
1	COVER SHEET
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3	EXISTING CONDITIONS AND PROPOSED GRADING
4	WATER AND WASTEWATER PLAN
5	EXISTING OVERALL DRAINAGE AREA MAP
6	PROPOSED OVERALL DRAINAGE AREA MAP
7	PROPOSED SUB-DRAINAGE AREA MAP
8	TREE SURVEY
9	TREE PROTECTION DETAILS
10	ILLUMINATION PLAN

TRAFFIC IMPACT ANALYSIS BY KELLY REES, P.E. - NOVEMBER, 21, 2022 ENGINEER'S REPORT BY JUSTIN KRAMER, P.E. - APRIL 11, 2022 DRAINAGE REPORT BY JUSTIN KRAMER, P.E. - APRIL 11, 2022 GEOTECHNICAL ENGINEERING REPORT BY JOHN STYRON - JULY 22, 2022

LOT USAGE TABLE									
LOT	PROPOSED ZONING	PROPOSED USE	ENTITY TYPE	ACREAGE	WIDTH	LENGTH			
LOT 1	GB-1	MF-20 AND RETAIL	PRIVATE	9.641 AC.	1003.5'	417.8'			
PROP. OLYMPIC DRIVE ROW	N/A	ROW	PUBLIC	0.586 AC.	60'	422'			
PROP. IMMANUEL ROAD ROW	N/A	ROW	PUBLIC	0.116 AC	VARIES	388'			
			TOTAL ACREAGE:	10.343 AC					

Parkland Dedication Requirement									
Units	Land/Resident	Resident/Unit	Acreage Required	Acreage Proposed					
192	0.0066	2	2.5344	0					

Fee in Lie	u of Acreage De	edication*			
Area	Fee/Acre	Fee			
2.5344	\$ 43,560.00	\$ 110,398.46			
*Fee shall be paid prior to Plat Approval					

Parkland Development Fee						
Units	F	ee/Unit		Fee		
192	\$	496.00	\$	95,232.00		

THE OWNER OF THE PROPERTY IN WHICH THE EASEMENT IS LOCATED MUST COMPLETE AND SIGN THE PETITION TO VACATE. FIELD NOTES AND A SURVEY OF THE EASEMENT TO BE VACATED MUST BE PROVIDED WITH THE PETITION. ALL UTILITY PROVIDERS HAVING FRANCHISES WITH THE CITY OF PFLUGERVILLE MUST BE CONTACTED AND EACH MUST COMPLETE AND SIGN THE CONSENT TO VACATE FORM. AFTER COMPLETING THE PETITION TO VACATE AND RECEIVING EACH SIGNED CONSENT TO VACATE FORM FROM THE UTILITY PROVIDERS, SUBMIT ALL THE INFORMATION TO THE CITY OF PFLUGERVILLE PLANNING DEPARTMENT FOR PROCESSING. PLEASE BE AWARE THAT THE PFLUGERVILLE CITY COUNCIL WILL ULTIMATELY APPROVE ANY VACATION.

THE NEW DRAINAGE EASEMENT NEEDS TO BE DEDICATED PRIOR TO CONSTRUCTION AND SITE PLAN APPROVALS. ONCE THE NEW DRAINAGE INFRASTRUCTURE IS CONSTRUCTED, AND THE OLD EASEMENT IS NO LONGER NEEDED, THE EXISTING EASEMENT VACATION WILL BE FILED WITH THE COUNTY, AND THIS NEEDS TO OCCUR PRIOR TO CERTIFICATE OF OCCUPANCY ISSUANCE.

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**BENCHMARKS** 

. TBM A - TRIANGLE CUT IN CONCRETE FOUND

NEAR THE SOUTH RIGHT-OF-WAY LINE

. TBM B - TRIANGLE CUT IN CONCRETE FOUI

NEAR THE SOUTH RIGHT-OF-WAY LINE

NAD 83 TEXAS STATE PLANES CENTRAL ZONE

WELLS BRANCH PARKWAY

WELLS BRANCH PARKWAY.

(FIPS 4203) SCALE FACTOR: 0.99990416

N: 1018808.3510'

E: 3151301.9800'

ELEV: 690.180'

N: 1018808.3510

E: 3151301.9800

ELEV: 681.420'

NAVD '88, GEOID 18

SHEET NUMBER

OF 10

### REVISIONS/CORRECTIONS

ACKNOWLEDGES THAT PLAT VACATION OR RE-PLATTING MAY BE REQUIRED AT THE OWNER'S SOLE EXPENSE IF

NO.	DESCRIPTION	REVISE (R) CORRECT (C) ADD (A) VOID (V) SHEET NO.'S	NET CHANGE IMP. COVER (SQ. FT.)/%	TOTAL SITE IMP. COVER (SQ. FT.)/%	DESIGN ENGINEER SIGNATURE	CITY OF PFLUGERVILLE APPROVAL	APPROVAL DATE			
							-			

OWNER/DEVELOPER: ROERS COMPANIES TWO CARLSON PARKWAY, SUITE 120 PLYMOUTH, MN 55447 CONTACT: LOGAN SCHMIDT

STANDARD PLAN NOTES:

THIS PLAN LIES WITHIN THE CITY OF PFLUGERVILLE FULL PURPOSE JURISDICTION

SHALL BE OCCUPIED UNTIL CONNECTED TO WATER AND WASTEWATER FACILITIES

DRAINAGE AND UTILITY FACILITIES, AND RELATED APPURTENANCES.

NOT LIMITED TO BEING DOWNCAST AND FULL CUT OFF TYPE

RATES FOR THE 2-YEAR, 25-YEAR, AND 100-YEAR STORM EVENTS.

PFLUGERVILLE ENGINEERING DESIGN MANUAL

AND REQUIREMENTS OF THE CITY OF PFLUGERVILLE

2. WATER AND WASTEWATER SHALL BE PROVIDED BY THE CITY OF PFLUGERVILLE. NO LOT IN THIS SUBDIVISION

PROPERTY, INCLUDING THE OBLIGATION TO REGULARLY MOW OR CUT BACK VEGETATION AND TO KEEP THE

FEE-IN-LIEU OF SIDEWALK CONSTRUCTION SHALL BE PAID FOR THE SIX (6) FOOT SIDEWALK ALONG IMMANUEL

STREETLIGHTS SHALL BE IN CONFORMANCE WITH ALL CITY OF PFLUGERVILLE ORDINANCES INCLUDING BUT

11.ON-SITE STORM WATER FACILITIES SHALL BE PROVIDED TO MITIGATE POST-DEVELOPMENT PEAK RUNOFF

14. CONSTRUCTION PLANS AND SPECIFICATIONS FOR ALL SUBDIVISION IMPROVEMENTS SHALL BE REVIEWED AND

16.NO PORTION OF THIS TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE

18. WASTEWATER AND WATER SYSTEMS SHALL CONFORM TO TCEQ (TEXAS COMMISSION ON ENVIRONMENTAL

APPROVED BY THE CITY OF PFLUGERVILLE PRIOR TO ANY CONSTRUCTION WITHIN THE SUBDIVISION.

15. SITE DEVELOPMENT CONSTRUCTION PLANS SHALL BE REVIEWED AND APPROVED BY THE CITY OF

QUALITY) AND STATE BOARD OF INSURANCE REQUIREMENTS. THE OWNER UNDERSTANDS AND

PLANS TO DEVELOP THIS SUBDIVISION DO NOT COMPLY WITH SUCH CODES AND REQUIREMENTS

OF THE CITY OF PFLUGERVILLE ENGINEERING DESIGN MANUAL. AS AMENDED.

ELECTRIC UTILITY LATERAL AND SERVICE LINES SHALL BE INSTALLED IN ACCORDANCE WITH

NO IMPROVEMENTS INCLUDING BUT NOT LIMITED TO STRUCTURES, FENCES, OR LANDSCAPING SHALL BE

THE PROPERTY OWNER SHALL PROVIDE ACCESS TO DRAINAGE AND UTILITY EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS FOR THE PLACEMENT. CONSTRUCTION, INSTALLATION. REPLACEMENT, REPAIR, MAINTENANCE, RELOCATION, REMOVAL, OPERATION AND INSPECTION OF SUCH

KIMLEY-HORN 10814 JOLLYVILLE ROAD, AVALLON IV, SUITE 200 AUSTIN, TX 78759 CONTACT: MICHAEL A. MONTGOMERY



AUSTIN, TX 78759 CERTIFICATE OF REGISTRATION #928 CONTACT: JUSTIN J. KRAMER, P.E.

ELECTRIC PROVIDER: ONCOR ELECTRIC DELIVERY COMPANY LLC 200 N ECTOR DRIVE EULESS,TX 76039 CONTACT: AARON RAMIREZ

ATMOS ENERGY CORPORATION 3110 N IH 35 ROUND ROCK, TX 78681 CONTACT: JACKY YU

WATER AND WASTEWATER PROVIDERS: CITY OF PFLUGERVILLE 100 W MAIN STREET PFLUGERVILLE, TX 78660 CONTACT: GORDON HAWS

CITY'S DEVELOPMENT SERVICES DEPARTMENT 100 W MAIN STREET PFLUGERVILLE, TX 78660 **CONTACT: GORDON HAWS** 512-990-6300

SIGNATURE OF REGISTERED PROFESSIONAL LAND SURVEYOR

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY OF PFLUGERVILLE MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

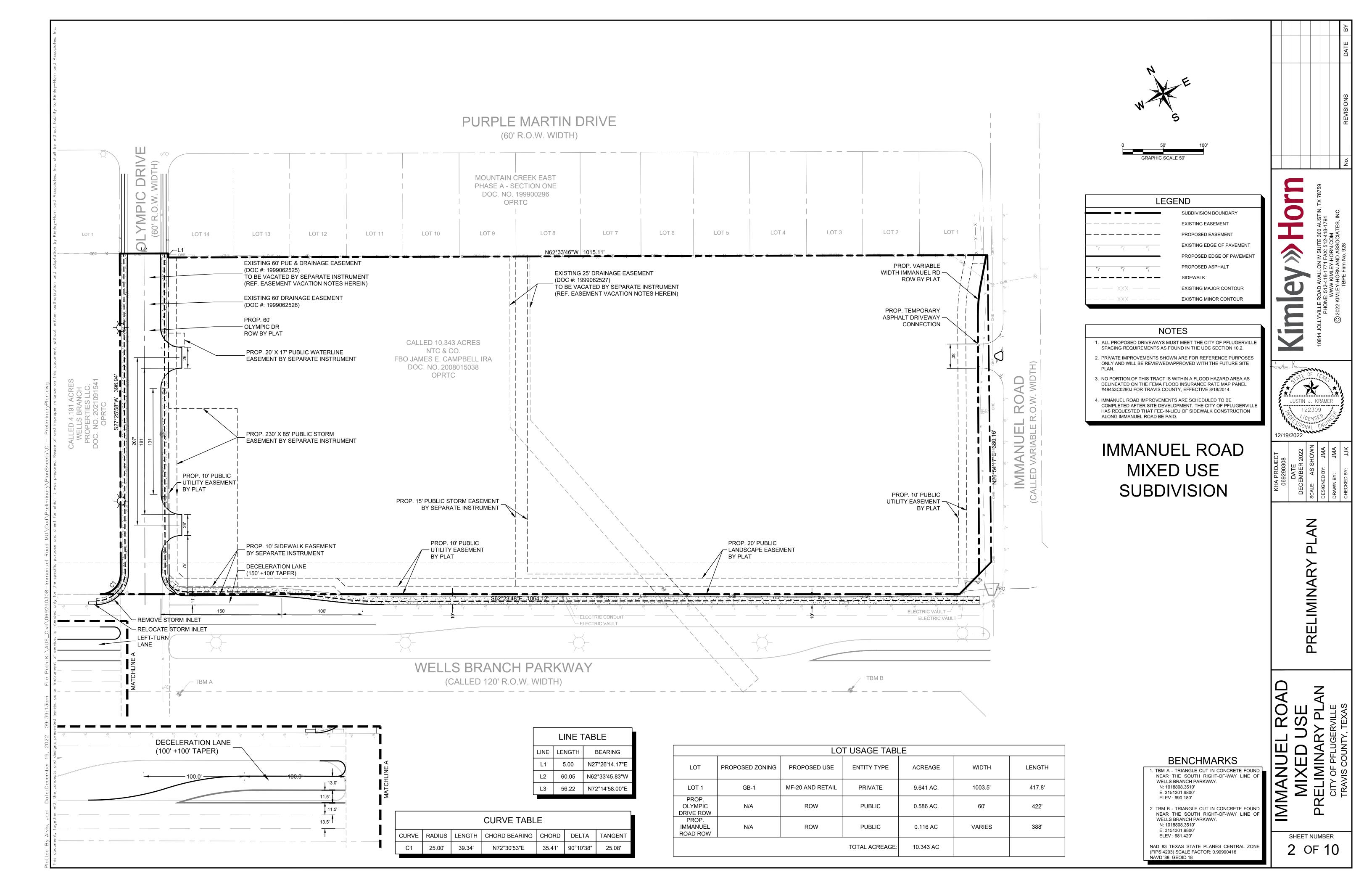
### SURVEYOR'S CERTIFICATION

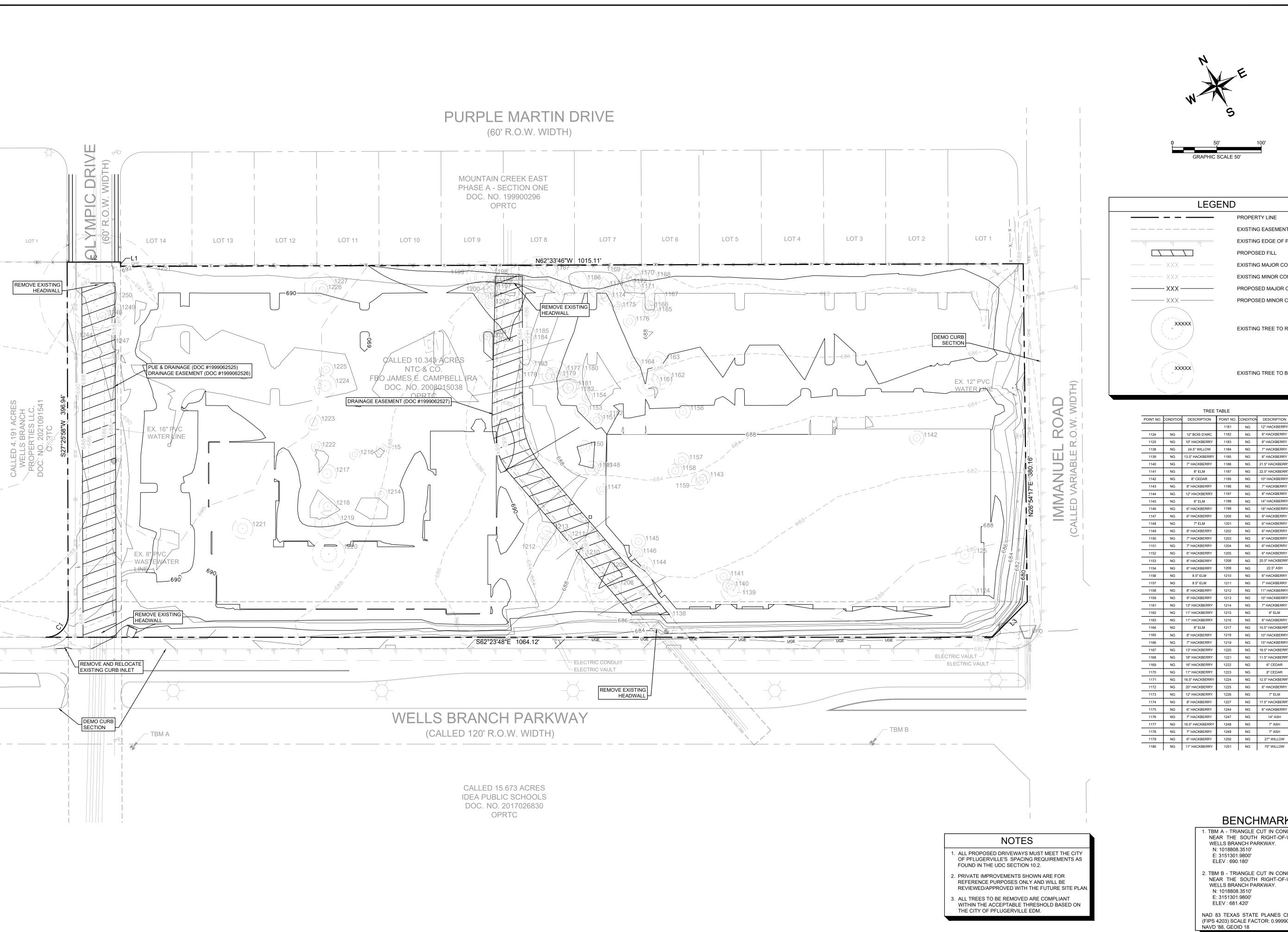
STATE OF TEXAS:

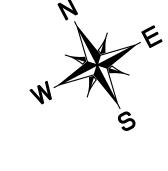
KNOW ALL MEN BY THESE PRESENTS:

**COUNTY OF TRAVIS:** 

THAT I, MIKE MONTGOMERY, DO HEREBY CERTIFY THAT I PREPARED THIS PLAN FROM AN ACTUAL AND ACCURATE ON-THE-GROUND SURVEY OF THE LAND, AND THAT THE CORNER MONUMENTS SHOWN THEREON MARKING THE BOUNDARY OF THE PROPOSED SUBDIVISION, BUT NOT INTERIOR LOT LINES, WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION, IN ACCORDANCE WITH ALL CITY OF PFLUGERVILLE, TEXAS CODES AND ORDINANCES AND THAT ALL KNOWN EASEMENTS WITHIN THE BOUNDARY OF THE PLAT ARE SHOWN HEREON.









LEGEND PROPERTY LINE EXISTING EASEMENT EXISTING EDGE OF PAVEMENT PROPOSED FILL EXISTING MAJOR CONTOUR EXISTING MINOR CONTOUR PROPOSED MAJOR CONTOUR PROPOSED MINOR CONTOUR EXISTING TREE TO REMAIN EXISTING TREE TO BE REMOVED

			TREE	TABLE		
_	POINT NO.	CONDITION	DESCRIPTION	POINT NO.	CONDITION	DESCRIPTION
_				1181	NG	12" HACKBERRY
	1124	NG	12" BOIS D'ARC	1182	NG	8" HACKBERRY
	1125	NG	10" HACKBERRY	1183	NG	8" HACKBERRY
	1138	NG	24.5" WILLOW	1184	NG	7" HACKBERRY
	1139	NG	13.5" HACKBERRY	1185	NG	8" HACKBERRY
	1140	NG	7" HACKBERRY	1186	NG	21.5" HACKBERRY
_	1141	NG	8" ELM	1187	NG	22.5" HACKBERRY
	1142	NG	8" CEDAR	1195	NG	10" HACKBERRY
	1143	NG	8" HACKBERRY	1196	NG	7" HACKBERRY
_	1144	NG	12" HACKBERRY	1197	NG	8" HACKBERRY
_	1145	NG	8" ELM	1198	NG	14" HACKBERRY
_	1146	NG	6" HACKBERRY	1199	NG	18" HACKBERRY
_	1147	NG	6" HACKBERRY	1200	NG	9" HACKBERRY
_	1148	NG	7" ELM	1201	NG	6" HACKBERRY
_	1149	NG	8" HACKBERRY	1202	NG	6" HACKBERRY
_	1150	NG	7" HACKBERRY	1203	NG	6" HACKBERRY
_	1151	NG	7" HACKBERRY	1204	NG	6" HACKBERRY
_	1152	NG	6" HACKBERRY	1205	NG	6" HACKBERRY
_	1153	NG	8" HACKBERRY	1208	NG	20.5" HACKBERRY
_	1154	NG	6" HACKBERRY	1209	NG	22.5" ASH
_	1156	NG	8.5" ELM	1210	NG	6" HACKBERRY
_	1157	NG	8.5" ELM	1211	NG	7" HACKBERRY
_	1158	NG	8" HACKBERRY	1212	NG	11" HACKBERRY
_	1159	NG	9" HACKBERRY	1213	NG	10" HACKBERRY
_	1161	NG	13" HACKBERRY	1214	NG	7" HACKBERRY
_	1162	NG	11" HACKBERRY	1215	NG	6" ELM
_	1163	NG	11" HACKBERRY	1216	NG	6" HACKBERRY
_	1164	NG	8" ELM	1217	NG	10.5" HACKBERRY
_	1165	NG	8" HACKBERRY	1218	NG	10" HACKBERRY
_	1166	NG	7" HACKBERRY	1219	NG	15" HACKBERRY
_	1167	NG	13" HACKBERRY	1220	NG	18.5" HACKBERRY
_	1168	NG	18" HACKBERRY	1221	NG	11.5" HACKBERRY
_	1169	NG	16" HACKBERRY	1222	NG	6" CEDAR
_	1170	NG	11" HACKBERRY	1223	NG	9" CEDAR
_	1171	NG	16.5" HACKBERRY	1224	NG	12.5" HACKBERRY
_	1172	NG	20" HACKBERRY	1225	NG	8" HACKBERRY
_	1173	NG	12" HACKBERRY	1226	NG	7" ELM
_	1174	NG	8" HACKBERRY	1227	NG	17.5" HACKBERRY
_	1175	NG	6" HACKBERRY	1244	NG	6" HACKBERRY
_	1176	NG	7" HACKBERRY	1247	NG	14" ASH
_	1177	NG	16.5" HACKBERRY	1248	NG	7" ASH
_	1178	NG	7" HACKBERRY	1249	NG	7" ASH
_	1179	NG	6" HACKBERRY	1250	NG	27" WILLOW
	1180	NG	11" HACKBERRY	1251	NG	70" WILLOW

### **BENCHMARKS**

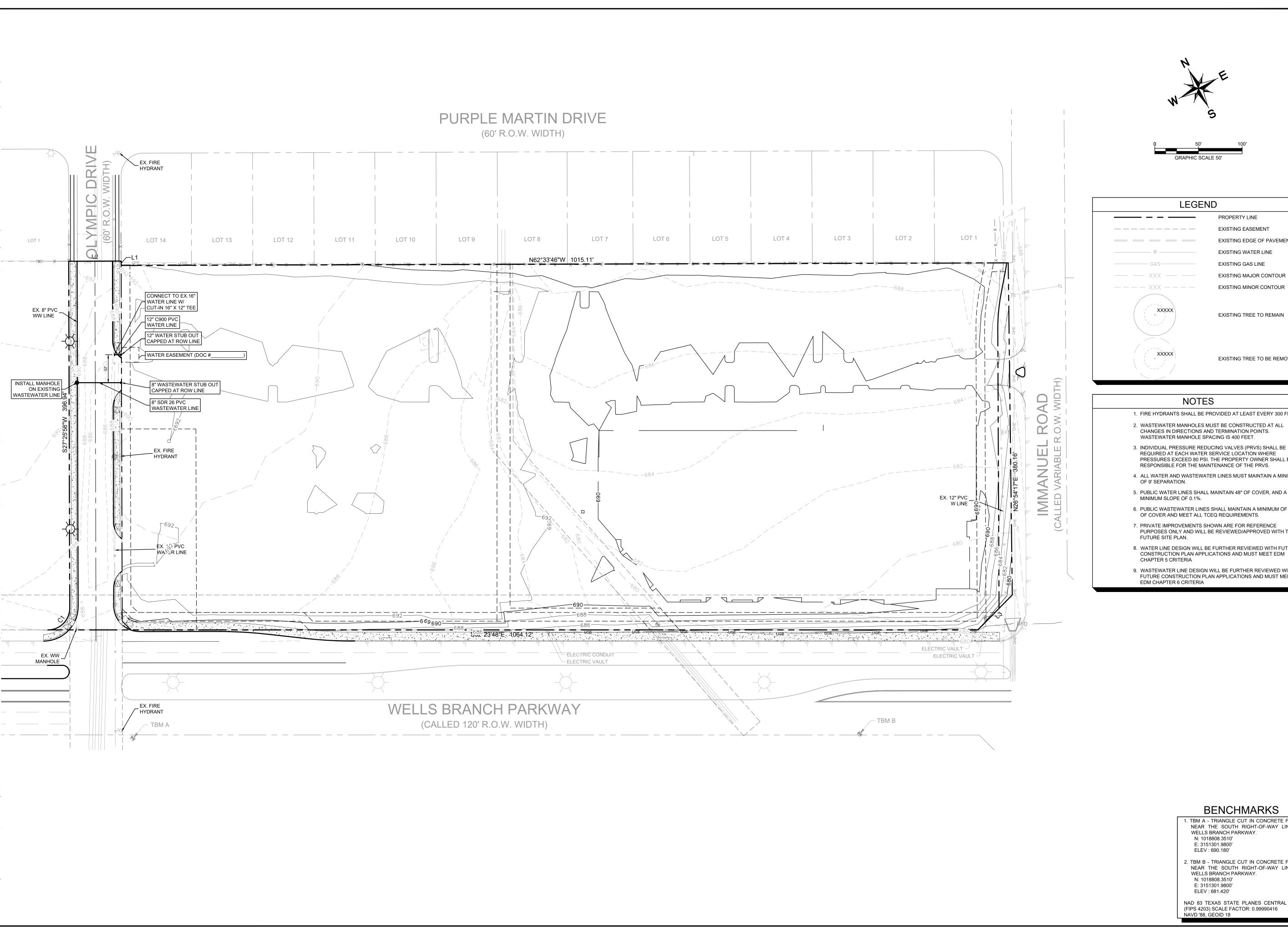
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NAD 83 TEXAS STATE PLANES CENTRAL ZONE (FIPS 4203) SCALE FACTOR: 0.999990416 NAVD '88, GEOID 18

ING CONDITIONS
ID PROPOSED
GRADING

XISTIN

SHEET NUMBER 3 OF 10



LEGEND PROPERTY LINE EXISTING EASEMENT EXISTING EDGE OF PAVEMENT EXISTING WATER LINE EXISTING GAS LINE EXISTING MAJOR CONTOUR EXISTING MINOR CONTOUR EXISTING TREE TO REMAIN EXISTING TREE TO BE REMOVED

- 1. FIRE HYDRANTS SHALL BE PROVIDED AT LEAST EVERY 300 FEET.
- 2. WASTEWATER MANHOLES MUST BE CONSTRUCTED AT ALL CHANGES IN DIRECTIONS AND TERMINATION POINTS. WASTEWATER MANHOLE SPACING IS 400 FEET.
- REQUIRED AT EACH WATER SERVICE LOCATION WHERE PRESSURES EXCEED 80 PSI. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE PRVS.
- 4. ALL WATER AND WASTEWATER LINES MUST MAINTAIN A MINIMUM
- 5. PUBLIC WATER LINES SHALL MAINTAIN 48" OF COVER, AND A
- 6. PUBLIC WASTEWATER LINES SHALL MAINTAIN A MINIMUM OF 48" OF COVER AND MEET ALL TCEQ REQUIREMENTS.
- 7. PRIVATE IMPROVEMENTS SHOWN ARE FOR REFERENCE PURPOSES ONLY AND WILL BE REVIEWED/APPROVED WITH T
- 8. WATER LINE DESIGN WILL BE FURTHER REVIEWED WITH FUTURE CONSTRUCTION PLAN APPLICATIONS AND MUST MEET EDM CHAPTER 5 CRITERIA
- 9. WASTEWATER LINE DESIGN WILL BE FURTHER REVIEWED WITH FUTURE CONSTRUCTION PLAN APPLICATIONS AND MUST MEET EDM CHAPTER 6 CRITERIA

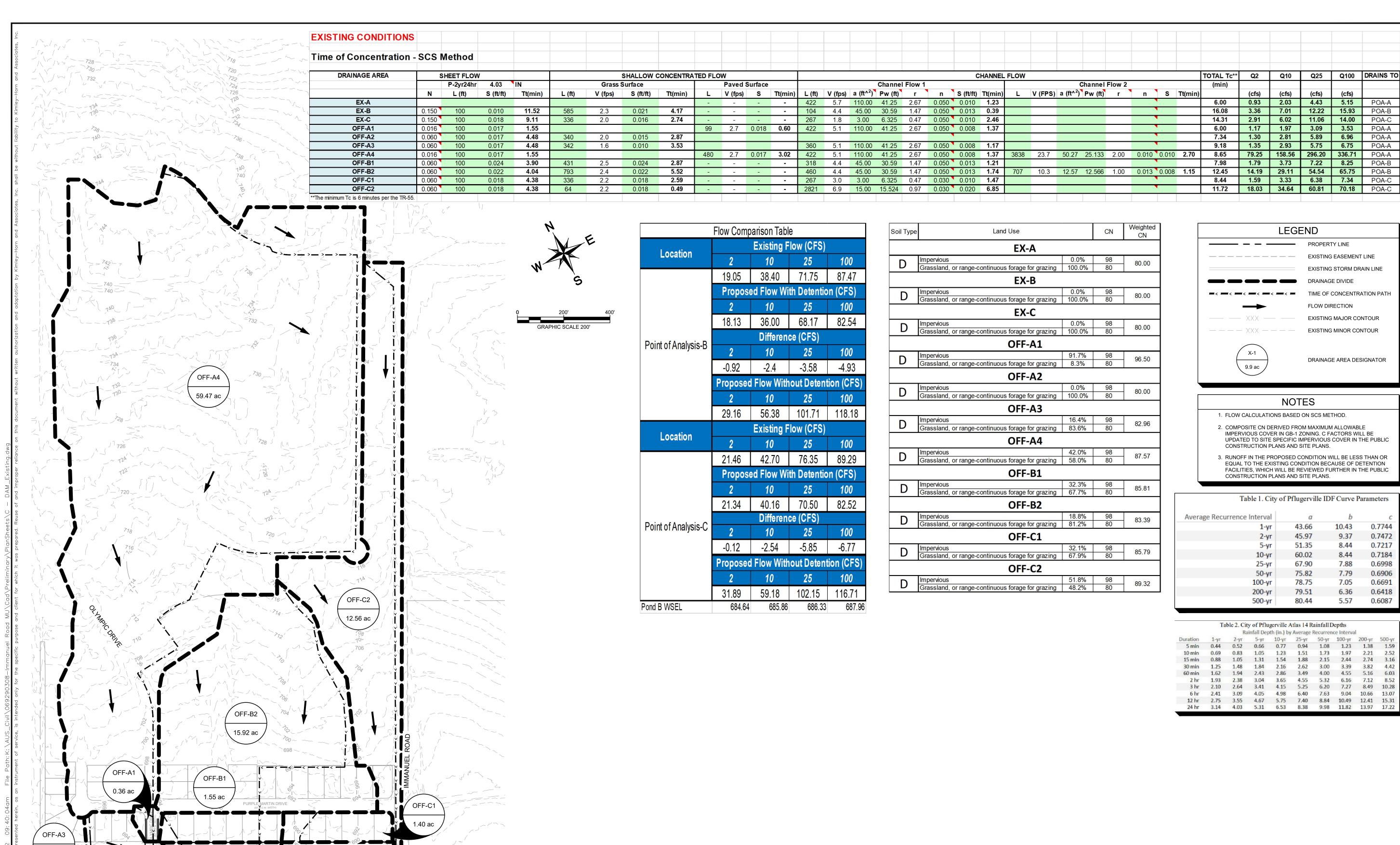
X JUSTIN J. KRAMER

WATER AND WASTEWATER P

### BENCHMARKS

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- 2. TBM B TRIANGLE CUT IN CONCRETE FOUN NEAR THE SOUTH RIGHT-OF-WAY LINE ( WELLS BRANCH PARKWAY. N: 1018808.3510'
- ELEV: 681.420' NAD 83 TEXAS STATE PLANES CENTRAL ZONE

SHEET NUMBER 4 OF 10



WELLS BRANCH PKWY

1.52 ac

OFF-A2

1.72 ac

# LEGEND PROPERTY LINE EXISTING EASEMENT LINE EXISTING STORM DRAIN LINE DRAINAGE DIVIDE TIME OF CONCENTRATION PATH FLOW DIRECTION EXISTING MAJOR CONTOUR EXISTING MINOR CONTOUR DRAINAGE AREA DESIGNATOR

### NOTES

- 1. FLOW CALCULATIONS BASED ON SCS METHOD.
- 2. COMPOSITE CN DERIVED FROM MAXIMUM ALLOWABLE IMPERVIOUS COVER IN GB-1 ZONING. C FACTORS WILL BE UPDATED TO SITE SPECIFIC IMPERVIOUS COVER IN THE PUBLIC CONSTRUCTION PLANS AND SITE PLANS.
- 3. RUNOFF IN THE PROPOSED CONDITION WILL BE LESS THAN OR EQUAL TO THE EXISTING CONDITION BECAUSE OF DETENTION FACILITIES, WHICH WILL BE REVIEWED FURTHER IN THE PUBLIC CONSTRUCTION PLANS AND SITE PLANS.

Table 1. City of Pflugerville IDF Curve Parameters							
Average Recurrence Interval	а	b	С				
1-yr	43.66	10.43	0.7744				
2-yr	45.97	9.37	0.7472				
5-yr	51.35	8.44	0.7217				
10-yr	60.02	8.44	0.7184				
25-yr	67.90	7.88	0.6998				
50-yr	75.82	7.79	0.6906				
100-yr	78.75	7.05	0.6691				
200-yr	79.51	6.36	0.6418				
500-yr	80.44	5.57	0.6087				

## Table 2. City of Pflugerville Atlas 14 Rainfall Depths

		Ra	infall Dep	oth (in.) by	Average	Recurren	ce Interva	ıl	
Duration	1-yr	2-yr	5-yr	10-yr	25-yr	50-уг	100-yr	200-yr	500-yr
5 min	0.44	0.52	0.66	0.77	0.94	1.08	1.23	1.38	1.59
10 min	0.69	0.83	1.05	1.23	1.51	1.73	1.97	2.21	2.52
15 min	0.88	1.05	1.31	1.54	1.88	2.15	2.44	2.74	3.16
30 min	1.25	1.48	1.84	2.16	2.62	3.00	3.39	3.82	4.42
60 min	1.62	1.94	2.43	2.86	3.49	4.00	4.55	5.16	6.03
2 hr	1.93	2.38	3.04	3.65	4.55	5.32	6.16	7.12	8.52
3 hr	2.10	2.64	3.41	4.15	5.25	6.20	7.27	8.49	10.28
6 hr	2.41	3.09	4.05	4.98	6.40	7.63	9.04	10.66	13.07
12 hr	2.75	3.55	4.67	5.75	7.40	8.84	10.49	12.41	15.31
24 hr	3.14	4.03	5.31	6.53	8.38	9.98	11.82	13.97	17.22

### **BENCHMARKS**

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JUSTIN J. KRAMER

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MAP

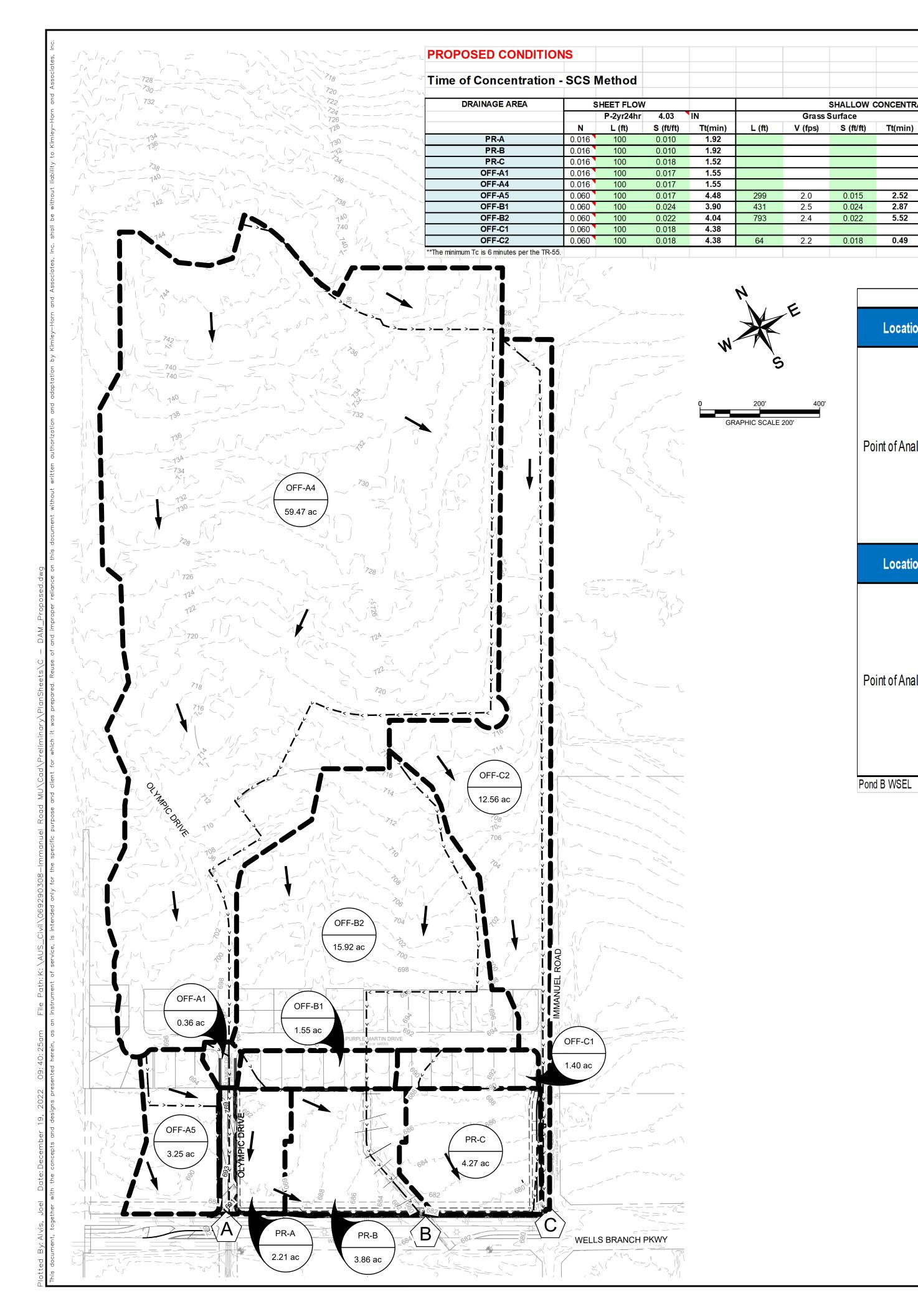
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EXISTING DRAINAGE

MMA

SHEET NUMBER

5 OF 10



Location   Existing Flow (CFS)   2   10   25   100   19.05   38.40   71.75   87.47   Proposed Flow With Detention (CFS)   2   10   25   100   18.13   36.00   68.17   82.54   Difference (CFS)   2   10   25   100   -0.92   -2.4   -3.58   -4.93   Proposed Flow Without Detention (CFS)   2   10   25   100   29.16   56.38   101.71   118.18   Existing Flow (CFS)   2   10   25   100   29.16   42.70   76.35   89.29   Proposed Flow With Detention (CFS)   2   10   25   100   21.46   42.70   76.35   89.29   Proposed Flow With Detention (CFS)   2   10   25   100   21.34   40.16   70.50   82.52   Difference (CFS)   2   10   25   100   -0.12   -2.54   -5.85   -6.77   Proposed Flow Without Detention (CFS)   2   10   25   100   31.89   59.18   102.15   116.71   10.71   1		Flow Comp	oricon Tobl					
Point of Analysis-B   Location   2   10   25   100   19.05   38.40   71.75   87.47   Proposed Flow With Detention (CFS)   2   10   25   100   18.13   36.00   68.17   82.54	· ·							
19.05   38.40   71.75   87.47	Location	2			100			
Proposed Flow With Detention (CFS)  2		_						
Point of Analysis-B  Point of Analysis-B    2								
Point of Analysis-B    18.13   36.00   68.17   82.54								
Point of Analysis-B  2		_	10.10					
Point of Analysis-B  2								
Proposed Flow Without Detention (CFS)  2	Point of Analysis-B	2			100			
2   10   25   100		-0.92	-2.4	-3.58	-4.93			
Location   Existing Flow (CFS)		Proposed Flow Without Detention (CFS)						
Existing Flow (CFS)           2         10         25         100           21.46         42.70         76.35         89.29           Proposed Flow With Detention (CFS)           2         10         25         100           21.34         40.16         70.50         82.52           Difference (CFS)           2         10         25         100           -0.12         -2.54         -5.85         -6.77           Proposed Flow Without Detention (CFS)           2         10         25         100		2	10	25	100			
2   10   25   100		29.16	56.38	101.71	118.18			
2 10 25 100 21.46 42.70 76.35 89.29  Proposed Flow With Detention (CFS)  2 10 25 100 21.34 40.16 70.50 82.52  Difference (CFS)  2 10 25 100  -0.12 -2.54 -5.85 -6.77  Proposed Flow Without Detention (CFS)  2 10 25 100	Location	Existing Flow (CFS)						
Proposed Flow With Detention (CFS)  2	Location	2	10	25	100			
Point of Analysis-C  Point of Analysis-C  2 10 25 100  21.34 40.16 70.50 82.52  Difference (CFS)  2 10 25 100  -0.12 -2.54 -5.85 -6.77  Proposed Flow Without Detention (CFS)  2 10 25 100		21.46	42.70	76.35	89.29			
Point of Analysis-C    21.34		Propose	ed Flow Wi	th Detentio	n (CFS)			
Point of Analysis-C 2 10 25 100 -0.12 -2.54 -5.85 -6.77 Proposed Flow Without Detention (CFS) 2 10 25 100		2	10	25	100			
Point of Analysis-C 2 10 25 100 -0.12 -2.54 -5.85 -6.77  Proposed Flow Without Detention (CFS) 2 10 25 100		21.34			82.52			
-0.12	Point of Analysis-C		0.0		100			
Proposed Flow Without Detention (CFS)  2 10 25 100				_				
2 10 25 100								
		-						
1 31 80   50 18   107 15   116 /1		2	10					
Pond B WSEL 684.64 685.86 686.33 687.9		0400	FA 14					

SHALLOW CONCENTRATED FLOW

0.018 **0.49** 

Paved Surface

347 2.7 0.018 **2.12** 

563 2.7 0.018 **3.44** 

603 2.7 0.018 **3.68** 

Soil Type	Land Use		CN	Weighted CN		
	PR-A	-				
<u> </u>	Impervious	92.1%	98	96.58		
D	Grassland, or range-continuous forage for grazing	7.9%	80	90.56		
	PR-B					
<u> </u>	Impervious	85.0%	98	05.20		
D	Grassland, or range-continuous forage for grazing	15.0%	80	95.30		
	PR-C					
	Impervious	85.0%	98	05.20		
D	Grassland, or range-continuous forage for grazing	15.0%	80	95.30		
	OFF-A1					
_	Impervious	91.7%	98	00.50		
D	Grassland, or range-continuous forage for grazing	8.3%	80	96.50		
	OFF-A4					
_	Impervious	42.0%	98	87.57		
D	Grassland, or range-continuous forage for grazing	58.0%	80	01.31		
	OFF-A5					
<u> </u>	Impervious	7.7%	98	81.38		
D	Grassland, or range-continuous forage for grazing	92.3%	80	01.30		
	OFF-B1					
<u> </u>	Impervious	32.3%	98	85.81		
D	Grassland, or range-continuous forage for grazing	67.7%	80	05.01		
	OFF-B2					
<u> </u>	Impervious	18.8%	98	83.39		
D	Grassland, or range-continuous forage for grazing	81.2%	80	05.59		
	OFF-C1					
D	Impervious	32.1%	98	85.79		
	Grassland, or range-continuous forage for grazing	67.9%	80			
	OFF-C2			_		
D	Impervious	51.8%	98	89.32		
	Grassland, or range-continuous forage for grazing	48.2%	80	89.32		

**CHANNEL FLOW** 

480 2.7 0.017 **3.02** 422 18.9 78.54 31.42 2.50 0.013 0.008 **0.37** 3838 18.2 50.27 25.133 2.00 0.013 0.010 **3.52 8.46 79.43 159.18 298.82 339.61** POA-A

418 20.7 50.27 25.133 2.00 0.013 0.013 **0.013 0.014** 318 2.7 2.50 5.385 0.46 0.030 0.008 **1.99 9.10 1.74 3.62 6.90 7.93** POA-B

460 20.7 50.27 25.133 2.00 0.013 0.013 **0.013 0.013 10.013** 

408 6.9 15.00 15.524 0.97 0.030 0.020 **0.99** 466 2.7 2.50 5.385 0.46 0.030 0.008 **2.92 8.28 1.60 3.34 6.43 7.39** POA-C

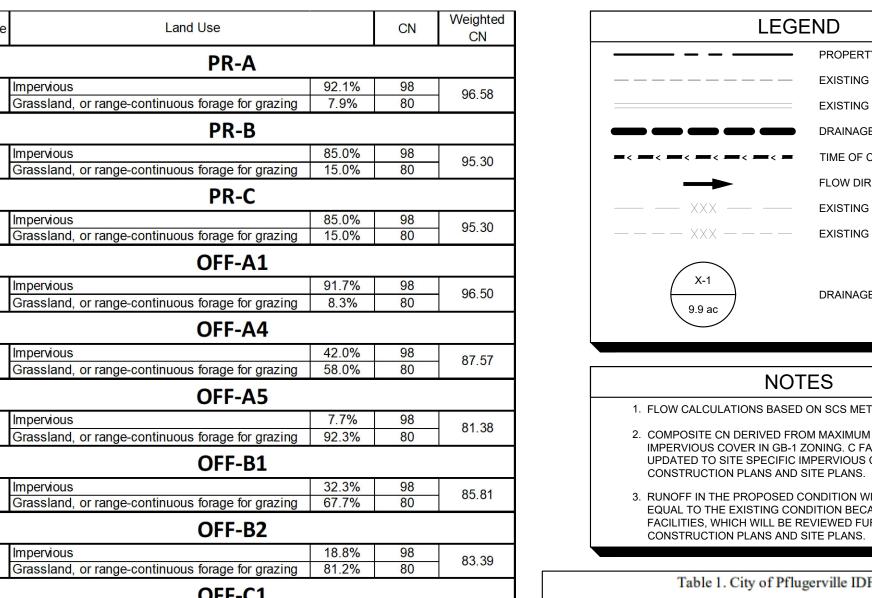
Channel Flow 1

377 2.7 2.50 5.385 0.46 0.030 0.008 **2.36** 

2821 6.9 15.00 15.524 0.97 0.030 0.020 **6.85** 

99 2.7 0.018 **0.60** 422 18.9 78.54 31.42 2.50 0.013 0.008 **0.37** 

L V (fps) S Tt(min) L (ft) V (fps) a (ft^2) Pw (ft) r n S (ft/ft) Tt(min) L V (FPS) a (ft^2) Pw (ft) r n S Tt(min)



			500-y	500-yr 80.44			5.57		0.6087	
	Ta	ble 2. Cit	y of Pflu	gerville A	Atlas 14 R	tainfall E	epths			
Rainfall Depth (in.) by Average Recurrence Interval										
Duration	1-yr	2-yr	5-уг	10-yr	25-yr	50-yr	100-yr	200-yr	500-yr	
5 min	0.44	0.52	0.66	0.77	0.94	1.08	1.23	1.38	1.59	
10 min	0.69	0.83	1.05	1.23	1.51	1.73	1.97	2.21	2.52	
15 min	0.88	1.05	1.31	1.54	1.88	2.15	2.44	2.74	3.16	
30 min	1.25	1.48	1.84	2.16	2.62	3.00	3.39	3.82	4.42	
60 min	1.62	1.94	2.43	2.86	3.49	4.00	4.55	5.16	6.03	
2 hr	1.93	2.38	3.04	3.65	4.55	5.32	6.16	7.12	8.52	
3 hr	2.10	2.64	3.41	4.15	5.25	6.20	7.27	8.49	10.28	
6 hr	2.41	3.09	4.05	4.98	6.40	7.63	9.04	10.66	13.07	
12 br	2.75	2 55	1 67	E 7E	7.40	0.04	10.40	10.41	15 21	

# PROPERTY LINE EXISTING EASEMENT LINE EXISTING STORM DRAIN LINE DRAINAGE DIVIDE TIME OF CONCENTRATION PATH FLOW DIRECTION EXISTING MAJOR CONTOUR EXISTING MINOR CONTOUR DRAINAGE AREA DESIGNATOR

TOTAL Tc\*\* Q2 Q10 Q25 Q100 DRAINS TO

**6.00 4.98 8.39 13.09 14.97** POA-A

**6.00 13.10 22.64 37.29 41.80** POA-B

**6.00 12.26 21.20 34.91 39.14** POA-C

**6.00 1.17 1.97 3.09 3.53** POA-A

**9.36 2.63 5.58 11.15 13.26** POA-A

**11.72 18.03 34.64 60.81 70.18** POA-C

(cfs)

- 1. FLOW CALCULATIONS BASED ON SCS METHOD.
- COMPOSITE CN DERIVED FROM MAXIMUM ALLOWABLE IMPERVIOUS COVER IN GB-1 ZONING. C FACTORS WILL BE UPDATED TO SITE SPECIFIC IMPERVIOUS COVER IN THE PUBLIC
- 3. RUNOFF IN THE PROPOSED CONDITION WILL BE LESS THAN OR EQUAL TO THE EXISTING CONDITION BECAUSE OF DETENTION FACILITIES, WHICH WILL BE REVIEWED FURTHER IN THE PUBLIC CONSTRUCTION PLANS AND SITE PLANS.

Table 1. City	of Pflugervi	lle IDF Curve	Parameters
Average Recurrence Interval	а	b	С
1-yr	43.66	10.43	0.7744
2-yr	45.97	9.37	0.7472
5-yr	51.35	8.44	0.7217
10-yr	60.02	8.44	0.7184
25-yr	67.90	7.88	0.6998
50-yr	75.82	7.79	0.6906
100-yr	78.75	7.05	0.6691
200-yr	79.51	6.36	0.6418
500-yr	80.44	5.57	0.6087

	Ta	ble 2. Cit	y of Pflu	gerville A	Atlas 14 R	ainfall D	epths		
Rainfall Depth (in.) by Average Recurrence Interval									
Duration	1-yr	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	200-yr	500-yr
5 min	0.44	0.52	0.66	0.77	0.94	1.08	1.23	1.38	1.59
10 min	0.69	0.83	1.05	1.23	1.51	1.73	1.97	2.21	2.52
15 min	0.88	1.05	1.31	1.54	1.88	2.15	2.44	2.74	3.16
30 min	1.25	1.48	1.84	2.16	2.62	3.00	3.39	3.82	4.42
60 min	1.62	1.94	2.43	2.86	3.49	4.00	4.55	5.16	6.03
2 hr	1.93	2.38	3.04	3.65	4.55	5.32	6.16	7.12	8.52
3 hr	2.10	2.64	3.41	4.15	5.25	6.20	7.27	8.49	10.28
6 hr	2.41	3.09	4.05	4.98	6.40	7.63	9.04	10.66	13.07
12 hr	2.75	3.55	4.67	5.75	7.40	8.84	10.49	12.41	15.31
24 hr	3.14	4.03	5.31	6.53	8.38	9.98	11.82	13.97	17.22

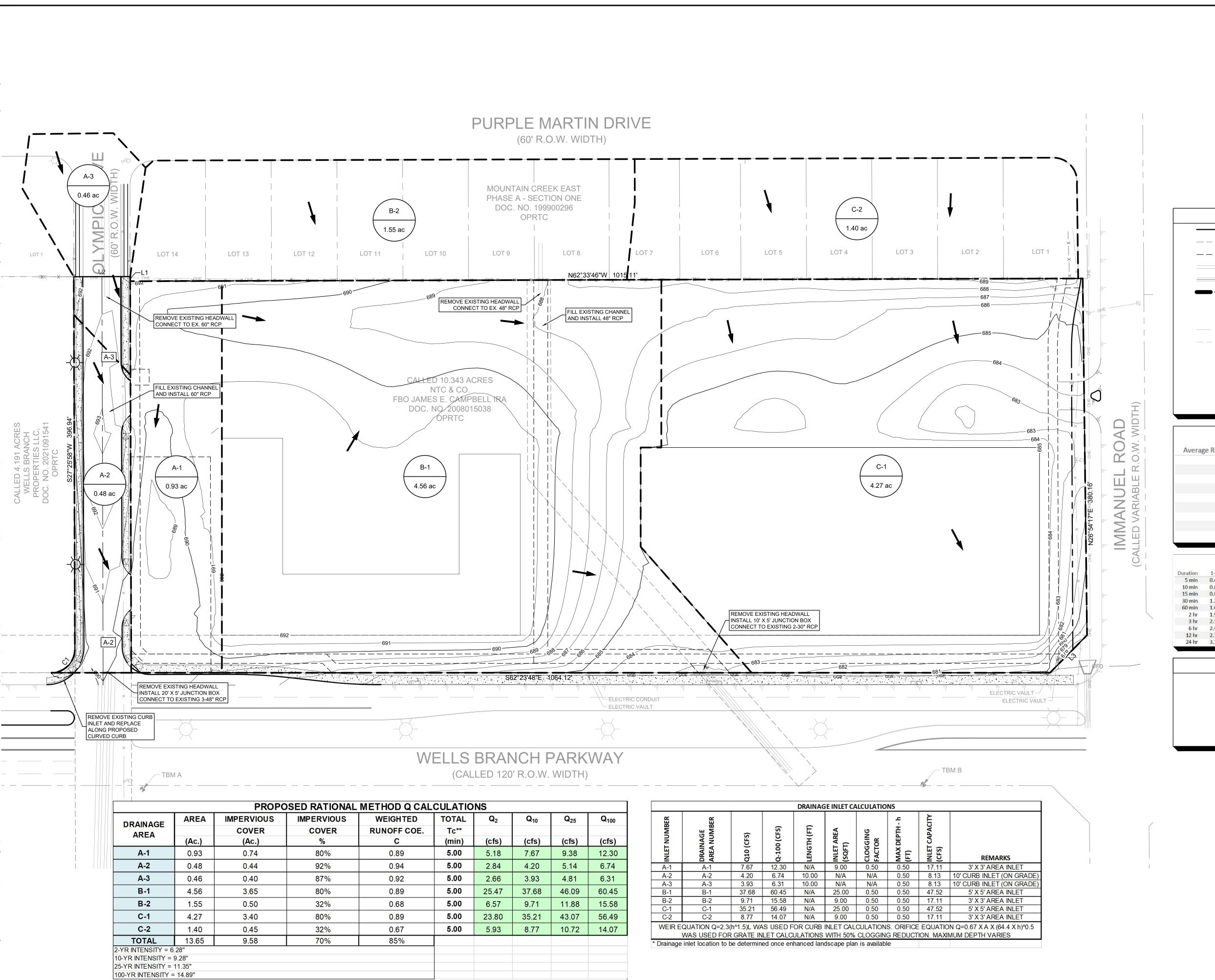
# **BENCHMARKS**

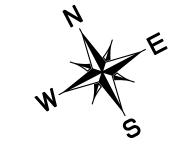
- 1. TBM A TRIANGLE CUT IN CONCRETE FOUND NEAR THE SOUTH RIGHT-OF-WAY LINE OF WELLS BRANCH PARKWAY. N: 1018808.3510'
- E: 3151301.9800' ELEV: 690.180'
- 2. TBM B TRIANGLE CUT IN CONCRETE FOUN NEAR THE SOUTH RIGHT-OF-WAY LINE ( WELLS BRANCH PARKWAY. N: 1018808.3510' E: 3151301.9800'
- ELEV: 681.420' NAD 83 TEXAS STATE PLANES CENTRAL ZONE (FIPS 4203) SCALE FACTOR: 0.99990416 NAVD '88, GEOID 18

SHEET NUMBER 6 OF 10

PROPOSED DRAINAGE

JUSTIN J. KRAMER





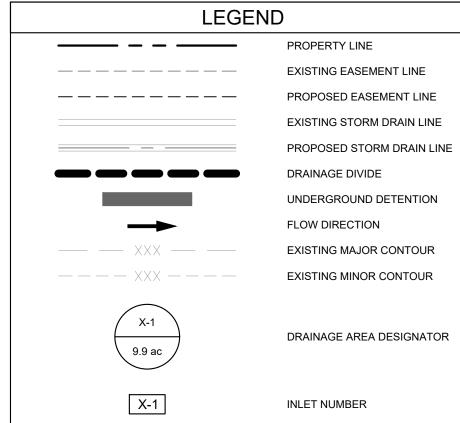


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25-yr	67.90	7.88	0.6998
50-yr	75.82	7.79	0.6906
100-yr	78.75	7.05	0.6691
200-yr	79.51	6.36	0.6418
500-yr	80.44	5.57	0.6087

	Ta	ble 2. Cit	y of Pflu	gerville A	Atlas 14 R	ainfall E	epths			
	Rainfall Depth (in.) by Average Recurrence Interval									
Duration	1-yr	2-yr	5-уг	10-yr	25-yr	50-yr	100-yr	200-yr	500-y	
5 min	0.44	0.52	0.66	0.77	0.94	1.08	1.23	1.38	1.59	
10 min	0.69	0.83	1.05	1.23	1.51	1.73	1.97	2.21	2.5	
15 min	0.88	1.05	1.31	1.54	1.88	2.15	2.44	2.74	3.10	
30 min	1.25	1.48	1.84	2.16	2.62	3.00	3.39	3.82	4.4	
60 min	1.62	1.94	2.43	2.86	3.49	4.00	4.55	5.16	6.0	
2 hr	1.93	2.38	3.04	3.65	4.55	5.32	6.16	7.12	8.5	
3 hr	2.10	2.64	3.41	4.15	5.25	6.20	7.27	8.49	10.2	
6 hr	2.41	3.09	4.05	4.98	6.40	7.63	9.04	10.66	13.0	
12 hr	2.75	3.55	4.67	5.75	7.40	8.84	10.49	12.41	15.3	
24 hr	3.14	4.03	5.31	6.53	8.38	9.98	11.82	13.97	17.2	

### NOTES

- 1. FLOW CALCULATIONS BASED ON RATIONAL METHOD.
- 2. COMPOSITE C FACTOR DERIVED FROM MAXIMUM ALLOWABLE IMPERVIOUS COVER IN GB-1 ZONING. C FACTORS WILL BE UPDATED TO SITE SPECIFIC IMPERVIOUS COVER IN THE PUBLIC CONSTRUCTION PLANS AND SITE PLANS.
- 3. RUNOFF IN THE PROPOSED CONDITION WILL BE LESS THAN OR EQUAL TO THE EXISTING CONDITION BECAUSE OF DETENTION FACILITIES, WHICH WILL BE REVIEWED FURTHER IN THE PUBLIC CONSTRUCTION PLANS AND SITE PLANS.

### **BENCHMARKS**

- . TBM A TRIANGLE CUT IN CONCRETE FOUND NEAR THE SOUTH RIGHT-OF-WAY LINE OF WELLS BRANCH PARKWAY. N: 1018808.3510' E: 3151301.9800' ELEV: 690.180'
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SHEET NUMBER OF 10

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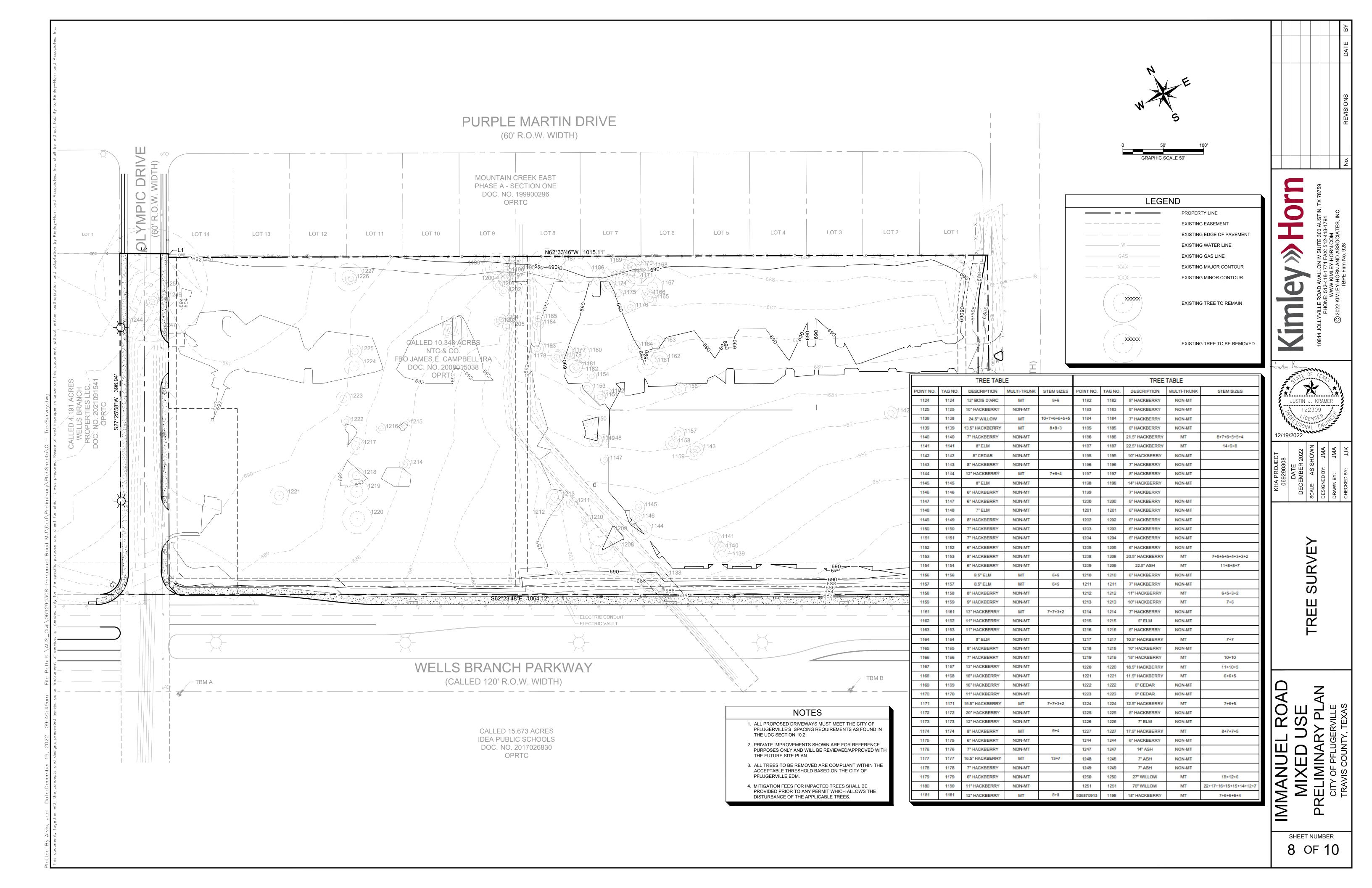
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JUSTIN J. KRAMER

PROPOSED

-DR

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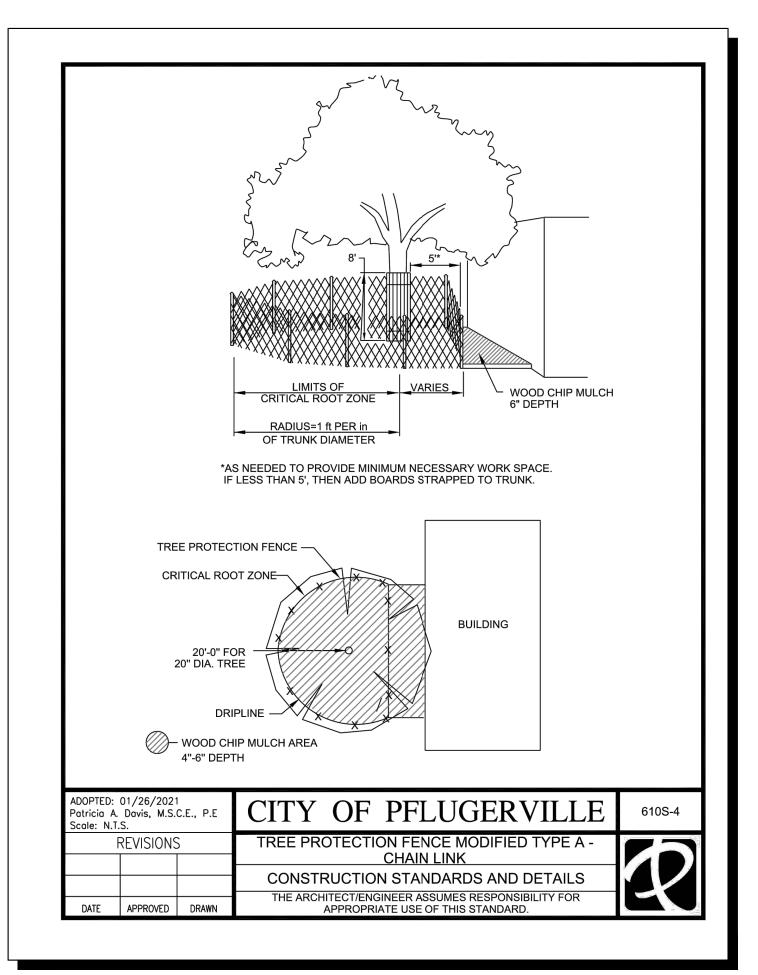


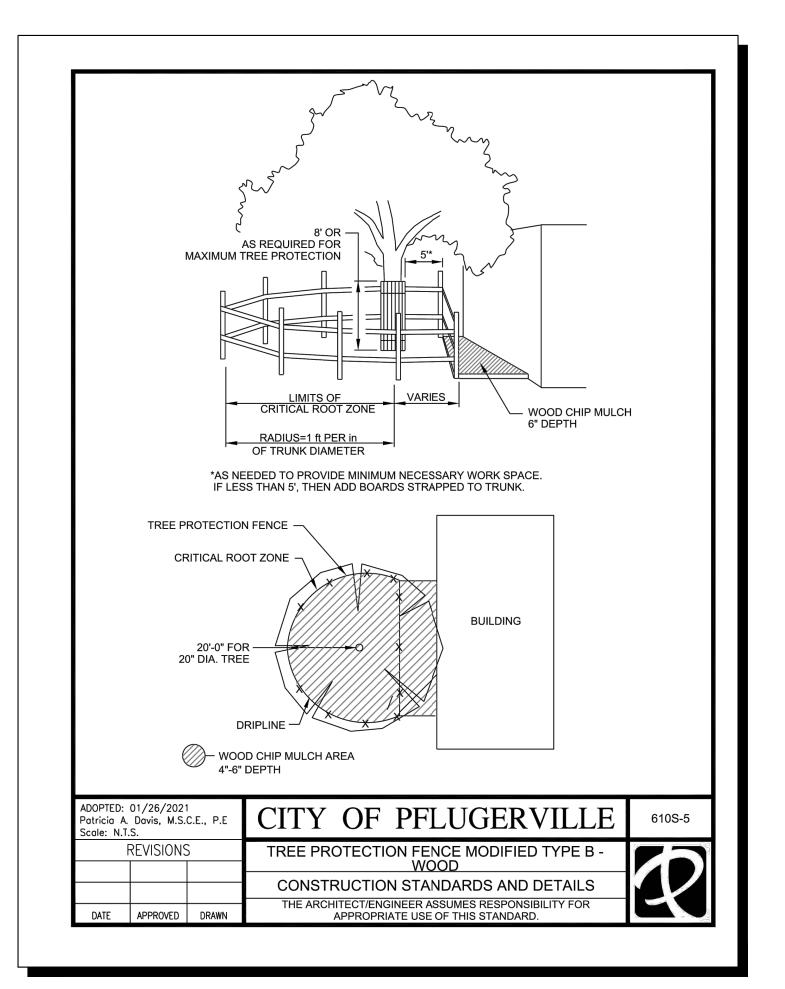
### 2.3.2 TREE PROTECTION NOTES

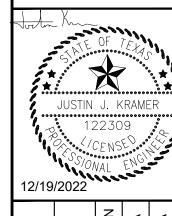
- ALL TREES NOT LOCATED WITHIN THE LIMITS OF CONSTRUCTION AND OUTSIDE OF DISTURBED AREAS SHALL BE PRESERVED.
- ALL TREES SHOWN ON THIS PLAN TO BE RETAINED SHALL BE PROTECTED DURING CONSTRUCTION WITH FENCING.
- TREE PROTECTION FENCES SHALL BE ERECTED ACCORDING TO CITY STANDARDS FOR TREE PROTECTION, INCLUDING TYPES OF FENCING AND SIGNAGE.
- TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING, 9. OR GRADING) AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
- EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR BUILD-UP WITHIN TREE CRZ'S OR DRIPLINES.
- TREE PROTECTION FENCES SHALL COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES AND BE PLACED AT THE OUTERMOST LIMITS OF THE TREE BRANCHES (DRIPLINE) OR CRZ, WHICHEVER IS GREATER; AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
  - A. SOIL COMPACTION IN ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIAL.
  - B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN ' 6 INCHES CUT OR FILL) OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY ARBORIST OR ADMINISTRATOR.
  - C. WOUNDS TO EXPOSED ROOTS, TRUNK, OR LIMBS BY MECHANICAL **EQUIPMENT**
  - D. OTHER ACTIVITIES DETRIMENTAL TO TREES, SUCH AS CHEMICAL STORAGE, CONCRETE TRUCK CLEANING AND FIRES.
- EXCEPTIONS TO INSTALLING TREE FENCES AT THE TREE DRIPLINES OR CRZ, 13. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED WHICHEVER IS GREATER, MAY BE PERMITTED IN THE FOLLOWING CASES:
  - A. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, OR TREE WELL.
  - B. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
  - C. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE

- FENCE NO CLOSER THAN 6 FEET TO THE BUILDING.
- D. WHERE THERE ARE SEVERE SPACE CONSTRAINTS DUE TO TRACT SIZE, OR OTHER SPECIAL REQUIREMENTS, CONTACT THE CITY ARBORIST TO DISCUSS ALTERNATIVES.
- WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE THAT IS CLOSER THAN 5 FEET TO A TREE TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF 8 FEET (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.
- WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN AREAS OF UNPROTECTED ROOT ZONES UNDER THE DRIPLINE OR CRZ, WHICHEVER IS GREATER, THOSE AREAS SHOULD BE COVERED WITH 6 INCHES OF ORGANIC MULCH TO MINIMIZE SOIL COMPACTION.
- MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN TRENCHING OR SOIL 10. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN DAMAGE TO THE FINE, WATER ABSORBING ROOTS, SUPPLEMENTAL WATERING SHALL BE REQUIRED:
  - A. TREES SHALL BE WATERED ONCE EVERY TWO WEEKS DURING PERIODS OF HOT, DRY WEATHER.
  - B. TREE CROWNS ARE TO BE SPRAYED WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON LEAVES.
  - C. A SIGNED WATERING CONTRACT SHALL BE REQUIRED.
  - PRIOR TO EXCAVATION OR GRADE CUTTING WITHIN TREE DRIPLINES, A CLEAN CUT SHALL BE MADE BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE DAMAGE TO REMAINING ROOTS.
  - 12. ALL GRADING WITHIN PROTECTED ROOT ZONE AREAS SHALL BE DONE BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE. PRIOR TO GRADING. RELOCATE PROTECTIVE FENCING TO 2 FEET BEHIND THE GRADE CHANGE AREA.
  - FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN 2 DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
  - 14. WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, USE A PLASTIC VAPOR BARRIER BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE ROOT ZONE.

- 15. ANY TRENCHING SHALL BE AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE. TRENCH LINES SHALL NOT RUN WITHIN THE CRZ. BORING, TUNNELING OR OTHER TECHNIQUES MAY BE APPROVED BY THE CITY ARBORIST OR ADMINISTRATOR IF THERE IS NO ALTERNATIVE AVAILABLE.
- 16. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN FOUR (4) INCHES SHALL BE PERMITTED WITHIN THE DRIPLINE OR CRZ, WHICHEVER IS GREATER, OF TREES. NO TOPSOIL IS PERMITTED ON ROOT FLARES OR WITHIN 6 INCHES OF TREE TRUNKS.
- 17. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES. VEHICULAR TRAFFIC AND CONSTRUCTION EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS. ALL PRUNING MUST BE DONE ACCORDING TO CITY STANDARDS AND AS OUTLINED IN LITERATURE PROVIDED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA PRUNING TECHNIQUES).
- 18. ALL OAK TREE CUTS, INTENTIONAL OR UNINTENTIONAL, SHALL BE PAINTED IMMEDIATELY (WITHIN 10 MINUTES). TREE PAINT MUST BE KEPT ON SITE AT ALL TIMES. ALL PRUNING OR CUTTING TOOLS MUST BE STERILIZED BETWEEN TREES TO PREVENT THE SPREAD OF DISEASE.
- 19. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.REFER TO THE CITY OF PFLUGERVILLE TREE TECHNICAL MANUAL FOR APPROPRIATE REMOVAL METHODS.
- 20. DEVIATIONS FROM THE ABOVE NOTES MAY BE CONSIDERED ORDINANCE VIOLATIONS IF THERE IS SUBSTANTIAL NONCOMPLIANCE OR IF A TREE SUSTAINS DAMAGE AS A RESULT.
  - **2.3.3. PRE-CONSTRUCTION MEETING-** THE DEMOLITION, GRADING AND UNDERGROUND CONTRACTORS, CONSTRUCTION SUPERINTENDENT AND OTHER PERTINENT PERSONNEL ARE REQUIRED TO MEET WITH THE CITY ARBORIST AND/OR ADMINISTRATOR PRIOR TO BEGINNING WORK TO REVIEW PROCEDURES, TREE PROTECTION MEASURES AND TO ESTABLISH HAUL ROUTES, STAGING AREAS, CONTACTS, WATERING, ETC.
  - 2.3.4. VERIFICATION OF TREE PROTECTION- THE PROJECT ARBORIST, LANDSCAPE ARCHITECT OR CONTRACTOR SHALL VERIFY, IN WRITING, THAT ALL PRECONSTRUCTION CONDITIONS HAVE BEEN MET (TREE FENCING, EROSION CONTROL, PRUNING, ETC.) AND ARE IN PLACE. WRITTEN VERIFICATION MUST BE SUBMITTED TO AND APPROVED BY THE CITY ARBORIST OR THE ADMINISTRATOR BEFORE DEMOLITION OR GRADING BEGINS.







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SHEET NUMBER

9 OF 10

