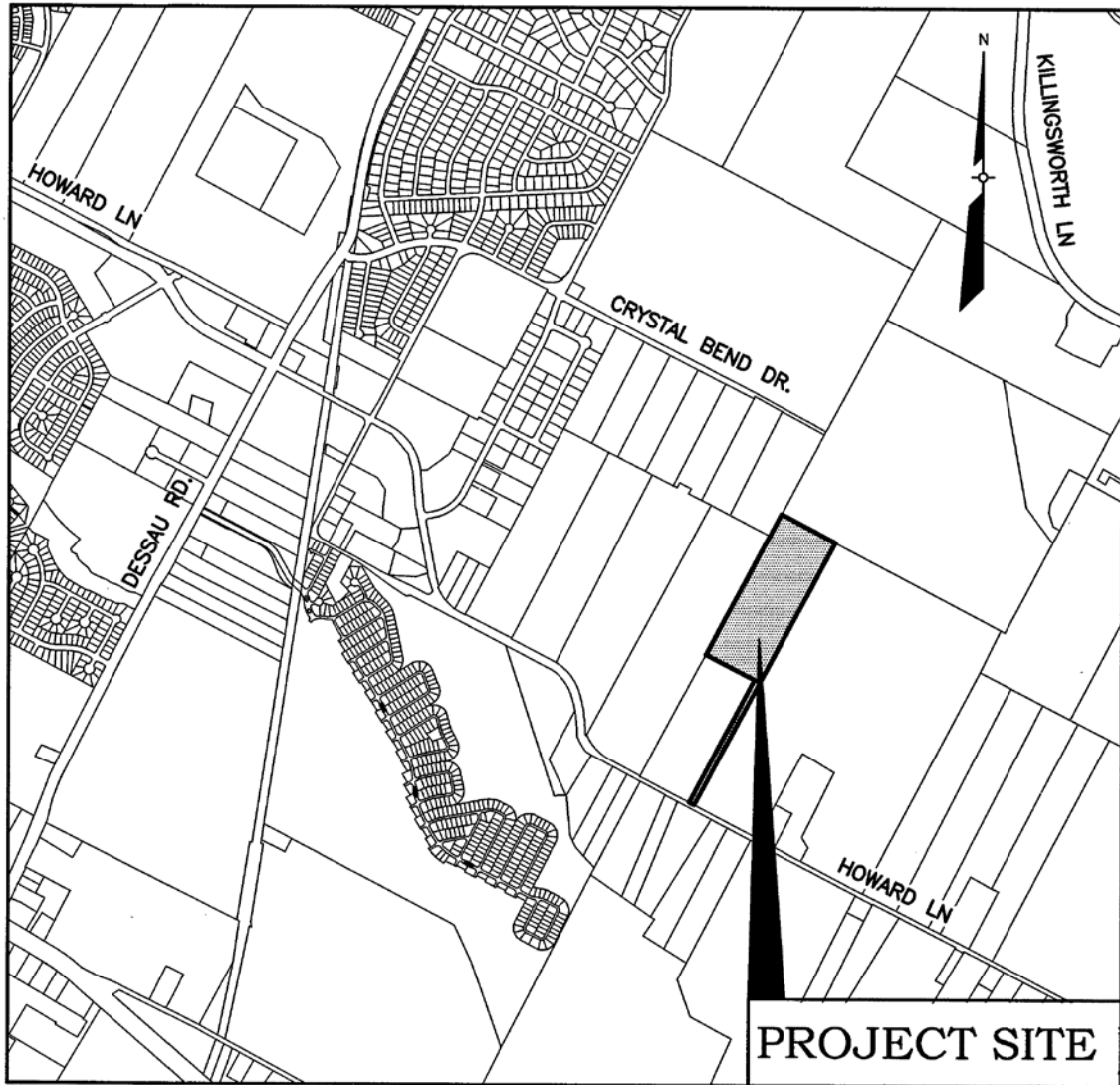


SUBDIVISION REVIEW SHEET**CASE NO.:** C8J-2015-0097**Z.A.P. DATE:** 10/4/16**SUBDIVISION NAME:** Upper East End Preliminary Plan**AREA:** 29.07 acres**LOT(S):** 101**OWNER/APPLICANT:** MMK Preproperties, LLC (Saeed Minhas)**AGENT:** Cuatro Consultants, LTD (Hugo Elizondo)**ADDRESS OF SUBDIVISION:** 3010 E Howard Ln.**GRIDS:** Q-33**COUNTY:** Travis**WATERSHED:** Gilleland Creek**JURISDICTION:** 5-Mile
ETJ**EXISTING ZONING:** N/A**MUD:** N/A**PROPOSED LAND USE:** Single Family, Drainage Easement, Pond**ADMINISTRATIVE WAIVERS:** For 25-8-42 (B) (7) for cut and fill of 4 to 8 feet in the desired development zone.**VARIANCES:** None**SIDEWALKS:** Sidewalks will be provided on all internal streets.**DEPARTMENT COMMENTS:** The request is for approval of the Upper East End Preliminary Plan consisting of 101 lots on 29.07 acres. Water and wastewater will be provided by the City of Austin.**STAFF RECOMMENDATION:** The staff recommends approval of this resubdivision. This plan meets all applicable County, State and City of Austin LDC requirements.**ZONING AND PLATTING COMMISSION ACTION:****CASE MANAGER:** Sarah Sumner**PHONE:** 512-854-7687Email address: sarah.sumner@traviscountytx.gov

Upper East End Preliminary Plan

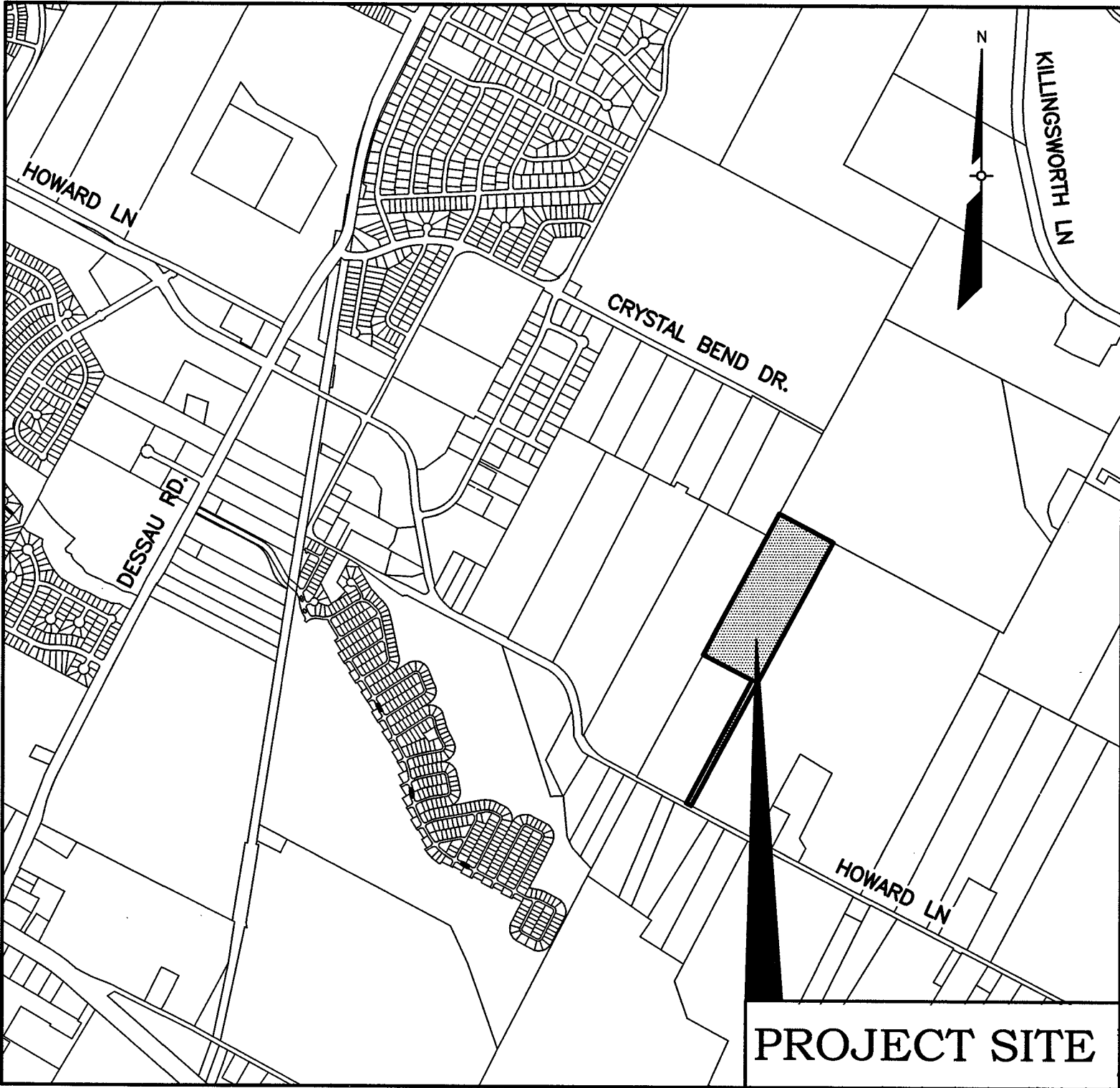
Location Map



GRID Q-33

LOCATION MAP
1" = 1500'

UPPER EAST END
A SMALL LOT SUBDIVISION
PRELIMINARY PLAN
CITY OF AUSTIN
TRAVIS COUNTY, TEXAS



GRID Q-33
LOCATION MAP
1"= 1500'

STREET INVENTORY

CLASSIFICATION	PUBLIC / PRIVATE	STREET NAME	R.O.W.	PAVEMENT FOC-FOC	4' SIDEWALK	CL LENGTH
RESIDENTIAL COLLECTOR	PUBLIC	GRAND CENTRAL DR	VARIES	40	BOTH SIDES	1,970 LF
LOCAL STREET	PUBLIC	ORTMAN DR.	50	30	BOTH SIDES	55 LF
LOCAL STREET	PUBLIC	TAVERN DR	50	30	BOTH SIDES	517 LF
LOCAL STREET	PUBLIC	LONG ISLAND DRIVE	50	30	BOTH SIDES	1,148 LF
LOCAL STREET	PUBLIC	BRONX DR	50	30	BOTH SIDES	436 LF
LOCAL STREET	PUBLIC	MANHATTAN DR	50	30	BOTH SIDES	230 LF
LOCAL STREET	PUBLIC	ST. REGIS DR	50	30	BOTH SIDES	551 LF
TOTAL						4,907 LF

PROJECT DATA:

SUBDIVISION PLAT NUMBER: _____
SUBMITTAL DATE: FEBRUARY, 2015
PROJECT ADDRESS: 3010 E. HOWARD LANE
ZONING: N/A
USE: SINGLE FAMILY RESIDENTIAL (SMALL LOT SUBDIVISION)

LEGAL DESCRIPTION:

BEING A 29.07 ACRE TRACT OUT OF THE MARIGUITA CASTRO LEAGUE NO. 60 IN TRAVIS COUNTY, TEXAS, BEING ALL OF THAT 29.17ACRE TRACT CONVEYED TO JOHN PORTER IN VOL. 5492, PG. 345, DEED RECORDS, TRAVIS COUNTY, TEXAS, SAVE AND EXCEPT A 0.079 ACRE TRACT CONVEYED TO TRAVIS COUNTY IN DOCUMENT NO. 2007177479, OFFICIAL PUBLIC RECORDS, TRAVIS COUNTY, TEXAS.

GENERAL NOTES:

- 1) ALL DRIVEWAYS, SIDEWALKS, AND EROSION CONTROLS IN THE SUBDIVISION WILL BE CONSTRUCTED USING CITY OF AUSTIN DESIGN STANDARDS. ALL DRIVEWAYS WILL BE PAVED WITH ASPHALT CONCRETE PAVEMENT WITH CONCRETE CURB AND GUTTER.
- 2) NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO CITY OF AUSTIN WATER UTILITY FOR WATER SERVICE AND CITY OF AUSTIN WASTEWATER MAINS FOR WASTEWATER SERVICE.
- 3) PROPERTY OWNERS SHALL PROVIDE FOR ACCESS TO DRAINAGE EASEMENTS AND/OR STORM SEWER EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY GOVERNMENTAL AUTHORITIES.
- 4) NO BUILDINGS, FENCES, LANDSCAPING OR OTHER OBSTRUCTIONS ARE PERMITTED IN DRAINAGE EASEMENTS AND/OR STORM SEWER EASEMENTS EXCEPT AS APPROVED BY THE CITY OF AUSTIN AND TRAVIS COUNTY.
- 5) ALL DRAINAGE EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY OWNER OR ASSIGNS. ALL NON-RESIDENTIAL LOTS ARE TO BE MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
- 6) APPROVAL OF THIS PRELIMINARY PLAN DOES NOT CONSTITUTE APPROVAL OF ANY DEVIATION FROM THE CITY'S LAND DEVELOPMENT REGULATIONS IN THE FINAL PLAT, CONSTRUCTION PLAN OR SITE PLAN STAGE, UNLESS SUCH DEVIATIONS HAVE BEEN SPECIFICALLY REQUESTED IN WRITING AND SUBSEQUENTLY APPROVED IN WRITING BY THE CITY. SUCH APPROVALS DO NOT RELIEVE THE ENGINEER OF THE OBLIGATION TO MODIFY THE DESIGN OF THE PROJECT IF IT DOES NOT MEET ALL OTHER CITY LAND DEVELOPMENT REGULATIONS OR IF IT IS SUBSEQUENTLY DETERMINED THAT THE DESIGN WOULD ADVERSELY IMPACT THE PUBLIC'S SAFETY, HEALTH, WELFARE OR PROPERTY.
- 7) A TEN FOOT ELECTRIC AND TELECOMMUNICATIONS EASEMENT ADJACENT TO THE R.O.W. SHALL BE DEDICATED ON THE FINAL PLATS.
- 8) PRIOR TO RECORDING OF ANY FINAL PLAT OR ALL OR A PORTION OF THIS PRELIMINARY PLAN ARRANGEMENTS, FISCAL SECURITY SHALL BE PROVIDED IN COMPLIANCE WITH CITY OF AUSTIN AND TRAVIS COUNTY REQUIREMENTS.
- 9) NO DRIVEWAY SHALL BE CONSTRUCTED CLOSER THAN 150 FEET (150') TO THE EDGE OF PAVEMENT OF ANY INTERSECTING ARTERIAL STREET. NO DRIVEWAY SHALL BE CONSTRUCTED CLOSER THAN 50 FEET (50') TO THE EDGE OF PAVEMENT OF AN INTERSECTING LOCAL OR COLLECTOR STREET.
- 10) AT THE TIME OF THE RECORDING OF ANY FINAL PLAT OUT OF THIS PRELIMINARY PLAN, A DECLARATION OF COVENANTS, EASEMENTS AND RESTRICTIONS, IN COMPLIANCE WITH CHAPTER 30 OF THE LDC SHALL BE RECORDED IN THE OFFICIAL PUBLIC RECORDS OF TRAVIS COUNTY, TEXAS.
- 11) POSTAL FACILITIES SHALL BE LOCATED IN THE SIDE YARDS OR LOCATIONS APPROVED BY POSTMASTER AT THE TIME OF FINAL PLAT.
- 12) THE OWNER OF THIS SUBDIVISION AND HIS OR HER SUCCESSORS AND ASSIGNS, ASSUMES RESPONSIBILITY OF PLANS FOR CONSTRUCTION OF SUBDIVISION IMPROVEMENTS WHICH COMPLY WITH APPLICABLE CODES AND REQUIREMENTS OF THE CITY OF AUSTIN. THE OWNER UNDERSTANDS AND ACKNOWLEDGES THAT PLAT VACATION OR RE-PLATTING MAY BE REQUIRED, AT THE OWNER'S SOLE EXPENSE, IF PLANS TO CONSTRUCT THIS SUBDIVISION DO NOT COMPLY WITH SUCH CODES AND REQUIREMENTS.
- 13) PRIOR TO CONSTRUCTION, EXCEPT SINGLE FAMILY ON ANY LOT IN THIS SUBDIVISION, A SITE DEVELOPMENT PERMIT MUST BE OBTAINED FROM THE CITY OF AUSTIN.
- 14) PRIOR TO CONSTRUCTION ON LOTS IN THIS SUBDIVISION, DRAINAGE PLANS WILL BE SUBMITTED TO THE CITY OF AUSTIN AND TRAVIS COUNTY FOR REVIEW. RAINFALL RUN-OFF SHALL BE HELD TO THE AMOUNT EXISTING AT UNDEVELOPED STATUS BY PONDING OR OTHER APPROVED METHODS.
- 15) THE WATER AND WASTEWATER UTILITY SYSTEM SERVING THIS SUBDIVISION MUST BE IN ACCORDANCE WITH THE CITY OF AUSTIN UTILITY DESIGN CRITERIA. THE WATER AND WASTEWATER UTILITY PLAN MUST BE REVIEWED AND APPROVED BY THE AUSTIN WATER UTILITY. ALL WATER AND WASTEWATER CONSTRUCTION MUST BE INSPECTED BY THE CITY OF AUSTIN. THE LANDOWNER MUST PAY THE CITY INSPECTION FEE WITH THE UTILITY CONSTRUCTION.
- 16) AUSTIN ENERGY HAS THE RIGHT TO PRUNE AND/OR REMOVE TREES, SHRUBBERY AND OTHER OBSTRUCTIONS TO THE EXTENT NECESSARY TO KEEP THE EASEMENTS CLEAR. AUSTIN ENERGY WILL PERFORM ALL TREE WORK IN COMPLIANCE WITH CHAPTER 25-8, SUBCHAPTER B OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE.
- 17) THE OWNER/DEVELOPMENT OF THIS SUBDIVISION/LOT SHALL PROVIDE AUSTIN ENERGY WITH ANY EASEMENT AND/OR ACCESS REQUIRED, IN ADDITION TO THOSE INDICATED, FOR THE INSTALLATION AND ONGOING MAINTENANCE OF OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES. THESE EASEMENTS AND/OR ACCESS ARE REQUIRED TO PROVIDE ELECTRIC SERVICE TO THE BUILDING AND WILL NOT BE LOCATED SO AS TO CLUSE THE SITE TO BE OUT OF COMPLIANCE WITH CHAPTER 25-8 OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE.
- 18) THE OWNER SHALL BE RESPONSIBLE FOR INSTALLATION OF TEMPORARY EROSION CONTROL, REVEGETATION AND TREE PROTECTION. IN ADDITION, THE OWNER SHALL BE RESPONSIBLE FOR ANY INITIAL TREE PRUNING AND TREE REMOVAL THAT IS WITHIN TEN FEET OF THE CENTER LINE OF THE PROPOSED OVERHEAD ELECTRIC FACILITIES DESIGNED TO PROVIDE ELECTRIC SERVICE TO THIS PROJECT. THE OWNER SHALL INCLUDE AUSTIN ENERGY'S WORK WITHIN THE LIMITS OF CONSTRUCTION FOR THIS PROJECT.
- 19) THE OWNER OF THE PROPERTY IS RESPONSIBLE FOR MAINTAINING CLEARANCES REQUIRED BY THE NATIONAL ELECTRIC SAFETY CODE, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, CITY OF AUSTIN RULES AND REGULATIONS AND TEXAS STATE LAWS PERTAINING TO CLEARANCES WHEN WORKING IN CLOSE PROXIMITY TO OVERHEAD POWER LINES AND EQUIPMENT. AUSTIN ENERGY WILL NOT RENDER ELECTRIC SERVICE UNLESS REQUIRED CLEARANCES ARE MAINTAINED. ALL COSTS INCURRED BECAUSE OF FAILURE TO COMPLY WITH THE REQUIRED CLEARANCES WILL BE CHARGED TO THE OWNER.
- 20) ANY RELOCATION OF ELECTRIC FACILITIES SHALL BE AT THE LANDOWNER'S/DEVELOPER'S EXPENSE.
- 21) PUBLIC SIDEWALKS, BUILT TO THE CITY OF AUSTIN STANDARDS, ARE REQUIRED ALONG THE FOLLOWING STREETS AND AS SHOWN BY A DOTTED LINE ON THE FACE OF THE PLAT: GRAND CENTRAL DR, TAVERN DR, LONG ISLAND DR, BRONX DR, MANHATTAN DR, ST REGIS DR AND ORTMAN DR. THESE SIDEWALKS SHALL BE IN PLACE PRIOR TO THE LOT BEING OCCUPIED. FAILURE TO CONSTRUCT THE REQUIRED SIDEWALKS MAY RESULT IN THE WITHHOLDING OF CERTIFICATES OF OCCUPANCY, BUILDING PERMITS, OR UTILITY CONNECTIONS BY THE GOVERNING BODY OR UTILITY COMPANY.
- 22) ALL ACTIVITIES WITHIN THE CRITICAL ENVIRONMENTAL FEATURE AND ASSOCIATED SETBACK MUST COMPLY WITH THE CITY OF AUSTIN LAND DEVELOPMENT CODE. THE NATURAL VEGETATIVE COVER MUST BE RETAINED TO THE MAXIMUM EXTENT PRACTICABLE. CONSTRUCTION IS PROHIBITED, AND WASTEWATER, OR IRRIGATION IS PROHIBITED. DISTURBANCE WITHIN CEF SETBACKS RELATED TO RESTORATION AND MITIGATION OF THE CEF'S IS APPROVED FOR THE PURPOSES OF THIS SITE PLAN.
- 23) PARKLAND DEDICATION IS REQUIRED PER TITLE 30 OF THE LAND DEVELOPMENT CODE (30-2-213) PRIOR TO THE APPROVAL OF THE FIRST FINAL PLAT IN THIS SUBDIVISION.
- 24) PARKLAND FEES WILL BE SATISFIED PRIOR TO FINAL PLAT.
- 25) A TEN FOOT ELECTRIC EASEMENT SHALL BE DEDICATED AT THE FRONT OF EVERY LOT.
- 26) A 5'x5' TRANSFORMER PAD SHALL BE PLACED AT EVERY 5TH LOT IN THIS SUBDIVISION.
- 27) RESTORATION WILL BE REQUIRED FOR ANY UNAUTHORIZED LAND CLEARING OR DEVELOPMENT ACTIVITIES WITHIN 150' OF A CRITICAL ENVIRONMENTAL FEATURE.
- 28) TRENCHING FOR UTILITY INSTALLATION IS NOT ALLOWED TO CROSS A CRITICAL ENVIRONMENTAL FEATURE. UNDERGROUND UTILITY INSTALLATION ACROSS A CEF'S SHALL BE PERFORMED WITH BORING TECHNIQUES AND BORE PITS SHALL NOT BE PLACED WHERE CONSTRUCTION ACTIVITIES WILL DISTURB CEF'S.
- 29) IN ORDER TO PROVIDE PARTIAL MITIGATION FOR DEVELOPMENT IMPACTS TO CRITICAL ENVIRONMENTAL FEATURES, WATER QUALITY TREATMENT REQUIREMENTS WILL BE MET USING BIOTRITRATION. BIOTRITRATION PONDS WILL UTILIZE EARTHEN BERMS AND WILL BE VEGETATED USING STANDARD SPECIFICATION 609S.
- 30) A TRAVIS COUNTY SITE DEVELOPMENT PERMIT IS REQUIRED PRIOR TO CONSTRUCTION ON THIS SITE.
- 31) AN ADMINISTRATIVE VARIANCE HAS BEEN GRANTED IN ACCORDANCE WITH LDC 25-8-42(B)(7). AN ADMINISTRATIVE ENVIRONMENTAL VARIANCE IS REQUIRED FOR CUT AND FILL FROM 4 TO 8 FEET IN THE DOZ.
- 32) SLOPES IN EXCESS OF 15% EXIST ON LOTS 19-21 BLOCK A AND LOTS 9-12, 38, 44 BLOCK B IN THIS SUBDIVISION. CONSTRUCTION AND IMPERVIOUS COVER ON SLOPES IS LIMITED PER THE LAND DEVELOPMENT CODE SECTION 30-5-302.
- 33) AN ADMINISTRATIVE VARIANCE HAS BEEN GRANTED IN ACCORDANCE WITH LDC 30-2-158(B), AN ADMINISTRATIVE VARIANCE IS REQUIRED FOR SINGLE ACCESS.

SHEET INDEX:

SHEET 1 COVER SHEET
SHEET 2 PRELIMINARY PLAN
EXHIBIT 1 DRAINAGE/WATER QUALITY PLAN

OWNER:

SAEED AHMED MINHAS
2207 W. PARMER LN
AUSTIN, TEXAS 78727
(512) 833-0404

DEVELOPER:

MMK PROPERTIES, LLC
2207 W. PARMER LN
AUSTIN, TEXAS 78727
(512) 833-0404

CIVIL ENGINEER & PERMIT CONSULTANT

CUATRO CONSULTANTS, LTD.
3601 KYLE CROSSING, SUITE B.
KYLE, TEXAS 78640
(512) 312-5040
(512) 312-5399 FAX

SURVEYOR

CELCO SURVEYING, FIRM REGISTRATION NO. 10193975
GEORGE E. LUCAS, REGISTERED PROFESSIONAL LAND SURVEYOR NO. 4160
2205 STONECREST PATH
NEW BRAUNFELS, TEXAS 78130
(512) 635-4857

SUBMITTED BY:

THE 100-YEAR FLOOD PLAIN IS CONTAINED WITHIN THE DRAINAGE EASEMENT AS SHOWN HEREON. A PORTION OF THIS TRACT IS WITHIN THE DESIGNATED FLOOD HAZARD AREA AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) #48453C0290J, TRAVIS COUNTY, TEXAS, DATED AUGUST 18, 2014.



HUGO ELIZONDO, JR., P.E. #69781

DATE:

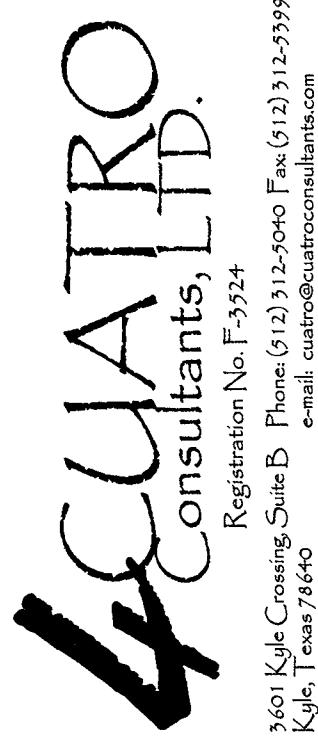
PRELIMINARY SUBDIVISION APPROVAL SHEET 1 OF 2

FILE NUMBER _____ APPLICATION DATE _____
APPROVED BY (ADM) (PC) (ZAP) ON _____
UNDER SECTION 2-57 OF CHAPTER 30 OF THE AUSTIN CITY CODE
EXPIRATION DATE _____ CASE MANAGER _____
(IF REV) ORIGINAL APPLICATION DATE _____ DWPZ _____ DDZ _____

Director, Watershed Protection and Development Review

FINAL PLAT TO LOCK-IN PRELIMINARY FILE # _____ APPROVED ON _____
PRELIMINARY PLAN EXTENDED (UNDER CHAPTER 30) ON _____
UNTIL _____ CASE MANAGER _____
Final Plats must be recorded by the Project Expiration Date. Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permits must also be approved by the Project Expiration Date.

DATE:									
BY:									
DESCRIPTION									
REVISION									



UPPER EAST END
A SMALL LOT SUBDIVISION
3010 E. HOWARD LANE
AUSTIN, TEXAS

CLIENT:
MMK PROPERTIES, LLC
2207 W. PARMER LN
AUSTIN, TEXAS 78727

DATE: JUNE, 2016

PROJECT: JOB # 13-133

DRAWING'S NAME:

HOWARD-PRELIM_COVER

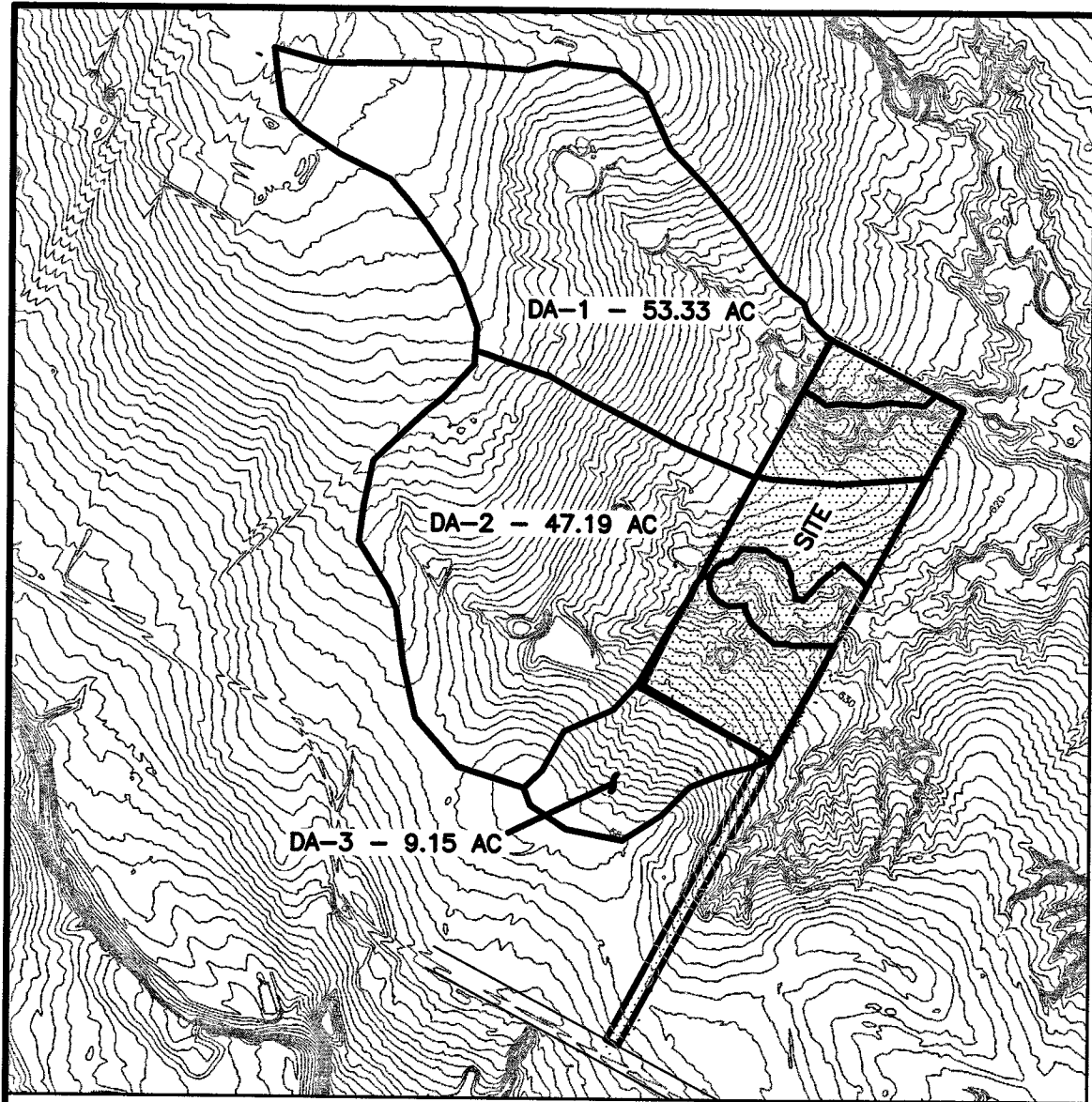
DESIGN: CHECKED: HE,Jr.

STAFF: HE,Jr.

DRAWN: LG HE,Jr.

SHEET: 1 OF 2





OFFSITE DRAINAGE AREA MAP

NOTES:
1. TOPOGRAPHY SOURCE: 2003 CITY OF AUSTIN
2-FOOT CONTOURS

OFF-SITE CALCULATIONS

Time of Concentration (TR-55 method) & Run-off Values			
Subbasin	Area	DA-1	DA-2
Area	sf	2322984	2055712
	ac	53.33	47.19
	sq mi	0.08333	0.07374
Impervious	sf	66973	52941
	%	20.00%	15.00%
	Cn	74	77
Pervious	Cn	79	80
	Retention	2.69	2.48
	Initial Abstraction	0.538	0.495
Sheet Flow			
Slope	in/in	0.0100	0.0100
	Length	ft.	100
	Roughness	n	0.2
Time	hr.	0.24	0.24
Shallow Concentrated			
Slope	in/in	0.0200	0.0200
	Length	ft.	700
	Paved?	p/u	u
Time	hr.	0.09	0.09
Channel Flow			
Slope	in/in	0.02	0.02
	Length	ft.	2113
	Velocity	fps	2
Time	hr.	0.29	0.17
Summary			
Travel Time	hr.	0.62	0.50
	Tc	min.	37.10
	Lag Time	min.	22.26
Run-off Values			
100 Year	cfs	233.4	231.6

NOTES:
1. TWO-YEAR PEAK FLOW CONTROL AS DETERMINED UNDER THE DRAINAGE CRITERIA MANUAL AND THE ENVIRONMENTAL CRITERIA MANUAL IS REQUIRED PURSUANT TO LAND DEVELOPMENT CODE 25-7-61.

ON-SITE CALCULATIONS

Time of Concentration (TR-55 method) & Run-off Values			
DRAINAGE AREA - A			
Subbasin	Area	EXISTING	PROPOSED
Area	sf	265000	265000
	ac	6.08	6.08
	sq mi	0.00951	0.00951
Impervious	sf	0	168971
	%	0.00%	63.76%
	Cn	77	77
Pervious	Cn	77	90
	Retention	2.99	1.06
	Initial Abstraction	0.597	0.213
Sheet Flow			
Slope	in/in	0.0200	0.0200
	Length	ft.	100
	Roughness	n	0.2
Time	hr.	0.18	0.18
Shallow Concentrated			
Slope	in/in	0.0200	0.0200
	Length	ft.	768
	Paved?	p/u	u
Time	hr.	0.09	0.05
Channel Flow			
Slope	in/in	0.01	0.023
	Length	ft.	700
	Velocity	fps	4
Time	hr.	0.00	0.05
Summary			
Travel Time	hr.	0.28	0.28
	Tc	min.	16.51
	Lag Time	min.	9.90
Run-off Values			
100 Year	cfs	37.2	42.1

Time of Concentration (TR-55 method) & Run-off Values			
DRAINAGE AREA - B			
Subbasin	Area	EXISTING	PROPOSED
Area	sf	165491	165491
	ac	3.80	3.80
	sq mi	0.00594	0.00594
Impervious	sf	0	88730
	%	0.00%	53.62%
	Cn	77	77
Pervious	Cn	77	88
	Retention	2.99	1.33
	Initial Abstraction	0.597	0.266
Sheet Flow			
Slope	in/in	0.0200	0.0200
	Length	ft.	533
	Roughness	n	0.2
Time	hr.	0.18	0.18
Shallow Concentrated			
Slope	in/in	0.0200	0.0200
	Length	ft.	768
	Paved?	p/u	u
Time	hr.	0.06	0.02
Channel Flow			
Slope	in/in	0.01	0.023
	Length	ft.	700
	Velocity	fps	4
Time	hr.	0.00	0.02
Summary			
Travel Time	hr.	0.25	0.22
	Tc	min.	14.79
	Lag Time	min.	8.87
Run-off Values			
100 Year	cfs	33.7	38.8

Time of Concentration (TR-55 method) & Run-off Values			
DRAINAGE AREA - C			
Subbasin	Area	EXISTING	PROPOSED
Area	sf	272253	272253
	ac	6.25	6.25
	sq mi	0.00977	0.00977
Impervious	sf	0	145129
	%	0.00%	52.57%
	Cn	77	77
Pervious	Cn	77	88
	Retention	2.99	1.36
	Initial Abstraction	0.597	0.272
Sheet Flow			
Slope	in/in	0.0100	0.0100
	Length	ft.	100
	Roughness	n	0.2
Time	hr.	0.24	0.24
Shallow Concentrated			
Slope	in/in	0.0200	0.0200
	Length	ft.	700
	Paved?	p/u	u
Time	hr.	0.09	0.02
Channel Flow			
Slope	in/in	0.01	0.023
	Length	ft.	192
	Velocity	fps	4
Time	hr.	0.01	0.04
Summary			
Travel Time	hr.	0.34	0.30
	Tc	min.	20.29
	Lag Time	min.	12.17
Run-off Values			
100 Year	cfs	14.1	16.1

APPENDIX R-6
POND A - FULL BIOFILTRATION POND CALCULATIONS FOR DEVELOPMENT PERMITS

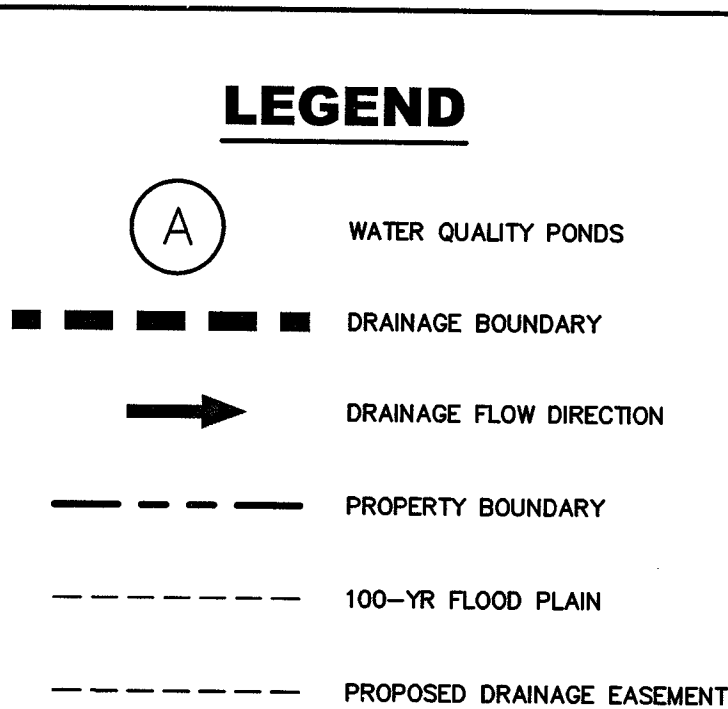
DRAINAGE AREA DATA:			
Subbasin	Area	EXISTING	PROPOSED
Area	sf	272253	272253
	ac	6.25	6.25
	sq mi	0.00977	0.00977
Impervious	sf	0	145129
	%	0.00%	52.57%
	Cn	77	77
Pervious	Cn	77	88
	Retention	2.99	1.36
	Initial Abstraction	0.597	0.272
Sheet Flow			
Slope	in/in	0.0100	0.0100
	Length	ft.	100
	Roughness	n	0.2
Time	hr.	0.24	0.24
Shallow Concentrated			
Slope	in/in	0.0200	0.0200
	Length	ft.	700
	Paved?	p/u	u
Time	hr.	0.09	0.02
Channel Flow			
Slope	in/in	0.01	0.023
	Length	ft.	192
	Velocity	fps	4
Time	hr.	0.01	0.04
Summary			
Travel Time	hr.	0.34	0.30
	Tc	min.	20.29
	Lag Time	min.	12.17
Run-off Values			
100 Year	cfs	14.1	16.1

APPENDIX R-6
POND B - FULL BIOFILTRATION POND CALCULATIONS FOR DEVELOPMENT PERMITS

DRAINAGE AREA DATA:			
Subbasin	Area	EXISTING	PROPOSED
Area	sf	272253	272253
	ac	6.25	6.25
	sq mi	0.00977	0.00977
Impervious	sf	0	145129
	%	0.00%	52.57%
	Cn	77	77
Pervious	Cn	77	88
	Retention	2.99	1.36
	Initial Abstraction	0.597	0.272
Sheet Flow			
Slope	in/in	0.0100	0.0100
	Length	ft.	100
	Roughness	n	0.2
Time	hr.	0.24	0.24
Shallow Concentrated			
Slope	in/in	0.0200	0.0200
	Length	ft.	700
	Paved?	p/u	u
Time	hr.	0.09	0.02
Channel Flow			
Slope	in/in	0.01	0.023
	Length	ft.	192
	Velocity	fps	4
Time	hr.	0.01	0.04
Summary			
Travel Time	hr.	0.34	0.30
	Tc	min.	20.29
	Lag Time	min.	12.17
Run-off Values			
100 Year	cfs	14.1	16.1

APPENDIX R-6
POND C - FULL BIOFILTRATION POND CALCULATIONS FOR DEVELOPMENT PERMITS

DRAINAGE AREA DATA:			
Subbasin	Area	EXISTING	PROPOSED
Area	sf	272253	272253
	ac	6.25	6.25
	sq mi	0.00977	0.00977
Impervious	sf	0	145129
	%	0.00%	52.57%
	Cn	77	77
Pervious	Cn	77	88
	Retention	2.99	1.36
	Initial Abstraction	0.597	0.272
Sheet Flow			
Slope	in/in	0.0100	0.0100
	Length	ft.	100
	Roughness	n	0.2
Time	hr.	0.24	0.24
Shallow Concentrated			
Slope	in/in	0.0200	0.0200
	Length	ft.	700
	Paved?	p/u	u
Time	hr.	0.09	0.02
Channel Flow			
Slope	in/in	0.01	0.023
	Length	ft.	192
	Velocity	fps	4
Time	hr.	0.01	0.04
Summary			
Travel Time	hr.	0.34	0.30
	Tc	min.	20.29
	Lag Time	min.	12.17
Run-off Values			
100 Year	cfs	14.1	16.1



DATE: JUNE, 2016

PROJECT: JOB # 13-133

DRAWING'S NAME: HOWARD-PRELUIM_PLAN

DESIGN: STAFF

DRAWN: LG

CHECKED: HE,jr.

APPROVED: HE,jr.

SHEET: 1 OF 1

EXHIBIT 1
DRAINAGE PLAN
UPPER EAST END
A SMALL LOT SUBDIVISION
3010 E. HOWARD LANE
AUSTIN, TEXAS

CUATRO CONSULTANTS, INC.
Registration No. F-3924
HUGO ELIZONDO, JR.
Professional Engineer
No. 1000140017
Kyle, Texas 78660
e-mail: cuatro@austintexas.com