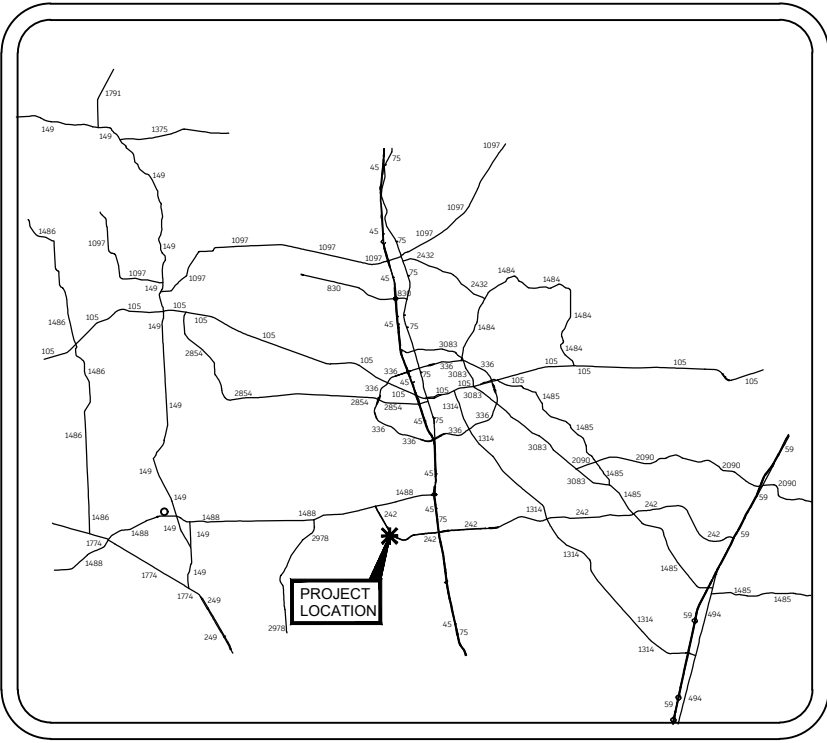


COMMERCIAL ACCESS PLANS  
FOR  
ALDEN BRIDGE SPORTS  
PARK EXPANSION

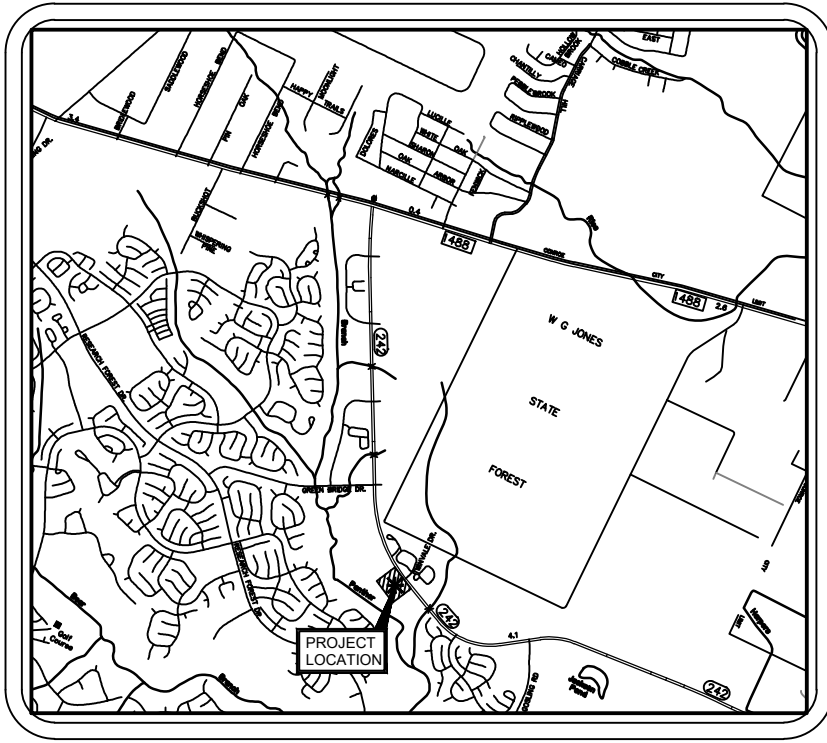
4751 TX-242  
THE WOODLANDS, TX 77384



KEY MAP NO. 217N



PROJECT LOCATION  
NOT TO SCALE



LOCATION MAP  
NOT TO SCALE

SHEET INDEX	
SHEET NO.	SHEET TITLE
C0.00	COVER SHEET
C1.00	OVERALL SITE PLAN
C2.00	CLEARING & GRUBBING PLAN
C3.00	GRADING PLAN
C4.00	STORM & DRAINAGE PLAN
C4.01	STORM CALCULATIONS
C5.00	PAVING AND DIMENSIONAL PLAN
C6.00	STRIPING & SIGNAGE PLAN
C7.00	TRAFFIC CONTROL PLAN
C8.00	DETAILS
C8.01	DETAILS
C8.02	DETAILS
C8.03	DETAILS
C8.04	DETAILS
C8.05	DETAILS
C8.06	DETAILS
C8.07	DETAILS
C8.08	DETAILS
C8.09	DETAILS
C8.10	DETAILS

**OWNER/DEVELOPER**  
THE WOODLANDS TOWNSHIP  
2801 TECHNOLOGY BLVD  
THE WOODLANDS, TX 77381  
CONTACT: CHRIS NUNES  
EMAIL: CNUNES@THEWOODLANDSTOWNSHIP-TX.GOV  
TEL: (281) 210-3906

**ENGINEER**  
HALFF ASSOCIATES, INC.  
14800 ST. MARY'S LANE, ST. 160  
HOUSTON, TX 77079  
CONTACT: TYLER EATON  
EMAIL: TEATON@HALFF.COM  
TEL: (713) 588-2470  
TBPELS FIRM# F-312

THE PROJECT AREA IS LOCATED IN ZONE X  
SHADED AND ZONE X UNSHADED PER  
FEMA FLOOD INSURANCE RATE MAP NO.  
48339C0530G, DATED AUGUST 18, 2014.

06/22/2024



14800 ST. MARY'S LN., SUITE 160  
HOUSTON, TEXAS 77079-2943  
TEL: (713) 588-2450  
TBPELS FIRM NO.F- 312

AVO: 52417.002    DATE: June 2024

[illegible]

STATE OF TEXAS  
 TYLER P. EATON  
 143886  
 LICENSED  
 PROFESSIONAL ENGINEER

*Tyler P. Eaton*

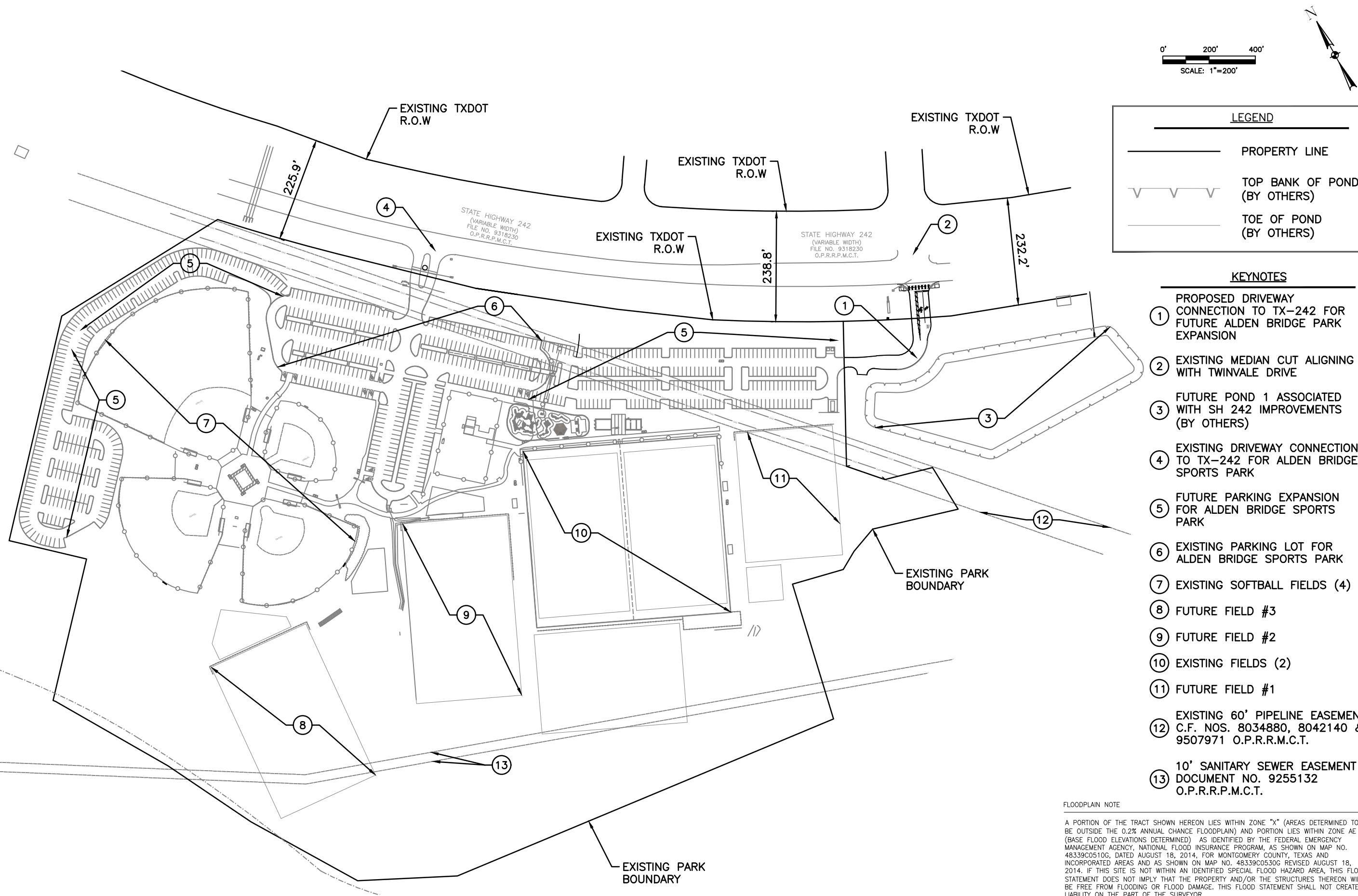
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Sheet Title	

# OVERALL SITE PLAN

## C1.00

Sheet Number	
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FLOODPLAIN NOTE

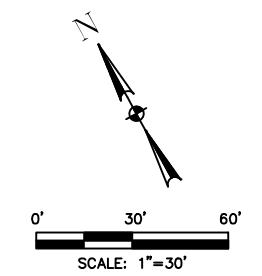
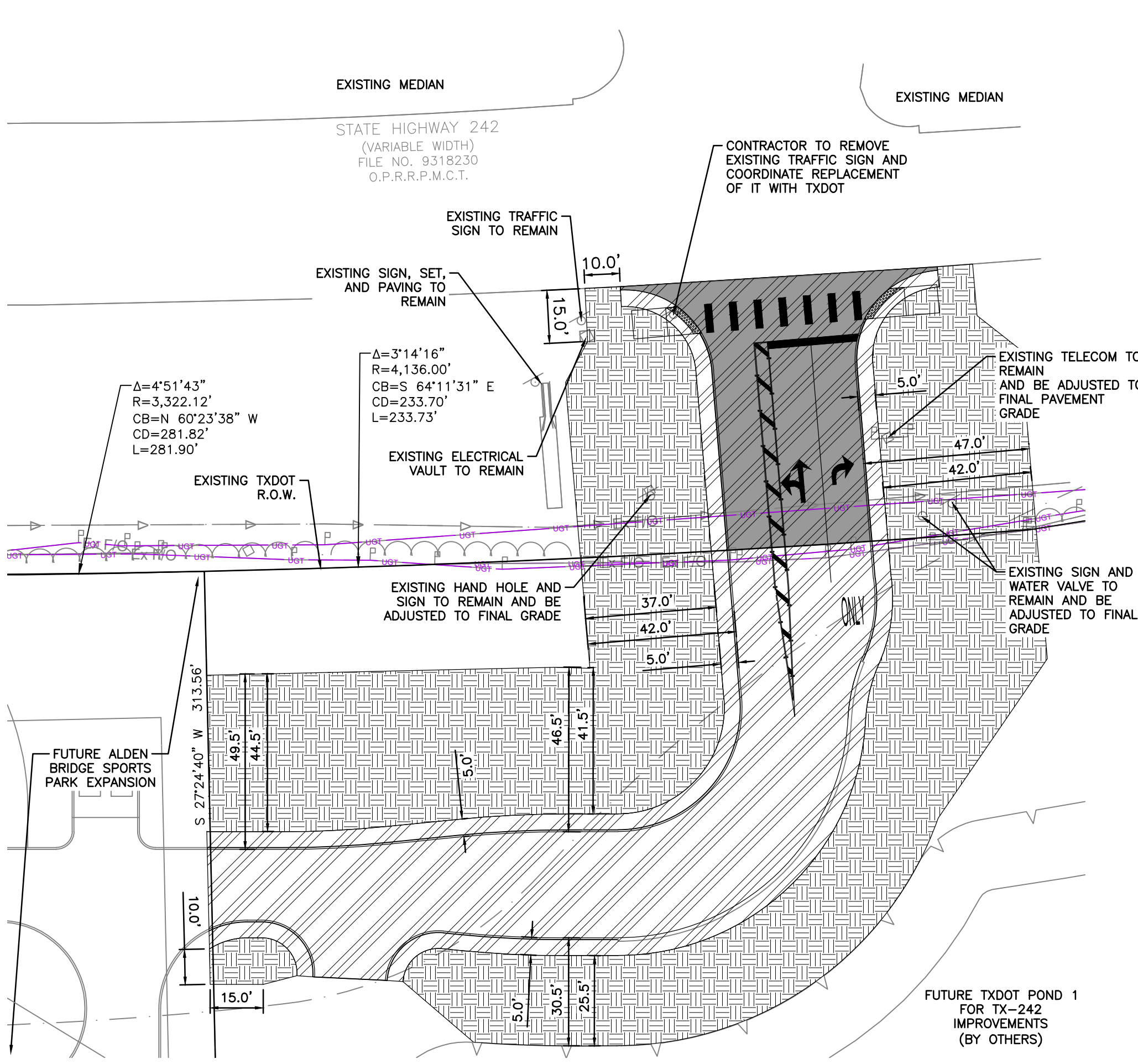
A PORTION OF THE TRACT SHOWN HEREON LIES WITHIN ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AND PORTION LIES WITHIN ZONE AE (BASE FLOOD ELEVATIONS DETERMINED) AS IDENTIFIED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, NATIONAL FLOOD INSURANCE PROGRAM, AS SHOWN ON MAP NO. 48339C0510G, DATED AUGUST 18, 2014, FOR MONTGOMERY COUNTY, TEXAS AND INCORPORATED AREAS AND AS SHOWN ON MAP NO. 48339C0530G REVISED AUGUST 18, 2014. IF THIS SITE IS NOT WITHIN AN IDENTIFIED SPECIAL FLOOD HAZARD AREA, THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR THE STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

## BENCHMARK

THE VERTICAL DATUM SHOWN HEREON IS NAVD88 (GEOID 18) BASED ON RTK DIFFERENTIAL  
LEVEL TO SITE CONTROL FROM NGS MONUMENT A56405.



A:\520200s\52417\002\LD\CADD\EXHIBITS\TXDOT Permit Drawings\HOU\CE-CG-52417.002.dwg 6/22/2024



**LEGEND**

- PROPERTY LINE
- TOP BANK OF POND (BY OTHERS)
- TOE OF POND (BY OTHERS)
- PROPOSED DITCH TO BE FILLED
- PROPOSED AREA TO BE CLEARED AND STRIPPED OF ALL UNSUITABLE MATERIALS FOR ACCESS ROAD CONSTRUCTION
- EXISTING TREES, SHRUBS, AND GROUND COVER TO BE REMOVED WITHIN LIMITS AS NEEDED FOR GRADING. SEE SHEET C3.00
- EXISTING TELECOMMS LINE
- EXISTING DITCH CENTER LINE

**FLOODPLAIN NOTE**

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**COMMERCIAL ACCESS PLANS FOR ALDEN BRIDGE SPORTS PARK EXPANSION**

4751 TX-242  
THE WOODLANDS, TX 77384

14800 ST. MARY'S LN., SUITE 160  
HOUSTON, TEXAS 77079-2943  
TEL: 281.350.1500  
TBPELS FIRM NO. F-312

Revision No.	Date	Description

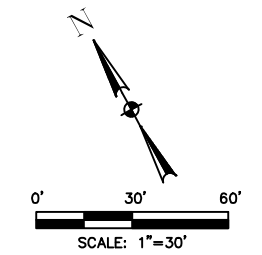
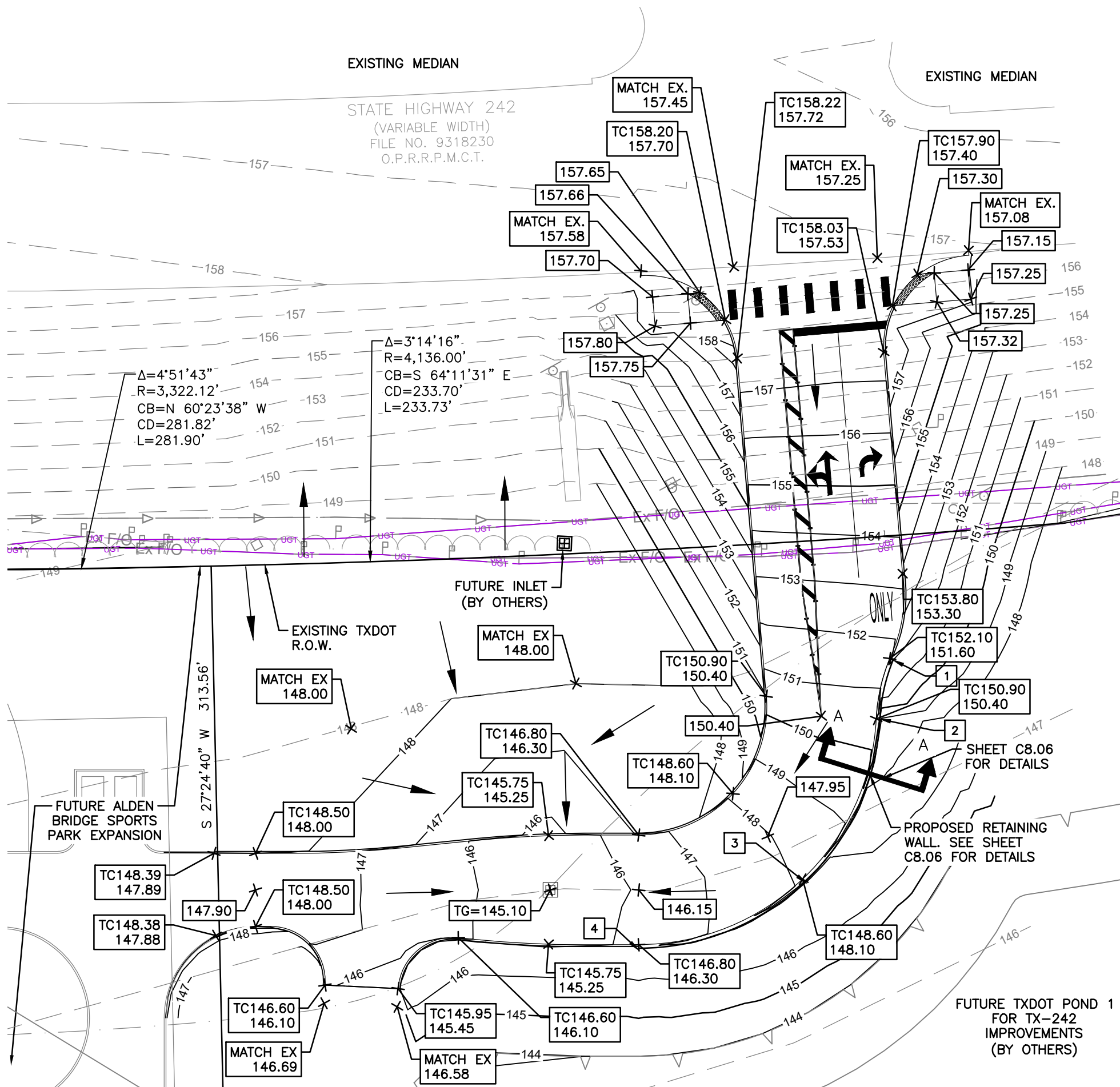
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TYLER P. EATON  
143886  
LICENSED PROFESSIONAL ENGINEER

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Project No.:	52417.002
Issued:	06/22/2024
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Checked By:	TE
Scale:	AS NOTED
Sheet Title	CLEARING & GRUBBING PLAN
Sheet Number	C2.00

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**LEGEND**

	PROPERTY LINE
	TOP BANK OF POND (BY OTHERS)
	TOE OF POND (BY OTHERS)
	EXISTING CONTOUR
	PROPOSED CONTOUR
	EXISTING TELECOMMS LINE
	EXISTING DITCH CENTER LINE
	STORM WATER FLOW DIRECTION
TW	TOP OF WALL ELEVATION
NG	NATURAL GROUND ELEVATION AT WALL
TG	TOP OF GRATE
TC	TOP OF CURB

**KEY NOTES**

1	START OF WALL TW152.10 NG152.10 N: 10071604.22 E: 3824720.50	3	TW148.60 NG146.60 N: 10071562.52 E: 3824670.29
2	TW150.90 NG148.90 N: 10071591.78 E: 3824709.60	4	END OF WALL TW146.80 NG146.80 N: 10071568.41 E: 3824621.65

**FLOODPLAIN NOTE**

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**BENCHMARK**

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COMMERCIAL  
ACCESS PLANS FOR  
ALDEN BRIDGE  
SPORTS PARK  
EXPANSION

4751 TX-242  
THE WOODLANDS, TX 77384

14800 ST. MARY'S LN., SUITE 160  
HOUSTON, TEXAS 77079-2943  
TBPELS FIRM NO. F-312

Revision No.	Date	Description

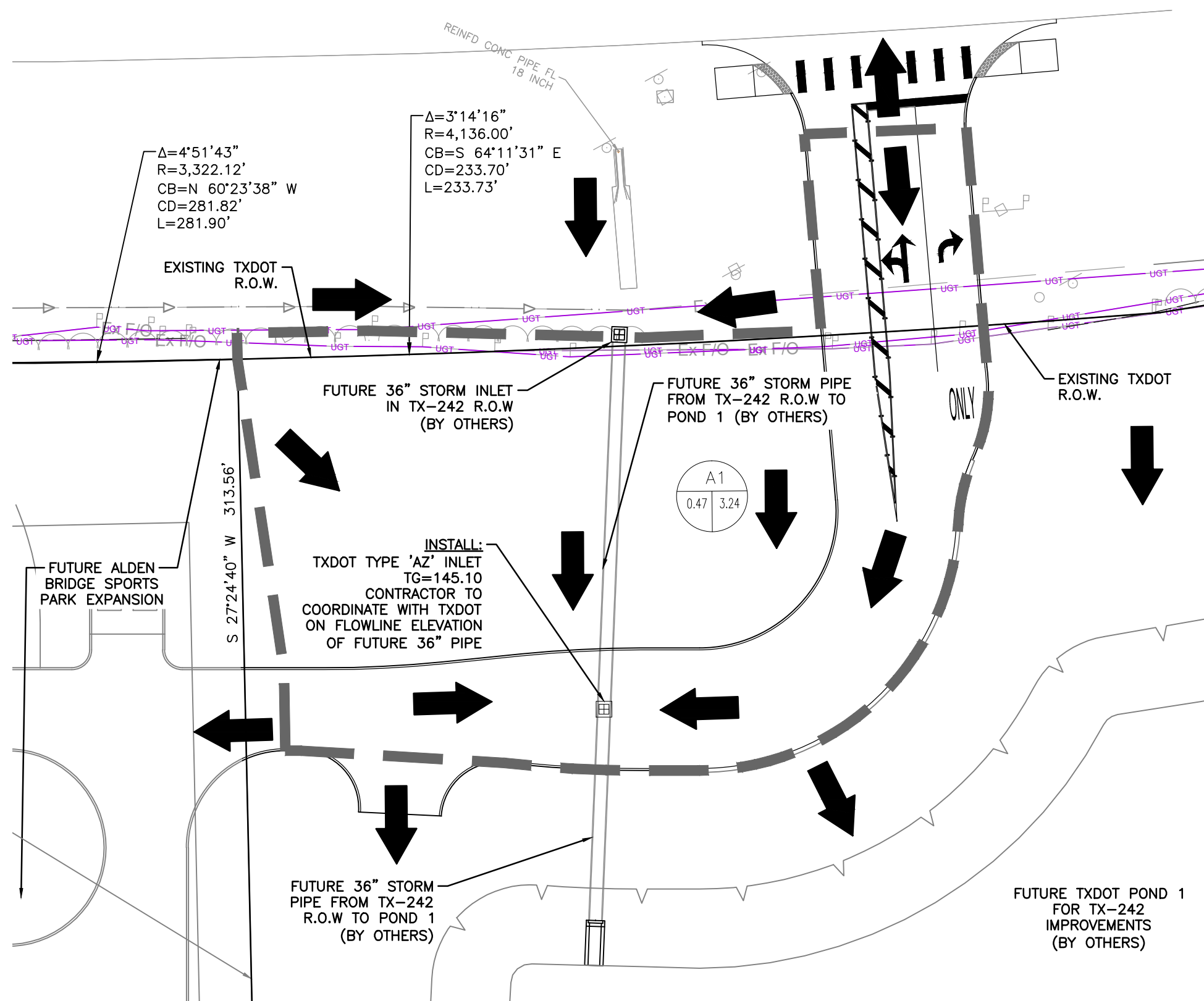
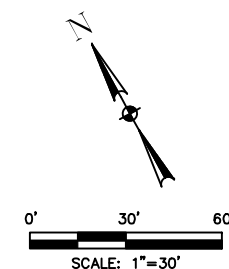
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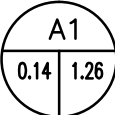




Project No.:	52417.002
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Scale:	AS NOTED
Sheet Title	GRADING PLAN
Sheet Number	C3.00



EXISTING MEDIAN



### LEGEND

- |   |  |
|---|--|
|    | PROPERTY LINE  |
|    | TOP BANK OF POND<br>(BY OTHERS)  |
|    | TOE OF POND<br>(BY OTHERS)   |
|    | DRAINAGE DIVIDE  |
|    | DRAINAGE AREA<br>DRAINAGE AREA (AC)<br>100-YR CUMULATIVE<br>FLOW (CFS) |
|    | PROPOSED<br>GRATE INLET  |
|   | PROPOSED<br>ON-SITE FLOW   |
|  | EXISTING TELECOMMS<br>LINE   |
|  | EXISTING DITCH CENTER<br>LINE  |

NOTES:

1. SEE SHEET C4.01 FOR STORM SEWER CALCULATIONS.

**COMMERCIAL  
ACCESS PLANS FOR  
ALDEN BRIDGE  
SPORTS PARK  
EXPANSION**

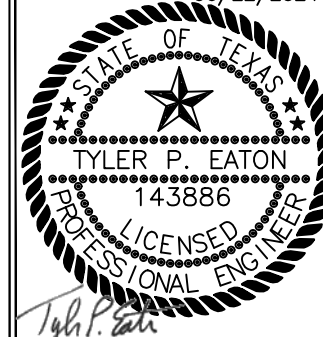
4751 TX-242  
THE WOODLANDS, TX 77384



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HOUSTON, TEXAS 77079-2943  
TEL. (713) 588-2450  
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Project No. : 52417 002

Project No.:	32417.002
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Sheet Title

# STORM & DRAINAGE PLAN


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C4.00

Sheet Number



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### Rainfall Intensity-Duration-Frequency Coefficients for Texas

Based on "National Oceanic and Atmospheric Administration's (NOAA) Atlas 14  
Precipitation-Frequency Atlas of the United States, Volume 11 Version 2.0: Texas" (Perica et al. 2018)

**Parameter Selection**

1. **Select Units**  
English

2. **Select Methodology**  
Annual Maximum Series (AMS)

3. **Select County**  
MONTGOMERY

4. **Select County Zone**  
Zone-2

5. **Select Time of Concentration (t<sub>c</sub>)**  
10 Minute

Coefficient	Design Annual Exceedance Probability (Design Annual Recurrence Interval)						
	50% (2-year)	20% (5-year)	10% (10-year)	4% (25-year)	2% (50-year)	1% (100-year)	0.2% (500-year)
e	0.8133	0.7801	0.7590	0.7341	0.7132	0.6967	0.6935
b	65.2959	75.8969	83.2070	92.1100	96.3295	102.8392	145.5571
d (min)	13.1516	12.8200	12.6902	12.6767	12.4917	12.8831	18.1819
Intensity (inches/hour)	5.07	6.62	7.78	9.31	10.46	11.62	14.37

Note: Montgomery County has 3 rainfall zones. Since Montgomery County county has more than 1 rainfall zone, consider using the accompanying Google Earth file to accurately locate a project.

Weighted Runoff Coefficient		
Description	C-Value	Area (ac)
Concrete	0.95	0.21
Lawn	0.30	0.26
Cw	0.59	

Proposed Drainage Area Flowrate Calculations	2-Year Flowrate	10-Year Flowrate	25-Year Flowrate	100-Year Flowrate
Proposed Flowrate (cfs)	1.41	2.17	2.60	3.24
Runoff Coefficient	0.59	0.59	0.59	0.59
Intensity (in/hr)	5.07	7.78	9.31	11.62
Drainage Area (acres)	0.4728	0.4728	0.4728	0.4728


2-year Storm Calculations															
Inlet or MH from	Inlet or MH to	Area (acres)	b		d		e		Time of Conc. (min)	Reach Length (ft)	Diameter or Rise (inches)	Slope (ft/ft)	Manning's n	Design Capacity (cfs)	Design Velocity (ft/s)
			2 yr	65.2959	13.1516	0.8133	Sum of	Sum of							
			Sum of A		Intensity I (in/hr)	Flows (cfs)									
A1	Pond	0.47	0.47	0.59	5.07	1.41	10.00	55.0	36	0.0010	0.013	21.21	3.00		

100-year Storm Calculations													
Inlet or MH from	Inlet or MH to	Area (acres)	b		d	e	Time of Conc. (min)	Reach Length (ft)	Diameter or Rise (inches)	Slope (ft/ft)	Manning's n	Design Capacity (cfs)	Design Velocity (ft/s)
			2 yr	102.839	12.8831	0.6967							
			Sum of A		Intensity I (in/hr)	Sum of Flows (cfs)							
A1	Pond	0.473	0.47	0.59	11.61	3.24	10.00	55.0	36	0.0010	0.013	21.21	3.00

DRAINAGE SUMMARY TABLE		
TxDOT Tracking Number (TR#)	TR24050041	
Highway	SH 242	
TxDOT Frontage	1927	FT
TxDOT Area (the strip of site within 150-ft frontage)	6.63	AC
Total tract area based on submitted survey map	N/A	AC
Proposed disturbed area	0.47	AC
Project contributing drainage area to TxDOT	0.47	AC
Off-site contributing drainage area (if applicable)	0.00	AC
Increased impervious area	0.21	AC
10-yr required detention volume	N/A*	AC-FT
10-yr proposed detention volume	N/A*	AC-FT
10-yr design W.S.E.	N/A*	FT
10-yr Pre-developed peak flow	N/A*	CFS
10-yr Post-developed peak flow (before detention/restrictor)	2.17	CFS
10-yr Proposed discharge to TxDOT R.O.W. (with detention/restrictor)	N/A*	CFS
100-yr required detention volume	N/A*	AC-FT
100-yr proposed detention volume	N/A*	AC-FT
100-yr design W.S.E.	N/A*	FT
100-yr Pre-developed peak flow	N/A*	CFS
100-yr Post-developed peak flow (before detention/restrictor)	3.24	CFS
100-yr Proposed discharge to TxDOT R.O.W. (with detention/restrictor)	N/A*	CFS
TxDOT as-built or calculated allowable discharge	N/A*	CFS
Primary tie-in/outfall structure size	N/A*	INCH
Primary restrictor size	N/A*	INCH
Primary restrictor maximum discharge	N/A*	CFS
Secondary outfall device size (if applicable)	N/A*	CFS
Secondary outfall discharge (if applicable)	N/A*	CFS
Maximum combined pumped discharge (if applicable)	N/A*	GPM (CFS)
% Pumped discharge volume (if applicable)	N/A*	AC-FT
Effective gravity discharge elevation (if applicable)	N/A*	FT
B.F.E. per effective FIRM (if applicable)	N/A	FT
Proposed fill below B.F.E. (if applicable)	N/A	AC-FT
Proposed cut below B.F.E. (if applicable)	N/A	AC-FT
* The future TxDOT Pond 1 for TX-242 Improvements shown in these plans is not part of this project and is being designed and constructed by TxDOT. Halff has coordinated with the respective TxDOT project manager and consulting engineer for the future pond on the allowance of the developed flow from the proposed driveway to be directed to the future pond.		


COMMERCIAL  
ACCESS PLANS FOR  
ALDEN BRIDGE  
SPORTS PARK  
EXPANSION

4751 TX-242  
THE WOODLANDS, TX 77384



14800 ST. MARYS LN, SUITE 160  
HOUSTON, TEXAS 77079-2943  
TBPELS FIRM NO. F-312

Revision No.	Date	Description													



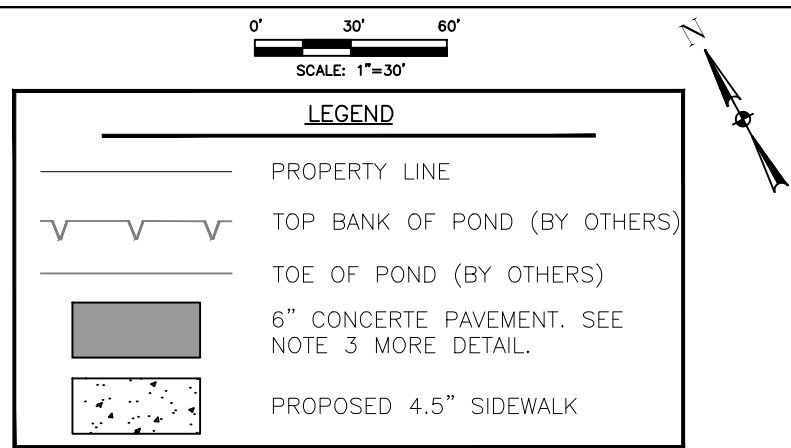
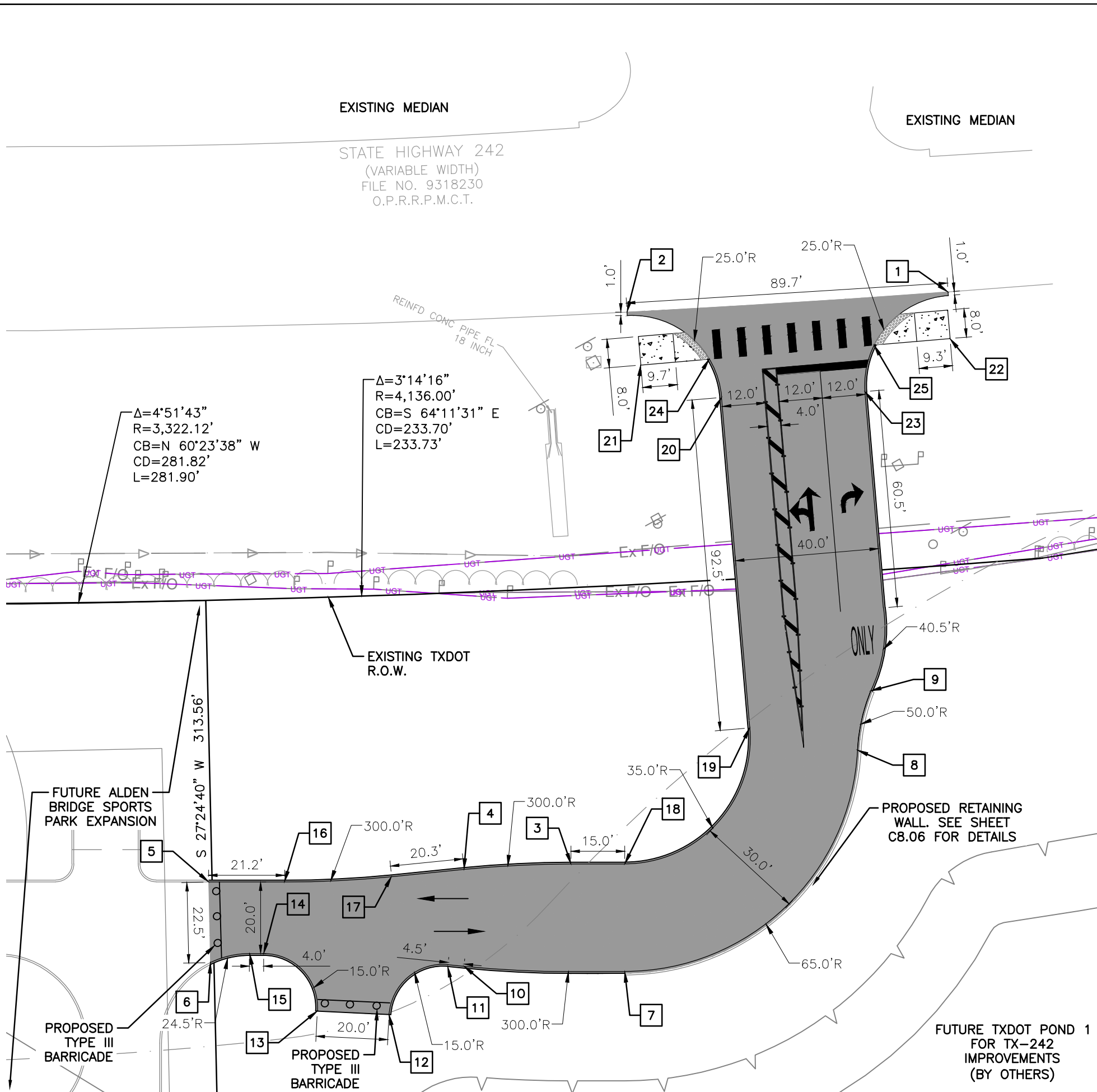
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Sheet Title  
STORM  
CALCULATIONS  
C4.01  
Sheet Number



Project No.:	52417.002
Issued:	06/22/2024
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Checked By:	TE
Scale:	AS NOTED
Sheet Title	
PAVING AND DIMENSIONAL PLAN	
C5.00	
Sheet Number	



- NOTES:
1. DIMENSIONS ARE FACE OF CURB TO FACE OF CURB UNLESS OTHERWISE NOTED.
  2. SEE SHEETS C8.00–C8.10 FOR STANDARD DETAILS.
  3. PAVEMENT SHALL BE AS RECOMMENDED BY THE GEOTECHNICAL REPORT PREPARED BY TERRACON. PROJECT NO. 97235079, DATED AUGUST 31, 2023. 6" THICK, 3500 PSI CONCRETE REINFORCED WITH #3 REINFORCING BARS AT 12" O.C.E.W. OR #4 REINFORCING BARS AT 18" O.C.E.W. LIME-FLYASH STABILIZE TOP 6-INCHES AT 50 LBS/SY (70% FLYASH / 30% LIME BLEND) BY DRY WEIGHT OF SOIL. THE ACTUAL QUANTITY OF LIME-FLYASH SHOULD BE DETERMINED AT THE TIME OF CONSTRUCTION BASED ON LABORATORY TESTING CONDUCTED USING BULK SAMPLES OF SUBGRADE SOILS. ALL LIME-FLYASH STABILIZATION PROCEDURES SHOULD BE IN ACCORDANCE WITH TXDOT STANDARD SPECIFICATIONS ITEM 265. STABILIZED SUBGRADE SHALL BE COMPACTED TO A MINIMUM 95% OF STANDARD EFFORT (ASTM D 698) MAXIMUM DRY DENSITY AT A MOISTURE CONTENT BETWEEN OPTIMUM AND 2% OF OPTIMUM.

# NORTHING & EASTING

1	N: 10071692.29 E: 3824792.31	9	N: 10071605.01 E: 3824719.89	17	N: 10071623.78 E: 3824577.77
2	N: 10071730.39 E: 3824711.07	10	N: 10071592.14 E: 3824583.50	18	N: 10071596.41 E: 3824635.60
3	N: 10071602.81 E: 3824623.48	11	N: 10071594.68 E: 3824579.79	19	N: 10071612.17 E: 3824685.36
4	N: 10071615.84 E: 3824596.48	12	N: 10071590.38 E: 3824558.67 START OF 6" CURB	20	N: 10071696.83 E: 3824722.74
5	N: 10071646.99 E: 3824532.29 START OF 6" CURB	13	N: 10071600.83 E: 3824541.61 END OF 6" CURB	21	N: 10071715.59 E: 3824707.33
6	N: 10071627.03 E: 3824521.94 START OF 6" CURB	14	N: 10071622.06 E: 3824536.17	22	N: 10071680.61 E: 3824786.57
7	N: 10071569.29 E: 3824622.13	15	N: 10071624.00 E: 3824532.64	23	N: 10071679.05 E: 3824758.62
8	N: 10071592.31 E: 3824708.75	16	N: 10071636.81 E: 3824550.87	24	N: 10071707.86 E: 3824724.85 END OF 6" CURB
				25	N: 10071689.22 E: 3824767.09 END OF 6" CURB

FLOODPLAIN NOTE

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## BENCHMARK

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**COMMERCIAL  
ACCESS PLANS FOR  
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4751 TX-242  
THE WOODLANDS, TX 77384

 **half**

14800 ST. MARY'S LN., SUITE 160  
HOUSTON, TEXAS 77079-2943  
TEL (713) 598-2480  
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06/22/2024



STATE OF TEXAS  
TYLER P. EATON  
143886  
LICENSED PROFESSIONAL ENGINEER

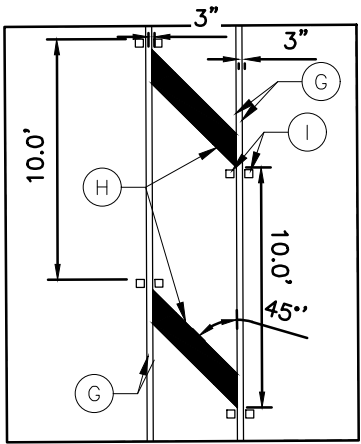
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Project No.:	52417.002
Issued:	06/22/2024
Drawn By:	SW
Checked By:	TE
Scale:	AS NOTED
Sheet Title	
<div style="text-align: center;"> PAVING AND  DIMENSIONAL PLAN    C5.00    Sheet Number </div>	



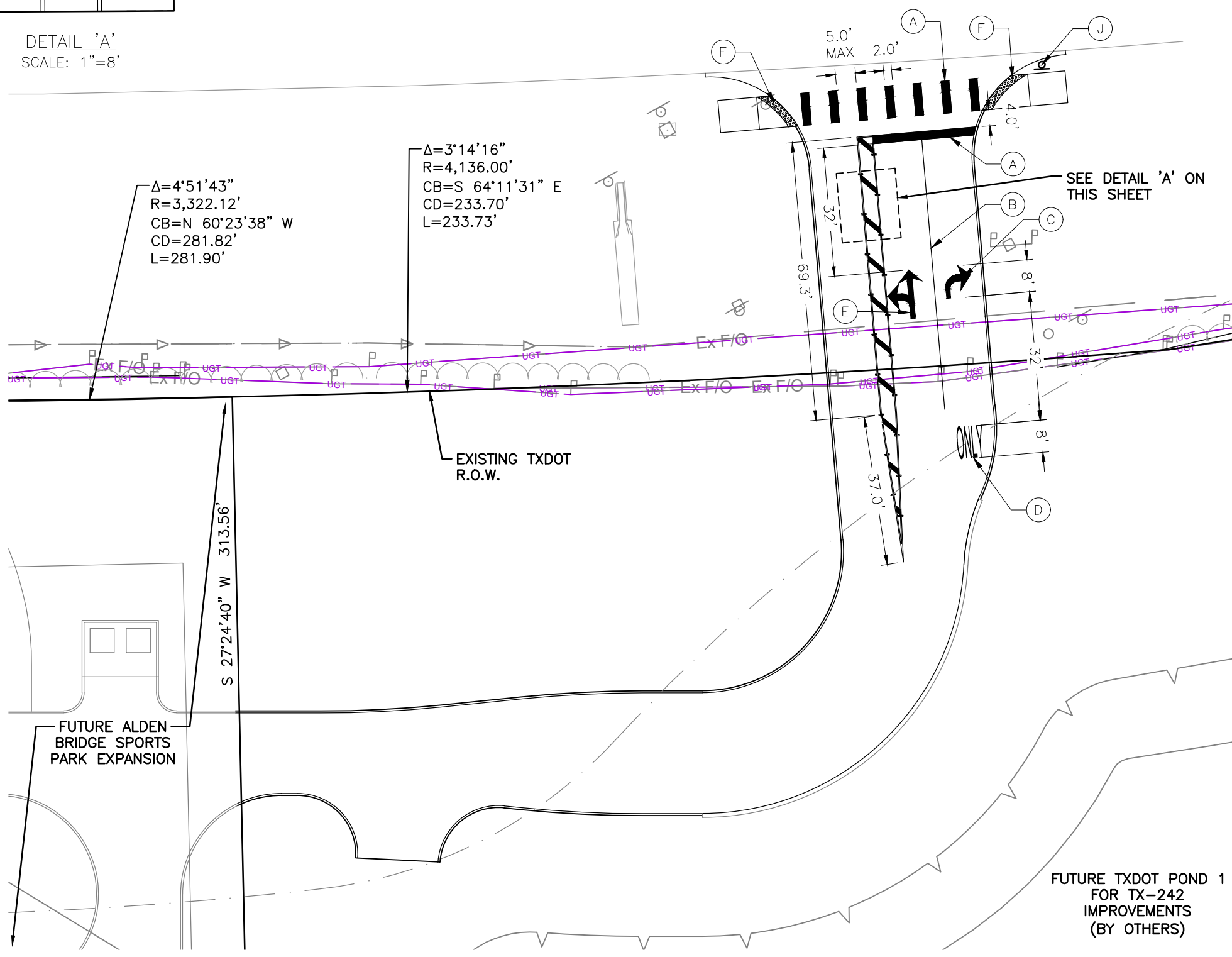
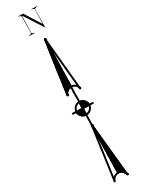
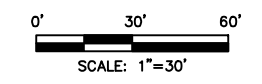
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DETAIL 'A'  
SCALE: 1"=8'

EXISTING MEDIAN  
  
STATE HIGHWAY 242  
(VARIABLE WIDTH)  
FILE NO. 9318230  
O.P.R.R.P.M.C.T.

EXISTING MEDIAN



LEGEND	
	PROPERTY LINE
	TOP BANK OF POND (BY OTHERS)
	TOE OF POND (BY OTHERS)
	EXISTING TELECOMMS LINE
	EXISTING DITCH CENTER LINE

NOTES:

1. ALL PROPOSED PAVEMENT MARKINGS SHOWN ARE TO BE INSTALLED IN ACCORDANCE WITH TXDOT STANDARDS.
2. ALL PAVEMENT MARKINGS MATERIAL SUPPLIED SHALL CONFORM TO TXDOT STANDARDS.
3. ALL SIGNAGE AND PAVEMENT MARKINGS TO BE INSTALLED UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO COORDINATE EXACT SIGN LOCATIONS WITH TXDOT DURING INSTALLATION.

KEYNOTES

- (A) MULTIPOLYMER PAV MRK (W) (24") (SLD)
- (B) MULTIPOLYMER PAV MRK (W) (6") (SLD)
- (C) PREFAB PAV MRK TY C (W) (ARROW)
- (D) PREFAB PAV MRK TY C (W) (WORD) "ONLY"
- (E) PREFAB PAV MRK TY C (W) (DBL ARROW)
- (F) DETECTABLE WARNING SURFACE SEE SHEET C8.09 FOR DETAILS
- (G) MULTIPOLYMER PAV MRK (Y) (6") (SLD)
- (H) MULTIPOLYMER PAV MRK (Y) (12") (SLD)
- (I) REFL PAV MRKR TY-II-A-A
- (J) PROPOSED R1-1 STOP SIGN. SEE SHEET C8.07 FOR DETAILS.

FLOODPLAIN NOTE

A PORTION OF THE TRACT SHOWN HEREON LIES WITHIN ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AND PORTION LIES WITHIN ZONE AE (BASE FLOOD ELEVATIONS DETERMINED) AS IDENTIFIED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, NATIONAL FLOOD INSURANCE PROGRAM, AS SHOWN ON MAP NO. 48339C0510G, DATED AUGUST 18, 2014, FOR MONTGOMERY COUNTY, TEXAS AND INCORPORATED AREAS AND AS SHOWN ON MAP NO. 48339C0530G REVISED AUGUST 18, 2014. IF THIS SITE IS NOT WITHIN AN IDENTIFIED SPECIAL FLOOD HAZARD AREA, THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR THE STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

BENCHMARK

THE VERTICAL DATUM SHOWN HEREON IS NAVD88 (GEOID 18) BASED ON RTK DIFFERENTIAL LEVEL TO SITE CONTROL FROM NGS MONUMENT A56405.

COMMERCIAL  
ACCESS PLANS FOR  
ALDEN BRIDGE  
SPORTS PARK  
EXPANSION  
  
4751 TX-242  
THE WOODLANDS, TX 77384

14800 ST. MARY'S LN., SUITE 160  
HOUSTON, TEXAS 77079-2943  
TELEPHONE: 281.560.3120  
TBPELS FIRM NO. F-312

Revision No.	Date	Description

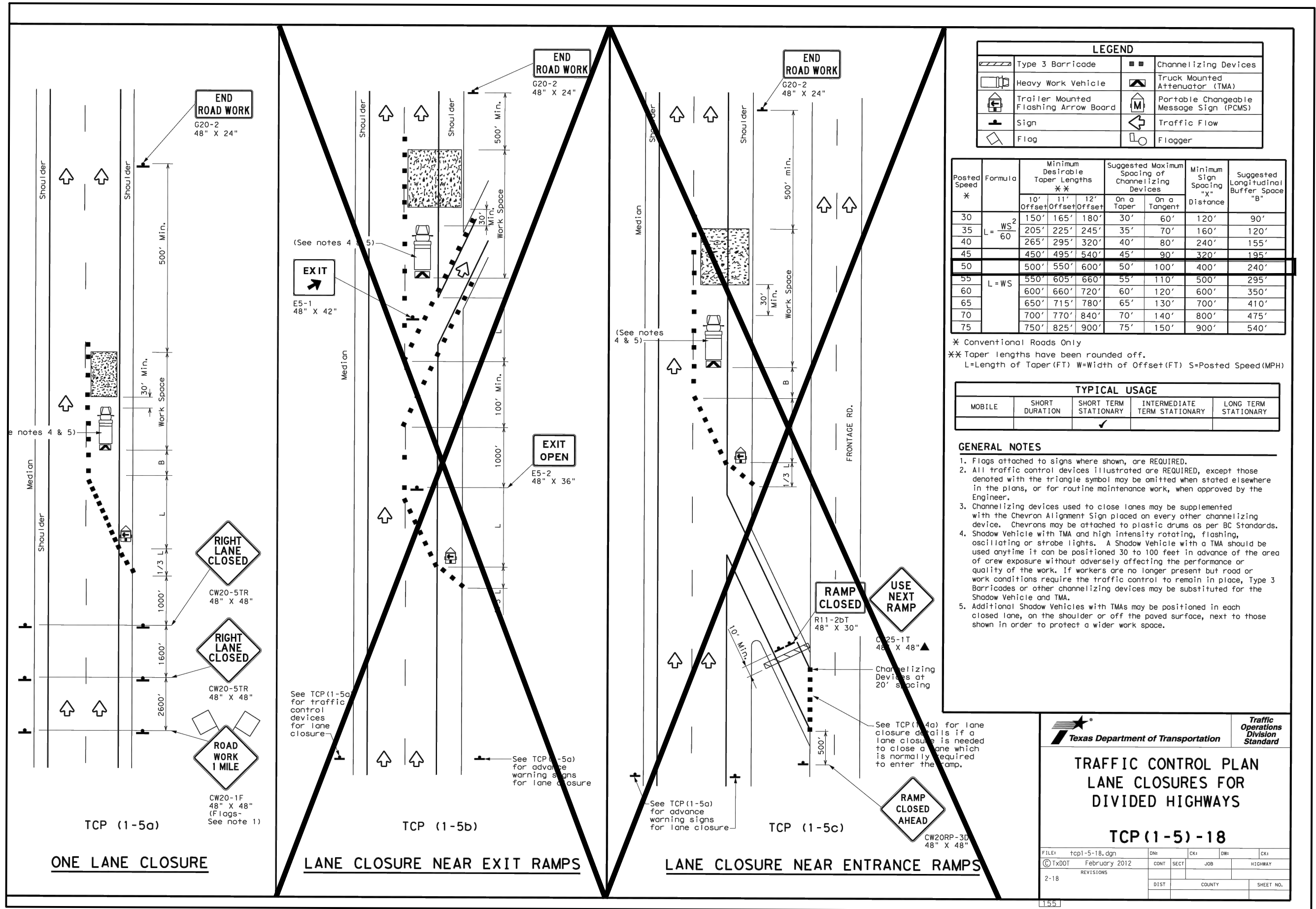
06/22/2024

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Project No.:	52417.002
Issued:	06/22/2024
Drawn By:	SW
Checked By:	TE
Scale:	AS NOTED
Sheet Title	STRIPING & SIGNAGE PLAN
	C6.00
Sheet Number	

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LEGEND					
	Type 3 Barricade		Channelizing Devices		
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)		
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)		
	Sign		Traffic Flow		
	Flag		Flagger		

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45		450'	495'	540'	45'	90'	320'	195'
50	L = WS	500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
\*\* Taper lengths have been rounded off.  
L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
		✓		

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
  - Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

**Texas Department of Transportation**

**Traffic Operations Division Standard**

**TRAFFIC CONTROL PLAN  
LANE CLOSURES FOR  
DIVIDED HIGHWAYS**

**TCP (1-5) - 18**

FILE:	tcp1-5-18.dgn	DW:	CK:	DW:	CK:
© TxDOT	February 2012	CONT	SECT	JOB	HIGHWAY
2-18	REVISIONS	DIST	COUNTY	SHEET NO.	

**COMMERCIAL  
ACCESS PLANS FOR  
ALDEN BRIDGE  
SPORTS PARK  
EXPANSION**

4751 TX-242  
THE WOODLANDS, TX 77384

**half**  
14800 ST. MARYS LN., SUITE 160  
HOUSTON, TEXAS 77079-2943  
TBP FIRM NO. F-312

Revision	No.	Date	Description

06/22/2024

**TYLER P. EATON**  
143886  
LICENSED PROFESSIONAL ENGINEER

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Project No.:	52417.002
Issued:	06/22/2024
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Scale:	AS NOTED
Sheet Title	TRAFFIC CONTROL PLAN
Sheet Number	C7.00



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**EXCAVATION DETAIL**  
MONOLITHIC PIPE  
IN A PAVED OR GRADED AREA

**BACKFILL DETAIL**  
BOX CULVERTS  
IN A GRADED OR PAVED AREA  
INCLUDING DETOURS \*

**EXCAVATION DETAIL**  
BOX CULVERTS  
IN A GRADED AREA

**EXCAVATION & BACKFILL DETAIL**  
REINFORCED CONCRETE PIPE  
IN A GRADED OR PAVED AREA  
INCLUDING DETOURS

**BACKFILL DETAIL**  
AT MANHOLE, INLET OR JUNCTION BOX

REINFORCED CONCRETE PIPE			
EXCAVATION AND BACKFILL QUANTITIES			
PIPE DIA. IN.	T FT.	CULVERT OR SEWER EXCAVATION IN A PAVED OR GRADED AREA	CEMENT STABILIZED BACKFILL IN A PAVED OR GRADED AREA
		C.Y. PER L.F. PER FT. OF DEPTH	C.Y. PER L.F. OF PIPE
18	0.19	0.144	0.383
24	0.23	0.165	0.478
30	0.29	0.188	0.586
36	0.33	0.210	0.692
42	0.38	0.231	0.808
48	0.42	0.327	1.394
54	0.46	0.349	1.560
60	0.50	0.370	1.731
66	0.54	0.392	1.907
72	0.58	0.414	2.088
78	0.62	0.435	2.275
84	0.67	0.457	2.474

MONOLITHIC PIPE		
EXCAVATION QUANTITIES		
PIPE DIA. IN.	T FT.	EXCAVATION
		C.Y. PER L.F. PER FT. OF DEPTH
36	0.417	0.142
42	0.458	0.164
48	0.458	0.182
54	0.500	0.204
60	0.583	0.228
66	0.583	0.247
72	0.625	0.269
78	0.625	0.287
84	0.625	0.306

**NOTE:**  
Cement stabilized backfill may be omitted in private driveways as indicated elsewhere in the plans.  
Rubber gaskets shall be required for all joints on proposed cross drainage, pipe culverts and proposed storm sewer systems, unless otherwise shown in the plans.  
\* Backfill with cement stabilized material will be required for all structures under detours unless noted otherwise in the General Notes.

**EXCAVATION AND BACKFILL DIAGRAMS**  
**E&BD**

FILE: STDE1.DGN    DN: TxDo+    CK: TxDo+    DW: TxDo+    CK: TxDo+  
© TXDOT FEB 2010    DIST: FEB REG    PROJECT NO.    SHEET  
REVISED 11/05    HOUSTON 6  
REVISED 2/2010 Added note to Table 1, Sht 2 of 2.  
REVISED 6/12  
REVISED 9/14

D = Depth  
H = Height  
T = Thickness  
R = Radius  
Dia = Diameter

COMMERCIAL  
ACCESS PLANS FOR  
ALDEN BRIDGE  
SPORTS PARK  
EXPANSION  
4751 TX-242  
THE WOODLANDS, TX 77384

14800 ST. MARYS LN., SUITE 160  
HOUSTON, TEXAS 77059-2943  
TBPELS FIRM NO. F-312

Revision No.	Date	Description

06/22/2024

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Project No.:	52417.002
Issued:	06/22/2024
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Scale:	AS NOTED
Sheet Title	DETAILS
Sheet Number	C8.00





Sheet Number

\*\* PROPOSED LIMIT OF ROADWAY BASE  
AND/OR SUBGRADE

FILE: STDB-8c.dgn	DN:	CK:	DW:	CK:
 TxDOT SEPT. 2004 REVISIONS 11/15 ADDED NOTE FOR PCH 3/17 MODIFIED PAVEMENT SLOPES	DIST	FED REG	PROJECT NO.	SHEET
HOU	6			
	COUNTY	CONTROL	SECT	JOB
				HIGHWAY

STDB8C

**half**

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HOUSTON, TEXAS 77079-2843  
TEL. (713) 588-2450  
TBPELS FIRM NO.F. 312

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Project No.:	52417.002
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Issued:	06/22/2024
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Drawn By: SW

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Scale:	AS NOTED
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Sheet Title
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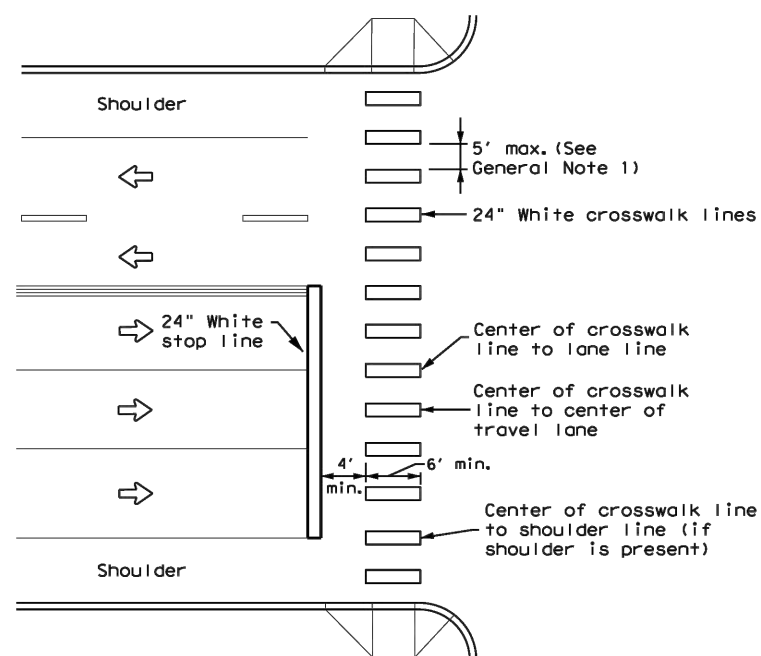
## DETAILS

C8.03

Sheet Number



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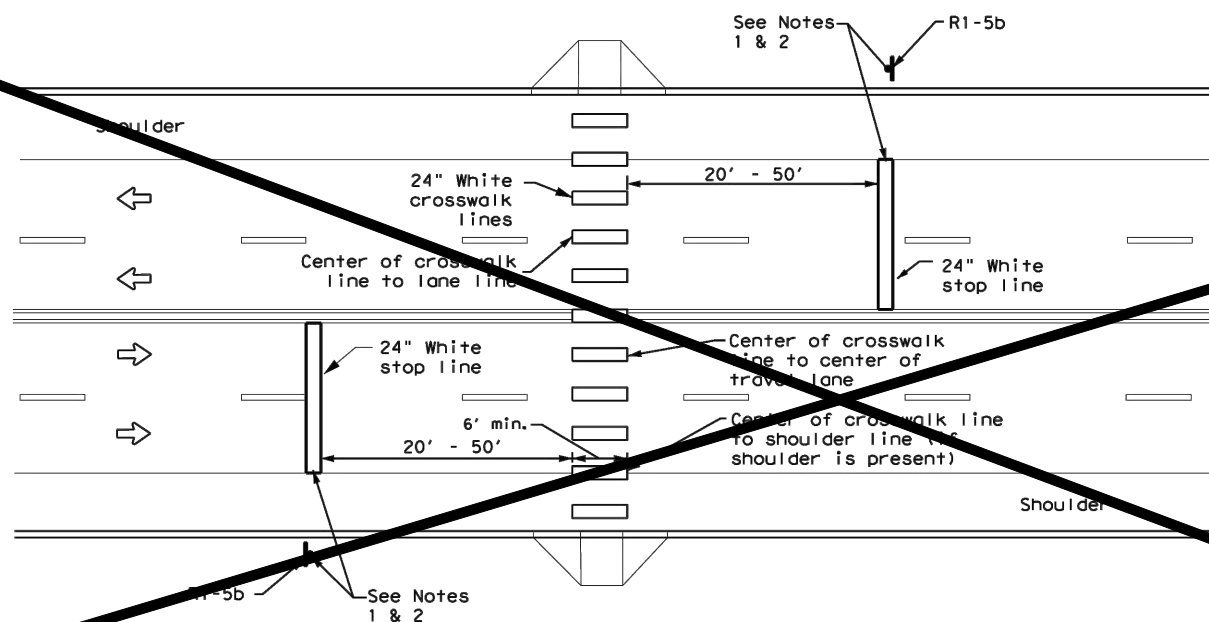
## HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

- ## GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6" clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6' wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

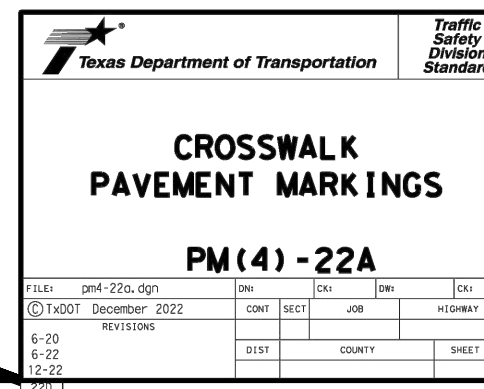
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



### UNSIGNALIZED MIDBLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

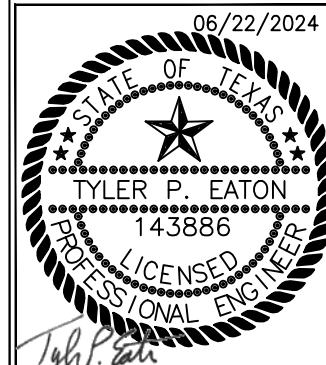
**NOTES:**

1. Use stop bars with Stop Here For Pedestrians (R1-5b) signs at unsignalized midblock cross walks.
2. Use stop bars with STOP HERE ON RED (R10-6 or R10-6a) signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.



14800 ST. MARY'S LN., SUITE 160  
HOUSTON, TEXAS 77075-2943  
TEL. (713) 582-2450  
TBPBLS FIRM NO.F. - 312

**COMMERCIAL  
ACCESS PLANS FOR  
ALDEN BRIDGE  
SPORTS PARK  
EXPANSION**

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Project No.:	52417.002
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Drawn By:	SW
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Scale:	AS NOTED
Sheet Title	

## DETAILS

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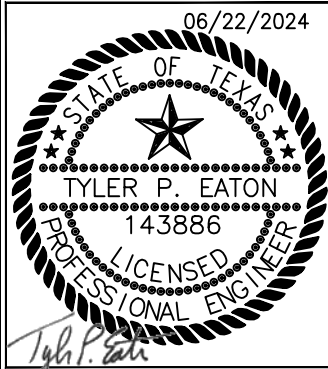
C8.04

Sheet Number



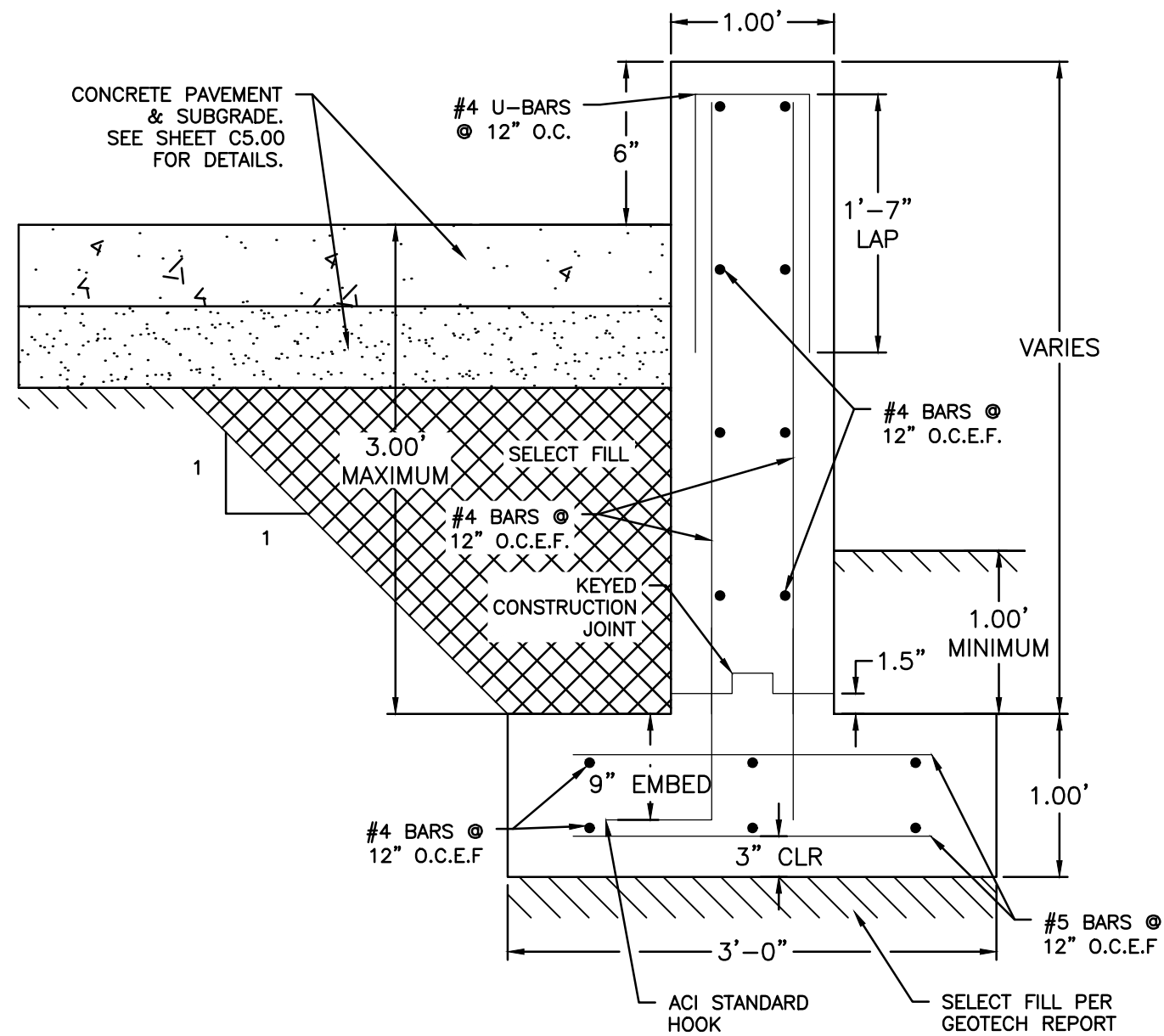




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Project No.:	52417.002
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Drawn By:	SW
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Scale:	AS NOTED
Sheet Title	
DETAILS	
C8.06	
Sheet Number	



SEE SHEET C3.00 & C5.00 FOR LOCATION

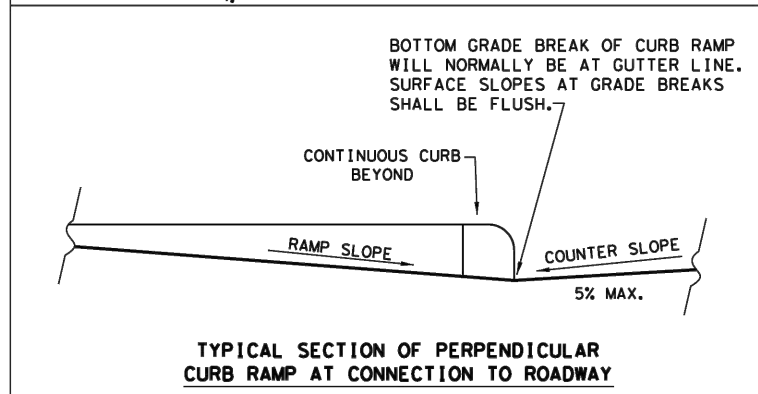
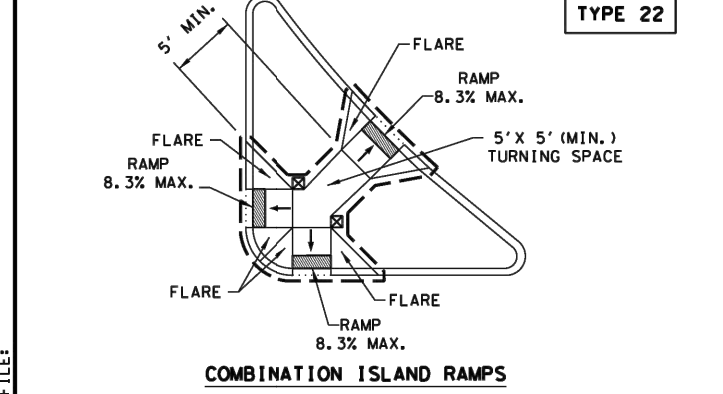
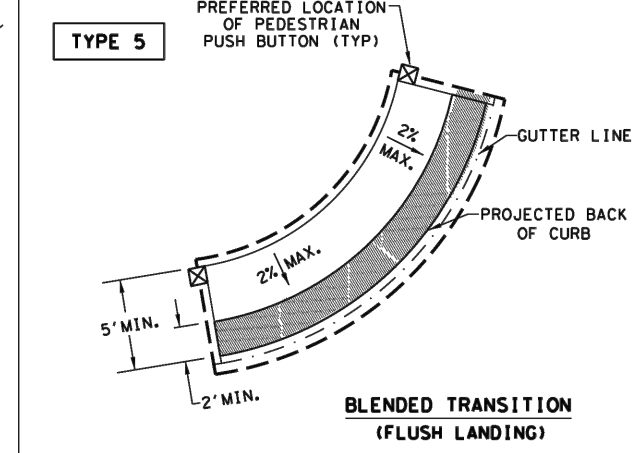
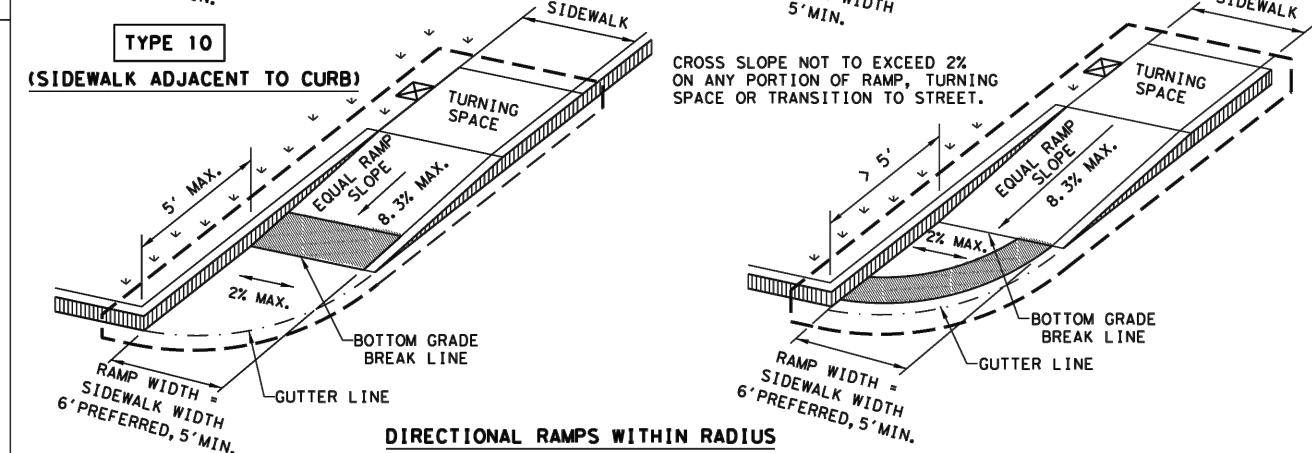
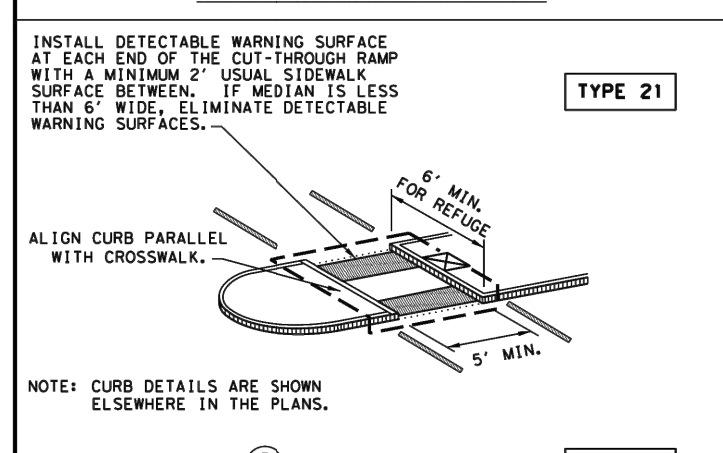
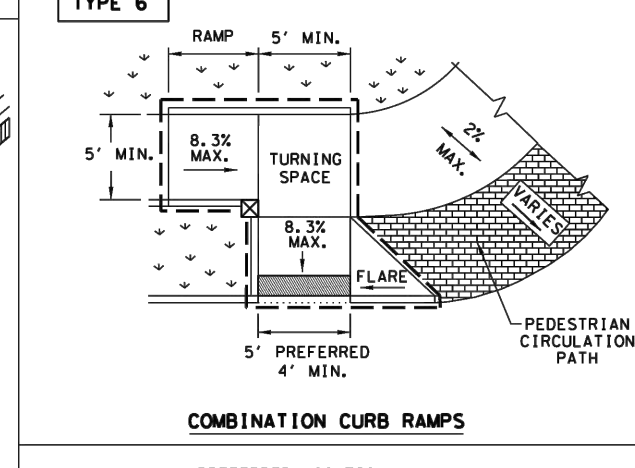
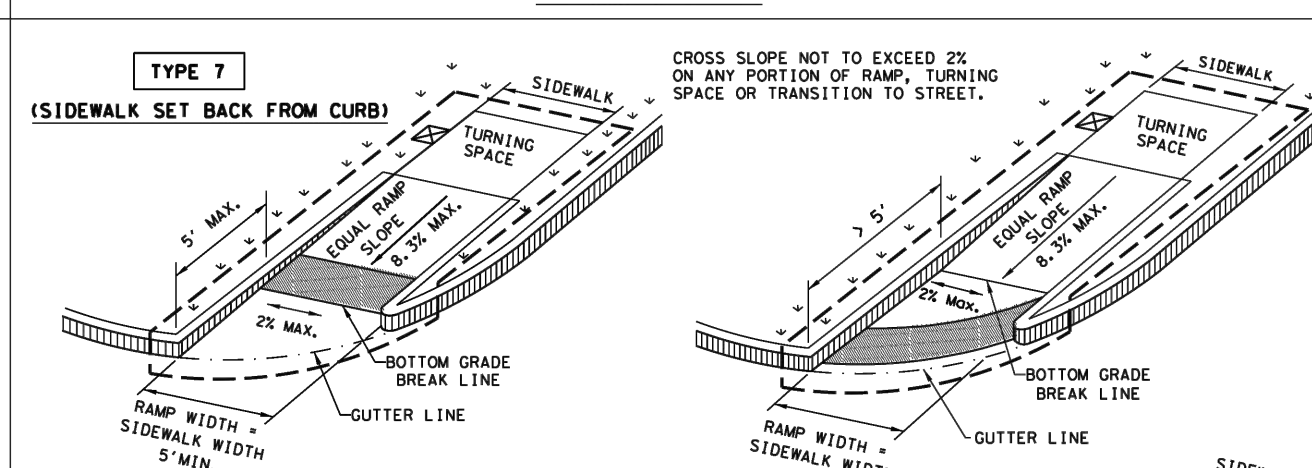
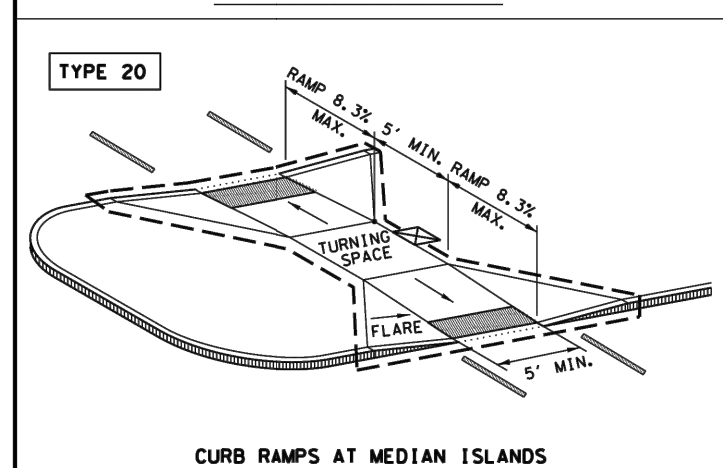
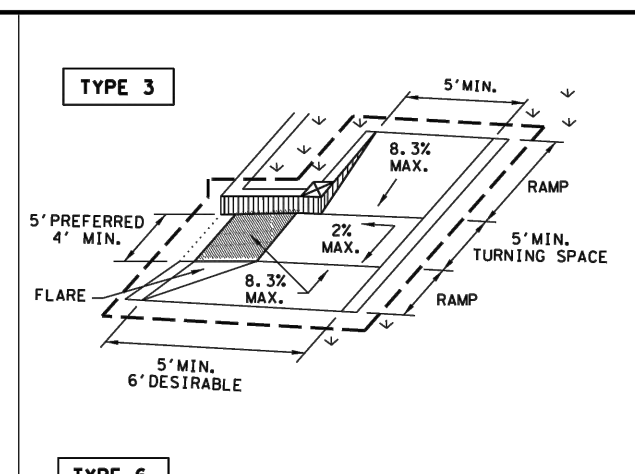
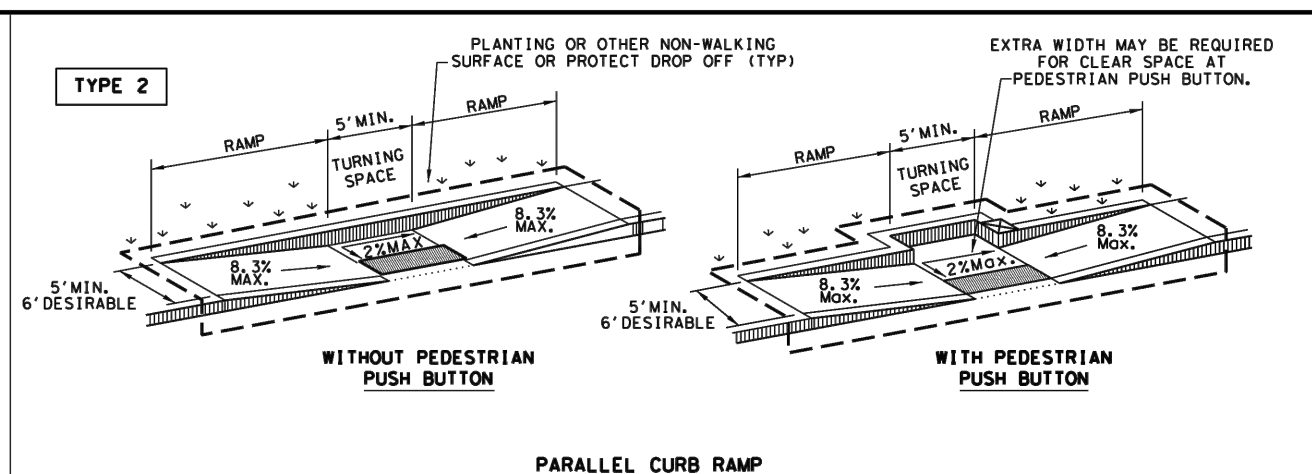
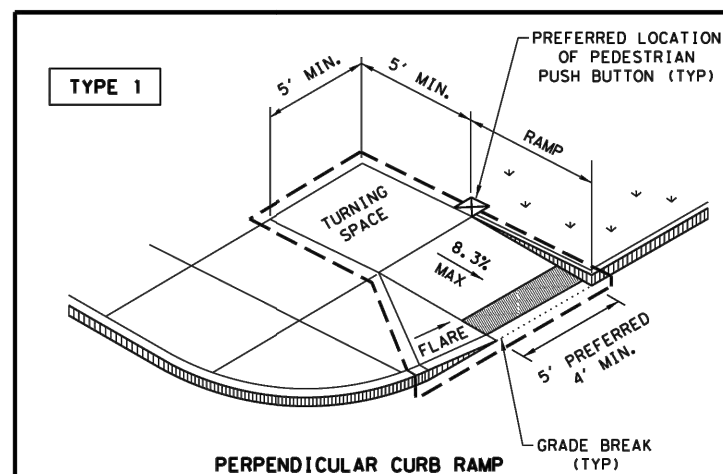
NOTES:




1. PROVIDE TXDOT CLASS C CONCRETE WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH  $F'C=3600$  PSI.
2. SELECT FILL SHALL MATCH THE REQUIREMENTS OF THE GEOTECHNICAL REPORT. THE FOOTING SHALL BEAR ON PROPERLY COMPACTED SUBGRADE.


## RETAINING WALL SECTION







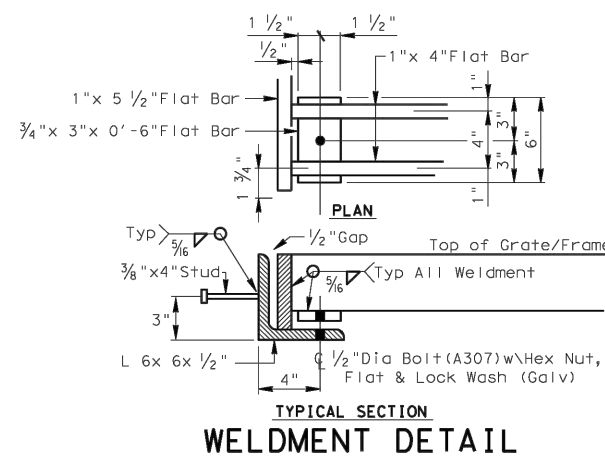
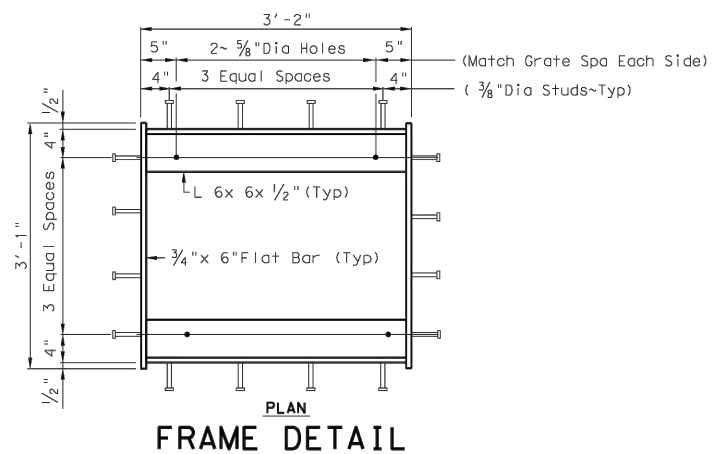
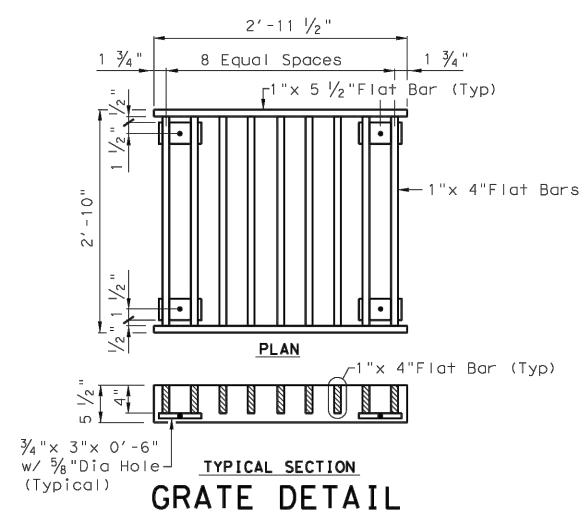
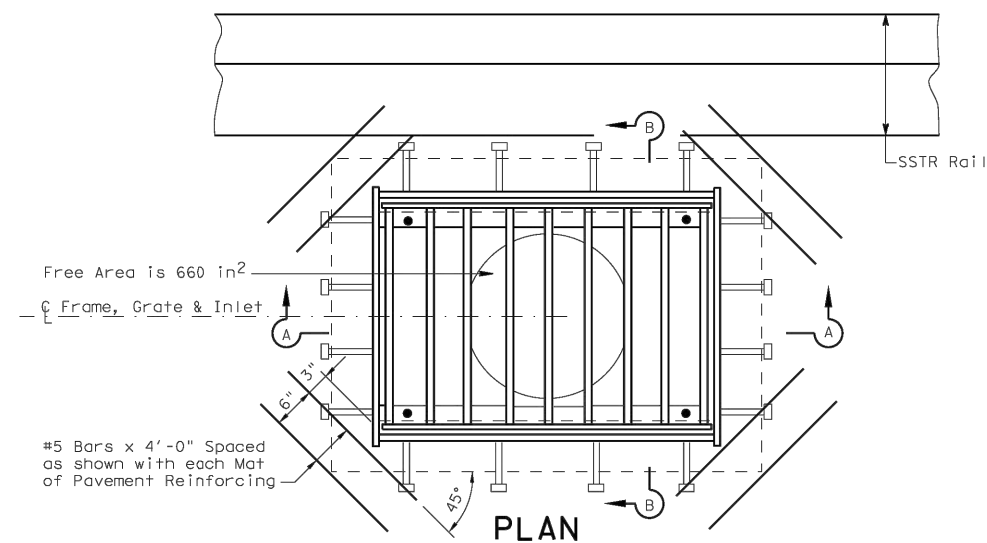
NOTES / LEGEND:		
SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.		
DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.		GUTTER LINE — . —
DETECTABLE WARNING SURFACE		GRADE BREAK .....
DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.		RAMP LIMITS OF PAYMENT — —

 <p><b>Texas Department of Transportation</b></p>	<p><b>SHEET 1 OF 4</b></p> <p><i>Design Division Standard</i></p>															
<h1 style="margin: 0;">PEDESTRIAN FACILITIES</h1> <h2 style="margin: 0;">CURB RAMPS</h2> <h3 style="margin: 0;">PED-18</h3>																
<p>FILE: ped18</p> <p>© TxDOT: MARCH, 2002</p> <p style="text-align: center;">REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">REVISED 08, 2005</td> <td style="width: 15%;">DIN: TXDOT</td> <td style="width: 15%;">DIN: VP</td> <td style="width: 15%;">CK: KM</td> <td style="width: 15%;">CK: PK &amp; J</td> </tr> <tr> <td>REVISED 06, 2012</td> <td>CONT</td> <td>SECT</td> <td>JOB</td> <td>HIGHWAY</td> </tr> <tr> <td>REVISED 01, 2018</td> <td>DIST</td> <td colspan="2">COUNTY</td> <td>SHEET NO.</td> </tr> </table>		REVISED 08, 2005	DIN: TXDOT	DIN: VP	CK: KM	CK: PK & J	REVISED 06, 2012	CONT	SECT	JOB	HIGHWAY	REVISED 01, 2018	DIST	COUNTY		SHEET NO.
REVISED 08, 2005	DIN: TXDOT	DIN: VP	CK: KM	CK: PK & J												
REVISED 06, 2012	CONT	SECT	JOB	HIGHWAY												
REVISED 01, 2018	DIST	COUNTY		SHEET NO.												

[illegible]







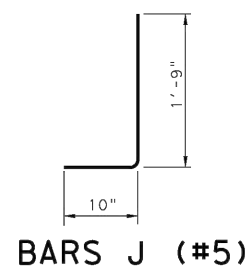
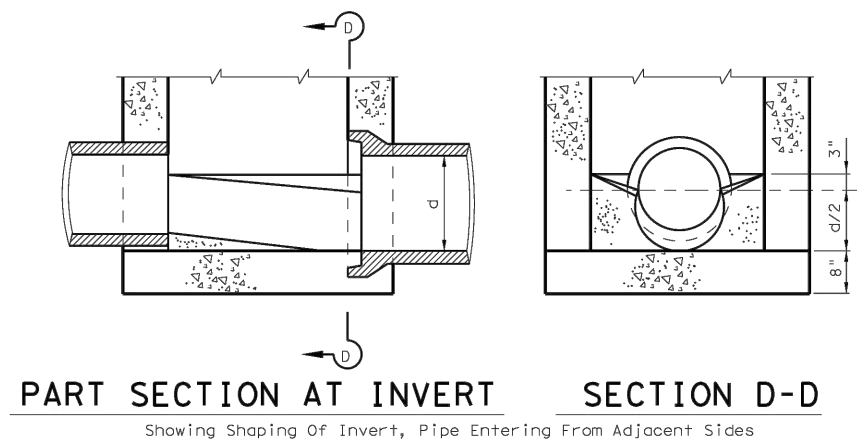
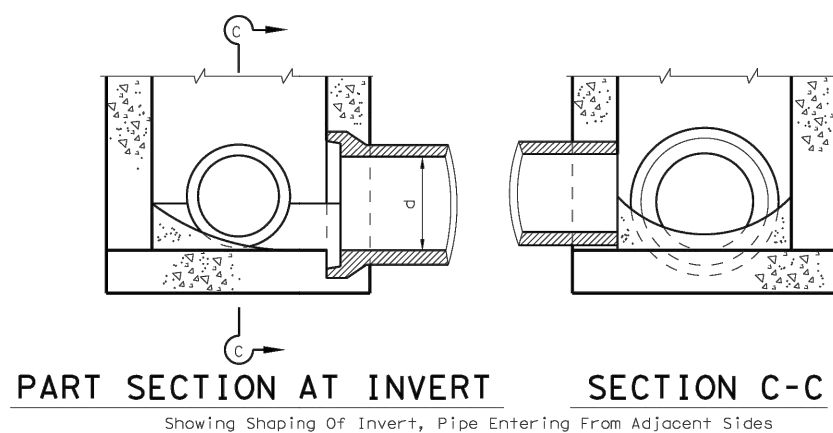
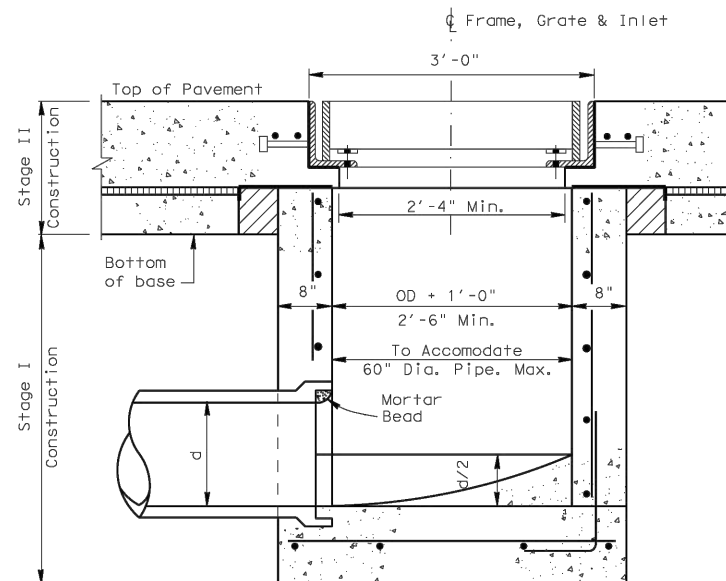
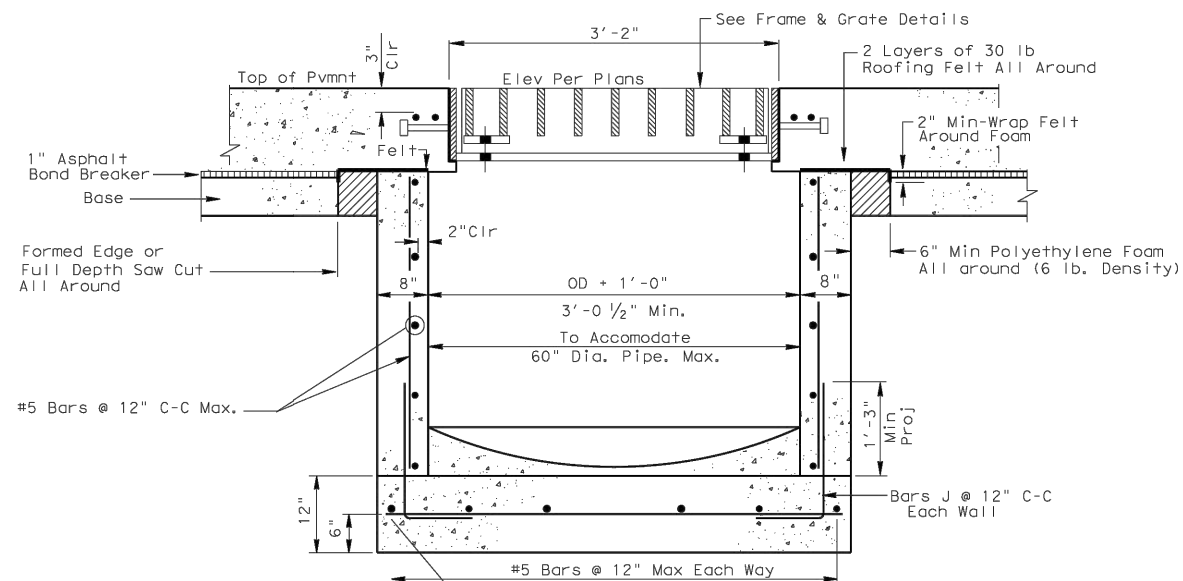
GENERAL NOTES:

All steel is ASTM-A36 and shall be galvanized after fabrication.

Cost Of Furnishing And Installing  
Frames, Grates, Additional Pavement  
Reinforcing, Roofing Felt And Poly-  
ethylene Foam Shall Be Included In  
The Unit Price Bid For The Type Of  
Inlet Selected.

All Concrete Shall Be Class C.

Shop Drawings Will Be Required For  
Precast Construction Of Inlets.



FOR TRAFFIC LOADS



INLET TYPE AZ

HIL-AZ

FILE#	STDD6.DGN	DN#	TxDOT	CK#	TxDOT	DN#	TxDOT	CK#	TxDOT	STD#			
C TxDOT		2014		DIST		FED REG		PROJECT NO.		SHEET			
REVISIONS				HOURS		6							
				COUNTY				CONTROL		SECT		JOB	
												HIGHWAY	

COMMERCIAL  
ACCESS PLANS FOR  
ALDEN BRIDGE  
SPORTS PARK  
EXPANSION

4751 TX-242

THE WOODLANDS, TX 77384

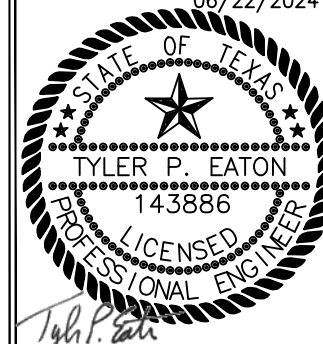
4751 TX-242  
THE WOODLANDS, TX 77384



14800 ST. MARY'S LN., SUITE 160  
HOUSTON, TEXAS 77079-2943  
TEL. (713) 588-2450  
TBP&S FIRM NO. F-312

[illegible]

06/22/2024



The seal appearing on this document was authorized by  
Tyler P. Eaton, PE #143886  
on 6/22/2024.  
Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.  
The record copy of this drawing is on file at the offices of Hoff Associates, Inc.  
14800 St. Mary's Lane Suite 160, Houston, Texas 77079-2943. TBPE FIRM #F-312

Project No.:	52417.002
Issued:	06/22/2024
Drawn By:	SW
Checked By:	TE
Scale:	AS NOTED
Sheet Title	

## DETAILS

C8.10

Sheet Number