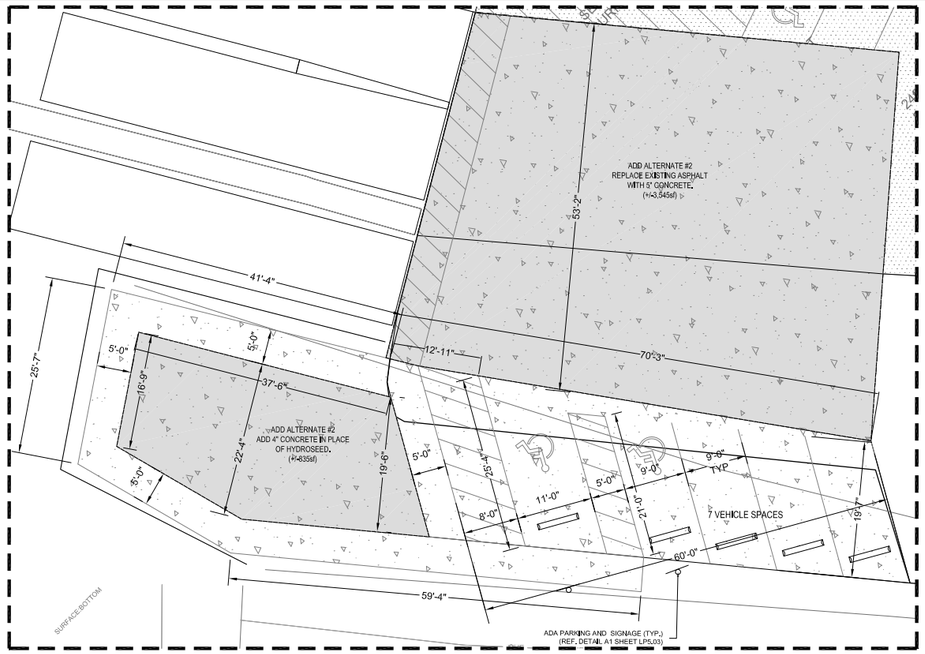
*** LEGEND ***

- ASPHALT HMA OVERLAY PER TXDOT STANDARDS +/- 27,750SF
- CONCRETE PAVING +/- 2,700SF
- ADD ALTERNATE CONCRETE PAVING +/- 6,440SF

ALTERNATES

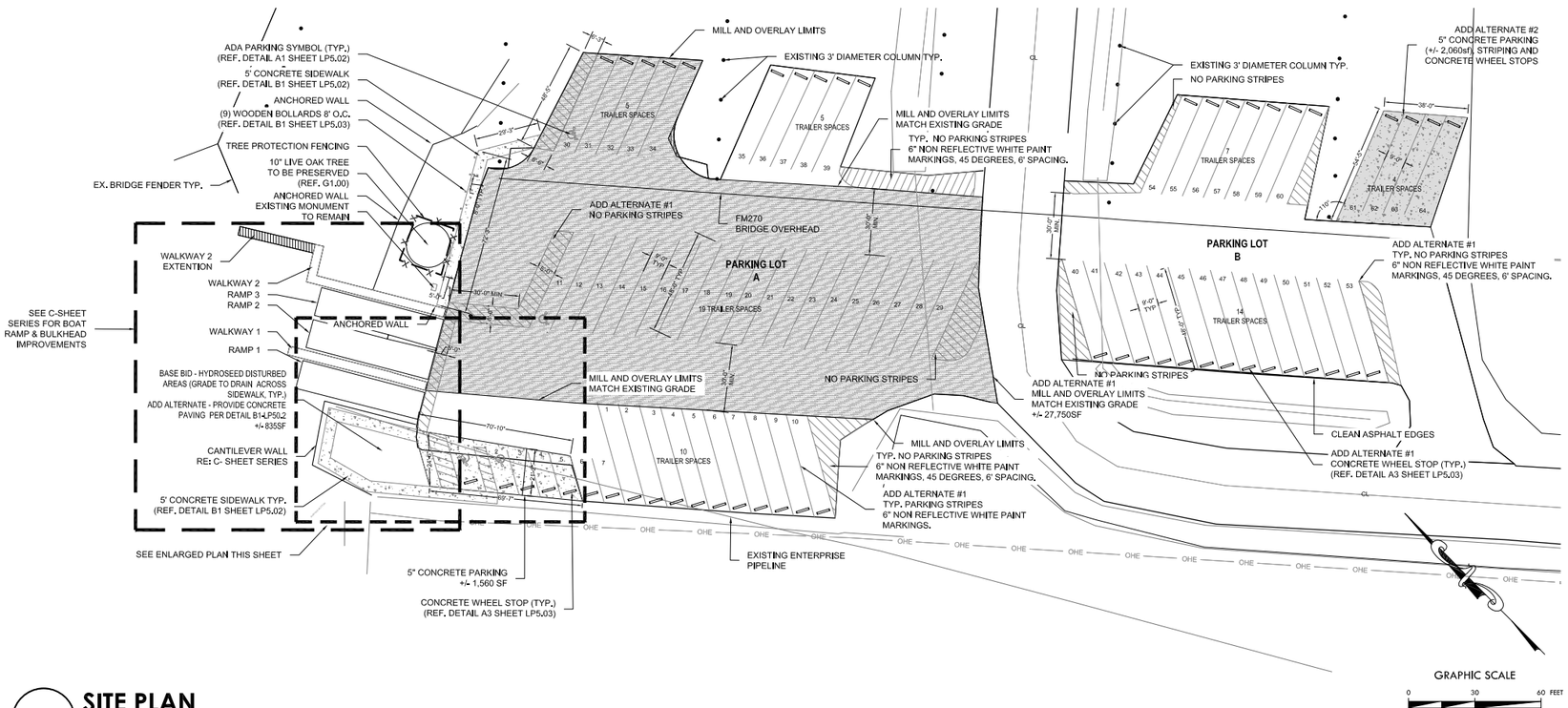
ALTERNATE #1
Parking A - Mill and overlay existing parking (+/- 27,750sf), new stripping and installation of new concrete wheel stops.
Parking B - Remove existing stripping, re-stripe, and install new concrete wheel stops.

ALTERNATE #2
In lieu of hydroseed, install base and concrete paving per detail. (+/- 835sf)Reference B1 sheet LP5.02.
PARKING A
In lieu of asphalt overlay, install base and 5" concrete paving per detail. (+/- 3,545sf) Reference C2 sheet LP5.02
Parking B - Install base and 5" concrete paving. (+/-2,060sf)



C3 **ENLARGED SITE PLAN** (ADD ALT # 2)

SCALE 1"=10'-0"



A1 **SITE PLAN**

SCALE 1"=30'-0"

GRADING & EXCAVATION NOTES:

1. Any existing and / or on-site conditions which vary from those shown on drawings shall be immediately brought to the attention of the owner's representative.
2. The contractor shall be responsible for verifying the actual location and elevation in the field prior to beginning construction of the new amenities. The contractor shall protect all existing utilities encountered during construction.
3. The debris created by removal operations shall become the property of the contractor and shall be legally disposed of away from the job site. Subsoil shall not be reused for topsoil.
4. General contractor shall establish smooth and uniform grades with a maximum slope of 3:1 unless otherwise noted. Tie into existing adjacent grades smoothly and fine grade for positive drainage and to prevent water from standing. Cut swales to direct water away from all structures and property lines, and towards storm sewer inlets or ditches and culverts. Do not drain any water towards lots, easements, or buildings.
5. If there are clumps larger than 1" in diameter after topsoil is spread out over site, contractor to lightly proofroll the topsoil to break up and smooth out finished surface in preparation for hydromulch or solid sod. Final soil surface around the site should be smooth just before sod or hydromulch is installed. Contractor is responsible for filling in "erosion veins", tire tracks, or other disturbances to an otherwise smooth and uniform finished grade surface just prior to grass installation.
6. Contractor is responsible for backfilling behind all curbs, sidewalks, and structures to have positive drainage everywhere on site. Any "birdbaths" or standing puddles to be filled in and fine graded for positive drainage over entire site. Any area around the site that puddles water where it should have positive drainage will not be accepted.
All sides of outfall swales are to be compacted 95% proctor. all earthwork to be performed in maximum 8" lifts, compacting and testing each lift. Geotechnical materials testing by a qualified agency must be performed regularly and often on each lift of backfill with reports outlining results of testing before subsequent earth lifts or pavement is placed or final topsoil is installed. Reports must be submitted to client representative within 48 hours of testing for approval.
7. Once final grades have been achieved contractor is responsible for maintaining smooth finished surface until topsoil, and final sod/hydromulch have been installed. Any erosion from weather on bare, exposed soil is to be fine graded again to fill in erosion veins and excavate sediment piles at contractors' expense.

BURDITT
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SEAL:

REGISTERED LANDSCAPE ARCHITECT
STATE OF TEXAS

12/28/2022

FM 270 PUBLIC BOAT RAMP
2913 MARINER DRIVE
LEAGUE CITY, TEXAS 77573

1 INCH
IF THIS LINE DOES NOT MEASURE ONE INCH THIS DRAWING IS NOT TO SCALE AND SHOULD NOT BE SCALED FOR DIMENSIONAL INFORMATION.

PROJECT NUMBER:
1144.003

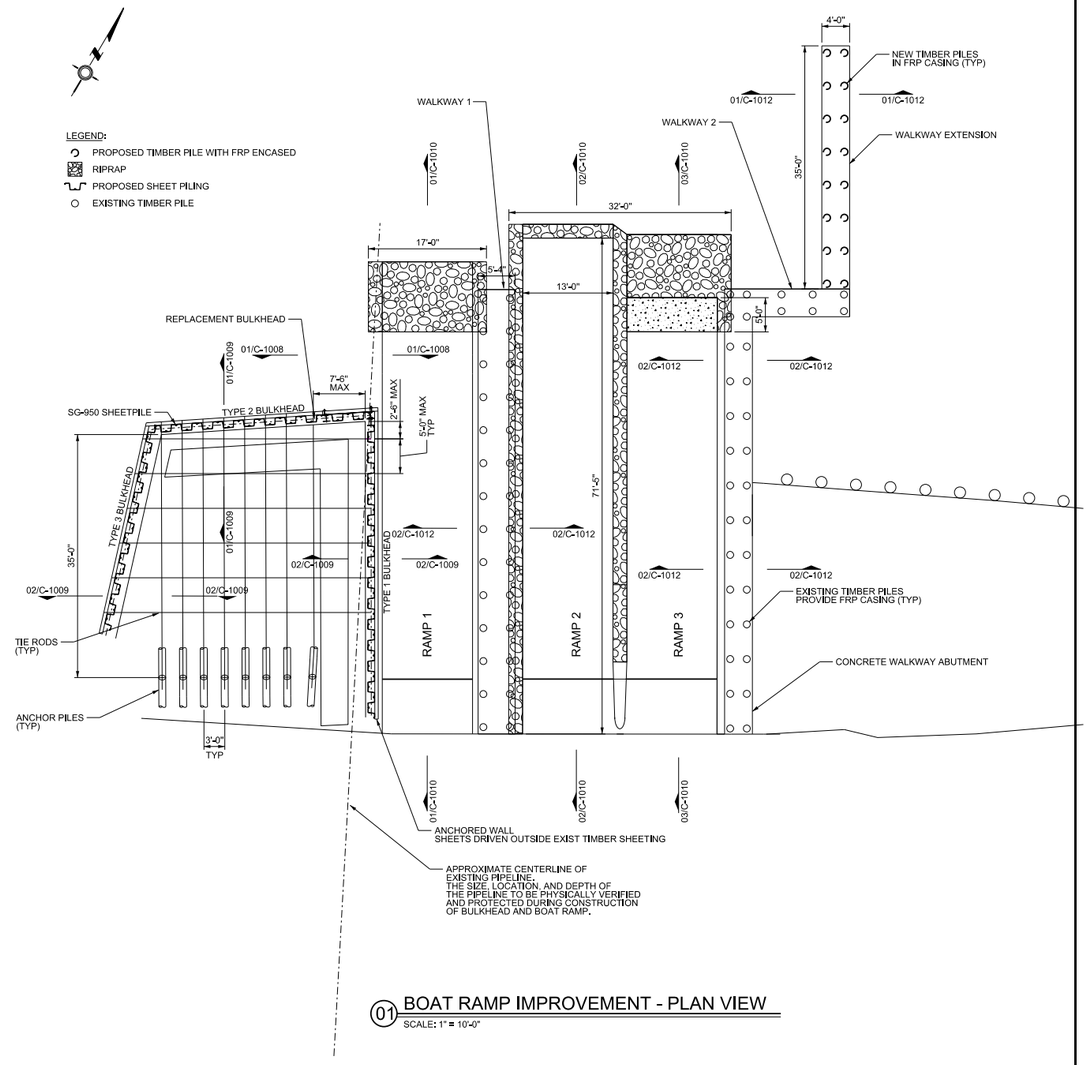
ISSUE DATES:
12.28.2022- ISSUE FOR BID &
PERMITTING

DRAWN BY:
CTW, PDK

CHECKED BY:
CTW

SHEET NO.:
LP1.00

SITE PLAN



01 BOAT RAMP IMPROVEMENT - PLAN VIEW
SCALE: 1" = 10'-0"

WARNING! HIGH PRESSURE PIPELINE

EXCAVATION AND/OR CONSTRUCTION PROHIBITED
WITHOUT PRIOR WRITTEN PERMISSION FROM ENTERPRISE
PRODUCTS OPERATING LLC
CONTACT PRIOR TO CONSTRUCTION

STATE OF TEXAS
BING ZHANG
110956
LICENSED
PROFESSIONAL ENGINEER

FOR STRUCTURAL BOAT RAMP IMPROVEMENT - PLAN VIEW

02/02/2023

BING ZHANG, P.E. •110956

HYDRAULIC ANALYSIS METHODOLOGY

THE EFFECTIVE HEC-RAS MODEL FOR CLEAR CREEK (A100-00-00) WAS OBTAINED FROM THE HARRIS COUNTY FLOOD CONTROL DISTRICTS (HCFCD) MODEL MANAGEMENT SYSTEM (M3). THE A100-00-00 M3 MODEL USES HEC-RAS VERSION 3.0.1 AND HAS AN EFFECTIVE DATE NOVEMBER 2021. A REVISED EFFECTIVE SCENARIO WAS CREATED TO ACCOUNT FOR THE GEOMETRY OF THE EXISTING BOAT RAMP. NO CROSS-SECTIONS WERE LOCATED NEAR THE BOAT RAMP. A CROSS-SECTION WAS INTERPOLATED AT RIVER STATION 37679.5. THIS CROSS-SECTION WAS MODIFIED TO ACCOUNT FOR THE GEOMETRY OF THE EXISTING BOAT RAMP. NEXT, A PROPOSED SCENARIO WAS CREATED TO ACCOUNT FOR THE PROPOSED BOAT RAMP IMPROVEMENTS. CROSS-SECTION 37679.5 FROM THE REVISED EFFECTIVE SCENARIO WAS MODIFIED TO MATCH THE GEOMETRY OF THE PROPOSED BOAT RAMP. THE EFFECTIVE FLOWS REMAIN UNCHANGED IN BOTH SCENARIOS.

HYDRAULIC ANALYSIS RESULTS

TWO MODEL RUN SCENARIOS WERE CREATED: REVISED EFFECTIVE (REVISED EFFECTIVE MULTI-PROFILE 2021) AND THE PROPOSED (PROP EFFECTIVE MULTI-PROFILE 2021). THE WATER SURFACE ELEVATIONS WERE COMPARED BETWEEN THE TWO SCENARIOS AT THE CROSS-SECTION WHERE THE BOAT RAMP IS LOCATED AND SEVERAL CROSS-SECTIONS UPSTREAM AND DOWNSTREAM. THERE WERE NO INCREASES TO THE WATER SURFACE ELEVATIONS BETWEEN THE REVISED EFFECTIVE AND PROPOSED CONDITIONS. THE TABLE BELOW SUMMARIZES THE WATER SURFACE ELEVATIONS AT THOSE CROSS-SECTIONS.

HYDRAULIC ANALYSIS CONCLUSION

THE HYDRAULIC ANALYSIS FOR THE PROPOSED BOAT RAMP IMPROVEMENTS UTILIZED THE LATEST EFFECTIVE HEC-RAS VERSION 3.0.1 MODEL FROM THE HCFCD M3 SYSTEM AND WERE MODIFIED TO ACCOUNT FOR THE EXISTING AND PROPOSED BOAT RAMPS. THE ANALYSIS DETERMINED THAT THERE WILL BE NO INCREASES IN WATER SURFACE ELEVATION ALONG CLEAR CREEK DUE TO THE PROPOSED BOAT RAMP IMPROVEMENTS. IN CONCLUSION, THE PROPOSED BOAT RAMP IMPROVEMENTS RESULT IN NO ADVERSE IMPACTS TO CLEAR CREEK OR ADJACENT PROPERTIES.

NO-RISE CERTIFICATION STATEMENT

I HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS (PE NUMBER 91867, EXPIRES 06/30/2023) AND THAT ALL DOCUMENTS SUBMITTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE.

I HEREBY CERTIFY THAT THERE WILL BE NO INCREASE IN THE BASE FLOOD ELEVATION DURING THE OCCURRENCE OF THE BASE FLOOD EVENT FLOOD FROM THE PROPOSED BOAT RAMP MODIFICATIONS ON CLEAR CREEK IN THE CITY OF LEAGUE CITY, TEXAS.

RIVER STATION	REVISED EFFECTIVE				PROPOSED				DELTA (PROP-REVISED EFFECTIVE)			
	10-YR	50-YR	100-YR	500-YR	10-YR	50-YR	100-YR	500-YR	10-YR	50-YR	100-YR	500-YR
	(ft)											
39765.40	6.44	8.34	9.16	10.75	6.41	8.32	9.13	9.13	-0.03	-0.02	-0.03	-1.62
39372.55	6.42	8.33	9.14	10.73	6.39	8.30	9.11	9.11	-0.03	-0.03	-0.03	-1.62
38390.74	6.39	8.29	9.10	10.69	6.36	8.26	9.08	9.08	-0.03	-0.03	-0.02	-1.61
37679.5*	6.21	8.16	8.99	10.62	6.17	8.11	8.95	8.95	-0.04	-0.05	-0.04	-1.67
37273.21	5.84	7.70	8.52	10.09	5.84	7.70	8.52	8.52	0	0	0	-1.57
37222.00	0	0	0	0	0	0	0	0	0	0	0	0
37212.22	5.79	7.60	8.41	9.96	5.79	7.60	8.41	8.41	0	0	0	-1.55
36556.81	5.75	7.57	8.39	9.96	5.75	7.57	8.39	8.39	0	0	0	-1.57
35779.77	5.54	7.32	8.13	9.66	5.54	7.32	8.13	8.13	0	0	0	-1.53

* BOAT RAMP INTERPOLATED XS

STATE OF TEXAS
JESSICA L. KOUTNY
91867
LICENSED
PROFESSIONAL ENGINEER

02/02/2023

JESSICA L. KOUTNY, P.E. •91867

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Marine
3600 W Sam Houston Pkwy S, Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

ISSUE	DATE	BY	DESCRIPTION	CHK'D	APP'D
1	12/28/22	RCW	ISSUE FOR BIDDING & PERMITTING	RCW	BZ
0	11/2/22	RCW	ISSUE FOR BID	RCW	BZ

LEAGUE CITY BOAT RAMP & BULKHEAD

IMPROVEMENT GENERAL LAYOUT

DRAWN BY	DATE	SCALE	CHK'D / APP'D
JRM	10/9/19	1"=10'	RCW / BZ

DRAWING NO. B-1036-1002-C-1007

ISSUE NO. 1