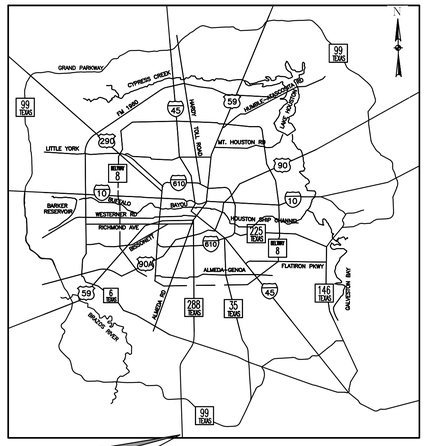
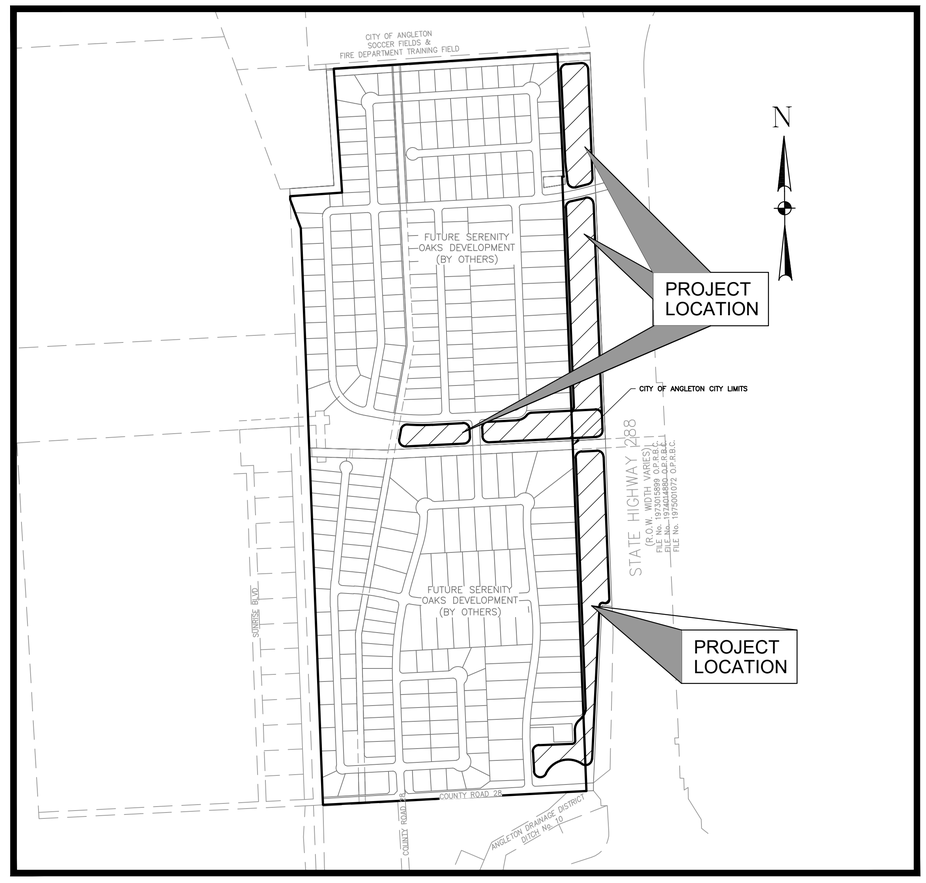
CONSTRUCTION PLANS FOR
DETENTION & DRAINAGE FACILITIES TO SERVE
SERENITY OAKS DETENTION
BRAZORIA COUNTY
ANGLETON, TX



LOCATION MAP

PROJECT LOCATION



VICINITY MAP
SCALE: 1" = 600'

INDEX OF DRAWINGS

SHEET No.	DESCRIPTION
01.	COVER SHEET
02.	CONSTRUCTION NOTES
	INDEX SHEETS
03.	EXISTING CONDITIONS
04.	SERVICE AREA MAP
05.	OVERALL FILL MAP
	PLAN VIEW & CROSS SECTIONS
06.	DETENTION BASIN #1 PLAN VIEW & CROSS SECTION
07.	DETENTION BASIN #2 PLAN VIEW & CROSS SECTIONS SHEET 1 OF 2
08.	DETENTION BASIN #2 PLAN VIEW & CROSS SECTIONS SHEET 2 OF 2
09.	DETENTION BASIN #3 PLAN VIEW SHEET 1 OF 2
10.	DETENTION BASIN #3 PLAN VIEW SHEET 2 OF 2
11.	DETENTION BASIN #3 CROSS SECTIONS
12.	DETENTION BASIN #4 PLAN VIEW & CROSS SECTION
	PLAN & PROFILES
13.	BASIN #1 TO BASIN #2 & BASIN #3 TO BASIN #2 CONNECTIONS
14.	BASIN #2 TO BASIN #4 CONNECTION
15.	BASIN #1 INTAKE & BASIN #3 OUTFALL
	DETAIL SHEETS
16.	STORM SEWER DETAILS SHEET 1 OF 2
17.	STORM SEWER DETAILS SHEET 2 OF 2
18.	INTERCEPTOR STRUCTURE AND CONCRETE CHANNEL LINING DETAILS
	STORM WATER POLLUTION PREVENTION PLAN
19.	STORM WATER POLLUTION PREVENTION PLAN
20.	STORM WATER POLLUTION PREVENTION PLAN DETAILS SHEET 1 OF 2
21.	STORM WATER POLLUTION PREVENTION PLAN DETAILS SHEET 2 OF 2

THE ABOVE HAVE SIGNED THESE PLANS AND/OR PLAT BASED ONT HE RECOMMENDATION OF THE DISTRICT'S ENGINEER WHO HAS REVIEWED ALL SHEETS PROVIDED AND FOUND THEM TO BE IN GENERAL COMPLIANCE WITH THE DISTRICTS'S "RULES, REGULATIONS, AND GUIDELINES." THIS APPROVAL IS ONLY VALID FOR THREE HUNDRED SIXTY–FIVE (365) CALENDAR DAYS. AFTER THAT TIME RE–APPROVAL IS REQUIRED. PLEASE NOTE, THIS DOES NOT NECESSARILY MEAN THAT ALL THE CALCULATIONS PROVIDED IN THESE PLANS AND/OR PLATS HAVE BEEN COMPLETELY CHECKED AND VERIFIED. PLANS SUBMITTED HAVE BEEN PREPARED, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE ENGINEERING IN THE STATE OF TEXAS AND PLAT HAS BEEN SIGNED AND SEALED BY A REGISTERED PROFESSIONAL LAND SURVEYOR LICENSED TO PRACTICE IN THE STATE OF TEXAS, WHICH CONVEYS THE ENGINEER'S AND/OR SURVEYOR'S RESPONSIBILITY AND ACCOUNTABILITY.

ONE-CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG!!!
811
713-223-4567 (IN HOUSTON)
1-800-545-6005
(STATEWIDE NUMBER OUTSIDE HOUSTON)

FIRM
Flood Insurance Rate Map
Panels: (440) of (925)
Map #'s: 48039C0440K
Map Reserved DECEMBER 30, 2020
BFE Elevation: D.N.E. (SITE LIES SHADED AND UNSHADED ZONE "X"

I, TYLER D. BROOM P.E., HEREBY ACKNOWLEDGE THAT I HAVE REVIEWED THE NEW FLOOD HAZARD RECOVERY DATA AND USED THE MOST RESTRICTIVE INFORMATION FOR THE DESIGN OF THIS PROJECT.

NOTE:

DRAINAGE OF ADJACENT SITE(S) WILL NOT BE ADVERSELY AFFECTED BY THE PROPOSED DEVELOPMENT DURING A 100 YR EVENT.

DEWATERING DUE TO RAINFALL OR ANY OTHER CIRCUMSTANCE OTHER THAN ENCOUNTERING GROUND WATER IS INCIDENTAL TO THE JOB AND COST WILL BE CONTRACTOR'S RESPONSIBILITY

CONTACT INFO:
BRAZORIA COUNTY MUD No. 76
TYLER BROOM, P.E.
GANNETT FLEMING TRANSYSTEMS
3100 W ALABAMA
HOUSTON, TX 77098
PH: 713–520–9570

GANNETT FLEMING

TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION # 1800
3100 WEST ALABAMA HOUSTON, TEXAS 77098 (713) 520-9570
ENGINEER OF RECORD: TYLER D. BROOM T.P.B.E. REGISTRATION #119125
(713) 527-6476 tbroom@gfnet.com

February 5, 2025

SEAL
STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED
PROFESSIONAL ENGINEER
2/5/2025

SHEET No. 01 OF 21

SERENITY OAKS DETENTION– DRAINAGE FACILITIES AND DETENTION (5479-02)

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\01 COVER.DWG

GENERAL CONSTRUCTION NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE BEGINNING CONSTRUCTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SECURITY TO PROTECT HIS OWN PROPERTY, EQUIPMENT AND WORK IN PROGRESS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING OF STREETS CAUSED BY ASSOCIATED CONSTRUCTION AT CLOSE OF EACH WORK DAY.
4. PAVED SURFACES SHALL BE PROTECTED FROM DAMAGE BY TRACKED EQUIPMENT.
5. IRON RODS DISTURBED DURING CONSTRUCTION ARE TO BE REPLACED BY A REGISTERED PUBLIC LAND SURVEYOR FOR THE ORIGINAL PROPERTY OWNER AT NO SEPARATE PAY.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AN UPDATED REDLINED "RECORD" SET OF CONSTRUCTION DRAWINGS ON SITE FOR INSPECTION BY THE ENGINEER.
7. CONTRACTOR MUST PROVIDE FENCING AROUND OPEN EXCAVATION AREAS DURING NON-WORKING HOURS.
8. REFER TO THE SWPPP GENERAL NOTES FOR PROPER MEASURES AND CONTROLS.
9. CONTRACTOR SHALL OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY THE STANDARDS OF THE GOVERNMENTAL AGENCY HAVING JURISDICTION.
10. EXISTING PAVEMENTS, CURBS, SIDEWALKS AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO ORIGINAL OR BETTER CONDITION IN ACCORDANCE WITH BRAZORIA COUNTY CRITERIA.
11. WHENEVER UNSUITABLE MATERIAL IS ENCOUNTERED AND CANNOT BE HANDLED BY THE EXCAVATION OR EMBANKMENT REQUIREMENTS, THEN THE UNSUITABLE MATERIAL SHALL BE EXCAVATED TO A DEPTH DEEMED SUFFICIENT BY THE ENGINEER AND THE EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF THE JOB SITE. THE EXCAVATED AREA SHALL BE FILLED WITH SELECT FILL PER BRAZORIA COUNTY CRITERIA.
12. SURPLUS EXCAVATED EARTHEN MATERIAL BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED AND DISPOSED OF OFF-SITE. INCLUDE COST OF REMOVAL AND DISPOSAL IN OTHER ITEMS OF WHICH THIS WORK IS A COMPONENT PART, NO SEPARATE PAY. THE MATERIAL MUST BE DISPOSED OF IN A SAFE AND LEGAL MANNER.
13. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. ANY DRAINAGE DITCH OR STRUCTURE DISTRIBUTED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY. DAMAGE TO EXISTING PAVEMENT DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE ENGINEER OR OWNING AUTHORITY.
14. WHERE MANHOLES ARE LOCATED WITHIN PAVED AREAS, CONTRACTOR SHALL SET RIM ELEVATIONS TO MATCH FINISHED GRADE ELEVATIONS. OUTSIDE OF PAVED AREAS, SET MANHOLE RIMS 3 INCHES (MINIMUM) TO 6 INCHES (MAXIMUM) ABOVE FINISHED GRADE. ADD SLOPE FILL AROUND MANHOLES, SLOPED AWAY AND DOWN FROM MANHOLE RING.
15. THE PROPOSED DEVELOPMENT HAS BEEN DESIGNED NOT TO IMPEDE, IMPOUND, OR BLOCK THE NATURAL FLOW OF WATER ACROSS ADJACENT AND CONTIGUOUS PROPERTIES.
16. CONTRACTOR SHALL NOTIFY THE BRAZORIA COUNTY ENGINEERING DEPARTMENT AT LEAST 24 HOURS PRIOR TO THE START OF ANY CONSTRUCTION (979-864-1265) AND AT ENGINEER-CONSTRUCTION@BRAZORIA-COUNTY.COM.
17. ALL AREAS ON ADJACENT FUTURE SECTION WHERE EXCESS DIRT IS TO BE PLACED SHALL FIRST BE STRIPPED OF VEGETATION AND DISPOSED OF AT NO SEPARATE PAY.
18. ALL SUBCONTRACTORS WILL BE EDUCATED TO FOLLOW STORMWATER POLLUTION PREVENTION REQUIREMENTS.
19. STRUCTURAL BMPS WILL BE INSPECTED AND MAINTAINED AT LEAST EVERY 14 DAYS AND AFTER ANY PRECIPITATION OR RUNOFF EVENT THAT CAUSES SURFACE EROSION, SEDIMENT TRANSPORT OR VEHICULAR TRACKING.
20. REGULAR SCRAPING AND SWEEPING OF STREETS, SIDEWALKS AND FLOWLINES MUST BE CONDUCTED.
21. EARTH MATERIALS AND LANDSCAPE MATERIALS SUCH AS SOD, ROCK AND MULCH SHALL NOT BE STOCKPILED, PLACED OR STORED ON DRIVEWAYS, STREETS, SIDEWALKS OR IN STORMWATER FLOWLINES.
22. CONSTRUCTION SUPPLIES (E.G. TRUSSES AND LUMBER), ROLL OFF CONTAINERS, DUMPSTERS, PORTABLE TOILETS, TRAILERS, ETC. SHALL NOT BE STORED ON STREETS OR SIDEWALKS OR OTHER IMPERVIOUS SURFACES. THESE ITEMS SHALL BE STORED ON THE CONSTRUCTION SITE OR STAGING AREA.
23. ALL SLEEVES TO BE FOUR (4) INCH SCHEDULE 40 PVC AND SLEEVES TO BE EIGHTEEN (18) INCHES BELOW THE BOTTOM OF THE PAVEMENT BASE MATERIAL. STUB OUT THREE (3) FEET BEYOND CURB AND MARK SLEEVE LOCATIONS ON CURB.
24. STORM DRAINAGE SYSTEMS SHALL BE DESIGNED AND CONSTRUCTION IN ACCORDANCE BRAZORIA COUNTY ENGINEERING STANDARDS.
25. REINFORCED CONCRETE (C76 CLASS III) STORM SEWERS SHALL BE INSTALLED, BEDDED AND BACKFILLED IN ACCORDANCE WITH BRAZORIA COUNTY ENGINEERING DEPARTMENT STANDARD CONSTRUCTION DETAILS. CLASS IV OR V REINFORCED CONCRETE PIPE IS REQUIRED UNDER ROADWAYS.
26. THE CONTRACTOR(S) SHALL NOTIFY BRAZORIA COUNTY – ENGINEERING DIVISION – PERMIT OFFICE TWENTY-FOUR (24) HOURS IN ADVANCE OF COMMENCING UTILITY AND/OR PAVING CONSTRUCTION AT (979) (864-1265) AND AT ENGINEER-CONSTRUCTION@BRAZORIA-COUNTY.COM AND WRITTEN NOTIFICATION SEVEN (7) HOURS IN ADVANCE OF COMMENCING CONSTRUCTION AT 451 N VELASCO, SUITE 230, ANGLETON, TX 77515.
27. GUIDELINES SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE OBSERVED.
28. CONTRACTOR TO OBTAIN ALL PERMITS, INCLUDING GRADE & FILL THROUGH THE FLOODPLAIN/BUILDING DEPT., REQUIRED BY BRAZORIA COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION.
29. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY BRAZORIA COUNTY, AT ENGINEER – PERMITS @ BRAZORIA-COUNTY.COM PRIOR TO STARTING CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN BRAZORIA COUNTY ROAD RIGHTS-OF-WAY.CONTACT BRAZORIA COUNTY PERMIT OFFICE (979) (864-1265).
30. AUTHORIZATION NOTICE ISSUED BY BRAZORIA COUNTY – ENGINEERING DIVISION – PERMIT OFFICE – REQUIRED PRIOR TO CONSTRUCTION OF UTILITIES OR LEFT TURN LANES WITH IN BRAZORIA COUNTY RIGHTS-OF-WAY,"
31. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND FIELD VERIFYING ALL UTILITIES. VILLAGE OF BONNEY AND BRAZORIA COUNTY ARE NOT PART OF 811.
32. CONTRACTOR RESPONSIBLE FOR REPAIRS TO ANY DAMAGE DONE TO ANY CITY/ COUNTY ASSETS OR UTILITIES DURING CONSTRUCTION.
33. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST BRAZORIA COUNTY SUBDIVISION REGULATIONS.
34. BRAZORIA COUNTY DOES NOT ALLOW OPEN CUT CONSTRICTION ON COUNTY MAINTAINED ROADS.
35. NO INSPECTABLE WORK CAN BE CONDUCTED ON WEEKENDS AND BRAZORIA COUNTY HOLIDAYS.
36. ALL VALVES TO OPEN RIGHT.

STORM SEWER CONSTRUCTION NOTES:

1. ALL STORM SEWERS SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS III) WITH RUBBER GASKET JOINTS (ASTM C-443), AND SHALL BE INSTALLED, BEDDED AND BACKFILLED IN ACCORDANCE WITH BRAZORIA COUNTY STANDARD CONSTRUCTION DETAILS. CLASS IV OR V REINFORCED CONCRETE PIPE IS REQUIRED UNDER ROADWAYS.
2. ALL STORM SEWER MANHOLES SHALL BE TYPE "C" AND CONSTRUCTED IN ACCORDANCE WITH BRAZORIA COUNTY STANDARD CONSTRUCTION DETAILS, UNLESS OTHERWISE NOTED.
3. ALL STORM SEWER INLETS SHALL BE STANDARD "C" INLETS AND CONSTRUCTED IN ACCORDANCE WITH BRAZORIA COUNTY STANDARD CONSTRUCTION DETAILS, UNLESS OTHERWISE NOTED.
4. ALL PROPOSED PIPE STUB OUTS FROM MANHOLES AND INLETS ARE TO BE PLUGGED WITH EIGHT INCH (8") BRICK WALL UNLESS OTHERWISE NOTED.
5. ALL STORM SEWERS UNDER OR WITHIN ONE FOOT (1') OF PROPOSED OR FUTURE PAVEMENT SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND (2 SACK CEMENT/TON) TO WITHIN ONE FOOT (1') OF SUBGRADE. NOT SEPARATE PAY. (LAB DENSITY TEST REPORTS ARE REQUIRED PRIOR TO PLACEMENT OF PAVEMENT.)
6. ALTERNATIVE TO CEMENT STABILIZED SAND BACKFILL FOR PIPES 54-INCH AND LARGER, FROM ONE FOOT (1') ABOVE THE TOP OF BACKFILL WITH SUITABLE MATERIAL, PROVIDED THE BACKFILL COMPACTED TO 95% STANDARD PROCTOR DENSITY PER ASTM D-698. TESTS SHALL BE TAKEN AT 100-FOOT INTERVALS ON EACH LIFT. BEDDING AND BACKFILL TO 1-FOOT ABOVE THE TOP OF PIPE SHALL BE CEMENT STABILIZED SAND. (LAB DENSITY TEST REPORTS ARE REQUIRED PRIOR TO PLACEMENT OF PAVEMENT.)
7. ALL CONSTRUCTION STORM RUNOFF SHALL COMPLY WITH BRAZORIA COUNTY DRAINAGE CRITERIA MANUAL; ALL IN SYSTEM (TPDES) REQUIREMENTS.
8. UTILITIES CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING STAGE II INLETS AFTER COMPLETION OF PAVING. (NO SEPARATE PAY)

CAUTION: UNDERGROUND GAS FACILITIES

LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY, INTRASTATE PIPELINE, LLC. WHERE APPLICABLE) ARE SHOWN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567 OR 1-800-669-8344 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

- WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 967-8037 (7:00 AM TO 4:30 PM) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
- WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THE UNDERGROUND FACILITIES.

THE CONTRACTOR SHALL CONTACT BRAZORIA COUNTY ENGINEERING DEPARTMENT AT (979) 864-1265 AND AT ENGINEER-PERMITS@BRAZORIA-COUNTY.COM A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION.

CENTERPOINT ENERGY NOTES:

WARNING: OVERHEAD ELECTRICAL FACILITIES

WARNING: OVERHEAD LINES MAY EXIST ON THE PROPERTY. WE HAVE NOT ATTEMPTED TO MARK THOSE LINES SINCE THEY ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAWS, SECTION 752, HEALTH & SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713)207-2222.

TRAFFIC NOTES

1. CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TEXAS MUTCD, MOST RECENT EDITION WITH REVISIONS) DURING CONSTRUCTION.
2. CONTRACTOR SHALL OBTAIN LANE CLOSURE PERMITS WHEN LANE CLOSURES ARE REQUIRED. REQUESTS MUST BE MADE AT LEAST ONE MONTH PRIOR TO THE DATE FOR WHICH CLOSURE IS SOUGHT. CALL THE BRAZORIA COUNTY ENGINEER'S OFFICE AT (979) (864-1265) AND AT ENGINEER-PERMITS@BRAZORIA-COUNTY.COM FOR AN APPLICATION.
3. CONTRACTOR SHALL COVER EXCAVATIONS WITH ADEQUATELY ANCHORED STEEL PLATES DURING NON-WORKING HOURS AND OPEN LANES FOR TRAFFIC FLOW.
4. IF CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF "TRAFFIC CONTROL PLANS" DURING CONSTRUCTION THAN WHAT IS OUTLINED IN THE TRAFFIC CONTROL PLAN OR IF (S)HE SHALL BE RESPONSIBLE TO SUBMIT AN ALTERNATE SET OF TRAFFIC CONTROL PLANS ON REPRODUCIBLE MYLARS SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED BY THE STATE OF TEXAS, WITH THE APPROVED SET OF DRAWINGS TO THE COUNTY ENGINEER FOR APPROVAL 10 WORKING DAYS PRIOR TO IMPLEMENTATION
5. APPROVED COPIES OF "TRAFFIC CONTROL PLANS" AND LANE/SIDEWALK CLOSURE PERMITS SHALL BE AVAILABLE FOR INSPECTION AT JOB SITE AT ALL TIMES.
6. LANE CLOSURES MUST BE APPROVED THROUGH COMMISSIONERS COURT.

SWPPP CONSTRUCTION NOTES:

1. CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND REINFORCED FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION PREVENTION (SWPP) PLANS TO KEEP SILT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.
2. DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATION MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALLS ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEPT BACK INTO THE EXCAVATED AREA.
3. CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT OR ROCK TRACKED FROM THE EXCAVATED AREA.
4. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
5. CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER.
   * DISTURBED AREAS OF CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
   * AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
   * STRUCTURAL CONTROL MEASURES.
   * LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.
6. CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION ON BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.

BENCHMARK:

ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4202), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (2001 ADJUSTMENT). ALL DISTANCE ARE ACTUAL DISTANCES. SCALE FACTOR = 0.999866625.

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED
PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING | TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA, HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

CONSTRUCTION NOTES

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 02 OF 21
DRAWN BY: DH	SCALE: HORZ: NO SCALE VERT:	JOB No. 5479-02
APPROVED: TDB		

PLOTTED: Feb 05,2025 - 4:15pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\02 CONSTRUCTION NOTES.dwg XREFS:

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0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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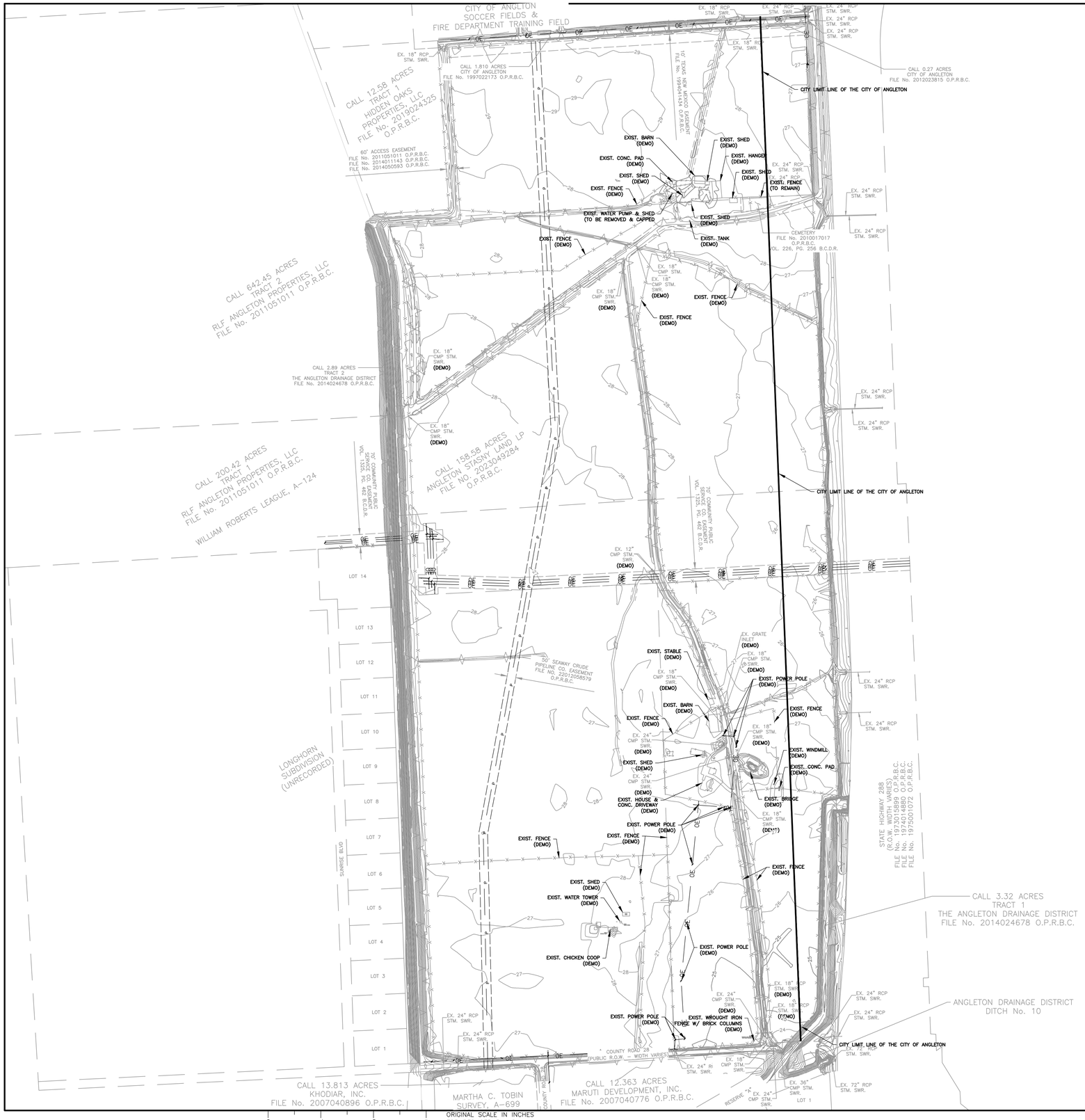

BENCHMARK:

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N

300' 0 300' 600'

SCALE: 1" = 300'

LEGEND

	EXIST. STM. SWR., INLET & M.H.
	PLAT BOUNDARY
	U.E., D.E., W.L.E, & S.S.E.
	B.L.
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
W.L.E.	WATERLINE EASEMENT
S.S.E.	SANITARY SEWER EASEMENT
B.L.	BUILDING LINE

WARNING OVERHEAD ELECTRICAL FACILITIES EXIST IN THE AREA. CONTRACTOR TO USE EXTREME CAUTION

WARNING UNDERGROUND GAS FACILITIES EXIST IN THE AREA. CONTRACTOR TO USE EXTREME CAUTION

ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY BEFORE COMMENCEMENT OF WORK

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING

TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA, HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

EXISTING CONDITIONS

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 03 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 300' VERT:	JOB No. 5479-02
APPROVED: TDB		

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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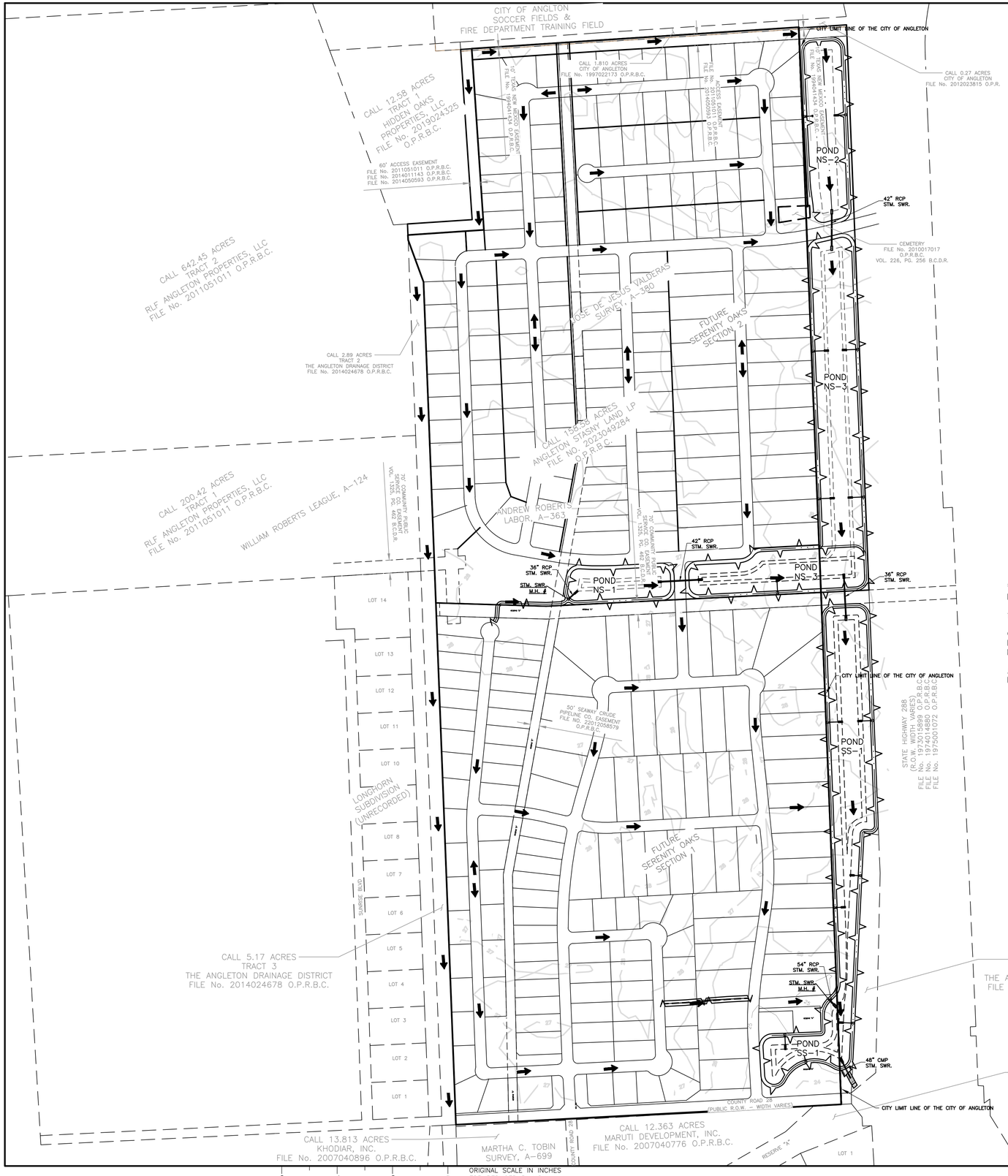
XREFS: _VOL_AREFS\05 - EXISTING AerialSite.dwg



Included on Exhibit 6 are the model results for the 100-yr event. Below is a Summary;

POND VOLUME SUMMARY							
Pond ID	Type	Flow Line ft	Normal Pool ft	Peak Stage ft	Storage ac-ft	Top of Bank ft	Freeboard ft
NS-1	WET	16.60	16.60	28.64	16.84	29.64	1.00
NS-2	DRY	16.80	-	28.55	27.88	29.55	1.00
NS-3	WET	16.60	16.60	28.48	117.51	29.48	1.00
SS-1	WET	16.60	16.60	26.01	100.20	27.01	1.00

Peak Discharge Review	100yr	10yr	5yr
Average Peak Flow Rate (cfs/ac)	2.1	1.4	1.2
(1) Peak low Ratio to 100-yr	-	0.65	0.56
(2) Allowable Discharge cfs/ac	0.45	not specified	
Factored Allowable Discharge (1) x (2), (cfs/ac)	-	0.29	0.25
Total Area (ac)	344.2	344.2	344.2
Peak Allowable Discharge (cfs)	155	100	86
Peak Discharge Provided (cfs)	155	97	77

Above, the allowable peak discharges are shown relative to the prescribed 100-yr storm event. The proposed peaks do not exceed those maximum flow rates.

*SEE DRAINAGE IMPACT STUDY, "SERENITY OAKS – SINGLE FAMILY DEVELOPMENT IN ANGLETON, TX" DATED MAY 2024, APPROVED: JULY 9, 2024.

100 YR ANALYSIS CAN BE FOUND IN ABOVE MENTIONED DRAINAGE REPORTS.

CALCULATIONS FOR RELEASE RATE CAN BE FOUND IN ABOVE MENTIONED DRAINAGE REPORTS. DRAINAGE SYSTEM HAS BEEN DESIGNED TO NOT NEED RESTRICTORS.

ADJACENT SITES WILL NOT BE ADVERSELY AFFECTED BY THE PROPOSED DEVELOPMENT IN A 100YR EVENT.

N

300' 0 300' 600'

SCALE: 1" = 300'

LEGEND

- PROPOSED STORM SEWER WITH MANHOLE
- FUTURE STORM SEWER WITH MANHOLE
- FUTURE DRAINAGE INLETS
- PLAT BOUNDARY
- BLOCK NUMBER
- SHEET REFERENCE NUMBER
- W.L.E., S.S.E., U.E. & STM.S.E.
- B.L.
- W.L.E. WATERLINE EASEMENT
- STM.S.E. STORM SEWER EASEMENT
- U.E. UTILITY EASEMENT
- S.S.E. SANITARY SEWER EASEMENT
- B.L. BUILDING LINE
- EXIST. EXTREME EVENT SHEET FLOW

NOTE:
PROPOSED DETENTION BASIN IS TO BE MAINTAINED BY BRAZORIA COUNTY M.U.D. #76

WARNING OVERHEAD ELECTRICAL FACILITIES EXIST IN THE AREA. CONTRACTOR TO USE EXTREME CAUTION

WARNING UNDERGROUND GAS FACILITIES EXIST IN THE AREA. CONTRACTOR TO USE EXTREME CAUTION

ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY BEFORE COMMENCEMENT OF WORK

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED
PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING | TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA, HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

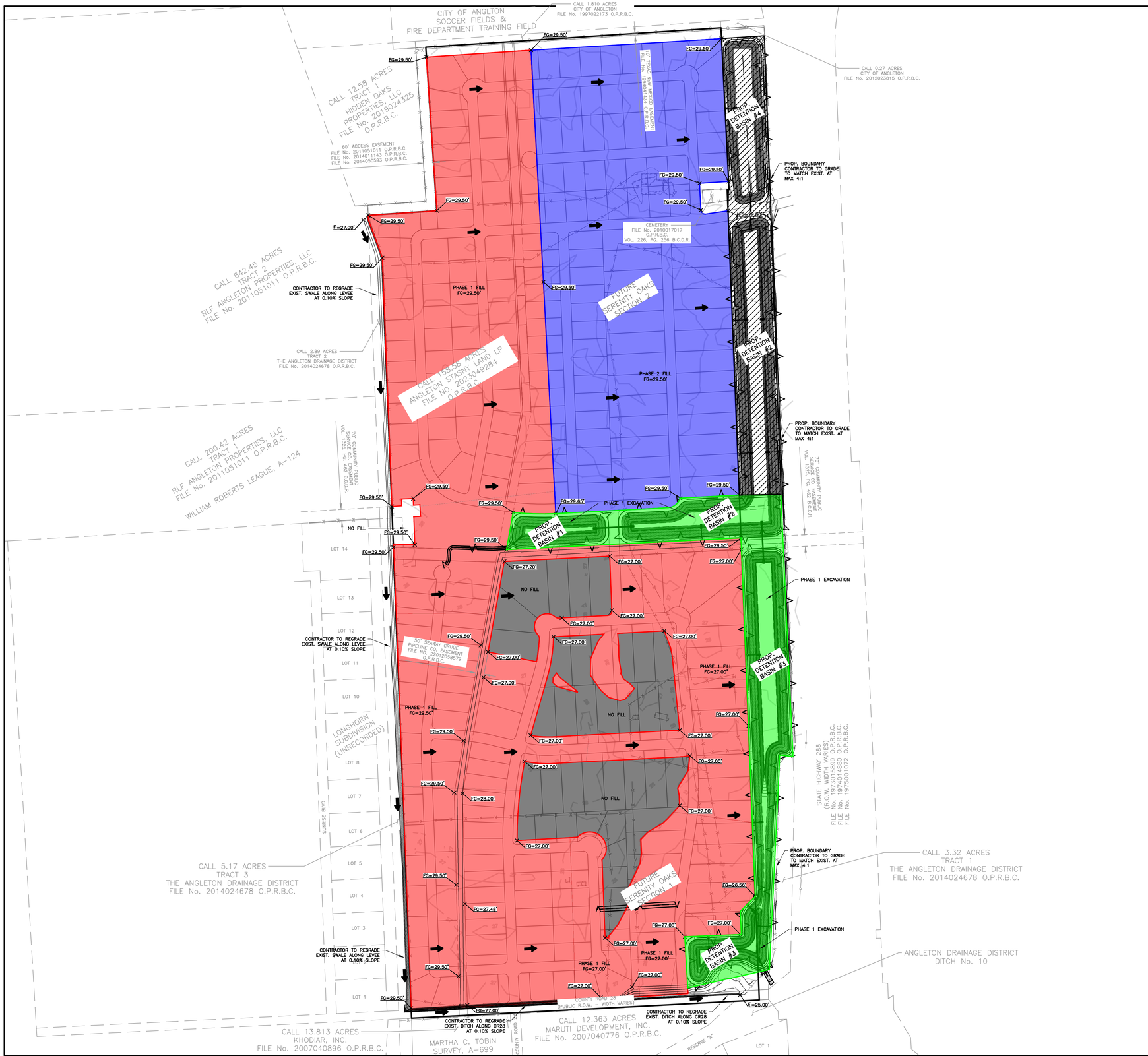
SERVICE AREA MAP

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 04 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 300' VERT:	JOB No. 5479-02
APPROVED: TDB		

PLOTTED: Feb 05,2025 – 4:10pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_SHEETS\01_DWGS\04 SERVICE AREA.DWG XREFS: G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_Data\04 SERVICE AREA.MAP Feb 05,2025–4:10pm Broom

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\04 SERVICE AREA MAP.DWG



N

300' 0 300' 600'

SCALE: 1" = 300'

LEGEND

	PHASE 1 FILL AREA
	PHASE 2 FILL AREA
	PHASE 1 EXCAVATION
	PHASE 2 EXCAVATION
	NO FILL
	DRAINAGE ARROW
42.00	FG ELEVATION
39.5	EXIST. CONTOUR
41.0	PROP. CONTOUR
	PROP. DRAINAGE SWALE

NOTE:
PROPOSED DETENTION BASIN IS TO BE MAINTAINED BY BRAZORIA COUNTY M.U.D. #76

WARNING OVERHEAD ELECTRICAL FACILITIES EXIST IN THE AREA. CONTRACTOR TO USE EXTREME CAUTION

WARNING UNDERGROUND GAS FACILITIES EXIST IN THE AREA. CONTRACTOR TO USE EXTREME CAUTION

ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY BEFORE COMMENCEMENT OF WORK

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING | TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

OVERALL FILL MAP

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 05 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 300' VERT:	JOB No. 5479-02
APPROVED: TDB		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\05 OVERALL FILL MAP.DWG

PLOTTED: Feb 05,2025 - 4:10pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_SHEETS\BORDER.dwg
G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_SHEETS\WATER - SERENITY.dwg
G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_SHEETS\01_DWGS\05 OVERALL FILL MAP.dwg Feb 05,2025-4:10pm Brooms
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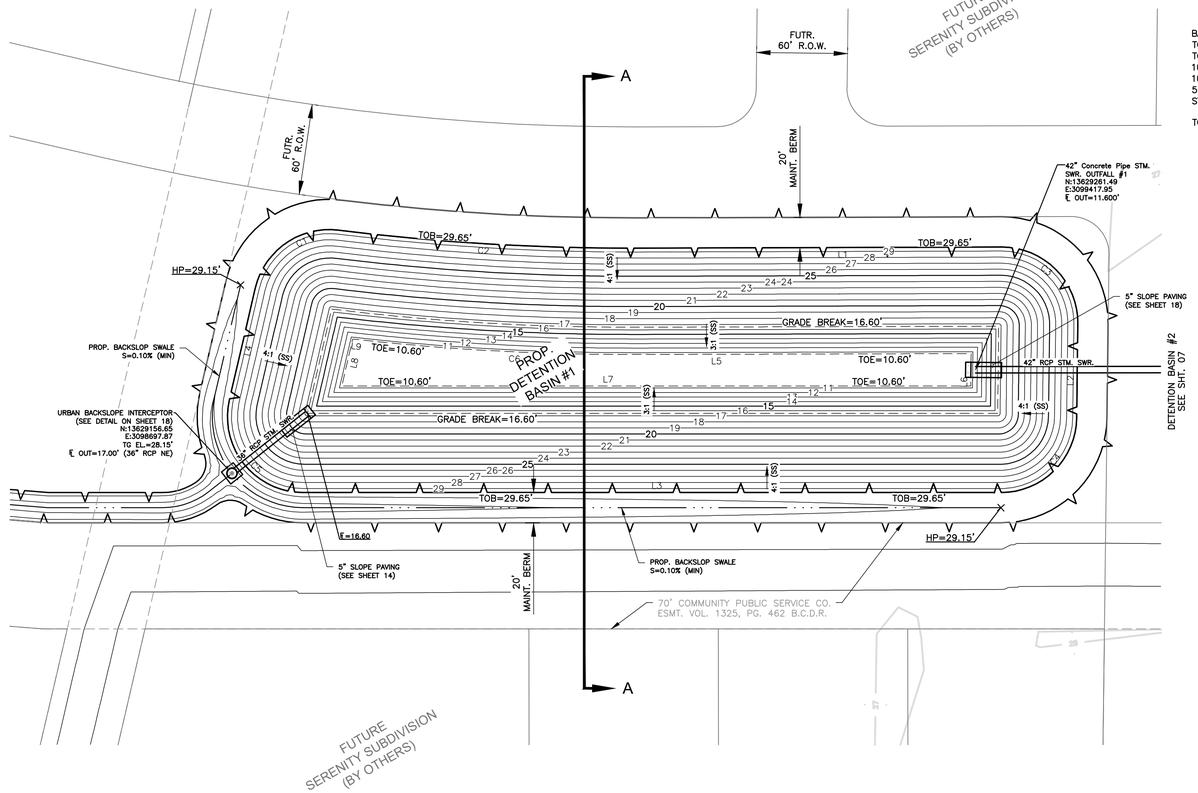


BASIN #1
TOP OF BANK ELEV.=29.65'
TOE = 10.60'
100 YR. W.S.E. = 28.48'
10 YR. W.S.E. = 23.39'
5 YR. W.S.E. = 22.09'
STATIC W.S.E. = 16.60'

TOTAL VOL. = 16.84 AC/FT

BENCHMARK:

ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4202), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (2001 ADJUSTMENT). ALL DISTANCE ARE ACTUAL DISTANCES. SCALE FACTOR = 0.999866625.

N

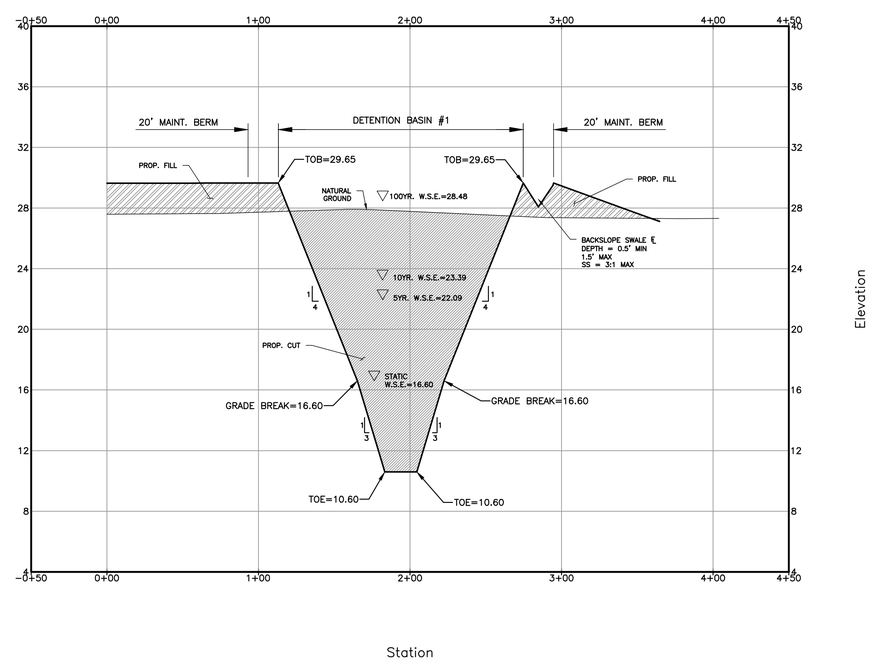
50' 0 50' 100'

SCALE: 1" = 50'

LEGEND

	PROPOSED STORM SEWER WITH MANHOLE
	FUTURE STORM SEWER WITH MANHOLE
	PLAT BOUNDARY
1	BLOCK NUMBER
12	SHEET REFERENCE NUMBER
	W.L.E., S.S.E., U.E. & STM.S.E.
	B.L.
W.L.E.	WATERLINE EASEMENT
STM.S.E.	STORM SEWER EASEMENT
U.E.	UTILITY EASEMENT
S.S.E.	SANITARY SEWER EASEMENT
B.L.	BUILDING LINE
	BACKSLOPE SWALE HIGH POINT ARROWS

CROSS SECTION A–A PROFILE



NOTE:
PROPOSED DETENTION BASIN IS TO BE MAINTAINED BY BRAZORIA COUNTY M.U.D. #76

TOB LINE TABLE		
LINE #	Length	DIRECTION
L1	242.81'	N86° 58' 12"E
L2	61.96'	S02° 11' 03"E
L3	460.46'	S87° 07' 28"W
L4	75.42'	N10° 12' 25"E

TOE LINE TABLE		
LINE #	Length	DIRECTION
L5	84.18'	N86° 58' 12"E
L6	21.50'	S02° 11' 03"E
L7	279.75'	S87° 07' 28"W
L8	31.95'	N10° 12' 25"E

TOE CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH
C6	178.75'	1619.99'	006° 19' 20"	S89° 52' 01"E	178.66

TOB CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH
C1	73.30'	50.00'	083° 59' 25"	N52° 12' 08"E	66.91
C2	195.51'	1550.00'	007° 13' 38"	S89° 24' 59"E	195.38
C3	79.28'	50.00'	090° 50' 44"	S47° 36' 26"E	71.23
C4	77.94'	50.00'	089° 18' 32"	S42° 28' 12"W	70.28
C5	89.96'	50.00'	103° 04' 57"	N41° 20' 03"W	78.31

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED
PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING | TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

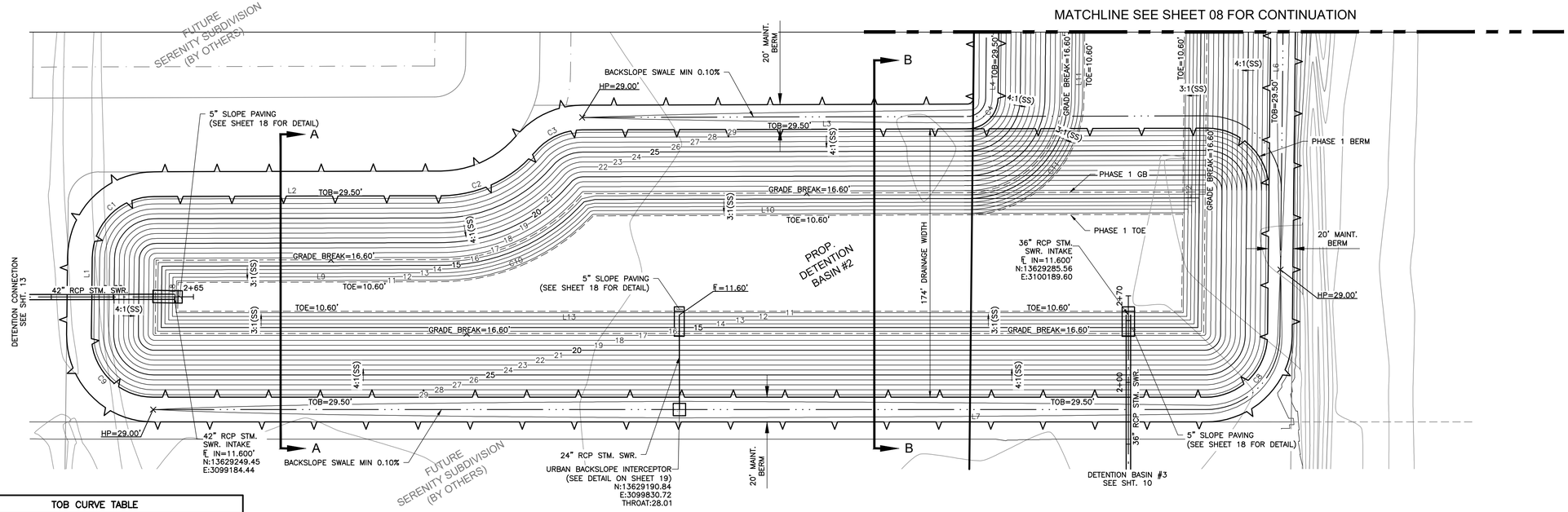
DETENTION BASIN #1 PLAN VIEW & CROSS SECTION

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 06 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 50' VERT:	JOB No. 5479–02
APPROVED: TDB		

PLOTTED: Feb 05,2025 – 4:10pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\06 DETENTION BASIN #1 PLAN VIEW & CROSS SECTION.dwg XREFS: \\XR_UREF\LANDER - DETENTION.dwg \\XR_UREF\LANDER - DETENTION.dwg

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

G:\1130\5479–01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\06 DETENTION BASIN #1 PLAN VIEW & CROSS SECTION.DWG



BENCHMARK:

ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4202), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (2001 ADJUSTMENT). ALL DISTANCE ARE ACTUAL DISTANCES. SCALE FACTOR = 0.999866625.

N

50' 0 50' 100'

SCALE: 1" = 50'

LEGEND

- PROPOSED STORM SEWER WITH MANHOLE
- FUTURE STORM SEWER WITH MANHOLE
- PLAT BOUNDARY
- BLOCK NUMBER
- SHEET REFERENCE NUMBER
- W.L.E., S.S.E., U.E. & STM.S.E.
- B.L.
- W.L.E. WATERLINE EASEMENT
- STM.S.E. STORM SEWER EASEMENT
- U.E. UTILITY EASEMENT
- S.S.E. SANITARY SEWER EASEMENT
- B.L. BUILDING LINE
- BACKSLOPE SWALE HIGH POINT ARROWS

BASIN #2
TOP OF BANK ELEV.=29.50'
TOE = 8.60'
100 YR. W.S.E. = 28.48'
10 YR. W.S.E. = 23.39'
5 YR. W.S.E. = 22.09'
STATIC W.S.E. = 16.60'

TOB CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH
C1	77.80'	50.00'	089° 09' 16"	N42° 23' 34"E	70.19
C2	86.75'	100.00'	049° 42' 13"	N62° 07' 06"E	84.05
C3	43.37'	50.00'	049° 42' 13"	N62° 07' 06"E	42.03
C8	78.01'	50.00'	089° 23' 43"	S42° 25' 37"W	70.34
C9	79.14'	50.00'	090° 41' 28"	N47° 31' 48"W	71.14
C4	38.94'	25.00'	089° 14' 27"	N42° 20' 59"E	35.12
C5	70.28'	50.00'	080° 32' 16"	N37° 59' 53"E	64.64
C6	90.18'	2050.00'	002° 31' 13"	N77° 00' 24"E	90.17
C7	89.00'	50.00'	101° 58' 58"	S53° 15' 44"E	77.71

TOE CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH
C12	76.62'	2119.60'	002° 04' 17"	N76° 46' 55"E	76.62
C10	137.83'	169.60'	046° 33' 44"	N63° 41' 20"E	134.07
C11	147.34'	94.60'	089° 14' 27"	N42° 20' 59"E	132.90

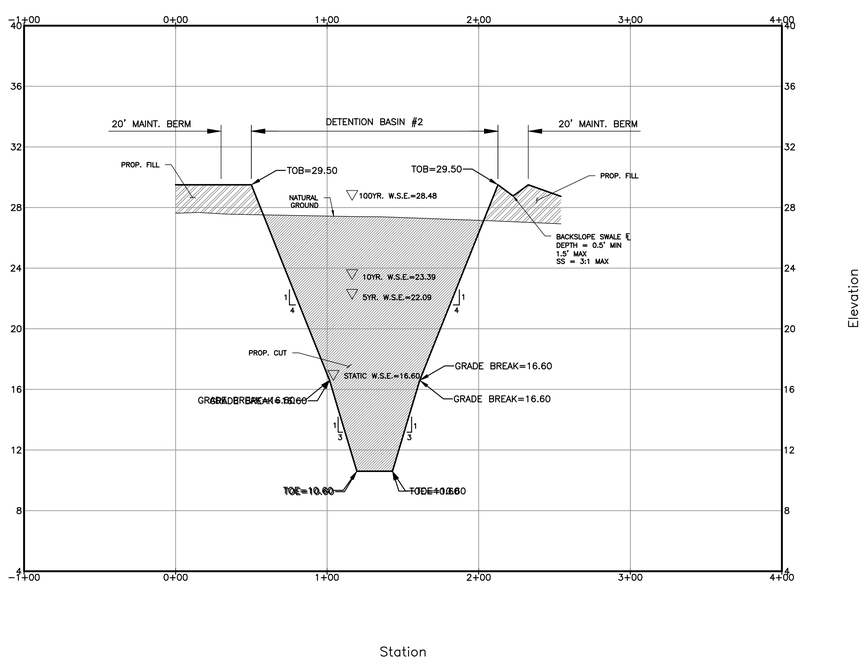
TOB LINE TABLE

LINE #	Length	DIRECTION
L1	62.49'	N02° 11' 03"W
L2	232.24'	N86° 58' 12"E
L3	505.36'	N86° 58' 12"E
L4	1582.20'	N02° 16' 15"W
L5	29.89'	N75° 44' 47"E
L6	1678.02'	S02° 16' 15"E
L7	851.37'	N87° 07' 28"E

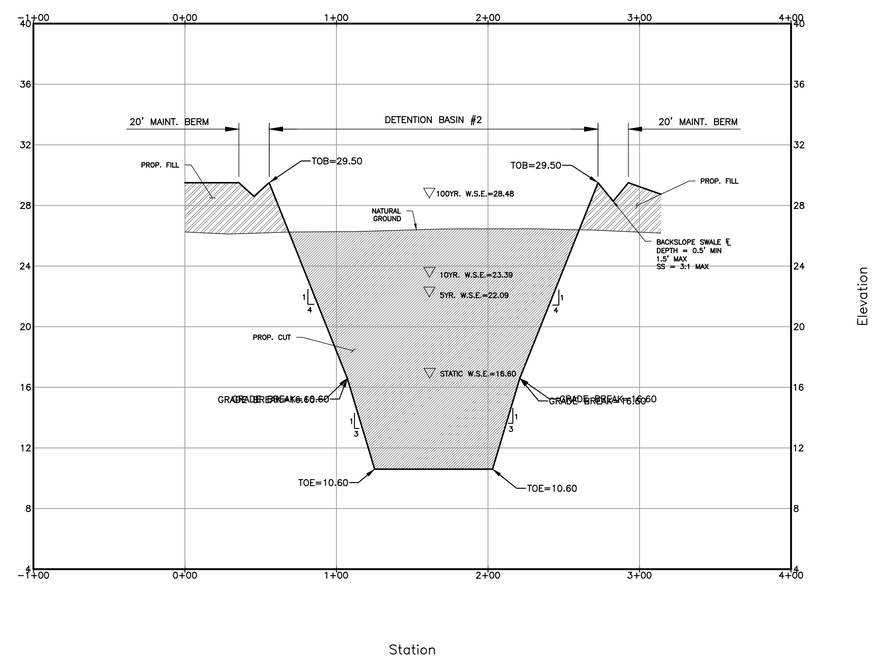
TOE LINE TABLE

LINE #	Length	DIRECTION
L8	23.34'	N02° 11' 03"W
L9	212.93'	N86° 58' 12"E
L10	302.60'	N86° 58' 12"E
L11	1565.66'	N02° 16' 15"W
L12	1655.44'	S02° 16' 15"E
L13	812.14'	S87° 07' 28"W

SECTION A–A PROFILE



SECTION B–B PROFILE



NOTE:
PROPOSED DETENTION BASIN IS TO BE MAINTAINED BY BRAZORIA COUNTY M.U.D. #76

SEAL
STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING | TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

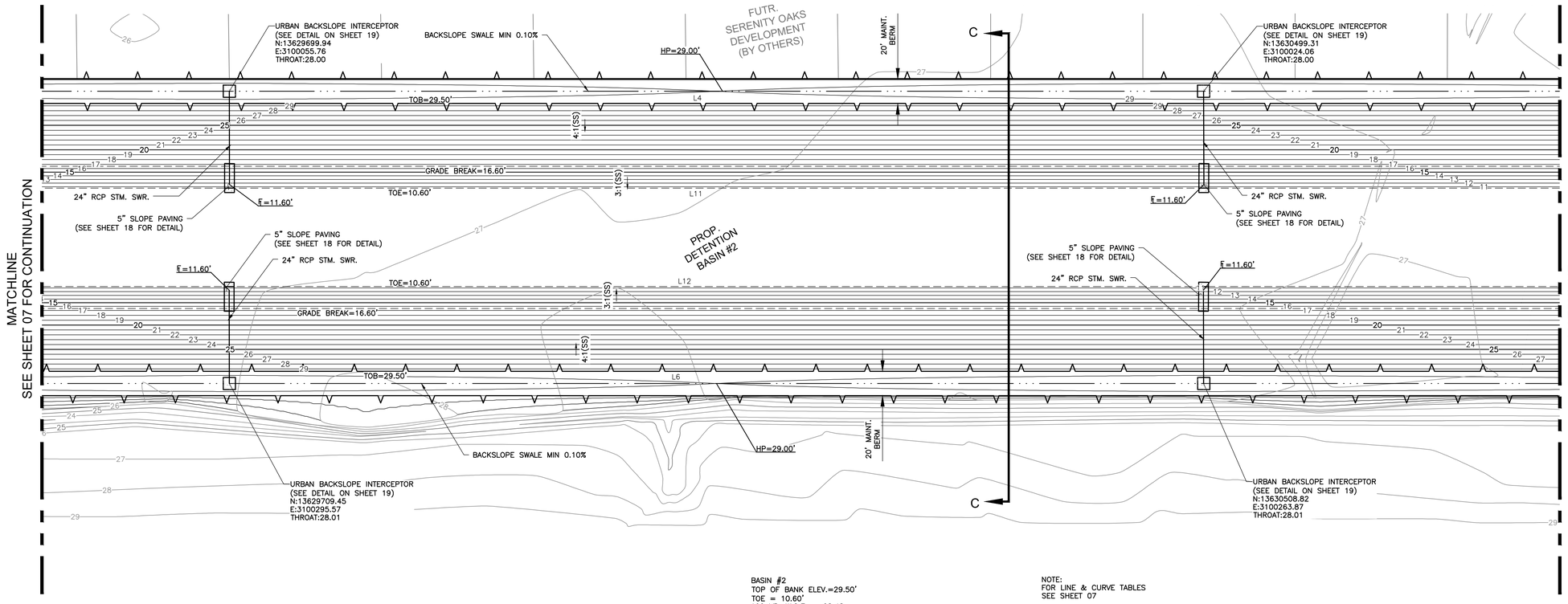
DETENTION BASIN #2
PLAN VIEW

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 07 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 50' VERT:	
APPROVED: TDB		JOB No. 5479-02

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\07 DETENTION BASIN #2 PLAN VIEW & CROSS SECTIONS.DWG

PLOTTED: Feb 05,2025 - 4:17pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\07 DETENTION BASIN #2 PLAN VIEW & CROSS SECTIONS.dwg



BASIN #2
TOP OF BANK ELEV.=29.50'
TOE = 10.60'
100 YR. W.S.E. = 28.48
10 YR. W.S.E. = 23.33'
5 YR. W.S.E. = 22.05'
STATIC W.S.E. = 16.60'

TOTAL VOL.= 117.51 AC/FT

NOTE:
FOR LINE & CURVE TABLES
SEE SHEET 07

BENCHMARK:

ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4202), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (2001 ADJUSTMENT). ALL DISTANCE ARE ACTUAL DISTANCES. SCALE FACTOR = 0.999866625.

N

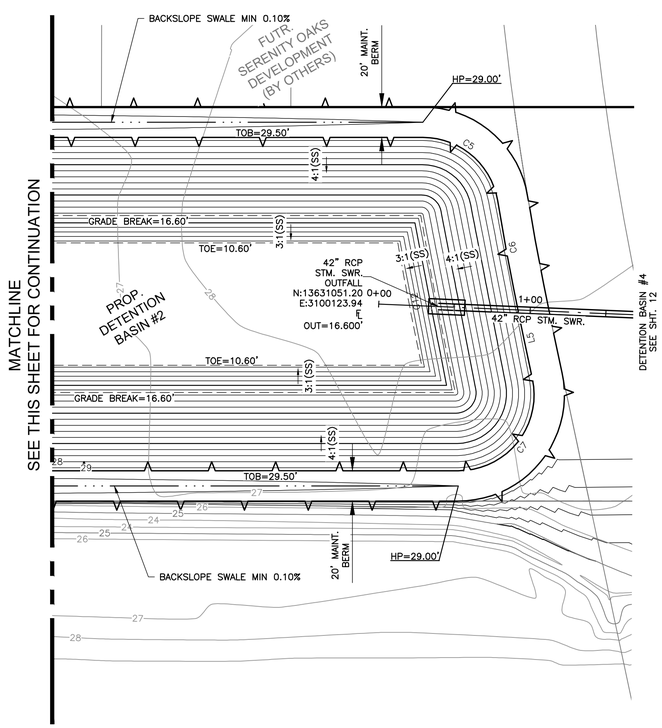
50' 0 50' 100'
SCALE: 1" = 50'

LEGEND

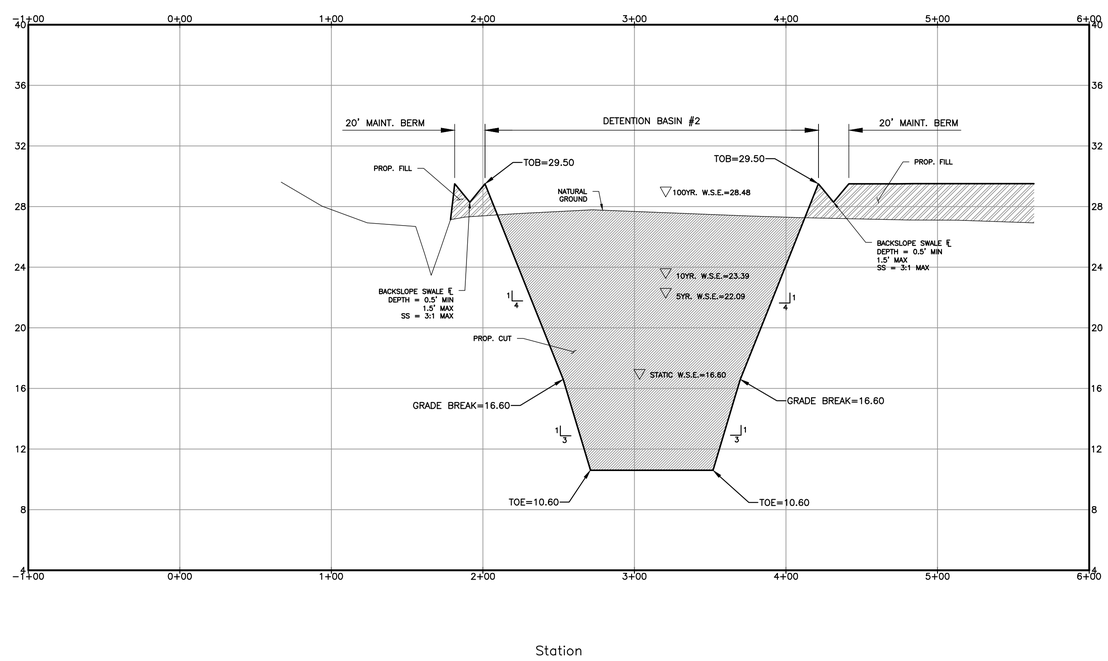
- PROPOSED STORM SEWER WITH MANHOLE
- FUTURE STORM SEWER WITH MANHOLE
- PLAT BOUNDARY
- BLOCK NUMBER
- SHEET REFERENCE NUMBER
- W.L.E., S.S.E., U.E. & STM.S.E.
- B.L.
- W.L.E. WATERLINE EASEMENT
- STM.S.E. STORM SEWER EASEMENT
- U.E. UTILITY EASEMENT
- S.S.E. SANITARY SEWER EASEMENT
- B.L. BUILDING LINE
- BACKSLOPE SWALE HIGH POINT ARROWS

NOTE:
SEE SHEET 11 FOR CROSS SECTIONS

NOTE:
PROPOSED DETENTION BASIN IS TO BE MAINTAINED BY BRAZORIA COUNTY M.U.D. #76



CROSS SECTION C–C PROFILE



SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING
TRANSYSTEMS
T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA, HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

DETENTION BASIN #2 PLAN VIEW & CROSS SECTIONS SHEET 2 OF 2

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 08 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 50' VERT:	JOB No. 5479–02
APPROVED: TDB		

PLOTTED: Feb 05,2025 – 4:11pm (G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\08 DETENTION BASIN #2 PLAN VIEW SHEET 2.dwg) Feb 05,2025–4:11pm tbroom

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

G:\1130\5479–01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\08 DETENTION BASIN #2 PLAN VIEW SHEET 2.DWG

BENCHMARK:

ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4202), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (2001 ADJUSTMENT). ALL DISTANCE ARE ACTUAL DISTANCES. SCALE FACTOR = 0.999866625.

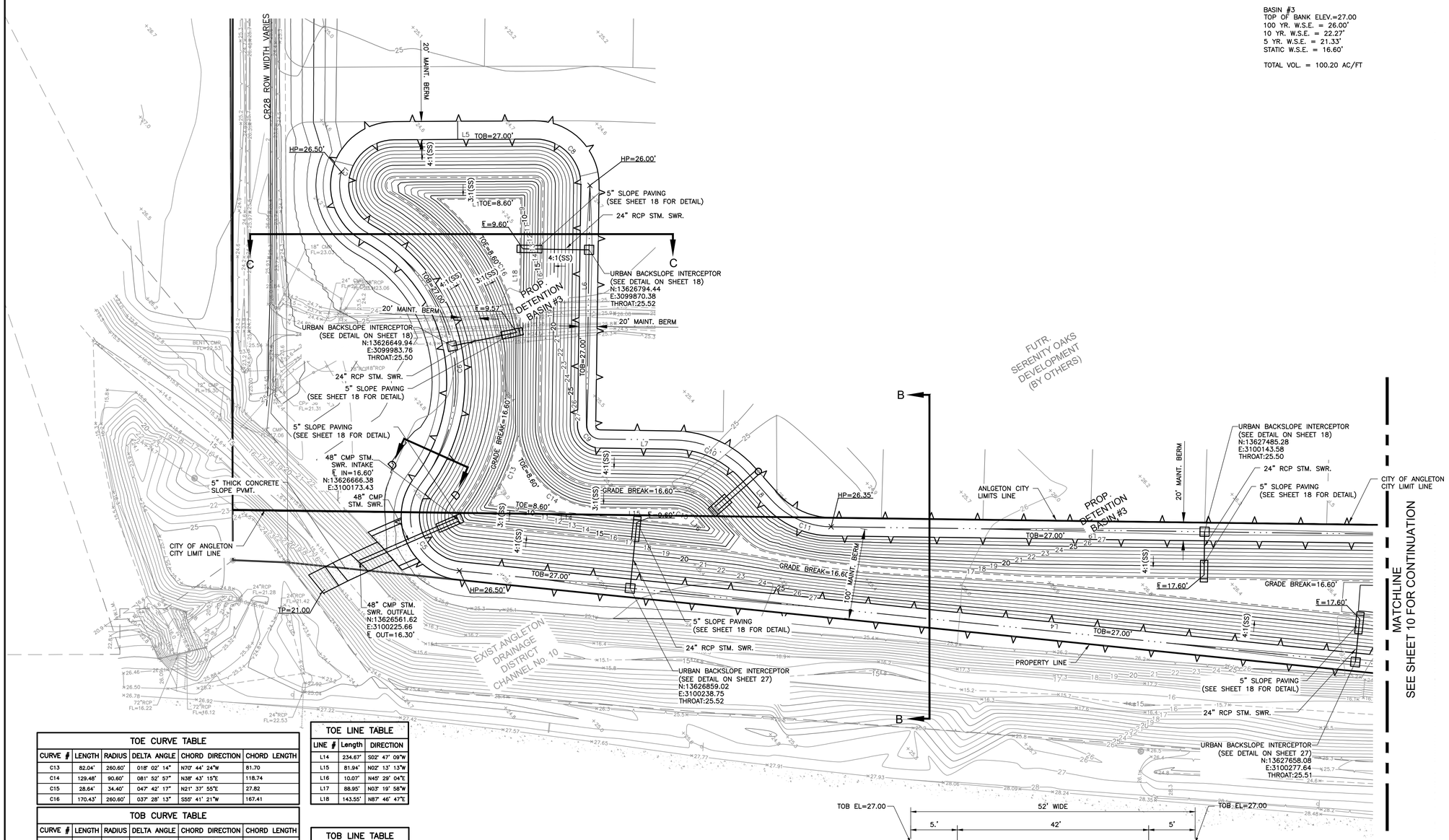
N

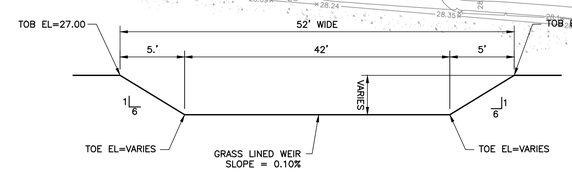
60' 0 60' 120'

SCALE: 1" = 60'

BASIN #3
TOP OF BANK ELEV.=27.00
100 YR. W.S.E. = 26.00'
10 YR. W.S.E. = 22.27'
5 YR. W.S.E. = 21.33'
STATIC W.S.E. = 16.60'

TOTAL VOL. = 100.20 AC/FT





CROSS SECTION D-D
(EXTREME EVENT OVERFLOW WEIR DETAIL)
SCALE: NTS

LEGEND

- PROPOSED STORM SEWER WITH MANHOLE
- FUTURE STORM SEWER WITH MANHOLE
- PLAT BOUNDARY
- BLOCK NUMBER
- SHEET REFERENCE NUMBER
- W.L.E., S.S.E., U.E. & STM.S.E.
- B.L.
- W.L.E. WATERLINE EASEMENT
- STM.S.E. STORM SEWER EASEMENT
- U.E. UTILITY EASEMENT
- S.S.E. SANITARY SEWER EASEMENT
- B.L. BUILDING LINE
- BACKSLOPE SWALE HIGH POINT ARROWS

NOTE:
SEE SHEET 11 FOR CROSS SECTIONS

NOTE:
PROPOSED DETENTION BASIN IS TO BE MAINTAINED BY BRAZORIA COUNTY M.U.D. #76

TOE CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH
C13	82.04'	260.60'	018° 02' 14"	N70° 44' 24"W	81.70
C14	129.48'	90.60'	081° 52' 57"	N38° 43' 15"E	118.74
C15	28.64'	34.40'	047° 42' 17"	N21° 37' 55"E	27.82
C16	170.43'	260.60'	037° 28' 13"	S55° 41' 21"W	167.41

TOB CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH
C1	78.01'	50.00'	089° 23' 43"	N42° 25' 37"E	70.34
C2	79.07'	50.00'	090° 36' 17"	S47° 34' 23"E	71.08
C3	43.25'	25.00'	099° 07' 04"	S47° 17' 17"W	38.05
C4	41.04'	25.00'	094° 03' 41"	S49° 48' 59"W	36.59
C5	105.97'	50.00'	121° 25' 54"	S63° 30' 05"W	87.22
C6	335.58'	195.00'	098° 36' 09"	S74° 54' 58"W	295.68
C7	131.82'	50.00'	151° 03' 09"	N78° 51' 32"W	96.83
C8	79.51'	50.00'	091° 06' 44"	N42° 13' 24"E	71.39
C9	39.27'	25.00'	090° 00' 00"	N42° 46' 47"E	35.36
C10	83.26'	100.00'	047° 42' 17"	N21° 37' 55"E	80.88
C11	83.35'	100.00'	047° 45' 19"	N21° 36' 24"E	80.96

TOE LINE TABLE

LINE #	Length	DIRECTION
L14	234.67'	S02° 47' 09"W
L15	81.94'	N02° 13' 13"W
L16	10.07'	N45° 29' 04"E
L17	88.95'	N03° 19' 58"W
L18	143.55'	N87° 46' 47"E

TOB LINE TABLE

LINE #	Length	DIRECTION
L1	120.01'	N87° 07' 28"E
L2	1133.60'	S02° 16' 15"E
L3	21.65'	N83° 09' 11"W
L4	1214.68'	S02° 47' 09"W
L5	154.78'	N03° 19' 58"W
L6	263.10'	N87° 46' 47"E
L7	81.94'	N02° 13' 13"W
L8	37.01'	N45° 29' 04"E
L9	1979.70'	N02° 16' 15"W

SEAL
STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING
TRANSYSTEMS
T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

DETENTION BASIN #3 PLAN VIEW SHEET 1 OF 2

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 09 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 60' VERT:	JOB No. 5479-02
APPROVED: TDB		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\09 DETENTION BASIN #3 PLAN VIEW SHEET 1 OF 2.DWG

PLOTTED: Feb 05,2025 - 4:11pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGs\09 DETENTION BASIN #3 PLAN VIEW SHEET 1 OF 2.dwg File: 05,2025-4:11pm tbroom

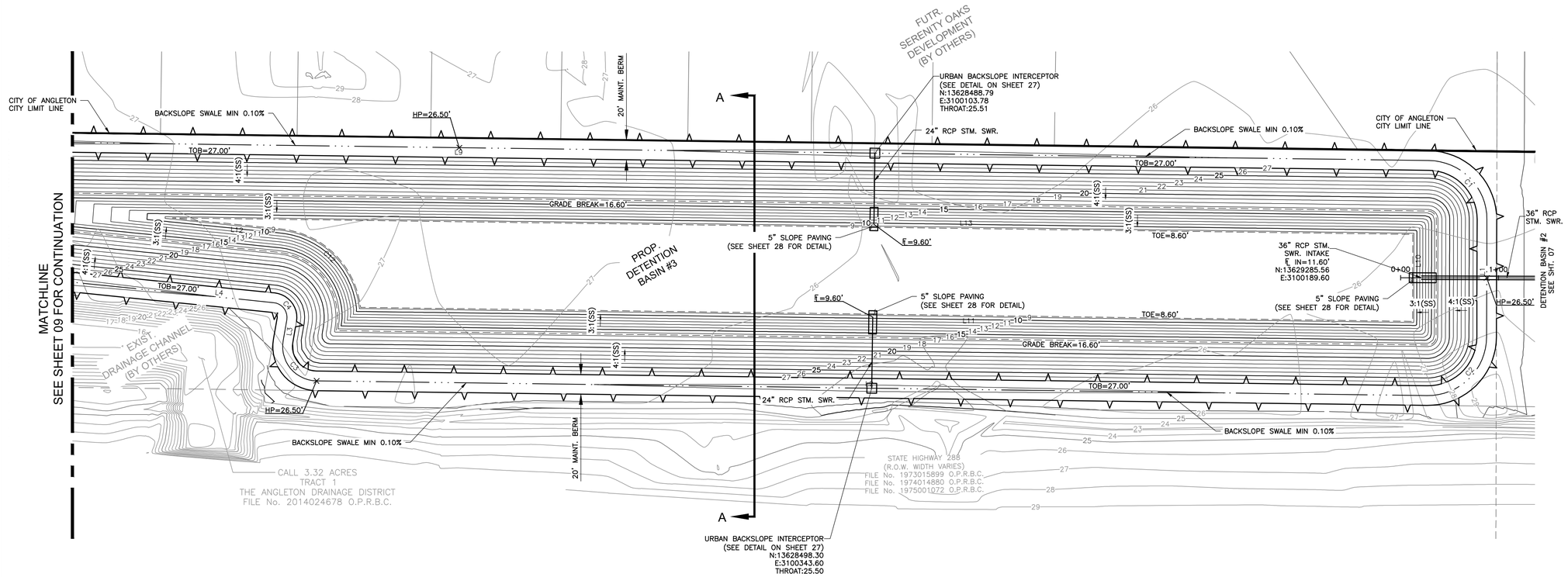
BENCHMARK:

ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4202), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (2001 ADJUSTMENT). ALL DISTANCE ARE ACTUAL DISTANCES. SCALE FACTOR = 0.999866625.

N

60' 0 60' 120'

SCALE: 1" = 60'



NOTE:
FOR LINE & CURVE TABLES
SEE SHEET 07

BASIN #3
TOP OF BANK ELEV.=28.00'
E = 17.30' – 17.10'
100 YR. W.S.E. = 26.00'
10 YR. W.S.E. = 22.27'
5 YR. W.S.E. = 21.33'
STATIC W.S.E. = 16.60'

TOTAL VOL. = 100.20 AC/FT

LEGEND

- PROPOSED STORM SEWER WITH MANHOLE
- FUTURE STORM SEWER WITH MANHOLE
- PLAT BOUNDARY
- BLOCK NUMBER
- SHEET REFERENCE NUMBER
- W.L.E., S.S.E., U.E. & STM.S.E.
- B.L.
- W.L.E. WATERLINE EASEMENT
- STM.S.E. STORM SEWER EASEMENT
- U.E. UTILITY EASEMENT
- S.S.E. SANITARY SEWER EASEMENT
- B.L. BUILDING LINE
- BACKSLOPE SWALE HIGH POINT ARROWS

NOTE:
SEE SHEET 11 FOR CROSS SECTIONS

NOTE:
PROPOSED DETENTION BASIN IS TO BE MAINTAINED BY BRAZORIA COUNTY M.U.D. #76

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING | TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

DETENTION BASIN
#3 PLAN VIEW
SHEET 2 OF 2

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 10 OF 21
DRAWN BY: DH	SCALE: HORZ: VERT: 1" = 60'	JOB No. 5479–02
APPROVED: TDB		

PLOTTED: Feb 05,2025 – 4:12pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\10 DETENTION BASIN #3 PLAN VIEW SHEET 2 OF 2.dwg File: 05,2025-4:12pm Tyler.broom

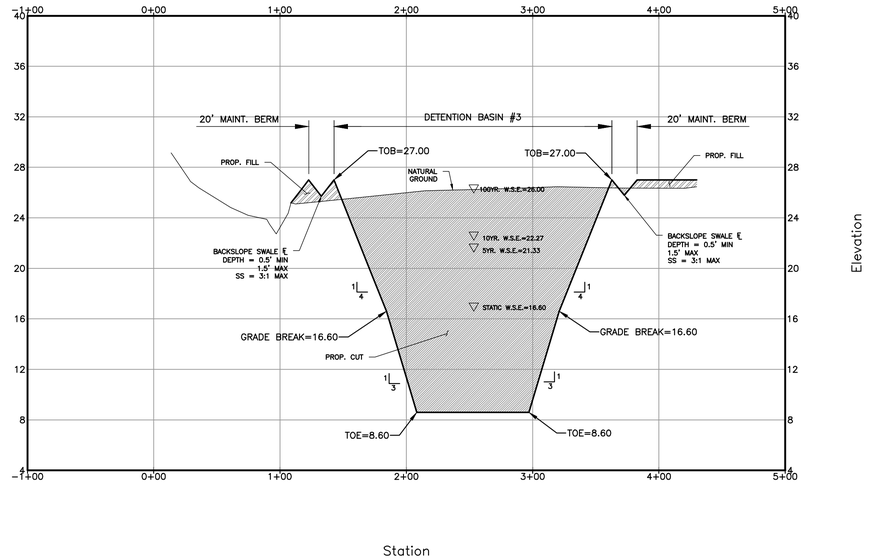
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

G:\1130\5479–01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\10 DETENTION BASIN #3 PLAN VIEW SHEET 2 OF 2.DWG

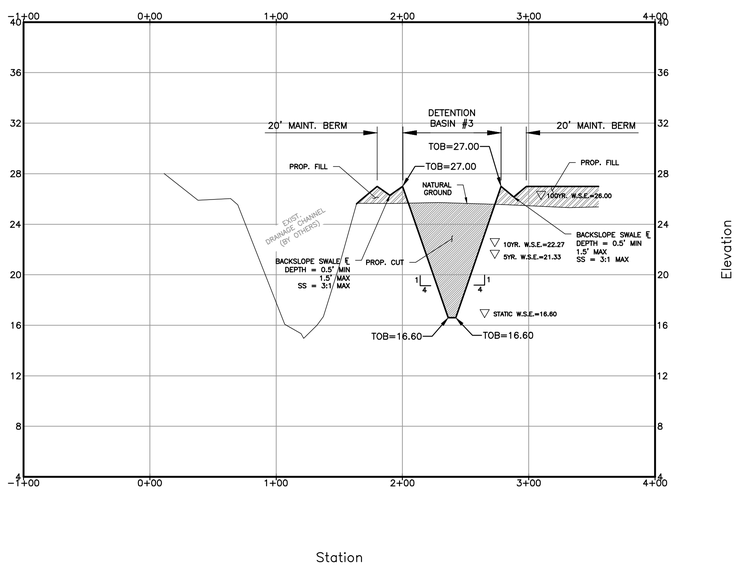
BENCHMARK:

ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4202), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (2001 ADJUSTMENT). ALL DISTANCE ARE ACTUAL DISTANCES. SCALE FACTOR = 0.999866625.

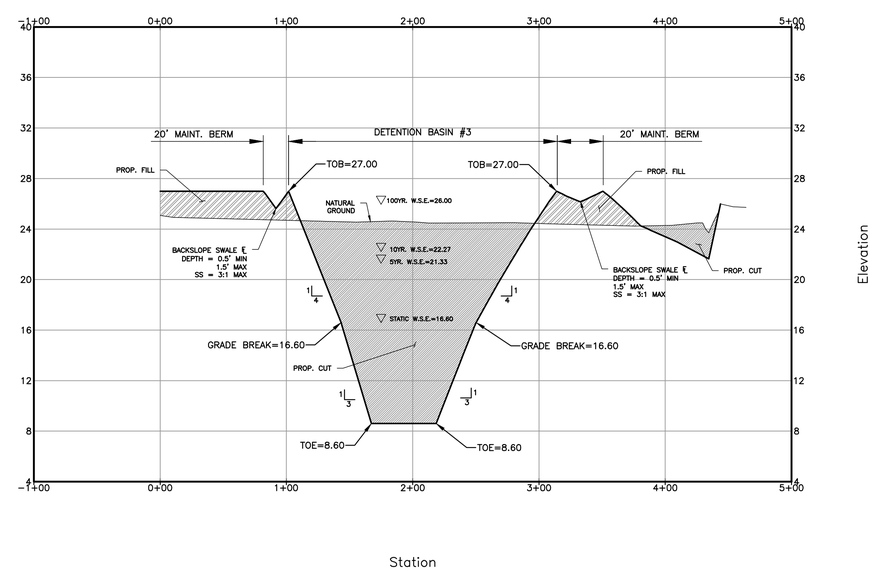
SECTION A–A PROFILE



SECTION B–B PROFILE



SECTION C–C PROFILE



LEGEND

	PROPOSED STORM SEWER WITH MANHOLE
	FUTURE STORM SEWER WITH MANHOLE
	PLAT BOUNDARY
1	BLOCK NUMBER
12	SHEET REFERENCE NUMBER
	W.L.E., S.S.E., U.E. & STM.S.E.
	B.L.
W.L.E.	WATERLINE EASEMENT
STM.S.E.	STORM SEWER EASEMENT
U.E.	UTILITY EASEMENT
S.S.E.	SANITARY SEWER EASEMENT
B.L.	BUILDING LINE
	BACKSLOPE SWALE HIGH POINT ARROWS

NOTE:
SEE SHEETS 09 & 10 FOR PLAN VIEW

NOTE:
PROPOSED DETENTION BASIN IS TO BE MAINTAINED BY BRAZORIA COUNTY M.U.D. #76

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING

TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

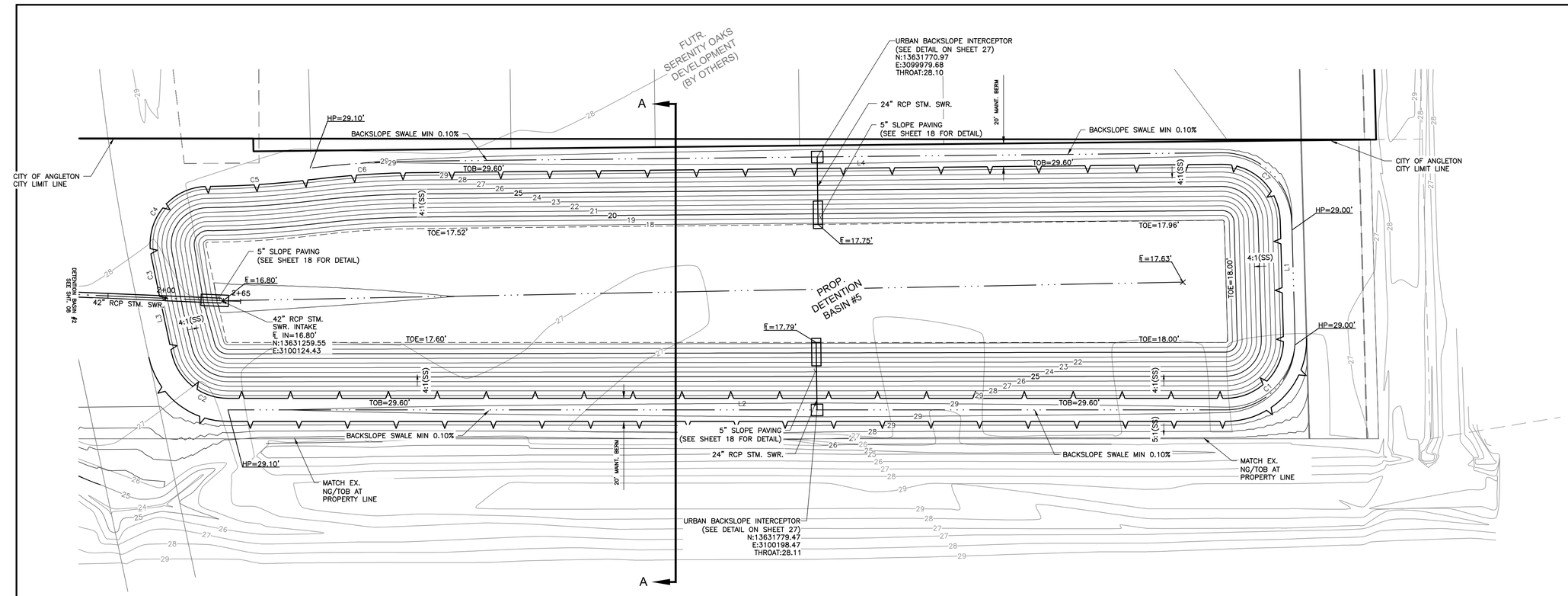
DETENTION BASIN #3 CROSS SECTIONS

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 11 OF 21
DRAWN BY: DH	SCALE: HORZ: VERT: 1" = 60'	JOB No. 5479-02
APPROVED: TDB		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\11 DETENTION BASIN #3 CROSS SECTIONS.DWG

PLOTTED: Feb 05,2025 – 4:12pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_Dwgs\11 DETENTION BASIN #3 CROSS SECTIONS.dwg Feb 05,2025–4:12pm tbroom
XREFS: \\TX-MFS13\MISC_DATA\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_Dwgs\Xrefs\01_DETENTION BASIN #3 PLAN VIEW.dwg



BENCHMARK:

ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4202), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (2001 ADJUSTMENT). ALL DISTANCE ARE ACTUAL DISTANCES. SCALE FACTOR = 0.999866625.

N

50' 0 50' 100'

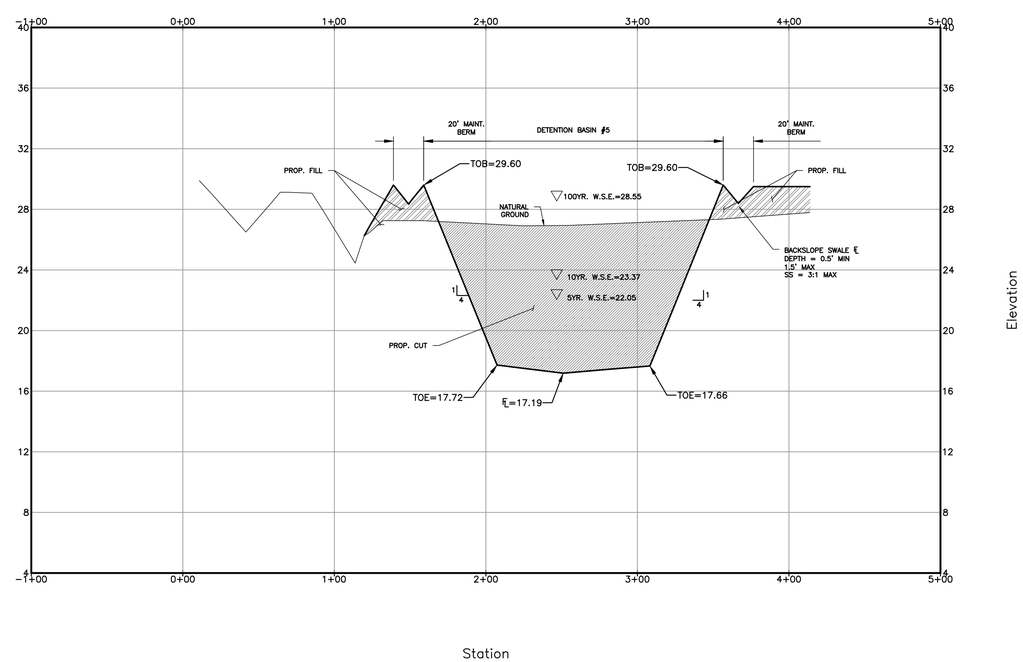
SCALE: 1" = 50'

LEGEND

- PROPOSED STORM SEWER WITH MANHOLE
- FUTURE STORM SEWER WITH MANHOLE
- PLAT BOUNDARY
- (1) BLOCK NUMBER
- (12) SHEET REFERENCE NUMBER
- W.L.E., S.S.E., U.E. & STM.S.E.
- B.L.
- W.L.E. WATERLINE EASEMENT
- STM.S.E. STORM SEWER EASEMENT
- U.E. UTILITY EASEMENT
- S.S.E. SANITARY SEWER EASEMENT
- B.L. BUILDING LINE
- BACKSLOPE SWALE HIGH POINT ARROWS

BASIN #4
TOP OF BANK ELEV.=29.60'
E = 17.63' – 16.80'
100 YR. W.S.E. = 28.55'
10 YR. W.S.E. = 22.37'
5 YR. W.S.E. = 22.05'
STATIC W.S.E. = DRY BOTTOM
TOTAL VOL. = 27.88 AC/FT

CROSS SECTION A–A PROFILE



NOTE:
PROPOSED DETENTION BASIN IS TO BE MAINTAINED BY BRAZORIA COUNTY M.U.D. #76

SEAL
STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING | TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA, HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

DETENTION BASIN #4 PLAN VIEW & CROSS SECTION

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 12 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 50' VERT: 1" = 5'	JOB No. 5479-02
APPROVED: TDB		

TOE LINE TABLE

LINE #	Length	DIRECTION

TOB LINE TABLE

LINE #	Length	DIRECTION
L1	102.66'	N86° 09' 08"E
L2	864.67'	S02° 16' 15"E
L3	57.01'	S75° 44' 47"W
L4	701.19'	N02° 52' 06"W

TOB CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH
C1	79.92'	50.00'	091° 34' 37"	S48° 03' 33"E	71.68
C2	68.08'	50.00'	078° 01' 02"	S36° 44' 16"W	62.94
C3	29.01'	1950.00'	000° 51' 09"	S76° 10' 22"W	29.01
C4	87.90'	50.00'	100° 43' 33"	N53° 02' 18"W	77.01
C5	87.90'	772.21'	006° 31' 19"	N06° 07' 45"W	87.85
C6	87.90'	772.21'	006° 31' 19"	N06° 07' 45"W	87.85
C7	77.69'	50.00'	089° 01' 14"	N41° 38' 31"E	70.10

TOE CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH

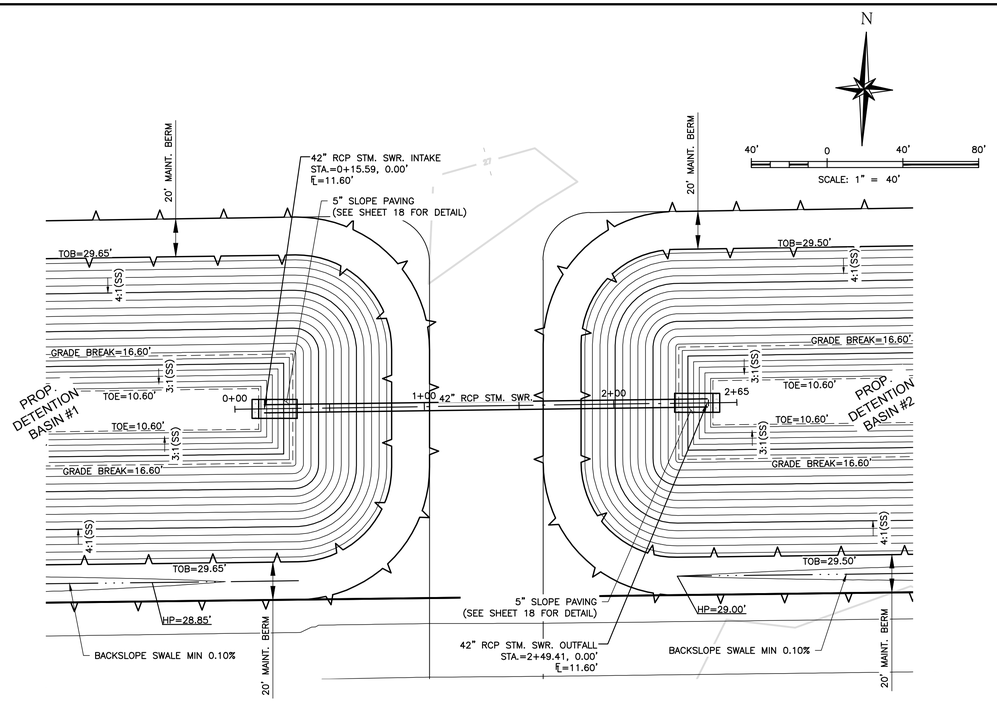
PLOTTED: Feb 05,2025 – 4:17pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\12 DETENTION BASIN #5 PLAN VIEW & CROSS SECTION.dwg Fri, 05,2025-4:17pm brooml

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

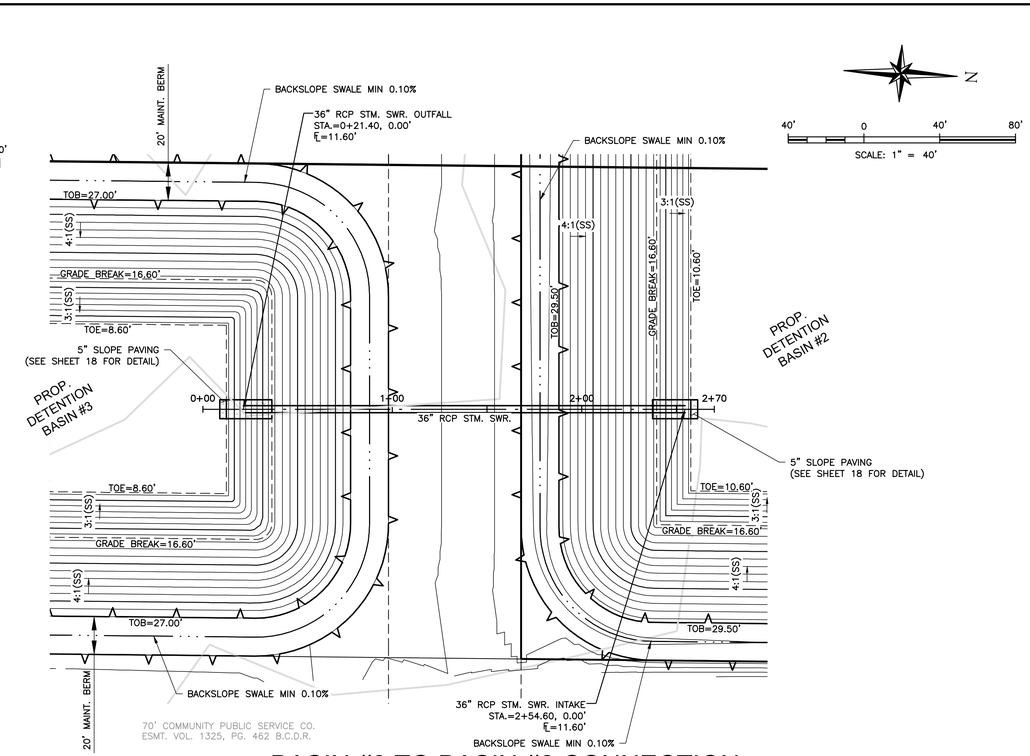
G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\12 DETENTION BASIN #5 PLAN VIEW & CROSS SECTION.DWG

BENCHMARK:

ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4202), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (2001 ADJUSTMENT). ALL DISTANCE ARE ACTUAL DISTANCES. SCALE FACTOR = 0.999866625.



BASIN #1 TO BASIN #2 CONNECTION

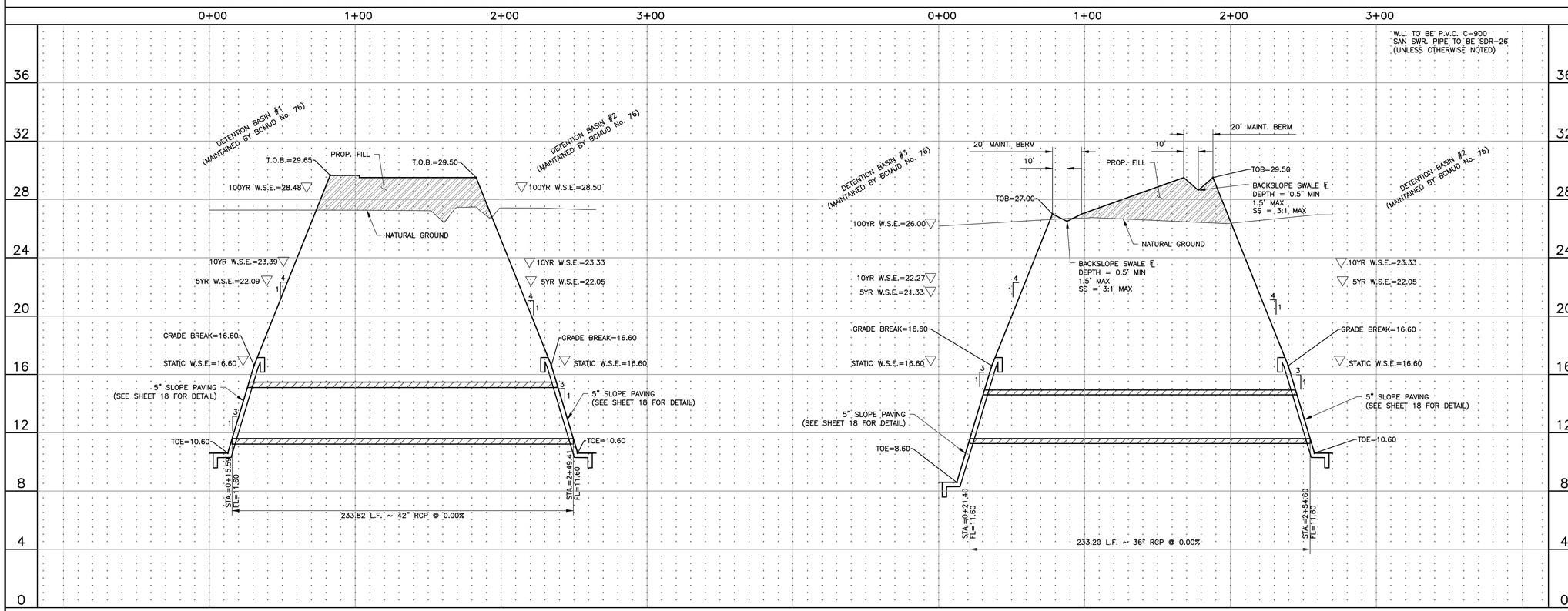


BASIN #3 TO BASIN #2 CONNECTION

LEGEND

	SAN. SWR. LEAD
	PROP. SAN. SWR. WITH M.H.
	EXIST. SAN. SWR. WITH M.H.
	PROP. STM. SWR., INLET & M.H.
	EXIST. STM. SWR., INLET & M.H.
	PROP. WATER LINE, FLUSHING VALVE, GATE VALVE, BLOW OFF VALVE, AND VERTICAL OFFSET
	EXIST. WATER LINE, FLUSHING VALVE, GATE VALVE, BLOW OFF VALVE, AND VERTICAL OFFSET
	WATER LEAD W/ ¾" METER
	TRAFFIC SIGN
	STREET SIGN
	PLAT BOUNDARY
BLOCK 1	BLOCK NUMBER
	U.E., D.E., W.L.E, & S.S.E.
	B.L.
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
W.L.E.	WATERLINE EASEMENT
S.S.E.	SANITARY SEWER EASEMENT
B.L.	BUILDING LINE
	PROPOSED CUT
	PROPOSED FILL

ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY BEFORE COMMENCEMENT OF WORK



SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING | TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

PLAN & PROFILE
BASIN #1 TO BASIN #2 &
BASIN #3 TO BASIN #2
CONNECTIONS

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 13 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 4' VERT: 1" = 40'	JOB No. 5479-02
APPROVED: TDB		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\14 P&P BASIN #1 TO BASIN #2 & BASIN #3 TO BASIN #2 CONNECTIONS.DWG

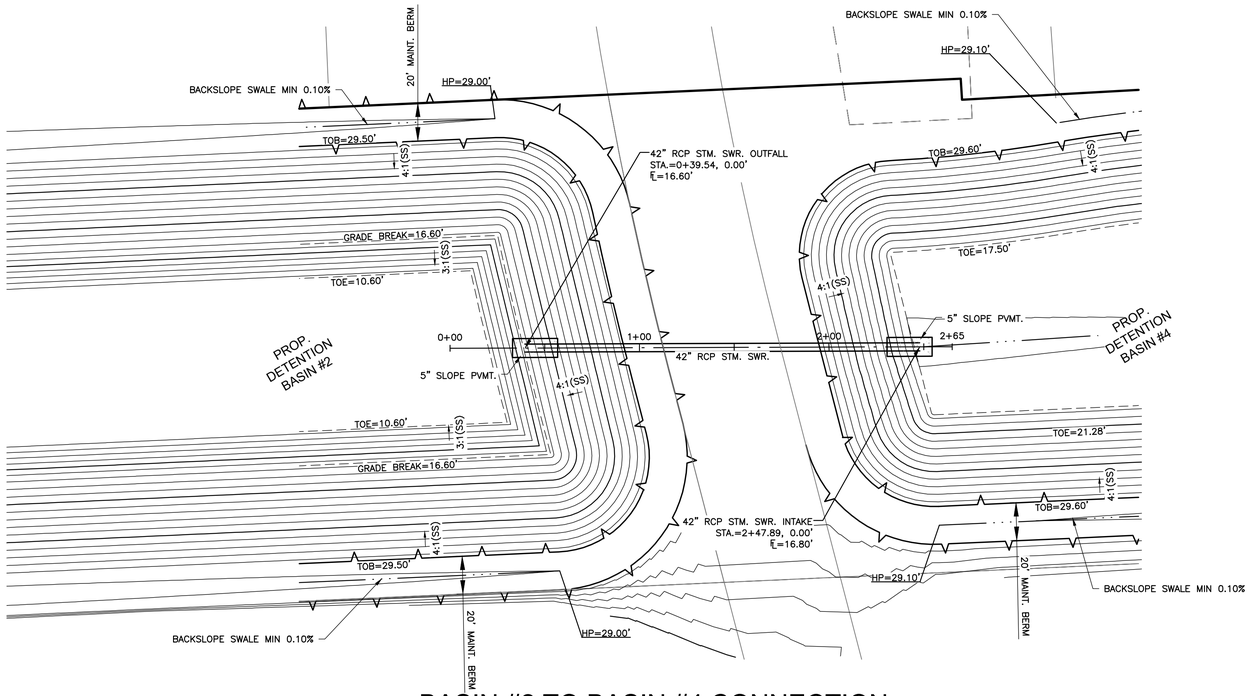
BENCHMARK:

ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4202), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (2001 ADJUSTMENT). ALL DISTANCE ARE ACTUAL DISTANCES. SCALE FACTOR = 0.999866625.

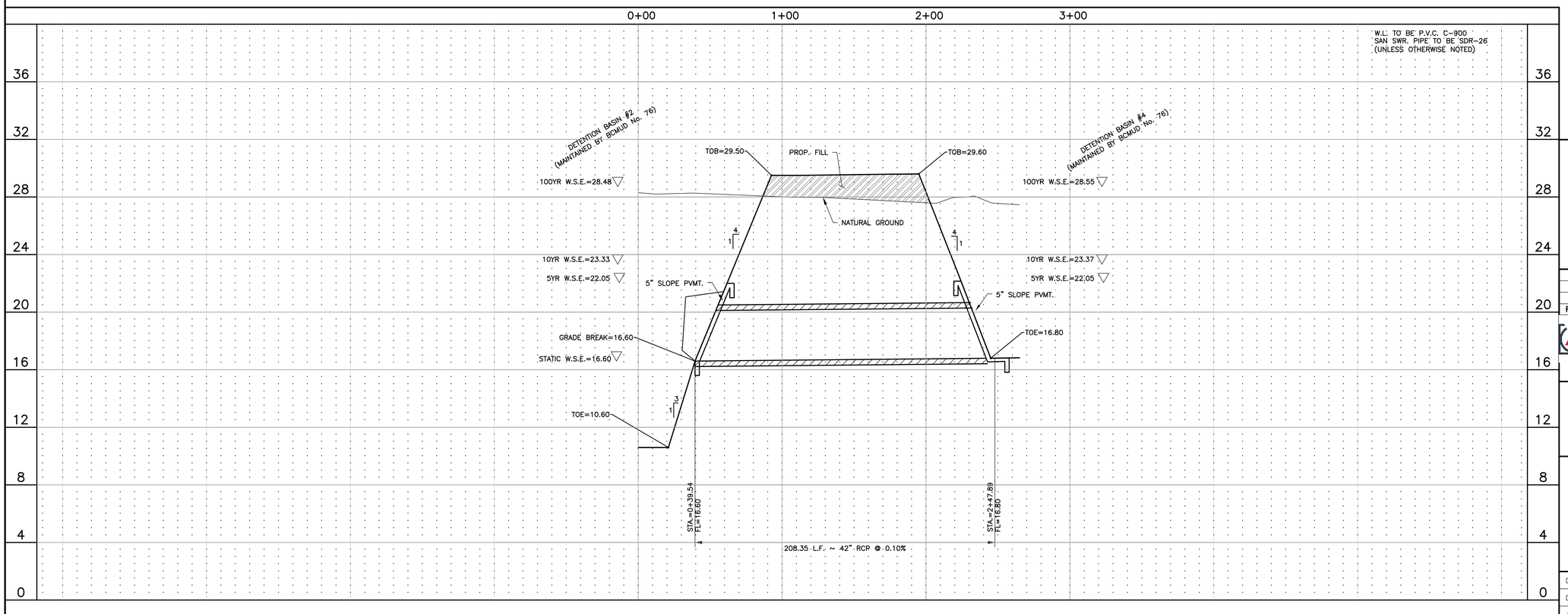
N

40' 0 40' 80'

SCALE: 1" = 40'



BASIN #2 TO BASIN #4 CONNECTION



LEGEND

	SAN. SWR. LEAD
	PROP. SAN. SWR. WITH M.H.
	EXIST. SAN. SWR. WITH M.H.
	PROP. STM. SWR., INLET & M.H.
	EXIST. STM. SWR., INLET & M.H.
	PROP. WATER LINE, FLUSHING VALVE, GATE VALVE, BLOW OFF VALVE, AND VERTICAL OFFSET
	EXIST. WATER LINE, FLUSHING VALVE, GATE VALVE, BLOW OFF VALVE, AND VERTICAL OFFSET
	WATER LEAD W/ ¾" METER
	TRAFFIC SIGN
	STREET SIGN
	PLAT BOUNDARY
BLOCK 1	BLOCK NUMBER
	U.E., D.E., W.L.E, & S.S.E.
	B.L.
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
W.L.E.	WATERLINE EASEMENT
S.S.E.	SANITARY SEWER EASEMENT
B.L.	BUILDING LINE
	PROPOSED CUT
	PROPOSED FILL

ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY BEFORE COMMENCEMENT OF WORK

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED
PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

PLAN & PROFILE
BASIN #2 TO BASIN #4
CONNECTION

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 14 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 4' VERT: 1" = 40'	JOB No. 5479-02
APPROVED: TDB		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\14 P&P BASIN #2 TO BASIN #4 CONNECTION.DWG

PLOTTED: Feb 05,2025 - 4:13pm
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G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\03_XREFS\WATER - DETENTION.dwg
G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\03_XREFS\BASIN.dwg
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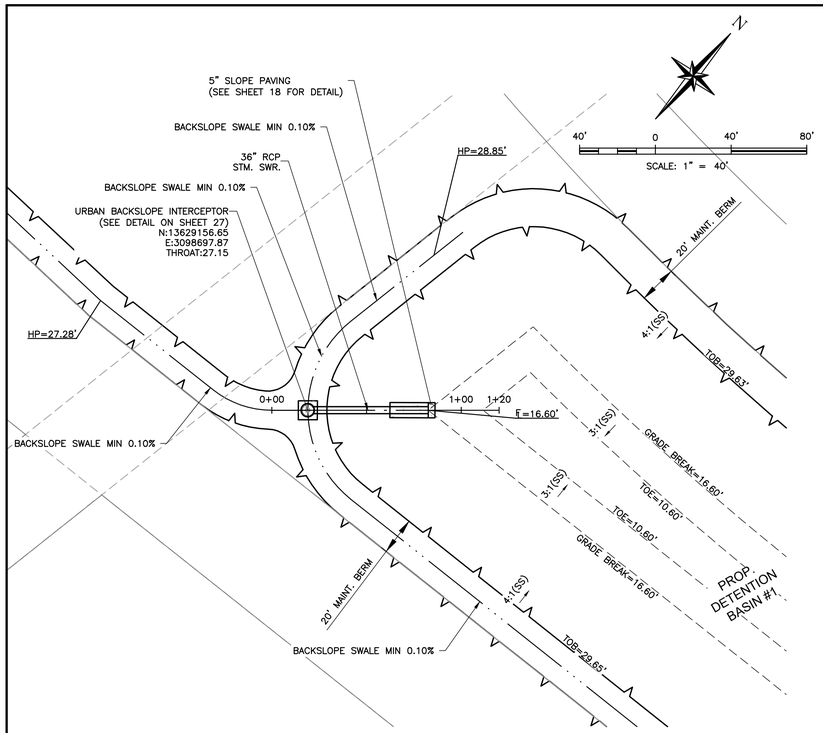
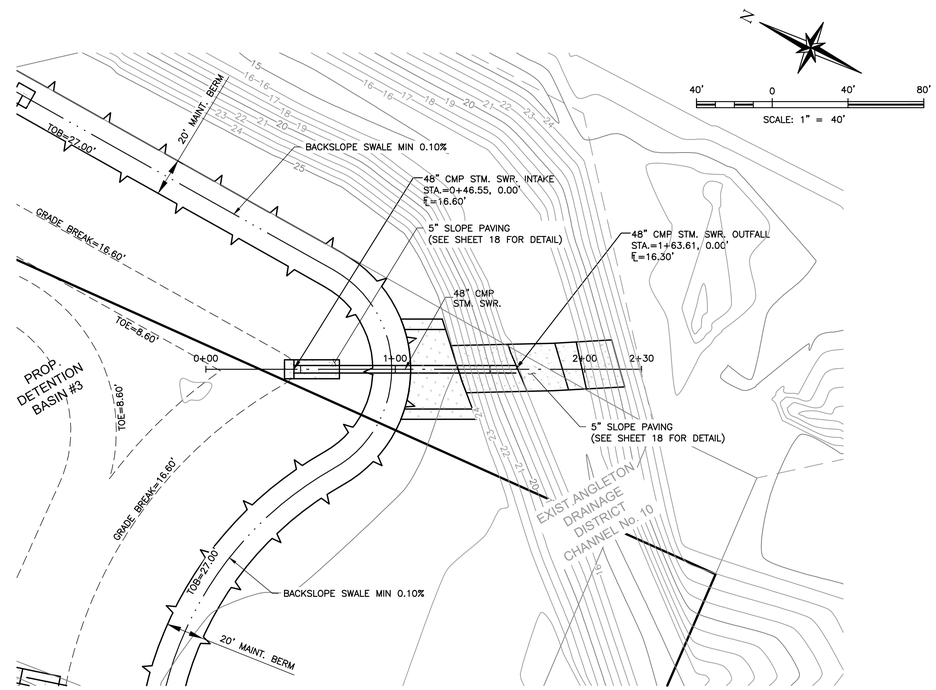
XREFS:



BASIN #1 INTAKE



BASIN #3 OUTFALL

BENCHMARK:

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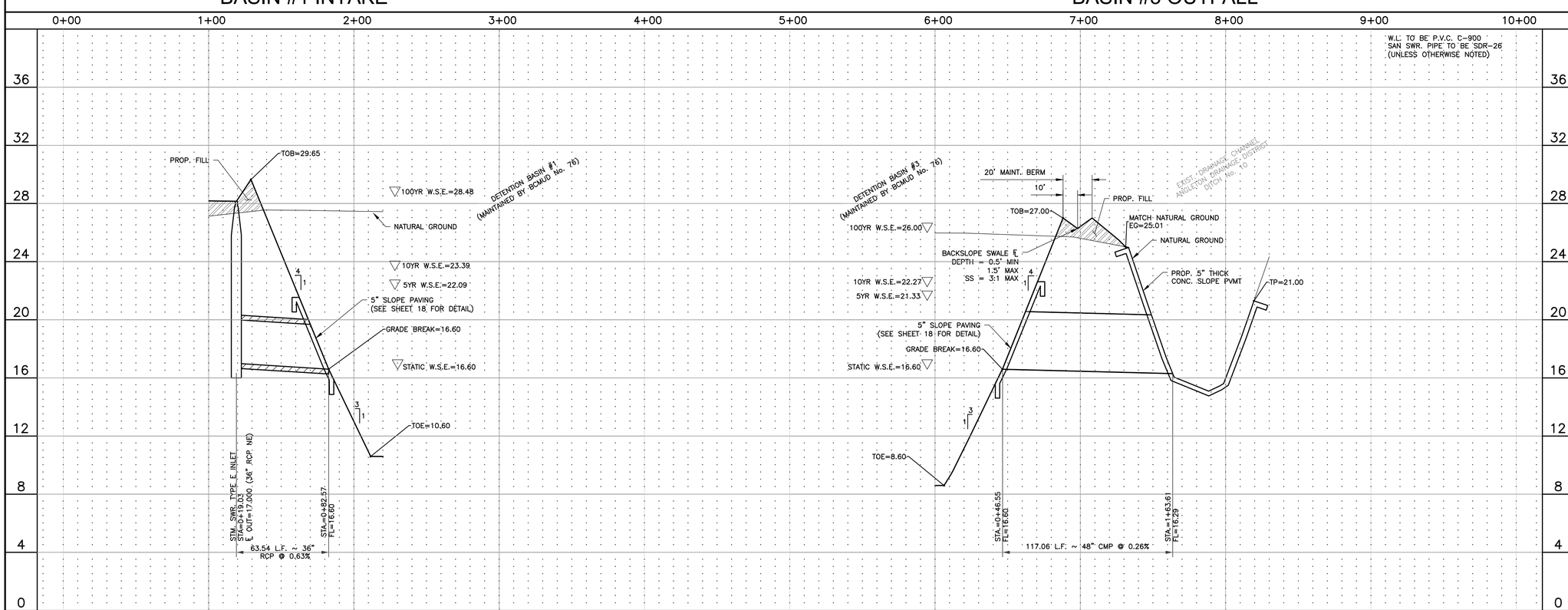
LEGEND

- SAN. SWR. LEAD
- PROP. SAN. SWR. WITH M.H.
- EXIST. SAN. SWR. WITH M.H.
- PROP. STM. SWR., INLET & M.H.
- EXIST. STM. SWR., INLET & M.H.
- PROP. WATER LINE, FLUSHING VALVE, GATE VALVE, BLOW OFF VALVE, AND VERTICAL OFFSET
- EXIST. WATER LINE, FLUSHING VALVE, GATE VALVE, BLOW OFF VALVE, AND VERTICAL OFFSET
- WATER LEAD W/ ¾" METER
- TRAFFIC SIGN
- STREET SIGN
- PLAT BOUNDARY
- BLOCK NUMBER (BLOCK 1)
- U.E., D.E., W.L.E, & S.S.E.
- B.L.
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- W.L.E. WATERLINE EASEMENT
- S.S.E. SANITARY SEWER EASEMENT
- B.L. BUILDING LINE
- PROPOSED CUT
- PROPOSED FILL

ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY BEFORE COMMENCEMENT OF WORK



SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED
PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING | TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

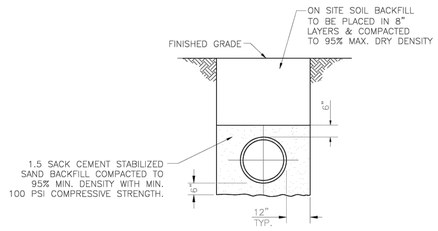
ANGLETON, TEXAS

PLAN & PROFILE
BASIN #1 INTAKE &
BASIN #3 OUTFALL

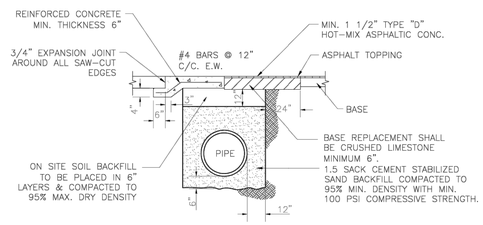
DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 15 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 4' VERT: 1" = 40'	JOB No. 5479-02
APPROVED: TDB		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

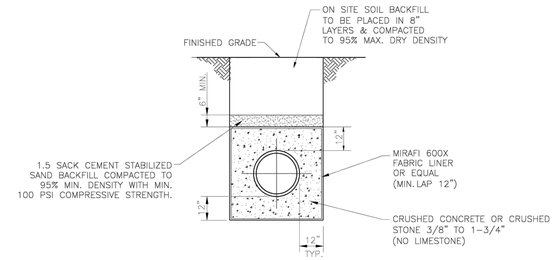
G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\15 P&P BASIN #1 INTAKE & BASIN #3 OUTFALL.DWG



1 **PIPE BEDDING DETAIL**
CONCRETE PIPE (TONGUE AND GROOVE)



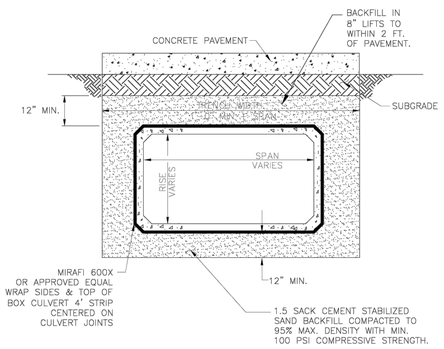
2 **PIPE BEDDING DETAIL**
CONCRETE PIPE (TONGUE AND GROOVE)
BELL AND SPIGOT UNDER PAVEMENT



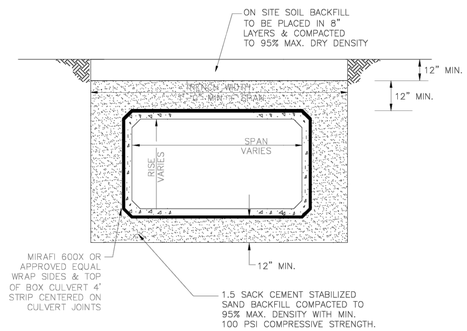
NOTES:

1. POURED-IN-PLACE OR PRE-CAST MANHOLES ONLY SHALL BE USED.
2. NO BRICKS OF ANY KIND WILL BE ALLOWED IN CONSTRUCTION OF MANHOLES OR INLETS.
3. FOR ALL PRE-CAST AND POURED-IN-PLACE INLETS AND JUNCTION BOXES, CENTER DOUBLE-SEALING GASKET IN WALL AND GROUT COMPLETELY AROUND PVC PIPE. GROUT SHALL BE SMOOTH AND FLUSH WITH INNER AND OUTER WALL WHEN ENTERING AT AN ANGLE TO THE WALL OR THROUGH THE CORNER OF AN INLET OR JUNCTION BOX, THE GASKET MAY BE OMITTED.
4. ALL CEMENT STABILIZED SAND BACKFILL SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 100 PSI.

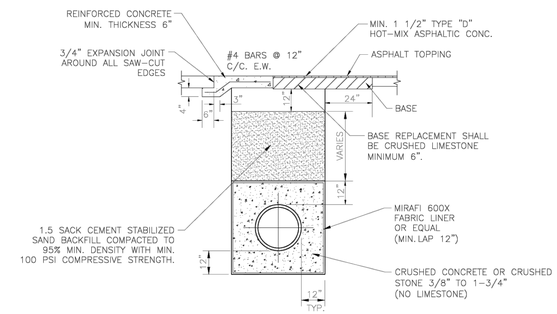
3 **BEDDING AND BACKFILL FOR WET SAND**



4 **BEDDING AND BACKFILL**
FOR REINFORCED CONCRETE BOX CULVERTS
UNDER PAVEMENT



5 **BEDDING AND BACKFILL**
FOR REINFORCED CONCRETE BOX CULVERTS



NOTES:

1. NECESSITY FOR USE OF THIS SECTION TO BE DETERMINED BY THE ENGINEER AS CONSTRUCTION PROGRESSES AND MAY BE MODIFIED BY HIM TO SUIT CONDITIONS ENCOUNTERED.
2. WELL POINTS TO BE INSTALLED AND TRENCH KEPT DRY DURING CONSTRUCTION UNTIL BACKFILL IS COMPLETELY PLACED AND ENOUGH TIME AS APPROVED BY ENGINEER HAS ELAPSED.

6 **BEDDING AND BACKFILL FOR WET SAND**
UNDER PAVEMENT

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING | TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA, HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

STORM SEWER DETAILS
(SHEET 1 OF 2)

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 16 OF 21
DRAWN BY: DH	SCALE: HORZ: VERT: NO SCALE	JOB No. 5479-02
APPROVED: TDB		

PLOTTED: Feb 05,2025 - 4:13pm XREFS: \\US_PROPS\BROOD\.dwg
G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\15 STORM SEWER DETAILS (SHEET 1 OF 2).dwg Feb 05,2025-4:13pm brooom

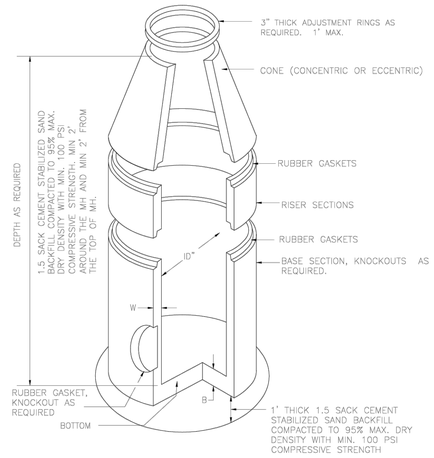
0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\15 STORM SEWER DETAILS (SHEET 1 OF 2).DWG

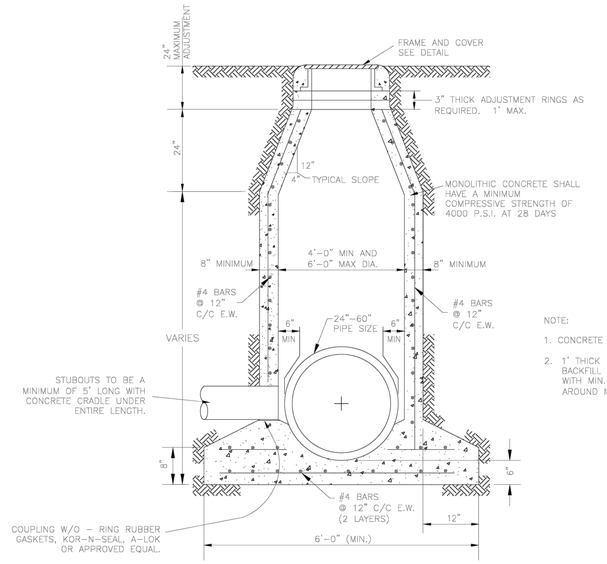
DIMENSIONS AND WEIGHTS			
I.D. SIZE (in)	W (in)	B (in)	RISER WT/LF (lb)
48	5	6	868
60	6	8	1300
72	7	8	1811
96	9	8	3090

NOTE:

1. CLASS 1 CONCRETE WITH A DESIGN STRENGTH OF4000 PSI AT 28 DAYS. RATES FOR H-20 LOADING.
2. PRECAST CONCRETE MANHOLE CONFORMING TO ASTM C478, STRUCTURAL REINFORCEMENT CONFORMING TO ASTM 615A.
3. LIFTING INSERTS AS REQUIRED.
4. ALL JOINTS SHALL BE SEALED WITH APPROVED GASKET.
5. LARGER INSIDE DIAMETER MANHOLES SHALL BE REQUIRED IF LESS THAN 1' OF WALL SURFACE IS LEFT BETWEEN OPENINGS OR AS SPECIFIED BY ENGINEER.
6. ALL MANHOLES IN OPEN DITCH AND ABOVE FINISHED GRADE SHALL HAVE HINGED FRAME AND COVER.
7. ALL MANHOLES IN PAVED AREAS SHALL HAVE BLOCK OUT (SEE DRIVEWAY DETAIL SHEET).



1 **TYPE "C" PRECAST STORM SEWER MANHOLE**



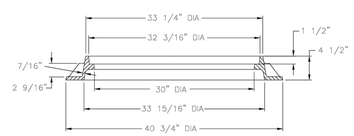
NOTE:

1. CONCRETE SHALL BE A MONOLITHIC POUR.
2. 1' THICK 1.5 SACK CEMENT STABILIZED SAND BACKFILL COMPACTED TO 95% MAX. DRY DENSITY WITH MIN. 100 PSI COMPRESSIVE STRENGTH AROUND MANHOLE COMPACTED IN 8" LIFTS.

2 **TYPE "C" CAST-IN-PLACE STORM SEWER MANHOLE**

NOTE:

1. ONLY CAST-IN-PLACE OR PRE-CAST MANHOLES SHALL BE USED.
2. NO BRICKS OF ANY KIND WILL BE ALLOWED IN CONSTRUCTION OF MANHOLES OR INLETS.
3. FOR ALL PRE-CAST AND POURED-IN-PLACE INLETS AND JUNCTION BOXES, CENTER DOUBLE- SEALING GASKET IN WALL AND GROUT COMPLETELY AROUND DUAL WALL PVC PIPE. GROUT SHALL BE SMOOTH AND FLUSH WITH INNER AND OUTER WALL. WHEN ENTERING AT AN ANGLE TO THE WALL OR THROUGH THE CORNER OF AN INLET OR JUNCTION BOX, THE GASKET MAY BE OMITTED.
4. ALL CEMENT STABILIZED SAND BACKFILL SHALL CONFORM TO SPECIFICATION CEMENT STABILIZED SAND - SECTION 02252.



STORM SEWER SIZE	MANHOLE DIAMETER
48" OR LARGER	6'-0"
48" TO 42"	5'-0"
30" OR LESS	4'-0"

NOTE:

1. MANHOLE FRAME AND COVER TO BE EAST JORDAN IRON WORKS PATTERN, OR OTHER APPROVED EQUAL. WHERE SEWER IS LOCATED IN EASEMENTS, CONTRACTOR MAY USE LIGHTWEIGHT F AND C, APPROVED BY THE ENGINEER.
2. STAINLESS STEEL INFLOW PREVENTERS MADE BY KoLo, INC., OR APPROVED EQUAL, SHALL BE USED ON ALL SANITARY SEWER MANHOLES.
3. ALL MANHOLES IN OPEN DITCH AND ABOVE FINISHED GRADE SHALL HAVE HINGED FRAME AND COVER.

3 **MANHOLE COVER AND FRAME**

SEAL

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GANNETT FLEMING | TRANSYSTEMS

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3100 WEST ALABAMA, HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

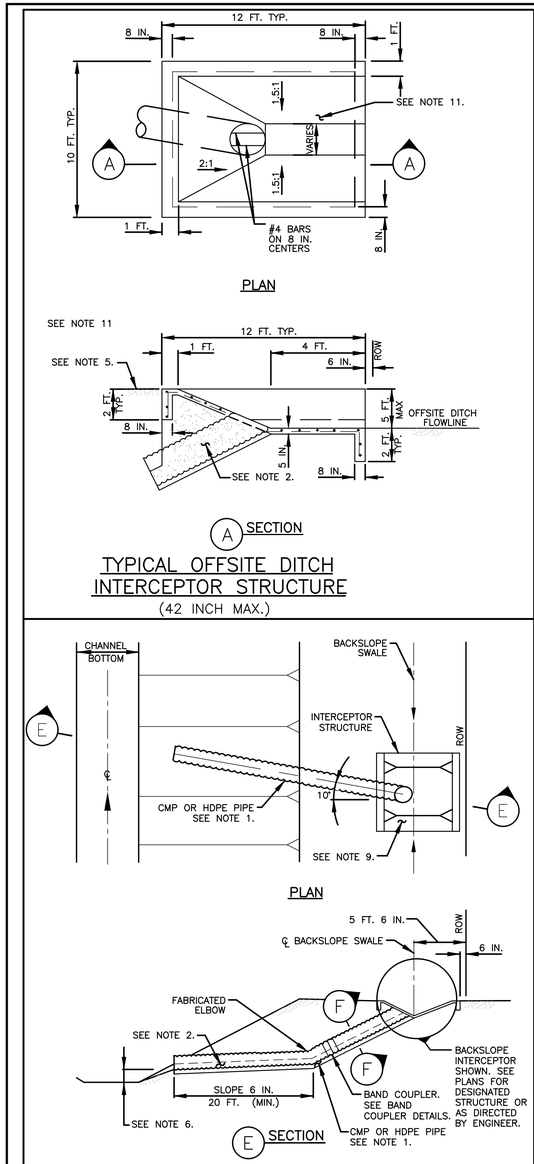
STORM SEWER DETAILS
(SHEET 2 OF 2)

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 17 OF 21
DRAWN BY: DH	SCALE: HORZ: NO SCALE VERT:	JOB No. 5479-02
APPROVED: TDB		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

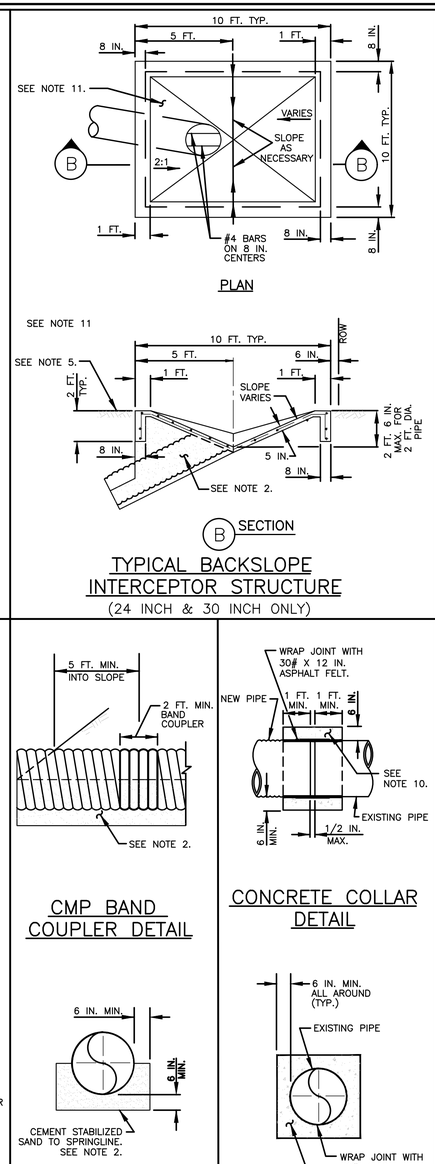
G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\16 STORM SEWER DETAILS (SHEET 2 OF 2).DWG

PLOTTED: Feb 05,2025 - 4:13pm \\J-US-PRPP01\PRP001.dwg XREFS: G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\16 STORM SEWER DETAILS (SHEET 2 OF 2).dwg Feb 05,2025-4:13pm tbroom



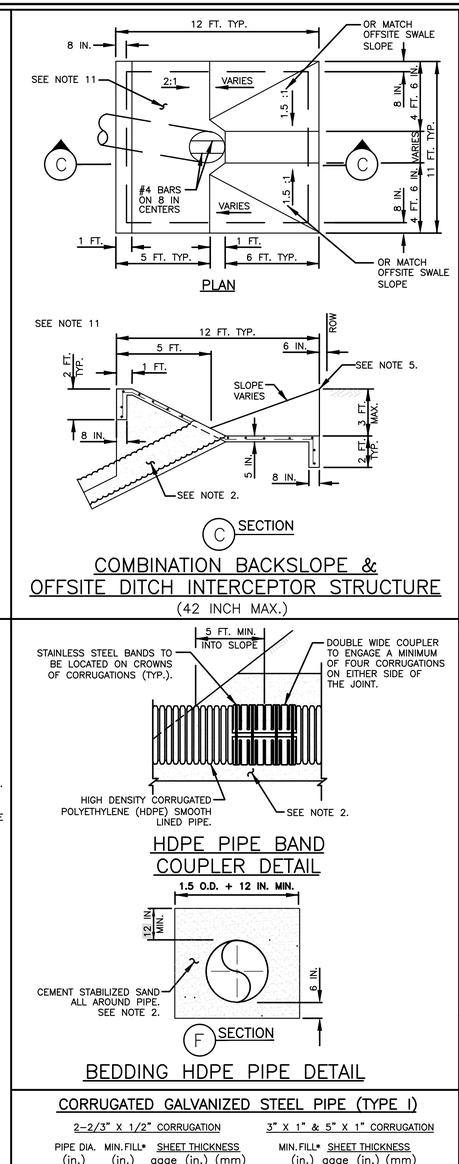
TYPICAL OFFSITE DITCH INTERCEPTOR STRUCTURE

(42 INCH MAX.)



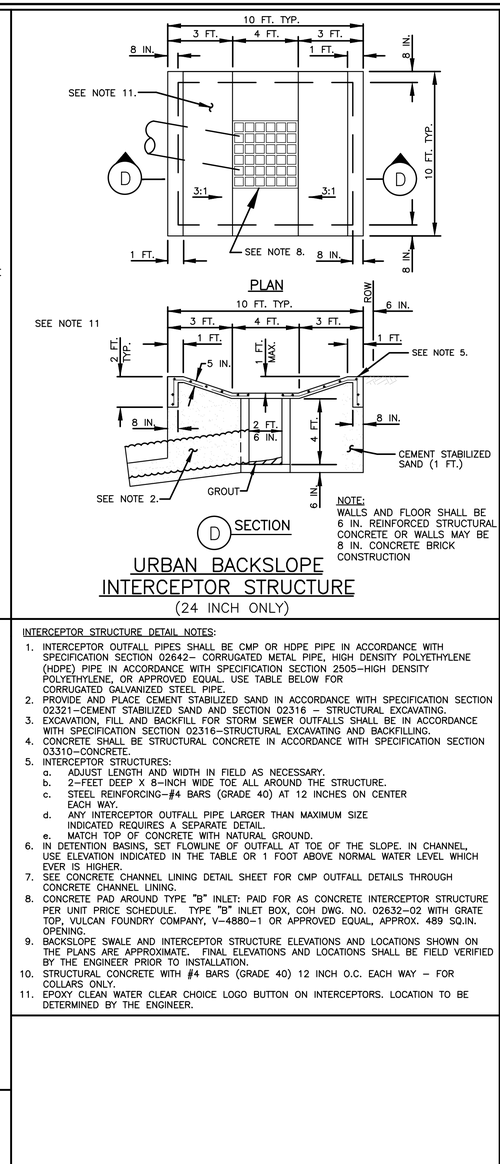
TYPICAL BACKSLOPE INTERCEPTOR STRUCTURE

(24 INCH & 30 INCH ONLY)



COMBINATION BACKSLOPE & OFFSITE DITCH INTERCEPTOR STRUCTURE

(42 INCH MAX.)



NOTE:
WALLS AND FLOOR SHALL BE 6 IN. REINFORCED STRUCTURAL CONCRETE OR WALLS MAY BE 8 IN. CONCRETE BRICK CONSTRUCTION

URBAN BACKSLOPE INTERCEPTOR STRUCTURE

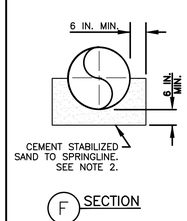
(24 INCH ONLY)

TYPICAL INTERCEPTOR OUTFALL STRUCTURE LAYOUT

PIPE OUT FALL IN CHANNELS

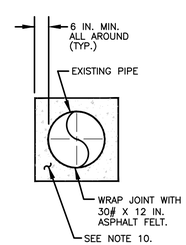
BOTTOM WIDTH	PIPE OUTLET INVERT
6 FEET ≤ BW ≤ 20 FT	1 FOOT ABOVE FLOWLINE
20 FEET < BW ≤ 60 FT	AT TOE OF SLOPE
BW > 60 FT	AT TOE OF SLOPE

CMP BAND COUPLER DETAIL



BEDDING CMP DETAIL

CONCRETE COLLAR DETAIL



BEDDING CONCRETE PIPE DETAIL

HDPE PIPE BAND COUPLER DETAIL

BEDDING HDPE PIPE DETAIL

CORRUGATED GALVANIZED STEEL PIPE (TYPE I)

PIPE DIA. (in.)	2-2/3" X 1/2" CORRUGATION MIN. FILL* (in.)	SHEET THICKNESS gage	SHEET THICKNESS (in.)	SHEET THICKNESS (mm)	3" X 1" & 5" X 1" CORRUGATION MIN. FILL* (in.)	SHEET THICKNESS gage	SHEET THICKNESS (in.)	SHEET THICKNESS (mm)
24	12	16	.064	1.63	–	–	–	–
30	12	16	.064	1.63	–	–	–	–
36	12	16	.064	1.63	–	–	–	–
42	12	16	.064	1.63	12	16	.064	1.63
48	12	16	.064	1.63	12	16	.064	1.63

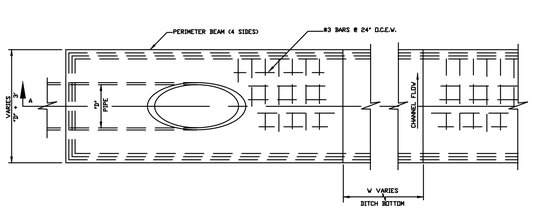
* MINIMUM DEPTH OF COVER ABOVE TOP OF PIPE.
MAXIMUM DEPTH OF COVER ABOVE TOP OF PIPE IS 20 FEET.

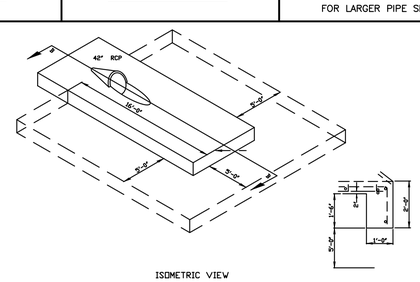
FOR LARGER PIPE SIZES SEE: STORM SEWER AND RIPRAP DETAILS SHEET

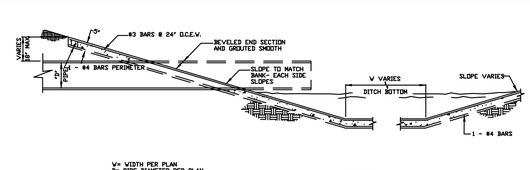
INTERCEPTOR STRUCTURE DETAIL NOTES:

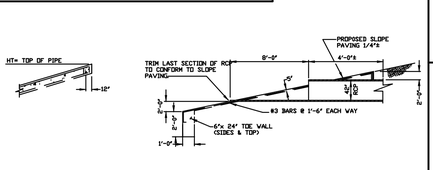
1. INTERCEPTOR OUTFALL PIPES SHALL BE CMP OR HDPE PIPE IN ACCORDANCE WITH SPECIFICATION SECTION 02642– CORRUGATED METAL PIPE, HIGH DENSITY POLYETHYLENE (HDPE) PIPE IN ACCORDANCE WITH SPECIFICATION SECTION 2505–HIGH DENSITY POLYETHYLENE, OR APPROVED EQUAL. USE TABLE BELOW FOR CORRUGATED GALVANIZED STEEL PIPE.
2. PROVIDE AND PLACE CEMENT STABILIZED SAND IN ACCORDANCE WITH SPECIFICATION SECTION 02321–CEMENT STABILIZED SAND AND SECTION 02316 – STRUCTURAL EXCAVATING.
3. EXCAVATION, FILL AND BACKFILL FOR STORM SEWER OUTFALLS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02316–STRUCTURAL EXCAVATING AND BACKFILLING.
4. CONCRETE SHALL BE STRUCTURAL CONCRETE IN ACCORDANCE WITH SPECIFICATION SECTION 03310–CONCRETE.
5. INTERCEPTOR STRUCTURES:
   a. ADJUST LENGTH AND WIDTH IN FIELD AS NECESSARY.
   b. 2–FEET DEEP X 8–INCH WIDE TOE ALL AROUND THE STRUCTURE.
   c. STEEL REINFORCING–#4 BARS (GRADE 40) AT 12 INCHES ON CENTER EACH WAY.
   d. ANY INTERCEPTOR OUTFALL PIPE LARGER THAN MAXIMUM SIZE INDICATED REQUIRES A SEPARATE DETAIL.
   e. MATCH TOP OF CONCRETE WITH NATURAL GROUND.
6. IN DETENTION BASINS, SET FLOWLINE OF OUTFALL AT TOE OF THE SLOPE. IN CHANNEL, USE ELEVATION INDICATED IN THE TABLE OR 1 FOOT ABOVE NORMAL WATER LEVEL WHICH EVER IS HIGHER.
7. SEE CONCRETE CHANNEL LINING DETAIL SHEET FOR CMP OUTFALL DETAILS THROUGH CONCRETE CHANNEL LINING.
8. CONCRETE PAD AROUND TYPE "B" INLET: PAID FOR AS CONCRETE INTERCEPTOR STRUCTURE PER UNIT PRICE SCHEDULE. TYPE "B" INLET BOX, COH DWG. NO. 02632–02 WITH GRATE TOP, VULCAN FOUNDRY COMPANY, V–4880–1 OR APPROVED EQUAL, APPROX. 489 SQ.IN. OPENING.
9. BACKSLOPE SWALE AND INTERCEPTOR STRUCTURE ELEVATIONS AND LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. FINAL ELEVATIONS AND LOCATIONS SHALL BE FIELD VERIFIED BY THE ENGINEER PRIOR TO INSTALLATION.
10. STRUCTURAL CONCRETE WITH #4 BARS (GRADE 40) 12 INCH O.C. EACH WAY – FOR COLLARS ONLY.
11. EPOXY CLEAN WATER CLEAR CHOICE LOGO BUTTON ON INTERCEPTORS. LOCATION TO BE DETERMINED BY THE ENGINEER.

P.E. SEAL AND SIGNATURE









STANDARD CONCRETE SLOPE PAVING PIPE OUTFALL

N.T.S.

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING | TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #18001
3100 WEST ALABAMA, HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

INTERCEPTOR STRUCTURE AND CONCRETE CHANNEL LINING DETAILS

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 18 OF 21
DRAWN BY: DH	SCALE: HORZ: NO SCALE VERT:	JOB No. 5479–02
APPROVED: TDB		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\18 INTERCEPTOR DETAILS.DWG

PLOTTED: Feb 05,2025 – 4:13pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\18 INTERCEPTOR DETAILS.dwg Feb 05,2025-4:13pm brooms

0 1 2 3
ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

BENCHMARK:

ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4202), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (2001 ADJUSTMENT). ALL DISTANCE ARE ACTUAL DISTANCES. SCALE FACTOR = 0.999866625.

N

300' 0 300' 600'

SCALE: 1" = 300'

LEGEND

SC	STABILIZED CONSTRUCTION ACCESS
RFF RFF	EXISTING REINFORCED FILTER FABRIC FENCE
RFF RFF	REINFORCED FILTER FABRIC FENCE
IPB	INLET PROTECTION BARRIER
SB	SANDBAG
CW	CONCRETE TRUCK WASHOUT
	HYDROMULCH SEEDING
FDR	ROCK FILTER DAM

STORM WATER POLLUTION PREVENTION DETAILS
(SEE SHEET XX OF XX)

NOTE:
PROPOSED DETENTION BASIN IS TO BE MAINTAINED BY BRAZORIA COUNTY M.U.D. #76

WARNING OVERHEAD ELECTRICAL FACILITIES EXIST IN THE AREA. CONTRACTOR TO USE EXTREME CAUTION

WARNING UNDERGROUND GAS FACILITIES EXIST IN THE AREA. CONTRACTOR TO USE EXTREME CAUTION

ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY BEFORE COMMENCEMENT OF WORK

SEAL

STATE OF TEXAS
TYLER D. BROOM
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GANNETT FLEMING

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3100 WEST ALABAMA HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

STORM WATER POLLUTION PREVENTION PLAN

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 19 OF 21
DRAWN BY: DH	SCALE: HORZ: 1" = 300' VERT:	JOB No. 5479-02
APPROVED: TDB		

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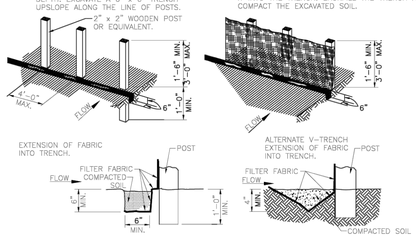
PLOTTED: Feb 05,2025 - 4:13pm
XREFS:
G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\19 SWPPP.dwg Feb 05,2025- 4:13pm tbroom

1. SET POSTS AT REQUIRED SPACING AND DEPTH. EXCAVATE A 6" x 6" TRENCH UPSLOPE ALONG THE LINE OF POSTS.

2. ATTACH FILTER FABRIC TO POSTS AND INSTALL IT INTO THE TRENCH. BACKFILL THE TRENCH AND COMPACT THE EXCAVATED SOIL.



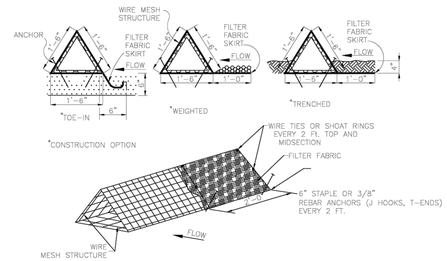
GENERAL NOTES:

1. SET POSTS AT 4-FEET MAXIMUM SPACING. IF FACTORY PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAXIMUM.
2. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6 INCHES AT THE POST, FOLD TOGETHER, AND ATTACH TO THE POSTS.
3. REMOVE SEDIMENT DEPOSITS WHEN SILT DEPTH REACHES ONE-THIRD OF THE HEIGHT OF THE FENCE.

FILTER FABRIC FENCE

X— (FF) —X

SYMBOL



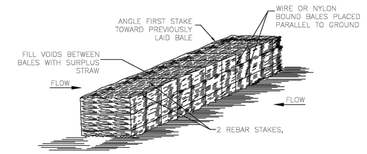
GENERAL NOTES:

1. PLACE BARRIER IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BARRIER.
2. USING ONE CONTINUOUS SECTION OF FILTER FABRIC, WRAP FABRIC AROUND WIRE MESH AND EXTEND FABRIC TO FORM SKIRT ON THE UPSTREAM SIDE.
3. WEIGHT SKIRT WITH A CONTINUOUS LAYER OF 3-INCH TO 5-INCH OPEN GRADED ROCK, OR TOE IN SKIRT WITH SIX INCHES WITH MECHANICALLY COMPACTED MATERIAL.
4. SECURELY ANCHOR BARRIER AND SKIRT IN PLACE USING 6-INCH WIRE STAPLES ON 2-FOOT CENTERS ON BOTH EDGES, OR STAKE USING 18-INCH BY 3/8 INCH REBARS (T-ENDS, J-HOOKS).
5. FILTER FABRIC SHALL BE LAPPED OVER ENDS 6 INCHES TO COVER SEGMENT JOINTS. FASTEN JOINTS WITH GALVANIZED SHOAT RINGS OR EQUIVALENT.
6. THE BARRIER STRUCTURE SHALL BE WELDED WIRE MESH, 18 INCHES ON EACH SIDE.

TRIANGLE FILTER FABRIC FENCE

X— (TFF) —X

SYMBOL



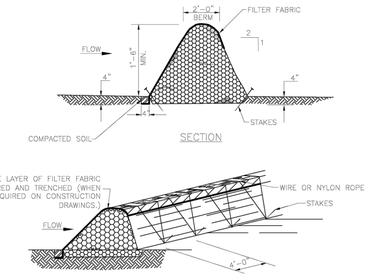
GENERAL NOTES:

1. LIMIT USE TO ONSITE SWALES FOR PURPOSES OF LOW FLOW VELOCITY DISSIPATION FOR EROSION CONTROL. USE STRAW BALE FENCES TO TREAT OVERLAND FLOW ONLY. DO NOT USE STRAW BALE FENCES TO TREAT FLOW IN CHANNELS.
2. PLACE BALES IN A ROW WITH ENDS TIGHTLY ABUTTING ADJACENT BALES. FILL THE VOIDS BETWEEN BALES WITH SURPLUS STRAW. PLACE BALES WITH BINDING PARALLEL TO GROUND SURFACE.
3. IMBED EACH BALE AT LEAST 4 INCHES IN THE SOIL.
4. SECURELY ANCHOR BALES IN PLACE BY REBAR STAKES. DRIVE STAKES THROUGH THE BALES AND AT LEAST 18 INCHES INTO THE GROUND. ANGLE THE STAKE IN EACH BALE TOWARD THE PREVIOUS BALE TO FORCE THE BALES TOGETHER.
5. BIND BALES WITH WIRE OR NYLON ROPE TIED ACROSS THE STRAW BALES.
6. REPLACE WITH NEW STRAW BALE FENCE EVERY TWO MONTHS.
7. WATTLES STAKED INTO THE GROUND ARE A PREFERRED SUBSTITUTE FOR STRAW BALE FENCES.

STRAW BALE FENCE

X— (SBF) —X

SYMBOL



GENERAL NOTES:

1. LIMIT USE TO ONSITE SWALES FOR PURPOSES OF LOW FLOW VELOCITY DISSIPATION FOR EROSION CONTROL. USE BRUSH BERMS TO TREAT OVERLAND FLOW ONLY. DO NOT USE BRUSH BERMS TO TREAT FLOW IN CHANNELS.
2. PLACE WOODY BRUSH AND BRANCHES HAVING A DIAMETER OF LESS THAN 2 INCHES WITH A 6-INCH OVERLAP. AVOID INCORPORATION OF ANNUAL WEEDS AND SOIL INTO BRUSH BERM.
3. MINIMUM HEIGHT OF THE BRUSH BERM IS 18 INCHES, MEASURED FROM THE TOP OF THE EXISTING GROUND AT THE UPSLOPE TOE TO THE TOP OF THE BERM.
4. HAND PLACE BRUSH BERMS ALONG CONTOUR LINES. MACHINE PLACEMENT OF BRUSH BERMS IS NOT PERMITTED.
5. IMBED BRUSH BERM AT LEAST 4 INCHES INTO THE SOIL.
6. ANCHOR BRUSH BERMS USING WIRE OR NYLON ROPE ACROSS THE BERM WITH A MINIMUM TENSION OF 50 POUNDS.
7. SECURELY TIE ROPE TO 18-INCH REBAR STAKES DRIVEN INTO THE GROUND ON 4-FOOT CENTERS ON BOTH SIDES OF THE BERM.
8. PERFORM MAINTENANCE AS NEEDED.

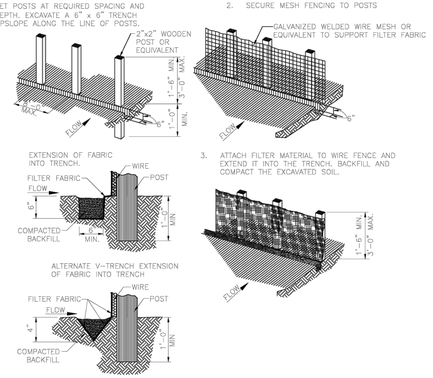
BRUSH BERM

X— (SB) —X

SYMBOL

1. SET POSTS AT REQUIRED SPACING AND DEPTH. EXCAVATE A 6" x 6" TRENCH UPSLOPE ALONG THE LINE OF POSTS.

2. SECURE MESH FENCING TO POSTS



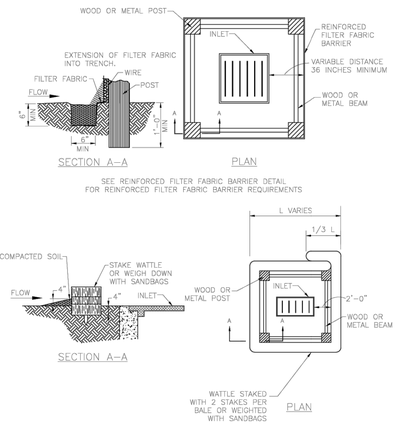
GENERAL NOTES:

1. SECURELY FASTEN MESH FENCING TO POSTS WITH STAPLES OR TIE WIRES.
2. SECURELY FASTEN FILTER FABRIC TO MESH FENCING.
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6 INCHES AT A POST, FOLD TOGETHER, AND ATTACH TO A POST.
4. REMOVE SEDIMENT DEPOSITS WHEN SILT REACHES ONE-THIRD OF THE HEIGHT OF THE FENCE IN DEPTH.

REINFORCED FILTER FABRIC BARRIER

X— (RFB) —X

SYMBOL

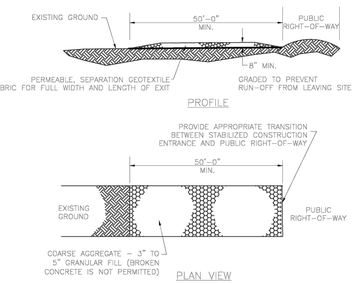


NOTE:
TYPICALLY STRAW BALES ARE NOT RECOMMENDED FOR INLET PROTECTION BARRIERS.

INLET PROTECTION BARRIERS FOR STAGE I INLETS

IPB

SYMBOL



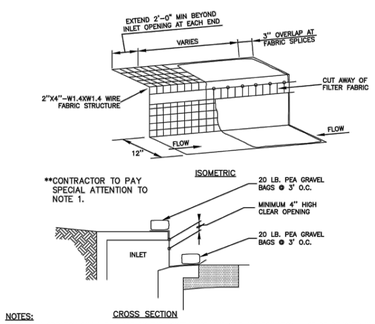
GENERAL NOTES:

1. MINIMUM LENGTH IS AS SHOWN ON CONSTRUCTION DRAWINGS OR 50 FEET, WHICHEVER IS MORE.
2. CONSTRUCT AND MAINTAIN CONSTRUCTION EXIT WITH CONSTANT WIDTH ACROSS ITS LENGTH, INCLUDING ALL POINTS OF INGRESS OR EGRESS.
3. UNLESS SHOWN ON THE CONSTRUCTION DRAWINGS, STABILIZATION FOR OTHER AREAS WILL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT.
4. WHEN SHOWN ON THE CONSTRUCTION DRAWINGS, WIDEN OR LENGTHEN STABILIZED AREA TO ACCOMMODATE A TRUCK WASHING AREA. PROVIDE OUTLET SEDIMENT TRAP FOR THE TRUCK WASHING AREA.
5. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL COARSE AGGREGATE TO MAINTAIN THE REQUIRED DEPTH OR WHEN SURFACE BECOMES PACKED WITH MUD.
6. PERIODICALLY TURN AGGREGATE TO EXPOSE A CLEAN DRIVING SURFACE.
7. ALTERNATIVE METHODS OF CONSTRUCTION INCLUDE
   -CEMENT STABILIZED SOIL. COMPACTED CEMENT STABLIZED SOIL, LIMESTONE AGGREGATE, OR OTHER FILL MATERIAL IN AN APPLICATION OF THICKNESS OF 8 INCHES.
   -WOOD MATS: OAK OR OTHER HARDWOOD TIMBERS PLACED EDGE TO EDGE AND ACROSS SUPPORT WOODEN BEAMS WHICH ARE PLACED ON TOP OF EXISTING SOIL IN AN APPLICATION THICKNESS OF 6 INCHES.
   -STEEL MATS: PERFORATED MATS PLACED ACROSS PERPENDICULAR SUPPORT MEMBERS.

STABILIZED CONSTRUCTION ACCESS

SC

SYMBOL



NOTES:

1. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
2. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.
3. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM-WATER BEGINS TO OVERTOP THE CURB.
4. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

WIRE/FILTER FABRIC CURB INLET PROTECTION

IPB

SYMBOL

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED
PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

GANNETT FLEMING

TRANSYSTEMS

T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA, HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

STORM WATER POLLUTION PREVENTION PLAN DETAILS (SHEET 1 OF 2)

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 20 OF 21
DRAWN BY: DH	SCALE: HORZ: VERT: NO SCALE	JOB No. 5479-02
APPROVED: TDB		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

G:\1130\5479-01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\20 SWPPP DETAILS (SHEET 1 OF 2).DWG

PLOTTED: Feb 05,2025 - 4:13pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\20 SWPPP DETAILS (SHEET 1 OF 2).dwg Feb 05,2025-4:13pm Brooom

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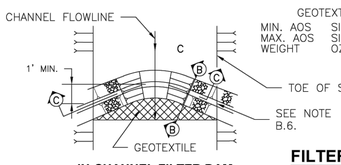


IN-CHANNEL FILTER DAM PLAN

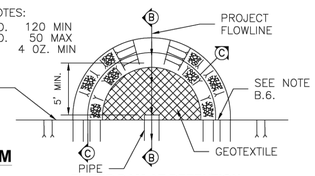
GEOTEXTILE NOTES:

MIN. AOS	SIEVE NO.	120 MIN
MAX. AOS	SIEVE NO.	50 MAX
WEIGHT	OZ/SY	4 OZ. MIN

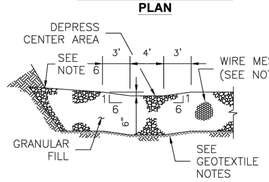
FILTER DAM

RFD–TYPE

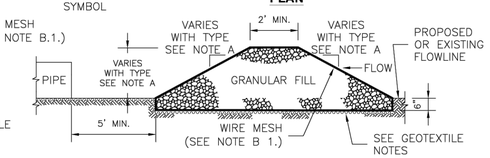
SYMBOL



FILTER DAM AT DETENTION BASIN OUTFALL PIPE PLAN



SECTION C-C



SECTION B-B

NOTE: ONLY APPLIES FOR DETENTION BASIN OUTFALL PIPE PROTECTION.

A. TYPES OF FILTER DAMS

1. TYPE 1 (NON–REINFORCED)
   a. HEIGHT – 18–24 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM)
   c. SLOPES – 2:1 (MAXIMUM).
2. TYPE 2 (REINFORCED).
   a. HEIGHT – 18–36 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM).
   c. SLOPES – 2:1 (MAXIMUM).
3. TYPE 3 (REINFORCED)
   a. HEIGHT – 36–48 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM).
   c. SLOPES – 3:1 (MAXIMUM).
4. TYPE 4 (GABION)
   a. HEIGHT – 30 INCHES (MINIMUM). MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH – 2 FEET (MINIMUM).
5. TYPE 5. AS SHOWN ON THE PLANS.

B. CONSTRUCT FILTER DAMS ACCORDING TO THE FOLLOWING CRITERIA UNLESS SHOWN OTHERWISE ON THE PLANS.

1. TYPE 2 AND 3 FILTER DAMS: SECURE WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1 INCH DIAMETER HEXAGONAL OPENINGS.
2. PLACE GRANULAR FILL ON THE WIRE MESH TO HEIGHT AND SLOPES SHOWN ON PLANS OR AS SPECIFIED BY THE ENGINEER.
   a. 3–5 INCHES FOR ROCK FILTER DAM TYPES 1, 2 AND 4.
   b. 4–8 INCHES FOR ROCK FILTER DAM TYPE REFER TO GRANULAR FILL IN SPECIFICATION SECTION No. 02378 RIPRAP AND GRANULAR FILL.
3. FOLD WIRE MESH AT UPSTREAM SIDE OVER GRANULAR FILL AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS.
4. IN STREAMS: SECURE OR STAKE MESH TO STREAM BED PRIOR TO AGGREGATE PLACEMENT.
5. SEE HCFCD SPECIFICATION SECTION NO. 02364–FILTER DAMS.
6. EMBED ONE FOOT MINIMUM INTO SLOPE AND RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA AT SLOPE.

MAINTENANCE

ALL EROSION AND SEDIMENT CONTROL WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIRS NECESSARY IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN 7 CALENDAR DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT. THE AREA ADJACENT TO CREEKS AND DRAINAGE WAYS SHALL HAVE PRIORITY FOLLOWED BY DEVICES PROTECTING STORM SEWER INLETS.

INSPECTION

ALL INSPECTION WILL BE PERFORMED BY A XXX INSPECTOR EVERY SEVEN DAYS OR TWO WEEKS, AS WELL AS AFTER EVERY HALF–INCH OR MORE OF RAIN (AS RECOMMENDED ON A NON–FREEZING RAIN GAUGE TO BE LOCATED AT THE PROJECT SITE). AN INSPECTION AND MAINTENANCE REPORT SHOULD BE MADE FOR EACH INSPECTION. BASED ON THE INSPECTION RESULTS, THE CONTROLS SHALL BE REVISED ACCORDING TO THE INSPECTION REPORT.

WASTE MATERIALS

THE DUMPSTER USED TO STORE ALL WASTE MATERIAL WILL MEET ALL STATE AND THE VILLAGE OF BONNEY SOLID WASTE ORDINANCE. ALL TRASH AND CONSTRUCTION DEBRIS WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION AND THE TRASH WILL BE HAULED TO A LOCAL DUMP. NO CONSTRUCTION WASTE MATERIAL WILL BE BURIED ON SITE.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING)

IN THE EVENT OF A SPILL WHICH MAY BE CONSIDERED HAZARDOUS, THE VILLAGE OF BONNEY FIRE DEPARTMENT SHALL BE CONTACTED IMMEDIATELY AT 281–595–3730.

SANITARY WASTE

CONTRACTOR SHALL PROVE SANITARY WASTE FACILITIES IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS AND SPACING. ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR OR FIRM AS NEEDED OR AS REQUIRED BY LOCAL REGULATIONS.

ADDITIONAL

DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE SEDIMENT THAT MAY ENTER RECEIVING WATERWAYS.

CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER WHICH MINIMIZES THE RUNOFF OF ALL POLLUTANTS.

ALL WATERWAYS SHALL BE CLEARED AS SOON AS PRACTICAL OF TEMPORARY EMBANKMENTS, TEMPORARY BRIDGES, MATTING, FALSEWORK, PILING, DEBRIS, AND OTHER OBSTRUCTIONS PLACED DURING CONSTRUCTION OPERATIONS THAT ARE NOT PART OF THE FINISHED WORK.

SEAL

STATE OF TEXAS
TYLER D. BROOM
119125
LICENSED
PROFESSIONAL ENGINEER
2/5/2025

REVISION No.	DATE	REVISION DESCRIPTION	MADE	CHECKED	APPROVED

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T.B.P.E.L.S. FIRM REGISTRATION #1800
3100 WEST ALABAMA, HOUSTON, TEXAS 77098 (713) 520-9570

BRAZORIA COUNTY

SERENITY OAKS DETENTION

ANGLETON, TEXAS

STORM WATER POLLUTION PREVENTION PLAN DETAILS (SHEET 2 OF 2)

DESIGN BY: DH	DATE: 2/5/2025	SHEET No. 21 OF 21
DRAWN BY: DH	SCALE: HORZ: NO SCALE VERT:	JOB No. 5479–02
APPROVED: TDB		

PLOTTED: Feb 05,2025 – 4:15pm G:\1130\5479-01\03_CADD\01_Construction Plans\02_Detention\01_Sheets\01_DWGS\21 SWPPP DETAILS (SHEET 2 OF 2).dwg Feb 05,2025-4:13pm tbroom

XREFS:

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

G:\1130\5479–01\03_CADD\01_CONSTRUCTION PLANS\02_DETENTION\01_SHEETS\01_DWGS\21 SWPPP DETAILS (SHEET 2 OF 2).DWG