



February 22, 2023

Jorge E Vergara  
DaRam Engineers, Inc.  
11000 Richmond Ave. Suite 300  
Houston, Texas 77042

Re: On-Going Services  
Drainage Review of 25 Windermere – **New Pool, First Revision, First Submittal**  
Piney Point Village, Texas  
HDR Job No. 10361768

Dear Mr. Vergara:

We are in receipt of the proposed drainage plan for the above referenced address, with engineer seal dated 2/13/2023. Please make the following changes to the drainage plan:

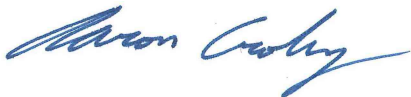
1. Per City drainage criteria, the Drainage Plan shall show existing and finished grade elevations of all proposed paving and grading on the site and shall include existing and planned spot elevations at a maximum of twenty-five foot (25') spacing covering the lot, including shots on 25' spacing along the perimeter of the lot, grid across the lot, and along the perimeter of all structures (i.e., building slabs, sidewalks, patios, driveways, decks, etc.). It appears that existing and proposed elevations at a maximum of twenty-five foot (25') spacing covering the lot, including shots on 25' spacing along the perimeter of the lot, grid across the lot, and along the perimeter of all structures were not provided on the drainage plan as shown in the previous submittal that received a letter of no objections dated 11/2/2022. Please revise the drainage plan to ensure this criterion is met.
2. Per City drainage criteria, the drainage system must include a clean-out, inlet, or junction box at every bend so as to provide access for maintenance; the only exception may be where roof drains tie into the main system. It appears there are several locations of proposed bends in the pipe that do not have a clean-out, inlet, or junction box at the bend. Please revise the drainage plan to ensure this criterion is met.
3. Per City drainage criteria, all proposed drainage pipes shall be sloped to achieve a velocity of at least 3ft/sec. It appears that there are two proposed pipes that are not adequately sloped to achieve a velocity of at least 3ft/sec. Please revise the drainage plan to ensure that all proposed pipes are sloped for a velocity of at least 3 ft/sec to ensure this criterion is met.
4. Per City drainage criteria, when the design calls for a system to discharge through an existing concrete curb, the plan submitted must include a curb cut and repair detail. It appears that the curb cut and repair detail that was included on the previous submittal that received a letter of no objections dated 11/2/2022 was removed from the drainage plan. Please revise drainage plan to show a curb cut and repair detail to ensure this criterion is met.

5. Per City drainage criteria, the engineer shall provide drainage area calculations using Atlas 14 rainfall data for a Harris County Region 2 2-Year storm event on the submitted plans. It appears that the drainage plan shows that the two proposed 6-inch outfall pipes on the east side of the lot will be reduced to two 4-inch pipes before outfalling through the curb along the street. It also appears that these 4-inch pipes will not have the required capacity to convey the flow produced on the lot during a Harris County Region 2 2-Year storm event at their proposed slope. Please revise the drainage plan to ensure that all proposed drainage pipes are adequately sized to convey the flow produced on the lot. Also, please verify the "Flow Capacity" column provided in the Proposed Storm Drain Pipe Schedule table on the drainage plan as it appears that some of the capacities provided do not correspond to the proposed pipe sizes and slopes shown in the table.
6. Per City drainage criteria, any excavation in the vicinity of trees 20 inches in diameter and above shall be completed by hand digging. Locations of hand digging around trees must be called out on the drainage plan. Please revise the drainage plan to call out locations of hand digging around trees where required to ensure this criterion is met.
7. Per City drainage criteria, the drainage plan shall include all aspects of the anticipated development including but not limited to building foundation, patios, decks, swimming pools, drives, walks, landscaped areas, downspouts, **drainage system**, etc. It appears that the permanent drainage plan shows existing drainage structures on the property that are not proposed to be removed or tied into the proposed drainage system. Please provide clarification for what parts of the existing drainage system will be incorporated into the proposed system and what parts will be removed as part of the scope of work and revise the drainage plan accordingly.
8. It appears that the sign and seal date on the Temporary drainage plan was not updated and is dated prior to the previous submittal that received a letter of no objections dated 11/2/2022. Please ensure that the Temporary Drainage plan includes a revised date upon resubmittal.

**Please revise plans and resubmit as an electronic drainage submission by email to Annette Arriaga at [bldgofficial@pineypt.org](mailto:bldgofficial@pineypt.org).** A copy of the drainage plan with markups will be sent with this letter by the Building Official. If you have any questions, please feel free to contact the City.

Sincerely,

HDR Engineering, Inc.



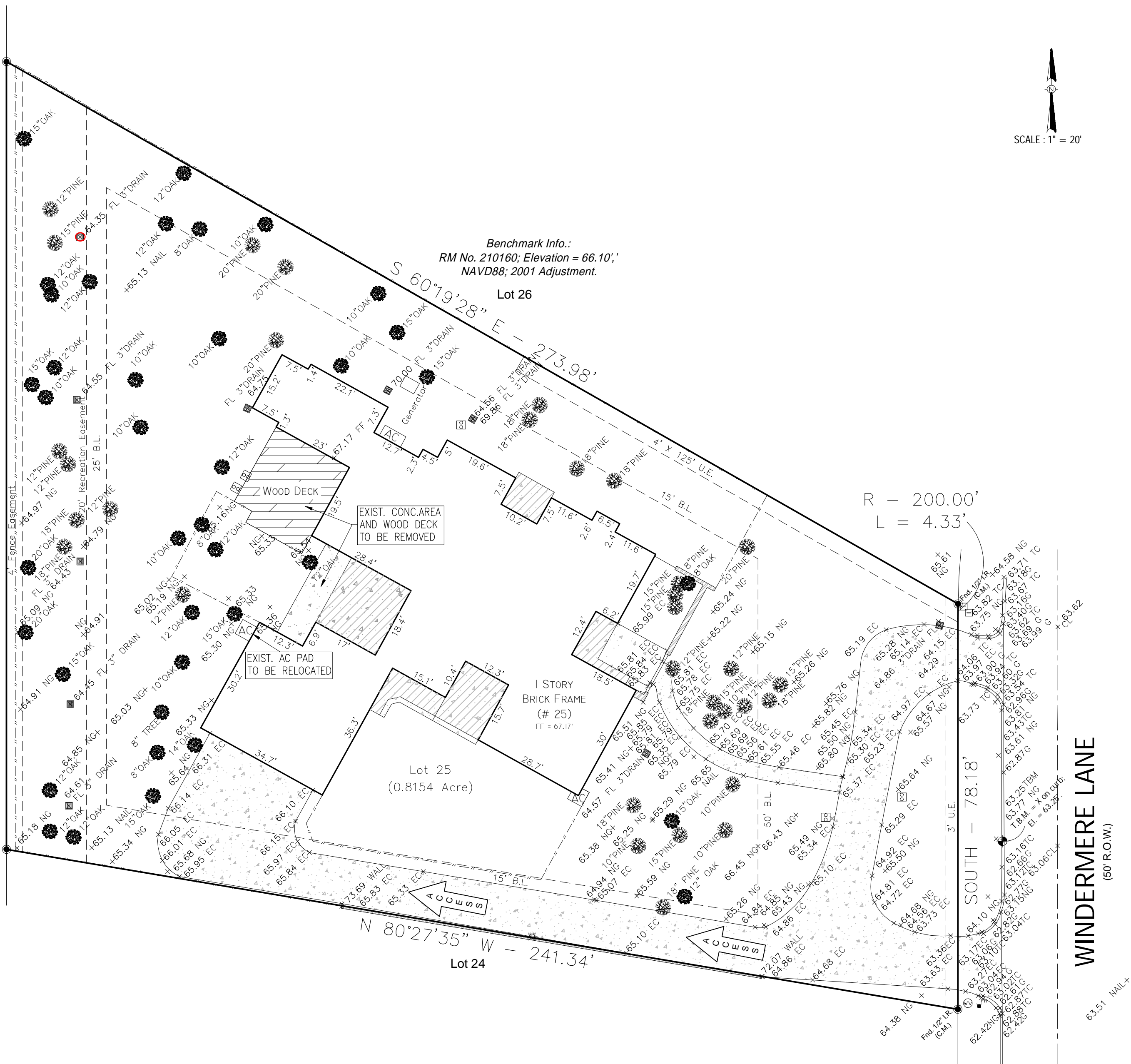
Aaron Croley, P.E., CFM  
Project Engineer

Cc: Annette Arriaga – City of Piney Point Village



FONDREN ROAD  
(R.O.W. varies / platted as South Piney Point Road)

NORTH - 78.18'

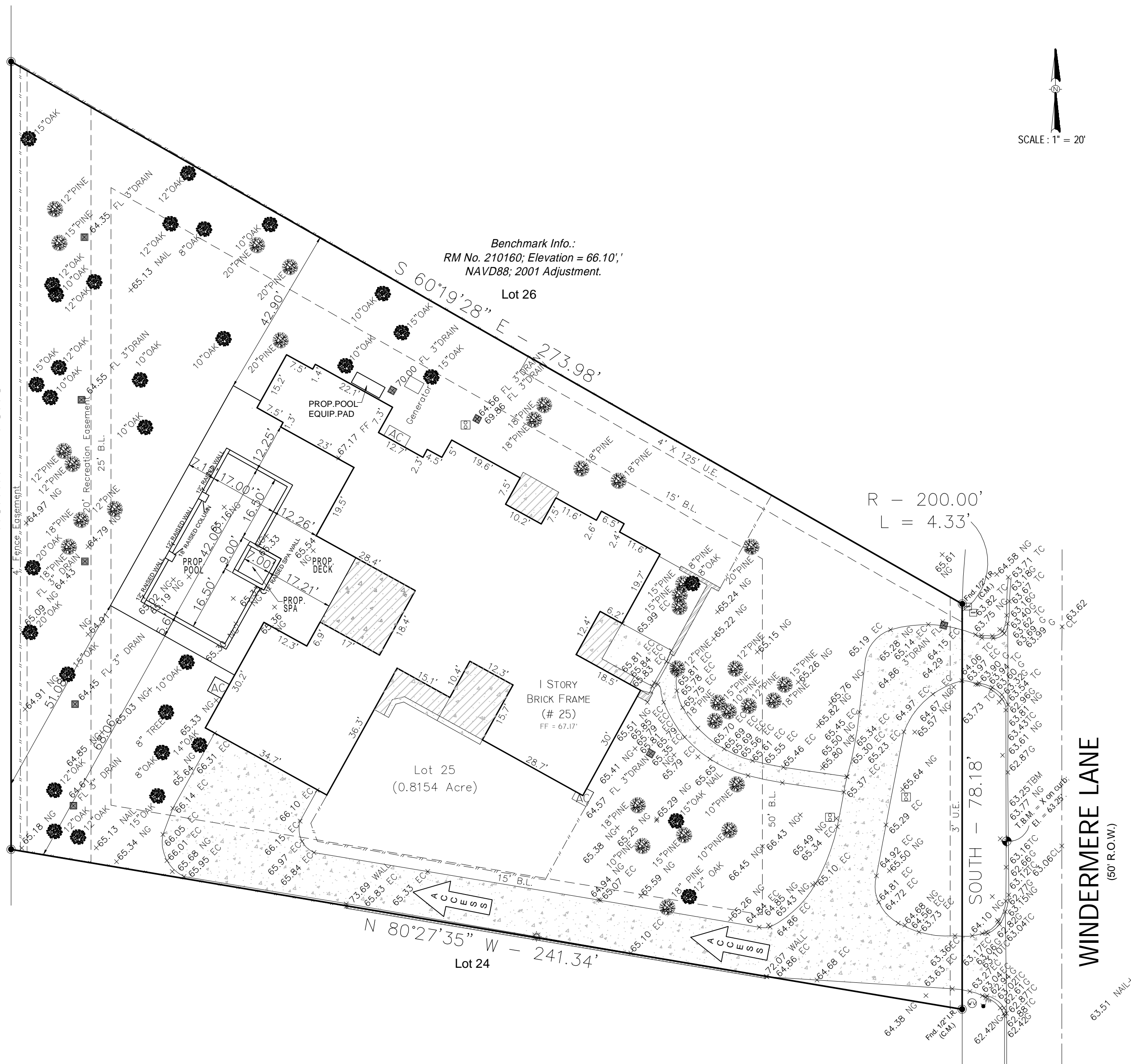


SCALE: 1" = 20'

WINDERMERE LANE  
(50' R.O.W.)

FONDREN ROAD  
(R.O.W. varies / platted as South Piney Point Road)

NORTH - 78.18'



SCALE: 1" = 20'

WINDERMERE LANE  
(50' R.O.W.)

1

EXISTING SITE

1"=20'-0"

LEGEND

- FLOW DIRECTION
- EXIST. SEWER MANHOLE
- PROPOSED 12x12 INLET
- PROP DRAIN PIPE
- EXIST 6" PVC DRAIN PIPE
- EXIST INLET
- EXISTING GRADE
- PROPOSED ELEVATION
- F.F. FINISHED FLOOR
- BFE BASE FLOOD ELEVATION
- TC TOP OF CURB
- G GUTTER
- TG TOP OF GRATE
- FL FLOW LINE
- ANG AVERAGE NATURAL GRADE
- PL PROPERTY LINE
- CL CENTER LINE
- WROUGHT IRON FENCE
- WOOD FENCE
- FIRE HYDRANT
- PROP. CLEAN OUT

ADDRESS:

25 WINDERMERE LANE,  
PINEY POINT VILLAGE, TX 77063

SURVEY BY:

DARAM ENGINEERS, INC.  
BARRY D. ADKINS  
R.P.L.S. NO. 6137  
11000 RICHMOND AVE. SUITE 300  
HOUSTON, TX 77042

LEGAL DESCRIPTION

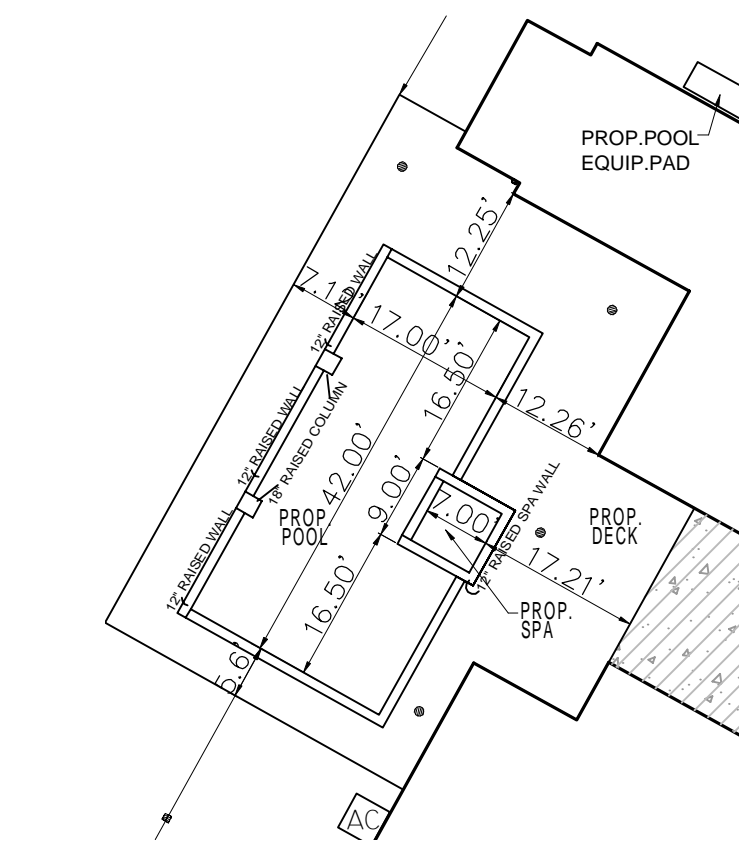
LOT 25, BLOCK -, WINDERMERE,  
VOLUME 206, PAGE 38 OF THE MAP  
RECORDS OF HARRIS COUNTY, TEXAS.

BENCHMARK:

ELEVATIONS SHOWN ARE BASED ON  
PINEY POINT VILLAGE BM # 210160; EL.=66.10,  
NAVD88, 2001 ADJUSTMENT.

FLOOD ZONE NOTE:

THIS PROPERTY APPEARS TO BE OUT OF  
THE 100 YEAR FLOOD PLAIN (ZONE AE)  
& OUT OF THE 500 YEAR FLOOD PLAIN  
(ZONE X' SHADED); AS PER INSURANCE  
RATE MAP 48201C0835 L,  
DATED 06/18/2007.



3

POOL LAYOUT PLAN

1"=10'-0"

IMPACT STATEMENT:

THE PROPOSED CONSTRUCTION FOR THIS SITE DOES NOT IMPACT EXISTING  
DRAINAGE COURSES FOR NEIGHBORING PROPERTIES.

- CONSTRUCTION SITE IS TO BE MAINTAINED FREE OF ANY OPEN  
TRENCHES, PITS, HOLES OR OTHER EXCAVATIONS THAT MAY HOLD WATER,  
AND AT NO TIME MAY RUNOFF FROM THE CONSTRUCTION SITE TRAVERSE  
NEIGHBORING PROPERTY.
- RUNOFF SHALL BE FILTERED TO PREVENT SAND, MUD AND DIRT OF ANY  
KIND FROM ENTERING CITY STORM DRAINAGE SYSTEM.

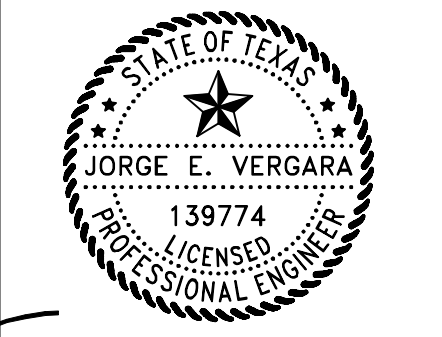
Revise and Resubmit  
Barry Adkins  
2-22-2023

PROP. POOL, SPA AND DECK

AT

25 WINDERMERE LANE  
PINEY POINT VILLAGE, TX 77063

PROFESSIONAL SEAL



02/13/23  
JORGE VERGARA FOR DARAM ENGINEERS

ISSUED / REVISED

NO.	DATE	DESCRIPTION
1	04/21/22	ISSUE FOR PERMIT SA
2	04/28/2022	ISSUE FOR PERMIT FH
3	02/13/2023	DESIGN CHANGE RM
4		
5		

JOB NO:	21-467
CHECKED BY:	JEV
DRAWN BY:	SA
DATE:	02/13/2023
SCALE:	AS SHOWN

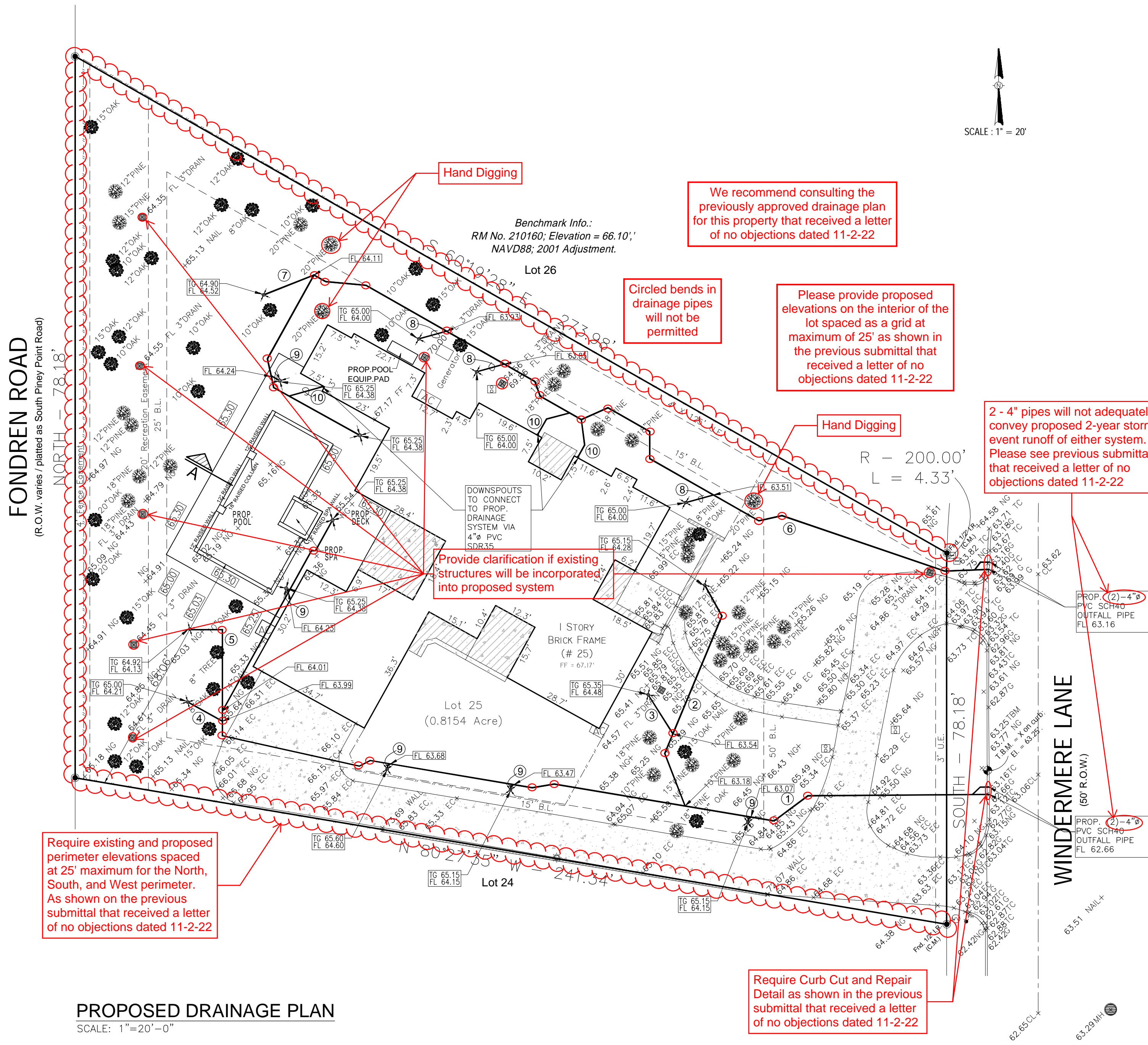
DRAWING TITLE:  
SITE PLAN

DRAWING NO.

C-1

**Daram Engineers, Inc.**  
11000 RICHMOND AVE., SUITE 300  
HOUSTON, TEXAS 77042  
(713)528-1552 PH.  
(713)583-5028 FAX  
EMAIL: info@daramengineers.com  
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TEXAS FIRM REGISTRATION NUMBER F-9503





LEGEND

→	FLOW DIRECTION
●	EXIST. SEWER MANHOLE
■	PROPOSED 12X12 INLET
—	PROP. DRAIN PIPE
---	EXIST 6" PVC DRAIN PIPE
■	EXIST INLET
65.33'	EXISTING GRADE
65.25'	PROPOSED ELEVATION
F.F.	FINISHED FLOOR
BFE	BASE FLOOD ELEVATION
TC	TOP OF CURB
G	GUTTER
TG	TOP OF GRATE
FL	FLOW LINE
ANG	AVERAGE NATURAL GRADE
PL	PROPERTY LINE
CL	CENTER LINE
—	WROUGHT IRON FENCE
—	WOOD FENCE
⊕	FIRE HYDRANT
⊗	PROP. CLEAN OUT

ADDRESS:  
25 WINDERMERE LANE,  
PINEY POINT VILLAGE, TX 77063

SURVEY BY:  
DARAM ENGINEERS, INC.  
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LEGAL DESCRIPTION  
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VOLUME 206, PAGE 38 OF THE MAP  
RECORDS OF HARRIS COUNTY, TEXAS.

BENCHMARK:  
ELEVATIONS SHOWN ARE BASED ON  
PINEY POINT VILLAGE BM # 210160; EL.=66.10,  
NAVD88, 2001 ADJUSTMENT.

FLOOD ZONE NOTE:  
THIS PROPERTY APPEARS TO BE OUT OF  
THE 100 YEAR FLOOD PLAIN (ZONE AE)  
& OUT OF THE 500 YEAR FLOOD PLAIN  
(ZONE 'X' SHADED); AS PER INSURANCE  
RATE MAP 48201C0835 L, DATED  
06/18/2007.

ROOF DRAIN NOTES:  
ROOF DRAIN TIE-INS AS A MINIMUM SHALL BE AS FOLLOWS: 1 PER  
4-INCH DRAIN LINE OR 4 PER 6-INCH DRAIN LINE. THE DESIGN ENGINEER  
SHALL DETERMINE THE PROPER SIZING AS PART OF THE PERMANENT  
DRAINAGE PLAN.

IMPACT STATEMENT:  
THE PROPOSED CONSTRUCTION FOR THIS SITE DOES NOT IMPACT EXISTING  
DRAINAGE COURSES FOR NEIGHBORING PROPERTIES.

1. CONSTRUCTION SITE IS TO BE MAINTAINED FREE OF ANY OPEN  
TRENCHES, PITS, HOLES OR OTHER EXCAVATIONS THAT MAY HOLD WATER,  
AND AT NO TIME MAY RUNOFF FROM THE CONSTRUCTION SITE TRAVERSE  
NEIGHBORING PROPERTY.

2. RUNOFF SHALL BE FILTERED TO PREVENT SAND, MUD AND DIRT OF ANY  
KIND FROM ENTERING CITY STORM DRAINAGE SYSTEM.

GENERAL NOTES  
1. ANY REVISIONS TO THE ORIGINALLY APPROVED DRAINAGE PLANS MUST  
BE SUBMITTED TO THE CITY BY THE BUILDER'S ENGINEER THAT  
PROVIDED THE ORIGINAL APPROVED DRAINAGE PLANS.

2. RESUBMITTED PLANS MUST BE SIGNED AND SEALED BY THE BUILDER'S  
ENGINEER.

TREES' DRIP-LINE NOTE  
ANY EXCAVATION IN THE DRIP-LINE OF TREES 20 INCHES IN DIAMETER  
AND ABOVE MUST BE COMPLETED BY HAND DIGGING. NO ROOTS LARGER  
THAN 1 INCH IN DIAMETER ARE PERMITTED TO BE CUT FOR CONSTRUCTION  
OF THE DRAINAGE SYSTEM.

GROUND ELEVATIONS NOTES:  
NO GROUND ELEVATIONS CHANGES SHALL OCCUR AROUND THE PERIMETER  
OF THE PROPERTY.  
EXISTING GROUND ELEVATIONS, AROUND THE PERIMETER OF THE PROPERTY,  
ARE TO REMAIN UNCHANGED DURING AND AFTER CONSTRUCTION.

DRAINAGE NOTES  
1. ANY AREAS OF GRASS WITHIN THE CITY'S RIGHT OF WAY WHICH ARE DISTURBED  
OR DIG UP DURING CONSTRUCTION SHALL BE REPLACED WITH ST. AUGUSTINE  
OR GRASS WHICH MATCHES THE GRASS REMOVED.

2. ANY DAMAGE TO EXISTING ROADS, DRIVEWAYS, SIDEWALKS, OR OTHER  
APPURTENANCES WITHIN THE CITY'S RIGHT OF WAY SHALL BE SAW CUT,  
REMOVED AND REPLACED WITH MATERIAL EQUAL TO OR SUPERIOR TO EXISTING  
MATERIAL, AND BE INSTALLED IN A MANNER ACCEPTABLE TO THE CITY.

3. THE CONTRACTOR SHALL MAINTAIN DRAINAGE DURING CONSTRUCTION AS TO NOT  
ADVERSELY IMPACT ADJACENT / NEIGHBORING PROPERTIES DURING A HARRIS  
COUNTY REGION 2-YEAR STORM EVENT.

4. REINFORCED FILTER-FABRIC FENCES MAY NOT BE TAKEN DOWN UNTIL THE  
BUILDER RECEIVES APPROVAL FROM THE CITY.

PROPOSED STORM DRAIN PIPE SCHEDULE				FLOW CAPACITY (CFS)	AVERAGE VELOCITY (FT/SEC)
1	282LF	6"Ø	PVC SCH40 @ 0.61%	0.86	4.37
2	66LF	6"Ø	PVC SDR35 @ 1.67%	1.83	4.37
3	13LF	6"Ø	PVC SDR35 @ 7.60%	0.55	2.83
4	31LF	6"Ø	PVC SDR35 @ 0.70%	0.40	2.06
5	31LF	6"Ø	PVC SDR35 @ 0.37%	0.44	2.25
6	274LF	6"Ø	PVC SDR35 @ 0.44%	1.12	5.71
7	15LF	6"Ø	PVC SDR35 @ 2.85%	1.87	9.57
8	8LF	6"Ø	PVC SDR35 @ 8.00%	1.87	9.57
9	2LF	6"Ø	PVC SDR35 @ 8.00%	0.32	3.65
10	11LF	4"Ø	PVC SDR35 @ 2.00%	0.55	2.79

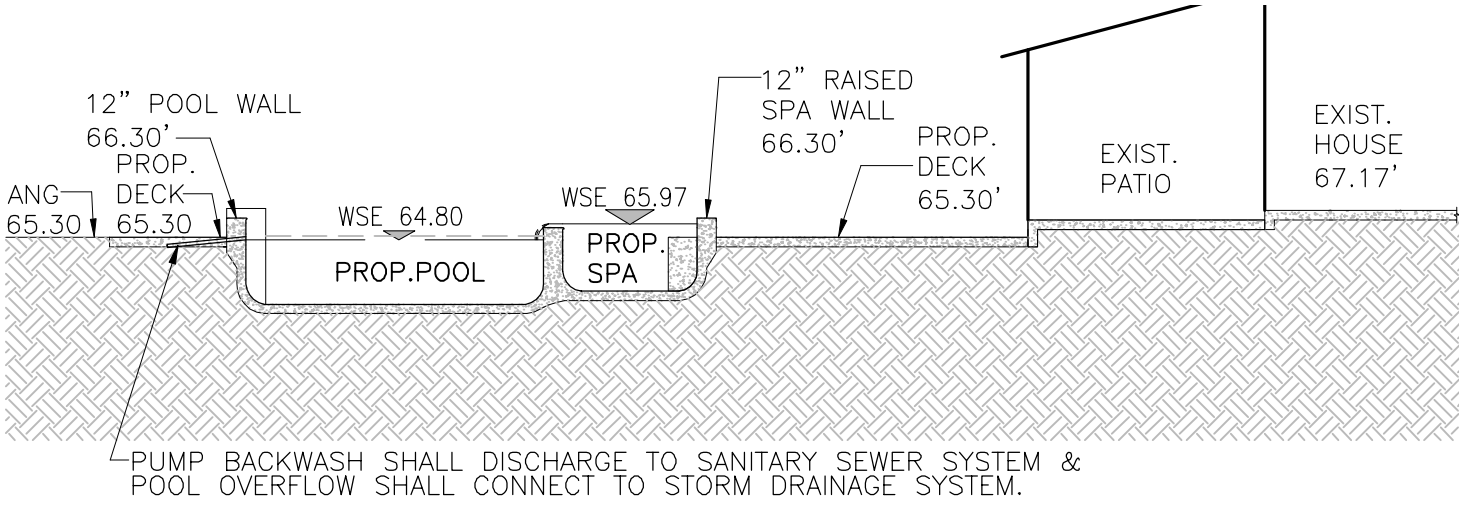
12" NDS CATCH BASIN SERIES					
PART NO.	DESCRIPTION	COLOR	PKg. Qty.	Wt. Ea. (lbs.)	Product Class
1200	12"X12" CATCH BASIN , 2 OPENINGS	BLACK	4	4.25	10ND
1203	12"X12" CATCH BASIN , 3 OPENINGS	BLACK	4	3.75	10ND
1204	12"X12" CATCH BASIN , 4 OPENINGS	BLACK	4	3.75	10ND

EXISTING IMPERVIOUS AREA	
- EXIST. 1 STORY RESIDENCE WITH GARAGE	5,610 SF
- EXIST. FRONT PORCH	255 SF
- EXIST. SIDE PORCH	294 SF
- EXIST. BACK COVE. CONC. AREA	313 SF
- EXIST. BACK CONC. AREA	182 SF
- EXIST. FRONT WALKWAY	237 SF
- EXIST. SIDE COVERED CONC. AREA	93 SF
- EXIST. CONC. DRIVEWAY	4,282 SF
- EXIST. WOOD DECK	501 SF
- EXIST. WALL	40 SF
- EXIST. GENERATOR	12 SF
- EXIST. AC PADS	34 SF
-TOTAL EXISTING IMPERVIOUS AREA	11,853 SF 0.2721 ACRES

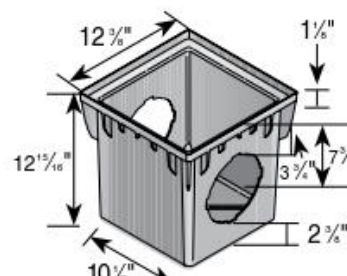
PROP. IMPERVIOUS AREA	
- PROP. POOL WATER SURFACE AREA	787 SF
- PROP. POOL COPIING	75 SF
- PROP. 12" RAISED SPA WALL	25 SF
- PROP. SPA WATER BODY	56 SF
- PROP. 18" RAISED POOL COLUMN	8 SF
- PROP. 12" RAISED POOL WALL	40 SF
- PROP. POOL DECK	1,497 SF
- PROP. POOL EQUIPMENT AREA	24 SF
-TOTAL PROPOSED IMPERVIOUS AREA	2,512 SF 0.0577 ACRES
- DEMO. EXIST. WOOD DECK (DISTURBED)	501 SF
- DEMO. EXIST. BACK CONC. AREA (DISTURBED)	182 SF
-TOTAL PROPOSED INCREASE IMPERVIOUS AREA	1,829 SF 0.0420 ACRES

CALCULATION OF IMPERVIOUS PERCENTAGE  
-TOTAL AREA OF LOT (AS PER HCAD) = 35,719 SF  
-EXISTING LOT COVERAGE = 11,853 SF  
-FINAL IMPERVIOUS LOT COVERAGE = 13,682 SF  
(USED FOR DETENTION CALCULATIONS) 38.30 %

DRAINAGE CALCULATIONS:  
2-YEAR RAIN FALL EVENT:  
LOT AREA = A = 0.8200 ACRES (35,719 SF)  
TIME OF CONCENTRATION: TC = 10A<sup>0.1761</sup> + 15 = 24.66 Min.  
INTENSITY FOR 2 YEAR RAINFALL FREQUENCY: I<sub>2yr</sub> =  $\frac{b}{(d+TC)^e}$  = 3.680 in / hr  
b = 47.25 d = 8.94 e = 0.7263  
ALLOWABLE FLOW RATE Q:  $Q_s = CIA = 0.35 \times 3.68 \times 0.820 = 1.056$  CFS  
2-YEAR EXISTING DRAINAGE CONDITIONS:  
EXISTING IMPERVIOUS AREA = 0.272 ACRES  
LOT AREA = A = 0.8200 ACRES (35,719 SF)  
IMPERVIOUS AREA / TOTAL AREA :  $\frac{b}{(d+TC)^e} = 0.33$  (33.18%)  
RUN OFF COEFFICIENT: C = 0.6b + 0.2 = 0.6 x 0.332 + 0.2 = 0.40 (0.4 MN)  
EXISTING FLOW RATE Q:  
Q = CIA = 0.40 x 3.680 x 0.272 = 1.204 CFS  
2-YEAR PROPOSED DRAINAGE CONDITIONS:  
TOTAL IMPERVIOUS AREA (PROP. + EXIST.) = 0.314 ACRES (13,682 SF)  
LOT AREA = A = 0.8200 ACRES (35,719 SF)  
IMPERVIOUS AREA / TOTAL AREA :  $\frac{b}{(d+TC)^e} = 0.38$  (38.30%)  
RUN OFF COEFFICIENT: C = 0.6b + 0.2 = 0.6 x 0.383 + 0.2 = 0.43 (0.4 MN)  
PROPOSED FLOW RATE Q:  
Q = CIA = 0.43 x 3.680 x 0.314 = 1.297 CFS



PROP. POOL @ SEC.- "A"  
SCALE: 1"=10'



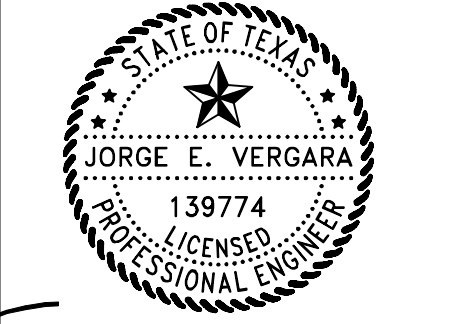
Revise and Resubmit  
Anna Cady  
2-22-2023

11000 RICHMOND AVE., SUITE 300  
HOUSTON, TEXAS 77042  
(713)528-1552 PH.  
(713)583-5028 FAX  
EMAIL: info@daramengineers.com

Daram  
Engineers, Inc.

PROP. POOL, SPA AND DECK  
AT  
25 WINDERMERE LANE  
PINEY POINT VILLAGE, TX 77063

PROFESSIONAL SEAL



02/13/23  
JORGE VERGARA FOR DARAM ENGINEERS

ISSUED / REVISED

NO.	DATE	DESCRIPTION
1	04/21/22	ISSUE FOR PERMIT SA
2	04/28/2022	ISSUE FOR PERMIT FH
3	02/13/2023	DESIGN CHANGE RM
5		

JOB NO: 21-467  
CHECKED BY: JEV  
DRAWN BY: SA  
DATE: 02/13/2023  
SCALE: AS SHOWN

DRAWING TITLE:  
DRAINAGE  
PLAN

DRAWING NO.



FONDREN ROAD

(R.O.W. varies / platted as South Piney Point Road)

NORTH - 78.18'

## PROPOSED S.W.P.P. PLAN

SCALE: 1"=20'-0"

Benchmark Info.:  
RM No. 210160, Elevation = 66.10',  
NAVD88, 2001 Adjustment.

Lot 26

60° 9' 28" E = 273.88'

Lot 25

(0.8154 Acre)

1 STORY BRICK FRAME (# 25)

FF = 67.17'

Lot 24

N 80° 27' 35" W = 241.34'

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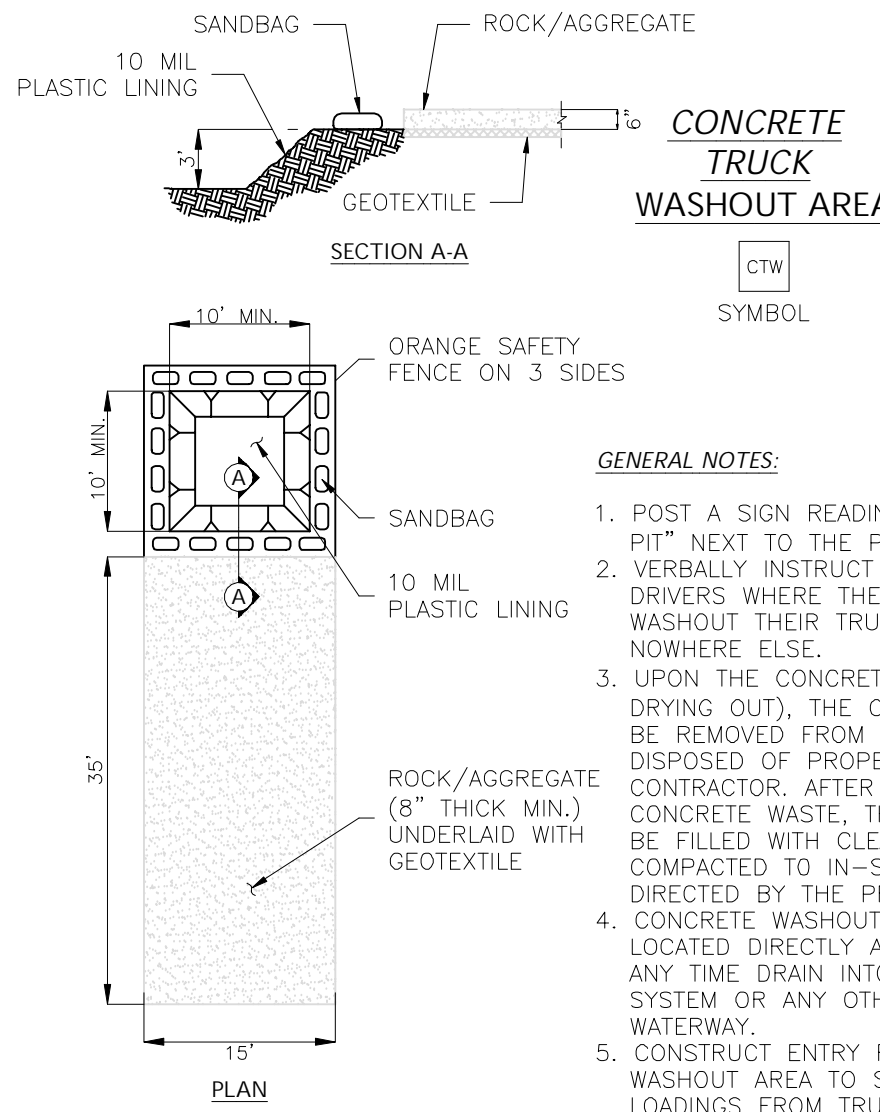
SCALE: 1" = 20'

WINDERMERE LANE

(50' R.O.W.)

## LEGEND

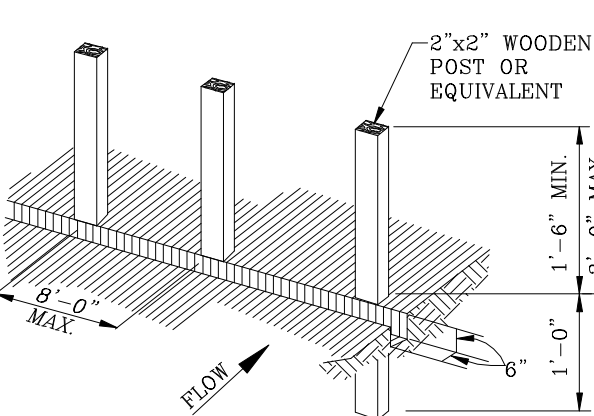
- SF — SILT FENCE
- IPB INLET PROTECTION BARRIER
- TLN SEE TREE DRIP LINE NOTE
- FLOW DIRECTION
- EXIST. SEWER MANHOLE
- PROPOSED 12x12 INLET
- PROP DRAIN PIPE
- EXIST 6" PVC DRAIN PIPE
- EXIST INLET
- EXISTING GRADE
- 65.25 PROPOSED ELEVATION
- F.F. FINISHED FLOOR
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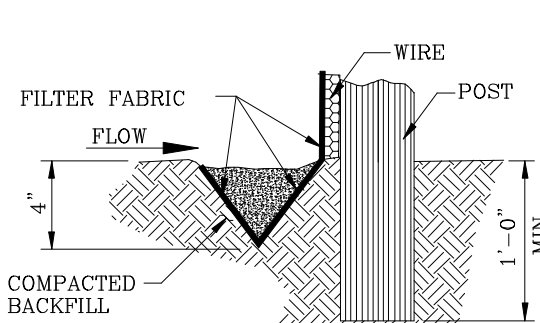
## CONCRETE TRUCK WASHOUT (CTW) AREA

SCALE: N.T.S.

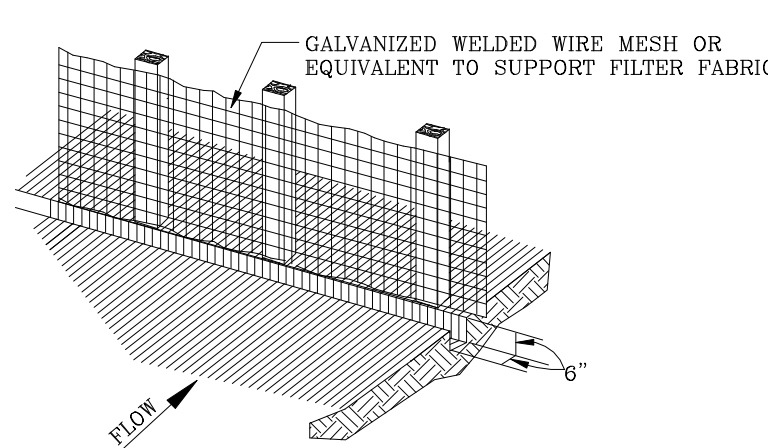
1. SET POSTS AT REQUIRED SPACING AND DEPTH. EXCAVATE 6" x 6" TRENCH UPSLOPE ALONG THE LINE OF POSTS.



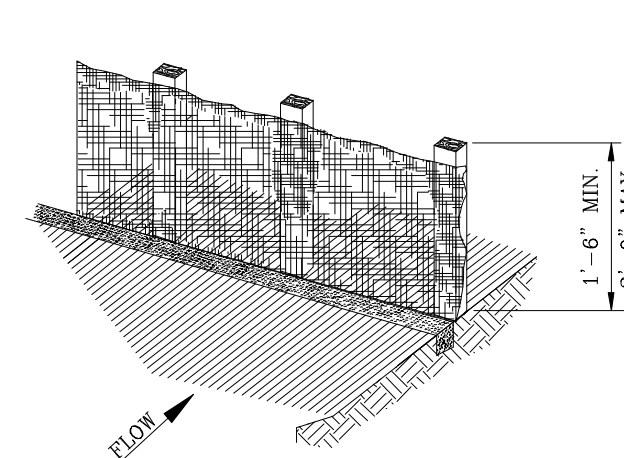
## ALTERNATE V-TRENCH EXTENSION OF FABRIC INTO TRENCH



2. SECURE MESH FENCING TO POSTS



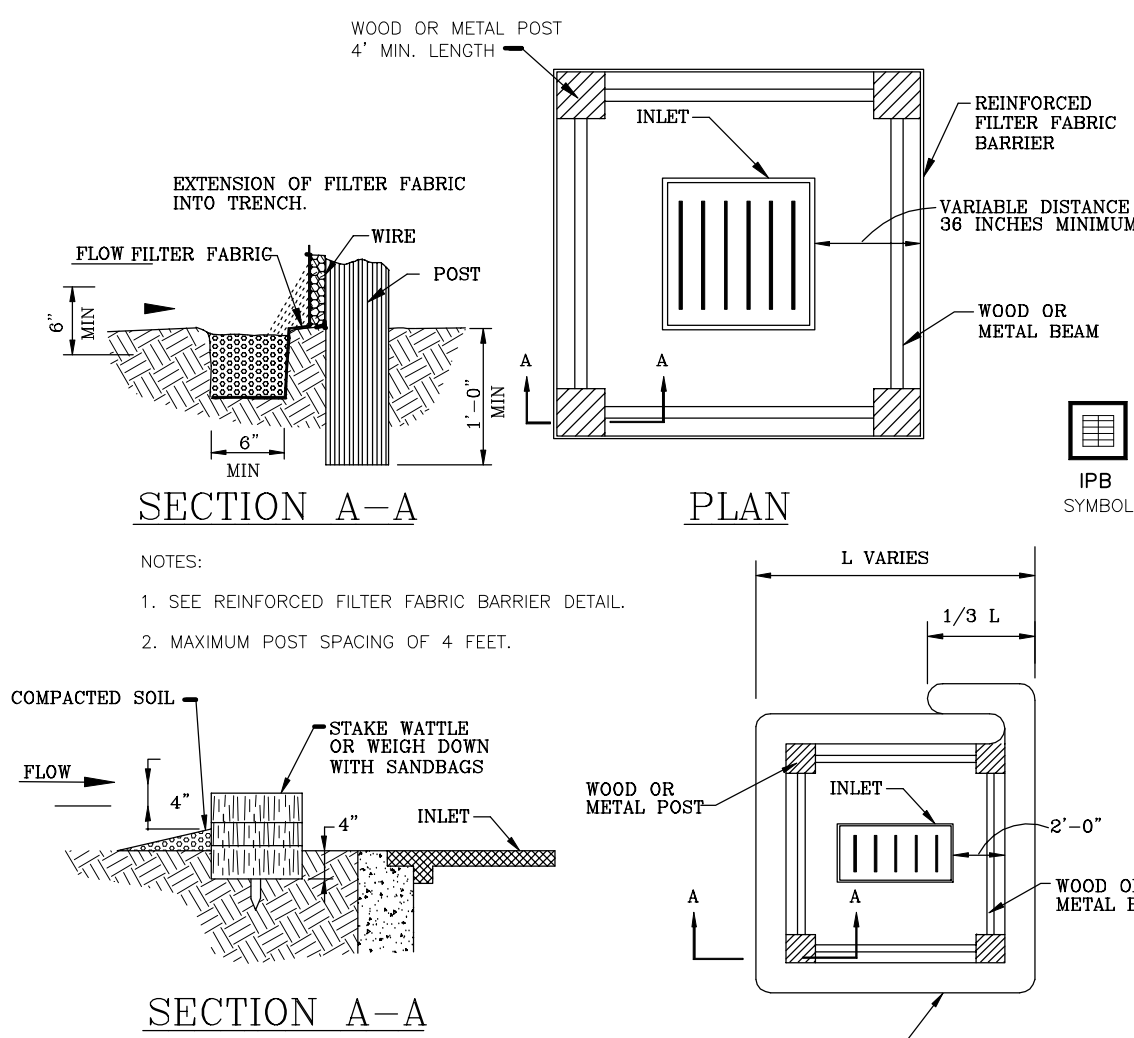
3. ATTACH FILTER MATERIAL TO WIRE FENCE AND EXTEND IT INTO THE TRENCH. BACKFILL AND COMPACT THE EXCAVATED SOIL.



## 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



## INLET PROTECTION BARRIERS FOR STAGE 1 INLETS

## EROSION CONTROL SYSTEM NOTES

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING BERMS, SILT FENCES, STRAW BALES OR OTHER MEANS TO PREVENT EROSION FROM REACHING ADJACENT PROPERTY.

IN THE EVENT THE PREVENTION MEASURES ARE NOT EFFECTIVE, THE CONTRACTOR SHALL REMOVE ANY EROSION DEBRIS AND RESTORE ADJACENT PROPERTY AND/OR RIGHT-OF-WAY TO ORIGINAL OR BETTER CONDITION.

EROSION CONTROL FEATURES SHOWN ARE THE MINIMUM REQUIREMENTS ACCEPTABLE. PLACE ADDITIONAL EROSION CONTROL DEVICES AS RUNOFF AND DRAINAGE PATTERNS CHANGE DURING CONSTRUCTION TO PROHIBIT LOST OF SOIL FROM THE SITE.

MINIMIZE THE AMOUNT OF SURFACE AREA EXPOSED TO THE EXTENT PRACTICABLE.

LEAVE GRADED AREAS WITH A ROUGH TEXTURE TO PROMOTE INFILTRATION. LIMIT UNNECESSARY TRAFFIC ON GRADED AREAS.

INSTALL SILT FENCES OR STRAW BALE DIKES IN DOWNSTREAM SLOPES FOR THE EXTENT OF THE CONSTRUCTION LIMITS PRIOR TO BAGGING ANY GRADING OPERATIONS.

SILT FENCES:  
A- INSTALL SILT FENCES AT LOCATIONS SHOWN GENERALLY ALONG THE CONTOUR OF DOWNSTREAM SLOPES.

B- INSTALL POST-ANGLING SLIGHTLY UPSTREAM. USE WIRE FENCE AND SPACE POST AT 10' TO SUPPORT FABRIC.

C- EXCAVATE 4" x 4" TRENCH ON UPSTREAM SITE, EMBED FABRIC 8", BACKFILL TRENCH AND COMPACT.

D- FASTEN FABRIC AND WIRE FENCE SECURELY TO POSTS.

E- REINFORCED FILTER FABRIC FENCES MAY NOT BE TAKEN DOWN UNTIL THE BUILDER RECEIVES APPROVAL FROM THE CITY.

MAINTAIN EROSION CONTROL DEVICES IN GOOD CONDITION AT ALL TIMES. INSPECT FREQUENTLY AND AFTER EACH RAINFALL.

REDISTRIBUTE ACCUMULATED SEDIMENT UPSTREAM OF DEVICES.

REMOVE EROSION CONTROL DEVICES WHEN NO LONGER NEEDED.

PROPERLY DISPOSE OF SOLID WASTE, PAINTS, SOLVENTS, CLEANING COMPOUNDS, ETC.

STORE CONSTRUCTION MATERIAL AWAY FROM LOW AREAS AND DRAINAGE WAYS.

PROVIDE PORTABLE TOILETS AND PROPERLY DISPOSE OF SANITARY SEWAGE. PROVIDE MINIMUM TWO ADJACENT TO TEMPORARY CONSTRUCTION TRAILER.

LOCATE FUEL/MATERIAL STORAGE AREAS AWAY FROM STORM WATER CONVEYANCE SYSTEMS. USE A LINER UNDER ABOVE GROUND STORAGE TANKS. USE SILT FENCING, HAY BALES, OR BERMS AROUND FUEL STORAGE AREAS. (NO SEPARATE PAY).

CONTRACTOR WILL ADVISE OWNER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL SPILLS ONTO THE PROJECT/CONSTRUCTION AREAS AND THE ACTION TAKEN TO REMEDY THE PROBLEM.

CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL ENVIRONMENTAL LOSS.

CONTRACTOR IS RESPONSIBLE FOR DISPOSING FUELS, MATERIALS, AND EXCAVATIONS IN A LEGALLY APPROVED MANNER.

CONTRACTOR IS TO INSPECT ALL STRUCTURAL CONTROLS SPECIFIED HEREIN, AT A MINIMUM, ONCE EVERY SEVEN CALENDAR DAYS OR BETWEEN 24 HOURS AFTER EVERY STORM EVENT THAT MEETS OR EXCEEDS 0.5 INCHES/24 HOUR PERIOD.

CONTRACTOR WILL PROVIDE STORAGE AREAS FOR CHEMICAL, PAINTS, SOLVENTS, FERTILIZERS, AND ANY POTENTIALLY TOXIC MATERIAL.

FILTER FABRIC (SILT FENCE) FLOW RATE WILL BE 30 GALLON PER SQUARE FOOT PER MINUTE.

FILTER FABRIC WILL BE STAPLED OVER BOARDS ON ALL STAGE ONE STORM SEWER INLETS.

PROTECT ALL DESIGNATED SPECIMEN TREES WITH PROTECTIVE FENCING.

## GROUND ELEVATIONS NOTES:

NO GROUND ELEVATIONS CHANGES SHALL OCCUR AROUND THE PERIMETER OF THE PROPERTY. EXISTING GROUND ELEVATIONS, AROUND THE PERIMETER OF THE PROPERTY, ARE TO REMAIN UNCHANGED DURING AND AFTER CONSTRUCTION.

## TREES' DRIP-LINE NOTE

ANY EXCAVATION IN THE DRIP-LINE OF TREES 20 INCHES IN DIAMETER AND ABOVE MUST BE COMPLETED BY HAND DIGGING. NO ROOTS LARGER THAN 1 INCH IN DIAMETER ARE PERMITTED TO BE CUT FOR CONSTRUCTION OF THE DRAINAGE SYSTEM.

## TEMPORARY DRAINAGE NOTES

1. ANY AREAS OF GRASS WITHIN THE CITY'S RIGHT OF WAY WHICH ARE DISTURBED OR DUG UP DURING CONSTRUCTION SHALL BE REPLACED WITH ST. AUGUSTINE OR GRASS WHICH MATCHES THE GRASS REMOVED.
2. ANY DAMAGE TO EXISTING ROADS, DRIVEWAYS, SIDEWALKS, OR OTHER APPURTENANCES WITHIN THE CITY'S RIGHT OF WAY SHALL BE REMOVED AND REPLACED WITH MATERIAL EQUAL TO OR SUPERIOR TO EXISTING MATERIAL, AND BE INSTALLED IN A MANNER ACCEPTABLE TO THE CITY.
3. THE CONTRACTOR SHALL MAINTAIN DRAINAGE DURING CONSTRUCTION AS TO NOT ADVERSELY IMPACT ADJACENT / NEIGHBORING PROPERTIES DURING A CITY OF HOUSTON 2 YEAR DESIGN STORM.
4. REINFORCED FILTER-FABRIC FENCES MAY NOT BE TAKEN DOWN UNTIL THE BUILDER RECEIVES APPROVAL FROM THE CITY.

## NOTES

"ANY EXCAVATION IN THE DRIP-LINE OF TREES 20 INCHES IN DIAMETER AND ABOVE MUST BE COMPLETED BY HAND DIGGING. NO ROOTS LARGER THAN 1 INCH IN DIAMETER ARE PERMITTED TO BE CUT FOR CONSTRUCTION OF THE DRAINAGE SYSTEM."

\* TEMPORARY DRAINAGE: CONTRACTOR TO PROVIDE SUMP PUMP DURING POOL CAVITY EXCAVATION AND DRAIN THROUGH EXISTING INLET.

11000 RICHMOND AVE., SUITE 300

HOUSTON, TEXAS 77042

(713)528-1552 PH.

(713)583-5028 FAX

EMAIL: info@darameengineers.com

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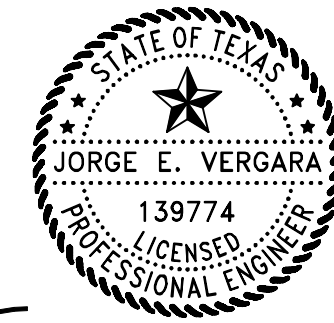
TEXAS FIRM REGISTRATION NUMBER F-9503

PROP. POOL, SPA AND DECK

AT

25 WINDERMERE LANE  
PINEY POINT VILLAGE, TX 77063

## PROFESSIONAL SEAL



04/28/2022

## ISSUED / REVISED

NO.	DATE	DESCRIPTION
1	04/21/22	ISSUE FOR PERMIT SA
2	04/28/2022	ISSUE FOR PERMIT FH
3	02/13/2023	DESIGN CHANGE RM
4		
5		

JOB NO: 21-467

CHECKED BY: JEV

DRAWN BY: SA

DATE: 02/13/2023

SCALE: AS SHOWN

DRAWING TITLE:

SWPPP PLAN

DRAWING NO.

C-3