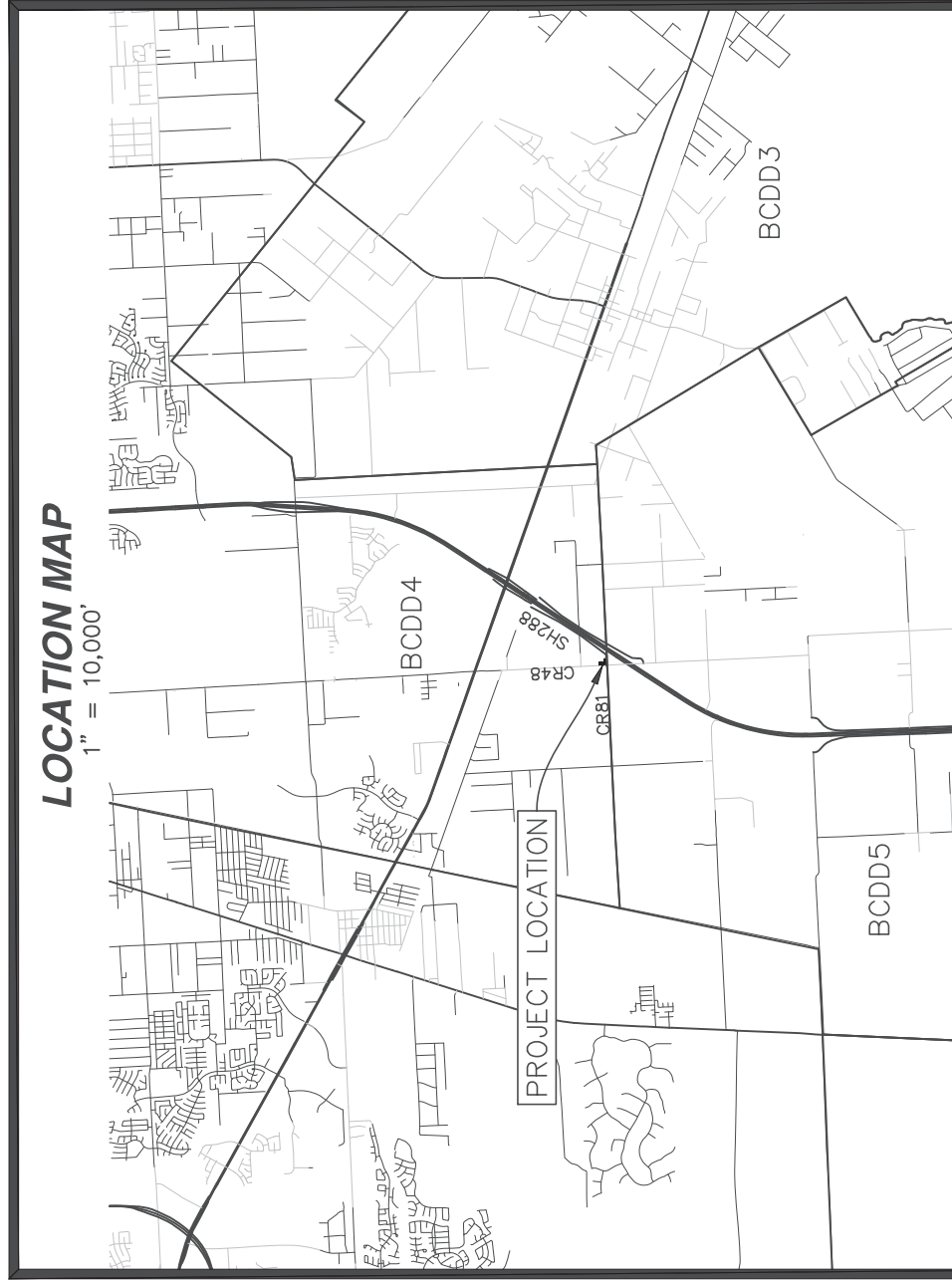


LOCATION MAP

1" = 10,000'

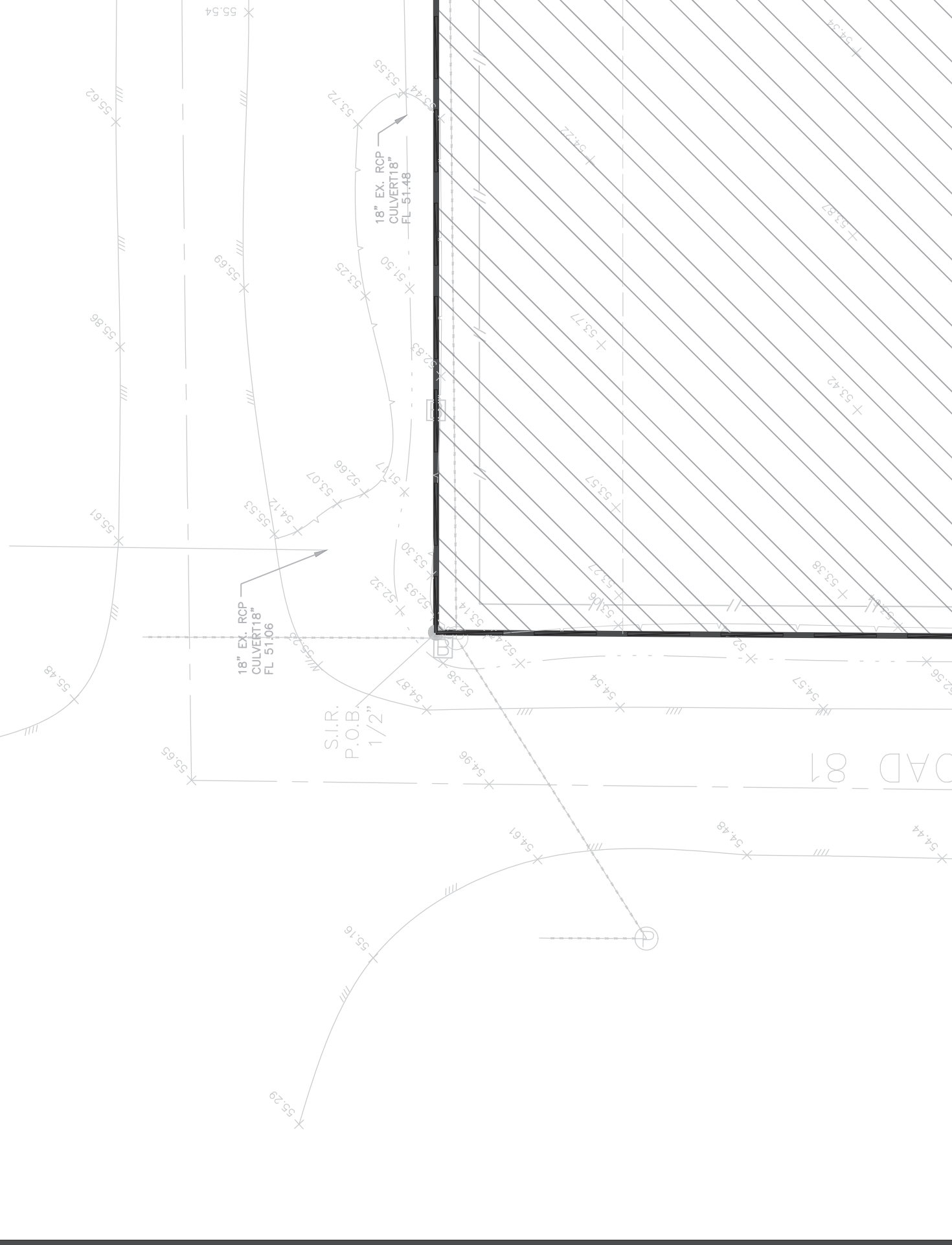


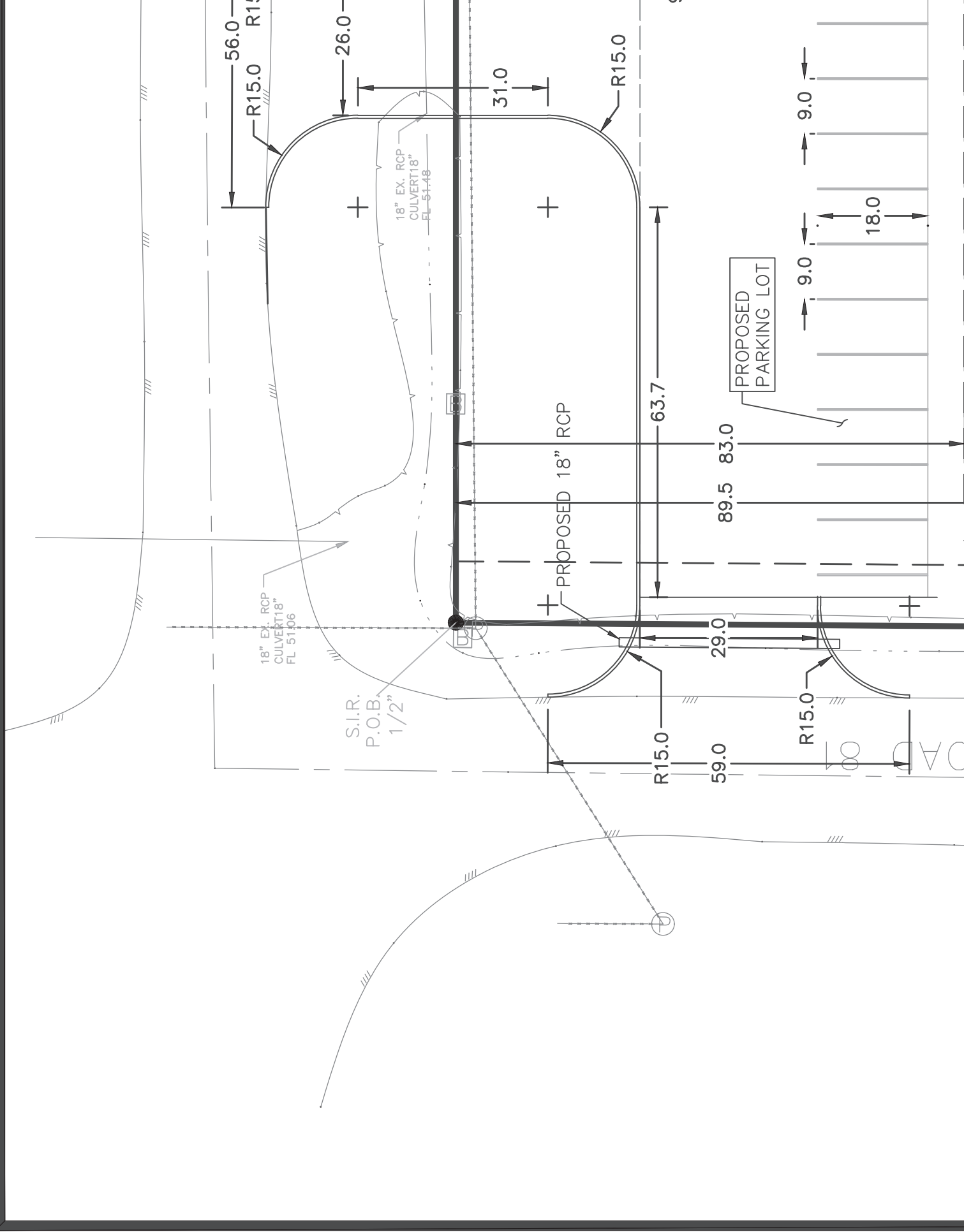
GENERAL CONSTRUCTION NOTES

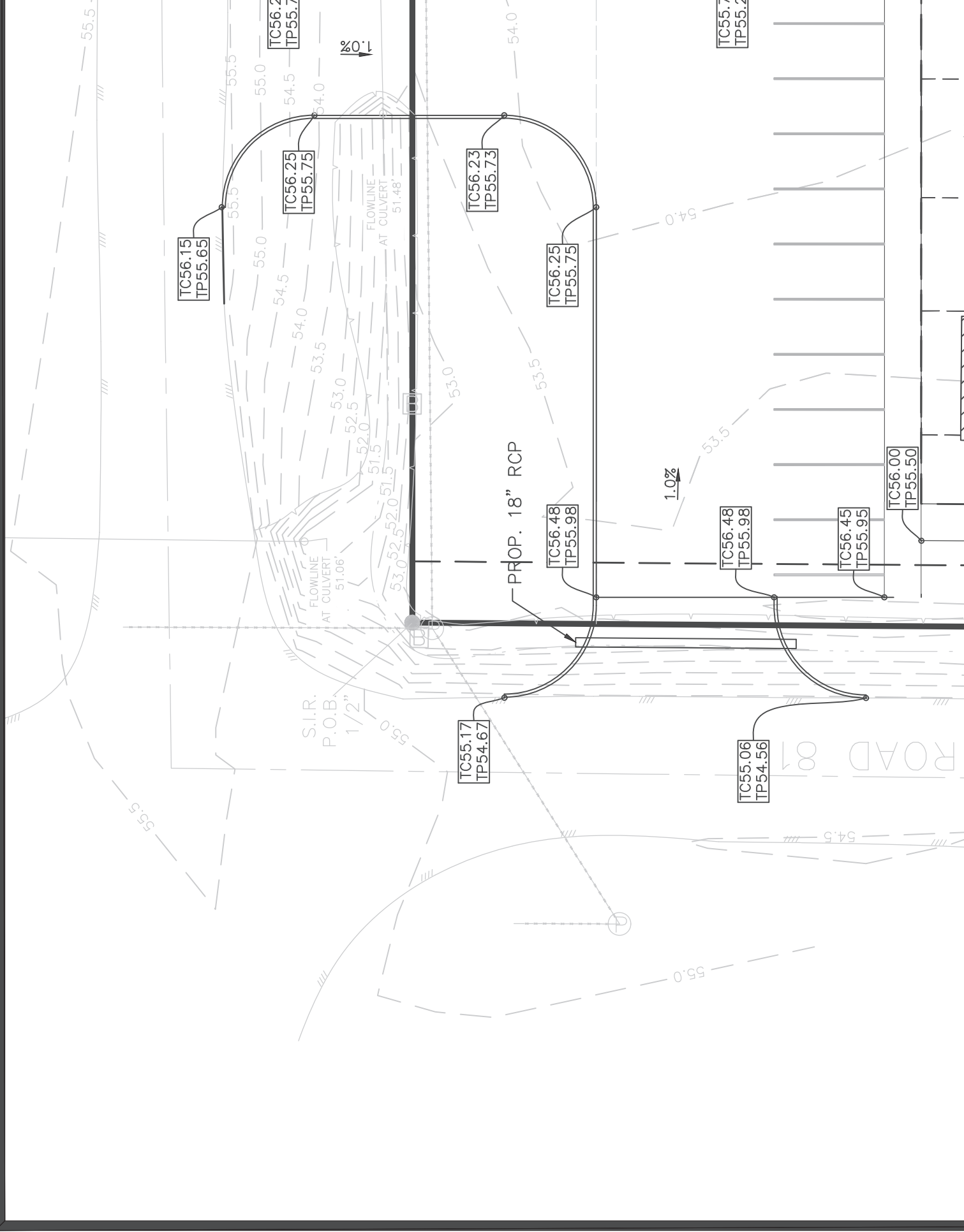
1. CONSTRUCT WASTEWATER COLLECTION SYSTEMS, WATERLINES, STORM DRAINAGE AND STREET PAVING IN ACCORDANCE WITH THE LATEST EDITION OF THE PUBLICATIONS STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING, AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS.
WATER LINES, STORM DRAINAGE, AND STREET PAVING PUBLISHED BY HOUSTON PUBLIC WORKS.
2. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567/811 OR 800-344-8377 AND LONESTAR NOTIFICATION CENTER AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION. UTILITIES MARKED WITHIN THE PUBLIC RIGHT OF WAY OR IN EASEMENTS SHALL COMPLY WITH TAC TITLE 16, PART 1, CHAPTER 18, RULE §18.6 AND THE AMERICAN PUBLIC WORKS ADMINISTRATION (APWA) UNIFORM COLOR CODE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTE WATER, STORM WATER LINES AND TRAFFIC CONTROL DEVICES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE CITY OF IOWA COLONY, STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTE WATER COLLECTION SYSTEM, WATER LINES, STORM DRAINAGE, AND STREET PAVING AND STANDARD CONSTRUCTION DETAILS FOR WASTE WATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING, REFERENCED ABOVE, AT NO ADDITIONAL COST.
4. CONTRACTOR SHALL NOTIFY THE OFFICE OF THE CITY OF IOWA COLONY PUBLIC WORKS @ 346-395-4530 OR VIA FAX AT 281-369-0005 FOR INSPECTION AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
5. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.
6. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION.

TRAFFIC NOTES

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL DEVICES IN CONFORMANCE WITH PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) WITH REVISIONS DURING THE ENTIRE CONSTRUCTION PERIOD.
2. NO WORK SHALL BE PERFORMED IN RESIDENTIAL AREAS FROM 7:00PM TO 7:00AM.
3. CONTRACTOR SHALL MAINTAIN APPROVED NUMBERED TRAFFIC IN EACH DIRECTION DURING CONSTRUCTION HOURS. TRAFFIC CONTROL PLANS SHALL INCLUDE AND/OR DETOUR PLANS. CONTRACTOR SHALL NOTIFY AND COMPLAINTEE PEDESTRIAN ACCESS TO BUS STOPS AND BUS ACCESS TO THE BUS STOP.
4. CONTRACTOR SHALL COVER OPEN PAVEMENT EXCAVATIONS WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS, OPEN LANES FOR NORMAL TRAFFIC WHEN FEASIBLE.
5. CONTRACTOR SHALL SECURE LANE/SIDEWALK/BICYCLE LANE CLOSURE PERMITS FROM TRANSPORTATION & DRIVERS OPERATIONS BEFORE IMPLEMENTING THE TRAFFIC CONTROL PLAN. THE APPLICATION MUST BE SUBMITTED AT LEAST 10 DAYS PRIOR TO THE IMPLEMENTATION OF THE TRAFFIC CONTROL PLAN AND/OR BEGINNING CONSTRUCTION WORK. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL MEASURES, CONSTRUCTION SEQUENCING, AND CONSTRUCTION SIGNAGE THE APPLICATION.
6. CONTRACTOR SHALL HAVE APPROVED TRAFFIC CONTROL PLAN AND PERMIT AT THE JOB SITE FOR INSPECTION PRIOR TO COMMENCING CONSTRUCTION.
7. ACCESS TO DRIVEWAYS ADJACENT TO THE CONSTRUCTION ZONE SHALL BE MAINTAINED AT ALL TIMES AS MUCH AS POSSIBLE. ADDITIONAL CONES AND/OR DELINEATORS SHALL BE REQUIRED TO DELINEATE THE DRIVEWAY ACCESS TO THE CONSTRUCTION WORK ZONE. A MINIMUM OF TWO CONES SHALL BE MAINTAINED ACROSS THE DRIVEWAY PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE CITY OF IOWA COLONY.







TC56.15
TP55.65

TC56.25
TP55.75

TC55.17
TP54.67

TC56.48
TP55.98

TC56.48
TP55.98

TC55.06
TP54.56

TC56.45
TP55.95

TC56.00
TP55.50

TC56.25
TP55.75

TC56.23
TP55.73

TC55.7
TP55.2

TC56.2
TP55.7

S.I.R.
P.O.B.
1/2"

FLOWLINE
AT CULVERT
51.06'

FLOWLINE
AT CULVERT
51.48'

PROP. 18" RCP

1.0%

1.0%

ROAD 81

55.5

55.5

55.0

54.5

54.0

53.5

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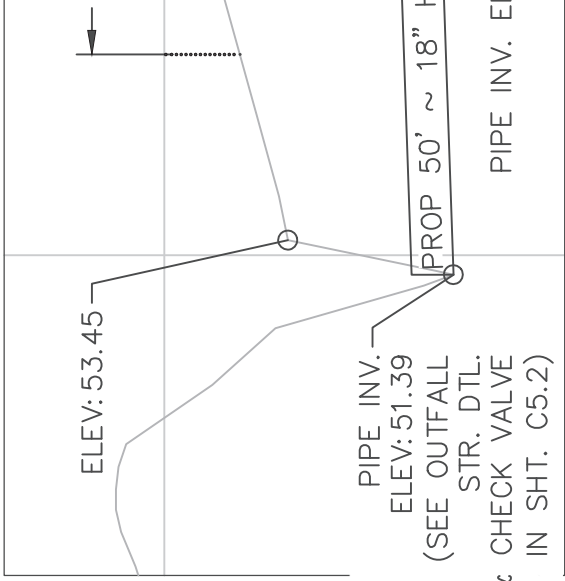
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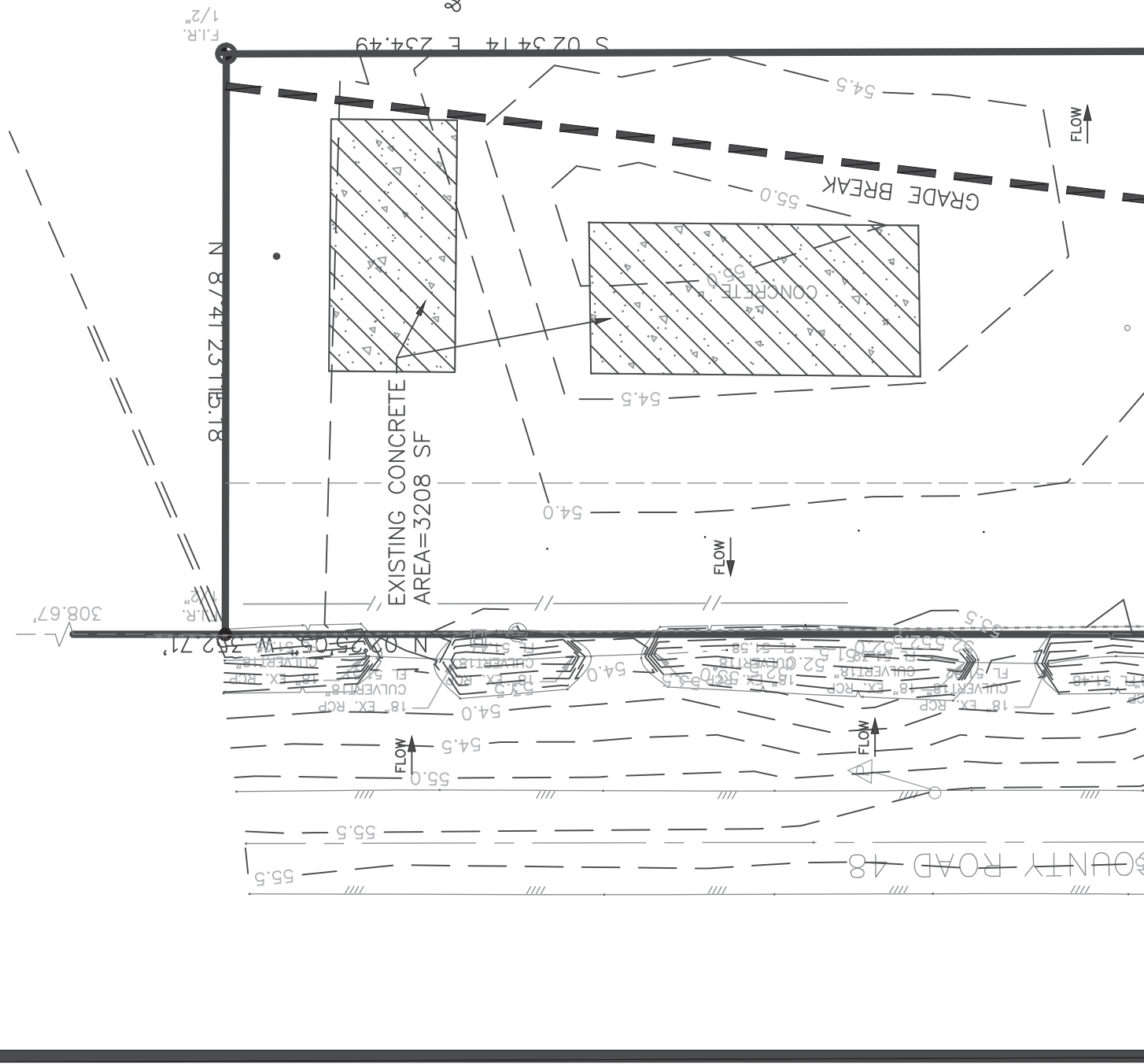
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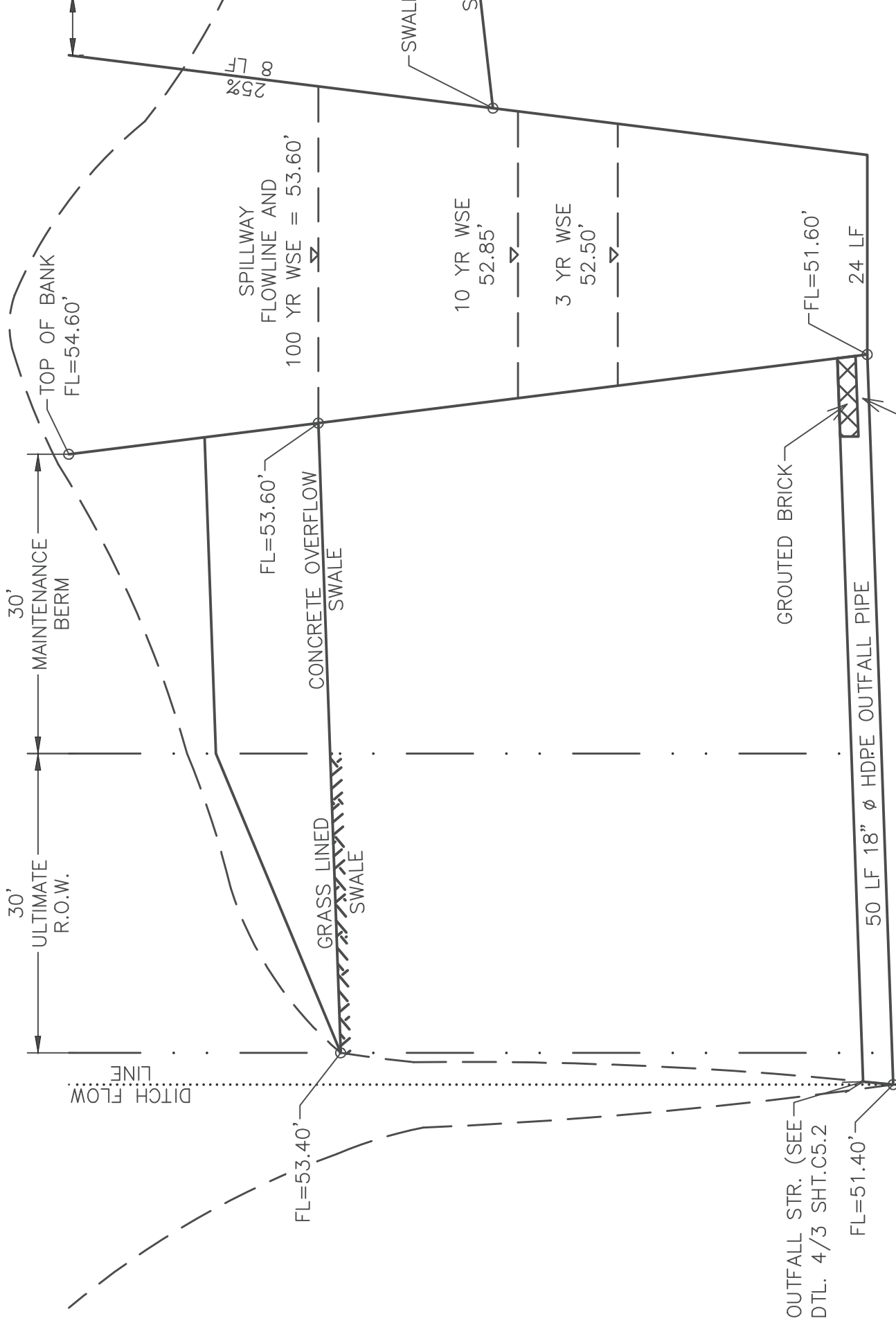


SECTION

- DRIVEWAY AREA = 1,226 SF
 - PARKING AREA = 6,248 SF
 - POND AREA = 5,528 SF
 - BUILDING AREA = 5,402 SF
 - SIDEWALK AREAS = 1,660 SF
 - = TOTAL AREA = 20,064 SF
- NET IMP. AREA = (TOTAL AREA) 20,064 - (CONCRETE AREA) 3,208 SF = 16,856 SF

REQ. VOLUME = 20,064 SF x 0.65 = 13,041 CU.FT
 REQ. VOLUME = 13,041 CU.FT = 0.2





30' ULTIMATE R.O.W.

30' MAINTENANCE BERM

TOP OF BANK
FL=54.60'

DITCH FLOW LINE

25% LF

SPILLWAY FLOWLINE AND
100 YR WSE = 53.60'

FL=53.60'

FL=53.40'

GRASS LINED SWALE

CONCRETE OVERFLOW SWALE

10 YR WSE
52.85'

3 YR WSE
52.50'

GROUTED BRICK

OUTFALL STR. (SEE
DTL. 4/3 SHT.C5.2

FL=51.40'

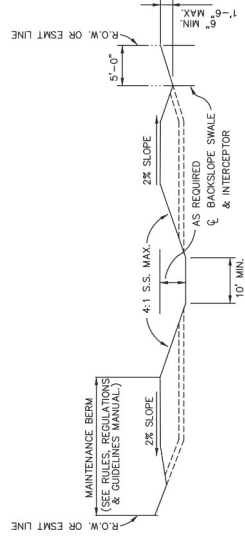
50 LF 18" Ø HDPE OUTFALL PIPE

24 LF

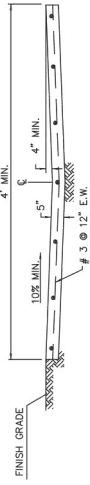
FL=51.60'

SWAL

S



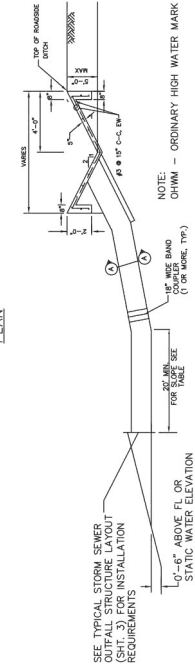
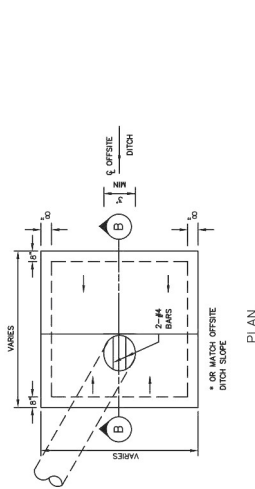
1 TYPICAL GRASS LINED TRAPEZOIDAL CHANNEL SECTION



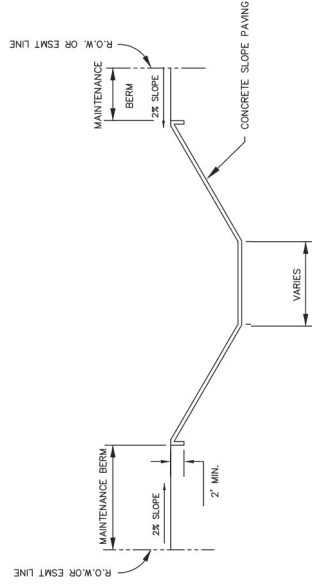
2 TYPICAL CONCRETE LINED TRAPEZOIDAL CHANNEL SECTION

- NOTES:
1. THE DIMENSIONS SHOWN ARE THE MINIMUM REQUIRED BY THE DISTRICT.
 2. THE PAVING THICKNESS AND REBAR PLACEMENT SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THIS DETAIL. THE ENGINEER IS RESPONSIBLE FOR THE PAVEMENT AND REINFORCEMENT BASED UPON THE SITE CONDITIONS.
 3. ALL CONCRETE MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
 4. PILOT CHANNEL SHALL BE AT LEAST 2 FOOT WIDER THAN THE DIAMETER OF ANY PIPE CONNECTED TO THE PILOT CHANNEL.

1 DETENTION BASIN PILOT CHANNEL

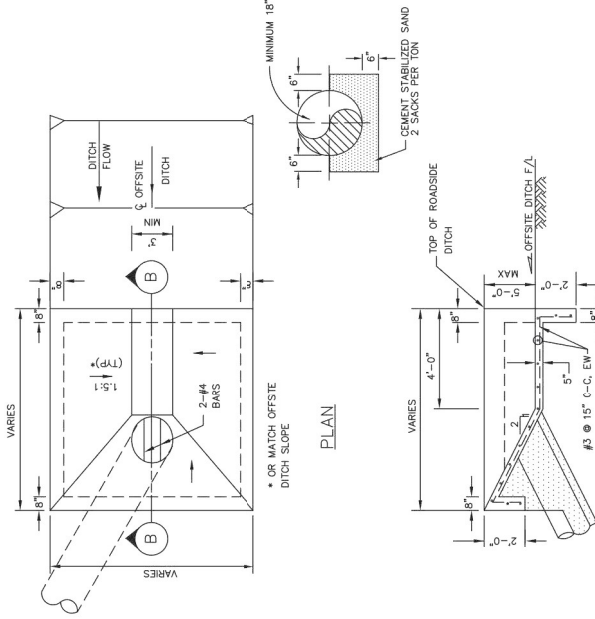


MODIFIED TYPE "B" BERM INLET (HIGHWAY LOADING) (SECTION A-A)



- NOTES:
1. SEE RULES, REGULATIONS, AND GUIDE LINES FOR SIDE SLOPE REQUIREMENT. A GEOTECHNICAL ANALYSIS MAY BE REQUIRED.
 2. BACK SLOPE SWALES ARE AND INTERCEPTORS ARE NOT REQUIRED FOR CONCRETE LINED SECTIONS.
 3. SEE OTHER DETAILS FOR SLOPE PAVING AND TIE WALL REQUIREMENTS.
 4. MAINTENANCE BERM WIDTHS VARY BASED UPON CHANNEL DEPTH AND OTHER FACTORS SEE RULES REGULATIONS, AND GUIDELINES FOR ADDITIONAL INFORMATION.

3 TYPICAL CONCRETE LINED TRAPEZOIDAL CHANNEL SECTION

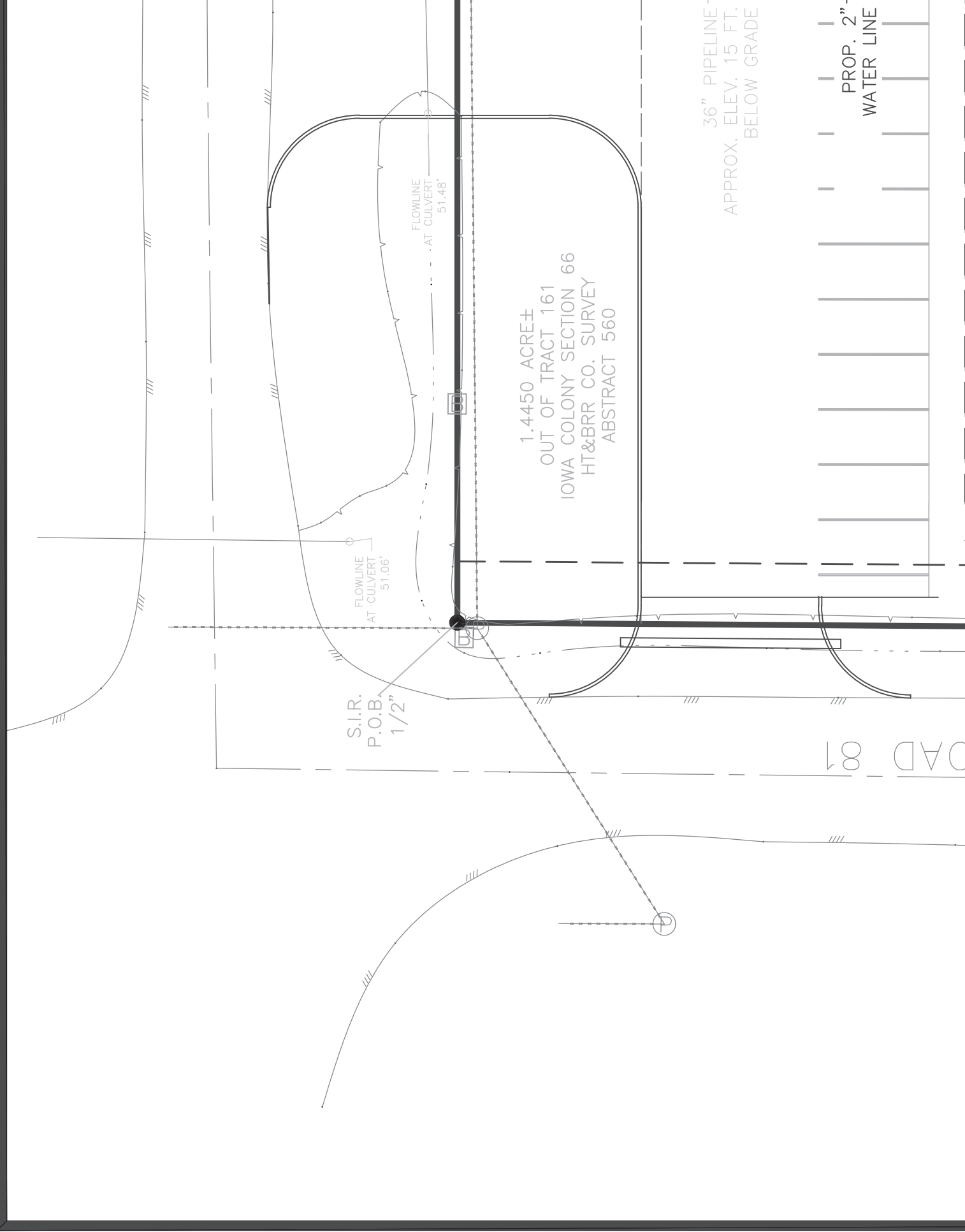


4 TYPICAL STORM SEW LAYOUT

APPROVED BY THE BOARD OF COMMISSIONS
Brazerota Drainage District No. 4

District Engineer
The above have signed these plans and/or plat based on the information provided and the Engineer's review of the same. The Engineer does not warrant the accuracy of the information provided. The Engineer does not necessarily mean that all the calculations between the DISTRICTS' Rules, Regulations and plans and/or plat, the DISTRICTS' Rules, Regulations and appropriate variances shall be itemized on the appropriate sheet where applicable. Plans submitted by a Professional Engineer licensed to practice engineering in the State of Texas, which conveys the engineer's and/or

BDD4 Ref. ID #:



S.I.R.
P.O.B.
1/2"

FLOWLINE
AT CULVERT
51.06'

FLOWLINE
AT CULVERT
51.48'

1.4450 ACRE±
OUT OF TRACT 161
IOWA COLONY SECTION 66
HT&BRR CO. SURVEY
ABSTRACT 560

36" PIPELINE
APPROX. ELEV. 15 FT.
BELOW GRADE

CAD 81

PROP. 2"
WATER LINE

SYSTEM CALCULATIONS

SYSTEM 1:

LOADING NOTES

1. DANCE STUDIO (5 DAYS/WEEK)
= DAILY FLOW 15 GPD FOR 20 PATRONS = 300 GPD
= OFFICE WORKERS (5 DAYS/WEEK)
= DAILY FLOW 5 GPD FOR 4 EMPLOYEES = 20 GPD

TOTAL
= 320 GPD (5 DAYS/WEEK)

TOTAL W/ WATER SAVING DEVICES
= 256 GPD (5 DAYS/WEEK)

BOD CALCULATIONS:

FLOW = 256 GPD
BOD EQUALS 300 MG/L FOR OFFICE USE
 $0.000256 \times 8.32 \times 300 \text{ MG/L} = 0.638976 \text{ LBS PER DAY}$
BOD LOADING CAPACITY FOR 500GPD ATU = 1.25 LBS

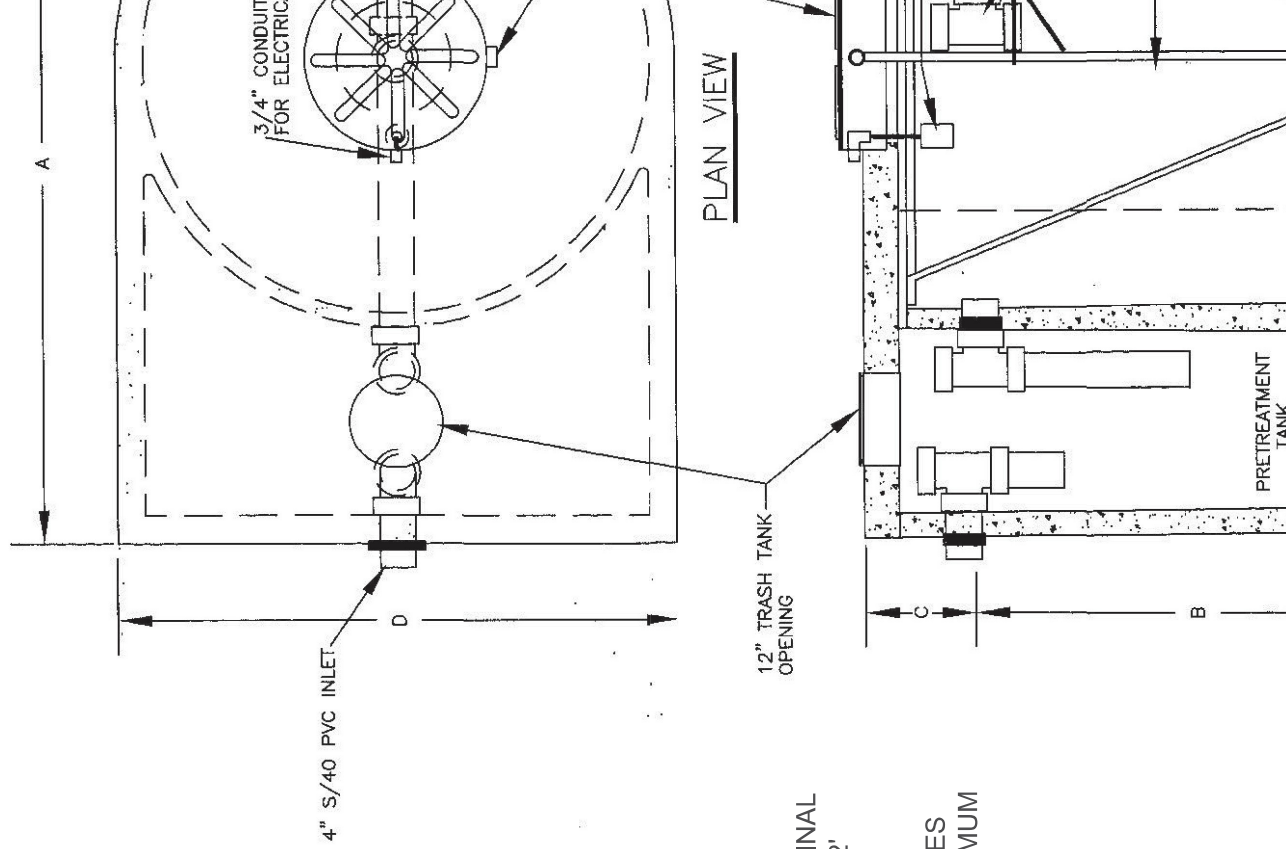
GENERAL NOTES

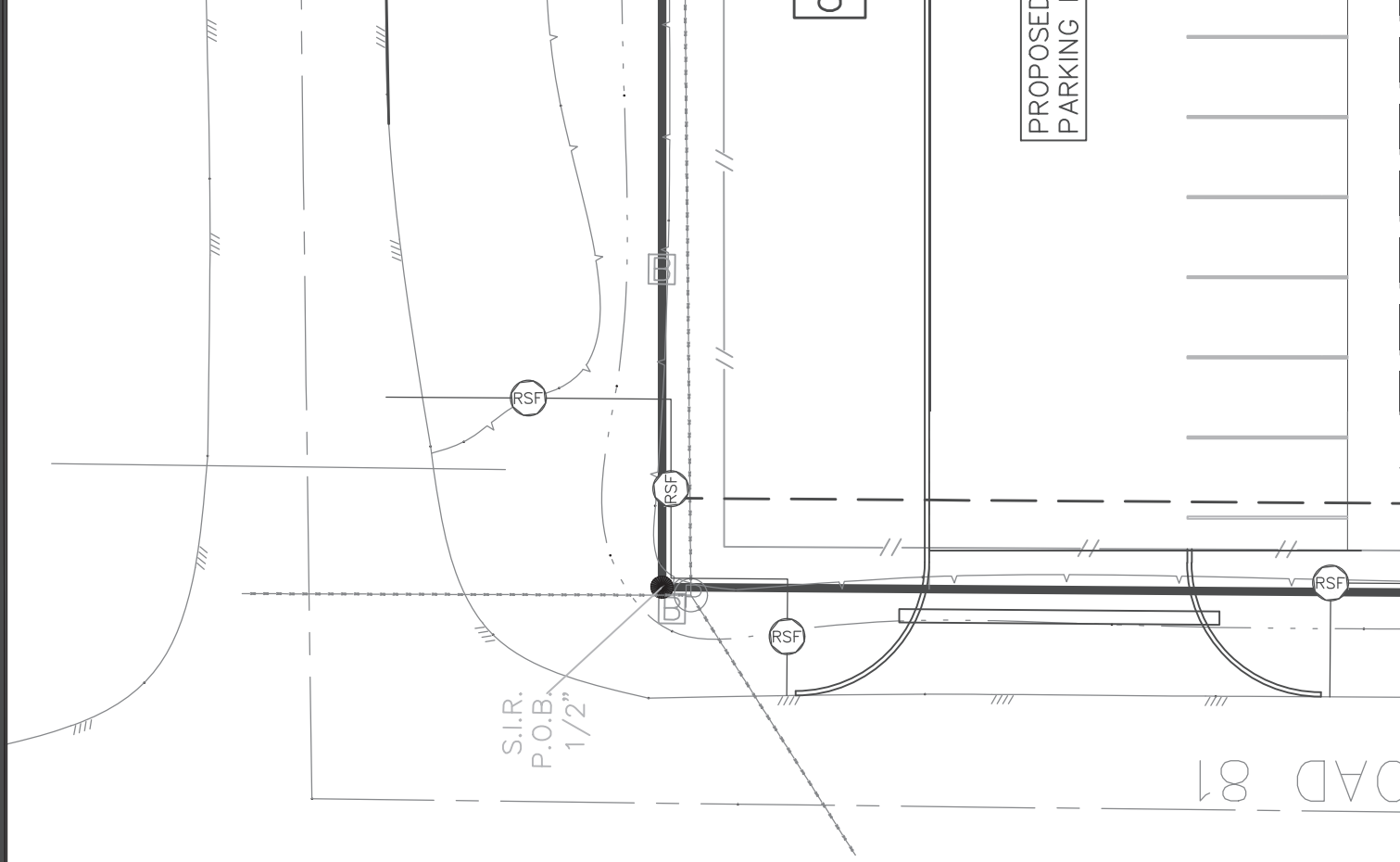
1. INSTALLATION WILL BE IN ACCORDANCE WITH TAC 285 AND BRAZORIA COUNTY RULES AND REGULATIONS.
2. PRIVATE WATER SUPPLY PROVIDED BY PRIVATE WATER WELL LOCATED ON-SITE.
3. PROVIDE SLEEVES FOR ALL SANITARY SEWER PIPE CROSSING UNDER PAVED AREAS. SLEEVE DIAMETER SHALL BE TWO NOMINAL SIZES GREATER THAN THE CARRIER PIPE AND SHALL EXTEND 2' BEYOND THE EDGE OF PAVEMENT.
4. PROVIDE SLEEVES FOR ALL SANITARY SEWER PIPE CROSSING WATER LINES. SLEEVE DIAMETER SHALL BE TWO NOMINAL SIZES GREATER THAN THE CARRIER PIPE. SLEEVES SHALL BE A MINIMUM OF 20 FEET IN LENGTH AND CENTERED AT THE WATERLINE CROSSING.
5. ALL POPULATION VALUES PROVIDED BY THE CLIENT.
6. APPROPRIATE CLEANOUTS SHALL BE INSTALLED EVERY 100'.
7. INSTALL SWPPP MEASURES AS NEEDED.

SPRAY AREA CALCULATIONS

1. RI FOR BRAZORIA COUNTY FROM TAC 285 TABLE 1 = 0.41
2. DAILY FLOW FROM ATU = 256 GPD (5 DAYS/WEEK)
3. DAILY FLOW FROM PUMP TANK = 100.00 GPD (5 DAYS/WEEK)

AEROBIC TREATMENT UNIT DETAIL
AEROBIC TREATMENT UNIT TO BE 500 GPD MODEL
MANUFACTURED BY CLEARSTREAM OR APPROXIMATE





SWPPP NOTES

1. PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL INSTALL POLLUTION PREVENTION SYSTEMS AT LOCATION SHOWN ON PLANS.
2. IF POLLUTION PREVENTION SYSTEMS ARE EXISTING FROM PRIOR CONTRACTS, OWNER AND/OR OWNER'S REPRESENTATIVE WITH THE CONTRACTOR SHALL EXAMINE THE EXISTING POLLUTION PREVENTION SYSTEMS FOR DAMAGE PRIOR TO CONTRACTOR STARTING CONSTRUCTION OF THE CONTRACT. ANY DAMAGE NOTED AT THIS TIME SHALL BE REPAIRED AT OWNER'S EXPENSE.
3. CONTRACTOR SHALL INSPECT ALL POLLUTION PREVENTION SYSTEMS SPECIFIED HEREIN, AS REQUIRED IN THE PERMIT.
4. CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEMS THROUGHOUT THE DURATION OF THE CONTRACT.
5. CONTRACTOR SHALL PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS AND OTHER POTENTIALLY TOXIC MATERIALS.
6. CONTRACTOR SHALL LOCATE FUEL/MATERIAL STORAGE AREAS AWAY FROM STORM WATER CONVEYANCE SYSTEMS. CONTRACTOR SHALL USE A LINER UNDER ABOVE GROUND STORAGE TANKS. CONTRACTOR SHALL USE FILTER FABRIC FENCING, HAY BALES, OR BERMS AROUND FUEL STORAGE AREAS.
7. CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT/CONSTRUCTION AREA AND THE ACTIONS TAKEN TO REMEDY THE PROBLEM.
8. CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF HIS FUELS, MATERIALS, AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER.