

**Fort Bend County
Engineering Department**
301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500
Permits@fortbendcountytexas.gov

X

Permit No: 2018-20673

Bond No. [REDACTED] **Date of Bond:** 6/25/2018 **Amount:** \$10,747.00

By:

Date Recorded 8-1-2018 Comm. Court No. 130

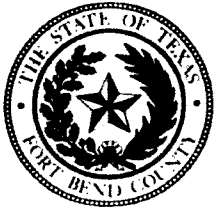
N/A

By:

Clerk of Commissioners Court

By:

08/01/2018 Original sent to Sean Eglinton, Engineering dept.



**PERMIT APPLICATION REVIEW FORM FOR
CABLE, CONDUIT, AND POLE LINE ACTIVITY
IN FORT BEND COUNTY**

**Fort Bend County
Engineering Department**
301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500
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- ☐ Right of Way Permit
☒ Commercial Driveway Permit

Permit No: 2018-20673

The following "Notice of Proposed Cable, Conduit, and/or Pole Line activity in Fort Bend County" and accompanying attachments have been reviewed and the notice conforms to appropriate regulations set by Commissioner's Court of Fort Bend County, Texas.

(1) COMPLETE APPLICATION FORM:

- ☒ a. Name of road, street, and/or drainage ditch affected.
☒ b. Vicinity map showing course of directions
☒ c. Plans and specifications

(2) BOND:

- ☐ County Attorney, approval when applicable.
- ☐ Perpetual bond currently posted. Bond No: _____ Amount: _____
- ☒ Performance bond submitted. Bond No: [REDACTED] Amount: \$10,747.00
- ☐ Cashier's Check Check No: _____ Amount: _____

(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):

Drainage District Approval

Date

We have reviewed this project and agree it meets minimum requirements.



Permit Administrator

7/13/2018

Date



PERFORMANCE BOND COVERING ALL CABLE, CONDUIT AND/OR POLE LINE
ACTIVITY IN, UNDER, ACROSS OR ALONG FORT BEND COUNTY ROAD,
COMMERCIAL DRIVEWAY AND MEDIAN OPENINGS OR MODIFICATIONS
(AUTHORIZED)

BOND NO 

THE STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF FORT BEND §

THAT WE, Nationwide Structural LLC whose (address, phone) is 440 Benmar Dr Ste 3325, Houston, TX 77060, (281) 379-4343 Texas, hereinafter called the Principal, and Nationwide Mutual Insurance Company, a Corporation existing under and by virtue of the laws of the state of New York and authorized to do an indemnifying business in the state of Texas, and whose principal office is located at (name/address/phone) 7 World Trade Center, 37th Floor, 250 Greenwich Street, New York, NY 10007-0033, (888) 800-0147, whose officer residing in the State of Texas, authorized to accept service in all suits and actions brought within said state is Boyd, Shackelford & Barnett and whose address is 5800 Granite Pkwy, Ste. 350, Plano, TX 75024, hereinafter called the Surety, and held and firmly bound unto, Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, in the full sum of Ten Thousand Seven Hundred Forty Seven Dollars and No Cents Dollars (\$10,747.00) current, lawful money of the United States of America, to be paid to said Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, to which payment well and truly to be made and done, we, the undersigned, bind ourselves and each of us, our heirs, executors, administrators, successors, assigns, and legal representatives, jointly and severally, by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT, WHEREAS, the above bounden principal contemplates laying, constructing, maintaining and/or repairing one or more cables, conduits, and/or pole lines in, under, across and/or along roads, streets and highways, commercial driveway and median openings or modifications in the County of Fort Bend, and the State of Texas, under the jurisdiction of the Commissioners' Court of Fort Bend County, Texas, pursuant to the Commissioners' Court order adopted on the 1st day of December, A.D. 1980, recorded in Volume 13, of the Commissioners' Court Minutes of Fort Bend County, Texas, regulating same, which Commissioners' Court order is hereby referred to and made a part hereof for all purposes as though fully set out herein;

AND WHEREAS, the principal desires to provide Fort Bend County with a performance bond covering all such cable, conduit and/or pole line activity, commercial driveway and median openings or modifications;

NOW, THEREFORE, if the above bounden principal shall faithfully perform all its cable, conduit and/or pole line activity (including, but not limited to the laying, construction, maintenance and/or repair of cables, conduits and/or pole lines) in, under, across and/or along roads, streets and highways, commercial driveway and median openings or modifications in the County of Fort Bend and State of Texas, under the jurisdiction of the Commissioners Court of Fort Bend County, Texas, pursuant to and in accordance with minimum requirements and conditions of the above mentioned Commissioners' Court order set forth and specified to be by said principal done and performed, at the time and in the manner therein specified, and shall pay over and make good and reimburse Fort Bend County, all loss and damages which Fort Bend County may sustain by reason of any failure or default on the part of said principal, then this obligation shall be null and void, otherwise to remain in full force and effect.

This bond is payable at the County Courthouse in the County of Fort Bend and State of Texas.

It is understood that at any time Fort Bend County deems itself insecure under this bond, it may require further and/or additional bonds of the principal.

EXECUTED this 25th day of June, 2018.


Nationwide Structural LLC
PRINCIPAL

BY


Nationwide Mutual Insurance Company
SURETY

BY

Attorney-In-Fact

CCM 7-24-2018 # 135
Fort Bend County Clerk
Return Admin Serv Coord
Permit# 2018-20673 RAC

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS THAT:

Nationwide Mutual Insurance Company, an Ohio corporation hereinafter referred to as the "Company" and does hereby make, constitute and appoint:

David Barnett, Aimee Ocampo, Don Barnett, S. Michael Boyd, Kimberly Sandri

each in their individual capacity, its true and lawful attorney-in-fact, with full power and authority to sign, seal, and execute on its behalf any and all bonds and undertakings, and other obligatory instruments of similar nature, in penalties not exceeding the sum of

UNLIMITED

and to bind the Company thereby, as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Company; and all acts of said Attorney pursuant to the authority given are hereby ratified and confirmed.

This power of attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the board of directors of the Company:

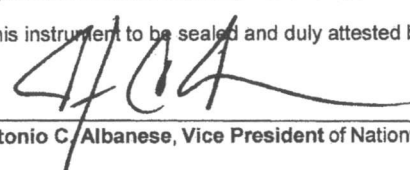
"RESOLVED, that the president, or any vice president be, and each hereby is, authorized and empowered to appoint attorneys-in-fact of the Company, and to authorize them to execute and deliver on behalf of the Company any and all bonds, forms, applications, memorandums, undertakings, recognizances, transfers, contracts of indemnity, policies, contracts guaranteeing the fidelity of persons holding positions of public or private trust, and other writings obligatory in nature that the business of the Company may require; and to modify or revoke, with or without cause, any such appointment or authority; provided, however, that the authority granted hereby shall in no way limit the authority of other duly authorized agents to sign and countersign any of said documents on behalf of the Company."

"RESOLVED FURTHER, that such attorneys-in-fact shall have full power and authority to execute and deliver any and all such documents and to bind the Company subject to the terms and limitations of the power of attorney issued to them, and to affix the seal of the Company thereto; provided, however, that said seal shall not be necessary for the validity of any such documents."

This power of attorney is signed and sealed under and by the following bylaws duly adopted by the board of directors of the Company.

Execution of Instruments. Any vice president, any assistant secretary or any assistant treasurer shall have the power and authority to sign or attest all approved documents, instruments, contracts, or other papers in connection with the operation of the business of the company in addition to the chairman of the board, the chief executive officer, president, treasurer or secretary; provided, however, the signature of any of them may be printed, engraved, or stamped on any approved document, contract, instrument, or other papers of the Company.

IN WITNESS WHEREOF, the Company has caused this instrument to be sealed and duly attested by the signature of its officer the 1st day of May, 2017.


Antonio C. Albanese, Vice President of Nationwide Mutual Insurance Company



ACKNOWLEDGMENT

STATE OF NEW YORK, COUNTY OF NEW YORK: ss

On this 1st day of May, 2017, before me came the above-named officer for the Company aforesaid, to me personally known to be the officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, deposes and says, that he is the officer of the Company aforesaid, that the seal affixed hereto is the corporate seal of said Company, and the said corporate seal and his signature were duly affixed and subscribed to said instrument by the authority and direction of said Company.

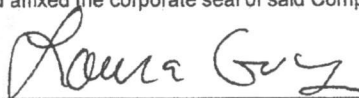
BARRY T. BASSIS
Notary Public, State of New York
No. 02BA4656400
Qualified in New York County
Commission Expires April 30, 2019


Notary Public
My Commission Expires
April 30, 2019

CERTIFICATE

I, Laura B. Guy, Assistant Secretary of the Company, do hereby certify that the foregoing is a full, true and correct copy of the original power of attorney issued by the Company; that the resolution included therein is a true and correct transcript from the minutes of the meetings of the boards of directors and the same has not been revoked or amended in any manner; that said Antonio C. Albanese was on the date of the execution of the foregoing power of attorney the duly elected officer of the Company, and the corporate seal and his signature as officer were duly affixed and subscribed to the said instrument by the authority of said board of directors; and the foregoing power of attorney is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of said Company this 25th day of June, 2017.


Assistant Secretary

FILED AND RECORDED
OFFICIAL PUBLIC RECORDS

Laura Richard

Laura Richard, County Clerk

Fort Bend County Texas

July 27, 2018 03:00:49 PM



FEE: \$0.00

SG

2018084512

FORT BEND COUNTY M.U.D. 194

PLANS FOR CONSTRUCTION

OF

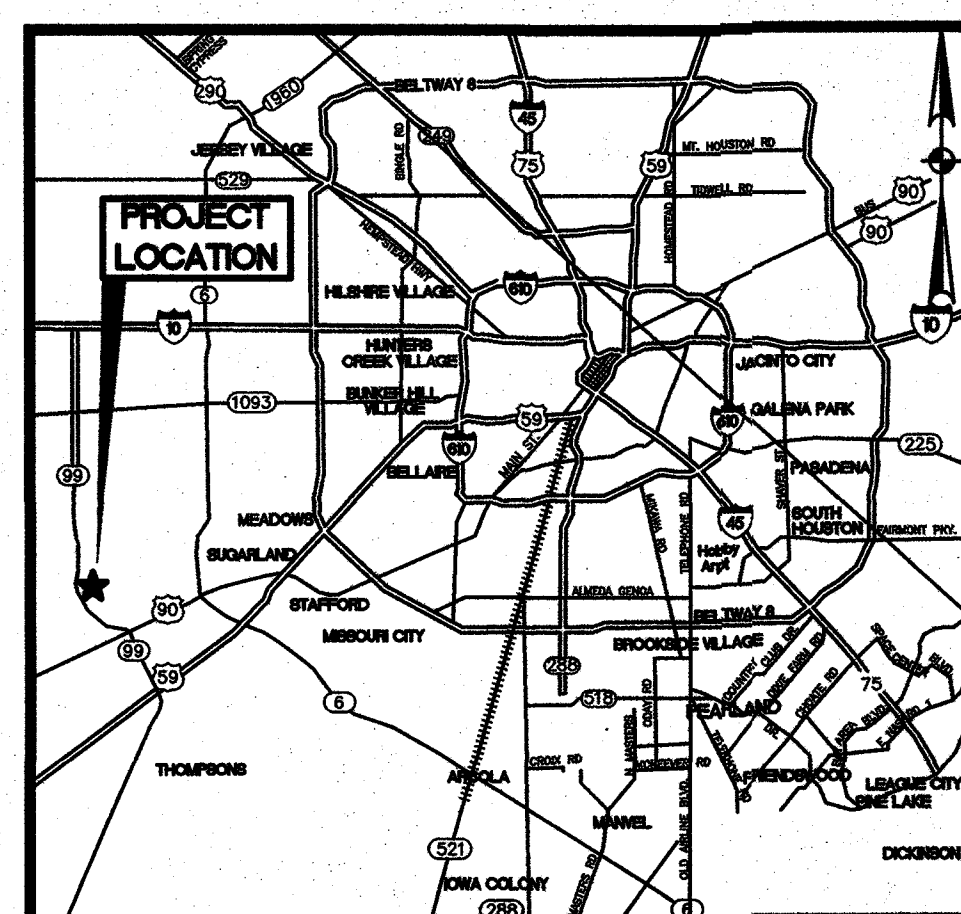
PRIVATE PAVING, STORM SEWER, SANITARY SEWER AND WATER LINE

TO SERVE

LONGMEADOW RANCH APARTMENTS

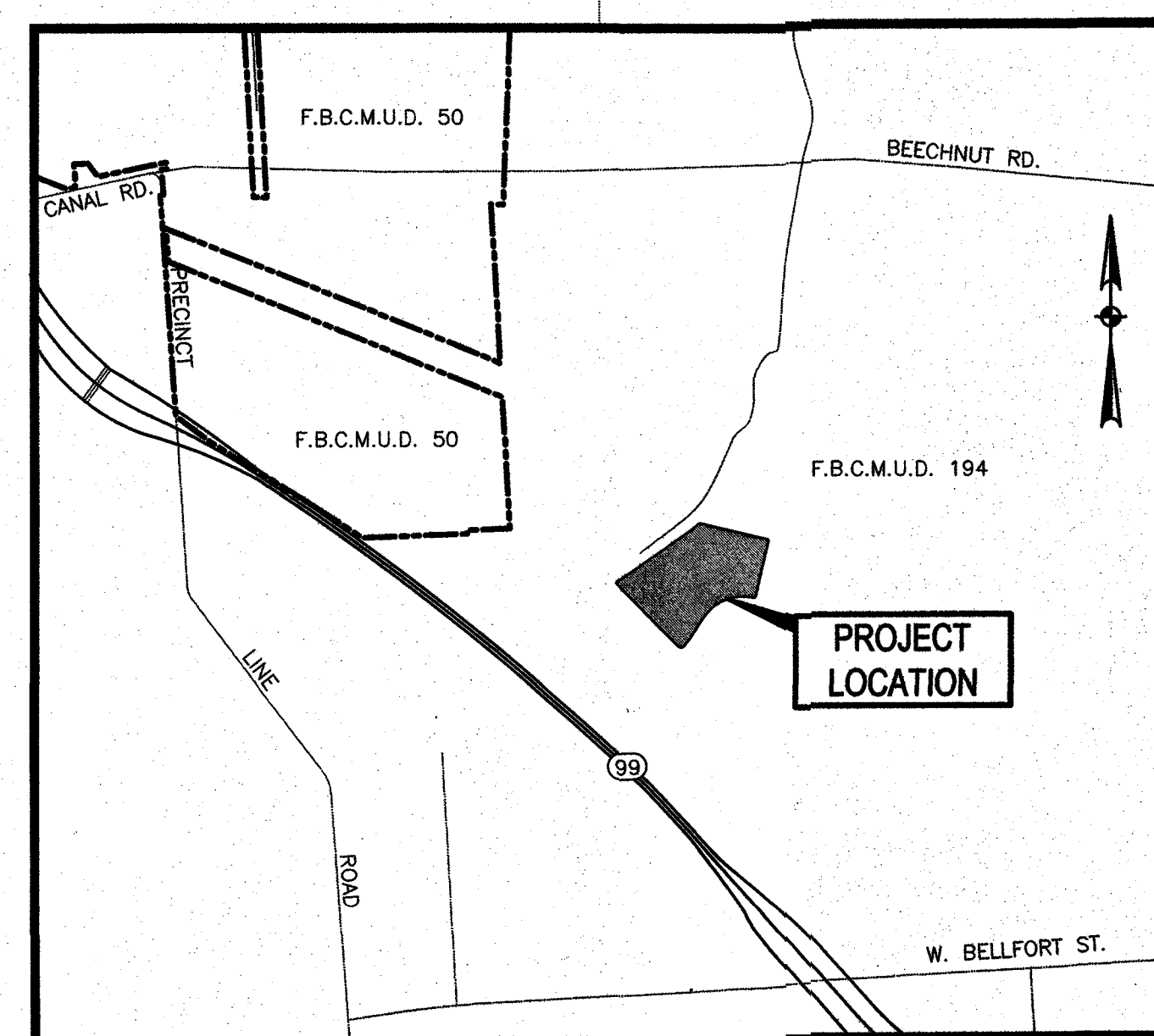
5830 MEADOW RANCH PARKWAY, RICHMOND, TX 77407

20.7015 ACRES



LOCATION MAP

N.T.S.



KEY MAP # 525-V
GIMS MAP # 4454C&D

VICINITY MAP

N.T.S.

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Engineer:
r.g.miller
engineers
since 1966

16340 park ten place
suite 350
houston, texas 77084
phone: 713-461-9600
TEXAS FIRM REGISTRATION NO. F-487

Owner/Contractor:
TX Morrow Construction, Inc.

4635 Southwest Freeway
Suite 420
Houston, Texas 77027
phone: 713-840-0910

ONE-CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG!!!
(713) 223-4567 (In Houston)
(New Statewide Number Outside Houston)
1-800-344-8377

CONTRACTOR TO NOTIFY M.U.D.
PRIOR TO ANY WORK ON SITE
PER NOTES ON SHEET C2

CONTRACTOR TO NOTIFY FORT BEND
COUNTY ENGINEERING 72 HOURS PRIOR
TO THE PRE-CONSTRUCTION MEETING
AND ALL PAVING ACTIVITIES. EMAIL TO:
CONSTRUCTION@FORTBENDCOUNTYTX.GOV

FORT BEND COUNTY ENGINEER

ENGINEER: Richard W. Stollers, P.E.
P.E. RICHARD W. STOLLERS, P.E.

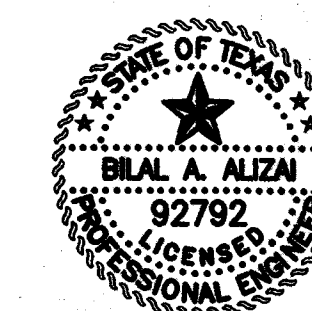
DATE: 5/9/18

THESE SIGNATURES ARE VOID IF CONSTRUCTION
HAS NOT COMMENCED IN ONE (1) YEAR FROM
DATE OF APPROVAL.

APPROVED: Cassandra D. [Signature]
DEVELOPMENT COORDINATOR

DATE: 5/9/18

△ REVISED BUILDING LAYOUT, STM. SWR LAYOUT, & GRADING 03/02/2018



Richard W. Stollers
3/6/2018

S:\3906 MEADOW RANCH PARKWAY APTS - PHASE 1\CAD\PRIVATE\3906-INTS.DWG NOV. 21, 2017-8:53am FLOU

GENERAL CONSTRUCTION NOTES - OUTSIDE CITY LIMITS (FORT BEND COUNTY)

1. CONSTRUCT WASTEWATER COLLECTION SYSTEMS, WATER LINES AND STORM DRAINAGE IN ACCORDANCE WITH FORT BEND COUNTY'S STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING.
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 713-223-4567/800-245-4545 AND "LONE STAR ONE CALL" AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER AND STORM DRAINAGE LINES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING AT NO ADDITIONAL COST.
4. CONTRACTOR SHALL NOTIFY THE OFFICE OF THE FORT BEND COUNTY ENGINEER, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING 48 HOURS PRIOR TO COMMENCING CONSTRUCTION. PHONE (281) 633-7500
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 COMPLY WITH THE LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.
7. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION.
8. IF THE CONSTRUCTION DOES NOT BEGIN WITHIN A YEAR AFTER THE PLANS HAVE BEEN SIGNED, NEW SIGNATURES MUST BE OBTAINED AND LETTERS OF AVAILABILITY MUST BE UPDATED.
9. CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS RECORDING AS-BUILT CONDITIONS DURING CONSTRUCTION. THESE REDLINE MARKED UP DRAWINGS WILL BE SUBMITTED TO THE DESIGN CONSULTANT, WHO WILL MAKE THE CHANGES ON THE ORIGINAL TRACINGS.
10. THE OWNER SHALL OBTAIN THE NECESSARY PERMITS FOR INSTALLATION OF UTILITY PIPELINES WITHIN THE 100 YEAR FLOOD PLAIN.
11. PAVING SHALL BE IN ACCORDANCE WITH FORT BEND COUNTY REQUIREMENTS.
12. ALL CONCRETE USED IN THIS PROJECT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
13. GUIDELINES SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE OBSERVED.
14. ALL STREET AND DRIVEWAY FILL SHALL BE PLACED IN 8" MAXIMUM LIFTS AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY PRIOR TO CONSTRUCTION OF SUBGRADE AND PAVEMENT.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRENCH LINES (I.E. STORM SEWER, SANITARY SEWER AND WATER LINES) TO INDUCE MAXIMUM SETTLEMENT OF BACKFILL MATERIAL.
16. EXISTING PAVEMENTS, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO FORT BEND COUNTY STANDARDS.
17. CONDITION OF THE SITE, ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF JOB, SHALL BE AS GOOD AS OR BETTER THAN THE CONDITION PRIOR TO STARTING WORK.
18. ALL DISTURBED AREAS TO BE HYDRO-SEEDED OR LANDSCAPED AT THE COMPLETION OF WORK IN THAT AREA.

STORM SEWER CONSTRUCTION NOTES

1. ALL STORM SEWERS OUTSIDE OF THE PUBLIC R.O.W. TO BE HDPE ASTM D447 AND SHALL BE INSTALLED, BEDDED AND BACK FILLED ACCORDING TO MANUFACTURER'S RECOMMENDATION. ASTM C-76 CLASS III RCP SHALL BE USED WHEN CONNECTING TO PUBLIC STORM SEWERS IN PUBLIC R.O.W. PIPE GRADES ARE BASED ON CONCRETE PIPE TO PRODUCE 5 FPS MINIMUM VELOCITY.
2. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT/C.Y. STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.
3. ALL TRENCH BACKFILLS SHALL BE IN 8" LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS ON EACH LIFT, AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D-698/ASTM D 1557).
4. CONTRACTOR SHALL PROVIDE 12" MINIMUM CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS.
5. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS AND VALVE BOXES TO GRADE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF HIS WORK.
7. ALL DITCHES SHALL BE REGRADED TO PROPOSED ELEVATIONS TO INSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREAS SHALL BE REGRADED, SEEDED, AND FERTILIZED.

WATER LINE CONSTRUCTION NOTES

1. UNLESS OTHERWISE NOTED, ALL WATER LINES 12-INCHES AND SMALLER SHALL HAVE A MINIMUM OF 4- FEET OF COVER.
2. SANITARY PRECAUTIONS MUST BE TAKEN DURING WATER LINE CONSTRUCTION, AS CALLED FOR BY AWWA STANDARDS. PRECAUTIONS INCLUDE, BUT ARE NOT LIMITED TO, KEEPING PIPE CLEAN AND CAPPED OR OTHERWISE EFFECTIVELY COVERING OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED PIPE LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.
3. ALL WATER LINES, AFTER INSTALLATION, SHALL BE THOROUGHLY DISINFECTED ACCORDING TO TCEQ, CHAPTER 290 AND AWWA SPECIFICATION C-851 AND THEN FLUSHED BEFORE BEING PLACED INTO SERVICE. WATER SAMPLES WILL BE COLLECTED FOR BACTERIOLOGIC ANALYSIS AND MUST MEET THE TEXAS STATE DEPARTMENT OF HEALTH AND CITY OF HOUSTON REQUIREMENTS PRIOR TO PLACING THE LINES INTO SERVICE.
4. PIPE MATERIAL (IF NOT A STEEL SECTION) SHALL BE POLY-VINYL CHLORIDE (P.V.C.) CONFORMING TO AWWA SPECIFICATION C-900, WITH BELL AND SPIGOT PUSH ON JOINTS.
5. THE CONTRACTOR SHALL NOT OPERATE ANY EXISTING MUD/PUBLIC GATE VALVES. THE CONTRACTOR SHALL CONTACT THE MUNICIPAL UTILITY DISTRICT'S OPERATOR A MINIMUM OF 48 HOURS PRIOR TO MAKING ANY CONNECTIONS TO THE EXISTING WATER LINE AND TO OPERATE ANY EXISTING GATE VALVES.
6. ALL WATER VALVES SHALL OPEN CLOCKWISE, SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA SPECIFICATION C-500 AND SHALL BE OF THE RESILIENT SEAT TYPE.
7. WATER LINES PARALLEL TO SANITARY SEWER LINES SHALL BE INSTALLED WITH AT LEAST 9- FEET OF CLEARANCE FROM OUTSIDE TO OUTSIDE OF PIPE AND SHALL BE INSTALLED IN SEPARATE TRENCHES. CONTRACTOR MUST MAINTAIN A MINIMUM OF 9- FEET OF CLEARANCE BETWEEN OUTSIDE OF SANITARY SEWER MANHOLES AND WATER LINES AS SPECIFIED BY TCEQ, CHAPTER 317 (LATEST PRINTING).
8. WATER LINES SHALL BE CONSTRUCTED SO THAT ALL FITTINGS WILL NOT BE LOCATED UNDER PROPOSED OR FUTURE PAVEMENT.
9. THE UTILITY CONTRACTOR SHALL TURN FIRE HYDRANTS AND MAKE ALL FINAL ADJUSTMENTS AFTER COMPLETION OF PAVING. NO SEPARATE PAY.
10. THIS PROJECT SHALL BE BUILT BY MEANS OF OPEN CUT EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF BORE PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.

MUD OPERATOR NOTES

1. THE WATER SYSTEM CONNECTION SHALL BE MADE BY THE FBCMUD No. 194 OPERATOR. ENVIRONMENTAL DEVELOPMENT PARTNERS AND SATISFACTORY BACTERIOLOGICAL TEST RESULTS MUST BE PROVIDED TO THEM BEFORE ANY CONNECTION TO THE WATER SYSTEM IS PERMITTED. THE BACTERIOLOGICAL TEST FOR THE WATER LINES SHALL BE PERFORMED IN THE PRESENCE OF THE FBCMUD No. 194 OPERATOR. COORDINATE WITH THE FBCMUD No. 194 OPERATOR TO RECEIVE A TEMPORARY WATER TAP FOR PERFORMANCE OF THIS TEST.
2. THE CONTRACTOR SHALL NOTIFY THE FBCMUD No. 194 OPERATOR, ENVIRONMENTAL DEVELOPMENT PARTNERS AT (281) 655-0180, FOURTY-EIGHT (48) HOURS PRIOR TO CONSTRUCTION.
3. THE SANITARY SEWER CONNECTION SHALL BE INSPECTED BY THE FBCMUD No. 194. ENVIRONMENTAL DEVELOPMENT, PRIOR TO BACKFILLING.
4. DISTRICT OPERATOR SHALL MAKE ALL WATER TAPS/CONNECTIONS AND SHALL BE CONTACTED TO OPERATE ANY VALVES ON THE DISTRICT'S WATERLINE.

SANITARY SEWER CONSTRUCTION NOTES

1. ALL PROPOSED SANITARY SEWER SHALL BE CONSTRUCTED OF MATERIAL WHICH IS IN ACCORDANCE W/C.O.H. SPECIFICATION NO. 02056.
2. ALL SDR/DR P.V.C. PIPES ARE TO HAVE RUBBER GASKETED PUSH-ON BELL-AND-SPIGOT TYPE JOINT ENDS. CHEMICALLY WELDED SANITARY SEWER JOINTS ARE NOT ACCEPTABLE. ALL DR P.V.C. PIPE USED IS TO HAVE C.I.P. SIZE O.D.'S REGARDLESS OF ANY OTHER WASTEWATER CONSTRUCTION NOTE TO THE CONTRARY. ALL P.V.C. PIPE AND FITTINGS TO PIPE (JOINTS) MUST BE SO MARKED (STAMPED).
3. ALL SANITARY SEWER SERVICE LEADS SHALL BE ASTM D 3034 SDR 26 P.V.C. PIPE.
4. SANITARY SEWER AND SERVICE LEADS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH FORT BEND COUNTY DEPARTMENT OF PUBLIC WORKS AND ENGINEERING STANDARD CONSTRUCTION SPECIFICATIONS.
5. SANITARY SEWER, INCLUDING ALL LEADS, SHALL HAVE CEMENT STABILIZED SAND BEDDING AND BACKFILL AS PER C.O.H. DRAWING No. 02317-03 IN THE CITY OF HOUSTON STANDARD CONSTRUCTION DETAILS.
6. SANITARY SEWERS CONSTRUCTED IN WET STABLE TRENCH SHALL BE BEDDED & BACKFILLED AS PER CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING DWG. NO. 02317-02 OF STANDARD CONSTRUCTION DETAILS.
7. ALL CEMENT STABILIZED SAND (USED FOR SEWER BEDDING AND/OR PAVING BACKFILL) MUST MEET OR EXCEED CURRENT FORT BEND COUNTY PERFORMANCE SPECIFICATION (100 PSI COMPRESSION TEST) REGARDLESS OF ANY OTHER MINIMUM CEMENT CONTENT RATIO REQUIREMENTS STATED IN OTHER APPLICABLE NOTES.
8. SANITARY SEWER MANHOLE RIMS, AS A RULE SHALL BE SET 2" MINIMUM ABOVE THE SURROUNDING LEVEL FINISHED GRADE AFTER PAVING, WITH SLOPED BACKFILL ADDED FOR STORMWATER DRAINAGE AWAY FROM THE MANHOLE RIM. MANHOLES IN THE 100 YEAR FLOOD PLAIN SHALL EITHER HAVE TOPS RAISED 12" MINIMUM ABOVE 100 YEAR WATER LEVEL OR BE SEALED AND VENTED PER APPROVED DETAIL ON THESE PLANS.
9. SANITARY SEWER MANHOLES ARE TO BE PRECAST IN ACCORDANCE WITH THE CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS & ENGINEERING STANDARD CONSTRUCTION SPECIFICATIONS AND STANDARD CONSTRUCTION DETAILS. CAST-IN-PLACE MANHOLES ARE NOT ALLOWED.
10. UNLESS OTHERWISE NOTED ALL SANITARY SEWER MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS & ENGINEERING DWG. NO. 02082-02 WITH NOTES FROM DWG. NO. 02082N-02.
11. WHERE P.V.C. (OR OTHER SMOOTH PLASTIC) PIPE IS TO BE USED, WATER-STOP GASKET AND CLAMP ASSEMBLY ARE TO BE FURNISHED AND INSTALLED AT ALL CONNECTIONS TO MANHOLES.
12. WHEN MAKING A CONNECTION TO AN EXISTING SANITARY SEWER MANHOLE, CONTRACTOR SHALL PLUG DOWNSTREAM END OF PROPOSED SANITARY SEWER. THE SEWER SHALL REMAIN PLUGGED UNTIL FINAL ACCEPTANCE BY THE COUNTY OR M.U.D.
13. THE TOTAL FOOTAGE OF ALL SANITARY SEWERS SHALL BE AIR TESTED OR WATER TESTED BY THE CONTRACTOR. THE CURRENT CITY OF HOUSTON TESTING PROCEDURE SHALL BE FOLLOWED. IF THE WATER TESTING METHOD IS EMPLOYED, THE TOTAL INFILTRATION/EXFILTRATION SHALL NOT EXCEED 200 GALLONS PER INCH OF PIPE DIAMETER, PER MILE OF PIPE, PER 24 HOURS. IF THE AIR TESTING METHOD IS EMPLOYED, THE CONSTRUCTION, SEQUENCING AND SCHEDULING OF ALL TEST WILL BE AGREED UPON BY THE CONTRACTOR AND THE ENGINEER.
14. DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID PIPE, WITH THE EXCEPTION OF SERVICE LEADS. THE TESTS SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. THE TEST IS TO BE RUN USING A MANROEL HAVING AN OUTSIDE DIAMETER OF 95% OF THE AVERAGE INSIDE DIAMETER OF THE PIPE. THE MANROEL SHALL HAVE A MINIMUM OF 9 RUNNERS (ODD NUMBER ONLY), WITH THE CONTACT LENGTH OF EACH RUNNER BEING BOTH 6" MINIMUM AND NOT LESS THAN 75% OF THE NOMINAL INSIDE DIAMETER OF THE PIPE BEING TESTED. THE CONTRACTOR SHALL PROVIDE AN APPROVED TRUING RING FOR THE MANROEL DEVICE. THERE WILL BE NO SEPARATE PAY FOR MANROEL TESTS. ANY PIPE NOT MEETING TEST REQUIREMENTS WILL BE REMOVED, REPLACED AND RETESTED AT THE CONTRACTOR'S EXPENSE.
15. SANITARY SEWER TESTING WILL BE IN ACCORDANCE WITH FORT BEND COUNTY DEPARTMENT OF PUBLIC WORKS AND ENGINEERING STANDARD CONSTRUCTION SPECIFICATIONS. CONTRACTOR IS TO FURNISH ALL NECESSARY TEST PLUGS AND RISERS. IF SEWER (INCLUDING M.H.'S) IS TO BE AIR TESTED, OBTAIN APPROVAL LETTER FROM CITY'S WASTEWATER DESIGN SECTION.
16. MANROEL TESTING WILL BE REQUIRED FOR SEWERS CONSTRUCTED OF: P.V.C. (WITH WALLS THINNER THAN SDR/DR 21); A.B.S./P.V.C. "TRUSS" TESTING IS NOT REQUIRED FOR: RIGID (NON-PLASTIC) PIPES; AND PRESSURE PIPES, AS DESIGNATED IN THESE NOTES BY THE COUNTY.
17. MAINTAIN 12 INCH MINIMUM VERTICAL CLEARANCE AT CROSSINGS BETWEEN SANITARY SEWERS AND CULVERTS, UNLESS OTHERWISE NOTED.
18. WHENEVER A SANITARY SEWER CROSSES OVER A WATER MAIN OR UNDER A WATER MAIN CLOSER THAN 2 FEET VERTICALLY, THE SEWER PIPE SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (CLASS NO. 350, MIN. THICKNESS CLASS 52)/OR C900 P.V.C. AND ONE JOINT OF THE SEWER PIPE WILL BE CENTERED ON THE WATER MAIN.
19. PRIOR TO SANITARY SEWER CONSTRUCTION, CONTRACTOR SHALL CONTACT THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING AND COMPLY WITH REQUIREMENTS FOR ISSUANCE OF NECESSARY PERMITS/WORK ORDERS.

SANITARY SEWER FORCE MAIN CONSTRUCTION NOTES

1. UNLESS OTHERWISE NOTED, ALL FORCE MAINS SHALL HAVE A MINIMUM OF 4- FEET OF COVER AND CONSTRUCTED IN ACCORDANCE WITH C.O.H. SPECIFICATIONS.
2. PIPE MATERIAL (IF NOT A STEEL OR D.I.P. SECTION) SHALL BE POLY-VINYL CHLORIDE (P.V.C.) CONFORMING TO AWWA SPECIFICATION C-900, WITH BELL AND SPIGOT PUSH ON JOINTS.
3. ALL SDR/DR P.V.C. PIPES ARE TO HAVE RUBBER GASKETED PUSH-ON BELL-AND-SPIGOT TYPE JOINT ENDS. CHEMICALLY WELDED SANITARY SEWER JOINTS ARE NOT ACCEPTABLE. ALL DR P.V.C. PIPE USED IS TO HAVE C.I.P. SIZE O.D.'S REGARDLESS OF ANY OTHER WASTEWATER CONSTRUCTION NOTE TO THE CONTRARY. ALL P.V.C. PIPE AND FITTINGS TO PIPE (JOINTS) MUST BE SO MARKED (STAMPED).
4. SANITARY SEWER FORCE MAIN, WHEN NOT CONSTRUCTED UNDER FUTURE PAVEMENT, WILL BE BEDDED AND BACKFILLED WITH COMPACTED BANK SAND.
5. SANITARY SEWER FORCE MAIN CONSTRUCTED UNDER FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK FROM ALL PROPOSED FUTURE CURBS SHALL BE BEDDED AND BACKFILLED WITH 1-1/2 SACK CEMENT/C.Y. STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.
6. ALL CEMENT STABILIZED SAND (USED FOR SEWER BEDDING AND/OR PAVING BACKFILL) MUST MEET OR EXCEED CURRENT CITY OF HOUSTON PERFORMANCE SPECIFICATION (100 PSI COMPRESSION TEST) REGARDLESS OF ANY OTHER MINIMUM CEMENT CONTENT RATIO REQUIREMENTS STATED IN OTHER APPLICABLE NOTES.
7. SANITARY SEWER FORCE MAINS PARALLEL TO WATER LINES SHALL BE INSTALLED WITH AT LEAST 9- FEET OF CLEARANCE FROM OUTSIDE TO OUTSIDE OF PIPE AND SHALL BE INSTALLED IN SEPARATE TRENCHES.
8. FORCE MAINS SHALL BE CONSTRUCTED SO THAT FITTINGS WILL NOT BE LOCATED UNDER PROPOSED OR FUTURE PAVEMENT.
9. AIR RELEASE MANHOLES, WHEN CALLED FOR, WILL BE PRECAST AND CONSTRUCTED IN ACCORDANCE WITH C.O.H. SPECIFICATIONS.
10. THIS PROJECT SHALL BE BUILT BY MEANS OF OPEN CUT EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF BORE PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
11. SANITARY SEWER FORCE MAIN TESTING WILL BE IN ACCORDANCE WITH CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING STANDARD CONSTRUCTION SPECIFICATION AND STANDARD CONSTRUCTION DETAILS. CONTRACTOR IS TO FURNISH ALL NECESSARY TEST PLUGS AND RISERS. IF SEWER (INCLUDING M.H.'S) IS TO BE AIR TESTED, OBTAIN APPROVAL LETTER FROM CITY'S WASTEWATER DESIGN SECTION.
12. MAINTAIN 12-INCH MINIMUM VERTICAL CLEARANCE AT CROSSINGS BETWEEN SANITARY SEWER FORCE MAINS AND CULVERTS, UNLESS OTHERWISE NOTED.
13. PRIOR TO SANITARY SEWER CONSTRUCTION, CONTRACTOR SHALL CONTACT THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING AND COMPLY WITH REQUIREMENTS FOR ISSUANCE OF NECESSARY PERMITS/WORK ORDERS.

SITE PREPARATION/CLEARING NOTES

1. INSTALL STORMWATER POLLUTION PREVENTION PLAN.
2. STAKE PROPERTY LINE AND ESTABLISH 20' CLEARED AREA INSIDE OF PROPERTY LINE. START CLEARING BALANCE OF SITE AT THAT TIME.
3. MAKE A PLAN TO DISPOSE OF AREA TREES PER TCEQ AND COUNTY REGULATIONS. ALL DEBRIS TO BE HAULED OFF SITE BY CONTRACTOR AND DISPOSED OF PER STATE AND LOCAL REGULATIONS.
4. ROOT RAKE ALL CLEARED AREAS.
5. PROOF ROLL SITE EXCAVATION AND COMPACT 6" MAXIMUM LIFT +2%-0% MOISTURE CONTENT.

PRIVATE UTILITY NOTES

CENTERPOINT ENERGY

CAUTION: UNDERGROUND GAS FACILITIES:

LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY, INTRASTATE PIPELINE LLC, WHERE APPLICABLE) ARE SHOWN IN AN 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 (7:00AM TO 4:30PM) 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 THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL FACILITIES:

OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE. BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:

-ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX(6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND

-OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 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.

ACTIVITIES ON OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

NO APPROVAL TO USE, CROSS OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-8248 OR (713) 207-5768.

AT&T TEXAS/SBC FACILITIES

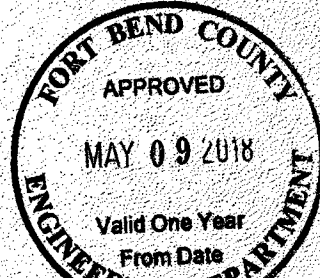
1. THE LOCATIONS OF AT&T TEXAS/SBC FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SBC FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SBC FACILITIES.
4. WHEN AT&T TEXAS/SBC FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SBC UNDERGROUND CONDUIT FACILITIES DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES IN THE AREA. FOLLOW THE DIRECT BURIED CABLE PROCEDURES TO LOCATE THE AT&T TEXAS/SBC DIRECT BURIED CABLES AS INDICATED IN THE AT&T TEXAS RESEARCH AND SIGNATURE PROCESS FOR AT&T TEXAS/SBC FACILITIES.
6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER MR. ROOSEVELT LEE JR. AT (713) 567-4552 OR EMAIL HIM AT RL7259@ATT.COM, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SBC FACILITIES.

SWPPP 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 ALL AND/OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES
2. DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATED MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM SETTLING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALLS ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEEPED 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.
4. 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 THE 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.
5. CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND/OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION OR BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER, SHALL BE REPLACED BY BLOCK SODDING.

ABBREVIATIONS

A.B.	ALL BELL	N/A	NOT APPLICABLE
A.E.	AERIAL EASEMENT	N.G.	NATURAL GROUND
B-B	BACK TO BACK	O.C.	ON CENTER
B.C.	BACK OF CURB	P.A.A.	PERMANENT ACCESS EASEMENT
B	BASE LINE	P.C.	POINT OF CURVATURE
B.L.	BUILDING LINE	P.C.C.	POINT OF COMPOUND CURVATURE
B.O.V.	BLOW OFF VALVE	P.I.	POINT OF INTERSECTION
C-C	CENTER TO CENTER	P.L.	PROPERTY LINE
C.G.M.P.	CORRUGATED GALVANIZED METAL PIPE	P.L.A.	PLASTIC
C	CENTER LINE	P.P.	POWER POLE
C.O.H.	CITY OF HOUSTON	P.R.C.	POINT OF REVERSE CURVATURE
CONC.	CONCRETE	P.T.	POINT OF TANGENCY
CTR.	CENTER	P.U.A.	PUBLIC UTILITY DISTRICT
DBL	DOUBLE	P.U.B.	PUBLIC UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT	P.V.	POLY-VINYL CHLORIDE
D.I.P.	DUCTILE IRON PIPE	P.V.T.	PRIVATE
E.L.	ELEVATION	P.M.T.	PAVEMENT
E.P.	EDGE OF PAVEMENT	R.	RADIUS
E.R.	END OF RADIUS	R.CB	REINFORCED CONCRETE BOX
ESMT	EASEMENT	RCB	REINFORCED CONCRETE PIPE
EXIST.	EXISTING	RED.	REDUCER
F.H.	FIRE HYDRANT	R.O.W.	RIGHT-OF-WAY
G.	GUTTER	SAN.SWR.	SANITARY SEWER
G.V.	GATE VALVE	S.S.E.	SANITARY SEWER EASEMENT
H.B.	HIGH BANK	STM.SWR.	STORM SEWER
H.C.L.	HYDRAULIC GRADE LINE	STM.S.E.	STORM SEWER EASEMENT
H.M.A.C.	HOT MIX ASPHALTIC COATING	S.E.B.	SMALL END BELL
H.P.	HIGH PRESSURE	SGL	SINGLE
I.P.	INTERMEDIATE PRESSURE	STL	STEEL
L.E.B.	LARGE END BELL	T.C.	TOP OF CURB
MH.	MANHOLE	T.S.B.V.	TAPPING SIZE AND VALVE
M.U.D.	MUNICIPAL UTILITY DISTRICT	U.E.	UTILITY EASEMENT
		VOL.	VOLUME
		W.L.E.	WATER LINE EASEMENT
		W.S.E.	WATER SURFACE ELEVATION



for GJB

FBC DEVELOPMENT COORDINATOR DATE 1/23/18

LONGMEADOW RANCH APARTMENTS~3906

REVISIONS:

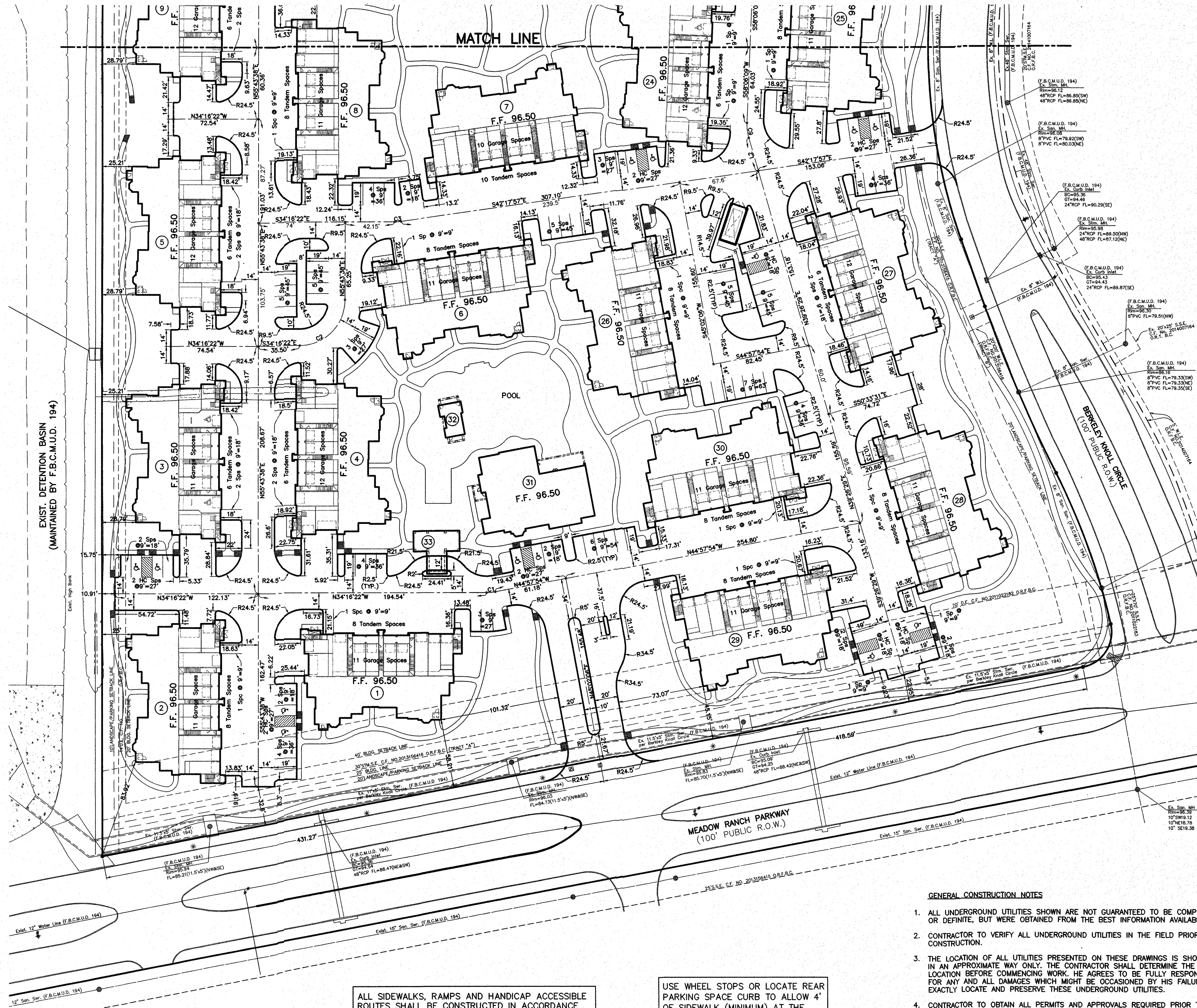
GENERAL NOTES

DATE: JULY, 2014
DRAWN BY: J.B.
FIRST CHECK BY: M.T.
SCALE: N.T.S.
FIELD CHECK BY: B.M.
FINAL CHECK BY: B.E.S.

FORT BEND COUNTY M.U.D. 194
LONGMEADOW RANCH APARTMENTS
5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20.7015 ACRE

r.g.miller
engineers
since 1966
18340 park kna place - suite 360 - houston, texas 77064
TEXAS FIRM REGISTRATION NO. F-487

C2

EXIST. DETENTION BASIN
(MAINTAINED BY F.B.C.M.U.D. 194)

MATCH LINE

POOL

MEADOW RANCH PARKWAY
(100' PUBLIC R.O.W.)BERKELEY KNOLL CIRCLE
(100' PUBLIC R.O.W.)

ALL SIDEWALKS, RAMPS AND HANDICAP ACCESSIBLE ROUTES SHALL BE CONSTRUCTED IN ACCORDANCE TO TDLR/ADA REQUIREMENTS. THIS ALSO INCLUDES ALL HANDICAP PARKING SPACES.

USE WHEEL STOPS OR LOCATE REAR PARKING SPACE CURB TO ALLOW 4' OF SIDEWALK (MINIMUM) AT THE REAR OF PARKING SPACES.

GENERAL CONSTRUCTION NOTES

- ALL UNDERGROUND UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE.
- CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION.
- THE LOCATION OF ALL UTILITIES PRESENTED ON THESE DRAWINGS IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
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- ALL DIMENSIONS ARE TO BACK OF CURB, NOT FACE OF CURB.

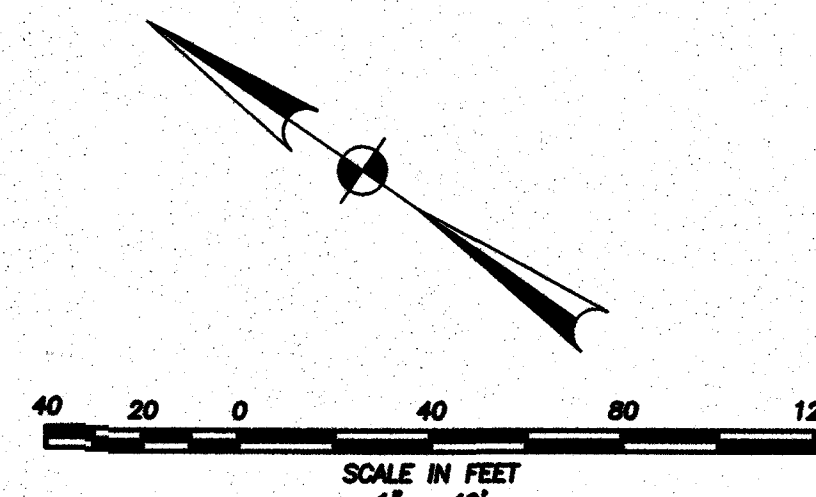
PROJECT BENCHMARK:
NGS MONUMENT L 806 RESET (PROVIDED BY COSTELLO, INC.)
BEING AN NGS MONUMENT STAMPED "L 806 RESET 1963"
LOCATED ALONG THE SOUTHWEST R.O.W. OF F.M. 723,
APPROXIMATELY 0.45 MILE NORTHWEST OF F.M. 359.
ELEVATION = 94.85 FEET (1973 ADJUSTMENT)

HGCS 67 (AW5408)
BEING A STAINLESS STEEL ROD WITH PUNCH MARK ENCASED
IN A 5-INCH PVC SLEEVE STAMPED "HGCS 67 1986"
LOCATED ON THE NORTH SIDE OF THE NORTH FEEDER OF
WESTPARK TOLLWAY, APPROXIMATELY 2,100 FEET EAST OF THE
INTERSECTION OF WESTPARK TOLLWAY AND PEEK ROAD.
ELEVATION = 99.10 FEET NAVD 1988 (GEOID 99)
99.79 FEET (1973 ADJUSTMENT)

TBM "A"
BEING A BOX CUT IN CONCRETE AT THE CENTERLINE OF
BERKELEY KNOLL, ±900 FEET NORTHEAST OF THE CENTERLINE
INTERSECTION OF MEADOW RANCH PARKWAY AND BERKELEY
KNOLL.
ELEVATION = 95.38 FEET (1973 ADJUSTMENT)

TBM "B"
BEING A BOX CUT ON TOP OF A CURB INLET ON THE EAST
SIDE OF BERKELEY KNOLL, ±450 FEET NORTH OF THE
CENTERLINE INTERSECTION OF MEADOW RANCH PARKWAY AND
BERKELEY KNOLL.
ELEVATION = 95.58 FEET (1973 ADJUSTMENT)

FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP No. 48157C0140L,
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.



CURVE TABLE					
CURVE	RADIUS	DELTA	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	39.00	10°41'32"	7.28	S39°37'08"E	7.27
C2	38.50	90°00'00"	60.48	S79°16'22"E	54.45
C3	39.00	80°01'35"	5.46	S38°17'10"E	5.46
C9	39.00	18°39'40"	12.70	S48°48'19"W	12.65

LINE TABLE		
LINE	BEARING	LENGTH
L2	N39°26'29"E	29.01

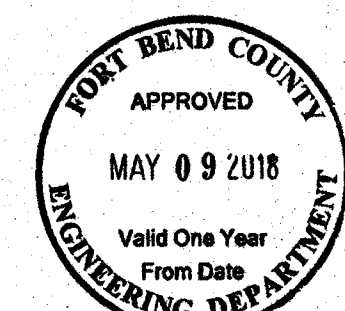
CALCULATIONS - OVERALL

TOTAL UNITS	300 UNITS
GROSS ACREAGE	20.70 ACRES
GROSS DENSITY	11.59 DU/AC

PARKING CALCULATIONS

PROVIDED PARKING	718 SPACES
TANDEM	218
STANDARD	194
GARAGE	306

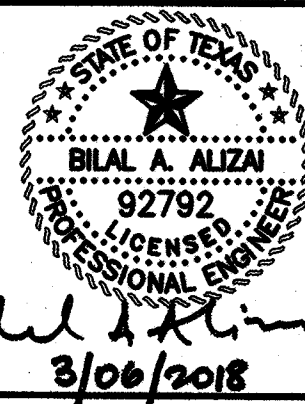
PARKING CALCULATIONS (CLIENT STANDARDS)	
1 BDR.	96 x 2.00 = 192
2 BDR.	96 x 2.00 = 192
3 BDR.	48 x 2.00 = 96



FBC DEVELOPMENT COORDINATOR DATE

DIMENSIONAL CONTROL
PLAN - WEST

FORT BEND COUNTY M.U.D. 194

LONGMEADOW RANCH
APARTMENTS5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20.7015 ACREr.g.miller
engineers18340 park ton place - suite 350 - Houston, Texas 77064
TEXAS FIRM REGISTRATION NO. F-487

C3

GENERAL CONSTRUCTION NOTES

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- ALL DIMENSIONS ARE TO BACK OF CURB, NOT FACE OF CURB.

CAUTION!!

CONTRACTOR SHALL CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOT DEPICTING THE EXACT LOCATIONS OF THE UTILITIES ON THESE DRAWINGS.

(F.B.C.M.U.D. 194)
Ex. 30m. MH
Rim=96.60
Box N & S
(UNABLE TO DETERMINE SIZE)
BOTTOM = 90.46

(F.B.C.M.U.D. 194)
Ex. 30m. MH
Rim=96.60
Box N & S
(UNABLE TO DETERMINE SIZE)
BOTTOM = 90.46

CURVE	RADIUS	DELTA	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C4	38.50	47°25'50"	31.87	S79°26'33"W	30.97
C5	99.50	27°44'52"	48.19	S0°42'58"E	47.72
C6	23.50	44°15'08"	18.15	S53°17'02"W	17.70
C7	249.50	21°08'07"	92.04	S85°58'40"W	91.51
C8	39.50	17°18'27"	11.93	S66°45'23"W	11.89

LINE	BEARING	LENGTH
L1	N75°24'36"E	31.19

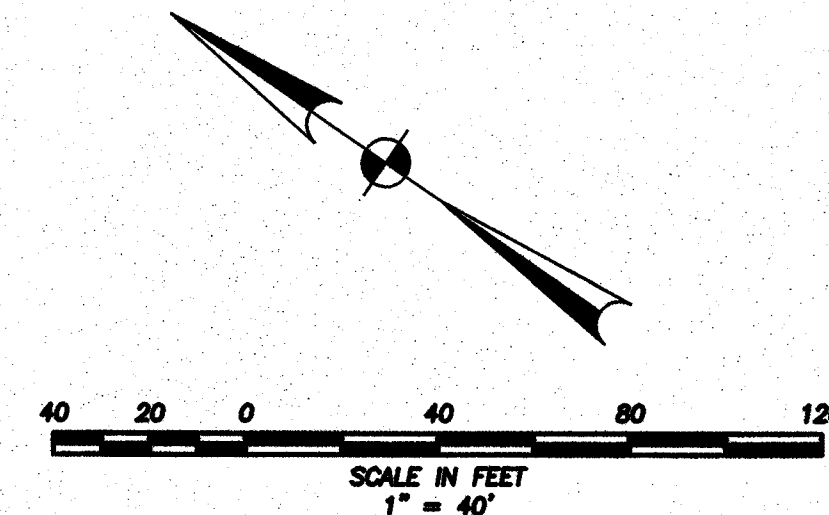
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TBM "B"
BEING A BOX CUT ON TOP OF A CURB INLET ON THE EAST
SIDE OF BERKELEY KNOLL, ±450 FEET NORTH OF THE
CENTERLINE INTERSECTION OF MEADOW RANCH PARKWAY AND
BERKELEY KNOLL.
ELEVATION = 95.58 FEET (1973 ADJUSTMENT)

FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP No. 48157C0140L,
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.



CALCULATIONS - OVERALL

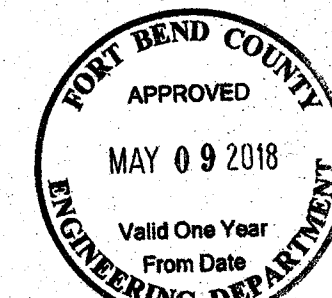
TOTAL UNITS	300 UNITS
GROSS ACREAGE	20.70 ACRES
GROSS DENSITY	11.59 DU/AC

PARKING CALCULATIONS

PROVIDED PARKING	718 SPACES
TANDEM	218
STANDARD	194
GARAGE	306
PARKING CALCULATIONS (CLIENT STANDARDS)	
1 BDR.	96 x 2.00 = 192
2 BDR.	96 x 2.00 = 192
3 BDR.	48 x 2.00 = 96

ALL SIDEWALKS, RAMPS AND HANDICAP ACCESSIBLE
ROUTES SHALL BE CONSTRUCTED IN ACCORDANCE
TO TDLR/ADA REQUIREMENTS. THIS ALSO INCLUDES
ALL HANDICAP PARKING SPACES.

USE WHEEL STOPS OR LOCATE REAR
PARKING SPACE CURB TO ALLOW 4'
OF SIDEWALK (MINIMUM) AT THE
REAR OF PARKING SPACES.



FBC DEVELOPMENT COORDINATOR

DATE

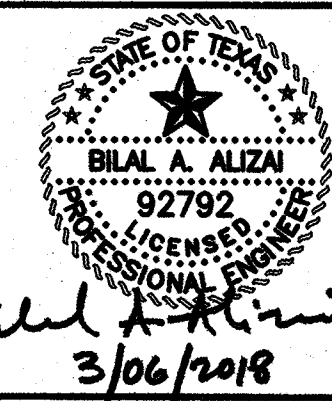
DIMENSIONAL CONTROL
PLAN - EAST

FORT BEND COUNTY M.U.D. 194

LONGMEADOW RANCH
APARTMENTS

5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407

20.7015 ACRE

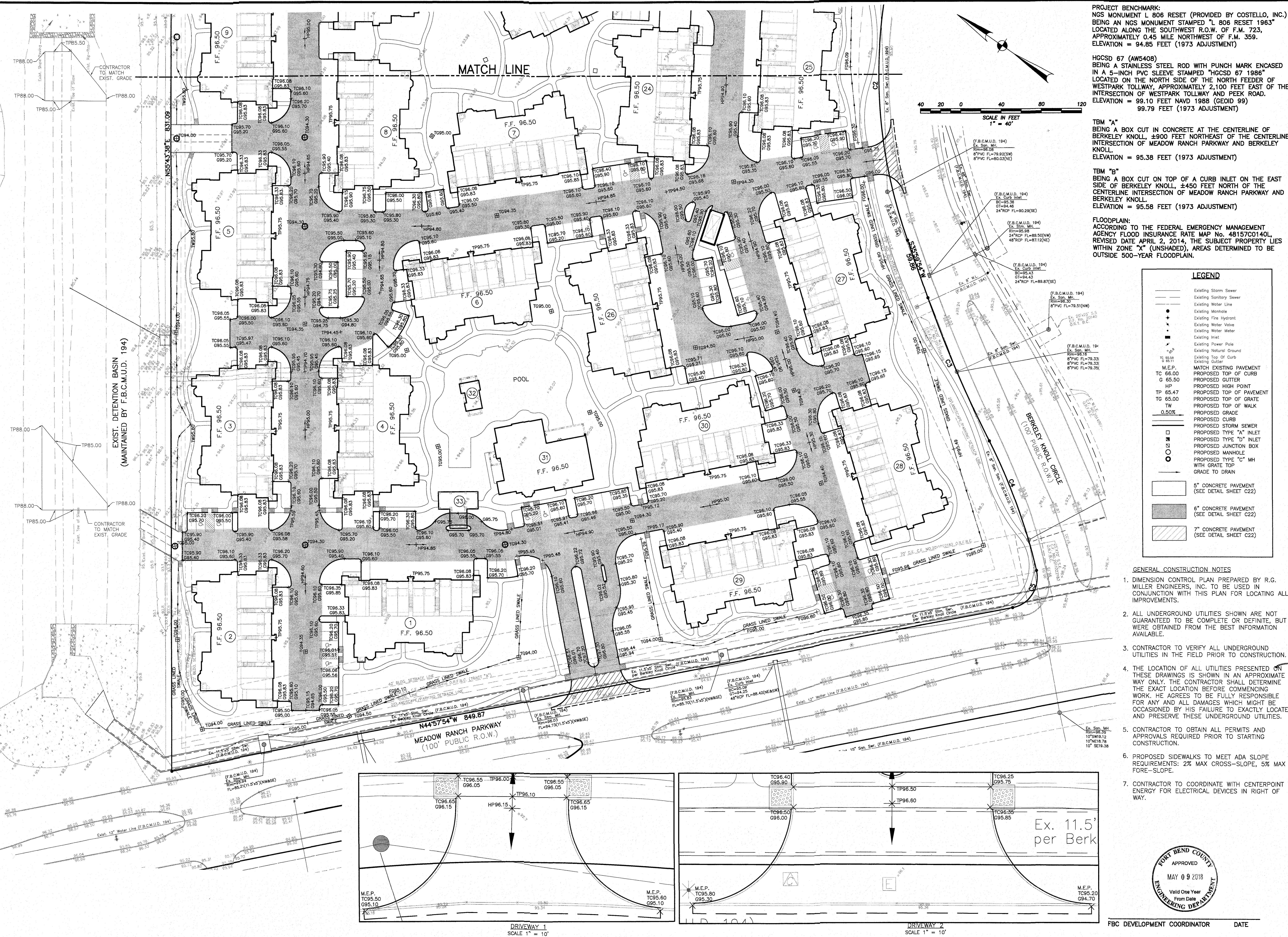


r.g.miller
engineers

16340 park ten place - suite 350 - houston, texas 77064
TEXAS FIRM REGISTRATION NO. F-487

C4

LONGMEADOW RANCH APARTMENTS-3906



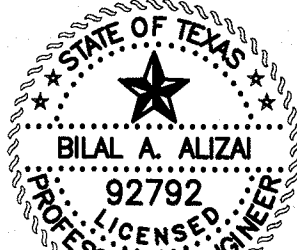
REVISIONS: A) REVISED BUILDING LAYOUT, STM. SWR LAYOUT, & GRADING 03/02/2018

PAVING AND GRADING
PLAN - WEST

FORT BEND COUNTY M.U.D. 194

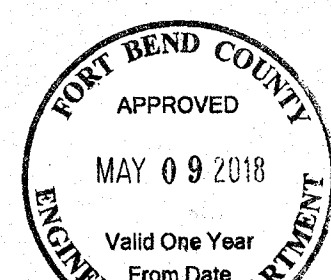
LONGMEADOW RANCH
APARTMENTS5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407

20.7015 ACRE



r.g.miller
engineers

16340 park ten place - suite 350 - houston, texas 77064
TEXAS FIRM REGISTRATION NO. F-487



FBC DEVELOPMENT COORDINATOR

DATE

C5

LONGMEADOW RANCH APARTMENTS-3906

1. DIMENSION CONTROL PLAN PREPARED BY R.G. MILLER ENGINEERS, INC. TO BE USED IN CONJUNCTION WITH THIS PLAN FOR LOCATING ALL IMPROVEMENTS.
2. ALL UNDERGROUND UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE.
3. CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION.
4. THE LOCATION OF ALL UTILITIES PRESENTED ON THESE DRAWINGS IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
5. CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS REQUIRED PRIOR TO STARTING CONSTRUCTION.
6. PROPOSED SIDEWALKS TO MEET ADA SLOPE REQUIREMENTS:
2% MAX CROSS-SLOPE, 5% MAX FORE-SLOPE.

FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP No. 48157C0140L,
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.

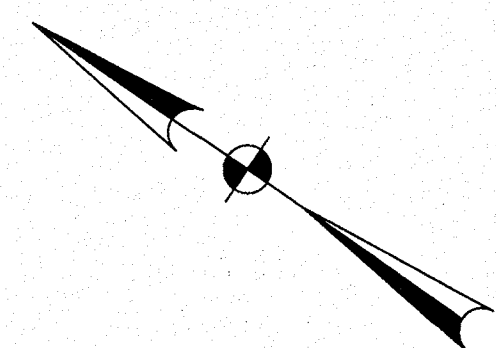
VARIES 6" MINIMUM VARIES

BOTTOM WIDTH

12 1

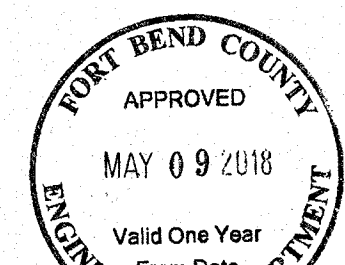
1 12

CONCRETE SLOPE PAVING
(COMPACT SUBGRADE SOILS TO 95% OPTIMUM
DENSITY PER ASTM D698.
5" THICK MIN. CONCRETE FLATWORK, #3 BAR
@ 15" O.C. MID DEPTH)



-----	Existing Storm Sewer
-----	Existing Sanitary Sewer
-----	Existing Water Line
●	Existing Manhole
+	Existing Fire Hydrant
•	Existing Water Valve
•	Existing Water Meter
•	Existing inlet
•	Existing Power Pole
•	Existing Natural Ground
TC 65.58 TG 65.11	Existing Top Of Curb Existing Gutter
M.E.P.	MATCH EXISTING PAVEMENT
TP 66.00	PROPOSED TOP OF CURB
G 65.50	PROPOSED GUTTER
HP	PROPOSED HIGH POINT
TP 65.47	PROPOSED TOP OF PAVEMENT
TG 65.00	PROPOSED TOP OF GRATE
TW	PROPOSED TOP OF WALK
<u>0.50%</u>	PROPOSED GRADE
-----	PROPOSED CURB
-----	PROPOSED STORM SEWER
□	PROPOSED TYPE "A" INLET
▣	PROPOSED TYPE "D" INLET
□	PROPOSED JUNCTION BOX
○	PROPOSED MANHOLE
○	PROPOSED TYPE "C" MH
→	WITH GRATE TOP
→	GRADE TO DRAIN
	5" CONCRETE PAVEMENT (SEE DETAIL SHEET C22)
	6" CONCRETE PAVEMENT (SEE DETAIL SHEET C22)
	7" CONCRETE PAVEMENT (SEE DETAIL SHEET C22)

CONTRACTOR SHALL CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOT DEPECTING THE EXACT LOCATIONS OF THE UTILITIES ON THESE DRAWINGS.



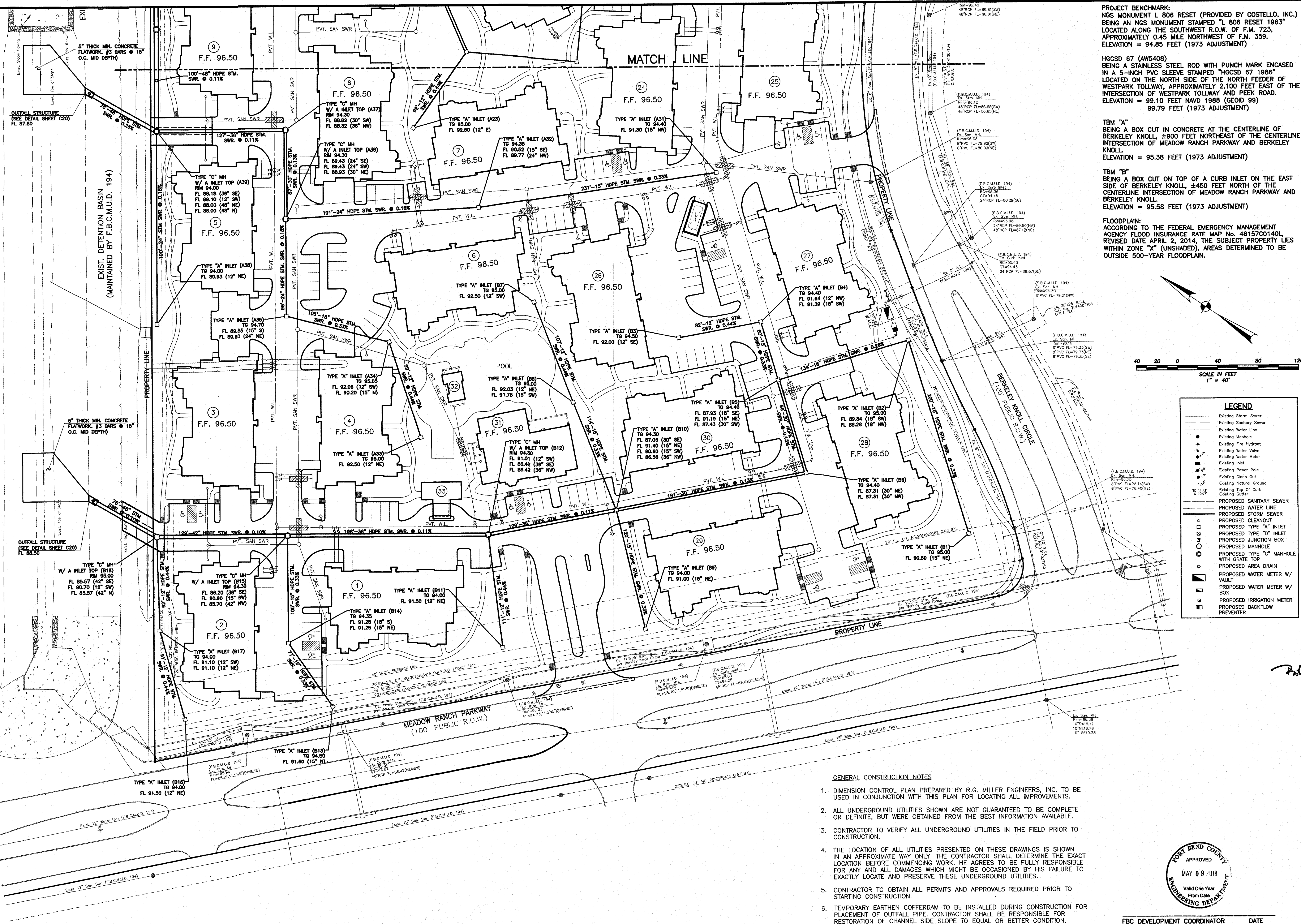
DATE _____

STATE OF TEXAS
★
BILAL A. ALIZAI
92792
LICENSED
PROFESSIONAL ENGINEER
Bilal A. Alizai
3/06/2018

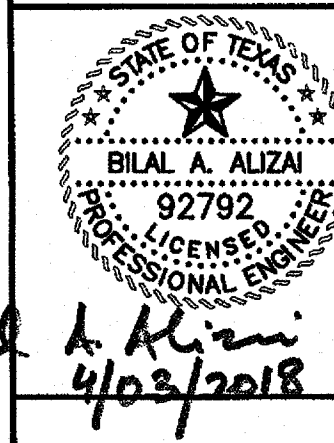
16340 park ten place - suite 350- houston, texas 77084
TEXAS FIRM REGISTRATION NO. F-487

LONGMEADOW RANCH APARTMENTS~3906

① C6



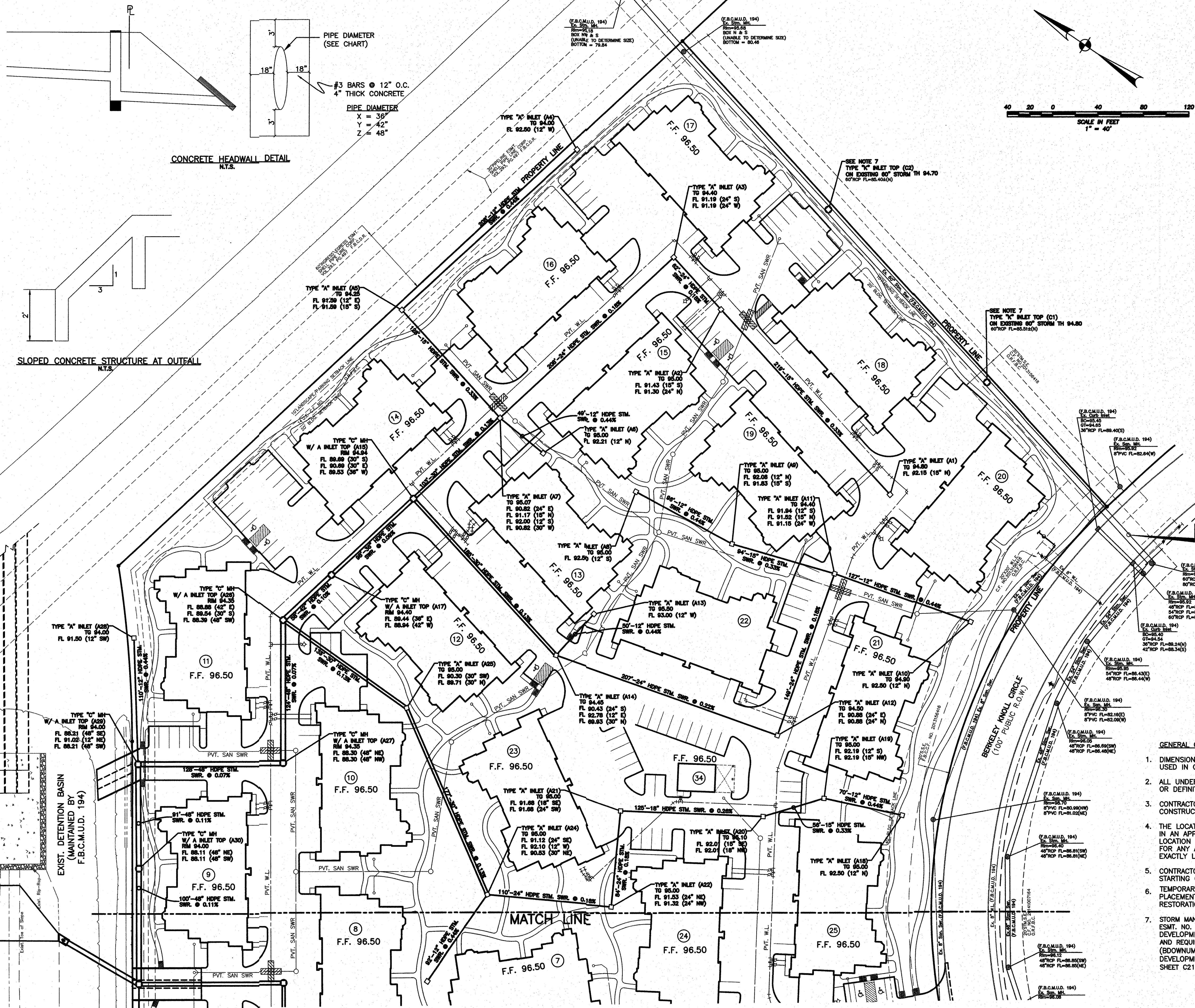
REVISIONS: 1. REVISED BUILDING LAYOUT, STM, SAN, LAYOUT, & GRADING 03/02/2018

STORM SEWER LAYOUT
- WESTFORT BEND COUNTY M.U.D. 194
LONGMEADOW RANCH
APARTMENTS

r.g. miller engineers

16340 park ten place - suite 350 - houston, texas 77084
TEXAS FIRM REGISTRATION NO. F-487

C7

CONCRETE HEADWALL DETAIL
N.T.S.SLOPED CONCRETE STRUCTURE AT OUTFALL
N.T.S.

PROJECT BENCHMARK:
NGS MONUMENT L 806 RESET (PROVIDED BY COSTELLO, INC.)
BEING AN NGS MONUMENT STAMPED "L 806 RESET 1963"
LOCATED ALONG THE SOUTHWEST R.O.W. OF F.M. 723,
APPROXIMATELY 0.45 MILE NORTHWEST OF F.M. 359.
ELEVATION = 94.85 FEET (1973 ADJUSTMENT)

HGCSO 67 (AW5408)
BEING A STAINLESS STEEL ROD WITH PUNCH MARK ENCASED
IN A 5-INCH PVC SLEEVE STAMPED "HGCSO 67 1986"
LOCATED ON THE NORTH SIDE OF THE NORTH FEEDER OF
WESTPARK TOLLWAY, APPROXIMATELY 2,100 FEET EAST OF THE
INTERSECTION OF WESTPARK TOLLWAY AND PEEK ROAD.
ELEVATION = 99.10 FEET NAVD 1988 (GEOID 99)
99.79 FEET (1973 ADJUSTMENT)

TBM "A"
BEING A BOX CUT IN CONCRETE AT THE CENTERLINE OF
BERKELEY KNOLL, ±900 FEET NORTHEAST OF THE CENTERLINE
INTERSECTION OF MEADOW RANCH PARKWAY AND BERKELEY KNOLL.
ELEVATION = 95.38 FEET (1973 ADJUSTMENT)

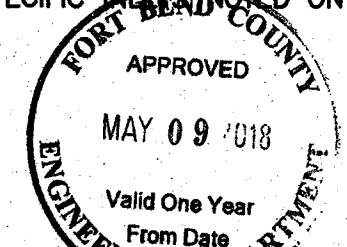
TBM "B"
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CENTERLINE INTERSECTION OF MEADOW RANCH PARKWAY AND
BERKELEY KNOLL.
ELEVATION = 95.58 FEET (1973 ADJUSTMENT)

FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP NO. 4815700140L,
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.

LEGEND	
	Existing Storm Sewer
	Existing Sanitary Sewer
	Existing Water Line
	Existing Manhole
	Existing Fire Hydrant
	Existing Water Valve
	Existing Water Meter
	Existing Inlet
	Existing Power Pole
	Existing Clean Out
	Existing Natural Ground
	Existing Top Of Curb
	Existing Gutter
	PROPOSED SANITARY SEWER
	PROPOSED WATER LINE
	PROPOSED STORM SEWER
	PROPOSED CLEANOUT
	PROPOSED TYPE "A" INLET
	PROPOSED TYPE "D" INLET
	PROPOSED JUNCTION BOX
	PROPOSED MANHOLE
	PROPOSED TYPE "C" MANHOLE
	PROPOSED AREA DRAIN
	PROPOSED WATER METER W/ VAULT
	PROPOSED WATER METER W/ BOX
	PROPOSED IRRIGATION METER
	PROPOSED BACKFLOW PREVENTER

GENERAL CONSTRUCTION NOTES

- DIMENSION CONTROL PLAN PREPARED BY R.G. MILLER ENGINEERS, INC. TO BE USED IN CONJUNCTION WITH THIS PLAN FOR LOCATING ALL IMPROVEMENTS.
- ALL UNDERGROUND UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE.
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- CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS REQUIRED PRIOR TO STARTING CONSTRUCTION.
- TEMPORARY EARTHEN COFFERDAM TO BE INSTALLED DURING CONSTRUCTION FOR PLACEMENT OF OUTFALL PIPE. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF CHANNEL SIDE SLOPE TO EQUAL OR BETTER CONDITION.
- STORM MANHOLES WITH TYPE K INLET TOPS ALONG FORT BEND COUNTY MUD 194 SMIT. NO. 2013156416 MUST BE INSTALLED AND INSPECTED BY ENVIRONMENTAL DEVELOPMENT PARTNERS TO ENSURE PROPER INSTALLATION PER MUD194 STANDARDS AND REQUIREMENTS. CONTACT MUD OPERATOR BART DOWNUM (BDOWNUM@EDPWATER.COM). DEVELOPER TO CONTRACT WITH ENVIRONMENTAL DEVELOPMENT PARTNERS FOR SPECIFIC INFORMATION ON PLANS. (SEE DETAIL SHEET C21)



FBC DEVELOPMENT COORDINATOR

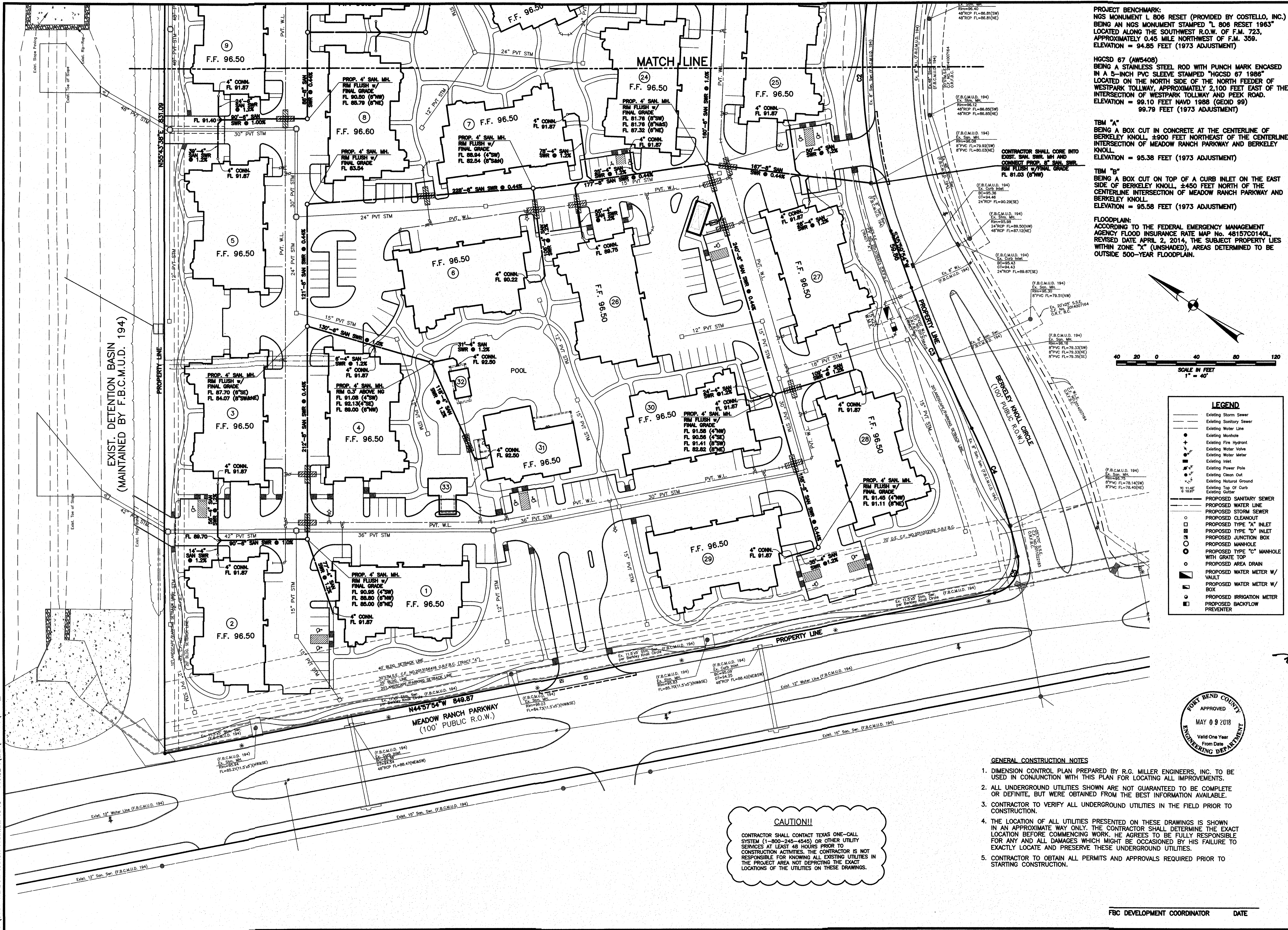
DATE

STORM SEWER LAYOUT
— EAST

FORT BEND COUNTY M.U.D. 194

LONGMEADOW RANCH
APARTMENTS5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20.7015 ACREr.g.miller
engineers16840 park ten place - suite 350 - houston, texas 77064
TEXAS FIRM REGISTRATION NO. F-487

C8



REVISIONS:

NO.	DATE	BY	DESCRIPTION
1	03/02/2018	D.A.	REVISED BUILDING LAYOUT, STN. SWR. LAYOUT, & GRADING

SANITARY SEWER LAYOUT - WEST

SCALE: 1"=40'

DATE: JANUARY, 2018

DRAWN BY: F.L.

CHECK BY: D.A.

FINAL CHECK BY: B.A.

PORT BEND COUNTY M.U.D. 194

LONGMEADOW RANCH APARTMENTS

5830 MEADOW RANCH PARKWAY

RICHMOND, TX 77407

20.7015 ACRE

APPROVED

MAY 09 2018

Valid One Year

From Date

ENGINEERING DEPARTMENT

r.g.miller engineers

16340 park ten place - suite 350 - houston, texas 77084

TEXAS FIRM REGISTRATION NO. F-487

92792

STATE OF TEXAS

SEAL OF ENGINEER

3/26/2018

C9

LONGMEADOW RANCH APARTMENTS-3906

CAUTION!!

CONTRACTOR SHALL CONTACT TEXAS ONE-CALL SYSTEM (1-800-245-4545) OR OTHER UTILITY SERVICES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES IN THE PROJECT AREA NOT DEPICTING THE EXACT LOCATIONS OF THE UTILITIES ON THESE DRAWINGS.

PROJECT BENCHMARK:
NGS MONUMENT L 806 RESET (PROVIDED BY COSTELLO, INC.)
BEING AN NGS MONUMENT STAMPED "L 806 RESET 1963"
LOCATED ALONG THE SOUTHWEST R.O.W. OF F.M. 723,
APPROXIMATELY 0.45 MILE NORTHWEST OF F.M. 359.
ELEVATION = 94.85 FEET (1973 ADJUSTMENT)

HGCS 67 (AW5408)
BEING A STAINLESS STEEL ROD WITH PUNCH MARK ENCASED
IN A 5-INCH PVC SLEEVE STAMPED "HGCS 67 1986"
LOCATED ON THE NORTH SIDE OF THE NORTH FEEDER OF
WESTPARK TOLLWAY, APPROXIMATELY 2,100 FEET EAST OF THE
INTERSECTION OF WESTPARK TOLLWAY AND PEEK ROAD.
ELEVATION = 99.10 FEET NAVD 1988 (GEOID 99)
99.79 FEET (1973 ADJUSTMENT)

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ELEVATION = 95.58 FEET (1973 ADJUSTMENT)

FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP NO. 48157C0140L,
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.

LEGEND

- Existing Storm Sewer
- Existing Sanitary Sewer
- Existing Water Line
- Existing Manhole
- Existing Fire Hydrant
- Existing Water Valve
- Existing Water Meter
- Existing Inlet
- Existing Power Pole
- Existing Clean Out
- Existing Natural Ground
- Existing Top of Curb
- Existing Outer
- PROPOSED SANITARY SEWER
- PROPOSED WATER LINE
- PROPOSED STORM SEWER
- PROPOSED CLEANOUT
- PROPOSED TYPE "A" INLET
- PROPOSED TYPE "D" INLET
- PROPOSED JUNCTION BOX
- PROPOSED MANHOLE
- PROPOSED TYPE "C" MANHOLE WITH GRATE TOP
- PROPOSED AREA DRAIN
- PROPOSED WATER METER W/ VAULT
- PROPOSED WATER METER W/ BOX
- PROPOSED IRRIGATION METER
- PROPOSED BACKFLOW PREVENTER

GENERAL CONSTRUCTION NOTES

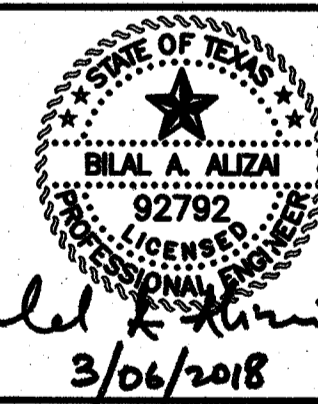
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FBC DEVELOPMENT COORDINATOR DATE

SANITARY SEWER LAYOUT - EAST

FORT BEND COUNTY M.U.D. 194
LONGMEADOW RANCH
APARTMENTS
5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20,7015 ACRE



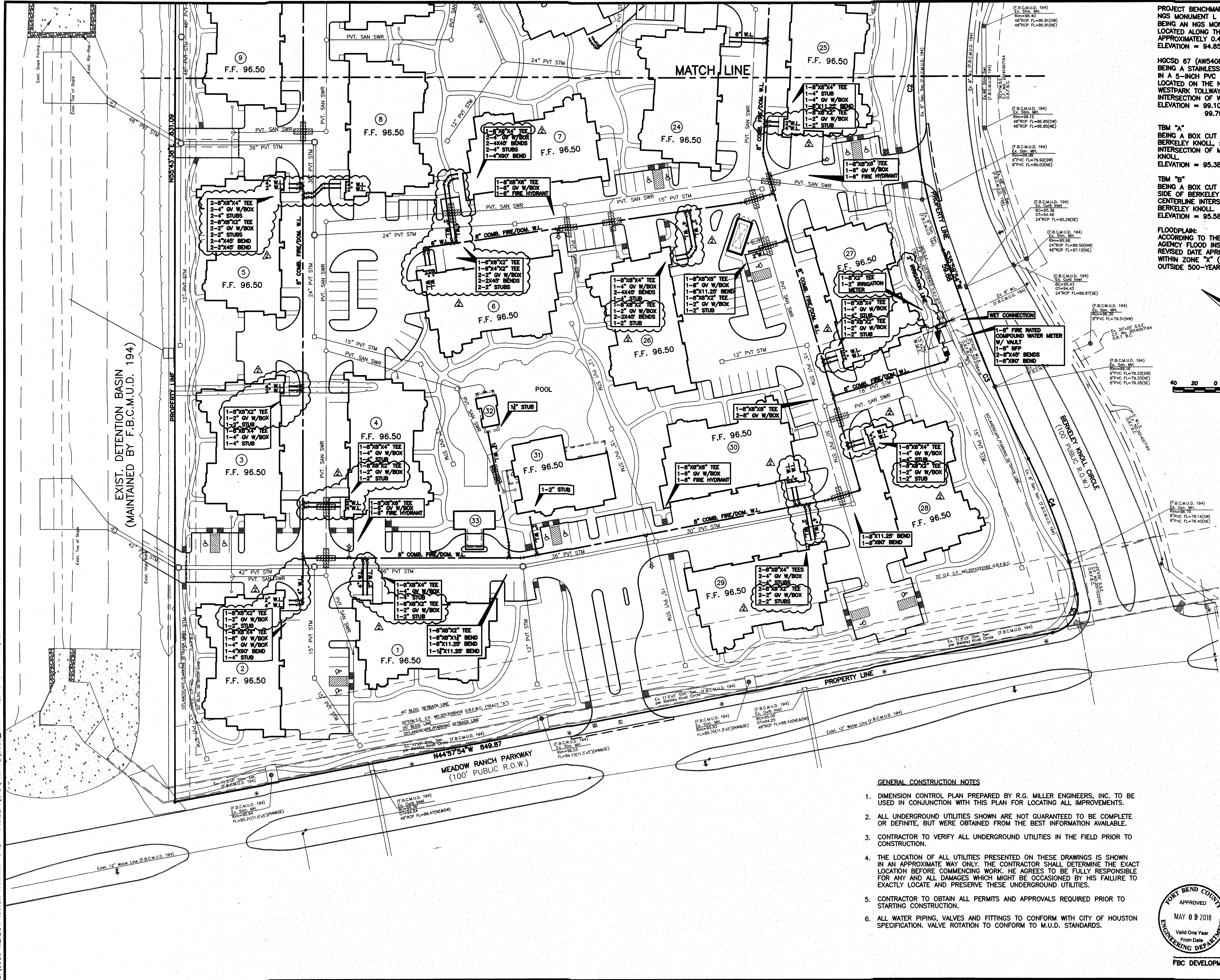
r.g.miller
engineers

1830 park ten place - suite 350 - houston, texas 77084
TEXAS FIRM REGISTRATION NO. F-487

C10

LONGMEADOW RANCH APARTMENTS-3906

S:\3906 MEADOW RANCH PARKWAY APTS - PHASE 1\CAO\PRIVATE\3906_WTR - WEST.DWG APR. 03, 2018-11:03am FLOU



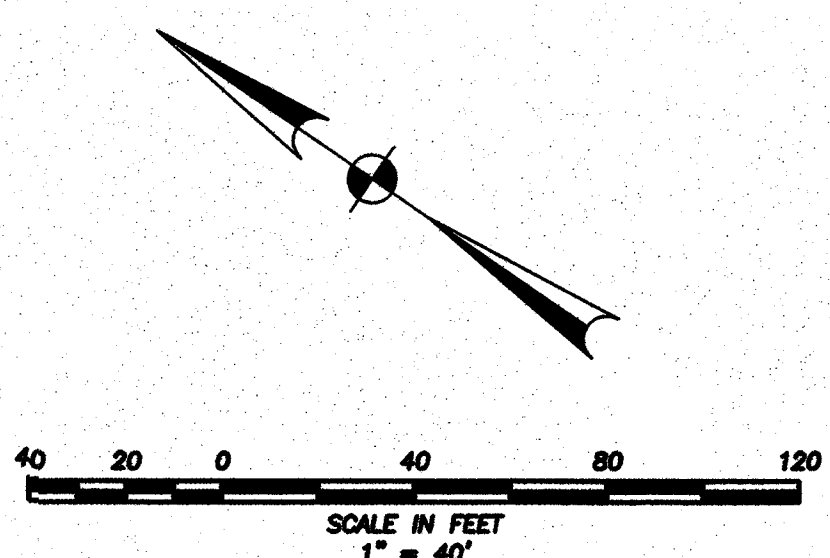
PROJECT BENCHMARK:
NGS MONUMENT L 806 RESET (PROVIDED BY COSTELLO, INC.)
BEING AN NGS MONUMENT STAMPED "L 806 RESET 1963"
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APPROXIMATELY 0.45 MILE NORTHWEST OF F.M. 359.
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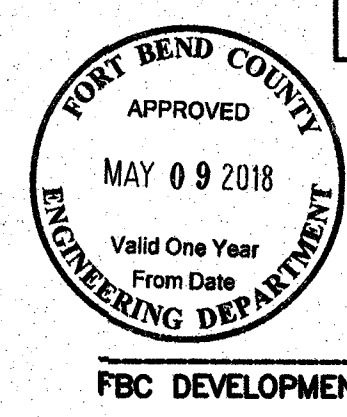
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CENTERLINE INTERSECTION OF MEADOW RANCH PARKWAY AND
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FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP NO. 4815700140L
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.



- LEGEND**
- Existing Storm Sewer
 - Existing Sanitary Sewer
 - Existing Water Line
 - Existing Manhole
 - Existing Fire Hydrant
 - Existing Water Valve
 - Existing Water Meter
 - Existing Inlet
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 - Existing Natural Ground
 - Existing Top Of Curb
 - Existing Gutter
 - PROPOSED SANITARY SEWER
 - PROPOSED WATER LINE
 - PROPOSED STORM SEWER
 - PROPOSED CLEANOUT
 - PROPOSED TYPE "A" INLET
 - PROPOSED TYPE "D" INLET
 - PROPOSED JUNCTION BOX
 - PROPOSED MANHOLE
 - PROPOSED TYPE "C" MANHOLE WITH GRATE TOP
 - PROPOSED AREA DRAIN
 - PROPOSED WATER METER W/ VAULT
 - PROPOSED WATER METER W/ BOX
 - PROPOSED IRRIGATION METER
 - PROPOSED BACKFLOW PREVENTER
 - PROPOSED ISOLATION GATE VALVE W/BOX

- GENERAL CONSTRUCTION NOTES**
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 - CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS REQUIRED PRIOR TO STARTING CONSTRUCTION.
 - ALL WATER PIPING, VALVES AND FITTINGS TO CONFORM WITH CITY OF HOUSTON SPECIFICATION. VALVE ROTATION TO CONFORM TO M.U.D. STANDARDS.



FBC DEVELOPMENT COORDINATOR DATE

REVISIONS:

NO.	DESCRIPTION	DATE
1	REVISED BUILDING LAYOUT, STN. SWR LAYOUT, & GRADING 03/02/2018	04/02/2018
2	ADDED IRRIGATION METERS AND 2" W.L. CONNECTIONS.	

WATER LINE LAYOUT - WEST

DATE: JANUARY, 2018 SCALE: 1"=40'

DRAWN BY: E.A. FIELD CHECK BY: D.A.

FIRST CHECK BY: B.A. FINAL CHECK BY: B.A.

FORT BEND COUNTY M.U.D. 194
LONGMEADOW RANCH
APARTMENTS
5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20,7015 ACRE

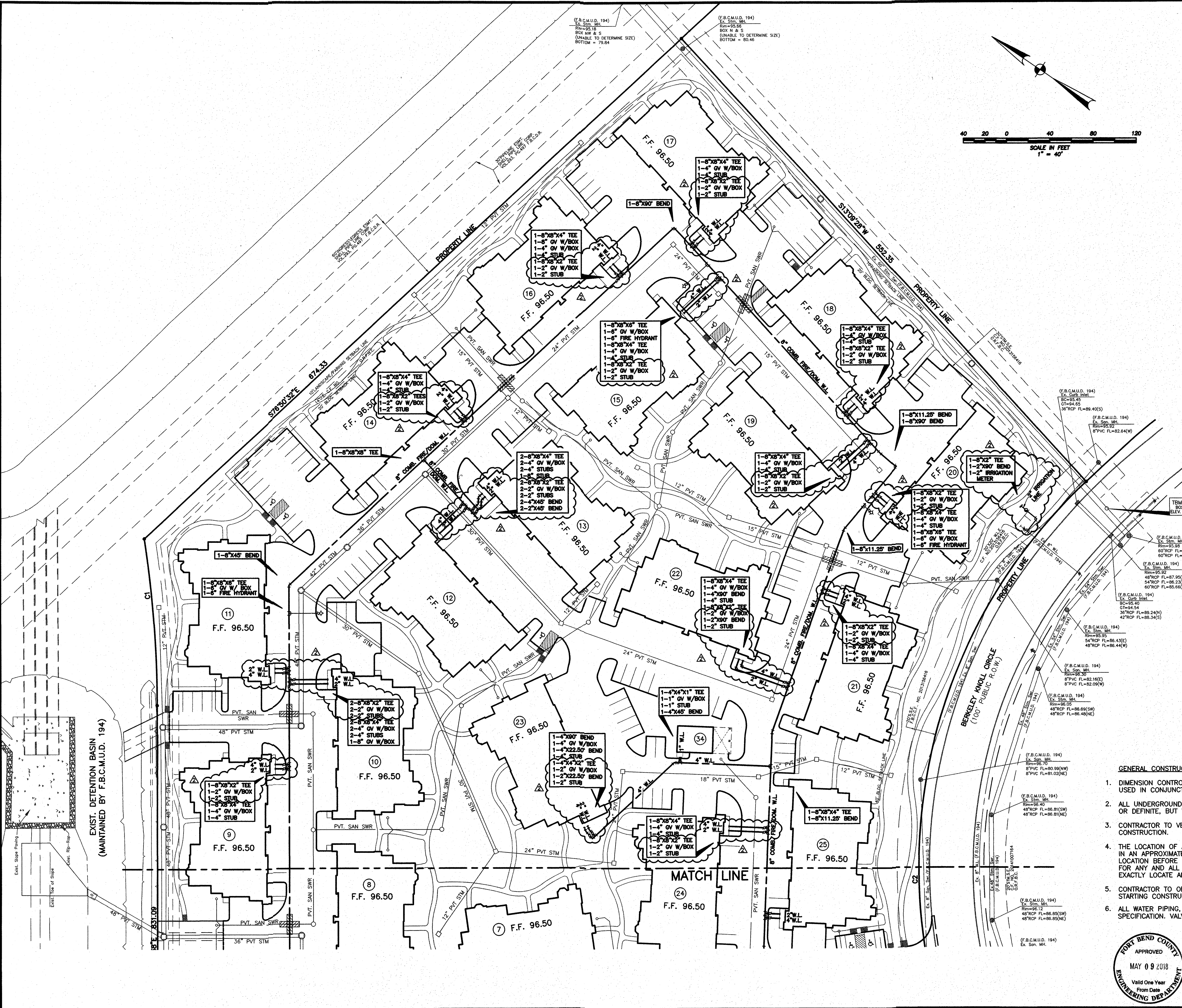
STATE OF TEXAS
92792
R.G. MILLER
Professional Engineer

Bill A. Miller
4/03/2018

r.g.miller
engineers

18340 park ten place - suite 350 - Houston, Texas 77084
TEXAS FIRM REGISTRATION NO. F-457

△ C11



PROJECT BENCHMARK:
NGS MONUMENT L 806 RESET (PROVIDED BY COSTELLO, INC.)
BEING AN NGS MONUMENT STAMPED "L 806 RESET 1963"
LOCATED ALONG THE SOUTHWEST R.O.W. OF F.M. 723,
APPROXIMATELY 0.45 MILE NORTHWEST OF F.M. 359.
ELEVATION = 94.85 FEET (1973 ADJUSTMENT)

HGCS 67 (AW5408)
BEING A STAINLESS STEEL ROD WITH PUNCH MARK ENCASED
IN A 5-INCH PVC SLEEVE STAMPED "HGCS 67 1986"
LOCATED ON THE NORTH SIDE OF THE NORTH FEEDER OF
WESTPARK TOLLWAY, APPROXIMATELY 2,100 FEET EAST OF THE
INTERSECTION OF WESTPARK TOLLWAY AND PEEK ROAD.
ELEVATION = 99.10 FEET NAVD 1988 (GEOID 99)
99.79 FEET (1973 ADJUSTMENT)

TBM "A"
BEING A BOX CUT IN CONCRETE AT THE CENTERLINE OF
BERKELEY KNOLL, ±900 FEET NORTHEAST OF THE CENTERLINE
INTERSECTION OF MEADOW RANCH PARKWAY AND BERKELEY
KNOLL.
ELEVATION = 95.38 FEET (1973 ADJUSTMENT)

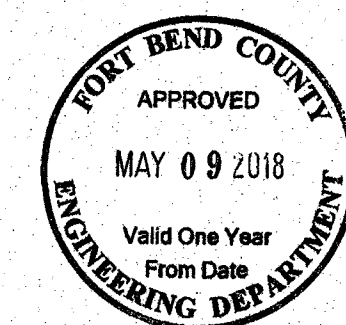
TBM "B"
BEING A BOX CUT ON TOP OF A CURB INLET ON THE EAST
SIDE OF BERKELEY KNOLL, ±450 FEET NORTH OF THE
CENTERLINE INTERSECTION OF MEADOW RANCH PARKWAY AND
BERKELEY KNOLL.
ELEVATION = 95.58 FEET (1973 ADJUSTMENT)

FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP NO. 48157C0140L,
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.

LEGEND

- Existing Storm Sewer
- Existing Sanitary Sewer
- Existing Water Line
- Existing Manhole
- Existing Fire Hydrant
- Existing Water Valve
- Existing Water Meter
- Existing Inlet
- Existing Power Pole
- Existing Clean Out
- Existing Natural Ground
- Existing Top Of Curb
- Existing Gutter
- PROPOSED SANITARY SEWER
- PROPOSED WATER LINE
- PROPOSED STORM SEWER
- PROPOSED CLEANOUT
- PROPOSED TYPE "A" INLET
- PROPOSED TYPE "D" INLET
- PROPOSED JUNCTION BOX
- PROPOSED MANHOLE
- PROPOSED TYPE "C" MANHOLE WITH GRATE TOP
- PROPOSED AREA DRAIN
- PROPOSED WATER METER W/ VAULT
- PROPOSED WATER METER W/ BOX
- PROPOSED IRRIGATION METER
- PROPOSED BACKFLOW PREVENTER
- PROPOSED ISOLATION GATE VALVE W/BOX

- GENERAL CONSTRUCTION NOTES**
- DIMENSION CONTROL PLAN PREPARED BY R.G. MILLER ENGINEERS, INC. TO BE USED IN CONJUNCTION WITH THIS PLAN FOR LOCATING ALL IMPROVEMENTS.
 - ALL UNDERGROUND UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE.
 - CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION.
 - THE LOCATION OF ALL UTILITIES PRESENTED ON THESE DRAWINGS IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
 - CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS REQUIRED PRIOR TO STARTING CONSTRUCTION.
 - ALL WATER PIPING, VALVES AND FITTINGS TO CONFORM WITH CITY OF HOUSTON SPECIFICATION. VALVE ROTATION TO CONFORM TO M.U.D. STANDARDS.



WATER LINE LAYOUT - EAST

DATE: JANUARY, 2018 SCALE: 1"=40' FIELD CHECK BY: D.A. DRAWN BY: F.L. FIRST CHECK BY: B.A.

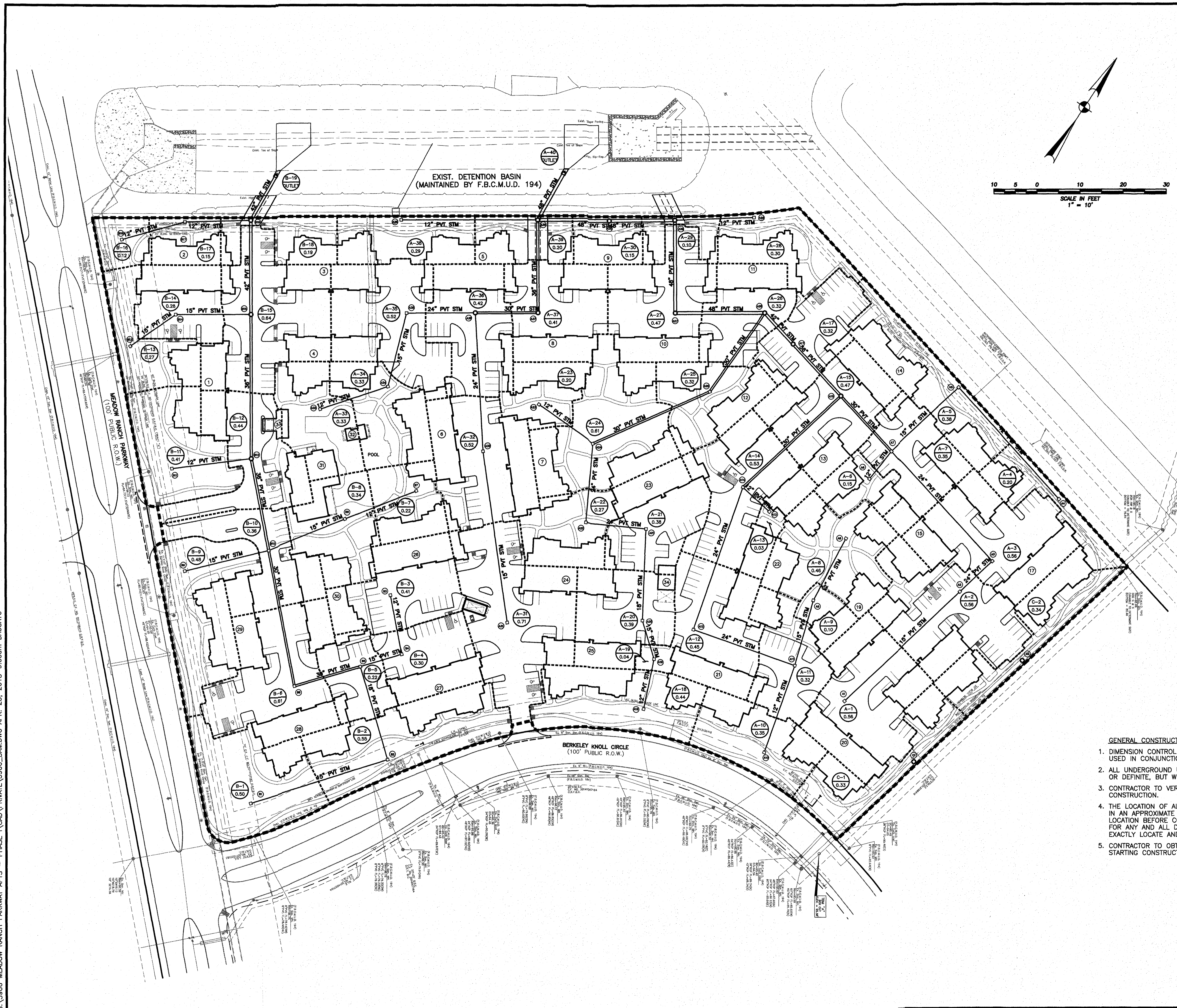
FORT BEND COUNTY M.U.D. 194
LONGMEADOW RANCH APARTMENTS
5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20,7015 ACRE

Bill A. Alizon
4/03/2018

r.g.miller engineers

18340 park ten place - suite 350 - Houston, Texas 77064
TEXAS FIRM REGISTRATION NO. F-467

C12



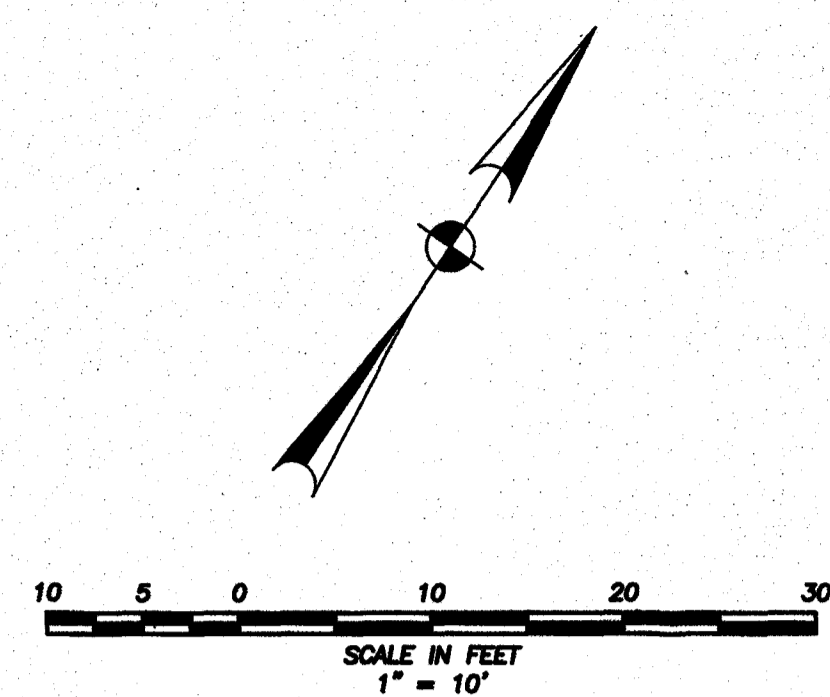
PROJECT BENCHMARK:
NGS MONUMENT L 806 RESET (PROVIDED BY COSTELLO, INC.)
BEING AN NGS MONUMENT STAMPED "HCSD 87 1986"
LOCATED ALONG THE SOUTHWEST R.O.W. OF F.M. 723,
APPROXIMATELY 0.45 MILE NORTHWEST OF F.M. 359.
ELEVATION = 94.85 FEET (1973 ADJUSTMENT)

HCSD 87 (AW5408)
BEING A STAINLESS STEEL ROD WITH PUNCH MARK ENCASED
IN A 5-INCH PVC SLEEVE STAMPED "HCSD 87 1986"
LOCATED ON THE NORTH SIDE OF THE NORTH FEEDER OF
WESTPARK TOLLWAY, APPROXIMATELY 2,100 FEET EAST OF THE
INTERSECTION OF WESTPARK TOLLWAY AND PEEK ROAD.
ELEVATION = 99.10 FEET NAVD 1988 (GEOID 99)
99.79 FEET (1973 ADJUSTMENT)

TBM "A"
BEING A BOX CUT IN CONCRETE AT THE CENTERLINE OF
BERKELEY KNOLL, ±900 FEET NORTHEAST OF THE CENTERLINE
INTERSECTION OF MEADOW RANCH PARKWAY AND BERKELEY
KNOLL.
ELEVATION = 95.38 FEET (1973 ADJUSTMENT)

TBM "B"
BEING A BOX CUT ON TOP OF A CURB INLET ON THE EAST
SIDE OF BERKELEY KNOLL, ±450 FEET NORTH OF THE
CENTERLINE INTERSECTION OF MEADOW RANCH PARKWAY AND
BERKELEY KNOLL.
ELEVATION = 95.58 FEET (1973 ADJUSTMENT)

FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP No. 48157C0140L,
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.



LEGEND	
SYMBOL	DESCRIPTION
	DRAINAGE AREA DESIGNATION DRAINAGE AREA (ACRES)
	DRAINAGE AREA BOUNDARY
	DRAINAGE SUB-AREA BOUNDARY
	PROPOSED STORM SEWER
	INLET OR MANHOLE NUMBER

CAUTION!!
CONTRACTOR SHALL CONTACT TEXAS ONE-CALL
SYSTEM (1-800-245-4545) OR OTHER UTILITY
SERVICES AT LEAST 48 HOURS PRIOR TO
CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS NOT
RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES
IN THE PROJECT AREA NOT DEPICTING THE EXACT
LOCATIONS OF THE UTILITIES ON THESE DRAWINGS.

- GENERAL CONSTRUCTION NOTES**
1. DIMENSION CONTROL PLAN PREPARED BY R.G. MILLER ENGINEERS, INC. TO BE USED IN CONJUNCTION WITH THIS PLAN FOR LOCATING ALL IMPROVEMENTS.
 2. ALL UNDERGROUND UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE.
 3. CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION.
 4. THE LOCATION OF ALL UTILITIES PRESENTED ON THESE DRAWINGS IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
 5. CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS REQUIRED PRIOR TO STARTING CONSTRUCTION.



FBC DEVELOPMENT COORDINATOR DATE

REVISIONS:
A REVISED BUILDING LAYOUT, STM, SWR LAYOUT, & GRADING 03/02/2018

DRAINAGE AREA MAP

DATE: JANUARY, 2018 SCALE: 1"=60'
DRAWN BY: F.L. FIELD CHECK BY: D.A.
FIRST CHECK BY: B.A. FINAL CHECK BY: B.A.

FORT BEND COUNTY M.U.D. 194
LONGMEADOW RANCH APARTMENTS
5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20.7015 ACRE

STATE OF TEXAS
BILAL A. ALI
92792
PROFESSIONAL ENGINEER
4/25/2018

r.g.miller engineers
18340 park ten place - suite 350 - Houston, Texas 77084
TEXAS FIRM REGISTRATION NO. F-487

C13

S:\3906 MEADOW RANCH PARKWAY APTS - PHASE 1\CAD\PRIVATE\3906_CALC.DWG APR. 25, 2018--9:21am DAGUAYO



Point Noted as			
Outfall on C14	Area (AC)	2 Year Design Outfall	100 Year
A	10.53	None	51
B	4.49	32.24 (A51 Sheet C15)	23
C	6.46	16.23 (B21 Sheet C14)	32
TOTAL	21.48 AC.		

Tract Size 20.70

0.78 Ac over due to ROW in Meadow Ranch being in Private DA

Table on
C14 Sheet
Design Flow
100 Year Capacity

100 YEAR STORM SEWER CALCULATIONS MEADOW RANCH

PREPARED ON: MARCH, 2018
Total AREA=20.70 AC

JOB NO.: 3906
LINE "B"

Manhole	Delta	Area	Runoff Coefficient	Sum of	Intensity I	Sum of Flow	Time of Concentration	Pipe Time	Reach Length	Diameter or Rise	Slope	Mannings	Design Capacity	Design Velocity	Fall	Manhole Drop	Elevation Upstream	Elevation Upstream	Elevation Downstream	Elevation Downstream	Actual Velocity	Hydraulic Gradient	Change in Head	Hyd. Grad. Upstream	Hyd. Grad. Downstream	Ground/Grate	
From	To	Area (Acres)	Cf	C x Cf	C x A	Frequency	(in/Hr)	(CFS)	(Minutes)	(Minutes)	(Feet)	(Inches)	%	"n"	(FUS)	(Feet)	(Feet)	(Feet)	(Feet)	(Feet)	(FVS)	(%)	(Feet)	(Feet)	(Feet)	(Feet)	
B1	B2	0.50	1.25	1.00	0.50	100	7.14	3.57	23.85	1.15	200	15	0.33	0.012	4.02	3.28	0.66	0.00	89.67	90.92	89.01	90.26	2.91	0.26	0.52	95.77	95.00
B2	B5	0.55	1.25	1.00	1.05	100	7.01	7.36	25.00	0.54	134	18	0.28	0.012	5.80	3.28	0.35	0.25	89.01	90.51	88.66	90.16	4.16	0.42	0.56	95.25	95.00
B3	B4	0.41	1.25	1.00	0.41	100	7.18	2.94	23.55	0.36	82	12	0.44	0.012	2.56	3.26	0.36	0.00	88.77	89.77	88.41	89.41	3.75	0.58	0.48	95.17	94.50
B4	B5	0.30	1.25	1.00	0.71	100	7.13	5.06	23.91	0.24	60	15	0.33	0.012	4.02	3.28	0.20	0.25	88.41	89.66	88.21	89.46	4.13	0.52	0.31	94.69	94.40
B5	B6	0.22	1.25	1.00	1.98	100	7.10	14.07	24.15	0.56	96	30	0.13	0.012	16.02	3.26	0.12	1.25	89.58	92.08	89.46	91.96	2.87	0.10	0.10	94.37	94.40
B6	B10	0.61	2.59	1.25	2.59	100	7.04	18.24	24.71	0.86	191	30	0.13	0.012	16.02	3.26	0.25	0.00	88.21	90.71	87.96	90.46	3.71	0.17	0.32	94.28	94.40
B7	B8	0.22	0.22	1.00	0.22	100	7.28	1.60	22.66	0.87	107	12	0.44	0.012	2.56	3.26	0.47	0.00	87.96	88.96	87.49	88.49	2.04	0.17	0.18	93.96	95.00
B8	B10	0.34	0.56	1.25	0.56	100	7.18	4.02	23.53	0.58	114	15	0.33	0.012	4.02	3.28	0.38	0.00	87.49	88.74	87.11	88.36	3.28	0.33	0.38	93.77	95.00
B9	B10	0.48	0.48	1.25	0.48	100	7.15	3.43	23.79	0.72	120	15	0.33	0.012	4.02	3.28	0.40	0.00	87.65	88.90	87.25	88.50	2.80	0.24	0.29	93.88	94.00
B10	B12	0.36	3.99	1.25	3.99	100	7.06	28.19	24.50	0.54	129	36	0.11	0.012	23.96	3.39	0.14	0.00	87.25	90.25	87.11	90.11	3.99	0.15	0.20	93.59	94.30
B11	B12	0.41	0.41	1.25	0.41	100	7.18	2.94	23.55	0.49	111	12	0.44	0.012	2.56	3.26	0.49	0.00	87.82	88.82	87.33	88.33	3.75	0.58	0.64	94.49	94.00
B12	B15	0.44	4.84	1.25	4.84	100	7.12	34.45	24.04	0.68	198	36	0.11	0.012	23.96	3.39	0.22	0.00	87.33	90.33	87.11	90.11	4.87	0.23	0.45	93.85	94.30
B13	B14	0.27	0.27	1.25	0.27	100	12.43	3.36	0.00	0.47	77	15	0.33	0.012	4.02	3.28	0.25	0.00	87.11	88.36	86.86	88.11	2.73	0.23	0.18	93.40	94.50
B14	B15	0.28	0.55	1.25	0.55	100	7.12	3.92	24.00	0.55	105	15	0.33	0.012	4.02	3.28	0.35	0.00	86.86	88.11	86.51	87.76	3.19	0.31	0.33	93.22	94.35
B15	B18	0.64	6.03	1.25	6.03	100	6.62	39.90	28.72	0.52	129	42	0.10	0.012	34.47	3.58	0.13	0.00	86.51	90.01	86.38	89.88	4.15	0.13	0.17	92.89	94.30
B16	B17	0.12	0.12	1.25	0.12	100	7.38	0.89	21.88	1.35	91	12	0.44	0.012	2.56	3.26	0.40	0.00	86.38	87.38	85.98	86.98	1.13	0.05	0.05	93.00	94.00
B17	B18	0.15	0.27	1.25	0.27	100	7.21	1.95	23.23	0.62	92	12	0.44	0.012	2.56	3.26	0.40	0.00	85.98	86.98	85.58	86.58	2.48	0.25	0.23	92.95	94.00
B18	outfall	0.19	6.49	1.25	6.49	100	6.60	42.83	28.90	0.28	76	42	0.10	0.012	34.47	3.58	0.08	0.00	85.58	89.08	85.50	89.00	4.45	0.15	0.12	92.72	95.00
C1	EX	0.33	0.33	1.25	0.33	100	7.21	2.38	23.23	0.00	0	60	0.05	0.013	58.24	2.97	0.00	0.00	88.00	93.00	88.00	93.00	0.12	0.00	0.00	93.00	94.80
C2	EX	0.34	0.34	1.25	0.34	100	7.21	2.45	23.27	0.00	0	60	0.05	0.013	58.24	2.97	0.00	0.00	88.00	93.00	88.00	93.00	0.12	0.00	0.00	93.00	94.70

Inlet Sizing			
Type "A" Inlet 4"	2.50 CFS		
Ponding			
Type "A" Inlet 6"	10 CFS		
Ponding			
100 YR AREA DRAINAGE FLOW RATE = Qi			
l = b/(d+TC)q C = 0.80			
b	125.4		
d	21.8		
e	0.75		
TC	10A^0.1761+15		
Qi			
A1	TC	24.03	Q 3.19
A2	TC	24.03	Q 3.19
A3	TC	24.03	Q 3.19
A4	TC	22.53	Q 1.17
A5	TC	23.43	Q 2.19
A6	TC	22.24	Q 0.94
A7	TC	23.31	Q 2.02
A8	TC	23.72	Q 2.63
A9	TC	21.67	Q 0.59
A10	TC	23.31	Q 2.02
A11	TC	23.18	Q 1.85
A12	TC	23.69	Q 2.58
A13	TC	20.39	Q 0.18
A14	TC	23.94	Q 3.02
A15	TC	23.76	Q 2.69
A17	TC	23.18	Q 1.85
A18	TC	23.65	Q 2.52
A19	TC	20.67	Q 0.24
A20	TC	23.47	Q 2.24
A21	TC	23.43	Q 2.19
A22	TC	22.94	Q 1.57
A23	TC	22.53	Q 1.17
A24	TC	24.17	Q 3.47
A25	TC	23.18	Q 1.85
A26	TC	23.18	Q 1.85
A27	TC	23.76	Q 2.69
A28	TC	23.09	Q 1.74
A29	TC	22.24	Q 0.94
A30	TC	23.09	Q 1.74
A31	TC	24.41	Q 4.02
A32	TC	23.09	Q 3.01
A33	TC	23.91	Q 1.88
A34	TC	23.23	Q 1.90
A35	TC	23.23	Q 3.00
A36	TC	23.27	Q 1.67
A37	TC	23.69	Q 1.95
A38	TC	23.04	Q 2.61
A39	TC	22.53	Q 1.17
B1	TC	23.85	Q 2.85
B2	TC	25.09	Q 3.13
B3	TC	23.55	Q 2.34
B4	TC	24.41	Q 1.71
B5	TC	26.28	Q 1.25
B6	TC	26.82	Q 3.47
B7	TC	22.66	Q 1.25
B8	TC	24.03	Q 1.94
B9	TC	23.79	Q 2.73
B10	TC	27.76	Q 2.05
B11	TC	23.55	Q 2.34
B12	TC	28.20	Q 2.51
B13	TC	22.94	Q 1.54
B14	TC	24.00	Q 1.59
B15	TC	28.72	Q 3.65
B16	TC	21.88	Q 0.68
B17	TC	22.94	Q 0.85
B18	TC	28.90	Q 1.08



r.g.miller
engineers
16340 park ten place - suite 350- Houston, Texas 77064
TEXAS FIRM REGISTRATION NO. F-487

C14

FORT BEND COUNTY M.U.D. 194
LONGMEADOW RANCH
APARTMENTS
5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20.7015 ACRES

DRAINAGE CALCULATIONS

REVISIONS:
A REVISION BUILDING LAYOUT, STM. SWR LAYOUT, & GRADING 03/02/2018

LONGMEADOW RANCH APARTMENTS~3906

FBC DEVELOPMENT COORDINATOR DATE

100 YEAR STORM SEWER
CALCULATIONS
MEADOW RANCH

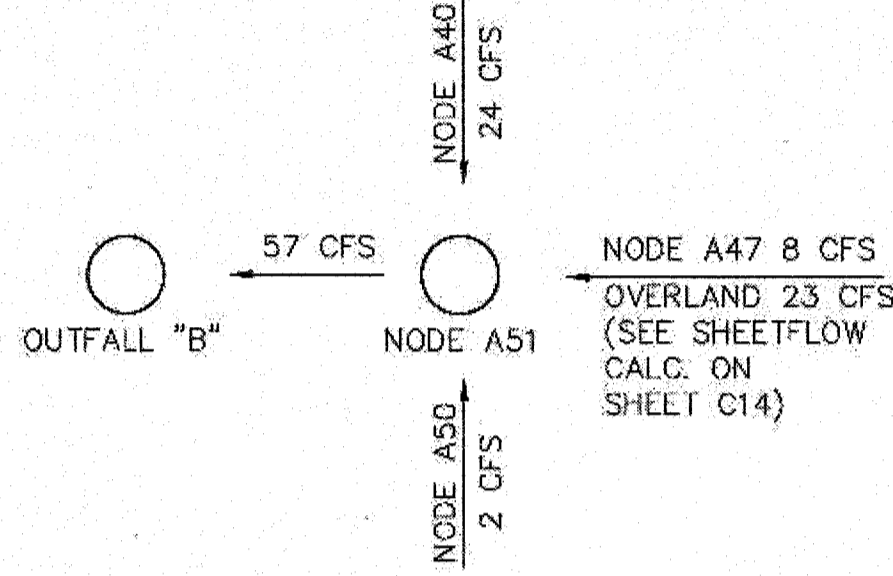
PREPARED ON: APRIL, 2018

Total AREA=20.70 AC

JOB NO.: 3906

LINE "A"

Manhole		Delta	Area	Runoff		Intensity	Sum of	Time of	Pipe	Reach	Diameter	Slope	Mannings	Design	Design	Manhole	Elevation	Elevation	Elevation	Elevation	Actual	Hydraulic	Change	Hyd. Grad.	Hyd. Grad.	Ground/Grad			
From	To	Area	(Acres)	Cf	C x A	reque	(in/Hr)	(CFS)	(Minutes)	(Minutes)	(Feet)	(Inches)	%	"n"	(CFS)	(F/US)	(Feet)	(Feet)	(Feet)	(Feet)	(F/US)	(%)	(Feet)	(Feet)	(Feet)	(Feet)			
A1	A2	0.56	0.56	1.25	1.00	0.56	100	7.12	3.89	24.03	1.12	219	15	0.33	0.012	4.02	3.28	0.72	0.00	92.15	93.40	91.43	92.68	3.25	0.32	0.71	95.33	94.82	94.80
A2	A3	0.56	1.12	1.25	1.00	1.12	100	6.99	7.83	25.15	0.41	82	24	0.18	0.012	10.40	3.31	0.11	0.00	91.30	93.30	91.19	93.19	2.49	0.10	0.06	94.62	94.55	95.00
A3	A7	0.56	1.88	1.25	1.00	1.68	100	6.95	11.67	25.57	0.83	208	24	0.18	0.012	10.40	3.31	0.37	0.00	91.19	93.19	90.82	92.82	3.71	0.23	0.47	94.55	94.08	94.40
A4	A5	0.20	0.20	1.25	1.00	0.20	100	7.30	1.46	22.53	1.87	208	12	0.44	0.012	2.58	3.26	0.92	0.00	91.50	92.50	90.58	91.58	1.86	0.14	0.30	95.36	95.08	94.00
A5	A7	0.38	0.58	1.25	1.00	0.58	100	7.11	4.13	24.09	0.63	126	15	0.33	0.012	4.02	3.28	0.42	0.00	90.58	91.83	90.16	91.41	3.36	0.35	0.44	94.53	94.08	94.25
A6	A7	0.15	0.15	1.25	1.00	0.15	100	7.35	1.10	22.16	0.56	49	12	0.44	0.012	2.58	3.28	0.22	0.00	92.50	93.50	92.28	93.28	1.40	0.08	0.04	94.12	94.08	95.00
A7	A15	0.35	2.76	1.25	1.00	2.76	100	6.80	18.76	26.96	0.45	103	30	0.13	0.012	16.02	3.26	0.13	0.00	90.82	93.32	90.89	93.19	3.82	0.18	0.18	94.08	93.90	94.50
A8	A9	0.46	0.46	1.25	1.00	0.46	100	7.16	3.29	23.72	0.38	96	12	0.44	0.012	2.58	3.26	0.42	0.00	92.50	93.50	92.08	93.08	4.19	0.73	0.70	95.76	95.06	95.00
A9	A11	0.10	0.56	1.25	1.00	0.56	100	7.11	3.98	24.10	0.48	94	15	0.33	0.012	4.02	3.28	0.31	0.00	92.08	93.33	91.77	93.02	3.24	0.32	0.30	95.06	94.76	95.00
A10	A11	0.35	0.35	1.25	1.00	0.35	100	7.20	2.52	23.31	0.66	127	12	0.44	0.012	2.58	3.26	0.56	0.00	92.40	93.40	91.84	92.84	3.21	0.43	0.54	95.30	94.76	94.90
A11	A12	0.32	1.23	1.25	1.00	1.23	100	6.97	8.57	25.37	0.91	149	24	0.18	0.012	10.40	3.31	0.27	0.00	91.15	93.15	90.88	92.88	2.73	0.12	0.18	94.78	94.58	94.40
A12	A14	0.45	1.88	1.25	1.00	1.68	100	6.87	11.54	26.26	0.94	207	24	0.18	0.012	10.40	3.31	0.37	0.00	90.88	92.88	90.51	92.51	3.67	0.22	0.46	94.58	94.12	94.50
A13	A14	0.03	0.03	1.25	1.00	0.03	100	7.57	0.23	20.39	2.88	50	12	0.44	0.012	2.58	3.26	0.22	0.00	93.00	94.00	92.78	93.78	0.29	0.00	0.00	94.12	94.12	95.50
A14	A15	0.53	2.24	1.25	1.00	2.24	100	6.84	15.33	26.53	0.99	185	30	0.13	0.012	16.02	3.26	0.24	0.00	89.93	92.43	89.89	92.19	3.12	0.12	0.22	94.12	93.90	94.45
A15	A17	0.47	5.47	1.25	1.00	5.47	100	6.74	36.86	27.51	0.31	98	38	0.09	0.012	21.68	3.07	0.09	0.00	89.89	92.89	88.60	92.60	5.21	0.26	0.26	93.90	93.64	94.40
A17	A26	0.32	5.79	1.25	1.00	5.79	100	6.63	38.37	28.82	0.24	58	42	0.10	0.012	34.47	3.58	0.06	0.00	88.94	92.44	88.88	92.38	3.99	0.12	0.07	93.84	93.57	94.40
A18	A19	0.44	0.44	1.25	1.00	0.44	100	7.16	3.15	23.85	0.29	70	12	0.44	0.012	2.58	3.28	0.31	0.00	92.50	93.50	92.19	93.19	4.01	0.67	0.47	95.29	94.82	95.00
A19	A20	0.04	0.48	1.25	1.00	0.48	100	7.13	3.42	23.84	0.33	56	15	0.33	0.012	4.02	3.28	0.18	0.00	92.19	93.44	92.01	93.26	2.79	0.24	0.13	94.82	94.69	95.00
A20	A21	0.39	0.87	1.25	1.00	0.87	100	7.09	6.17	24.28	0.60	125	18	0.26	0.012	5.80	3.28	0.33	0.00	92.01	93.51	91.68	93.18	3.49	0.29	0.37	94.89	94.32	95.10
A21	A22	0.38	1.25	1.25	1.00	1.25	100	7.02	8.78	24.88	0.50	84	24	0.18	0.012	10.40	3.31	0.15	0.00	91.68	93.68	91.53	93.53	2.79	0.13	0.11	94.32	94.21	95.00
A22	A24	0.27	1.52	1.25	1.00	1.52	100	6.92	10.52	25.77	0.55	110	24	0.18	0.012	10.40	3.31	0.20	0.00	91.32	93.32	91.12	93.12	3.35	0.18	0.20	94.21	94.01	95.00
A23	A24	0.20	0.20	1.25	1.00	0.20	100	7.30	1.46	22.53	0.82	92	12	0.44	0.012	2.58	3.26	0.40	0.00	92.50	93.50	90.53	91.53	1.86	0.14	0.13	94.14	94.01	95.00
A24	A25	0.61	2.33	1.25	1.00	2.33	100	6.83	15.92	26.61	0.91	177	30	0.13	0.012	16.02	3.26	0.23	0.00	90.53	93.03	90.30	92.80	3.24	0.13	0.23	94.01	93.78	95.00
A25	A26	0.32	2.65	1.25	1.00	2.65	100	6.74	17.86	27.52	0.61	133	30	0.13	0.012	16.02	3.28	0.17	0.00	89.71	92.21	89.54	92.04	3.64	0.16	0.21	93.78	93.57	95.00
A26	A27	0.32	8.76	1.25	1.00	8.76	100	6.53	57.18	29.65	0.45	124	48	0.07	0.012	41.17	3.28	0.09	0.00	88.39	92.39	88.30	92.30	4.55	0.14	0.17	93.57	93.40	94.30
A27	A29	0.47	9.23	1.25	1.00	9.23	100	6.48	59.85	30.11	0.45	128	48	0.07	0.012	41.17	3.28	0.09	0.00	88.30	92.30	88.21	92.21	4.76	0.15	0.19	93.40	93.21	94.30
A28	A29	0.30	0.30	1.25	1.00	0.30	100	7.23	2.17	23.09	0.66	110	12	0.44	0.012	2.58	3.26	0.48	0.00	91.50	92.50	91.02	92.02	2.76	0.32	0.35	93.56	93.21	94.00
A29	A30	0.10	9.63	1.25	1.00	9.63	100	6.50	62.63	29.90	0.30	91	48	0.11	0.012	51.61	4.11	0.10	0.00	88.21	92.21	88.11	92.11	4.98	0.16	0.15	93.21	93.07	94.30
A30	A39	0.15	9.78	1.25	1.00	9.78	100	6.48	63.33	30.21	0.33	100	48	0.11	0.012	51.61	4.11	0.11	0.00	88.11	92.11	88.00	92.00	5.04	0.17	0.17	93.07	92.90	94.30
A31	A32	0.71	0.71	1.25	1.00	0.71	100	7.07	5.02	24.41	0.97	237	15	0.33	0.012	4.02	3.28	0.78	0.00	91.30	92.55	90.52	91.77	4.09	0.52	1.22	94.35	93.13	94.30
A32	A36	0.52	1.23	1.25	1.00	1.23	100	6.97	6.57	25.38	1.17	191	24	0.18	0.012	10.40	3.31	0.34	0.75	89.77	91.77	89.43	91.43	2.73	0.12	0.23	93.13	92.90	94.30
A33	A34	0.33	0.33	1.25	1.00	0.33	100	7.21	2.38	23.23	0.54	99	12	0.44	0.012	2.58	3.26	0.44	1.00	92.50	93.50	92.08	93.08	3.03	0.38	0.38	93.87	93.49	95.00
A34	A35	0.33	0.66	1.25	1.00	0.66	100	7.15	4.72	23.77	0.46	105	15	0.33	0.012	4.02	3.28	0.35	0.25	90.20	91.45	89.85	91.10	3.85	0.45	0.48	93.49	93.01	95.00
A35	A36	0.52	1.18	1.25	1.00	1.18	100	7.10	6.37	24.23	0.60	96	24	0.18	0.012	10.40	3.31	0.17	0.00	89.60	91.60	89.43	91.43	2.67	0.12	0.11	93.01	92.90	94.70
A38	A39	0.29	0.29	1.25	1.00	0.29	100	7.24	2.10	23.04	0.89	110	12	0.44	0.012	2.58	3.26	0.48	0.00	91.50	92.50	88.18	89.18	2.87	0.30	0.33	93.23	92.90	94.00
A36	A37	0.42	2.83	1.25	1.00	2.83	100	6.79	19.22	27.01	0.37	87	30	0.13	0.012	16.02	3.26	0.11	0.00	88.18	90.68	88.07	90.57	3.91	0.19	0.16	93.18	93.02	94.30
A37	A38	0.41	3.24	1.25	1.00	3.24	100	6.75	21.88	27.38	0.68	127	36	0.11	0.012	23.96	3.39	0.14	0.00	88.07	91.07	88.21	91.21	3.10	0.09	0.12	93.02	92.90	94.30
A39	OUT	0.20	13.51	1.25	1.00	13.51	100	6.68	80.28	28.06	0.18	76	48	0.26	0.013	73.24	5.63	0.20	0.00	88.20	92.20	88.00	92.00	7.18	0.40	0.30	92.90	92.60	94.00



STORM SEWER ANALYSIS AT OUTFALL "B"

TOTAL HEAD = 2.90'
MAX. PONDING ELEV. = 95.50'
25 YR. W.S.E.L. = 92.40'
HEAD LOSS IN M.H. = 0.50'
TOTAL HEAD AVAILABLE = 2.40'

HEAD LOSS FOR ROUND PIPE FLOWING FULL
 $H = [(2.52(1+K_e)/D^4) + ((466n^2)/D^{16/3})] * Q^2/100$

Node A40 TO Node A51

0.2 H - head difference between entrance and exit (ft)
0.013 Ke - entrance loss coefficient (table 6.7.4)
100 n - Manning roughness coefficient
24 L - Length of pipe (feet)
3.5 Q - Design discharge rate (cfs)
D - Diameter of pipe in (ft)

150.06 D^4
3.02 2.52*(1+Ke)
0.00017 n^2
797.10 D^16/3
5.76 Q^2/100
7.88 466N^2*L

0.020152 2.52*(1+Ke)/D^4
0.00988 466N^2*L/D^16/3

H 0.17 FT

Node A47 TO Node A51

0.2 H - head difference between entrance and exit (ft)
0.013 Ke - entrance loss coefficient (table 6.7.4)
127 n - Manning roughness coefficient
2 L - Length of pipe (feet)
7.8 Q - Design discharge rate (cfs)
2 D - Diameter of pipe in (ft)

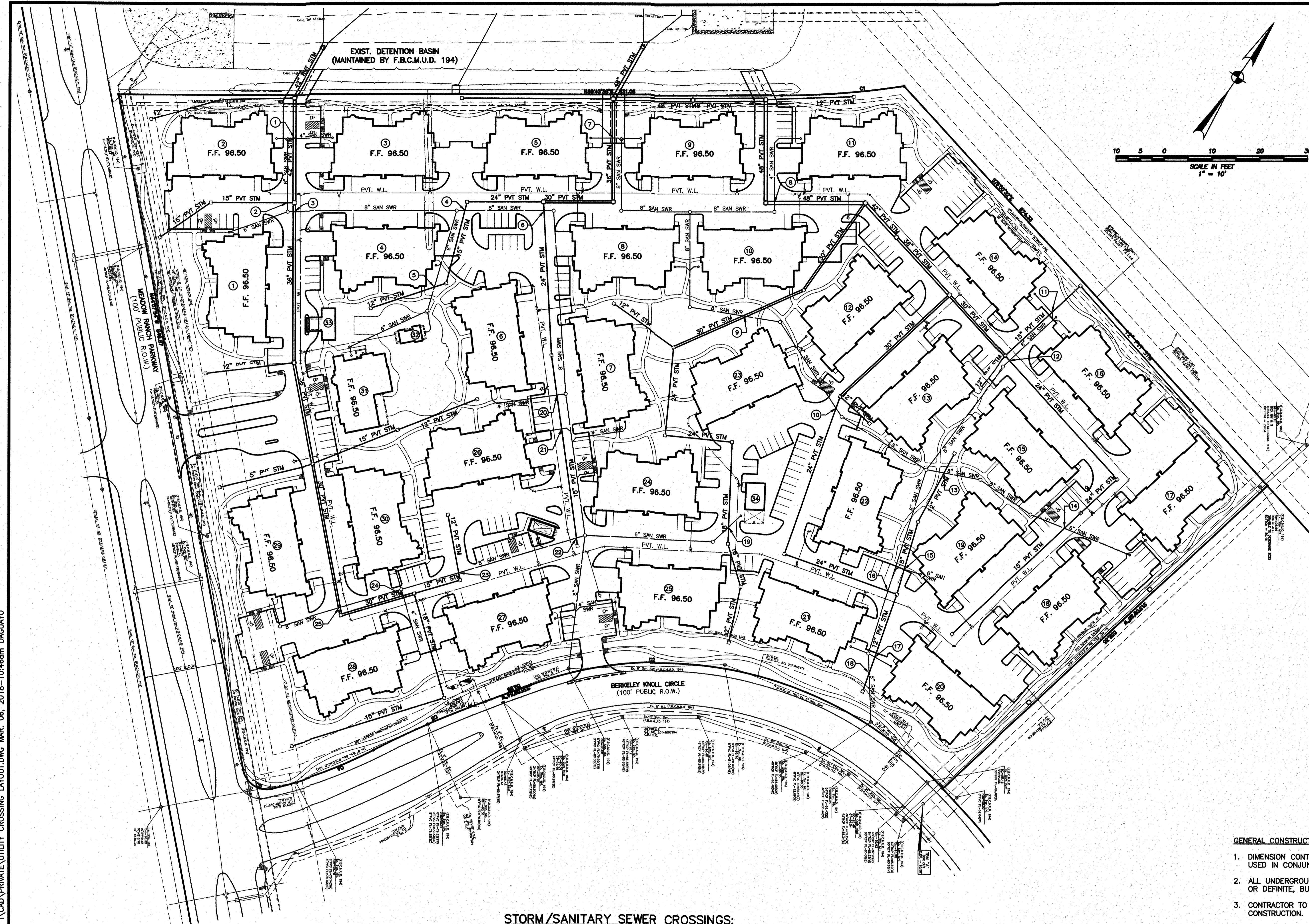
16.00 D^4
3.02 2.52*(1+Ke)
0.00017 n^2
40.31 D^16/3
0.6084 Q^2/100
10.00 466N^2*L

0.189 2.52*(1+Ke)/D^4
0.248132 466N^2*L/D^16/3

H 0.27 FT

Node A50 TO Node A51

0.2 H - head difference between entrance and exit (ft)
0.013 Ke - entrance loss coefficient (table 6.7.4)
93 n - Manning roughness coefficient
1 L - Length of pipe (feet)
1.16 Q - Design discharge rate (cfs)



STORM/SANITARY SEWER CROSSINGS:

- | | | | | | | |
|---|---|---|---|---|---|---|
| ① 42" STORM FL=85.62
4" SANITARY FL=91.29
2.17' CLEARANCE | ⑤ 12" STORM FL=92.13
6" SANITARY FL=88.69
2.94' CLEARANCE | ⑨ 30" STORM FL=90.41
8" SANITARY FL=84.58
5.16' CLEARANCE | ⑬ 24" STORM FL=92.38
8" SANITARY FL=86.61
5.10' CLEARANCE | ⑰ 12" STORM FL=92.17
4" SANITARY FL=90.72
1.77' CLEARANCE | ⑳ 15" STORM FL=90.06
4" SANITARY FL=89.23
0.50' CLEARANCE | ㉔ 30" STORM FL=87.29
6" SANITARY FL=90.77
0.98' CLEARANCE |
| ② 15" STORM FL=90.93
6" SANITARY FL=88.90
1.53' CLEARANCE | ⑥ 24" STORM FL=88.58
8" SANITARY FL=83.59
4.32' CLEARANCE | ⑩ 24" STORM FL=90.45
8" SANITARY FL=83.82
5.59' CLEARANCE | ⑭ 15" STORM FL=92.01
6" SANITARY FL=87.63
3.71' CLEARANCE | ⑱ 12" STORM FL=92.20
8" SANITARY FL=82.59
8.94' CLEARANCE | ㉒ 15" STORM FL=90.51
8" SANITARY FL=81.80
8.37' CLEARANCE | |
| ③ 36" STORM FL=86.21
8" SANITARY FL=84.96
0.58' CLEARANCE | ⑦ 36" STORM FL=87.98
4" SANITARY FL=91.52
0.29' CLEARANCE | ⑪ 15" STORM FL=91.42
4" SANITARY FL=90.21
0.87' CLEARANCE | ⑮ 15" STORM FL=91.62
4" SANITARY FL=90.44
0.84' CLEARANCE | ⑲ 18" STORM FL=91.95
4" SANITARY FL=89.25
2.36' CLEARANCE | ㉓ 12" STORM FL=91.68
8" SANITARY FL=82.49
8.52' CLEARANCE | |
| ④ 15" STORM FL=91.63
8" SANITARY FL=84.02
6.94' CLEARANCE | ⑧ 48" STORM FL=88.31
4" SANITARY FL=86.35
1.62' CLEARANCE | ⑫ 24" STORM FL=90.83
6" SANITARY FL=89.33
0.83' CLEARANCE | ⑯ 24" STORM FL=91.12
8" SANITARY FL=83.19
7.26' CLEARANCE | ㉑ 15" STORM FL=89.93
4" SANITARY FL=89.09
0.50' CLEARANCE | ㉕ 30" STORM FL=87.41
4" SANITARY FL=90.67
0.76' CLEARANCE | |

WALL THICKNESS:

12"=1.25"=0.104'
15"=1.50"=0.125'
18"=2.00"=0.17'
24"=2.00"=0.17'
30"=3.00"=0.25'
36"=3.00"=0.25'

PROJECT BENCHMARK:
NGS MONUMENT L 806 RESET (PROVIDED BY COSTELLO, INC.)
BEING AN NGS MONUMENT STAMPED "L 806 RESET 1963"
LOCATED ALONG THE SOUTHWEST R.O.W. OF F.M. 723,
APPROXIMATELY 0.45 MILE NORTHWEST OF F.M. 359.
ELEVATION = 94.85 FEET (1973 ADJUSTMENT)

HGCS 67 (AW5408)
BEING A STAINLESS STEEL ROD WITH PUNCH MARK ENCASED
IN A 5-INCH PVC SLEEVE STAMPED "HGCS 67 1986"
LOCATED ON THE NORTH SIDE OF THE NORTH FEEDER OF
WESTPARK TOLLWAY, APPROXIMATELY 2,100 FEET EAST OF THE
INTERSECTION OF WESTPARK TOLLWAY AND PEEK ROAD.
ELEVATION = 99.10 FEET NAVD 1988 (GEOID 99)
99.79 FEET (1973 ADJUSTMENT)

TBM "A"
BEING A BOX CUT IN CONCRETE AT THE CENTERLINE OF
BERKELEY KNOLL, ±900 FEET NORTHEAST OF THE CENTERLINE
INTERSECTION OF MEADOW RANCH PARKWAY AND BERKELEY
KNOLL.
ELEVATION = 95.38 FEET (1973 ADJUSTMENT)

TBM "B"
BEING A BOX CUT ON TOP OF A CURB INLET ON THE EAST
SIDE OF BERKELEY KNOLL, ±450 FEET NORTH OF THE
CENTERLINE INTERSECTION OF MEADOW RANCH PARKWAY AND
BERKELEY KNOLL.
ELEVATION = 95.58 FEET (1973 ADJUSTMENT)

FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP NO. 48157C0140L,
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.

10 5 0 10 20 30
SCALE IN FEET
1" = 10'

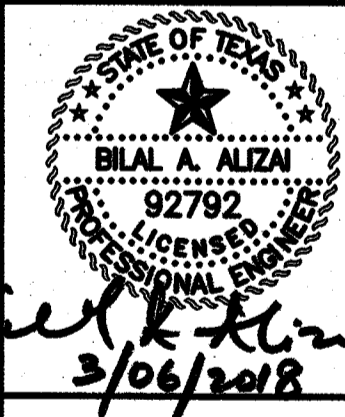
REVISIONS:
Δ REVISED BUILDING LAYOUT, STM, SWR LAYOUT, & GRADING 03/02/2018

UTILITY CROSSINGS

FORT BEND COUNTY M.U.D. 194

LONGMEADOW RANCH
APARTMENTS

5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20.7015 ACRE

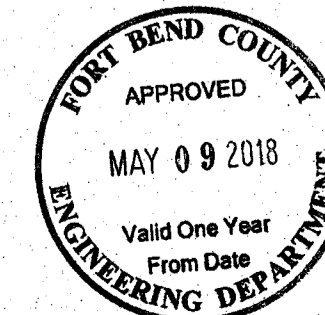


r.g.miller
engineers

18340 park ten place - suite 350- houston, texas 77084
TEXAS FIRM REGISTRATION NO. F-487

GENERAL CONSTRUCTION NOTES

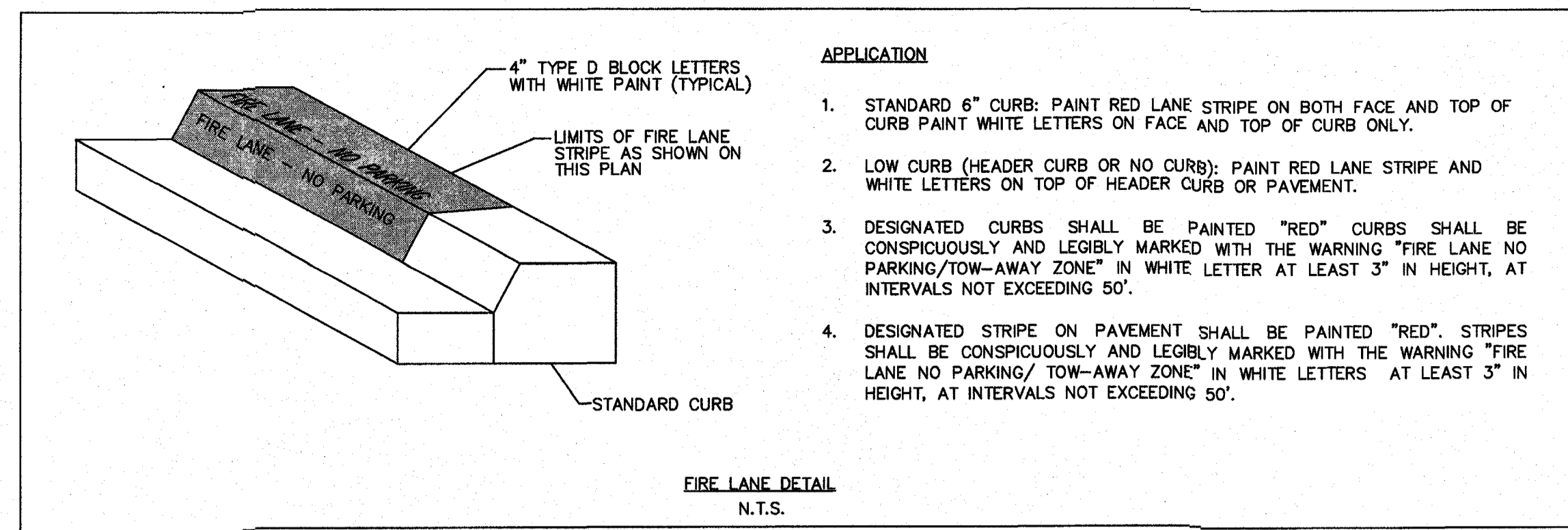
1. DIMENSION CONTROL PLAN PREPARED BY R.G. MILLER ENGINEERS, INC. TO BE USED IN CONJUNCTION WITH THIS PLAN FOR LOCATING ALL IMPROVEMENTS.
2. ALL UNDERGROUND UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE.
3. CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION.
4. THE LOCATION OF ALL UTILITIES PRESENTED ON THESE DRAWINGS IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
5. CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS REQUIRED PRIOR TO STARTING CONSTRUCTION.



FBC DEVELOPMENT COORDINATOR

DATE

Δ C16



FIRE LANE NOTES

CURBS LOCATED ON EITHER SIDE OF A FIRE LANE SHALL BE PAINTED RED OR A RED STRIPE SHALL BE PLACED ALONG THE PAVEMENT WHERE THERE IS NO CURB. WHERE A FIRE LANE PASSES BETWEEN HEAD IN PARKING SPACES, THE RED STRIPE SHOULD BE PLACED ALONG THE REAR OF THESE SPACES CLEARLY DEFINING THE FIRE LANE. PAINTED CURBS AND FIRE LANE STRIPES SHALL ALSO BE CONSPICUOUSLY AND LEGIBLY MARKED WITH THE WARNING "FIRE LANE-TOW AWAY ZONE" IN WHITE LETTERS AT LEAST THREE (3) INCHES IN HEIGHT, AT INTERVALS NOT EXCEEDING (50) FEET. WHERE FIRE LANES ARE CLEARLY DEFINED BY CURB/PAVEMENT STRIPING, FIRE LANE SIGNS ARE NOT REQUIRED. FIRE LANE SIGNS SHOULD BE PLACED EVERY (75) FEET ALONG ANY FIRE LANE WHERE PAVEMENT OR CURB STRIPING IS NOT PRACTICAL.

ANY COLOR OTHER THAN RED MAY BE USED IN "NO PARKING" AREAS THAT ARE NOT APPROVED FIRE LANES. RED COLORED CURBS; PAVEMENT STRIPING OR WHEEL STOPS SHALL BE USED ONLY TO DESIGNATE APPROVED FIRE LANES. THE PLANS WILL BE APPROVED WITH THE CIVIL SITE-PLAN REVIEW BUT MAY BE REVISED AT FIRE CODE REVIEW, BY THE BUILDING OFFICIAL.

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HGCSO 67 (AW5408)
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FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP No. 48157C0140L,
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.

LEGEND	
SYMBOL	DESCRIPTION
	ACCESS ROAD/FIRE LANE
	FIRE HYDRANT

GENERAL CONSTRUCTION NOTES

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2. ALL UNDERGROUND UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE.
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5. CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS REQUIRED PRIOR TO STARTING CONSTRUCTION.



FBC DEVELOPMENT COORDINATOR DATE

FORT BEND COUNTY M.U.D. 194
LONGMEADOW RANCH
APARTMENTS
5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20.7015 ACRE

Bill A. Miller
3/06/2018

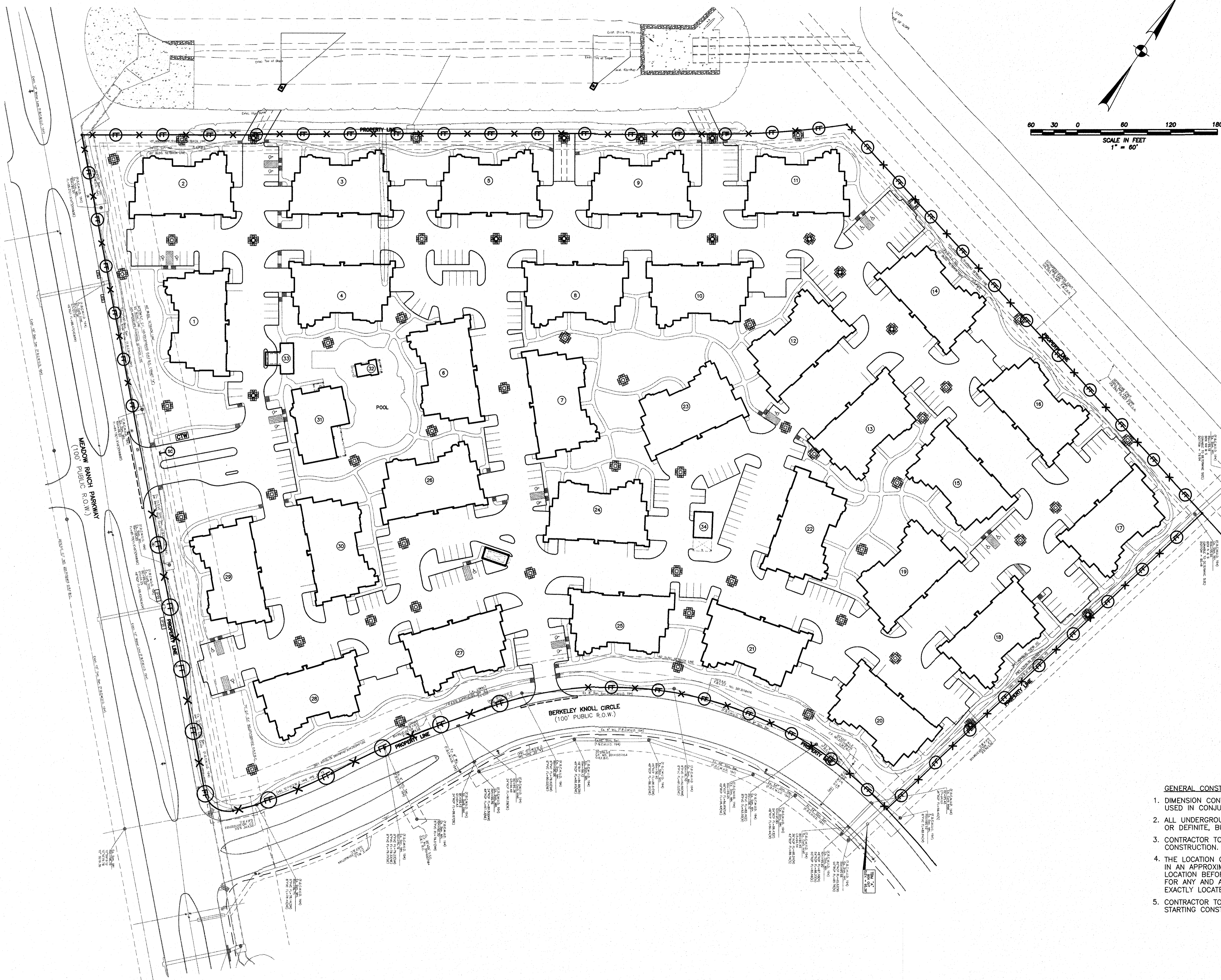
r.g.miller
engineers

C18

REVISIONS:
A REVISED BUILDING LAYOUT, STW, SWM LAYOUT, & GRADING 03/02/2018

FIRE APPARATUS ACCESS
LANE LAYOUT

DATE: JANUARY, 2018 SCALE: 1"=60'
DRAWN BY: E.L. FIELD CHECK BY: DA.
FIRST CHECK BY: B.A. FINAL CHECK BY: B.A.



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KNOLL.
ELEVATION = 95.38 FEET (1973 ADJUSTMENT)

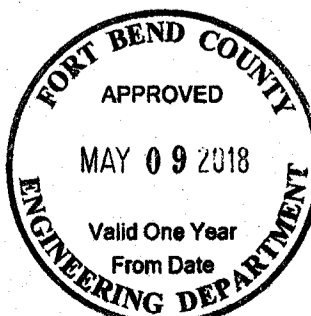
TBM "B"
BEING A BOX CUT ON TOP OF A CURB INLET ON THE EAST
SIDE OF BERKELEY KNOLL, ±450 FEET NORTH OF THE
CENTERLINE INTERSECTION OF MEADOW RANCH PARKWAY AND
BERKELEY KNOLL.
ELEVATION = 95.58 FEET (1973 ADJUSTMENT)

FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP No. 48157C0140L,
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.

CAUTION!!
CONTRACTOR SHALL CONTACT TEXAS ONE-CALL
SYSTEM (1-800-245-4545) OR OTHER UTILITY
SERVICES AT LEAST 48 HOURS PRIOR TO
CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS NOT
RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES
IN THE PROJECT AREA NOT DEPICTING THE EXACT
LOCATIONS OF THE UTILITIES ON THESE DRAWINGS.

LEGEND	
SYMBOL	DESCRIPTION
X-RFB-X	REINFORCED FILTER FABRIC BARRIER
X-FF-X	FILTER FABRIC FENCE
SC	STABILIZED CONSTRUCTION ACCESS
IPB	INLET PROTECTION BARRIER
CTW	CONCRETE TRUCK WASHOUT AREA

- GENERAL CONSTRUCTION NOTES**
- DIMENSION CONTROL PLAN PREPARED BY R.G. MILLER ENGINEERS, INC. TO BE USED IN CONJUNCTION WITH THIS PLAN FOR LOCATING ALL IMPROVEMENTS.
 - ALL UNDERGROUND UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE.
 - CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION.
 - THE LOCATION OF ALL UTILITIES PRESENTED ON THESE DRAWINGS IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
 - CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS REQUIRED PRIOR TO STARTING CONSTRUCTION.



FBC DEVELOPMENT COORDINATOR DATE

REVISIONS:

1	REVISED BUILDING LAYOUT, STM. SWF LAYOUT, & GRADING 03/02/2018
---	--

STORM WATER POLLUTION PREVENTION PLAN

DATE: JANUARY, 2018
DRAWN BY: F.L.
FIRST CHECK BY: B.A.

SCALE: 1"=80'
FIELD CHECK BY: D.A.
FINAL CHECK BY: B.A.

FORT BEND COUNTY M.U.D. 194
LONGMEADOW RANCH APARTMENTS
5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20.7015 ACRE

STATE OF TEXAS
BILAL A. ALUZI
92792
LICENSED PROFESSIONAL ENGINEER

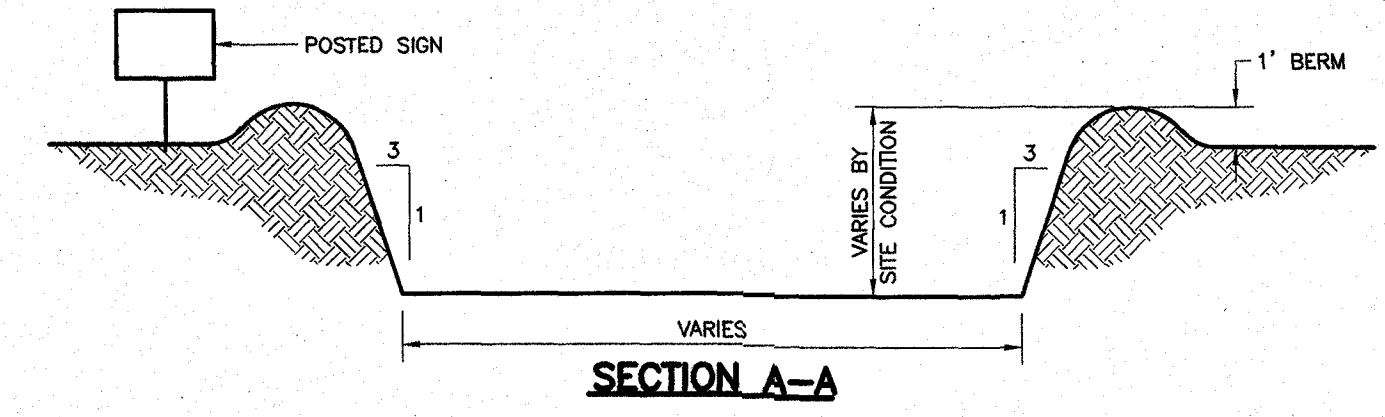
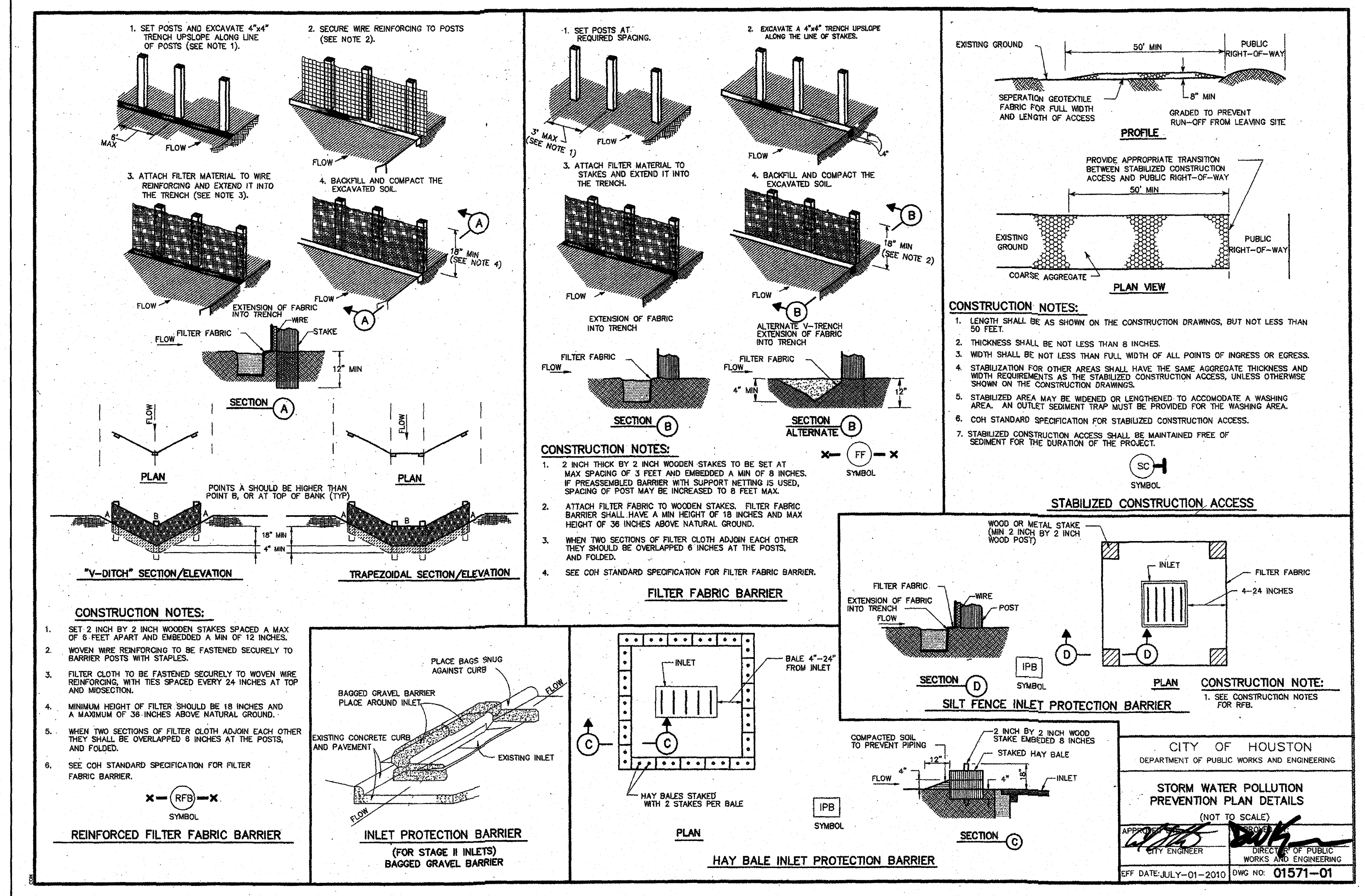
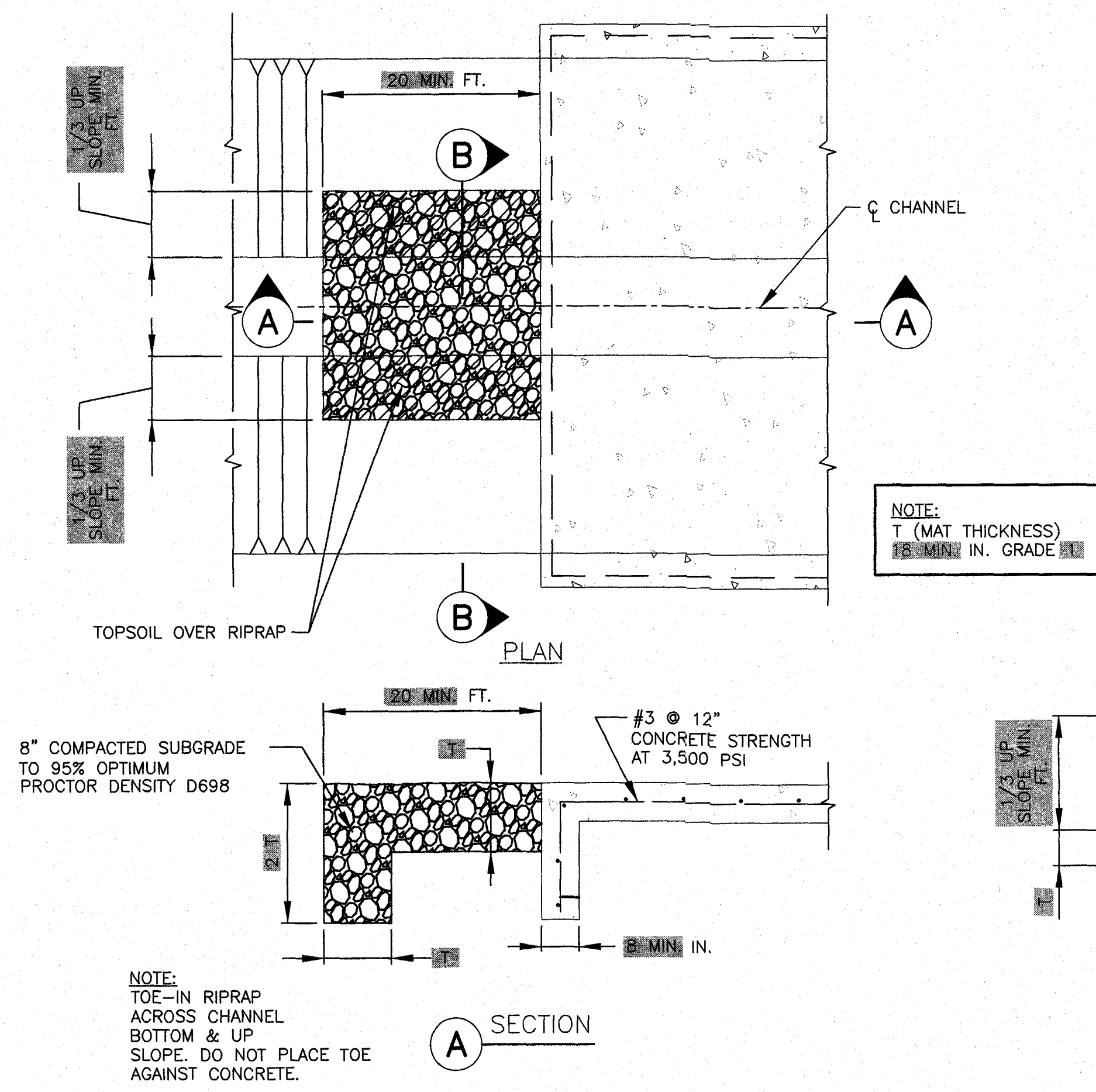
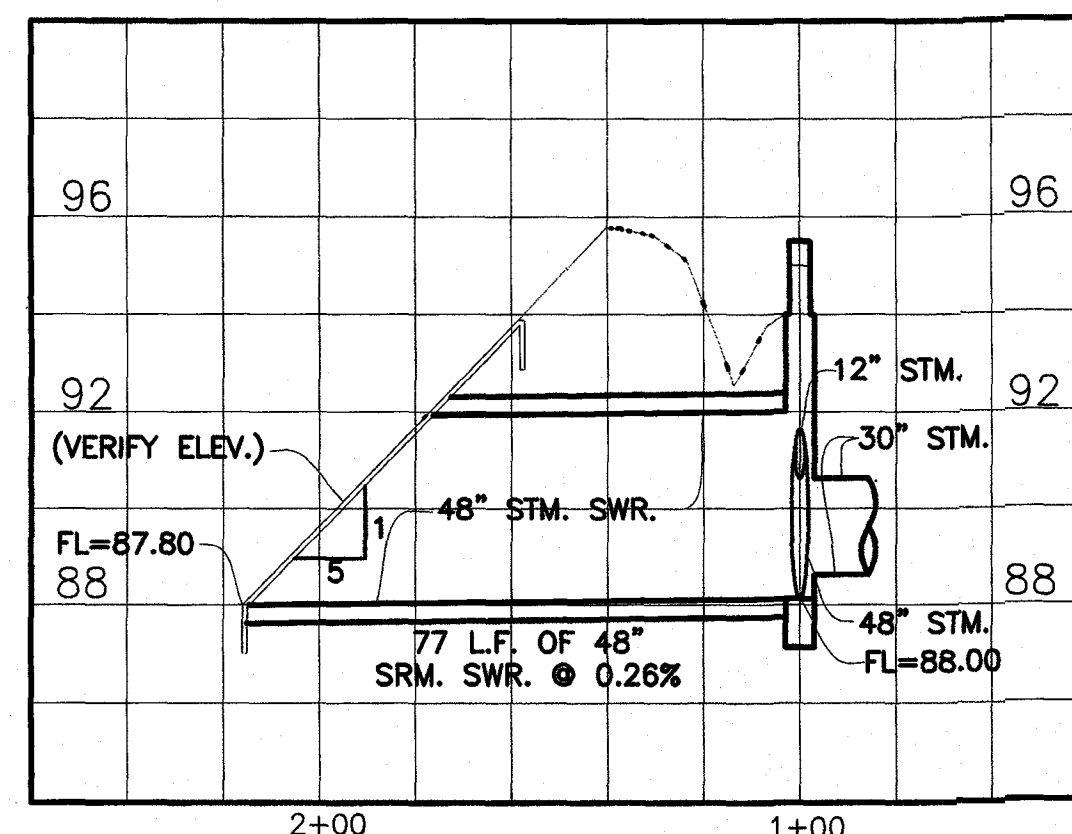
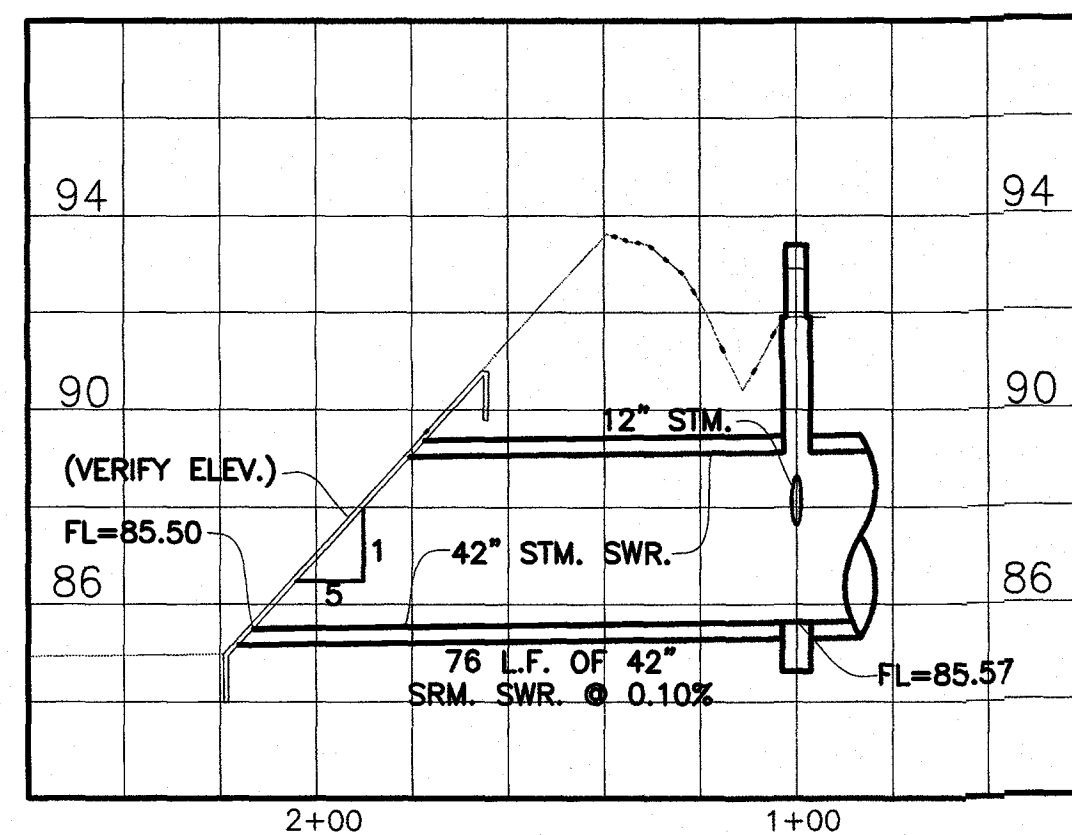
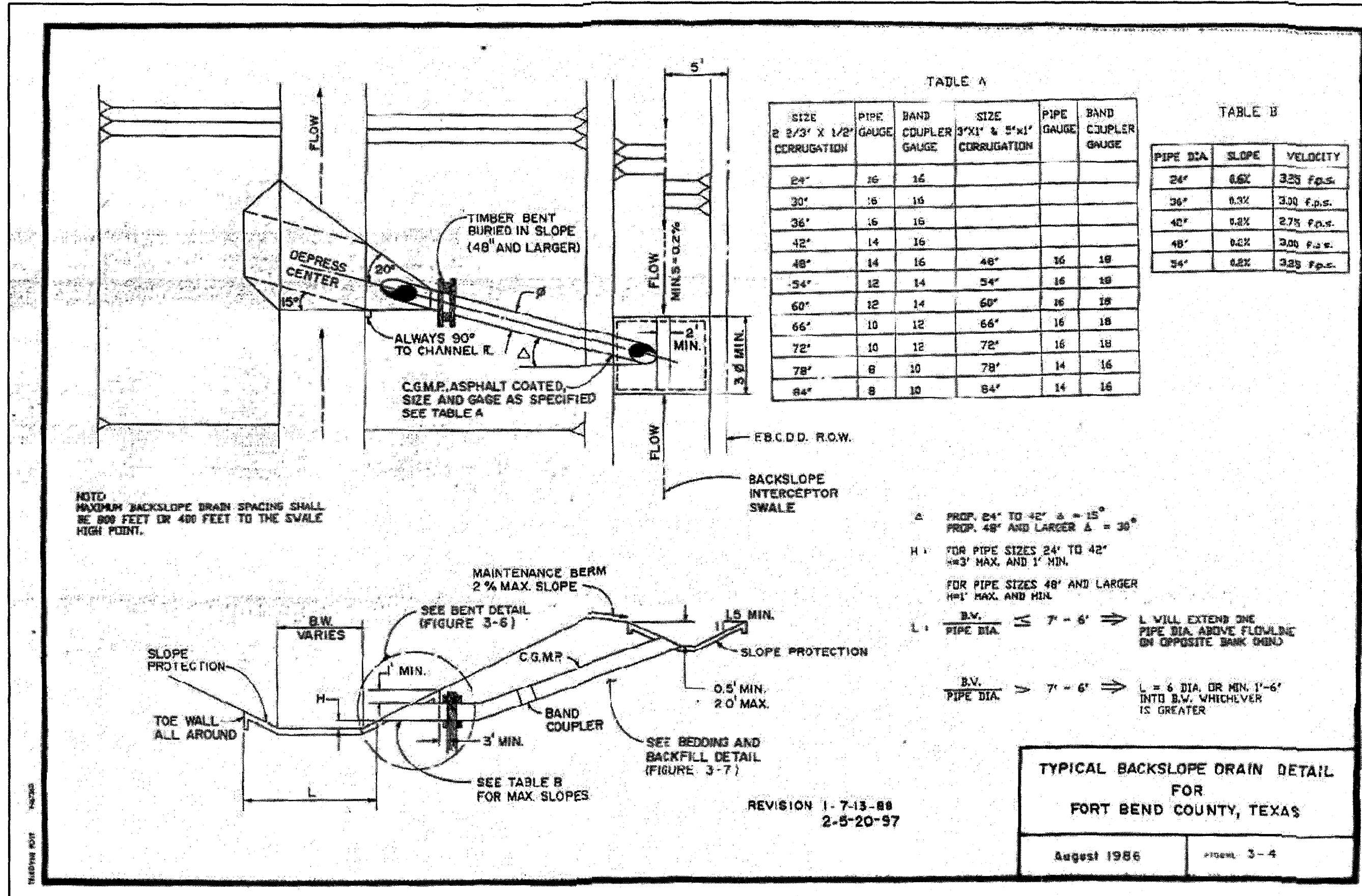
Bilal A. Aluzi
3/06/2018

r.g.miller engineers

16340 park ten place - suite 800 - Houston, Texas 77084
TEXAS FIRM REGISTRATION NO. F-487

C19

LONGMEADOW RANCH APARTMENTS-3906



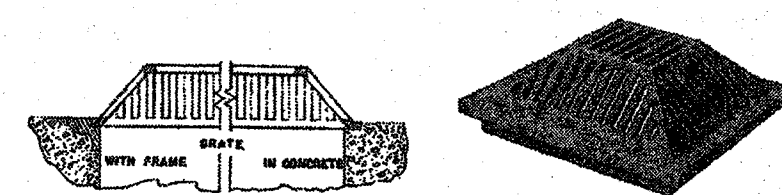
GENERAL NOTES:

1. POST A SIGN READING "CONCRETE WASH OUT PIT" NEXT TO THE PIT.
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASH OUT THEIR TRUCKS IN THE PIT AND NO WHERE ELSE.
3. UPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. AFTER REMOVAL OF THE CONCRETE WASTE, THE WASH OUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
4. CONCRETE WASH OUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY.
5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS EQUIPMENT.

R-4345 to R-4347 Series

Square Beehive Drainage Grate, Frame

Light Duty

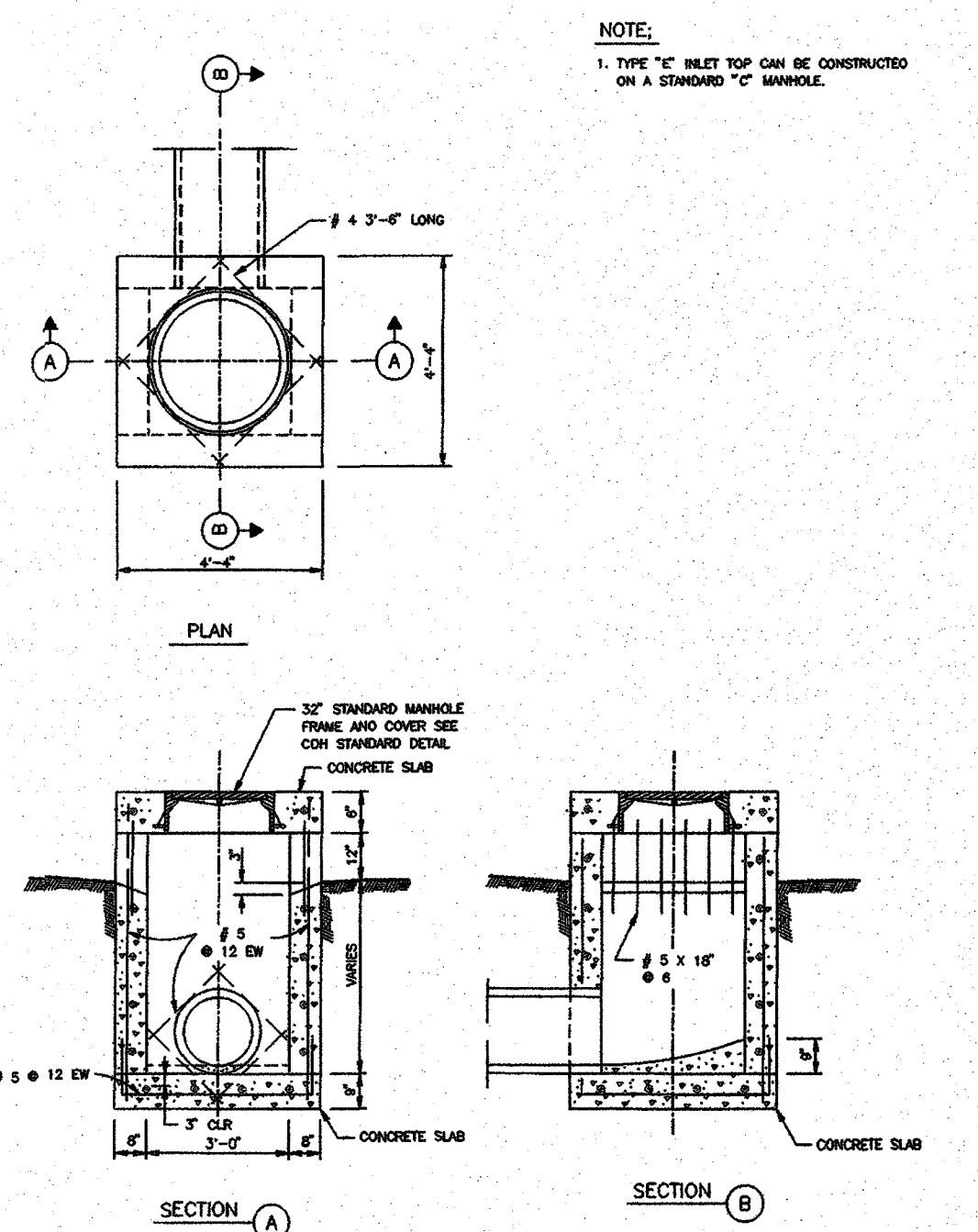




- For off-roadway construction

These castings are suitable for use at low points of large graded areas and will drain a substantial volume of surface water from all sides.

Catalog Number	Grate Type	Sq. Feet Open	Weir Perimeter Linear Feet
R-4345	Beehive	2.4	8.6
R-4346	Beehive	2.4	8.6
R-4347	Beehive	2.4	8.6


Catalog Number	Grate Overall	Grate Top Size	Frame Overall	Height Grate	Height Frame
R-4345	26X26	12X12	-	6-1/4	-

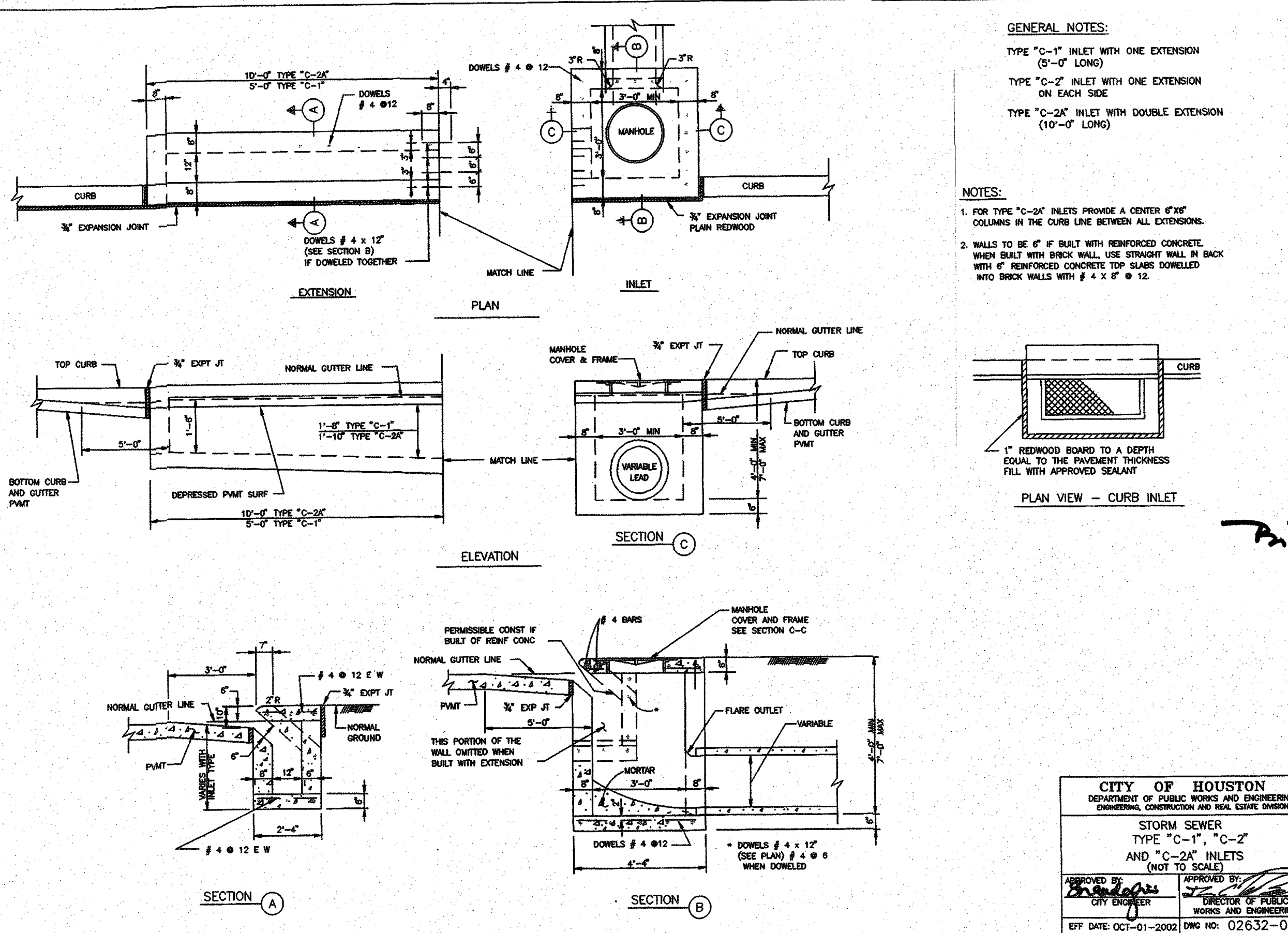
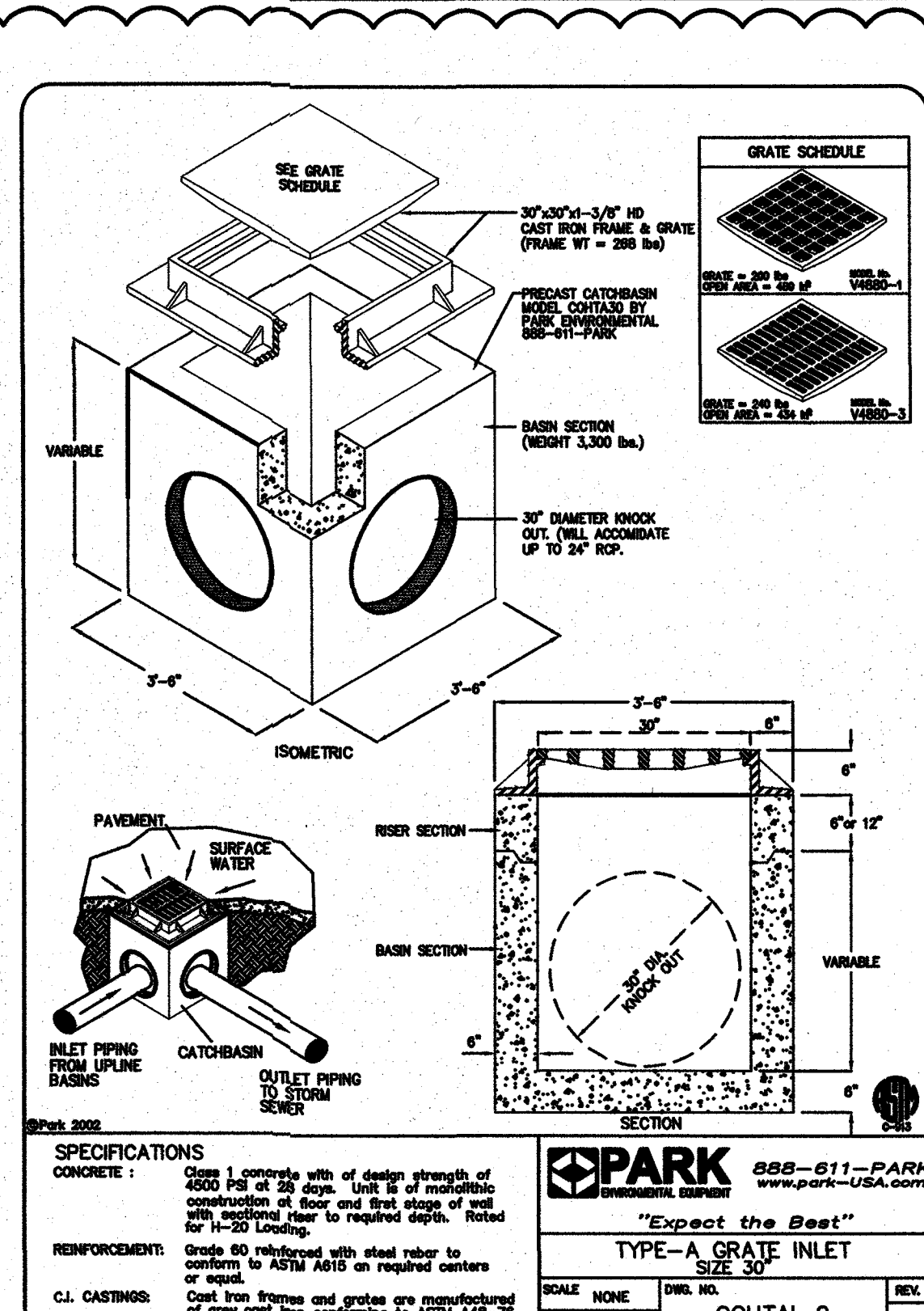
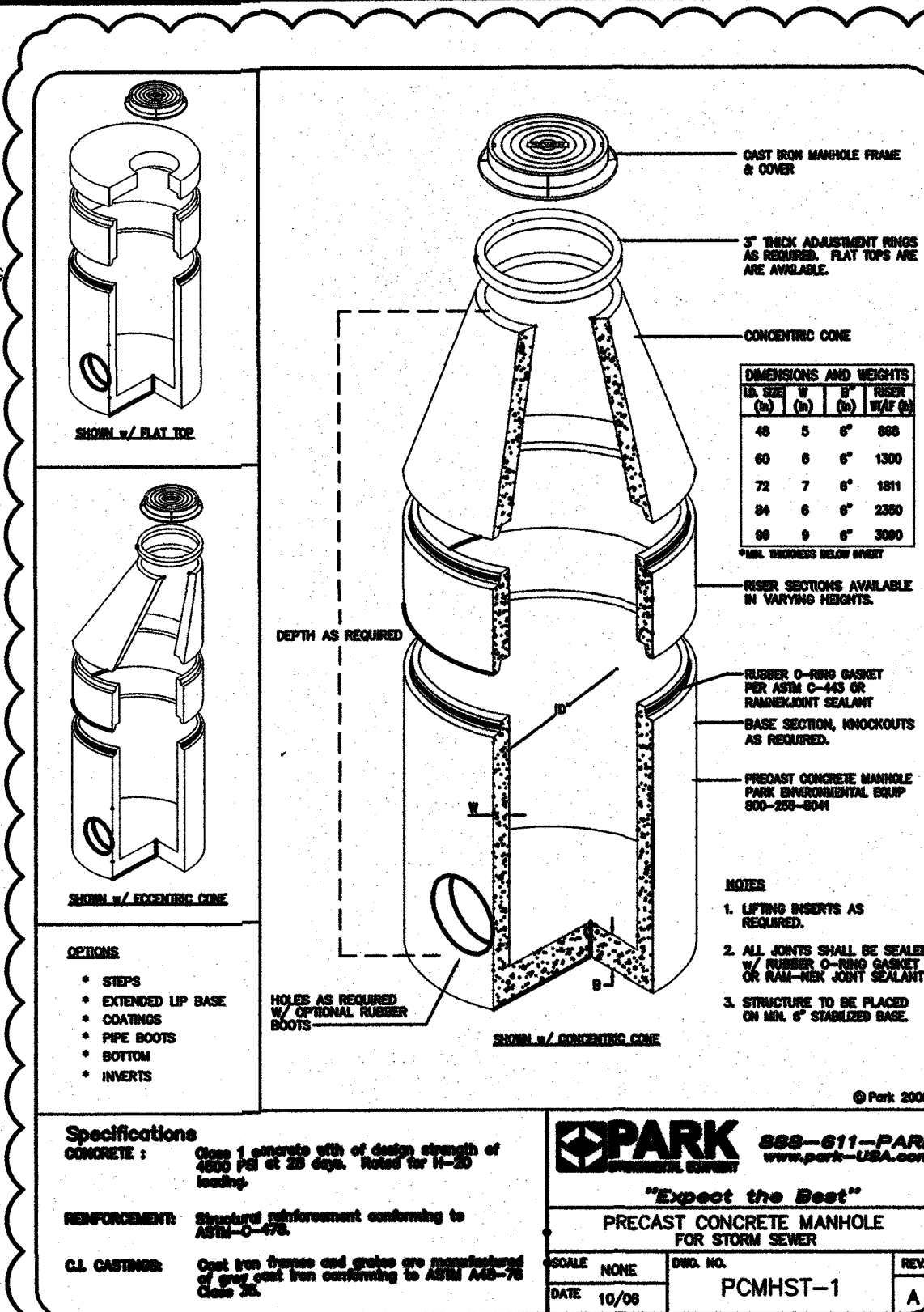
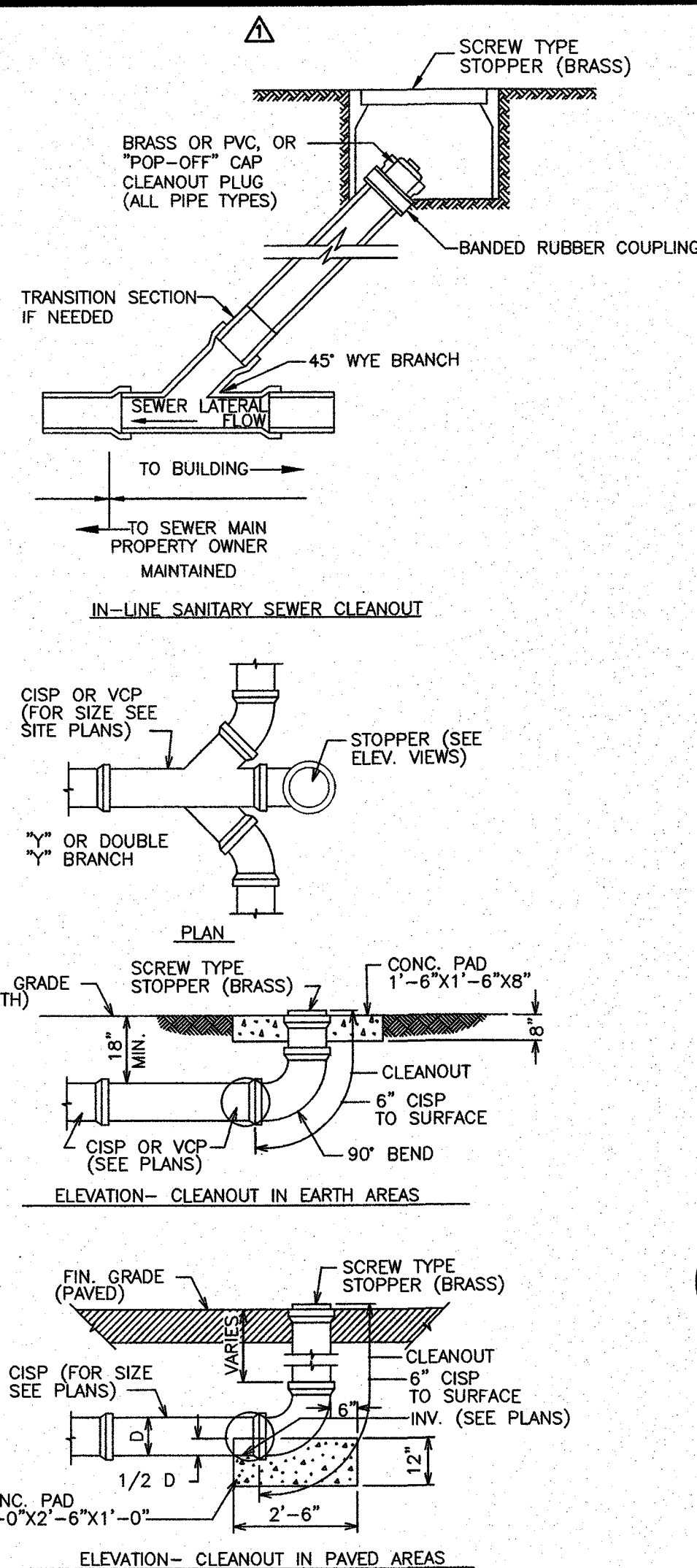




<p align="center">CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DESIGN</p>	
<p align="center">STORM SEWER TYPE "E" INLET (NOT TO SCALE)</p>	
<p>APPROVED BY:  CITY ENGINEER</p>	<p>APPROVED BY:  DIRECTOR OF PUBLIC WORKS AND ENGINEERING</p>
<p>EFF DATE: OCT-01-2002</p>	<p>DWG NO: 02632-09</p>

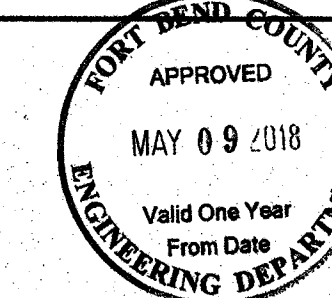
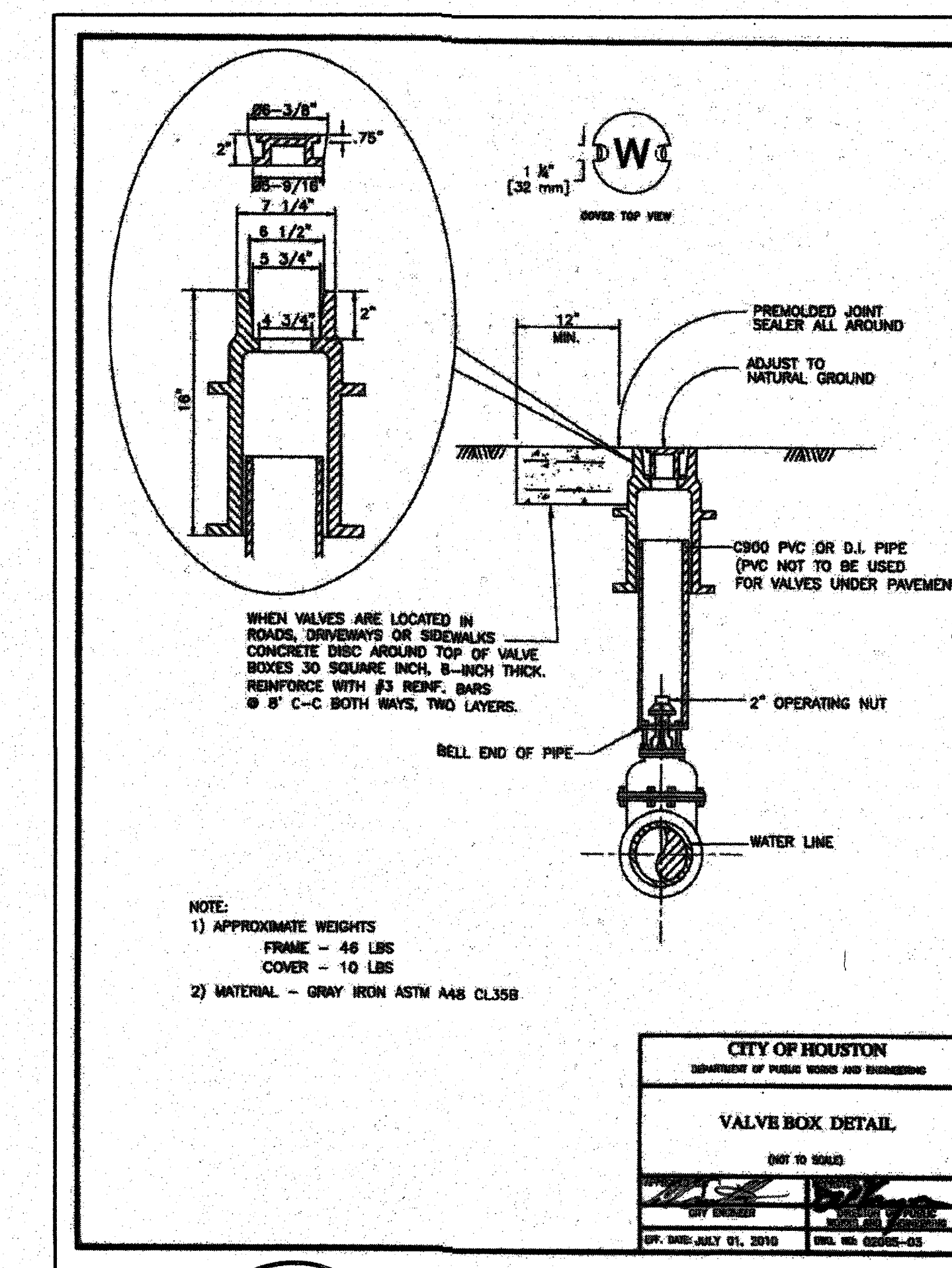
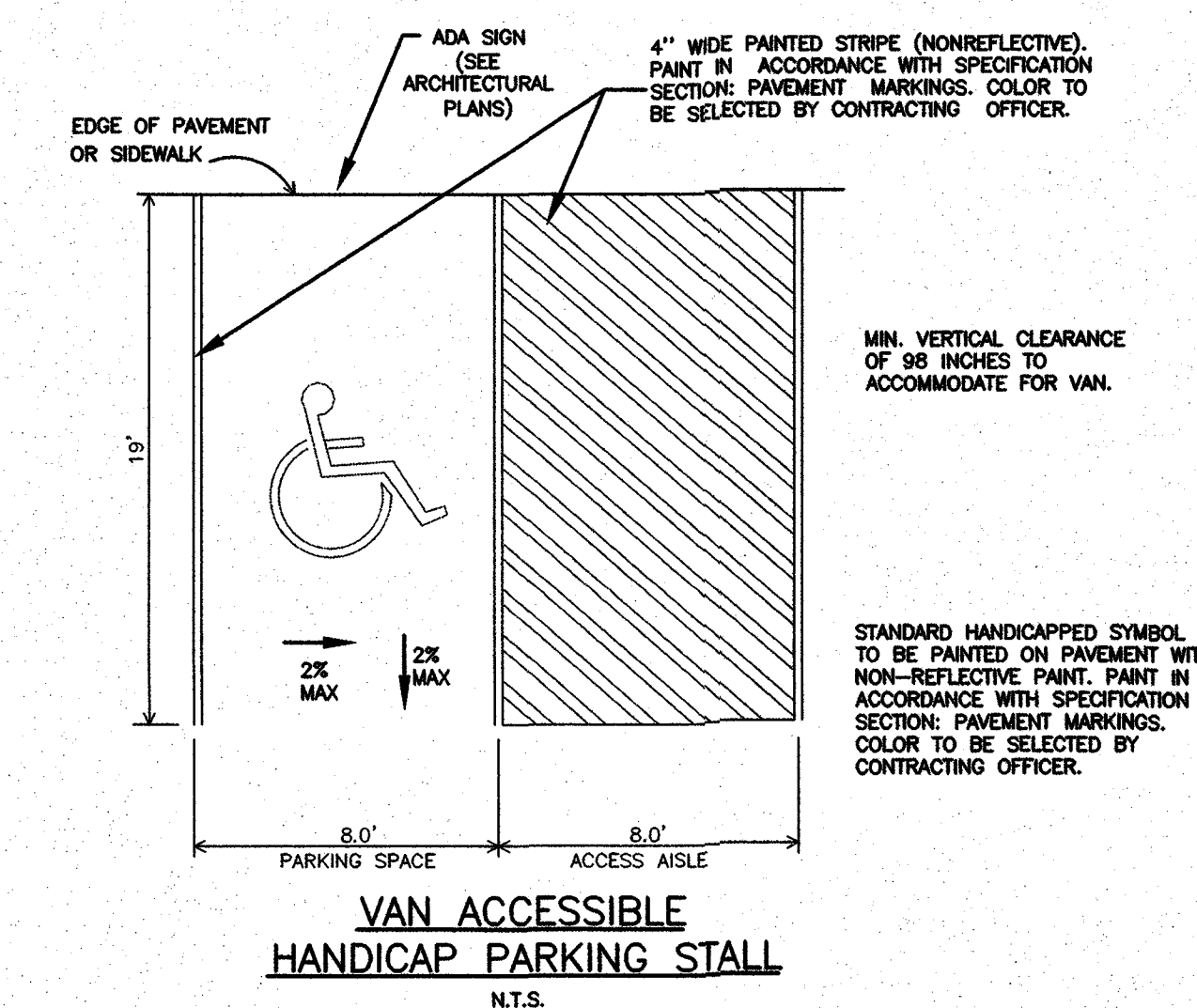
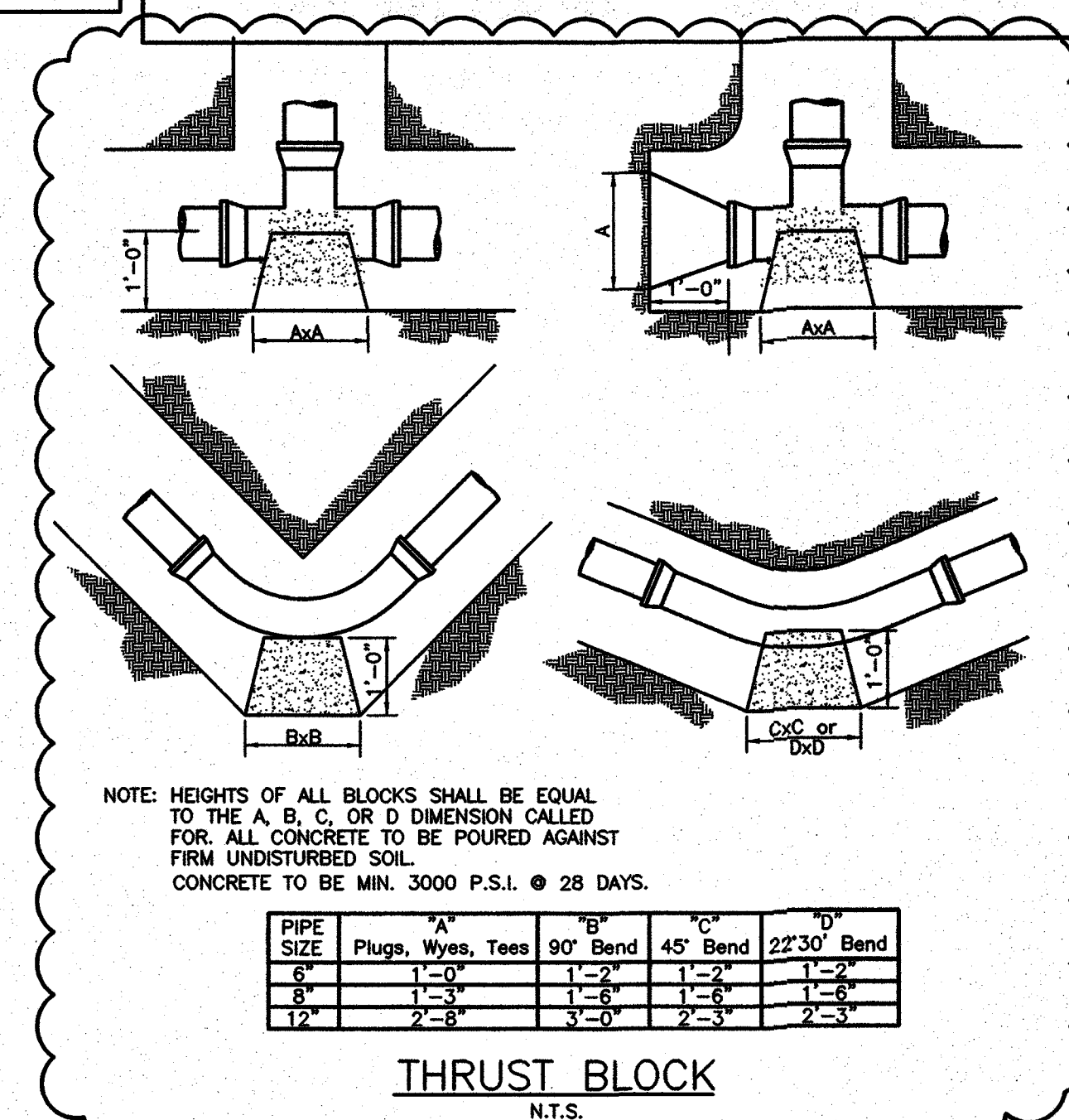
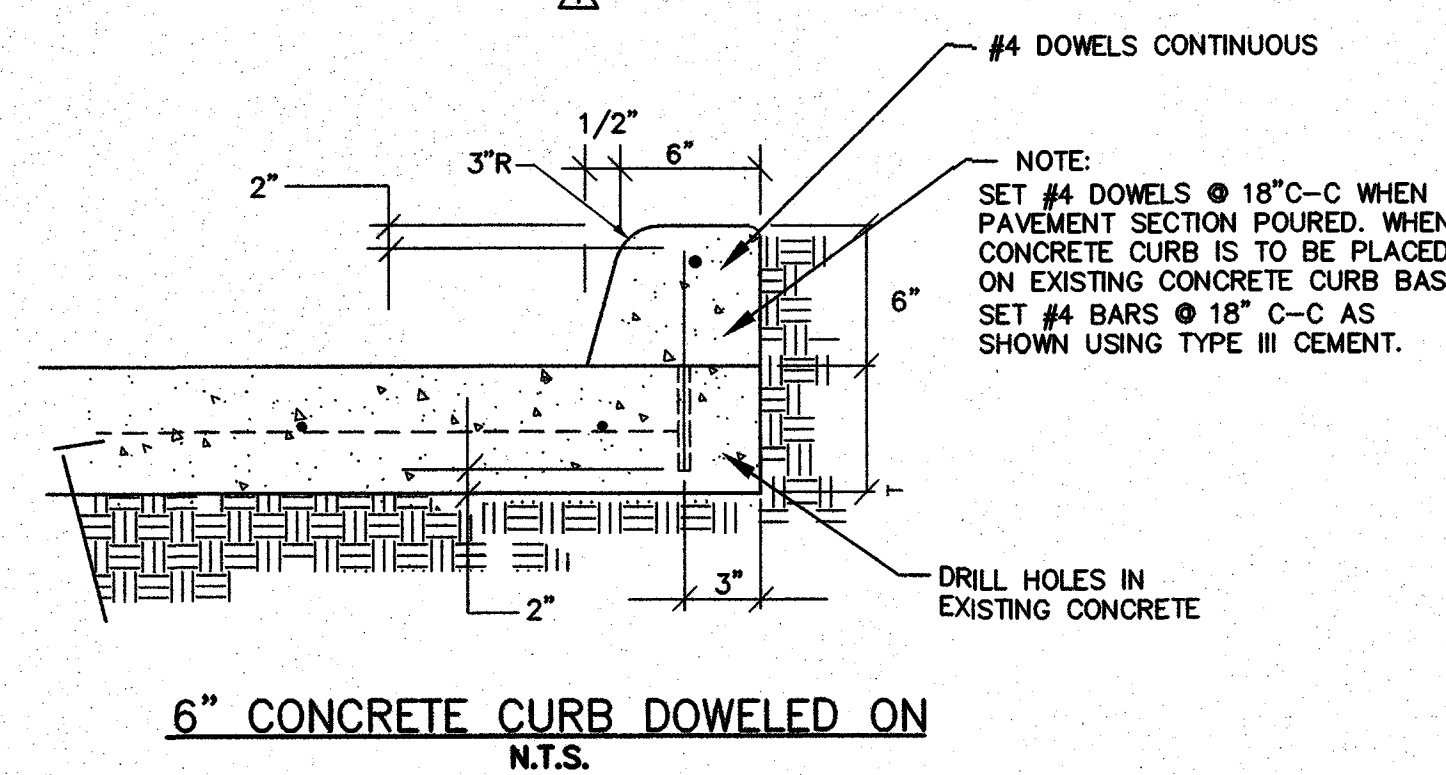
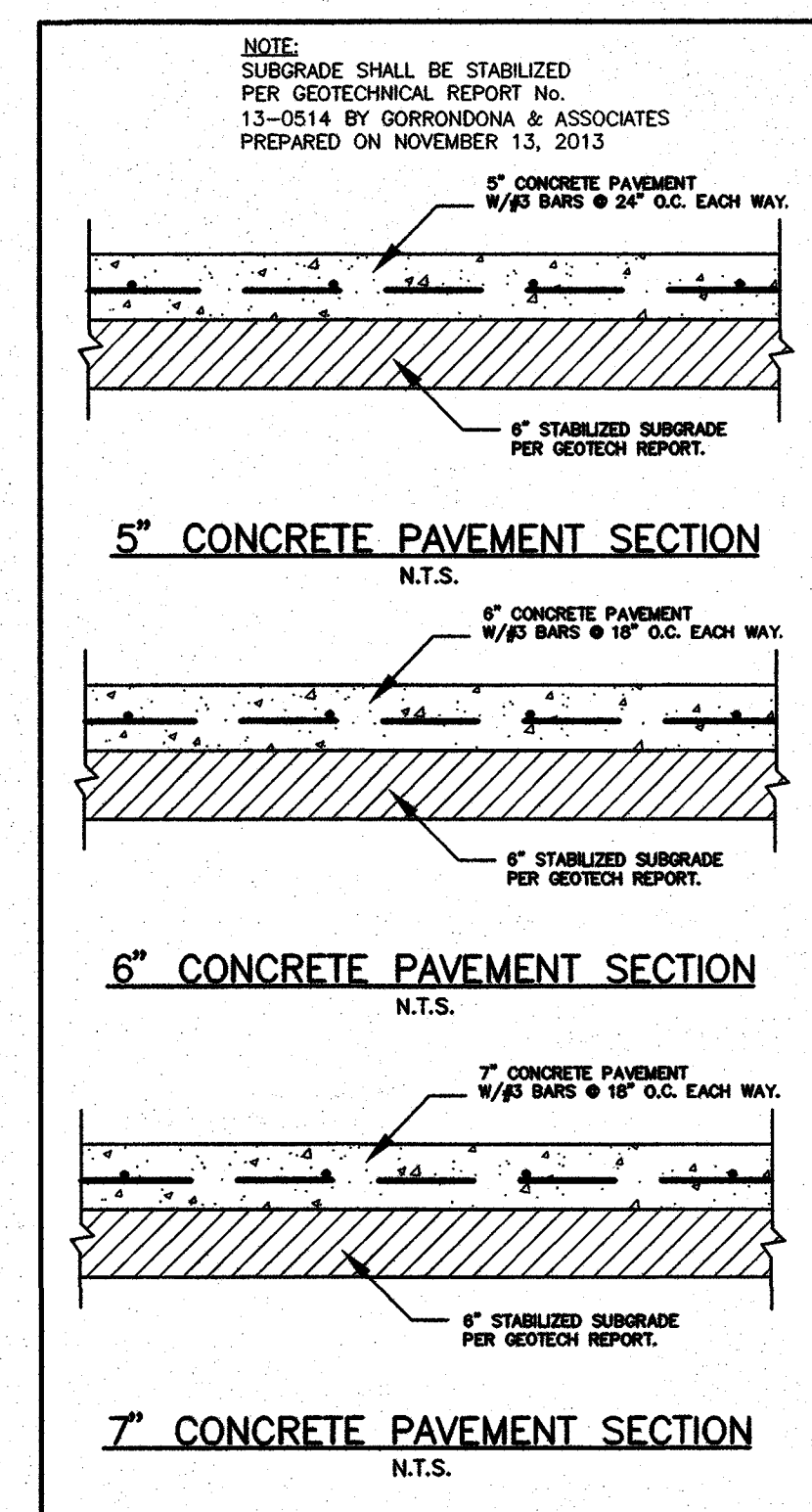
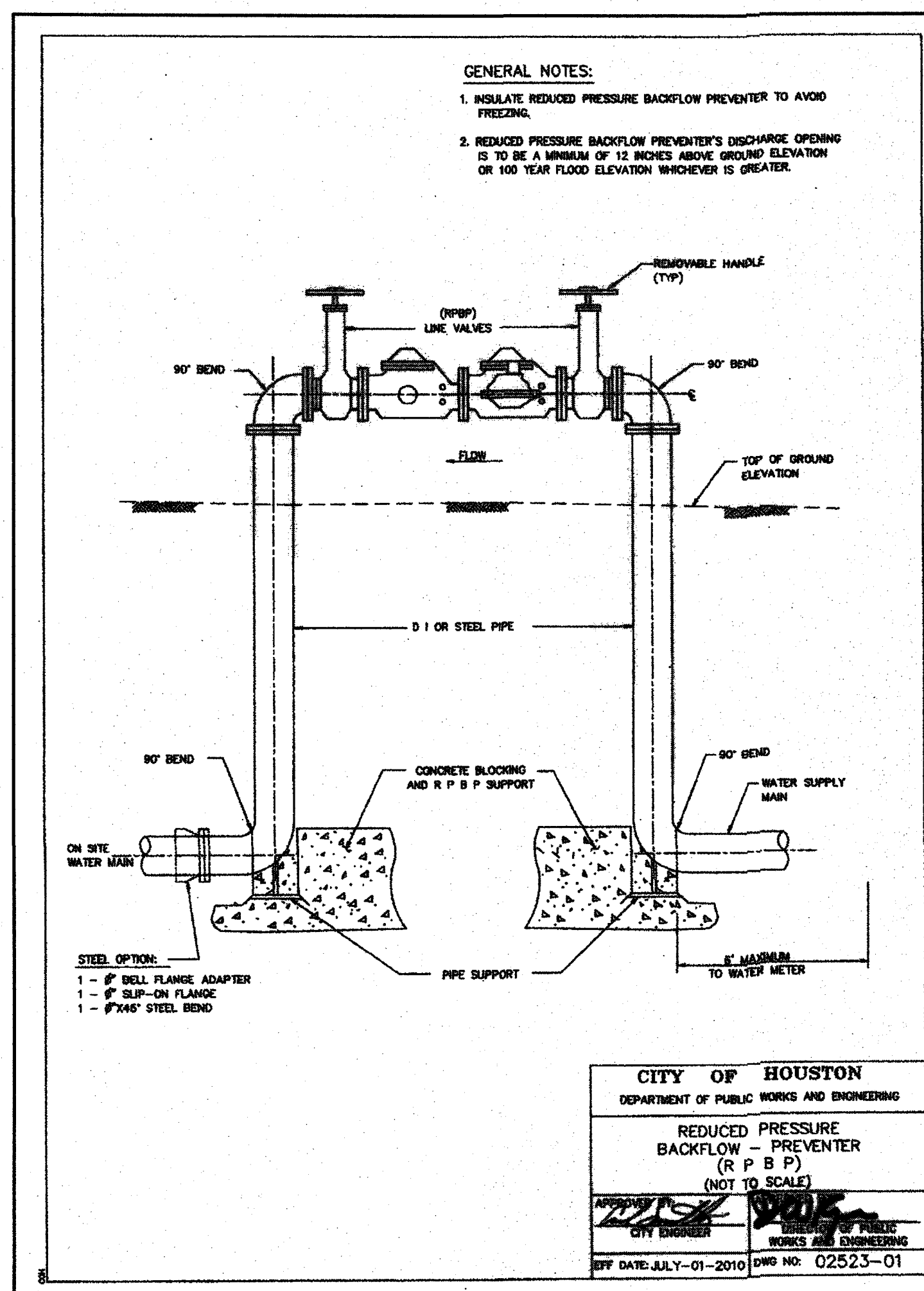
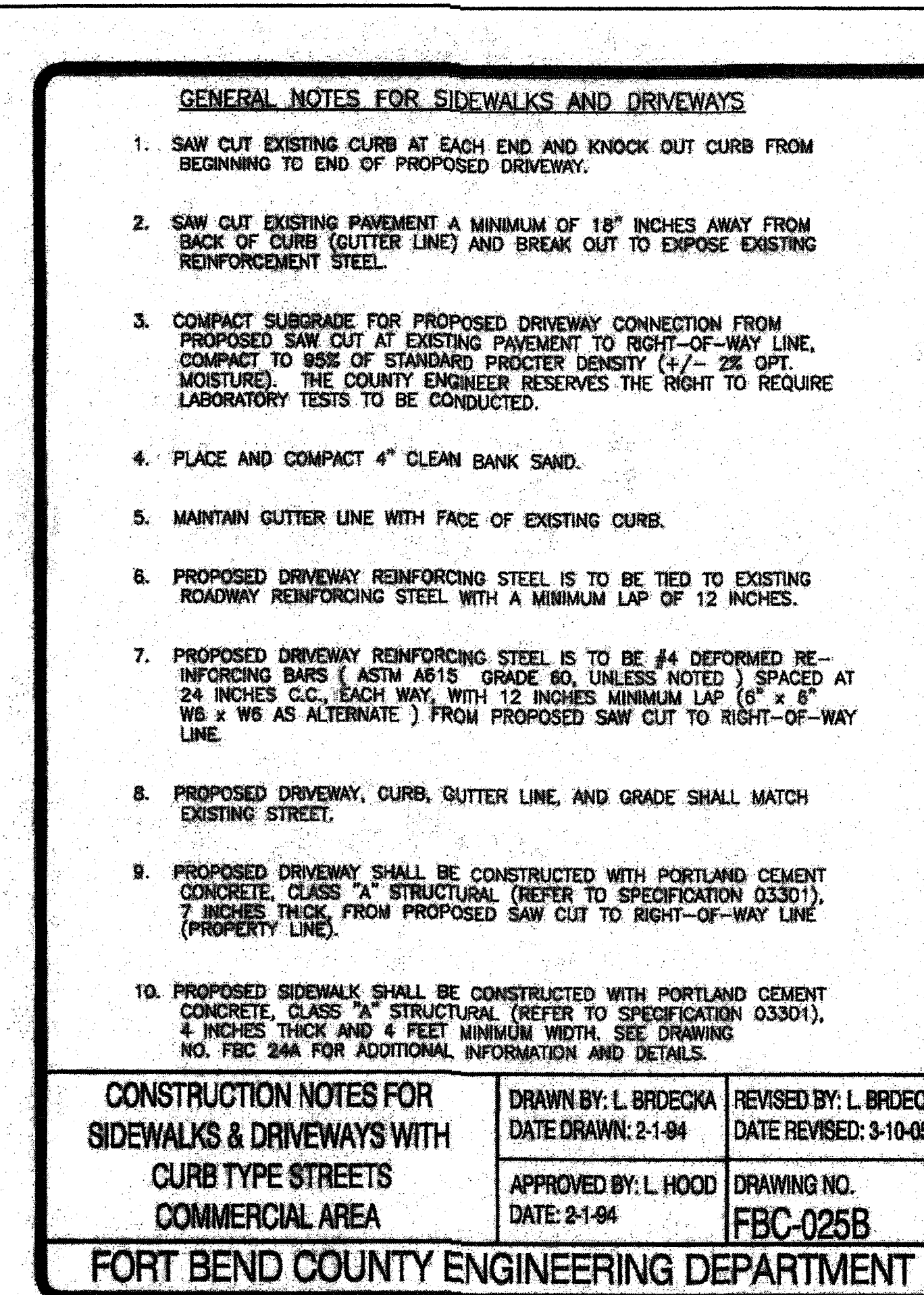
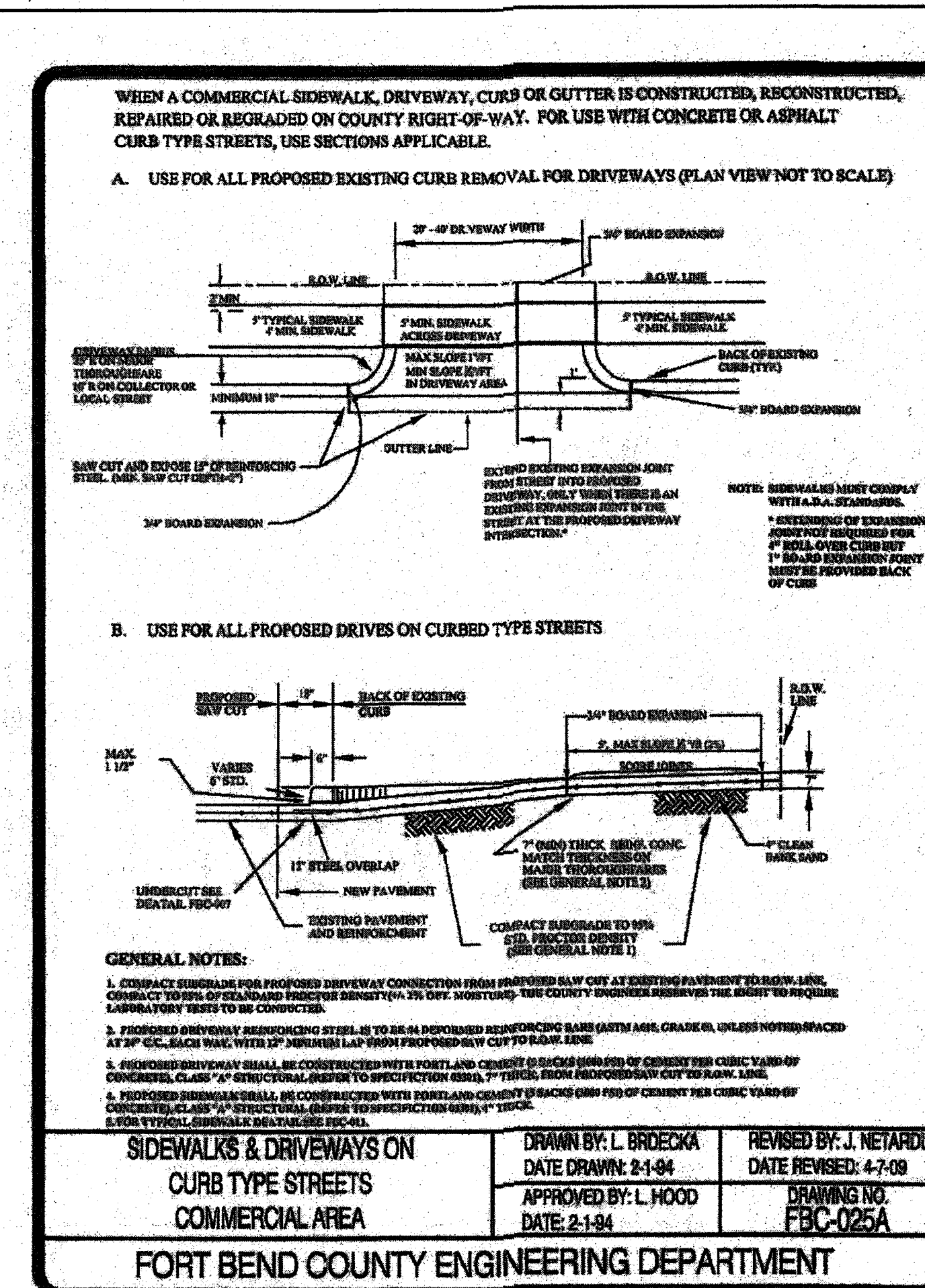
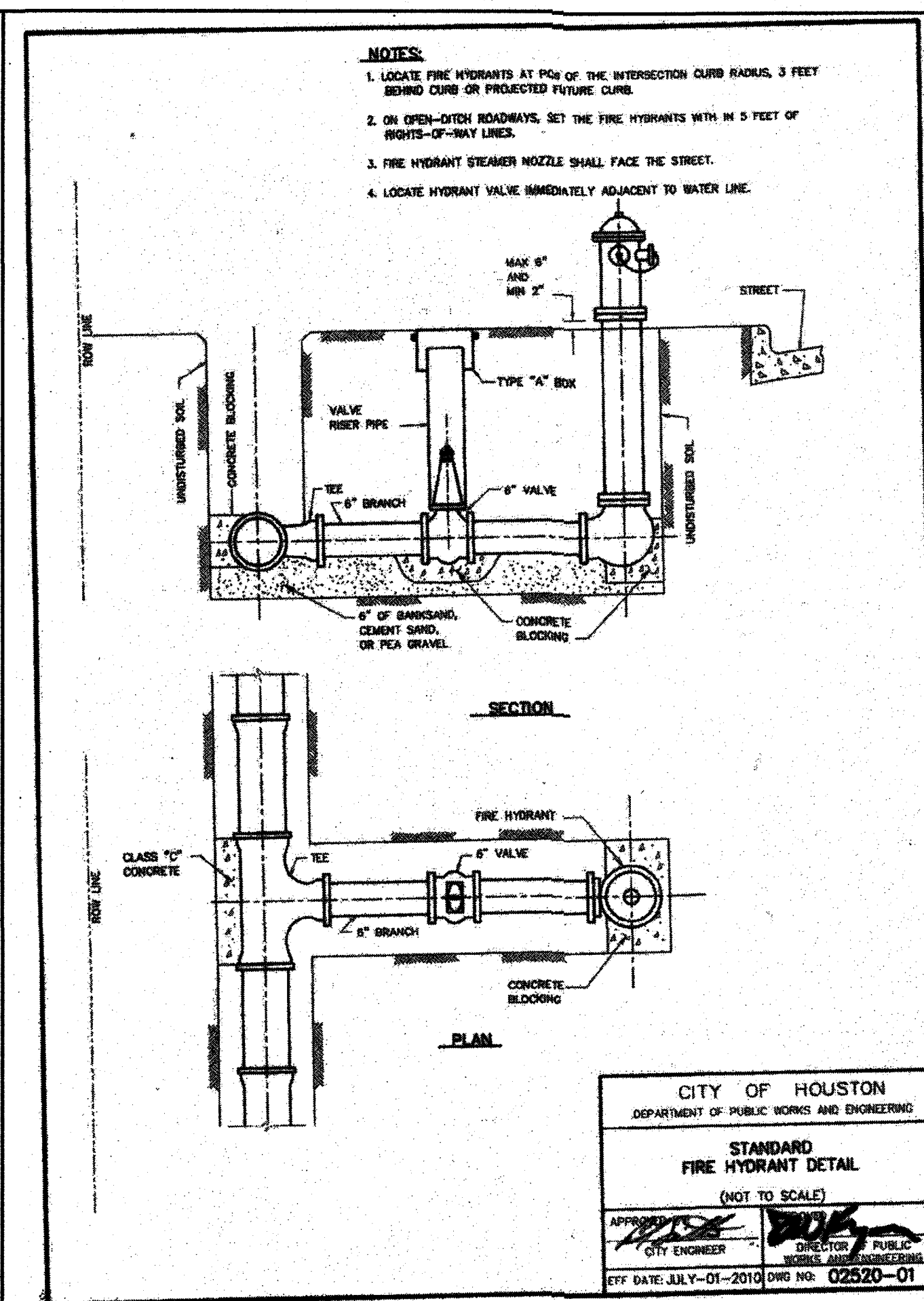
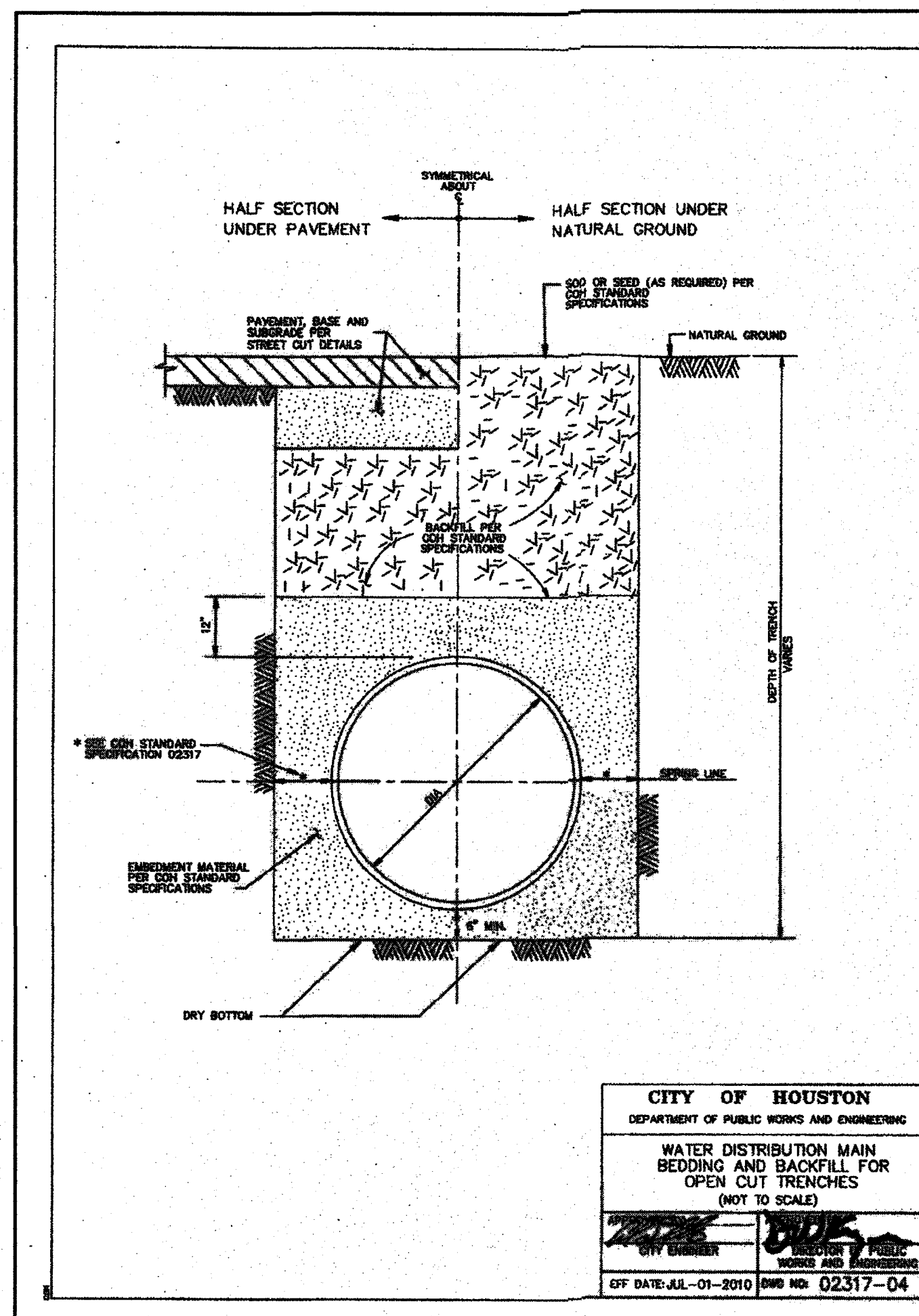
MODEL #	DIMENSIONS						GRAVE SIZE	WEIGHT LBS.
	W1	W2	H1	H2	T1	K.O.		
CBT3A8	48"	36"	42"	38"	6"	38"	30"x30"	4,888
CBT4A8	60"	48"	54"	48"	6"	48"	30"x30"	8,900
CBT5A8	72"	60"	66"	60"	6"	60"	30"x30"	13,680
CBT472	84"	72"	78"	72"	6"	72"	30"x30"	19,000
CBT484	96"	83"	78"	72"	6"	84"	30"x30"	23,000

SPECIFICATIONS	
CONCRETE :	Class 1 concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional reinforcement as required depth for H-20 Loading.
REINFORCEMENT:	Grade 60 reinforced with steel rebar to conform to ASTM A615 on required center to center or equal.
C.I. CASTINGS:	Cast iron frames and gratings are manufacture of grey cast iron conforming to ASTM A

 PARK <small>COMMERCIAL EQUIPMENT</small>	888-611-PARK www.park-usa.com	
	<i>"Expect the Best"</i>	
TYPE-A GRATE INLET 36" THRU 84"		
SCALE NONE DATE 01/02	DWR. NO. CBTA3684	REV. A

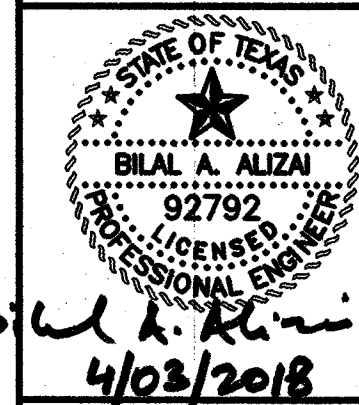


<p align="center">CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION</p>	
<p align="center">STORM SEWER TYPE "C-1", "C-2" AND "C-2A" INLETS (NOT TO SCALE)</p>	
<p>APPROVED BY:  CITY ENGINEER</p>	<p>APPROVED BY:  DIRECTOR OF PUBLIC WORKS AND ENGINEERING</p>
<p>EFF DATE: OCT-01-2002</p>	<p>DWG NO: 02632-0</p>



FBC DEVELOPMENT COORDINATOR DATE

FORT BEND COUNTY M.U.D. 194

LONGMEADOW RANCH
APARTMENTS
5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20,7015 ACRE

**r.g.miller
engineers**

18340 park ten place - suite 350 - Houston, Texas 77084
TEXAS FIRM REGISTRATION NO. F-487

C22

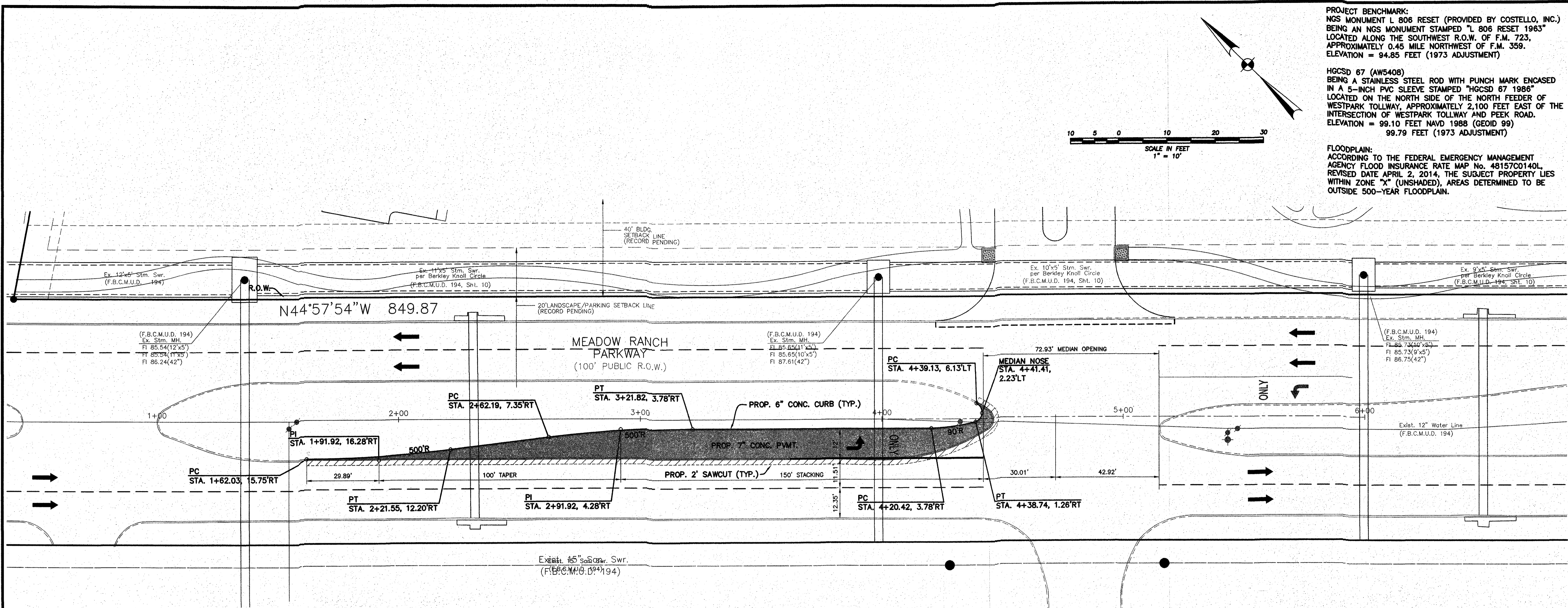
REVISIONS:
Δ REVISED BUILDING LAYOUT, STM. SWR LAYOUT, & GRADING 03/02/2018
Δ ADDED THRUST BLOCK DETAIL 04/02/2018

WATERLINE AND SITE DETAILS

DATE: JANUARY, 2018 SCALE: N.T.S.
DRAWN BY: E.L. FIELD CHECK BY: D.A.
FIRST CHECK BY: E.L. FINAL CHECK BY: E.A.

LONGMEADOW RANCH APARTMENTS-3906

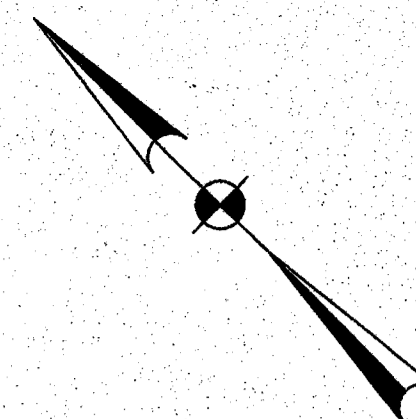
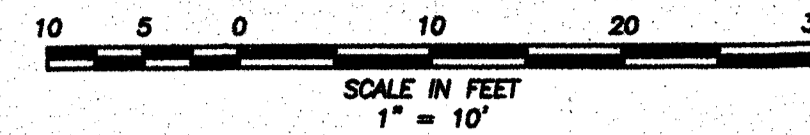
S:\3906 MEADOW RANCH PARKWAY APTS - PHASE 1\CAD\PRIVATE\LEFT TURN LANE-MEADOW RANCH PARKWAY.DWG NOV. 21, 2017-9:01am FLOU



PROJECT BENCHMARK:
NGS MONUMENT L 806 RESET (PROVIDED BY COSTELLO, INC.)
BEING AN NGS MONUMENT STAMPED "L 806 RESET 1963"
LOCATED ALONG THE SOUTHWEST R.O.W. OF F.M. 723,
APPROXIMATELY 0.45 MILE NORTHWEST OF F.M. 359.
ELEVATION = 94.85 FEET (1973 ADJUSTMENT)

HGCS 67 (AW5408)
BEING A STAINLESS STEEL ROD WITH PUNCH MARK ENCASED
IN A 5-INCH PVC SLEEVE STAMPED "HGCS 67 1986"
LOCATED ON THE NORTH SIDE OF THE NORTH FEEDER OF
WESTPARK TOLLWAY, APPROXIMATELY 2,100 FEET EAST OF THE
INTERSECTION OF WESTPARK TOLLWAY AND PEEK ROAD.
ELEVATION = 99.10 FEET NAVD 1988 (GEOID 99)
99.79 FEET (1973 ADJUSTMENT)

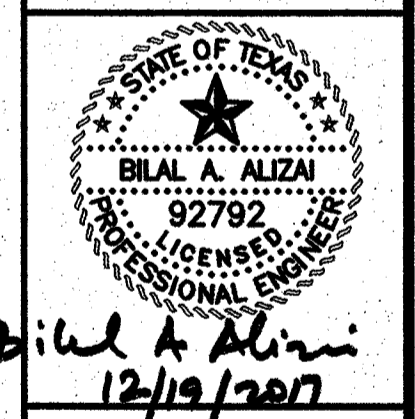
FLOODPLAIN:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT
AGENCY FLOOD INSURANCE RATE MAP No. 48157C0140L,
REVISED DATE APRIL 2, 2014, THE SUBJECT PROPERTY LIES
WITHIN ZONE "X" (UNSHADED). AREAS DETERMINED TO BE
OUTSIDE 500-YEAR FLOODPLAIN.



REVISIONS:	
DATE: JULY, 2014	SCALE: 1"=40'
DRAWN BY: J.B.	FIELD CHECK BY: B.M.
FIRST CHECK BY: M.T.	FINAL CHECK BY: R.E.S.

LEFT TURN LANE -
MEADOW RANCH PARKWAY

FORT BEND COUNTY M.U.D. 194
LONGMEADOW RANCH
APARTMENTS
5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20.7015 ACRE



r.g.miller
engineers
since 1966
18340 park ten place - suite 350 - Houston, Texas 77064
TEXAS FIRM REGISTRATION NO. F-487

C23



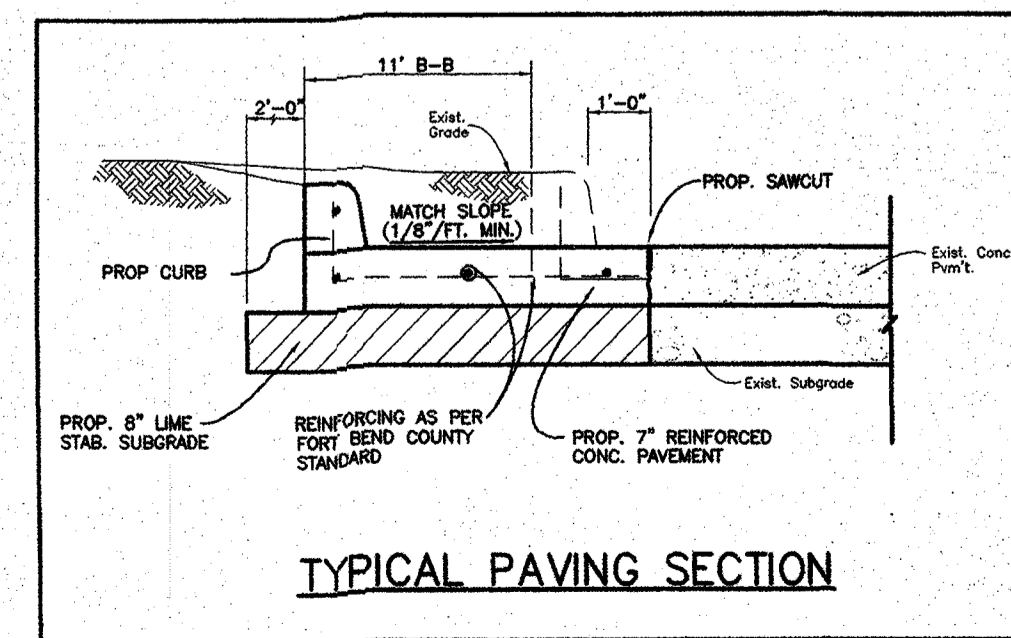
Fort Bend County Engineering
FORT BEND COUNTY, TEXAS

Richard W. Stokely, P.E.
County Engineer

Fort Bend County
Construction - General Notes

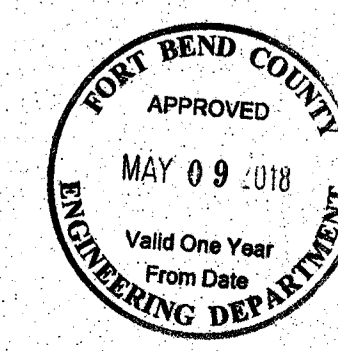
- Fort Bend County must be invited to the Pre-Construction Meeting.
- Contractor shall notify Fort Bend County Engineering Department 48 hours prior to commencing construction and 48 hours notice to any construction activity within the limits of the paving at Construction/Improvement/Relocation.
- Contractor is responsible for obtaining all permits required from Fort Bend County prior to commencing construction of any improvements within County road right of ways.
- All Paving Improvements shall be constructed in accordance with Fort Bend County "Rules, Regulations and Requirements" relating to the Approval and Acceptance of Improvements in Subdivisions as currently amended.
- All road widths, curb radii and curb alignment shown indicates back of curb.
- A continuous longitudinal reinforcing bar shall be used in the curb.
- All concrete pavement shall be 5 1/2 sack cement with a minimum compressive strength of 3500 psi at 28 days. Transverse expansion joints shall be installed at each curb return and at a maximum spacing of 60 feet.
- All weather access to all existing streets and driveways shall be maintained at all times.
- 4"x12" reinforced concrete curb shall be placed in front of single family lots only. All other areas shall be 6" reinforced concrete curb.
- At all intersection locations, Type 7 ramps shall be placed in accordance with TxDOT Pad-13a standard detail sheet, A.D.A. - Handicap Ramps shall be installed with street paving at all intersections and comply with current A.D.A. regulations.
- Curb headers are required at curb connections to Handicap Ramps, with no construction joint within 5' of ramp.
- All intersections utilizing Traffic Control measures shall have A.D.A. wheel chair ramps installed.
- Guidelines are set forth in the Texas "Manual on Uniform Traffic Control Devices", as currently amended, shall be observed. The Contractor shall be responsible for providing adequate flagmen, signing, striping and warning devices, etc., during construction - both day and night.
- All R-14 stop signs shall be 30"x30" with diamond grade sheathing per Texas manual on uniform traffic control devices.
- Street name signage shall be on a 9" high sign flat blade w/reflective green background. Street names shall be upper and lowercase lettering with uppercase letters of 6" minimum and lowercase letters of 4.5" minimum. The letters shall be reflective white. Street name signs shall be mounted on stop sign post.
- A five double reflective bottom shall be placed at all fire hydrant locations. The bottom shall be placed 12 inches off of the centerline of the street on the same side as the hydrant.
- The project and all parts thereof shall be subject to inspection from time to time by inspectors designated by Fort Bend County. No such inspectors shall relieve the Contractor of any of its obligations hereunder. Neither failure to inspect nor failure to discover or reject any of the work as not in accordance with the drawings and specifications, requirements and specifications of Fort Bend County or any provision of this project shall be construed to imply an acceptance of such work or to relieve the Contractor of any of its obligations hereunder.

NOTE: Fort Bend County notes supersede any conflicting notes.



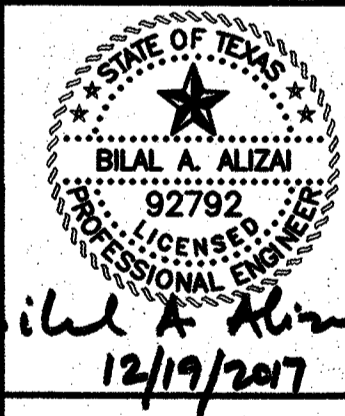
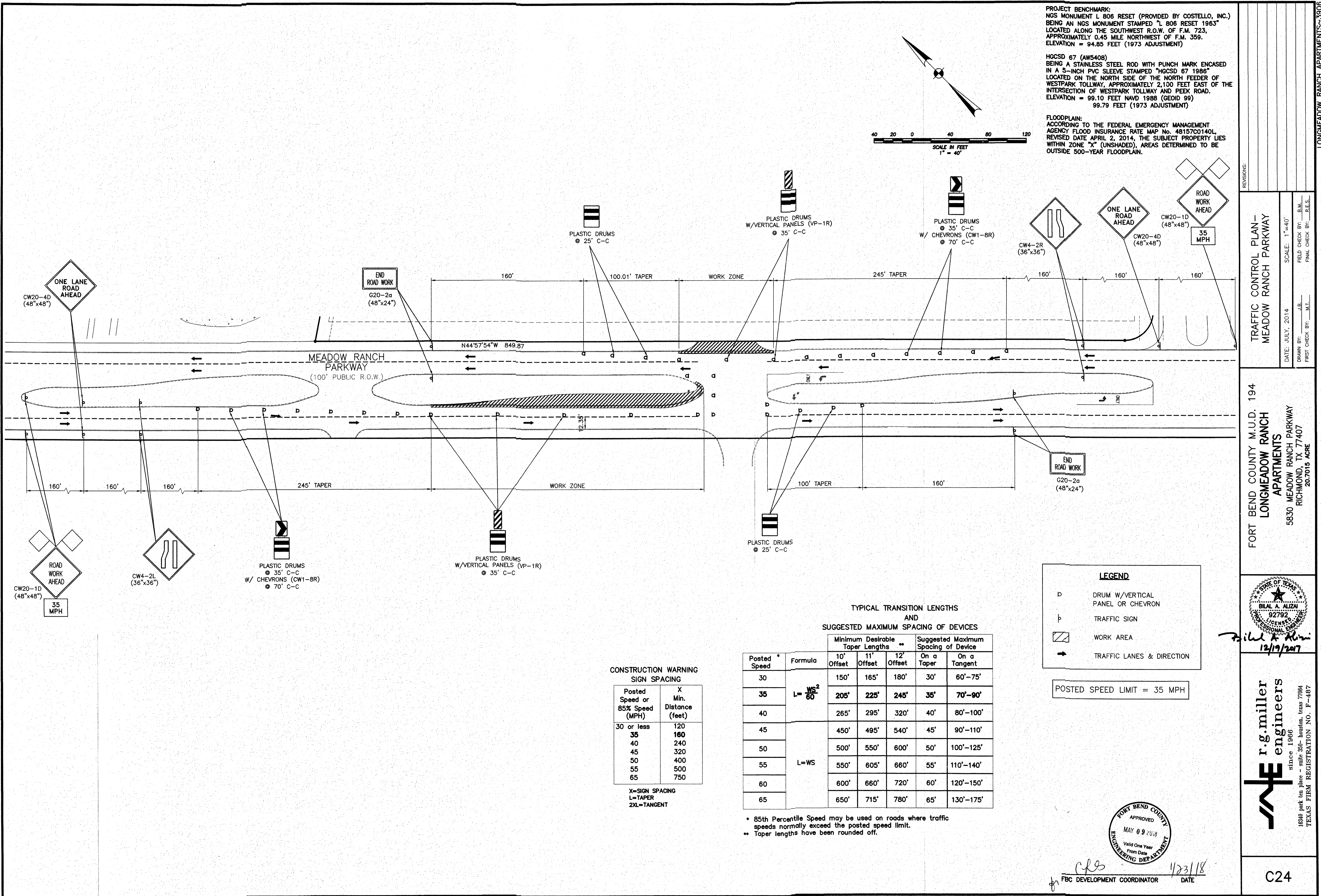
CONSTRUCTION NOTES FOR ESPLANADE OPENINGS AND LEFT TURN LANES

- ESPLANADE NOSES AT THE CROSSOVER ARE TO BE BULLET TYPE, PAINTED REFLECTORIZED YELLOW, IN ACCORDANCE WITH THE HARRIS COUNTY PAVEMENT MARKING DETAIL AND TO BE 6" REINFORCED CONCRETE WALK COLORED BLACK ON CONCRETE PAVEMENT, AND 6" H.M.A.C. ON ASPHALT PAVEMENT.
- THE RELOCATION OF EXISTING TREES, LANDSCAPING, SPRINKLER SYSTEMS, WATER METERS, FIRE HYDRANTS, MANHOLES, AND PIPELINES (IF APPLICABLE) ARE TO BE REINSTALLED AS RECOMMENDED BY THE H.C.P.D.-ENGINEERS DIVISION AND/OR H.C. PCT. 3. (IF LOCATED IN CONTRACTORS TO CONTACT WALT PECKHAM WITH THE PARKS ADMINISTRATION OFFICE AT (281)-(531-1592) 48 HOURS PRIOR TO CONSTRUCTION FOR TREE(S) AND LANDSCAPING RELOCATION.
- EXISTING REINFORCED CONCRETE PAVEMENT IS TO BE MACHINE SAW-CUT 1-1/2" DEEP TO EXPOSE A MINIMUM OF 24" OF REINFORCING BARS AND PLACE NEW REINFORCING (1/2" DIAMETER DEFORMED BARS) 24" CENTER TO CENTER BOTH WAIS AND THE NEW REINFORCING BARS (10" LAPS) TO EXISTING REINFORCED BARS.
- REINFORCED CONCRETE PAVEMENT IS TO BE MINIMUM 8" WITH A MINIMUM OF 5.0 SACK CEMENT PER CUBIC YARD, (3000 PSI IN 28 DAYS), DEPTH OF CONCRETE TO MEET CURRENT REQUIREMENTS OF DEPTH OF EXISTING PAVEMENT WHENEVER IT IS GREATER.
- SUBGRADE SHALL BE 6" LIME STABILIZATION AND COMPACTED TO 95% STANDARD PROCTOR DENSITY (+/-) 2% MOISTURE.
- SLOPE ON PROPOSED CONCRETE LEFT TURN SLOTS IS TO BE A MINIMUM OF 1/8" PER FOOT WITH CROWN AT CENTER OF ESPLANADE.
- ALL SEWERS UNDER OR WITHIN ONE (1) FOOT OF PROPOSED OR FUTURE PAVEMENT SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE.
- THE CONTRACTOR SHALL NOTIFY F.B.C.E.D. 48-HOURS PRIOR TO COMMENCING CONSTRUCTION AND 24-HOURS PRIOR TO ANY PAVING OPERATIONS AT CONSTRUCTION@FORTBENDCOUNTYTX.GOV
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AS REQUIRED BY FORT BEND COUNTY.

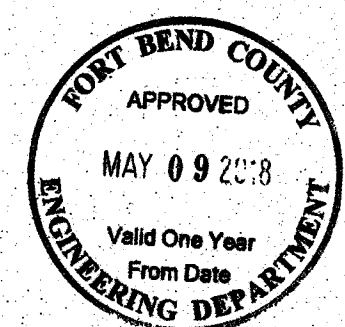
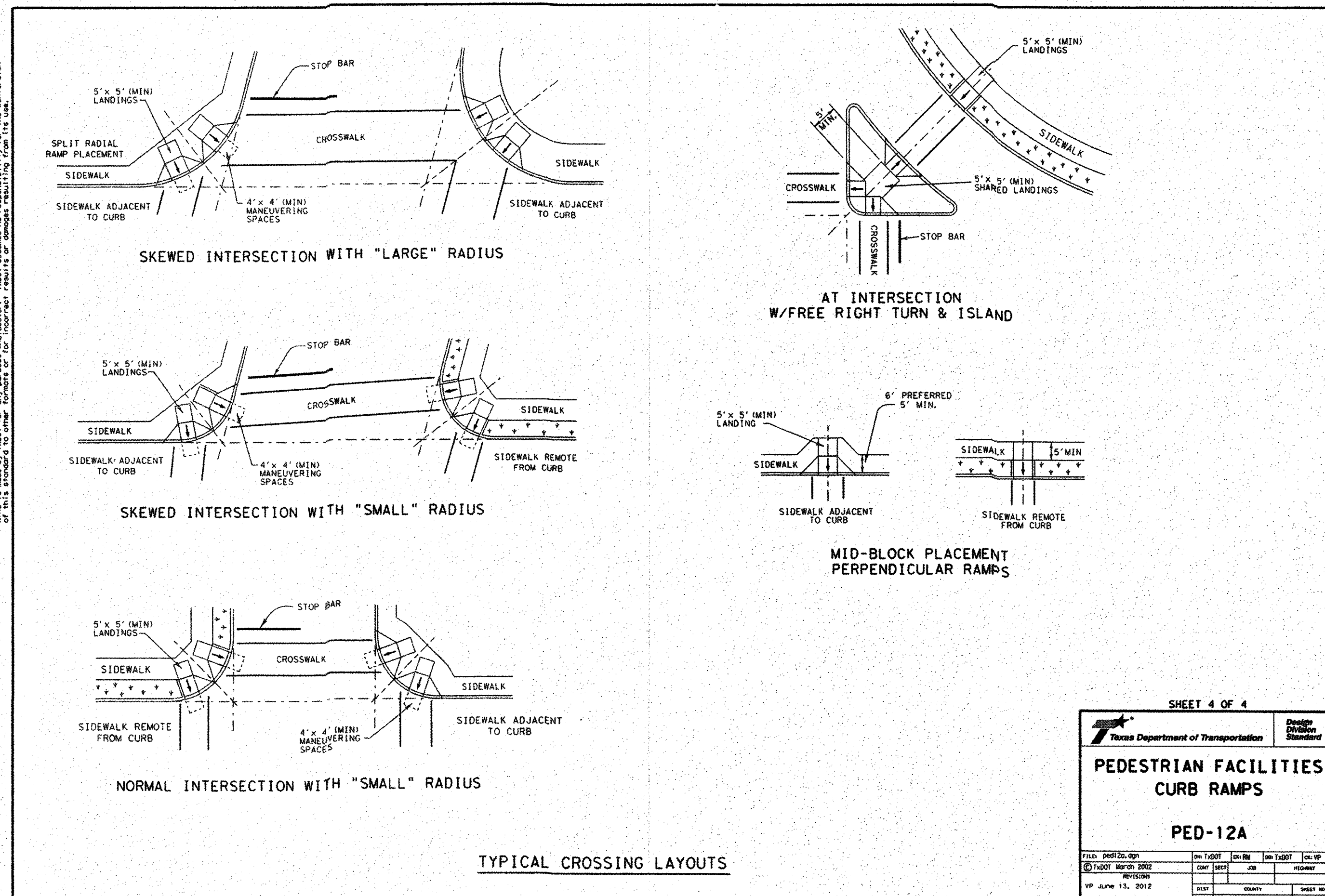
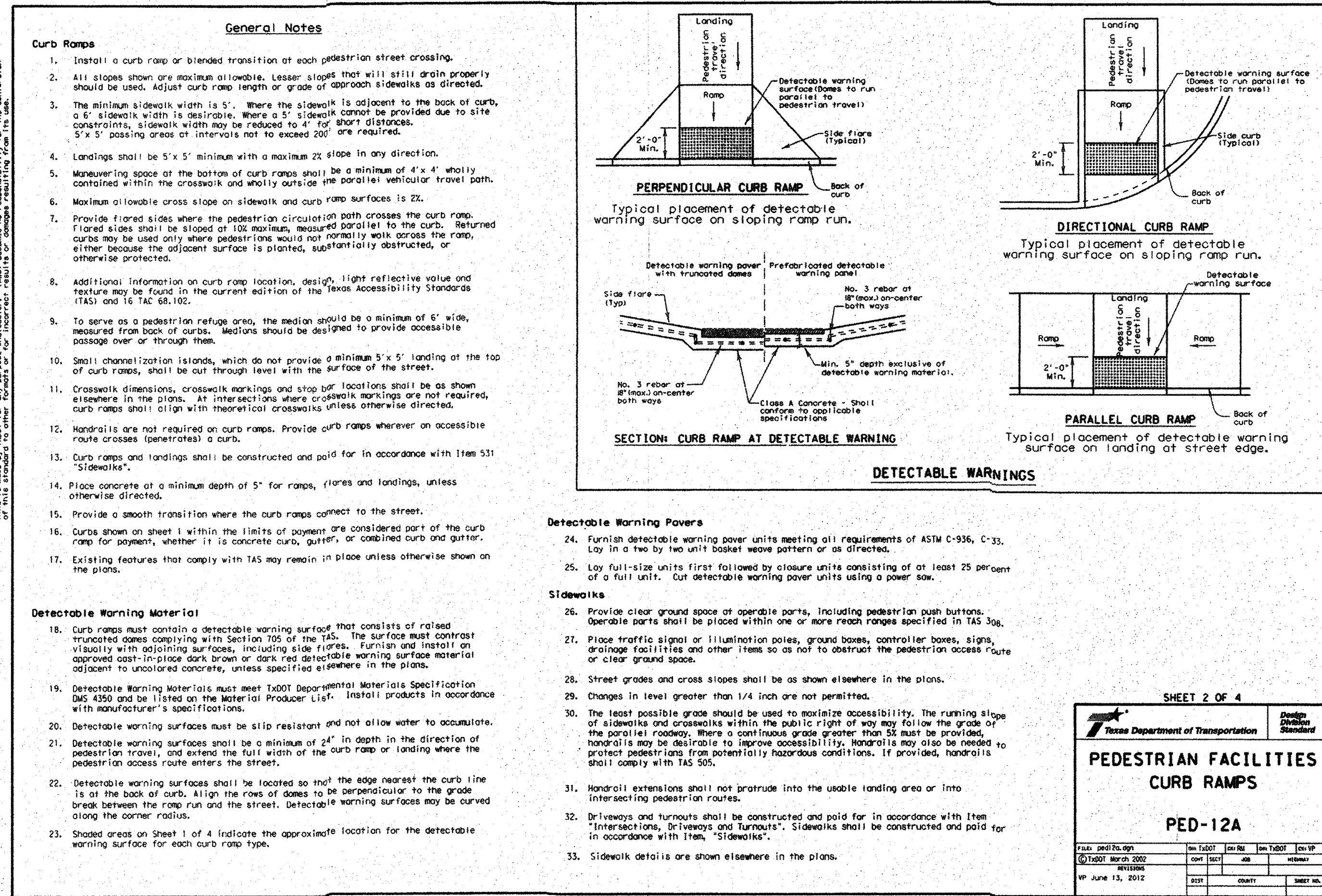
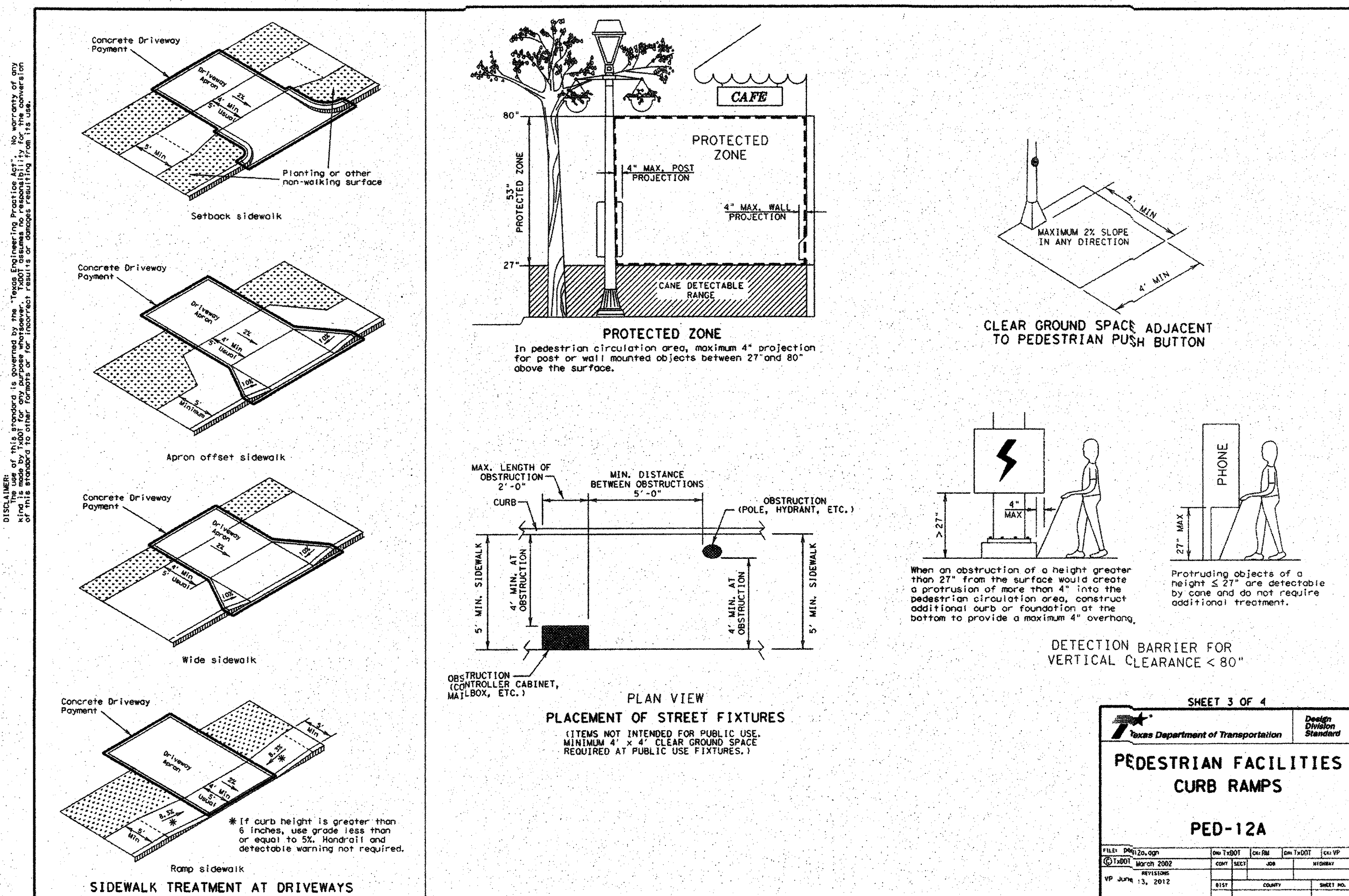
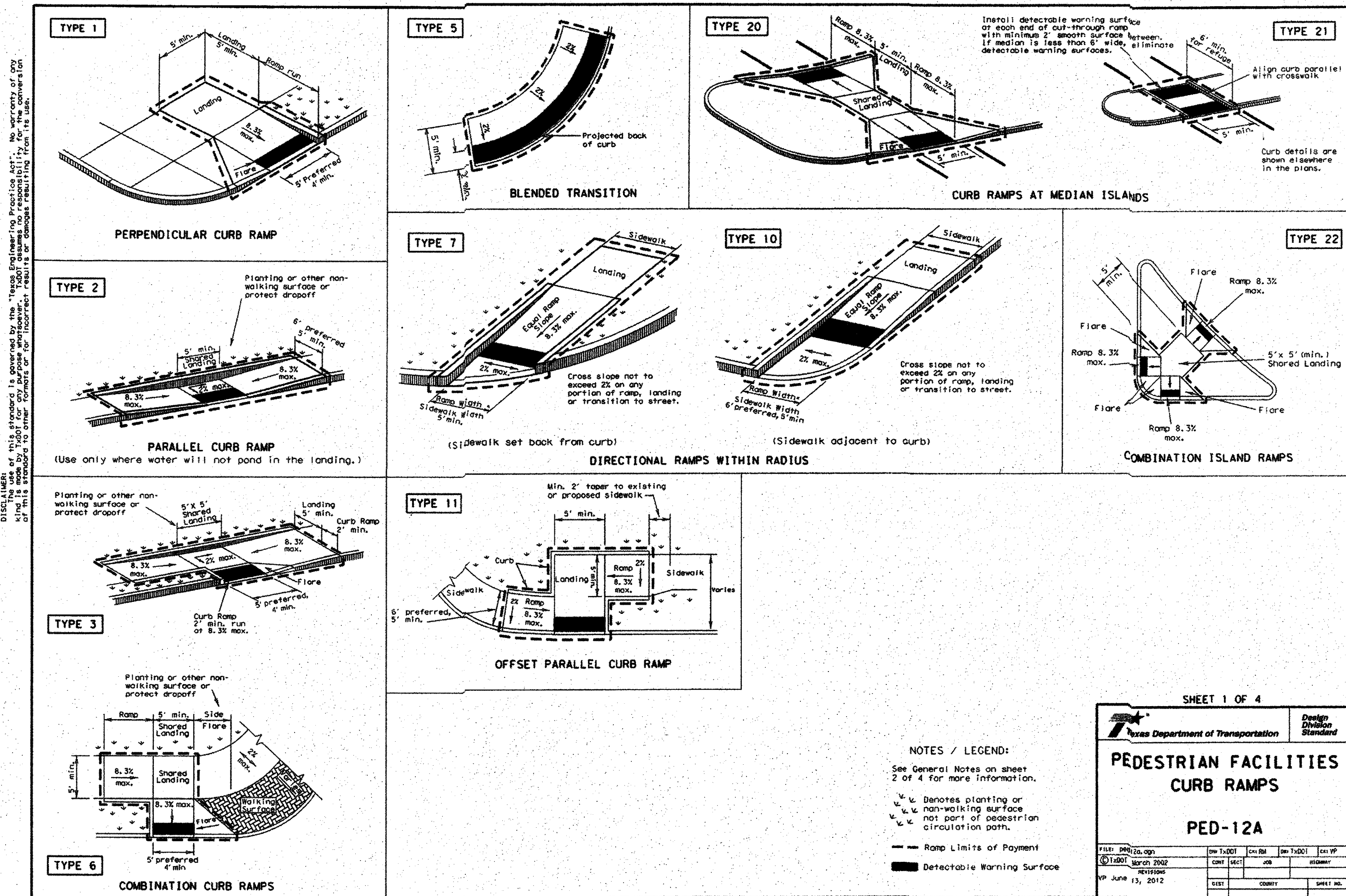


for CLG
FBC DEVELOPMENT COORDINATOR

DATE 1/23/18



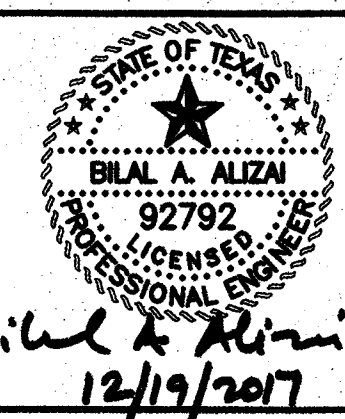
r.g.miller engineers
since 1966
16340 park ten place - suite 350 - houston, texas 77064
TEXAS FIRM REGISTRATION NO. F-487



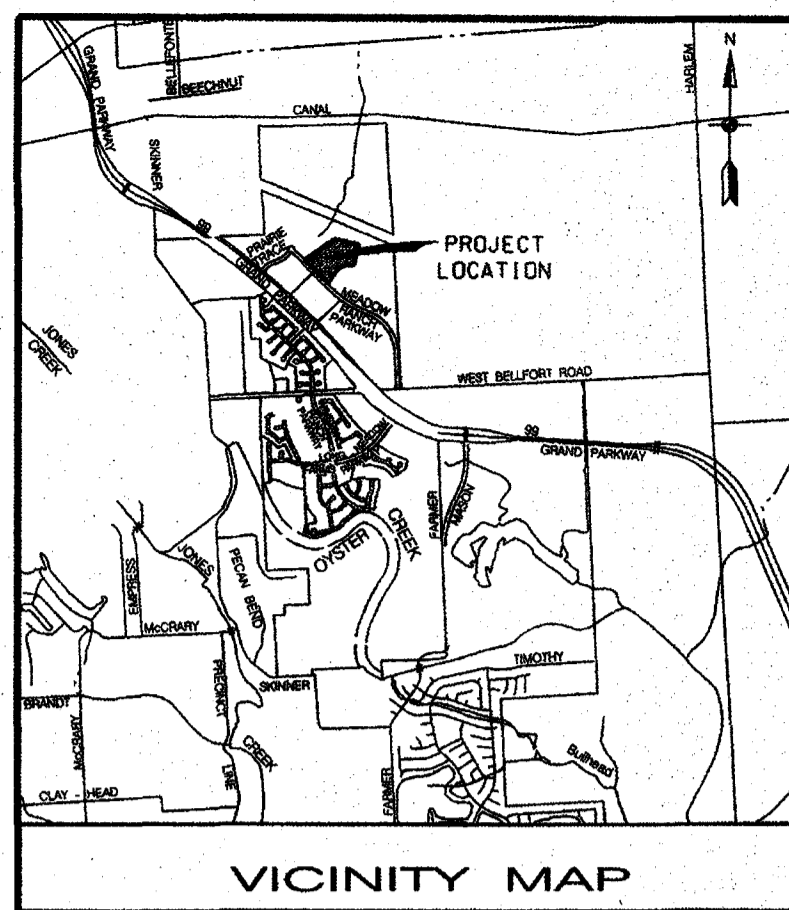
for FBC DEVELOPMENT COORDINATOR
DATE 1/23/18

r.g.miller engineers
since 1966
16340 park ten place - suite 550 - Houston, Texas 77064
TEXAS FIRM REGISTRATION NO. F-487

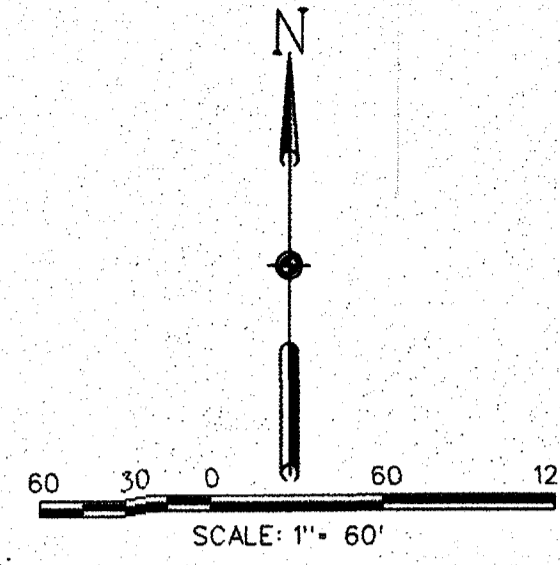
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RICHMOND, TX 77407
20.7015 ACRE



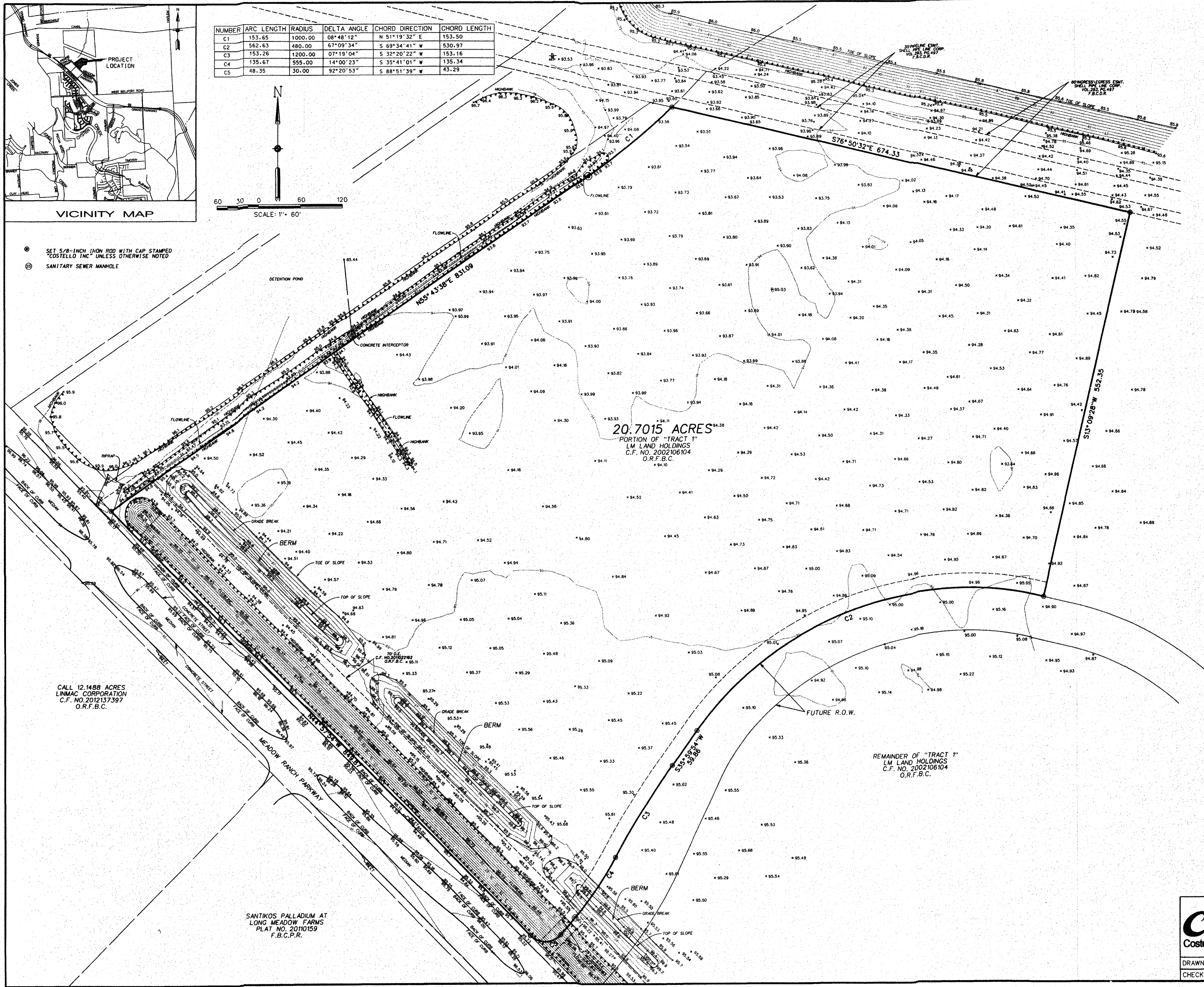
TXDOT DETAILS
SCALE: N.T.S.
DATE: JULY, 2014
DRAWN BY: J.B.
FIRST CHECK BY: M.T.
FIELD CHECK BY: B.M.
FINAL CHECK BY: R.E.S.



NUMBER	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH
C1	153.65	1000.00	08°48'12"	N 51°19'32" E	153.50
C2	562.63	480.00	67°09'34"	S 69°34'41" W	530.97
C3	153.26	1200.00	07°19'04"	S 32°20'22" W	153.16
C4	135.67	555.00	14°00'23"	S 35°41'01" W	135.34
C5	48.35	30.00	92°20'53"	S 88°51'39" W	43.29



- SET 5/8-INCH IRON ROD WITH CAP STAMPED COSTELLO INC. UNLESS OTHERWISE NOTED
- SANITARY SEWER MANHOLE



- ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS, MAP NUMBER 481570115, DATED JANUARY 3, 1997, THIS PROPERTY IS IN ZONE "X" (AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN), SHADED ZONE "X" (AREAS OF 500-YEAR FLOOD, AREAS OF 100-YEAR FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS OF LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 100-YEAR FLOOD). THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP IS FOR USE IN ADMINISTERING THE NATIONAL FLOOD INSURANCE PROGRAM; IT DOES NOT NECESSARILY IDENTIFY ALL AREAS SUBJECT TO FLOODING, PARTICULARLY FROM LOCAL DRAINAGE SOURCES OF SMALL SIZE, OR ALL PLANIMETRIC FEATURES OUTSIDE SPECIAL FLOOD HAZARD AREAS. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR STRUCTURES LOCATED THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. THE FLOOD HAZARD AREA IS SUBJECT TO CHANGE AS DETAILED STUDIES OCCUR AND/OR WATERSHED OR CHANNEL CONDITIONS CHANGE. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.
- ALL BEARINGS ARE REFERENCED TO THE TEXAS STATE PLANE COORDINATE SYSTEM, NAD 83, SOUTH CENTRAL ZONE.
- ABBREVIATIONS: F.B.C.P.R. INDICATES FORT BEND COUNTY PLAT RECORDS; O.R.F.B.C. INDICATES OFFICIAL RECORDS OF FORT BEND COUNTY; B.L. INDICATES BUILDING SETBACK LINE; S.M.S.E. INDICATES STORM SEWER EASEMENT; S.S.E. INDICATES SANITARY SEWER EASEMENT; W.L.E. INDICATES WATER LINE EASEMENT; U.E. INDICATES UTILITY EASEMENT; A.E. INDICATES AERIAL EASEMENT; C.F. NO. INDICATES CLERK'S FILE NUMBER.
- CONTROL BENCHMARK: NGS MONUMENT STAMPED "L 806 RESET 1963", ELEVATION 94.85, NGVD 1929, 1973 ADJUSTMENT.



M. D. Armstrong
10/08/2013

TOPOGRAPHIC SURVEY 20.7015 ACRES

	Engineering and Surveying 9000 Richmond Avenue, Suite 450 Houston, Texas 77042 (713) 763-7788 (713) 763-3680, Fax	LOCATED IN THE WILLIAM LITTLE SURVEY, A-54 FORT BEND COUNTY, TEXAS
	DRAWN BY: CSC DWG. NO.: 60 SCALE EXHIBIT SURVEY DATE: 10-08-2013 CHECKED BY: MA JOB NO: 2012-232-002 SCALE: 1"=60'	



CHE
FBC DEVELOPMENT COORDINATOR
DATE 1/23/18

**r.g.miller
engineers**
since 1966
18340 park ten place - suite 350 - Houston, Texas 77084
TEXAS FIRM REGISTRATION NO. F-487

FORT BEND COUNTY M.U.D. 194
**LONGMEADOW RANCH
APARTMENTS**
5830 MEADOW RANCH PARKWAY
RICHMOND, TX 77407
20.7015 ACRE

TOPOGRAPHICAL SURVEY

DATE: JULY, 2014
SCALE: N.T.S.
DRAWN BY: J.B.
FIELD CHECK BY: B.M.
FIRST CHECK BY: M.T.
FINAL CHECK BY: R.E.S.

REVISIONS:
LONGMEADOW RANCH APARTMENTS-3906

STATE OF TEXAS
COUNTY OF FORT BEND

WE, DD LMR, LLC, A GEORGIA LIMITED LIABILITY COMPANY ACTING BY AND THROUGH FRED HAZEL, VICE PRESIDENT, BEING OFFICER OF MORROW INVESTORS, INC., OWNER HEREINAFTER REFERRED TO AS OWNER OF THE 20.7015 ACRE TRACT DESCRIBED IN THE ABOVE AND FOREGOING MAP OF MEADOW RANCH PARKWAY APARTMENTS, DO HEREBY MAKE AND ESTABLISH SAID SUBDIVISION AND DEVELOPMENT PLAN OF SAID PROPERTY ACCORDING TO ALL LAWS, DEDICATIONS, RESTRICTIONS AND NOTATIONS ON SAID MAPS OR PLAT AND HEREBY DEDICATE TO THE USE OF THE PUBLIC FOREVER, ALL STREETS (EXCEPT THOSE STREETS DESIGNATED AS PRIVATE STREETS, OR PERMANENT ACCESS EASEMENTS), ALLEYS, PARKS, WATER COURSES, DRAINS, EASEMENTS, AND PUBLIC PLACES SHOWN THEREON FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED, AND DO HEREBY BIND OURSELVES, OUR HEIRS, SUCCESSORS, AND ASSIGNS TO WARRANT AND FOREVER DEFEND THE TITLE ON THE LAND SO DEDICATED.

FURTHER, OWNERS HAVE DEDICATED AND BY THESE PRESENTS DO DEDICATE TO THE USE OF THE PUBLIC FOR PUBLIC UTILITY PURPOSE FOREVER UNRESTRICTED AERIAL EASEMENTS. THE AERIAL EASEMENTS SHALL EXTEND HORIZONTALLY AN ADDITIONAL ELEVEN FEET, SIX INCHES (11'6") FOR TEN FEET (10'0") PERIMETER GROUND EASEMENTS OR SEVEN FEET, SIX INCHES (7'6") FOR FOURTEEN FEET (14'0") PERIMETER GROUND EASEMENTS OR FIVE FEET, SIX INCHES (5'6") FOR SIXTEEN FEET (16'0") PERIMETER GROUND EASEMENTS, FROM A PLANE SIXTEEN FEET (16'0") ABOVE THE GROUND LEVEL UPWARD, LOCATED ADJACENT TO AND ADJOINING SAID PUBLIC UTILITY EASEMENTS THAT ARE DESIGNATED WITH AERIAL EASEMENTS (U.E. AND A.E.) AS INDICATED AND DEPICTED HEREON, WHEREBY THE AERIAL EASEMENT TOTALS TWENTY ONE FEET, SIX INCHES (21'6") IN WIDTH.

FURTHER, OWNERS HAVE DEDICATED AND BY THESE PRESENTS DO DEDICATE TO THE USE OF THE PUBLIC FOR PUBLIC UTILITY PURPOSE FOREVER UNRESTRICTED AERIAL EASEMENTS. THE AERIAL EASEMENTS SHALL EXTEND HORIZONTALLY AN ADDITIONAL TEN FEET (10'0") FOR TEN FEET (10'0") BACK-TO-BACK GROUND EASEMENTS, OR EIGHT FEET (8'0") FOR FOURTEEN FEET (14'0") BACK-TO-BACK GROUND EASEMENTS OR SEVEN FEET (7'0") FOR SIXTEEN FEET (16'0") BACK-TO-BACK GROUND EASEMENTS, FROM A PLANE SIXTEEN FEET (16'0") ABOVE THE GROUND LEVEL UPWARD, LOCATED ADJACENT TO BOTH SIDES AND ADJOINING SAID PUBLIC UTILITY EASEMENTS THAT ARE DESIGNATED WITH AERIAL EASEMENTS (U.E. AND A.E.) AS INDICATED AND DEPICTED HEREON, WHEREBY THE AERIAL EASEMENT TOTAL THIRTY FEET (30'0") IN WIDTH.

FURTHER, OWNERS DO HEREBY COVENANT AND AGREE THAT ALL OF THE PROPERTY WITHIN THE BOUNDARIES OF THIS PLAT IS HEREBY RESTRICTED TO PREVENT THE DRAINAGE OF ANY SEPTIC TANKS INTO ANY PUBLIC OR PRIVATE STREET, PERMANENT ACCESS EASEMENT, ROAD OR ALLEY, OR ANY DRAINAGE DITCH, EITHER DIRECTLY OR INDIRECTLY.

FURTHER, OWNERS DO HEREBY COVENANT AND AGREE THAT ALL OF THE PROPERTY WITHIN THE BOUNDARIES OF THIS PLAT IS HEREBY RESTRICTED TO PROVIDE THAT DRAINAGE STRUCTURES UNDER PRIVATE DRIVEWAYS SHALL HAVE A NET DRAINAGE OPENING AREA OF SUFFICIENT SIZE TO PERMIT THE FREE FLOW OF WATER WITHOUT BACKWATER AND IN NO INSTANCE HAVE A DRAINAGE OPENING OF LESS THAN ONE AND THREE QUARTERS (1-3/4) SQUARE FEET (18" DIAMETER) WITH CULVERTS OR BRIDGES TO BE PROVIDED FOR ALL PRIVATE DRIVEWAYS OR WALKWAYS CROSSING SUCH DRAINAGE FACILITIES.

FURTHER, OWNERS DO HEREBY DEDICATE TO THE PUBLIC A STRIP OF LAND FIFTEEN (15'0") FEET WIDE ON EACH SIDE OF THE CENTER LINE OF ANY AND ALL BAYS, CREEKS, GULLIES, RAVINES, DRAINS, SLOUGHS, OR OTHER NATURAL DRAINAGE COURSES LOCATED IN SAID PLAT, AS EASEMENTS FOR DRAINAGE PURPOSES, GIVING THE CITY OF HOUSTON, HARRIS COUNTY, OR ANY OTHER GOVERNMENTAL AGENCY, THE RIGHT TO ENTER UPON SAID EASEMENT AT ANY AND ALL TIMES FOR THE PURPOSE OF CONSTRUCTION AND MAINTENANCE OF DRAINAGE FACILITIES AND STRUCTURES.

FURTHER, OWNERS DO HEREBY COVENANT AND AGREE THAT ALL OF THE PROPERTY WITHIN THE BOUNDARIES OF THIS PLAT AND ADJACENT TO ANY DRAINAGE EASEMENT, DITCH, GULLY, CREEK, OR NATURAL DRAINAGE WAY SHALL HEREBY BE RESTRICTED TO KEEP SUCH DRAINAGE WAYS AND EASEMENTS CLEAR OF FENCES, BUILDINGS, PLANTING, AND OTHER OBSTRUCTIONS TO THE OPERATIONS AND MAINTENANCE OF THE DRAINAGE FACILITY AND THAT SUCH ABUTTING PROPERTY SHALL NOT BE PERMITTED TO DRAIN DIRECTLY INTO THIS EASEMENT EXCEPT BY MEANS OF AN APPROVED DRAINAGE STRUCTURE.

FURTHER, OWNERS DO HEREBY COVENANT AND AGREE THAT THOSE STREETS LOCATED WITHIN THE BOUNDARIES OF THIS PLAT SPECIFICALLY NOTED AS PRIVATE STREETS OR PERMANENT ACCESS EASEMENTS, SHALL BE HEREBY ESTABLISHED AND MAINTAINED AS PRIVATE STREETS OR PERMANENT ACCESS EASEMENTS BY THE OWNERS, HEIRS, SUCCESSORS, AND ASSIGNS TO PROPERTY LOCATED WITHIN THE BOUNDARIES OF THIS PLAT AND ALWAYS AVAILABLE FOR THE GENERAL USE OF SAID OWNERS AND TO THE PUBLIC FOR FIREFIGHTERS, FIRE FIGHTING EQUIPMENT, POLICE AND EMERGENCY VEHICLES OF WHATEVER NATURE AT ALL TIMES AND DO HEREBY BIND OURSELVES, OUR HEIRS, SUCCESSORS, AND ASSIGNS AS PRIVATE STREETS OR PERMANENT ACCESS EASEMENTS.

FURTHER, WE DO HEREBY ACKNOWLEDGE THE RECEIPT OF THE "ORDERS FOR REGULATION OF OUTDOOR LIGHTING IN THE UNINCORPORATED AREAS OF FORT BEND COUNTY, TEXAS", AND DO HEREBY COVENANT AND AGREE TO COMPLY WITH THIS ORDER AS ADOPTED BY FORT BEND COUNTY COMMISSIONERS COURT ON MARCH 23, 2004 AND ANY SUBSEQUENT AMENDMENTS.

IN TESTIMONY WHEREOF, DD LMR, LLC, A GEORGIA LIMITED LIABILITY COMPANY HAS CAUSED THESE PRESENTS TO BE SIGNED BY FRED HAZEL, VICE PRESIDENT OF MORROW INVESTORS, INC., HEREUNTO AUTHORIZED THIS 15th DAY OF October, 2014.

DD LMR, LLC, A GEORGIA LIMITED LIABILITY COMPANY

BY: MORROW INVESTORS, INC.

BY: FRED HAZEL, VICE PRESIDENT

STATE OF GEORGIA

COUNTY OF HENRY

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED FRED HAZEL, VICE PRESIDENT KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGMENT TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS 15th DAY OF October, 2014.

NOTARY-PUBLIC IN AND FOR

THE STATE OF Georgia

MY COMMISSION EXPIRES: January 21, 2016

THIS IS TO CERTIFY THAT THE PLANNING COMMISSION OF THE CITY OF HOUSTON, TEXAS, HAS APPROVED THIS PLAT AND SUBDIVISION OF MEADOW RANCH PARKWAY APARTMENTS IN CONFORMANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE ORDINANCES OF THE CITY OF HOUSTON AS SHOWN HEREON AND AUTHORIZED THE RECORDING OF THIS PLAT THIS 3rd DAY OF March, 2015.

BY: Mark A. Kilkenney, OR M. SONNY GARCIA

TITLE CHAIR OR VICE CHAIRMAN

BY: Patrick Walsh, P.E., SECRETARY

PATRICK WALSH, P.E., SECRETARY

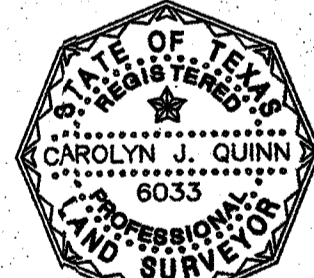
I, CAROLYN J. QUINN, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF SURVEYING AND HEREBY CERTIFY THAT THE ABOVE SUBDIVISION IS TRUE AND ACCURATE; WAS PREPARED FROM AN ACTUAL SURVEY OF THE PROPERTY MADE UNDER MY SUPERVISION ON THE GROUND; THAT, EXCEPT AS SHOWN ALL BOUNDARY CORNERS, ANGLE POINTS, POINTS OF CURVATURE AND OTHER POINTS OF REFERENCE HAVE BEEN MARKED WITH IRON (OR OTHER OBJECTS OF A PERMANENT NATURE) PIPES OR RODS HAVING AN OUTSIDE DIAMETER OF NOT LESS THAN FIVE EIGHTS (5/8) INCH AND A LENGTH OF NOT LESS THAN THREE (3) FEET; AND THAT THE PLAT BOUNDARY CORNERS HAVE BEEN TIED TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE.

Carolyn J. Quinn 10-17-14

CAROLYN J. QUINN

REGISTERED PROFESSIONAL LAND SURVEYOR

TEXAS REGISTRATION NO. 6033



I, RANDALL E. SIEMON, A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS DO HEREBY CERTIFY THAT THIS PLAT MEETS ALL OF THE REQUIREMENTS OF FORT BEND COUNTY TO THE BEST OF MY KNOWLEDGE.

Randall E. Siemon 10-20-14

RANDALL E. SIEMON

REGISTERED PROFESSIONAL ENGINEER

TEXAS REGISTRATION NO. 73607



LEGEND	
AC	= ACRE
A.E.	= AERIAL EASEMENT
B.L.	= BLDG. LINE
D.E.	= DRAINAGE EASEMENT
E.S.F.C.S.	= SINGLE FAMILY RESIDENTIAL CONN.
F.B.C.C.F.	= FORT BEND COUNTY CLERK'S FILE
F.B.C.D.R.	= FORT BEND COUNTY DEED RECORDS
F.B.C.P.R.	= FORT BEND COUNTY PLAT RECORDS
LTD.	= LIMITED
NO.	= NUMBER
O.R.F.B.C.	= OFFICIAL RECORDS FORT BEND COUNTY
P.G.	= PAGE
R.	= RADIUS
R.O.W.	= RIGHT-OF-WAY
S.S.E.	= SANITARY SEWER EASEMENT
STN.S.E.	= STORM SEWER EASEMENT
U.E.	= UTILITY EASEMENT
W.L.E.	= WATER LINE EASEMENT
X	= EASTING COORDINATE
Y	= NORTHING COORDINATE
1	= BLOCK NUMBER
2	= SET 5/8-INCH IRON ROD (UNLESS OTHERWISE NOTED)
3	= FOUND 5/8-INCH CAPPED IRON ROD (UNLESS OTHERWISE NOTED)

GENERAL NOTES:

- ALL KNOWN PIPELINES OR PIPELINE EASEMENTS WITHIN THE PLATTED AREA ARE SHOWN HEREON.
- UNLESS OTHERWISE INDICATED, THE BUILDING LINES (BL) WHETHER ONE OR MORE, SHOWN ON THIS SUBDIVISION PLAT ARE ESTABLISHED TO EVIDENCE COMPLIANCE WITH THE APPLICABLE PROVISIONS OF CHAPTER 42, CODE OF ORDINANCES, CITY OF HOUSTON, TEXAS, IN EFFECT AT THE TIME THIS PLAT WAS APPROVED, WHICH MAY BE AMENDED FROM TIME TO TIME.
- THIS SUBDIVISION CONTAINS ONE OR MORE PAVED PRIVATE STREETS THAT HAVE NOT BEEN DEDICATED TO THE PUBLIC OR ACCEPTED BY THE CITY OF HOUSTON OR ANY OTHER LOCAL GOVERNMENT AGENCY AS PUBLIC RIGHTS-OF-WAY. THE CITY OF HOUSTON HAS NO OBLIGATION, NOR DOES ANY OTHER LOCAL GOVERNMENT AGENCY HAVE ANY OBLIGATION TO MAINTAIN OR IMPROVE ANY PERMANENT ACCESS EASEMENT WITHIN THE SUBDIVISION, WHICH OBLIGATION SHALL BE THE SOLE RESPONSIBILITY OF THE OWNERS OF PROPERTY IN THIS SUBDIVISION.
- THE COORDINATES SHOWN HEREON ARE TEXAS SOUTH CENTRAL ZONE NO. 4204 STATE PLANE GRID COORDINATES (NAD83) AND MAY BE BROUGHT TO SURFACE BY APPLYING THE FOLLOWING COMBINED SCALE 1:000123576.
- THE DRAINAGE SYSTEM FOR THIS SUBDIVISION WITHIN FORT BEND COUNTY IS DESIGNED IN ACCORDANCE WITH THE FORT BEND DRAINAGE CRITERIA MANUAL WHICH ALLOWS STREET FLOODING WITH INTENSE RAINFALL EVENTS.
- THIS PROPERTY LIES WITHIN THE BOUNDARIES OF ZONE "X" (UNSHADED) AREAS OUTSIDE THE 500 YEAR FLOODPLAIN, AS PER THE FLOOD INSURANCE RATE MAPS, MAP NUMBER 4815700140L, REVISED APRIL 2, 2014.
- ALL DRAINAGE EASEMENTS TO BE KEPT CLEAR OF FENCES, BUILDINGS, VEGETATION AND OTHER OBSTRUCTION TO THE OPERATION AND MAINTENANCE OF THE DRAINAGE FACILITY.
- SIDEWALKS SHALL BE BUILT OR CAUSED TO BE BUILT NOT LESS THAN 5 FEET IN WIDTH ON BOTH SIDES OF ALL DEDICATED RIGHTS-OF-WAY WITHIN SAID PLAT AND ON THE CONTIGUOUS RIGHT-OF-WAY OF ALL PERIMETER ROADS SURROUNDING SAID PLAT, IN ACCORDANCE WITH THE A.D.A.
- THIS PLAT LIES IN LIGHTING ZONE (L23) FORT BEND COUNTY ONLY.
- THE TOP OF ALL FLOOR SLABS SHALL BE A MINIMUM 96.50 FEET ABOVE MEAN SEA LEVEL. THE TOP OF SLAB ELEVATION AT ANY POINT ON THE PERIMETER OF THE SLAB SHALL NOT BE LESS THAN EIGHTEEN (18) INCHES ABOVE NATURAL GROUND.
- ALL PROPERTY TO DRAIN INTO THE DRAINAGE EASEMENT ONLY THROUGH AN APPROVED DRAINAGE STRUCTURE.
- THE OPEN SPACE SET FOR HEREON INCLUDES ALL AREA NOT COVERED BY PROPOSED PAVING, GARAGE OR BUILDINGS.
- A MINIMUM DISTANCE OF 10' SHALL BE MAINTAINED BETWEEN RESIDENTIAL DWELLINGS.
- THIS SUBDIVISION HAS A PRIVATE WATER SYSTEM. IT IS NOT A PUBLIC WATER SYSTEM, NOR WILL IT BE CONSTRUCTED WITH ANY PUBLIC FUNDS. THE WATER LINE AND FIRE HYDRANTS THAT WILL SERVE THIS SUBDIVISION ARE PRIVATE AND WILL BE MAINTAINED BY THE OWNER AND/OR OWNER'S MANAGEMENT ASSOCIATION.
- FORT BEND COUNTY MUD NO. 194 HAS COMMITTED TO PROVIDE A MAXIMUM OF 172 ESFS OF WATER SURFACE TO THE SUBDIVISION'S PRIVATE WATER SYSTEM AND PRIVATE FIRE HYDRANTS.
- THIS PLAT LIES WITHIN THE LAMAR CONSOLIDATED INDEPENDENT SCHOOL DISTRICT, FORT BEND COUNTY DRAINAGE DISTRICT, FORT BEND COUNTY LID NO. 12 AND FORT BEND COUNTY MUD NO. 194.
- THE BUILDING LINE REQUIREMENTS ESTABLISHED BY CHAPTER 42 ARE MINIMUM STANDARDS WHERE DEED RESTRICTIONS PROVIDE FOR A GREATER BUILDING SETBACK, THE DEED RESTRICTIONS SHALL CONTROL OVER THE PROVISIONS OF THIS DIVISION.
- PROJECT BENCHMARK: NGS MONUMENT L 806 RESET (PROVIDED BY CORTELLIO, INC.) BEING AN NGS MONUMENT STAMPED "L 806 RESET 1963" LOCATED ALONG THE SOUTHWEST R.O.W. OF F.M. 723, APPROXIMATELY 0.45 MILE NORTHWEST OF F.M. 359. ELEVATION = 94.85 FEET (1973 ADJUSTMENT). TEMPORARY BENCHMARK "X" BEING A BOX CUT IN CONCRETE AT THE CENTERLINE OF BERKELEY KNOLL, +/- 900 FEET NORTHEAST OF THE CENTERLINE INTERSECTION OF MEADOW RANCH PARKWAY AND BERKELEY KNOLL. ELEVATION = 95.38 FEET (1973 ADJUSTMENT).

CURVE TABLE					
CURVE	RADIUS	DELTA	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	1000.00	08°48'12"	153.65	N51°19'32"E	153.50
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C4	555.00	14°0'23"	135.67	S35°41'01"W	135.34
C5	30.00	92°20'25"	48.35	S88°51'39"W	43.29

PUBLIC FACILITIES	DISTRICT NAMES
MUD	FORT BEND COUNTY MUD NO.194
LID	FORT BEND LID NO.12
DID	FORT BEND CO.
SCHOOL	DRAINAGE DISTRICT
FIRE	LAMAR CSD
IMPACT FEE	HARRIS-FORT BEND EMS
CITY OR CITY ETJ	UNKNOWN
UTILITY COMPANIES	HOUSTON ETJ
	CENTERPOINT ENERGY
	CONSOLIDATED COMMUNICATIONS

35 PGS 2015024634
PLAT ATTACH

FILED AND RECORDED
OFFICIAL PUBLIC RECORDS

Laura Richard
Laura Richard, County Clerk
Fort Bend County, Texas
March 11, 2015 09:52:06 AM
FEE: \$190.00 VCK
PLAT 20150063

MEADOW RANCH PARKWAY APARTMENTS

A SUBDIVISION OF 20.7015 ACRES OF PLAND LOCATED IN THE
I & G.N. RAILROAD COUNTY SURVEY, A-353 IN
FORT BEND COUNTY, TEXAS



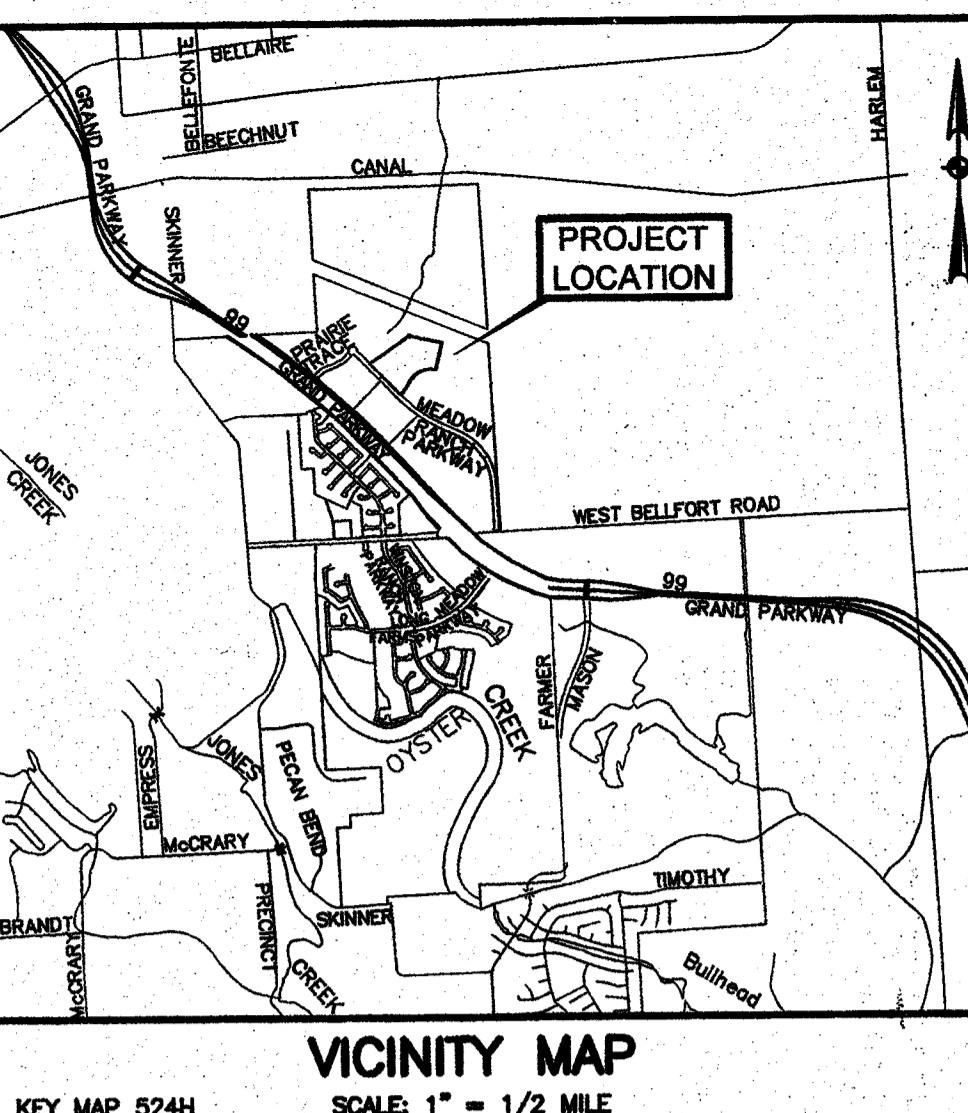
OWNERS: DD LMR, LLC,
A GEORGIA LIMITED LIABILITY COMPANY
C/O DAVIS DEVELOPMENT INC.
403 CORPORATE CENTER DRIVE, STE. 201,
STOCKBRIDGE, GA 30281
(770) 474-4345

ENGINEER
r.g.miller
engineers

16340 Park Ten Place - Suite 350
Houston, Texas 77064 (713) 461-9600
JACK P. MILLER, P.E.
TEXAS FIRM REGISTRATION NO. F-487

SURVEYOR
MILLER
SURVEY GROUP

1760 WEST SAM HOUSTON PARKWAY NORTH
HOUSTON, TEXAS 77043
PHONE 713-413-1900 FAX 713-413-1944
BRIAN E. WILSON, R.P.L.S.
TEXAS FIRM REGISTRATION NO. 10047100



I, RICHARD W. STOLLES, FORT BEND COUNTY ENGINEER, DO HEREBY CERTIFY THAT THE PLAT OF THIS SUBDIVISION COMPLETES WITH ALL THE EXISTING RULES AND REGULATIONS OF THIS OFFICE AS ADOPTED BY THE FORT BEND COUNTY COMMISSIONER'S COURT. HOWEVER NO CERTIFICATION IS HEREBY GIVEN AS TO THE EFFECT OF DRAINAGE FROM THIS SUBDIVISION ON THE INTERFERING DRAINAGE ARTERY OR PARENT STREAM OR ON ANY OTHER AREA OR SUBDIVISION WITHIN THE WATERSHED.

Richard W. Stollis
RICHARD W. STOLLES, P.E.
FORT BEND COUNTY ENGINEER

APPROVED BY THE COMMISSIONERS' COURT OF FORT BEND COUNTY, TEXAS, THIS 10th DAY OF March, 2015.

Richard W. Stollis
RICHARD W. STOLLES, P.E.
FORT BEND COUNTY ENGINEER

Robert E. Hays
ROBERT E. HAYS, JR.
COUNTY CLERK

James Patterson
JAMES PATTERSON
PRECINCT 4, COUNTY COMMISSIONER

James Patterson
JAMES PATTERSON
PRECINCT 4, COUNTY COMMISSIONER

I, LAURA RICHARD, COUNTY CLERK IN AND FOR FORT BEND COUNTY, TEXAS, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT WAS FILED FOR RECORDATION IN MY OFFICE ON March 11, 2015, AT 9:52 O'CLOCK A.M., IN PLAT NUMBER 20150063 OF THE PLAT RECORDS OF FORT BEND COUNTY, TEXAS.

WITNESS MY HAND AND SEAL OF OFFICE, AT RICHMOND, TEXAS, THE DAY AND DATE LAST ABOVE WRITTEN.

Laura Richard
LAURA RICHARD, COUNTY CLERK
FORT BEND COUNTY, TEXAS

BY: Vickie Kirk
VICKIE KIRK
DEPUTY

