

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	FINAL PLAT
3	FINAL PLAT
4	GENERAL NOTES
5	DEMOLITION PLAN
6	PAVING & DIMENSIONAL PLAN
7A	GRADING PLAN
7B	GRADING DETAILS
8	EXISTING DRAINAGE AREA MAP
9	DRAINAGE AREA MAP
10	HYDRAULIC CALCULATIONS
11	STORM PLAN
12	STORM PROFILES
13	DETENTION POND PLAN
14	WATER & WASTEWATER PLAN
15	EROSION CONTROL PLAN
16	DETAILS - SHEET 01
17	DETAILS - SHEET 02
18	LANDSCAPE PLAN L-100
19	LANDSCAPE DETAILS L-201



BROWN & GAY ENGINEERS, INC.
 #:\01_Projects\2745-00\03_CADD\01_Sheets\Cover Sheet.dwg Jun 22, 2017-10:17am showell

BROWN & GAY ENGINEERS, INC.
W:\01_P\Projects\2745-00\03_04\00\01_Sheets\VP-General_Notes.dwg Jun 22, 2017 9:38am showell

GENERAL NOTES

- THESE NOTES APPLY TO ALL SHEETS IN THIS PLAN SET.
- CONTRACTOR IS RESPONSIBLE FOR, AND MUST OBTAIN PRIOR TO CONSTRUCTION, ALL NECESSARY CONSTRUCTION PERMITS REQUIRED BY THE LOCAL MUNICIPALITY. CONTRACTOR MUST HAVE A COPY OF THE LOCAL MUNICIPALITY'S STANDARD CONSTRUCTION DETAILS ON SITE.
- EXISTING UTILITY LOCATIONS SHOWN ARE TAKEN FROM AVAILABLE RECORDS PROVIDED BY THE UTILITY OWNER AND FIELD LOCATIONS OF SURFACE APPURTENANCES. LOCATIONS SHOWN ARE GENERALLY SCHEMATIC IN NATURE AND MAY NOT ACCURATELY REFLECT THE SIZE AND LOCATION OF EACH PARTICULAR UTILITY. SOME UTILITY LINES MAY NOT BE SHOWN. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ACTUAL FIELD LOCATION AND PROTECTION OF EXISTING FACILITIES WHETHER SHOWN OR NOT. CONTRACTOR SHALL ALSO ASSUME RESPONSIBILITY FOR REPAIRS TO EXISTING FACILITIES, WHETHER SHOWN OR NOT, DAMAGED BY CONTRACTOR'S ACTIVITIES. DIFFERENCES IN HORIZONTAL OR VERTICAL LOCATION OF EXISTING UTILITIES SHALL NOT BE A BASIS FOR ADDITIONAL EXPENSE.
- ANY CONTRACTOR / SUBCONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM HIS OPERATIONS. SAID EXISTING IMPROVEMENTS SHALL INCLUDE BUT NOT BE LIMITED TO BERMS, DITCHES, FENCES, AND PLANTS. ANY REMOVAL OR DAMAGE TO EXISTING IMPROVEMENTS SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT HIS EXPENSE AND SHALL BE APPROVED BY THE CITY OF ROCKWALL.
- THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL USE SILT FENCES (OR OTHER METHODS APPROVED BY THE ENGINEER AND CITY) AS REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, OR LOCAL EROSION CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING PERMITS AND APPROVALS BEFORE CONSTRUCTION BEGINS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN NEAT AND ACCURATE CONSTRUCTION RECORD PLANS. A COPY OF THESE RECORD PLANS ARE TO BE SUBMITTED TO THE ENGINEER UPON COMPLETION OF CONSTRUCTION.
- CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND POWER LINES. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS SHOWN ON THE PLANS AND ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION.
- SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE CONSTRUCTION.
- CONTRACTOR TO DISPOSE OF ALL EXCESS EXCAVATION MATERIALS AS DIRECTED BY THE OWNER AND NOT WITHIN CITY LIMITS.
- THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. CONTRACTOR SHALL CONTROL DUST BY SPRINKLING WATER, OR BY OTHER MEANS APPROVED BY THE CITY AND ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.
- ALL EXCAVATING IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED. UNUSABLE EXCAVATED MATERIAL AND ALL WASTE RESULTING FROM SITE CLEARING AND GRUBBING SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR AT HIS EXPENSE.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.
- THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC. DURING ALL CONSTRUCTION PHASES.
- BACKFILL SHALL BE FREE FLOWING, FREE OF ROCKS AND LARGE CLODS. BACKFILL SHALL BE PLACED IN 6 TO 9 INCH LIFTS AT OR ABOVE OPTIMUM MOISTURE AND MECHANICALLY COMPACTED TO 95 PERCENT STANDARD PROCTOR FOR ALL UTILITIES.
- ALL PROPOSED GRADING WHERE ANY BUILDINGS MAY POTENTIALLY BE CONSTRUCTED SHALL BE AT OR ABOVE OPTIMUM MOISTURE AND MECHANICALLY COMPACTED TO 95 PERCENT STANDARD PROCTOR. ALL OTHER GRADING SHALL BE AT OR ABOVE OPTIMUM MOISTURE AND MECHANICALLY COMPACTED TO 95 PERCENT STANDARD PROCTOR. CONTRACTOR WILL HAVE TO COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND / OR RELOCATIONS. ALL FILL TO BE COMPACTED USING A SHEEPSFOOT ROLLER.
- EROSION CONTROL DEVICES AS SHOWN ON THE GRADING AND EROSION CONTROL PLANS FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
- ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER AND THE CITY OF ROCKWALL.
- IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND / OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON-SITE.
- IF OFF-SITE BORROW OR SPOILS SITES ARE USED IN CONJUNCTION WITH THIS PROJECT, THIS INFORMATION SHALL BE DISCLOSED AND SHOWN ON THE EROSION CONTROL PLAN. OFFSITE BORROW AND SPOILS AREAS ARE CONSIDERED PART OF THE PROJECT SITE AND THEREFORE SHALL COMPLY WITH THE CITY OF ROCKWALL EROSION CONTROL REQUIREMENTS. THESE AREAS SHALL BE STABILIZED WITH PERMANENT GROUND COVER PRIOR TO FINAL APPROVAL OF THE PROJECT.
- THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS GOVERNING EXCAVATION. THE CONTRACTOR SHALL PROVIDE DETAILED PLANS AND SPECIFICATIONS FOR TRENCH SAFETY SYSTEMS THAT COMPLY WITH APPLICABLE LAWS GOVERNING EXCAVATION. THESE PLANS SHALL BE SEALED BY AN ENGINEER EXPERIENCED IN THE DESIGN OF TRENCH SAFETY SYSTEMS AND LICENSED BY THE STATE OF TEXAS. SUBMIT PLAN TO THE OWNER PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL ASPECTS OF WORK RELATED TO EXCAVATION.
- THE CONTRACTOR SHALL COORDINATE OPERATION OF ALL EXISTING VALVES WITH THE CITY OF ROCKWALL. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE TRENCH SAFETY DURING ALL PHASES OF CONSTRUCTION.
- THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER.
- THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE STORM SEWER. THE CITY OF ROCKWALL SHALL INSPECT ALL PUBLIC IMPROVEMENTS.
- THE CONTRACTOR'S BID PRICE SHALL INCLUDE ALL INSPECTION FEES. AS AN ALTERNATE, THE OWNER RESERVES THE RIGHT TO PAY THE INSPECTION FEES DIRECTLY TO THE CITY. CONSTRUCTION STAKING TO BE PROVIDED BY THE CONTRACTOR, UNLESS OTHERWISE AGREED TO BY THE OWNER.
- THESE PLANS DO NOT EXTEND TO OR INCLUDE DESIGN OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR IS ITS EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEM THAT MAY NOW OR HEREAFTER BE INCORPORATED IN THESE PLANS.
- SEEDING SHALL BE BROADCAST SEEDING IN ACCORDANCE WITH NCTCOG SPECIFICATIONS ITEM 3.10 "SEEDING".
- FERTILIZER SHALL BE IN ACCORDANCE WITH NCTCOG SPECIFICATIONS ITEM 3.11 "FERTILIZER".
- WATER, SEWER, & DUCT BANK WILL HAVE DETECTOR TAPE INSTALLED BETWEEN EMBEDMENT AND NATIVE BACKFILL.
- THE CONTRACTOR SHALL VERIFY THE LOCATION, SIZE, AND MATERIAL OF ALL UTILITIES AFFECTED BY CONSTRUCTION PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL CONTACT AND COORDINATE WITH ALL AFFECTED UTILITIES 48 HOURS PRIOR TO CONSTRUCTION. DIG TESS 1-800-344-8377. FOR WATER AND SANITARY SEWER CALL CITY OF ROCKWALL SERVICE CENTER 972-771-7730.
- CONTRACTOR SHALL LOCATE AND ADJUST EXISTING UTILITY MANHOLE LIDS, CLEANOUTS, WATER VALVES AND OTHER SURFACE APPURTENANCES AS REQUIRED FOR NEW CONSTRUCTION. CONTRACTOR SHALL COORDINATE UTILITY ADJUSTMENTS WITH OTHER DISCIPLINES AND THE APPROPRIATE UTILITY AGENCIES AND PROVIDE FOR ALL FEES FOR PERMITS, CONNECTIONS, INSPECTIONS, ETC. THESE ADJUSTMENTS SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION CONTRACT.
- THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY MONUMENTATION AND PRIMARY CONTROL. ANY SUCH POINTS WHICH THE CONTRACTOR BELIEVES WILL BE DESTROYED SHALL HAVE OFFSET POINTS ESTABLISHED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY MONUMENTATION DESTROYED BY THE CONTRACTOR SHALL BE REESTABLISHED AT HIS EXPENSE.
- BARRICADING AND TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM TO THE LATEST EDITION OF THE 'TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES'; PART VI IN PARTICULAR. TRAFFIC FLOW AND ACCESS SHALL BE MAINTAINED DURING ALL PHASES OF THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TRAFFIC SAFETY MEASURES FOR WORK ON PROJECT.
- ONSITE PLANAMETRIC AND TOPOGRAPHIC MAPPING TAKEN FROM DATA PROVIDED BY GIA CONSULTANTS CONFIRMED BY BROWN AND GAY ENGINEERS IN JULY 2014.
- ANY DAMAGES THAT MAY OCCUR TO REAL PROPERTY OR EXISTING IMPROVEMENTS SHALL BE RESTORED BY THE CONTRACTOR TO AT LEAST THE SAME CONDITION THAT THE REAL PROPERTY OR EXISTING IMPROVEMENTS WERE IN PRIOR TO THE DAMAGES. THIS RESTORATION SHALL BE SUBJECT TO THE OWNER'S APPROVAL; MOREOVER, THIS RESTORATION SHALL NOT BE A BASIS FOR ADDITIONAL COMPENSATION TO THE CONTRACTOR. RESTORATION SHALL INCLUDE, BUT NOT BE LIMITED TO, REGRASSING, REVEGETATION, REPLACING FENCES, REPLACING TREES, ETC.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO:
 - PREVENT ANY DAMAGE TO PRIVATE PROPERTY AND PROPERTY OWNER'S POLES, FENCES, SHRUBS, ETC.
 - PROVIDE ACCESS TO ALL DRIVES DURING CONSTRUCTION.
 - PROTECT ALL UNDERGROUND UTILITIES TO REMAIN IN SERVICE.
 - NOTIFY ALL UTILITY COMPANIES AND VERIFY LOCATION OF ALL UTILITIES PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN UTILITY SERVICES AT ALL TIMES DURING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR KEEPING SIDEWALKS ADJACENT TO THE PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION.
- THE CONTRACTOR SHALL REMOVE ALL SURPLUS MATERIAL FROM THE PROJECT AREA UNLESS INSTRUCTED DIFFERENTLY BY OWNER OR ENGINEER. THIS WORK SHALL BE SUBSIDIARY TO THE CONTRACT AND IS NOT A SEPARATE PAY ITEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION, INSPECTION, AND TESTING AS REQUIRED BY THE OWNER AND/OR THE LOCAL MUNICIPALITY.
- ALL WORK IN THE CITY RIGHT-OF-WAY, PROPERTY AND EASEMENTS SHALL BE CONSIDERED PUBLIC. ALL OTHER WORK SHALL BE CONSIDERED PRIVATE.
- ALL EXISTING UTILITIES SHALL BE ADJUSTED TO APPROVED GRADE.

WATER NOTES:

- CONTRACTOR SHALL OBTAIN A COPIE(S) OF THE CITY OF ROCKWALL ENGINEERING STANDARDS OF DESIGN AND CONSTRUCTION PRIOR TO CONTRUCTION AND NCTCOG 3rd EDITION.
- ALL WATER LINES, FITTINGS, AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY OF ROCKWALL ENGINEERING STANDARDS OF DESIGN AND CONSTRUCTION. ALL WATER SERVICE CONNECTIONS TO BE FORD COMPRESSION FITTINGS. ALL BENDS TO HAVE RETAINER FITTINGS (MEGA-LUG). USE DOMESTIC DUCTILE IRON FITTINGS ONLY.
- ALL FIRE HYDRANTS SHALL HAVE ONE (1) HYDRA-STORZ CONNECTION AND TWO (2) 2.5" HOSE NOZZLES. SHALL HAVE A MINIMUM MAIN BARREL VALVE OPENING OF 5.25", AND SHALL BE PLACED ON MAINS OF NOT LESS THAN 6" IN DIAMETER. ALL FIRE HYDRANTS ARE TO BE PAINTED PER ARTICLE IV, SECTION 2.H.5 OF THE CITY OF ROCKWALL ENGINEERING STANDARDS AND AGREED TO BY THE CITY.
- UTILITY CONTRACTOR SHALL PLACE APPROPRIATE LOCATION MARKS ON THE CURBS PER THE CITY OF ROCKWALL ENGINEERING STANDARDS.
- ALL WATER MAINS SHALL BE PVC AWWA-C900, DR14, CLASS 200 UNLESS NOTED OTHERWISE.
- TOP OF WATER MAIN SHALL BE A MINIMUM OF 48" BELOW THE TOP OF CURB OR 48" BELOW FINISHED GRADE. METALLIC DETECTOR TAPE WILL BE USED. VALVES TO BE EXTENDED TO WITHIN 1' OF GROUND IF MORE THAN 48".
- FIRE HYDRANTS SHALL BE LOCATED 3' BEHIND THE BACK OF CURB (MIN).
- CONTRACTOR SHALL CLEAN THE WATER MAIN BY INSERTION OF "POLY PIGS" AT DESIGNATED LOCATIONS. COST FOR "POLY PIG" CLEANING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL DOMESTIC WATER SERVICES SHALL BE 2" CLASS 200 POLYETHYLENE.
- CORPORATION STOPS SHALL BE FULL OPEN PRIOR TO BACKFILL.
- CURB STOPS SHALL BE TESTED FOR FULL FLOW WHEN THE SYSTEM IS PRESSURE TESTED.
- METER BOXES SHALL BE FURNISHED BY THE CONTRACTOR AND LOCATED 3' BEHIND THE CURB OR AT RIGHT-OF-WAY.
- WATER MAINS TO BE LOCATED PER THE PLANS.
- METER BOXES SHALL BE ADJUSTED TO FINISH GRADE AFTER PAVING CONTRACTOR COMPLETES THE BACKFILL OF CURB.
- EXTEND SAMPLING POINT 2' ABOVE EXISTING GRADE AND END WITH A 1" CURB STOP. SAMPLING POINTS WILL BE DETERMINED BY THE CONSTRUCTION INSPECTOR.
- PIPE SHALL BE TESTED AT 180 PSI FOR FOUR (4) HOURS.
- CHLORINATE WATER LINES AT 500 PPM FOR FORTY-EIGHT (MIN. 24) HOURS. CHLORINATION IS ACCEPTABLE DURING THE PRESSURE TEST.
- FLUSHING AND CHLORINATION SHALL BE COORDINATED WITH THE CONSTRUCTION INSPECTOR.
- ALL TAPS ON EXISTING MAINS SHALL BE WET TAPS. NO SIZE-ON-SIZE TAPS ALLOWED.
- EXISTING VALVES SHALL BE OPERATED BY CITY PERSONNEL ONLY. ONCE THE NEW WATER LINE IS ACTIVATED AND PASSES BACTERIOLOGICAL TESTING, THE VALVES MAY BE OPERATED BY CITY PERSONNEL ONLY.
- INSTALL BLUE EMS DISK ON THE WATER LINE EVERY 250', CHANGE IN DIRECTION, VALVE, AND SERVICE.

SANITARY SEWER NOTES:

- CONTRACTOR SHALL PURCHASE A COPY OF THE CITY OF ROCKWALL ENGINEERING STANDARDS OF DESIGN AND CONSTRUCTION.
- ALL SANITARY SEWER LINES, FITTINGS, AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY OF ROCKWALL ENGINEERING STANDARDS, LATEST EDITION AND NCTCOG 3rd EDITION.
- THE SANITARY SEWER SERVICE LINE SHALL BE EXTENDED A MINIMUM OF 2 FEET PAST THE PROPERTY LINE.
- SERVICE LINES SHALL BE 4" PVC AND SHALL BE PLUGGED AND PRESSURE TESTED WITH THE MAIN LINE.
- SERVICE LINES ARE TO BE LOCATED AT THE DOWNHILL SIDE OF THE LOT.
- THE TOP OF SEWER PIPE SHALL BE A MINIMUM OF 48" BELOW FINISHED GRADE.
- THE CONTRACTOR IS REQUIRED TO PULL A MANDREL THROUGH SEWER PIPE.
- A TV INSPECTION OF THE SANITARY SEWER LINES IS REQUIRED.
- THE SEWER PIPE WILL BE PRESSURE TESTED IN ACCORDANCE WITH TNRCC LOW PRESSURE AIR TEST (SECTION 317.2 (a)(4)(B)). REFER TO MANHOLE DETAIL FOR ADDITIONAL TESTING REQUIREMENTS.
- ENGINEERED CASING IS REQUIRED WHEN CROSSING STREETS LARGER THAN COLLECTORS.
- NO SERVICES ALLOWED ON CLEANOUT STACK.
- ELIMINATE DISCHARGE INTO THE EXISTING SEWER SYSTEM BY PLUGGING LINE AT CONNECTION. THE CONTRACTOR WILL BE BILLED FOR THE DISCHARGE DURING CONSTRUCTION.
- UTILITY CONTRACTOR SHALL PLACE APPROPRIATE LOCATION MARKS ON THE CURBS PER THE CITY OF ROCKWALL ENGINEERING STANDARDS OF DESIGN AND CONSTRUCTION.
- PIPE MATERIAL FOR WASTE WATER LINES SHALL CONFORM TO THE NOTES SHOWN ON THIS DRAWING AND TO THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS. SANITARY SEWER LINE SHALL BE SDR-35 PVC IF DEPTH OF LINE IS 10' OR LESS AND SDR-26 IF DEPTH OF LINE IS GREATER THAN 10'. EMBED SEWER PIPE IN ACCORDANCE WITH LOCAL MUNICIPALITY DESIGN STANDARDS.
- WATER AND WASTEWATER LINES SHALL BE LOCATED A MINIMUM OF 9' APART (CLEAR DISTANCE). WHEN SEPARATION CANNOT BE MAINTAINED, SANITARY SEWER SHALL EITHER BE ENCASED IN CONCRETE OR UPGRADED TO PRESSURE PIPE (MIN. SDR 26).
- INSTALL GREEN EMS DISK ON THE SEWER LINE EVERY 250', MANHOLE, CLEANOUT, AND SERVICE.

STORM DRAIN NOTES:

- ALL CULVERT HEADWALLS AND INLETS TO HAVE STONE CLADDING.
- NO PRECAST CURB INLETS.
- ALL MATERIALS AND WORKMANSHIP FOR STORM DRAIN CONSTRUCTION SHALL CONFORM TO THE NCTCOG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 3rd EDITION, AND THE LOCAL MUNICIPALITY REQUIREMENTS.
- CONTRACTOR SHALL MAINTAIN DRAINAGE AT ALL TIMES DURING CONSTRUCTION. PONDING OF WATER WILL NOT BE ALLOWED.
- STORM PIPE SHALL BE CLASS III REINFORCED CONCRETE PIPE (RCP) 18" AND ABOVE IN DIAMETER AND SDR-35 POLYVINYL CHLORIDE (PVC)(PRIVATE ONLY) PIPE OR HIGH DENSITY POLYETHYLENE (HDPE)(PRIVATE ONLY) BELOW 18" IN DIAMETER.

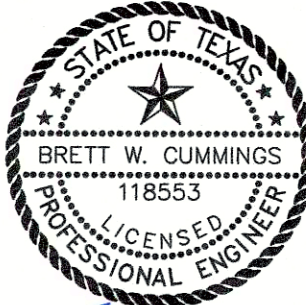
GRADING NOTES:

- THE CONTRACTOR SHALL ADMINISTER SPRINKLERS FOR DUST CONTROL, EARTHWORK OR BASE CONSTRUCTION AS REQUIRED OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE LOCAL MUNICIPALITY STANDARDS.
- FILL MATERIAL SHALL BE COMPACTED BETWEEN 95 AND 98 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST, ASTM D 698. IN CONJUNCTION WITH THE COMPACTING OPERATION, FILL MATERIAL SHALL BE BROUGHT TO A MOISTURE CONTENT RANGING FROM +2 PERCENT POINTS ABOVE OPTIMUM TO +6 PERCENTAGE POINTS ABOVE OPTIMUM +2 TO +6. COMPACTED USING A SHEEPSFOOT ROLLER.
- ALL DETENTION SYSTEMS TO BE INSTALLED AND FULLY FUNCTIONING PRIOR TO ANY PAVING/CONCRETE BEING INSTALLED. SIDES AND BOTTOM OF THE DETENTION TO HAVE ANCHORED SEEDED CURLEX OR SOD INSTALLED PRIOR TO ANY PAVING/CONCRETE BEING INSTALLED. SILT FENCE TO BE INSTALLED AT THE TOP OF THE BANK AFTER POND INSTALLATION.
- 75% - 80% OF ALL DISTURBED AREAS TO HAVE 1" MINIMUM STAND OF GRASS PRIOR TO CITY ACCEPTANCE AND/OR CO.

PAVING NOTES:

- CONTRACTOR'S WORK SHALL INCLUDE PAVEMENT REMOVAL AND DISPOSAL REQUIRED FOR NEW WALK, DRIVE, CURB, GUTTER AND OTHER PAVING FEATURES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION, INSPECTION AND TESTING REQUIRED BY THE OWNER AND/OR THE LOCAL MUNICIPALITY.
- PAVING SECTIONS SHALL BE SAWCUT IN 15' X 15' SQUARES.
- PAVEMENT REMOVAL AND REPAIR SHALL CONFORM TO THE LOCAL MUNICIPALITY REQUIREMENTS. CONTRACTOR SHALL MAKE AN EFFORT TO PROJECT CONCRETE AND/OR ASPHALT EDGES.
- CONCRETE PAVING JOINTS SHALL BE CONSTRUCTED AS RECOMMENDED IN THE GEOTECHNICAL REPORT NOTED BELOW.
- SITE PAVING AND PAVEMENT SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT NO. W141078 PREPARED BY ALPHA TESTING AND DATED JULY 18, 2014.

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.


REVISIONS			
REV. NO.	DATE	DESCRIPTION	BY
BENCHMARKS & CONTROL POINTS			
BM # 1: City of Rockwall Benchmark No. "Reset #1". An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.			
Elevation: 567.704			
BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.			
Elevation: 561.017			
		<div><div> <i>BWC</i> 6-22-77 Brown & Gay Engineers, Inc. F-1048</div></div>	
GENERAL NOTES			
PATRIOT PAWS			
254 RANCH TRAIL			
CITY OF ROCKWALL, TEXAS			
DESIGN	DRAWN	DATE	FILE
BWC	KAT	FEB 2016	NUMBER
			4

RECORD DRAWING

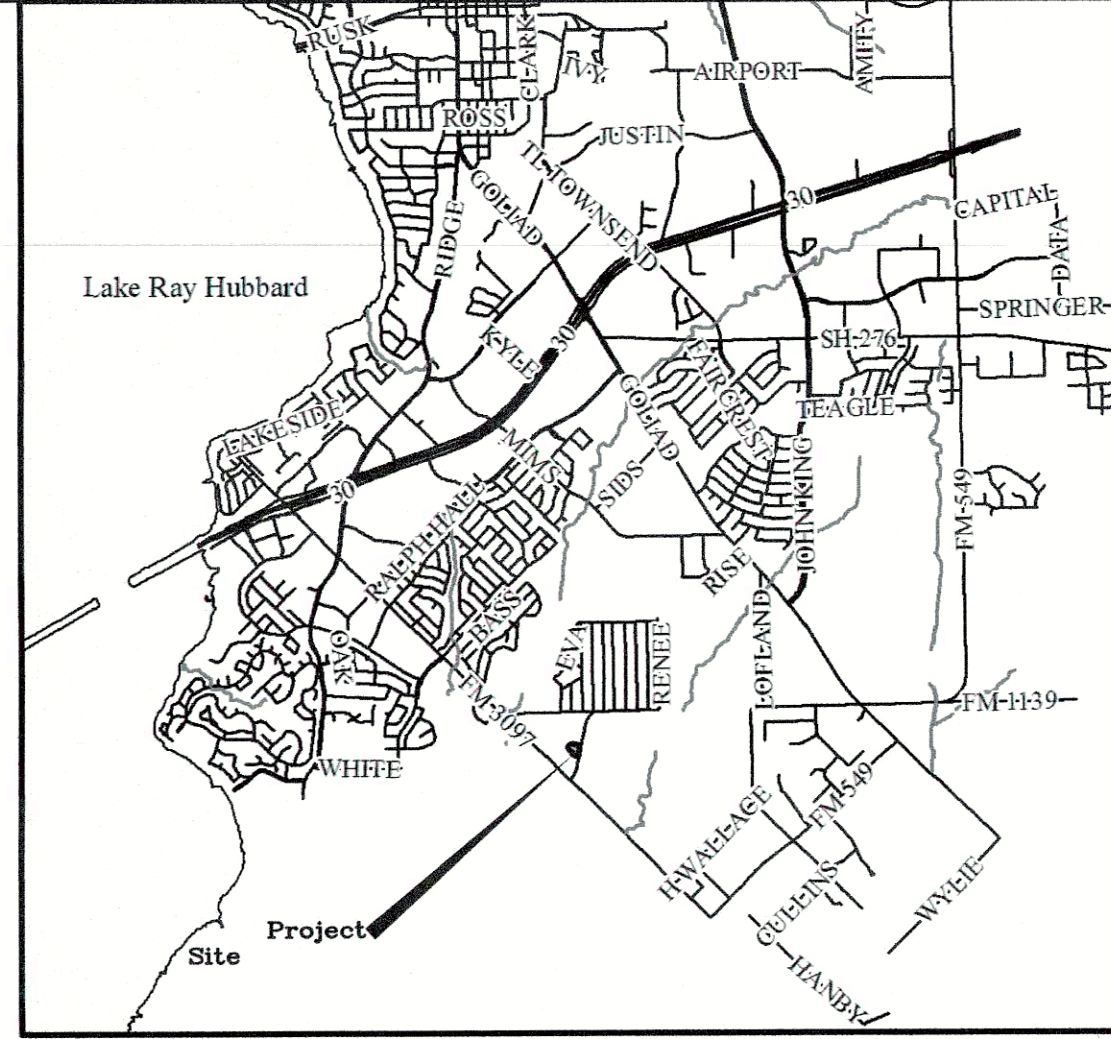
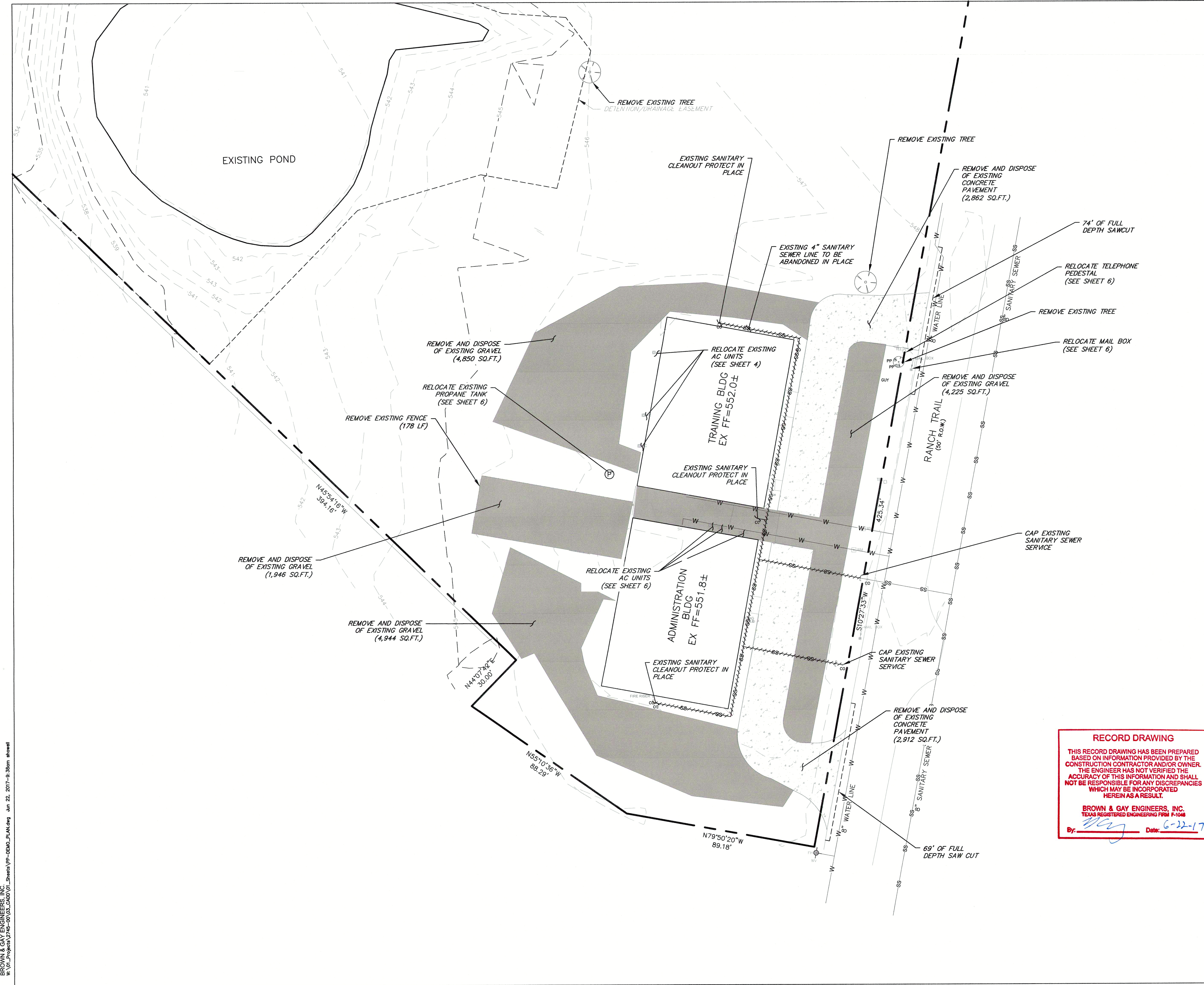
THIS RECORD DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE CONSTRUCTION CONTRACTOR AND/OR OWNER. THE ENGINEER HAS NOT VERIFIED THE ACCURACY OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

BROWN & GAY ENGINEERS, INC.

TEXAS REGISTERED ENGINEERING FIRM F-1048

By: 

Date: 6-22-17



VICINITY MAP
MAPSCO PG. NO. 30C GRID 'R'

LEGEND

- EXISTING SANITARY TO BE ABANDONED
- EXISTING GRAVEL
- EXISTING CONCRETE

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

REVISIONS			
REV NO.	DATE	DESCRIPTION	BY

BENCHMARKS & CONTROL POINTS

BM # 1: City of Rockwall Benchmark No. R014. An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.
Elevation: 567.704

BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.
Elevation: 561.017

Scale: 1" = 20'

0' 20' 40'

Brown & Gay Engineers, Inc.
F-1046

DEMOLITION PLAN					
PATRIOT PAWS					
254 RANCH TRAIL					
CITY OF ROCKWALL, TEXAS					
DESIGN	DRAWN	DATE	FILE	NUMBER	
BWC	KAT	FEB 2016			5

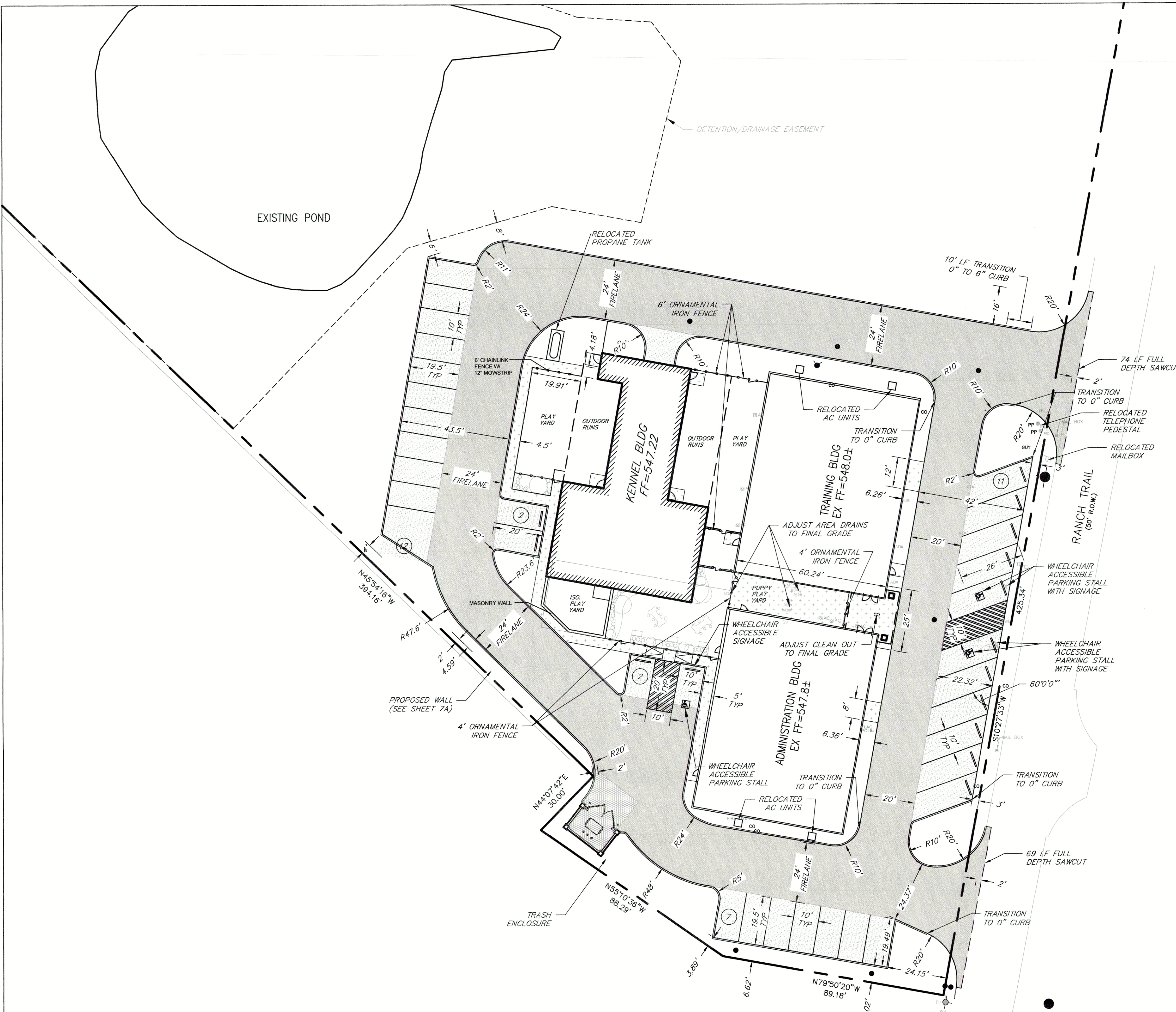
RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE CONSTRUCTION CONTRACTOR AND/OR OWNER. THE ENGINEER HAS NOT VERIFIED THE ACCURACY OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

BROWN & GAY ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-1046

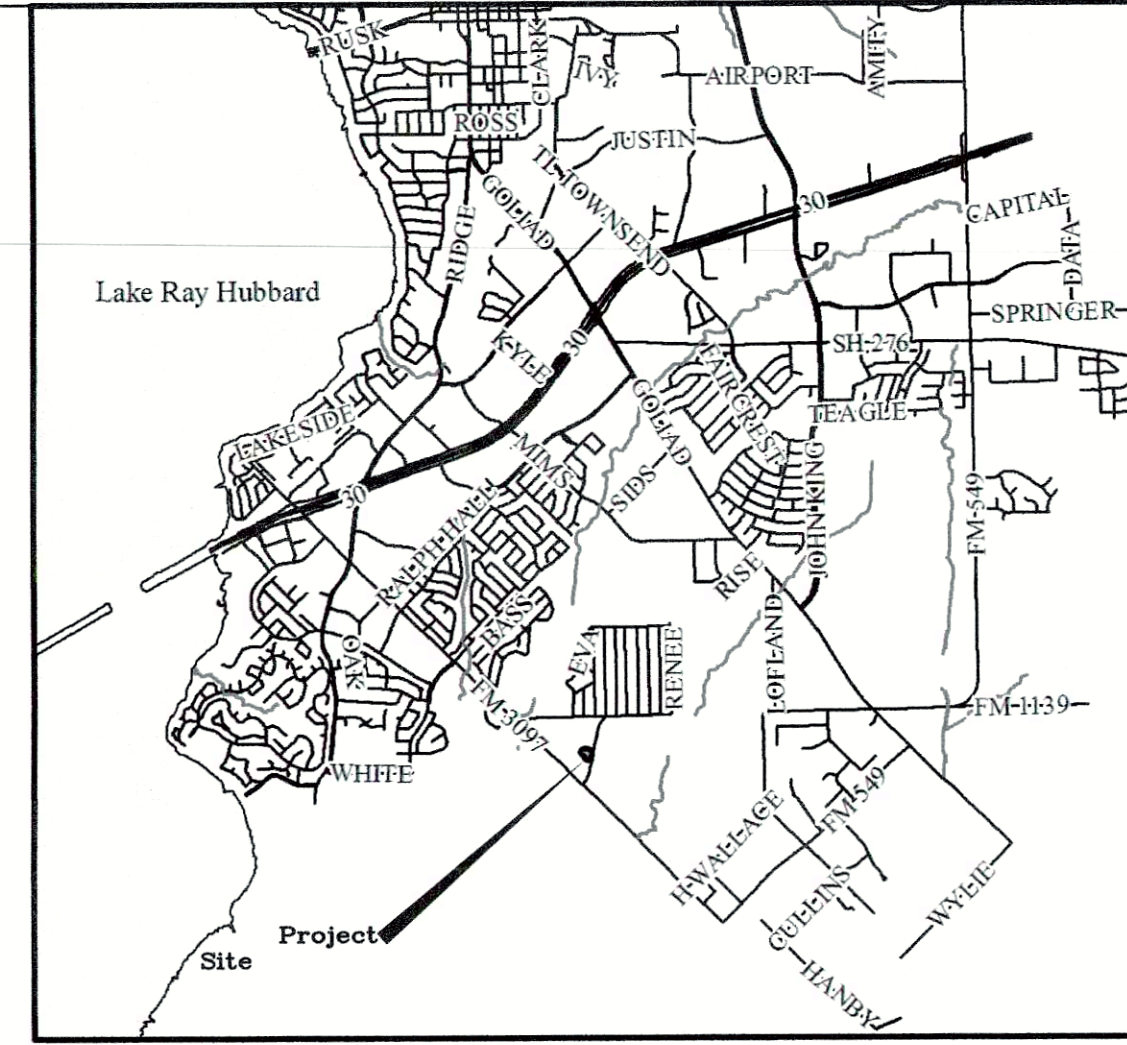
By: Date: 6-22-17

BROWN & GAY ENGINEERS, INC.
W:\Projects\2745-00\03_000\01_Sheet\PP-PAV_DIM_Plan.dwg Jan 22, 2017--8:36am shovell



- LEGEND
- SANITARY SEWER MANHOLE
 - STORM INLET
 - WATER GATE VALVE
 - BUILDING OVERHANG
 - 4"-3600 P.S.I. CONCRETE PAVEMENT REINFORCED WITH #3 BARS @ 24" O.C.E.W. (SIDEWALK) (MIN. 6.5 SACK)
 - 5"-3600 P.S.I. CONCRETE PAVEMENT REINFORCED WITH #3 BARS @ 24" O.C.E.W. (PARKING AREAS) (MIN. 6.5 SACK)
 - 6"-3600 P.S.I. CONCRETE PAVEMENT REINFORCED WITH #3 BARS @ 18" O.C.E.W. (FIRE LANE) (MIN. 6.5 SACK)
 - 7"-3600 P.S.I. CONCRETE PAVEMENT REINFORCED WITH #3 BARS @ 18" O.C.E.W. (DUMPSTER PAD ENCLOSURE/LOADING AREA). (MIN. 6.5 SACK)

NOTES:
1. ALL DIMENSIONS ARE TO FRONT OF CURB WHERE APPLICABLE
2. REFER TO ARCHITECTURAL PLANS FOR ALL FOUNDATION AND BUILDING DIMENSIONS
3. GRADES IN ACCESSIBILITY ROUTING INCLUDING CROSSING DRIVEWAYS, SHALL CONFORM TO ADA STANDARDS, NOT TO EXCEED 5.0% ALONG TRAVEL PATH WITH NO MORE THAN 2.0% CROSS FALL ACCESSIBLE PARKING STALLS SHALL HAVE A MAXIMUM CROSS FALL OF LESS THAN 2.0% IN EVERY DIRECTION. ALL SUBGRADE TO BE 6" LIME STABILIZED (27 LBS/S.Y.) COMPACTED TO 95% STANDARD PROCTOR DENSITY AND TO 2 PERCENTAGE POINTS ABOVE OPTIMUM MOISTURE CONTENT. REFER TO FINAL GEOTECHNICAL RECOMMENDATION AND CITY OF ROCKWALL STANDARD DETAILS & SPECIFICATIONS PRIOR TO CONSTRUCTION. NO SAND ALLOWED UNDER PAVING.



VICINITY MAP
MAPSCO PG. NO. 30C GRID 'R'

RECORD DRAWING
THIS RECORD DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE CONSTRUCTION CONTRACTOR AND/OR OWNER. THE ENGINEER HAS NOT VERIFIED THE ACCURACY OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES WHICH MAY BE INCORPORATED HEREIN AS A RESULT.
BROWN & GAY ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-10448
By: [Signature] Date: 6-22-17

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

REVISIONS			
REV NO.	DATE	DESCRIPTION	BY

BENCHMARKS & CONTROL POINTS

BM # 1: City of Rockwall Benchmark No. R014. An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.

Elevation: 567.704

BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.

Elevation: 561.017

Scale: 1" = 20'

0'20'40'

STATE OF TEXAS

★

BRETT W. CUMMINGS

118553

LICENSED

PROFESSIONAL ENGINEER

Brown & Gay Engineers, Inc.

F-1046

PAVING/DIMENSIONAL PLAN

PATRIOT PAWS

254 RANCH TRAIL

CITY OF ROCKWALL, TEXAS

DESIGN	DRAWN	DATE	FILE	NUMBER	
BWC	KAT	FEB 2016			6

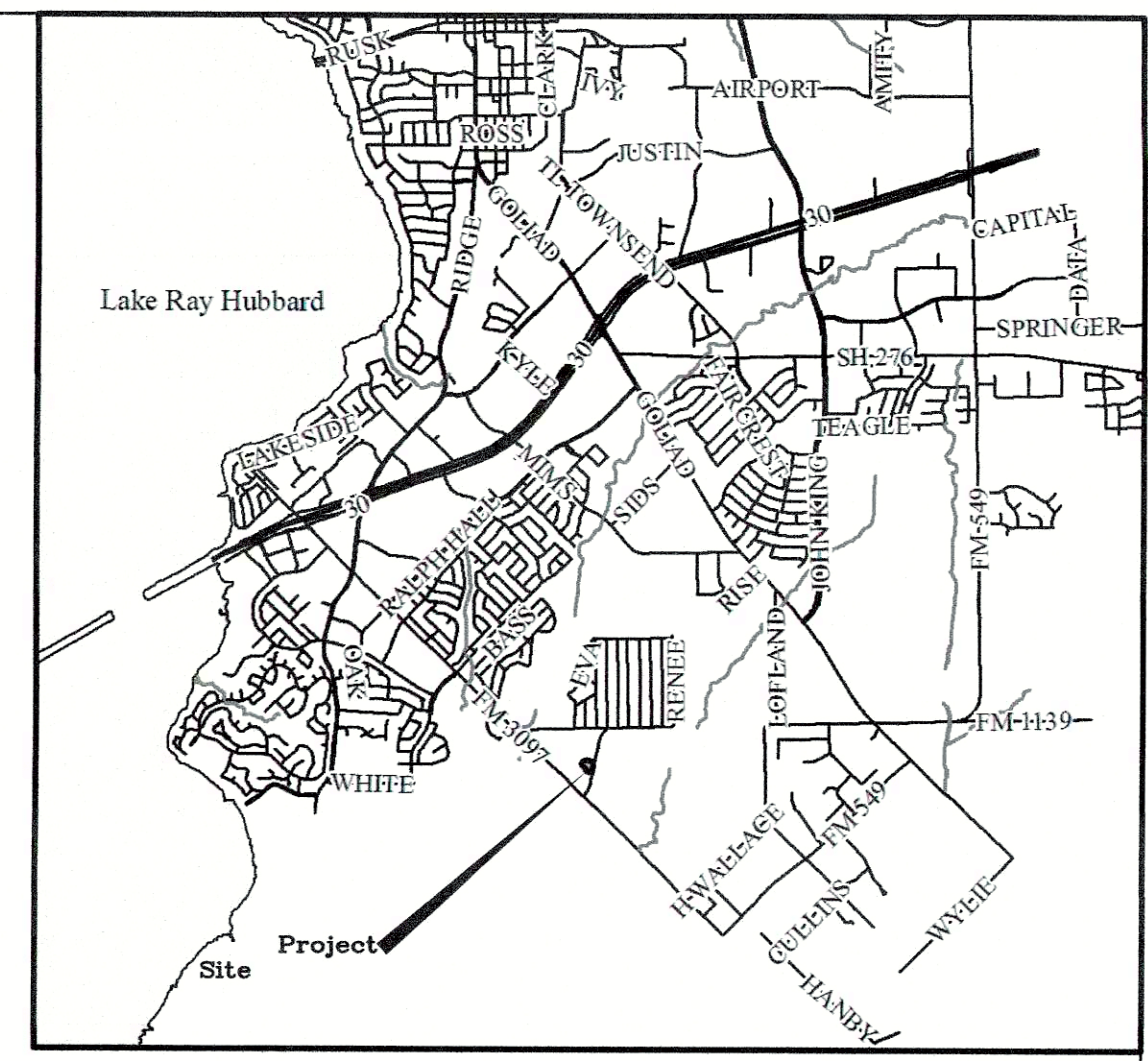
BROWN & GAY ENGINEERS, INC.
W:\Projects\2745-00\03_Grading.dwg Jun 22, 2017 8:30am shawell



SEE SHEET 7B FOR DETAILED GRADING IN THIS AREA

- LEGEND**
- X 526.25 ETP EXISTING TOP OF PAVEMENT
 - X 526.25 ETC EXISTING TOP OF CURB
 - X 526.25 TP PROPOSED TOP OF PAVEMENT
 - X 526.25 TC PROPOSED TOP OF CURB
 - X 526.25 TW PROPOSED TOP OF WALL
 - X 526.25 BW PROPOSED BOTTOM OF WALL
 - X 526.25 FG PROPOSED FINISHED GRADE
 - 550--- EXISTING CONTOUR
 - 550— PROPOSED CONTOUR
 - - - - - GRADE CHANGE LINE
 - FLOW ARROW
 - HIGH POINT

- NOTES:**
- REFER TO CITY OF ROCKWALL STANDARD CONSTRUCTION DETAILS FOR SIDEWALKS, BARRIER FREE RAMPS, CURBS, AND DRIVEWAY APPROACHES.
 - REFER TO ARCHITECTURAL PLANS FOR ALL FOUNDATION AND BUILDING DIMENSIONS.
 - REFER TO LANDSCAPE PLANS FOR DECORATIVE CONCRETE LOCATIONS & DETAILS.
 - GRADES IN ACCESSIBILITY ROUTING INCLUDING CROSSING DRIVEWAYS, SHALL CONFORM TO ADA STANDARDS. NOT TO EXCEED 5.0% ALONG TRAVEL PATH WITH NO MORE THAN 2.0% CROSS FALL ACCESSIBLE PARKING STALLS SHALL HAVE A MAXIMUM CROSS FALL OF LESS THAN 2.0% IN EVERY DIRECTION.
 - WALLS WILL BE ENGINEERED AND MADE OF STONE/ROCK (SMOOTH CONCRETE WILL NOT BE PERMITTED).
 - ALL PORTIONS OF THE WALL (TIE-BACKS, ANCHORS, FOOTINGS, ETC.) WILL NOT BE ALLOWED IN ANY EASEMENTS, OFF-SITE, OR RIGHT-OF-WAYS.



VICINITY MAP
MAPSCO PG. NO. 30C GRID 'R'

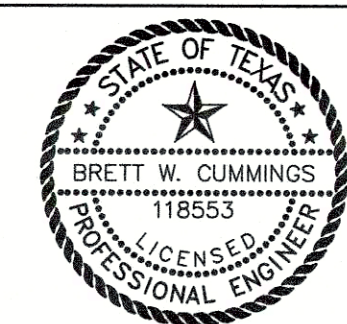
RECORD DRAWING
THIS RECORD DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE CONSTRUCTION CONTRACTOR AND/OR OWNER. THE ENGINEER HAS NOT VERIFIED THE ACCURACY OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES WHICH MAY BE INCORPORATED HEREIN AS A RESULT.
BROWN & GAY ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-1046
By: [Signature] Date: 6-22-17

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

REVISIONS			
REV NO.	DATE	DESCRIPTION	BY
1	6-21-17	REVISED FOR AS BUILTS	BWC

BENCHMARKS & CONTROL POINTS

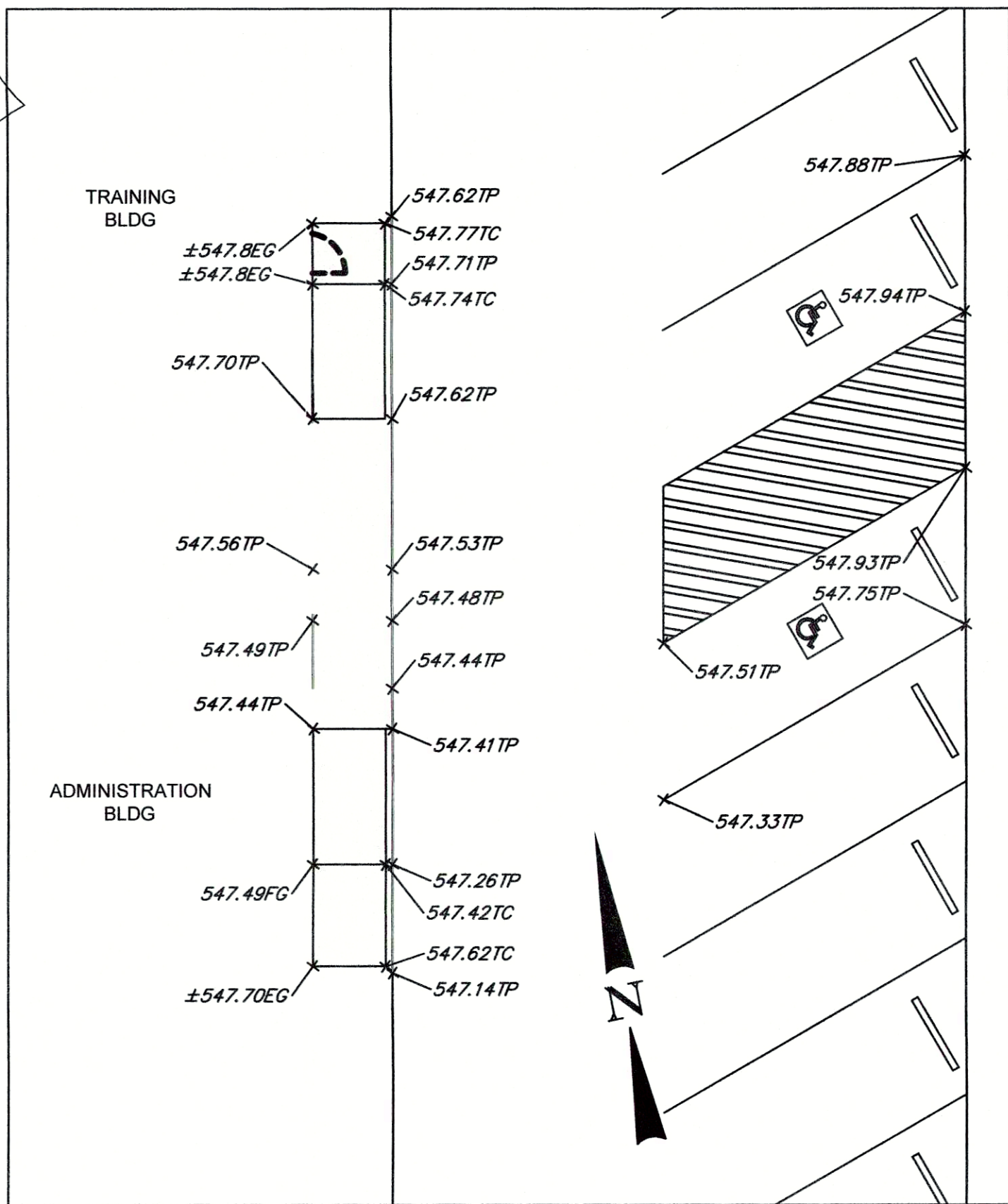
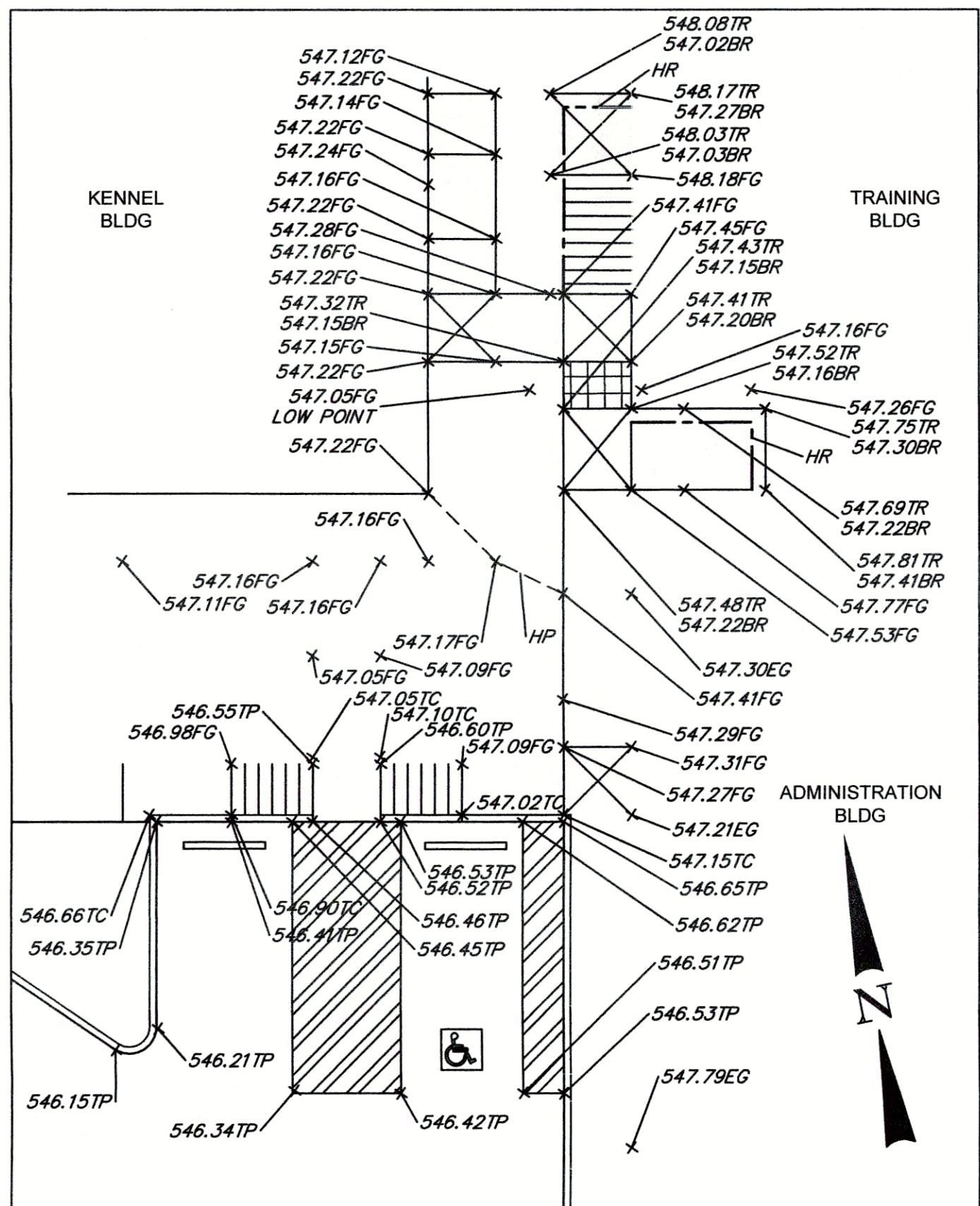
BM # 1: City of Rockwall Benchmark No. R014. An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.
Elevation: 567.704
BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.
Elevation: 561.017



Brown & Gay Engineers, Inc.
F-1046

**GRADING PLAN
PATRIOT PAWS
254 RANCH TRAIL**

CITY OF ROCKWALL, TEXAS					
DESIGN	DRAWN	DATE	FILE	NUMBER	
BWC	KAT	FEB 2016			7A



RECORD DRAWING

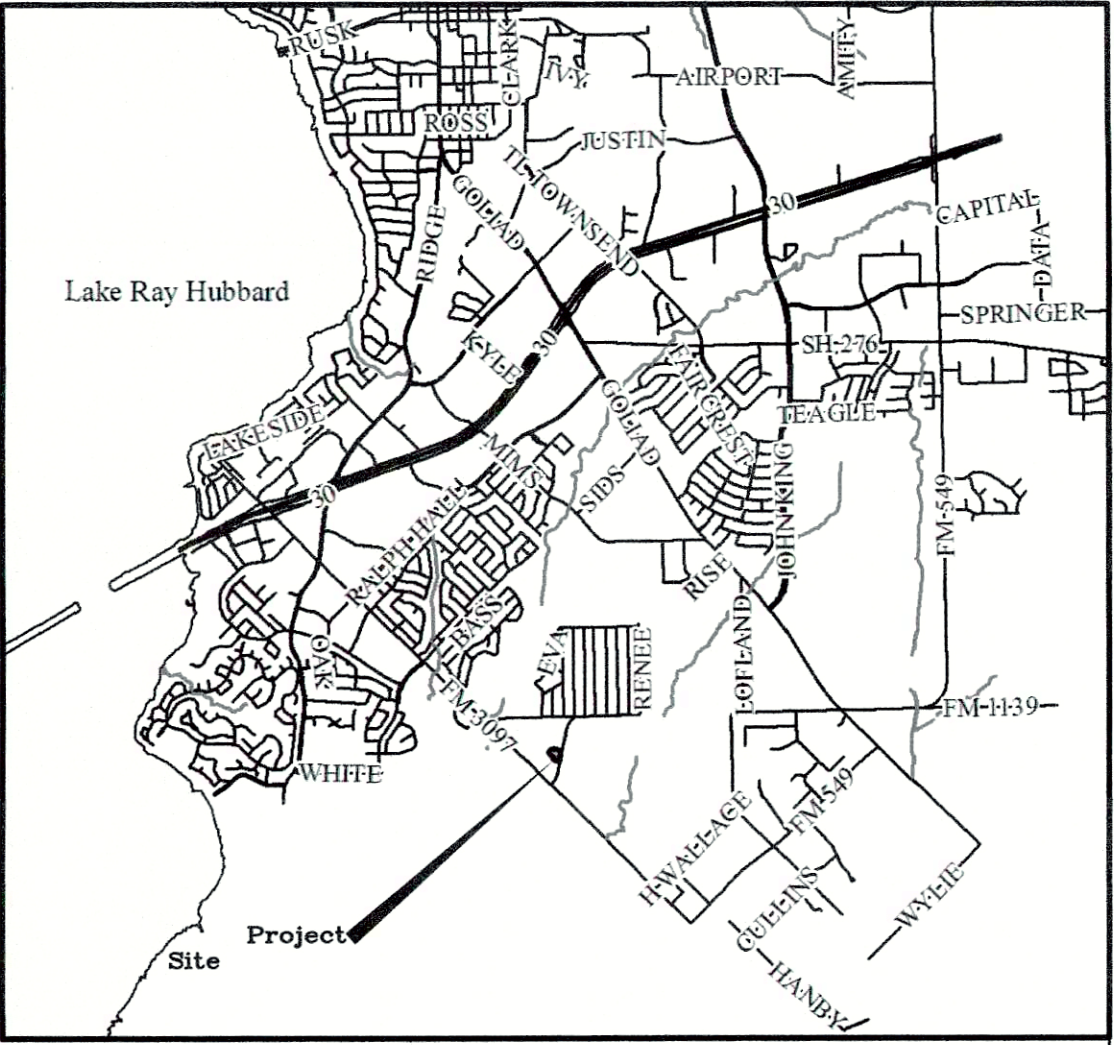
THIS RECORD DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE CONSTRUCTION CONTRACTOR AND/OR OWNER. THE ENGINEER HAS NOT VERIFIED THE ACCURACY OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

BROWN & GAY ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-1046

By: *[Signature]* Date: 6-22-17

- LEGEND
- TOP OF PAVEMENT TP
 - TOP OF CURB TC
 - EXISTING GRADE EG
 - FINISHED GRADE FG
 - TOP OF RAMP TR
 - BOTTOM OF RAMP BR
 - HANDRAIL HR
 - HIGH POINT HP
 - SLIP RESISTANT WALKWAY
 - STEEL PLATE
 - ADA ROUTE

- NOTES:
- REFER TO CITY OF ROCKWALL STANDARD CONSTRUCTION DETAILS FOR SIDEWALKS, BARRIER FREE RAMPS, CURBS, AND DRIVEWAY APPROACHES.
 - REFER TO ARCHITECTURAL PLANS FOR ALL FOUNDATION AND BUILDING DIMENSIONS.
 - REFER TO LANDSCAPE PLANS FOR DECORATIVE CONCRETE LOCATIONS & DETAILS.
 - GRADES IN ACCESSIBILITY ROUTING INCLUDING CROSSING DRIVEWAYS, SHALL CONFORM TO ADA STANDARDS. NOT TO EXCEED 5.0% ALONG TRAVEL PATH WITH NO MORE THAN 2.0% CROSS FALL ACCESSIBLE PARKING STALLS SHALL HAVE A MAXIMUM CROSS FALL OF LESS THAN 2.0% IN EVERY DIRECTION.
 - WALLS WILL BE ENGINEERED AND MADE OF STONE/ROCK (SMOOTH CONCRETE WILL NOT BE PERMITTED).
 - ALL PORTIONS OF THE WALL (TIE-BACKS, ANCHORS, FOOTINGS, ETC.) WILL NOT BE ALLOWED IN ANY EASEMENTS, OFF-SITE, OR RIGHT-OF-WAYS.



VICINITY MAP
MAPSCO PG. NO. 30C GRID 'R'



ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

REVISIONS			
REV. NO.	DATE	DESCRIPTION	BY
1	6-21-17	REVISED FOR AS BUILTS	BWC

BENCHMARKS & CONTROL POINTS

BM # 1: City of Rockwall Benchmark No. *Reset #1*. An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.

Elevation: 567.704

BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.

Elevation: 561.017

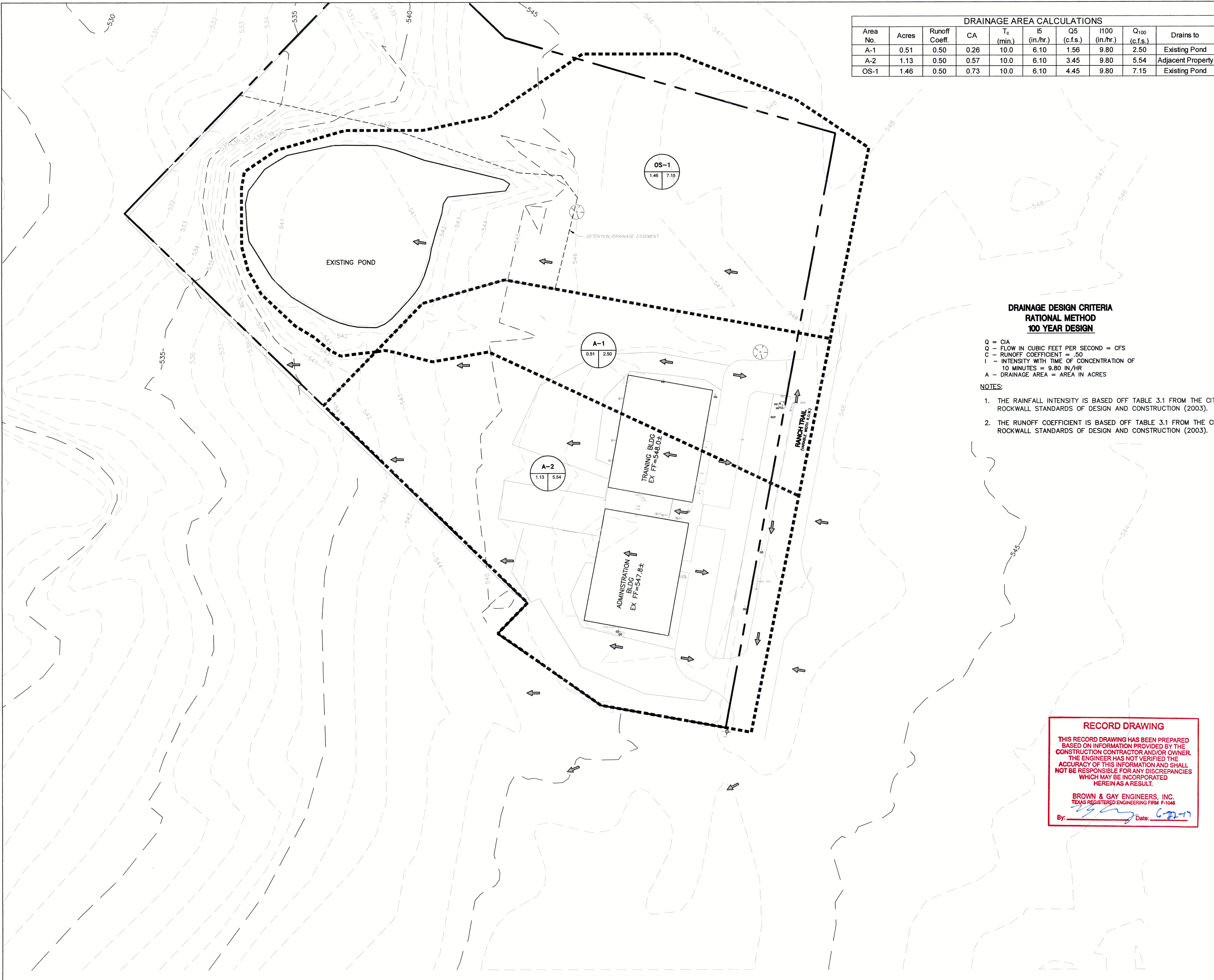
Scale: 1" = 10'

[Signature] 6-22-17

Brown & Gay Engineers, Inc.
F-1046

GRADING DETAILS					
PATRIOT PAWS					
254 RANCH TRAIL					
CITY OF ROCKWALL, TEXAS					
DESIGN	DRAWN	DATE	FILE	NUMBER	
BWC	KAT	FEB 2016			7B

BROWN & GAY ENGINEERS, INC.
10101 Preston Road, Suite 200, Dallas, TX 75242
Jun 22, 2017 - 8:51am showell

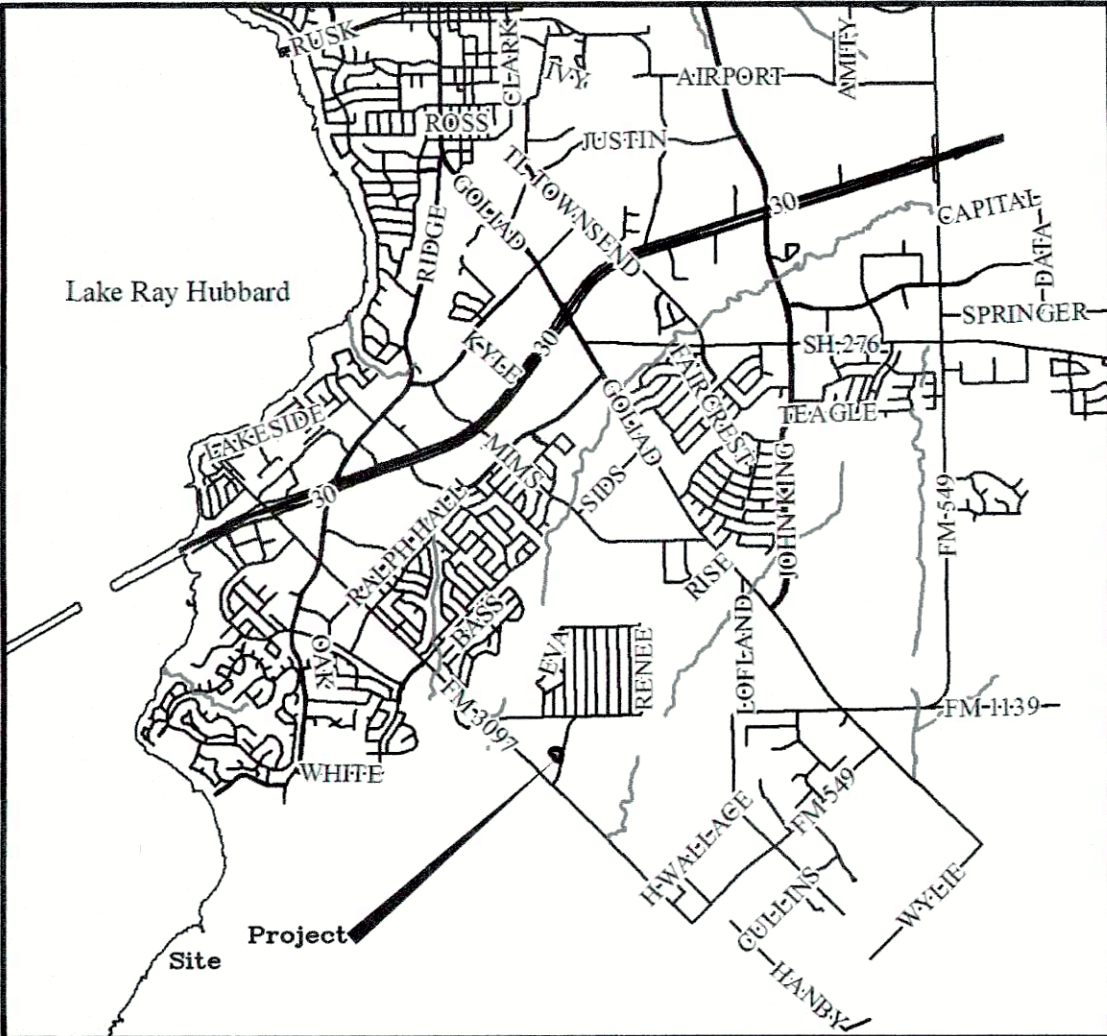


DRAINAGE AREA CALCULATIONS									
Area No.	Acres	Runoff Coeff.	CA	T _c (min.)	I ₅ (in./hr.)	Q ₅ (c.f.s.)	I100 (in./hr.)	Q ₁₀₀ (c.f.s.)	Drains to
A-1	0.51	0.50	0.26	10.0	6.10	1.56	9.80	2.50	Existing Pond
A-2	1.13	0.50	0.57	10.0	6.10	3.45	9.80	5.54	Adjacent Property
OS-1	1.46	0.50	0.73	10.0	6.10	4.45	9.80	7.15	Existing Pond

**DRAINAGE DESIGN CRITERIA
RATIONAL METHOD
100 YEAR DESIGN**

Q = CIA
Q = FLOW IN CUBIC FEET PER SECOND = CFS
C = RUNOFF COEFFICIENT = .50
I = INTENSITY WITH TIME OF CONCENTRATION OF 10 MINUTES = 9.80 IN/HR
A = DRAINAGE AREA = AREA IN ACRES

- NOTES:**
1. THE RAINFALL INTENSITY IS BASED OFF TABLE 3.1 FROM THE CITY OF ROCKWALL STANDARDS OF DESIGN AND CONSTRUCTION (2003).
 2. THE RUNOFF COEFFICIENT IS BASED OFF TABLE 3.1 FROM THE CITY OF ROCKWALL STANDARDS OF DESIGN AND CONSTRUCTION (2003).

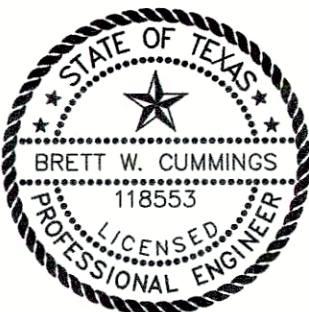



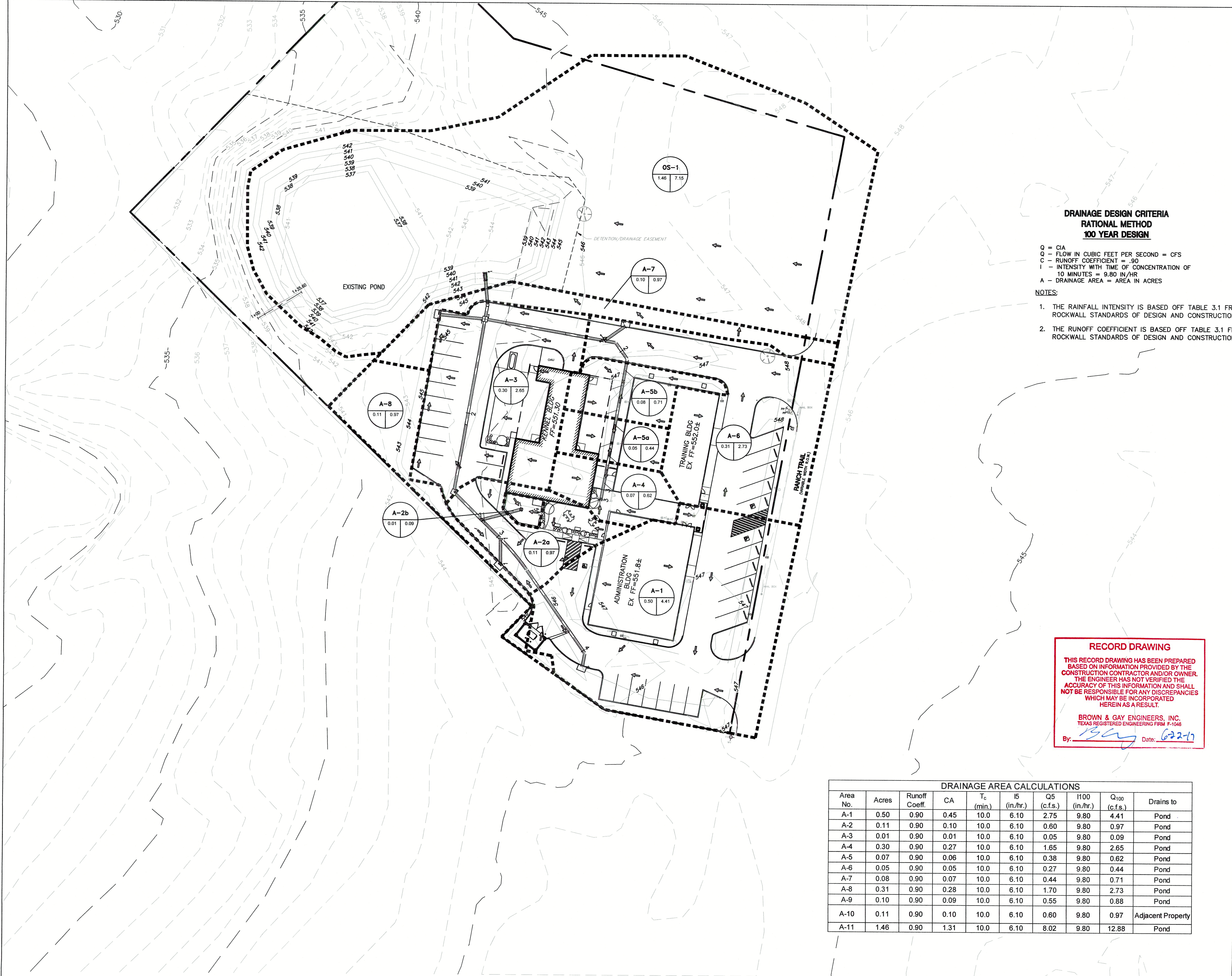
VICINITY MAP
MAPSCO PG. NO. 30C GRID 'R'

LEGEND

- DRAINAGE AREA
- 1. DRAINAGE AREA NUMBER
- 2. DRAINAGE AREA IN ACRES
- 3. RUNOFF IN C.F.S.
- ← DRAINAGE FLOW DIRECTION
- XX DRAINAGE DESIGN POINTS
- EXISTING STORM SEWER w/ INLET
- PROPOSED STORM SEWER w/ INLET
- 5.36 PROPOSED GRADE ELEVATION
- 5.36 EXISTING GRADE ELEVATION (SURVEY)

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

REVISIONS			
REV NO.	DATE	DESCRIPTION	BY
BENCHMARKS & CONTROL POINTS			
BM # 1: City of Rockwall Benchmark No. R014. An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line. Elevation: 567.704			
BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole. Elevation: 561.017			
Scale: 1" = 30'		  Brown & Gay Engineers, Inc. F-1046	
EXISTING DRAINAGE AREA MAP			
PATRIOT PAWS			
254 RANCH TRAIL			
CITY OF ROCKWALL, TEXAS			
DESIGN	DRAWN	DATE	FILE
BWC	KAT	FEB 2016	
NUMBER			8

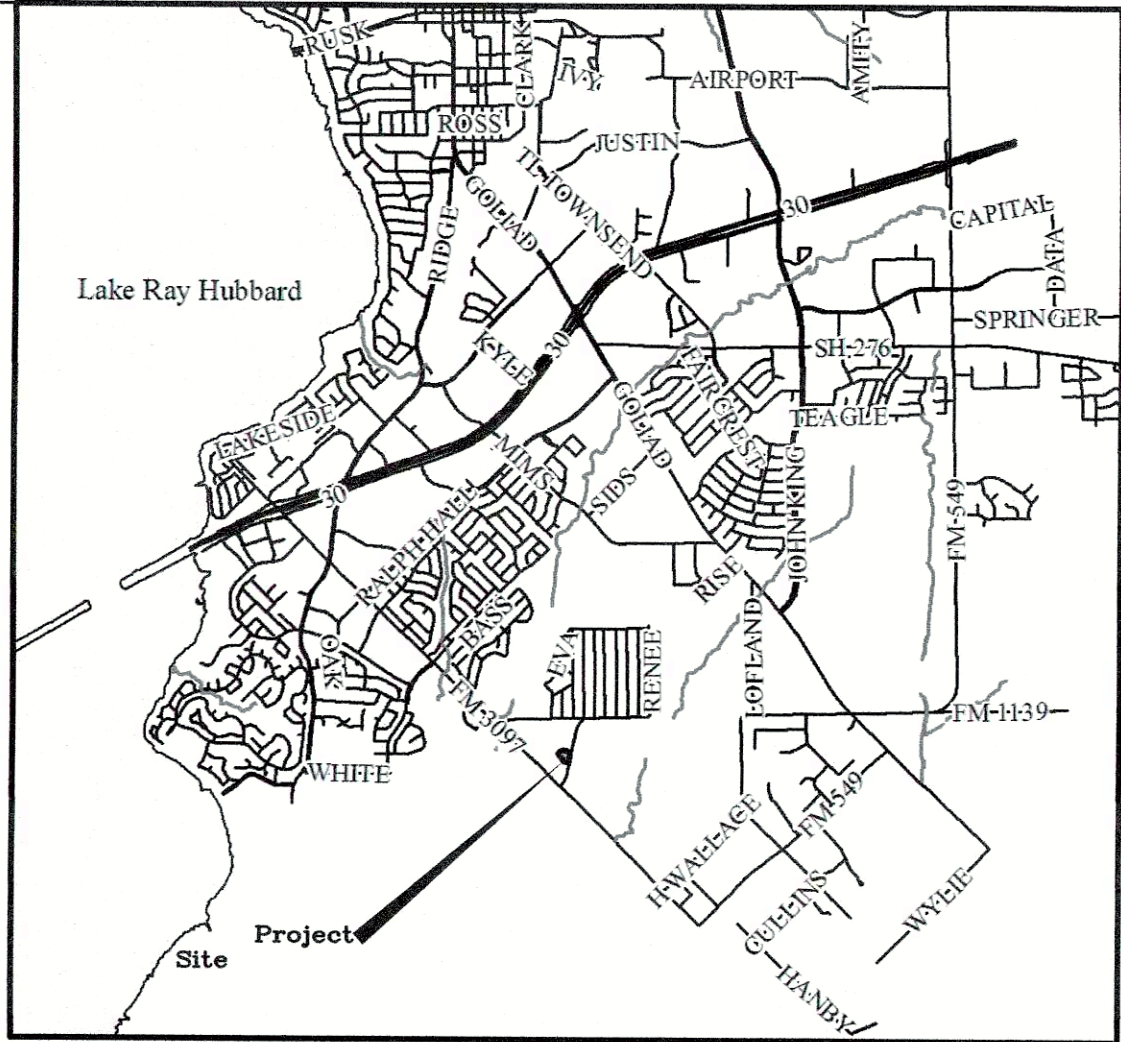


**DRAINAGE DESIGN CRITERIA
RATIONAL METHOD
100 YEAR DESIGN**

Q = CIA
Q = FLOW IN CUBIC FEET PER SECOND = CFS
C = RUNOFF COEFFICIENT = .90
I = INTENSITY WITH TIME OF CONCENTRATION OF
10 MINUTES = 9.80 IN/HR
A = DRAINAGE AREA = AREA IN ACRES

NOTES:

1. THE RAINFALL INTENSITY IS BASED OFF TABLE 3.1 FROM THE CITY OF ROCKWALL STANDARDS OF DESIGN AND CONSTRUCTION (2003).
2. THE RUNOFF COEFFICIENT IS BASED OFF TABLE 3.1 FROM THE CITY OF ROCKWALL STANDARDS OF DESIGN AND CONSTRUCTION (2003).



**VICINITY MAP
MAPSCO PG. NO. 30C GRID 'R'**

LEGEND

- DRAINAGE AREA
- 1 2 3 DRAINAGE AREA NUMBER
- 1 2 3 DRAINAGE AREA IN ACRES
- 1 2 3 RUNOFF IN C.F.S.
- XX DRAINAGE FLOW DIRECTION
- XX DRAINAGE DESIGN POINTS
- EXISTING STORM SEWER w/ INLET
- PROPOSED STORM SEWER w/ INLET
- PROPOSED GRADE ELEVATION
- EXISTING GRADE ELEVATION (SURVEY)

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

REVISIONS

REV NO.	DATE	DESCRIPTION	BY

BENCHMARKS & CONTROL POINTS

BM # 1: City of Rockwall Benchmark No. "Reset #1". An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.

Elevation: 567.704

BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.

Elevation: 561.017

RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE CONSTRUCTION CONTRACTOR AND/OR OWNER. THE ENGINEER HAS NOT VERIFIED THE ACCURACY OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

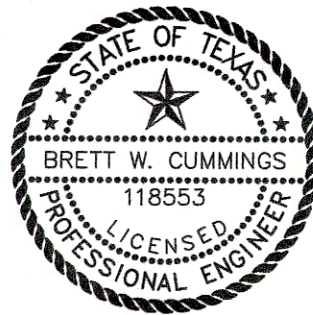
BROWN & GAY ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-1046

By: *[Signature]* Date: 6-22-17

DRAINAGE AREA CALCULATIONS

Area No.	Acres	Runoff Coeff.	CA	T _c (min.)	I ₅ (in./hr.)	Q ₅ (c.f.s.)	I100 (in./hr.)	Q ₁₀₀ (c.f.s.)	Drains to
A-1	0.50	0.90	0.45	10.0	6.10	2.75	9.80	4.41	Pond
A-2	0.11	0.90	0.10	10.0	6.10	0.60	9.80	0.97	Pond
A-3	0.01	0.90	0.01	10.0	6.10	0.05	9.80	0.09	Pond
A-4	0.30	0.90	0.27	10.0	6.10	1.65	9.80	2.65	Pond
A-5	0.07	0.90	0.06	10.0	6.10	0.38	9.80	0.62	Pond
A-6	0.05	0.90	0.05	10.0	6.10	0.27	9.80	0.44	Pond
A-7	0.08	0.90	0.07	10.0	6.10	0.44	9.80	0.71	Pond
A-8	0.31	0.90	0.28	10.0	6.10	1.70	9.80	2.73	Pond
A-9	0.10	0.90	0.09	10.0	6.10	0.55	9.80	0.88	Pond
A-10	0.11	0.90	0.10	10.0	6.10	0.60	9.80	0.97	Adjacent Property
A-11	1.46	0.90	1.31	10.0	6.10	8.02	9.80	12.88	Pond

Scale: 1" = 30'
0' 30' 60'



[Signature] 6-22-17
Brown & Gay Engineers, Inc.
F-1046

DRAINAGE AREA MAP

**PATRIOT PAWS
254 RANCH TRAIL**

CITY OF ROCKWALL, TEXAS

DESIGN	DRAWN	DATE	FILE	NUMBER	
BWC	KAT	FEB 2016			9

BROWN & GAY ENGINEERS, INC.
W:\01_Projects\2746-00\03_CALC\01_Sheets\VP-HYDRAULIC_CALC\CS.dwg Jun 22, 2017 - 10:08am skowell

HYDRAULIC CALCULATIONS																																																	
FROM	TO	Pipe Length feet	Drainage Area			Runoff Coeff	Incr.	Total	Time of Concentration				5-Year Intensity	100-Year Intensity	Q 5 Runoff	Q 100 Runoff	Inlet Bypass	Q in Pipe	Storm Pipe	Box Culvert			Manning n	Hydr Grade	Hydraulic Grade Line Elevation		Head Loss Calculations							Head Loss at Structure	Design HGL	Invert Elevation			Comments										
			Incremental	Area	Total Area				Inlet Time	Travel Time	Total Time	No. of Storm Drain								Storm Drain	Storm Drain	V1			V2			Loss		Head Loss		FROM	TO			TC Elev													
			Area	(Acres)	(Acres)																																												
			No.	"A"	"A"				"C"	"CA"	"CA"	(min.)								(min.)	(min.)	"I" (in./hr)			"I" (in./hr)	"Q" (c.f.s.)	"Q" (c.f.s.)	"Q" (c.f.s.)	"Q" (c.f.s.)	Diameter	Spans	Width	Height			Value	"S" (ft./ft.)	Dwnstrm Elev.		Upstrm Elev.	Flow (in) (f.p.s.)	Flow (out) (f.p.s.)	V1*2 / 2g (feet)	V2*2 / 2g (feet)	Coeff (Kj)	KjV1*2 / 2g (feet)	"Hk" (feet)	Elevation (feet)	(feet)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	19a	19b	19c	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34													
STORM DRAIN LINE A																																																	
410.22	402.25	7.97	A-1	0.50	0.50	0.90	0.45	0.45	10.00	0.05	10.05	6.10	9.80	2.75	4.41	0.00	4.41	18				0.013	0.0018	543.99	543.97		2.50		0.10	1.25		0.12	544.11	541.93	541.91	546.10													
402.25	302.45	99.80			0.50		0.00	0.45	10.05	0.67	10.72	6.10	9.80	2.75	4.41	0.00	4.41	18				0.013	0.0018	543.87	543.70	2.50	2.50	0.10	0.10	0.35	0.03	0.10	543.97	541.91	541.61	546.56	⚠												
302.45	283.80	18.65	A-2a	0.11	0.61	0.90	0.10	0.55	10.72	0.11	10.83	5.71	9.01	3.13	4.95	0.00	4.95	18				0.013	0.0022	543.60	543.55	2.50	2.80	0.10	0.12	0.75	0.07	0.10	543.70	541.61	541.55	545.93													
283.80	256.29	27.51	A-2b	0.01	0.62	0.90	0.01	0.56	10.83	0.16	10.99	5.68	8.98	3.17	5.01	0.00	5.01	18				0.013	0.0023	543.45	543.39	2.80	2.84	0.12	0.12	0.60	0.07	0.10	543.55	541.55	541.47	546.02													
256.29	133.04	123.25			0.62		0.00	0.56	10.99	0.72	11.72	5.68	8.98	3.17	5.01	0.00	5.01	18				0.013	0.0023	543.29	543.01	2.84	2.84	0.12	0.12	0.50	0.06	0.10	543.39	541.47	541.10	545.91	⚠												
133.04	123.04	10.00			0.62		0.00	0.56	11.72	0.06	11.78	5.68	8.98	3.17	5.01	0.00	5.01	18				0.013	0.0023	542.91	542.89	2.84	2.84	0.12	0.12	0.25	0.03	0.10	543.01	541.10	541.07	545.73	⚠												
123.04	100.00	23.04	A-3-A-6	0.81	1.43	0.90	0.73	1.29	11.78	0.06	11.84	5.50	8.72	7.08	11.22	0.00	11.22	18				0.013	0.0114	542.76	542.50	2.84	6.35	0.12	0.63	0.20	0.02	0.13	542.89	541.07	541.00	545.58													
STORM DRAIN LINE A-1																																																	
117.68	100.00	17.68	A-2a	0.11	0.11	0.90	0.10	0.10	10.00	0.54	10.54	6.10	9.80	0.60	0.97	0.00	0.97	18				0.013	0.0001	543.70	543.70		0.55		0.00	1.25		0.10	543.80	541.53	541.61	546.03	⚠												
STORM DRAIN LINE A-2																																																	
132.10	100.00	32.10	A-3	0.30	0.30	0.90	0.27	0.27	10.00	0.36	10.36	6.10	9.80	1.65	2.65	0.00	2.65	18				0.013	0.0006	543.03	543.01		1.50		0.03	1.25		0.10	543.13	541.20	541.10	544.88													
STORM DRAIN LINE A-3																																																	
306.90	272.51	34.39	A-4	0.07	0.07	0.90	0.06	0.06	10.00	1.64	11.64	6.10	9.80	0.38	0.62	0.00	0.62	18				0.013	0.0000	543.63	543.63		0.35		0.00	1.25		0.10	543.73	544.34	543.91	547.05	⚠												
266.77	222.85	43.92	A-5a	0.05	0.12	0.90	0.05	0.11	11.64	1.37	13.01	5.53	8.75	0.60	0.95	0.00	0.95	18				0.013	0.0001	543.53	543.53	0.35	0.54	0.00	0.00	0.50	0.00	0.10	543.63	543.91	543.37	547.07													
222.85	207.01	15.84	A-5b	0.08	0.20	0.90	0.07	0.18	13.01	0.31	13.32	5.28	8.40	0.95	1.51	0.00	1.51	18				0.013	0.0002	543.43	543.43	0.54	0.86	0.00	0.01	0.50	0.00	0.10	543.53	543.37	543.07	546.83													
207.01	192.86	14.15			0.20		0.00	0.18	13.32	0.28	13.59	5.28	8.40	0.95	1.51	0.00	1.51	18				0.013	0.0002	543.33	543.32	0.86	0.86	0.01	0.01	0.35	0.00	0.10	543.43	543.07	542.81	546.79													
192.86	184.96	7.90			0.20		0.00	0.18	13.59	0.15	13.75	5.28	8.40	0.95	1.51	0.00	1.51	18				0.013	0.0002	543.22	543.22	0.86	0.86	0.01	0.01	0.35	0.00	0.10	543.32	542.81	542.67	546.69													
184.96	100.00	84.96	A-6	0.31	0.51	0.90	0.28	0.46	13.75	0.66	14.41	5.16	8.23	2.37	3.78	0.00	3.78	18				0.013	0.0013	543.12	543.01	0.86	2.14	0.01	0.07	0.75	0.01	0.10	543.22	542.67	541.10	546.73													
STORM DRAIN LINE A-3-1																																																	
117.68	100.00	17.68	A-6	0.31	0.31	0.90	0.28	0.28	10.00	0.19	10.19	6.10	9.80	1.70	2.73	0.00	2.73	18				0.013	0.0007	543.23	543.22		1.55		0.04	1.25		0.10	543.33	543.05	542.67	547.05													
STORM DRAIN LINE A-4																																																	
128.78	100.00	28.78	A-2b	0.01	0.01	0.90	0.01	0.01	10.00	9.61	19.61	6.10	9.80	0.05	0.09	0.00	0.09	18				0.013	0.0000	543.55	543.55		0.05		0.00	1.25		0.10	543.65	543.43	541.55	546.93													

REVISIONS			
REV. NO.	DATE	DESCRIPTION	BY
1	6-21-17	REVISED FOR AS BUILTS	BWC

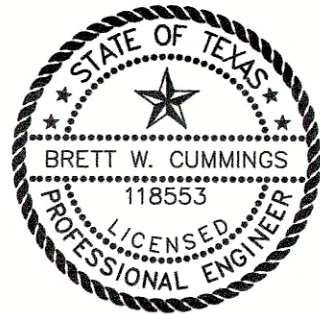
BENCHMARKS & CONTROL POINTS

BM # 1: City of Rockwall Benchmark No. *Reset #1*. An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.

Elevation: 567.704

BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.

Elevation: 561.017



Brown & Gay Engineers, Inc.
F-1046

RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED
BASED ON INFORMATION PROVIDED BY THE
CONSTRUCTION CONTRACTOR AND/OR OWNER.
THE ENGINEER HAS NOT VERIFIED THE
ACCURACY OF THIS INFORMATION AND SHALL
NOT BE RESPONSIBLE FOR ANY DISCREPANCIES
WHICH MAY BE INCORPORATED
HEREIN AS A RESULT.

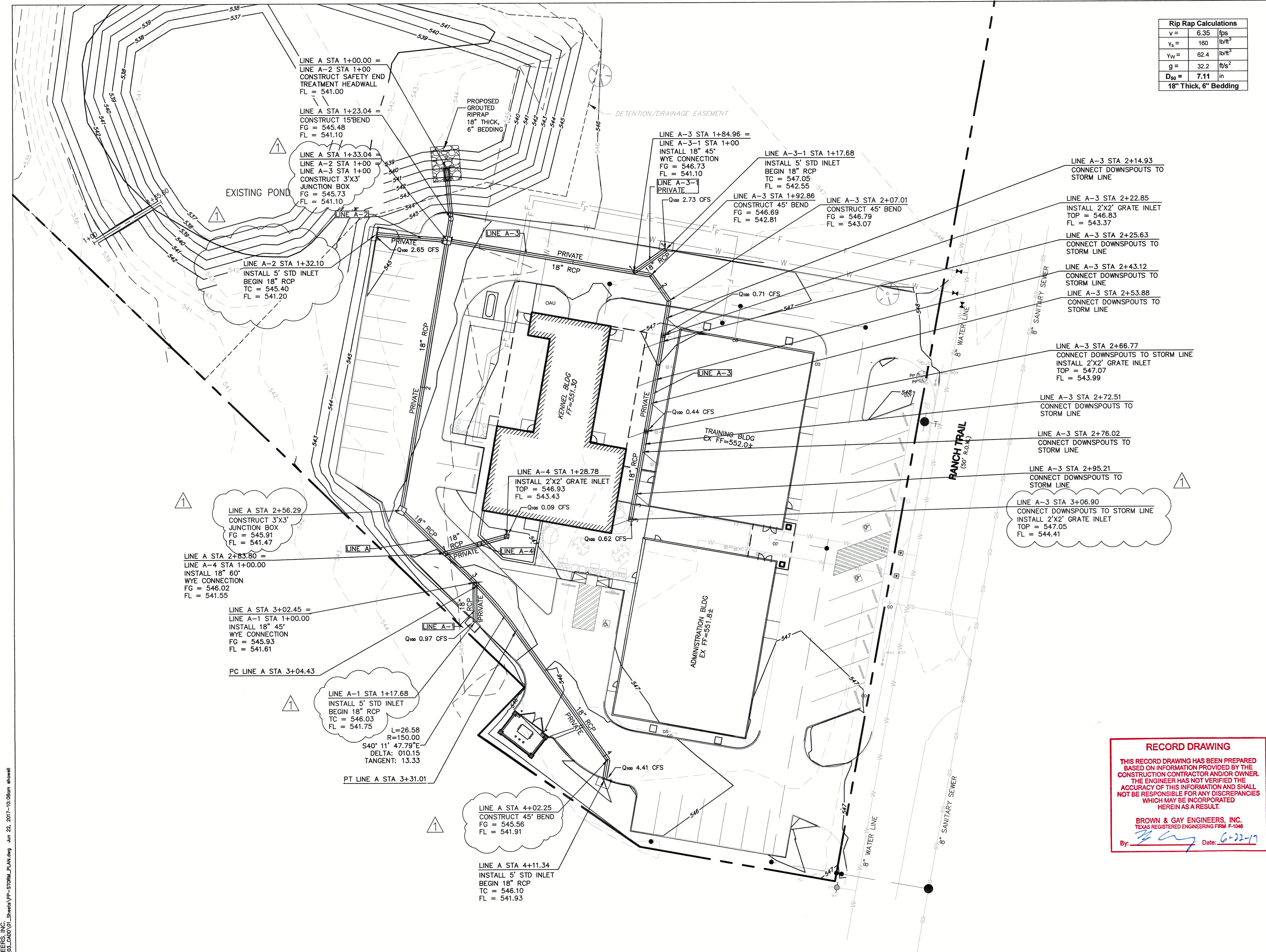
BROWN & GAY ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-1046

By: Date: 6-22-17

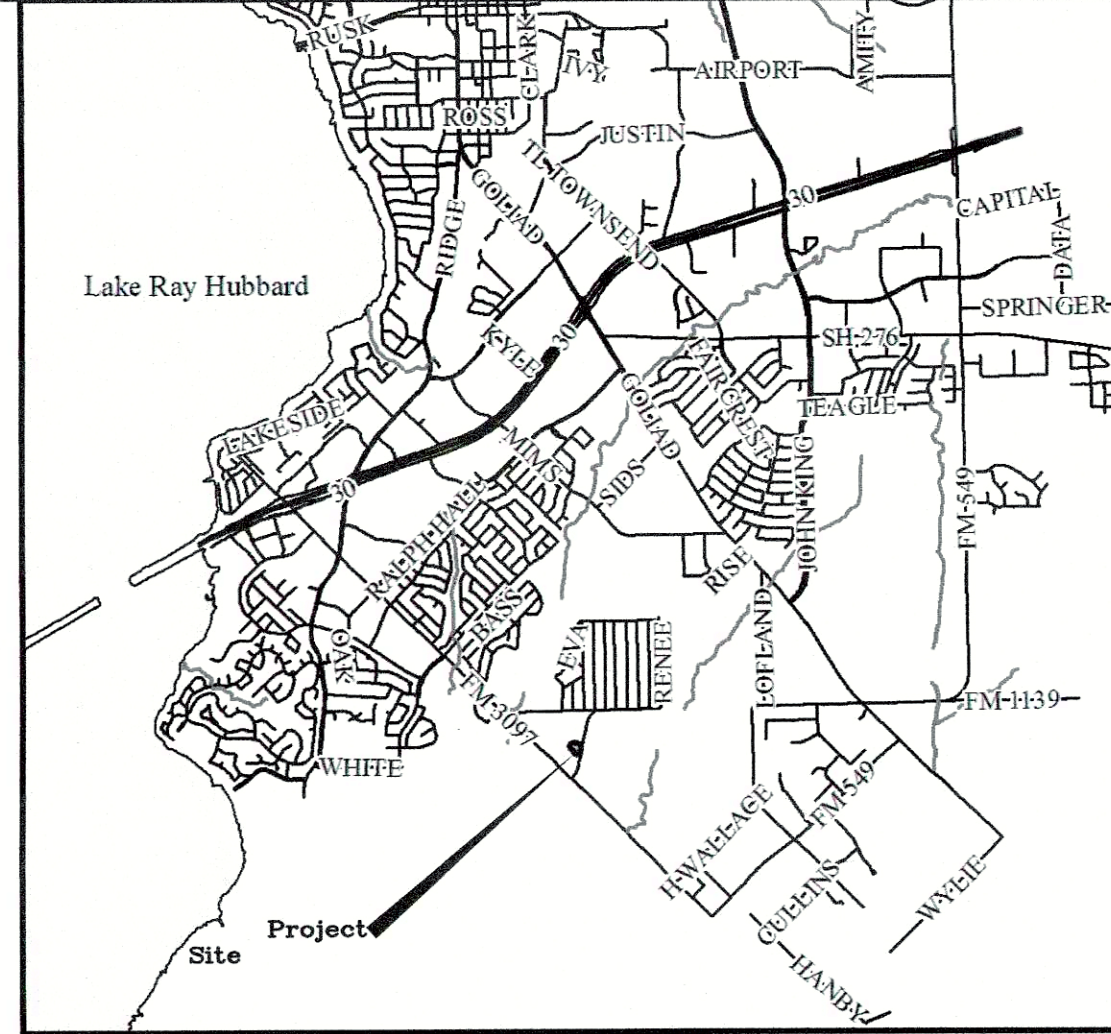
ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH
THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING
AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO
RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

HYDRAULIC CALCULATIONS					
PATRIOT PAWS					
254 RANCH TRAIL					
CITY OF ROCKWALL, TEXAS					
DESIGN	DRAWN	DATE	FILE	NUMBER	
BWC	KAT	FEB 2016			10

BROWN & GAY ENGINEERS, INC.
1101 Westport Dr., Suite 200, Rockwall, TX 75087
Jun 22, 2017 - 10:08am showall



Rip Rap Calculations		
v =	6.35	fps
V _s =	160	lb/ft ³
Y _w =	62.4	lb/ft ³
g =	32.2	ft/s ²
D ₅₀ =	7.11	in
18" Thick, 6" Bedding		



VICINITY MAP
MAPSCO PG. NO. 30C GRID 'R'

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

REVISIONS			
REV NO.	DATE	DESCRIPTION	BY
1	6-21-17	REVISED FOR AS BUILTS	BWC

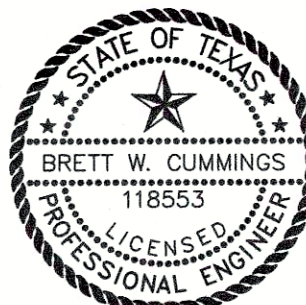
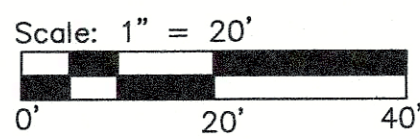
BENCHMARKS & CONTROL POINTS

BM # 1: City of Rockwall Benchmark No. R014. An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.

Elevation: 567.704

BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.

Elevation: 561.017



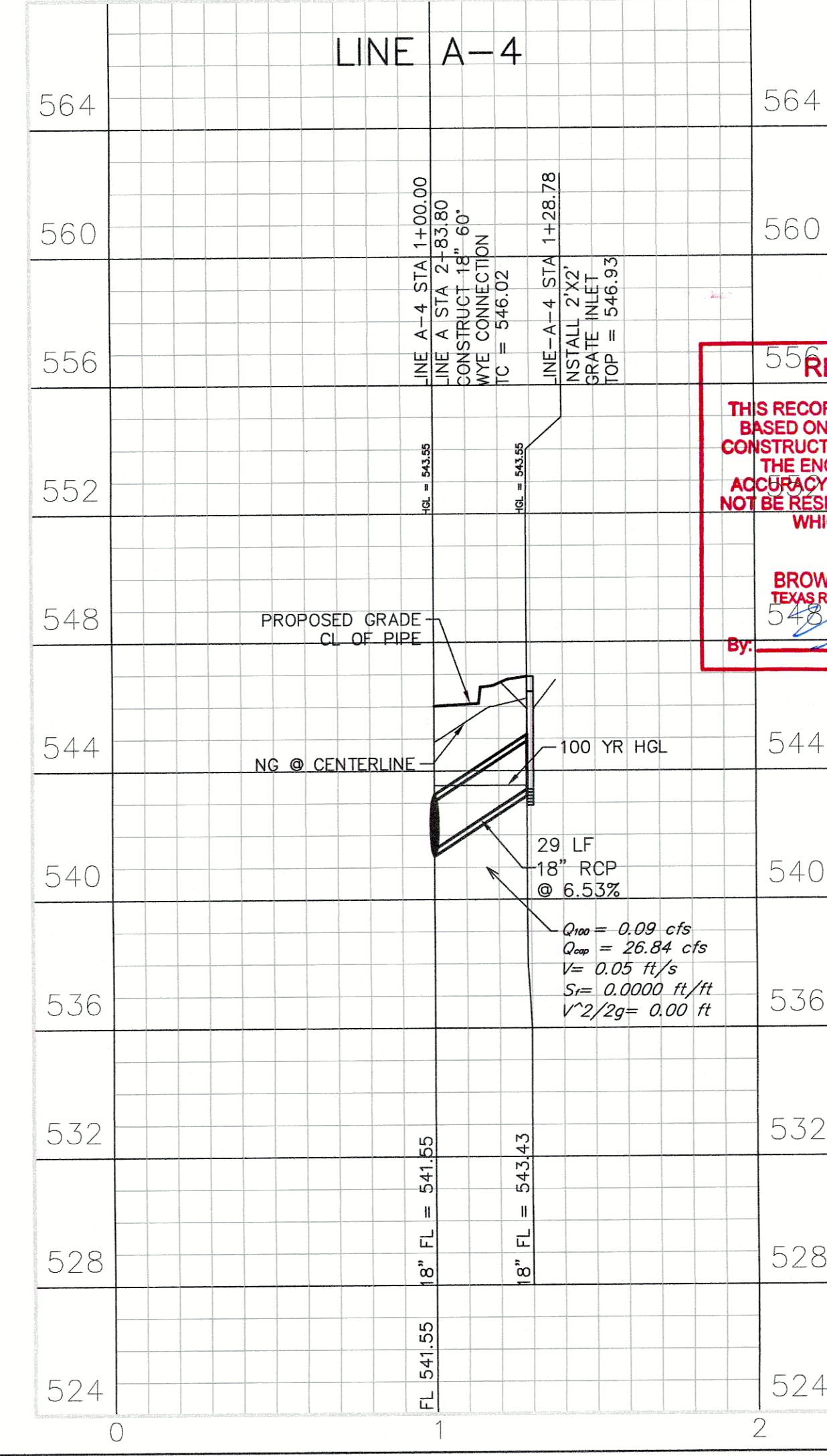
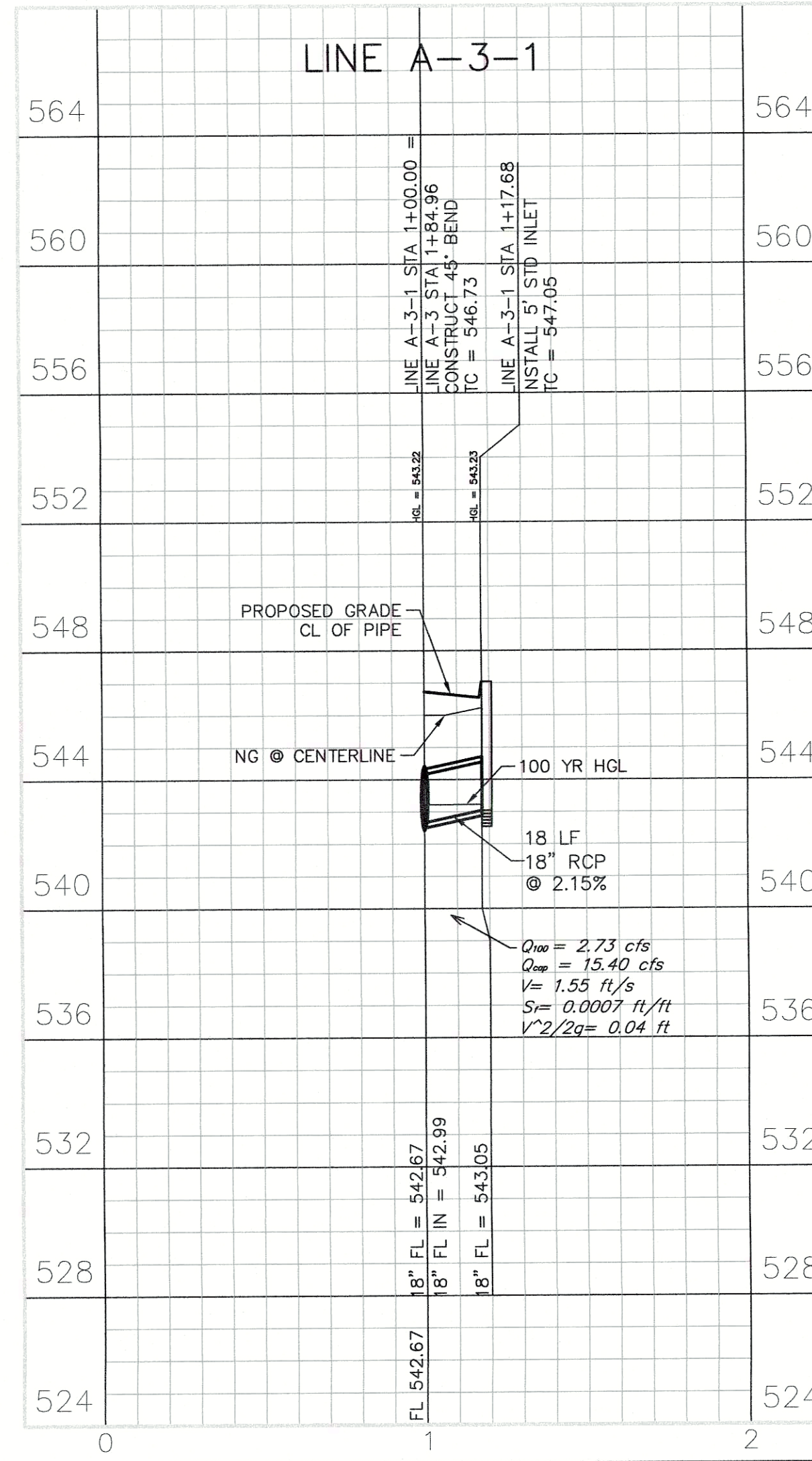
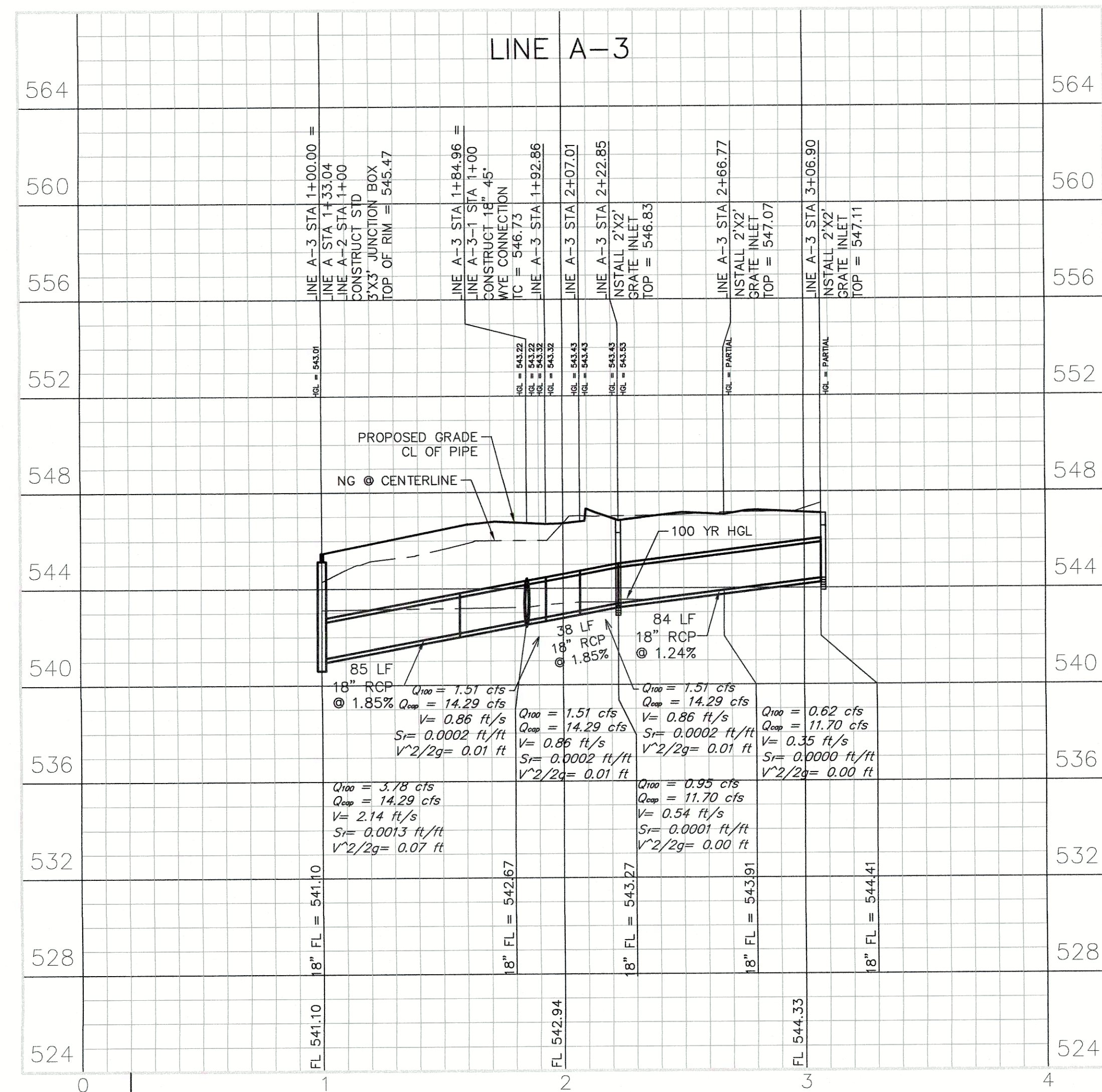
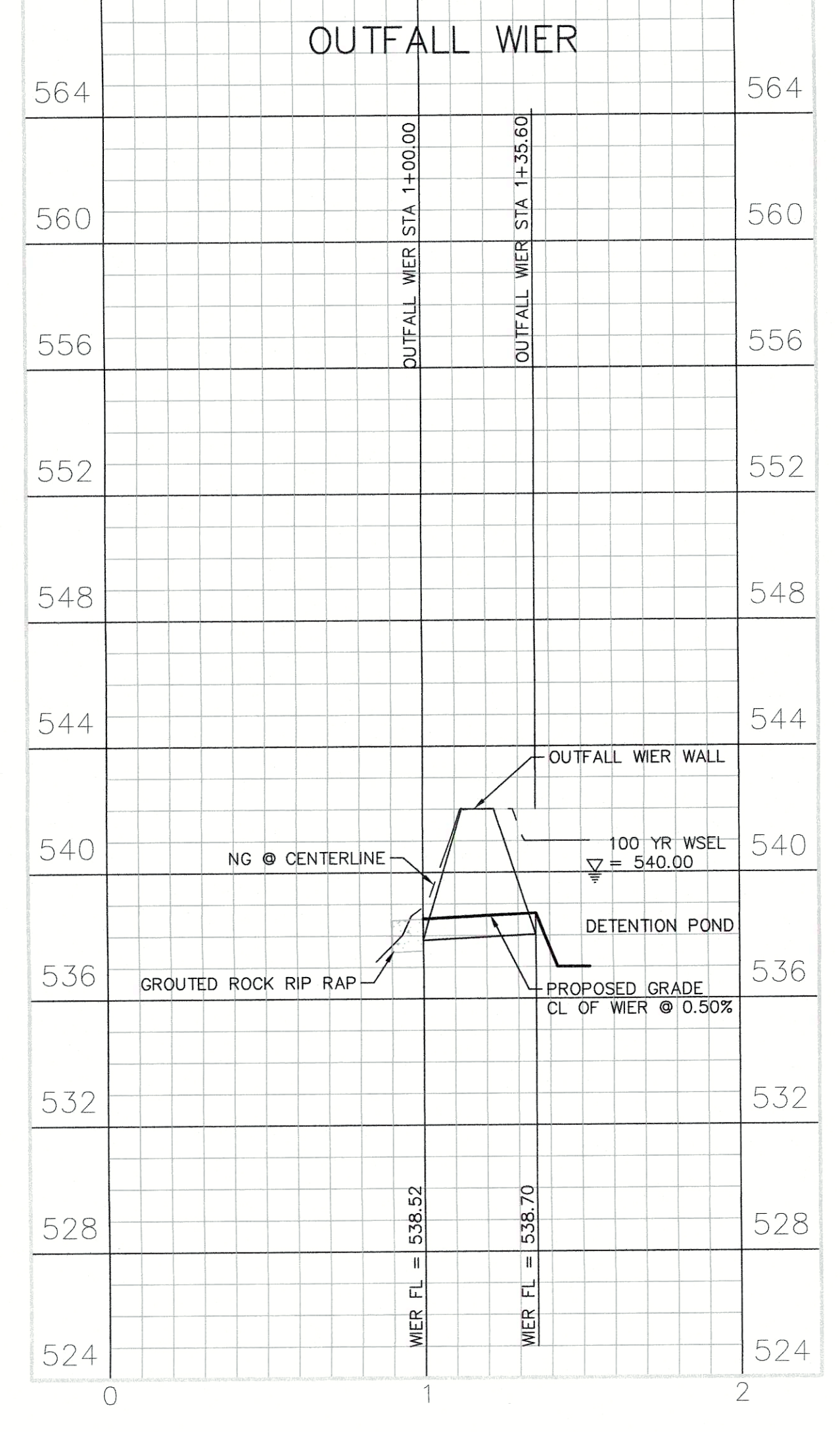
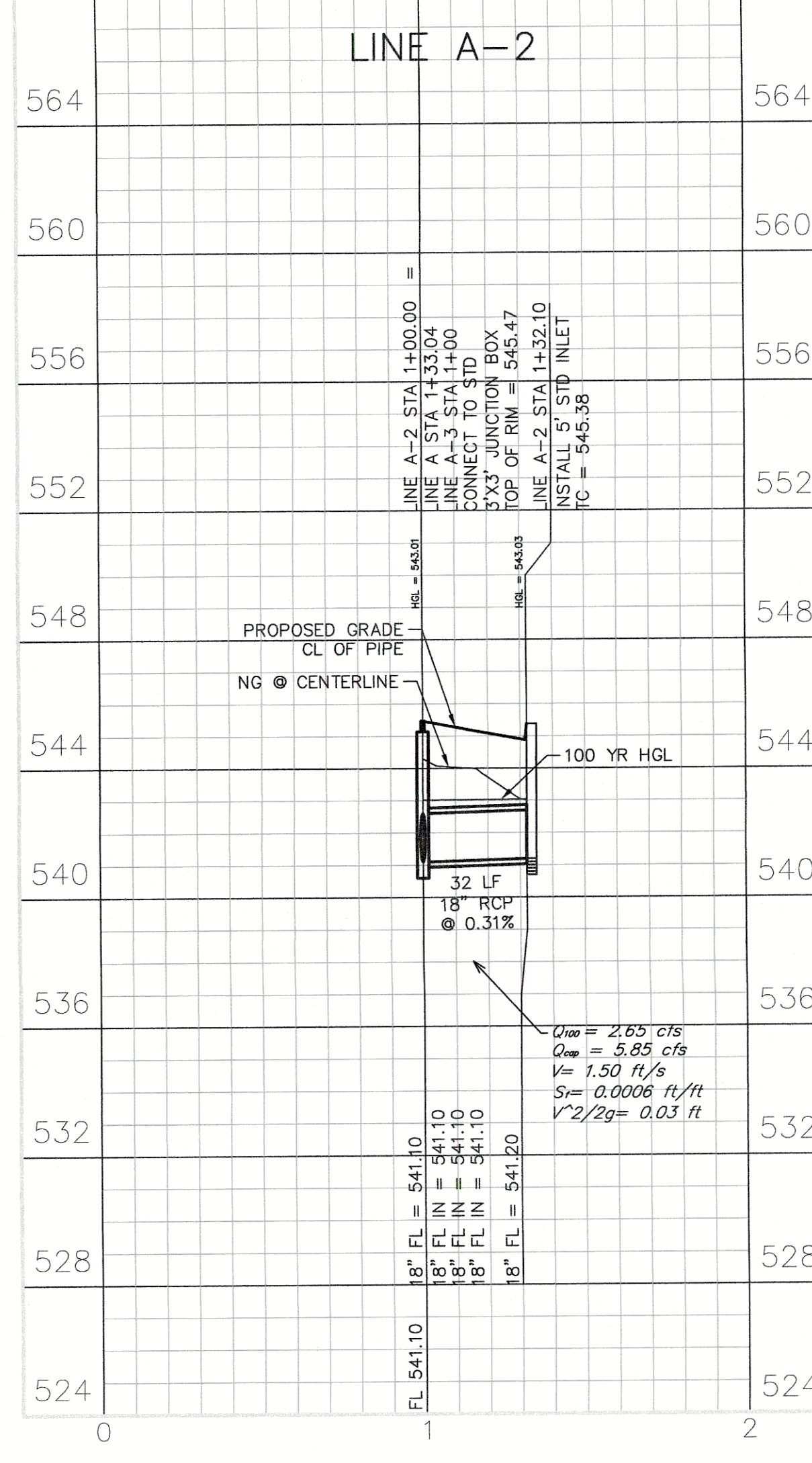
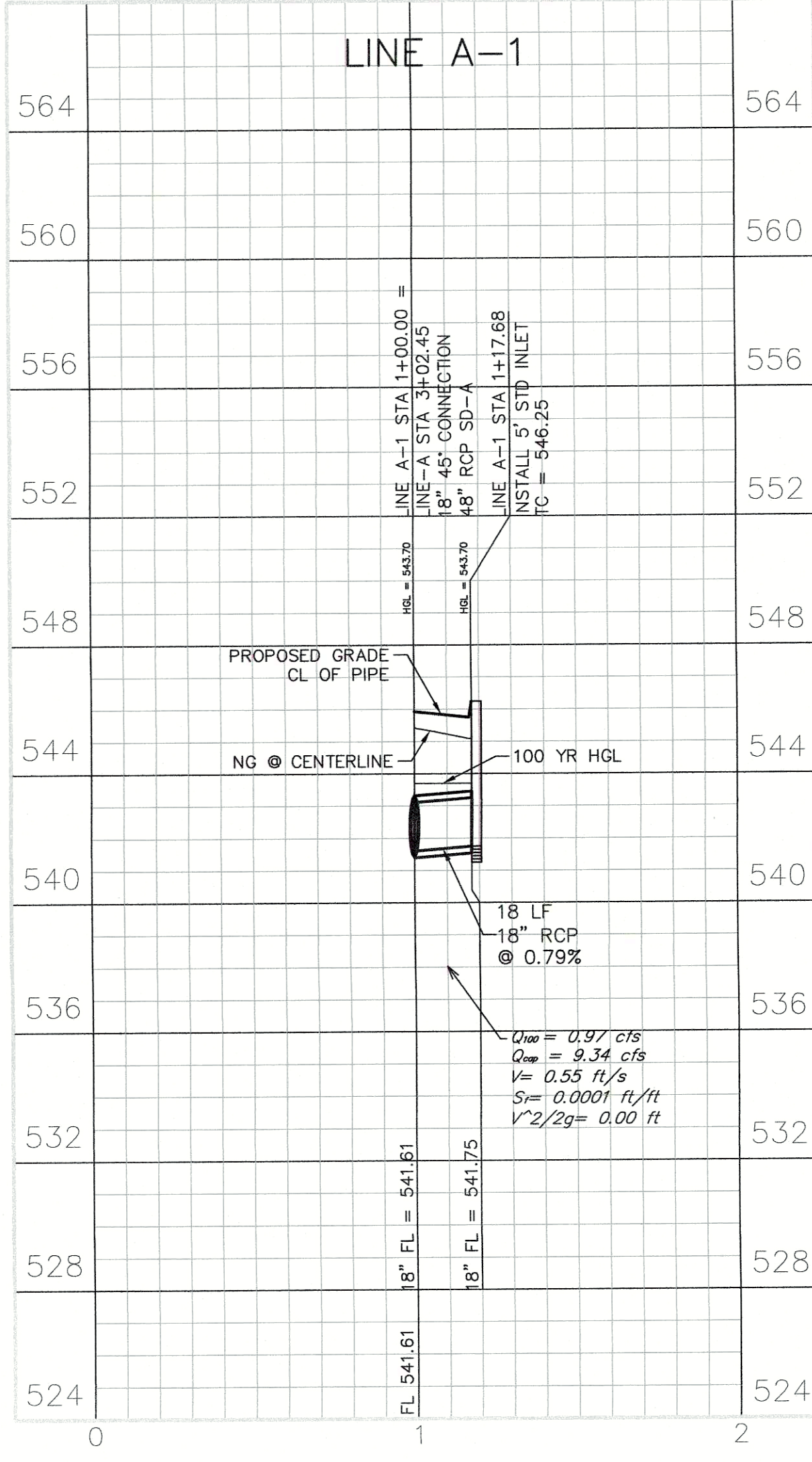
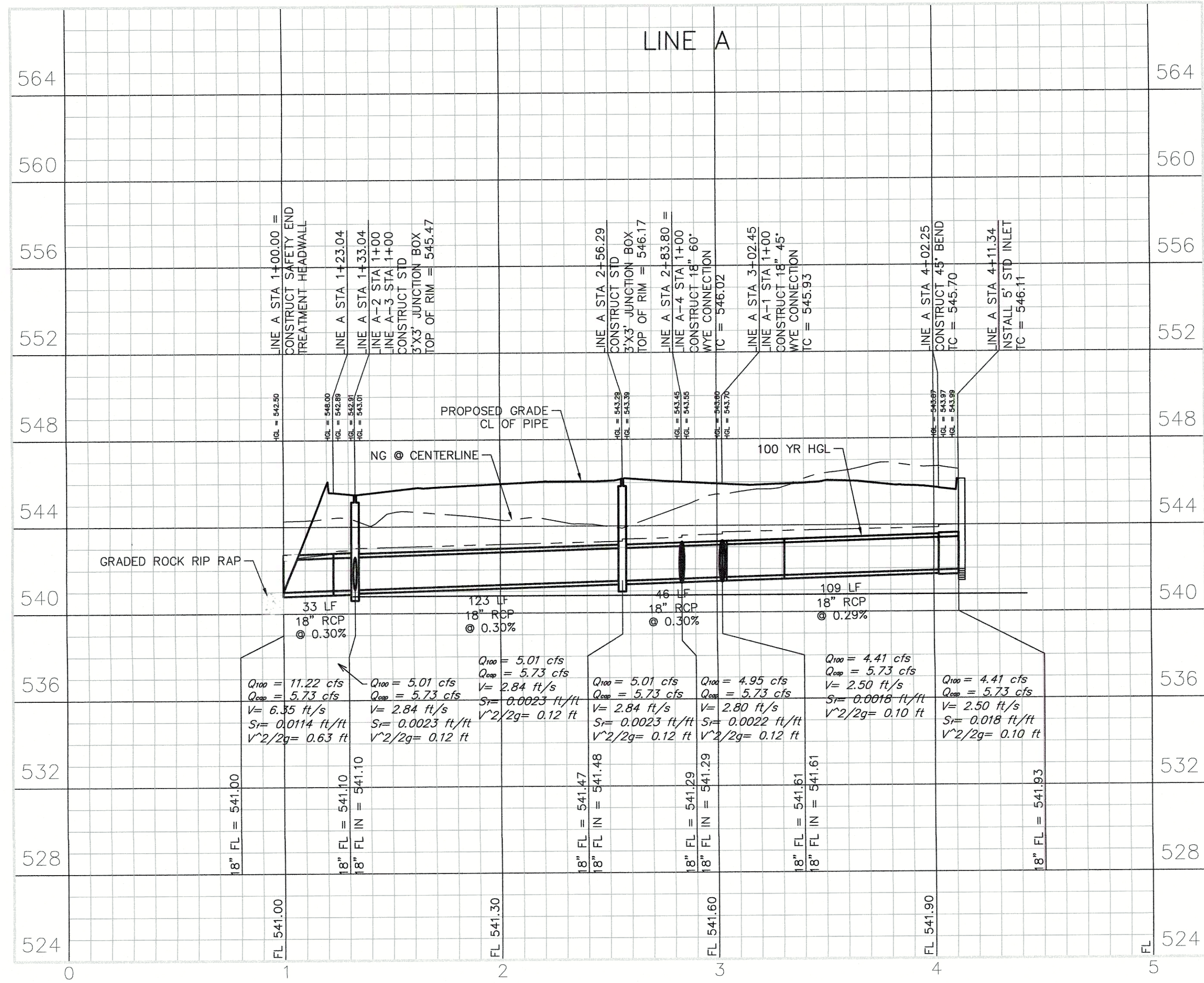
Brown & Gay Engineers, Inc.
F-1046

RECORD DRAWING
THIS RECORD DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE CONSTRUCTION CONTRACTOR AND/OR OWNER. THE ENGINEER HAS NOT VERIFIED THE ACCURACY OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES WHICH MAY BE INCORPORATED HEREIN AS A RESULT.
BROWN & GAY ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-1046
By: [Signature] Date: 6-22-17

STORM PLAN
PATRIOT PAWS
254 RANCH TRAIL

CITY OF ROCKWALL, TEXAS

DESIGN	DRAWN	DATE	FILE	NUMBER
BWC	KAT	FEB 2016		11



RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED
BASED ON INFORMATION PROVIDED BY THE
CONSTRUCTION CONTRACTOR AND/OR OWNER.
THE ENGINEER HAS NOT VERIFIED THE
ACCURACY OF THIS INFORMATION AND SHALL
NOT BE RESPONSIBLE FOR ANY DISCREPANCIES
WHICH MAY BE INCORPORATED
HEREIN AS A RESULT.

BROWN & GAY ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-1046

By: *[Signature]* Date: 6-22-17

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH
THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING
AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO
RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

REVISIONS			
REV NO.	DATE	DESCRIPTION	BY

BENCHMARKS & CONTROL POINTS

BM # 1: City of Rockwall Benchmark No. R014. An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.

Elevation: 567.704

BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.

Elevation: 561.017

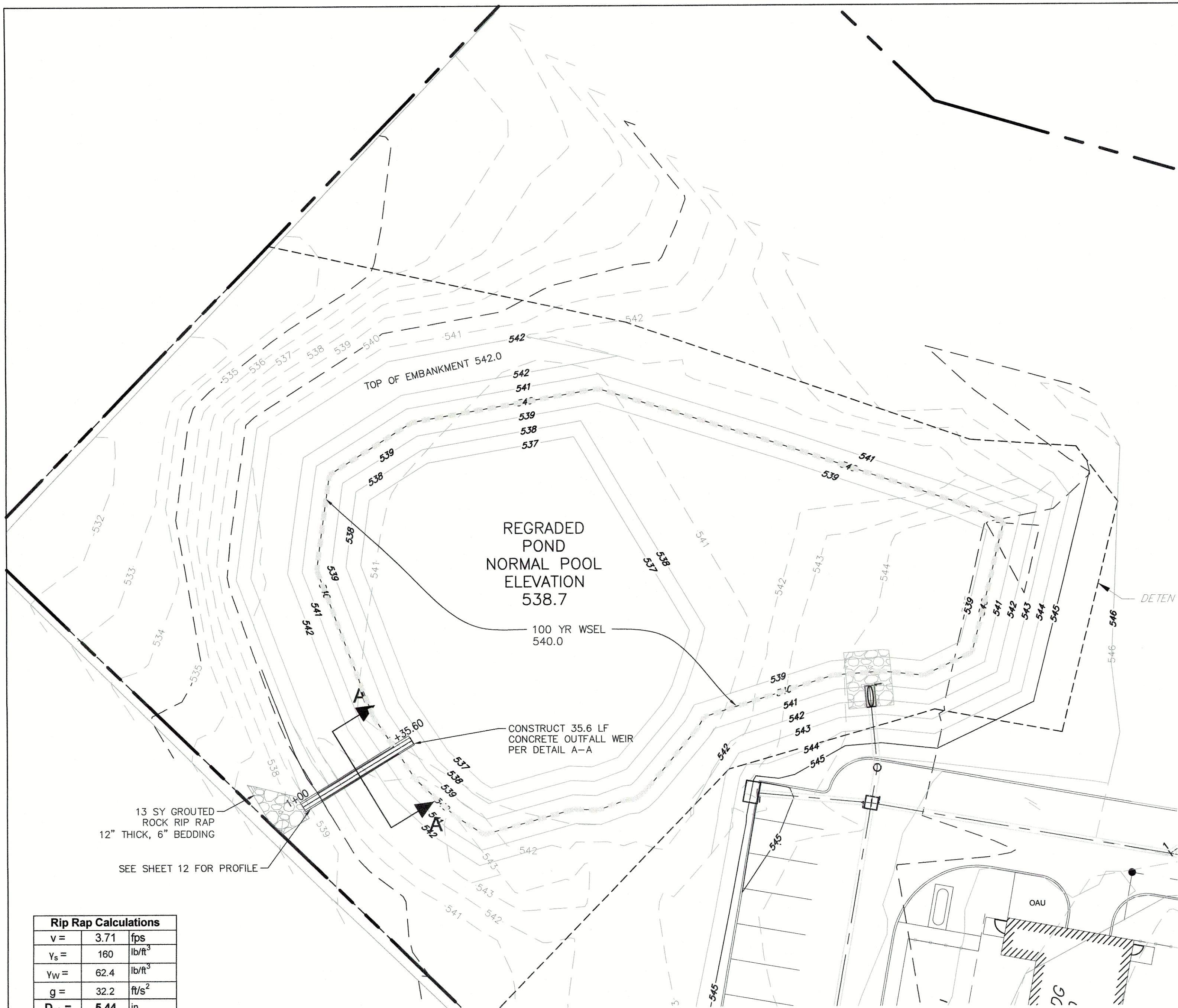
Scale: 1" = 40'

0' 40' 80'

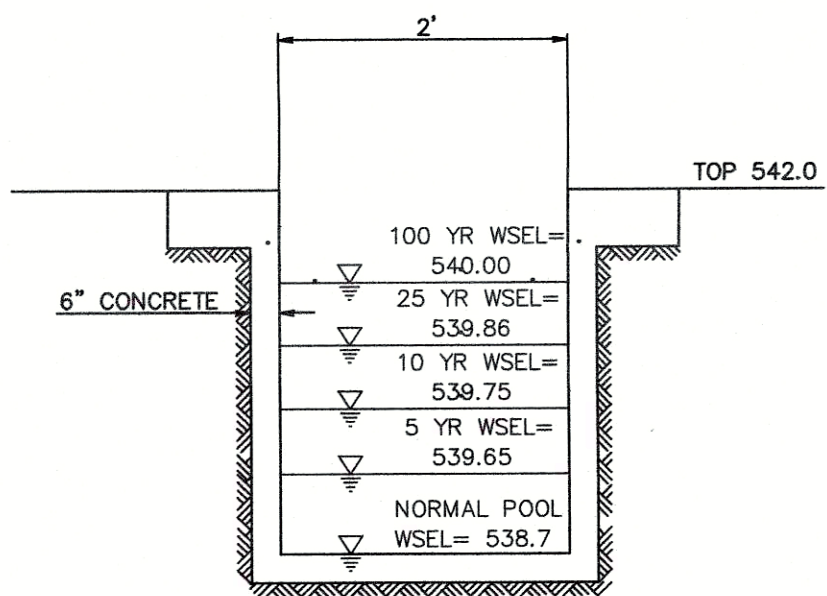
1" = 40'H
1" = 4'V

[Signature] 6-22-17
Brown & Gay Engineers, Inc.
F-1046

STORM PROFILES					
PATRIOT PAWS					
254 RANCH TRAIL					
CITY OF ROCKWALL, TEXAS					
DESIGN	DRAWN	DATE	FILE	NUMBER	
BWC	KAT	FEB 2016			12



Rip Rap Calculations		
v =	3.71	fps
γ_s =	160	lb/ft ³
γ_{ws} =	62.4	lb/ft ³
g =	32.2	ft/s ²
D_{90} =	5.44	in
12" Thick, 6" Bedding		



SECTION A-A
CONCRETE OUTFALL WEIR DETAIL
(NTS)

Present Conditions		
$Q_p = C_p i A$		
Return Period =	5	Yr
$A_{(exist)}$ =	1.97	Ac.
C_p (exist) =	0.50	
T_c (exist) =	10.0	min
i =	6.10	in/hr
Q_p =	6.01	cfs
Future Conditions		
$Q_f = C_p i A$		
$A_{(developed)}$ =	1.53	Ac.
C_p (developed) =	0.90	
$A_{(undeveloped)}$ =	1.46	Ac.
C_p (undeveloped) =	0.50	
T_c =	10.0	min
i =	6.10	in/hr
Q_f =	12.85	cfs

Maximum Storage Volume						
T (min)	I	Q	Inflow	Outflow	Max Storage Volume	
10	6.10	12.85	7711.62	3605.1	4106.52	
15	5.5	11.59	10429.65	4506.375	5923.275	
20	4.9	10.32	12389.16	5407.65	6981.51	
30	4.1	8.64	15549.66	7210.2	8339.46	
40	3.4	7.16	17193.12	9012.75	8180.37	
50	2.8	5.90	17698.8	10815.3	6883.5	
60	2.6	5.48	19721.52	12617.85	7103.67	
70	2.4	5.06	21238.56	14420.4	6818.16	
80	2.3	4.85	23261.28	16222.95	7038.33	
90	2.1	4.42	23893.38	18025.5	5867.88	
100	1.9	4.00	24019.8	19828.05	4191.75	
110	1.8	3.79	25031.16	21630.6	3400.56	

Designed Storage Volume					
Contour	Area (sf)	Average Area (sf)	Volume (cf)	Cumulative Volume (cf)	(ac-ft)
539.65	14837				
539	13566	14201.5	9230.975	9231	0.21
538.7	12995	13280.5	3984.15	13215	0.30

Wier Equation	
Solve for H:	
Coefficient	0.61
b	1.995564
g	32.2
Q	6.01
H	0.947876
5-YR WSEL=	539.6479

$$H = \left(\frac{3Q}{2Cb\sqrt{2g}} \right)^{2/3}$$

Present Conditions		
$Q_p = C_p i A$		
Return Period =	10	Yr
$A_{(exist)}$ =	1.97	Ac.
C_p (exist) =	0.50	
T_c (exist) =	10.0	min
i =	7.10	in/hr
Q_p =	6.99	cfs
Future Conditions		
$Q_f = C_p i A$		
$A_{(developed)}$ =	1.53	Ac.
C_p (developed) =	0.90	
$A_{(undeveloped)}$ =	1.46	Ac.
C_p (undeveloped) =	0.50	
T_c =	10.0	min
i =	7.10	in/hr
Q_f =	14.96	cfs

Maximum Storage Volume						
T (min)	I	Q	Inflow	Outflow	Max Storage Volume	
10	7.10	14.96	8975.82	4196.1	4779.72	
15	6.5	13.70	12325.95	5245.125	7080.825	
20	5.9	12.43	14917.56	6294.15	8623.41	
30	4.8	10.11	18204.48	8392.2	9812.28	
40	4	8.43	20227.2	10490.25	9736.95	
50	3.5	7.37	22123.5	12588.3	9535.2	
60	3	6.32	22755.6	14686.35	8069.25	
70	2.8	5.90	24778.32	16784.4	7993.92	
80	2.6	5.48	26295.36	18882.45	7412.91	
90	2.5	5.27	28444.5	20980.5	7464	
100	2.4	5.06	30340.8	23078.55	7262.25	
110	2.3	4.85	31984.26	25176.6	6807.66	

Designed Storage Volume					
Contour	Area (sf)	Average Area (sf)	Volume (cf)	Cumulative Volume (cf)	(ac-ft)
539.75	15036				
539	13566	14301	10725.75	10726	0.25
538.7	12995	13280.5	3984.15	14710	0.34

Wier Equation	
Solve for H:	
Coefficient	0.61
b	1.995564
g	32.2
Q	6.99
H	1.048652
10-YR WSEL=	539.7487

$$H = \left(\frac{3Q}{2Cb\sqrt{2g}} \right)^{2/3}$$

Present Conditions		
$Q_p = C_p i A$		
Return Period =	25	Yr
$A_{(exist)}$ =	1.97	Ac.
C_p (exist) =	0.50	
T_c (exist) =	10.0	min
i =	8.30	in/hr
Q_p =	8.18	cfs
Future Conditions		
$Q_f = C_p i A$		
$A_{(developed)}$ =	1.53	Ac.
C_p (developed) =	0.90	
$A_{(undeveloped)}$ =	1.46	Ac.
C_p (undeveloped) =	0.50	
T_c =	10.0	min
i =	8.30	in/hr
Q_f =	17.49	cfs

Maximum Storage Volume						
T (min)	I	Q	Inflow	Outflow	Max Storage Volume	
10	8.30	17.49	10492.86	4905.3	5587.56	
15	7.5	15.80	14222.25	6131.625	8090.625	
20	6.6	13.91	16687.44	7357.95	9329.49	
30	5.5	11.59	20869.3	9810.8	11048.7	
40	4.6	9.69	23261.28	12263.25	10998.03	
50	4	8.43	25284	14715.9	10568.1	
60	3.5	7.37	26548.2	17168.55	9379.65	
70	3.3	6.95	29203.02	19621.2	9581.82	
80	3.1	6.53	31352.16	22073.85	9278.31	
90	2.9	6.11	32995.62	24526.5	8469.12	
100	2.7	5.69	34133.4	26979.15	7154.25	
110	2.5	5.27	34765.5	29431.8	5333.7	

Designed Storage Volume					
Contour	Area (sf)	Average Area (sf)	Volume (cf)	Cumulative Volume (cf)	(ac-ft)
539.86	15257				
539	13566	14411.5	12393.89	12394	0.28
538.7	12995	13280.5	3984.15	16378	0.38

Wier Equation	
Solve for H:	
Coefficient	0.61
b	1.995564
g	32.2
Q	8.18
H	1.16371
25-YR WSEL=	539.8637

$$H = \left(\frac{3Q}{2Cb\sqrt{2g}} \right)^{2/3}$$

Present Conditions		
$Q_p = C_p i A$		
Return Period =	100	Yr
$A_{(exist)}$ =	1.97	Ac.
C_p (exist) =	0.50	
T_c (exist) =	10.0	min
i =	9.80	in/hr
Q_p =	9.65	cfs
Future Conditions		
$Q_f = C_p i A$		
$A_{(developed)}$ =	1.53	Ac.
C_p (developed) =	0.90	
$A_{(undeveloped)}$ =	1.46	Ac.
C_p (undeveloped) =	0.50	
T_c =	10.0	min
i =	9.80	in/hr
Q_f =	20.65	cfs

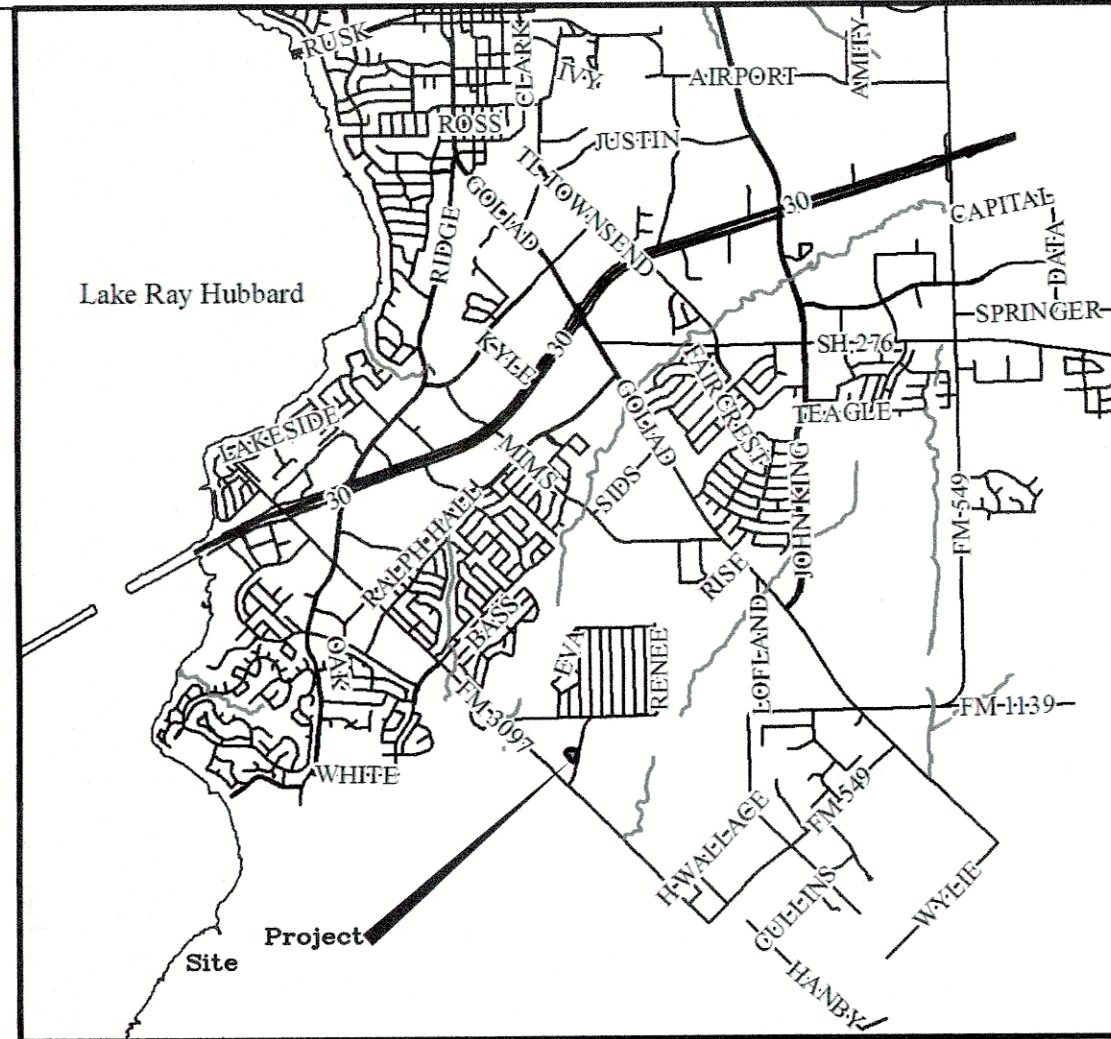
Maximum Storage Volume						
T (min)	I	Q	Inflow	Outflow	Max Storage Volume	
10	9.80	20.65	12389.16	5791.8	6597.36	
15	9	18.96	17066.7	7239.75	9826.95	
20	8.3	17.49	20985.72	8687.7	12298.02	
30	6.9	14.54	26168.94	11583.6	14585.34	
40	5.8	12.22	29329.44	14479.5	14849.94	
50	5	10.54	31605	17375.4	14229.6	
60	4.5	9.48	34133.4	20271.3	13862.1	
70	4	8.43	35397.6	23167.2	12230.4	
80	3.7	7.80	37420.32	26063.1	11357.22	
90	3.5	7.37	39822.3	28959	10863.3	
100	3.4	7.16	42982.8	31854.9	11127.9	
110	3.2	6.74	44499.84	34750.8	9749.04	

Designed Storage Volume					
Contour	Area (sf)	Average Area (sf)	Volume (cf)	Cumulative Volume (cf)	(ac-ft)
540	15540				
539	13566	14553	14553	14553	0.33
538.7	12995	13280.5	3984.15	18537	0.43

Wier Equation	
Solve for b:	
Coefficient	0.61
Q:	9.65 cfs
g:	32.2 ft/sec ²
H:	1.3 ft
b	1.995564 ft
100-YR WSEL=	540

$$b = \frac{3Q}{2CH^{3/2}\sqrt{2g}}$$

RECORD DRAWING
THIS RECORD DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE CONSTRUCTION CONTRACTOR AND/OR OWNER. THE ENGINEER HAS NOT VERIFIED THE ACCURACY OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES WHICH MAY BE INCORPORATED HEREIN AS A RESULT.
BROWN & GAY ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-1046
By: [Signature] Date: 6-22-17



VICINITY MAP
MAPSCO PG. NO. 30C GRID 'R'

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

REVISIONS			
REV NO.	DATE	DESCRIPTION	BY

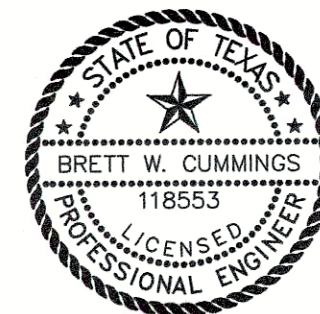
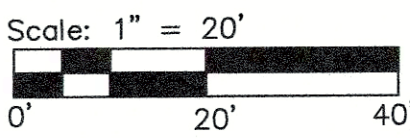
BENCHMARKS & CONTROL POINTS

BM # 1: City of Rockwall Benchmark No. R014. An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.

Elevation: 567.704

BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.

Elevation: 561.017



Brown & Gay Engineers, Inc.
F-1046

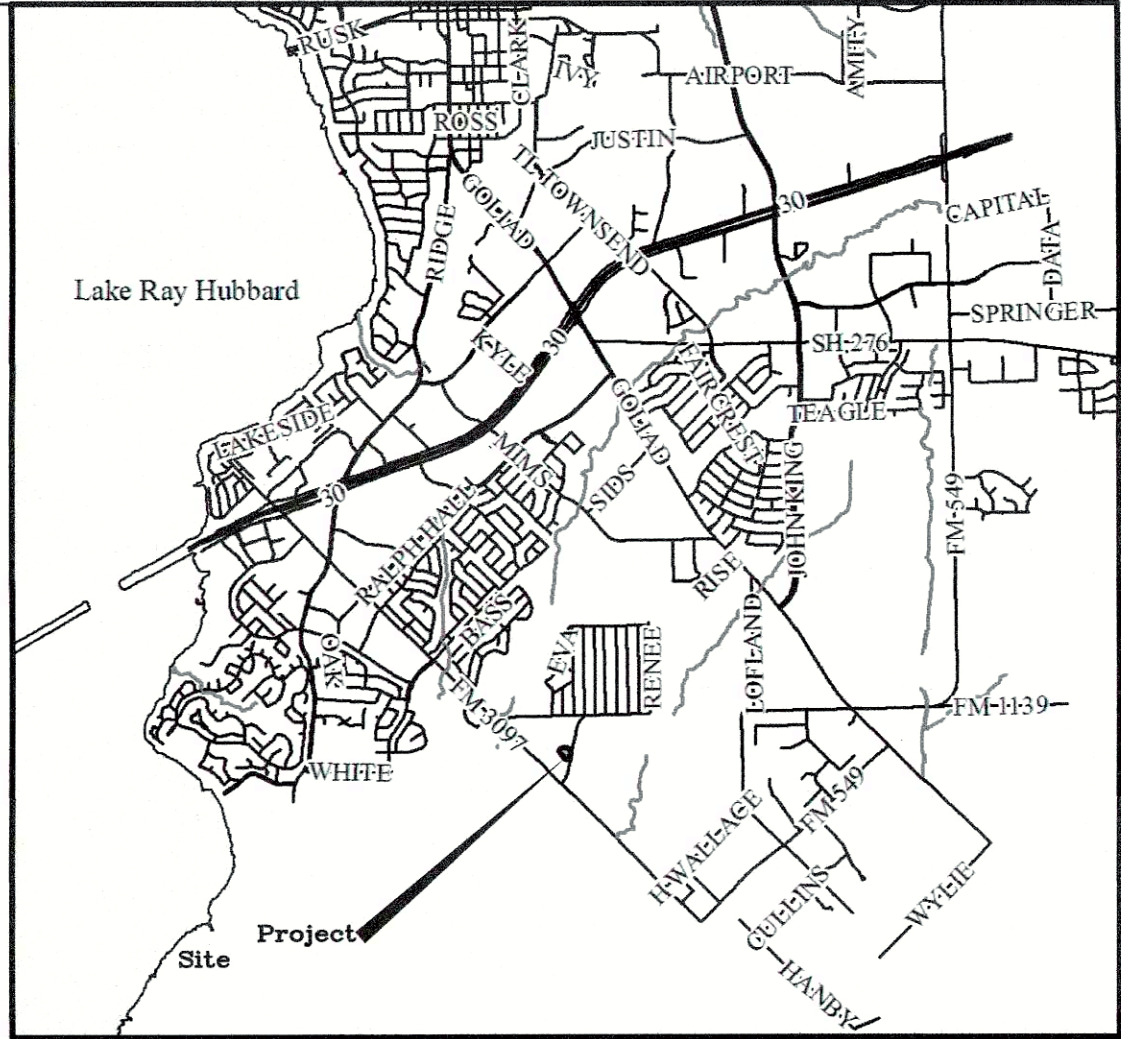
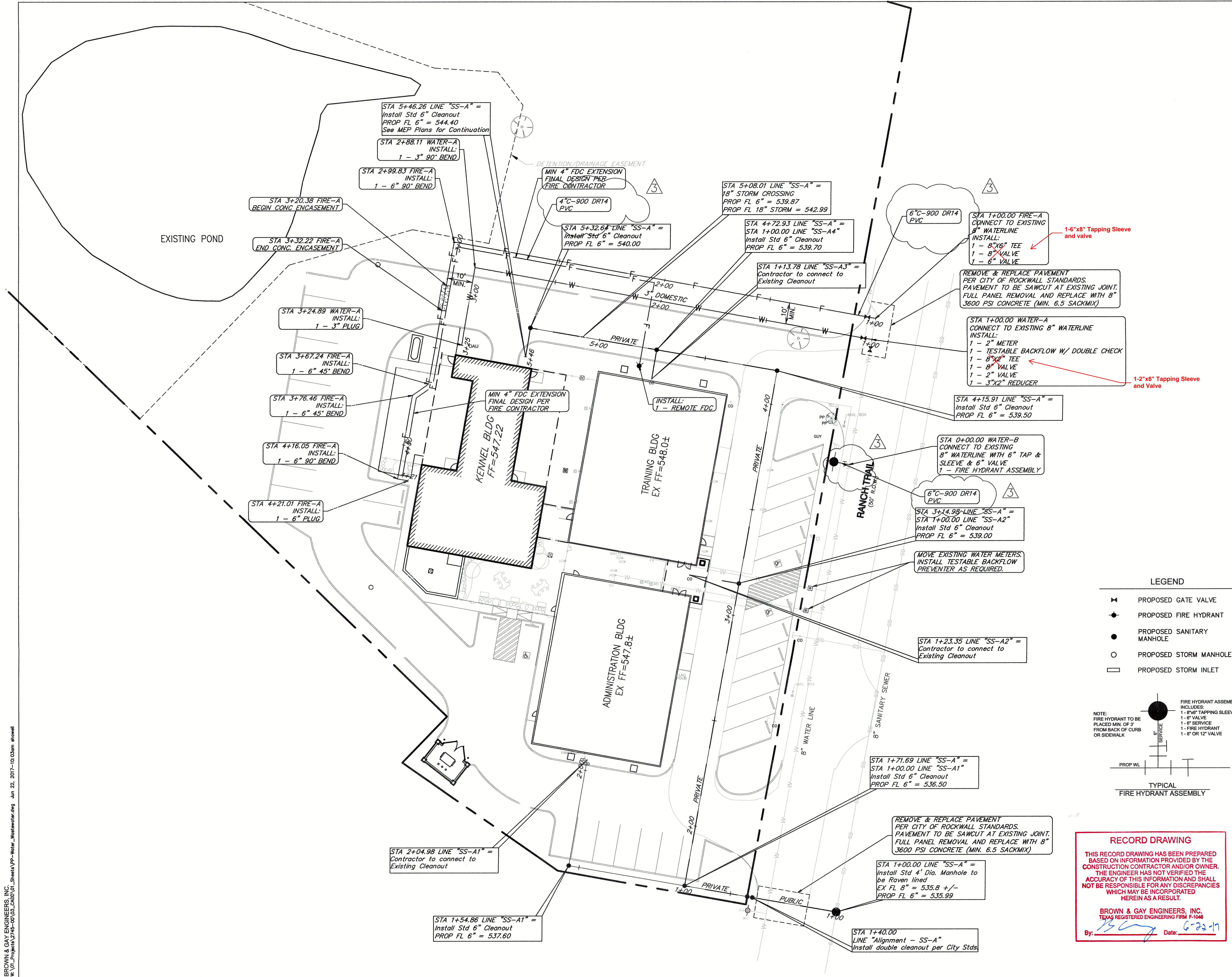
DETENTION POND PLAN

PATRIOT PAWS

254 RANCH TRAIL

CITY OF ROCKWALL, TEXAS

DESIGN	DRAWN	DATE	FILE	NUMBER
BWC	KAT	FEB 2016		13



VICINITY MAP
MAPSCO PG. NO. 30C GRID 'R'

NOTE: ALL PRIVATE WATER & SEWER
TO BE INSPECTED BY BUILDING & FIRE
DEPARTMENT.

NOTE: FINAL DESIGN OF FDC EXTENSION
FROM BUILDING TO REMOTE FDC WILL
BE THE RESPONSIBILITY OF THE FIRE
CONTRACTOR.

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH
THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING
AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO
RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

REVISIONS			
REV NO.	DATE	DESCRIPTION	BY
1	6-21-17	REVISED FOR AS BUILTS	BWC

BENCHMARKS & CONTROL POINTS	
BM # 1: City of Rockwall Benchmark No. R101. An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line. Elevation: 567.704	
BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole. Elevation: 561.017	

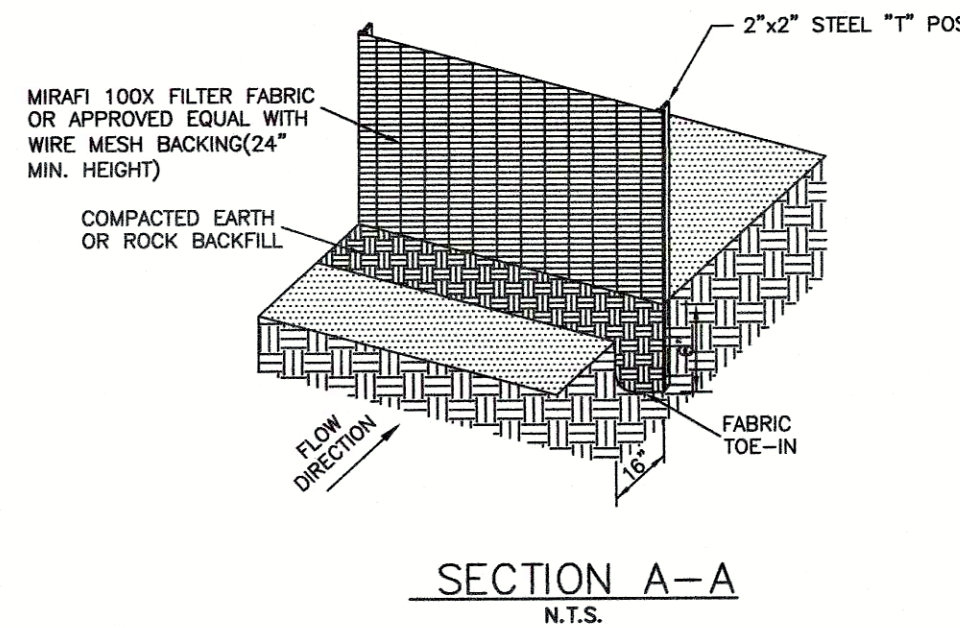
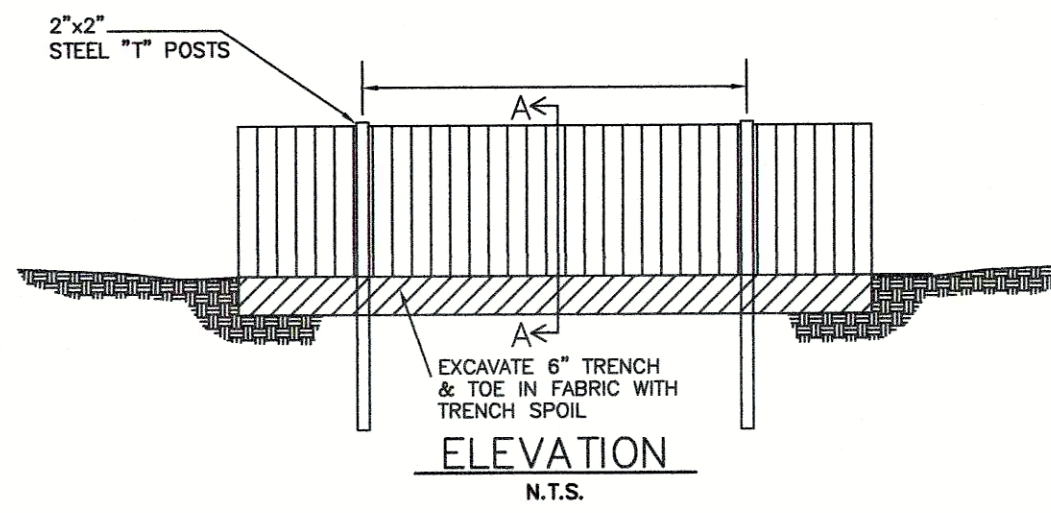
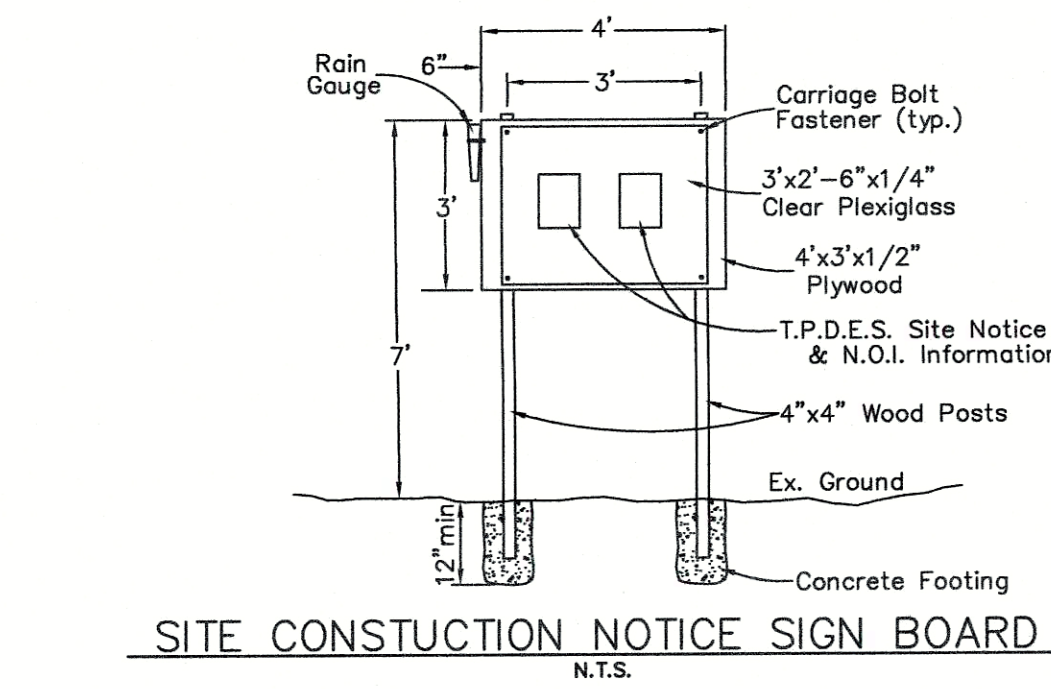
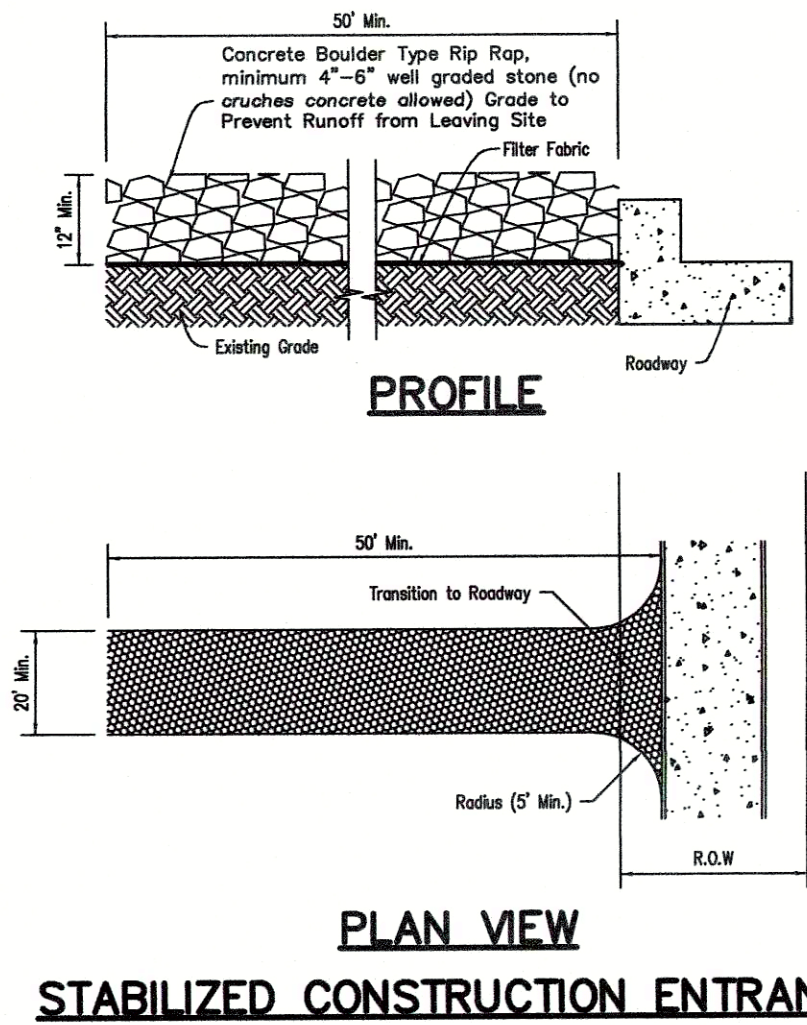
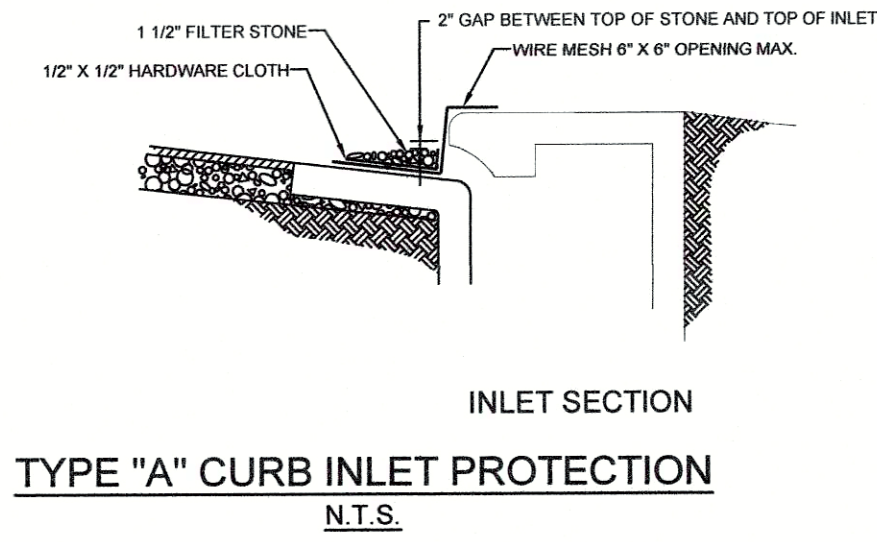
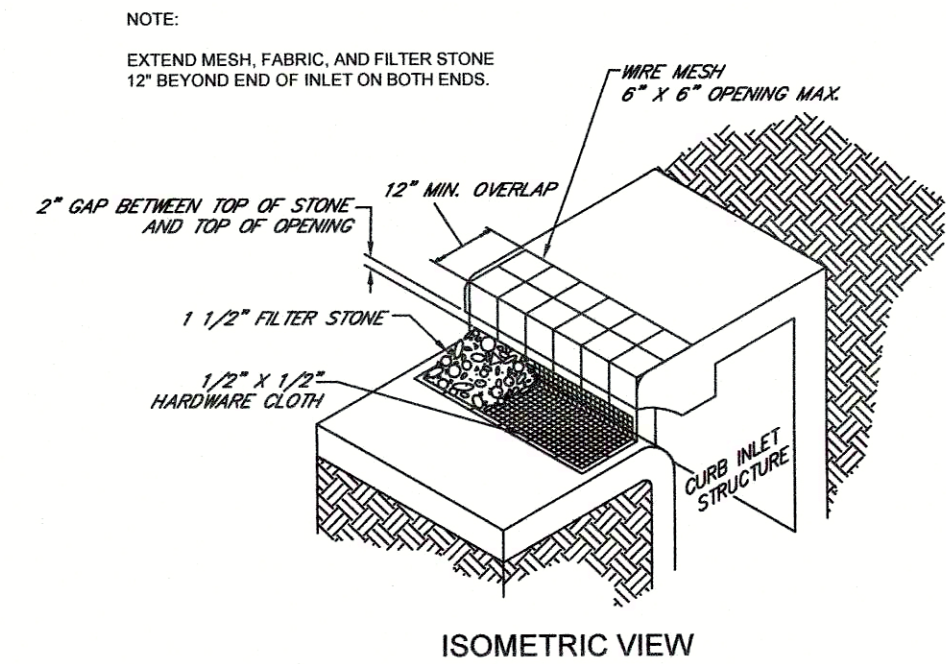
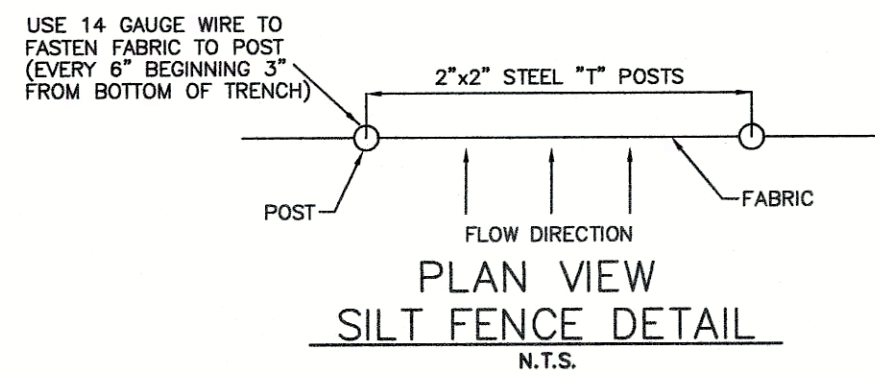
Scale: 1" = 20'

Brown & Gay Engineers, Inc.
F-1046

WATER & WASTEWATER PLAN					
PATRIOT PAWS					
254 RANCH TRAIL					
CITY OF ROCKWALL, TEXAS					
DESIGN	DRAWN	DATE	FILE	NUMBER	
BWC	KAT	FEB 2016			14

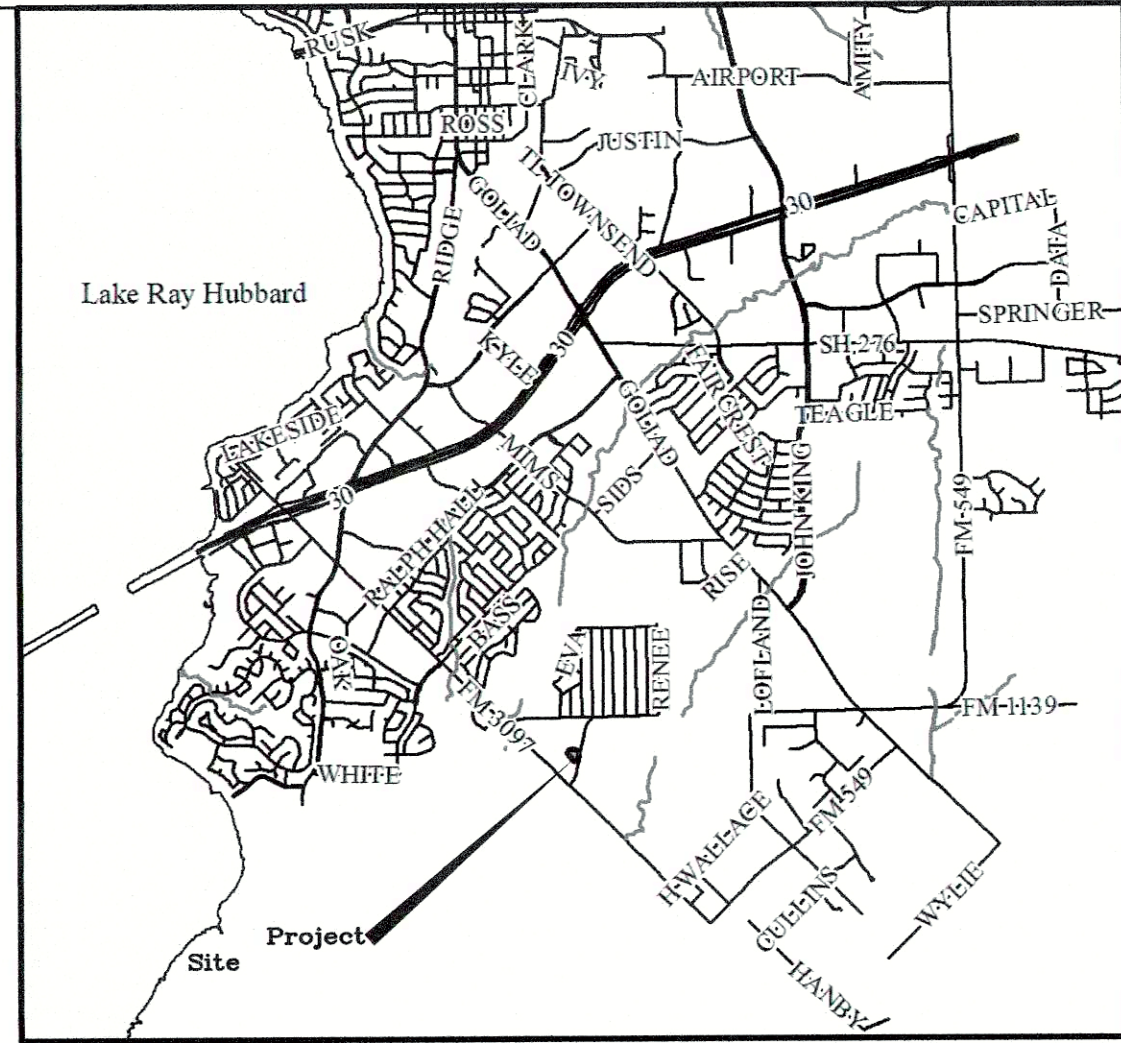
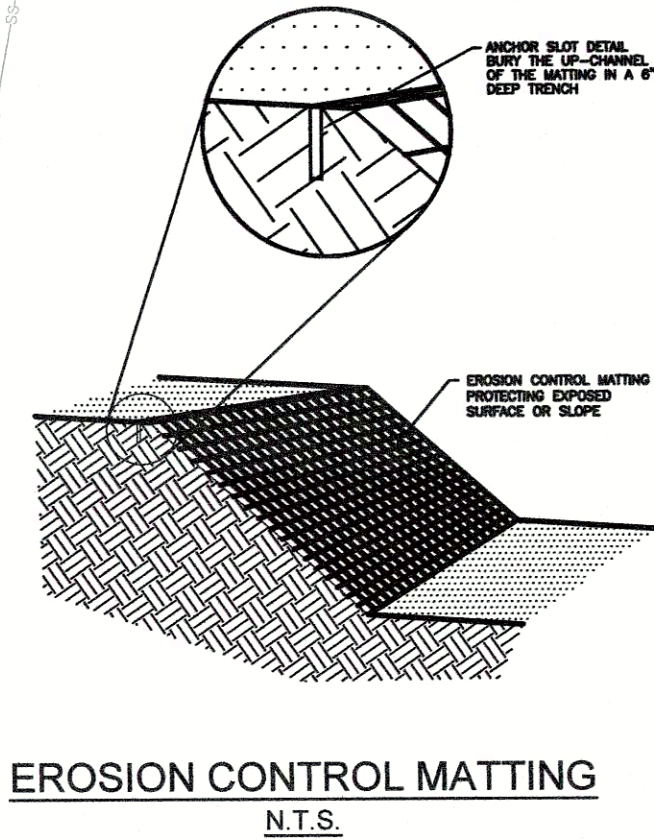
STORM WATER PERMIT/ENVIRONMENTAL COMMENTS:

- Construction activities within the City of Rockwall shall comply with the requirements of the Texas Pollution Discharge Elimination System (TPDES) Construction Storm Water General Permit.
- Projects that will disturb five (5.0) or more acres, or are part of a larger common plan of development or sale that will ultimately disturb five (5.0) or more acres, must complete and submit a Notice of Intent (NOI) for Storm Commission on Environmental Quality (TCEQ) at least two (2) days prior to start of earth disturbing activities. All operators and/or owners of the project must individually submit a NOI to TCEQ. Two copies of the NOI and proof of payment to TCEQ for all operators and/or must be submitted to the City of Dallas, Engineering Services before final approval of the grading plan.
- Projects that will disturb one (1.0) or more acres but less than five (5.0) acres, or are part of a larger common plan of development or sale that will ultimately disturb one (1.0) or more acres but less than five (5.0) acres, must complete and post on the project site a TPDES Construction Site Notice before start of earth disturbing activities. Refer to the TPDES construction Storm Water General Permit No. TXR150000 for a template. Two copies of the Construction Site Notice must be submitted to the City of Dallas, Engineering Services before final approval of the grading plan.
- All projects that will disturb one (1.0) or more acres, or are part of a larger common plan of development or sale that will ultimately disturb one (1.0) or more acres must develop and implement a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the TPDES Construction Storm Water General Permit. A SWPPP must be prepared for each operator and/or owner, or operator(s) and/or owner(s) must sign a common SWPPP. A copy of the SWPPP(s) must be presented to Engineering Services at the preconstruction meeting for review and approval before final Notice to Proceed will be granted by the City of Dallas. If site grading will occur before the Engineering Services preconstruction meeting, the project operator(s) and/or owner(s) must make arrangements for Engineering Services review and approval of the SWPPP(s) before final approval of the grading plan.

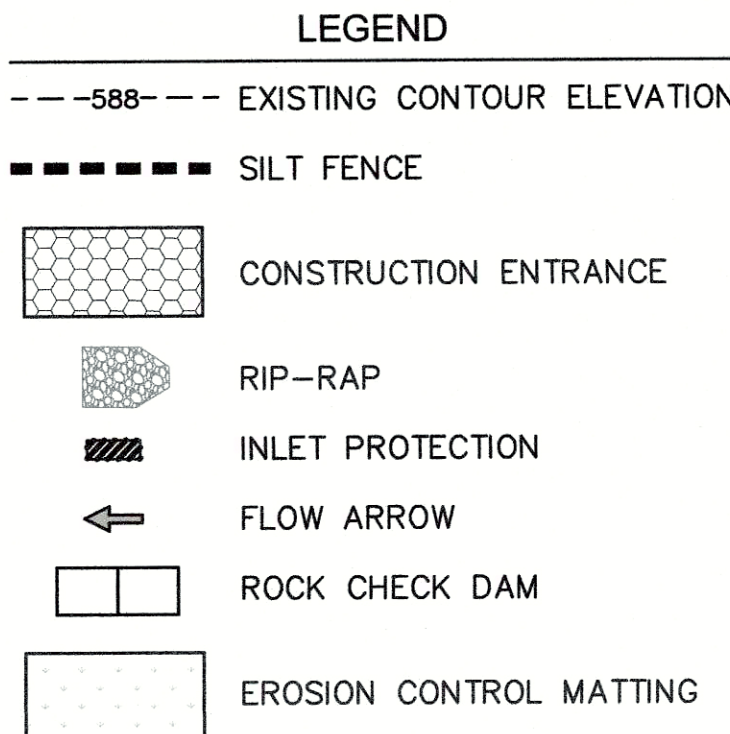


SILT FENCE GENERAL NOTES:

- Steel posts which support the silt fence shall be installed on a slight angle toward the anticipated runoff source.
- The toe of the silt fence shall be trenched in with a spade or mechanical trencher so that the down slope face of the trench is flat and follows the line of flow.
- The trench should be four inches wide to the ground and backfilled with trench spoil.
- Silt fence should be secured to support post or to woven wire mesh as a result attached to the steel fence posts.
- Inspection shall be frequent and repair or replacement shall be made promptly as needed.
- Silt fence shall be removed when it has served its usefulness, so as not to block or impede storm flow or drainage.
- Sediment trapped by this practice shall be disposed of in an approved site in a manner that will not contribute to additional siltation.
- Accumulated silt shall be removed when it reaches a depth of six inches and disposed of in an approved spoil site or as in No. 7 above.
- Filter fabric is to be Marafi 100X or approved equal. (Marafi, Inc.: 800-438-1855)



VICINITY MAP
MAPSCO PG. NO. 30C GRID 'R'



ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER, THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

REVISIONS			
REV NO.	DATE	DESCRIPTION	BY

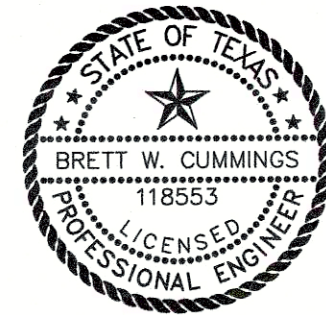
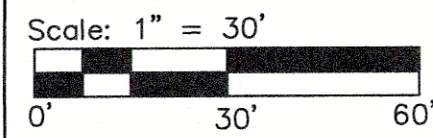
BENCHMARKS & CONTROL POINTS

BM # 1: City of Rockwall Benchmark No. ~~Reset #1~~. An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.

Elevation: 567.704

BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.

Elevation: 561.017

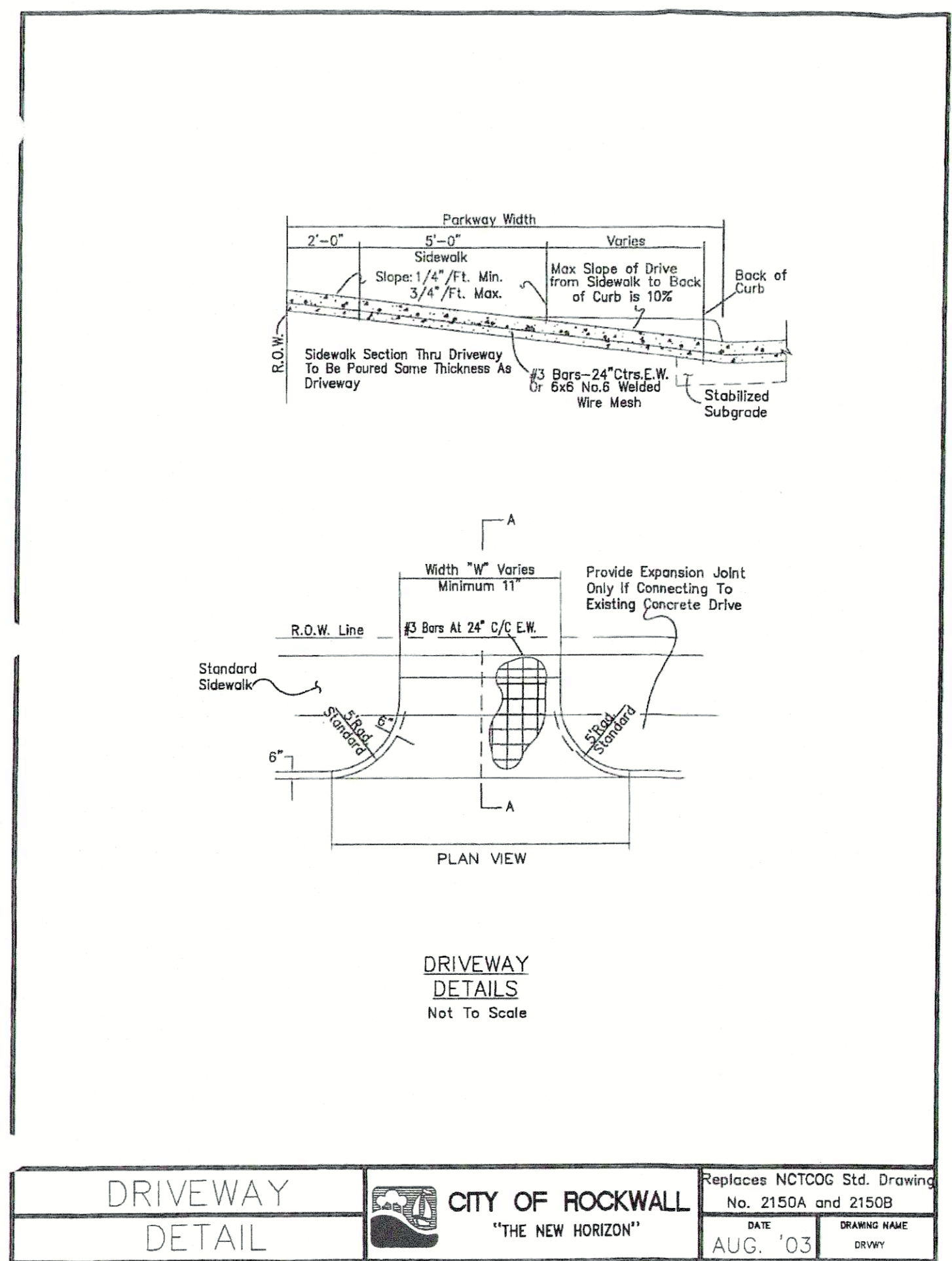
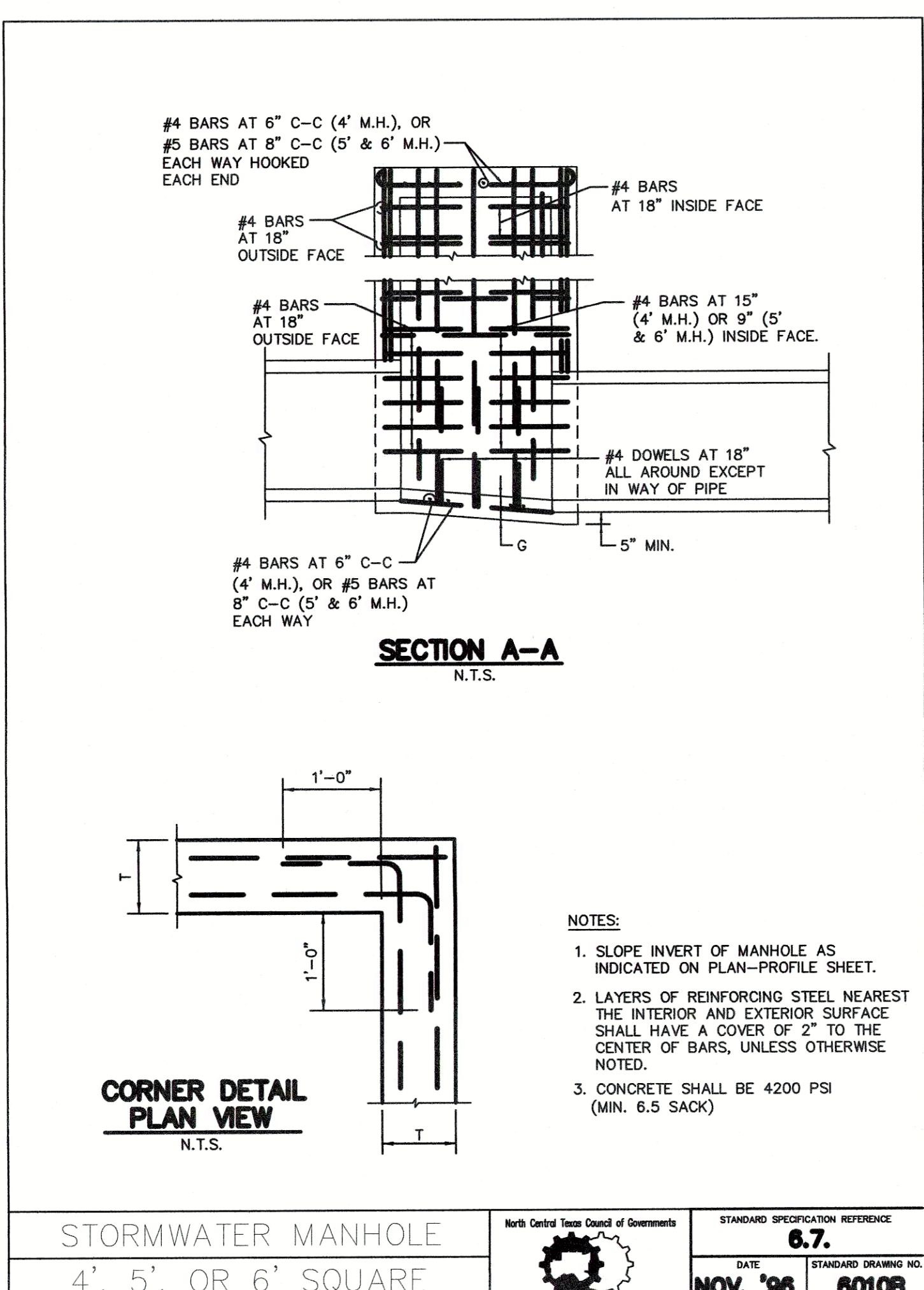
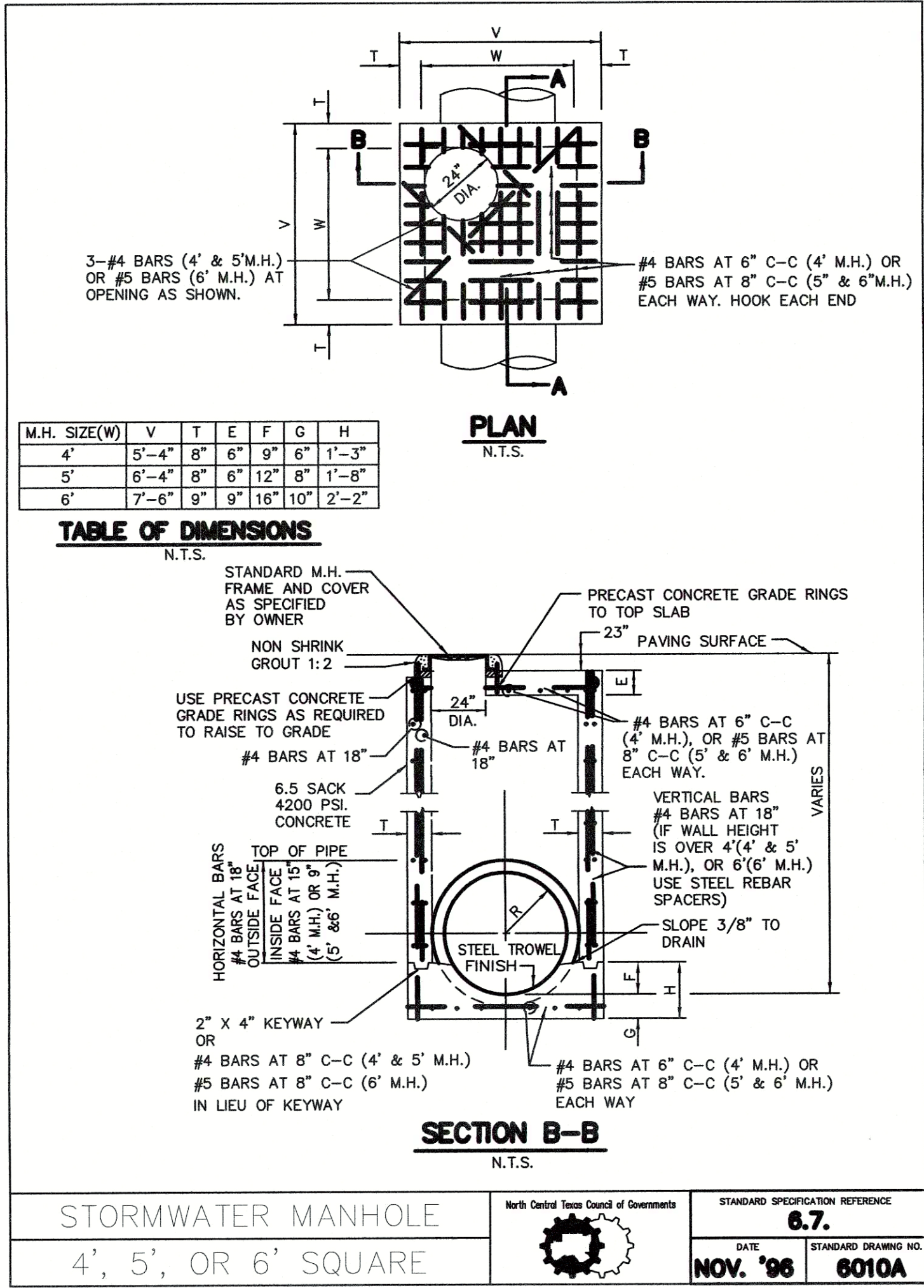
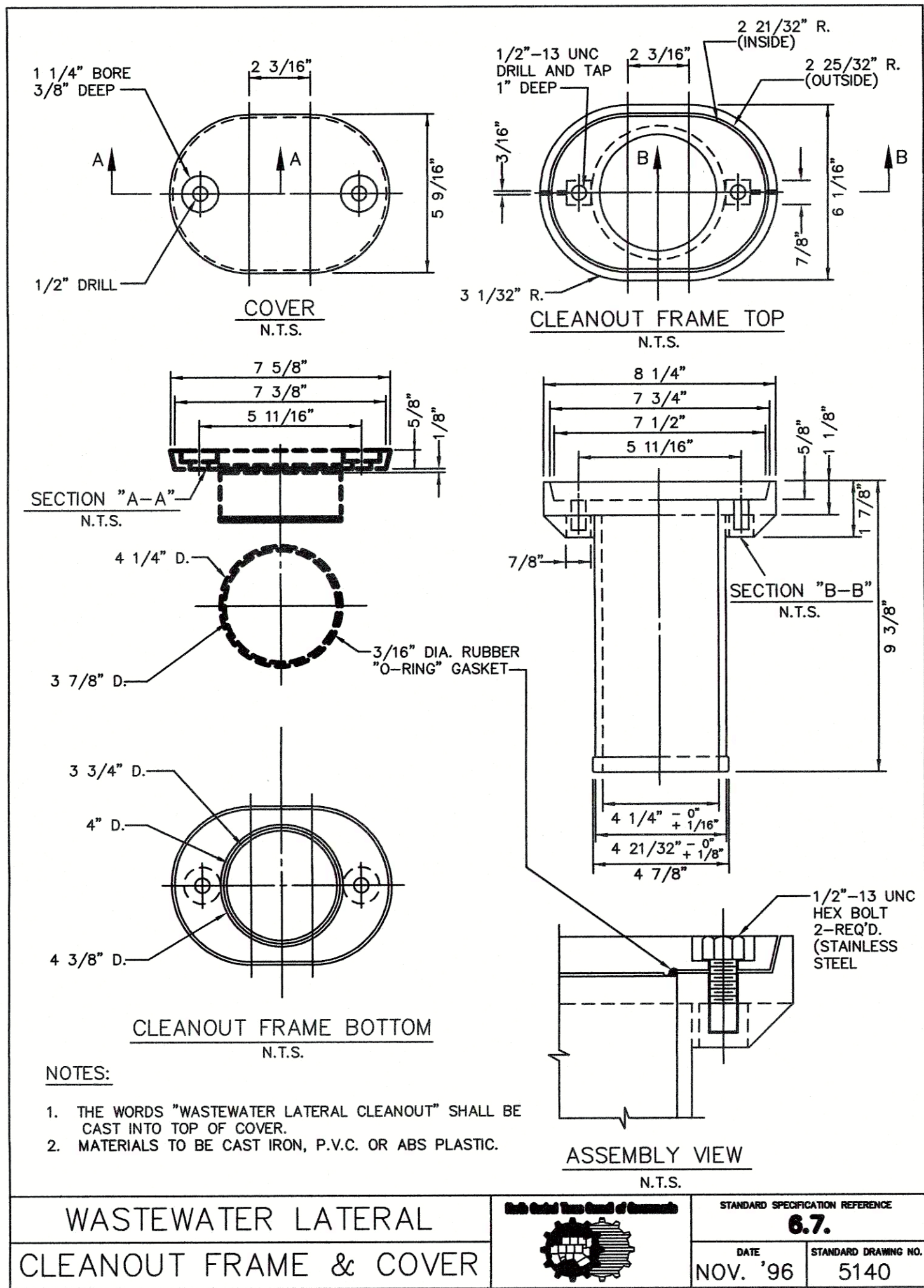


Brown & Gay Engineers, Inc.
F-1046

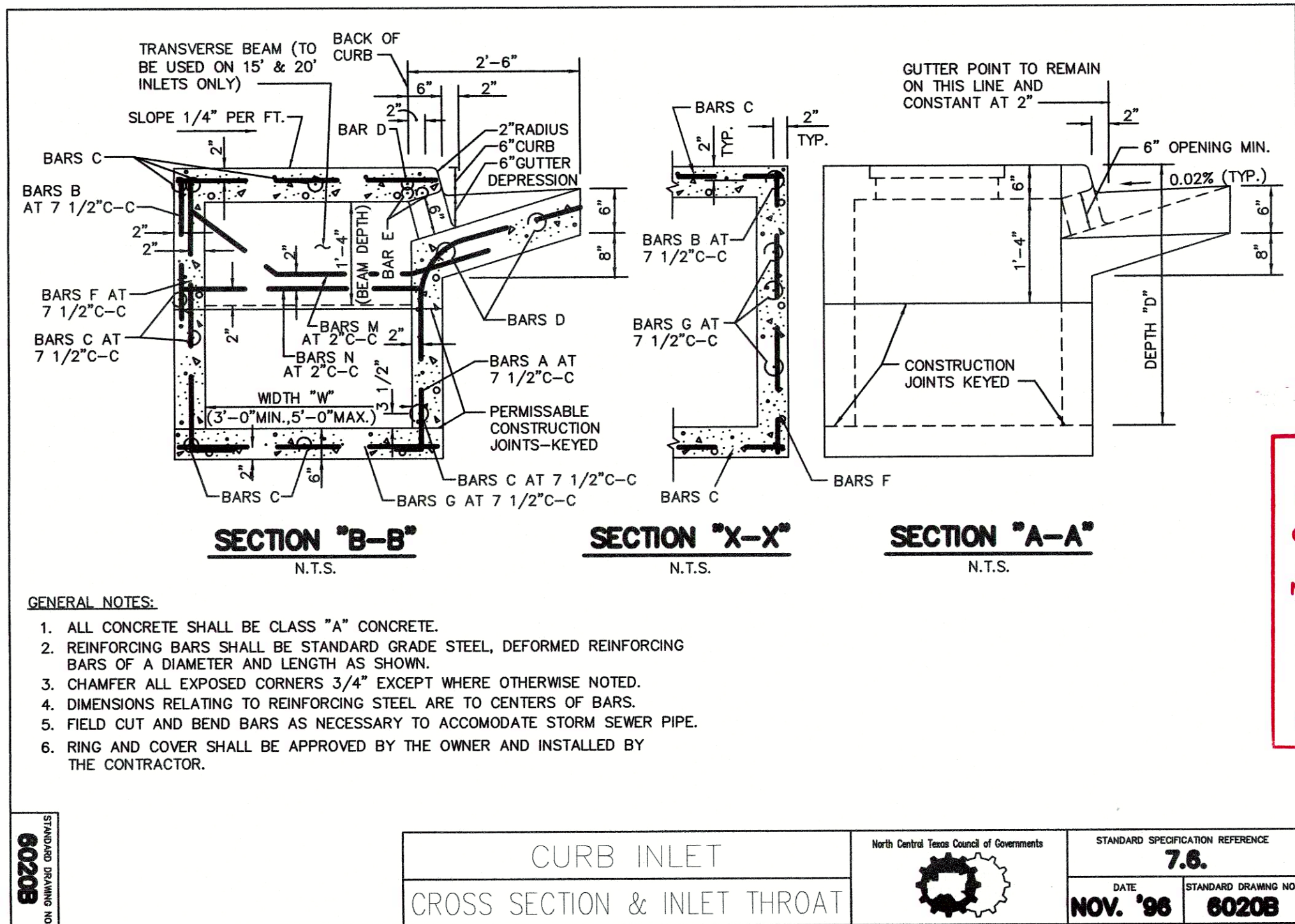
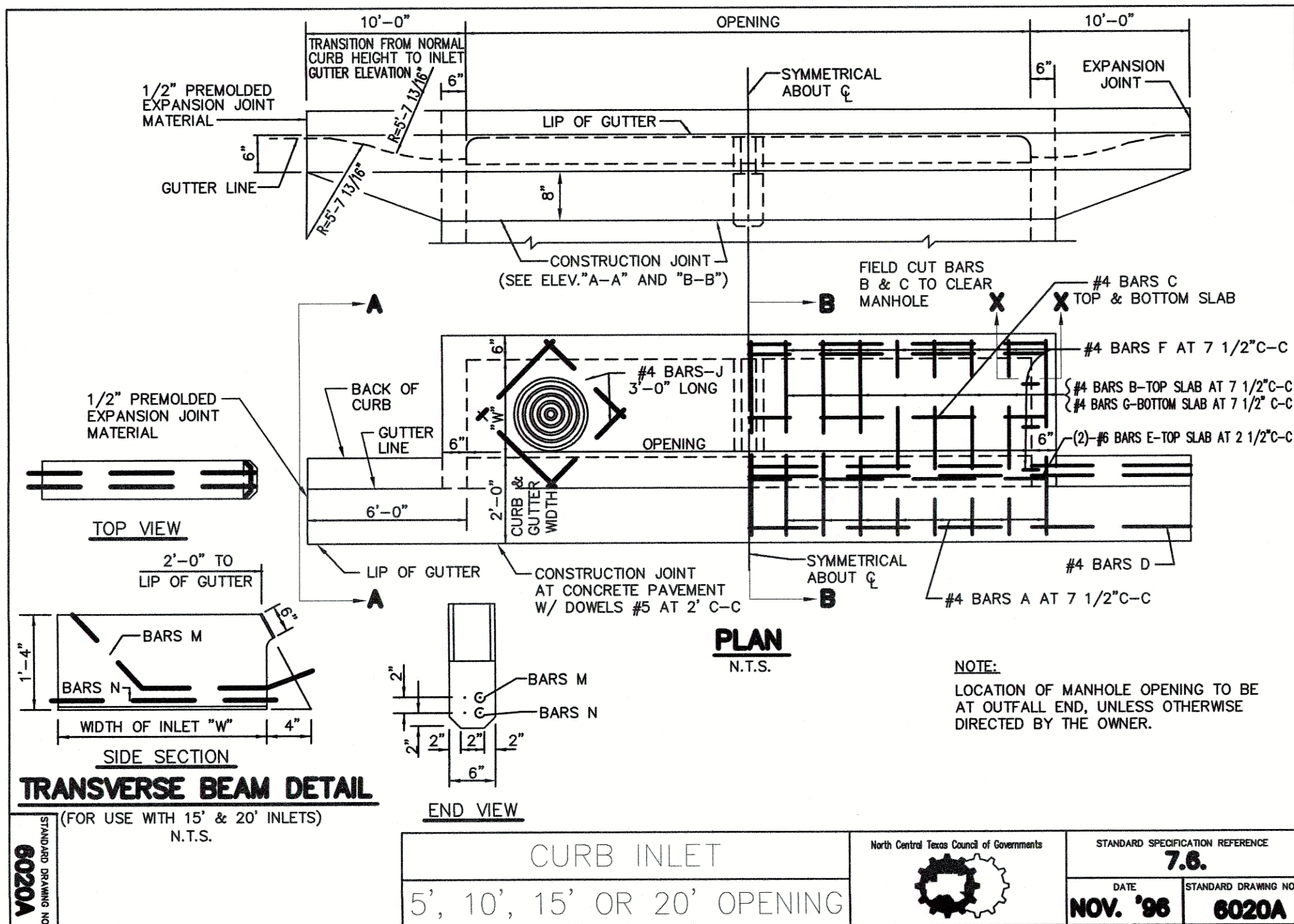
EROSION CONTROL PLAN
PATRIOT PAWS
254 RANCH TRAIL

CITY OF ROCKWALL, TEXAS

DESIGN	DRAWN	DATE	FILE	NUMBER
BWC	KAT	FEB 2016		15



ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH
THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING
AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO
RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.



RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED
BASED ON INFORMATION PROVIDED BY THE
CONSTRUCTION CONTRACTOR AND/OR OWNER.
THE ENGINEER HAS NOT VERIFIED THE
ACCURACY OF THIS INFORMATION AND SHALL
NOT BE RESPONSIBLE FOR ANY DISCREPANCIES
WHICH MAY BE INCORPORATED
HEREIN AS A RESULT.

BROWN & GAY ENGINEERS, INC.
TEXAS REGISTERED ENGINEERING FIRM F-1046

By: [Signature] Date: 6-22-11

REVISIONS			
REV NO.	DATE	DESCRIPTION	BY

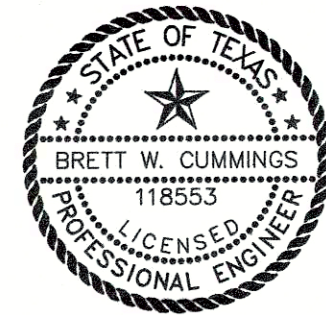
BENCHMARKS & CONTROL POINTS

BM # 1: City of Rockwall Benchmark No. "Reset #1". An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.

Elevation: 567.704

BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.

Elevation: 561.017



Brown & Gay Engineers, Inc.
F-1046

DETAILS - SHEET 01

PATRIOT PAWS

254 RANCH TRAIL

CITY OF ROCKWALL, TEXAS

DESIGN	DRAWN	DATE	FILE	NUMBER
BWC	KAT	FEB 2016		16

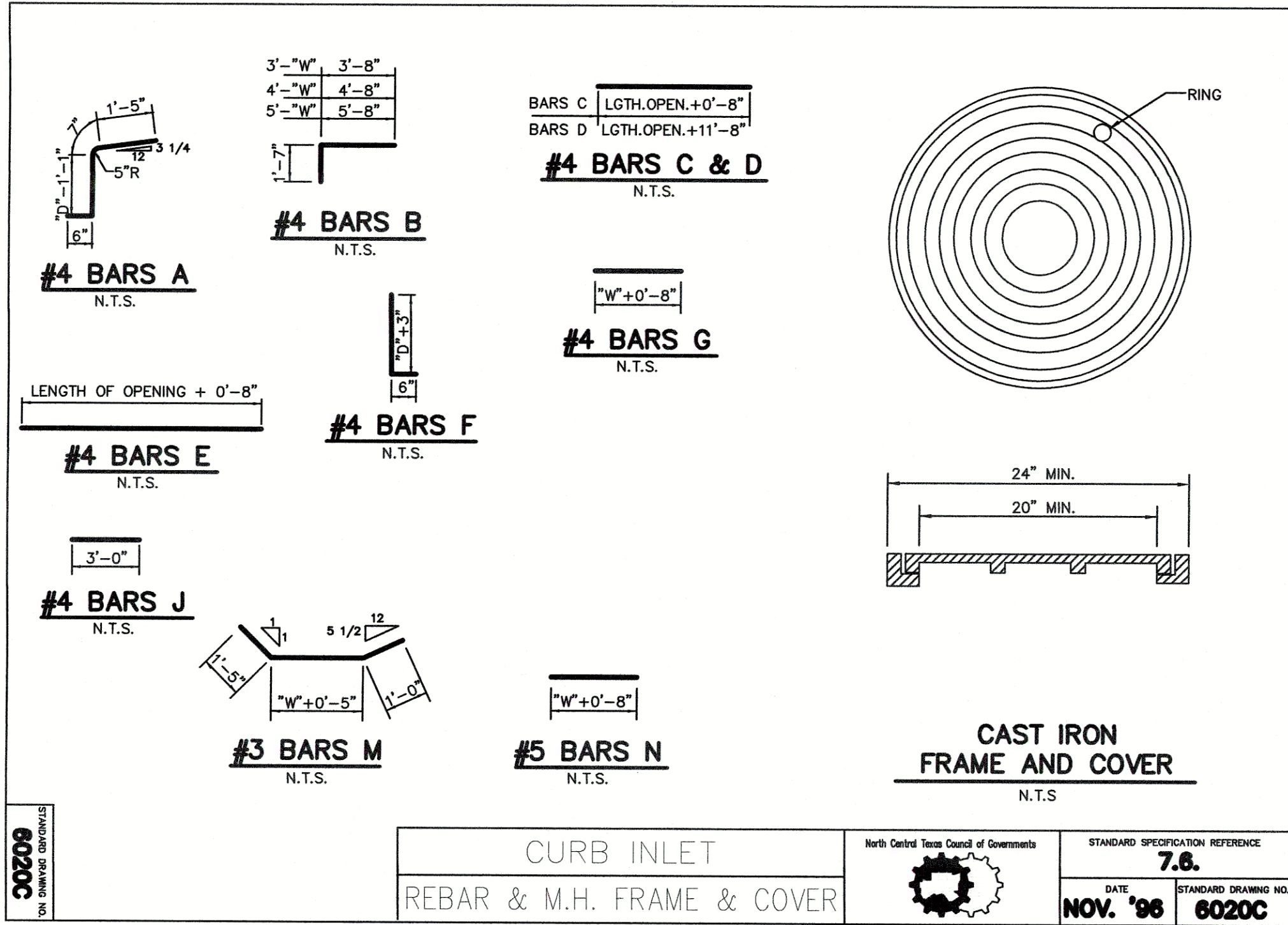
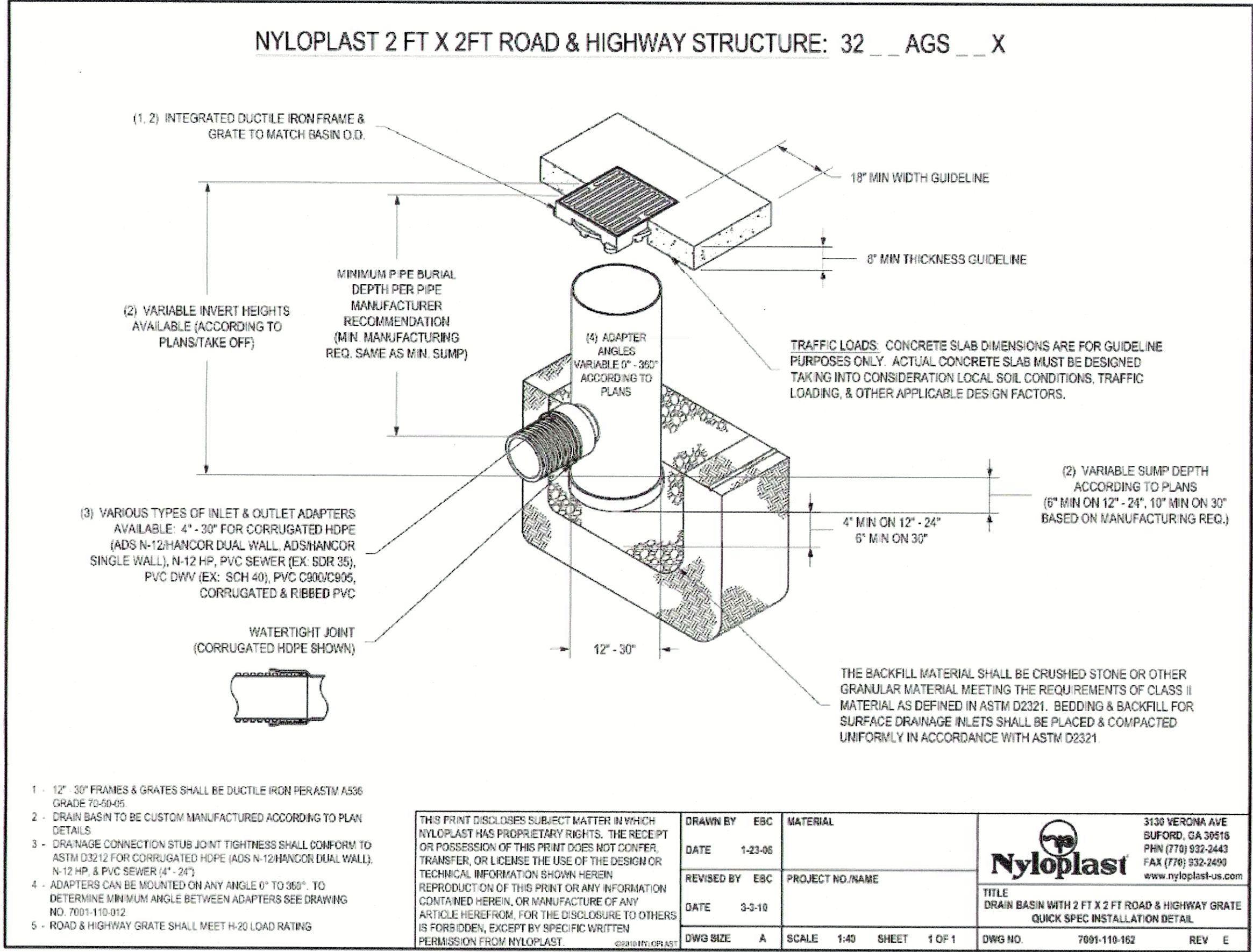
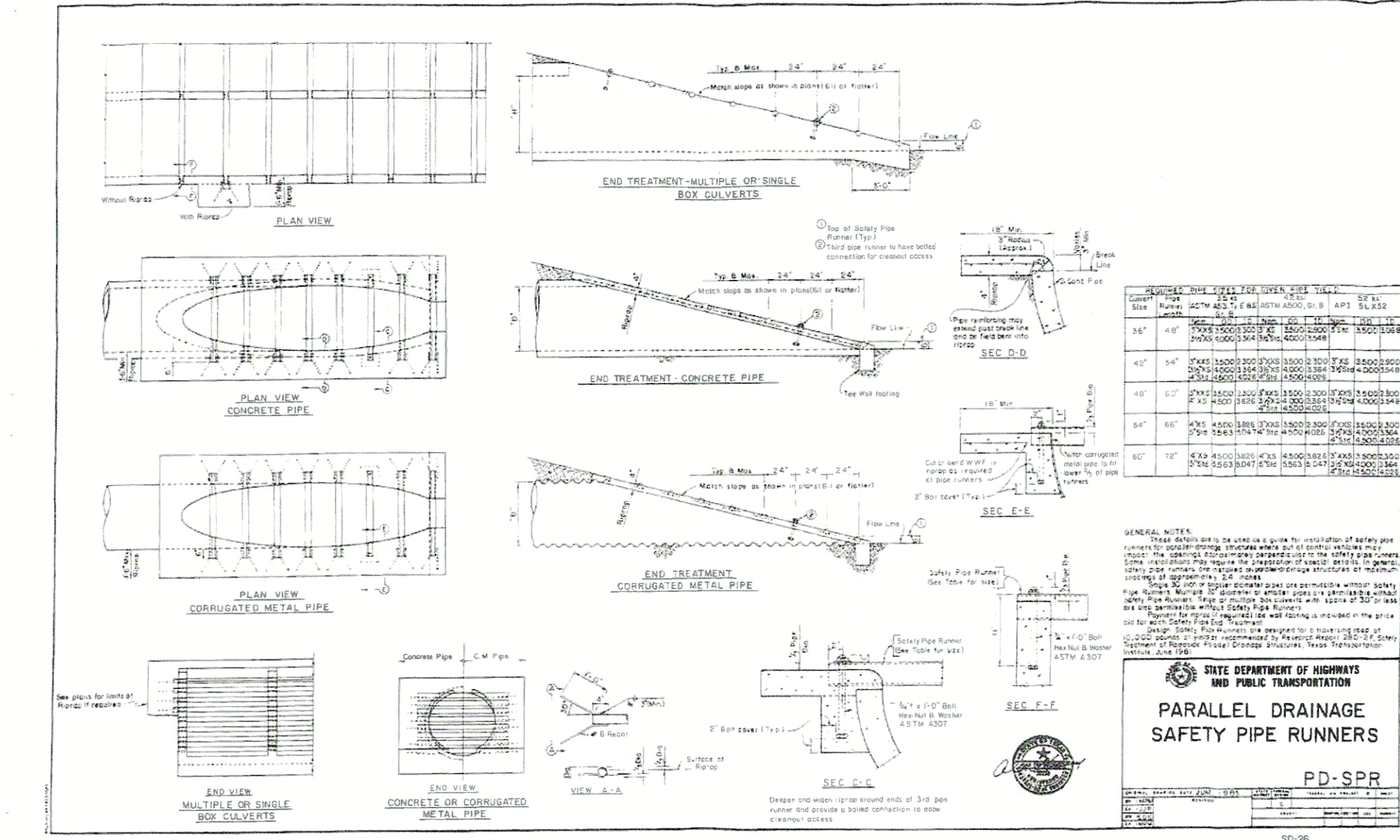


Table titled 'BILL OF REINFORCING STEEL' showing dimensions and quantities for various reinforcement bars (A, B, C, D, E, F, G, J, M, N) used in the curb inlet structure.

Table titled 'SUMMARY OF QUANTITIES FOR CURB INLETS' showing dimensions and quantities for various reinforcement bars (A, B, C, D, E, F, G, J, M, N) used in the curb inlet structure.



ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

Table titled 'REVISIONS' showing revision details, including revision number, date, description, and by.

BENCHMARKS & CONTROL POINTS

BM # 1: City of Rockwall Benchmark No. "Reset #1". An aluminum disc set at the Southwest corner of Summer Lee and FM 740, 1.5' west of the first driveway curb line.

Elevation: 567.704

BM # 2: City of Rockwall Benchmark No. R014. An aluminum disc set at the Northeast corner of Henry M. Chandler Dr. and Commodore Plaza about 1.5' from back of curb and 3' South East of a light pole.

Elevation: 561.017



Brown & Gay Engineers, Inc. F-1048

DETAILS - SHEET 02

PATRIOT PAWS
254 RANCH TRAIL

CITY OF ROCKWALL, TEXAS

Table showing design details, including design number, date, file, number, and other information.