PROPOSED DRAINAGE, GRADING, PAVING AND UTILITIES CONSTRUCTION PLANS

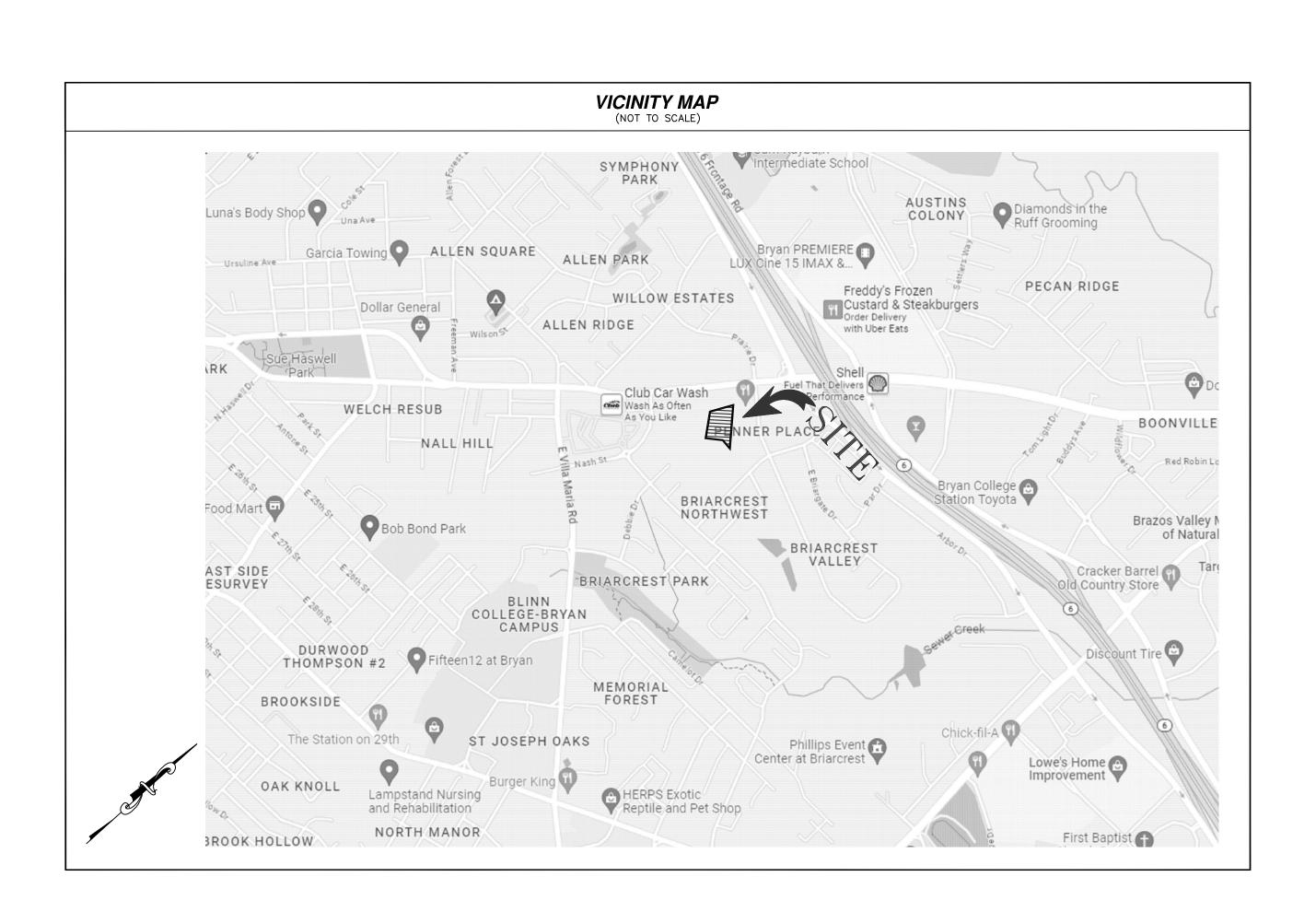
TO SERVE

NASH ST RETAIL CENTER

AT

2735 NASH ST, BRYAN, TEXAS 77802

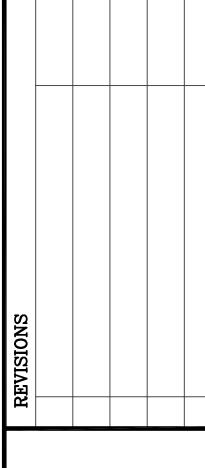
OCTOBER, 2023



CITY OF BRYAN PUBLIC WORKS (979-209-5900). TEXAS ONE-CALL DOES NOT MARK UTILITIES OWNED BY THE CITY OF BRYAN.

CODES AND REGULATIONS RELATED TO THE DESIGN OF IMPROVEMENTS INSIDE THE BUILDING ENVELOPE ARE NOT WITHIN THE SCOPE OF RSG ENGINEERING. BUILDING CODE COMPLIANCE IS NOT THE RESPONSIBILITY OF RSG

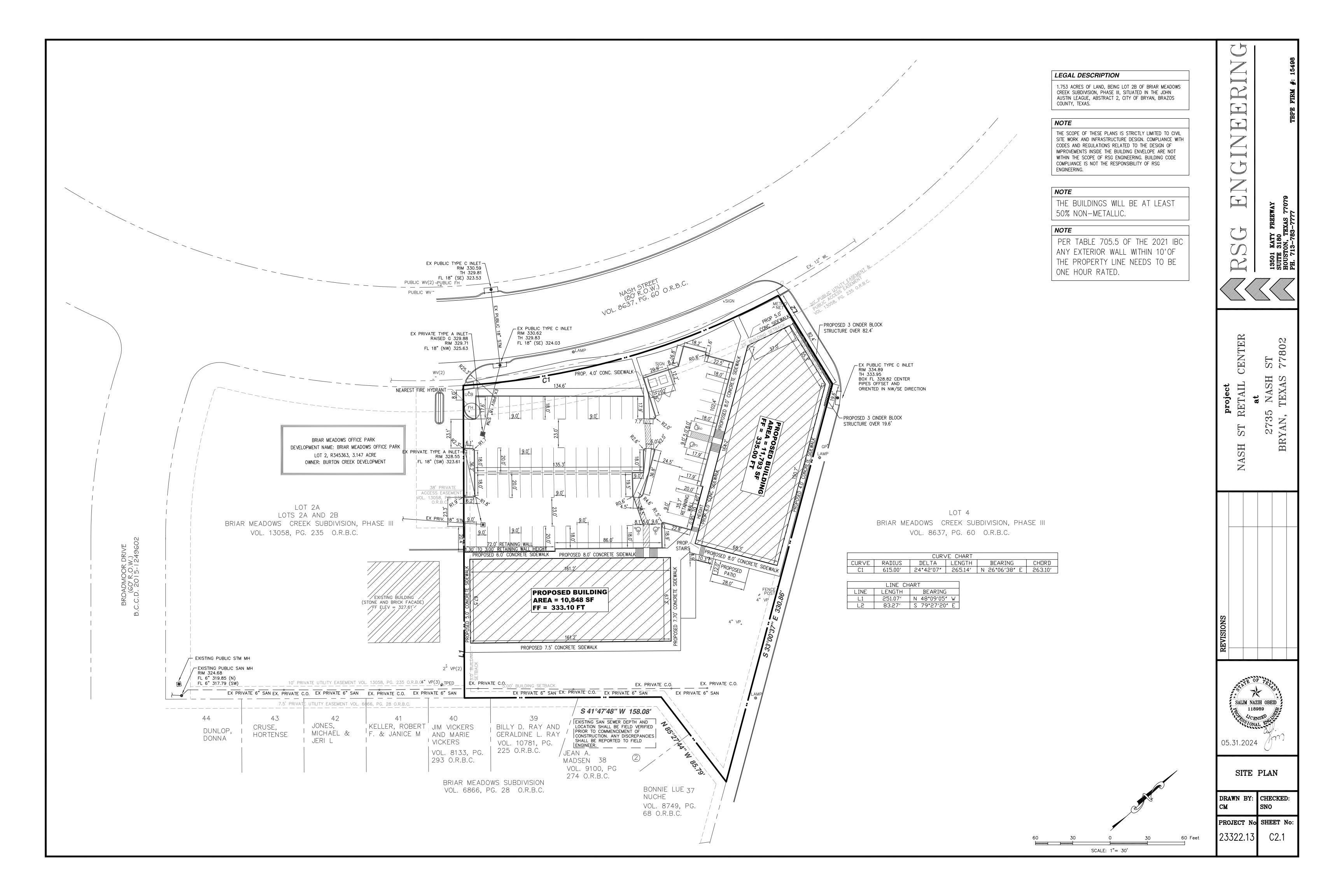
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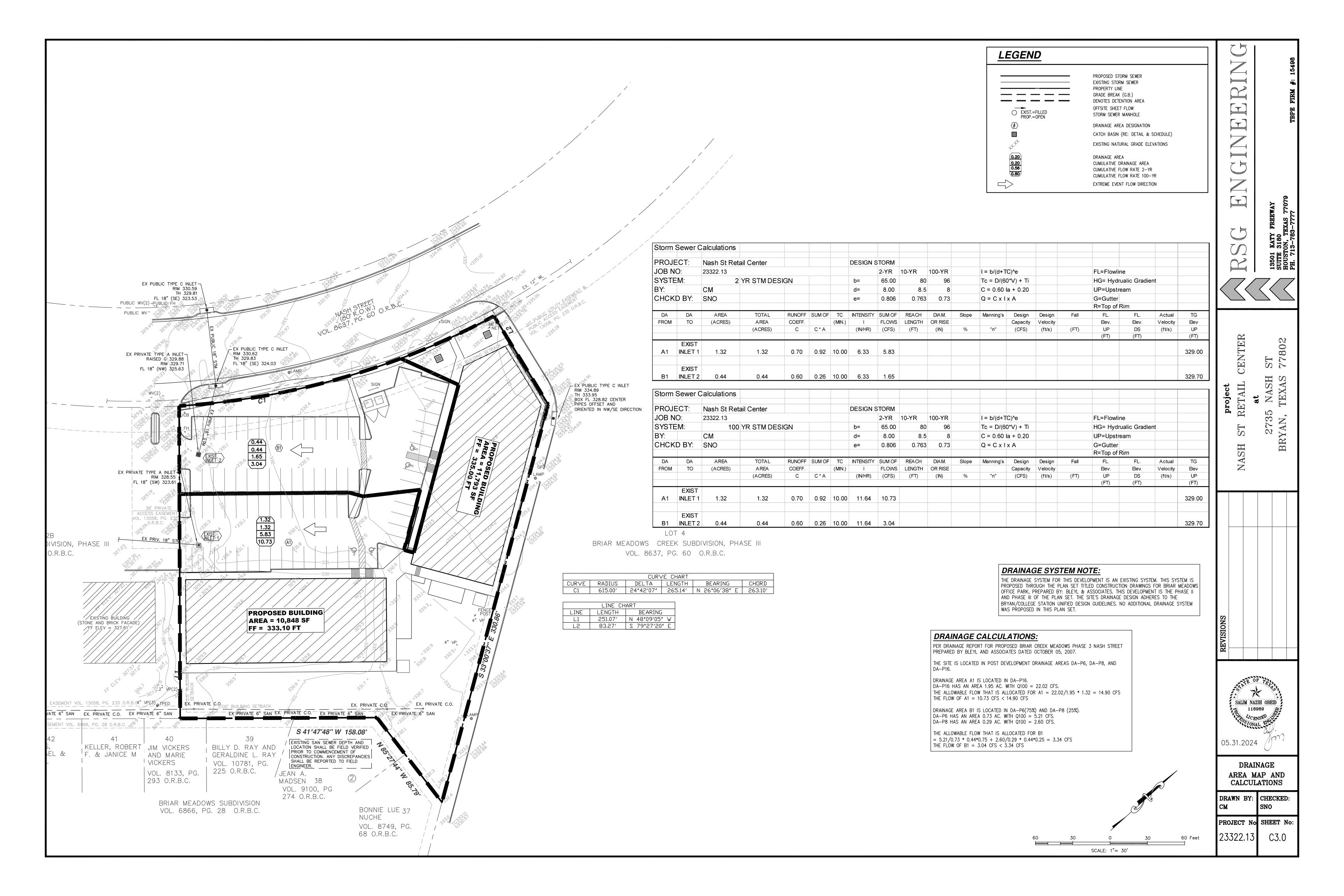


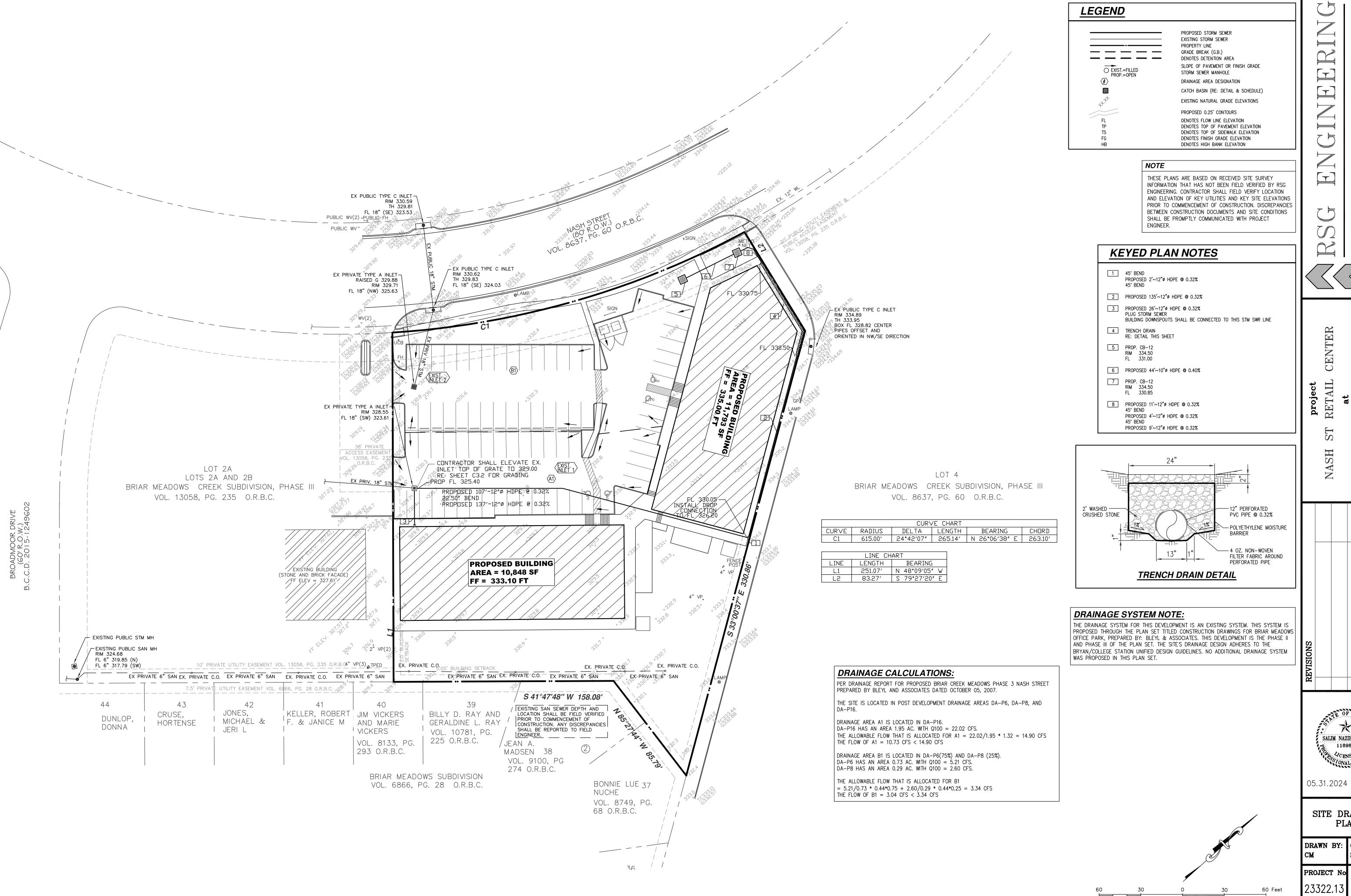


COVER SHEET

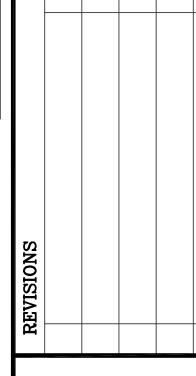
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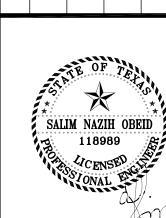






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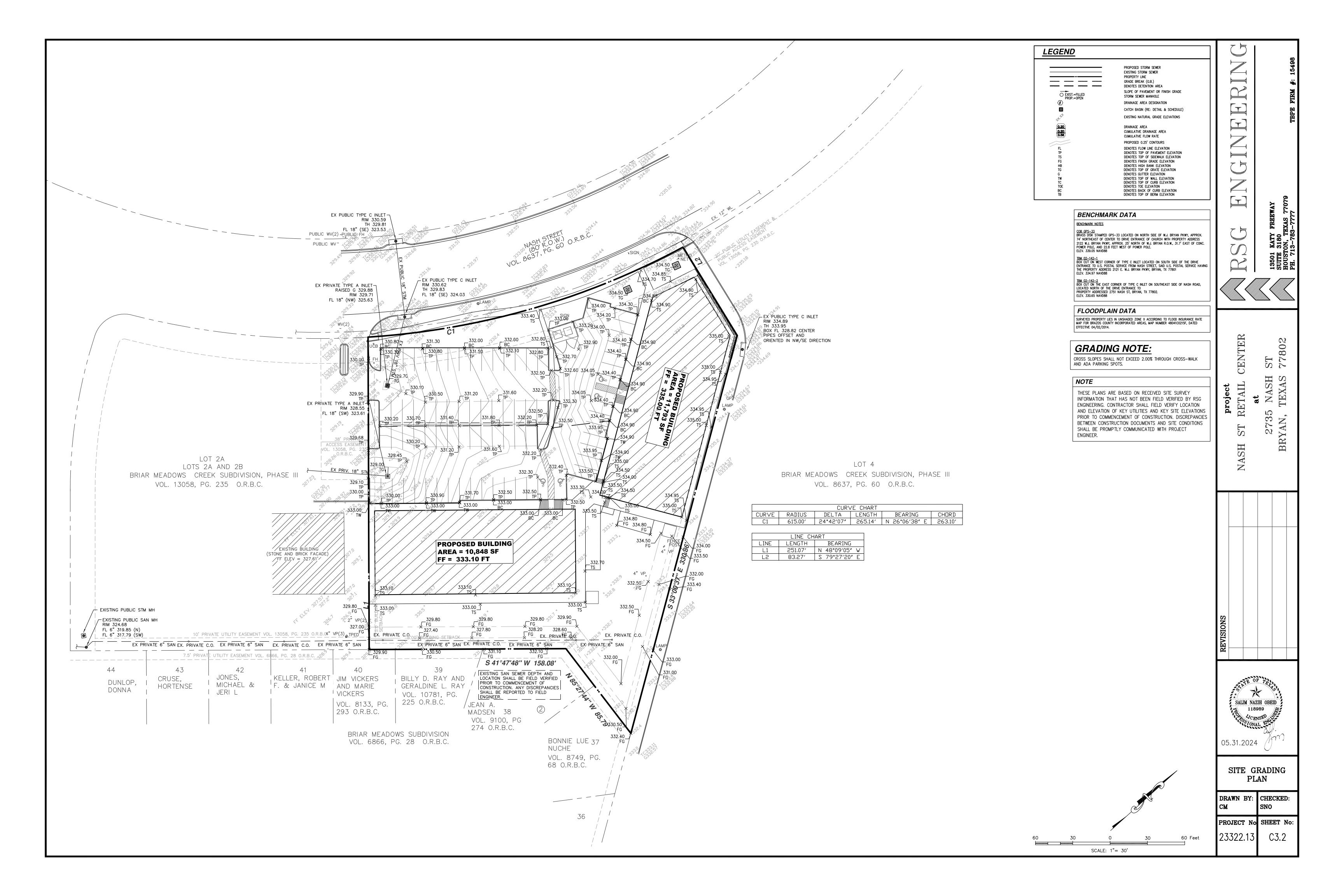


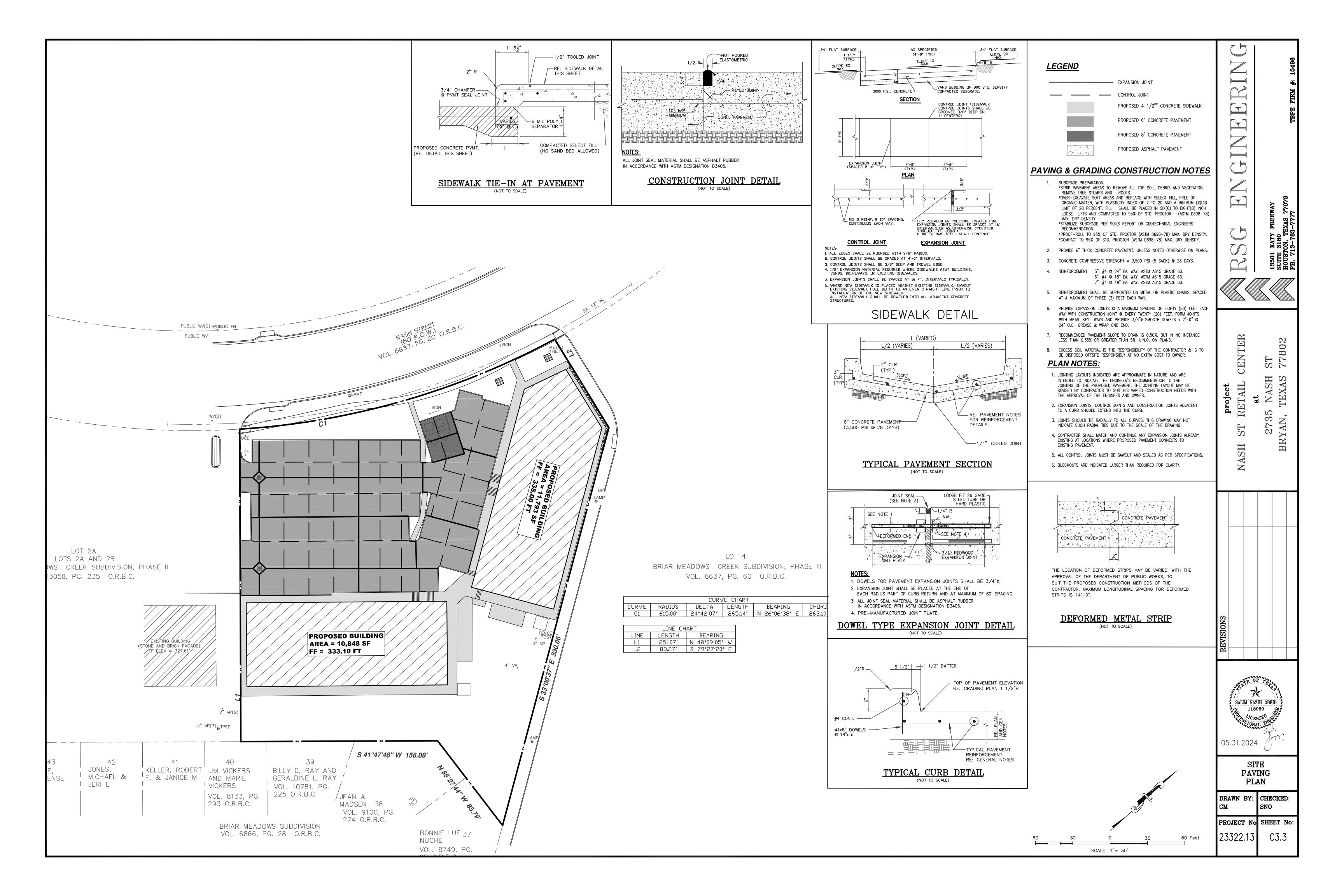


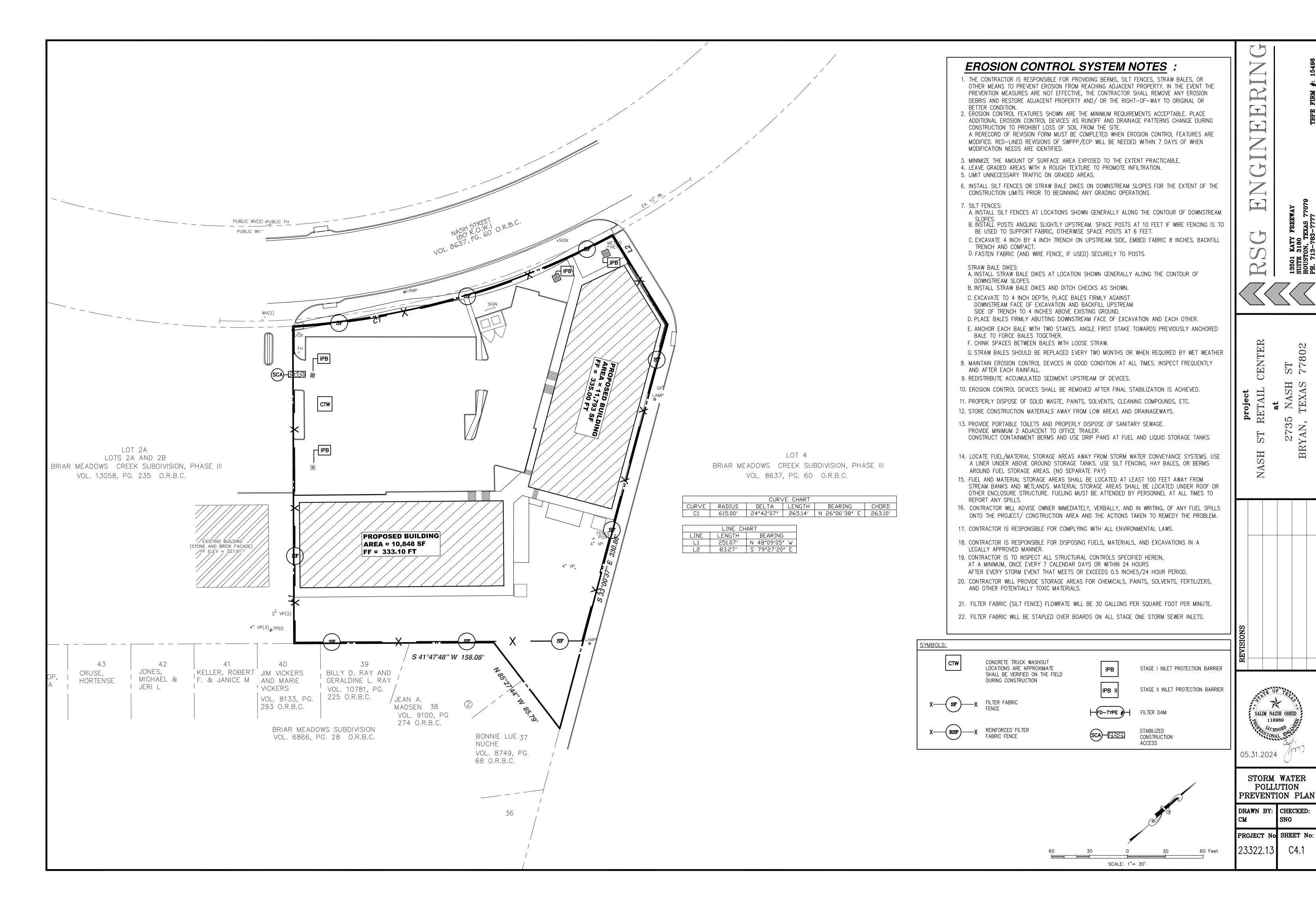
SITE DRAINAGE PLAN

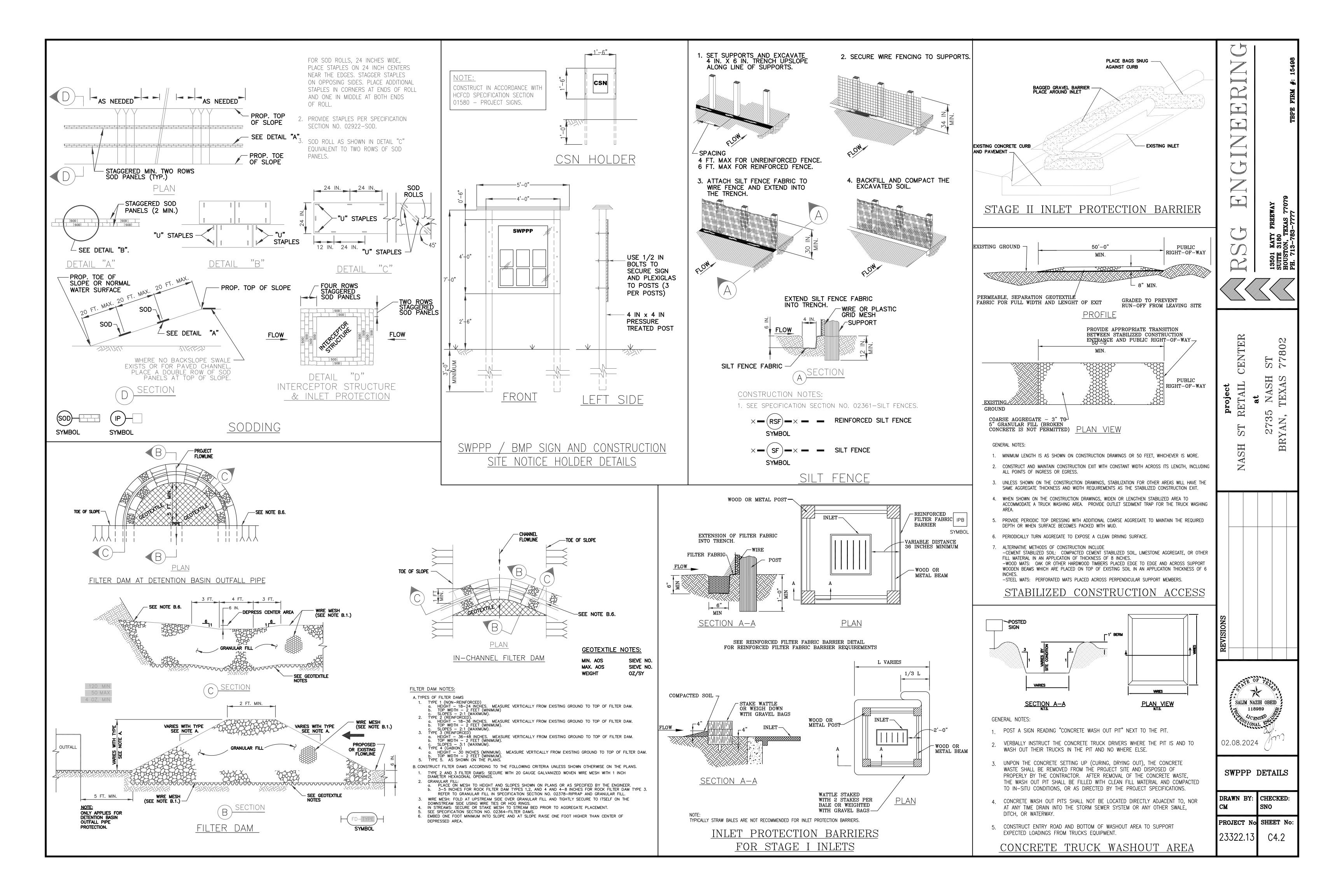
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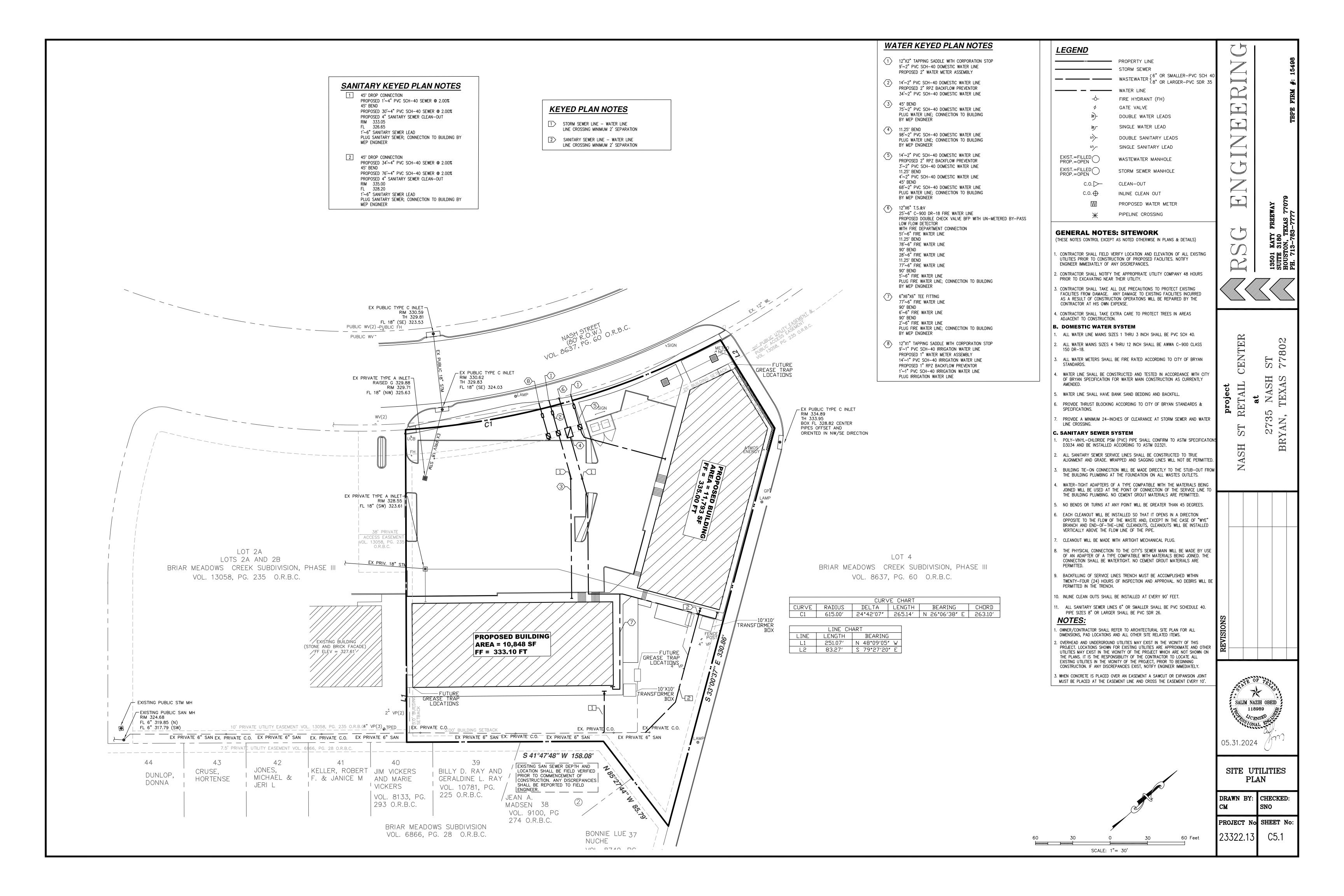
SCALE: 1"= 30'











GENERAL

1. ALL WATER LINES, WASTEWATER COLLECTION SYSTEMS, PAVING, TRAFFIC SIGNALS AND DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF BRYAN ENGINEERING STANDARDS WITH ALL SUBSEQUENT AMENDMENTS ADDED THERETO UNLESS OTHERWISE NOTED AND APPROVED ON THESE PLANS. THE LATEST EDITIONS OF DESIGN RULES, SPECIFICATIONS, STANDARD DETAILS AND MANUALS SHALL GOVERN AS OF THE DATES FOR

2. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING PUBLIC OR PRIVATE UTILITY LINES, INCLUDING BUT NOT LIMITED TO PAVING, WATER LINES, WASTEWATER COLLECTION SYSTEMS, STORM SEWER AND TRAFFIC SIGNALS DURING CONSTRUCTION. ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH CURRENT EDITIONS OF CITY OF BRYAN STANDARD CONSTRUCTION SPECIFICATIONS, DESIGN DETAILS AND DESIGN MANUALS. REPAIRS SHALL BE AT NO COST TO THE DISTRICT.

3. CONTRACTOR SHALL COMPLY WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS AND ANY OTHER FEDERAL, STATE AND LOCAL REGULATIONS REGARDING TRENCH SAFETY SYSTEMS FOR TRENCH EXCAVATION.

4. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY. ALL CONSTRUCTION STORM RUNOFF SHALL COMPLY WITH THE FINAL DRAFT OF STORMWATER MANAGEMENT HANDBOOK FOR CONSTRUCTION ACTIVITIES AS PREPARED BY CITY OF BRYAN, IN COMPLIANCE WITH THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM (TPDES) REQUIREMENTS.

5. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF JOB, SHALL BE AS GOOD OR BETTER THAN CONDITION PRIOR TO STARTING

6. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINE SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE DRAWINGS. EXISTING UTILITIES ARE LOCATED ON THE PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS ARE NOT SHOWN ON THE PLANS AND CONTRACTOR IS ADVISED TO CALL THE APPLICABLE UTILITIES/AGENCIES BEFORE

7. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR RECONSTRUCTED TO THE SATISFACTION OF THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.

8. THE CONTRACTOR IS TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE PLANS AND WHAT EXISTS IN THE FIELD, CONTRACTOR IS TO NOTIFY THE ARCHITECT AND ENGINEER IMMEDIATELY. CONTRACTOR SHALL VERIFY THE INVERT AND/OR FLOW LINE ELEVATIONS OF POINTS OF CONNECTIONS PRIOR TO THE COMMENCEMENT OF WORK AND SHALL IMMEDIATELY REPORT ANY DEVIATIONS TO THE ENGINEER.

PRIVATE UTILITY NOTES

CAUTION: <u>SBC CABLES</u>

THE LOCATION OF 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.

WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF SBC FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING THE CONTRACTOR SHALL EXPOSE THE SBC FACILITIES.

WHEN 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.

CAUTION: <u>UNDERGROUND GAS FACILITIES</u>

LOCATION OF CENTERPOINT/ENTEX MAIN LINES (TO INCLUDE UNIT GAS TRANSMISSION AND/OR INDUSTRIAL GAS SUPPLY CORPORATION WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 223-4567 OR 1-800-669-8344 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD

WHEN CENTERPOINT/ENTEX PIPE LINE MARKINGS AR NOT VISIBLE, CALL 713-967-8037 (7:00 am to 4:30 pm) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.

WHEN EXCAVATION WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT/ENTEX FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.

WHEN CENTERPOINT/ENTEX FACILITIES ARE EXPOSED SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE

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

ANY UTILITY OUTAGES CAUSED BY CONTRACTOR SHALL BE RESTORED WITHIN 4

CAUTION: <u>OVERHEAD POWER LINES</u>

HOURS OF NOTICE BY TENANT OR OWNER.

OVERHEAD LINES EXIST ON THE PROPERTY. WE HAVE NOT ATTEMPTED TO MARK THOSE LINES SINCE THEY ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH AND SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED, CALL RELIANT ENERGY/HL&P AT 713-207-7777.

CONTRACTOR TO NOTIFY THE "UNDERGROUND UTILITY COORDINATING COMMITTEE" (TELEPHONE: 713-223-4567) AND CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS (TELEPHONE: 713-754-0767) 48 HOURS BEFORE STARTING WORK IN STREET RIGHT-OF-WAY OR EASEMENTS.

CONTRACTOR TO NOTIFY THE MUD OPERATOR AND IS RESPONSIBLE FOR SCHEDULING AND COORDINATING ALL NECESSARY INSPECTIONS, REVIEWS OF WORK AND APPROVAL.

PAVING

1. GUIDELINES SET FORTH IN THE TXDOT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES SHALL BE OBSERVED.

2. EXISTING PAVEMENTS, CURBS, SIDEWALKS AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO CITY OF BRYAN STANDARDS WITH LATEST ADDENDA AND AMENDMENTS THERETO.

3. PAVING CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF BRYAN ENGINEERING STANDARDS.

4. CONTRACTOR SHALL BLOCK OUT (SQUARE) AROUND ALL INLETS AND MANHOLES IN PROPOSED PAVING AS SHOWN ON TYPE "A" INLET AND TYPE "C"

5. EXPANSION JOINT SHALL BE PLACED AT THE END OF EACH CURB RETURN AND A MAXIMUM 80' SPACING.

6. PROPOSED DRIVEWAYS TO BE CONSTRUCTED PER CITY OF BRYAN DRIVEWAY

7. CONTRACTOR SHALL CONSULT THE SOILS OR GEOTECHNICAL REPOR. 8. CONTRACTOR SHALL SUBMIT JOINT PLAN TO ENGINEER FOR APPROVAL.

STORM SEWERS

1. STORM SEWER PIPE USED FOR CONNECTION TO STORM SEWER IN PUBLIC RIGHT-OF-WAY SHALL BE REINFORCED CONCRETE PIPE ASTM C-76, CLASS III, AND SHALL EXTEND TO FIRST INLET OR MANHOLE. ALL OTHER PRIVATE STORM SEWERS SHALL BE HDPE AND BEDDED PER CITY OF BRYAN STANDARDS. PIPE GRADES ARE BASED ON CONCRETE PIPE TO PRODUCE THREE (3) FPS MINIMUM

2. STORM SEWERS SHALL BE INSTALLED, BEDDED, AND BACKFILLED IN ACCORDANCE WITH CITY OF BRYAN STANDARD DRAWINGS.

3. STORM SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF BRYAN ENGINEERING STANDARDS.

4. ALL SEWERS 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 IN 8 INCH LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS ON EACH LIFT. AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM DESIGNATION D-698/AASHTO T99). MOISTURE CONTENT OF BACKFILL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CEMENT- STABILIZED SAND SPECIFICATION ASTM C33, LATEST EDITION.

5. CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINTS ONLY CONFORMING TO ASTM C443.

6. "STM. S.E." INDICATES "STORM SEWER EASEMENT."

OF BRYAN STANDARDS UNLESS OTHERWISE NOTED.

7. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES OR INLETS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.

SANITARY SEWERS

1. ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF BRYAN ENGINEERING STANDARDS AND BE SUBJECT TO A STANDARD EXFILTRATION TEST. TESTS ARE TO BE PERFORMED ON THE TOTAL FOOTAGE OF SEWER LINE INCLUDED IN THE PROJECT. REQUIREMENTS OF TEXAS ADMINISTRATIVE CODE, TITLE 30 CHAPTER 317. "DESIGN CRITERIA FOR SEWERAGE SYSTEMS" SHALL GOVERN WHERE CONFLICTS EXIST EXCEPT WHERE CITY REQUIREMENTS ARE OF

2. SANITARY SEWER PIPE TO BE SDR 26 P.V.C. PIPE MEETING ASTM SPECIFICATION D2241 WITH RUBBER GASKET JOINTS, UNLESS OTHERWISE NOTED. 3. SANITARY SEWERS MANHOLES WILL HAVE BEDDING AND BACKFILL PER CITY

4. ALL SANITARY SEWER LINES UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL HAVE BEDDING PER CITY OF BRYAN STANDARDS AS APPLICABLE, WITH 1 1/2 SACK CEMENT/C.Y. STABILIZED SAND BACKFILL UP TO THE BOTTOM OF THE PAVEMENT SUBGRADE. 100 PSI PERFORMANCE RESULTS ARE STILL REQUIRED.

5. ALL MANHOLES ARE TO BE PER CITY OF BRYAN STANDARDS.

6. ALL SANITARY SEWERS CROSSING WATER LINES WITH A CLEARANCE BETWEEN 6 INCHES AND 9 FEET SHALL HAVE A MINIMUM OF ONE 18' JOINT OF 150 P.S.I. DUCTILE IRON OR C900 PVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER PROVIDE MINIMUM 2 FOOT SEPARATION.

7. CONTRACTOR SHALL PROVIDE FOR A MINIMUM HORIZONTAL CLEARANCE OF 9' FEET BETWEEN WATER LINES AND SANITARY SEWER MANHOLES AND LINES. 8. SANITARY SEWER MANHOLE RIMS OUTSIDE OF PROPOSED PAVING WILL BE SET 3" - 6" ABOVE THE SURROUNDING LEVEL FINISHED GRADE AFTER PAVING WITH SLOPED BACKFILL ADDED FOR STORMWATER DRAINAGE AWAY FROM

9. "SAN. S. E." INDICATES "SANITARY SEWER EASEMENT"

BELL-AND- SPIGOT TYPE JOINT ENDS.

D-1784.

10. IN WET STABLE TRENCH AREAS USE BEDDING PER CITY OF BRYAN STANDARDS.

11. ALL SDR P.V.C. PIPE IS TO HAVE D.I.P. SIZE O.D. AND RUBBER GASKET

12. SDR 26 P.V.C. PIPE USES "FULL BODIED" SDR 26 P.V.C. FITTINGS WITH APPROPRIATE ADAPTERS. AWWA C-900 DR-18 P.V.C. PIPE USES EITHER AWWA C900 DR-18 P.V.C. FITTINGS OR D.I.P. FITTINGS. SDR-26 P.V.C. PIPE SHALL HAVE A CELL CLASSIFICATION OF 12364-B AS DEFINED IN ASTM

13. DEFLECTION TEST: DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID SEWER PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE TEST SHALL BE PERFORMED AS PER 30 TAC 317.2 LATEST AMENDMENT AND WITHOUT MECHANICAL PULLING DEVICES.

14. INFILTRATION, EXFILTRATION OR LOW-PRESSURE AIR TEST: EITHER OF THE FOLLOWING TESTS SHALL BE PERFORMED AS PER TAC, TITLE 30 317.2 WITHIN THE SPECIFIED TOLERANCES ON ALL GRAVITY SEWERS. A. INFILTRATION OR EXFILTRATION TEST: TOTAL LEAKAGE AS DETERMINED BY A HYDROSTATIC HEAD TEST SHALL NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO (2) FEET.

B. LOW-PRESSURE AIR TEST: PERFORM TEST ACCORDING TO UNI-B-6-90 OR OTHER APPROPRIATE PROCEDURES. FOR SECTIONS OF PIPE LESS THAN 36"(INCH) AVERAGE INSIDE DIAMETER, THE MINIMUM ALLOWABLE TIME FOR PRESSURE DROP FROM 3.5 PSIG TO 2.5 PSIG SHALL BE AS FOLLOWS:

6" 340 SECONDS OR 0.855(L) FOR TEST LENGTHS GREATER THAN 398' 8" 454 SECONDS OR 1.520(L) FOR TEST LENGTHS GREATER THAN 298' 10" 567 SECONDS OR 2.374(L) FOR TEST LENGTHS GREATER THAN 239" 12" 680 SECONDS OR 3.419(L) FOR TEST LENGTHS GREATER THAN 199' 15" 850 SECONDS OR 5.342(L) FOR TEST LENGTHS GREATER THAN 159' 18" 1020 SECONDS OR 7.693(L) FOR TEST LENGTHS GREATER THAN 133'

WHERE L = LENGTH OF LINE OF SAME PIPE SIZE IN FEET

BACKFILL/COMPACTION OF FILL

1. ALL GRADING/BACKFILL/COMPACTION SHALL BE IN ACCORDANCE WITH THE SOILS REPORT AND ANY ADDENDUMS THERETO.

2. ALL AREAS TO BE FILLED ARE TO BE FREE OF VEGETATION, DEBRIS, PONDING WATER, LOOSE SOILS, MUD & MUCK (STRIP 4").

3. ALL FILL OR DISPOSAL OF EXCESS MATERIAL SHALL BE COMPACTED IN 8" LIFTS, 95% STANDARD PROCTOR DENSITY.

4. THE BUILDING AND PAVEMENT AREAS SHOULD BE STRIPPED OF ANY REMAINING TREES AND STUMPS, VEGETATION, ORGANICS, LOOSE TOPSOIL, AND/OR OTHER DEBRIS. CARE SHOULD BE TAKEN TO REPLACE OR RECOMPACT ALL SOIL REMOVED OR LOOSENED BY REMOVAL OF TREE ROOTS AND STUMPS. THE LOOSENED SOILS SHOULD BE MOISTURE CONDITIONED IF NECESSARY AND COMPACTED TO AT LEAST 95 PERCENT MAXIMUM DRY DENSITY TO WITHIN 1% DRY TO 3% WET OF THE OPTIMUM MOISTURE CONTENT AS OUTLINED BELOW.

5. FOLLOWING A PERIOD OF RAIN, THE MOISTURE SENSITIVE SILTY SAND SUBGRADE WILL BE OBVIOUSLY WEAK AND NOT CAPABLE OF SUPPORTING CONSTRUCTION EQUIPMENT. THE SOIL WILL THEN REQUIRE IMPROVEMENT AS OUTLINED IN THE GEOTECHICAL REPORT. IF THE SUBGRADE IS REASONABLY DRY AND STABLE. THE EXPOSED SOIL SUBGRADE AREA SHOULD BE PROOF ROLLED TO DETECT WEAK AREAS ONCE FINAL SUBGRADE ELEVATIONS HAVE BEEN ACHIEVED THROUGHOUT THE SITE. WEAK AREAS DETECTED DURING PROOF ROLLING, AS WELL AS ZONES OF DEBRIS AND ORGANICS SHOULD BE REMOVED AND REPLACED WITH SOILS EXHIBITING SIMILAR CLASSIFICATION. MOISTURE CONTENT, AND DENSITY AS THE ADJACENT IN-SITU SOILS. SUBSEQUENT TO PROOF ROLLING, AND JUST PRIOR TO PLACEMENT OF FILL, THE EXPOSED SUBGRADE SHOULD BE MOISTURE CONDITIONED AND COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DENSITY (ASTM D 698) AT 1% DRY TO 3% WET OF THE OPTIMUM MOISTURE CONTENT. THE PURPOSE IS TO PROVIDE SUPPORT FOR COMPACTION OF THE INITIAL FILL LIFT IN THE BUILDING AREA OR FOR CHEMICAL STABILIZATION IN THE PAVEMENT AREAS. FOR WET WEATHER CONSIDERATIONS, SEE GEOTECH REPORT.

6. GRADE ADJUSTMENTS WITHIN THE BUILDING LIMITS SHOULD BE ACCOMPLISHED WITH SELECT, STRUCTURAL FILL COMPOSED OF CLEAN, INACTIVE SANDY CLAY (NOT A SILT) WITH A PLASTICITY INDEX RANGING BETWEEN 10 AND 20. ALL FILL SHOULD BE FREE OF ORGANIC AND DEBRIS. ALL STRUCTURAL FILL SHOULD BE PLACED ON REPAIRED SURFACES IN LIFTS NOT TO EXCEED EIGHT INCHES LOOSE MEASURE. WITH COMPACTED THICKNESS NOT TO EXCEED SIX INCHES. ALL FILL SHOULD BE COMPACTED TO AT LEAST 95 PERCENT (ASTM D 698) MAXIMUM DRY DENSITY AT AT MOISTURE CONTENT WITHIN 1% DRY TO 3% WET OF OPTIMUM MOISTURE CONTENT.

WATERLINE CONSTRUCTION NOTES:

1. WATER MAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF BRYAN ENGINEERING STANDARDS.

2. 4" THRU 12" WATER LINES SHALL BE AWWA C-900 AND 1" THRU 3" WATER LINES SHALL BE SCHEDULE 40 PVC

3. ALL WATER LINES SHALL BE BEDDED AND BACKFILLED IN ACCORDANCE WITH LIERTY COUNTY STANDARD DRAWINGS.

4. ALL WATER LINES UNDER PROPOSED OR FUTURE PAVING AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE ENCASED IN BANK SAND TO 12" OVER PIPE AND BACKFILLED WITH BANK SAND TO THE BOTTOM OF THE PAVEMENT SUBGRADE.

5. CONTRACTOR SHALL PROVIDE FOR A MINIMUM HORIZONTAL CLEARANCE OF 9' (NINE FEET) BETWEEN WATER LINES AND SANITARY SEWER MANHOLES AND

6. "W.L.E." INDICATES "WATER LINE EASEMENT"

7. ALL WATER LINES TO BE DISINFECTED IN CONFORMANCE WITH AWWA C-651. A MINIMUM OF ONE BACTERIOLOGICAL SAMPLE SHALL BE COLLECTED FOR EACH 1 000 FFFT OF COMPLETED WATER LINE, OR FRACTION THEREOF, TO CHECK EFFICIENCY OF DISINFECTION PROCEDURES AND SHALL BE REPEATED IF CONTAMINATION PERSISTS.

8. ALL WATER PIPE AND RELATED PRODUCTS MUST CONFORM TO ANSI/NSF

9. 4" THRU 12" FITTINGS SHALL BE CEMENT MORTAR LINED COMPACT DUCTILE IRON PRESSURE FITTINGS PER ANSI A21.53 OR PUSH ON FITTINGS PER ANSI A21.10 PRESSURE RATED AT 250 PSIG CONFORMING TO THE REQUIREMENTS OF CITY OF HOUSTON STANDARD SPECIFICATION SECTION 02501-DUCTILE IRON PIPE AND FITTINGS

10. HYDROSTATIC TESTING: ALL WATER PIPE SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH AWWA STANDARDS. LEAKAGE SHALL BE DEFINED AS THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE NEWLY LAID PIPE OR ANY VALVED SECTION THEREOF TO MAINTAIN PRESSURE WITHIN 5 PSI OF THE SPECIFIED TEST PRESSURE AFTER THE PIPE HAS BEEN FILLED WITH WATER AND THE AIR HAS BEEN EXPELLED. THE TEST PRESSURE SHALL BE EITHER A MINIMUM OF 125 PSIG OR 1.5 TIMES THE MAXIMUM DESIGN PRESSURE WHICHEVER IS LARGER. THE MAXIMUM LEAKAGE SHALL BE CALCULATED USING THE FORMULA AS FOLLOWS:

WHERE L = $(S)(D)(P^1/2)/133,200$

L = ALLOWABLE LEAKAGE IN GAL./HR. S = LENGTH OF PIPE TESTED IN FEET

D = INSIDE DIAMETER OF PIPE IN INCHES S

P = PRESSURE IN POUNDS PER SQUARE INCH (GAUGE)

11. ALL WATER LINES TO HAVE 4' MINIMUM COVER TO FINISHED GRADE AND MINIMUM 12" CLEAR TO OTHER UTILITIES AT CROSSINGS UNLESS OTHERWISE NOTED ON PLANS.

12. ALL FLANGES BELOW GRADE SHALL BE INSULATED.

13. ALL WATERLINES SHALL BE ENCASED IN BANK SAND AT LEAST 12" ABOVE THE PIPE. COST OF BANK SAND TO BE INCLUDED IN THE UNIT PRICE OF

14. CENTER OF FIRE HYDRANT TO BE LOCATED 3'-0" FROM BACK OF CURB.

15. UTILITY CONTRACTOR TO TURN FIRE HYDRANTS AND MAKE ALL FINAL ADJUSTMENTS AFTER COMPLETION OF PAVING. NO SEPARATE PAY.

16. SANITARY PRECAUTIONS MUST BE TAKEN DURING WATER LINE CONSTRUCTION, AS CALLED FOR BY AWWA STANDARDS. PRECAUTIONS INCLUDE KEEPING PIPE CLEAN AND CAPPING OR OTHERWISE EFFECTIVELY SEALING OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED PIPE LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.

~ $\infty \sim$ AII 5 * SALIM NAZIH OBEID 118989 02.08.2024 CONSTRUCTION

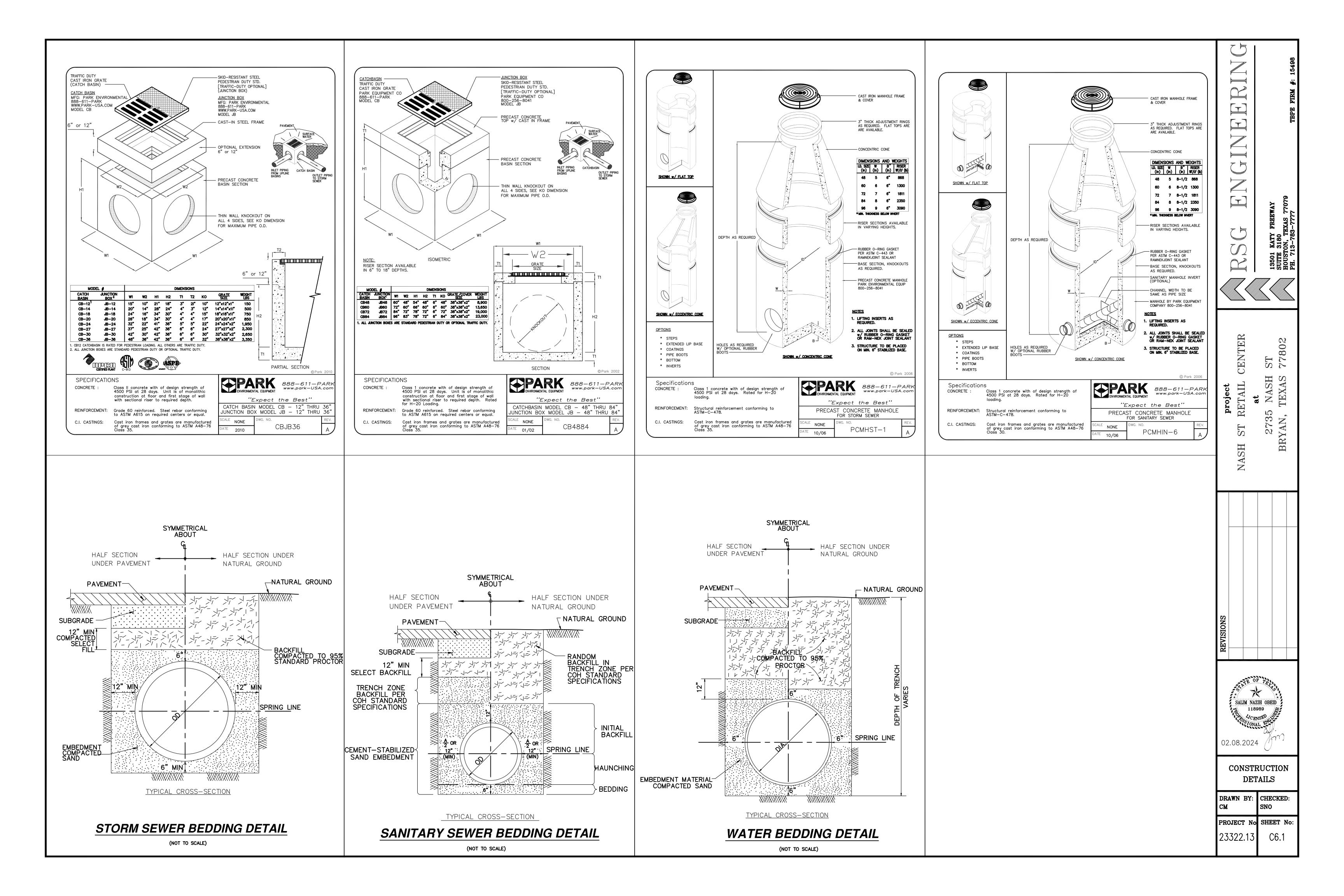
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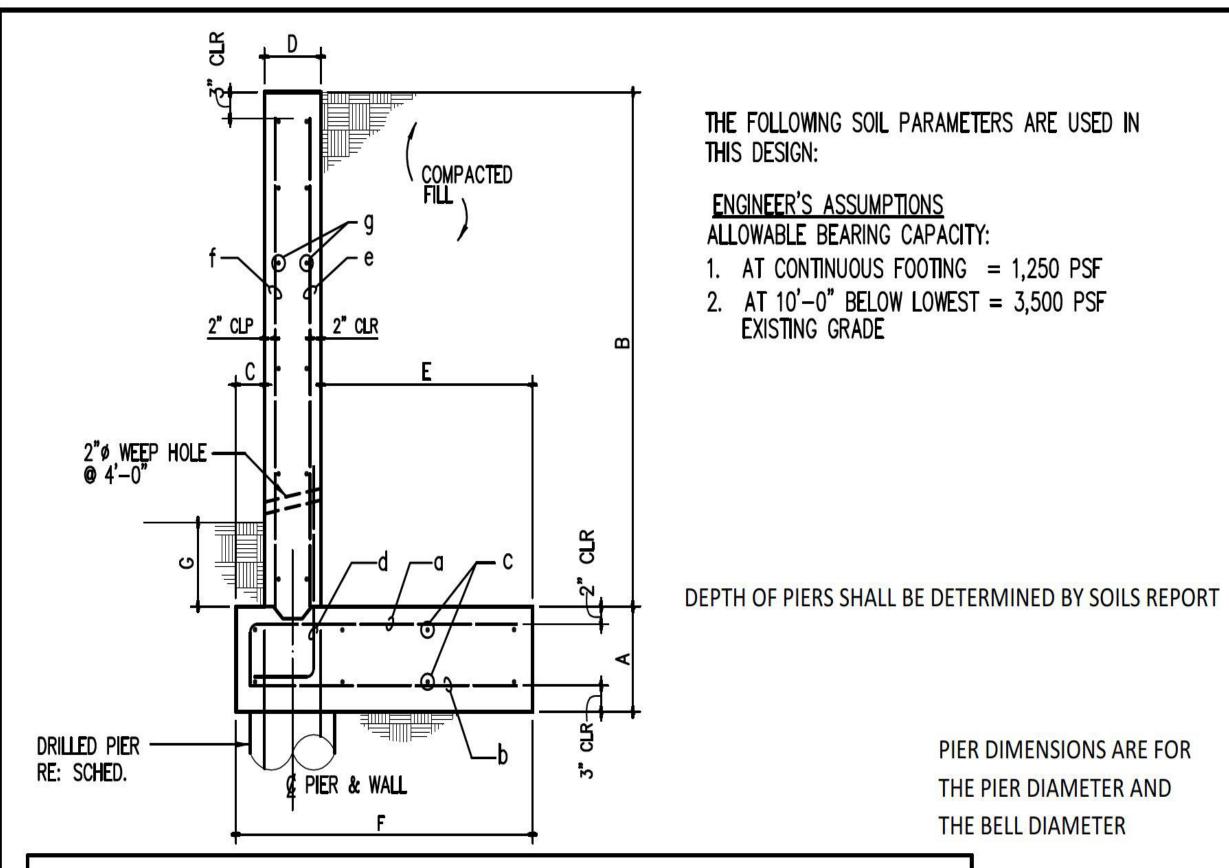
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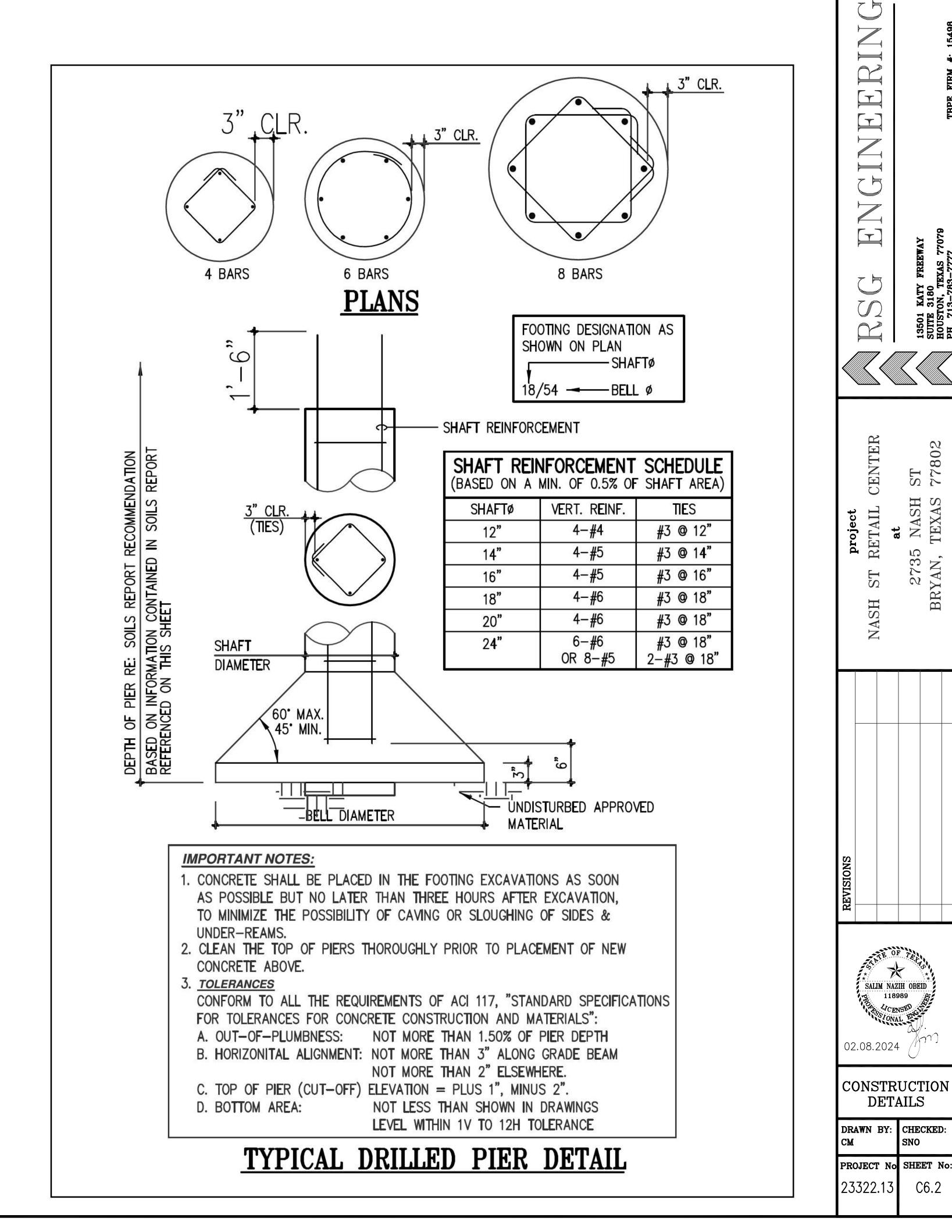




RETAINING WALL DIMENSION SCHEDULE								
DEPTH	Α	В	С	D	E	F	G	PIERS
3' TO 5'	1'-0"	2'-4'	0'-4"	0'-7"	2'-5"	3'-4"	0'-6"	not req'd
5' TO 7'	1'-0"	4'-6	0'-6"	0'-10"	3'-4"	4'-8"	0'-8"	12/36 @ 12' O.C.
7' TO 9'	1'-0"	6'-8'	0'-6"	1'-0"	4'-4"	5'-10"	1'-0"	14/42 @ 12' O.C.
9' TO 11'	1'-3"	8'-10'	0'-10"	1'-2"	5 '- 3"	7 '– 3"	1'-0"	18/54 @ 12' O.C.
11' TO 13'	1'-4"	10'-12'	1'-0"	1'-3"	6'-3"	8'-6"	1'-3"	21/63 @ 12' O.C.

RETAINING WALL REINFORCEMENT SCHEDULE								
DEPTH	a	b	С	d	е	f	g	
3' T O 5'	# 4 © 15" ‰	#4 @ 15"	3#4 CONT. TOP & BOTT.	#4 @ 15" Full Height	#4 @ 15"	not req'd	#4 @ 15"	
5' TO 7'	#4 @ 15" *&	#4 @ 15"	4#4 CONT. TOP & BOTT.	#4 @ 15" Full Height	#4 @ 15"	#4 @ 18"	#4 @ 18"	
7' TO 9'	#4 © 10" ‰	#4 @ 15"	5#4 CONT. TOP & BOTT.	#4 @ 10" _{10"}	#4 @ 15"	#4 @ 18"	#4 @ 18"	
9' TO 11'	#5 @ 10"	#4 @ 15"	7#4 CONT. TOP & BOTT.	#5 @ 10" ₂₅	#4 @ 10"	#4 @ 15"	#4 @ 15"	
11' T O 13'	#6 © 10"	#4 @ 14"	9#4 CONT. TOP & BOTT.	#6 @ 10" %	#4 @ 10"	#4 @ 15"	#4 @ 15"	

TYPICAL RETAINING WALL DETAIL



735

SNO

C6.2

