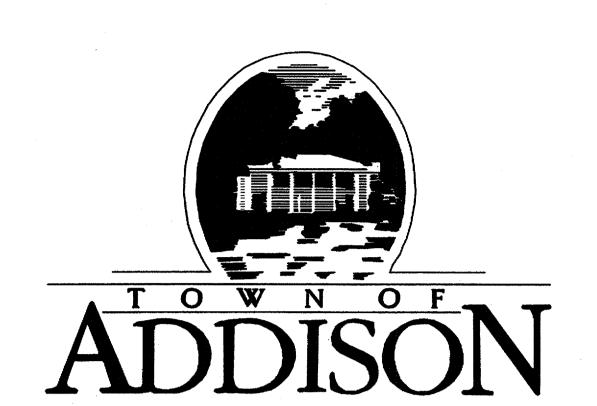
TALISKER



#### MAYOR

R. SCOTT WHEELER

MAYOR PRO-TEM

FREDRIC M. SILVER

DEPUTY MAYOR PRO-TEM

JOE CHOW

COUNCIL MEMBERS

DIANE MALLORY **GLYNDA TURNER** JIMMY NIEMANN GREGORY S. HIRSCH

CITY MANAGER

RON WHITEHEAD

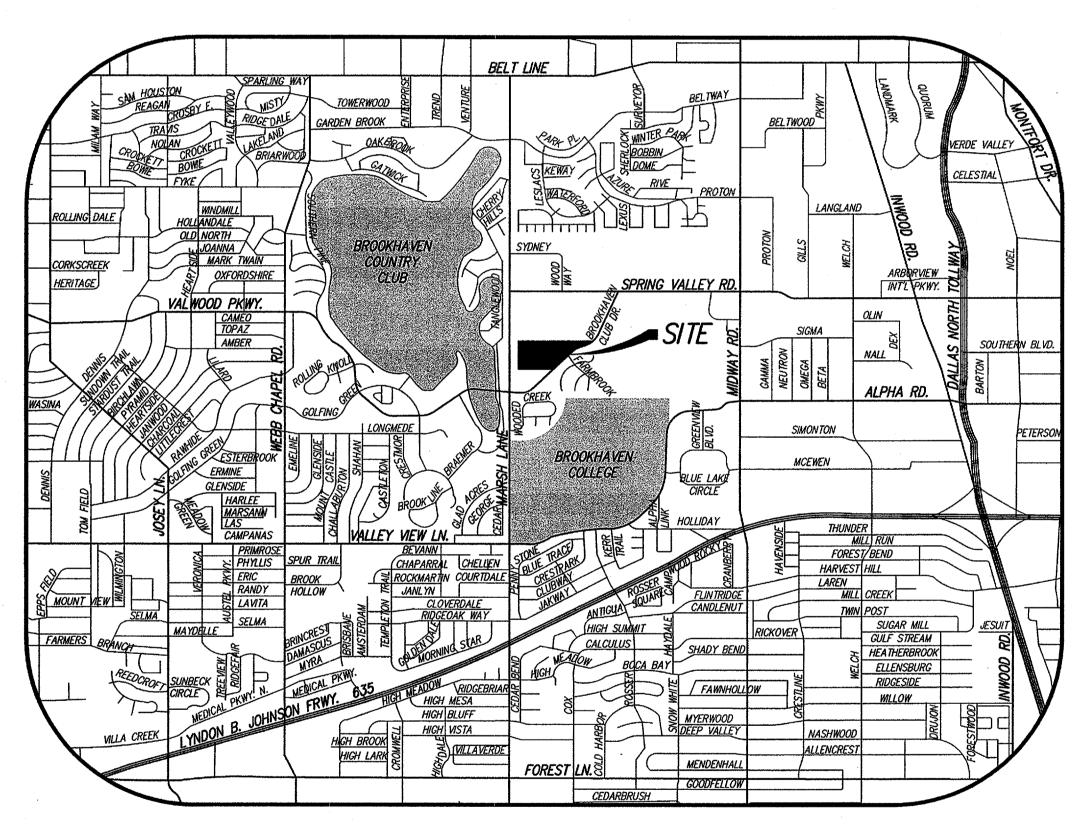
PUBLIC WORKS DIRECTOR

MICHAEL MURPHY, P.E.

# TALISKER APARTMENTS WATER LINE IMPROVEMENTS ADDISON, TEXAS

TOWN OF ADDISON, TEXAS

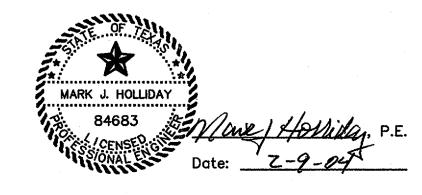
CONSTRUCTION PLANS FOR



LOCATION MAP

# FEBRUARY 2004





#### RECORD DOCUMENTS

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GENERAL NOTES & LEGEND

PROJECT LAYOUT SHEET

MISCELLANEOUS DETAILS 1

MISCELLANEOUS DETAILS 2

**COVER SHEET** 

DESCRIPTION

PROJECT CONSTRUCTION SEQUENCING

WATER LINE 'A' PLAN & PROFILE - STA 0+00 TO STA 1+78.64

WATER LINE 'B' PLAN - STA 0+00 TO STA 8+00

WATER LINE 'B' PLAN - STA 8+00 TO STA 10+79.34

WATER LINE 'D' PLAN - STA 0+00 TO STA 3+12.64 WATER LINE 'E' PLAN - STA 0+00 TO STA 4+14.64

SHEET NO.

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# **ENGINEER**

TEAGUE NALL AND PERKINS, INC. 12160 NORTH ABRAMS ROAD #508 DALLAS, TEXAS 75243 (214) 461-9867 CONTACT: MARK J. HOLLIDAY, P.E.

- TRAFFIC CONTROL & TRAFFIC CONTROL DEVICES USED DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE TEXAS DEPARTMENT OF TRANSPORTATION. THE CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN TO THE CITY PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL USE EXTREME CAUTION IN LOCATING AND PROTECTING ALL UTILITY SERVICE LINES. WHERE A PROPOSED WATER LINE IS BEING CONSTRUCTED IN A LOCATION DIFFERENT FROM THE EXISTING MAIN. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING AN INSPECTION OF THE MAIN, TO BE REPLACED FOR THE PURPOSE OF IDENTIFYING AND LOCATING ALL ACTIVE SERVICE TAPS. THE CONTRACTOR SHOULD NOT ASSUME THAT ALL SERVICES TO BE RECONNECTED ARE SHOWN IN THE PLANS. OR SHOWN IN THE CORRECT LOCATION. THE COST FOR THE PRECONSTRUCTION INSPECTION IS SUBSIDIARY TO THE COST BID FOR THE INSTALLATION OF THE MAIN.
- THE CONTRACTOR SHALL MAINTAIN EXISTING WATER SERVICE THROUGHOUT CONSTRUCTION, USING TEMPORARY LINES AS NECESSARY. AFTER THE PROPOSED WATER MAIN HAS BEEN TESTED AND APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL TRANSFER ALL EXISTING METERED SERVICES. NO SERVICE SHALL BE DISRUPTED FOR A PERIOD LONGER THAN SIX (6) HOURS. ALL SERVICES SHALL BE 2" UNLESS OTHERWISE NOTED ON THE PLANS.
- THE ENGINEER WILL PROVIDE ON THE PLANS HORIZONTAL CONTROL IN THE FORM OF GRID REFERENCE POINTS AND/OR BEARINGS AND DISTANCES AND VERTICAL CONTROL IN THE FORM OF BENCHMARKS. FROM THE CONTROLS PROVIDED ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE LAYOUT OF THE WORK AND FOR ESTABLISHING LINES AND ELEVATIONS AS NEEDED DURING CONSTRUCTION. THE CONTRACTOR SHALL FURNISH AT HIS OWN EXPENSE LABOR, INCLUDING THE SERVICES OF COMPETENT PERSONNEL, EQUIPMENT, INCLUDING ACCURATE SURVEYING INSTRUMENTS, STAKES, TEMPLATES, PLATFORMS, TOOLS, AND MATERIALS AS MAY BE REQUIRED FOR LAYING OUT ANY AND ALL PARTS OF THE WORK. ALL WORK ASSOCIATED WITH CONSTRUCTION LAYOUT SHALL BE SUBSIDIARY TO THE VARIOUS CONSTRUCTION PAY ITEMS IN THE CONTRACT.
- THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL EXISTING UTILITY POLES, LIGHT POLES, SIGNALS, AND GUY WIRES. (NO SEPARATE PAY ITEM)
- THE CONTRACTOR SHALL PRESERVE ALL TREES, SHRUBS, SPRINKLER SYSTEMS, FENCES, MAIL BOXES AND OTHER PROPERTY OWNER IMPROVEMENTS NOT NOTED FOR REMOVAL. THE REMOVAL AND/OR REPLACEMENT OF THE SAID PROPERTY OWNER IMPROVEMENTS BY THE CONTRACTOR DEEMED NECESSARY FOR THE COMPLETION OF SAID PROJECT, INCLUDING BUT NOT LIMITED TO ASPHALT PAVEMENT, CONCRETE SIDEWALKS, CONCRETE CURB/GUTTER, SPEED BUMPS, LANDSCAPING, FENCES, STEPS, PARKING/FIRE LANE STRIPING SHALL BE REPLACED TO EQUAL OR BETTER CONDITION AS A NON-PAY ITEM UNLESS A PAY ITEM EXISTS FOR THE SPECIFIC IMPROVEMENT.
- THE CONTRACTOR SHALL GIVE THE TOWN, APARTMENT MANAGEMENT, AND BUSINESSES AFFECTED BY ANTICIPATED WATER OR SEWER SERVICE DISRUPTIONS AT LEAST FORTY-EIGHT (48) HOURS PRIOR NOTICE.
- DUCTILE IRON FITTINGS REQUIRED TO PROPERLY INSTALL THE PROPOSED WATER LINES ON THIS PROJECT SHALL BE MEASURED SEPARATELY, AND SHALL BE PAID FOR UNDER A SEPARATE PAY ITEM PER TON.
- 9. ALL EXISTING FIRE HYDRANTS WITHIN THE LIMITS OF THE PROJECT, SHALL BE SALVAGED AND DELIVERED TO THE TOWN OF ADDISON PUBLIC WORKS YARD AT 16801 WESTGROVE BY THE CONTRACTOR. (NO SEPARATE PAY ITEM)
- ALL EXISTING WATER VALVES SHALL BE ABANDONED ON ALL KILLED WATER MAINS PER VALVE ABANDONMENT DETAIL. VALVE COVERS AND CAPS SHALL BE SALVAGED AND DELIVERED TO THE TOWN OF ADDISON PUBLIC WORKS YARD. WATER MAINS TO BE ABANDONED SHALL BE CUT, CAPPED, AND BLOCKED WITH CONCRETE AT ALL ENDS AND/OR FITTINGS.
- 11. THE PROPOSED WATER MAIN SHALL HAVE A MINIMUM COVER OF FOUR (4') FEET MEASURED FROM THE TOP OF THE EXISTING CURB OR FROM THE TOP OF THE EXISTING GROUND TO THE TOP OF THE PROPOSED PIPE, WHICHEVER IS GREATER. OR AS DIRECTED BY THE ENGINEER.
- 12. THE CONTRACTOR SHALL CENTER A FULL 20-FOOT LONG JOINT OF THE PROPOSED PIPE AT A STORM SEWER CROSSING IF THE PROPOSED PIPE MUST PASS UNDER THE STORM SEWER.
- WHERE PROPOSED OR EXISTING WATER LINES CROSS PROPOSED OR EXISTING SANITARY SEWER LINES: 1) THE SANITARY SEWER MAIN SHOULD BE EITHER CONCRETE ENCASED (20' CENTERED ON CROSSING); OR 2) A FULL 20-FOOT LONG JOINT OF PIPE SHALL BE CENTERED AT THE CROSSING AND A 2-FOOT VERTICAL CLEARANCE BE MAINTAINED. PAYMENT IS SUBSIDIARY TO COST OF PIPE.
- 14. ALL DUCTILE IRON FITTINGS SHALL BE POLYWRAPPED.
- THE CONTRACTOR SHALL MAINTAIN FIRE EMERGENCY VEHICLE ACCESS TO FIRE HYDRANTS THROUGHOUT CONSTRUCTION.
- THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE DRIVING LANE OPEN FOR INGRESS/EGRESS OF VEHICULAR TRAFFIC THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY APARTMENT MANAGEMENT IF PARKING AREAS WILL BE INACCESSIBLE 48 HOURS PRIOR TO CONSTRUCTION.

- 17. IRRIGATION AND SPRINKLER SYSTEM NOTES (SEE TOWN OF ADDISON SPECIFICATIONS):
  - A) THE CONTRACTOR SHALL HIRE A LICENSED IRRIGATOR AS A SUBCONTRACTOR TO OVERSEE ALL ACTIVITIES THAT IMPACT EXISTING, OR PROPOSED IRRIGATION
  - B) PRIOR TO DEMOLITION OR CONSTRUCTION ACTIVITIES. EXISTING IRRIGATION SYSTEMS SHALL BE TURNED ON. THE LOCATION OF THE HEADS. VALVES. AND PIPE SHALL BE MARKED WHERE DEMOLITION OR CONSTRUCTION WILL IMPACT THE SYSTEM. DEFICIENCIES IN THE SYSTEM SHALL BE NOTED AND REPORTED TO THE SYSTEM OWNER. A PHOTOGRAPHIC OR VIDEO RECORD SHALL BE MADE IF APPROPRIATE.
  - C) PIPING SHALL BE CUT, CAPPED, AND MARKED AT THE LIMITS OF CONSTRUCTION.
  - D) AT THE COMPLETION OF CONSTRUCTION. THE LICENSED IRRIGATOR SHALL RESTORE AND TEST THE IRRIGATION SYSTEMS FOR PROPER FUNCTION. THE TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE TOWN OF ADDISON'S PUBLIC WORKS INSPECTOR, AND THE SYSTEM OWNERS. (NO SEPARATE PAY)
- CONTRACTOR SHALL CONFORM WITH THE "NORTH CENTRAL TEXAS STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (NCTSSPWC) AND ALL TOWN OF ADDISON STANDARD CONSTRUCTION DETAILS.
- 19. ALL BENDS AND FIRE HYDRANTS SHALL INCLUDE RESTRAINED TYPE FITTINGS WITH RETAINER GLANDS IN ADDITION TO CONCRETE THRUST BLOCKING. ALL FIRE HYDRANTS SHALL BE INSTALLED PER STANDARD DETAILS. CONCRETE THRUST BLOCKING MAY BE ELIMINATED AT THE OWNER'S DISCRETION.
- 20. WATER MAINS SHALL BE AWWA C-909, CL 150.
- 21. ALL STREET AND DRIVEWAY PAVEMENT SHALL BE 8-INCH, 4000 PSI CONCRETE WITH #3 BARS ON 18-INCH (18") CENTERS BOTH WAYS. ALL CONSTRUCTION TO BE PER TOWN STANDARDS.
- 22. ALL PORTIONS OF EXISTING PAVEMENT THAT ARE TO REMAIN SHALL BE PROTECTED BY THE CONTRACTOR. REMOVAL OF ANY PAVEMENT THAT IS NOT SHOWN TO BE REMOVED SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE TOWN OF ADDISON.
- 23. ALL WATER SERVICE LINES THAT EXTEND ACROSS PUBLIC STREETS SHALL BE BORED UNDERNEATH THE EXISTING PAVEMENT UNLESS OTHERWISE NOTED.
- 24. THE CONTRACTOR SHALL CONNECT ALL NEW SERVICE LINES TO THE NEW WATER METERS. (NO SEPARATE PAY ITEM)
- THE CONTRACTOR SHALL INSTALL NEW WATER METERS AND BOXES ACCORDING TO THE TOWN OF ADDISON SPECIFICATIONS. ALL METERS SHALL BE EQUIPPED WITH ELECTRONIC ENCODER REGISTERS, PROGRAMMED TO READ IN THOUSAND GALLON INCREMENTS, FOR FOR CONNECTION TO TOUCH PAD. WATER METERS SHALL BE 5/8", 1", 1.5", OR 2". ALL EXISTING WATER METERS SHALL BE SALVAGED AND DELIVERED TO THE TOWN OF ADDISON PUBLIC WORKS YARD. COORDINATE METER CHANGE-OUT WITH THE TOWN OF ADDISON PUBLIC WORKS DEPARTMENT.
- 26. AN APPROVED BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED, BY A LICENCED PLUMBER WITH ALL WATER SERVICES AFTER THE METER, WITH A BRASS OR COPPER NIPPLE BETWEEN THE METER AND THE ASSEMBLY OF SUFFICIENT LENGTH TO ALLOW PLACEMENT IN SEPARATE BOXES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE THE ASSEMBLY TESTED UPON INSTALLATION BY A CERTIFIED TESTER, REGISTERED WITH THE TOWN OF ADDISON. THE ORIGINAL TEST RESULTS SHALL BE PROVIDED TO THE TOWN OF ADDISON UTILITY DIVISION PRIOR TO FINAL CONTINUOUS CONNECTION TO THE TOWN'S WATER SUPPLY. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE USC CERTIFIED. INSTALLATION OF THE BPA SHALL BE SUBSIDIARY TO THE METER. THE APPROPRIATE BPA WILL BE DETERMINED BY THE TOWN OF ADDISON UTILITY DIVISION USING THE MOST CURRENT EDITION OF THE MANUAL OF CROSS-CONNECTION CONTROL AS PUBLISHED BY USCFCCCHR AS A GUIDELINE. FINAL DETERMINATION RESTS WITH THE TOWN OF ADDISON. ALL BPA'S SHALL BE INSTALLED ACCORDING TO THE MOST RECENT EDITION OF THE TOWN OF ADDISON'S STANDARD OPERATING PROCEDURES MANUAL.
- 27. ALL PAVEMENT FOR REMOVAL WITHIN THE PROJECT LIMITS SHALL BE SAWCUT. ALL SAWCUTS SHALL BE FULL DEPTH. (NO SEPARATE PAY ITEM)
- BEFORE THE NEWLY CONSTRUCTED WATER MAIN IS PERMITTED TO BE PLACED INTO SERVICE, IT SHALL BE PRESSURE TESTED. DISINFECTED AND TESTED FOR BACTERIA AT THE CONTRACTOR'S EXPENSE. TESTING IS TO BE ACCOMPLISHED BY A TOWN OF ADDISON APPROVED LAB. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DESINFECTION AND TESTING.
- STAGING AND STORAGE FOR THIS PROJECT SHALL BE APPROVED BY THE TOWN OF ADDISON PRIOR TO ANY CONSTRUCTION ACTIVITY.
- 30. ALL NEW DUMMY AND EXPANSION JOINTS SHALL MATCH EXISTING JOINT LOCATIONS. WHICH SHALL BE RECORDED BY VIDEO, SKETCH, PHOTO ETC. PRIOR TO DEMOLITION.
- CONTRACTOR SHALL SUPPLY RECORD DRAWINGS TO THE TOWN OF ADDISON, BASED UPON MARKUP PLANS PROVIDED BY THE TOWN INSPECTOR AND CONTRACTOR.

LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE BASED ON INFORMATION PROVIDED BY THE OWNERS OF THE UTILITIES AND FIELD SURVEYS. THERE MAY ALSO BE EXISTING UTILITIES THAT ARE NOT SHOWN. THE OWNER AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION. CONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF A CONFLICT IS DISCOVERED BETWEEN EXISTING UTILITIES AND PROPOSED IMPROVEMENTS, CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY. IT SHALL BE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANY FOR ANY NECESSARY RELOCATION OF FACILITIES AND NO SEPARATE PAYMENT SHALL BE MADE. ADDITIONALLY, CONTRACTOR SHALL NOT BE COMPENSATED FOR DELAYS OR REMOBILIZATION DUE TO UTILITY COORDINATION. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT CONTRACTOR'S SOLE EXPENSE. CONTRACT TIME SHALL NOT BE EXTENDED DUE TO DELAYS CAUSED BY UTILITY COORDINATION. RESPONSIBILITY TO NOTIFY THE OWNERS TO ARRANGE FOR EXACT LOCATIONS AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.

<u>UTILITY</u>	TELEPHONE
ONCOR WORLDCOM/MCI TELE—CABLE	(214) 875–2256 (972) 656–5519 (214) 578–7573
DIG-TESS SBC AT&T	1-800-344-8377 (214) 920-0189
TOWN OF ADDISON (DAVE WILDE)	(972) 907–4073 (972) 450–2871

- 33. ANY CONSTRUCTION ITEM OR REQUIRED WORK SHOWN ON THESE PLANS FOR WHICH THERE IS NO SPECIFIC BID ITEM IN THE PROPOSAL SHALL BE CONSIDERED SUBSIDIARY TO THE OTHER BID ITEMS AND NO SEPARATE PAYMENT SHALL BE MADE.
- CONTRACTOR SHALL PREPARE PHOTOGRAPHS AND A VIDEO OF THE PROJECT SITE DOCUMENTING SITE CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. VIDEO SHALL CLEARLY SHOW ALL PUBLIC AND PRIVATE IMPROVEMENTS WITHIN AND ADJACENT TO THE PROJECT LIMITS INCLUDING, BUT NOT LIMITED TO, DRIVEWAYS, FENCES, STRUCTURES, LANDSCAPING, POOLS, ABOVE GROUND UTILITIES, RETAINING WALLS, ETC. NO SEPARATE PAYMENT SHALL BE MADE FOR PREPARATION OF PHOTOGRAPHS AND VIDEO. VIDEO TO BE APPROVED BY TOWN.
- THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT A DETAILED CONSTRUCTION SCHEDULE AT THE PRECONSTRUCTION CONFERENCE FOR EACH PHASE OF THE PROJECT.
- 36. ALL PEDESTRIAN FACILITIES SHALL CONFORM TO CURRENT AMERICAN'S WITH DISABILITIES ACT (ADA) REQUIREMENTS.
- 37. SUBGRADE SHALL BE COMPACTED TO 95% STD PROCTOR DENSITY AND APPROVED BY TOWN'S INDEPENDENT LAB BEFORE PROCEEDING WITH CONSTRUCTION. (PROVIDED BY CONTRACTOR AT NO SEPARATE PAY)
- 38. ALL CONCRETE FORMS SHALL BE APPROVED BY TOWN INSPECTOR PRIOR TO POURING.
- WORKING HOURS SHALL BE DETERMINED BY THE TOWN OF ADDISON AND PROPERTY OWNER MANAGEMENT.
- SPRINKLING FOR DUST CONTROL SHALL CONSIST OF THE AUTHORIZED APPLICATION OF WATER AS DIRECTED BY THE TOWN OF ADDISON. WATER SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL BE CLEAN, FREE FROM INDUSTRIAL WASTE AND OTHER OBJECTIONABLE MATTER. THE CONTRACTOR SHALL FURNISH AND OPERATE A SPRINKLER EQUIPPED WITH POSITIVE AND RAPIDLY WORKING CUTOFF VALVES AND APPROVED SPRAY BARS. WHICH SHALL INSURE THE DISTRIBUTION OF WATER IN A UNIFORM AND CONTROLLABLE RATE OF APPLICATION. IT SHALL BE THE CONTRACTOR'S CONTINUOUS RESPONSIBILITY AT ALL TIMES INCLUDING NIGHTS. HOLIDAYS. WEEKENDS. ETC... UNTIL ACCEPTANCE OF THE PROJECT BY THE OWNER, TO MAINTAIN THE PROJECT FREE OF DUST IN A MANNER WHICH SHALL CAUSE THE LEAST INCONVENIENCE TO THE PUBLIC. (NO SEPARATE PAY)

#### SYMBOL LEGEND

EVICTINO		DRODOSED
EXISTING		PROPOSED
	SURVEY CONTROL POINT	
•	MAILBOX	
_	S.S. CLEAN OUT	
•	S.S. MANHOLE	
	WATER SERVICE -	
	SANITARY SEWER LINE	
	STORM DRAIN LINE	
	OVERHEAD ELECTRIC	
		1
	FIRE HYDRANT	
G	GAS METER	
· **	GAS METER GUY WIRE IRON ROD FOUND	
<b>o</b> 31°		
· •	LIGHT POLE	
<u> </u>	S.D. MANHOLE	
E	PULL BOX	
Ø	POWER POLE	
þ	SIGN	
×	SPRINKLER VALVE	
WM	WATER METER/BPA	
W	PRIVATE CUT-OFF VALVE	
$\otimes$	WATER VALVE	H
( HBATS	TREE	
	SHRUB	
XX	FENCE	
	BUILDING	
1, //		
	CONC. REMOVAL AND RE	PLACEMENT
	HMAC REMOVAL AND REP	PLACEMENT
	BORING FOR WATER LINE	

F/L = FLOW LINE ELEV.

T/C = TOP OF CURB ELEV.

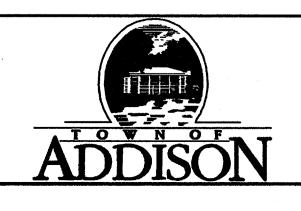
MH = MANHOLE

CO = CLEANOUT

#### RECORD DOCUMENTS

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NO. REVISION BY DATE



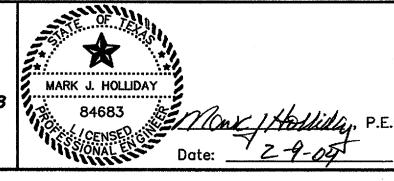




TEAGUE NALL AND PERKINS **ENGINEERS + SURVEYORS + CONSULTANTS** 

1100 Macon Street Fort Worth, Texas 76102 Denton, Texas 76201 (817) 336-5773 (940) 383-4177

235 W. Hickory Street #100 12160 N. Abrams Road #508 Dallas, Texas 75243 (214) 461-9867



TOWN OF ADDISON, TEXAS TALISKER APARTMENTS

WATER LINE IMPROVEMENTS

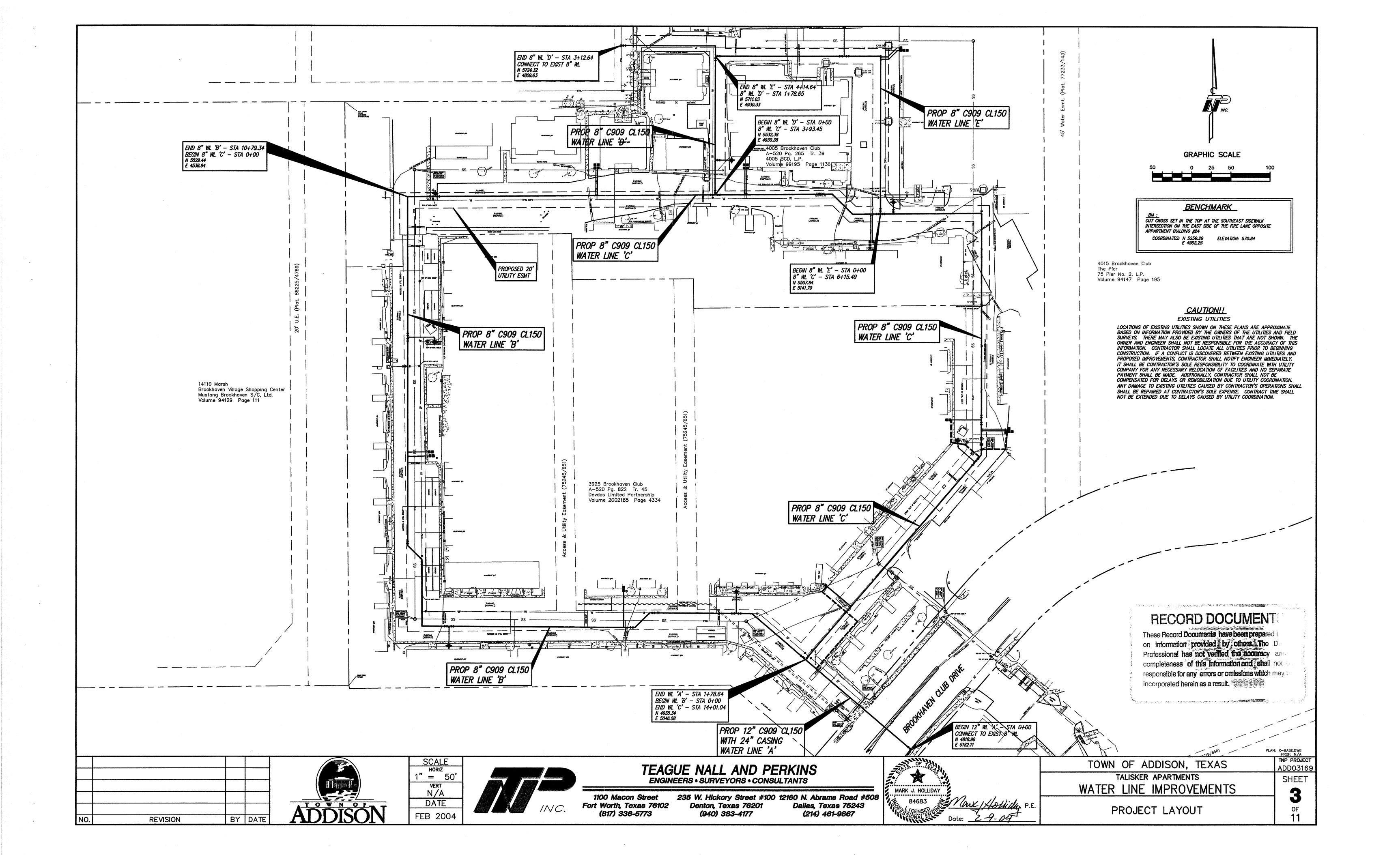
GENERAL NOTES

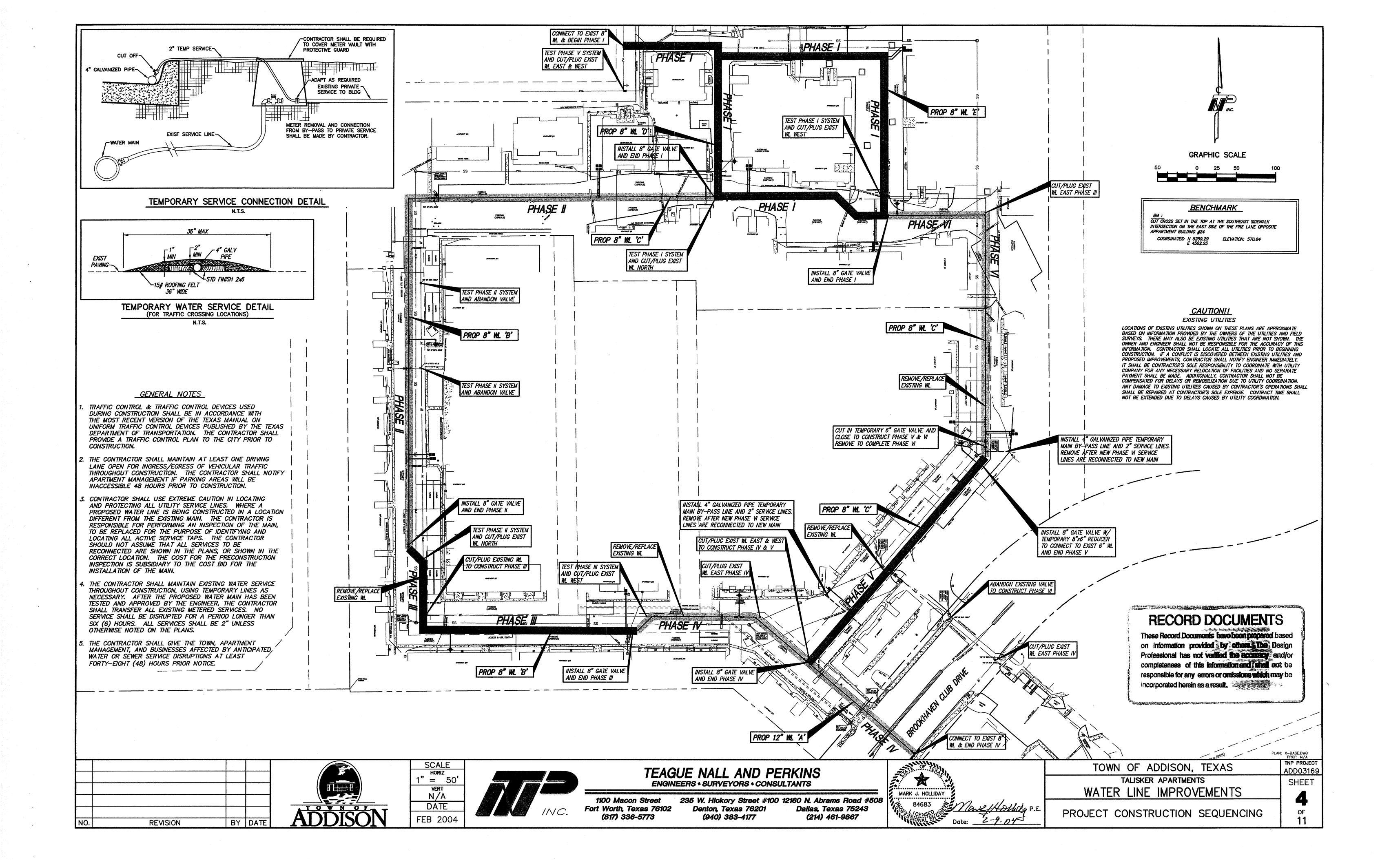
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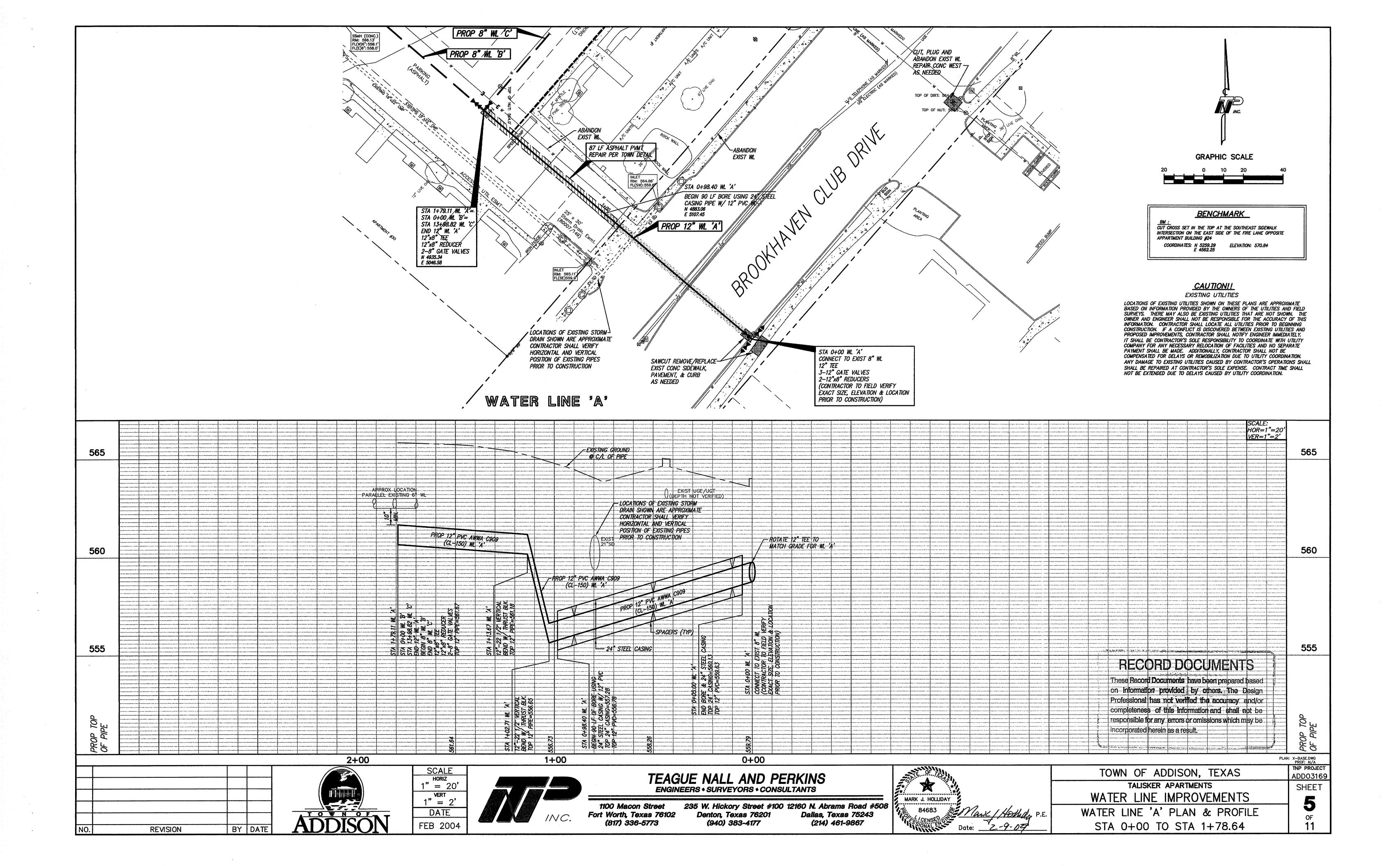
TNP PROJECT

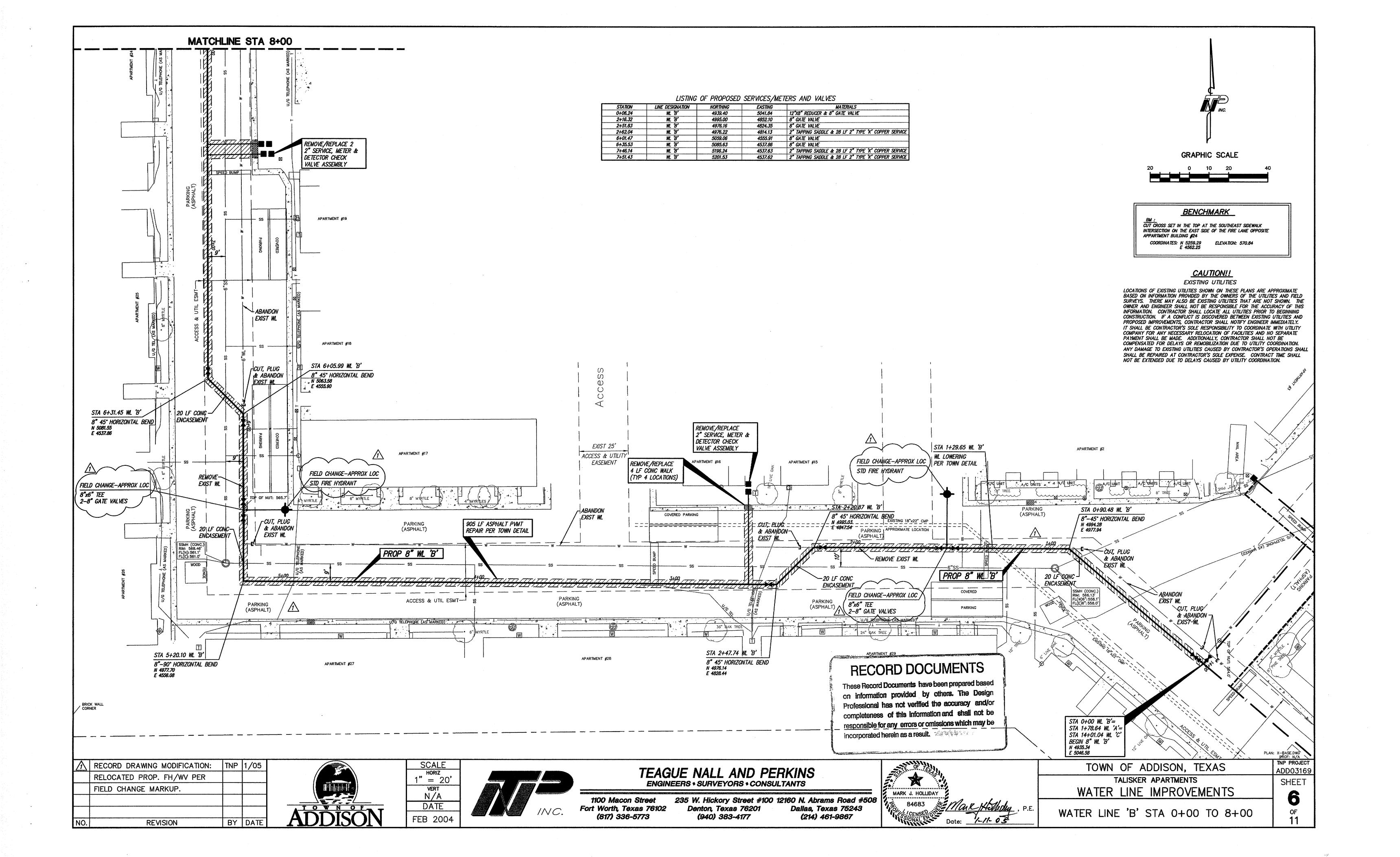
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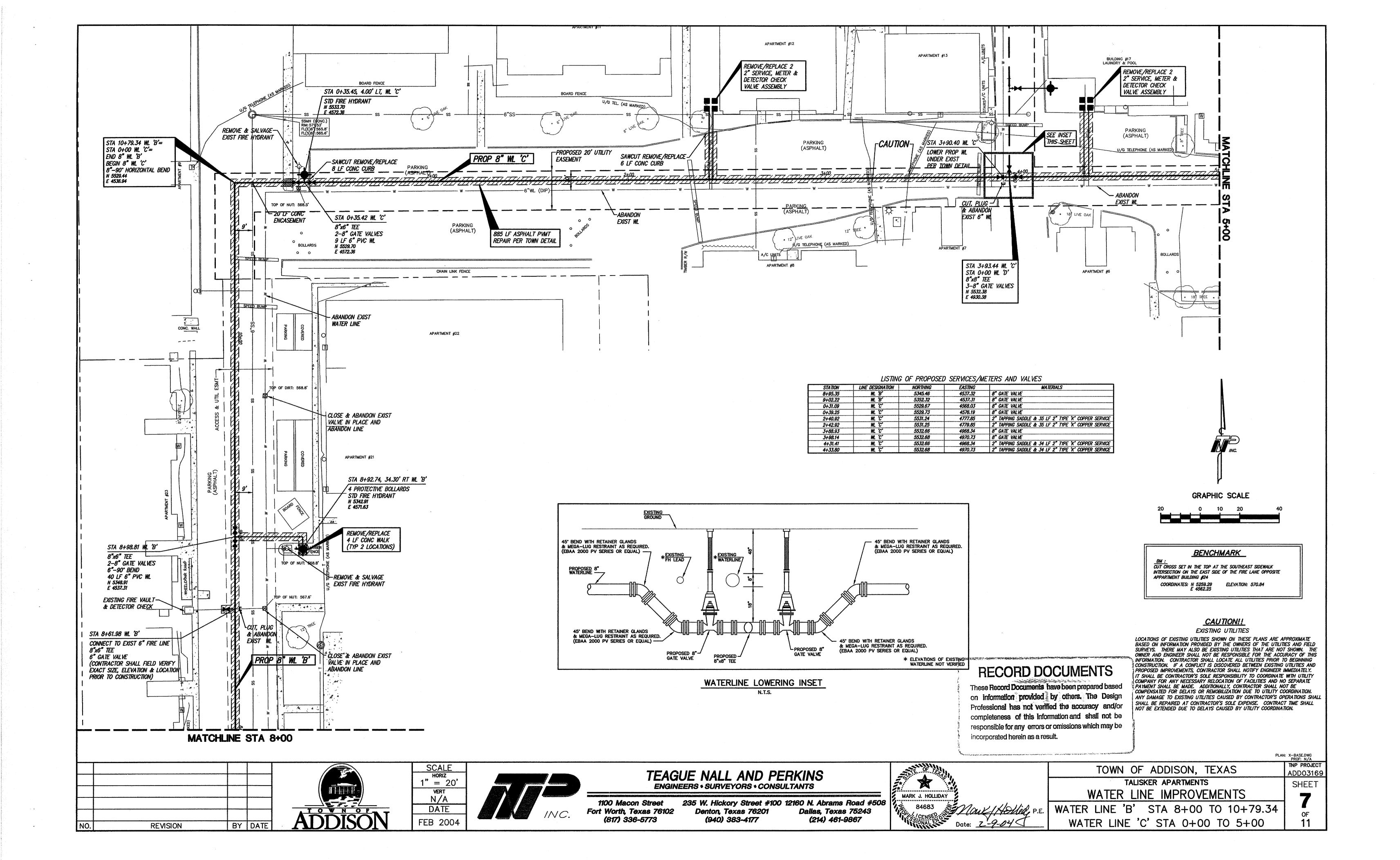
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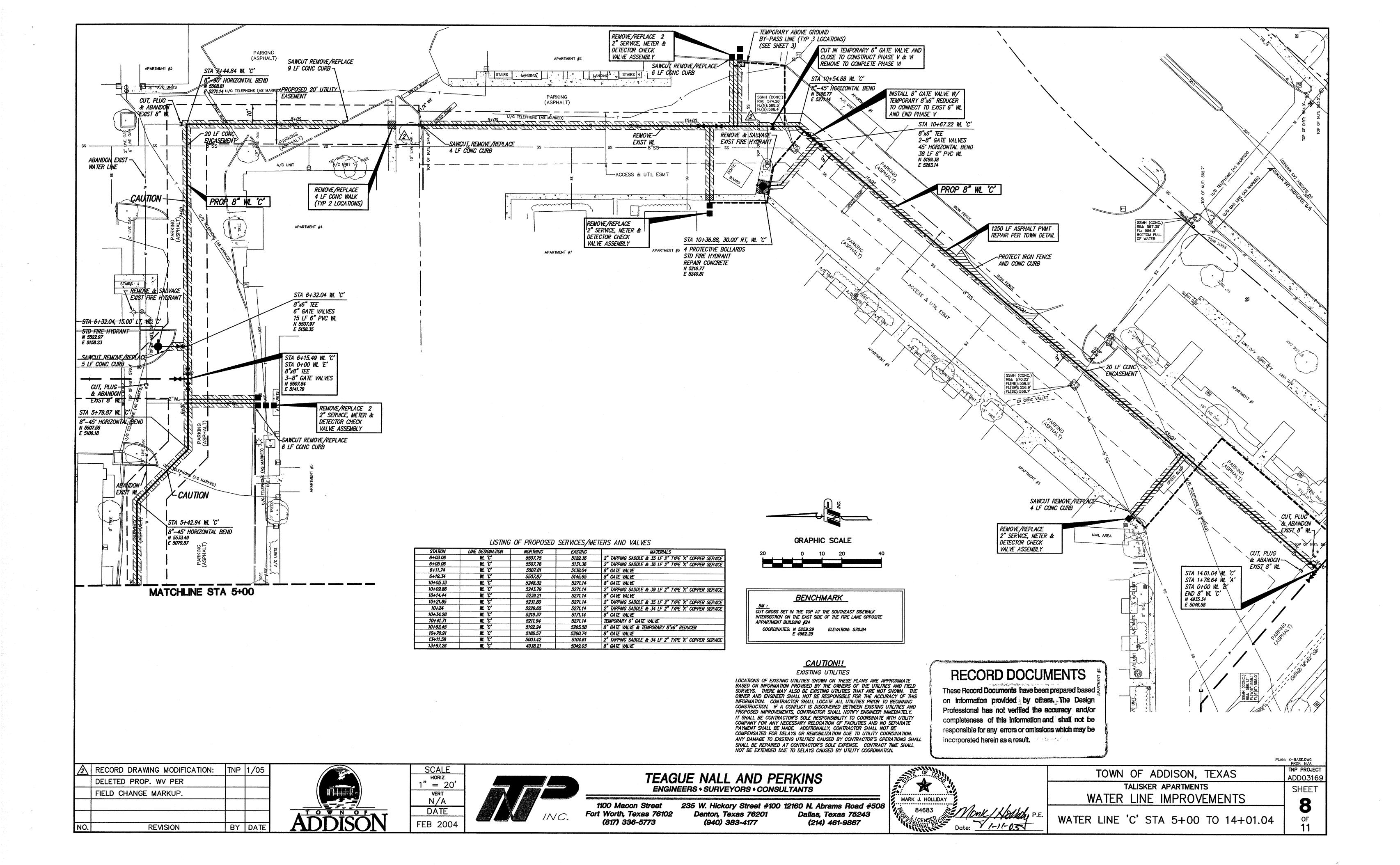


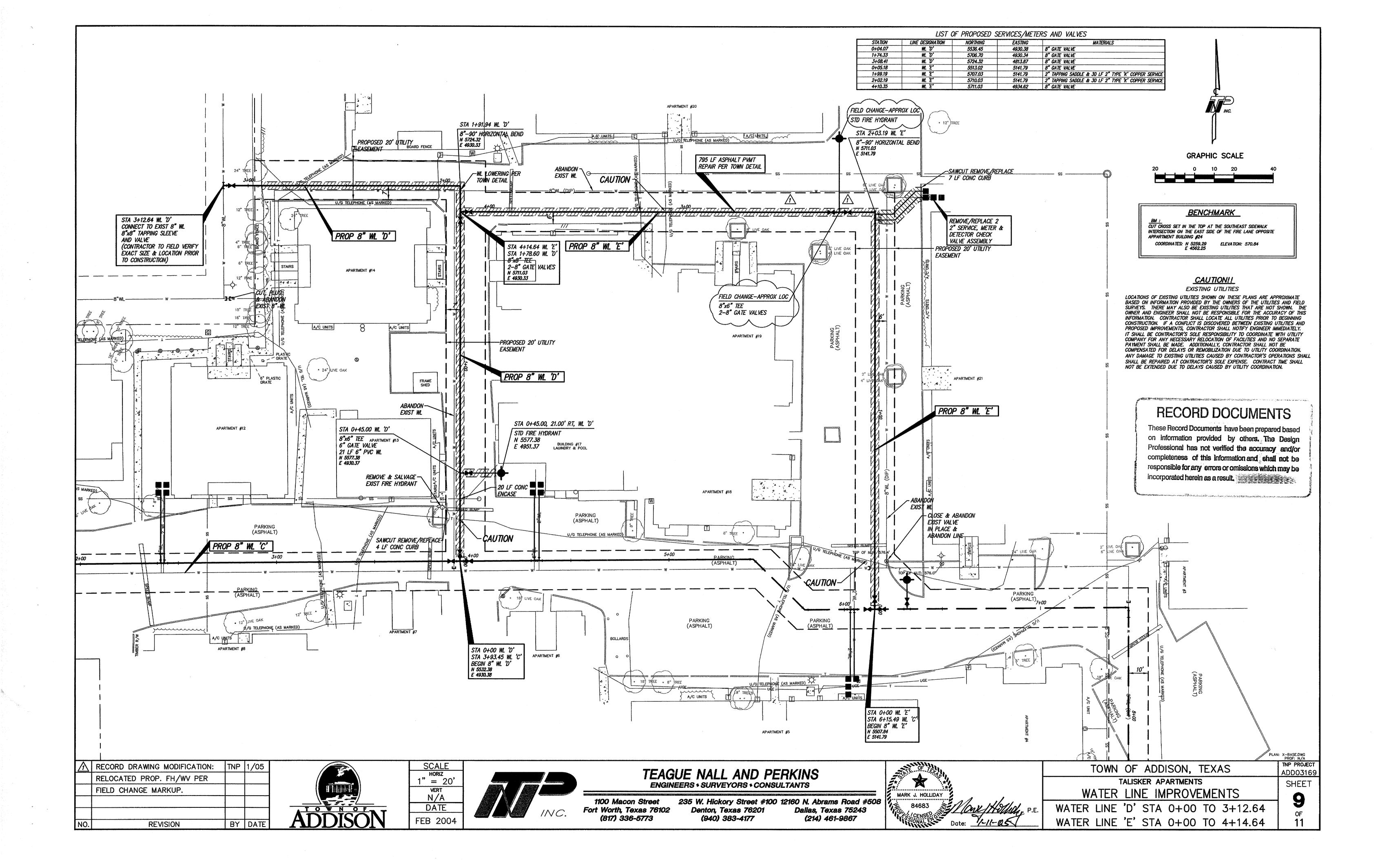


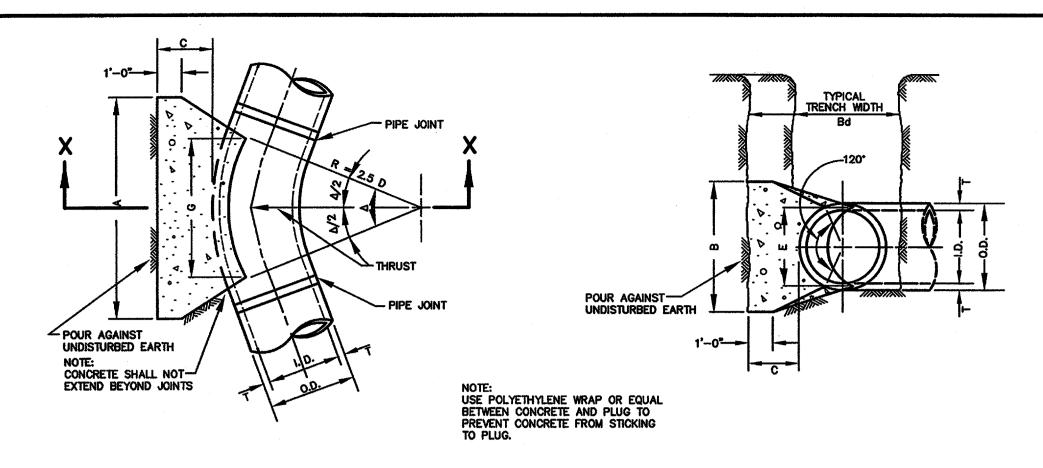












### HORIZONTAL THRUST BLOCK

SECTION X-X

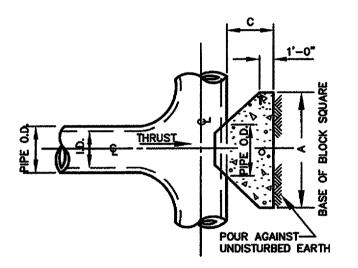
45° BEND WITH RETAINER GLANDS & MEGA-LUG RESTRAINT AS REQUIRED. (EBAA 2000 PV SERIES OR EQUAL) -----

45° BEND WITH RETAINER GLANDS & MEGA-LUG RESTRAINT AS REQUIRED.

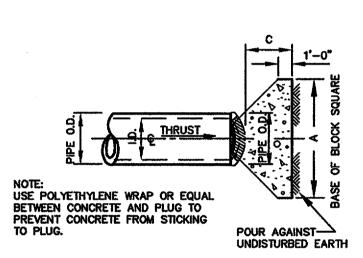
(EBAA 2000 PV SERIES OR EQUAL) -

PROPOSED (WATERLINE

				Δ=1	1.25*		△=22.50*			△=45°				<b>▽=</b> 90 <b>.</b>				
I.D. (IN)	C FT.	E FT.	G FT.	A FT.	B FT.	VOL. C.Y.	G FI.	A FT.	B FT.	VOL. C.Y.	G FT.	A FT.	B FT.	VOL. C.Y.	G FT.	A FT.	B FT.	VOL. C.Y.
6/8	1.5	0.9	0.4	1.0	1.5	0.1	0.8	1.5	1.5	0.1	1.5	2.0	2.0	0.2	2.7	5.0	1.5	0.4



PLUC	& TEE	THRUST B	LOCK
I.D. (IN)	C FT.	A FT.	VOL. C.Y.
6/8	1.5	2.5	0.3
10/12	1.5	3.5	0.6
16/18	2.0	5.5	1.6
20	2.0	6.0	1.9
24	2.5	7.0	3.1
30	3.0	7.5	4.1

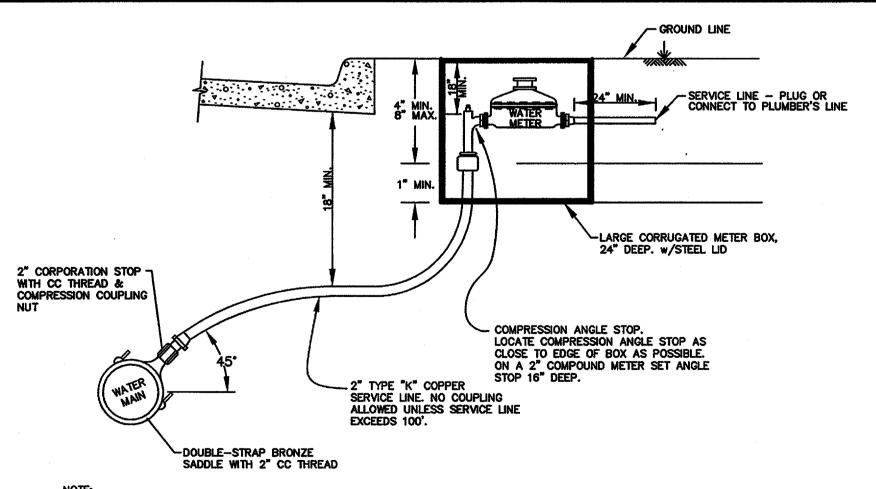


GENERAL NOTES FOR ALL THRUST BLOCKS:

- 1. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 P.S.I. (EXCEPT 30" I.D.-150 P.S.I.).
- 2. CONCRETE FOR BLOCKING SHALL BE CLASS B, 2000 P.S.I. CONCRETE.
- 3. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE C.M. THE NET VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN IN TABLES.

PLAN OF TEE THRUST BLOCK

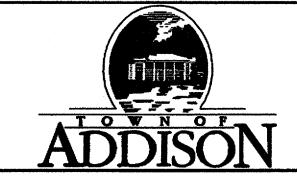
PLAN OF PLUG THRUST BLOCK

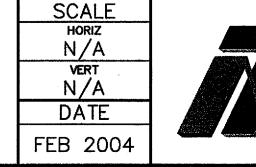


NOTE: WATER SERVICES SHALL NOT BE CONNECTED TO FIRE HYDRANT LINES. ALL MATERIALS SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND/OR SPECIAL PROVISIONS.

TYPICAL SERVICE CONNECTION WITH METER BOX

REVISION BY DAT



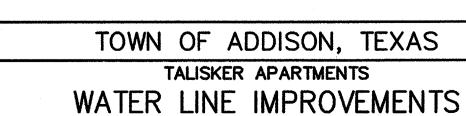




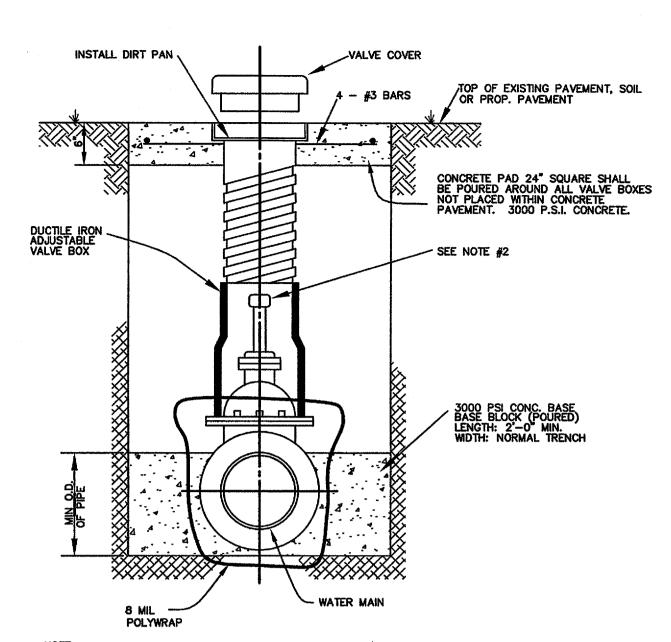
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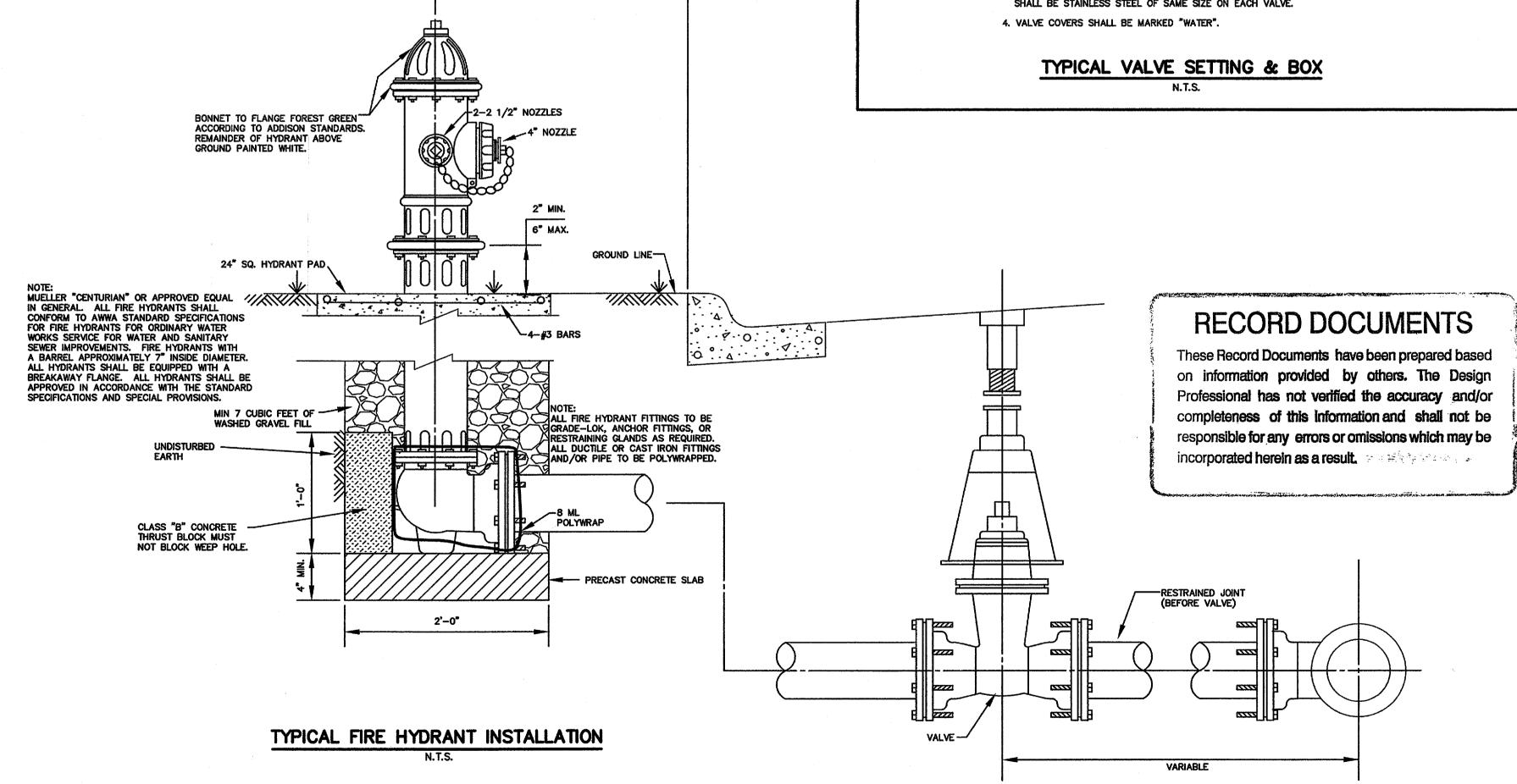


MISCELLANEOUS DETAILS 1



2. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE WHOSE OPERATING NUT IS LOCATED IN EXCESS OF 4 FEET BELOW THE VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO INSURE THAT ITS TOP IS WITHIN 4 FEET OF VALVE BOX LID. MANUFACTURED VALVE STACK DUCTILE IRON PIPE TO BE USED FOR EXTENSION GREATER THAN 4'. BELL END OF STACK TO BE FITTED OVER VALVE, AND VALVE STACK IS TO BE

3. VALVES SHALL BE OF DUCTILE IRON W/RUBBER ENCAPSULATED DISK. BOLTS SHALL BE STAINLESS STEEL OF SAME SIZE ON EACH VALVE.



- 45° BEND WITH RETAINER GLANDS & MEGA-LUG RESTRAINT AS REQUIRED. (EBAA 2000 PV SERIES OR EQUAL)

45° BEND WITH RETAINER GLANDS & MEGA-LUG RESTRAINT AS REQUIRED. (EBAA 2000 PV SERIES OR EQUAL)

MIN. 2.0' B.C. MAX. 4.0' B.C.

# TEAGUE NALL AND PERKINS

235 W. Hickory Street #100 12160 N. Abrams Road #508 Dallas, Texas 75243

WATER LINE RELOCATION AT STORM SEWER CROSSING

TYPICAL SECTION

TNP PROJECT

ADD03169

SHEET

