

CONSTRUCTION PLANS FOR RECLAIMED WATER DISTRIBUTION SYSTEM EXPANSION

OPTION T-8 IMPROVEMENTS BY CITY OF NAPLES, FLORIDA UTILITIES DEPARTMENT

380 RIVERSIDE CIRCLE
NAPLES, FL 34102
PHONE: (239) 213-4745



CITY OF NAPLES, FLORIDA

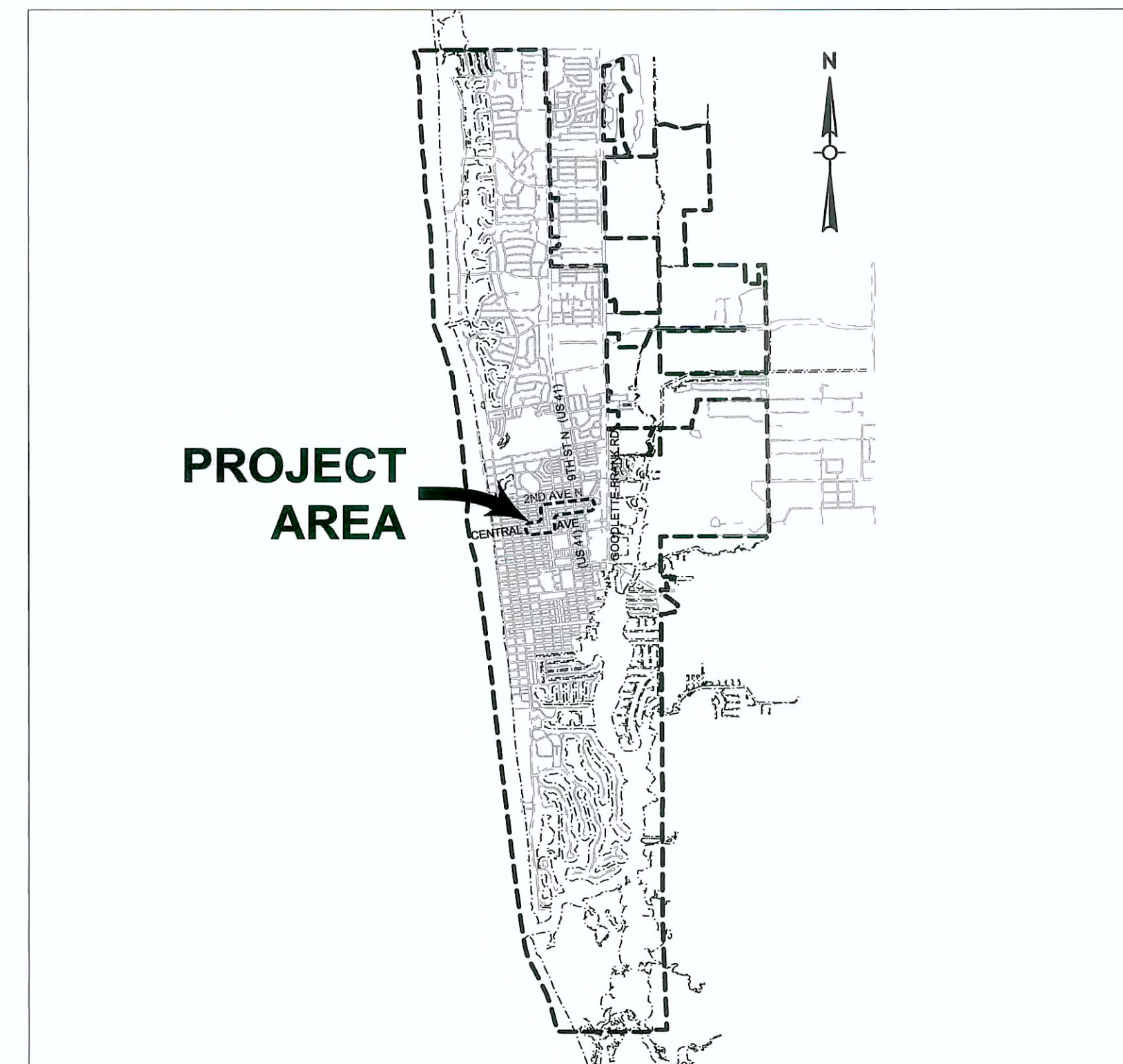
John Sorey III, Mayor
Gary Price, Vice Mayor
Bill Barnett, Council Member
Doug Finlay, Council Member
Teresa Heitmann, Council Member
Sam Saad III, Council Member
Margaret "Dee" Sulick, Council Member

William Moss, City Manager

Robert Middleton, Utility Director
Justin Frederiksen, Deputy Utility Director



LOCATION MAP
NTS



SITE MAP
NTS

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UTILITY SERVICES

WATER
NAPLES UTILITY DEPARTMENT
380 RIVERSIDE CIRCLE
NAPLES, FL 34102
(239) 213-4745

CABLE TV
COMCAST
26100 WESTLINKS DRIVE,
SUITE 4
FT. MYERS, FL 33913
(239) 432-1805

ELECTRIC
FLORIDA POWER & LIGHT
COMPANY
4105 SW 15TH AVENUE
NAPLES, FL 34116
(239) 947-7372

COMMUNICATIONS
FPL FIBERNET
32250 W FLAGLER STREET
MIAMI, FL 33174
(866) 553-4237

SEWER
NAPLES UTILITY DEPARTMENT
380 RIVERSIDE CIRCLE
NAPLES, FL 34102
(239) 213-4745

GAS
TECO PEOPLES GAS
5901 ENTERPRISE PARKWAY
FORT MYERS, FL 33905
(239) 896-0812

TELEPHONE
CENTURYLINK
3530 KRAFT ROAD
NAPLES, FL 34105
(239) 213-7531

US METROPOLITAN TELECOM
24017 PRODUCTION CIRCLE
BONITA SPRINGS, FL 34135
(239) 631-9251

NOTE:
CONTRACTOR SHALL CALL SUNSHINE
STATE ONE CALL OF FLORIDA, INC. AT
LEAST 48 HOURS PRIOR TO EXCAVATION
1-(800)-432-4770

FEBRUARY 2014

Weston & Sampson

4210 METRO PARKWAY, SUITE 250, FORT MYERS, FL 33917
CERTIFICATE OF AUTHORIZATION NO. 26190

THIS IS A COPY OF A SIGNED/SEALED DOCUMENT THAT HAS BEEN
FILED WITH THE CITY OF NAPLES, FL UTILITIES DEPARTMENT

FEB 20 2014
RECLAIMED WATER IMPROVEMENTS
ENGINEER OF RECORD
Jeffrey A. Wilson
Jeffrey A. Wilson, P.E.
FL License No. 41792

GENERAL NOTES & INSTRUCTIONS:

- ALL WATER MAIN AND PIPING FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF NAPLES STANDARD DETAILS AND SPECIFICATIONS (LATEST UPDATE). THE MINIMUM COVER FOR ALL PROPOSED UTILITIES SHALL BE 30-INCHES UNLESS OTHERWISE INDICATED ON THE CONSTRUCTION PLANS OR APPROVED BY THE CITY UTILITY ENGINEER.
- CONTRACTOR SHALL NOT EXCEED 50% OF THE MANUFACTURERS' RECOMMENDED MAXIMUM DEFLECTION WHEN DEFLECTING PIPE. FITTINGS MAY BE USED FOR PIPE ALIGNMENT CHANGES RATHER THAN DEFLECTING JOINTS AT THE CONTRACTOR'S EXPENSES.
- CONTRACTOR SHALL KEEP A RECORD OF ALL CHANGES AND MAINTAIN AN AS-BUILT PLAN AT ALL TIMES. THIS PLAN WILL BE FURNISHED TO THE ENGINEER IMMEDIATELY AFTER PRESSURE TESTING IS COMPLETED FOR THE PREPARATION OF AS-BUILTS. THE CONTRACTOR SHALL ALSO NOTATE ALL OTHER UTILITIES LOCATED DURING EXCAVATION. THE CONTRACTOR SHALL OBTAIN GPS LOCATIONS OF NEW AND EXISTING UTILITIES DURING CONSTRUCTION AND PROVIDE THE GPS LOCATIONS TO THE ENGINEER IN A FORMAT COMPATIBLE WITH THE CITY'S GIS STANDARDS (SEE SPECIFICATION SECTION 01750).
- CONTRACTOR SHALL MAINTAIN EXISTING TRAFFIC/ACCESS, EXISTING DRAINAGE, AND EXISTING UTILITIES DURING CONSTRUCTION.
- ALL FINAL FITTINGS, PIPE, AND VALVE LOCATIONS THAT DEVIATE FROM THE PLAN SHALL BE APPROVED IN THE FIELD BY THE OWNER/UTILITY ENGINEER/PROJECT MANAGER.
- THE LOCATION OF EXISTING UTILITIES AND FACILITIES HAS BEEN PREPARED FROM THE MOST RELIABLE INFORMATION AVAILABLE TO THE CITY. THE INFORMATION IS NOT GUARANTEED, THEREFORE THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES AND FACILITIES IN THE FIELD PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN THE AREA 48 HOURS MINIMUM PRIOR TO START OF CONSTRUCTION, AND SHALL HAVE ALL SERVICE LINES (TELEPHONE, POWER, GAS, CABLE TV, WATER, SANITARY SEWER, FORCE MAINS, STORMWATER, IRRIGATION, AND ANY OTHERS) LOCATED AND FLAGGED PRIOR TO EXCAVATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL UTILITY LINES AND SERVICES DAMAGED DURING CONSTRUCTION, INCLUDING IRRIGATION SERVICES. THE APPROPRIATE UTILITY SHALL BE NOTIFIED OF ALL DAMAGED LINES AND FACILITIES PRIOR TO REPAIRS. ALL NECESSARY REPAIRS SHALL BE PERFORMED IMMEDIATELY UPON DAMAGE OF THE LINE OR FACILITY.
- ALL PAVING, STABILIZED EARTH, DRIVEWAYS, CURBS, SIDEWALKS, SOD, LANDSCAPING, SIGNS, MAIL BOXES, GRASS, FENCING, ETC.; DAMAGED OR REMOVED BY THE CONTRACTOR'S OPERATIONS, SHALL BE RESTORED TO A CONDITION EQUIVALENT TO PRE-CONSTRUCTION OR BETTER CONDITION; UNLESS OTHERWISE APPROVED BY THE UTILITY ENGINEER/PROJECT MANAGER/OWNER.
- ALL ELEVATIONS SHALL BE BASED ON NORTH AMERICAN VERTICAL DATUM (NAVD).
- THE CONTRACTOR IS REQUIRED TO OBTAIN WRITTEN APPROVAL FROM THE UTILITY ENGINEER/PROJECT MANAGER/OWNER FOR ANY DEVIATIONS FROM THE PLANS AND/OR SPECIFICATIONS.
- THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND NOTIFY THE UTILITY ENGINEER IMMEDIATELY OF ANY REQUIRED PLAN DEVIATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A DEWATERING PERMIT FROM THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT AS REQUIRED (IF APPLICABLE). NO EXTRA COMPENSATION FOR DEWATERING WILL BE ALLOWED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A RIGHT OF WAY PERMIT FROM THE CITY OF NAPLES STREETS AND STORMWATER DEPARTMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC AND USAGE OF THE EXISTING STREETS/PROPERTIES ADJACENT TO THE PROJECT AREA AT ALL TIMES. ALL TRAFFIC MAINTENANCE CONTROL SHALL BE IN ACCORDANCE WITH THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 600 SERIES. CONTRACTOR SHALL SUBMIT AN APPROVED MAINTENANCE OF TRAFFIC PLAN TO THE OWNER/UTILITY ENGINEER PRIOR TO CONSTRUCTION.
- ALL UTILITY CONNECTIONS SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OF EACH INDIVIDUAL UTILITY LINE.
- THE CONTRACTOR SHALL MINIMIZE THE WORK AREA OF THE TRENCHES TO AVOID DISTURBANCES OF NATURAL VEGETATION. SPOIL FROM TRENCHES SHALL BE PLACED ONLY ON PREVIOUSLY CLEARED AREAS, EXISTING RIGHT-OF-WAY, OR APPROVED EASEMENT. THE CONTRACTOR SHALL NOT REMOVE OR DISTURB ANY TREES OR SHRUBS WITHOUT PRIOR APPROVAL FROM THE OWNER/UTILITY ENGINEER/PROJECT MANAGER.
- THE 30-INCH MINIMUM COVER REQUIREMENT FOR THE PROPOSED REUSE LINE IMPROVEMENTS SHALL BE MEASURED FROM FINISHED GRADES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSURE MINIMUM COVER REGARDLESS OF EXISTING GRADE. PERIODIC CHECKS (MIN. EVERY 200FT) FOR MINIMUM COVER SHALL BE MADE BY THE CONTRACTOR AND RECORDED ON THE RECORD DRAWINGS.
- ALL MECHANICAL FITTINGS SHALL BE RESTRAINED WITH MEGA-LUG OR APPROVED EQUAL. ALL FLANGED FITTINGS SHALL HAVE MIN. 1/16-INCH RUBBER GASKETS AND STAINLESS STEEL HARDWARE.
- ALL IN-LINE VALVES SHALL BE MAIN SIZED MECHANICAL JOINT AND RESTRAINED WITH MOLDED FLANGE ADAPTOR WITH STEEL RETAINING RING AS SUPPLIED BY THE MANUFACTURER. THE VALVES SHALL BE RESILIENT SEAT GATE VALVES WITH 2-INCH DRIVER NUT AS PER CITY STANDARDS.
- THE CONTRACTOR SHALL NOTIFY RESIDENCES AND BUSINESSES AT LEAST 48 HOURS IN ADVANCE OF ANY DISRUPTION OF SERVICE, INCLUDING DRIVEWAY CUTS.
- CONTRACTOR IS ADVISED TO VISIT THE PROJECT CONSTRUCTION AREA PRIOR TO SUBMITTING THEIR PROPOSAL. THE PROPOSAL SHALL BE FINAL AND ACKNOWLEDGES THAT CONTRACTOR IS FAMILIAR WITH EXISTING SITE CONDITIONS.
- NO WORK SHALL BE PERFORMED AT NIGHT. ANY WORK REQUIRED TO BE PERFORMED AT NIGHT SHALL BE SUBJECT TO APPROVAL BY THE OWNER/UTILITY ENGINEER/PROJECT MANAGER. ALL WORK SHALL BE BETWEEN THE HOURS OF 7 A.M. AND 7 P.M.

- THE CONTRACTOR SHALL PERFORM AN AUDIO/VIDEO LOG OF THE ENTIRE PROJECT CONSTRUCTION AREA PRIOR TO ANY CONSTRUCTION ACTIVITIES. THIS LOG WILL ENSURE RESTORATION ACTIVITIES AND AID IN RESOLVING ANY CONFLICTS THAT MAY ARISE.
- THE CONTRACTOR SHALL SUPPLY ALL PIPING, FITTINGS, AND RECLAIMED WATER MAIN ASSOCIATED MATERIALS. THE CONTRACTOR SHALL SUPPLY ALL MATERIALS AND SUPPLIES NECESSARY FOR THE INSTALLATION OF THE SPECIFIED RECLAIMED WATER LINE/CONNECTIONS AND ALL RESTORATION ACTIVITIES.
- ALL RECLAIMED WATER MAIN PIPING SHALL BE C-906 HDPE PIPE DR-9 TO BE USED THROUGHOUT ENTIRE PROJECT; UNLESS OTHERWISE NOTED ON THE PLANS OR INSTRUCTED BY THE UTILITY ENGINEER/ PROJECT MANAGER.
- THE CONTRACTOR SHALL INSTALL A TRACER WIRE, 1030P-HS BY COPPERHEAD INDUSTRIES, LLC. OR APPROVED EQUAL, ALONG THE ENTIRE LENGTH OF THE REUSE MAIN. THIS TRACER WIRE SHALL BE INSTALLED AT THE TOP-DEAD CENTER OF THE PIPE. A 18-INCH TO 24-INCH LOOP OF TRACER WIRE SHALL BE LEFT IN EACH VALVE BOX AND CAPPED WITH A WIRE CONNECTOR. LOCATOR BALLS SHALL BE PLACED AT THE BEGINNING AND END OF EACH MAIN LINE DEFLECTION FOR OPEN CUT INSTALLATION; AS SPECIFIED IN SECTION 02650, LAYING AND JOINTING BURIED PIPELINES. SERIAL NUMBERS OF LOCATOR BALLS SHALL BE INCLUDED ON THE AS-BUILT DRAWINGS.
- THE CONTRACTOR SHALL ACCURATELY LOG ALL ELEVATIONS AND DIMENSIONS OF ALL DEFLECTIONS, TAPS, AND BRANCHES ON THE PLANS PRIOR TO BACKFILL.
- ANY TIME STRUCTURES, ROADWAY/ROAD BASE, CURBS, AND/OR DRIVES ARE UNDERMINED OR DISTURBED DURING PROJECT INSTALLATIONS; THE CONTRACTOR SHALL REMOVE FOR A MINIMUM OF 10 FEET IN EACH DIRECTION FROM THE LIMITS OF UNDERMINING AND REPLACE IN KIND AFTER PROPER COMPACTION. THE CONTRACTOR SHALL REPAIR/REPLACE ANY FACILITIES DAMAGED DURING THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.
- REQUIRED CLEARANCES:** CONTRACTOR SHALL MAINTAIN A MINIMUM 3 FEET HORIZONTALLY FROM POTABLE WATER MAINS AND 12-INCHES VERTICALLY; OTHERWISE NOTIFY UTILITY ENGINEER/PROJECT MANAGER IMMEDIATELY.

SPECIAL NOTE TO CONTRACTOR:

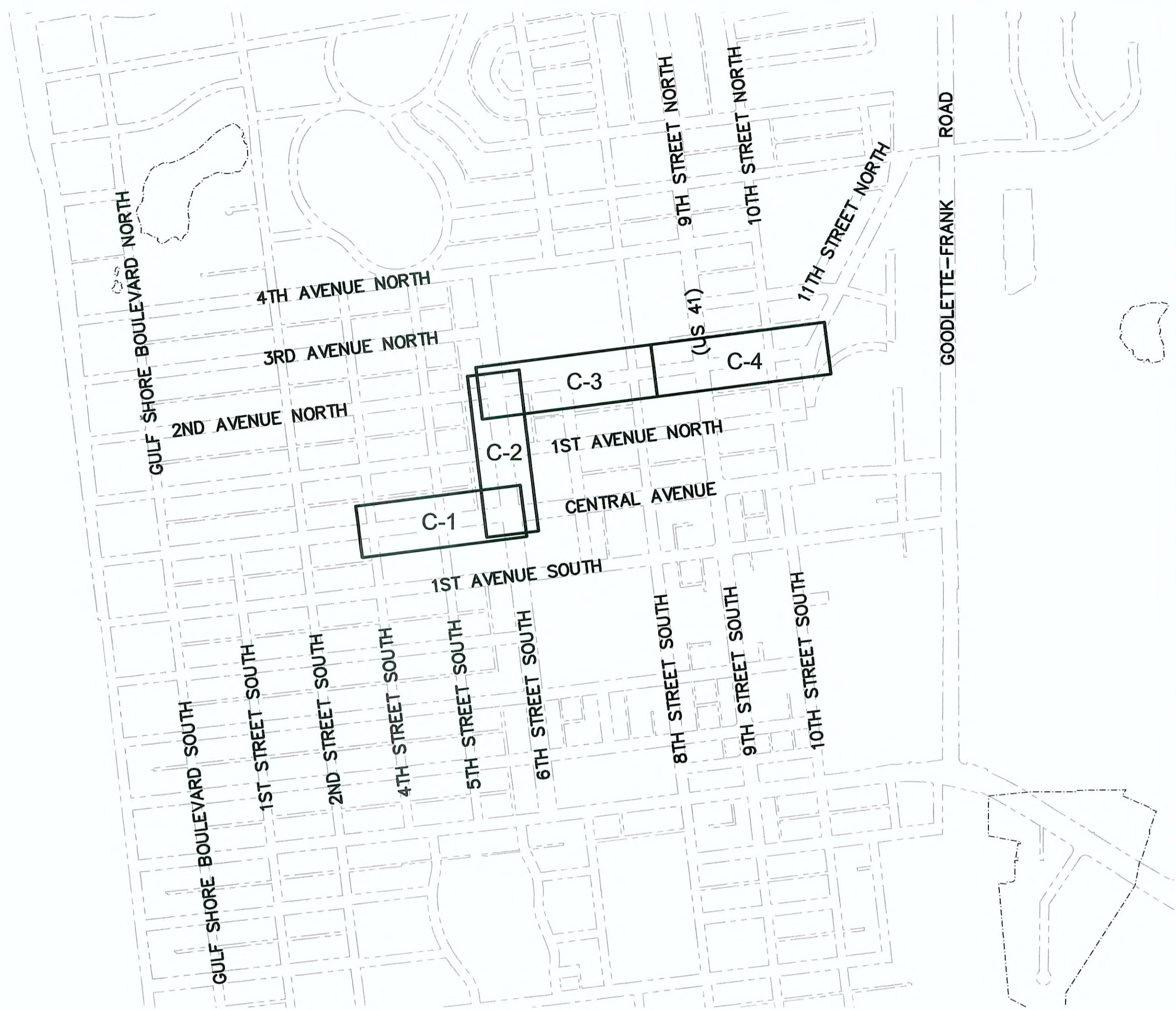
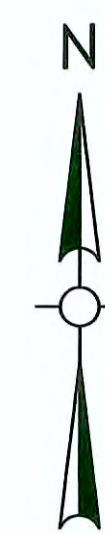
IT IS THE LAW IN FLORIDA:
TWO BUSINESS DAYS BEFORE YOU DIG - CALL SUNSHINE 1-800-432-4770. (811)**
CONTRACTOR SHALL PRE-MARK PROPOSED WORK AREA WITH WHITE PAINT PRIOR TO REQUESTING LOCATIONS AS REQUIRED BY STATUTE.

DESIGN PLAN NOTES:

- BASE AERIAL SOURCE: COLLIER COUNTY PROPERTY APPRAISER'S OFFICE. FLIGHT DATES: 12-07-2011 THROUGH 01-03-2012.
- TOPOGRAPHICAL SURVEY: LIMITED TOPOGRAPHICAL SURVEY (HORIZONTAL/VERTICAL CONTROL, IDENTIFIABLE CONFLICTS, AND HDD PROFILES) PERFORMED BY MARCO SURVEYING AND MAPPING.
- RIGHT-OF-WAY: THE RIGHT-OF-WAY WAS NOT FIELD VERIFIED. IF REQUIRED, CONTRACTOR SHALL RETAIN THE SERVICES OF A REGISTERED PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF FLORIDA TO LOCATE PROPERTY CORNERS IN THE FIELD AND VERIFY RIGHT-OF-WAY IN ADVANCE OF THE WORK AT NO ADDITIONAL COST.
- EXISTING UTILITY INFORMATION: LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES BASED UPON AVAILABLE INFORMATION REVIEWED AT THE TIME OF DOCUMENT PREPARATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF THIS INFORMATION FOR CONSTRUCTION NEEDS AT NO ADDITIONAL COST.
- GROUNDWATER IS TIDALLY AFFECTED AND WILL BE ENCOUNTERED DURING EXCAVATION. THE CONTRACTOR MUST MAINTAIN A DRY TRENCH AT ALL TIMES DURING CONSTRUCTION. DEWATERING PUMPS MUST MEET THE REQUIREMENTS OF ALL APPLICABLE CITY OF NAPLES NOISE ORDINANCES. DISCHARGES FROM DEWATERING OPERATIONS SHALL BE HANDLED IN ACCORDANCE WITH DEP/SFWM D PERMITS.

LEGEND:

	BACKFLOW PREVENTER		FLAG POLE		SPIGOT		FOUND CONCRETE MONUMENT
	BENCH MARK		FORCE MAIN		STEEL POST		FOUND DRILL HOLE
	BOLLARD		GAS PIPELINE MARKER		TELEPHONE CANISTER		FOUND IRON ROD
	CABLE RISER		GUARD RAIL		TELEPHONE MANHOLE		FOUND IRON ROD & CAP
	CABLE TV BOX		GUY POLE		TELEPHONE RISER		FOUND NAIL
	CATCH BASIN		GUY WIRE		TOE OF SLOPE		FOUND NAIL & DISK
	CENTERLINE		IRRIGATION BOX		TOP OF BANK		FOUND PARKER KALON NAIL
	CLEANOUT		IRRIGATION VALVE		TRAFFIC SIGNAL BOX		FOUND PARKER KALON NAIL & DISK
	COORDINATE NUMBER		LIGHT POLE		UNDERGROUND UTILITIES		SET CONCRETE MONUMENT
	CONCRETE POWER POLE		MAIL BOX		WATER MAIN		SET DRILL HOLE
	DRAINAGE MANHOLE		MITERED END		WATER LINE FLAG		SET 5/8" IRON ROD & CAP
	ELECTRICAL BOX		MONITORING WELL		WATER METER		SET 5/8" PARKER KALON NAIL & DISK
	ELECTRIC METER		OVERHEAD POWER LINE		WATER VALVE		TOPOGRAPHY AND PIPE INVERTS
	ELECTRIC LINE		POWER POLE		WOOD POST		NEW RECLAIMED WATER MAIN
	EXISTING ELEVATION		POWER POLE w/ RISER		WOOD SUPPORT POLE		NEW REDUCER
	FENCE - BARBED WIRE		SANITARY SEWER LINE		YARD DRAIN		EXISTING REDUCER
	FENCE - CHAIN LINK		SEWER MANHOLE		BUSH		NEW BLOWOFF ASSEMBLY
	FENCE - WOOD		SEWER VALVE		CABBAGE PALM		
	FIBER OPTIC MARKER		SECURITY SENSOR		OAK TREE		
	FIRE HYDRANT		SIGN SINGLE POST		PALM TREE		
	FIRE VALVE		SIGN DOUBLE POST		SHADE TREE (VARIOUS TYPE)		



KEY MAP
NTS

SURVEY CONTROL INFORMATION

POINT NUMBER	APPROXIMATE STATION	DESCRIPTION	NORTHING	EASTING	ELEVATION
BM K-758	STA 9+77 (C-1)	PK&D IN GUTTER	659752.5900	392927.7524	7.55
BM K-759	STA 14+52 (C-1)	PK&D IN GUTTER	659810.4059	393398.3627	8.15
BM K-757	STA 18+73 (C-1)	PK&D IN CURB	659861.8831	393817.0626	7.96
BM K-757.1	STA 18+90 (C-2)	PK&D IN GUTTER	659870.1092	393884.1230	6.55
BM K-756.2	STA 19+35 (C-2)	PK&D	659906.4111	393811.6699	7.73
BM K-756.1	STA 22+97 (C-2)	N&D IN GRATE	660264.9381	393768.1519	5.55
BM K-756	STA 23+41 (C-2)	N&D IN GRATE	660308.9932	393762.8191	5.99
BM K-755	STA 27+01 (C-2)	MAG N&D IN E.O.P.	660666.2386	393719.4559	5.60
BM K-732.1	STA 27+12 (C-2)	IP&C IN MEDIAN	660703.9032	393714.8994	6.68
BM K-732	STA 31+52 (C-3)	N&D IN BACK/CURB	660758.4813	394164.8925	5.22
BM K-731	STA 37+02 (C-3)	MAG N&D IN CURB	660824.8336	394710.8553	3.84
BM K-730	STA 41+46 (C-4)	N&D IN CURB	660878.4724	395152.6007	6.12
BM K-729	STA 45+02 (C-4)	MAG N&D IN CB	660921.3157	395505.1200	4.57

Weston&Sampson
4210 Metro Parkway, Suite 250
Fort Myers, FL 33916
(239) 437-4601 (800) SAMPSON
Certificate of Authorization No. 26190
www.westonandsampson.com

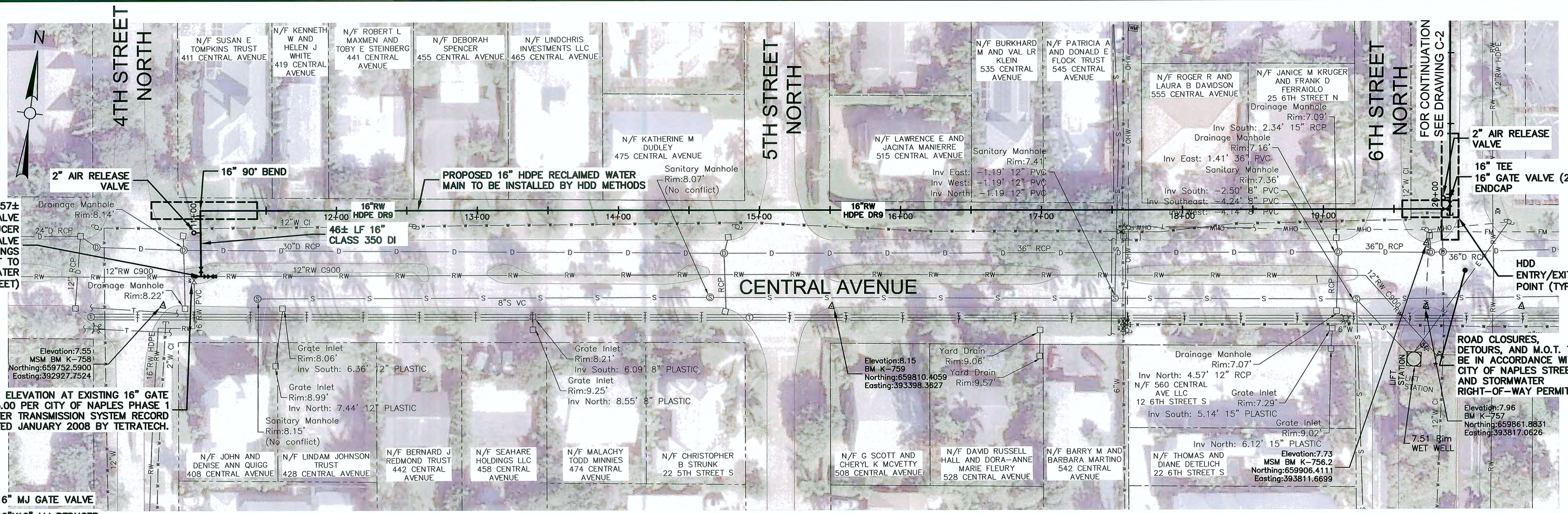
No.	Date	Dr. By	Ck. By	App. By	Description
1	02/14	DCM	RLH	JAW	ISSUED FOR BIDDING

(RECLAIMED WATER)
[Signature]
Jeffrey A. Wilson, P.E.
FL License No. 47152

CITY OF NAPLES, FLORIDA
RECLAIMED WATER DISTRIBUTION SYSTEM EXPANSION
OPTION T-8
GENERAL NOTES / KEY MAP
CADD NO. **RWM T8** | SCALE: **AS NOTED** | CONTRACT: **AS NOTED** | JOB NO. **21200311** | DR. BY | DSJN.BY | CHK.BY | APP.BY

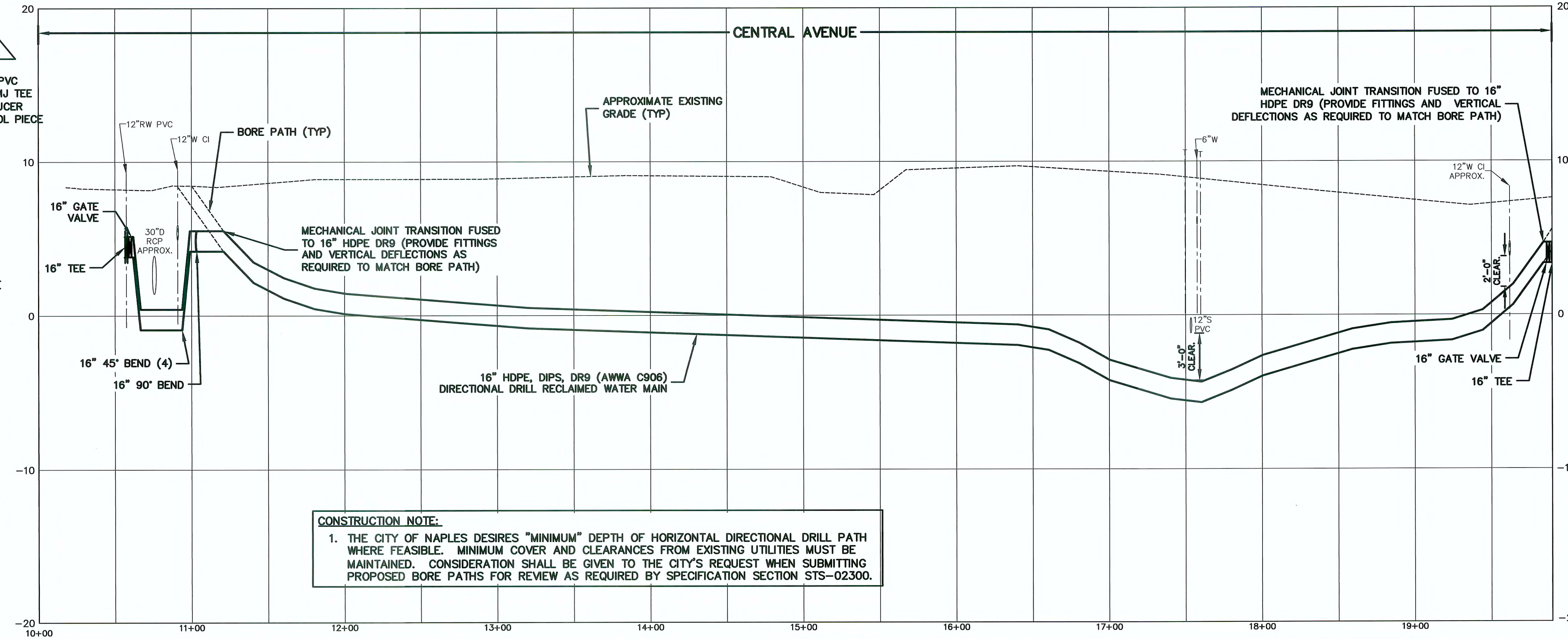
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PLAN

SCALE: 1"=40'

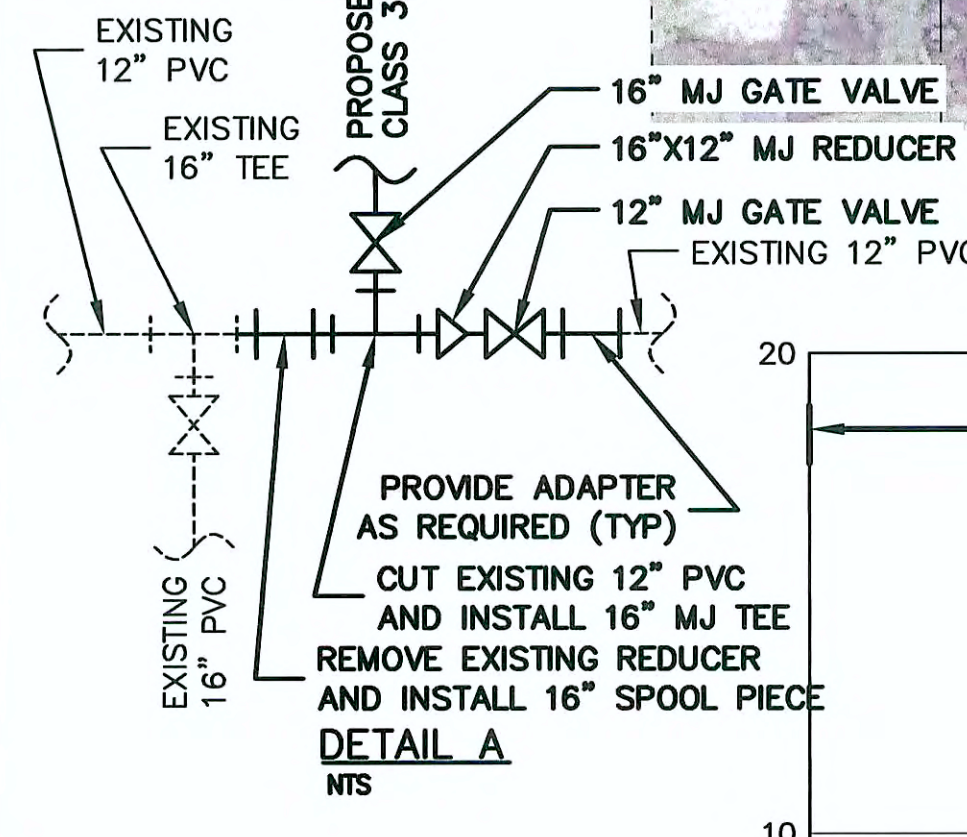


PROFILE

SCALE: 1"=40' HORIZ; 1"=4' VERT

CONSTRUCTION NOTE:
 1. THE CITY OF NAPLES DESIRES "MINIMUM" DEPTH OF HORIZONTAL DIRECTIONAL DRILL PATH WHERE FEASIBLE. MINIMUM COVER AND CLEARANCES FROM EXISTING UTILITIES MUST BE MAINTAINED. CONSIDERATION SHALL BE GIVEN TO THE CITY'S REQUEST WHEN SUBMITTING PROPOSED BORE PATHS FOR REVIEW AS REQUIRED BY SPECIFICATION SECTION STS-02300.

- NOTE:**
 AT LEAST 30 DAYS PRIOR TO MOBILIZATION OF EQUIPMENT, THE CONTRACTOR SHALL SUBMIT A DETAILED INSTALLATION PLAN TO THE ENGINEER FOR REVIEW. INFORMATION SHALL INCLUDE THE FOLLOWING:
1. A DETAILED PLAN AND PROFILE OF THE BORE PLOTTED AT A SCALE NO SMALLER THAN 1-INCH EQUALS 20 FEET HORIZONTALLY AND 1-INCH EQUALS 2 FEET VERTICALLY.
 2. LOCATIONS OF BORE PIT ENTRY/EXIT LOCATIONS.
 3. THE PLOTTED BORE PATH SHALL ENSURE THAT PIPE JOINTS DO NOT DEFLECT MORE THAN 50 PERCENT OF THE MANUFACTURER'S RECOMMENDED MAXIMUM DEFLECTION
 4. MINIMUM PIPE WALL THICKNESS SHALL BE BASED ON A DR OF 9. CONTRACTOR AND PIPE MANUFACTURER SHALL MUTUALLY DETERMINE ACTUAL WALL THICKNESS REQUIRED, BASED ON STATIC AND DYNAMIC LOADS, WITH AN APPLIED FACTOR OF SAFETY OF 2.5.
 5. CALCULATIONS OF STRESSES AND LONGITUDINAL STRAINS DEVELOPED IN PIPE DURING HANDLING AND INSTALLATION.



ROAD CLOSURES, DETOURS, AND M.O.T. TO BE IN ACCORDANCE WITH CITY OF NAPLES STREETS AND STORMWATER RIGHT-OF-WAY PERMIT

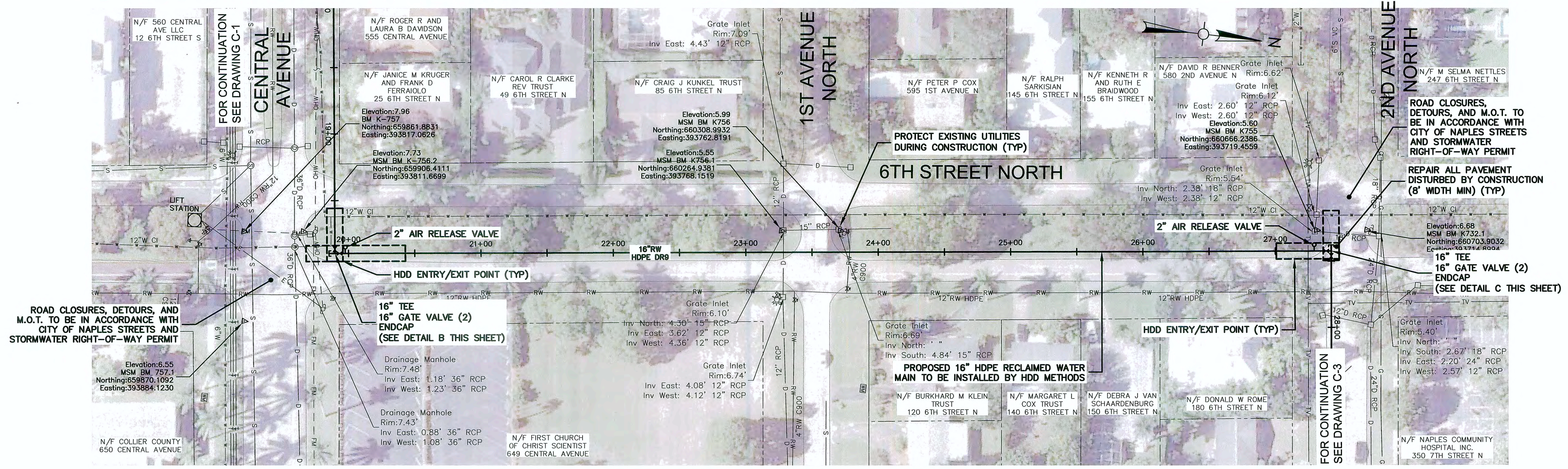
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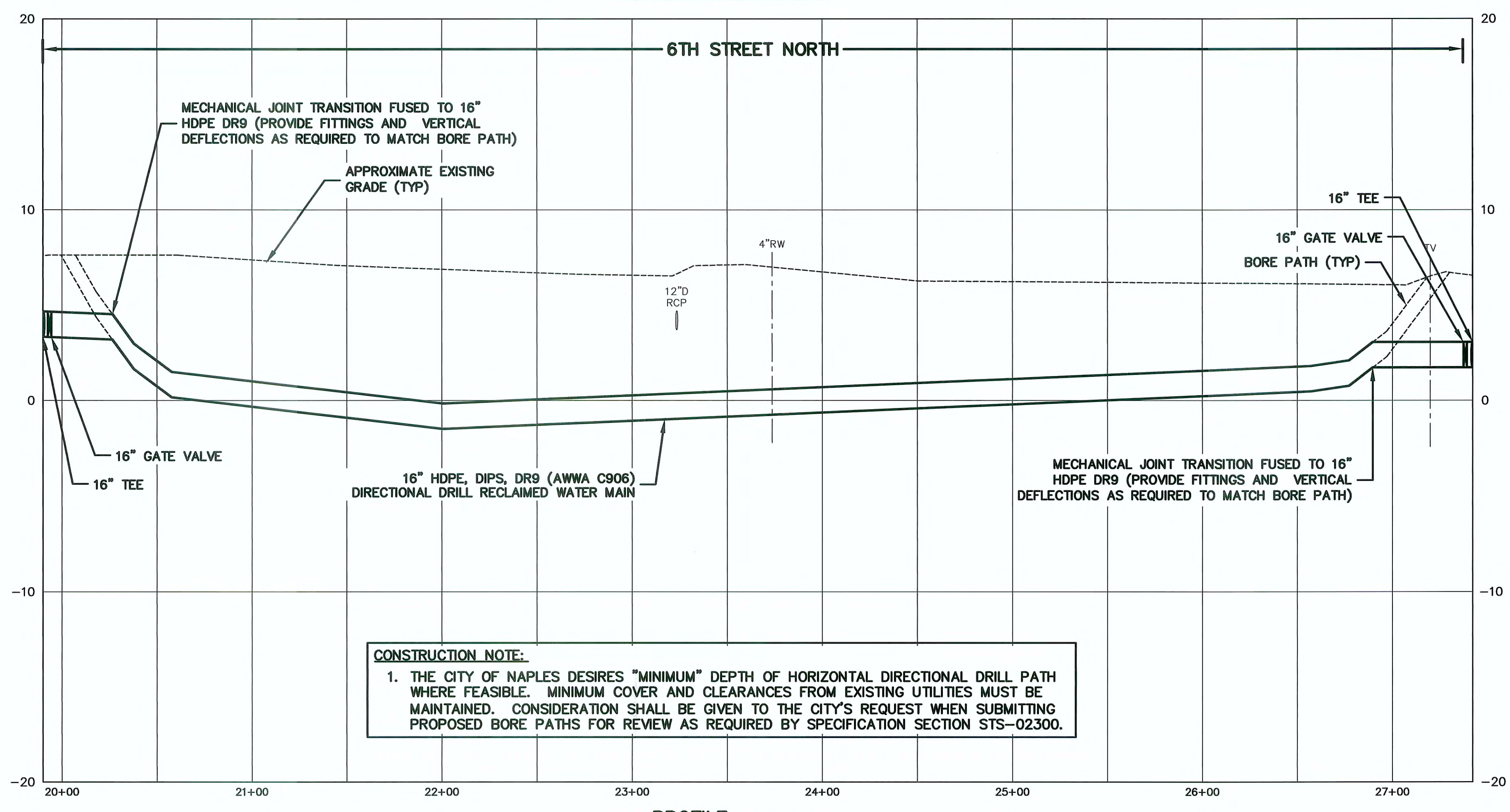
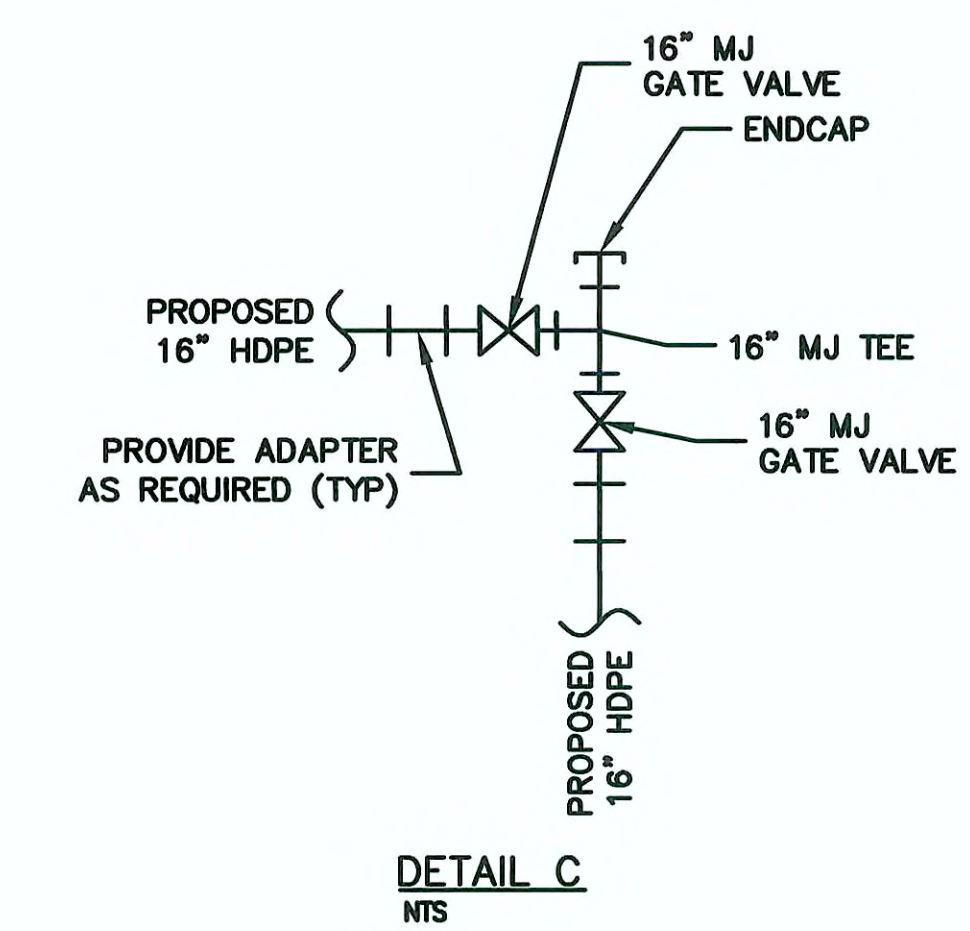
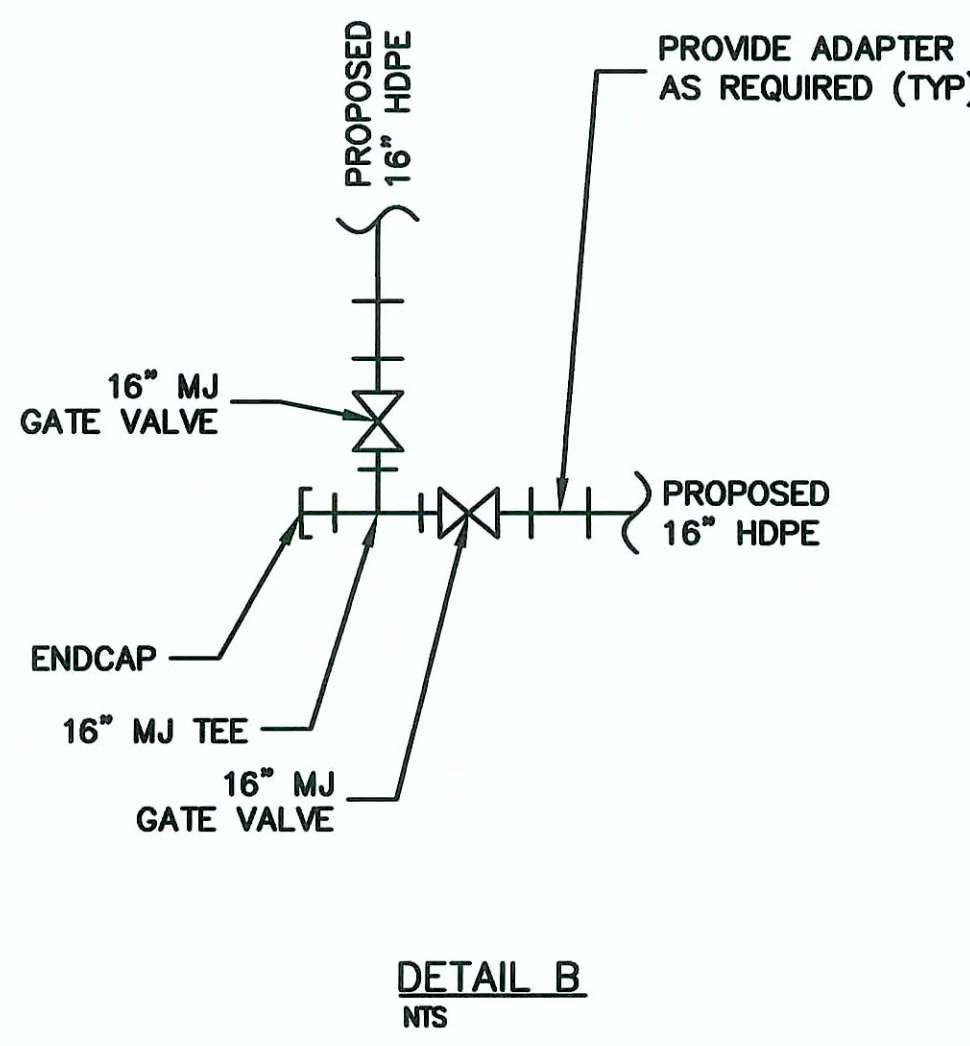
(RECLAIMED WATER)
 Jeffrey A. Wilson, P.E.
 License No. 41752

CITY OF NAPLES, FLORIDA
 RECLAIMED WATER DISTRIBUTION SYSTEM EXPANSION
 OPTION T-8
CENTRAL AVENUE STA 10+57 TO 19+90
 SCALE: AS NOTED
 CONTRACT: RWM TB
 JOB NO. 2120311
 DSN.BY: CHK.BY: APP.BY:
 DR.BY: DSN.BY: CHK.BY: APP.BY:
 FILE NO. 1
SHEET 3 of 9

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PLAN
SCALE: 1"=40'



PROFILE
SCALE: 1"=40' HORIZ; 1"=4' VERT

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ROAD CLOSURES, DETOURS, AND M.O.T. TO BE IN ACCORDANCE WITH CITY OF NAPLES STREETS AND STORMWATER RIGHT-OF-WAY PERMIT

PROTECT EXISTING UTILITIES DURING CONSTRUCTION (TYP)

ROAD CLOSURES, DETOURS, AND M.O.T. TO BE IN ACCORDANCE WITH CITY OF NAPLES STREETS AND STORMWATER RIGHT-OF-WAY PERMIT

REPAIR ALL PAVEMENT DISTURBED BY CONSTRUCTION (8' WIDTH MIN) (TYP)

16" TEE
16" GATE VALVE (2)
ENDCAP
(SEE DETAIL B THIS SHEET)

16" TEE
16" GATE VALVE (2)
ENDCAP
(SEE DETAIL C THIS SHEET)

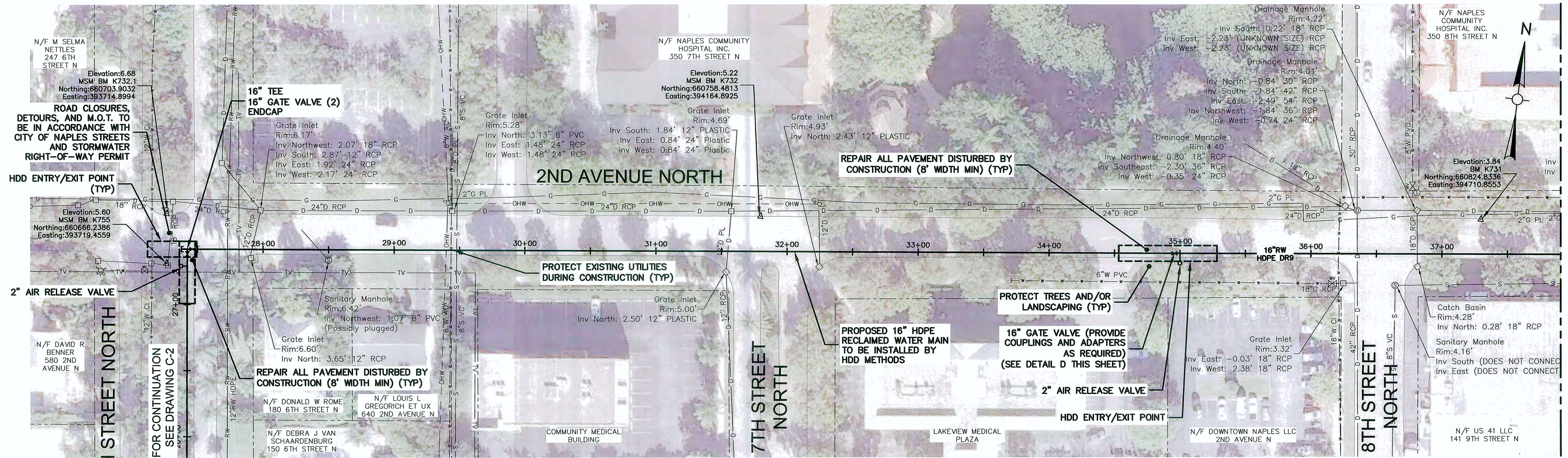
PROPOSED 16" HDPE RECLAIMED WATER MAIN TO BE INSTALLED BY HDD METHODS

No.	Date	Dr.-By	Chk.-By	App.-By	Description
1	02/14	DCM	RLH	JAW	ISSUED FOR BIDDING

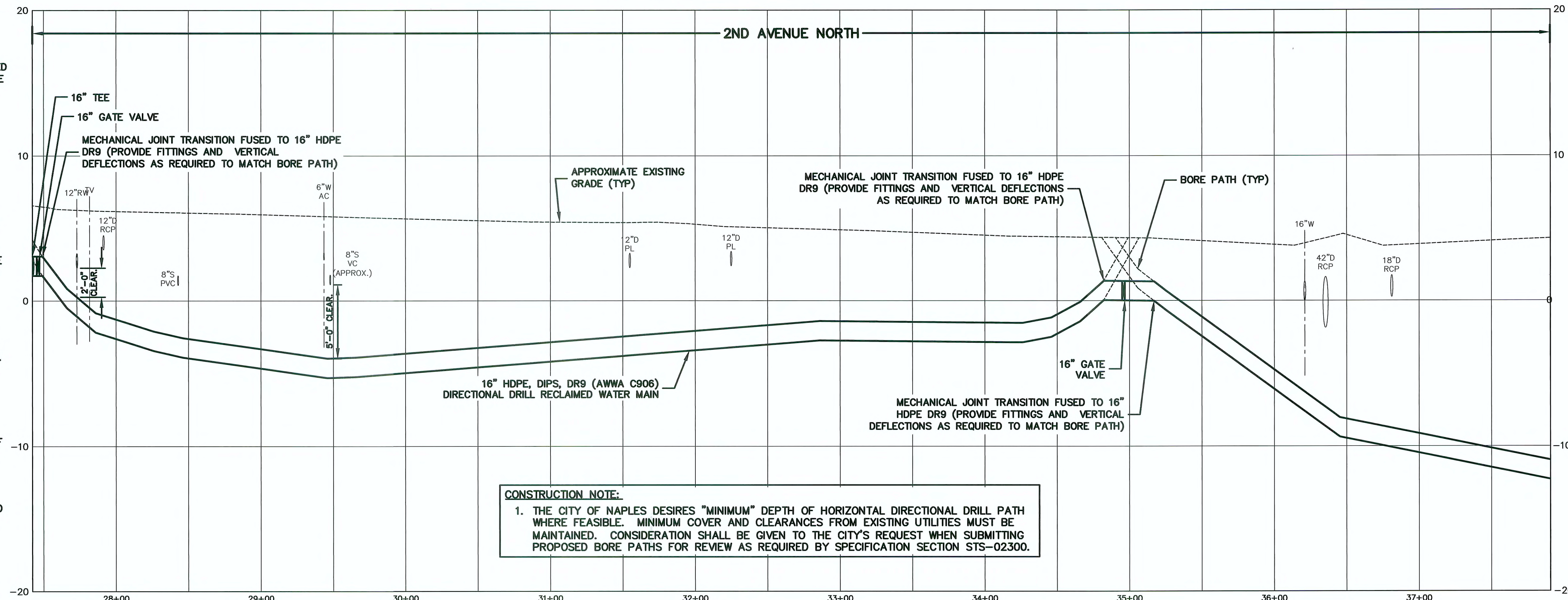
(RECLAIMED WATER)
[Signature]
Jeffrey A. Wilson, P.E.
FL License No. 41752

CITY OF NAPLES, FLORIDA
RECLAIMED WATER DISTRIBUTION SYSTEM EXPANSION
OPTION T-8
6TH STREET NORTH STA 19+90 TO 27+42
CADD NO. **RWM T8** | SCALE: **AS NOTED** | CONTRACT: **AS NOTED** | JOB NO. **2120311** | DR.-BY: | CHK.-BY: | APP.-BY: | DATE: |

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PLAN
SCALE: 1"=40'



PROFILE
SCALE: 1"=40' HORIZ; 1"=4' VERT

- NOTE:**
AT LEAST 30 DAYS PRIOR TO MOBILIZATION OF EQUIPMENT, THE CONTRACTOR SHALL SUBMIT A DETAILED INSTALLATION PLAN TO THE ENGINEER FOR REVIEW. INFORMATION SHALL INCLUDE THE FOLLOWING:
1. A DETAILED PLAN AND PROFILE OF THE BORE PLOTTED AT A SCALE NO SMALLER THAN 1-INCH EQUALS 20 FEET HORIZONTALLY AND 1-INCH EQUALS 2 FEET VERTICALLY.
 2. LOCATIONS OF BORE PIT ENTRY/EXIT LOCATIONS.
 3. THE PLOTTED BORE PATH SHALL ENSURE THAT PIPE JOINTS DO NOT DEFLECT MORE THAN 50 PERCENT OF THE MANUFACTURER'S RECOMMENDED MAXIMUM DEFLECTION
 4. MINIMUM PIPE WALL THICKNESS SHALL BE BASED ON A DR OF 9. CONTRACTOR AND PIPE MANUFACTURER SHALL MUTUALLY DETERMINE ACTUAL WALL THICKNESS REQUIRED, BASED ON STATIC AND DYNAMIC LOADS, WITH AN APPLIED FACTOR OF SAFETY OF 2.5.
 5. CALCULATIONS OF STRESSES AND LONGITUDINAL STRAINS DEVELOPED IN PIPE DURING HANDLING AND INSTALLATION.

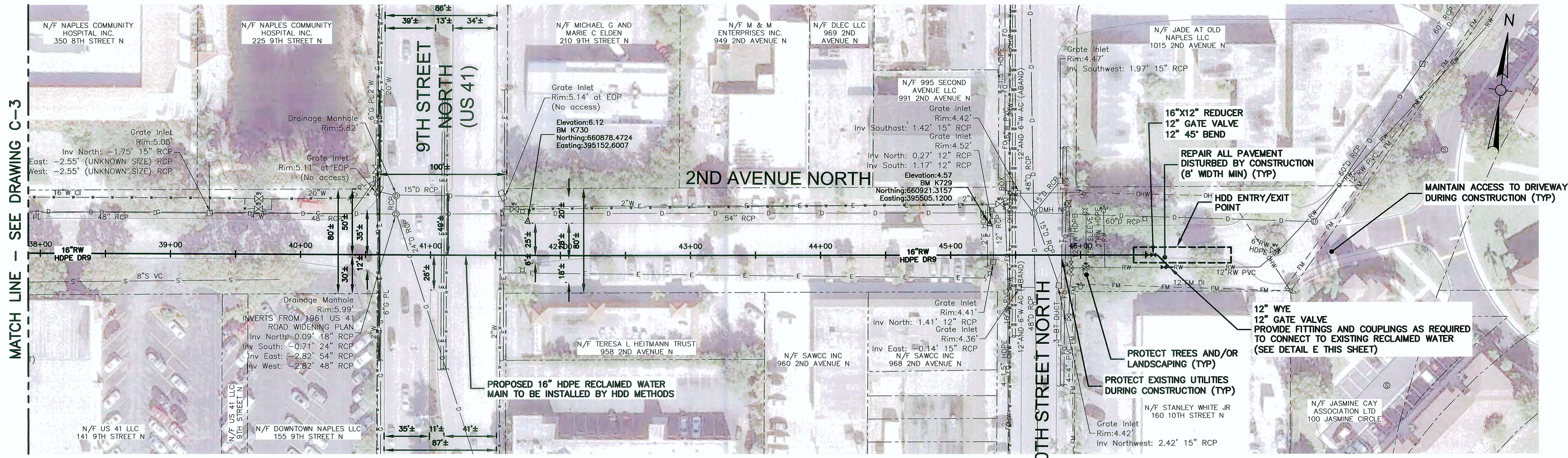
CONSTRUCTION NOTE:
1. THE CITY OF NAPLES DESIRES "MINIMUM" DEPTH OF HORIZONTAL DIRECTIONAL DRILL PATH WHERE FEASIBLE. MINIMUM COVER AND CLEARANCES FROM EXISTING UTILITIES MUST BE MAINTAINED. CONSIDERATION SHALL BE GIVEN TO THE CITY'S REQUEST WHEN SUBMITTING PROPOSED BORE PATHS FOR REVIEW AS REQUIRED BY SPECIFICATION SECTION STS-02300.

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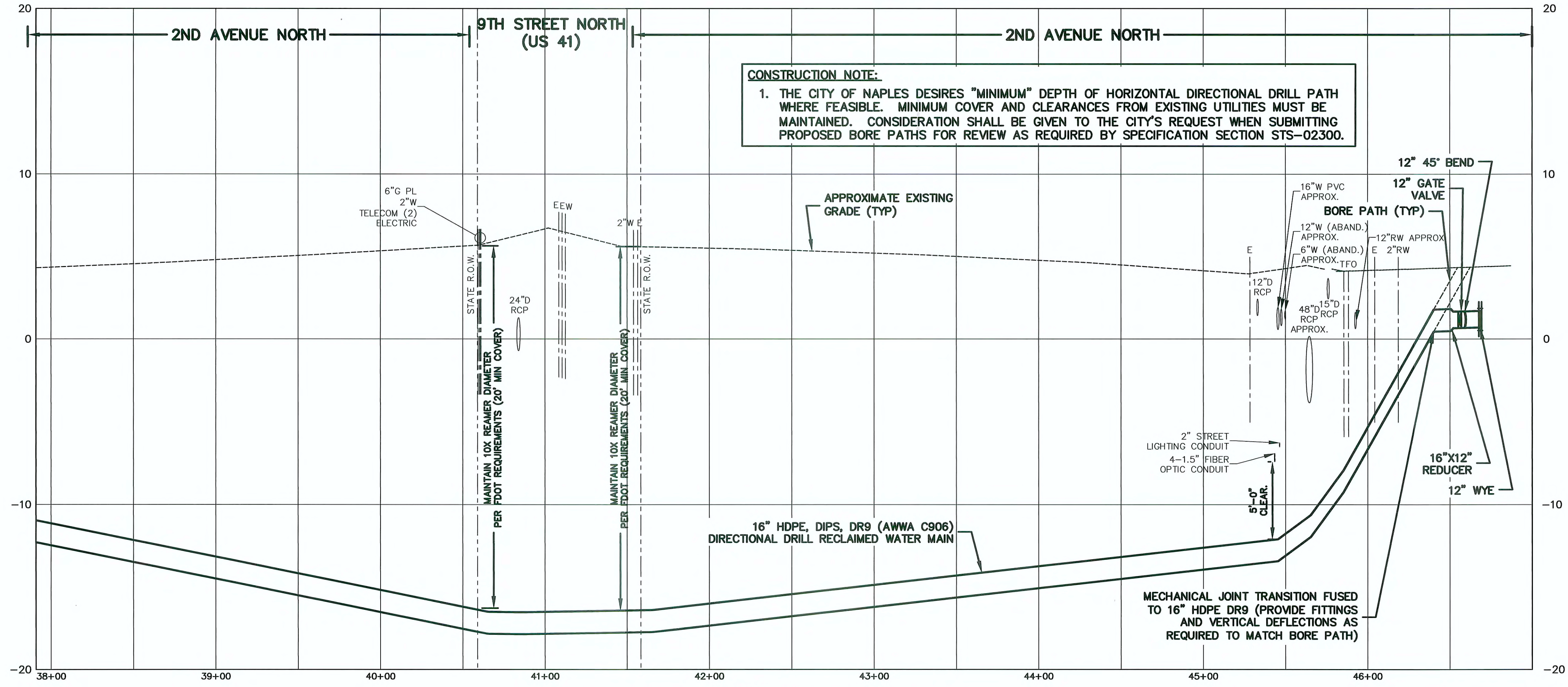
No.	Date	Dr. By	Ck. By	App. By	Description
1	02/14	DCM	RUH	JAW	ISSUED FOR BIDDING

(RECLAIMED WATER)
Jeffrey A. Wilson, P.E.
FL License No. 41752
FEB 20 2014

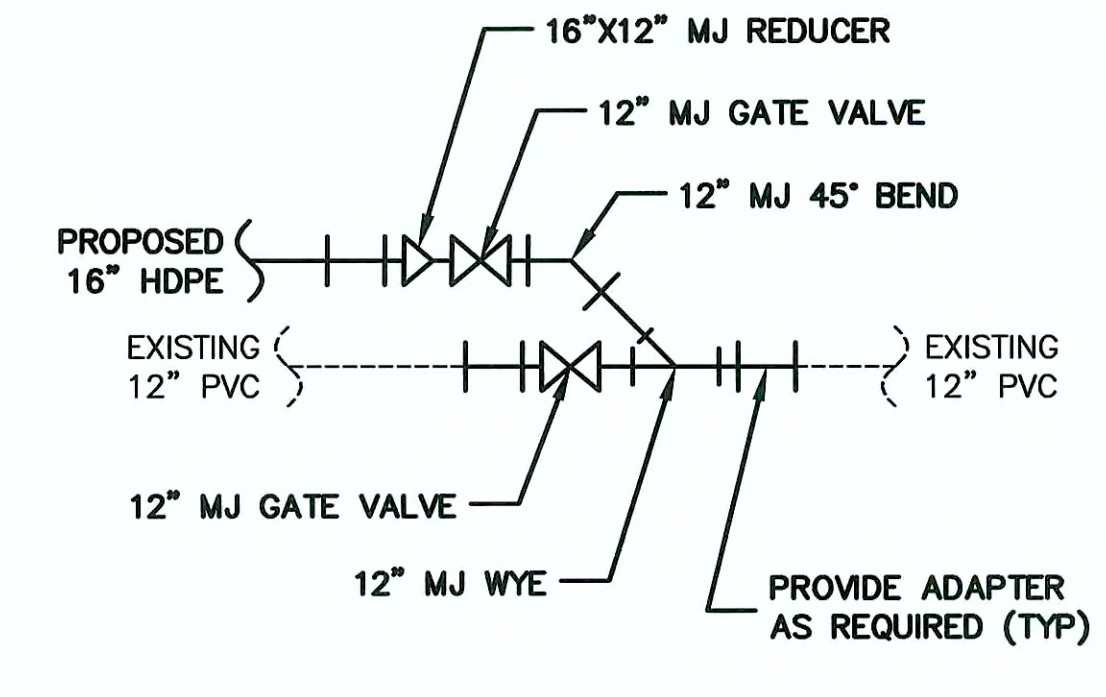
CITY OF NAPLES, FLORIDA RECLAIMED WATER DISTRIBUTION SYSTEM EXPANSION OPTION T-8					
CADD NO.	SCALE:	CONTRACT:	JOB NO.	DR. BY	APP. BY
R1111	TB	AS NOTED	2120311	DSNBY	CHKBY
2ND AVENUE NORTH STA 27+42 TO 37+91					



PLAN
SCALE: 1"=40'



PROFILE
SCALE: 1"=40' HORZ; 1"=4' VERT



DETAIL E
NTS

- NOTE:**
AT LEAST 30 DAYS PRIOR TO MOBILIZATION OF EQUIPMENT, THE CONTRACTOR SHALL SUBMIT A DETAILED INSTALLATION PLAN TO THE ENGINEER FOR REVIEW. INFORMATION SHALL INCLUDE THE FOLLOWING:
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 5. CALCULATIONS OF STRESSES AND LONGITUDINAL STRAINS DEVELOPED IN PIPE DURING HANDLING AND INSTALLATION.

MATCH LINE - SEE DRAWING C-3

No.	Date	Dr./By	Chk./By	App./By	Description
1	02/14	DCM	RLH	JAW	ISSUED FOR BIDDING

(RECLAIMED WATER)
Jeffrey A. Wilson, P.E.
FL License No. 47392
FEB 14 2014

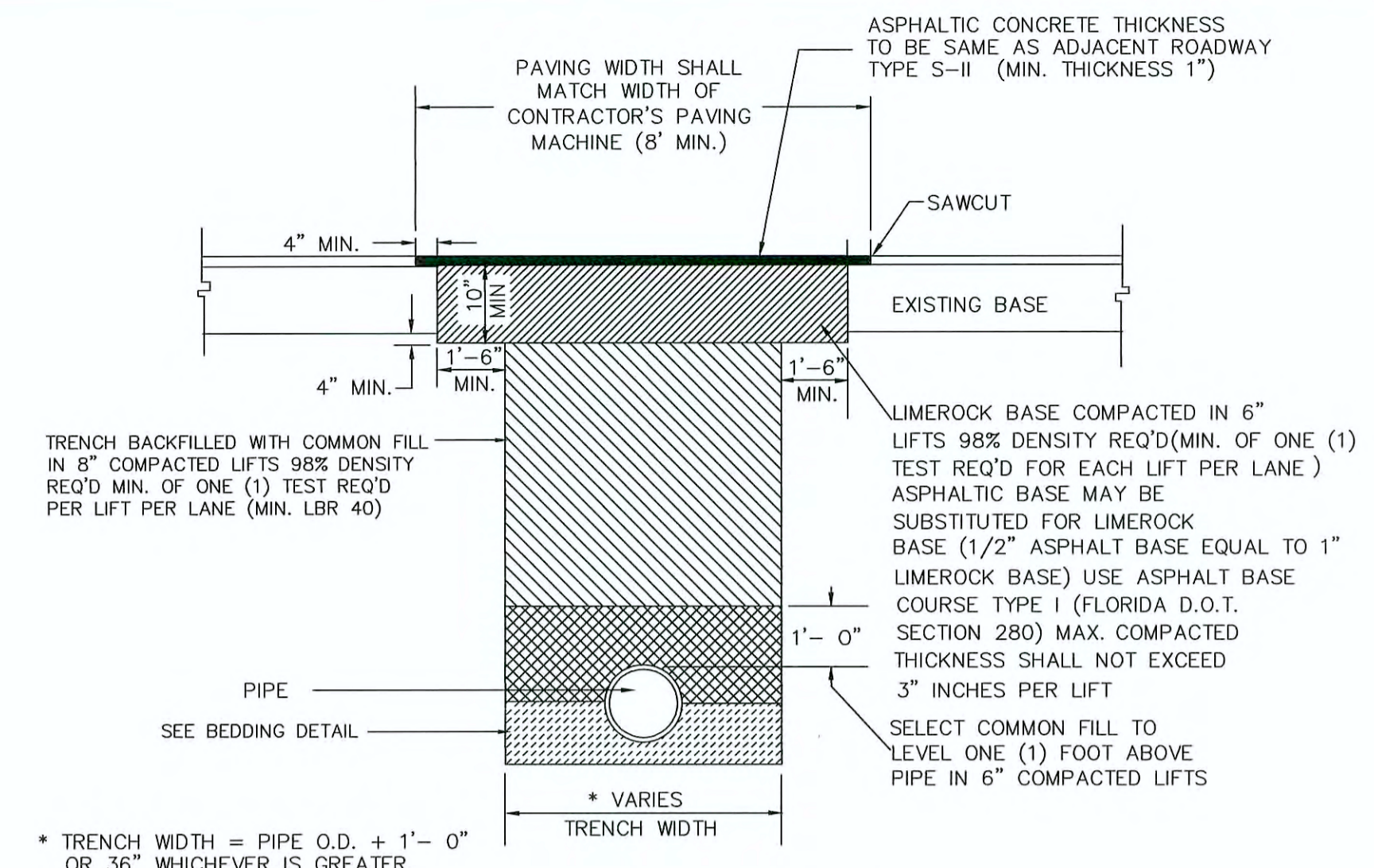
CITY OF NAPLES, FLORIDA
RECLAIMED WATER DISTRIBUTION SYSTEM EXPANSION
OPTION T-8
2ND AVENUE NORTH STA 37+91 TO 46+72
SCALE: R/W 1/8" = 1'-0" AS NOTED
JOB NO. 2120311
CONTRACTOR: AS NOTED
DR. BY: JSN.BY
CHK. BY: APP.BY

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ISSUED FOR BIDDING	Description
JAW	App. By
RLH	Ck. By
DCM	Dr. By
1/02/14	Date
No.	

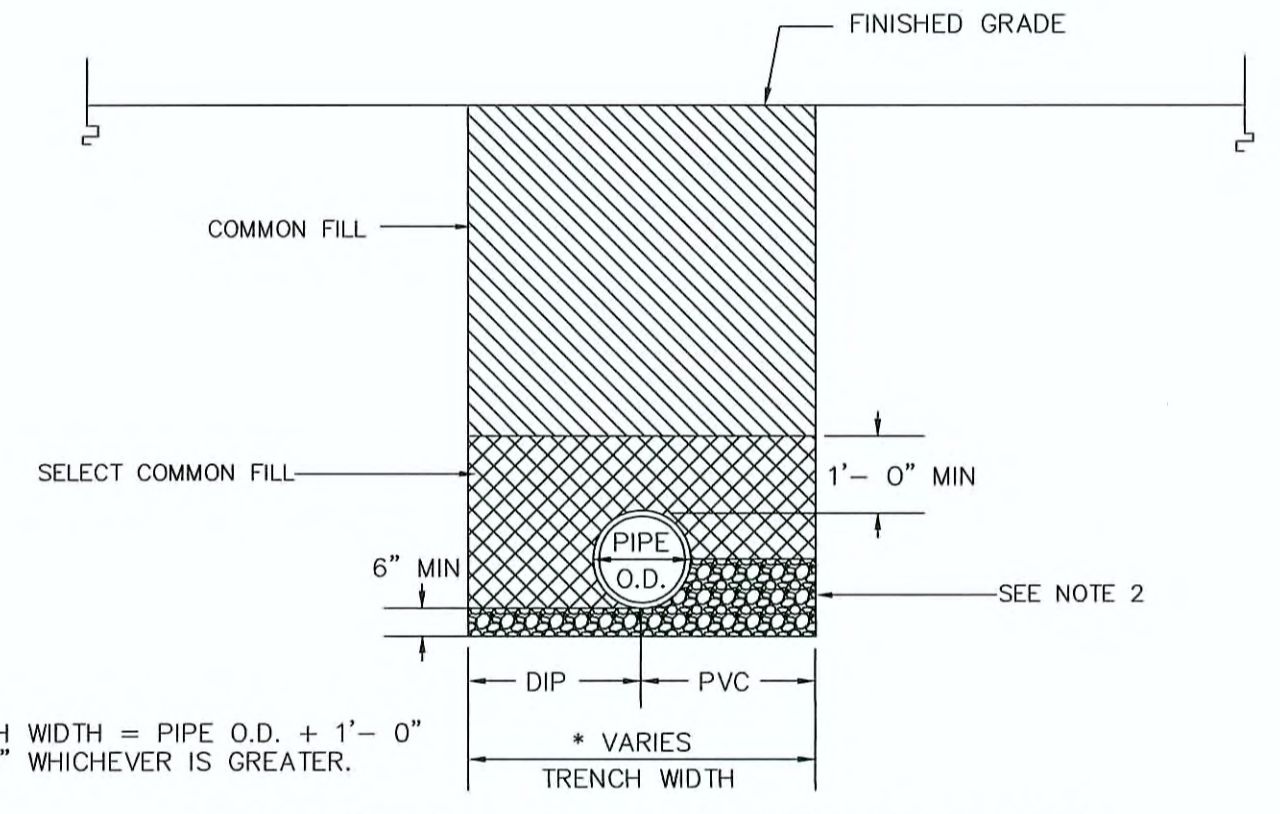
(RECLAIMED WATER)
 Jeffrey A. Wilson, P.E.
 10/20/14
 FL License No. 47782

CITY OF NAPLES, FLORIDA RECLAIMED WATER DISTRIBUTION SYSTEM EXPANSION OPTION T-8	CONTRACT: AS NOTED	JOB NO. 2120311	DR. BY	DESIGN BY	CHK. BY	APP. BY
CITY OF NAPLES STANDARD DETAILS	SCALE: RWM T8					
CADD NO. RWM T8						
FILE NO.						



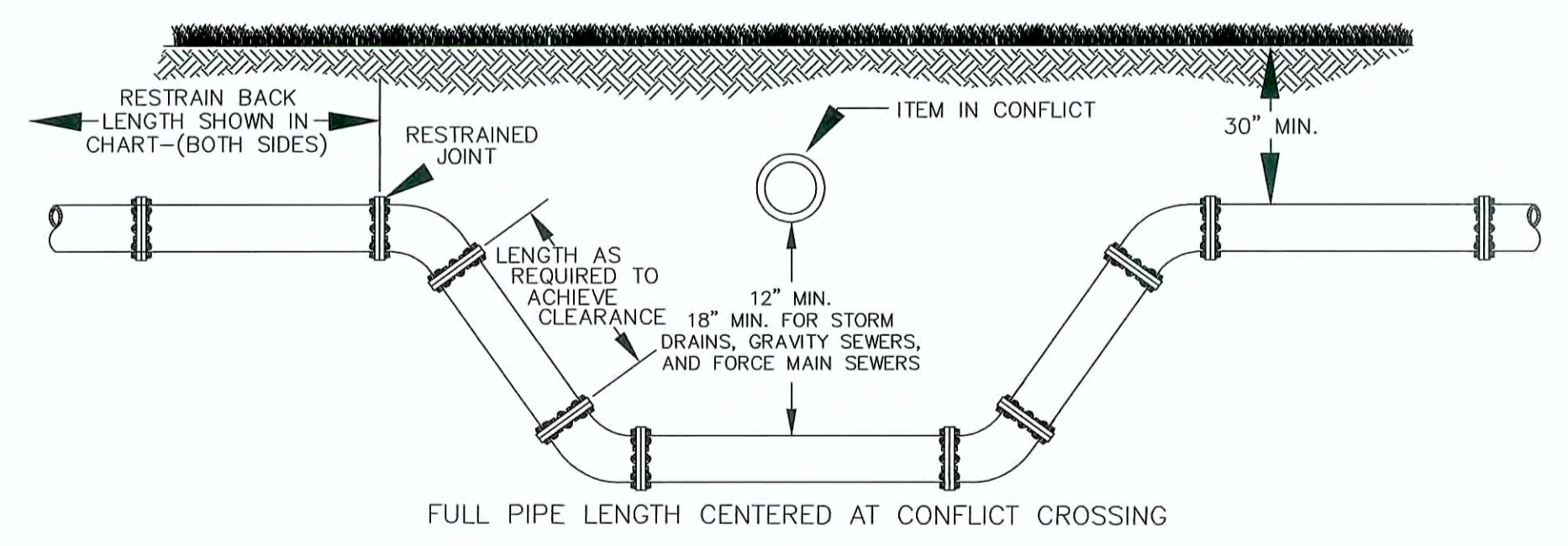
- * TRENCH WIDTH = PIPE O.D. + 1'-0" OR 36" WHICHEVER IS GREATER.
- NOTES: 1) ALL PROCTOR AND DENSITY TESTS SHALL BE TAKEN BY A CERTIFIED LABORATORY
 2) ALL TESTS SHALL BE COMPLETED AND MEET MINIMUM DENSITY REQUIREMENTS PRIOR TO ADDITIONAL BACK-FILLING
 3) ORDINANCE 82-91 REQUIRES A R.O.W. PERMIT FOR ALL WORK WITHIN PUBLIC ROADS. THE R.O.W. PERMIT REQUIREMENTS SHALL SUPERSEDE THIS DETAIL.
 4) COMPACTION AND DENSITY TESTING SHALL BE COMPLETED ALONG THE TRENCH AT 500' INTERVALS.
 5) A DRY TRENCH SHALL BE MAINTAINED AT ALL TIMES AND BACKFILLING SHALL BE COMPLETED IN COMPACTED LIFTS AS SHOWN ABOVE.

TRENCH BACKFILL IN PAVED ROADWAYS DETAIL
N.T.S.



- * TRENCH WIDTH = PIPE O.D. + 1'-0" OR 36" WHICHEVER IS GREATER.
- NOTES: 1) COMMON FILL SHALL BE COMPACTED TO MATCH CRITERIA PROVIDED IN BACKFILL DETAILS FOR PAVED AND UNPAVED LOCATIONS RESPECTIVELY.
 2) BEDDING MATERIAL SHALL BE FDOT #57 STONE IF BELOW THE SEASONAL LOW GROUNDWATER TABLE, OR FDOT #89 STONE, FDOT #131 OR #132 SCREENING IF ABOVE THE SEASONAL LOW GROUNDWATER TABLE.
 3) ORDINANCE 82-91 REQUIRES A R.O.W. PERMIT FOR ALL WORK WITHIN PUBLIC ROADS. THE R.O.W. PERMIT REQUIREMENTS SHALL SUPERSEDE THIS DETAIL.

PIPE BEDDING AND BACKFILL DETAIL
N.T.S.



PIPE SIZE	90° BEND	45° BEND	22 1/2°	11 1/4°
8"	74	31	15	7
10"	87	36	17	9
12"	100	41	20	10
16"	123	51	24	12
20"	143	59	29	14
24"	162	67	32	16
30"	184	76	37	18
36"	207	86	41	20

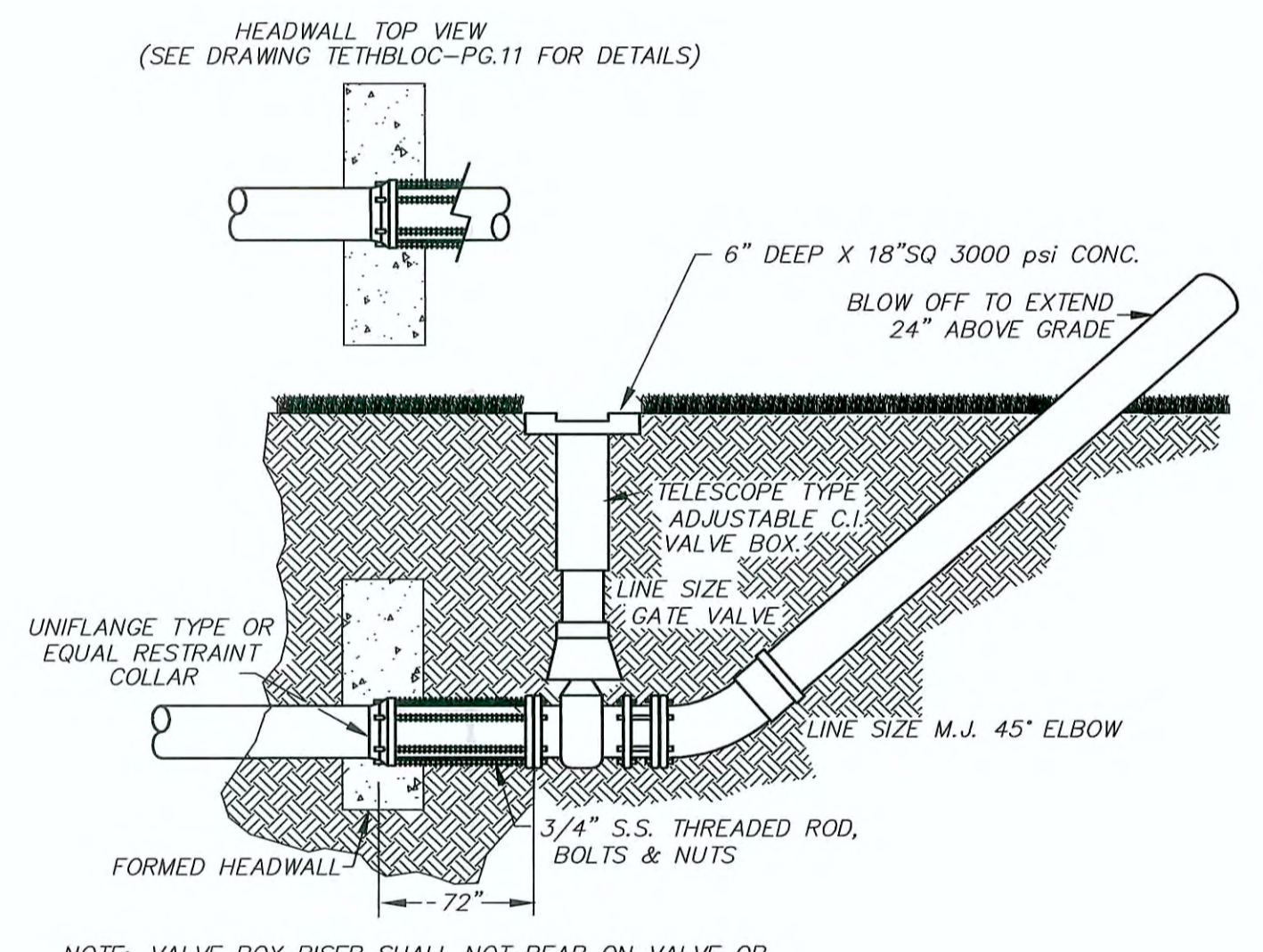
*FOR FITTINGS NOT SHOWN HERE, REFER TO PIPE RESTRAINT DETAIL DRAWING
TYPICAL CONFLICT CROSSING DETAIL
N.T.S.

PIPE SIZE IN INCHES	RESTRAINED PIPE LENGTH IN FEET (1)					45° VERTICAL BENDS	
	HORIZONTAL BENDS					UPPER	LOWER
	90°	45°	22-1/2°	11-1/4°	DEAD ENDS (2)		
4	23	9	5	2	55	23	8
6	32	13	6	3	77	32	11
8	37	15	7	4	100	41	14
10	47	17	9	5	120	50	17
12	55	20	10	6	141	58	20
16	74	24	12	8	181	76	25
18	87	27	13	9	200	83	28
20	100	29	14	10	218	90	30
24	123	32	16	12	253	105	35
30	143	37	18	15	303	125	41
36	162	41	20	18	350	145	47

PIPE SIZE IN INCHES	RESTRAINED PIPE LENGTH IN FEET (1)	
	TEE (3)	REDUCER (4)
6 x 4	0	40
6 x 6	34	
8 x 4	0	72
8 x 8	55	
10 x 6	3	74
10 x 10	75	
12 x 4	0	122
12 x 8	31	75
12 x 12	95	
16 x 6	0	153
16 x 10	44	107
16 x 16	134	
18 x 8	0	157
18 x 12	68	108
18 x 18	152	
20 x 10	20	161
20 x 16	120	77
20 x 20	170	
24 x 12	37	187
24 x 18	132	109
24 x 24	204	
30 x 16	78	213
30 x 20	138	165
30 x 30	252	
36 x 18	84	259
36 x 24	170	191
36 x 36	298	

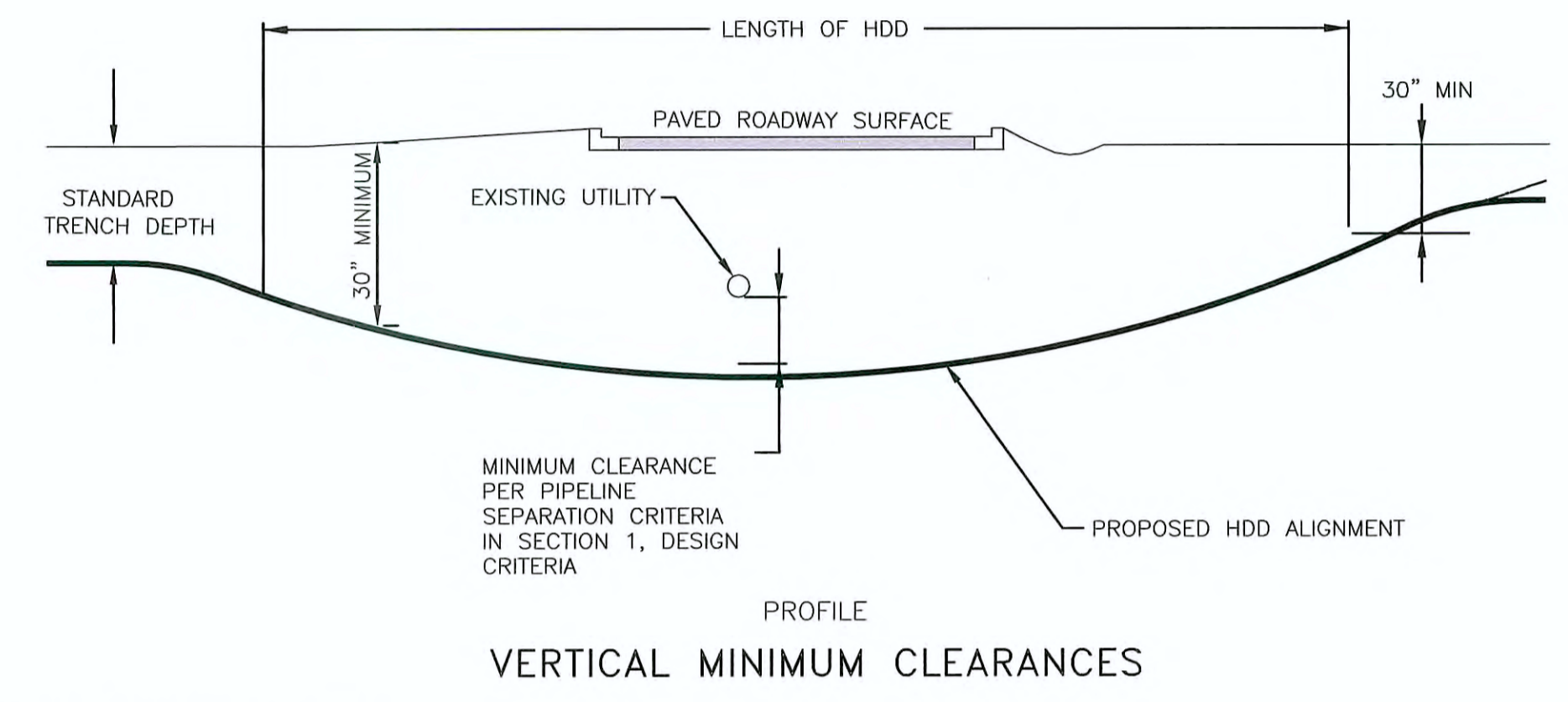
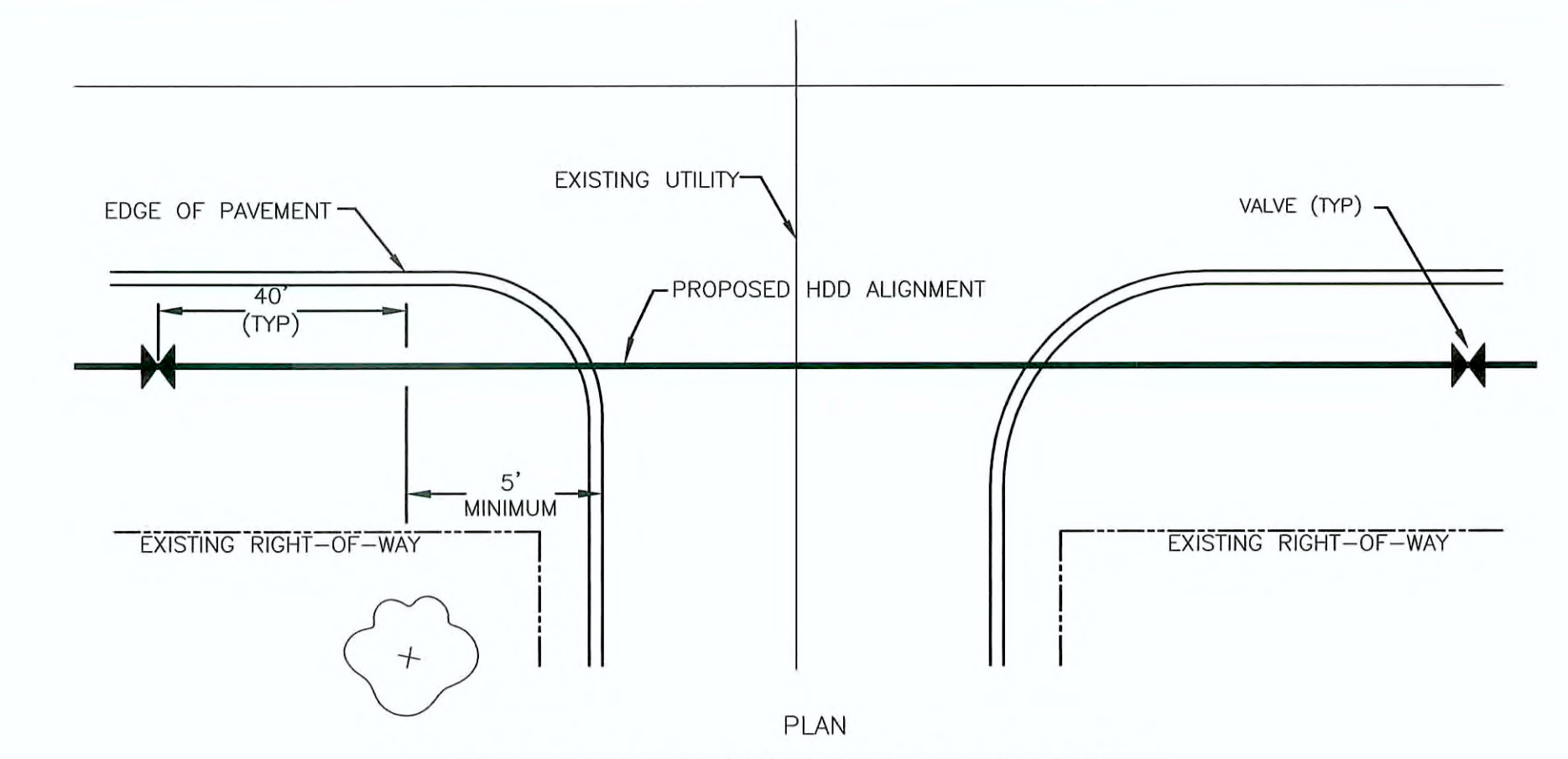
- NOTES:
 1. RESTRAIN ALL PIPE JOINTS WITHIN THE DISTANCE SHOWN ON THE TABLES MEASURED FROM THE POINT OF CONNECTION.
 2. ISOLATION VALVES SHALL BE TREATED AS DEAD ENDS. WITH RESTRAINT ON BOTH SIDES OF THE VALVE.
 3. RESTRAINT IS FOR BRANCH OF TEE. IF BRANCH SIZE IS NOT ON TABLE, USE NEXT LARGEST BRANCH.
 4. RESTRAINT IS FOR LARGE DIAMETER SIDE OF REDUCER. IF REDUCER SIZE IS NOT ON TABLE, USE NEXT SMALLER REDUCER (SMALL END).
 5. THIS SCHEDULE IS TO BE USED FOR DUCTILE IRON AND PVC PIPE.

PIPE RESTRAINT SCHEDULE
N.T.S.



- NOTE: VALVE BOX RISER SHALL NOT BEAR ON VALVE OR PIPE.
 NOTE: TEMPORARY BLOW-OFF TO REMAIN IN PLACE UNTIL DISTRIBUTION SYSTEM HAS BEEN FLUSHED. AFTER CLEARANCE IS OBTAINED REFER TO FIRE HYDRANT DETAIL FOR FINAL CONFIGURATION.

TEMPORARY BLOWOFF DETAIL
N.T.S.

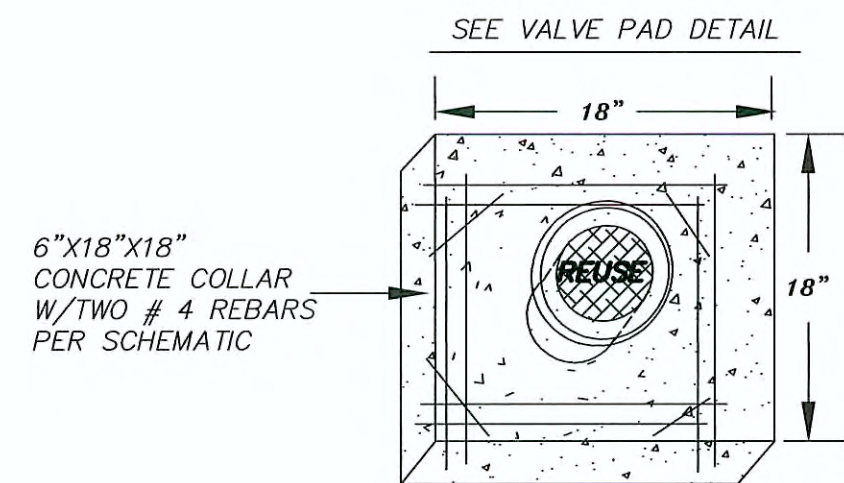
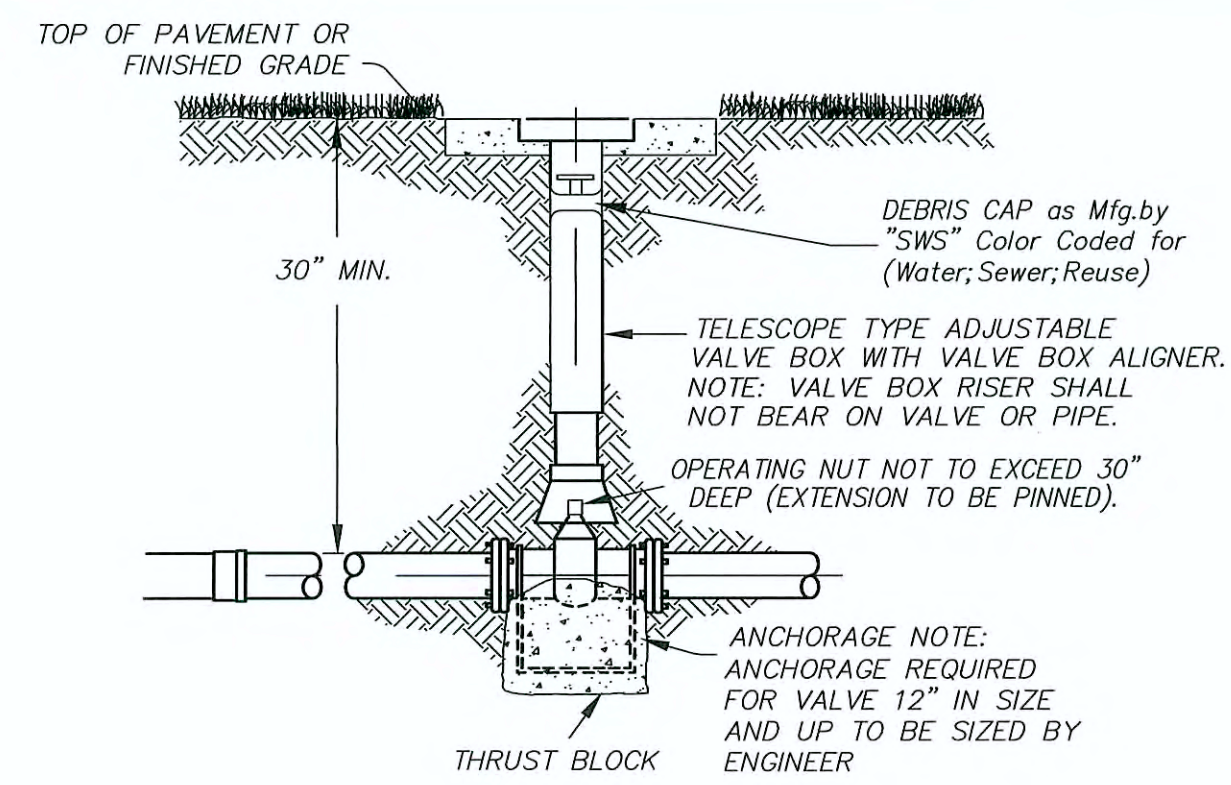


- HDD INSTALLATION NOTES:**
- ALL WORK SHALL BE IN ACCORDANCE WITH SECTIONS 1 AND 02300 OF THE CITY UTILITIES STANDARDS MANUAL.
 - ALL HDD INSTALLATION ACTIVITIES SHALL BE IN ACCORDANCE WITH THE FLORIDA D.O.T. UTILITY ACCOMMODATIONS MANUAL AND THE CITY UTILITIES STANDARDS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF AFFECTED AGENCIES AND COORDINATION WITH ALL UTILITIES PRIOR TO CONSTRUCTION.
 - ALL CONSTRUCTION MATERIALS, INCLUDING DRILLING FLUID, SHALL BE REMOVED FROM THE SITE PRIOR TO RESTORATION OF DISTURBED AREAS.
 - ALL RESTORATION WORK SHALL BE IN ACCORDANCE WITH THE CITY UTILITIES STANDARD MANUAL.
 - EXCAVATIONS SHALL BE RESTORED IN ACCORDANCE WITH THE CITY UTILITIES STANDARD MANUAL AND STANDARD DETAILS.
 - ALLOW 40' BETWEEN VALVE AND HDPE TO PVC TRANSITION COUPLING. DISTANCE LESS THAN 40' REQUIRES APPROVAL OF DEVIATION. THE 40' LENGTH SHALL NOT INCLUDE BRANCHES/TEES IN THE PIPING BETWEEN VALVE AND END OF CASING.
 - VALVES AT EACH END OF THE HDD ARE REQUIRED FOR NUMBERED COUNTY ROADS, STATE ROADS AND AT INTERSECTIONS WITH NUMBERED COUNTY ROADS AND STATE ROADS.

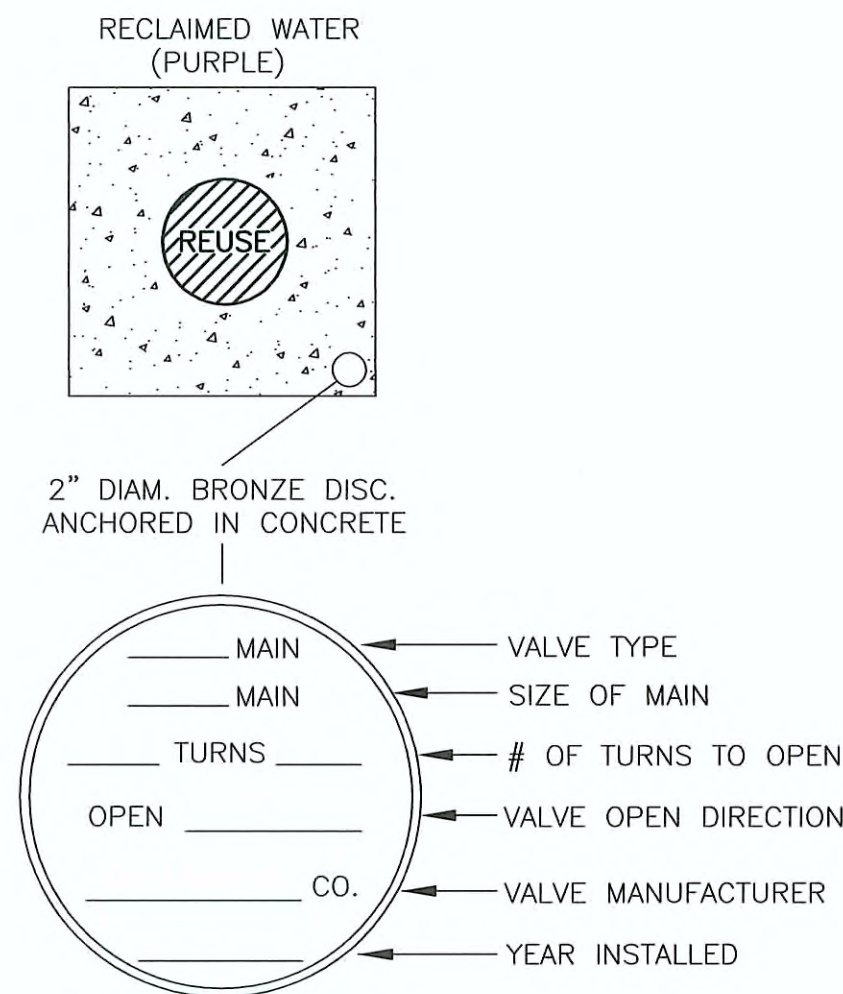
TYPICAL HORIZONTAL DIRECTIONAL DRILL (HDD) UNDER ROADWAY DETAIL
N.T.S.

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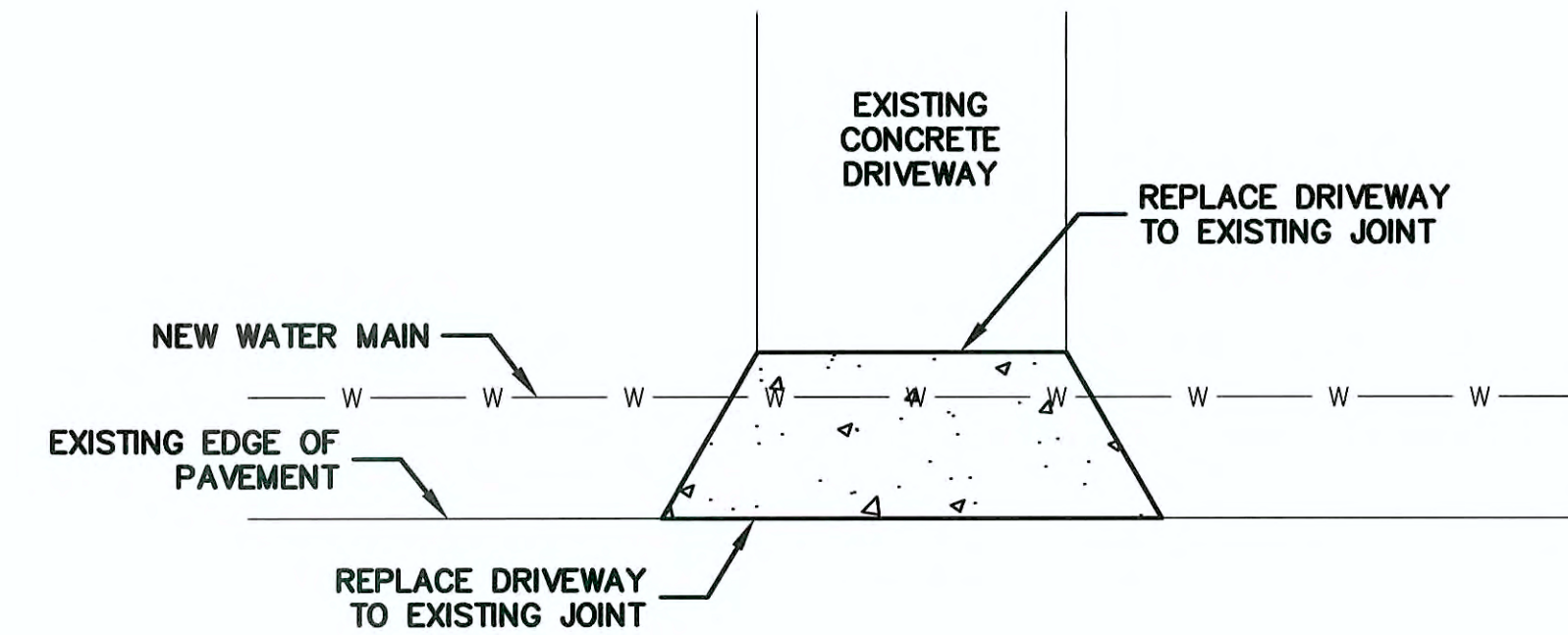
NOTE: THIS SHEET PRESENTS DETAILS WHICH HAVE BEEN DEVELOPED/DESIGNED BY OTHERS AND ARE STANDARDS FOR THE CITY OF NAPLES UTILITIES DEPARTMENT. THEY HAVE BEEN REVIEWED/EVALUATED BY THE ENGINEER OF RECORD AND ARE ACCEPTABLE FOR USE ON THIS PROJECT.



TYPICAL IN-LINE VALVE
N.T.S.



VALVE PAD DETAIL
N.T.S.

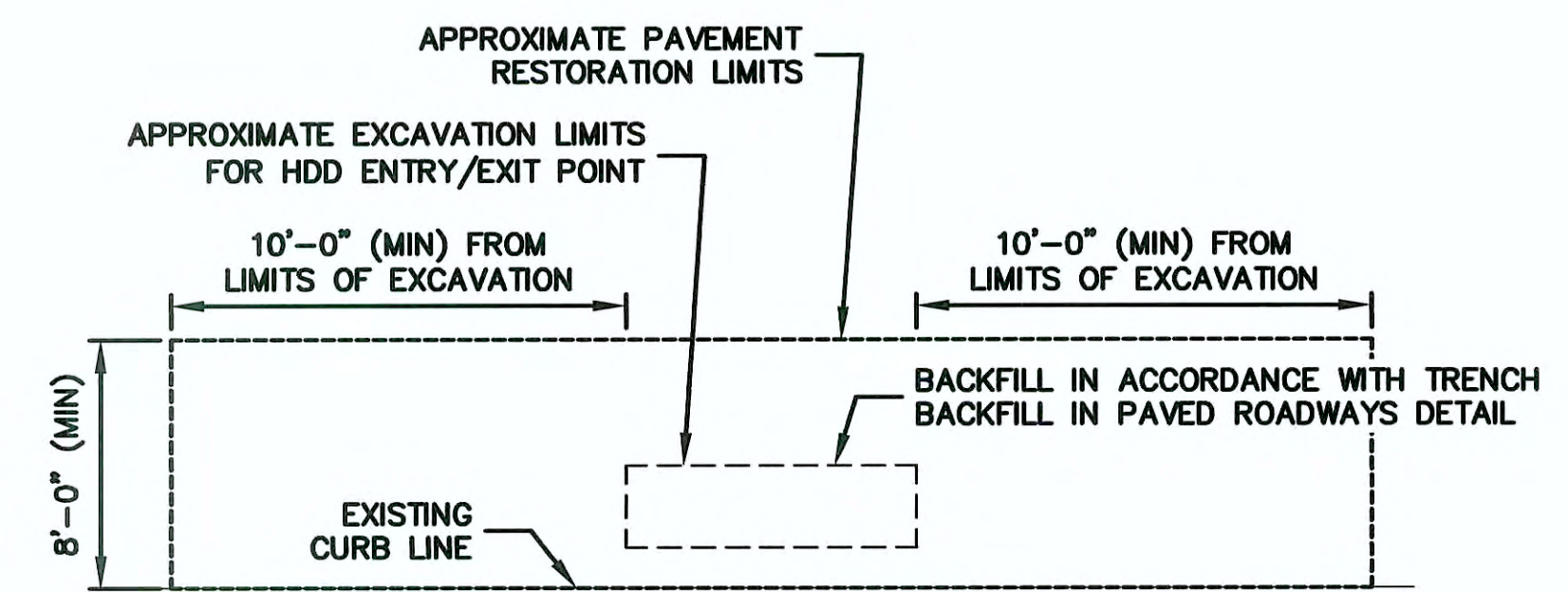


CONCRETE DRIVEWAY OPEN-CUT DETAIL
(WESTON & SAMPSON)
N.T.S.

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING AT CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER (2)			
VACUUM SANITARY SEWER			
GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (4)			
ON-SITE SEWAGE TREATMENT AND DISPOSAL	10'-0" MIN.	--	--

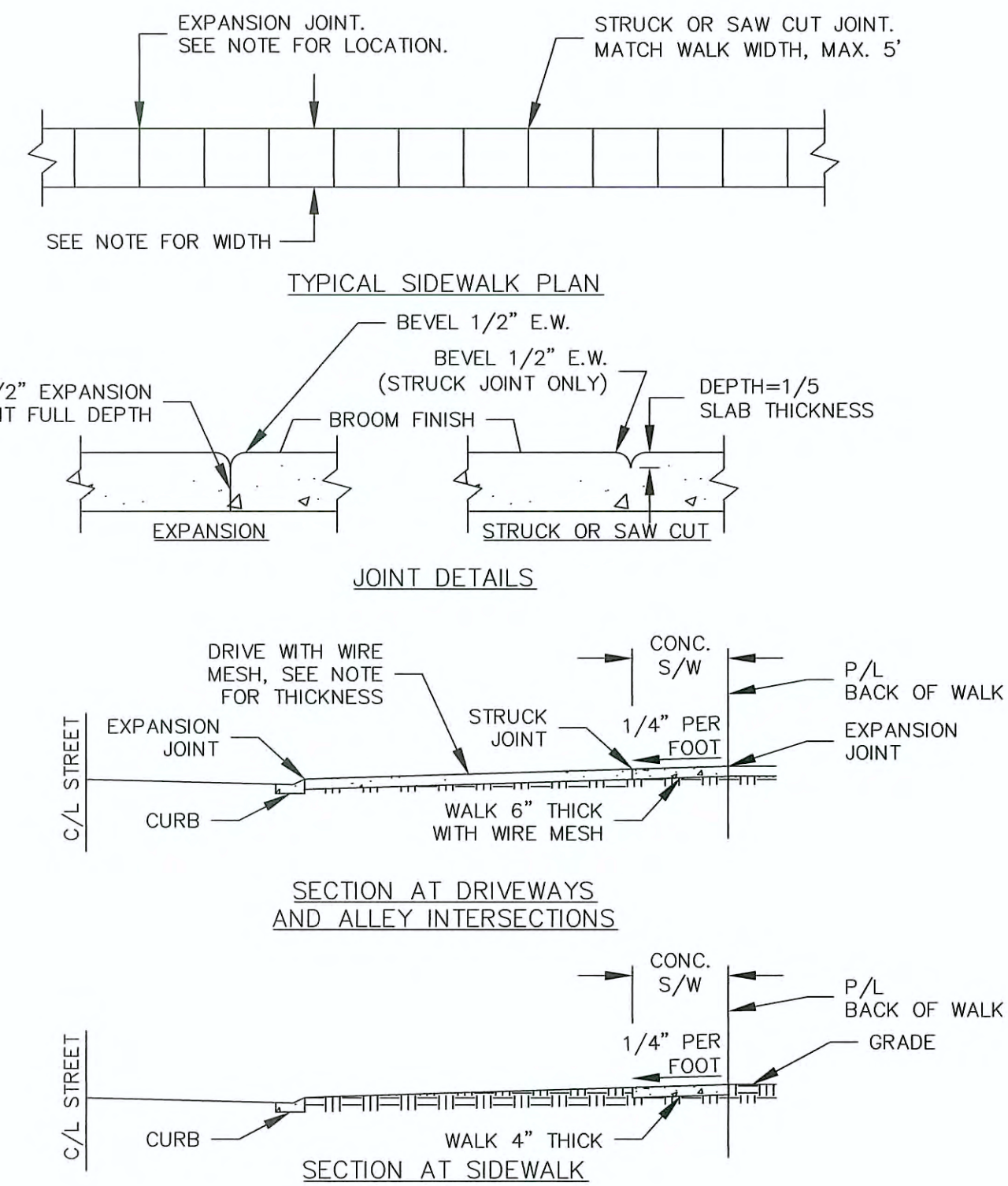
- NOTES:**
1. WATER MAIN SHALL CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
 2. RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
 3. 3'-0" FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6" ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
 4. RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314
(WESTON & SAMPSON)
N.T.S.



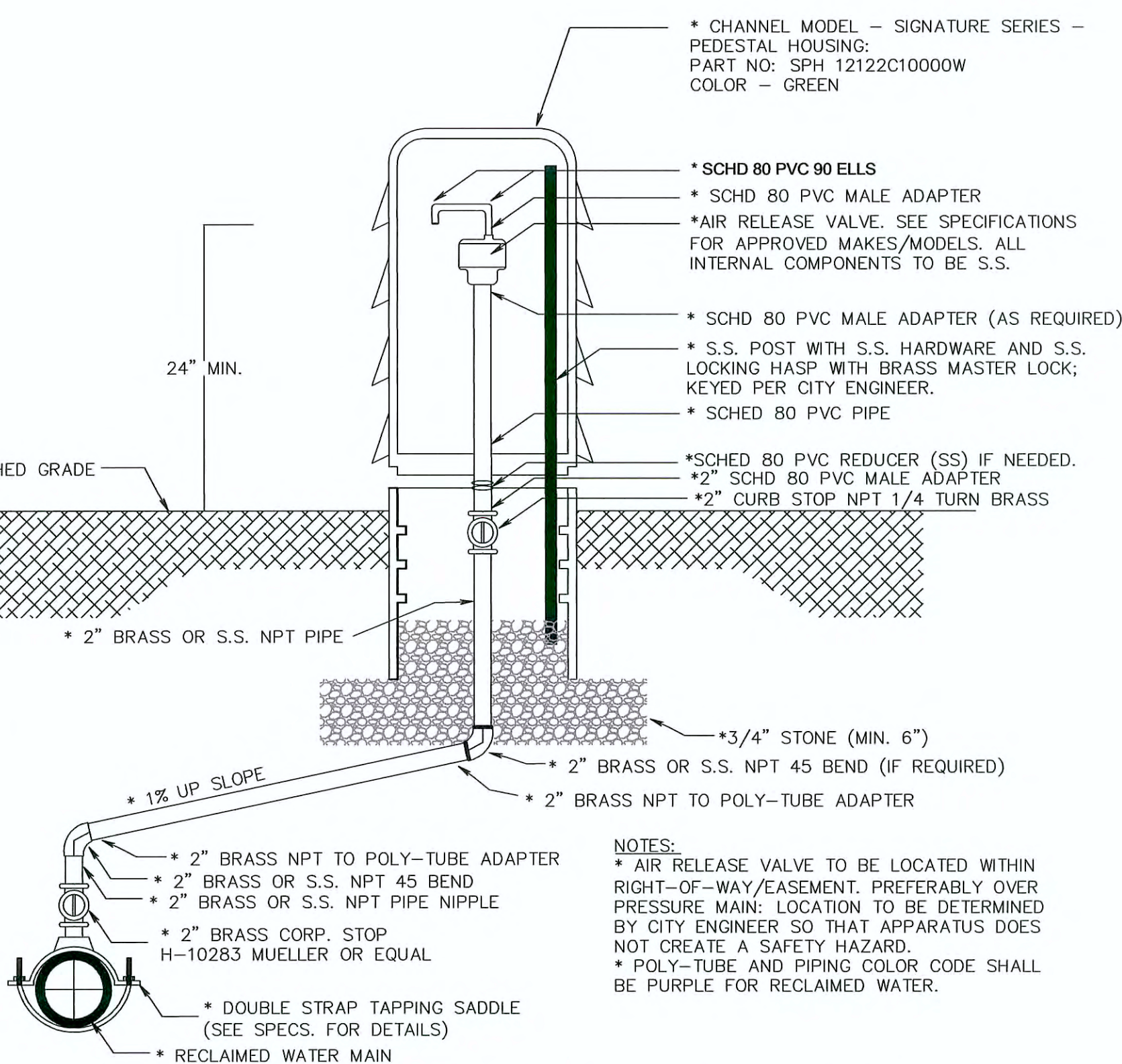
HDD ENTRY/EXIT POINT PAVEMENT RESTORATION
(WESTON & SAMPSON)
N.T.S.

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- NOTES:**
1. MIN. 1/4" PER FOOT RISE, BACK OF CURB TO BACK OF WALK. WHERE NO CURB EXISTS, SIDEWALK TO BE SET TO GRADE ESTABLISHED BY ENGINEERING DEPARTMENT.
 2. ALL CONCRETE SHALL CONFORM TO A.S.T.M. C-150, LATEST SPECIFICATION, AND ATTAIN A COMPRESSIVE STRENGTH OF 3,000 P.S.I. AT 28 DAYS.
 3. SIDEWALK EXPANSION JOINTS TO BE AT ALL TIES TO CONCRETE OTHER THAN DRIVEWAYS. MAXIMUM SPACING SHALL BE 40'.
 4. EXPANSION JOINT MATERIAL SHALL BE ASPHALT FIBER IMPREGNATED PREFORMED JOINT FILLER, TO FULL DEPTH OF CONCRETE.
 5. WIDTH OF SIDEWALK IN RESIDENTIAL AREAS TO BE 5'-0". WIDTH OF SIDEWALK IN COMMERCIAL/INDUSTRIAL AREAS TO BE 8'-0".
 6. CONCRETE DRIVEWAY SERVING A SINGLE FAMILY UNIT OR DUPLEX TO BE MIN. 4" THICK. CONCRETE DRIVEWAY SERVING OTHER THAN A SINGLE FAMILY UNIT OR DUPLEX TO BE MIN. 6" THICK.

SIDEWALK CONSTRUCTION DETAILS
N.T.S.



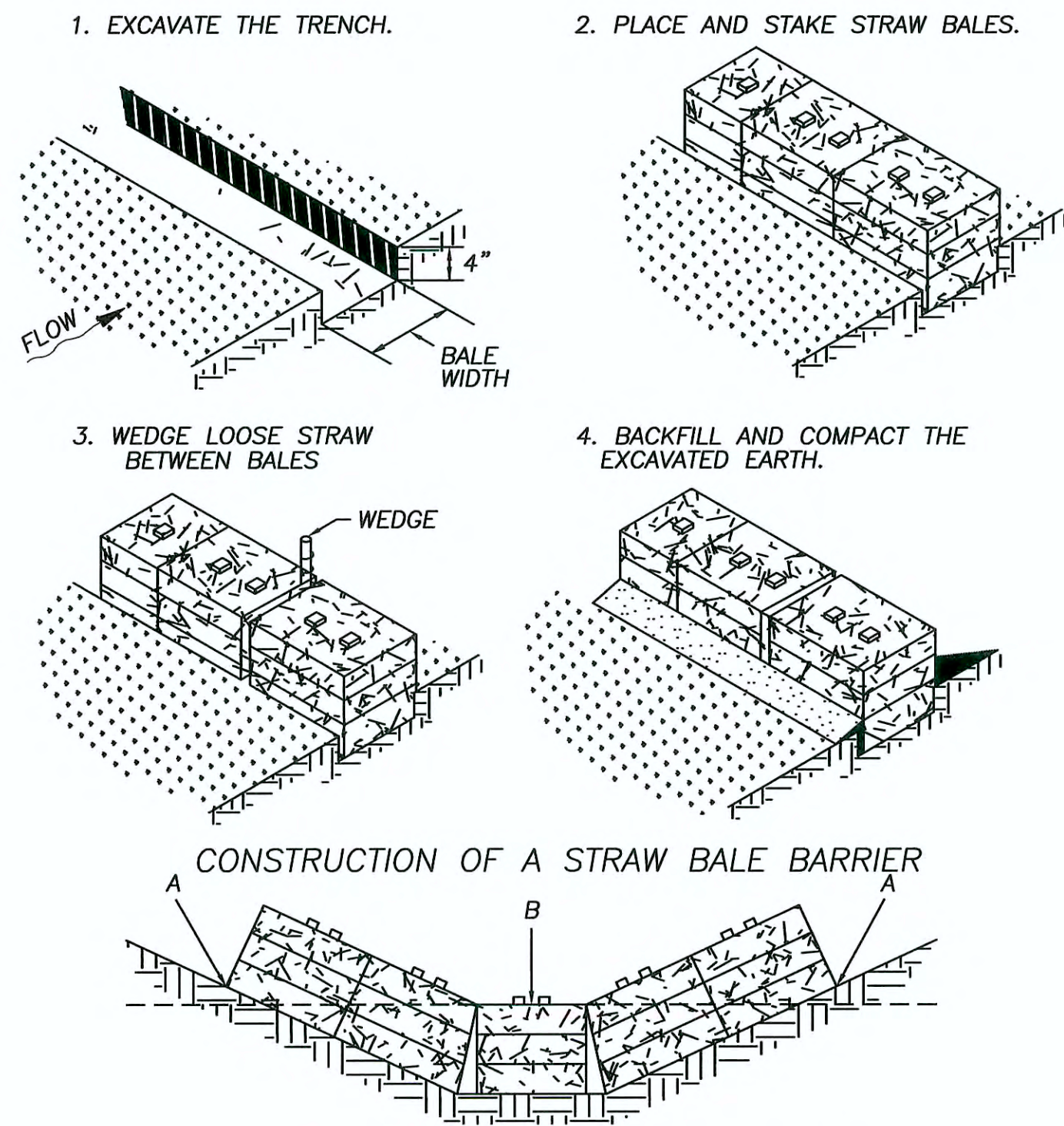
RECLAIMED WATER MAIN AIR RELEASE VALVE DETAIL
N.T.S.

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NO.	DATE	DR. BY	CK. BY	APP. BY	DESCRIPTION
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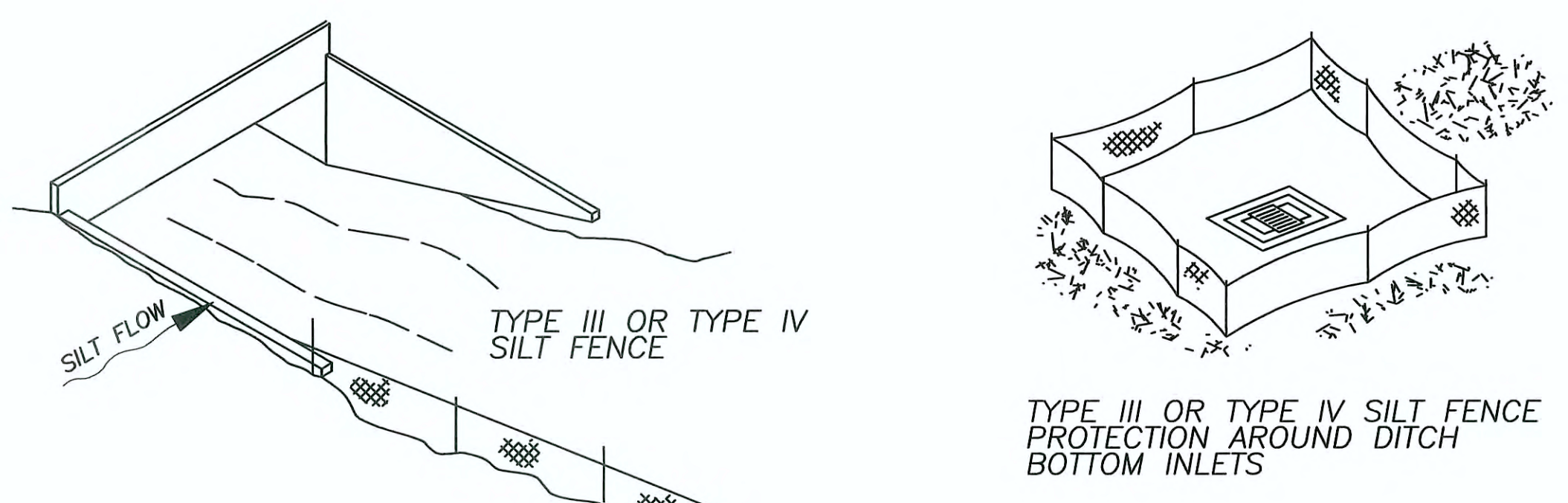
(RECLAIMED WATER)
Jeffrey A. Wilson, P.E.
PL License No. 41732

SCALE	CONTRACT	JOB NO.	DR. BY	DES. BY	CHK. BY	APP. BY
R/M T/B	AS NOTED	21203311				

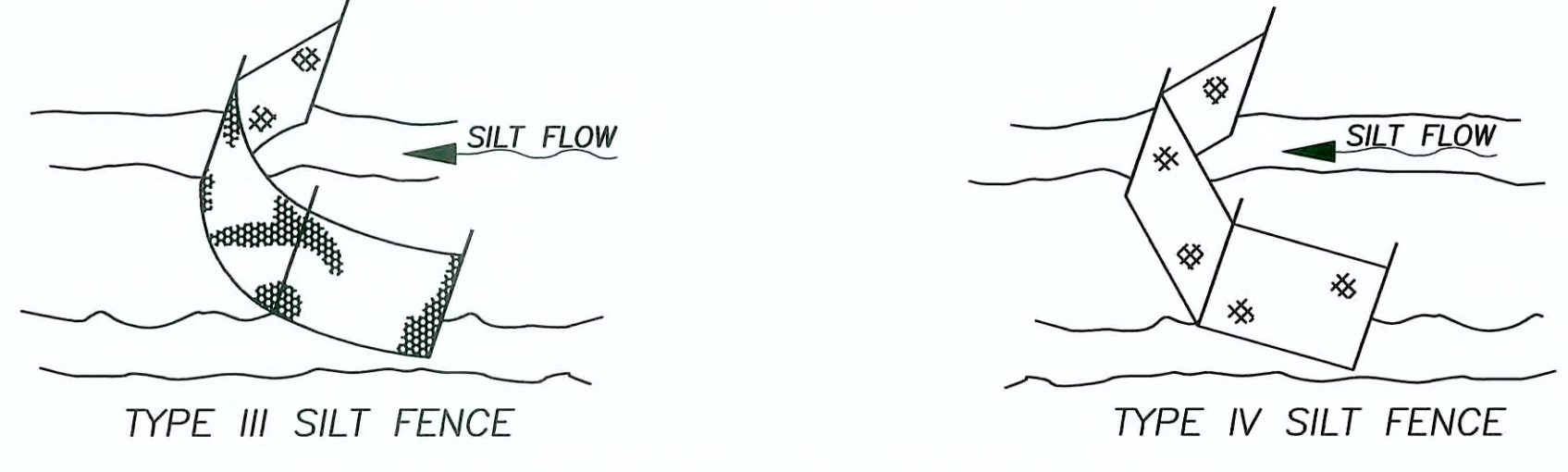


CONSTRUCTION OF A STRAW BALE BARRIER

POINTS A SHOULD BE HIGHER THAN POINT B
PROPER PLACEMENT OF A STRAW BALE BARRIER IN DRAINAGE WAY

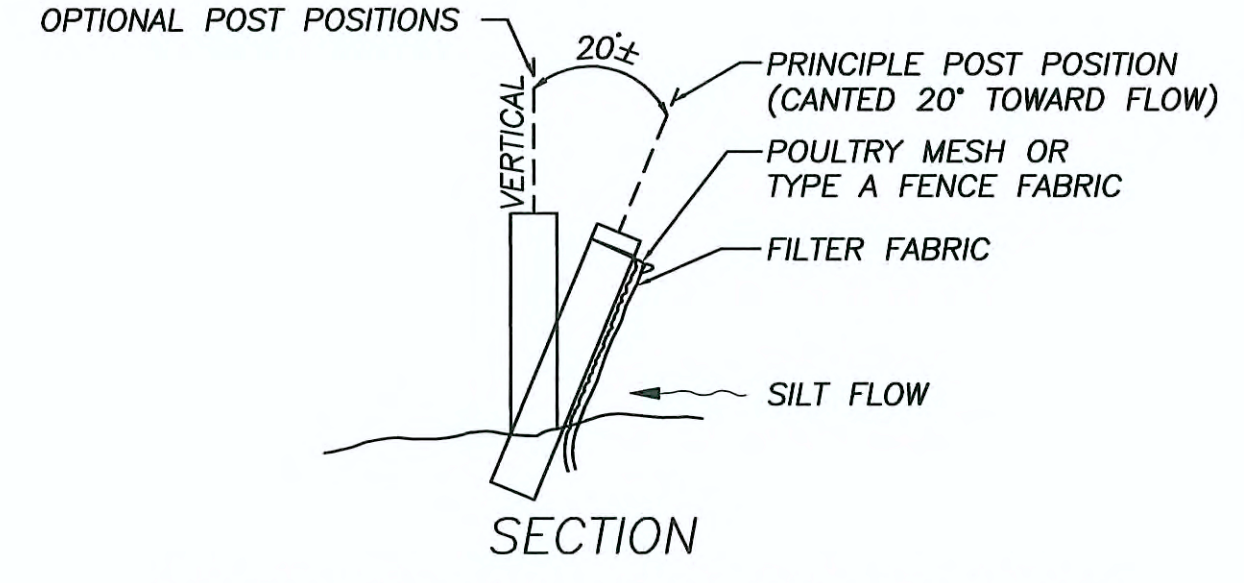
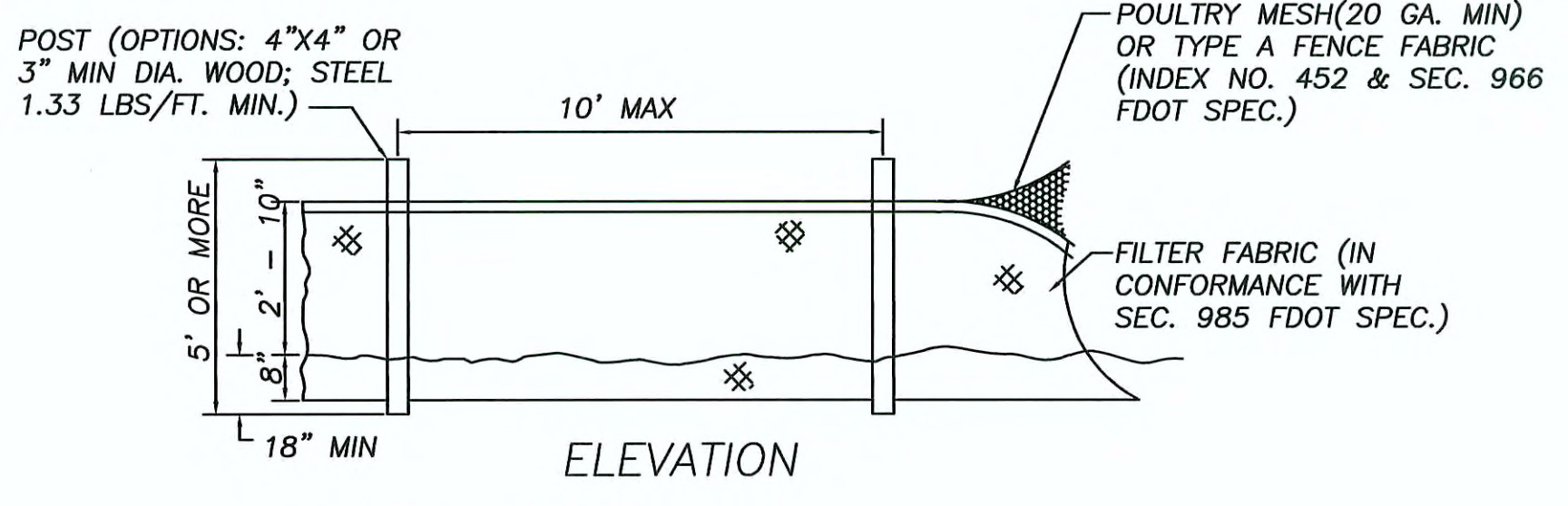
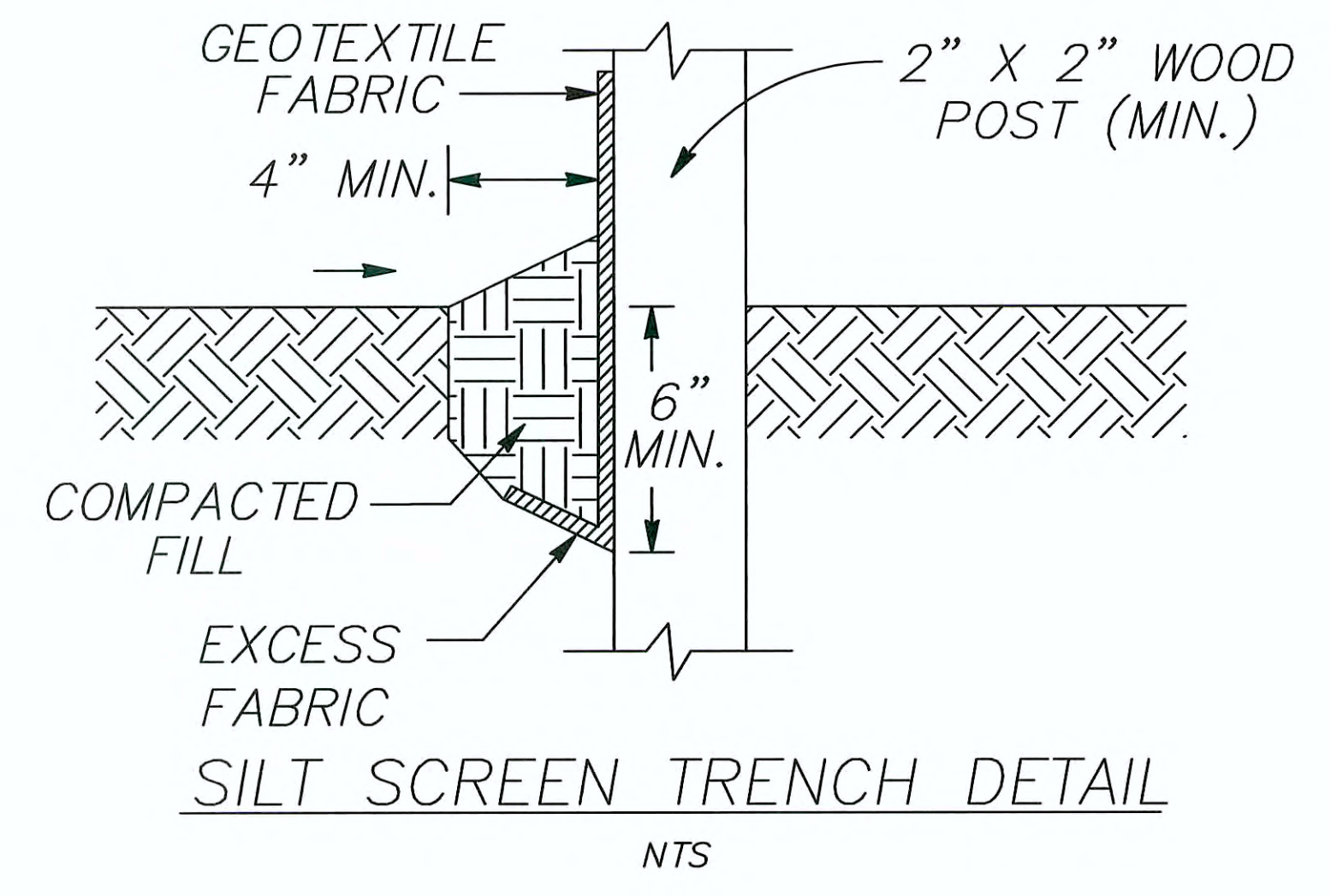
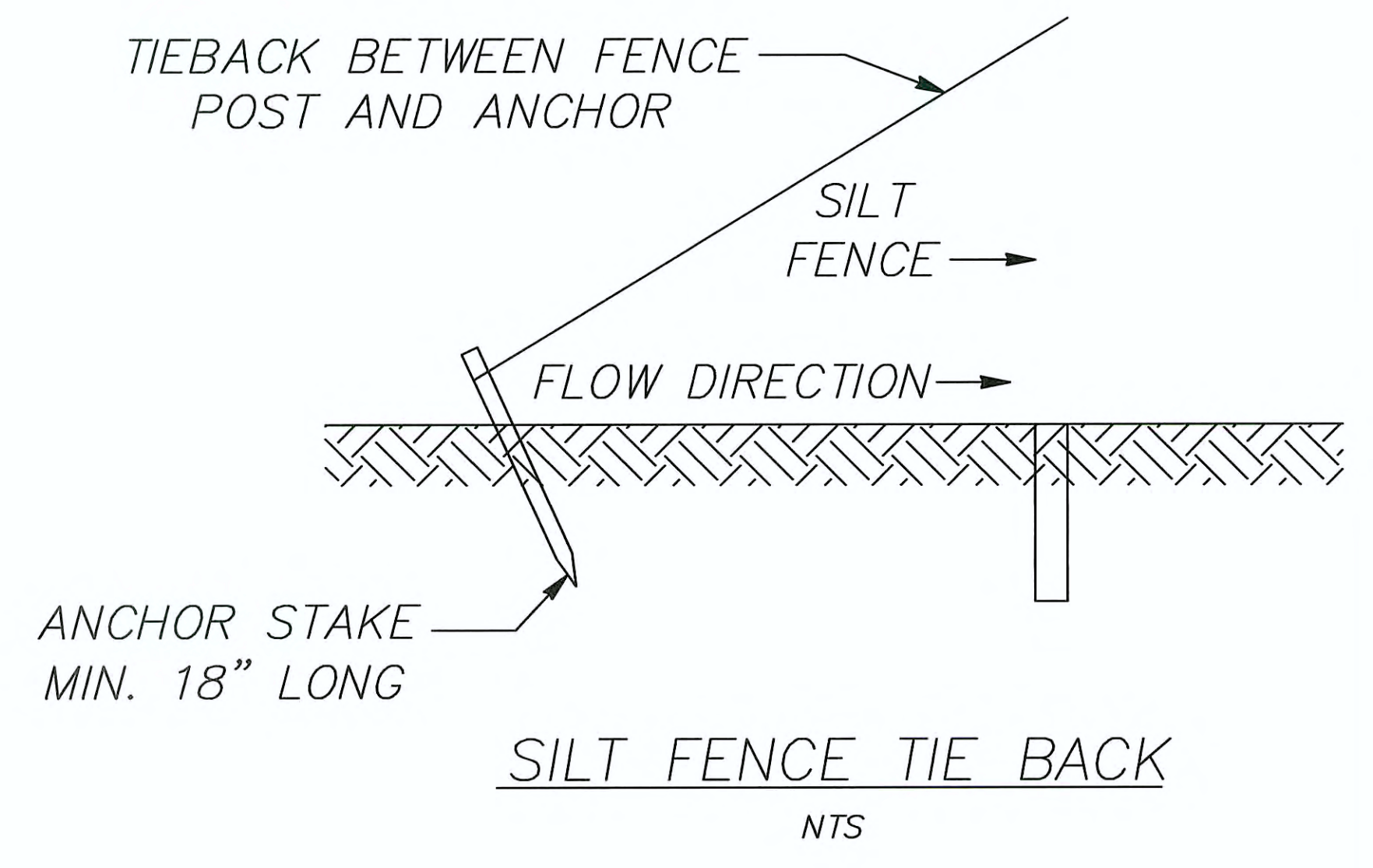


DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

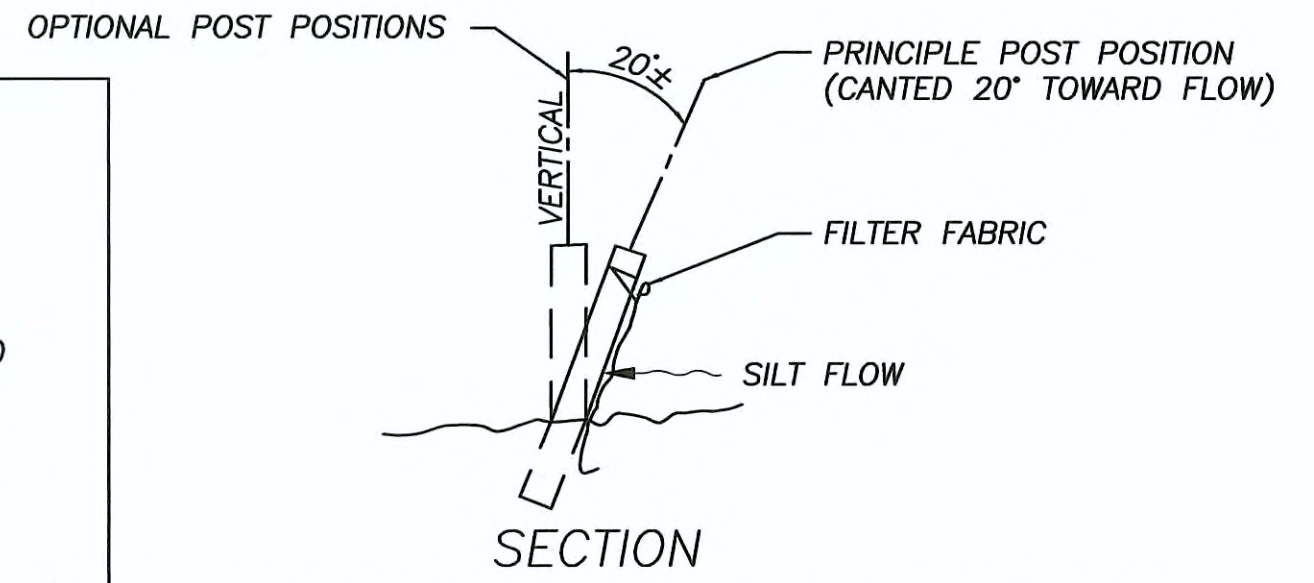
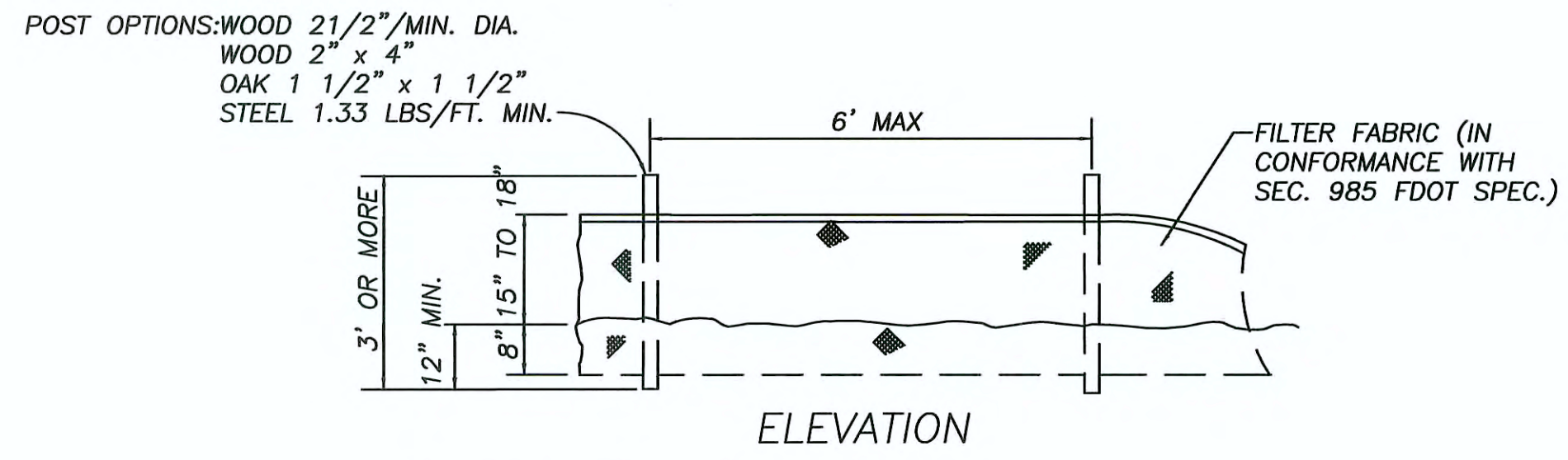


NOTE: SPACING FOR TYPE IV AND TYPE V FENCES TO BE IN ACCORDANCE WITH DITCH INSTALLATIONS AT DRAINAGE

SILT FENCE APPLICATIONS

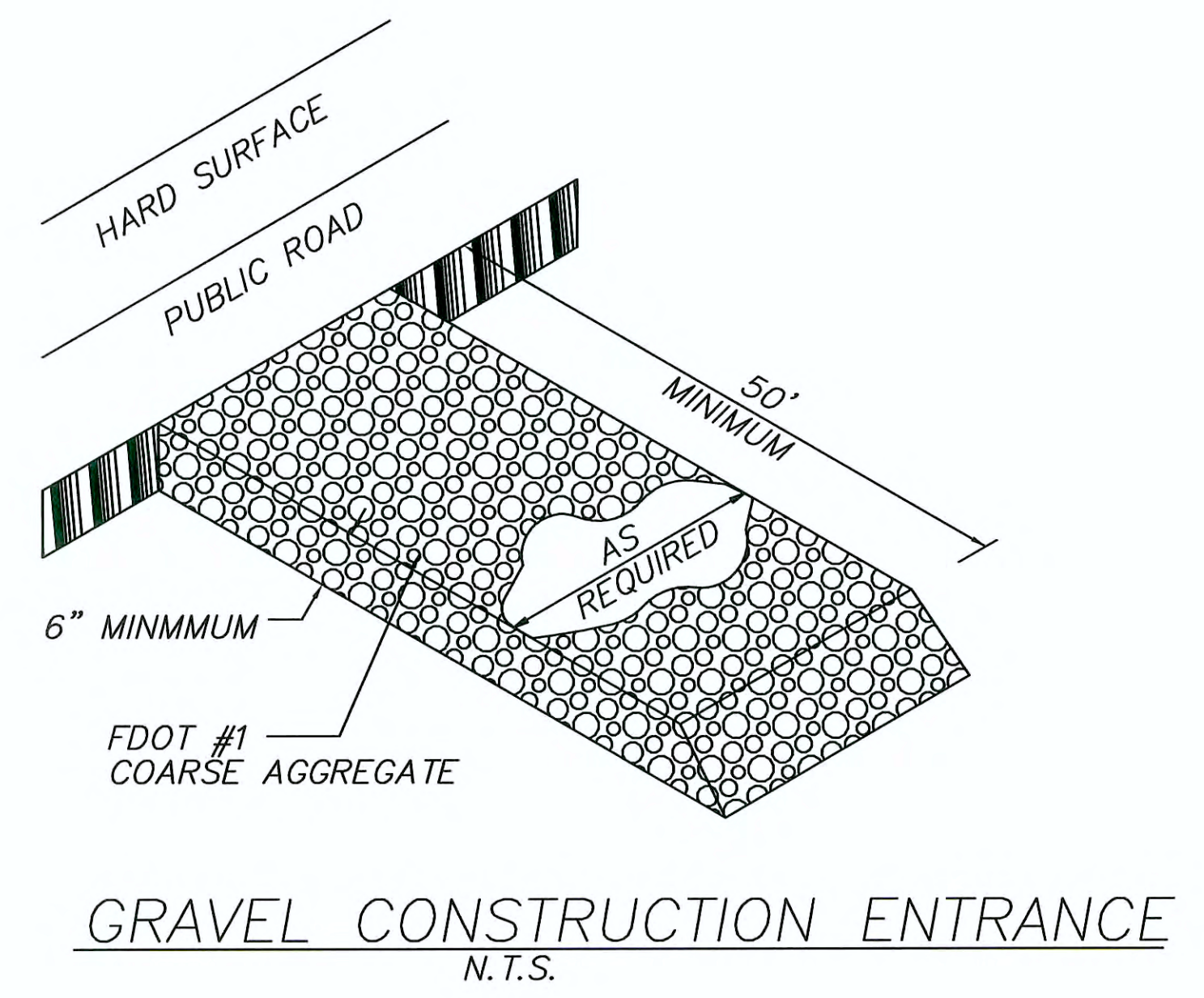


NOTE: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (LF)
TYPE IV SILT FENCE



NOTE: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (LF)
TYPE III SILT FENCE

- NOTE:**
1. THE USE OF STRAW BALE BARRIERS AND SILT FENCE SHALL BE INCREASED AS NECESSARY TO CONTAIN EROSION.
 2. CONTRACTOR SHALL INSTALL SILT FENCE AND HAY OR STRAW BALE BARRIERS PER FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX 102 OR APPROVED EQUIVALENT PRIOR TO ANY SITE ACTIVITIES.
 3. REFER TO THE "PAVING, GRADING AND DRAINAGE PLAN" AND "DEMOLITION PLAN" FOR ADDITIONAL INFORMATION.



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ISSUED FOR BIDDING	Description
JAW	App. By
RLH	Ck. By
DCM	Dr. By
1 02/14	Date
No.	No.

(RECLAIMED WATER)
 FEB 20 2014
 Jeffrey A. Wilson, P.E.
 License No. 4732

CITY OF NAPLES, FLORIDA
 RECLAIMED WATER DISTRIBUTION SYSTEM EXPANSION
 OPTION T-8

BEST MANAGEMENT PRACTICES DETAILS

SCALE: RWM TB	AS NOTED	CONTRACT: 2120311	DR. BY: JDN	CHK. BY: APP
GAUD NO. 1	FILE NO. 1			