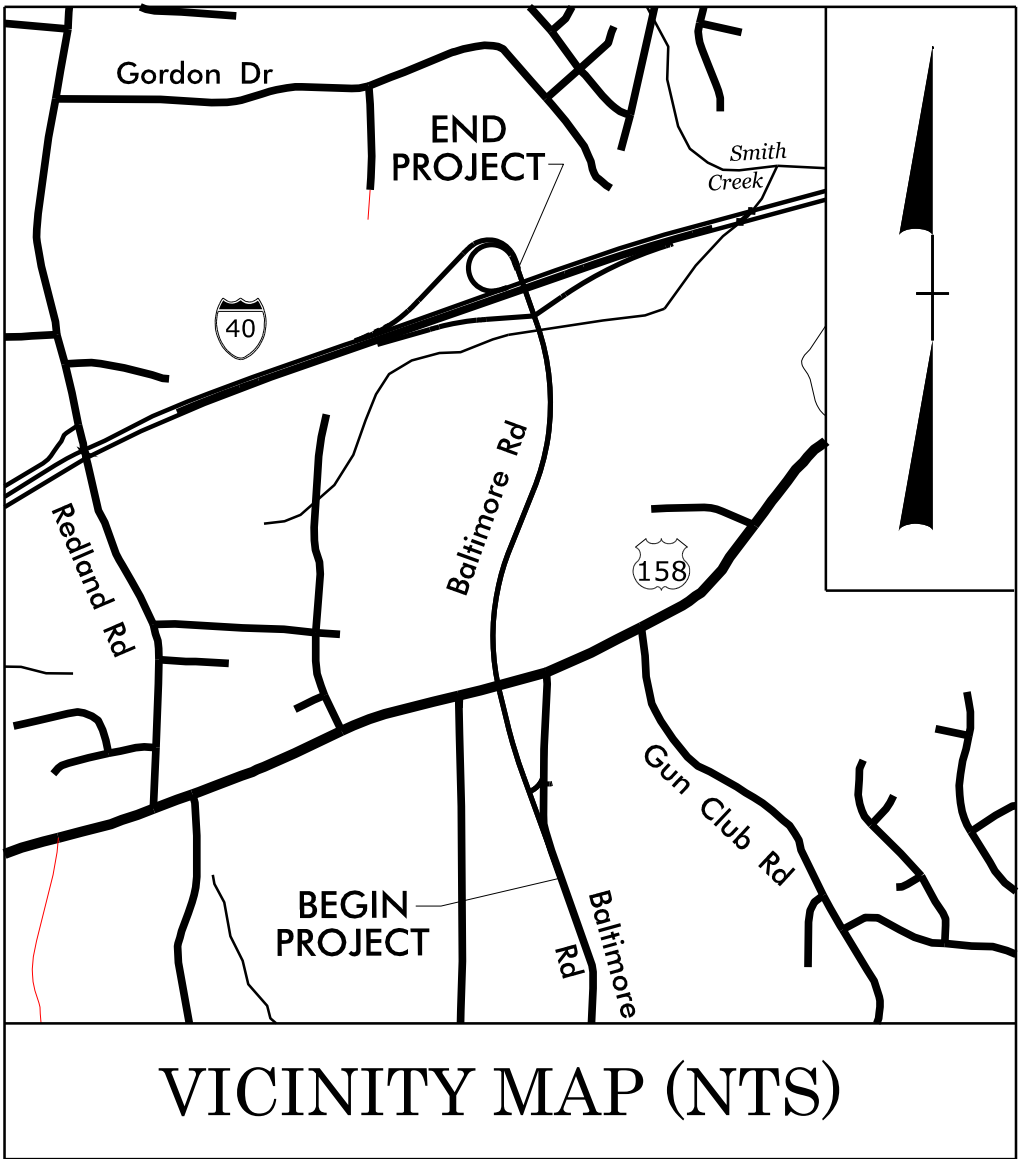


TIP PROJECT: U-6187

CONTRACT:

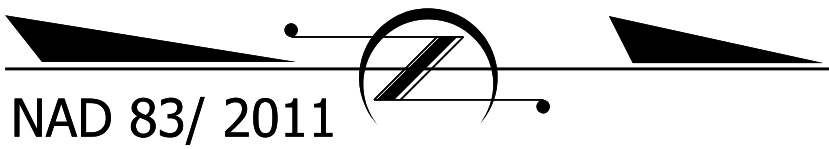
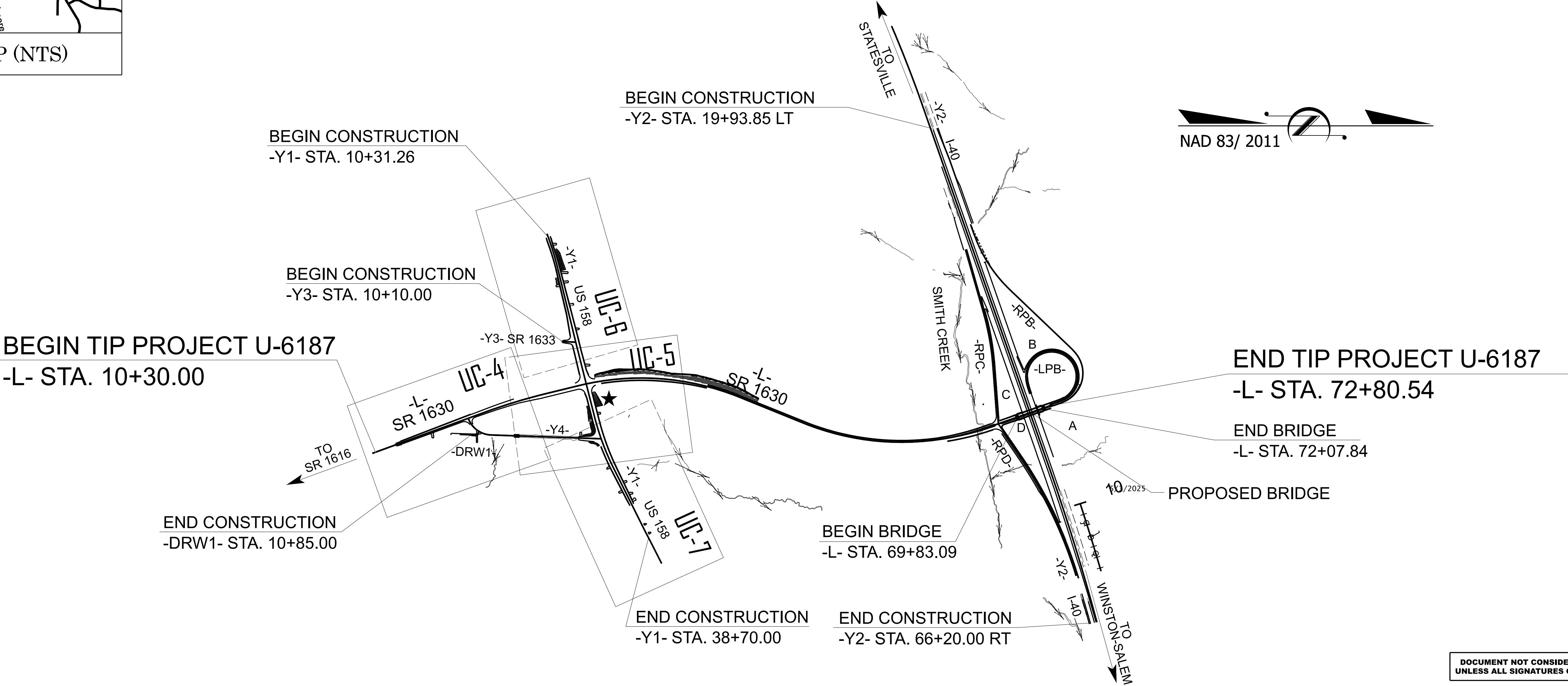


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
DAVIE COUNTY

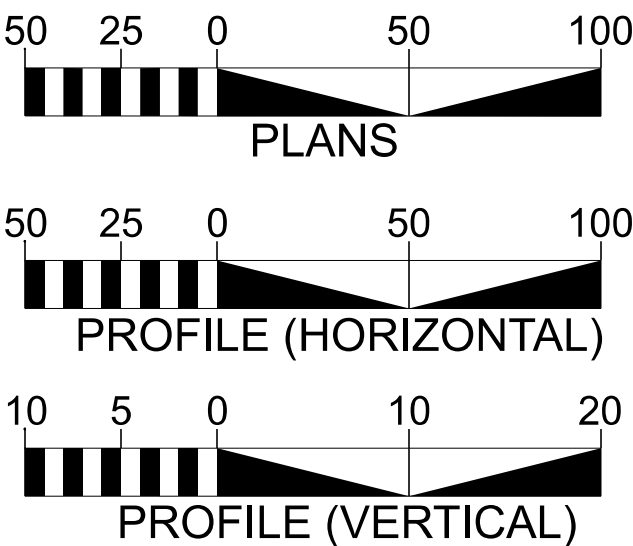
LOCATION: REALIGNMENT AND EXTENSION OF SR 1630
(BALTIMORE ROAD) FROM SOUTH OF US 158
TO A NEW INTERCHANGE AT I-40
TYPE OF WORK: WATER AND SEWER RELOCATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-6187	UC-1	14



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



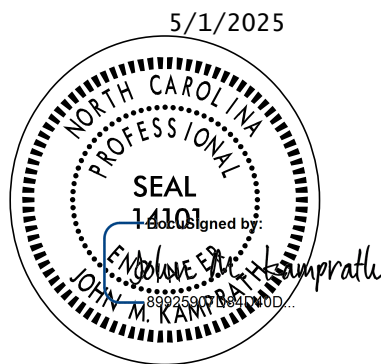
INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	UTILITY CONSTRUCTION NOTES
UC-3A THRU UC-3C	UTILITY CONSTRUCTION DETAILS
UC-4 THRU UC-7	UTILITY CONSTRUCTION SHEETS
UC-8 THRU UC-11	UTILITY PROFILE SHEETS

WATER AND SEWER OWNERS ON PROJECT

- (A) WATER - DAVIE COUNTY
(B) SANITARY SEWER - DAVIE COUNTY

SEAL



PREPARED IN THE OFFICE OF
VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
(919) 829-0328

JOHN M. KAMPRA TH CONSULTANT CONTACT #1
BRANDON BARHAM CONSULTANT CONTACT #2
JONATHAN SOIKA CONSULTANT CONTACT #3



DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

JOSHUA A. MCMAHANDIVISION UTILITY ENGINEER
LOU PORTER ASST. DIVISION UTILITY ENG.
XXXX UTILITIES AREA COORDINATOR
XXXX UTILITIES COORDINATOR

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	12" WL
11¼ Degree Bend	
22½ Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	REM FH
Water Meter	
Relocate Water Meter	
Remove Water Meter	REM WM
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

Gravity Sewer Line 12" SS

(Sized as Shown)

Force Main Sewer Line 12" FSS

(Sized as Shown)

Manhole •

(Sized per Note)

Sewer Pump Station PS(SS)

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	 PROP. O/H POW. LINES
Trenchless Installation	 12" TL. INSTALL
Encasement by Open Cut	 24" ENCASEMENT BY OC
Encasement	 24" ENCASEMENT

Thrust Block		
Air Release Valve		
Utility Vault		
Concrete Pier		
Steel Pier		
Plan Note		NOTE
Pay Item Note		

EXISTING UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

Underground Power Line	P
*Underground Telephone Cable	T
*Underground Telephone Conduit	TC
*Underground Fiber Optics Telephone Cable	T FO
*Underground TV Cable	TV
*Underground Fiber Optics TV Cable	TV FO
*Underground Gas Pipeline	G
Aboveground Gas Pipeline	A/G Gas
*Underground Water Line	W
Aboveground Water Line	A/G Water
*Underground Gravity Sanitary Sewer Line	SS
Aboveground Gravity Sanitary Sewer Line	A/G Sanitary Sewer
*Underground SS Forced Main Line	FSS
Underground Unknown Utility Line	UNK.
SUE Test Hole	⚙️
Water Meter	⌚
Water Valve	⊗
Fire Hydrant	⚡
Sanitary Sewer Cleanout	Ⓢ

*For Existing Utilities

Utility Line Drawn from Record
(Type as Shown)
Designated Utility Line
(Type as Shown)

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.
2. ALL WATER AND SANITARY SEWER FACILITIES ON THE PROJECT BELONG TO DAVIE COUNTY.
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. DAVIE COUNTY OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND DAVIE COUNTY ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN DAVIE COUNTY AND THE CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND DAVIE COUNTY'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND DAVIE COUNTY TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP THE COUNTY'S REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH DAVIE COUNTY'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

1. ALL WATER LINES AND FORCE MAINS SHALL BE INSTALLED WITH A MINIMUM OF 3.0' OF COVER.
2. MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.
3. VERIFY ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IF CONFLICTS ARE ENCOUNTERED.
4. CONTRACTOR SHALL COORDINATE UTILITY RELOCATION OR ABANDONMENT WITH LOCAL UTILITY COMPANIES AS REQUIRED.
5. WATER LINES SHALL BE AT LEAST 10 FEET Laterally FROM EXISTING OR PROPOSED SEWERS. WHERE LOCAL CONDITIONS PREVENT A SEPARATION OF 10 FEET, THE WATER LINE MAY BE LAID CLOSER PROVIDED THAT THE ELEVATION OF THE BOTTOM OF THE WATER LINE IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER WITH A HORIZONTAL SEPARATION OF 3 FEET.
6. ALL GATE VALVES SHALL BE APPROVED BY THE DAVIE COUNTY PUBLIC UTILITIES DEPARTMENT PRIOR TO INSTALLATION ON THIS PROJECT.
7. EXISTING TOPOGRAPHIC SURVEY AND SUE BY OTHERS. CONTRACTOR TO VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR TO CONFIRM FINAL CONNECTION POINTS IN THE FIELD.
8. EXISTING WATER LINE DEPTHS SHOWN ARE APPROXIMATE BASED ON BEST AVAILABLE INFORMATION. ACTUAL DEPTHS ARE TO BE CONFIRMED IN THE FIELD.
9. ALL CONNECTIONS TO EXISTING WATER LINES AND FORCE MAINS SHALL BE MADE WITH A THRUST COLLAR IN ACCORDANCE WITH THE DETAILS OF THESE PLANS.
10. FOR ALL NEW PRESSURE LINES, INSTALL A TEMPORARY CAP WITH A 2" 90 DEGREE BEND AND A 2" VERTICAL PIPE AT EACH END FOR FILLING, FLUSHING, DISINFECTION, AND PRESSURE TESTING. AFTER PASSING ALL TESTS, CONNECT THE NEW LINE INTO THE EXISTING LINE.

UTILITY CONSTRUCTION

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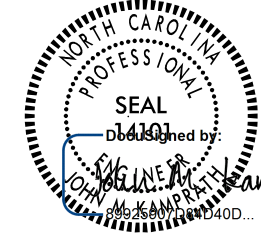
DAVIE COUNTY PUBLIC UTILITIES STANDARD DETAILS

- 1.04 TRENCH BACKFILL FOR WATER
- 1.05 PIPE CONSTRUCTION NOTES
- 1.06 ENCASEMENT PIPE & SPACER DETAIL
- 1.08 CAP & TEE THRUST BLOCKS
- 1.09 COMPRESSION THRUST BLOCKS AT BENDS
- 1.10 TENSION THRUST BLOCKS ANCHORAGE AT BENDS
- 2.01 WATER MAIN GENERAL NOTES & SUPPLEMENTAL SPECIFICATIONS
- 2.07 STD. FIRE HYDRANT W/ HYD. TEE
- 2.08 STD. 'U' CONNECTION
- 2.21 TYP. 2" WATER CONNECTION
- 2.24 BLOW-OFF HYDRANT AT 2" END
- 3.01 3/4" WATER SERVICE
- 3.03 1.5" WATER SERVICE
- 4.03 1.5" REDUCED PRESSURE BACKFLOW PREVENTER

PRESSURE REGULATING VALVE WITH BYPASS
AIR RELIEF/VACUUM VALVE
2" FM STRAIGHT TAP CONNECTION

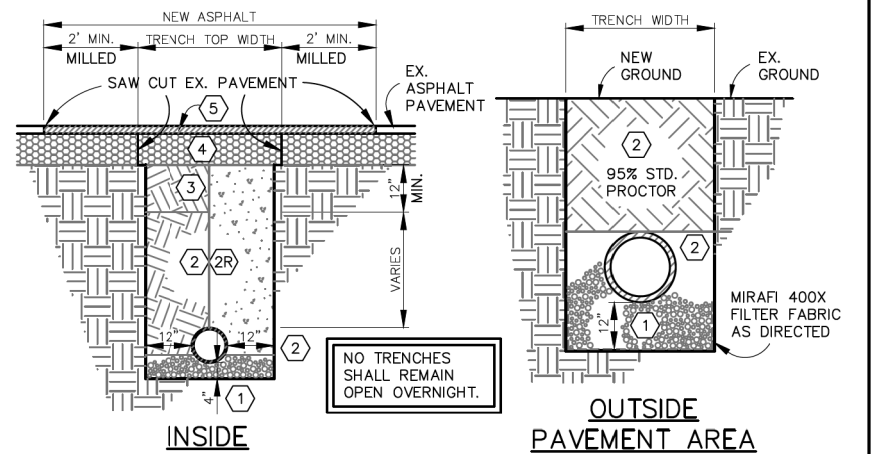
PROJECT REFERENCE NO.		SHEET NO.
U-6187		UC-3
DESIGNED BY: JMK	5/1/2025 	UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY: JMK		
CHECKED BY:		
APPROVED BY: JMK		
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		

PROJECT TYPICAL DETAILS

PROJECT REFERENCE NO.		SHEET NO.
U-6187		UC-3A
DESIGNED BY: JMK	5/1/2025	
DRAWN BY: JMK		
CHECKED BY:		
APPROVED BY: JMK		
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

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INSIDE PAVEMENT AREA

CONTRACTOR SHALL COMPLY WITH ALL OSHA REGULATIONS FOR TRENCH SHORING AND SLOPING. A "COMPETENT PERSON" AS DEFINED BY OSHA SHALL BE ON SITE AT ALL TIMES WHEN ANY WORKER IS IN A TRENCH.

SEE ENLIGHTENED SOIL MATERIAL CLASSIFICATIONS TABLE FOR SOIL CLASSES. ADD WATER TO EACH LAYER AS NEEDED OR DIRECTED FOR COMPACTION AND MECHANICAL JOINT THOROUGHLY.

KEYNOTE FOR BEDDING PIPE

1. PROVIDE CLASS I, II, III OR IV SOIL BACKFILL. DIG BELL HOLES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

A. PLACE PIPE ON COMPETENT SOIL BOTTOM.

B. FOR NON-COMPETENT TRENCH BOTTOM, PLACE PIPE ON 12" BEDDING OVER MIRAP 400X FILTER FABRIC AS DIRECTED BY ENGINEER.

OUTSIDE PAVEMENT AREA

KEYNOTES FOR TRENCH BACKFILL

2. PROVIDE CLASS I, II, III OR IV SOIL BACKFILL. COMPACT SOIL IN 6" LAYERS TO 90% STANDARD PROCTOR DENSITY IN ALL PAVED AND SHOULDER AREAS AND TO 90% STANDARD PROCTOR DENSITY FOR ALL OTHER AREAS.

3. PROVIDE FLOWABLE FILL FOR HEAVY DUTY ASPHALT REPAIR. SEE PAVING DESIGN TABLE FOR SUBGRADE.

4. PROVIDE CLASS I, II, III OR IV SOIL BACKFILL. COMPACT SOIL IN 6" LAYERS TO 90% STANDARD PROCTOR DENSITY FOR TOP 1 FT OF SUBGRADE.

5. SEE PAVING DESIGN TABLE FOR PAVING COURSE.

6. SEE PAVING DESIGN TABLE FOR SURFACE COURSE.

TRENCH BACKFILL

SHEET: 1 OF 1 05/20/20 058

1.04

TRENCH BACKFILL FOR WATER

DAVE COUNTY PUBLIC UTILITIES
05060000/05060000

PIPE CONSTRUCTION NOTES:

- FITTINGS SHALL BE CLASS 51 DUCTILE IRON MECHANICAL JOINTS WITH AN APPROPRIATE TRANSITION GASKET TO PVC WHERE APPLICABLE.
- WHEN CONNECTING DUCTILE IRON PIPE TO PVC PIPE, USE AN APPROPRIATE TRANSITION GASKETS TO PVC BELL END AND A SLEEVE WITH APPROPRIATE GASKETS AT THE PLAIN END.
- DEFLECTION AT THE JOINTS SHALL NOT EXCEED 14" FOR LENGTH OF PIPE OR 80% OF MANUFACTURER'S RECOMMENDATION, WHICHEVER IS LESS.
- CASING PIPES SHALL BE BORED UNLESS OTHERWISE NOTED. SEE CASING PIPE SPACERS DETAIL.
- FOR JURISDICTIONAL DRAINAGE CROSSINGS, USE PIPE CROSSING STREAM INSTALLATION DETAIL AND JURISDICTIONAL STREAM CROSSING DETAIL.
- FOR NON-JURISDICTIONAL DRAINAGE CROSSING, USE PIPE CROSSING STREAM INSTALLATION DETAIL AND DITCH CROSSING DETAIL.
- PROVIDE JOINT RESTRAINT AT ALL BENDS, TEES AND CAPS. JOINT RESTRAINT SHALL BE A COMBINATION OF CONCRETE THRUST BLOCKING ACCORDING TO DETAILS SHOWN AND MECHANICAL JOINT RESTRAINT AS APPROVED BY THE ENGINEER. MECHANICAL JOINT RESTRAINTS SHALL BE PLACED AT MULTIPLE LOCATIONS ON EACH SIDE OF FITTINGS ACCORDING TO MANUFACTURER'S RECOMMENDATION.
- MECHANICAL JOINT RESTRAINT SHALL BE:
A. FOR DI PIPE TO M.J. CLOW MJ FIELD LOK, MEGLUG #1100, MIDCO #4 RESTRAINT, SMITH-BLAIR #981 OR STAR PIPE #3000, #3000S.
B. FOR C900 PIPE TO M.J. CLOW MJ FIELD LOK, MEGLUG #2000PV, MIDCO #4 RESTRAINT, SMITH-BLAIR #981 OR STAR PIPE #4000, #1000C, #1200.
C. FOR SDR-21 PIPE TO M.J. MEGLUG #2000PV MIDCO #4 RESTRAINT, SMITH-BLAIR #981 OR STAR PIPE #4000, #1000S. NOT APPLICABLE TO NEW PROJECTS.
D. FOR PIPE BELL/SPOUT RESTRAINT: SMITH-BLAIR #932, STAR PIPE #4100P, #1100.
- CONCRETE THRUST BLOCK RESTRAINT AND SUBSURFACE SUPPORT SHALL BE 4000 PSI CLASS 'B' CONCRETE WITH 5% AIR ENTRAINMENT, 0.45 WATER/CEMENT RATIO AND PLACED AT A SLUMP NO GREATER THAN 3".
- CONTRACTOR SHALL SUBMIT TO ENGINEER THE MODEL MANUFACTURER AND TYPICAL PLACEMENT OF RESTRAINT SYSTEM TO BE USED ON PROJECT.

SHEET: 1 OF 1 05/20/20 058

1.05

PIPE CONSTRUCTION NOTES

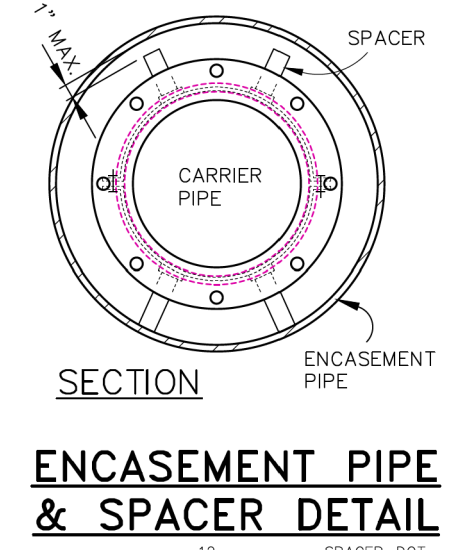
DAVE COUNTY PUBLIC UTILITIES
05060000/05060000

MATERIAL:

- ENCASEMENT PIPE: STEEL PIPE, ASTM A139 GRADE B WITH DIAMETER AND WALL THICKNESS PER TABLE OR NOTE. SEE NDOT ENCASMENT PROVISIONS FOR ADDITIONAL REQUIREMENTS.
- CARRIER PIPE: DUCTILE IRON MJ RESTRAINT.
- SPACERS: CASCADE MFG CCS-ER. PROVIDE FOR RADIAL RESTRAINT OF CARRIER PIPE INSIDE ENCASEMENT PIPE.
- END SEALS: CASCADE MFG MODEL CCS.

INSTALLATION:

- INSTALL (3)THREE SPACERS PER JOINT OF DUCTILE IRON PIPE: (1)ONE AT EACH END AND (1)ONE IN THE MIDDLE OF PIPE.



ENCASEMENT PIPE & SPACER DETAIL

SHEET: 1 OF 1 05/20/20 058

1.06

ENCASEMENT PIPE & SPACER DETAIL

DAVE COUNTY PUBLIC UTILITIES
05060000/05060000

CONCRETE DIMENSIONS

DIM	2'-4"	6"	8"	10"	12"	16"
A	19"	19"	24"	28"	35"	44"
B	15"	15"	18"	21"	25"	33"
C	6"	6"	8"	8"	10"	12"

COVER FITTING WITH PLASTIC BEFORE PLACING CONCRETE

PLAN

SECTION A-A

CAP THRUST BLOCK

CONCRETE DIMENSIONS

DIM	2'-4"	6"	8"	10"	12"	16"
A	6"	6"	8"	12"	12"	16"
B	6"	8"	10"	12"	15"	20"
C	8"	8"	9"	10"	12"	14"
E	6"	6"	8"	8"	8"	10"

COVER FITTING WITH PLASTIC BEFORE PLACING CONCRETE

PLAN

SECTION A-A

TEE THRUST BLOCK

SHEET: 1 OF 1 05/20/20 058

1.08

CAP & TEE THRUST BLOCKS

DAVE COUNTY PUBLIC UTILITIES
05060000/05060000

COVER FITTING WITH PLASTIC BEFORE PLACING CONCRETE

PLAN

ELEVATION

SECTION A-A

SECTION B-B

HORIZONTAL

VERTICAL

COMPRESSION THRUST BLOCKS AT BENDS

CONCRETE DIMENSIONS

BEND DEG	DIM	2'-4"	6"	8"	10"	12"	16"
1/2	A	6"	6"	8"	10"	12"	16"
11/4	B	7"	7"	8"	9"	10"	12"
	C	7"	7"	7"	8"	8"	9"
1/2	A	9"	9"	12"	18"	21"	27"
22 1/2	B	7"	7"	7"	8"	10"	12"
	C	8"	8"	9"	10"	11"	14"
1/2	A	15"	15"	20"	25"	30"	40"
45	B	7"	7"	8"	9"	11"	15"
	C	8"	8"	9"	10"	11"	15"
1/2	A	18"	18"	24"	31"	36"	49"
90	B	8"	8"	12"	14"	16"	21"
	C	9"	9"	10"	11"	12"	16"

SHEET: 1 OF 1 05/20/20 058

1.09

COMPRESSION THRUST BLOCKS AT BENDS

DAVE COUNTY PUBLIC UTILITIES
05060000/05060000

REBARS, SEE NOTE

ELEVATION

REBARS, SEE NOTE

PLAN

TENSION THRUST BLOCKS ANCHORAGE AT BENDS

CONCRETE DIMENSIONS

BEND DEG	DIM	2'-4"	6"	8"	10"	12"	16"
1/2	A	16"	18"	18"	17"	15"	42"
11/4	B	15"	15"	21"	15"	24"	24"
	C	21"	24"	30"	33"	36"	48"
1/2	A	20"	24"	40"	44"	48"	52"
22 1/2	B	21"	21"	27"	30"	30"	30"
	C	27"	30"	32"	46"	48"	66"
1/2	A	24"	30"	36"	48"	54"	62"
45	B	30"	30"	33"	36"	42"	48"
	C	30"	36"	48"	54"	57"	78"

NOTES:

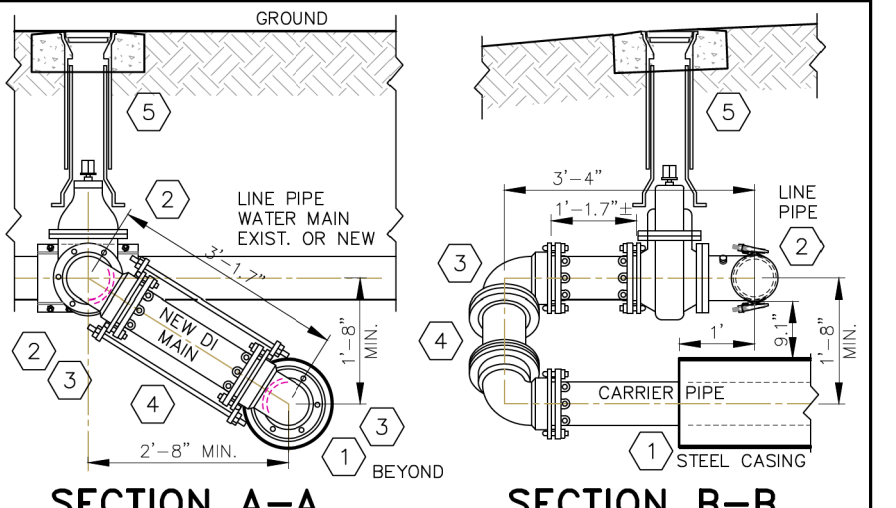
- EMBED 3-#6 REINFORCING STEEL MIN. OF 20" STRAIGHT OR 10" W/ 180° STD. HOOK
- COVER FITTING WITH PLASTIC BEFORE PLACING CONCRETE

SHEET: 1 OF 1 05/20/20 058

1.10

TENSION THRUST BLOCKS ANCHORAGE AT BENDS

DAVE COUNTY PUBLIC UTILITIES
05060000/05060000



SECTION A-A

SECTION B-B

PLAN

STD. 'U' CONNECTION

KEYNOTES:

- STEEL CASING PIPE
- ROMAC SST TAPPING SLEEVE/TEE, GATE VALVE & VALVE BOX: SEE PLAN FOR SIZE
- UPPER & LOWER 90° BEND MJ RESTRAINED
- TWO(2) 3/4" SS THREADED RODS WITH SS NUTS TYP. EA. SPOOL PIECE
- VALVE BOX & COLLAR/PAD, SEE DTL 2.31

NOTE: ALL FITTINGS SHALL BE MJ RESTRAINED.

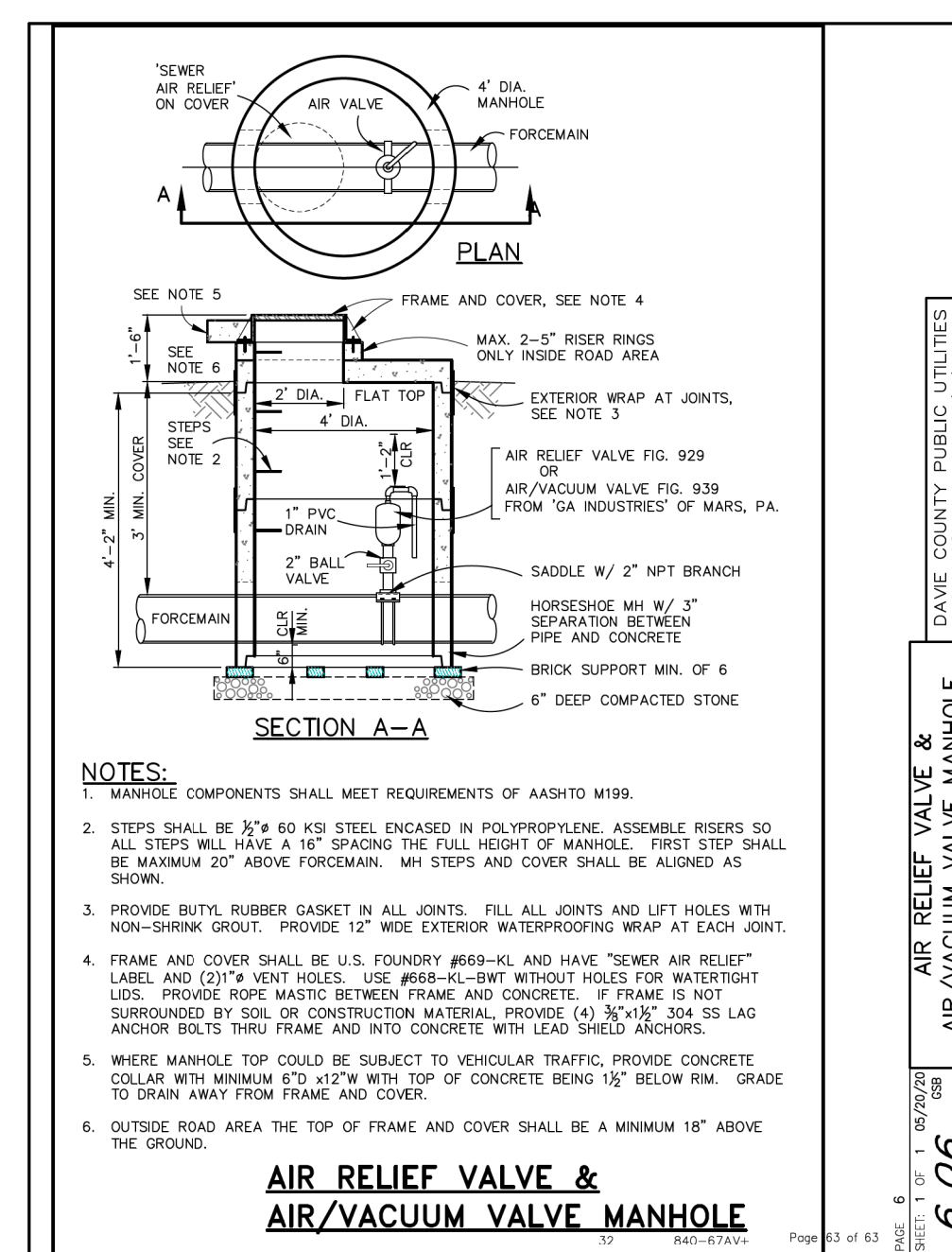
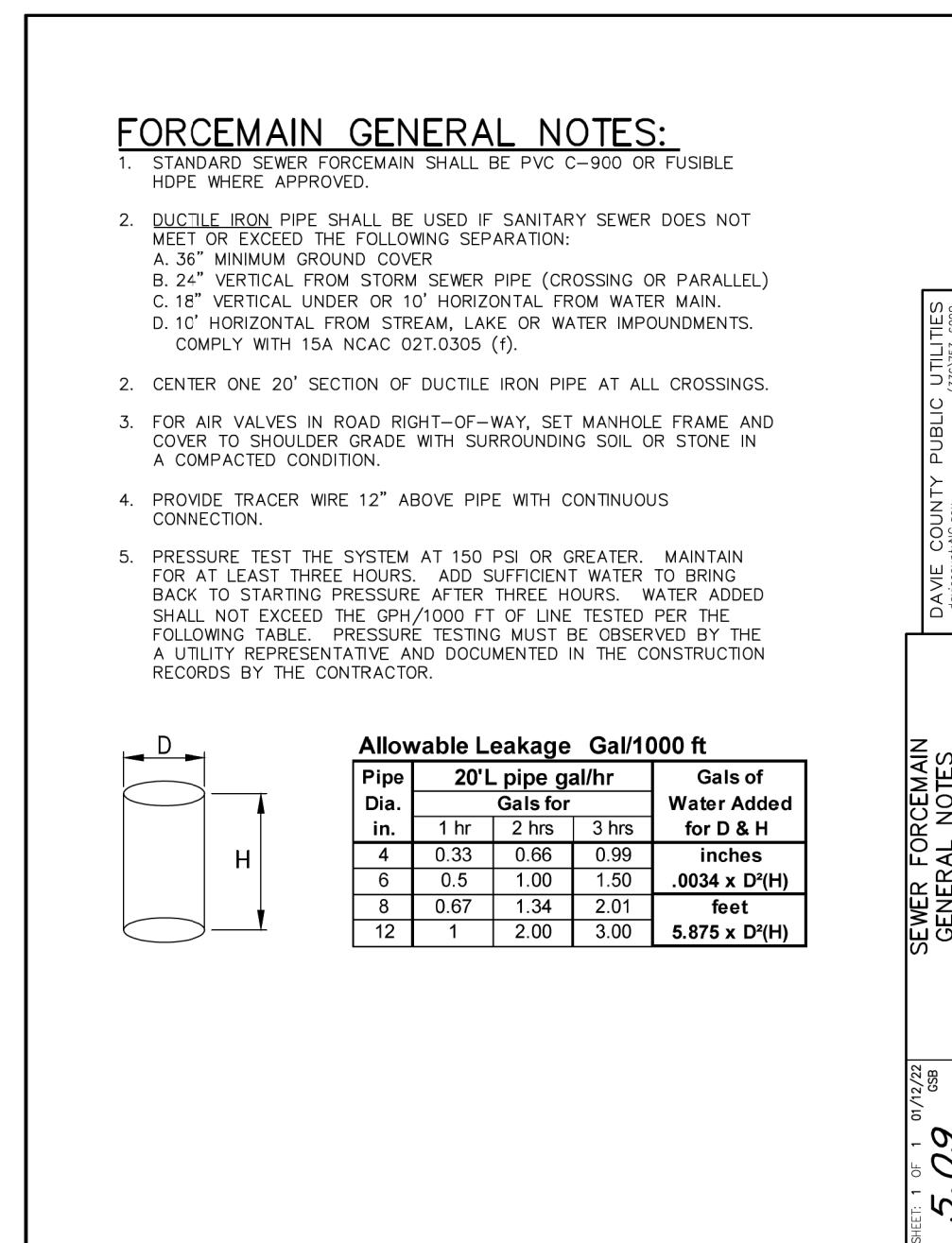
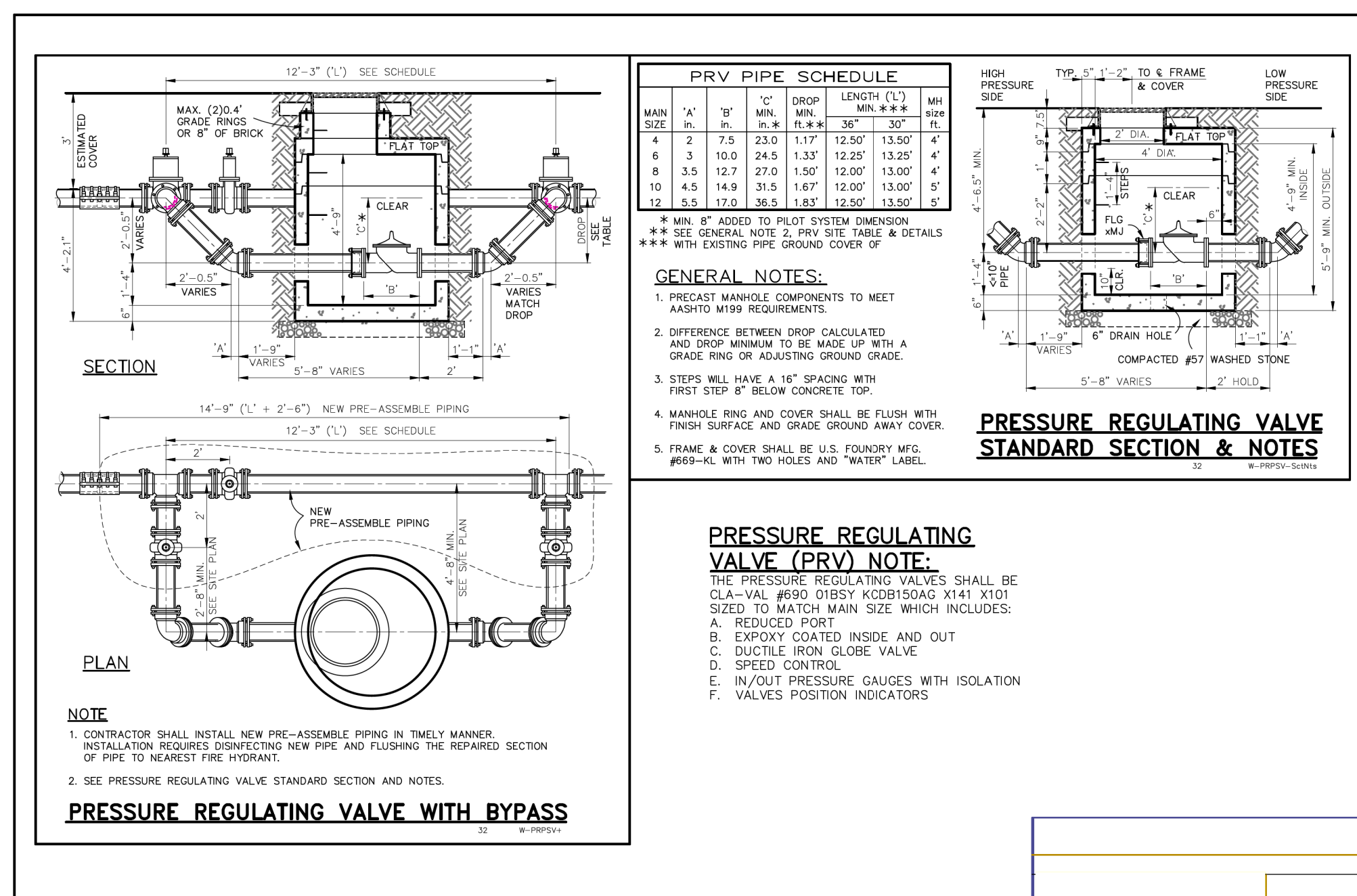
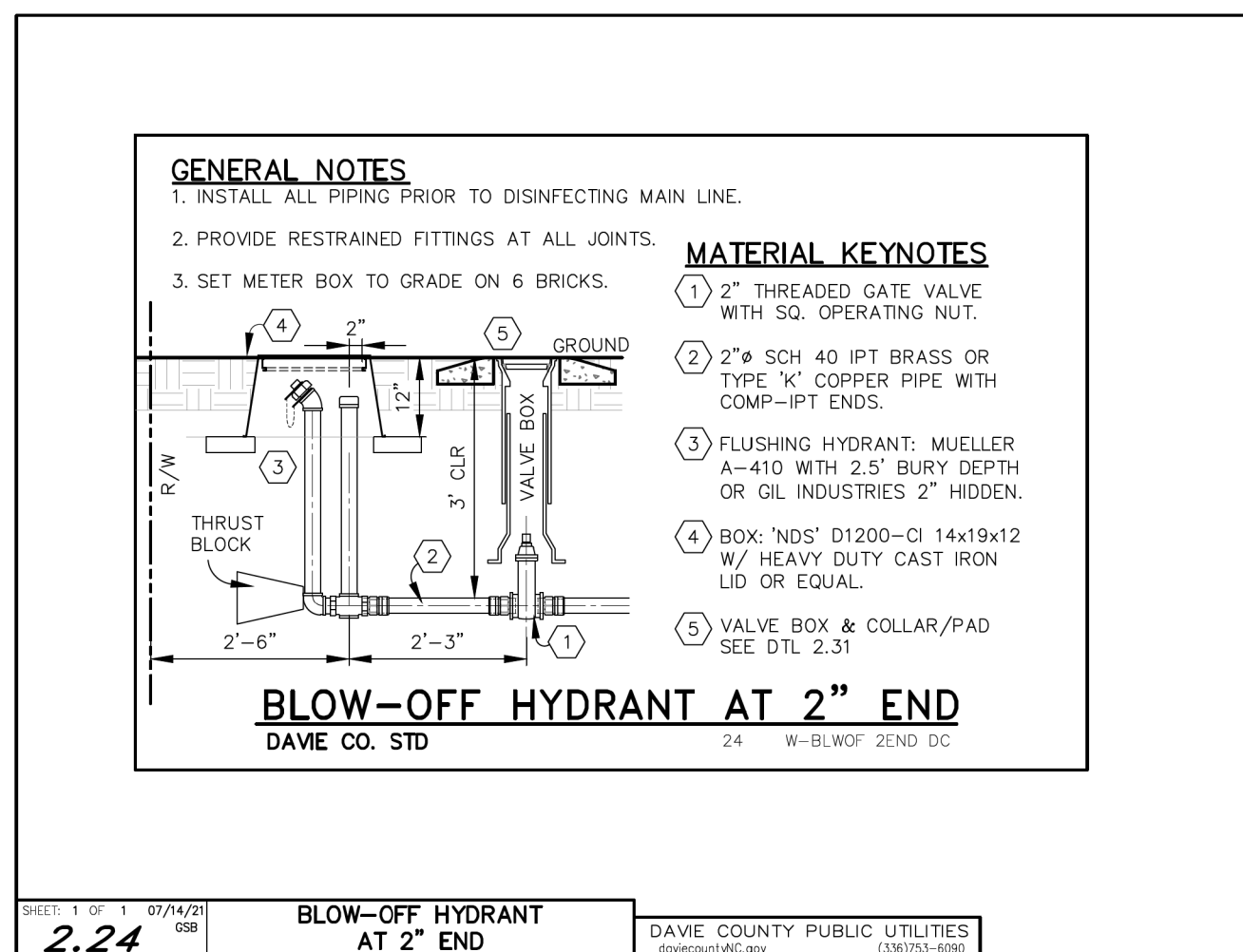
SHEET: 1 OF 1 05/20/20 058

2.08

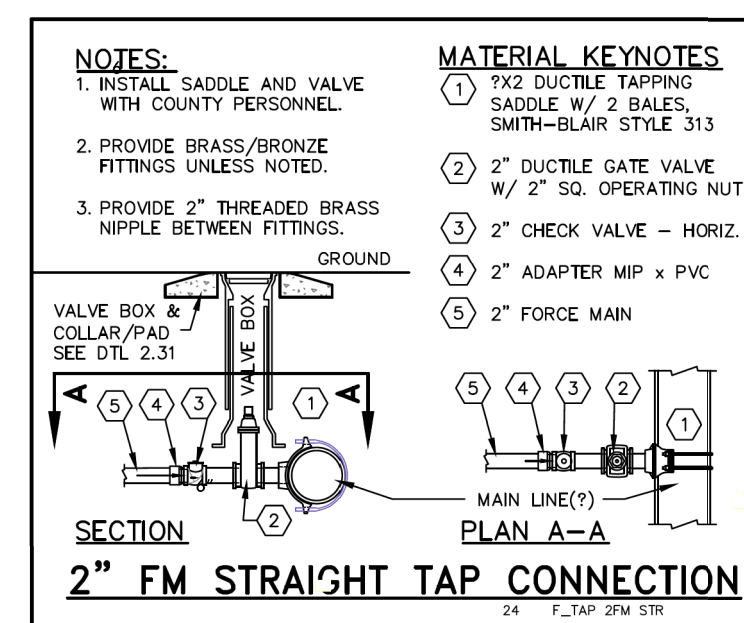
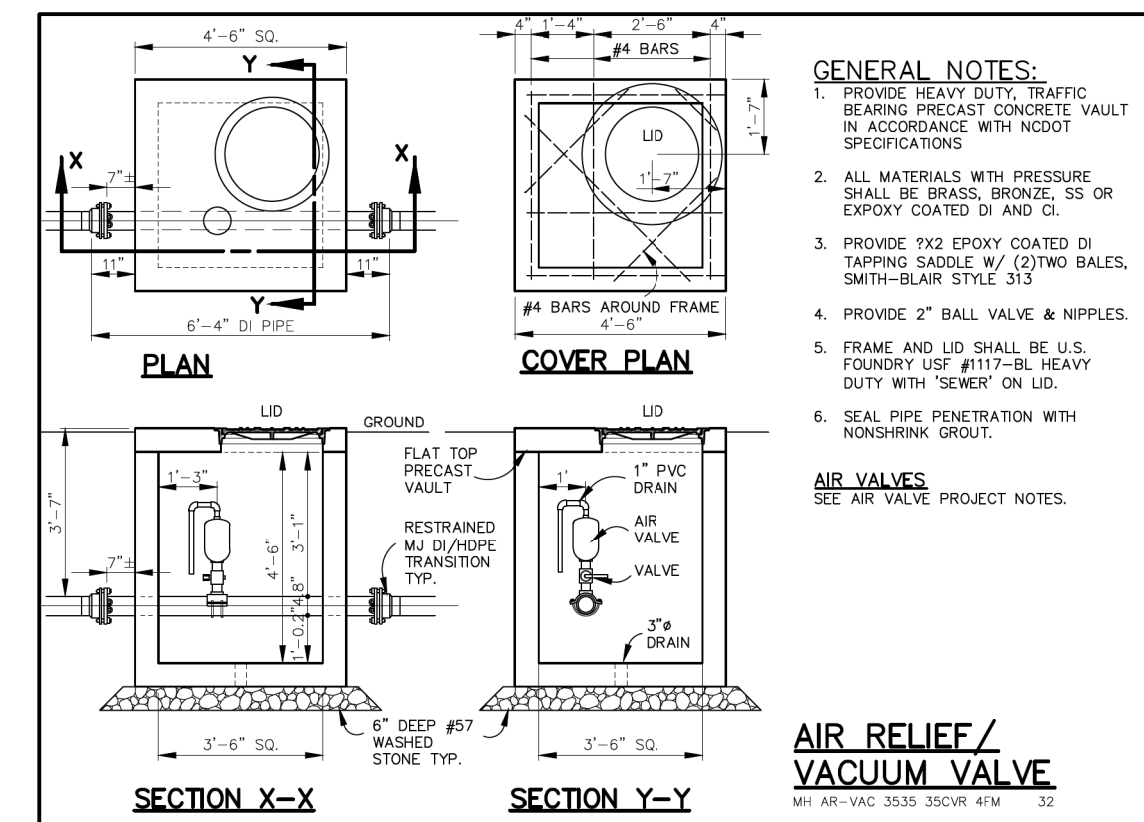
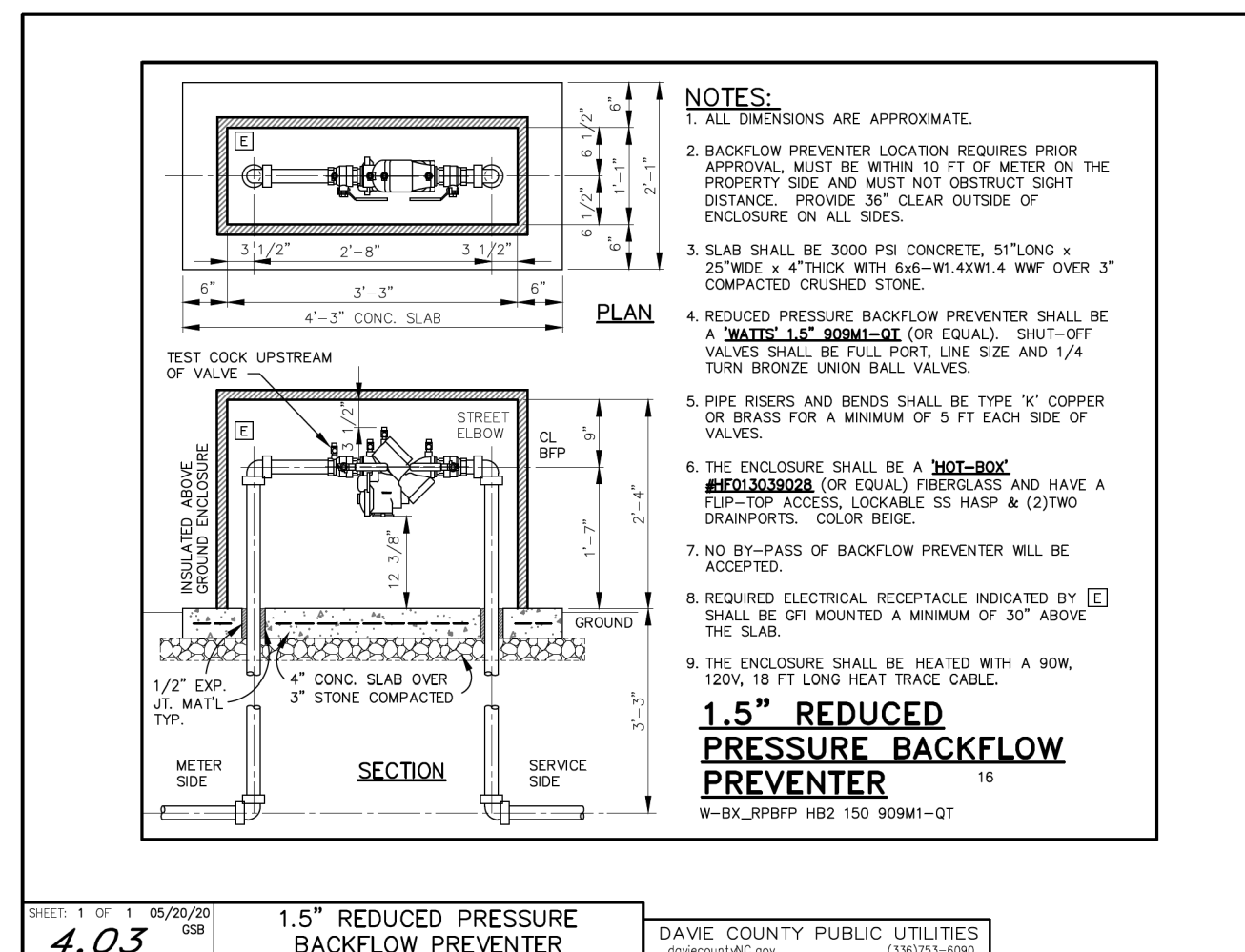
STD. 'U' CONNECTION

DAVE COUNTY PUBLIC UTILITIES
05060000/05060000

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DOCUMENT NOT CONSIDERED FINAL
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UTILITY CONSTRUCTION

THIS SHEET CORRESPONDS TO
ROADWAY SHEET 4



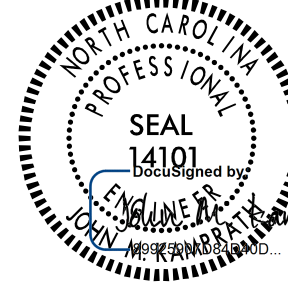
U-6187

3RD1 UC-4

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIE COUNTY

ROADWAY DESIGN UNIT

6/3/2025



UTILITY CONSTRUCTION
PLANS ONLY

PREPARED BY



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REVISIONS

BEGIN CONSTRUCTION
CONNECT TO EX. 4" PVC FORCE MAIN
WITH 22.5 DEG DI BEND
FM1 STA. 0+00.00
L STA. 13+62.68, 29.6' LT.

4" X 22 1/2° DI BEND
FM1 STA. 0+23.68
L STA. 13+84.81, 38.0' LT.

INSTALL 562 LF OF 4"
FORCE MAIN SEWER

INSTALL BY OPEN CUT
86 LF 12" ENCASEMENT PIPE
0.250" MINIMUM WALL THICKNESS

1" COMBINATION AIR
VALVE W/ MANHOLE
SEE DETAIL 6.06,
SHT. UC-3B
FM1 STA. 0+76.68
L STA. 14+37.81, 38.0' LT.

4" X 90° DI BEND
FM1 STA. 3+88.88
L STA. 17+50.00, 38.0' LT.

-L- POT 19+10.82=
-Y4- POB 10+00.00

ABANDON 429 LF OF
4" UTILITY PIPE

4" X 22 1/2° DI BEND
FM1 STA. 5+08.70
L STA. 17+77.05, 70.6' RT.

4" X 45° DI BEND
FM1 STA. 4+70.47
L STA. 17+50.00, 43.6' RT.

END CONSTRUCTION
CONNECT TO EX. 4" PVC
FORCE MAIN
FM1 STA. 5+61.60
L STA. 18+25.91, 90.9' RT.

BEGIN CONSTRUCTION 8" WATER LINE
CONNECT TO EX. 8" PVC WATER LINE WITH
22 1/2 DEG DI BEND
WL1 STA. 0+00.00
DRW1 STA. 11+03.41, 13.6' LT.

RELOCATE WATER METER

6 LF 3/4" WATER SERVICE LINE

8" X 11 1/4° DI VERT. BEND
WL1 STA. 1+25.00
Y4 STA. 12+08.00, 72.4' RT.

8" VALVE
WL1 STA.
1+15.00

-Y4- PT 12+68.16

8" X 22 1/2° DI BEND
WL1 STA. 1+56.88
Y4 STA. 12+31.28, 76.9' RT.

INSTALL 495 LF - 8" WATER LINE

8" X 11 1/4° DI VERT. BEND
WL1 STA. 2+10.00
Y4 STA. 12+72.37, 70.9' RT.

INSTALL BY BORE & JACK
106 LF - 18" ENCASEMENT PIPE
0.250" MINIMUM WALL THICKNESS

8" X 11 1/4° DI BEND
WL1 STA. 3+64.80
Y4 STA. 14+26.70, 65.4' RT.

8" VALVE
WL1 STA. 3+84.80

8" X 11 1/4° DI BEND
WL1 STA. 4+42.60
Y4 STA. 15+02.15, 47.6' RT.

8" X 22 1/2° BEND
WL1 STA. 4+64.98
Y4 STA. 15+23.09, 38.9' RT.

END CONSTRUCTION 8" WATER LINE
CONNECT TO EX. 8" PVC WATER LINE WITH
45 DEG DI BEND
WL1 STA. 4+95.10
Y4 STA. 15+44.39, 17.7' RT.

MATCH LINE -L- STA 24+00.00 SEE SHEET UC-5

NOTES:

- 4" DIAMETER FORCE MAIN PIPING SHALL BE DR11 HDPE PER ASTM 714 (PE 4710) UNLESS SHOWN AS DUCTILE IRON.
- HDPE JOINTS SHALL BE FUSION WELDED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- 4" DIAMETER BURIED FORCE MAIN FITTINGS SHALL BE CEMENT LINED, ASPHALTIC COATED, DUCTILE IRON WITH MECHANICAL RESTRAINT EQUAL TO MEGALUGS.
- TRANSITIONS BETWEEN DUCTILE IRON AND HDPE SHALL BE PROVIDED IN ACCORDANCE WITH PLASTIC PIPE INSTITUTE, INC. TN-36-2006 "GUIDELINES FOR CONNECTING HDPE POTABLE WATER PRESSURE PIPES TO DI AND PVC PIPING SYSTEMS", (www.plasticpipe.org), ARTICLE 2.8, TRANSITION FITTINGS. ALL TRANSITION FITTINGS WILL UTILIZE A MECHANICAL ASSEMBLY OF HDPE AND DI PIPE THAT WILL BE BUTT WELDED TO THE HDPE MEMBER.
- THE FORCE MAIN SYSTEM IS INTENDED TO BE TRENCHED IN THE ROAD RIGHT OF WAY. COMPACT TRENCH FILL TO 95% OF STANDARD PROCTOR THROUGHOUT.

FOR WATER LINE PROFILE SEE SHEET UC-8

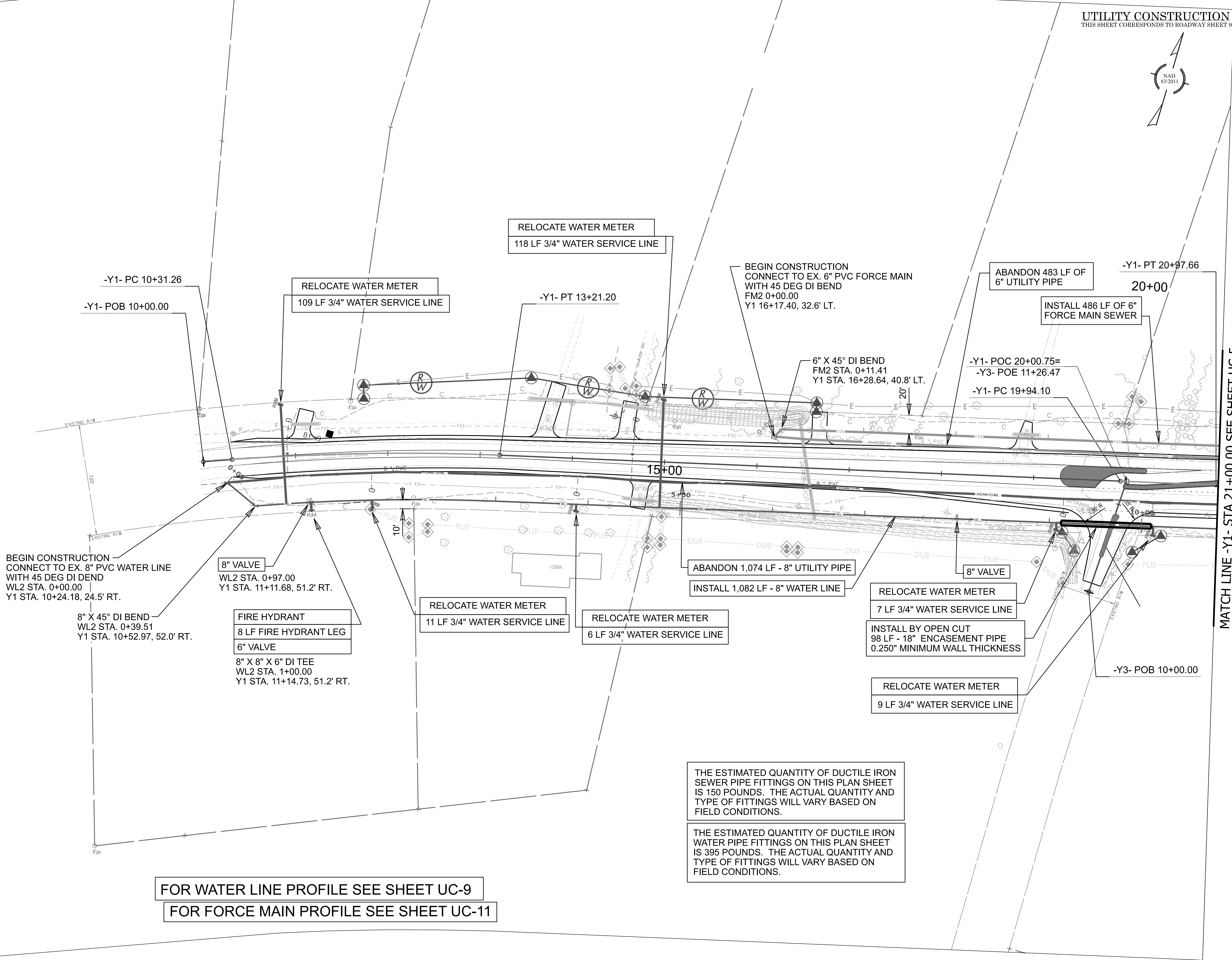
FOR FORCE MAIN PROFILE SEE SHEET UC-10

THE ESTIMATED QUANTITY OF DUCTILE IRON
SEWER PIPE FITTINGS ON THIS PLAN SHEET
IS 255 POUNDS. THE ACTUAL QUANTITY AND
TYPE OF FITTINGS WILL VARY BASED ON
FIELD CONDITIONS.

THE ESTIMATED QUANTITY OF DUCTILE IRON
WATER PIPE FITTINGS ON THIS PLAN SHEET
IS 880 POUNDS. THE ACTUAL QUANTITY AND
TYPE OF FITTINGS WILL VARY BASED ON
FIELD CONDITIONS.



FOR FORCE MAIN PROFILES SEE SHEETS UC-10 & UC-11



U-6187

3RD1UC-6

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIE COUNTY

ROADWAY DESIGN UNIT

6/3/2025

SEAL

14101

ENGINEER

DAVID L. WILSON

DAVID L. WILSON

UTILITY CONSTRUCTION
PLANS ONLY

PREPARED BY

vhb

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REVISIONS

UTILITY CONSTRUCTION

THIS SHEET CORRESPONDS TO
ROADWAY SHEET 10

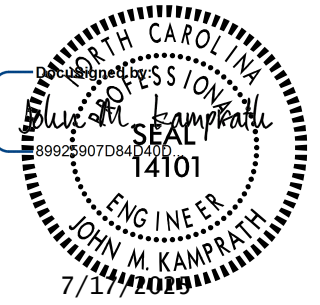
U-6187

FINAL UC-7

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIE COUNTY



ROADWAY DESIGN UNIT

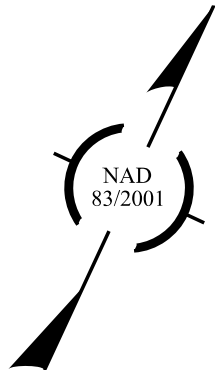


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MATCH LINE -Y1- STA 30+00.00 SEE SHEET UC-5

INSTALL 214 LF OF 4" FORCE MAIN SEWER

INSTALL BY BORE & JACK
85 LF - 6" ENCASEMENT PIPE
0.250" MINIMUM WALL THICKNESS
123 LF - 2" ROLLED FLEXIBLE SDR-9 CARRIER PIPE

END CONSTRUCTION
6" X 2" DI TAPPING SADDLE
SEE DETAIL, SHT. UC-3C
FM4 STA. 1+23.33 =
FM2 STA. 14+51.15
Y1 STA. 30+73.17

2" VALVE
ABANDON 213 LF OF 4" UTILITY PIPE

15+00

ABANDON 102 LF 8" UTILITY PIPE

INSTALL 137 LF 8" WATER LINE

8" X 90 DEG DI BEND
WL4 STA. 0+14.20
Y1 STA. 31+88.48, 58.5' RT.

8" X 8" X 8" DI TEE

8" VALVE

STD. 'U' CONNECTION
SEE DETAIL 2.08, SHT. UC-3A
WL3 STA. 3+49.87 =
WL4 STA. 0+00.00
Y1 STA. 31+82.70, 50.1' RT.

8" X 90 DEG DI BEND
WL4 STA. 0+08.30

RELOCATE WATER METER

7 LF 3/4" WATER SERVICE LINE

RECONNECT WATER METER
12 LF 1.5" WATER SERVICE LINE

BEGIN CONSTRUCTION
CONNECT TO EX. 2" FORCE MAIN SEWER
WITH COMPRESSION CONNECTION FITTING
FM4 STA. 0+00.00
Y1 STA. 30+81.61, 67.5' RT.

ABANDON 88 LF OF 2" UTILITY PIPE

END CONSTRUCTION
CONNECT TO EX. 8" PVC WATER LINE
W/ 8" X 90 DEG DI BEND
WL4 STA. 1+36.46
Y1 STA. 31+83.80, 57.2' RT.

W/ 8" X 90 DEG DI BEND
WL4 STA. 1+29.84
Y1 STA. 31+89.67, 57.2' RT.

4" X 22.5 DEG DI BEND
FM3 STA. 3+42.65
Y1 STA. 32+02.93, 41.3' LT.

END CONSTRUCTION
CONNECT TO EX. 4" PVC
FORCE MAIN SEWER WITH
4" X 22.5 DEG DI BEND
FM3 STA. 3+56.79
Y1 STA. 32+15.75, 35.4' LT.

RELOCATE WATER METER

109 LF 3/4" WATER SERVICE LINE

35+00

RELOCATE WATER METER

109 LF 3/4" WATER SERVICE LINE

INSTALL 915 LF OF 6" FORCE MAIN SEWER

6" X 45° DI BEND
FM2 STA. 22+44.07
Y1 STA. 38+82.60, 50.5' LT.

ABANDON 906 LF 6" UTILITY PIPE

-Y1- POT 37+90.31

20+00

END CONSTRUCTION
CONNECT TO EX. 6" PVC
FORCE MAIN SEWER WITH
45 DEG DI BEND
FM2 STA. 22+94.93
Y1 STA. 39+07.85, 23.1' LT.

-Y1- POT 39+16.37

END CONSTRUCTION
CONNECT TO EX. 8" PVC WATER LINE
WITH 45 DEG DI BEND
WL3 STA. 10+43.21
Y1 STA. 38+47.90, 24.9' RT.

8" X 45° DI BEND
WL3 STA. 9+97.85
Y1 STA. 38+20.43, 51.6' RT.

8" VALVE

WL3 STA. 9+87.81

8" X 8" X 6" DI TEE

FIRE HYDRANT

FIRE HYDRANT LEG - 8 LF

6" VALVE

WL3 STA. 9+84.37

Y1 STA. 38+20.43, 51.6' RT.

NOTES:

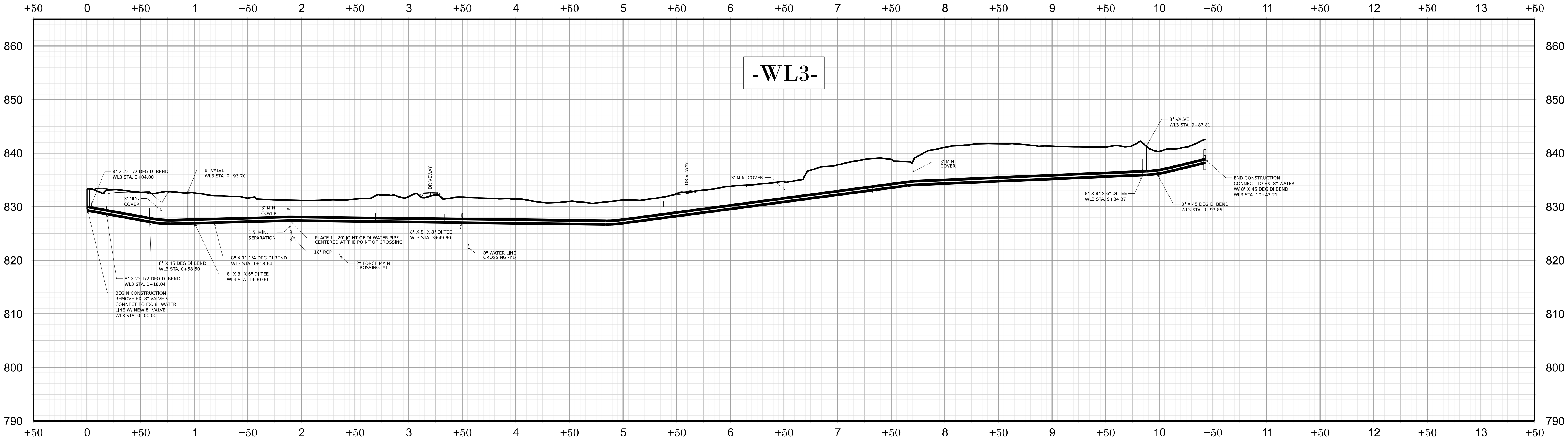
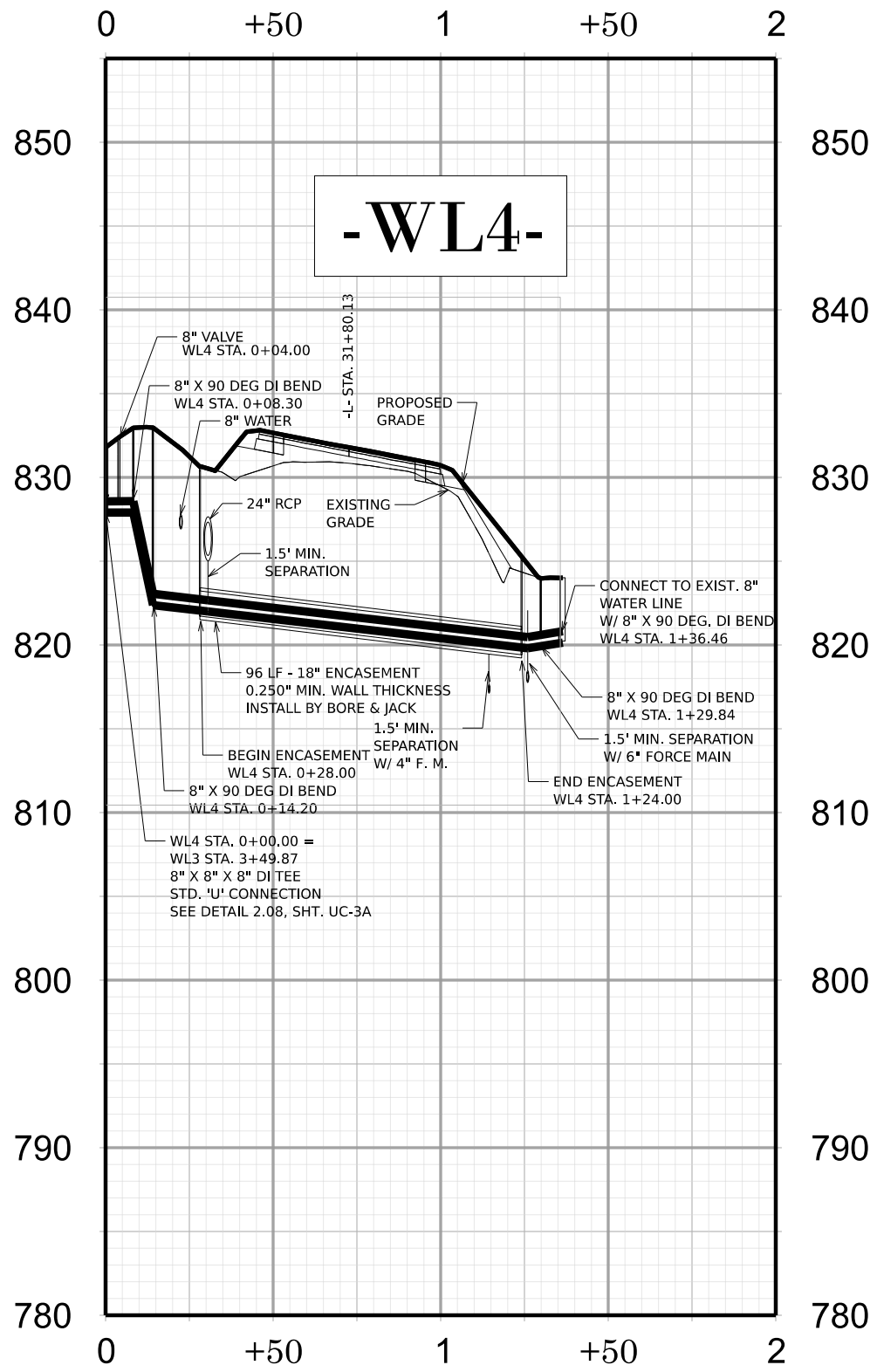
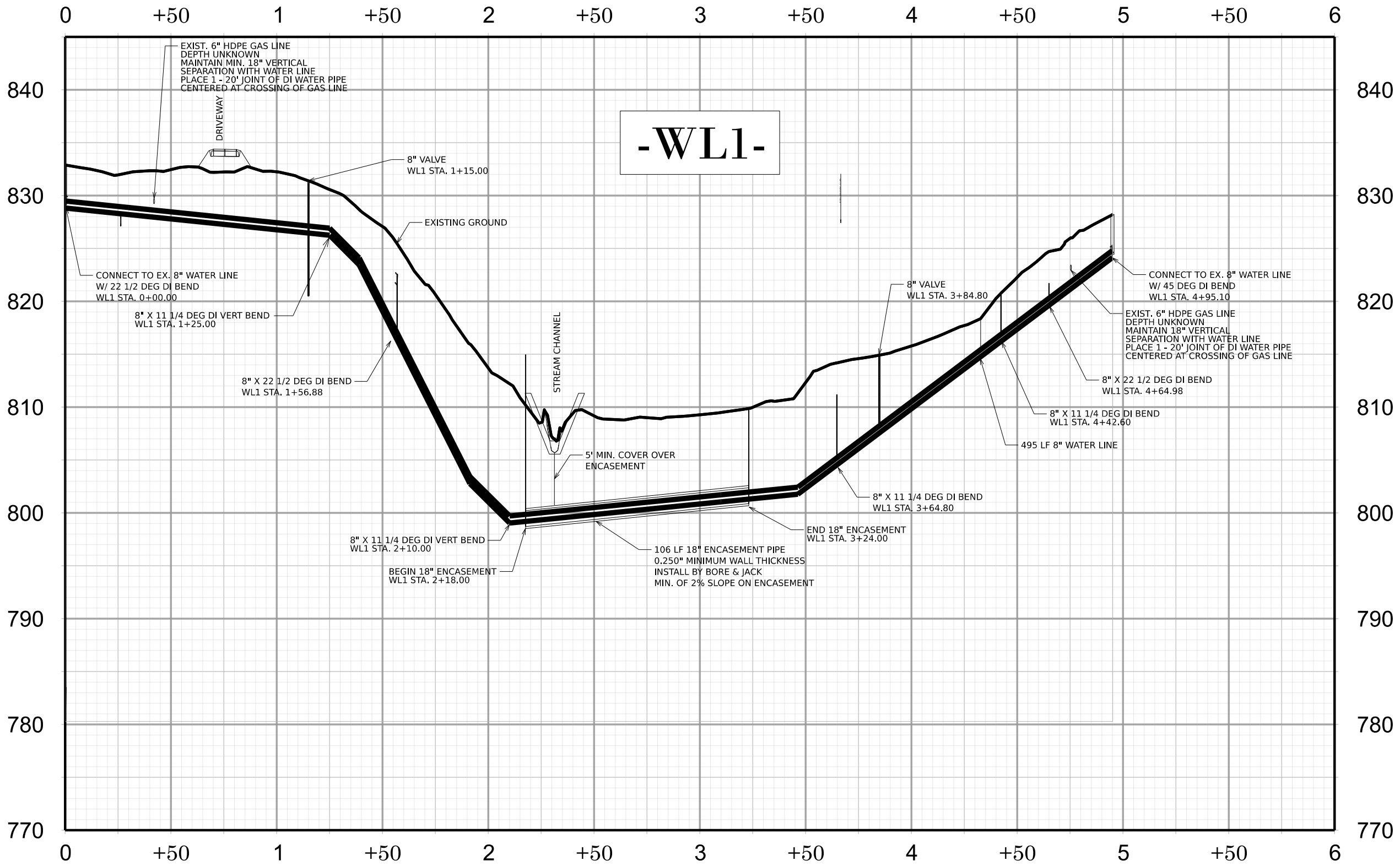
- 4" DIAMETER FORCE MAIN PIPING SHALL BE DR11 HDPE PER ASTM 714 (PE 4710) UNLESS SHOWN AS DUCTILE IRON.
- HDPE JOINTS SHALL BE FUSION WELDED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- 4" DIAMETER BURIED FORCE MAIN FITTINGS SHALL BE CEMENT LINED, ASPHALTIC COATED, DUCTILE IRON WITH MECHANICAL RESTRAINT EQUAL TO MEGALUGS.
- TRANSITIONS BETWEEN DUCTILE IRON AND HDPE SHALL BE PROVIDED IN ACCORDANCE WITH PLASTIC PIPE INSTITUTE, INC. TN-36-2006 "GUIDELINES FOR CONNECTING HDPE POTABLE WATER PRESSURE PIPES TO DI AND PVC PIPING SYSTEMS", (www.plasticpipe.org), ARTICLE 2.8, TRANSITION FITTINGS. ALL TRANSITION FITTINGS WILL UTILIZE A MECHANICAL ASSEMBLY OF HDPE AND DI PIPE THAT WILL BE BUTT WELDED TO THE HDPE MEMBER.
- THE FORCE MAIN SYSTEM IS INTENDED TO BE TRENCHED IN THE ROAD RIGHT OF WAY. COMPACT TRENCH FILL TO 95% OF STANDARD PROCTOR THROUGHOUT.

THE ESTIMATED QUANTITY OF DUCTILE IRON
SEWER PIPE FITTINGS ON THIS PLAN SHEET
IS 250 POUNDS. THE ACTUAL QUANTITY AND
TYPE OF FITTINGS WILL VARY BASED ON
FIELD CONDITIONS.

THE ESTIMATED QUANTITY OF DUCTILE IRON
WATER PIPE FITTINGS ON THIS PLAN SHEET
IS 1,080 POUNDS. THE ACTUAL QUANTITY AND
TYPE OF FITTINGS WILL VARY BASED ON
FIELD CONDITIONS.

FOR WATER LINE PROFILES SEE SHEETS UC-8 & UC-9

FOR FORCE MAIN PROFILES SEE SHEETS UC-9 & UC-10



U-6187

UC-8

NORTH CAROLINA
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DAVIE COUNTY

6/3/2025

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JOHN M. KAMPRATH

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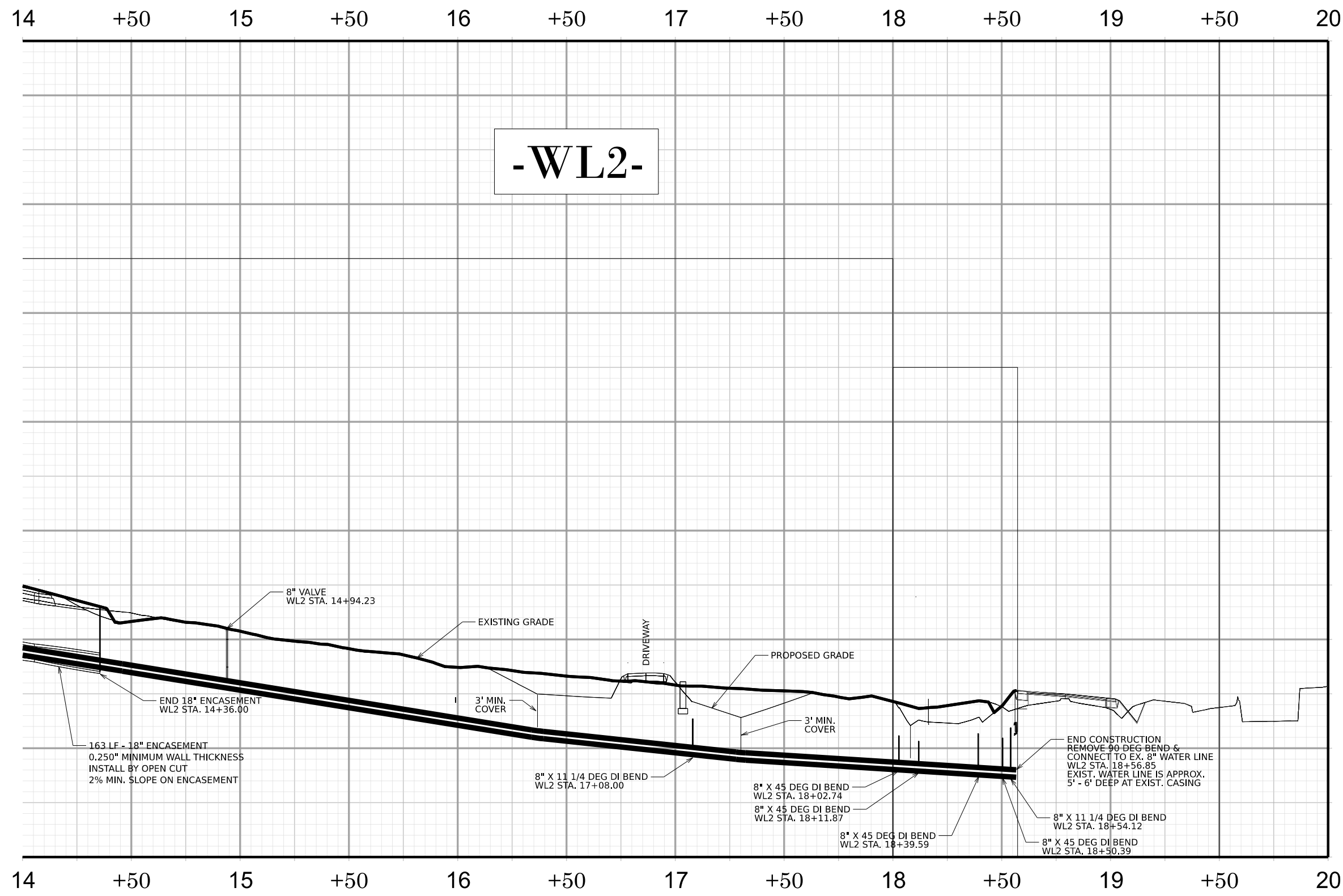
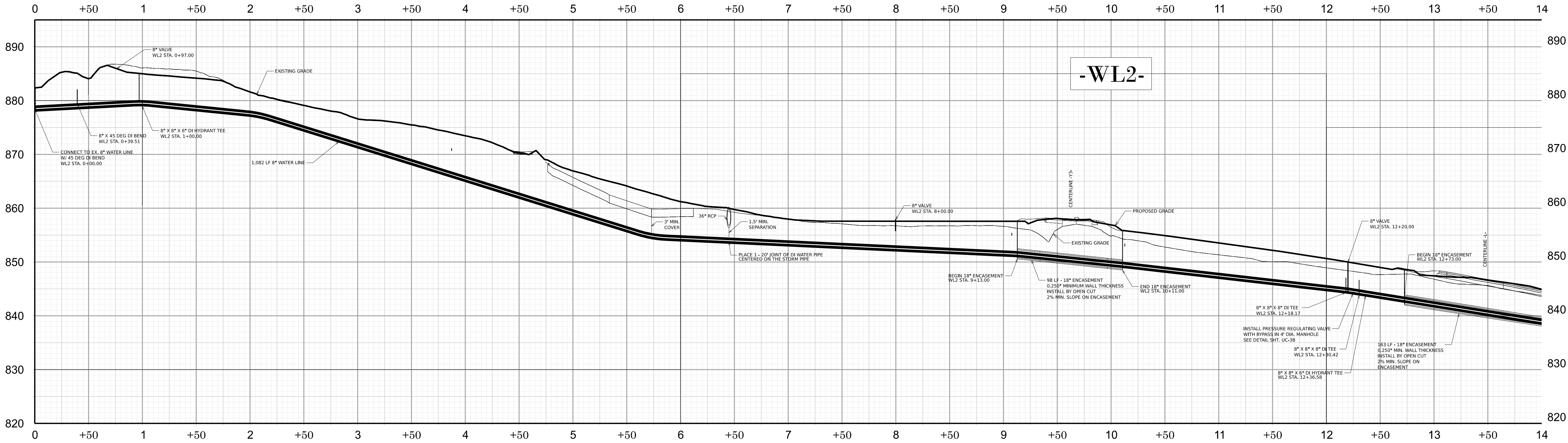
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UC-9

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DAVIE COUNTY

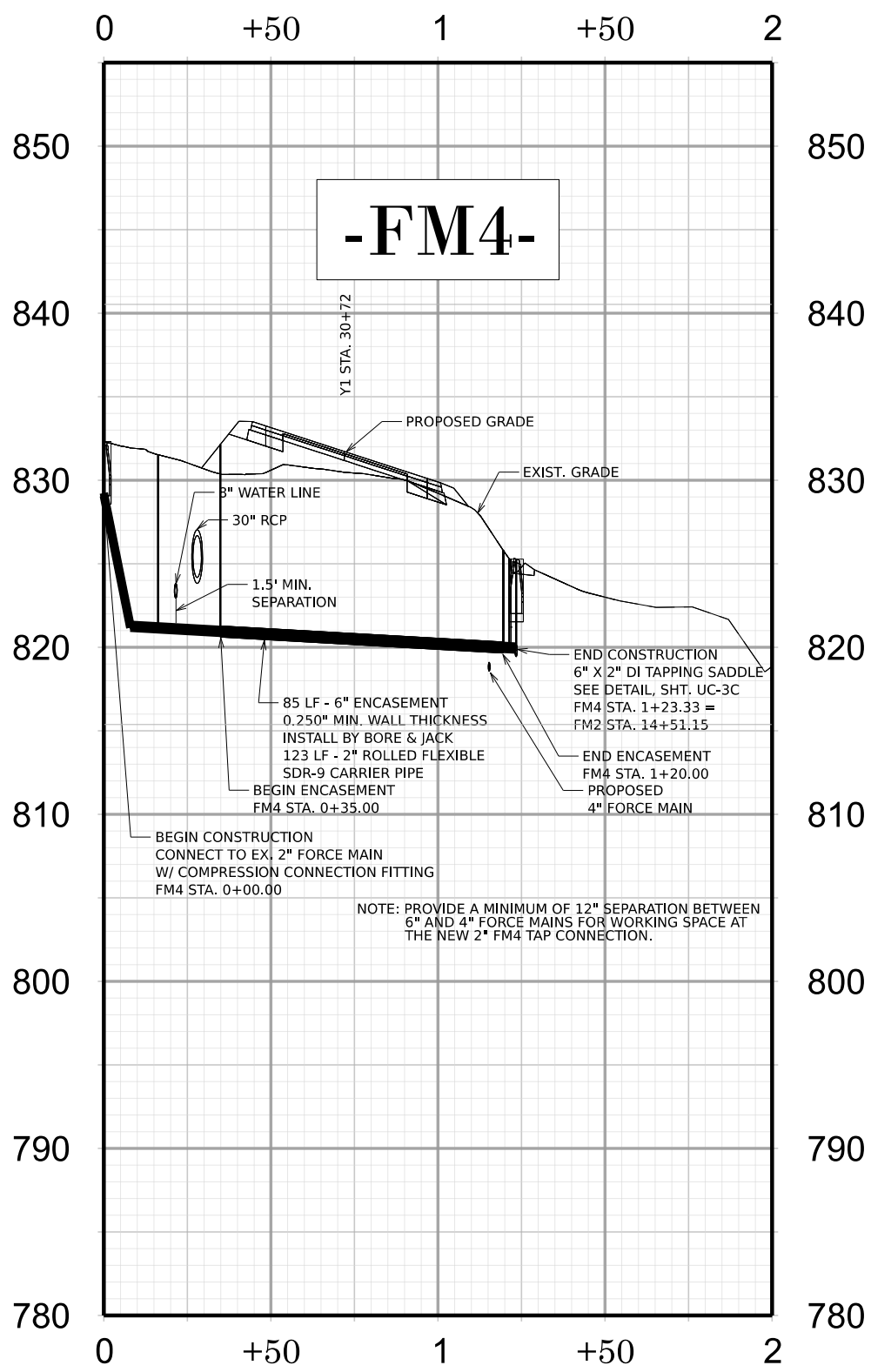
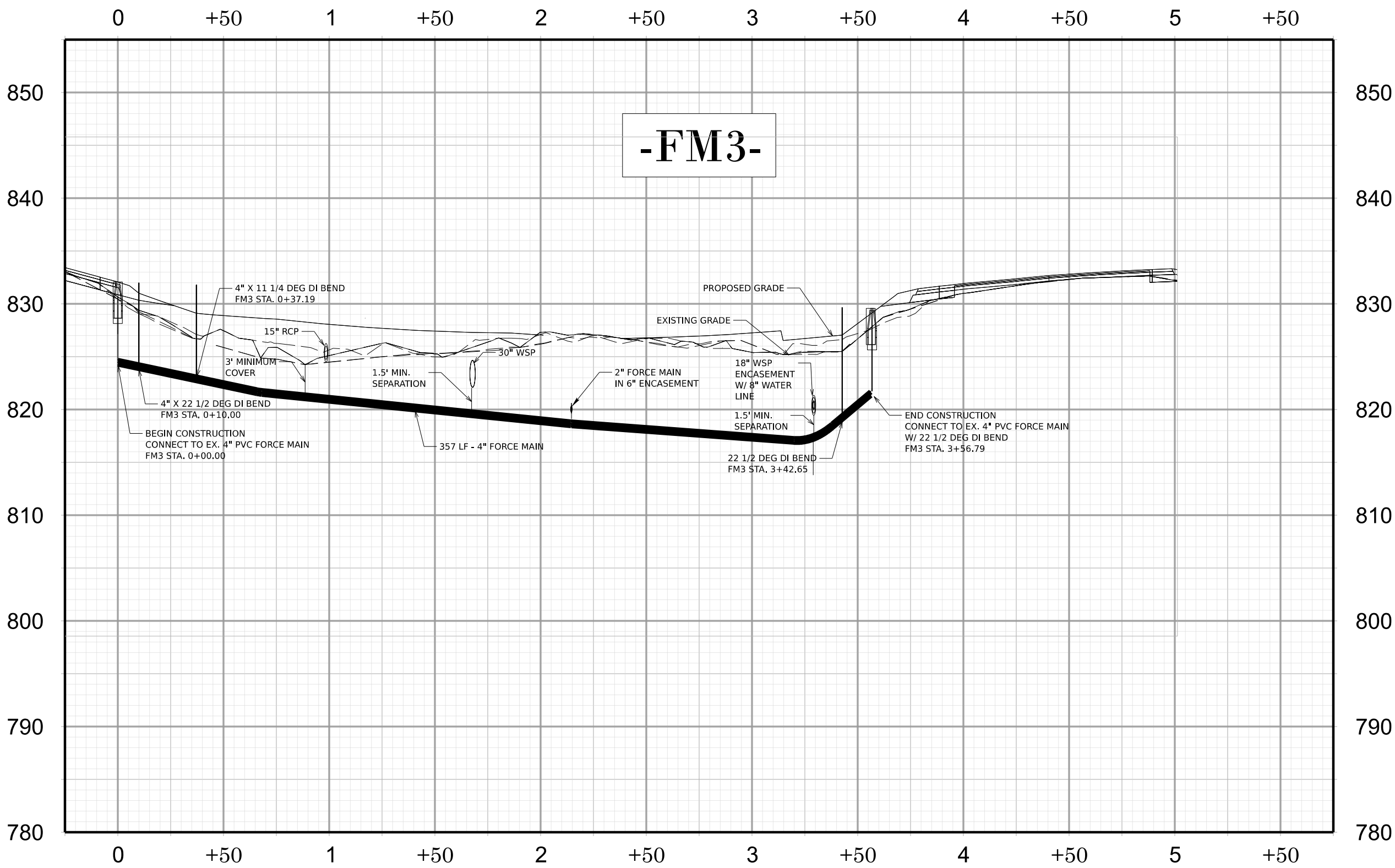
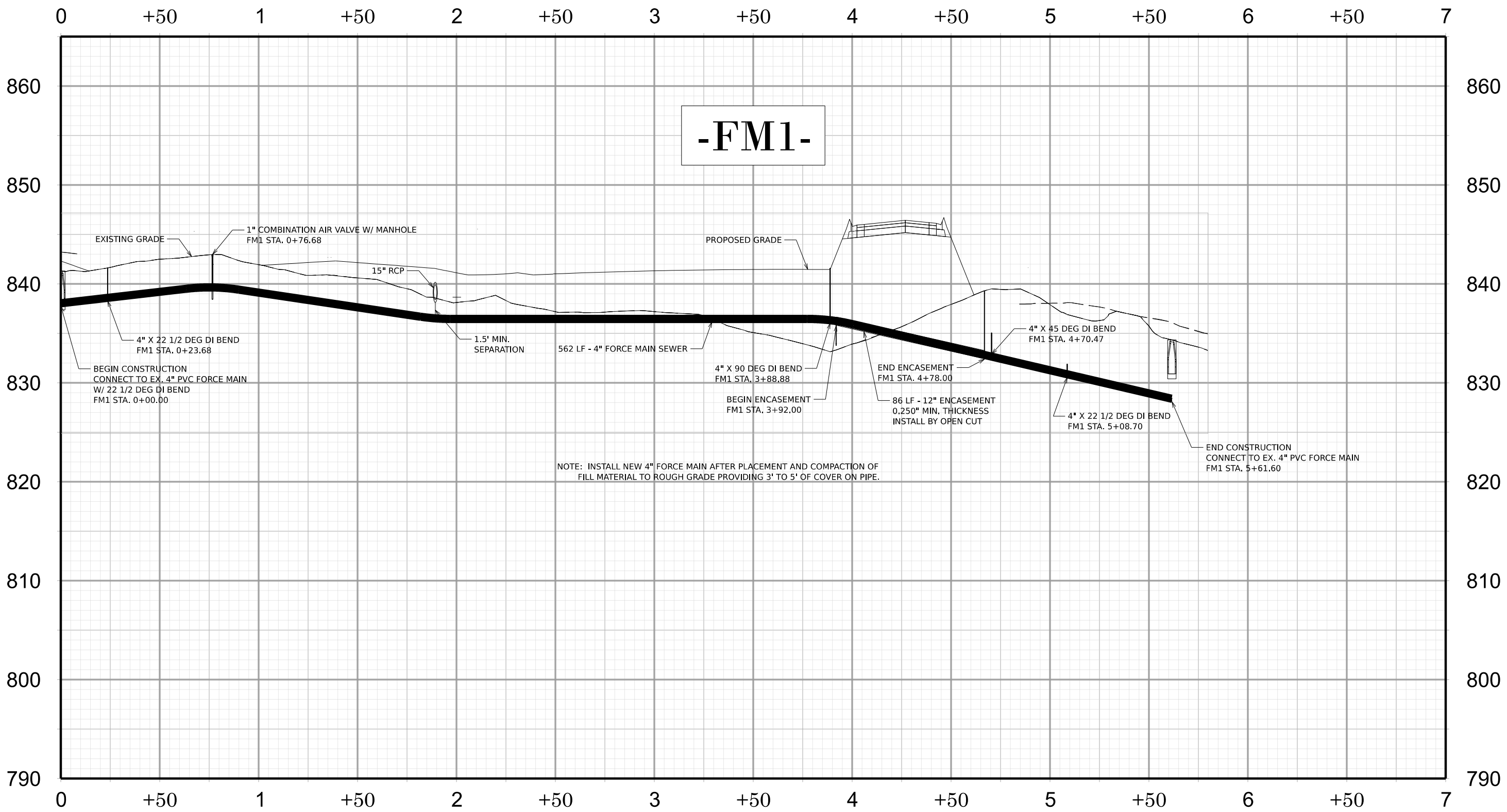
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PROFESSIONAL
SEAL
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J. M. KAMPRATH
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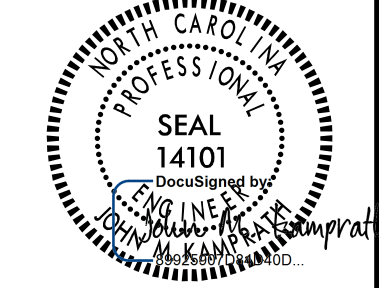


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UC-10

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DAVIE COUNTY

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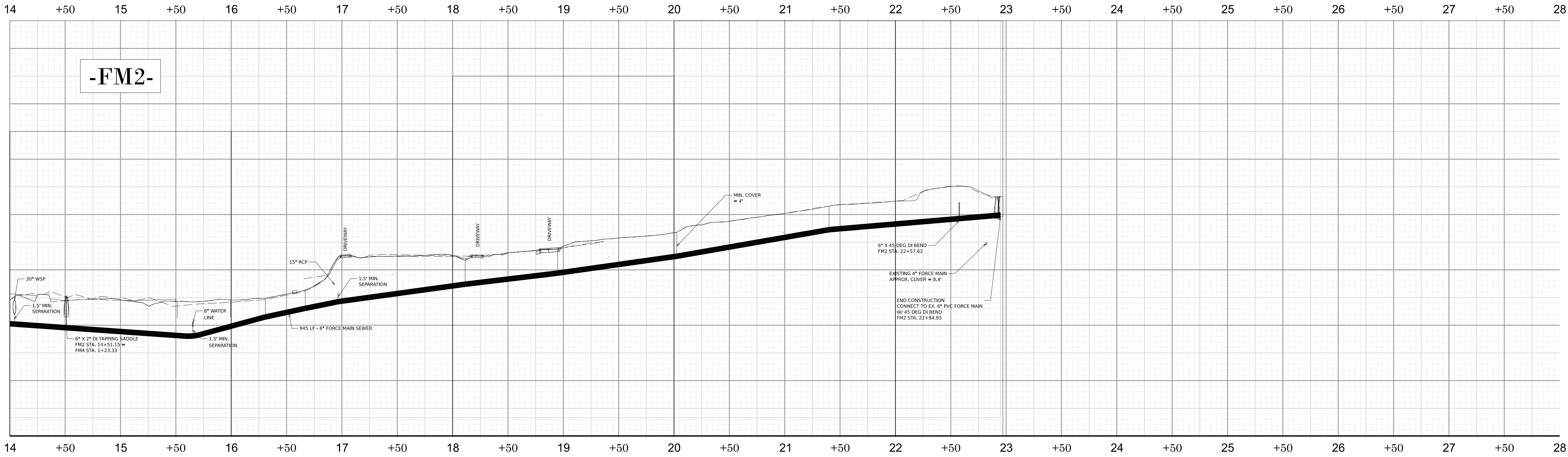
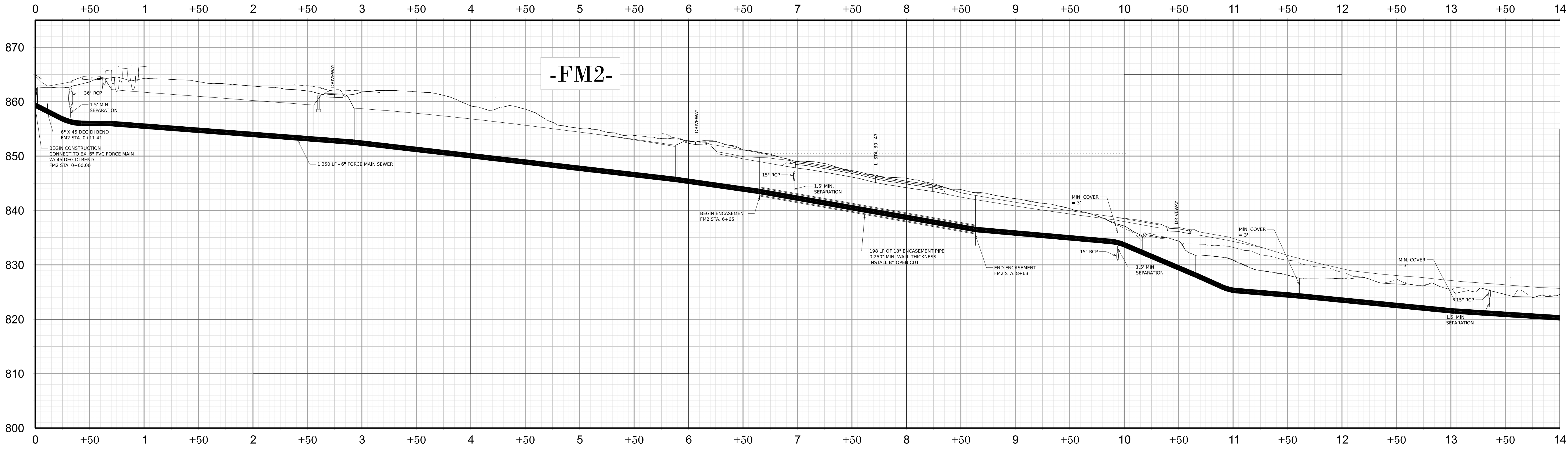


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JOHN M. KAMPRATH

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