

# GREENCASTLE AREA, FRANKLIN COUNTY WATER AUTHORITY

GREENCASTLE, FRANKLIN COUNTY, PENNSYLVANIA

## SOUTH WASHINGTON STREET WATER MAIN REPLACEMENT DESIGN

### UNDERGROUND UTILITY LINE PROTECTION ACT

ARRO CONSULTING, INC. HEREBY STATES THAT, PURSUANT TO THE PROVISIONS OF ACT NO. ACT 287 OF 1974 AS AMENDED BY ACT 50 OF 2017 OF THE PENNSYLVANIA LEGISLATURE, IT HAS COMPLIED WITH THE DESIGNER'S DUTIES PROVISIONS OF THE ACT IN PREPARING THESE DRAWINGS REQUIRING EXCAVATION OR DEMOLITION WORK AT SITES WITHIN THE POLITICAL SUBDIVISION(S) SHOWN ON THE DRAWINGS.

ARRO CONSULTING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY OR ASSURANCE OR OTHERWISE GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO SAID ACT FROM THE FACILITY OWNER, AS THE TERM FACILITY OWNER IS DEFINED IN THE ACT, AS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE.

DATE: 10/16/24 BY: ARRO CONSULTING, INC.

PA ONE CALL SERIAL NO: 20242903119 AND 20242903120

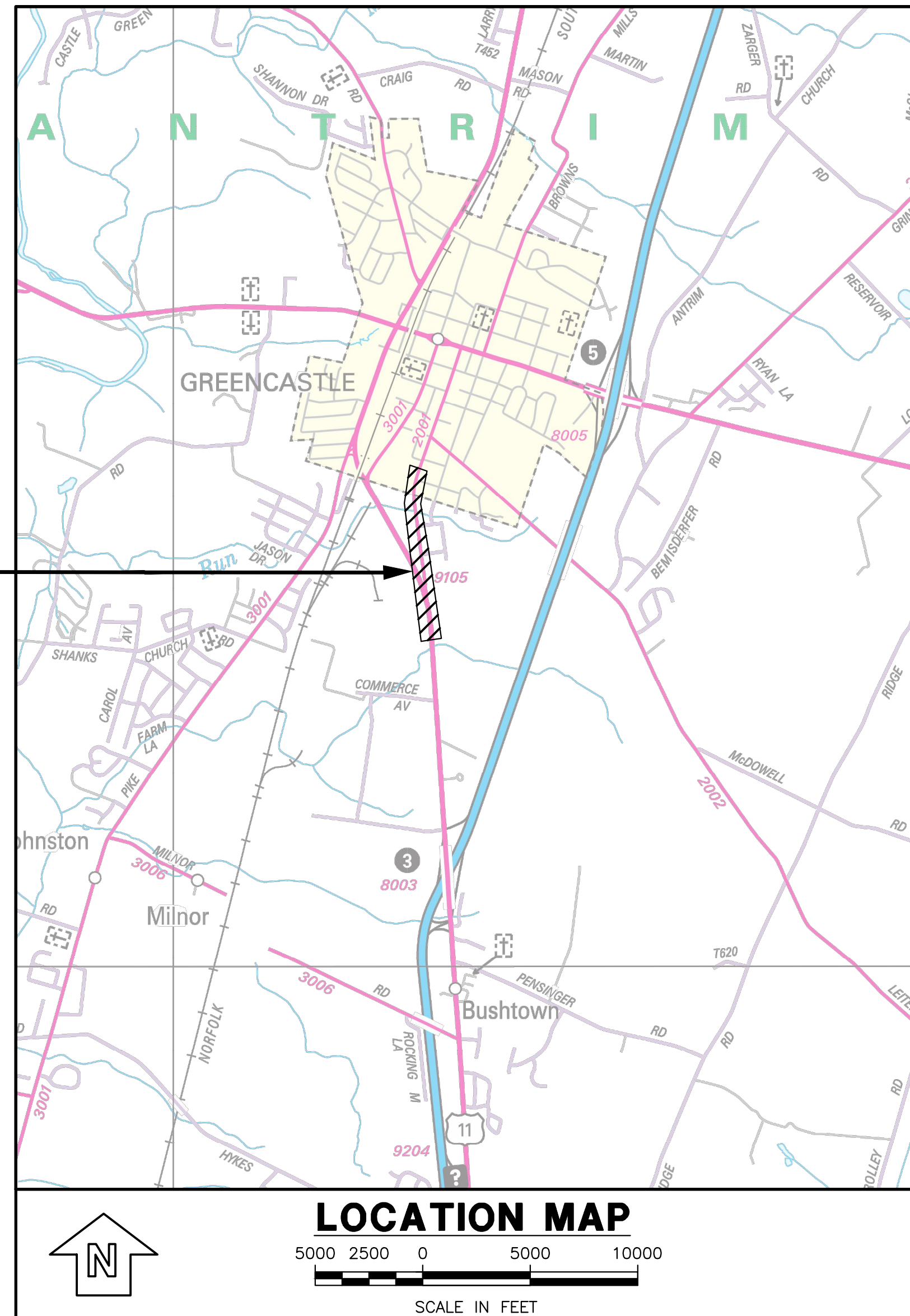


THE REFERENCED ACT REQUIRES NOTIFICATION BY DESIGNERS, CONTRACTORS, OR ANY OTHER PARTY INVOLVED IN DISTURBING THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH.

### UTILITY LIST

BRIGHTSPEED 1120 S TRYON STREET SUITE 700 CHARLOTTE, NC. 28203 CASE WELLS case.wells@brightspeed.com 704-314-2503	FIRSTENERGY CORPORATION 21 S MAIN ST AKRON, OH. 44308 MELLYSSA ADAMS madams@firstenergycorp.com 330-604-4073
COLUMBIA GAS OF PA INC 1600 DUBLIN RD COLUMBUS, OH. 43215 LISA COLLINS ldugan@nisource.com 614-325-5961	GREENCASTLE BOROUGH 60 N WASHINGTON ST GREENCASTLE, PA. 17225 BOB MANAHAN bmanahan@greencastlepa.gov 717-597-7143 EXT. 301
COLUMBIA GAS TRANSMISSION ELLWOOD 10750 WELSH RUN RD GREENCASTLE, PA. 17225 STEPHEN CARROLL stephen_carroll@cenergy.com 717-387-6299	INSTANT BRANDS LLC 12000 MOLLY PITCHER HWY S GREENCASTLE, PA. 17225 DENNIS NULL dennis.null@instantbrands.com 717-597-6185
ANTRIM TOWNSHIP ADDRESS: 13431 ANTRIM CHURCH RD PO BOX 130 GREENCASTLE, PA. 17225 DOUG MCCULLOH 717-597-9798	

PROJECT  
LOCATION



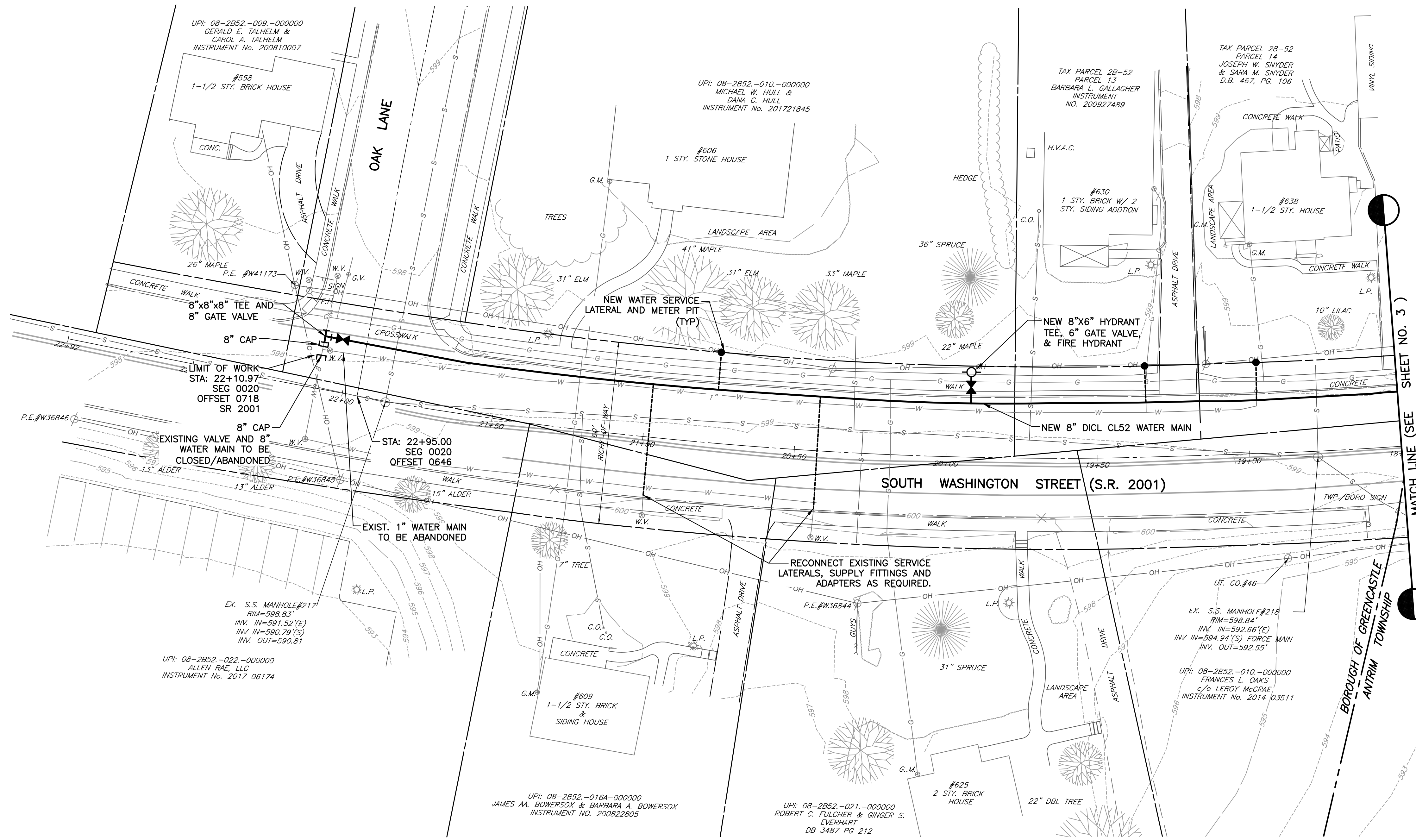
### DRAWING INDEX

1 OF 6	TITLE SHEET
2 OF 6	PLAN AND PROFILE STA 22+92 TO STA 18+50
3 OF 6	PLAN AND PROFILE STA 18+50 TO STA 15+60
4 OF 6	CONSTRUCTION DETAILS
5 OF 6	CONSTRUCTION DETAILS
6 OF 6	EROSION AND SEDIMENT CONTROL PLAN

### GENERAL NOTES

- WHETHER OR NOT CROSS REFERENCED, IN WHOLE OR IN PART, ALL DRAWINGS AND ALL SPECIFICATIONS FOR THE ENTIRE PROJECT SHALL BE EXAMINED BY ALL INDIVIDUAL BIDDERS AND CONTRACTORS, TO ASCERTAIN THE COMPLETE EXTENT OF THEIR WORK.
- CONTRACTOR SHALL REMOVE AND RELOCATE OR REPLACE EXISTING FACILITIES, WHETHER OR NOT SHOWN, NECESSARY TO INSTALL ITS WORK.
- WHETHER OR NOT SHOWN OR SPECIFIED IN DETAIL, ALL MECHANICAL, ELECTRICAL AND OTHER EQUIPMENT SHALL BE STEADILY AND SECURELY SUPPORTED, IN A MANNER APPROVED BY THE MANUFACTURER AND ACCEPTABLE TO THE ENGINEER.
- IN THE EVENT OF CONFLICT OR INCONSISTENCY BETWEEN OR AMONG SPECIFIED OR DRAWN REQUIREMENTS, APPLICABLE REGULATIONS, OR MANUFACTURER RECOMMENDATIONS; THE MORE STRINGENT REQUIREMENT(S), AS DETERMINED BY THE ENGINEER, SHALL GOVERN.
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES AND STRUCTURES BEFORE COMMENCING THE WORK. UTILITY COMPANIES SHOULD BE CONTACTED BEFORE WORK COMMENCES IN ORDER TO DETERMINE THEIR REQUIREMENTS.
- ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM.
- ALL ANGLES ON THE SURVEY BASE LINE ARE MEASURED IN A CLOCKWISE DIRECTION FROM THE REAR STATION TO THE FORWARD STATION, UNLESS INDICATED OTHERWISE.
- IF DEWATERING OF THE TRENCH IS REQUIRED, CONTRACTOR TO PUMP WATER TO A FILTER BAG TO DEWATER.
- CONTRACTOR SHALL ACQUIRE METERS AND METER CROCS FROM GREENCASTLE AREA, FRANKLIN COUNTY WATER AUTHORITY AT NO COST.

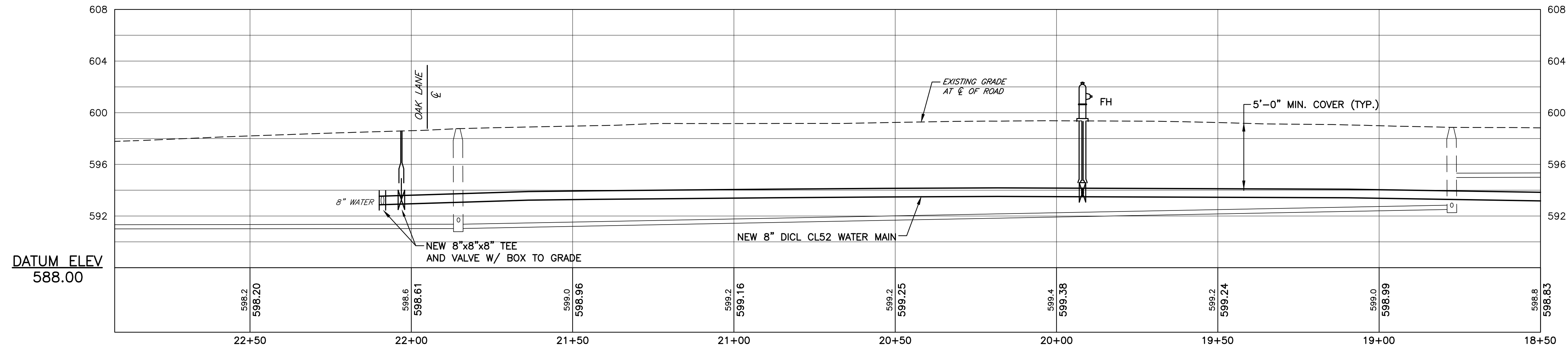
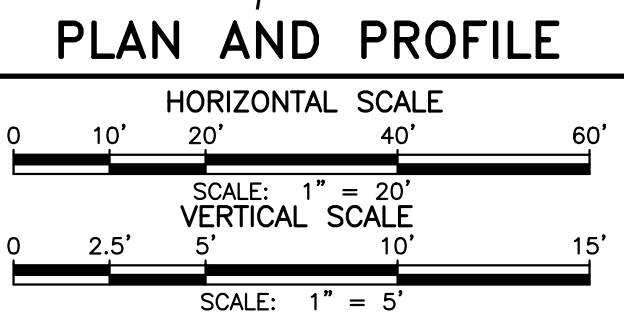
										MATTHEW D. WARFEL, P.E. RELEASED BY: DESIGN AMV CHECKED DRAWN CADD CHECKED DATE OCTOBER 2024 SURVEY DATE JUNE 2024 FIELD BOOK SHELLY, WITTE & FOX		SEAL 		SEAL CLIENT & PROJECT GREENCASTLE AREA, FRANKLIN COUNTY WATER AUTHORITY 60 N WASHINGTON STREET GREENCASTLE, PENNSYLVANIA 17225 SOUTH WASHINGTON STREET WATER MAIN REPLACEMENT GREENCASTLE BORO. & ANTRIM TWP., FRANKLIN CO., PA		108 West Airport Road Lititz, Pennsylvania 17543 Tel 717.569.7021		TITLE TITLE SHEET		SCALE AS SHOWN		DWG. NO. G-1	
NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.	3	REVISED PER COMMENT 12/19/24 - PENNDOT	1/13/25	BLE	AMV	1	ISSUED FOR PERMITTING	11/20/24	L/L	BP	PROJECT NO.	SHEET NO.	REV.	
																				10814.12	1 OF 6		



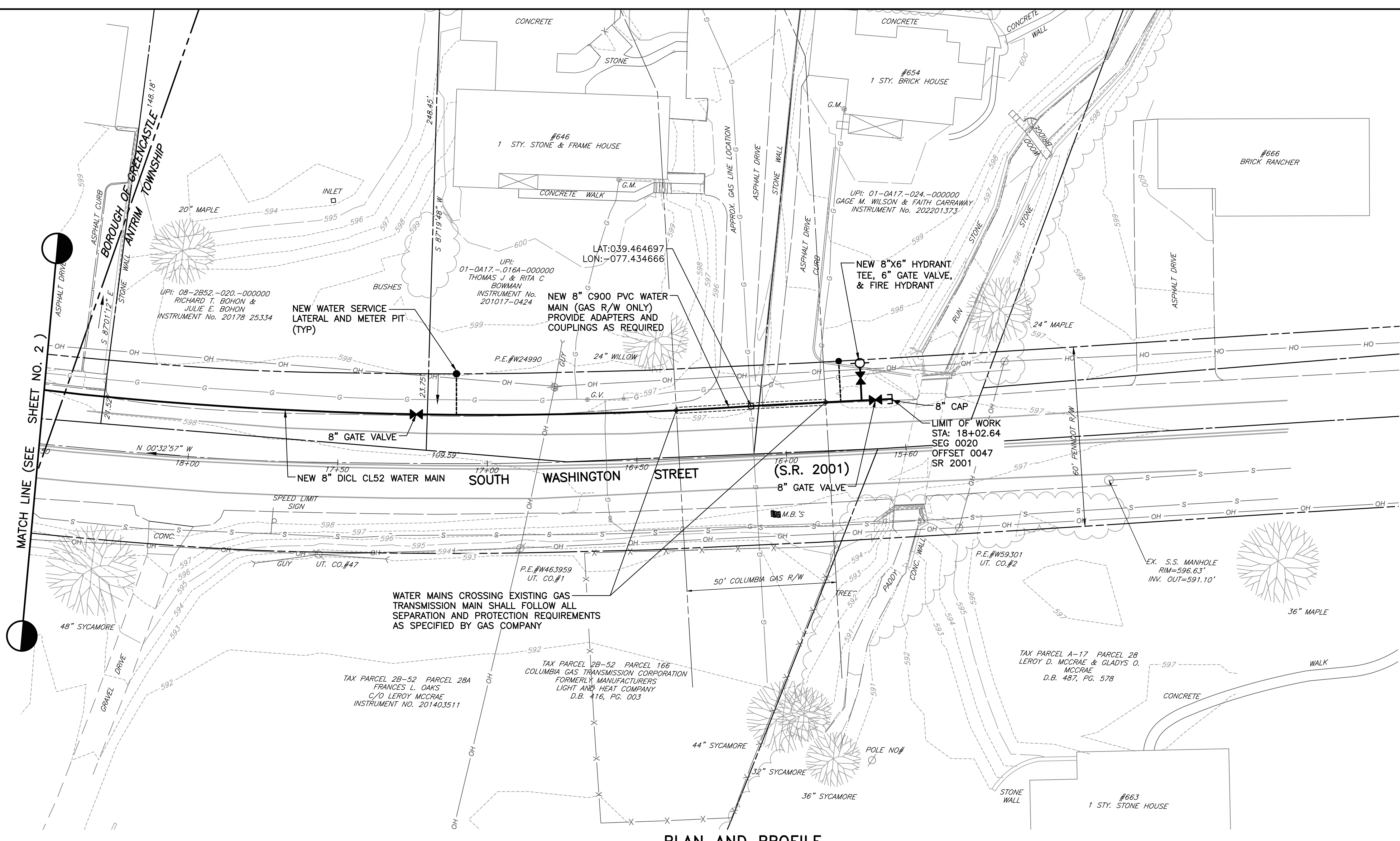
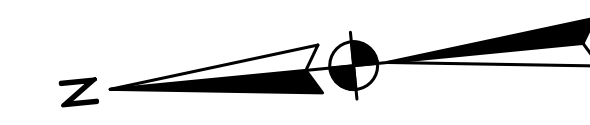
**LEGEND**

---	PROPERTY LINE
- - -	ADJOINER PROPERTY LINE
---	GASLINE
OH	OVERHEAD ELECTRIC
S	SANITARY SEWER LINE
---	CONTOUR MAJOR
---	CONTOUR MINOR

- NOTE:**
- CONTRACTOR TO FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO STARTING CONSTRUCTION.
  - EXISTING WATER SERVICE LATERALS WILL REQUIRE VERIFICATION OF LOCATION AND MATERIAL PRIOR TO TAKING OUT OF SERVICE FOR NEW CONNECTIONS. COORDINATION WITH AUTHORITY WILL BE REQUIRED.
  - NEW SERVICES WILL REQUIRE NEW METER PIT INSTALLED AT RIGHT-OF-WAY.
  - CONTRACTOR TO VERIFY NEW WATER SERVICE LATERAL ROUTE TO BUILDING WITH PROPERTY OWNERS. CONTRACTOR TO INSTALL NEW SERVICES FROM NEW METER TO BUILDING.
  - THE EXISTING 1" WATER SUPPLY WILL NEED TO REMAIN IN SERVICE WHILE THE NEW 8" DICL WATER MAIN IS BEING INSTALLED. ONCE THE NEW MAIN HAS BEEN DISINFECTED AND TESTED PER AUTHORITY SPECIFICATIONS, THE SERVICE LATERALS WILL BE TAPPED/CONNECTED AS SHOWN AND THEN THE EXISTING 1" WATER SUPPLY WILL BE ABANDONED IN-PLACE.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING GAS MAINS AND SERVICE LATERALS PRIOR TO INSTALLATION OF NEW WATER MAINS TO LIMIT USE OF VERTICAL BENDS WHILE MAINTAINING VERTICAL SEPARATION REQUIREMENTS. WHERE GAS MAINS CROSS THE NEW WATER MAIN, CONTRACTOR SHALL PROVIDE C900 PVC AS SHOWN, AND SHALL INCLUDE ALL FITTINGS AND ADAPTERS AS REQUIRED. COORDINATION WITH ENGINEER AND AUTHORITY IS REQUIRED PRIOR TO CHANGES TO LAYOUT SHOWN.



NO		REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.	MATTHEW D. WARFEL, P.E. RELEASED BY: AMV DESIGN: CADD DRAWN: DATE CHECKED: SURVEY DATE FIELD BOOK: SHELLY, WITTE & FOX		SEAL PROFESSIONAL ENGINEER MATTHEW D. WARFEL 12-20-24		SEAL CLIENT & PROJECT GREENCASTLE AREA, FRANKLIN COUNTY WATER AUTHORITY 60 N WASHINGTON STREET GREENCASTLE, PENNSYLVANIA 17225 SOUTH WASHINGTON STREET WATER MAIN REPLACEMENT GREENCASTLE BORO. & ANTRIM TWP., FRANKLIN CO., PA		<b>ARRG</b> 108 West Airport Road Lititz, Pennsylvania 17543 Tel 717.569.7021		TITLE PLAN AND PROFILE STA 22+92 TO STA 18+50		SCALE AS SHOWN		DWG. NO. C-1	
3	REVISED PER COMMENT 12/19/24 - PENNDOT	1/13/25	BLE	AMV		1	REVISED PER COMMENT 12/16/24 - TC ENERGY	11/20/24	LJL	MDW	1	ISSUED FOR PERMITTING												
NO		REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.	OCTOBER 2024		JUNE 2024		PROJECT NO. 10814.12		SHEET NO. 2 OF 6		REV.					

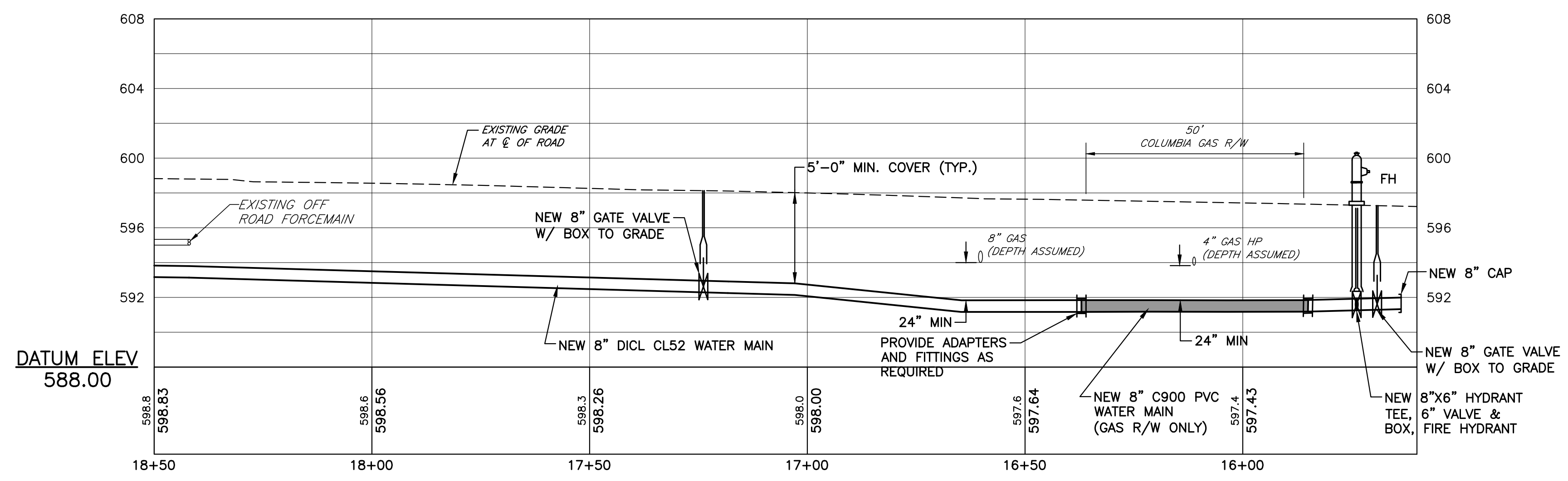
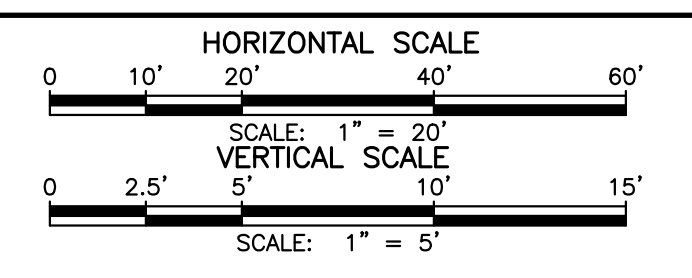


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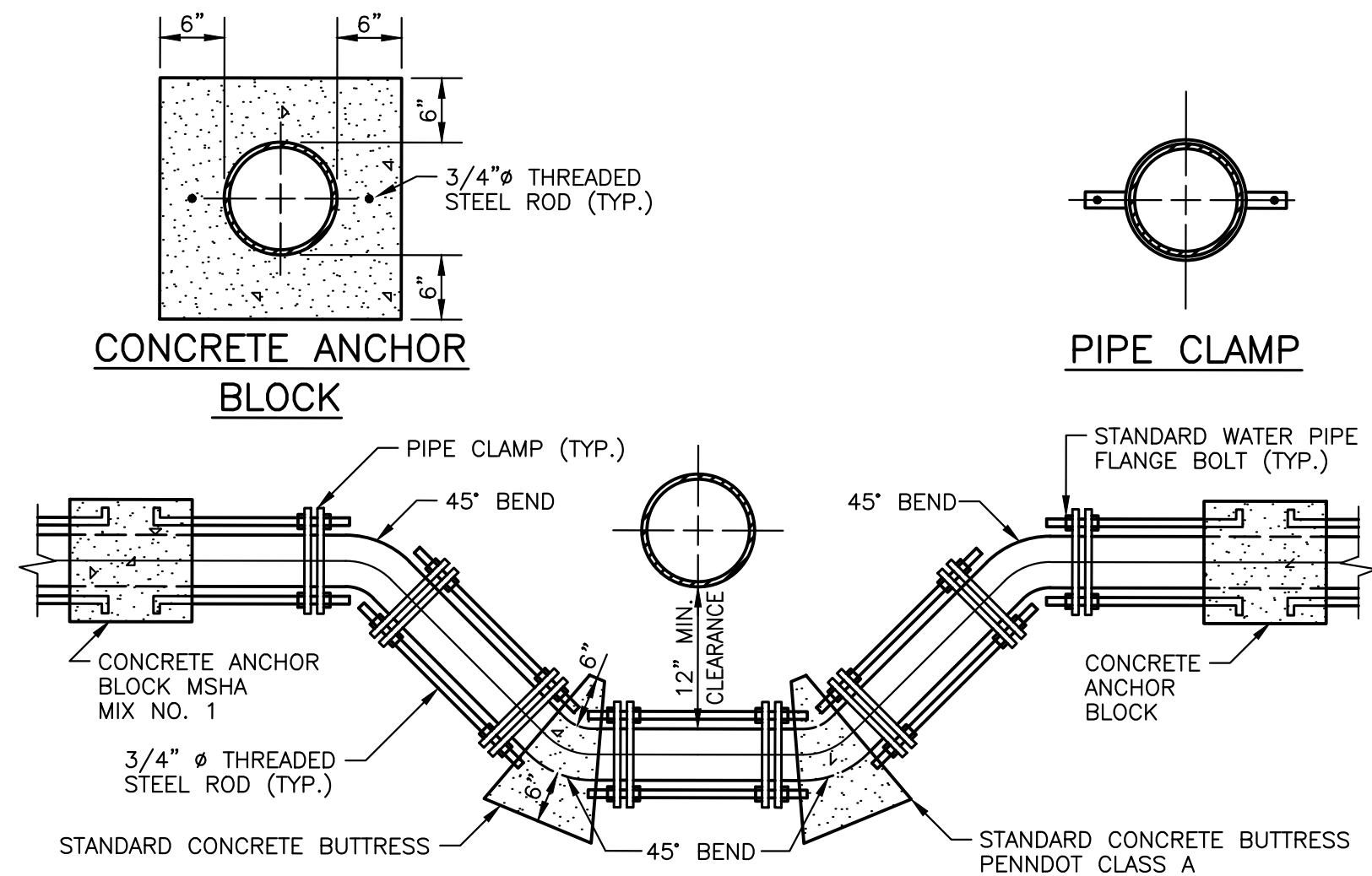
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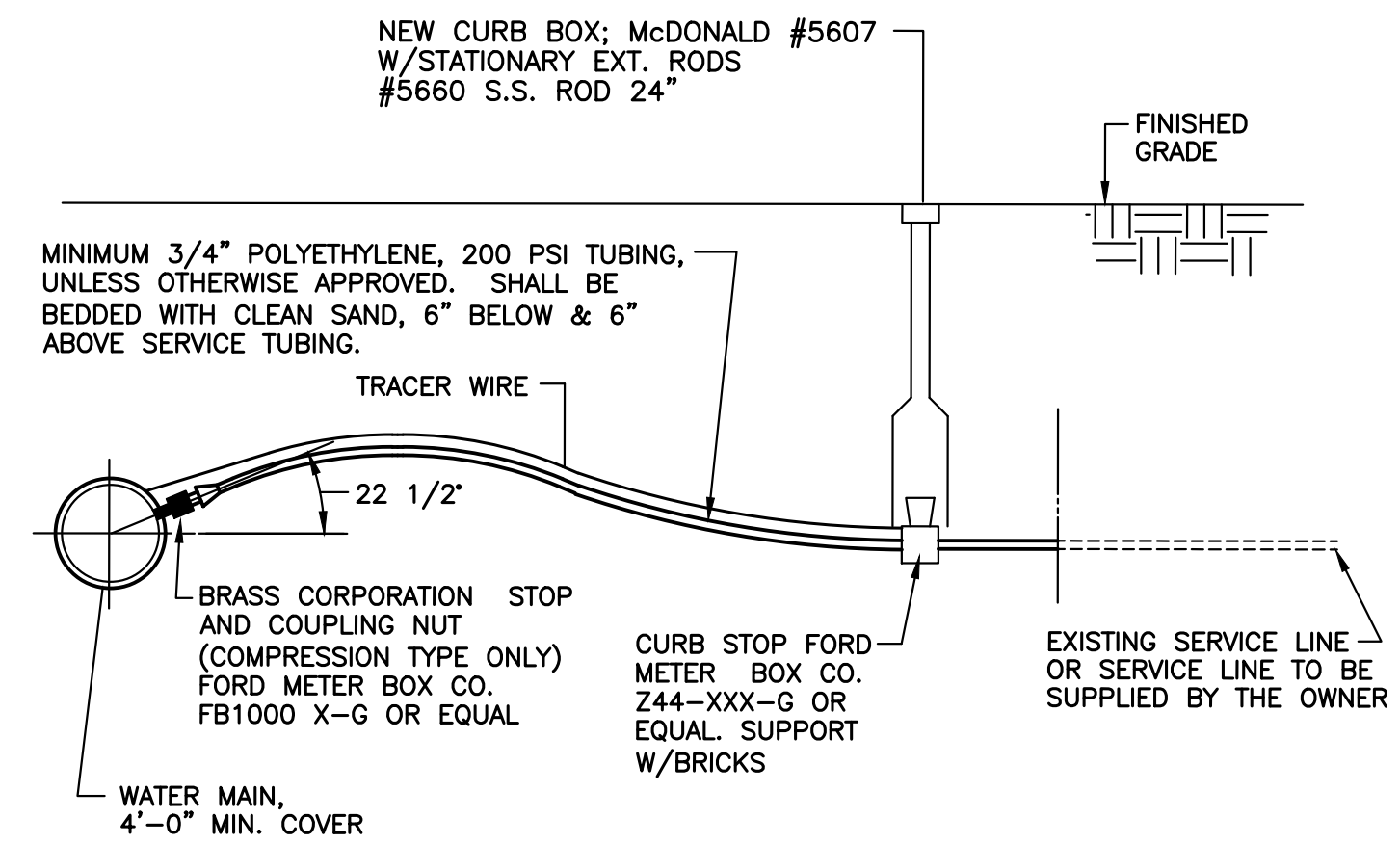
**PLAN AND PROFILE**



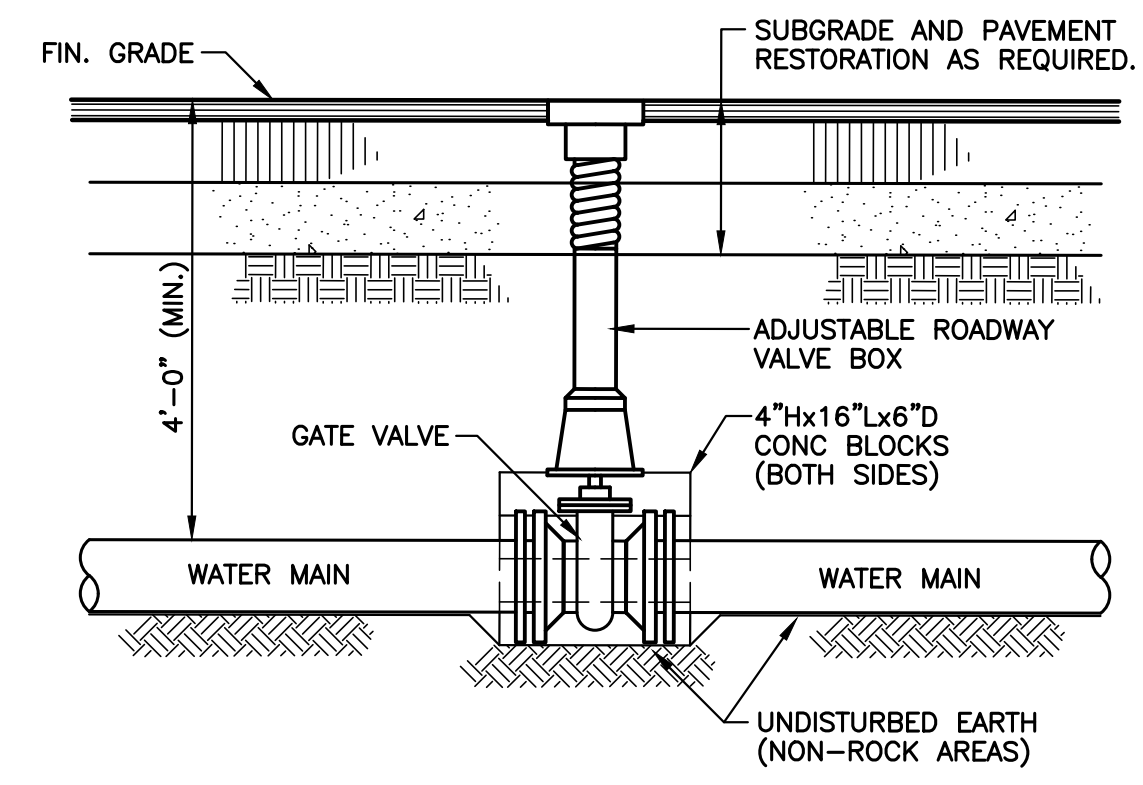
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3		REVISED PER COMMENT 12/19/24 - PENNDOT		1/13/25	BLE	AMV							PROJECT NO. 10814.12		SHEET NO. 3 OF 6		REV.									
2		REVISED PER COMMENT 12/16/24 - TC ENERGY		1/13/25	BLE	MDW							SURVEY DATE JUNE 2024													
1		ISSUED FOR PERMITTING		11/20/24	LJL	BP							FIELD BOOK SHELLY, WITTE & FOX													



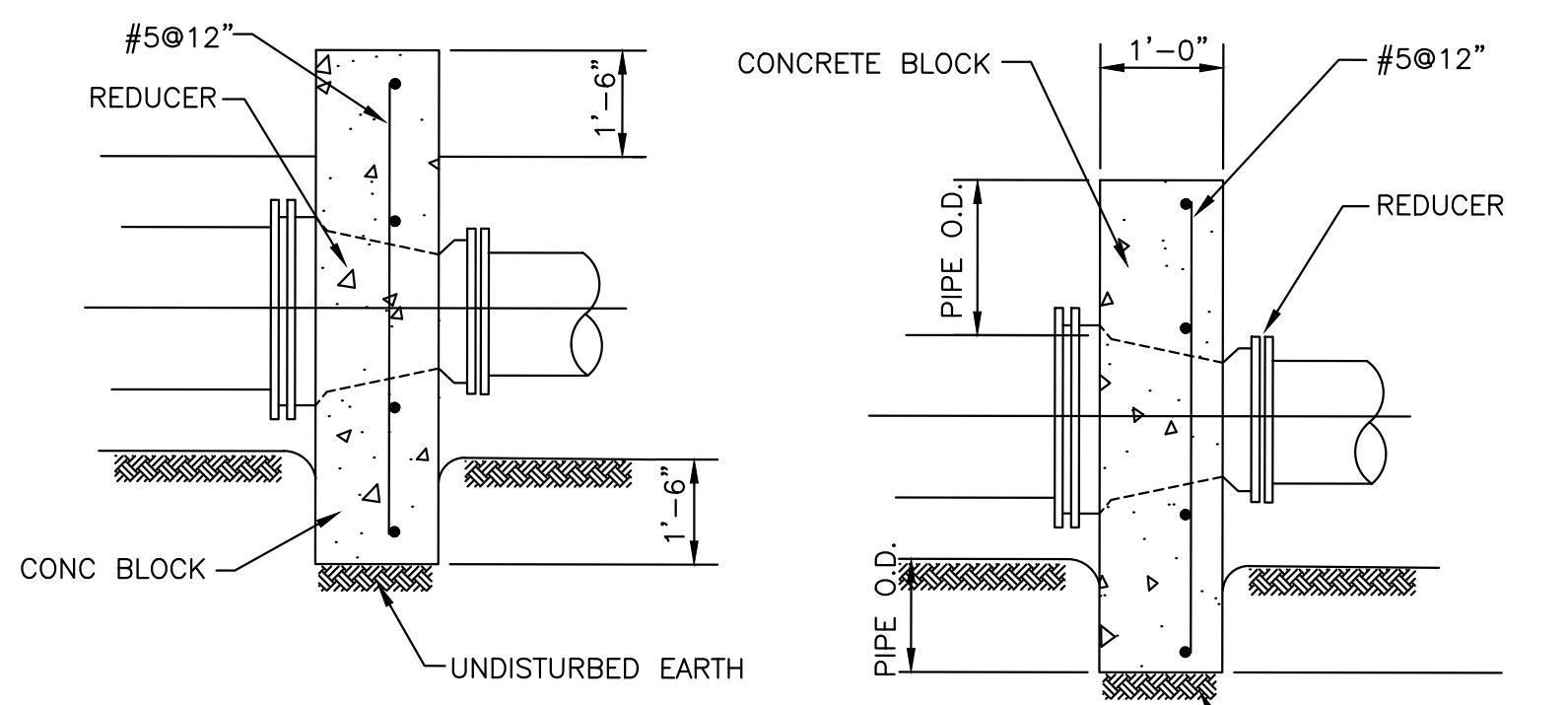
**TYPICAL WATER MAIN VERTICAL OFFSET TYING DETAIL**  
NO SCALE



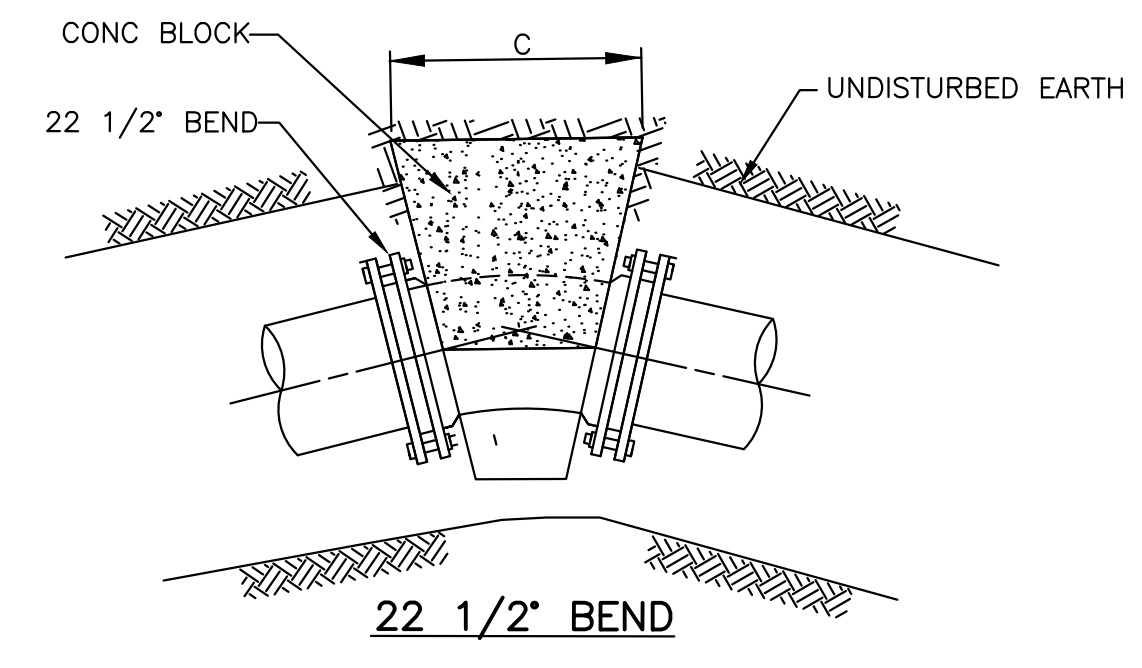
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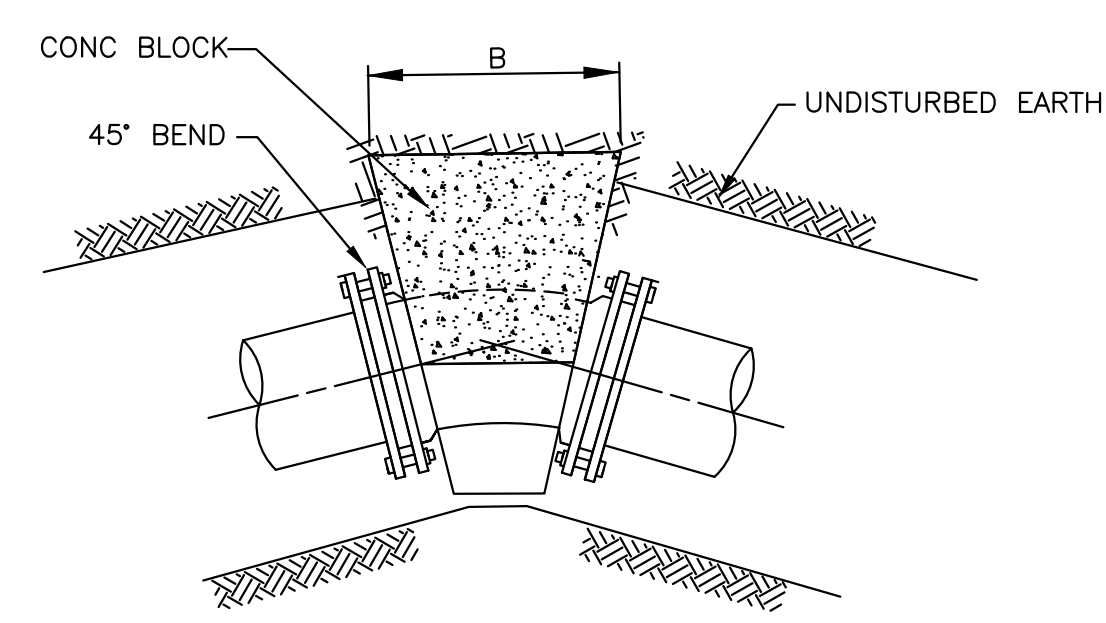
**STANDARD VALVE INSTALLATION**  
NO SCALE



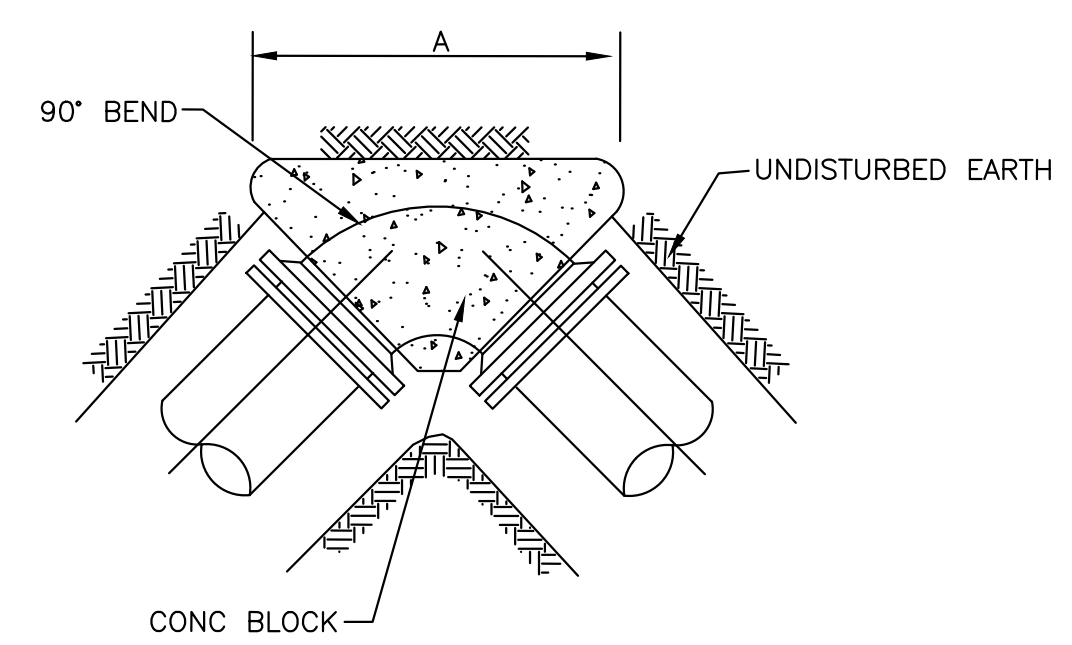
**HORIZONTAL REACTION BACKINGS**  
NO SCALE



**22 1/2\"/>**

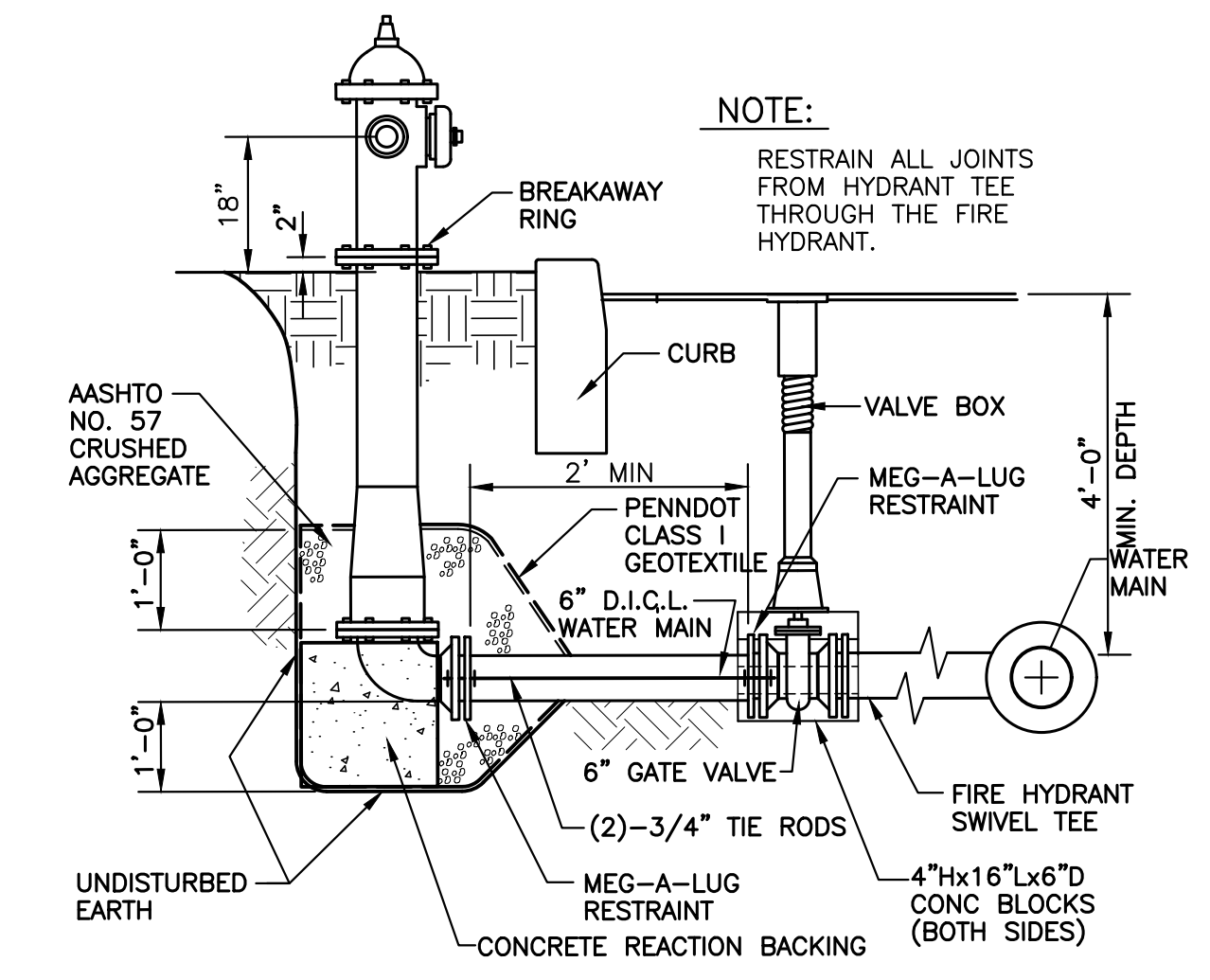


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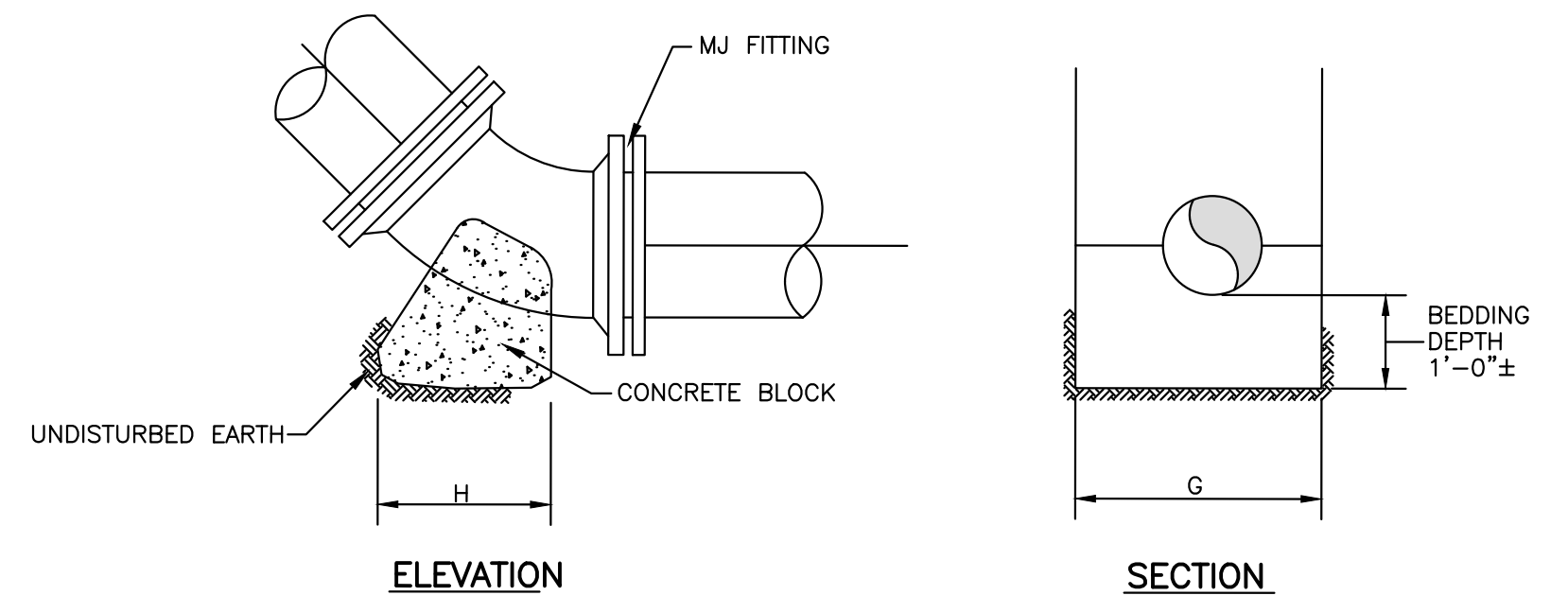


**90\"/>**

**VERTICAL REACTION BACKINGS**  
NO SCALE

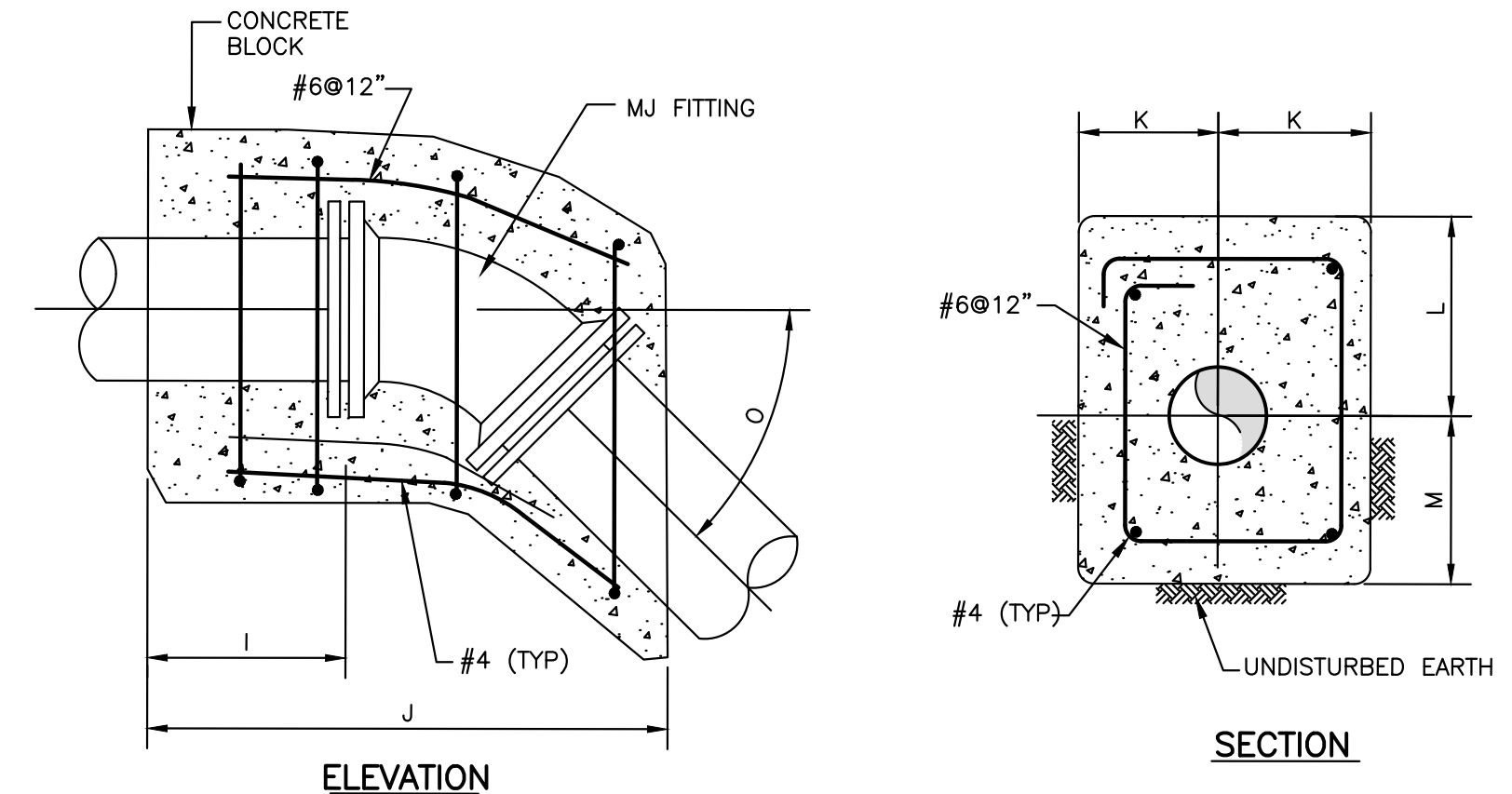


**STANDARD FIRE HYDRANT DETAIL**  
NO SCALE



**ELEVATION**

**SECTION**



**ELEVATION**

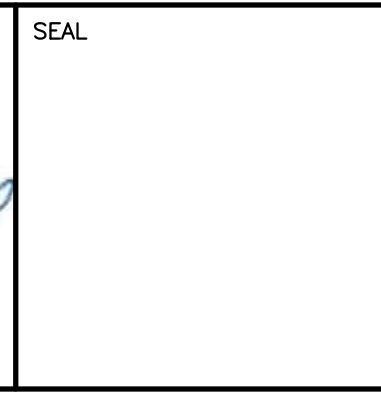
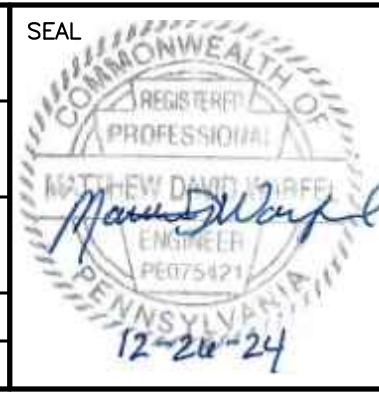
**SECTION**

**VERTICAL REACTION BACKINGS**  
NO SCALE

TABLE OF REACTION BACKING DIMENSIONS																		
PIPE DIA	TEST PRESSURE (PSI)	A	B	C	D	E	F	G	H		I		J			K	L	M
		45°	22 1/2°	45°	22 1/2°	45°	22 1/2°	K	L	M								
6"	150	2'-8"	1'-6"	1'-0"	1'-0"	2'-0"	1'-5"	2'-6"	1'-0"	1'-0"	1'-0"	0'-6"	3'-0"	2'-0"	1'-3"	2'-3"	1'-3"	
8"	150	3'-6"	2'-0"	1'-0"	1'-0"	2'-6"	2'-0"	2'-8"	1'-6"	1'-0"	1'-10"	0'-6"	5'-0"	2'-6"	1'-4"	2'-4"	1'-4"	

NO	REVISION	DATE	BY	APP.
3	REVISED PER COMMENT 12/19/24 - PENNDOT	1/13/25	BLE	AMV
2	REVISED PER COMMENT 12/16/24 - TC ENERGY	1/13/25	BLE	MDW
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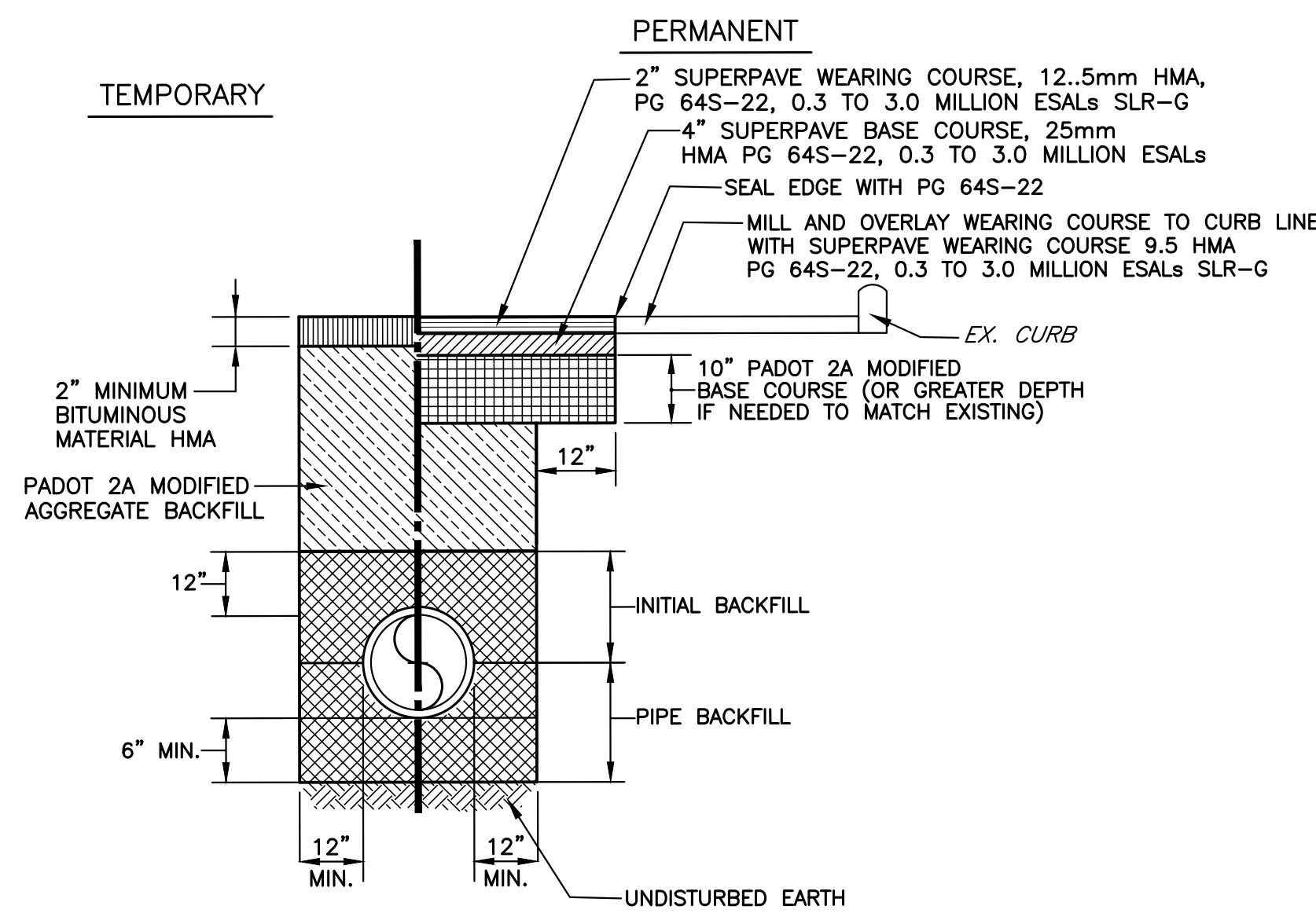
MATTHEW D. WARFEL, P.E.	
DESIGN	CHECKED
DRAWN	CHECKED
CADD	
DATE	SURVEY DATE
OCTOBER 2024	JUNE 2024
	FIELD BOOK
	SHELLY, WITTE & FOX



CLIENT & PROJECT  
 GREENCASTLE AREA, FRANKLIN COUNTY WATER AUTHORITY  
 60 N WASHINGTON STREET  
 GREENCASTLE, PENNSYLVANIA 17225  
 SOUTH WASHINGTON STREET  
 WATER MAIN REPLACEMENT  
 GREENCASTLE BORO. & ANTRIM TWP., FRANKLIN CO., PA



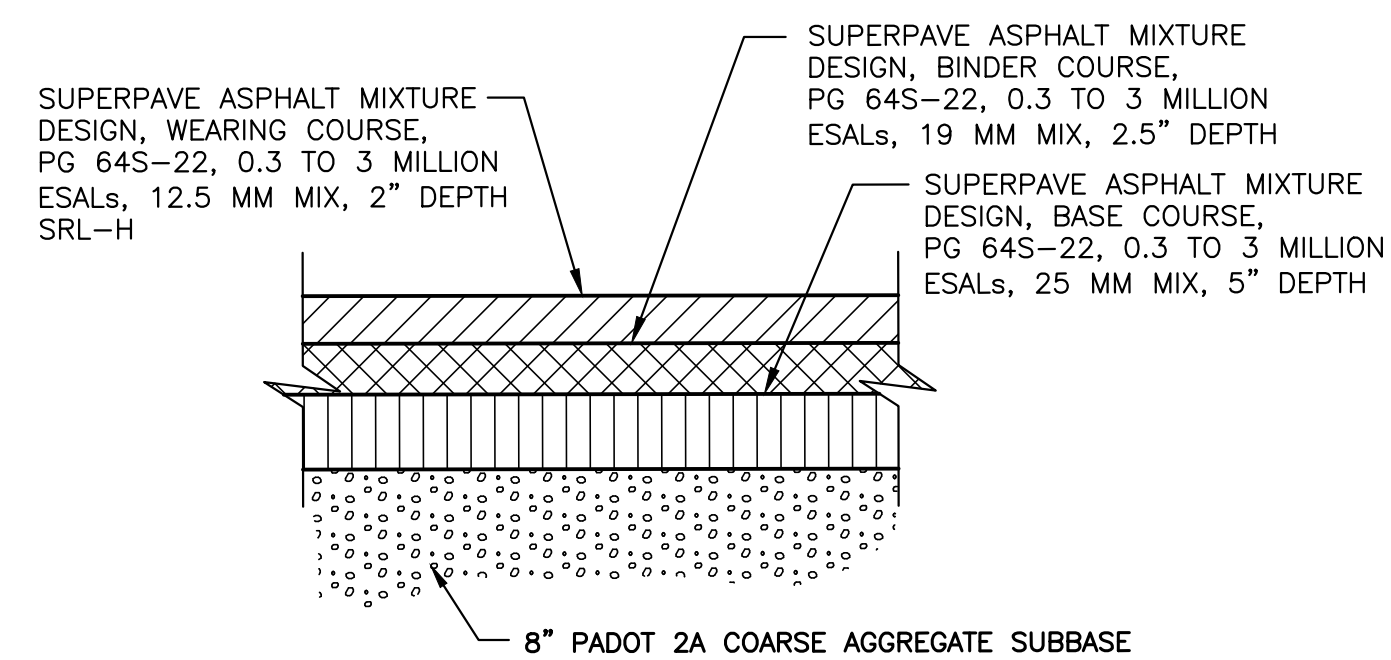
TITLE CONSTRUCTION DETAILS			
SCALE AS SHOWN	DWG. NO.		
PROJECT NO. 10814.12	SHEET NO. 4 OF 6	REV.	



- NOTES:**
- ALL WORK TO BE DONE IN ACCORDANCE WITH PADOT PUBLICATION 408.
  - FINAL RESTORATION TO BE PERFORMED 90 DAYS (MIN.) AFTER INSTALLATION OF TEMPORARY RESTORATION.
  - PIPE BEDDING & INITIAL BACKFILL TO BE AASHTO #8.
  - MILL AND OVERLAY IF TRENCH IS IN THE TRAVEL LANE.

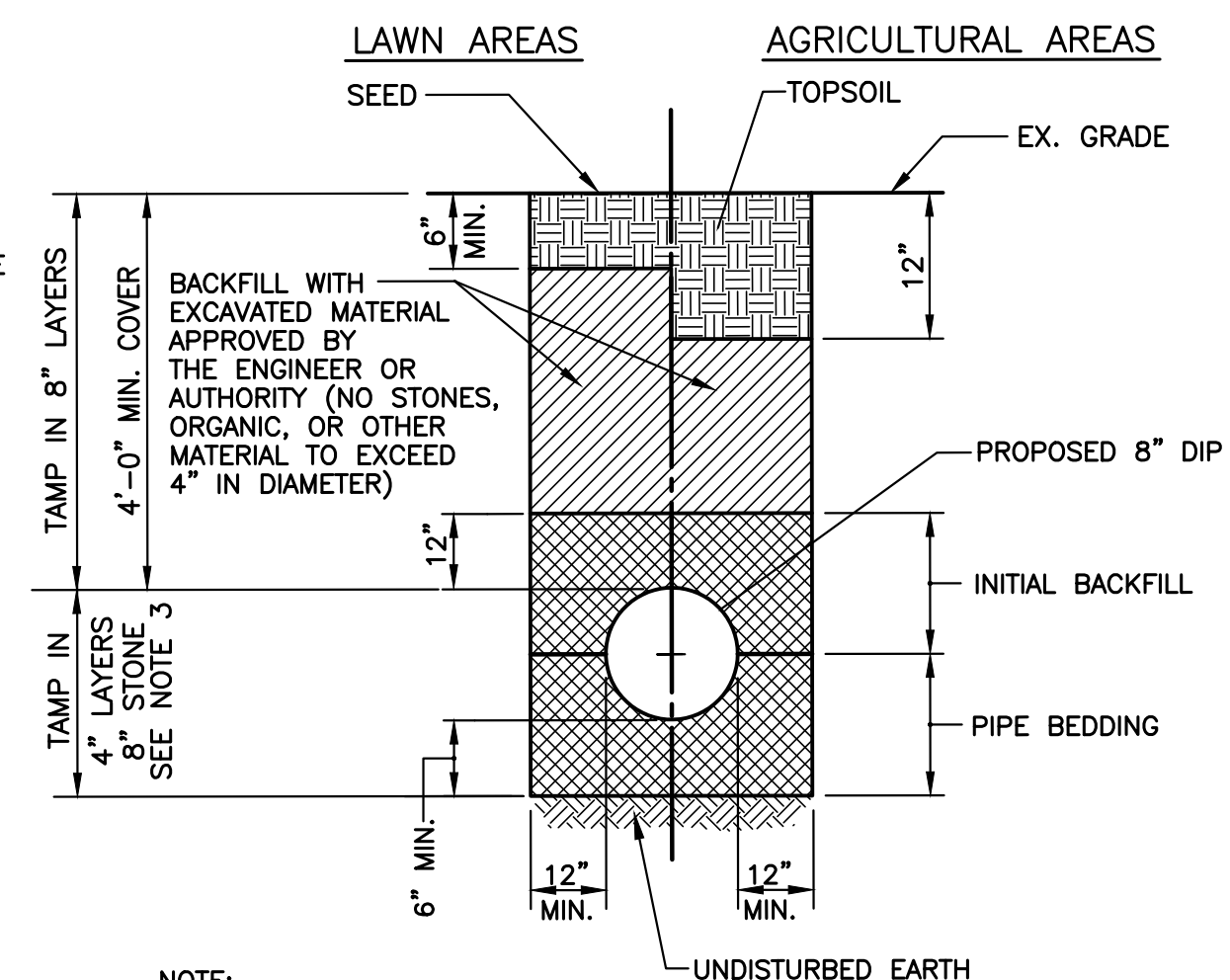
**BACKFILL AND PAVEMENT RESTORATION PENNDOT STATE ROADS**

NO SCALE



**TYPICAL ROAD SECTION**

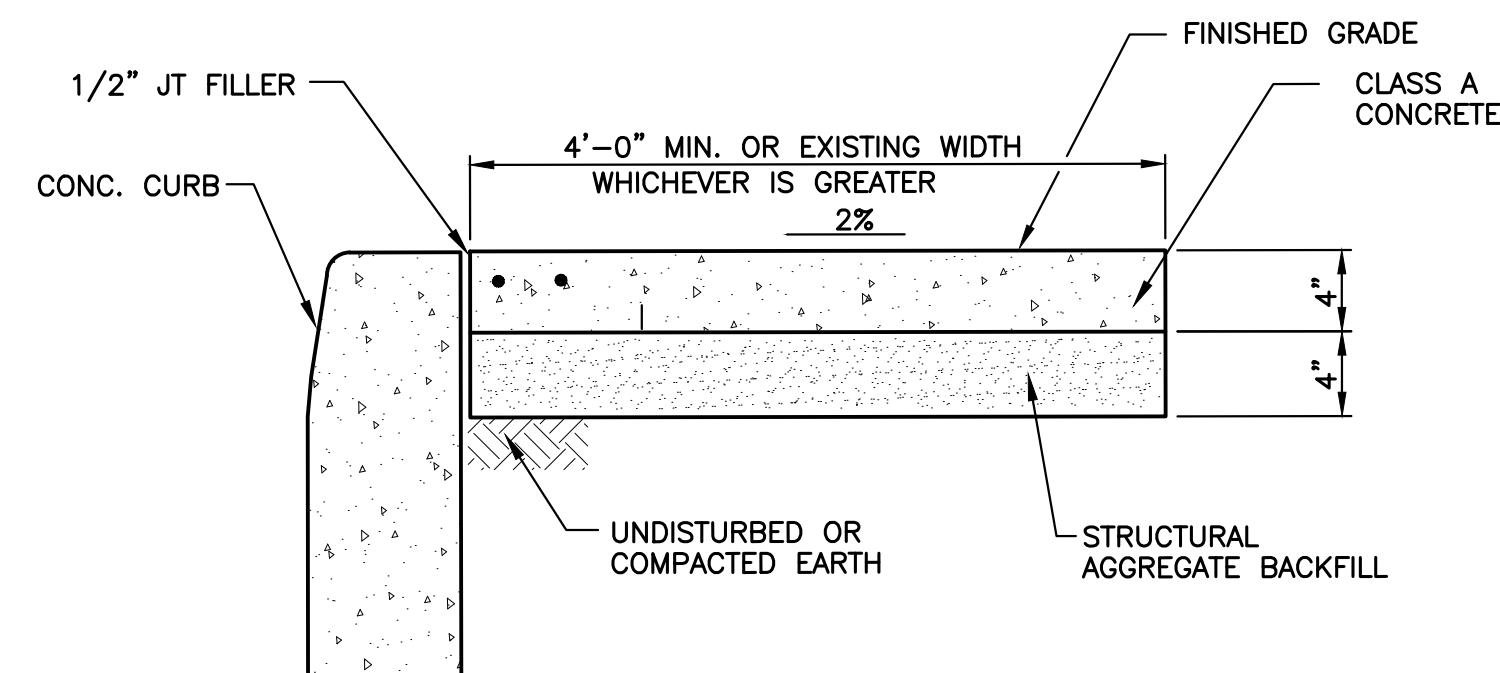
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**NOTE:**  
PIPE BEDDING & INITIAL BACKFILL TO BE AASHTO #8.

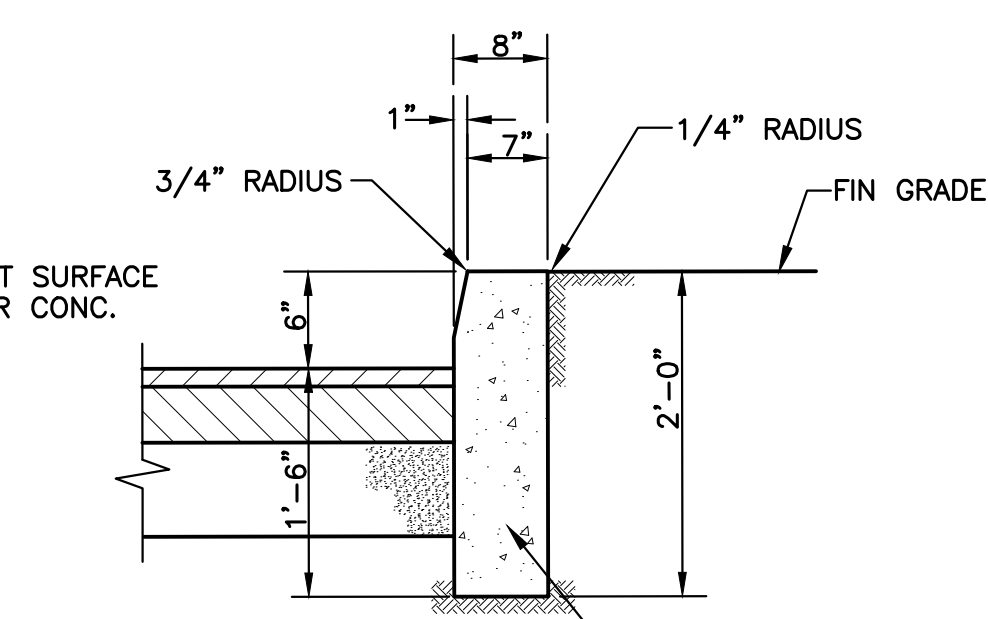
**TYPICAL TRENCH UNPAVED AREAS**

NO SCALE



**SIDEWALK SECTION AT CURB**

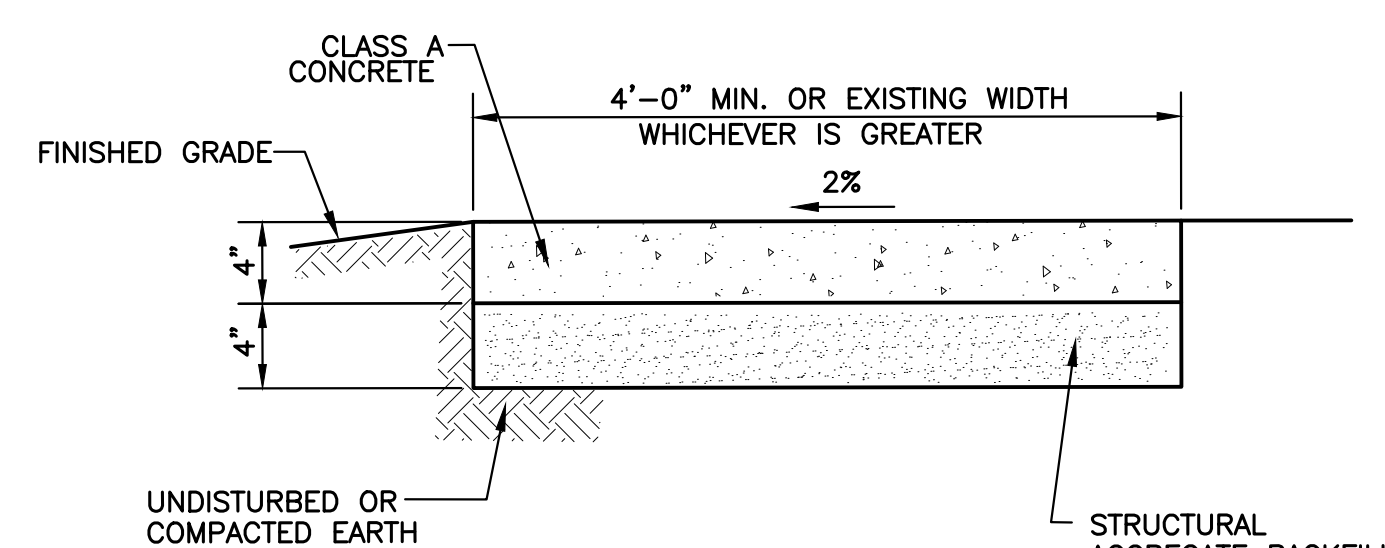
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**NOTE:**  
CURB TO BE CONSTRUCTED WITH CLASS 'A' CONCRETE WITH CONTRACTION JOINTS SPACED AT 16'-0" MAXIMUM

**CONCRETE CURB SECTION**

NO SCALE



**TYPICAL SIDEWALK SECTION**

NO SCALE

SIDEWALK TO BE CONSTRUCTED WITH CLASS 'A' CONCRETE. SPACE CONTRACTION JOINTS WITH JOINT FILLER AT 16'-0" MAXIMUM.

MAXIMUM PAY-LINE WIDTHS		
NOMINAL PIPE DIAMETER (INCHES)	AGGREGATE BACKFILL AND TEMPORARY PAVEMENT (TRENCH WIDTH INCHES)	FINAL PAVEMENT RESTORATION AND RESEEDING OVER TRENCH (WIDTH INCHES)
2 AND SMALLER	24	48
3 THRU 24	48	72
27 THRU 36	60	84
42 THRU 48	84	108
54 THRU 66	96	120

AT MANHOLES, VALVE PITS, AND OTHER STRUCTURES, THE PAY-LINE SHALL BE MEASURED AS ONE (1) FOOT OUTSIDE THE WALL FOR EXCAVATION AND EIGHTEEN (18) INCHES OUTSIDE THE WALL FOR RESTORATION.

**TRENCH NOTES:**

- IF UNSUITABLE SUBSOIL IS ENCOUNTERED AT THE NORMAL TRENCH SUBGRADE THE CONTRACTOR SHALL REMOVE IT TO THE DEPTH DIRECTED BY THE ENGINEER IN THE FIELD AND BACKFILL W/CLASS 'A' BEDDING MATERIAL IN 4" LAYERS.
- BOTTOM OF TRENCH SHALL BE FREE OF WATER PRIOR TO PLACING BEDDING.
- IF VIBRATORY COMPACTION EQUIPMENT IS USED, BACKFILL MAY BE IN 8" LAYERS.
- PROVIDE 6" TOPSOIL WHERE SEEDING IS REQUIRED. SEE NOTE 6 AT GRAVEL DRIVEWAYS.
- CONTRACTOR SHALL SHORE THE TRENCH IN ACCORDANCE WITH AUTHORITY'S STANDARD SPECIFICATIONS.
- GRAVEL AND PAVED DRIVEWAYS TO BE RESTORED IN KIND WITH MINIMUM REQUIREMENTS AS INDICATED IN THE AUTHORITY'S STANDARD DETAILS AND SPECIFICATIONS.
- CLASS 'A' BEDDING MATERIAL SHALL CONSIST OF AASHTO NO. 8 STONE.
- NO PARALLEL OPENING MAY BE MADE FOR MORE THAN 200 LINEAR FEET AT ONE TIME, UNLESS AUTHORIZED BY THE PENNDOT PERMIT.

**SEQUENCE OF CONSTRUCTION**

- CLEARLY STAKE THE LIMIT OF DISTURBANCE (LOD) ENSURING CONSTRUCTION EQUIPMENT DOES NOT EXIT AT ANY TIME FOR THE ENTIRE DURATION OF CONSTRUCTION.
- INSTALL ROCK CONSTRUCTION ENTRANCE AND ALL PERIMETER COMPOST FILTER SOCKS (OR EQUAL ALTERNATIVE).
- CLEAR, GRUB AND STRIP TOPSOIL AND STOCKPILE AT THE LOCATION DEPICTED ON THE APPROVED E&S PLAN DRAWINGS. TOPSOIL STOCKPILES SHOULD BE TEMPORARILY STABILIZED AFTER REMAINING IDLE FOR GREATER THAN 4 CALENDAR DAYS.
- PERFORM SITE GRADING FOR BUILDING CONSTRUCTION. INSTALL CONCRETE WASHOUT PRIOR TO ANY CONCRETE WORK.
- CONSTRUCT THE PROPOSED BUILDING AND ANY PROPOSED UTILITIES.
- AS CONSTRUCTION IS FINALIZED, THE STOCKPILED TOPSOIL MAY BE DISTRIBUTED AS NECESSARY TO COMPLETE FINAL GRADING. PERMANENTLY STABILIZE ALL REMAINING EARTH DISTURBANCE WITH THE PERMANENT SEEDING MIXTURE. ANY STEEP SLOPES (3:1 OR GREATER) OR AREAS OF CONCENTRATED FLOW SHOULD UTILIZE EROSION CONTROL MATTING.
- ONCE PERMANENT STABILIZATION HAS BEEN ACHIEVED, THE OWNER AND/OR OPERATORS SHALL CONTACT THE FRANKLIN COUNTY CONSERVATION DISTRICT FOR A FINAL INSPECTION PRIOR TO THE REMOVAL OF THE BMPs.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED. ALL DISTURBANCE CREATED BY THE REMOVAL OF THE CONTROLS MUST BE STABILIZED IMMEDIATELY. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

**General Application 01-A Component Parts of a TTC Zone Two-Way Roadway**

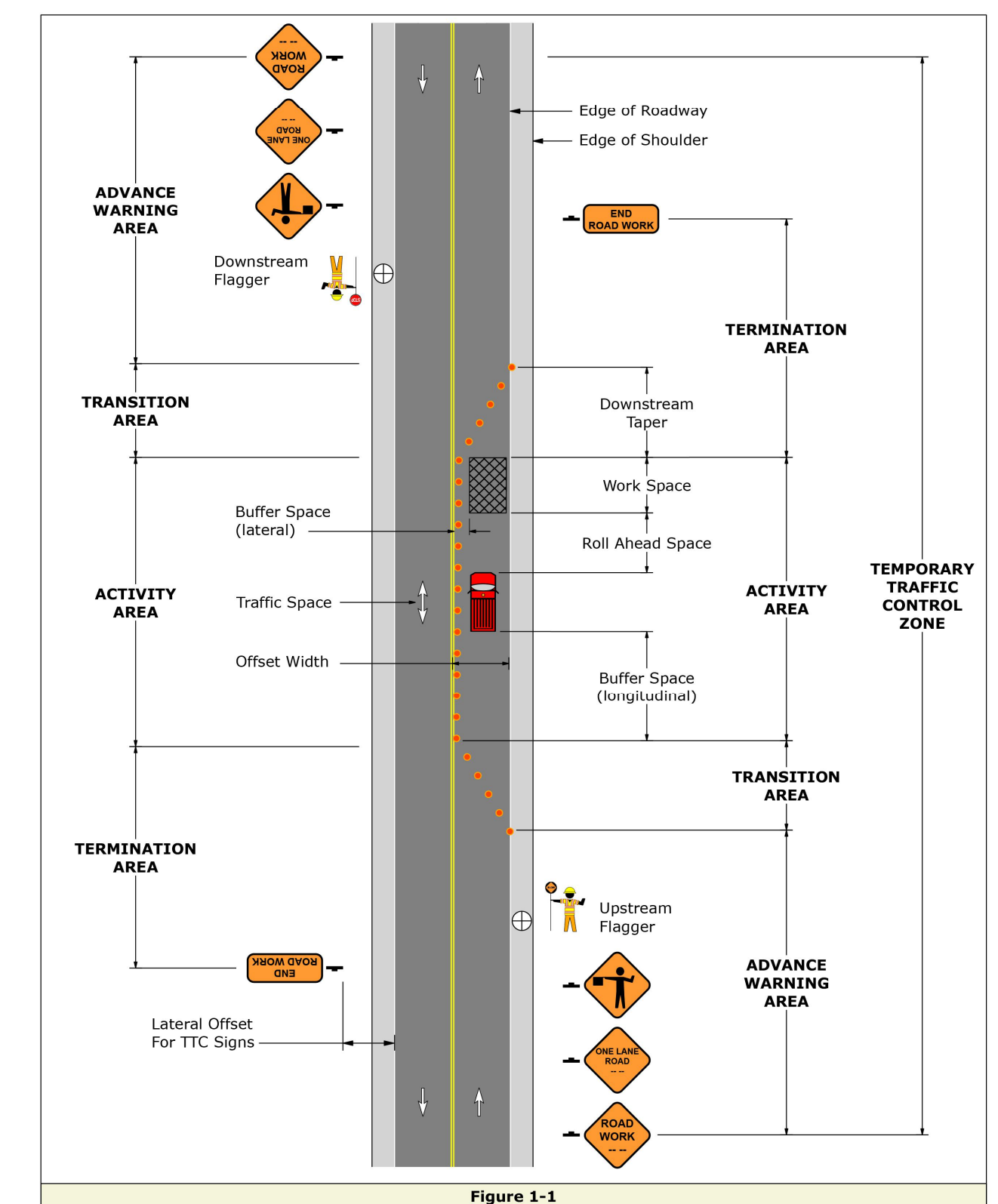


Figure 1-1

**PATA/GA Reference Charts**

Speed S (MPH)	Channelizing Devices Spacing (Feet)	Sign Spacing						Buffer Space (Feet)	Roll Ahead Space (Feet)
		Conventional		Freeways and Expressways					
		Urban	Rural	A	B	C	D		
25	50	100-200	500-800	-	-	-	-	155	150
30	60	100-200	500-800	-	-	-	-	200	150
35	70	100-200	500-800	-	-	-	-	250	150
40	80	350-500	500-800	1000	1640	2640	5280	305	150
45	90	350-500	500-800	1000	1640	2640	5280	360	150
50	100	350-500	500-800	1000	1640	2640	5280	425	250
55	110	350-500	500-800	1000	1640	2640	5280	495	250
60	120	-	-	1000	1640	2640	5280	570	250
65	130	-	-	1000	1640	2640	5280	645	250
70	140	-	-	1000	1640	2640	5280	730	250

**Taper Lengths and Minimum Number of Channelizing Devices**

Speed S (MPH)	Merging Taper: L		Shifting Taper: 1/2L		Shoulder Taper: 1/3L		50' Per Lane Taper	
	Length (Feet)	Minimum Number Of Devices	Length (Feet)	Minimum Number Of Devices	Length (Feet)	Minimum Number Of Devices	Length (Feet)	Minimum Number Of Devices
25	125	6	65	6	45	6	50	6
30	180	7	90	6	60	6	50	6
35	245	8	125	6	85	6	50	6
40	320	9	160	6	110	6	50	6
45	340	13	270	7	180	6	50	6
50	400	13	300	7	200	6	50	6
55	660	13	330	7	220	6	50	6
60	720	13	360	7	240	6	50	6
65	780	13	390	7	260	6	50	6
70	840	13	420	7	280	6	50	6

**Taper Length Formulas**

Taper lengths shown on PATA Notes pages are based upon a full-lane offset (12'). Field conditions may justify a shorter taper length if the offset is less than 12'. Use these formulas to determine required taper length for any offset distance.

$$L = \frac{WS^2}{50}$$

$$L = WS$$

S = 40 MPH or less  
 S = 45 MPH or more  
 W = Width of Offset (feet)  
 L = Length of Taper (feet)  
 S = Regulatory Speed Limit (MPH)

MATTHEW D. WARFEL, P.E. DESIGN BY: AMV DRAWN: CADD DATE: OCTOBER 2024										SEAL 		CLIENT & PROJECT GREENCASTLE AREA, FRANKLIN COUNTY WATER AUTHORITY 60 N WASHINGTON STREET GREENCASTLE, PENNSYLVANIA 17225 SOUTH WASHINGTON STREET WATER MAIN REPLACEMENT GREENCASTLE BORO. & ANTRIM TWP., FRANKLIN CO., PA				TITLE CONSTRUCTION DETAILS		SCALE AS SHOWN		DWG. NO. PROJECT NO. 10814.12 SHEET NO. 5 OF 6 REV.				
NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.	3	REVISED PER COMMENT 12/19/24 - PENNDOT	1/13/25	BLE	AMV	1	REVISED PER COMMENT 12/16/24 - TC ENERGY	1/13/25	BLE	MDW	2	ISSUED FOR PERMITTING	11/20/24	LJL	BP



### SEDIMENTATION AND EROSION CONTROL NOTES

THIS NARRATIVE AND THE ATTACHED PLAN AND DETAILS CONSTITUTE THE EROSION AND SEDIMENTATION CONTROL PLAN FOR THE WATER MAIN REPLACEMENT, ALONG SOUTH WASHINGTON STREET FROM OAK LANE TO THE BOROUGH LINE.

- A. GENERAL STATEMENT OF THE PROJECT**
- THIS PROJECT CONSISTS OF THE INSTALLATION OF AN 8-INCH WATER MAIN.
  - ACCELERATED EROSION AND SEDIMENTATION SHALL BE LIMITED BY STABILIZATION OF THE DISTURBED AREA AS SOON AS POSSIBLE.
  - SEDIMENTATION WILL BE CONTROLLED BY LIMITING THE AMOUNT OF OPEN TRENCH TO THE TOTAL LENGTH OF UTILITY LINE THAT CAN BE PLACED IN THE TRENCH AND BACKFILLED IN ONE WORKING DAY, NO MORE THAN 50 LINEAL FEET OF OPEN TRENCH SHOULD EXIST WHEN WATER LINE INSTALLATION CEASES AT THE END OF THE WORKDAY. ALL DISTURBED AREAS TO BE GRASS WILL BE SEEDED AND MAINTAINED IMMEDIATELY AFTER FINAL GRADING.
  - MINIMAL DISTURBANCE OF GRASS AREAS MAY OCCUR DURING PLACEMENT OF LATERALS, VALVES, AND HYDRANTS. THE CONTRACTOR SHALL UTILIZE 12" FILTER SOCK DOWNPOLE OF THESE DISTURBED AREAS UNTIL FULLY STABILIZED.
  - ALL SEDIMENT CONTROL MEASURES ARE TO REMAIN IN PLACE UNTIL ALL AREAS ARE FULLY STABILIZED.
  - AFTER FINAL SITE STABILIZATION HAS OCCURRED, TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE REINSTALLED.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL FACILITIES.
  - A COPY OF THE EROSION AND SEDIMENTATION CONTROL PLANS MUST BE POSTED AT THE CONSTRUCTION SITE IN ACCORDANCE WITH THE LAWS OF THE COMMONWEALTH OF PENNSYLVANIA.
- B. FEATURES OF THE PROJECT**
- THE LOCATIONS OF AFFECTED PROPERTY LINES, AND THE OTHER SIGNIFICANT PHYSICAL FEATURES HAVE BEEN SHOWN ON THE ATTACHED PLAN.
- C. PROPOSED ALTERATION TO THE AREA**
- THE PROPOSED ALTERATION TO THE AREA CONSISTS OF THE TRENCHING REQUIRED TO INSTALL THE WATERLINE, THE RESTORATION OF THAT TRENCH TO MATCH PRE-CONSTRUCTION CONDITIONS.
- D. AMOUNT OF RUNOFF FROM THE PROJECT AREA**
- INCREASED STORM WATER RUNOFF WILL BE MINIMAL DUE TO THIS CONSTRUCTION BECAUSE THE AREAS IN WHICH CONSTRUCTION WILL TAKE PLACE SHALL BE ULTIMATELY RETURNED TO THEIR EXISTING CONDITION.
- E. TEMPORARY CONTROL MEASURES**
- STOCKPILES
    - TOPSOIL AND SPOIL SHALL BE PLACED INTO SEPARATE STOCKPILES WHICH SHALL BE MAINTAINED IN A LIMITED AREA TO KEEP THE DISTURBED AREA TO A MINIMUM. THE STOCKPILES SHALL BE PLACED UPSLOPE FROM THE EXCAVATION WHENEVER POSSIBLE, AND RUNOFF FROM THE STOCKPILES SHALL BE DIRECTED THROUGH A SEDIMENT FILTER STRUCTURE AND DISCHARGED IN A NON-EROSIVE MANNER. EXCAVATED MATERIAL FROM THE STREAM CHANNELS SHALL BE LOCATED OUTSIDE THE CHANNEL.
    - STOCKPILES THAT WILL EXIST BETWEEN TWENTY (20) DAYS AND TWELVE (12) MONTHS SHALL BE STABILIZED WITH A TEMPORARY COVER CROP OF ANNUAL RYE GRASS (1 LB./1000 SQUARE FEET) OR WINTER RYE (3.5 LB./1000 SQUARE FEET) IN ACCORDANCE WITH ACCEPTED SEEDING PRACTICES.
    - BLACK POLYETHYLENE SHEETING, 3 MIL. THICKNESS, MAY BE USED TO STABILIZE STOCKPILES. SHEETS SHALL BE OVERLAPPED 50 AS TO SHED AND NOT CONTAIN WATER. SHEETS SHALL BE ANCHORED WITH TIRES OR APPROVED EQUAL AT SIX (6) FEET O.C. ALONG SEAMS AND EDGES AND TEN (10) FEET O.C. THROUGHOUT.
    - PLYWOOD SHEETING MAY BE USED TO PROTECT EXISTING VEGETATION UNDER SHORT DURATION STORAGE/STOCKPILES AREAS. EFFECTIVENESS OF THIS PROTECTION IS LIMITED TO TIME PERIODS NOT EXCEEDING FOUR (4) DAYS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE/REPLACE VEGETATION DAMAGED UNDER SHEETING.
    - THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAULING ALL EXCAVATED MATERIALS THAT WILL NOT BE USED AS BACKFILL OFF SITE AND DISPOSE OF EXCAVATED MATERIALS IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE FRANKLIN COUNTY CONSERVATION DISTRICT.
- F. PERMANENT CONTROL MEASURES**
- PERMANENT GRASS OR LEGUME COVER
    - ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED SHALL BE COVERED WITH GRASS OR A LEGUME IN ORDER TO MINIMIZE EROSION. THE GRASS OR LEGUME SHALL AS NEARLY AS POSSIBLE MATCH THE GROUND COVER THAT EXISTED PRIOR TO CONSTRUCTION. SEED SHALL BE SELECTED BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
  - MULCH
    - STRAW MULCH SHALL BE APPLIED TO SEEDING AREAS TO HELP ESTABLISH A PERMANENT GRASS COVER TO PREVENT EROSION.
    - IT SHALL BE APPLIED AT A RATE OF 100 POUNDS PER 1000 SQUARE FEET (ENOUGH TO LIGHTLY COVER 75 TO 90 PERCENT OF THE DISTURBED AREA).
  - EROSION CONTROL MAT OR FABRIC
    - IN AREAS WHERE THE SLOPE EXCEEDS A 3:1 RATIO, EROSION CONTROL MAT OR FABRIC SHALL BE INSTALLED TO PREVENT EROSION UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED.
  - SOD
    - IN AREAS WHERE STABILIZATION IS FOUND TO BE DIFFICULT, THE OWNER MAY INSTALL SOD. SOD MATERIAL AND INSTALLATION SHALL CONFORM TO THE GUIDELINE SPECIFICATIONS TO SOODING BY THE AMERICAN SOD PRODUCER ASSOCIATION.
- G. MAINTENANCE**
- ALL SEDIMENT AND EROSION CONTROL FACILITIES SHALL BE CHECKED FOR DAMAGE AFTER EACH STORM. ALL FACILITIES THAT ARE DAMAGED, CLOGGED, OR CAN NO LONGER DO THE JOB THEY WERE DESIGNED FOR, SHALL BE REPLACED.
  - ANY PERMANENT SEEDING AREAS THAT BECOME ERODED SHALL HAVE THE TOPSOIL REPLACED, THE GRASS RESOWN AND MULCH REAPPLIED, OR, AT THE DISCRETION OF THE OWNER, SOD MAY BE INSTALLED.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAULING ALL EXCAVATED MATERIALS THAT WILL NOT BE USED AS BACKFILL OFF SITE AND DISPOSE OF EXCAVATED MATERIALS IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE FRANKLIN COUNTY CONSERVATION DISTRICT.
  - ALL AREAS ADJACENT TO THE STREAM CROSSINGS SHALL BE STABILIZED WITHIN 5 DAYS OF COMPLETION.

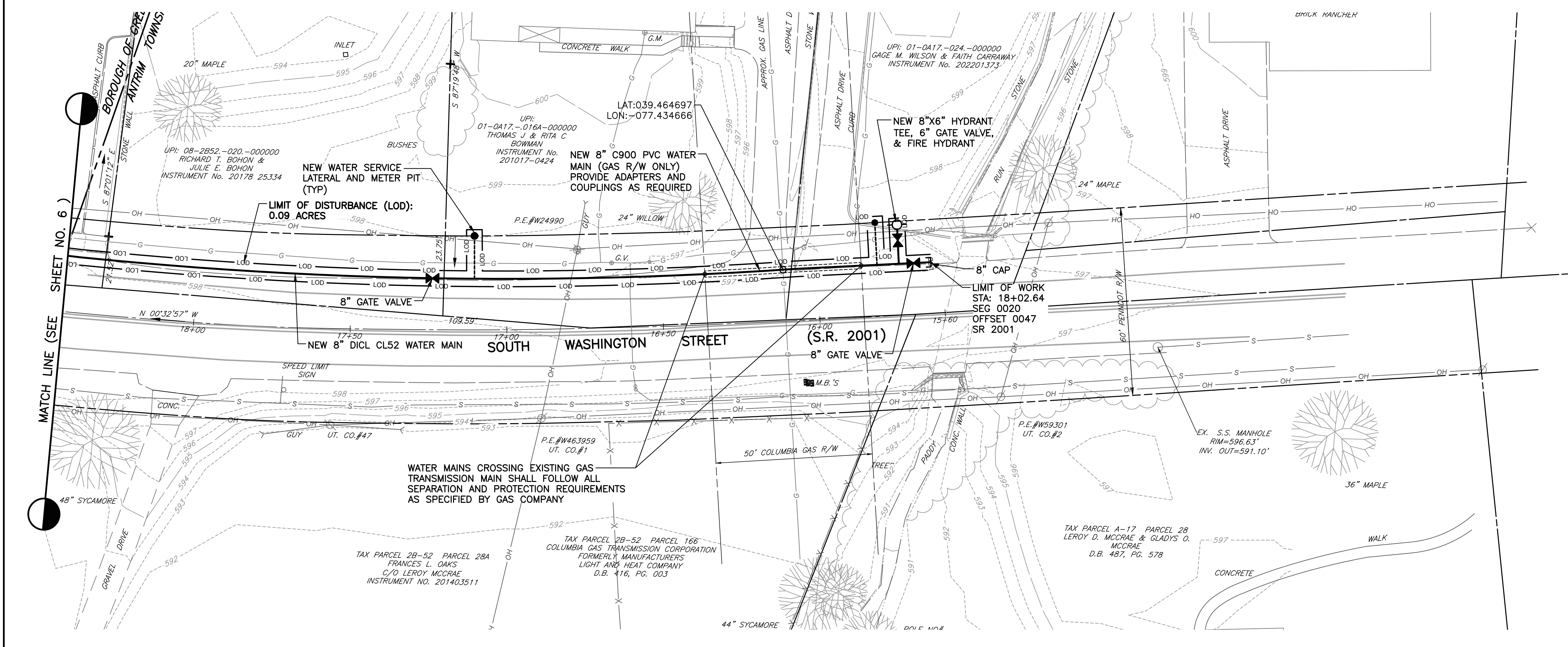
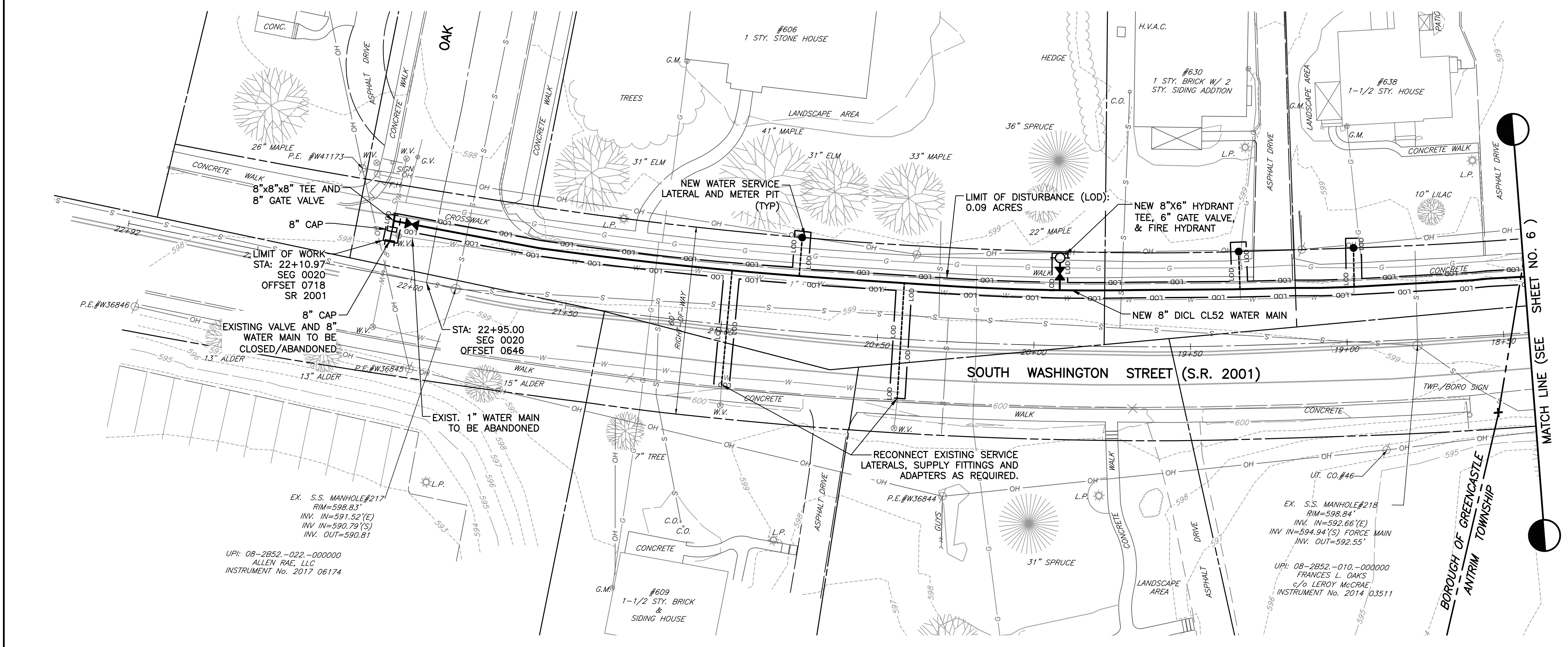
### SEEDING SCHEDULE

APPLICATION	SPECIES	APPLICATION RATE	LIMITING RATE	% PURE LIVE SEED	FERTILIZER	SEEDING DATE
TEMPORARY	ANNUAL RYE	10 LBS/1000 SY	2000 LBS/AC	98%	5-5-5 @ 1000 LBS/AC	PRIOR TO OCT. 15
PERMANENT	LOFTS INC. RECLAIM CONSERVATION MIX - DAMP FORMULA	220 LBS/AC	800 LBS / 1000 SY	98%	SEE NOTE 1 BELOW	MAY 1 AND OCT 15
PERMANENT	PERENNIAL RYE	4 LBS/1000 SY		98%	SEE NOTE 1 BELOW	JUNE 1 AND OCT 15
	KENTUCKY BLUE GRASS CREEPING RED FESCUE	6 LBS/1000 SY 11 LBS/1000 SY	800 LBS / 1000 SY	98%		

- \* COMMERCIAL GRADE FERTILIZER
- FERTILIZER SHALL BE AS FOLLOWS  
10-20-20 ANALYSIS: COMMERCIAL FERTILIZER @ 140 LBS. / 1000 S.Y. AND 38-0-0 UREA FORM FERTILIZER @ 50 LBS. / 1000 S.Y. OR 32-0-0 TO 38-0-0 SULFUR COATED UREA FERTILIZER @ 59-50 LBS. / 1000 S.Y. OR 31-0-0 IBDU FERTILIZER @ 61 LBS. / 1000 S.Y.
  - SPECIFICATION ITEMS OBTAINED USING PADOT PUBLICATION NO. 408 AND THE PENN STATE AGRONOMY GUIDE (1991, 1992).
  - ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW APPLIED AT A RATE OF 8000 LBS. / ACRE (1240 LBS. 1000 S.Y.), MULCH TO BE ANCHORED WITH WOOD CELLULOSE FIBER @ 750 LBS. / ACRE OR EQUAL.

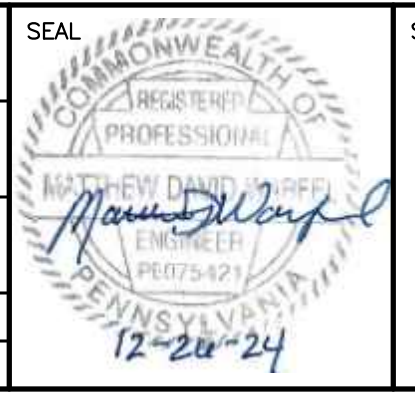
### LEGEND

LOD LIMIT OF DISTURBANCE: 0.09 ACRES



NO.	REVISION	DATE	BY	APP.
3	REVISED PER COMMENT 12/19/24 - PENNDOT	1/13/25	BLE	AMV
2	REVISED PER COMMENT 12/16/24 - TC ENERGY	1/13/25	BLE	MDW
1	ISSUED FOR PERMITTING	11/20/24	LJL	BP

MATTHEW D. WARFEL, P.E.	
DESIGN BY	CHECKED
AMV	
DRAWN BY	CHECKED
CADD	
DATE	SURVEY DATE
OCTOBER 2024	JUNE 2024
	FIELD BOOK
	SHELLY, WITTER & FOX



CLIENT & PROJECT  
 GREENCASTLE AREA, FRANKLIN COUNTY WATER AUTHORITY  
 60 N WASHINGTON STREET  
 GREENCASTLE, PENNSYLVANIA 17225  
 SOUTH WASHINGTON STREET  
 WATER MAIN REPLACEMENT  
 GREENCASTLE BORO. & ANTRIM TWP., FRANKLIN CO., PA



TITLE		EROSION AND SEDIMENT CONTROL PLAN	
		STA 0+00 TO STA 4+50 AND STA 4+50 TO STA END	
SCALE	0 10' 20' 40' 60'	DWG. NO.	
	SCALE: 1" = 20'		
PROJECT NO.	10814.12	SHEET NO.	6 OF 6
		REV.	