# 2020 FALLS TOWNSHIP ROAD IMPROVEMENT PROGRAM

## MARCH 19, 2020

### UTILITY OWNERS

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CONYERS, GA 30013
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COMCAST CABLEVISION
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ATTN: KATHIE BROWN

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LOWER BUCKS COUNTY JOINT MUNICIPAL AUTHORITY
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FAIRLESS HILLS, PA 19030
ATTN: KEITH SUMMERVILLE
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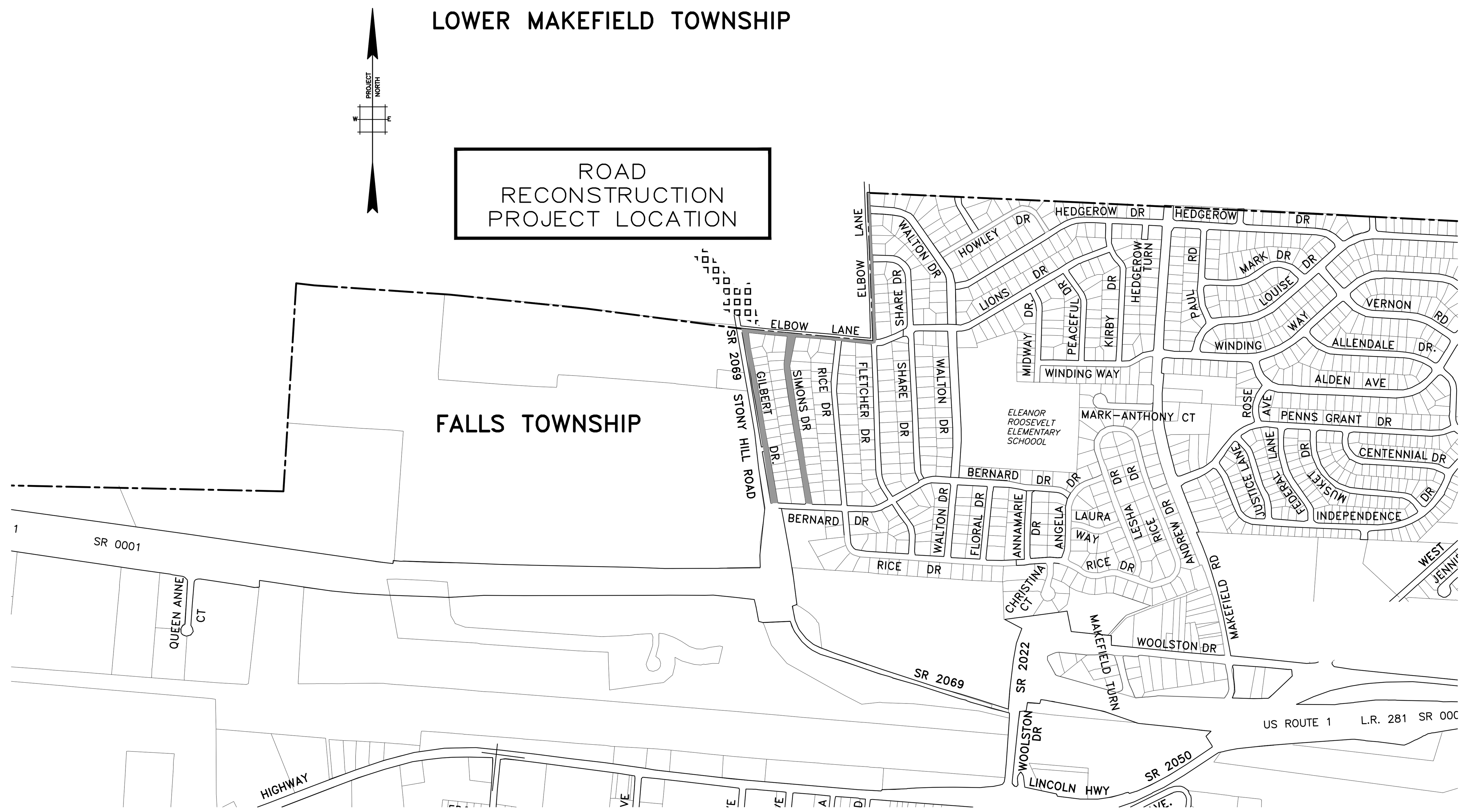
PENNSYLVANIA AMERICAN WATER
1145 EDGEWOOD ROAD
YARDLEY, PA 19067-1604
ATTN: LAURA FOULDS

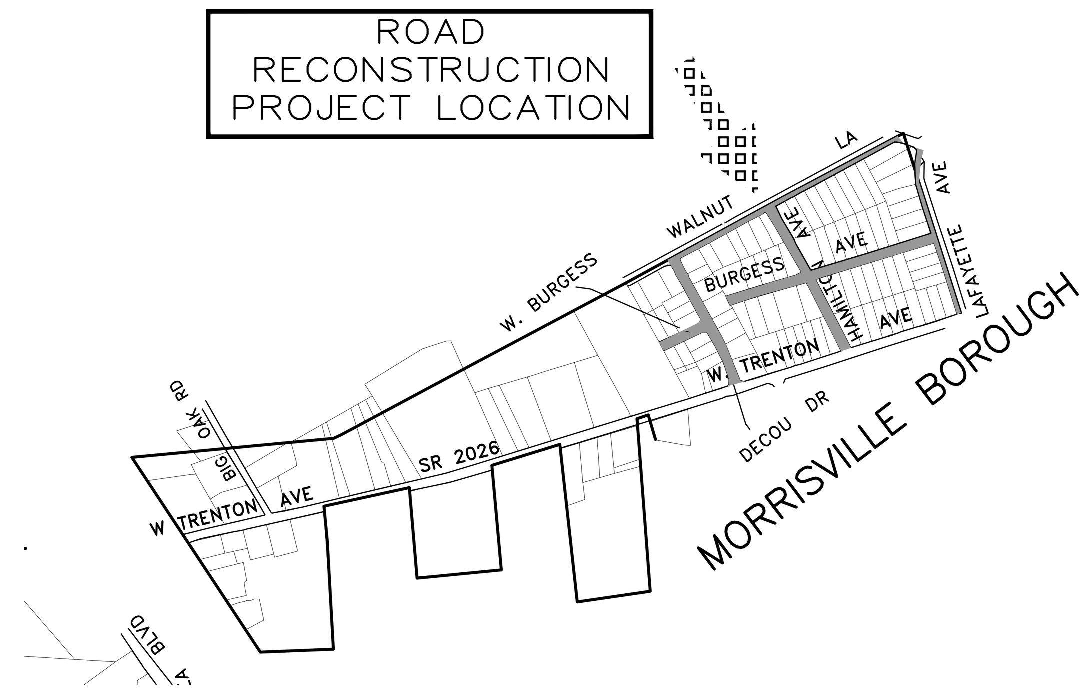
FALLS, TOWNSHIP OF
188 LINCOLN HIGHWAY, SUITE 100
FAIRLESS HILLS, PA 19030
ATTN: MATHEW TAKITA, AIA, MCP

LOCATION OF UTILITIES SHOWN ON THESE PLANS ARE NOT WARRANTED AS TO EXACTNESS. CONTRACTOR SHALL DETERMINE EXACT LOCATION AND DEPTH OF UTILITIES PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND OTHER APPLICABLE LAWS.

PRIOR TO DIGGING CALL 1-800-242-1776




LOCATION MAP
SCALE: 1"=800'




LOCATION MAP
SCALE: 1"=800'

PREPARED FOR:
TOWNSHIP OF FALLS
188 LINCOLN HIGHWAY SUITE 100
FAIRLESS HILLS, PA 19030
(215) 949-9000

PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776
STOP - CALL BEFORE YOU DIG

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS, TOWNSHIP FILES AND/OR ABOVE-GROUND INSPECTION OF THE SITE COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 38 (AMENDED BY ACT 121 OF 2008), CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK.

PA ONE CALL SERIAL NUMBERS
XXXXXXXXXXX

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JONES ENGINEERING ASSOCIATES
YOUR PARTNER FOR EXCELLENCE.
188 LINCOLN HIGHWAY, SUITE 206
FAIRLESS HILLS, PA 19030

JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233

| NO. | DATE | REVISION | BY | CHK. |
|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

TITLE SHEET
of
2020 ROAD IMPROVEMENT PROGRAM
PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
Fairless Hills, PA

| | |
|---|---|
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/20 | SCALE: --- |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING: Title Sheet.dwg



Monday, March 16, 2020
P:\FALLS\CI19-01\Plans\Plat\Bid-Docs-Cad-2020 Scope\Title Sheet.dwg

## GENERAL NOTES:

1. EXISTING FEATURES FOR SIMONS DRIVE, GILBERT DRIVE, ELBOW LANE, DECOU DRIVE, WEST BURGESS AVENUE, BURGESS AVENUE, HAMILTON AVENUE, WALNUT LANE, AND NORTH LAFAYETTE AVENUEARE BASED ON TOPOGRAPHIC SURVEY AND FIELD OBSERVATIONS PERFORMED BY ANDERSEN ENGINEERING ASSOCIATES FROM MARCH THROUGH SEPTEMBER OF 2019. VERTICAL DATUM IS NAVD88. HORIZONTAL LOCATIONS ARE REFERENCED TO NORTH AMERICAN DATUM 1983 (NAD83) PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SPCS) SOUTH (FEET).
2. A DRIP LINE SURVEY OF EXISTING TREES WAS NOT PERFORMED AS PART OF THIS SURVEY. NO REPRESENTATIONS, EXPRESSED AND/OR IMPLIED, ARE MADE AS TO THE ACTUAL DRIPLINES. A BOUNDARY SURVEY WAS NOT PERFORMED AS PART OF THE SURVEY.
3. THE CONTRACTOR SHALL OBTAIN SHOP DRAWING APPROVAL FROM THE ENGINEER PRIOR TO ORDERING MATERIALS.
4. THE PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS, THE PROJECT SPECIFICATIONS, PENNDOT PUBLICATION 408, AND THE PENNDOT ROADWAY CONSTRUCTION STANDARDS. IF A DISCREPANCY EXISTS BETWEEN ANY OF THE DOCUMENTS THE MORE STRINGENT REQUIREMENTS SHALL APPLY, AS DETERMINED BY THE ENGINEER. PAYMENT PROVISIONS SHALL BE AS DEFINED IN THE PROJECT SPECIFICATIONS.
5. THE CONTRACTOR SHALL VISIT THE SITE AND ASSESS AND ACKNOWLEDGE ALL EXISTING CONDITIONS AND CONSTRAINTS IMPLIED AND EXISTING ON SITE WHICH MAY OR MAY NOT AFFECT INSTALLATION OF THE IMPROVEMENTS. THE SUBMITTAL OF A BID SHALL SERVE AS ACKNOWLEDGMENT OF A SITE VISIT PRIOR TO BID AND ACCEPTANCE OF SITE CONDITIONS AS DEPICTED HERE IN. CONTRACTOR SHALL PERFORM A PRE-CONSTRUCTION VIDEO OF THE ENTIRE WORK AREA INCLUDING, BUT NOT LIMITED TO, ROADWAYS, STRUCTURES, CURBING, UTILITY MARK-OUT LOCATIONS, SIDEWALKS, APRONS, DRIVEWAYS, SIGNS, POLES, ETC. CONTRACTOR SHALL PROVIDE TWO COPIES OF THE VIDEO TO THE ENGINEER AS REQUIRED BY THE SPECIFICATIONS PRIOR TO PERFORMING ANY DEMOLITION WORK.
6. ALL EXCAVATION WORK BENEATH THE EXISTING ROAD PAVEMENT REQUIRED TO ACHIEVE THE SUBGRADE ELEVATIONS OF THE PROPOSED ROADWAY SECTION SHALL BE UNCLASSIFIED AS DEFINED BY SECTION 02300 – EARTHWORK OF THE PROJECT SPECIFICATIONS.
7. THE CONTRACTOR SHALL PROTECT ALL BENCHMARKS AND MONUMENTS THROUGHOUT THE PROJECT SITE FROM DAMAGE AND SHALL ESTABLISH OFFSET POINTS AS REQUIRED FOR HIS WORK.
8. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND COORDINATE THE RELOCATION OF ALL CONFLICTING UTILITIES WITHIN THE WORK ZONE, WITH THE OWNER AND RESPECTIVE UTILITY COMPANY, AS NECESSARY.
9. THE LOCATION OF ALL UTILITIES SHOWN ON THESE PLANS IS APPROXIMATE AND IS NOT GUARANTEED AS TO EXACTNESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, RELOCATE, IDENTIFY, AND PROTECT ANY UTILITIES WITHIN THE PROJECT LIMITS DURING CONSTRUCTION. DESIGN PA ONE CALLS FOR THIS PROJECT HAVE BEEN PLACED. TEST PITS SHALL BE PERFORMED WHERE POTENTIAL UTILITY CONFLICTS ARE ANTICIPATED, AND AT OTHER AREAS DETERMINED BY THE ENGINEER PRIOR TO ANY CONSTRUCTION OF THE POTENTIALLY AFFECTED UTILITY / IMPROVEMENT.
10. EXCAVATIONS AND/OR TRENCHING WITHIN CLOSE PROXIMITY TO UNDERGROUND FACILITIES AND/OR UTILITY POLES WILL REQUIRE PROTECTION TO PREVENT DAMAGE AND/OR INTERRUPTION OF SERVICE TO FACILITIES. THE COST TO PROVIDE THE PROTECTION WILL BE BORNE BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING MEANS AND METHODS APPROVED BY THE AFFECTED UTILITY COMPANY.
11. ANY DAMAGE TO UTILITIES OR ANY OTHER MATERIALS OR STRUCTURES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND ALL COST FOR REPLACEMENT SHALL BE BORNE BY THE CONTRACTOR.
12. UNLESS OTHERWISE SPECIFICALLY PERMITTED BY THE ENGINEER, WORK SHALL BE DONE BETWEEN THE HOURS OF 7:30 A.M. AND 6:30 P.M., PREVAILING TIME MONDAY THROUGH FRIDAY AND 8:00 A.M. TO 4:00 P.M. ON SATURDAYS. NO WORK SHALL BE PERFORMED ON SUNDAYS. IF IT SHALL BECOME NECESSARY TO PERFORM WORK AT NIGHT, IT SHALL ONLY BE AS APPROVED BY THE ENGINEER. ADEQUATE TRAFFIC CONTROL, WORK ZONE SAFETY LIGHTING AND LIGHTED SIGNAGE SHALL BE REQUIRED. ADEQUATE LIGHTING AND ALL OTHER NECESSARY FACILITIES FOR PROPERLY CARRYING OUT AND INSPECTING THE WORK SHALL BE PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL STATE AND LOCAL REGULATIONS GOVERNING HOURS DURING WHICH CONSTRUCTION EQUIPMENT MAY BE OPERATED.
13. ALL MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE COORDINATED THROUGH THE FALLS TOWNSHIP POLICE DEPARTMENT.
14. ALL TRENCHES SHALL BE BACK FILLED IMMEDIATELY. OPEN TRENCHES SHALL BE KEPT TO A MINIMUM. OPEN TRENCHES SHALL BE COVERED WITH A STEEL PLATE WHEN WORK IS NOT IN PROGRESS. TRENCHES PERPENDICULAR TO THE CARTWAY MUST BE COVERED WITH A STEEL PLATE OR COVERED WITH TEMPORARY RESTORATION.
15. NO EXCAVATED AREAS ARE TO REMAIN OPEN OVERNIGHT. EMERGENCY ACCESS MUST BE MAINTAINED AT ALL TIMES.
16. ALL INFORMATION SHOWN OR NOTED FOR EXISTING FACILITIES, GRADES AND ROADWAYS, IS APPROXIMATE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL INFORMATION AND/OR PERFORMING TEST PIT EXCAVATIONS TO CONFIRM EXISTING UTILITY LOCATIONS AT NEW STORM PIPE CROSSING LOCATIONS PRIOR TO ORDERING THE MANUFACTURE OF THE STRUCTURES.
17. EXISTING CURBING AS SHOWN ON THE PLANS WITHIN THE LIMITS OF WORK SHALL BE REMOVED AND REPLACED AS NOTED.
18. ALL DISTURBED FENCING, SIGNS, LANDSCAPING, DEVICES, ETC. SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, AND TO THE SATISFACTION OF THE OWNER. NO SEPARATE PAYMENT SHALL BE MADE FOR THIS RESTORATION UNLESS SPECIFIED ELSEWHERE.
19. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO MAINTAIN DUST CONTROL, AS REQUIRED OR AS DIRECTED BY THE ENGINEER. ALL VEHICLES SHALL BE CLEAN AND ALL ROADWAYS AND PATHS SHALL BE SWEPT DAILY AND MAINTAINED AS DIRECTED BY THE ENGINEER.
20. IN THE EVENT A SITUATION ARISES IN WHICH MATERIALS NOT SPECIFIED ON THE PLANS ARE TO BE USED FOR EXTRA WORK, THEN THE MATERIALS SHALL CONFORM TO THE FALLS TOWNSHIP DESIGN STANDARDS, PROJECT SPECIFICATIONS OR THE SUPPLEMENTS, WHICHEVER GOVERNS.
21. THE CONTRACTOR SHALL DISPOSE OF ALL EXCAVATED MATERIALS OFF-SITE, IF NOT ACCEPTABLE FOR USE ON THE SITE AS FILL MATERIAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF ALL MATERIALS EXCAVATED OR REMOVED OF WHATEVER NATURE AT HIS OWN EXPENSE. MATERIALS MUST BE DISPOSED OF IN ACCORDANCE WITH APPROVED PADEP AND TOWNSHIP OF FALLS METHODS AND MEANS.
22. SITE CLEARING/DEMOLITION/REMOVAL/RESETS SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL DEBRIS, TEMPORARILY REMOVING AND RESTORING FENCING, REMOVING AND RESTORING SERVICE WALKWAYS, REMOVAL OF DESIGNATED DRIVEWAY PAVING, GRUBBING OF TURF AREAS, ETC. WITHIN THE PROJECT AREA, REMOVAL OF EXISTING UNDERDRAIN AND MISCELLANEOUS PIPES FOUND DURING EXCAVATION ACTIVITIES. IT SHOULD NOT INCLUDE THE COST FOR ASPHALT PAVING EXCAVATION WITHIN THE CARTWAY, SINCE THIS IS ALREADY ACCOUNTED FOR IN THE BID ITEM FOR "EXISTING ROADWAY EXCAVATION". THIS ITEM IS FURTHER CLARIFIED IN THE PROJECT SPECIFICATIONS. ALL EXCAVATED PIPING, DRAINAGE STRUCTURES, ETC. MUST BE REMOVED FROM THE SITE AT THE COMPLETION OF EACH WORK DAY.
23. THE CONTRACTOR SHALL PROVIDE 72 HOURS ADVANCE NOTICE TO ALL RESIDENTS PRIOR TO THE START OF CONSTRUCTION AND RENOTIFICATION WHEN WORK COMMENCES ON EACH GIVEN STREET. IF THE CONTRACTOR WILL BE OFF-SITE FOR OVER A WEEK, THE CONTRACTOR SHALL PROVIDE NOTIFICATION TO THE ENGINEER AND RESIDENTS.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PROVIDE FOR ALL CONSTRUCTION STAKEOUT AND SURVEY WORK (PERFORMED BY A PROFESSIONAL SURVEYOR LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA). ANY DISCREPANCIES FOUND DURING THE COURSE OF THE SURVEY WORK SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. CUT SHEETS FOR CURB, DRAINAGE AND DRIVEWAY APRON STAKE-OUT SHALL BE REVIEWED BY THE ENGINEER.
25. THE CONTRACTOR SHALL PROVIDE AS-BUILTS OF THE ENTIRE PROJECT AS PER THE SPECIFICATIONS. THE COST OF THIS SURVEY SHALL BE INCLUDED IN THE BID ITEM FOR "SURVEY AS-BUILT PLANS".
26. THE CONTRACTOR SHALL OBTAIN UTILITY MARK-OUTS PRIOR TO THE PRE-CONSTRUCTION MEETING AND REVIEW SAME FOR ANY POSSIBLE CONFLICT. SAME SHALL BE SCHEDULED FOR TEST PIT VERIFICATION WITH THE ENGINEER.
27. THE LENGTH OF ROADWAY TO BE EXCAVATED DURING ANY GIVEN DAY WILL DEPEND UPON THE CONTRACTOR'S ABILITY TO PREPARE, GRADE AND ROLL THE SUBGRADE AND INSTALL STONE SUBBASE AND BASE COURSE PAVEMENT TO MAKE THE ROAD PASSABLE. THE CONTRACTOR WILL NOT EXCAVATE EXISTING ROAD PAVEMENT AREAS BEYOND THAT WHICH THE ENGINEER CONCURS CAN BE TEMPORARILY LEFT EXPOSED TO THE ELEMENTS AND REMAIN STABLE FOR RECEIVING PROPOSED STONE SUBBASE COURSE. THE MAXIMUM LENGTH OF ROADWAY EXCAVATION PERMITTED IN ANY DAY SHALL BE LIMITED TO FIVE HUNDRED FEET (500') UNLESS OTHERWISE APPROVED BY THE ENGINEER. SHOULD IT BECOME NECESSARY FOR THE CONTRACTOR TO SUSPEND OPERATIONS FOR A PERIOD OF TIME GREATER THAN TWO DAYS (DUE TO ADVERSE WEATHER CONDITIONS, WINTER, ETC.), THE ROAD SURFACE SHALL BE LEFT WITH A MINIMUM OF THE BASE COURSE HAVING BEEN INSTALLED. NO AREAS SHALL BE LEFT UN-STONED, AND ALL LONG TERM STOPPAGES SHALL BE APPROVED BY THE ENGINEER, AND SHALL HAVE APPROPRIATE TRAFFIC CONTROL MEASURES IN PLACE. EXCAVATION/REMOVAL OF THE ROADWAY SHALL NOT COMMENCE DURING WINTER MONTHS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
28. ROADWAYS SHALL BE PASSABLE FOR EMERGENCY VEHICLES AT ALL TIMES. ACCESS FOR UTILITY PERSONNEL SHALL BE MAINTAINED AT ALL TIMES TO THE FOLLOWING: INCLUDING BUT NOT LIMITED TO – FIRE HYDRANTS, VALVE PIT COVERS, VALVE BOXES, CURB BOXES AND ALL OTHER UTILITY CONTROLS.
29. MAINTAIN ACCESS TO ALL INTERSECTING STREETS. THE CLOSING OF DRIVEWAY ACCESSIBILITY WILL BE LIMITED TO A SINGLE DAY WHILE ROADWAY IS EXCAVATED. CONTRACTOR WILL BE REQUIRED TO MAKE RAMPS FOR DRIVEWAY ACCESS USING PENNDOT 2A STONE. THIS STONE SHALL THEN BE RELOCATED OR REMOVED. STREET PLATES MAY ALSO BE USED. THE COST OF SUCH TEMPORARY RAMPS SHALL BE CONSIDERED AS INCIDENTAL TO THE PROJECT. NO ADDITIONAL PAYMENT WILL BE MADE FOR THESE RAMPS.
30. CONSTRUCTION SCHEDULING SHALL BE DISCUSSED AT THE PRE-BID MEETING. IN GENERAL, THE PROJECT SHALL BE BROKEN UP INTO PHASES, THE CONTRACTOR SHALL SCHEDULE CONSTRUCTION ACTIVITIES ACCORDINGLY. AS SUCH, THE CONTRACTOR SHALL NOT BE ALLOWED TO PERFORM CONSTRUCTION ACTIVITIES, WITH THE EXCEPTION OF WEARING COURSE INSTALLATION, OUTSIDE OF EACH GIVEN PHASE OF ROADWAYS AT ONE TIME (I.E. DRAINAGE CONSTRUCTION SHALL NOT MOVE SO FAR AHEAD OF THE ROADWAY CONSTRUCTION SO AS TO CAUSE UNDUE INCONVENIENCE FOR THE RESIDENTS). IN ADDITION, ONCE THE CONTRACT IS AWARDED, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE A CONSTRUCTION SCHEDULE AT THE PRE-CONSTRUCTION MEETING WHICH ADDRESSES THE PROPOSED PHASING OF THE PROJECT.
31. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE INFORMATION, I.E. INVERTS, SLOPES, PIPE SIZES, ETC. PRIOR TO ORDERING MATERIALS. SHOULD FIELD CHANGES BECOME NECESSARY, THEY SHALL BE APPROVED BY THE ENGINEER.
32. IN THOSE AREAS WHERE STORM SEWER PIPES ARE TO BE REMOVED, TRENCHES SHALL BE BACKFILLED WITH COMPACTED PENNDOT 2A STONE IN ACCORDANCE WITH THE TRENCH BACK FILL DETAIL.
33. IN THOSE AREAS WHERE EXISTING STRUCTURES ARE TO BE REMOVED, EXCAVATED PITS SHALL BE BACK FILLED WITH COMPACTED 2A STONE IN ACCORDANCE WITH THE TRENCH BACK FILL DETAIL. STRUCTURES MUST BE REMOVED IN THEIR ENTIRETY.
34. ALL EXISTING UNDER DRAIN (FROM OUTSIDE OF THE LIMIT OF WORK) FOUND/EXPOSED DURING CONSTRUCTION SHALL BE TIED INTO THE STORM SEWER SYSTEM. ALL UNDERDRAIN WITHIN THE LIMITS OF WORK SHALL BE REMOVED (UNDER PAY ITEM – SITE CLEARING / DEMOLITION REMOVAL / RESET) IN ADDITION, ALL PROPOSED UNDER DRAINS SHALL TIE INTO A STORM SEWER STRUCTURE. SPACES AROUND UNDER DRAIN PENETRATIONS SHALL BE NEAT CEMENT GROUTED. PAYMENT FOR EXISTING/PROPOSED UNDER DRAIN IS INCIDENTAL TO PROPOSED UNDER DRAIN UNIT PRICE.
35. REMOVAL OF EXISTING SIDEWALK SHALL BE COMPLETED TO THE NEAREST JOINT. NO SAW-CUTTING OF SIDEWALK SHALL BE PERMITTED.
36. REMOVAL OF EXISTING CURB SHALL BE COMPLETED TO THE NEAREST CONSTRUCTION JOINT OR SAW-CUT IF THE REMAINING SECTION OF CURB WILL BE A MINIMUM OF 5' IN LENGTH.
37. PROPOSED TOP AND BOTTOM OF CURB ELEVATIONS AS SHOWN ARE INTENDED TO BE LOCATED AT EVEN 50 FOOT STATIONS EXCEPT ALONG THE CURB RETURNS OR AT DRIVEWAY APRONS (SHOWN AS TOP OF DEPRESSED CURB "TDC") OR AS NOTED OTHERWISE.
38. PROTECTION OF EXISTING TREES WITHIN THE LIMITS OF DISTURBANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER SHALL DETERMINE IN THE FIELD WHICH TREES REQUIRE TREE PROTECTION. NO CONSTRUCTION EQUIPMENT OR SUPPLIES SHALL BE STOCKPILED OR STORED WITHIN THE DRIP LINE OF ANY TREE TO REMAIN.
39. THE CONTRACTOR IS RESPONSIBLE TO TRIM BACK ANY TREE LIMBS THAT PROTRUDE INTO THE ROADWAY AREA OR ARE AT RISK OF BEING DAMAGED BY THE VARIOUS CONSTRUCTION VEHICLES THAT WILL BE PRESENT WITHIN THE WORK ZONE PRIOR TO CONSTRUCTION. TREES DAMAGED DURING THE CONSTRUCTION ACTIVITY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND ANY REQUIRED REPLACEMENTS AS A RESULT OF THIS CONSTRUCTION WILL BE AT THE CONTRACTORS EXPENSE.
40. ALL NEWLY INSTALLED CONCRETE SIDEWALK, APRON SIDEWALK, AND DRIVEWAY APRONS ARE TO BE TREATED WITH AQURON CPT-2000 AFTER BRUSHED / TOOLED FINISHES ARE APPLIED. SEE SPECIFICATIONS FOR APPLICATION AND MATERIAL INFORMATION.
41. IN THE EVENT THE CONTRACTOR DISRUPTS ELECTRICAL LINES OR ANY OTHER UTILITY DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO APRONS AND SIDEWALK, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY OWNER TO REPAIR THE DAMAGED UTILITY. THE CONTRACTOR SHALL THEN INSTALL A PVC CONDUIT AS NEEDED AND CONTINUE WORK. NO ADDITIONAL PAYMENT FOR THE CONDUIT WILL BE MADE BY THE TOWNSHIP. NO CLAIMS FOR DELAYS RESULTING FROM THE UTILITY COMPANY'S SLOW RESPONSE TO EFFECT A REPAIR WILL BE ACCEPTED AS THE DAMAGE WAS CAUSED BY THE CONTRACTOR.
42. CONTRACTOR SHALL KEEP ROAD SURFACE CLEAN BY STREET SWEEPING AT REGULAR INTERVALS, MORE THAN AT THE END OF EACH DAY, TO THE SATISFACTION OF THE ENGINEER.
43. WATER VALVE COVERS AND / OR RISERS SHALL BE CONSIDERED PART OF THE WORK AND THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE THE REQUISITE MATERIALS ON HAND SO THERE IS NO DELAY IN DAILY ACTIVITIES DUE TO THE REQUIREMENT TO CHANGE THE ELEVATION OF SUCH APPURTENANCES.
44. DURING THE MILL AND OVERLAY OPERATION, A STREET SWEEPER SHALL BE PRESENT AND AVAILABLE FOR USAGE AT ALL TIMES IN ORDER TO KEEP DEBRIS TO A MINIMUM AND TO KEEP THE MILLED SURFACE IN A CONDITION THAT CAN BE RIDDEN WITHOUT THE POSSIBILITY OF DAMAGE TO AN AUTOMOBILE.
45. DURING THE WEARING COURSE PAVEMENT OPERATION, THE PAVEMENT CONTRACTOR SHALL COVER THE INLET GRATES UNTIL THE PAVEMENT TREATMENT AT THE INLET IS COMPLETE. AT NO TIME WILL IT BE ACCEPTABLE TO PAVE OVER AN UNPROTECTED INLET GRATE AND SPILL ASPHALT INTO THE STORM SEWER.
46. THE CONTRACTOR SHALL AT NO TIME PLACE CONSTRUCTION DEBRIS ON A RESIDENTIAL PROPERTY OR WITHIN THE RIGHT-OF-WAY. ALL EXCAVATED MATERIAL, INCLUDING BUT NOT LIMITED TO CONCRETE CURB, SHALL BE HAULED AWAY FROM THE PROJECT AREA DURING THE SAME WORK DAY AS IT WAS EXCAVATED.
49. ALL PROPOSED STORM SEWER PIPE ON THIS PROJECT SHALL BE "SLCPP" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE, UNLESS OTHERWISE NOTED.
50. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE STORM SEWER STRUCTURES THAT WILL ACCEPT THE PROPOSED PIPE SYSTEM WITHOUT EXTRAORDINARY CONNECTION MEASURES. THE PLANS SPECIFY "PENNDOT OVERSIZED BOXES" WHERE THE ENGINEER ANTICIPATES AN OVERSIZED BOX IS NEEDED. THE CONTRACTOR SHALL SHOW VIA SHOP DRAWINGS ALL PIPE CONNECTIONS TO THE NEW STORM SEWER STRUCTURES. PENNDOT BOX TYPES SHALL BE INDICATED ON THE SHOP DRAWINGS. THE CONTRACTOR SHALL NOT ORDER STORM SEWER STRUCTURES UNTIL HE RECEIVES AN APPROVED SHOP DRAWING.
51. ALL PAVEMENT SEAMS (NEW TO EXISTING) SHALL RECEIVE HOT A/C JOINT SEALER. MINIMUM 12" WIDE.
52. ALL WATER SERVICE RELOCATION / WATER MAIN RELOCATIONS SHALL BE OF A MATERIAL APPROVED BY THE AUTHORITY/UTILITY COMPANY HAVING JURISDICTION. INSPECTIONS OF THE RELOCATIONS SHALL BE MADE ONCE FINISHED AND BEFORE BACKFILLING. THE CONTRACTOR WILL HAVE TO UNCOVER THE CONNECTIONS/RELOCATIONS IF HE COVERS UP THE WORK PRIOR TO INSPECTION BY THE ENGINEER. 24 HOURS NOTICE SHALL BE GIVEN TO THE ENGINEER PRIOR TO A REQUIRED INSPECTION FOR SCHEDULING.
53. ALL UTILITY RIMS / CAPS / TOPS SHALL BE SET TO THE REQUIRED FINISHED GRADE PRIOR TO SURFACE PAVEMENT. IT WILL NOT BE ACCEPTABLE TO PAVE OVER A UTILITY CAP / RIM / TOP AND THEN CUT OUT THE PAVEMENT TO INSTALL A RISER AND RESET THE CAP / RIM / TOP. THE CONTRACTOR IS RESPONSIBLE TO HAVE THE REQUISITE MATERIALS ON HAND AT THE JOB SITE TO COMPLETE THIS TASK SO THAT THERE ARE NO DELAYS OR STOPPAGES IN THE SURFACE COURSE PAVEMENT OPERATION. THE MATERIALS SHALL BE THOSE ACCEPTABLE AND APPROVED (VIA SHOP DRAWING) BY THE APPROPRIATE UTILITY OWNER.
54. ALL SUB-GRADE AREAS SHALL BE PROOF ROLLED WITH THE ENGINEER / INSPECTOR PRESENT PRIOR TO APPLICATION OF THE STONE SUBBASE. STONE SUBBASE CONSTRUCTION SHALL NOT COMMENCE UNTIL THE ENGINEER / INSPECTOR AUTHORIZES THE CONTRACTOR TO PROCEED. 24 HOURS NOTICE SHALL BE GIVEN TO THE INSPECTOR FOR SCHEDULING.
55. SOME AREAS OF THE PROJECT MAY REQUIRE FILL MATERIAL. CLEAN STRUCTURAL FILL SHALL BE USED FOR THIS PURPOSE, IF EXCAVATED MATERIALS ARE TO BE UTILIZED IT SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE FILLING / GRADING OPERATION. FILLING SHALL BE DONE IN 6" LIFTS WHERE THE FILL REQUIREMENT EXCEEDS THIS DIMENSION. EACH LIFT SHALL BE COMPACTED TO 95% OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR METHOD PRIOR TO RECEIVING THE NEXT LIFT.
56. UNLESS OTHERWISE NOTED, ALL TRANSITIONS IN HEIGHT AND/OR WIDTH BETWEEN EXISTING AND PROPOSED CURB SHALL TAKE PLACE OVER A MINIMUM OF 10'.
57. ANY AREAS USED FOR STAGING DURING THE COURSE OF THE PROJECT MUST BE APPROVED PRIOR TO MOBILIZATION AND SHALL BE COMPLETELY SURROUNDED WITH A LOCKABLE 6 FOOT HIGH TEMPORARY CHAINLINK FENCE WITH SCREENING TO OBSCURE CONTENTS FROM VIEW. THE COST FOR THE RESTORATION OF THE STAGING AREA AND STAGING AREA APPURTENANCES MUST BE INCLUDED IN THE BID ITEM FOR "MOBILIZATION/DEMOBILIZATION". ALL AREAS SHALL BE RESTORED TO A NATURAL GRASSED CONDITION AS SOON AS THEY ARE NO LONGER IN USE. RESTORATION MUST BE TO THE SATISFACTION OF THE ENGINEER AND SITE REPRESENTATIVE.
58. APPROVED STAGING AREAS MUST BE MAINTAINED TO THE SATISFACTION OF THE ENGINEER. THIS IS TO INCLUDE BUT IS NOT LIMITED TO: APPEARANCE, SIZE, REQUIRED TRAFFIC CONTROL, OR SAFETY LIGHTING. ALL DELIVERY AND STAGING OF MATERIALS, STRUCTURES, AND EQUIPMENT MUST BE COORDINATED WITH THE ENGINEER.
59. "PREPARATION FOR 4" TOPSOIL" FOR THIS CONTRACT SPECIFICALLY REFERS TO GROUND PREPARATION FOR TOPSOIL BEHIND THE RIGHT-OF-WAY. IT IS ASSUMED THAT ALL LAWN AREAS BETWEEN THE EXISTING CURB AND RIGHT-OF-WAY WILL REQUIRE RE-GRADING AND PREPARATION (CUT/FILL/COMPACT) FOR TOPSOIL. COSTS FOR THE EXCAVATION AND PREPARATION OF GRASSED AREAS BETWEEN THE CURB AND RIGHT-OF-WAY IS CONSIDERED INCIDENTAL AND NO SEPARATE PAY ITEM IS INCLUDED. COSTS FOR THE EXCAVATION OF GRASSED AREAS BEHIND THE RIGHT-OF-WAY MUST BE INCLUDED IN THE BID ITEM FOR "PREPARATION FOR 4" TOPSOIL". LAWN RESTORATION PREPARATION AREAS MUST BE CONFIRMED IN THE FIELD WITH THE ENGINEER PRIOR TO FINAL LOCATIONS AND CUT BACKS. (CROSS -SECTIONS OF THE PROPOSED ROAD BOX WILL BE AVAILABLE TO THE SUCCESSFUL BIDDER PRIOR TO CONSTRUCTION).
60. DRIVEWAY APRONS WILL REQUIRE THE SIDEWALK TO TRANSITION VERTICALLY BETWEEN THE EDGE OF THE DRIVEWAY AND A LOCATION WHERE A NORMAL 2% CROSS SLOPE CAN BE ACHIEVED BETWEEN THE FRONT OF THE SIDEWALK AND THE TOP OF CURB. TRANSITIONS SHALL BE A MINIMUM OF 4' IN LENGTH AND SHALL NOT EXCEED A RUNNING SLOPE OF 5%.
61. ACTUAL LIMITS OF SIDEWALK REPLACEMENT WILL BE DETERMINED IN THE FIELD BY THE ENGINEER PRIOR TO CONSTRUCTION, AND WILL BE ADJUSTED AS NECESSARY DURING THE COURSE OF THE PROJECT.
62. DRIVEWAY MATERIALS OTHER THAN CONCRETE AND ASPHALT SHALL BE REPLACED "IN KIND". BRICK, FLAGSTONE, PAVER SYSTEMS ETC. SHALL BE IDENTIFIED BY THE CONTRACTOR AND REPLACED WITH SIMILAR MATERIALS APPROVED BY THE ENGINEER AND IN ACCORDANCE WITH CONSTRUCTION DETAILS PROVIDED BY THE CONTRACTOR, REFERENCING MANUFACTURERS' RECOMMENDATIONS, APPROVED BY THE ENGINEER THROUGH "SHOP DRAWING SUBMITTALS".
63. IF NECESSARY, IT WILL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE ALL PROCEDURAL ELEMENTS FOR THE SHUT-OFF OF THE EXISTING WATER MAIN FOR THE PURPOSE OF RELOCATION (IF NECESSARY). THIS ALSO ENCOMPASSES REQUIRED NOTIFICATIONS TO THE AFFECTED USERS. THIS PROCESS SHALL BE COORDINATED WITH THE AUTHORITY/UTILITY COMPANY HAVING JURISDICTION AND THE ENGINEER. HOWEVER IT IS NOT ANTICIPATED THAT WATER MAIN RELOCATIONS ARE REQUIRED FOR THIS CONTRACT.
64. QUANTITY FOR "6" CONCRETE DRIVEWAY APRON SIDEWALK" IS BASED ON THE EXISTING DRIVEWAY OR THE PROPOSED APRON (WHICHEVER IS WIDER).
65. IT IS NOT THE INTENT OF THE DESIGN TO REMOVE ANY TREES, HEDGES, SHRUBS THAT EXIST BEHIND THE SIDEWALK WITHIN THE LAWN RESTORATION AREAS OTHER THAN THOSE SHOWN ON THE PLANS. THE CONTRACTOR IS DIRECTED TO PERFORM THE RESTORATION MEASURES WHILE MAINTAINING THE EXISTING LANDSCAPING. (MULCH AT THE BASE OF THE TREE/SHRUB COULD BE USED TO MAKE UP A GRADE DIFFERENCE IN AREAS OF DEEP TOPSOIL RESTORATION).
66. THERE WILL BE NO ASPHALT PRICE INDEX ALLOWANCE FOR THIS PROJECT.
67. THE BID ITEM FOR "UNCLASSIFIED EXCAVATION" IS SPECIFIC TO EXCAVATION REQUIRED FOR THE PROPOSED PAVEMENT SECTION (FACE OF CURB TO FACE OF CURB) BENEATH THE EXISTING ASPHALT ROAD PAVING. COSTS FOR ALL OTHER EXCAVATION MUST BE INCLUDED IN THE BID AMOUNTS FOR THE ITEMS RELATED TO THE EXCAVATION (INCLUDING BUT NOT LIMITED TO PIPING, CURB, SIDEWALKS AND DRIVEWAYS). THIS ITEM IS FURTHER CLARIFIED IN THE PROJECT SPECIFICATIONS.
68. THE BID ITEM FOR "SITE CLEARING/DEMOLITION/REMOVAL/RESETS" INCLUDES ALL SITE CLEARING AND RESETTING OF MISCELLANEOUS ITEMS NOT SPECIFICALLY DELINEATED IN THE BID FORM (I.E. REMOVAL OF MISCELLANEOUS PIPES FOUND, SHRUBS, MINOR LANDSCAPING, MAILBOXES, FENCING, LAWN DECORATIONS & EXCAVATION OF GRASSED AREAS BETWEEN THE CURB AND RIGHT-OF-WAY). THIS ITEM IS FURTHER CLARIFIED IN THE PROJECT SPECIFICATIONS.
69. THE BID ITEM FOR "STRUCTURAL FILL" IS SPECIFIC TO FILL MATERIAL REQUIRED WITHIN THE CARTWAY UNDER THE PROPOSED ROAD SECTION. AREAS BEHIND THE CURB REQUIRE EXCAVATION FOR APRONS, SIDEWALKS, IT IS ANTICIPATED THAT THE CUT GENERATED BY THIS EXCAVATION WILL BALANCE THE FILLS REQUIRED BEHIND THE CURBS.
70. ALL ROAD OPENINGS, INCLUDING BUT NOT LIMITED TO UTILITY TRENCHES AND TEST PITS, MUST BE TEMPORARILY PAVED PRIOR TO THE END OF THE WORK WEEK WITH A MINIMUM OF 2" OF EITHER HOT MIX ASPHALT OR COLD PATCH. TEMPORARY PAVING WILL ALSO BE REQUIRED IN THE EVENT OF PREDICTED INCLEMENT WEATHER.
71. ONCE ROADWAYS HAVE BEEN RECONSTRUCTED UP TO THE BASE PAVEMENT LEVEL, TEMPORARY PAVED RAMPS/WEDGES MUST BE INSTALLED AROUND MANHOLES, INLETS, AND VALVES IN THE CARTWAY.
72. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY TEMPORARY PAVING. COSTS FOR TEMPORARY PAVEMENT SHOULD BE INCLUDED IN THE BID ITEMS RELATED TO THE WORK REQUIRING THE PAVING (I.E. STORM PIPING, MANHOLE RIMS, ETC.).
73. AT THE PRECONSTRUCTION MEETING THE TOWNSHIP AND THE CONTRACTOR WILL AGREE ON THE ORDER IN WHICH ROADS ARE RECONSTRUCTED AND THE LOCATION OF ALL TEST PITS.
74. PAVEMENT MARKINGS MUST BE RE-ESTABLISHED AFTER FINAL WEARING COURSE APPLICATION. THERE IS NO SEPARATE PAY ITEM FOR PAVEMENT MARKINGS, THE COST FOR THIS SHALL BE INCLUDED IN THE BID NUMBER FOR WEARING COURSE PAVEMENT.
75. DRIVEWAY RECONSTRUCTION MUST BE COMPLETED WITH COMPACT ROLLERS AND STANDARD PAVING EQUIPMENT. DUMPED ASPHALT AND PLATE TAMPERS ARE NOT ACCEPTABLE FOR REPAVING DRIVEWAYS. PLYWOOD OR OTHER APPROVED PROTECTIVE MEASURE IS REQUIRED TO PROTECT NEW REINFORCED CONCRETE DRIVEWAY APRONS FROM PAVING EQUIPMENT ACCESSING THE DRIVEWAY FOR REPAVING.
76. DUE TO THE LOCATION OF THE EXISTING ROAD WITHIN THE RIGHT-OF-WAY, PROPOSED DRIVEWAY APRONS IN SOME CASES DO NOT MEET AT THE EDGE OF THE EXISTING DRIVEWAY. THE NOTATION "DRIVEWAY CONSTRUCTION" ON THE PLAN AND PROFILES IDENTIFY THOSE AREAS. THOSE AREAS WILL REQUIRE A COMPLETE DRIVEWAY PAVEMENT SECTION (OR AN EXTENDED CONCRETE DRIVEWAY APRON). THE CORRECT REMEDIAL MEASURES WILL BE IDENTIFIED ON A CASE BY CASE BASIS, IN THE FIELD BY THE ENGINEER. SEE DETAILS RELATED TO DRIVEWAY RESTORATION AND RECONSTRUCTION.
77. ALL EXISTING STORM SEWER PIPE AND STRUCTURES WITHIN THE PROJECT LIMITS ARE TO BE REMOVED AND DISPOSED OF TO ACCOMMODATE THE PROPOSED STORM SEWER IMPROVEMENTS. ALL EXISTING STORM SEWER PIPE AND STRUCTURES MAY NOT BE SHOWN IN THE PROFILE VIEWS FOR CLARITY, HOWEVER THEY ARE SHOWN ON THE EXISTING FEATURES PLAN AND IN THE PLAN VIEW OF THE PLAN AND PROFILE SHEETS. ALL TRENCHES AND EXCAVATIONS MUST BE BACK FILLED IN ACCORDANCE WITH THE TRENCH RESTORATION DETAILS.
78. ALL WATER SERVICE METERS SHALL BE RESET AND/OR RELOCATED AS NECESSARY DUE TO NEW ELEVATIONS ASSOCIATED WITH THE PROPOSED IMPROVEMENTS AND THE HORIZONTAL DESIGN AT THE ROADWAYS.

## MILL AND OVERLAY NOTES:

1. SUPERPAVE BASE WILL BE USED IF THE MILLING DEPTHS REVEAL LACK OF ASPHALT. RESTORATION OF THE ROADWAY BASE SHALL BE AS DIRECTED FROM A FALLS TOWNSHIP REPRESENTATIVE.
2. THE CONTRACTOR OR SUBCONTRACTOR SHALL BE RESPONSIBLE FOR HANDLING ALL DAMAGE CLAIMS.
3. THE CONTRACTOR SHALL BE REQUIRED TO MAKE ADJUSTMENTS TO UTILITIES AND ALL WORK SHALL BE PERFORMED UNDER THE INSPECTION OF DESIGNATED TOWNSHIP PERSONNEL.
4. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPLACING ALL EXISTING PAVEMENT STRIPING REMOVED DURING THE CONSTRUCTION PROCESS. ALL STRIPING WILL BE THERMOPLASTIC.
5. ANY MILLED ROADWAY MUST RECEIVE WEARING COARSE OVERLAY WITHIN 48 HOURS OF THE SECTION BEING MILLED. THE ENGINEER WILL NOTIFY THE CONTRACTOR AS TO THE START OF THE 48 HOUR CLOCK. IT IS THE INTENT OF THIS REQUIREMENT THAT NO SECTION OF ROADWAY REMAIN WITHOUT WEARING COURSE IN EXCESS OF 48 HOURS.
6. ANY TRAFFIC SIGNAL LOOP DETECTORS WILL BE REPLACED BY THE FALLS TOWNSHIP PUBLIC WORKS DEPARTMENT. THEY SHOULD BE CONTACTED BY THE CONTRACTOR 5 BUSINESS DAYS PRIOR TO ANY REMOVALS TO COORDINATE REINSTALLATION WHICH, AT THE DISCRETION OF THE TOWNSHIP, MAY BE INSTALLED PRIOR TO RECEIVING AN OVERLAY.
7. RESTORATION OF ALL PAVEMENT MARKINGS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MAY ALSO BE REQUIRED TO INSTALL TEMPORARY YELLOW CENTERLINES AND BE RESPONSIBLE FOR THE REMOVALS.
8. CONTRACTOR TO PROVIDE RISERS / RINGS WHERE REQUIRED TO ADJUST UTILITY CAP / RIM TO PROPOSED ELEVATIONS. CONTRACTOR SHALL COORDINATE THE REQUIRED MATERIALS WITH THE APPROPRIATE UTILITY COMPANY AND SHALL COORDINATE THE WORK IN GENERAL (TIMING, INSPECTIONS, ETC..) WITH THE APPROPRIATE UTILITY COMPANY. IN NO CASE SHALL IT BE ACCEPTABLE TO PAVE OVER A UTILITY CAP / RIM THEN CUT OUT THE NEW PAVEMENT AT A LATER DATE TO PROVIDE RISERS, ETC.. ALL WORK SHALL BE PERFORMED UNDER THE INSPECTION OF DESIGNATED TOWNSHIP PERSONNEL
9. CONTRACTOR IS REQUIRED TO CONSTRUCT OVERLAY (1/2 CARTWAY) IN ONE (1) PASS OF THE PAVEMENT MACHINE (BOTH ½ CARTWAYS).
10. DETAILS FOR TRAFFIC CONTROL REQUIREMENTS FOR THE MILL AND OVERLAY SECTIONS ARE INCLUDED AT THE END OF THIS PLAN SET. THE CONTRACTOR IS REMINDED THAT FLAGGING OPERATIONS SHALL APPLY TO ALL INTERSECTIONS WITHIN THE WORK ZONES.
11. EXISTING PAVEMENT ELEVATIONS SHALL BE MATCHED FOR THE MILL AND OVERLAY SECTIONS AT ALL INTERSECTIONS AS SPECIFIED BY THE LIMITS OF ROADWAY RESURFACING OR AS DIRECTED BY A FALLS TOWNSHIP REPRESENTATIVE.
12. SAW CUT LINES AT THE TIE IN POINTS SHALL BE APPROVED BY A FALLS TOWNSHIP REPRESENTATIVE AND MUST BE SEALED UPON COMPLETION.
13. MILLINGS MUST BE DISPOSED OF AT AN APPROVED DISPOSAL FACILITY. UNDER NO CIRCUMSTANCE SHALL MILLINGS BE STOCKPILED AT THE SITE OR REMAIN OVERNIGHT.
14. THE ENGINEER / INSPECTOR WILL INSPECT ALL MILLED SURFACES PRIOR TO IT RECEIVING WEARING COURSE OVERLAY. AREAS OF BASE REPAIR MAY BE IDENTIFIED BY THE ENGINEER / INSPECTOR, AT WHICH TIME THEIR CONTRACTOR WILL MAKE THE BASE REPAIR IN ACCORDANCE WITH THE CONSTRUCTION DETAIL. AFTER THE BASE REPAIR HAS BEEN INSPECTED AND APPROVED, THE WEARING COURSE MAY BE APPLIED.
15. CONTRACTOR SHALL COORDINATE HIS WORK WITH THE AFFECTED UTILITY OWNERS. ALL UTILITIES AT THE STREET SURFACE SHALL BE ADJUSTED TO PROPOSED FINISHED GRADE PRIOR TO FINAL OVERLAY BY THE CONTRACTOR AT THE UTILITY OWNER'S DIRECTION OR THE UTILITY OWNER MAY ELECT TO PERFORM THE WORK. NO SEPARATE PAYMENT FOR THIS WORK WILL BE MADE TO THE CONTRACTOR FOR THIS CONTRACT. CONTRACTOR SHALL MAKE PROVISION IN HIS BID INCIDENTAL TO OTHER UNIT PRICE ITEMS FOR THE COST OF THE COORDINATION OF UTILITY CAP/RIM ADJUSTMENTS BY EITHER HIMSELF OR THE UTILITY OWNER AS REQUIRED TO ACHIEVE THE DESIGN PAVEMENT GRADES INDICATED ON THE CONTRACT DRAWINGS. ALL SURFACE UTILITIES SHALL BE PLACED FLUSH WITH THE FINISH GRADE PAVING. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH THE UTILITY COMPANY REQUIREMENTS AND SUBJECT TO THEIR APPROVAL. ANY NEWLY CONSTRUCTED PAVEMENT, LAWN AND SIDEWALK THAT MUST BE DISTURBED AS A RESULT OF FAILURE OF ANY EXISTING OR NEW UTILITY WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
16. IF REQUIRED REPLACE ALL INLET GRATES WITH BICYCLE SAFE GRATES
17. REMOVAL OF EXISTING CURB OR SIDEWALK TO FACILITATE NEW CONSTRUCTION, IF NECESSARY, SHALL BE COMPLETED TO THE NEAREST CONSTRUCTION JOINT OR SAW-CUT IF THE REMAINING SECTION WILL BE A MINIMUM OF 5' IN LENGTH. PROVIDE A BONDING AGENT ON EXISTING CONCRETE PRIOR TO POURING NEW CONCRETE.
18. IT IS THE INTENTION OF THE DESIGN TO MAINTAIN THE EXISTING CURB REVEAL WITHIN THE MILL AND OVERLAY PORTION OF THE PROJECT. THE CURB LINE WILL BE MILLED TO A 2" DEPTH AND THE EXISTING GUTTER MAINTAINED AFTER OVERLAY.
19. ANY DAMAGE, AS A RESULT OF CONSTRUCTION ACTIVITIES, TO TREES AND/OR LANDSCAPING OUTSIDE OF THE EXISTING CARTWAY, INCLUDING BRANCHES HANGING ABOVE CARTWAY, WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
20. ALL EXISTING DRAINAGE INLETS WITHIN THE LIMITS OF WORK ARE TO BE EQUIPPED WITH FILTER BAG INLET PROTECTION. FILTER BAGS SHOULD BE INSPECTED/CLEANED WEEKLY AND AFTER ALL MEASURABLE PRECIPITATION.


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GERNERAL NOTES
OF
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS

SITUATED IN:
FAIRLESS HILLS, PA

| DRAWN BY: | CHECKED BY: |
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| DATE: | SCALE: |
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| CI19-01 | CMK |

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# EXISTING FEATURES OF 2020 ROAD IMPROVEMNENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS

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Monday, March 16, 2020
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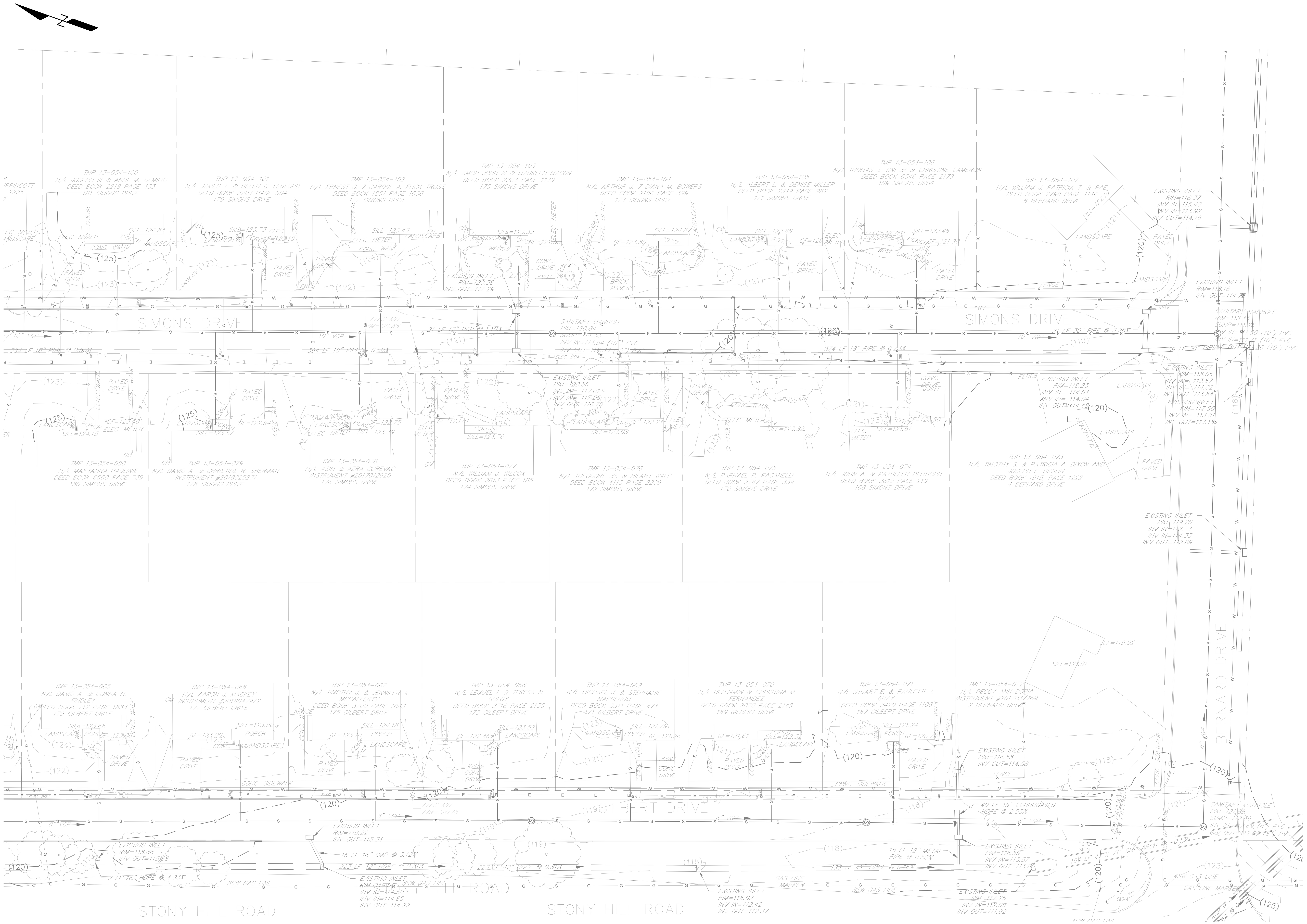


## LEGEND

| Existing | Description | Proposed |
|---|---|---|
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | x |
| S | SANITARY SEWER MANHOLE | |
| S | SANITARY SEWER MAIN | |
| W | WATER MAIN | |
| G | GAS MAIN | |
| WV | WATER VALVE | |
| WM | WATER METER | |
| | FIRE HYDRANT | |
| E | UNDERGROUND WIRE | |
| // | OVERHEAD WIRE | |
| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
| | STORM SEWER YARD STUB | |
| | STORM SEWER | |
| | PAVEMENT KEYWAY | |
| | TREE REMOVAL | |
| | 12" SILT FENCE | |

30' 15' 0 30' 60'
1" = 30'


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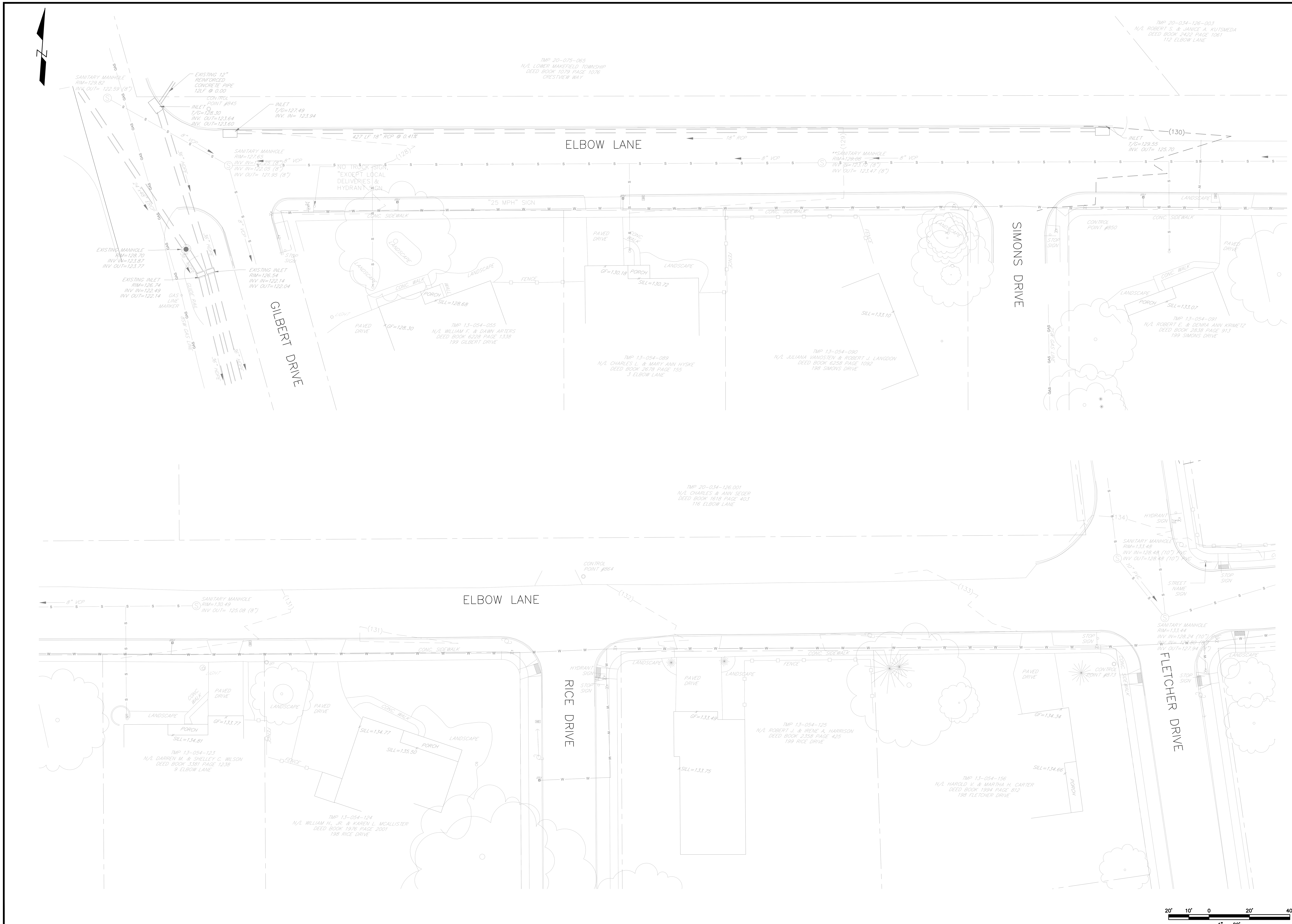

20' 10' 0 20' 40'
1" = 20'

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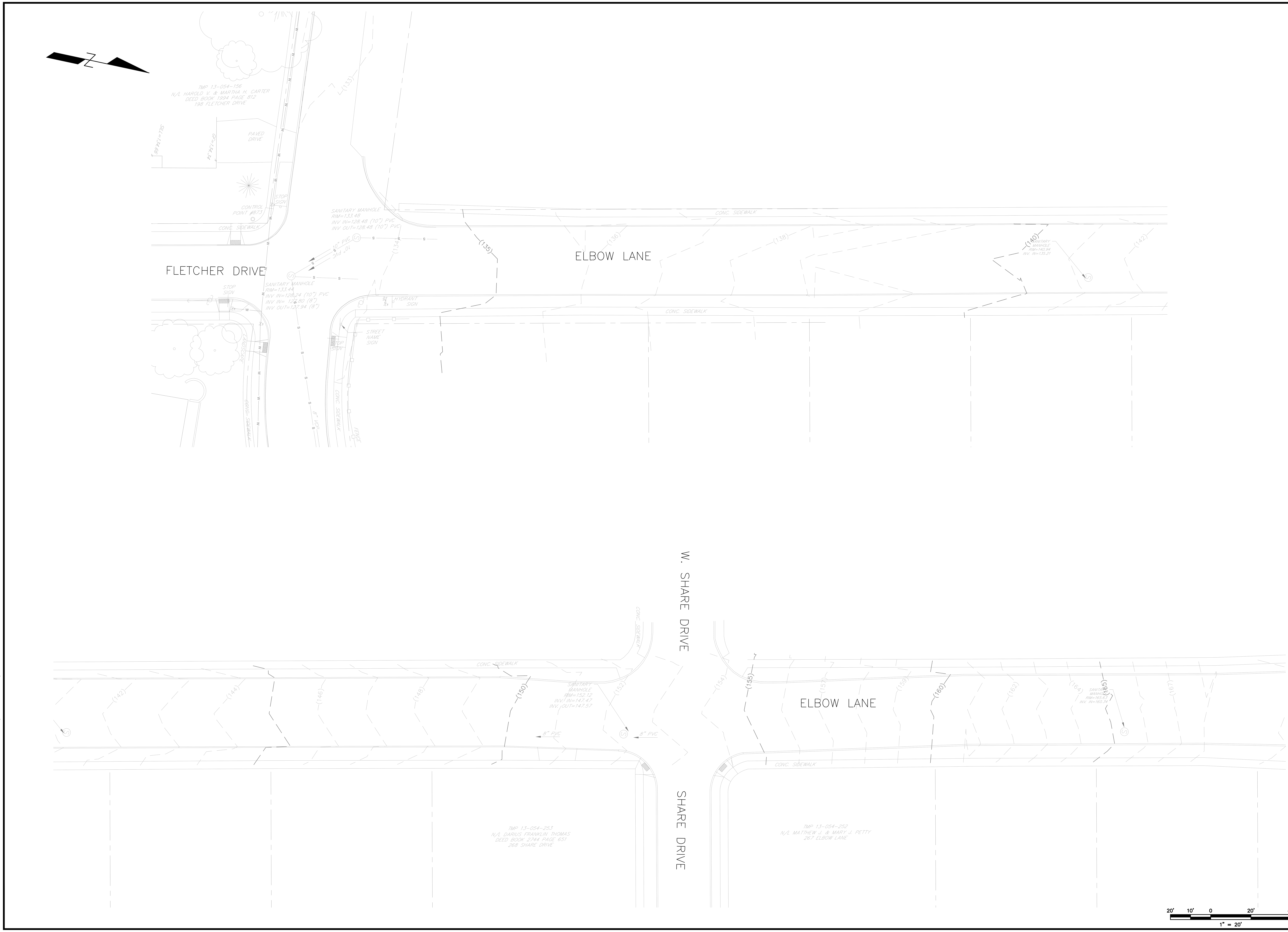


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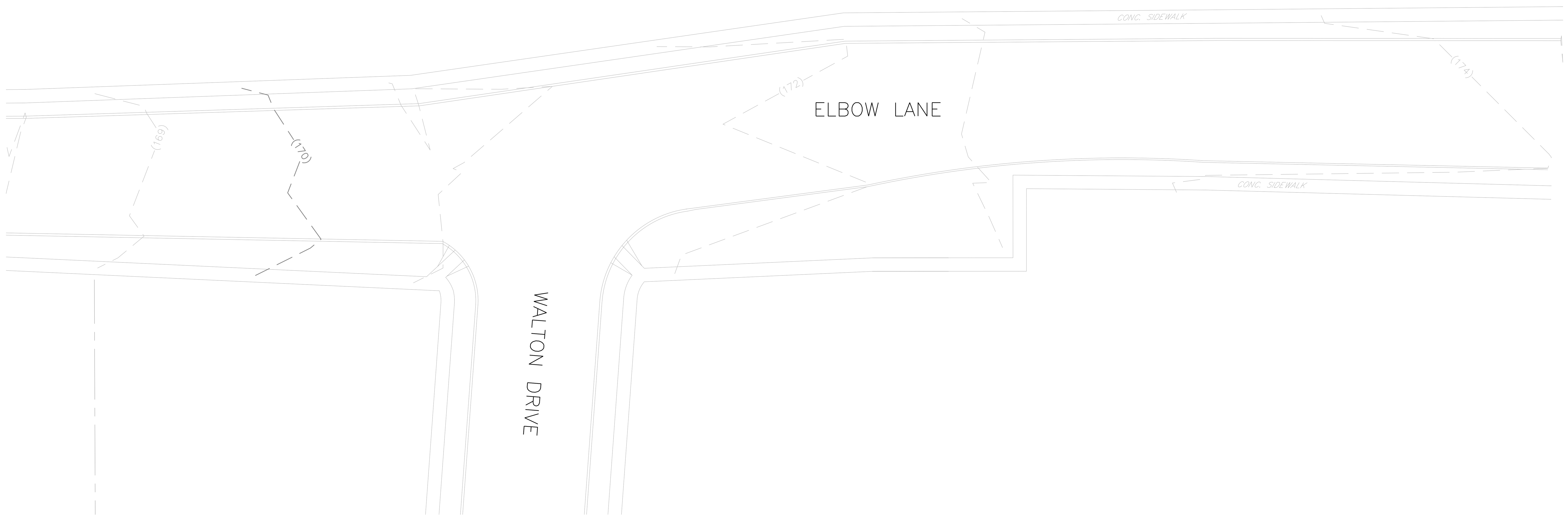


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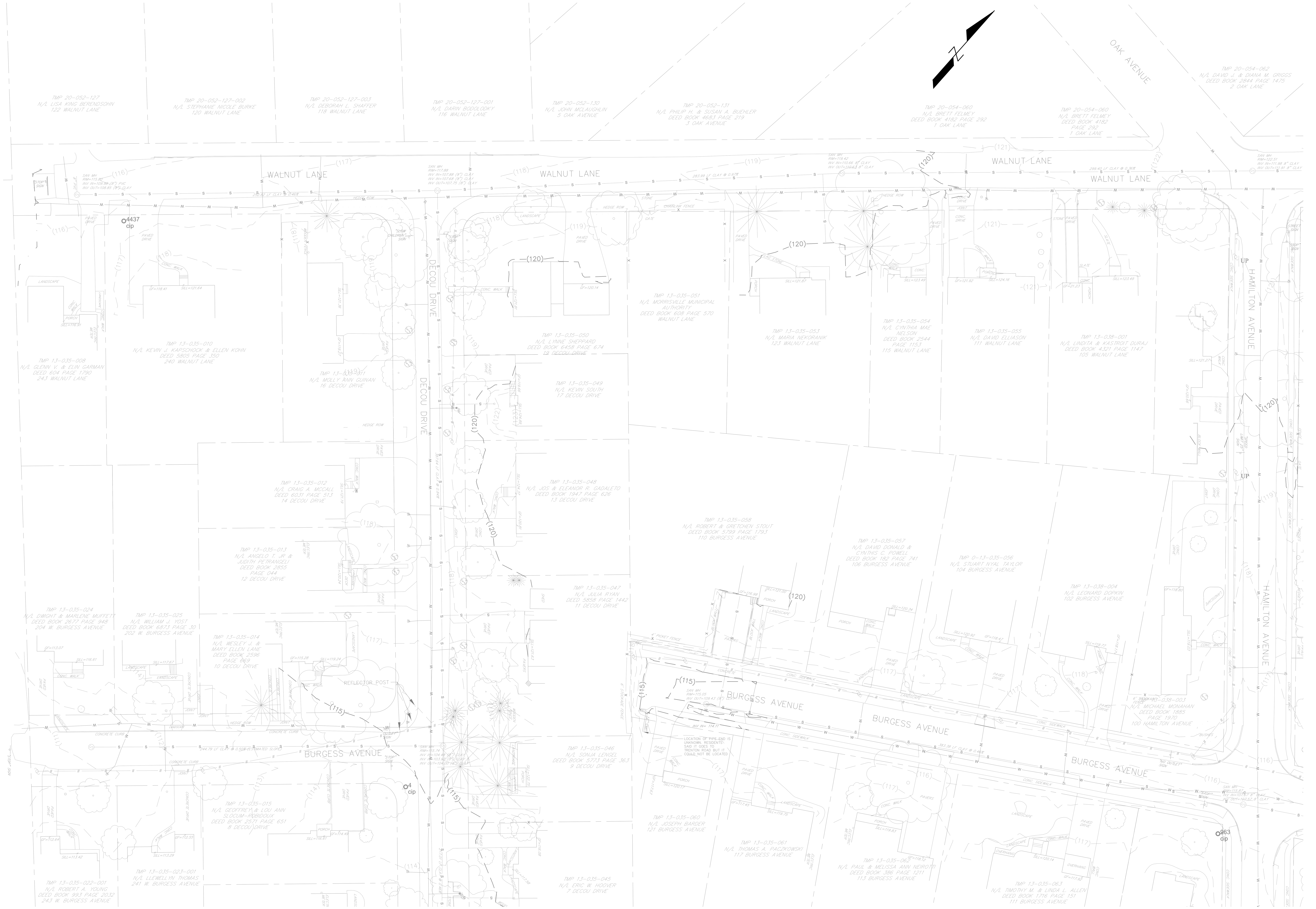


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|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

EXISTING FEATURES
OF
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS

SITUATED IN:
Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: | SCALE: |
| 3/19/20 | 1"=30' |
| PROJECT NUMBER: | DESIGNED BY: |
| CI19-01 | CMK |

DRAWING:
Existing Features Burgess.dwg



Sunday, March 15, 2020
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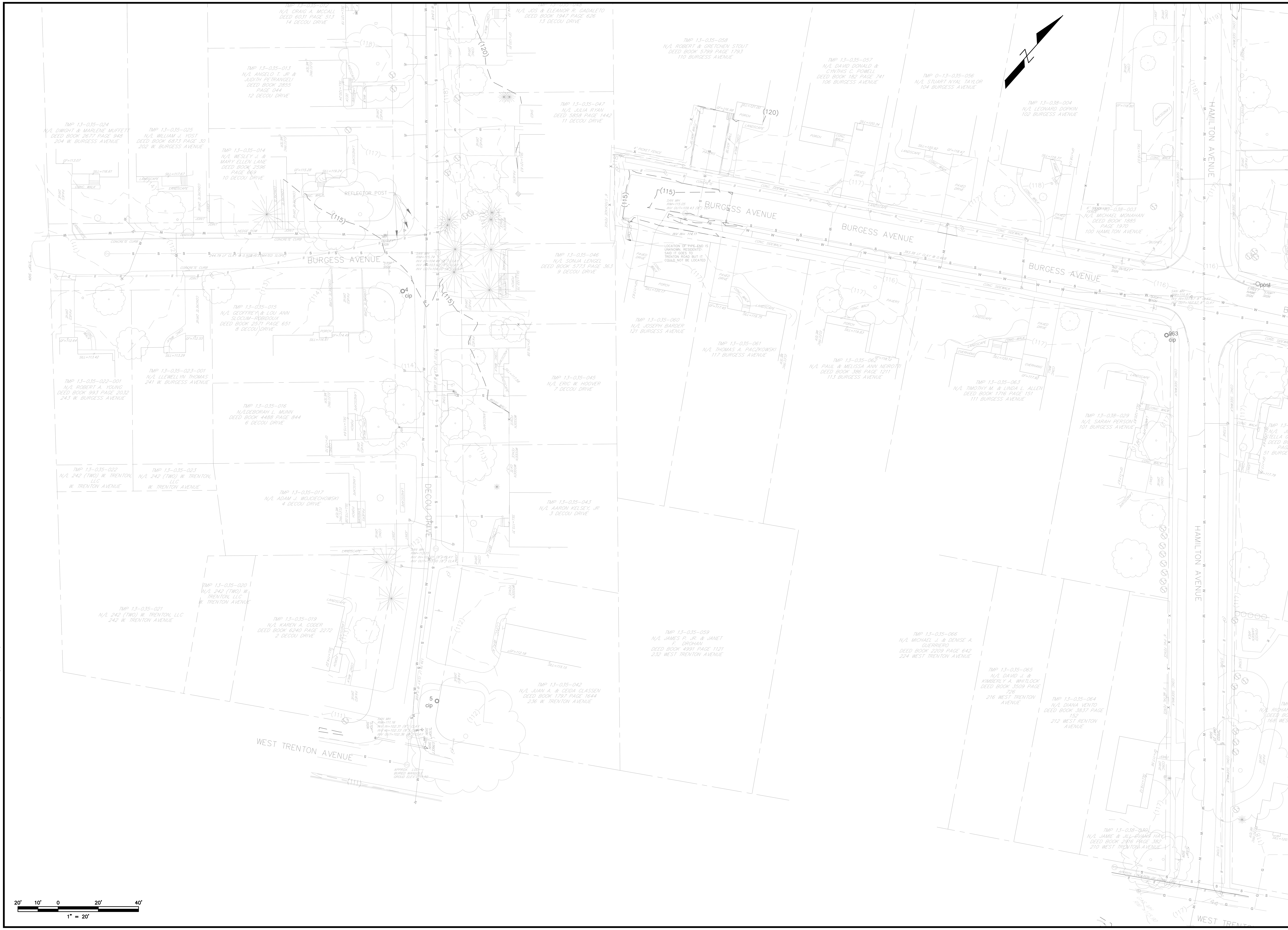


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PA. PE LICENSE # PE075233

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EXISTING FEATURES
OF
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS

SITUATED IN:
Fairless Hills, PA

| DRAWN BY: ARL | CHECKED BY: JGJ |
|---|---|
| DATE: 3/19/20 | SCALE: 1"=30' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING:
Existing Features Burgess.dwg

SHEET NO:
10 OF 38

Sunday, March 15, 2020
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# LEGEND

| Existing | Description | Proposed |
|---|---|---|
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | x |
| S | SANITARY SEWER MANHOLE | |
| S | SANITARY SEWER MAIN | |
| W | WATER MAIN | |
| G | GAS MAIN | |
| WV | WATER VALVE | |
| WM | WATER METER | |
| | FIRE HYDRANT | |
| E | UNDERGROUND WIRE | |
| // | OVERHEAD WIRE | |
| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
| | STORM SEWER YARD STUB | |
| | STORM SEWER | |
| | PAVEMENT KEYWAY | |
| | TREE REMOVAL | |

20' 10' 0 20' 40'

1" = 20'


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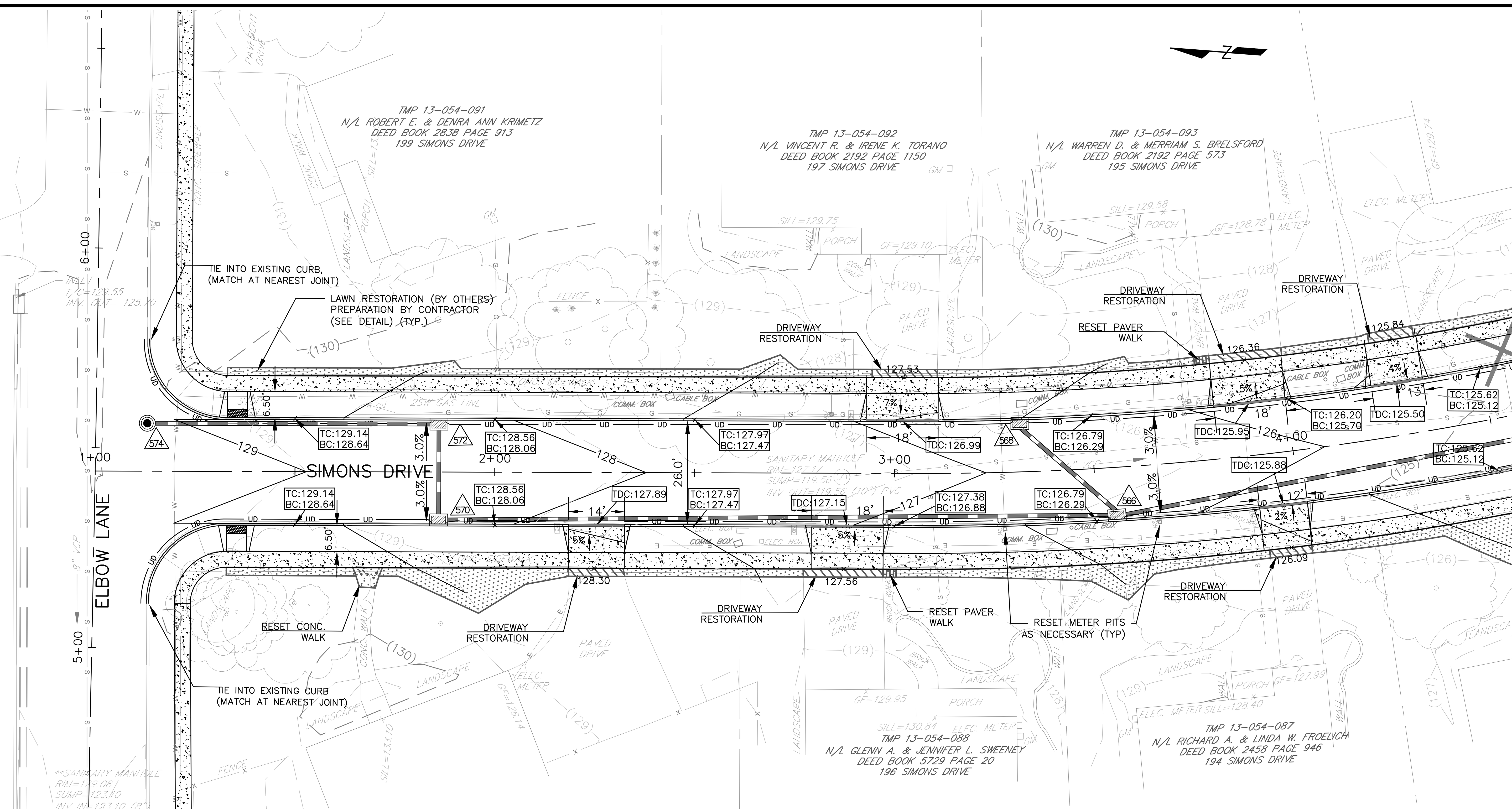
# EXISTING FEATURES
OF
# 2020 ROAD IMPROVEMENT PROGRAM

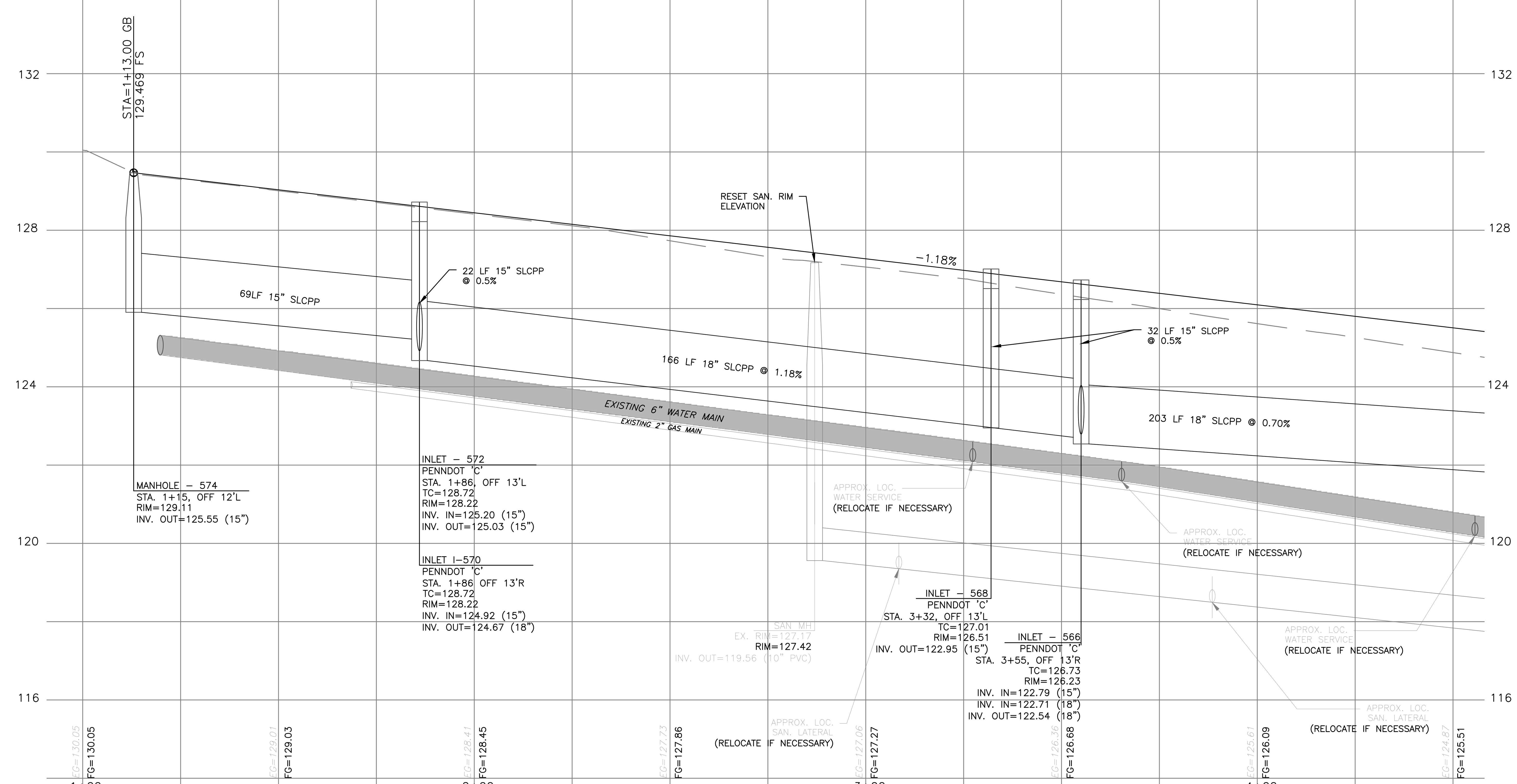
PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: | SCALE: |
| 3/19/20 | 1"=30' |
| PROJECT NUMBER: | DESIGNED BY: |
| CI19–01 | CMK |

DRAWING:
Existing Features Burgess.dwg




## PLAN VIEW
**SIMONS DRIVE STA 1+00 TO 4+50**
**SCALE: 1"= 20'**




## PROFILE VIEW
**SIMONS DRIVE STA 1+00 TO 4+50**
**SCALE: HORIZ 1"= 20'**
**VERT 1"=2'**

| LEGEND | | |
|---|---|---|
| Existing | Description | Proposed |
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | x |
| | SANITARY SEWER MANHOLE | |
| S | SANITARY SEWER MAIN | |
| W | WATER MAIN | |
| G | GAS MAIN | |
| WV | WATER VALVE | |
| WM | WATER METER | |
| | FIRE HYDRANT | |
| E | UNDERGROUND WIRE | |
| | OVERHEAD WIRE | |
| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
| | STORM SEWER YARD STUB | |
| | STORM SEWER | |
| | PAVEMENT KEYWAY | |
| | TREE REMOVAL | |

## NOTES:

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2. ALL DRIVEWAY RESTORATION LIMITS MUST BE CONFIRMED IN THE FIELD WITH THE ENGINEER'S REPRESENTATIVE PRIOR TO SAWCUTTING. ENGINEER'S REPRESENTATIVE MUST BE PRESENT WHEN DRIVEWAYS ARE SAWCUT.
3. ALL PROPOSED INLETS TO RECEIVE FILTER BAG INLET PROTECTION DURING CONSTRUCTION.
4. INDICATES A MODIFIED INLET BOX OR MANHOLE
5. 4" TOPSOIL AND SEEDING, AT ALL LOCATIONS (BETWEEN CURB AND SIDEWALK & LAWN RESTORATION AREAS BEHIND SIDEWALK) WILL BE COMPLETED BY OTHERS UNDER A SEPARATE CONTRACT, AND IS NOT INCLUDED IN THE SCOPE OF WORK FOR THIS CONTRACT. ALL EARTH WORK (CUTS/FILLS) REQUIRED TO ACHIEVE A SUBGRADE PREPARED TO RECEIVE THE 4" OF TOPSOIL IS PART OF THIS CONTRACT. ALL EARTHWORK THAT IS PART OF THIS CONTRACT (BETWEEN THE CURB AND THE SIDEWALK & LAWN RESTORATION AREAS BEHIND THE SIDEWALK) IS NOT A SEPARATE PAY ITEM AND MUST BE INCLUDED IN AN APPROPRIATE LINE ITEM WITHIN THE BID FORM.

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Pennsylvania One Call System, Inc.
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HORIZONTAL SCALE
20' 10' 0 20' 40'
1" = 20'

VERTICAL SCALE
2' 1' 0 2' 4'
1" = 2'

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PA. PE LICENSE # PE075233
DATE

| NO. | DATE | REVISION | BY | CHK. |
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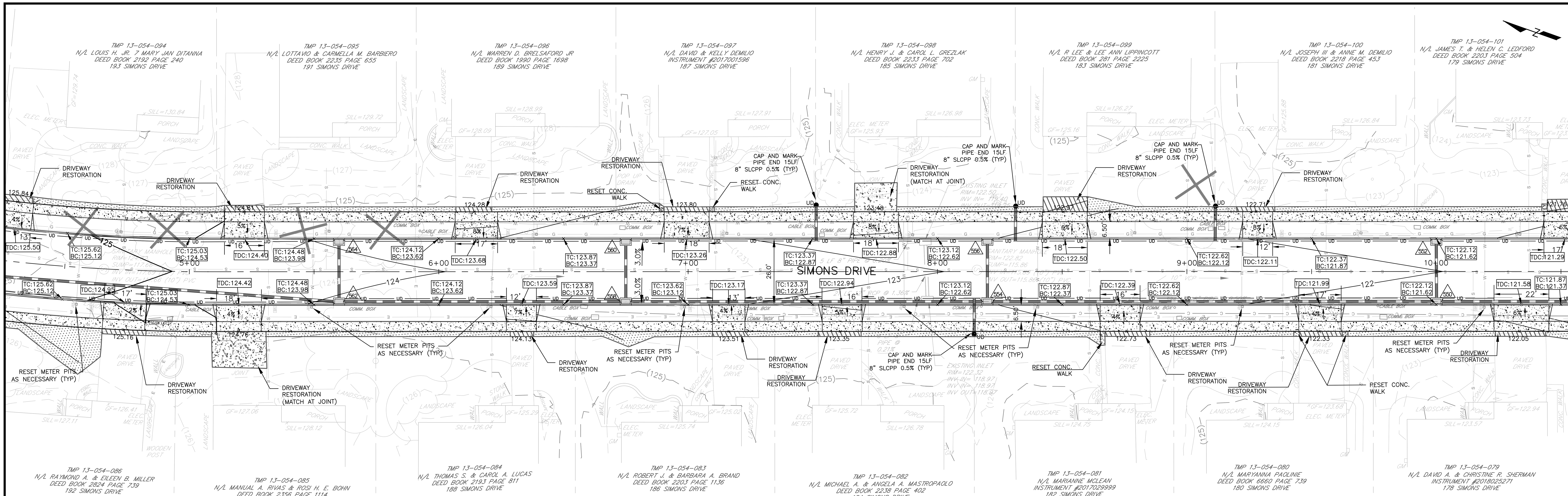
# PLAN AND PROFILE
OF
# SIMONS DRIVE STA:1+00 TO 4+50
# 2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
**TOWNSHIP OF FALLS**
SITUATED IN:
Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: | SCALE: |
| 3/19/20 | 1"=20' |
| PROJECT NUMBER: | DESIGNED BY: |
| CI19–01 | CMK |

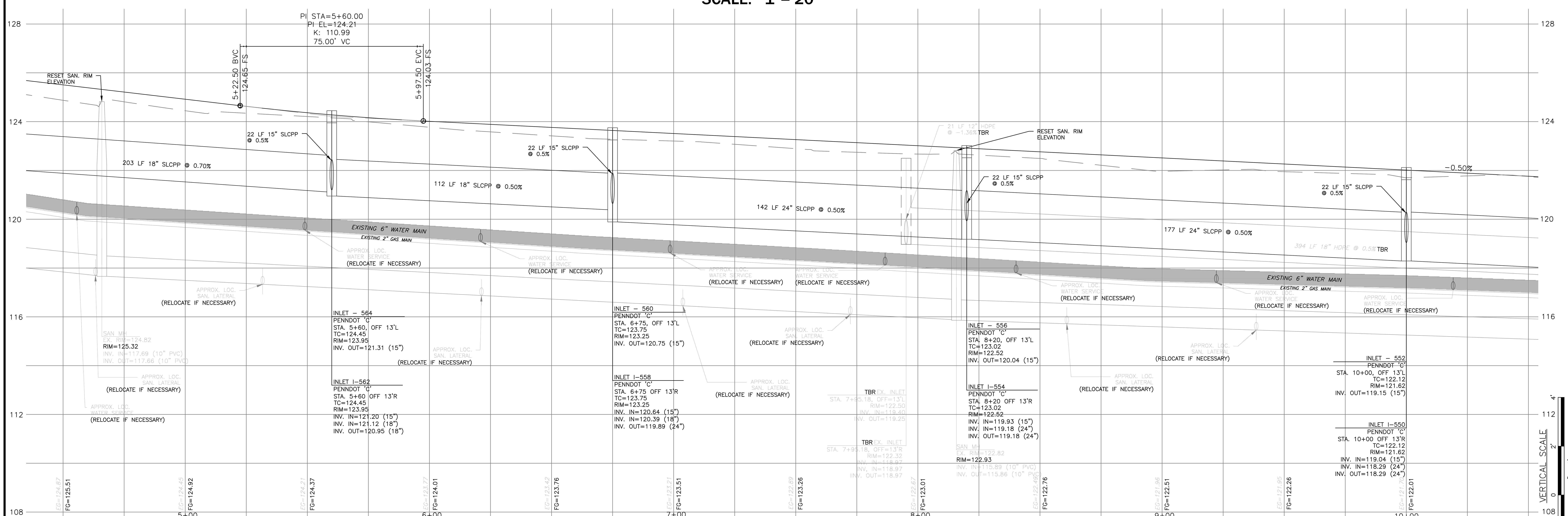
DRAWING:
Plan-Profile-Simons.dwg




# PLAN VIEW

**SIMONS DRIVE STA 4+50 TO 10+50**

**SCALE: 1"= 20'**




# PROFILE VIEW

**SIMONS DRIVE STA 4+50 TO 10+50**

**SCALE: HORIZ 1"= 20'**

**VERT 1"=2'**

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PLAN AND PROFILE OF SIMONS DRIVE STA:4+50 TO 10+50
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR: TOWNSHIP OF FALLS
SITUATED IN: Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: | SCALE: |
| 3/19/20 | 1"=20' |
| PROJECT NUMBER: | DESIGNED BY: |
| CI19-01 | CMK |

DRAWING: Plan-Profile-Simons.dwg



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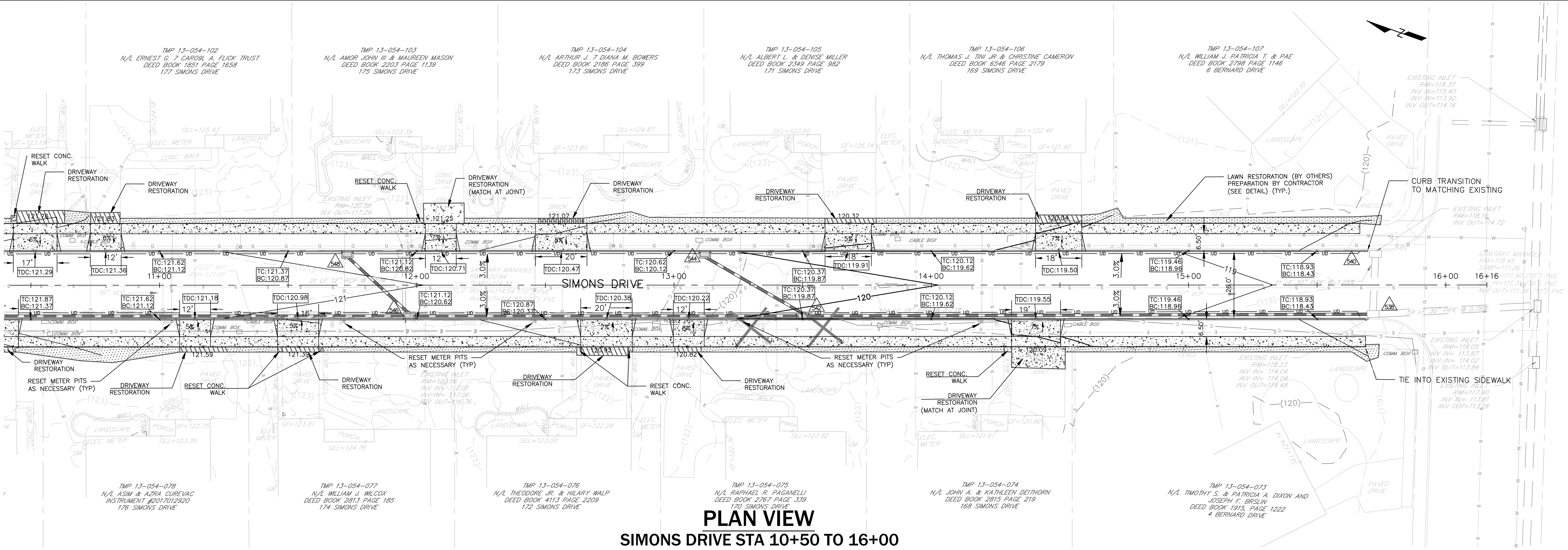
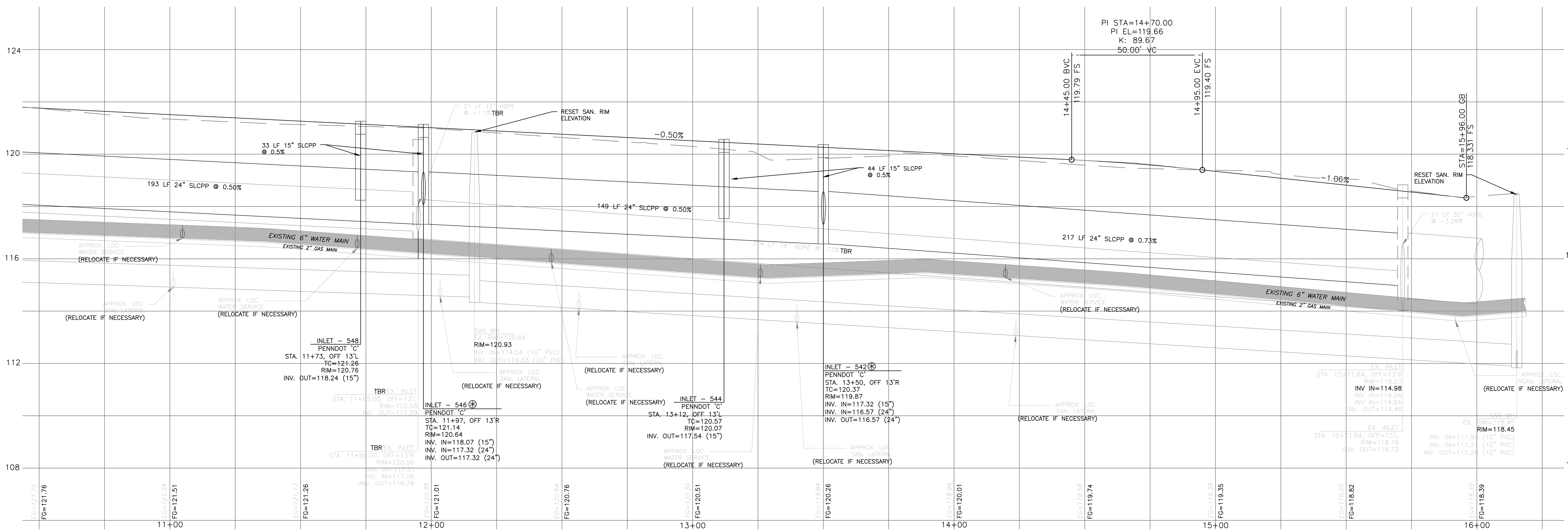



# PLAN VIEW

**SIMONS DRIVE STA 10+50 TO 16+00**
**SCALE: 1"= 20'**




# PROFILE VIEW

**SIMONS DRIVE STA 10+50 TO 16+00**
**SCALE: HORIZ 1"= 20'**
**VERT 1"=2'**

Monday, March 16, 2020
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DATE

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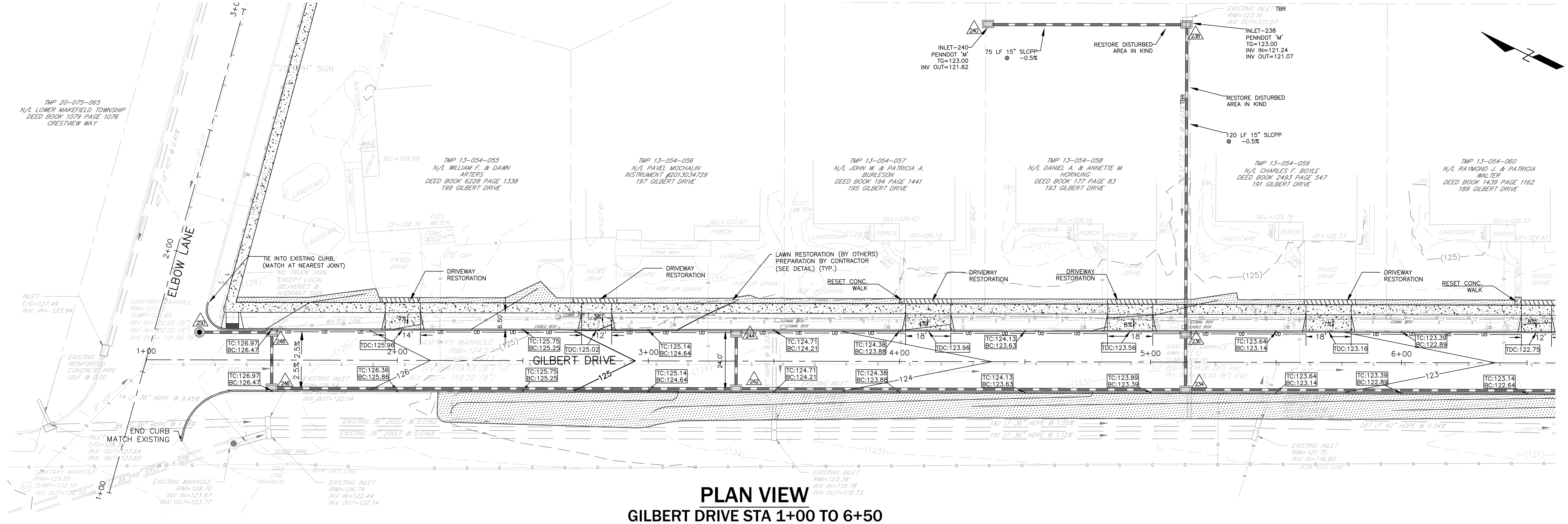
PLAN AND PROFILE
OF
SIMONS DRIVE STA 10+50 TO 16+00
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
Fairless Hills, PA

| | |
|---|---|
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/20 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

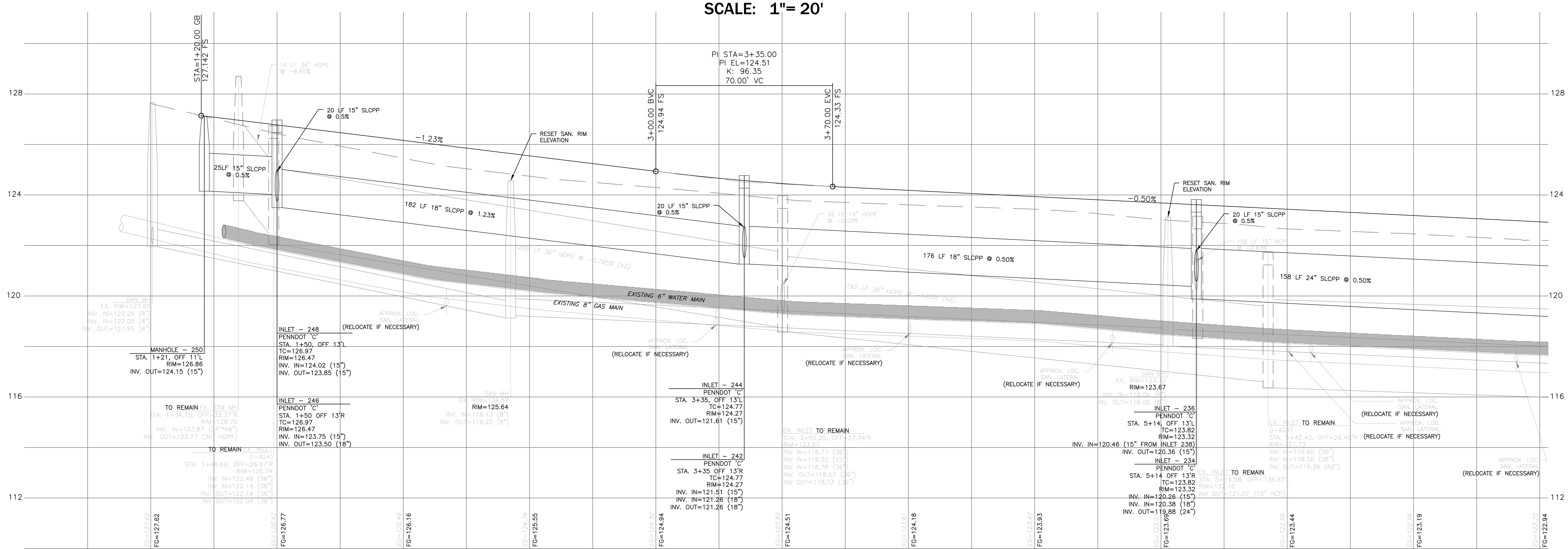
DRAWING:
Plan-Profile-Simons.dwg




# PLAN VIEW

**GILBERT DRIVE STA 1+00 TO 6+50**

**SCALE: 1"= 20'**




# PROFILE VIEW

**GILBERT DRIVE STA 1+00 TO 6+50**

**SCALE: HORIZ 1"= 20'**

**VERT 1"=2'**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PLAN AND PROFILE OF GILBERT DRIVE STA:1+00 TO 6+50

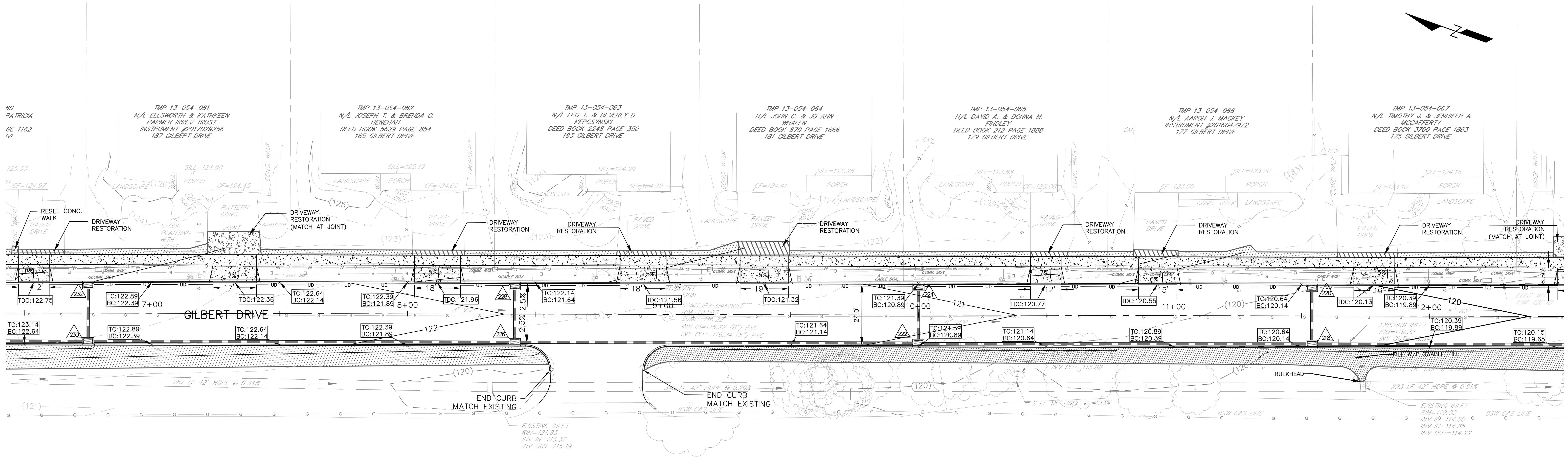
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR: TOWNSHIP OF FALLS

SITUATED IN: Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: 3/19/20 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

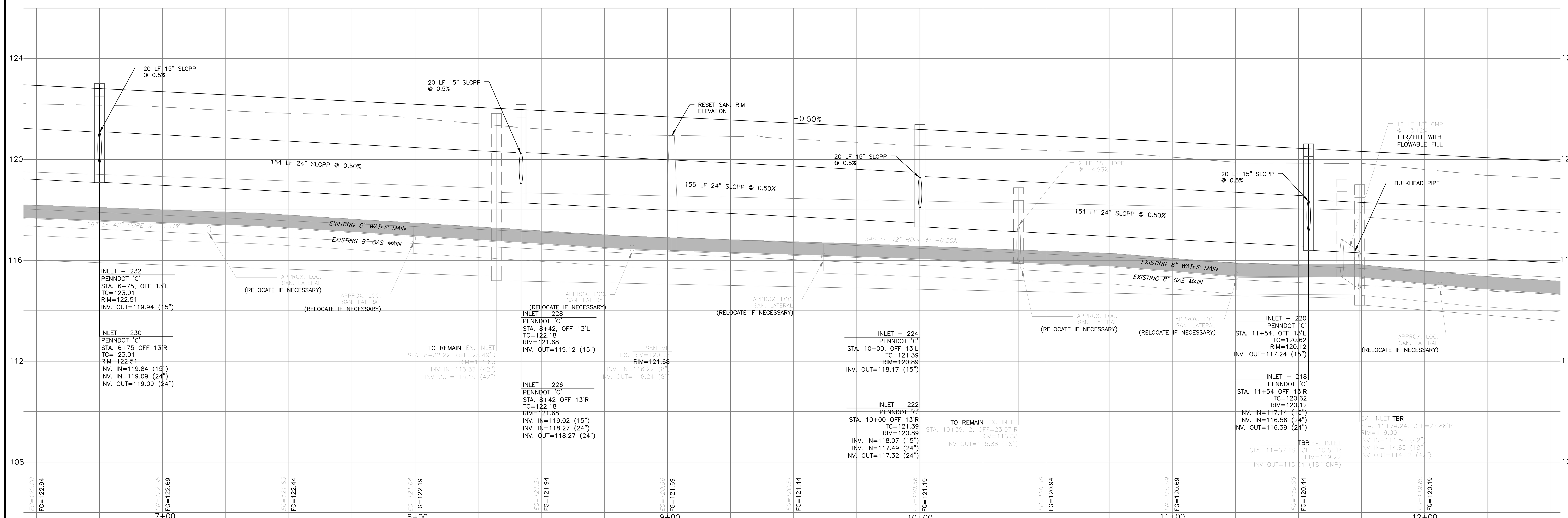
DRAWING: Plan-Profile-Gilbert.dwg




## PLAN VIEW

**GILBERT DRIVE STA 6+50 TO 12+50**

**SCALE: 1"= 20'**




## PROFILE VIEW

**GILBERT DRIVE STA 6+50 TO 12+50**

**SCALE: HORIZ 1"= 20'**

**VERT 1'=2'**

HORIZONTAL SCALE 1" = 20'

VERTICAL SCALE 1" = 2'

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PLAN AND PROFILE OF GILBERT DRIVE STA 6+50 TO 12+50

2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR: TOWNSHIP OF FALLS

SITUATED IN: Fairless Hills, PA

| | |
|---|---|
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/20 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING: Plan-Profile-Gilbert.dwg



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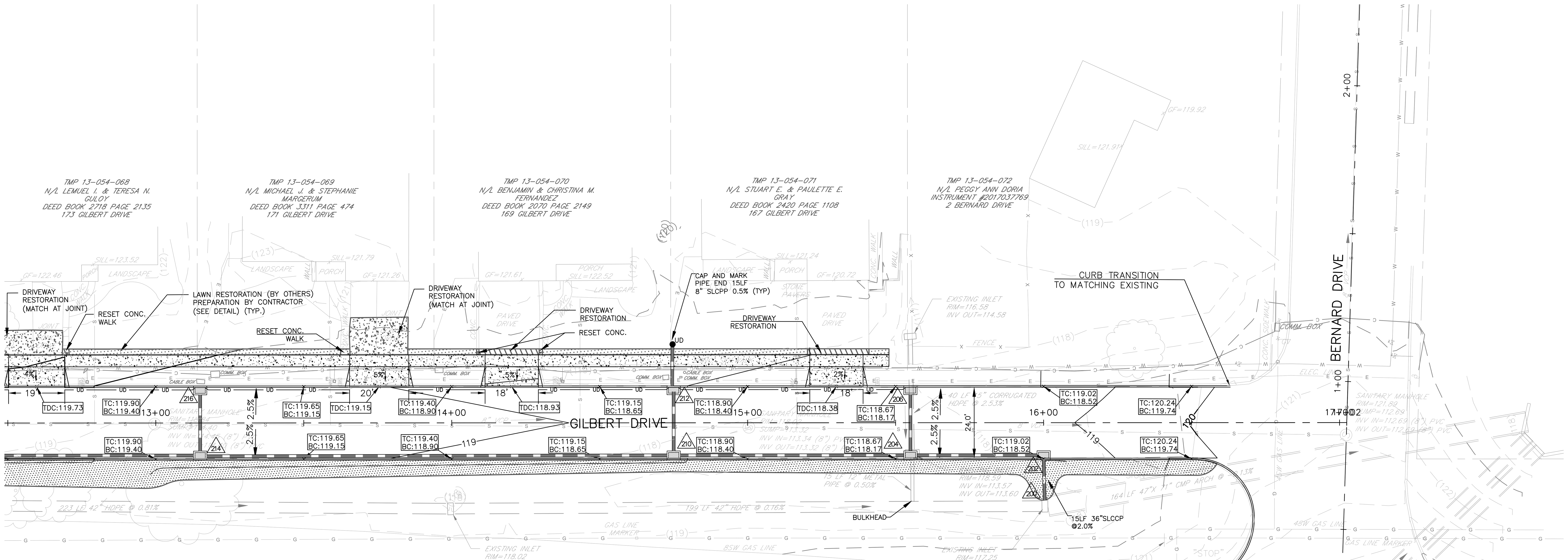
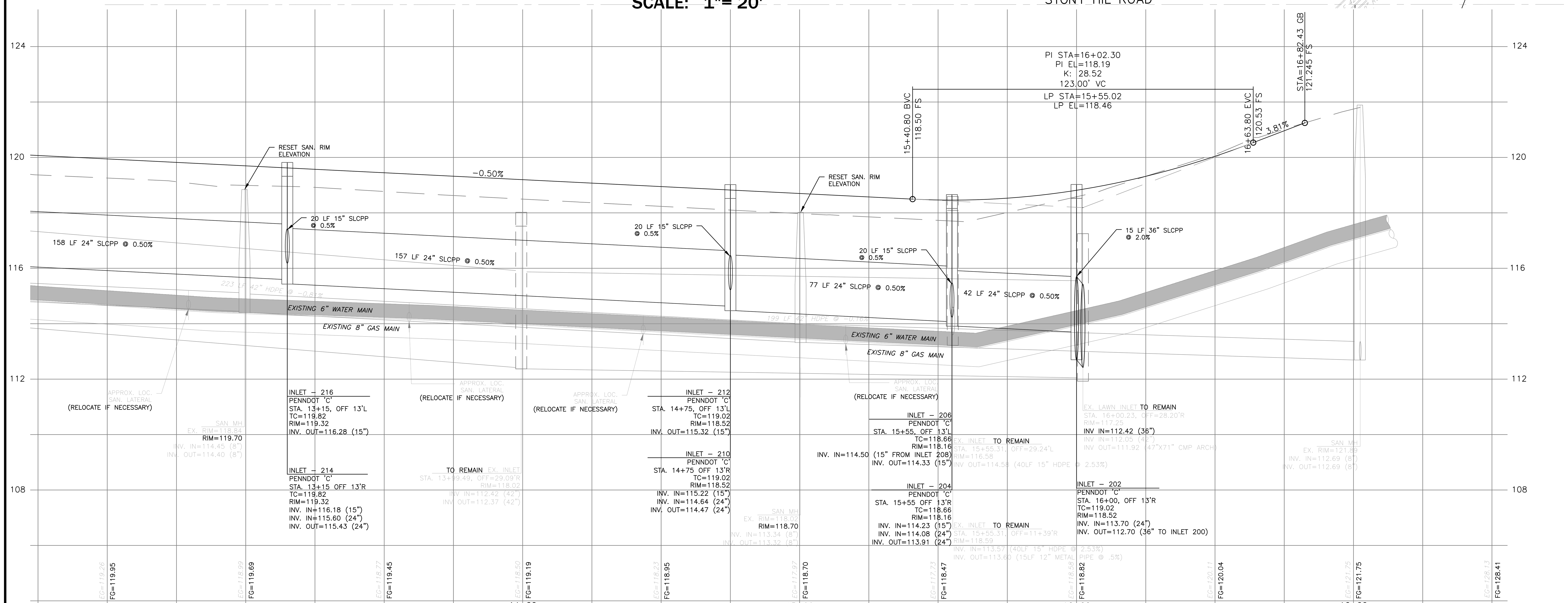



## PLAN VIEW

**GILBERT DRIVE STA 12+50 TO 17+00**

**SCALE: 1"= 20'**




## PROFILE VIEW

**GILBERT DRIVE STA 12+50 TO 17+00**

**SCALE: HORIZ 1"= 20'**

**VERT 1"=2'**

VERTICAL SCALE 1" = 2'

HORIZONTAL SCALE 1" = 20'

### LEGEND

| Existing | Description | Proposed |
|---|---|---|
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | |
| | SANITARY SEWER MANHOLE | |
| | SANITARY SEWER MAIN | |
| | WATER MAIN | |
| | GAS MAIN | |
| | WATER VALVE | |
| | WATER METER | |
| | FIRE HYDRANT | |
| | UNDERGROUND WIRE | |
| | OVERHEAD WIRE | |
| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
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| | STORM SEWER | |
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PLAN AND PROFILE OF

**GILBERT DRIVE STA:12+50:17+00**

**2020 ROAD IMPROVEMENT PROGRAM**

PREPARED FOR: TOWNSHIP OF FALLS

SITUATED IN: Fairless Hills, PA

| | |
|---|---|
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/20 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING: Plan-Profile-Gilbert.dwg



Monday, March 16, 2020
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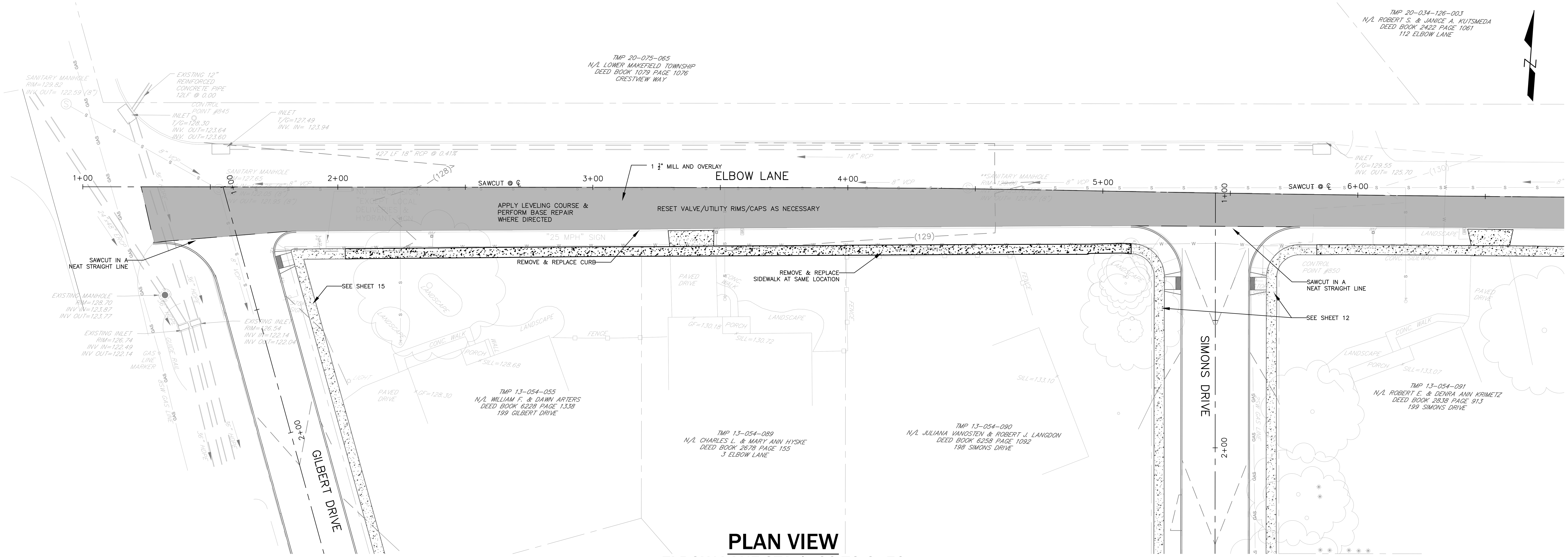
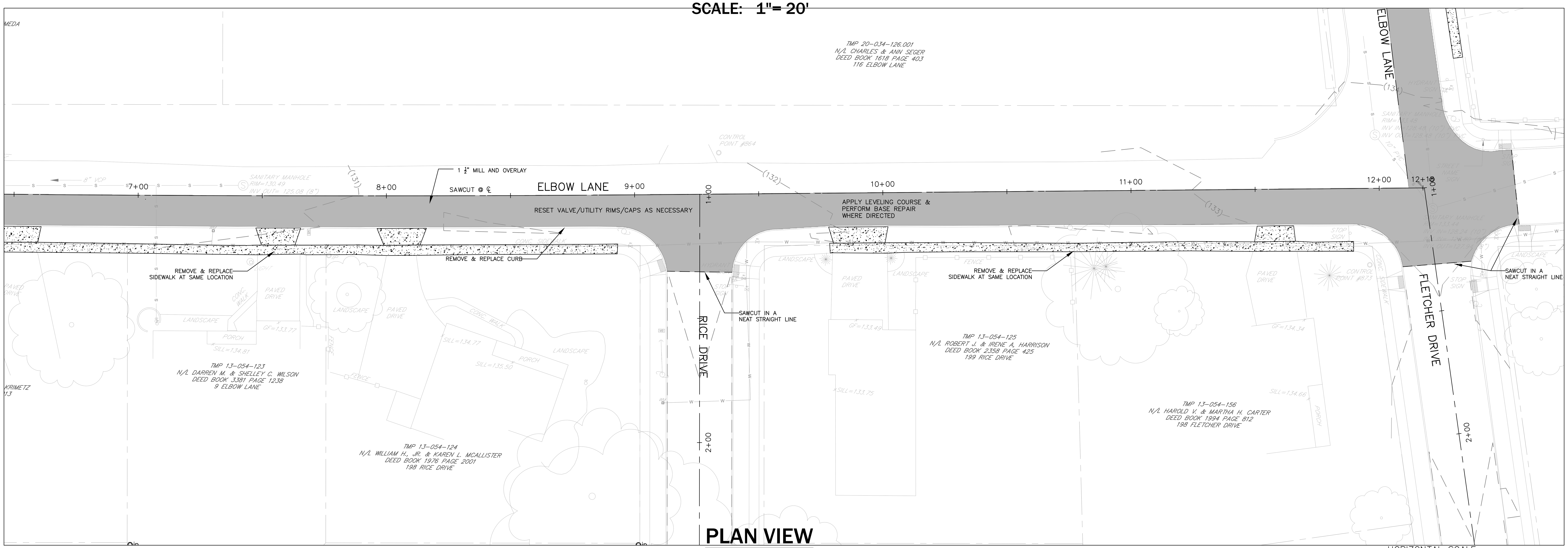



## PLAN VIEW

**ELBOW LANE STA 1+00 TO 6+50**
**SCALE: 1"= 20'**




## PLAN VIEW

**ELBOW LANE STA 6+50 TO 12+18**
**1"= 20'**

HORIZONTAL SCALE
20' 10' 0 20' 40'
1" = 20'

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MILL AND OVERLAY IMPROVEMENTS
OF
ELBOW LANE STA:1+00 TO 12+18
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
Fairless Hills, PA

| DRAWN BY: ARL | CHECKED BY: JGJ |
|---|---|
| DATE: 3/19/20 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING: Plan-Elbow.dwg

SHEET NO: 18 OF 38

Thursday, April 16, 2020
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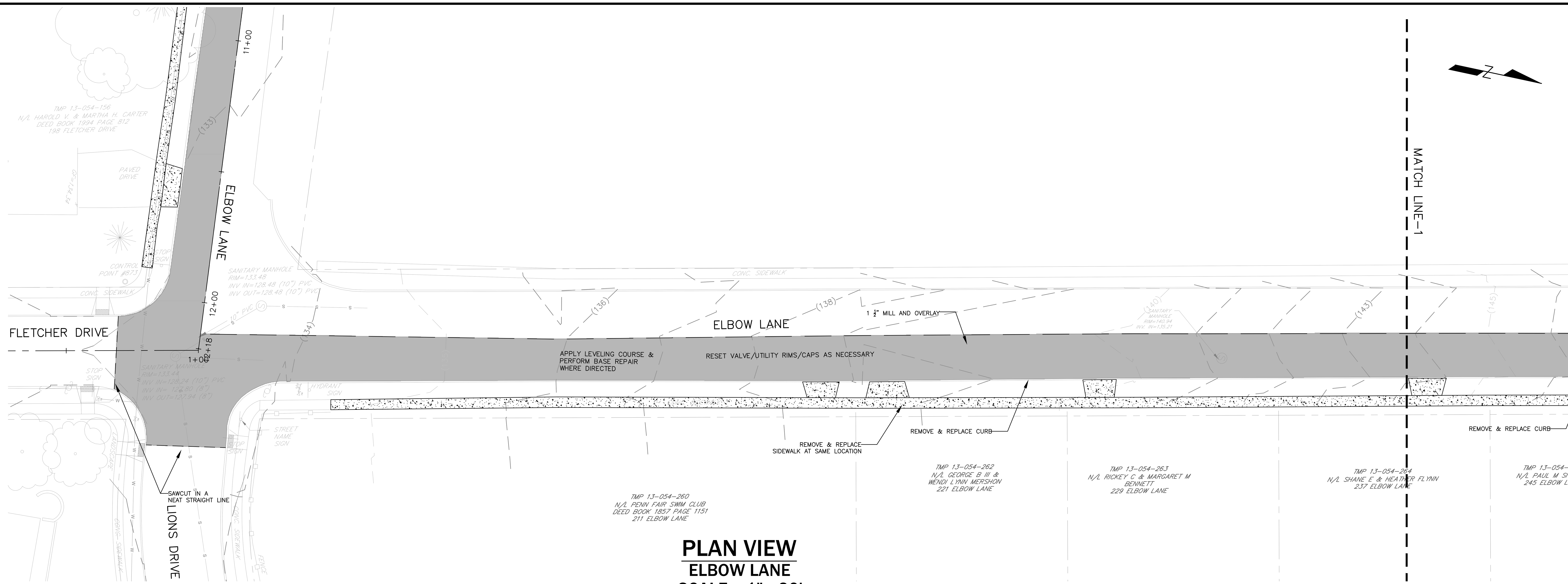
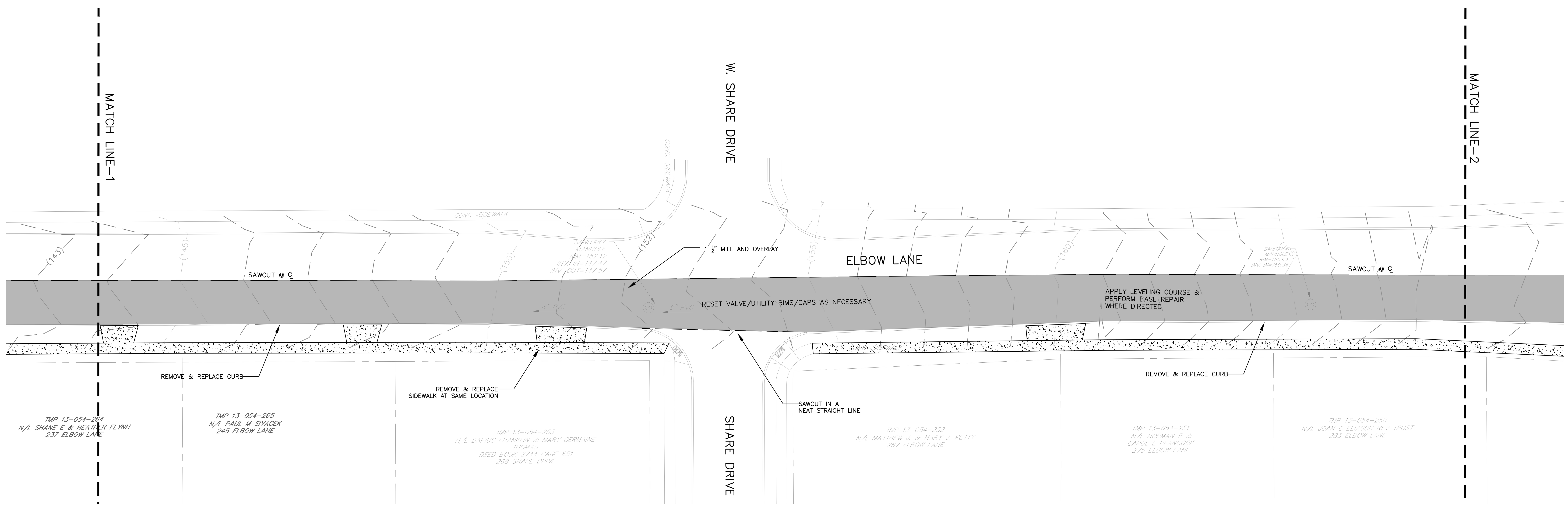



**PLAN VIEW**
**ELBOW LANE**
**SCALE: 1"= 20'**




**PLAN VIEW**
**ELBOW LANE**
**1"= 20'**

HORIZONTAL SCALE
20' 10' 0 20' 40'
1" = 20'

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PA. PE LICENSE # PE075233
DATE

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MILL AND OVERLAY IMPROVEMENTS
OF
ELBOW LANE
2020 ROAD IMPROVEMENT PROGRAM
PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
Fairless Hills, PA

| | |
| --- | --- |
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/20 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING:
Plan-Elbow.dwg
SHEET NO:
19 OF 38

Thursday, April 16, 2020
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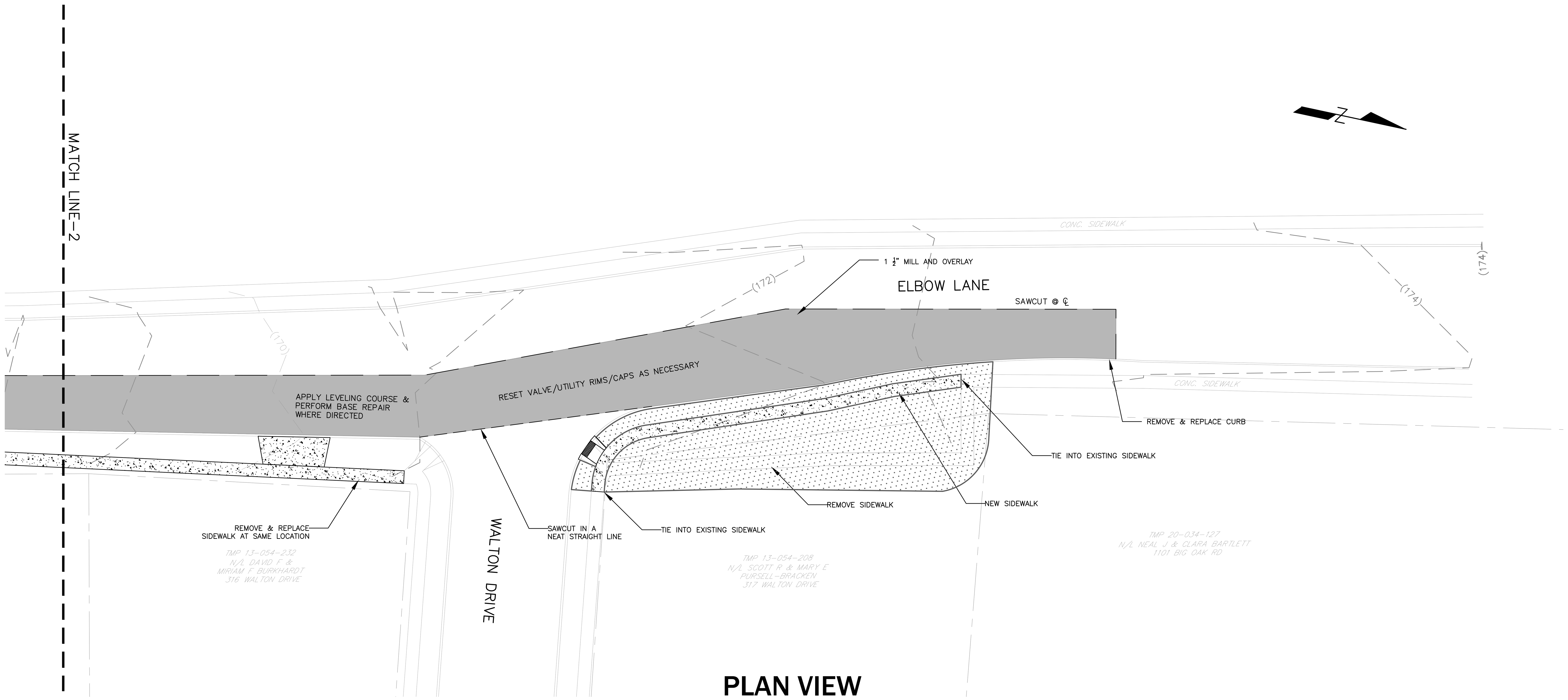


## PLAN VIEW
**ELBOW LANE**
**SCALE: 1"= 20'**

### LEGEND

| Existing | Description | Proposed |
|---|---|---|
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | |
| | SANITARY SEWER MANHOLE | |
| | SANITARY SEWER MAIN | |
| | WATER MAIN | |
| | GAS MAIN | |
| | WATER VALVE | |
| | WATER METER | |
| | FIRE HYDRANT | |
| | UNDERGROUND WIRE | |
| | OVERHEAD WIRE | |
| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
| | STORM SEWER YARD STUB | |
| | STORM SEWER | |
| | PAVEMENT KEYWAY | |
| | TREE REMOVAL | |

NOTES:

1. TEMPORARY UTILITY POLE SUPPORTS MAY BE REQUIRED TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THIS PLAN. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING POLE SUPPORTS, THE COST FOR WHICH SHALL BE INCLUDED IN THE LINE ITEM FOR WHICH THE SUPPORT IS NEEDED. NO SEPARATE PAY ITEM IS INCLUDED FOR POLE SUPPORTS.
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**CALL BEFORE YOU DIG!**

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL

**Pennsylvania One Call System, Inc.**

1–800–242–1776

HORIZONTAL SCALE

20' 10' 0 20' 40'

1" = 20'

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FAIRLESS HILLS, PA 19030
(215) 377-9244
www.jeassoc.com

JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233
DATE

| NO. | DATE | REVISION | BY | CHK. |
|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

MILL AND OVERLAY IMPROVEMENTS
OF
ELBOW LANE
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS

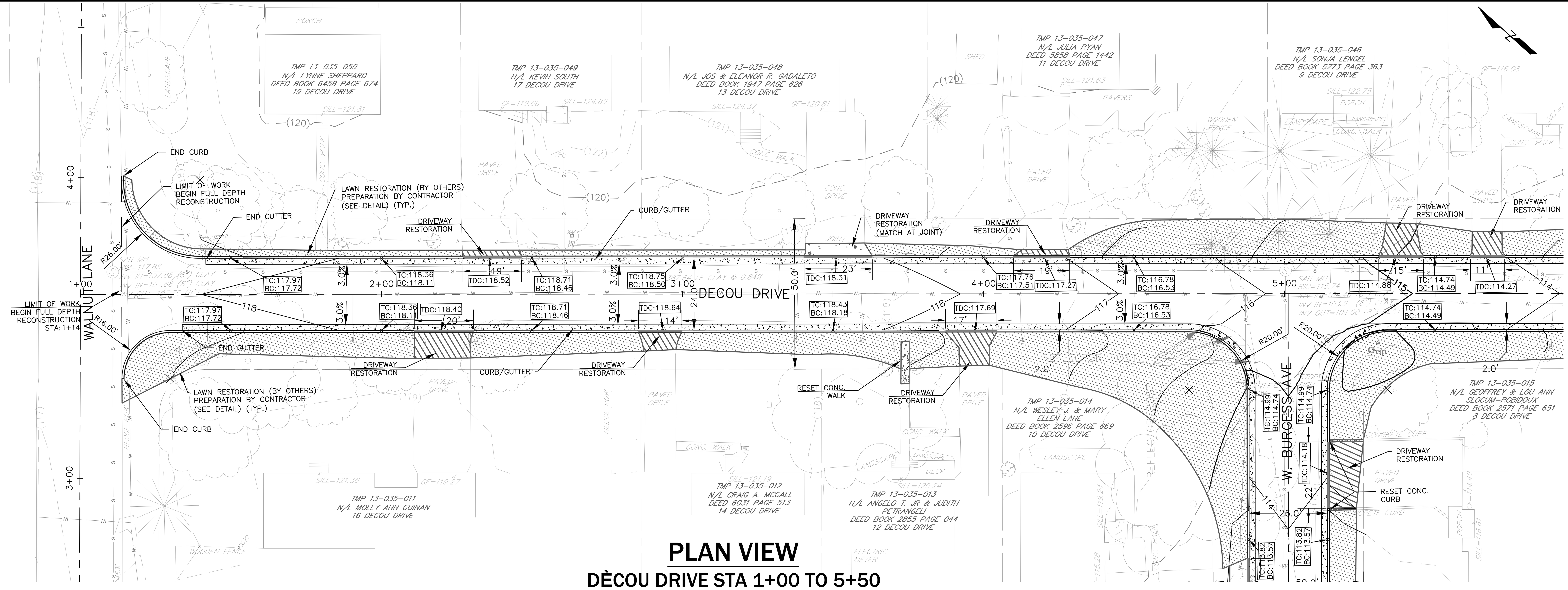
SITUATED IN:
Fairless Hills, PA

| | |
|---|---|
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/20 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19–01 | DESIGNED BY: CMK |

DRAWING:
Plan-Elbow.dwg



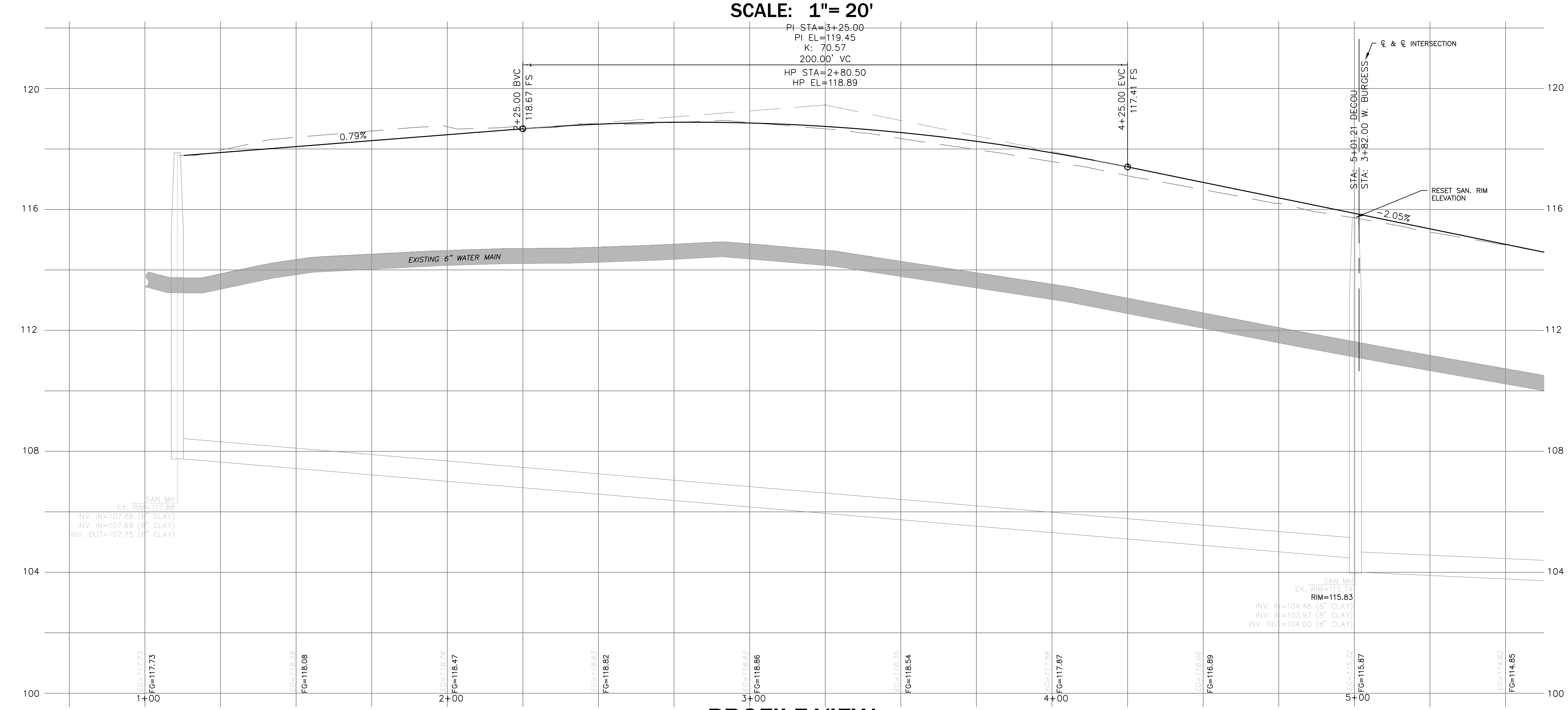
Thursday, April 16, 2020
P:\FALLS\CI19-01\Plans\Plot\Bid-Docs-Cad-2020 Scope\Plan-Elbow.dwg




## PLAN VIEW

**DÈCOU DRIVE STA 1+00 TO 5+50**

**SCALE: 1"= 20'**




## PROFILE VIEW

**DÈCOU DRIVE STA 1+00 TO 5+50**

**SCALE: HORIZ 1"= 20'**

**VERT 1'=2'**

VERTICAL SCALE 1" = 2'

HORIZONTAL SCALE 1" = 20'

## LEGEND

| Existing | Description | Proposed |
|---|---|---|
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | x |
| | SANITARY SEWER MANHOLE | |
| S | SANITARY SEWER MAIN | |
| W | WATER MAIN | |
| G | GAS MAIN | |
| WV | WATER VALVE | |
| WM | WATER METER | |
| | FIRE HYDRANT | |
| E | UNDERGROUND WIRE | |
| | OVERHEAD WIRE | |
| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
| | STORM SEWER YARD STUB | |
| | STORM SEWER | |
| | PAVEMENT KEYWAY | |
| | TREE REMOVAL | |

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3 WORKING DAYS NOTICE FOR
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1-800-242-1776

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www.jeassoc.com

JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233
DATE

| NO. | DATE | REVISION | BY | CHK. |
|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

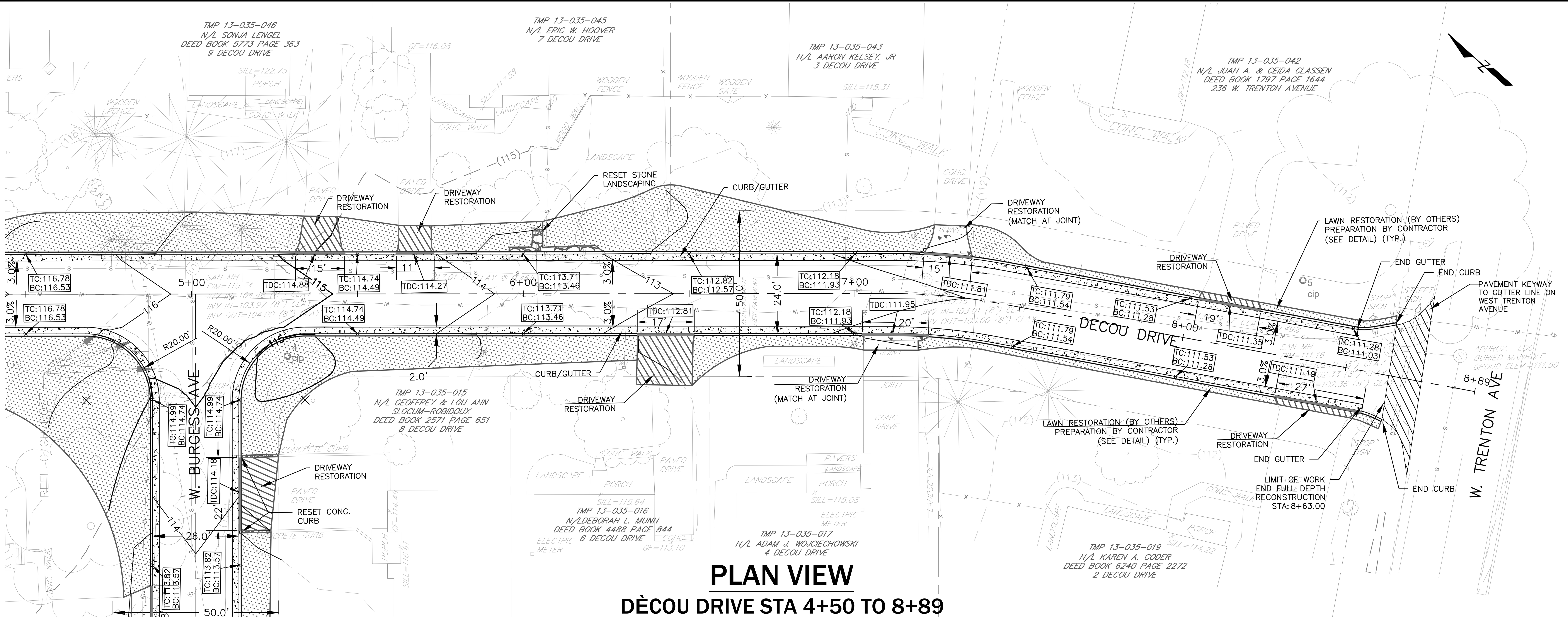
PLAN AND PROFILE
OF
DÈCOU DRIVE STA 1+00 TO 5+50
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS

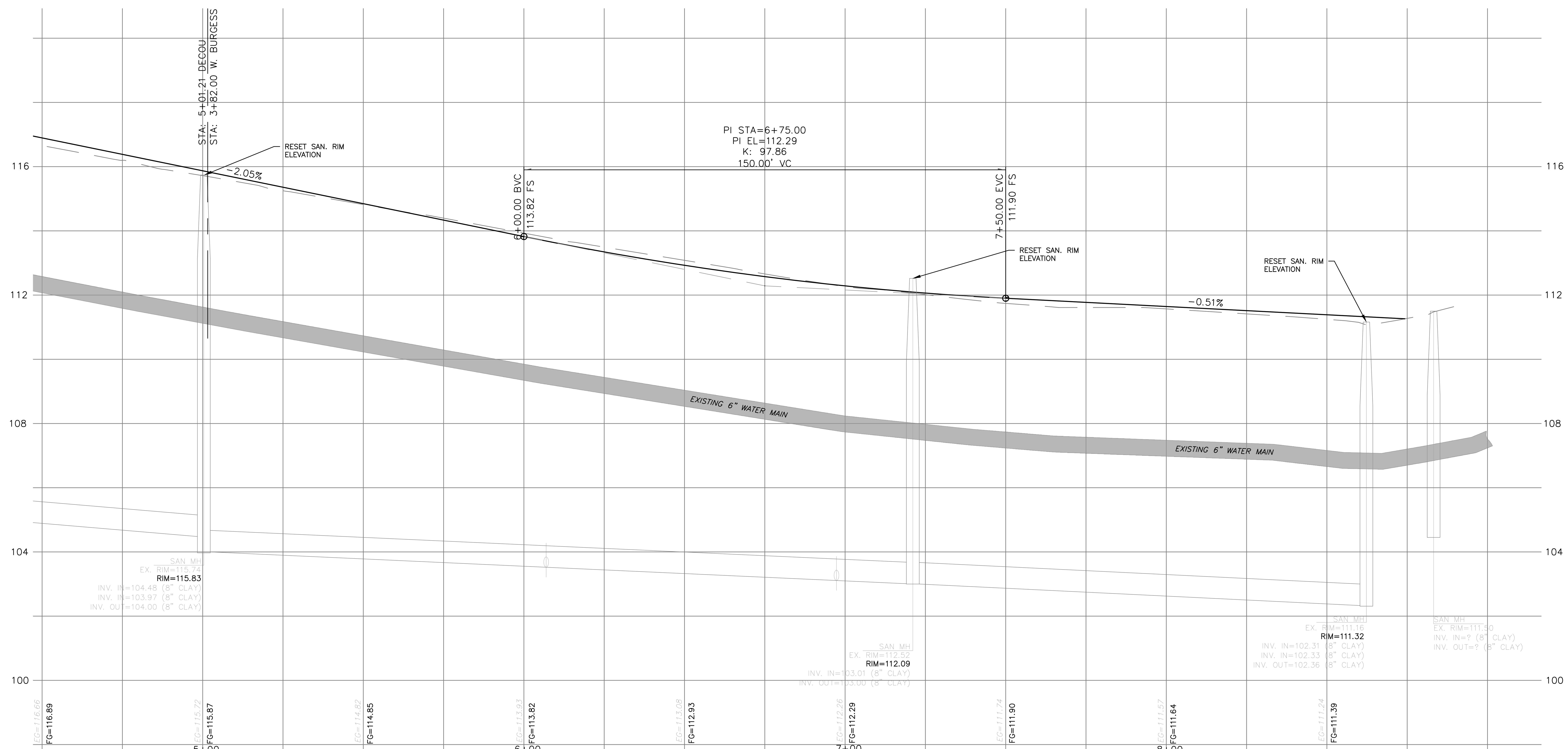
SITUATED IN:
Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: | SCALE: |
| 3/19/20 | 1"=20' |
| PROJECT NUMBER: | DESIGNED BY: |
| CI19-01 | CMK |

DRAWING:
Plan-Profile-Decou.dwg



## PLAN VIEW
**DÈCOU DRIVE STA 4+50 TO 8+89**
**SCALE: 1"= 20'**



## PROFILE VIEW
**DÈCOU DRIVE STA 4+50 TO 8+89**
**HORIZ 1"= 20'**
**VERT 1'=2'**

### LEGEND

| Existing | Description | Proposed |
|---|---|---|
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | |
| | SANITARY SEWER MANHOLE | |
| | SANITARY SEWER MAIN | |
| | WATER MAIN | |
| | GAS MAIN | |
| | WATER VALVE | |
| | WATER METER | |
| | FIRE HYDRANT | |
| | UNDERGROUND WIRE | |
| | OVERHEAD WIRE | |
| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
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| | PAVEMENT KEYWAY | |
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**Pennsylvania One Call System, Inc.**

**1-800-242-1776**

VERTICAL SCALE 1" = 2'

HORIZONTAL SCALE 1" = 20'


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(215) 377-9244
www.jeassoc.com


JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233
DATE

| NO. | DATE | REVISION | BY | CHK. |
|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

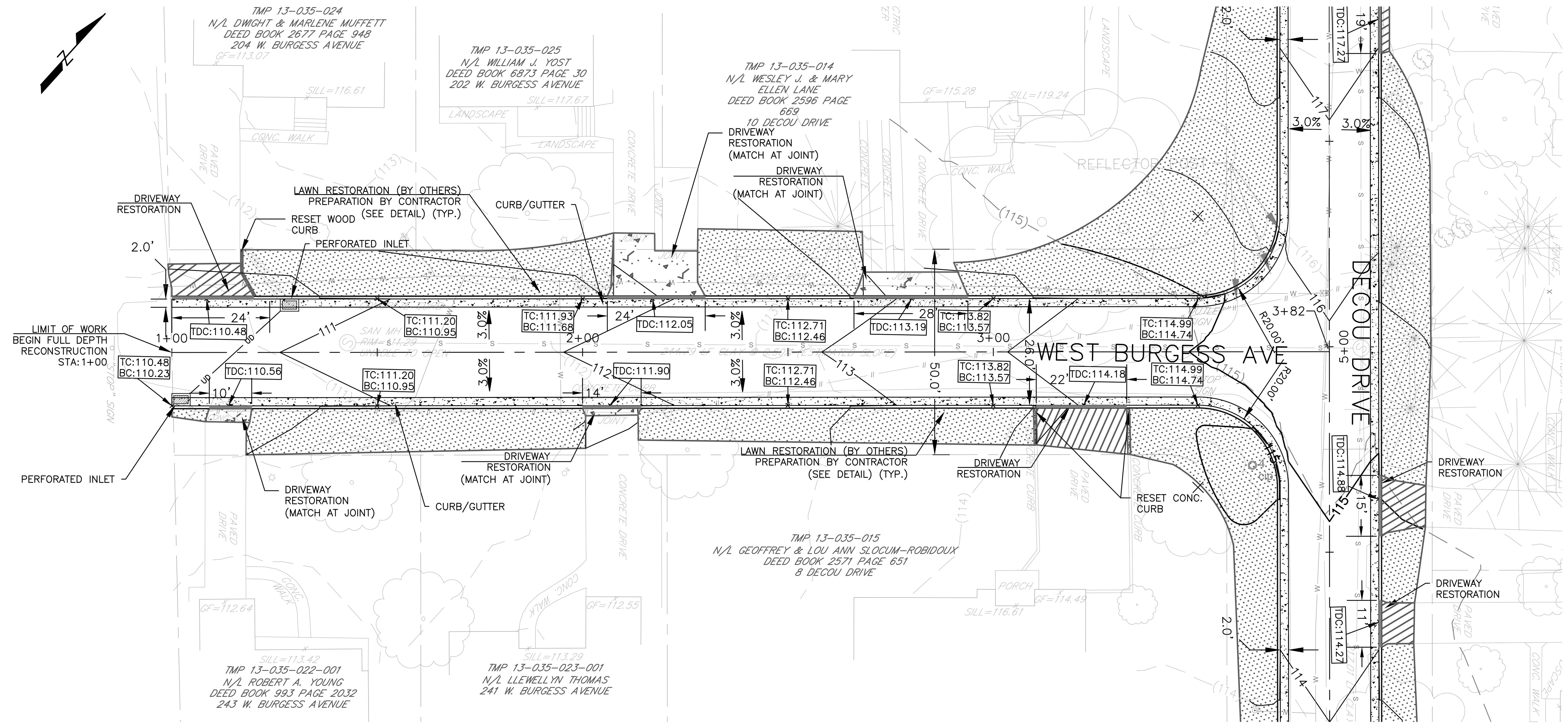
PLAN AND PROFILE
OF
**DÈCOU DRIVE STA 4+50 TO 8+89**
**2020 ROAD IMPROVEMENT PROGRAM**

PREPARED FOR:
TOWNSHIP OF FALLS

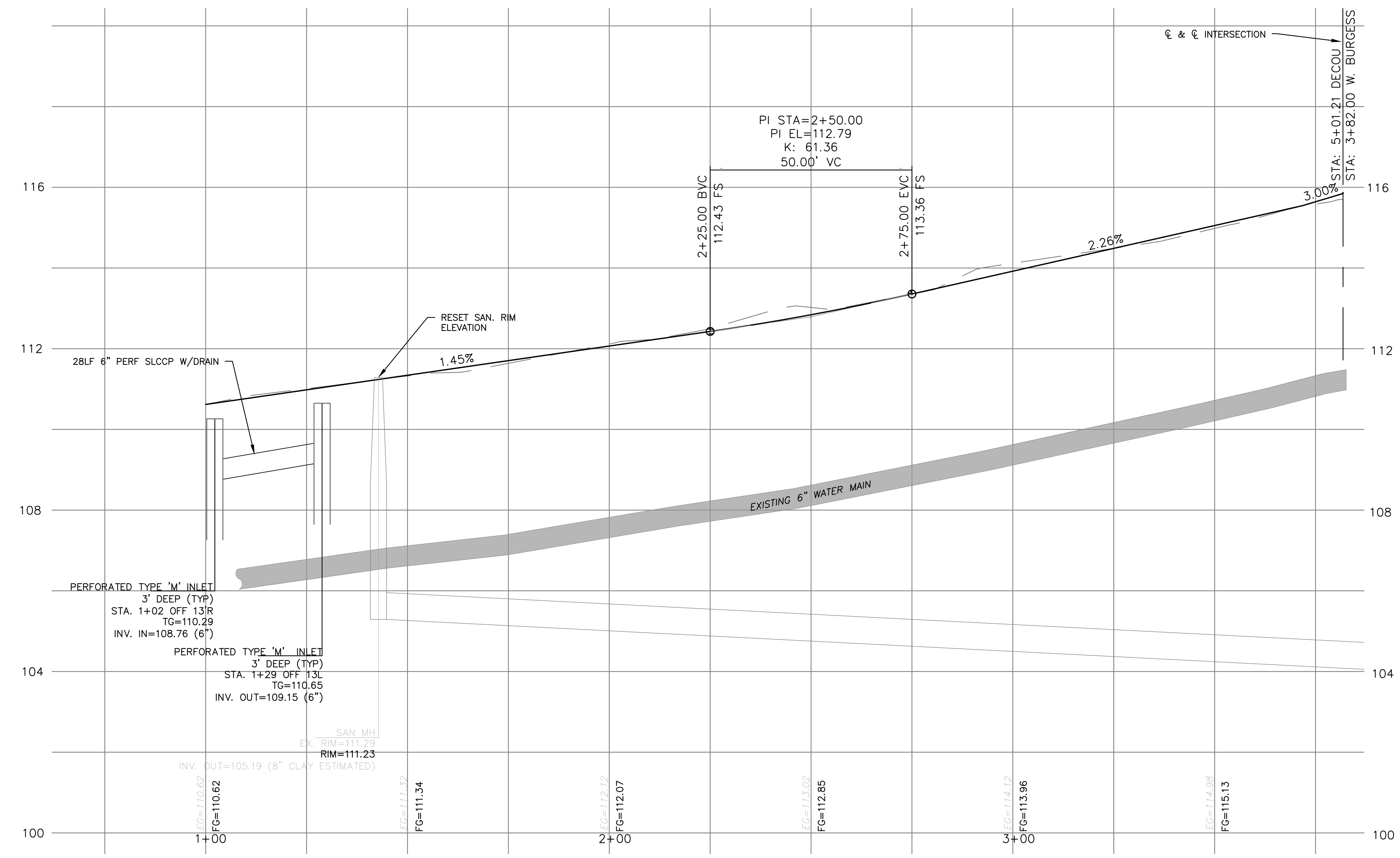
SITUATED IN:
Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: | SCALE: |
| 3/19/20 | 1"=20' |
| PROJECT NUMBER: | DESIGNED BY: |
| CI19-01 | CMK |

DRAWING: Plan-Profile-Decou.dwg



# PLAN VIEW
## W. BURGESS AVENUE STA 1+00 TO 3+82
SCALE: 1"= 20'



# PROFILE VIEW
## W. BURGESS AVENUE STA 1+00 TO 3+82
SCALE: HORIZ 1"= 20'
VERT 1'=2'

## LEGEND

| Existing | Description | Proposed |
|---|---|---|
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | x |
| | SANITARY SEWER MANHOLE | |
| S | SANITARY SEWER MAIN | |
| W | WATER MAIN | |
| G | GAS MAIN | |
| WV | WATER VALVE | |
| WM | WATER METER | |
| | FIRE HYDRANT | |
| E | UNDERGROUND WIRE | |
| | OVERHEAD WIRE | |
| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
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Pennsylvania One Call System, Inc.

1-800-242-1776

VERTICAL SCALE

1" = 2'

HORIZONTAL SCALE

20' 10' 0 20' 40'

1" = 20'


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www.jeassoc.com

JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233


DATE

| NO. | DATE | REVISION | BY | CHK. |
|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

PLAN AND PROFILE
OF
W. BURGESS AVE STA 1+00 TO 3+82
2020 ROAD IMPROVEMENT PROGRAM

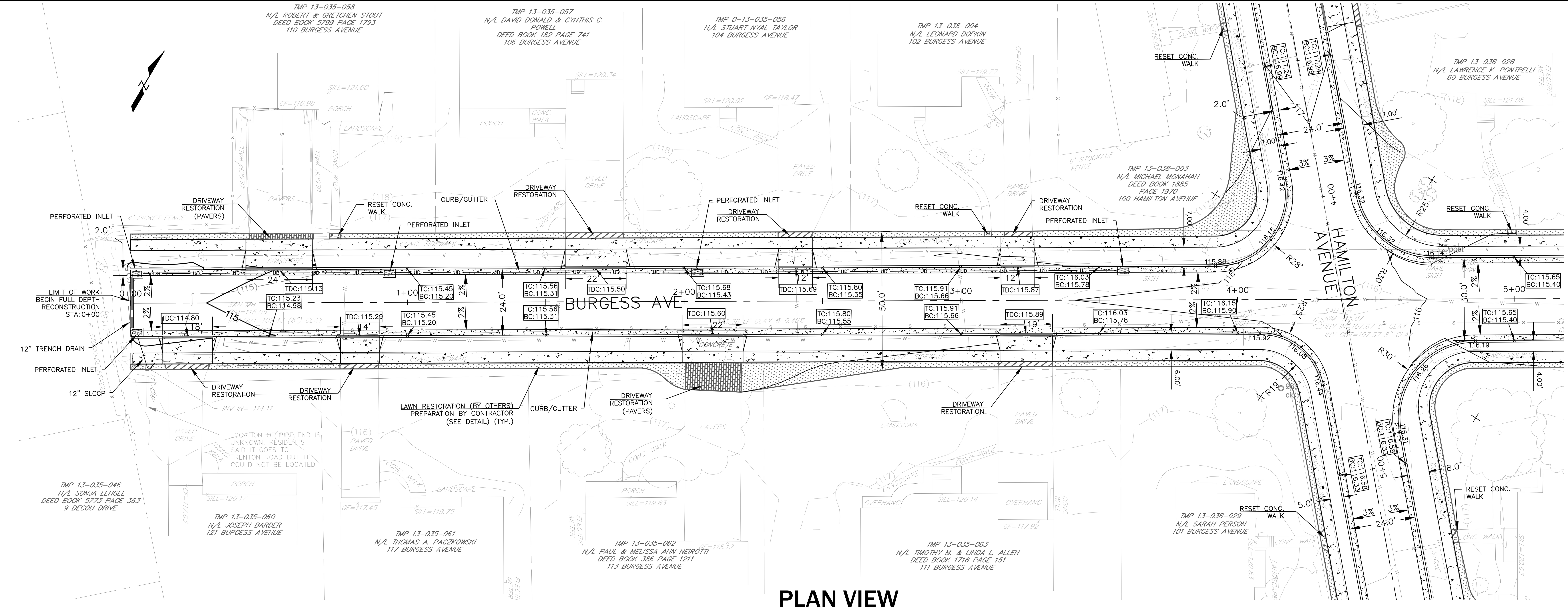
PREPARED FOR:
TOWNSHIP OF FALLS

SITUATED IN:
Fairless Hills, PA

| | |
|---|---|
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/2020 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING: Plan-Profile-Burgess.dwg

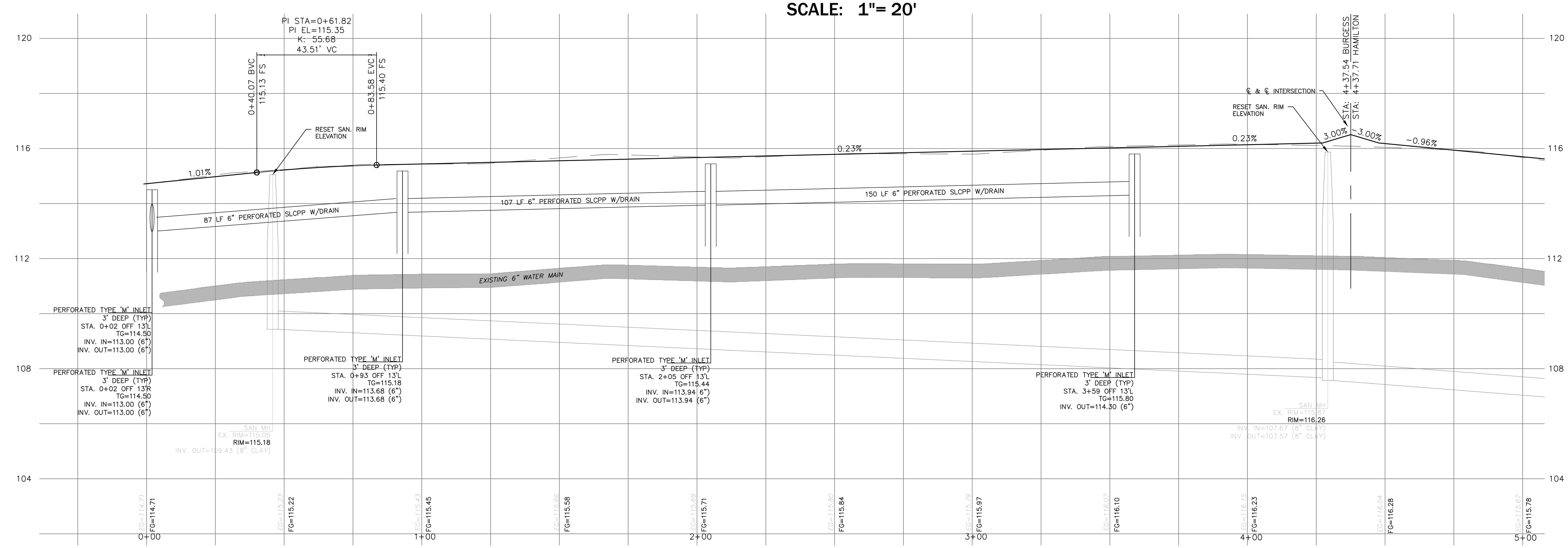
SHEET NO: 23 OF 38




## PLAN VIEW

**BURGESS AVENUE STA 0+00 TO 5+00**

**SCALE: 1"= 20'**




## PROFILE VIEW

**BURGESS AVENUE STA 0+00 TO 5+00**

**SCALE: HORIZ 1"= 20'**

**VERT 1'=2'**

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(215) 777-8244
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PA. PE LICENSE # PE075233

| NO | DATE | REVISION | BY | CHK. | DATE |
|---|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | | |

PLAN AND PROFILE
OF
BURGESS AVE STA 0+00 TO 5+00
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: | SCALE: |
| 3/19/2020 | 1"=20' |
| PROJECT NUMBER: | DESIGNED BY: |
| CI19-01 | CMK |

DRAWING:
Plan-Profile-Burgess.dwg

SHEET NO:
24 OF 38

Sunday, March 15, 2020
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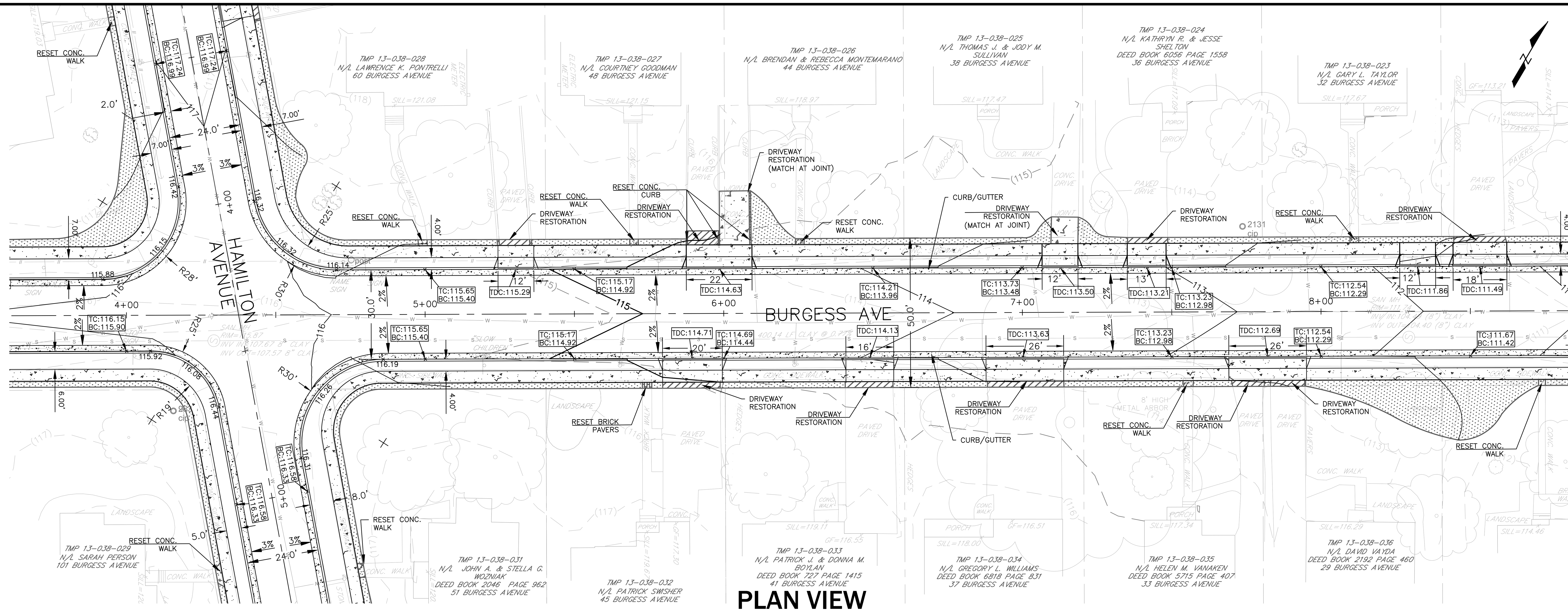
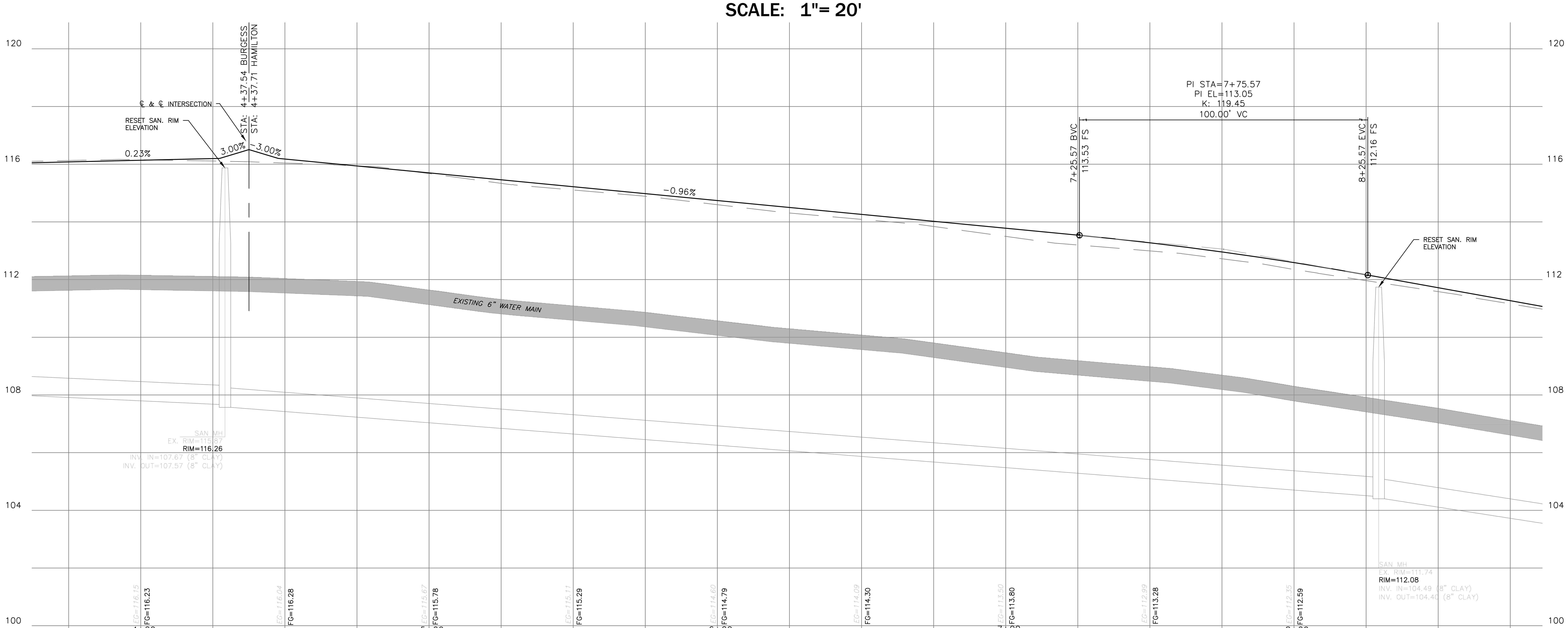


## PLAN VIEW
**BURGESS AVENUE STA 4+00 TO 8+50**
**SCALE: 1"= 20'**



## PROFILE VIEW
**BURGESS AVENUE STA 4+00 TO 8+50**
**SCALE: HORIZ 1"= 20'**
**VERT 1'=2'**

VERTICAL SCALE 1" = 2'

HORIZONTAL SCALE 1" = 20'

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PA. PE LICENSE # PE075233

| NO | DATE | REVISION | BY | CHK. |
|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

PLAN AND PROFILE
OF
BURGESS AVE STA 4:00 TO 8+50
2020 ROAD IMPROVEMENT PROGRAM
PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
Fairless Hills, PA

| | |
|---|---|
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/2020 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING: Plan-Profile-Burgess.dwg
SHEET NO: 25 OF 38

Sunday, March 15, 2020
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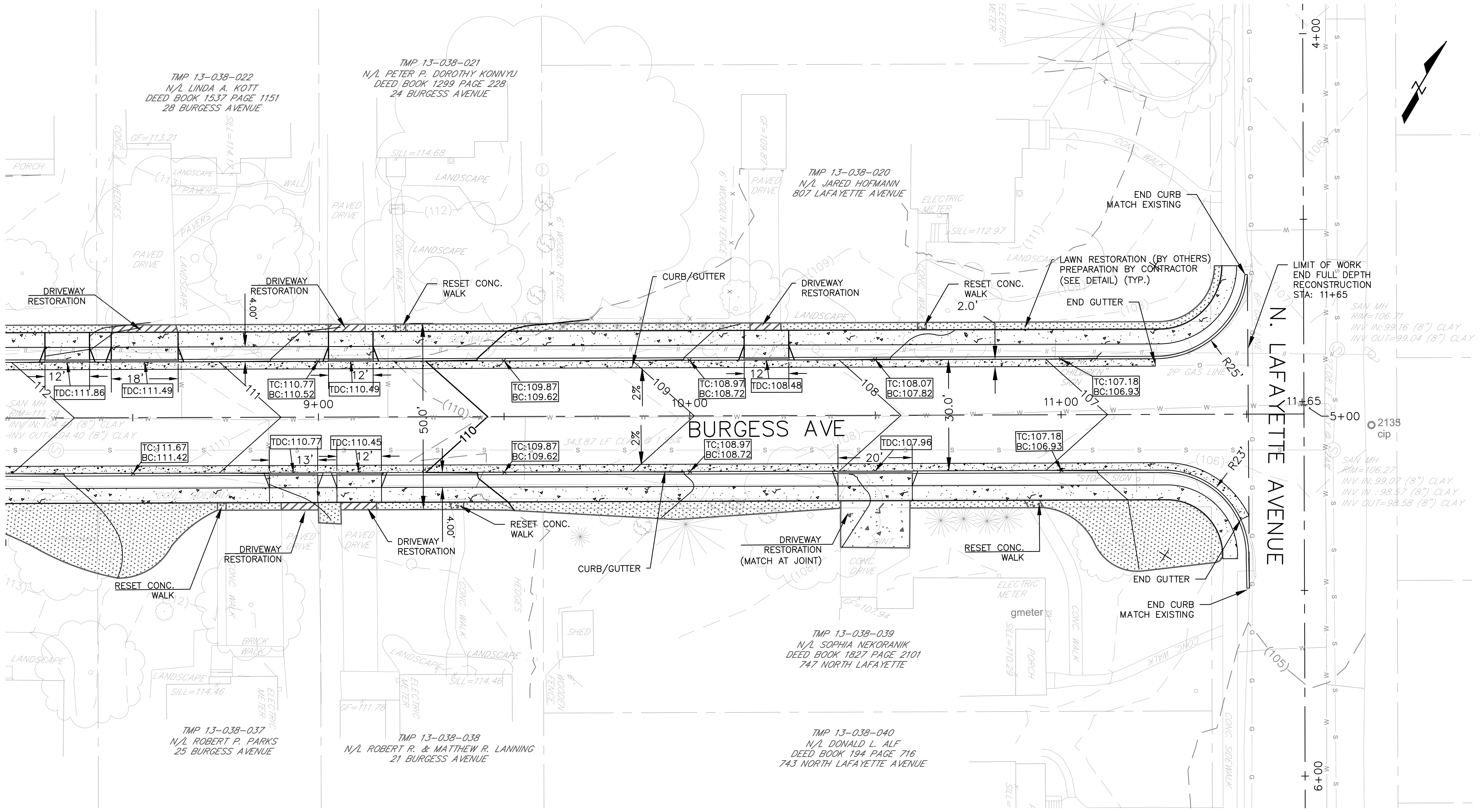
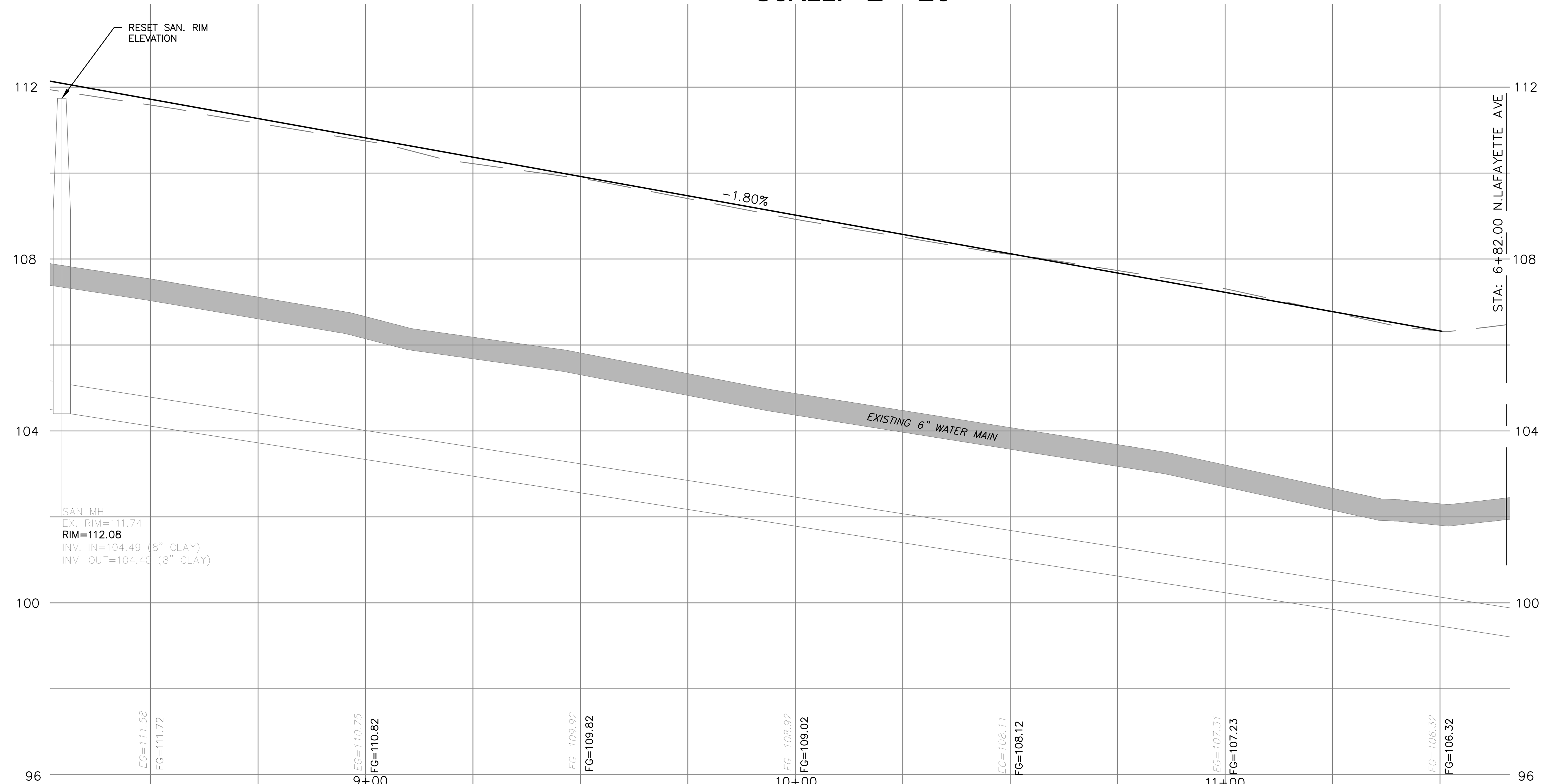



## PLAN VIEW
**BURGESS AVENUE STA 8+50 TO 11+65**
**SCALE: 1"= 20'**




## PROFILE VIEW
**BURGESS AVENUE STA 8+50 TO 11+65**
**SCALE: HORIZ 1"= 20'**
**VERT 1'=2'**

## LEGEND

| Existing | Description | Proposed |
|---|---|---|
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | x |
| | SANITARY SEWER MANHOLE | |
| S | SANITARY SEWER MAIN | |
| W | WATER MAIN | |
| G | GAS MAIN | |
| WV | WATER VALVE | |
| WM | WATER METER | |
| | FIRE HYDRANT | |
| E | UNDERGROUND WIRE | |
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| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
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| | PAVEMENT KEYWAY | |
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HORIZONTAL SCALE
20' 10' 0 20' 40'
1" = 20'

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FAIRLESS HILLS, PA 19030
(215) 377-9244
www.jeassoc.com

JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233

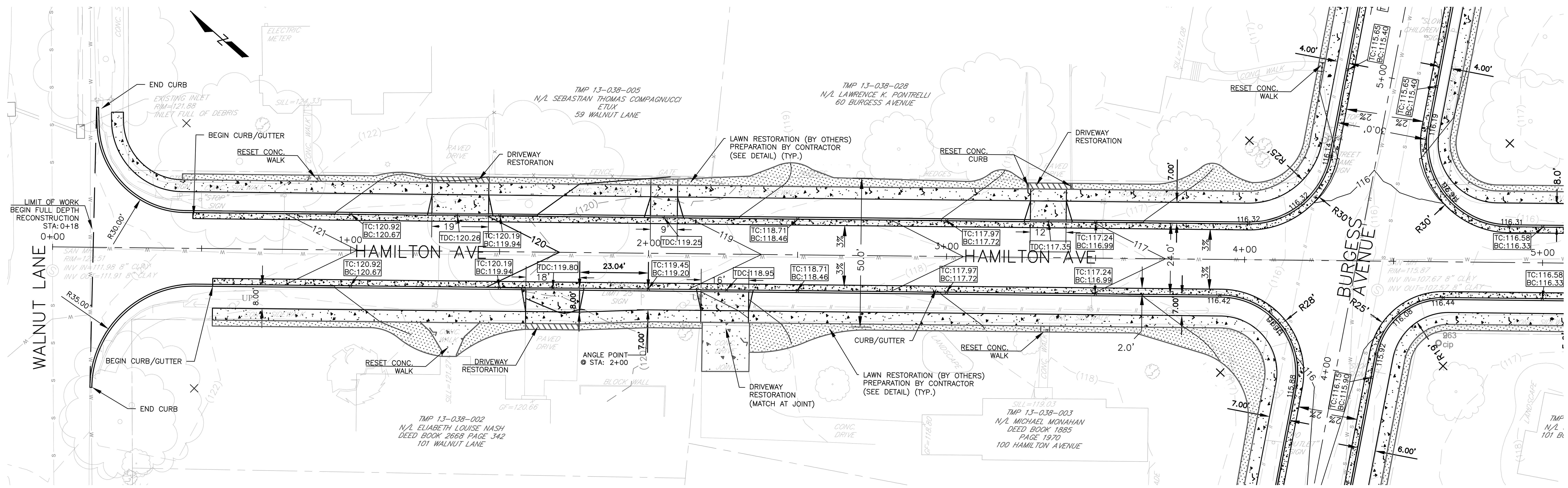
DATE

| NO | DATE | REVISION | BY | CHK. |
|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

PLAN AND PROFILE
OF
BURGESS AVE STA 8+50 TO 11+65
2020 ROAD IMPROVEMENT PROGRAM
PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
Fairless Hills, PA

| | |
|---|---|
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/2020 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

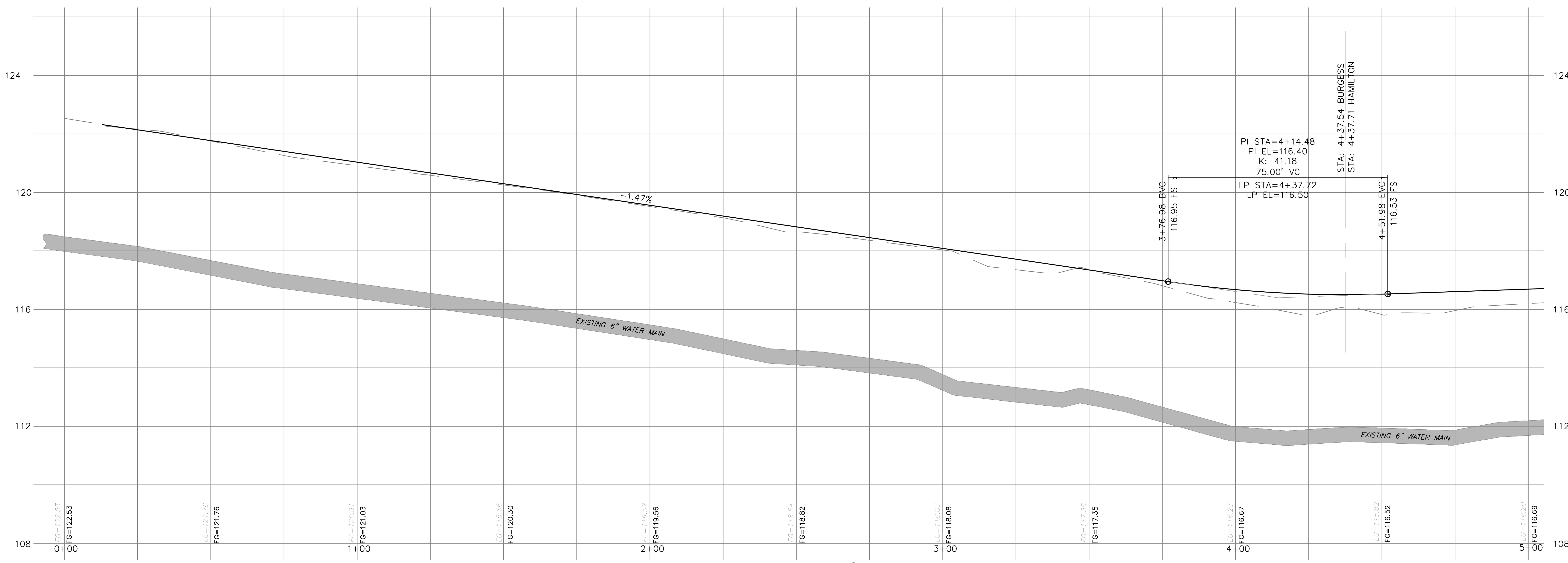
DRAWING:
Plan-Profile-Burgess.dwg




# PLAN VIEW

**HAMILTON AVE STA 0+00 TO 5+00**

**SCALE: 1"= 20'**




# PROFILE VIEW

**HAMILTON AVE STA 0+00 TO 5+00**

**SCALE: HORIZ 1"= 20'**

**VERT 1'=2'**

VERTICAL SCALE 1" = 2'

HORIZONTAL SCALE 1" = 20'

## LEGEND

| Existing | Description | Proposed |
|---|---|---|
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | x |
| | SANITARY SEWER MANHOLE | |
| S | SANITARY SEWER MAIN | |
| W | WATER MAIN | |
| G | GAS MAIN | |
| WV | WATER VALVE | |
| WM | WATER METER | |
| | FIRE HYDRANT | |
| E | UNDERGROUND WIRE | |
| // | OVERHEAD WIRE | |
| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
| | STORM SEWER YARD STUB | |
| | STORM SEWER | |
| | PAVEMENT KEYWAY | |
| | TREE REMOVAL | |

## NOTES:

1. TEMPORARY UTILITY POLE SUPPORTS MAY BE REQUIRED TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THIS PLAN. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING POLE SUPPORTS, THE COST FOR WHICH SHALL BE INCLUDED IN THE LINE ITEM FOR WHICH THE SUPPORT IS NEEDED. NO SEPARATE PAY ITEM IS INCLUDED FOR POLE SUPPORTS.
2. ALL DRIVEWAY RESTORATION LIMITS MUST BE CONFIRMED IN THE FIELD WITH THE ENGINEER'S REPRESENTATIVE PRIOR TO SAWCUTTING. ENGINEER'S REPRESENTATIVE MUST BE PRESENT WHEN DRIVEWAYS ARE SAWCUT.
3. ALL PROPOSED INLETS TO RECEIVE FILTER BAG INLET PROTECTION DURING CONSTRUCTION.
4. INDICATES A MODIFIED INLET BOX OR MANHOLE
5. 4" TOPSOIL AND SEEDING, AT ALL LOCATIONS (BETWEEN CURB AND SIDEWALK & LAWN RESTORATION AREAS BEHIND SIDEWALK) WILL BE COMPLETED BY OTHERS UNDER A SEPARATE CONTRACT, AND IS NOT INCLUDED IN THE SCOPE OF WORK FOR THIS CONTRACT. ALL EARTH WORK (CUTS/FILLS) REQUIRED TO ACHIEVE A SUBGRADE PREPARED TO RECEIVE THE 4" OF TOPSOIL IS PART OF THIS CONTRACT. ALL EARTHWORK THAT IS PART OF THIS CONTRACT (BETWEEN THE CURB AND THE SIDEWALK & LAWN RESTORATION AREAS BEHIND THE SIDEWALK) IS NOT A SEPARATE PAY ITEM AND MUST BE INCLUDED IN AN APPROPRIATE LINE ITEM WITHIN THE BID FORM.

**CALL BEFORE YOU DIG!**

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL

**Pennsylvania One Call System, Inc.**

1-800-242-1776

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www.jeassoc.com

JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233

DATE

| NO. | DATE | REVISION | BY | CHK. |
|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

PLAN AND PROFILE
OF
HAMILTON AVE STA:0+00 TO 5+00
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS

SITUATED IN:
Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: | SCALE: |
| 3/19/20 | 1"=20' |
| PROJECT NUMBER: | DESIGNED BY: |
| CI19-01 | CMK |

DRAWING:
Plan-Profile-Hamilton.dwg



Sunday, March 15, 2020
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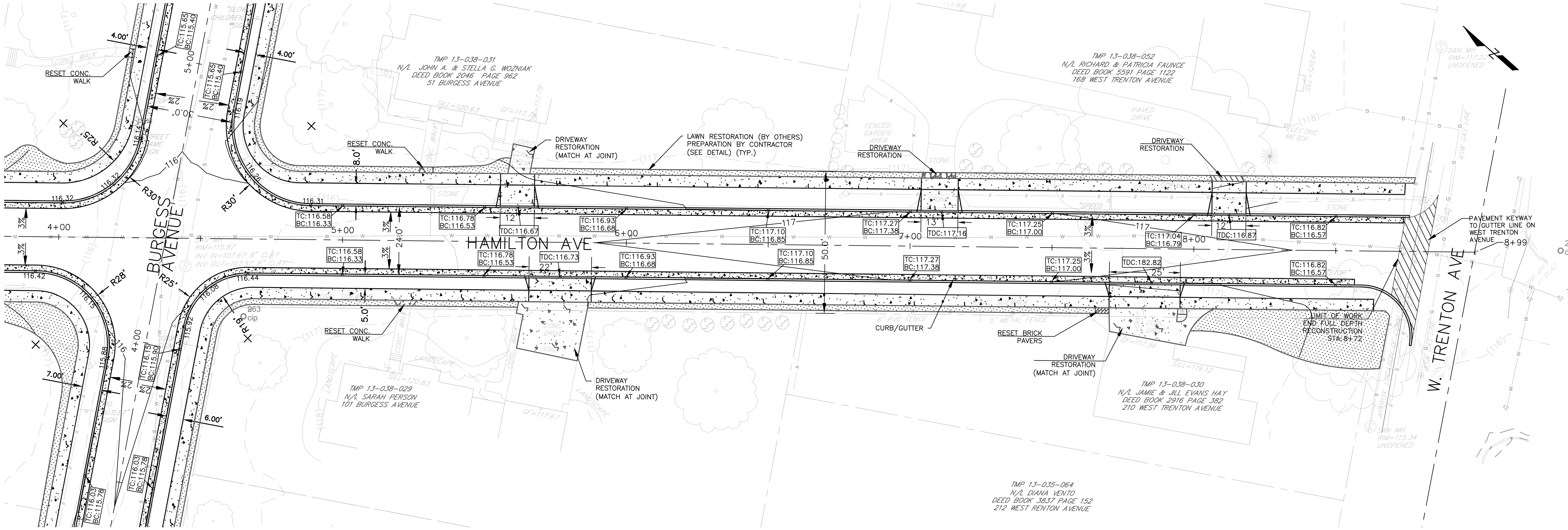
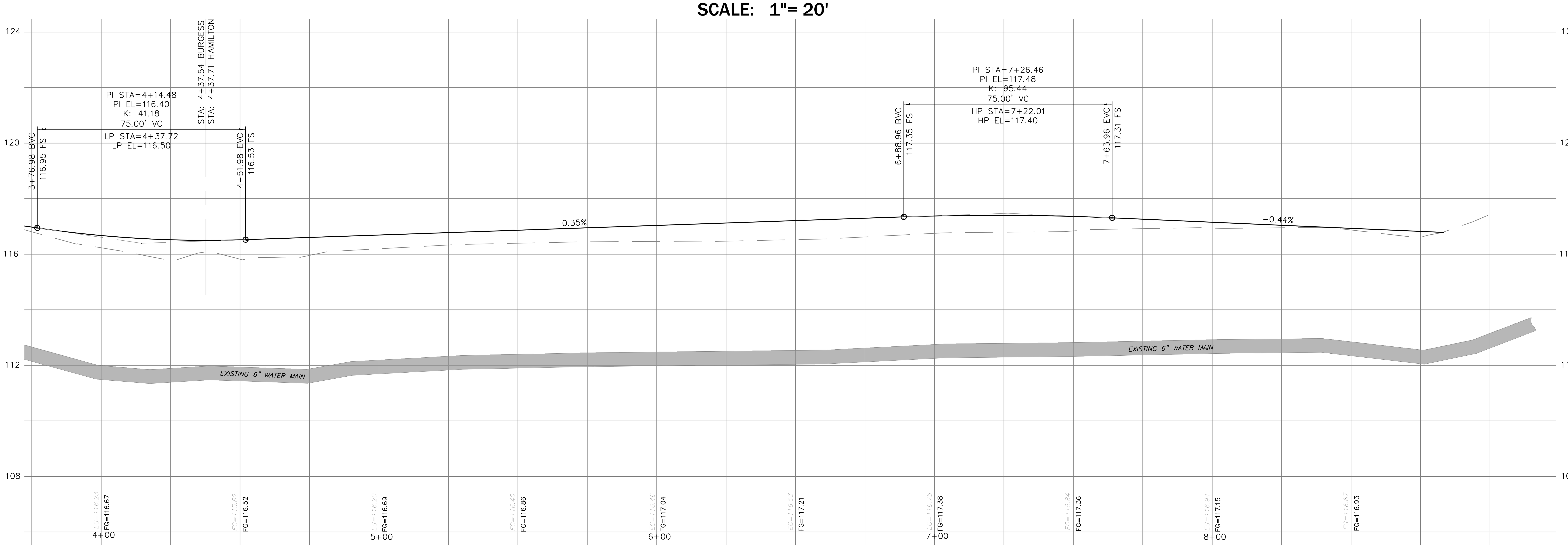



## PLAN VIEW

**HAMILTON AVE STA 4+00 TO 8+99**

**SCALE: 1"= 20'**




## PROFILE VIEW

**HAMILTON AVE STA 4+00 TO 8+99**

**SCALE: HORIZ 1"= 20'**

**VERT 1'=2'**

HORIZONTAL SCALE
20' 10' 0 20' 40'
1" = 20'

VERTICAL SCALE
2' 1' 0 2' 4'
1" = 2'

| LEGEND | | |
|---|---|---|
| Existing | Description | Proposed |
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | x |
| S | SANITARY SEWER MANHOLE | |
| S | SANITARY SEWER MAIN | |
| W | WATER MAIN | |
| G | GAS MAIN | |
| WV | WATER VALVE | |
| WM | WATER METER | |
| | FIRE HYDRANT | |
| E | UNDERGROUND WIRE | |
| // | OVERHEAD WIRE | |
| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
| | STORM SEWER YARD STUB | |
| | STORM SEWER | |
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DATE

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# PLAN AND PROFILE OF HAMILTON AVE STA:4+00 TO 8+99 2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: | SCALE: |
| 3/19/20 | 1"=20' |
| PROJECT NUMBER: | DESIGNED BY: |
| CI19-01 | CMK |

DRAWING:
Plan-Profile-Hamilton.dwg




Sunday, March 15, 2020
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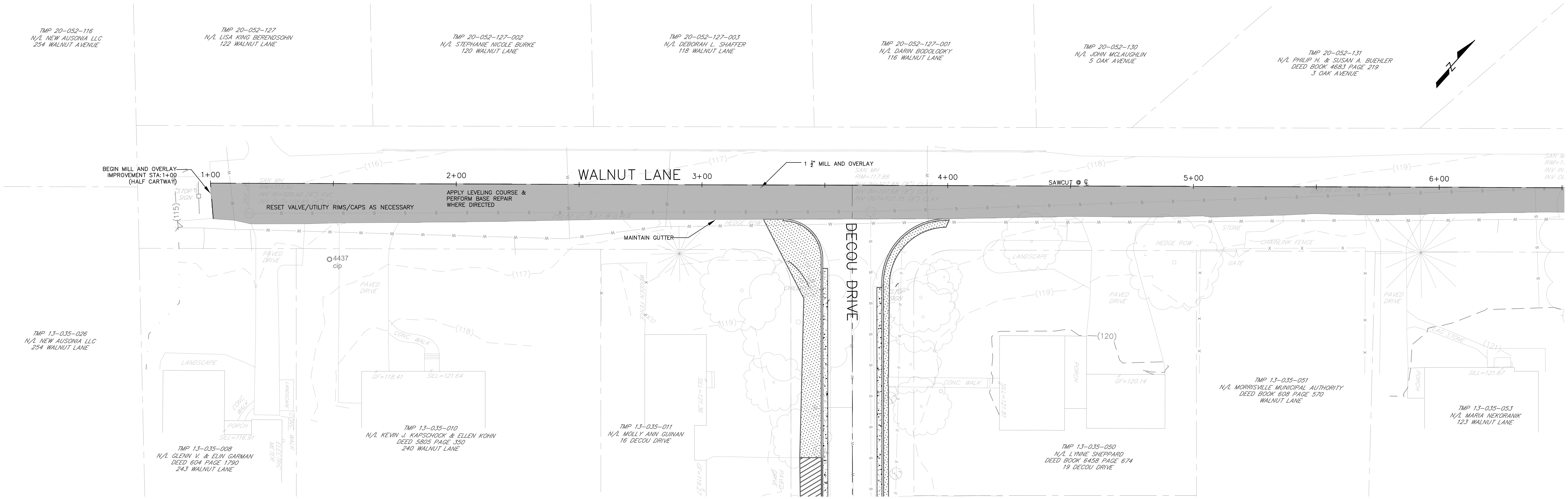
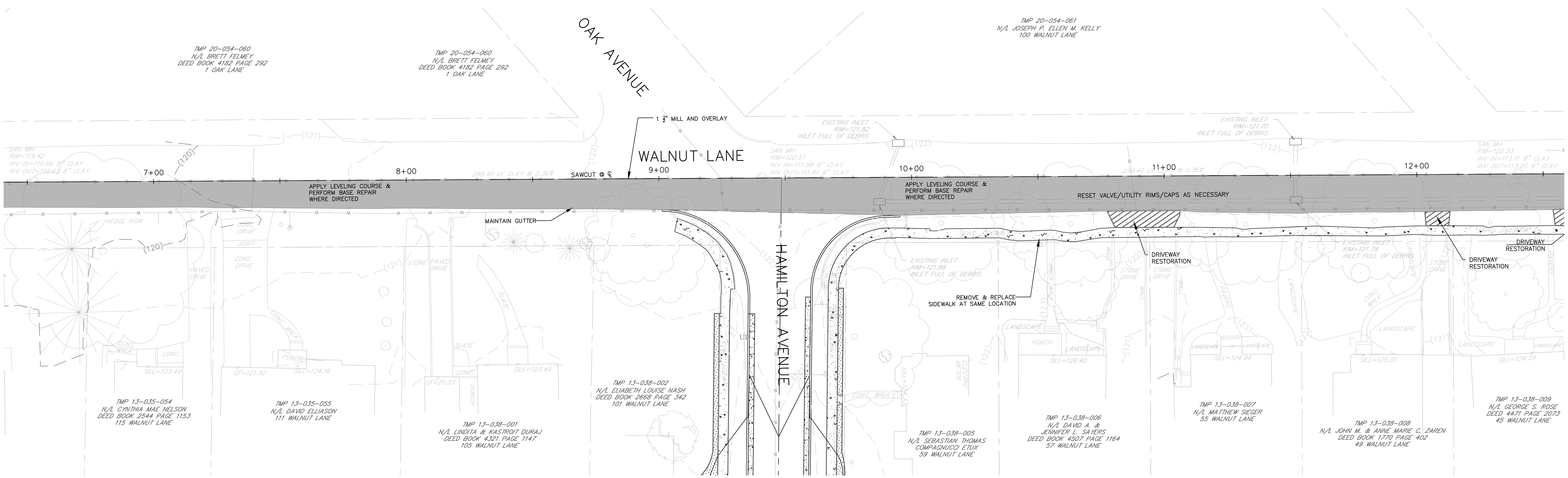



**PLAN VIEW**

**WALNUT LANE STA 1+00 TO 6+50**

**SCALE: 1"= 20'**




**PLAN VIEW**

**WALNUT LANE STA 6+50 TO 12+50**

**SCALE: HORIZ 1"= 20'**

HORIZONTAL SCALE 20' 10' 0 20' 40' 1" = 20'

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MILL AND OVERLAY IMPROVEMENTS OF WALNUT LANE STA 1+00 TO 12+50
2020 ROAD IMPROVEMENT PROGRAM

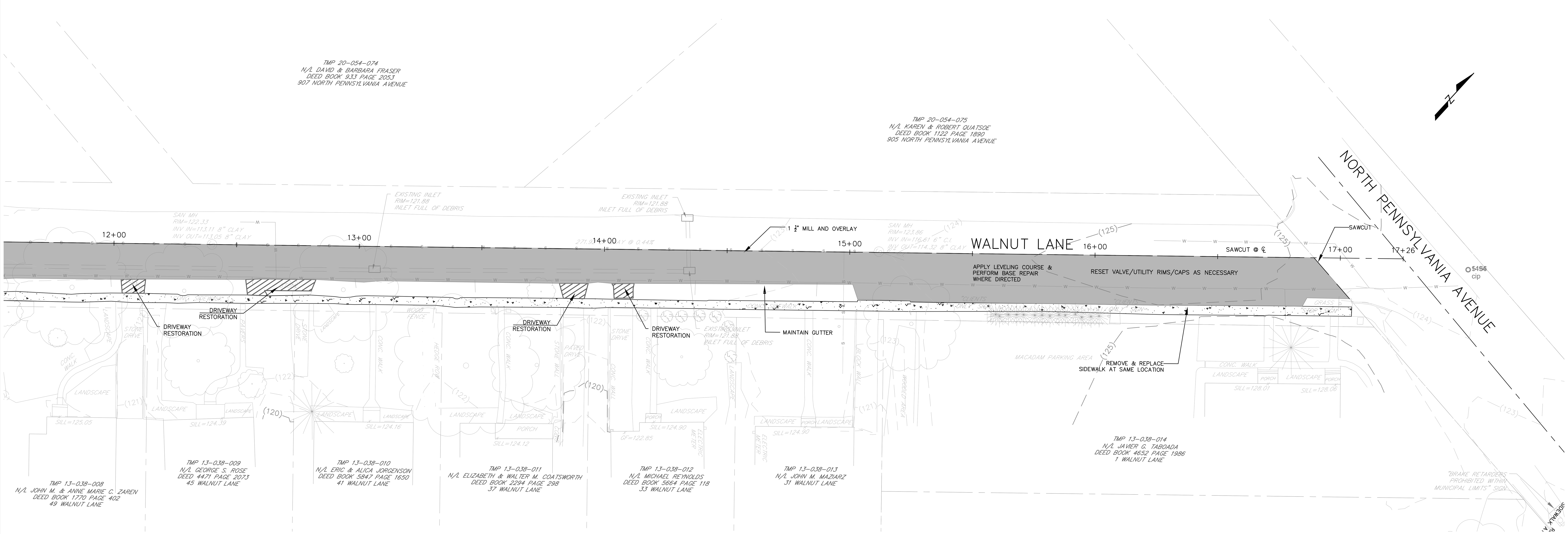
PREPARED FOR: FALLS TOWNSHIP
SITUATED IN: Fairless Hills, PA

| DRAWN BY: ARL | CHECKED BY: JGJ |
|---|---|
| DATE: 3/19/20 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING: Plan-Walnut.dwg

SHEET NO: 29 OF 38

Thursday, April 16, 2020 P:\FALLS\CI19-01\Plans\Plot\Bid-Docs-Cad-2020 Scope\Plan-Walnut.dwg




## PLAN VIEW

**WALNUT LANE STA 12+00 TO 17+26**
**SCALE: 1"= 20'**

HORIZONTAL SCALE
20' 10' 0 20' 40'
1" = 20'

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MILL AND OVERLAY IMPROVEMENTS
OF
WALNUT LANE STA 12+00 TO 17+26
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
Fairless Hills, PA

| DRAWN BY: ARL | CHECKED BY: JGJ |
|---|---|
| DATE: 3/19/20 | SCALE: 1"=20' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING: Plan-Walnut.dwg
SHEET NO: 30 OF 38

Thursday, April 16, 2020
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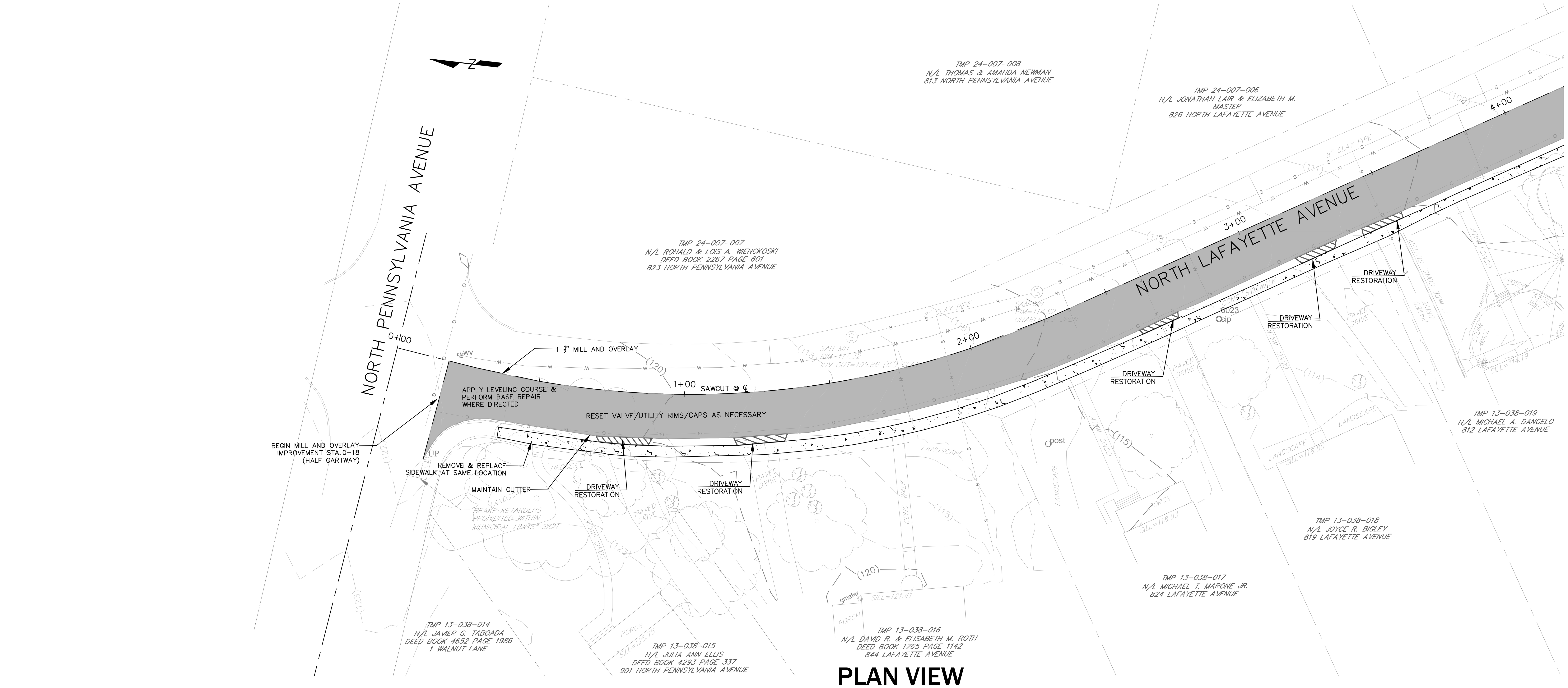
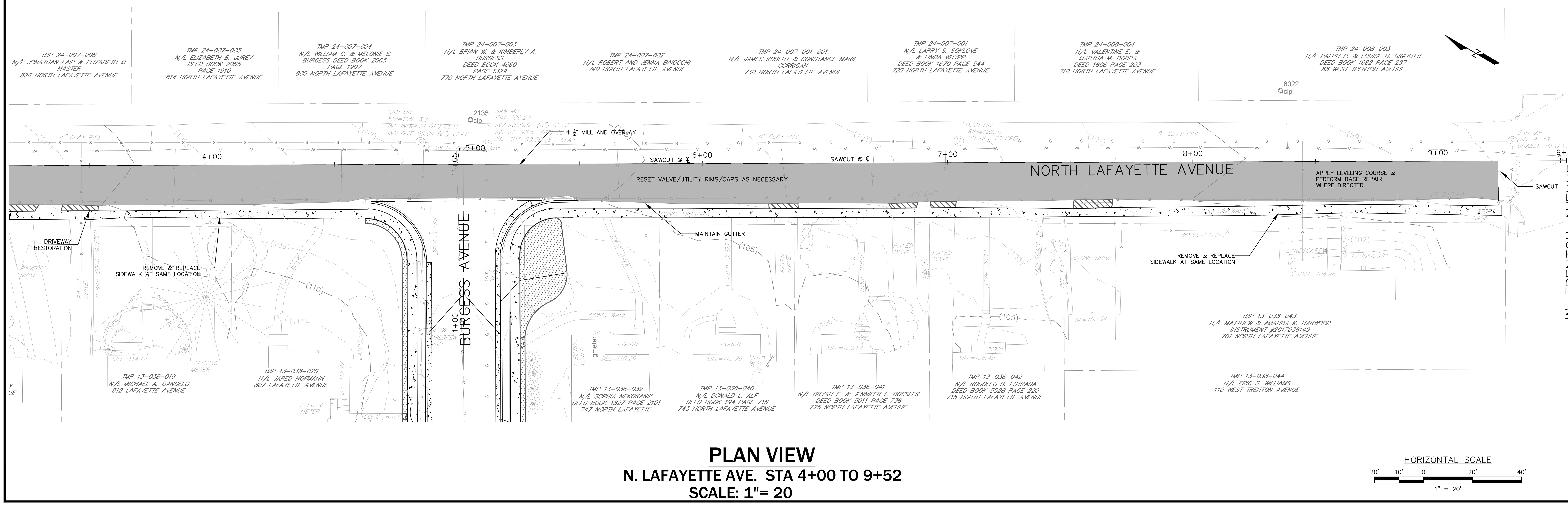



## PLAN VIEW

**N. LAFAYETTE AVE. STA 0+00 TO 4+00**

**SCALE: 1"= 20'**




## PLAN VIEW

**N. LAFAYETTE AVE. STA 4+00 TO 9+52**

**SCALE: 1"= 20**

Thursday, April 16, 2020
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PA. PE LICENSE # PE075233


DATE

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|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

MILL AND OVERLAY ROAD IMPROVEMENTS
OF
N. LAFAYETTE AVE STA 0+00 TO 9+52
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: | SCALE: |
| 3/19/19 | 1"=20' |
| PROJECT NUMBER: | DESIGNED BY: |
| CI19-01 | CMK |

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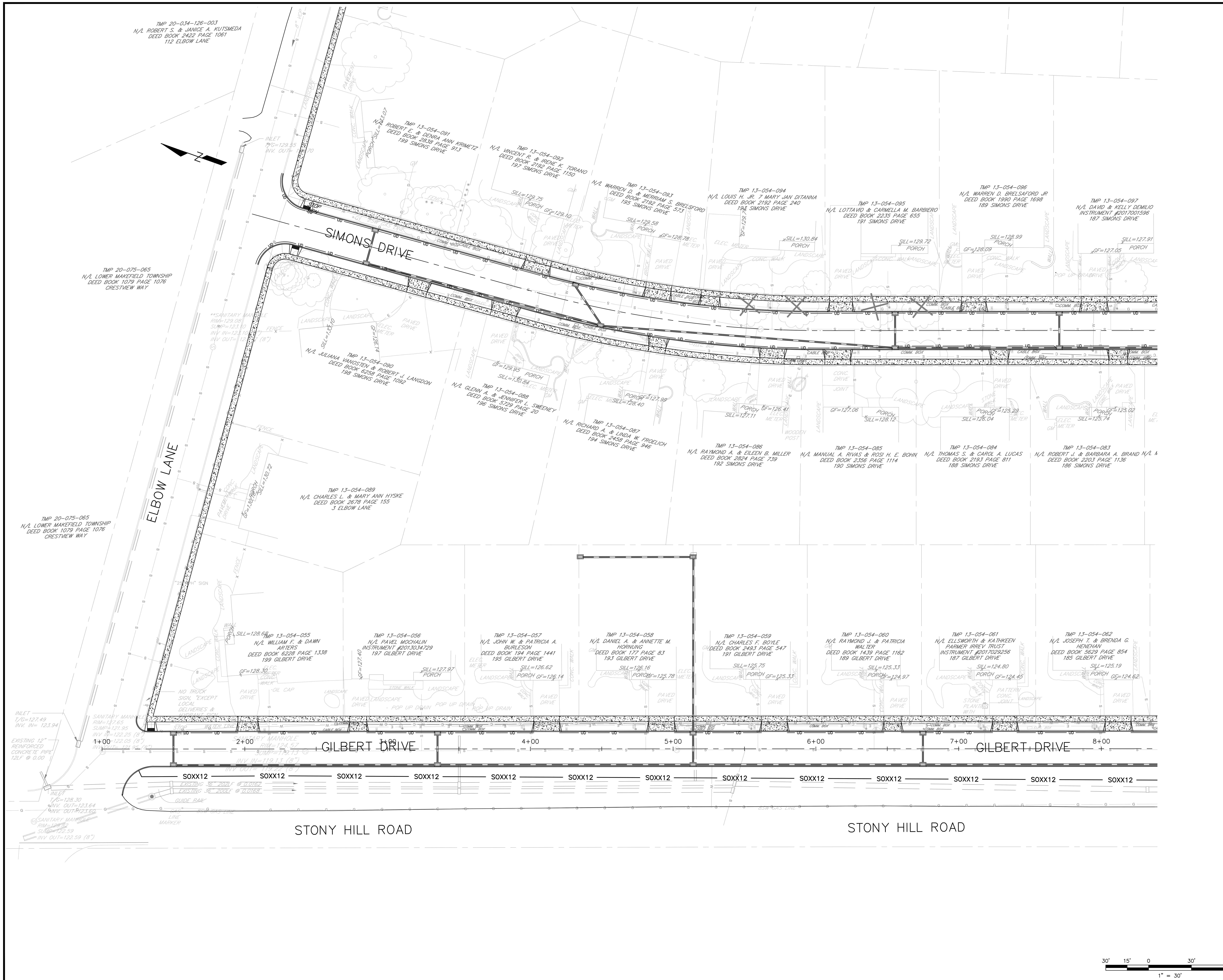
Plan-North-Lafayette.dwg




| LEGEND | | |
|---|---|---|
| Existing | Description | Proposed |
| | PROPERTY LINE | |
| | LEGAL RIGHT OF WAY | |
| | CONTOUR | |
| | CARTWAY/EDGE OF PAVEMENT | |
| | ROAD CENTERLINE | |
| | SIDEWALK | |
| | CONSTRUCTION FENCE | x |
| | SANITARY SEWER MANHOLE | |
| S | SANITARY SEWER MAIN | |
| W | WATER MAIN | |
| G | GAS MAIN | |
| WV | WATER VALVE | |
| WM | WATER METER | |
| | FIRE HYDRANT | |
| E | UNDERGROUND WIRE | |
| // | OVERHEAD WIRE | |
| | UTILITY POLE | |
| | STORM MANHOLE | |
| | STORM INLET | |
| | 6" UNDERDRAIN | UD |
| | INLET PROTECTION | |
| | STORM SEWER YARD STUB | |
| | STORM SEWER | |
| | PAVEMENT KEYWAY | |
| | TREE REMOVAL | |
| | 12" SILT FENCE | SOXX12 |

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# SOIL EROSION AND SEDIMENT CONTROL PLAN

OF

# 2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:

TOWNSHIP OF FALLS

SITUATED IN:

Fairless Hills, PA

| DRAWN BY: | CHECKED BY: |
|---|---|
| ARL | JGJ |
| DATE: | SCALE: |
| 3/19/20 | 1"=30' |
| PROJECT NUMBER: | DESIGNED BY: |
| CI19-01 | CMK |

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Sunday, March 15, 2020
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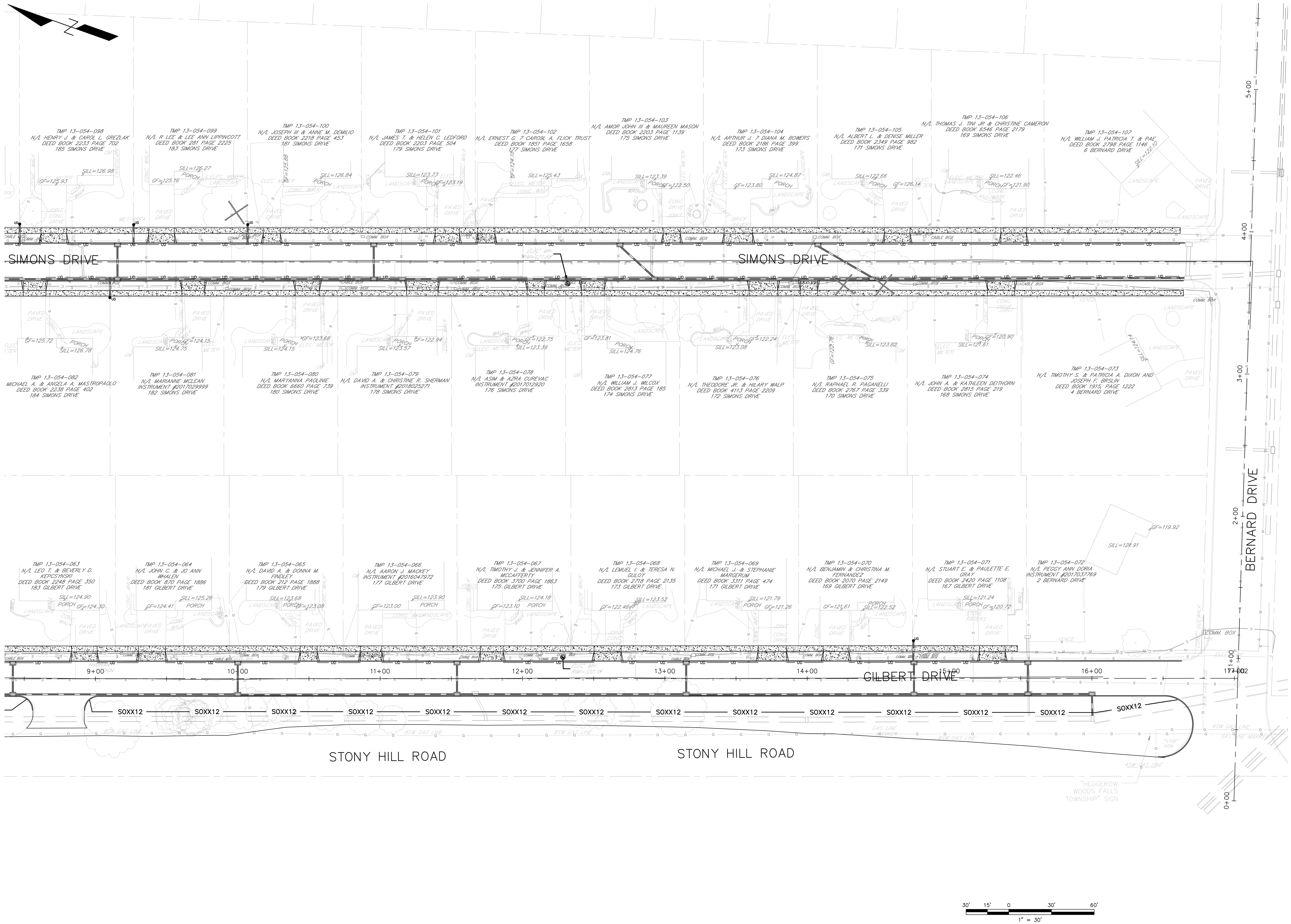


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JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233

DATE

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EROSION AND SEDIMNET CONTROL PLAN
OF
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS

SITUATED IN:
Fairless Hills, PA

| | |
|---|---|
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/20 | SCALE: 1"=30' |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING:
SESC Plan.dwg

SHEET NO:
33 OF 38

# SOIL SEEDING, FERTILIZING AND MULCHING SPECIFICATIONS & SCHEDULE

A. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). SEEDING DEPTH SHALL BE FROM 1/4" TO 1/2". SEEDING OPERATIONS SHALL BE ON CONTOUR.
B. ALL SLURRY APPLICATIONS OF HYDROSEEDING MUST BE APPLIED BEFORE NOVEMBER 15 AND SHALL BE APPLIED WITH A MULCH BINDER.
C. K-31 IS NOT ACCEPTABLE FOR USE WITH SEED MIX.
D. WHERE IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA BY OCTOBER 1, OR IF EARTH DISTURBANCE OCCURS BETWEEN OCTOBER 1 AND MARCH 5, THE DISTURBED AREA MUST BE TEMPORARILY MULCHED UNTIL MARCH
E. WHERE IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA IMMEDIATELY AFTER FINAL EARTHMOVING HAS BEEN COMPLETED OR WHERE THE ACTIVITY CEASED FOR MORE THAN 20 DAYS, THE AREA MUST BE TEMPORARILY SEEDED WITH PENNDOT TYPE FORMULA "E" AND MULCHED.
F. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4" WITH DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHALL BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY FLAT AND UNIFORM SEEDBED IS PREPARED.
G. LIME - AGRICULTURAL GRADE LIMESTONE ADDING LIME TO THE SOIL IS VITAL TO REVEGETATION EFFORTS. THE MAJORITY OF DISTURBED SITES ARE ACIDIC AND INFERTILE. A SOIL TEST FROM A REPUTABLE LABORATORY IS RECOMMENDED. IF SOIL TEST RESULTS ARE NOT AVAILABLE, APPLY LIME AT THE FOLLOWING RATE:
LIME 4 TONS PER ACRE OR 190 LBS. PER 1,000 S.F.
H. FERTILIZER - COMMERCIAL TYPE 10 - 20 - 20 FERTILIZER WILL GREATLY INCREASE THE GROWTH RATE OF BOTH THE PLANT AND THE ROOTS. A SOIL TEST FROM A REPUTABLE LABORATORY IS RECOMMENDED. IF SOIL TEST RESULTS ARE NOT AVAILABLE, APPLY FERTILIZER AT THE FOLLOWING RATE:
FERTILIZER 930 LBS. PER ACRE OR 25 LBS. PER 1,000 S.F.
I. SOILS HAVING A PH OF 4 OR LESS SHOULD BE MULCHED ONLY. LIQUID MULCH BINDERS SHOULD BE ONE OF THE FOLLOWING:
I1. EMULSIFIED ASPHALT (SS-1, CSS-1, CMS-2, MS-2, RS-W, CRS-1, CRS-2).
APPLY ON FLAT SLOPES LESS THAN 8%, 0.04 GAL/SY OR 194 GAL/ACRE.
ON SLOPES GREATER THEN 8%, USE 0.075 GAL/SY OR 363 GAL/ACRE.
I2. SYNTHETIC OR ORGANIC BINDERS; BINDERS SUCH AS CUROSOL, DCA-7D, PETRO-SET AND TERRA-TACK SHALL BE APPLIED AT RATES RECOMMENDED BY MANUFACTURERS TO ANCHOR MULCH MATERIALS.
I3. MULCH ANCHORING SHALL BE DONE IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. LIQUID MULCH-BINDER SHALL BE APPLIED HEAVIER AT THE EDGES WHERE WIND CATCHES THE MULCH SUCH AS AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHALL BE UNIFORM IN APPEARANCE.
J. TEMPORARY SEED MIXTURE
ANNUAL RYEGRASS IS A QUICK GERMINATING SPECIES OF GRASS, WHICH CAN BE SEEDED AT MOST ANY TIME. IF YOU PLAN TO LEAVE THE PROJECT DISTURBED AND INACTIVE FOR MORE THAN TWENTY (20) DAYS, TEMPORARY SEEDING SHOULD BE APPLIED IMMEDIATELY. IF THE SITE IS TO REMAIN INACTIVE FOR SIX (6) MONTHS OR MORE A PERMANENT SEED MIX IS NECESSARY. ANNUAL RYEGRASS:
40 LBS. PER ACRE OR 1 LB. PER 1,000 S.F.
PLANTING DATES: 4/1-5/31 AND 8/6-10/15
K. PERMANENT SEED MIXTURE
ESTABLISHING A PERMANENT VEGETATIVE COVER IS THE FINAL STEP TO EFFECTIVE SOIL EROSION AND SEDIMENT POLLUTION CONTROL. IT IS RECOMMENDED THAT THE PENN STATE UNIVERSITY "AGRONOMY GUIDE" BE CONSULTED. THE FOLLOWING MIXTURE WILL MEET THE REQUIREMENTS OF CHAPTER 102 - "EROSION CONTROL".

K1. ANNUAL RYEGRASS IS TO BE SEEDED WITH ALL PERMANENT SEED MIXES AS A COVER/NURSE CROP.
SEEDING RATE:
40 LBS. PER ACRE
A) TURF LAWN AND MOWED AREAS (SUNNY):
60% KENTUCKY BLUEGRASS
20% CHEWINGS FESCUE
20% PERENNIAL RYEGRASS
SEEDING RATE:
4 LBS. PER 1,000 S.F. OR
170 LBS. PER ACRE
PLANTING DATES: 4/1 - 5/31 AND 8/6 - 10/15
B) TURF LAWN AND MOWED AREAS (SHADE):
40% KENTUCKY BLUEGRASS
40% CHEWING FESCUE
20% PERENNIAL RYEGRASS
SEEDING RATE:
4 LBS. PER 1,000 S.F. OR 170 LBS. PER ACRE
PLANTING DATES: 3/1 - 8/31
NOTE: ALL MIXTURES GIVEN ABOVE ARE FOR PLS - PURE LIVE SEED 100%. TO CALCULATE PLS, THE PERCENTAGE OF PURE LIVE SEED IS MULTIPLIED BY THE PERCENTAGE OF GERMINATION, AND THE PRODUCT IS DIVIDED BY ONE HUNDRED (100). TO DETERMINE HOW MUCH SEED TO PLANT, DIVIDE THE PERCENTAGE INTO ONE HUNDRED (100).
EXAMPLE: 100 DIVIDED BY 61 = 1.63. THUS, EVERY POUND OF SEED MIXTURE CALLED FOR SHOULD THEN BE 1.63 LBS.
L. MULCH - HAY OR STRAW
ALL AREAS THAT ARE SEEDED SHOULD BE MULCHED. MULCH IS A LOOSE LAYER THREE FOURTHS OF AN INCH TO ONE INCH (3/4" TO 1") DEEP OF CLEAN HAY OR STRAW. MULCH REDUCES SOIL EROSION, AIDS SEED GERMINATION, AND CONSERVES MOISTURE. HAY OR STRAW SHOULD NOT BE CHOPPED OR FINELY BROKEN DURING APPLICATION. SEEDLESS OR REDUCED SEED STRAW MULCH IS RECOMMENDED FOR USE. MULCH SHOULD BE APPLIED AS FOLLOWS:
3 TONS PER ACRE OR 140 LBS. PER 1,000 S.F.
M. VEGETATIVE SURFACE STABILIZATION:
M1. ALL DISTURBED AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE AFTER FINAL GRADES HAVE BEEN ESTABLISHED.
M2. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE RECOMMENDED RATES.
M3. ON STEEP SLOPES, EROSION CONTROL MATTING SHOULD BE USED TO HOLD SEED AND TOPSOIL IN PLACE. SLOPE STEEPNESS, SLOPE LENGTH, SOIL ERODIBILITY, AND CUT OR FILL CONDITION SHOULD BE CONSIDERED IN DETERMINING NEED FOR MATTING OR OTHER MULCH-TACKING METHODS.
M4. SURFACE ROUGHENING IS THE PRACTICE OF PROVIDING A ROUGH SURFACE WITH HORIZONTAL DEPRESSIONS FOR THE PURPOSE OF REDUCING RUNOFF VELOCITY, INCREASE INFILTRATION, AIDING THE ESTABLISHMENT OF VEGETATION, AND REDUCTION OF EROSION. SURFACE ROUGHENING SHOULD BE APPLIED TO ALL SLOPES 3:1 OR STEEPER UNLESS A STABLE ROCK FACE IS PROVIDED. SLOPE TRACKING SLOPES MAY BE USED. RUNNING TRACKED MACHINERY UP AND DOWN THE SLOPE, LEAVING MARKS PARALLEL TO THE CONTOUR, DOES TRACKING.
M5. USE SOD WHERE THERE IS A HEAVY CONCENTRATION OF WATER AND IT IS IMPORTANT TO GET A QUICK VEGETATIVE COVER IN ORDER TO PREVENT GULLYING. USE SOD AT THE DIRECTION OF THE TOWNSHIP AND/OR ITS CONSULTANTS.
N. BANK STABILIZATION: BANKS SHALL BE STABILIZED IMMEDIATELY AFTER DISTURBANCE USING A BIODEGRADABLE EROSION CONTROL BLANKET SUCH AS S75BN AS MANUFACTURED BY NORTH AMERICAN GREEN, OR EQUIVALENT.

## MAINTENANCE PROGRAM

DURING THE LIFE OF THE PROJECT, ALL EROSION AND SEDIMENT CONTROL DEVICES MUST BE MAINTAINED.

1. INSPECTIONS - DURING CONSTRUCTION, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR CONDUCTING THE INSPECTIONS AND PERFORMING ANY REQUIRED MAINTENANCE TO MAINTAIN THE UPSTREAM SIDE OF ALL SEDIMENT CONTROL DEVICES AS REQUIRED. INSPECTION OF BMP'S SHALL OCCUR ON A WEEKLY BASIS AND AFTER EACH MEASURABLE RAINFALL EVENT. SEDIMENT REMOVED FROM FACILITIES MAY BE INCORPORATED INTO THE EARTHWORK AS FILL OR DISTRIBUTED ON THE SITE, AS DEEMED APPROPRIATE. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS SHOULD BE MAINTAINED PROPERLY. MAINTENANCE SHOULD INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROLS AFTER EACH MEASURABLE RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, REMULCHING, AND REMATTING (IF APPLICABLE) SHOULD BE PREFORMED IMMEDIATELY. IF BMP'S FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMP'S WILL BE REQUIRED.
2. FILTER FABRIC FENCE:
(2.1) THE FENCE INSTALLATION SHOULD BE INSPECTED WEEKLY AND AFTER EACH MEASURABLE RAINFALL EVENT. ANY NECESSARY REPAIR WILL BE MADE IMMEDIATELY.
(2.2) ACCUMULATED SEDIMENT WILL BE REMOVED AS REQUIRED TO KEEP THE FENCE FUNCTIONAL. REMOVE DEPOSITS WHEN ACCUMULATIONS REACH ONE-HALF (1/2) THE ABOVE GROUND HEIGHT OF THE FENCE.
(2.3) ALL UNDERCUTTING OR EROSION OF THE TOE ANCHOR WILL BE REPAIRED IMMEDIATELY WITH COMPACTED BACKFILL MATERIAL.
(2.4) ADHERE TO ANY MANUFACTURER'S RECOMMENDATIONS FOR REPLACING FILTER FABRIC FENCE DUE TO WEATHERING.
(2.5) ANY SECTION OF FILTER FABRIC FENCE THAT HAS BEEN UNDERMINED OR TOPPLED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.
3. ROCK FILTER OUTLET - SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET. FILTER MATERIALS MUST BE WASHED COMPLETELY FREE OF ALL FOREIGN MATERIALS OR NEW ROCK SHALL BE USED TO REBUILD THE FILTER. ROCK FILTERS SHALL BE REPLACED WHEN CLOGGED WITH SEDIMENT.
4. SEEDED AREAS - SEEDED AREAS THAT HAVE WASHED AWAY SHALL BE FILLED AND UPGRADED AS NECESSARY, RESEEDED, AND MULCHED.
5. SLOPES - PROPERLY MAINTAIN SLOPES UNTIL THE ENTIRE PROJECT HAS BEEN COMPLETED. THIS MAINTENANCE MAY INCLUDE REFILLING OF WASHED OUT AREAS, RESEEDING, LIMING, FERTILIZING, AND/OR REPLACING SLOPE BLANKETS.
6. MULCH - PROPERLY MAINTAIN MULCHED AREAS UNTIL THE ENTIRE PROJECT HAS BEEN COMPLETED. PROMPTLY REAPPLY MULCH MATERIALS, WHICH BECOME DISLODGED OR LOST, DUE TO WIND, RAIN, FIRE, OR OTHER CAUSES, AT INITIAL OR MODIFIED RATES, AS DIRECTED. AFTER MULCHING WORK ON A SLOPE HAS BEEN SATISFACTORILY COMPLETED, IF SLOPE FAILURE OCCURS (ONE WHICH REQUIRES REDRESSING, EXCAVATION, OR THE ESTABLISHMENT OF A NEW SLOPE) REPLACE THE MULCH AS DIRECTED.
7. HIGHWAY DEBRIS - ANY MUD OR DEBRIS TRACKED ONTO PUBLIC HIGHWAYS SHALL BE IMMEDIATELY REMOVED, TO THE SATISFACTION OF THE MUNICIPALITY, BY BRUSHING OR BROOMING. IN HAZARDOUS SITUATIONS WHEN MUD CAUSES SLICK CONDITIONS ON TRAVELED ROADWAY, PRESSURE WASHING SHALL BE PERFORMED TO THE SATISFACTION OF THE TOWNSHIP. ALL SEDIMENT LADEN WATER GENERATED BY PRESSURE WASHING SHALL BE COLLECTED AND FILTERED THROUGH AN ADEQUATE FILTER CONVEYANCE, SUCH AS A WATER FILTER BAG, PRIOR TO DISCHARGE TO SEWER OR WATER COURSE. REMOVAL OF MUD OR DEBRIS FROM THE HIGHWAY SHALL BE AT THE EXPENSE OF THE PERSON RESPONSIBLE CONTRACTOR AND/OR DEVELOPER. WASHING OF THE ROADWAY WILL NOT BE PERMITTED.
8. SEDIMENT OR SEDIMENT-LADEN WATER - NO SEDIMENT OR SEDIMENT-LADEN WATER SHALL BE ALLOWED TO LEAVE THE SITE WITHOUT FIRST BEING PROPERLY FILTERED.
9. WASTE MATERIALS - INDIVIDUALS RESPONSIBLE FOR EARTH DISTURBANCE ACTIVITIES MUST ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS. CONSTRUCTION WASTE INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY. MEASURES SHOULD BE PLANNED AND IMPLEMENTED FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL. WHENEVER POSSIBLE, RECYCLING OF EXCESS MATERIALS IS PREFERRED, RATHER THAN DISPOSAL.
10. MAINTENANCE - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED WITHIN THIS PLAN.

## UNDERGROUND UTILITY INSTALLATION NOTES

1. ADVANCE CLEARING AND GRUBBING OPERATIONS MUST BE LIMITED TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
2. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATED FROM CLEARING, GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
3. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE WHICH CAN BE COMPLETED THE SAME DAY.
4. WATER THAT ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS. WATER MUST BE PUMPED THROUGH A FILTER BAG ON TO A STABLE SURFACE.
5. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS. SEEDING AND MULCHING OF ALL DISTURBED AREAS MUST BE DONE IMMEDIATELY.

## CONSTRUCTION SEQUENCE BASIC SCHEDULE

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE.

1. AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER, AND THE BUCKS COUNTY CONSERVATION DISTRICT TO AN ON-SITE MEETING. ALSO, AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEMS INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.
2. PROVIDE 48 HOURS NOTICE TO RESIDENTS.
3. INSTALL ALL SEDIMENT EROSION CONTROL MEASURES.
4. INSTALL DRAINAGE IMPROVEMENTS (MAINTAIN TWO LANES OF TRAFFIC WHERE POSSIBLE). STORMWATER IMPROVEMENTS SHALL BE INSTALLED FROM DOWNSTREAM TO UPSTREAM.
5. INSTALL CONCRETE CURB AND SIDEWALK. CONTRACTOR SHALL BACKFILL TRENCH EXCAVATED FOR INSTALLATION OF CURB ONCE CURB HAS SET IN ORDER TO PROVIDE SUFFICIENT PARKING FOR RESIDENTS. CONTRACTOR SHALL COMPLETELY INSTALL SIDEWALK ALONG ONE SIDE OF THE ROAD BEFORE COMMENCING REMOVAL OF SIDEWALK ALONG THE OPPOSITE SIDE. SUFFICIENT BARRICADES, NOTING THE SIDEWALK ALONG ONE SIDE IS CLOSED AND PEDESTRIANS SHALL USE THE OTHER SIDE, MUST BE PROVIDED BY USE OF SIGNAGE (R9-10) AT EACH END. ADDITIONAL BARRICADES MUST BE PROVIDED THROUGHOUT THE EXCAVATION.
6. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMANATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
7. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS 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.
8. EXCAVATE ROADWAY, INSTALL STONE AND BITUMINOUS BASE COURSES. (ROAD TO BE CLOSED DURING DAYTIME WORK HOURS AND SHALL BE OPENED AT NIGHT.)
9. INSTALL WEARING COURSE FOR THE ENTIRE PROJECT ONCE CONSTRUCTION IS COMPLETE FOR ALL SECTIONS.

* ITEMS 5 THROUGH 8 MAY OCCUR CONCURRENTLY OR AS APPROVED BY THE ENGINEER

NOTE:
IT IS ANTICIPATED THAT THE PROJECT WILL BE COMPLETED IN SECTIONS OF APPROXIMATELY 1000 FEET IN LENGTH. THE SEQUENCE DESCRIBED ABOVE WILL BE REPEATED (ITEMS 2-8) UNTIL THE ENTIRE ROAD HAS BEEN PAVED WITH BASE COURSE. AT THAT TIME, THE CONTRACTOR SHALL COMPLETE STABILIZATION OF DISTURBED AREAS AND REMOVE EROSION CONTROL FACILITIES. IT IS EXPECTED THAT THE INSTALLATION OF THE WEARING COURSE WILL BE THE FINAL TASK COMPLETED.

## PROCEDURES FOR RECYCLING OR DISPOSAL OF MATERIALS

COMPLY WITH LOCAL, STATE AND FEDERAL LAWS REGULATING THE HANDLING, RECYCLING AND DISPOSAL OF ALL MATERIALS ASSOCIATED WITH THIS LAND DEVELOPMENT. IN ADDITION, SPECIFICALLY:

1. HANDLE, REMOVE AND EITHER RECYCLE OR DISPOSE OF "DEBRIS PILE" CONTENTS IN AN APPROPRIATE MANNER.
2. DISPOSE OF MATERIAL EXCAVATED FROM SITE APPROPRIATELY. THE COUNTY CONSERVATION DISTRICT AND THE APPROPRIATE REGULATING AGENCY HAVING JURISDICTION MUST APPROVE THE FINAL ACTIONS TAKEN WITH THESE MATERIALS.
3. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA 260.1 ET SEQ, 271.1 ET SEQ, AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.

## SOIL EROSION AND SEDIMENTATION CONTROL NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER AND STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS. ALL PUMPING OF SEDIMENT-LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP SUCH AS A PUMPED WATER FILTER BAG.
14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF ON-SITE IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED OR PLACED IN SOIL STOCKPILES AND STABILIZED.
18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES -- 6 TO 12 INCHES ON COMPACTED SOILS -- PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING AND SLIDING.
28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
33. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
34. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
35. SEDIMENT BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
36. SEDIMENT BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
37. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
38. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY SEDIMENT BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
39. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
40. AT STREAM CROSSINGS, A 50-FOOT BUFFER SHALL BE MAINTAINED. ON BUFFERS, CLEARINGS, SOD DISTURBANCES AND EXCAVATIONS, EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITY SUCH AS STACKING LOGS, BURNING CLEARED BRUSH, DISCHARGED RAINWATER FROM TRENCHES, WELDING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE AVOIDED WITHIN BUFFER ZONES.

## EROSION AND SEDIMENTATION CONTROL NOTES (CONTINUED)

41. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM 8-INCH LAYERED LIFTS AT 95% DENSITY.
42. THE PROJECT'S RECEIVING WATERCOURSE IS DELAWARE RIVER SOUTH. THE CHAPTER 93 CLASSIFICATION IS WWF -WARM WATER FISHES.
43. CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK, OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE). CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1a AND FP-1b FOUND IN THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS ON THE DEPARTMENT'S WEBSITE.

ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

44. ALL DISTURBED AREAS AND ALL TOPSOIL STOCKPILES SHALL BE STABILIZED AND MULCHED IMMEDIATELY IN ACCORDANCE WITH THE TEMPORARY COVER SPECIFICATION OF PENNSYLVANIA CODE TITLE 25 CHAPTER 102.
45. ALL AREAS CHANGED FROM ITS NATURAL (IMPERVIOUS) COVER AND NOT COMMITTED TO REPLACED IMPERVIOUS SURFACE SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT COVER SPECIFICATIONS OF PENNSYLVANIA CODE TITLE 25 CHAPTER 102.
46. ALL SLOPES SHALL BE A MAXIMUM OF 3 HORIZONTAL TO 1 VERTICAL. ANY 3:1 SLOPES SHALL BE TEMPORARILY LINED WITH EROSION CONTROL BLANKETS OR NETTING.
47. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT POLLUTION CONTROLS. SEDIMENT MUST BE REMOVED FROM THE SILT FENCE AFTER EACH RUNOFF EVENT.
48. ANY SOIL BORROWED OR SPOIL SITES, OFFSITE SHALL HAVE AN APPROVED AND IMPLEMENTED EROSION CONTROL PLAN BY THE MONTGOMERY COUNTY CONSERVATION DISTRICT.
49. TREES / TREELINES NOT SPECIFICALLY INDICATED FOR REMOVAL ON THE REMOVALS PLAN ARE TO BE PROTECTED AND REMAIN UNDISTURBED DURING CONSTRUCTION.
50. WHERE IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA BY OCTOBER 1, OR IF EARTH DISTURBANCE OCCURS BETWEEN OCTOBER 1 AND MARCH 15, DISTURBED AREAS MUST BE TEMPORARILY MULCHED UNTIL MARCH 15.
51. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE DUST CONTROL MEASURES FOR THE DURATION OF THE PROJECT.
52. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
53. THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE BUCKS COUNTY CONSERVATION DISTRICT, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.
54. THE CONTRACTOR IS ADVISED TO BECOME FAMILIAR WITH THE PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 1, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
55. EROSION AND SEDIMENT BMPS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPS.
56. SEDIMENT MUST BE REMOVED FROM STORMWATER INLET PROTECTION AFTER EACH RUNOFF EVENT.
57. MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER.
58. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.
59. FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENTS MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE. THESE REGULATIONS ARE AVAILABLE ON-LINE AT WWW.PACODE.COM.

# SOILS DATA

THE FOLLOWING SOILS DATA FOR THE SITE IS AS CLASSIFIED BY THE BUCKS COUNTY SOIL SURVEY, DATED OCTOBER 2006.

UtB - URBAN LAND-MATAPEAKE COMPLEX
UkB - URBAN LAND-CHESTER COMPLEX

# SOIL USE LIMITATIONS

| SOILS NAME | HSG | HYDRIC RATING | Kf | T FACTOR | REPRESENT. VALUE % SAND | % SILT | % CLAY | SURFACE RUNOFF | WATER TABLE UPPER LIMIT (FT) | LOWER LIMIT (FT) | POTENTIAL FOR FROST ACTION | RISK OF CORROSION UNCOATED STEEL | CONCRETE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UtB | C | NO | -- | -- | -- | -- | -- | VERY HIGH | --- | --- | NONE | --- | --- |
| UkB | C | NO | -- | -- | -- | -- | -- | VERY HIGH | --- | --- | NONE | --- | --- |

| SOILS NAME | RESTRICTIVE LAYER KIND | DEPTH TO TOP (IN) | THICKNESS (IN) | HARDNESS | DEPTH (IN) | SATURATED HYDRAULIC CONDUCTIVITY | AVAILABLE WATER CAPACITY | LINEAR EXTENSIBILITY |
|---|---|---|---|---|---|---|---|---|
| UtB | --- | 10-99 | --- | --- | 0-6 | --- | 0.00 | --- |
| | | | | | | | | |
| | | | | | | | | |
| UkB | --- | 10-99 | --- | --- | 0-6 | --- | 0.00 | --- |
| | | | | | | | | |
| | | | | | | | | |

| SOILS NAME | DWELLINGS WITHOUT BASEMENTS | DWELLINGS WITH BASEMENTS | SMALL COMMERCIAL BUILDINGS | LOCAL ROADS AND STREETS | SHALLOW EXCAVATIONS | LAWNS AND LANDSCAPING | POND RESERVOIR AREAS | EMBANKMENTS, DIKES, AND LEVEES |
|---|---|---|---|---|---|---|---|---|
| UtB | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT LIMITED | NOT RATED |
| UkB | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT LIMITED | NOT RATED |

| SOILS NAME | CAMP AREAS | PICNIC AREAS | PLAYGROUNDS | PATHS AND TRAILS | GOLF FAIRWAYS | SEPTIC TANK ABSORPTION FIELDS | POTENTIAL AS A SOURCE OF ROADFILL | POTENTIAL AS A SOURCE OF TOPSOIL |
|---|---|---|---|---|---|---|---|---|
| UtB | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT RATED |
| UkB | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT RATED | NOT LIMITED | NOT RATED |

# SOIL RESOLUTIONS

THE ENTIRE PROJECT IS LOCATED WITHIN URBAN LANDS. THE 2006 PA DEP EROSION AND SEDIMENT CONTROL MANUAL DOES NOT INDICATE ANY LIMITATIONS FOR URBAN LANDS. PROPER CONSTRUCTION PRACTICES AND EROSION & SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE MANUAL WILL BE PROVIDED.

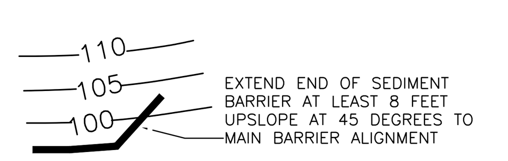
## GENERAL CONSERVATION NOTES AND SPECIFICATIONS

INTENT OF CONSERVATION PROGRAM: THE INTENT OF THIS PROGRAM IS TO PREVENT ACCELERATED EROSION OF THE EXPOSED SITE SOILS DURING THE CONSTRUCTION AND PERMANENT LIFE PERIODS OF THE DEVELOPMENT. THE PROGRAM REQUIRES RETENTION OF ALL SEDIMENTS ON THE CONSTRUCTION SITE TO MINIMIZE THE IMPACT OF DEVELOPMENT ON EXISTING STREAMS AND ADJACENT PROPERTY OWNERS. THESE OBJECTIVES WILL BE ACHIEVED BY MINIMIZING THE EXPOSURE TIME OF POTENTIALLY EROSIVE SOILS TO RUNOFF AND INSTALLATION OF THE TEMPORARY CONSTRUCTION. THE INTENT OF THIS PROGRAM SHALL BE UNDERSTOOD AND IMPLEMENTED THROUGHOUT THE ENTIRE DEVELOPMENT. THE VARIOUS CONSTRUCTION TRADES SHOULD BE APPRAISED OF THIS PROGRAM AND DIRECTED TO PREVENT UNDUE DISTURBANCE OF PREPARED AND PROTECTED SURFACES.

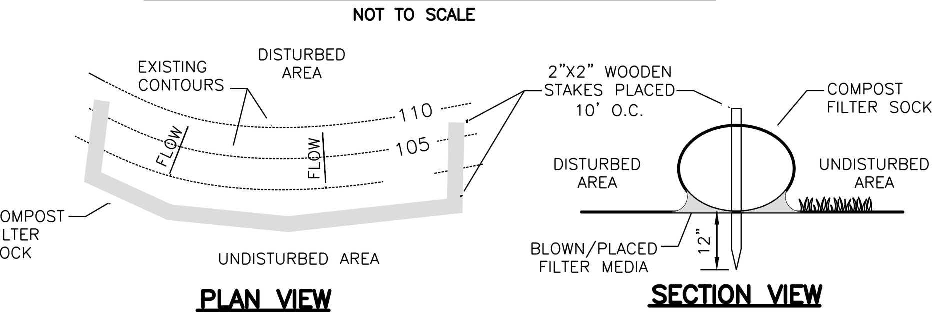
SURFACE STABILIZATION CRITERIA: ALL DENUDED SOIL SURFACES, INCLUDING SOIL STOCKPILES, ARE SUBJECT TO EROSION AND SHALL BE STABILIZED EITHER TEMPORARILY OR PERMANENTLY, IMMEDIATELY DURING NON-GERMINATION PERIODS, MULCH MUST BE APPLIED AT RECOMMENDED RATES. CRUSHED STONE ON PAVEMENT SUBGRADES IS CONSIDERED ADEQUATE PROTECTION. ALL DISTURBED ZONES AND VEGETATED REGIONS SHALL BE STABILIZED, PREFERABLY WITH A PERMANENT TREATMENT AS FOLLOWS:

# RESPONSIBILITIES FOR FILL MATERIALS

1. THE OPERATOR MUST USE ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT ANY NECESSARY FILL MATERIAL ASSOCIATED WITH THIS PROJECT QUALIFIES AS CLEAN FILL: AN ALL FILL MATERIAL MUST BE USED IN ACCORDANCE WITH PADEP'S POLICY "MANAGEMENT OF FILL", DOCUMENT NUMBER 258-2182-773. A COPY OF THIS POLICY IS AVAILABLE ONLINE AT WWW.DEPWEB.STATE.PA.US.
2. CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM THE WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE).
3. CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN PADEP'S POLICY "MANAGEMENT OF FILL"
4. ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE PADEP FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT WWW.DEPWEB.STATE.PA.US.
5. ENVIRONMENTAL DUE DILIGENCE: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREEN, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS.
6. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF A REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF PADEP'S POLICY "MANAGEMENT OF FILL".
7. FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE MUNICIPAL OR RESIDUAL WASTE REGULATIONS IN 25 PA CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.
8. ALL FILLS SHALL BE COMPACTED SUFFICIENTLY FOR THEIR INTENDED PURPOSE AND AS REQUIRED TO REDUCE SUPPING, EROSION OR EXCESS SATURATION.




PADEP FIGURE 4.1
## SEDIMENT BARRIER ALIGNMENT
NOT TO SCALE




1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1, COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2
2. COMPOST FILTER SOCK SHALL BE PLACED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND LENGTH OF THE SOCK AND DISPOSED OF IN THE MANNER ELSEWHERE DESCRIBED IN THE PLAN.
5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

PADEP STANDARD CONSTRUCTION DETAIL #4.1
## COMPOST FILTER SOCK
NOT TO SCALE

| MATERIAL TYPE | 3 MIL HDPE | 5 MIL HDPE | 5 MIL HDPE | MULTI-FILAMENT POLYPROPYLENE (MFPP) | HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP) |
|---|---|---|---|---|---|
| MATERIAL CHARACTERISTICS | PHOTO-DEGRADABLE | PHOTO-DEGRADABLE | BIO-DEGRADABLE | PHOTO-DEGRADABLE | PHOTO-DEGRADABLE |
| SOCK DIAMETERS | 12"<br>18" | 12"<br>18"<br>24"<br>32" | 12"<br>18"<br>24"<br>32" | 12"<br>18"<br>24"<br>32" | 12"<br>18"<br>24"<br>32" |
| MESH OPENING | 3/8" | 3/8" | 3/8" | 3/8" | 1/8" |
| TENSILE STRENGTH | | 26 PSI | 26 PSI | 44 PSI | 202 PSI |
| ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155) | 23% AT 1000 HR | 23% AT 1000 HR | | 100% AT 1000 HR | 100% AT 1000 HR |
| MIN. FUNCTIONAL LONGEVITY | 6 MONTHS | 9 MONTHS | 6 MONTHS | 1 YEAR | 2 YEARS |
| 2-PLY SYSTEMS | | | | | |
| INNER CONTAINMENT NETTING | | | HDPE BIAXIAL NET<br>CONTINUOSLY WOUND<br>FUSION-WELDED JUNCTURES<br>3/4" x 3/4" MAX. APERTURE SIZE | | |
| OUTER FILTRATION MESH | | | COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)<br>3/16" MAX. APERTURE SIZE | | |
| SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS. | | | | | |

PADEP TABLE 4.1
## COMPOST SOCK MINIMUM SPECIFICATIONS
NO SCALE


JONES ENGINEERING ASSOCIATES
YOUR PARTNER FOR EXCELLENCE.
188 LINCOLN HIGHWAY, SUITE 206
FAIRLESS HILLS, PA 19030
(215) 337-4044
www.joneseac.com
JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233

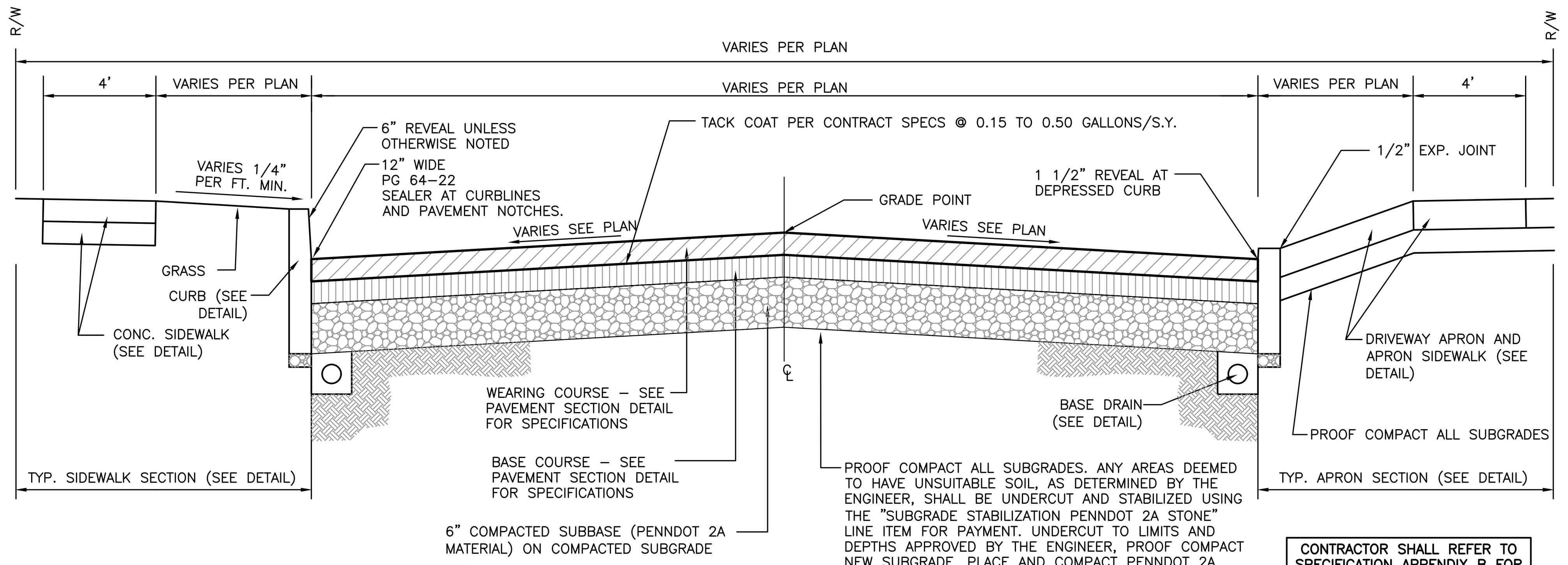

| NO. | DATE | REVISION | BY | CHK. | DATE |
|---|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | | |

SOIL EROSION AND SEDIMENT CONTROL NOTES OF 2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR: TOWNSHIP OF FALLS
SITUATED IN: FAIRLESS HILLS, Pa

| DRAWN BY: ARL | CHECKED BY: JGJ |
|---|---|
| DATE: 3/19/20 | SCALE: --- |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |
| DRAWING: Details.dwg | |
| SHEET NO: 34 OF 38 | |

Monday, April 20, 2020
P:\FALLS\CI19-01\Plans\Plot\Bid-Docs-Cad-2020 Scope\Details.dwg




CONTRACTOR SHALL REFER TO SPECIFICATION APPENDIX B FOR CORE SAMPLE INFORMATION

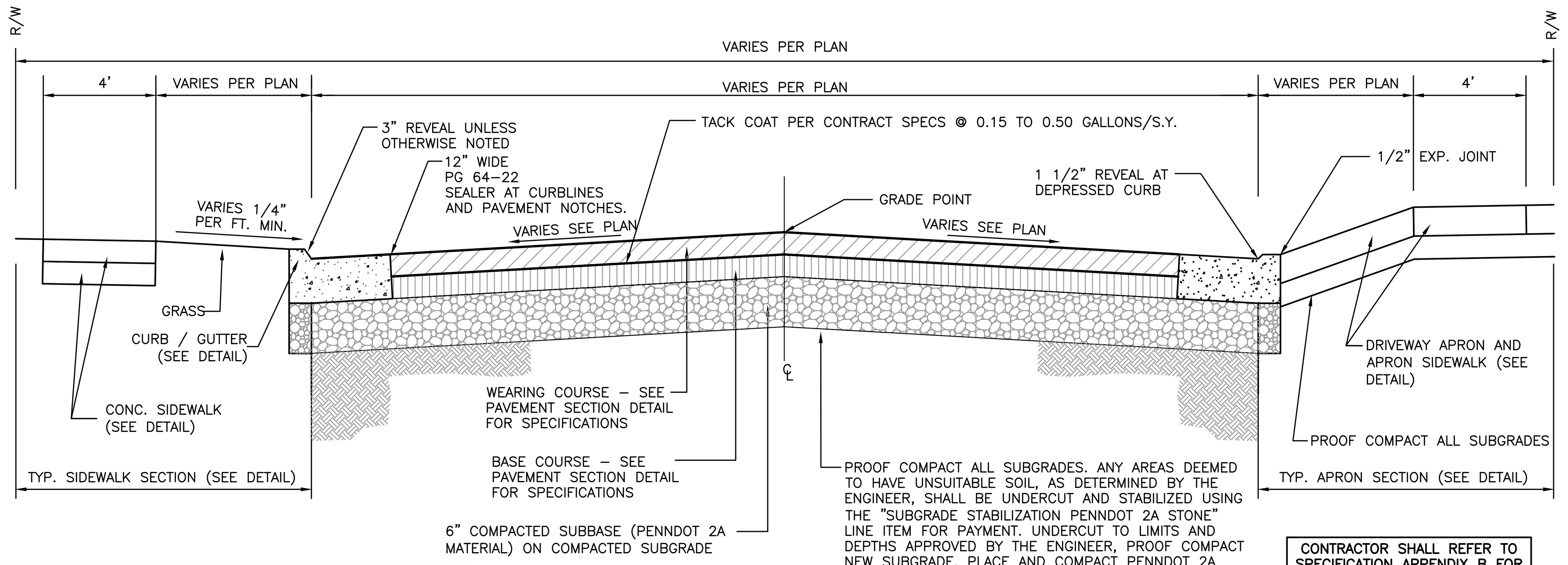
**PAVING SECTION – FOR USE WITHIN TOWNSHIP RIGHT OF WAY ONLY:**

1. SUPERPAVE ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, PG 64-22, 9.5MM, 0 TO 0.3 MILLION ESALS, 1.5" DEPTH, SRL-L
2. SUPERPAVE ASPHALT MIXTURE DESIGN, HMA BINDER COURSE, PG 64-22, 19.0MM, 0 TO 0.3 MILLION ESALS, 2.5" DEPTH

NOTES:
1. ALL CONSTRUCTION, MATERIALS, METHODS OF CONSTRUCTION AND CONTROL OF WORK TO BE GOVERNED BY THE CURRENT EDITION OF PENNDOT SPECIFICATIONS, PUBLICATION 408.

## TYPICAL ROADWAY RECONSTRUCTION SECTION

NOT TO SCALE




CONTRACTOR SHALL REFER TO SPECIFICATION APPENDIX B FOR CORE SAMPLE INFORMATION

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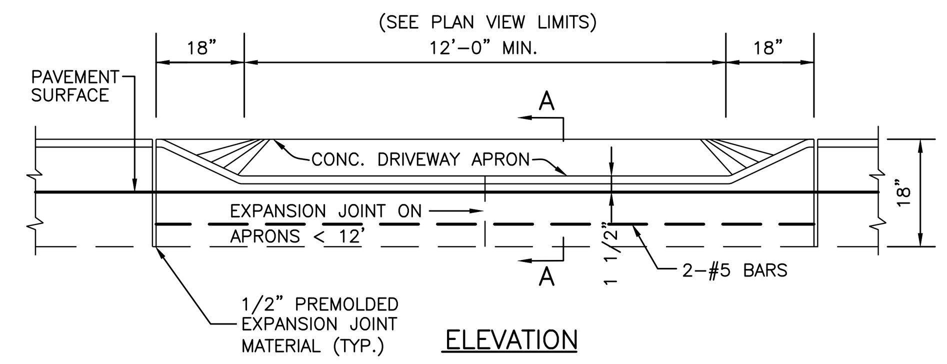
2. SUPERPAVE ASPHALT MIXTURE DESIGN, HMA BINDER COURSE, PG 64-22, 19.0MM, 0 TO 0.3 MILLION ESALS, 2.5" DEPTH

NOTES:
1. ALL CONSTRUCTION, MATERIALS, METHODS OF CONSTRUCTION AND CONTROL OF WORK TO BE GOVERNED BY THE CURRENT EDITION OF PENNDOT SPECIFICATIONS, PUBLICATION 408.

## TYPICAL ROADWAY RECONSTRUCTION SECTION
## TYPICAL ROADWAY RECONSTRUCTION SECTION (BURGESS MANOR)

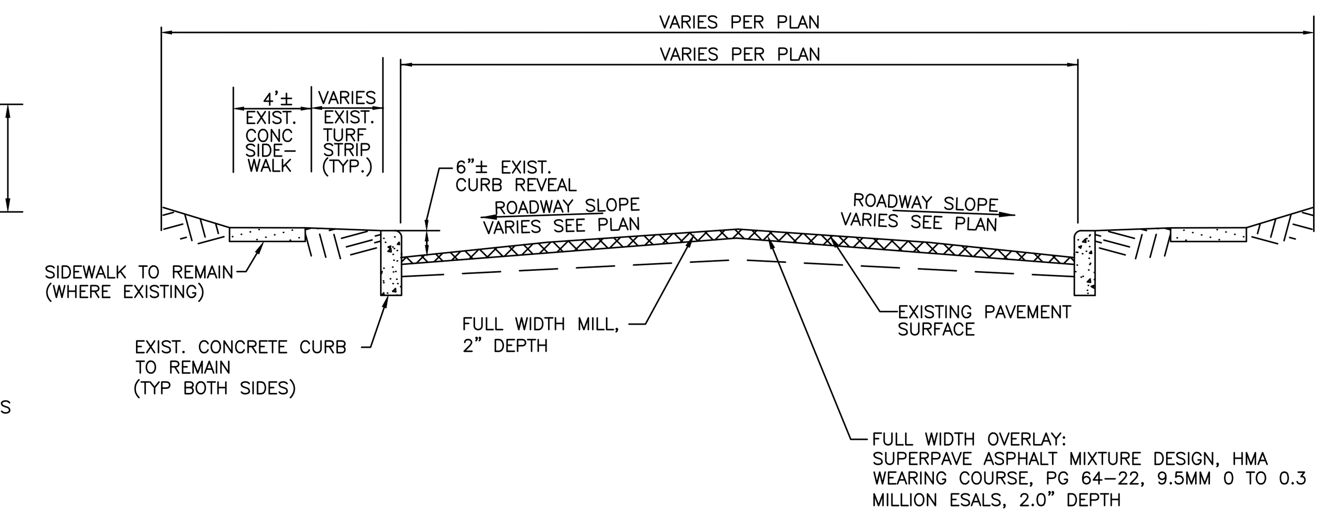
NOT TO SCALE




NOTES:
1. ALL CONSTRUCTION, MATERIALS, METHODS OF CONSTRUCTION AND CONTROL OF WORK TO BE GOVERNED BY THE CURRENT EDITION OF PENNDOT SPECIFICATIONS, PUBLICATION 408.
2. MAINTAIN 1 1/2" CURB REVEAL THROUGH DEPRESSED CURB EVEN IF STANDARD PROFILE IS REDUCED.

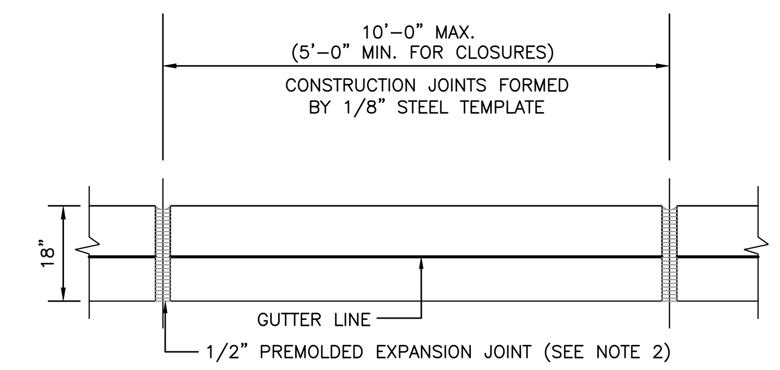
## DEPRESSED CURB – RESIDENTIAL

NOT TO SCALE




## TYPICAL MILL AND OVERLAY SECTION

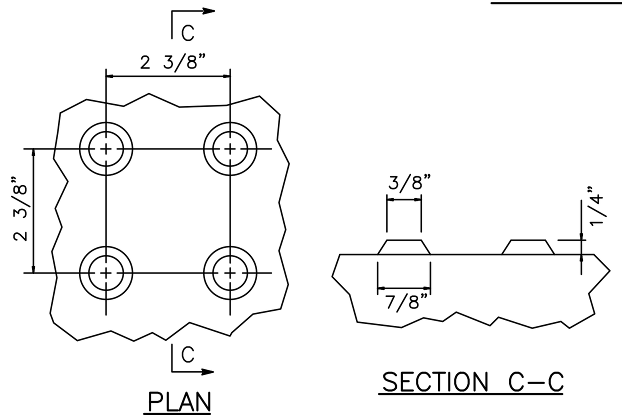
NOT TO SCALE




NOTES:
1. ALL CONSTRUCTION, MATERIALS, METHODS OF CONSTRUCTION AND CONTROL OF WORK TO BE GOVERNED BY THE CURRENT EDITION OF PENNDOT SPECIFICATIONS, PUBLICATION 408.
2. PLACE 1/2" PREMOLDED FULL DEPTH EXPANSION JOINT MATERIAL ADJACENT TO ANY CONCRETE SLABS, SIDEWALK OR STRUCTURES; AT PC'S AND PT'S OF CURVES AND RETURNS; AND AT THE END OF THE WORKDAY.
3. THIS CURB TO BE INSTALLED OR REPLACED ON FALLS TOWNSHIP STREETS, OUTSIDE OF STATE RIGHT-OF-WAY AND IN PRIVATE DEVELOPMENTS.

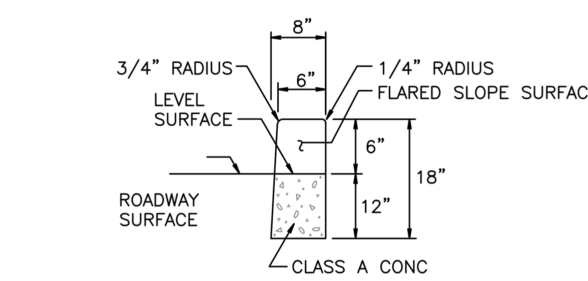
## CONCRETE CURB PROFILE

NOT TO SCALE



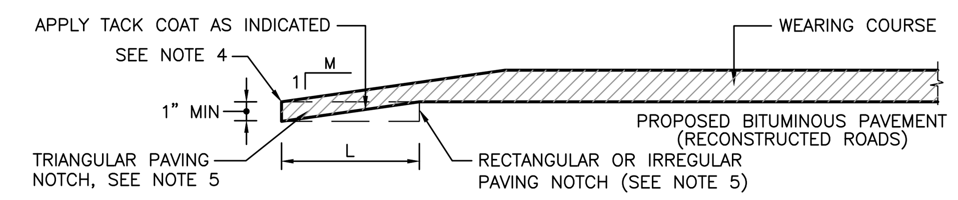

## DETECTABLE WARNING TRUNCATED DOME

NOT TO SCALE




## DEPRESSED CURB SECTION B–B

NOTES:
1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTIONS 350, 420, 630 AND 676.
2. PROVIDE EXPANSION JOINT MATERIAL 1/2" THICK WHERE CURB RAMP ADJOINS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF JOINT FILLER FLUSH WITH ADJACENT CONCRETE SURFACE.
3. IF PEDESTRIAN CROSSWALKS ARE NOT WIDE ENOUGH TO PROVIDE MINIMUM 4'-0" WIDE WHEELCHAIR OVERRUN ZONE AT THE BOTTOM OF THE RAMP, POSITION CROSSWALKS AS INDICATED IN DETAIL A, ON SHEET 2.
4. SEAL JOINTS WITH AN APPROVED SEALING MATERIAL.
5. PROVIDE SLIP RESISTANT TEXTURE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARED SIDE RAMPS.
6. MODIFY CONSTRUCTION DETAILS TO ADAPT DIMENSIONS TO EXISTING CURB ALTERATIONS WHERE THE CURB IS LESS THAN THE STANDARD 8" HEIGHT.
7. CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK PITCH.
8. WHENEVER POSSIBLE, CONSTRUCT THE TRANSITION SLOPE FROM THE CURB RAMP AND FLARE SIDES TO ADJOINING SURFACES WITH A GRADUAL CURVE RATHER THAN AN ABRUPT ANGLE.
9. CONSTRUCT BUILT-UP CURB RAMP OF BITUMINOUS MATERIAL AS INDICATED, INCLUDING SURFACE PREPARATION AND TACK COAT, AS REQUIRED.
10. ALIGN DETECTABLE WARNING DOMES ON A SQUARE GRID IN THE PREDOMINENT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN THE DOMES.
11. PROVIDE DETECTABLE WARNING SURFACES THAT CONTRAST (70%) IN LIGHT REFLECTANCE WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT COLORED RED.

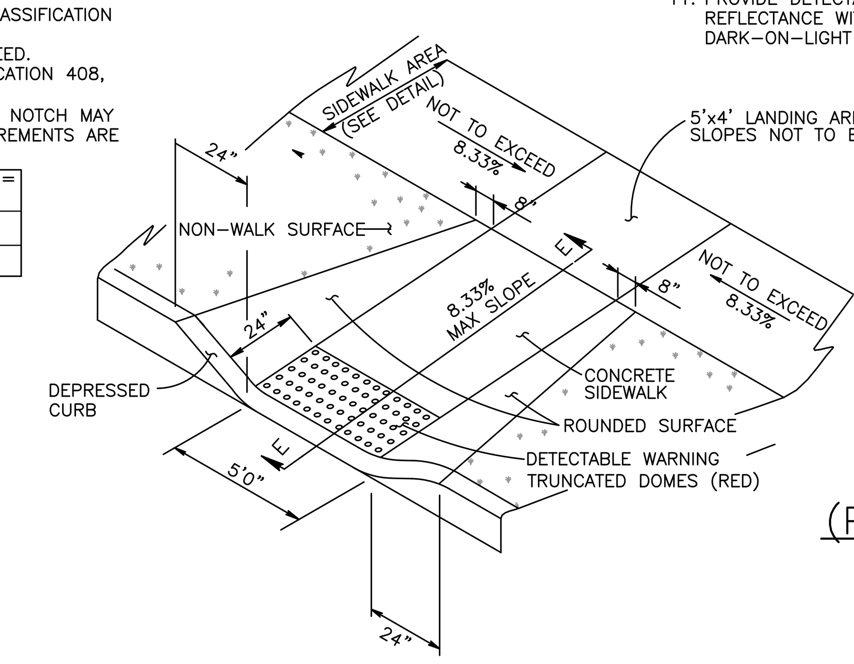



NOTES:
1. SEAL EDGE AS SPECIFIED IN PUBLICATION 408, SECTION 401.3 (j) 3.
2. USE HIGHER APPROPORIATE CRITERIA IF A CROSS STREET HAS A FUNCTIONAL CLASSIFICATION OF COLLECTORS AND LOCAL ROADS OR HIGHER.
3. USE 85TH PERCENTILE SPEED, IF AVAILABLE. OTHERWISE, USE THE POSTED SPEED.
4. PLACE EDGE FLUSH WITH EXISTING PAVEMENT AND SEAL AS SPECIFIED IN PUBLICATION 408, SECTION 401.3 (j) 3.
5. USE OF A TRIANGULAR PAVING NOTCH, AS SHOWN, IS PREFERED. HOWEVER, THE NOTCH MAY BE RECTANGULAR OR IRREGULAR AS LONG AS THE MINIMUM DIMENSIONAL REQUIREMENTS ARE MET.

| FUNCTIONAL CLASSIFICATION | SLOPE = M (MAX.) | PAVING NOTCH = L (MINIMUM) |
|---|---|---|
| ARTERIALS > 45 MPH, SEE NOTE 3 | 1" IN 10' | 10' |
| COLLECTORS AND LOCAL ROADS | 1" IN 5' | 5' |

## PAVING NOTCH

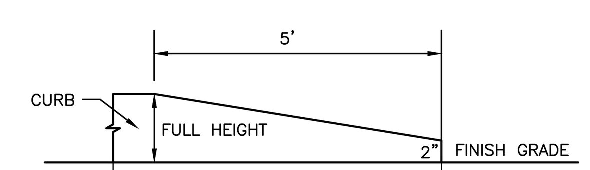
NOT TO SCALE




TYPE 6
CURB RAMP

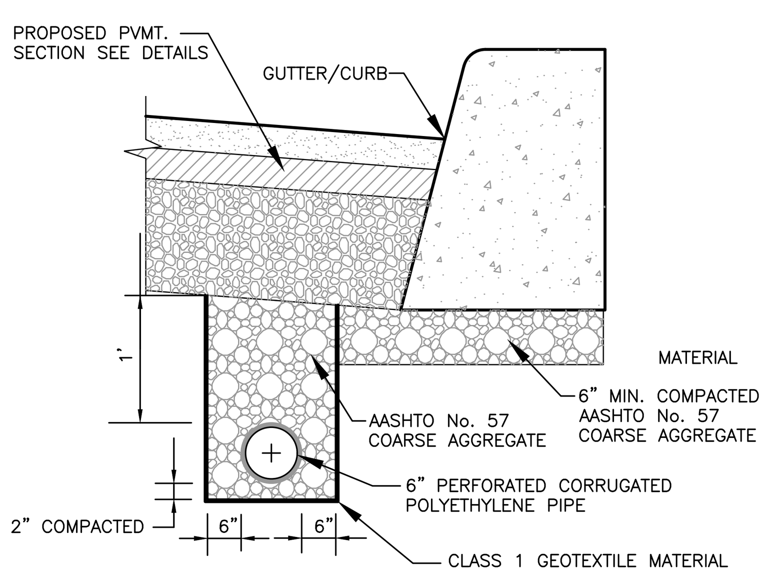
## TYPE 6 HANDICAP RAMP (PENNDOT STANDARD RC-67M)

NOT TO SCALE



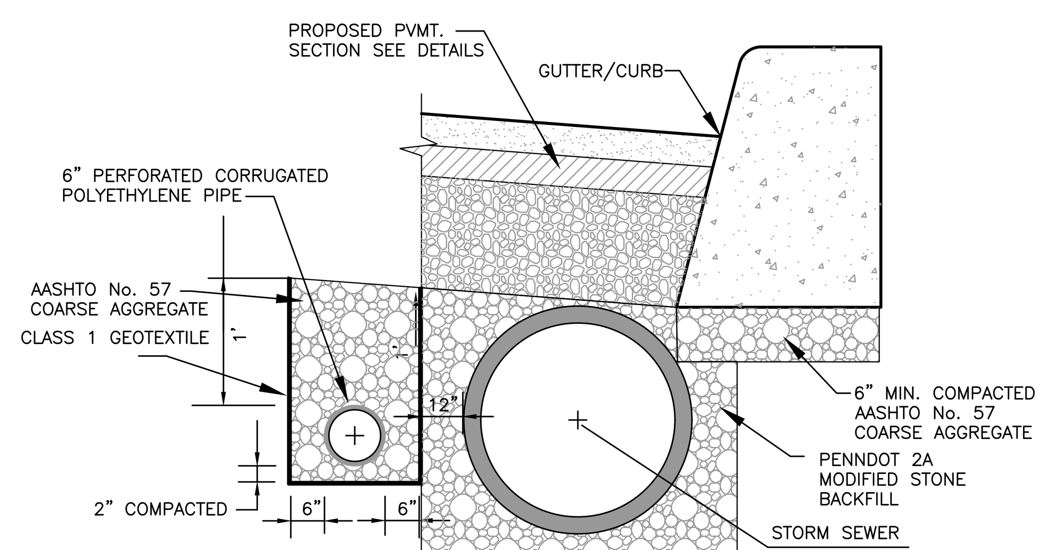

## CURB TAPER DETAIL

NOT TO SCALE



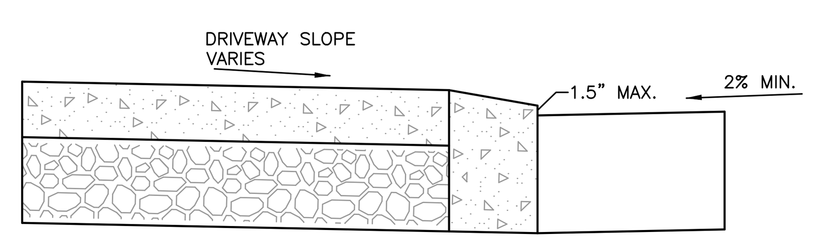

## PAVEMENT BASE UNDER DRAIN

NOT TO SCALE



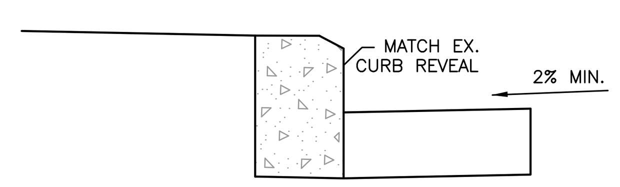

## PAVEMENT BASE UNDER DRAIN ALTERNATE

NOT TO SCALE



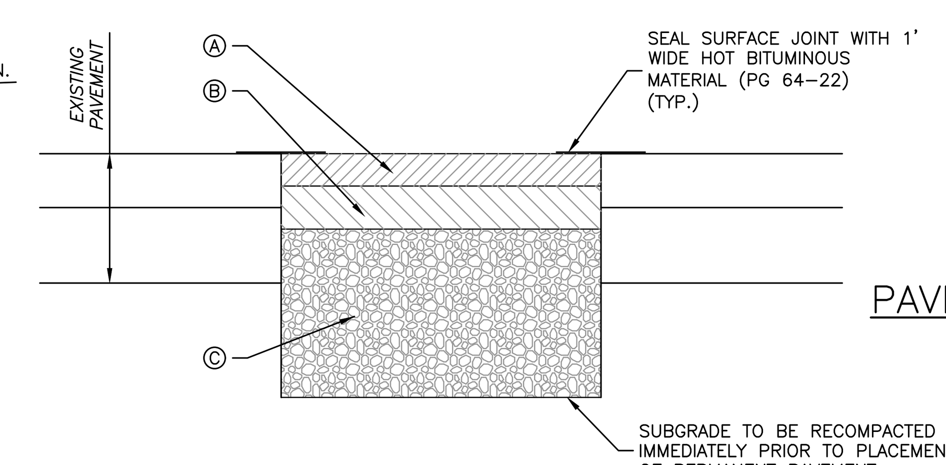

## DRIVEWAY APRON REVEAL FOR MILL / OVERLAY SECTIONS

NOT TO SCALE




## CURB REVEAL FOR MILL /OVERLAY SECTIONS

NOT TO SCALE




NOTES:

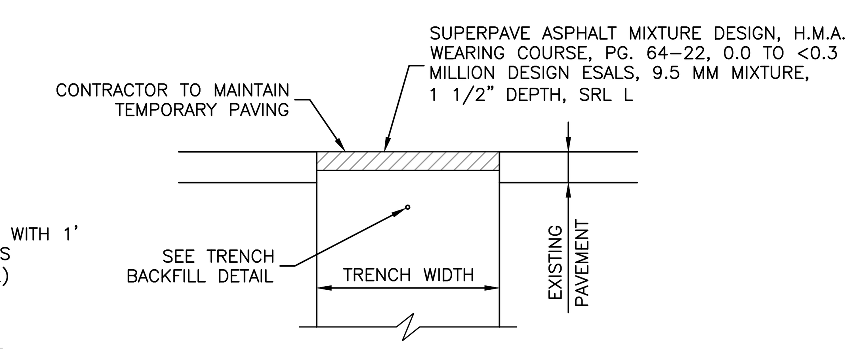
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS DIRECTED BY FALLS TOWNSHIP REPRESENTATIVE.
2. TACK COAT MATERIAL SHALL BE APPLIED TO THE ENTIRE SURFACE PRIOR TO APPLICATION OF THE WEARING SURFACE.
3. REFER TO PAVEMENT LEGEND FOR DESCRIPTIONS OF A AND B.

**PAVEMENT LEGEND:**

**A. SUPERPAVE ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, PG 64-22, 9.5MM, 0 TO 0.3 MILLION ESALS, 1.5" DEPTH, SRL-L**
**B. SUPERPAVE ASPHALT MIXTURE DESIGN, HMA BASE COURSE, PG 64-22, 19.0MM, 0 TO 0.3 MILLION ESALS, 2.5" DEPTH**
**C. PENNDOT 2A STONE**

## PAVEMENT RESTORATION (MILL / OVERLAY SECTIONS)

NOT TO SCALE




NOTES:
1. MAINTAIN IN ACCORDANCE WITH PENNDOT PUBLICATION 408.
2. TO BE PROVIDED ON ALL TRENCHES PERPENDICULAR TO THE CARTWAY.
3. STEEL PLATES MAY BE PROVIDED IN LIEU OF TEMPORARY PAVING.

## PAVEMENT RESTORATION (TEMPORARY)

NOT TO SCALE

NOTE:
PENNDOT FORM 408 AND PENNDOT RC DRAWINGS SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS BY REFERENCE. IN THE INSTANCE WHERE THERE IS A CONFLICT BETWEEN THE CONTRACT PLANS AND SPECIFICATIONS AND PENNDOT FORM 408 AND PENNDOT RC DRAWINGS, THE MORE STRINGENT STANDARD SHALL APPLY UNLESS WAIVED BY THE ENGINEER. ALL FINAL INTERPRETATIONS OF THE CONTRACT DOCUMENTS WILL BE MADE SOLELY BY THE ENGINEER. IN THE EVENT A CONFLICT EXISTS WHICH MAY AFFECT THE CONTRACTOR'S BID, THE CONTRACTOR SHALL SUBMIT THE ISSUE TO THE ENGINEER A MINIMUM OF 5 DAYS PRIOR TO THE BID OPENING TO RECEIVE CLARIFICATION.

NOTE:
CONTRACTOR SHALL PERFORM THE ADJUSTMENT OF ANY UTILITY VALVE BOX, MANHOLES, OR ANY OTHER DEVICE, ETC. REQUIRED AS A RESULT OF GRADE CHANGES WITHIN THE CARTWAY OR LAWN OR WALK AREAS. CONTRACTOR SHALL COORDINATE HIS WORK WITH THE AFFECTED UTILITY.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FAIRLESS HILLS, PA 19030
(215) 377-9244
www.jeassoc.com

JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233


DATE

| NO. | DATE | REVISION | BY | CHK. |
|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

CONSTRUCTION DETAILS
OF
2020 ROAD IMPROVEMENT PROGRAM

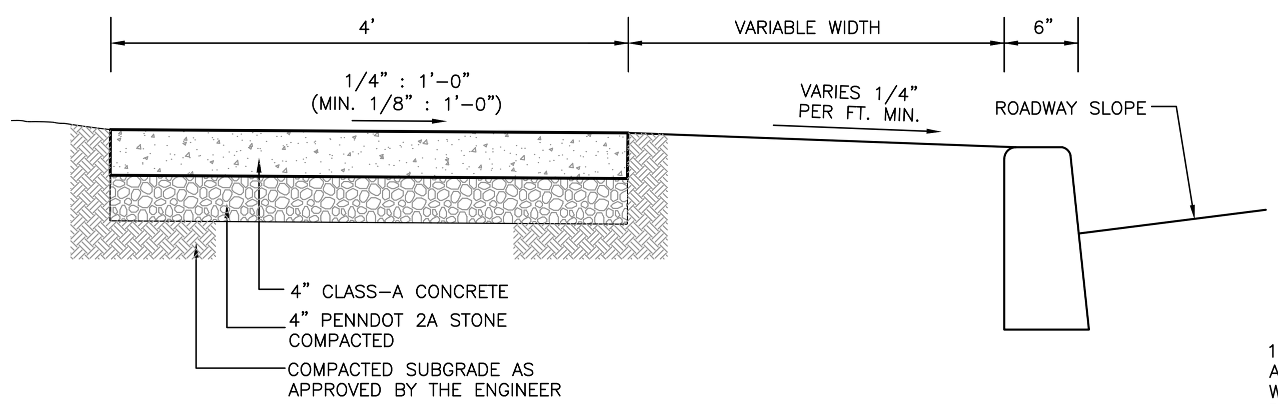
PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
FAIRLESS HILLS, PA

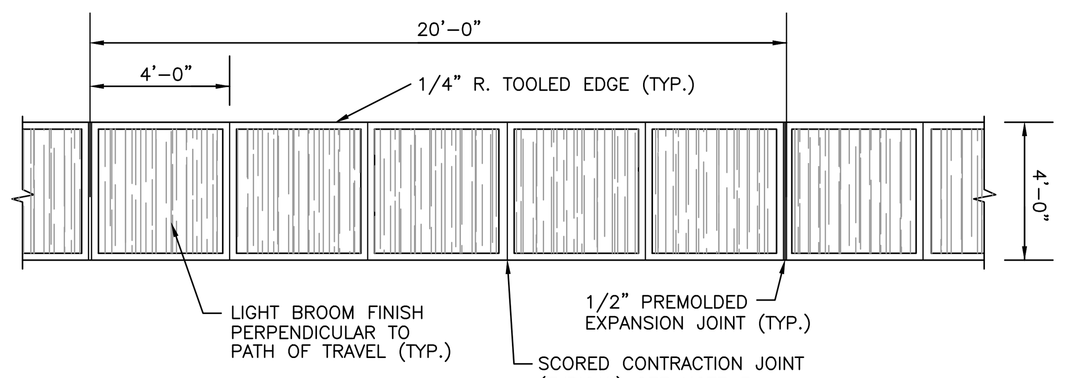
| | |
|---|---|
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/20 | SCALE: – – – |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |

DRAWING: Details.dwg




Monday, April 20, 2020
P:\FALLS\CI19-01\Plans\Plot\Bid-Docs-Cad-2020 Scope\Details.dwg

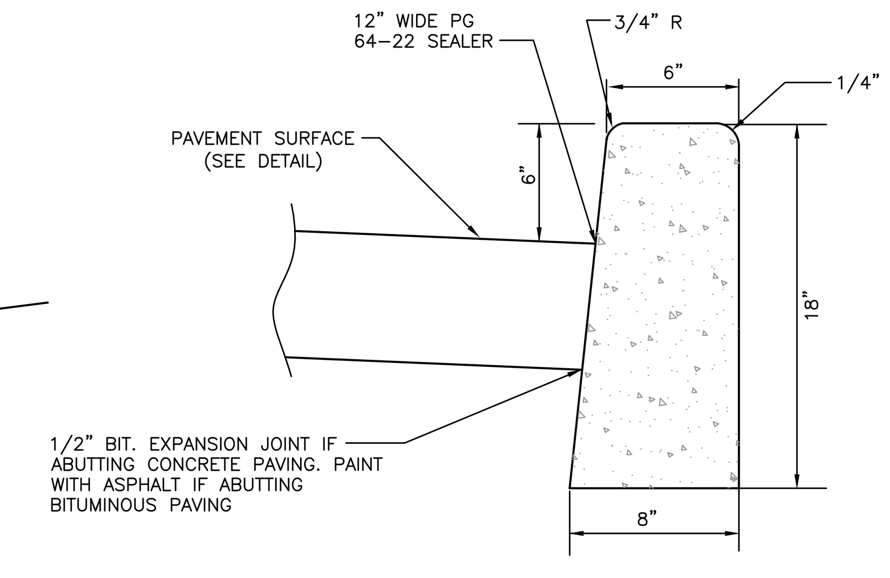


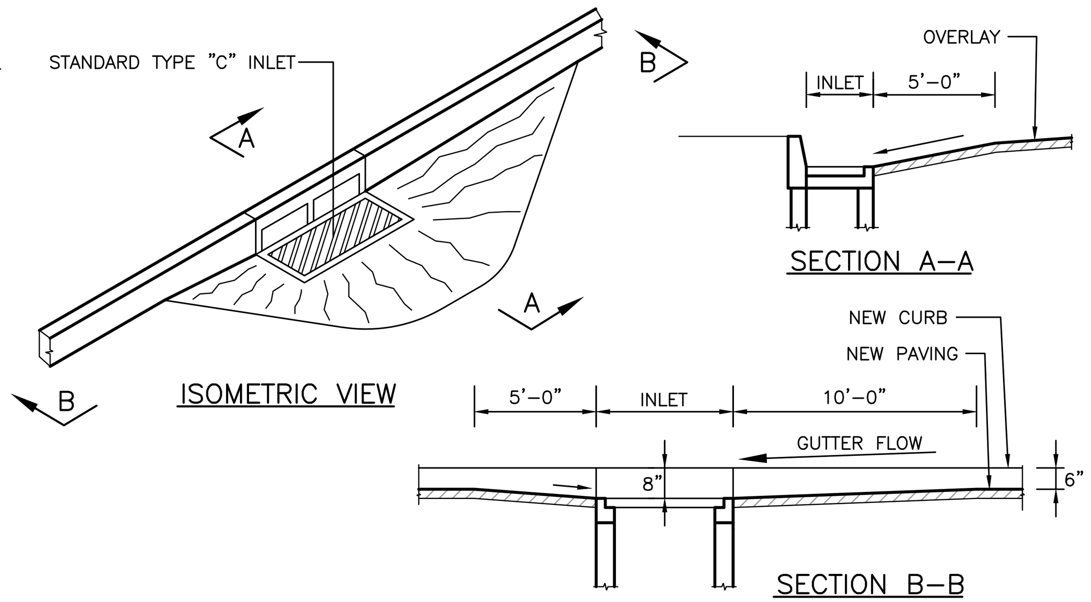

PLAN VIEW

NOTES:
1. ALL CONSTRUCTION, MATERIALS, METHODS OF CONSTRUCTION AND CONTROL OF WORK TO BE GOVERNED BY THE CURRENT EDITION OF PENNDOT SPECIFICATIONS, PUBLICATION 408.
2. PLACE 1/2" PREMOLDED EXPANSION JOINT MATERIAL FOR THE FULL DEPTH OF THE SIDEWALK AT 20' INTERVALS, OPPOSITE EXPANSION JOINTS IN ADJACENT CURB, BETWEEN THE SIDEWALK AND CURB AND BETWEEN THE SIDEWALK AND ANY RIGID STRUCTURES.
3. FORM TRANSVERSE CONSTRUCTION JOINTS AT 5 FOOT INTERVALS, APPROXIMATELY 1/8" WIDE AND AT LEAST 1" DEEP.

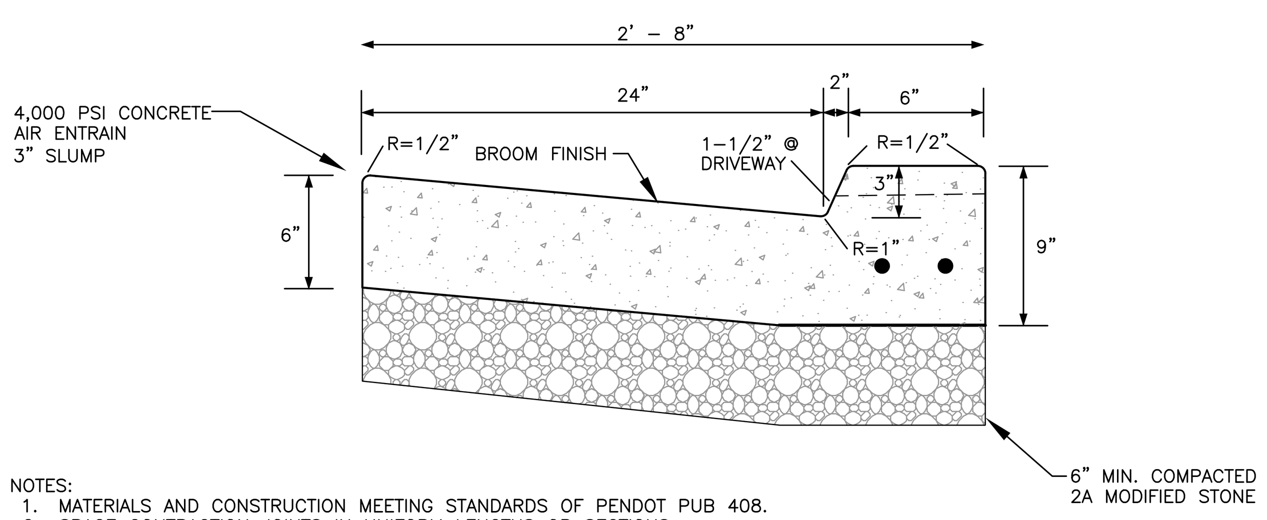
CONCRETE SIDEWALK
NOT TO SCALE




CONCRETE CURB CROSS SECTION
NOT TO SCALE

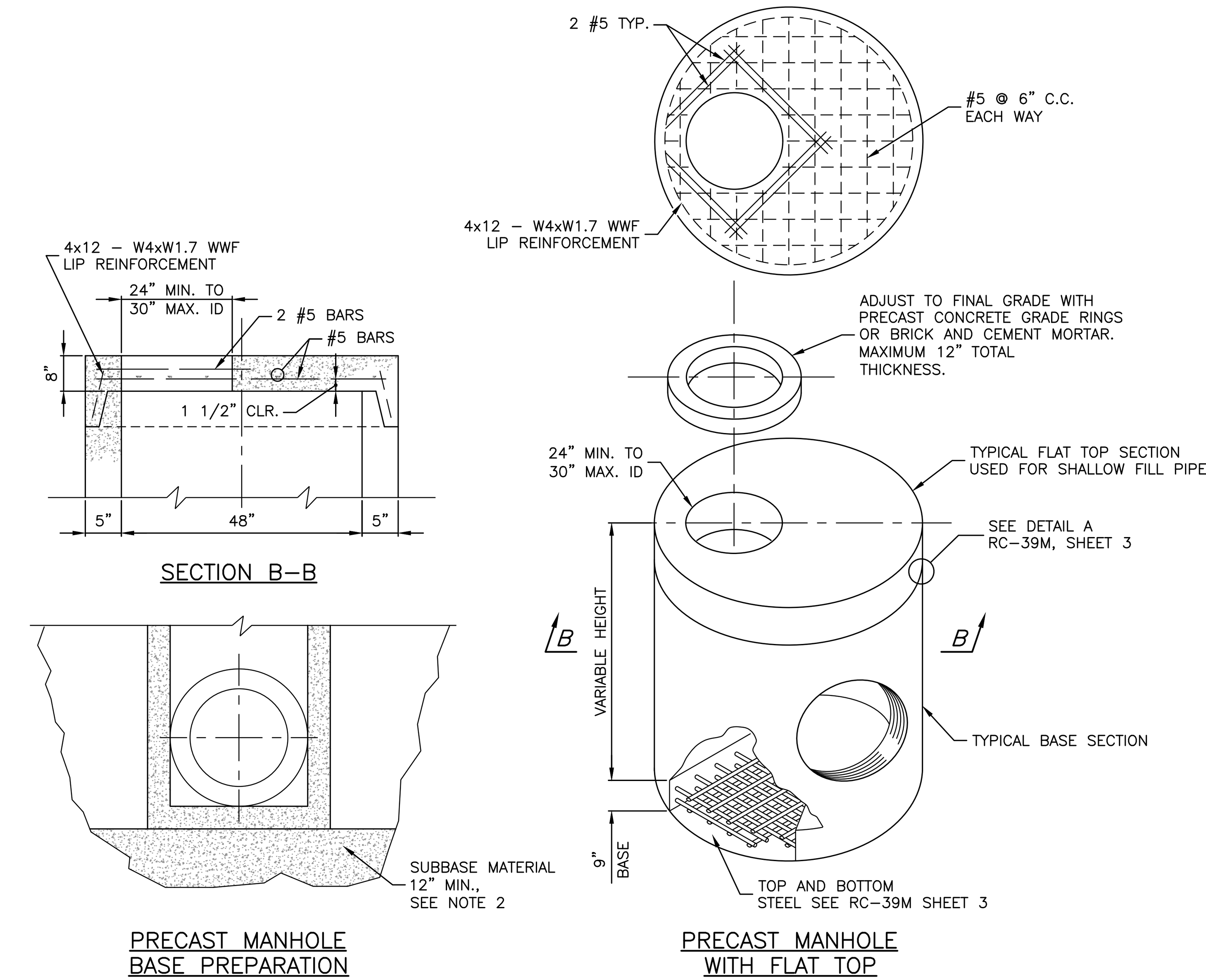



INLET PAVING TAPER
NOT TO SCALE



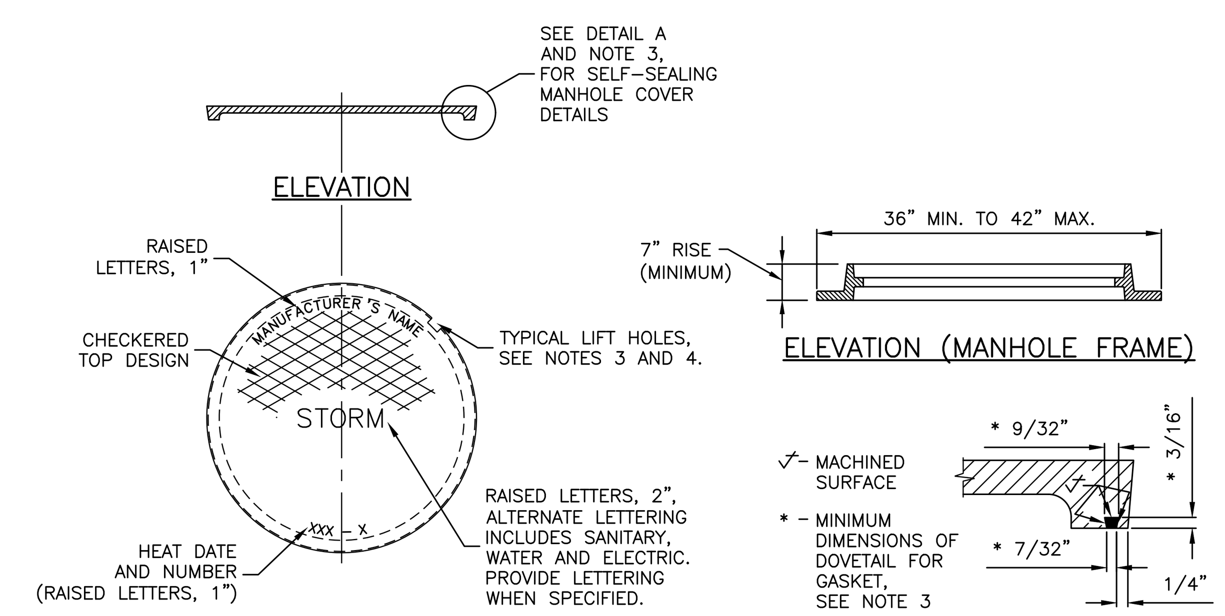

NOTES:
1. MATERIALS AND CONSTRUCTION MEETING STANDARDS OF PENDOT PUB 408.
2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.
3. PLACE ½" THICK PREMOLDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT CONSTRUCTION JOINTS. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB.
4. (2) #5 BAR THROUGH DRIVEWAY DEPRESSION THROUGH FLARE – EACH SIDE.

CONCRETE CURB & GUTTER
NOT TO SCALE



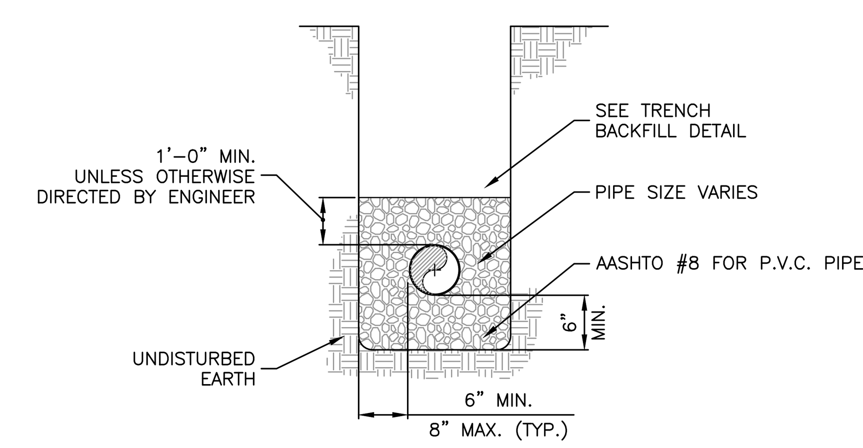

NOTES:
1. PRECAST MANHOLES MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 714, MAY BE SUBSTITUTED FOR THE STANDARD CAST-IN-PLACE MANHOLE. SUBMIT SHOP DRAWINGS FOR APPROVAL.
2. PLACE SUBBASE MATERIAL MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 350.2, IN LAYERS 4" THICK, COMPACTED TO A DENSITY SATISFACTORY TO THE ENGINEER AND INCIDENTAL TO THE MANHOLE PAY ITEM.
3. FOR ALL OTHER DESIGN REQUIREMENTS AND APPLICABLE NOTES, SEE PENNDOT RC-39M, SHEET 3.

STORM MANHOLE FOR PIPES LESS THAN 30" INSIDE DIAMETER

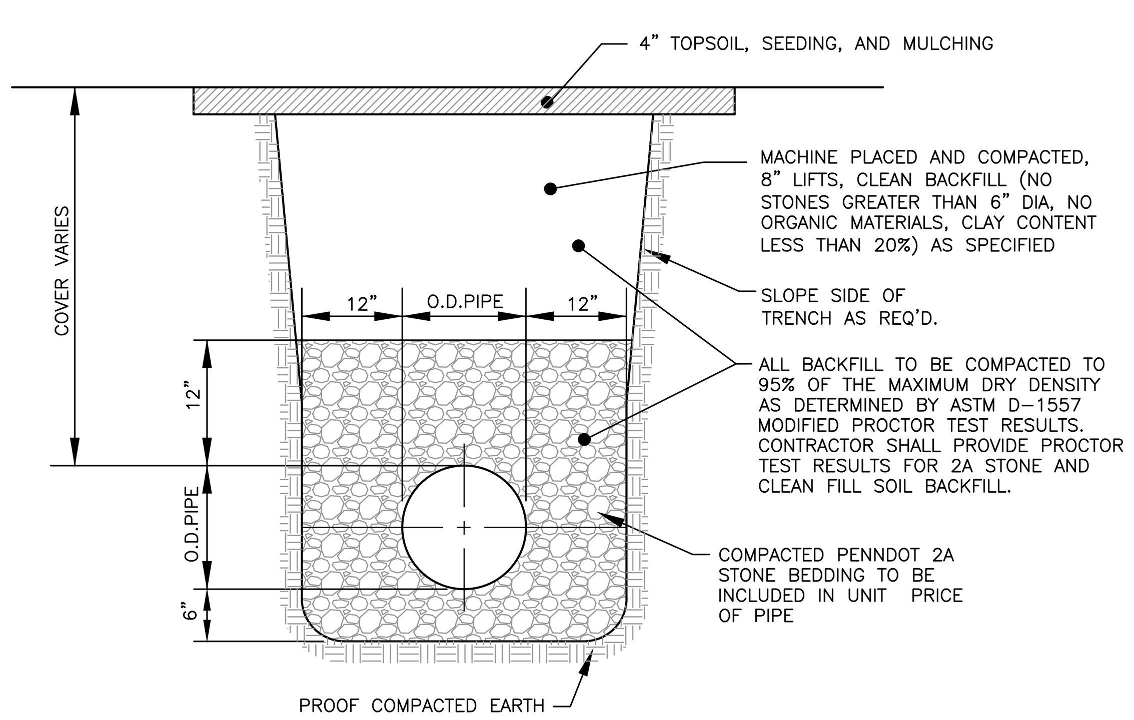



NOTES:
1. PROVIDE MANHOLE FRAMES AND COVERS MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 605.2(b). DESIGN MANHOLE FRAME, COVER AND GRADE ADJUSTMENT RINGS FOR HS25 LIVE LOAD. IF MANHOLES ARE NOT IN OR ADJACENT TO ROADWAY, DESIGN FOR ALL POSSIBLE LIVE LOADS AS APPROVED BY THE DEPARTMENT.
2. PROVIDE MANHOLE FRAMES, COVERS AND GRADE ADJUSTMENT RISERS SUPPLIED BY A MANUFACTURER AS LISTED IN BULLETIN 15. SUBMIT SHOP DRAWINGS FOR APPROVAL.
3. PROVIDE A GASKET SEALING SYSTEM, DOVETAIL GROOVE AND CONTINUOUS GASKET, AS INDICATED IN DETAIL A, TO PREVENT INFLOW THROUGH THE BEARING SURFACES, OF SURFACE RUNOFF WATER INTO THE MANHOLE SYSTEM, WHEN SPECIFIED. PROVIDE 1/4" DIA ONE PIECE SELF-SEAL POLYISOPRENE ROUND GASKET, 40 DUROMETER GLUED IN PLACE. PROVIDE TWO (2) LIFT HOLES AT 180° TO FACILITATE COVER REMOVAL FOR SELF-SEALING MANHOLE COVER.
4. PROVIDE ONE LIFT HOLE TO FACILITATE COVER REMOVAL FOR NON-SEALING MANHOLE COVER.
5. FRAME AND GRADE ADJUSTMENT RISER TO HAVE A MINUMUM BEARING SEAT OF 1" FOR COVER.
6. LOCATE TOP OF FRAME OR ADJUSTMENT RISER 1/8" BELOW THE TOP OF ROADWAY SURFACE.
7. PROVIDE GRADE ADJUSTMENT RISERS MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS, SECTION 606, AND AS MODIFIED HEREIN:
   A. CUSTOM FABRICATE EACH ADJUSTMENT RISER FROM MEASUREMENTS PROVIDED WITH EACH ORDER.
   B. MANUFACTURE BAR STOCK AND RETAINER CLIP FROM U.S. MADE CARBON STEEL MEETING OR EXCEEDING THE MINIMUM REQUIREMENTS OF ASTM A-36M.
   C. REQUIRE FULL CIRCUMFERENTIAL WELDS ON BOTH TOP AND BOTTOM RINGS. MAKE THE INNER WELD A BEVEL GROOVE WELD (FLUSH FINISH) FOR PROPER SEATING OF MANHOLE LID AND MAKE THE OUTER WELD A FILLET WELD.
   D. MAKE THE MINIMUM WIDTH OF BOTTOM AND TOP BAR STOCK 1" AND 3/8", RESPECTIVELY.
   E. TAP THE BOTTOM BAR STOCK FOR MULTI-PIECE ADJUSTMENT RISER FOR M14 ADJUSTMENT BOLT.
   F. REINFORCE THE ADJUSTMENT RISER ADEQUATELY TO PREVENT BENDING.
   G. PROVIDE AN ADJUSTMENT RISER WHICH IS FLUSH WITH COVER AND DOES NOT ALLOW EXCESSIVE MOVEMENT. PROVIDE AN ADJUSTMENT RISER WHICH CONFORMS TO THE SHAPE OF THE ORIGINAL FRAME.
8. ATTACH FRAME AND/OR PRECAST CONCRETE GRADE RINGS RIGIDLY TO TOP OF MANHOLE. USE 3-M14 THREADED STUDS WITH HEX HEAD NUTS AND WASHERS, INSERTED THROUGH AT 5/8" DIA HOLES THROUGH FRAME AND/OR RINGS. SPACE HOLES AT 120° AND 2" FROM OUTSIDE EDGE OF FRAME. EMBED STUDS 4" MINIMUM INTO MANHOLE. GROUT STUDS INTO MANHOLE.
9. SET THE BASE OF THE FRAME AND/OR PRECAST CONCRETE GRADE RINGS IN A BED OF CEMENT MORTAR.

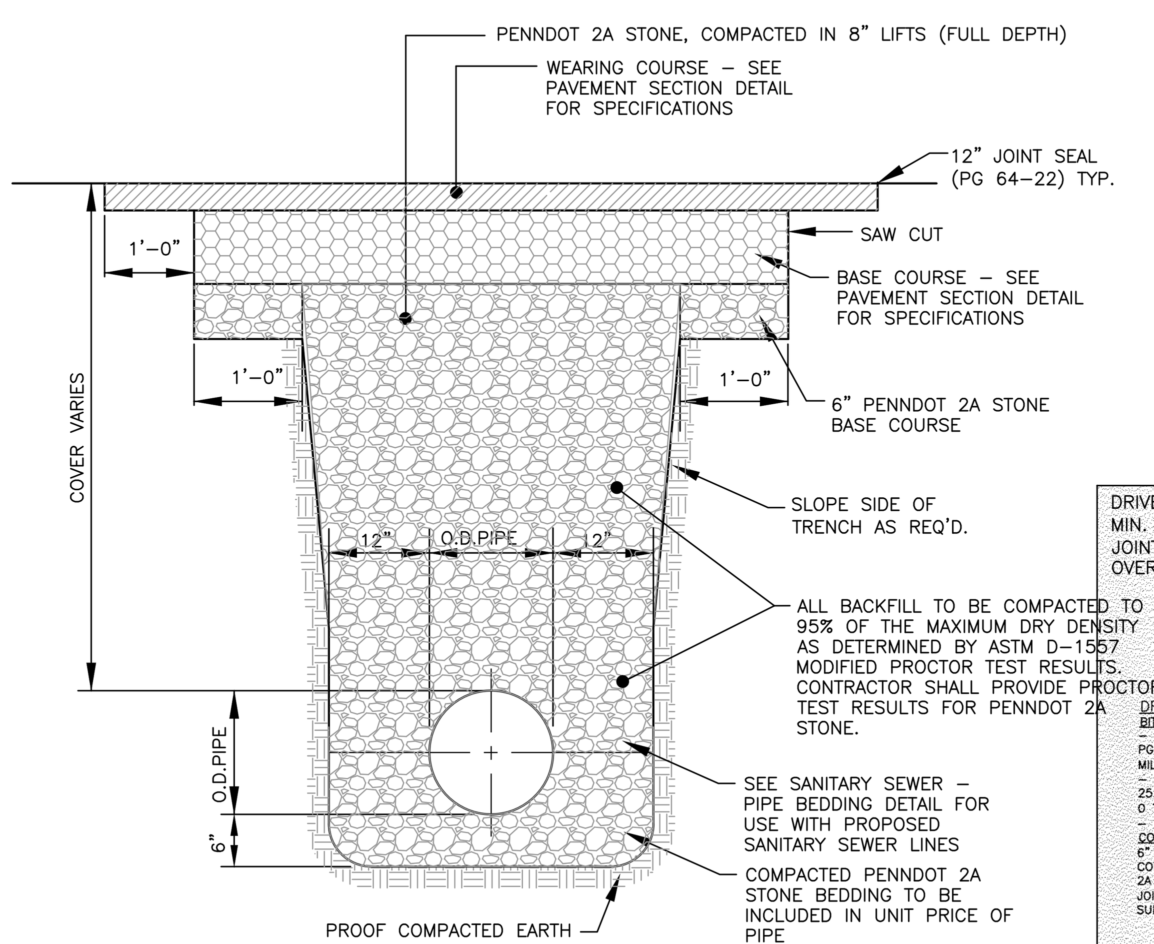
STORM MANHOLE COVER (CAST IRON – PLATEN)
NOT TO SCALE



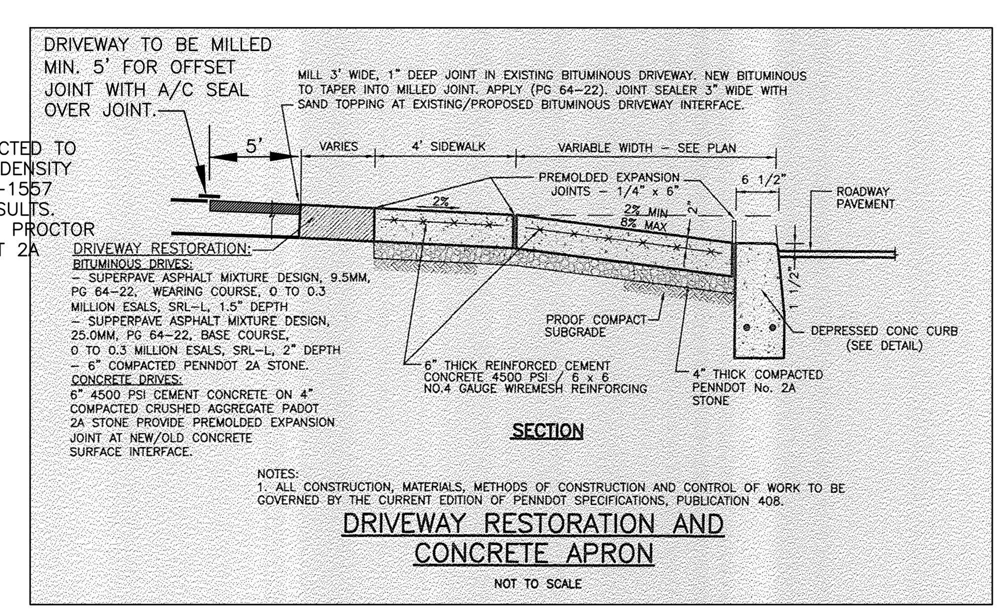

PIPE BEDDING (SANITARY LATERAL)
NOT TO SCALE




BACKFILL AND PERMANENT RESTORATION DETAIL
FOR GRASS AREA AND
TYPICAL DETAIL FOR STONE BEDDING
NOT TO SCALE




PERMANENT RESTORATION
OF TOWNSHIP ROADS
NOT TO SCALE




NOTE:
ALL STRUCTURES MUST CONFORM TO PENNDOT RC-STANDARDS AND PENNDOT PUBLICATION 408, LATEST EDITIONS. CONTRACTOR MUST SUBMIT SHOP DRAWINGS FOR ALL STRUCTURES FOR APPROVAL BY TOWNSHIP ENGINEER, PRIOR TO ORDERING MATERIALS.

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FAIRLESS HILLS, PA 19030
(215) 377-9244
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JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233

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CONSTRUCTION DETAILS
OF
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
FAIRLESS HILLS, PA

| | |
|---|---|
| DRAWN BY: ARL | CHECKED BY: JGJ |
| DATE: 3/19/20 | SCALE: – – – |
| PROJECT NUMBER: CI19-01 | DESIGNED BY: CMK |
| DRAWING: Details.dwg | |



Monday, April 20, 2020
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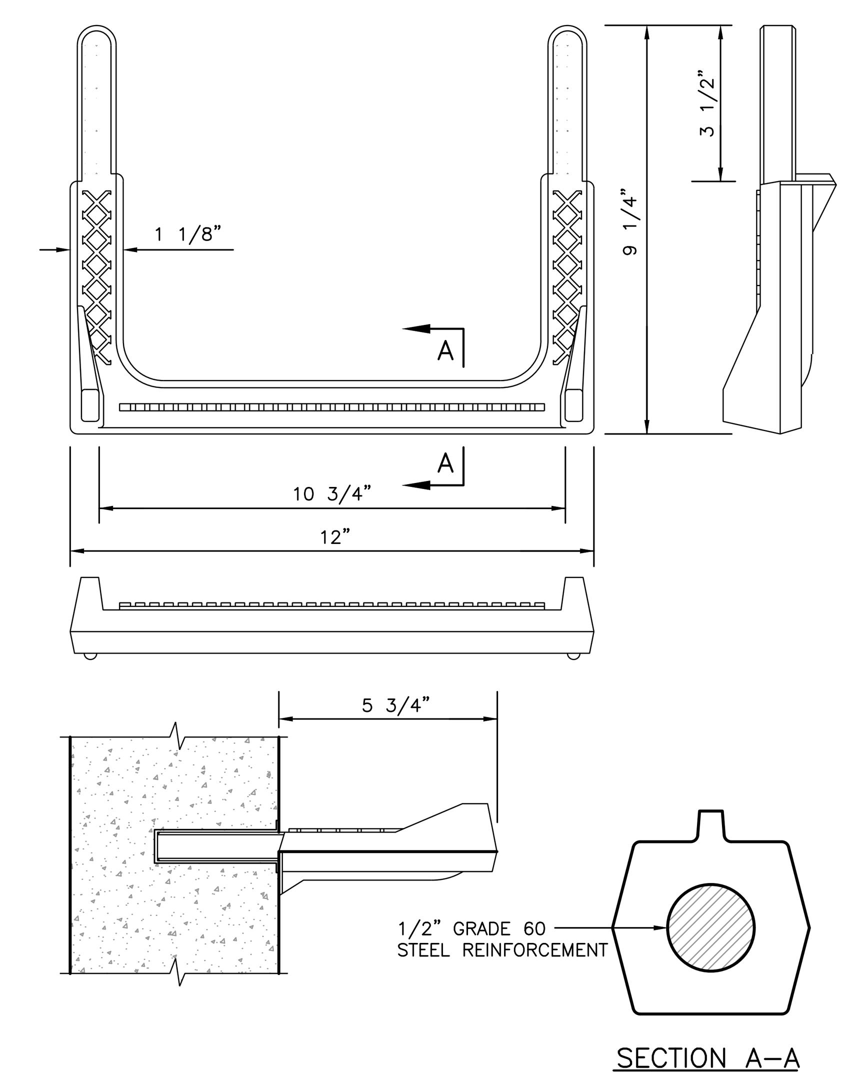
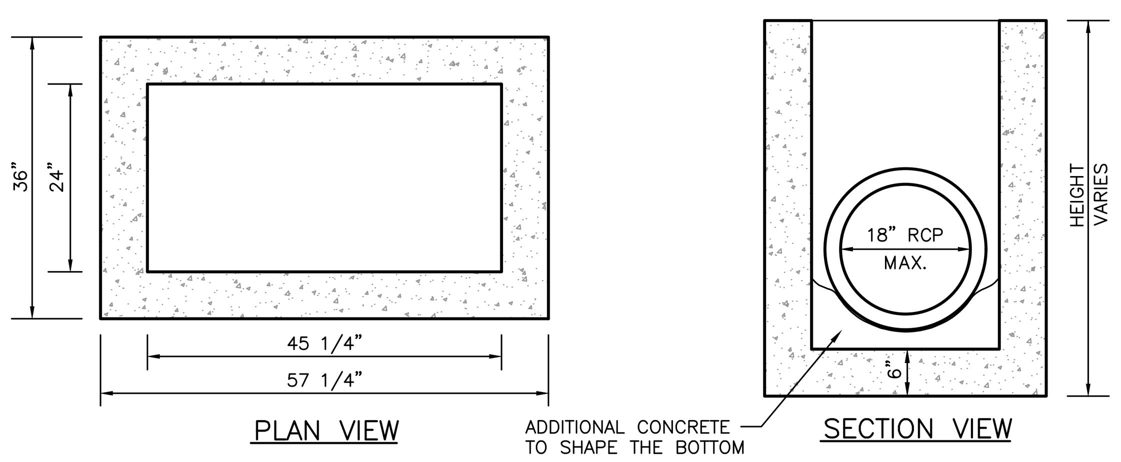


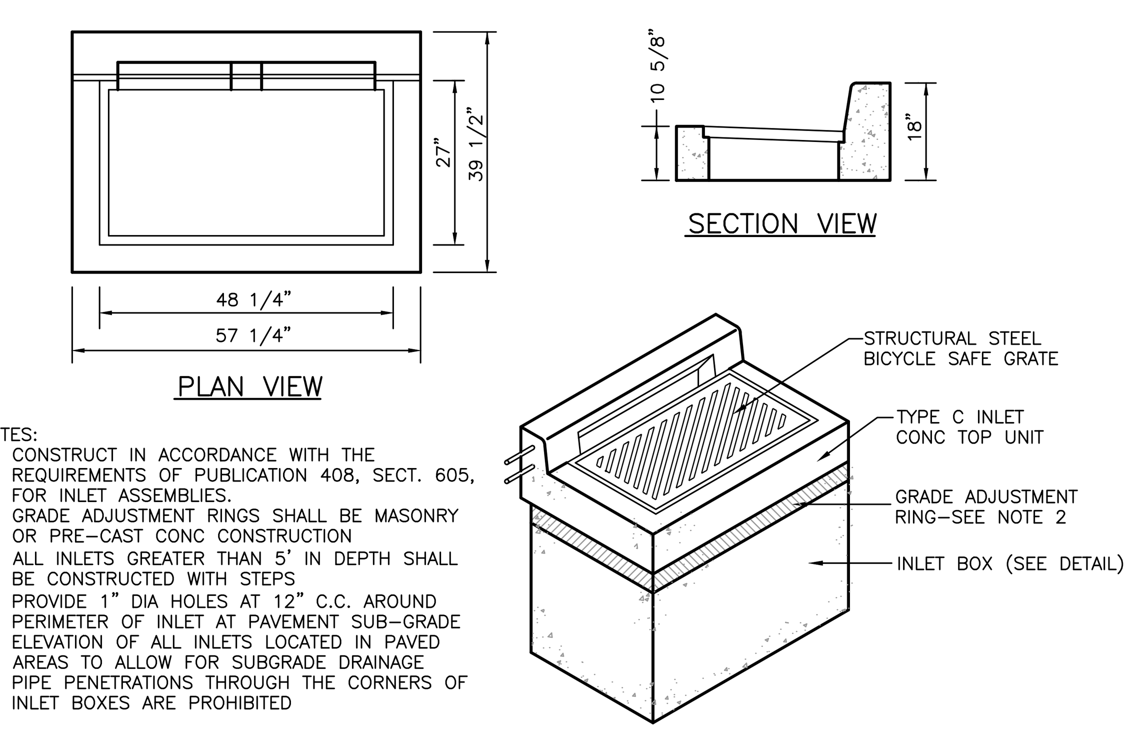

NOTES:
1. STEPS TO BE FABRICATED FROM COPOLYMER POLYPROPYLENE PLASTIC

## POLYPROPYLENE MANHOLE STEP
NOT TO SCALE



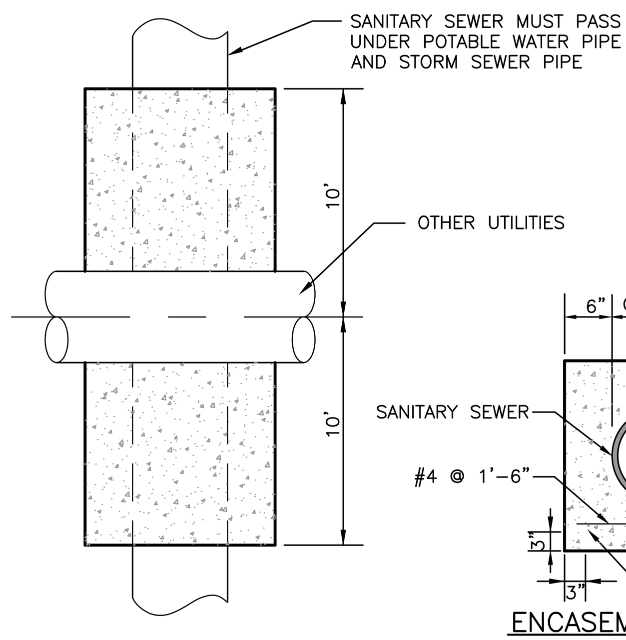

NOTES:
1. ALL CONSTRUCTION, MATERIALS, METHODS OF CONSTRUCTION AND CONTROL OF WORK TO BE GOVERNED BY THE CURRENT EDITION OF PENNDOT SPECIFICATIONS, PUBLICATION 408.

## STANDARD INLET BOX
NOT TO SCALE

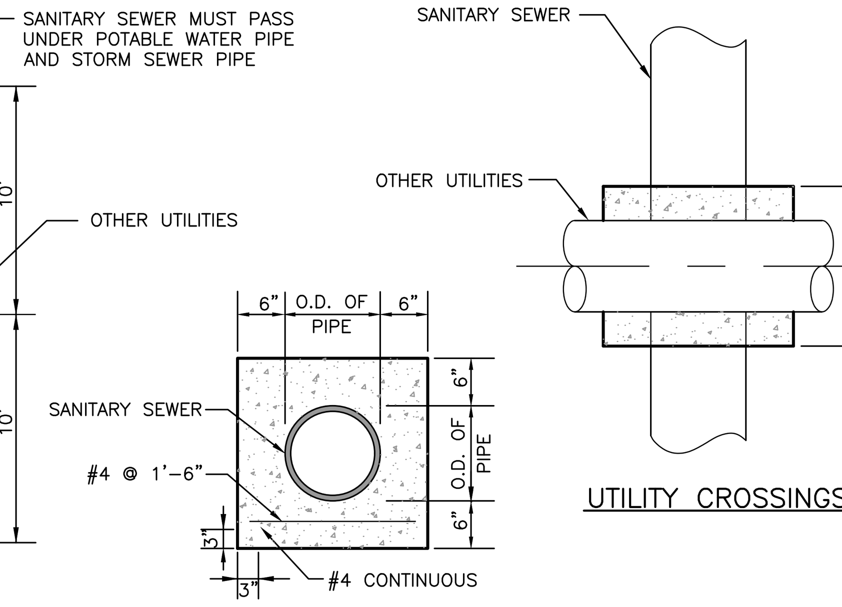



NOTES:
1. CONSTRUCT IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECT. 605, FOR INLET ASSEMBLIES.
2. GRADE ADJUSTMENT RINGS SHALL BE MASONRY OR PRE-CAST CONC CONSTRUCTION
3. ALL INLETS GREATER THAN 5' IN DEPTH SHALL BE CONSTRUCTED WITH STEPS
4. PROVIDE 1" DIA HOLES AT 12" C.C. AROUND PERIMETER OF INLET AT PAVEMENT SUB-GRADE ELEVATION OF ALL INLETS LOCATED IN PAVED AREAS TO ALLOW FOR SUBGRADE DRAINAGE
5. PIPE PENETRATIONS THROUGH THE CORNERS OF INLET BOXES ARE PROHIBITED

## TYPE "C" INLET
NOT TO SCALE




WATER CROSSINGS

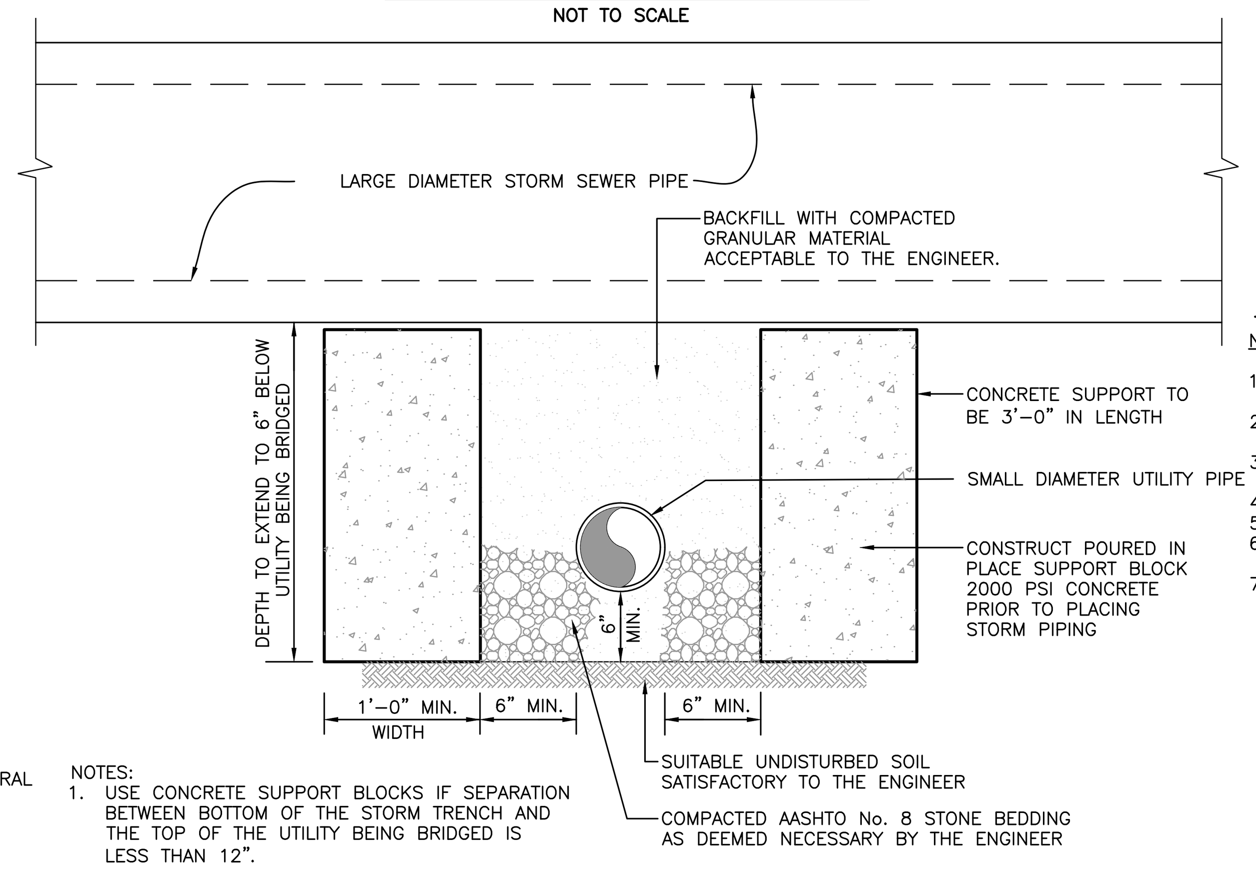



ENCASEMENT SECTION

UTILITY CROSSINGS

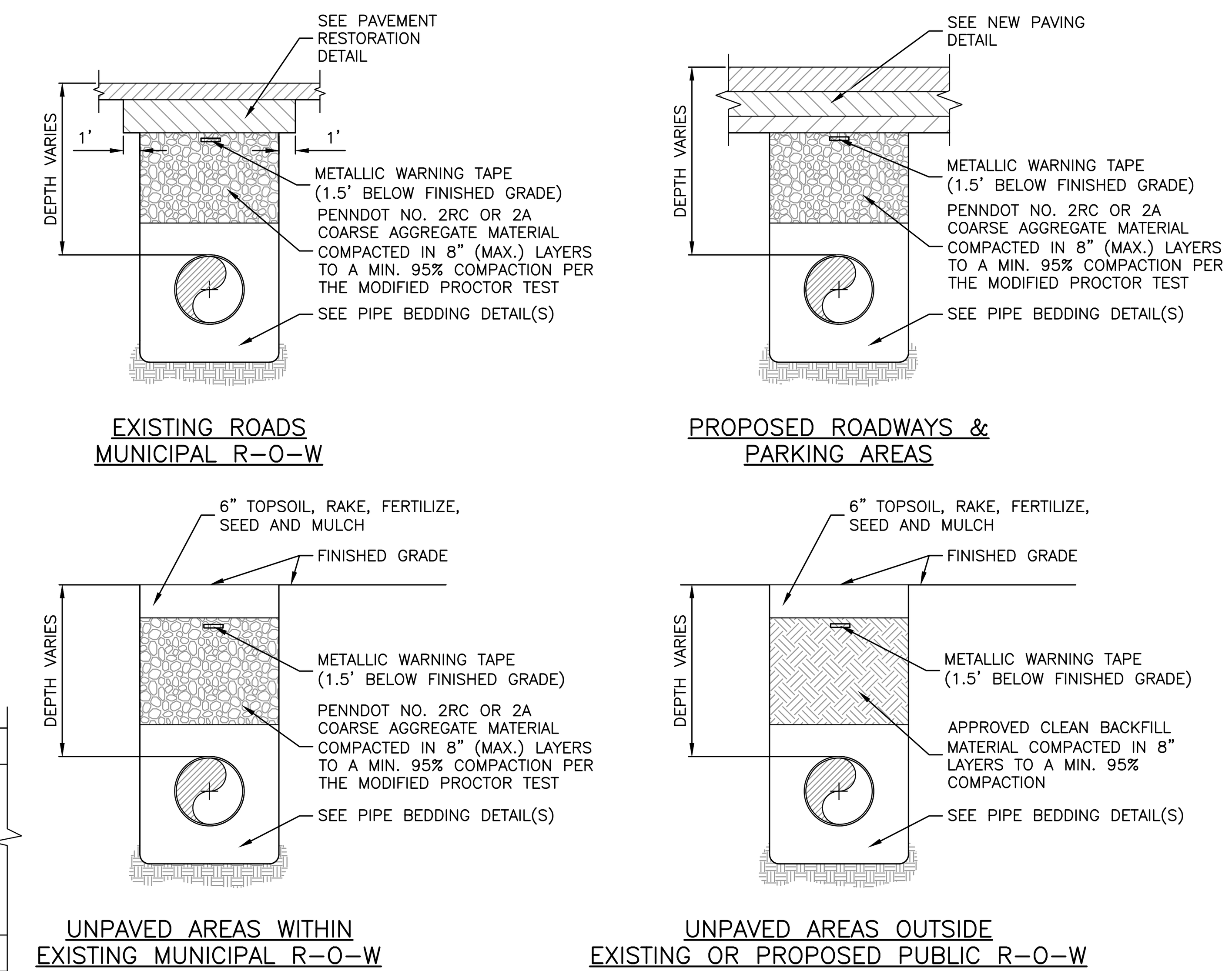
NOTES:
1. PROVIDE REINFORCEMENT AT UTILITY CROSSINGS OR AS DIRECTED BY THE AUTHORITY'S ENGINEER

## CONCRETE ENCASEMENT
NOT TO SCALE



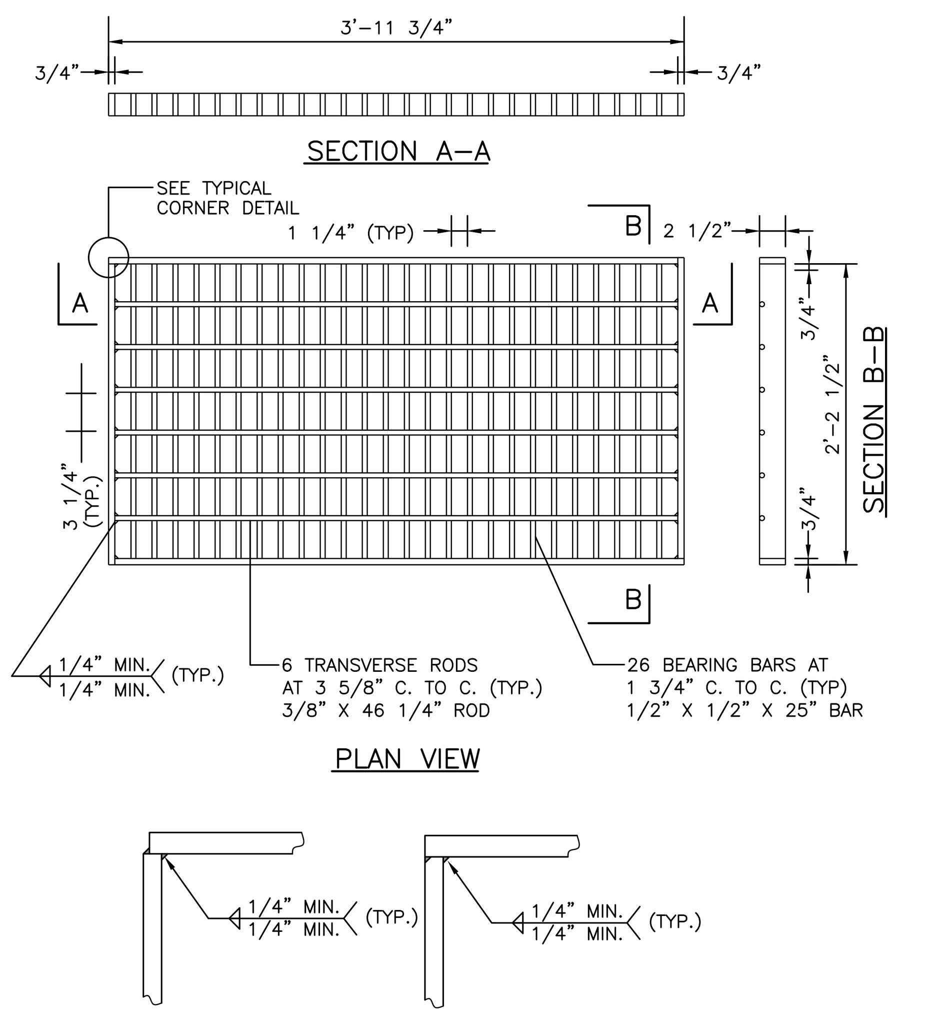

NOTES:
1. USE CONCRETE SUPPORT BLOCKS IF SEPARATION BETWEEN BOTTOM OF THE STORM TRENCH AND THE TOP OF THE UTILITY BEING BRIDGED IS LESS THAN 12".

## CONCRETE SUPPORT BLOCK – PIPE BRIDGE
NOT TO SCALE




NOTES:
1. TRENCH COMPACTION TO BE TESTED, AT THE DEVELOPERS EXPENSE, IN ACCORDANCE WITH PENNDOT PUB 408, AS REQUIRED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
2. CLEAN FILL MUST BE APPROVED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION PRIOR TO PLACEMENT IN THE TRENCH.
3. AREAS AROUND MANHOLES, INLETS, AND OTHER APPURTENANCES SHALL BE HAND COMPACTED AS DIRECTED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
4. NO SLAG MATERIAL PERMITTED.
5. IF WATER IS ENCOUNTERED IN THE EXCAVATION TRENCH, AASHTO #57 AGGREGATE MUST BE USED.
6. ALL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, FORM 408 AND 67 PA CODE SECTION 459.
7. UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO COLLECT IN EXCAVATED TRENCHES. ANY WATER IN THE TRENCHES SHALL BE REMOVED THROUGH A PUMPED WATER FILTER BAG.

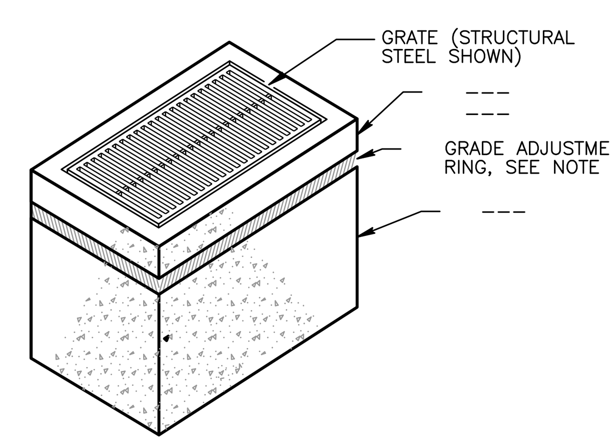
## SANITARY BACKFILL (TRENCH)
NOT TO SCALE



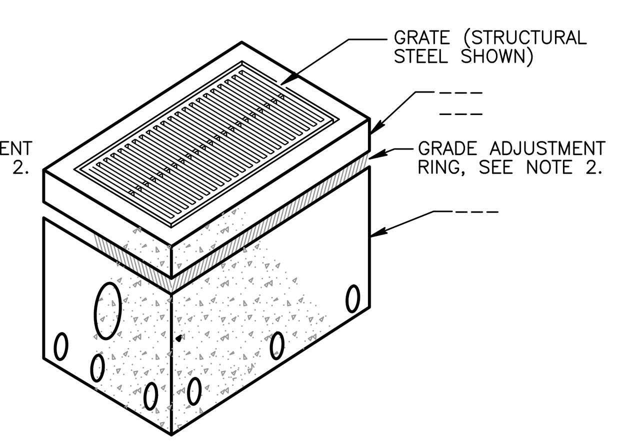

TYPICAL CORNER DETAILS

NOTES:
1. THIS SHEET DEPICTS THE DIMENSIONS REQUIRED FOR UNIFORMITY AND INTERCHANGEABILITY IT DOES NOT INCLUDE DETAILS REQUIRED FOR FABRICATION OF MANUFACTURING. ONLY GRATES SUPPLIED BY A MANUFACTURING LISTED IN BULLETIN 15 SHALL BE PERMITTED. FOR A BULLETIN 15 LISTING, SUBMIT Q 22" X 36" REPRODUCIBLE SHOP DRAWING TO THE BUREAU OF CONSTRUCTION AND MATERIALS, MATERIALS AND TESTING DIVISION FOR REVIEW AND APPROVAL.
2. WELD STRUCTURAL STEEL GRATES IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 1105.03(R).
3. PROVIDE TRANSVERSE BARS, MEETING THE REQUIREMENTS OF PUB. 408
4. PROVIDE BICYCLE-SAFE, STRUCTURAL STEEL OR CAST IRON VANE GRATES FOR INSTALLATION ONLY WHERE BICYCLE TRAFFIC IS ANTICIPATED, SUCH AS CURBED ROADWAYS IN URBAN AREAS OR ROADWAYS SPECIFICALLY ESTABLISHED AND SIGNED AS BIKEWAYS OR HAVING BIKE LANES. ALTERNATE BICYCLE-SAFE GRATE DESIGNS SHALL REQUIRE A SHOP DRAWING SUBMISSION, AS SPECIFIED IN NOTE 1, AND SHALL CONFORM TO THE DIMENSIONAL REQUIREMENTS FOR PROPER INSTALLATION WITH THE CURRENT CONCRETE TOP UNITS.
5. FABRICATE SLOTS BY BURNING, DRILLING, SHEARING, OR PUNCHING. HAVE THE BOTTOM OF ALL BURNED OR DRILLED SLOTS CONFORM TO THE SHAPE OF THE ROD.
6. PROVIDE STRUCTURAL STEEL GRATES WITH THE GRATE SPACERS LOCATED FLUSH ALONG THE TOP SURFACE OF THE GRATE.
7. DO NOT USE IRON GRATES WITHIN THE TRAVEL LANES. THESE GRATES ARE PERMITTED AT THE EDGE OF OUTSIDE SHOULDERS, SWALES, WIDE MEDIAN SWALES AND INFIELD AREAS THAT ARE OUTSIDE THE TRAVEL LANES OR CURB TO CURB ROADWAYS.

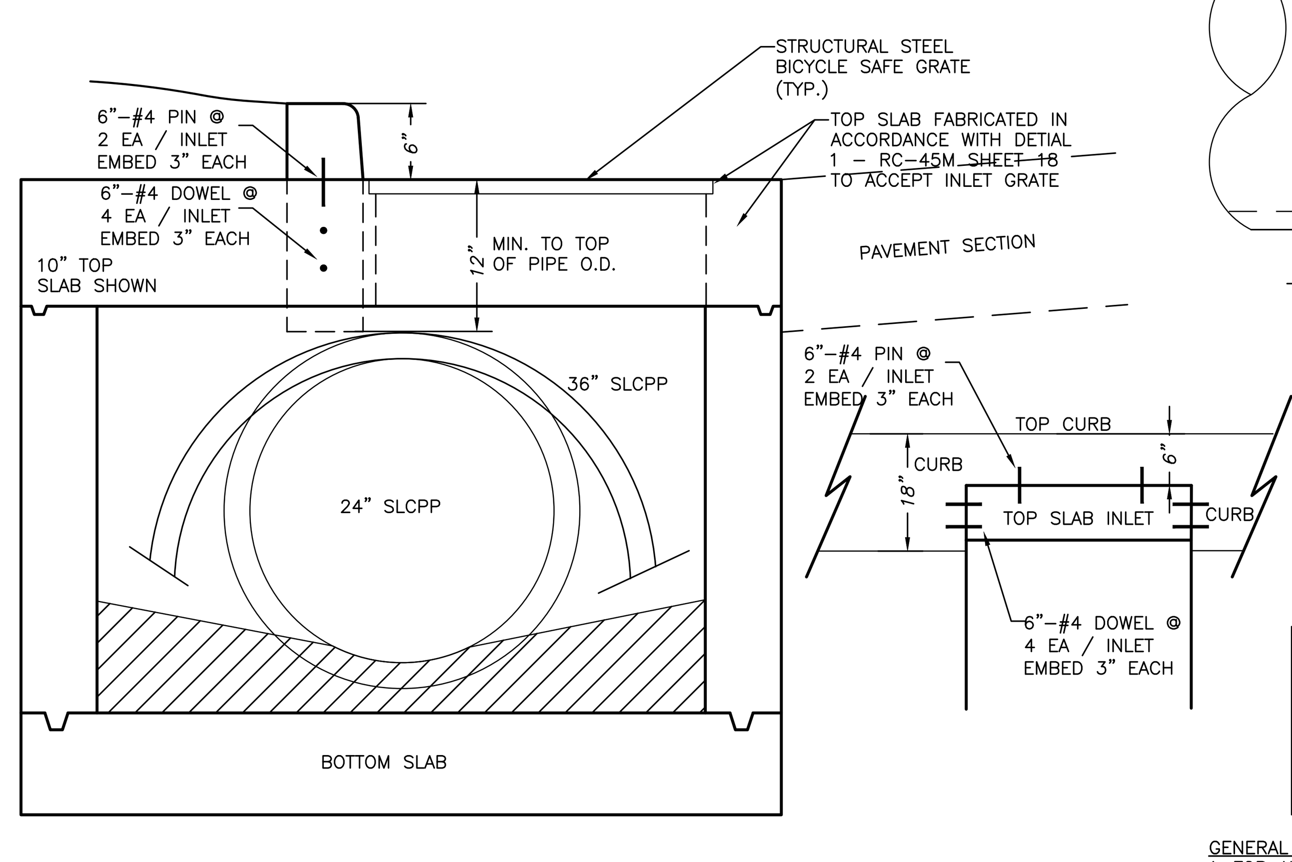
## BICYCLE SAFE STRUCTURAL STEEL GRATE
NOT TO SCALE




## TYPE "M" INLET
NOT TO SCALE

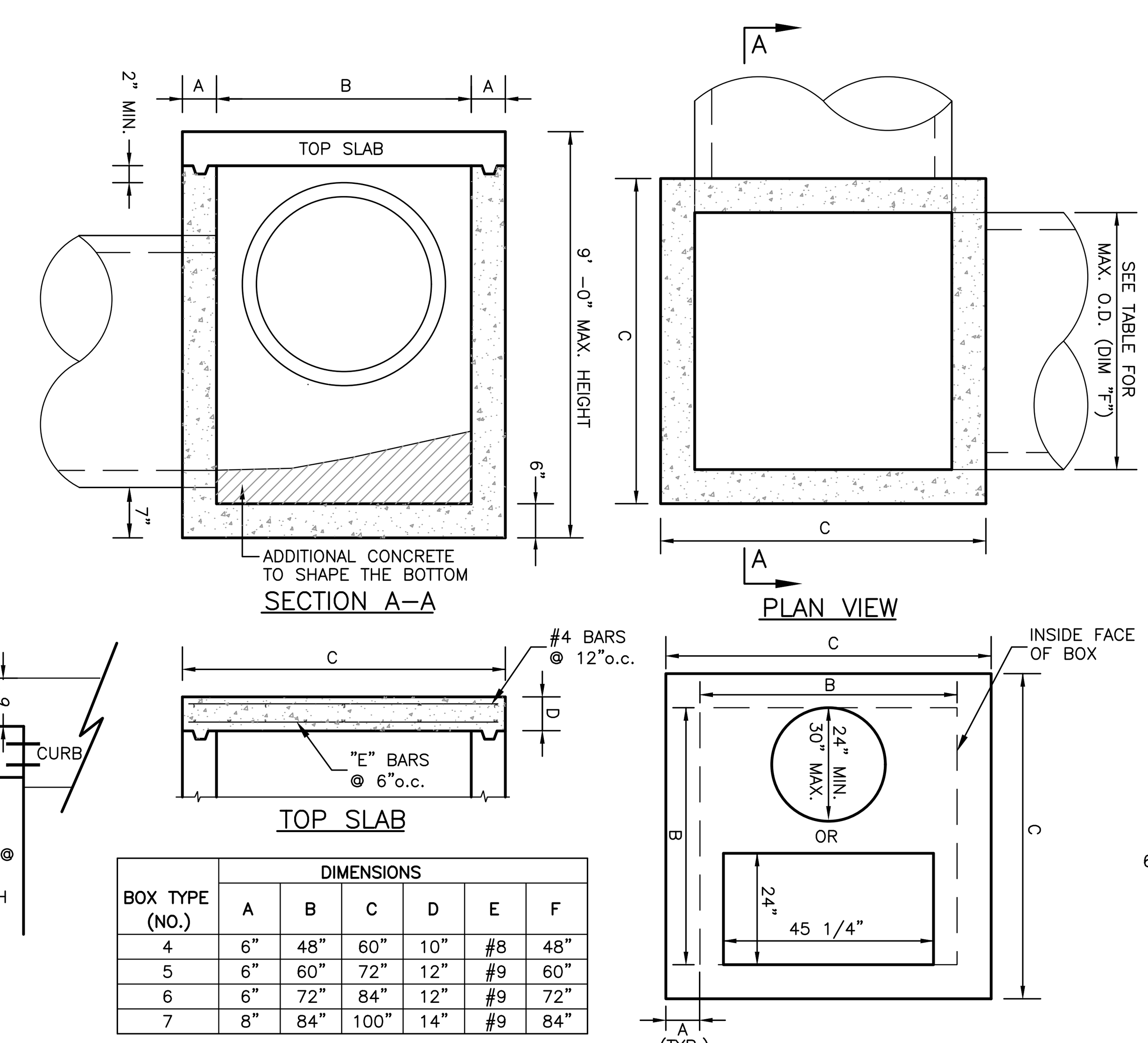



## TYPE "M" PERFORATED INLET
NOT TO SCALE




## TOB SLAB FOR MODIFIED INLET WITH TYPE "M" INSERT GRATE

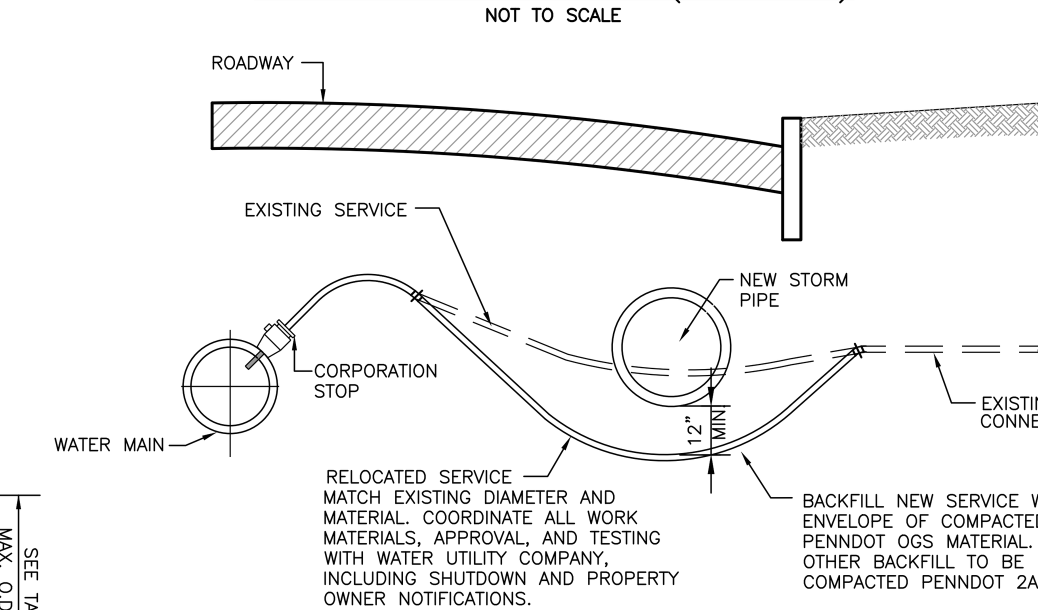
NOTES:
1. EPOXY DOWELS IN PLACE 18" O.C. ALONG CURB SIDE OF TOP SLAB FOR CONCRETE CURB INSTALLATION.




| BOX TYPE (NO.) | DIMENSIONS | | | | | |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| 4 | 6" | 48" | 60" | 10" | #8 | 48" |
| 5 | 6" | 60" | 72" | 12" | #9 | 60" |
| 6 | 6" | 72" | 84" | 12" | #9 | 72" |
| 7 | 8" | 84" | 100" | 14" | #9 | 84" |

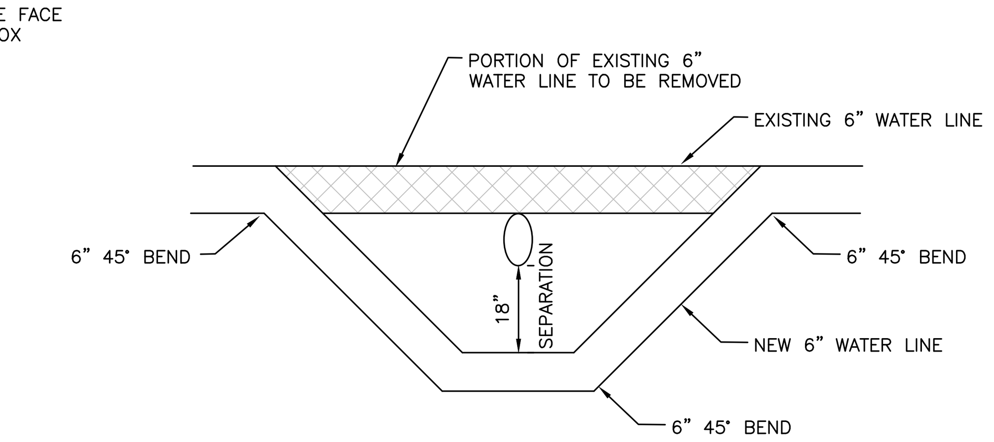
GENERAL NOTES:
1. FOR ALL OTHER DESIGN REQUIREMENTS AND APPLICABLE NOTES, SEE PENNDOT RC-46M (SHT 6 FOR BOXES & SHT 8 FOR TOP SLABS).
2. TOP SLAB DIMENSIONS ARE FOR PRECAST CONCRETE, DIMENSIONS "D" AND "E" MUST BE ADJUSTED PER RC-46M (SHT 6) IF CAST-IN-PLACE CONCRETE IS USED.

## NON-STANDARD INLET BOXES
NOT TO SCALE




NOTES:
1. COPPER SERVICES MAY BE REPLACED AS SHOWN. HOWEVER, ANY PLASTIC SERVICES ENCOUNTERED MUST BE REPLACED COMPLETELY WITH COPPER FROM THE MAIN TO THE METER.

## WATER SERVICE RELOCATION
NOT TO SCALE




## WATER LINE RELOCATION DETAIL
NOT TO SCALE

NOTE:
1. ALL WORKMANSHIP AND MATERIALS TO MEET OR EXCEED REQUIREMENTS OF THE PENNSYLVANIA AMERICAN WATER COMPANY.

**NOTE:**
ALL STRUCTURES MUST CONFORM TO PENNDOT RC–STANDARDS AND PENNDOT PUBLICATION 408, LATEST EDITIONS. CONTRACTOR MUST SUBMIT SHOP DRAWINGS FOR ALL STRUCTURES FOR APPROVAL BY TOWNSHIP ENGINEER, PRIOR TO ORDERING MATERIALS.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JOSEPH G. JONES, PE, CFM
PA. PE LICENSE # PE075233

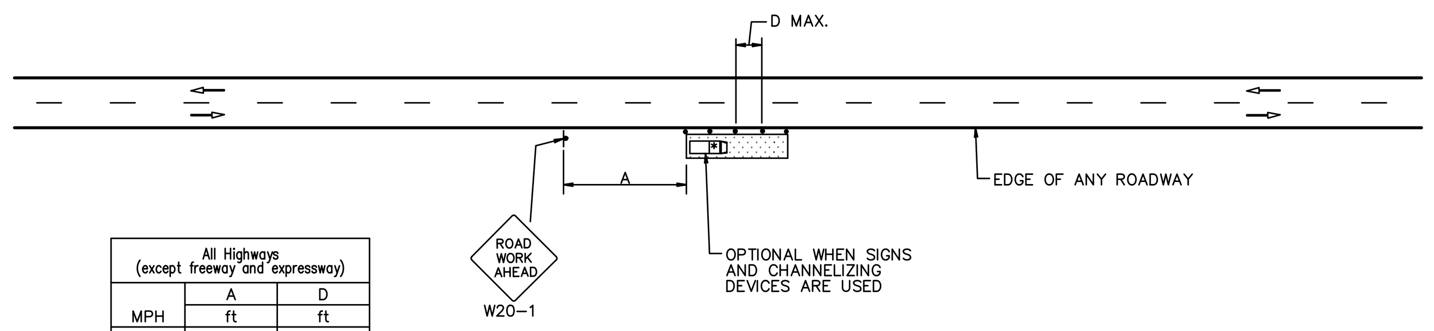

| NO. | DATE | REVISION | BY | CHK. |
|---|---|---|---|---|
| 1 | 3/19/20 | ISSUED FOR BID | | |

CONSTRUCTION DETAILS
OF
2020 ROAD IMPROVEMENT PROGRAM

PREPARED FOR:
TOWNSHIP OF FALLS
SITUATED IN:
FAIRLESS HILLS, PA

| DRAWN BY: ARL | CHECKED BY: JGJ |
|---|---|
| DATE: 3/19/20 | SCALE: – – – |
| PROJECT NUMBER: CI19–01 | DESIGNED BY: CMK |

DRAWING: Details.dwg



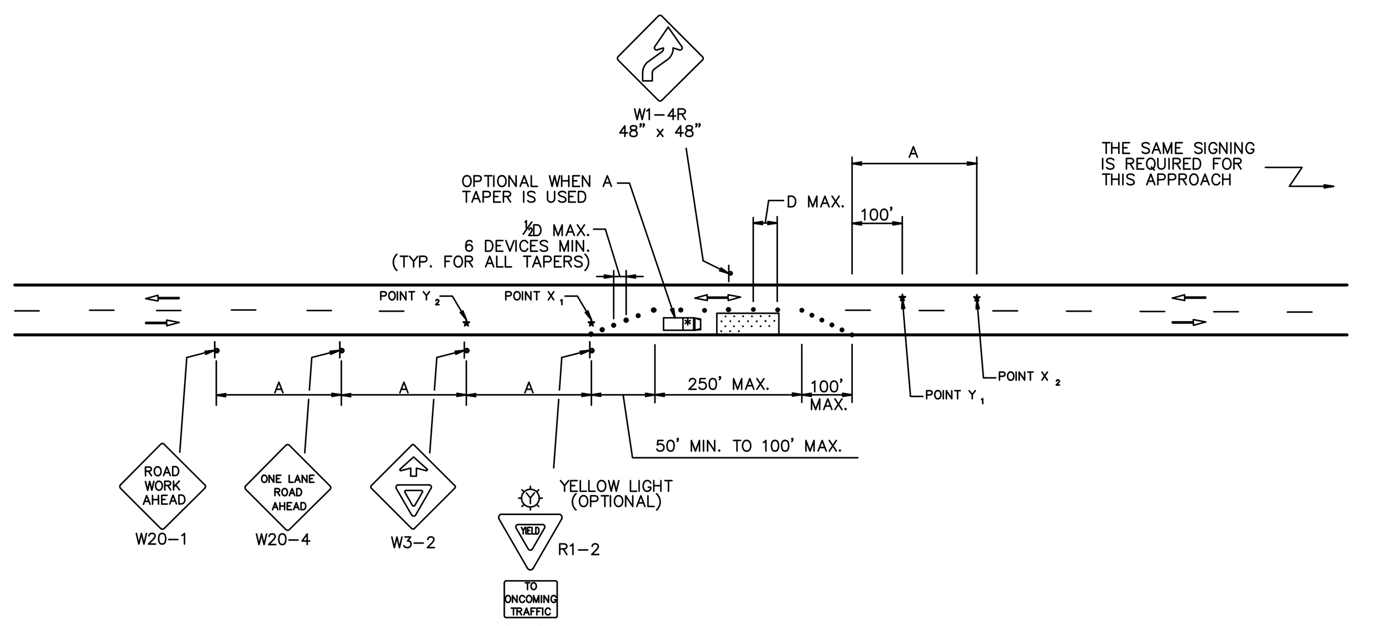

| All Highways (except freeway and expressway) | | |
|---|---|---|
| MPH | A | D |
| | ft | ft |
| 25 | 250 | 50 |
| 30 | 300 | 60 |
| 35 | 350 | 70 |
| 40 | 400 | 80 |
| 45 | 450 | 90 |
| 50 | 500 | 100 |
| 55 | 550 | 110 |
| Alternate Spacing for High Density Urban | | |
| 25 | 100 | 50 |
| 30 | 100 | 60 |
| Freeway and Expressway | | |
| 50 | 1000 | 100 |
| 55 | 1000 | 110 |
| 60 | 1000 | 120 |
| 65 | 1000 | 130 |

NOTES

1. TRAFFIC CONTROL DEVICES ARE NOT REQUIRED IF THE WORK SPACE IS OUTSIDE THE HIGHWAY RIGHT-OF-WAY, BEHIND BARRIER, MORE THAN 2' BEHIND CURB, OR 15' OR MORE FROM THE EDGE OF ANY ROADWAY.
2. FOR DIVIDED HIGHWAYS AND ONE-WAY HIGHWAYS WHERE IT IS PHYSICALLY POSSIBLE, ADVANCE WARNING SIGNS SHOULD ALSO BE PLACED ON THE LEFT-HAND SIDE OF THE ROADWAY.
3. THE W20-1 SIGN MAY BE REPLACED WITH OTHER APPROPRIATE SIGNS (LOW SHOULDER SIGN, NO GUIDE RAIL SIGN, AND SO FORTH).
4. FOR OPERATIONS 60 MINUTES OR LESS, ALL TRAFFIC CONTROL DEVICES MAY BE ELIMINATED IF A VEHICLE WITH AN ACTIVATED FLASHING OR REVOLVING YELLOW LIGHT IS USED.

## PATA 5 – SHORT-TERM STATIONARY OPERATION ADJACENT TO ANY ROADWAY

NOT TO SCALE



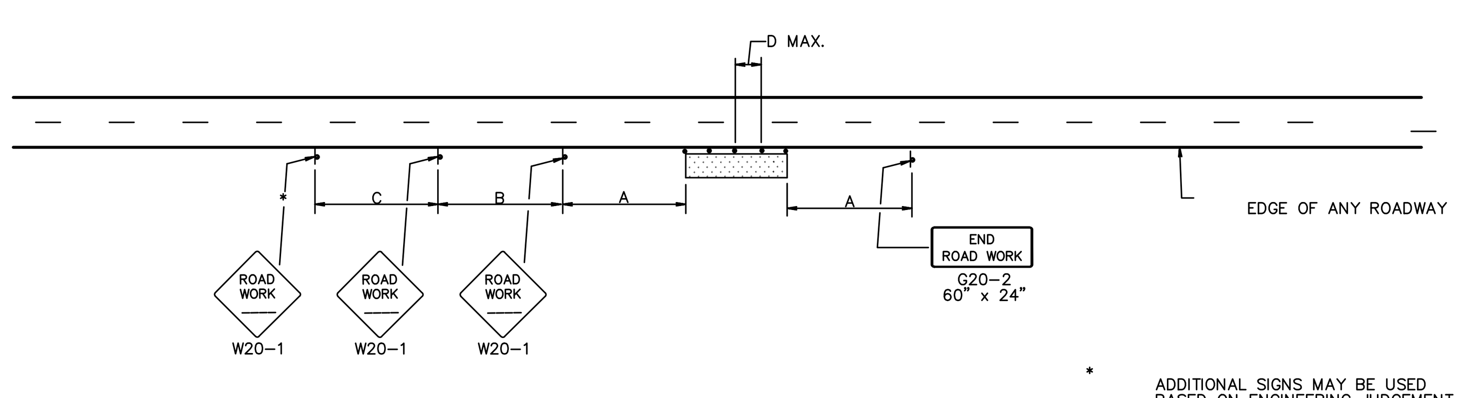

| ALL HIGHWAYS (EXCEPT FREEWAY AND EXPRESSWAY) | | |
|---|---|---|
| MPH | A | D |
| | ft | ft |
| 25 | 250 | 50 |
| 30 | 300 | 60 |
| 35 | 350 | 70 |
| 40 | 400 | 80 |
| 45 | 450 | 90 |
| 50 | 500 | 100 |
| 55 | 550 | 110 |
| ALTERNATE SPACING FOR HIGH DENSITY URBAN | | |
| 25 | 100 | 50 |
| 30 | 100 | 60 |

NOTES

1. THIS FIGURE APPLIES WHEN ALL OF THE FOLLOWING CONDITIONS ARE SATISFIED:
   A. SIGHT DISTANCE BETWEEN X1 AND X2 , AND BETWEEN Y1 AND Y2 , WILL BE UNABSTRUCTED.
   B. THE LENGTH OF THE ONE-LANE SECTION (NOT INCLUDING ANY TAPER) IS NOT GREATER THAN APPROXIMATELY 250 FT.
   C. THE ADT IS NOT GREATER THAN APPROXIMATELY 750, OR THE AVERAGE 5-MINUTE TRAFFIC VOLUME DURING THE PERIOD OF WORK IS 6 VEHICLES OR LESS.
2. FOR OPERATIONS 60 MINUTES OR LESS IN DURATION, A TAPER IS NOT REQUIRED IF A VEHICLE WITH AN ACTIVATED FLASHING OR REVOLVING YELLOW LIGHT IS LOCATED IN THE CLOSED LANE AS SHOWN. IF A TAPER IS NOT USED, POINT X1 SHALL BE APPROXIMATELY 150 FT FROM THE REAR OF THE VEHICLE WITH AN ACTIVATED FLASHING OR REVOLVING YELLOW LIGHT.

## PATA 10E – SHORT-TERM STATIONARY OPERATION TWO LANE, TWO-WAY ROADWAY – SELF-REGULATING LANE CLOSURE

NOT TO SCALE




| | A | B | C |
|---|---|---|---|
| CONVENTIONAL ROADWAYS | 500 ft | 500 ft | 500 ft |
| EXPRESSWAYS AND FREEWAYS | 1000 ft | 1500 ft | 2640 ft |

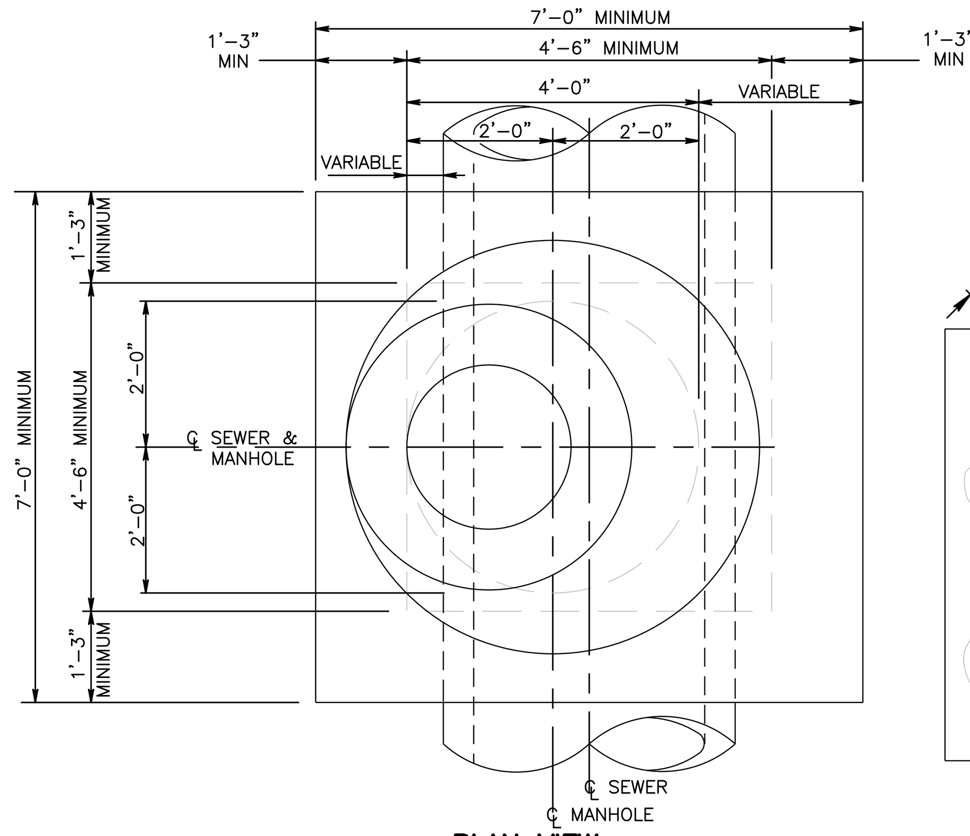
| S | D |
|---|---|
| MPH | (ft) |
| 25 | 50 |
| 30 | 60 |
| 35 | 70 |
| 40 | 80 |
| 45 | 90 |
| 50 | 100 |
| 55 | 110 |
| 60 | 120 |
| 65 | 130 |

NOTES

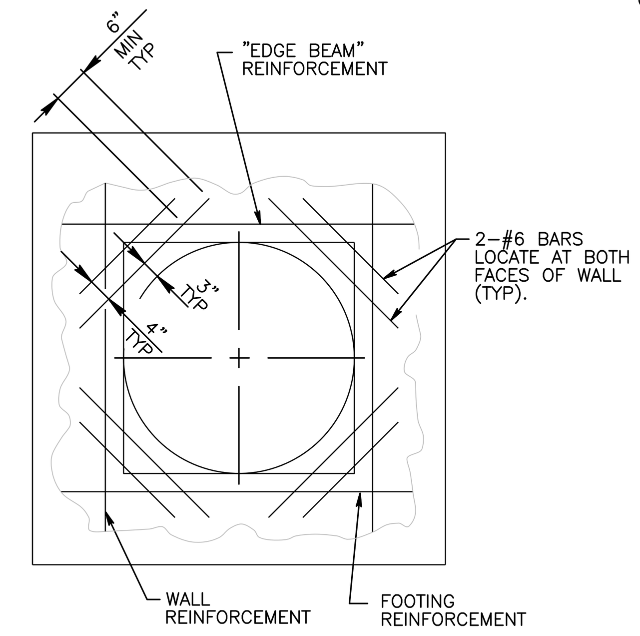
1. TRAFFIC CONTROL DEVICES ARE NOT REQUIRED IF THE WORK SPACE IS OUTSIDE THE HIGHWAY RIGHT-OF-WAY, BEHIND BARRIER, MORE THAN 2 FT BEHIND CURB, OR 15 FT OR MORE FROM THE EDGE OF ANY ROADWAY.
2. FOR DIVIDED HIGHWAYS AND ONE-WAY HIGHWAYS WHERE IT IS PHYSICALLY POSSIBLE, ADVANCE WARNING SIGNS SHOULD ALSO BE PLACED ON THE LEFT-HAND SIDE OF THE ROADWAY.
3. THE ROAD WORK 500 FT SIGN MAY BE REPLACED WITH OTHER APPROPRIATE SIGNS (LOW SHOULDER SIGN, NO GUIDE RAIL SIGN, AND SO FORTH).

## PATA 24 – LONG-TERM STATIONARY OPERATION ADJACENT TO ANY ROADWAY

NOT TO SCALE




PLAN VIEW




REINFORCEMENT DETAILS AT VERTICAL OPENINGS

NOTE: ONLY BOX WITH MAIN REINFORCEMENT SHOWN FOR CLARITY.

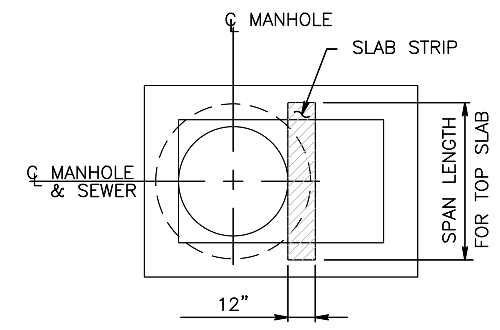



FIGURE 1
PLAN-TOP OF SLAB

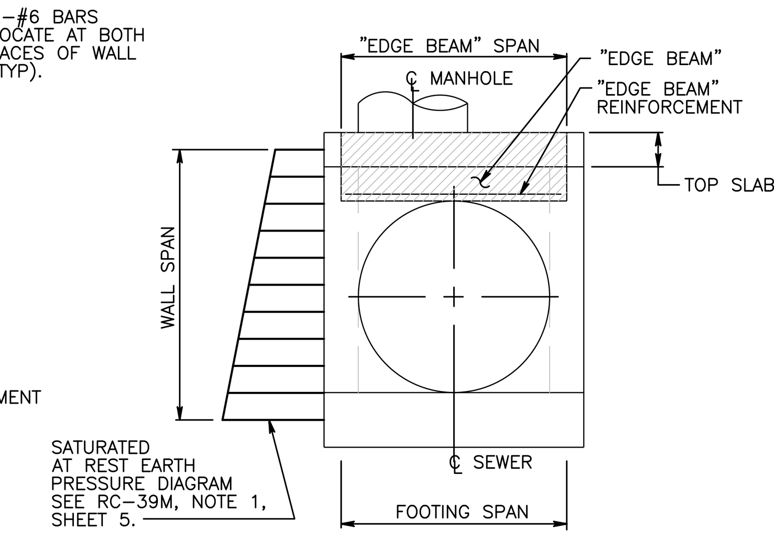



FIGURE 2
ELEVATION-OPENING

NOTES

1. FOR CONSTRUCTION REQUIREMENTS SEE RC-39M NOTE 1, SHEET 1. FOR DESIGN REQUIREMENTS SEE NOTE 1, SHEET 6.
2. INCREASE BOX SIZE WHEN REQUIRED TO KEEP WALLS OF MANHOLE BOX SECTION FLUSH WITH THE OPENING FOR PIPES LARGER THAN 42" ID. INDICATE THE BOX SIZE ON THE CONSTRUCTION PLANS OR SHOP DRAWINGS BASED ON THE DESIGN PROCEDURES PROVIDED BELOW.

DESIGN ALL MEMBERS FOR MOMENT, CRACK CONTROL & SHEAR AT DISTANCE d (EFFECTIVE DEPTH OF MEMBER) FROM FACE OF SUPPORT. CALCULATE ALL SPAN LENGTHS FROM THE CENTER OF THE SUPPORTS.

3A. TOP SLAB
- DESIGN A 12" WIDE SLAB STRIP FOR ONE-WAY ACTION TO CARRY DEAD LOAD, LIVE LOAD, AND WEIGHT OF EARTH. SPAN THE STRIP, SIMPLY SUPPORTED, ACROSS THE WIDTH OF THE BOX OR IN THE SHORT DIRECTION. SEE FIGURE 1 FOR DETAILS.
- PLACE ADDITIONAL BARS IN THE SLAB AT 45° AROUND THE MANHOLE OPENING. SEE SECTION A-A FOR DETAILS.

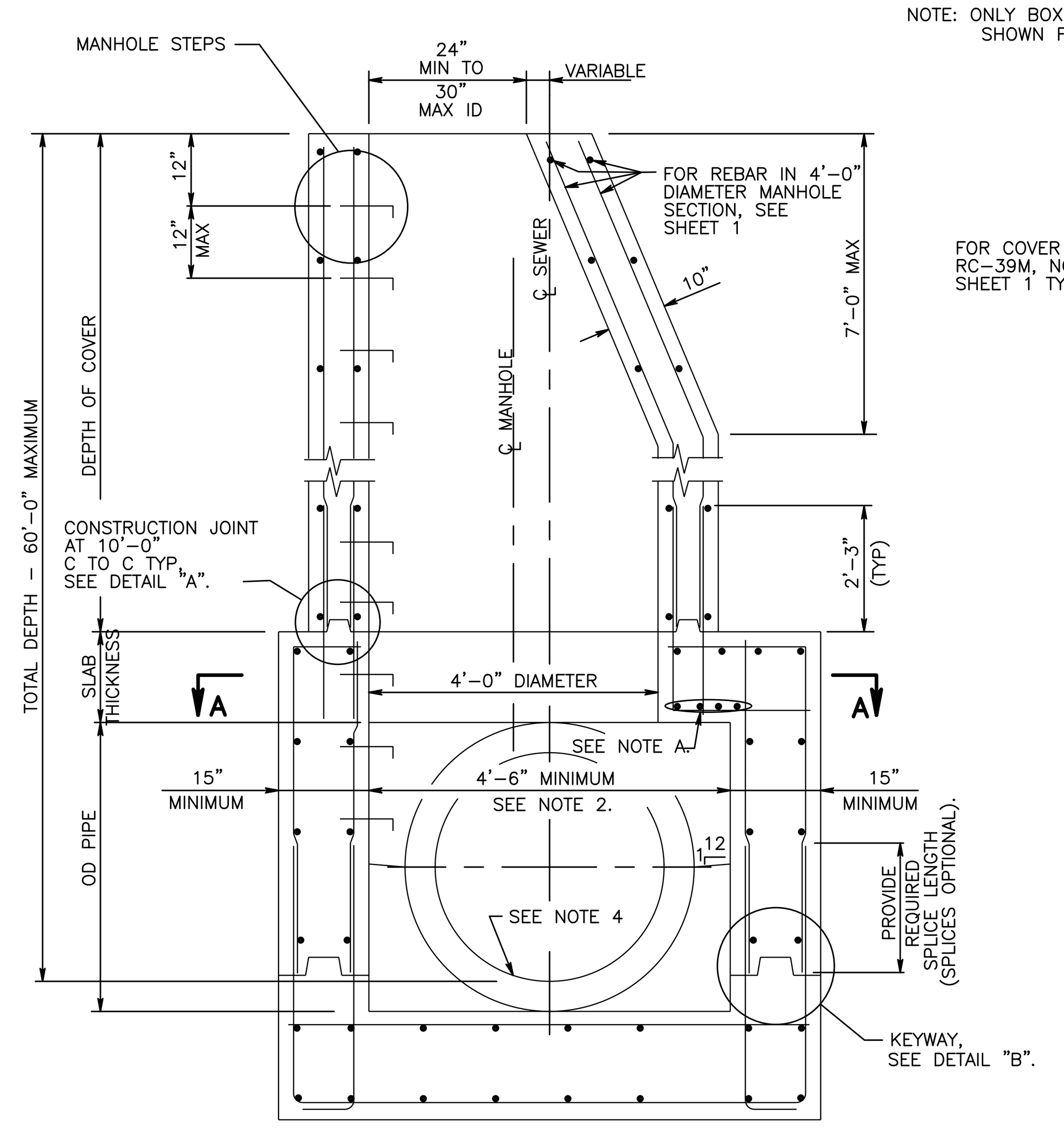
3B. "EDGE BEAM"

VIEWS SHOWING THE CONFIGURATION OF MANHOLE BOX SECTION ILLUSTRATE "EDGE BEAMS" TO BE THE SAME DEPTH AS THE TOP SLAB. TO ACHIEVE REQUIRED CAPACITY WHERE NECESSARY, INCREASE DEPTH OF "EDGE BEAM" BY PROVIDING ADDITIONAL CLEARANCE BETWEEN THE SLAB AND TOP OF OPENING. LOCATE HORIZONTAL STEEL FOR BEAM ABOVE THE SOFFIT OF THE OPENING. SEE FIGURE 2 FOR DETAILS.
- DESIGN THE "EDGE BEAMS", SPANNING THE LENGTH OF THE BOX, TO CARRY A UNIFORMLY DISTRIBUTED LOAD EQUAL TO THE REACTION FROM THE SLAB.

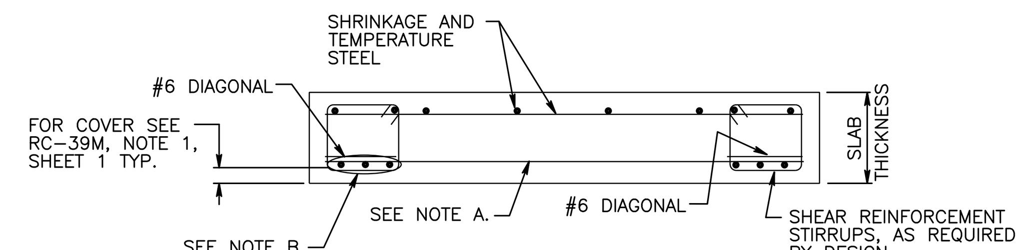
3C. WALLS
- DESIGN THE WALLS TO CARRY THE AXIAL LOAD, DUE TO EARTH LOAD, LIVE LOAD, AND DEAD LOAD APPLIED DIRECTLY TO THE WALL, IN ADDITION TO REACTIONS FROM THE "EDGE BEAMS", AND THE VERTICAL MOMENT CAUSED BY SATURATED AT REST EARTH PRESSURE. SEE FIGURE 2 FOR PRESSURE DIAGRAM. CONSIDER THE WALL SIMPLY SUPPORTED BETWEEN TOP SLAB AND FOOTING. PROVIDE THE SAME REINFORCEMENT ON THE OUTSIDE FACE.

3D. FOOTING
- DESIGN SPAN NORMAL TO PIPE TO CARRY POSITIVE MOMENT OF 1/10 WL AND NEGATIVE MOMENT OF 1/12 WL WHERE W IS THE UNIFORM BEARING PRESSURE. DO NOT TAKE INTO ACCOUNT THE CONCRETE IN THE CHANNEL WHEN CALCULATING CAPACITY OF THE FOOTING.
- AS A MINIMUM, PROVIDE #4 BARS AT 12" CENTERS, TOP AND BOTTOM OF SLAB IN THE OPPOSITE DIRECTION.

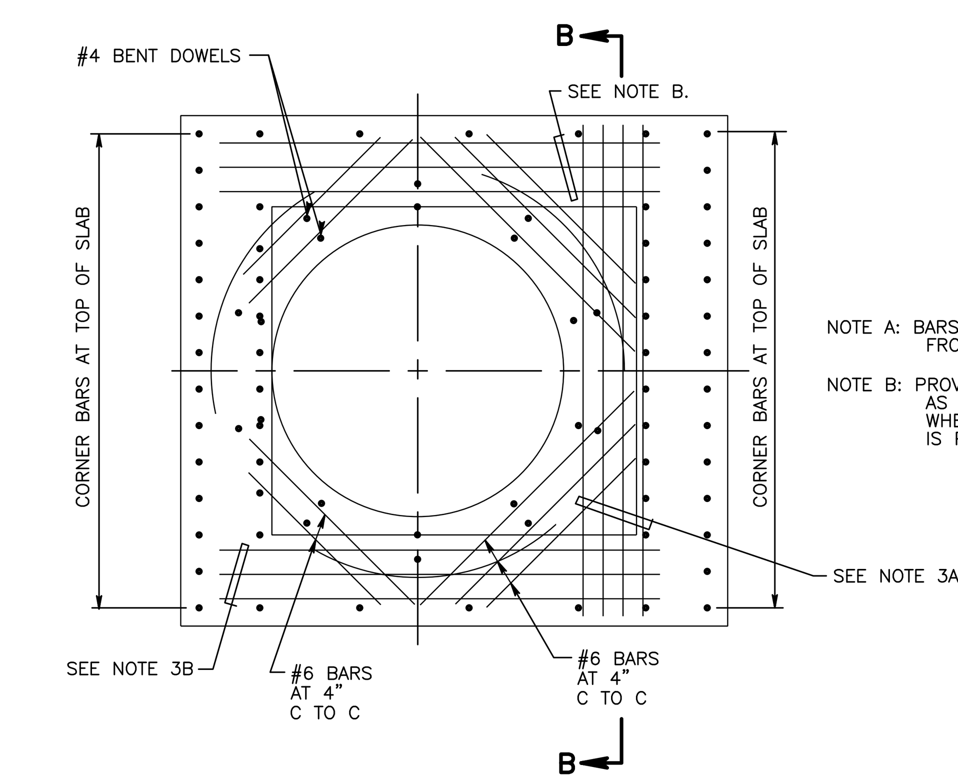
4. FORM A CONCRETE CHANNEL AT THE BOTTOM OF THE MANHOLE CONFORMING TO THE SHAPE OF THE LOWER HALF OF THE INCOMING AND/OR OUTGOING PIPES. PROVIDE A FULL DEPTH U-SHAPED CHANNEL WHEN NECESSARY TO REDUCE ENERGY LOSSES.




SECTION VIEW



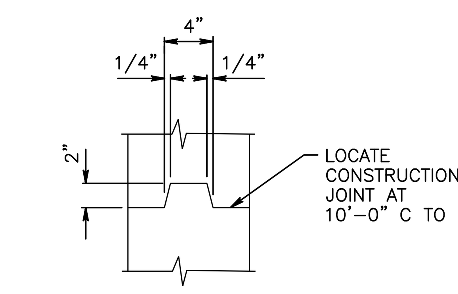

SECTION B-B




NOTE A: BARS REQUIRED TO SPAN FROM WALL TO WALL.

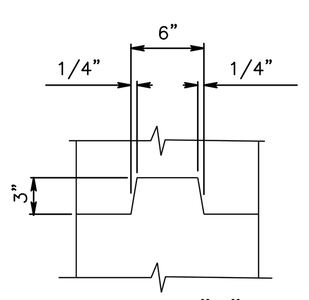
NOTE B: PROVIDE ADDITIONAL BARS AS REQUIRED BY DESIGN WHEN OPENING IN WALL IS PRESENT (TYP).

SECTION A-A




DETAIL "A"
CONSTRUCTION JOINT

SEE NOTE 6, SHEET 1

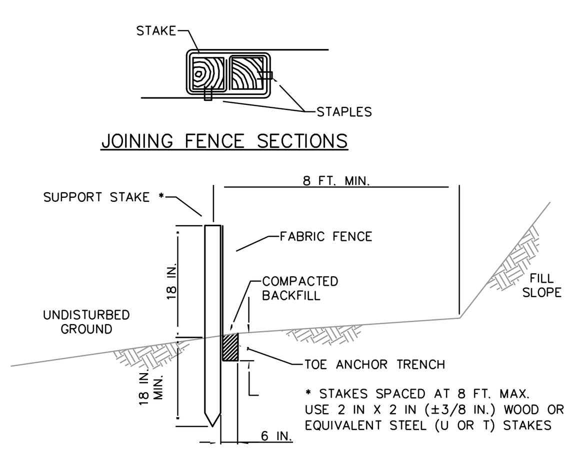



DETAIL "B"
KEYWAY

SEE NOTE 6, SHEET 1

## MODIFIED STORM MANHOLE FOR PIPES GREATER THAN 30" INSIDE DIAMETER

NOT TO SCALE




NOTES:

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.

FABRIC WIDTH SHALL BE 30 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES.

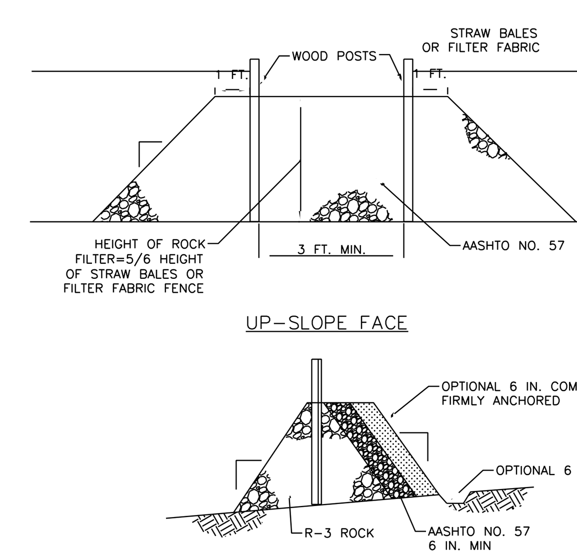
SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (STANDARD CONSTRUCTION DETAIL # 4-6).

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

STANDARD CONSTRUCTION DETAIL #4-7
STANDARD SILT FENCE (18" HIGH)

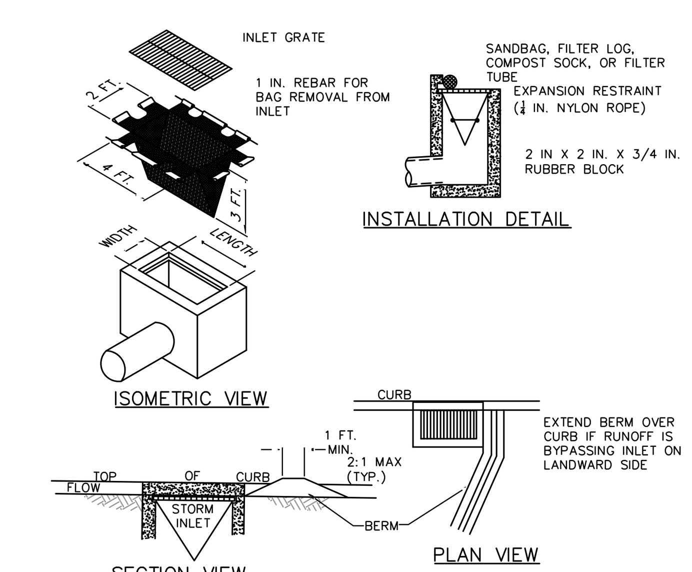



NOTES:

A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

STANDARD CONSTRUCTION DETAIL #4-6
ROCK FILTER OUTLET




NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-15
FILTER BAG INLET PROTECTION - TYPE C INLET

NOT TO SCALE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