

# *PUBLIC IMPROVEMENTS*

FOR

## *BRISTOL TOWNSHIP*

# *MARIE LOWE DRIVE COMMUNITY CENTER*

*BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA*



LOCATION MAP

500 00 500 1000  
SCALE IN FEET

SCALE: 1"=500'



DATE: 05/31/2022



DATE: 05/31/2022

**GILMORE & ASSOCIATES, INC.**  
ENGINEERING & CONSULTING SERVICES

LUXEMBOURG CORPORATE CENTER  
508 CORPORATE DRIVE WEST, LANGHORNE, PA 19047 • (215) 369-3955 • www.gilmore-assoc.com

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**GILMORE & ASSOCIATES, INC.**  
ENGINEERING & CONSULTING SERVICES  
PROJECT NUMBER: 21-07025

PLAN DATE: 5/5/2022  
LAST REVISED: 5/5/2022

SHEET NO.:  
1 OF 10

I:\municipal\Bristol\_Township\_2021\2107025-BT\_1248 Marie Lowe Drive Community Center - Public Improvements\02 DRAWING FILES\CAD\Production Drawings\2107025\_COVER.dwg Layout: COVER SHEET Plotted By: skennedy, on Thu Jun 23, 2022 at 9:38am

T:\municipal\Bristol\_Township\_2021\2107025-BT\_1248 Marie Lowe Drive Community Center - Public Improvements\02 DRAWING FILES\CAD\Production Drawings\2107025-General Notes.dwg Layout: GENERAL NOTES Plotted By: dkennedy, on Thu Jun 23, 2022 at 9:38am

**GENERAL NOTES:**

- 1. THESE GENERAL NOTES APPLY TO ALL PLANS, SPECIFICATIONS, AND WORK ASSOCIATED WITH THIS PROJECT.
2. EXISTING FEATURES BACKGROUND AND EXISTING CONDITIONS INFORMATION IS BASED UPON SURVEY PERFORMED BY GILMORE & ASSOCIATES IN 2021. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD.
3. LOCATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM RECORDS.
4. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO START OF WORK.
5. SITE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES WHETHER SHOWN ON THE PLANS OR NOT.
6. DO NOT SCALE DRAWINGS. ALL MEASUREMENTS SHALL BE TAKEN FROM DIMENSIONS SHOWN ON THE DRAWING.
7. INSTALL ALL MANUFACTURED ITEMS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
8. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL BE RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE O.S.H.A.
9. THE GENERAL CONTRACTOR AND ELECTRICAL CONTRACTOR ARE RESPONSIBLE FOR PROVIDING THE APPROPRIATE CONTRACT DOCUMENTS.
10. THE GENERAL, ELECTRICAL, AND/OR MEP CONTRACTOR AND SUBCONTRACTORS SHALL COORDINATE AND COMPLY WITH ALL UTILITY COMPANY REGULATIONS AND REQUIREMENTS FOR UTILITIES AFFECTED BY THE PROJECT.
11. THE CONTRACTOR(S) SHALL OBTAIN ALL PERMITS RELATING TO THIS PROJECT PRIOR TO CONSTRUCTION.
12. IT IS THE RESPONSIBILITY OF ALL CONTRACTORS TO MEET ALL OF THE REQUIREMENTS OF FEDERAL, STATE, AND LOCAL AUTHORITIES.
13. IN THE CASE OF CONFLICT BETWEEN ANY PART OF THESE PLANS, THE SPECIFICATIONS, OR THE CONTRACT DOCUMENTS,
14. ALL WORK WITHIN A RIGHT OF WAY (R.O.W.) OR EASEMENT SHALL BE DONE IN ACCORDANCE WITH THE AGENCY OR ENTITY HAVING JURISDICTION OR OWNERSHIP OF THAT R.O.W. OR EASEMENT.
15. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR(S) TO PROTECT EXISTING STRUCTURES AND FACILITIES.
16. THE CONTRACTOR(S) SHALL PROVIDE POSITIVE PROTECTION (MAT/SHEET COVERINGS) FOR ALL EXPOSED EXCAVATIONS TO PROTECT FROM INSTABILITY AND DETERIORATION DUE TO RAIN, WIND OR SNOWICE.
17. THE CONTRACTOR SHALL PROVIDE SURFACE DRAINAGE CHANNELS OR DIVISION DIKES, SUMPS AND SUMP PUMPS AND/OR OTHER DEWATERING MEASURES AS REQUIRED TO PROTECT ALL EXCAVATIONS FROM FLOODING.
18. ALL ORGANIC, WET, SOFT AND/OR OTHER UNSUITABLE MATERIALS SHALL BE REMOVED FROM PAVEMENT SUBGRADE AND BACKFILLED WITH SUITABLE GRANULAR, FREE DRAINING MATERIAL.
19. THE CONTRACTOR(S) SHALL MAINTAIN ALL EROSION CONTROLS DURING CONSTRUCTION, AND COMPLY WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLANS AND ASSOCIATED PERMIT REQUIREMENTS.
20. THE CONTRACTOR(S) SHALL ERECT PROTECTIVE DEVICES, SUCH AS TEMPORARY CHAIN-LINK FENCING, TO PROTECT THE SITE FROM UNAUTHORIZED PERSONS FROM ENTERING THE WORK SITE.
21. THE CONTRACTOR(S) ARE RESPONSIBLE FOR THE PROTECTION OF EXISTING TREES TO REMAIN.
22. IF IT BECOMES NECESSARY TO CLOSE A PORTION OF THE ADJACENT STREET OR SIDEWALK DURING CONSTRUCTION,
23. THE CONTRACTOR(S) SHALL KEEP ALL PUBLIC AREAS CLEAN OF DEBRIS ON A DAILY BASIS.
24. ALL MATERIAL REMOVED FROM THE PROJECT SITE SHALL BE DISPOSED OF IN A LAWFUL MANNER ACCORDING TO APPLICABLE LOCAL, STATE, AND/OR FEDERAL REGULATIONS.

**GRADING AND DRAINAGE NOTES:**

- 1. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES.
2. UNLESS OTHERWISE NOTED, A MAXIMUM SLOPE SHALL NOT EXCEED 3:1 (H:V) OR 33% FOR NON-PAVED SURFACES.
3. UNLESS OTHERWISE NOTED, ALL WALKWAYS SHALL COMPLY WITH THE MOST RECENT PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT.
4. GRADE EARTHEN, NON-PAVED, SURFACES TO A SMOOTH FINISH.
5. GRADE ALL SEEDED FINE LAWN AREAS FLUSH WITH FINISH GRADE.
6. GRADE ALL TREE/SHRUB/GROUNDCOVER PLANTING BEDS TO 3 INCHES BELOW TOP OF ABUTTING CURBS.
7. REFER TO PLANTING PLAN FOR ADDITIONAL NOTES.
8. ADJUST EXISTING AND NEW MANHOLE, CATCH BASINS, AND DRAINS RIM/GRATE ELEVATIONS TO NEW GRADE ELEVATIONS (PAVEMENT OR SOIL).
9. ELIMINATE ROUGH AND LOW AREAS TO ENSURE POSITIVE DRAINAGE.
10. PIPE SLOPES ARE APPROXIMATE; CONTRACTOR SHALL USE INVERTS TO INSTALL GRAVITY LINES.
11. FINISHED SURFACES SHALL BE GRADED SMOOTH AND EVEN WITH NO ABRUPT OR AWKWARD CHANGES IN GRADE.
12. NOTIFY THE ENGINEER IMMEDIATELY IF SLOPE REQUIREMENTS CANNOT BE MET.
13. PLANS INDICATE ALL FINISH GRADE ELEVATIONS.
14. COORDINATE GRADING WORK WITH WORK OF OTHER TRADES OR WORK BY OTHERS AS REQUIRED TO COMPLETE THE PROJECT.

**GENERAL LANDSCAPING NOTES:**

- 1. PLANT MATERIAL SHALL BE FURNISHED AND INSTALLED AS INDICATED INCLUDING ALL LABOR, MATERIALS, PLANTS EQUIPMENT, INCIDENTALS AND CLEAN UP.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT.
3. PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY.
4. ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE OF THE PLANT MATERIAL, SHALL BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION OF PLANT MATERIAL.
5. ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRA 18 MONTHS (1.5 YEARS) FOR TREES AND SHRUBS.
6. PLANT MATERIALS SHALL BE PLANTED ON THE DAY OF DELIVERY.
7. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH THE MOST RECENT "AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMAN INC., OR LATEST EDITION.
8. ALL PLANTS SHALL BE PLANTED IN TOPSOIL THAT IS THOROUGHLY WATERED AND TAMPED AS BACK FILLING PROGRESSES.
9. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE.
10. SET ALL PLANTS PLUMB AND STRAIGHT.
11. EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICE TO PRESERVE NATURAL CHARACTER OF THE PLANT.
12. LANDSCAPE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO PLACEMENT OF LANDSCAPE MATERIAL.
13. PLAN QUANTITIES SUPERSEDE PLANT LIST.
14. PLANTING PLAN SHALL BE USED FOR PLANT AND LANDSCAPE INSTALLATION ONLY.

**SITE LAYOUT NOTES:**

- 1. VERIFY ALL DIMENSIONS AND ACCEPT SITE CONDITIONS PRIOR TO COMMENCING WORK.
2. ALL DIMENSIONS ARE FROM FACE OF BUILDING/CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
3. ALL ANGLES ARE 90 DEGREES UNLESS OTHERWISE NOTED.
4. ALL RADII AND DIMENSIONS ARE TO THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL UNLESS OTHERWISE NOTED WITH (B-B), WHICH INDICATES BACK OF CURB, WALL, ETC.
5. THE OWNER SHALL PROVIDE CONTROL AND REFERENCE POINTS FOR THE SITE TO THE CONTRACTOR WHO WILL PROVIDE THEIR OWN SURVEY STAKEOUT.
6. THE NEW PAVING SHALL PROVIDE A SMOOTH TRANSITION TO EXISTING PAVING WITHOUT ABRUPT CHANGE IN GRADE.
7. MAINTAIN POSITIVE DRAINAGE AND ELIMINATE LOW SPOTS.
8. ENSURE ALL WALKWAYS ARE ADA COMPLIANT.

**GENERAL UTILITY TRENCHING NOTES:**

- 1. LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS 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, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
3. ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
4. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
5. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT AND / OR BACKFILLING BEGINS.
6. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.
7. SOILS EXCAVATED FROM EXISTING SURFACE LAYER SHOULD BE STOCKPILED SEPARATELY AND RETURNED AS FINAL SURFACE LAYER FOLLOWING TRENCH BACKFILLING.
8. PLACE SILT FENCE DOWN-SLOPE OF THE PROPOSED TRENCHING ACTIVITIES.
9. TOPSOIL SHALL BE REMOVED AND STOCKPILED SEPARATELY FROM BACKFILL SOILS.
10. REMOVE SILT FENCE AFTER AREA IS STABILIZED.

**DEMOLITION NOTES:**

- 1. THE CONTRACTOR(S) SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. IN ACCORDANCE WITH PENNSYLVANIA STATE LAW, NOTIFY ALL UTILITY COMPANIES (1-800-242-1776 PENNSYLVANIA ONE CALL SYSTEM) AT LEAST (3) THREE BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION.
3. THE CONTRATOR(S) SHALL OBTAIN ALL REQUIRED/PERTINENT PERMITS FOR THIS WORK AND COMPLY AND ADHERE TO ALL APPLICABLE REGULATIONS SET FORTH.
4. PERFORM DEMOLITION WORK IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND/OR FEDERAL REGULATIONS AND ORDINANCES AND WITH NATIONAL STANDARD SAFETY REQUIREMENTS FOR DEMOLITION.
5. DO NOT INTERFERE WITH THE USE OF ADJACENT BUILDING OR SITE AREAS.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR(S) TO PROTECT EXISTING STRUCTURES AND FACILITIES.
7. PREVENT MOVEMENT, SETTLEMENT, OR DAMAGE TO ADJACENT WALKWAYS, PAVEMENT, STRUCTURES, OR OTHER SITE ELEMENTS TO REMAIN.
8. PROTECT ALL EXISTING PLANT MATERIALS FROM DAMAGE UNLESS THEY ARE INDICATED TO BE REMOVED.
9. PROVIDE, ERECT AND MAINTAIN BARRICADE AND LIGHTING AS REQUIRED BY APPLICABLE REGULATION TO PROTECT OCCUPANTS OF BUILDING/FACILITY AND WORKERS.
10. DEMOLISH AND REMOVE WORK IN A MANNER WHICH ALLOWS FOR INTRODUCTION OF NEW ADJACENT WORK WITHOUT DAMAGING EDGE CONDITIONS TO THE EXISTING WORK.
11. DEMOLITION OF EXISTING UTILITIES INCLUDES THE REMOVAL OF PIPE, UTILITY STRUCTURES, DRAINS, MANHOLES, ENCASEMENT, FITTINGS, VALVES, ETC.
12. DISPOSE OF ALL UNUSABLE MATERIAL AND DEBRIS RESULTING FROM THE WORK OFF OF THE SITE AND THE WORK AREAS CLEAN AND READY FOR NEW WORK.
13. MAINTAIN UTILITY SERVICES TO ACTIVE EXISTING BUILDINGS AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PERIOD.
14. ALL UTILITIES NOT SCHEDULED/INDICATED FOR DEMOLITION WITHIN THE LIMIT OF DEMOLITION/WORK AREA SHALL BE PROTECTED AND MAINTAINED DURING CONSTRUCTION.
15. SEE EROSION AND SEDIMENTATION CONTROL PLANS, NOTES AND DETAILS FOR EROSION CONTROL MEASURES AND CONSTRUCTION SEQUENCE.
16. ALL MATERIALS DEMOLISHED, UNLESS IDENTIFIED TO BE SAVED OR SALVAGED (CONCRETE, PAVING, ROOT MAT, FENCING AND ALL OTHER DEBRIS) SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PER FEDERAL, STATE, AND LOCAL REGULATIONS.
17. ALL MATERIALS IDENTIFIED TO BE SALVAGED SHALL BE REMOVED WITH CARE TO PREVENT AND MINIMIZE DAMAGE AND SHALL BE STORED ON-SITE FOR REUSE OR FOR RETRIEVAL BY OWNER OR THE OWNER'S REPRESENTATIVE.
18. ALL QUANTITIES OF DEMOLITION SHALL BE DETERMINED BY THE CONTRACTOR AND COVERED IN THE BASE BID.
19. SAWCUT AND TRIM ALL EXISTING CONCRETE AND ASPHALT PAVEMENT EDGES PRIOR TO INSTALLING NEW PAVING.
20. ALL EXCAVATED MATERIALS REMOVED FROM THE SITE SHALL BE DISPOSED OF IN A LAWFUL MANNER.

GILMORE & ASSOCIATES, INC. ENGINEERING & CONSULTING SERVICES. 506 CORPORATE DRIVE, SUITE 110, LANCASTER, PA 17602-1000. www.gilmore-associ.com. ONLY THOSE PLANS INCORPORATING THE PROFESSIONAL SEAL SHOULD BE CONSIDERED OFFICIAL AND RELIED UPON BY USER.



TAX MAP PARCEL NO.: 05-061-499/498. MUNICIPAL FILE NO.: NOT APPLICABLE. JOB NO.: 21-07025. DESIGNED BY: LCR/MDS. DRAWN BY: LCR/MDS. CHECKED BY: RMS. SCALE: 1"=20'. TOTAL AREA: .51 AC. DATE: 5/5/2022.

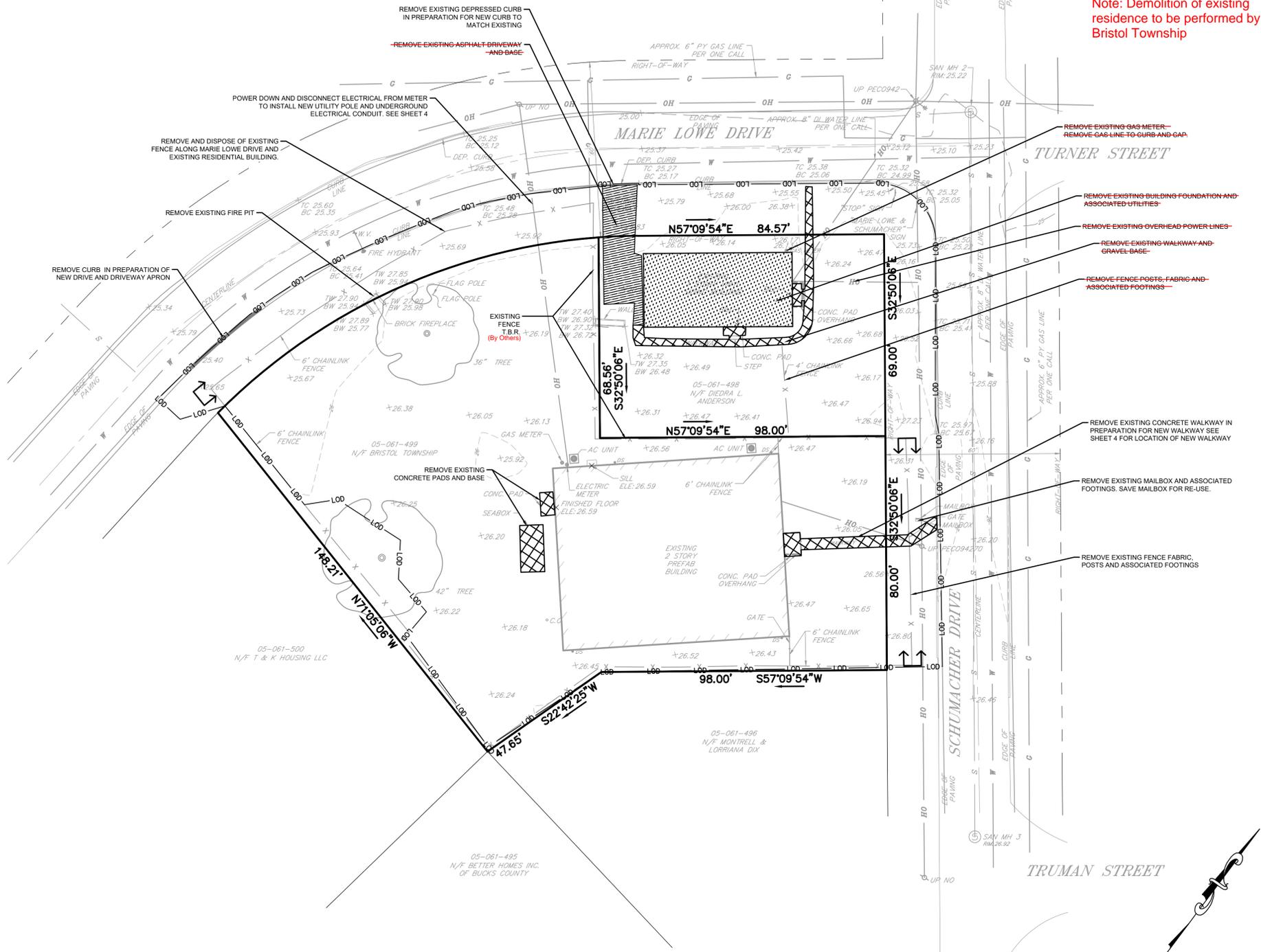
OWNER: BRISTOL TOWNSHIP, 2301 BATH ROAD, BRISTOL, PA 19007, 215-785-0600. PUBLIC IMPROVEMENTS GENERAL NOTES. TAX MAP PARCEL NO.: 05-061-499/498.

MARIE LOWE DRIVE COMMUNITY CENTER. BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA.

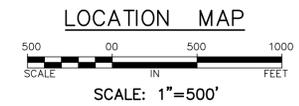
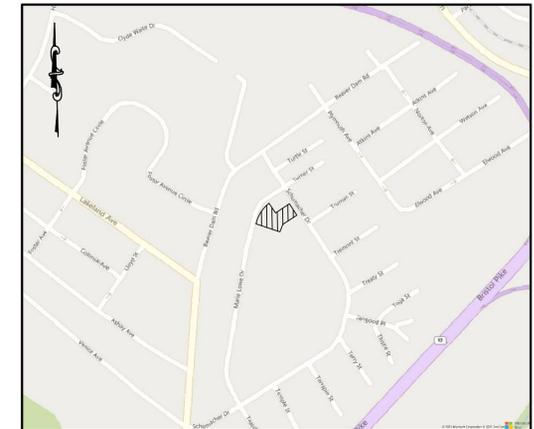
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Note: Demolition of existing residence to be performed by Bristol Township



**GENERAL SURVEY NOTES:**

- PROPERTY KNOWN AS TAX PARCEL 05-061-499 AS SHOWN ON THE TAX MAP OF THE TOWNSHIP OF BRISTOL, COUNTY OF BUCKS, COMMONWEALTH OF PENNSYLVANIA.
- CONTAINING 22,353.57 SQ FT AND/OR 0.51 ACRES, GROSS, MORE OR LESS.
- THIS SURVEY IS BASED ON A FIELD SURVEY PERFORMED BY GILMORE & ASSOCIATES, INC. IN AUGUST OF 2021 AND THE REFERENCED INFORMATION LISTED HEREON. IT WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT.
- SUBJECT TO COVENANTS, RESTRICTIONS AND/OR EASEMENTS EITHER WRITTEN OR IMPLIED.
- VERTICAL DATUM IS NAVD83 AND WAS ESTABLISHED BY THE GLOBAL POSITIONING SYSTEM (GPS) WITH OBSERVATIONS REFERENCED TO THE KEYNET-GPS VIRTUAL REFERENCE STATION SYSTEM.
- HORIZONTAL DATUM IS BASED ON THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (NAD 83) ESTABLISHED BY GLOBAL POSITIONING SYSTEM (GPS) WITH OBSERVATIONS REFERENCED TO THE KEYNET-GPS VIRTUAL REFERENCE STATION SYSTEM.

**REFERENCES:**

- TAX MAP FOR THE TOWNSHIP OF BRISTOL, COUNTY OF BUCKS, COMMONWEALTH OF PENNSYLVANIA.
- PLAN ENTITLED "DEVELOPMENT PLAN FOR KBS INC", PREPARED BY JOSEPH H. MIXNER, DATED OCTOBER 22, 1985 AND LAST REVISED JANUARY 22, 1987.

**LEGEND**

**EXISTING CONDITION SYMBOLS**

- EXISTING CONTOUR - MAJOR
- EXISTING UNDERGROUND WATER SERVICE
- EXISTING OVERHEAD ELECTRICAL LINE/SERVICE
- EXISTING UNDERGROUND ELECTRICAL LINE/SERVICE
- EXISTING UNDERGROUND DRAINAGE PIPING
- EXISTING WATER VALVE
- EXISTING EDGE OF WOODS
- EXISTING TREE

**REMOVALS LEGEND**

- LIMIT OF DISTURBANCE
- EXTENTS OF FENCE REMOVAL
- SAWCUT EXISTING ASPHALT
- REMOVE CONCRETE PAVEMENT
- REMOVE ASPHALY PAVEMENT

- NOTES:
- DEMOLISH ALL EXISTING FEATURES IN CONFLICT WITH THE PROPOSED WORK UNLESS OTHERWISE SPECIFIED FOR REUSE.
  - CONTRACTOR TO RESPONSIBLY HAUL AND DISPOSE OF ALL MATERIALS IN A LEGAL AND AUTHORIZED FASHION.

1 EXISTING CONDITIONS AND DEMOLITION PLAN  
3

PENNSYLVANIA ONE CALL SYSTEM, INC.



BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA CALL 1-800-242-1776  
NON-MEMBERS MUST BE CONTACTED DIRECTLY  
PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH  
SERIAL NO.

LOCATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM RECORDS, FIELD MARKOUTS BY UTILITY OWNERS, AND/OR ABOVE-GROUND OBSERVATION OF THE SITE. NO EXCAVATIONS WERE PERFORMED IN THE PREPARATION OF THESE DRAWINGS; THEREFORE ALL UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE IN LOCATION, DEPTH, AND SIZE. THE POTENTIAL EXISTS FOR OTHER UNDERGROUND UTILITIES/FACILITIES TO BE PRESENT WHICH ARE NOT SHOWN ON THE DRAWINGS. ONLY THE VISIBLE LOCATIONS OF UNDERGROUND UTILITIES/FACILITIES AT THE TIME OF FIELD SURVEY SHALL BE CONSIDERED TRUE AND ACCURATE. COMPLETENESS OR ACCURACY OF UNDERGROUND UTILITIES/FACILITIES ARE NOT GUARANTEED BY GILMORE & ASSOCIATES INC.

ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287, DECEMBER 10, 1974 AS LAST AMENDED ON APRIL 28, 2018 PENNSYLVANIA ACT 50. GILMORE & ASSOCIATES INC. HAS OBTAINED A PA-ONE CALL SERIAL NUMBER AS NOTED HEREON FOR DESIGN PURPOSES ONLY.

**GILMORE & ASSOCIATES, INC.**  
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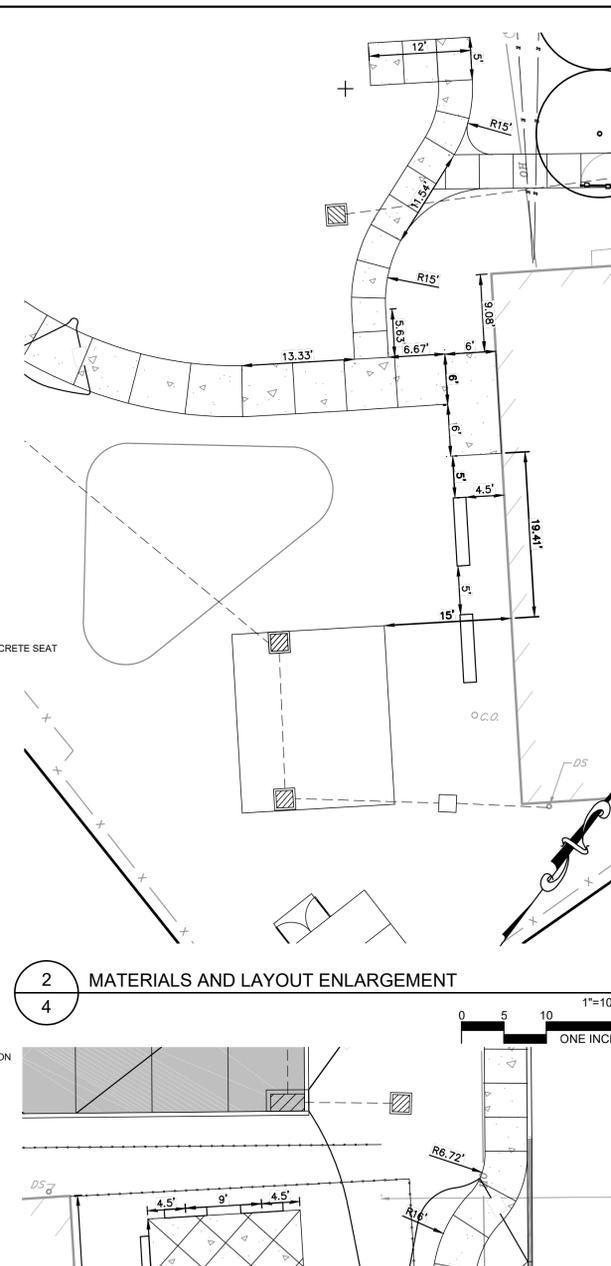
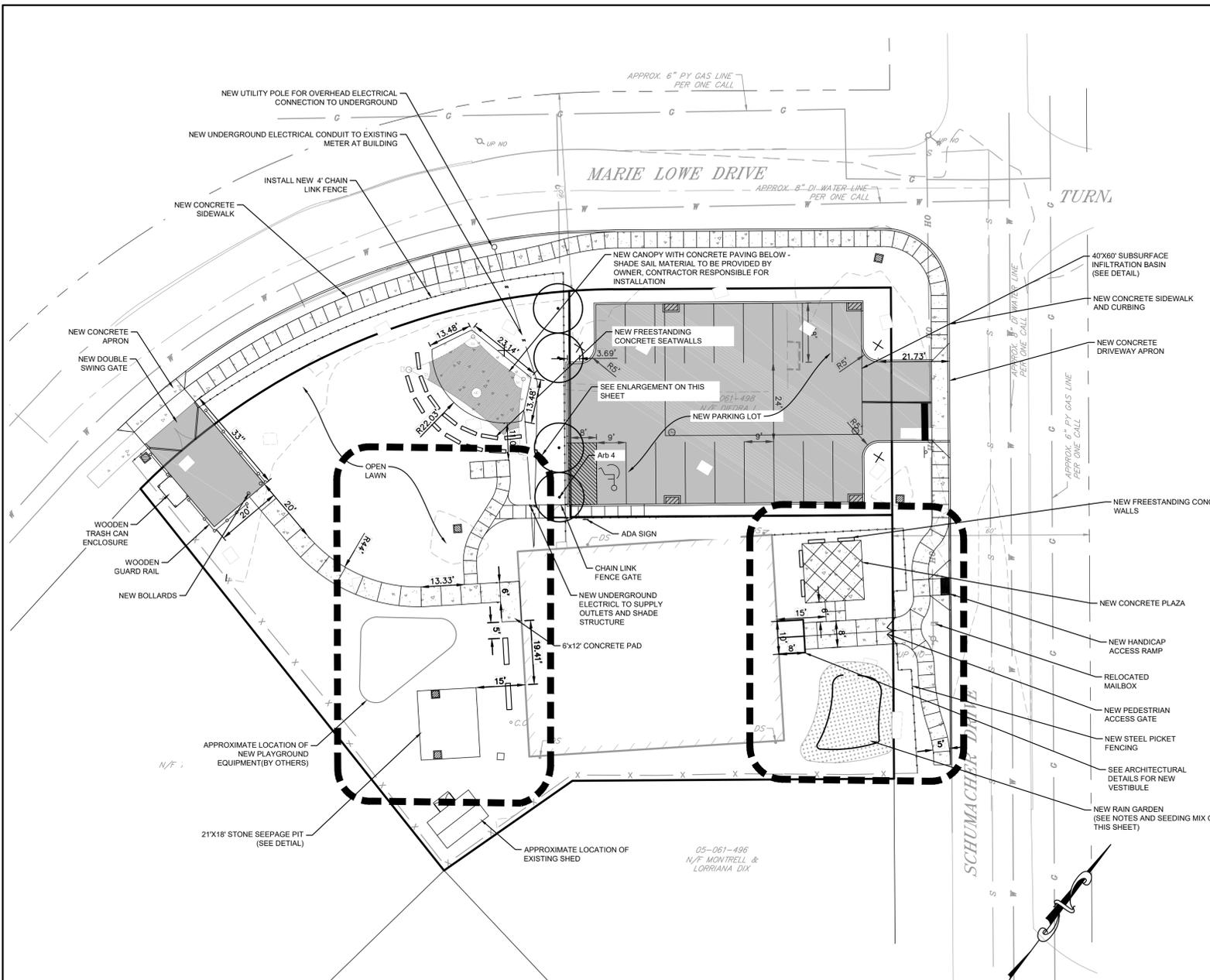
TAX MAP PARCEL NO.: 05-061-499/498  
MUNICIPAL FILE NO.: NOT APPLICABLE  
JOB NO.: 21-07025  
OWNER: BRISTOL TOWNSHIP, 2501 BATH ROAD, BRISTOL, PA 19007

TOTAL AREA: .51 AC  
DATE: 5/15/2022  
SCALE: 1"=20'

PUBLIC IMPROVEMENTS  
EXISTING CONDITIONS & DEMOLITION PLAN  
**MARIE LOWE DRIVE CENTER**  
BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV.	DESCRIPTION	DATE	BY

ISSUED FOR BID



### LEGEND : MATERIALS

- NEW FENCING
- NEW CONCRETE
- NEW ASPHALT
- RAIN GARDEN

### PLANTING PALETTE

Perennial/Grasses	Key	Qty.	Botanical Name	Common Name	Size	Root	Spacing
Arb	5	Acer Rubrum 'Bowhall'	Bowhall Red Maple	2.5' Cal	B&B	SEE PLAN	

### PERMANENT TURF SEED MIX

SEED TYPE	POPORTION BY WIEGHT	MINIMUM PURITY	MINIMUM GERMINATION
TURF-TYPE TALL FESCUE	60%	95%	80%
PERENNIAL RYE GRASS	30%	95%	85%
KENTUCKY BLUE GRASS	10%	90%	80%

## 1 MATERIALS & LAYOUT PLAN

### ERNST NATIVE DETENTION AREA MIX - ERNMX-183

BOTANICAL NAME	COMMON NAME
32.00% Panicum clandestinum 'Tioga'	'Tioga' Deertongue
20.00 % Carex vulpinoidea, PA Ecotype	Fox Sedge, PA Ecotype
20.00 % Elymus virginicus, PA Ecotype	Virginia Wildrye, PA Ecotype
20.00 % Panicum virgatum, 'Shawnee'	'Shawnee' Switchgrass
4.00 % Agrostis perennans, Albany Pine Bush-NY Ecotype	Autumn Bentgrass Albany Pine Bush-NY Ecotype
2.00 % Juncus tenuis, PA Ecotype	Path Rush, PA Ecotype
1.00 % Juncus effusus	Soft Rush
1.00 % Panicum rigidulum, PA Ecotype	Redtop Panicgrass, PA Ecotype

SEEDING RATE: 20LB/ACRE

### SEED MIX ESTABLISHMENT SPECIFICATIONS

- INSTALLATION:  
 SPRAY AREAS TO BE SEEDED WITH A SYSTEMIC HERBICIDE ONE (1) MONTH PRIOR TO THE INSTALLATION OF THE SPECIFIED SEED MIXTURE. AFTER TWO (2) WEEKS OF HERBICIDE APPLICATION, AREAS TO BE SEEDED SHALL BE TREATED AGAIN IF PERSISTANT WEEDS RE-GERMIMATE. ONLY AFTER ALL EXISTING VEGETATION TO BE REMOVED IS ERRADICATED SHALL THE FOLLOWING SEED INSTALLATION STEPS TAKE PLACE:
- ALL AREAS TO BE SEEDED SHALL BE CLEARED OF ALL REMAINING DEBRIS AND VEGETATION.
  - TILL ALL AREAS TO BE SEEDED TO A MINIMUM DEPTH OF FOUR (4) INCHES, AND ADD ANY SPECIFIED SOIL AMENDMENTS TO THE TILLED AREAS.
  - SPREAD SEED AT RECOMMENDED RATE EVENLY ACROSS THE ENTIRE SITE.
  - FINE RAKE ALL AREAS PREVIOUSLY SEEDED TO ENSURE GOOD SOIL TO SEED CONTACT.
  - LAY DOWN JUTE MAT TO REDUCE EROSION.
  - WATER ENTIRE AREA THOROUGHLY, AVOID OVER WATERING.
- FIRST YEAR MAINTENANCE:  
 SEED MIXTURE SHALL BE INSPECTED FOR INVASIVE WEED SPECIES. IF WEED SPECIES APPEAR IN THE SEEDED AREA SPOT TREAT BY PULLING. ALLOW SEED MIXTURE TO REACH A HEIGHT OF 12-18 INCHES IN HEIGHT, MOW TO A HEIGHT OF APPROXIMATELY SIX (6) INCHES WITH A WEED EATER.
- SECOND YEAR MAINTENANCE:  
 MOW ONCE IN SPRING AS CLOSE TO GROUND AS POSSIBLE. ALLOW PLANTS TO GROW TO FULL HEIGHT.
- CONSECUTIVE FOLLOWING YEARS:  
 MOW EVERY OTHER YEAR AND SPOT TREAT INVASIVE PLANT SPECIES.

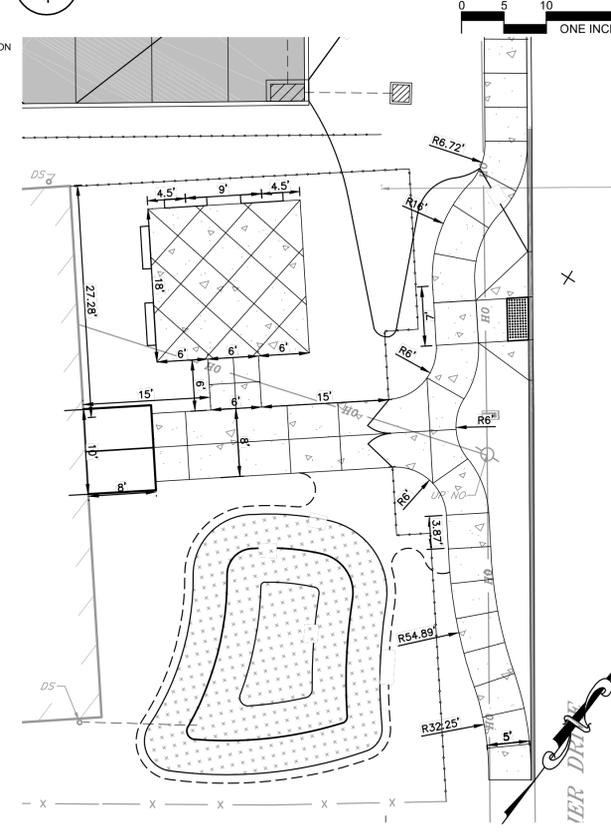
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PAENNSYLVANIA ONE CALL SYSTEM, INC.  
 925 Irwin Run Road  
 West Mifflin, Pennsylvania  
 15122 - 1078

ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287, DECEMBER 10, 1974 AS LAST AMENDED ON APRIL 28, 2018 PENNSYLVANIA ACT 50. GILMORE & ASSOCIATES INC. HAS OBTAINED A PA-ONE CALL SERIAL NUMBER AS NOTED HEREON FOR DESIGN PURPOSES ONLY.

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776  
 NON-MEMBERS MUST BE CONTACTED DIRECTLY  
 PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH  
 SERIAL NO. #####

## 2 MATERIALS AND LAYOUT ENLARGEMENT



## 3 MATERIALS AND LAYOUT ENLARGEMENT



**GILMORE & ASSOCIATES, INC.**  
 ENGINEERING & CONSULTING SERVICES  
 506 CORPORATE DRIVE WEST, LANCASTER, PA 17602  
 WWW.GILMORE-ASSOC.COM



LOBB NO.: 21-07025  
 TAX MAP PARCEL NO.: 05-061-499/49B  
 MUNICIPAL FILE NO.: NOT APPLICABLE

OWNER: BRISTOL TOWNSHIP  
 2501 BATH ROAD  
 BRISTOL, PA 19007  
 215-785-0500

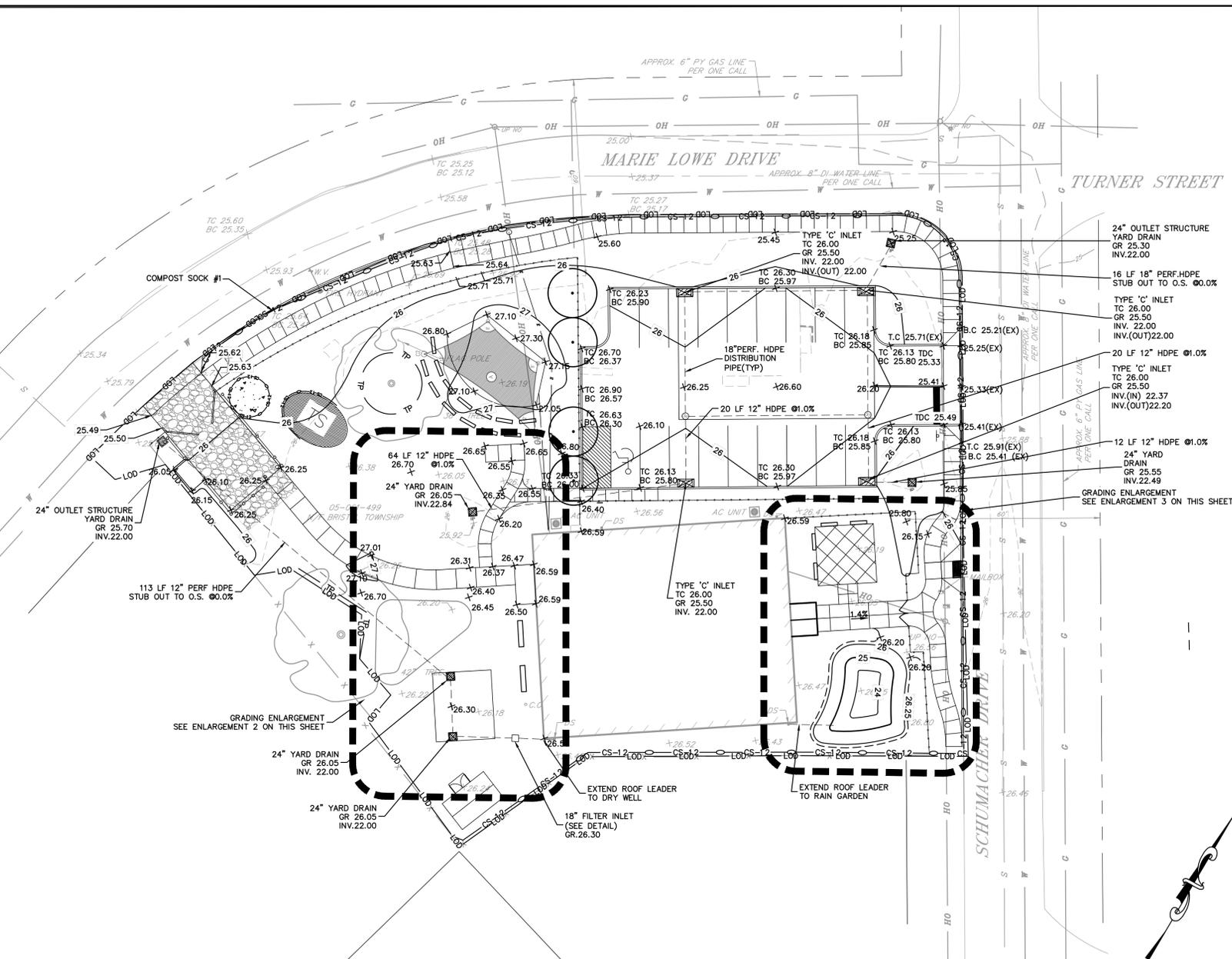
TOTAL AREA: .51 AC  
 TOTAL LOTS: 1  
 DATE: 5/5/2022  
 SCALE: 1"=20'

PUBLIC IMPROVEMENTS  
 SITE PLAN  
**MARIE LOWE DRIVE COMMUNITY CENTER**  
 BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

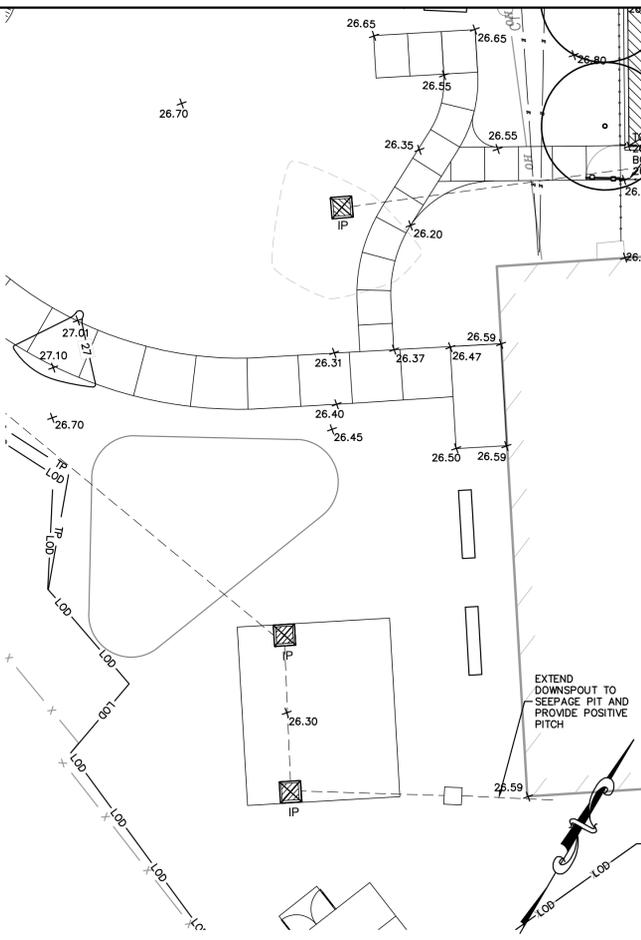
REV.	DESCRIPTION	DATE	BY

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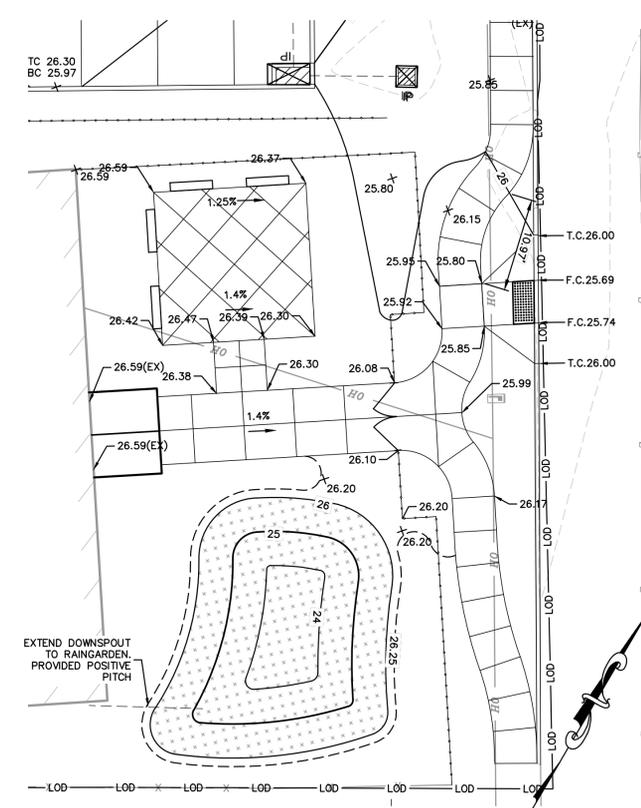
T:\municipal\Bristol\_Township\2021\2107025-BT\_1248 Marie Lowe Drive Community Center - Public Improvements\02\_DRAWING FILES\CAD\Production Drawings\2107025\_GRADING\_DRAINAGE & EROSION CONTROL.dwg Layout: GRADING-DRAINAGE & EROSION CONTROL Plotted By: dkennedy, on Thu Jun 23, 2022 at 9:39am



1 OVERALL GRADING PLAN  
5



2 GRADING ENLARGEMENT  
5



3 GRADING ENLARGEMENT  
5

- LEGEND : MATERIALS**
- EXISTING 1FT CONTOUR
  - PROPOSED 1FT CONTOUR
  - LOO- PROPOSED 1FT CONTOUR
  - 26.53 SPOT ELEVATION
  - 4" HDPE UNDERDRAIN
  - DIRECTIONAL FLOW ARROW

- LEGEND : E&S**
- (TS) TOPSOIL STOCKPILE
  - (CWS) CONCRETE WASHOUT STATION
  - CS-12- 12" COMPOST SOCK
  - (RCE) ROCK CONSTRUCTION ENTRANCE
  - (IP) INLET PROTECTION

LOCATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM RECORDS, FIELD MARKOUTS BY UTILITY OWNERS, AND/OR ABOVE-GROUND OBSERVATION OF THE SITE. NO EXCAVATIONS WERE PERFORMED IN THE PREPARATION OF THESE DRAWINGS; THEREFORE ALL UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE IN LOCATION, DEPTH, AND SIZE. THE POTENTIAL EXISTS FOR OTHER UNDERGROUND UTILITIES/FACILITIES TO BE PRESENT WHICH ARE NOT SHOWN ON THE DRAWINGS. ONLY THE VISIBLE LOCATIONS OF UNDERGROUND UTILITIES/FACILITIES AT THE TIME OF FIELD SURVEY SHALL BE CONSIDERED TRUE AND ACCURATE. COMPLETENESS OR ACCURACY OF UNDERGROUND UTILITIES/FACILITIES ARE NOT GUARANTEED BY GILMORE & ASSOCIATES INC.

ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287 DECEMBER 10, 1974 AS LAST AMENDED ON APRIL 28, 2018 PENNSYLVANIA ACT 50. GILMORE & ASSOCIATES INC. HAS OBTAINED A PA-ONE CALL SERIAL NUMBER AS NOTED HEREON FOR DESIGN PURPOSES ONLY.

PENNSYLVANIA ONE CALL SYSTEM, INC.

925 Irwin Run Road  
West Mifflin, Pennsylvania  
15122 - 1078

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776. NON-MEMBERS MUST BE CONTACTED DIRECTLY. PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH.

SERIAL NO. #####

**GILMORE & ASSOCIATES, INC.**  
ENGINEERING & CONSULTING SERVICES

506 CORPORATE DRIVE SUITE 100, BRISTOL TOWNSHIP, PA 19007  
PH: 610-326-3666 FAX: 610-326-3668 WWW.GILMORE-ASSOC.COM

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**TAX MAP PARCEL NO.:** 05-061-499/498  
**MUNICIPAL FILE NO.:** NOT APPLICABLE

**OWNER:** BRISTOL TOWNSHIP  
2500 BATH ROAD  
BRISTOL, PA 19007  
215-785-0500

**TOTAL AREA:** 1.51 AC  
**DATE:** 5/15/2022

**SCALE:** 1"=20'

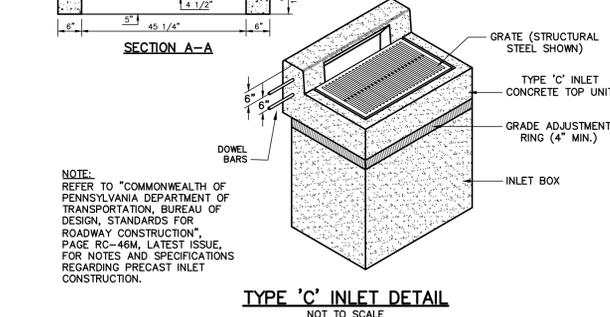
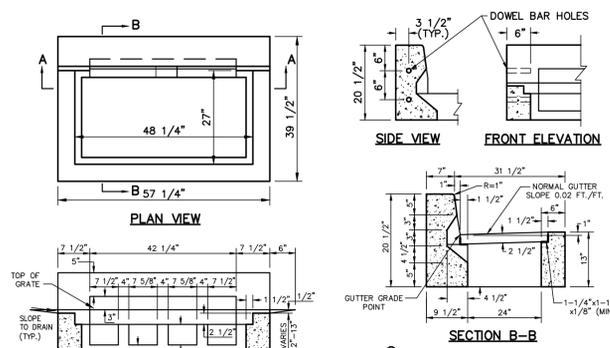
**DESIGNED BY:** LCR/MDS  
**DRAWN BY:** LCR/MDS  
**CHECKED BY:** RIMS

**PROJECT:** PUBLIC IMPROVEMENTS  
GRADING-DRAINAGE & EROSION CONTROL  
**MARIE LOWE DRIVE CENTER**  
BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV.	DESCRIPTION	DATE	BY

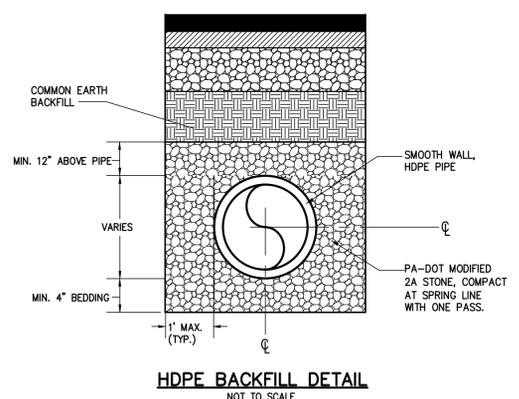
SHEET NO.: 5 OF 10

T:\municipal\Bristol\_Township\_2021\2107025-T\_1248 Marie Lowe Drive Community Center - Public Improvements\02 DRAWING FILES\CAD\Production Drawings\2107025 GRADING AND DRAINAGE Details\02.dwg Layout: GRADING AND DRAINAGE Details Plotted By: dmenedy, on Thu Jun 23, 2022 at 9:38am

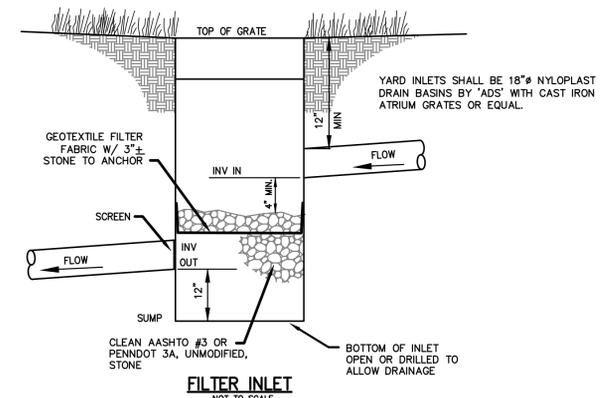


**TYPE 'C' INLET DETAIL**  
NOT TO SCALE

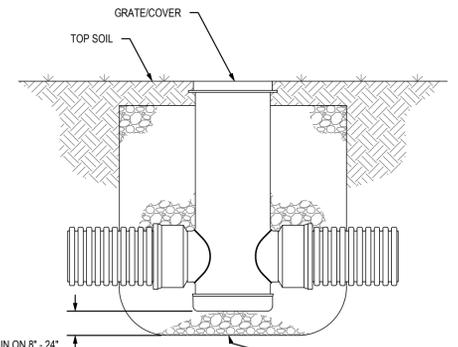
NOTE: REFER TO "COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION, BUREAU OF DESIGN, STANDARDS FOR ROADWAY CONSTRUCTION", PAGE RC-46M, LATEST ISSUE, FOR NOTES AND SPECIFICATIONS REGARDING PRECAST INLET CONSTRUCTION.



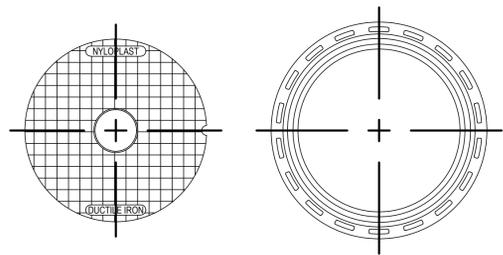
**HDPE BACKFILL DETAIL**  
NOT TO SCALE



**FILTER INLET**  
NOT TO SCALE



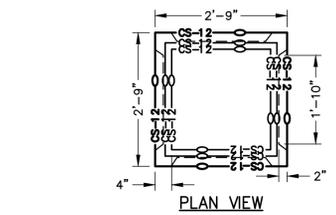
**DRAIN BASIN**



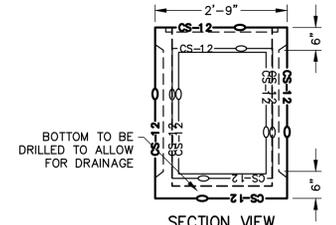
**SOLID COVER ASSEMBLY**

MANHOLE NAME	LID Ø (IN)	FRAME Ø (IN)
18" ADS MH	18.64	22.13
30" ADS MH	31.87	36.00
24" ADS MH	24.75	28.50

NOTE: ALL YARD DRAIN GRATES AND SOLID COVERS MUST BE RATED FOR HEAVY DUTY (H20) LOADING.

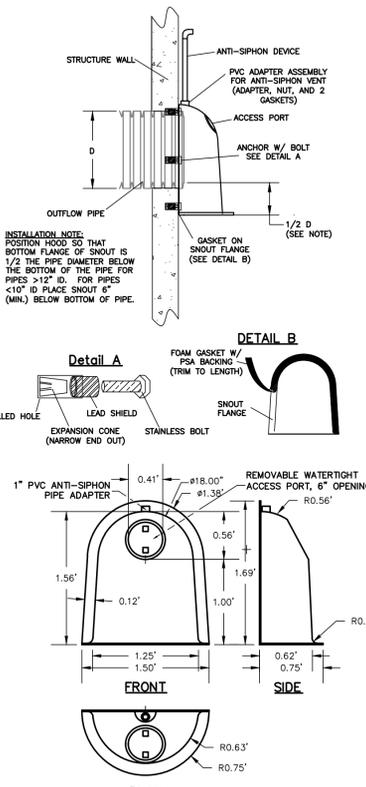


**PLAN VIEW**



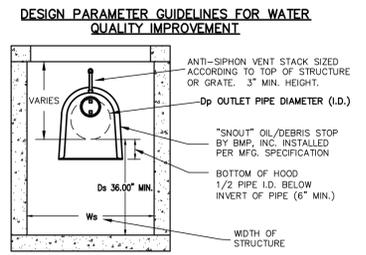
**SECTION VIEW**

**2'x2' PRECAST LAWN INLET:**  
 ~ CONCRETE - 4000 PSI @ 28 DAY  
 ~ CONFORMS TO ASTM A615, A185  
 ~ TRAFFIC LOADING - HS 25  
 ~ GRATE - NEENAH #R4810 OR EQUAL  
**2'x2' YARD DRAIN DETAIL**  
 NOT TO SCALE

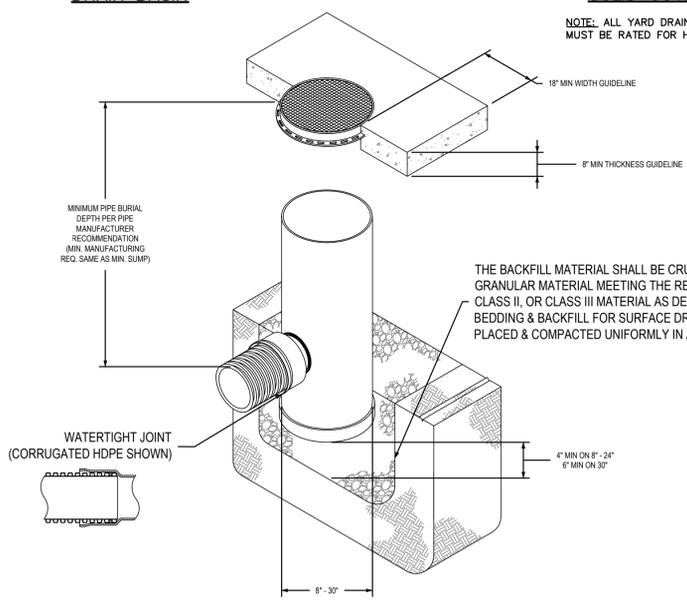


**WATER QUALITY SNOOT INLET INSERT DETAIL**  
NOT TO SCALE

NOTE: TO BE APPLIED IN ALL TYPE 'C' AND TYPE 'M' INLETS LOCATED IN PAVED PARKING AND DRIVEWAY AREAS.



- SELECT THE SNOOT OIL & DEBRIS STOP OF SIZE AND CONFIGURATION TO FIT APPLICATION.
- CENTER THE SNOOT DIRECTLY OVER THE EXIT PIPE SO THAT THE ENTIRE PIPE IS COVERED AND SO THAT THE LOWER EDGE OF THE HOOD IS AT LEAST 1/2 THE PIPE DIAMETER BELOW THE LOWEST INSIDE POINT OF THE PIPE.
- DRILL EQUALLY SPACED 7/16" HOLES THROUGH THE SNOOT FLANGE. (NUMBER OF HOLES MAY VARY WITH SIZE OF SNOOT.)
- MARK AND DRILL CATCH BASIN AND INSTALL THE TAMP-IN LEAD ANCHORS.
  - DRILL A 3/4" HOLE INTO THE BASE MATERIAL TO THE REQUIRED DEPTH.
  - BLOW THE HOLE CLEAN OF DUST AND OTHER MATERIAL.
  - INSERT THE ANCHOR INTO THE HOLE (LEAD SHIELD OUT).
  - POSITION THE SETTING TOOL IN THE ANCHOR. THE OUTER RIM OF THE TOOL SHOULD SEAT ONTO THE LEAD SHIELD RIM.
  - USING THE TOOL, SET THE ANCHOR BY DRIVING THE LEAD SLEEVE OVER THE CONE USING SEVERAL SHARP HAMMER BLOWS. BE SURE THE ANCHOR IS AT THE REQUIRED EMBEDMENT DEPTH.
- ATTACH THE VENT PIPE ADAPTER IN THE PREDRILLED HOLE IN THE TOP OF THE SNOOT USING THE 2 FLAT O-RING GASKETS AND PVC LOCK-NUT SUPPLIED IN KIT. INSTALL WITH THE FEMALE SLIP ADAPTER UP AND A WASHER ON EACH SIDE OF THE SNOOT SHELL. TIGHTEN LOCK-NUT HAND TIGHT.
- REMOVE PSA BACKING AND WITH FIRM PRESSURE, ATTACH GASKET STRIP TO BACK OF FLANGE AND TRIM EXCESS.
- ATTACH THE SNOOT TO THE CATCH BASIN WALL WITH 3/8" DIAMETER STAINLESS STEEL BOLTS DO NOT OVERTIGHTEN: 10 TO 15 FOOT POUNDS SHOULD BE SUFFICIENT.
- CUT THE ANTI-SIPHON VENT STACK TO LENGTH AND ATTACH TO HOOD WITH PVC CEMENT.
- ATTACH 90 DEGREE FITTING TO VENT STACK WITH PVC CEMENT. INSURE THAT FITTING OPENING IS ACCESSIBLE FOR MAINTENANCE AND INSPECTION.



**NYLOLAST DRAIN BASIN WITH SOLID COVER**

**GENERAL:**  
 PVC SURFACE DRAINAGE INLETS SHALL INCLUDE THE DRAIN BASIN TYPE AS INDICATED ON THE CONTACT DRAWING AND REFERENCED WITHIN THE CONTRACT SPECIFICATIONS. THE DUCTILE IRON GRATES FOR EACH OF THESE FITTING ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SURFACE DRAINAGE INLET AND SHALL BE FURNISHED BY THE SAME MANUFACTURER. THE SURFACE DRAINAGE INLETS SHALL BE AS MANUFACTURED BY NYLOPLAST A DIVISION OF ADVANCED DRAINAGE SYSTEMS, INC., OR PRIOR APPROVAL EQUAL.

**MATERIALS:**  
 THE DRAIN BASINS REQUIRED FOR THIS CONTRACT SHALL BE MANUFACTURED FROM PVC PIPE STOCK, UTILIZING A THERMOFORMING PROCESS TO REFORM THE PIPE STOCK TO THE SPECIFIED CONFIGURATION. THE DRAINAGE PIPE CONNECTION STUBS SHALL BE MANUFACTURED FROM PVC PIPE STOCK AND FORMED TO PROVIDE A WATERTIGHT CONNECTION WITH THE SPECIFIED PIPE SYSTEM. THIS JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR JOINTS FOR DRAIN AND SEWER PLASTIC PIPE USING FLEXIBLE ELASTOMERIC SEALS. THE FLEXIBLE ELASTOMERIC SEALS SHALL CONFORM TO ASTM F477. THE PIPE BELL SPIGOT SHALL BE JOINED TO THE MAIN BODY OF THE DRAIN BASIN OR CATCH BASIN. THE RAW MATERIAL USED TO MANUFACTURE THE PIPE STOCK THAT IS USED TO MANUFACTURE THE MAIN BODY AND PIPE STUBS OF THE SURFACE DRAINAGE INLETS SHALL CONFORM TO ASTM D1784 CELL CLASS 12454.

THE GRATES AND FRAMES FURNISHED FOR ALL SURFACE DRAINAGE INLETS SHALL BE DUCTILE IRON FOR SIZES 8", 10", 12", 15", 18", 24", AND 30" AND SHALL BE MADE SPECIFICALLY FOR EACH BASIN SO AS TO PROVIDE A ROUND BOTTOM FLANGE THAT CLOSELY MATCHES THE DIAMETER OF THE SURFACE DRAINAGE INLET. GRATES FOR DRAIN BASINS SHALL BE CAPABLE OF SUPPORTING VARIOUS WHEEL LOADS AS SPECIFIED BY NYLOPLAST. 12" AND 15" SQUARE GRATES WILL BE HINGED TO THE FRAME USING PINS, DUCTILE IRON USED IN THE MANUFACTURE OF THE CASTINGS SHALL CONFORM TO ASTM A536 GRADE 70-50-05. GRATES AND COVERS SHALL BE PROVIDED PAINTED BLACK.

**INSTALLATION:**  
 THE SPECIFIED PVC SURFACE DRAINAGE INLET SHALL BE INSTALLED DURING CONVENTIONAL FLEXIBLE PIPE BACKFILL MATERIALS AND PROCEDURES. THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING AND BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE WELL PLACED AND COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321. THE DRAIN BASIN BODY WILL BE CUT AT THE TIME OF THE FINAL GRADE. NO BRICK, STONE OR CONCRETE BLOCK WILL BE REQUIRED TO SET THE GRATE TO THE FINAL GRADE HEIGHT. FOR LOAD RATED INSTALLATIONS, A CONCRETE SLAB SHALL BE POURED UNDER AND AROUND THE GRATE AND FRAME. THE CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, AND OTHER APPLICABLE DESIGN FACTORS. FOR OTHER INSTALLATION CONSIDERATIONS SUCH AS MIGRATION OF FINES, GROUND WATER, AND SOFT FOUNDATIONS REFER TO ASTM D2321 GUIDELINES.

**GILMORE & ASSOCIATES, INC.**  
 ENGINEERING & CONSULTING SERVICES  
 506 CORPORATE DRIVE, SUITE 110, LANCASTER, PA 17601-4700 • P.O. BOX 3065 • WWW.GILMORE-ASSOC.COM

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**G&A**

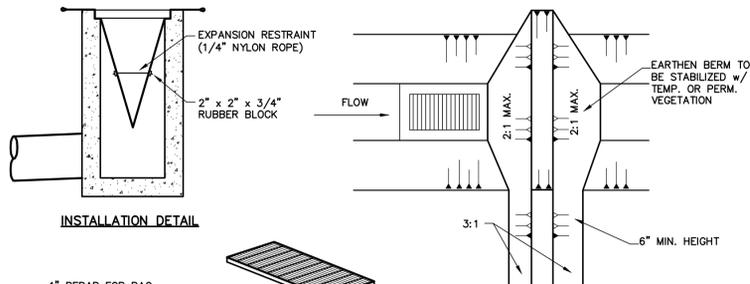
**TAX MAP PARCEL NO.:** 05-061-499/498  
**MUNICIPAL FILE NO.:** NOT APPLICABLE  
**JOB NO.:** 21-07025  
**OWNER:** BRISTOL TOWNSHIP, 2501 BATH ROAD, BRISTOL, PA 19007, 215-785-0500  
**TOTAL LOTS:** 1  
**TOTAL AREA:** .51 AC  
**DATE:** 5/15/2022  
**SCALE:** 1"=20'

**DESIGNED BY:** LCR/MDS  
**CHECKED BY:** RIMS  
**DRAWN BY:** LCR/MDS

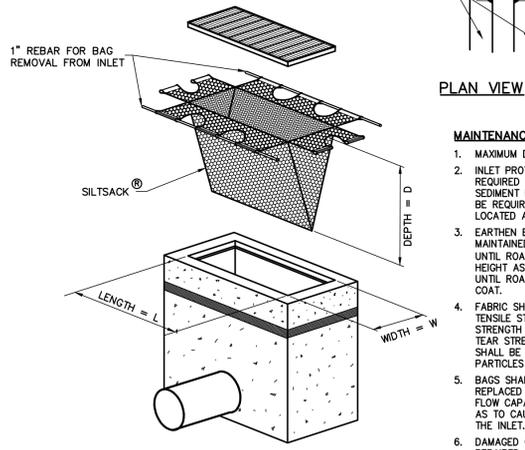
**PUBLIC IMPROVEMENTS**  
**GRADING AND DRAINAGE DETAILS**  
**MARIE LOWE DRIVE COMMUNITY CENTER**  
 BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

**DESCRIPTION**  
 DATE  
 BY  
 REV.

**SHEET NO.:** 6 OF 10



INSTALLATION DETAIL



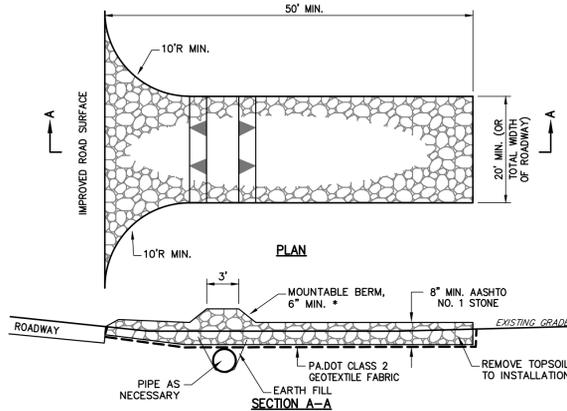
SILTSACK TYPE 'C' & TYPE 'M' INLET PROTECTION DETAIL  
NOT TO SCALE

PLAN VIEW

ISOMETRIC VIEW

MAINTENANCE:

1. MAXIMUM DRAINAGE AREA = 1/2 ACRE
2. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLETS TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.
3. EARTHEN BERM SHALL BE INSTALLED & MAINTAINED IN LIEU OF ASPHALT BERMS UNTIL ROADWAY IS STONED. 6" MINIMUM HEIGHT ASPHALT BERM TO BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
4. FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LB, BURST STRENGTH OF 200 PSI, AND TRAPEZOIDAL TEAR STRENGTH OF 50 LB. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A #40 SIEVE.
5. BAGS SHALL BE EMPTIED & RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET.
6. DAMAGED OR CLOGGED BAGS SHALL BE REPAIRED OR REPLACED IMMEDIATELY UPON INSPECTION.

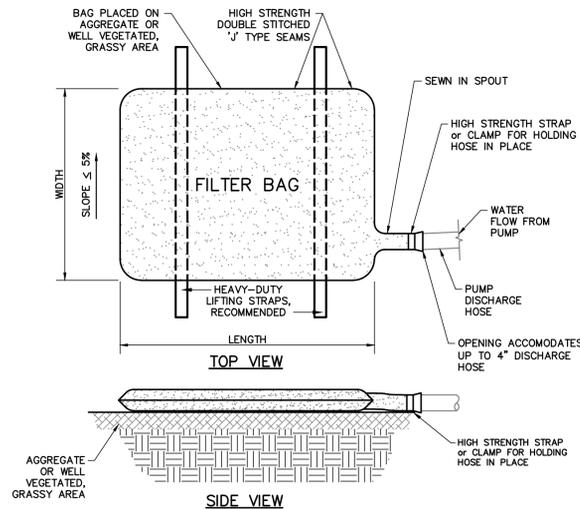


\*MOUNTABLE BERM SHOULD BE USED WHEREVER OPTIONAL CULVERT PIPE IS USED TO PROVIDE PROPER COVER FOR PIPE PER MANUFACTURER'S SPECIFICATION. PIPE TO BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.

IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50-FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWER, CULVERTS OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE  
NOT TO SCALE



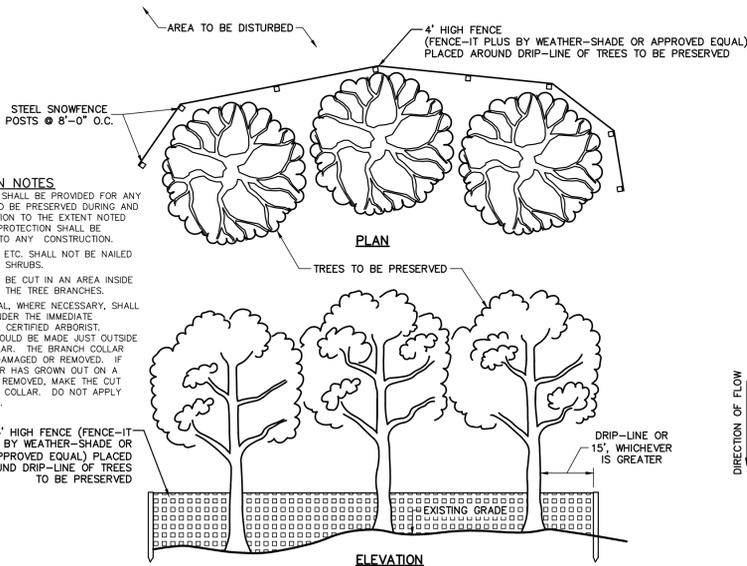
SEDIMENT FILTER BAG FOR PUMPED WATER

1. LOW VOLUME FILTER BAGS SHALL BE MADE OF NON-WOVEN GEOTEXTILE WHICH RETAINS ALL SEDIMENT PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES MEETING THE FOLLOWING STANDARDS:
- | PROPERTY            | TEST METHOD | MINIMUM STANDARD |
|---------------------|-------------|------------------|
| AVG. WIDTH STRENGTH | ASTM D-4884 | 60 LB/IN         |
| GRAB TENSILE        | ASTM D-4632 | 205 LB           |
| PUNCTURE            | ASTM D-4833 | 110 LB           |
| MULLEN BURST        | ASTM D-3786 | 350 PSI          |
| UV RESISTANCE       | ASTM D-4355 | 70%              |
| AOS % RETAINED      | ASTM D-4751 | 80 SIEVE         |
2. PLACE FILTER BAGS ON STABLE OR WELL-VEGETATED AREAS WHICH ARE FLATTER THAN 5% SLOPE AND SHALL DISCHARGE ONTO STABLE, EROSION RESISTANT GROUND. WHERE THIS IS NOT POSSIBLE, GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED.
  3. PUMP DISCHARGE HOSE SHALL BE INSERTED INTO BAG IN MANNER SPECIFIED BY MANUFACTURER AND SECURELY CLAMPED INTO FILTER BAG. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
  4. LIMIT PUMPING TO 750 GPM OR 1/2 THE MANUFACTURER'S MAXIMUM PUMPING RATE, WHICHEVER IS LESS. PUMP INTAKE SHALL BE FLOATING AND SCREENED.
  5. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL PROBLEM IS CORRECTED.
  6. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY IS REQUIRED FOR DISPOSAL PURPOSES. WHEN SEDIMENT FILLS 1/2 THE VOLUME OF A FILTER BAG, IMMEDIATELY REMOVE THAT BAG FROM SERVICE AND REPLACE WITH NEW BAG IMMEDIATELY. PROPERLY DISPOSE OF SPENT BAGS WITH THEIR SEDIMENTS.
  7. THE DISCHARGE FROM THE FILTER BAG SHOULD NOT PASS THROUGH A DISTURBED AREA OR CAUSE AN EROSION PROBLEM DOWN SLOPE.

SEDIMENT FILTER BAG FOR PUMPED WATER  
NOT TO SCALE

TREE PROTECTION NOTES

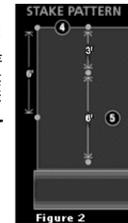
1. TREE PROTECTION SHALL BE PROVIDED FOR ANY AND ALL TREES TO BE PRESERVED DURING AND AFTER CONSTRUCTION TO THE EXTENT NOTED ON THE PLANS. PROTECTION SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION.
2. BOARDS, FENCING, ETC. SHALL NOT BE NAILED TO ANY TREES OR SHRUBS.
3. ROOTS SHALL NOT BE CUT IN AN AREA INSIDE THE DRIP-LINE OF THE TREE BRANCHES.
4. TREE LIMB REMOVAL, WHERE NECESSARY, SHALL BE PERFORMED UNDER THE IMMEDIATE SUPERVISION OF A CERTIFIED ARBORIST. PRUNING SHOULD BE MADE JUST OUTSIDE THE BRANCH COLLAR. THE BRANCH COLLAR SHOULD NOT BE DAMAGED OR REMOVED. IF THE TRUNK COLLAR HAS GROWN OUT ON A DEAD LIMB TO BE REMOVED, MAKE THE CUT JUST BEYOND THE COLLAR. DO NOT APPLY WOUND DRESSINGS.



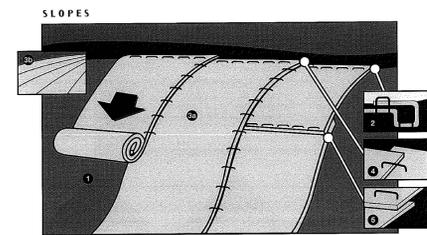
TREE PROTECTION DETAIL  
NOT TO SCALE

INSTALLATION INSTRUCTIONS:

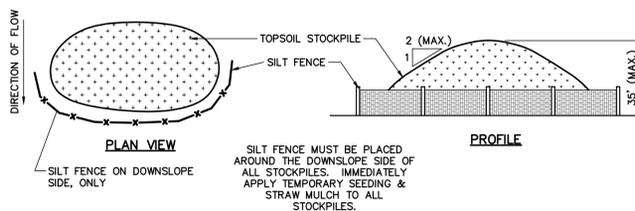
- ADDITIONAL ITEMS NEEDED FOR INSTALLATION:  
GRASS SEED  
FERTILIZER  
RUBBER Mallet  
SCISSORS OR SHEARS  
SAFETY GLASSES/GOOGLES
- CAUTION: ALWAYS WEAR EYE AND HAND PROTECTION DURING INSTALLATION OF BIOSTAKES.
1. PREPARE THE AREA TO BE PROTECTED BY RAKING THE SOIL TO A DEPTH OF 1-2 INCHES AND REMOVING LARGE DIRT CLODS, STICKS AND OTHER OBSTRUCTIONS. APPLY SEED AND FERTILIZER AND LIGHTLY RAKE INTO THE SOIL. (NOTE: THIS PRODUCT DOES NOT INCLUDE SEED OR FERTILIZER. FOR SEEDING AND FERTILIZER SEE THE SEEDING & MULCHING SCHEDULE)
  2. STARTING AT THE TOP OF SLOPE, ANCHOR THE BLANKET IN A 6"x6" TRENCH WITH A ROW OF BIODEGRADABLE PLASTIC BIOSTAKES. A RUBBER Mallet IS RECOMMENDED FOR DRIVING THE BIOSTAKES INTO THE GROUND. CAUTION BIOSTAKES MAY SHATTER IF BROKEN, THEREFORE, ALWAYS WEAR EYE AND HAND PROTECTION DURING INSTALLATION. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
  3. ROLL OUT BLANKET (a) DOWN OR (b) HORIZONTALLY ACROSS THE SLOPE. SECURE BLANKET WITH BIOSTAKES IN APPROPRIATE PATTERN PER STAPLING PATTERN, FIGURE 2. IF APPLICABLE USE DOT SYSTEM PROVIDED ON FABRIC BY MANUFACTURER. BE SURE TO SMOOTH OUT ANY WRINKLES OR FOLDS IN MATERIAL AS WORK PROGRESSES.
  4. EDGES OF PARALLEL BLANKETS SHALL OVERLAP A MINIMUM OF 6" AND BE STAKED AT 12" INTERVALS.
  5. CONSECUTIVE BLANKETS ALONG SLOPE SHALL OVERLAP, SINGLE STYLE, WITH A MINIMUM 6" OVERLAP. STAKE THROUGH OVERLAP AREA AT 12" INTERVALS.
  6. IMMEDIATELY FOLLOWING INSTALLATION, GENTLY WATER ENTIRE AREA, THOROUGHLY WETTING BOTH THE BLANKET AND UNDERLYING SOIL. FOR BEST RESULTS, KEEP SOIL MOIST FOR THE FIRST 30 TO 60 DAYS, OR UNTIL UNIFORM GRASS ESTABLISHMENT IS ACHIEVED.



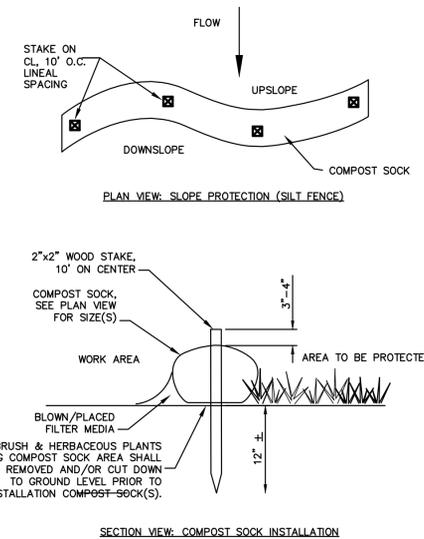
NORTH AMERICAN GREEN SLOPE INSTALLATION  
NOT TO SCALE



CONTRACTOR SHALL USE NORTH AMERICAN GREEN (OR EQUAL) EROSION CONTROL FABRICS WITH THE MANUFACTURER'S RECOMMENDED STAPLE PATTERN. CLASS OF FABRIC SHALL BE AS NOTED ELSEWHERE IN THE PLANS.



TOPSOIL STOCKPILE AREA DETAIL  
NOT TO SCALE



- NOTES:
1. COMPOST SOCK SHALL BE "SILTSOXX" AS SUPPLIED BY MCS INC. (1971 N. BLACK HORSE PIKE, WILLIAMSTOWN, NJ 08094, 856-829-1044, www.mcsnj.com) OR EQUAL PRODUCT BY OTHER MANUFACTURER.
  2. FOR INSTALLATIONS ON EXISTING PAVEMENT, CONCRETE BLOCKS ON DOWNSLOPE SIDE MAY BE USED IN LIEU OF WOOD STAKES TO ANCHOR THE SOCKS.
  3. UPON COMPLETION OF THE PROJECT, COMPOST MATERIAL SHALL BE MIXED WITH ONSITE SOIL/TOPSOIL AND SPREAD ON THE SITE AS DETAILED IN SEEDING AND MULCHING SCHEDULE.
  4. SOCK FABRIC SHALL BE 5mil PHOTO-DEGRADABLE, HDPE FOR INSTALLATIONS LESS THAN 9 MONTHS; FOR PROJECTS WITH LONGER DURATIONS, SOCKS SHALL BE MULTI-FILAMENT POLYPROPYLENE FABRIC.
  5. INFILL MATERIAL SHALL BE WEED FREE COMPOST DERIVED FROM WELL-DECOMPOSED ORGANIC MATTER. COMPOST SHALL BE PRODUCED USING AEROBIC COMPOSTING PROCESS MEETING CFR 503 REGULATIONS. COMPOST MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:  
ORGANIC MATTER CONTENT 25% - 100%  
ORGANIC PORTION FIBROUS & ELONGATED  
pH 5.5 - 8.5  
MOISTURE CONTENT 30% - 60%  
PARTICLE SIZE 30-50% PASS 3/8" SIEVE  
SOLUBLE SALT 5.0 dS/m MAXIMUM
  6. COMPOST SOCKS SHALL BE PLACED AT LEVEL GRADE AND BOTH ENDS EXTENDED 8' MIN. UP SLOPE AT 45° ANGLE.
  7. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED OF IN APPROVED UPLAND AREA.

COMPOST SOCK "SILT FENCE" DETAIL  
NOT TO SCALE

T:\municipal\Bristol\_Township\_2021\2107025-BT\_1248 Marie Lowe Drive Community Center - Public Improvements\02 DRAWING FILES\CAD\Production Drawings\2107025\_DTESC.dwg Layout: EROSION & SEDIMENT CONTROL DETAILS Plotted By: diemmedy, on Thu Jun 23, 2022 at 8:39am

**GILMORE & ASSOCIATES, INC.**  
ENGINEERING & CONSULTING SERVICES  
100 CORPORATE DRIVE WEST, LANCASTER, PENNSYLVANIA 17602 • www.gilmore-associ.com

**G&A**

JOB NO.: 21-07025  
MUNICIPAL FILE NO.: NOT APPLICABLE  
TAX MAP PARCEL NO.: 05-061-499/498

OWNER: BRISTOL TOWNSHIP  
2501 BATH ROAD  
BRISTOL, PA 19007  
215-785-0500

TOTAL LOTS: 1  
TOTAL AREA: 51 AC  
DATE: 5/15/2022  
SCALE: AS NOTED

DESIGNED BY: LCR/MDS  
DRAWN BY: LCR/MDS  
CHECKED BY: JMS

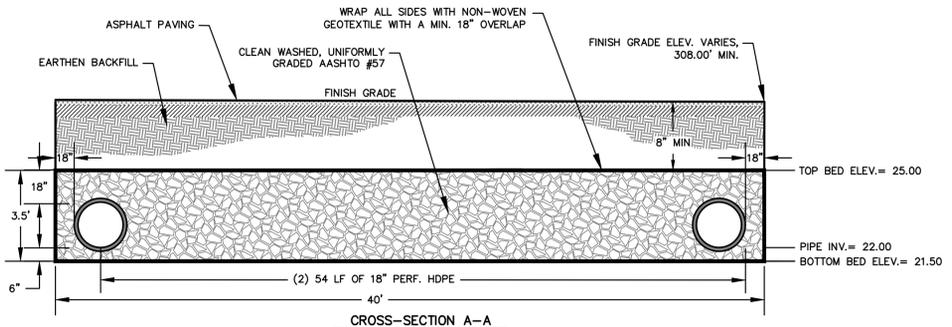
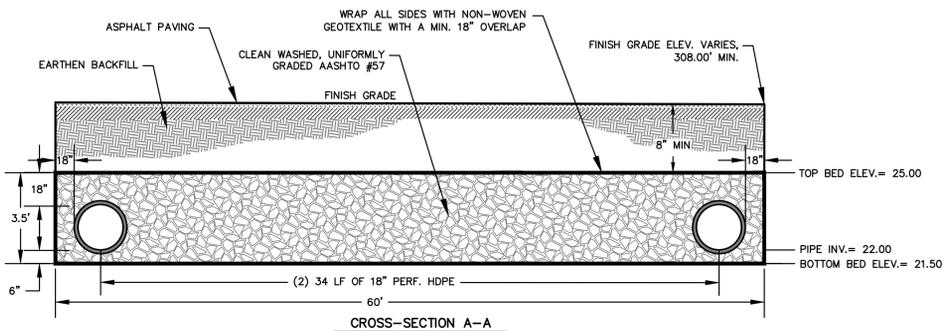
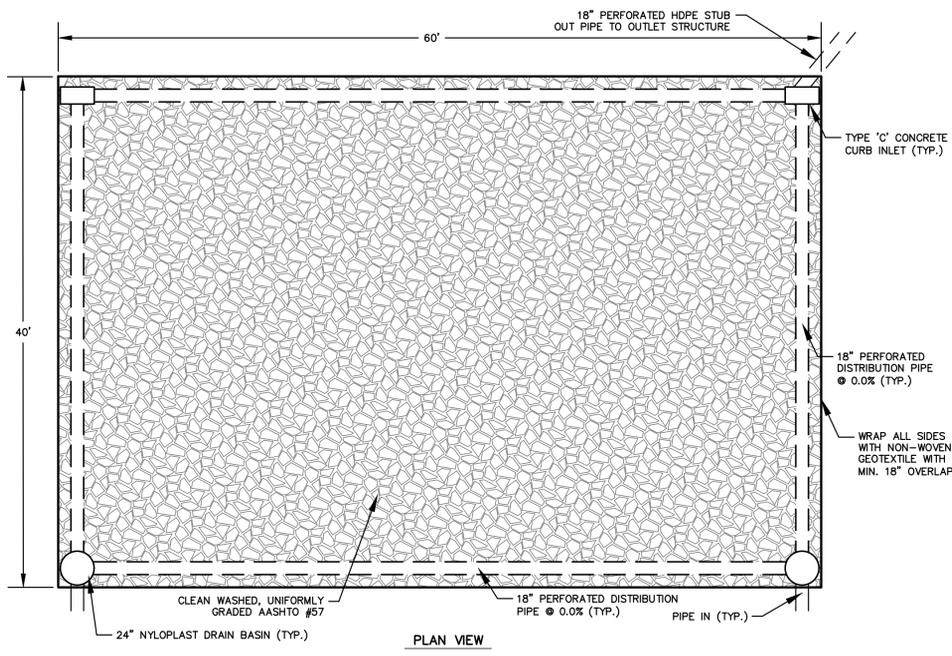
PUBLIC IMPROVEMENTS  
EROSION & SEDIMENT CONTROL DETAILS  
MARIE LOWE DRIVE COMMUNITY CENTER  
BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV. DATE BY DESCRIPTION

SHEET NO.: 7 OF 10

ISSUE FOR BID

T:\municipal\Bristol\_Township\_2021\21070225-BT\_1248\_Marie\_Lowe\_Drive\_Community\_Center - Public Improvements\02\_DRAWING\_FILES\CAD\Production Drawings\21070225-DTESC.dwg Layout: EROSION AND SEDIMENT CONTROL NOTES Revit: skennedy on Thu Jun 23, 2023 at 9:40am



**UNDERGROUND SWM INFILTRATION BASIN DETAIL**

NOT TO SCALE

**SEQUENCE OF CONSTRUCTION**

- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED, UNLESS NOTED OTHERWISE. CLEARING AND GRUBBING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE.
- AT LEAST 7 DAYS PRIOR TO START OF WORK OR EARTH DISTURBANCE ACTIVITIES, A PRECONSTRUCTION MEETING SHALL BE HELD INCLUDING THE OWNER, SITE CONTRACTOR, TOWNSHIP ENGINEER, MONTGOMERY COUNTY CONSERVATION DISTRICT, AND THE PLAN DESIGNER.
- INSTALL RAIN CONSTRUCTION ENTRANCES AS SHOWN ON THE PLAN.
- INSTALL SILT FENCES AND COMPOST SOCKS, TREE PROTECTION, ROCK FILTER OUTLETS AND ALL OTHER EROSION AND SEDIMENT CONTROL MEASURES ON SITE.
- PERFORM SITE DEMOLITION ACTIVITIES AND SITE CLEARING AND GRUBBING, STOCKPILE TOPSOIL WHERE DESIGNATED.
- PERFORM BULK EXCAVATION AND ROUGH GRADING TO ESTABLISH SUBGRADE OF PARKING LOTS, DRIVEWAYS, WALKWAYS, PATIOS AND CONCRETE PADS.
- CONSTRUCT UNDERGROUND INFILTRATION BASIN, CONSTRUCT UNDERGROUND BASIN, BUT DO NOT CONSTRUCT INLET PIPES OR OUTLET PIPE. UNDERGROUND BASIN SHALL BE PROTECTED FROM SEDIMENT BY INSTALLING INLET PROTECTION ON ADJACENT INLETS (CRITICAL STAGE BMP 6.4.3).
- INSTALL COMPOST SOCK AT TOP OF SLOPE TO PROTECT UNDERGROUND INFILTRATION BASIN DURING CONSTRUCTION.
- EXCAVATE TO SUBGRADE OF STONE INFILTRATION BED. BED BOTTOM SHALL BE UNCOMPACTED.
- INSTALL NON-WOVEN GEOTEXTILE ON SIDES OF BED.
- BEGIN PLACEMENT OF AASHTO #57 STONE AND 12" PERFORATED HDPE PIPE.
- CONSTRUCT BASIN INLETS AND MANHOLES, PERFORATED PVC PIPE, AND FILTER INLET. TEMPORARILY PLATE OFF INLET OPENINGS. ROOF DRAIN MAY BE CONNECTED TO FILTER INLET AT ANY TIME.
- CONSTRUCT OUTLET PIPE AND BUBBLE-OUT OUTLET STRUCTURE BOX. SURROUND BOX WITH STONE PROTECTION.
- ONCE AASHTO #57 STONE REACHES TOP OF BED ELEVATION, PLACE NON-WOVEN GEOTEXTILE ON TOP OF BED.
- HACKFILL REMAINING EXCAVATION TO SUBGRADE.
- BEGIN BUILDING VESTIBULE AND RENOVATIONS.
- INSTALL STORM CONVEYANCE PIPING AND STRUCTURES. IMMEDIATELY INSTALL INLET PROTECTION TO ALL NEW INLETS.
- ROUGH GRADE RAIN GARDEN. MAINTAIN A MINIMUM OF 12" ABOVE PLANTING SOIL SUBGRADE. INSTALL OUTLET CONTROL STRUCTURES, HEADWALLS, FLARED END SECTIONS, AND RIP RAP APRONS TO RAIN GARDEN. PROTECT RAIN GARDEN BMP FROM SEDIMENTATION AND COMPACTION THROUGHOUT CONSTRUCTION. RAIN GARDENS SHALL NOT RECEIVE RUNOFF UNTIL THE CONTRIBUTORY DRAINAGE AREA HAS ACHIEVED FINAL STABILIZATION (CRITICAL STAGE BMP 6.4.5). ROOF DRAIN MAY BE CONNECTED AT ANY TIME.
- INSTALL CURBING AND FENCING.
- FINE GRADE REMAINING SITE.
- STABILIZE SITE WITH PERMANENT VEGETATION.

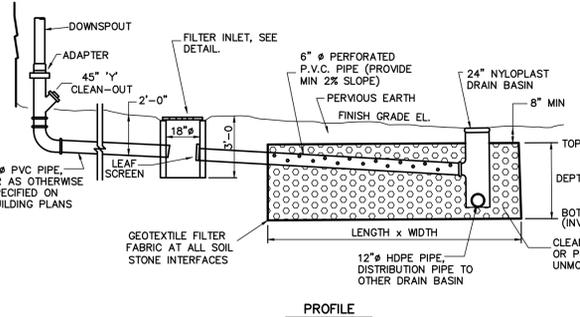
- CONSTRUCT SUBSURFACE SEEPAGE PIT. SEEPAGE PIT SHALL BE PROTECTED FROM SEDIMENT BY INSTALLING INLET PROTECTION ON ADJACENT INLETS (CRITICAL STAGE BMP 6.4.6).
- INSTALL COMPOST SOCK AT TOP OF SLOPE TO PROTECT SEEPAGE PIT DURING CONSTRUCTION.
- EXCAVATE TO SUBGRADE OF SEEPAGE PIT. BED BOTTOM SHALL BE UNCOMPACTED.
- INSTALL NON-WOVEN GEOTEXTILE ON SIDES OF BED.
- BEGIN PLACEMENT OF AASHTO #3 STONE AND 12" PERFORATED HDPE PIPE.
- CONSTRUCT BASIN INLETS AND MANHOLES, PERFORATED PVC PIPE, AND FILTER INLET. TEMPORARILY PLATE OFF INLET OPENINGS. ROOF DRAIN MAY BE CONNECTED TO FILTER INLET AT ANY TIME.
- CONSTRUCT OUTLET PIPE AND BUBBLE-OUT OUTLET STRUCTURE BOX. SURROUND BOX WITH STONE PROTECTION.
- ONCE AASHTO #3 STONE REACHES TOP OF BED ELEVATION, PLACE NON-WOVEN GEOTEXTILE ON TOP OF BED.
- HACKFILL REMAINING EXCAVATION TO SUBGRADE.
- BEGIN BUILDING VESTIBULE AND RENOVATIONS.
- INSTALL STORM CONVEYANCE PIPING AND STRUCTURES. IMMEDIATELY INSTALL INLET PROTECTION TO ALL NEW INLETS.
- ROUGH GRADE RAIN GARDEN. MAINTAIN A MINIMUM OF 12" ABOVE PLANTING SOIL SUBGRADE. INSTALL OUTLET CONTROL STRUCTURES, HEADWALLS, FLARED END SECTIONS, AND RIP RAP APRONS TO RAIN GARDEN. PROTECT RAIN GARDEN BMP FROM SEDIMENTATION AND COMPACTION THROUGHOUT CONSTRUCTION. RAIN GARDENS SHALL NOT RECEIVE RUNOFF UNTIL THE CONTRIBUTORY DRAINAGE AREA HAS ACHIEVED FINAL STABILIZATION (CRITICAL STAGE BMP 6.4.5). ROOF DRAIN MAY BE CONNECTED AT ANY TIME.
- INSTALL CURBING AND FENCING.
- FINE GRADE REMAINING SITE.
- STABILIZE SITE WITH PERMANENT VEGETATION.

**SEEDING AND MULCHING SCHEDULE**

- SITE PREPARATION, STABILIZATION AND MAINTENANCE SHALL BE PERFORMED IN ACCORDANCE WITH PENN STATE UNIVERSITY'S "THE AGRONOMY GUIDE" AND PENNDOT FORM 408 SPECIFICATIONS MOST RECENT EDITION.
- TEMPORARY SEEDING SPECIFICATION FORMULA E - ANNUAL RYE GRASS
- PERMANENT SEEDING SPECIFICATION FORMULA B - 50% KENTUCKY BLUEGRASS MIXTURE 30% PENNLAWN RED FESCUE 20% PERENNIAL RYEGRASS MIXTURE
- STEEP SLOPE SEEDING SPECIFICATION FORMULA W - 70% TALL FESCUE 20% BIRDFOOT TREFOIL MIXTURE 10% REDTOP
- SEEDING RATE FOR THE ABOVE MIXTURES: 10 LBS/1,000 SY FOR TEMPORARY SEEDING 21 LBS/1,000 SY FOR PERMANENT SEEDING 11 LBS/1,000 SY FOR STEEP SLOPE SEEDING (SEE NOTE 5)
- HAY OR STRAW MULCH SHALL BE APPLIED AT THE RATES OF AT LEAST 3.0 TONS PER ACRE. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN. SLOPES OF 3:1 SHALL BE ANCHORED WITH MULCH CONTROL NETTING.
- PULVERIZED AGRICULTURAL LIMESTONE AND COMMERCIAL FERTILIZER SHALL BE APPLIED TO ALL DISTURBED AREAS WHICH ARE TO BE SEED FOR TEMPORARY SEED AREAS ARE THE FOLLOWING RATES: PULVERIZED AGRICULTURAL LIMESTONE - 90 LBS/1,000 SF 10-20-20 ANALYSIS COMMERCIAL FERTILIZER - 20 LBS/1,000 SF
- NOTE: APPLICATION OF LIME AND FERTILIZER FOR TEMPORARY SEEDING IS UNNECESSARY AND ONLY SERVES TO CONTRIBUTE TO AN OVERABUNDANCE OF NUTRIENT POLLUTION IN THE WATERSHED.
- PERMANENT SEEDING SHALL TAKE PLACE FROM MARCH 15 TO JUNE 1 OR FROM AUGUST 1 TO OCTOBER 15. IF COMPLETED AT IN OTHER SEASONS, AREAS SHALL RECEIVE TEMPORARY SEEDING AND 3.0 TONS PER ACRE MULCH.
- STEEP SLOPE AREAS, CONSIDERED SLOPES GREATER THAN 3:1, SHALL BE PROTECTED FROM EROSION BY ONE OF THE FOLLOWING METHODS. MANUFACTURER'S RECOMMENDATIONS SHALL BE FOLLOWED FOR PARTICULAR METHOD AND SPECIFIC SITE CONDITIONS. FLEXIBLE GROWTH MEDIUM: SHALL BE HYDRAULICALLY APPLIED COMBINATION OF SEED, MULCH, AND EROSION PROTECTION MATERIAL SIMILAR TO "FLEXITERRA" BY ACF OR EQUAL BY OTHER MANUFACTURER. EROSION CONTROL MATTING: SHALL BE TEMPORARY MATTING SIMILAR TO SC350 BY NORTH AMERICAN GREEN OR EQUAL BY OTHER MANUFACTURER.

**MAINTENANCE OF FACILITIES**

- SILT FENCE SHOULD BE INSPECTED AND MAINTAINED ON A DAILY BASIS.
- UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROL DEVICES MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROLS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RETENING MUST BE PERFORMED IMMEDIATELY. IF EROSION CONTROL BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs OR MODIFICATIONS OF INSTALLED MEASURES WILL BE REQUIRED.
- CONTRACTOR SHALL MAINTAIN AND MAKE AVAILABLE TO THE BUCKS COUNTY CONSERVATION DISTRICT COMPLETE, WRITTEN INSPECTION LOGS OF THE ABOVE NOTED INSPECTION AND MAINTENANCE.
- UPON INSTALLATION OF TEMPORARY RISER(S) IN BASINS AND/OR TRAPS, AN IMMEDIATE INSPECTION SHALL BE CONDUCTED BY A QUALIFIED SITE REPRESENTATIVE. BUCKS COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING THAT THE RISER IS PROPERLY INSTALLED AND SEALED.
- SEEDING, MULCHING AND FERTILIZING SHALL BE IN ACCORDANCE WITH THE SEEDING AND MULCHING SCHEDULE.
- SHOULD THE TREE PROTECTION FENCING BE DISTURBED AT ANY POINT, IT SHALL BE REPLACED IMMEDIATELY.
- THE CONTRACTOR SHALL HAVE AVAILABLE WATER TRUCKS OR OTHER MEANS OF CONTROLLING EXCESSIVE DUST AND AIRBORNE DEBRIS.
- ALL DRAINAGE SWALES SHALL BE SEEDED AND MULCHED, AND PROTECTED WITH TURF REINFORCEMENT MAT: NORTH AMERICAN GREEN #5C150 (OR EQUAL). IF SWALES ARE TO BE SODED, TURF REINFORCEMENT IS NOT REQUIRED.
- ALL AREAS OF CONCENTRATED SURFACE DRAINAGE SHALL BE SEEDED AND MULCHED, AND PROTECTED WITH TEMPORARY TURF REINFORCEMENT MAT: NORTH AMERICAN GREEN #5C150 (OR EQUAL). IF AREAS ARE TO BE SODED, TURF REINFORCEMENT IS NOT REQUIRED.
- AFTER THE STORM CONVEYANCE SYSTEM IS CONSTRUCTED, MONTHLY INSPECTIONS FOR EACH DEVICE WILL BE MADE. AN INSPECTION OF ALL FACILITIES WILL BE MADE AFTER EVERY STORM TO DETERMINE THEIR RESISTANCE TO DRIVING RAINS AND ACCUMULATED RUNOFF.
- SEEDED AREAS THAT HAVE WASHED AWAY SHALL BE FILLED AND GRADED AS NECESSARY AND THEN RESEED. A BURLAP OR STRAW COVER WILL BE APPLIED TO RETAIN THE SEED UNTIL IT HAS A CHANCE TO ROOT PROPERLY.
- THE ABOVE PROCEDURE SHALL BE REPEATED AFTER EACH SIZEABLE STORM UNTIL NO MORE SIGNS OF EROSION ARE EVIDENT. AT MONTHLY INTERVALS THEREAFTER, INSPECTIONS AND NECESSARY CLEANING WILL BE DONE. TRASH THAT IS REMOVED FROM ANY OF THE CONTROL DEVICES SHALL BE DISPOSED OF AT AN APPROVED DISPOSAL AREA. SILT THAT HAS ACCUMULATED SHALL BE REMOVED AND ALLOWED TO DRY AND USED AS FILL WHEREVER REQUIRED ON THE SITE.
- SEDIMENT BASINS AND TRAPS MUST BE PROTECTED FROM UNAUTHORIZED ACTS OF THIRD PARTIES.



PIT NO.	GRADE EL.	INV. EL. OF STONE	TOP OF STONE EL.	DEPTH (FT.)	LENGTH x WIDTH
1	26.05	21.50	25.50	4.0'	21' x 18'

**SEEPAGE PIT FOR ROOF DRAINS**

NOT TO SCALE

**EROSION & SEDIMENT CONTROL NOTES- TEMPORARY CONTROL MEASURES**

- EXISTING TREES AND OTHER EXISTING VEGETATION WILL BE DISRUPTED AS LITTLE AS POSSIBLE.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITY HAS CEASED, ALL AREAS SHALL BE STABILIZED. DURING NON-GERMINATING PERIODS, MULCH SHALL BE APPLIED AT SPECIFIED RATES. DISTURBED AREAS THAT ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTRIBUTED WITHIN ONE YEAR SHALL BE STABILIZED WITH TEMPORARY VEGETATION. AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTRIBUTED WITHIN ONE YEAR SHALL RECEIVE PERMANENT STABILIZATION. (SEE SEEDING AND MULCHING TABLE FOR DETAILS).
- ALL TOPSOIL FROM THE OVERALL SITE PREPARATIONS WILL BE STOCKPILED AND REDISTRIBUTED UNIFORMLY AT THE TIME OF FINAL GRADING. ALL STOCKPILES SHALL HAVE PERIMETER SILT FENCE INSTALLED AND BE SEEDED AND MULCHED IMMEDIATELY. STOCKPILES SHALL HAVE A SIDE SLOPE OF 2:1 OR FLATTER AND SHALL HAVE A HEIGHT NOT GREATER THAN 35 FEET. SEE PLAN FOR LOCATION OF TOPSOIL STOCKPILES.
- GRADE ALL CUT AND FILL SLOPES TO 3 FOOT HORIZONTAL FOR EVERY 1 FOOT VERTICAL OR FLATTER, AND APPLY SEEDING AND MULCH. AREAS WITH GRADES GREATER THAN 3:1 SHALL RECEIVE STEEP SLOPE SEED MIX AND PERMANENT TURF REINFORCEMENT MAT: NORTH AMERICAN GREEN #C350 OR EQUAL.
- RIP-RAP WILL BE APPLIED TO ALL AREAS WHERE HEAVY CONCENTRATIONS OF DRAINAGE ARE PREVALENT (GREATER THAN 3:1 SLOPE). THIS WOULD BE AT CULVERT OUTLETS, WHERE WATER IS IN TRANSITION FROM AN OPEN CHANNEL INTO A CULVERT, OR AS SPECIFIED.
- SIGNIFICANT STANDS OF TREES, DESIGNATED TO REMAIN, WILL BE PROTECTED WITH FENCING, SEE DETAIL. INSTALL ALONG THE DRIP LINE OF THE TREE BRANCHES.
- EROSION CONTROL FACILITIES MUST DISCHARGE INTO ADEQUATE STORM SEWERS, NATURAL WATERWAYS, OR STABLE EROSION RESISTANT AREAS.
- CONCRETE WASHOUT AREA SHALL BE PROVIDED FOR CLEANING OF CHUTES, MIXERS, AND HOPPERS OF DELIVERY VEHICLES. NO WASH WATER FROM THESE VEHICLES SHALL BE ALLOWED TO ENTER ANY SURFACE WATERS. WASHOUT FACILITIES SHALL NOT BE LOCATED WITHIN 50 FEET OF STORM DRAINS, OPEN DITCHES, INFILTRATION FACILITIES OR SURFACE WATERS.
- ANY SEDIMENT OR MUD THAT IS TRACKED TO THE PUBLIC ROADWAY MUST BE CLEANED OFF IMMEDIATELY BY BROOMING AND/OR SHOVELING TO THE SATISFACTION OF THE TOWNSHIP AT THE EXPENSE OF THE DEVELOPER AND/OR RESPONSIBLE CONTRACTOR. USE OF A BACKHOE BUCKET TO SCRAPE ROADWAY SURFACE IS PROHIBITED. WHERE SAND AND/OR SEDIMENT IS CAUSING SLICK OR HAZARDOUS CONDITIONS, ROADWAY SURFACE SHALL BE PRESSURE WASHED TO REMOVE THE CONDITION. ALL SEDIMENT LADEN WATER MUST BE FILTERED IN A MANNER SATISFACTORY TO THE BUCKS COUNTY CONSERVATION DISTRICT BEFORE ENTERING STORM SEWERS AND/OR DRAINAGE CHANNELS.
- NO SEDIMENT OR SEDIMENT LADEN WATER MUST BE ALLOWED TO LEAVE THE SITE/PROPERTY WITHOUT FIRST BEING FILTERED TO THE SATISFACTION OF BUCKS COUNTY CONSERVATION DISTRICT. ANY INLETS WHICH DO NOT DIRECT FLOW TO A SEDIMENT BASIN MUST BE PROTECTED WITH STONE FILTER INLET PROTECTION.
- ALL PUMPING OF SEDIMENT-LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A FILTER BAG, DISCHARGING OVER UNDISTURBED AREAS.
- ABSOLUTELY NO EARTHMOVING, PLACEMENT OF FILL MATERIAL OR THE ENTRY OF SEDIMENT LADEN WATER MUST TAKE PLACE IN WETLANDS. ALL WETLANDS SHALL BE PROTECTED FROM ENCROACHMENT WITH FENCING.
- ROCK FILTER OUTLETS MUST BE PROVIDED IMMEDIATELY WHERE SILT FENCING HAS BEEN UNDERRMINED OR OVERTOPPED.
- THE SEDIMENT AND EROSION CONTROL MEASURES SHOWN ON THIS PLAN HAVE BEEN PREPARED IN ACCORDANCE WITH REQUIREMENTS OF THE BUCKS COUNTY CONSERVATION DISTRICT. GILMORE AND ASSOCIATES DOES NOT TAKE ANY RESPONSIBILITY IN OBSERVING AND CERTIFYING THE CONSTRUCTION OF THESE FACILITIES UNLESS REQUESTED SPECIFICALLY BY THE OWNER AND/OR CONTRACTOR. THEREFORE, GILMORE AND ASSOCIATES DOES NOT ACCEPT ANY RESPONSIBILITY FOR DAMAGES AS A RESULT OF IMPROPER CONSTRUCTION AND/OR MAINTENANCE OF FACILITIES DURING CONSTRUCTION.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE CONTRACTOR SHALL IMPLEMENT APPROPRIATE MEASURES TO ADDRESS SAID CIRCUMSTANCES.
- ACCUMULATED SEDIMENTS REMOVED FROM ANY AND ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES. IMMEDIATELY STABILIZE REPLACED SOILS WITH SEED & MULCH OR FILTER INLET PROTECTION.
- THE CONTRACTOR SHALL REMOVE FROM THE SITE, RECYCLE OR DISPOSE OF ALL BUILDING MATERIAL AND WASTES IN ACCORDANCE WITH DEP'S SOLID WASTE MANAGEMENT REGULATIONS, AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.

**POTENTIAL THERMAL IMPACT**

THE CURRENT SITE CONSISTS OF AN EXISTING COMMUNITY CENTER BUILDING WITH LAWN AREAS AND A FEW WALKWAYS, AS WELL AS ONE RESIDENTIAL DWELLING AND DRIVEWAY. NO STORMWATER MANAGEMENT EXISTS ON THE SITE, WHILE IMPERVIOUS AREA ON SITE WILL BE INCREASED BY THE PROPOSED IMPROVEMENTS. STORMWATER MANAGEMENT FACILITIES WILL BE INCREASED ON SITE BY A HIGHER PROPORTION, INCLUDING AN UNDERGROUND INFILTRATION BED, A SEEPAGE PIT AND A RAIN GARDEN. THERMAL IMPACTS WILL BE REDUCED BY THE PROPOSED BMPs BY A GREATER EXTENT THAN THE CURRENT SWM FACILITIES ON THE SITE PROVIDE.

**CHAPTER 93 -SURFACE WATER CLASSIFICATION**

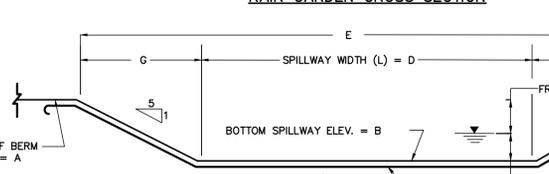
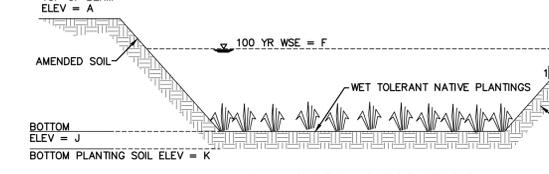
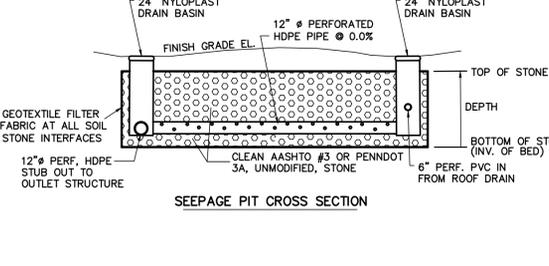
RECEIVING WATER NAME: MILL CREEK, CHAPTER 93 EXISTING/ DESIGNATED USE: WW, MF

**RIPARIAN BUFFER NOTE**

- THERE ARE NO EXISTING OR PROPOSED RIPARIAN BUFFERS ON SITE OR WITHIN THE SURROUNDING AREA. ALSO, THE PROJECT DOES NOT DISCHARGE TO A RIVER, STREAM, CREEK, LAKE, POND, OR RESERVOIR WITH A DESIGNATED USE OF HIGH QUALITY OR EXCEPTIONAL VALUE.

**GEOLOGICAL/SOIL CONDITIONS NOTE**

THERE ARE NO KNOWN GEOLOGICAL FORMATIONS OR SOIL CONDITIONS THAT HAVE POTENTIAL TO CAUSE POLLUTION DURING EARTH DISTURBANCE ACTIVITIES. IF ANY SUCH MATERIAL IS ENCOUNTERED DURING CONSTRUCTION, PROPER HANDLING AND/OR DISPOSAL OF ALL SUCH MATERIALS SHALL BE EMPLOYED BY CONTRACTOR PER METHODS OUTLINED ON THESE PLANS.



STRUCTURE	A	B	D	E	F	Q	G	H**	J	K
RAIN GARDEN	26.30	26.20	12.5	13.5	26.28	0.973	0.5	0.086	24.00	23.00

\*\* H\* CALCULATED BY PASSING THE 100-YR STORM THROUGH THE SPILLWAY. H = 10' ICL

**RAIN GARDEN & EMERGENCY SPILLWAY DETAILS**

NOT TO SCALE

**PLANNING & DESIGN**

- THE PROJECT WENT THROUGH A PLANNING AND DESIGN PROCESS TO EVALUATE THE PROPOSED IMPROVEMENTS AND ITS POTENTIAL IMPACTS. THE PROJECT WAS DESIGNED TO PROVIDE THE FOLLOWING MEASURES TO LIMIT NEGATIVE IMPACTS TO THE ENVIRONMENT:
- THE DESIGN WILL MINIMIZE THE EXTENT AND DURATION OF EARTH DISTURBANCE. THE PLAN PROVIDES A LIMIT OF DISTURBANCE AND CONSTRUCTION SEQUENCE TO LIMIT THE EXTENT AND LIMIT OF DISTURBANCE.
  - THE DESIGN MAXIMIZES PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION. A LIMIT OF DISTURBANCE LINE AND TREE PROTECTION IS PROVIDED TO MAINTAIN THE EXISTING AND PROPOSED TREE LINE.
  - THE DESIGN MINIMIZES SOIL COMPACTION. THERE ARE AREAS WITHIN THE LIMIT OF DISTURBANCE NOTED FOR LANDSCAPING AND LIMITED GRADING WHICH WILL LIMIT THE NEED FOR SOIL COMPACTION.
  - THE DESIGN UTILIZES MEASURES AND CONTROLS THAT PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF. THE PROPOSED IMPROVEMENTS INCLUDE A RAIN GARDEN WITH AN OUTLET CONTROL STRUCTURE AND VEGETATED CONVEYANCE WHICH WILL PREVENT AN INCREASE IN THE RATE OF STORMWATER RUNOFF.

**CLEAN FILL REQUIREMENTS:** IF THE SITE WILL NEED TO IMPORT OR EXPORT MATERIAL FROM THE SITE, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH THE CONTRACTOR. CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, 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 OF PENNSYLVANIA UNLESS AUTHORIZED BY THE "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.)

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST BE CERTIFIED BY A STATE REGISTERED SUBSTANCE STORAGE QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE LIMITS AS NOTED IN TABLE A AND TABLE B OF THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S POLICY "MANAGEMENT OF FILL."

ENVIRONMENTAL DUE DILIGENCE: THE LANDOWNER/APPLICANT MUST PERFORM ENVIRONMENTAL 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 INSPECTIONS, ANALYTICAL TESTING, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, AND OTHER INVESTIGATIVE TECHNIQUES. INVESTIGATIVE TECHNIQUES AUTHORIZED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S POLICY "MANAGEMENT OF FILL."

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA CODE CHAPTER 287 RESIDUAL WASTE MANAGEMENT OR CHAPTER 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE. THESE REGULATIONS ARE AVAILABLE ON-LINE AT WWW.PA.DOE.COM.

**RECYCLING OR DISPOSAL METHODS**

- THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTE IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE CHAPTER 287 (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.
- EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN ON THE PROPERTY, DEMOLISHED OR EXCAVATED MATERIALS SHALL BE REMOVED FROM THE SITE. MATERIALS SLATED FOR REMOVAL FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH ANY AND ALL APPLICABLE MUNICIPAL OR OTHER GOVERNMENTAL AGENCY CURRENT REGULATIONS. NO DEBRIS FROM BUILDING MATERIALS SHALL NOT BE ACCUMULATED, DUMPED, BURIED, OR DISCHARGED ON THE JOB-SITE. DUST AND DIRT SHALL BE HELD TO A MINIMUM DURING DEMOLITION, BY WETTING DOWN, AS REQUIRED, ON SITE BURNING OF MATERIALS WILL NOT BE PERMITTED. AT THE COMPLETION OF WORK, THE ENTIRE AREA INVOLVED WILL BE CLEAN AND LEFT IN A NEAT CONDITION, FREE OF RUBBISH, RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THIS PROJECT SITE SHALL BE UNDERTAKEN IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION RULES AND REGULATIONS.
- SEDIMENT REMOVED FROM CONTROL FACILITIES AS A PART OF REGULAR MAINTENANCE SHALL BE DISPOSED OF UPLOUSE OF THE CONTROL FACILITY.

- CONSTRUCTION GUIDELINES:**
- THE RAIN GARDEN SHALL NOT BE CONSTRUCTED UNTIL ALL THE CONTRIBUTORY DRAINAGE AREA HAS BEEN STABILIZED.
  - THE PLANTING SOIL SHALL BE PLACED IN 12" LIFTS OF GREATER AND PLACED WITHIN THE CONTRIBUTORY DRAINAGE AREA. THE RAIN GARDEN AREA, RAKE SOIL MATERIAL AS NEEDED TO LEVEL OUT OVERLAP ABOVE THE PLANTING SOIL. THE RAIN GARDEN AREA SHALL BE ACCOMMODATE FOR EXPECTED NATURAL SETTLEMENT OF UP TO 20% PLANT SETTLEMENT AS INDICATED.
  - PERMEABLE PLANTING SOIL TO HAVE CLAY CONTENT LESS THAN 5%. SAND CONTENT 80% LEAF COMPOST 15%, AND HIGH QUALITY TOP SOIL 2%.
  - ALL RAIN GARDEN EMBANKMENTS SHALL BE PLACED IN MAXIMUM OF 8" LIFTS COMPACTED TO A MINIMUM OF 95% MOIST PROCTOR DENSITY AS ESTABLISHED BY ASTM D-1557. PRIOR TO PROCEEDING TO THE NEXT LIFT, THE COMPACTION SHALL BE CHECKED BY A LICENSED SOILS ENGINEER. COMPACTION TESTS SHALL BE PERFORMED AT THE LEADING AND TRAILING ENDS OF THE RAIN GARDEN AS AT THE TOP OF BERM. COMPACTION TEST RESULTS, CERTIFIED BY A LICENSED SOILS ENGINEER SHALL BE SUBMITTED TO THE TOWNSHIP ENGINEER FOR REVIEW AND APPROVAL.

- MAINTENANCE GUIDELINES:**
- PROPERLY DESIGNED AND INSTALLED RAINGARDENS REQUIRE LITTLE MAINTENANCE. DURING PERIODS OF EXTENDED DROUGHT, RAINGARDENS MAY REQUIRE WATERING APPROXIMATELY EVERY 10 DAYS.
  - WATER VEGETATION EVERY DAY (END OF DAY) FOR 2 WEEKS AFTER PLANTING. WATER REGULARLY THROUGHOUT THE YEAR.
  - REMOVE DEAD PLANTS. TREAT DISEASED TREES AND SHRUBS AND KEEP OVERFLOW FREE AND CLEAR OF LEAVES - AS NEEDED.
  - INSPECT SOIL AND REPAIR ERODED AREAS. REMOVE LITTER AND DEBRIS AND CLEAR LEAVES AND DEBRIS FROM OVERFLOW MONTHLY.
  - INSPECT TREES AND SHRUBS TO EVALUATE HEALTH TWICE PER YEAR.
  - ADD ADDITIONAL MULCH AND INSPECT FOR SEDIMENT BUILDUP, EROSION, VEGETATIVE CONDITIONS, ETC. - ONCE PER YEAR.

- RAIN GARDEN SOIL SPECIFICATIONS:**
- |                               |               |
|-------------------------------|---------------|
| PLANTING SOIL                 | 30% BY VOLUME |
| DOUBLE SHREDED HARDWOOD MULCH | 20% BY VOLUME |
| SAND                          | 50% BY VOLUME |
- THE RAIN GARDEN SOIL MIXTURE SHALL BE CLASSIFIED AS A SANDY LOAM, (LOAMY SAND OR LOAM (USA)) AND HAVE THE FOLLOWING CHARACTERISTICS:
- |                   |                            |
|-------------------|----------------------------|
| pH RANGE          | 5.2 TO 7.0                 |
| ORGANIC MATTER    | 1.5 TO 4.0%                |
| NITROGEN          | 0.05 TO 0.10% (MINIMUM)    |
| PHOSPHORUS (P205) | 75 LBS. PER ACRE (MINIMUM) |
| POTASSIUM (K20)   | 85 LBS. PER ACRE (MINIMUM) |
| SOLUBLE SALTS     | 10 TO 25%                  |
| CLAY              | 10 TO 25%                  |
| SILT              | 35 TO 60%                  |
| SAND              | 35 TO 60%                  |
- THE RAIN GARDEN SOIL MIXTURE SHALL BE FREE OF STONES, INORGANIC MATERIAL, STUMPS, ROOTS OR OTHER WOODY MATERIALS (EXCLUDING MULCH) OVER 1" IN DIAMETER.

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100 CORPORATE DRIVE WEST, LANCASTER, PA 17602-1000  
TEL: 717-397-1000 FAX: 717-397-1001  
WWW.GILMORE-ASSOCIATES.COM

**MARIE LOWE DRIVE COMMUNITY CENTER**  
BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

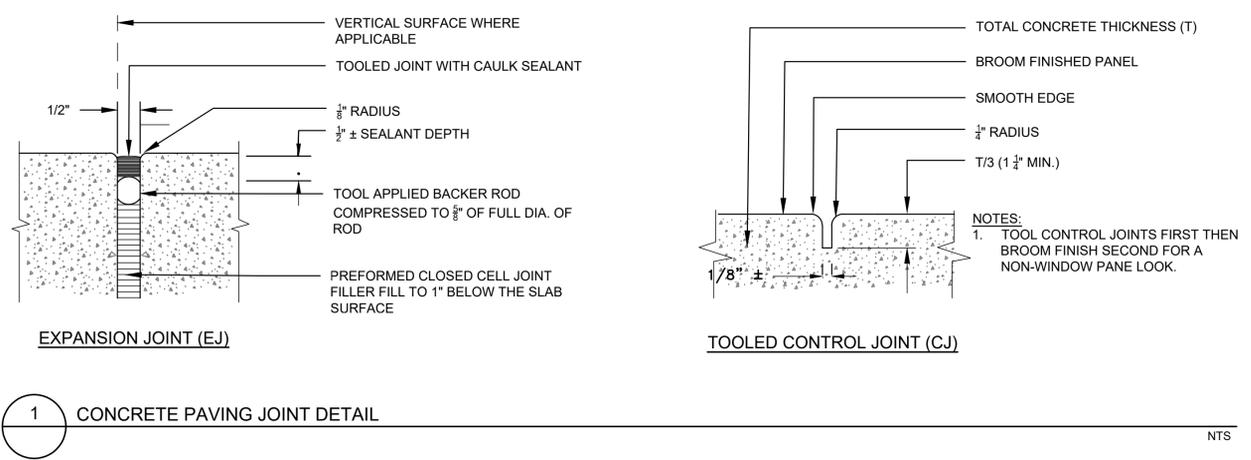
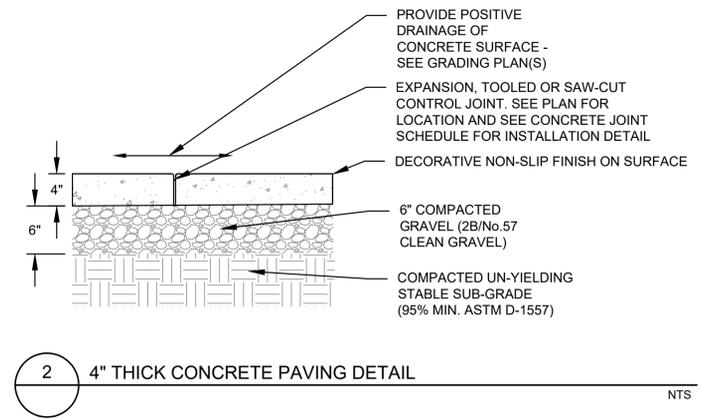
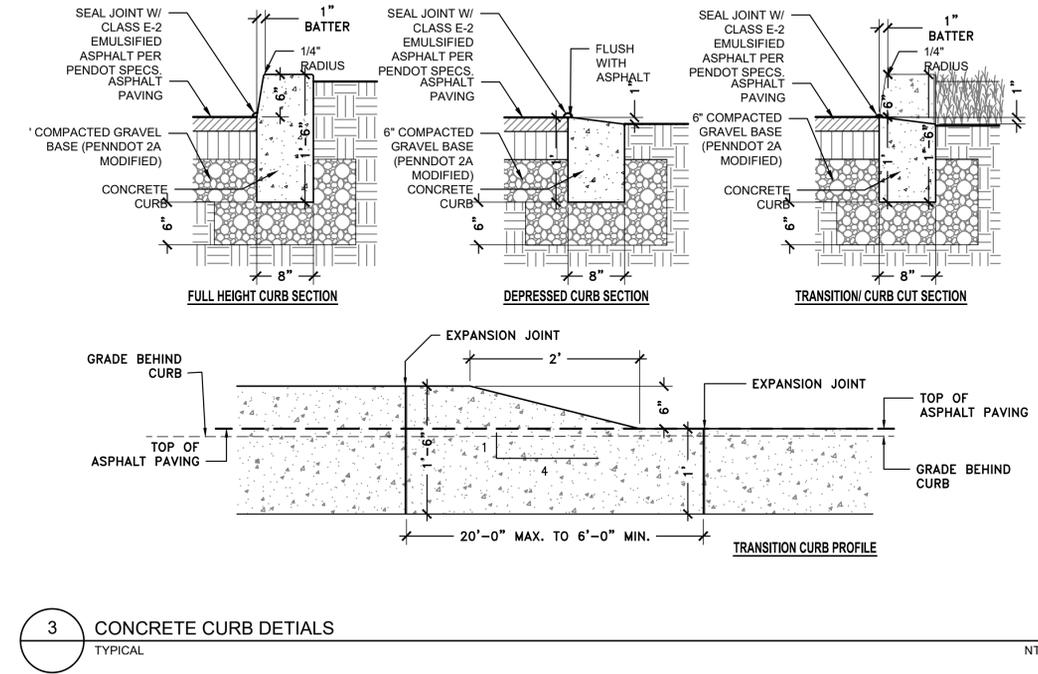
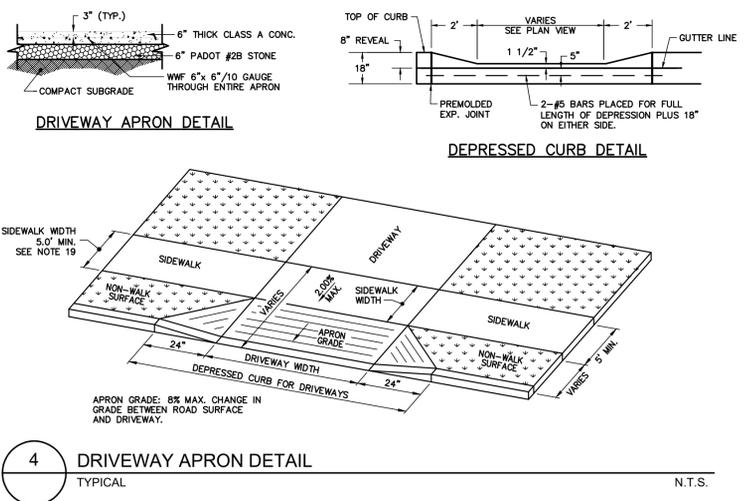
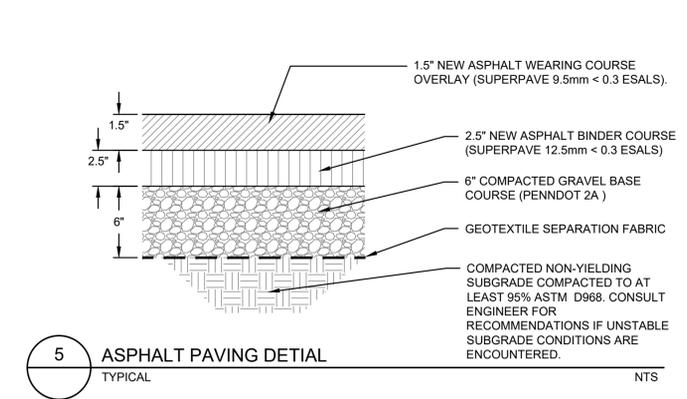
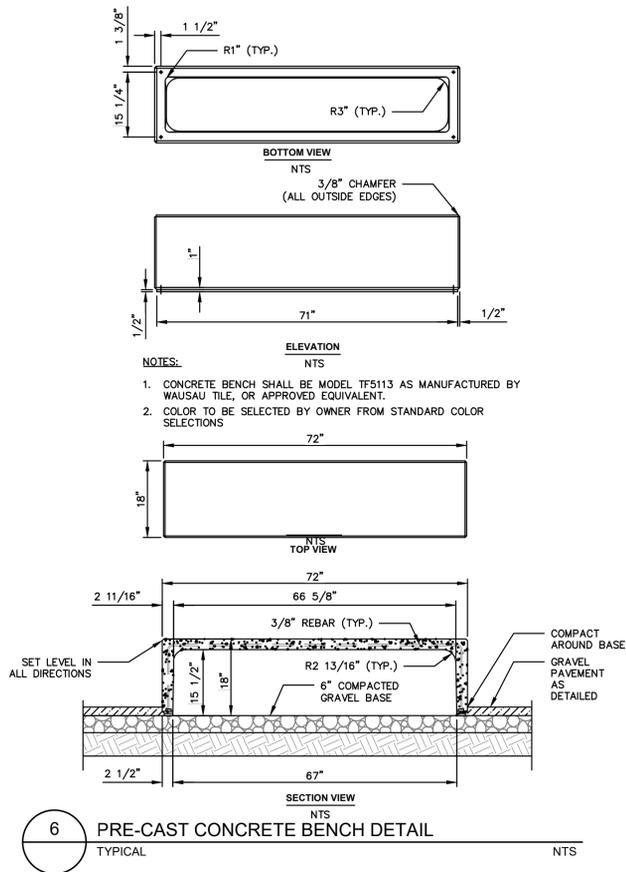
**ISSUE FOR BID**

**SHEET NO.:** 8 OF 10

**DATE:** 5/15/2022

**DESCRIPTION:** EROSION AND SEDIMENT CONTROL NOTES

**JOB NO.:** 21-070225  
**TAX MAP PARCEL NO.:** 05-061-499/498  
**MUNICIPAL FILE NO.:** NOT APPLICABLE  
**OWNER:** BRISTOL TOWNSHIP  
2501 BATH ROAD  
BRISTOL, PA 19007  
215-785-0500  
**TOTAL AREA:** 51 AC  
**SCALE:** AS NOTED  
**DESIGNED BY:** LCR/MDS  
**DRAWN BY:** LCR/MDS  
**CHECKED BY:** RMS



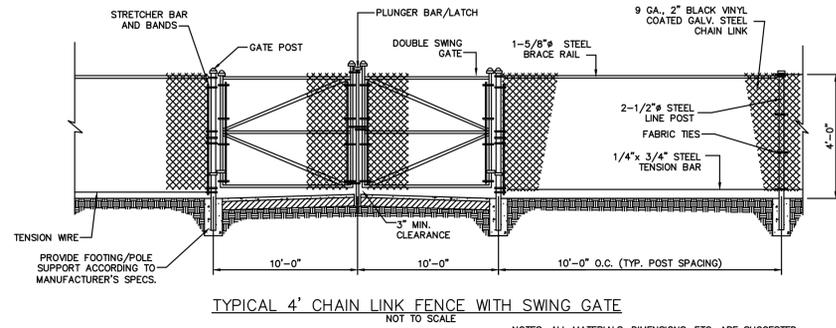
T:\municipal\Bristol\_Township\_2021\_2107025-BT\_1248 Marie Lowe Drive Community Center - Public Improvements\02 DRAWING FILES\CAD\Production Drawings\2107025-DETAIL.dwg Layout: SITE DETAILS Plotted By: dkenedy, on Thu Jun 23, 2022 at 9:40am

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100 CORPORATE DRIVE WEST, SUITE 100, LAWRENCEVILLE, GA 30046 • (770) 962-9666 • www.gilmore-associ.com

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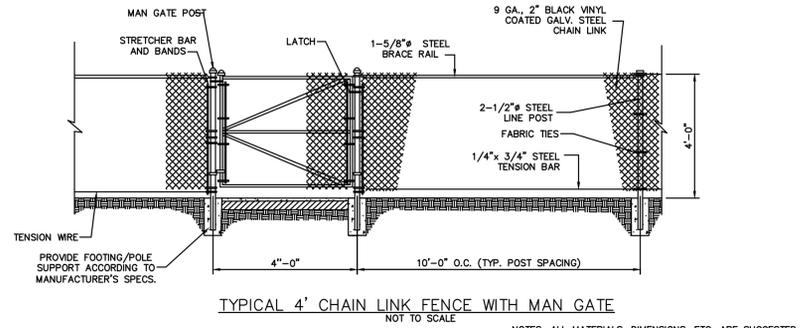
JOB NO.: 21-07025	TAX MAP PARCEL NO.: 05-061-499/498	MUNICIPAL FILE NO.: NOT APPLICABLE	DESIGNED BY: LCR/MDS	DRAWN BY: LCR/MDS	CHECKED BY: JMS
OWNER: BRISTOL TOWNSHIP 2501 BATH ROAD BRISTOL, PA 19007 215-785-0500		TOTAL AREA: 51 AC	TOTAL LOTS: 1	SCALE: AS NOTED	DATE: 5/5/2022
PUBLIC IMPROVEMENTS SITE DETAILS <b>MARIE LOWE DRIVE COMMUNITY CENTER</b> BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA					
REV.	DESCRIPTION	DATE	BY		
SHEET NO.: <b>9 OF 10</b>					

T:\municipal\Bristol\_Township\_2021\2107025-BT\_1248 Marie Lowe Drive Community Center - Public Improvements\02 DRAWING FILES\CAD\Production Drawings\2107025-DETAIL.dwg Layout: SITE DETAILS 2 Plotted By: dkennehy on Thu Jun 23, 2022 at 9:40am



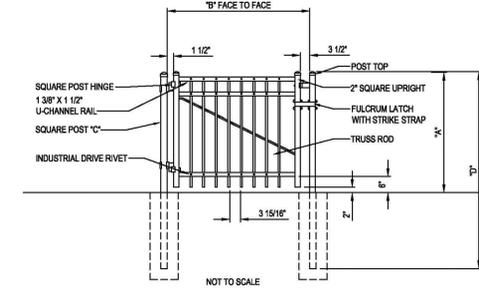
1 TYPICAL 4' CHAIN LINK FENCE WITH SWING GATE  
NOT TO SCALE

NOTES: ALL MATERIALS, DIMENSIONS, ETC. ARE SUGGESTED AND MAY BE ADJUSTED PER A PARTICULAR FENCE MANUFACTURER'S SPECIFICATIONS.  
ANY GATE PROVIDED FOR THIS FENCING SHALL BE SELF-CLOSING AND SELF-LATCHING.



4 TYPICAL 4' CHAIN LINK FENCE WITH MAN GATE  
NOT TO SCALE

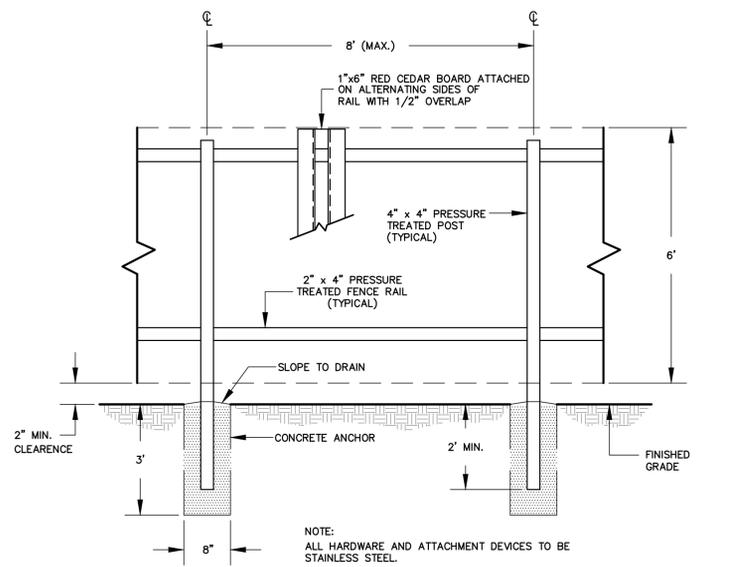
NOTES: ALL MATERIALS, DIMENSIONS, ETC. ARE SUGGESTED AND MAY BE ADJUSTED PER A PARTICULAR FENCE MANUFACTURER'S SPECIFICATIONS.  
ANY GATE PROVIDED FOR THIS FENCING SHALL BE SELF-CLOSING AND SELF-LATCHING.



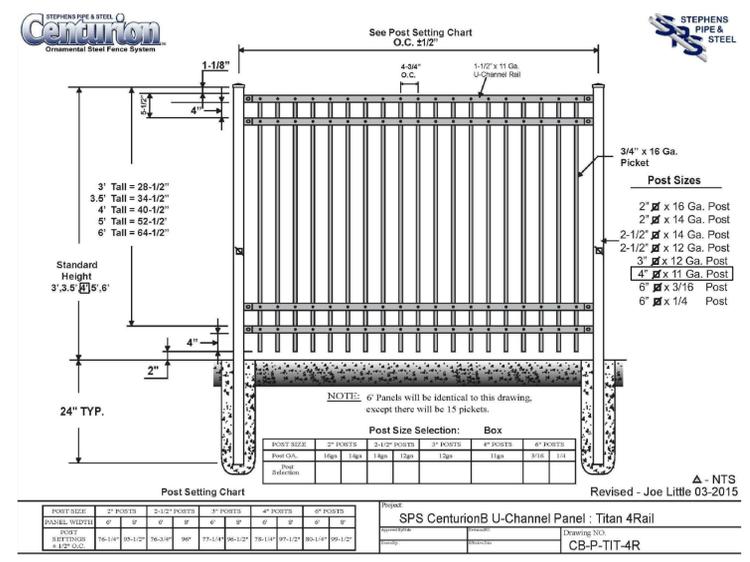
NOM. HEIGHT (A) 3'-0" 4'-0" 5'-0" 6'-0" 7'-0" 8'-0" CUSTOM HEIGHTS AVAILABLE	POST OPTION (C) 7\"/>
	A - *NOM. HEIGHT B - FACE TO FACE OF POSTS C - POST SIZE GAUGE D - POST LENGTH E - PICKET SIZE GAUGE

- NOTES:  
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.  
2. DO NOT SCALE DRAWINGS.  
3. SPECIFICATIONS SHOWN CAN BE CHANGED ONLY BY THE MANUFACTURER.  
4. FOOTING WIDTH TO BE (A) X POST WIDTH.  
5. CONTRACTOR NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT [www.CADdetails.com/info](http://www.CADdetails.com/info)  
REFERENCE NUMBER 2812-015.

5 ORNAMENTAL FENCE MANGATE  
TYPICAL NTS



2 6' TALL SHADOW BOX FENCE ENCLOSURE  
TYPICAL N.T.S.



3 4 RAIL ORNAMENTAL PICKET FENCE DETAIL  
TYPICAL N.T.S.

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JOB NO.: 21-07025  
MUNICIPAL FILE NO.: NOT APPLICABLE

TAX MAP PARCEL NO.: 05-061-499/498

DESIGNED BY: LCR/MDS  
DRAWN BY: LCR/MDS  
CHECKED BY: RMS

OWNER: BRISTOL TOWNSHIP  
250 BALDWIN ROAD  
BRISTOL, PA 19007  
215-785-0500

TOTAL AREA: .51 AC  
DATE: 04/10/19

SCALE: AS NOTED

PUBLIC IMPROVEMENTS

SITE DETAILS - 2

**MARIE LOWE DRIVE COMMUNITY CENTER**

BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV. DESCRIPTION

DATE BY

SHEET NO.:

10 OF 10



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METAL WALL PANELS  
KINGSPAN INSULATED PANELS  
KS SERIES INSULATED WALL PANEL SYSTEM

PART 1 - GENERAL

- 1.1 SECTION INCLUDES
A. STEEL FACED, POLYURETHANE (POLYSOCYANURATE) METAL WALL PANELS.
B. ACCESSORIES INCLUDING FASTENERS AND PERIMETER TRIM.

1.2 REFERENCES

- A. AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
1. AAMA 501.1: STANDARD TEST METHOD FOR METAL CURTAIN WALLS FOR WATER PENETRATION USING DYNAMIC PRESSURE.
2. AAMA 501.2: QUALITY ASSURANCE AND DIAGNOSTIC WATER LEAKAGE FIELD CHECK OF INSTALLED STOREFRONTS, CURTAIN WALLS AND SLOPED GLAZING SYSTEMS.
B. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
1. ASCE 7: MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.

- C. ASTM INTERNATIONAL
1. ASTM A480: STANDARD SPECIFICATION FOR GENERAL REQUIREMENTS FOR FLAT-ROLLED STAINLESS AND HEAT-RESISTING STEEL PLATE, SHEET AND STRIP.

- 2. ASTM A653: STANDARD SPECIFICATION FOR STEEL SHEET, ZINC-COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANEALD) BY THE HOT-DIP PROCESS

- 3. ASTM A755: STANDARD SPECIFICATION FOR STEEL SHEET, METALLIC COATED BY THE HOT-DIP PROCESS AND PREPAINTED BY THE COIL-COATING PROCESS FOR EXTERIOR EXPOSED BUILDING PRODUCTS

- 4. ASTM A792: STANDARD SPECIFICATION FOR STEEL SHEET, 55% ALUMINUM-ZINC ALLOY-COATED BY THE HOT-DIP PROCESS

- 5. ASTM A924: STANDARD SPECIFICATION FOR GENERAL REQUIREMENTS FOR STEEL SHEET, METALLIC-COATED BY THE HOT-DIP PROCESS

- 6. ASTM B117: STANDARD PRACTICE FOR OPERATING SALT SPRAY (FOG) APPARATUS

- 7. ASTM B209: STANDARD SPECIFICATION FOR ALUMINUM AND ALUMINUM-ALLOY SHEET AND PLATE

- 8. ASTM C209: STANDARD TEST METHODS FOR CELLULOSIC FIBER INSULATING BOARD

- 9. ASTM C273: STANDARD TEST METHOD FOR SHEAR PROPERTIES OF SANDWICH CORE MATERIALS.

- 10. ASTM C518: STANDARD TEST METHOD FOR STEADY-STATE THERMAL TRANSMISSION PROPERTIES BY MEANS OF THE HEAT FLOW METER APPARATUS

- 11. ASTM C920: STANDARD SPECIFICATION FOR ELASTOMERIC JOINT SEALANTS

- 12. ASTM D224: STANDARD SPECIFICATION FOR SMOOTH-SURFACED ASPHALT ROLL

- 13. ASTM D522: STANDARD TEST METHODS FOR MANDEREL BEND TEST OF ATTACHED ORGANIC COATINGS

- 14. ASTM D523: STANDARD TEST METHOD FOR SPECULAR GLOSS

- 15. ASTM D714: STANDARD TEST METHOD FOR EVALUATING DEGREE OF BLISTERING OF PAINTS

- 16. ASTM D968: STANDARD TEST METHODS FOR ABRASION RESISTANCE OF ORGANIC COATINGS BY FALLING ABRASIVE

- 17. ASTM D1308: STANDARD TEST METHOD FOR EFFECT OF HOUSEHOLD CHEMICALS ON CLEAR AND PIGMENTED ORGANIC FINISHES

- 18. ASTM D1621: STANDARD TEST METHOD FOR COMPRESSIVE PROPERTIES OF RIGID CELLULAR PLASTICS

- 19. ASTM D1622: STANDARD TEST METHOD FOR APPARENT DENSITY OF RIGID CELLULAR PLASTICS

- 20. ASTM D1623: STANDARD TEST METHOD FOR TENSILE AND TENSILE ADHESION PROPERTIES OF RIGID CELLULAR PLASTICS

- 21. ASTM D1654: STANDARD TEST METHOD FOR EVALUATION OF PAINTED OR COATED SPECIMENS SUBJECTED TO CORROSIVE ENVIRONMENTS.

- 22. ASTM D1929: STANDARD TEST METHOD FOR DETERMINING IGNITION TEMPERATURE OF PLASTICS

- 23. ASTM D2126: STANDARD TEST METHOD FOR RESPONSE OF RIGID CELLULAR PLASTICS TO THERMAL AND HUMID AGING.

- 24. ASTM D2244: STANDARD PRACTICE FOR CALCULATION OF COLOR TOLERANCES AND COLOR DIFFERENCES FROM INSTRUMENTALLY MEASURED COLOR COORDINATES

- 25. ASTM D2247: STANDARD PRACTICE FOR TESTING WATER RESISTANCE OF COATINGS IN 100 PERCENT RELATIVE HUMIDITY

- 26. ASTM D2794: STANDARD TEST METHOD FOR RESISTANCE OF ORGANIC COATINGS TO THE EFFECTS OF RAPID DEFORMATION (IMPACT)

- 27. ASTM D3273: STANDARD TEST METHOD FOR RESISTANCE TO GROWTH OF MOLD ON THE SURFACE OF INTERIOR COATINGS IN AN ENVIRONMENTAL CHAMBER.

- 28. ASTM D3359: STANDARD TEST METHODS FOR MEASURING ADHESION BY TAPE TEST

- 29. ASTM D3363: STANDARD TEST METHOD FOR FILM HARDNESS BY PENCIL TEST

- 30. ASTM D4145: STANDARD TEST METHOD FOR COATING FLEXIBILITY OF PREPAINTED SHEET

- 31. ASTM D4214: STANDARD TEST METHODS FOR EVALUATING THE DEGREE OF CHALKING OF EXTERIOR PAINT FILMS

- 32. ASTM D5894: STANDARD PRACTICE FOR CYCLIC SALT FOG/UV EXPOSURE OF PAINTED METAL, (ALTERNATING EXPOSURES IN A FOG/DRY CABINET AND A UV CONDENSATION CABINET)

- 33. ASTM D6226: STANDARD TEST METHOD FOR OPEN CELL CONTENT OF RIGID CELLULAR PLASTICS.

- 34. ASTM E72: STANDARD TEST METHODS OF CONDUCTING STRENGTH TESTS OF PANELS FOR BUILDING CONSTRUCTION

- 35. ASTM E84: STANDARD TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS

- 36. ASTM E90: STANDARD TEST METHOD FOR LABORATORY MEASUREMENT OF AIRBORNE SOUND TRANSMISSION LOSS OF BUILDING PARTITIONS AND ELEMENTS

- 37. ASTM E283: STANDARD TEST METHOD FOR DETERMINING RATE OF AIR LEAKAGE THROUGH EXTERIOR WINDOWS, CURTAIN WALLS, AND DOORS UNDER SPECIFIED PRESSURE DIFFERENCES ACROSS THE SPECIMEN

- 38. ASTM E330: STANDARD TEST METHOD FOR STRUCTURAL PERFORMANCE OF EXTERIOR WINDOWS, DOORS, SKYLIGHTS AND CURTAIN WALLS BY UNIFORM STATIC AIR PRESSURE DIFFERENCE

- 39. ASTM E331: STANDARD TEST METHOD FOR WATER PENETRATION OF EXTERIOR WINDOWS, SKYLIGHTS, DOORS, AND CURTAIN WALLS BY UNIFORM STATIC AIR PRESSURE DIFFERENCE

- 40. ASTM G153: STANDARD PRACTICE FOR OPERATING ENCLOSED CARBON ARC LIGHT APPARATUS FOR EXPOSURE OF NONMETALLIC MATERIALS

- 41. ASTM G154: STANDARD PRACTICE FOR OPERATING FLUORESCENT LIGHT APPARATUS FOR UV EXPOSURE OF NONMETALLIC MATERIALS

- D. FM GLOBAL (FM)
1. APPROVAL STANDARD 4880; CLASS 1 FIRE RATING OF INSULATED WALL OR WALL AND ROOF/CEILING PANELS, INTERIOR FINISH MATERIALS OR COATINGS, AND EXTERIOR WALL SYSTEMS.

- 2. APPROVAL STANDARD 4881; CLASS 1 EXTERIOR WALL SYSTEMS.

- E. INTERNATIONAL BUILDING CODE (IBC): CURRENT EDITION

- F. NATIONAL FIRE PROTECTION AGENCY (NFPA)
1. NFPA 259: STANDARD TEST METHOD FOR POTENTIAL HEAT OF BUILDING MATERIALS.

- 2. NFPA 268: STANDARD TEST METHOD FOR DETERMINING IGNITIBILITY OF EXTERIOR WALL ASSEMBLIES USING A RADIANT HEAT ENERGY SOURCE.

- 3. NFPA 285: STANDARD FIRE TEST METHOD FOR EVALUATION OF FIRE PROPAGATION CHARACTERISTICS OF EXTERIOR NON-LOAD-BEARING WALL ASSEMBLIES CONTAINING COMBUSTIBLE COMPONENTS.

- G. INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
1. ISO 14025: ENVIRONMENTAL LABELS AND DECLARATIONS

- 1.3 ADMINISTRATIVE REQUIREMENTS
A. PRE-INSTALLATION MEETING: CONDUCT A PRE-INSTALLATION MEETING AT THE JOB SITE ATTENDED BY OWNER, ARCHITECT, MANUFACTURER'S TECHNICAL REPRESENTATIVE, PANEL INSTALLER, AND CONTRACTORS OF RELATED TRADES. COORDINATE STRUCTURAL SUPPORT REQUIREMENTS IN RELATION TO INSULATED WALL PANEL SYSTEM, INSTALLATION OF ANY SEPARATE AIR/WATER BARRIERS, TREATMENT OF PENETRATION, AND OTHER REQUIREMENTS SPECIFIC TO THE PROJECT.

2

- 1.4 SUBMITTALS
A. PRODUCT DATA: SUBMIT MANUFACTURER CURRENT TECHNICAL LITERATURE FOR EACH TYPE OF PRODUCT.
B. SHOP DRAWINGS: SUBMIT DETAILED DRAWINGS AND PANEL ANALYSIS SHOWING:

- 1. PROFILE
2. GAUGE OF BOTH EXTERIOR AND INTERIOR SHEET
3. LOCATION, LAYOUT AND DIMENSIONS OF PANELS
4. LOCATION AND TYPE OF FASTENERS

- 5. SHAPE AND METHOD OF ATTACHMENT OF ALL TRIM
6. LOCATIONS AND TYPE OF SEALANTS
7. INSTALLATION SEQUENCE

- 8. COORDINATION DRAWINGS: PROVIDE ELEVATION DRAWINGS AND BUILDING SECTIONS WHICH SHOW PANELS IN RELATIONSHIP TO REQUIRED LOCATIONS FOR STRUCTURAL TRIM. INCLUDE PANEL DETAILS AND DETAILS SHOWING ATTACHMENT TO STRUCTURAL SUPPORT.

- 9. OTHER DETAILS AS MAY BE REQUIRED FOR A WEATHERTIGHT INSTALLATION

- C. PANEL ANALYSIS: PROVIDE PANEL CALCULATIONS TO VERIFY PANELS WILL WITHSTAND THE DESIGN WIND LOADS INDICATED WITHOUT DETRIMENTAL EFFECTS OR DEFLECTION EXCEEDING L/180. INCLUDE EFFECTS OF THERMAL DIFFERENTIAL BETWEEN THE EXTERIOR AND INTERIOR PANEL FACINGS AND RESISTANCE TO FASTENER PULLOUT.

- D. SAMPLES: PROVIDE NOMINAL 3 X 5 INCH OF EACH COLOR INDICATED

- E. MISCELLANEOUS CERTIFICATIONS:
1. SUBMIT DOCUMENTATION THAT PRODUCTS HAVE BEEN CERTIFIED IN ACCORDANCE WITH ISO 14025.

- F. QUALITY ASSURANCE SUBMITTALS
1. MANUFACTURER ERECTION INSTRUCTIONS: PROVIDE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS INCLUDING PROPER MATERIAL STORAGE, MATERIAL HANDLING, INSTALLATION SEQUENCE, PANEL LOCATION(S), AND ATTACHMENT METHODS, DETAILS AND REQUIRED TRIM AND ACCESSORIES.

1.5 QUALITY ASSURANCE

- A. MANUFACTURER QUALIFICATIONS:
1. MANUFACTURER SHALL HAVE A MINIMUM OF FIVE (5) YEARS EXPERIENCE IN THE PRODUCTION OF INSULATED WALL PANELS. MANUFACTURER SHALL DEMONSTRATE PAST EXPERIENCE WITH EXAMPLES OF PROJECTS OF SIMILAR TYPE AND EXPOSURE.

- 2. MANUFACTURER TO BE REGISTERED WITH A PROGRAM OPERATOR WITH A CERTIFIED, ENVIRONMENTAL PRODUCT DECLARATION, IN CONFORMANCE WITH ISO 14025, FOR INSULATED METAL PANELS.

- B. INSTALLER QUALIFICATIONS: AUTHORIZED BY THE MANUFACTURER AND THE WORK SHALL BE SUPERVISED BY A PERSON HAVING A MINIMUM OF FIVE (5) YEARS EXPERIENCE INSTALLING INSULATED WALL PANELS ON SIMILAR TYPE AND SIZE PROJECTS.

1.6 DELIVERY, STORAGE AND HANDLING

- A. DELIVER PANEL MATERIALS AND COMPONENTS IN MANUFACTURER'S ORIGINAL, UNOPENED, UNDAMAGED PACKAGING WITH IDENTIFICATION LABELS INTACT.

- B. STORE WALL PANEL MATERIALS ON DRY, LEVEL, FIRM, AND CLEAN SURFACE. STACK NO MORE THAN TWO BUNDLES HIGH. ELEVATE ONE END OF BUNDLE TO ALLOW MOISTURE RUN-OFF, COVER AND VENTILATE TO ALLOW AIR TO CIRCULATE AND MOISTURE TO ESCAPE.

1.7 WARRANTY

- A. LIMITED WARRANTY: STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE ITEMS THAT FAIL IN MATERIAL OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD. THE ITEMS COVERED BY THE WARRANTY INCLUDE STRUCTURAL PERFORMANCE INCLUDING BOND INTEGRITY, DEFLECTION AND BUCKLING.

- B. FINISH WARRANTY: STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE METAL PANELS THAT EVIDENCE DETERIORATION OF FLUOROPOLYMER FINISH, INCLUDING FLAKING OR PEELING FROM APPROVED PRIMED METAL SUBSTRATE, CHALK IN EXCESS OF 8 WHEN TESTED IN ACCORDANCE WITH ASTM D4214, METHOD A, AND /OR COLOR FADING IN EXCESS OF 5 ΔE HUNTER UNITS ON PANELS WHEN TESTED IN ACCORDANCE WITH ASTM D2244.

- 1. WARRANTY PERIOD: TWENTY (20) YEARS FROM DATE OF SUBSTANTIAL COMPLETION, OR 20 YEARS AND 3 MONTHS FROM THE DATE OF SHIPMENT FROM MANUFACTURER'S PLANT, WHICHEVER OCCURS FIRST.

- 2. AFTER EVALUATION BY ARCHITECT, APPROVAL WILL BE ISSUED VIA ADDENDUM. NO VERBAL APPROVAL WILL BE GIVEN.

PART 2 - PRODUCTS

- 2.1 MANUFACTURER OR EQUAL, CONTRACTOR MAY SUBMIT ALTERNATES WITH THEIR BID

- A. KINGSPAN INSULATED PANELS LTD. 12557 COLERAIN DRIVE, CALEDON, ON L7E 3B5 (866-442-3594); 5202-272ND STREET, LANGLEY, B.C. V4W 1S3 (866-442-3594) (WWW.KINGSPANPANELS.CA);

- B. KINGSPAN INSULATED PANELS, INC. 726 SUMMERSHILL DRIVE, DELAND, FL 32724 (888-882-5862); 2000 MORGAN ROAD, MODOSTO, CA 95358 (800-377-5110) (WWW.KINGSPANPANELS.US)

- C. BASIS OF DESIGN: KINGSPAN KS SERIES.

- D. SUBSTITUTION LIMITATIONS:
1. SUBMIT WRITTEN REQUEST FOR APPROVAL OF SUBSTITUTIONS TO THE ARCHITECT A MINIMUM OF [14] DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS INCLUDE THE FOLLOWING INFORMATION:
a. NAME OF THE MATERIALS AND DESCRIPTION OF THE PROPOSED SUBSTITUTE.
b. DRAWINGS, CUT SHEETS, PERFORMANCE AND TEST DATA.
c. LIST OF PROJECTS SIMILAR SCOPE AND PHOTOGRAPHS OF EXISTING INSTALLATIONS.
d. TEST REPORTS INDICATING COMPLIANCE WITH THE PERFORMANCE CRITERIA.
e. OTHER INFORMATION NECESSARY FOR EVALUATION.

- 2. AFTER EVALUATION BY ARCHITECT, APPROVAL WILL BE ISSUED VIA ADDENDUM. NO VERBAL APPROVAL WILL BE GIVEN.

2.2 EXTERIOR WALL PANELS

- A. PERFORMANCE CRITERIA:
1. STRUCTURAL TEST: STRUCTURAL PERFORMANCE SHALL BE VERIFIABLE BY WITNESSED STRUCTURAL TESTING FOR SIMULATED WIND LOADS IN ACCORDANCE WITH ASTM E72 AND E330. DEFLECTION CRITERIA SHALL BE L/180

- 2. FATIGUE TEST: THERE SHALL BE NO EVIDENCE OF METAL/INSULATION INTERFACE DELAMINATION WHEN THE PANEL IS TESTED BY SIMULATED WIND LOADS (POSITIVE AND NEGATIVE LOADS), WHEN APPLIED FOR TWO MILLION ALTERNATE CYCLES OF L/180 DEFLECTION.

- 3. FREEZE / HEAT CYCLING TEST: PANELS SHALL EXHIBIT NO DELAMINATION, SURFACE BLISTERS, PERMANENT BOWING OR DEFORMATION WHEN SUBJECTED TO CYCLIC TEMPERATURE EXTREMES OF MINUS 36 DEG. F TO PLUS 180 DEG. F TEMPERATURES FOR TWENTY ONE, EIGHT-HOUR CYCLES.

- 4. WATER PENETRATION: THERE SHALL BE NO UNCONTROLLED WATER PENETRATION THROUGH THE PANEL JOINTS AT A PRESSURE DIFFERENTIAL OF 20 PSF, WHEN TESTED IN ACCORDANCE WITH ASTM E331.

- 5. DYNAMIC WATER PENETRATION: THERE SHALL BE NO UNCONTROLLED WATER PENETRATION THROUGH THE PANEL ASSEMBLY AT A PRESSURE DIFFERENCE OF 12 PSF, WHEN TESTED IN ACCORDANCE WITH AAMA 501.1.

- 6. AIR INFILTRATION: AIR INFILTRATION THROUGH THE PANEL SHALL NOT EXCEED 0.006 CFM/SF AT 20 PSF AIR PRESSURE DIFFERENTIAL WHEN TESTED IN ACCORDANCE WITH ASTM E283.

- 7. HUMIDITY TEST: PANELS SHALL EXHIBIT NO DELAMINATION OR METAL INTERFACE CORROSION WHEN SUBJECTED TO PLUS 140 DEG. F TEMPERATURE AND 100 PERCENT RELATIVE HUMIDITY FOR A TOTAL OF 1500 HOURS (62 DAYS).

- 8. AUTOCLAVE TEST: PANELS SHALL EXHIBIT NO DELAMINATION OR SHRINKAGE/MELTING OF THE FOAM CORE FROM THE METAL SKINS AFTER BEING SUBJECTED IN AN AUTOCLAVE TO A PRESSURE OF 2PSIG (13.8KPA) AT A TEMPERATURE OF PLUS 218 DEG. F (PLUS 103 DEG. C) FOR A PERIOD OF 2 1/2 HOURS.

- 9. SEISMIC PERFORMANCE: COMPLY WITH ASCE 7, SECTION 13, "SEISMIC DESIGN REQUIREMENTS FOR NON-STRUCTURAL COMPONENTS". PANELS SHALL BE HARD-FASTENED TO STRUCTURE ALONG ONE EDGE ONLY SUCH THAT LATERAL SLIPPAGE BETWEEN PANELS CAN OCCUR IN THE EVENT OF SEISMIC ACTIVITY.

- 10. PANEL FIRE TESTS:
a. FIRE ENDURANCE TEST - 10 MINUTES: PANELS REMAINED IN PLACE WITHOUT JOINT STITCH FASTENING PER

3

- CAN/ULC-S101.
b. FIRE ENDURANCE TEST - 15 MINUTES: PANELS REMAINED IN PLACE WITH JOINT STITCH FASTENING PER CAN/ULC-S101.

- 11. FLAME SPREAD AND SMOKE DEVELOPED TESTS ON EXPOSED INSULATING CORE:
a. FLAME SPREAD: 25 OR LESS.
b. SMOKE DEVELOPED: 250 OR LESS.
c. TESTS PERFORMED IN ACCORDANCE WITH CAN/ULC-S102 AND ASTM E84.

- 12. FIRE TEST RESPONSE CHARACTERISTICS: STEEL-FACED PANELS WITH POLYSOCYANURATE (ISO) CORE SHALL FULLY COMPLY WITH CHAPTER 26 OF INTERNATIONAL BUILDING CODE REGARDING THE USE OF FOAM PLASTIC.
a. FM 4880: CLASS I RATED PER FM GLOBAL, PANELS ARE APPROVED FOR USE WITHOUT A THERMAL BARRIER AND DO NOT CREATE A REQUIREMENT FOR AUTOMATIC SPRINKLER PROTECTION.
b. NFPA 259 POTENTIAL HEAT CONTENT; ESTABLISHED FOR FOAM CORE.
c. NFPA 268 IGNITABILITY OF EXTERIOR WALL ASSEMBLIES USING A RADIANT HEAT SOURCE; SUCCESSFULLY PASSED ACCEPTANCE CRITERIA.
d. NFPA 285 INTERMEDIATE SCALE MULTI-STORY FIRE EVALUATION; SUCCESSFULLY PASSED ACCEPTANCE CRITERIA.
e. UL 263 FIRE RESISTIVE RATING; CLASSIFIED AS A COMPONENT OF A FIRE-RATED WALL ASSEMBLY FOR 1-HOUR AND 2-HOUR RATING DESIGN NO. U053 (RATED ASSEMBLIES INCLUDE APPROPRIATE LAYERS OF FIRE-RATED TYPE X GYPSUM BOARD).
f. ASTM D1929 MINIMUM FLASH AND SELF IGNITION; ESTABLISHED FOR FOAM CORE.
g. S101, S102, S127, S134 UL CANADA FIRE TEST STANDARDS; SUCCESSFULLY PASSED.

- 13. WINDBORNE DEBRIS RATING FOR WALL PANEL:
a. MEET REQUIREMENTS FOR HIGH VELOCITY HURRICANE ZONE WITH LARGE MISSILE IMPACT WHEN TESTED IN ACCORDANCE WITH FM STANDARD 4881.

- 14. INSULATING CORE: POLYISOCYANURATE (ISO) CORE, ASTM C591 TYPE IV, CFC AND HCFC FREE, COMPLIANT WITH MONTREAL PROTOCOL AND CLEAN AIR ACT, WITH THE FOLLOWING MINIMUM PHYSICAL PROPERTIES:
a. CORE IS 95 PERCENT CLOSED CELL WHEN TESTED IN ACCORDANCE WITH ASTM D6226

- b. PANEL SHALL PROVIDE A NOMINAL R-VALUE OF 7.2 [HR·FT<sup>2</sup>·°/BTU] PER INCH THICKNESS WHEN TESTED IN ACCORDANCE WITH ASTM C 518 AT 75°F MEAN TEMPERATURE AND 8.0 [HR·FT<sup>2</sup>·°/BTU] PER INCH THICKNESS WHEN TESTED IN ACCORDANCE WITH ASTM C 518 AT 35°F MEAN TEMPERATURE.

- c. FOAM HAS A DENSITY OF 2.2 TO 2.8 POUNDS PER CUBIC FOOT WHEN TESTED IN ACCORDANCE WITH ASTM D1622

- d. COMPRESSIVE STRESS: PANELS SHALL HAVE A COMPRESSIVE STRESS OF 19 PSI. WHEN TESTED ACCORDING TO ASTM D1621

- e. SHEAR STRESS: 25 PSI WHEN TESTED IN ACCORDANCE WITH ASTM C273

- f. TENSILE STRESS: 23 PSI WHEN TESTED IN ACCORDANCE WITH ASTM D1623

- g. OVEN AGING AT 212 DEGREES F:
1) 1 DAY: PLUS 1 PERCENT VOLUME CHANGE
2) 7 DAYS: PLUS 3 PERCENT VOLUME CHANGE
3) TESTED ACCORDING TO ASTM D2126

- h. LOW TEMPERATURE AGING AT MINUS 40 DEGREES F:
1) 1 DAY: 0 PERCENT VOLUME CHANGE
2) 7 DAYS: 0 PERCENT VOLUME CHANGE
3) TESTED ACCORDING TO ASTM D2126

- B. PAINT FINISH CHARACTERISTICS:
1. GLOSS: 15 ± 5 MEASURED AT 60 DEGREE ANGLE TESTED IN ACCORDANCE WITH ASTM D523.

- 2. PENCIL HARDNESS: HB-H MINIMUM TESTED IN ACCORDANCE WITH ASTM D3363.

- 3. FLEXIBILITY, T-BEND: 1-2T BEND WITH NO ADHESION LOSS WHEN TESTED IN ACCORDANCE WITH ASTM D4145.

- 4. FLEXIBILITY, MANDEREL: NO CRACKING WHEN BENT 180° AROUND A 1/8 MANDEREL AS TESTED IN ACCORDANCE WITH ASTM D522.

- 5. ADHESION: NO ADHESION LOSS TESTED IN ACCORDANCE WITH ASTM D3359.

- 6. REVERSE IMPACT: NO CRACKING OR ADHESION LOSS WHEN IMPACTED 3000 BY INCHES OF METAL THICKNESS (LB-IN), TESTED IN ACCORDANCE WITH ASTM D2794.

- 7. ABRASION RESISTANCE: NOMINAL 65 LITERS OF FALLING SAND TO EXPOSE 5/32 INCH DIAMETER OF METAL SUBSTRATE WHEN TESTED IN ACCORDANCE WITH ASTM D968.

- 8. GRAFFITI RESISTANCE: MINIMAL EFFECT.

- 9. ACID POLLUTANT RESISTANCE: NO EFFECT WHEN SUBJECTED TO 30 PERCENT SULFURIC ACID FOR 18 HOURS, OR 10 PERCENT MURIATIC ACID FOR 15 MINUTES WHEN TESTED IN ACCORDANCE WITH ASTM D1308.

- 10. SALT FOG RESISTANCE: PASSES 1000 HOURS, WHEN TESTED IN ACCORDANCE WITH ASTM B117 (5 PERCENT SALT FOG AT 95 DEG. F).

- 11. CYCLIC SALT FOG AND UV EXPOSURE: PASSES 2016 HOURS WHEN TESTED IN ACCORDANCE WITH ASTM D5894.

- 12. HUMIDITY RESISTANCE: PASSES 1500 HOURS AT 100 PERCENT RELATIVE HUMIDITY AND 95 DEG. F, WITH A TEST RATING OF 10 WHEN TESTED IN ACCORDANCE WITH ASTM D2247, AND D714.

- 13. COLOR RETENTION: PASSES 5000 HOURS WHEN TESTED IN ACCORDANCE WITH ASTM G153 AND G154.

- 14. CHALK RESISTANCE: MAXIMUM CHALK IS A RATING OF 8 WHEN TESTED IN ACCORDANCE WITH ASTM D4214, METHOD A.

- 15. COLOR TOLERANCES: MAXIMUM OF 5 ΔE HUNTER UNITS ON PANELS WHEN TESTED IN ACCORDANCE WITH ASTM D2244.

- C. PANEL ASSEMBLY:
1. PANEL THICKNESS: [2 INCHES] THICK.
2. PANEL WIDTH: 42 INCHES
3. PANEL LENGTHS: [AS INDICATED ON DRAWINGS]

- 4. PANEL ATTACHMENT: SHALL CONSIST OF FASTENERS AND STAINLESS STEEL ATTACHMENT CLIP COMPLETELY CONCEALED WITHIN THE PANEL SIDE JOINT.

- 5. HORIZONTAL PANEL JOINT REVEALS: 3/8 INCH

- 6. VERTICAL JOINT TREATMENTS (FOR HORIZONTAL PANELS):
a. PANEL TRIMLESS ENDS WITH BLACK EPDM GASKET INSERT
b. SURFACE MOUNTED ALUMINUM EXTRUSION WITH REVEAL AND BLACK EPDM GASKET INSERT
c. SURFACE MOUNTED ALUMINUM EXTRUSION WITH REVEAL AND FLUSH ALUMINUM INSERT
d. SURFACE MOUNTED TOP HAT METAL FLASHING

- 7. VERTICAL PANEL JOINT REVEALS: 1/8 INCH.

- 8. EXTERIOR FACE OF PANEL:
a. MATERIAL:
1) STEEL COIL MATERIAL SHALL BE IN ACCORDANCE WITH ASTM A755:
2) GAUGE: 24 GAUGE
b. PROFILE: MICRO-RIB
c. TEXTURE: SMOOTH.
d. EXTERIOR PAINT FINISH COLOR:
1) SELECTED FROM CURRENT KINGSPAN INSULATED PANELS COLOR CHART
2) FINISH SYSTEM:
a) 1.0 MIL FLUOROPOLYMER (PVDF) TWO COAT SYSTEM: 0.2 MIL PRIMER WITH 0.8 MIL KYNAR 500 (70 PERCENT) SOLID COLOR COAT.

- 9. INTERIOR FACE OF PANEL:
a. MATERIAL:
1) STEEL COIL MATERIAL SHALL BE IN ACCORDANCE WITH ASTM A755:
2) GAUGE: 26 GAUGE.
c. TEXTURE: NON-DIRECTIONAL STUCCO EMBOSSED.
d. GAUGE: 26 GAUGE.
e. INTERIOR FINISH: MODIFIED POLYESTER, DRY FILM THICKNESS OF 1.0 MIL INCLUDING PRIMER.
1) COLOR: SELECTED FROM THE CURRENT KINGSPAN INSULATED PANELS STOCK COLOR CHART

- 2.3 ACCESSORIES
A. FASTENERS:
1. SELF DRILLING FASTENERS SHALL BE CORROSION RESISTANT PLATED STEEL WITH NEOPRENE WASHER, AS RECOMMENDED BY MANUFACTURER.
2. MATERIAL: HEX-HEAD TYPE WITH STEEL AND NEOPRENE WASHER AND 12 GAUGE STAINLESS STEEL CLIP SUPPLIED BY THE MANUFACTURER.
3. SIZE: AS RECOMMENDED BY MANUFACTURER.

- B. PERIMETER TRIM:
1. FABRICATED PERIMETER TRIM AND METAL FLASHING: SHALL BE SAME GAUGE, MATERIAL AND COATING COLOR AS EXTERIOR FACE OF INSULATED METAL WALL PANEL.
2. EXTERIOR PERIMETER TRIM: SHALL BE EXTRUDED ALUMINUM 6063-T5 ALLOY WITH SPRAY APPLIED PVF COATING IN SAME COLOR AS EXTERIOR FACE OF INSULATED METAL WALL PANEL.

- C. SEALANTS: BUTYL, NON-SKINNING/CURING TYPE AS RECOMMENDED BY MANUFACTURER.
D. BUTYL TAPE: AS RECOMMENDED BY MANUFACTURER.

PART 3 - EXECUTION

- 3.1 EXAMINATION
A. PROVIDE FIELD MEASUREMENTS TO MANUFACTURER AS REQUIRED TO ACHIEVE PROPER FIT OF THE PREFORMED WALL PANEL ENVELOPE. MEASUREMENTS SHALL BE PROVIDED IN A TIMELY MANNER SO THAT THERE IS NO IMPACT TO CONSTRUCTION OR MANUFACTURING SCHEDULE.

- B. SUPPORTING STEEL: ALL STRUCTURAL SUPPORTS REQUIRED FOR INSTALLATION OF PANELS SHALL BE BY OTHERS. SUPPORT MEMBERS SHALL BE INSTALLED WITHIN THE FOLLOWING TOLERANCES:
1. PLUS OR MINUS 1/8 INCH IN 5 FEET IN ANY DIRECTION ALONG PLANE OF FRAMING.
2. PLUS OR MINUS 1/4 INCH CUMULATIVE IN 20 FEET IN ANY DIRECTION ALONG PLANE OF FRAMING.
3. PLUS OR MINUS 1/2 INCH FROM FRAMING PLANE ON ANY ELEVATION.
4. PLUMS OR LEVEL WITHIN 1/8 INCH AT ALL CHANGES OF TRANSVERSE FOR PRE-FORMED CORNER PANEL APPLICATIONS.
5. VERIFY THAT BEARING SUPPORT HAS BEEN PROVIDED BEHIND VERTICAL JOINTS OF HORIZONTAL PANEL SYSTEMS AND HORIZONTAL JOINTS OF VERTICAL PANEL SYSTEMS. WIDTH OF SUPPORT SHALL BE AS RECOMMENDED BY MANUFACTURER.

- C. EXAMINE INDIVIDUAL PANELS UPON REMOVING FROM THE BUNDLE; NOTIFY MANUFACTURER OF PANEL DEFECTS. DO NOT INSTALL DEFECTIVE PANELS.

- 3.2 PANEL INSTALLATION
A. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION GUIDELINES AND RECOMMENDATIONS.
B. INSTALL PANELS PLUMB, LEVEL, AND TRUE-TO-LINE TO DIMENSIONS AND LAYOUT INDICATED ON APPROVED SHOP DRAWINGS.
C. CUT PANELS PRIOR TO INSTALLING, WHERE INDICATED ON SHOP DRAWINGS, USING A POWER CIRCULAR SAW WITH FINE TOOTH CARBIDE TIP BLADE PER MANUFACTURER'S INSTRUCTIONS. PERSONNEL SHOULD WEAR RESPIRATORY AND EYE PROTECTION DEVICES.

- D. BUTYL WEATHER BARRIER SEALANT:
1. APPLY NON-SKINNING BUTYL SEALANT AS SHOWN ON SHOP DRAWINGS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS AS NECESSARY TO ESTABLISH THE VAPOR BARRIER FOR THE PANELS.
2. USE NON-SKINNING BUTYL TUBE SEALANT ONLY FOR TIGHT METAL-TO-METAL CONTACT.
3. DO











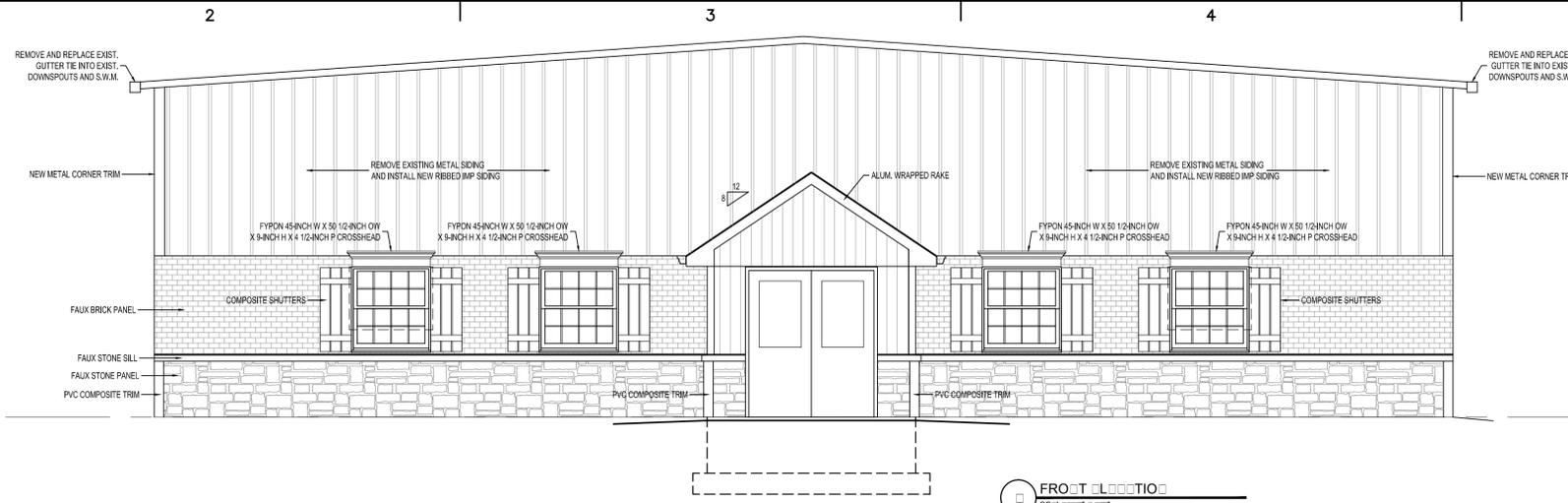
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EXIST. REAR RIGHT SIDE ELEVATION  
SCALE: 1/8" = 1'-0"



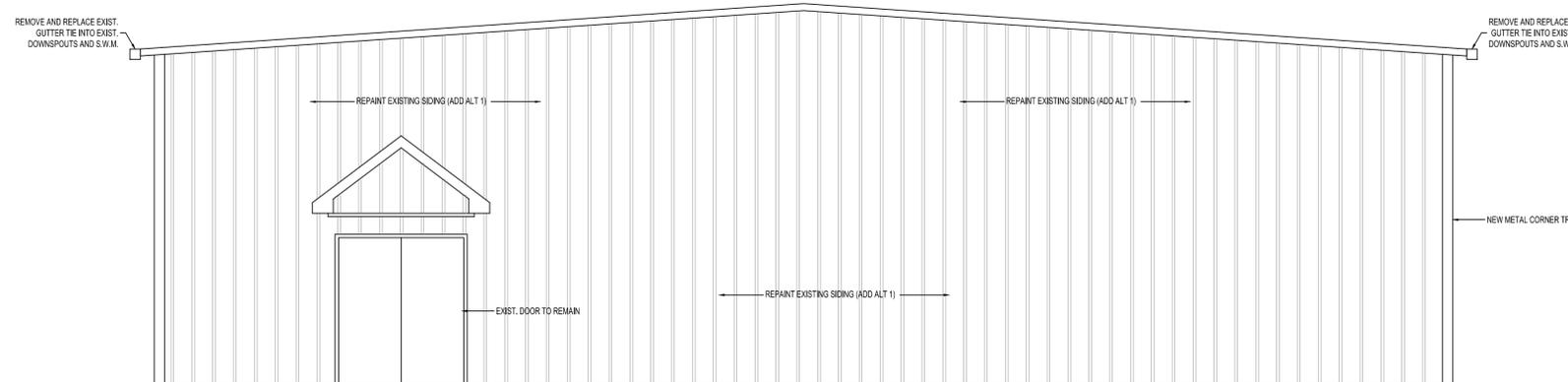
EXIST. REAR LEFT SIDE ELEVATION  
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FRONT ELEVATION  
SCALE: 1/8" = 1'-0"



EXIST. FRONT ELEVATION  
SCALE: 1/8" = 1'-0"

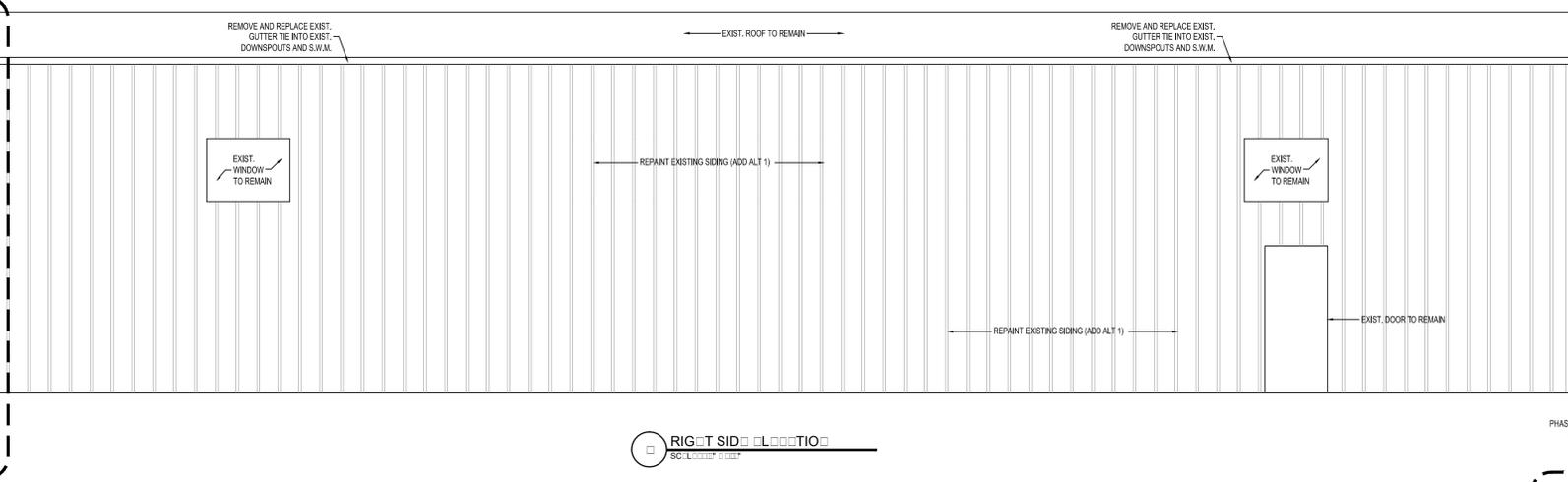
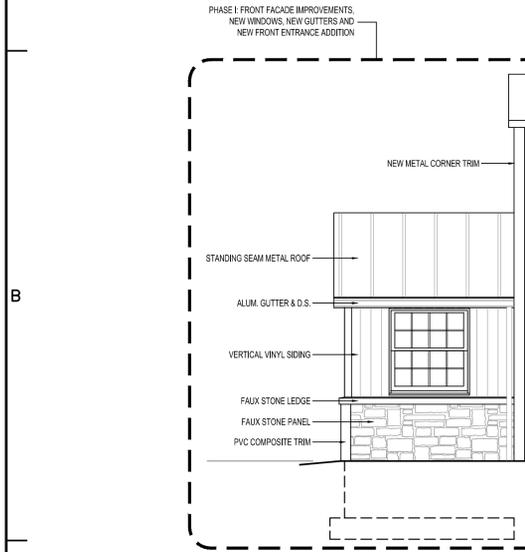


REAR ELEVATION  
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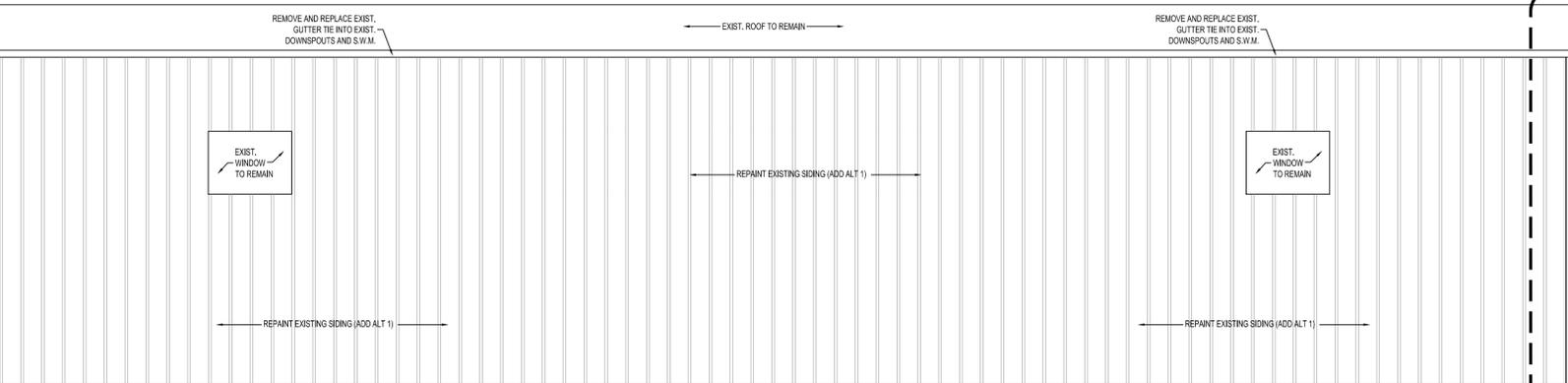
ADD ALTERNATE #1  
CONTRACTOR TO PROVIDE A PRICE  
TO REPAINT THE EXISTING SIDING  
ON THE REAR AND SIDES OF THE BUILDING

STONE PANEL/LEDGE SPECIFICATIONS  
- PROVIDE NEW FAUX STONE AND BRICK PANELS BY BARRON  
DESIGNS, OR APPROVED EQUAL. REFER TO MANUF. INFORMATION  
FOR COMPLETE INSTALLATION DETAILS.

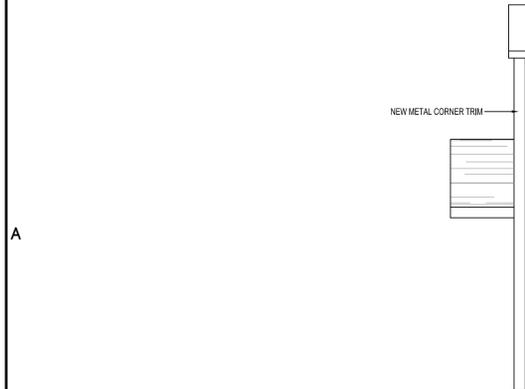
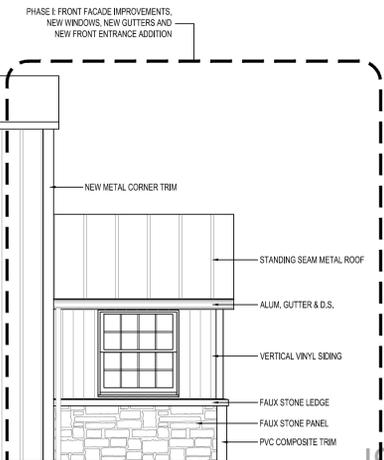
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RIGHT SIDE ELEVATION  
SCALE: 1/8" = 1'-0"



LEFT SIDE ELEVATION  
SCALE: 1/8" = 1'-0"



CONSULTANTS

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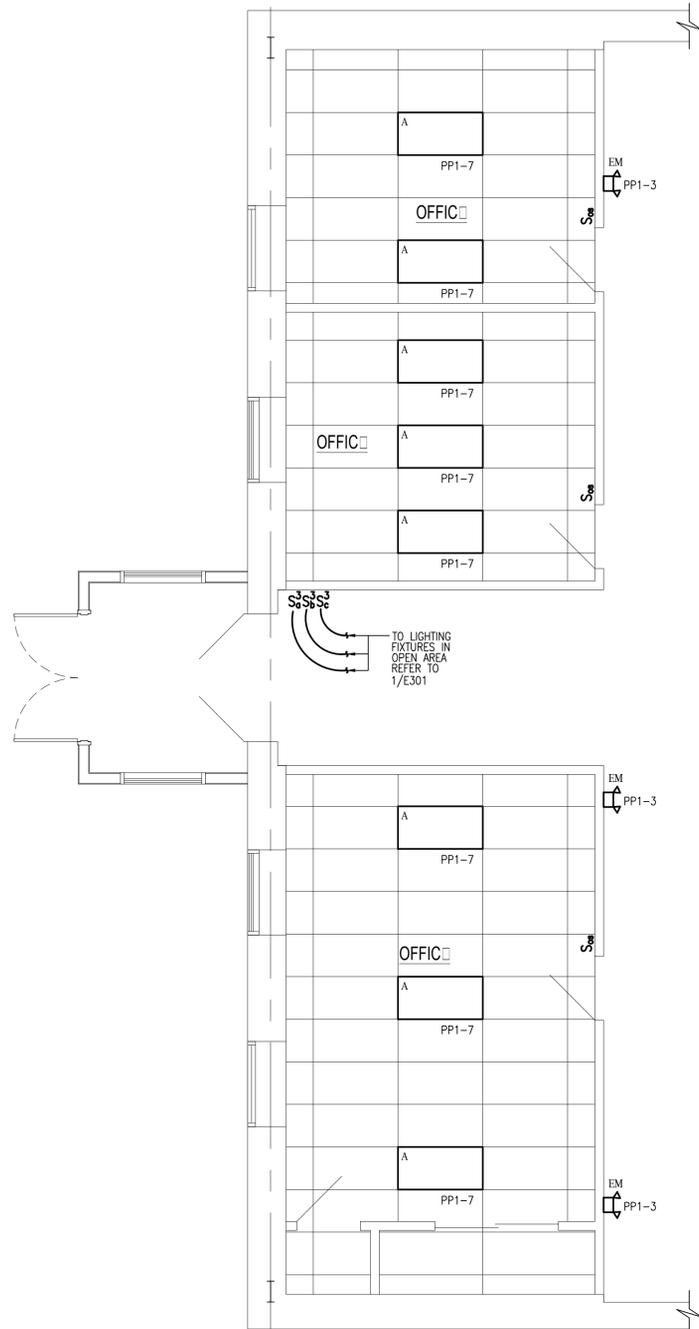
REVISIONS	MARK	DATE	DESCRIPTION

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 DATE: 06/15/2023  
 DRAWN BY: JDK

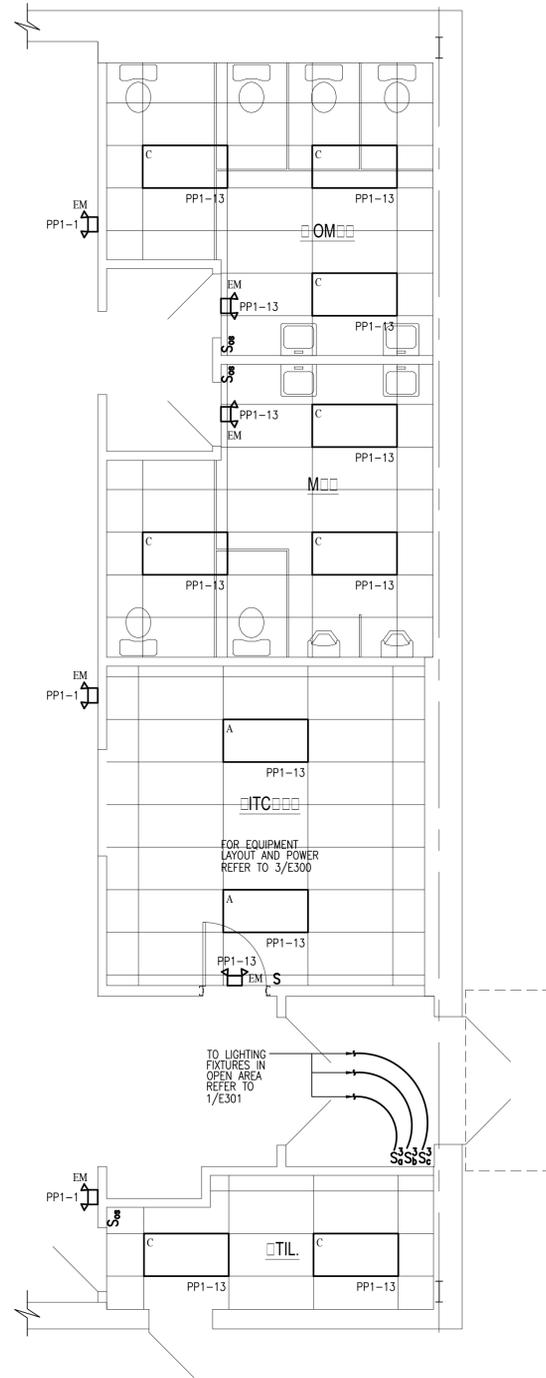
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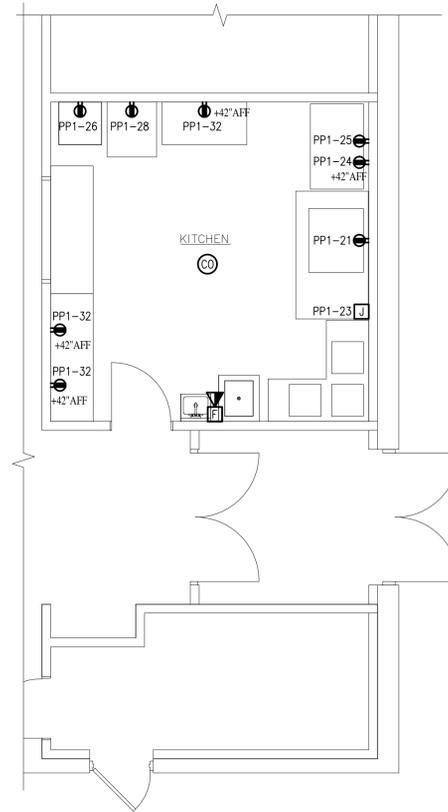




1 PARTIAL FLOOR PLAN - LIGHTING  
E300 SCALE: 1/4" = 1'-0"



2 PARTIAL FLOOR PLAN - LIGHTING  
E300 SCALE: 1/4" = 1'-0"



3 PARTIAL FLOOR PLAN - POWER  
E300 SCALE: 1/4" = 1'-0"



NOTES:

1. FOR SYMBOL LIST, ABBREVIATIONS AND GENERAL NOTES REFER TO DRAWING E100. FOR LIGHTING FIXTURE AND PANEL SCHEDULES REFER TO DRAWING E500.
2. CONNECT EMERGENCY LIGHTING FIXTURE TO THE LIGHTING CIRCUIT PRIOR TO ANY LIGHTING SWITCHES.
3. FIRE ALARM:
  - a) EXTEND THE FIRE ALARM WIRING FROM THE COMPONENTS SHOWN TO THE EXISTING MAIN FIRE ALARM CONTROL PANEL.
  - b) UPGRADE AND REPROGRAM THE EXISTING FIRE ALARM PANEL AS REQUIRED.
  - c) FURNISH AND INSTALL ALL WIRING AND EQUIPMENT TO MATCH THE EXISTING COMPONENTS PRESENTLY IN USE.

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SEAL  
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PROJECT TITLE  
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OWNER  
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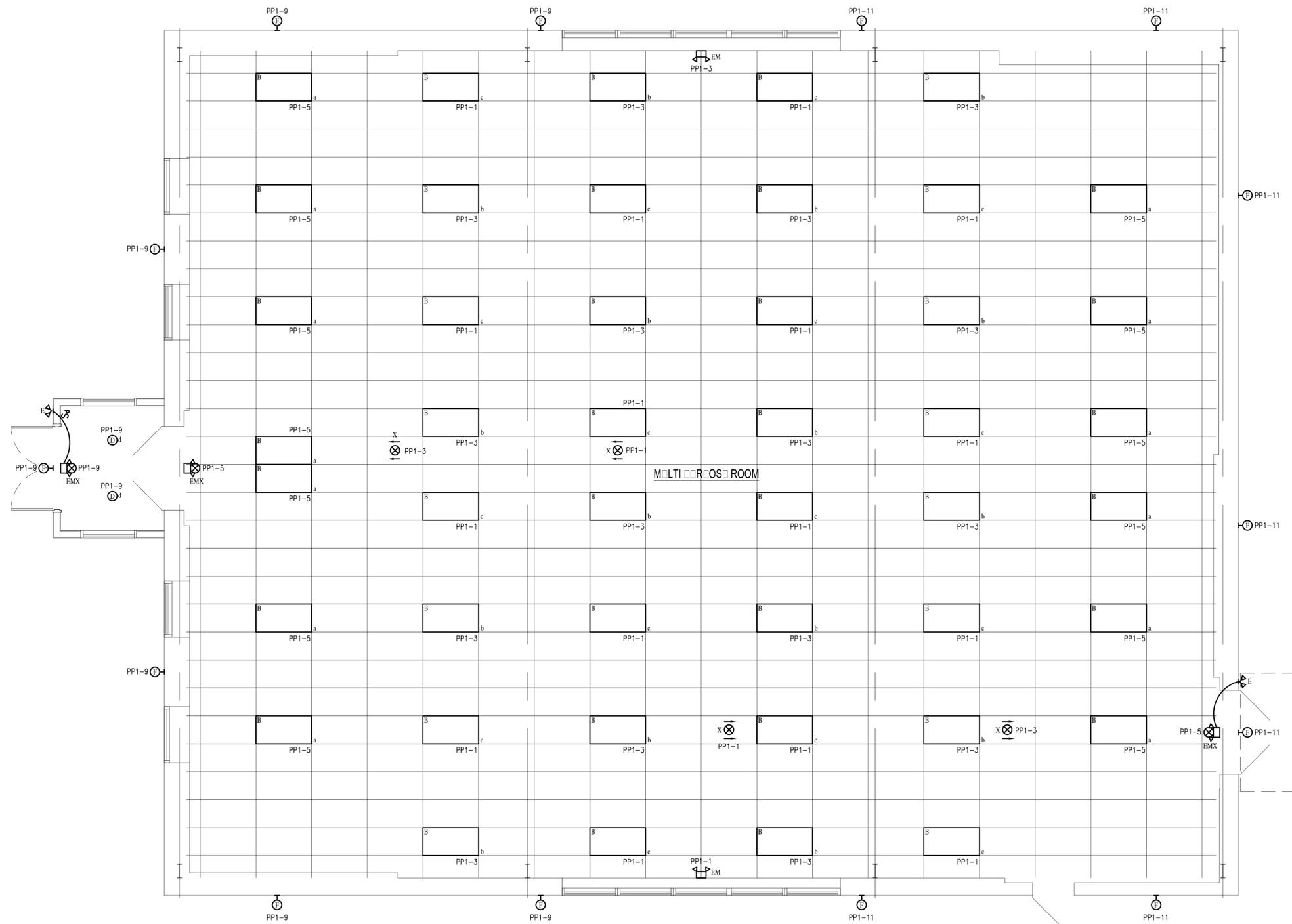
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No.	REVISION	DATE
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PROJ. NO.	21D111.1	
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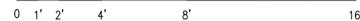
DRAWING NAME  
**FLOOR PLANS  
 LIGHTING  
 AND  
 POWER**

DRAWING NUMBER  
**E300**

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1 FLOOR PLAN - LIGHTING  
 E301 SCALE: 1/4" = 1'-0"



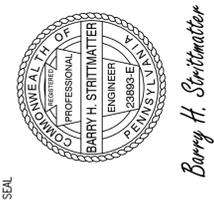
NOTES

- FOR SYMBOL LIST, ABBREVIATIONS AND GENERAL NOTES, REFER TO DRAWING E100. FOR LIGHTING FIXTURE AND PANEL SCHEDULES REFER TO DRAWING E500.
- CONNECT THE EXIT SIGNS, EMERGENCY BATTERY PACK, NIGHT LIGHTING FIXTURES TO THE LIGHT FIXTURES CIRCUIT PRIOR TO ANY LIGHT SWITCHES.

**GnP Design Group**  
 MECHANICAL  
 ELECTRICAL  
 PLUMBING  
 FACILITY PLANNING  
 CONSTRUCTION MANAGEMENT

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PROJECT TITLE  
**FACILITY RENOVATIONS**

OWNER  
**BRISTOL TOWNSHIP**

ADDRESS  
**1248 SCHUMACHER DR  
 BRISTOL, PA 19007**

No.	REVISION	DATE
	PERMIT SET	12/02/22
	PROJ. NO. 21D111.1	
	DRAWN VL	
	CHECKED BG	
	DATE	
	SCALE AS NOTED	

DRAWING NAME  
**FLOOR PLAN  
 LIGHTING**

DRAWING NUMBER  
**E301**



1 FLOOR PLAN - POWER  
E400 SCALE: 1/4" = 1'-0"



NOTES

- FOR SYMBOL LIST, ABBREVIATIONS AND GENERAL NOTES, REFER TO DRAWING E100. FOR LIGHTING FIXTURE AND PANEL SCHEDULES REFER TO DRAWING E500.
- FIRE ALARM:
  - a) EXTEND THE FIRE ALARM WIRING FROM THE COMPONENTS SHOWN TO THE EXISTING MAIN FIRE ALARM CONTROL PANEL.
  - b) UPGRADE AND REPROGRAM THE EXISTING FIRE ALARM PANEL AS REQUIRED.
  - c) FURNISH AND INSTALL ALL WIRING AND EQUIPMENT TO MATCH THE EXISTING COMPONENTS PRESENTLY IN USE.

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SEAL

Barry H. Strittmatter

PROJECT TITLE  
**FACILITY RENOVATIONS**

OWNER  
**BRISTOL TOWNSHIP**

ADDRESS  
**1248 SCHUMACHER DR  
 BRISTOL, PA 19007**

No.	REVISION	DATE
	PERMIT SET	12/02/22
	PROJ. NO. 21D111.1	
	DRAWN VL	
	CHECKED BG	
	DATE	
	SCALE AS NOTED	

DRAWING NAME  
**FLOOR PLAN  
 POWER**

DRAWING NUMBER  
**E400**

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Barry H. Strittmatter

PROJECT TITLE: **FACILITY RENOVATIONS**  
 OWNER: **BRISTOL TOWNSHIP**  
 ADDRESS: **1248 SCHUMACHER DR  
 BRISTOL, PA 19007**

No.	PERMIT SET	12/02/22
No.	REVISION	DATE
PROJ. NO.	21D111.1	
DRAWN	EY	
CHECKED	OT	
DATE		
SCALE	AS NOTED	

DRAWING NAME:  
**SINGLE LINE  
 DIAGRAM  
 AND  
 SCHEDULES**

DRAWING NUMBER:  
**E500**

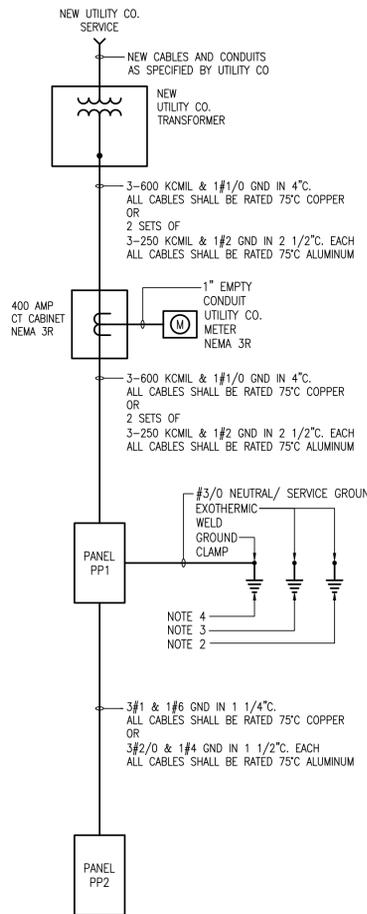
**LIGHTING FIXTURE SCHEDULE**

TYPE	MOUNTING	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	LAMP DATA			REMARKS
				No.	WATTS	VOLTS	
A	RECESSED	2 X 4 LED LIGHTING FIXTURE	LITHONIA #2WR TL G L48 5000LM IAW AFL MVOLT G21 50K 80CRI WH	2	38.7	120	
B	RECESSED	2 X 4 LED LIGHTING FIXTURE	LITHONIA #25TL 4 72L E21 LP850	4	53.32	120	
C	RECESSED	2 X 4 LED LIGHTING FIXTURE	LITHONIA #25TL 4 48L E21 LP850	2	35.79	120	
D	RECESSED	6" LED DOWNLIGHT	LITHONIA #LDN6 40 20 LOGAR LGS MVOLT E210	22	22.5	120	
E	WALL	DOUBLE HEAD EMERGENCY LIGHT, WEATHERPROOF SHIELD, 120 VOLT	LITHONIA# ELA T QWP L0309	2	1.5	9.6	
EM	UNIVERSAL	EMERGENCY LIGHT WHITE FINISH, POLYCARBONATE LIGHT SHIELD, 120 VOLT	LITHONIA #ELM2L	2	2.4	3.6	
EMX	UNIVERSAL	COMBINATION EXIT SIGN AND EMERGENCY LIGHT, 120 VOLT	LITHONIA #LHOM LED R HD	2	1.5	3.6	
F	WALL	EXTERIOR GENERAL LIGHTING AT DOOR, VANDAL RESISTING PHOTOCELL	LITHONIA #TMH LED 100 1000 50K T3M 120 PE DDBXD	1	39	120	
X	UNIVERSAL	LED EXIT, NICKEL CADMIUM BATTERY, SINGLE(DOUBLE) FACE RED LETTERS, WHITE FACE AND HOUSING	LITHONIA #LOM S W 3 R 120/277 EL N	1		120	

- NOTES:**
- LED LAMPS SHALL HAVE COLOR TEMPERATURE OF 5000°K UNLESS OTHERWISE NOTED.
  - VERIFY CEILING TYPE AND OPERATING VOLTAGE BEFORE ORDERING LIGHTING FIXTURES.
  - COORDINATE COMPATIBILITY OF FIXTURES WITH BUILDING CONSTRUCTION FOR AVAILABLE SPACE, CLEARANCE, ACCESSIBILITY, ETC.
  - COORDINATE THE EXACT LOCATION OF SUSPENDED AND/OR SURFACE MOUNTED LIGHTING FIXTURES IN MECHANICAL AND STORAGE AREAS WITH OTHER TRADES PRIOR TO ROUGH-IN AND INSTALLATION.
  - ALL SUSPENDED OR PENDANT MOUNTED FIXTURES SHALL BE PROVIDED WITH CUSTOM STEM LENGTHS TO SUIT EACH APPLICATION. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS.
  - VERIFY MAXIMUM ACCEPTABLE DISTANCE OF REMOTE BALLASTS (NORMAL AND DIMMING) WITH MANUFACTURERS RECOMMENDATION FOR ALL SUSPENDED OR PENDANT MOUNTED FIXTURES.

PANEL PP1				MAIN: 400 AMPERES MAIN CIRCUIT BREAKER				BUS: 400 AMP, TINNED COPPER				SHORT CIRCUIT RATING: 24,000 AIC MIN. COORDINATED WITH UTILITY CO.			
SERVICE: 240/120 V, 1 PHASE, 3 WIRE				NEUTRAL BUS: FULL				GROUND BUS: FULL							
FDR. DATA	CIR. NO.	LOAD DESCRIPTION		C.B. POLE NO.	C.B. TRIP A	C.B. LOAD VA	PHASE A	PHASE B	C.B. POLE NO.	C.B. TRIP A	C.B. LOAD VA	PHASE A	PHASE B	CIR. NO.	FDR. DATA
2 12 12 3/4"	1	1	LIGHTING	1	20	653	1213		300	20	1	RECEPTACLES	2	2 12 12 3/4"	
2 12 12 3/4"	3	1	LIGHTING	1	20	653	3503		2650	30	2	CU-1	4	2 10 10 3/4"	
2 12 12 3/4"	5	1	LIGHTING	1	20	693	3343		2650	-	-	-	6	- - - -	
2 12 12 3/4"	7	1	LIGHTING	1	20	286			2936	2650	30	2	CU-2	8	2 10 10 3/4"
2 12 12 3/4"	9	1	LIGHTING	1	20	318	2968		2650	-	-	-	10	- - - -	
2 12 12 3/4"	11	1	LIGHTING	1	20	273			4423	4150	60	2	CU-3	12	2 6 10 3/4"
2 12 12 3/4"	13	1	LIGHTING	1	20	364	4514		4150	-	-	-	14	- - - -	
	15	1	SPARE	1	20				4150	4150	60	2	CU-4	16	2 6 10 3/4"
2 12 12 3/4"	17	1	AC-3	1	20	600	4750		4150	-	-	-	18	- - - -	
2 12 12 3/4"	19	1	AC-4	1	20	600	1200		600	20	1	AC-1	20	2 12 12 3/4"	
2 12 12 3/4"	21	1	RANGE	1	20	600	1200		600	20	1	AC-2	22	2 12 12 3/4"	
2 12 12 3/4"	23	1	HOOD	1	20	600	2100		1500	20	1	MICROWAVE	24	2 12 12 3/4"	
2 12 12 3/4"	25	1	REFRIGERATED WORK TOP	1	20	600	1220		600	20	1	FREEZER	26	2 12 12 3/4"	
	27	1	SPARE	1	20				540	540	20	1	REFRIGERATOR	28	2 12 12 3/4"
	29	1	SPARE	1	20				600	20	1	GVW-1	30	2 12 12 3/4"	
	31	1	SPARE	1	20				540	540	20	1	RECEPTACLES	32	2 12 12 3/4"
	33	1	SPARE	1	20		0					1	SPACE	34	
	35	1	SPACE	1	20		0					1	SPACE	36	
	37	1	SPACE	1	20		0					1	SPACE	38	
3 1 6 1 1/4"	39	2	PANEL PP2	2	125	0	0					1	SPACE	40	
- - - -	41	-	-	-	0	0	0					1	SPACE	42	
				PHASE LOAD				19828	19392	VA		Remarks:			
TYPE: NEMA 1				TOTAL CONNECTED LOAD				39	KVA						
MOUNTING: SURFACE				TOTAL CONNECTED LOAD				163	AMPS						
FED FROM: UTILITY CO.				TOTAL CONNECTED LOAD				240	VOLTS						
LOCATION: UTILITY ROOM															

PANEL PP1				MAIN: 125 AMP MLO				BUS: 200 AMP, TINNED COPPER				SHORT CIRCUIT RATING: 24,000 AIC MIN. COORDINATED WITH UPSTREAM DEVICES			
SERVICE: 240/120 V, 1 PHASE, 3 WIRE				NEUTRAL BUS: FULL				GROUND BUS: FULL							
FDR. DATA	CIR. NO.	LOAD DESCRIPTION		C.B. POLE NO.	C.B. TRIP A	C.B. LOAD VA	PHASE A	PHASE B	C.B. POLE NO.	C.B. TRIP A	C.B. LOAD VA	PHASE A	PHASE B	CIR. NO.	FDR. DATA
	1	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	2		2	EXISTING
	3	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	4		4	EXISTING
	5	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	6		6	EXISTING
	7	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	8		8	EXISTING
	9	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	10		10	EXISTING
	11	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	12		12	EXISTING
	13	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	14		14	EXISTING
	15	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	16		16	EXISTING
	17	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	18		18	EXISTING
	19	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	20		20	EXISTING
	21	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	22		22	EXISTING
	23	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	24		24	EXISTING
	25	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	26		26	EXISTING
	27	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	28		28	EXISTING
	29	1	EXISTING LOAD	1	20	0	0		20	1	EXISTING LOAD	30		30	EXISTING
				PHASE LOAD				0	0	VA		Remarks:			
TYPE: NEMA 1				TOTAL CONNECTED LOAD				0	KVA						
MOUNTING: SURFACE				TOTAL CONNECTED LOAD				0	AMPS						
FED FROM: PANEL PP1				TOTAL CONNECTED LOAD				240	VOLTS						
LOCATION: UTILITY ROOM															



- NOTES:**
- FOR SYMBOL LIST, ABBREVIATIONS AND GENERAL NOTES, REFER TO DRAWING E100.
  - CONNECT THE SERVICE GROUND CONDUCTOR TO THE SERVICE GROUND ELECTRODE CONSISTING OF A 3/4" DIA. X 10 FT. LONG COPPER CLAD GROUND ROD.
  - CONNECT THE SERVICE GROUND CONDUCTOR TO THE CONCRETE ENCASED ELECTRODE AS REQUIRED BY THE N.E.C. ARTICLE 250-50 (C).  
 UTILIZE A # 3/0 BARE TINNED COPPER STRANDED GROUNDING CONDUCTOR. GROUNDING ELECTRODE SHALL BE INSTALLED BY OTHERS, WIRING AND CONNECTIONS SHALL BE INSTALLED BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONNECTION IS REQUIRED TO BE INSPECTED BEFORE CONCRETE IS POURED.
  - CONNECT THE SERVICE GROUND CONDUCTOR TO THE INCOMING WATER SERVICE BEFORE THE WATER METER AND TO METAL GAS PIPING.

1 SINGLE LINE DIAGRAM  
 E500 NTS







SEAL  
 Barry H. Strittmatter

PROJECT TITLE: TOWNSHIP FACILITY AT SCHUMACHER DRIVE  
 OWNER:  
 ADDRESS: BRISTOL TOWNSHIP, 1248 SCHUMACHER DR, BRISTOL, PA 19007

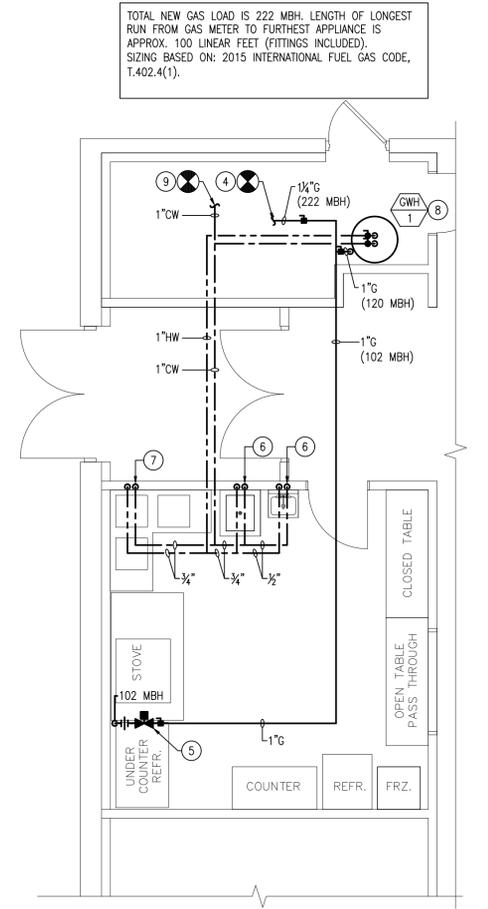
No.	REVISION	DATE
	PERMIT SET	03/31/2022
	REVIEW SET	02/07/2022
	REVIEW SET	01/20/2022
	REVIEW SET	11/02/2021

PROJ. NO.	21D111.1
DRAWN	JD
CHECKED	BG
DATE	
SCALE	AS NOTED

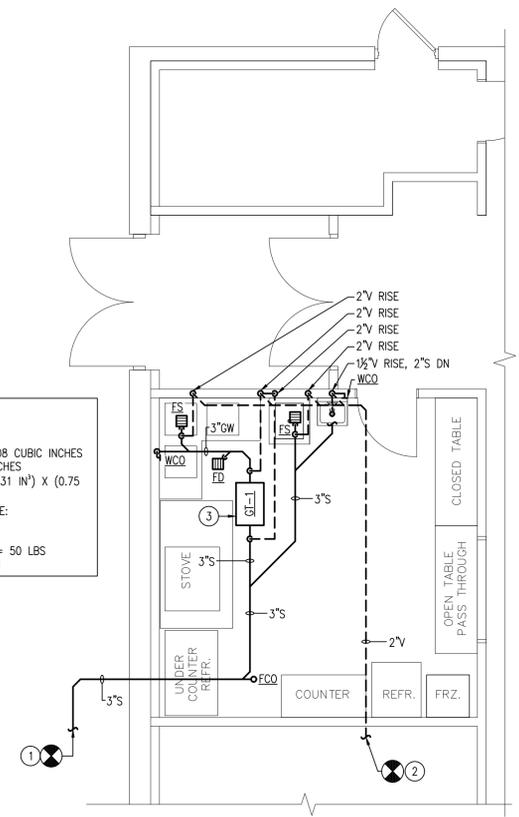
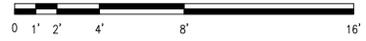
DRAWING NAME: PLUMBING FLOOR PLANS  
 DRAWING NUMBER: P300

- NOTES:**
- FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS REFER TO DRAWING P100.
  - ALL WORK TO MEET INTERNATIONAL PLUMBING CODE, 2015, ALL APPLICABLE RULES AND REGULATIONS.
  - PLUMBING PLANS ARE SCHEMATIC REPRESENTATION OF DESIGN INTENT OF THE PLUMBING SYSTEMS ONLY. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LOCAL PLUMBING CODE AND GOOD INSTALLATION PRACTICE. THE PLUMBING CONTRACTOR IS RESPONSIBLE BE AWARE OF THE LOCAL CODE, THE REQUIREMENTS ON THESE PLANS AND THE OWNERS REQUIREMENTS PRIOR TO SUBMITTING BIDS. THERE WILL BE NO ADDITIONAL COMPENSATION MADE FOR LACK OF KNOWLEDGE OF ANY REQUIREMENTS AFTER THE CONTRACTS HAVE BEEN AWARDED.
  - PLUMBING CONTRACTOR SHALL COORDINATE THE WORK WITH THE WORK OF ALL OTHER CONTRACTORS PRIOR TO START OF PLUMBING SYSTEM INSTALLATION. THE PLUMBING CONTRACTOR SHALL COORDINATE THE PLUMBING PIPE INSTALLATIONS WITH THE HVAC DUCTWORK, HVAC EQUIPMENT, ELECTRICAL CONDUITS AND FIXTURES, BUILDING STRUCTURAL MEMBERS TO INSURE ADEQUATE CLEARANCES AND PROPER INSTALLATION OF THE ITEMS OF HIS CONTRACT.
  - SHOULD ANY CHANGES OCCUR DUE TO COORDINATION WITH OTHER BUILDING TRADES AND CONFLICTS WITH THE PLANS, THE CONTRACTOR SHALL SUBMIT FOR THE ARCHITECTS APPROVAL AN ALTERNATE METHOD OF COMPLETING THE WORK ACCORDING TO THE INTENT OF THE PLUMBING DOCUMENTS.
  - ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH ANY WORK. ALL INVERT ELEVATION OF SANITARY PIPING BELOW FLOOR TO BE VERIFIED BEFORE START OF NEW WORK.
  - IF CONTRACTOR IS IN PROCESS OF NEW WORK AND CONFLICTS WITH EXISTING CONDITIONS OR OTHER TRADES ARISE, NOTIFY THE ENGINEER, ARCHITECT AND DETERMINE REVISED COURSE OF ACTION BEFORE CONTINUING WORK IN THIS AREA.
  - ALL GAS, HOT WATER AND COLD WATER PIPING TAKE OFFS TO HAVE SHUT OFF BALL VALVES.
  - PROVIDE ALL NECESSARY ACCESS PANELS FOR SHUT OFF VALVES, WHERE REQUIRED.
  - COORDINATE ROUGH-IN FIXTURES WITH GENERAL CONTRACTOR AND KITCHEN EQUIPMENT VENDOR PRIOR TO PURCHASE.
  - ALL PIPE PENETRATIONS GOING THRU FIRE RATED WALLS SHALL HAVE FIRE RATED PIPE SLEEVES AND PACKAGING.
  - ALL SANITARY PIPING 3" AND LARGER TO SLOPE AT .01', SMALLER TO SLOPE AT .02', UNLESS OTHERWISE NOTED.
  - ALL SANITARY PIPING SHALL RUN BELOW FLOOR, ALL VENT AND SERVICE PIPING SHALL RUN ABOVE CEILING UNLESS OTHERWISE NOTED.
  - ALL EXPOSED PIPES ON WATER SUPPLY & WASTE LINES SHALL BE INSULATED W/TRIEBRO WRAP OR EQUAL. REFER ALSO TO ARCHITECTURAL SHEETS FOR LOCATIONS & FIXTURE DIMENSIONAL INFORMATION.
  - THE PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL ALL BACKFLOW DEVICES REQUIRED BY CODE AND NOT FURNISHED BY OTHER EQUIPMENT SUPPLIERS.
  - THE ENTIRE NATURAL GAS INSTALLATION SHALL MEET ALL REQUIREMENTS AND APPROVAL OF IFGC 2015.
  - PROVIDE FLEXIBLE QUICK DISCONNECTS TO ALL KITCHEN GAS CONNECTIONS.
  - THE CONTRACTOR SHALL VERIFY GAS SUPPLY PRESSURE FOR KITCHEN EQUIPMENT AND PROVIDE PRV IF REQUIRED.
  - ALL EXCAVATION SHALL BE PERFORMED IN STRICT COMPLIANCE WITH OSHA REGULATIONS, OCCUPATIONAL SAFETY AND HEALTH ASSOCIATION.
  - ALL PIPE LAYOUT SHALL COORDINATE WITH BEAMS ARRANGEMENT. REFER TO STRUCTURAL DRAWINGS.
  - PROVIDE ALL NECESSARY TEMPORARY OR PERMANENT CAPS OR PLUGS FOR PIPING. DO NOT LEAVE PIPING OPEN ENDED.
  - PROVIDE ACCESSIBLE CLEANOUTS AT BASE OF ALL SANITARY STACKS AND ON HORIZONTAL SANITARY PIPING AS REQUIRED.

- SHEET NOTES:**
- EXTEND IN THE FIELD AND CONNECT NEW SANITARY PIPING TO EXISTING SANITARY MAIN, 4" PIPE SIZE OR LARGER. FIELD VERIFY EXACT SIZE, LOCATION, INVERT AND DIRECTION OF FLOW OF EXISTING PIPING. MODIFY, EXTEND AND/OR ADJUST EXISTING PIPING AS REQUIRED TO MAKE CONNECTION. PATCH ALL SURFACES DISTURBED OR LEFT UNFINISHED BY THIS WORK TO MATCH ADJACENT SURFACES. REPORT ANY ISSUES/CONCERNS TO ARCHITECT/ENGINEER.
  - EXTEND IN THE FIELD AND CONNECT NEW VENT PIPING TO EXISTING VENT MAIN 3" PIPE SIZE OR LARGER. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPING. MODIFY, EXTEND AND/OR ADJUST EXISTING PIPING AS REQUIRED TO MAKE CONNECTION. PATCH ALL SURFACES DISTURBED OR LEFT UNFINISHED BY THIS WORK TO MATCH ADJACENT SURFACES. REPORT ANY ISSUES/CONCERNS TO ARCHITECT/ENGINEER.
  - F&I NEW RECESSED GT-1 IN APPROXIMATE LOCATION SHOWN. REFER TO PLUMBING SCHEDULES AND DETAILS FOR ADDITIONAL INFORMATION. ADJUST PIPING AND EXACT LOCATION OF NEW GT-1 WITH EXISTING CONDITIONS. PATCH ALL SURFACES DISTURBED OR LEFT UNFINISHED BY THIS WORK TO MATCH ADJACENT SURFACES. REPORT ANY ISSUES/CONCERNS TO ARCHITECT/ENGINEER.
  - EXTEND AND CONNECT NEW 1/4" GAS TO EXISTING NATURAL GAS SERVICE AS REQUIRED. CONNECTION SHALL BE MADE TO EXISTING GAS MANIFOLD. MODIFY EXISTING PIPING AS REQUIRED TO MAKE NEW CONNECTION. CONTRACTOR TO COORDINATE NEW GAS LOADS WITH UTILITY CO. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION AND CHARACTERISTICS (INCLUDING PRESSURE, SIZE AND MATERIALS) OF EXISTING GAS SERVICE. CHECK SIZE OF EXISTING GAS METER AND/OR GAS PRESSURE REGULATOR AND ADJUST OR REPLACE AS REQUIRED TO ACCOMMODATE NEW GAS LOAD AND EQUIPMENT PRESSURE REQUIREMENTS. PATCH ALL SURFACES DISTURBED OR LEFT UNFINISHED BY THIS WORK TO MATCH ADJACENT SURFACES.
  - SHUT OFF VALVE AND GAS SOLENOID MOUNTED BELOW CEILING. DROP GAS DOWN AND RUN BEHIND EQUIPMENT. GAS SOLENOID VALVE 120 VAC WIRE BACK TO FIRE SUPPRESSION SYSTEM. PROVIDE GAS VALVE FOR EACH PIECE OF EQUIPMENT FULL SIZE OF APPLIANCE CONNECTION. FIELD VERIFY EQUIPMENT CONNECTION REQUIREMENTS.
  - 1/2" CW DROP TO HS. INSTALL TEMPERED MIXING VALVE SET TO 110F.
  - 3/4" CW & 3/4" HW TO 3 COMP SINK. PROVIDE WATTS #L7 BACKFLOW PREVENTER OR RESTRICT SPRAYER FROM EXTENDING BELOW FLOOD RIM OF SINK.
  - REPLACE EXISTING WATER HEATER WITH NEW GWH IN SAME LOCATION AND BACKFEED EXISTING HOT WATER MAIN FULL SIZE OF EXISTING PIPING. 1" HW DROP TO GWH. REFER TO DWG. P700 FOR WATER HEATER PIPING LAYOUT. ALL NEW AND EXISTING LAVATORIES AND HAND SINKS SHALL HAVE TEMPERED MIXING VALVES SET TO 110F. FIELD VERIFY ALL EXISTING HAND SINKS AND LAVATORIES HAVE TEMPERED MIXING VALVES AND FURNISH AND INSTALL NEW MIXING VALVES WHERE REQUIRED. VERIFY EXISTING MIXING VALVES ARE SET TO 110F AND ADJUST AS REQUIRED.
  - EXTEND NEW 1" CW IN THE FIELD FROM NEW WATER HEATER TO LOCATION OF EXISTING WATER SERVICE AND CONNECT TO EXISTING MAIN. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING SERVICE. MODIFY, EXTEND AND/OR ADJUST EXISTING PIPING AS REQUIRED TO MAKE CONNECTION. PATCH ALL SURFACES DISTURBED OR LEFT UNFINISHED BY THIS WORK TO MATCH ADJACENT SURFACES. REPORT ANY ISSUES/CONCERNS TO ARCH/ENGINEER.



2 FLOOR PLAN - SERVICE PIPING  
 P300 SCALE: 1/4" = 1'-0"



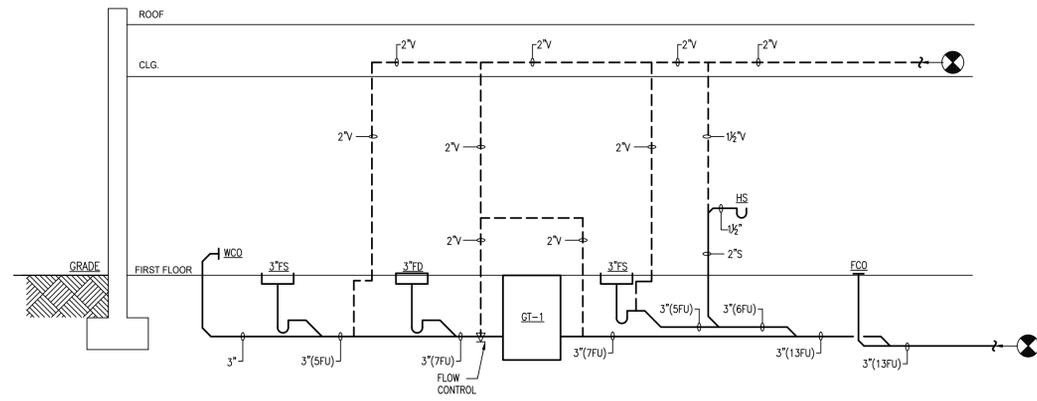
1 FLOOR PLAN - WASTE  
 P300 SCALE: 1/4" = 1'-0"



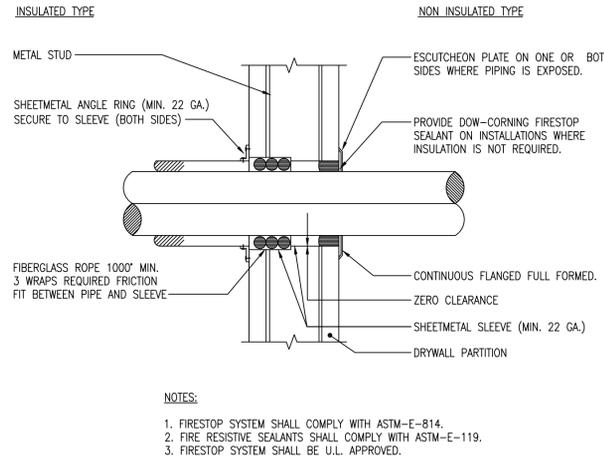
**GREASE TRAP SIZING**  
 GREASE TRAP (GT-1)

- 18"x18"x14" BOWLS X 3 = 13,608 CUBIC INCHES  
 TOTAL VOLUME = 13,608 CUBIC INCHES  
 FLOW RATE = 13,608 X (1 GAL / 231 IN<sup>3</sup>) X (0.75 LOADED) X (1 / 2 MIN) = 23 GPM
- FLOOR DRAIN W/O INDIRECT WASTE:  
 2 DFU = 1.0 GPM
- TOTAL FLOW RATE = 24.0 GPM  
 GREASE TRAP RETENTION PROVIDED = 50 LBS  
 GREASE TRAP FLOW RATE = 25 GPM

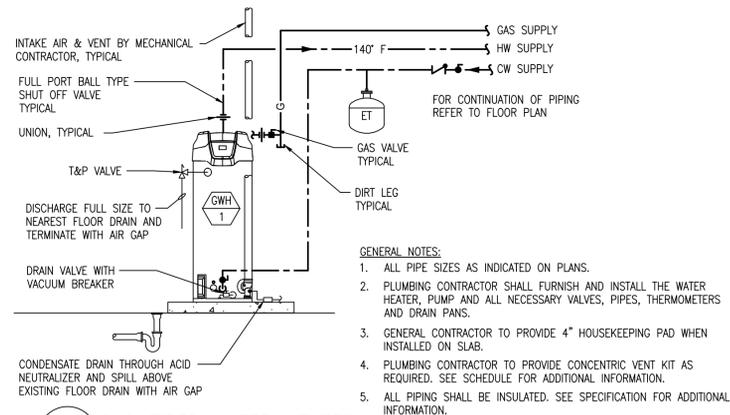
WATER HEATER (GAS FIRED)												GWH-1		
NO.	LOCATION	INPUT MBH	RECOVERY GAL/HR	STORAGE GAL	WATER TEMP. (°F)		CONN. SIZE		ELECTRICAL			ACCESSORIES	MANUFACTURER	MODEL NO.
					INLET	OUTLET	INLET	OUTLET	V	PH	HZ			
1	BASEMENT	120,000	138	60	40	140	1½"	1½"	120	1	60	TEMPERATURE AND PRESSURE RELIEF VALVE, FACTORY INSTALLED HEAT TRAP, AMTROL THERM-X-TROL EXPANSION TANK ST-5-C (ASME), 4 GAGE GALVANIZED STEEL DRAIN PAN 1.5 IN. DEEP. PROVIDE WITH CONDENSATE NEUTRALIZATION KIT.	A.O. SMITH	BTH-120(A)



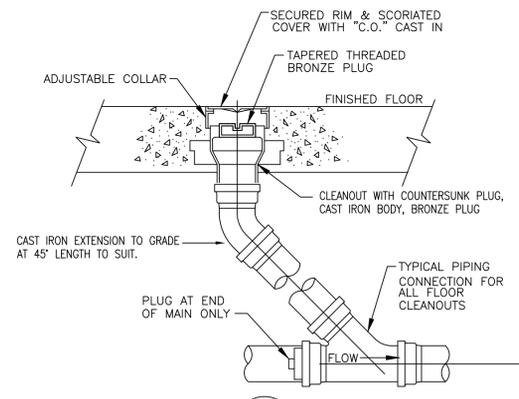
1 WASTE RISER DIAGRAM  
P700 N.T.S.



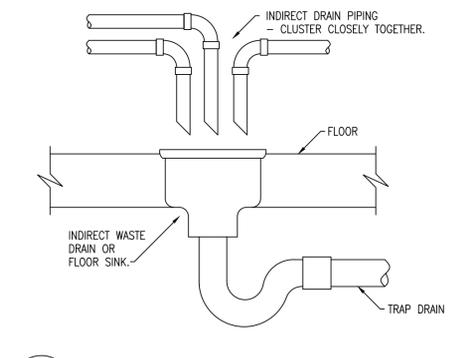
2 FIRE RATED PIPE SLEEVE-DRYWALL PARTITION  
P700 N.T.S.



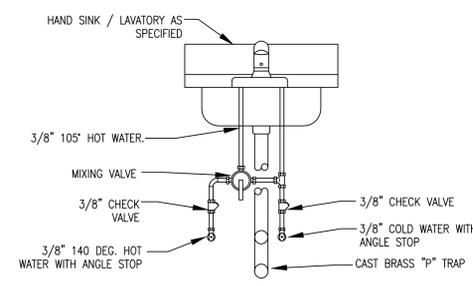
3 GAS FIRED WATER HEATER  
P700 N.T.S.



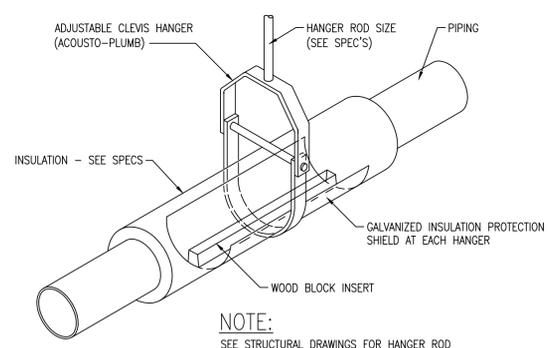
4 INTERIOR CLEANOUT  
P700 N.T.S.



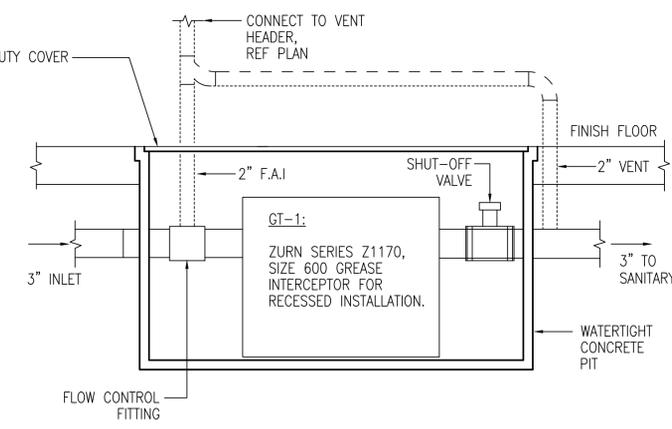
5 FLOOR SINK & INDIRECT WASTE DETAIL  
P700 N.T.S.



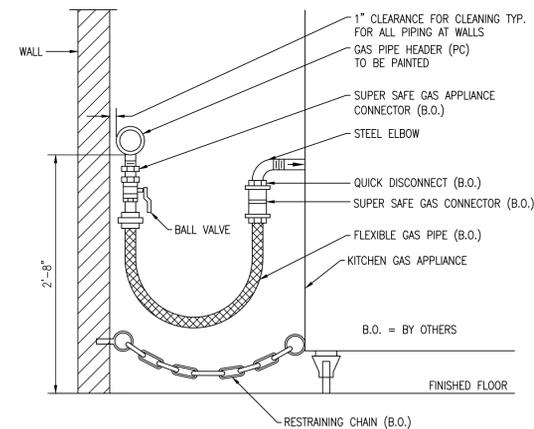
6 BELOW DECK MIXING VALVE  
P700 N.T.S.



7 PIPE HANGER AND INSULATION DETAIL  
P700 N.T.S.



8 RECESSED BELOW FLOOR GREASE INTERCEPTOR  
P700 SCALE: N.T.S.



9 KITCHEN EQUIPMENT GAS CONNECTION DETAIL  
P700 N.T.S.

DRAINAGE SPECIALTIES DATA				
VARIATION SUFFIX				
AJ	ADJUSTABLE STRAINER			
AR	ACID RESISTANT COATING			
B	SEDIMENT BUCKET			
CI	CAST IRON			
DI	DUCTILE IRON			
FC	FLASHING CLAMP			
H	HINGED GRATE			
LD	LOCKING DEVICE			
NB	NICKEL BRONZE			
P	TRAP PRIMER CONN.			
PB	POLISHED BRONZE TOP			
U	VANDAL PROOF GRATE			
ITEM	LOCATION	SYSTEM	SIZE	COMMENTS
FS	KITCHEN	WASTE	3"	J.R. SMITH SERIES 3101, SANI-CEPTOR; ACID RESISTANT COATED FLOOR DRAIN, 8-½" NICKEL BRONZE TOP; WITH SEDIMENT BUCKET
FD	KITCHEN	WASTE	3"	J.R. SMITH SERIES 3041, SANI-CEPTOR; ACID RESISTANT COATED FLOOR DRAIN, 8-½" NICKEL BRONZE TOP; WITH SEDIMENT BUCKET
FCO	KITCHEN	WASTE	3"	J.R. SMITH SERIES 4021S, D.I., ROUND ADJUSTABLE BRONZE TOP.
WCO	KITCHEN	WASTE	3"	J.R. SMITH SERIES 4472, CAST BRONZE, STAINLESS STEEL COVER.
GT-1	KITCHEN	WASTE	3"	ZURN SERIES Z1170-HD-E, SIZE 600 ACID RESISTANT GREASE INTERCEPTOR, 25 GPM FLOW RATE WITH FLOW CONTROL FITTING, 50 LBS. GREASE CAPACITY, 3" INLET/OUTLET, HEAVY DUTY COVER AND PDI CERTIFIED. FIELD VERIFY EXTENSION HEIGHT REQUIRED FOR FLUSH MOUNT RECESSED INSTALLATION.

NOTE:  
1) FINAL PLUMBING FIXTURE SELECTION IS BY OWNER.  
2) FOR TRAP PRIMING OF FD PROVIDE SURESEAL WATERLESS FLOOR DRAIN TRAP SEALER, AS AN ADD ALTERNATE TO SURESEAL, ZURN TRAP PRIMER 2-1022, OR SIMILAR PRODUCT MAY BE USED.

WATER MIXING VALVE DATA										
NO.	LOCATION	GPM	PD PSIG	INLET TEMP. °F		OUTLET TEMP. °F	TYPE	CABINET REQ'D	PIPE SIZE	MANUFACTURER AND MODEL NO.
				CW	HW					
1	LAVATORIES/HAND SINKS	0.5/1.5	-	40	140	110	COMBINATION	NO	½"	POWERS HYDROGUARD SERIES LFE480-00

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MECHANICAL  
ELECTRICAL  
PLUMBING  
FIRE PROTECTION  
FACILITY PLANNING  
CONSTRUCTION MANAGEMENT

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PROJECT TITLE: TOWNSHIP FACILITY AT SCHUMACHER DRIVE  
OWNER: BRISTOL TOWNSHIP  
ADDRESS: 1248 SCHUMACHER DR BRISTOL, PA 19007

No.	REVISION	DATE
	PERMIT SET	03/31/2022
	REVIEW SET	02/07/2022
	REVIEW SET	01/20/2022
	REVIEW SET	11/02/2021

PROJ. NO.	21D111.1
DRAWN	JD
CHECKED	BG
DATE	
SCALE	AS NOTED

DRAWING NAME: PLUMBING SCHEDULES RISER DIAGRAM AND DETAILS  
DRAWING NUMBER: P700

GENERAL REQUIREMENTS

A. GENERAL AND SUPPLEMENTARY CONDITIONS

1. THE GENERAL CONDITIONS OF PLUMBING AND FIRE PROTECTION GENERAL NOTES ON DRAWINGS, TOGETHER WITH ANY ADDENDA THERETO, ARE MADE PART OF THESE CONTRACTS.

B. BIDDING INSTRUCTIONS

1. BASE BID SHALL BE SUBMITTED AND SHALL INCLUDE ONLY THE EQUIPMENT EXACTLY AS SPECIFIED. 2. ALTERNATES MAY BE OFFERED INDICATING PRICE REDUCTION ONLY IF THE BASE BID IS SUBMITTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATION. ALTERNATE BIDS WILL NOT BE ACCEPTED IF THE CONTRACTOR DOES NOT ADHERE TO THIS SECTION. 3. ALTERNATE MATERIAL OR EQUIPMENT MUST BE OF EQUAL QUALITY, CAPACITY AND TYPE. CONTRACTORS SUBMITTING ALTERNATES WILL ASSUME ALL COST NECESSARY FOR THE REVISION OF THE WORK OF ANY OTHER TRADE, OWNER AND THE ENGINEER DUE TO THE SUBSTITUTION. ENGINEER'S DECISION SHALL BE FINAL IN ANY QUESTION CONCERNING ACCEPTABILITY OF ALTERNATE EQUIPMENT OR MATERIAL.

C. CONTRACT DRAWINGS

1. BIDDERS SHALL EXAMINE ALL DRAWINGS AND SPECIFICATIONS AND SHALL VISIT THE SITE IN ORDER TO ACQUAINT THEMSELVES WITH THE CONSTRUCTION AND THE EXTENT OF WORK.

D. SCOPE OF WORK

1. IT IS THE INTENT OF THESE SPECIFICATIONS TO INCLUDE ALL MATERIAL AND LABOR NECESSARY TO FORM A COMPLETE AND PROPERLY OPERATING WHOLE. 2. ALL WORK UNDER THIS SECTION SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, WHERE DIFFERENCES MAY EXIST BETWEEN THE DRAWINGS, THIS SPECIFICATION AND ANY CODES, THE CODE SHALL GOVERN AND WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE CODE AT NO ADDITIONAL COST TO THE OWNER.

E. LAWS, ORDINANCES AND REGULATIONS

1. SYSTEMS SHALL CONFORM TO ALL REQUIREMENTS OF INTERNATIONAL PLUMBING CODE 2015, STATE AND LOCAL CODES, CLIENT'S INSURANCE CARRIER, O.S.H.A. SPECIFICATIONS AND APPLICABLE INTERNATIONAL BUILDING CODE SECTIONS.

F. WORK NOT INCLUDED

1. PAINTING, GENERALLY. 2. ELECTRICAL WIRING EXCEPT AS REQUIRED FOR AUTOMATIC TEMPERATURE CONTROLS.

G. PROGRESS

1. THE WORK MUST BE DONE AS FAST AS THE PROGRESS OF OTHER TRADES WILL PERMIT AND AS DIRECTED.

H. CLEANING UP

1. UPON COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL, DEBRIS, TOOLS, AND EQUIPMENT FROM THE SITE, AND SHALL LEAVE THE PREMISES IN A NEAT CONDITION.

I. FIELD MEASUREMENTS

1. BEFORE DOING ANY WORK, THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS ON THE SITE.

J. SHOP DRAWING AND SUBMITTALS

1. BEFORE PROCEEDING WITH THE WORK, CONTRACTOR SHALL SUBMIT TO THE OWNER'S REPRESENTATIVE FIVE (5) COPIES OF EQUIPMENT AND MATERIAL SHOP DRAWINGS WITH APPROVAL STAMP AFFIXED FOR THE COMPLETE PROJECT.

A. MANUFACTURER'S DETAILS FOR ALL EQUIPMENT. B. WATER HEATERS

C. PIPING

D. OPERATING AND MAINTENANCE INSTRUCTIONS

2. ALL SHOP DRAWINGS WILL BE ASSUMED TO INCORPORATE ONLY MINOR FIELD CHANGES. CONTRACTOR IS REQUIRED TO POINT OUT ANY MAJOR CHANGES AND EXPLAIN WHY REQUESTED. FAILURE TO COMPLY HEREWITH NEGATES THE APPROVAL OF SHOP DRAWINGS FOR SUCH CHANGES. SHOP DRAWINGS SHALL BE SUBMITTED WITH CONTRACTORS APPROVAL STAMP.

K. SHORT FORM SPECIFICATIONS

1. CERTAIN ITEMS ARE SPECIFIED BY MANUFACTURER'S NAME. SUBSTITUTIONS WILL BE ACCEPTED IF BIDDING INSTRUCTIONS ARE FOLLOWED, BUT THE ENGINEER MAY CONSIDER ANY OR ALL DETAILS OF THE SPECIFIED ITEM AS SUFFICIENT TO WITHHOLD APPROVAL OF THE SUBSTITUTION. IF CONTRACTOR IS IN DOUBT AS TO THE ACCEPTABILITY OF AN ITEM CONTRACTOR MAY CONTACT THE ENGINEER BEFORE BIDDING OR SPECIFY SUBSTITUTION AS AN ALTERNATE IN THE BID. PROVIDED CONTRACTOR BIDS THE JOB AS SPECIFIED FIRST.

L. MATERIALS AND EQUIPMENT

1. ALL MATERIALS AND EQUIPMENT USED FOR THIS CONTRACT SHALL BE UNUSED AND OF THE LATEST MODEL OR DESIGN AVAILABLE AT THE TIME OF BIDDING.

M. REJECTED MATERIALS

1. REJECTED MATERIALS SHALL BE REMOVED FROM THE SITE WITHIN TWENTY-FOUR (24) HOURS. MATERIALS NOT REMOVED SHALL BE SUBJECT TO CONFISCATION OR DESTRUCTION WITHOUT COMPENSATION.

N. CUTTING AND PATCHING

1. OPENINGS AND CHASES SHALL BE BY THIS CONTRACTOR.

O. TESTING AND BALANCING

1. UPON COMPLETION, THE ENTIRE INSTALLATION OF PLUMBING SYSTEMS SHALL BE TESTED AND BALANCED. CERTIFICATES OF APPROVAL AND/OR ACCEPTANCE AS REQUIRED IN COMPLIANCE WITH REGULATIONS OF AGENCIES HAVING JURISDICTION SHALL BE OBTAINED.

P. PIPING AND EQUIPMENT IDENTIFICATION

1. EXPOSED AND CONCEALED PIPING SHALL BE IDENTIFIED BY MEANS OF SELF-ADHERING MARKERS, W.H. BRADY CO. B-350 PERMA-CODE FILM MARKERS. 2. ALL VALVES, CONTROL VALVES AND ACCESSORIES FOR REPAIR SERVICE SHALL BE IDENTIFIED BY MEANS OF VALVE TAGS. 3. ALL EQUIPMENT SHALL BE IDENTIFIED BY EQUIPMENT NAME AND DRAWINGS SCHEDULE IDENTIFICATION. TAGS SHALL BE 1-1/4" X 4" ENGRAVED NAMEPLATES WITH BLACK ENAMEL BACKGROUND AND NATURAL ALUMINUM BORDER AND LETTERS, AS MANUFACTURED BY SETON NAME PLATE CO., INC. OR APPROVED EQUIVALENT BY W.H. BRADY.

Q. SERVICING OF EQUIPMENT AND SYSTEMS

1. PRIOR TO EXPIRATION OF GUARANTEE PERIOD, CONTRACTOR SHALL CHECK ALL EQUIPMENT MATERIALS AND SYSTEMS INSTALLED UNDER THIS CONTRACT MAKE NECESSARY ADJUSTMENTS AND/OR REPLACEMENTS AND LEAVE SYSTEM IN FIRST CLASS OPERATING CONDITION.

R. INSTRUCTING OWNER'S PERSONNEL

1. AFTER ALL TESTS AND ADJUSTMENTS HAVE BEEN MADE, CONTRACTOR SHALL FULLY INSTRUCT THE REPRESENTATIVES OF THE OWNER IN ALL DETAILS OF OPERATION OF THE EQUIPMENT.

S. OPERATING AND MAINTENANCE INSTRUCTIONS

1. CONTRACTOR SHALL PROVIDE TWO (2) COPIES OF PRINTED INSTRUCTIONS IN LOOSE-LEAF BINDERS TO THE ENGINEER UPON COMPLETION OF INSTALLATION. 2. INSTRUCTION BOOK SHALL BE PREPARED TO THE SATISFACTION OF THE ENGINEER AND SHALL CONTAIN DETAILED OPERATING AND MAINTENANCE DATA FOR ALL COMPONENTS OF ALL SYSTEMS, INCLUDING WIRING AND PIPING DIAGRAMS.

T. GUARANTEE

1. CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE IN WRITING ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF SYSTEM BY THE OWNER. 2. ACCEPTANCE OF ALL SYSTEMS WILL BE EVIDENCED BY A LETTER TO THIS EFFECT FROM THE OWNER TO THE CONTRACTOR. 3. GUARANTEE SHALL INCLUDE RESTORATION TO ITS ORIGINAL OPERATING AND AESTHETIC CONDITION, FOR ALL ADJACENT WORK THAT IS DISTURBED IN FULFILLING THIS GUARANTEE.

PLUMBING AND DRAINAGE

A. CONTRACTOR

1. REFERENCE TO "THIS CONTRACTOR", "THE CONTRACTOR", OR "PLUMBING CONTRACTOR" USED IN THIS SPECIFICATION, MEANS THE CONTRACTOR RESPONSIBLE FOR ALL PLUMBING WORK DESCRIBED IN PLUMBING AND DRAINAGE. 2. THOSE RESPONSIBLE FOR WORK IN OTHER SECTIONS OF THIS SPECIFICATION WILL BE REFERRED TO AS "MECHANICAL CONTRACTOR", "GENERAL CONTRACTOR", "ELECTRICAL CONTRACTOR", OR SIMPLY BY THE TERM "OTHERS".

B. SCOPE OF WORK

1. THE WORK REQUIRED UNDER THIS SECTION CONSISTS OF ALL LABOR, MATERIALS, APPLIANCES, AND SERVICES NECESSARY FOR AND INCIDENTAL TO THE PROPER COMPLETION OF THE PLUMBING SYSTEM AND RELATED WORK, SHOWN, IMPLIED, OR REQUIRED BY THE DRAWINGS AND THESE SPECIFICATIONS. THE WORK INCLUDES GENERALLY, BUT IS NOT LIMITED TO THE FOLLOWING:

- A. ALL SOIL WASTE AND VENT - COMPLETE SANITARY SYSTEM INCLUDING TRAPPED CONNECTIONS TO ALL FIXTURES. B. GAS PIPING AND CONNECTION TO ALL GAS CONSUMING EQUIPMENT. C. COMPLETE DOMESTIC HOT AND COLD WATER PIPING SYSTEM WITH CONNECTIONS TO ALL WATER CONSUMING EQUIPMENT INCLUDING WATER HEATER. D. DISINFECTION OF DOMESTIC WATER SYSTEM. E. PLUMBING FIXTURES ALL PLUMBING FIXTURES AND DRAINS AS SPECIFIED HEREIN OR AS INDICATED ON THE DRAWING. F. GAS WATER HEATER AND ALL APPURTENANCES. G. INSULATION FOR ALL PIPING AND EQUIPMENT AS HEREINAFTER SPECIFIED. H. ALL MISCELLANEOUS PIPING, FITTINGS, VALVES, HANGERS, AND ALL OTHER RELATED APPURTENANCES NECESSARY FOR THE COMPLETE INSTALLATION. J. TESTING AND ADJUSTING OF ALL SYSTEMS. K. FINAL DRAIN AND WATER CONNECTIONS TO ALL FIXTURES OR EQUIPMENT. 2. ALL WORK UNDER THIS SECTION SHALL BE IN STRICT ACCORDANCE WITH THE 2015 INTERNATIONAL PLUMBING CODE, WHERE DIFFERENCES MAY EXIST BETWEEN THIS SPECIFICATION, DRAWINGS AND THE PLUMBING CODE, THE CODE SHALL GOVERN AND WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE CODE AT NO ADDITIONAL COST TO THE OWNER.

C. PROGRAM OF CONSTRUCTION

1. THIS PROGRAM OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR. 2. IMMEDIATELY AFTER THE AWARD OF THE CONTRACT AND BEFORE STARTING WORK, THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT DELIVERY DATES FOR ALL EQUIPMENT. 3. PLUMBING CONTRACTOR SHALL CONFER IMMEDIATELY WITH ALL OTHER CONTRACTORS TO ASCERTAIN ANY PROBLEMS THAT WILL NOT PERMIT OPERATION OF THE PLUMBING SYSTEM WHEN OWNER OBTAINS CERTIFICATE OF OCCUPANCY.

D. PIPING SYSTEMS

1. ALL PIPING IN FINISHED AREAS SHALL BE RUN CONCEALED IN BUILDING CONSTRUCTION UNLESS INDICATED OTHERWISE. 2. HOT AND COLD WATER PIPING: A. PIPE - TYPE "M" COPPER TUBING, ASTM B-88. FITTINGS - WROUGHT COPPER WITH SILVERBRIT 100 LEAD FREE OR BRIDGIT LEAD FREE SOLDERED JOINTS. 50/50 SOLDER IS NOT ACCEPTABLE. 3. ALL SOIL, WASTE AND VENT PIPING: A. PIPE AND FITTINGS - MEDIUM WEIGHT CAST IRON, ASTM A-74, OR SCHEDULE 40 GALVANIZED STEEL, ASTM A-120 WITH SCREWED GALVANIZED CAST IRON LONG RADIUS DRAINAGE PATTERN FITTINGS. SCREWED MALLEABLE IRON 150# OR DRAINAGE WEIGHT COPPER, ASTM B306-66A. NO HUB CAST IRON. B. UNDERGROUND CAST IRON SANITARY PIPE: CAST IRON-BELL-AND-SPIGOT SOIL PIPE SHALL BE FIRMLY PACKED WITH OAKUM OR HEMP AND FILLED WITH MOLTEN LEAD NOT LESS THAN 1-INCH DEEP WHICH SHALL BE RUN IN ONE POURING AND CALKED TIGHT WHEN COLD. 4. EXPOSED DRAINAGE PIPE AND FITTINGS AT PLUMBING FIXTURES AND EQUIPMENT: A. PIPE - CHROME PLATED BRASS OR COPPER WITH POLISHED CHROME FITTINGS. 5. DOMESTIC COLD AND HOT WATER SHORT EXPOSED CONNECTIONS TO FIXTURES: A. PIPE - CHROME PLATED IP'S BRASS PIPE. FITTINGS - CHROME PLATED BRASS WITH SCREWED FITTINGS.

E. PLUMBING FIXTURES

1. ALL TRIM SHALL BE FIRST GRADE OF THE MANUFACTURER SPECIFIED AND ALL FIXTURES AND TRIM SHALL BE PERFECT IN ALL RESPECT. 2. UNLESS SPECIFIED OTHERWISE, ALL FAUCETS, FITTINGS, TRAPS, WATER AND WASTE CONNECTIONS AND ANY OTHER EXPOSED METAL PARTS SHALL BE POLISHED CHROME PLATED. ALL FAUCET, POP-UP WASTE AND TRAPS SHALL BE CHROME PLATED CAST BRASS. 3. ALL PLUMBING FIXTURES AND TRIM THAT IS DAMAGED SHALL BE REPLACED BY THE PLUMBING CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER. 4. FIXTURES SHALL BE COMPLETE. IN ALL RESPECTS AND THE FIXTURE FIGURE NUMBER SHALL APPLY TO THE ENTIRE FIXTURE, INCLUDING ALL NECESSARY APPURTENANCES. FIXTURE FIGURE NUMBERS SHOWN ARE INTENDED TO BE COMPLETE FIXTURES.

F. SANITARY DRAINAGE SYSTEM

1. AS SHOWN ON DRAWINGS OR AS REQUIRED. 2. PIPING AS IN PIPING SYSTEMS SECTION. MAKE ALL CHANGES IN DIRECTION OF UNDERGROUND PIPE WITH "Y" BRANCHES AND 1/8 BENDS. INSTALL CLEAN-OUTS AT THE END OF "Y" BRANCH FITTINGS AND AT THE BASE OF ALL STACKS AND VENTS. 3. THE APPROXIMATE POSITION AND SIZE OF ALL PIPING FOR SYSTEM IS SHOWN GENERALLY ON DRAWINGS. WHERE QUESTION EXISTS, CONSULT WITH ARCHITECT BEFORE PROCEEDING. 4. PLUMBER SHALL VERIFY LOCATION OF EXISTING SANITARY MAIN DRAIN AND DOMESTIC WATER SERVICE BEFORE STARTING WORK.

G. DOMESTIC WATER SYSTEM

1. DUE TO THE SCALE OF DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS AND FITTINGS, WHICH MAY BE REQUIRED. CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISHED CONDITIONS AFFECTING HIS WORK AND ARRANGE HIS WORK ACCORDINGLY, FURNISHING ALL OFFSETS, FITTINGS, VALVES TRAPS, SPECIALTIES AND OTHER MATERIAL THAT MAY BE REQUIRED TO MEET THE CONDITIONS WITHOUT ADDITIONAL COST TO THE OWNER. 2. DO NOT INSTALL JOINTS OR FITTINGS OVER ELECTRICAL EQUIPMENT. 3. INSTALL PIPING PARALLEL WITH OR AT RIGHT ANGLES TO WALLS, FLOORS AND PARTITIONS. 4. INSTALL ALL PIPING TO PROVIDE ACCESS TO VALVES AND EQUIPMENT. INSTALL UNIONS OR FLANGES AT ALL CONNECTIONS TO EQUIPMENT. 5. ANCHOR AND BRACE ALL PIPING TO PREVENT EXCESSIVE EXPANSION OR VIBRATION. 6. VALVES SHALL BE PROVIDED ON EACH BRANCH AND TO EACH PIECE OF EQUIPMENT OR FIXTURE.

H. NATURAL GAS AND PIPING SYSTEM

1. MAKE ALL NECESSARY ARRANGEMENTS WITH THE GAS UTILITY COMPANY. THIS CONTRACTOR SHALL PAY ALL CHARGES IN CONNECTION WITH THE INSTALLATION OF THE GAS SERVICE AND METER AND PROVIDE ALL LABOR AND MATERIAL REQUIRED FOR THE INSTALLATION. 2. THIS CONTRACTOR SHALL PROVIDE DISTRIBUTION SYSTEM FROM THE GAS METERS AND THROUGHOUT THE BUILDINGS INCLUDING UNDERGROUND PIPING AS REQUIRE, MAINS, DRIPS, BRANCHES, SHUT-OFFS, UNIONS, OTHER DEVICES AND FITTINGS AND CONNECT TO ALL GAS CONSUMING DEVICES. GRADE HORIZONTAL PIPING MINIMUM OF 1/4" IN 15 FEET TOWARD LOW POINTS. PROVIDE DRIPS AT LOW POINTS WITH TEE NIPPLE, VALVE AND CAP. CONCEAL PIPING IN FINISHED AREAS. USE REDUCING FITTINGS WHERE PIPES ARE REDUCED IN SIZE. ON HORIZONTAL RUNS, USE ECCENTRIC FITTINGS AND TAKE ALL BRANCHES FROM TOP OR SIDE OF PIPE. 3. HEAVY RED BRASS GROUND KEY TYPE GAS COCKS. 4. PROVIDE PRESSURE REGULATORS AS REQUIRED. 5. THE ENTIRE INSTALLATION SHALL MEET ALL REQUIREMENTS AND APPROVAL NFPA 54, 2015 IFCC AND LOCAL GAS COMPANY REQUIREMENTS. 6. PIPE - SCHEDULE 40 BLACK STEEL, ASTM A-120. 7. FITTINGS - SCREWED BLACK MALLEABLE IRON, 150 LB. UP TO 4", OVER 4" SHALL BE BUTT WELDED.

I. WORK IN EXISTING BUILDING

1. PERFORM WORK IN EXISTING BUILDING WHEN AND AS DIRECTED. ALL WORK IS TO BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE OCCUPANTS. 2. THE WORK IS PREDICATED ON THE PERFORMANCE OF THE WORK DURING NORMAL WORKING HOURS. WHEN SO DIRECTED, INSTALL OR PERFORM WORK DURING OVERTIME HOURS, AND THE ADDITIONAL COST WILL ONLY INVOLVE THE "PREMIUM" PORTION OF THE WAGES PAID. 3. SCRAP AND DEBRIS, EXCEPT AS OTHERWISE SPECIFIED, SHALL BE REMOVED FROM THE CONSTRUCTION SITE AND DISPOSED OF. WHEN REQUESTED BY OWNER, MOVE EQUIPMENT REMOVED TO A STORAGE PLACE ON THE PREMISES AND LEAVE AS PROPERTY OF THE OWNER. 4. WHEN INSTALLATION OF THE NEW WORK REQUIRES THE SHUTDOWN OF AN EXISTING OPERATING SYSTEM, A MINIMUM OF 72 HOURS WRITTEN NOTICE SHALL BE GIVEN TO THE OWNER BEFORE WORK IS STARTED. 5. THE WORK SPECIFIED SHALL INCLUDE REPAIR TO EXISTING SYSTEMS REQUIRED WHEN SUCH SYSTEMS ARE DISTURBED OR OTHERWISE DAMAGED AS A RESULT OF THE EXECUTION OF THIS WORK.

J. NATURAL GAS FIRED WATER HEATERS

1. WATER HEATERS SHALL BE AS MANUFACTURED BY BRADFORD WHITE OR SIMILAR, WITH ENERGY SAVER GAS BURNER. 2. HEATER MODEL AND SIZE SHALL BE AS INDICATED ON DRAWINGS. EACH HEATER SHALL INCLUDE THE FOLLOWING: 3. ALL ITEMS IDENTIFIED IN MANUFACTURER'S CATALOG DATA AS "STANDARD EQUIPMENT" INCLUDING BUT NOT LIMITED TO: A. ELECTRONIC IGNITION SYSTEM B. DRAFT BLOWER C. GLASS LINING D. PROTECTIVE MAGNESIUM ROD E. FACTORY INSTALLED HYDROJET TOTAL PERFORMANCE SYSTEM F. FACTORY INSTALLED DIELECTRIC WATERWAY FITTINGS G. 1" NON-CFC FOAM INSULATION H. FULLY AUTOMATIC CONTROLS I. BRASS DRAIN VALVE J. T&P RELIEF VALVE OPENING K. FLUE Baffle

K. GREASE INTERCEPTOR.

1. PROVIDE GREASE INTERCEPTOR AS INDICATED ON DWG. P300 OR EQUAL.

L. HOT WATER TEMPERATURE CONTROL MIXING VALVE.

1. PROVIDE HOT WATER TEMPERATURE CONTROL MIXING VALVES AS INDICATED ON DWG. P700 OR EQUAL.

M. TRAP PRIMER

1. AS SHOWN ON DRAWINGS OR AS REQUIRED. 2. PROVIDE AUTOMATIC TRAP PRIMER VALVE IS MACHINED FROM CSA360 CORROSION RESISTANT BRASS. 3. INSTALLATION SHALL BE AT LEAST 12" ABOVE TRAPS TO INSURE PROPER FLOW. 4. PROVIDE WITH ACCESS TO UNIT. 5. TRAP PRIMER IS IN ACCORDANCE WITH ASSE 1018.

N. INSULATION

1. GENERAL: A. INSULATION SYSTEMS: 2. INSULATION SYSTEMS: A. PIPING SYSTEMS: PLUMBING SYSTEMS PIPE SIZE THICKNESS INCH INCH DOMESTIC HOT WATER SUPPLY UP TO 2" 1 DOMESTIC COLD WATER UP TO 6 1 B. COVER FITTINGS AND VALVES WITH MOLDED GLASS FIBER OF THE SAME THICKNESS AS THE ADJOINING PIPE COVERING AND APPLY 8 OZ. CANVAS JACKET OR USE 25/50 RATED, ZESTON PVC INSULATED FITTING COVERS APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. C. AT THE CONTRACTOR'S OPTION 1-1/2" THICK SELF-SEAL ARMAFLEX 25/20 MAY BE USED ON DOMESTIC HOT AND COLD PIPING. PROVIDE PVC FITTING COVERS.

O. PIPING HANGERS AND SUPPORTS

1. INSTALL HANGERS, SUPPORTS, CLAMPS, AND ATTACHMENTS AS REQUIRED TO PROPERLY SUPPORT PIPING FROM BUILDING STRUCTURE. INSTALL HANGERS AND SUPPORTS COMPLETE WITH NECESSARY INSERTS, BOLTS, RODS, NUTS, WASHERS, AND OTHER ACCESSORIES. NOTE - UTILIZE EXISTING PIPING SUPPORT SYSTEMS TO THE MAXIMUM AMOUNT POSSIBLE. 2. ARRANGE FOR GROUPING OF PARALLEL RUNS OF HORIZONTAL PIPING AND SUPPORT TOGETHER ON FIELD-FABRICATED TRAPEZE PIPE HANGERS. 3. INSTALL HANGERS AND SUPPORTS TO ALLOW CONTROLLED THERMAL AND SEISMIC MOVEMENT OF PIPING SYSTEMS, TO PERMIT FREEDOM OF MOVEMENT BETWEEN PIPE ANCHORS, AND TO FACILITATE ACTION OF EXPANSION JOINTS, EXPANSION BENDS, AND SIMILAR UNITS. 4. INSTALL LATERAL BRACING WITH PIPE HANGERS AND SUPPORTS TO PREVENT SWAYING. PROVIDE SEISMIC BRACING AS REQUIRED FOR SEISMIC ZONE 1 FACTOR OF 0.075. 5. INSTALL HANGERS AND SUPPORTS TO PROVIDE INDICATED PIPE SLOPES AND SO MAXIMUM PIPE DEFLECTIONS ALLOWED BY ASME B31.1 (FOR POWER PIPING) AND ASME B31.9 (FOR BUILDING SERVICES PIPING) ARE NOT EXCEEDED. ADJUST HANGERS TO DISTRIBUTE LOADS EQUALLY ON ATTACHMENTS AND TO ACHIEVE INDICATED SLOPE OF PIPE. 6. INSTALL PROTECTIVE SHIELDS FOR INSULATED PIPING. SHIELDS SHALL BE 12 INCHES LONG AND 0.048 INCH THICK. 7. MAXIMUM DISTANCE BETWEEN HORIZONTAL SUPPORTS SHALL BE AS DESCRIBED BELOW:

Table with 4 columns: PIPE MATERIAL, SIZE, INSULATED, MAX. SPACING

Table with 4 columns: PIPE MATERIAL, SIZE, INSULATED, MAX. SPACING

MINIMUM ROD HANGER SIZE SHALL BE 3/8" DIAMETER.

P. VALVES

1. VALVE ALL EQUIPMENT IN SUCH MANNER THAT REPAIRS CAN BE MADE WITHOUT INTERRUPTING SERVICES IN THE BUILDING. INSTALL STOP VALVE IN HOT AND COLD WATER SUPPLY TO ALL PLUMBING FIXTURES NOT FURNISHED WITH INTEGRAL STOPS. 2. ALL VALVES SHALL BE ONE MANUFACTURER. 3. BALL VALVES - THREE PIECE BRONZE BODY, 150 PSI NTC SEAT, SOLDER ENDS EQUAL TO NIBCO MODEL S-595-Y-66.

Q. TESTING

1. TEST PIPING SYSTEMS TO MEET REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION, AS DIRECTED. PROVIDE ALL REQUIRED CERTIFICATES.

R. STERILIZATION

1. THOROUGHLY DISINFECT THE WATER PIPING UPON COMPLETION OF ALL TESTS. 2. THE STERILIZATION SOLUTION SHALL CONTAIN NOT LESS THAN 50 PPM OF AVAILABLE CHLORINE OR SODIUM HYPOCHLORITE AND SHALL BE INTRODUCED INTO THE SYSTEM AND REMAIN THEREIN FOR A PERIOD OF 24 HOURS. THE SYSTEM SHALL THEN BE FLUSHED WITH CLEAN WATER UNTIL THE RESIDUAL CHLORINE IS LESS THAN 0.2 PPM.

S. GUARANTEE

1. CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE IN WRITING ALL MATERIALS, EQUIPMENT AND WORKMANSHIP INCLUDING AUTOMATIC TEMPERATURE CONTROLS FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF SYSTEM BY THE OWNER. 2. GUARANTEE SHALL INCLUDE RESTORATION TO ITS ORIGINAL OPERATING AND AESTHETIC CONDITION, FOR ALL ADJACENT WORK THAT IS DISTURBED IN FULFILLING THIS GUARANTEE. 3. ALL REPAIRS AND/OR REPLACEMENTS SHALL BE MADE WITHOUT DELAY AND AT THE CONVENIENCE OF THE OWNER.

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MECHANICAL ELECTRICAL PLUMBING FIRE PROTECTION FACILITY PLANNING CONSTRUCTION MANAGEMENT

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Barry H. Strittmatter

SEAL

TOWNSHIP FACILITY AT SCHUMACHER DRIVE

BRISTOL TOWNSHIP

1248 SCHUMACHER DR BRISTOL, PA 19007

PROJECT TITLE

OWNER

ADDRESS

Table with 2 columns: Description, Date

DRAWING NAME

PLUMBING SPECIFICATIONS

DRAWING NUMBER

P900