

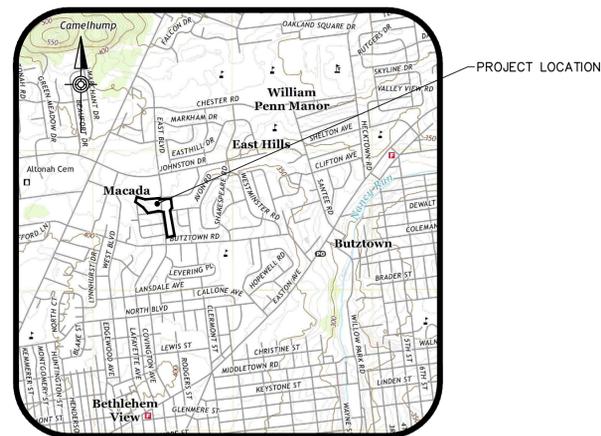
CONSTRUCTION AND EROSION AND SEDIMENT POLLUTION CONTROL PLAN FOR EASTON AVENUE FLOOD MITIGATION PHASE 1A BETHLEHEM TOWNSHIP, NORTHAMPTON COUNTY, PENNSYLVANIA

23 JUNE, 2023

REVISED: 28 OCTOBER, 2025

LEGEND

	Benchmark		PROPOSED PIPE
	Property Line		PROPOSED D-W ENDWALL
	Legal Right-of-Way Line		PROPOSED INLET/OUTLET STRUCTURE
	Soil Boundaries		PROPOSED D ENDWALL
	Existing Contour Major		PROPOSED MAJOR CONTOUR
	Existing Contour Minor		PROPOSED MINOR CONTOUR
	Existing Ground Elevation		AMENDED SOILS
	Existing Deciduous Tree		N.A.G S-75 EROSION CONTROL BLANKET OR EQUAL
	Tree/Brush Line		N.A.G C-350 PERMANENT TRM EROSION CONTROL BLANKET
	Road Centerline		RIP-RAP APRON
	Existing Curb		TEMPORARY ROCK FILTER
	Existing Edge of Road		12" COMPOST FILTER SOCK
	Existing Edge of Gravel		LIMIT OF DISTURBANCE
	Existing Fence		ORANGE CONSTRUCTION FENCE
	Existing Sign		TOPSOIL STOCKPILE
	Existing Above Ground Electric Line		ERNMX-180 SEED MIX
	Existing Electrical Manhole		ERNMX-181 SEED MIX
	Existing Light Standard		MILL AND OVERLAY PAVEMENT
	Existing Electrical Box		INLET PROTECTION
	Existing Underground Electric Line		TREE PROTECTION FENCING
	Existing Above Ground Electric and Telephone Line		PROPOSED CONIFEROUS TREE
	Existing Water Line		PROPOSED DECIDUOUS TREE
	Existing Water Valve		
	Existing Fire Hydrant		
	Existing Sanitary Sewer Line		
	Existing Storm Sewer Line		
	Existing Sanitary Sewer Manhole		
	Existing Storm Sewer Inlet		
	Existing Cable TV Pedestal		
	Existing Underground Fiber Optic Cable		
	Existing Underground Telephone Line		
	Existing Underground Telephone Line		
	Existing Underground Cable TV Line		



LOCATION MAP
SCALE: 1"=2000'
2,000' 1,000' 0' 2,000'
SCALE IN FEET

ENGINEER OF RECORD

RYAN M. CUMMINGS, P.E.

DATE

INDEX OF DRAWINGS

SHEET NO.	TITLE
1	COVER SHEET
2	GENERAL CONSTRUCTION NOTES
3	LOCATION MAP AND INDEX OF SHEETS
4-5	EXISTING CONDITIONS AND DEMOLITION PLANS
6-7	SITE RESTORATION PLANS
8-9	LANDSCAPING PLANS
10-11	EROSION AND SEDIMENT CONTROL PLANS
12	EROSION AND SEDIMENT CONTROL NOTES
13-14	EROSION AND SEDIMENT CONTROL DETAILS
15-20	CONSTRUCTION DETAILS

PA ONE CALL



PENNSYLVANIA ACT 287 (1974) AS AMENDED, REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH. PA ONE-CALL SERIAL NO. 20212500959, 20212500967, 20212500968, 20212501946, 20212501970, 20212502034, 20212502041, 20212502357, 20212502380, 20212502403, 20212502430 & 20212661201.

PA ONE CALL-UTILITY LIST

- EASTON SUBURBAN WATER AUTHORITY (610-258-7171)
- FIRSTLIGHT (1-888-344-7233)
- MET-ED (1-800-545-7741)
- PPL ELECTRIC UTILITIES (1-800-342-5775)
- BETHLEHEM CITY SET (610-865-7000)
- SERVICE ELECTRIC CABLE TB & COMMUNICATIONS (610-865-9100)
- RCN TELECOM (1-800-427-8686)
- UGI LEHIGH (1-800-276-2722)
- VERIZON EASTERN (1-8020-837-4966)



369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrg@hrg-inc.com
www.hrg-inc.com

OWNER

BETHLEHEM TOWNSHIP
MUNICIPAL AUTHORITY
3535 ORTH STREET
BETHLEHEM, PA 180120
(610) 814-6421

GENERAL NOTES

1. THE CONTRACTOR SHALL CHECK AND VERIFY ALL FIELD DIMENSIONS AND SITE CONDITIONS PRIOR TO CONSTRUCTION.
2. ALL HORIZONTAL MEASUREMENTS ARE U.S. STANDARD MEASUREMENTS, UNLESS OTHERWISE NOTED.
3. UNLESS OTHERWISE NOTED, ALL WORK AND MATERIALS SHALL COMPLY WITH ALL LOCAL AND STATE REGULATIONS AND CODES AND OSHA STANDARDS, INCLUDING BUT NOT LIMITED TO LATEST VERSIONS OF:
 - 3.1. PENNDOT PUBLICATION 408 SPECIFICATIONS
 - 3.2. PENNDOT PUBLICATION 72M, ROADWAY CONSTRUCTION DRAWINGS
 - 3.3. PENNDOT PUBLICATION 35, APPROVED CONSTRUCTION MATERIALS
4. FIELD ADJUSTMENTS SHALL BE MADE AS NECESSARY TO PROVIDE A SMOOTH TRANSITION BOTH VERTICALLY AND HORIZONTALLY FROM EXISTING TO PROPOSED GRADES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION AT THE START OF CONSTRUCTION, OF ALL RELOCATIONS OR ADJUSTMENTS NECESSARY FOR THIS PROJECT, INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS AND POLES, ETC. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES REQUIREMENTS AND SPECIFICATIONS AND SHALL BE APPROVED BY SUCH.
6. DETERMINATION OF SUBSURFACE CONDITIONS, INCLUDING BUT NOT LIMITED TO EXISTENCE OF ROCK, IS THE RESPONSIBILITY OF THE CONTRACTOR.
7. THE CONTRACTOR SHALL PROVIDE TEMPORARY SEDIMENT EROSION CONTROL MEASURES AS SHOWN ON THE PLANS. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE PLACED IN ACCORDANCE WITH ALL RULES AND REGULATIONS OF THE NORTHAMPTON COUNTY CONSERVATION DISTRICT AND THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION APPLICABLE TO 25 PA CODE CHAPTER 102.
8. ALL MATERIALS AND DETAILS SPECIFIED SHALL NOT BE ALTERED DURING CONSTRUCTION WITHOUT WRITTEN APPROVAL BY THE ENGINEER OF BETHLEHEM TOWNSHIP MUNICIPAL AUTHORITY.
9. EROSION AND SEDIMENT CONTROL PLANS HAVE BEEN PREPARED. CONTRACTOR MUST REFER TO THE OFFICIAL E&S PLANS.
10. THE CONTRACTOR SHALL NEATLY SAWCUT ALL JOINTS WHERE PROPOSED CONSTRUCTION MEETS EXISTING PAVING OR CONCRETE.
11. SEAL ALL ASPHALT TO ASPHALT & ASPHALT TO CONCRETE JOINTS WITH PG 64-22.
12. SHOULD A SINKHOLE(S) OPEN WITHIN THE WORK SITE, IMMEDIATELY DIVERT ALL SURFACE RUNOFF AND CONTACT THE ENGINEER FOR BACKFILLING GUIDANCE.
13. ALL TREES ARE TO BE PROTECTED UNLESS NOTED FOR REMOVAL AND REPLACEMENT.
14. ALL WORK TO BE COMPLETED WITHIN THE TOWNSHIP RIGHT-OF-WAY, TOWNSHIP PROPERTY, OR EASEMENTS ACQUIRED.
15. THE CONTRACTOR SHALL NOTIFY OWNER AND ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY CONDITIONS THAT ARE NOT CONSISTENT WITH THE CONTENT OF THESE PLANS.
16. THE CONTRACTOR IS TO PROVIDE PHOTOGRAPH AND VIDEO OF PRE AND POST CONSTRUCTION RECORD TO INCLUDE THE ROADWAYS, CURB AND SIDEWALK, AND ANY OTHER AREAS THAT COULD BE ADVERSELY IMPACTED DURING CONSTRUCTION.

GENERAL UTILITY NOTES

1. THE CONTRACTOR MUST CONTACT THE PENNSYLVANIA ONE-CALL NUMBER THREE WORKING DAYS PRIOR TO THE START OF WORK TO HAVE ALL UTILITIES MARKED IN THE WORK AREA. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL APPLICABLE REGULATIONS OF ACT 199 NOTIFICATION OF UTILITIES PRIOR TO CONSTRUCTION.
2. EXISTING UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST INFORMATION AVAILABLE AND ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. AS SUCH, THESE LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY, AND MUST BE FIELD VERIFIED PRIOR TO ANY CONSTRUCTION ACTIVITIES FOR THE PROJECT. HRG, INC. PROVIDES NO CERTIFICATION, EITHER IMPLICITLY OR EXPLICITLY, CONCERNING THE LOCATION, ABSENCE, OR PRESENCE OF ANY UNDERGROUND UTILITY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATION AND DEPTH OF ALL UTILITY LINES OR OTHER CONFLICTS (WHETHER OR NOT SHOWN ON THE PLAN) PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES, BY DIGGING TEST PITS (AT CONTRACTOR'S EXPENSE) WELL IN ADVANCE OF CONSTRUCTION. IF LOCATION OF UTILITIES ARE NOT AS SHOWN ON THE PLAN, CONTACT THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.

TRAFFIC CONTROL NOTES

1. THE CONTRACTOR WILL FURNISH, ERECT, PLACE AND MAINTAIN TRAFFIC CONTROL SIGNS AND DEVICES AND MAINTAIN TRAFFIC DURING HOURS OF CONSTRUCTION AND AT ALL OTHER TIMES IN ACCORDANCE WITH THE METHODS BELOW:
 - 1.1. 67 PA CODE, CHAPTER 212, OFFICIAL TRAFFIC CONTROL DEVICES
 - 1.2. PENNDOT PUBLICATION NO. 213
 - 1.3. PENNDOT PUBLICATION NO. 35 APPROVED CONSTRUCTION MATERIALS (BULLETIN 15)
 - 1.4. PENNDOT PUBLICATION NO. 408, SPECIFICATIONS, CURRENT EDITION

SURVEY NOTES

1. THIS SURVEY HORIZONTALLY REFERENCES NORTH AMERICAN DATUM OF 1983 (NAD83 - 2011) PENNSYLVANIA STATE PLANE, SOUTH ZONE DERIVED THROUGH THE KEYNETGPS GNSS VRS NETWORK.
2. THE VERTICAL DATUM IS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88), DERIVED THROUGH THE KEYNETGPS GNSS VRS NETWORK.
3. TOPOGRAPHIC EXISTING CONDITIONS AND CONTOURS SHOWN ARE DERIVED FROM A FIELD RUN TOPOGRAPHIC SURVEY, SEPTEMBER 14, 2021 THROUGH JANUARY 30, 2023.
4. THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND MAY BE SUBJECT TO EASEMENTS AND OTHER RESTRICTIONS, EITHER RECORDED OR UNRECORDED. THE SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENT OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP TITLE EVIDENCE OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE OTHER THAN WHAT IS SHOWN ON THIS PLAN.
5. THE LOCATIONS OF UTILITIES SHOWN HEREON ARE BASED ON ABOVEGROUND FEATURES, FIELD OBSERVATIONS/SURVEY, RECORD DRAWINGS RECEIVED FROM UTILITY COMPANIES, AND QUALITY B LOCATIONS PROVIDED BY LEXIS GROUP. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATION AND DEPTH OF ALL UTILITY LINES PRIOR TO START OF ANY CONSTRUCTION ACTIVITIES.
6. THE LOCATIONS OF UTILITIES AS SHOWN HEREON ARE BASED ON ABOVEGROUND FEATURES, FIELD OBSERVATIONS/SURVEY, AND RECORD DRAWINGS PROVIDED BY UTILITY COMPANIES. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATION AND DEPTH OF ALL UTILITY LINES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES IN COMPLIANCE WITH ACT 187 TO VERIFY THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES. A PA ONE CALL WAS PERFORMED PRIOR TO FIELD SURVEYING. SERIAL NO. 20212500959, 20212500967, 20212500982, 20212501946, 20212501970, 20212502034, 20212502041, 20212502357, 20212502380, 20212502403, 20212502430 & 20212661201.

DEMOLITION NOTES

1. ALL DEMOLITION SHALL BE CONDUCTED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
2. ALL DEMOLITION MATERIAL SHALL BE DISPOSED OF IN A LEGAL MANNER.
3. ITEMS TO REMAIN SHALL BE PROTECTED DURING DEMOLITION AND CONSTRUCTION ACTIVITIES. IF ANY ITEM TO REMAIN IS DAMAGED OR MADE INOPERABLE FOR ITS INTENDED FUNCTION IT SHALL BE REPAIRED OR REPLACED TO A CONDITION EQUAL TO OR BETTER THAN ITS CONDITION WHEN DAMAGED AT CONTRACTOR'S EXPENSE.

GRADING AND STORMWATER NOTES

1. EXISTING CONTOURS ARE SHOWN AT 1' INTERVALS.
2. THE CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS. ALL AREAS OF THE SITE MUST BE GRADED TO MAINTAIN POSITIVE DRAINAGE TO A DRAINAGE FACILITY. ANY LOCALIZED DEPRESSIONS WITHIN PAVED AREAS MUST BE ELIMINATED.
3. THE CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH AND CONTINUOUS GRADE TO TIE-IN TO EXISTING GRADE.
4. THE CONTRACTOR SHALL ADHERE TO ALL TERMS AND CONDITIONS OF THE PERMITS ISSUED BY THE GOVERNING REGULATORY AGENCY.
5. THE CONTRACTOR SHALL APPLY A STABILIZATION MATTING, OR EQUIVALENT, TO ALL SLOPES 3:1 OR STEEPER FOR ANY TEMPORARY OR PERMANENT CUTS OR FILLS.
6. EXISTING DRAINAGE STRUCTURES SHALL BE INSPECTED AND REPAIRED AS NECESSARY AND ALL EXISTING AND NEW PIPES AND INLETS SHALL BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS AT THE CONCLUSION OF CONSTRUCTION.
7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER AT THEIR OWN COST.
8. ALL STORM PIPING ENTERING STRUCTURES SHALL BE JOINED PER PENNDOT STANDARDS TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN OF GRADE, THICKNESS, CLASS, GROUP, AND/OR GAUGE OF PIPE AND SHALL PROVIDE THE SELECTION TO THE TOWNSHIP ENGINEER FOR APPROVAL.
10. ALL TRAFFIC BEARING DRAINAGE STRUCTURES SHALL BE CONSTRUCTED PER LATEST PENNDOT SPECS AND STANDARD DRAWINGS.
11. INVERT ELEVATIONS OF PIPES CONNECTED TO STRUCTURES ARE AT THE INSIDE EDGE STRUCTURE FOR STORM SYSTEM.
12. PIPE LENGTH AND SLOPE OF PIPES ARE BASED ON TWO DIMENSIONAL PLAN VIEW LENGTH BETWEEN OUTSIDE EDGES OF STRUCTURES FOR STORM SEWER.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION RESOLUTION OF ALL UTILITY CONFLICTS SHOWN (OR NOT SHOWN) ON PLANS.
14. IN AREAS ON THE PLAN WHERE TYPE-C INLET TOPS ARE SPECIFIED OR WHERE OTHER INLET TYPES ARE SPECIFIED IN CURBED AREAS (WHETHER INLETS ARE INSTALLED BY CONTRACTOR OR OTHERS) AND NO LENGTH OF CURB REPLACEMENT IS DIMENSIONED, IT SHOULD BE ASSUMED THAT APPROXIMATELY 5 FEET OF CURB WILL BE REPLACED ON THAT SIDE OF THE INLET TOP UNIT TO TIE-IN TO THE EXISTING CURB.
15. CONTRACTOR SHALL MAKE PROVISIONS TO INSTALL/REPLACE ROAD UNDERDRAIN IN ANY AREAS ENCOUNTERED DURING EXCAVATION.
16. ALL EXISTING STORMSEWER PIPE/STRUCTURE REMOVAL SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATIONS OF THE NEW PIPES/STRUCTURES UNLESS SPECIFIED AS PAY ITEMS ON PLANS.

WORK RESTRICTION NOTES

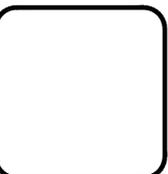
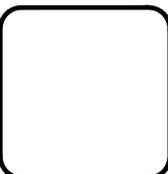
1. NO TREE CLEARING OPERATIONS SHALL BE PERFORMED BETWEEN MAY 15 AND AUGUST 15.

PENNDOT PUBLICATIONS

1. THESE PLANS REFERENCE THE FOLLOWING PENNDOT PUBLICATION EDITIONS:

PUBLICATION	EFFECTIVE DATE
PUB 408	LATEST EDITION AT TIME OF BID
PUB 72M	LATEST EDITION AT TIME OF BID
PUB 213	LATEST EDITION AT TIME OF BID
PUB 35	LATEST EDITION AT TIME OF BID

NO.	REVISION	DATE	BY



HRG
 Herbert, Rowland & Grubic, Inc.
 Engineering & Related Services
 AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
 Harrisburg, PA 17111
 (717) 564-1121
 Fax (717) 564-1158
 hrg@hrg-inc.com
 www.hrg-inc.com

**BETHLEHEM TOWNSHIP
 MUNICIPAL AUTHORITY**
 3535 ORTH STREET
 BETHLEHEM, PA 18020

(610) 814-6421

GENERAL NOTES
 FOR
EASTON AVE FLOOD MITIGATION PHASE 1

BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

PROJ. MGR. - GW
DESIGN - JUR/AW/JDP
CADD - PTO/JDP
CHECKED - RMC/JJR
SCALE - AS SHOWN
DATE - 2025.06.23

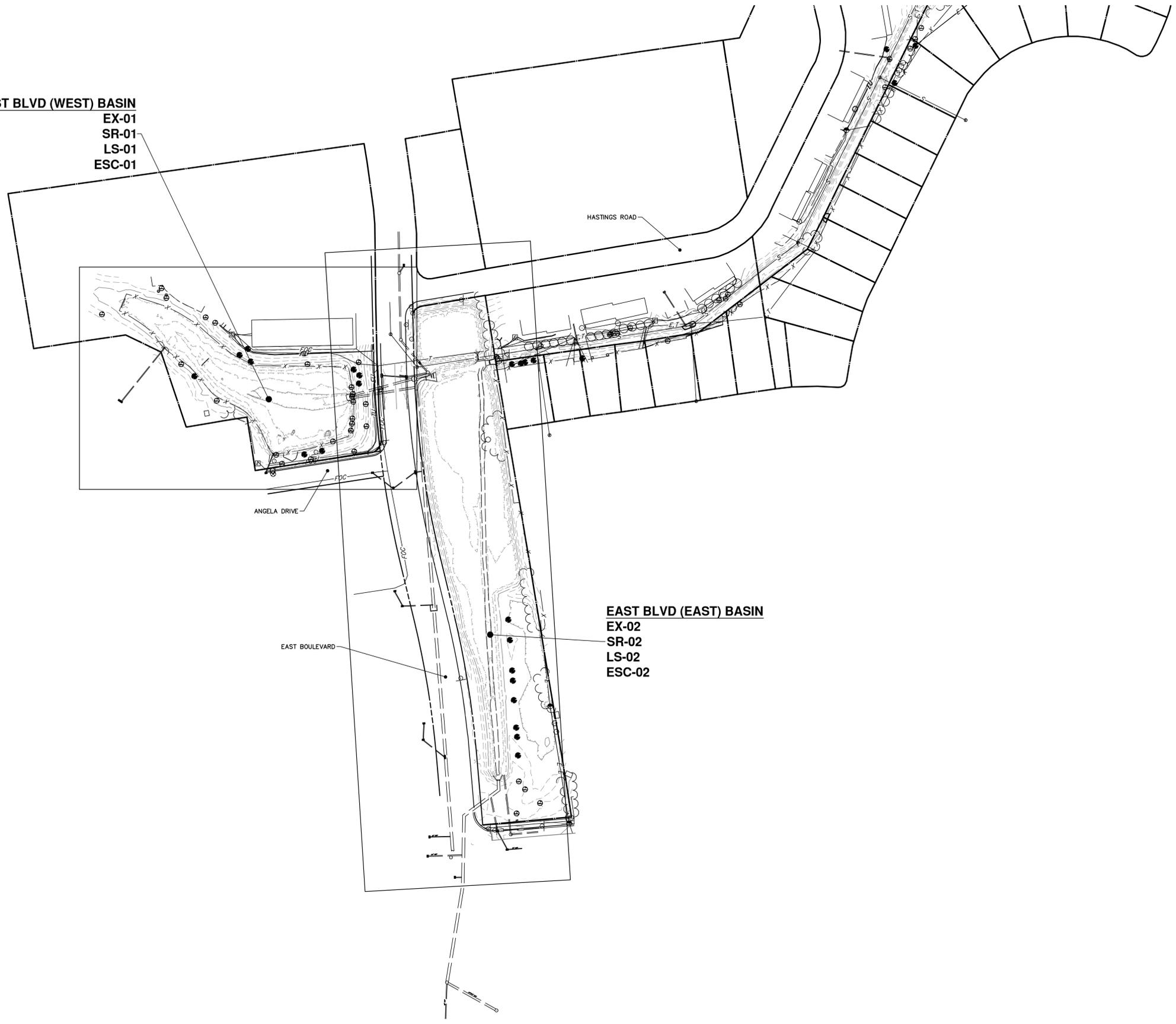
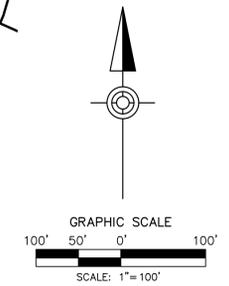
DRAWING NO.
NT-01

SHEET NO.
02 OF 20

PROJECT R009170.0428

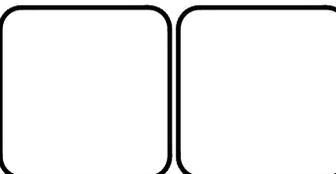
File Name: P:\2025\06\170_2502430\Plan_Site\Station_Ave_Pln_1\AS\0001\00010001.dwg User:NT-01 Job: 25- 2025-210pm - general

EAST BLVD (WEST) BASIN
 EX-01
 SR-01
 LS-01
 ESC-01



EAST BLVD (EAST) BASIN
 EX-02
 SR-02
 LS-02
 ESC-02

NO.	REVISION	DATE	BY



HRG
 Herbert, Rowland & Grubic, Inc.
 Engineering & Related Services
 AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
 Harrisburg, PA 17111
 (717) 564-1121
 Fax (717) 564-1158
 hrg@hr-g-inc.com
 www.hrg-inc.com

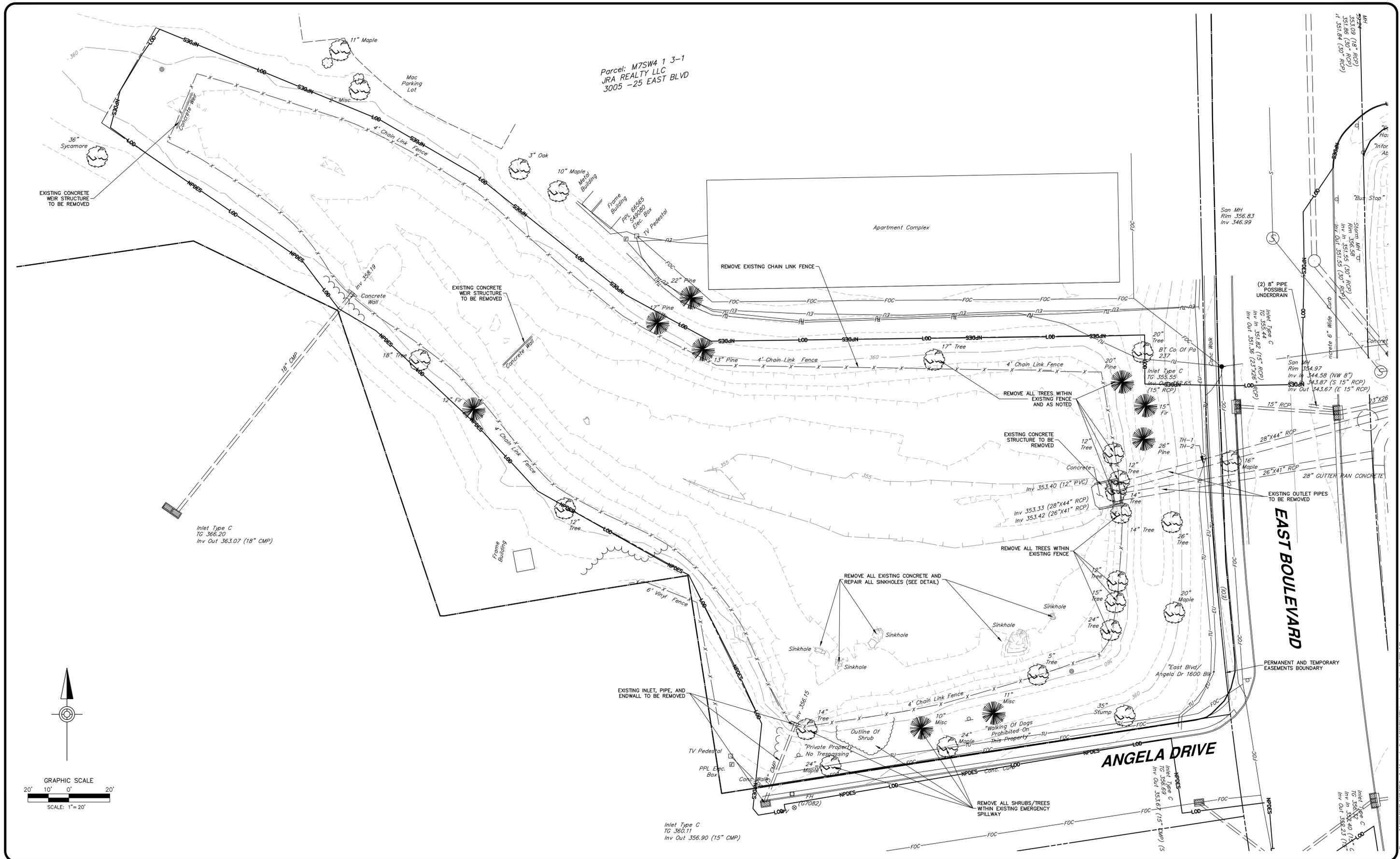
**BETHLEHEM TOWNSHIP
 MUNICIPAL AUTHORITY**
 3535 ORTH STREET
 BETHLEHEM, PA 18020
 (610) 814-6421

LOCATION MAP AND SHEET INDEX
 FOR
EASTON AVE FLOOD MITIGATION PHASE 1
 BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

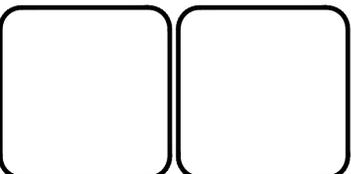
PROJ. MGR. - GW
 DESIGN - JUR/AW/JDP
 CADD - PTO/JDP
 CHECKED - RMC/JJR
 SCALE - AS SHOWN
 DATE - 2025.06.23

DRAWING NO.
IND-01
 SHEET NO.
03 OF 20
 PROJECT R009170.0428

File name: P:\000\009170_2428\03\Plan_Site\Location_Ave_P1_1A\000100000000.dwg User: jrg Date: 2025-06-23 10:08:00 AM



NO.	REVISION	DATE	BY



HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

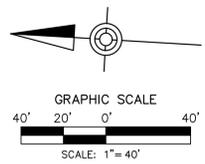
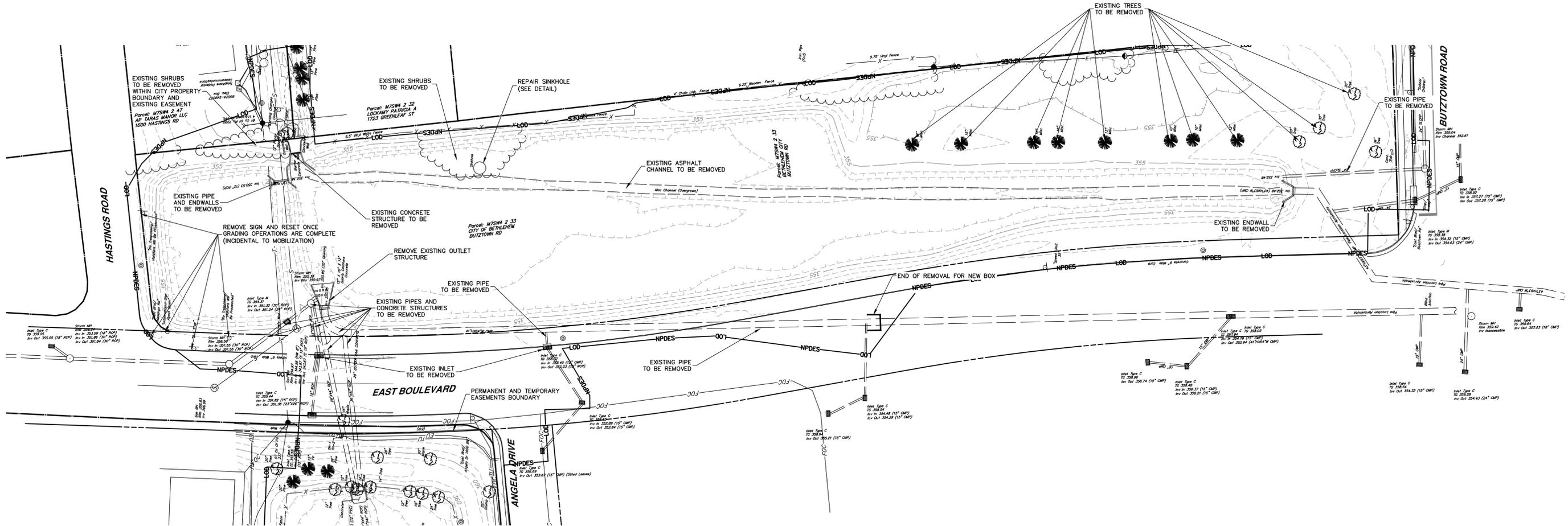
369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrg@hrg-inc.com
www.hrg-inc.com

BETHLEHEM TOWNSHIP
MUNICIPAL AUTHORITY
3535 ORTH STREET
BETHLEHEM, PA 18020
(610) 814-6421

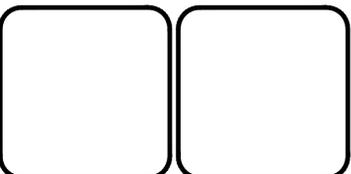
EAST BLVD (WEST) BASIN EXISTING CONDITIONS PLAN
FOR
EASTON AVE FLOOD MITIGATION PHASE 1
BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

PROJ. MGR. - GW
DESIGN - JUR/AW/JDP
CADD - PTO/JDP
CHECKED - RMC/JJR
SCALE - AS SHOWN
DATE - 2025.06.23

DRAWING NO.
EX-01
SHEET NO.
04 OF 20
PROJECT R009170.0428



NO.	REVISION	DATE	BY



HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrg@hrg-inc.com
www.hrg-inc.com

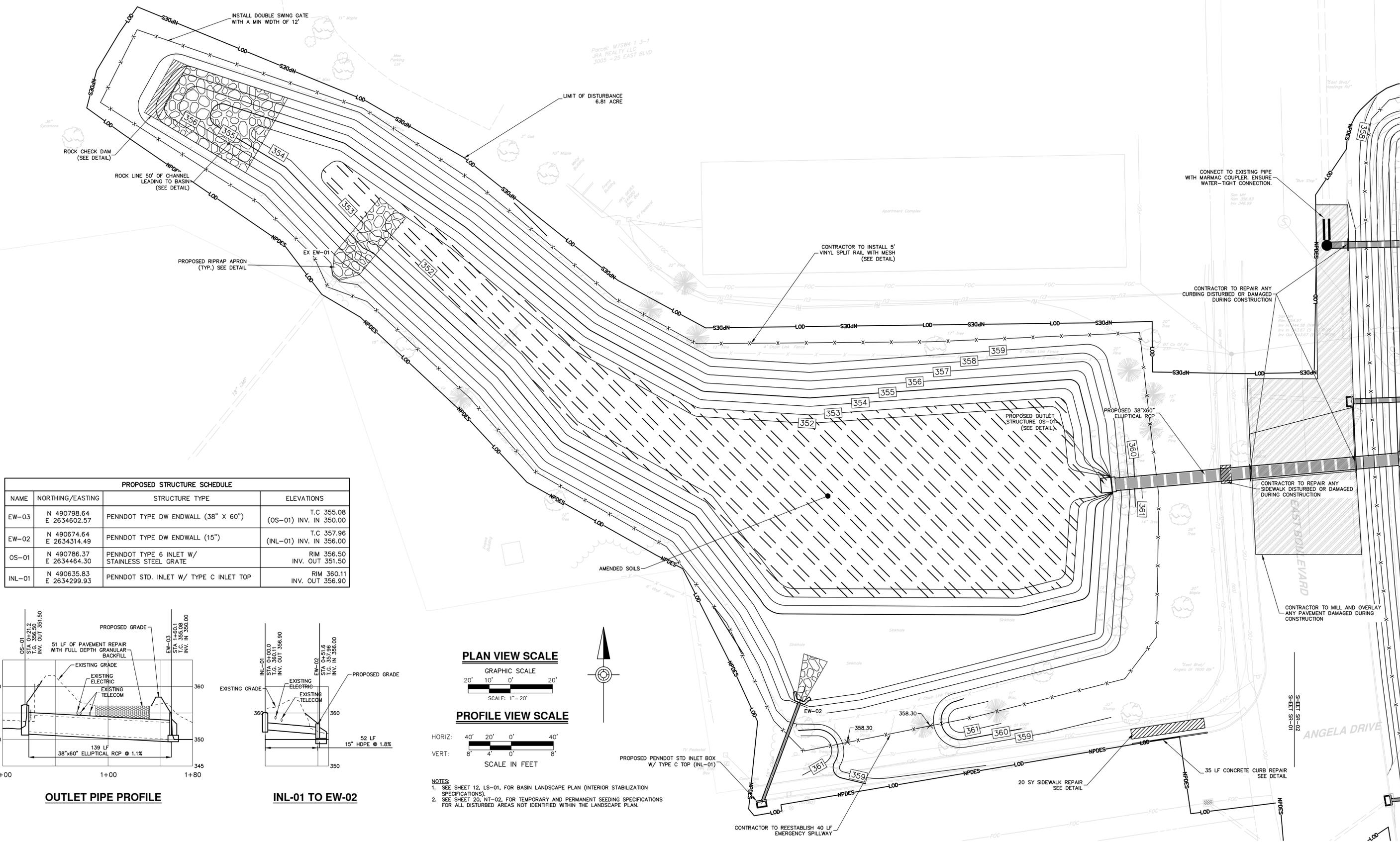
BETHLEHEM TOWNSHIP
MUNICIPAL AUTHORITY
3535 ORTH STREET
BETHLEHEM, PA 18020
(610) 814-6421

EAST BLVD (EAST) BASIN EXISTING CONDITIONS PLAN
FOR
EASTON AVE FLOOD MITIGATION PHASE 1
BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

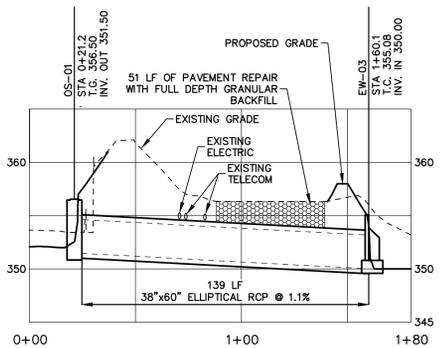
PROJ. MGR. - GW
DESIGN - JUR/AW/JDP
CADD - PTO/JDP
CHECKED - RMC/JJR
SCALE - AS SHOWN
DATE - 2025.06.23

DRAWING NO.
EX-02
SHEET NO.
05 OF 20
PROJECT R009170.0428

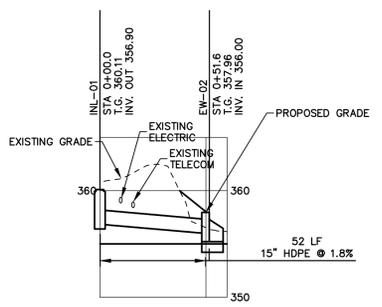
File Name: P:\009170\0428\0428\Drawings\Sheet\0428\0428.dwg Plot Date: 2025-06-23 10:08:23 AM



PROPOSED STRUCTURE SCHEDULE			
NAME	NORTHING/EASTING	STRUCTURE TYPE	ELEVATIONS
EW-03	N 490798.64 E 2634602.57	PENNDOT TYPE DW ENDWALL (38" X 60")	T.C 355.08 (OS-01) INV. IN 350.00
EW-02	N 490674.64 E 2634314.49	PENNDOT TYPE DW ENDWALL (15")	T.C 357.96 (INL-01) INV. IN 356.00
OS-01	N 490786.37 E 2634464.30	PENNDOT TYPE 6 INLET W/ STAINLESS STEEL GRATE	RIM 356.50 INV. OUT 351.50
INL-01	N 490635.83 E 2634299.93	PENNDOT STD. INLET W/ TYPE C INLET TOP	RIM 360.11 INV. OUT 356.90

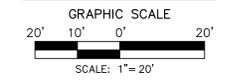


OUTLET PIPE PROFILE

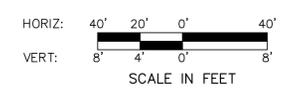


INL-01 TO EW-02

PLAN VIEW SCALE

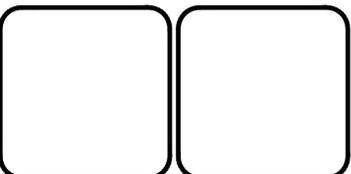


PROFILE VIEW SCALE



- NOTES:
- SEE SHEET 12, LS-01, FOR BASIN LANDSCAPE PLAN (INTERIOR STABILIZATION SPECIFICATIONS).
 - SEE SHEET 20, NT-02, FOR TEMPORARY AND PERMANENT SEEDING SPECIFICATIONS FOR ALL DISTURBED AREAS NOT IDENTIFIED WITHIN THE LANDSCAPE PLAN.

NO.	REVISION	DATE	BY



HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hr@hr-inc.com
www.hr-inc.com

**BETHLEHEM TOWNSHIP
MUNICIPAL AUTHORITY**
3535 ORTH STREET
BETHLEHEM, PA 18020
(610) 814-6421

EAST BLVD (WEST) BASIN SITE RESTORATION PLAN
FOR
EASTON AVE FLOOD MITIGATION PHASE 1

BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

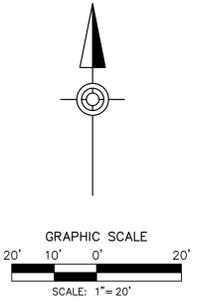
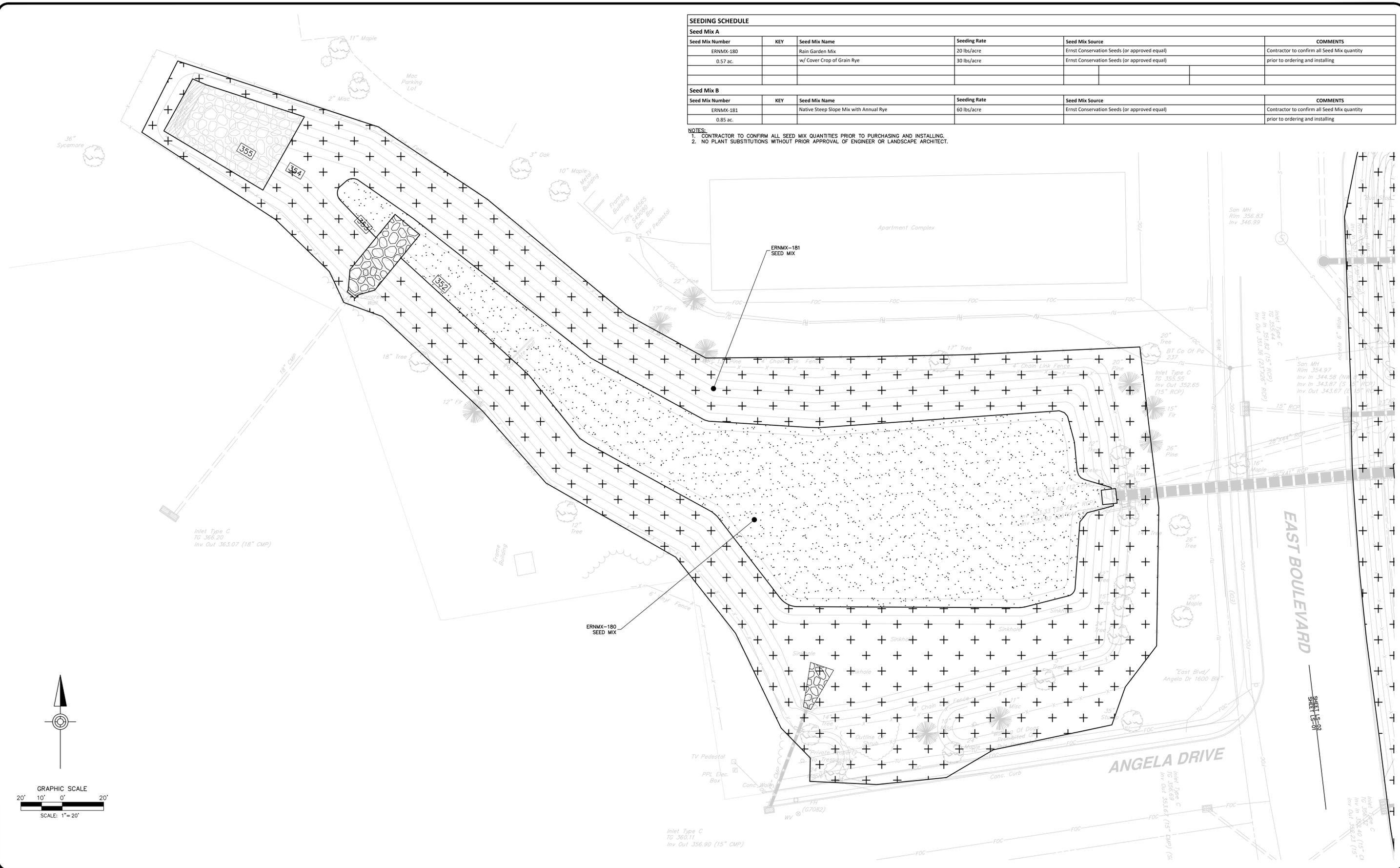
PROJ. MGR. - GW
DESIGN - JUR/AW/JDP
CADD - PTO/JDP
CHECKED - RMC/JJR
SCALE - AS SHOWN
DATE - 2025.06.23

DRAWING NO.
SR-01
SHEET NO.
06 OF 20
PROJECT R009170.0428

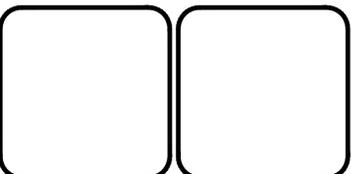
SEEDING SCHEDULE

Seed Mix A					
Seed Mix Number	KEY	Seed Mix Name	Seeding Rate	Seed Mix Source	COMMENTS
ERNMX-180		Rain Garden Mix	20 lbs/acre	Ernst Conservation Seeds (or approved equal)	Contractor to confirm all Seed Mix quantity
0.57 ac.		w/ Cover Crop of Grain Rye	30 lbs/acre	Ernst Conservation Seeds (or approved equal)	prior to ordering and installing
Seed Mix B					
Seed Mix Number	KEY	Seed Mix Name	Seeding Rate	Seed Mix Source	COMMENTS
ERNMX-181		Native Steep Slope Mix with Annual Rye	60 lbs/acre	Ernst Conservation Seeds (or approved equal)	Contractor to confirm all Seed Mix quantity
0.85 ac.					prior to ordering and installing

NOTES:
 1. CONTRACTOR TO CONFIRM ALL SEED MIX QUANTITIES PRIOR TO PURCHASING AND INSTALLING.
 2. NO PLANT SUBSTITUTIONS WITHOUT PRIOR APPROVAL OF ENGINEER OR LANDSCAPE ARCHITECT.



NO.	REVISION	DATE	BY



HRG
 Herbert, Rowland & Grubic, Inc.
 Engineering & Related Services
 AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
 Harrisburg, PA 17111
 (717) 564-1121
 Fax (717) 564-1158
 hrg@hr-ginc.com
 www.hr-ginc.com

**BETHLEHEM TOWNSHIP
 MUNICIPAL AUTHORITY**
 3535 ORTH STREET
 BETHLEHEM, PA 18020
 (610) 814-6421

EAST BLVD (WEST) LANDSCAPING PLAN
 FOR
EASTON AVE FLOOD MITIGATION PHASE 1

BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

PROJ. MGR. — GW
 DESIGN — JUR/AW/JDP
 CADD — PTO/JDP
 CHECKED — RMC/JJR
 SCALE — AS SHOWN
 DATE — 2025.06.23

DRAWING NO.
LS-01

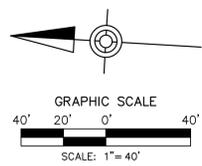
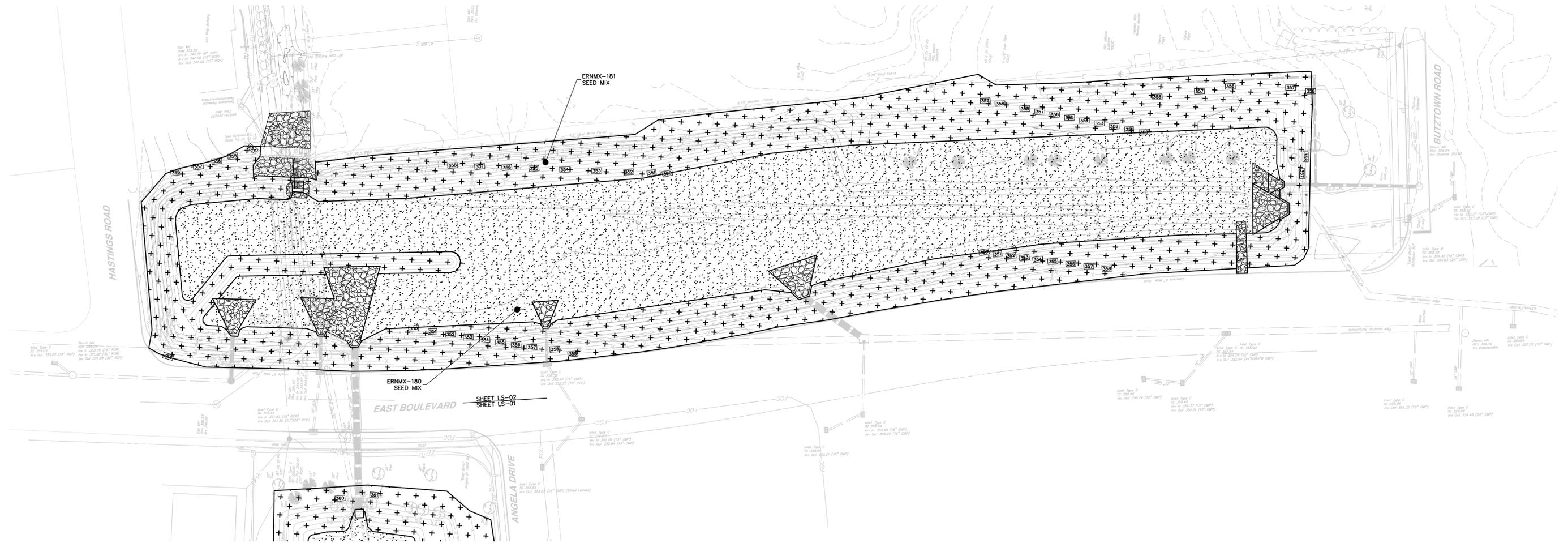
SHEET NO.
08 OF 20

PROJECT R009170.0428

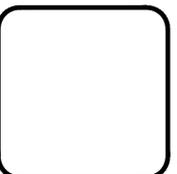
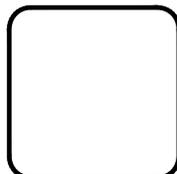
File Name: P:\0001\000170_2424\2424\Plan_Site\000170_2424\000170_2424_Landscaping.dwg User: JLR-01 Date: 2025-06-23 09:00:00 AM

SEEDING SCHEDULE					
Seed Mix A					
Seed Mix Number	KEY	Seed Mix Name	Seeding Rate	Seed Mix Source	COMMENTS
ERNMX-180		Rain Garden Mix	20 lbs/acre	Ernst Conservation Seeds (or approved equal)	Contractor to confirm all Seed Mix quantity
1.96 ac.		w/ Cover Crop of Grain Rye	30 lbs/acre	Ernst Conservation Seeds (or approved equal)	prior to ordering and installing
Seed Mix B					
Seed Mix Number	KEY	Seed Mix Name	Seeding Rate	Seed Mix Source	COMMENTS
ERNMX-181		Native Steep Slope Mix with Annual Rye	60 lbs/acre	Ernst Conservation Seeds (or approved equal)	Contractor to confirm all Seed Mix quantity
1.82 ac.					prior to ordering and installing

NOTES:
 1. CONTRACTOR TO CONFIRM ALL SEED MIX QUANTITIES PRIOR TO PURCHASING AND INSTALLING.
 2. NO PLANT SUBSTITUTIONS WITHOUT PRIOR APPROVAL OF ENGINEER OR LANDSCAPE ARCHITECT.



NO.	REVISION	DATE	BY



HRG
 Herbert, Rowland & Grubic, Inc.
 Engineering & Related Services
 AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
 Harrisburg, PA 17111
 (717) 564-1121
 Fax (717) 564-1158
 hrg@hrg-inc.com
 www.hrg-inc.com

BETHLEHEM TOWNSHIP
 MUNICIPAL AUTHORITY
 3535 ORTH STREET
 BETHLEHEM, PA 18020
 (610) 814-6421

EAST BLVD (EAST) LANDSCAPING PLAN
 FOR
 EASTON AVE FLOOD MITIGATION PHASE 1

BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

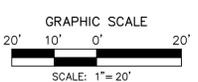
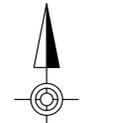
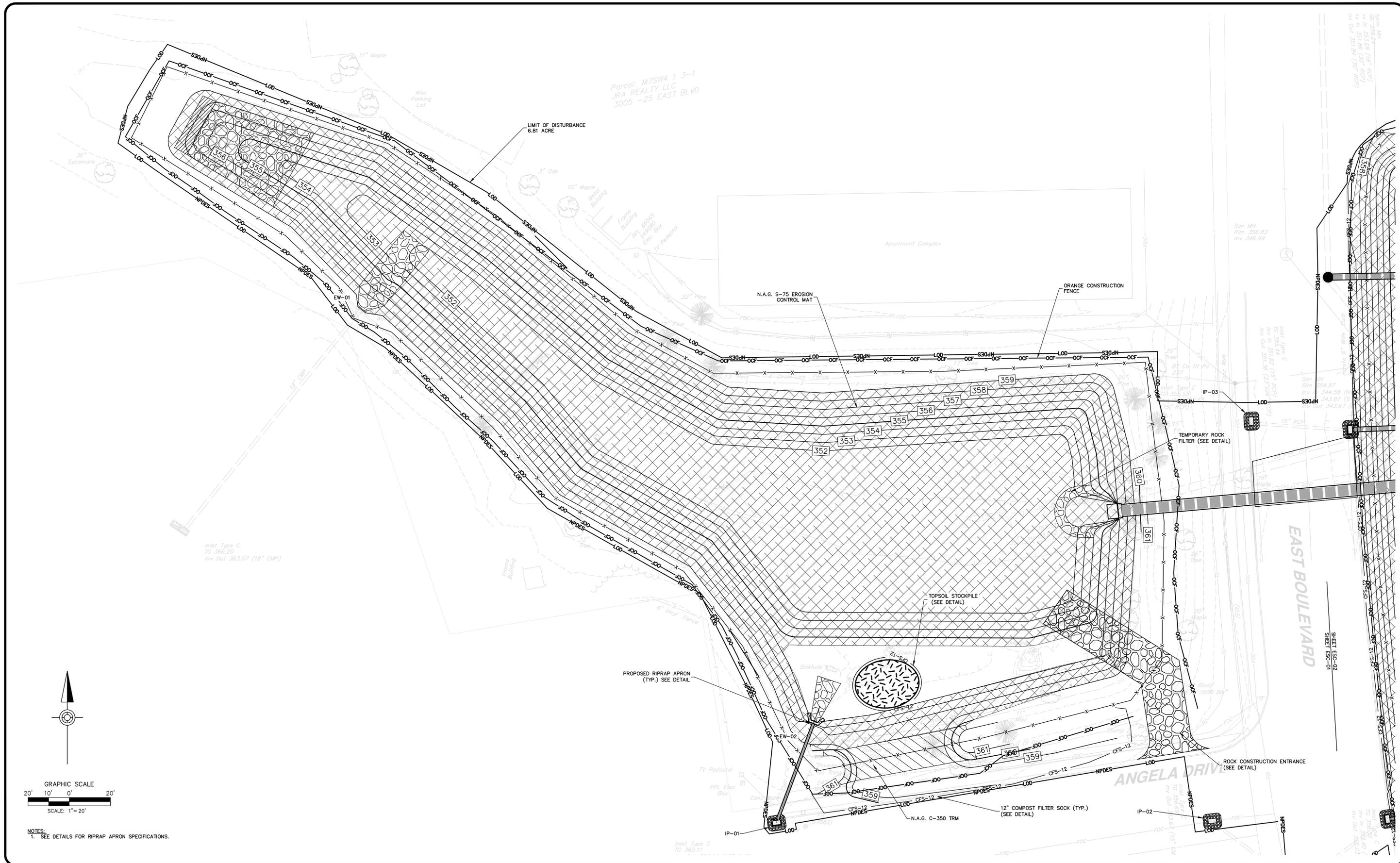
PROJ. MGR. — GW
 DESIGN — JUR/AW/JDP
 CADD — PTO/JDP
 CHECKED — RMC/JUR
 SCALE — AS SHOWN
 DATE — 2025.06.23

DRAWING NO.
LS-02

SHEET NO.
09 OF 20

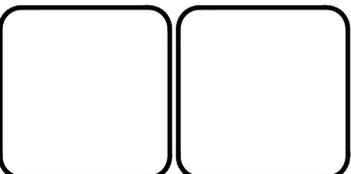
PROJECT R009170.0428

The name: P:\0001\009170_2428\LS02\Plan_Site\LS02.dwg User:LS02 Date: 2025-06-23 Time: 10:00:00 AM



NOTES:
 1. SEE DETAILS FOR RIPRAP APRON SPECIFICATIONS.

NO.	REVISION	DATE	BY



HRG
 Herbert, Rowland & Grubic, Inc.
 Engineering & Related Services
 AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
 Harrisburg, PA 17111
 (717) 564-1121
 Fax (717) 564-1158
 hrg@hrg-inc.com
 www.hrg-inc.com

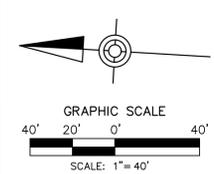
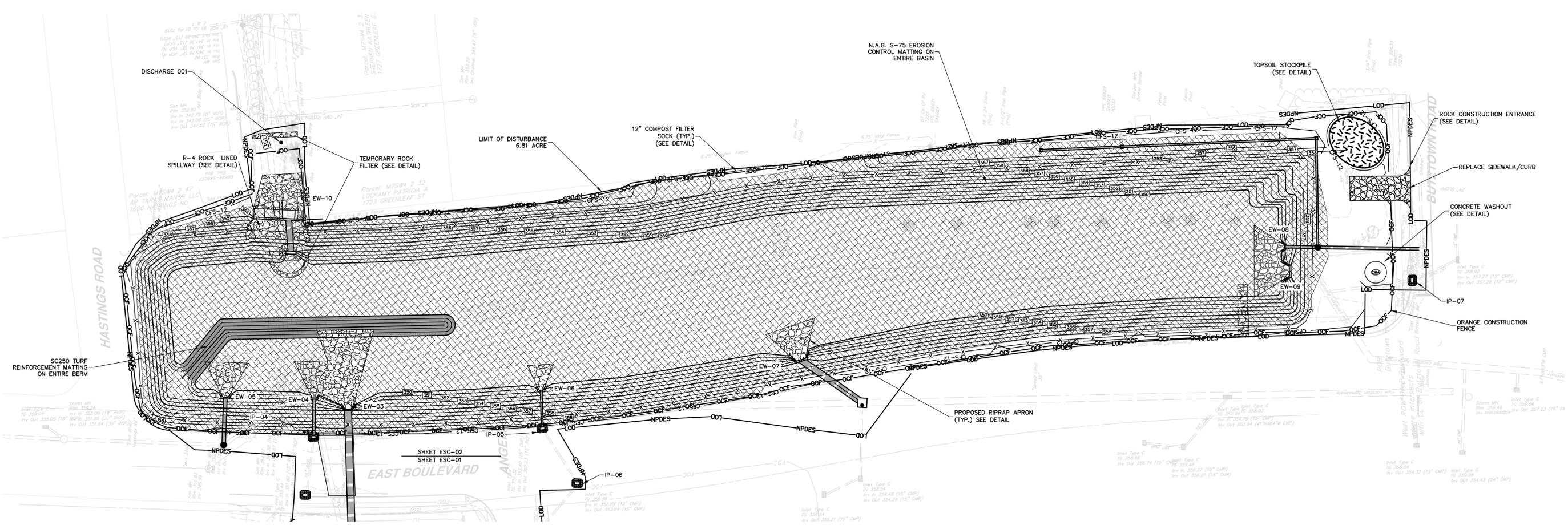
BETHLEHEM TOWNSHIP
 MUNICIPAL AUTHORITY
 3535 ORTH STREET
 BETHLEHEM, PA 18020
 (610) 814-6421

EAST BLVD (WEST) EROSION AND SEDIMENT CONTROL PLAN
 FOR
 EASTON AVE FLOOD MITIGATION PHASE 1
 BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

PROJ. MGR. - GW
 DESIGN - JUR/AW/JDP
 CADD - PTO/JDP
 CHECKED - RMC/JJR
 SCALE - AS SHOWN
 DATE - 2025.06.23

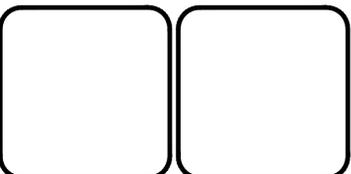
DRAWING NO.
ESC-01
 SHEET NO.
10 OF 20
 PROJECT R009170.0428

File Name: P:\0001\009170_2425\ESC-01.dwg
 User: JGR
 Date: 2025-06-23 10:23:00 AM
 Plot Date: 2025-06-23 10:23:00 AM
 Plot Scale: 1"=20'
 Plot Orientation: Landscape
 Plot Size: 11x17"



NOTES:
 1. SEE DETAILS FOR RIPRAP APRON SPECIFICATIONS.

NO.	REVISION	DATE	BY



HRG
 Herbert, Rowland & Grubic, Inc.
 Engineering & Related Services
 AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
 Harrisburg, PA 17111
 (717) 564-1121
 Fax (717) 564-1158
 hrg@hrg-inc.com
 www.hrg-inc.com

BETHLEHEM TOWNSHIP
 MUNICIPAL AUTHORITY
 3535 ORTH STREET
 BETHLEHEM, PA 18020
 (610) 814-6421

EAST BLVD (EAST) EROSION AND SEDIMENT CONTROL PLAN
 FOR
 EASTON AVE FLOOD MITIGATION PHASE 1
 BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

PROJ. MGR. - GW
 DESIGN - JUR/AW/JDP
 CADD - PTO/JDP
 CHECKED - RMC/JJR
 SCALE - AS SHOWN
 DATE - 2025.06.23

DRAWING NO.
ESC-02
 SHEET NO.
11 OF 20
 PROJECT R009170.0428

File Name: P:\009170\2428\ESC\Plan_Site\009170-0428-ESC-02.dwg User: SGA/Gordon_Aw_Pn Date: 2025-06-23 2:23pm

GENERAL EROSION CONTROL NOTES

1. EROSION AND SEDIMENTATION CONTROLS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE GENERAL SITE DISTURBANCE WITHIN THE TRIBUTARY AREAS OF THOSE CONTROLS.
2. IF FILL MATERIALS MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF CLEAN FILL".
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE REVIEWING AGENCY PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.)
7. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROL MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED.
8. VEHICLES MAY ONLY ENTER AND EXIT AT THE LOCATION OF APPROVED CONSTRUCTION ENTRANCES.
9. STOCK PILE HEIGHTS MUST NOT EXCEED 35 FEET NOR SHALL THE SIDE SLOPES EXCEED 2:1.
10. SOIL AND OTHER MATERIAL SHALL NOT BE STOCKPILES IN THE FLOODWAY.
11. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH STORM EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEANOUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING MUST BE PERFORMED IMMEDIATELY.
12. SILT SOCK MUST BE INSTALLED PARALLEL TO EXISTING CONTOURS. ENDS OF THE SILT SOCK MUST EXTEND 8', TRAVELING UP SLOPE AT 45° TO THE ALIGNMENT OF THE MAIN SILT SOCK SECTION.
13. SEDIMENT MUST BE REMOVED WHERE ACCUMULATIONS REACH ONE-HALF THE ABOVE GROUND HEIGHT OF THE SILT SOCK.
14. ANY SILT SOCK THAT HAS BEEN UNDERMINED OR TOPPED MUST BE REPLACED WITH FILTER OUTLETS IMMEDIATELY.
15. ALL STORM WATER INLETS MUST BE PROTECTED UNTIL THE TRIBUTARY AREAS ARE STABILIZED.
16. SEDIMENT MUST BE REMOVED FROM INLET PROTECTION DEVICES AFTER EACH STORM EVENT. ALL EROSION AND SEDIMENTATION CONTROL MEASURES MUST BE INSPECTED WEEKLY AND AFTER EVERY RUNOFF EVENT.
17. ANY DIVERSION CHANNELS, SEDIMENT BASINS, SEDIMENT TRAPS, DIVERSION BERMS, AND STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY.
18. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED ON THIS PLAN.
19. THE CONTRACTOR MUST DEVELOP, AND HAVE APPROVED BY THE COUNTY CONSERVATION DISTRICT, A SEPARATE EROSION AND SEDIMENTATION CONTROL PLAN FOR EACH SPOIL, BORROW OR OTHER WORK AREA NOT DETAILED ON THE APPROVED PLAN, WHETHER LOCATED WITHIN OR OUTSIDE OF THE CONSTRUCTION LIMITS.
20. SHOULD ANY MEASURES CONTAINED WITHIN THIS PLAN PROVE INCAPABLE OF ADEQUATELY REMOVING SEDIMENT FROM ON-SITE FLOWS PRIOR TO DISCHARGE OR STABILIZING THE SURFACES INVOLVED, ADDITIONAL MEASURES MUST BE IMMEDIATELY IMPLEMENTED BY THE CONTRACTOR TO ELIMINATE ALL SUCH PROBLEMS.
21. SHOULD UNFORESEEN EROSION CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ACTION TO REMEDY SUCH CONDITIONS AND TO PREVENT DAMAGE TO ADJACENT PROPERTIES AS A RESULT OF INCREASED RUNOFF AND/OR SEDIMENT DISPLACEMENT. STOCKPILES OF WOOD CHIPS, HAY BALES, CRUSHED STONE AND OTHER MULCHES SHALL BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF EXISTING TREES AND SHRUBS TO REMAIN FROM UNNECESSARY DAMAGE.
23. A COPY OF THE EROSION AND SEDIMENTATION CONTROL PLANS MUST BE POSTED AT THE CONSTRUCTION SITE AT ALL TIMES, REGARDLESS IF APPROVAL FROM THE CONSERVATION DISTRICT IS REQUIRED, IN ACCORDANCE WITH THE LAWS OF THE COMMONWEALTH OF PENNSYLVANIA.
24. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF APPENDIX 64, EROSION CONTROLS AND REGULATIONS, TITLE 25, PART 11, DEPARTMENT OF ENVIRONMENTAL RESOURCES, SUB-PART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
25. THE EROSION AND SEDIMENT CONTROL PLAN IS FOR THE INSTALLATION, MAINTENANCE AND MEASURES TO CONTROL EROSION AND SEDIMENTATION ONLY. REFER TO APPROPRIATE PLAN SHEETS FOR ALL UTILITY, STORMWATER, SITE IMPROVEMENT AND OTHER CONSTRUCTION INFORMATION.
26. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ANY EXCESS MATERIAL AND MAKE SURE THE SITE(S) RECEIVING THE EXCESS HAS AN APPROVED EROSION AND SEDIMENT CONTROL PLAN THAT MEETS THE CONDITIONS OF CHAPTER 102 AND/OR OTHER STATE OR FEDERAL REGULATIONS. THE DISPOSAL SITE SHALL BE LOCATED GREATER THAN 100 FEET FROM ANY WETLAND, LOCATED OUTSIDE THE FLOODPLAIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE APPROPRIATE CONSERVATION DISTRICT TO ENSURE THAT THE DISPOSAL SITE IS AN APPROVED FACILITY.
27. ALL BUILDING MATERIALS AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS § AT 25 PA. CODE 260.1 ET. SEQ., § 267.1 ET. SEQ., § 271.1 ET. SEQ., NO BUILDING MATERIAL AND OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
28. THE CONTRACTOR MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY AND AFTER EACH PRECIPITATION EVENT BY A QUALIFIED PERSON TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT THE BMP'S ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION TO THE WATERS OF THE COMMONWEALTH.
29. ALL MUD, DIRT AND DEBRIS TRACKED INTO EXISTING ROADS FROM THESE SITES SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR. WASHING OF SUCH WITH WATER SHALL NOT BE PERMITTED.

STABILIZATION NOTES

1. UPON FINAL COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, THE SITE SHALL IMMEDIATELY HAVE TOPSOIL RESTORED, REPLACED, OR AMENDED, SEEDED, MULCHED OR OTHERWISE PERMANENTLY STABILIZED AND PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION.
2. E&S BMPs SHALL BE IMPLEMENTED AND MAINTAINED UNTIL THE PERMANENT STABILIZATION IS COMPLETED. ONCE PERMANENT STABILIZATION HAS BEEN ESTABLISHED, THE TEMPORARY E&S BMPs SHALL BE REMOVED. ANY AREAS DISTURBED IN THE ACT OF REMOVING TEMPORARY E&S BMPs SHALL BE PERMANENTLY STABILIZED UPON COMPLETION OF THE TEMPORARY E&S BMP REMOVAL ACTIVITY.
3. FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY TO BE CONSIDERED PERMANENTLY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION OR AN ACCEPTABLE BMP WHICH PERMANENTLY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION.
4. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES.
5. FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY TO BE CONSIDERED TEMPORARILY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED WITH A MINIMUM UNIFORM COVERAGE OF MULCH AND SEED, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION OR AN ACCEPTABLE BMP WHICH TEMPORARILY MINIMIZES ACCELERATED EROSION AND SEDIMENTATION.
6. AN EROSION CONTROL BLANKET WILL BE INSTALLED ON ALL DISTURBED SLOPES 3:1 OR STEEPER, ALL AREAS OF CONCENTRATED FLOWS, AND DISTURBED AREAS WITHIN 50' OF WATERS OF THE COMMONWEALTH.
7. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES AND 6 TO 12 INCHES ON COMPACTED SOILS PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 6 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING.
8. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED.

MAINTENANCE PROGRAM NOTES

1. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMPs AFTER EACH STORMWATER EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEANOUT, REPAIR, REPLACEMENT, RE-GRADING, RESEEDING, RE-MULCHING AND RE-NETTING MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
2. A LOG SHOWING DATES THAT E&S BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
3. THE CONTRACTOR MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY, AND AFTER EACH MEASURABLE STORMWATER EVENT BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT THE EROSION AND SEDIMENT CONTROL (E&S) BMPs ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION TO THE WATER OF THE COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT, AND INCLUDE:
 - 3.1. A SUMMARY OF THE SITE CONDITIONS, E&S BMPs, AND COMPLIANCE; AND
 - 3.2. THE DATE, TIME, AND THE NAME OF THE PERSON CONDUCTING THE INSPECTION.
4. IF BMPs ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN INSPECTION, OR ANY OTHER TIME, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE DISTRICT. DOCUMENTATION SHOULD INCLUDE WHAT STEPS ARE BEING TAKEN TO REDUCE, ELIMINATE AND PREVENT RECURRENCE OF THE PROBLEM.
5. ANY SEDIMENT REMOVED FROM BMPs DURING CONSTRUCTION WILL BE RETURNED TO UPLAND AREAS ON SITE AND INCORPORATED INTO THE SITE GRADING.

RECEIVING WATER COURSES

STORMWATER FROM THIS SITE FLOWS TO NANCY RUN. THE CHAPTER 93 CLASSIFICATION OF NANCY RUN IS HIGH QUALITY COLD WATER FISHES, MIGRATORY FISHES (HQ-CWF-MF).

GENERAL CONSTRUCTION SEQUENCE

1. A COPY OF THE APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
2. AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE CONTRACTOR SHALL INVITE ALL OPERATORS INVOLVED IN THOSE ACTIVITIES, THE LAND OWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENTATION CONTROL PLAN PREPARER, AND REPRESENTATIVES FROM THE NORTHAMPTON COUNTY CONSERVATION DISTRICT (717-921-8100) TO AN ON-SITE MEETING. ALSO, AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PA ONE-CALL SYSTEM AT 1-800-242-1776 FOR BURIED UTILITIES.
3. ALL EARTH DISTURBANCE SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED AND IMMEDIATELY STABILIZED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING, GRUBBING AND TOPSOIL STRIPPING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE. TOPSOIL SHALL BE STOCKPILED IN THE AREAS DESIGNATED ON THE PLAN DRAWING AND IMMEDIATELY STABILIZED. ALL AREAS MUST BE STABILIZED IMMEDIATELY UPON REACHING FINAL GRADE.
4. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
5. FIELD MARK THE LIMITS OF DISTURBANCE PRIOR TO CONSTRUCTION.
6. COORDINATE ALL UTILITY CONFLICTS, NECESSARY RELOCATIONS, ETC. WITH THE APPROPRIATE UTILITY OWNERS.
7. TEMPORARY CONNECTIONS SHALL BE MADE BETWEEN THE EXISTING AND PROPOSED STORMSEWER SYSTEMS AS NEEDED TO ALLOW FOR POSITIVE DRAINAGE AND CONVEYANCE OF STORMWATER RUNOFF DURING CONSTRUCTION.
8. INSTALL EROSION AND SEDIMENT CONTROLS PER CONSTRUCTION DETAILS AND LOCATIONS PROVIDED ON THE PLAN.
9. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER UNDISTURBED VEGETATED AREAS.
10. AT THE END OF EACH CONSTRUCTION DAY, PROJECT AREAS SHALL BE STABILIZED AS MUCH AS POSSIBLE TO ELIMINATE EROSION POTENTIAL.

EAST BLVD (WEST) CONSTRUCTION SEQUENCE

1. STAKE OUT ALL LIMITS OF DISTURBANCE.
2. INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES.
3. INSTALL DEWATERING SYSTEM.
4. REMOVE EXISTING TREES AND FENCING. INSTALL ORANGE CONSTRUCTION FENCE AROUND PROPOSED WORK AREA.
5. REPAIR ALL SINKHOLES ACCORDING TO THE DETAIL PROVIDED WITHIN THE PLAN. REPORT ANY ADDITIONAL OR NEWLY FORMED SINKHOLES TO ENGINEER IMMEDIATELY UPON DISCOVERY.
6. BEGIN GRADING OF THE BASIN AND OVER EXCAVATE THE BASIN BOTTOM TO 1.5 FOOT BELOW FINAL GRADE.
7. BEING REMOVAL OF EXISTING OUTLET STRUCTURE AND REPLACE WITH PROPOSED OUTLET STRUCTURE.
8. INSTALL PROPOSED OUTLET PIPE AS SHOWN ON THE PLAN AND PROVIDE TEMPORARY PAVEMENT RESTORATION.
9. INSTALL AMENDED SOILS AS SHOWN IN DETAILS.
10. INSTALL RIP-RAP APRONS AS SHOWN ON THE PLAN.
11. ONCE FINAL GRADE HAS BEEN ACHIEVED; IMMEDIATELY STABILIZE ALL DISTURBED AREAS.
12. INSTALL PLANTINGS IN ACCORDANCE WITH LANDSCAPE PLAN AND DETAILS.
13. INSTALL FINAL PAVING FOR DISTURBED AREAS WITHIN THE ROADWAY.
14. REPAIR ALL DAMAGED CURB & SIDEWALKS BEFORE FINAL PAVING.
15. WHEN ALL DISTURBED AREAS HAVE ACHIEVED PERMANENT STABILIZATION, CONTACT THE ENGINEER FOR AN INSPECTION AND REQUEST PERMISSION TO REMOVE ANY EROSION AND SEDIMENT POLLUTION CONTROL BMPs THAT REMAIN IN PLACE. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING OR OTHER MOVEMENTS.
16. WHEN APPROVED BY THE ENGINEER, REMOVE ANY REMAINING EROSION CONTROLS AND PERFORM TOUCH UP GRADING IN AREAS DISTURBED DURING THE REMOVAL OF CONTROLS. STABILIZE AREAS BY ADDING TOPSOIL (AS NEEDED), SEED AND MULCH OR MATTING IN CONFORMANCE WITH THE SPECIFICATIONS ON THESE PLANS.

EAST BLVD (EAST) CONSTRUCTION SEQUENCE

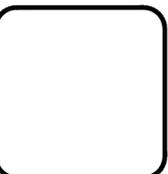
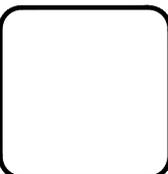
1. STAKE OUT ALL LIMITS OF DISTURBANCE.
2. INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES.
3. INSTALL DEWATERING SYSTEM.
4. REMOVE EXISTING TREES AND FENCING. INSTALL ORANGE CONSTRUCTION FENCE AROUND PROPOSED WORK AREA.
5. FILL ALL SINKHOLES ACCORDING TO THE DETAIL PROVIDED WITHIN THE PLAN. REPORT ANY ADDITIONAL OR NEWLY FORMED SINKHOLES TO ENGINEER IMMEDIATELY UPON DISCOVERY.
6. BEGIN GRADING OF THE BASIN AND OVER EXCAVATE THE BASIN BOTTOM TO 1.5 FOOT BELOW FINAL GRADE.
7. BEING REMOVAL OF EXISTING OUTLET STRUCTURE AND REPLACE WITH PROPOSED OUTLET STRUCTURE.
8. INSTALL PROPOSED OUTLET PIPE AS SHOWN ON THE PLAN AND CONSTRUCT CLAY CORE BERM AND EMBANKMENT ACROSS EXISTING SWALE. INSTALL PROPOSED STORM SEWER PIPE AND ENDWALLS FOR ALL INCOMING STORM SEWER WITHIN BASIN AND PROVIDE TEMPORARY PAVEMENT RESTORATION.
9. INSTALL AMENDED SOILS AS SHOWN IN DETAILS. CONSTRUCT INTERNAL BAFFLE BERM AS SHOWN ON PLAN.
10. INSTALL RIP-RAP APRONS AS SHOWN ON THE PLAN.
11. ONCE FINAL GRADE HAS BEEN ACHIEVED; IMMEDIATELY STABILIZE ALL DISTURBED AREAS.
12. INSTALL PLANTINGS IN ACCORDANCE WITH LANDSCAPE PLAN AND DETAILS.
13. INSTALL FINAL PAVING FOR DISTURBED AREAS WITHIN THE ROADWAY.
14. REPAIR ALL DAMAGED CURB AND SIDEWALK BEFORE FINAL PAVING.
15. WHEN ALL DISTURBED AREAS HAVE ACHIEVED PERMANENT STABILIZATION, CONTACT THE ENGINEER FOR AN INSPECTION AND REQUEST PERMISSION TO REMOVE ANY EROSION AND SEDIMENT POLLUTION CONTROL BMPs THAT REMAIN IN PLACE. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING OR OTHER MOVEMENTS.
16. WHEN APPROVED BY THE ENGINEER, REMOVE ANY REMAINING EROSION CONTROLS AND PERFORM TOUCH UP GRADING IN AREAS DISTURBED DURING THE REMOVAL OF CONTROLS. STABILIZE AREAS BY ADDING TOPSOIL (AS NEEDED), SEED AND MULCH OR MATTING IN CONFORMANCE WITH THE SPECIFICATIONS ON THESE PLANS.

SEEDING SCHEDULE

APPLICATION	SPECIES	%PURE LIVE SEED	APPLICATION RATE	FERTILIZER	LIMING RATE	SEEDING DATE
TEMPORARY (PENNDOT FORMULA T)	OATS (SPRING PLANTIN) CEREAL RYE (FALL PLANTING)	97%	6 LBS./1000 SY	SEE NOTE 1 BELOW	800 LBS./1000 SY	3/15 TO 6/1 8/1 TO 10/15
PERMANENT (PENNDOT FORMULA B) LAWN AREA	PERENNIAL RYEGRASS MIX (LOLIUM PERENNE)*	90%	4 LBS./1000 SY	SEE NOTE 1 BELOW	800 LBS./1000 SY	3/15 TO 6/1 AND 8/1 TO 10/15
	KENTUCKY BLUE GRASS MIX (POA PRATENSIS)**	80%	11 LBS./1000 SY			
	CREEPING RED FESCUE OR CHEWING FESCUE	85%	6 LBS./1000 SY			

1. FERTILIZER SHALL BE APPLIED IN ACCORDANCE WITH A SOIL TEST. IN THE ABSENCE OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AS FOLLOWS:
 - A. 10-20-20 ANALYSIS COMMERCIAL FERTILIZER AT 140 LBS./1000 S.Y. AND 38-0-0 UREA FORM FERTILIZER AT 50 LBS./1000 S.Y. OR
 - B. 32-0-0 TO 38-0-0 SULFUR COATED UREA FERTILIZER AT 59-50 LBS./1000 S.Y. OR
 - C. 31-0-0 IBDU FERTILIZER AT 61 LBS./1000 S.Y.
2. SPECIFICATION ITEMS OBTAINED USING PENNDOT PUBLICATION NO. 408
3. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY OR STRAW APPLIED AT A RATE OF 6000 LBS./AC. (1240 LBS./1000 S.Y.), MULCH TO BE ANCHORED WITH WOOD CELLULOSE FIBER AT 750 LBS./AC. OR EQUAL.
4. ALL AREAS RECEIVING SEEDING SHALL HAVE A MINIMUM OF 6" OF ORGANIC TOPSOIL.
5. 70% UNIFORM VEGETATED COVER IS REQUIRED FOR ACCEPTANCE.
6. ALL DISTURBED AREAS NOT RECEIVING OTHER PLANTING MATERIALS SHALL RECEIVE PENNDOT FORMULA B.
 - * PERENNIAL RYEGRASS: A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT.
 - ** KENTUCKY BLUEGRASS: A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 25% OF THE TOTAL BLUEGRASS COMPONENT.

NO.	REVISION	DATE	BY



HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hr@hr-ginc.com
www.hr-ginc.com

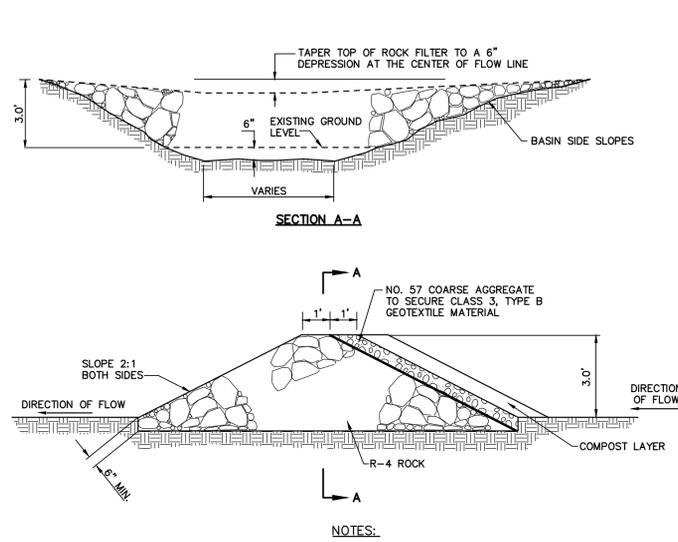
BETHLEHEM TOWNSHIP
MUNICIPAL AUTHORITY
3535 ORTH STREET
BETHLEHEM, PA 18020
(610) 814-6421

EROSION AND SEDIMENT CONTROL NOTES
FOR
EASTON AVE FLOOD MITIGATION PHASE 1
BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

PROJ. MGR. - GW
DESIGN- JUR/AW/JDP
CADD- PTO/JDP
CHECKED-RMC/JJR
SCALE- AS SHOWN
DATE- 2025.06.23

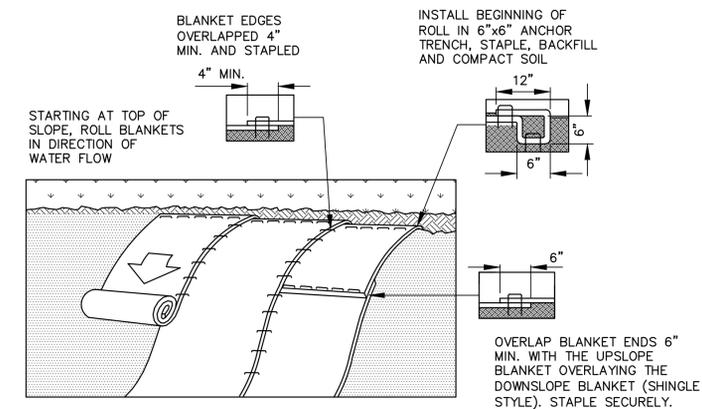
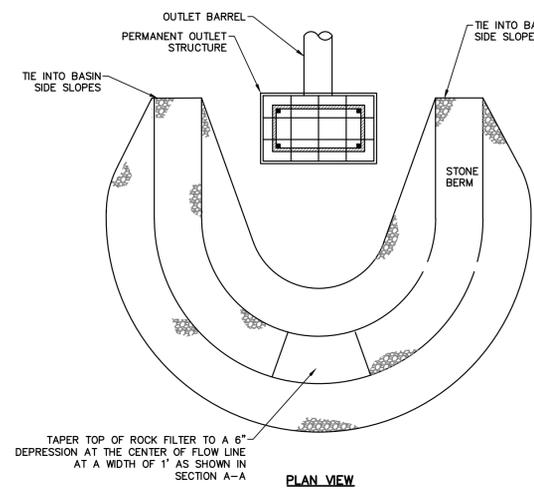
DRAWING NO.
NT-02
SHEET NO.
12 OF 20
PROJECT R009170.0428

File name: P:\0001\000170_24281230\Draw_S&S\Station_Aw_P1b_P1\0001\000100010001.dwg User: jhr Date: 2025-06-23 09:58:08



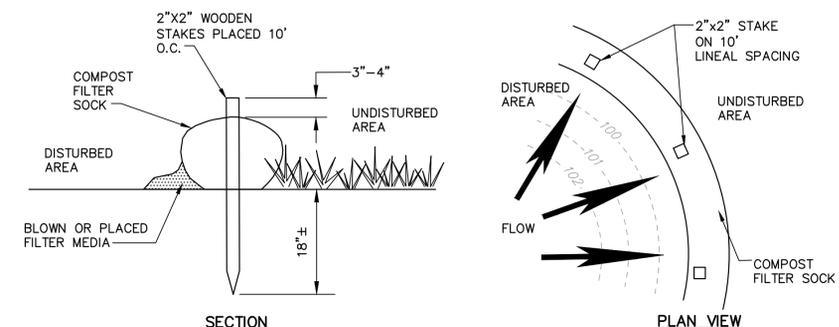
- NOTES:**
1. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTER.

SITE SPECIFIC ROCK FILTER DETAIL
NOT TO SCALE



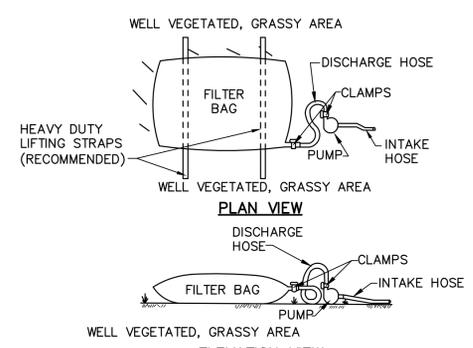
- NOTES:**
1. REFER TO MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS AND STAPLING PATTERN FOR STEEPNESS AND LENGTH OF SLOPE BEING BLANKETED.
 2. PREPARE SEED BED (INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED) PRIOR TO INSTALLATION OF BLANKET.
 3. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
 4. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
 5. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
 6. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
 7. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 5 CALENDAR DAYS.

EROSION CONTROL BLANKET SLOPE INSTALLATION DETAIL
NOT TO SCALE



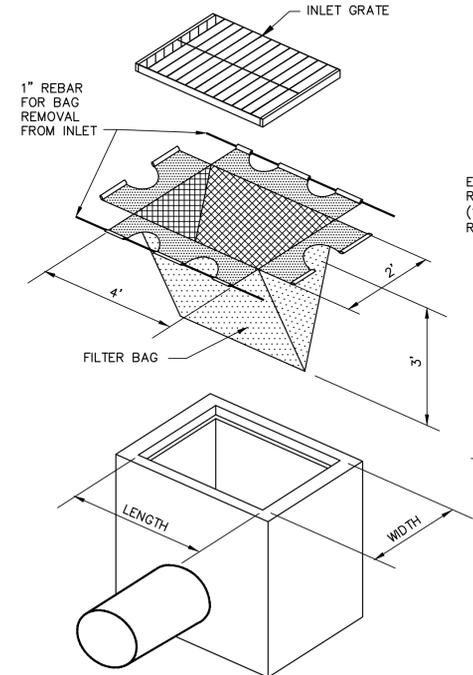
- NOTES:**
1. ALL MATERIAL TO MEET PADEP SPECIFICATIONS.
 2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8' UP SLOPE AT 45° TO THE MAIN SOCK ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED PADEP SPECIFICATIONS.
 3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
 4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE SOCK AND PROPERLY DISPOSED.
 5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
 6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK DETAIL
NOT TO SCALE



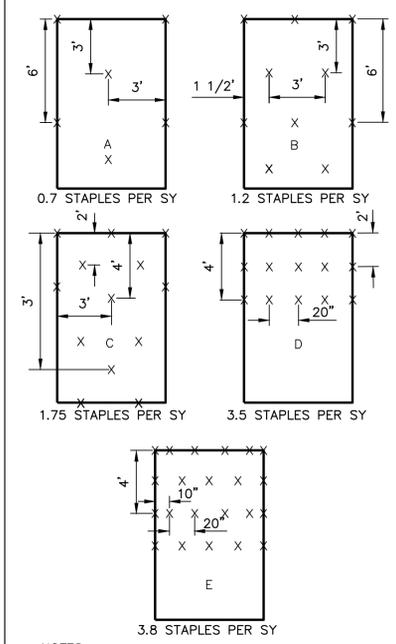
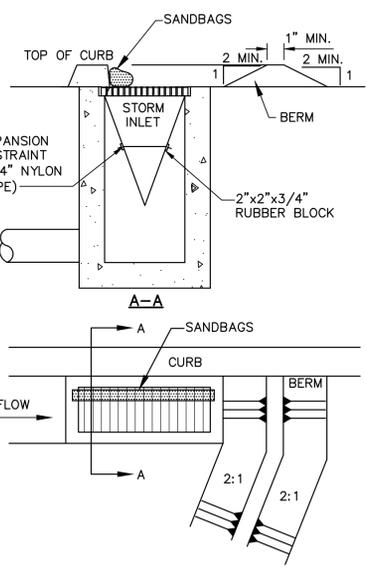
- NOTES:**
1. LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED 'J' TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS MAY BE MADE FROM WOVEN GEOTEXTILES THAT MEET DEP SPECIFICATIONS. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY IS REQUIRED FOR DISPOSAL PURPOSES. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
 2. BAGS SHALL BE LOCATED IN WELL VEGETATED (GRASSY) AREAS, AND DISCHARGED ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
 3. NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHOULD BE INSTALLED BELOW BAGS LOCATED WITHIN 50 FEET OF RECEIVING STREAM OR WHERE GRASSY AREA IS NOT AVAILABLE. A COMPOST BERM OR COMPOST FILTER SOCK SHALL BE PLACED BELOW ANY BAG DISCHARGING TO A SPECIAL PROTECTION SURFACE WATER.
 4. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
 5. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
 6. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

PUMPED WATER FILTER BAG
NOT TO SCALE



- NOTES:**
1. MAXIMUM DRAINAGE AREA=1/2 ACRE.
 2. INLET PROTECTION IS NOT REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS REQUIRED FOR ALL INSTALLATIONS.
 3. EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED.
 4. 6" MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
 5. AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.
 6. INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN 1/2 FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.
 7. DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

FILTER BAG INLET PROTECTION FOR TYPE C INLET
NOT TO SCALE



- NOTES:**
1. STAPLE PATTERN INDICATED IS FOR USE WITH SPECIFIED MATTING ONLY. CONSULT MANUFACTURER FOR PATTERN SHOULD AN ALTERNATE MATTING BE USED.
 2. INCREASED STAPLE RATES MAY BE NECESSARY DEPENDING UPON SITE CONDITIONS. CONSULT MANUFACTURER FOR SPECIFIC RECOMMENDATIONS.

STAPLE PATTERN GUIDE DETAIL
NOT TO SCALE

TABLE 4.1
COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

MATERIAL TYPE	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MULTI-FILAMENT POLYPROPYLENE (MFFP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFFP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 psi	26 psi	44 psi	202 psi
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% at 1000 HR.	23% at 1000 HR.		100% at 1000 HR.	100% at 1000 HR.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS

TWO-PLY SYSTEMS

INNER CONTAINMENT NETTING	HDPE BIAXIAL NET CONTINUOUSLY WOUND FUSION-WELDED JUNCTURES
	3/4" X 3/4" MAX. APERTURE SIZE
OUTER FILTRATION MESH	COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)
	3/16" MAX. APERTURE

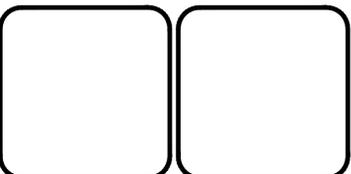
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.

TABLE 4.2
COMPOST STANDARDS

ORGANIC MATTER CONTENT	80% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.0
MOISTURE CONTENT	35% - 55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	SOLUBLE SALT CONCENTRATION

COMPOST FILTER SOCK DETAIL
NOT TO SCALE

NO.	REVISION	DATE	BY



HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrg@hrg-inc.com
www.hrg-inc.com

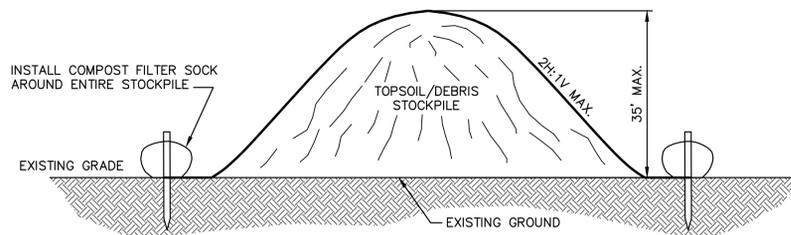
BETHLEHEM TOWNSHIP MUNICIPAL AUTHORITY
3535 ORTH STREET
BETHLEHEM, PA 18020
(610) 814-6421

EROSION AND SEDIMENT CONTROL DETAILS
FOR
EASTON AVE FLOOD MITIGATION PHASE 1

BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

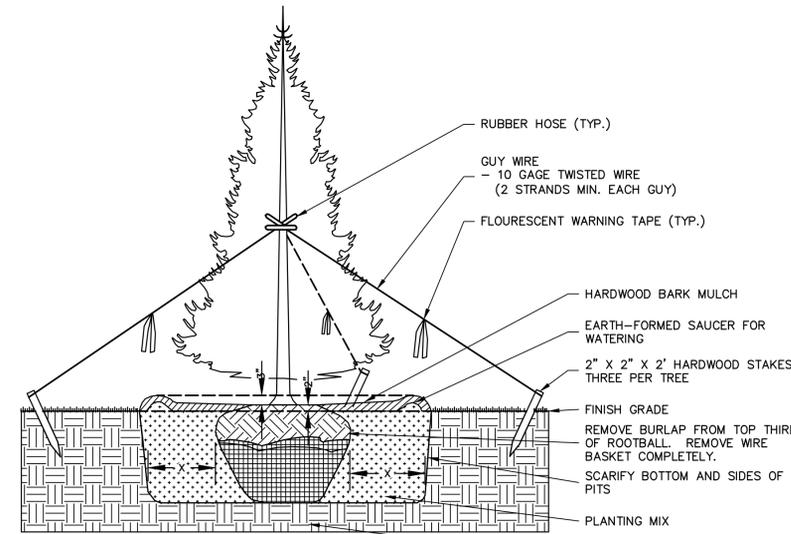
PROJ. MGR. - GW
DESIGN - JUR/AW/JDP
CADD - PTO/JDP
CHECKED - RMC/JJR
SCALE - AS SHOWN
DATE - 2025.06.23

DRAWING NO.
DT-01
SHEET NO.
13 OF 20
PROJECT R009170.0428



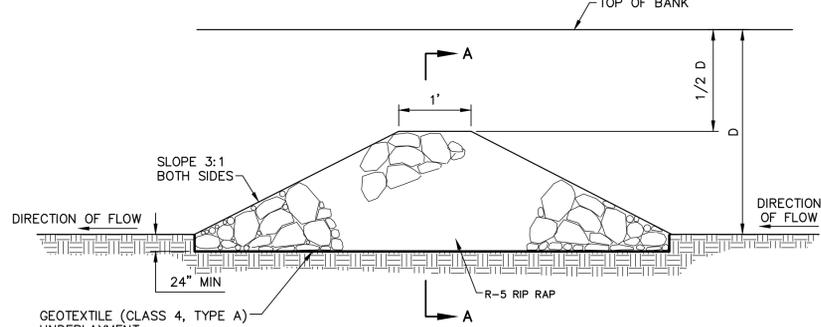
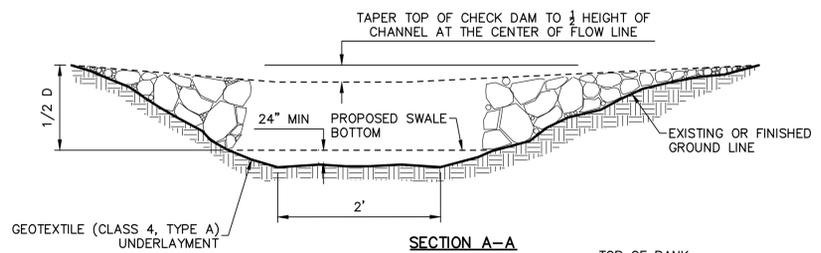
NOTES:
1. ANIONIC PAM MAY BE USED TO TEMPORARILY STABILIZE TOPSOIL STOCKPILES. HOWEVER, ANIONIC PAM MAY LOSE ITS EFFECTIVENESS IN AS LITTLE AS 2 MONTHS. THEREFORE, REAPPLY MIXTURE AS NECESSARY.

TOPSOIL/DEBRIS STOCKPILE DETAIL
NOT TO SCALE



NOTES:
- SET BALL & PLUMB TREE IN CENTER OF PIT WITH TOP OF BALL ELEVATED 2" ABOVE FINISH GRADE.
- DO NOT PLACE MULCH OR BACKFILL MIX ABOVE OR AGAINST THE ROOT CROWN.
- "X" = HALF THE WIDTH OF THE ROOT BALL.

CONIFEROUS TREE PLANTING
NOT TO SCALE

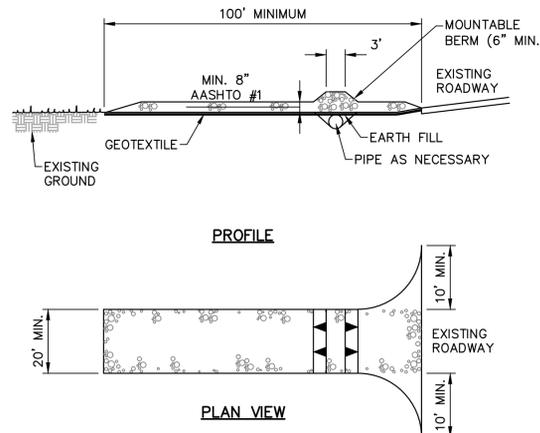


CHECK DAM
NOT TO SCALE

SCHEDULE			
INLET NO.	TYPE	BASIN	DRAINAGE AREA (AC)
IP-01	INLET FILTER BAG	EAST BLVD (WEST)	0.92
IP-02	INLET FILTER BAG	EAST BLVD (WEST)	0.53
IP-03	INLET FILTER BAG	EAST BLVD (WEST)	0.31
IP-04	INLET FILTER BAG	EAST BLVD (EAST)	0.28
IP-05	INLET FILTER BAG	EAST BLVD (EAST)	0.35
IP-06	INLET FILTER BAG	EAST BLVD (EAST)	0.61
IP-07	INLET FILTER BAG	EAST BLVD (EAST)	0.45

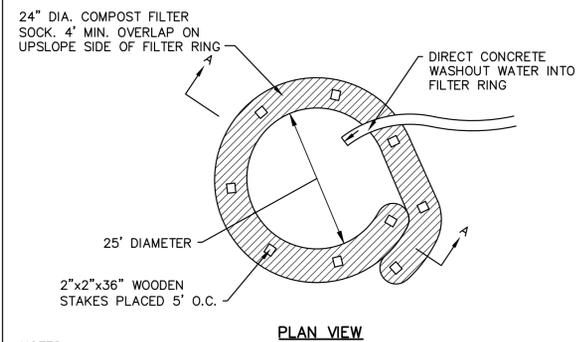
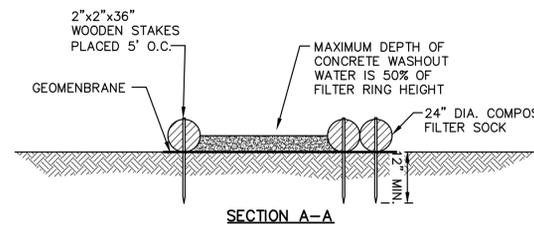
NOTES:
1. THE MAJORITY OF FLOW CONVEYED TO THE INLET FILTER BAGS IS CLEAN WATER. THE INLET FILTER BAGS ARE BEING INSTALLED AS AN ADDITIONAL PREVENTIVE MEASURE TO ENSURE PROPER TREATMENT IN THE EVENT ANY WATER FROM DISTURBANCES IS CONVEYED TO THE INLETS.

INLET PROTECTION TABLE
NOT TO SCALE



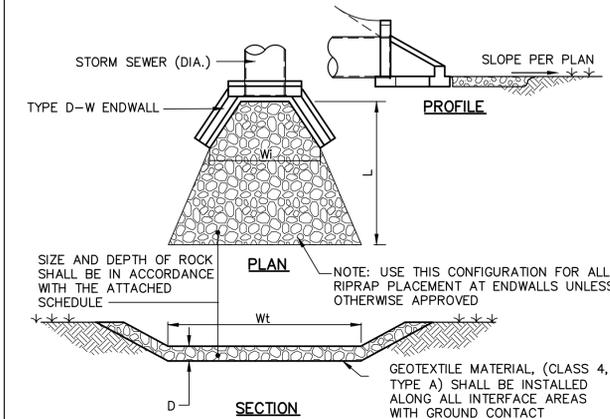
NOTES:
1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY THE MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
4. MAINTENANCE: 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. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50' INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL A WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE



NOTES:
1. PROVIDE PROPER SIGNAGE FOR CONCRETE DELIVERY VEHICLE DRIVERS SO THAT THEY ARE AWARE OF THE PRESENCE OF WASHOUT FACILITIES.
2. WASHOUT FACILITIES SHOULD NOT BE PLACED WITHIN 50' OF STORM DRAINS, OPEN DITCHES, OR SURFACE WATERS. UNDER NO CIRCUMSTANCES SHOULD WASH WATER BE ALLOWED TO ENTER ANY SURFACE WATERS.
3. WHEREVER POSSIBLE, CONCRETE WASHOUTS SHOULD BE LOCATED ON SLOPES NOT EXCEEDING A 2% GRADE.
4. A SUITABLE IMPERVIOUS GEOMEMBRANE SHOULD BE PLACED AT THE LOCATION OF THE WASHOUT. COMPOST SOCKS SHOULD BE STAKED IN THE MANNER RECOMMENDED BY THE MANUFACTURER AROUND PERIMETER OF THE GEOMEMBRANE SO AS TO FORM A RING WITHIN THE ENDS OF THE SOCK LOCATED AT THE UPSLOPE CORNER. CARE MUST BE TAKEN TO ENSURE CONTINUOUS CONTACT OF THE SOCK WITH THE GEOMEMBRANE AT ALL LOCATIONS. WHERE NECESSARY, 18" SOCKS MAY BE STACKED ONTO 24" SOCKS AND STAKED SO AS TO FORM A TRIANGULAR CROSS SECTION.

CONCRETE WASHOUT AREA DETAIL
NOT TO SCALE

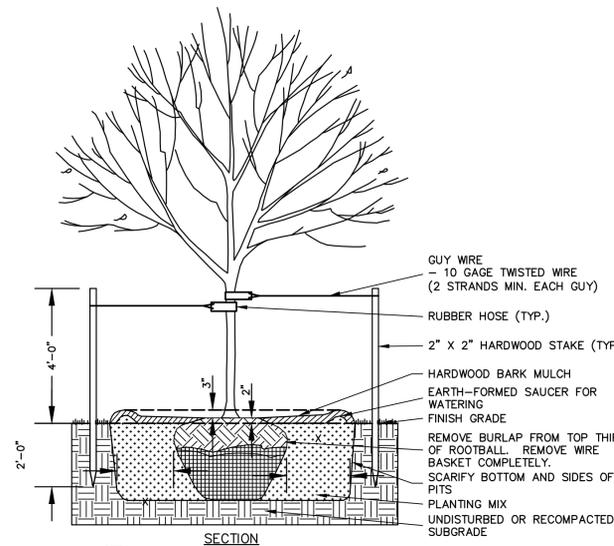


SCHEDULE						
ENDSECTION NO.	PIPE DIAMETER DIA. (IN)	LENGTH L (FT)	WIDTH W _i (FT)	WIDTH W _t (FT)	RIPRAP SIZE	DEPTH D (IN)
EX EW-01	18	43	4.5	15.5	R-4	18
EW-02	15	21	3.8	11.8	R-4	18
EW-03*	60X36	65	15	47	R-7	45
EW-04*	24	29	6	35	R-7	45
EW-05	30	29	7.5	36.5	R-6	36
EW-06	18	21	3.8	21.8	R-8	63
EW-07	65X40	29	13.5	42.5	R-6	36
EW-08*	24	25	6	60	R-6	36
EW-09*	68X43	29	13.5	60	R-6	36
EW-10	60X48	37	15	33	R-7	45

* EW-03 AND EW-04, EW-08 AND EW-09 SHARE A COMBINED APRON. SEE PLANS FOR LAYOUT.

NOTES:
1. CONSTRUCT ALL APRONS TO THE DIMENSIONS SHOWN. ADJUST TERMINAL WIDTHS AS NECESSARY TO MATCH RECEIVING CHANNELS.
2. EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND PIPE.
3. INSPECT ALL APRONS ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT.
4. REPLACE DISPLACED RIPRAP WITHIN THE APRON IMMEDIATELY.

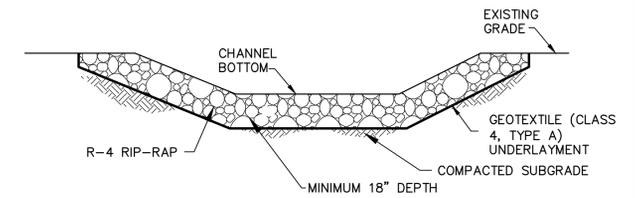
RIPRAP APRON DETAIL
NOT TO SCALE



NOTES:
- SET BALL & PLUMB TREE IN CENTER OF PIT WITH TOP OF BALL ELEVATED 2" ABOVE FINISH GRADE.
- DO NOT PLACE MULCH OR BACKFILL MIX ABOVE OR AGAINST THE ROOT CROWN.
- "X" = HALF THE WIDTH OF THE ROOT BALL.

DECIDUOUS TREE PLANTING
NOT TO SCALE

NOTES:
1. CONTRACTOR TO CONFIRM ALL SEED MIX QUANTITIES PRIOR TO PURCHASING AND INSTALLING.
2. NO PLANT SUBSTITUTIONS WITHOUT PRIOR APPROVAL OF ENGINEER OR LANDSCAPE ARCHITECT.
2.1. SEE SHEET DT-06 FOR TREE PLANTING SCHEDULE



ROCK LINED CHANNEL DETAIL
NOT TO SCALE

NO.	REVISION	DATE	BY

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrg@hrg-inc.com
www.hrg-inc.com

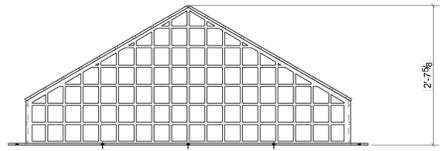
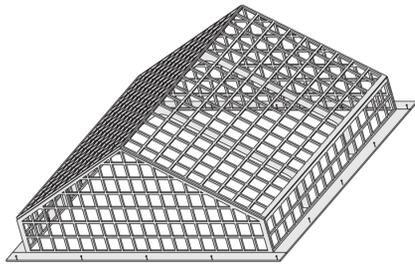
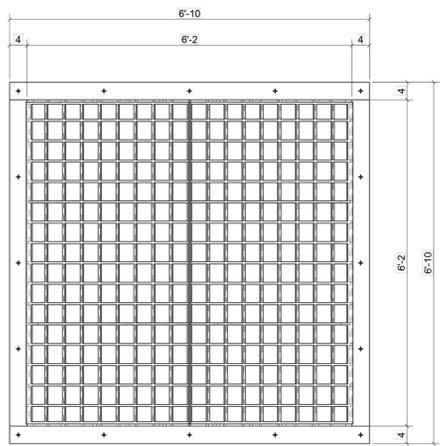
BETHLEHEM TOWNSHIP
MUNICIPAL AUTHORITY
3535 ORTH STREET
BETHLEHEM, PA 18020
(610) 814-6421

EROSION AND SEDIMENT CONTROL DETAILS CONT.
FOR
EASTON AVE FLOOD MITIGATION PHASE 1

BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

PROJ. MGR. - GW
DESIGN - JUR/AW/JDP
CADD - PTO/JDP
CHECKED - RMC/JJR
SCALE - AS SHOWN
DATE - 2025.06.23

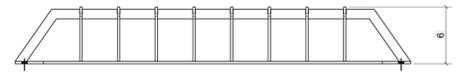
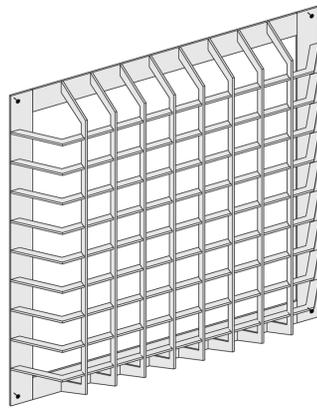
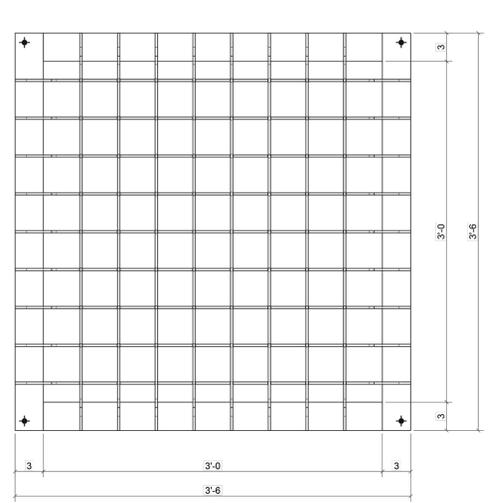
DRAWING NO.
DT-02
SHEET NO.
14 OF 20
PROJECT R009170.0428



PRODUCT ID	MATERIAL	COATING	WEIGHT
LPK-7272-P	ASTM A36 MILD STEEL	N/A	570 LBS.
LPK-7272-G	ASTM A36 MILD STEEL	GALVANIZED	570 LBS.
LPK-7272-PC	ASTM A36 MILD STEEL	POWDER COAT	570 LBS.
LPK-7272-SS	304 STAINLESS STEEL	N/A	570 LBS.
LPK-7272-AL	6061-T6 ALUMINUM	N/A	193 LBS.

CUSTOM SIZES AVAILABLE
 OPTIONS: HINGED ACCESS, ANTI-VORTEX PLATE

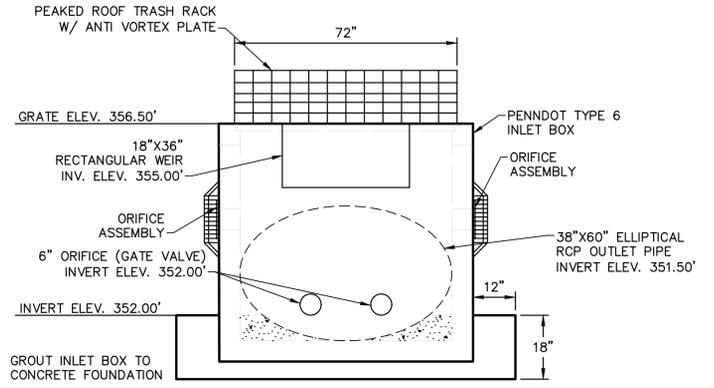
TITLE:
TRASHRACKS.COM LPK-7272
 72"x72" PEAKED ROOF TRASH RACK
 A DIVISION OF J.R.HOE
 MADE IN THE U.S.A.



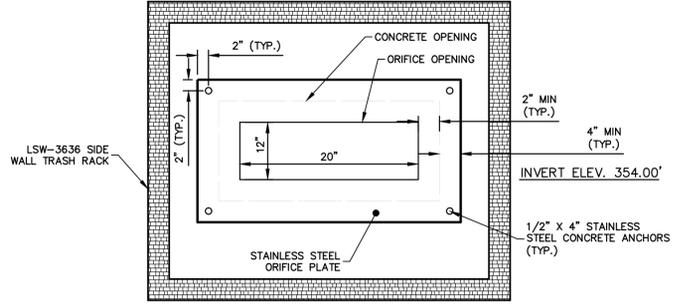
PRODUCT ID	MATERIAL	COATING	WEIGHT
LSW-3636-P	ASTM A36 MILD STEEL	N/A	90 LBS.
LSW-3636-G	ASTM A36 MILD STEEL	GALVANIZED	90 LBS.
LSW-3636-PC	ASTM A36 MILD STEEL	POWDER COAT	90 LBS.
LSW-3636-SS	304 STAINLESS STEEL	N/A	90 LBS.
LSW-3636-AL	6061-T6 ALUMINUM	N/A	30 LBS.

CUSTOM SIZES AVAILABLE
 OPTIONS: HINGED ACCESS, ANTI-VORTEX PLATE

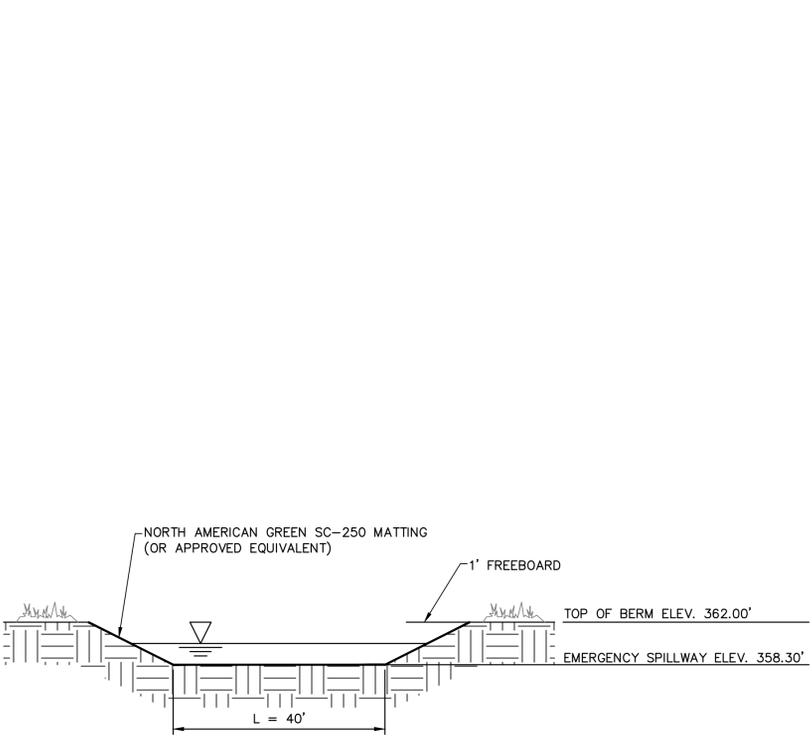
TITLE:
TRASHRACKS.COM LSW-3636
 36"x36" SIDE WALL TRASH RACK
 A DIVISION OF J.R.HOE
 MADE IN THE U.S.A.



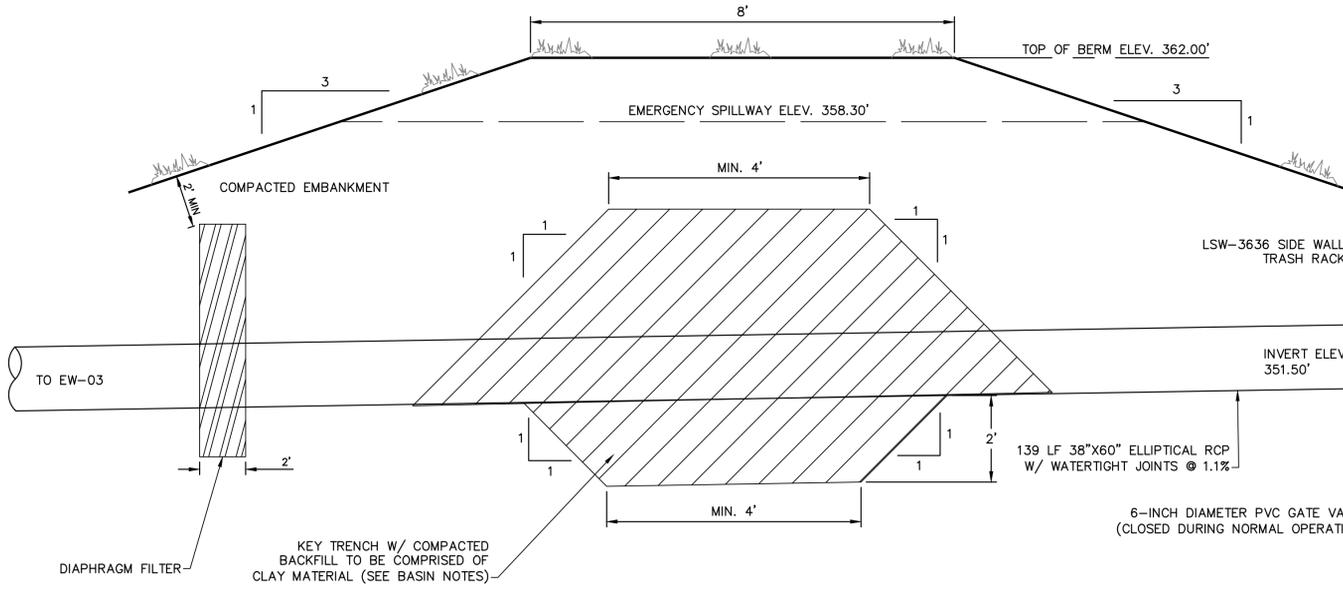
OUTLET STRUCTURE FRONT VIEW



ORIFICE ASSEMBLY



EMERGENCY SPILLWAY DETAIL

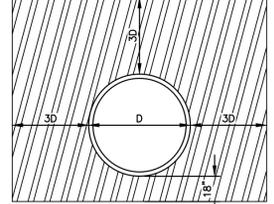


EAST BLVD (WEST) BASIN DETAIL

- NOTES:
1. PROVIDE FIELD PLACED CONCRETE FILL IN THE BOTTOM OF ALL OUTLET STRUCTURES TO A DEPTH OF 1/2 OF THE PIPE I.D. PROVIDE AN ADEQUATE FLOW CHANNEL FOR THE TRANSITION TO THE OUTLET PIPE. SHAPE BOX BOTTOM FOR POSITIVE DRAINAGE.
 2. CONSTRUCT THE REINFORCED CONCRETE FOUNDATION TO A DIMENSION 24" LARGER THAN THE OUTSIDE DIMENSIONS OF THE OUTLET STRUCTURE.
 3. CONSTRUCT OUTLET STRUCTURE IN ACCORDANCE WITH PENNDOT PUBLICATION 72, RC-34 FOR PRECAST CONCRETE INLET BOXES.

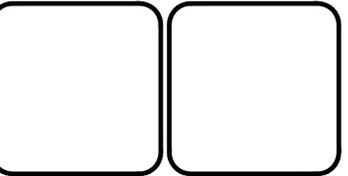
AMENDMENT	% OF MIX
TYPE C33 NATURAL CONCRETE SAND	30
TOPSOIL	50
COMPOST	20

AMENDED MEDIA SOIL MIX
 NOT TO SCALE



DIAPHRAGM FILTER FRONT VIEW

NO.	REVISION	DATE	BY



HRG
 Herbert, Rowland & Grubic, Inc.
 Engineering & Related Services
 AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
 Harrisburg, PA 17111
 (717) 564-1121
 Fax (717) 564-1158
 hrg@hrg-inc.com
 www.hrg-inc.com

BETHLEHEM TOWNSHIP
 MUNICIPAL AUTHORITY
 3535 ORTH STREET
 BETHLEHEM, PA 18020
 (610) 814-6421

EAST BLVD (WEST) BASIN RESTORATION DETAILS
 FOR
 EASTON AVE FLOOD MITIGATION PHASE 1

BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

PROJ. MGR. - GW
DESIGN - JUR/AW/JDP
CADD - PTO/JDP
CHECKED - RMC/JJR
SCALE - AS SHOWN
DATE - 2025.06.23

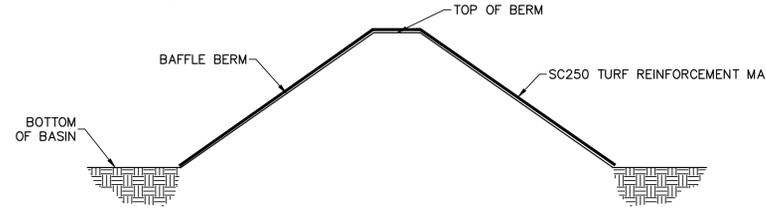
DRAWING NO.
DT-03

SHEET NO.
15 OF 20

PROJECT R009170.0428

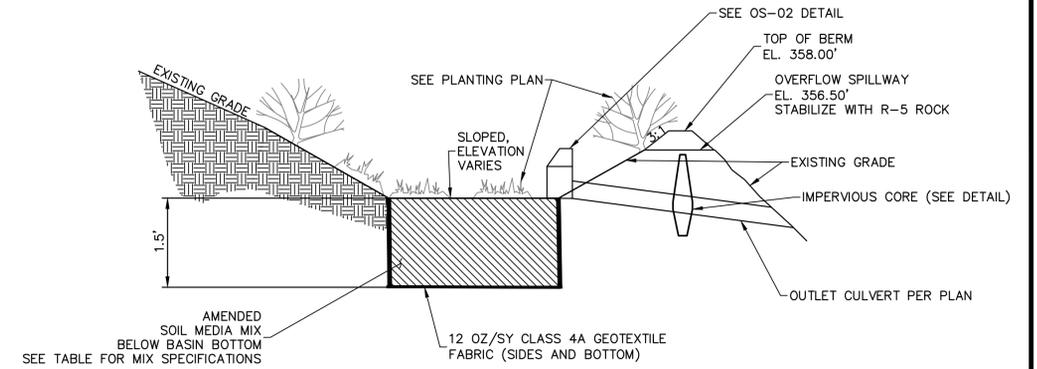
AMENDMENT	% OF MIX
TYPE C33 NATURAL CONCRETE SAND	30
TOPSOIL	50
COMPOST	20

AMENDED MEDIA SOIL MIX
NOT TO SCALE

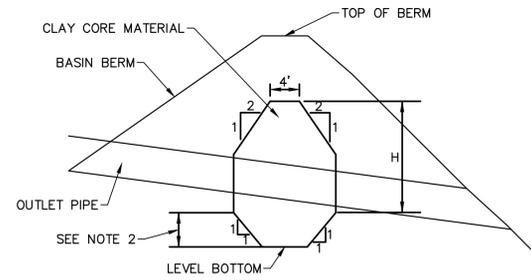


BAFFLE BERM DETAIL
NOT TO SCALE

- NOTES:
- BERM FILL MATERIAL SHALL CONSIST OF ML, CL, SC, OR GC SOILS AND FREE OF ALL WOOD, ROOTS, ROCKS OR ANY OTHER ORGANIC AND NON-COMPACTIBLE SOILS.
 - TOP ELEVATION OF BERM CORE (BCTE) MATERIAL SHALL BE CONSTRUCTED TO THE HIGHER OF THE 25-YEAR STORM PEAK ELEVATION OR TO AN ELEVATION OF SIX (6) INCHES BELOW THE EMERGENCY SPILLWAY ELEVATION.
 - SC250 TURF REINFORCEMENT MAT SHALL EXTEND FROM THE TOE OF ONE SIDE OF THE BAFFLE BERM TO THE TOE OF THE OTHER SIDE OF THE BERM.

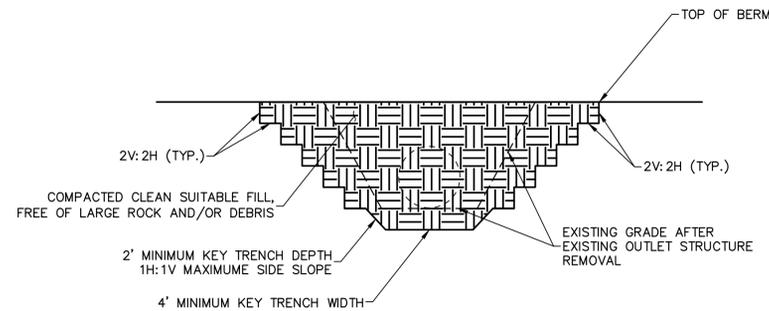


EAST BLVD (EAST) BASIN DETAIL
NOT TO SCALE

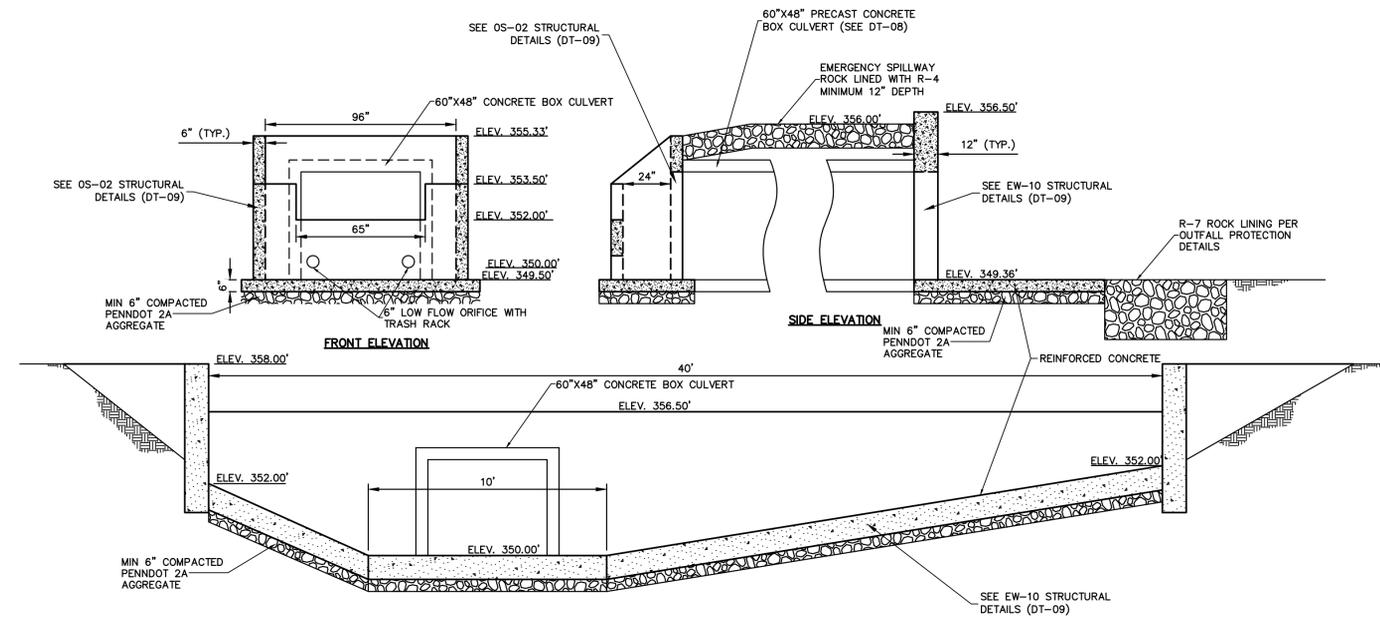


IMPERVIOUS CORE DETAIL
NOT TO SCALE

- NOTES:
- CORE FILL MATERIAL SHALL CONSIST OF ML, CL, SC, OR GC SOILS AND FREE OF ALL WOOD, ROOTS, ROCKS OR ANY OTHER ORGANIC AND NON-COMPACTIBLE SOILS. CLAY CORE SHALL BE CONSTRUCTED IN MAX. 6" LIFTS TO A DRY DENSITY OF 95% STANDARD PROCTOR UNDER ASTM D698.
 - CORE TRENCH SHALL EXTEND TWO (2) FEET BENEATH LEVEL OF UNDISTURBED EARTH.
 - TOP ELEVATION OF BERM CORE (BCTE) MATERIAL SHALL BE CONSTRUCTED TO THE HIGHER OF THE 25-YEAR STORM PEAK ELEVATION OR TO AN ELEVATION OF SIX (6) INCHES BELOW THE EMERGENCY SPILLWAY ELEVATION.



BASIN BERM RESTORATION DETAIL
NOT TO SCALE



- NOTES:
- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000PSI.
 - SEE DT-09 FOR REBAR AND FOUNDATION DETAILS.

EAST BLVD (EAST) BASIN OUTLET STRUCTURE (OS-02) AND ENDWALL (EW-10) DETAIL
NOT TO SCALE

NO.	REVISION	DATE	BY

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrg@hrg-inc.com
www.hrg-inc.com

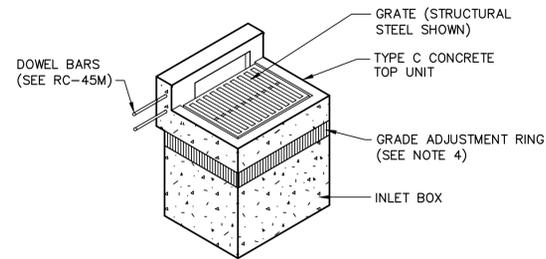
BETHLEHEM TOWNSHIP
MUNICIPAL AUTHORITY
3535 ORTH STREET
BETHLEHEM, PA 18020
(610) 814-6421

EAST BLVD (EAST) BASIN RESTORATION DETAILS
FOR
EASTON AVE FLOOD MITIGATION PHASE 1

BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

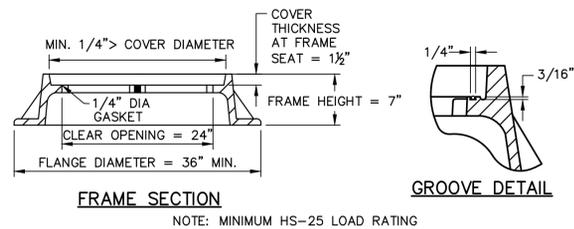
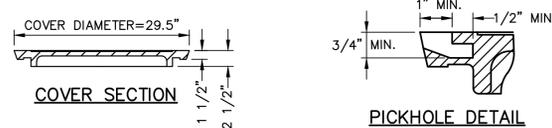
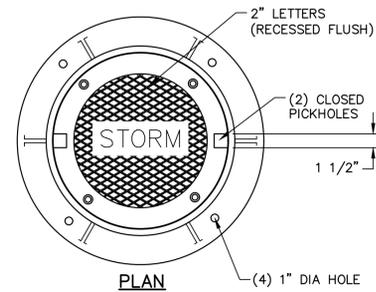
PROJ. MGR. - GW
DESIGN - JUR/AW/JDP
CADD - PTO/JDP
CHECKED - RMC/JJR
SCALE - AS SHOWN
DATE - 2025.06.23

DRAWING NO.
DT-04
SHEET NO.
16 OF 20
PROJECT R009170.0428

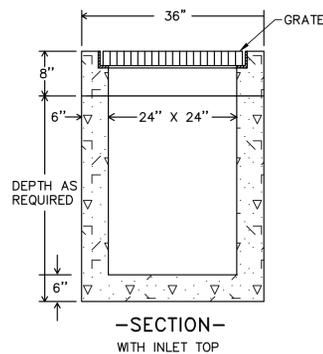
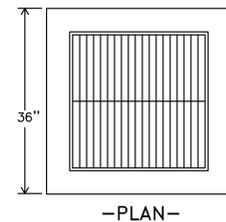


- NOTES:**
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION, RC-34. CONTRACTOR SHALL VERIFY INLET BOX SIZING BASED ON PIPE SIZES AND ALIGNMENT PRIOR TO ORDERING PRECAST STRUCTURES.
 2. ALL DRAINAGE STRUCTURES SHALL HAVE POURED-IN-PLACE CONCRETE CHANNEL BOTTOMS.
 3. NO PIPES SHALL ENTER INLET BOX AT CORNER.
 4. PROVIDE GRADE ADJUSTMENT RINGS WHEN REQUIRED. (SEE RC-45M FOR DETAILS)

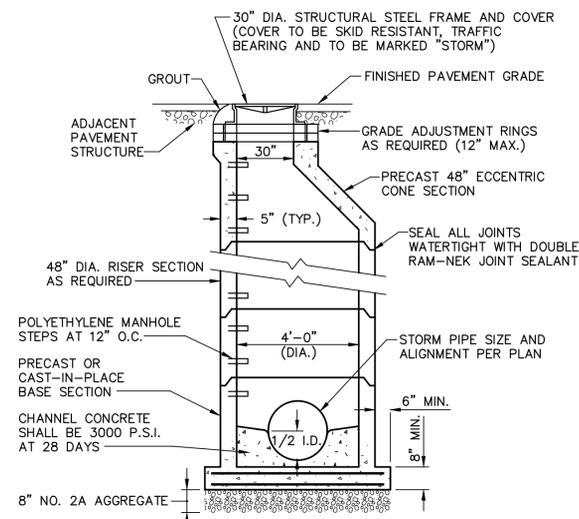
TYPE C INLET DETAIL
NOT TO SCALE



STORM SEWER MANHOLE FRAME & COVER DETAIL
NOTE: MINIMUM HS-25 LOAD RATING
NOT TO SCALE

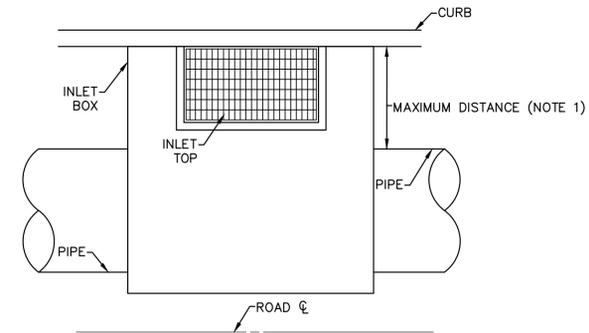


CONCRETE CATCH BASIN 2'X2' DETAIL
NOT TO SCALE

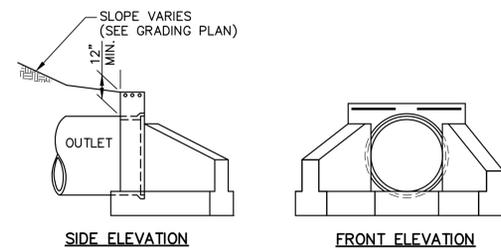


- NOTE:**
1. CONSTRUCT MANHOLE IN ACCORDANCE WITH PENNDOT PUBLICATION 72, RC-39 FOR PRECAST CONCRETE MANHOLES.
 2. ALL MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408.
 3. USE FLAT TOP MANHOLES WHERE DEPTHS ARE LESS THAN 6' DEEP.

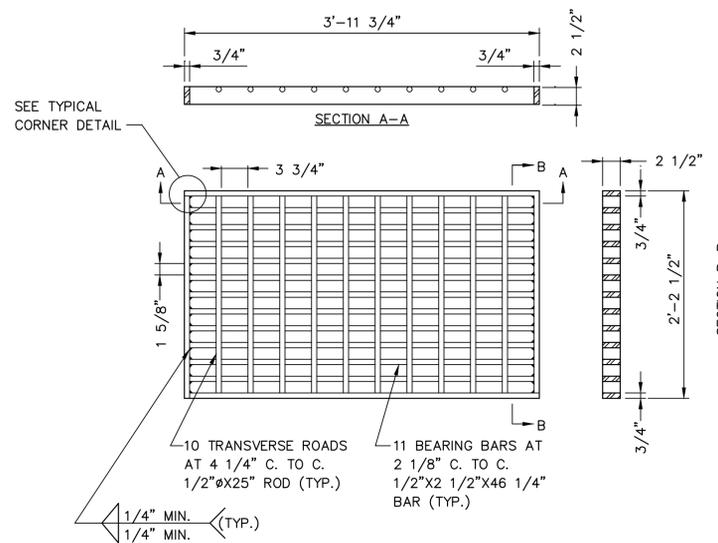
STORM SEWER MANHOLE, 4' DIAMETER DETAIL
NOT TO SCALE



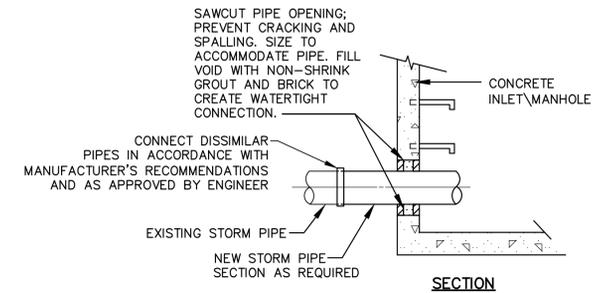
INLET BOX CONFIGURATION DETAIL
NOTE: 1. CONFIGURE PIPE OPENINGS IN INLET TOP SLABS AND BOX TO PLACE PIPE TOWARD THE ROAD CENTERLINE AND AWAY FROM EDGE OF ROAD AS FAR AS POSSIBLE.
NOT TO SCALE



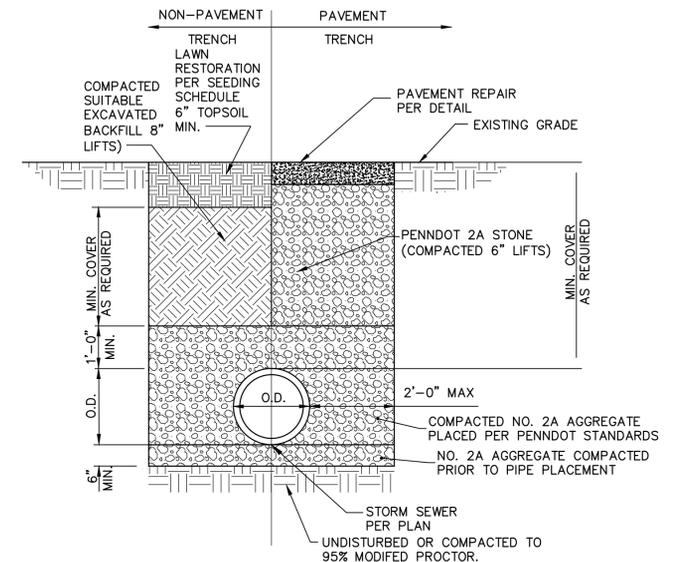
TYPE D-W ENDWALL DETAIL
NOT TO SCALE



BICYCLE SAFE STRUCTURAL STEEL GRATE DETAIL
NOT TO SCALE



CONNECT TO EXISTING DRAINAGE STRUCTURE DETAIL
NOT TO SCALE



STORM TRENCH DETAIL (STANDARD SPEC.)
NOT TO SCALE

NO.	REVISION	DATE	BY

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrg@hrg-inc.com
www.hrg-inc.com

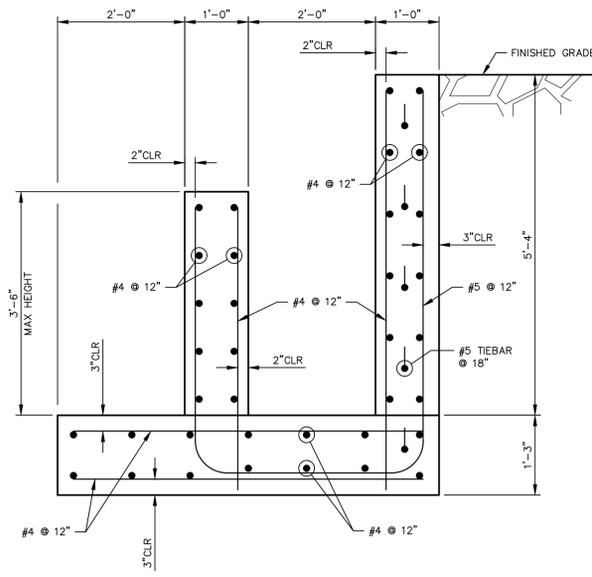
BETHLEHEM TOWNSHIP
MUNICIPAL AUTHORITY
3535 ORTH STREET
BETHLEHEM, PA 18020
(610) 814-6421

STORM SEWER CONSTRUCTION DETAILS
FOR
EASTON AVE FLOOD MITIGATION PHASE 1

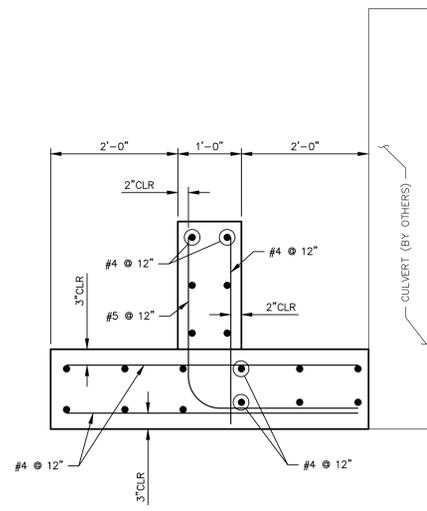
BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

PROJ. MGR. - GW
DESIGN - JUR/AW/JDP
CADD - PTO/JDP
CHECKED - RMC/JJR
SCALE - AS SHOWN
DATE - 2025.06.23

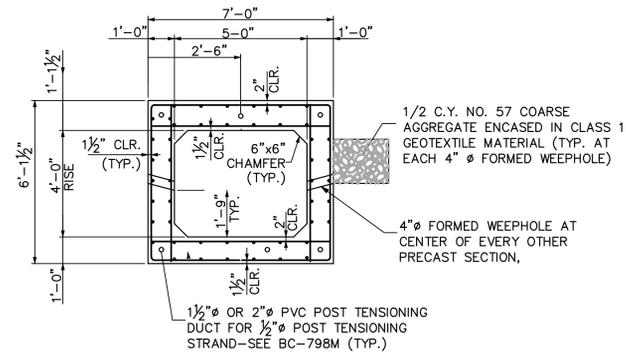
DRAWING NO.
DT-06
SHEET NO.
18 OF 20
PROJECT R009170.0428



TYPICAL SECTION (BEYOND CULVERT LIMITS)



TYPICAL SECTION (ADJACENT TO CULVERT)

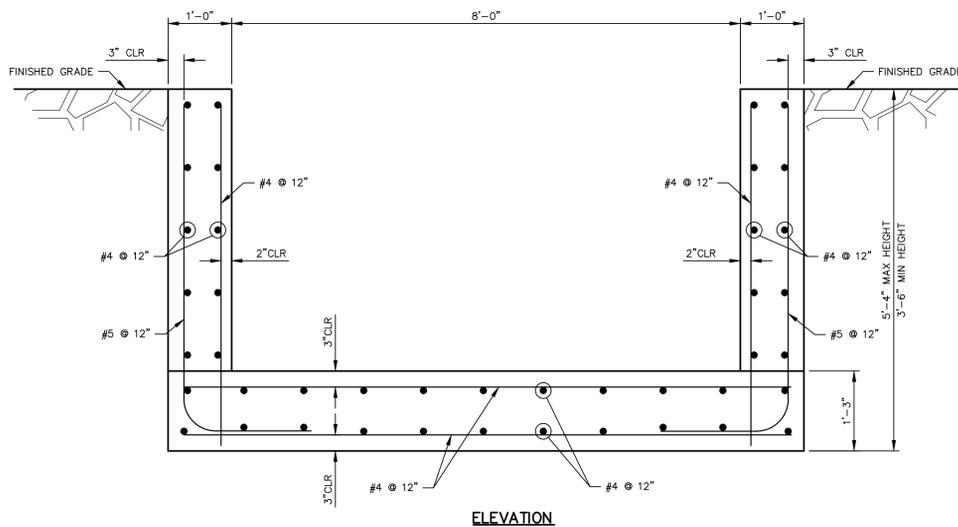


EAST BLVD (EAST) BASIN PRECAST BOX CULVERT TYPICAL SECTION

NOT TO SCALE

OUTLET STRUCTURE GENERAL NOTES

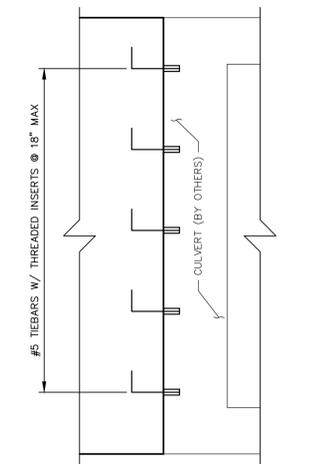
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
2. PROVIDE GRADE 60 REINFORCING STEEL BARS THAT MEET THE REQUIREMENTS OF ASTM A615/615M, A996/A996M, OR A706/A706M. DO NOT WELD GRADE 60 REINFORCING STEEL BARS UNLESS SPECIFIED.
3. PROVIDE MINIMUM EMBEDMENT AND LAP SPICE LENGTHS IN ACCORDANCE WITH ACI 318-14.
4. ALL SURFACES IN CONTACT WITH SOIL SHALL HAVE 3IN MINIMUM CLEAR COVER, UNLESS OTHERWISE NOTED.
5. WALL EW-10, OVEREXCAVATE A MINIMUM OF TWO FEET BELOW THE PROPOSED BOTTOM OF FOOTING ELEVATION. EXTEND OVEREXCAVATION A MINIMUM OF TWO FEET, OR AS INDICATED ON THE PLANS, LINEARLY ON ALL SIDES OF THE RETAINING WALL FOOTING.
6. PROOF ROLL THE EXCAVATED SUBGRADE AND REMOVE ANY ENCOUNTERED SOFT ZONES.
7. WALL EW-10, IMPLEMENT DEWATERING MEASURES TO ACCOMMODATE THE RECOMMENDED OVEREXCAVATION AND BACKFILL OPERATIONS.
8. WALL EW-10, BACKFILL THE OVEREXCAVATION WITH FLOWABLE FILL TO THE PROPOSED BOTTOM OF FOOTING. FLOWABLE FILL SHALL HAVE AN UNCONFINED COMPRESSIVE STRENGTH BETWEEN 75 PSI AND 150 PSI.
9. WALL EW-10, CONSTRUCT THE RETAINING WALL FOUNDATION ON TOP OF THE CURED FLOWABLE FILL.
10. CONTRACTOR IS RESPONSIBLE FOR VERIFYING WALL SIZE, REINFORCEMENT, AND SOIL CONDITIONS AND PROVIDING SHOP DRAWINGS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF PENNSYLVANIA.
11. SEE DRAWING NUMBER DT-03 FOR ADDITIONAL INFORMATION.



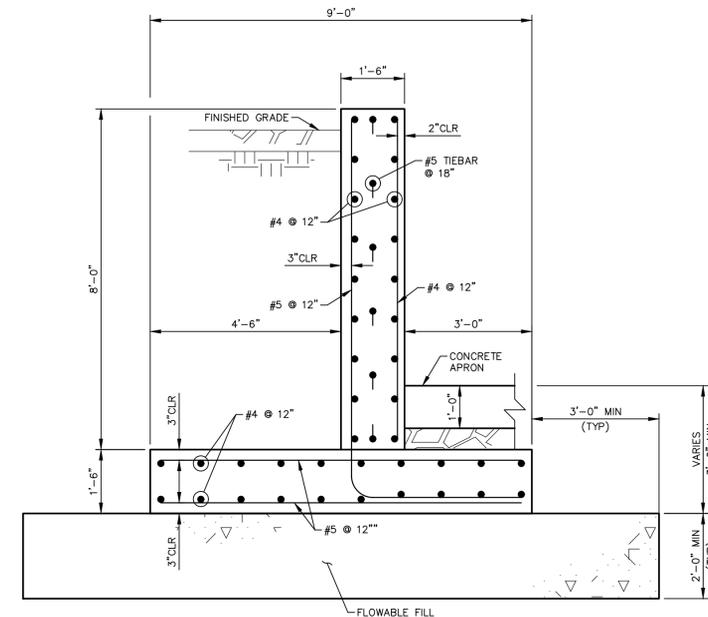
ELEVATION

OS-02 TYPICAL SECTION

12 0 12 INCHES
SCALE: 3/4" = 1'-0"



CULVERT TO WALL CONNECTION DETAIL



EW-10 TYPICAL SECTION

1 0 2 FEET
SCALE: 1/2" = 1'-0"

NO.	REVISION	DATE	BY

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrg@hrg-inc.com
www.hrg-inc.com

BETHLEHEM TOWNSHIP
MUNICIPAL AUTHORITY
3535 ORTH STREET
BETHLEHEM, PA 18020
(610) 814-6421

STRUCTURAL DETAILS
FOR
EASTON AVE FLOOD MITIGATION PHASE 1

BETHLEHEM TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

PROJ. MGR. - GW
DESIGN - JUR/AW/JDP
CADD - PTO/JDP
CHECKED - RMC/JJR
SCALE - AS SHOWN
DATE - 2025.06.23

DRAWING NO.
DT-08
SHEET NO.
20 OF 20
PROJECT R009170.0428

File Name: P:\0001\000170_2428\CD\Draw_S&G\Station A\18_1A\0001700428.DWG User:JUR Date: 2025-06-23 2:49pm