

SOUTH DEVON AREA FLOOD REDUCTION PROJECT

AT THE WEST WAYNE PRESERVE
AND FRIENDS OF RADNOR TRAIL PARK

RADNOR TOWNSHIP, DELAWARE COUNTY, PA

LITTLE DARBY CREEK WATERSHED

REVISIONS:	
DATE:	ISSUE:
06/27/23	ADDENDUM 1

OWNER:
RADNOR TOWNSHIP
301 IVEN AVENUE
WAYNE, PA 19087-5297

CIVIL ENGINEER:
meliora 
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SURVEYOR:
CONTROL POINT ASSOCIATES, INC.
1600 MANOR DRIVE, SUITE 210
CHALFONT, PA 18814
215.712.9800
WWW.CPASURVEY.COM

PROJECT TITLE:
SOUTH DEVON AREA FLOOD
REDUCTION PROJECT
AT THE WEST WAYNE PRESERVE
AND FRIENDS OF RADNOR TRAIL PARK

SEAL:

MARC B. HENDERSON
PROFESSIONAL ENGINEER
NO. 100827
STATE OF PENNSYLVANIA

SUBMISSION:
BID DOCUMENTS

DRAWING TITLE:
COVER SHEET

DATE: 06/14/23	DRAWING NO.:
SCALE: AS NOTED	CS
DRAWN BY: MPB	
CHECKED BY: MBH/MCA	

LOCATION MAP



MAP SCALE : 1:300



SHEET LIST	
Sheet Number	Sheet Title
CS	COVER SHEET
C1.00	EXISTING CONDITIONS PLAN
C1.10	DEMOLITION PLAN
C1.11	DEMOLITION PLAN - ENLARGEMENT
C1.20	EROSION & SEDIMENT CONTROL NOTES
C1.21	EROSION & SEDIMENT CONTROL PLAN
C1.22	EROSION & SEDIMENT CONSTRUCTION SEQUENCE
C1.30	STORMWATER & GRADING PLAN
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C5.00	EROSION & SEDIMENT CONTROL DETAILS - SHEET 1
C5.01	EROSION & SEDIMENT CONTROL DETAILS - SHEET 2
C5.02	STORMWATER DETAILS - SHEET 1
C5.03	STORMWATER DETAILS - SHEET 2
C5.04	STORMWATER DETAILS - SHEET 3
L1.0	PLANTING PLAN
L1.1	PLANTING DETAILS & PLANT SCHEDULE



IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT ACTIVITIES IN A CLEAN, NEAT MANNER THROUGHOUT THE CONTRACT PERIOD. ALL DEBRIS GENERATED BY THE CONTRACTOR'S ACTIVITIES SHALL BE CLEANED UP AND REMOVED FROM THE PREMISES AT THE END OF EACH WORKING DAY. IF THE CONTRACTOR FAILS TO COMPLY, THE TOWNSHIP OF RADNOR HAS THE RIGHT TO HAVE THE SITE CLEANED AT THE CONTRACTOR'S EXPENSE.

ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK PER PENNSYLVANIA ACT 287 OF 1974 AS AMENDED BY ACT 199 OF 2004 OR LATER.

EXISTING CONDITIONS LEGEND

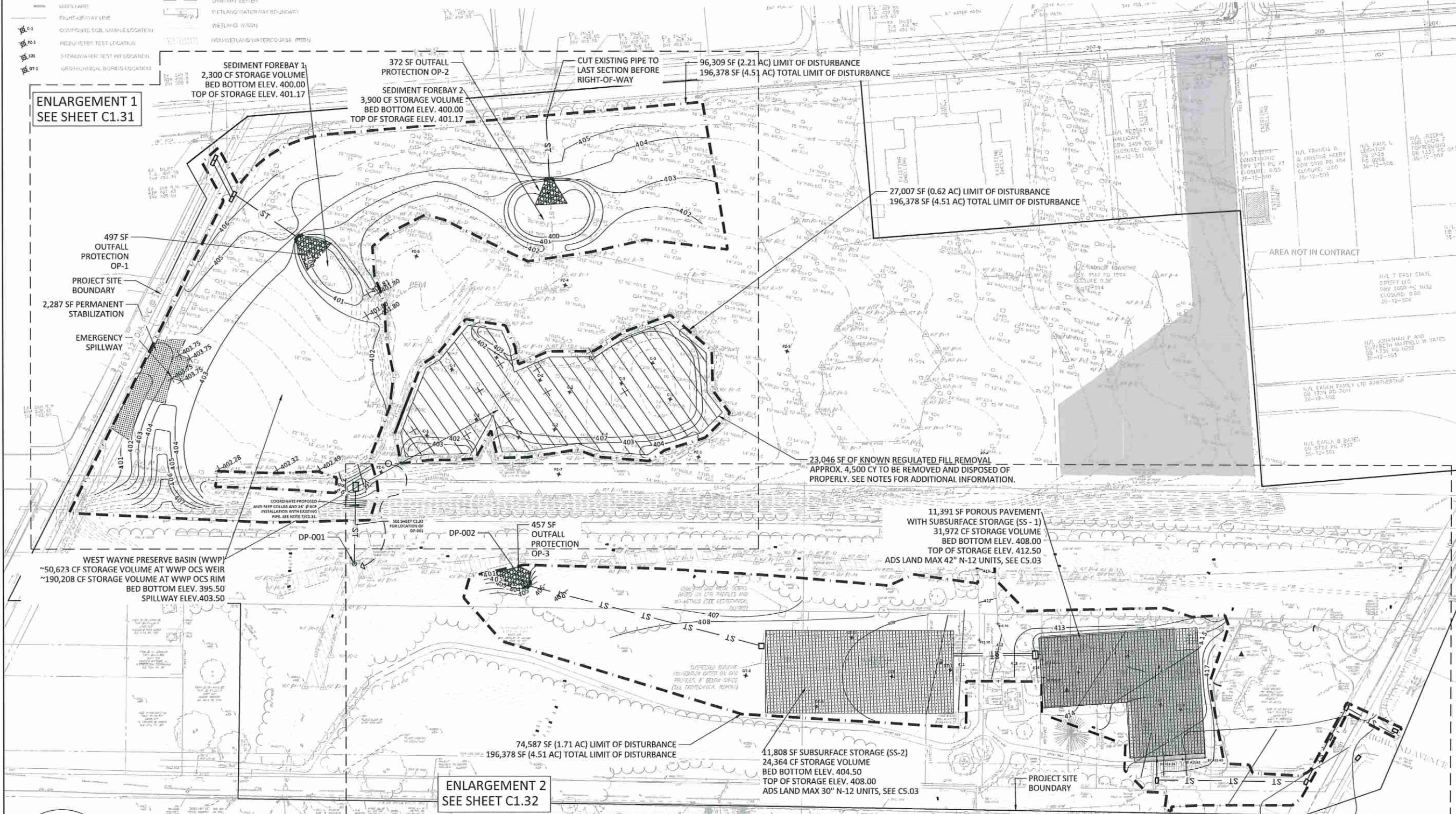
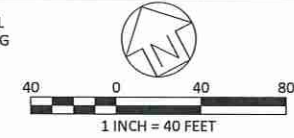
- EXISTING CONTOUR
- OVERHEAD WIRES
- UNDERGROUND CABLE
- HYDRANT
- WATER METER
- SEWERAGE STORAGE TANKAGE
- SANITARY SEWER MANHOLE
- CLEANOUT
- UTILITY POLE
- WHITTY POLYETHYLENE POLE
- SOIL
- BOULEVARD
- BOULEVARD
- RIGHT-OF-WAY LINE
- COMPOSITE SOIL SAMPLE LOCATION
- REZONESTER TEST LOCATION
- STORMWATER TEST PIT LOCATION
- GEOTECHNICAL BORIS LOCATION
- PERMANENT TREE & TRUNK SIZE
- COINCIDENT TREE & TRUNK SIZE
- PARKING SPACE CURVE
- EDGE OF WOODS
- PROPERTY BOUNDARY
- GALE LINE
- WATER LINE
- AREA LIGHT
- CATCH BASIN OR INLET
- STORM SEWER
- SANITARY SEWER
- WETLAND (W20)
- WETLAND WATER COURSE (PRO)

LEGEND

- LIMIT OF DISTURBANCE
- PROJECT SITE BOUNDARY
- JUNCTION STRUCTURE
- ENDWALL
- OUTLET CONTROL STRUCTURE
- INLET
- PROPOSED CONTOUR
- SOLID PIPE
- OUTFALL PROTECTION
- TRM PERMANENT STABILIZATION
- ADS SUBSURFACE STORAGE SYSTEM
- POROUS PAVEMENT
- KNOWN REGULATED FILL REMOVAL

NOTES:

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- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE WORK COMMENCES. THE CONTRACTOR MUST BRING TO THE ATTENTION OF THE ENGINEER ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND DRAWINGS PRIOR TO BEGINNING WORK. FIELD CONDITION DISCREPANCIES SHALL NOT BE USED AS THE BASIS FOR CHANGE ORDER CLAIMS ONCE CONSTRUCTION ACTIVITIES AVE COMMENCED.
- THE SITE INCLUDES AREAS OF PREVIOUS DISTURBANCE AND HISTORIC FILL. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING RADNOR TOWNSHIP OF ANY AREAS UNCOVERED DURING CONSTRUCTION THAT MAY NOT MEET PENNSYLVANIA STANDARDS FOR CLEAN FILL.



ENLARGEMENT 1
SEE SHEET C1.31

ENLARGEMENT 2
SEE SHEET C1.32



ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK PER PENNSYLVANIA ACT 287 OF 1974 AS AMENDED BY ACT 199 OF 2004 OR LATER.

NOTES CONTINUED:

- KNOWN REGULATED FILL MATERIAL OUTLINED FOR REMOVAL DOES NOT MEET PENNSYLVANIA CLEAN FILL STANDARDS BASED ON ELEVATED VANADIUM LEVELS OF 75-79.2 PPM AND BENO(A)PYRENE LEVEL OF 1.54 PPM, BUT IS SUITABLE FOR DISPOSAL AT REGULATED FILL SITES. THE CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL AND TESTING OF ALL MATERIAL IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS 25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ TO PROPERLY REMOVE THE REGULATED FILL MATERIAL FROM THE SITE.
- REFER TO THE L-SERIES SHEETS FOR THE PLANTING PLANS.
- REFER TO C1.36 STORMWATER & GRADING NOTES FOR CLEAN FILL AND SITE CONTAMINATION NOTES.
- ALL EXCAVATION AND REMOVAL VOLUMES ARE GIVEN AS NEAT QUANTITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALCULATE NECESSARY BULKING FACTORS TO DETERMINE HOW TRANSPORT OR WORK WITH MATERIALS ARE QUANTIFIED TO ACHIEVE THE WORK AS DOCUMENTED.

STORMWATER TEST PIT ID	SURFACE	DEPTH TO REDOX FEATURES	ASSUMED WATER SURFACE ELEVATION	GEOTECHNICAL TEST PIT ID	SURFACE	WET SOIL DEPTH	ESTIMATED WATER SURFACE ELEVATION
101	416	79" - 110" (6.6')	409.4	1	410	5'	405'
102	+413.75	72" - 100" (6')	407.75	2	408	8.2' (TO REDOX)	398.81'
103	409	72" - 90" (6')	403'	3	408	6'	402'
				4	407.9	8'	399.9'
				5	414	6' (TO REDOX)	408'
				6	+416.3	8' (TO REDOX)	408.3'

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SOUTH DEVON AREA FLOOD REDUCTION PROJECT
AT THE WEST WAYNE PRESERVE AND FRIENDS OF RADNOR TRAIL PARK

SEAL:

MARC B. HENDERSON
REGISTERED PROFESSIONAL ENGINEER
NO. 000022
STATE OF PENNSYLVANIA

SUBMISSION:
BID DOCUMENTS

DRAWING TITLE:
STORMWATER & GRADING PLAN

DATE: 06/14/23
SCALE: 1" = 40'
DRAWN BY: MPB
CHECKED BY: MBH/MCA

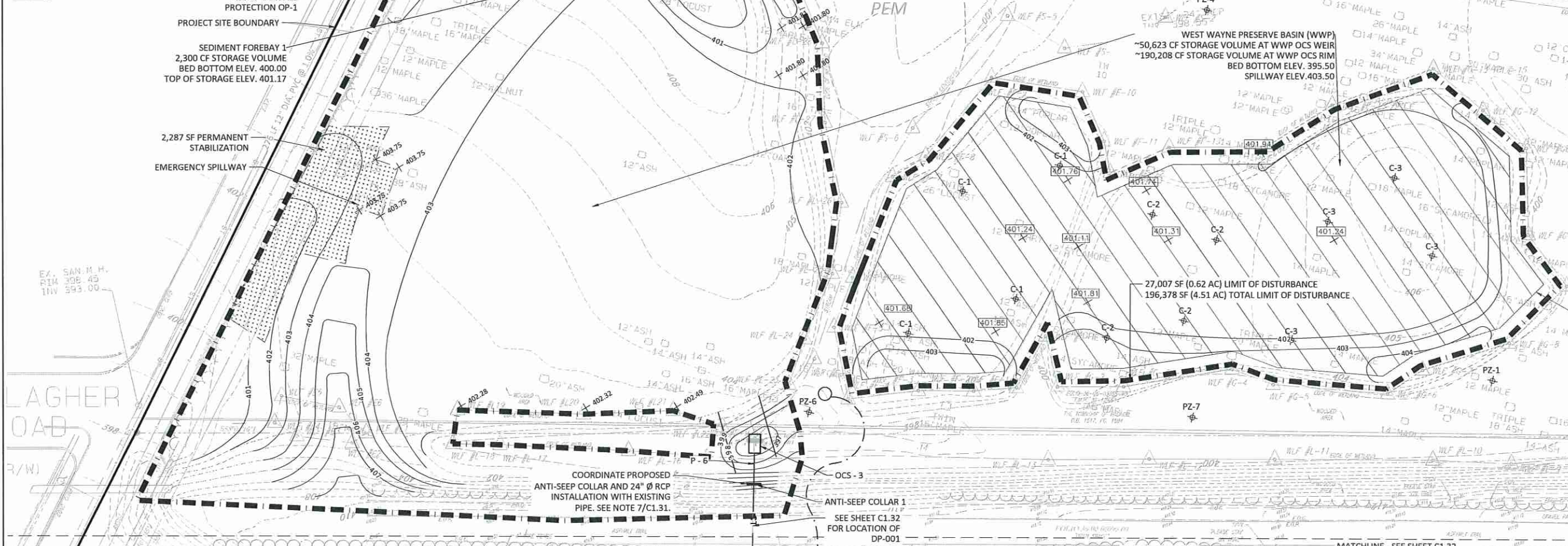
DRAWING NO:
C1.30

EXISTING CONDITIONS LEGEND

- EXISTING CONTOUR
- OVERHEAD WIRE
- DEEPSEED WIRE
- HYDRANT
- WATER METER
- GRABMETER/STORMWATER METER
- SANITARY/SEWER METER
- CLEAN OUT
- UTILITY POLE
- UTILITY PULLER LIGHT POLE
- TRENCH
- ROLLING
- W/SHOULDER
- REST-OF-WAY LINE
- CONDUIT/PIPE LOCATION
- PRESSUREMETER TEST LOCATION
- STORMWATER TEST PIPE LOCATION
- PHOTOGRAPHIC MARKING LOCATION
- DECIDUOUS TREE & TRUNK SIZE
- CONIFEROUS TREE & TRUNK SIZE
- TREE SURVIVAL POINT
- EDGE OF WOODS
- PROPERTY BOUNDARY
- GAS LINE
- WATER LINE
- AIR SERVICE
- CATCH BASIN OR INLET
- STORM SEWER
- SANITARY SEWER
- VETERANARY-WATERWAY BOUNDARY
- WETLAND (W100)
- W/SHOULDER WATERCOURSE

LEGEND

- LIMIT OF DISTURBANCE
- PROJECT SITE BOUNDARY
- JUNCTION STRUCTURE
- ENDWALL
- OUTLET CONTROL STRUCTURE
- INLET
- 408 PROPOSED CONTOUR
- SOLID PIPE
- OUTFALL PROTECTION
- TRM PERMANENT STABILIZATION
- ADS SUBSURFACE STORAGE SYSTEM
- POROUS PAVEMENT
- KNOWN REGULATED FILL REMOVAL



REVISIONS:	
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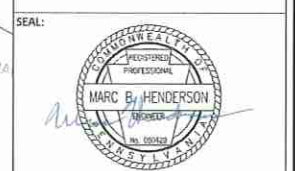
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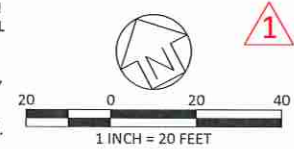


SUBMISSION:
BID DOCUMENTS

DRAWING TITLE:
**STORMWATER &
 GRADING PLAN -
 ENLARGEMENT 1**

DATE:	06/14/23	DRAWING NO.:	C1.31
SCALE:	1" = 20'		
DRAWN BY:	MPB		
CHECKED BY:	MBH/MCA		

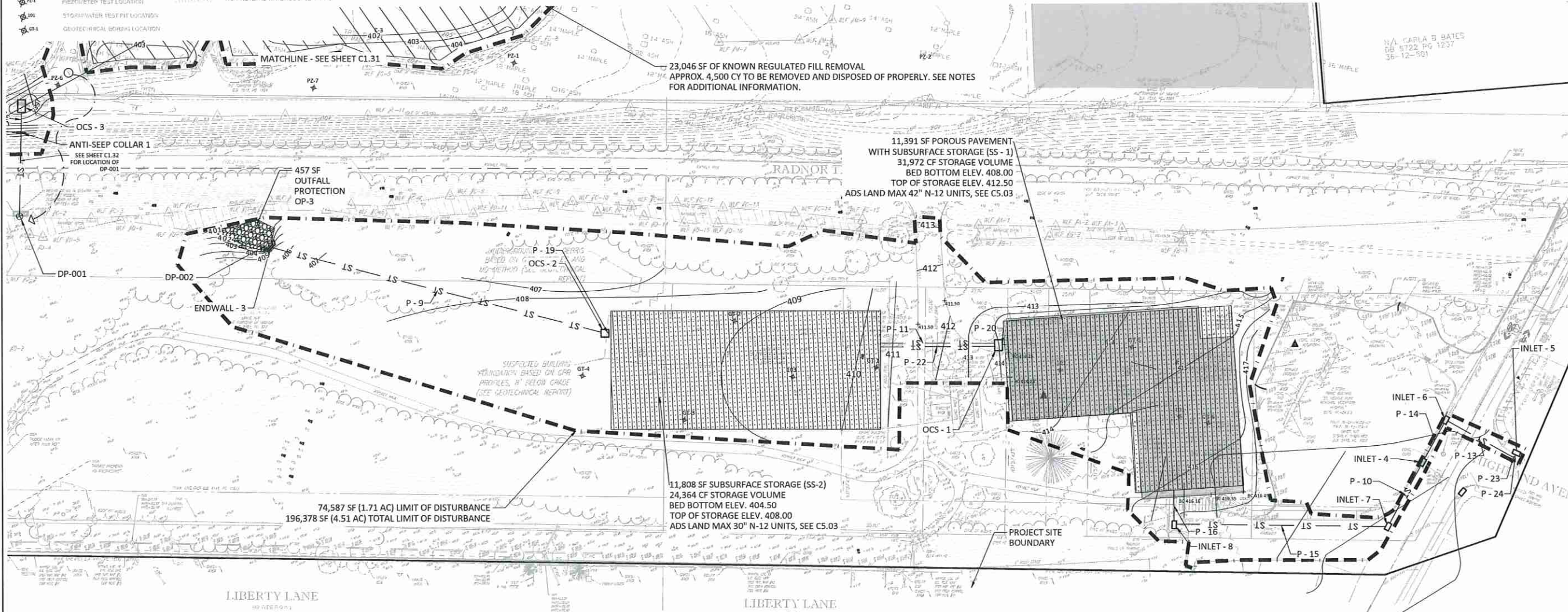
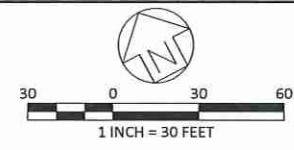
- NOTES:
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 - KNOWN REGULATED FILL MATERIAL OUTLINED FOR REMOVAL DOES NOT MEET PENNSYLVANIA CLEAN FILL STANDARDS BASED ON ELEVATED VANADIUM LEVELS OF 75-79.2 PPM AND BENO(A)PYRENE LEVEL OF 1.54 PPM, BUT IS SUITABLE FOR DISPOSAL AT REGULATED FILL SITES. THE CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL AND TESTING OF ALL MATERIAL IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS 25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ TO PROPERLY REMOVE THE REGULATED FILL MATERIAL FROM THE SITE.
 - REFER TO THE L-SERIES SHEETS FOR THE PLANTING PLANS.
 - REFER TO C1.36 STORMWATER & GRADING NOTES FOR CLEAN FILL AND SITE CONTAMINATION NOTES. CONTRACTOR TO REMOVE EXISTING HEADWALL, INSTALL NEW 24" RCP AND ANTI-SEEP COLLAR, AND ATTACH PERMANENTLY TO EXISTING PIPE. CONTRACTOR TO REVIEW PIPE CONDITION WITH OWNER PRIOR TO DEMOLITION.



ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK PER PENNSYLVANIA ACT 287 OF 1974 AS AMENDED BY ACT 199 OF 2004 OR LATER.

EXISTING CONDITIONS LEGEND	
---	EXISTING DISTRICT
---	EXISTING DRIVE
---	EXISTING CURB
---	HYDRANT
---	WATER METER
---	DRAINAGE STRUCTURE MANHOLE
---	SANITARY SEWER MANHOLE
---	CLEANOUT
---	UTILITY POLE
---	UTILITY POLE/LIGHT POLE
---	SEW
---	WALL
---	W-DRILLING
---	RIGHT-OF-WAY LINE
---	COMPOSITE SOIL SAMPLE LOCATION
---	PERMEABILITY TEST LOCATION
---	STORMWATER TEST PIT LOCATION
---	GEOTECHNICAL BORING LOCATION

LEGEND	
---	DECIDUOUS TREE & TRUNK SIZE
---	CONIFEROUS TREE & TRUNK SIZE
---	PARKING SPACE FOOTPRINT
---	EDGE OF WOODS
---	EDGE OF DRIP LINE
---	PROPERTY BOUNDARY
---	GAS LINE
---	WATER LINE
---	AREA LIGHT
---	CATCH BASIN OR RILET
---	STORM SEWER
---	SANITARY SEWER
---	WETLAND WATERWAY BOUNDARY
---	WETLAND (W2B1)
---	NON-WETLAND WATERCOURSE (R10)
---	LIMIT OF DISTURBANCE
---	PROJECT SITE BOUNDARY
---	JUNCTION STRUCTURE
---	ENDWALL
---	OUTLET CONTROL STRUCTURE
---	INLET
---	PROPOSED CONTOUR
---	SOLID PIPE
---	OUTFALL PROTECTION
---	TRM PERMANENT STABILIZATION
---	ADS SUBSURFACE STORAGE SYSTEM
---	POROUS PAVEMENT
---	KNOWN REGULATED FILL REMOVAL



23,046 SF OF KNOWN REGULATED FILL REMOVAL
APPROX. 4,500 CY TO BE REMOVED AND DISPOSED OF PROPERLY. SEE NOTES FOR ADDITIONAL INFORMATION.

11,391 SF POROUS PAVEMENT WITH SUBSURFACE STORAGE (SS-1)
31,972 CF STORAGE VOLUME
BED BOTTOM ELEV. 408.00
TOP OF STORAGE ELEV. 412.50
ADS LAND MAX 42" N-12 UNITS, SEE C5.03

11,808 SF SUBSURFACE STORAGE (SS-2)
24,364 CF STORAGE VOLUME
BED BOTTOM ELEV. 404.50
TOP OF STORAGE ELEV. 408.00
ADS LAND MAX 30" N-12 UNITS, SEE C5.03

74,587 SF (1.71 AC) LIMIT OF DISTURBANCE
196,378 SF (4.51 AC) TOTAL LIMIT OF DISTURBANCE

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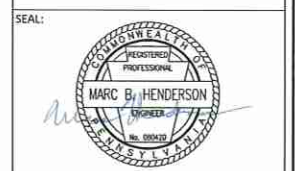
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SUBMISSION:
BID DOCUMENTS

DRAWING TITLE:
STORMWATER & GRADING PLAN - ENLARGEMENT 2

DATE: 06/14/23	DRAWING NO:
SCALE: 1" = 30'	C1.32
DRAWN BY: MPB	
CHECKED BY: MBH/MCA	

EXISTING CONDITIONS LEGEND

TR	EXISTING TOWER	ET	EXISTING TREE & TRUNK SIZE
OT	OVERHEAD TAPPE	ET	EXISTING TREE & TRUNK SIZE
DF	DEFERRED CUTS	ET	EXISTING TREE & TRUNK SIZE
HY	HYDRANT	ET	EXISTING TREE & TRUNK SIZE
GM	GAS METER	ET	EXISTING TREE & TRUNK SIZE
DT	DRAINAGE TROUGH/SM-HOLE	ET	EXISTING TREE & TRUNK SIZE
SM	SEWAGE/SEWER/SM-HOLE	ET	EXISTING TREE & TRUNK SIZE
KL	KEY LIGHT	ET	EXISTING TREE & TRUNK SIZE
UP	UTILITY POLE	ET	EXISTING TREE & TRUNK SIZE
UL	UTILITY POLE LIGHT POLE	ET	EXISTING TREE & TRUNK SIZE
ES	EGN	ET	EXISTING TREE & TRUNK SIZE
EQ	EQUILAND	ET	EXISTING TREE & TRUNK SIZE
ME	MESLAND	ET	EXISTING TREE & TRUNK SIZE
RL	RIGHT-OF-WAY LINE	ET	EXISTING TREE & TRUNK SIZE
CS	COMPOSITE SOIL SAMPLE LOCATION	ET	EXISTING TREE & TRUNK SIZE
FR	FRESHWATER TEST PIT LOCATION	ET	EXISTING TREE & TRUNK SIZE
ST	STORMWATER TEST PIT LOCATION	ET	EXISTING TREE & TRUNK SIZE
GT	GEOTECHNICAL BONDING LOCATION	ET	EXISTING TREE & TRUNK SIZE

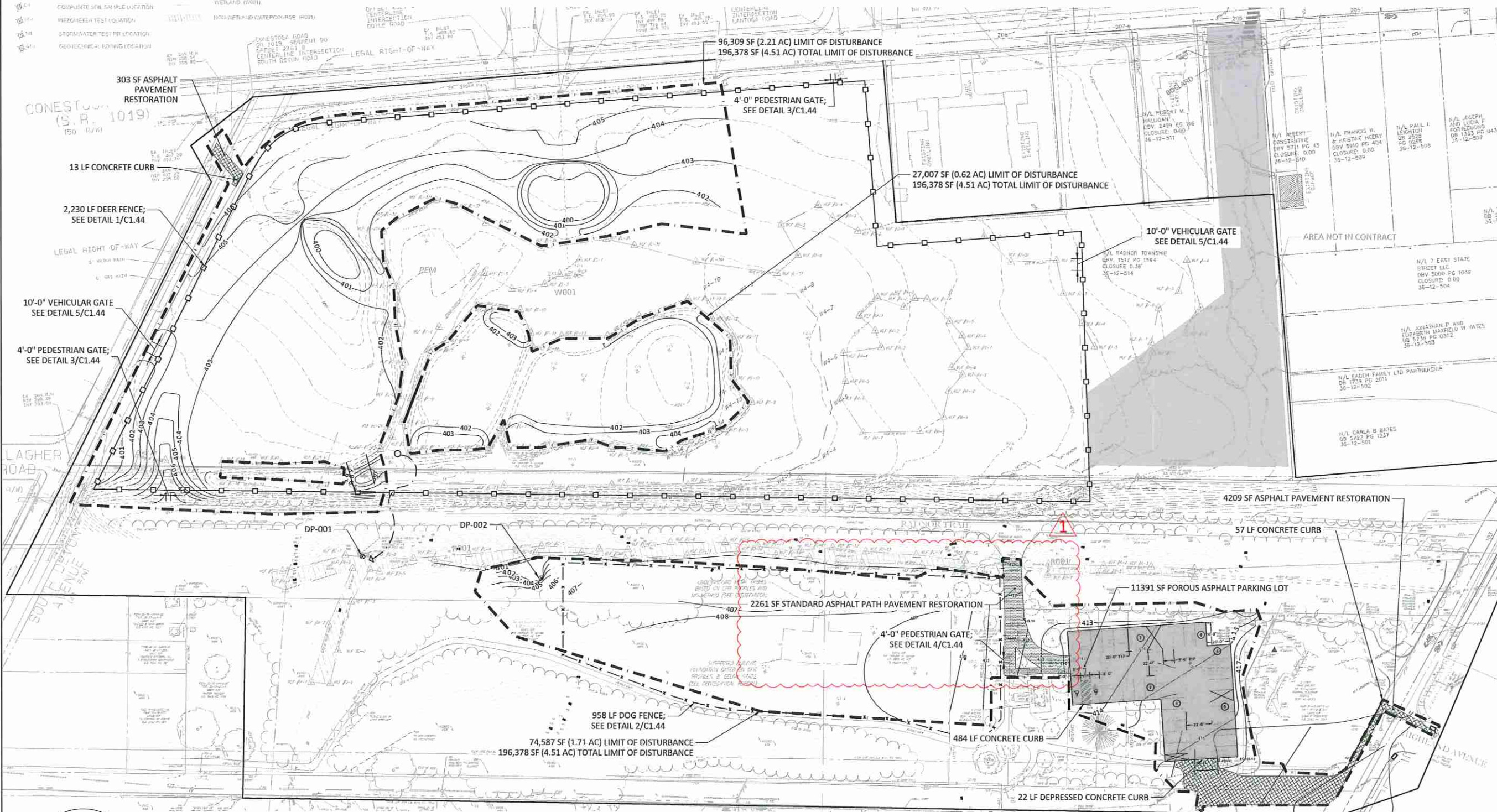
LEGEND

---	LIMIT OF DISTURBANCE
---	PROJECT SITE BOUNDARY
---	STANDARD CONCRETE CURB
---	POROUS ASPHALT PAVEMENT
---	PAVEMENT RESTORATION
---	ASPHALT PATH PAVEMENT RESTORATION
---	DEER FENCE
---	DOG FENCE

1

NOTES:

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OWNER:
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 301 IVEN AVENUE
 WAYNE, PA 19087-5297

CIVIL ENGINEER:

 MELIORA DESIGN
 259 MORGAN STREET
 PHOENIXVILLE, PA 19460
 610.933.0123
 WWW.MELIORADESIGN.COM

LANDSCAPE ARCHITECT:
 VIRIDIAN LANDSCAPE STUDIO
 3868 TERRACE STREET
 PHILADELPHIA, PA 19128
 215.482.7973
 WWW.VIRIDIANLS.COM

SURVEYOR:
 CONTROL POINT ASSOCIATES, INC.
 1600 MANOR DRIVE, SUITE 210
 CHALFONT, PA 18914
 215.712.9800
 WWW.CPASURVEY.COM

PROJECT TITLE:
 SOUTH DEVON AREA FLOOD
 REDUCTION PROJECT
 AT THE WEST WAYNE PRESERVE
 AND FRIENDS OF RADNOR TRAIL PARK

SEAL:

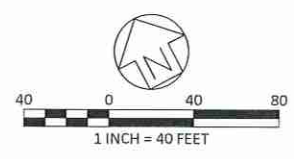
SUBMISSION:
 BID DOCUMENTS

DRAWING TITLE:
 SITE PLAN

DATE:	06/14/23	DRAWING NO.:	C1.40
SCALE:	1" = 40'		
DRAWN BY:	MPB		
CHECKED BY:	MBH/MCA		



ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK PER PENNSYLVANIA ACT 287 OF 1974 AS AMENDED BY ACT 199 OF 2004 OR LATER.



EXISTING CONDITIONS LEGEND	
	EXISTING UTILITY
	OVERHEAD WIRES
	DEPRESSED CURB
	HYDRANT
	WATER METER
	DAMAGED STORM MAIN
	SANITARY/SEWER MANHOLE
	CLEANOUT
	UTILITY POLE
	UTILITY POLE LIGHT POLE
	SIGN
	BUILDING
	WALL
	RIGHT-OF-WAY LINE
	ORNAMENTAL TREE & TRUNK SIZE
	CONIFEROUS TREE & TRUNK SIZE
	PARKING SPACE
	EDGE OF WOODS
	EDGE OF DIRT LINE
	PROPERTY BOUNDARY
	EASEMENT
	WATER LINE
	AREA LIGHT
	CATCH-BASIN TRAPLET
	STORM SEWER
	SANITARY SEWER
	WETLAND/WATERWAY BOUNDARY
	WETLAND/WATERWAY

LEGEND	
	LIMIT OF DISTURBANCE
	PROJECT SITE BOUNDARY
	STANDARD CONCRETE CURB
	POROUS ASPHALT PAVEMENT
	PAVEMENT RESTORATION

NOTES:

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT ACTIVITIES IN A CLEAN, NEAT MANNER THROUGHOUT THE CONTRACT PERIOD. ALL DEBRIS GENERATED BY THE CONTRACTOR'S ACTIVITIES SHALL BE CLEANED UP AND REMOVED FROM THE PREMISES AT THE END OF EACH WORKING DAY. IF THE CONTRACTOR FAILS TO COMPLY, RADNOR TOWNSHIP HAS THE RIGHT TO HAVE THE SITE CLEANED AT THE CONTRACTOR'S EXPENSE.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE WORK COMMENCES. THE CONTRACTOR MUST BRING TO THE ATTENTION OF THE ENGINEER ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND DRAWINGS PRIOR TO BEGINNING WORK. FIELD CONDITION DISCREPANCIES SHALL NOT BE USED AS THE BASIS FOR CHANGE ORDER CLAIMS ONCE CONSTRUCTION ACTIVITIES AVE COMMENCED.

REVISIONS:	
DATE:	ISSUE:
06/27/23	ADDENDUM 1

OWNER:
 RADNOR TOWNSHIP
 301 IVEN AVENUE
 WAYNE, PA 19087-5297

CIVIL ENGINEER:

 MELIORA DESIGN
 259 MORGAN STREET
 PHOENIXVILLE, PA 19460
 610.933.0123
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PROJECT TITLE:
 SOUTH DEVON AREA FLOOD
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 AT THE WEST WAYNE PRESERVE
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SEAL:

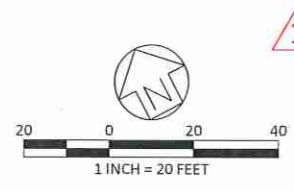
SUBMISSION:
 BID DOCUMENTS

DRAWING TITLE:
 SITE PLAN -
 ENLARGMENT 1

DATE:	06/14/23	DRAWING NO.:	C1.41
SCALE:	1" = 20'		
DRAWN BY:	MPB		
CHECKED BY:	MBH/MCA		



ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK PER PENNSYLVANIA ACT 287 OF 1974 AS AMENDED BY ACT 199 OF 2004 OR LATER.



EXISTING CONDITIONS LEGEND

---	EXISTING CURB	⊗	DECAJOUR TREE & TRUNK SIZE
---	OVERHEAD WIRE	⊕	CONIFEROUS TREE & TRUNK SIZE
---	DEPRESSED CURB	⊕	PARKING SPACE CURB
---	FIRE HYDRANT	---	EDGE OF TOBINS
---	WATER METER	---	EDGE OF DRIVE
---	DRAINAGE STRAIN	---	PROPERTY BOUNDARY
---	SAWYER/SEWER IN/OUT	---	GAS LINE
---	UTILITY CUT	---	WATER LINE
---	UTILITY POLE	---	AREA LIGHT
---	UTILITY POLE/SPLIT POLE	---	CATCH BASIN/INLET
---	SIGN	---	STORM SEWER
---	BOLLARD	---	SANITARY SEWER
---	HOLLARD	---	WETLAND/WATERWAY BOUNDARY
---	RIGHT-OF-WAY LINE	---	WETLAND (SWP)
---	CONCRETE AND/OR ASPHALT	---	WETLAND (SWP)

LEGEND

---	LIMIT OF DISTURBANCE
---	PROJECT SITE BOUNDARY
---	STANDARD CONCRETE CURB
---	POROUS ASPHALT PAVEMENT
---	PAVEMENT RESTORATION

- NOTES:**
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT ACTIVITIES IN A CLEAN, NEAT MANNER THROUGHOUT THE CONTRACT PERIOD. ALL DEBRIS GENERATED BY THE CONTRACTOR'S ACTIVITIES SHALL BE CLEANED UP AND REMOVED FROM THE PREMISES AT THE END OF EACH WORKING DAY. IF THE CONTRACTOR FAILS TO COMPLY, RADNOR TOWNSHIP HAS THE RIGHT TO HAVE THE SITE CLEANED AT THE CONTRACTOR'S EXPENSE.
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REVISIONS:

DATE:	ISSUE:
06/27/23	ADDENDUM 1

OWNER:

RADNOR TOWNSHIP
301 IVEN AVENUE
WAYNE, PA 19087-5297

CIVIL ENGINEER:

meliora
MELIORA DESIGN
259 MORGAN STREET
PHOENIXVILLE, PA 19460
610.933.0123
WWW.MELIORADESIGN.COM

LANDSCAPE ARCHITECT:

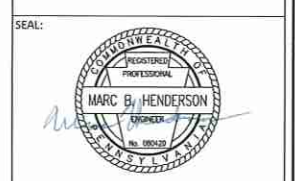
VIRIDIAN LANDSCAPE STUDIO
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SURVEYOR:

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PROJECT TITLE:

SOUTH DEVON AREA FLOOD REDUCTION PROJECT
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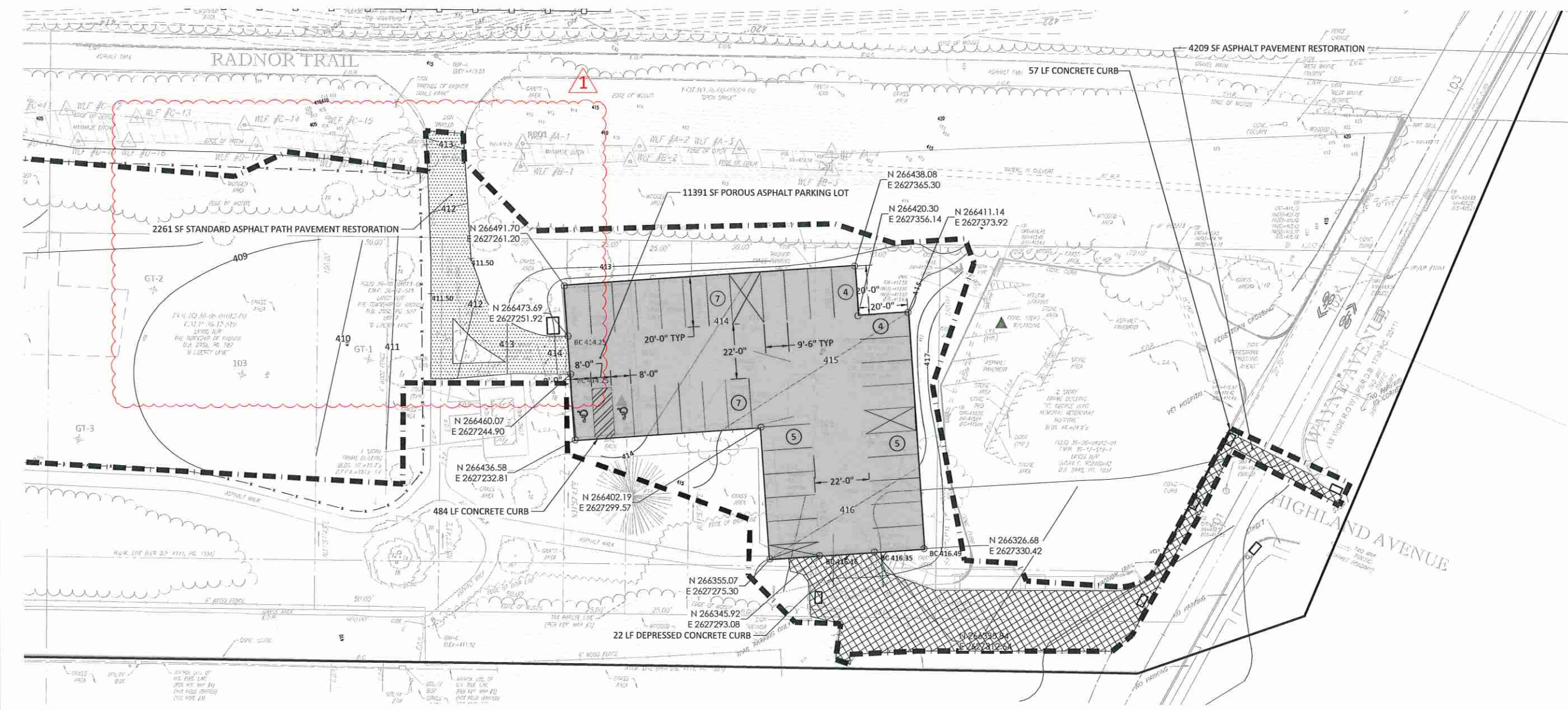
SUBMISSION:

BID DOCUMENTS

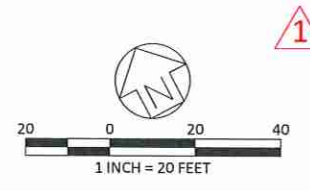
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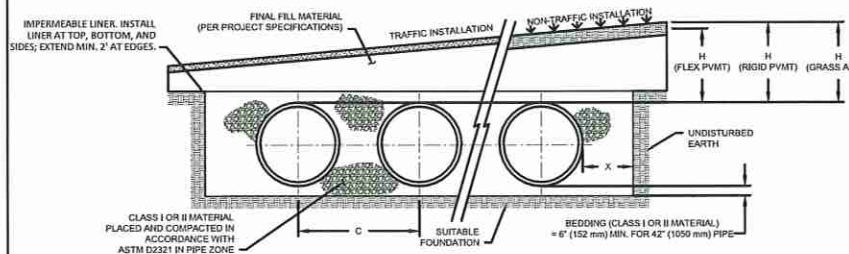
SITE PLAN - ENLARGMENT 2

DATE:	06/14/23	DRAWING NO.:	C1.42
SCALE:	1" = 20'		
DRAWN BY:	MPB		
CHECKED BY:	MBH/MCA		



ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK PER PENNSYLVANIA ACT 287 OF 1974 AS AMENDED BY ACT 199 OF 2004 OR LATER.



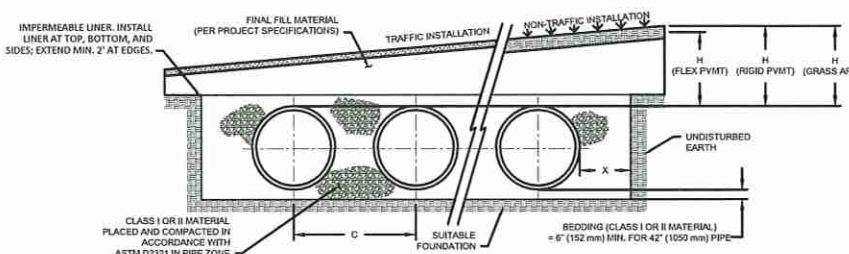


NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING "C"	TYPICAL SIDE WALL "X"	MIN. H (NON-TRAFFIC)	MIN. H (TRAFFIC)	MAX. H*
42"	48"	72"	18"	12"	24"	8'
(1093 mm)	(1219 mm)	(1829 mm)	(457 mm)	(305 mm)	(610 mm)	(2.4 m)

* MAXIMUM FILL HEIGHTS OVER MANIFOLD FITTINGS. CONTACT MANUFACTURER'S REPRESENTATIVE FOR INSTALLATION CONSIDERATIONS WHEN COVER EXCEEDS 8 FT (2.4 m).

- NOTES:**
- ALL REFERENCES TO CLASS I OR II MATERIAL ARE PER ASTM D2321 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
 - ALL RETENTION AND DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST EDITION AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.
 - MEASURES SHOULD BE TAKEN TO PREVENT THE MIGRATION OF NATIVE FINES INTO THE BACKFILL MATERIAL, WHEN REQUIRED, SEE ASTM D2321.
 - FILTER FABRIC:** A GEOTEXTILE FABRIC MAY BE USED AS SPECIFIED BY THE ENGINEER TO PREVENT THE MIGRATION OF FINES FROM THE NATIVE SOIL INTO THE SELECT BACKFILL MATERIAL.
 - FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL, AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
 - BEDDING:** SUITABLE MATERIAL SHALL BE CLASS I OR II. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (102 mm) FOR 4'-24" (100-600 mm), 6" (152 mm) FOR 30'-60" (750-900 mm).
 - INITIAL BACKFILL:** SUITABLE MATERIAL SHALL BE CLASS I OR II IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" (152 mm) ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (102 mm) FOR 4'-24" (100-600 mm), 6" (152 mm) FOR 30'-60" (750-900 mm).
 - COVER:** MINIMUM COVER OVER ALL RETENTION/DETENTION SYSTEMS IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (305 mm) FROM TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER IS 12" (305 mm) UP TO 36" (900 mm) DIAMETER PIPE AND 24" (610 mm) OF COVER FOR 42-60" (1093-1500 mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. MAXIMUM FILL HEIGHT LIMITED TO 8 FT (2.4 m) OVER FITTINGS FOR STANDARD INSTALLATIONS. CONTACT A SALES REPRESENTATIVE WHEN MAXIMUM FILL HEIGHTS EXCEED 8 FT (2.4 m) FOR INSTALLATION CONSIDERATIONS.

1 DETENTION SYSTEM CROSS SECTION
C5.04 SS-1 UPPER PARKING LOT N.T.S.

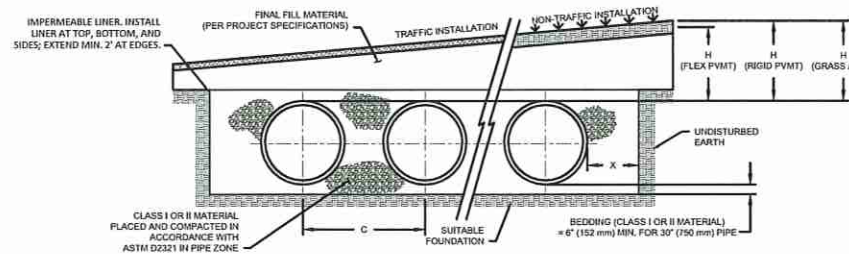


NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING "C"	TYPICAL SIDE WALL "X"	MIN. H (NON-TRAFFIC)	MIN. H (TRAFFIC)	MAX. H*
42"	48"	72"	18"	12"	24"	8'
(1093 mm)	(1219 mm)	(1829 mm)	(457 mm)	(305 mm)	(610 mm)	(2.4 m)

* MAXIMUM FILL HEIGHTS OVER MANIFOLD FITTINGS. CONTACT MANUFACTURER'S REPRESENTATIVE FOR INSTALLATION CONSIDERATIONS WHEN COVER EXCEEDS 8 FT (2.4 m).

- NOTES:**
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 - FILTER FABRIC:** A GEOTEXTILE FABRIC MAY BE USED AS SPECIFIED BY THE ENGINEER TO PREVENT THE MIGRATION OF FINES FROM THE NATIVE SOIL INTO THE SELECT BACKFILL MATERIAL.
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2 DETENTION SYSTEM CROSS SECTION
C5.04 SS-1 LOWER PARKING LOT N.T.S.

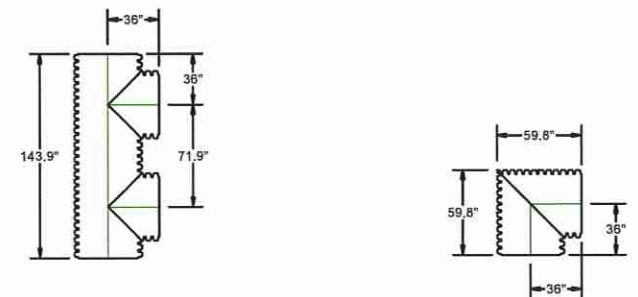


NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING "C"	TYPICAL SIDE WALL "X"	MIN. H (NON-TRAFFIC)	MIN. H (TRAFFIC)	MAX. H*
30"	36"	53.1"	18"	12"	24"	8'
(762 mm)	(914 mm)	(1349 mm)	(457 mm)	(305 mm)	(610 mm)	(2.4 m)

* MAXIMUM FILL HEIGHTS OVER MANIFOLD FITTINGS. CONTACT MANUFACTURER'S REPRESENTATIVE FOR INSTALLATION CONSIDERATIONS WHEN COVER EXCEEDS 8 FT (2.4 m).

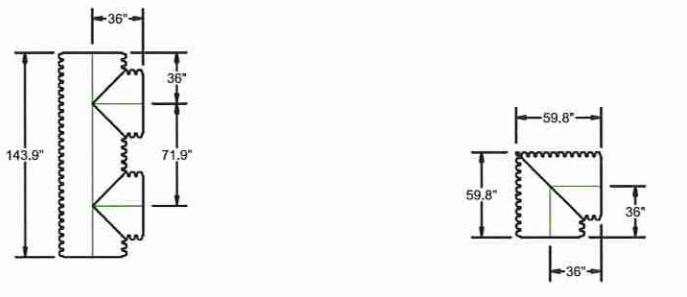
- NOTES:**
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3 DETENTION SYSTEM CROSS SECTION
C5.04 SS-2 N.T.S.



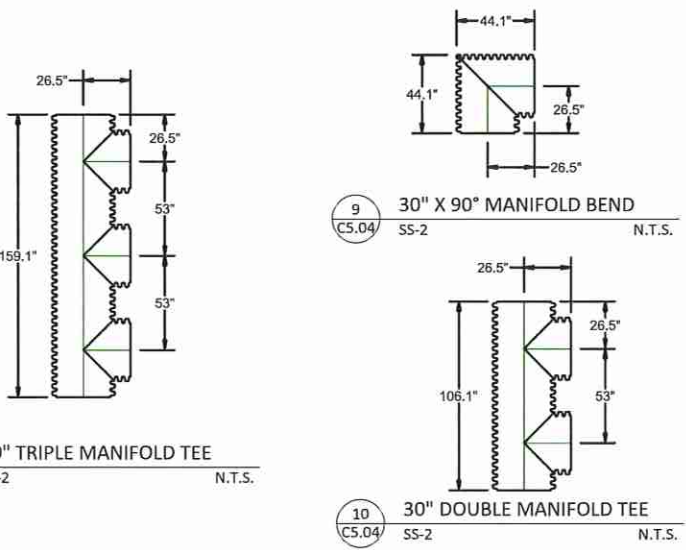
4 42" DOUBLE MANIFOLD TEE
C5.04 SS-1 UPPER PARKING LOT N.T.S.

5 42" X 90° MANIFOLD BEND
C5.04 SS-1 UPPER PARKING LOT N.T.S.



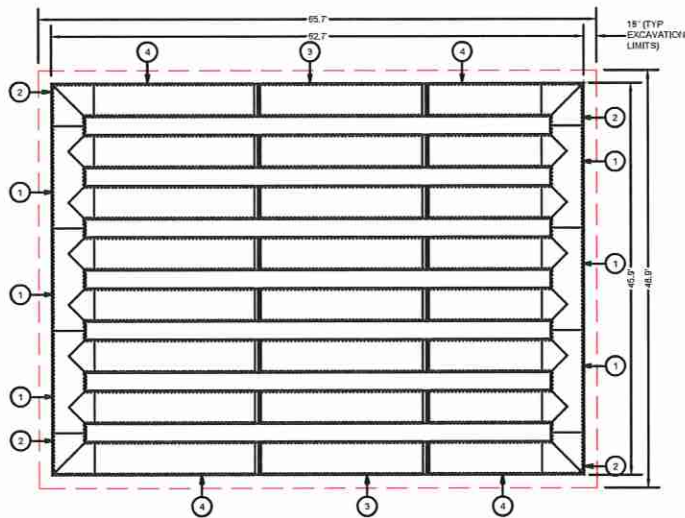
6 42" DOUBLE MANIFOLD TEE
C5.04 SS-1 LOWER PARKING LOT N.T.S.

7 42" X 90° MANIFOLD BEND
C5.04 SS-1 LOWER PARKING LOT N.T.S.

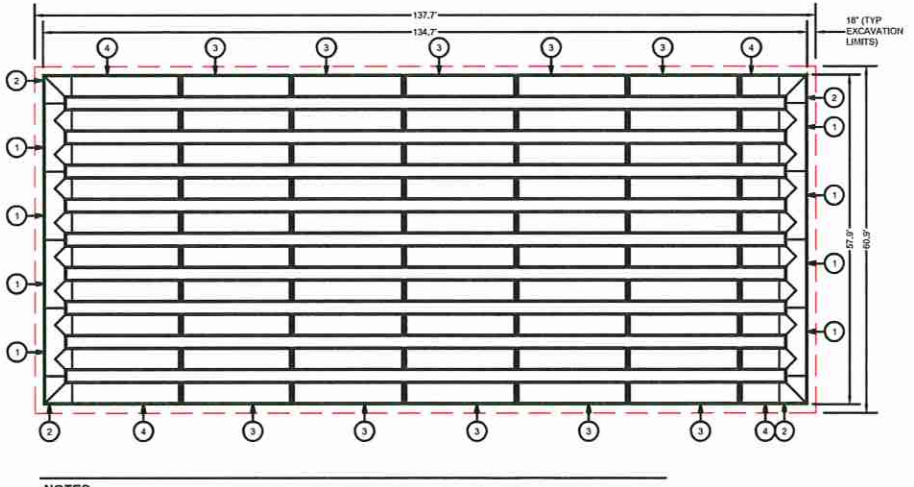


8 30" TRIPLE MANIFOLD TEE
C5.04 SS-2 N.T.S.

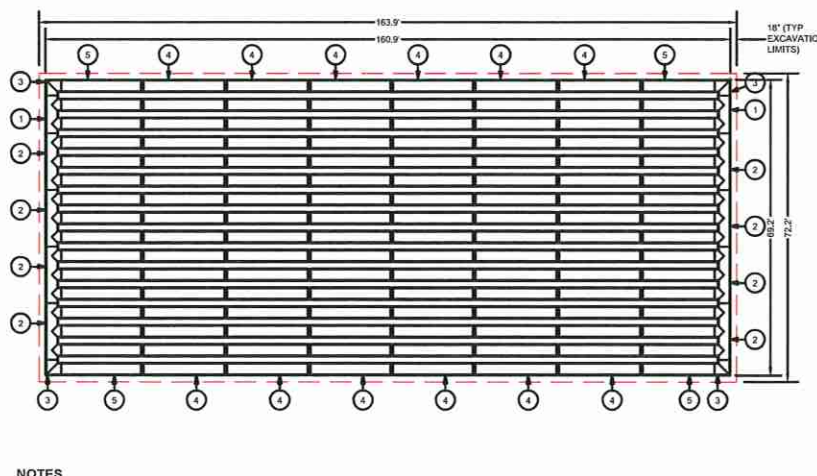
10 30" DOUBLE MANIFOLD TEE
C5.04 SS-2 N.T.S.



11 DETENTION SYSTEM PIPE LAYOUT
C5.04 SS-1 UPPER PARKING LOT N.T.S.



12 DETENTION SYSTEM PIPE LAYOUT
C5.04 SS-1 LOWER PARKING LOT N.T.S.



13 DETENTION SYSTEM PIPE LAYOUT
C5.04 SS-2 N.T.S.

- NOTES:**
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE PIPE COVER REQUIREMENTS ARE MET.
 - STUB SIZES AND INVERTS TO BE VERIFIED BY THE SITE DESIGN ENGINEER PRIOR TO FABRICATION.
 - ADS RISERS ARE FABRICATED 36" (900 mm) FROM TOP OF PIPE TO TOP OF RISER DUE TO SHIPPING LIMITATIONS. ADDITIONAL PIPE AND COUPLERS CAN BE USED TO EXTEND THE RISERS TO GRADE.
 - LAYOUT SHOWN DOES NOT INCLUDE ADDITIONAL PIPE & MANIFOLD NEEDED FOR PROPER PIPE INSERTION INTO STRUCTURES.
 - NOT FOR CONSTRUCTION

- NOTES:**
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE PIPE COVER REQUIREMENTS ARE MET.
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 - NOT FOR CONSTRUCTION

REVISIONS:

DATE:	ISSUE:

OWNER:

RADNOR TOWNSHIP
301 IVEN AVENUE
WAYNE, PA 19087-5297

CIVIL ENGINEER:

meliora
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SURVEYOR:

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PROJECT TITLE:

SOUTH DEVON AREA FLOOD
REDUCTION PROJECT
AT THE WEST WAYNE PRESERVE
AND FRIENDS OF RADNOR TRAIL PARK

SEAL:

SUBMISSION:

BID DOCUMENTS

DRAWING TITLE:

STORMWATER DETAILS -
SHEET 3

DATE: 06/14/23 **DRAWING NO.:**

SCALE: AS NOTED **C5.04**

DRAWN BY: MPB

CHECKED BY: MBH/MCA

PLANTING NOTES

1. REFER TO CIVIL DRAWINGS FOR EROSION AND SEDIMENT CONTROL REQUIREMENTS AND ALL SITE PREPARATION INFORMATION.

2. IF DISCREPANCIES EXIST BETWEEN THE NUMBER OF PLANTS DRAWN ON THE PLANTING PLAN AND THE NUMBER OF PLANTS IN THE PLANT LIST, THE PLANTING PLAN SHALL GOVERN.

3. ALL NEW PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.

4. ALL PLANT MATERIAL SHALL BE NURSERY GROWN, WITH THE EXCEPTION OF LIVESTAKES, WHICH MAY BE FIELD COLLECTED AS DIRECTED AND APPROVED BY THE LANDSCAPE ARCHITECT.

5. ALL NEW PLANTS SHALL BE BARE ROOT OR CONTAINER-GROWN, UNLESS OTHERWISE NOTED ON THE PLANT LIST.

6. THE CONTRACTOR SHALL SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON THE DRAWINGS.

7. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE, AND ONLY AFTER WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.

8. CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND SHALL REPORT ANY CONFLICTS TO THE LANDSCAPE ARCHITECT.

9. STAKE LOCATION OF ALL PROPOSED PLANTING FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF PLANTING.

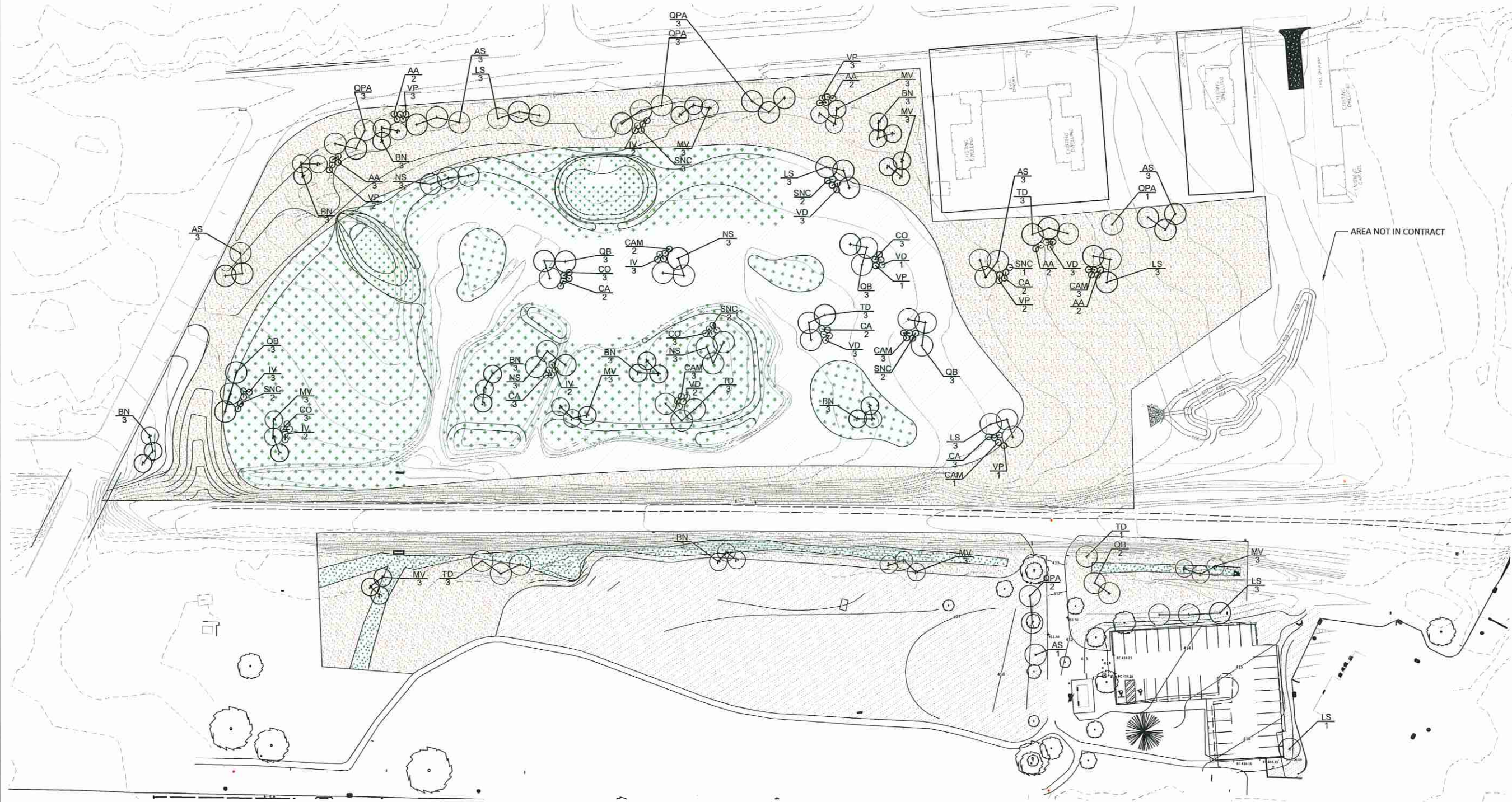
10. NO TREES OR SHRUBS SHALL BE PLANTED BEFORE ACCEPTANCE OF ROUGH GRADING BY LANDSCAPE ARCHITECT AND CIVIL ENGINEER.

11. SHRUBS SHALL BEAR THE SAME RELATIONSHIP TO GRADE AS THEY BORE TO PREVIOUS GRADE IN NURSERY. TREES SHALL BEAR SAME RELATIONSHIP TO GRADE AS THEY BORE TO PREVIOUS GRADE IN NURSERY OR HIGHER TO PREVENT COVERING ROOT FLARE.

12. ALL TREES AND SHRUBS SHALL RECEIVE THREE INCHES (3") OF BARK OR LEAF LITTER MULCH FOLLOWING INSTALLATION.

13. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL DAMAGED, STOLEN, DEAD, DECLINING OR LOST MATERIAL UNTIL COMPLETION OF MAINTENANCE AND GUARANTEE PERIODS.

14. MAINTENANCE AND GUARANTEE PERIODS SHALL BEGIN AT ACCEPTANCE OF SUBSTANTIAL COMPLETION AND LAST ONE YEAR.



LEGEND

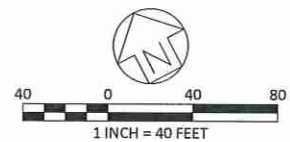
- ⊕ DECIDUOUS TREE 82 TREES
- ⊕ MULTI-STEMMED TREE 48 TREES
- SHRUB 95 SHRUBS

- [Pattern] FORESTED WETLAND SEEDING 3.6 ACRES
- [Pattern] FORESTED WETLAND CONTAINER/BARE-ROOT WOODY TREES AND SHRUBS 8' ON CENTER 78,200 SF 1,411 PLANTS
- [Pattern] LIVE STAKES 3' ON CENTER 6,842 SF 852 PLANTS

- [Pattern] UPLAND SEEDING 3.0 ACRES
- [Pattern] BIOSWALE SEEDING & PLUGGING 12' ON CENTER 6,990 SF 7,725 PLANTS
- [Pattern] SEEDED LAWN 66,000 SF



ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK PER PENNSYLVANIA ACT 287 OF 1974 AS AMENDED BY ACT 199 OF 2004 OR LATER.



REVISIONS:

DATE:	ISSUE:

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 RADNOR TOWNSHIP
 301 IVEN AVENUE
 WAYNE, PA 19087-5297

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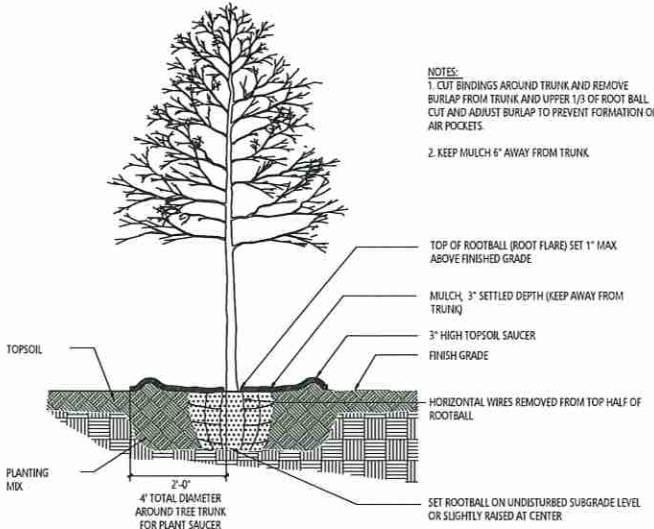
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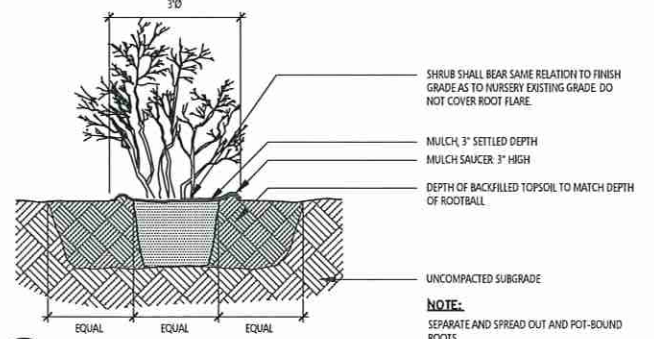
SUBMISSION:
DESIGN DOCUMENTS

DRAWING TITLE:
PLANTING PLAN

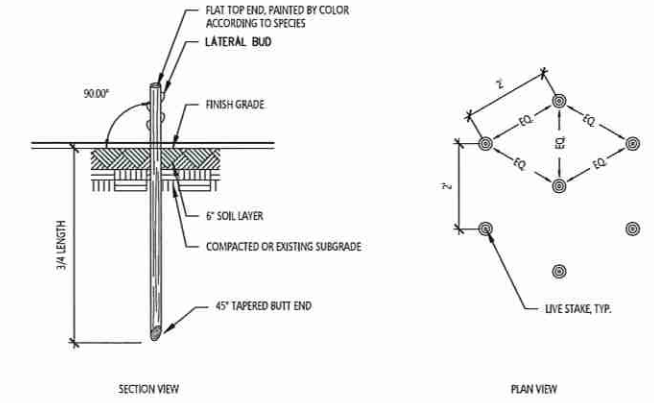
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CHECKED BY: THD	



1 B&B TREE PLANTING
L1.1 1/2" = 1'-0"



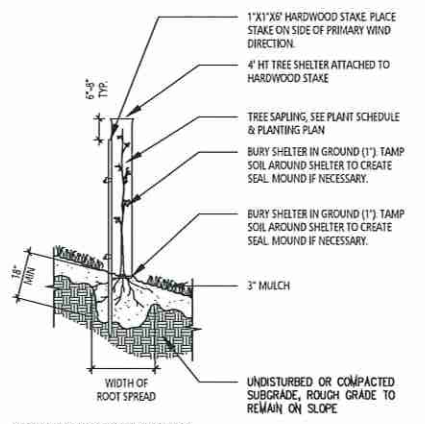
2 SHRUB PLANTING
L1.1 NOT TO SCALE



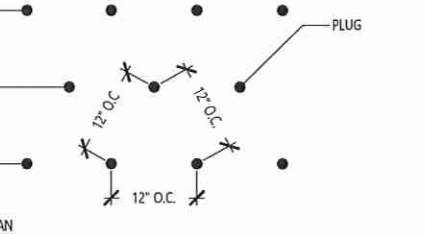
NOTES:

- LIVE STAKES ARE TO BE DORMANT LIVE BRANCHES MEASURING 24 TO 36 INCHES, WITH BASAL END DIAMETERS OF 3/4 TO 1 INCHES, WITH NO SIDE BRANCHES.
- BUTT ENDS OF STAKE SHALL BE ANGLED AT 45 DEGREES.
- OBTAIN LIVE STAKES FROM A NURSERY OR CUT FROM APPROVED SOURCES USING A SHARP TOOL. AVOID DAMAGE TO THE COLLECTION SITE. BRANCHES SHALL BE FLEXIBLE, FREE FROM DISEASE OR EXCESS DEAD TWIGS, AND MUST BE DORMANT.
- ALL SIDE BRANCHES SHALL BE CLEANLY CUT FROM LIVE STAKES.

3 LIVE STAKE PLANTING
L1.1 NOT TO SCALE



4 TREE PLANTING WITH SHELTER
L1.1 NOT TO SCALE



5 PLUG PLANTING
L1.1 NOT TO SCALE

PLANT SCHEDULE							
QUAN.	SYM.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	TYPE	INDICATOR/STATUS NOTES
B&B Trees							
24	BN	<i>Betula nigra</i>	River Birch	8' tall	As shown	B&B	FACW multi-stem
13	COH	<i>Celtis occidentalis</i>	Hackberry	2 1/2"-3" caliper	As shown	B&B	FACU
14	LS	<i>Liquidambar styraciflua</i>	Sweetgum	2 1/2"-3" caliper	As shown	B&B	FAC
24	MY	<i>Magnolia virginiana</i>	Sweetbay Magnolia	8' tall	As shown	B&B	FACW multi-stem
14	NS	<i>Nyssa sylvatica</i>	Black Tupelo	2 1/2"-3" caliper	As shown	B&B	FAC
14	QB	<i>Quercus bicolor</i>	Swamp White Oak	2 1/2"-3" caliper	As shown	B&B	FACW+
13	QPA	<i>Quercus palustris</i>	Pin Oak	2 1/2"-3" caliper	As shown	B&B	FACW
14	TD	<i>Taxodium distichum</i>	Bald Cypress	8' tall	As shown	B&B	OBL conifer
B&B Shrubs							
11	AA	<i>Aronia arbutifolia</i>	Red Chokecherry	24-36"	As shown	Container/Bareroot	FACW
12	CO	<i>Cephalanthus occidentalis</i>	Common Buttonbush	24-36"	As shown	Container/Bareroot	OBL
12	CA	<i>Clethra alnifolia</i>	Sweet Pepper Bush	24-36"	As shown	Container/Bareroot	FACW
12	CAM	<i>Cornus amomum</i>	Silky Dogwood	24-36"	As shown	Container/Bareroot	FACW
12	IV	<i>Ilex verticillata</i>	Winterberry Holly	24-36"	As shown	Container/Bareroot	FACW
12	SNC	<i>Sambucus nigra canadensis</i>	American Black Elderberry	24-36"	As shown	Container/Bareroot	FACW
12	VD	<i>Viburnum dentatum</i>	Arrow-wood	24-36"	As shown	Container/Bareroot	FAC
12	VP	<i>Viburnum prunifolium</i>	Blackhaw	24-36"	As shown	Container/Bareroot	FACU
Forested Wetland Container/Bareroot Trees & Shrubs							
83		<i>Acer saccharinum</i>	Silver Maple	24-36"	8' OC	Container/Bareroot	FAC
83		<i>Betula nigra</i>	River Birch	24-36"	8' OC	Container/Bareroot	FACW
83		<i>Celtis occidentalis</i>	Hackberry	24-36"	8' OC	Container/Bareroot	FACU
83		<i>Liquidambar styraciflua</i>	Sweetgum	24-36"	8' OC	Container/Bareroot	FAC
83		<i>Platanus occidentalis</i>	American Sycamore	24-36"	8' OC	Container/Bareroot	FACW+
83		<i>Quercus bicolor</i>	Swamp White Oak	24-36"	8' OC	Container/Bareroot	FACW+
83		<i>Quercus palustris</i>	Pin Oak	24-36"	8' OC	Container/Bareroot	FACW
83		<i>Salix nigra</i>	Black Willow	24-36"	8' OC	Container/Bareroot	OBL
83		<i>Acer negundo</i>	Box Elder	24-36"	8' OC	Container/Bareroot	FAC
83		<i>Alnus serrulata</i>	Smooth Alder	24-36"	8' OC	Container/Bareroot	OBL
83		<i>Aronia arbutifolia</i>	Red Chokecherry	24-36"	8' OC	Container/Bareroot	FACW
83		<i>Cephalanthus occidentalis</i>	Common Buttonbush	24-36"	8' OC	Container/Bareroot	OBL
83		<i>Clethra alnifolia</i>	Sweet Pepper Bush	24-36"	8' OC	Container/Bareroot	FACW
83		<i>Cornus amomum</i>	Silky Dogwood	24-36"	8' OC	Container/Bareroot	FACW
83		<i>Ilex verticillata</i>	Winterberry Holly	24-36"	8' OC	Container/Bareroot	FACW
83		<i>Sambucus nigra canadensis</i>	American Black Elderberry	24-36"	8' OC	Container/Bareroot	FACW
83		<i>Viburnum dentatum</i>	Arrow-wood	24-36"	8' OC	Container/Bareroot	FAC
83		<i>Viburnum prunifolium</i>	Blackhaw	24-36"	8' OC	Container/Bareroot	FACU
Live Stakes							
170		<i>Cornus amomum</i>	Silky Dogwood	3-4'	3' OC	Live Stake	FACW
171		<i>Cephalanthus occidentalis</i>	Common Buttonbush	3-4'	3' OC	Live Stake	OBL
171		<i>Salix nigra</i>	Black Willow	3-4'	3' OC	Live Stake	OBL
170		<i>Sambucus nigra canadensis</i>	American Black Elderberry	3-4'	3' OC	Live Stake	FACW
170		<i>Viburnum dentatum</i>	Arrow-wood	3-4'	3' OC	Live Stake	FAC
Bioswale Plugging							
1287		<i>Asclepias incarnata</i>	Swamp Milkweed	LPSO Plug	12" OC	PLUG	
1287		<i>Aster novae-angliae</i>	New England Aster	LPSO Plug	12" OC	PLUG	
1287		<i>Eupatorium fistulosum</i>	Joe-Pye Weed	LPSO Plug	12" OC	PLUG	
1288		<i>Helenium autumnale</i>	Sneezeweed	LPSO Plug	12" OC	PLUG	
1288		<i>Helianthus scaberrimus</i>	Smooth Oxeye	LPSO Plug	12" OC	PLUG	
1288		<i>Lobelia siphilitica</i>	Blue Lobelia	LPSO Plug	12" OC	PLUG	

SEEDING SCHEDULE			
BOTANICAL NAME	COMMON NAME	% of MIX	
Bioswale Seeding 12 lbs. per acre			
<i>Elymus virginicus</i>	Virginia Wild Rye	16%	
<i>Schizanthus acastrum</i>	Little Bluestem	10%	
<i>Vernonia noveboracensis</i>	New York Ironweed	10%	
<i>Helenium autumnale</i>	Common Sneezeweed	7%	
<i>Liatris spicata</i>	Dense Blazing Star	6%	
<i>Panicum virgatum</i>	Switchgrass	6%	
<i>Verbena hastata</i>	Blue Vervain	6%	
<i>Eupatorium purpureum</i>	Purple Joe-Pye	5%	
<i>Scirpus atrovirens</i>	Green Bulrush	5%	
<i>Penstemon digitalis</i>	Foxglove Beardtongue	4%	
<i>Pycnanthemum virginianum</i>	Mountain Mint	4%	
<i>Rudbeckia hirta</i>	Black-Eyed Susan	4%	
<i>Sorghastrum nutans</i>	Indian Grass	4%	
<i>Symphoricarpos novae-angliae</i>	New England Aster	4%	
<i>Lobelia siphilitica</i>	Blue Lobelia	3%	
<i>Monarda fistulosa</i>	Wild Bergamot	3%	
<i>Helianthus scaberrimus</i>	False Sunflower	2%	
<i>Iris versicolor</i>	Blueflag Iris	1%	
Forested Wetland Seeding 9lbs per acre			
<i>Carex lurida</i>	Shallow Sedge	20%	
<i>Andropogon gerardi</i>	Big Bluestem	14%	
<i>Panicum virgatum</i>	Switchgrass	12%	
<i>Helianthus scaberrimus</i>	False Sunflower	10%	
<i>Mirabilis jalapa</i>	Mokey Flower	9%	
<i>Juncus effusus</i>	Soft Rush	8%	
<i>Symphoricarpos novae-angliae</i>	New England Aster	7%	
<i>Vernonia noveboracensis</i>	New York Ironweed	6%	
<i>Monarda fistulosa</i>	Wild Bergamot	5%	
<i>Asclepias incarnata</i>	Swamp Milkweed	4%	
<i>Verbena hastata</i>	Blue Vervain	3%	
<i>Pycnanthemum virginianum</i>	Mountain Mint	2%	
Upland Seeding 21 lbs per acre			
<i>Elymus virginicus</i>	Virginia Wild Rye	25%	
<i>Panicum virgatum</i>	Switchgrass	20%	
<i>Andropogon gerardi</i>	Big Bluestem	16%	
<i>Helianthus scaberrimus</i>	False Sunflower	12%	
<i>Tridens flavus</i>	Purpletop	8%	
<i>Rudbeckia hirta</i>	Black-Eyed Susan	7%	
<i>Chamaecrista fasciculata</i>	Partridge Pea	6%	
<i>Sorghastrum nutans</i>	Indian Grass	6%	

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DATE:	ISSUE:

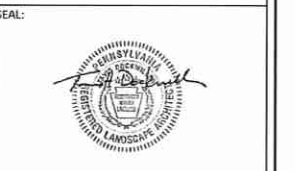
OWNER:
RADNOR TOWNSHIP
301 IVEN AVENUE
WAYNE, PA 19087-5297

CIVIL ENGINEER:
meliora
MELIORA DESIGN
259 MORGAN STREET
PHOENIXVILLE, PA 19460
610.933.0123
WWW.MELIORADESIGN.COM

LANDSCAPE ARCHITECT:
VIRIDIAN LANDSCAPE STUDIO
3868 TERRACE STREET
PHILADELPHIA, PA 19128
215.482.7973
WWW.VIRIDIANS.COM

SURVEYOR:
CONTROL POINT ASSOCIATES, INC.
1500 MANOR DRIVE, SUITE 210
CHALFONT, PA 18914
215.712.9800
WWW.CPASURVEY.COM

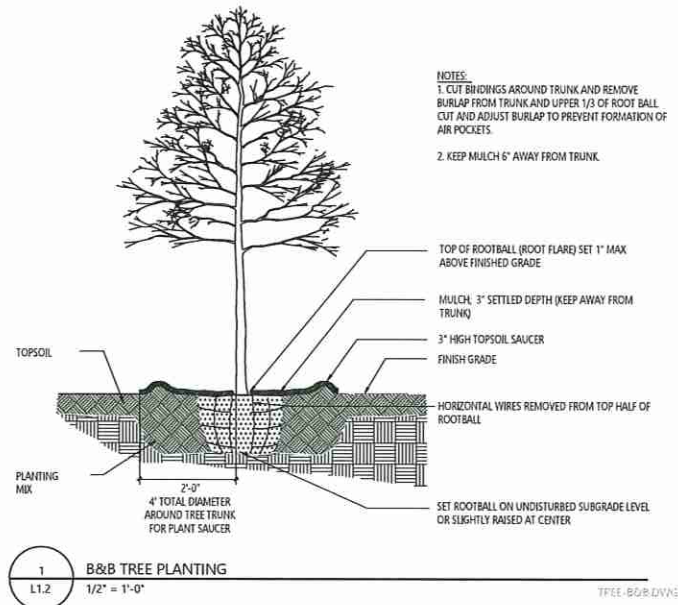
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**SOUTH DEVON AREA FLOOD
REDUCTION PROJECT**
AT THE WEST WAYNE PRESERVE
AND FRIENDS OF RADNOR TRAIL PARK



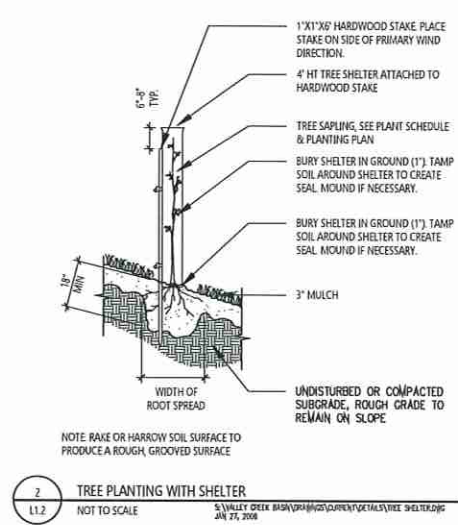
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DRAWING TITLE:
**PLANTING DETAILS
&
PLANT SCHEDULE**

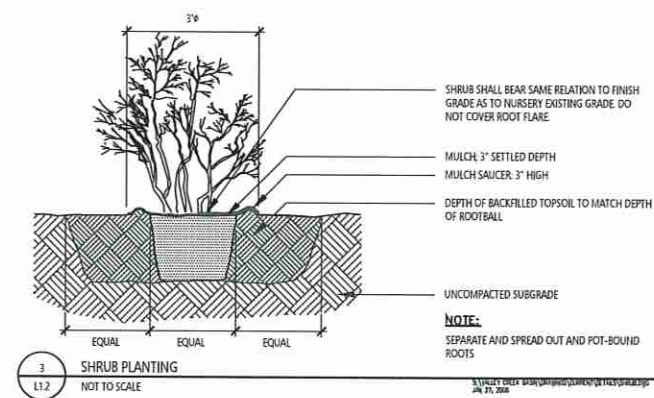
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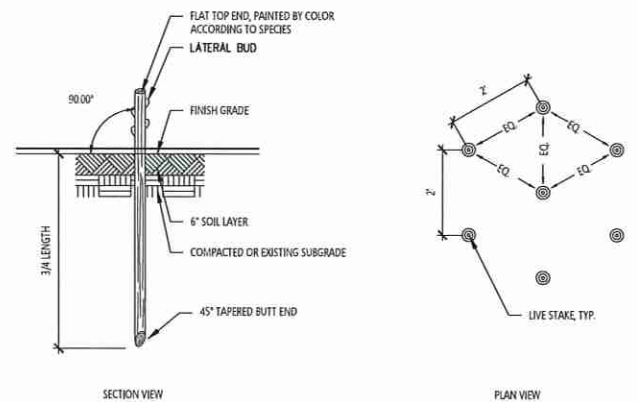
1 B&B TREE PLANTING
1/2" = 1'-0"



2 TREE PLANTING WITH SHELTER
NOT TO SCALE

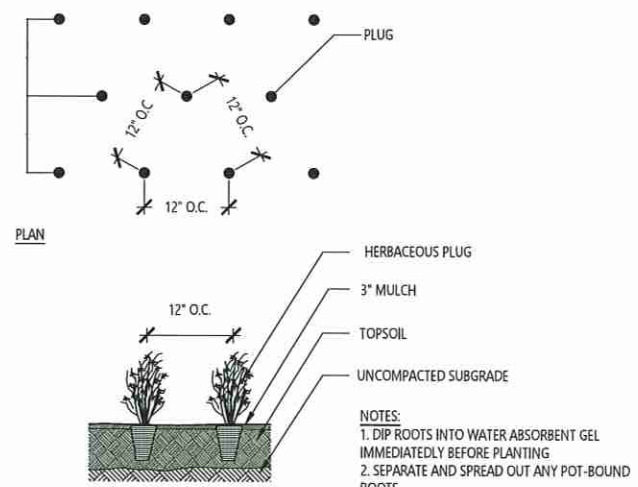


3 SHRUB PLANTING
NOT TO SCALE



- NOTES:
- LIVE STAKES ARE TO BE DORMANT LIVE BRANCHES MEASURING 24 TO 36 INCHES, WITH BASAL END DIAMETERS OF 1/2 TO 2 INCHES, WITH NO SIDE BRANCHES.
 - BUTT ENDS OF STAKE SHALL BE ANGLED AT 45 DEGREES.
 - OBTAIN LIVE STAKES FROM A NURSERY OR CUT FROM APPROVED SOURCES USING A SHARP TOOL. AVOID DAMAGE TO THE COLLECTION SITE. BRANCHES SHALL BE FLEXIBLE, FREE FROM DISEASE OR EXCESS DEAD TWIGS, AND MUST BE DORMANT.
 - ALL SIDE BRANCHES SHALL BE CLEANLY CUT FROM LIVE STAKES.

4 LIVE STAKE PLANTING
NOT TO SCALE



5 PLUG PLANTING
NOT TO SCALE

LIVE STAKE HANDLING & INSTALLATION

- LIVE STAKES ARE LIVE, ROOTABLE VEGETATIVE CUTTINGS. DELIVERY TIME FOR LIVE STAKES IS TYPICALLY 2-3 WEEKS FROM ORDER DATE. WHEN ORDERING, INCLUDE TIME FOR SOAKING (SEE NOTE 3 BELOW).
- IF THE CUTTINGS HAVE NOT BEEN TOP SEALED BY THE NURSERY, DIP THE TOP 1-2 INCHES OF THE CUTTING INTO A 50-50 MIX OF LIGHT-COLORED LATEX PAINT AND WATER. TOP SEALING PREVENTS EXCESSIVE TRANSPIRATION. USE DIFFERENT PAINT COLORS TO IDENTIFY EACH SPECIES. THE TOP OF THE CUTTING MUST BE CORRECTLY IDENTIFIED BEFORE SEALING. BUDS EMERGING FROM THE LEAF SCAR ALWAYS POINT UP. STEM DIAMETER IS OFTEN SMALLER NEAR THE TOP. STAKES PLANTED UPSIDE-DOWN WILL HAVE SIGNIFICANT MORTALITY.
- SOAK LIVE STAKES IN WATER FOR 24 HOURS PRIOR TO PLANTING. AVOID SOAKING THE SEALED TOP END. SOAKING CAN BE DONE IN TRASH CANS. PROTECT THE CUTTINGS FROM SUN AND WIND EXPOSURE DURING SOAKING.
- PLANT LIVE STAKES AT THE SPACING SHOWN IN DETAIL 1/L1.0. TO PLANT A STAKE, FIRST DRIVE A PILOT HOLE THROUGH THE TURF REINFORCEMENT MAT AND INTO THE GROUND USING A STEEL ROD OR PIECE OF REBAR.
- TAMP THE STAKE INTO THE PILOT HOLE WITH A DEAD BLOW HAMMER (HAMMER HEAD FILLED WITH SHOT OR SAND). DO NOT SPLIT THE STAKE DURING INSTALLATION. REMOVE AND REPLACE SPLIT STAKES.
- BURY THREE-QUARTERS OF THE STAKE. INADEQUATELY BURIED STAKES WILL DIE OF DESSICATION. FIRMLY PACK THE SOIL AROUND THE STAKE AFTER INSTALLATION.

TREE SHELTER INSTALLATION

- TREE SHELTERS: TUBEX SHELTERS OR APPROVED EQUAL TUBES SHALL INCLUDE MANUFACTURER-SUPPLIED HARDWOOD STAKES, TIES, AND BIRD SCREEN.
- TREE SHELTERS ARE AVAILABLE FROM OCTORARO NATIVE PLANT NURSERY, 6126 STREET ROAD, KIRKWOOD, PA 17536, (PH) 717 529-3160 (F) 717 529-4099.
- FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.

REVISIONS:

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PROJECT TITLE:
WEST WAYNE PRESERVE

SEAL:

SUBMISSION:
DESIGN DOCUMENTS

DRAWING TITLE:
PLANTING PLAN

DATE: 12/10/20	DRAWING NO:
SCALE: NA	L1.2
DRAWN BY: EJS	
CHECKED BY: THD	