

# BEACON UNITARIAN UNIVERSALIST CHURCH

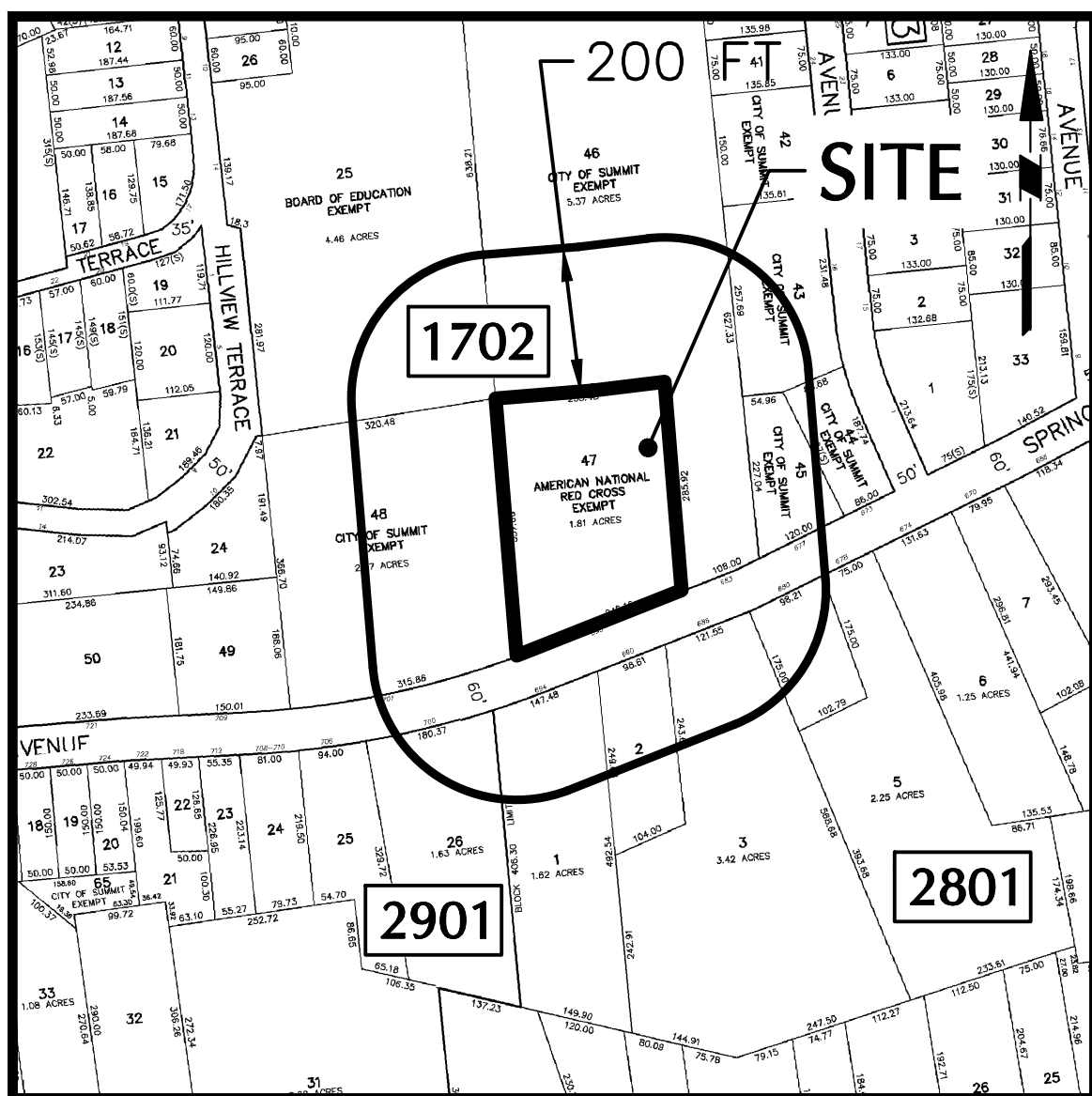
## PRELIMINARY & FINAL SITE PLANS

### BLOCK No. 1702, LOT No. 47

### CITY OF SUMMIT, UNION COUNTY, NEW JERSEY

#### GENERAL SITE NOTES:

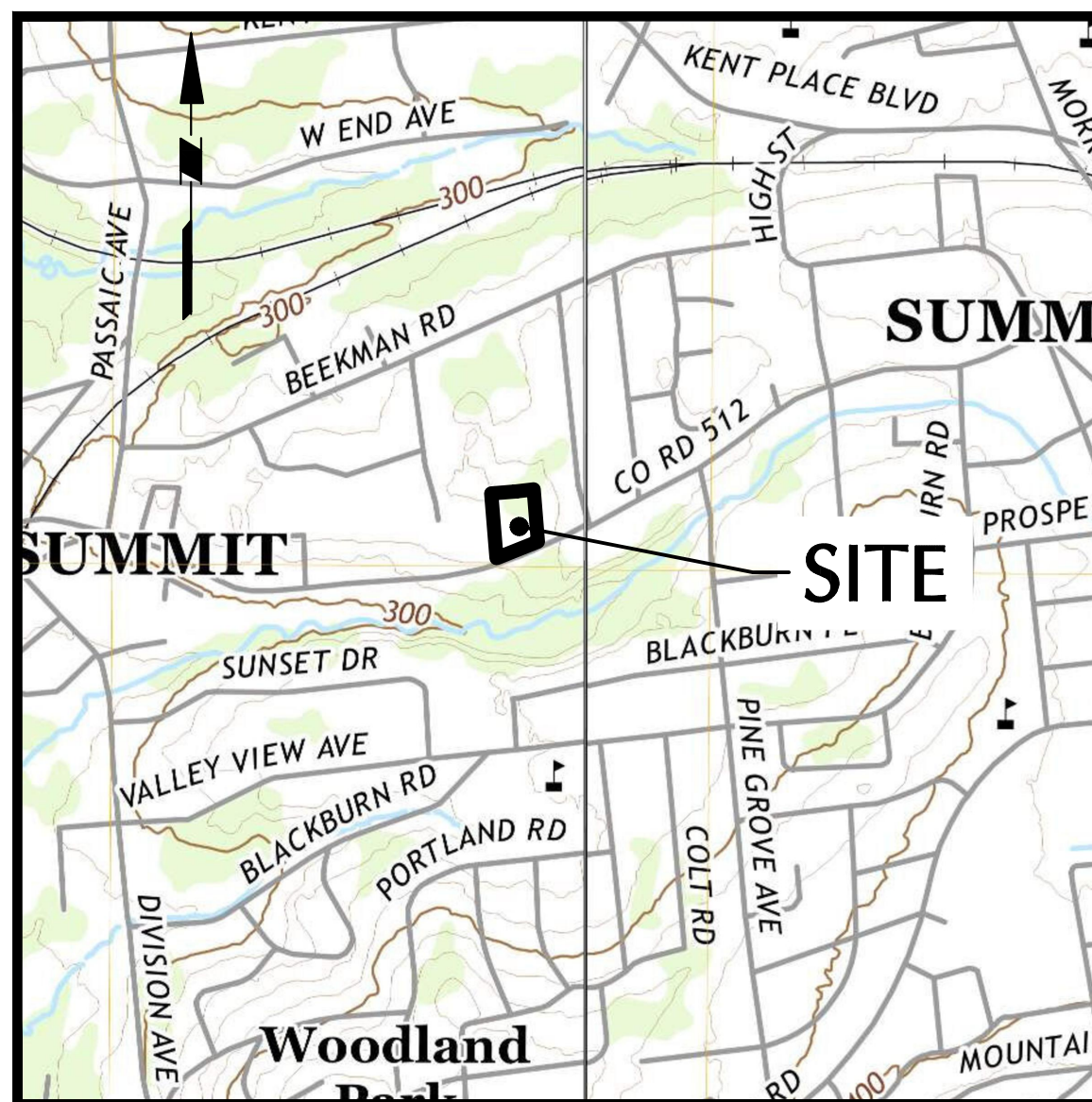
1. THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION; AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
2. THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER AND ENGINEER MAKE NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY INFORMATION THAT WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS; CORRELATE CONDITIONS WITH THE DRAWINGS; AND, RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL TOPOGRAPHIC SURVEYS HE/SHE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
3. THE CONTRACTOR SHALL, WHEN HE/SHE DEEMS NECESSARY, PROVIDE A WRITTEN REQUEST FOR INFORMATION (RFI) TO THE OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE (RFI) SHALL BE IN A FORM ACCEPTABLE TO OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF THREE WORK DAYS FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
4. INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO BID. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO BID.
5. THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.
6. CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ALL CONSTRUCTION TAKEOUT FOR THIS PROJECT MUST BE COMPLETED FROM THE SITE SPECIFIC SURVEY CONTROL (HORIZONTAL AND VERTICAL) UPON WHICH THE DESIGN IS BASED. THE CONTRACTOR SHOULD NOT RELY ON OR RE-ESTABLISH SURVEY CONTROL BY GPS OR OTHER METHODS FOR USE IN CONSTRUCTION TAKEOUT OR ANY OTHER PURPOSE FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE EXISTING HORIZONTAL OR VERTICAL DATA SHOWN ON THESE DRAWINGS AND THAT ENCOUNTERED IN THE FIELD MUST BE REPORTED TO THE DESIGN TEAM PRIOR TO CONSTRUCTION FOR RESOLUTION.



MAP REFERENCED: CITY OF SUMMIT, NEW JERSEY TAX MAP SHEET 17 LAST REVISED AUGUST 2022, SHEET 28 LAST REVISED FEBRUARY 2018, SHEET 29 LAST REVISED AUGUST 2022 .

#### TAX MAP

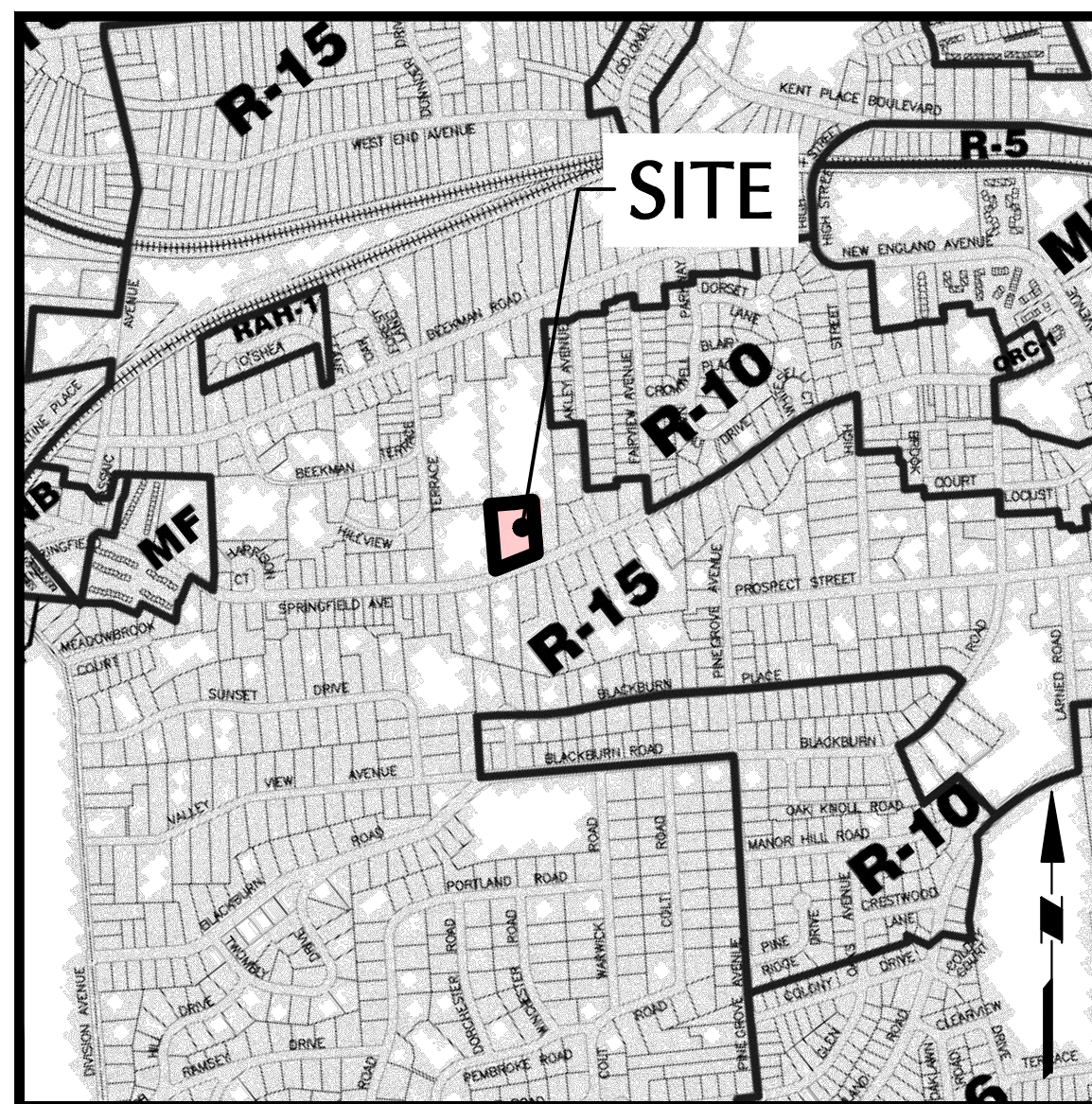
SCALE: 1" = 250'



MAP REFERENCED: ROSELLE, NJ U.S.G.S. QUADRANGLE MAP, DATED 2019 & CHATHAM, NJ QUADRANGLE MAP, DATED 2019.

#### LOCATION MAP

SCALE: 1" = 1,000'



MAP REFERENCED: CITY OF SUMMIT ZONING MAP, LAST REVISED 10/03/2020.

#### ZONING MAP

SCALE: 1" = 1,000'

200' PROPERTY OWNERS LIST					
BLOCK	LOT	PROPERTY ADDRESS	OWNER	OWNER ADDRESS	CITY / STATE / ZIP
1702	25	14 BEEKMAN TERRACE	BOARD OF EDUCATION	90 MAPLE STREET	SUMMIT NJ 07901
1702	43	16 OAKLEY AVENUE	CITY OF SUMMIT	512 SPRINGFIELD AVE	SUMMIT NJ 07901
1702	44	673 SPRINGFIELD AVENUE	CITY OF SUMMIT	512 SPRINGFIELD AVE	SUMMIT NJ 07901
1702	45	677 SPRINGFIELD AVENUE	CITY OF SUMMIT	512 SPRINGFIELD AVE	SUMMIT NJ 07901
1702	46	683 SPRINGFIELD AVENUE	CITY OF SUMMIT	512 SPRINGFIELD AVE	SUMMIT NJ 07901
1702	48	701 SPRINGFIELD AVENUE	CITY OF SUMMIT	512 SPRINGFIELD AVE	SUMMIT NJ 07901
2801	1	694 SPRINGFIELD AVENUE	AGGARWAL, ALKA & SINGH, SURENDRA	694 SPRINGFIELD AVE	SUMMIT NJ 07901
2801	2	690 SPRINGFIELD AVENUE	RANGANATHAN, RAGHAV & KULKAMI, R	690 SPRINGFIELD AVE	SUMMIT NJ 07901
2801	3.01	684 SPRINGFIELD AVENUE	KHADEMI, ALLEN M & HILLARY J	684 SPRINGFIELD AVE	SUMMIT NJ 07901
2801	3.02	686 SPRINGFIELD AVENUE	COGAN, DAVID & CHRISTINA	686 SPRINGFIELD AVE	SUMMIT NJ 07901
2801	4	680 SPRINGFIELD AVENUE	PAREKH, APARNA	680 SPRINGFIELD AVE	SUMMIT NJ 07901
2801	5	678 SPRINGFIELD AVENUE	BOND, BRETT D & CAROLAN, MONICA	678 SPRINGFIELD AVE	SUMMIT NJ 07901
2901	26	700 SPRINGFIELD AVENUE	LOWENTHAL, J. MARVIN & ELLEN TCHORNI	700 SPRINGFIELD AVE	SUMMIT NJ 07901

PROJECT CONTACTS	
OWNER / APPLICANT:	BEACON UNITARIAN UNIVERSALIST CONGREGATION 4 WALDRON AVE SUMMIT, NJ 07901 (908) 219-9785
CONTACT:	TULI PATEL
SITE/CIVIL ENGINEER, SURVEYOR:	LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. 300 KIMBALL DRIVE PARSIPPANY, NJ 07054 (973) 560-4900
CONTACT:	JOHN COTE, P.E., VP/ASSOCIATE PRINCIPAL
ARCHITECT:	LOUIS CHERRY ARCHITECTURE, PLLC 222 N. BLOODWORTH ST RALEIGH, NC 27601 (919)-971-2299
CONTACT:	LOUIS CHERRY
LANDSCAPE ARCHITECT:	VIRODIAN LANDSCAPE STUDIO 3868 TERRACE ST PHILADELPHIA, PA 19128 (215)-482-7973
CONTACT:	TRAVIS DOCKWILLER

DRAWING LIST					
SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE	DRAWING SCALE	DATE	REVISION DATE
1	GI001	COVER SHEET	AS SHOWN	2/9/2024	-
2	VA101	BOUNDARY, TOPOGRAPHY & UTILITY SURVEY	1" = 40'	4/26/2023	-
3	CD101	DEMOLITION PLAN	1" = 20'	2/9/2024	-
4	CS101	SITE PLAN	1" = 20'	2/9/2024	-
5	CS501	SITE DETAILS	N.T.S.	2/9/2024	-
6	CP101	TRUCK CIRCULATION PLAN	1" = 20'	2/9/2024	-
7	CG101	GRADING PLAN	1" = 20'	2/9/2024	-
8	CG102	DRAINAGE PLAN	1" = 20'	2/9/2024	-
9	CG501	DRAINAGE DETAILS	N.T.S.	2/9/2024	-
10	CG502	DRAINAGE DETAILS	N.T.S.	2/9/2024	-
11	CG503	DRAINAGE DETAILS	N.T.S.	2/9/2024	-
12	CG504	DRAINAGE DETAILS	N.T.S.	2/9/2024	-
13	CG505	DRAINAGE DETAILS	N.T.S.	2/9/2024	-
14	CU101	UTILITY PLAN	1" = 20'	2/9/2024	-
15	CU501	UTILITY DETAILS	N.T.S.	2/9/2024	-
16	CE101	SOIL EROSION & SEDIMENT CONTROL PLAN	1" = 20'	2/9/2024	-
17	CE501	SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS	N.T.S.	2/9/2024	-
18	LL101	LIGHTING PLAN	1" = 20'	2/9/2024	-
19	LL501	LIGHTING DETAILS AND NOTES	N.T.S.	2/9/2024	-

SUPPLEMENTAL DRAWING LIST (LANDSCAPE ARCHITECT)					
SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE	DRAWING SCALE	DATE	REVISION DATE
1	L-100	SITE MATERIAL PLAN	1" = 20'	2/8/2024	-
2	L-500	SITE DETAILS	N.T.S.	2/8/2024	-
3	L-501	SITE DETAILS	N.T.S.	2/8/2024	-
4	L-502	SITE DETAILS	N.T.S.	2/8/2024	-
5	L-503	SITE DETAILS	N.T.S.	2/8/2024	-
6	LP100	TREE PRESERVATION PLAN	1" = 20'	2/8/2024	-
7	LP101	TREE & SHRUB PLANTING PLAN	1" = 20'	2/8/2024	-
8	LP102	PHASE 1 GRASS & PERENNIAL PLANTING PLAN	1" = 20'	2/8/2024	-
9	LP103	PHASE 2 GRASS & PERENNIAL PLANTING PLAN	1" = 20'	2/8/2024	-
10	LP500	PLANTING DETAILS	N.T.S.	2/8/2024	-

SUPPLEMENTAL DRAWING LIST (ARCHITECT)					
SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE	DRAWING SCALE	DATE	REVISION DATE
1	A-201	EXTERIOR ELEVATIONS	1/8" = 1"	2/9/2024	-
2	A-202	EXTERIOR ELEVATIONS	1/8" = 1"	2/9/2024	-
3	A-203	EXTERIOR ELEVATIONS	1/8" = 1"	2/9/2024	-
4	A-204	EXTERIOR ELEVATIONS	1/8" = 1"	2/9/2024	-

CALL BEFORE YOU DIG TO LOCATE UNDERGROUND UTILITIES  
1 (800) 272-1000  
FOR FREE MARKOUTS TO LOCATE UNDERGROUND UTILITIES  
CALL AT LEAST 3 DAYS PRIOR TO GROUND DISTURBANCE



CALL BEFORE YOU DIG

-	-	-
-	-	-
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Date	Description	No.
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#### Revisions

SIGNATURE JOHN COTE DATE  
PROFESSIONAL ENGINEER NJ Lic. No. 24GE03705800

## LANGAN

Langan Engineering and  
Environmental Services, Inc.

300 Kimball Drive  
Parsippany, NJ 07054

T: 973.560.4900 F: 973.560.4901 www.langan.com  
NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400

Project

## BEACON UNITARIAN UNIVERSALIST CHURCH

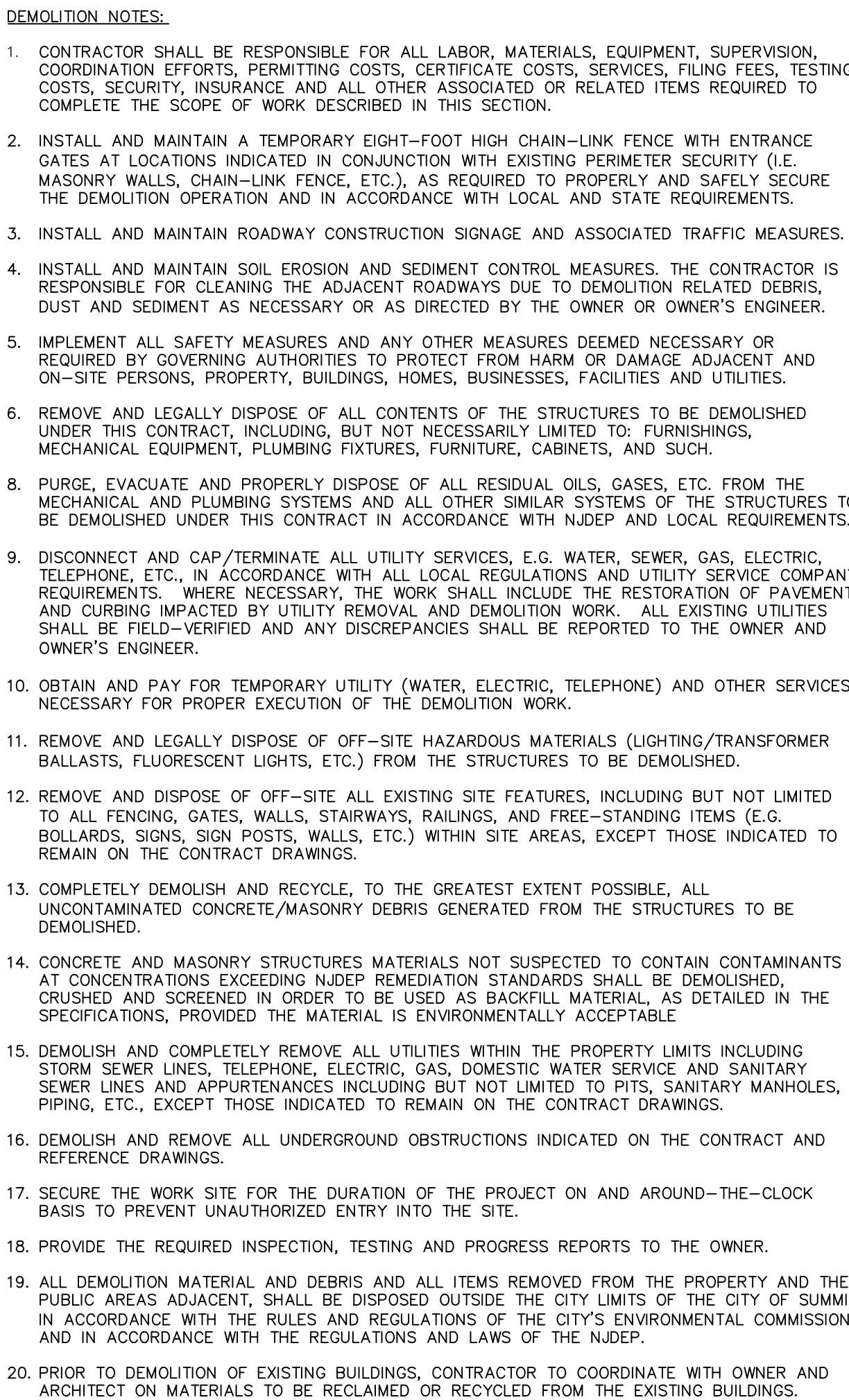
UNION COUNTY SUMMIT NEW JERSEY





















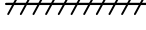




Drawing Title

## COVER SHEET

Project No.	Drawing No.
101007201	GI001
Date	
FEBRUARY 9, 2024	
Drawn By	
SS	
Checked By	
TH	
Sheet 1 of 19	

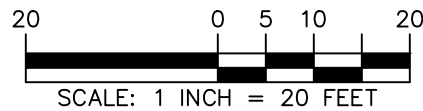




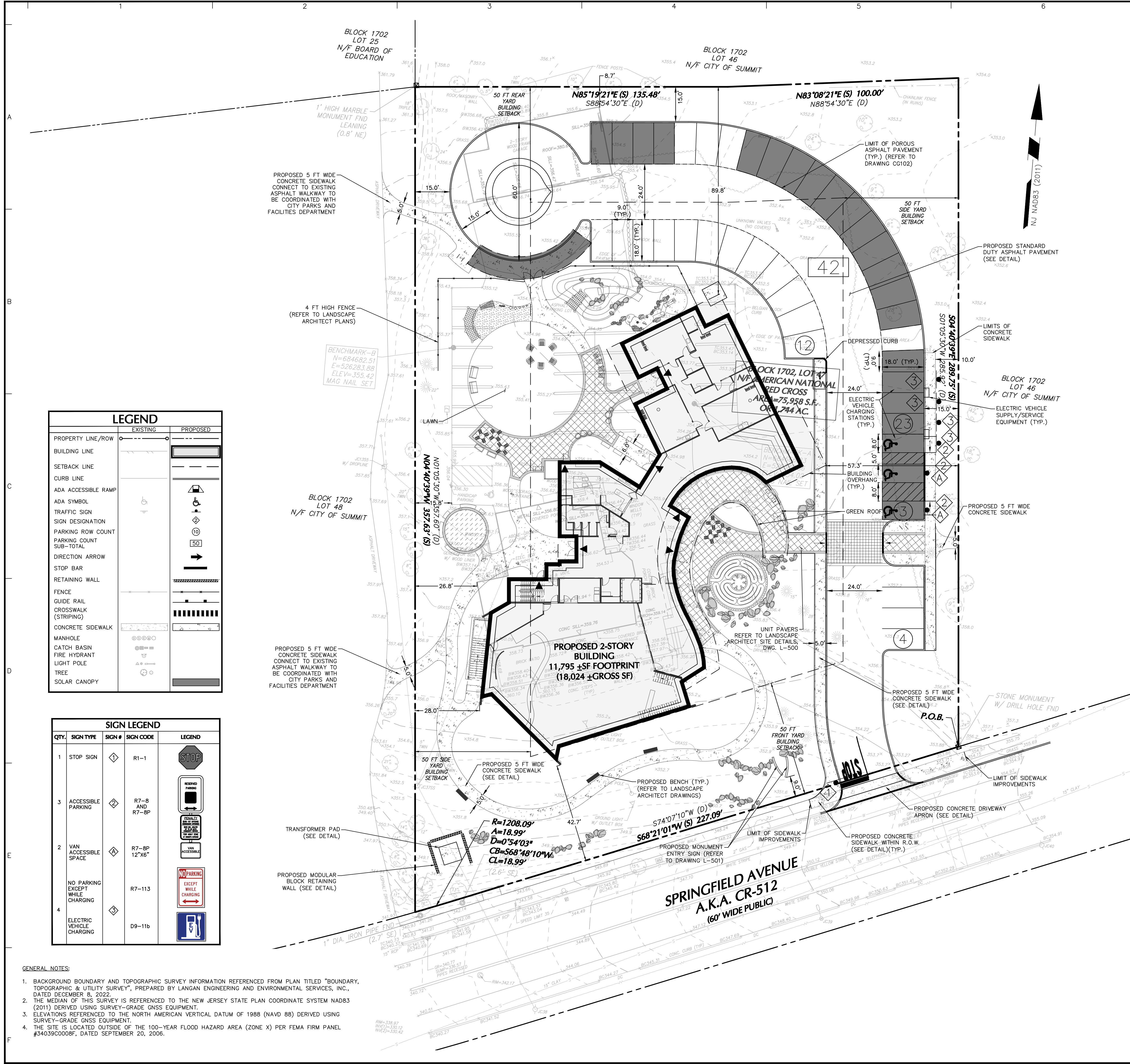
LEGEND		
	EXISTING	PROPOSED
PROPERTY LINE/ROW		
CONTOUR		
SPOT ELEVATION		
STORM MANHOLE		
SANITARY MANHOLE		
INLET		
STORM SEWER		
SANITARY SEWER		
WATER MAIN		
GAS MAIN		
ELECTRIC CONDUIT		
TELEPHONE CONDUIT		
VALVE		
FIRE HYDRANT		
LIGHT POLE		
UTILITY POLE		
OVERHEAD WIRE		
JUNCTION BOX		
ELECTRIC MANHOLE		
CURB, UTILITY & PIPE REMOVAL		
BUILDING REMOVAL		
PAVEMENT REMOVAL		
REMOVAL OF SURFACE STRUCTURE		
SAWCUT LIMITS		

Date	Description	No.
Revisions		
<div> <div>SIGNATURE</div> <div>JOHN COTE</div> <div>PROFESSIONAL ENGINEER NJ Lic. No. 24GE03705800</div> </div> <div>DATE</div>		
<div> <div>LANGAN</div> <div>Langan Engineering and Environmental Services, Inc.</div> <div>300 Kimball Drive</div> <div>Parsippany, NJ 07054</div> </div> <div> <div>T: 973.560.4900</div> <div>F: 973.560.4901</div> <div>www.langan.com</div> </div> <div>NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400</div>		
Project		
<div>BEACON UNITARIAN</div> <div>UNIVERSALIST</div> <div>CHURCH</div> <div>SUMMIT</div> <div>UNION COUNTY</div> <div>NEW JERSEY</div>		
Drawing Title		
DEMOLITION PLAN		
Project No.		Drawing No.
101007201		
Date		
FEBRUARY 9, 2024		
Drawn By		
SM		CD101
Checked By		
TH		
		Sheet 3 of 19

THE CONTRACTOR SHALL DEMOLISH AND REMOVE ALL SITE ELEMENTS UNDER THIS CONTRACT INCLUDING, BUT NOT LIMITED TO, BUILDINGS, WALLS, CONCRETE CURBS, SIDEWALKS, BOLLARDS, STAIRWAYS, RAMPS, FENCES, CONCRETE PADS, ASPHALT, ETC. WITHIN THE CONTRACT LIMITS UNLESS OTHERWISE SHOWN TO REMAIN.







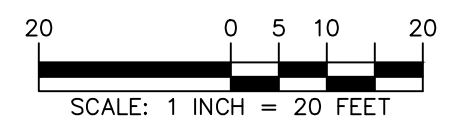
CITY OF SUMMIT ZONING TABLE					
695 SPRINGFIELD AVENUE REDEVELOPMENT					
BLOCK No. 1702, LOT No. 47					
ZONING DISTRICT: R-15 SINGLE FAMILY RESIDENTIAL DISTRICT <sup>2</sup>					
Item	Required / Allowed	Existing	Proposed	Regulation Reference <sup>1,2</sup>	Condition
<b>Land Use:</b>					
Principal Use <sup>3</sup>	House of Worship	Office	House of Worship	35-11.3 B.3.	V
<b>Area, Bulk &amp; Yard Requirements:</b>					
Min. Lot Area (A.C.)	2 AC.	1.74 ± AC.	1.74 ± AC.	35-11.2 C.1.	V
Min. Frontage (FT)	50 FT	246.1 FT	246.1 FT	35-11.2 C.2.	C
Min. Front Yard Building Setback (FT)	50 FT	91.8 FT	42.7 FT	35-11.2 C.3.	V
Min. Side Yard Building Setback (FT) (Each Side)	50 FT	26.8 FT	28.0 FT	35-11.2 C.4.	V
Min. Rear Yard Building Setback (FT)	50 FT	181.8 FT	89.8 FT	35-11.2 C.5.	C
Max. Building Height (Stories/FT) <sup>3</sup>	2 STORY / 35 FT	2 STORY / < 35 FT	2 STORY / < 35 FT	35-9.4 Appendix C	C
Max. Lot Coverage (%) <sup>3</sup>	40%	30.1%	46.6%	35-11.2 C.9.	V
Max. Building Coverage (%)	15%	4%	15.6%	35-11.2 C.10.	V
Side Yard Buffer (FT) <sup>9</sup>	47 FT	N/A	9.8 FT	35-11.2 C.7.	V
Rear Yard Buffer (FT) <sup>9</sup>	50 FT	N/A	15 FT	35-11.2 C.8.	V
Min. Parking Setback (FT)	20 FT	N/A	15 FT	35-11.2 C.12.	V
<b>Accessory Structure</b>					
Accessory Use (Solar Canopy)	N/A	N/A	Solar Canopy <sup>5</sup>	35-9.9 O.4.a.	V
Max. Height Solar Canopy	18 FT	N/A	< 18 FT	35-9.9 O.4.d.	C
Min. Setback Solar Canopy (all lot lines)	15 FT	N/A	15 FT	35-9.9 O.4.e.	C
<b>Driveway, Parking &amp; Loading Regulations</b>					
Min. Number of Parking Spaces <sup>6</sup>	100	27	42 <sup>7</sup>	35-14.1 P.6.a.	V
Min. Parking Space Size (FT x FT)	9 FT x 18 FT	9 FT x 18 FT	9 FT x 18 FT	35-14.1 P.10.a.	C
Min. Drive Aisle Width (FT)	23 FT	23.3 FT	24 FT	35-14.1 P.10.a.	C
Min. Number of Electric Vehicle (EV) Spaces <sup>6</sup>	4	N/A	4	35-9.9 E.2.	C
Min. Parking Lot Landscaping <sup>10</sup>	1 Shade Tree / 10 Spaces	-	0	35-14.1 P. 2.1.	V
<b>Miscellaneous</b>					
Max. Height of Fences & Walls (FT) (Side/Rear Yard)	7 FT	N/A	4 FT	35-14.1 K.5.a.	C
Max. Height of Fences & Walls (FT) (Front Yard)	4 FT	N/A	4 FT	35-14.1 K.5.a.1.	C
<b>Signage</b>					
Max. Sign Area (SF)	12 SF	-	≤ 18 SF	35-14.1.S. Appendix D	V
Max. Lettering Height (IN.)	6"	-	7.5"	35-14.1.S. Appendix D	V
<b>Abbreviations:</b>					
V - Variance	W - Waiver	C - Compliance	NC - Existing Nonconformity	N/A - Not Applicable	
<b>Notes:</b>					
1. Zoning regulations and design standards referenced from City of Summit Development Regulations: Chapter 35, dated 12/01/2020.					
2. The subject property is located within the R-15 Single Family Residential Zone. House of Worship is a conditional use in the R-15 Zone. House of Worship conditional use regulations 35-11.2 C.					
3. Lot coverage includes green roof area totaling approximately 2,360 ± SF.					
4. The required parking for House of Worship is 1 Space per 3 seats or 1 space per 10 SF of Gross Floor Area, whichever is greater. Proposed facility includes 300 seat Sanctuary.					
5. Freestanding solar array canopies are expressly prohibited in residential zones (35-9.9 O.4.a). Variance requested for four proposed solar canopy structures.					
6. Off-street parking facilities of 20 spaces or more, a minimum of 7% of such spaces shall contain facilities for EV charging.					
7. Total parking provided includes 42 spaces on-site and 58 off-site parking spaces located along the north side of Springfield Avenue. Total 100 parking spaces can be provided between on-site and off-site parking locations.					
8. Total Building GSF is 18,024 SF (First Floor: 11,795 SF; Second Floor: 3,116 SF; Basement: 3,113 SF).					
9. Side buffer is 47 ft, average width of property is 235 ± ft. Rear buffer is 50 ft, average depth of the property is 321 ± ft.					
10. 35-14.1 P. 2.1. In outdoor parking lots of 10 or more spaces, at least 10% of the parking area shall be suitably landscaped, including landscape plantings around the perimeter of the parking area and at least one shade tree for every 10 parking spaces. The project proposes solar canopies above parking spaces which provide shade and reduce heat island effect.					

LEGEND		
	EXISTING	PROPOSED
PROPERTY LINE/ROW		
BUILDING LINE		
SETBACK LINE		
CURB LINE		
ADA ACCESSIBLE RAMP		
ADA SYMBOL		
TRAFFIC SIGN		
SIGN DESIGNATION		
PARKING ROW COUNT		
PARKING COUNT		
SUB-TOTAL		
DIRECTION ARROW		
STOP BAR		
RETAINING WALL		
FENCE		
GUIDE RAIL		
CROSSWALK (STRIPING)		
CONCRETE SIDEWALK		
MANHOLE		
CATCH BASIN		
FIRE HYDRANT		
LIGHT POLE		
TREE		
SOLAR CANOPY		

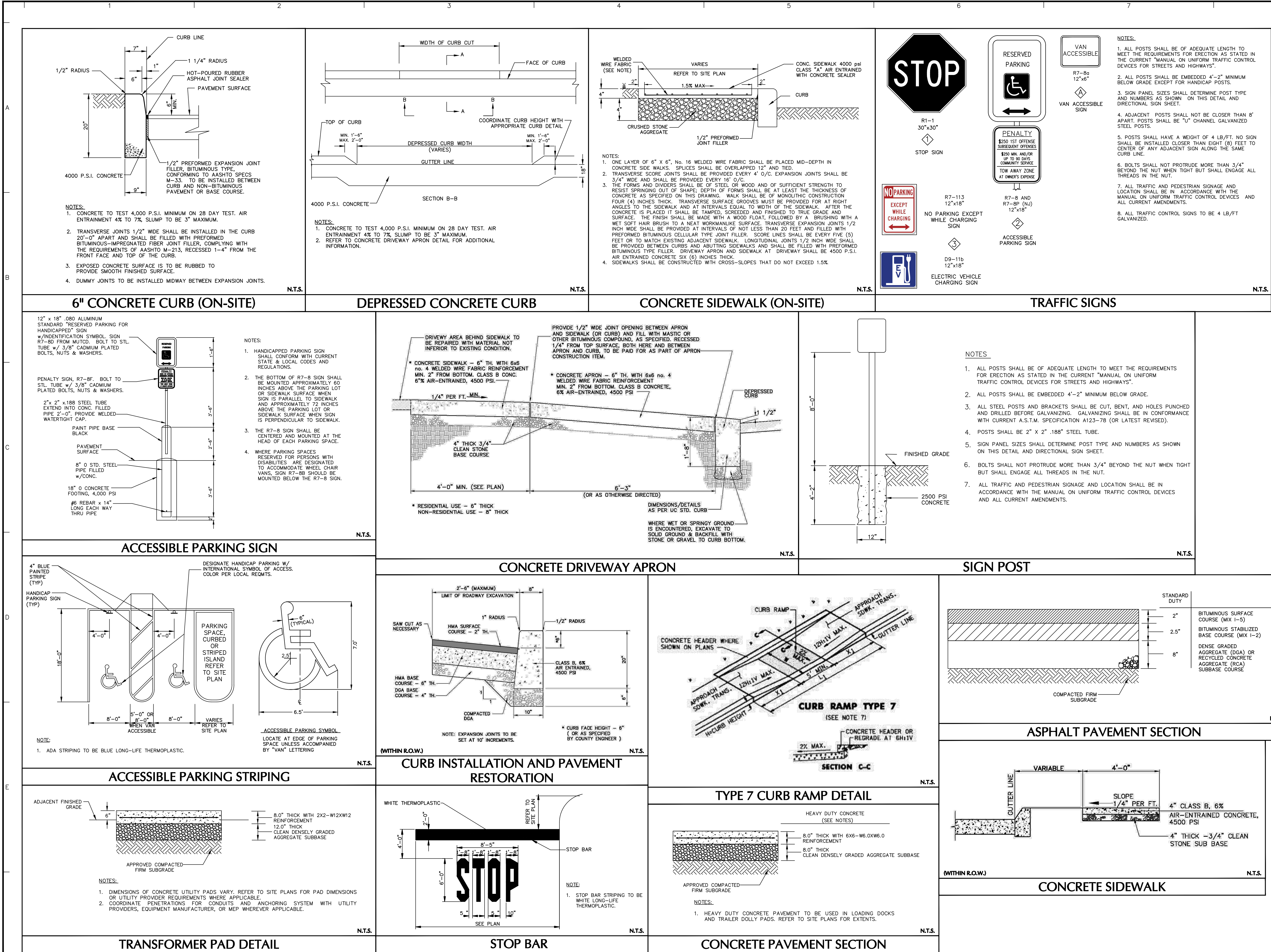
SIGN LEGEND			
QTY.	SIGN TYPE	SIGN #	LEGEND
1	STOP SIGN	R1-1	
3	ACCESSIBLE PARKING	R7-B AND R7-BP	
2	VAN ACCESSIBLE SPACE	R7-BP 12'X6'	
4	NO PARKING EXCEPT WHILE CHARGING	R7-113	
	ELECTRIC VEHICLE CHARGING	D9-11b	

- GENERAL NOTES:
- BACKGROUND BOUNDARY AND TOPOGRAPHIC SURVEY INFORMATION REFERENCED FROM PLAN TITLED "BOUNDARY, TOPOGRAPHIC & UTILITY SURVEY", PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC., DATED DECEMBER 8, 2022.
  - THE MEDIAN OF THIS SURVEY IS REFERENCED TO THE NEW JERSEY STATE PLAN COORDINATE SYSTEM NAD83 (2011) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
  - ELEVATIONS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
  - THE SITE IS LOCATED OUTSIDE OF THE 100-YEAR FLOOD HAZARD AREA (ZONE X) PER FEMA FIRM PANEL #34039C0008F, DATED SEPTEMBER 20, 2006.

Date	Description	No.
Revisions		
SIGNATURE JOHN COTE DATE		
PROFESSIONAL ENGINEER NJ Lic. No. 24GE03705800		
<b>LANGAN</b>		
Langan Engineering and Environmental Services, Inc.		
300 Kimball Drive Parsippany, NJ 07054		
T: 973.560.4900 F: 973.560.4901 www.langan.com		
NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400		
Project		
BEACON UNITARIAN UNIVERSALIST CHURCH		
SUMMIT NEW JERSEY		
Drawing Title		
SITE PLAN		
Project No.	Drawing No.	
101007201	CS101	
Date	FEBRUARY 9, 2024	
Drawn By	SM	
Checked By	TH	
Sheet 4 of 19		

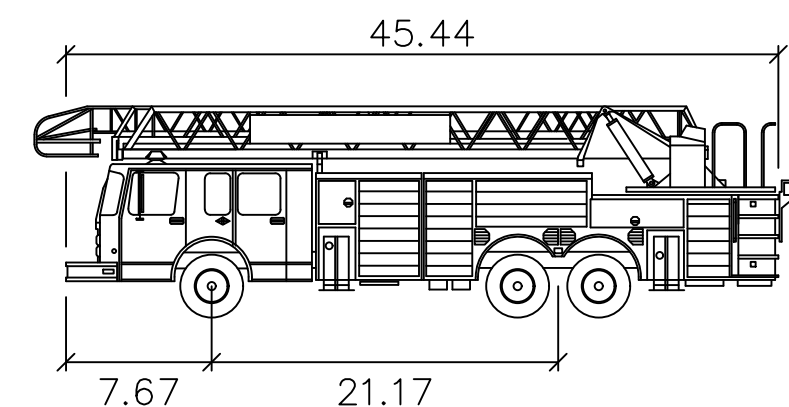
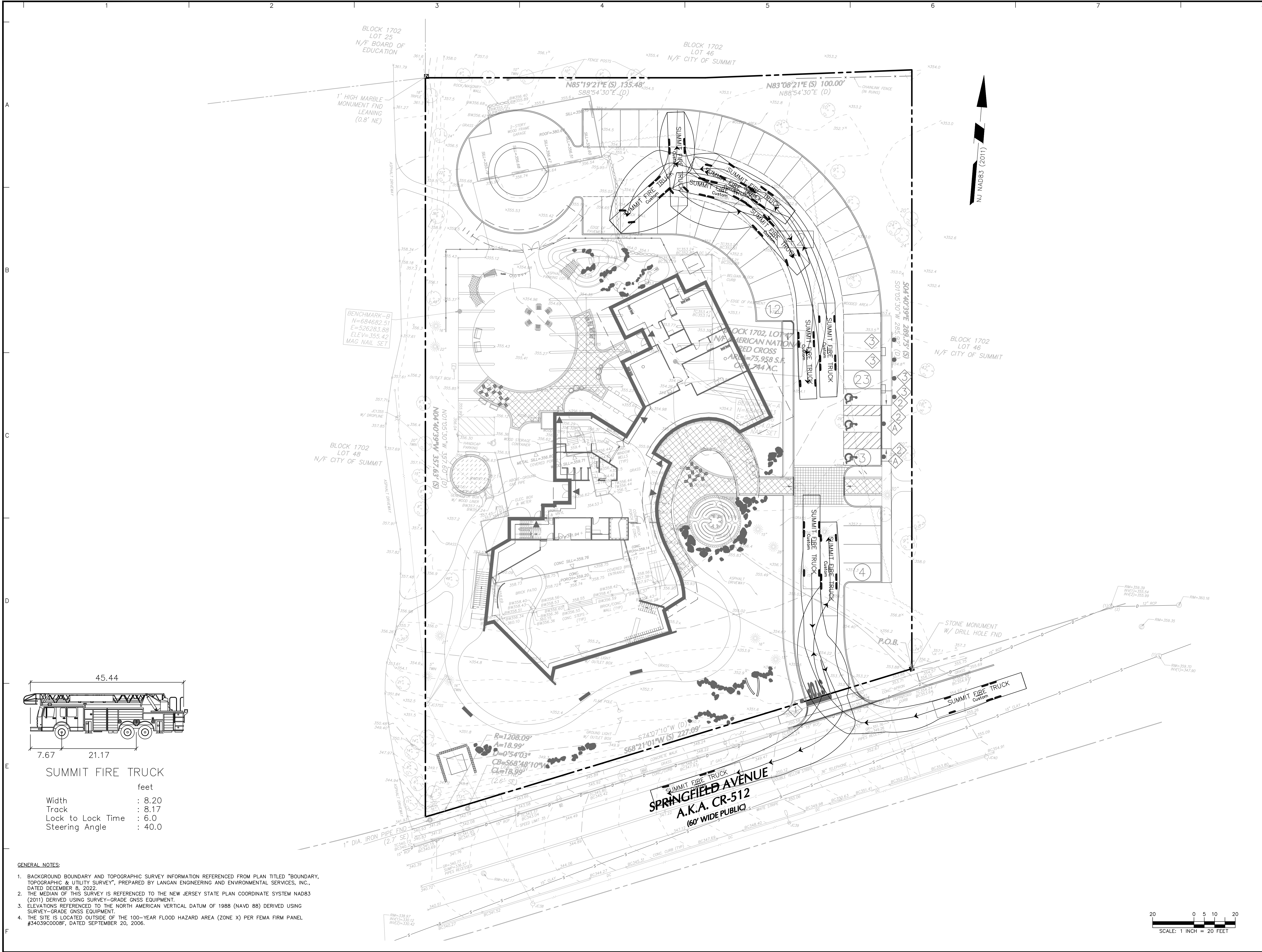






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Revisions		
SIGNATURE JOHN COTE PROFESSIONAL ENGINEER NJ Lic. No. 24GE03705800		
DATE		
PROJECT		
BEACON UNITARIAN UNIVERSALIST CHURCH		
SUMMIT NEW JERSEY		
Drawing Title		
SITE DETAILS		
Project No.	Drawing No.	
101007201	CS501	
Date	FEBRUARY 9, 2024	
Drawn By	SM	
Checked By	TH	
Sheet		5 of 19

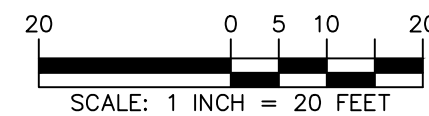




SUMMIT FIRE TRUCK

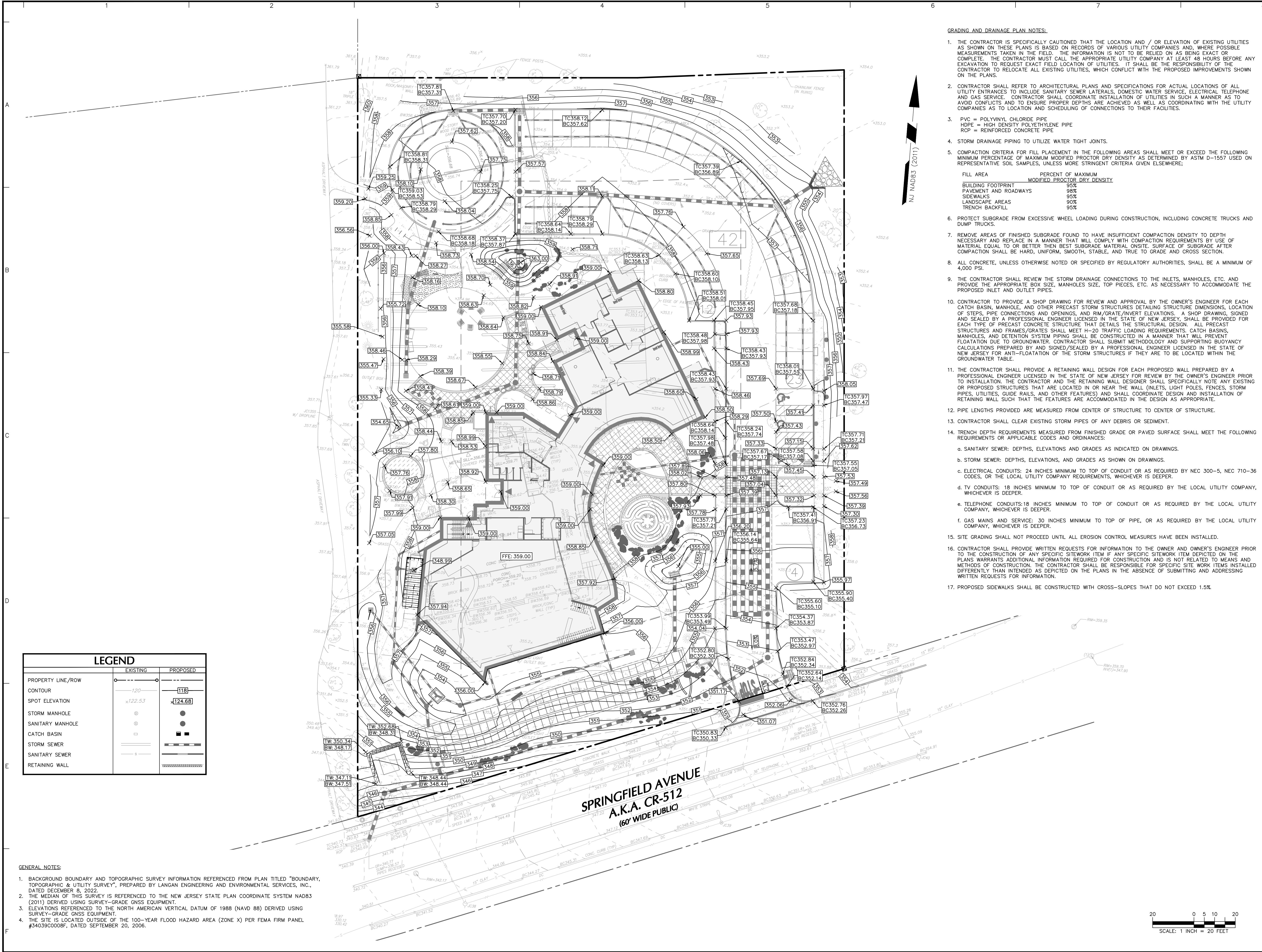
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Steering Angle	: 40.0

- GENERAL NOTES:
1. BACKGROUND BOUNDARY AND TOPOGRAPHIC SURVEY INFORMATION REFERENCED FROM PLAN TITLED "BOUNDARY, TOPOGRAPHIC & UTILITY SURVEY", PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC., DATED DECEMBER 8, 2022.
  2. THE MEDIAN OF THIS SURVEY IS REFERENCED TO THE NEW JERSEY STATE PLAN COORDINATE SYSTEM NAD83 (2011) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
  3. ELEVATIONS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
  4. THE SITE IS LOCATED OUTSIDE OF THE 100-YEAR FLOOD HAZARD AREA (ZONE X) PER FEMA FIRM PANEL #34039C0008F, DATED SEPTEMBER 20, 2006.



Date	Description	No.
Revisions		
SIGNATURE		DATE
JOHN COTE		
PROFESSIONAL ENGINEER NJ Lic. No.		
24GE03705800		
<div>LANGAN</div> <div>Langan Engineering and Environmental Services, Inc.</div> <div>300 Kimball Drive Parsippany, NJ 07054</div> <div>T: 973.560.4900      F: 973.560.4901      www.langan.com</div> <div>NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400</div>		
Project		
<div>BEACON UNITARIAN UNIVERSALIST CHURCH</div> <div>SUMMIT</div> <div>UNION COUNTY</div> <div>NEW JERSEY</div>		
Drawing Title		
<div>FIRE TRUCK CIRCULATION PLAN</div>		
Project No.		Drawing No.
101007201		
Date		
FEBRUARY 9, 2024		
Drawn By		
SS		CP101
Checked By		
TH		
Sheet		6 of 19



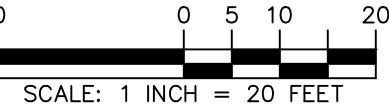


GRADING AND DRAINAGE PLAN NOTES:

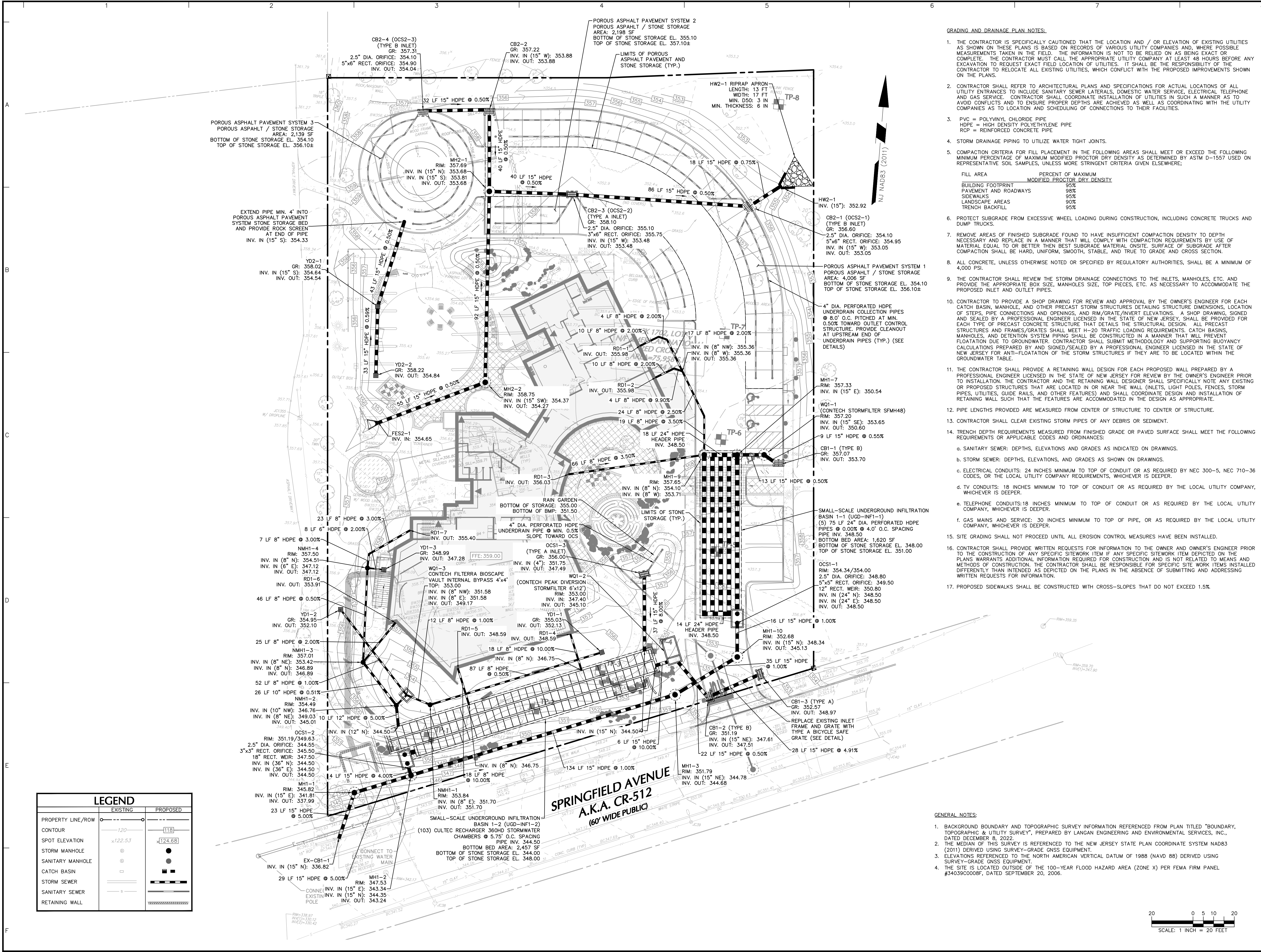
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND / OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES, WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC WATER SERVICE, ELECTRICAL TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE UTILITY COMPANIES AS TO LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.
- PVC = POLYVINYL CHLORIDE PIPE  
HDPE = HIGH DENSITY POLYETHYLENE PIPE  
RCP = REINFORCED CONCRETE PIPE
- STORM DRAINAGE PIPING TO UTILIZE WATER TIGHT JOINTS.
- COMPACTION CRITERIA FOR FILL PLACEMENT IN THE FOLLOWING AREAS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM PERCENTAGE OF MAXIMUM MODIFIED PROCTOR DRY DENSITY AS DETERMINED BY ASTM D-1557 USED ON REPRESENTATIVE SOIL SAMPLES, UNLESS MORE STRINGENT CRITERIA GIVEN ELSEWHERE:

FILL AREA	PERCENT OF MAXIMUM MODIFIED PROCTOR DRY DENSITY
BUILDING FOOTPRINT	95%
PAVEMENT AND ROADWAYS	98%
SIDEWALKS	95%
LANDSCAPE AREAS	90%
TRENCH BACKFILL	95%
- PROTECT SUBGRADE FROM EXCESSIVE WHEEL LOADING DURING CONSTRUCTION, INCLUDING CONCRETE TRUCKS AND DUMP TRUCKS.
- REMOVE AREAS OF FINISHED SUBGRADE FOUND TO HAVE INSUFFICIENT COMPACTION DENSITY TO DEPTH NECESSARY AND REPLACE IN A MANNER THAT WILL COMPLY WITH COMPACTION REQUIREMENTS BY USE OF MATERIAL EQUAL TO OR BETTER THEN BEST SUBGRADE MATERIAL ON SITE. SURFACE OF SUBGRADE AFTER COMPACTION SHALL BE HARD, UNIFORM, SMOOTH, STABLE, AND TRUE TO GRADE AND CROSS SECTION.
- ALL CONCRETE, UNLESS OTHERWISE NOTED OR SPECIFIED BY REGULATORY AUTHORITIES, SHALL BE A MINIMUM OF 4,000 PSI.
- THE CONTRACTOR SHALL REVIEW THE STORM DRAINAGE CONNECTIONS TO THE INLETS, MANHOLES, ETC. AND PROVIDE THE APPROPRIATE BOX SIZE, MANHOLES SIZE, TOP PIECES, ETC. AS NECESSARY TO ACCOMMODATE THE PROPOSED INLET AND OUTLET PIPES.
- CONTRACTOR TO PROVIDE A SHOP DRAWING FOR REVIEW AND APPROVAL BY THE OWNER'S ENGINEER FOR EACH CATCH BASIN, MANHOLE, AND OTHER PRECAST STORM STRUCTURES DETAILING STRUCTURE DIMENSIONS, LOCATION OF STEPS, PIPE CONNECTIONS AND OPENINGS, AND RIM/GRATE/INVERT ELEVATIONS. A SHOP DRAWING, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY, SHALL BE PROVIDED FOR EACH TYPE OF PRECAST CONCRETE STRUCTURE THAT DETAILS THE STRUCTURAL DESIGN. ALL PRECAST STRUCTURES AND FRAMES/GRATES SHALL MEET H-20 TRAFFIC LOADING REQUIREMENTS. CATCH BASINS, MANHOLES, AND DETENTION SYSTEM PIPING SHALL BE CONSTRUCTED IN A MANNER THAT WILL PREVENT FLOATION DUE TO GROUNDWATER. CONTRACTOR SHALL SUBMIT METHODOLOGY AND SUPPORTING BUOYANCY CALCULATIONS PREPARED BY AND SIGNED/SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY FOR ANTI-FLOATION OF THE STORM STRUCTURES IF THEY ARE TO BE LOCATED WITHIN THE GROUNDWATER TABLE.
- THE CONTRACTOR SHALL PROVIDE A RETAINING WALL DESIGN FOR EACH PROPOSED WALL PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY FOR REVIEW BY THE OWNER'S ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR AND THE RETAINING WALL DESIGNER SHALL SPECIFICALLY NOTE ANY EXISTING OR PROPOSED STRUCTURES THAT ARE LOCATED IN OR NEAR THE WALL (INLETS, LIGHT POLES, FENCES, STORM PIPES, UTILITIES, GUIDE RAILS, AND OTHER FEATURES) AND SHALL COORDINATE DESIGN AND INSTALLATION OF RETAINING WALL SUCH THAT THE FEATURES ARE ACCOMMODATED IN THE DESIGN AS APPROPRIATE.
- PIPE LENGTHS PROVIDED ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
- CONTRACTOR SHALL CLEAR EXISTING STORM PIPES OF ANY DEBRIS OR SEDIMENT.
- TRENCH DEPTH REQUIREMENTS MEASURED FROM FINISHED GRADE OR PAVED SURFACE SHALL MEET THE FOLLOWING REQUIREMENTS OR APPLICABLE CODES AND ORDINANCES:
  - SANITARY SEWER: DEPTHS, ELEVATIONS AND GRADES AS INDICATED ON DRAWINGS.
  - STORM SEWER: DEPTHS, ELEVATIONS, AND GRADES AS SHOWN ON DRAWINGS.
  - ELECTRICAL CONDUITS: 24 INCHES MINIMUM TO TOP OF CONDUIT OR AS REQUIRED BY NEC 300-5, NEC 710-36 CODES, OR THE LOCAL UTILITY COMPANY REQUIREMENTS, WHICHEVER IS DEEPER.
  - TV CONDUITS: 18 INCHES MINIMUM TO TOP OF CONDUIT OR AS REQUIRED BY THE LOCAL UTILITY COMPANY, WHICHEVER IS DEEPER.
  - TELEPHONE CONDUITS: 18 INCHES MINIMUM TO TOP OF CONDUIT OR AS REQUIRED BY THE LOCAL UTILITY COMPANY, WHICHEVER IS DEEPER.
  - GAS MAINS AND SERVICE: 30 INCHES MINIMUM TO TOP OF PIPE, OR AS REQUIRED BY THE LOCAL UTILITY COMPANY, WHICHEVER IS DEEPER.
- SITE GRADING SHALL NOT PROCEED UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
- CONTRACTOR SHALL PROVIDE WRITTEN REQUESTS FOR INFORMATION TO THE OWNER AND OWNER'S ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM IF ANY SPECIFIC SITEWORK ITEM DEPICTED ON THE PLANS WARRANTS ADDITIONAL INFORMATION REQUIRED FOR CONSTRUCTION AND IS NOT RELATED TO MEANS AND METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SPECIFIC SITE WORK ITEMS INSTALLED DIFFERENTLY THAN INTENDED AS DEPICTED ON THE PLANS IN THE ABSENCE OF SUBMITTING AND ADDRESSING WRITTEN REQUESTS FOR INFORMATION.
- PROPOSED SIDEWALKS SHALL BE CONSTRUCTED WITH CROSS-SLOPES THAT DO NOT EXCEED 1.5%.

Date	Description	No.
Revisions		
SIGNATURE JOHN COTE DATE PROFESSIONAL ENGINEER NJ Lic. No. 24GE03705800		
<b>LANGAN</b> Langan Engineering and Environmental Services, Inc. 300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400		
Project <b>BEACON UNITARIAN UNIVERSALIST CHURCH</b> SUMMIT NEW JERSEY		
Drawing Title <b>GRADING PLAN</b>		
Project No. <b>101007201</b>		Drawing No. <b>CG101</b>
Date <b>FEBRUARY 9, 2024</b>		<b>CG101</b>
Drawn By <b>SM</b>		
Checked By <b>TH</b>		
Sheet <b>7</b> of <b>19</b>		







GRADING AND DRAINAGE PLAN NOTES:

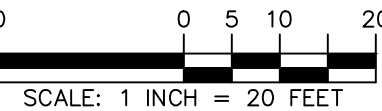
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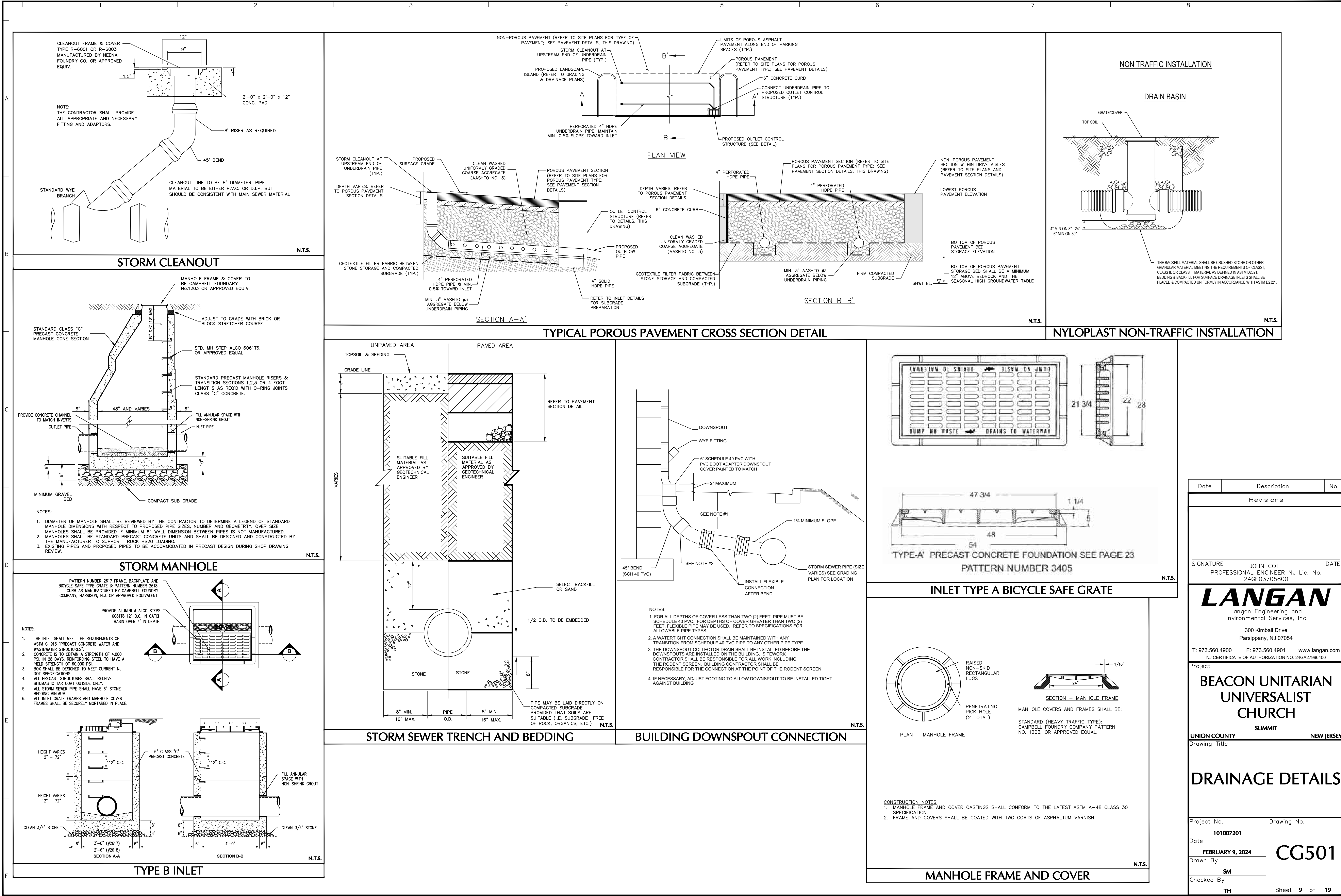
GENERAL NOTES:

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- ELEVATIONS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
- THE SITE IS LOCATED OUTSIDE OF THE 100-YEAR FLOOD HAZARD AREA (ZONE X) PER FEMA FIRM PANEL #34039C008F, DATED SEPTEMBER 20, 2006.

Date	Description	No.
Revisions		
SIGNATURE JOHN COTE DATE PROFESSIONAL ENGINEER NJ Lic. No. 24GE03705800		
<b>LANGAN</b> Langan Engineering and Environmental Services, Inc. 300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com NJ CERTIFICATE OF AUTHORIZATION NO. 24GE027996400		
Project <b>BEACON UNITARIAN UNIVERSALIST CHURCH</b> SUMMIT NEW JERSEY		
Drawing Title <b>DRAINAGE PLAN</b>		
Project No. <b>101007201</b>		Drawing No. <b>CG102</b>
Date <b>FEBRUARY 9, 2024</b>		Sheet <b>8</b> of <b>19</b>
Drawn By <b>SM</b>		
Checked By <b>TH</b>		







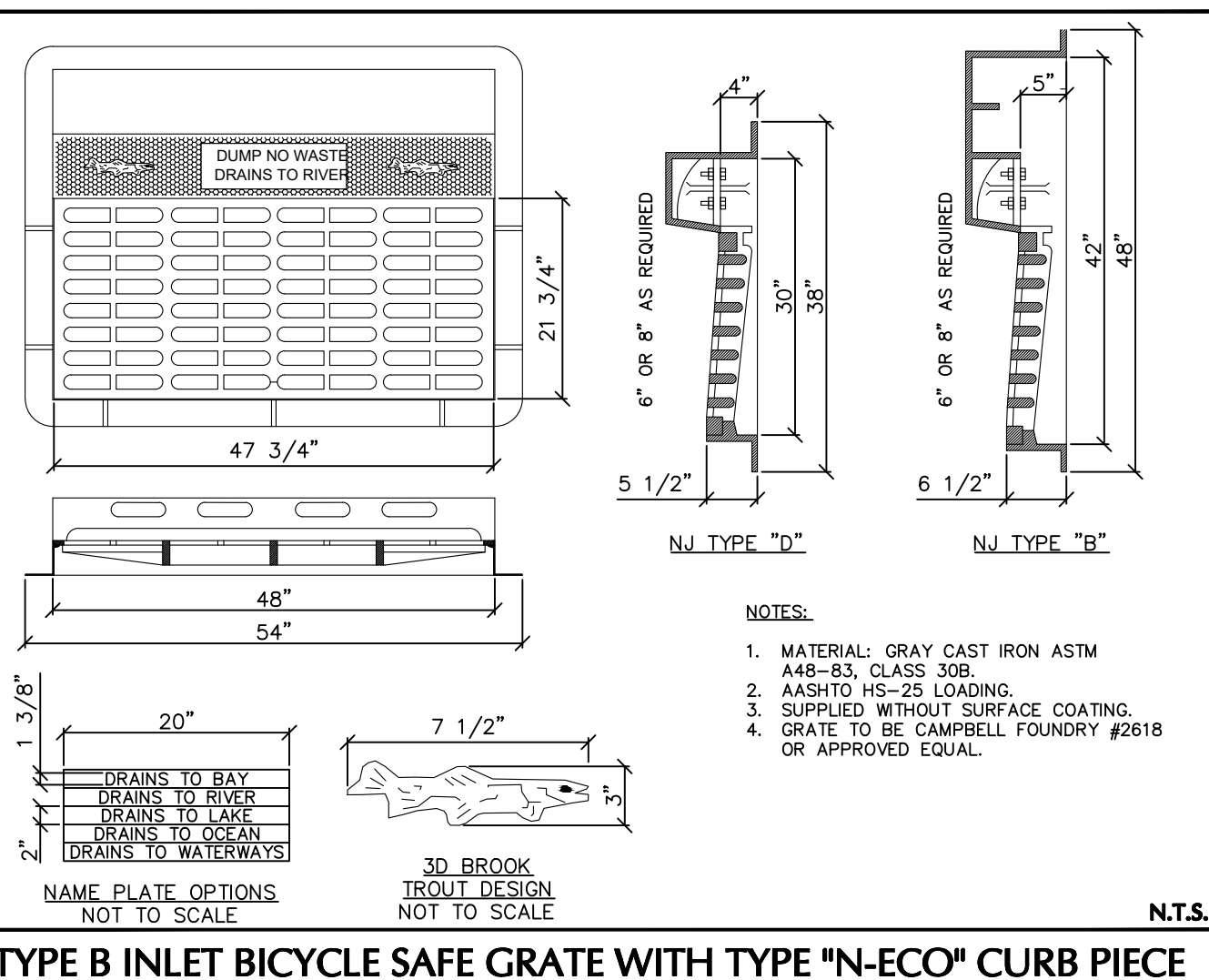




## POROUS PAVEMENT SYSTEM OUTLET CONTROL STRUCTURE



TYPE B INLET BICYCLE SAFE GRATE WITH TYPE "N-ECO" CURB PIECE



	ORIFICE "A"		ORIFICE "B"		RECT. WEIR		INLET PIPE		OUTLET PIPE		GRATE EL.
	SIZE	INVERT	SIZE	INVERT	LENGTH	CREST EL.	SIZE	INVERT	SIZE	INVERT	
OCS2-1	2.5" DIA.	354.10	5"x6"	354.95	—	—	N/A	N/A	15" HDPE	353.05	356.60
OCS2-2	2.5" DIA.	355.10	3"x6"	355.75	—	—	15" HDPE	353.48	15" HDPE	353.48	358.10
OCS2-3	2.5" DIA.	354.10	5"x6"	354.90	—	—	N/A	N/A	15" HDPE	354.04	357.31

	INLET PIPE(S)		OUTLET PIPE		ORIFICE		ORIFICE		RECT. WEIR		RIM EL. A	RIM EL. B
	SIZE	INVERT	SIZE	INVERT	SIZE	INVERT	SIZE	INVERT	SIZE	CREST EL.		
OCSI-1	24" HDPE	348.50	15" HDPE	348.50	2.5" DIA.	348.75	4"X4" RECT.	349.50	1' RECT.	350.60	354.17	354.00
OCSI-2	36" HDPE	344.50	15" HDPE	344.50	2.5" DIA.	344.55	3"X3" RECT.	345.50	1.5' RECT.	347.50	352.75	351.00

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Date: 2/7/2024 Time: 14:32 User: smelo Style Table: Langan.stb Layout: CG503 Document Code: 101007201-0301-CG501-0103



- CULTEC RECHARGER® 360HD PRODUCT SPECIFICATIONS**
- GENERAL**  
CULTEC RECHARGER® 360HD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.
- CHAMBER PARAMETERS**
1. THE CHAMBERS SHALL BE MANUFACTURED IN THE U.S.A. OR CANADA BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
  2. THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". THE LOAD CONFIGURATION SHALL INCLUDE:
    - A. INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER
    - B. MAXIMUM PERMANENT (50-YEAR) COVER LOAD
    - C. 1-WEEK PARKED AASHTO DESIGN TRUCK LOAD
  3. THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
  4. THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING:
    - A. THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430
    - B. THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75
    - C. THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95
  5. THE CHAMBER SHALL BE STRUCTURAL FOAM INJECTION MOLDED OF BLUE VIRGIN HIGH MOLECULAR WEIGHT IMPACT-MODIFIED POLYPROPYLENE.
  6. THE CHAMBER SHALL BE ARCHED IN SHAPE.
  7. THE CHAMBER SHALL BE OPEN-BOTTOMED.
  8. THE CHAMBER SHALL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS.
  9. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER® 360HD SHALL BE 36 INCHES (915 mm) TALL, 60 INCHES (1525 mm) WIDE AND 20 INCHES (508 mm) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER® 360HD SHALL BE 3.67 FEET (1.12 m).
  10. MULTIPLE CHAMBERS MAY BE CONNECTED TO FORM DIFFERENT LENGTH ROWS. EACH ROW SHALL BEGIN AND END WITH A SEPARATELY FORMED CULTEC RECHARGER® 360HD END CAP. MAXIMUM INLET OPENING ON THE END CAP IS 24 INCH (600 mm) HDPE OR 30 INCH (750mm) PVC.
  11. THE CHAMBER SHALL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV™ FC-48 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. MAXIMUM ALLOWABLE PIPE SIZE IN THE SIDE PORTAL IS 10 INCH (250mm) HDPE OR 12 INCH (300mm) PVC.
  12. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV™ FC-48 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 49 INCHES (1245 mm) LONG.
  13. THE NOMINAL STORAGE VOLUME OF THE RECHARGER® 360HD CHAMBER SHALL BE 10.0 FT³ / FT (1.928 m³ / m) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER® 360HD SHALL BE 36.66 FT³ / UNIT (1.038 m³ / UNIT) - WITHOUT STONE.
  14. THE NOMINAL STORAGE VOLUME OF THE HVLV™ FC-48 FEED CONNECTOR SHALL BE 0.913 FT³ / FT (0.085 m³ / m) - WITHOUT STONE.
  15. THE RECHARGER® 360HD CHAMBER SHALL HAVE 7 CORRUGATIONS.
  16. THE CHAMBER SHALL BE MANUFACTURED IN A FACILITY EMPLOYING CULTEC'S QUALITY CONTROL AND ASSURANCE PROCEDURES.
  17. MAXIMUM ALLOWABLE COVER OVER THE TOP OF THE CHAMBER SHALL BE 12.0 FEET (3.66 m).
- END CAP PARAMETERS**
1. THE CULTEC RECHARGER® 360HD END CAP (REFERRED TO AS 'END CAP') SHALL BE MANUFACTURED IN THE U.S.A. OR CANADA BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
  2. THE END CAP SHALL BE STRUCTURAL FOAM INJECTION MOLDED OF BLUE VIRGIN HIGH MOLECULAR WEIGHT IMPACT-MODIFIED POLYPROPYLENE.
  3. THE END CAP SHALL BE ARCHED IN SHAPE.
  4. THE END CAP SHALL BE OPEN-BOTTOMED.
  5. THE END CAP SHALL BE JOINED AT THE BEGINNING AND END OF EACH ROW OF CHAMBERS USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS.
  6. THE END CAP SHALL HAVE 5 CORRUGATIONS.
  7. THE NOMINAL DIMENSIONS OF THE END CAP SHALL BE 36.5 INCHES (927 mm) TALL, 60 INCHES (1525 mm) WIDE AND 16 INCHES (406 mm) LONG. WHEN JOINED WITH A RECHARGER 360HD CHAMBER, THE INSTALLED LENGTH OF THE END CAP SHALL BE 15 INCHES (381 mm).
  8. THE NOMINAL STORAGE VOLUME OF THE END CAP SHALL BE 5.17 FT³ / FT (0.48 m³ / m) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF AN INTERLOCKED END CAP SHALL BE 2.46 FT³ / UNIT (0.183 m³ / UNIT) - WITHOUT STONE.
  9. MAXIMUM INLET OPENING ON THE END CAP IS 24 INCH (600 mm) HDPE OR 30 INCH (750mm) PVC.
  10. THE CHAMBER SHALL BE MANUFACTURED IN A FACILITY EMPLOYING CULTEC'S QUALITY CONTROL AND ASSURANCE PROCEDURES.
  11. THE END CAP SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12.

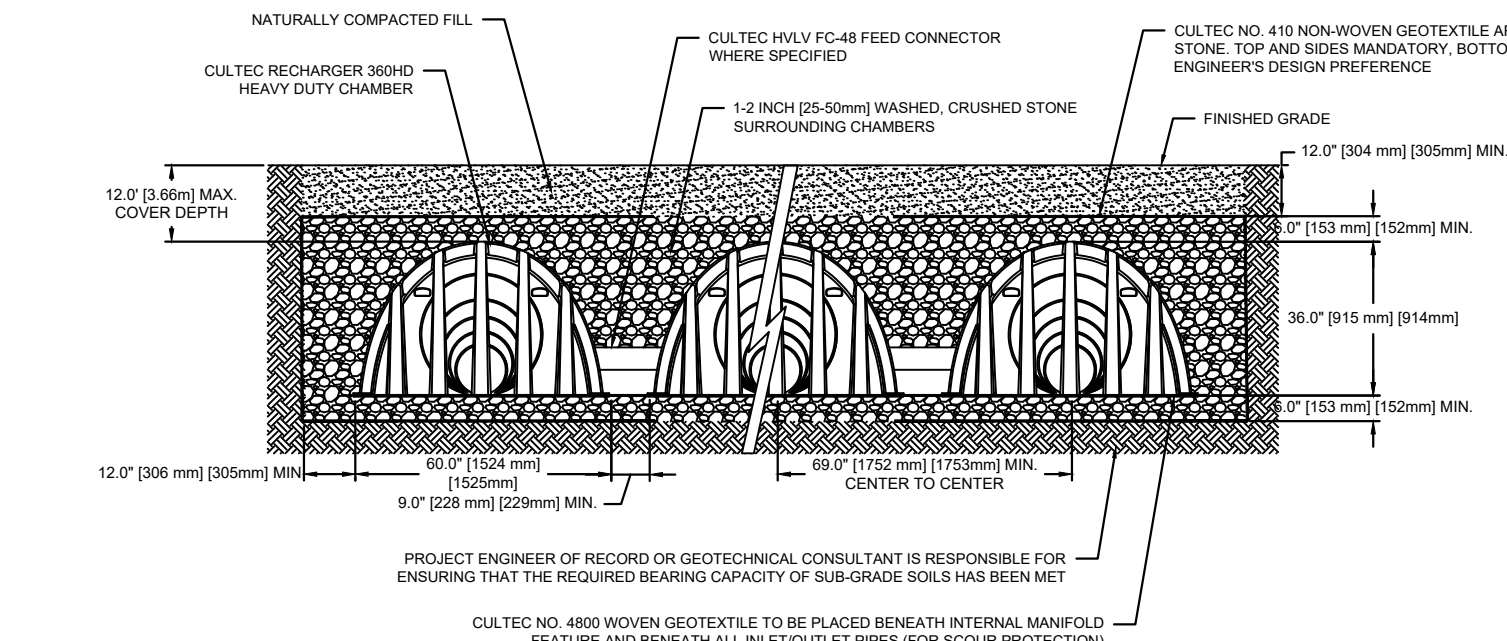
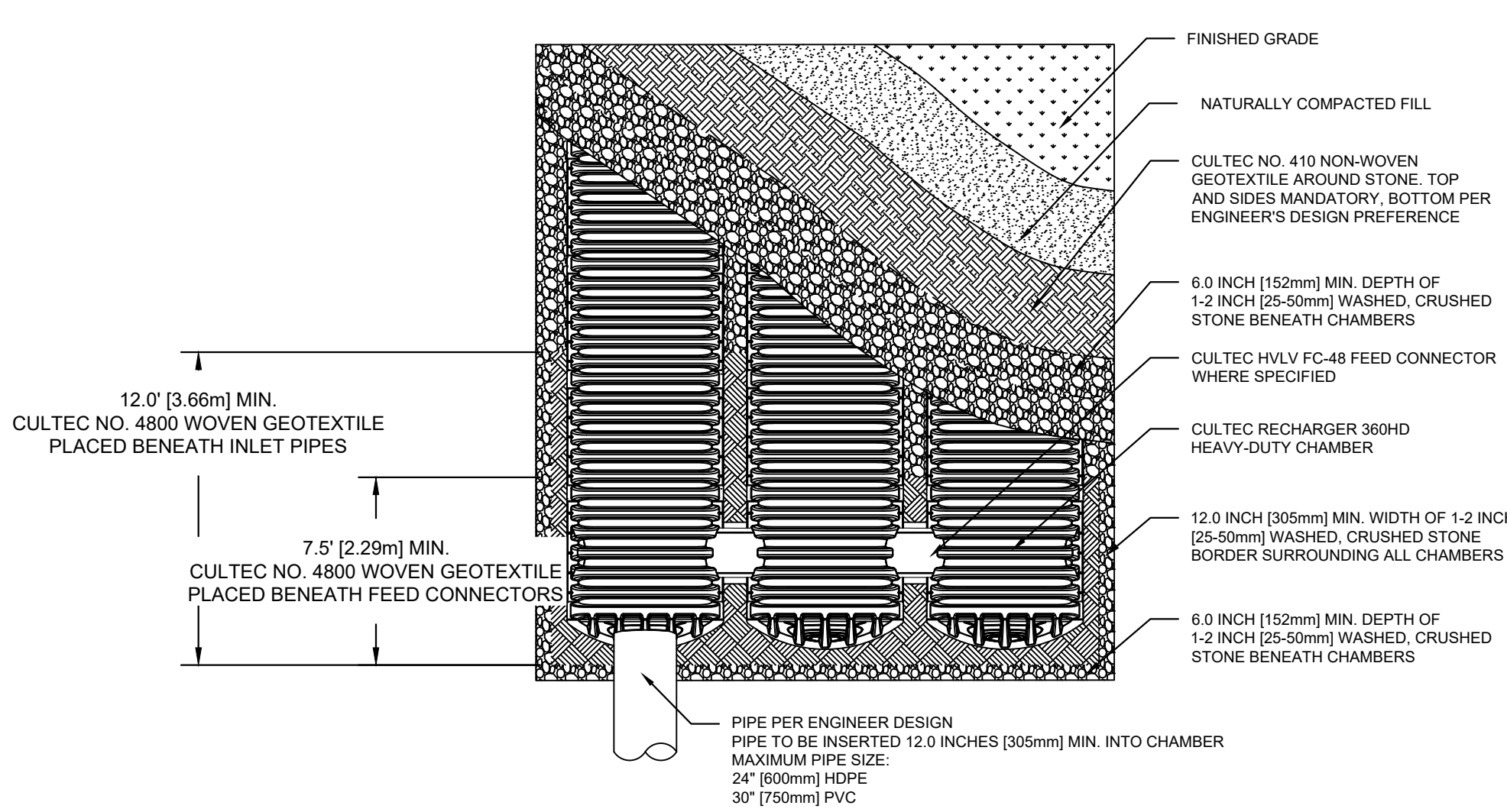
PIPE	A	B
6" [150 mm]	28.00" [660 mm]	0.75" [20 mm]
8" [200 mm]	24.00" [600 mm]	1.00" [25 mm]
10" [250 mm]	21.00" [525 mm]	1.25" [32 mm]
12" [300 mm]	18.00" [450 mm]	1.75" [45 mm]
15" [375 mm]	15.00" [375 mm]	2.00" [50 mm]
18" [450 mm]	12.00" [300 mm]	2.25" [58 mm]
24" [600 mm]	6.00" [150 mm]	2.50" [64 mm]

\*THE TYPICAL INVERT TABLE ABOVE IS BASED ON THE INSIDE DIAMETER OF STANDARD CORRUGATED PLASTIC PIPE. THE HEAVY DUTY END CAP HAS PRE-MARKED TRIM LINES FOR PIPE DIAMETERS 12" (300mm), 15" (375mm), 18" (450mm) AND 24" (600mm). PIPES OF ANY SIZE AND MATERIAL UP TO 24" (600mm) MAY BE PLACED AT CUSTOM LOCATIONS AND CUSTOM INVERTS. 30" (750 mm) SMOOTH-WALL SDR-35 PVC PIPE MAY BE USED AT THE BOTTOM OF THE END CAP. THE CROWN OF THE PIPE MUST REMAIN A MINIMUM OF 3" (75mm) FROM THE EDGE OF THE HEAVY DUTY END CAP.

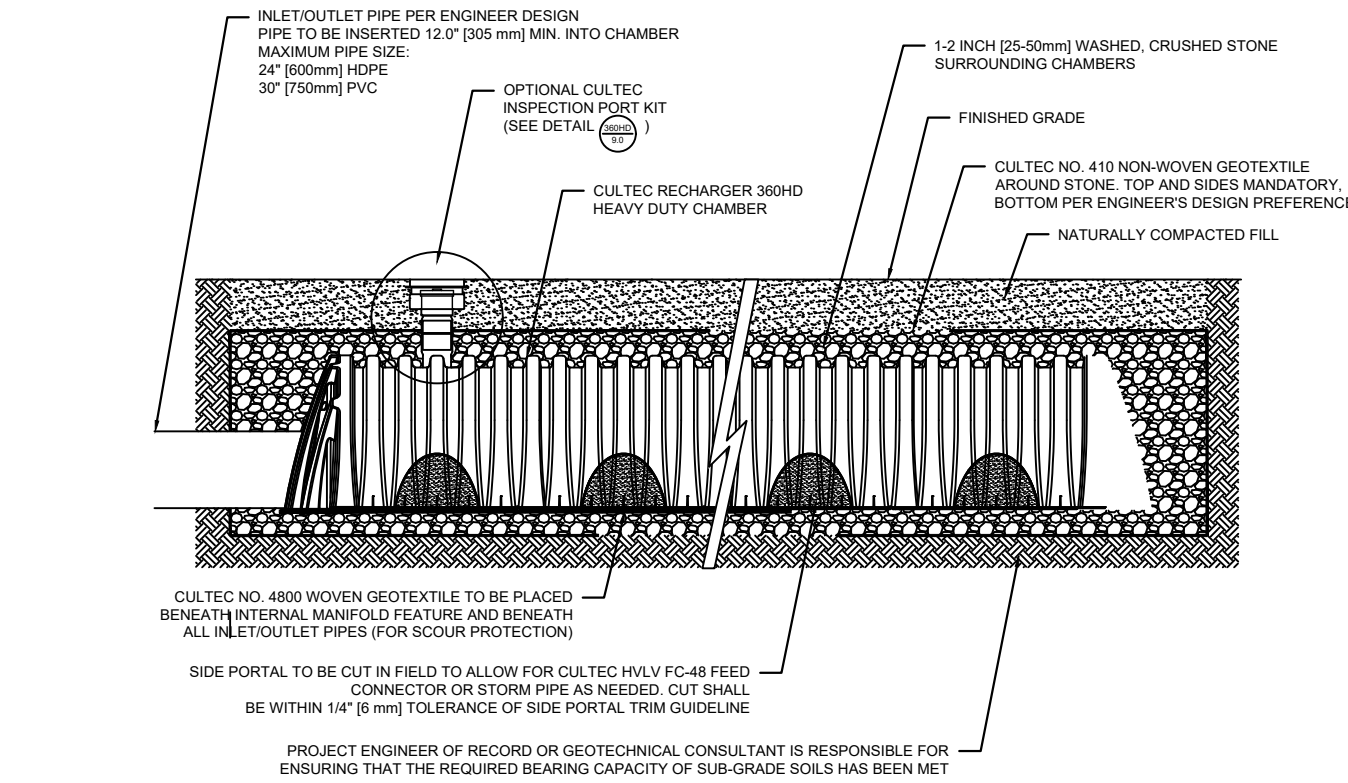
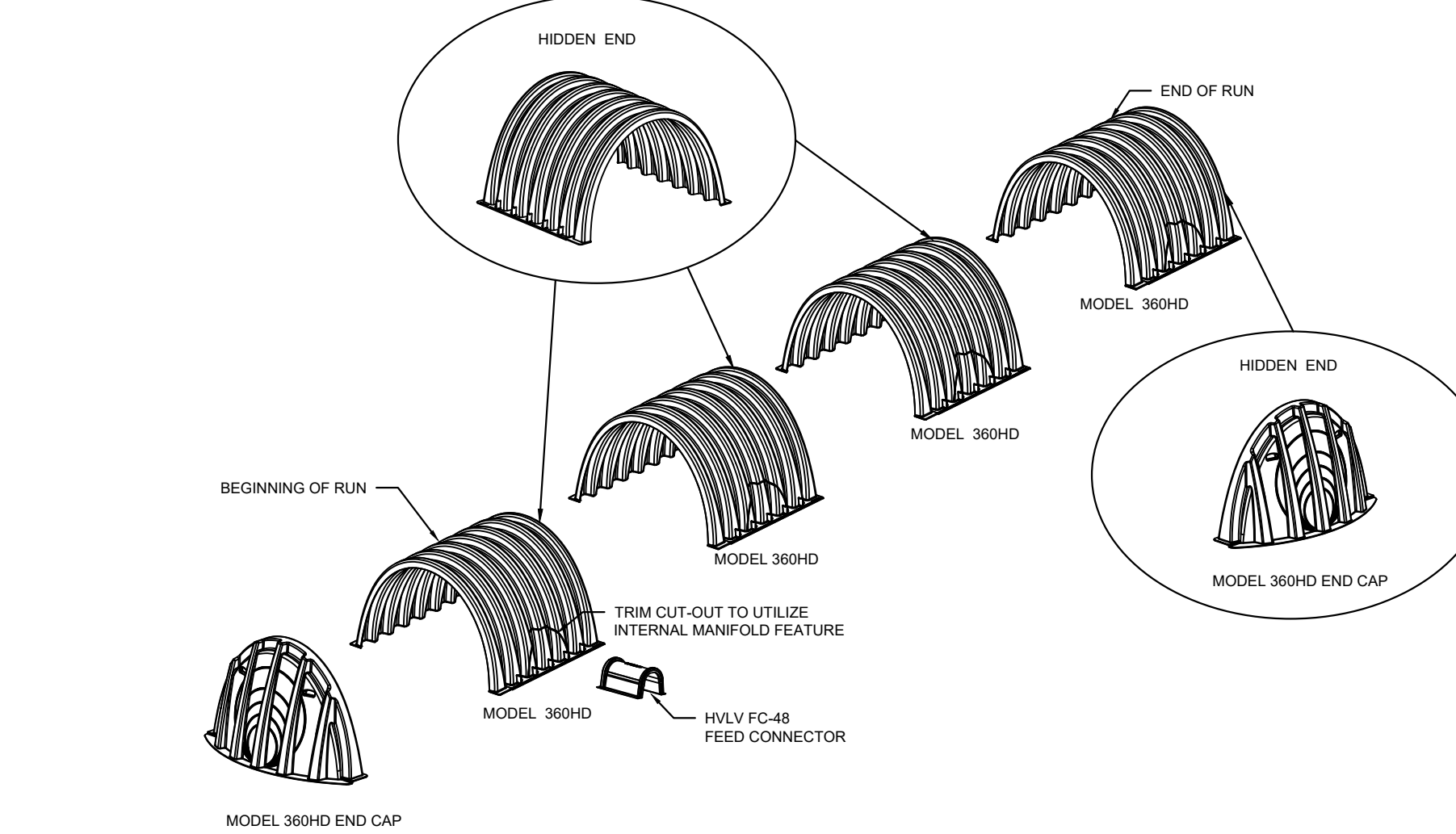
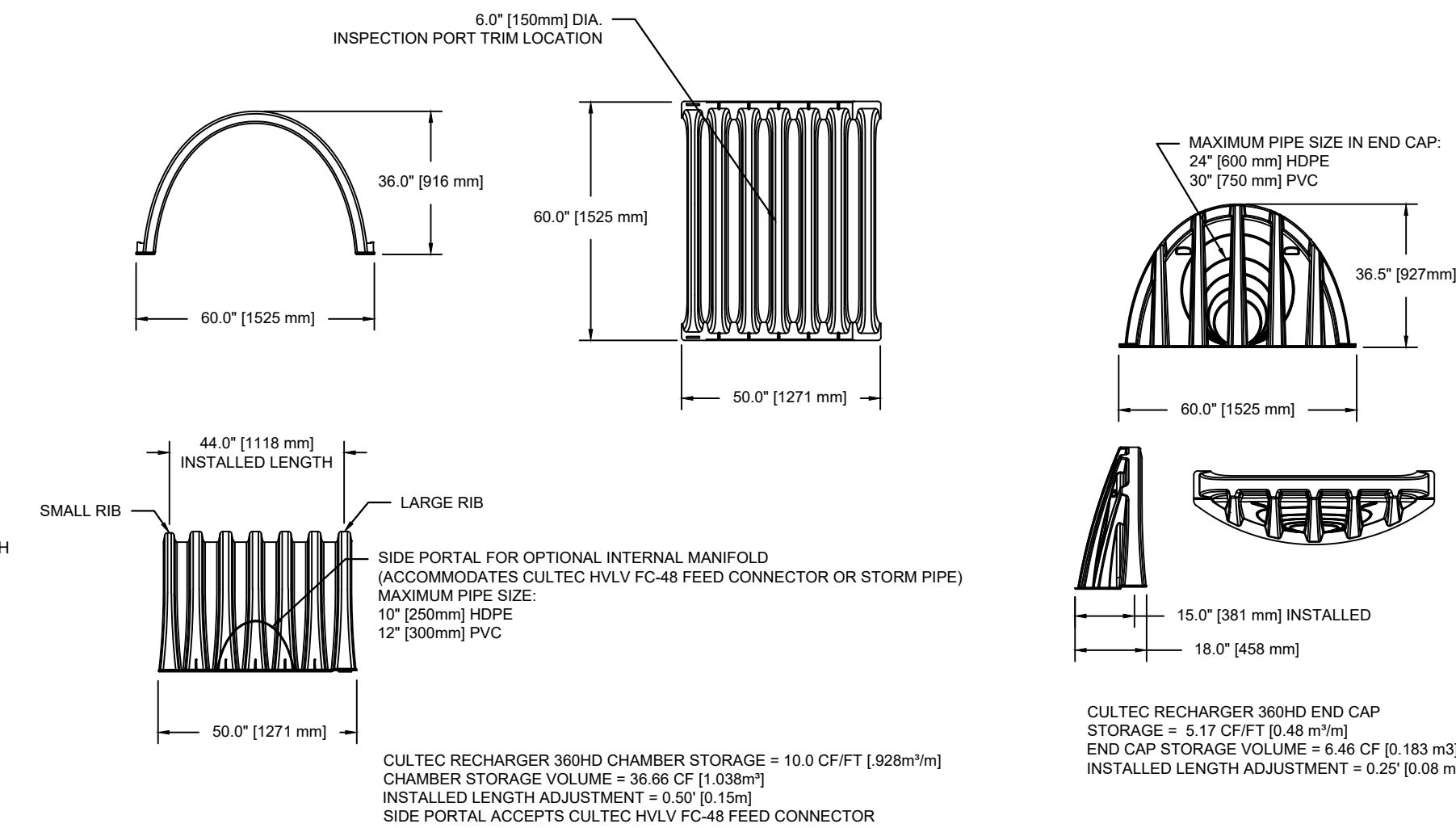
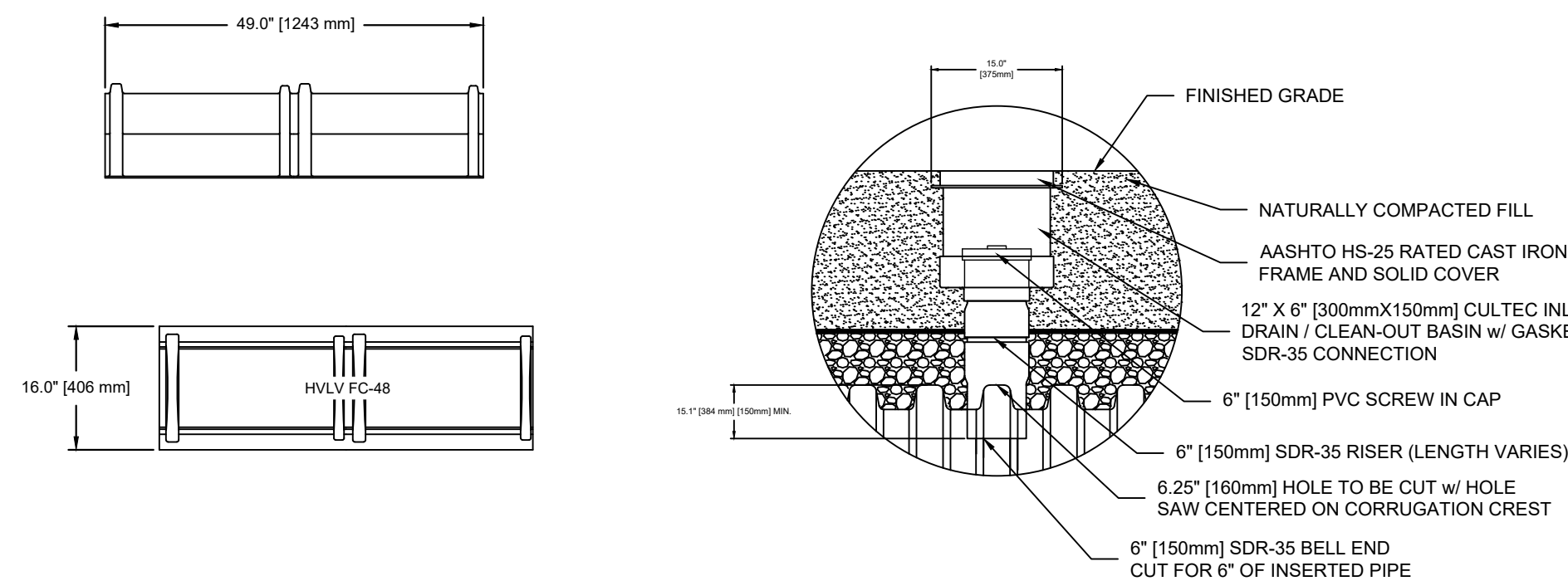
- CULTEC HVLV FC-48 FEED CONNECTOR PRODUCT SPECIFICATIONS**
- GENERAL**  
CULTEC HVLV FC-48 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER MODEL 360HD STORMWATER CHAMBERS.
- FEED CONNECTOR PARAMETERS**
1. THE FEED CONNECTOR SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
  2. THE FEED CONNECTOR SHALL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE).
  3. THE FEED CONNECTOR SHALL BE ARCHED IN SHAPE.
  4. THE FEED CONNECTOR SHALL BE OPEN-BOTTOMED.
  5. THE NOMINAL DIMENSIONS OF THE CULTEC HVLV FC-48 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 49 INCHES (1245 mm) LONG.
  6. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-48 FEED CONNECTOR SHALL BE 0.913 FT³ / FT (0.085 m³ / m) - WITHOUT STONE.
  7. THE HVLV FC-48 FEED CONNECTOR SHALL HAVE 4 CORRUGATIONS.
  8. THE HVLV FC-48 FEED CONNECTOR MUST BE FORMED AS A WHOLE UNIT HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT SHALL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
  9. THE FEED CONNECTOR SHALL BE DESIGNED TO WITHSTAND AASHTO HS-25 DEFINED LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
  10. THE FEED CONNECTOR SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.
- CULTEC NO. 410™ NON-WOVEN GEOTEXTILE**  
CULTEC NO. 410™ NON-WOVEN GEOTEXTILE MAY BE USED WITH CULTEC CONTACTOR® AND RECHARGER STORMWATER INSTALLATIONS TO PROVIDE A BARRIER THAT PREVENTS SOIL INTRUSION INTO THE STONE.

- GEOTEXTILE PARAMETERS**
1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
  2. THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
  3. THE GEOTEXTILE SHALL HAVE A TYPICAL WEIGHT OF 4.5 OZ/SY (142 G/M).
  4. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH VALUE OF 120 LBS (533 N) PER ASTM D4632 TESTING METHOD.
  5. THE GEOTEXTILE SHALL HAVE AN ELONGATION @ BREAK VALUE OF 50% PER ASTM D4632 TESTING METHOD.
  6. THE GEOTEXTILE SHALL HAVE A MULLEN BURST VALUE OF 225 PSI (1551 KPA) PER ASTM D3786 TESTING METHOD.
  7. THE GEOTEXTILE SHALL HAVE A PUNCTURE STRENGTH VALUE OF 65 LBS (289 N) PER ASTM D4833 TESTING METHOD.
  8. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE VALUE OF 340 LBS (1513 N) PER ASTM D6241 TESTING METHOD.
  9. THE GEOTEXTILE SHALL HAVE A TRAPEZOID TEAR VALUE OF 50 LBS (222 N) PER ASTM D4533 TESTING METHOD.
  10. THE GEOTEXTILE SHALL HAVE A AOS VALUE OF 70 U.S. SIEVE (0.212 MM) PER ASTM D4751 TESTING METHOD.
  11. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY VALUE OF 1.7 SEC-1 PER ASTM D4491 TESTING METHOD.
  12. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATE VALUE OF 135 GAL/MIN/SF (5500 L/MIN/SQ) PER ASTM D4491 TESTING METHOD.
  13. THE GEOTEXTILE SHALL HAVE A UV STABILITY @ 500 HOURS VALUE OF 70% PER ASTM D4355 TESTING METHOD.

- CULTEC NO. 4800™ WOVEN GEOTEXTILE**  
CULTEC NO. 4800 WOVEN GEOTEXTILE IS DESIGNED AS A UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE. IT MAY ALSO BE USED AS A COMPONENT OF THE CULTEC SEPARATOR ROW TO ACT AS A BARRIER TO PREVENT SOIL/CONTAMINANT INTRUSION INTO THE STONE WHILE ALLOWING FOR MAINTENANCE.
- GEOTEXTILE PARAMETERS**
1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
  2. THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
  3. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 550 X 550 LBS (2,448 X 2,448 N) PER ASTM D4632 TESTING METHOD.
  4. THE GEOTEXTILE SHALL HAVE A ELONGATION @ BREAK RESISTANCE OF 20 X 20% PER ASTM D4632 TESTING METHOD.
  5. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE OF 5,070 X 5,070 LBS/FT (74 X 74 KN/M) PER ASTM D4595 TESTING METHOD.
  6. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 2% STRAIN OF 960 X 1,096 LBS/FT (14 X 16 KN/M) PER ASTM D4595 TESTING METHOD.
  7. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 5% STRAIN OF 2,740 X 2,740 LBS/FT (40 X 40 KN/M) PER ASTM D4595 TESTING METHOD.
  8. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 10% STRAIN OF 4,800 X 4,800 LBS/FT (70 X 70 KN/M) PER ASTM D4595 TESTING METHOD.
  9. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 1,700 LBS (7,560 N) PER ASTM D6241 TESTING METHOD.
  10. THE GEOTEXTILE SHALL HAVE A TRAPEZOIDAL TEAR RESISTANCE OF 180 X 180 LBS (801 X 801 N) PER ASTM D4533 TESTING METHOD.
  11. THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (0.425 MM) PER ASTM D4751 TESTING METHOD.
  12. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.15 SEC-1 PER ASTM D4491 TESTING METHOD.
  13. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 11.5 GPM/FT² (470 LPM/M²) PER ASTM D4491 TESTING METHOD.
  14. THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 80% @ 500 HRS. PER ASTM D4355 TESTING METHOD.



- NOTES:**
1. THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". THE LOAD CONFIGURATION SHALL INCLUDE:
    - A. INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER
    - B. MAXIMUM PERMANENT (50-YEAR) COVER LOAD
    - C. 1-WEEK PARKED AASHTO DESIGN TRUCK LOAD
  2. THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
  3. THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING:
    - A. THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430
    - B. THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75
    - C. THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95



- FIGURE 1**
- MAX. PIPE: 10" [250mm] HDPE 12" [300mm] PVC
- FIGURE 1 ZOOM OF SIDE PORTAL SHOWING MAX. PIPE O.D.
- NOTES:**
1. THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". THE LOAD CONFIGURATION SHALL INCLUDE:
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    - B. MAXIMUM PERMANENT (50-YEAR) COVER LOAD
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    - A. THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430
    - B. THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75
    - C. THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95

## SMALL SCALE SUBSURFACE INFILTRATION BASIN 1-2 INSTALLATION DETAILS (CULTEC RECHARGER 360HD)

Date	Description	No.
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Revisions
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SIGNATURE JOHN COTE DATE  
PROFESSIONAL ENGINEER NJ Lic. No. 24GE03705800

**LANGAN**  
Langan Engineering and Environmental Services, Inc.

300 Kimball Drive  
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NJ CERTIFICATE OF AUTHORIZATION NO. 24GE03705800

Project

**BEACON UNITARIAN  
UNIVERSALIST  
CHURCH**

SUMMIT NEW JERSEY

Union County

Drawing Title

**DRAINAGE DETAILS**

Project No. 101007201

Drawing No. CG504

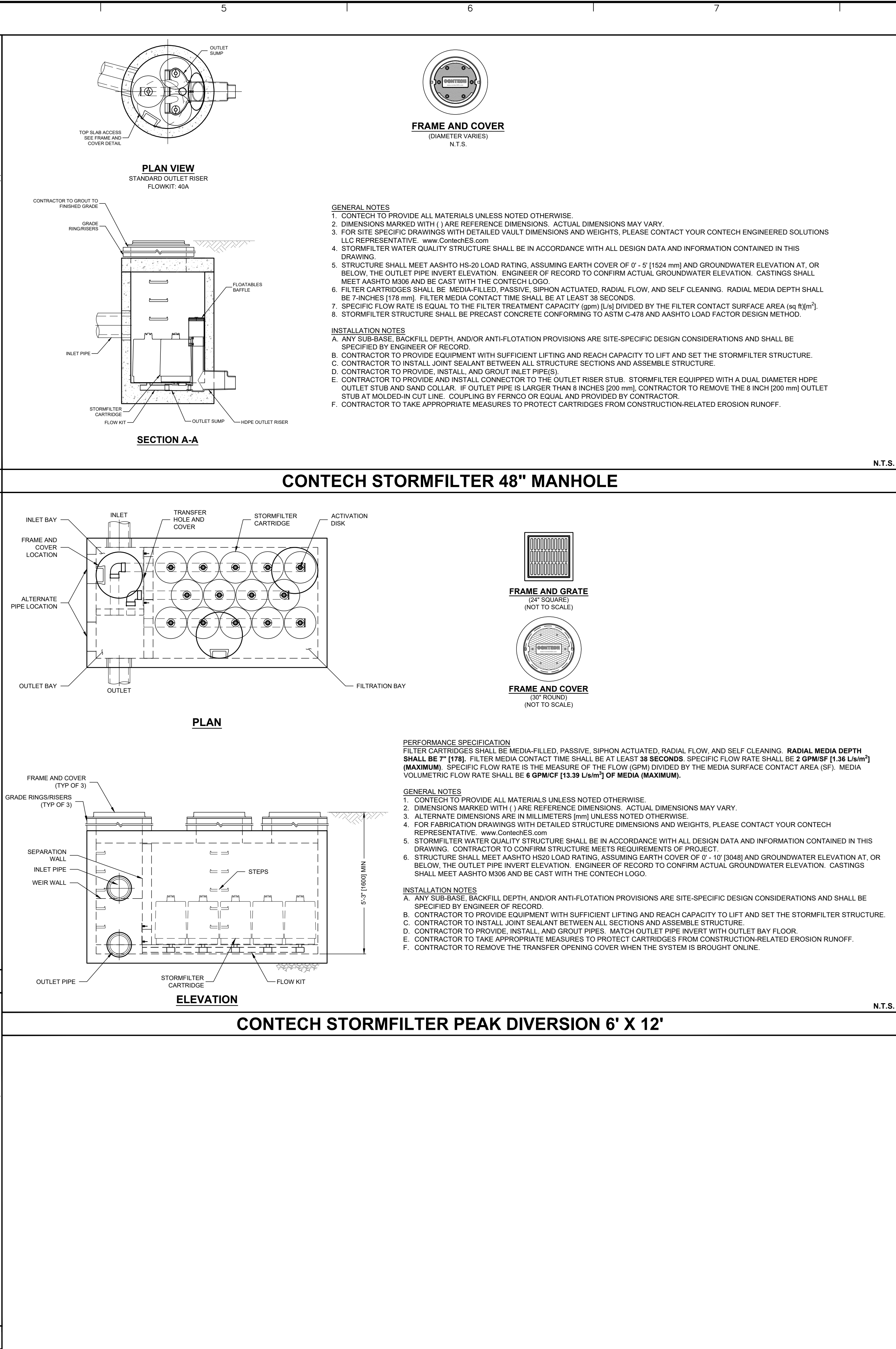
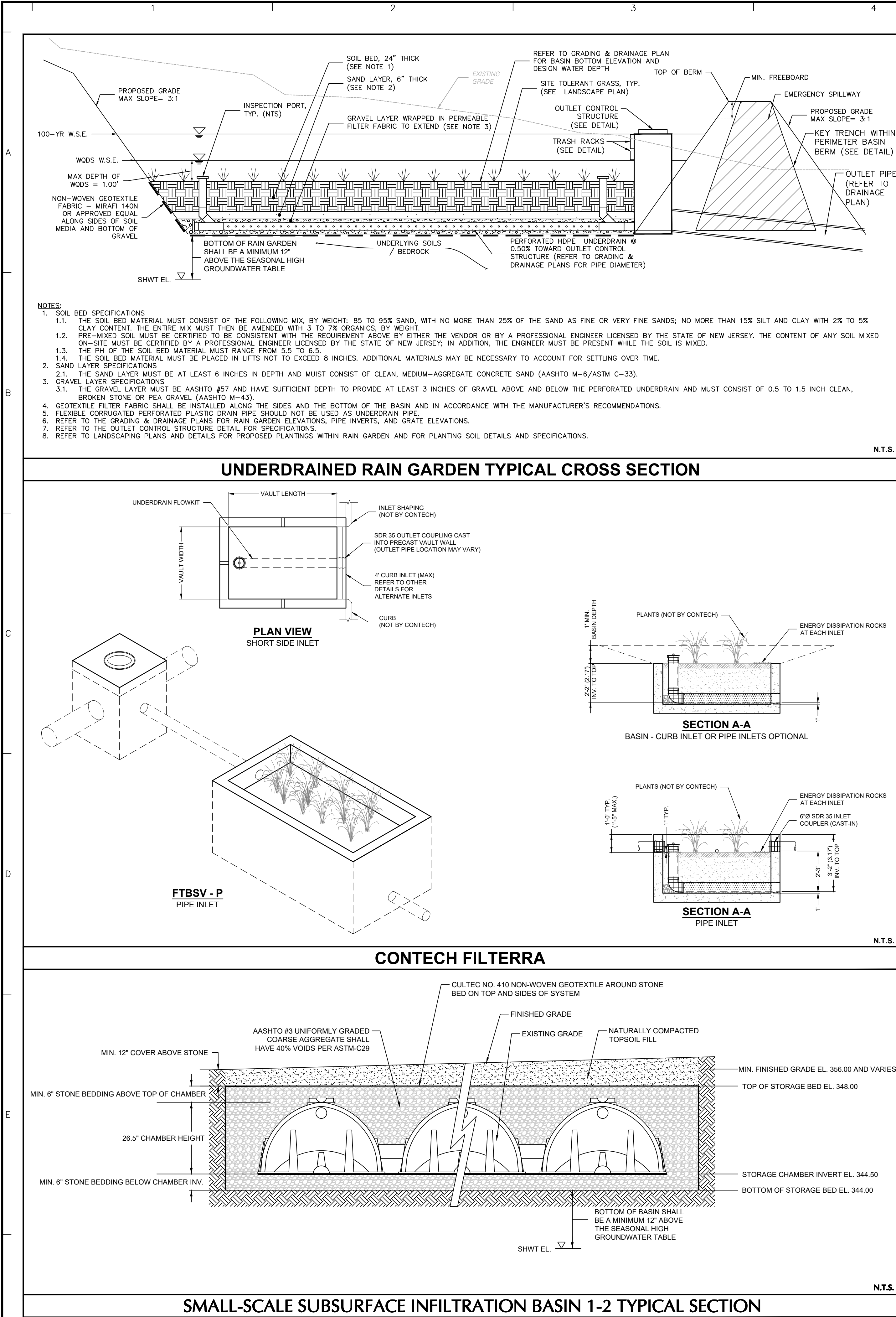
Date FEBRUARY 9, 2024

Drawn By SS

Checked By TH

Sheet 12 of 19





Date	Description	No.
Revisions		
SIGNATURE JOHN COTE PROFESSIONAL ENGINEER NJ Lic. No. 24GE03705800		
DATE		
<b>LANGAN</b> Langan Engineering and Environmental Services, Inc. 300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400		
Project		
<b>BEACON UNITARIAN UNIVERSALIST CHURCH</b> SUMMIT NEW JERSEY		
Drawing Title		
<b>DRAINAGE DETAILS</b>		
Project No.	Drawing No.	
101007201	<b>CG505</b>	
Date		
FEBRUARY 9, 2024		
Drawn By		
SS	Sheet 13 of 19	
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TH		



LEGEND		
	EXISTING	PROPOSED
PROPERTY LINE/ROW	— 120 —	— 118 —
CONTOUR	— 122.53 —	
SPOT ELEVATION	⊙	●
STORM MANHOLE	⊙	●
SANITARY MANHOLE	⊙	●
SANITARY CLEANOUT	⊙	●
CATCH BASIN	□	■
TRENCH DRAIN	—	—
STORM SEWER	—	—
SANITARY SEWER	—	—
SANITARY SEWER FORCE MAIN	—	—
WATER MAIN	—	—
GAS MAIN	—	—
ELECTRIC CONDUIT	—	—
TELEPHONE CONDUIT	—	—
VALVE	⊙	⊙
FIRE HYDRANT	⊙	⊙
LIGHT POLE	⊙	⊙
UTILITY POLE	⊙	⊙
OVERHEAD WIRE	—	—
JUNCTION BOX	⊙	⊙
ELECTRIC MANHOLE	⊙	⊙
RETAINING WALL	—	—

#### GENERAL NOTES:

- BACKGROUND BOUNDARY AND TOPOGRAPHIC SURVEY INFORMATION REFERENCED FROM PLAN TITLED "BOUNDARY, TOPOGRAPHIC & UTILITY SURVEY", PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC., DATED DECEMBER 8, 2022.
- THE MEDIAN OF THIS SURVEY IS REFERENCED TO THE NEW JERSEY STATE PLAN COORDINATE SYSTEM NAD83 (2011) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
- ELEVATIONS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) DERIVED USING SURVEY-GRADE GNSS EQUIPMENT.
- THE SITE IS LOCATED OUTSIDE OF THE 100-YEAR FLOOD HAZARD AREA (ZONE X) PER FEMA FIRM PANEL #34039C0008F, DATED SEPTEMBER 20, 2006.

#### SANITARY / SEWER NOTES:

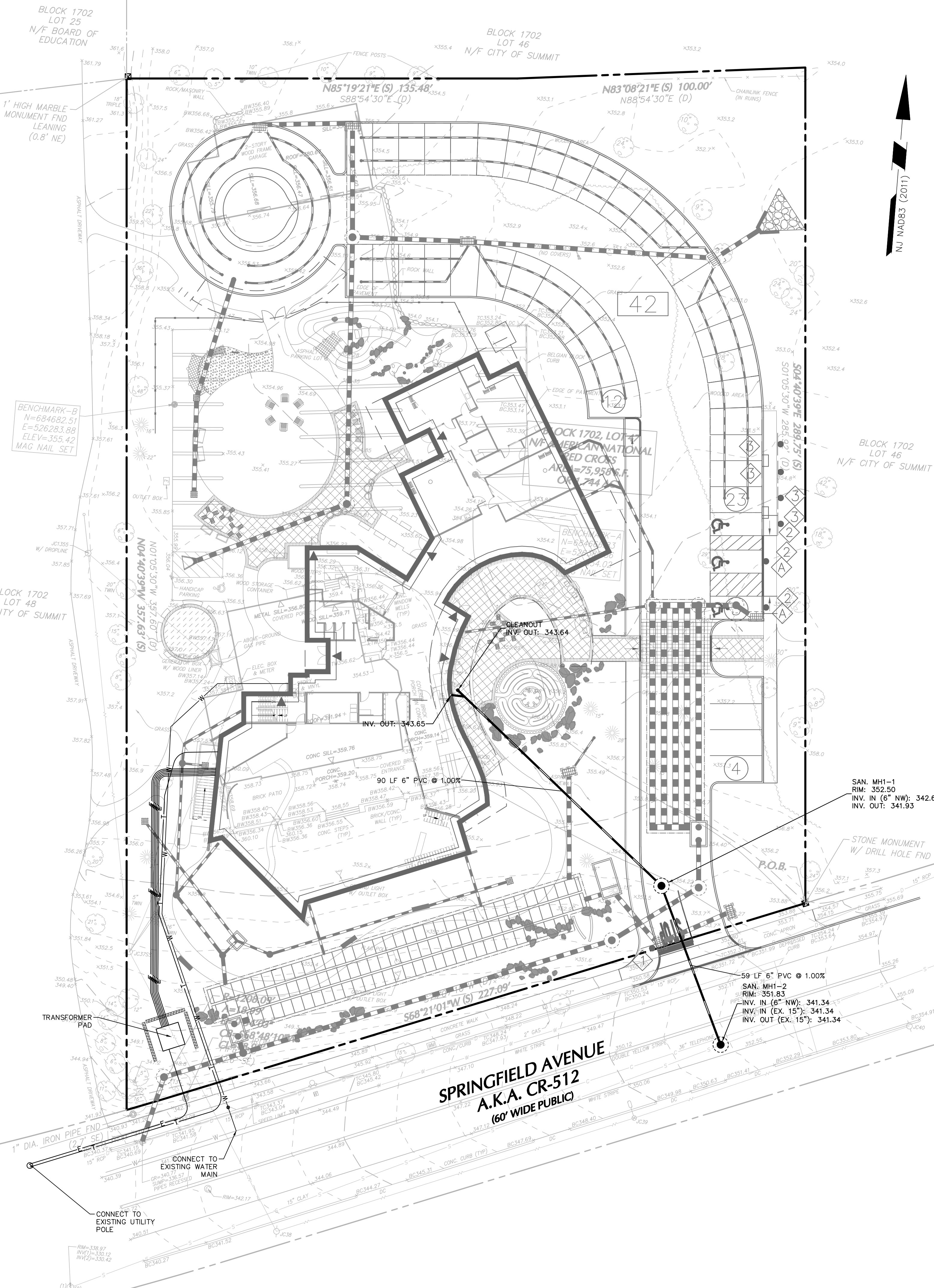
- ALL SEWER CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE LOCAL AUTHORITY.
- WITH THE EXCEPTION OF THE TIE-IN SEWER, EXISTING ON-SITE SANITARY SEWER LINES SERVICING THE SITE SHALL BE PHYSICALLY REMOVED UNLESS NOTED OTHERWISE. CONTRACTOR TO NOTIFY OWNER'S ENGINEER PRIOR TO REMOVAL OF ANY SEWER PIPE.
- THE CONTRACTOR MUST VERIFY THE LOCATION, SIZE, AND SERVICEABILITY OF THE EXISTING SANITARY SEWER MAINS PRIOR TO BEGINNING ANY SITE OR BUILDING CONSTRUCTION.
- THE SEWER CONTRACTOR SHALL CONSTRUCT THE SANITARY SEWER LINES TO WITHIN 5 FEET OF THE PROPOSED BUILDING LIMITS WHERE THE LINE SHALL BE PLUGGED AND MARKED.
- ALL MATERIALS USED AND ALL CONSTRUCTION METHODS EMPLOYED SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR THE GOVERNING LOCAL MUNICIPAL UTILITY AUTHORITY.
- WHERE LESS THAN 18" OF VERTICAL CLEARANCE IS PROVIDED BETWEEN THE SANITARY SEWER AND OTHER UTILITIES, THE SEWER SHALL BE ENCASED IN 6 INCHES OF CONCRETE ON ALL FOUR SIDES AND SHALL EXTEND 10 FEET BEYOND CROSSING IN BOTH DIRECTIONS. DUCTILE IRON PIPE MAY BE UTILIZED IN PLACE OF CONCRETE ENCASEMENT PER N.J.A.C. 7:14A 23.6.b.4.
- WHEN SANITARY LATERALS TIE DIRECTLY INTO MANHOLES, AN APPROPRIATE OPENING WITH AN "A-LOK" OR APPROVED EQUAL JOINT SHALL BE PRECAST IN THE MANHOLE BASE. ALL MAINS SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE LOW PRESSURE AIR TEST METHOD OR AS OTHERWISE SPECIFIED BY LOCAL AUTHORITY OR PROJECT SPECIFICATIONS.

#### WATER NOTES:

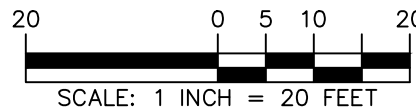
- ALL WATER CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE LOCAL GOVERNING AUTHORITY.
- ALL EXISTING WATER LATERALS SERVICING THE EXISTING BUILDINGS OR REMAINING WITHIN THE SITE FROM FORMER BUILDINGS (TO BE DEMOLISHED) SHALL BE TERMINATED AT THE MAIN AND CURB SHUT-OFFS SHALL BE REMOVED. EXISTING WATER SERVICE LINES SHALL BE PHYSICALLY REMOVED UNLESS NOTED OTHERWISE. CONTRACTOR SHALL NOTIFY OWNER'S ENGINEER PRIOR TO REMOVAL OF ANY WATER LINE.
- THE CONTRACTOR MUST VERIFY THE LOCATION, SIZE, AND SERVICEABILITY OF THE EXISTING WATER MAINS PRIOR TO BEGINNING ANY SITE OR BUILDING CONSTRUCTION.
- THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE CLOSEST TWO POINTS OF THE WATER AND SEWER MAIN IS TEN FEET (10'). THE MINIMUM VERTICAL SEPARATION BETWEEN THE CLOSEST TWO POINTS OF THE WATER AND SEWER LINE IS EIGHTEEN INCHES (18"). CONCRETE PIPE ENCASEMENTS WILL BE REQUIRED WHERE THE MINIMUM SEPARATION CANNOT BE ACHIEVED. LATERAL SEPARATION SHALL BE AS REQUIRED BY LOCAL CODE.
- THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS, TEES, ELBOWS, PLUGS, AND FIRE HYDRANTS.
- ALL FIRE HYDRANTS SHALL BE PROVIDED WITH AN APPROVED GATE VALVE A MAXIMUM OF 5'-0" FROM HYDRANT, AND SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL AUTHORITY.
- ALL GATE VALVES SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL AUTHORITY.
- ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
- BACKFLOW PREVENTION DEVICES FOR DOMESTIC AND FIRE SERVICE CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL AUTHORITY.
- ALL NEW WATER LINES SHALL BE PRESSURE TESTED AND LEAKAGE TESTED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA STANDARD C600, OR LOCAL REQUIREMENTS, WHICHEVER IS MORE RESTRICTIVE.
- ALL NEW WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651, OR LOCAL REQUIREMENTS, WHICHEVER IS MORE RESTRICTIVE.

#### GENERAL UTILITY NOTES:

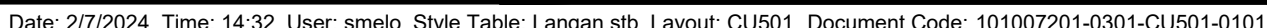
- SITE DISTURBANCE SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND ALL GOVERNING AGENCIES HAVE BEEN NOTIFIED BY THE CONTRACTOR.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL NEW JERSEY ONE-CALL AND THE APPROPRIATE UTILITY COMPANIES TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS IN A MANNER WHICH WILL NOT NEGATIVELY AFFECT ANY EXISTING USERS OF THESE UTILITIES.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, UTILITY LOCATIONS, AND INVERTS PRIOR TO CONSTRUCTION. ANY CONDITIONS FOUND TO DIFFER FROM THOSE SHOWN ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
- CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITY ENTRY POINTS, INCLUDING SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ROOF LEADERS, ELECTRICAL, TELEPHONE, AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE REGULATORY AGENCY AS TO LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.
- ALL REQUIRED UTILITIES SERVING THE BUILDINGS SHALL BE COORDINATED AND CONSTRUCTED TO WITHIN FIVE FEET OF EACH BUILDING UTILITY ENTRANCE AND PLUGGED AND MARKED UNLESS OTHERWISE NOTED. ANY NECESSARY EXTENSIONS, RELOCATIONS, OR CORRECTIONS WITHIN FIVE FEET OF THE BUILDING NECESSARY TO COMPLETE CONNECTION OF UTILITIES TO THE BUILDINGS SHALL BE MADE BY THE BUILDING CONTRACTOR. THE BUILDING CONTRACTOR SHALL MAKE THE FINAL CONNECTION BETWEEN THE BUILDING SYSTEMS AND THE SITE LATERALS.
- THE CONTRACTOR MUST NOTIFY LOCAL AUTHORITIES A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION, UNLESS FURTHER ADVANCE NOTICE IS REQUIRED BY THE CITY.
- ALL ON-SITE UTILITIES SHALL BE UNDERGROUND UNLESS NOTED OTHERWISE.
- ALL ABANDONED UTILITY LINES AND STRUCTURES SHALL BE COMPLETELY REMOVED AND CAPPED/PLUGGED AT THE MAIN IN ACCORDANCE WITH THE UTILITY COMPANY OR LOCAL AUTHORITY REQUIREMENTS.
- TRENCH DEPTH REQUIREMENTS MEASURED FROM FINISHED GRADE OR PAVED SURFACE SHALL MEET THE FOLLOWING REQUIREMENTS WHEN NOT SPECIFIED BY GOVERNING CODES, ORDINANCES, OR AUTHORITIES.
  - WATER MAINS: 48 INCHES TO TOP OF PIPE BARREL OR 6 INCHES BELOW THE FROST LINE (ESTABLISHED BY THE LOCAL BUILDING OFFICIAL OR WATER COMPANY).
  - SANITARY SEWER: DEPTHS, ELEVATIONS, AND GRADES AS INDICATED ON DRAWINGS.
  - ELECTRICAL CONDUITS: 24 INCHES MINIMUM TO TOP OF CONDUIT OR AS SPECIFIED BY THE UTILITY COMPANY REQUIREMENTS.
  - TV CONDUITS: 18 INCHES MINIMUM TO TOP OF CONDUIT OR AS REQUIRED BY THE UTILITY COMPANY.
  - TELEPHONE CONDUITS: 18 INCHES MINIMUM TO TOP OF CONDUIT OR AS REQUIRED BY THE UTILITY COMPANY.
  - GAS MAINS AND SERVICE: 30 INCHES MINIMUM TO TOP OF PIPE OR AS REQUIRED BY THE UTILITY COMPANY.
  - SANITARY FORCE MAINS: 48 INCHES MINIMUM TO THE TOP OF PIPE BARREL OR AS INDICATED ON THE DESIGN DRAWINGS.
- REFER TO ARCHITECTURAL DRAWINGS FOR SERVICE LATERAL CONNECTIONS TO INTERNAL BUILDING SERVICE LINES.
- ALL UTILITY CONSTRUCTION TO BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANIES, THE BOROUGH OF OAKLAND OR THE BOROUGH OF FRANKLIN LAKES DEPENDING ON LOCATION AND JURISDICTION, AND SHALL CONFORM WITH THE REQUIREMENTS THEREOF.
- ALL CABLE, ELECTRIC, TELEPHONE AND FIBER OPTIC UTILITY LINES SHALL BE INSTALLED UNDERGROUND UNLESS SPECIFIED OTHERWISE.



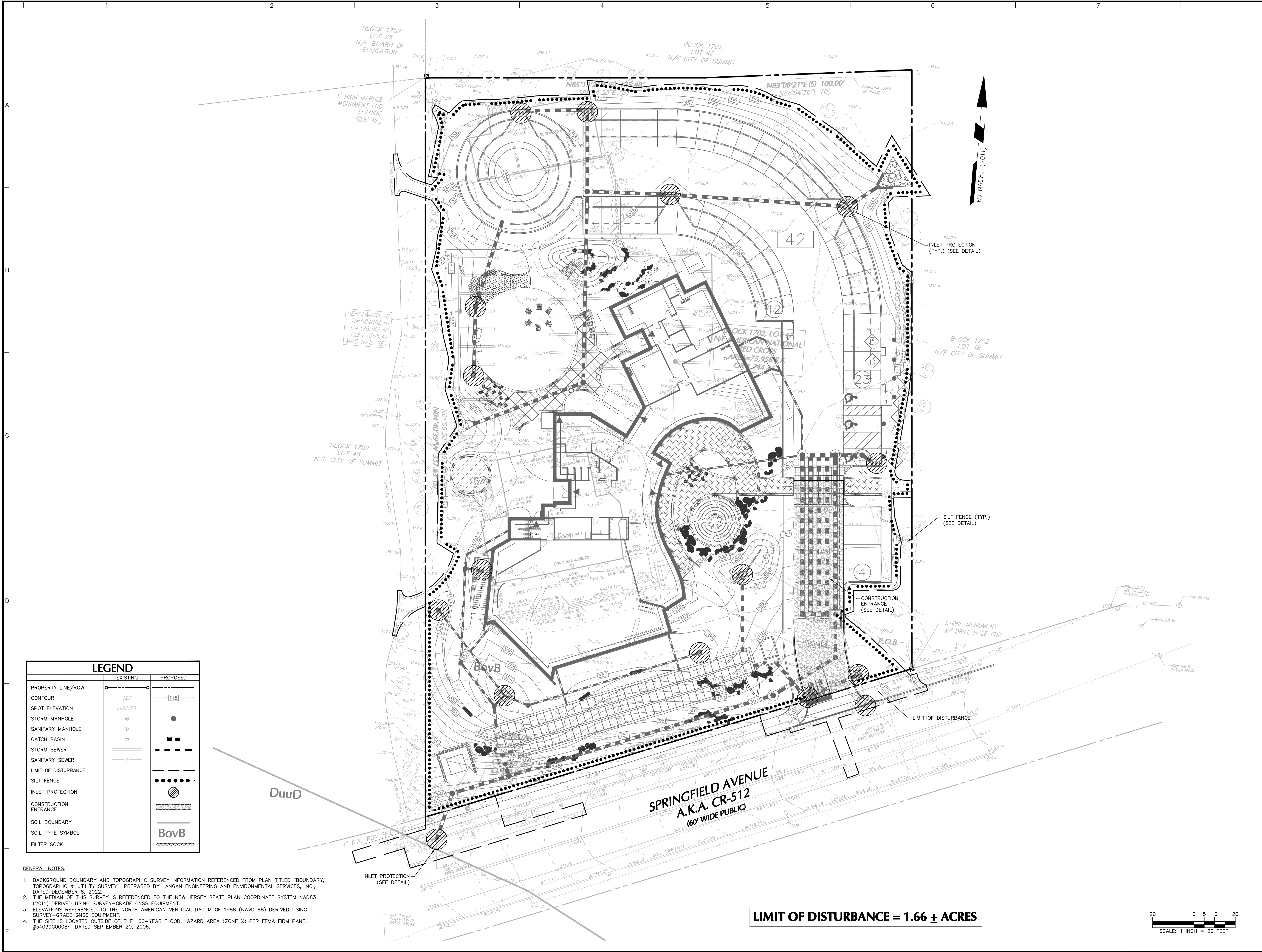
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PROFESSIONAL ENGINEER NJ Lic. No. 24GE03705800		
<b>LANGAN</b>		
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NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400		
Project		
<b>BEACON UNITARIAN UNIVERSALIST CHURCH</b>		
SUMMIT NEW JERSEY		
Drawing Title		
<b>UTILITY PLAN</b>		
Project No.	Drawing No.	
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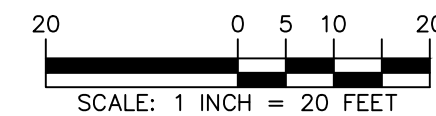




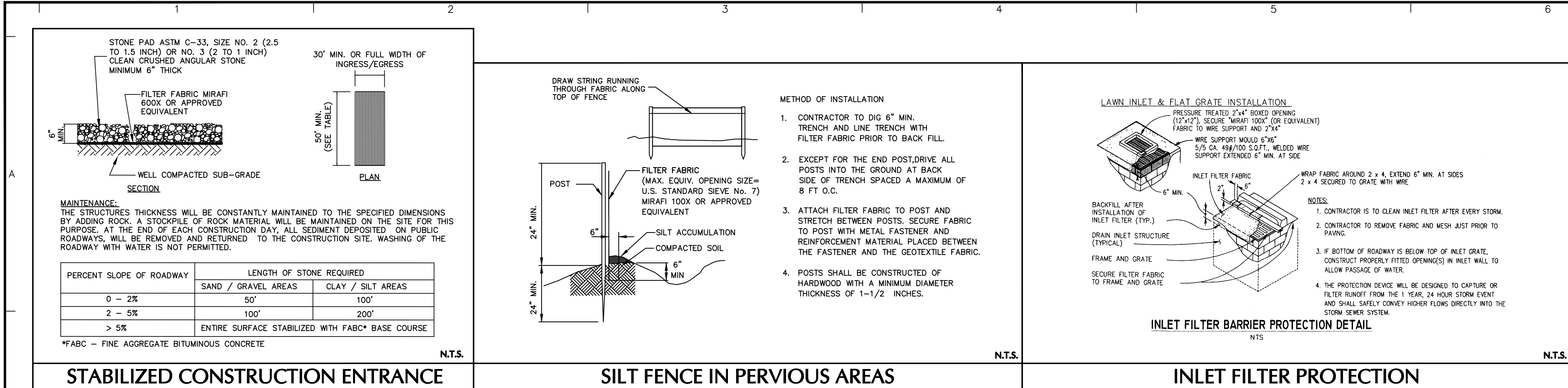




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NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400		
Project		
BEACON UNITARIAN UNIVERSALIST CHURCH		
SUMMIT NEW JERSEY		
UNION COUNTY		
Drawing Title		
SOIL EROSION & SEDIMENT CONTROL PLAN		
Project No. 101007201		Drawing No.
Date FEBRUARY 9, 2024		CE101
Drawn By SS		
Checked By TH		
		Sheet 16 of 19







## Soil De-compaction and Testing Requirements

## Soil Compaction Testing Requirements

1. Subgrade soils **prior to the application of topsoil** (see permanent seeding and stabilization notes for topsoil requirements) shall be free of excessive compaction to a depth of 6.0 inches to enhance the establishment of permanent vegetative cover.

2. Areas of the site which are subject to compaction testing and/or mitigation are **graphically denoted** on the certified soil erosion control plan.

3. **Compaction testing locations** are denoted on the plan. A copy of the plan or portion of the plan shall be used to mark locations of tests, and attached to the compaction remediation form, available from the local soil conservation district. This form must be filled out and submitted prior to receiving a certificate of compliance from the district.

4. In the event that testing indicates compaction in excess of the maximum thresholds indicated for the simplified testing methods (see details below), the contractor/owner shall have the option to perform either (1) compaction mitigation over the entire mitigation area denoted on the plan (excluding exempt areas), or (2) perform additional, more detailed testing to establish the limits of excessive compaction whereupon only the excessively compacted areas would require compaction mitigation. Additional detailed testing shall be performed by a trained, licensed professional.

## Compaction Testing Methods

- A. Probing Wire Test (see detail)
- B. Hand-held Penetrometer Test (see detail)
- C. Tube Bulk Density Test (licensed professional engineer required)
- D. Nuclear Density Test (licensed professional engineer required)

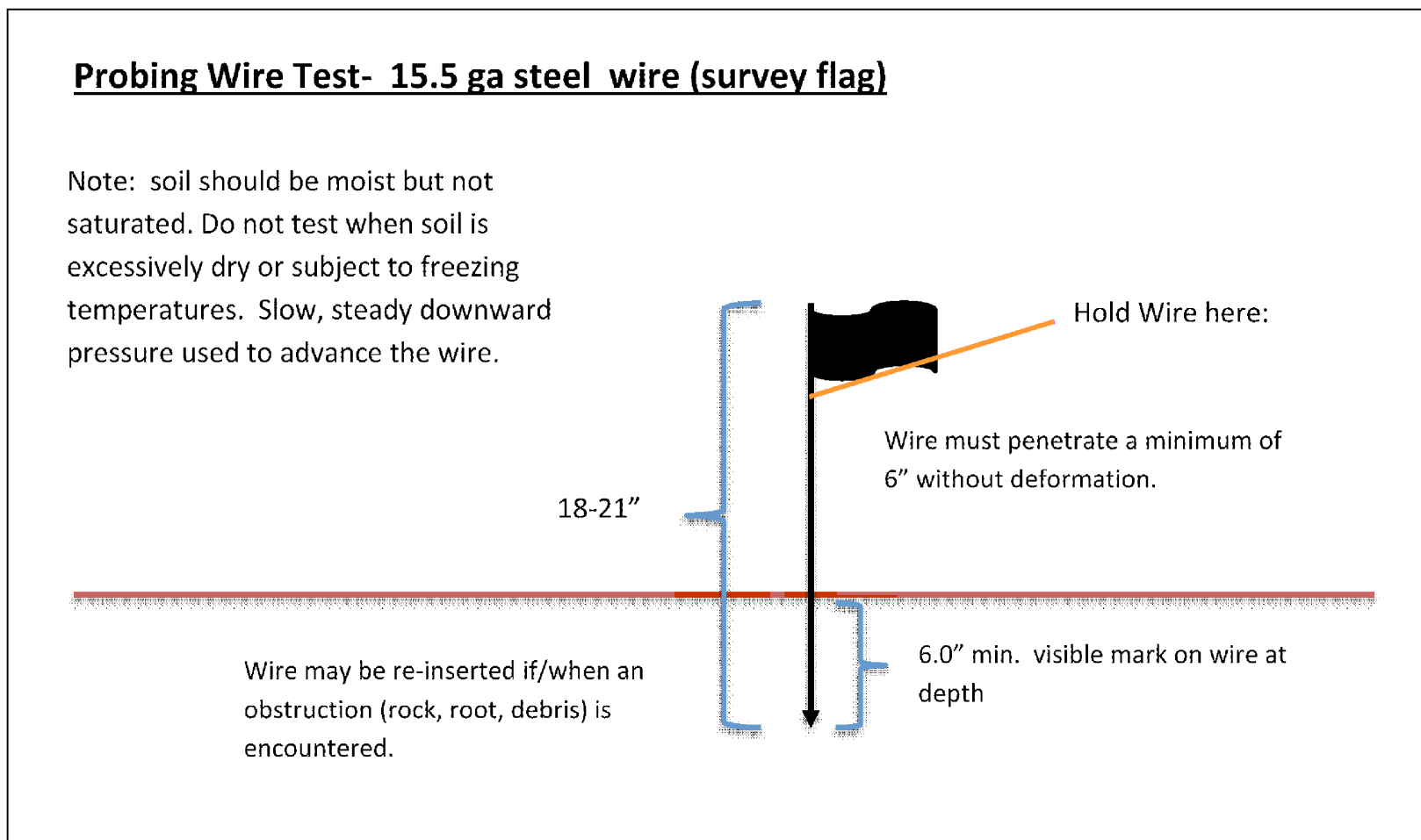
Note: Additional testing methods which conform to ASTM standards and specifications, and which produce a dry weight, soil bulk density measurement may be allowed subject to District approval.

Soil compaction testing is not required if/when subsoil compaction remediation (scarification/tillage (6" minimum depth) or similar) is proposed as part of the sequence of construction.

### Procedures for Soil Compaction Mitigation

Procedures shall be used to mitigate excessive soil compaction **prior to placement of topsoil** and establishment of permanent vegetative cover.

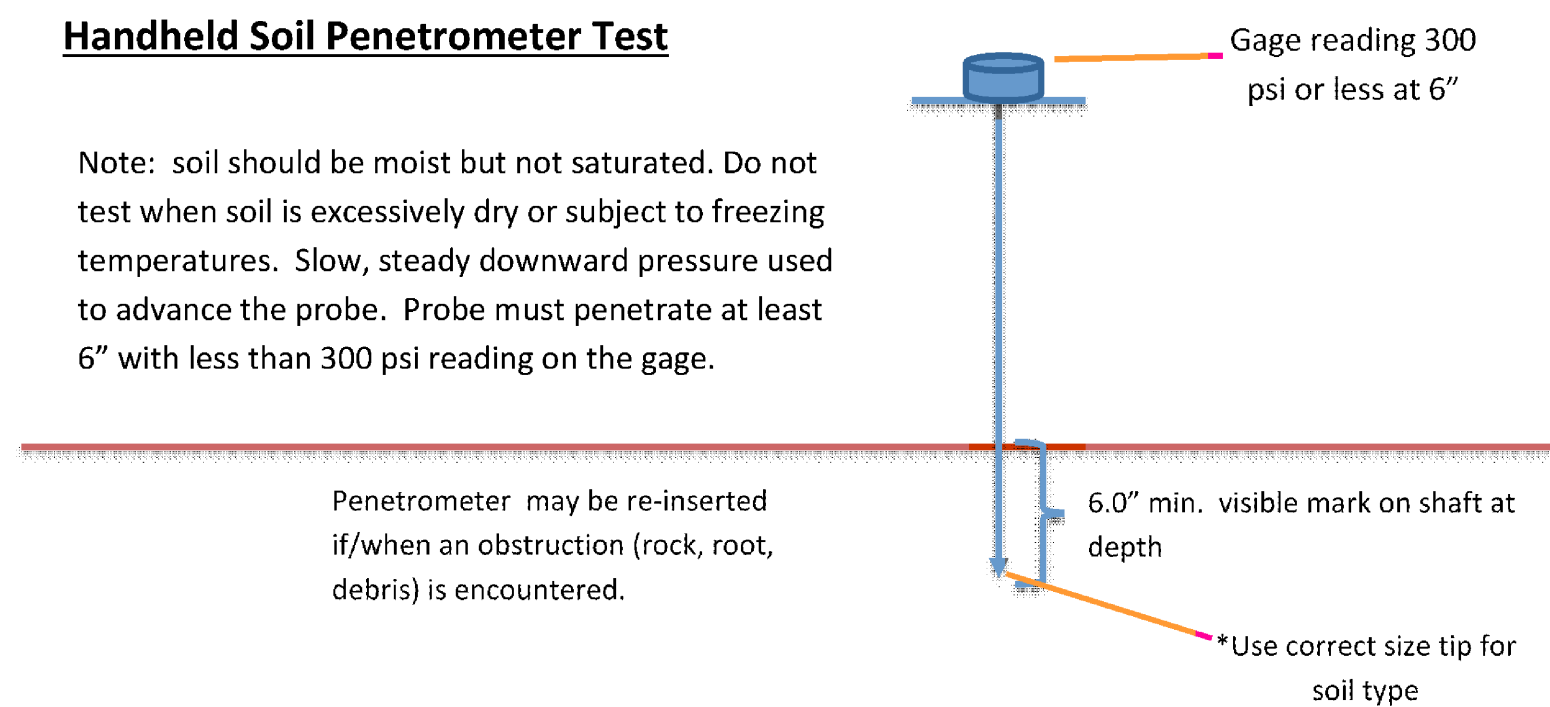
**Restoration of compacted soils shall be through deep scarification/tillage (6" minimum depth)** where there is no danger to underground utilities (cables, irrigation systems, etc.). In the alternative, another method as specified by a New Jersey Licensed Professional Engineer maybe substituted subject to District Approval.



### Handheld Soil Penetrometer Test

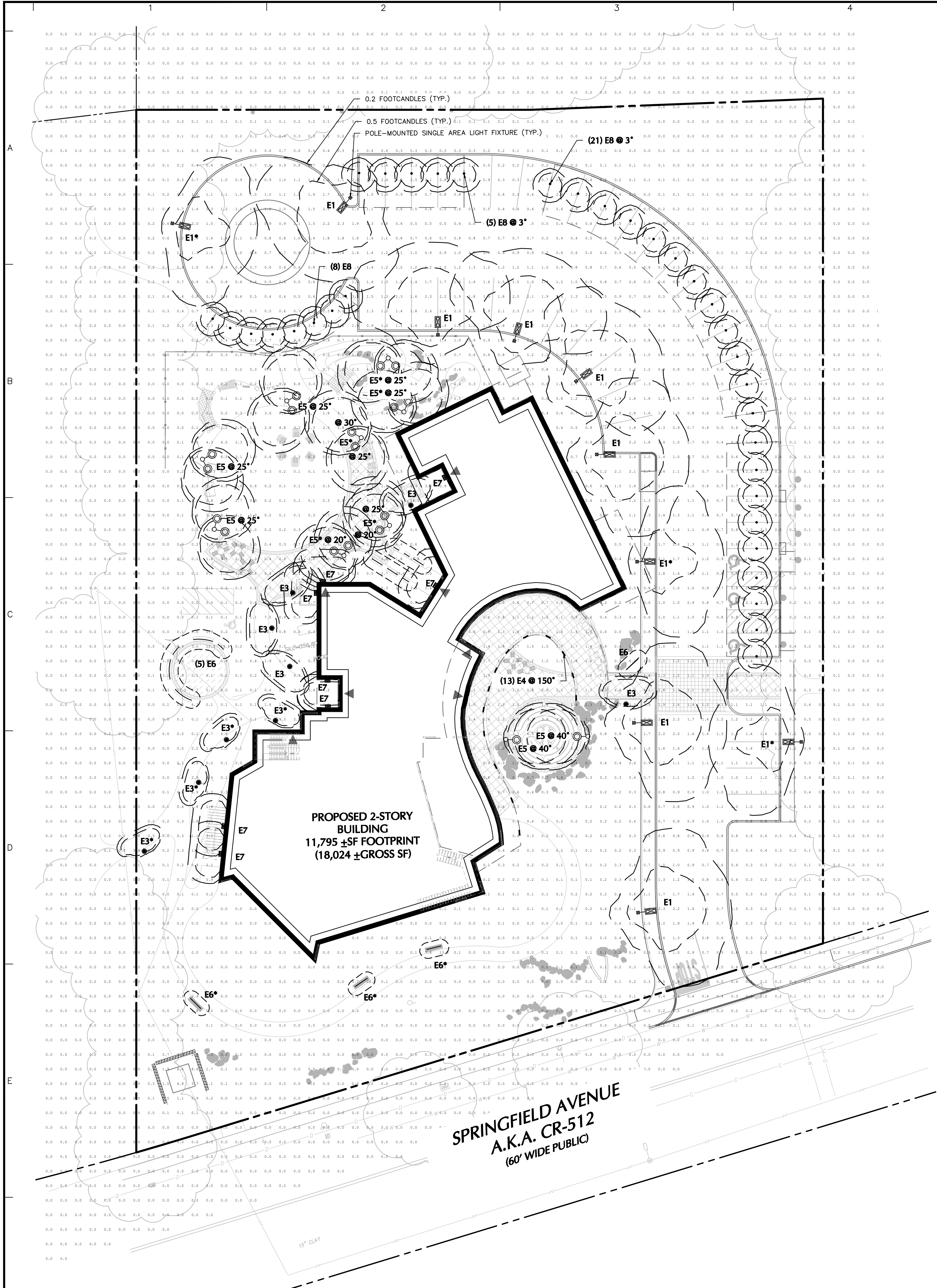
Note: soil should be moist but not saturated. Do not test when soil is excessively dry or subject to freezing temperatures. Slow, steady downward pressure used to advance the probe. Probe must penetrate at least 6" with less than 300 psi reading on the gage.

Penetrometer may be re-inserted if/when an obstruction (rock, root, debris) is encountered.














Date	Description	No.
Revisions		
SIGNATURE JOHN COTE DATE		
PROFESSIONAL ENGINEER NJ Lic. No. 24GE03705800		
<b>LANGAN</b> Langan Engineering and Environmental Services, Inc. 300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com NJ CONTRACT OF AUTHORIZATION NO. 24GA27996400		
Project		
<b>BEACON UNITARIAN          UNIVERSALIST          CHURCH</b> SUMMIT UNION COUNTY NEW JERSEY		
Drawing Title		
<b>SOIL EROSION &amp;          SEDIMENT CONTROL          NOTES &amp; DETAILS</b>		
Project No.		Drawing No.
101007201		
Date		
FEBRUARY 9, 2024		
Drawn By		
SS		CE501
Checked By		
TH		
Sheet		17 of 19





ORDINANCE COMPLIANCE TABLE				
ZONING DISTRICT (CITY OF SUMMIT): ZONING DISTRICT R-1S SINGLE FAMILY RESIDENTIAL DISTRICT				
ITEM	REQUIRED	PROPOSED	COMPLIES	ORDINANCE SECTION (PAGE)
GENERAL DESIGN REQUIREMENTS				
LIGHT FIXTURE MOUNTING HEIGHT	THE MAXIMUM HEIGHT OF ALL LIGHT FIXTURES SHALL NOT EXCEED 15 FEET.	MAXIMUM 15' MOUNTING HEIGHT OF ALL FIXTURES	YES	ZONING 35-14.1 M.2.a
LUMINANCE REQUIREMENTS	WALKWAYS, STAIRWAYS AND BIKEWAYS (DISTANT FROM ROADWAYS) 0.2 FC	MAXIMUM AVERAGE OF 0.2 FC IS PROPOSED.	YES	ZONING 35-14.1 M.2.g (3)(d)
COLOR TEMPERATURE	LIGHTING FIXTURES SHALL NOT EXCEED A COLOR TEMPERATURE OF 3,500 KELVIN.	PROPOSED FIXTURES ARE ALL 2700 KELVIN	YES	ZONING 35-14.1 M.2.g (3)(d)
PROPERTY LINE	THE MAXIMUM ILLUMINATION AT PROPERTY LINES SHALL BE 1/10 FOOTCANDLE AT GRADE.	MAXIMUM ILLUMINATION AT PROPERTY LINE IS 0.1 FC.	YES	ZONING 35-14.1 M.2.g (3)(d)

### SITE LIGHTING SCHEDULE

SYMBOL	KEY	QTY.	FIXTURE MANUFACTURER	FIXTURE MODEL	FIXTURE DESCRIPTION	FIXTURE MOUNTING HEIGHT	LAMP	OPTICS	LUMENS	LLF	TILT ANGLE	IES FILE	FIXTURE CATALOGUE NO.	POLE MANUFACTURER	POLE DESCRIPTION	POLE LENGTH	POLE CATALOGUE NO.
	E1	7	WE-EF	AFL120 LED	POLE MOUNTED SINGLE AREA LIGHT FIXTURE; COLOR = BLACK	15'-0"	26.5W LED	FORWARD THROW	2,983	0.90	0°	102-0317.IES	102-0317 INCLUDE: 430-0029 (FIELD ADJUSTABLE BACKLIGHT SHIELD)	LUMCA POLE	ROUND STRAIGHT ALUMINUM POLE	15'-0"	AP04-HD15-WB11-4-BK
	E1*	3	WE-EF	AFL120 LED	POLE MOUNTED SINGLE AREA LIGHT FIXTURE; COLOR = BLACK	15'-0"	26.5W LED	FORWARD THROW WITH HOUSE SIDE SHIELD	2,983	0.90	0°	102-0317.IES	102-0317 INCLUDE: 430-0029 (FIELD ADJUSTABLE BACKLIGHT SHIELD)	LUMCA POLE	ROUND STRAIGHT ALUMINUM POLE	15'-0"	AP04-HD15-WB11-4-BK
	E3	5	WE-EF	MRY224 LED II	BOLLARD LIGHT FIXTURE; COLOR = BLACK	2'-10"	13.5W LED	ASYMMETRIC	844	0.90	0°	115-9801.IES	115-980				
	E3*	4	WE-EF	MRY224 LED II	BOLLARD LIGHT FIXTURE; DIMMED @ 40% (SEPARATE CIRCUIT) COLOR = BLACK	2'-10"	13.5W LED	ASYMMETRIC	844	0.90	0°	115-9801.IES	115-980				
	E4	13	WE-EF	FLC311 SURFACE MOUNTED	COLUMN MOUNTED ACCENT LIGHT; COLOR = BLACK	7'-6"	11W LED	-	836	0.90	0°	145-7637.IES	145-7637 INCLUDE: 145-7785 (SNOOT) 145-7784 (GLARE SHIELD) 145-9536 (FLAT SURFACE AND COLUMN FITTER)				
	E5	2	WE-EF	FLC210 LED	POLE MOUNTED SINGLE AREA LIGHT FIXTURE; COLOR = BLACK	12'-0"	13.9W LED	-	1212	0.90		139-2391_us.IES	139-2704 (SINGLE POLE CLAMP) INCLUDE: 139-2407 (SNOOT) 139-2408 (GLARE SHIELD)	LUMCA POLE	ROUND STRAIGHT ALUMINUM POLE	15'-0"	AP04-HD15-WB11-4-BK
	E5*	8	WE-EF	FLC210 LED	POLE MOUNTED TWIN AREA LIGHT FIXTURE; COLOR = BLACK	12'-0"	13.9W LED	-	1212	0.90	REFER TO PLAN	139-2391_us.IES	139-2704 (SINGLE POLE CLAMP) INCLUDE: 139-2407 (SNOOT) 139-2408 (GLARE SHIELD)	LUMCA POLE	ROUND STRAIGHT ALUMINUM POLE	15'-0"	AP04-HD15-WB11-4-BK (TWIN FIXTURE)
	E6*	46	Q-TRAN	THIN-FLAT (01)	RECESSED MOUNTED UNDER BENCH; DIMMED @ 50% (SEPARATE CIRCUIT) COLOR = SATIN	1'-5"	1.44W LED	-	185	0.85	0°	TH1SW-1_5HE-30-DRY-STD-FR-ST.IES	TH1SW-1.5-27-WET-STD-FR-ST.IES				
	E6	15	Q-TRAN	THIN-FLAT (01)	RECESSED MOUNTED UNDER BENCH COLOR = SATIN	1'-5"	1.44W LED	-	185	0.85	0°	TH1SW-1_5HE-30-DRY-STD-FR-ST.IES	TH1SW-1.5-27-WET-STD-FR-ST.IES				
	E7	8	WE-EF	RLS410 LED	WALL MOUNTED LIGHT FIXTURE; COLOR = BLACK	8'-0" ABOVE FFE	7.5W LED	-	510	0.90	0°	131-9601_us.IES	131-9601			N/A	
	E8	34	KLJK USA	KLJK LED POD XL32	CANOPY DOWNLIGHT; COLOR = BLACK	11'-0"	6.10W LED	SYMMETRIC	368	0.50	0°	LP0DXL32F-Dir-FL-W-SymRef-500.IES	LP0DXL32F-Dir-FL-W-SymRef-500				

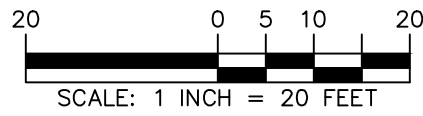
- NOTES:
- REFER TO ELECTRICAL DRAWINGS FOR SITE LIGHTING VOLTAGES AND ELECTRICAL LAYOUTS.
  - FINAL LOCATION OF BUILDING MOUNTED FIXTURES TO BE COORDINATED WITH ARCHITECTURAL PLANS.
  - FIXTURES TO ADHERE TO THE CRITERIA FOR DARK SKY COMPLIANCE SET FORTH BY THE INTERNATIONAL DARK SKY ASSOCIATION.
  - ALL MOUNTING METHODS, CONDUITS, WIRING AND THE SUPPLY OF THE CORRECT ELECTRICAL POWER IN ACCORDANCE WITH ALL LOCAL CODES IS THE RESPONSIBILITY OF THE INSTALLER.
  - MINIMAL TREE ACCENT LIGHTING WILL BE PROVIDED IN CERTAIN AREAS AT A FUTURE DATE.
  - CONTRACTOR TO CONFIRM CONTROLS SYSTEM REQUIRED BY THE OWNER AND PER CODE. BID PRICING SHALL INCLUDE SYSTEM. EXTERIOR LIGHTING WILL RESPOND TO MOTION SENSORS AND PHOTOCELL AND /OR TIMECLOCK WITH MANUAL OVERRIDE AT A CENTRAL LOCATION. PROVIDE SEPARATE CIRCUITS FOR GROUPINGS OF DIMMED FIXTURES PER PLAN.

### STATISTICS

DESCRIPTION	AVG.	MAX.	MIN.	MAX/MIN.	AVG/MIN.
DRIVE AND PARKING - VEHICULAR	1.2 FC	3.4 FC	0.2 FC	17.0:1	6.0:1
SOUTH PATH - PEDESTRIAN	0.2 FC	1.4 FC	0.0 FC	N/A	N/A
NORTH EAST PATH - PEDESTRIAN	0.2 FC	0.5 FC	0.1 FC	2.0:1	5.0:1
EAST EGRESS - PEDESTRIAN	1.7 FC	5.8 FC	1.0 FC	1.7:1	5.8:1
WEST EGRESS - PEDESTRIAN	5.0 FC	21.9 FC	1.1 FC	4.5:1	19.9:1
PROPERTY LINE	0.0 FC	0.1 FC	0.0 FC	N/A	N/A

NOTE: LIGHT PHOTOMETRY AND CALCULATIONS FOR EXISTING AND ADJACENT LIGHTING TO REMAIN ARE NOT INCLUDED IN THE ABOVE STATISTICS.

**NOTE:**  
LIGHTING LAYOUT BASED ON PLANS PREPARED  
BY JAMES CLOTFELTER, LIGHTING DESIGN,  
DATED JANUARY 31, 2024.



Date	Description	No.
Revisions		
SIGNATURE: MICHAEL SZURA N.J. LICENSED LANDSCAPE ARCHITECT LICENSE NO. A500B15		
DATE		
<b>LANGAN</b> Langan Engineering and Environmental Services, Inc. 300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400		
Project		
<b>BEACON UNITARIAN UNIVERSALIST CHURCH</b> SUMMIT NEW JERSEY		
Drawing Title		
<b>LIGHTING PLAN</b>		
Project No.	Drawing No.	
101007201	LL101	
Date	FEBRUARY 9, 2024	
Drawn By	GR	
Checked By	DB	
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