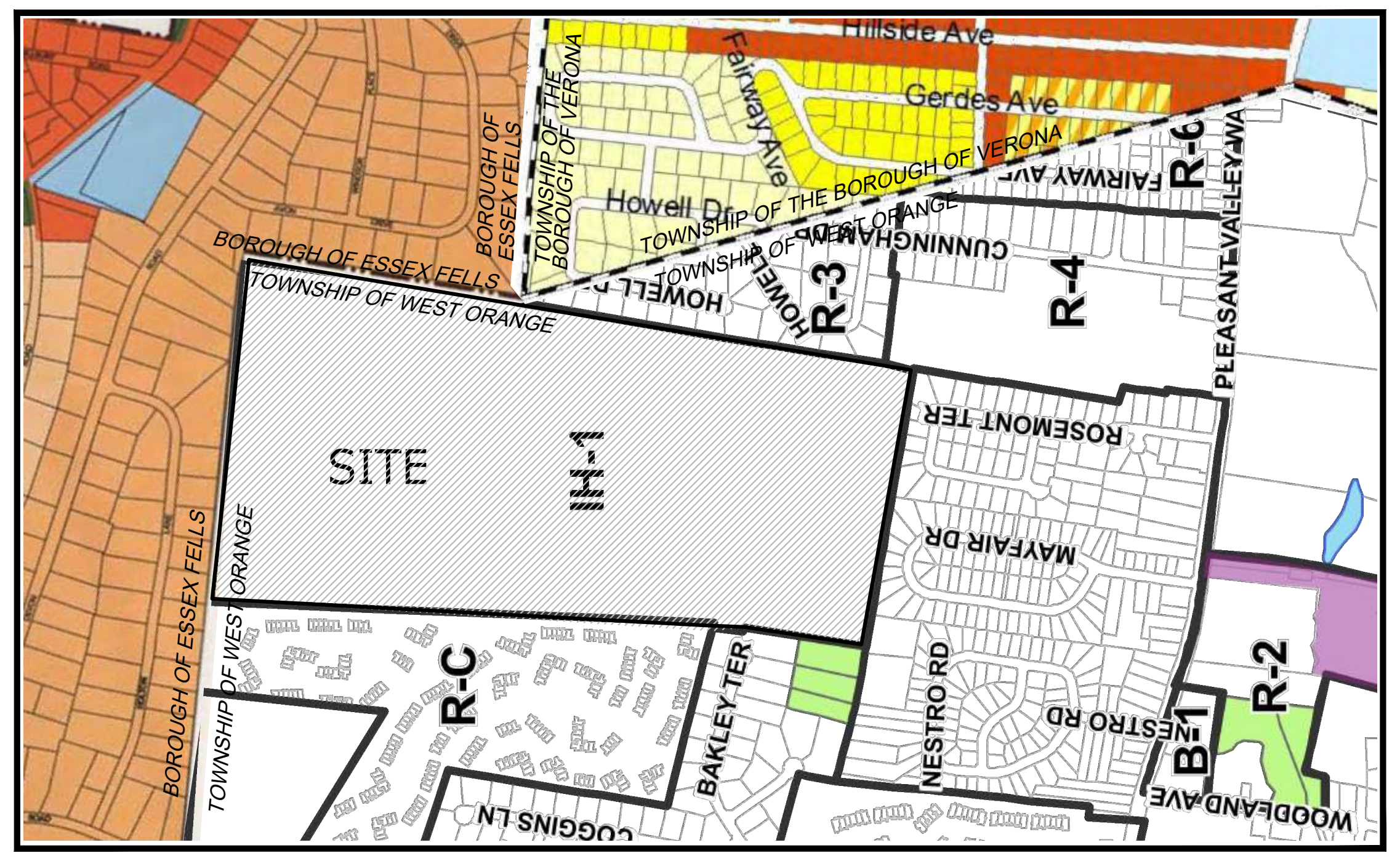
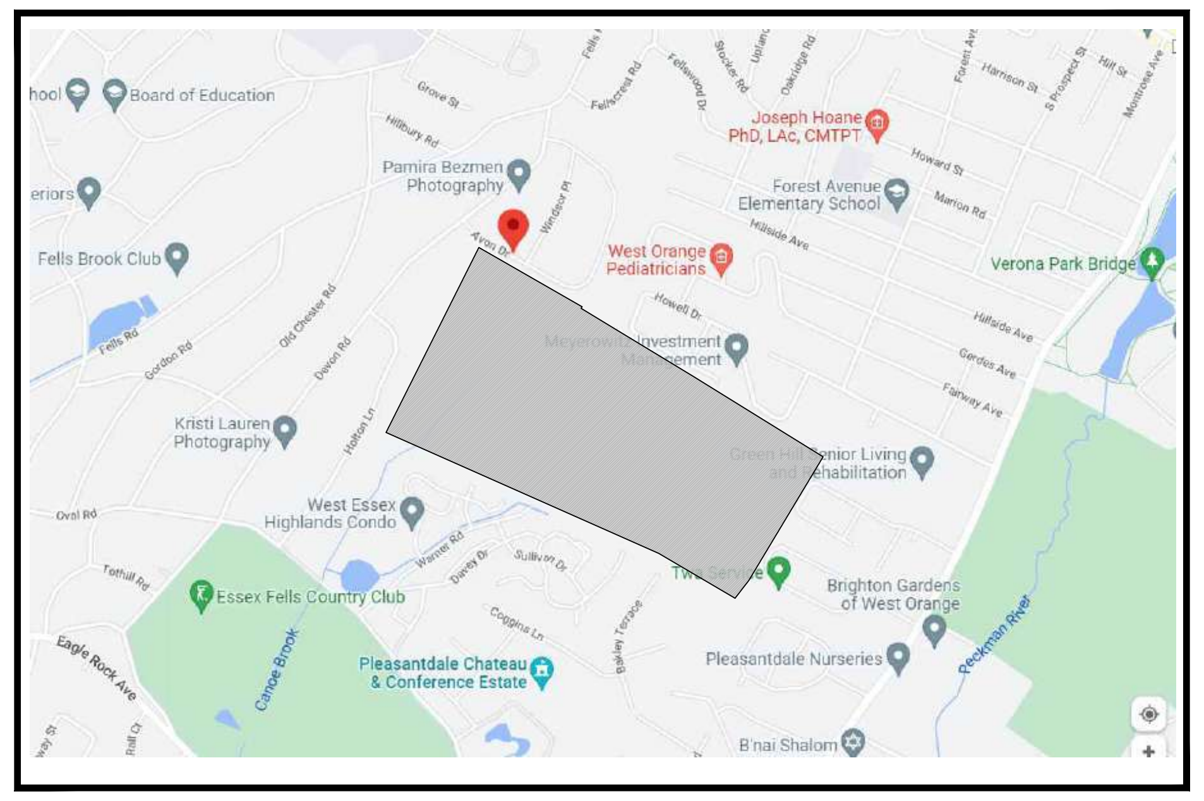


SOURCE:

ZONING MAP
N.T.S.

SOURCE:
TWP. OF WEST ORANGE ZONING MAP
BOROUGH OF ESSEX FELLS ZONING MAP
TWP. OF VERONA ZONING MAP

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOTS 32
TAX MAP # 130
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY


Board of Education
Joseph Hoane PhD, LAC, CMTFT
Plemins Bozmen Photography
Fenoll Avenue Elementary School
Fells Brook Club
West Orange Pediatricians
Verona Park Bridge
Kristi Lauren Photography
West Essex Highlands Condo
Senior Living & Rehabilitation
Essex Fells Country Club
Brighton Gardens of West Orange
Pleasantdale Chateau & Conference Estate
Pleasantdale Nurseries
B'nai Shalom

SOURCE: GOOGLE MAP

STREET MAP
N.T.S.

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SP-63	BOARDWALK PROFILE
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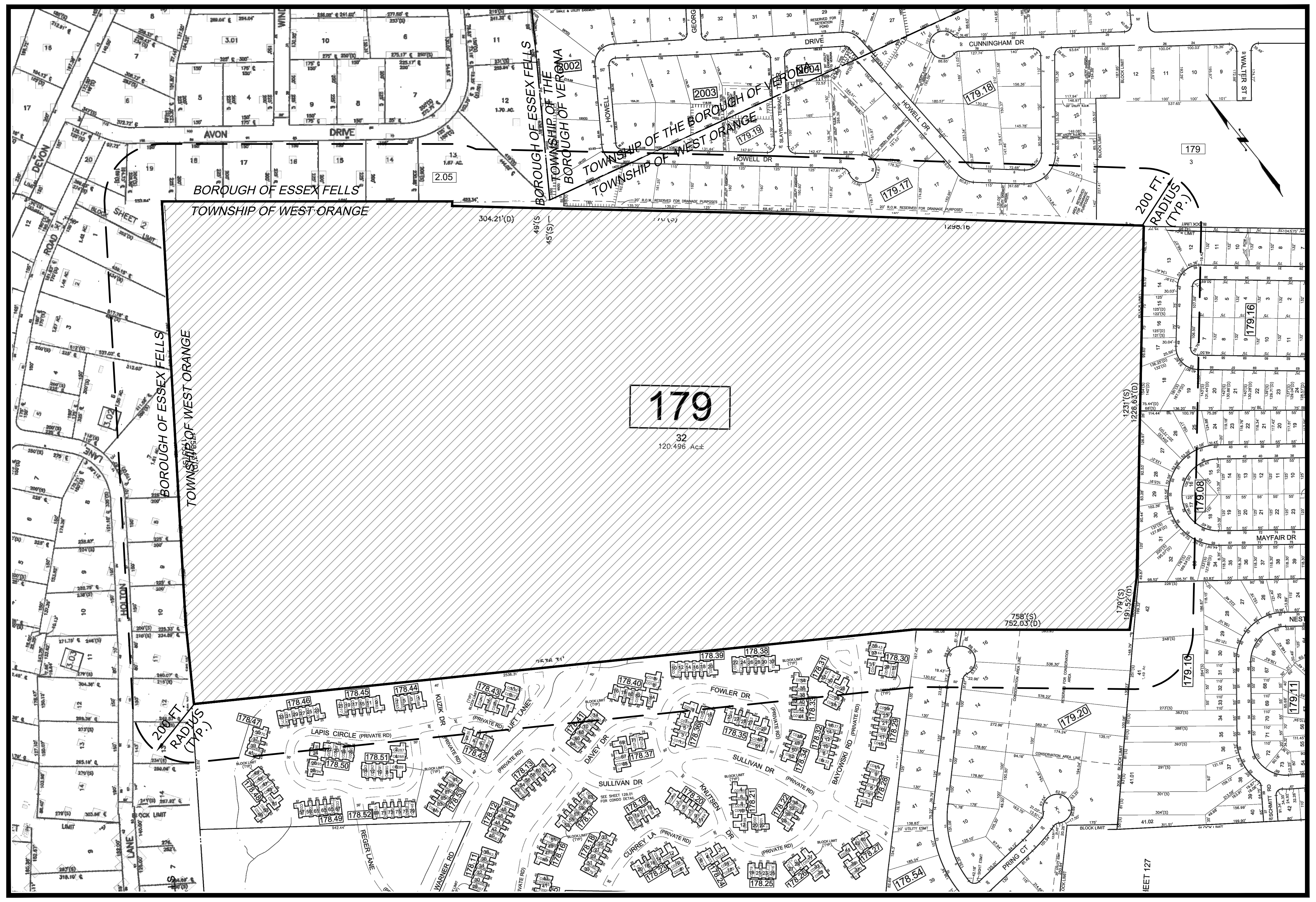
SP-65	CONSTRUCTION DETAILS B
SP-66	NJ AMERICAN WATER DETAILS



SOURCE:
TAX MAP # 128,129,130,131,132,133 – TWP. OF WEST ORANGE
TAX MAP # 2,3,4 – BOROUGH OF ESSEX FELLS
TAX MAP #20 – TWP. OF VERONA

TAX MAP
SCALE: 1"= 300'

OWNER

WEST ESSEX HIGHLANDS, INC.
820 MORRIS TURNPIKE
SHORT HILLS, NJ 07078
973-467-5000

APPLICANT

WEST ESSEX HIGHLANDS, INC.
820 MORRIS TURNPIKE
SHORT HILLS, NJ 07078
973-467-5000

PLANNING BOARD APPROVALS

PLANNING BOARD CHAIRMAN DATE

PLANNING BOARD SECRETARY DATE

TOWNSHIP ENGINEER DATE

MAP REFERENCE:

1. TOPOGRAPHIC INFORMATION BASED ON SURVEY ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY" TAX LOTS 1, 2.04, & 3 – BLOCK 161 TAX LOT 3.01 – BLOCK 161, 1701–1711 ROUTE 10, TOWNSHIP OF MORRIS PLAINS, MORRIS COUNTY, NEW JERSEY" DATED 1/15/16 AND LAST REVISED 1–20–20 PREPARED BY LAKELAND SURVEYING, ROCKAWAY NJ. SIGNED BY MARC J. CIFONE, PLS
2. VERTICAL DATUM IS NAVD 1988
3. NGVD29 TO NGVD1988 = + 1.03 FT
4. FRESHWATERS WETLANDS/BOUNDARY LINE AS VERIFIED BY NJDEP FILE No. 1423–07–0001.1, FWWW190001

Know what's below. Call before you dig.

NEW JERSEY STATE LAW REQUIRES NOTIFICATION 3 BUSINESS DAYS PRIOR TO ANY LAND DISTURBANCE. CONTRACTOR IS RESPONSIBLE FOR CALLING 811 OR 1–800–272–1000 FOR UTILITY MARKOUTS. UTILITY INFORMATION SHOWN IS PROVIDED BY THE SURVEYOR AND IS CURRENT AT THE TIME OF THE SURVEY. ANDERSON CONSULTING SERVICES IS NOT RESPONSIBLE FOR THE ACCURACY OF THE DATA.

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410
SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.

10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS
Revisions	

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CERTIFICATE OF AUTHORIZATION
24GA28182400

ACS
Anderson Consulting Services LLC
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www.pwanderson-cs.com

Proj. No.	WEMF2022
Date	9–23–22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

COVER SHEET

SP-1

SHEET 1 OF 66

THE FOLLOWING CERTIFIED LISTS OF PROPERTY OWNERS WITHIN 200 FEET OF THE SUBJECT PROPERTY MUST BE NOTIFIED PRIOR TO BEGINNING ANY CONSTRUCTION ON THE PREMISES

Parcel Limits (4)

Municipality	Block	Lot	Qualifier	Location	Owner	Owner Street	Owner CityState	Owner Zip
Verona Township	2002	6		46 HOWELL DRIVE	ROSS, CHRISTOPHER & ROSS LOREN	46 HOWELL DRIVE	VERONA,NJ	07044
Verona Township	2002	7		48 HOWELL DRIVE	GARDEN HOMES REALTY CORP.	820 MORRIS TURNPIKE	SHORT HILLS, NEW JERSEY	07078
Verona Township	2002	8		ASSESSED IN WEST ORANGE	UNKNOWN	HOWELL DRIVE	WEST ORANGE, NEW JERSEY	07052
Verona Township	2002	9		ASSESSED IN WEST ORANGE	FETISOV, VIACHESLAV & LADLENA	65 AVON DRIVE	ESSEX FELLS, NEW JERSEY	07021

BLOCK	LOT	QUALIFIER	PROPERTY_LOCATION	PROPERTY_	PROPERTY_	OWNER_OWNER	OWNER_ADDRESS	OWNER_CITYSTATE	OWNER_ZIP
174	1		EAGLE ROCK AVENUE		15C	TOWNSHIP OF WEST ORANGE	66 MAIN STREET	WEST ORANGE NJ	07052
174	1.01		750 EAGLE ROCK AVENUE		4A	CRESTMONT COUNTRY CLUB	750 EAGLE ROCK AVENUE	WEST ORANGE,NEW JERSEY	07052
177.01	25		EAGLE ROCK AVENUE		4A	ESSEX FELLS COUNTRY CLUB	219 DEVON ROAD	ESSEX FELLS, NEW JERSEY	07021
177.03	1		753 EAGLE ROCK AVENUE		2	MEJIA, TELESFORO & CARMELA	25 COOLIDGE AVE	WEST ORANGE, NJ	07052
177.03	3		21 WAKEMAN STREET		2	SMERALDO, PETER & KIM	21 WAKEMAN STREET	WEST ORANGE, N.J.	07052
177.03	4		19 WAKEMAN STREET		2	JOSEPH,PIERRE R+FRANCOIS,BRIGETTE	19 WAKEMAN STREET	WEST ORANGE, NJ	07052
177.03	5		17 WAKEMAN STREET		2	CHAMBERS, STEVEN	17 WAKEMAN STREET	WEST ORANGE, NJ	07052
177.03	6		15 WAKEMAN STREET		2	PADILLA, LUIS	15 WAKEMAN STREET	WEST ORANGE, NJ	07052
177.03	7		13 WAKEMAN STREET		2	LA TORRE, MASSIEL & CARLOS A	13 WAKEMAN ST	WEST ORANGE, NJ	07052
177.03	8		11 WAKEMAN STREET		2	RYFA, CASIMIR & MARGARET	11 WAKEMAN STREET	WEST ORANGE, N.J.	07052

Buffer Report

THE TOWNSHIP OF WEST ORANGE
Office of the Assessor
66 Main Street
West Orange, New Jersey 07052
Telephone: (973) 325-4060
Facsimile: (973) 669-4859

Highlighted feature(s)

Subject Property(s) (5)

Town	Block	Lot	Qualifier	Location	Owner	Owner Address	Owner City/State	Owner Zip
West Orange Township	178.54	45		22 BAKLEY TERR.	SAMSON, ERIC & CORINNE MADONNA	22 BAKLEY TERR.	WEST ORANGE, NJ	07052
West Orange Township	179	32		PLEASANT VALLEY WAY REAR	WEST ESSEX HIGHLANDS INC	820 MORRIS TURNPIKE	SHORT HILLS, N.J.	07078
West Orange Township	179.17	8		62 HOWELL DRIVE	EVERWOOD ESTATES INC	820 MORRIS TURNPIKE	SHORT HILLS, NEW JERSEY	07078
West Orange Township	179.17	9		HOWELL DRIVE	GARDEN HOUSE REALTY CORP	820 MORRIS TURNPIKE	SHORT HILLS, NEW JERSEY	07078
West Orange Township	179.20	16		25 BAKLEY TERR.	DESAI, RAJESH K & RUPAL R	25 BAKLEY TERR	WEST ORANGE, NJ	07052

§

List of adjoining feature(s) that intersect 200 foot buffer from Subject Property(s).

Adjoining Properties (135)

Town	Block	Lot	Qualifier	Location	Owner	Owner Address	Owner City/State	Owner Zip
West Orange Township	178.01	1.01		OVAL ROAD	WEST ESSEX HIGHLANDS	1 REGER LANE	WEST ORANGE, NJ	07052
West Orange Township	178.01	1.01	C0100	70 DAVEY DRIVE	WELLE, SCOTT & RUBY LYNE	70 DAVEY DR	WEST ORANGE, NJ	07052

Town	Block	Lot	Qualifier	Location	Owner	Owner Address	Owner City/State	Owner Zip
Essex Fells Township	2.05	21		63 DEVON ROAD	SINGH, ORIN B	63 DEVON RD	ESSEX FELLS, NJ	07021
Essex Fells Township	3.02	1						
Essex Fells Township	3.02	2		75 DEVON ROAD	MAURILLO, BARRY & SALLY (TRUSTEE)	75 DEVON ROAD	ESSEX FELLS, NJ	07021
Essex Fells Township	3.02	3		83 DEVON ROAD	ANDREWS, STEVEN & NICOLE	83 DEVON RD	ESSEX FELLS, NJ	07021

BLOCK	LOT	PROPERTY_LOCATION	ADDITIONALLOT1	OWNER_OWNER	OWNER_ADDRESS	OWNER_CITYSTATE	OWNER_ZI
2.05	12	65 AVON DRIVE		FETISOV, ANASTASIA ALEXANDRA	1 CENTRAL PARK WEST	NEW YORK,NY	10023
2.05	13	71 AVON DRIVE		LATTARULO, MICHAEL & NICOLINA	71 AVON DR.	ESSEX FELLS, NJ	07021
2.05	14	75 AVON DRIVE		SCHLATTER, BENEDICT & KATHRYN	75 AVON DRIVE	ESSEX FELLS, N.J.	07021
2.05	15	81 AVON DRIVE		HAYDU, JOHN & DENISE	81 AVON DRIVE	ESSEX FELLS, NJ	07021
2.05	16	85 AVON DRIVE		CHNAPKO, JOSEPH & MELISSA	85 AVON DRIVE	ESSEX FELLS, NJ	07021
2.05	17	91 AVON DRIVE		RYAN, JAMES F. JR. & DENE E.	91 AVON DRIVE	ESSEX FELLS, N.J.	07021
2.05	18	99 AVON DRIVE		MAYBAUM, MICHAEL W & CLAIRE D	99 AVON DR	ESSEX FELLS, NJ	07021
2.05	19	105 AVON DRIVE		GROSSMAN, LOREN & AMY	105 AVON DRIVE	ESSEX FELLS, NJ	07021
2.05	20	111 AVON DRIVE		PITA, FERNANDO & MARIANNE	111 AVON DR.	ESSEX FELLS, NJ	07032
2.05	21	63 DEVON ROAD	INCLUDES 3.02/1	SINGH, ORIN B	63 DEVON RD	ESSEX FELLS, NJ	07021
3.02	2	75 DEVON ROAD		MAURILLO, BARRY & SALLY (TRUSTEE)	75 DEVON ROAD	ESSEX FELLS, NJ	07021
3.02	3	83 DEVON ROAD		ANDREWS, STEVEN & NICOLE	83 DEVON RD	ESSEX FELLS, NJ	07021
3.02	6	9 HOLTON LANE		MONNIER, KURT & MICHELLE	9 HOLTON LANE	ESSEX FELLS, N J	07021
3.02	7	13 HOLTON LANE		SOMMERHALTER , ROY W. JR. & PATRICE	13 HOLTON LANE	ESSEX FELLS, NJ	07021
3.02	8	21 HOLTON LANE		FRANKS, SANDRA	21 HOLTON LANE	ESSEX FELLS, NJ	07021
3.02	9	27 HOLTON LANE		CAUGHEY, PATRICK &GERALYN	27 HOLTON LANE	ESSEX FELLS, N. J.	07021
3.02	10	33 HOLTON LANE		MANDIL, DHANNY & ANCHAN, DIVYANGI	33 HOLTON LANE	ESSEX FELLS, NJ	07021
3.02	11	39 HOLTON LANE		SMITH-HOLTON LANE ASSOCIATES, LLC	39 HOLTON LANE	ESSEX FELLS, NJ	07021
3.02	12	45 HOLTON LANE		MILLER, DOUGLAS & BRENNAN ELIZABETH	45 HOLTON LANE	ESSEX FELLS, NJ	07021
3.02	13	51 HOLTON LANE		CRIQUI, DONALD L & MOLLY O	51 HOLTON LA	ESSEX FELLS, N J	07021
3.02	14	57 HOLTON LANE		PANNULLO, SUSAN C	57 HOLTON LANE	ESSEX FELLS, NJ	07021

LIST OF UTILITIES TO BE NOTIFIED

- •New Jersey Bell Telephone Co. Attn: Corporate Secretary
  540 Broad Street Room 1005, Newark, NJ 07101
- •American Telephone & Telegraph Co. Attn:Karl Grossmann
  50 Patricia Drive, Flanders, NJ 07836
- •Public Service Electric & Gas Co. Attn: Manager Corporate Properties
  80 Park Place, T6B, Newark, NJ 07102
- •Passaic Valley Water Commission Attn: Corporate Secretary
  1525 Main Avenue, Clifton, NJ 07011
- •MCI 10 Marcello Ave., Attn: John Scoccola
  West Orange, NJ 07052
- •Comcast Cable
  800 Rahway Avenue, Union, New Jersey 07083

12/12/23, 8:33 AM Properties Near Mun 0722 Block 179 Lot 32 –– VitalGeo

Properties Near Mun 0722 Block 179 Lot 32 In WEST ORANGE TWP

00179 00003	PLEASANT VALLEY WAY	15D	VALLEY HILL PROPERTIES, LLC 755 SECOND AVE NEW YORK, NY 10017
00179 00032	PLEASANT VALLEY WAY REAR	1	WEST ESSEX HIGHLANDS INC 820 MORRIS TURNPIKE SHORT HILLS, N.J. 07078
00179 19 00002	51 HOWELL DRIVE	2	REGISTER, LENNON & CAINES-WHITE, BA 51 HOWELL DR WEST ORANGE, NJ 07052
00179 19 00003	6 SLAYBACK TERRACE	2	DYSON, DUANE & DIEDRE A. DYSON 6 SLAYBACK TERRACE WEST ORANGE, N.J. 07052

Properties Near Mun 0722 Block 179 Lot 32 In ESSEX FELLS BORO

00002 05 00019	105 AVON DRIVE	2	GROSSMAN, LOREN & AMY 105 AVON DRIVE ESSEX FELLS, NJ 07021
00002 05 00020	111 AVON DRIVE	2	PITA, FERNANDO & MARIANNE 111 AVON DR. ESSEX FELLS, NJ 07032

00178 39 00010 C0110	10 FOWLER DRIVE	2	RBS INVESTMENT TRUST, 96532 HEMINGTON LANE FT MYERS, FLORIDA 33913
00178 39 00018 C0114	18 FOWLER DRIVE	2	CHAN, DOROTHY 18 FOWLER DR WEST ORANGE, NJ 07052
00178 39 00020 C0115	20 FOWLER DRIVE	2	GUIDE, JEFFREY B 20 FOWLER DR WEST ORANGE, NJ 07052
00178 42 00002 C0235	2 LUFT LANE	2	RING, LOIS 2 LUFT LANE WEST ORANGE, NJ 07052

00179 07 00033	63 MAYFAIR DRIVE	2
00179 07 00034	65 MAYFAIR DRIVE	2
00179 08 00017	62 MAYFAIR DRIVE	2
00179 08 00018	66 MAYFAIR DRIVE	2
00179 10 00041	NESTRO ROAD-REAR 41.01,41.02	1

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LIC. NO. 33410
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Anderson Consulting Services LLC
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Boonton, NJ 07005
TEl: 973.975.0703
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www.pwanderson-cs.com

Proj. No.	WEMF2022
Date	9-23-22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

200 FT PROPERTY OWNERS

SP-2

SHEET 2 OF 66

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, COUNTY, STATE AND FEDERAL CODES AND STANDARDS. WHERE DISCREPANCIES OCCUR BETWEEN CODES, THE MORE STRINGENT SHALL APPLY.
2. TOPOGRAPHIC AND BOUNDARY INFORMATION BASED ON REFERENCED SURVEY. ADDITIONAL INFORMATION BASED ON RECORD DRAWINGS AND SITE OBSERVATIONS. ALL EXISTING FEATURES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO PROJECT ENGINEER PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
4. PROTECTION OF EXISTING TREES, WALLS, BUILDING FACILITIES, UTILITIES AND OTHER SITE IMPROVEMENTS TO REMAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY DAMAGE DONE TO ENTITIES TO REMAIN SHALL BE REPORTED TO THE PROJECT ENGINEER AND OWNER AND REPLACED AT CONTRACTORS EXPENSE.
5. CONTRACTOR TO PROVIDE TEMPORARY SIDEWALK FACILITIES WHEN NECESSARY DURING CONSTRUCTION. TEMPORARY SIDEWALKS TO COMPLY WITH LOCAL, COUNTY, STATE AND FEDERAL REGULATIONS.
6. CONTRACTOR TO COORDINATE DELIVERY OF MATERIALS WITH THE TOWNSHIP OF WEST ORANGE POLICE DEPARTMENT.
7. ALL AREAS DISTURBED FOR CONSTRUCTION ACTIVITIES INCLUDING BUT NOT LIMITED TO SITE ACCESS, MATERIAL STOCKPILE, CONSTRUCTION TRAILERS ETC. SHALL BE RESTORED TO A SAFE AND SERVICEABLE CONDITION TO THE SATISFACTION OF THE OWNER UPON PROJECT COMPLETION.
8. REFER TO ARCHITECTURAL PLANS FOR BUILDING DESIGN INFORMATION.
9. THE FOLLOWING STANDARD CODES AND SPECIFICATIONS SHALL BE CONSIDERED PART OF THESE DRAWINGS WHERE SUCH SPECIFICATIONS ARE APPLICABLE AND SHALL INCLUDE ALL CURRENT CHANGES AND REVISIONS:
   - NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
   - TOWNSHIP OF WEST ORANGE STANDARDS
   - ESSEX COUNTY DEPARTMENT OF ENGINEERING STANDARDS
   - STATE OF NEW JERSEY UNIFORM CONSTRUCTION CODE
   - HUDSON–ESSEX–PASSAIC SOIL EROSION AND SEDIMENT CONTROL STANDARDS
   - AMERICANS WITH DISABILITIES ACT (ADA)
   - UNITED STATES ACCESS BOARD PUBLIC RIGHT–OF–WAY ACCESS GUIDELINES (PROWAG)

LAYOUT AND MATERIAL NOTES

1. ALL PRODUCTS AND MATERIALS TO COMPLY WITH DESIGNATED DESIGN STANDARDS. NO SUBSTITUTION OR DEVIATION FROM SPECIFIED PRODUCTS OR MATERIALS ALLOWED WITHOUT PRIOR APPROVAL FROM THE DESIGN ENGINEER, ARCHITECT AND OWNER. ANY NON–APPROVED PRODUCTS OR MATERIALS INSTALLED WITHOUT PRIOR APPROVAL SHALL BE REMOVED AND REPLACED AT CONTRACTORS EXPENSE.
2. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND ACTUAL CONDITIONS AT THE SITE SHALL BE REPORTED TO THE PROJECT ENGINEER IMMEDIATELY.
3. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS GOVERNING THE WORK.
4. LAYOUT ALL NEW WORK PRIOR TO CONSTRUCTION FOR PROJECT ENGINEER'S APPROVAL. ANY WORK INSTALLED BY THE CONTRACTOR IN LOCATIONS NOT APPROVED BY THE PROJECT ENGINEER SHALL BE REMOVED BY THE CONTRACTOR AND REPLACED AS PER THE PROJECT ENGINEER'S INSTRUCTIONS AT NO COST TO THE OWNER.
5. ALL LAYOUT WORK SHALL BE DONE BY A LAND SURVEYOR LICENSED IN THE STATE OF NEW JERSEY.
6. PROTECTION OF EXISTING UTILITIES AND OTHER SITE IMPROVEMENTS TO REMAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY FACILITIES THAT ARE TO REMAIN THAT ARE DAMAGED DURING THE COURSE OF THE WORK SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER AND PROJECT ENGINEER.
7. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL SITE IMPROVEMENTS AND MATERIALS FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION.
8. THE CONTRACTOR SHALL COORDINATE HOURS AND LOCATIONS OF WORK WITH THE OWNER AND ENGINEER. ACCESS TO ALL BUILDINGS MUST BE MAINTAINED DURING OPEN HOURS. PROVIDE TEMPORARY WALKWAYS AS REQUIRED.
9. ALL WALKWAYS AND CURB RAMPS TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA) AND THE AMERICAN ACCESS BOARD PUBLIC RIGHT–OF–WAY GUIDELINES (PROWAG).
10. CONTRACTOR TO COORDINATE ANY WORK OR DELIVERIES WITHIN ROADWAY RIGHT–OF–WAY WITH WEST ORANGE POLICE DEPARTMENT AS NECESSARY.
11. ALL CURB RAMPS, RAMPS AND ACCESS ROUTES SHALL COMPLY WITH ALL ADA REQUIREMENTS. ANY RAMP EXCEEDING 6" RISE SHALL HAVE HANDRAILS.
12. ALL STOP SIGNS ON SITE SHALL BE STANDARD MUTCD SPECIFICATION 30"X30".
13. ALL CURBING SHALL BE BELGIAN BLOCK UNLESS NOTED

PAVEMENT MARKINGS:

STRIPING, PAVEMENT MARKINGS, AND TRAFFIC CONTROL SIGNS SHALL BE THERMOPLASTIC PAINT IN ACCORDANCE WITH THE CURRENT EDITION OF THE MUTCD AND N.J.D.O.T. ROAD AND BRIDGE SPECIFICATIONS.

ACCESS DRIVES – DOUBLE YELLOW 4" CENTER OF 2–WAY ALL ACCESS DRIVES
PARKING STRIPING – WHITE 4" WIDE AT ANGLE AND DIMENSIONS SHOWN
– SPACES TO BE 18" HAIRPIN DESIGN
ACCESSIBLE PARKING – BLUE 4" WIDE, STALLS AS SHOWN, OTHER STRIPPING 4" WIDE @ 2'–0" O.C. @ 45° (AS SHOWN).
STOP LINES – WHITE 24" WIDE EXTENDING ACROSS APPROACH LANE.
FIRE/NO PARKING – YELLOW 4" WIDE @ 5'–0" O.C. @ 45° TO CURBLINE.

FIRE LANE MARKINGS AND SIGNAGE SHALL BE AS PER WEST ORANGE FIRE DEPARTMENT STANDARDS AND AS DIRECTED BY FIRE MARSHALL

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GRADING NOTES:

1. THE CONTRACTOR SHALL BLEND ALL NEW EARTHWORK SMOOTHLY INTO EXISTING, PROVIDING VERTICAL CURVES OR ROUNDING AT ALL TOP AND BOTTOM OF SLOPES.
2. THE CONTRACTOR SHALL VERIFY ALL EXISTING GRADES IN THE FIELD PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ARCHITECT/ENGINEER.
3. ALL AREAS ADJACENT TO BUILDING LINES SHALL BE GRADED TO DRAIN AWAY FROM THE BUILDING TO PREVENT PONDING. ALL FINISH GRADE SURFACES SHALL BE FREE FROM IRREGULAR GRADE CHANGES.
4. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING CUT AND FILL CALCULATIONS TO DETERMINE SITE REQUIREMENTS. FAILURE TO DO SO SHALL BE AT THE CONTRACTOR'S RISK AND COST.
5. ALL SUBGRADES TO BE CROWNED AND SLOPED TO PROVIDE DRAINAGE OF THE BASE COURSE TO GRANULAR BACKFILLED UTILITY TRENCHES AND UNDERDRAINS.
6. CONTRACTOR IS RESPONSIBLE FOR DEWATERING OF ALL EXCAVATION AREAS.
7. ALL TOPSOIL IS TO BE REMOVED FROM CONSTRUCTED AREAS.
8. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES IN AREA OF CONSTRUCTION. SHOULD A CONFLICT WITH EXISTING UTILITIES BE IDENTIFIED, CONTRACTOR SHALL NOTIFY PROJECT ENGINEER PRIOR TO PROCEEDING WITH WORK.
9. ALL SIDEWALKS TO BE MAXIMUM 2% CROSS SLOPE
10. SEE SOIL EROSION AND SEDIMENT CONTROL PLANS FOR STABILIZATION OF ALL EXPOSED SOIL AREAS.

UTILITY NOTES:

1. ANY UTILITIES SHOWN ON THESE PLANS NOT SHOWN ON THE ORIGINAL SIGNED SURVEY HAVE BEEN ADDED BY THE DESIGNER BASED ON FIELD OBSERVATIONS AND RECORD DRAWINGS. SUCH UTILITIES ARE NOT VERIFIED AND CONSIDERED TO BE APPROXIMATE. USE OF THESE ELEMENTS WITHOUT FIELD VERIFICATION IS DONE SO AT THE CONTRACTORS RISK.
2. CONTRACTOR SHALL VERIFY TYPE, LOCATION AND DEPTH OF ALL EXISTING UTILITIES INCLUDING ANY NOT SHOWN ON THESE PLANS AS WELL AS ANY PREVIOUSLY ABANDONED UTILITIES PRIOR TO CONSTRUCTION.
3. BUILDING SERVICE CONNECTIONS SHALL BE COORDINATED WITH PROJECT ARCHITECT AND PROJECT MEP ENGINEER.
4. GAS SERVICE LINE WORK SHALL BE COORDINATED WITH GAS COMPANY. ALL WORK SHALL COMPLY WITH GAS COMPANY DETAILS AND SPECIFICATIONS.
5. WATER SERVICE WORK SHALL COMPLY WITH WATER COMPANY DETAILS AND SPECIFICATIONS FOR ALL LINES, VALVES, HYDRANTS ETC. CONTRACTOR TO SUPPLY SHOP DRAWINGS FOR ALL WATER SERVICE MATERIALS FOR APPROVAL BY WATER COMPANY AND PROJECT ENGINEER.
6. WORK WITHIN RIGHT–OF–WAYS SHALL COMPLY WITH TOWNSHIP OF WEST ORANGE STANDARDS
7. SANITARY CONNECTION TO BE COORDINATED WITH BUILDING PLUMBING DRAWINGS.
8. ROOF LEADER/STORM LINE CONNECTION SHALL BE COORDINATED WITH ARCHITECTURAL/PLUMBING PLANS.
9. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL INLETS, PIPES AND DRAINAGE SYSTEMS FOR APPROVAL.
10. TRAFFIC RATED MANHOLES OR CLEANOUT COVERS SHALL BE USED IN ALL PAVEMENT AREAS
11. ANY INLET CURB PIECES OR GRATES ON SITE THAT DO NOT CONFORM WITH BOROUGH DEP PERMIT ARE TO BE REMOVED AND REPLACED WITH NEW PIECES CONFORMING TO BOROUGH AND NJDEP STANDARDS.
12. PAVEMENT MILLINGS ARE NOT PERMITTED AS ACCEPTABLE TRENCH BACKFILL MATERIAL

TREE REPLACMENT CALCULATION

THE EXISTING TREE COUNT ON THE TRACT SHALL BE ESTABLISHED AT 212 TREES PER ACRE.

TREE BASELINE LOSS = ACRES DISTURBED X 212 TREES

27.5 ACRES X 212 = 5,830 TREES

TREE BASELINE LOSS SHALL BE REDUCED FOR EACH HEALTHY MAJOR TREE (GREATER THAN SIX INCHES) WITHIN THE PROPOSED AREA OF DISTURBANCE THAT IS NOT REMOVED IN CONNECTION WITH A PROPOSED DEVELOPMENT.

TREES NOT REMOVED = 0 TREES

TREE BASELINE LOSS SHALL BE REDUCED FOR EACH NONINVASIVE MAJOR TREE OR MINOR TREE (AS DEFINED IN THE TOWNSHIP OF WEST ORANGE CODE) PROPOSED AS PART OF A LANDSCAPE PLAN. THE TREE REPLACEMENT CALCULATION SHALL APPLY ONE CREDIT FOR EACH SUCH TREE WHICH IS A NATIVE SPECIES AND 1/4 CREDIT FOR EACH SUCH TREE WHICH IS NOT A NATIVE SPECIES.

PROPOSED NATIVE = 288 TREES X 1.0 = 288 CREDITS
PROPOSED NON–NATIIVE = 0 TREES X 0.25 = 0 CREDITS

THE TREE BASELINE LOSS SHALL BE REDUCED BY 212 TREES FOR EACH ACRE OF FOREST OUTSIDE THE AREA OF DISTURBANCE ENCLOSED BY A CONTROLLED, GATED ACCESS DEER FENCE THAT IS EIGHT FEET IN HEIGHT, THE PURPOSE OF WHICH IS TO REGENERATE THE GROWTH OF THE NATIVE FOREST, AND WHICH DEER FENCING SHALL BE MAINTAINED IN PERPETUITY.

ACRES OF FENCING = 33.6 ACRES X 212 = 7,123 CREDIT

ADJUSTED BASELINE TREE LOSS

TREE LOSS	5,830 TREES
TREE SAVED	0 TREES
PROPOSED TREE CREDIT	288 CREDIT
DEER FENCE CREDIT	7,123 TREES
REQUIRED REPLACEMENT	+1,581 OVER REQUIREMENT

ZONING SCHEDULE

PROPERTY INFO	ZONE: IH–1 (INCLUSIONARY HOUSING DISTRICT) BLOCK 179, LOT 32 TAX MAP #130			
ADDRESS	–			
	REQUIRED/ PERMITTED	**EXISTING CONDITIONS**	**PROPOSED**	**STATUS**
PERMITTED USE(§25-19.d)	MULTIFAMILY RESIDENTIAL OPEN SPACE	VACANT	MULTIFAMILY RESIDENTIAL	CONFORMS
LOT REQUIREMENTS				
MIN. LOT AREA	NO REQUIREMENT	5,245,870 SF/120.429 AC	NO CHANGE	CONFORMS
MAX. DISTURBANCE	30 ACRES	N/A	28.35 Acres	CONFORMS
BUFFER	100 FT	N/A		
BUILDING REQUIREMENTS (13-5.1D SCHEDULE "D")				
TOTAL UNITS	496	N/A	496	CONFORMS
AFFORDABLE UNITS	20% TOTAL UNITS	99,2	100	CONFORMS
MAX. STORIES	4 STY	N/A	4 STY	CONFORMS
MAX HEIGHT	75 FT	N/A	47.5 FT (BLDG D)	CONFORMS
PARKING AND LOADING REQUIREMENTS				
QUANTITY	968 SPACES	N/A	1,035	CONFORMS
SPACE SIZE	–	N/A	9' X 18'	–
SIGN REQUIRMENTS ()				
DEVELOPMENT SIGN	10'X8'			
IDENTIFICATION SIGN				
BUILDING SIGN				

BUILDING TYPE 1		4 STORIES RESIDENTIAL				
		1 STORY PARKING UNDER				
BUILDING A.1	Bedrooms	#	RSIS	REQ.		
	1	17	1.8	30.6		
	2	29	2	58		
	3	17	2.1	35.7		
	TOTAL	63		124.3		
BUILDING A.2	Bedrooms	#	RSIS	REQ.		
	1	13	1.8	23.4	PARKING PROVIDED	
	2	25	2	50	UNDER BUILDING PARKING	175
	3	21	2.1	44.1	SURFACE LOT PARKING	90
	TOTAL	59		117.5		265
BUILDING TYPE 2		4 STORIES RESIDENTIAL				
		1 STORY PARKING UNDER				
BUILDING B	Bedrooms	#	RSIS	REQ.		
	1	27	1.8	48.6	PARKING PROVIDED	
	2	22	2	44.0	UNDER BUILDING PARKING	73
	3	20	2.1	42.0	SURFACE LOT PARKING	68
	TOTAL	69		134.6		141

BUILDING TYPE 3		4 STORIES RESIDENTIAL				
150 UNITS		1 STORY PARKING UNDER				
BUILDING C	Bedrooms	#	RSIS	REQ.		
	1	59	1.8	106.2	PARKING PROVIDED	
	2	56	2	112.0	UNDER BUILDING PARKING	205
	3	24	2.1	50.4	SURFACE LOT PARKING	84
	TOTAL	139		268.6		289
BUILDING TYPE 4		4 STORIES RESIDENTIAL				
		1 STORY PARKING UNDER				
BUILDING D.1	Bedrooms	#	RSIS	REQ.		
	1	35	1.8	63.0	PARKING PROVIDED	
	2	31	2	62.0	UNDER BUILDING PARKING	147
	3	14	2.1	29.4	SURFACE LOT PARKING	45
	TOTAL	80		154.4		192
BUILDING D.2	Bedrooms	#	RSIS	REQ.		
	1	32	1.8	57.6	PARKING PROVIDED	
	2	43	2	86.0	UNDER BUILDING PARKING	146
	3	11	2.1	23.1	SURFACE LOT PARKING	45
	TOTAL	86		166.7		191

OVERALL DEVELOPEMENT SUMMARY

APARTMENT BUILDING DATA				APARTMENT PARKING PROVIDED			
BUILDING	BUILDING TYPE	UNITS	PARKING REQ.	UNDER BLDG.	SURFACE PARKING	TOTAL PER BLDG.	TOTAL
A.1	1	63	124.3	87	45	132	265
A.1	1	59	117.5	88	45	133	
B	2	69	134.6	73	68	141	141
C	3	139	268.6	205	84	289	289
D.1	4	80	154.4	147	45	192	383
D.2	4	86	166.7	146	45	191	
TOTALS		496	966.1	642	335	1,078	1,078

NOTE:
1. BEDROOM DISTRIBUTION SHOWN IS FOR CALCULATION OF PARKING REQUIREMENT ONLY. ACTUAL BEDROOM DISTRIBUTION MAY VARY EXCEPT FOR COAH UNITS WHICH WILL FOLLOW THE SETTLEMENT AGREEMENT.
2. EV PARKING SPACES WILL BE PROVIDED FOR 5 % OF THE TOTAL PARKING ON SITE.
3. MODEL UNITS AND SUPERINTENDENTS UNITS WILL NOT COUNT TOWARDS THE UNIT COUNT
4. CLUBHOUSE PARKING IS INCLUDED IN UNIT COUNT AS CLUBHOUSE IS FOR RESIDENTS OF THE DEVELOPMENT ONLY.
5. IN ADDITION TO THE REQUIRED PARKING FOR THE BUILDINGS, THE PROJECT HAS 55 PARKING SPACES IN THE CLUBHOUSE PARKING LOT, 40 SPACES AVAILABLE FOR OVERFLOW PARKING AT THE CLUBHOUSE IN BUILDING C LOWER LEVEL PARKING GARAGE, AND 18 PARKING SPACES FOR THE DOG PARK AND MAINTENANCE BUILDINGS. SEE NOTE 4 ABOVE.

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410
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10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
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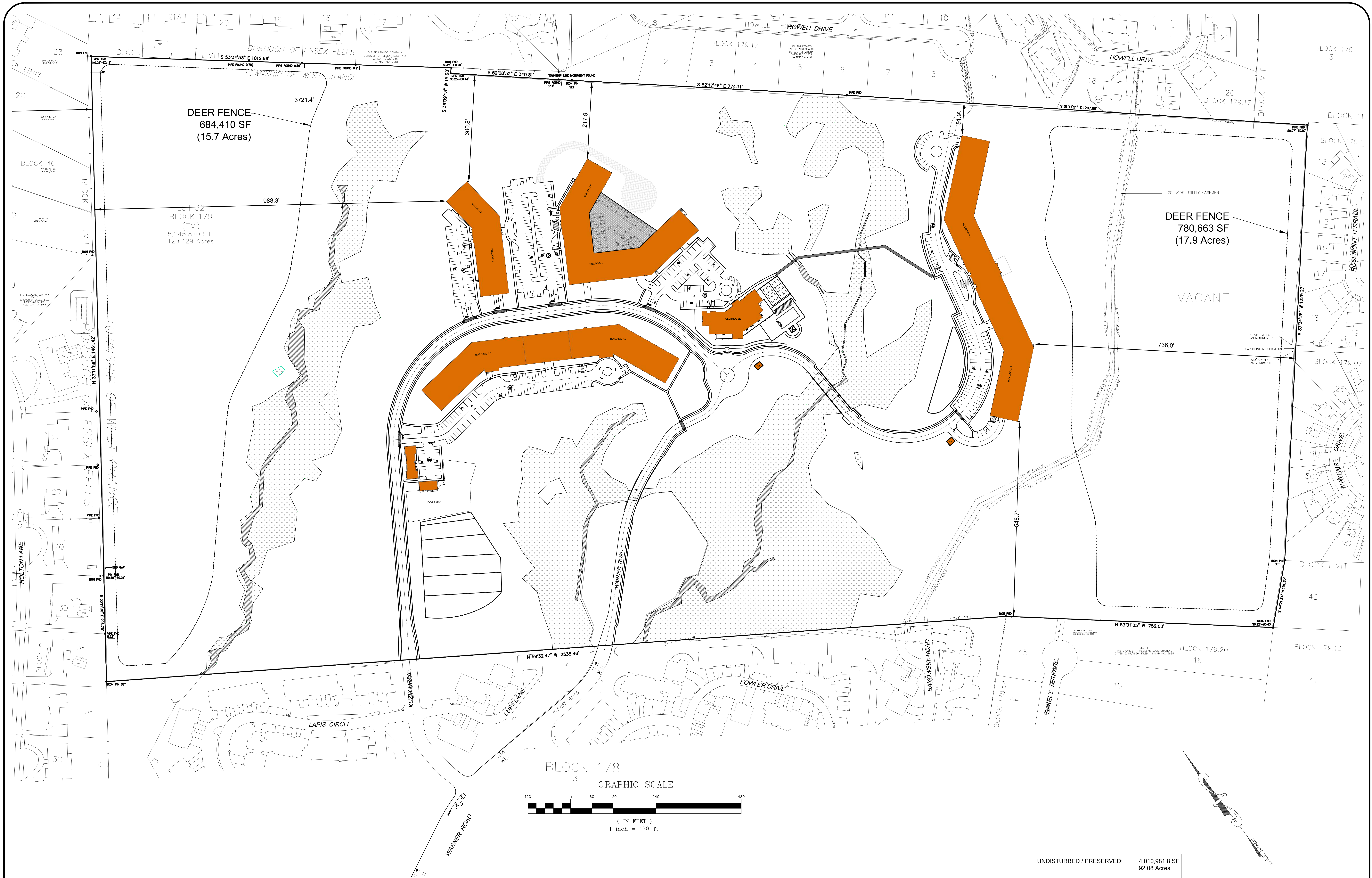
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

NOTES AND ZONING

SP-3



UNDISTURBED / PRESERVED:	4,010,981.8 SF 92.08 Acres
DISTURBED:	1,234,888.2 SF 28.35 Acres
TOTAL IMPERVIOUS:	619,951.3 SF 14.23 Acres
MOTOR VEHICLE SURFACE AREA:	257,012 SF 5.84 Acres

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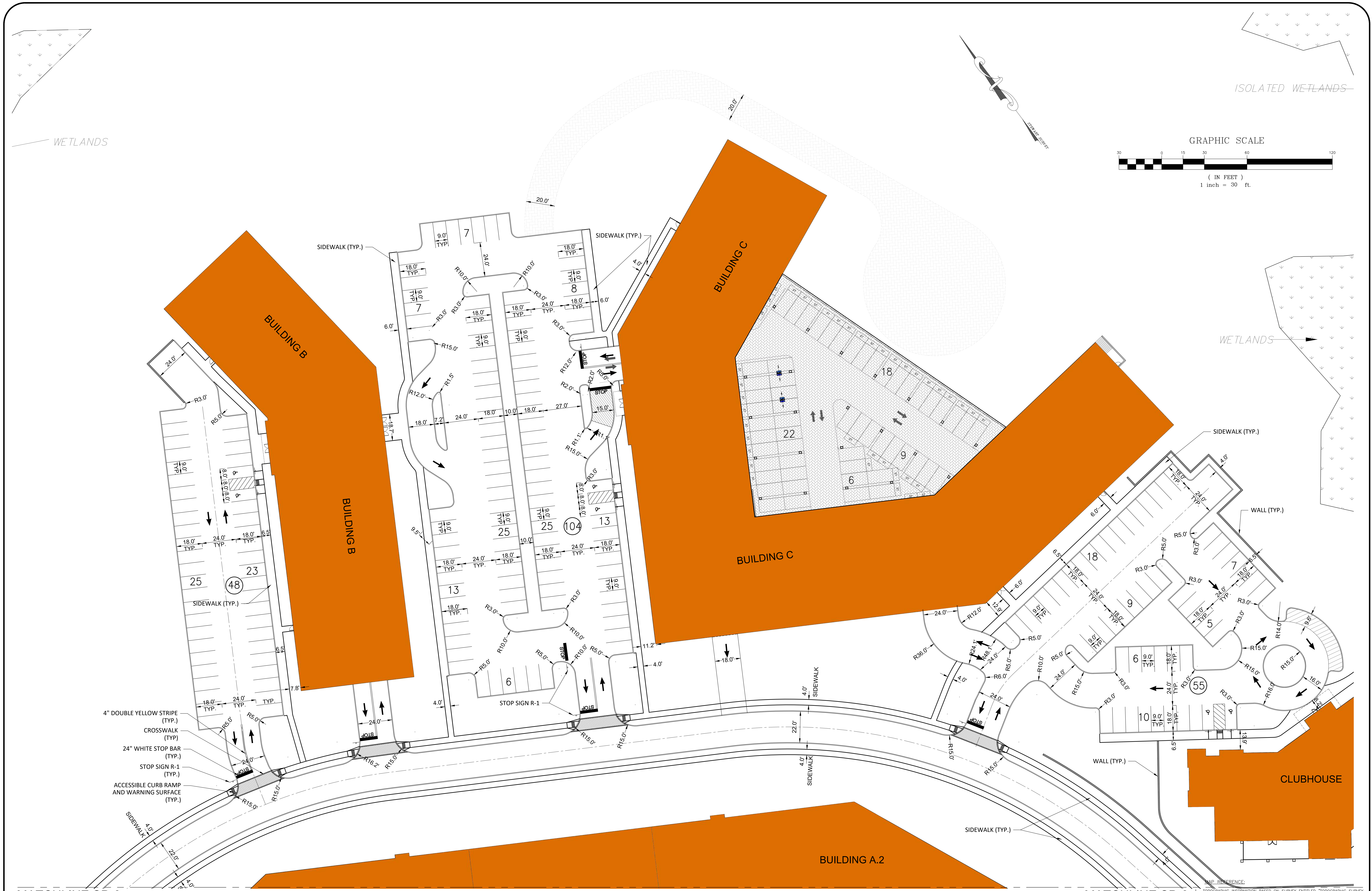
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

OVERALL SITE PLAN

SP-4

SHEET 4 OF 66



MATCHLINE SP-6

MATCHLINE SP-6

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TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

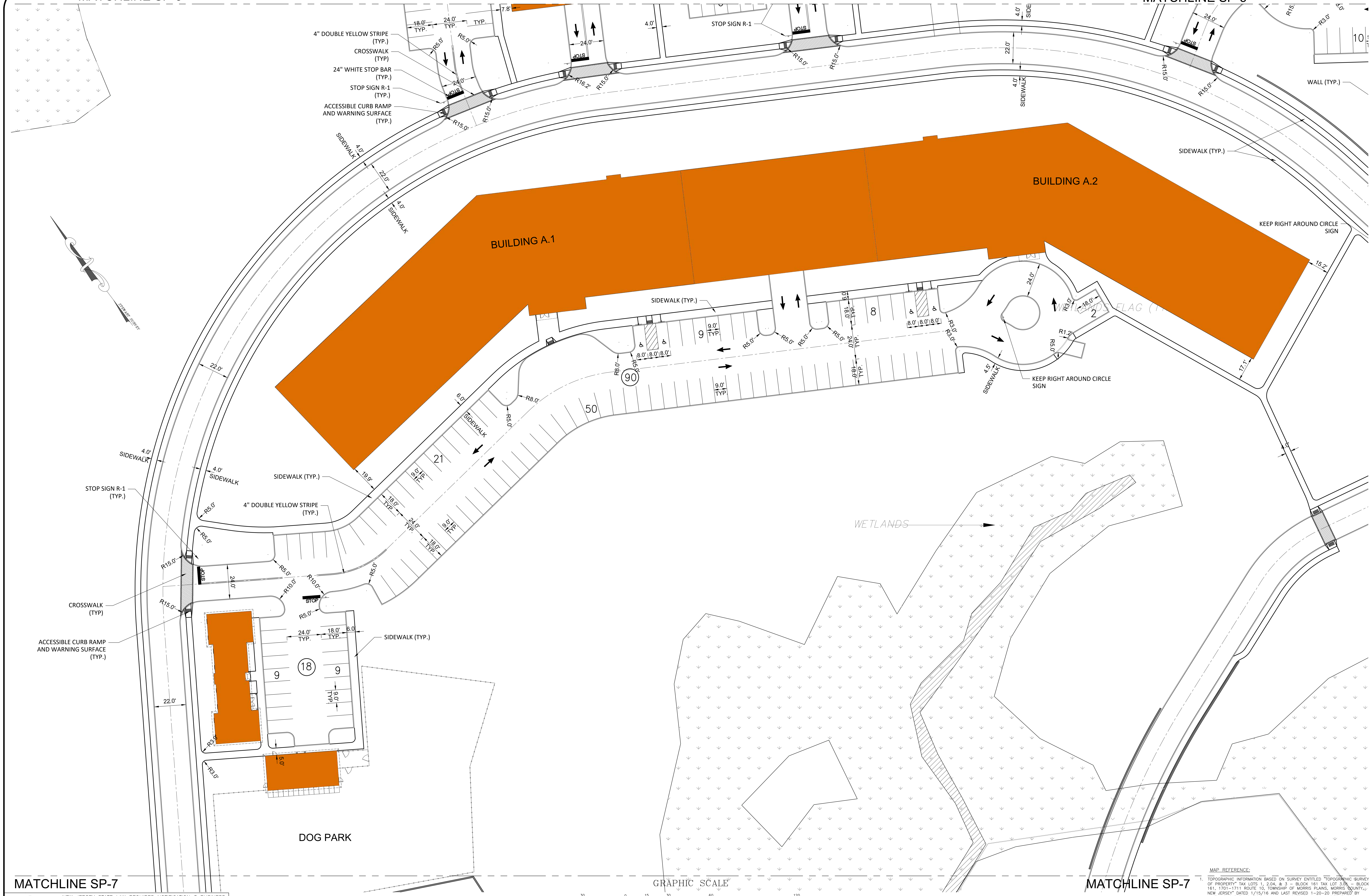
SITE PLAN A

SP-5

SHEET 5 OF 66

MATCHLINE SP-5

MATCHLINE SP-5



MATCHLINE SP-7

MATCHLINE SP-7

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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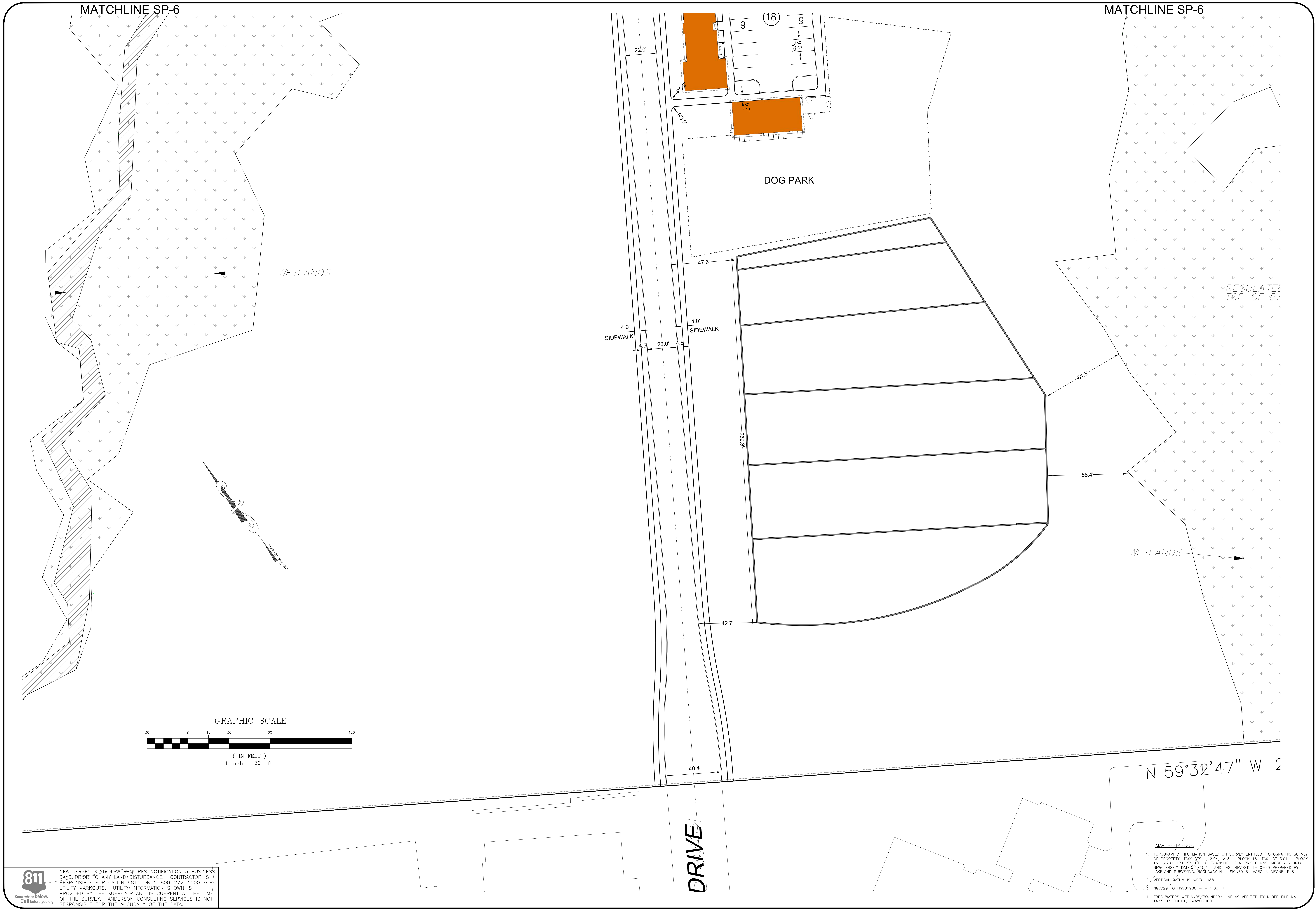
SITE PLAN B

SP-6

SHEET 6 OF 66



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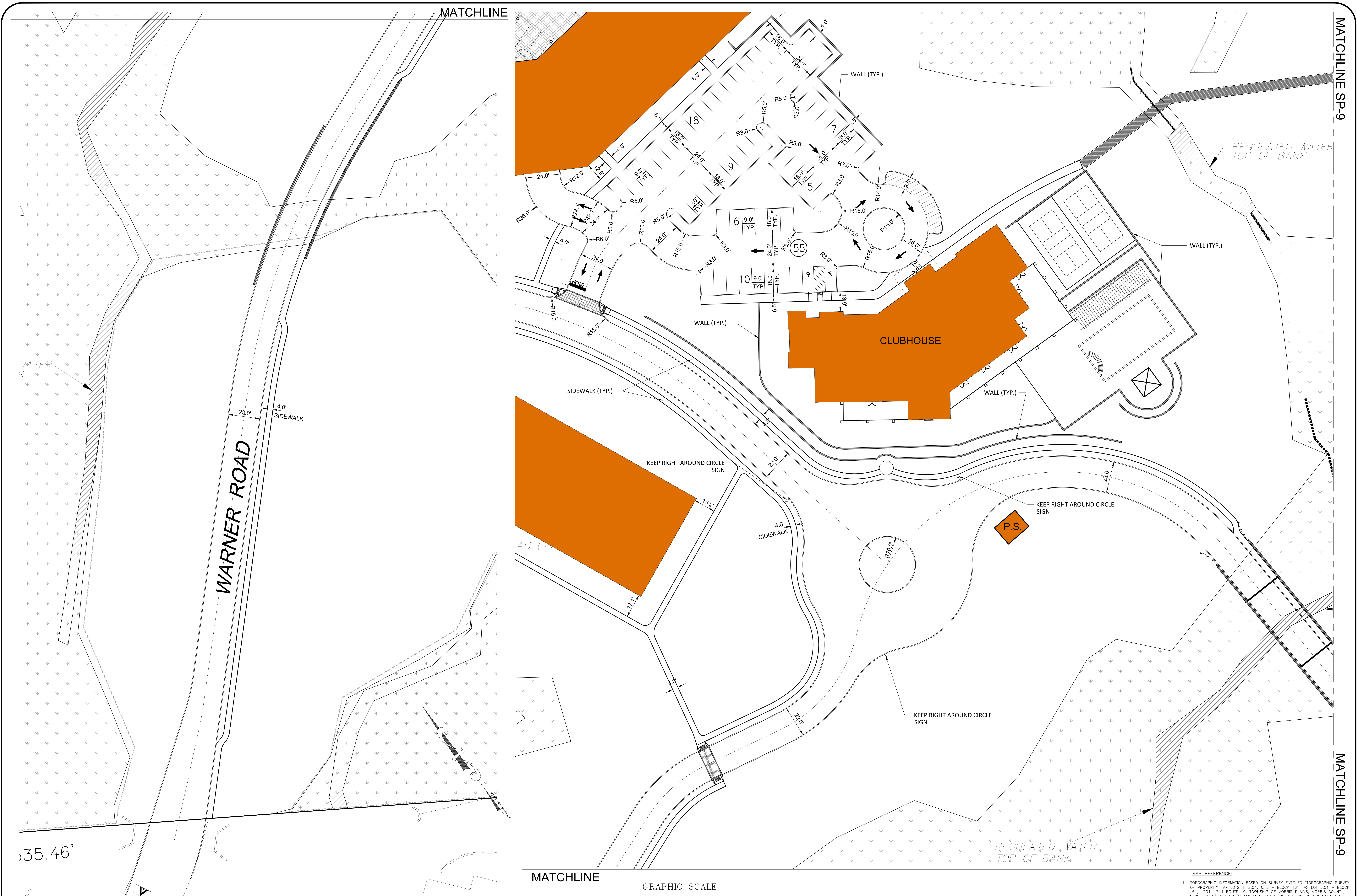
ESSEX COUNTY, NEW JERSEY

SITE PLAN C

SP-7



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PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410
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6/07/23	PER NJDEP COMMENTS
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Drawn by	BCA
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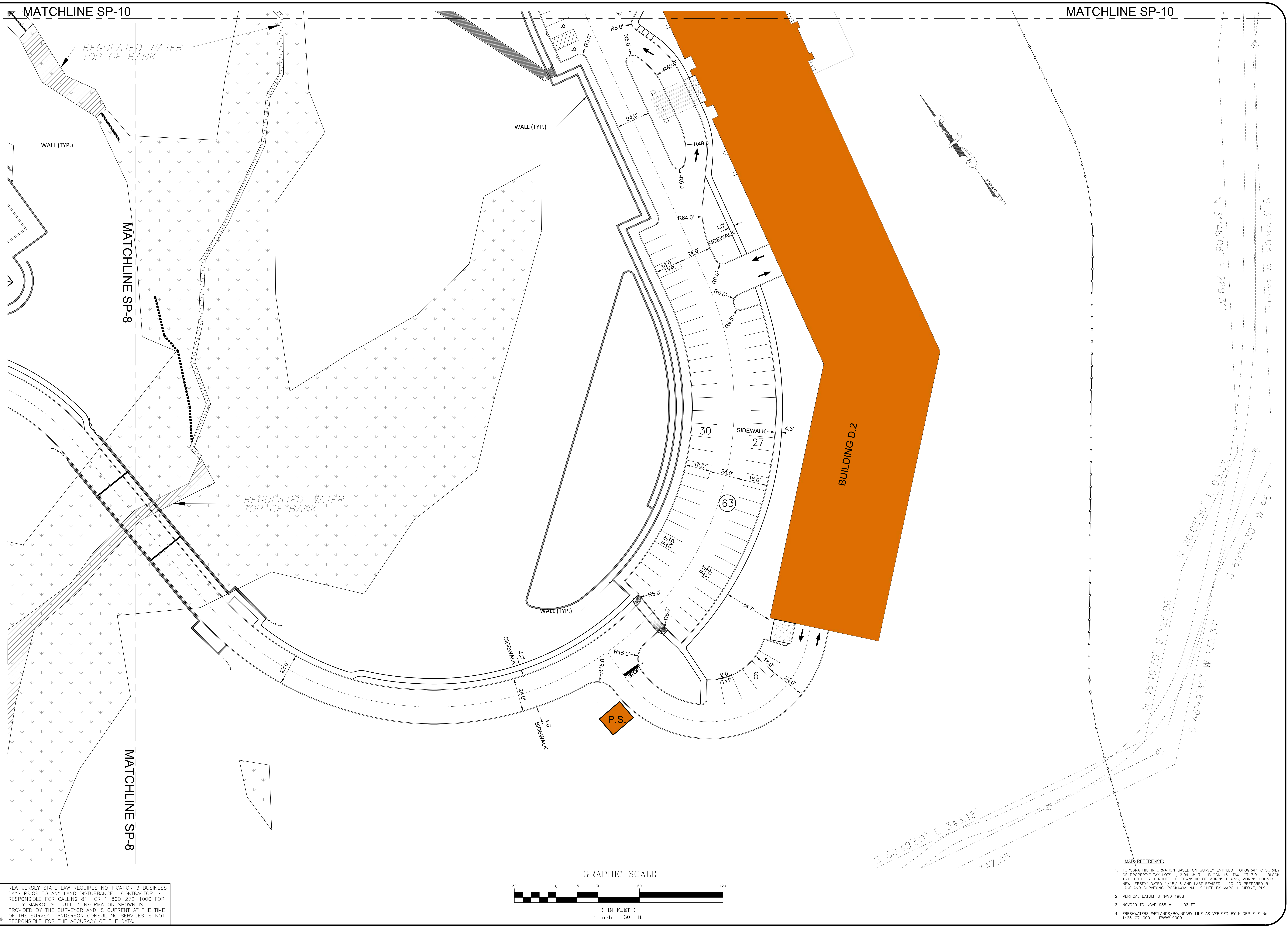
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

SITE PLAN D

SP-8



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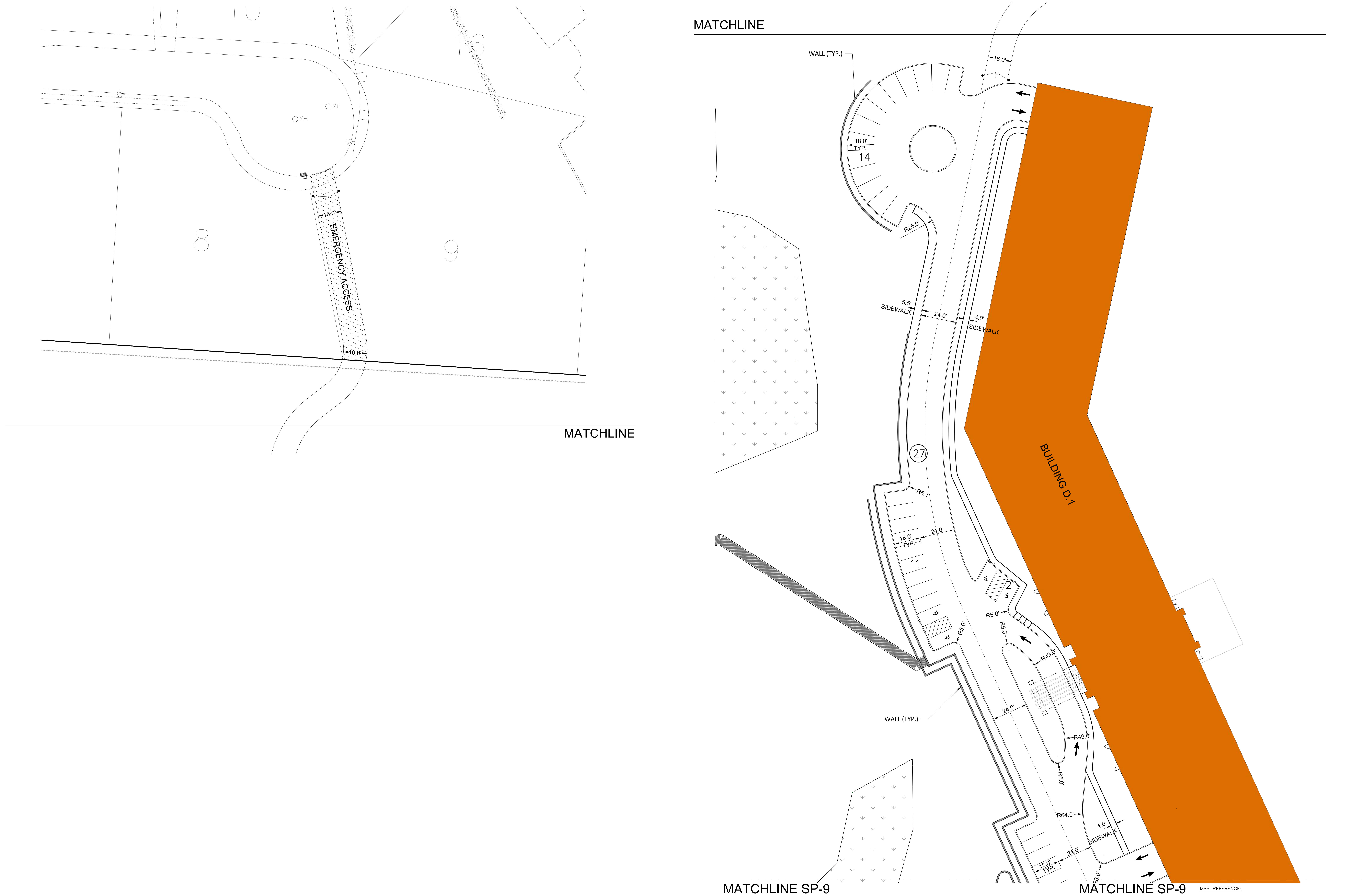
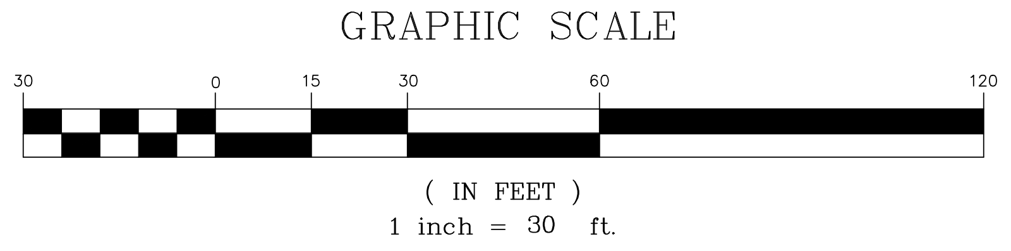
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

SITE PLAN E

SP-9





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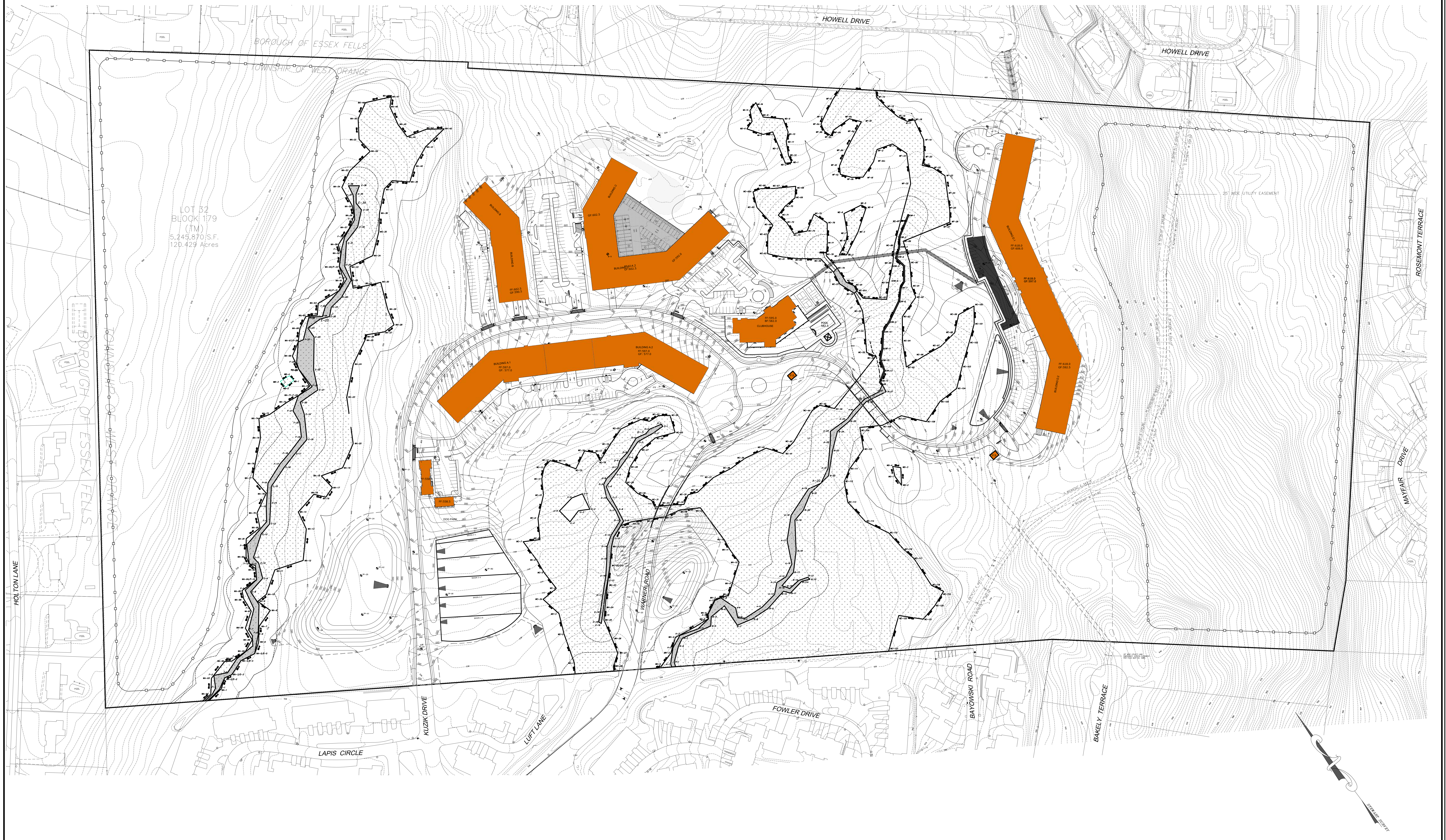
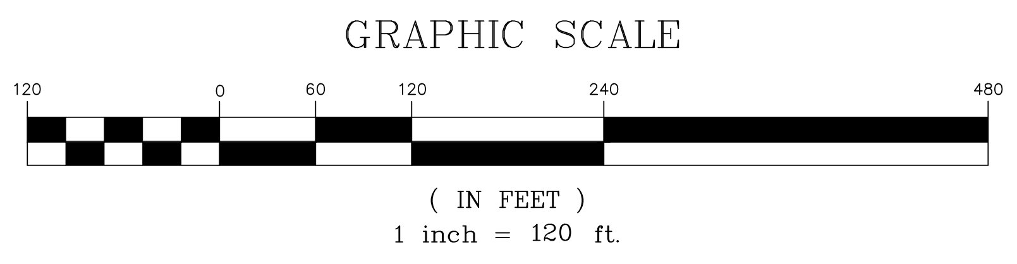
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

SITE PLAN F

SP-10

SHEET 10 OF 66





UNDISTURBED / PRESERVED:	4,010,981.8 SF 92.08 Acres
DISTURBED:	1,234,888.2 SF 28.35 Acres
TOTAL IMPERVIOUS:	619,951.3 SF 14.23 Acres
MOTOR VEHICLE SURFACE AREA:	257,012 SF 5.84 Acres

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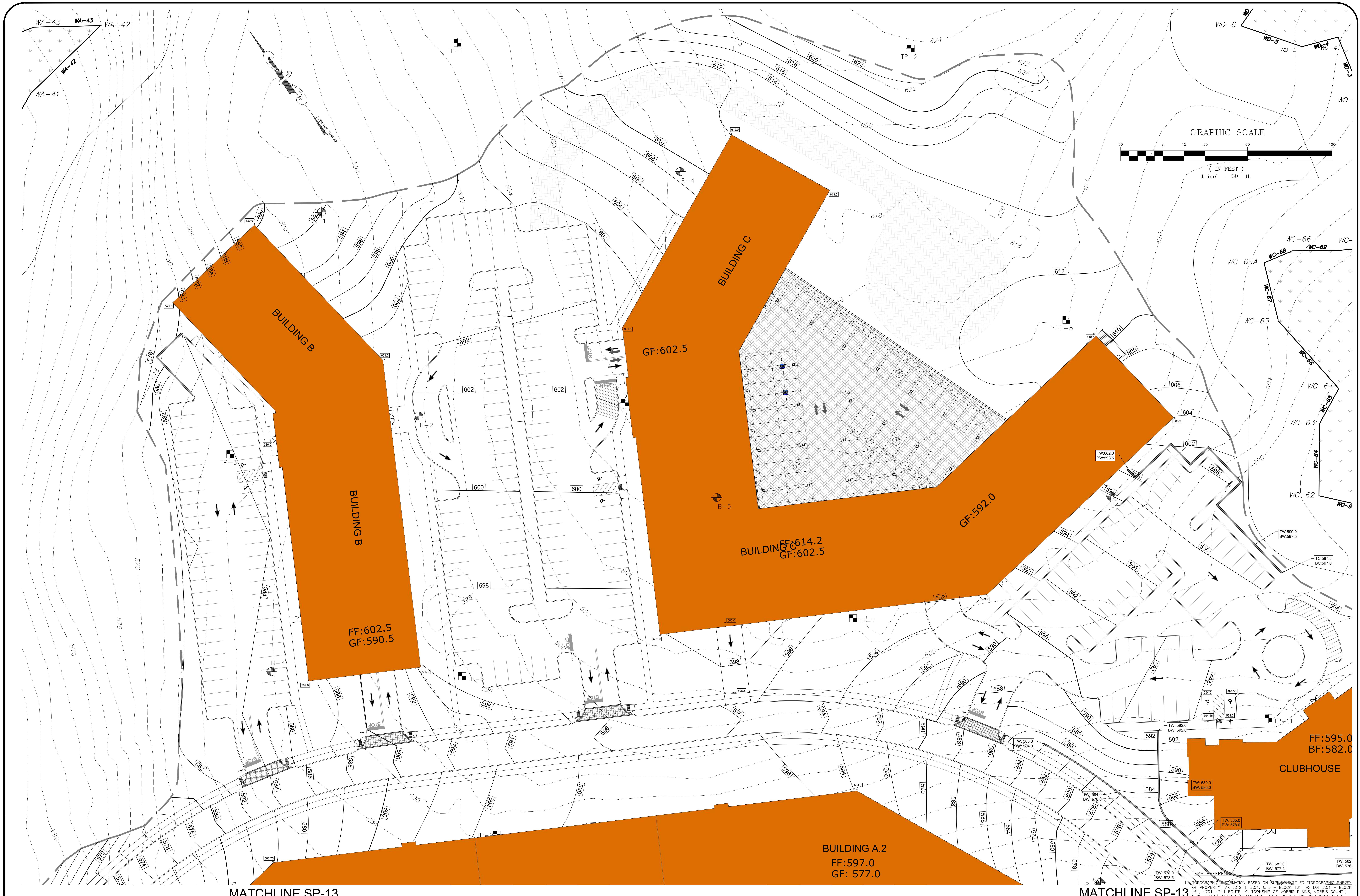
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

OVERALL GRADING PLAN

SP-11



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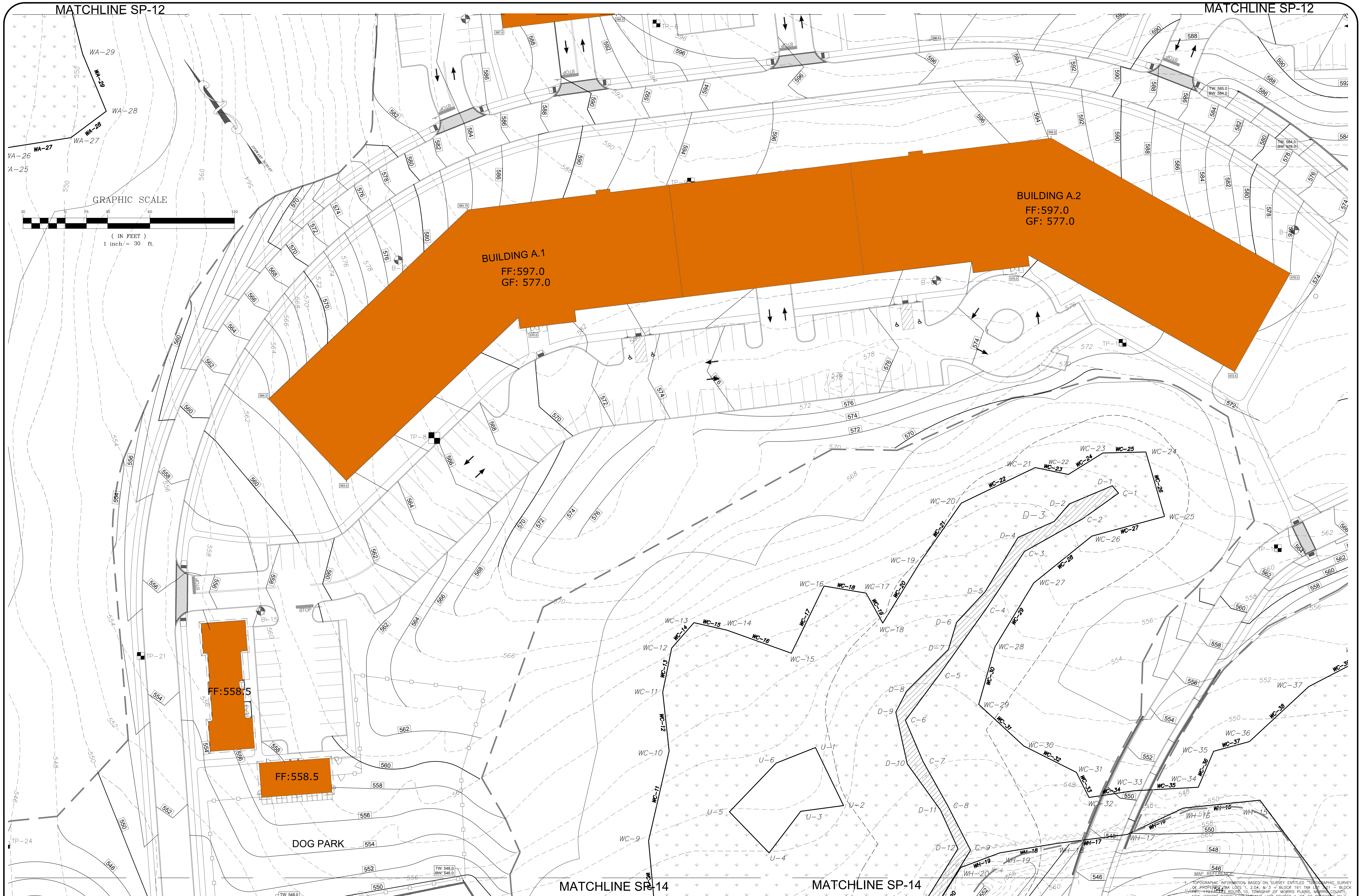
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

GRADING PLAN A

SP-12

SHEET 12 OF 66



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PRELIMINARY AND FINAL SITE PLAN
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BLOCK 179 LOT 32
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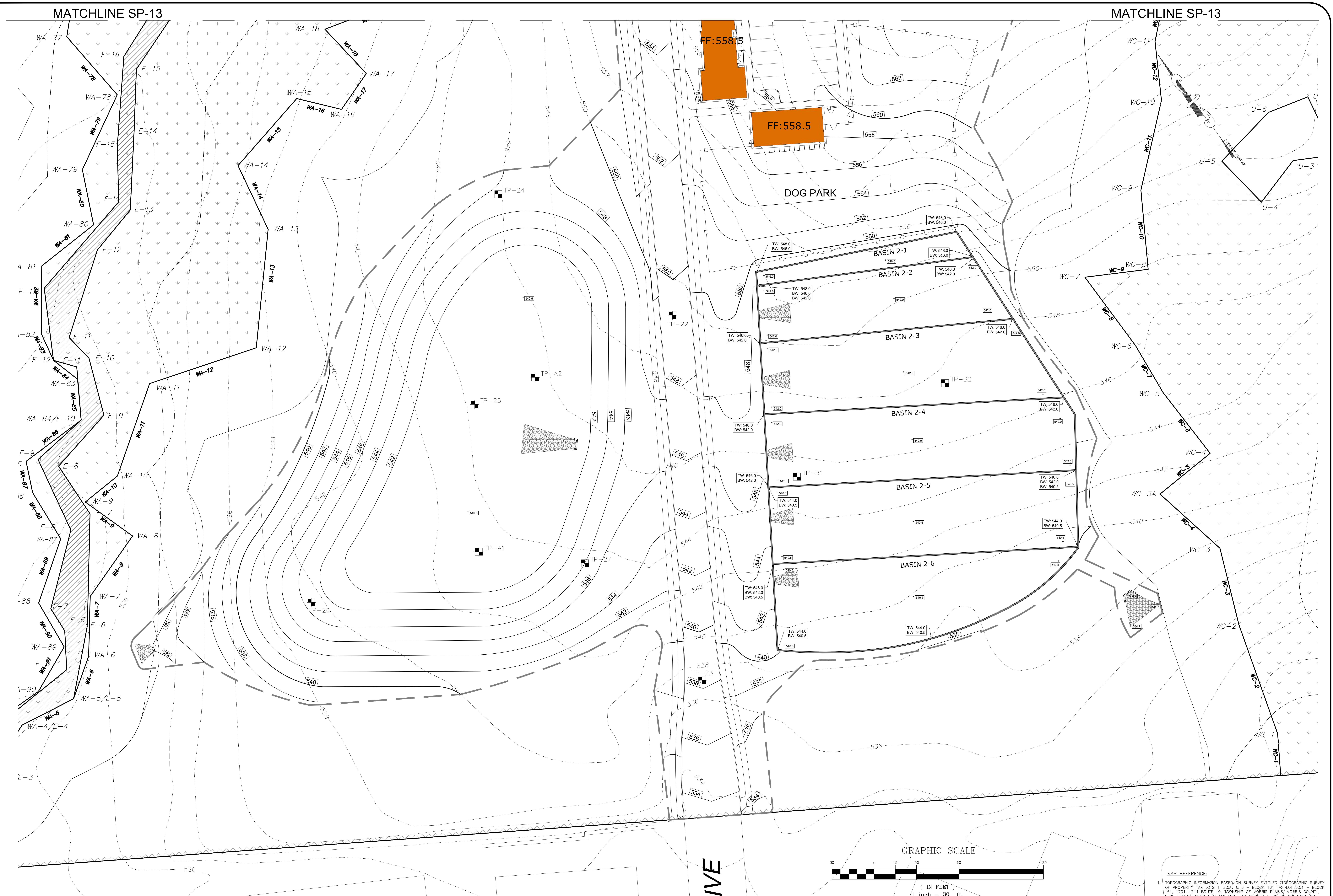
ESSEX COUNTY, NEW JERSEY

GRADING PLAN B

SP-13



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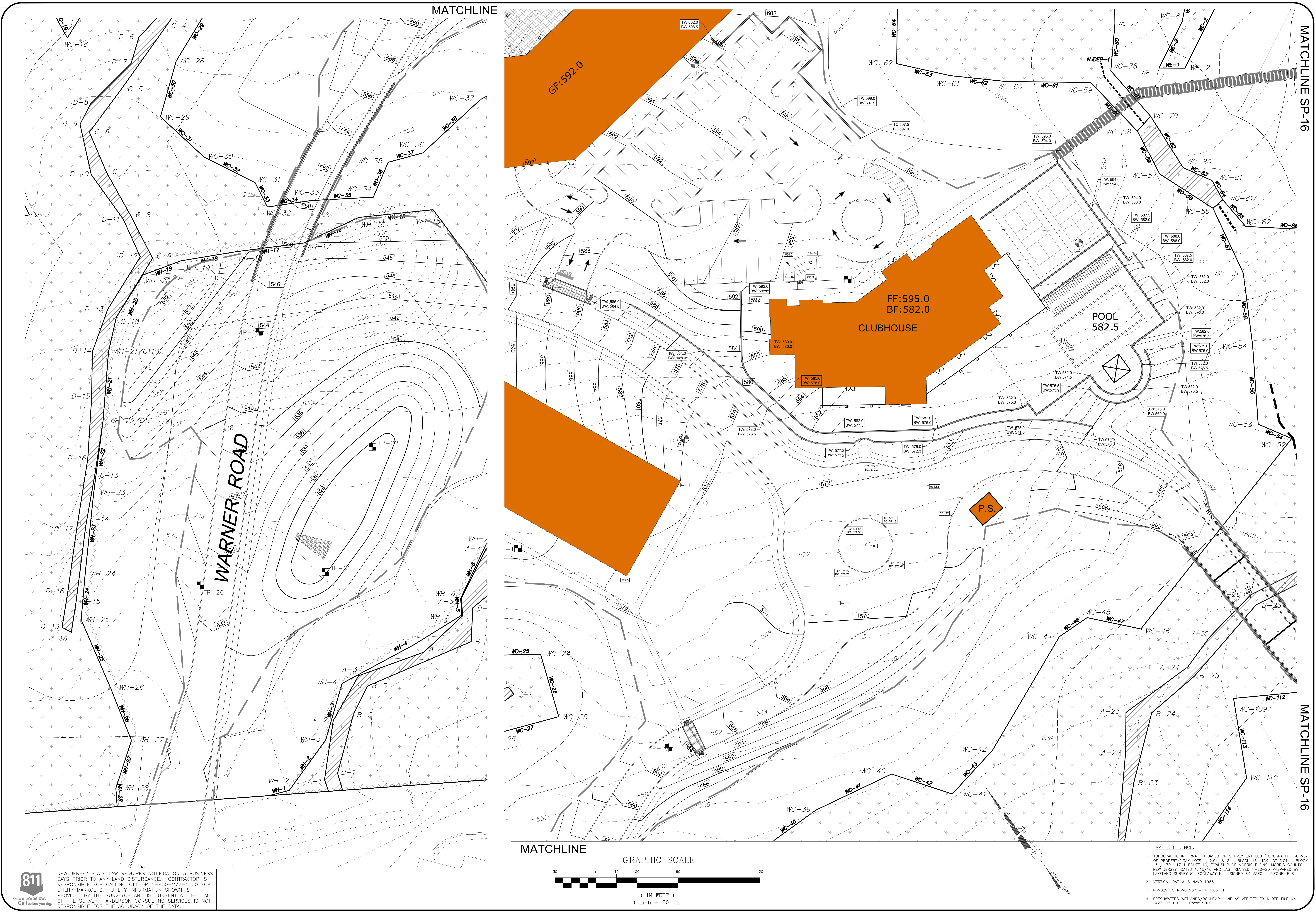
ESSEX COUNTY, NEW JERSEY

GRADING PLAN C

SP-14

SHEET 14 OF 66



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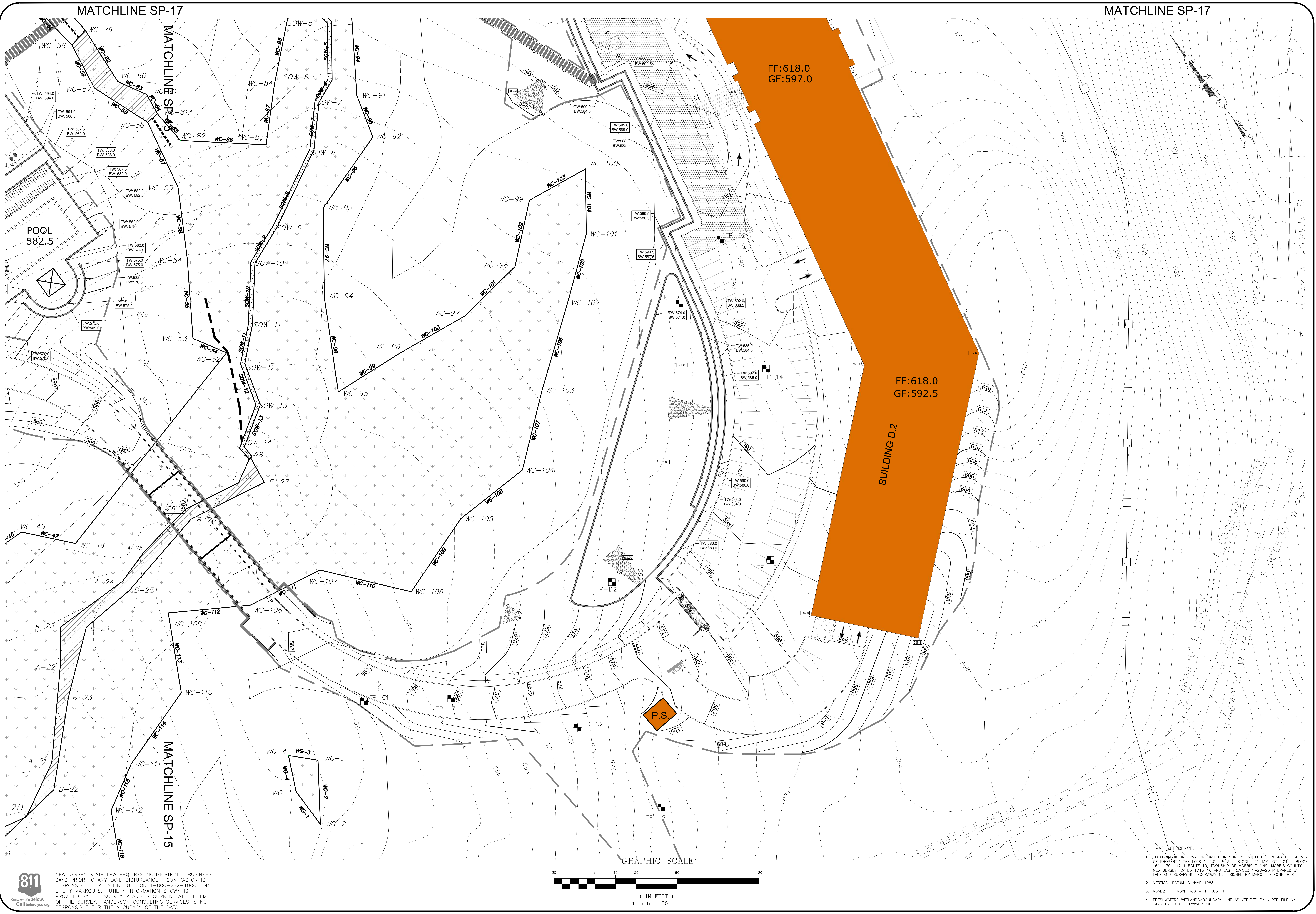
GRADING PLAN D

SP-15



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MAP REFERENCE:

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2. VERTICAL DATUM IS NAVD 1988
3. NGVD29 TO NGVD1988 = + 1.03 FT
4. FRESHWATERS WETLANDS/BOUNDARY LINE AS VERIFIED BY NJDEP FILE No. 1423–07–0001.1, FWWW190001

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410

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Revisions	
10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS

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www.pwanderson-cs.com

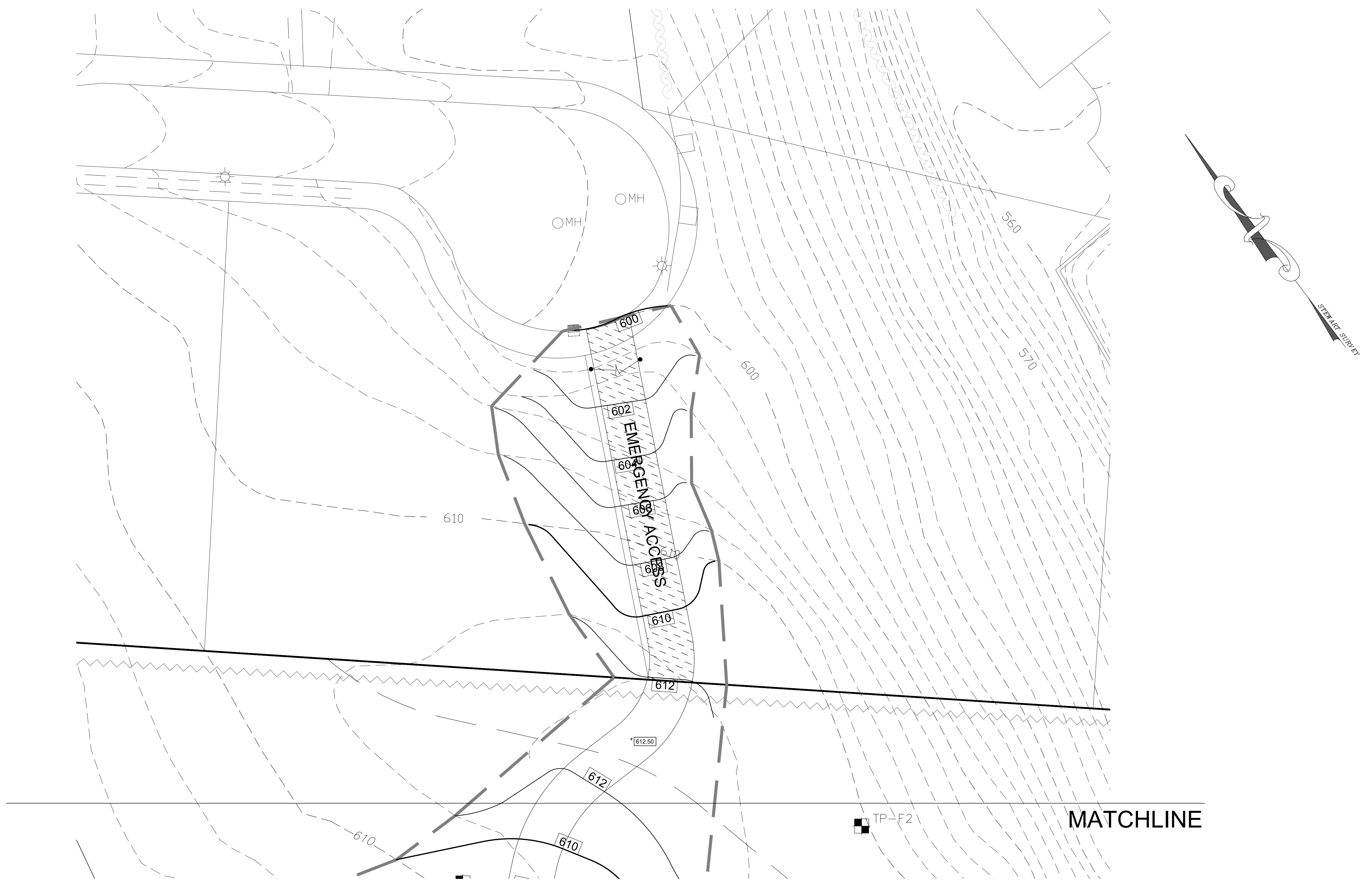
Proj. No.	WEMF2022
Date	9–23–22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

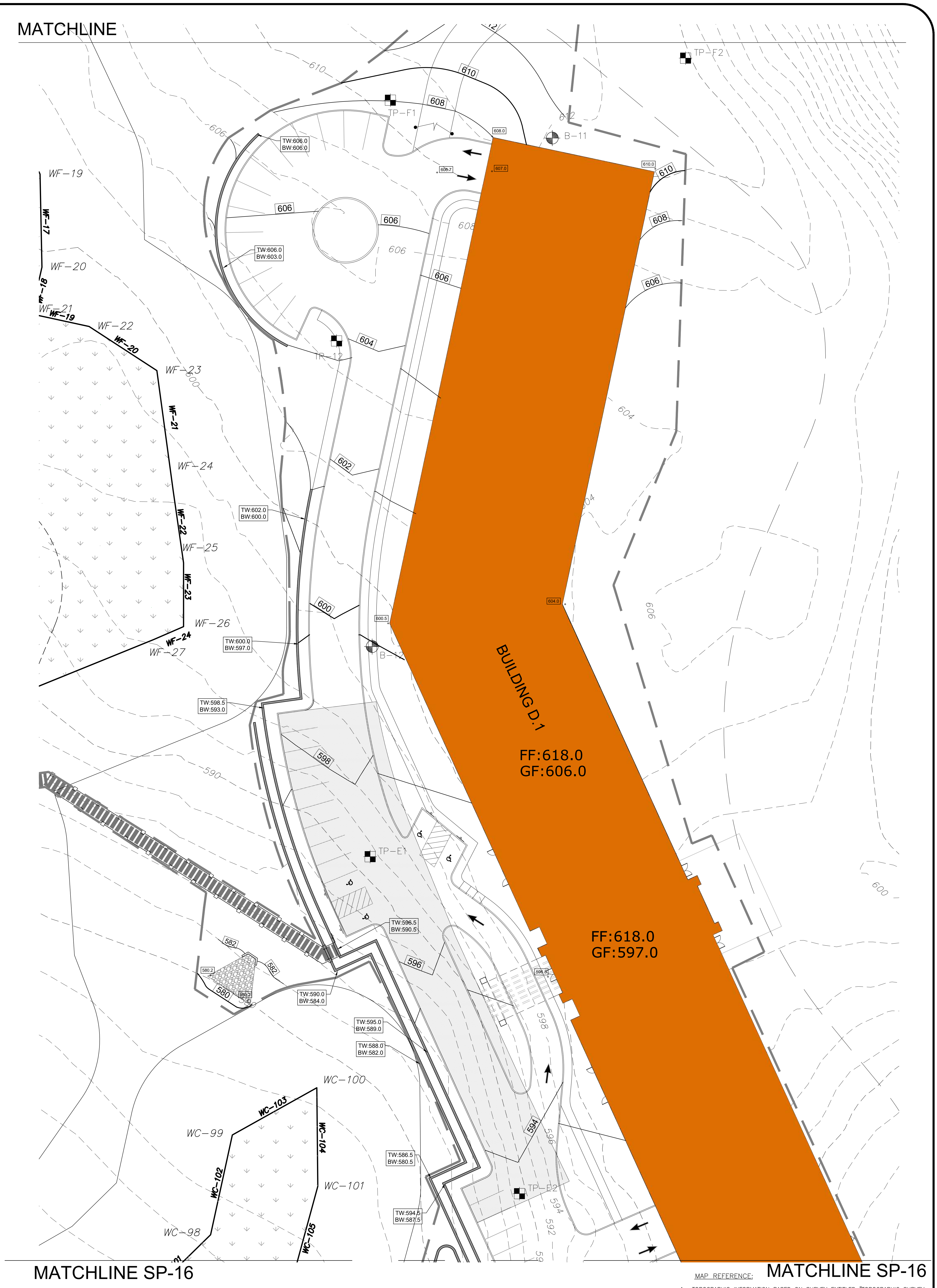
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

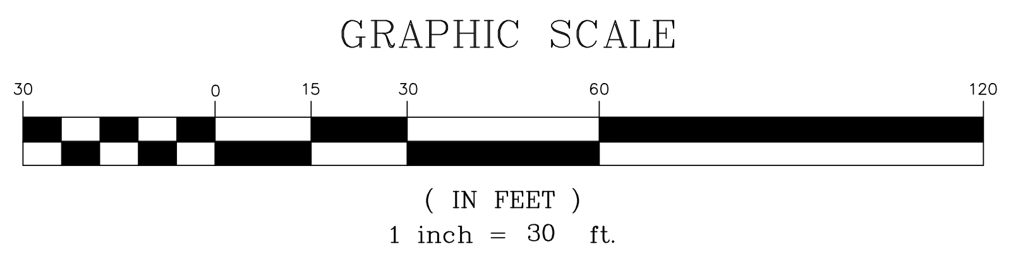
GRADING PLAN E

SP-16

SHEET 16 OF 66







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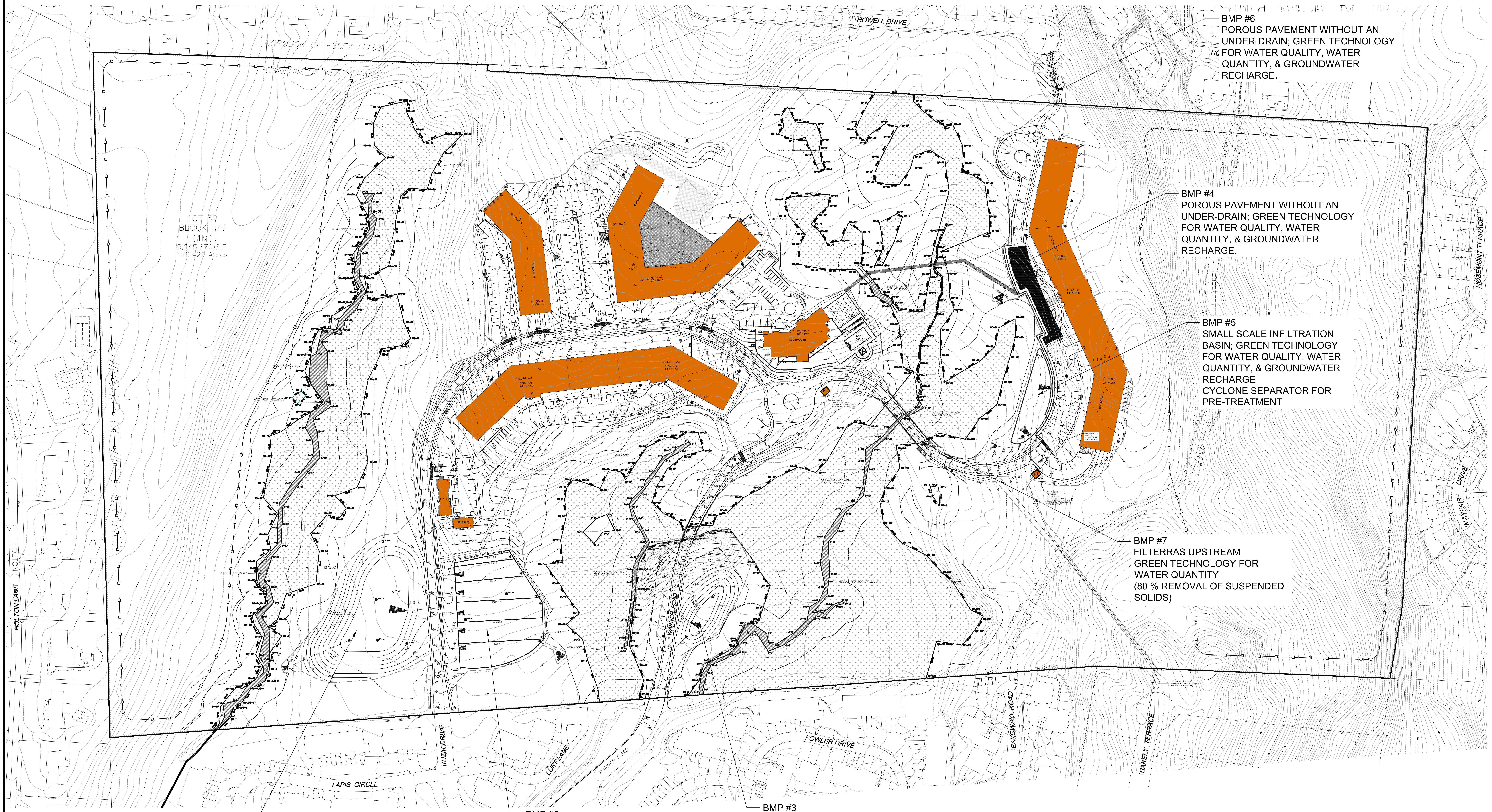
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

GRADING PLAN F

SP-17



BMP #6
POROUS PAVEMENT WITHOUT AN UNDER-DRAIN; GREEN TECHNOLOGY FOR WATER QUALITY, WATER QUANTITY, & GROUNDWATER RECHARGE.

BMP #4
POROUS PAVEMENT WITHOUT AN UNDER-DRAIN; GREEN TECHNOLOGY FOR WATER QUALITY, WATER QUANTITY, & GROUNDWATER RECHARGE.

BMP #5
SMALL SCALE INFILTRATION BASIN; GREEN TECHNOLOGY FOR WATER QUALITY, WATER QUANTITY, & GROUNDWATER RECHARGE
CYCLONE SEPARATOR FOR PRE-TREATMENT

BMP #7
FILTERRAS UPSTREAM GREEN TECHNOLOGY FOR WATER QUANTITY (80 % REMOVAL OF SUSPENDED SOLIDS)

BMP #1
LARGE SCALE INFILTRATION BASIN WITH GREEN TECHNOLOGY FOR WATER QUANTITY
FILTERRAS UPSTREAM OF BASIN 1 GREEN TECHNOLOGY FOR WATER QUANTITY (80 % REMOVAL OF SUSPENDED SOLIDS)

BMP #2
SMALL SCALE INFILTRATION BASINS WITH GREEN TECHNOLOGY FOR WATER QUALITY, WATER QUANTITY, & GROUND WATER RECHARGE
CYCLONE SEPARATOR FOR PRE-TREATMENT

BMP #3
SMALL SCALE INFILTRATION BASINS WITH GREEN TECHNOLOGY FOR WATER QUALITY, WATER QUANTITY, & GROUND WATER RECHARGE
CYCLONE SEPARATOR FOR PRE-TREATMENT

GRAPHIC SCALE
120 0 60 120 240 480
(IN FEET)
1 inch = 120 ft.

UNDISTURBED / PRESERVED:	4,010,981.8 SF 92.08 Acres
DISTURBED:	1,234,888.2 SF 28.35 Acres
TOTAL IMPERVIOUS:	619,951.3 SF 14.23 Acres
MOTOR VEHICLE SURFACE AREA:	257,012 SF 5.84 Acres

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811
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LIC. NO. 33410
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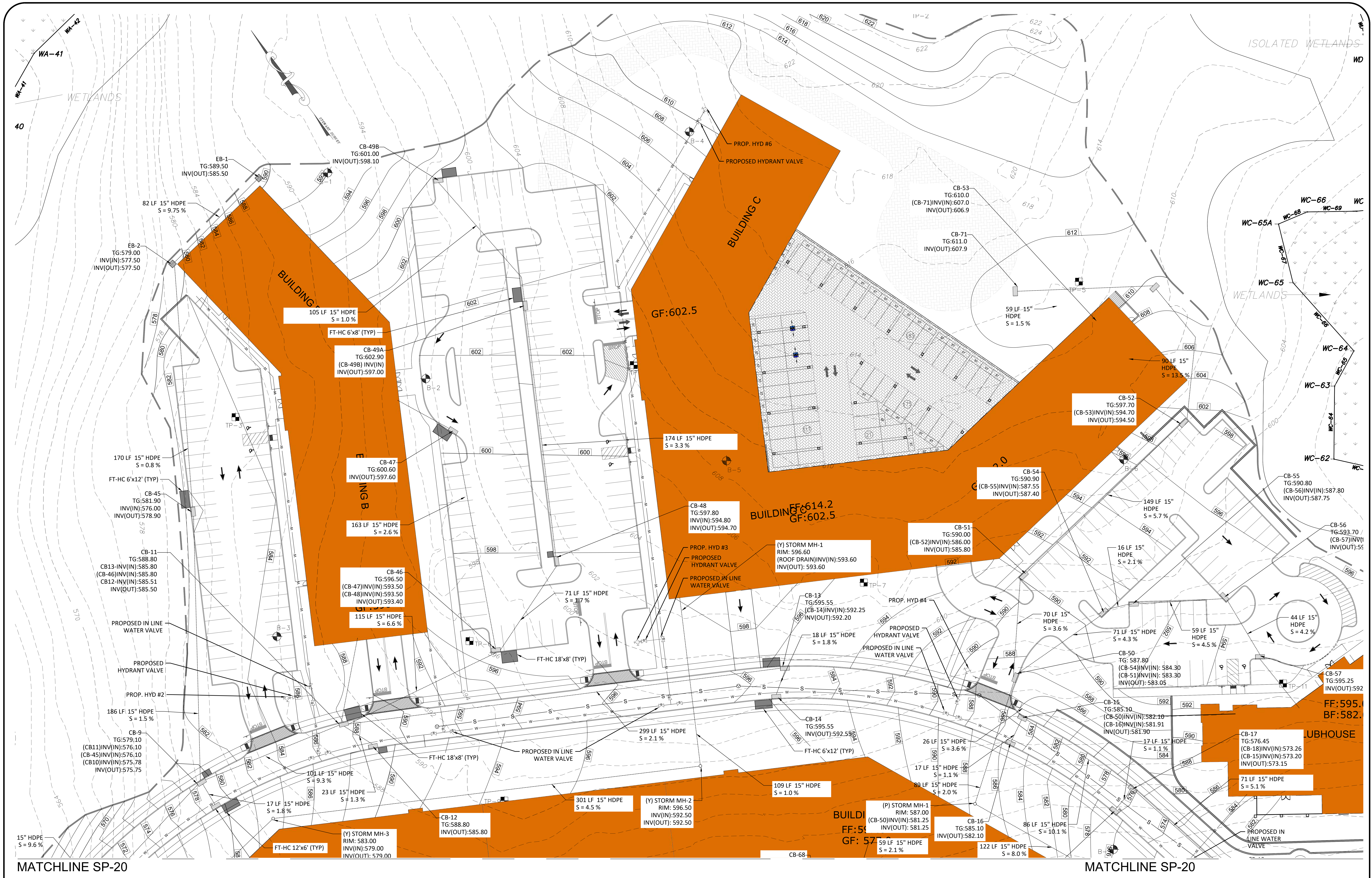
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

OVERALL UTILITY PLAN

SP-18

SHEET 18 OF 66



GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

811
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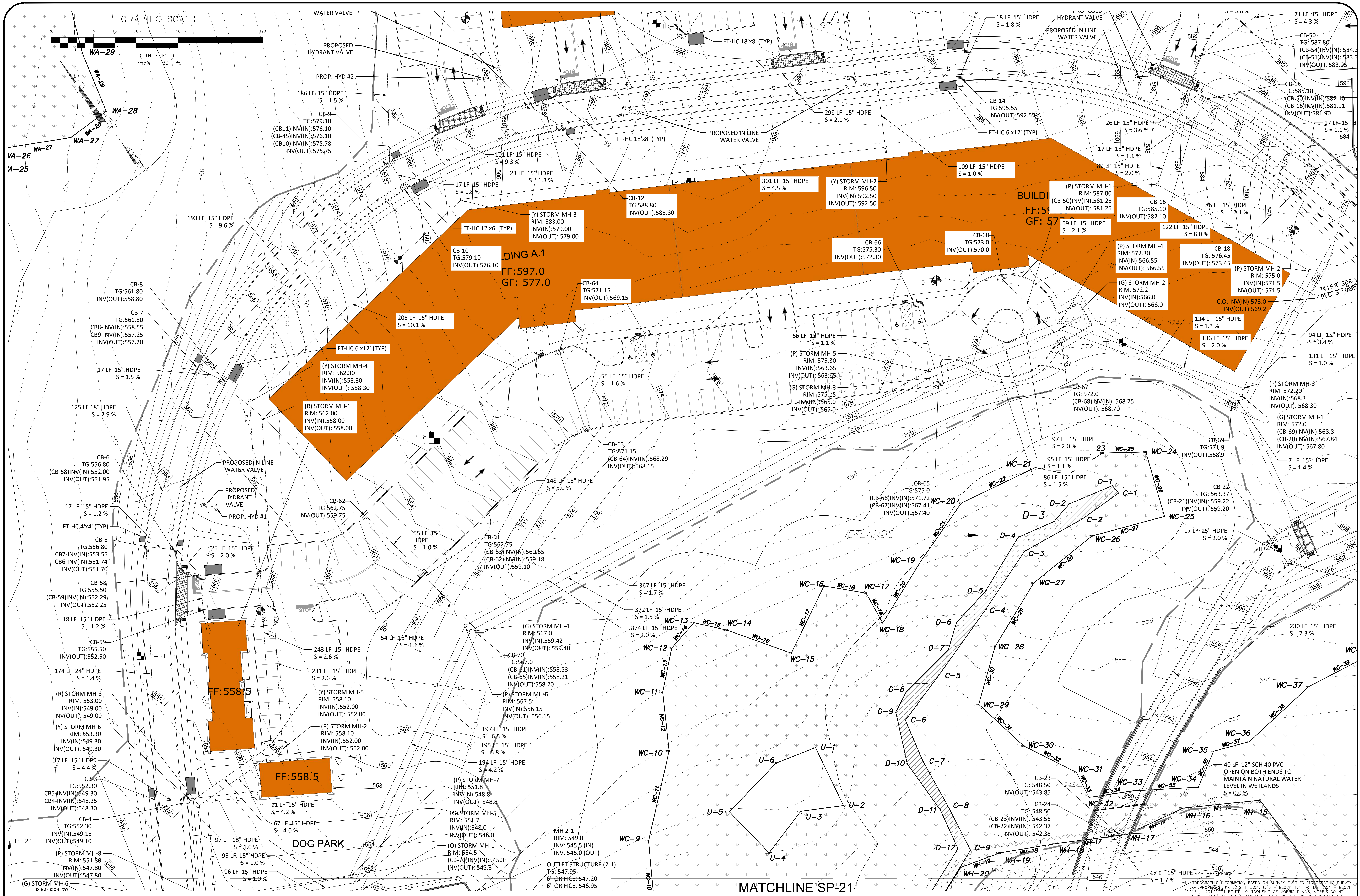
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

UTILITY PLAN A

SP-19

SHEET 19 OF 66


GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.
WATER VALVE
PROPOSED HYDRANT VALVE
PROP. HYD #2
186 LF 15" HDPE S = 1.5 %
CB-9 TG:579.10 (CB11)INV(IN):576.10 (CB-45)INV(IN):576.10 (CB10)INV(IN):575.78 INV(OUT):575.75
FT-HC 18'x8' (TYP)
PROPOSED IN LINE WATER VALVE
299 LF 15" HDPE S = 2.1 %
CB-14 TG:595.55 INV(OUT):592.55
FT-HC 6'x12' (TYP)
18 LF 15" HDPE S = 1.8 %
PROPOSED HYDRANT VALVE
PROPOSED IN LINE WATER VALVE
71 LF 15" HDPE S = 4.3 %
CB-50 TG: 587.80 (CB-54)INV(IN): 584.3 (CB-51)INV(IN): 583.3 INV(OUT): 583.05
CB-15 TG:585.10 (CB-50)INV(IN):582.10 (CB-16)INV(IN):581.91 INV(OUT):581.90
17 LF 15" HDPE S = 1.1 %
26 LF 15" HDPE S = 3.6 %
17 LF 15" HDPE S = 1.1 %
89 LF 15" HDPE S = 2.0 %
101 LF 15" HDPE S = 9.3 %
23 LF 15" HDPE S = 1.3 %
17 LF 15" HDPE S = 1.8 %
193 LF 15" HDPE S = 9.6 %
(Y) STORM MH-3 RIM: 583.00 INV(IN):579.00 INV(OUT): 579.00
CB-12 TG:588.80 INV(OUT):585.80
301 LF 15" HDPE S = 4.5 %
(Y) STORM MH-2 RIM: 596.50 INV(IN):592.50 INV(OUT): 592.50
109 LF 15" HDPE S = 1.0 %
(P) STORM MH-1 RIM: 587.00 (CB-50)INV(IN):581.25 INV(OUT): 581.25
CB-16 TG:585.10 INV(OUT):582.10
86 LF 15" HDPE S = 10.1 %
122 LF 15" HDPE S = 8.0 %
59 LF 15" HDPE S = 2.1 %
BUILDI FF:59 GF: 57
FT-HC 12'x6' (TYP)
CB-10 TG:579.10 INV(OUT):576.10
BUILDING A.1 FF:597.0 GF: 577.0
CB-64 TG:571.15 INV(OUT):569.15
CB-66 TG:575.30 INV(OUT):572.30
CB-68 TG:573.0 INV(OUT):570.0
(P) STORM MH-4 RIM: 572.30 INV(IN):566.55 INV(OUT): 566.55
(G) STORM MH-2 RIM: 572.2 INV(IN):566.0 INV(OUT): 566.0
CB-18 TG: 576.45 INV(OUT): 573.45
(P) STORM MH-2 RIM: 575.0 INV(IN):571.5 INV(OUT): 571.5
C.O. INV(IN):573.0 INV(OUT):569.2
74 LF 8" SDR-35 PVC S = 0.5%
134 LF 15" HDPE S = 1.3 %
136 LF 15" HDPE S = 2.0 %
94 LF 15" HDPE S = 3.4 %
131 LF 15" HDPE S = 1.0 %
WETLANDS FLAG (TYP.)
CB-8 TG:561.80 INV(OUT):558.80
CB-7 TG:561.80 CB8-INV(IN):558.55 CB9-INV(IN):557.25 INV(OUT):557.20
205 LF 15" HDPE S = 10.1 %
FT-HC 6'x12' (TYP)
17 LF 15" HDPE S = 1.5 %
(Y) STORM MH-4 RIM: 562.30 INV(IN):558.30 INV(OUT): 558.30
125 LF 18" HDPE S = 2.9 %
(R) STORM MH-1 RIM: 562.00 INV(IN):558.00 INV(OUT): 558.00
55 LF 15" HDPE S = 1.1 %
(P) STORM MH-5 RIM: 575.30 INV(IN):563.65 INV(OUT): 563.65
(G) STORM MH-3 RIM: 575.15 INV(IN):565.0 INV(OUT): 565.0
55 LF 15" HDPE S = 1.6 %
CB-67 TG: 572.0 (CB-68)INV(IN): 568.75 INV(OUT): 568.70
(P) STORM MH-3 RIM: 572.20 INV(IN):568.3 INV(OUT): 568.30
(G) STORM MH-1 RIM: 572.0 (CB-69)INV(IN):568.8 (CB-20)INV(IN):567.84 INV(OUT): 567.80
TP-8
CB-63 TG:571.15 (CB-64)INV(IN):568.29 INV(OUT):568.15
97 LF 15" HDPE S = 2.0 %
95 LF 15" HDPE S = 1.1 %
86 LF 15" HDPE S = 1.5 %
CB-69 TG:571.9 INV(OUT):568.9
7 LF 15" HDPE S = 1.4 %
CB-6 TG:556.80 (CB-58)INV(IN):552.00 INV(OUT):551.95
PROPOSED IN LINE WATER VALVE
PROPOSED HYDRANT VALVE
PROP. HYD #1
148 LF 15" HDPE S = 5.0 %
CB-65 TG:575.0 (CB-66)INV(IN):571.72 (CB-67)INV(IN):567.41 INV(OUT):567.40
CB-22 TG: 563.37 (CB-21)INV(IN): 559.22 INV(OUT): 559.20
17 LF 15" HDPE S = 1.2 %
CB-62 TG:562.75 INV(OUT):559.75
FT-HC 4'x4' (TYP)
CB-5 TG:556.80 CB7-INV(IN):553.55 CB6-INV(IN):551.74 INV(OUT):551.70
25 LF 15" HDPE S = 2.0 %
55 LF 15" HDPE S = 1.0 %
CB-61 TG:562.75 (CB-63)INV(IN):560.65 (CB-62)INV(IN):559.18 INV(OUT):559.10
WETLANDS
17 LF 15" HDPE S = 2.0 %
CB-58 TG:555.50 (CB-59)INV(IN):552.29 INV(OUT):552.25
367 LF 15" HDPE S = 1.7 %
372 LF 15" HDPE S = 1.5 %
374 LF 15" HDPE S = 2.0 %
18 LF 15" HDPE S = 1.2 %
54 LF 15" HDPE S = 1.1 %
(G) STORM MH-4 RIM: 567.0 INV(IN):559.42 INV(OUT): 559.40
230 LF 15" HDPE S = 7.3 %
CB-59 TG:555.50 INV(OUT):552.50
243 LF 15" HDPE S = 2.6 %
CB-70 TG:567.0 (CB-61)INV(IN):558.53 (CB-65)INV(IN):558.21 INV(OUT):558.20
174 LF 24" HDPE S = 1.4 %
231 LF 15" HDPE S = 2.6 %
(R) STORM MH-3 RIM: 553.00 INV(IN):549.00 INV(OUT): 549.00
FF:558.5
(Y) STORM MH-5 RIM: 558.10 INV(IN):552.00 INV(OUT): 552.00
(P) STORM MH-6 RIM: 567.5 INV(IN):556.15 INV(OUT): 556.15
(Y) STORM MH-6 RIM: 553.30 INV(IN):549.30 INV(OUT): 549.30
(R) STORM MH-2 RIM: 558.10 INV(IN):552.00 INV(OUT): 552.00
197 LF 15" HDPE S = 6.5 %
195 LF 15" HDPE S = 6.8 %
194 LF 15" HDPE S = 4.2 %
17 LF 15" HDPE S = 4.4 %
CB-3 TG:552.30 CB5-INV(IN):549.30 CB4-INV(IN):548.35 INV(OUT):548.30
FF:558.5
71 LF 15" HDPE S = 4.2 %
67 LF 15" HDPE S = 4.0 %
(P) STORM MH-7 RIM: 551.8 INV(IN):548.8 INV(OUT): 548.8
(G) STORM MH-5 RIM: 551.7 INV(IN):548.0 INV(OUT): 548.0
(O) STORM MH-1 RIM: 554.5 (CB-70)INV(IN):545.3 INV(OUT): 545.3
MH 2-1 RIM: 549.0 INV: 545.5 (IN) INV: 545.0 (OUT)
OUTLET STRUCTURE (2-1) TG: 547.95 6" ORIFICE:547.20 6" ORIFICE:546.95
CB-4 TG:552.30 INV(IN):549.15 INV(OUT):549.10
TP-24
97 LF 18" HDPE S = 1.0 %
95 LF 15" HDPE S = 1.0 %
96 LF 15" HDPE S = 1.0 %
DOG PARK
(P) STORM MH-8 RIM: 551.80 INV(IN):547.80 INV(OUT): 547.80
(G) STORM MH-6 RIM: 551.70
CB-23 TG: 548.50 INV(OUT): 543.85
CB-24 TG: 548.50 (CB-23)INV(IN): 543.56 (CB-22)INV(IN): 542.37 INV(OUT): 542.35
40 LF 12" SCH 40 PVC OPEN ON BOTH ENDS TO MAINTAIN NATURAL WATER LEVEL IN WETLANDS S = 0.0 %
17 LF 15" HDPE S = 1.7 %
MATCHLINE SP-21
WA-25 WA-26 WA-27 WA-28 WA-29
WC-9 WC-10 WC-11 WC-12 WC-13 WC-14 WC-15 WC-16 WC-17 WC-18 WC-19 WC-20 WC-21 WC-22 WC-23 WC-24 WC-25 WC-26 WC-27 WC-28 WC-29 WC-30 WC-31 WC-32 WC-33 WC-34 WC-35 WC-36 WC-37 WC-38 WC-39
D-1 D-2 D-3 D-4 D-5 D-6 D-7 D-8 D-9 D-10 D-11 D-12
C-1 C-2 C-3 C-4 C-5 C-6 C-7 C-8 C-9
U-1 U-2 U-3 U-4 U-5 U-6
WH-15 WH-16 WH-17 WH-18 WH-19 WH-20
TP-21
STOP

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N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410

SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.

Date	Revisions
10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
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24GA28182400

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Boonton, NJ 07005
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www.pwanderson-cs.com

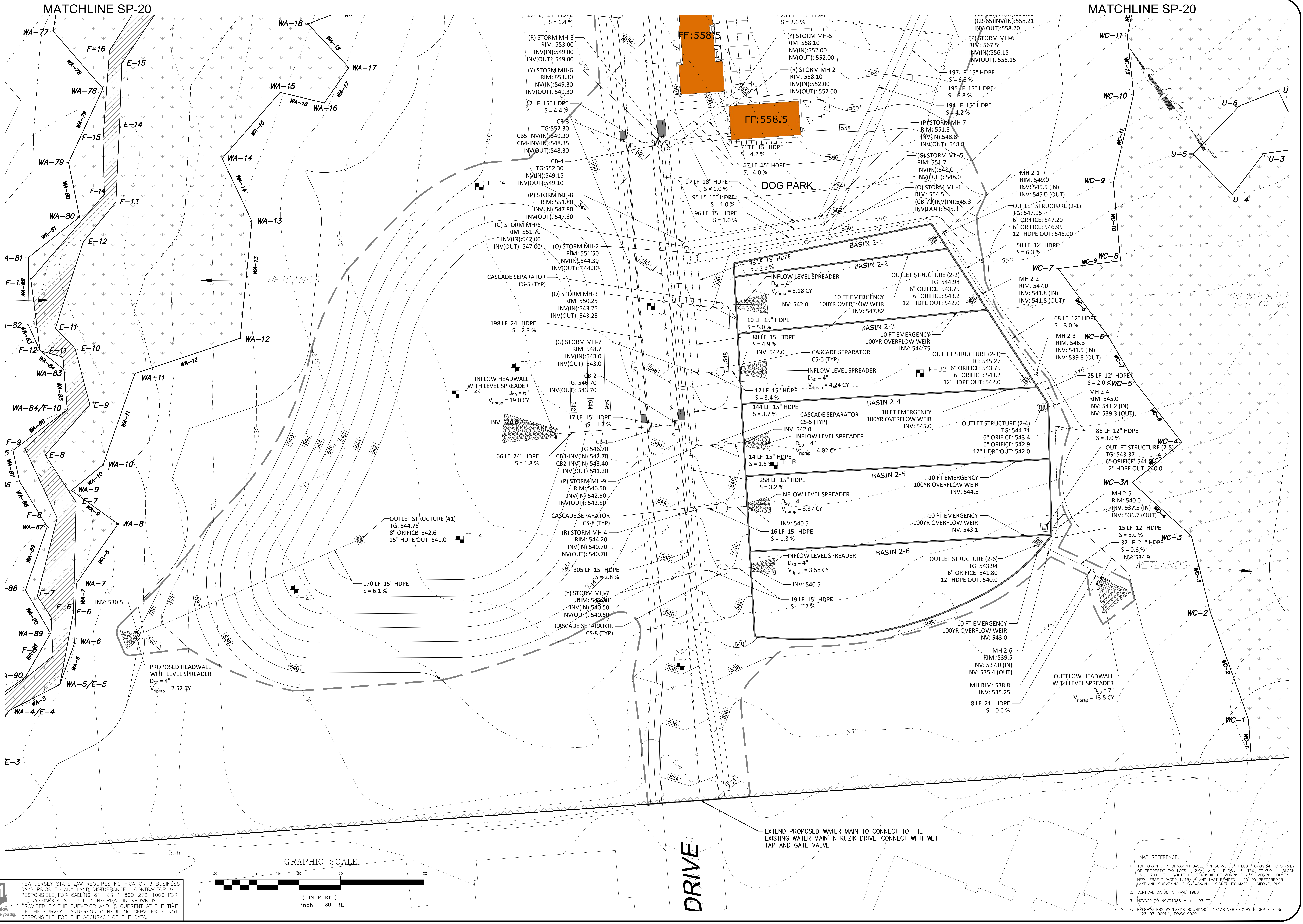
Proj. No.	WEMF2022
Date	9-23-22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

UTILITY PLAN B

SP-20

SHEET 20 OF 66



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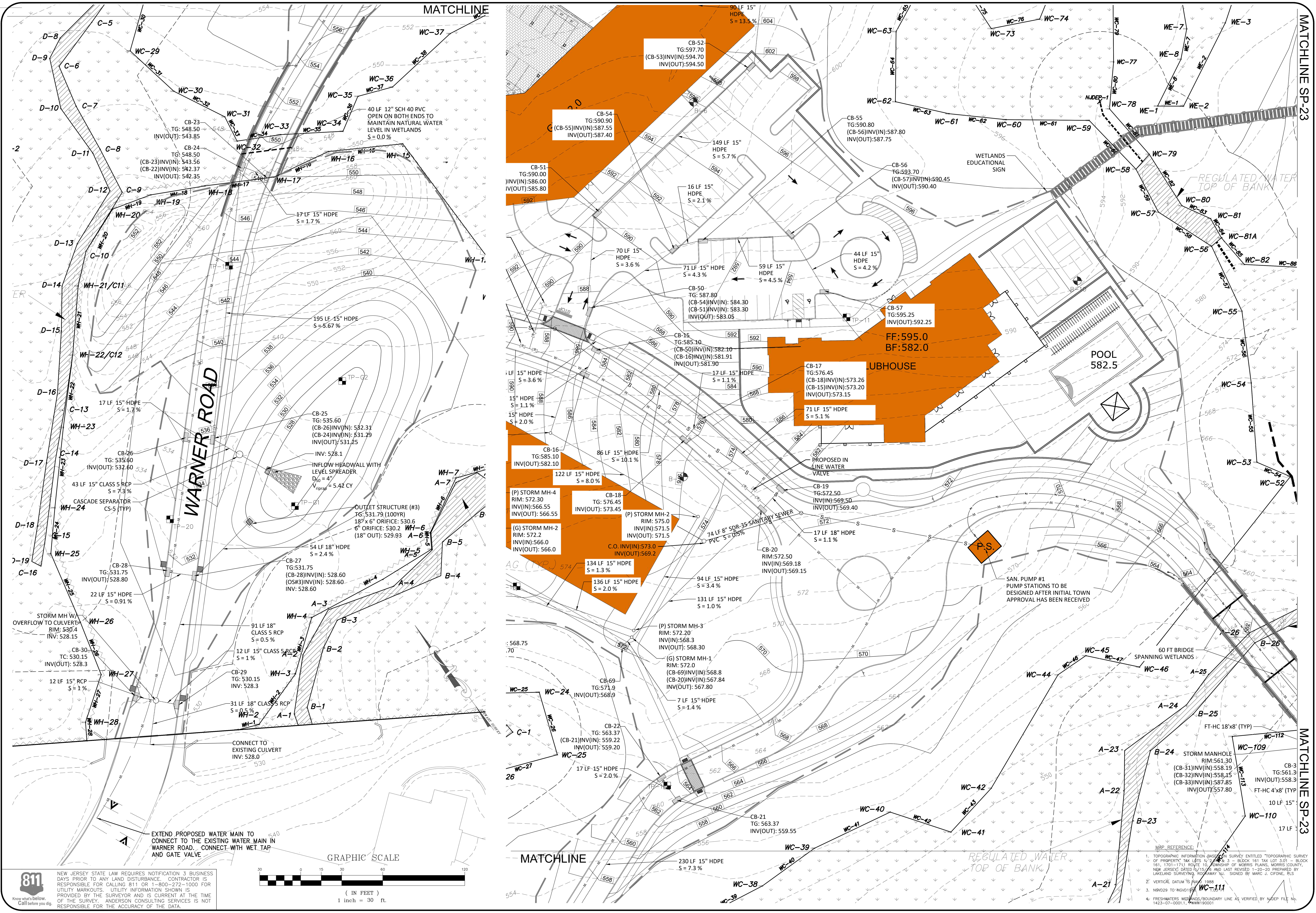
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

UTILITY PLAN C

SP-21

SHEET 21 OF 66


MATCHLINE
MATCHLINE SP-23
MATCHLINE
MATCHLINE SP-23
WARNER ROAD
FF:595.0
BF:582.0
CLUBHOUSE
POOL
582.5
P.S.
REGULATED WATER TOP OF BANK
CB-52 TG:597.70 (CB-53)INV(IN):594.70 INV(OUT):594.50
CB-54 TG:590.90 (CB-55)INV(IN):587.55 INV(OUT):587.40
CB-51 TG:590.00 INV(IN):586.00 INV(OUT):585.80
CB-55 TG:590.80 (CB-56)INV(IN):587.80 INV(OUT):587.75
CB-56 TG:593.70 (CB-57)INV(IN):590.45 INV(OUT):590.40
CB-57 TG:595.25 INV(OUT):592.25
CB-50 TG: 587.80 (CB-54)INV(IN): 584.30 (CB-51)INV(IN): 583.30 INV(OUT): 583.05
CB-15 TG:585.10 (CB-50)INV(IN):582.10 (CB-16)INV(IN):581.91 INV(OUT):581.90
CB-17 TG:576.45 (CB-18)INV(IN):573.26 (CB-15)INV(IN):573.20 INV(OUT):573.15
CB-16 TG:585.10 INV(OUT):582.10
CB-18 TG: 576.45 INV(OUT): 573.45
(P) STORM MH-4 RIM: 572.30 INV(IN):566.55 INV(OUT): 566.55
(G) STORM MH-2 RIM: 572.2 INV(IN):566.0 INV(OUT): 566.0
(P) STORM MH-2 RIM: 575.0 INV(IN):571.5 INV(OUT): 571.5
C.O. INV(IN):573.0 INV(OUT):569.2
CB-19 TG:572.50 INV(IN):569.50 INV(OUT):569.40
CB-20 RIM:572.50 INV(IN):569.18 INV(OUT):569.15
(P) STORM MH-3 RIM: 572.20 INV(IN):568.3 INV(OUT): 568.30
(G) STORM MH-1 RIM: 572.0 (CB-69)INV(IN):568.8 (CB-20)INV(IN):567.84 INV(OUT): 567.80
CB-69 TG:571.9 INV(OUT):568.9
CB-22 TG: 563.37 (CB-21)INV(IN): 559.22 INV(OUT): 559.20
CB-21 TG: 563.37 INV(OUT): 559.55
PROPOSED IN LINE WATER VALVE
74 LF 8" SDR 35 SANITARY SEWER PVC S = 0.5%
SAN. PUMP #1 PUMP STATIONS TO BE DESIGNED AFTER INITIAL TOWN APPROVAL HAS BEEN RECEIVED
60 FT BRIDGE SPANNING WETLANDS
WETLANDS EDUCATIONAL SIGN
STORM MANHOLE RIM:561.30 (CB-31)INV(IN):558.19 (CB-32)INV(IN):558.15 (CB-33)INV(IN):587.85 INV(OUT):557.80
CB-3 TG:561.3 INV(OUT):558.3
FT-HC 18'x8' (TYP)
FT-HC 4'x8' (TYP)
CB-23 TG: 548.50 INV(OUT): 543.85
CB-24 TG: 548.50 (CB-23)INV(IN): 543.56 (CB-22)INV(IN): 542.37 INV(OUT): 542.35
40 LF 12" SCH 40 PVC OPEN ON BOTH ENDS TO MAINTAIN NATURAL WATER LEVEL IN WETLANDS S = 0.0 %
CB-25 TG: 535.60 (CB-26)INV(IN): 532.31 (CB-24)INV(IN): 531.29 INV(OUT): 531.25
INV: 528.1
INFLOW HEADWALL WITH LEVEL SPREADER
OUTLET STRUCTURE (#3) TG: 531.79 (100YR) 18" x 6" ORIFICE: 530.6 6" ORIFICE: 530.2 (18" OUT): 529.93
CB-26 TG: 535.60 INV(OUT): 532.60
CASCADE SEPARATOR CS-5 (TYP)
CB-27 TG:531.75 (CB-28)INV(IN): 528.60 (OS#3)INV(IN): 528.60 INV: 528.60
CB-28 TG:531.75 INV(OUT):528.80
STORM MH W/ OVERFLOW TO CULVERT RIM: 530.4 INV: 528.15
CB-30 TC: 530.15 INV(OUT): 528.3
CB-29 TG: 530.15 INV: 528.3
CONNECT TO EXISTING CULVERT INV: 528.0
EXTEND PROPOSED WATER MAIN TO CONNECT TO THE EXISTING WATER MAIN IN WARNER ROAD. CONNECT WITH WET TAP AND GATE VALVE
GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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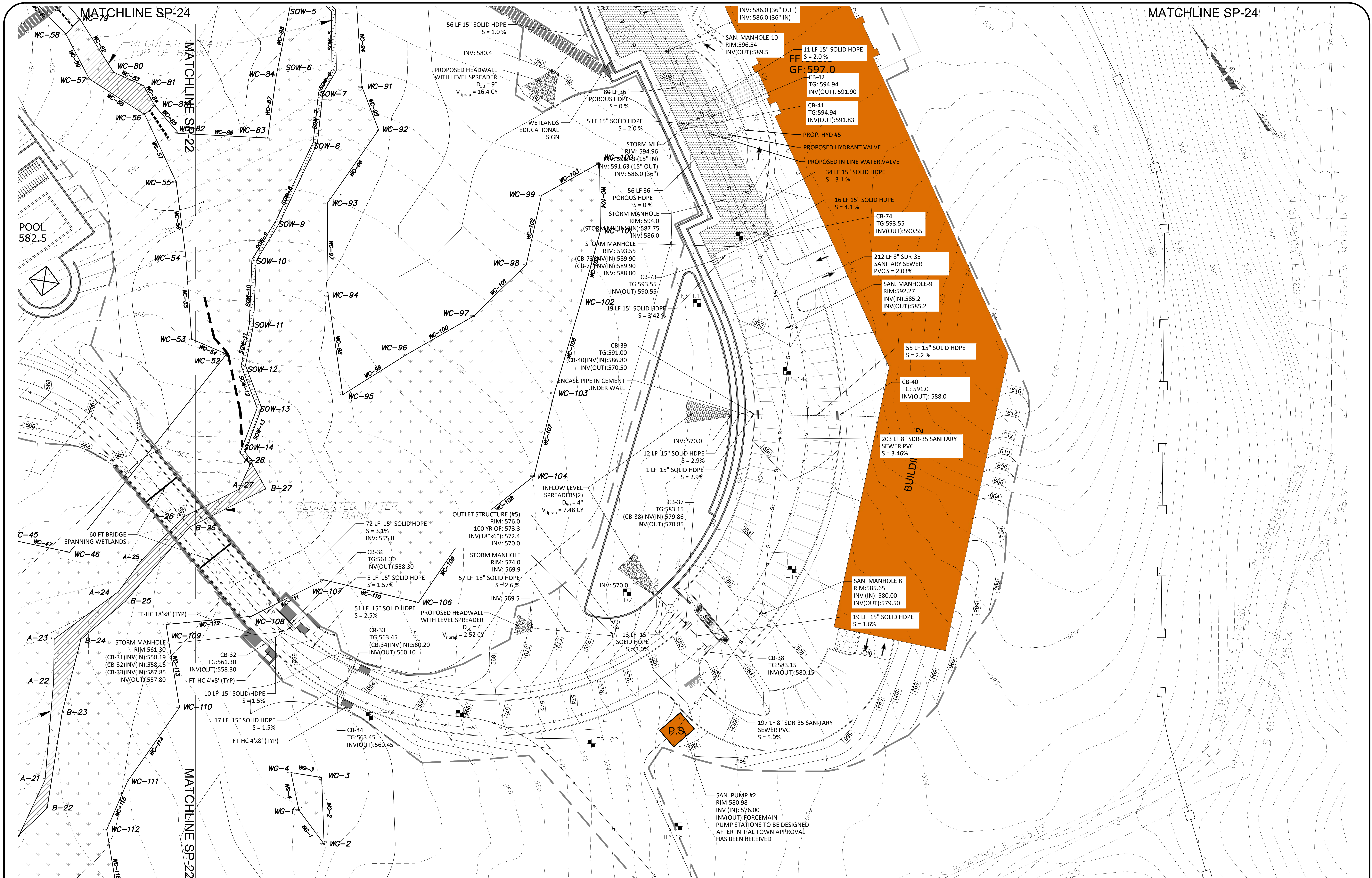
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

UTILITY PLAN D

SP-22

SHEET 22 OF 66


MATCHLINE SP-24
MATCHLINE SP-24
MATCHLINE SP-22
MATCHLINE SP-22
REGULATED WATER TOP OF BANK
REGULATED WATER TOP OF BANK
POOL 582.5
56 LF 15" SOLID HDPE S = 1.0 %
INV: 580.4
PROPOSED HEADWALL WITH LEVEL SPREADER D_{50} = 9" V_{riprap} = 16.4 CY
80 LF 36" POROUS HDPE S = 0 %
WETLANDS EDUCATIONAL SIGN
5 LF 15" SOLID HDPE S = 2.0 %
STORM MH RIM: 594.96 INV: 591.73 (15" IN) INV: 591.63 (15" OUT) INV: 586.0 (36")
56 LF 36" POROUS HDPE S = 0 %
STORM MANHOLE RIM: 594.0 (STORM MH)INV(IN):587.75 INV: 586.0
STORM MANHOLE RIM: 593.55 (CB-73)INV(IN):589.90 (CB-74)INV(IN):589.90 INV: 588.80
CB-73 TG:593.55 INV(OUT):590.55
19 LF 15" SOLID HDPE S = 3.42 %
CB-39 TG:591.00 (CB-40)INV(IN):586.80 INV(OUT):570.50
ENCASE PIPE IN CEMENT UNDER WALL
INV: 570.0
12 LF 15" SOLID HDPE S = 2.9%
1 LF 15" SOLID HDPE S = 2.9%
INFLOW LEVEL SPREADERS(2) D_{50} = 4" V_{riprap} = 7.48 CY
CB-37 TG:583.15 (CB-38)INV(IN):579.86 INV(OUT):570.85
OUTLET STRUCTURE (#5) RIM: 576.0 100 YR OF: 573.3 INV(18"x6"): 572.4 INV: 570.0
72 LF 15" SOLID HDPE S = 3.1% INV: 555.0
CB-31 TG:561.30 INV(OUT):558.30
5 LF 15" SOLID HDPE S = 1.57%
STORM MANHOLE RIM: 574.0 INV: 569.9
57 LF 18" SOLID HDPE S = 2.6 %
INV: 569.5
INV: 570.0
51 LF 15" SOLID HDPE S = 2.5%
PROPOSED HEADWALL WITH LEVEL SPREADER D_{50} = 4" V_{riprap} = 2.52 CY
CB-33 TG:563.45 (CB-34)INV(IN):560.20 INV(OUT):560.10
13 LF 15" SOLID HDPE S = 3.0%
60 FT BRIDGE SPANNING WETLANDS
FT-HC 18'x8' (TYP)
STORM MANHOLE RIM:561.30 (CB-31)INV(IN):558.19 (CB-32)INV(IN):558.15 (CB-33)INV(IN):557.85 INV(OUT):557.80
CB-32 TG:561.30 INV(OUT):558.30
FT-HC 4'x8' (TYP)
10 LF 15" SOLID HDPE S = 1.5%
17 LF 15" SOLID HDPE S = 1.5%
FT-HC 4'x8' (TYP)
CB-34 TG:563.45 INV(OUT):560.45
INV: 586.0 (36" OUT) INV: 586.0 (36" IN)
SAN. MANHOLE-10 RIM:596.54 INV(OUT):589.5
11 LF 15" SOLID HDPE S = 2.0 %
GF:597.0
CB-42 TG: 594.94 INV(OUT): 591.90
CB-41 TG:594.94 INV(OUT):591.83
PROP. HYD #5
PROPOSED HYDRANT VALVE
PROPOSED IN LINE WATER VALVE
34 LF 15" SOLID HDPE S = 3.1 %
16 LF 15" SOLID HDPE S = 4.1 %
CB-74 TG:593.55 INV(OUT):590.55
212 LF 8" SDR-35 SANITARY SEWER PVC S = 2.03%
SAN. MANHOLE-9 RIM:592.27 INV(IN):585.2 INV(OUT):585.2
55 LF 15" SOLID HDPE S = 2.2 %
CB-40 TG: 591.0 INV(OUT): 588.0
203 LF 8" SDR-35 SANITARY SEWER PVC S = 3.46%
BUILDING 2
SAN. MANHOLE 8 RIM:585.65 INV (IN): 580.00 INV(OUT):579.50
19 LF 15" SOLID HDPE S = 1.6%
CB-38 TG:583.15 INV(OUT):580.15
197 LF 8" SDR-35 SANITARY SEWER PVC S = 5.0%
P.S.
SAN. PUMP #2 RIM:580.98 INV (IN): 576.00 INV(OUT):FORCEMAIN PUMP STATIONS TO BE DESIGNED AFTER INITIAL TOWN APPROVAL HAS BEEN RECEIVED
TP-D1
TP-D2
TP-14
TP-15
TP-17
TP-18
TP-C1
TP-C2
TP-E2
STOP
N 31°48'08" E 289.31'
S 60°05'30" E 125.96'
N 60°05'30" W 95.33'
N 46°49'30" E 135.34'
S 46°49'30" W
S 80°49'50" E 343.18'
N 80°49'50" W 347.85'
WC-46
WC-52
WC-53
WC-54
WC-55
WC-56
WC-57
WC-58
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WC-112
WC-113
SOW-5
SOW-6
SOW-7
SOW-8
SOW-9
SOW-10
SOW-11
SOW-12
SOW-13
SOW-14
A-21
A-22
A-23
A-24
A-25
A-27
A-28
B-22
B-23
B-24
B-25
B-26
B-27
WG-1
WG-2
WG-3
WG-4
GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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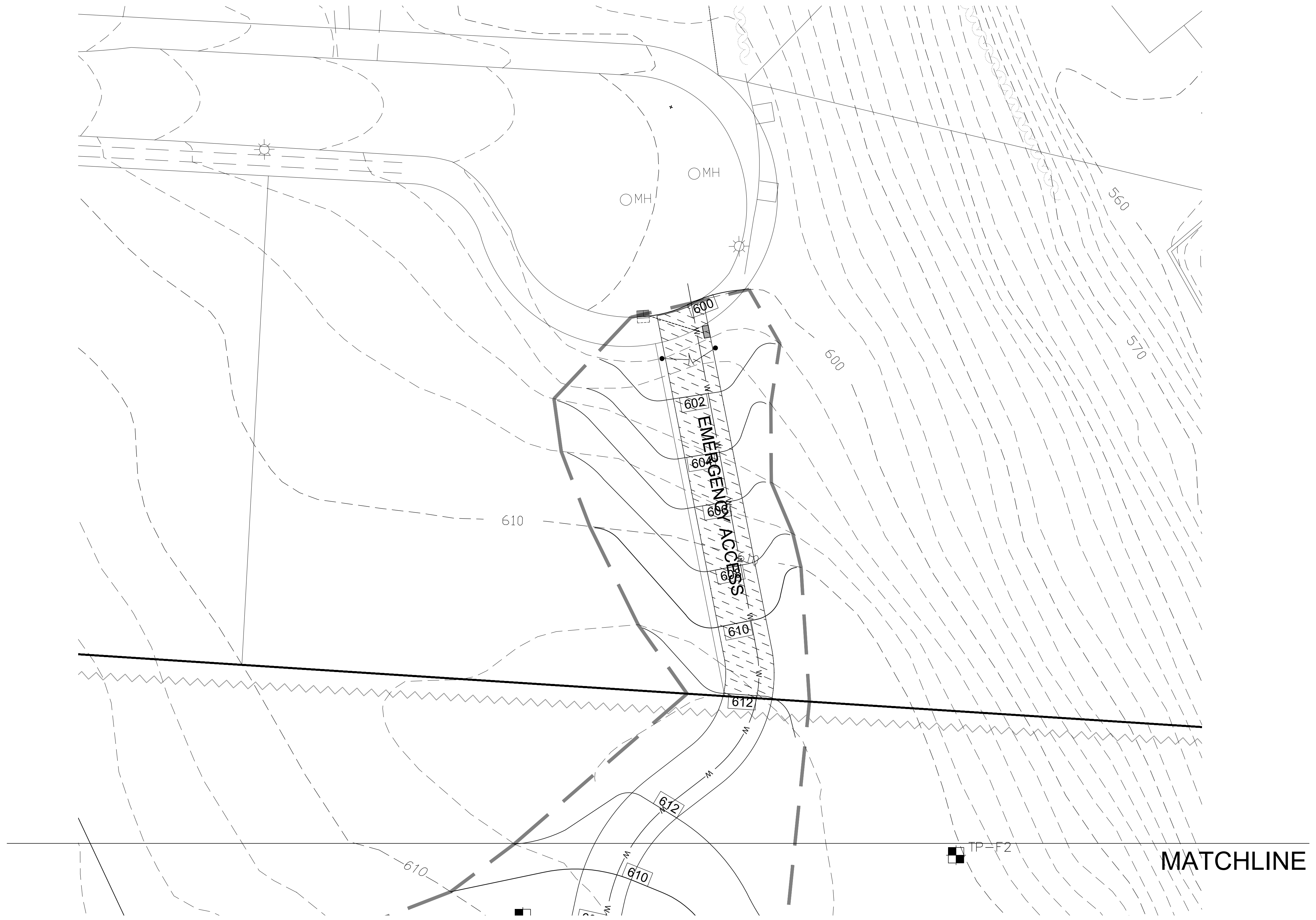
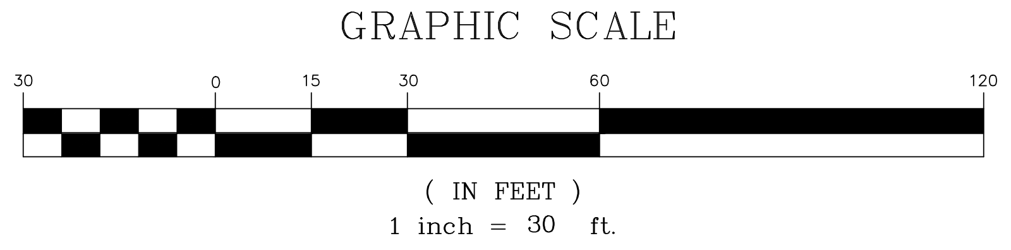
ESSEX COUNTY, NEW JERSEY

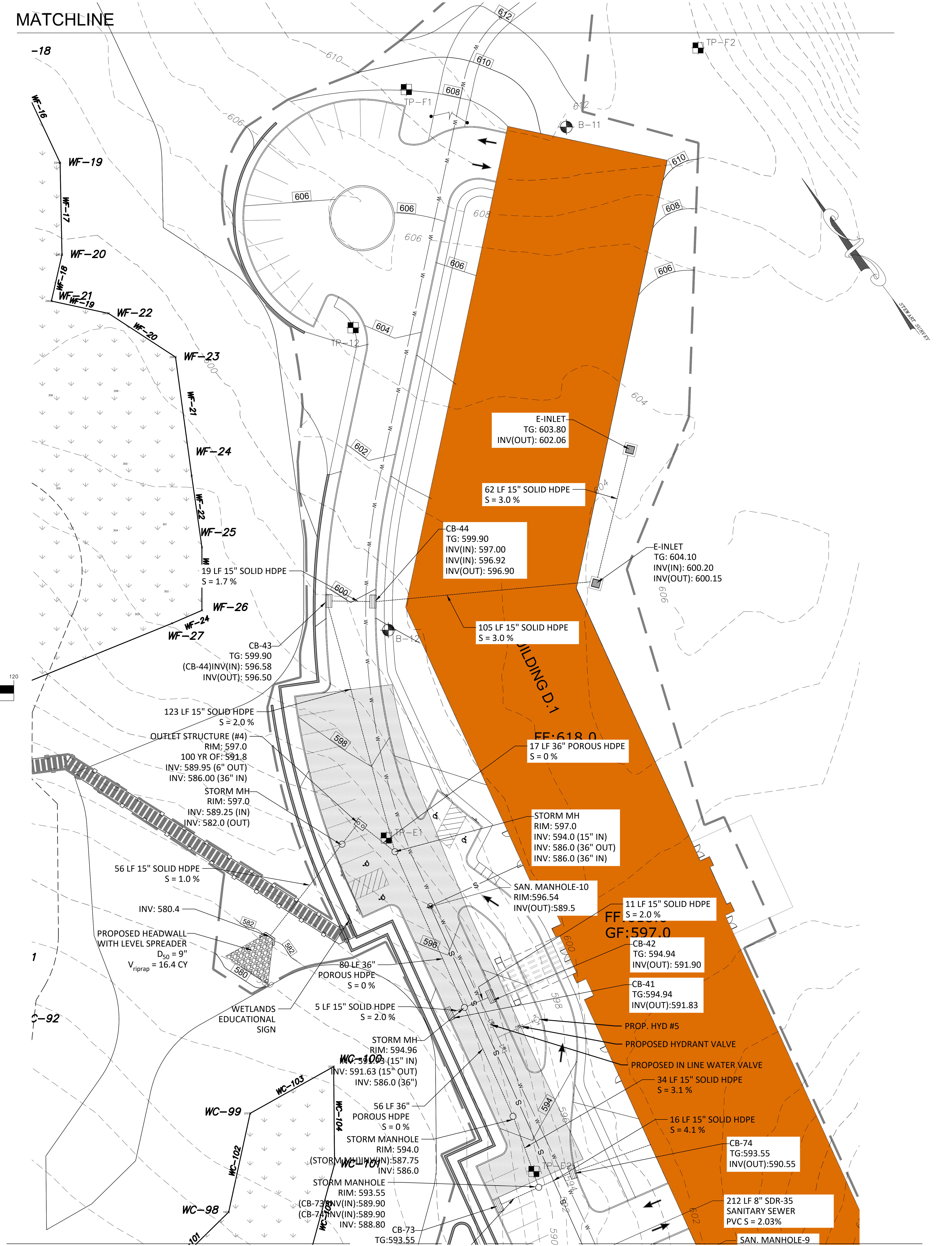
UTILITY PLAN E

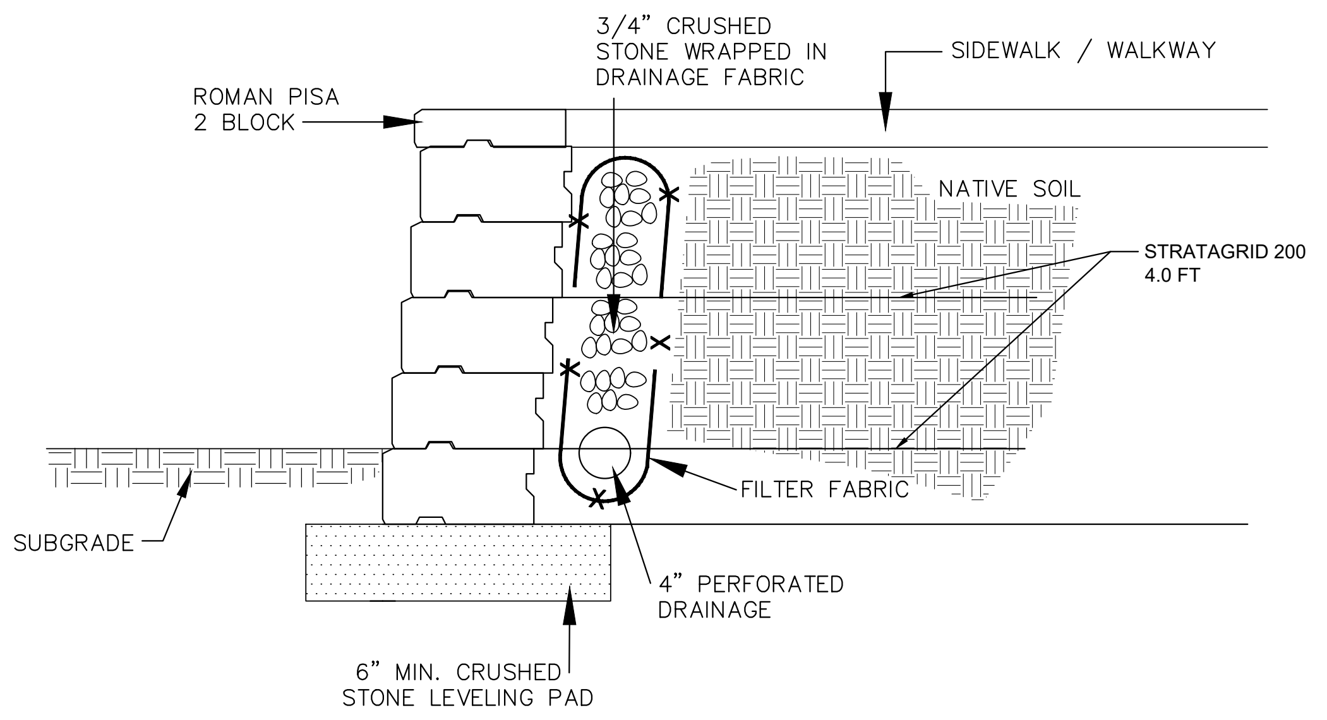
SP-23

SHEET 23 OF 66



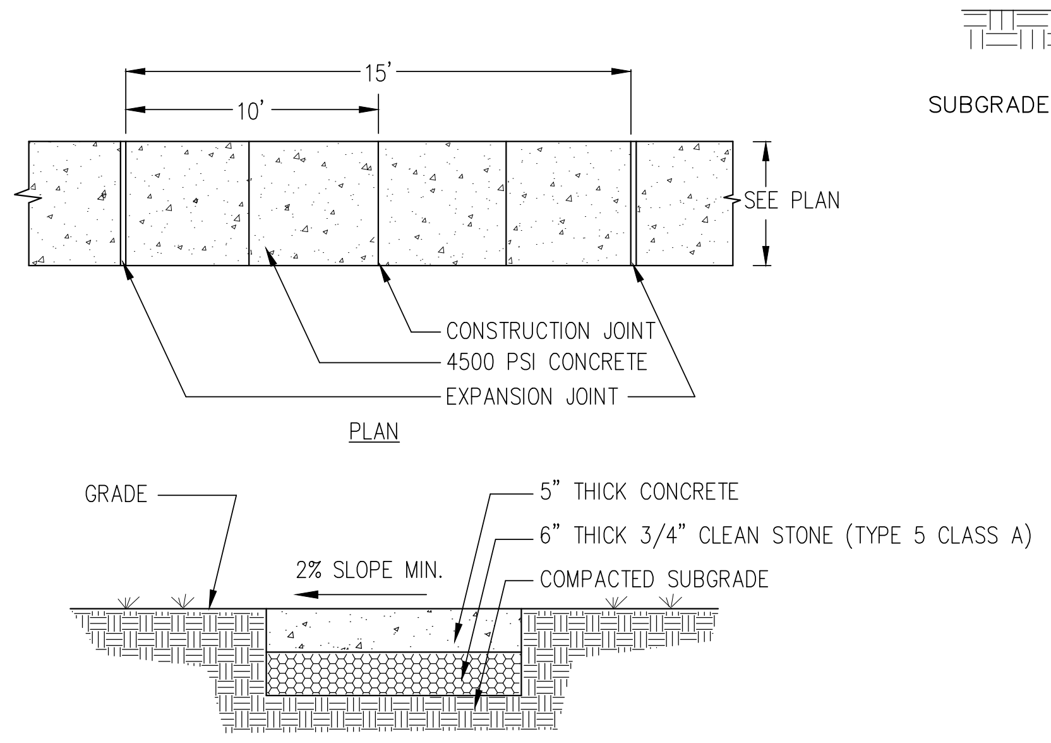






MODULAR BLOCK WALL (4FT MAX)

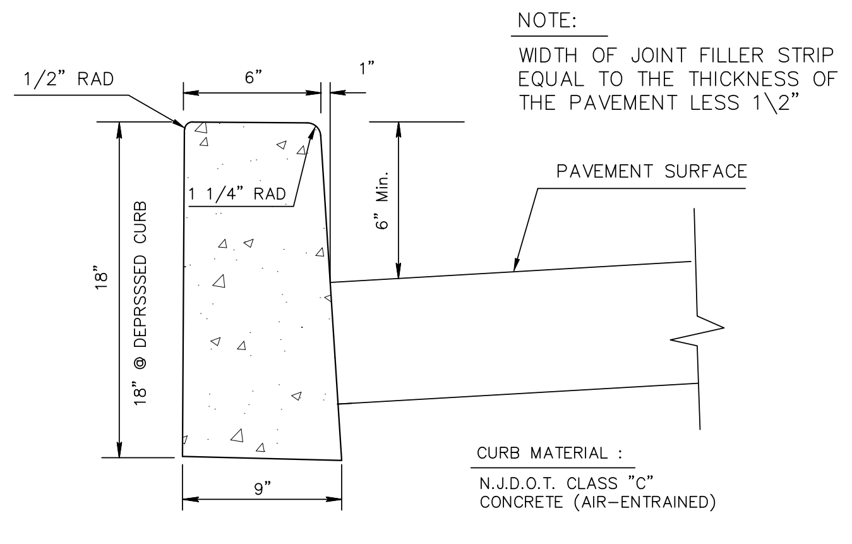
SCALE: NTS



1. ALL CONCRETE SHALL CONFORM TO 2001 STANDARD N.J.D.O.T. SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 914 CLASS "B", AIR-ENTRAINED, 4500 P.S.I. MINIMUM AT 28 DAYS. ALL CONCRETE WORK SHALL HAVE A WOOD FLOAT AND TRANSVERCE BROOM FINISH. BROOMING SHALL BE DONE BEFORE INITIAL SET USING A STEEL OR BARN BROOM.
2. SUBBASE AND FORMWORK SHALL BE FIRM AND APPROVED BY THE CITY ENGINEER OR HIS/HER REPRESENTITIVE PRIOR TO POURING.
3. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO NJDOT 2001 STANDARDS, SPECIFICATIONS AND INSPECTIONS.
4. WHEN SIDEWALK ABUTS CURB OR SIDEWALK, A 1/2" THICK NON-EXTRUDABLE, FIBROUS BITUMASTIC EXPANSION JOINT IS REQUIRED.
5. FOR SCORING PATTERN, SIDEWALK SHALL BE DIVIDED INTO TWO LONGITUDINAL SECTIONS.
6. ALL JOINTS SHALL SAW CUT. NO TOOLED JOINTS ARE PERMITTED.

CONCRETE SIDEWALK

SCALE: NTS



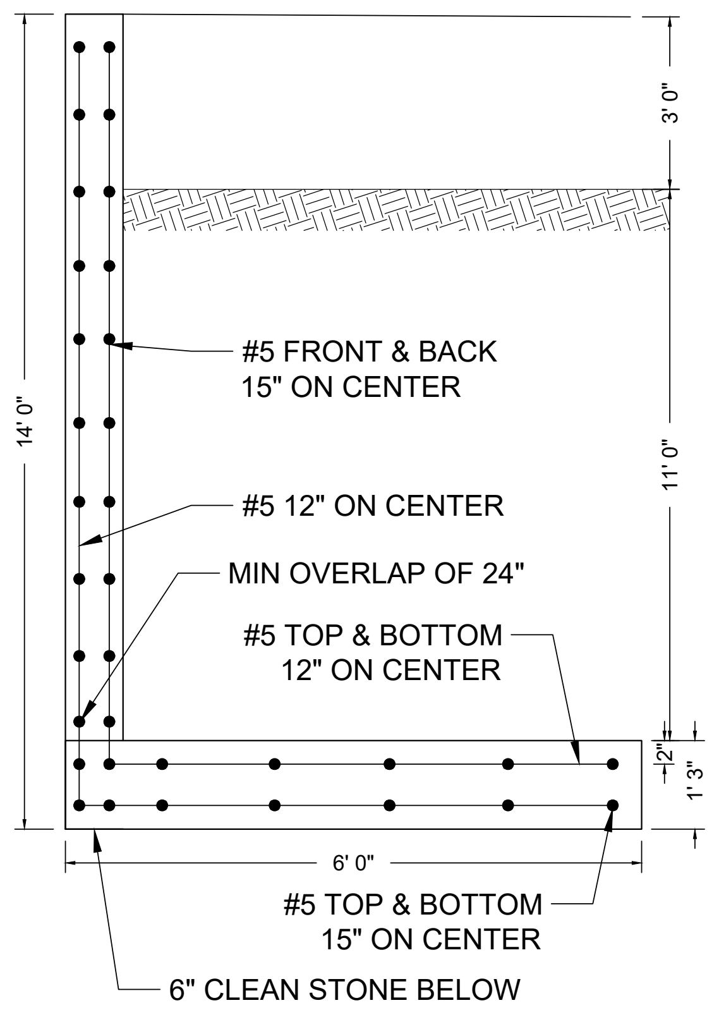
NOTE:
WIDTH OF JOINT FILLER STRIP EQUAL TO THE THICKNESS OF THE PAVEMENT LESS 1\2"

CURB MATERIAL :
N.J.D.O.T. CLASS "C" CONCRETE (AIR-ENTRAINED)

TRANSVERSE JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 20'-0" APART AND SHALL BE FILLED WITH PREFORMED, BITUMINOUS-IMPREGNATED FIBER JOINT FILLER, COMPLYING WITH THE REQUIREMENTS OF A.A.S.H.T.O. SPEC. M-213, RECESSED 1/4" IN FROM FRONT FACE AND TOP OF CURB

CONCRETE VERTICAL CURB

SCALE: NTS



ROAD D WALL DETAIL

SCALE: NTS

811
Know what's below.
Call before you dig.

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MAP REFERENCE:

1. TOPOGRAPHIC INFORMATION BASED ON SURVEY ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY" TAX LOTS 1, 2.04, & 3 – BLOCK 161 TAX LOT 3.01 – BLOCK 161, 1701-1711 ROUTE 10, TOWNSHIP OF MORRIS PLAINS, MORRIS COUNTY, NEW JERSEY" DATED 1/15/16 AND LAST REVISED 1-20-20 PREPARED BY LAKELAND SURVEYING, ROCKAWAY NJ. SIGNED BY MARC J. CIFONE, PLS
2. VERTICAL DATUM IS NAVD 1988
3. NGVD29 TO NGVD1988 = + 1.03 FT
4. FRESHWATERS WETLANDS/BOUNDARY LINE AS VERIFIED BY NJDEP FILE No. 1423-07-0001.1, FWWW190001

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410
SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.

10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS
Revisions	

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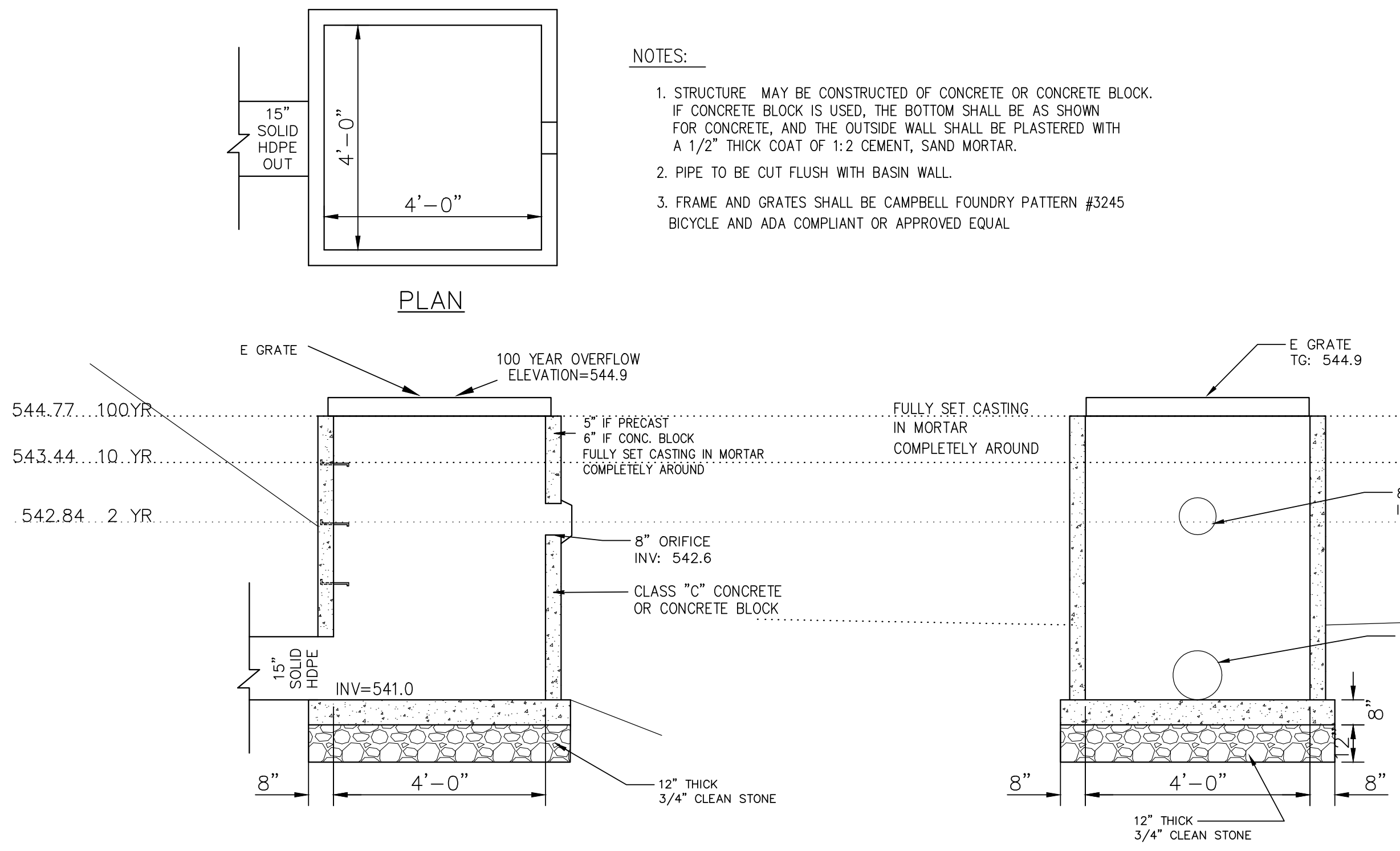
Proj. No.	WEMF2022
Date	9-23-22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

UTILITY PLAN F

SP-24

SHEET 24 OF 66

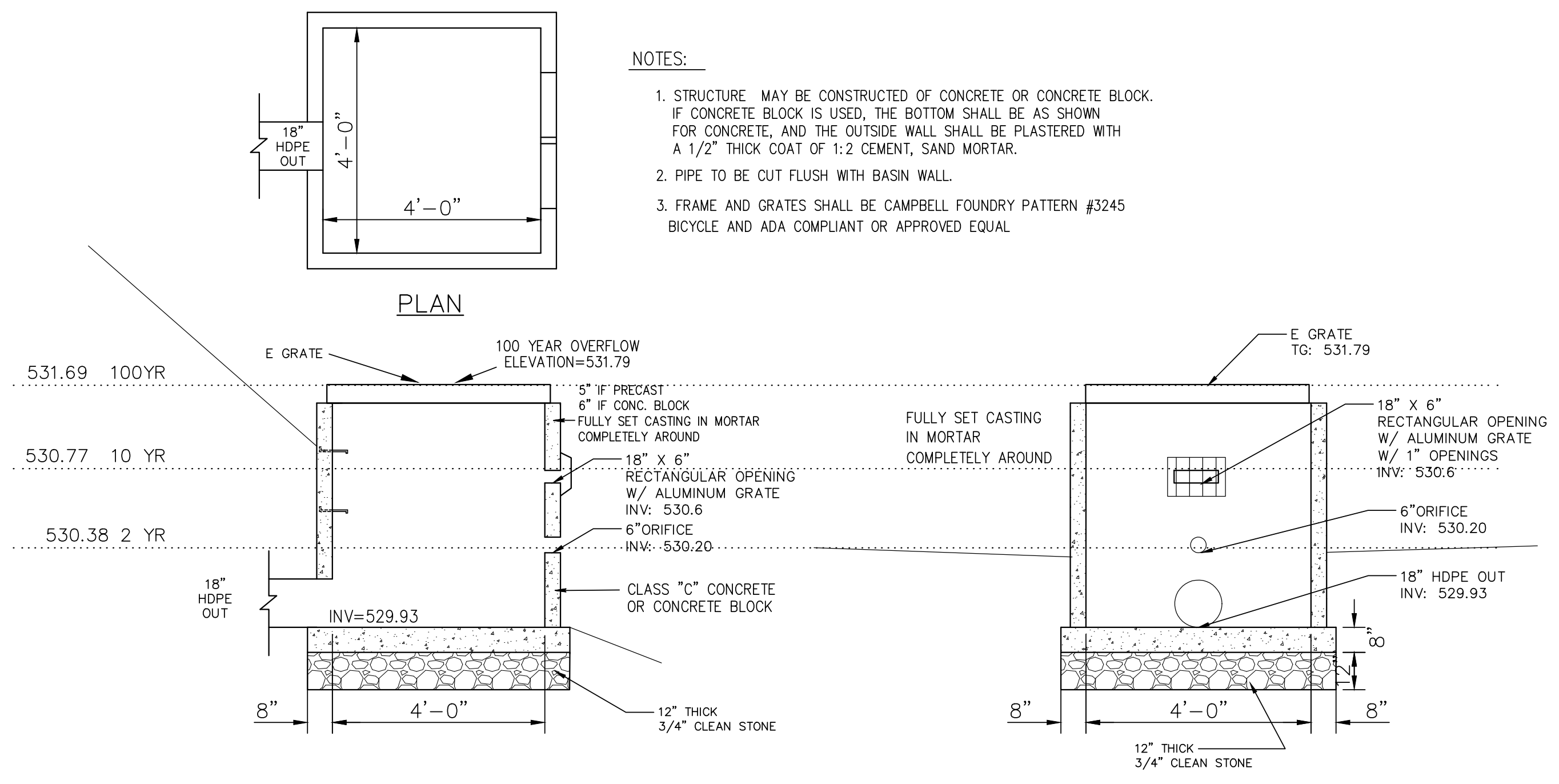


NOTES:

1. STRUCTURE MAY BE CONSTRUCTED OF CONCRETE OR CONCRETE BLOCK. IF CONCRETE BLOCK IS USED, THE BOTTOM SHALL BE AS SHOWN FOR CONCRETE, AND THE OUTSIDE WALL SHALL BE PLASTERED WITH A 1/2" THICK COAT OF 1:2 CEMENT, SAND MORTAR.
2. PIPE TO BE CUT FLUSH WITH BASIN WALL.
3. FRAME AND GRATES SHALL BE CAMPBELL FOUNDRY PATTERN #3245 BICYCLE AND ADA COMPLIANT OR APPROVED EQUAL

'BASIN 1' OUTLET STRUCTURE #1

SCALE: NTS

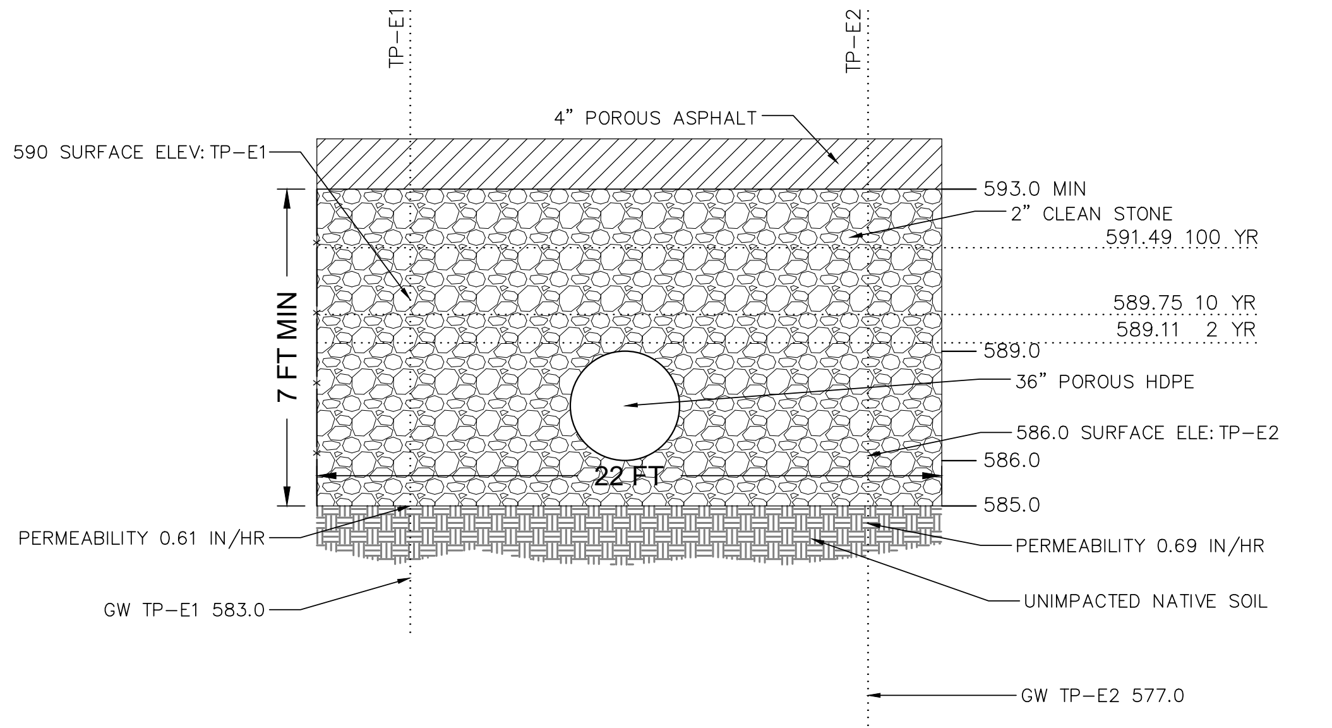

18" HDPE OUT
4'–0"
4'–0"
PLAN
E GRATE
100 YEAR OVERFLOW ELEVATION=531.79
531.69 100YR
530.77 10 YR
530.38 2 YR
5" IF PRECAST
6" IF CONC. BLOCK
FULLY SET CASTING IN MORTAR COMPLETELY AROUND
18" X 6" RECTANGULAR OPENING W/ ALUMINUM GRATE INV: 530.6
6"ORIFICE INV: 530.20
CLASS "C" CONCRETE OR CONCRETE BLOCK
18" HDPE OUT
INV=529.93
8"
4'–0"
12" THICK 3/4" CLEAN STONE
FULLY SET CASTING IN MORTAR COMPLETELY AROUND
E GRATE TG: 531.79
18" X 6" RECTANGULAR OPENING W/ ALUMINUM GRATE W/ 1" OPENINGS INV: 530.6
6"ORIFICE INV: 530.20
18" HDPE OUT INV: 529.93
8"
12"
8"
4'–0"
8"
12" THICK 3/4" CLEAN STONE

NOTES:

1. STRUCTURE MAY BE CONSTRUCTED OF CONCRETE OR CONCRETE BLOCK. IF CONCRETE BLOCK IS USED, THE BOTTOM SHALL BE AS SHOWN FOR CONCRETE, AND THE OUTSIDE WALL SHALL BE PLASTERED WITH A 1/2" THICK COAT OF 1:2 CEMENT, SAND MORTAR.
2. PIPE TO BE CUT FLUSH WITH BASIN WALL.
3. FRAME AND GRATES SHALL BE CAMPBELL FOUNDRY PATTERN #3245 BICYCLE AND ADA COMPLIANT OR APPROVED EQUAL

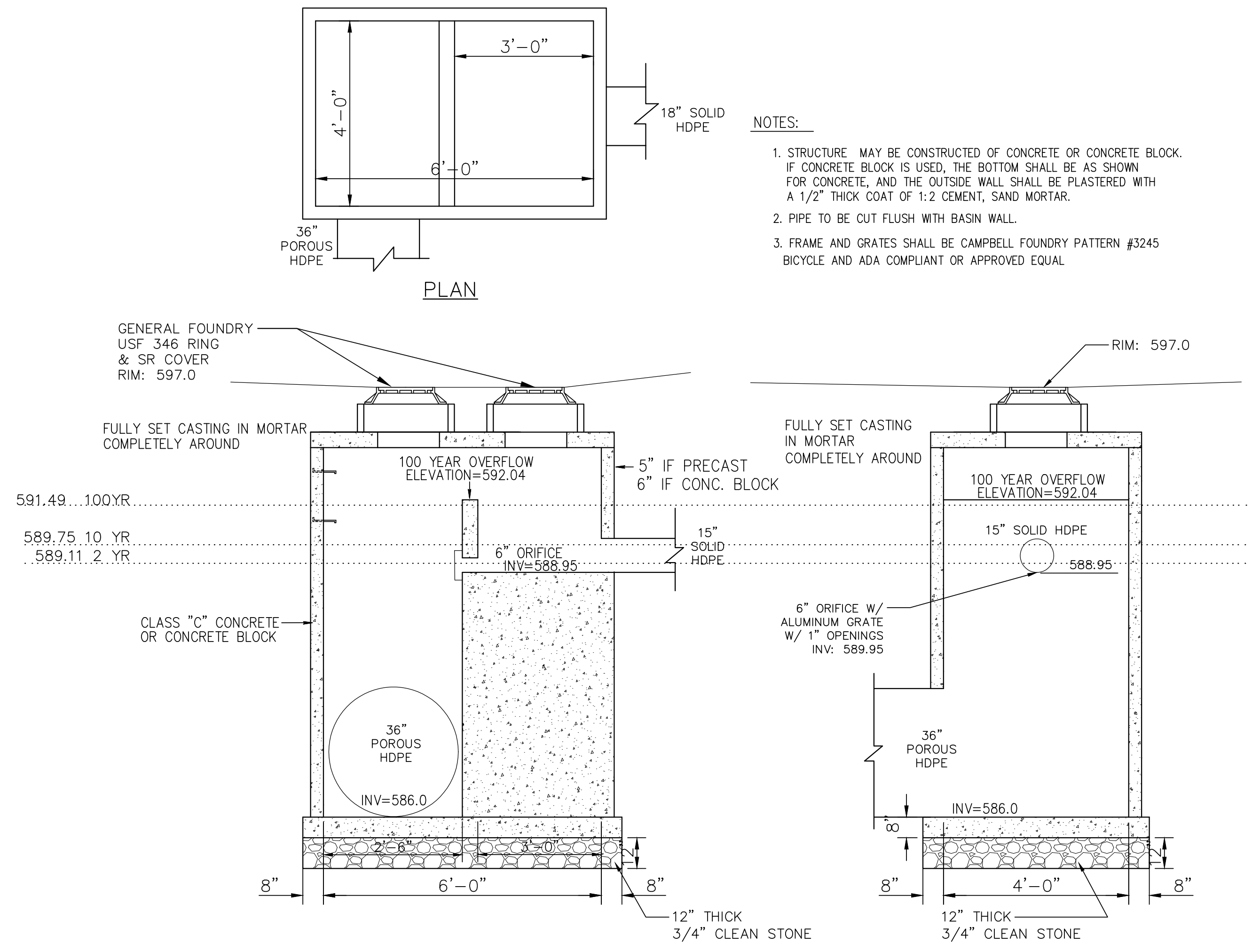
'BASIN 3' OUTLET STRUCTURE #3

SCALE: NTS



DETENTION #4
POROUS ASPHALT RECHARGE DETAIL

SCALE: NTS

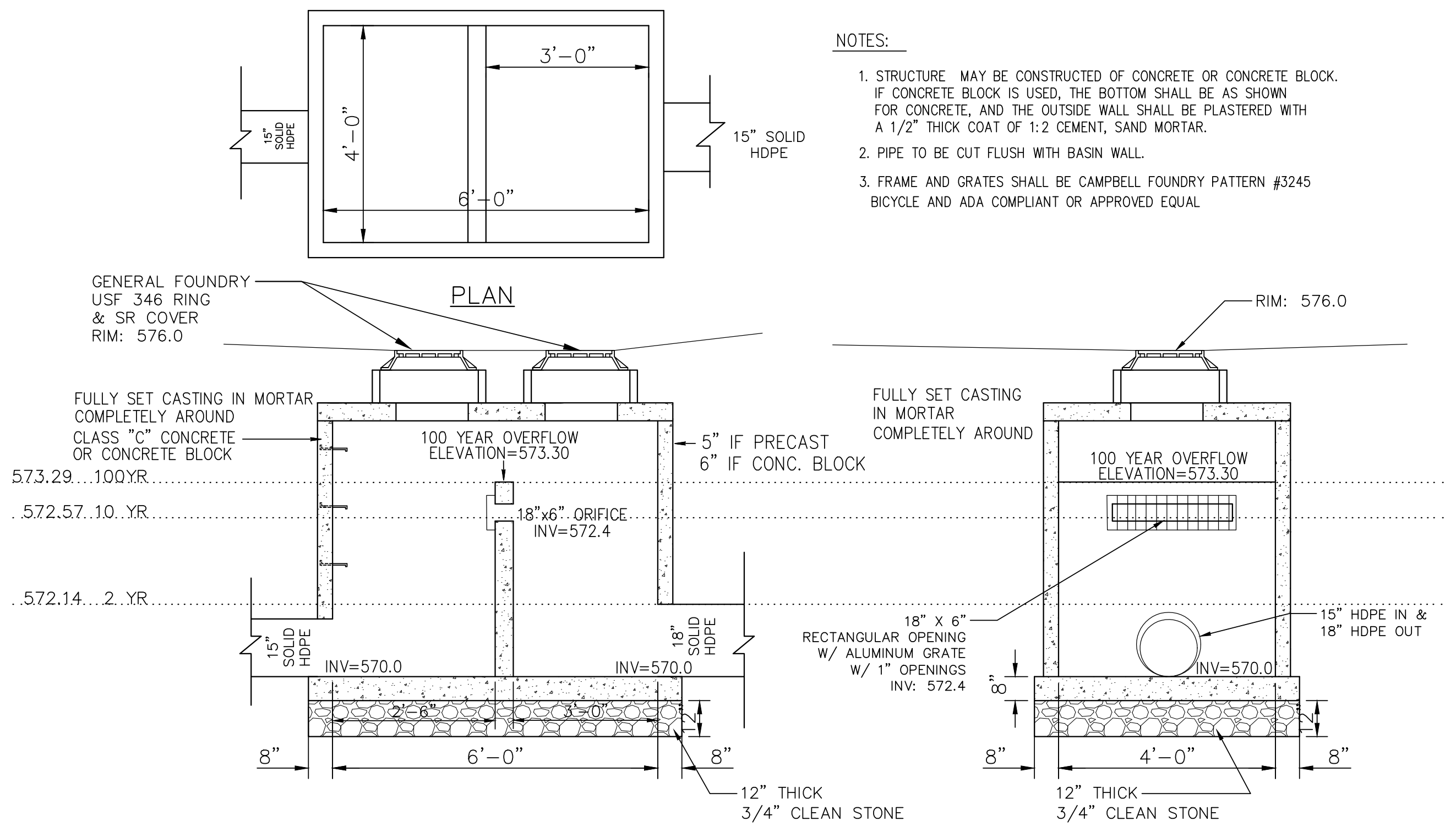

3'–0"
4'–0"
6'–0"
18" SOLID HDPE
36" POROUS HDPE
PLAN
GENERAL FOUNDRY USF 346 RING & SR COVER RIM: 597.0
RIM: 597.0
FULLY SET CASTING IN MORTAR COMPLETELY AROUND
100 YEAR OVERFLOW ELEVATION=592.04
5" IF PRECAST
6" IF CONC. BLOCK
591.49 100YR
589.75 10 YR
589.11 2 YR
6" ORIFICE INV=588.95
15" SOLID HDPE
CLASS "C" CONCRETE OR CONCRETE BLOCK
36" POROUS HDPE
INV=586.0
2'–6"
3'–0"
8"
6'–0"
8"
12" THICK 3/4" CLEAN STONE
FULLY SET CASTING IN MORTAR COMPLETELY AROUND
100 YEAR OVERFLOW ELEVATION=592.04
15" SOLID HDPE
588.95
6" ORIFICE W/ ALUMINUM GRATE W/ 1" OPENINGS INV: 589.95
36" POROUS HDPE
INV=586.0
8"
4'–0"
8"
12" THICK 3/4" CLEAN STONE

NOTES:

1. STRUCTURE MAY BE CONSTRUCTED OF CONCRETE OR CONCRETE BLOCK. IF CONCRETE BLOCK IS USED, THE BOTTOM SHALL BE AS SHOWN FOR CONCRETE, AND THE OUTSIDE WALL SHALL BE PLASTERED WITH A 1/2" THICK COAT OF 1:2 CEMENT, SAND MORTAR.
2. PIPE TO BE CUT FLUSH WITH BASIN WALL.
3. FRAME AND GRATES SHALL BE CAMPBELL FOUNDRY PATTERN #3245 BICYCLE AND ADA COMPLIANT OR APPROVED EQUAL

DETENTION OUTLET STRUCTURE #4

SCALE: NTS


15" SOLID HDPE
3'–0"
4'–0"
6'–0"
15" SOLID HDPE
PLAN
GENERAL FOUNDRY USF 346 RING & SR COVER RIM: 576.0
RIM: 576.0
FULLY SET CASTING IN MORTAR COMPLETELY AROUND
CLASS "C" CONCRETE OR CONCRETE BLOCK
100 YEAR OVERFLOW ELEVATION=573.30
5" IF PRECAST
6" IF CONC. BLOCK
573.29 100YR
572.57 10 YR
572.14 2 YR
18"x6" ORIFICE INV=572.4
15" SOLID HDPE
18" SOLID HDPE
INV=570.0
INV=570.0
2'–6"
3'–0"
8"
6'–0"
8"
12" THICK 3/4" CLEAN STONE
FULLY SET CASTING IN MORTAR COMPLETELY AROUND
100 YEAR OVERFLOW ELEVATION=573.30
18" X 6" RECTANGULAR OPENING W/ ALUMINUM GRATE W/ 1" OPENINGS INV: 572.4
15" HDPE IN & 18" HDPE OUT
INV=570.0
8"
4'–0"
8"
12" THICK 3/4" CLEAN STONE

NOTES:

1. STRUCTURE MAY BE CONSTRUCTED OF CONCRETE OR CONCRETE BLOCK. IF CONCRETE BLOCK IS USED, THE BOTTOM SHALL BE AS SHOWN FOR CONCRETE, AND THE OUTSIDE WALL SHALL BE PLASTERED WITH A 1/2" THICK COAT OF 1:2 CEMENT, SAND MORTAR.
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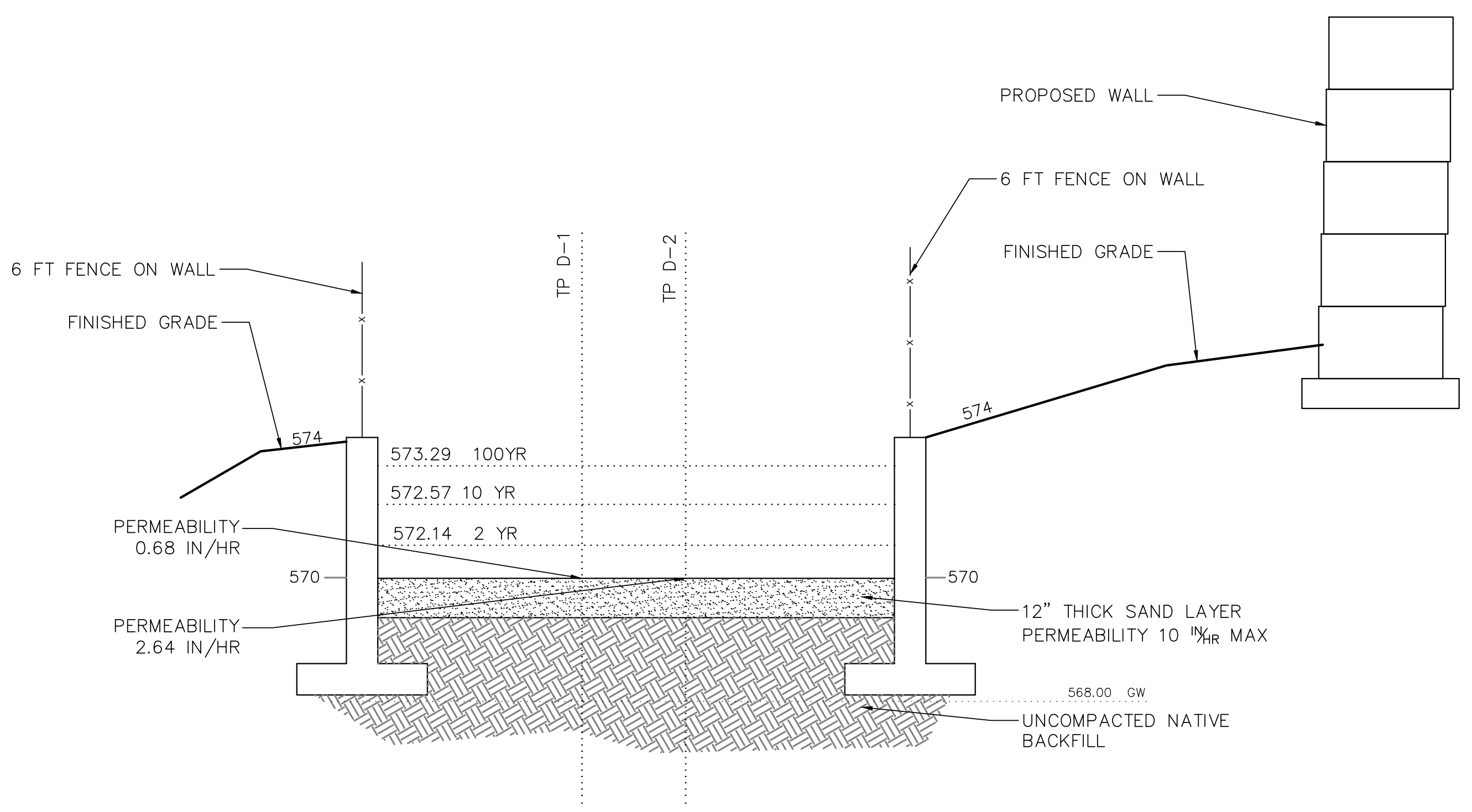
DETENTION OUTLET STRUCTURE #5

SCALE: NTS



DETENTION BASIN #5 SECTION

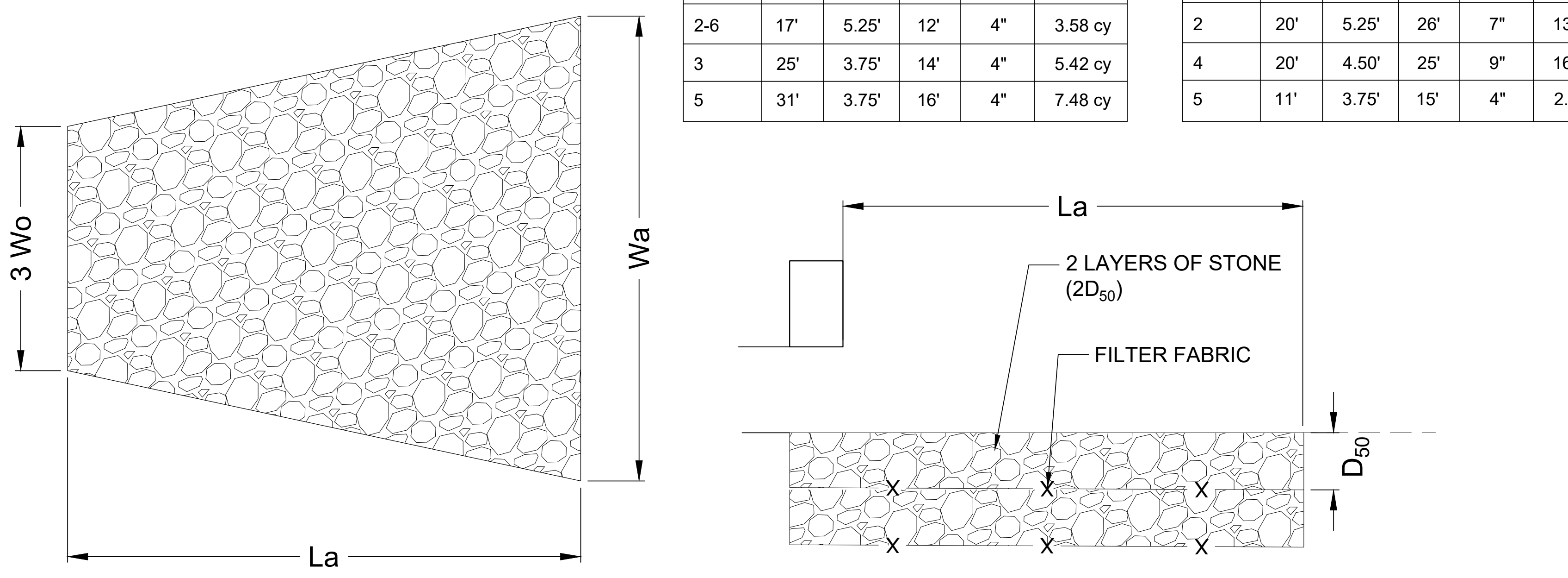
SCALE: NTS

DETENTION INFLOW RIPRAP TABLE

BASIN	La	3Wo	Wa	D_{50}	V_{RIPRAP}
1	38'	6.0'	21'	6"	19.0 cy
2-2	22'	5.25'	14'	4"	5.18 cy
2-3	19'	5.25'	13'	4"	4.24 cy
2-4	18'	5.25'	13'	4"	4.02 cy
2-5	16'	5.25'	12'	4"	3.37 cy
2-6	17'	5.25'	12'	4"	3.58 cy
3	25'	3.75'	14'	4"	5.42 cy
5	31'	3.75'	16'	4"	7.48 cy

DETENTION OUTFLOW RIPRAP TABLE

BASIN	La	3Wo	Wa	D_{50}	V_{RIPRAP}
1	11'	3.75'	15'	4"	2.52 cy
2	20'	5.25'	26'	7"	13.5 cy
4	20'	4.50'	25'	9"	16.4 cy
5	11'	3.75'	15'	4"	2.52 cy



RIP RAP APRON / LEVEL SPREADER

SCALE: NTS

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LIC. NO. 33410

Paul W. Anderson

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Revisions	

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CERTIFICATE OF AUTHORIZATION
24GA28182400

Proj. No.	WEMF2022
Date	9–23–22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

DRAINAGE CONSTRUCTION DETAILS

SP-25

NOTES:

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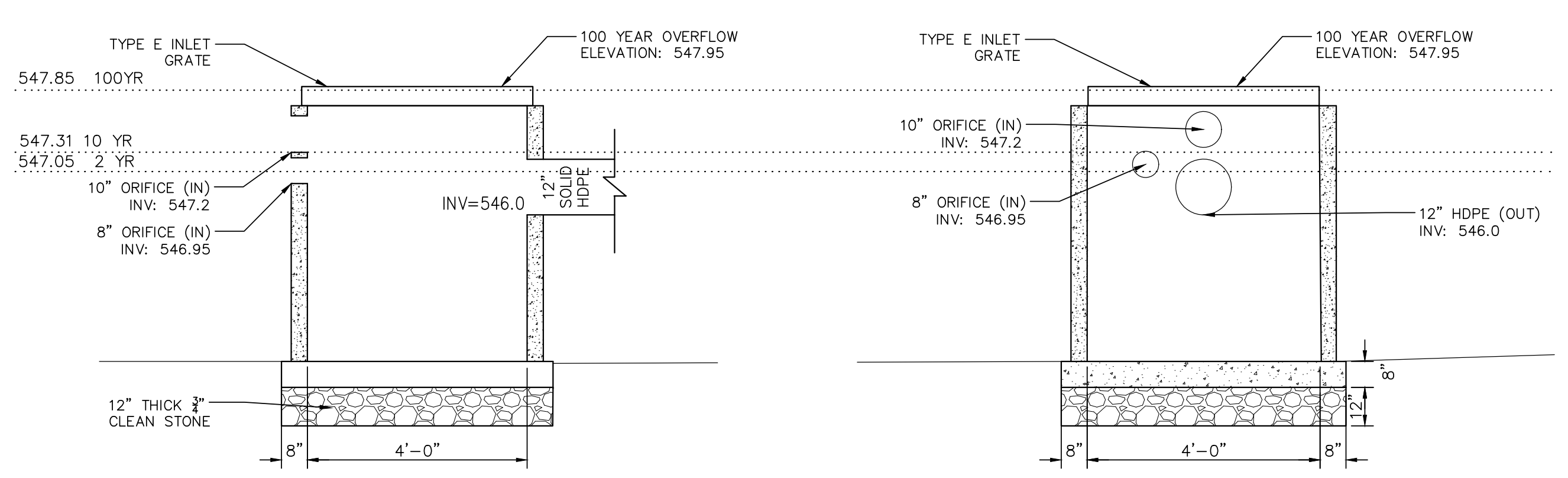
2. PIPE TO BE CUT FLUSH WITH BASIN WALL.
3. FRAME AND GRATES SHALL BE CAMPBELL FOUNDRY PATTERN #3245 BICYCLE AND ADA COMPLIANT OR APPROVED EQUAL


TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 547.95
547.85 100YR
547.31 10 YR
547.05 2 YR
10" ORIFICE (IN) INV: 547.2
8" ORIFICE (IN) INV: 546.95
INV=546.0
12" SOLID HDPE
12" THICK ¾" CLEAN STONE
8"
4'–0"
TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 547.95
10" ORIFICE (IN) INV: 547.2
8" ORIFICE (IN) INV: 546.95
12" HDPE (OUT) INV: 546.0
8"
12"
4'–0"
8"

'BASIN 2' OUTLET STRUCTURE 2-1

SCALE: NTS

NOTES:

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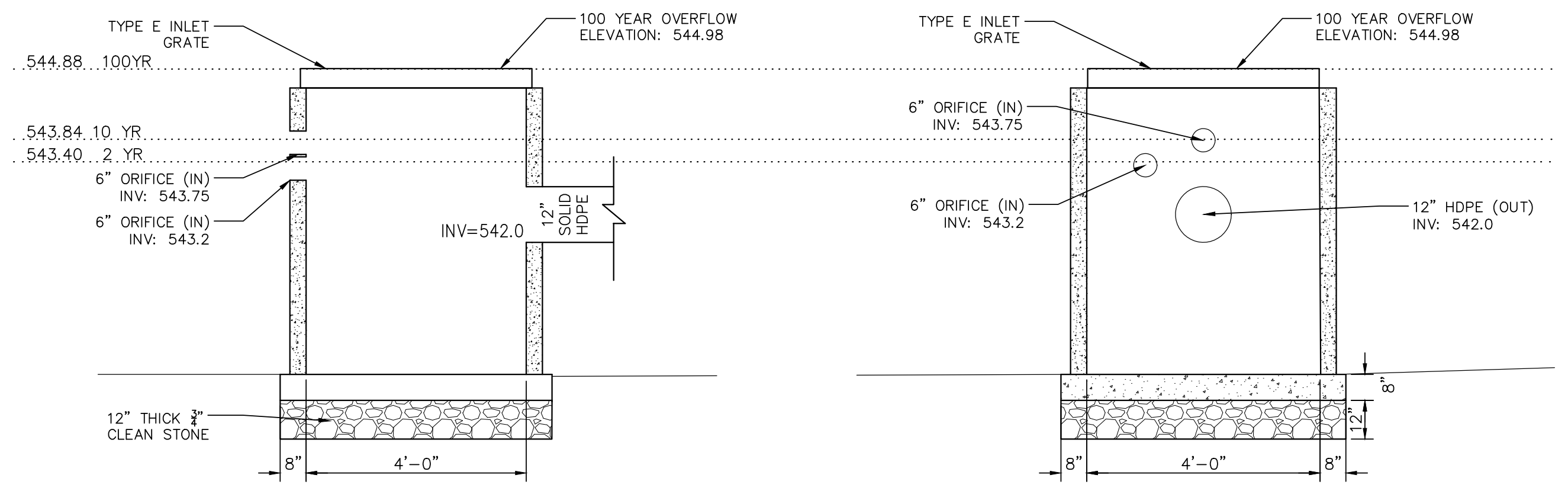
TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 544.98
544.88 100YR
543.84 10 YR
543.40 2 YR
6" ORIFICE (IN) INV: 543.75
6" ORIFICE (IN) INV: 543.2
INV=542.0
12" SOLID HDPE
12" THICK ¾" CLEAN STONE
8"
4'–0"
TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 544.98
6" ORIFICE (IN) INV: 543.75
6" ORIFICE (IN) INV: 543.2
12" HDPE (OUT) INV: 542.0
8"
12"
4'–0"
8"

'BASIN 2' OUTLET STRUCTURE 2-2

SCALE: NTS

NOTES:

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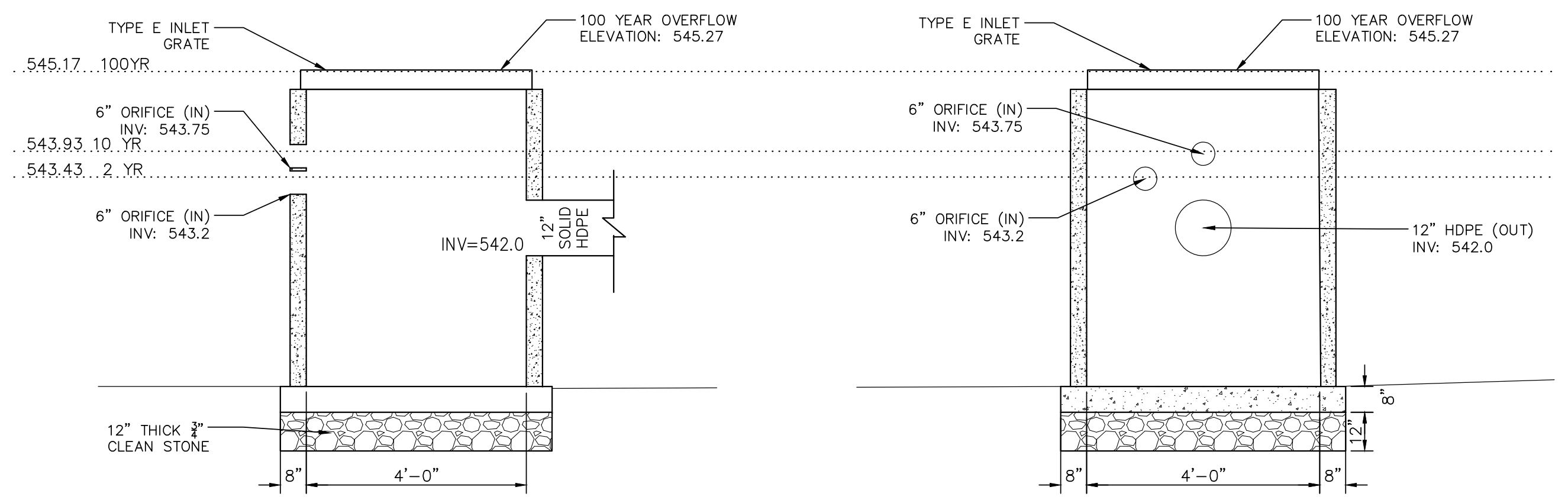
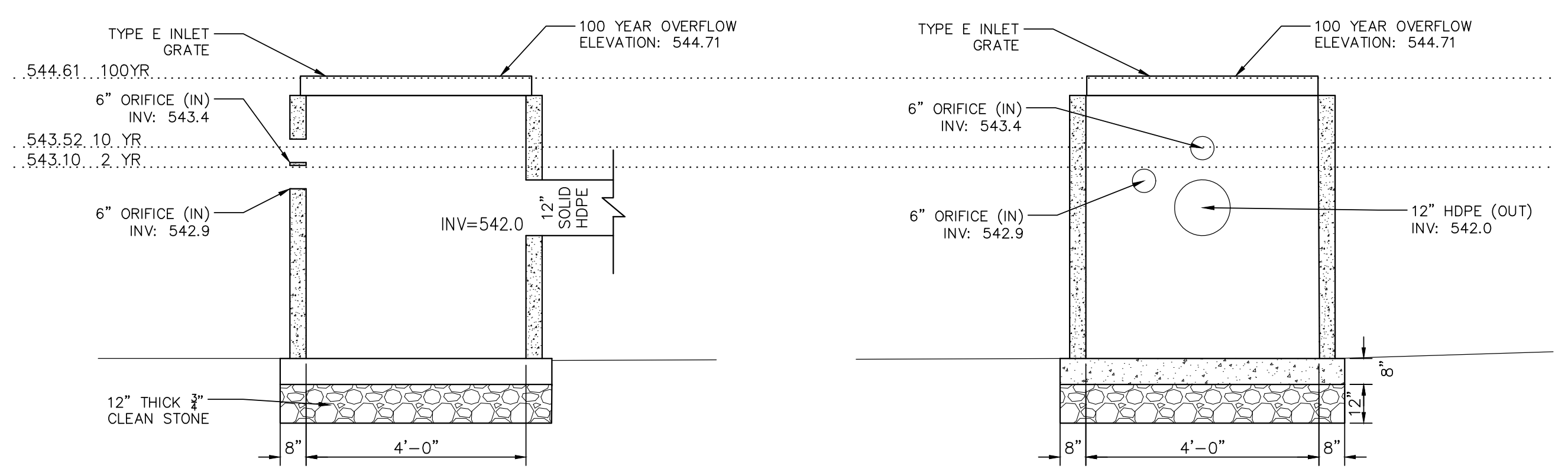

TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 545.27
545.17 100YR
6" ORIFICE (IN) INV: 543.75
543.93 10 YR
543.43 2 YR
6" ORIFICE (IN) INV: 543.2
INV=542.0
12" SOLID HDPE
12" THICK ¾" CLEAN STONE
8"
4'–0"
TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 545.27
6" ORIFICE (IN) INV: 543.75
6" ORIFICE (IN) INV: 543.2
12" HDPE (OUT) INV: 542.0
8"
12"
4'–0"
8"

'BASIN 2' OUTLET STRUCTURE 2-3

SCALE: NTS

NOTES:

1. STRUCTURE MAY BE CONSTRUCTED OF CONCRETE OR CONCRETE BLOCK. IF CONCRETE BLOCK IS USED, THE BOTTOM SHALL BE AS SHOWN FOR CONCRETE, AND THE OUTSIDE WALL SHALL BE PLASTERED WITH A 1/2" THICK COAT OF 1:2 CEMENT, SAND MORTAR.
2. PIPE TO BE CUT FLUSH WITH BASIN WALL.
3. FRAME AND GRATES SHALL BE CAMPBELL FOUNDRY PATTERN #3245 BICYCLE AND ADA COMPLIANT OR APPROVED EQUAL


TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 544.71
544.61 100YR
6" ORIFICE (IN) INV: 543.4
543.52 10 YR
543.10 2 YR
6" ORIFICE (IN) INV: 542.9
INV=542.0
12" SOLID HDPE
12" THICK ¾" CLEAN STONE
8"
4'–0"
TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 544.71
6" ORIFICE (IN) INV: 543.4
6" ORIFICE (IN) INV: 542.9
12" HDPE (OUT) INV: 542.0
8"
12"
4'–0"
8"

'BASIN 2' OUTLET STRUCTURE 2-4

SCALE: NTS

NOTES:

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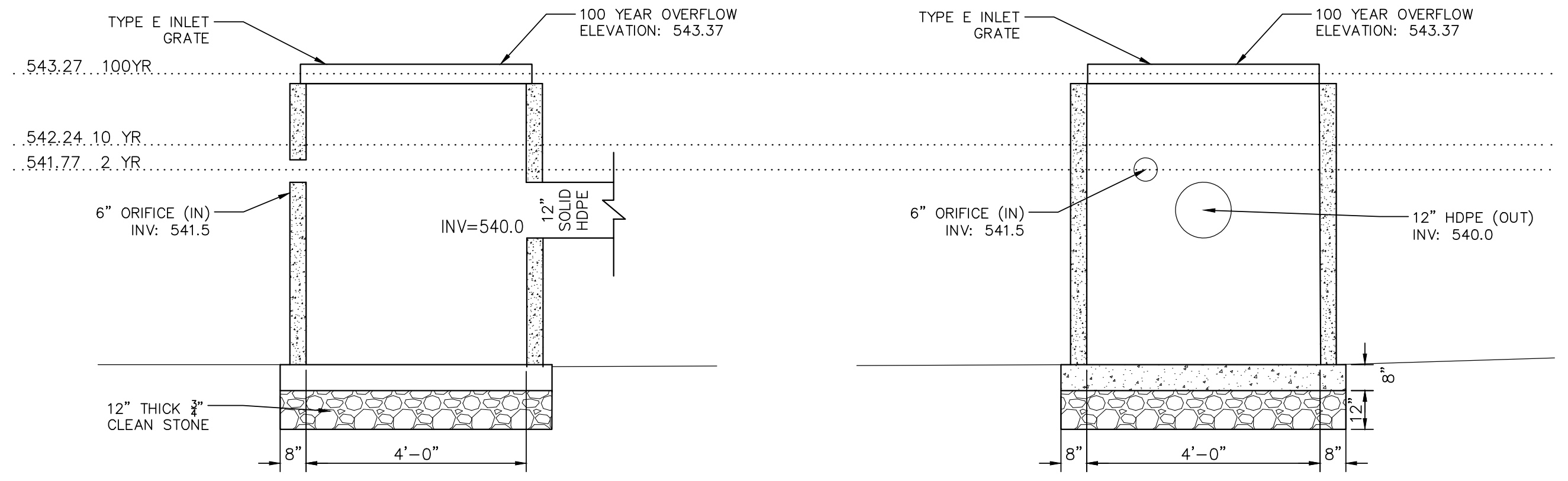
TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 543.37
543.27 100YR
542.24 10 YR
541.77 2 YR
6" ORIFICE (IN) INV: 541.5
INV=540.0
12" SOLID HDPE
12" THICK ¾" CLEAN STONE
8"
4'–0"
TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 543.37
6" ORIFICE (IN) INV: 541.5
12" HDPE (OUT) INV: 540.0
8"
12"
4'–0"
8"

'BASIN 2' OUTLET STRUCTURE 2-5

SCALE: NTS

NOTES:

1. STRUCTURE MAY BE CONSTRUCTED OF CONCRETE OR CONCRETE BLOCK. IF CONCRETE BLOCK IS USED, THE BOTTOM SHALL BE AS SHOWN FOR CONCRETE, AND THE OUTSIDE WALL SHALL BE PLASTERED WITH A 1/2" THICK COAT OF 1:2 CEMENT, SAND MORTAR.
2. PIPE TO BE CUT FLUSH WITH BASIN WALL.
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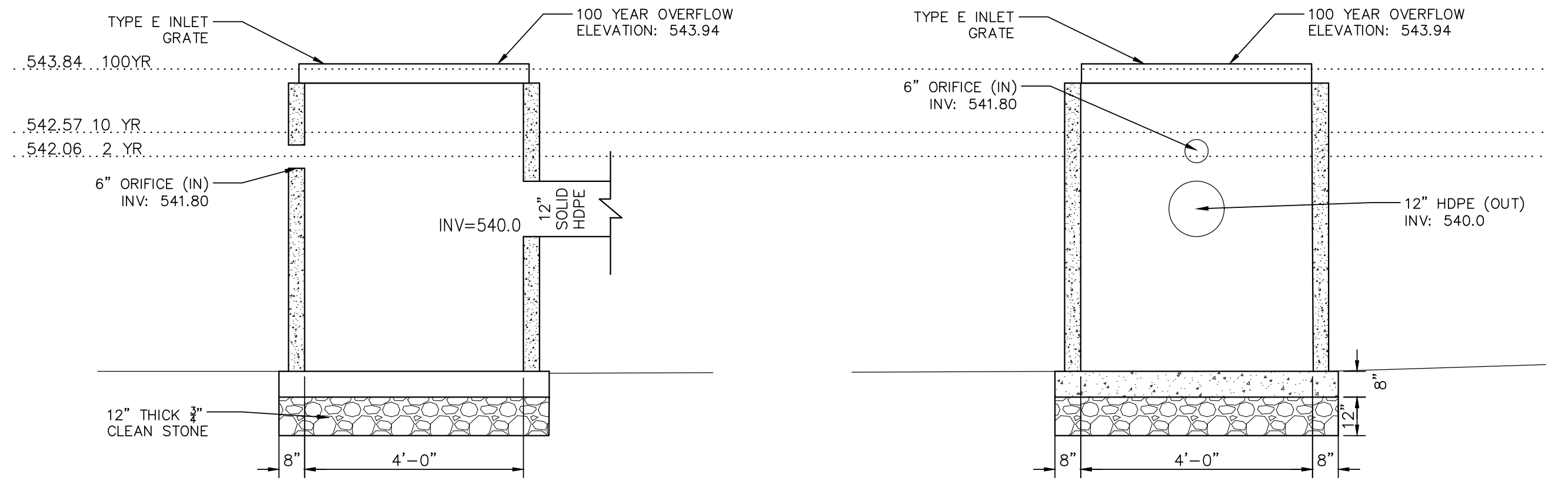
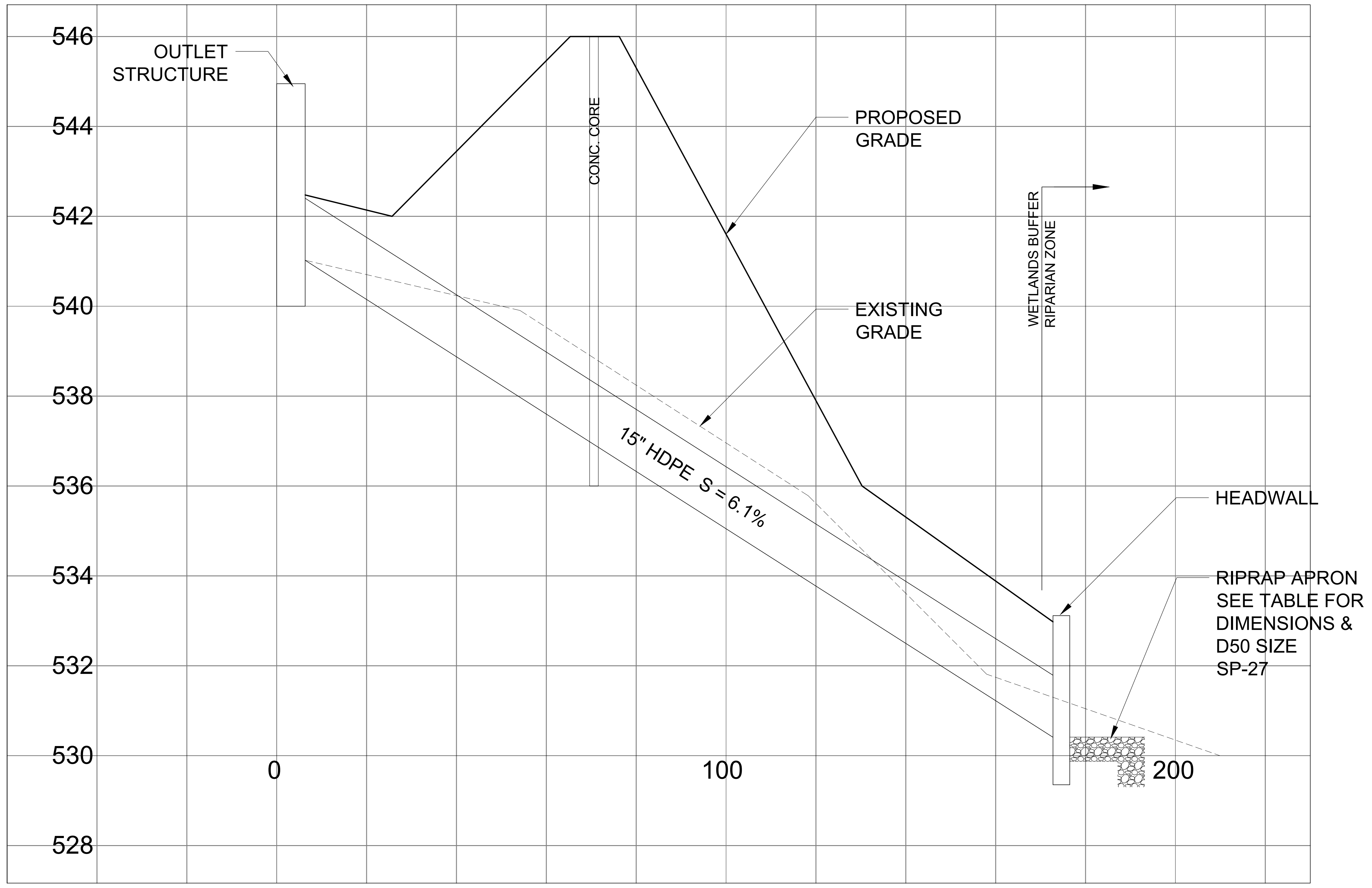

TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 543.94
543.84 100YR
542.57 10 YR
542.06 2 YR
6" ORIFICE (IN) INV: 541.80
INV=540.0
12" SOLID HDPE
12" THICK ¾" CLEAN STONE
8"
4'–0"
TYPE E INLET GRATE
100 YEAR OVERFLOW ELEVATION: 543.94
6" ORIFICE (IN) INV: 541.80
12" HDPE (OUT) INV: 540.0
8"
12"
4'–0"
8"

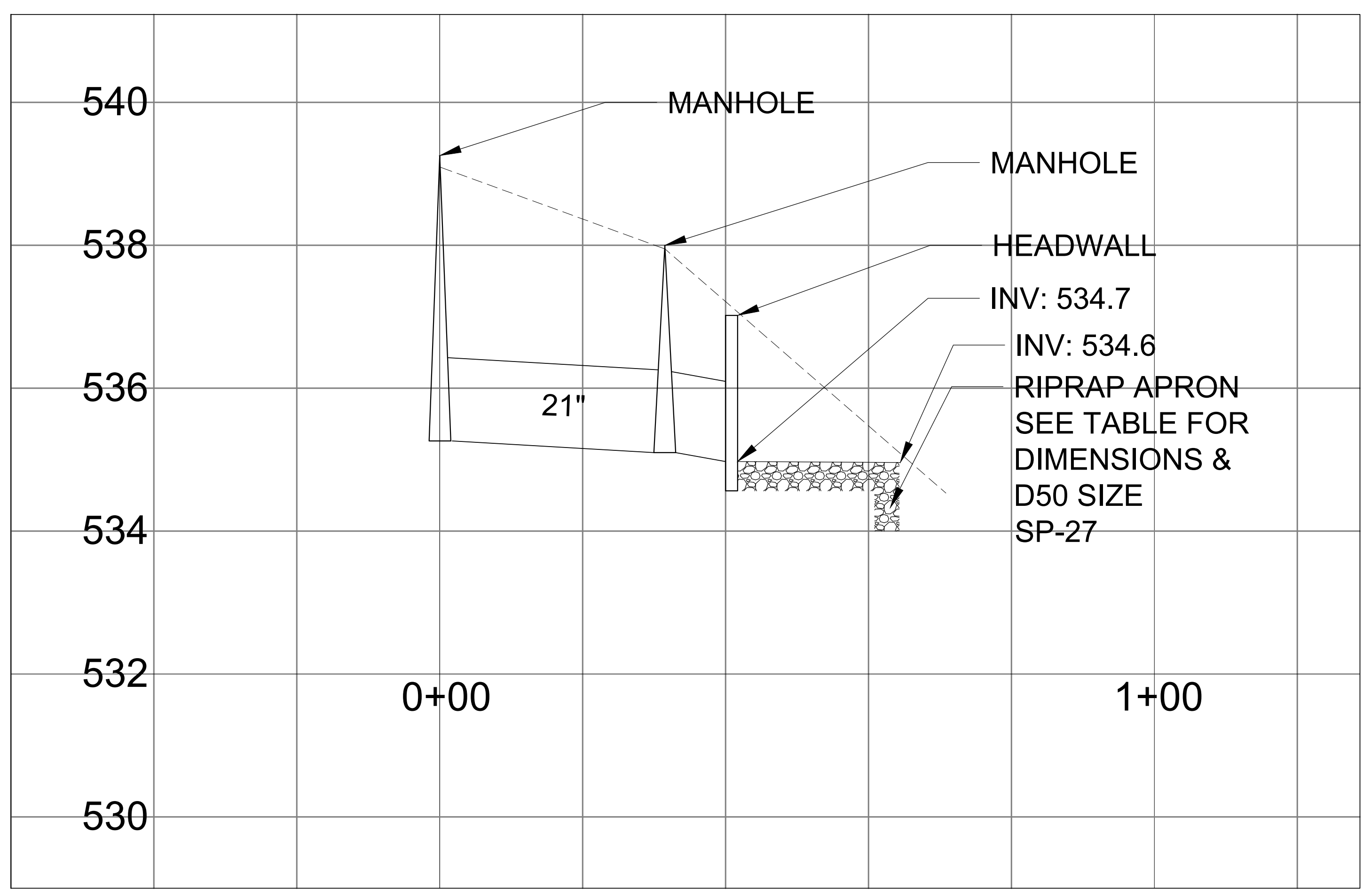
'BASIN 2' OUTLET STRUCTURE 2-6

SCALE: NTS



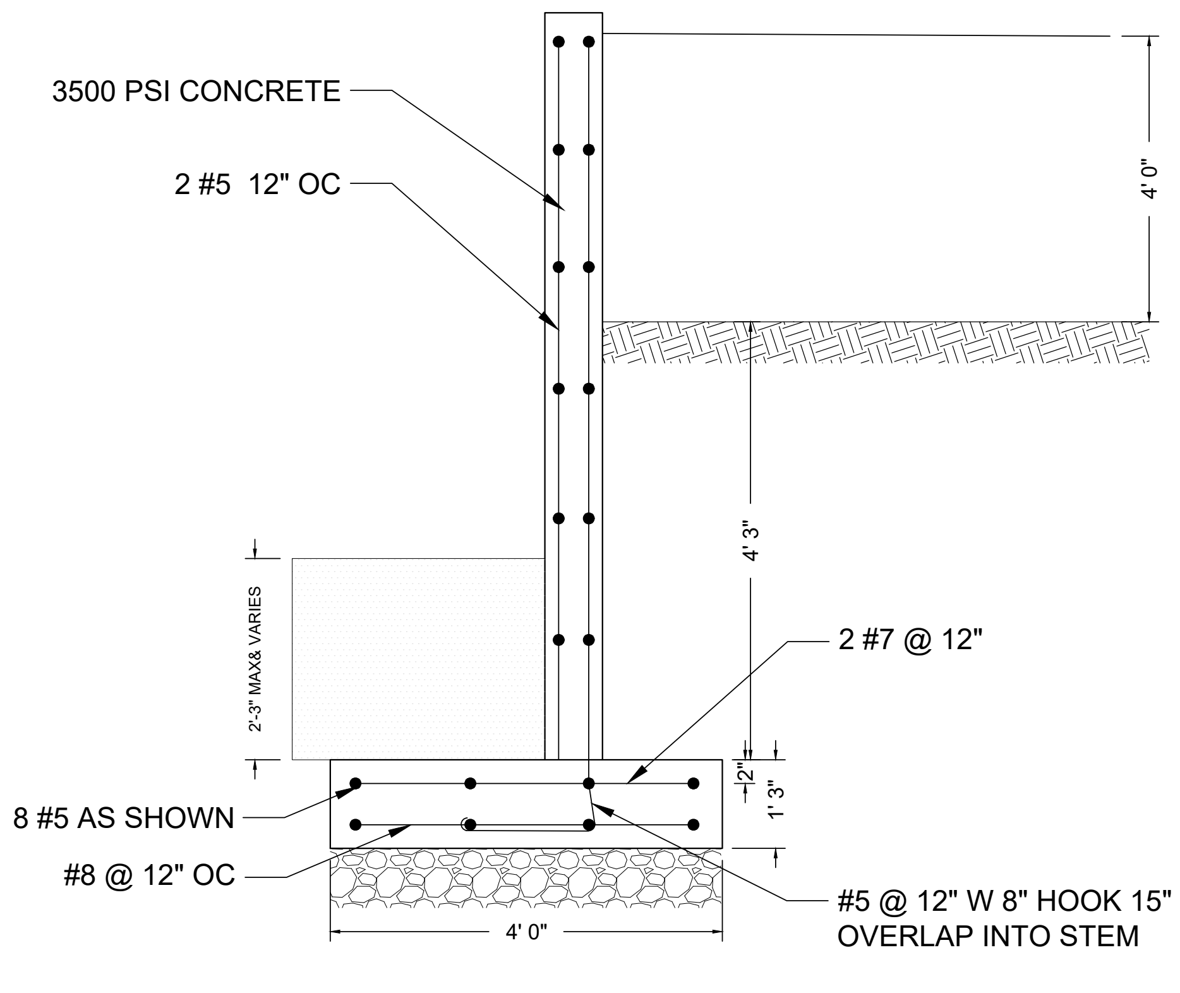
DETENTION BASIN OUTLET #1

SCALE: 1" = 2' V; 1" = 20' H



DETENTION BASIN OUTLET #2

SCALE: 1" = 2' V; 1" = 20' H



BASIN 2 WALL DETAIL

SCALE: NTS

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4. FRESHWATERS WETLANDS/BOUNDARY LINE AS VERIFIED BY NJDEP FILE No. 1423–07–0001.1, FWWW190001

811 Know what's below. Call before you dig.

NEW JERSEY STATE LAW REQUIRES NOTIFICATION 3 BUSINESS DAYS PRIOR TO ANY LAND DISTURBANCE. CONTRACTOR IS RESPONSIBLE FOR CALLING 811 OR 1–800–272–1000 FOR UTILITY MARKOUTS. UTILITY INFORMATION SHOWN IS PROVIDED BY THE SURVEYOR AND IS CURRENT AT THE TIME OF THE SURVEY. ANDERSON CONSULTING SERVICES IS NOT RESPONSIBLE FOR THE ACCURACY OF THE DATA.

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410
No. 33410
SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.

10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS
Revisions	

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CERTIFICATE OF AUTHORIZATION
24GA28182400

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Boonton, NJ 07005
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Fax: 973.975.0703
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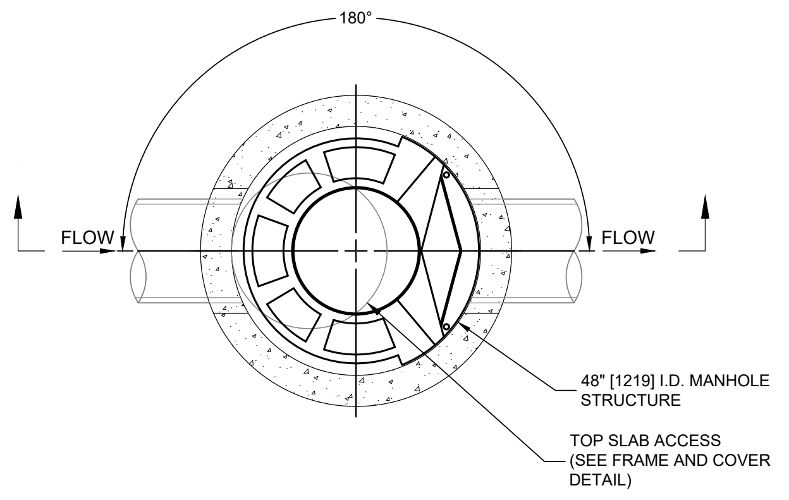
Proj. No.	WEMF2022
Date	9–23–22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

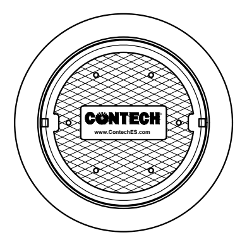
DRAINAGE CONSTRUCTION DETAILS

SP-26

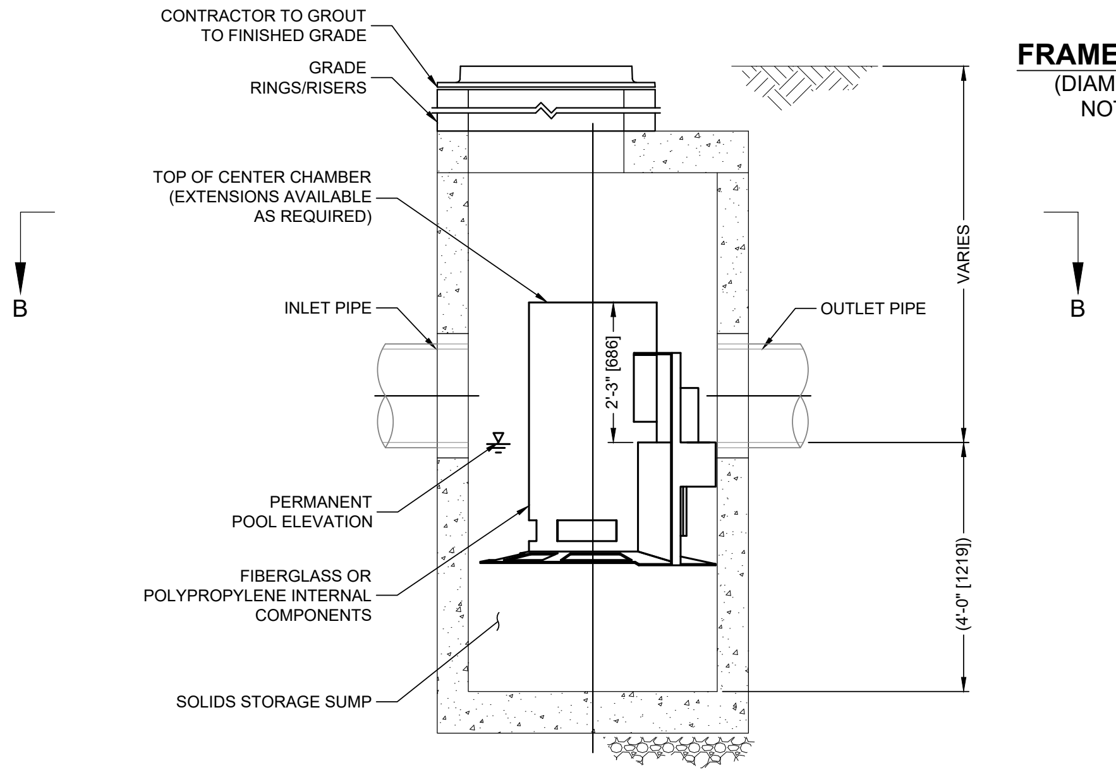
SHEET 26 OF 66


180°
FLOW
FLOW
48" [1219] I.D. MANHOLE STRUCTURE
TOP SLAB ACCESS (SEE FRAME AND COVER DETAIL)

PLAN VIEW B-B
NOT TO SCALE



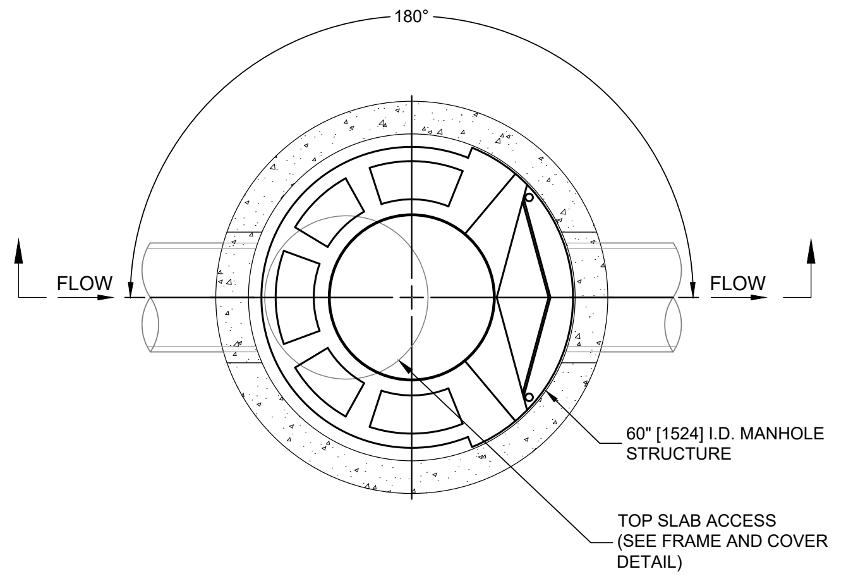
FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE


CONTRACTOR TO GROUT TO FINISHED GRADE
GRADE RINGS/RISERS
TOP OF CENTER CHAMBER (EXTENSIONS AVAILABLE AS REQUIRED)
B
B
INLET PIPE
OUTLET PIPE
VARIES
2'-3" [686]
PERMANENT POOL ELEVATION
FIBERGLASS OR POLYPROPYLENE INTERNAL COMPONENTS
(4'-0" [1219])
SOLIDS STORAGE SUMP

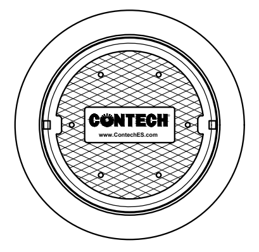
ELEVATION A-A
NOT TO SCALE

CASCADE SEPARATOR CS-4

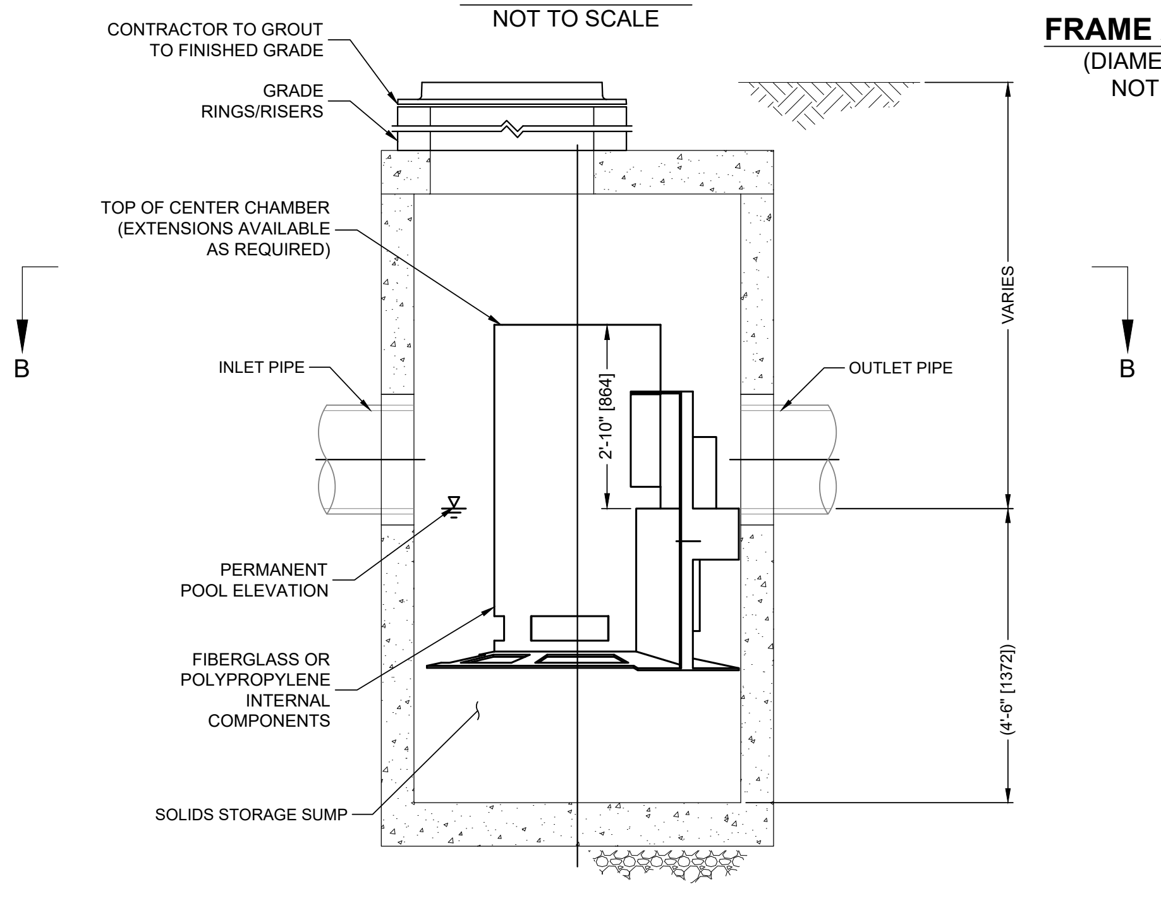
SCALE: NTS


180°
FLOW
FLOW
60" [1524] I.D. MANHOLE STRUCTURE
TOP SLAB ACCESS (SEE FRAME AND COVER DETAIL)

PLAN VIEW B-B
NOT TO SCALE



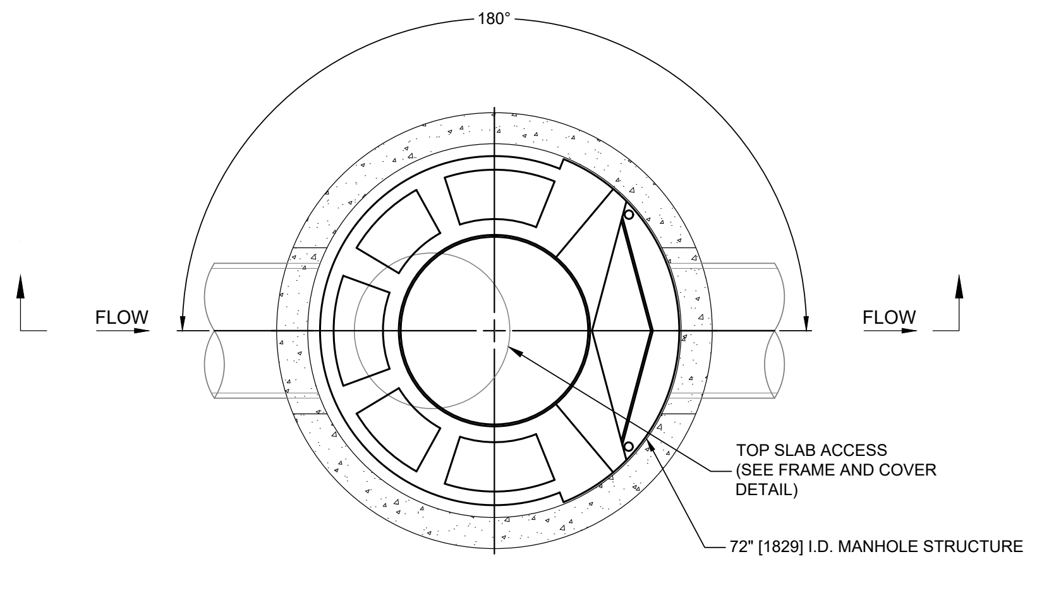
FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE


CONTRACTOR TO GROUT TO FINISHED GRADE
GRADE RINGS/RISERS
TOP OF CENTER CHAMBER (EXTENSIONS AVAILABLE AS REQUIRED)
B
B
INLET PIPE
OUTLET PIPE
VARIES
2'-10" [864]
PERMANENT POOL ELEVATION
FIBERGLASS OR POLYPROPYLENE INTERNAL COMPONENTS
(4'-6" [1372])
SOLIDS STORAGE SUMP

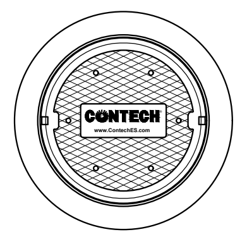
ELEVATION A-A
NOT TO SCALE

CASCADE SEPARATOR CS-5

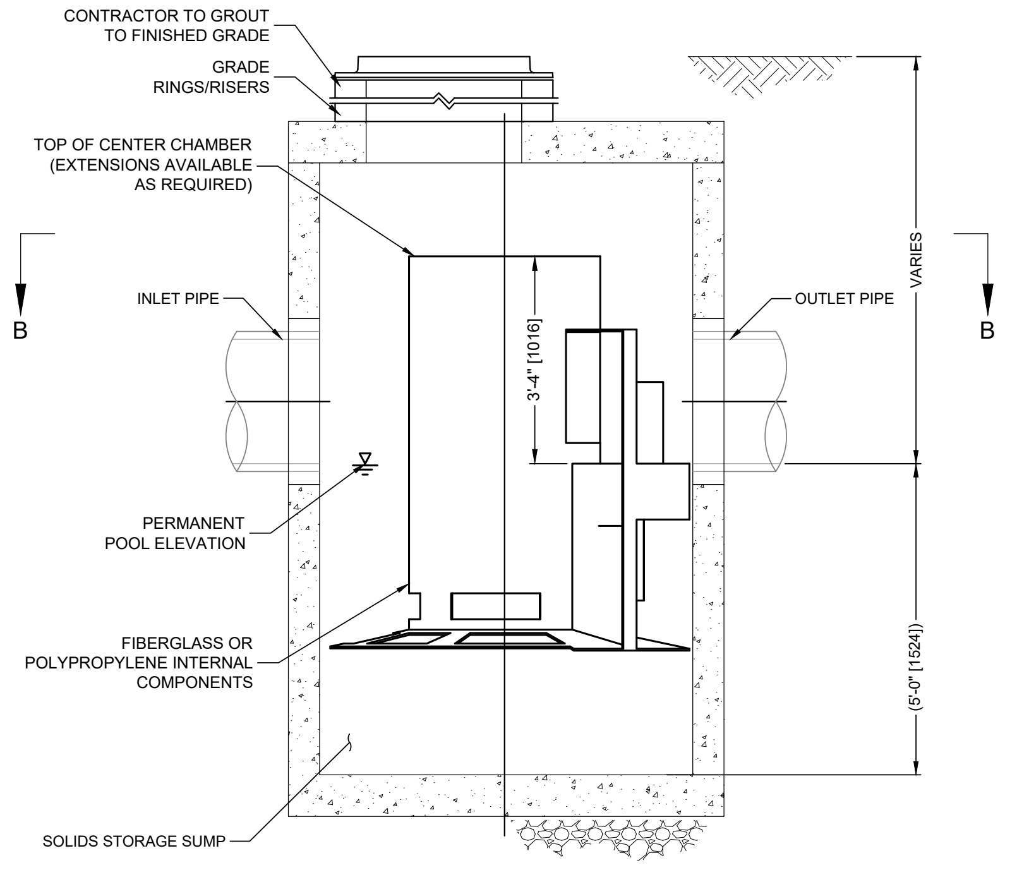
SCALE: NTS


180°
FLOW
FLOW
TOP SLAB ACCESS (SEE FRAME AND COVER DETAIL)
72" [1829] I.D. MANHOLE STRUCTURE

PLAN VIEW B-B
NOT TO SCALE



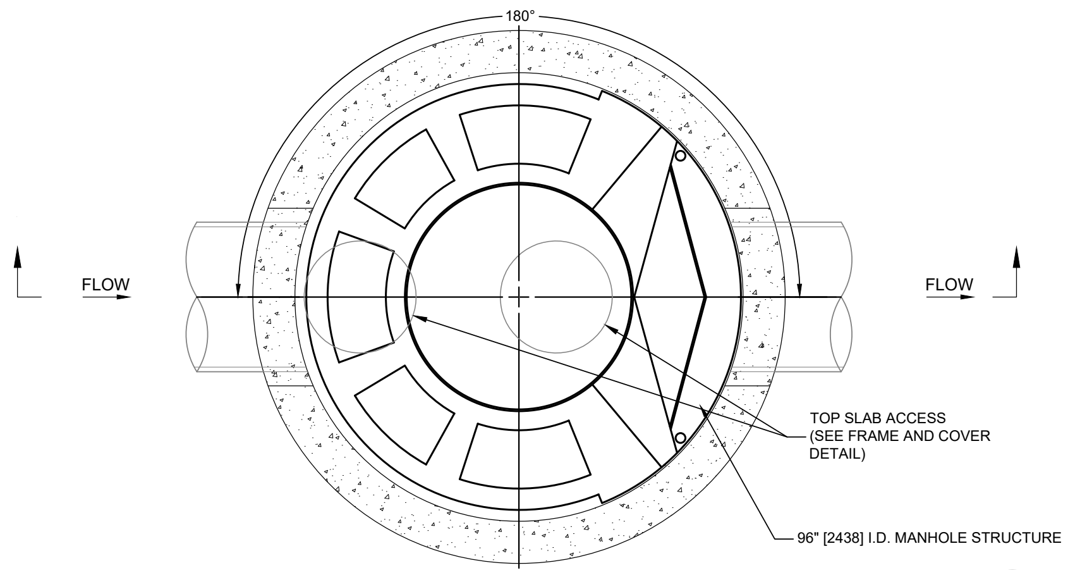
FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE


CONTRACTOR TO GROUT TO FINISHED GRADE
GRADE RINGS/RISERS
TOP OF CENTER CHAMBER (EXTENSIONS AVAILABLE AS REQUIRED)
B
B
INLET PIPE
OUTLET PIPE
VARIES
3'-4" [1016]
PERMANENT POOL ELEVATION
FIBERGLASS OR POLYPROPYLENE INTERNAL COMPONENTS
(5'-0" [1524])
SOLIDS STORAGE SUMP

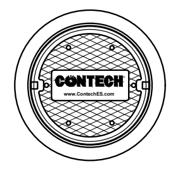
ELEVATION A-A
NOT TO SCALE

CASCADE SEPARATOR CS-6

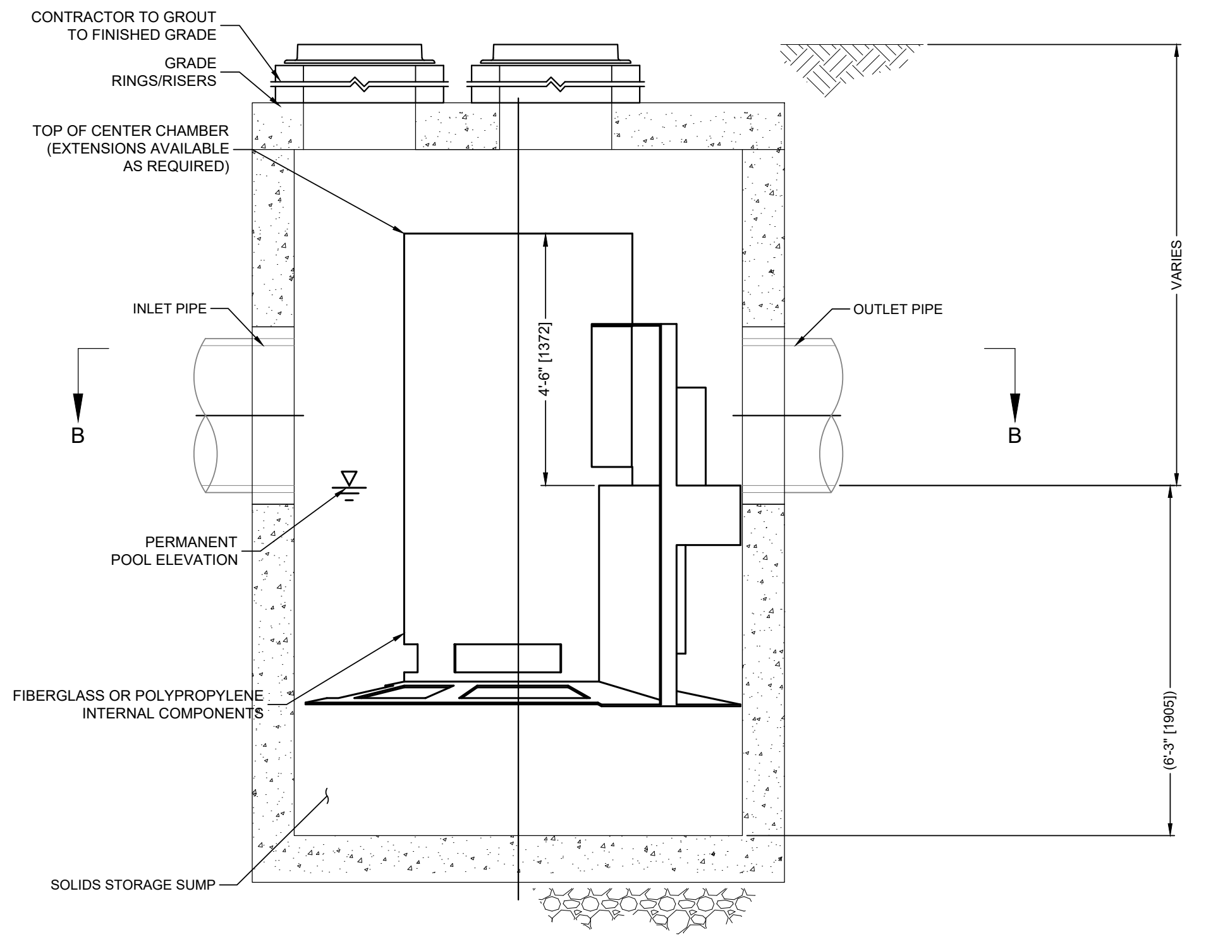
SCALE: NTS


180°
FLOW
FLOW
TOP SLAB ACCESS (SEE FRAME AND COVER DETAIL)
96" [2438] I.D. MANHOLE STRUCTURE

PLAN VIEW B-B
NOT TO SCALE



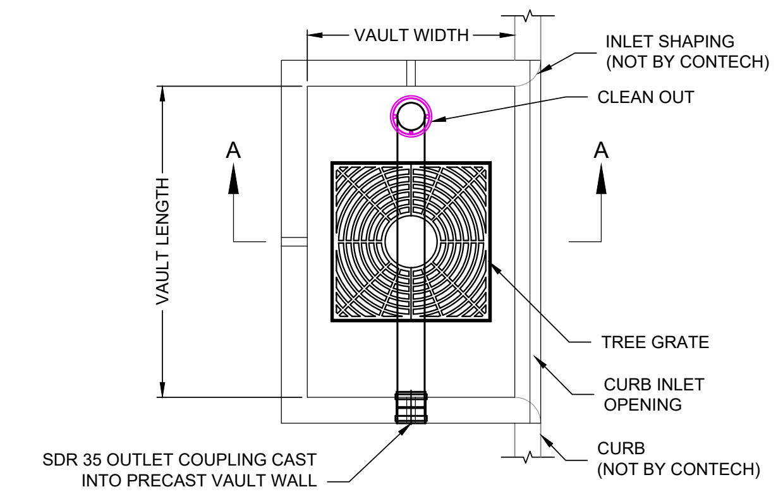
FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE


CONTRACTOR TO GROUT TO FINISHED GRADE
GRADE RINGS/RISERS
TOP OF CENTER CHAMBER (EXTENSIONS AVAILABLE AS REQUIRED)
INLET PIPE
OUTLET PIPE
B
B
VARIES
4'-6" [1372]
PERMANENT POOL ELEVATION
FIBERGLASS OR POLYPROPYLENE INTERNAL COMPONENTS
(6'-3" [1905])
SOLIDS STORAGE SUMP

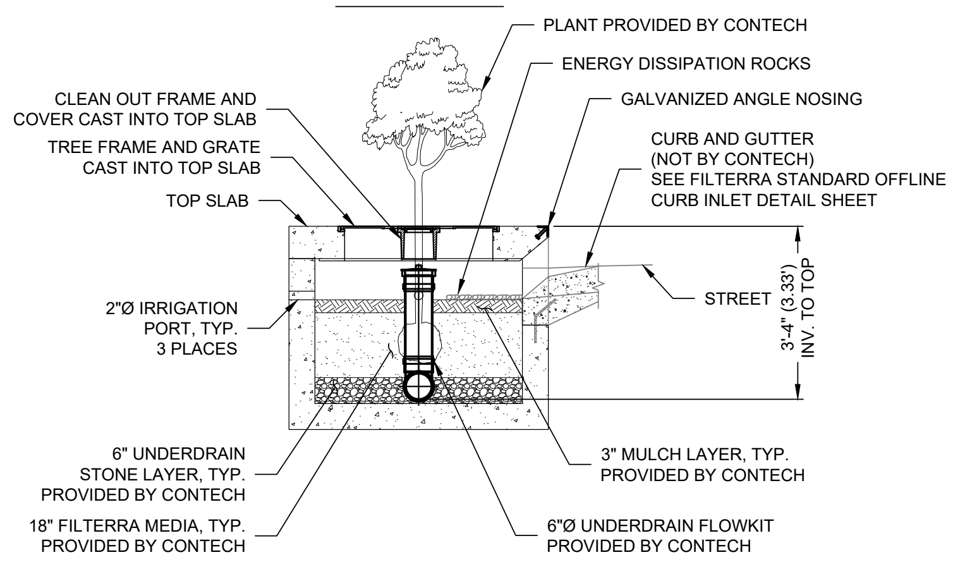
ELEVATION A-A
NOT TO SCALE

CASCADE SEPARATOR CS-8

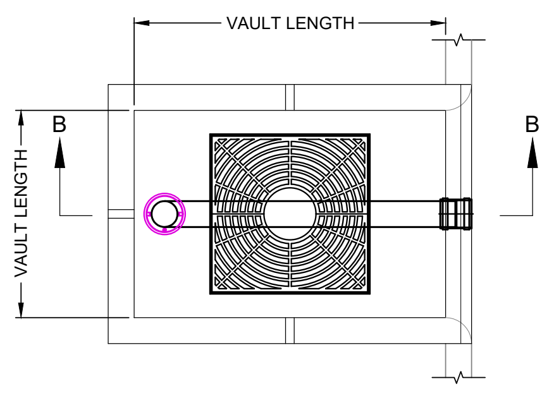
SCALE: NTS


VAULT WIDTH
INLET SHAPING (NOT BY CONTECH)
CLEAN OUT
A
A
VAULT LENGTH
TREE GRATE
CURB INLET OPENING
CURB (NOT BY CONTECH)
SDR 35 OUTLET COUPLING CAST INTO PRECAST VAULT WALL (OUTLET PIPE LOCATION MAY VARY)

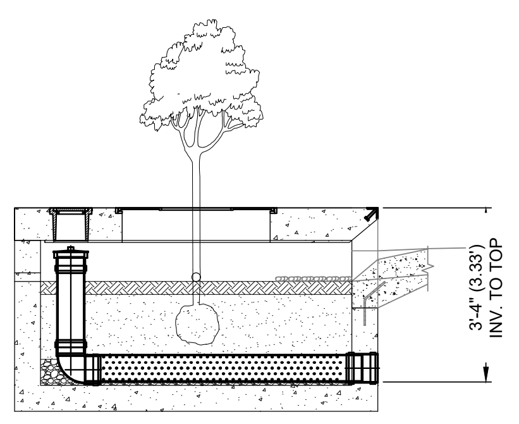
PLAN VIEW


PLANT PROVIDED BY CONTECH
ENERGY DISSIPATION ROCKS
GALVANIZED ANGLE NOSING
CLEAN OUT FRAME AND COVER CAST INTO TOP SLAB
TREE FRAME AND GRATE CAST INTO TOP SLAB
CURB AND GUTTER (NOT BY CONTECH) SEE FILTERRA STANDARD OFFLINE CURB INLET DETAIL SHEET
TOP SLAB
STREET
2"Ø IRRIGATION PORT, TYP. 3 PLACES
3'-4" (3.33') INV. TO TOP
6" UNDERDRAIN STONE LAYER, TYP. PROVIDED BY CONTECH
3" MULCH LAYER, TYP. PROVIDED BY CONTECH
18" FILTERRA MEDIA, TYP. PROVIDED BY CONTECH
6"Ø UNDERDRAIN FLOWKIT PROVIDED BY CONTECH

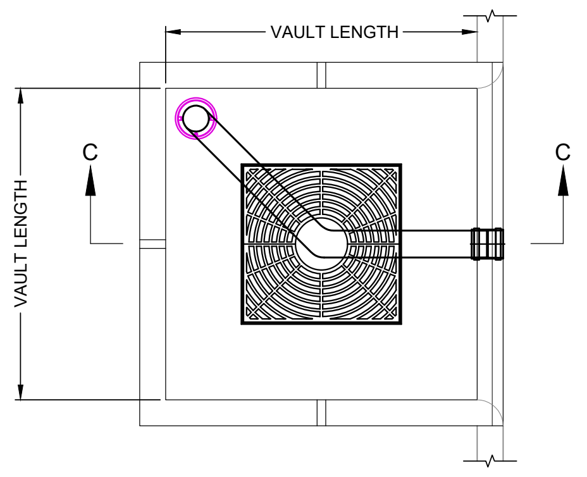
SECTION A-A



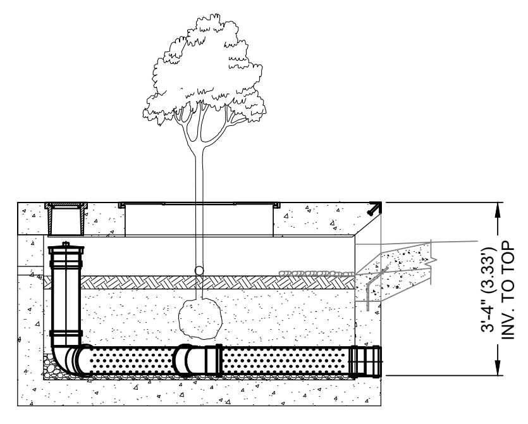
PLAN VIEW



SECTION B-B



PLAN VIEW



SECTION C-C

FT-HC LONG SIDE INLET CONFIGURATION

DESIGNATION	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (L x W)	OUTLET PIPE DIA	TREE GRATE QTY & SIZE
FT0604-HC	ALL	6 x 4	6 x 4	6" SDR 35	(1) 3' x 3'
FT078045-HC	DE, MD, NJ, PA, VA, WV ONLY	7.83 x 4.5	7.83 x 4.5	6" SDR 35	(1) 3' x 3'
FT0804-HC	N/A DE, MD, NJ, PA, VA, WV	8 x 4	8 x 4	6" SDR 35	(1) 3' x 3'
FT0806-HC	ALL	8 x 6	8 x 6	6" SDR 35	(1) 4' x 4'
FT1006-HC	ALL	10 x 6	10 x 6	6" SDR 35	(1) 4' x 4'
FT1206-HC	ALL	12 x 6	12 x 6	6" SDR 35	(2) 4' x 4'
FT1307-HC	ALL	13 x 7	13 x 7	6" SDR 35	(2) 4' x 4'
FT1408-HC	CALL CONTECH	14 x 8	14 x 8	6" SDR 35	(2) 4' x 4'
FT1509-HC	CALL CONTECH	15 x 9	15 x 9	6" SDR 35	(2) 4' x 4'
FT1608-HC	CALL CONTECH	16 x 8	16 x 8	6" SDR 35	(2) 4' x 4'
FT1808-HC	CALL CONTECH	18 x 8	18 x 8	6" SDR 35	(2) 4' x 4'
FT2008-HC	CALL CONTECH	20 x 8	20 x 8	6" SDR 35	(3) 4' x 4'
FT2208-HC	CALL CONTECH	22 x 8	22 x 8	6" SDR 35	(3) 4' x 4'

N/A = NOT AVAILABLE

FT-HC SHORT SIDE INLET CONFIGURATION

DESIGNATION	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (W x L)	OUTLET PIPE DIA	TREE GRATE QTY & SIZE
FT0406-HC	ALL	4 x 6	4 x 6	6" SDR 35	(1) 3' x 3'
FT0408-HC	N/A DE, MD, NJ, PA, VA, WV	4 x 8	4 x 8	6" SDR 35	(1) 3' x 3'
FT045078-HC	DE, MD, NJ, PA, VA, WV ONLY	4.5 x 7.83	4.5 x 7.83	6" SDR 35	(1) 3' x 3'
FT0608-HC	ALL	6 x 8	6 x 8	6" SDR 35	(1) 4' x 4'
FT0610-HC	ALL	6 x 10	6 x 10	6" SDR 35	(1) 4' x 4'
FT0612-HC	ALL	6 x 12	6 x 12	6" SDR 35	(2) 4' x 4'
FT0713-HC	ALL	7 x 13	7 x 13	6" SDR 35	(2) 4' x 4'

N/A = NOT AVAILABLE

FT-HC SQUARE INLET CONFIGURATION

DESIGNATION	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (W x L)	OUTLET PIPE DIA	TREE GRATE QTY & SIZE
FT0404-HC	ALL	4 x 4	4 x 4	6" SDR 35	(1) 3' x 3'
FT0606-HC	ALL	6 x 6	6 x 6	6" SDR 35	(1) 3' x 3'

N/A = NOT AVAILABLE

FILTERRA HC OFFLINE (FT-HC)

SCALE: NTS

Know what's **below.**
Call before you dig.

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MAP REFERENCE:

1. TOPOGRAPHIC INFORMATION BASED ON SURVEY ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY" TAX LOTS 1, 2.04, & 3 – BLOCK 161 TAX LOT 3.01 – BLOCK 161, 1701–1711 ROUTE 10, TOWNSHIP OF MORRIS PLAINS, MORRIS COUNTY, NEW JERSEY" DATED 1/15/16 AND LAST REVISED 1–20–20 PREPARED BY LAKELAND SURVEYING, ROCKAWAY NJ. SIGNED BY MARC J. CIFONE, PLS
2. VERTICAL DATUM IS NAVD 1988
3. NGVD29 TO NGVD1988 = + 1.03 FT
4. FRESHWATERS WETLANDS/BOUNDARY LINE AS VERIFIED BY NJDEP FILE No. 1423–07–0001.1, FWWW190001

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410

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Revisions	

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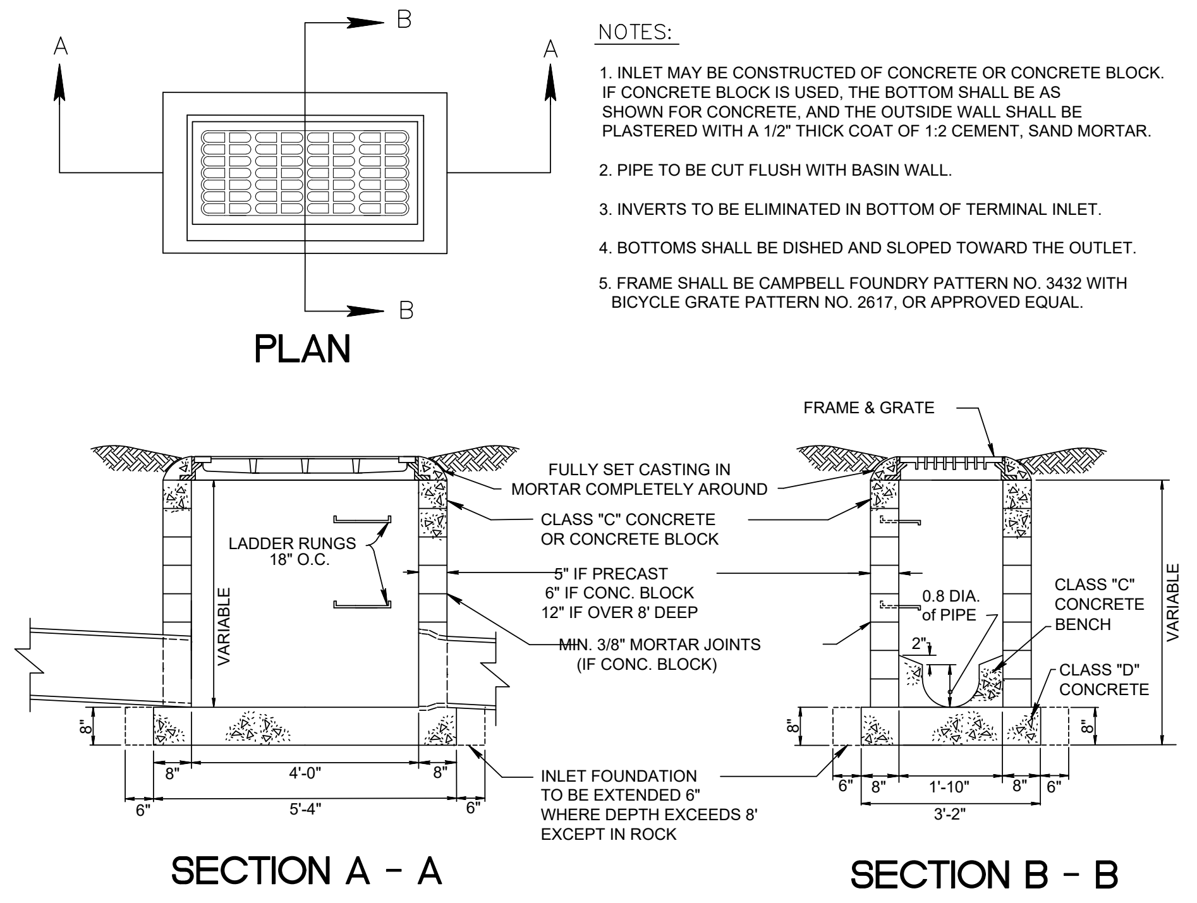
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

DRAINAGE CONSTRUCTION DETAILS

SP-27

SHEET 27 OF 66

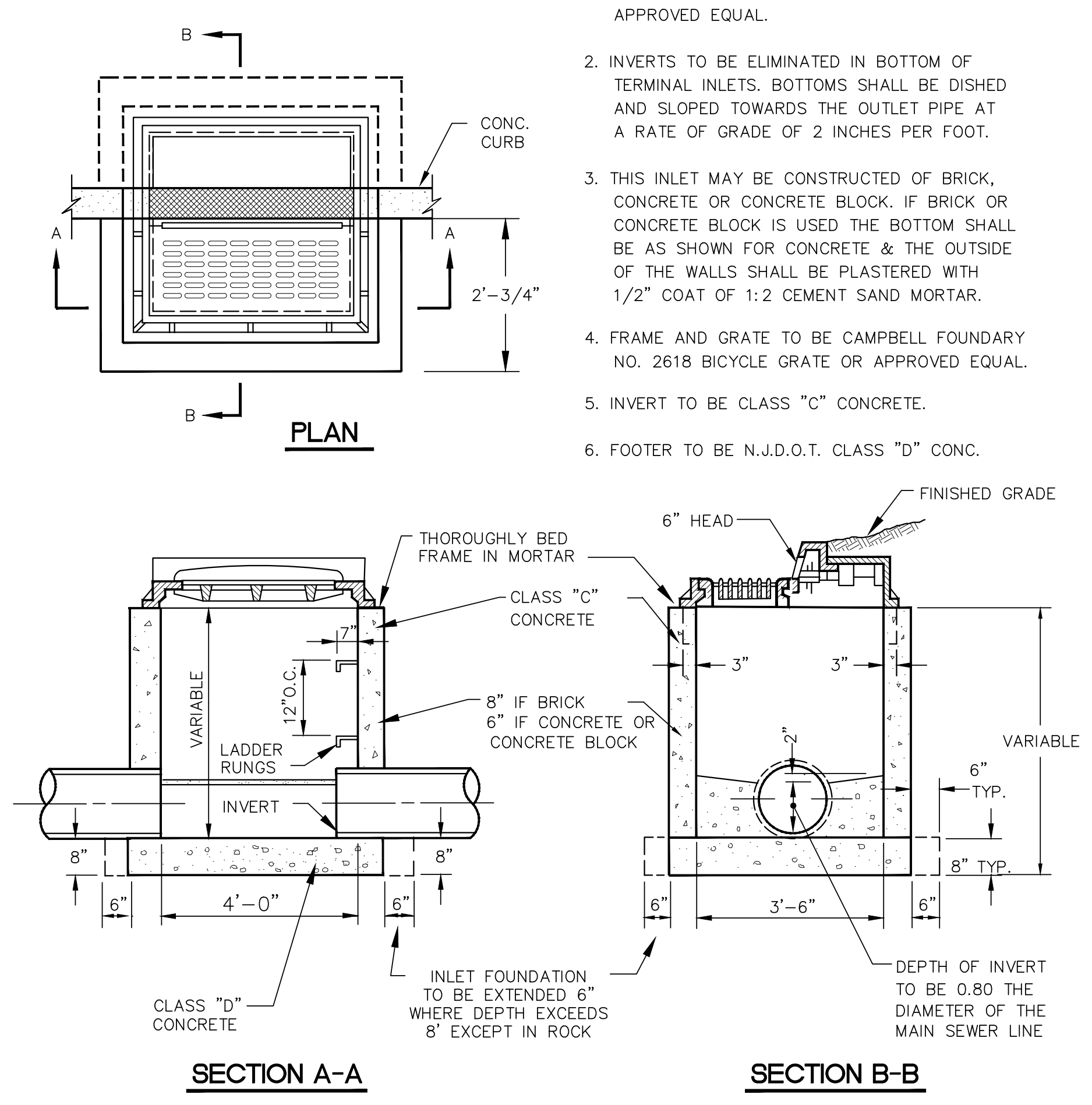

A
B
PLAN
FRAME & GRATE
FULLY SET CASTING IN MORTAR COMPLETELY AROUND
CLASS "C" CONCRETE OR CONCRETE BLOCK
LADDER RUNGS 18" O.C.
5" IF PRECAST 6" IF CONC. BLOCK 12" IF OVER 8' DEEP
MIN. 3/8" MORTAR JOINTS (IF CONC. BLOCK)
0.8 DIA. of PIPE
CLASS "C" CONCRETE BENCH
CLASS "D" CONCRETE
VARIABLE
INLET FOUNDATION TO BE EXTENDED 6" WHERE DEPTH EXCEEDS 8' EXCEPT IN ROCK
4'-0"
5'-4"
1'-10"
3'-2"
SECTION A - A
SECTION B - B

NOTES:

1. INLET MAY BE CONSTRUCTED OF CONCRETE OR CONCRETE BLOCK. IF CONCRETE BLOCK IS USED, THE BOTTOM SHALL BE AS SHOWN FOR CONCRETE, AND THE OUTSIDE WALL SHALL BE PLASTERED WITH A 1/2" THICK COAT OF 1:2 CEMENT, SAND MORTAR.
2. PIPE TO BE CUT FLUSH WITH BASIN WALL.
3. INVERTS TO BE ELIMINATED IN BOTTOM OF TERMINAL INLET.
4. BOTTOMS SHALL BE DISHED AND SLOPED TOWARD THE OUTLET.
5. FRAME SHALL BE CAMPBELL FOUNDRY PATTERN NO. 3432 WITH BICYCLE GRATE PATTERN NO. 2617, OR APPROVED EQUAL.

TYPE 'A' INLET

SCALE: NTS

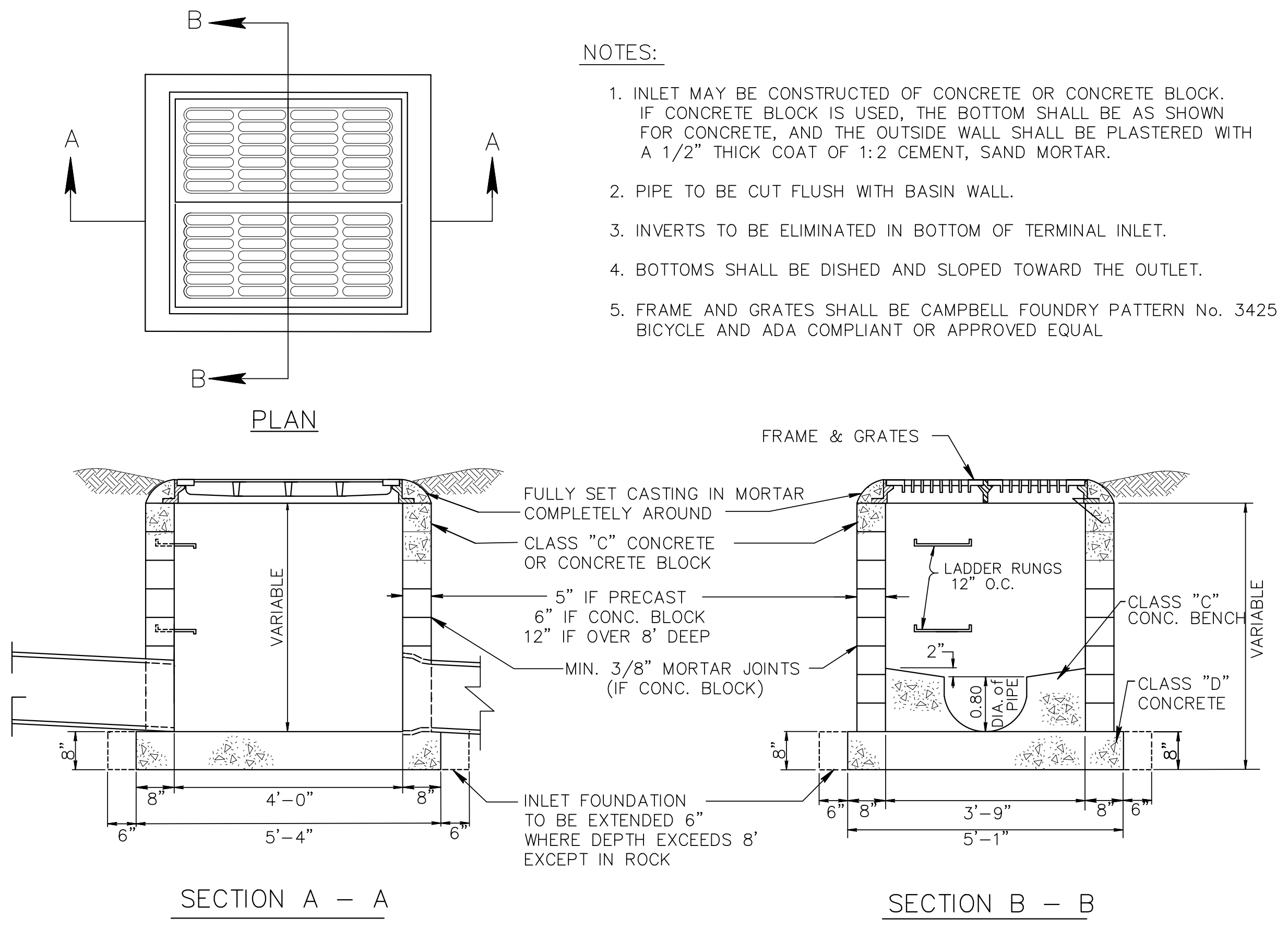

B
A
CONC. CURB
2'-3/4"
PLAN
THOROUGHLY BED FRAME IN MORTAR
CLASS "C" CONCRETE
8" IF BRICK 6" IF CONCRETE OR CONCRETE BLOCK
LADDER RUNGS
INVERT
VARIABLE
12" O.C.
4'-0"
6" HEAD
FINISHED GRADE
3"
3"
6" TYP.
8" TYP.
3'-6"
CLASS "D" CONCRETE
INLET FOUNDATION TO BE EXTENDED 6" WHERE DEPTH EXCEEDS 8' EXCEPT IN ROCK
DEPTH OF INVERT TO BE 0.80 THE DIAMETER OF THE MAIN SEWER LINE
SECTION A-A
SECTION B-B

GENERAL NOTES

1. ALL PRECAST CONCRETE STRUCTURES SHALL BE COATED WITH COAL TAR EPOXY OR APPROVED EQUAL.
2. INVERTS TO BE ELIMINATED IN BOTTOM OF TERMINAL INLETS. BOTTOMS SHALL BE DISHED AND SLOPED TOWARDS THE OUTLET PIPE AT A RATE OF GRADE OF 2 INCHES PER FOOT.
3. THIS INLET MAY BE CONSTRUCTED OF BRICK, CONCRETE OR CONCRETE BLOCK. IF BRICK OR CONCRETE BLOCK IS USED THE BOTTOM SHALL BE AS SHOWN FOR CONCRETE & THE OUTSIDE OF THE WALLS SHALL BE PLASTERED WITH 1/2" COAT OF 1:2 CEMENT SAND MORTAR.
4. FRAME AND GRATE TO BE CAMPBELL FOUNDARY NO. 2618 BICYCLE GRATE OR APPROVED EQUAL.
5. INVERT TO BE CLASS "C" CONCRETE.
6. FOOTER TO BE N.J.D.O.T. CLASS "D" CONC.

INLET TYPE "B"

SCALE: NTS

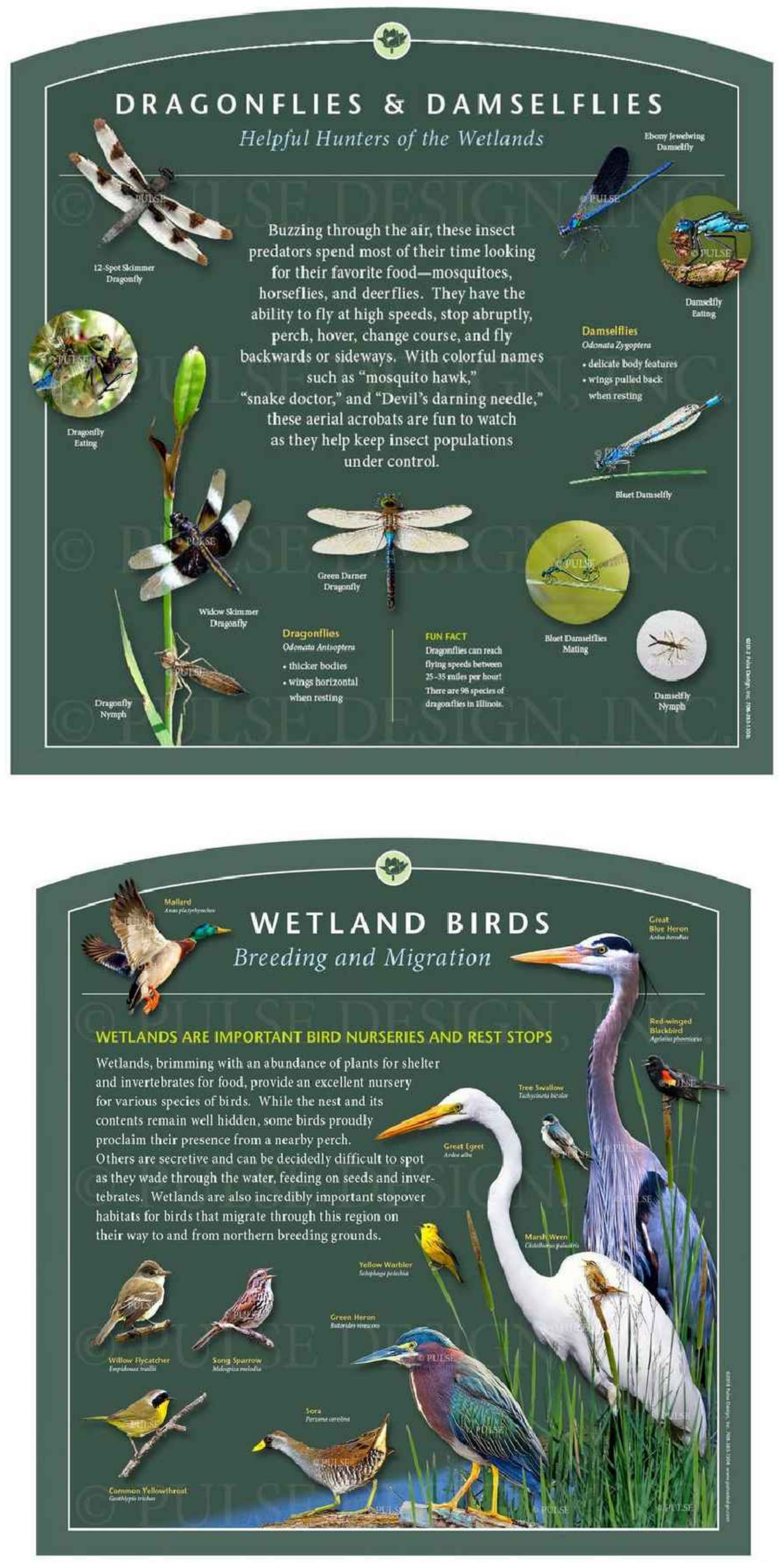

B
A
PLAN
FRAME & GRATES
FULLY SET CASTING IN MORTAR COMPLETELY AROUND
CLASS "C" CONCRETE OR CONCRETE BLOCK
5" IF PRECAST 6" IF CONC. BLOCK 12" IF OVER 8' DEEP
MIN. 3/8" MORTAR JOINTS (IF CONC. BLOCK)
LADDER RUNGS 12" O.C.
CLASS "C" CONC. BENCH
CLASS "D" CONCRETE
VARIABLE
INLET FOUNDATION TO BE EXTENDED 6" WHERE DEPTH EXCEEDS 8' EXCEPT IN ROCK
4'-0"
5'-4"
3'-9"
5'-1"
SECTION A – A
SECTION B – B

NOTES:

1. INLET MAY BE CONSTRUCTED OF CONCRETE OR CONCRETE BLOCK. IF CONCRETE BLOCK IS USED, THE BOTTOM SHALL BE AS SHOWN FOR CONCRETE, AND THE OUTSIDE WALL SHALL BE PLASTERED WITH A 1/2" THICK COAT OF 1:2 CEMENT, SAND MORTAR.
2. PIPE TO BE CUT FLUSH WITH BASIN WALL.
3. INVERTS TO BE ELIMINATED IN BOTTOM OF TERMINAL INLET.
4. BOTTOMS SHALL BE DISHED AND SLOPED TOWARD THE OUTLET.
5. FRAME AND GRATES SHALL BE CAMPBELL FOUNDRY PATTERN No. 3425 BICYCLE AND ADA COMPLIANT OR APPROVED EQUAL

TYPE "E" INLET

SCALE: NTS



DRAGONFLIES & DAMSELFLIES

Helpful Hunters of the Wetlands

Buzzing through the air, these insect predators spend most of their time looking for their favorite food—mosquitoes, horseflies, and deerflies. They have the ability to fly at high speeds, stop abruptly, perch, hover, change course, and fly backwards or sideways. With colorful names such as "mosquito hawk," "snake doctor," and "Devil's darning needle," these aerial acrobats are fun to watch as they help keep insect populations under control.

Damselflies
Odonata Zygoptera
- delicate body features
- wings pulled back when resting

Dragonflies
Odonata Anisoptera

FUN FACT
Dragonflies can reach

WETLAND BIRDS

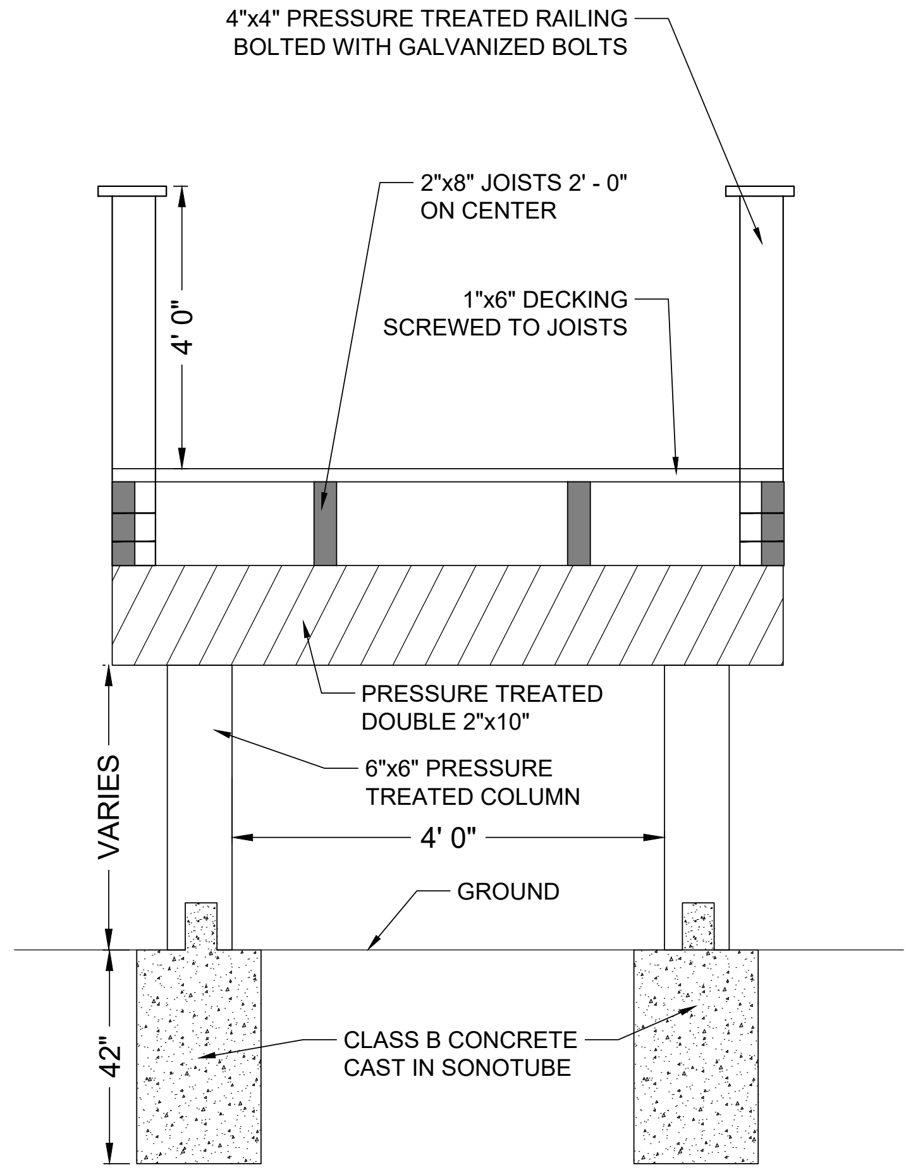
Breeding and Migration

WETLANDS ARE IMPORTANT BIRD NURSERIES AND REST STOPS

Wetlands, brimming with an abundance of plants for shelter and invertebrates for food, provide an excellent nursery for various species of birds. While the nest and its contents remain well hidden, some birds proudly proclaim their presence from a nearby perch. Others are secretive and can be decidedly difficult to spot as they wade through the water, feeding on seeds and invertebrates. Wetlands are also incredibly important stopover habitats for birds that migrate through this region on their way to and from northern breeding grounds.

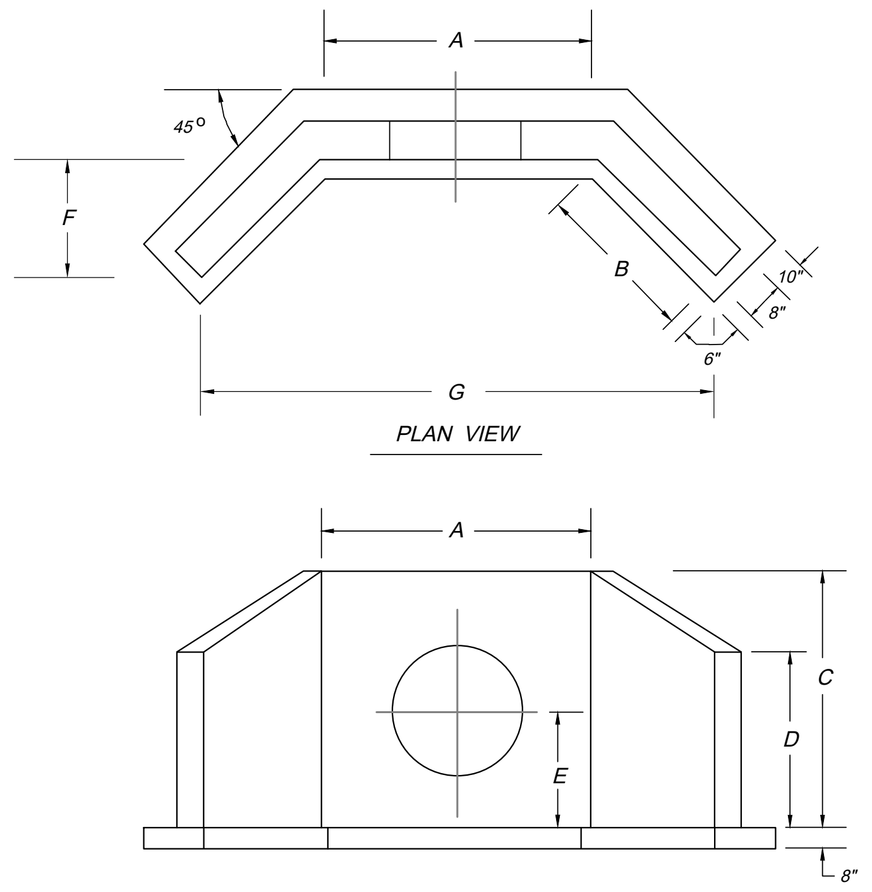
WETLANDS EDUCATIONAL SIGNS

SCALE: NTS


4"x4" PRESSURE TREATED RAILING BOLTED WITH GALVANIZED BOLTS
2"x8" JOISTS 2' - 0" ON CENTER
1"x6" DECKING SCREWED TO JOISTS
4' 0"
PRESSURE TREATED DOUBLE 2"x10"
6"x6" PRESSURE TREATED COLUMN
VARIES
4' 0"
GROUND
42"
CLASS B CONCRETE CAST IN SONOTUBE

BOARDWALK DECK SECTION

SCALE: NTS

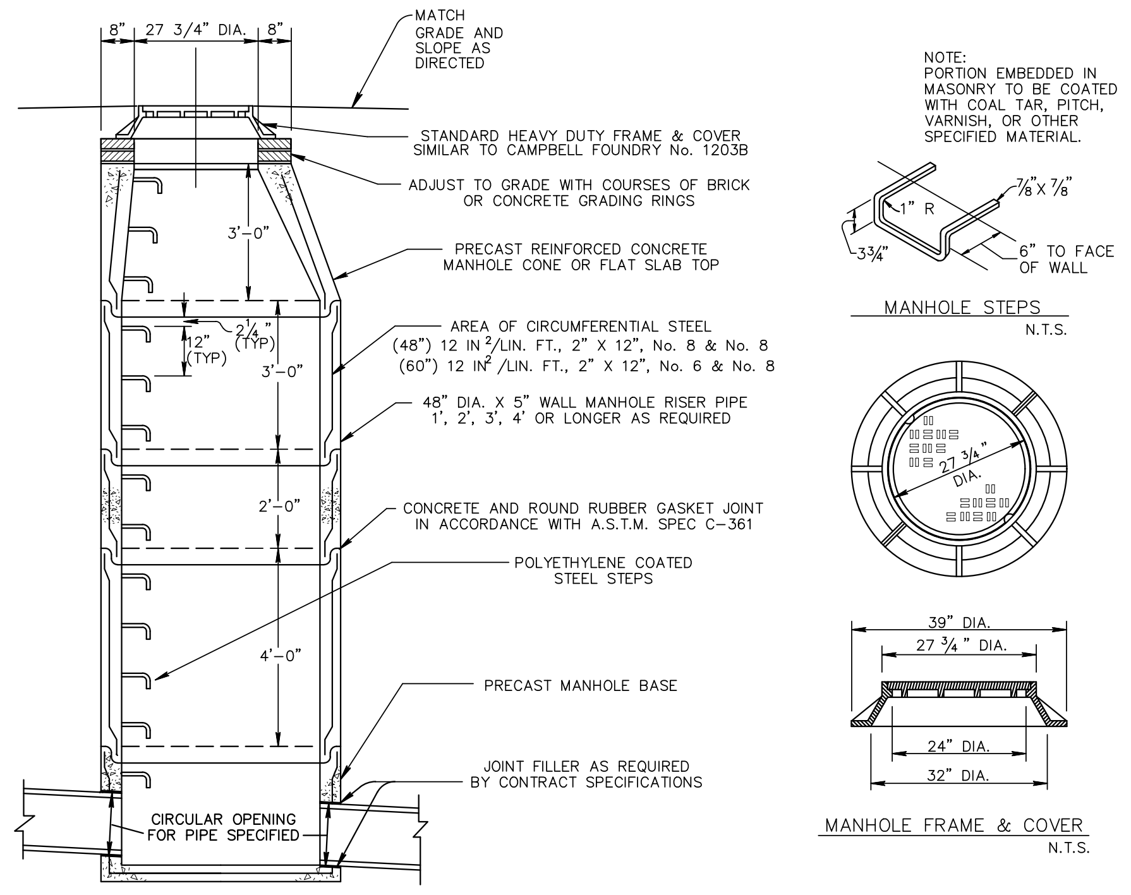


DIMENSION SCHEDULE								
PIPE DIA.	A	B	C	D	E	F	G	APPROX. WEIGHT
12"	36"	30"	54"	40"	36"	22"	78"	5445 LBS.
15"	48"	30"	60"	45"	37.5"	22"	92"	6400 LBS.
18"	48"	30"	60"	45"	39"	22"	92"	6400 LBS.
24"	60"	36"	64"	48"	42"	26"	112"	7250 LBS.
30"	72"	36"	72"	54"	45"	26"	124"	9276 LBS.
36"	78"	48"	78"	60"	48"	35"	144"	11623 LBS.
48"	84"	48"	90"	66"	54"	35"	150"	12402 LBS.
SPECIAL SIZES NOT LISTED CAN BE MFG. UPON REQUEST								

NOTES :
** ALL EXPOSED EDGES TO HAVE 1" BEVELED CORNERS*
** APRON BY CONTRACTOR IN FIELD*
** REINFORCING - NO. 4 BARS AT 12" O.C.E.W.*
** CONCRETE TO TEST 4000 PSI @ 28 DAYS*

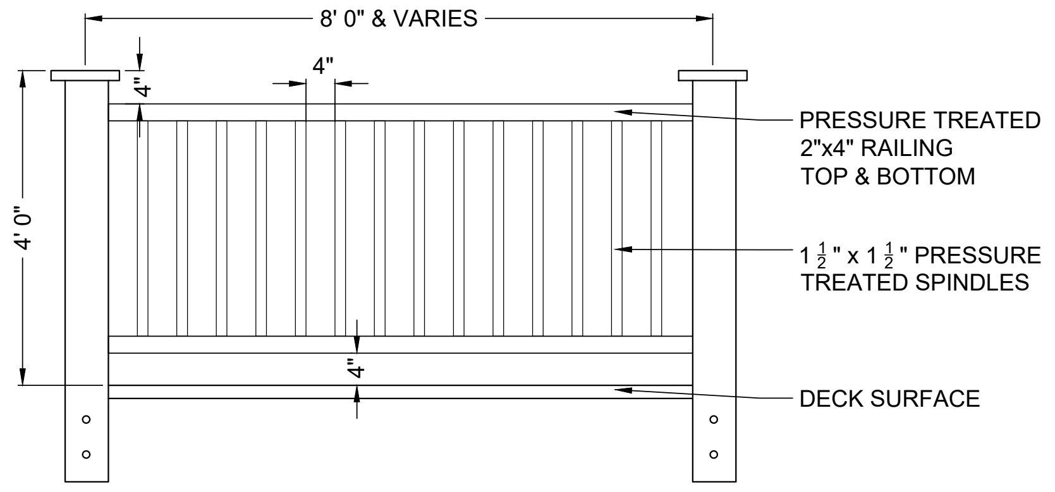
WINGWALL WITH FOOTING

SCALE: NTS


8" 27 3/4" DIA. 8"
MATCH GRADE AND SLOPE AS DIRECTED
STANDARD HEAVY DUTY FRAME & COVER SIMILAR TO CAMPBELL FOUNDRY No. 1203B
ADJUST TO GRADE WITH COURSES OF BRICK OR CONCRETE GRADING RINGS
PRECAST REINFORCED CONCRETE MANHOLE CONE OR FLAT SLAB TOP
AREA OF CIRCUMFERENTIAL STEEL (48") 12 IN²/LIN. FT., 2" X 12", No. 8 & No. 8 (60") 12 IN²/LIN. FT., 2" X 12", No. 6 & No. 8
48" DIA. X 5" WALL MANHOLE RISER PIPE 1', 2', 3', 4' OR LONGER AS REQUIRED
CONCRETE AND ROUND RUBBER GASKET JOINT IN ACCORDANCE WITH A.S.T.M. SPEC C-361
POLYETHYLENE COATED STEEL STEPS
PRECAST MANHOLE BASE
JOINT FILLER AS REQUIRED BY CONTRACT SPECIFICATIONS
CIRCULAR OPENING FOR PIPE SPECIFIED
3'-0"
3'-0"
2'-0"
4'-0"
12" (TYP.)
NOTE: PORTION EMBEDDED IN MASONRY TO BE COATED WITH COAL TAR PITCH, VARNISH, OR OTHER SPECIFIED MATERIAL.
6" TO FACE OF WALL
MANHOLE STEPS N.T.S.
39" DIA.
27 3/4" DIA.
24" DIA.
32" DIA.
MANHOLE FRAME & COVER N.T.S.

PRECAST MANHOLE

SCALE: NTS


8' 0" & VARIES
4"
4' 0"
PRESSURE TREATED 2"x4" RAILING TOP & BOTTOM
1 1/2" x 1 1/2" PRESSURE TREATED SPINDLES
DECK SURFACE

DECK RAILING DETAIL

SCALE: NTS

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LIC. NO. 33410
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10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
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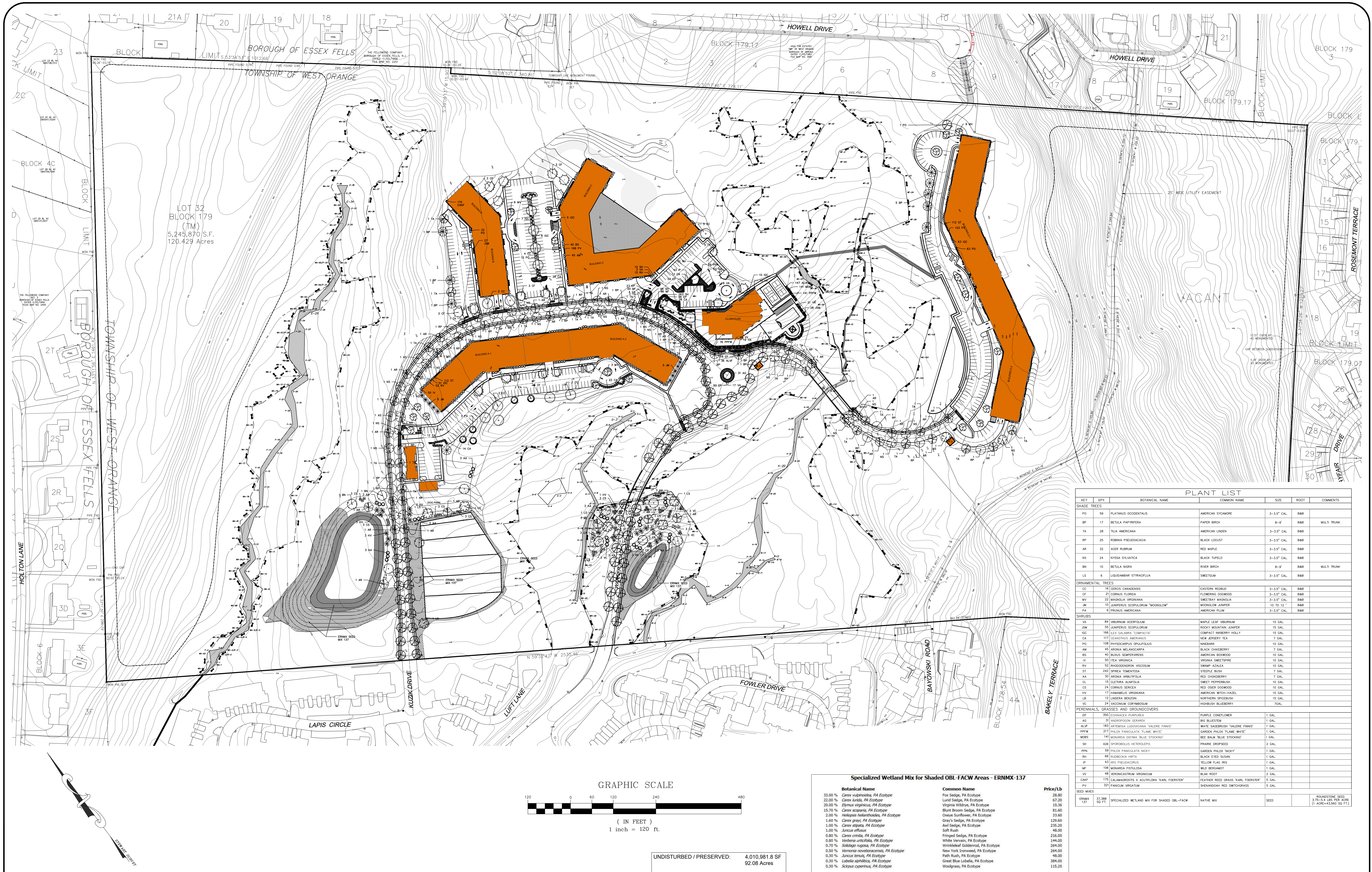
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

DRAINAGE CONSTRUCTION DETAILS

SP-28

SHEET 28 OF 66



GRAPHIC SCALE

120 0 60 120 240 480

(IN FEET)
1 inch = 120 ft.

PLANT LIST

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENTS
SHADE TREES						
PO	59	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	3–3.5" CAL.	B&B	
BP	17	BETULA PAPYRIFERA	PAPER BIRCH	8–9'	B&B	MULTI TRUNK
TA	28	TILIA AMERICANA	AMERICAN LINDEN	3–3.5" CAL	B&B	
RP	25	ROBINIA PSEUDOACACIA	BLACK LOCUST	3–3.5" CAL.	B&B	
AR	32	ACER RUBRUM	RED MAPLE	3–3.5" CAL.	B&B	
NS	24	NYSSA SYLVATICA	BLACK TUPELO	3–3.5" CAL.	B&B	
BN	10	BETULA NIGRA	RIVER BIRCH	8–9'	B&B	MULTI TRUNK
LS	6	LIQUIDAMBAR STYRACIFLUA	SWEETGUM	3–3.5" CAL.	B&B	
ORNAMENTAL TREES						
CC	16	CERCIS CANADENSIS	EASTERN REDBUD	3–3.5" CAL.	B&B	
CF	21	CORNUS FLORIDA	FLOWERING DOGWOOD	3–3.5" CAL.	B&B	
MV	22	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	3–3.5" CAL.	B&B	
JM	10	JUNIPERUS SCOPULORUM "MOONGLOW"	MOONGLOW JUNIPER	10 TO 12 '	B&B	
PA	6	PRUNUS AMERICANA	AMERICAN PLUM	3–3.5" CAL.	B&B	
SHRUBS						
VA	84	VIBURNUM ACERFOLIUM	MAPLE LEAF VIBURNUM	10 GAL.		
JSM	55	JUNIPERUS SCOPULORUM	ROCKY MOUNTAIN JUNIPER	15 GAL.		
IGC	166	ILEX GALABRA 'COMPACTA'	COMPACT INKBERRY HOLLY	15 GAL.		
CA	117	CEANOTHUS AMERIANUS	NEW JERSERY TEA	7 GAL.		
PO	108	PHYSOCARPUS OPULIFOLIUS	NINEBARK	10 GAL.		
AM	45	ARONIA MELANOCARPA	BLACK CHIKEBERRY	7 GAL.		
BS	40	BUXUS SEMPERVIRENS	AMERICAN BOXWOOD	10 GAL.		
IV	50	ITEA VIRGINICA	VIRGINIA SWEETSPIRE	10 GAL.		
RV	52	RHODODENDRON VISCOSUM	SWAMP AZALEA	10 GAL.		
ST	242	SPIREA TOMENTOSA	STEEPLE BUSH	7 GAL.		
AA	30	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	7 GAL.		
CL	15	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	10 GAL.		
CS	24	CORNUS SERICEA	RED OSIER DOGWOOD	10 GAL.		
HV	17	HAMAMELIS VIRGINIANA	AMERICAN WITCH–HAZEL	15 GAL.		
LB	12	LINDERA BENZOIN	NORTHERN SPICEBUSH	15 GAL.		
VC	24	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	7GAL.		
PERENNIALS, GRASSES AND GROUNDCOVERS						
EP	350	ECHINACEA PURPUREA	PURPLE CONEFLOWER	1 GAL.		
AG	31	ANDROPOGON GERARDII	BIG BLUESTEM	1 GAL.		
ALVF	183	ARTEMISIA LUDOVICIANA 'VALERIE FINNIS'	WHITE SAGEBRUSH 'VALERIE FINNIS'	1 GAL.		
PPFW	217	PHLOX PANICULATA 'FLAME WHITE'	GARDEN PHLOX 'FLAME WHITE'	1 GAL.		
MDBS	141	MONARDA DIDYMA 'BLUE STOCKING'	BEE BALM 'BLUE STOCKING'	I GAL.		
SH	426	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	2 GAL.		
PPN	59	PHLOX PANICULATA NICKY	GARDEN PHLOX 'NICKY'	1 GAL.		
RH	66	RUDBECKIA HIRTA	BLACK EYED SUSAN	1 GAL.		
IP	43	IRIS PSEUDACORUS	YELLOW FLAG IRIS	1 GAL.		
MF	106	MONARDA FISTULOSA	WILD BERGAMOT	1 GAL.		
VV	48	VERONICASTRUM VIRGINICUM	BLAK ROOT	2 GAL.		
CAKF	175	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS 'KARL FOERSTER'	5 GAL.		
PV	321	PANICUM VIRGATUM	SHENANDOAH RED SWITCHGRASS	5 GAL.		
SEED MIXES						
ERNMX 137	37,388 SQ FT.	SPECIALIZED WETLAND MIX FOR SHADED OBL–FACW	NATIVE MIX	SEED		ROUNDSTONE SEED 3.75–5.4 LBS PER ACRE (1 ACRE=43,560 SQ FT.)

Specialized Wetland Mix for Shaded OBL-FACW Areas - ERNMX-137

	Botanical Name	Common Name	Price/Lb
33.00 %	*Carex vulpinoidea, PA Ecotype*	Fox Sedge, PA Ecotype	28.80
22.00 %	*Carex lurida, PA Ecotype*	Lurid Sedge, PA Ecotype	67.20
20.00 %	*Elymus virginicus, PA Ecotype*	Virginia Wildrye, PA Ecotype	10.36
15.70 %	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype	81.60
2.00 %	*Heliopsis helianthoides, PA Ecotype*	Oxeye Sunflower, PA Ecotype	33.60
1.60 %	*Carex grayi, PA Ecotype*	Gray's Sedge, PA Ecotype	129.60
1.00 %	*Carex stipata, PA Ecotype*	Awl Sedge, PA Ecotype	235.20
1.00 %	*Juncus effusus*	Soft Rush	48.00
0.80 %	*Carex crinita, PA Ecotype*	Fringed Sedge, PA Ecotype	216.00
0.80 %	*Verbena urticifolia, PA Ecotype*	White Vervain, PA Ecotype	144.00
0.70 %	*Solidago rugosa, PA Ecotype*	Wrinkleleaf Goldenrod, PA Ecotype	264.00
0.50 %	*Vernonia noveboracensis, PA Ecotype*	New York Ironweed, PA Ecotype	264.00
0.30 %	*Juncus tenuis, PA Ecotype*	Path Rush, PA Ecotype	48.00
0.30 %	*Lobelia siphilitica, PA Ecotype*	Great Blue Lobelia, PA Ecotype	384.00
0.30 %	*Scirpus cyperinus, PA Ecotype*	Woolgrass, PA Ecotype	115.20
100.00 %		**Mix Price/Lb Bulk:**	**$52.44**

Seeding Rate: 20 lb per acre with a cover crop. For a cover crop use one of the following: grain rye (1 Sep to 30 Apr; 30 lbs/acre), Japanese millet (1 May to 31 Aug; 10 lbs/acre), or barnyard grass (1 May to 31 Aug; 10 lbs/acre).

Grasses & Grass-like Species - Herbaceous Perennial; Wet Meadows & Wetlands

The shade-tolerant native species provide wildlife habitat near wetland borders that are surrounded by trees. Excellent for grass and herbaceous cover on bioengineering sites. Mix formulations are subject to change without notice depending on the availability of existing and new dproducts. While the formula may change, the guiding philosophy and function of the mix will not.

UNDISTURBED / PRESERVED:	4,010,981.8 SF 92.08 Acres
DISTURBED:	1,234,888.2 SF 28.35 Acres
TOTAL IMPERVIOUS:	619,951.3 SF 14.23 Acres
MOTOR VEHICLE SURFACE AREA:	257,012 SF 5.84 Acres

811
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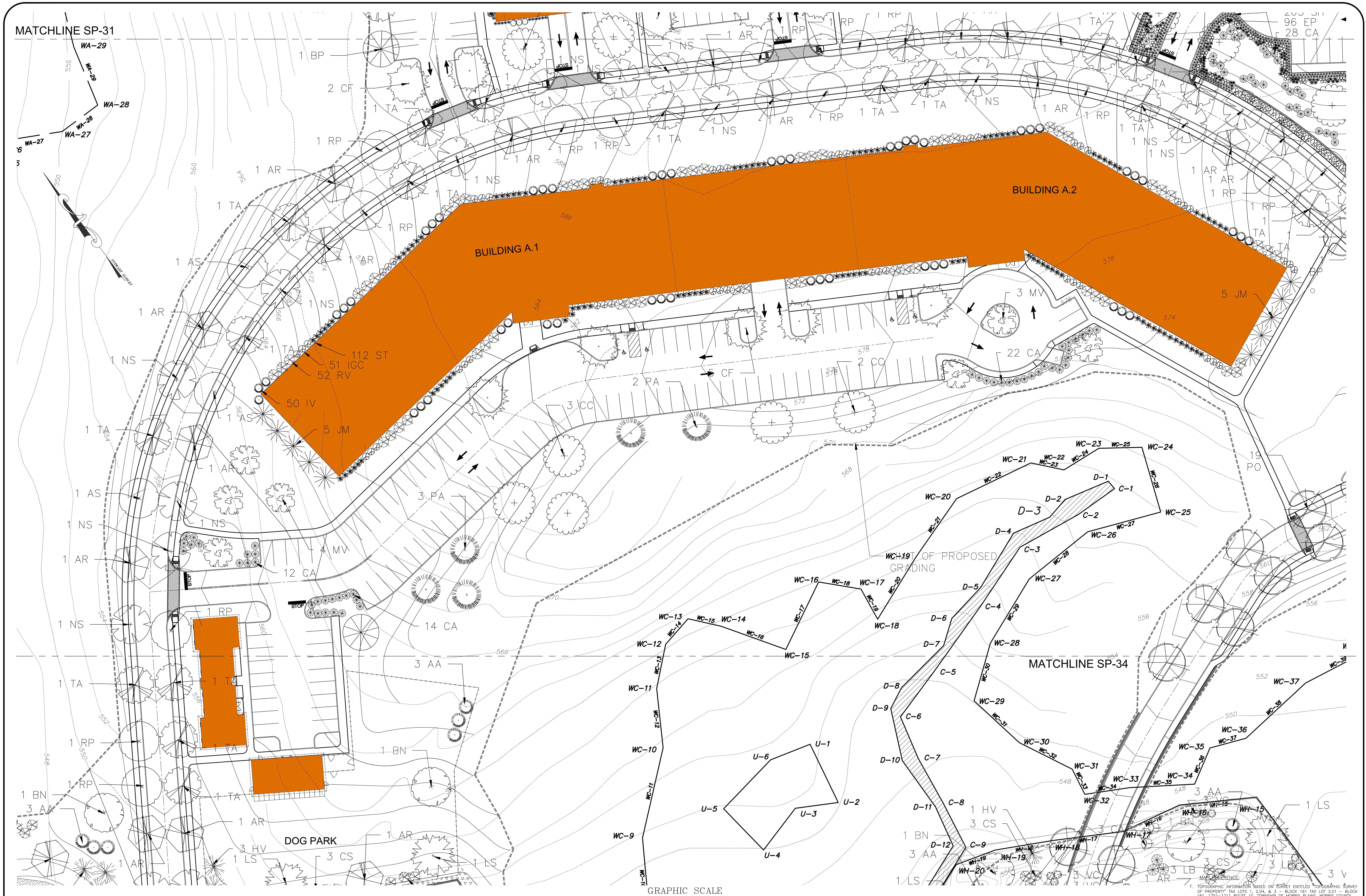
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

OVERALL LANDSCAPE PLAN

SP-29



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30 0 15 30 60 120

(IN FEET)
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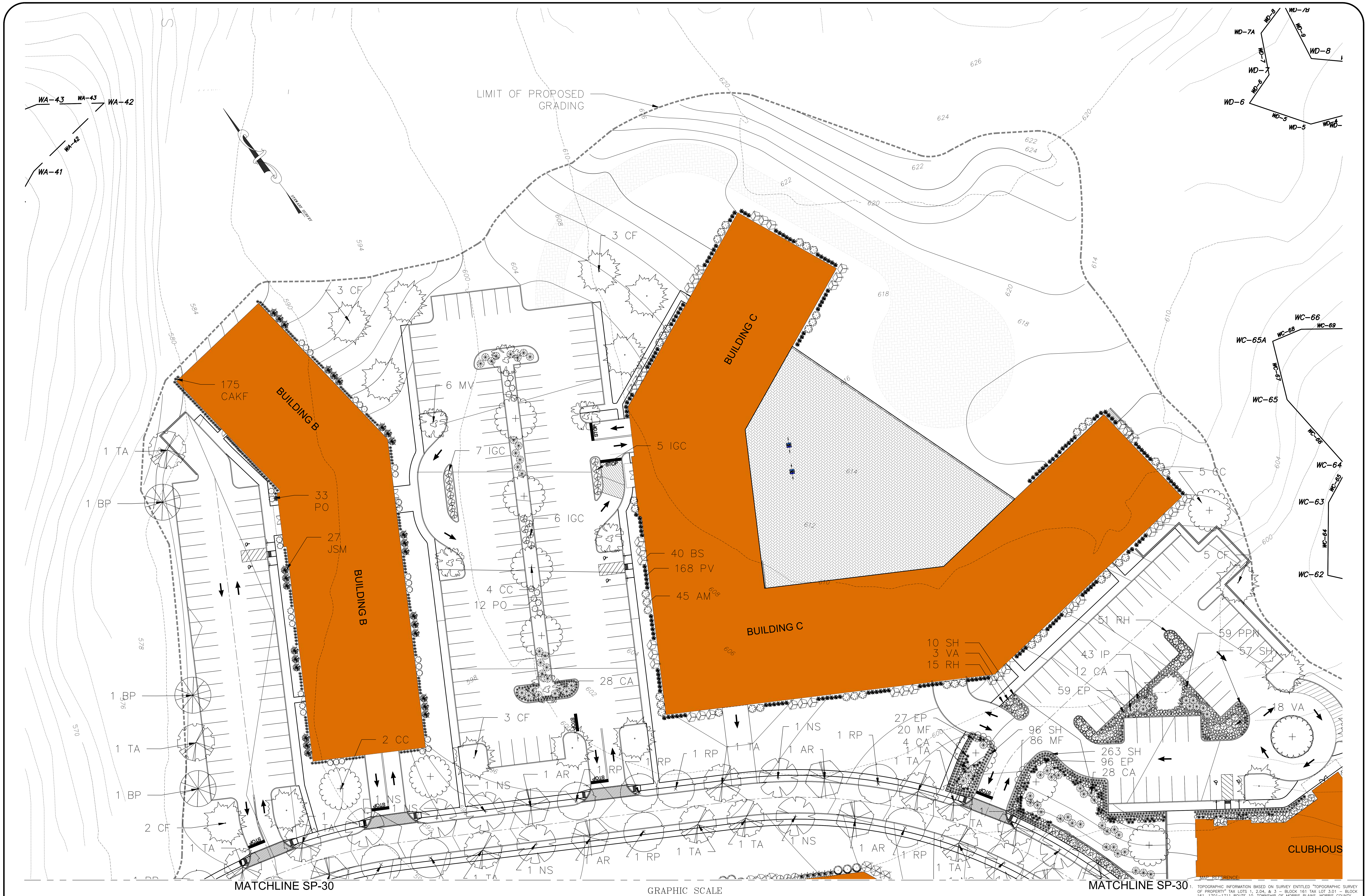
BLDG A LANDSCAPE PLAN

SP-30

SHEET 30 OF 66



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BLDG B+C LANDSCAPE PLAN

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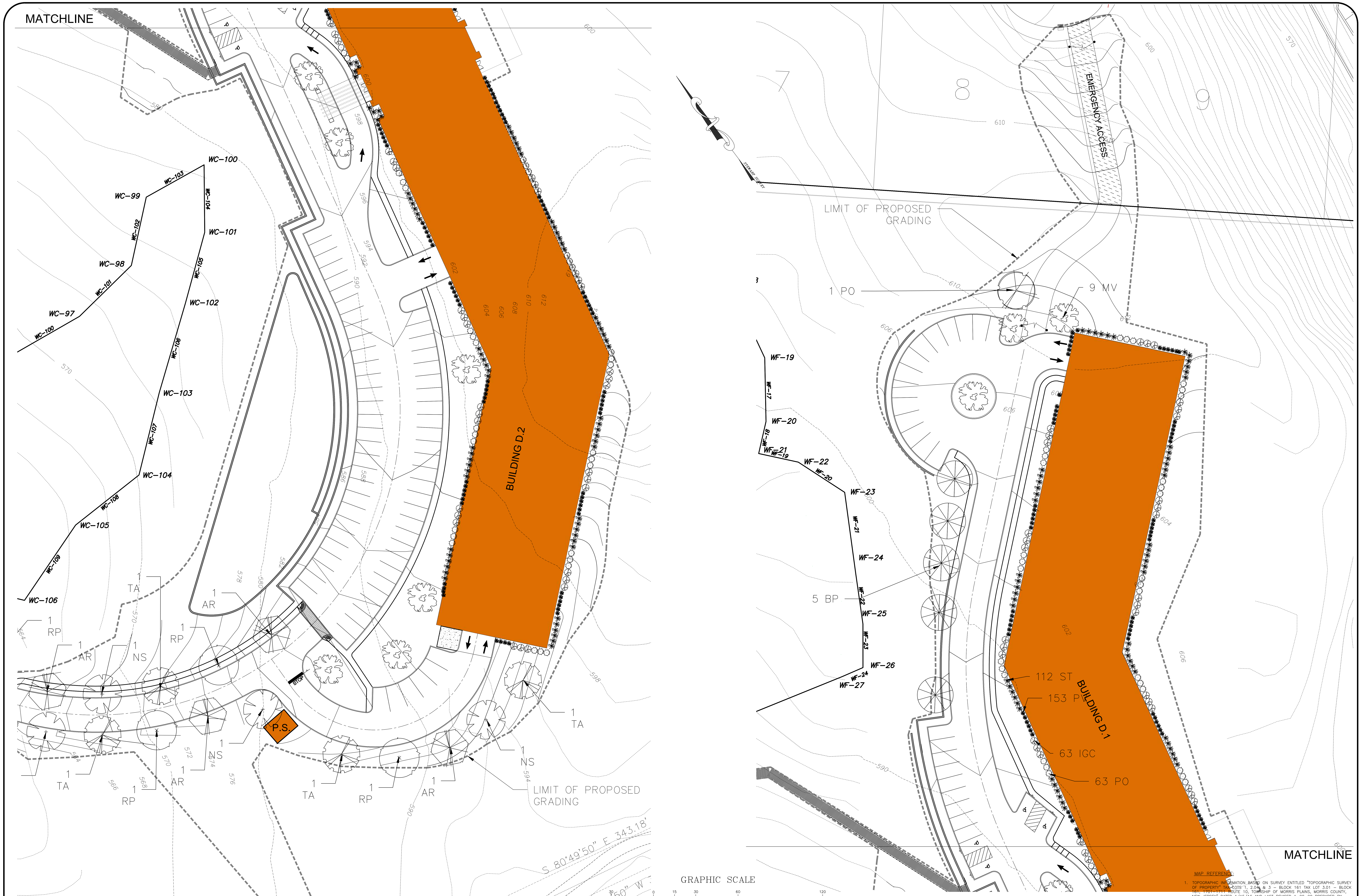

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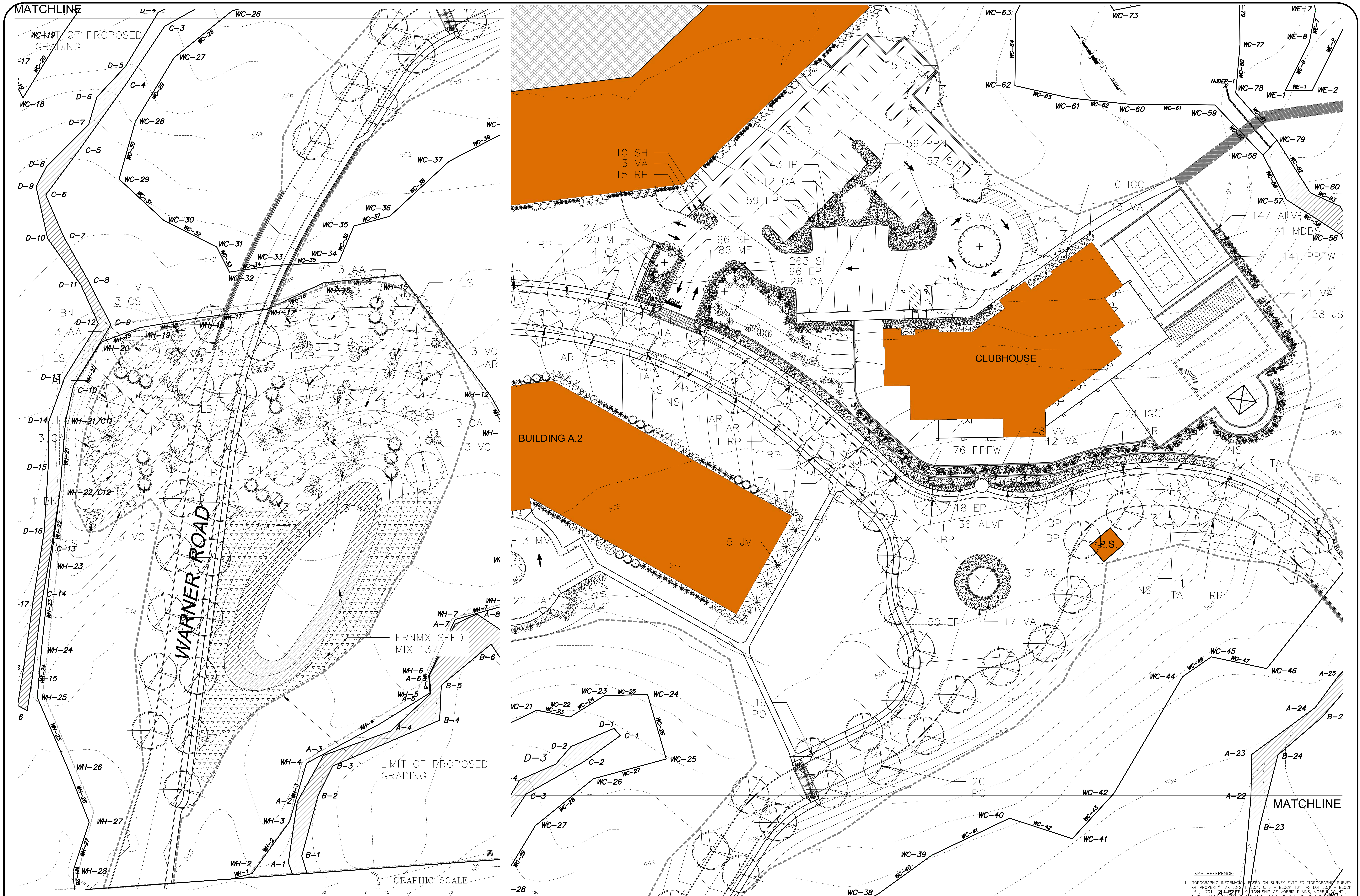
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

BLDG D LANDSCAPE PLAN

SP-32

SHEET 32 OF 66



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PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410
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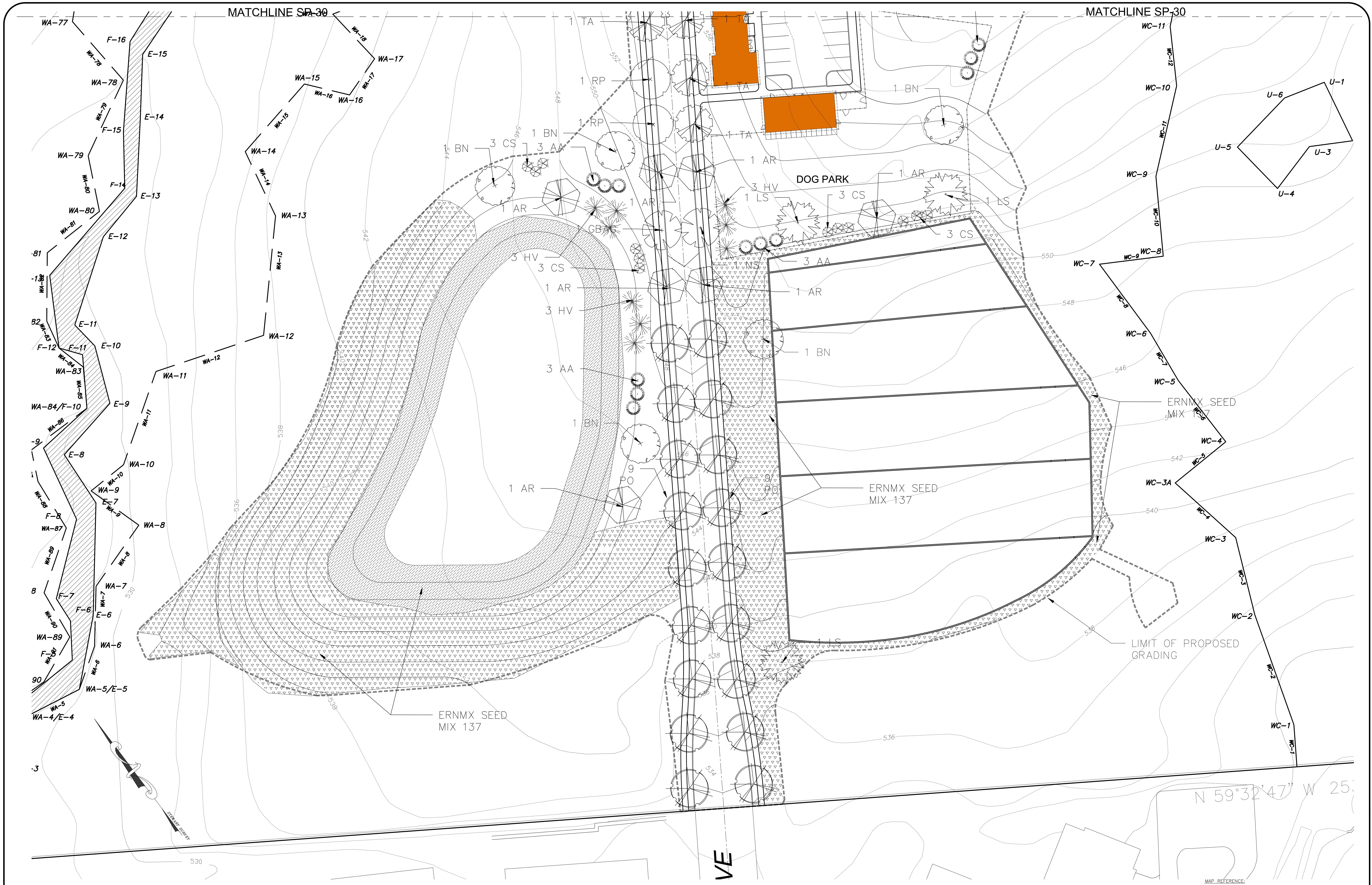
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

CLUBHOUSE LANDSCAPE PLAN

SP-33

SHEET 33 OF 66



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
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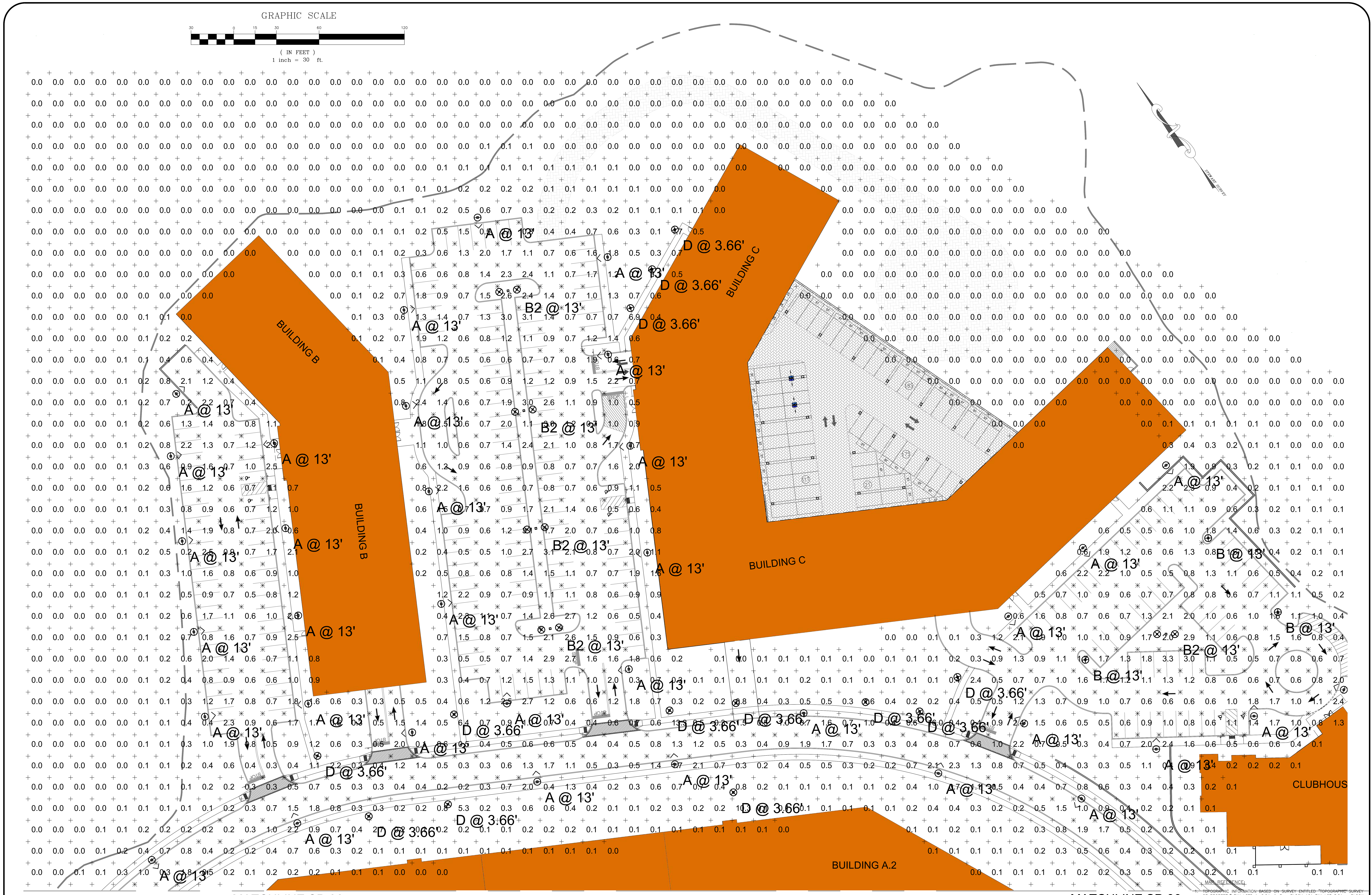
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

KUZIK ENTRANCE LANDSCAPE PLAN

SP-34



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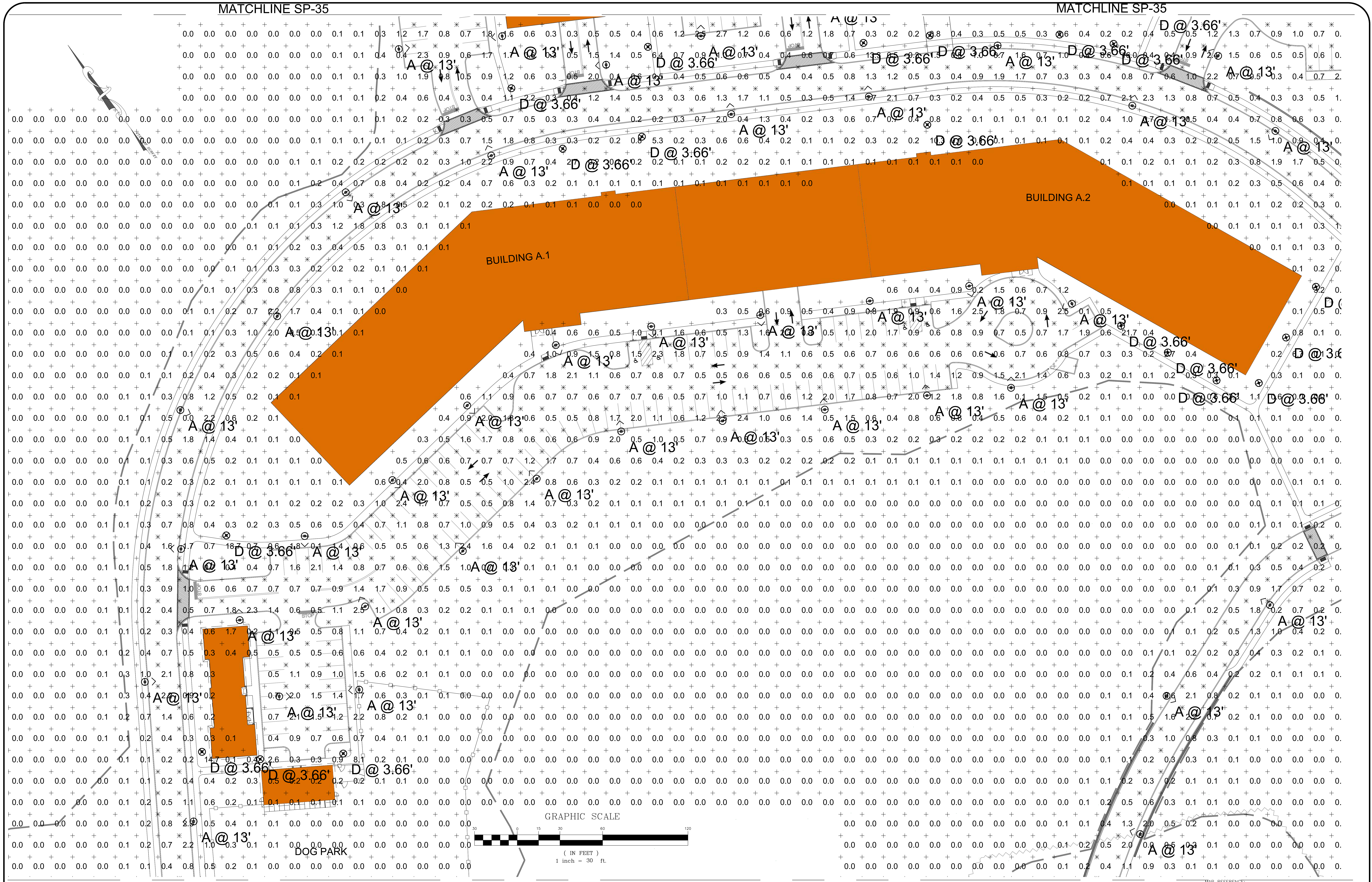
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

LIGHTING PLAN A

SP-35

SHEET 35 OF 66



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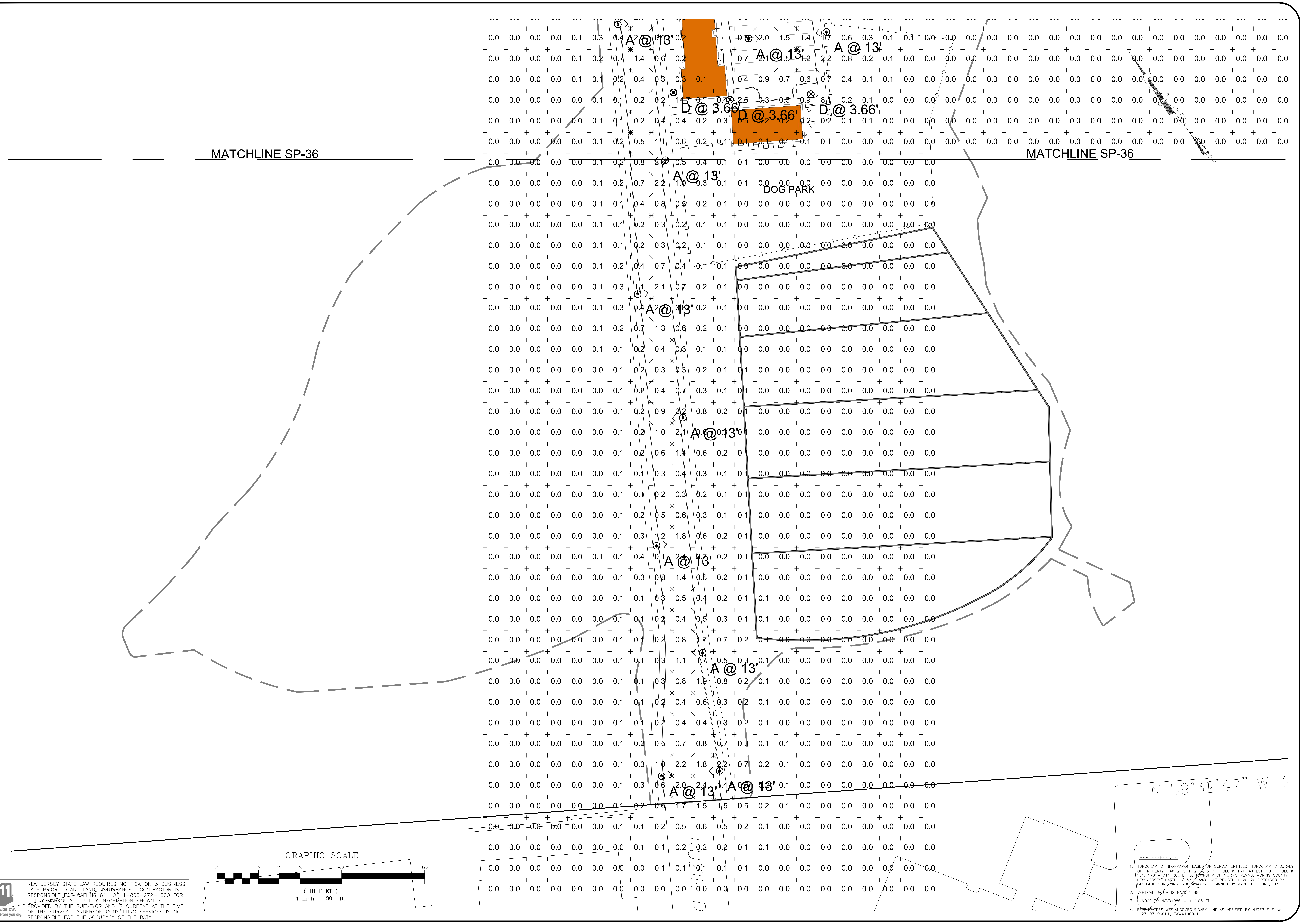
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

LIGHITNG PLAN B

SP-36

SHEET 36 OF 66



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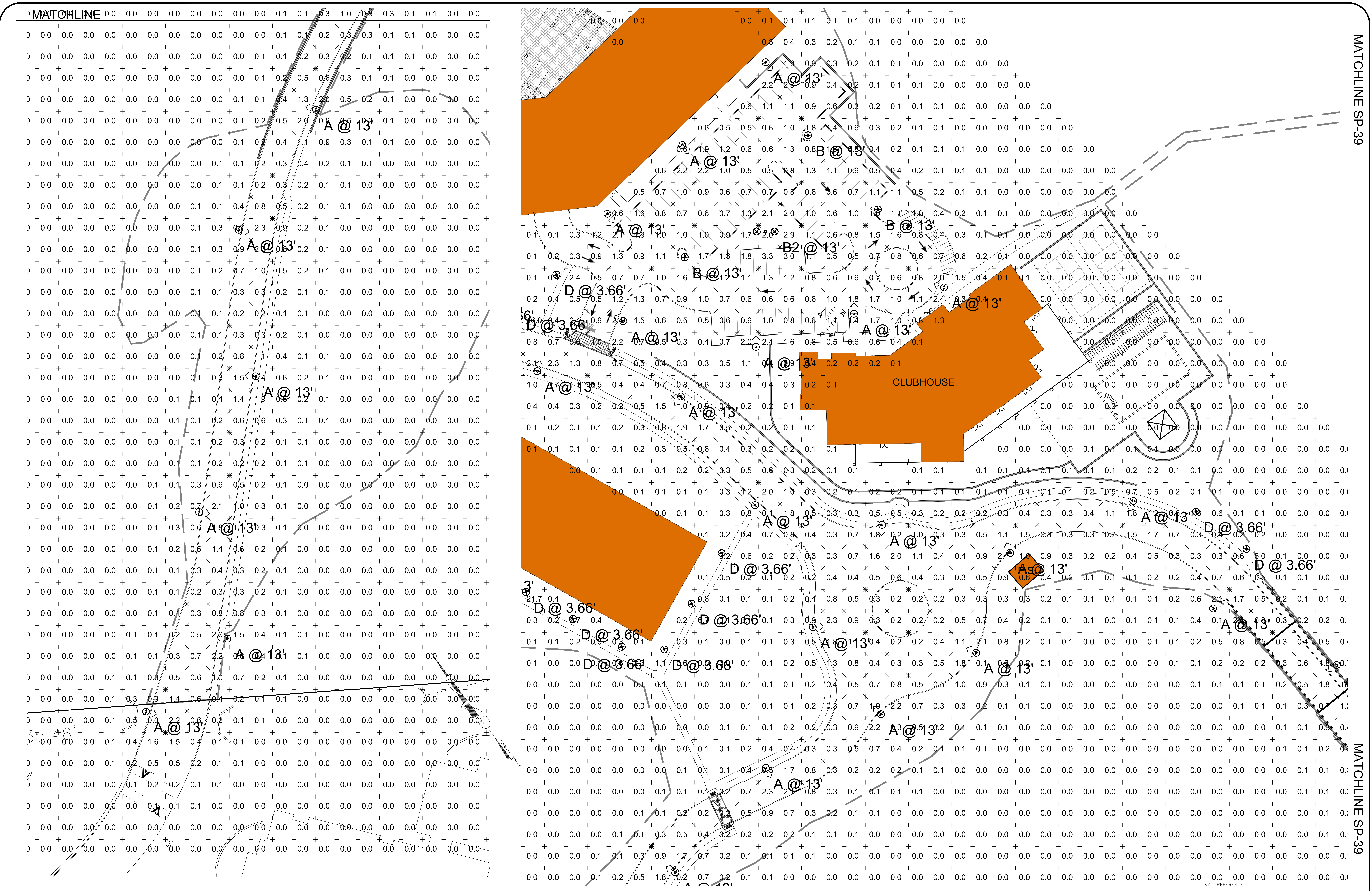
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

LIGHTING PLAN C

SP-37

SHEET 37 OF 66



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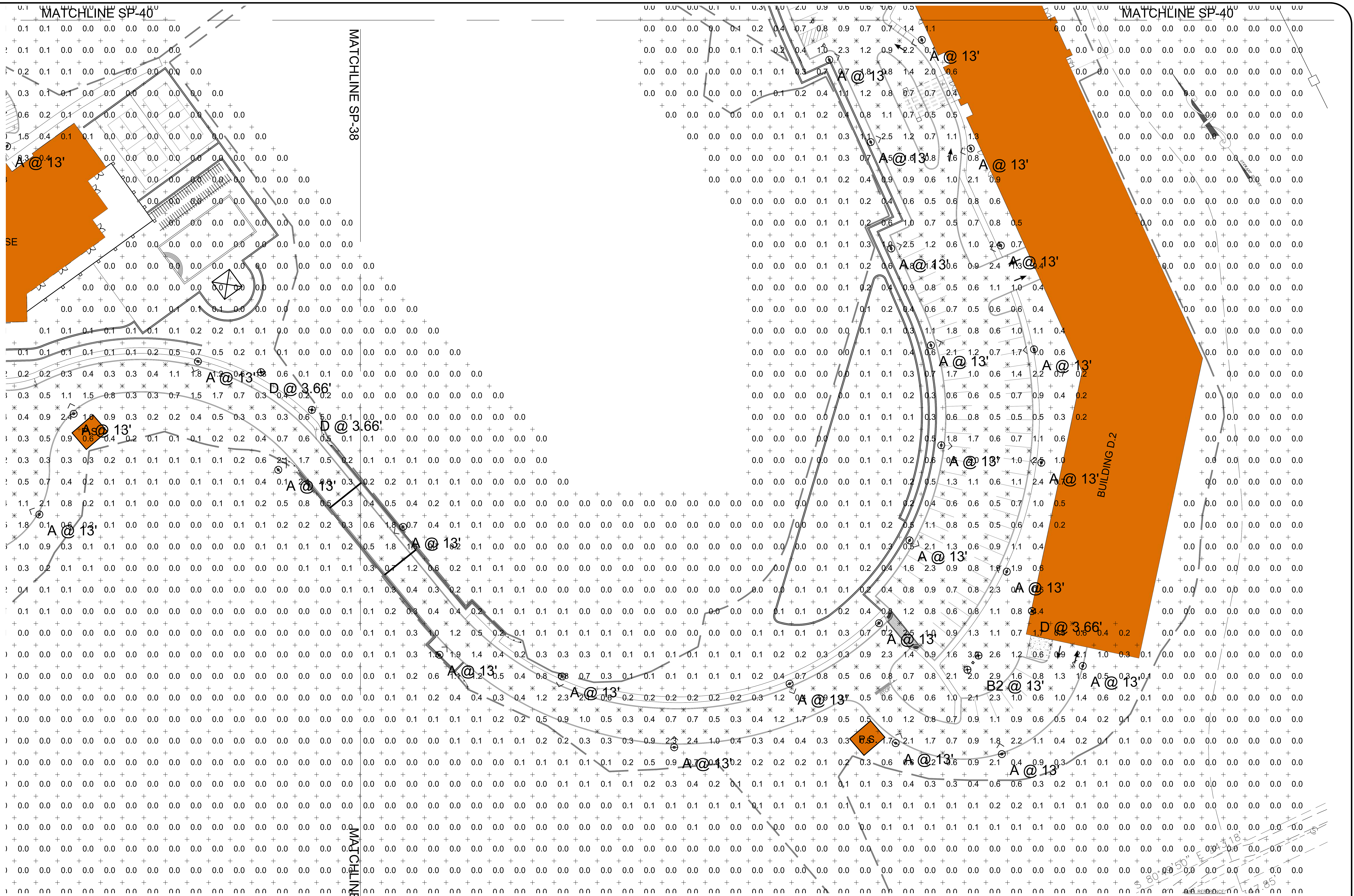
ESSEX COUNTY, NEW JERSEY

LIGHTING PLAN D

SP-38

SHEET 38 OF 66



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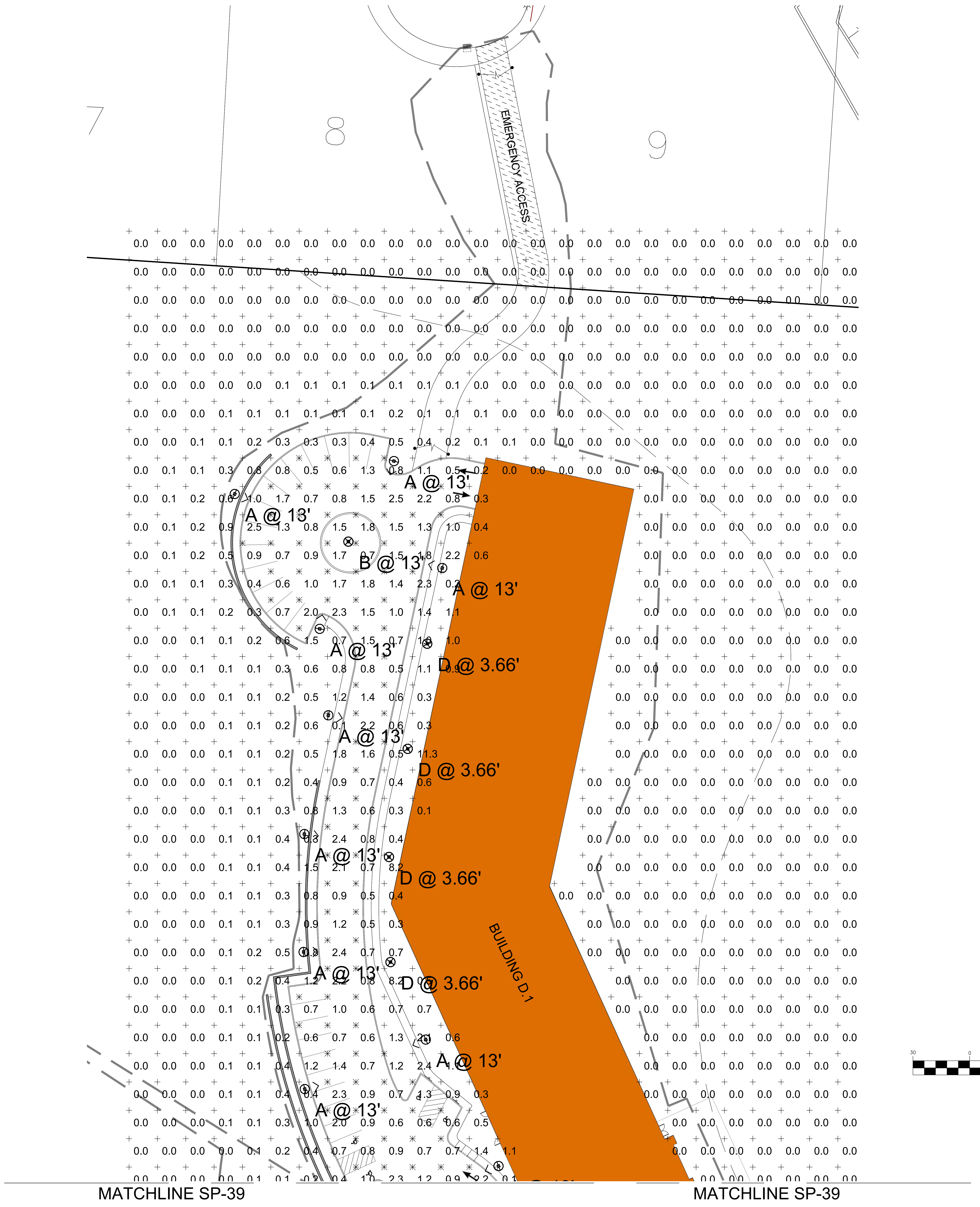
LIGHTING PLAN E

SP-39



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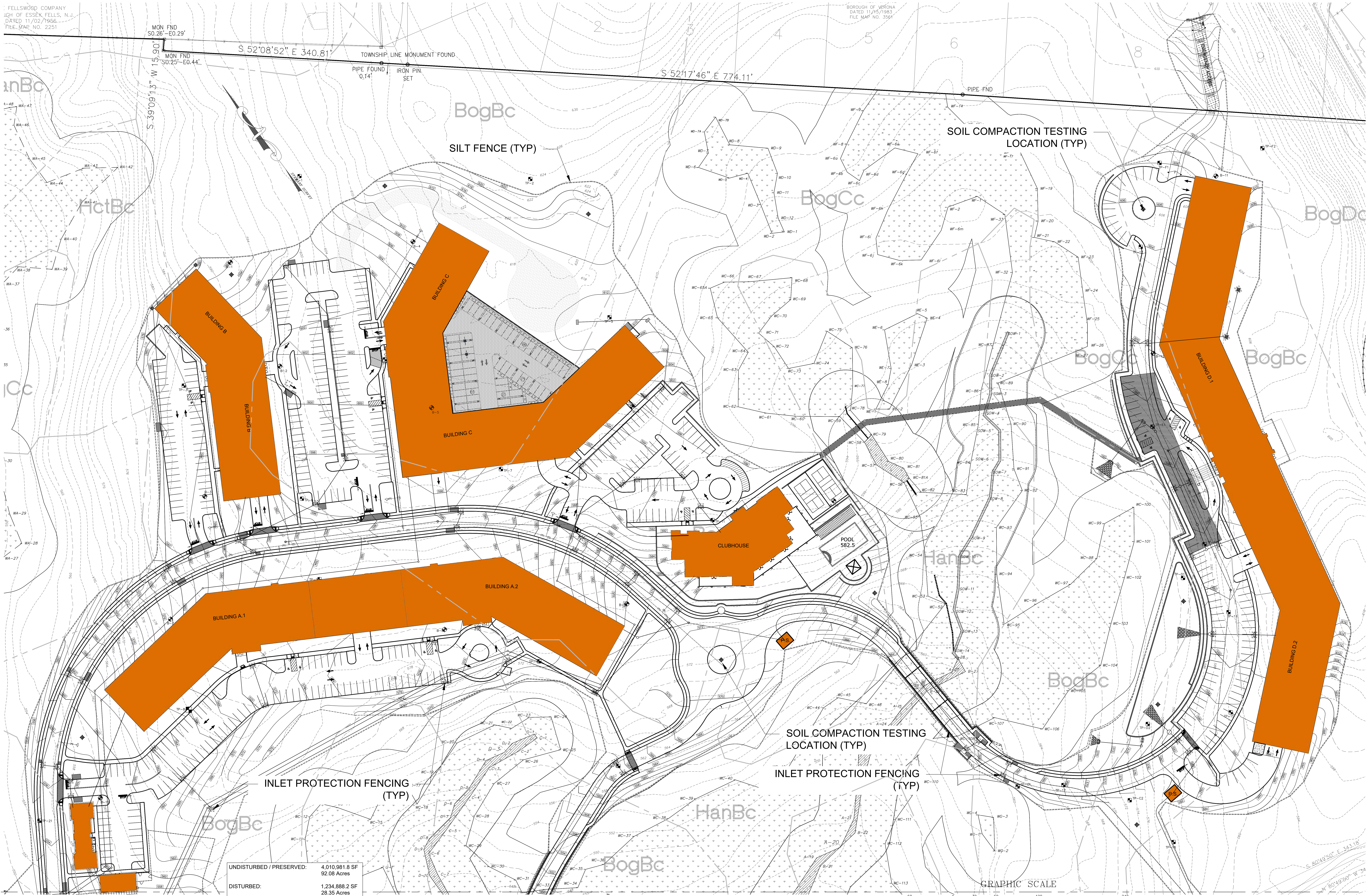
Proj. No.	WEMF2022
Date	9–23–22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

LIGHTING PLAN F

SP-40

SHEET 40 OF 66



NEW JERSEY STATE LAW REQUIRES NOTIFICATION 3 BUSINESS DAYS PRIOR TO ANY LAND DISTURBANCE. CONTRACTOR IS RESPONSIBLE FOR CALLING 811 OR 1-800-272-1000 FOR UTILITY MARKOUTS. UTILITY INFORMATION SHOWN IS PROVIDED BY THE SURVEYOR AND IS CURRENT AT THE TIME OF THE SURVEY. ANDERSON CONSULTING SERVICES IS NOT RESPONSIBLE FOR THE ACCURACY OF THE DATA.

811 Know what's below. Call before you dig.

UNDISTURBED / PRESERVED:	4,010,981.8 SF 92.08 Acres
DISTURBED:	1,234,888.2 SF 28.35 Acres
TOTAL IMPERVIOUS:	619,951.3 SF 14.23 Acres
MOTOR VEHICLE SURFACE AREA:	257,012 SF 5.84 Acres

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410

SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.

10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS
Revisions	

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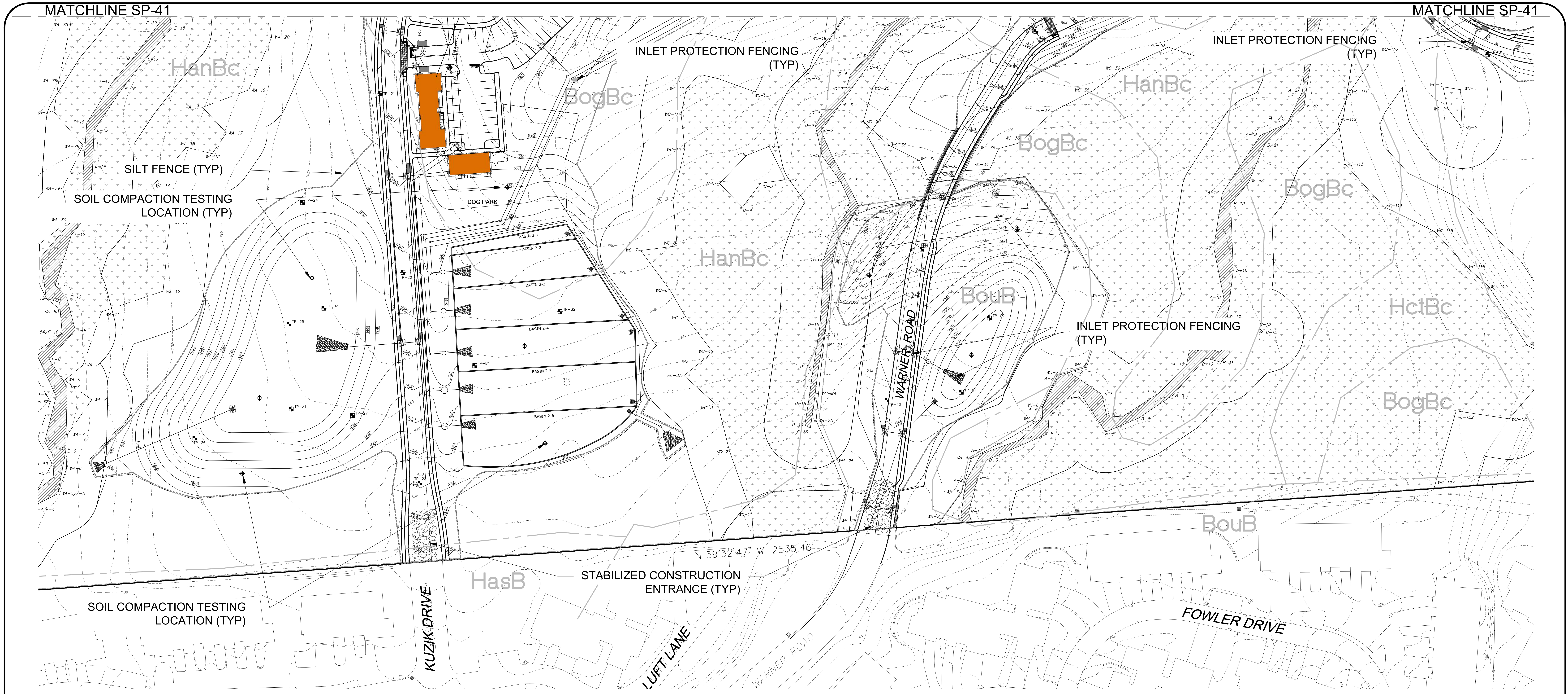
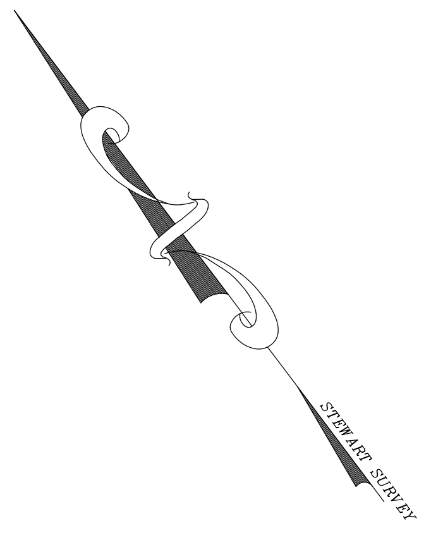
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

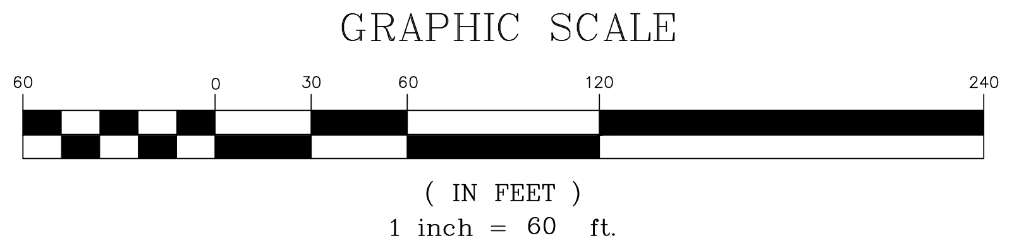
SOIL EROSION AND SEDIMENT CONTROL PLAN - A

SP-41

SHEET 41 OF 66







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CONSTRUCTION SEQUENCE

ITEM DESCRIPTION	DURATION
–INSTALL SOIL EROSION CONTROL MEASURES	5 DAYS
–DEMOLITION AND CLEARING	2 WEEKS
–ROUGH GRADING	1 MONTH
–BUILDING CONSTRUCTION	12 MONTHS
–UTILITIES AND DRAINAGE	4 WEEKS
–PARKING LOT CONSTRUCTION	6 WEEKS
–FINAL GRADING AND SEEDING	1 WEEK
–UNIFORMLY APPLY TOPSOIL TO AN AVERAGE DEPTH OF 5", MINIMUM 4", FIRMED IN PLACE	2 DAYS
–REMOVE SESC MEASURES UPON COMPLETION	3 DAYS

SEE SHEET SP-42 FOR ADDITIONAL NOTES AND DETAILS

LEGEND

—x—x—x—x—	SILT FENCE
▬ ▬ ▬ ▬ ▬	LIMIT OF DISTURBANCE
— — — — —	NRCS SOILTYPE LINE
HasB	NRCS SOILTYPE
×××	INLET PROTECTION
▨	STABILIZED CONSTRUCTION ENTRANCE / WHEEL CLEANING BLANKET
⌖	SOIL COMPACTION TESTING LOCATION

SOIL DATA:

BogBc -	Boonton loam, extremely stony: 0 to 8 % slopes
BogCc -	Boonton loam. extremely stony: 8 to 15 % slopes
BogDc -	Boonton loam, extremely stony: 15 to 35 % slopes
BouB -	Boonton - Urban land, Boonton substratum complex: 0 to 8 % slopes
BouC -	Boonton - Urban land, Boonton substratum complex: 8 to 15 % slopes
BouD -	Boonton - Urban land, Boonton substratum complex: 15 to 25 % slopes
HanBc -	Haledon silt loam, extremely stony: 0 to 8 % slopes
HasB -	Haledon - Urban land, Haledon substratum complex: 0 to 8 % slopes
HctBc -	Hasbrouck silt loam, extremely stony: 0 to 8 % slopes
PecmBc -	Peckmantown silt loam, extremely stony: 0 to 8 % slopes
PecuuB -	Peckmantown - Urban land, Peckmantown substratum complex: 0 to 8 % slopes

NOTE:
1. SOIL TYPES BASED ON NRCS SOIL SURVEY. GEOTECHNICAL REPORT REQUIRED FOR SITE SPECIFIC SOIL DATA AND PROFILES.

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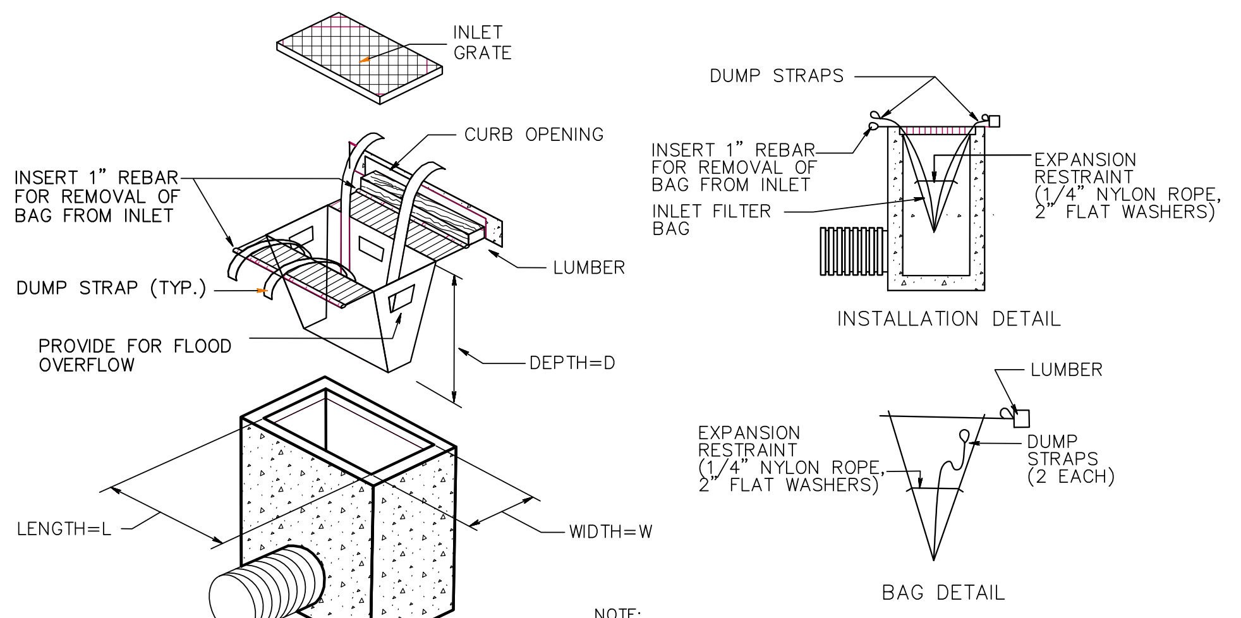
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

SOIL EROSION AND SEDIMENT CONTROL PLAN - B

SP-42

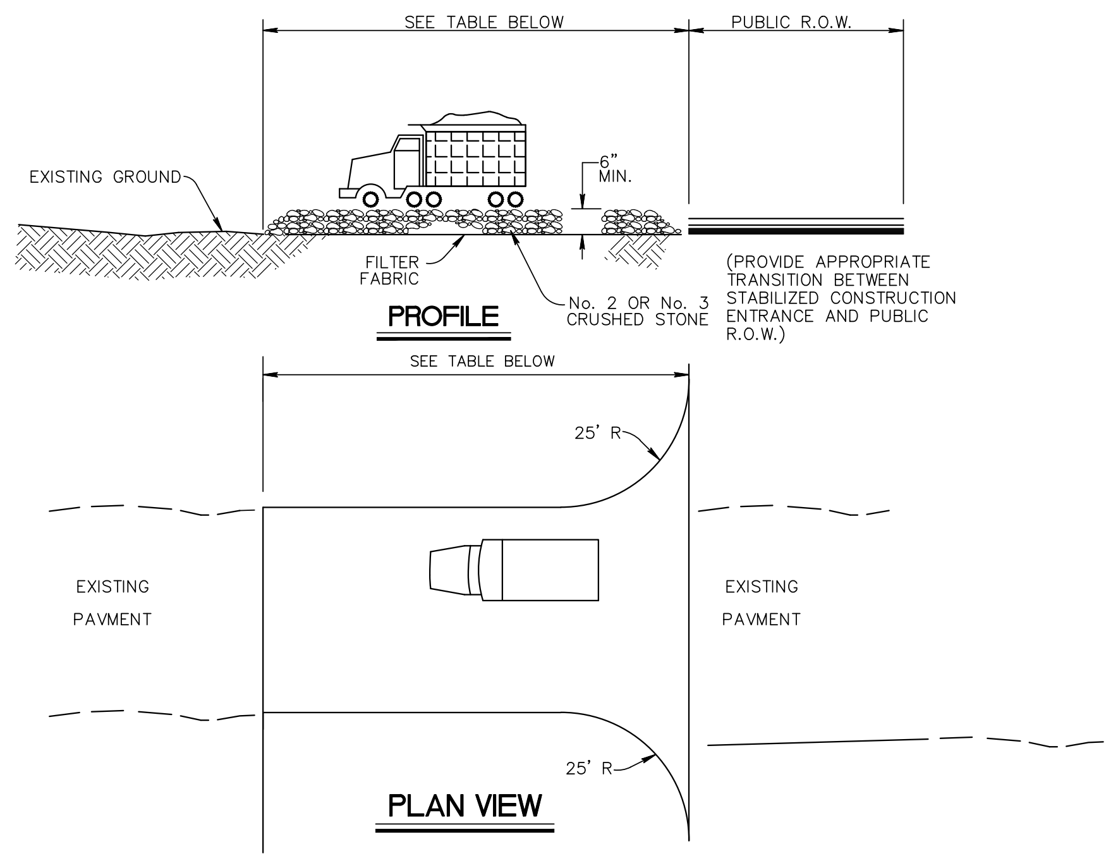
SHEET 42 OF 66


INLET GRATE
CURB OPENING
INSERT 1" REBAR FOR REMOVAL OF BAG FROM INLET
DUMP STRAP (TYP.)
LUMBER
PROVIDE FOR FLOOD OVERFLOW
DEPTH=D
LENGTH=L
WIDTH=W
DUMP STRAPS
INSERT 1" REBAR FOR REMOVAL OF BAG FROM INLET
INLET FILTER BAG
EXPANSION RESTRAINT (1/4" NYLON ROPE, 2" FLAT WASHERS)
INSTALLATION DETAIL
LUMBER
EXPANSION RESTRAINT (1/4" NYLON ROPE, 2" FLAT WASHERS)
DUMP STRAPS (2 EACH)
BAG DETAIL

NOTE:
1. INLET FILTERS SHALL BE FREQUENTLY INSPECTED
2. SEDIMENT TO BE REMOVED FROM DEVICES AFTER EACH RAIN EVENT
3. THE FILTER SHALL SAFELY PASS FLOWS GREATER THAN THE 1 YEAR, 24 HOUR DURATION STORM.

INLET SEDIMENT CONTROL DEVICE

SCALE: NTS

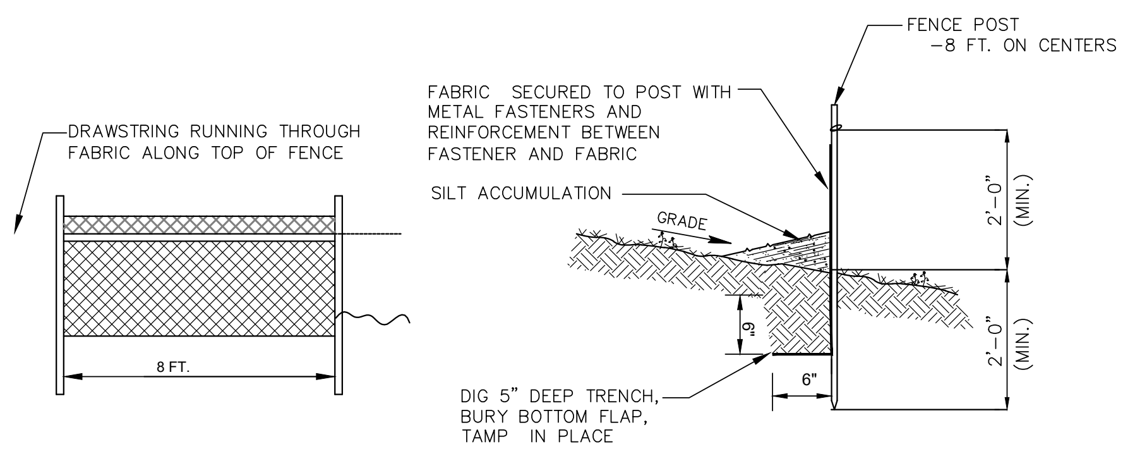


PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 – 2%	50 FT	100 FT
2 – 5%	100 FT	200 FT
> 5%	ENTIRE SURFACE STABILIZED WITH FABC BASE COURSE*	

* AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING BODY.

STABILIZED CONSTRUCTION ENTRANCE

SCALE: NTS


FENCE POST –8 FT. ON CENTERS
FABRIC SECURED TO POST WITH METAL FASTENERS AND REINFORCEMENT BETWEEN FASTENER AND FABRIC
DRAWSTRING RUNNING THROUGH FABRIC ALONG TOP OF FENCE
SILT ACCUMULATION
GRADE
2'–0" (MIN.)
2'–0" (MIN.)
6"
6"
8 FT.
DIG 5" DEEP TRENCH, BURY BOTTOM FLAP, TAMP IN PLACE

REQUIREMENTS FOR SILT FENCE

1. FENCE POSTS SHALL BE SPACED 8 FEET CENTER–TO–CENTER OR CLOSER. THEY SHALL EXTEND AT LEAST 2 FEET INTO THE GROUND AND EXTEND AND LEAST 2 FEET ABOVE GROUND. POSTS SHALL BE CONSTRUCTED OF HARDWOOD WITH A MINIMUM DIAMETER THICKNESS OF 1 1/2 INCHES.
2. A METAL FENCE WITH 6 INCH OR SMALLER OPENINGS AND AT LEAST 2 FEET HIGH MAY BE UTILIZED, FASTENED TO THE FENCE POSTS, TO PROVIDE REINFORCEMENT AND SUPPORT TO THE GEOTEXTILE FABRIC WHERE SPACE FOR OTHER PRACTICES IS LIMITED AND HEAVY SEDIMENT LOADING IS EXPECTED.
3. A GEOTEXTILE FABRIC, RECOMMENDED FOR SUCH USE BY THE MANUFACTURER, SHALL BE BURIED AT LEAST 6 INCHES DEEP IN THE GROUND. THE FABRIC SHALL EXTEND AT LEAST 2 FEET ABOVE THE GROUND. THE FABRIC MUST BE SECURELY FASTENED TO THE POSTS USING A SYSTEM CONSISTING OF METAL FASTENERS (NAILS OR STAPLES) AND HIGH STRENGTH REINFORCEMENT MATERIAL (NYLON WEBBING, GROMMETS, WASHERS, ETC.) PLACED BETWEEN THE FASTENER AND THE GEOTEXTILE FABRIC. THE FASTENING SYSTEM SHALL RESIST TEARING AWAY FROM THE POST. THE FABRIC SHALL INCORPORATE A DRAWSTRING IN THE TOP PORTION OF THE FENCE FOR ADDED STRENGTH.

SILT FENCE DETAIL

SCALE: NTS

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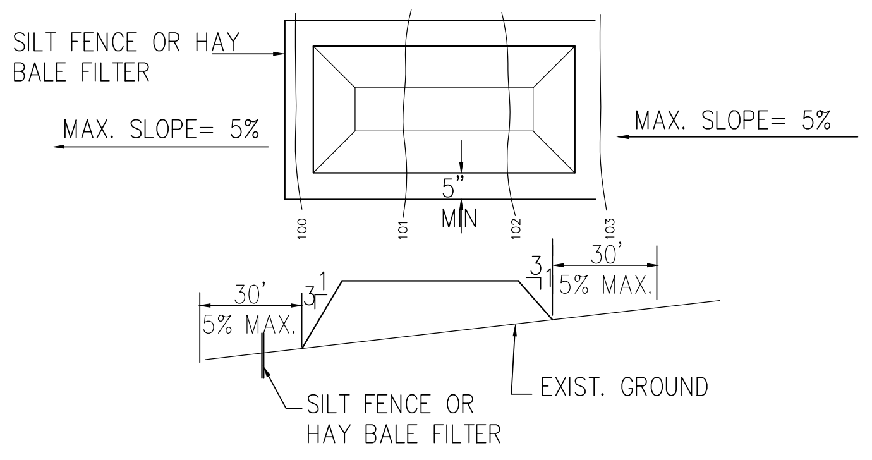


NOTES:

1. PLACE STOCKPILES AT LOCATIONS AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN
2. ALL SIDE SLOPES SHALL BE MAXIMUM 3:1
3. STOCKPILE SHALL RECIEVE A VEGETATIVE COVER IN ACCORDANCE WITH MINIMUM STABILIZATION REQUIREMENTS AS STATED ON THIS SHEET.
4. SILT FENCE OR HAY BALE FILTER SHALL BE INSTALLED AS DETAILED HEREON.

SOIL STOCKPILE

SCALE: NTS

DUST CONTROL NOTES:

TABLE 16–1: DUST CONTROL MATERIALS:

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS / ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM)– SPRAY ON POLYACRYLAMIDE (PAM)– DRY SPRAY	APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS. MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS. SEE SEDIMENT BASIN STANDARD (PG. 26–1)		
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200

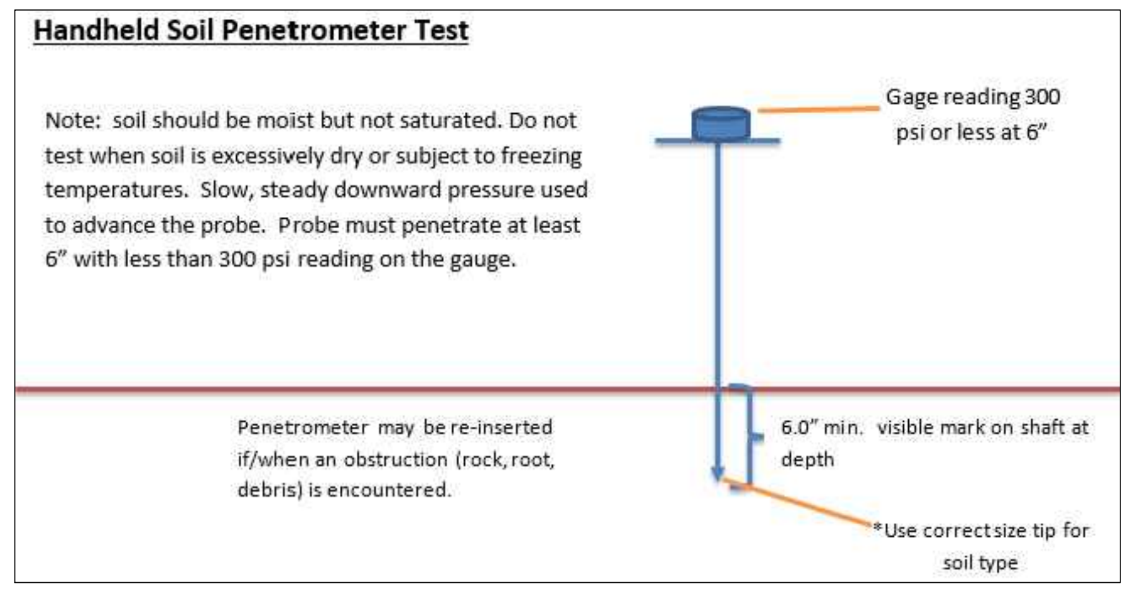
TILLAGE: TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL–TYPE PLOWS SPACED ABOUT 12 INCHES APART, AND SPRING–TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

SPRINKLING: SITE IS SPRINKLED UNTIL THE SURFACE IS WET.

BARRIERS: SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

CALCIUM CHLORIDE: SHALL BE IN THE FORM OF LOOSE, DRY GRANULATES OF FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS, OR ACCUMULATION AROUND PLANTS.

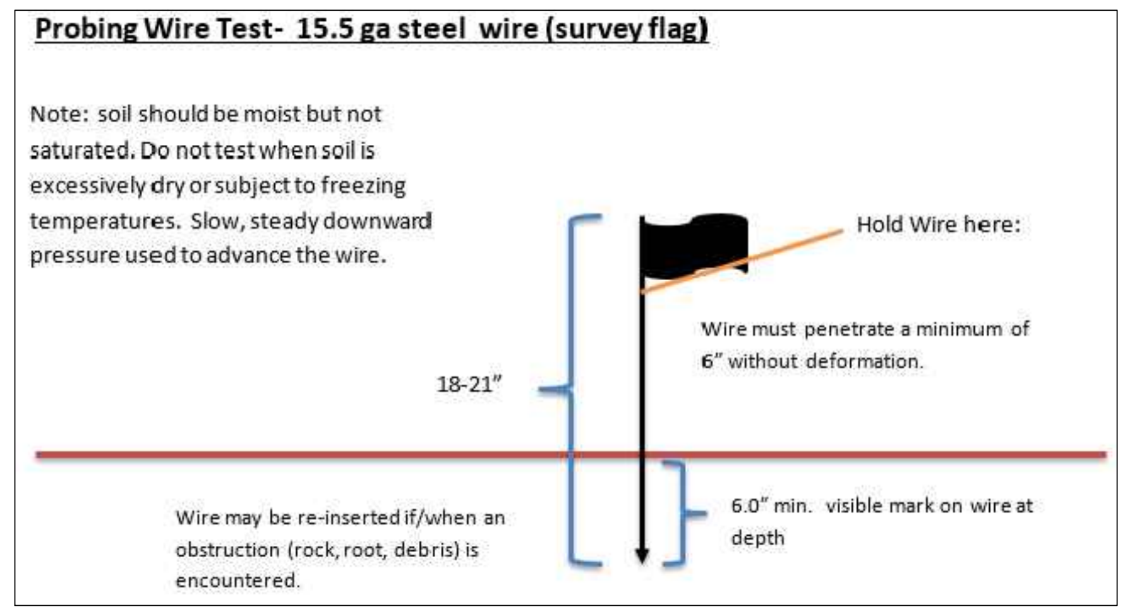
STONE: COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.



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 gauge.

Gage reading 300 psi or less at 6"
Penetrometer may be re-inserted if/when an obstruction (rock, root, debris) is encountered.
6.0" min. visible mark on shaft at depth
*Use correct size tip for soil type



Probing Wire Test- 15.5 ga steel wire (survey flag)

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 wire.

Hold Wire here:
Wire must penetrate a minimum of 6" without deformation.
18-21"
Wire may be re-inserted if/when an obstruction (rock, root, debris) is encountered.
6.0" min. visible mark on wire at depth

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.

SOIL EROSION & SEDIMENT CONTROL NOTES:

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ON THIS PLAN WILL BE CONSTRUCTED IN ACCORDANCE WITH THE "NEW JERSEY STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL" 7TH EDITION LAST REVISED DECEMBER 2017. THESE MEASURES WILL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
2. ALL SOIL TO BE EXPOSED OR STOCKPILED FOR A PERIOD OF GREATER THAN 14 DAYS, AND NOT UNDER ACTIVE CONSTRUCTION, WILL BE TEMPORARILY SEEDED AND HAY MULCHED OR OTHERWISE PROVIDED WITH VEGETATIVE COVER. THIS TEMPORARY COVER SHALL BE MAINTAINED UNTIL SUCH TIME WHEREBY PERMANENT RESTABILIZATION IS ESTABLISHED.
3. SEEDING DATES: THE FOLLOWING SEEDING DATES ARE RECOMMENDED TO BEST ESTABLISH PERMANENT VEGETATIVE COVER WITHIN MOST LOCATIONS IN THE HEPSCD: SPRING – 3/1–5/15 AND FALL – 8/15 – 10/1
4. SEDIMENT FENCES ARE TO BE PROPERLY TRENCHED AND MAINTAINED UNTIL PERMANENT VEGETATIVE COVER IS ESTABLISHED
5. ALL STORM DRAINAGE INLETS SHALL BE PROTECTED BY ONE OF THE PRACTICES ACCEPTED IN THE STANDARDS, AND PROTECTION SHALL REMAIN UNTIL PERMANENT STABILIZATION HAS BEEN ESTABLISHED. STORM DRAINAGE OUTLET POINTS SHALL BE PROTECTED AS REQUIRED BEFORE THEY BECOME FUNCTIONAL.
6. MULCH MATERIALS SHALL BE UN–ROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF 70 TO 90 POUNDS PER 1,000 SQUARE FEET AND ANCHORED WITH A MULCH ANCHORING TOOL, LIQUID MULCH BINDERS, OR NETTING TIE DOWN. OTHER SUITABLE MATERIALS MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT.
7. ALL EROSION CONTROL DEVICES SHALL BE PERIODICALLY INSPECTED, MAINTAINED AND CORRECTED BY THE CONTRACTOR. ANY DAMAGE INCURRED BY EROSION SHALL BE RECTIFIED IMMEDIATELY.
8. THE HUDSON–ESSEX–PASSAIC SOIL CONSERVATION DISTRICT WILL BE NOTIFIED IN WRITING AT LEAST 48 HOURS PRIOR TO ANY SOIL DISTURBING ACTIVITIES. FAX – (862) 333–4507 OR EMAIL – INFORMATION@HEPSCD.ORG
9. **THE APPLICANT MUST OBTAIN A DISTRICT ISSUED REPORT–OF–COMPLIANCE PRIOR TO APPLYING FOR THE CERTIFICATE OF OCCUPANCY OR TEMPORARY CERTIFICATE OF OCCUPANCY FROM THE RESPECTIVE MUNICIPALITY, NJ – DCA OR ANY OTHER CONTROLLING AGENCY**. CONTACT THE DISTRICT AT 862–333–4505 TO REQUEST A FINAL INSPECTION, GIVING ADVANCED NOTICE UPON COMPLETION OF THE RESTABILIZATION MEASURES. A PERFORMANCE DEPOSIT MAY BE POSTED WITH THE DISTRICT WHEN WINTER WEATHER OR SNOW COVER PROHIBITS THE PROPER APPLICATION OF SEED, MULCH, FERTILIZER OR HYDRO–SEED.
10. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. DO NOT UTILIZE A FIRE OR GARDEN HOSE TO CLEAN ROADS UNLESS THE RUNOFF IS DIRECTED TO A PROPERLY DESIGNED AND FUNCTIONING SEDIMENT BASIN. WATER PUMPED OUT OF THE EXCAVATED AREAS CONTAINS SEDIMENTS THAT MUST BE REMOVED PRIOR TO DISCHARGING TO RECEIVING BODIES OF WATER USING REMOVABLE PUMPING STATIONS, SUMP PITS, PORTABLE SEDIMENTATION TANKS AND/OR SILT CONTROL BAGS.
11. ALL SURFACES HAVING LAWN OR LANDSCAPING AS FINAL COVER ARE TO BE PROVIDED TOPSOIL PRIOR TO RE–SEEDING, SODDING OR PLANTING. A DEPTH OF 5.0 INCHES, FIRMED IN PLACE, IS REQUIRED, AS PER THE STANDARDS FOR TOPSOILING AND LAND GRADING, LAST REVISED DECEMBER 2017.
12. ALL PLAN REVISIONS MUST BE SUBMITTED TO THE DISTRICT FOR PROPER REVIEW AND APPROVAL.
13. A CRUSHED STONE WHEEL CLEANING TRACKING–PAD IS TO BE INSTALLED AT ALL SITE EXITS USING 2½ –1" CRUSHED ANGULAR STONE (ASTM 2 OR 3) TO A MINIMUM LENGTH OF 50 FEET AND MINIMUM DEPTH OF 6". ALL DRIVEWAYS MUST BE PROVIDED WITH CRUSHED STONE UNTIL PAVING IS COMPLETE.
14. STEEP SLOPES INCURRING DISTURBANCE MAY REQUIRE ADDITIONAL STABILIZATION MEASURES. THESE "SPECIAL" MEASURES SHALL BE DESIGNED BY THE APPLICANT'S ENGINEER AND BE APPROVED BY THE SOIL CONSERVATION DISTRICT.
15. **THE HUDSON–ESSEX–PASSAIC SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED, IN WRITING, FOR THE SALE OF ANY PORTION OF THE PROJECT OR FOR THE SALE OF INDIVIDUAL LOTS. NEW OWNERS' INFORMATION SHALL BE PROVIDED. ADDITIONAL MEASURES DEEMED NECESSARY BY DISTRICT OFFICIALS SHALL BE IMPLEMENTED AS CONDITIONS WARRANT.**

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N.J. PROFESSIONAL ENGINEER
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Fax: 973.975.0703
www.pwanderson-cs.com

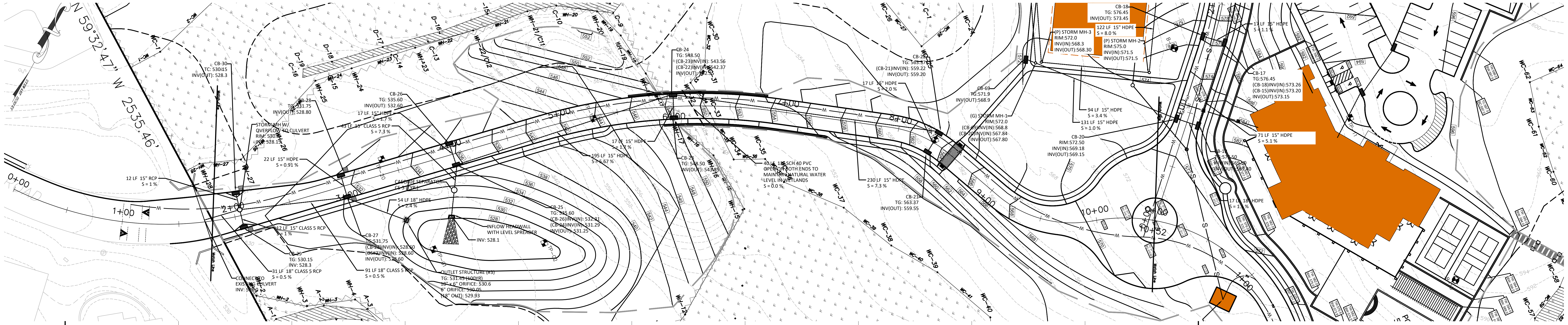
Proj. No.	WEMF2022
Date	9–23–22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

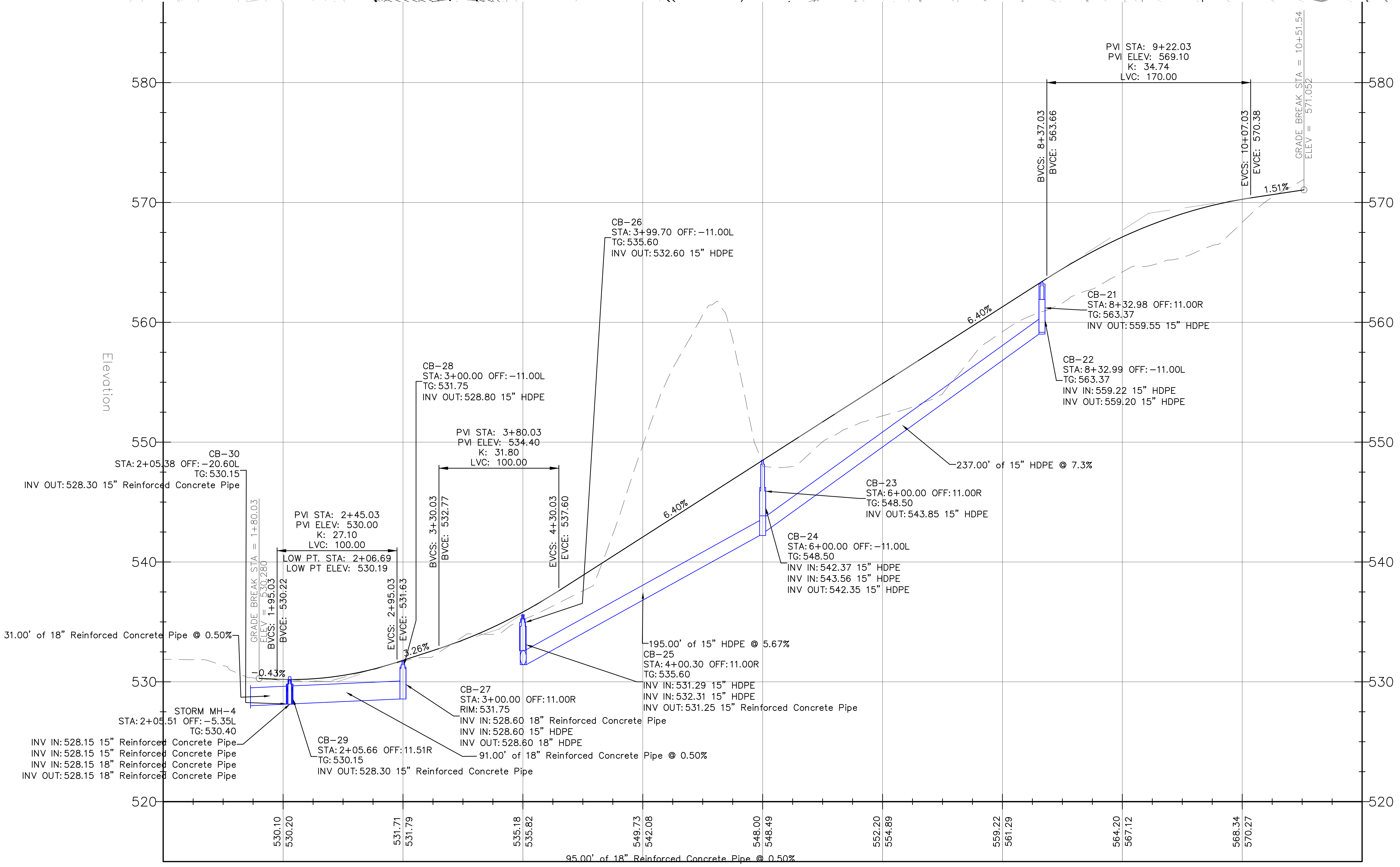
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

SOIL EROSION AND
SEDIMENT CONTROL DETAILS

SP-43

SHEET 43 OF 66





PROFILE - WARNER ROAD

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

HORIZONTAL

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

VERTICAL

GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)
1 inch = 5 ft.

MAP REFERENCE:

1. TOPOGRAPHIC INFORMATION BASED ON SURVEY ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY" TAX LOTS 1, 2.04, & 3 – BLOCK 161 TAX LOT 3.01 – BLOCK 161, 1701–1711 ROUTE 10, TOWNSHIP OF MORRIS PLAINS, MORRIS COUNTY, NEW JERSEY" DATED 1/15/16 AND LAST REVISED 1–20–20 PREPARED BY LAKELAND SURVEYING, ROCKAWAY NJ. SIGNED BY MARC J. CIFONE, PLS
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3. NGVD29 TO NGVD1988 = + 1.03 FT
4. FRESHWATERS WETLANDS/BOUNDARY LINE AS VERIFIED BY NJDEP FILE No. 1423–07–0001.1, FWWW190001

811
Know what's below.
Call before you dig.

NEW JERSEY STATE LAW REQUIRES NOTIFICATION 3 BUSINESS DAYS PRIOR TO ANY LAND DISTURBANCE. CONTRACTOR IS RESPONSIBLE FOR CALLING 811 OR 1–800–272–1000 FOR UTILITY MARKOUTS. UTILITY INFORMATION SHOWN IS PROVIDED BY THE SURVEYOR AND IS CURRENT AT THE TIME OF THE SURVEY. ANDERSON CONSULTING SERVICES IS NOT RESPONSIBLE FOR THE ACCURACY OF THE DATA.

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410
SIGNATURE INVALID UNLESS EMBOSSED SEAL OF P.E.

Revisions	
10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS

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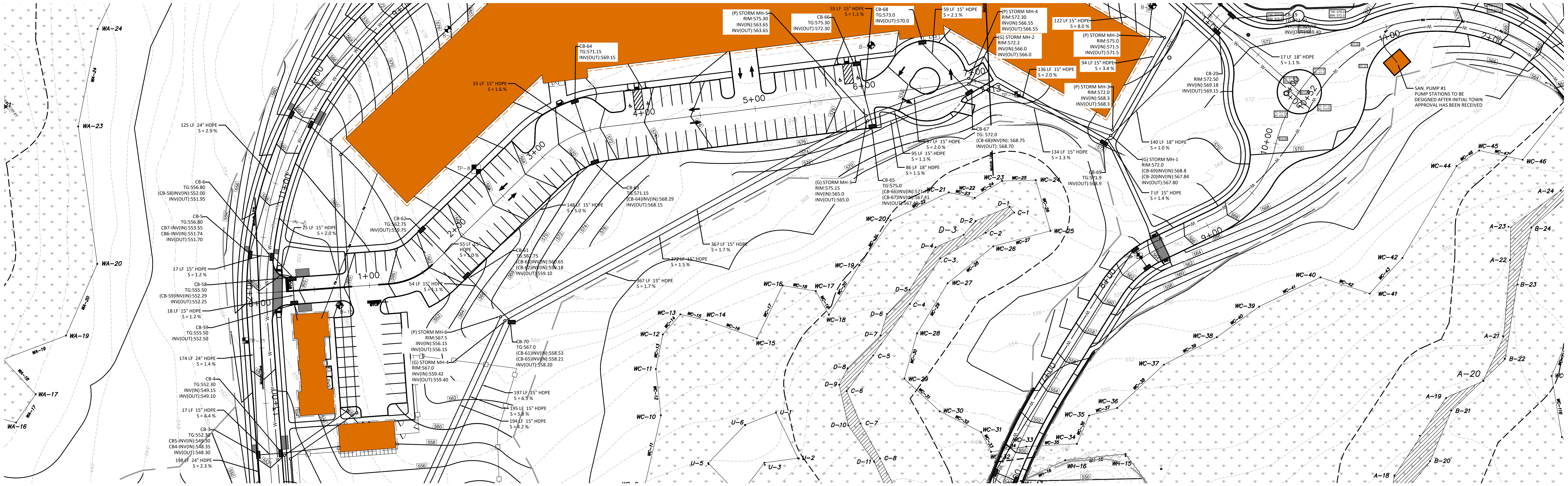
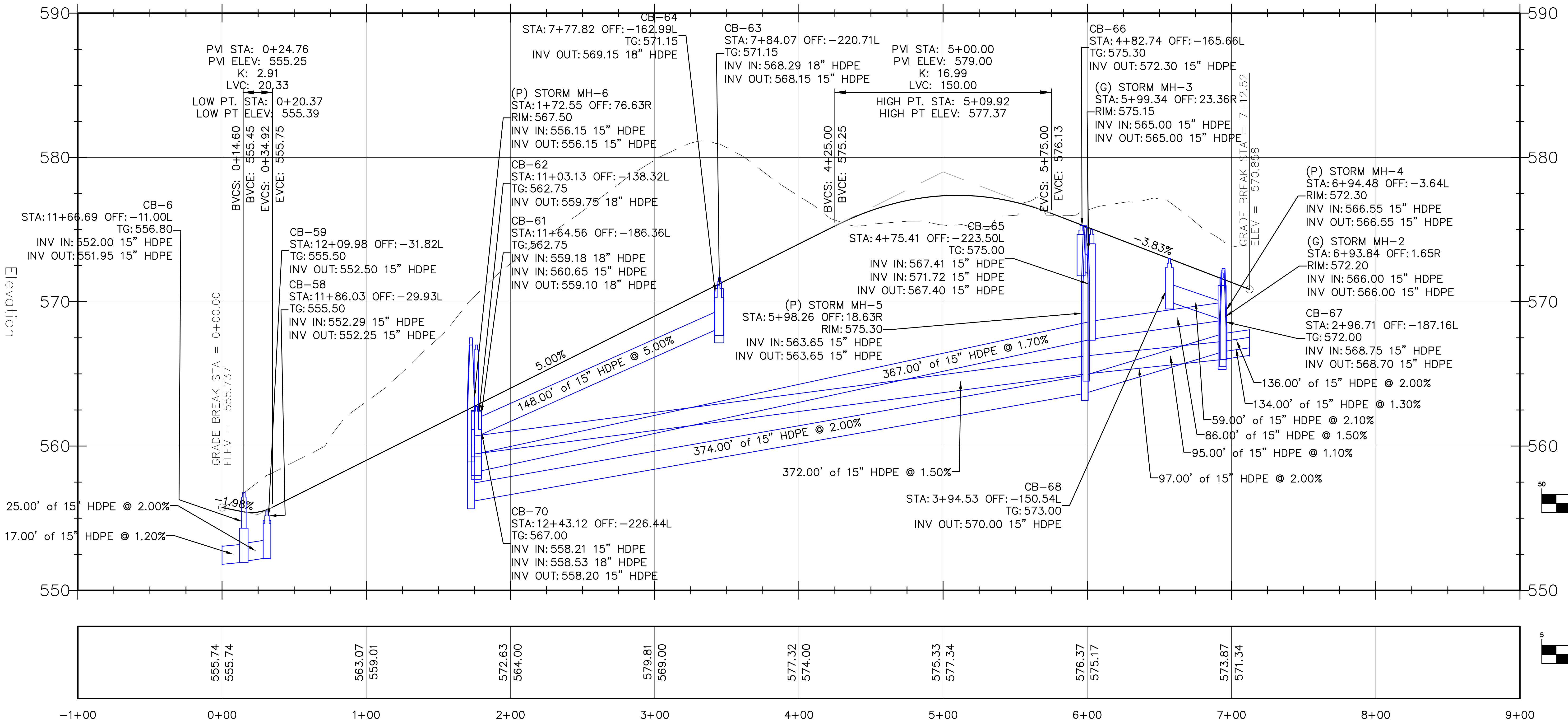
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

WARNER ROAD PLAN AND PROFILE

SP-44

SHEET 44 OF 66





PROFILE - BUILDING A ACCESS & PARKING ROAD

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

HORIZONTAL
GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

VERTICAL
GRAPHIC SCALE
5 0 2.5 5 10 20
(IN FEET)
1 inch = ft.
5

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PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
SIGNATURE IN ADDITION TO EMBOSSED SEAL OF P.E.

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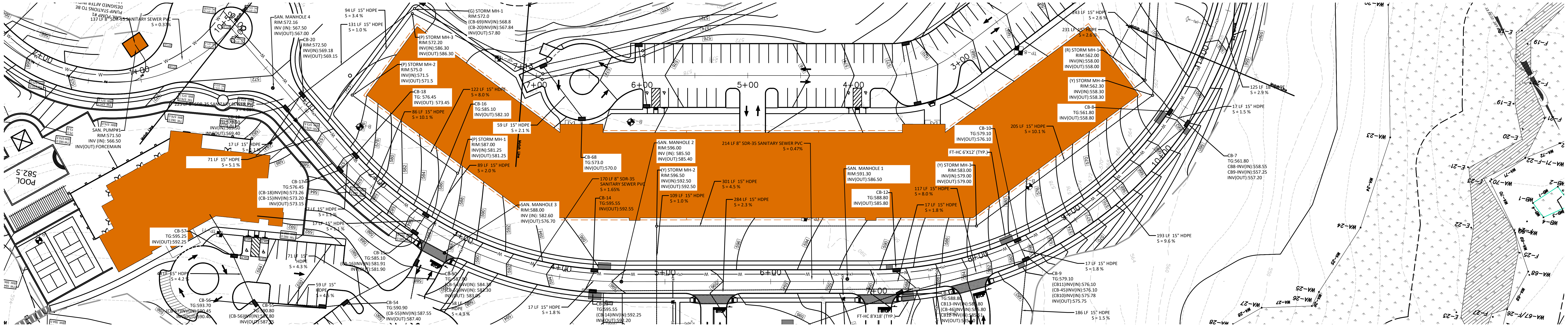
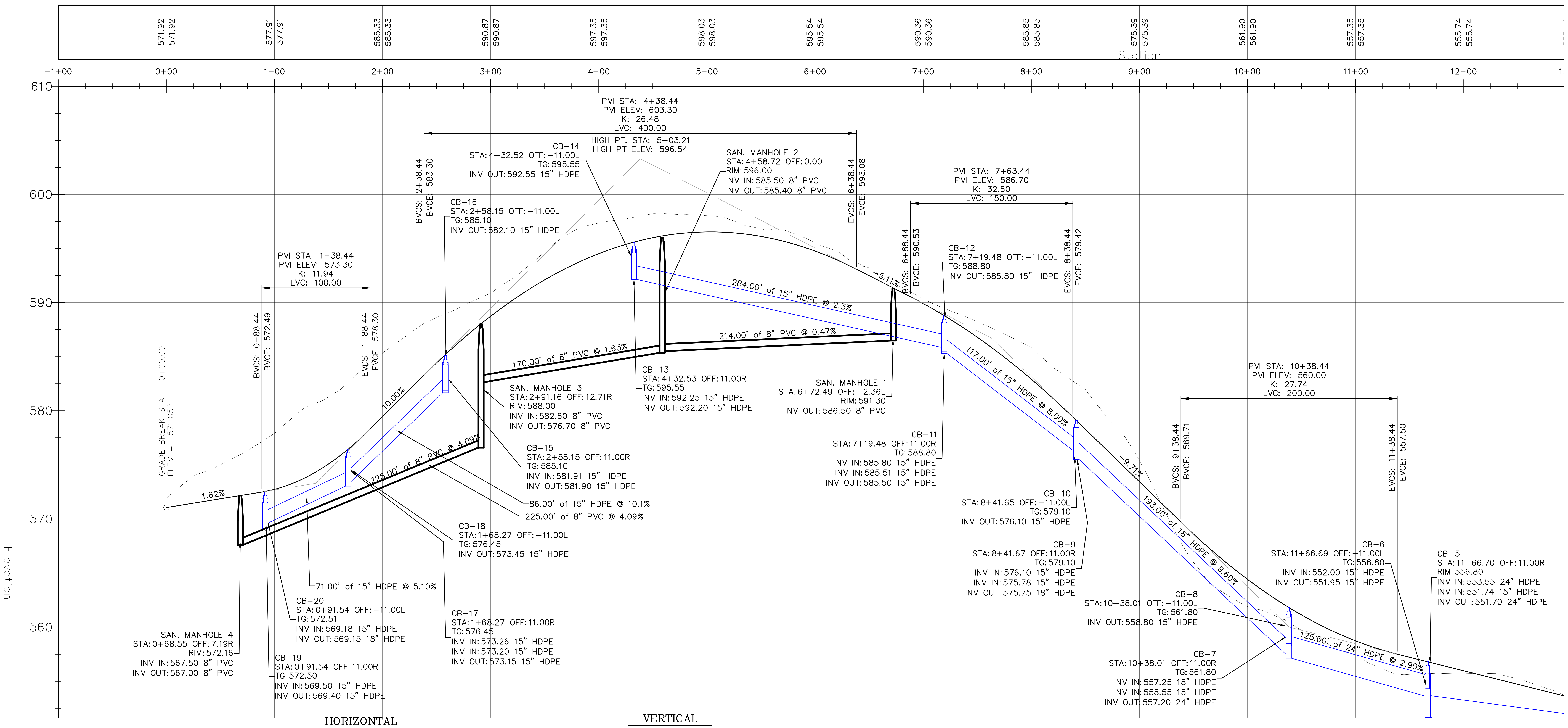
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

BUILDING A PLAN AND PROFILE

SP-45





HORIZONTAL

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
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VERTICAL

GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)
1 inch = 5 ft.

PROFILE - KUZIK ROAD

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

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PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. No. 33410
SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.

10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
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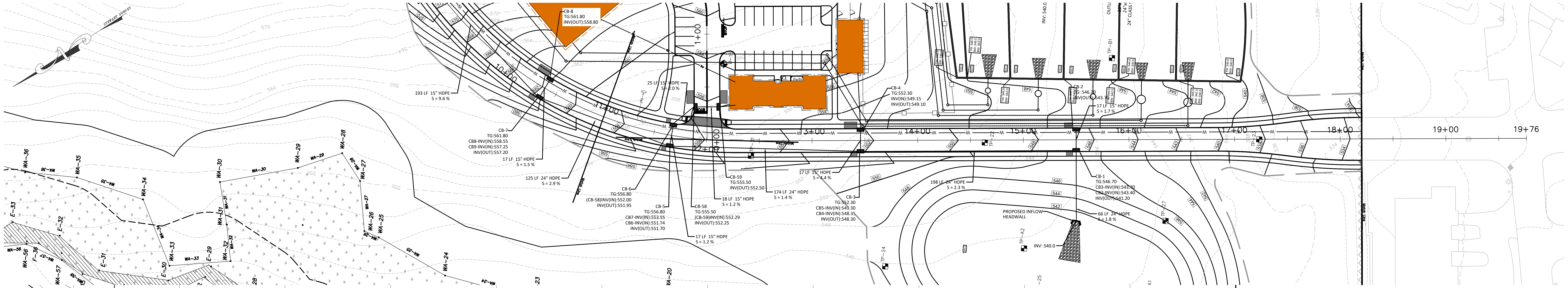
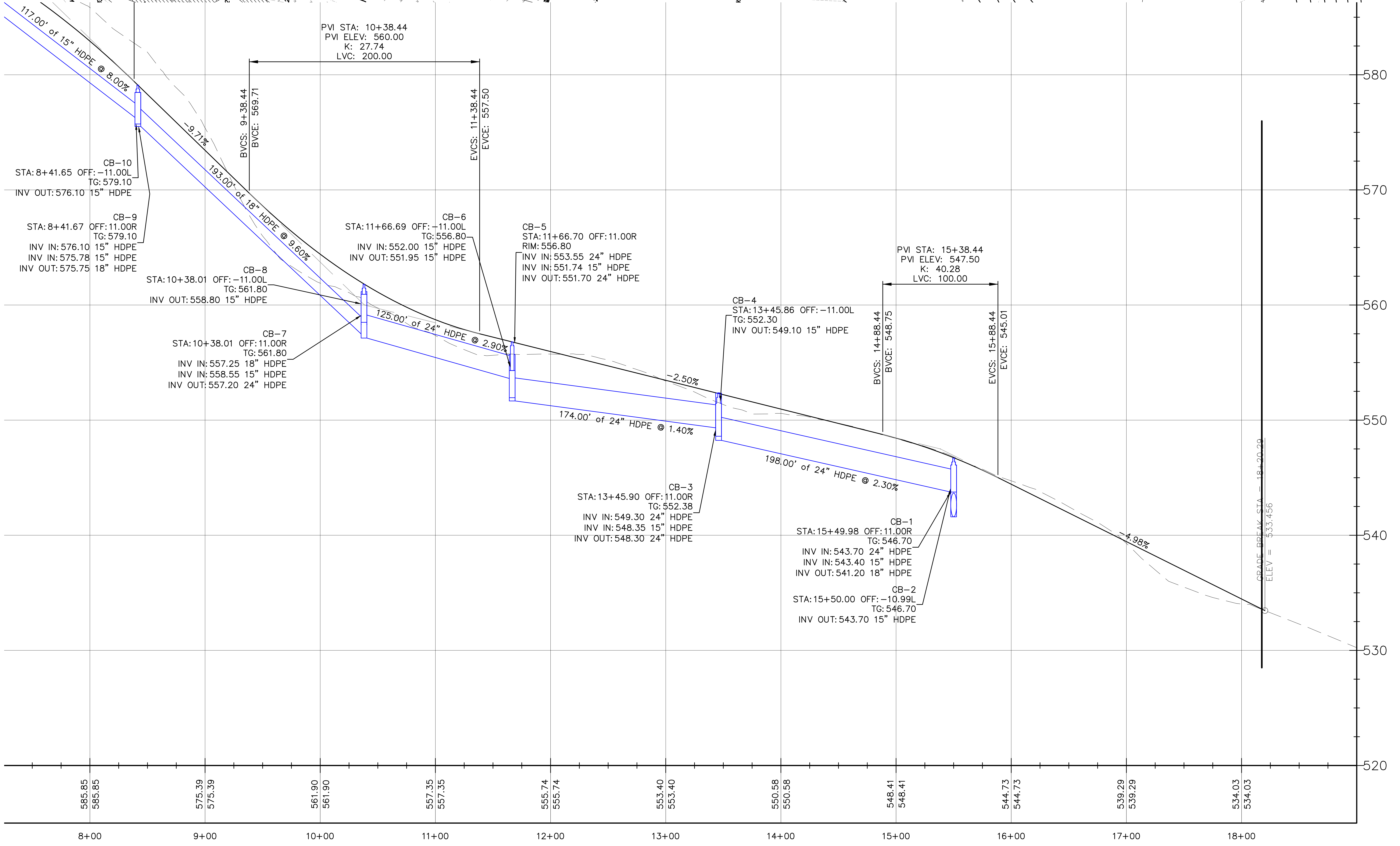
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

KUZIK ROAD PLAN AND PROFILE A

SP-46





PROFILE - KUZIK ROAD

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

HORIZONTAL

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

VERTICAL

GRAPHIC SCALE

(IN FEET)
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PAUL W. ANDERSON
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LIC. NO. 33410

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7/11/23	PER NJDEP WETLANDS COMMENTS
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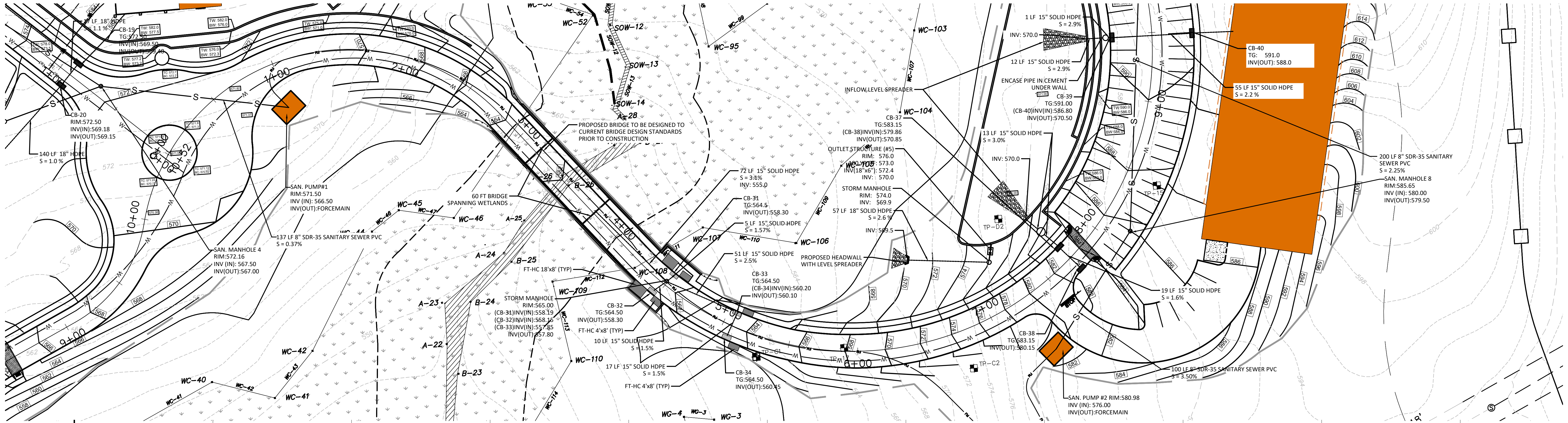
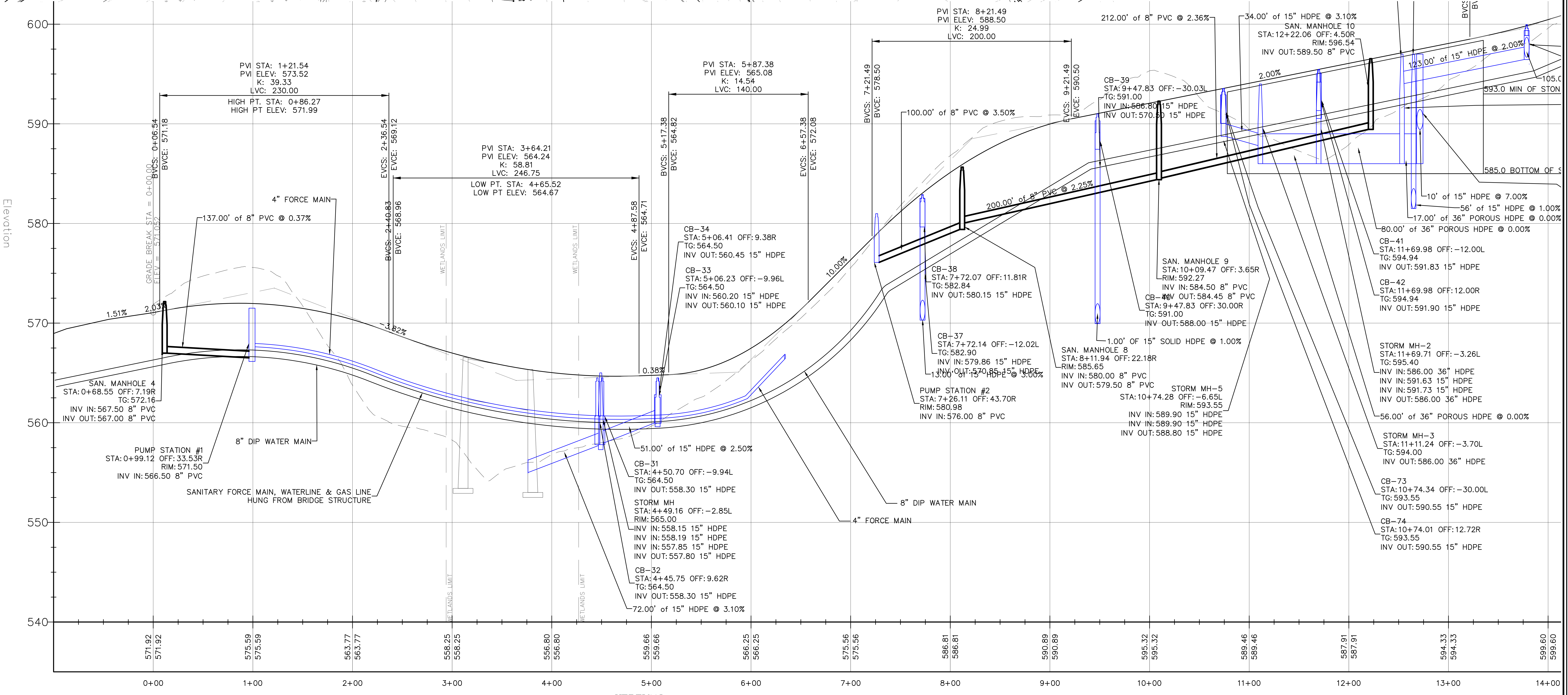
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

KUZIK ROAD PLAN AND PROFILE B

SP-47





HORIZONTAL

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

VERTICAL

GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)
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PROFILE - ROAD "D"

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

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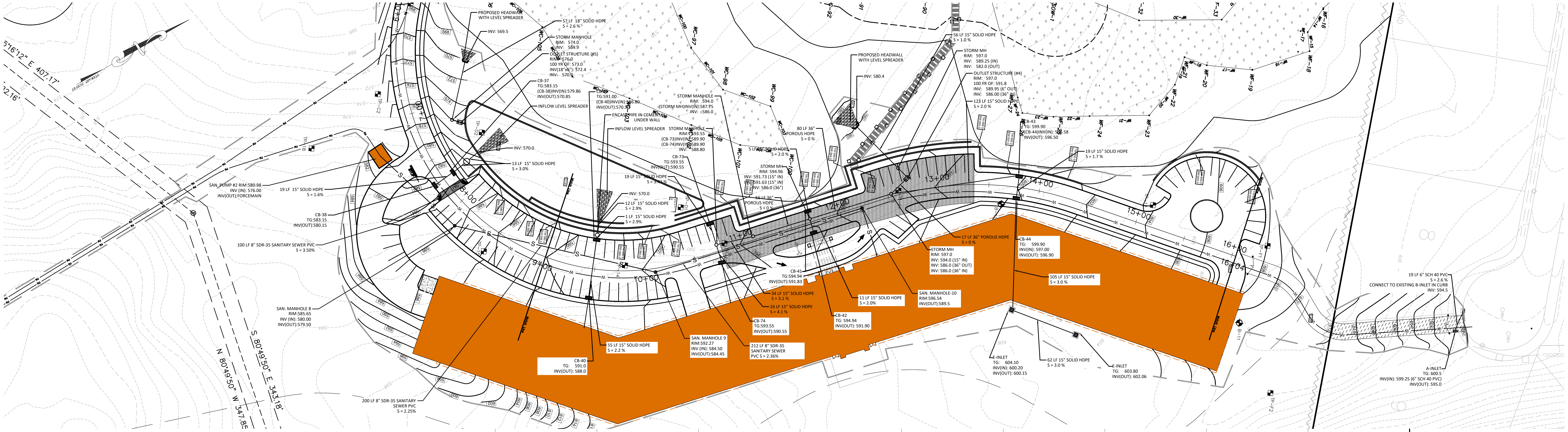
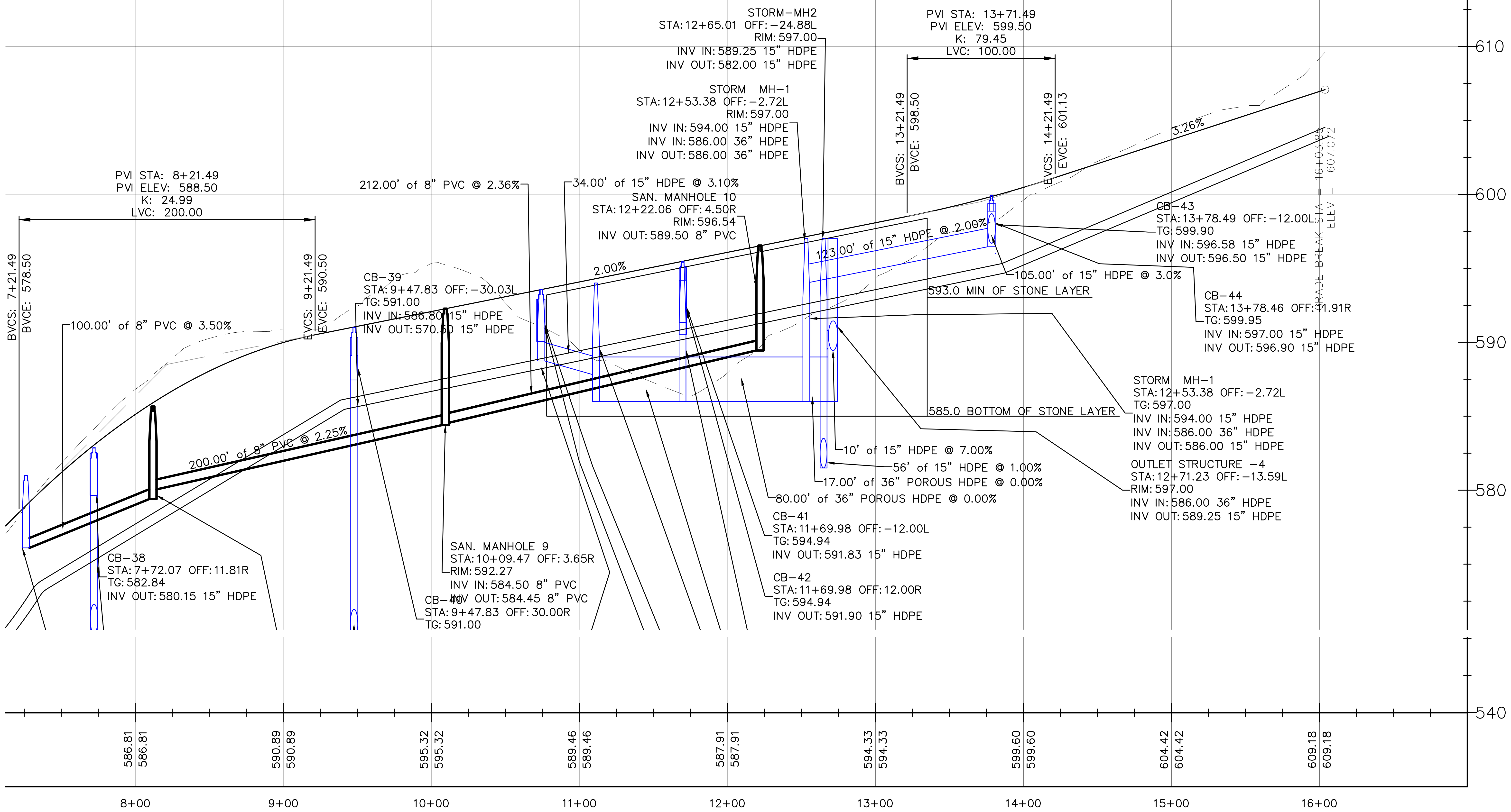
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

CONCEPTUAL BRIDGE CROSSING

SP-48


S 16'12" E 407.17'
PROPOSED HEADWALL WITH LEVEL SPREADER
INV: 569.5
57 LF 18" SOLID HDPE S = 2.6 %
STORM MANHOLE RIM: 574.0 INV: 569.9
OUTLET STRUCTURE (#5) RIM: 576.0 100 YR OF: 573.0 INV(18"x6"): 572.4 INV: 570.0
CB-37 TG:583.15 (CB-38)INV(IN):579.86 INV(OUT):570.85
INFLOW LEVEL SPREADER
CB-39 TG:591.00 (CB-40)INV(IN):586.80 INV(OUT):570.50
ENCASE PIPE IN CEMENT UNDER WALL
INFLOW LEVEL SPREADER
STORM MANHOLE RIM: 594.0 (STORM MH)INV(IN):587.75 INV: 586.0
STORM MANHOLE RIM: 593.55 (CB-73)INV(IN):589.90 (CB-74)INV(IN):589.90 INV: 588.80
CB-73 TG:593.55 INV(OUT):590.55
80 LF 36" POROUS HDPE S = 0 %
5 LF 15" SOLID HDPE S = 2.0 %
STORM MH RIM: 594.96 INV: 591.73 (15" IN) INV: 591.63 (15" IN) INV: 586.0 (36")
56 LF 36" POROUS HDPE S = 0 %
19 LF 15" SOLID HDPE S = 3.42 %
INV: 570.0
12 LF 15" SOLID HDPE S = 2.9%
1 LF 15" SOLID HDPE S = 2.9%
INV: 570.0
13 LF 15" SOLID HDPE S = 3.0%
SAN. PUMP #2 RIM:580.98 INV (IN): 576.00 INV(OUT):FORCEMAIN
19 LF 15" SOLID HDPE S = 1.6%
CB-38 TG:583.15 INV(OUT):580.15
100 LF 8" SDR-35 SANITARY SEWER PVC S = 3.50%
SAN. MANHOLE 8 RIM:585.65 INV (IN): 580.00 INV(OUT):579.50
S 80°49'50" E 343.18'
N 80°49'50" W 347.85
200 LF 8" SDR-35 SANITARY SEWER PVC S = 2.25%
CB-40 TG: 591.0 INV(OUT): 588.0
55 LF 15" SOLID HDPE S = 2.2 %
SAN. MANHOLE 9 RIM:592.27 INV (IN): 584.50 INV(OUT):584.45
212 LF 8" SDR-35 SANITARY SEWER PVC S = 2.36%
CB-74 TG:593.55 INV(OUT):590.55
CB-41 TG:594.94 INV(OUT):591.83
34 LF 15" SOLID HDPE S = 3.1 %
16 LF 15" SOLID HDPE S = 4.1 %
CB-42 TG: 594.94 INV(OUT): 591.90
11 LF 15" SOLID HDPE S = 2.0%
SAN. MANHOLE-10 RIM:596.54 INV(OUT):589.5
PROPOSED HEADWALL WITH LEVEL SPREADER
INV: 580.4
56 LF 15" SOLID HDPE S = 1.0 %
STORM MH RIM: 597.0 INV: 589.25 (IN) INV: 582.0 (OUT)
OUTLET STRUCTURE (#4) RIM: 597.0 100 YR OF: 591.8 INV: 589.95 (6" OUT) INV: 586.00 (36" IN)
123 LF 15" SOLID HDPE S = 2.0 %
CB-43 TG: 599.90 (CB-44)INV(IN): 596.58 INV(OUT): 596.50
19 LF 15" SOLID HDPE S = 1.7 %
17 LF 36" POROUS HDPE S = 0 %
STORM MH RIM: 597.0 INV: 594.0 (15" IN) INV: 586.0 (36" OUT) INV: 586.0 (36" IN)
CB-44 TG: 599.90 INV(IN): 597.00 INV(OUT): 596.90
105 LF 15" SOLID HDPE S = 3.0 %
E-INLET TG: 604.10 INV(IN): 600.20 INV(OUT): 600.15
62 LF 15" SOLID HDPE S = 3.0 %
E-INLET TG: 603.80 INV(OUT): 602.06
19 LF 6" SCH 40 PVC S = 2.6 % CONNECT TO EXISTING B-INLET IN CURB INV: 594.5
A-INLET TG: 600.5 INV(IN): 599.25 (6" SCH 40 PVC) INV(OUT): 595.0
7+00
8+00
9+00
10+00
11+00
12+00
13+00
14+00
15+00
16+00
16+04
Match Line
TP-C2
TP-18
TP-D2
TP-D1
TP-15
TP-14
TP-F1
TP-F2
B-11



HORIZONTAL

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(IN FEET)
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PROFILE - ROAD "D"

SCALE: 1"= 50' HORIZ.
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4. FRESHWATERS WETLANDS/BOUNDARY LINE AS VERIFIED BY NJDEP FILE No. 1423-07-0001.1, FWWW190001

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410

SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.

10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
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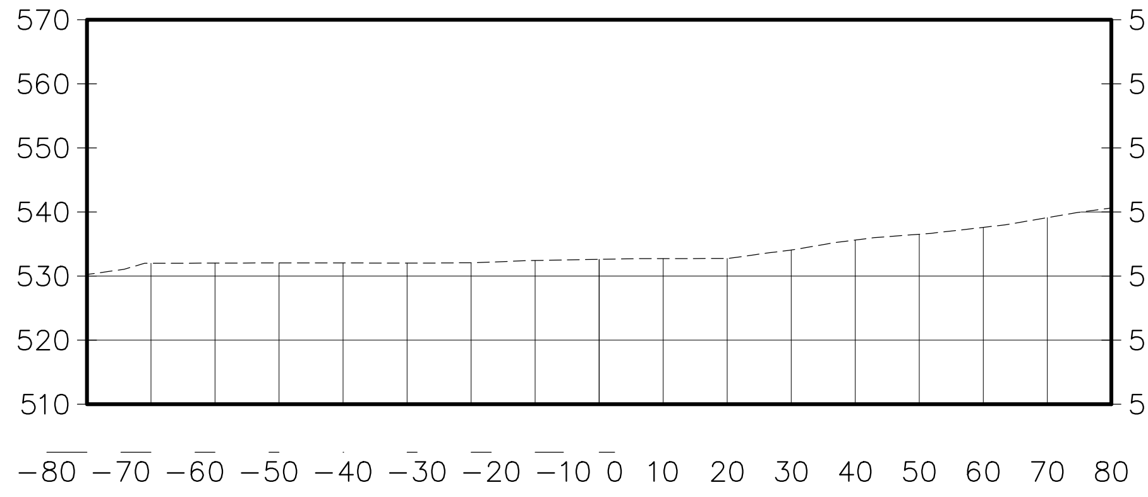
www.pwanderson-cs.com

Proj. No.	WEMF2022
Date	9-23-22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

ROAD D PLAN AND PROFILE B

0+50.00



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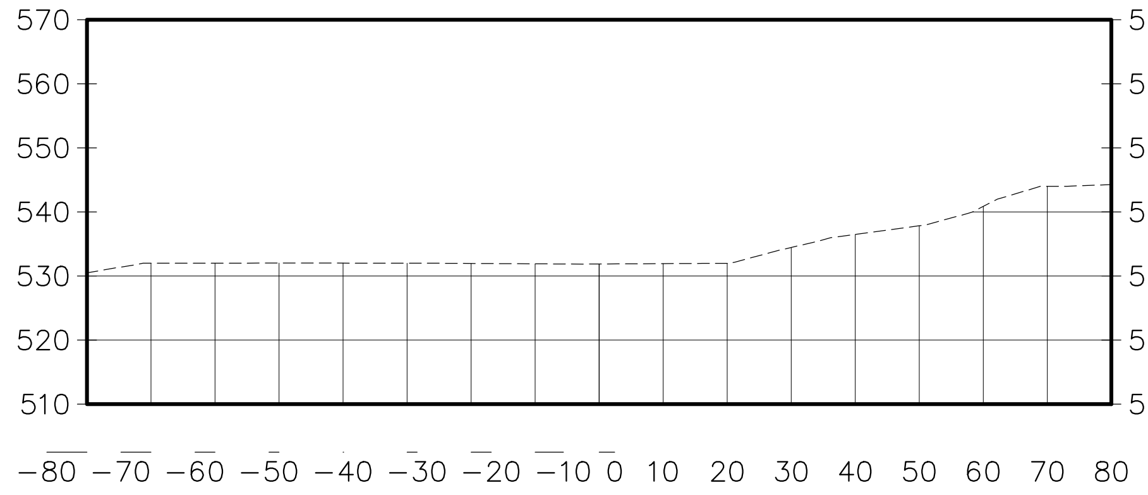

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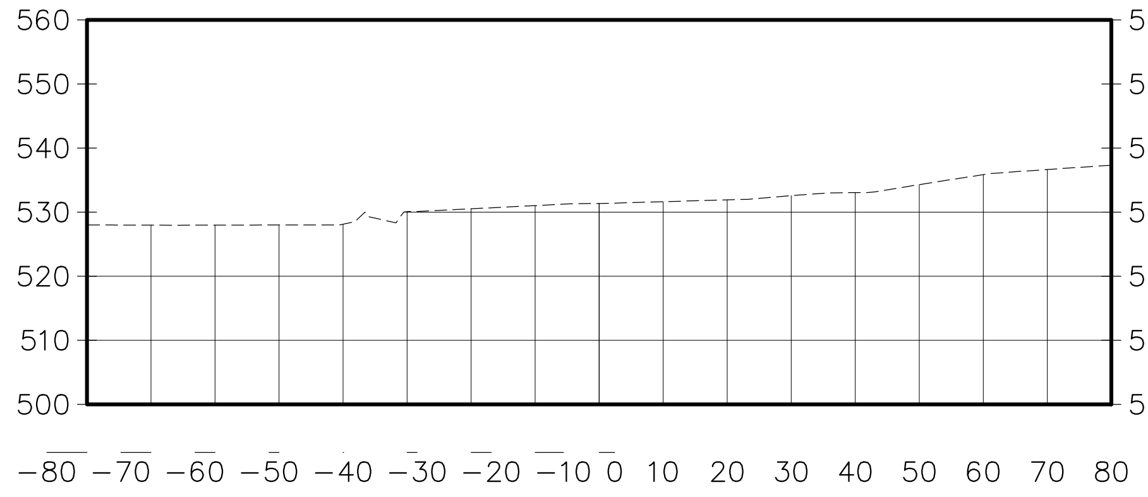

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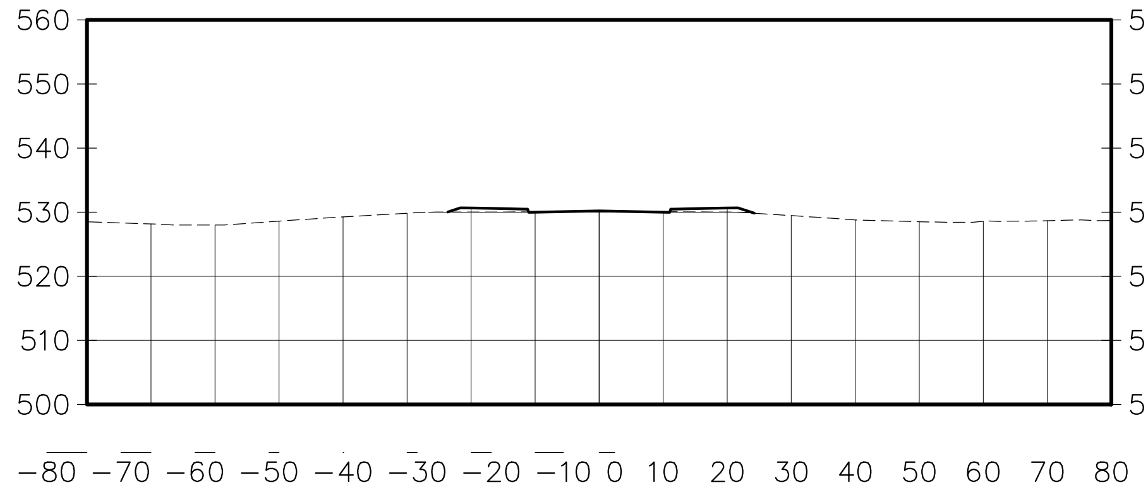

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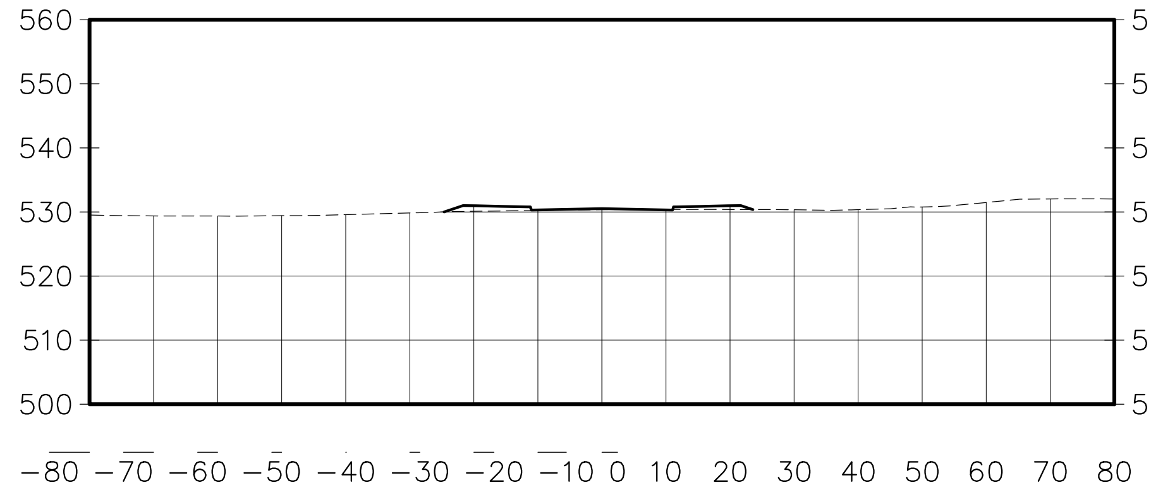

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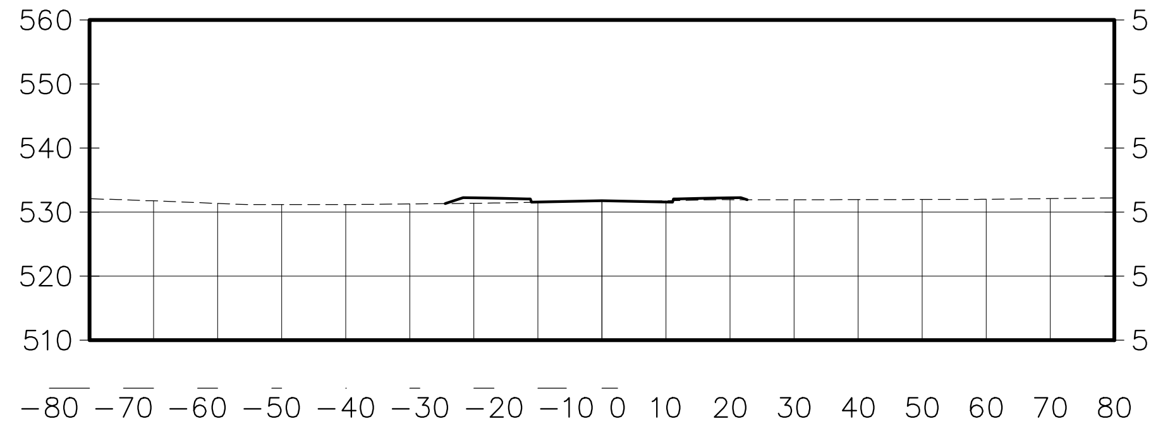

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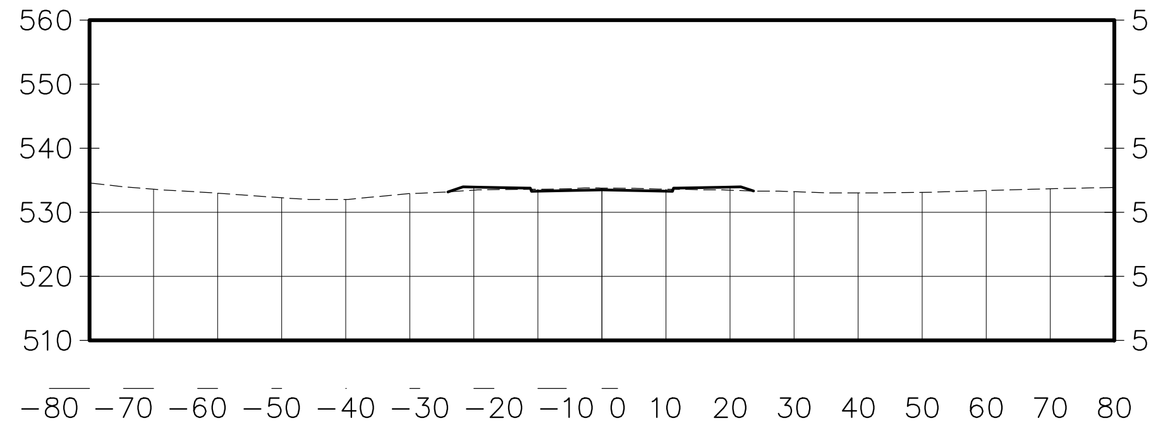

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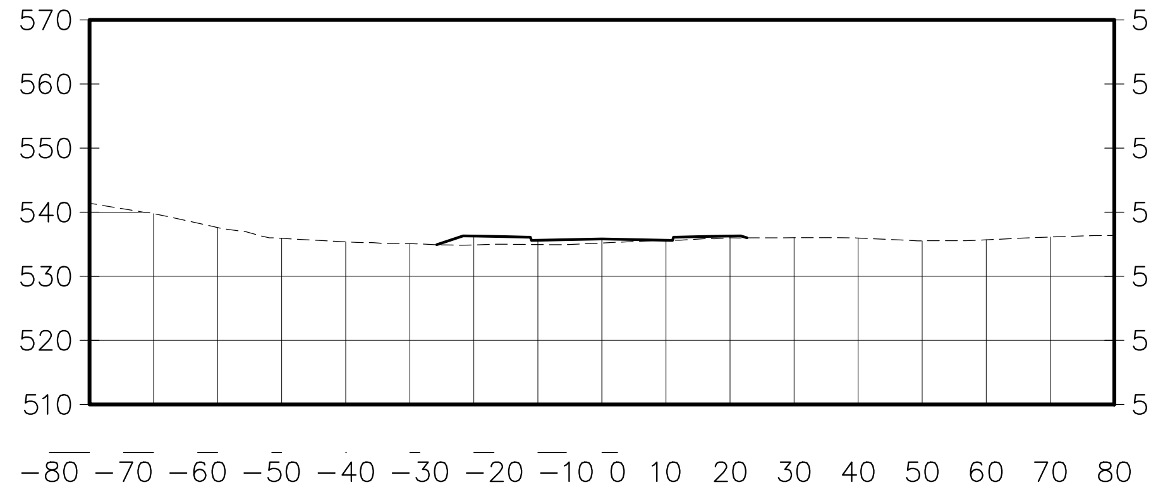

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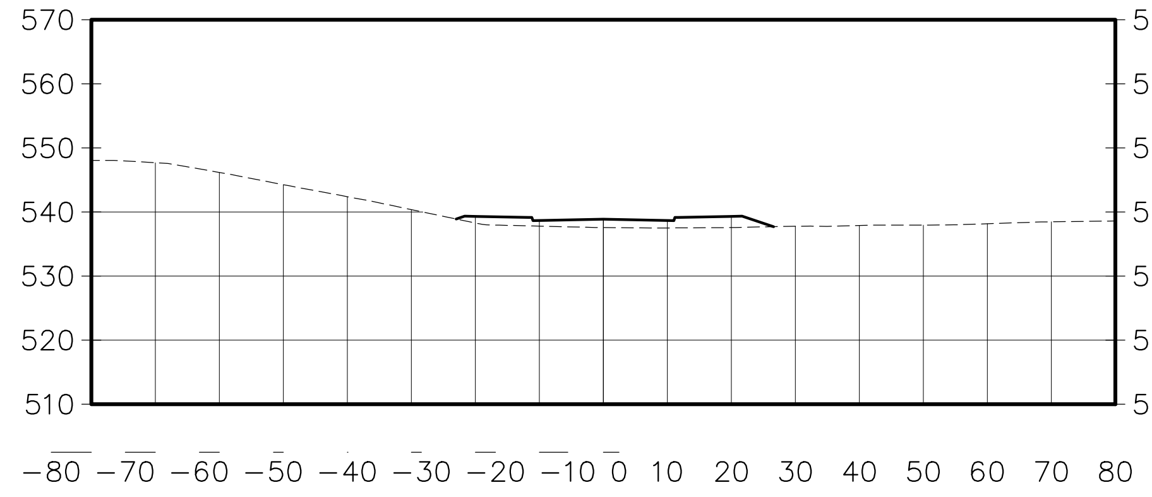

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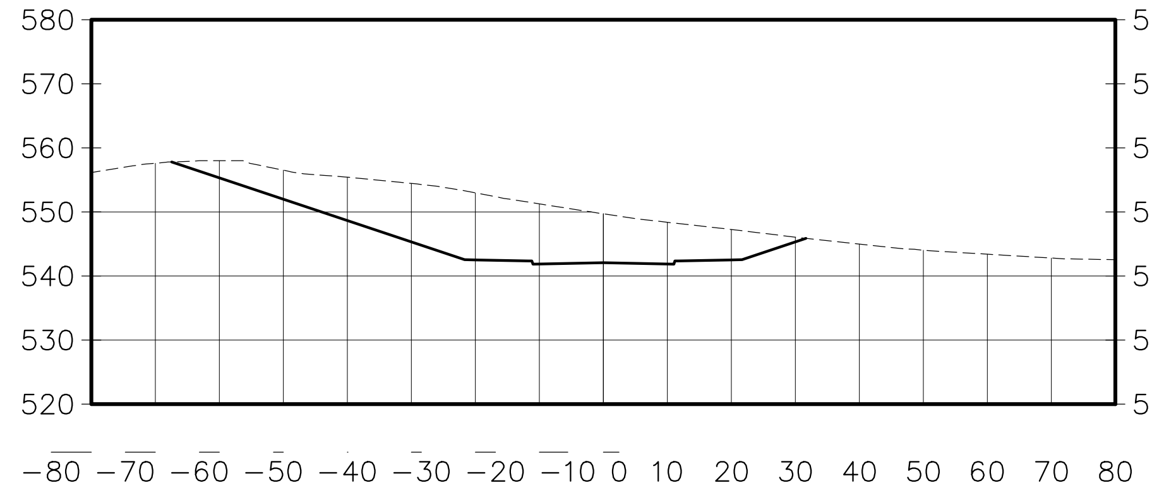

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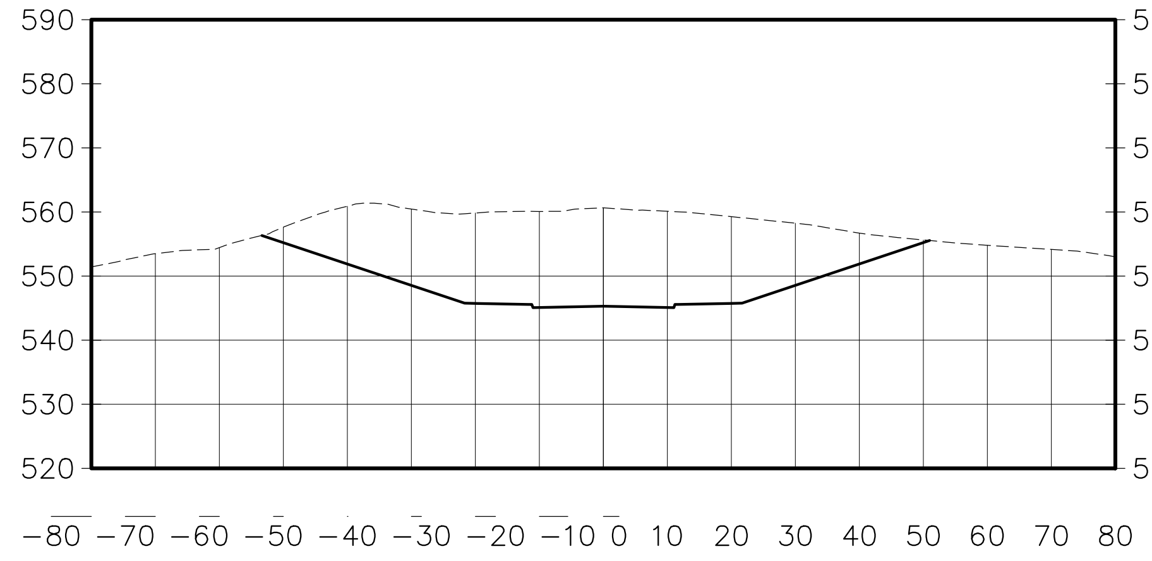

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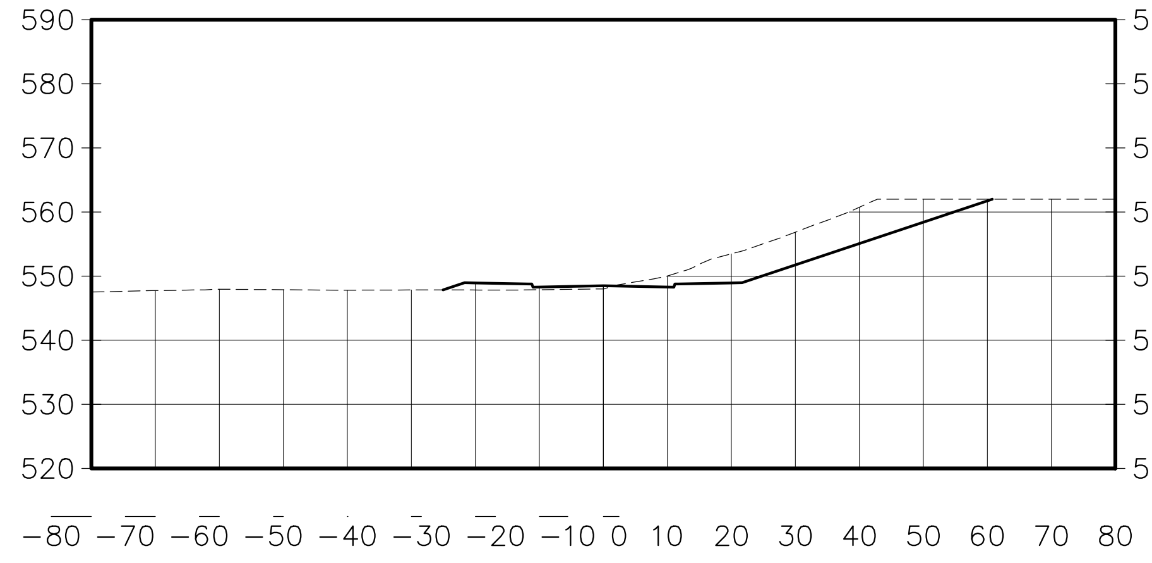

HORIZONTAL

GRAPHIC SCALE

(IN FEET)
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VERTICAL

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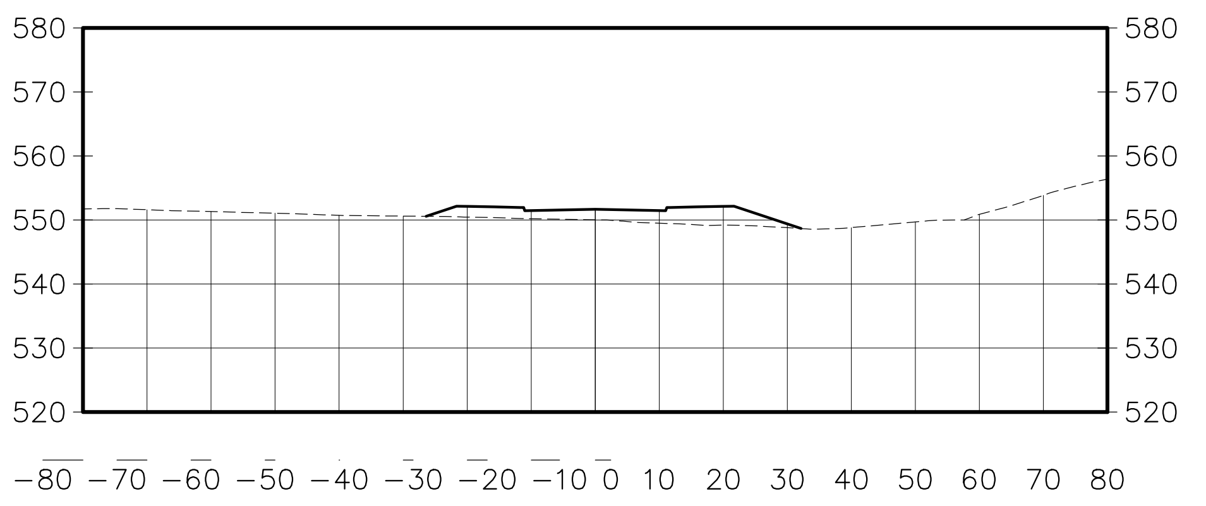
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

ROADWAY CROSS SECTIONS
WARNER ROAD 0+50 TO 6+00

SP-50

6+50.00



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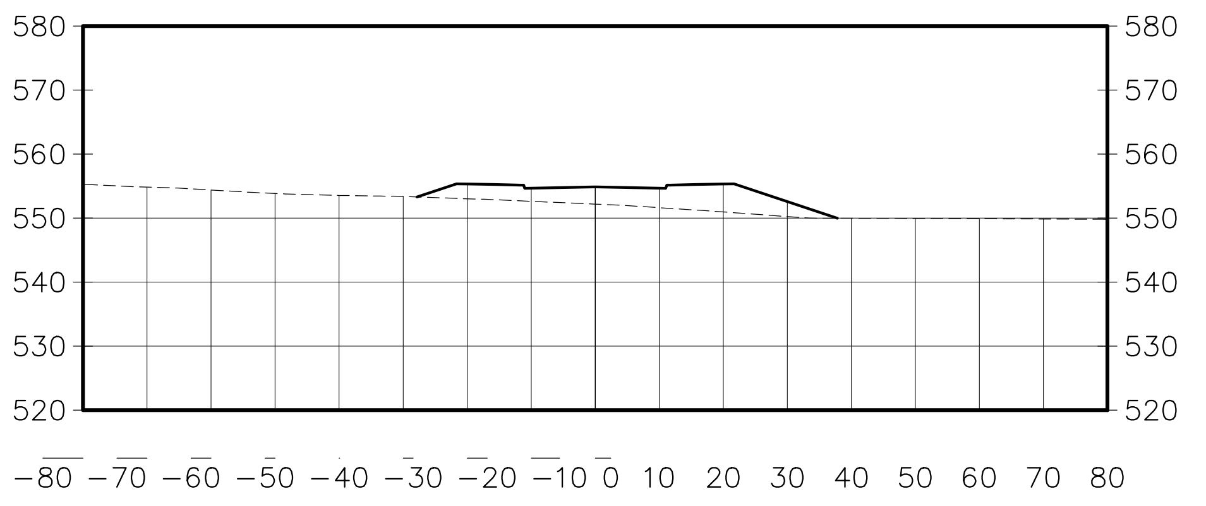

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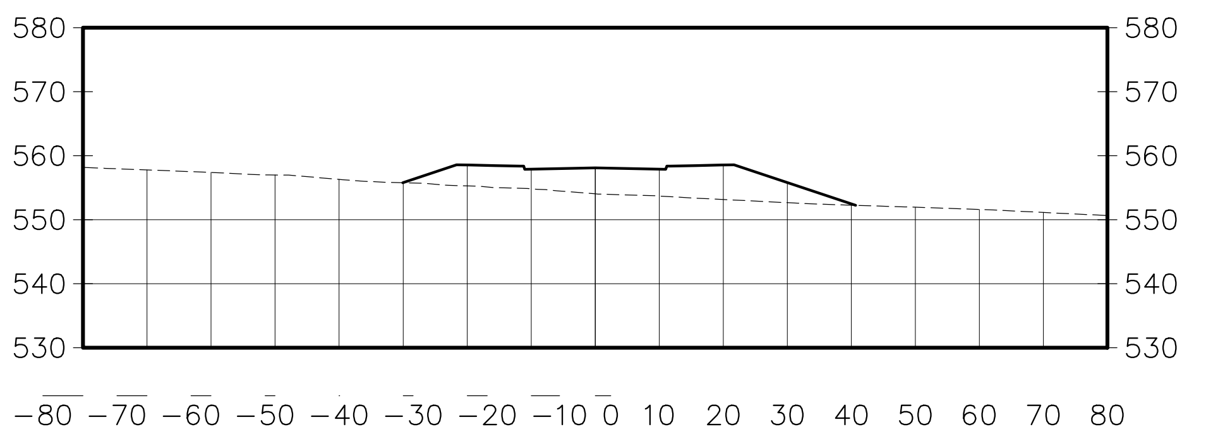

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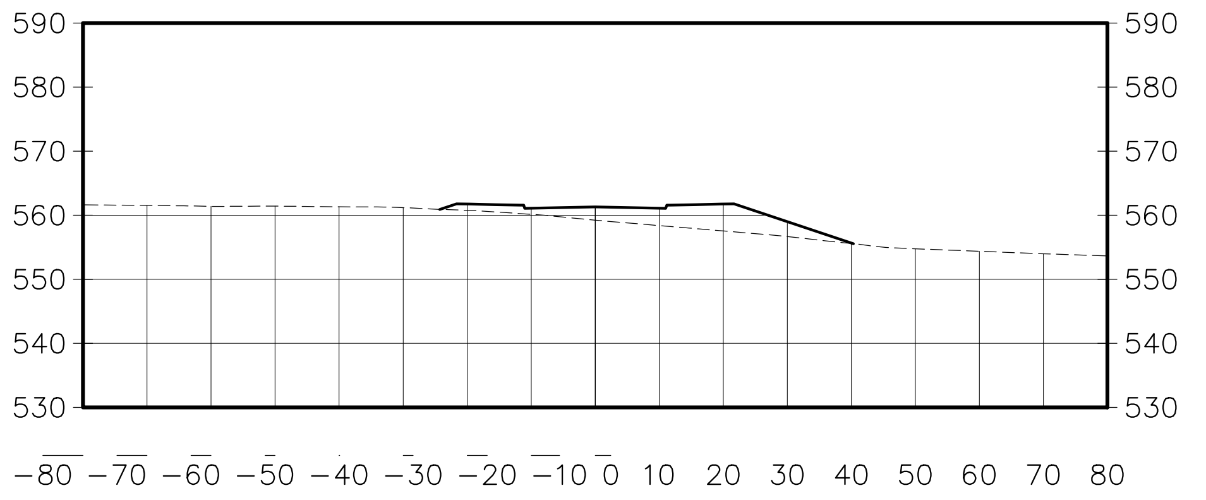

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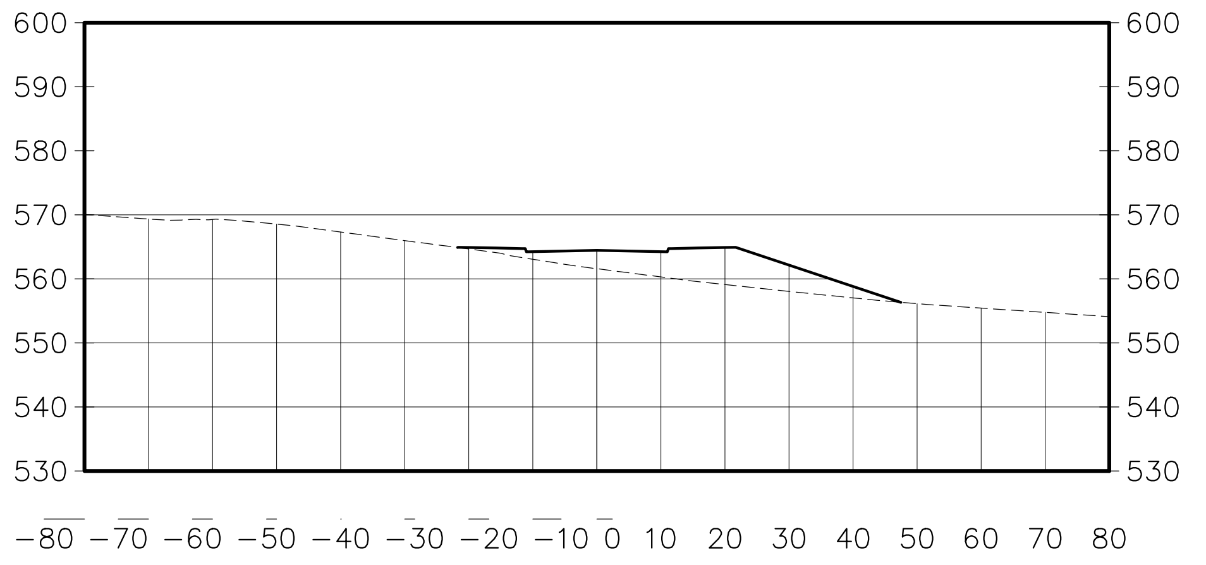

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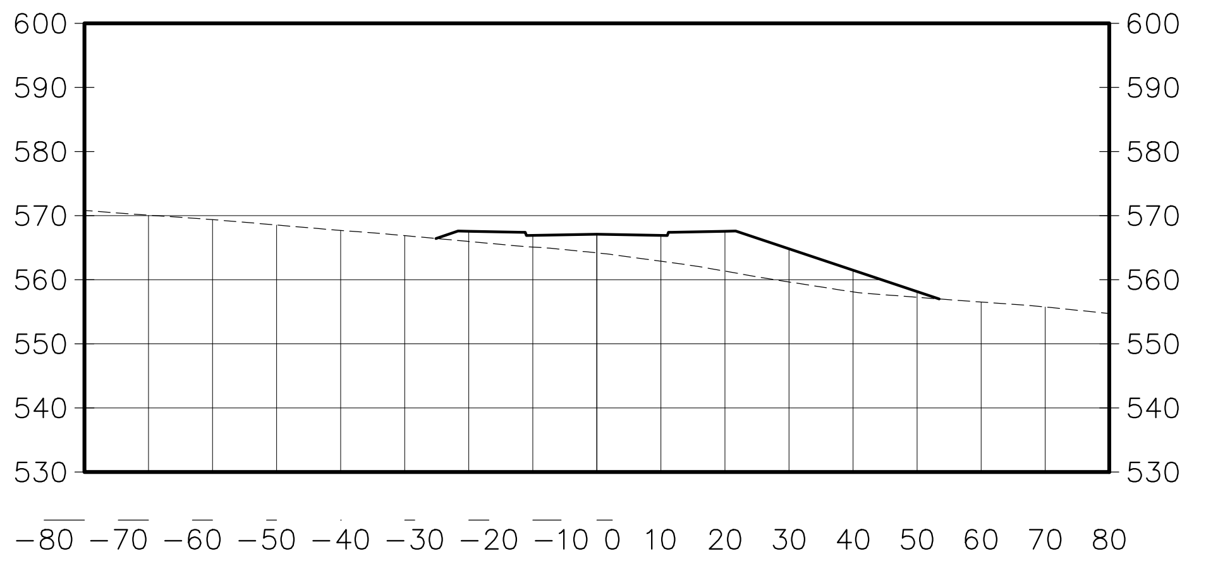

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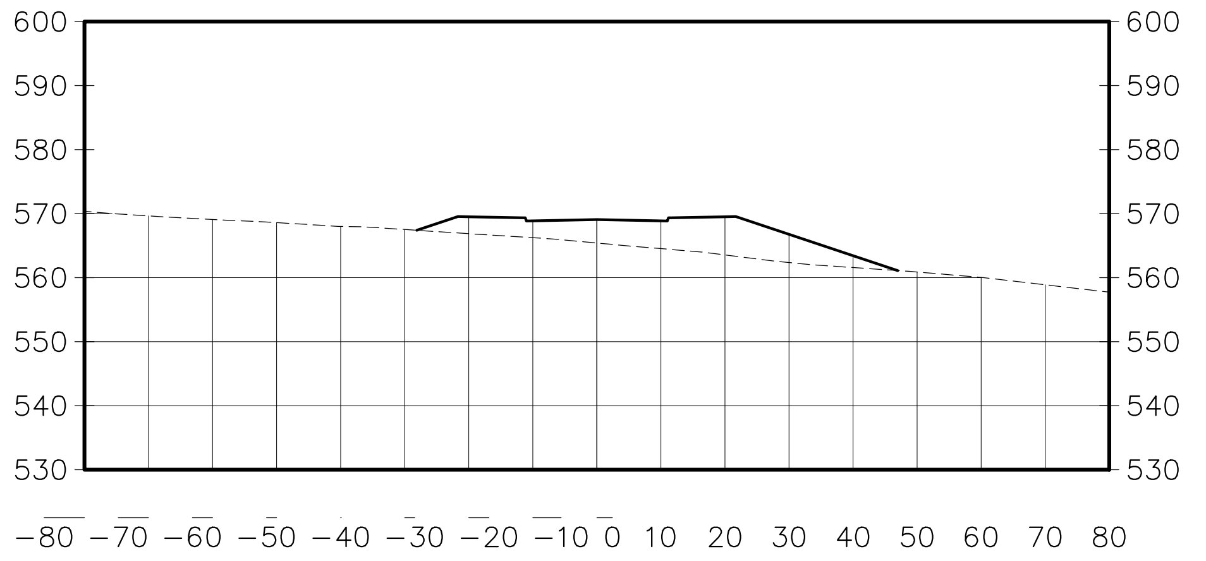

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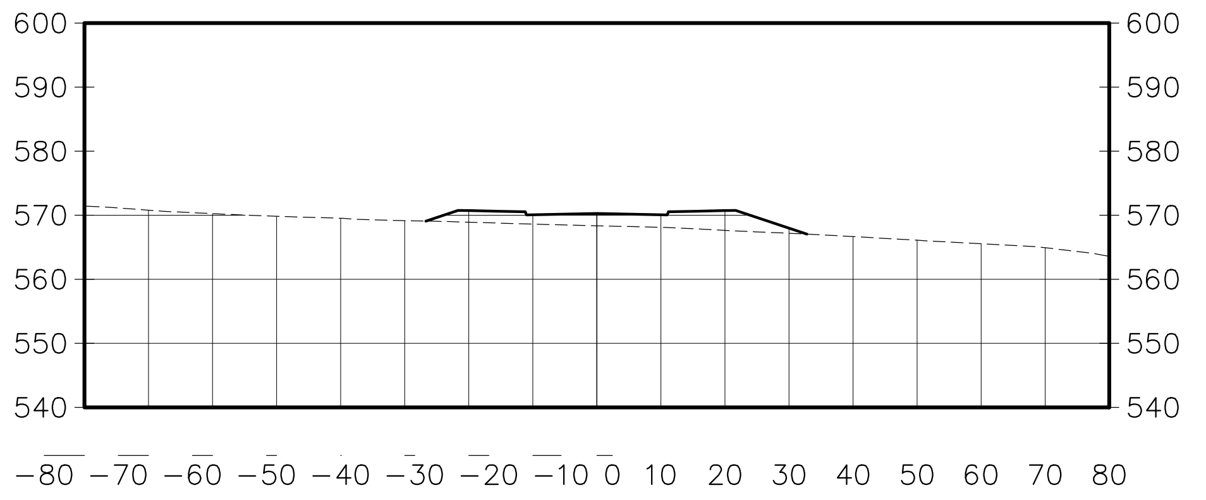

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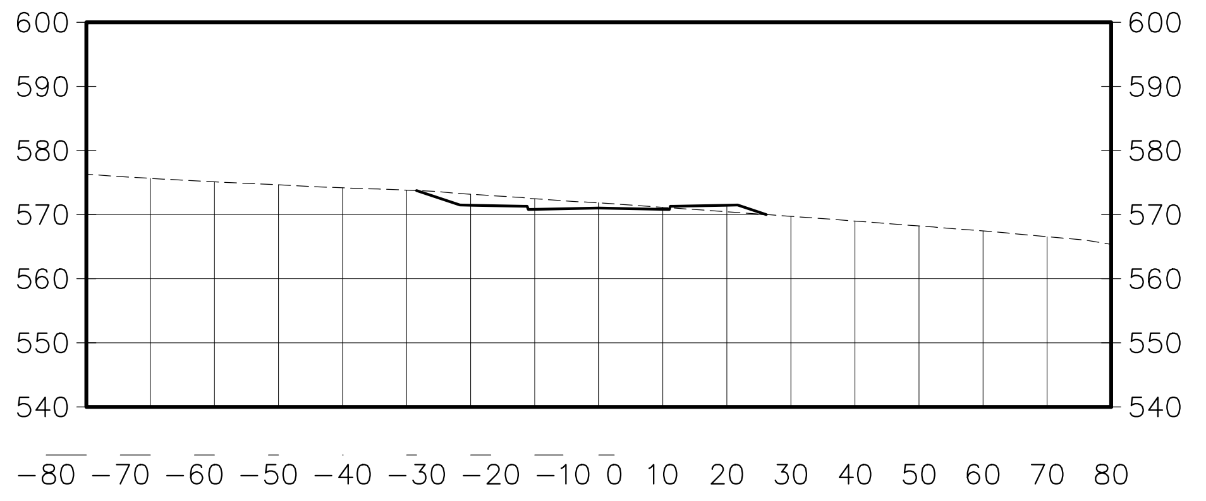

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811
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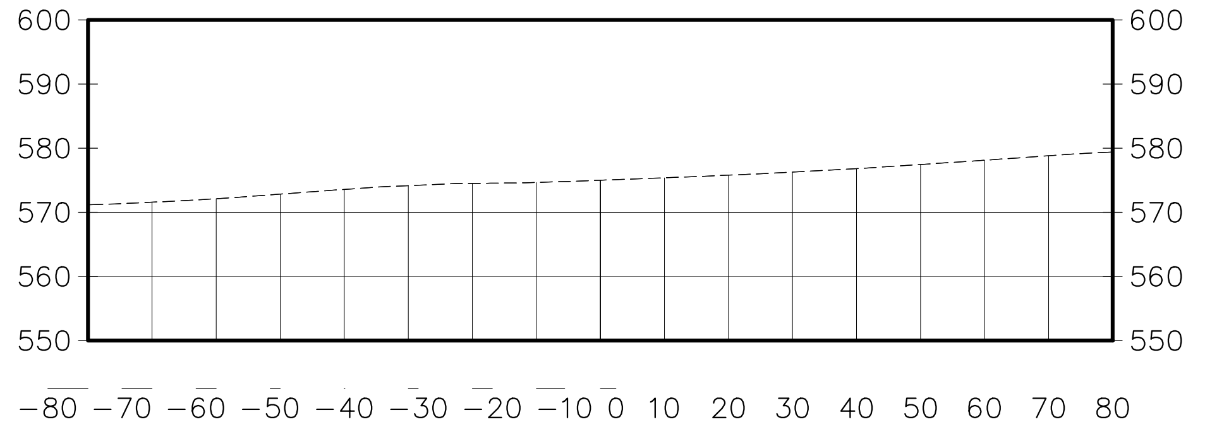
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

ROADWAY CROSS SECTIONS
WARNER ROAD 0+50 TO 10+50

SP-51

SHEET 51 OF 66

0+50.00



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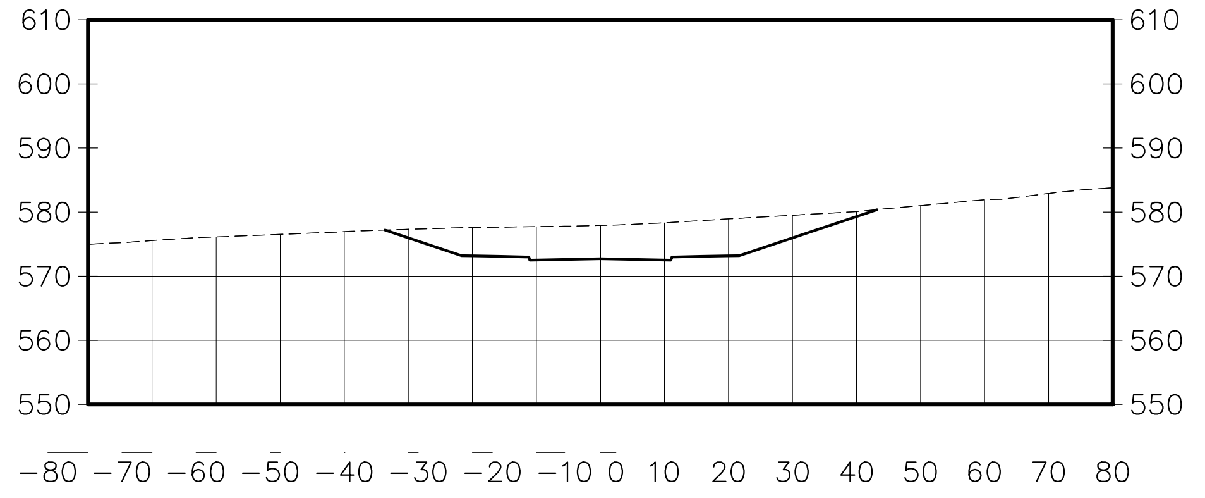

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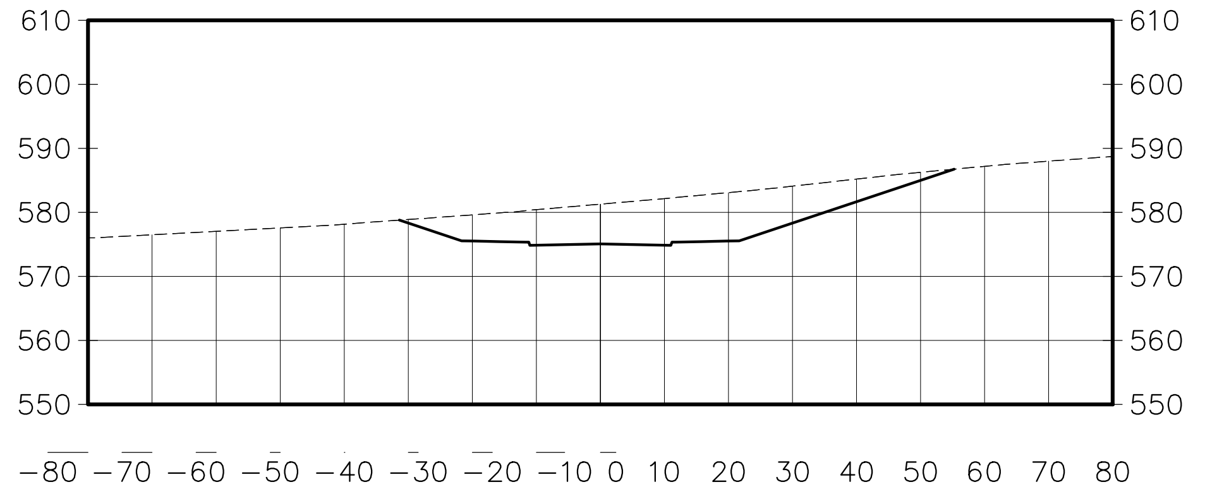

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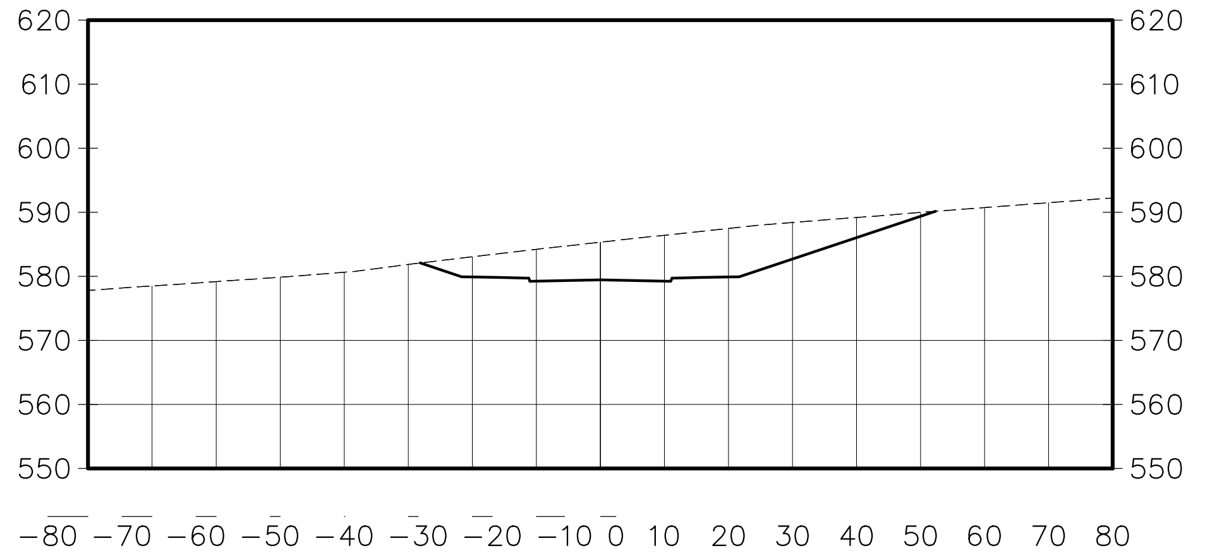

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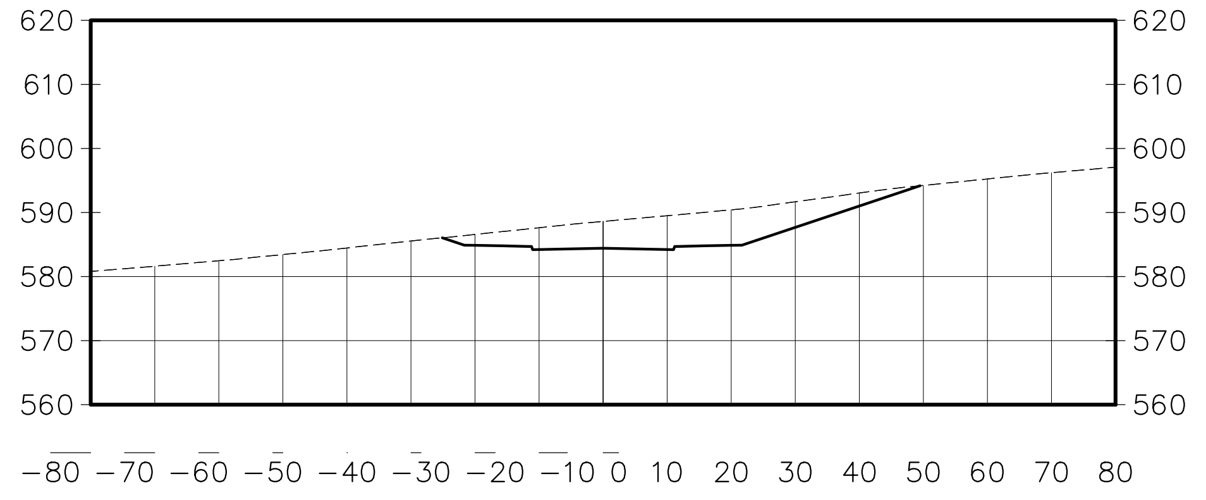

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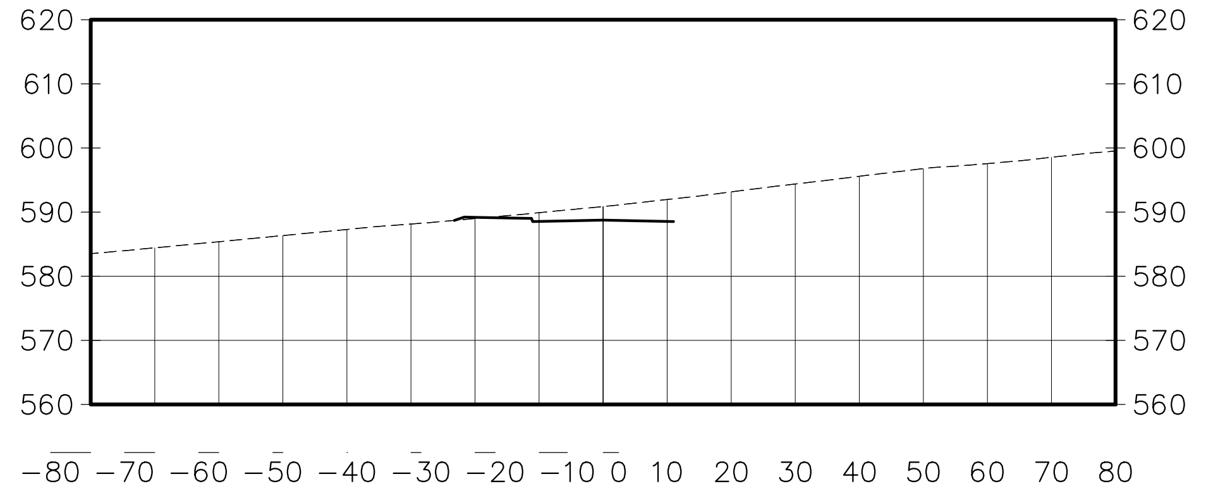

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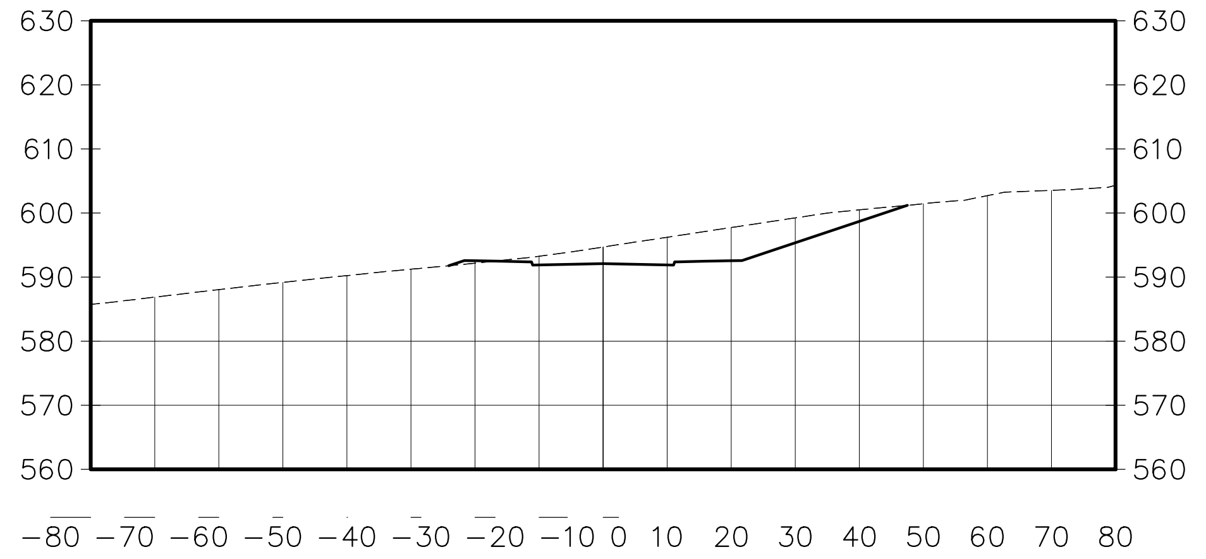

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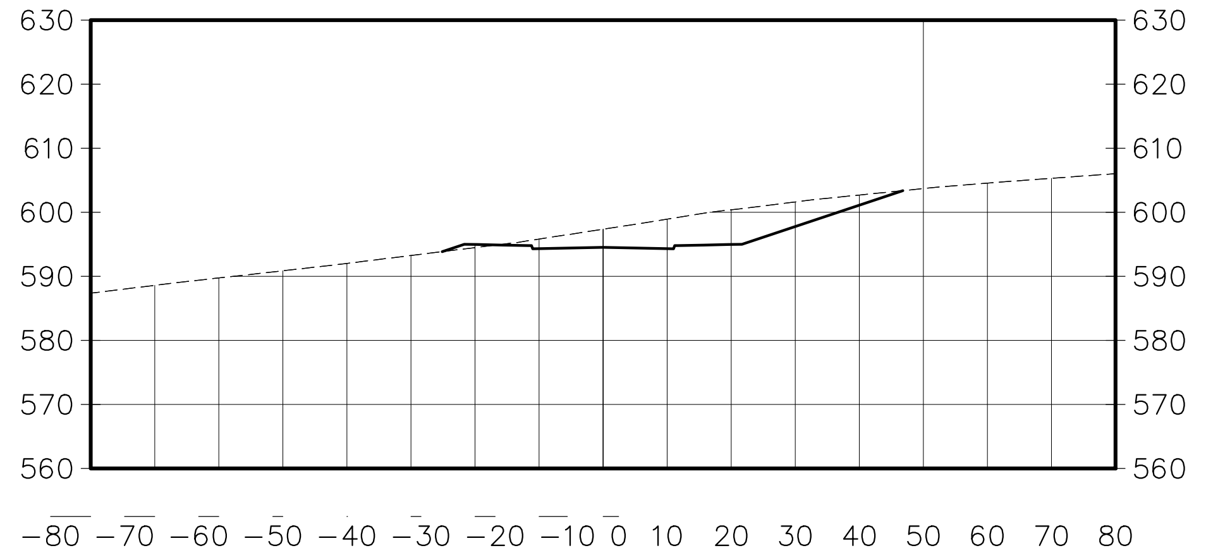

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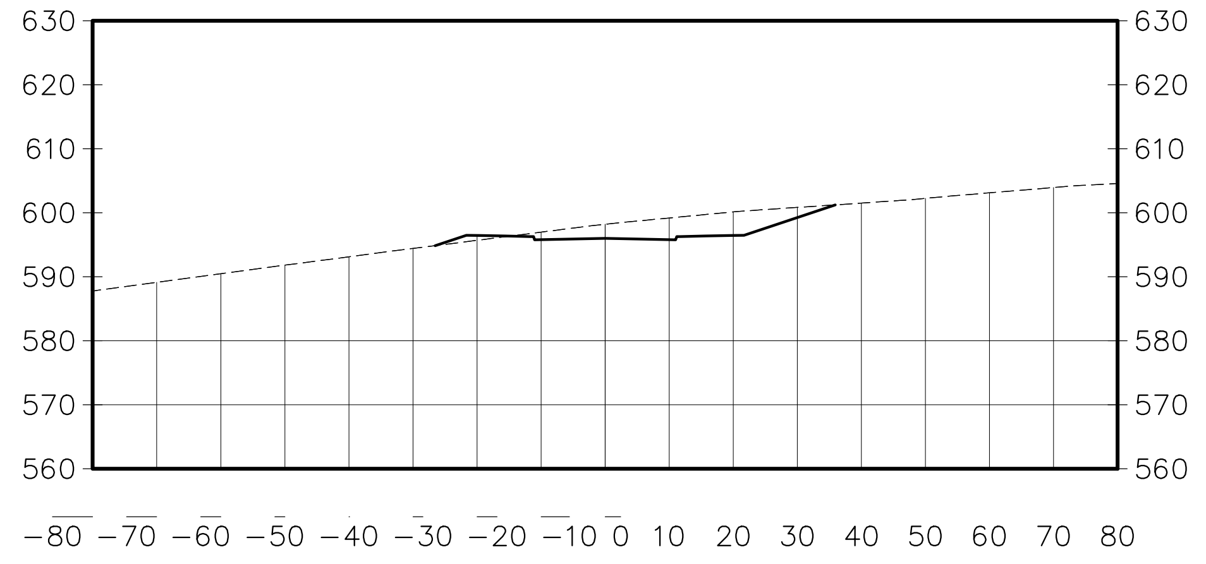

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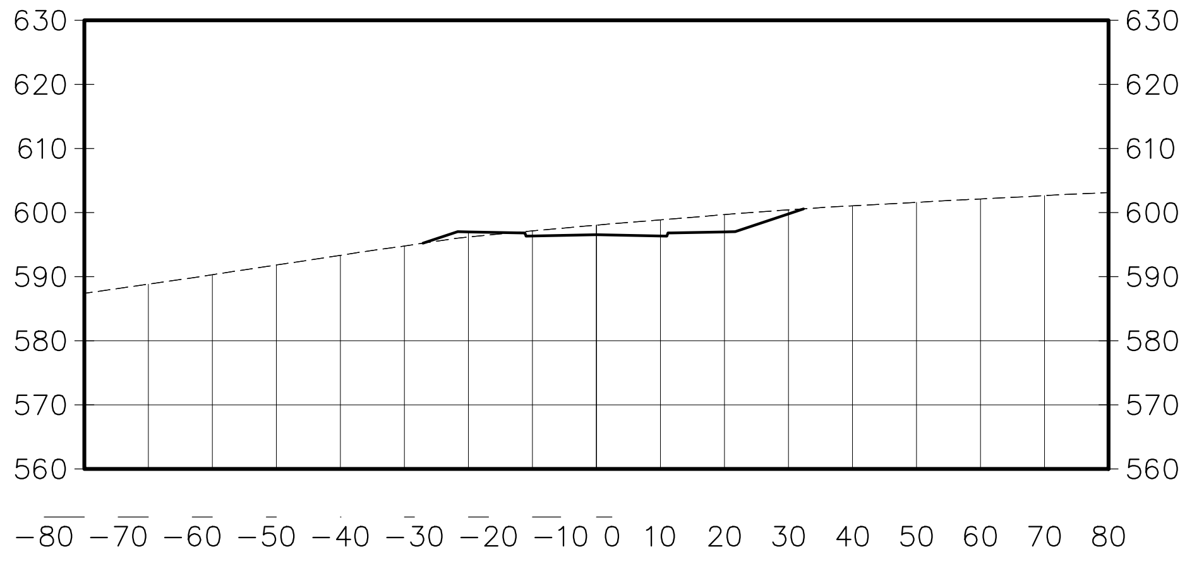
ROADWAY CROSS SECTIONS
KUZIK ROAD 0+00 TO 4+50

SP-52

5+00.00



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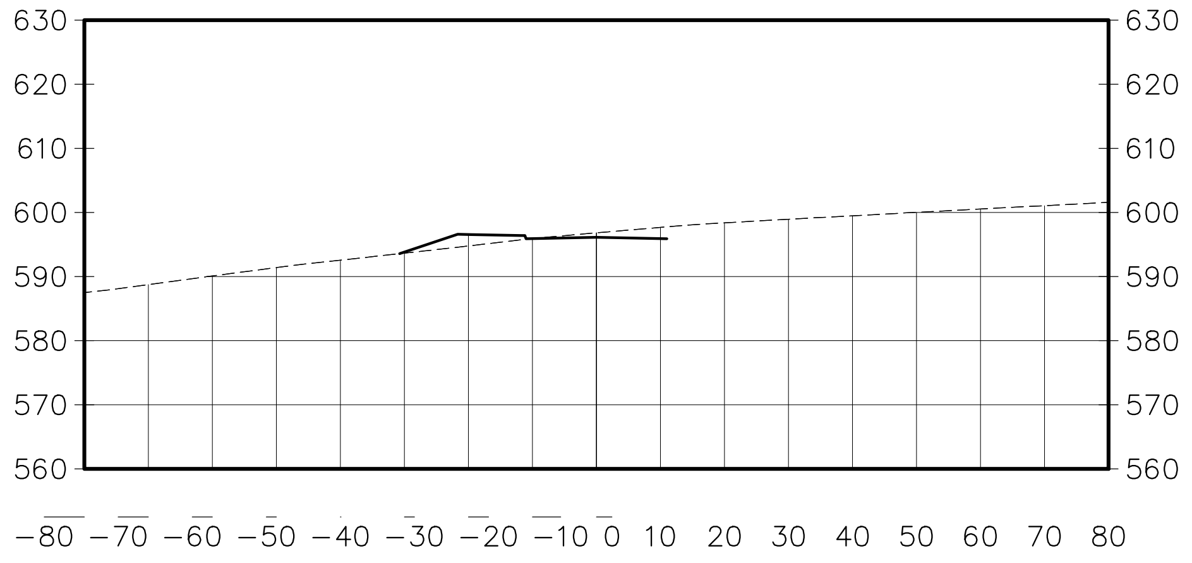

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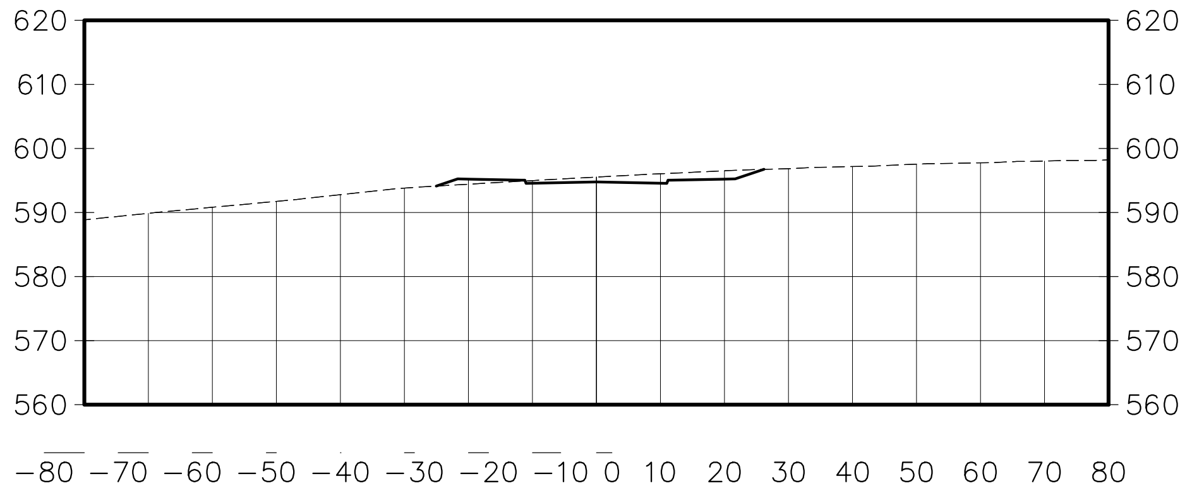

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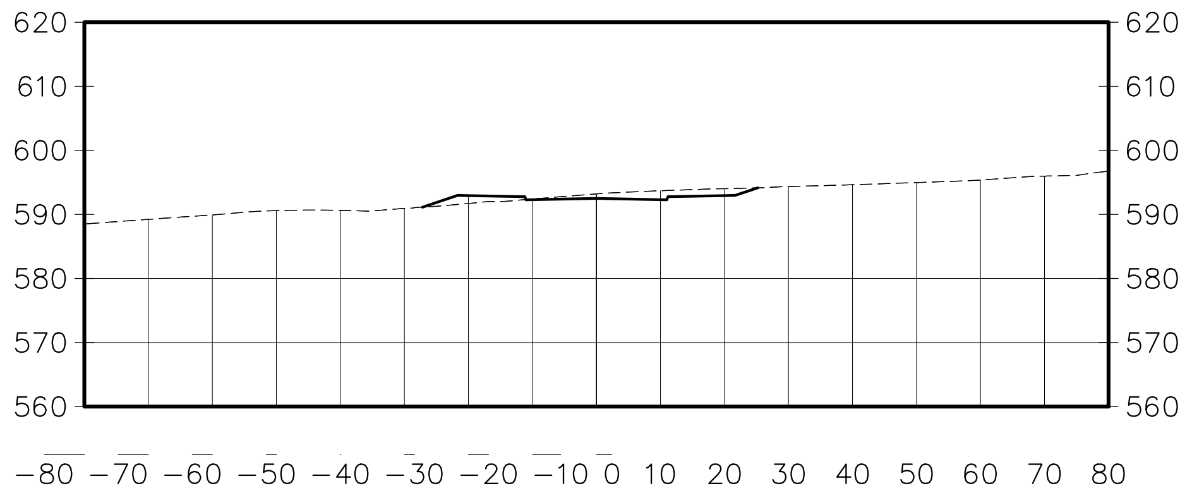

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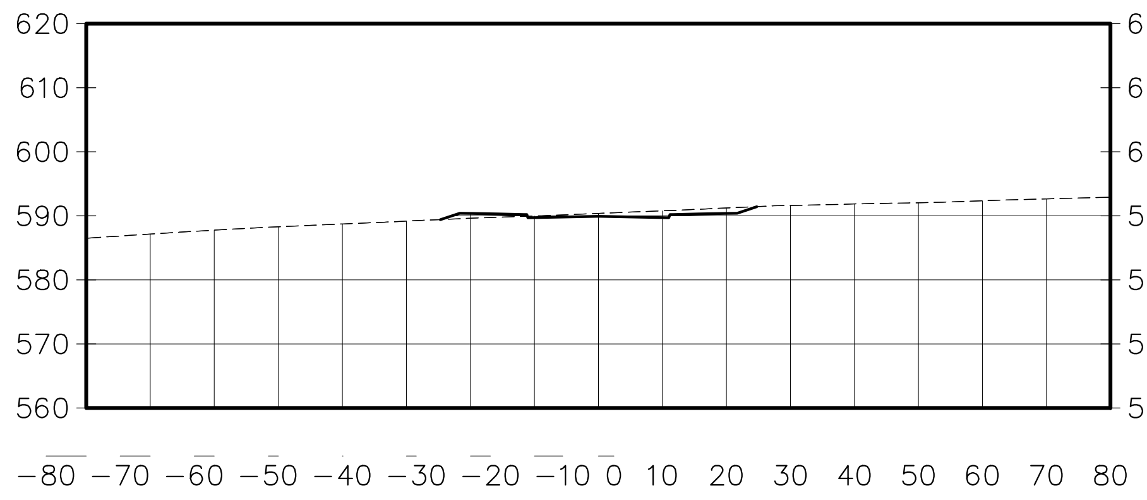

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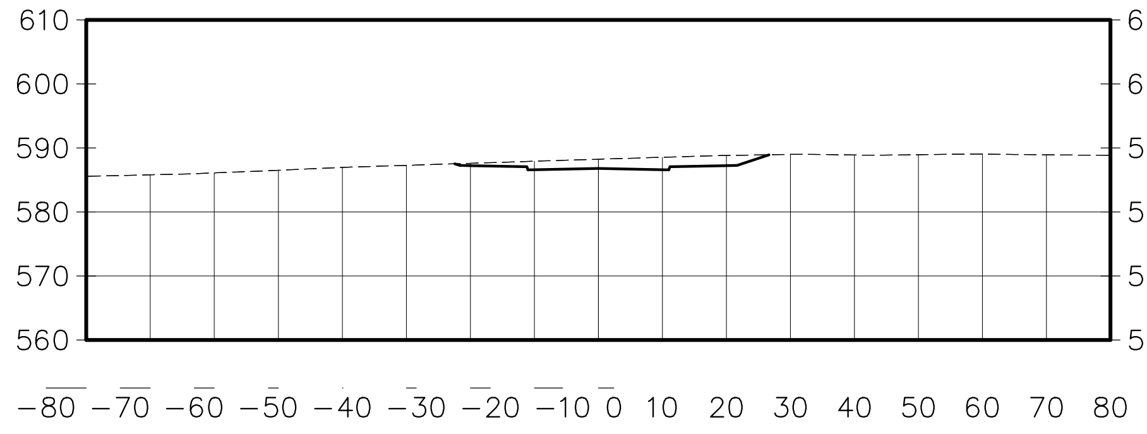

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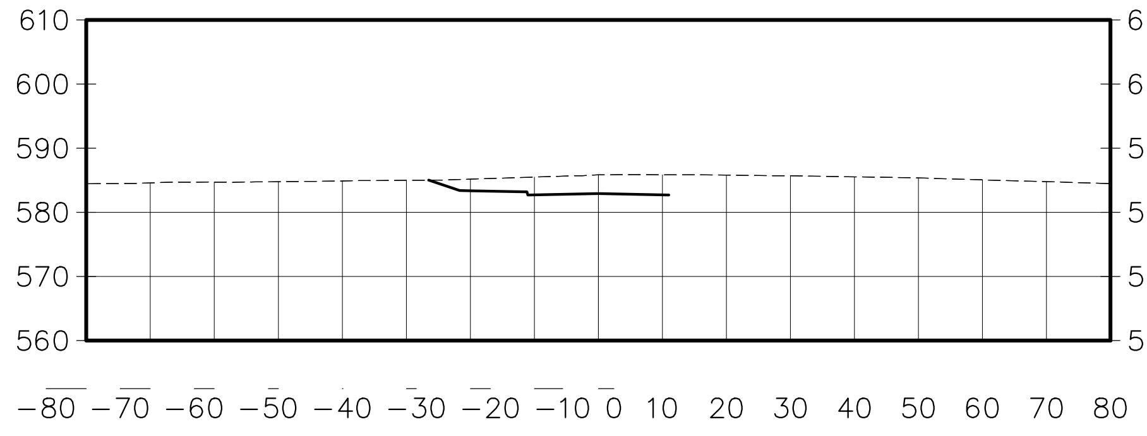

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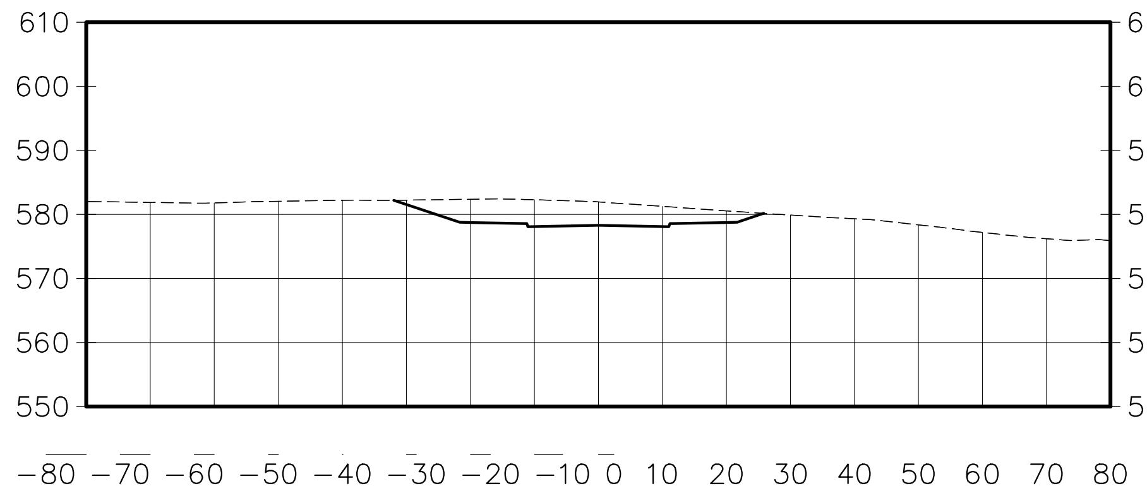

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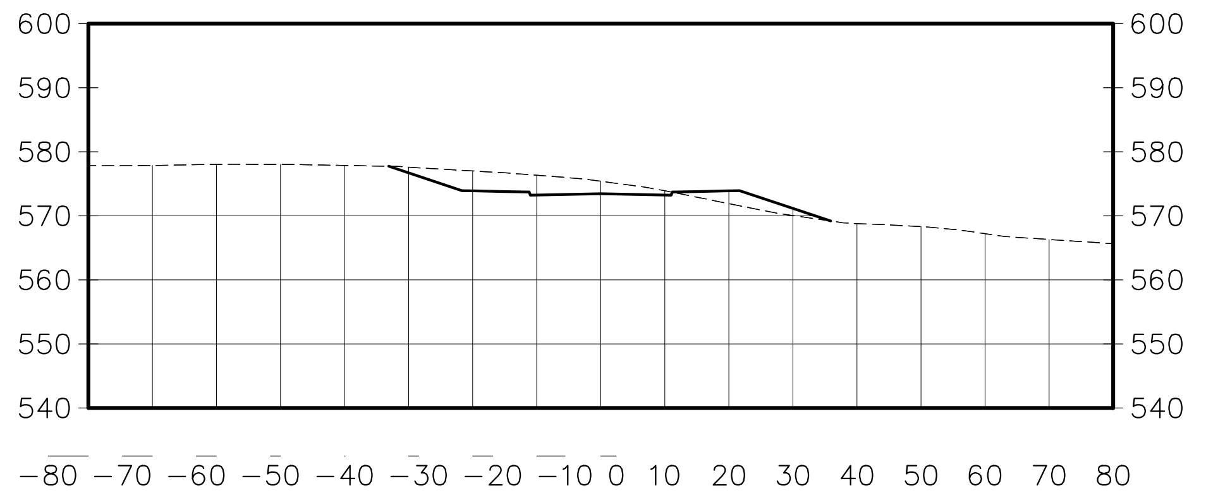

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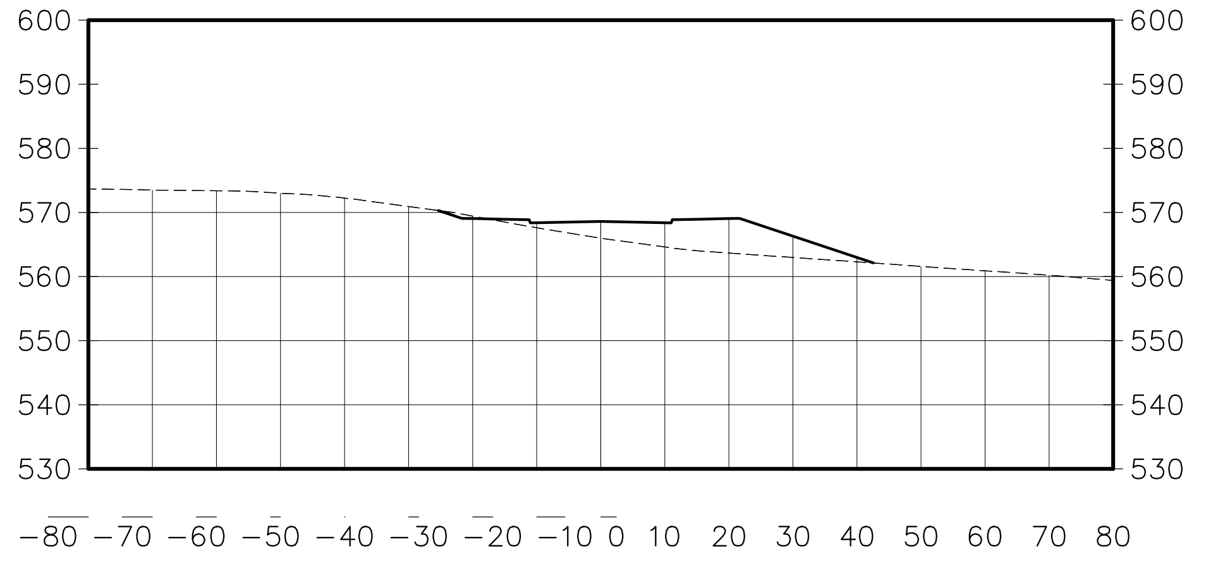

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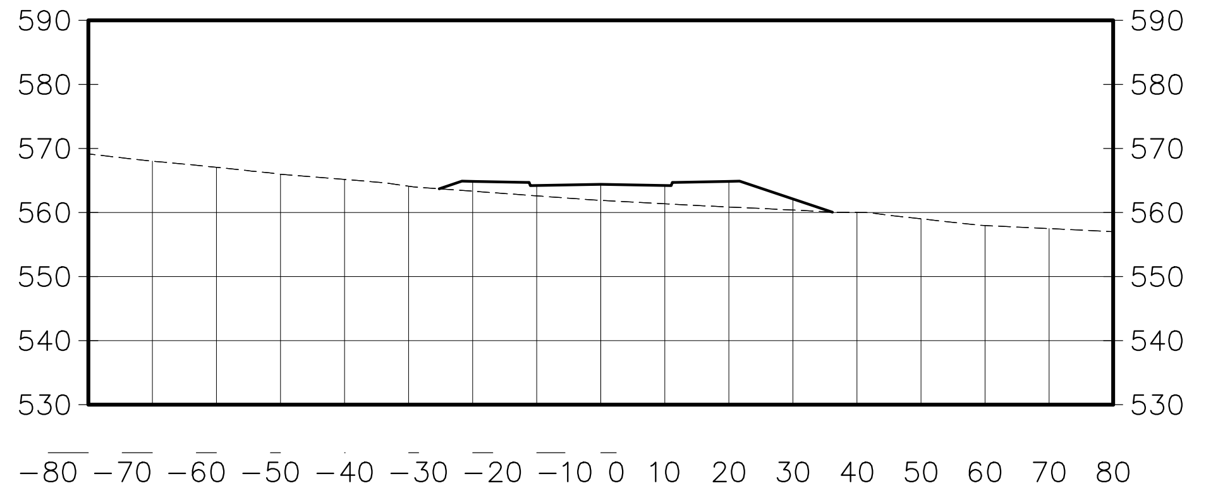

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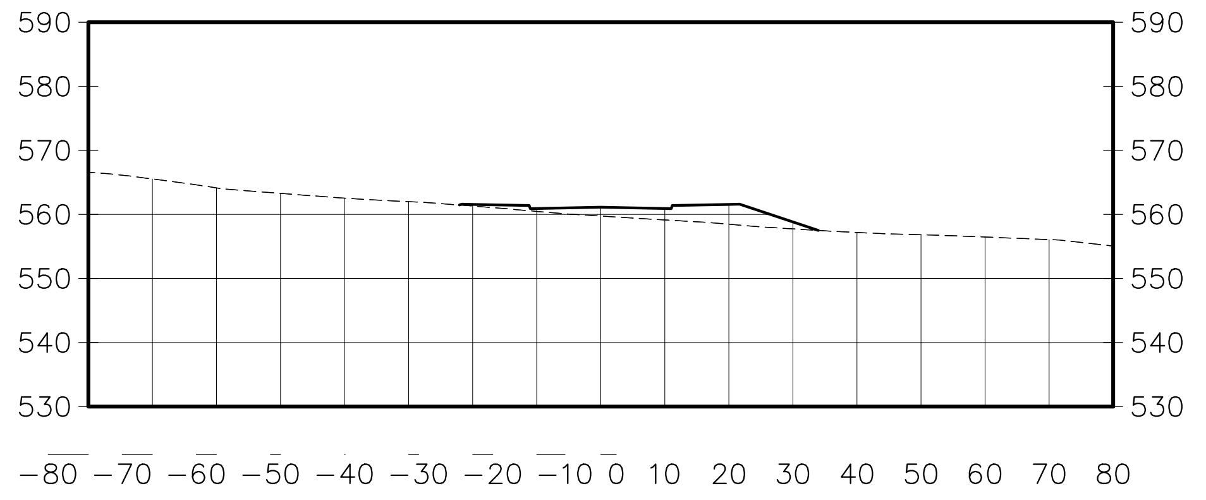

HORIZONTAL

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

VERTICAL

GRAPHIC SCALE

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PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410

No. 33410

SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.

10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
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Proj. No.	WEMF2022
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Drawn by	BCA
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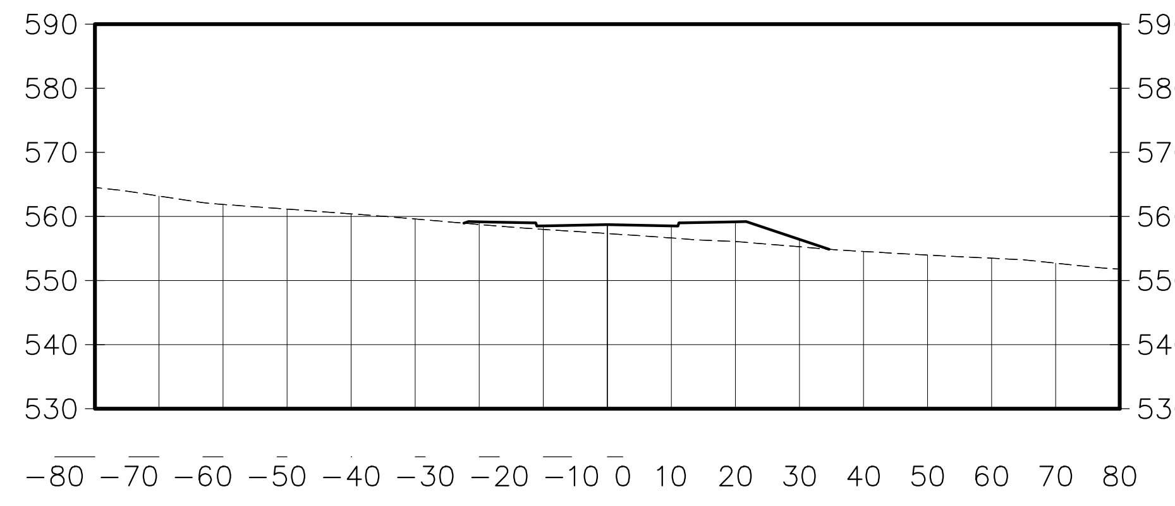
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

ROADWAY CROSS SECTIONS
KUZIK ROAD 5+00 TO 10+50

SP-53

11+00.00



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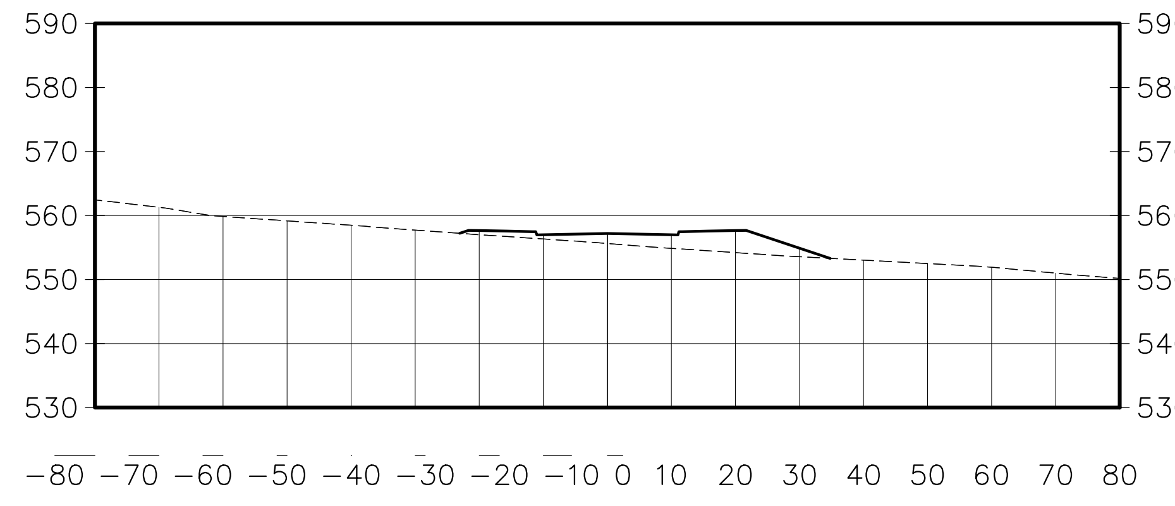

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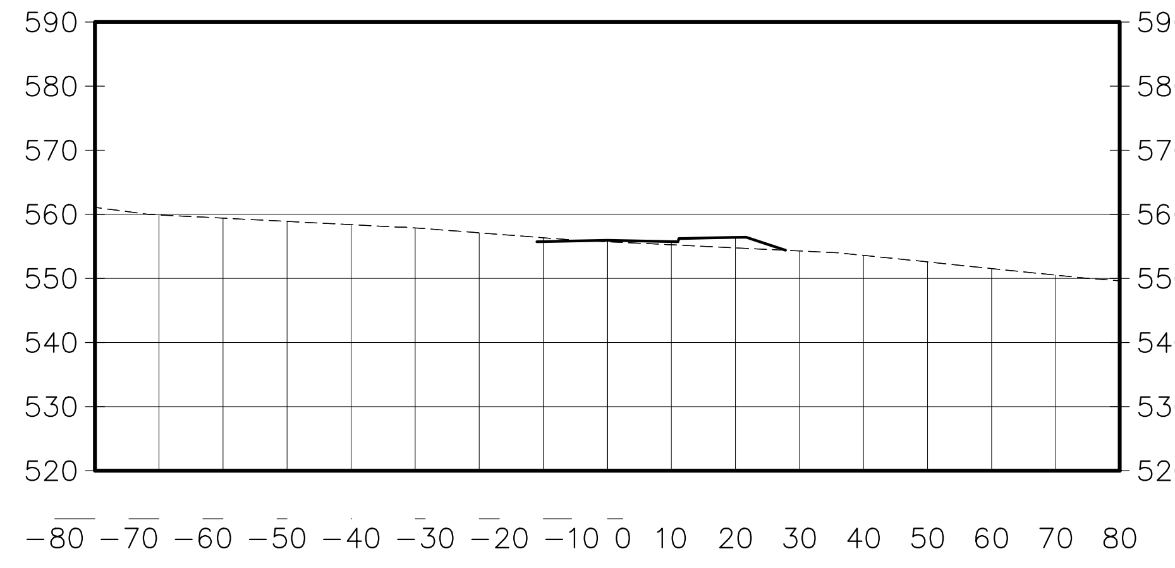

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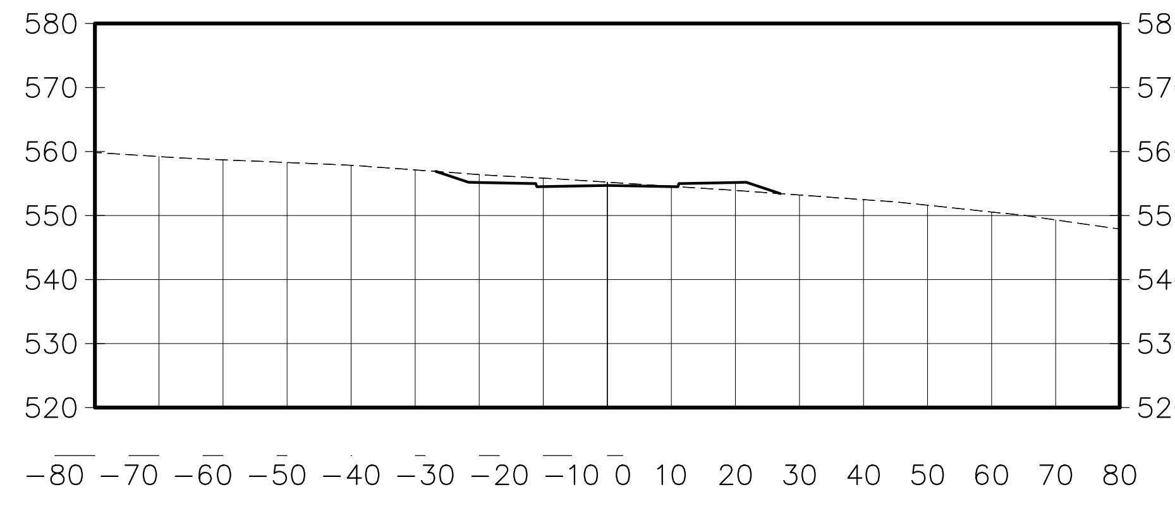

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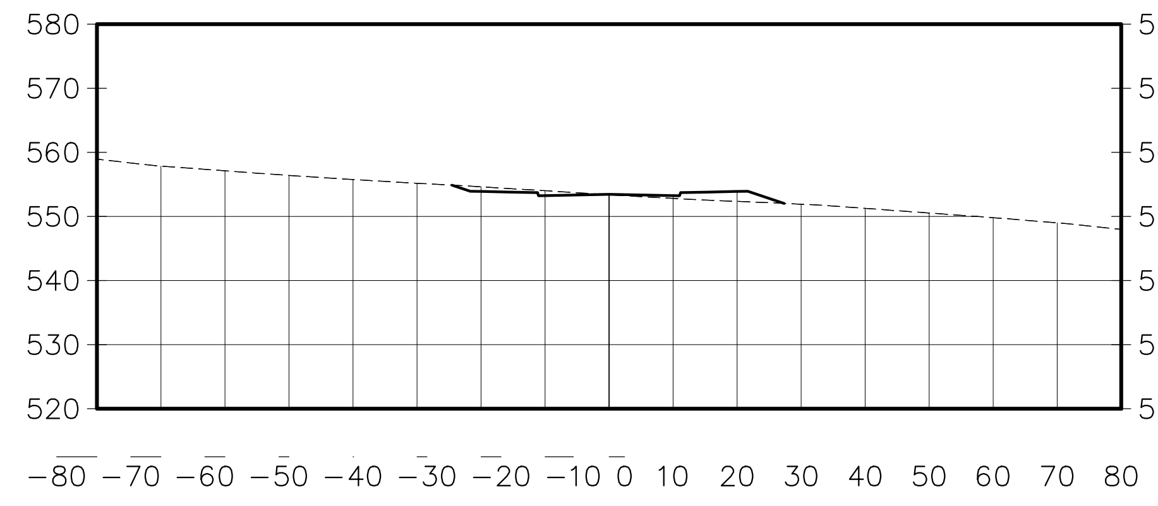

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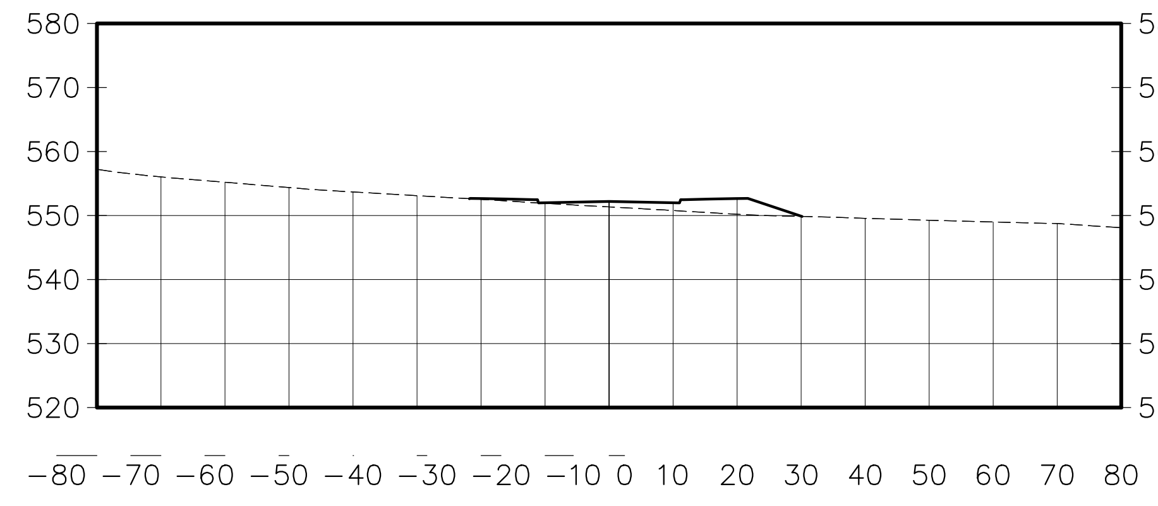

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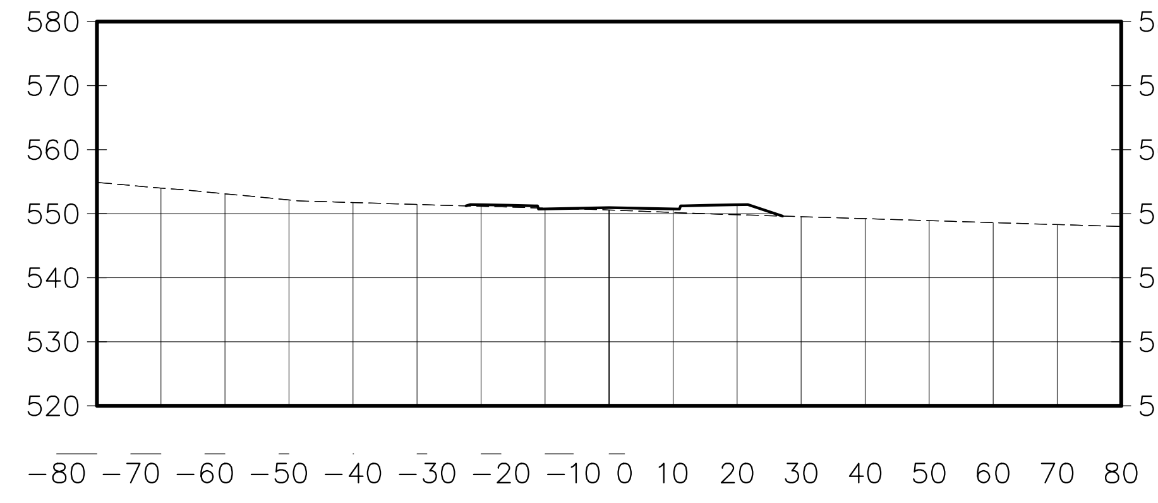

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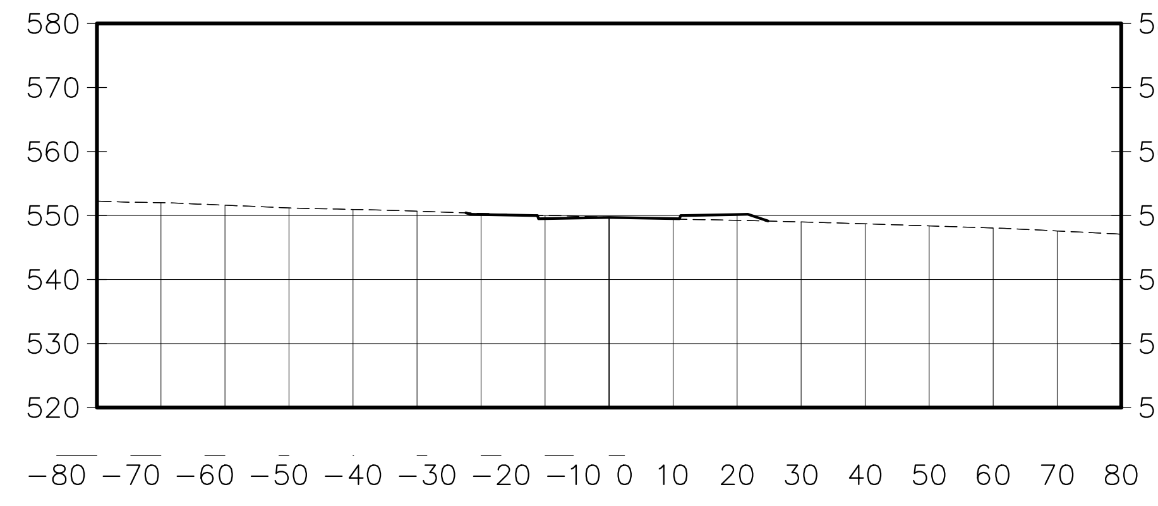

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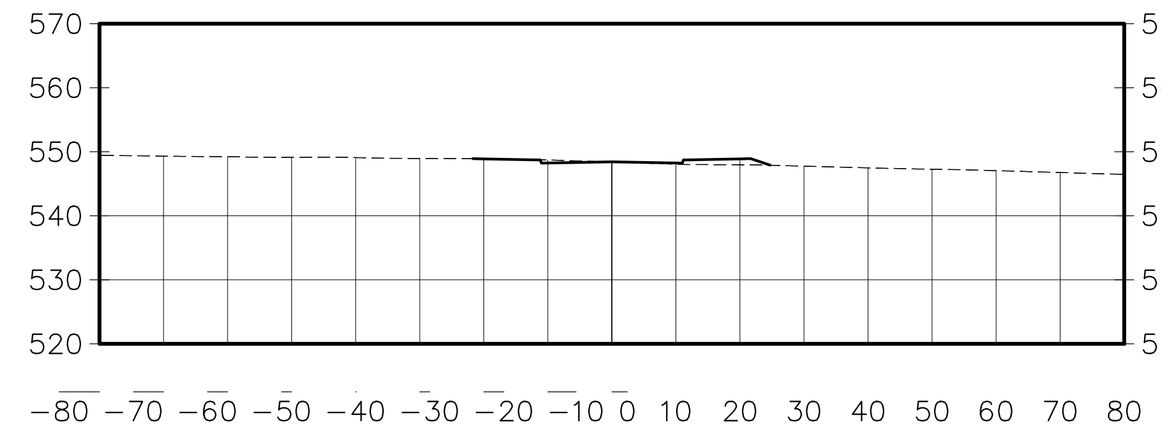

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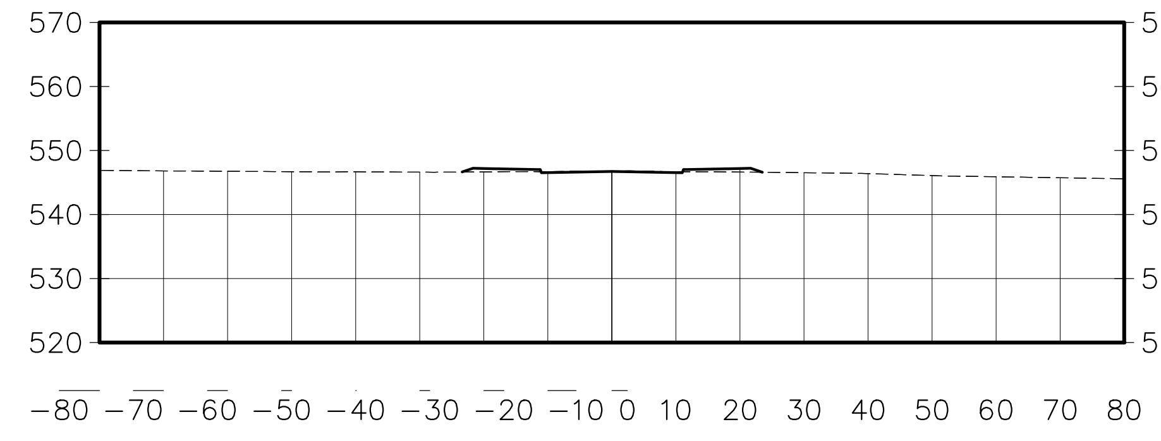

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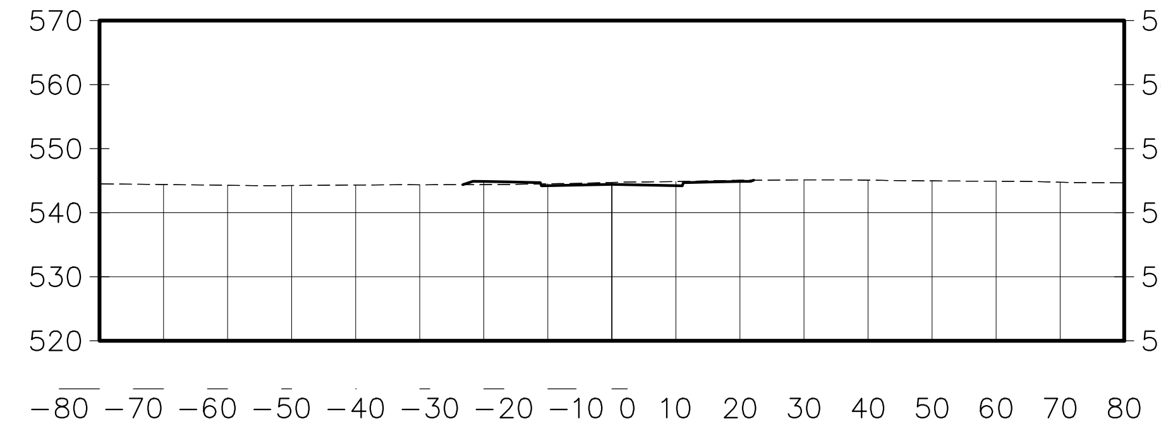

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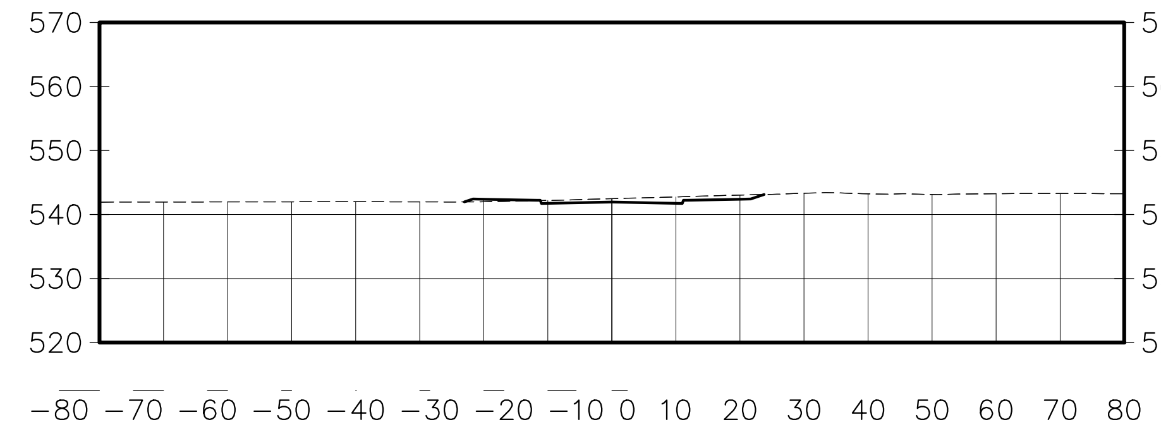

HORIZONTAL

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VERTICAL

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PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
SIGNATURE INVALID UNLESS EMBOSSED SEAL OF P.E.

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Proj. No.	WEMF2022
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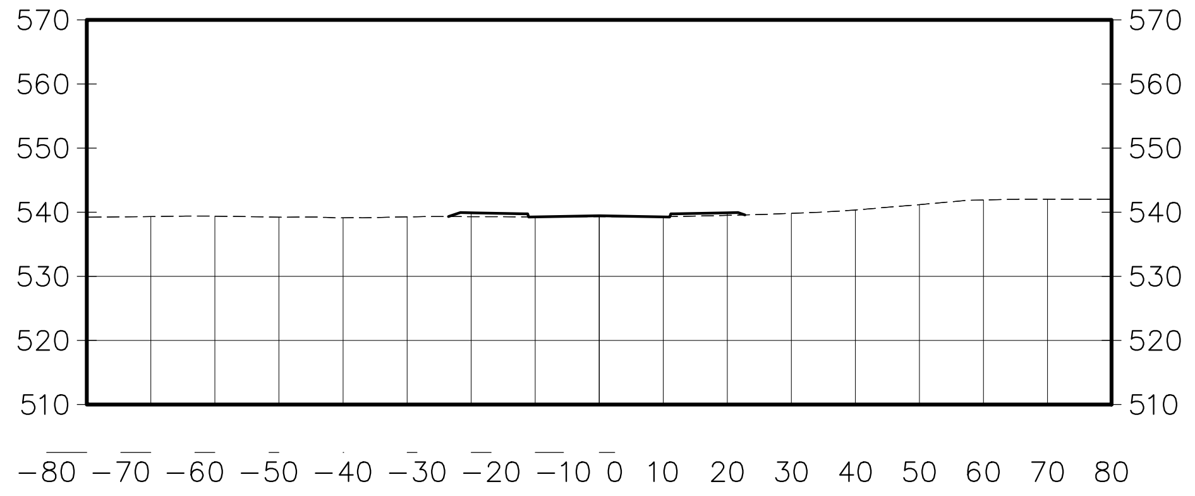
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

ROADWAY CROSS SECTIONS
KUZIK ROAD 11+00 TO 16+50

SP-54

SHEET 54 OF 66

17+00.00



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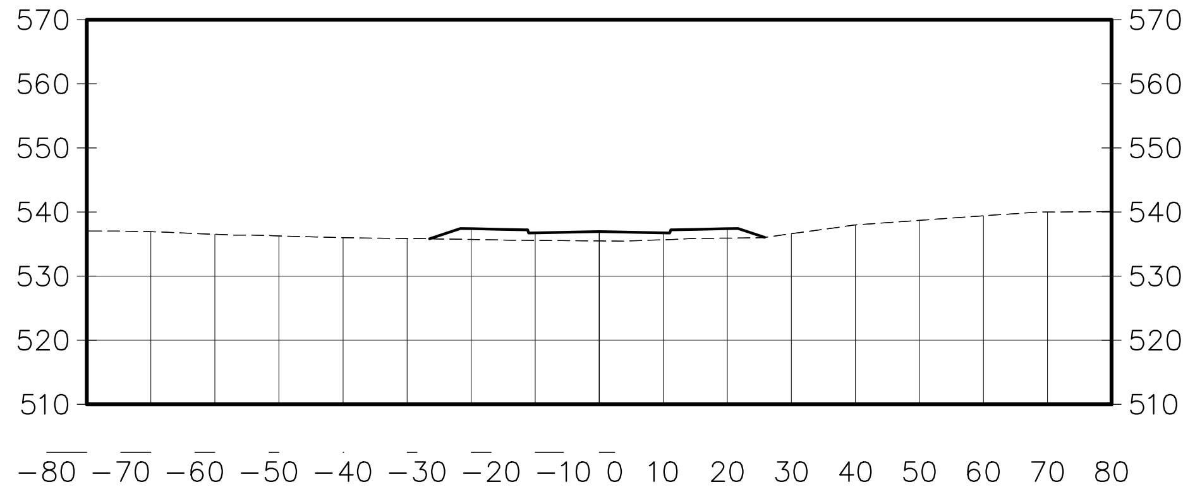

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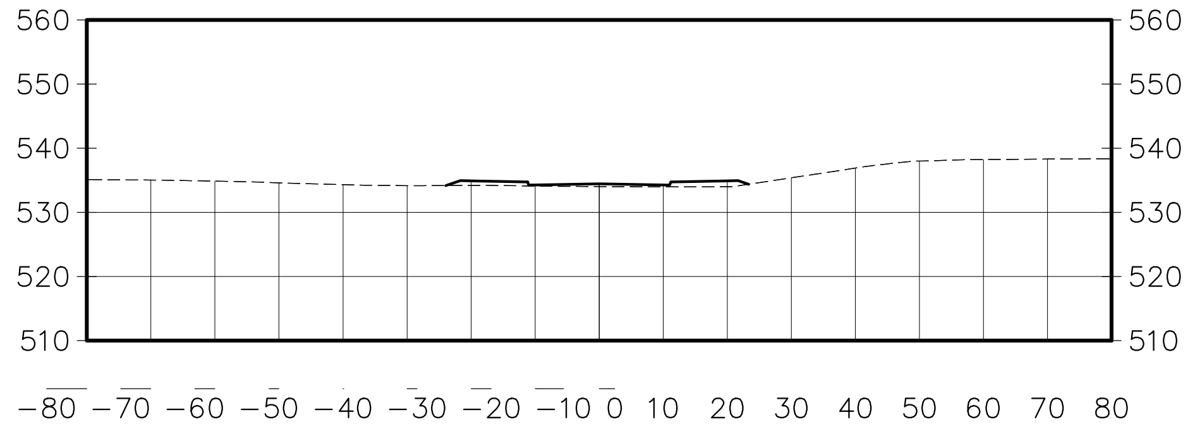

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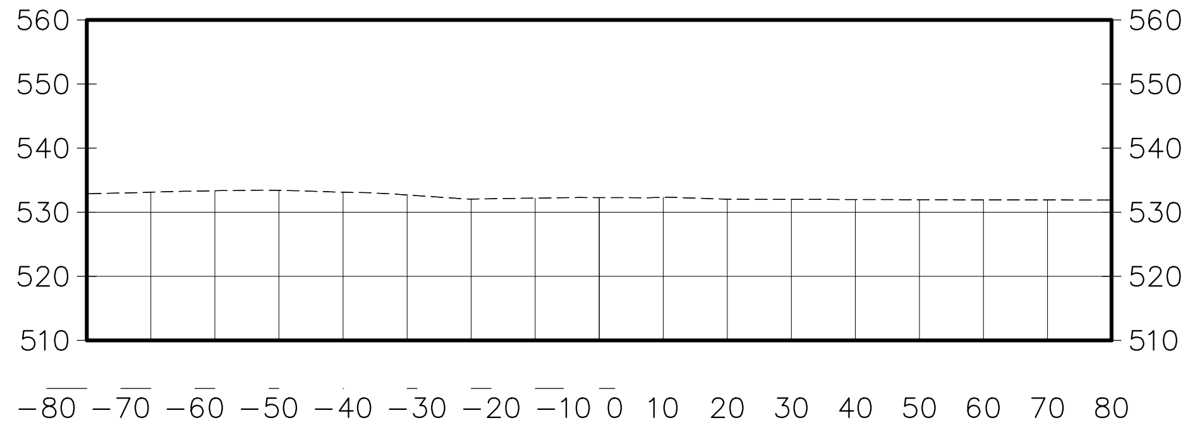

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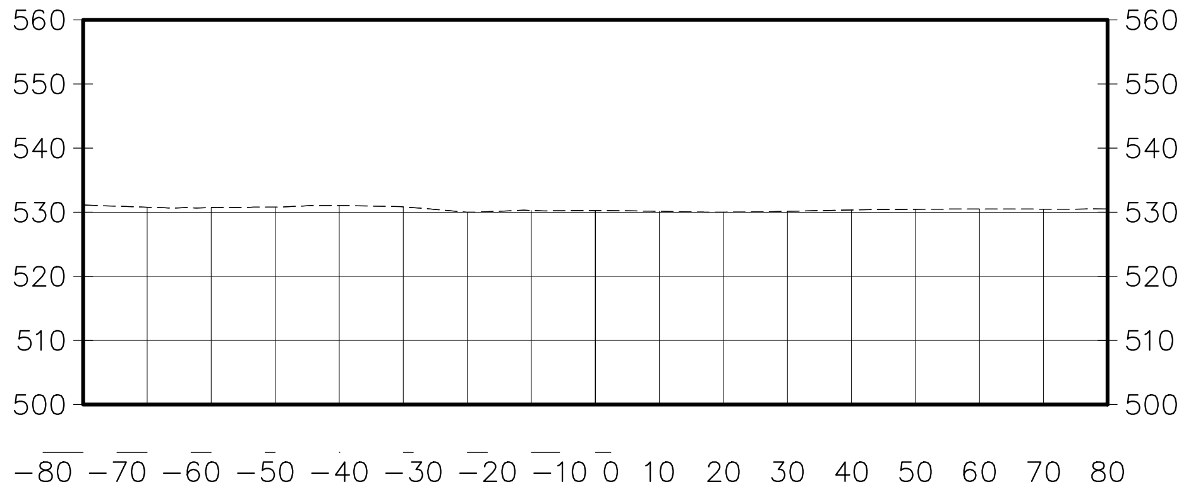

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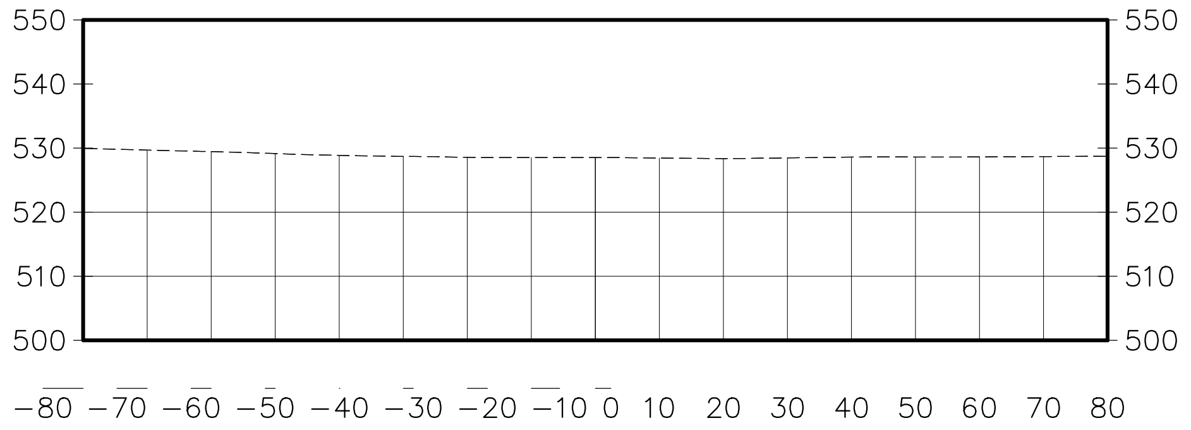

HORIZONTAL

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N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410
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Proj. No.	WEMF2022
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Scale	AS SHOWN

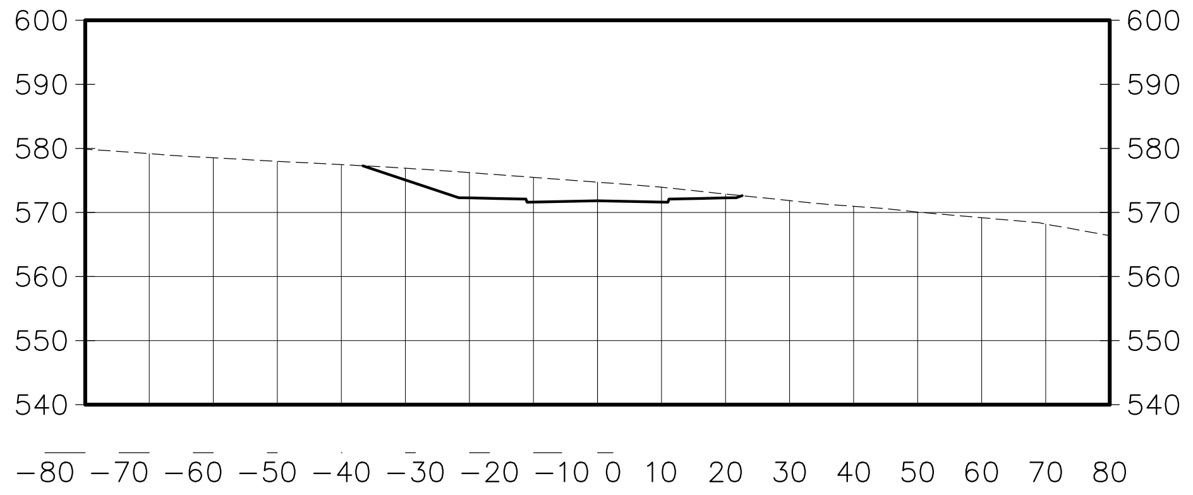
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

ROADWAY CROSS SECTIONS
KUZIK ROAD 17+00 TO 19+50

SP-55

SHEET 55 OF 66

0+50.00



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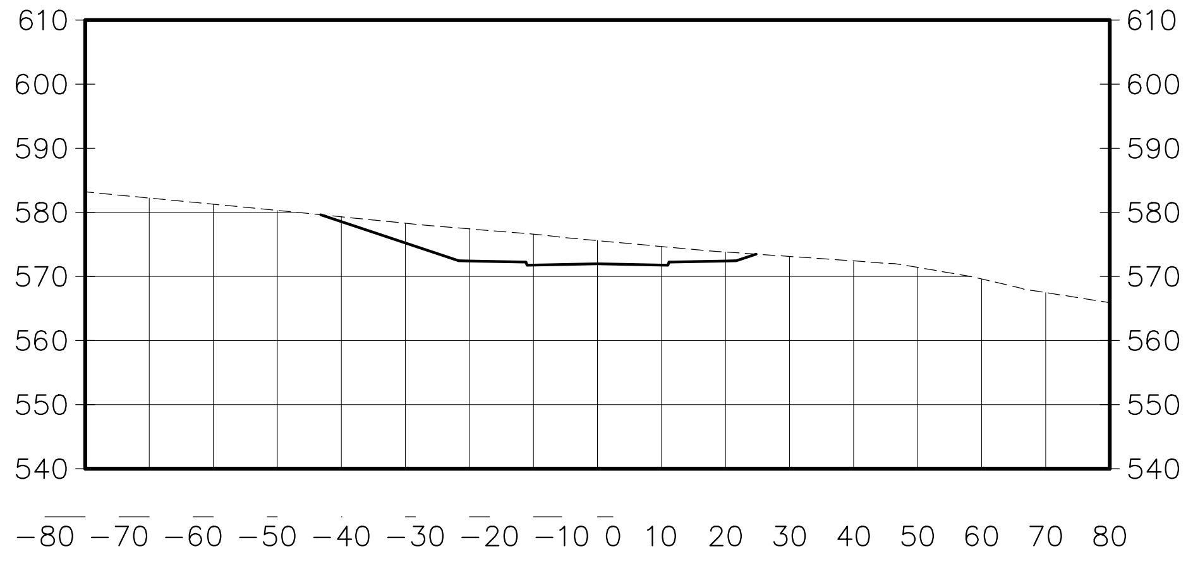

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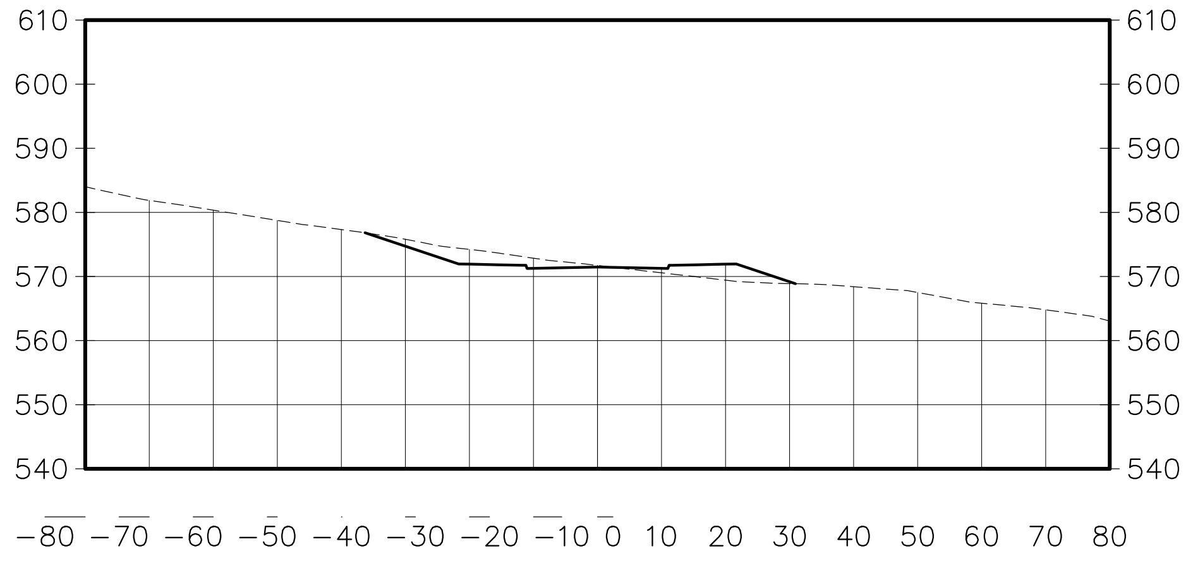

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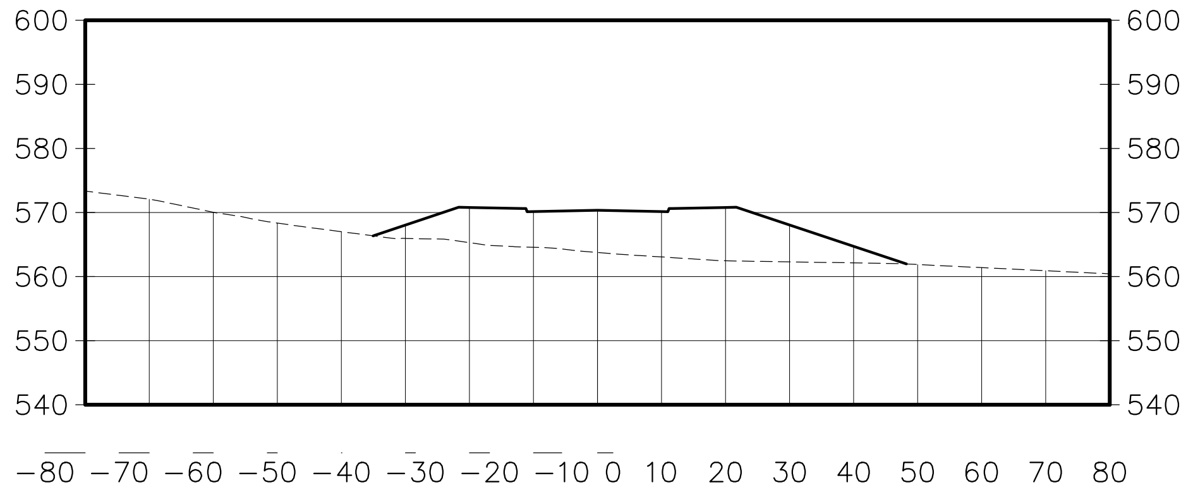

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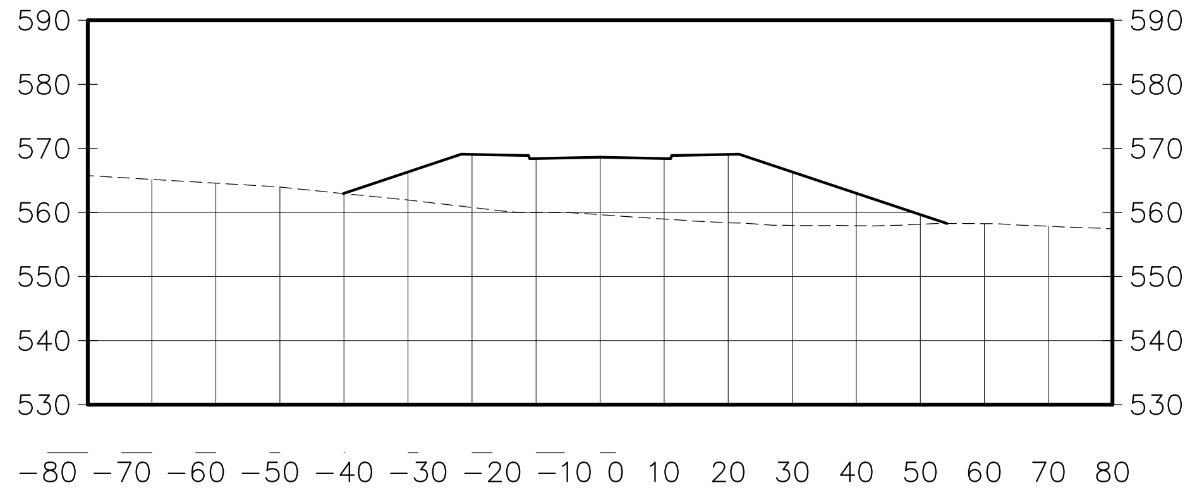

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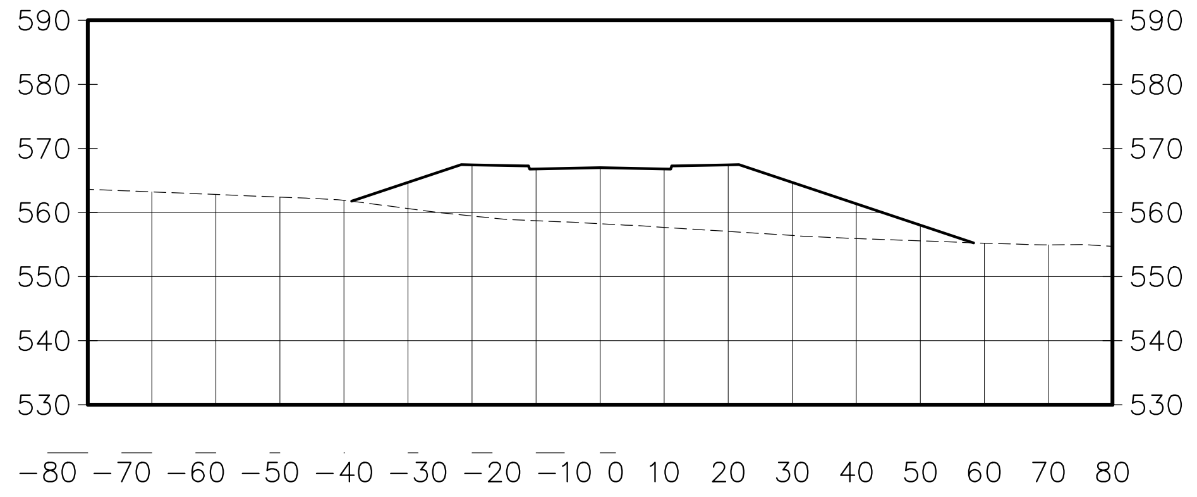

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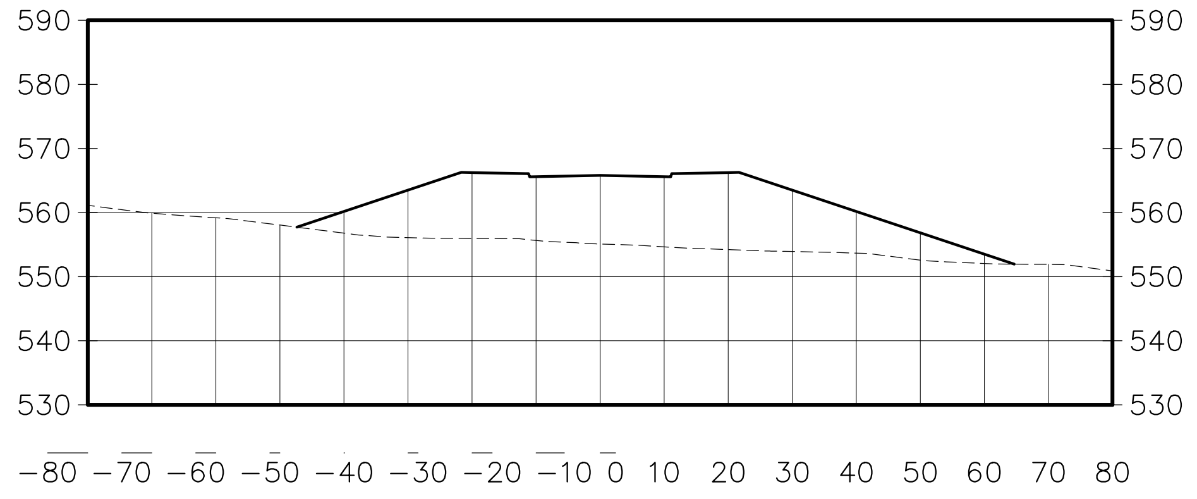

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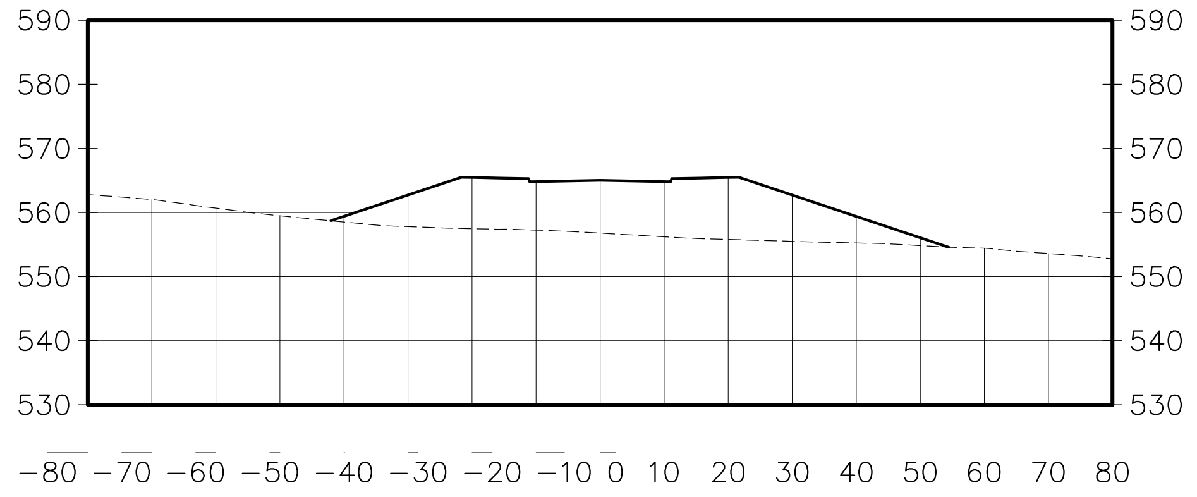

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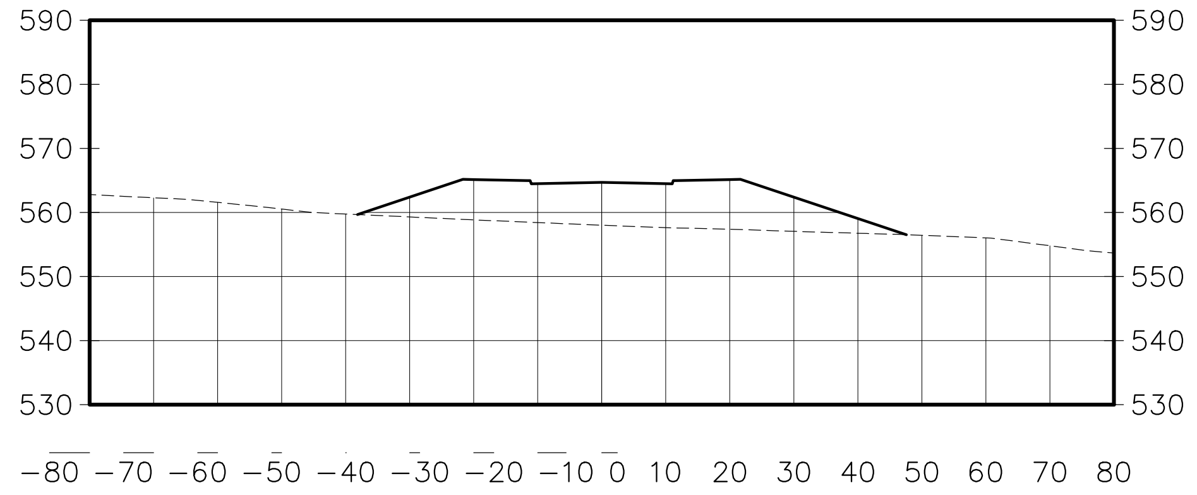

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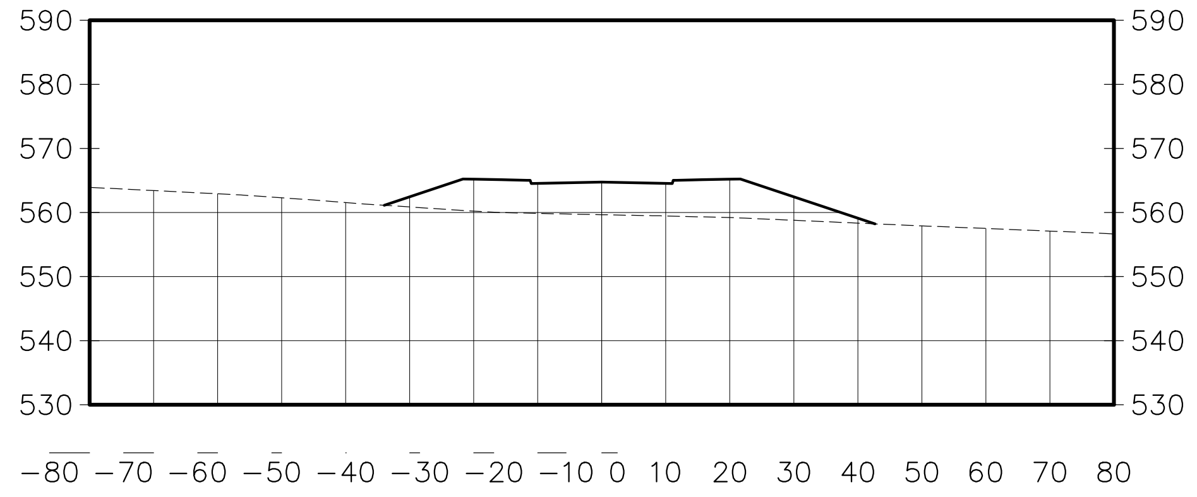

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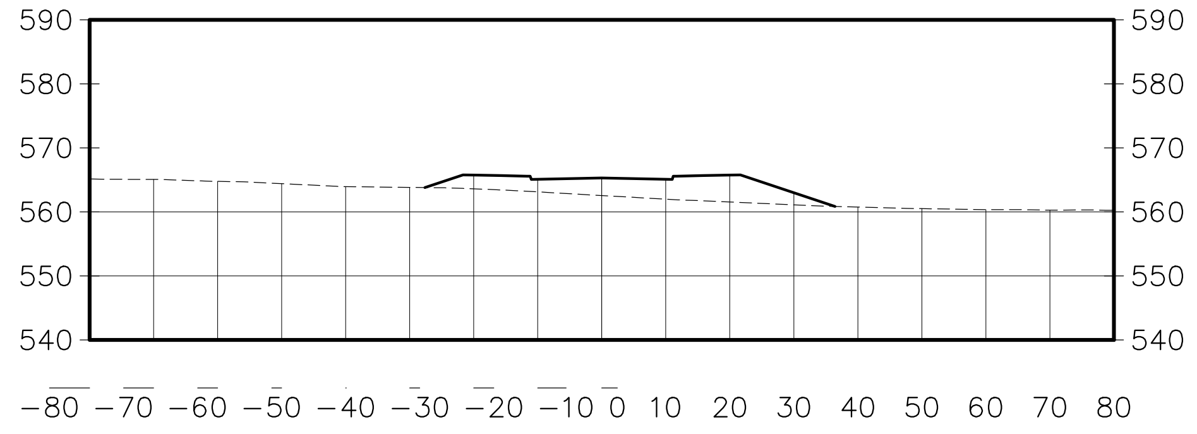

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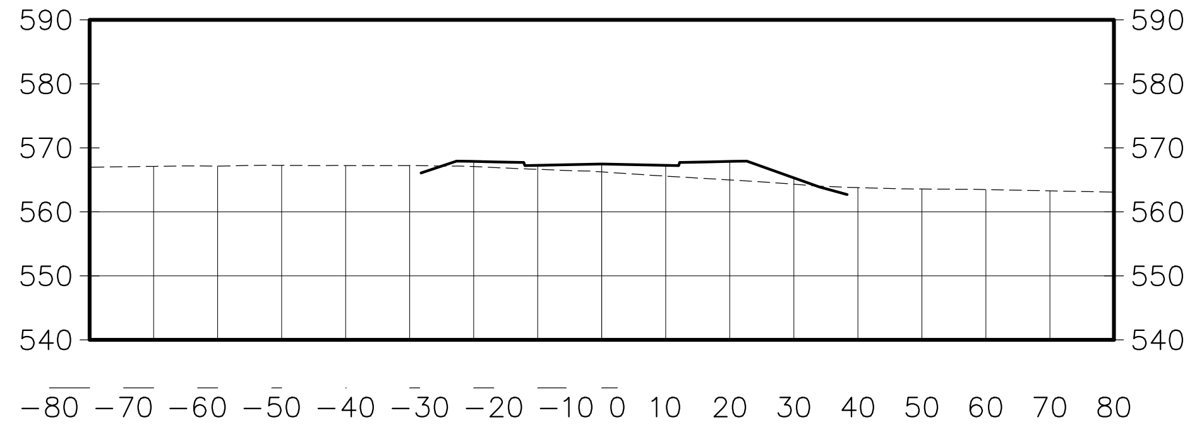

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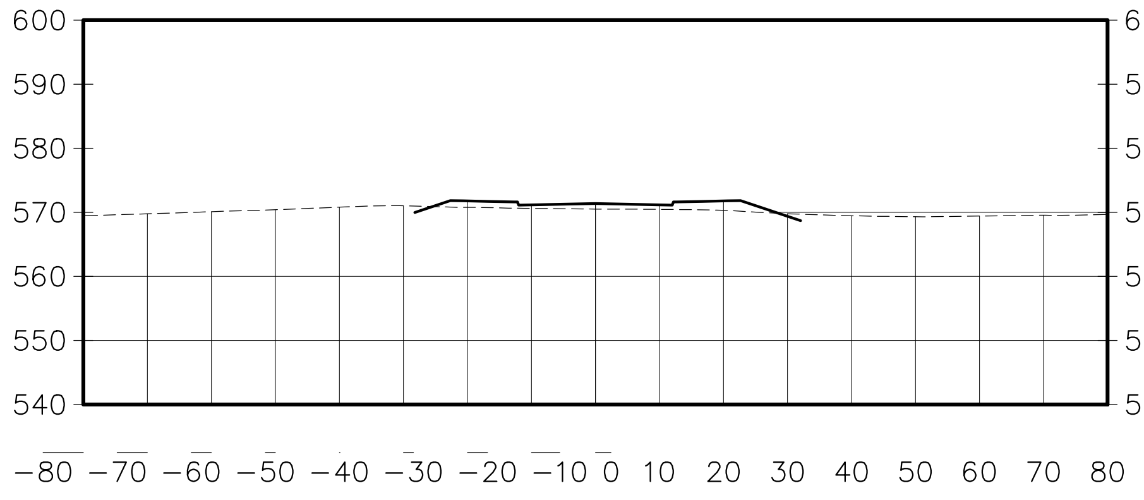
ESSEX COUNTY, NEW JERSEY

ROADWAY CROSS SECTIONS
ROAD D 0+50 TO 6+00

SP-56

SHEET 56 OF 66

6+50.00



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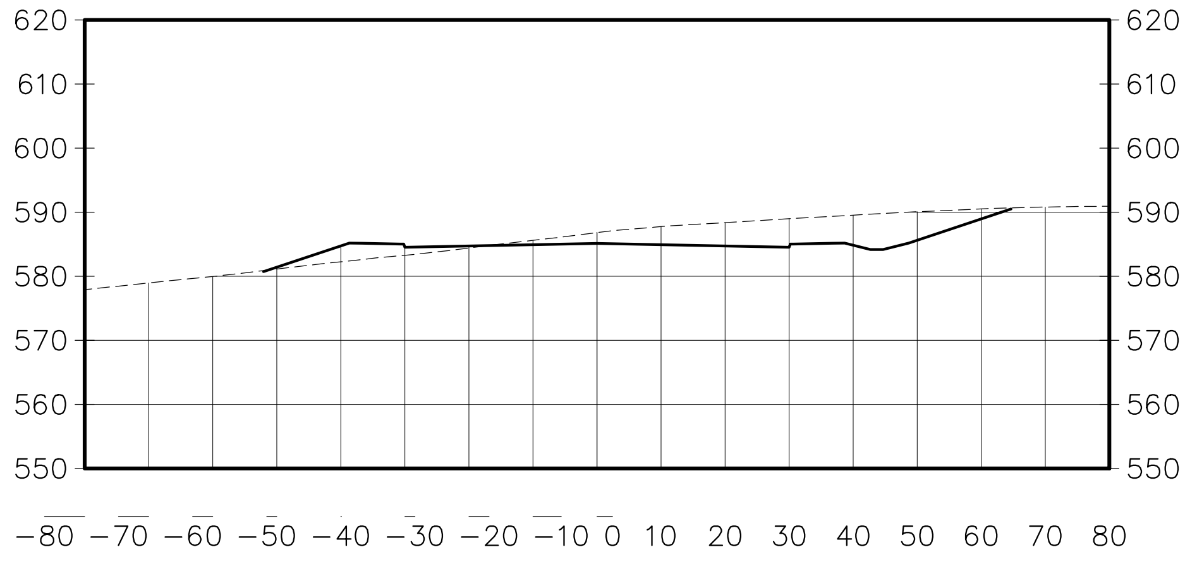

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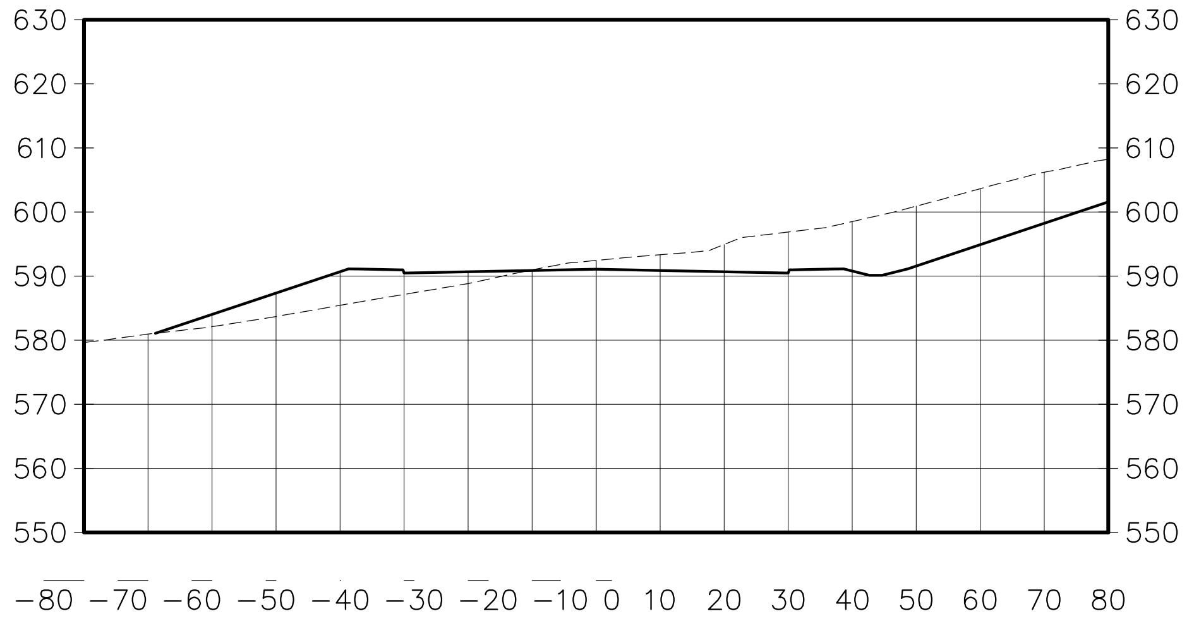

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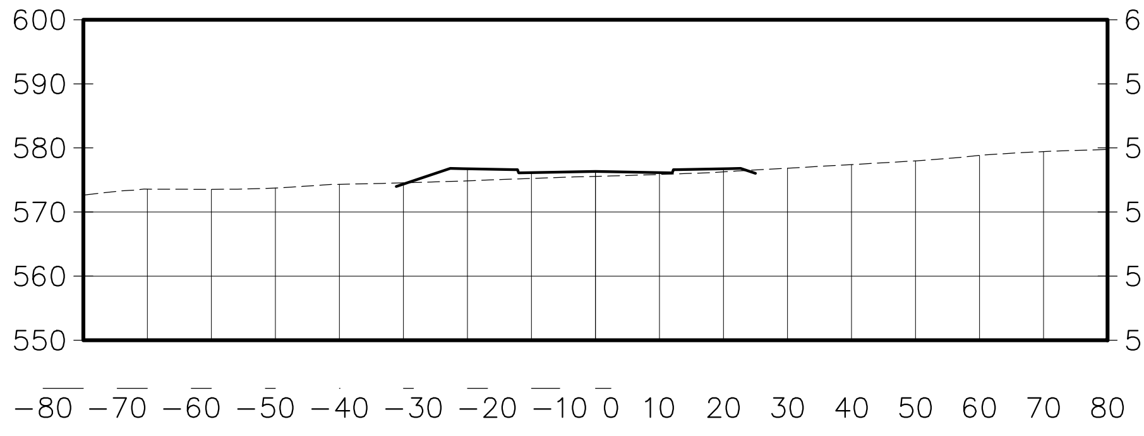

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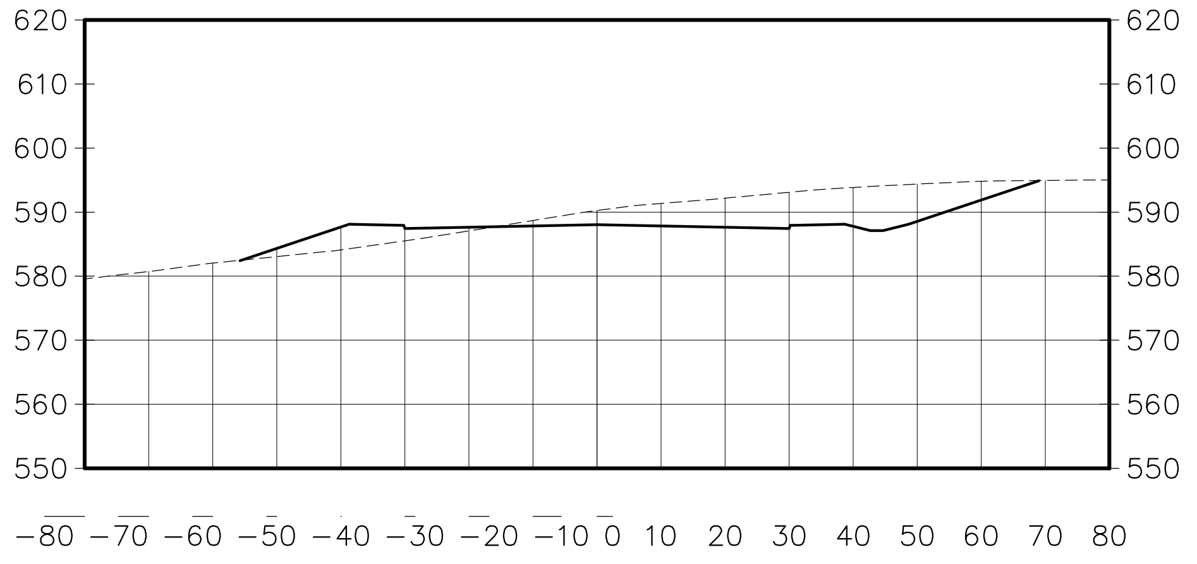

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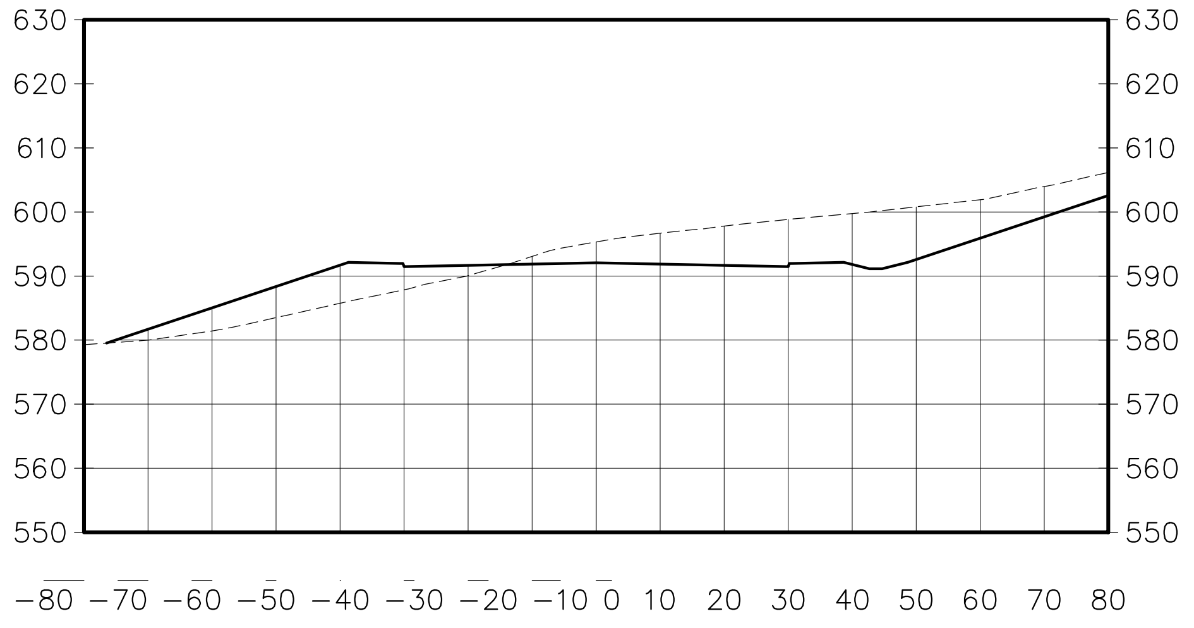

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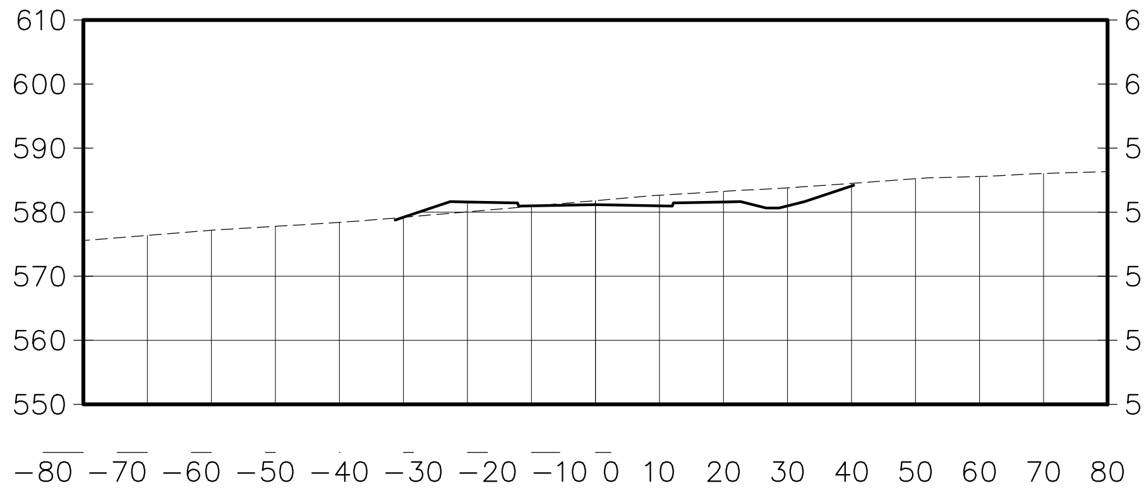

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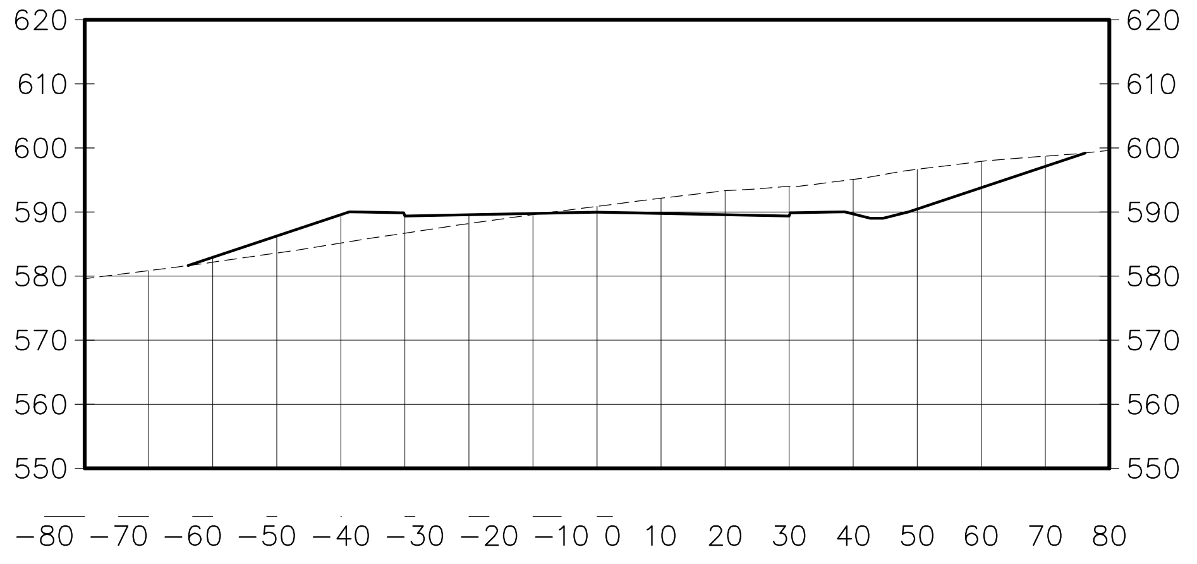

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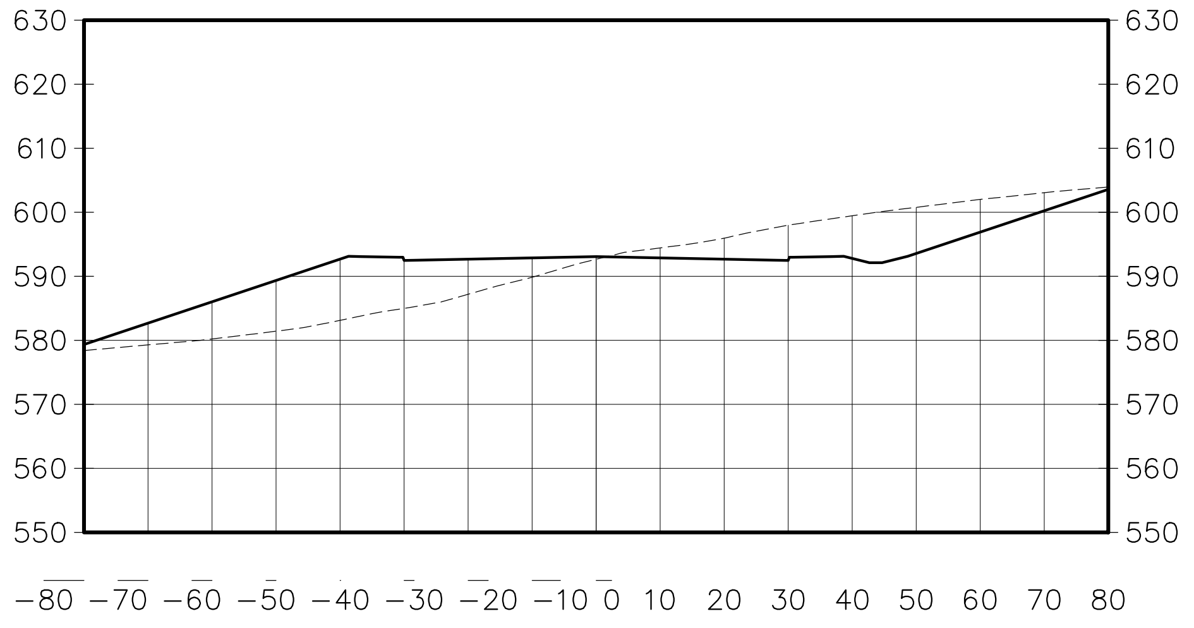

HORIZONTAL

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

VERTICAL

GRAPHIC SCALE

(IN FEET)
1 inch = 30ft.

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PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410
SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.

10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS
Revisions	

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24GA28182400

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www.pwanderson-cs.com

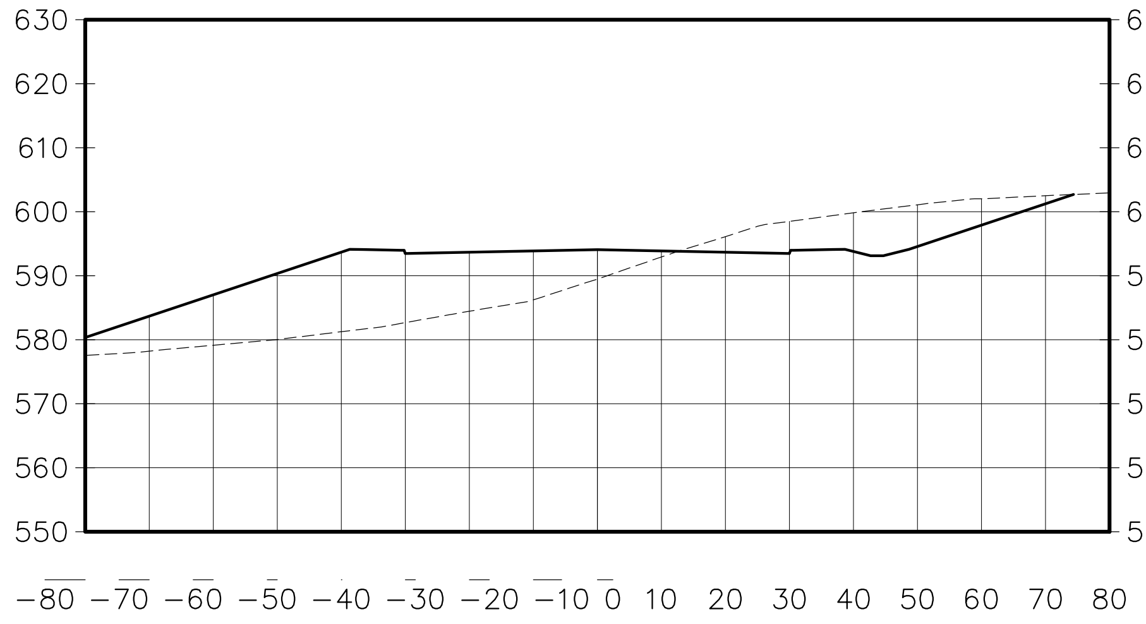
Proj. No.	WEMF2022
Date	9–23–22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

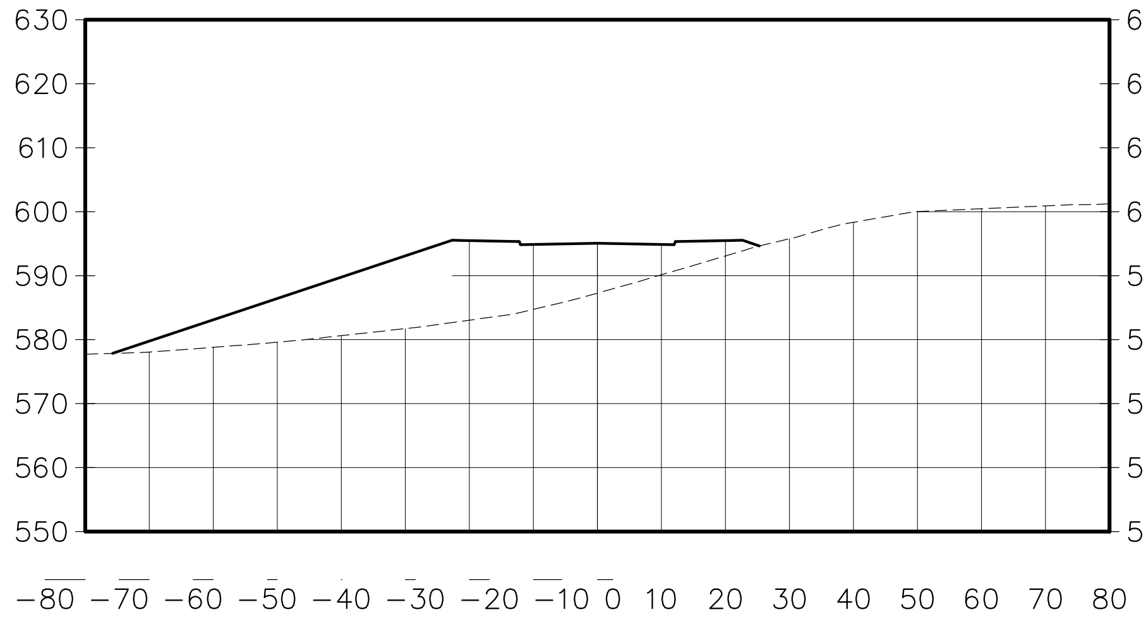
ROADWAY CROSS SECTIONS
ROAD D 6+50 TO 10+50

SP-57

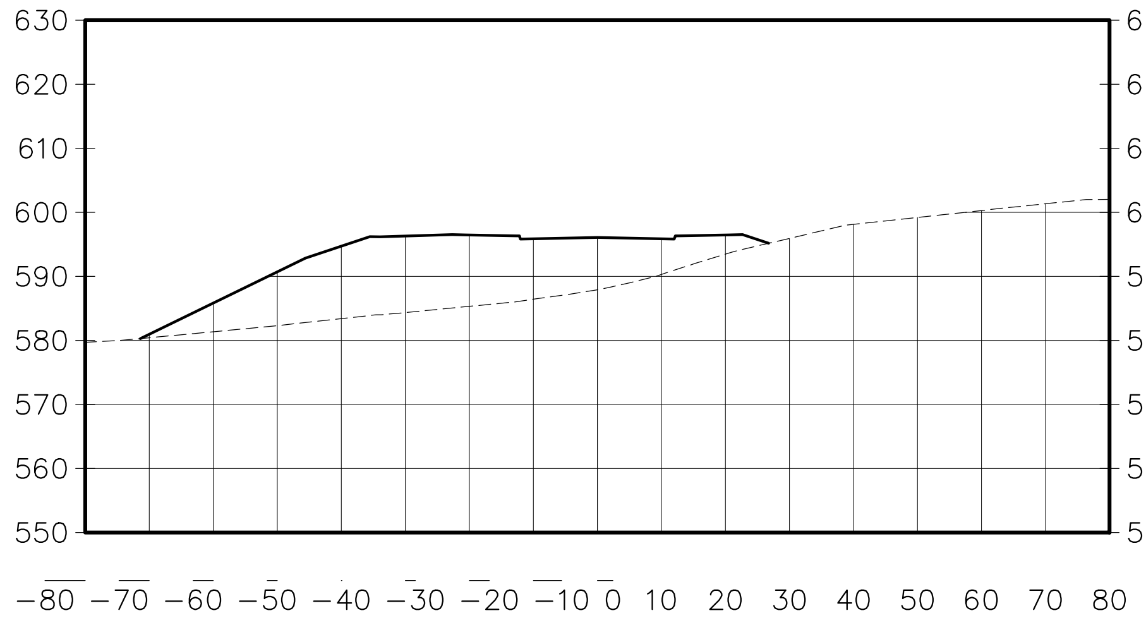
11+00.00



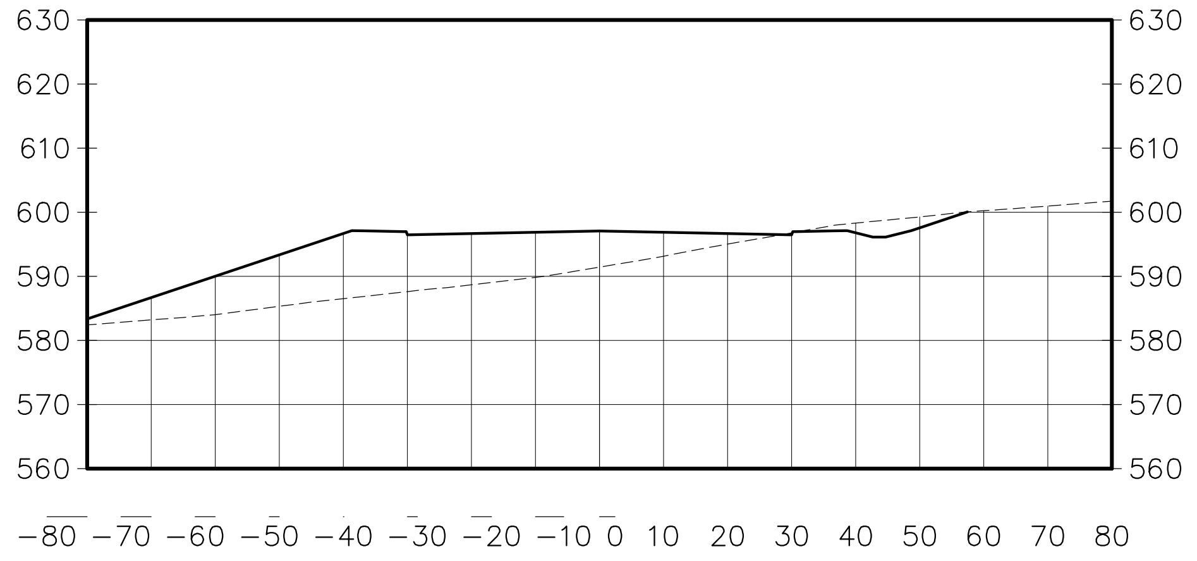
11+50.00



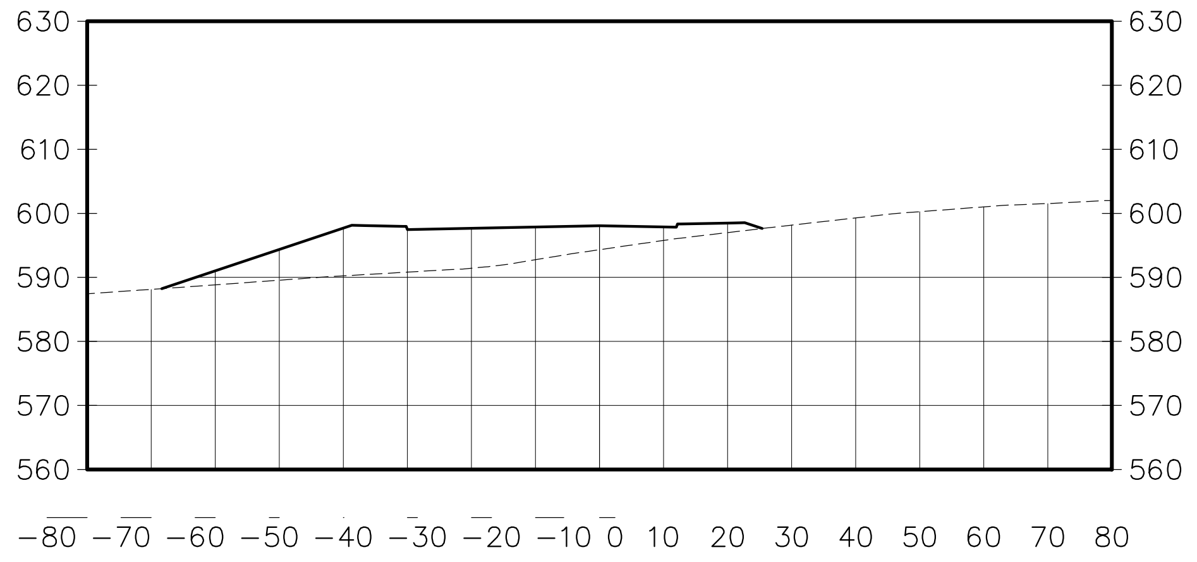
12+00.00



12+50.00



13+00.00



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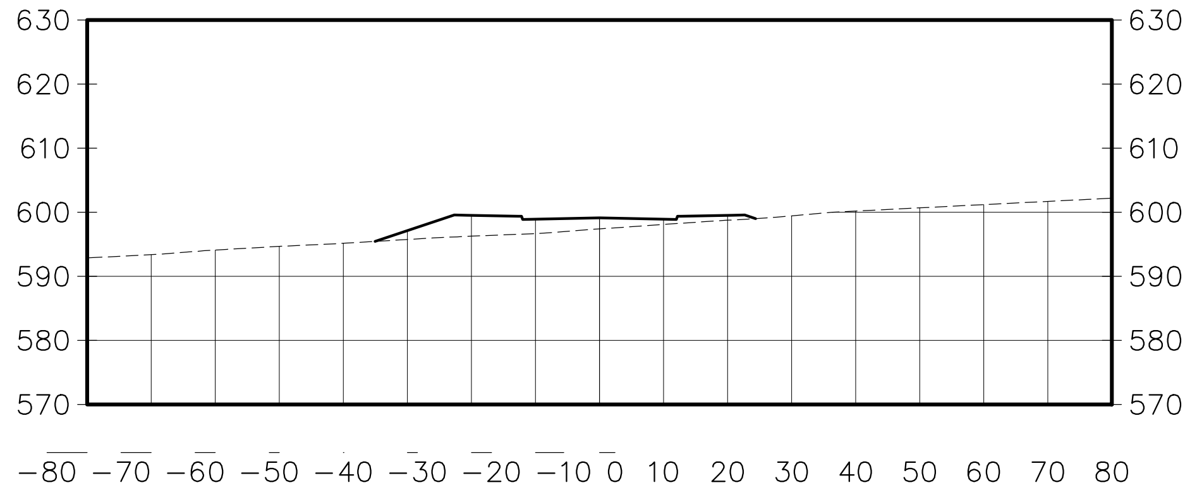

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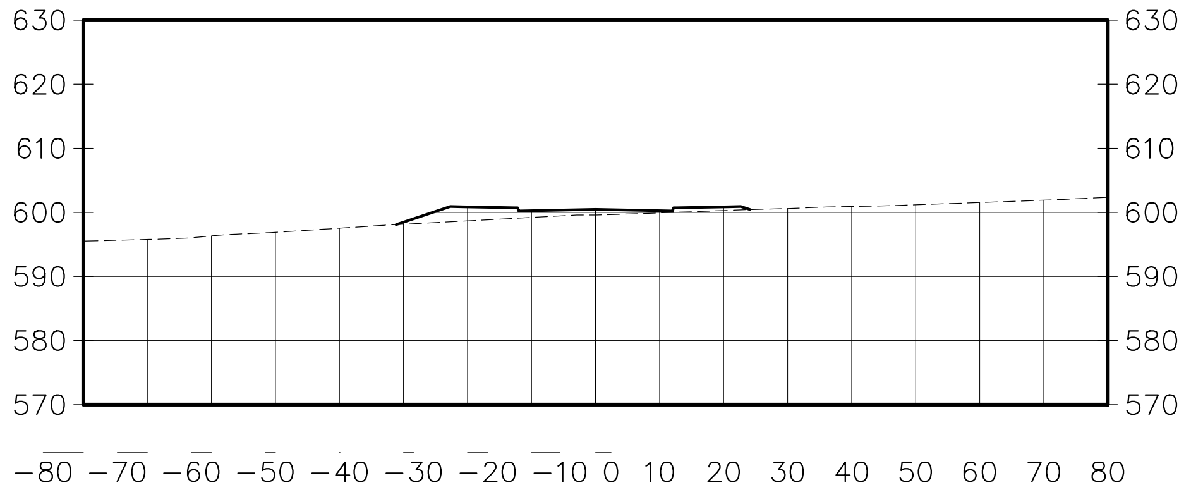

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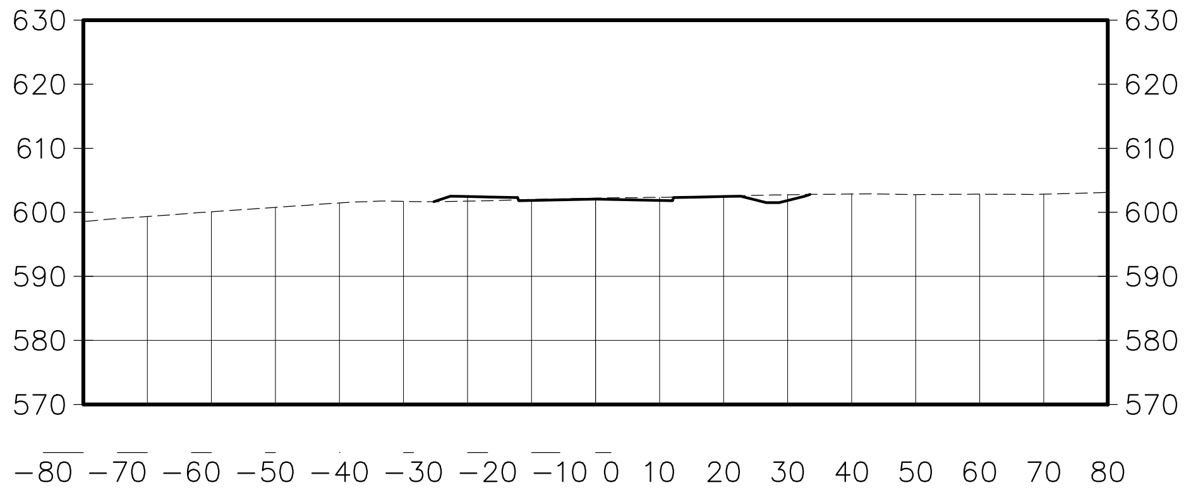
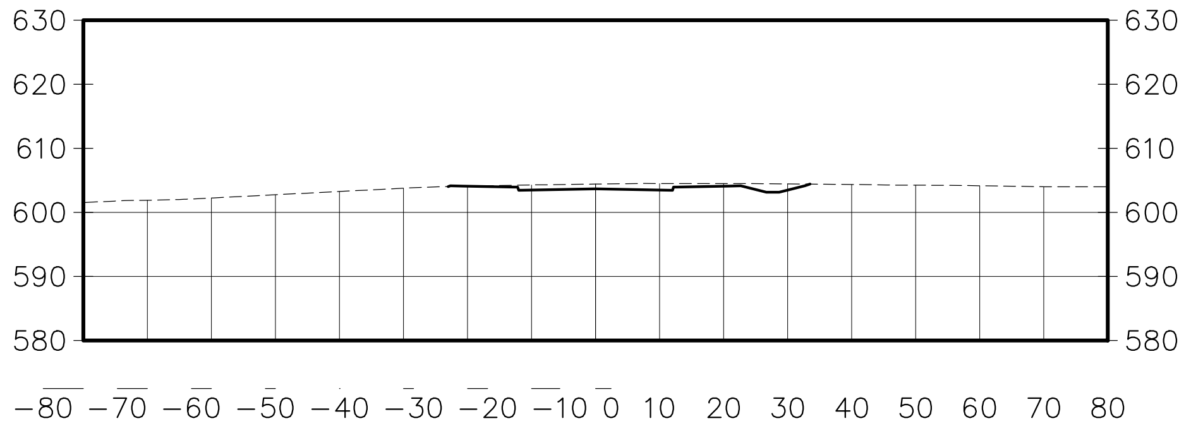


15+00.00



HORIZONTAL

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

VERTICAL

GRAPHIC SCALE

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811
Know what's below.
Call before you dig.

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Proj. No.	WEMF2022
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Drawn by	BCA
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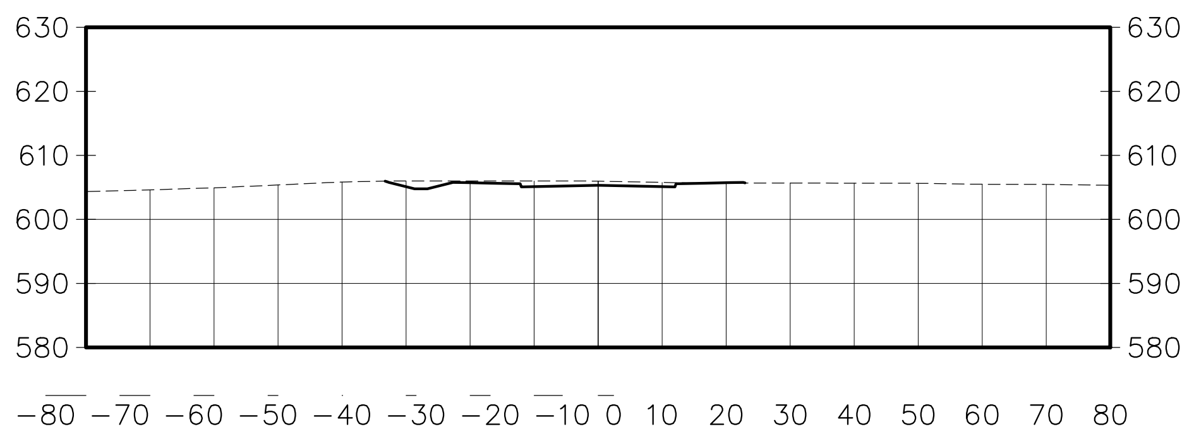
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

ROADWAY CROSS SECTIONS
ROAD D 11+00 TO 15+00

SP-58

15+50.00



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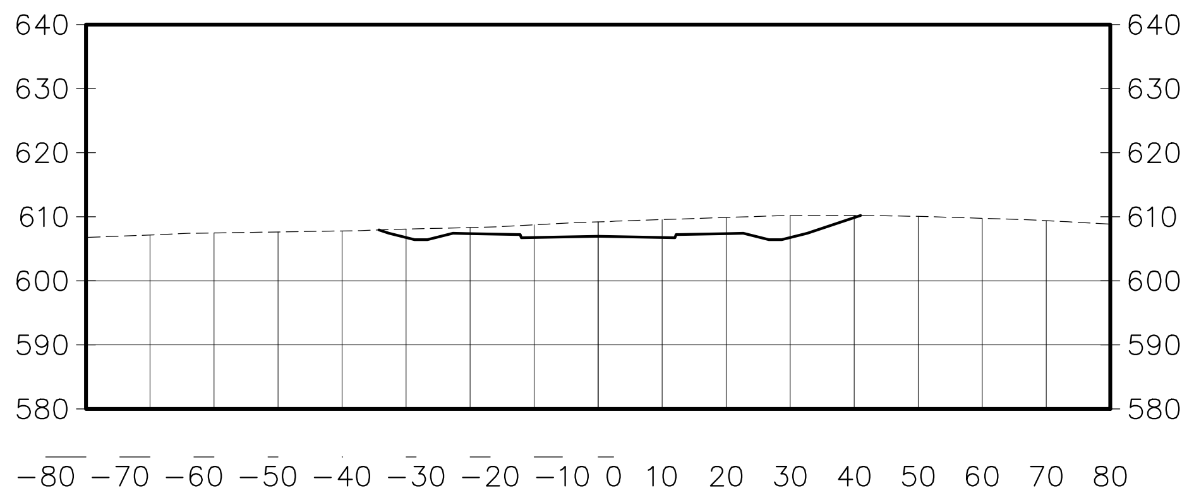

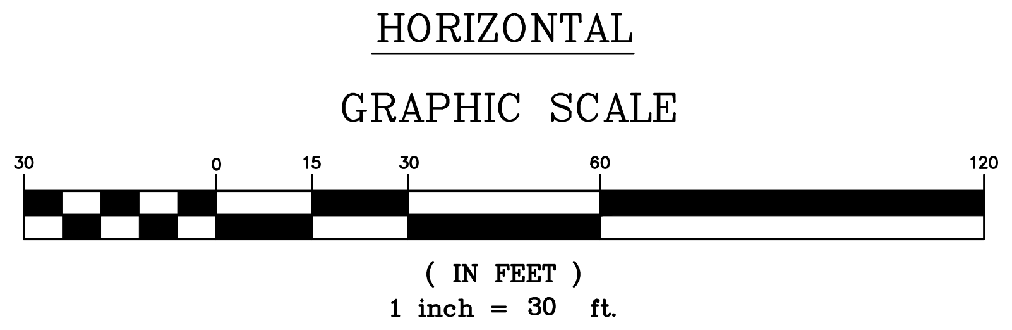

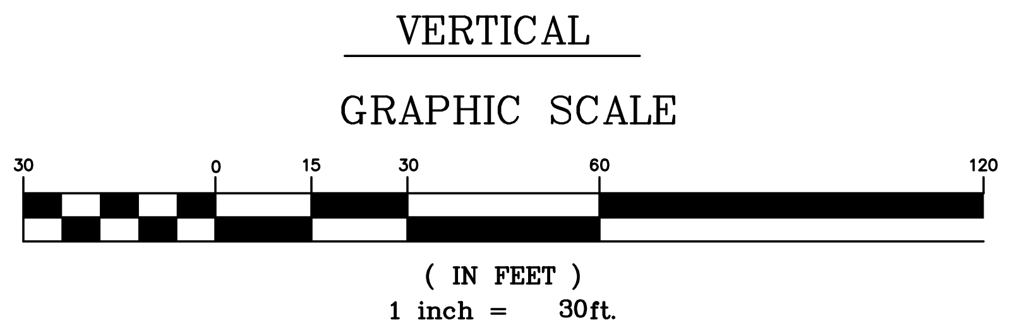

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PAUL W. ANDERSON
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LIC. NO. 33410

No. 33410

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Proj. No.	WEMF2022
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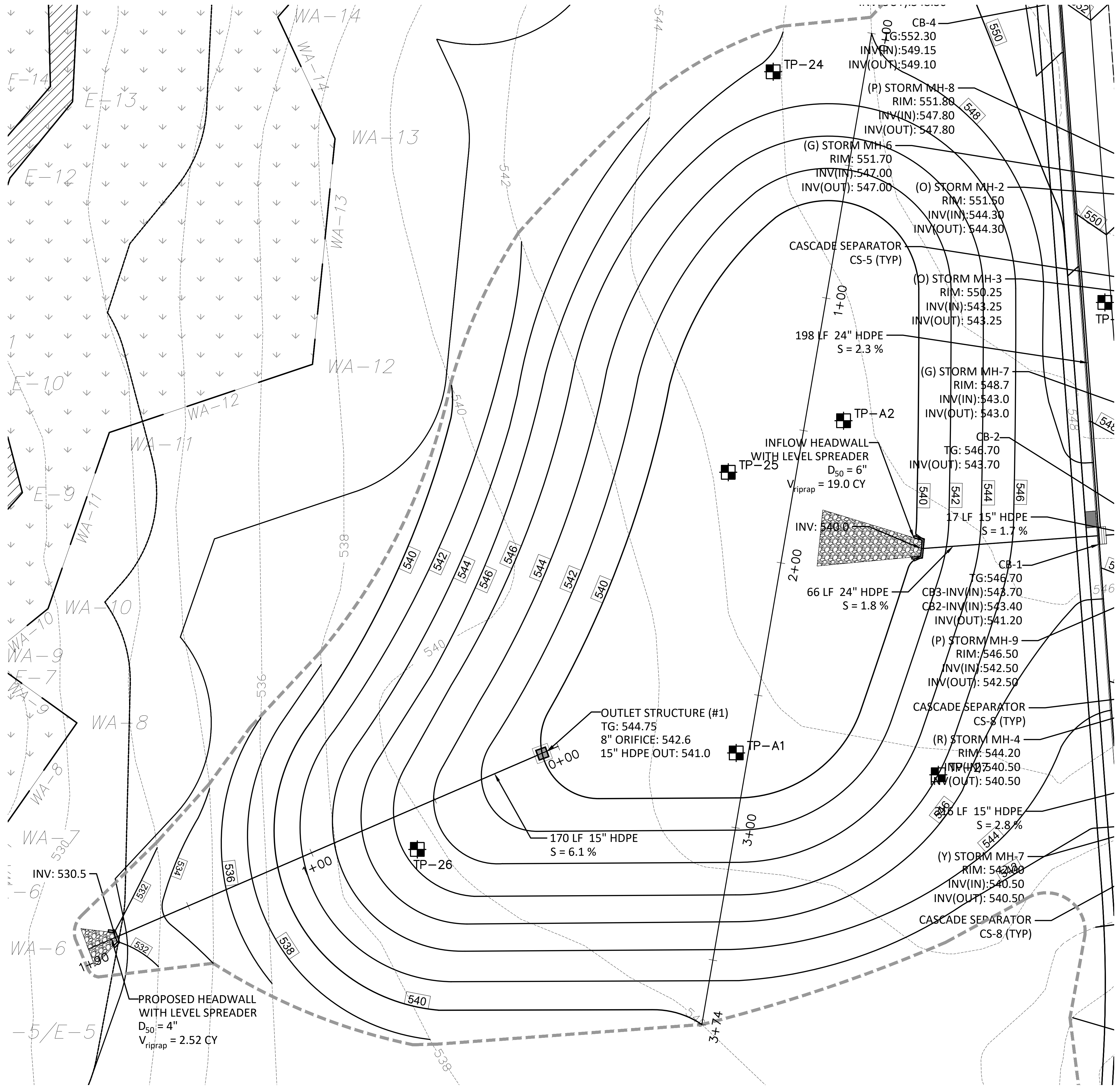
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

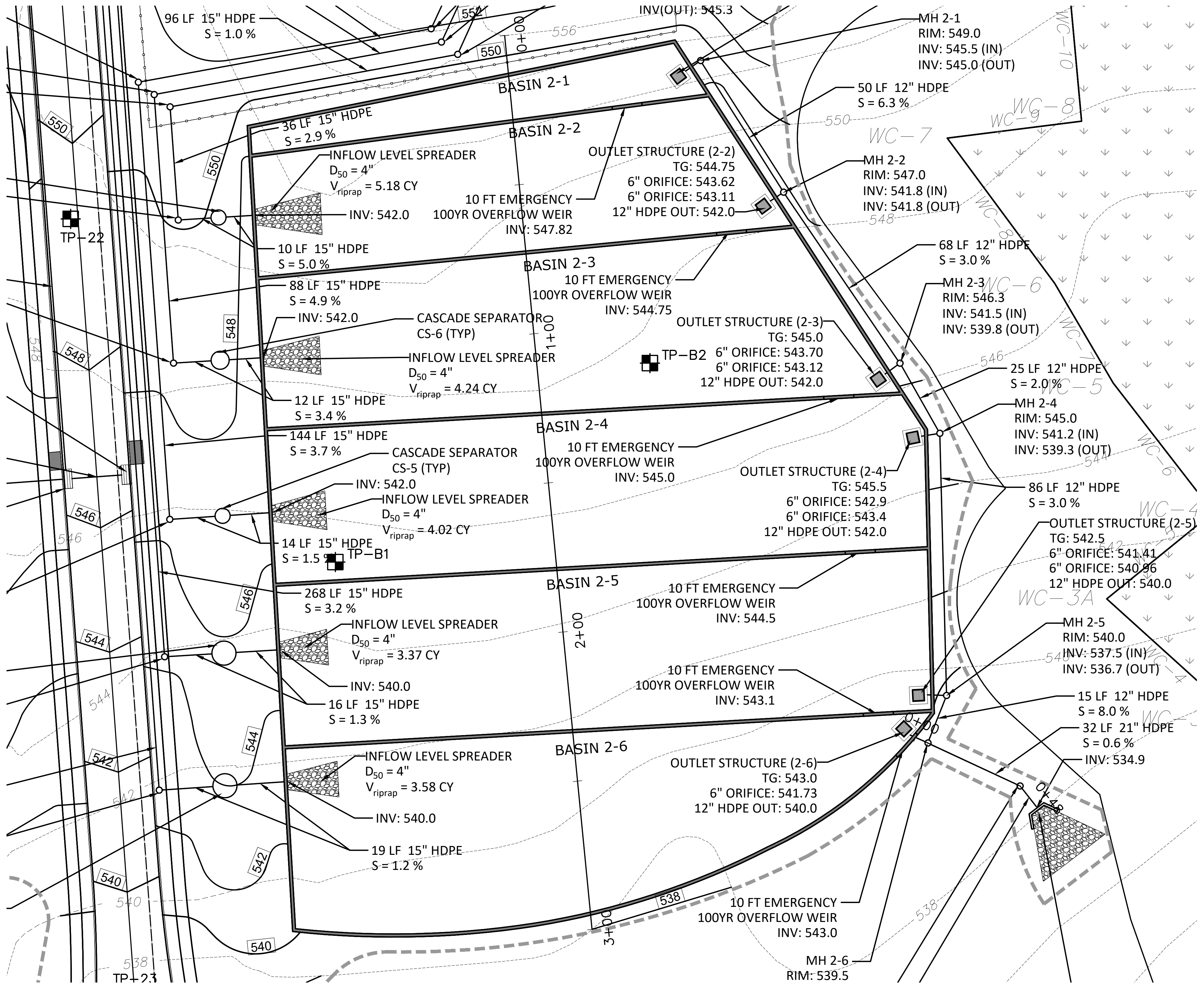
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

ROADWAY CROSS SECTIONS
ROAD D 15+50 TO 16+00

SP-59

SHEET 59 OF 66

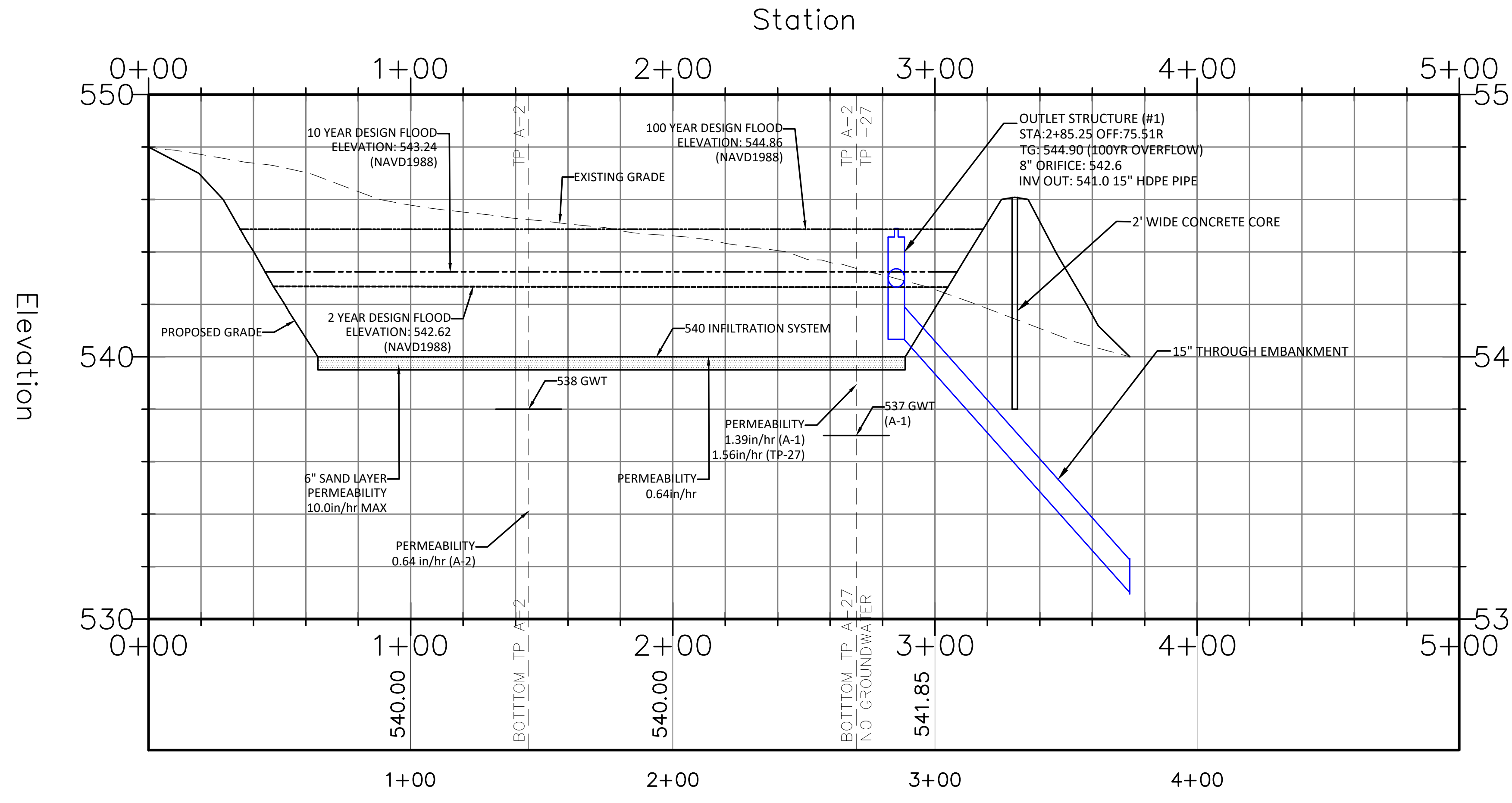




GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

BASIN #1 PROFILE



GROUNDWATER ENCOUNTERED AT
537.0 AND 538.0 RESPECTIVELY
PERMEABILITY RATES:
K = 1.39 IN/HR (K2) @ 5'
K = 0.64 IN/HR (K2) @ 5'

BASIN #1 - KUZIK ROAD

HORIZONTAL

GRAPHIC SCALE

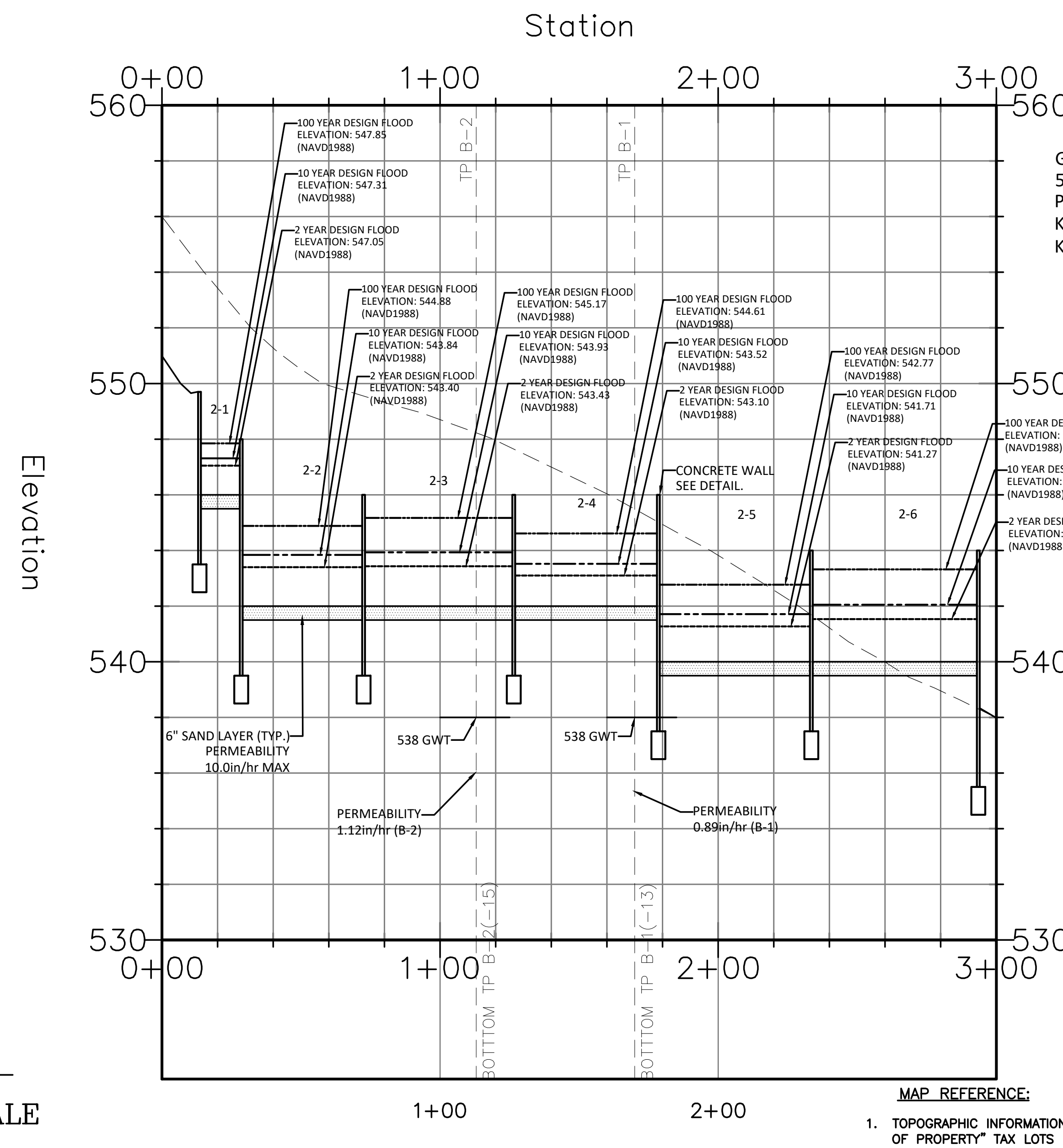
(IN FEET)
1 inch = 50 ft.

VERTICAL

GRAPHIC SCALE

(IN FEET)
1 inch = 5 ft.

BASIN #2 PROFILE



GROUNDWATER ENCOUNTERED AT
538.0 FOR BOTH TEST PITS
PERMEABILITY RATE
K = 1.12 IN/HR (K2) @ 6'
K = 0.89 IN/HR (K2) @ 7'

BASIN #2 - KUZIK ROAD

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PAUL W. ANDERSON
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LIC. No. 43410
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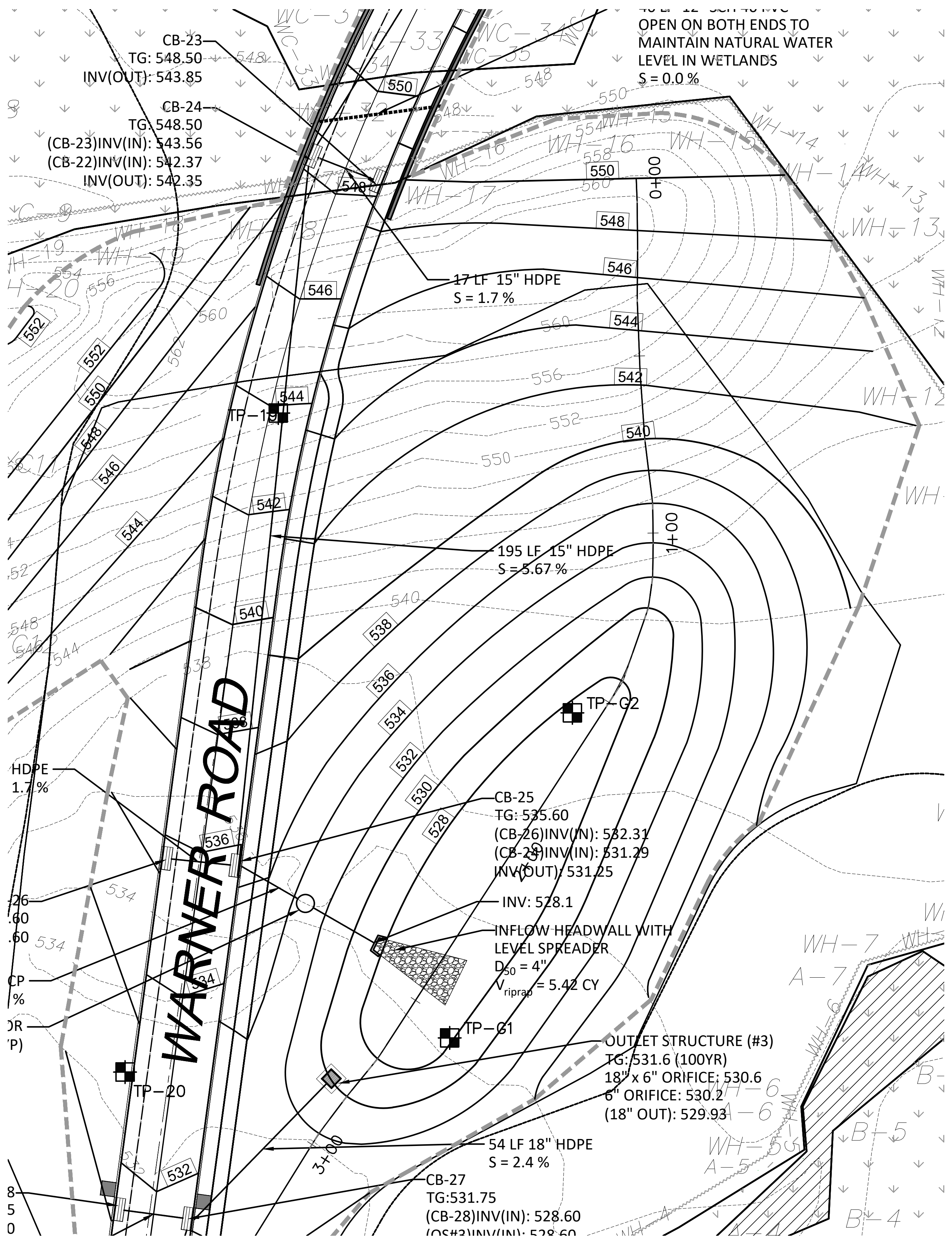
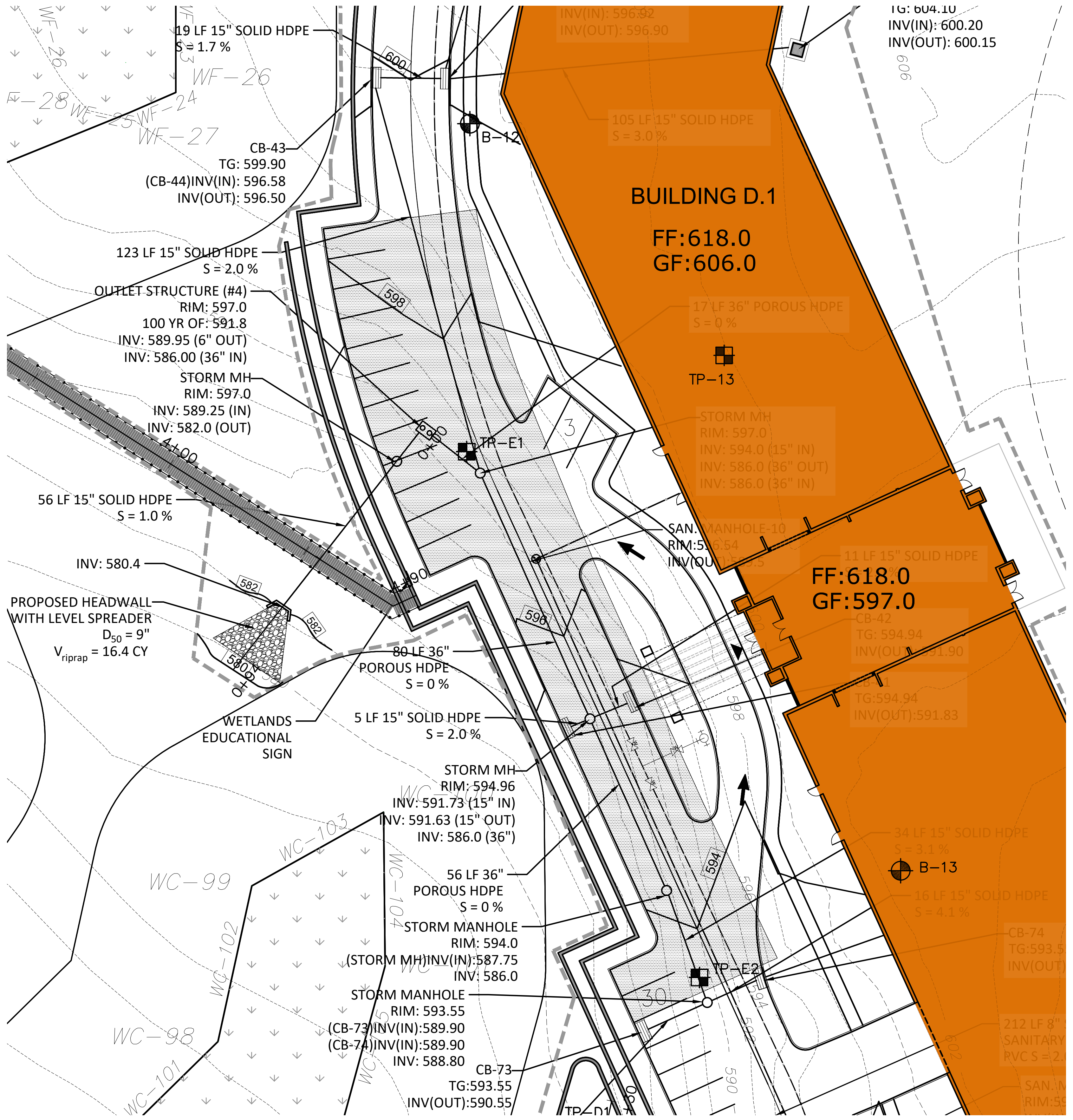
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

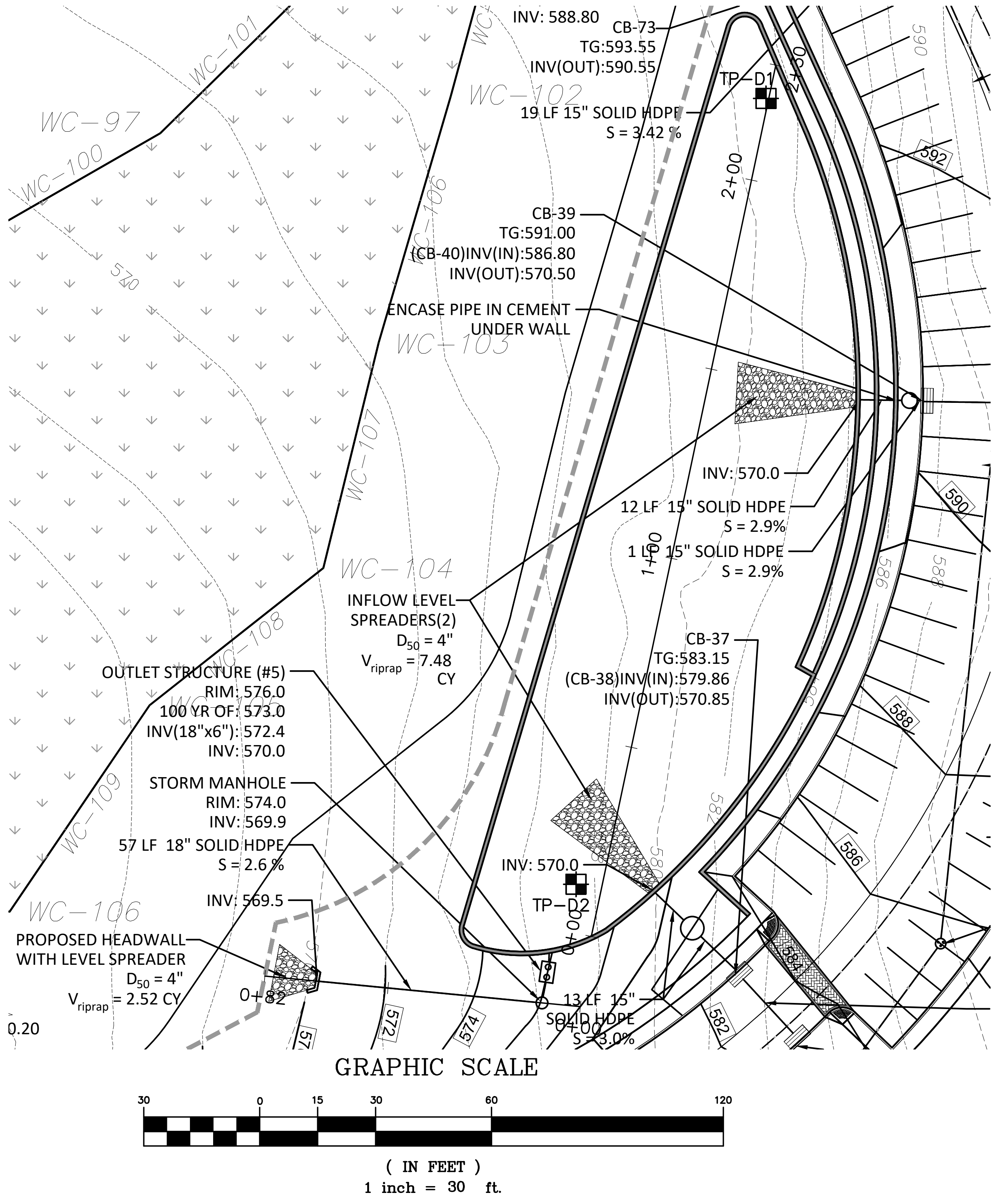
BASIN CROSS SECTIONS-A

SP-60

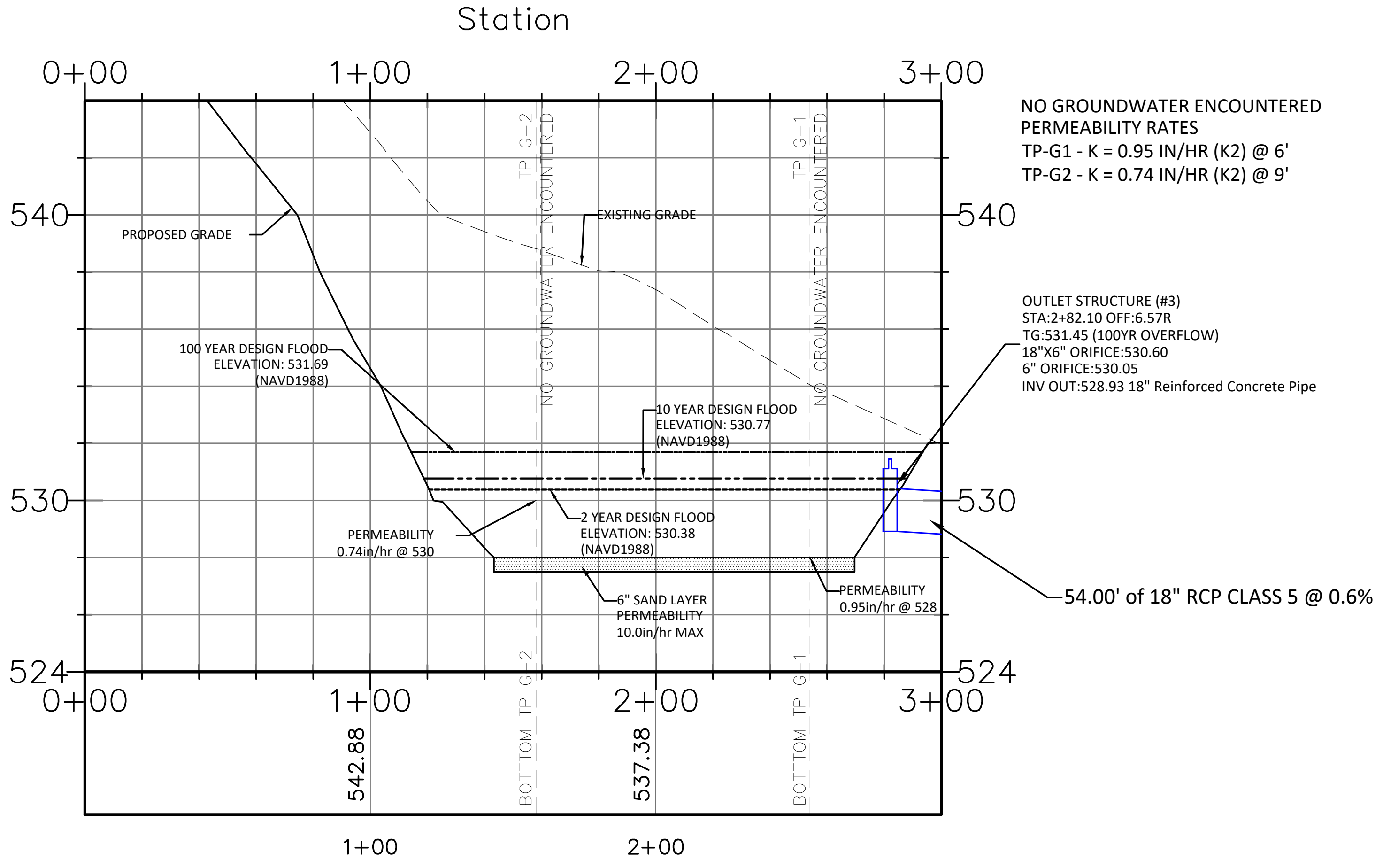
SHEET 60 OF 66


WARNER ROAD
CB-23 TG: 548.50 INV(OUT): 543.85
CB-24 TG: 548.50 (CB-23)INV(IN): 543.56 (CB-22)INV(IN): 542.37 INV(OUT): 542.35
OPEN ON BOTH ENDS TO MAINTAIN NATURAL WATER LEVEL IN WETLANDS S = 0.0 %
17 LF 15" HDPE S = 1.7 %
195 LF 15" HDPE S = 3.67 %
TP-18
TP-G2
TP-G1
TP-20
CB-25 TG: 535.60 (CB-26)INV(IN): 532.31 (CB-28)INV(IN): 531.29 INV(OUT): 531.25
INV: 528.1
INFLOW HEADWALL WITH LEVEL SPREADER D_{50} = 4" V_{riprap} = 5.42 CY
OUTLET STRUCTURE (#3) TG: 531.6 (100YR) 18" x 6" ORIFICE: 530.6 6" ORIFICE: 530.2 (18" OUT): 529.93
54 LF 18" HDPE S = 2.4 %
CB-27 TG:531.75 (CB-28)INV(IN): 528.60
0+00
1+00
2+00
3+00


BUILDING D.1
FF:618.0
GF:606.0
FF:618.0
GF:597.0
19 LF 15" SOLID HDPE S = 1.7 %
CB-43 TG: 599.90 (CB-44)INV(IN): 596.58 INV(OUT): 596.50
123 LF 15" SOLID HDPE S = 2.0 %
OUTLET STRUCTURE (#4) RIM: 597.0 100 YR OF: 591.8 INV: 589.95 (6" OUT) INV: 586.00 (36" IN)
STORM MH RIM: 597.0 INV: 589.25 (IN) INV: 582.0 (OUT)
56 LF 15" SOLID HDPE S = 1.0 %
INV: 580.4
PROPOSED HEADWALL WITH LEVEL SPREADER D_{50} = 9" V_{riprap} = 16.4 CY
80 LF 36" POROUS HDPE S = 0 %
5 LF 15" SOLID HDPE S = 2.0 %
WETLANDS EDUCATIONAL SIGN
STORM MH RIM: 594.96 INV: 591.73 (15" IN) INV: 591.63 (15" OUT) INV: 586.0 (36")
56 LF 36" POROUS HDPE S = 0 %
STORM MANHOLE RIM: 594.0 (STORM MH)INV(IN):587.75 INV: 586.0
STORM MANHOLE RIM: 593.55 (CB-73)INV(IN):589.90 (CB-74)INV(IN):589.90 INV: 588.80
CB-73 TG:593.55 INV(OUT):590.55
TG: 604.10 INV(IN): 600.20 INV(OUT): 600.15
B-12
B-13
TP-13
TP-E1
TP-E2
TP-D1


INV: 588.80
CB-73 TG:593.55 INV(OUT):590.55
19 LF 15" SOLID HDPE S = 3.42 %
TP-D1
CB-39 TG:591.00 (CB-40)INV(IN):586.80 INV(OUT):570.50
ENCASE PIPE IN CEMENT UNDER WALL
INV: 570.0
12 LF 15" SOLID HDPE S = 2.9 %
1 LF 15" SOLID HDPE S = 2.9 %
INFLOW LEVEL SPREADERS(2) D_{50} = 4" V_{riprap} = 7.48 CY
CB-37 TG:583.15 (CB-38)INV(IN):579.86 INV(OUT):570.85
OUTLET STRUCTURE (#5) RIM: 576.0 100 YR OF: 573.0 INV(18"x6"): 572.4 INV: 570.0
STORM MANHOLE RIM: 574.0 INV: 569.9
57 LF 18" SOLID HDPE S = 2.6 %
INV: 569.5
INV: 570.0
TP-D2
PROPOSED HEADWALL WITH LEVEL SPREADER D_{50} = 4" V_{riprap} = 2.52 CY
13 LF 15" SOLID HDPE S = 3.0%
0+00
1+00
2+00
GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

WARNER BASIN PROFILE

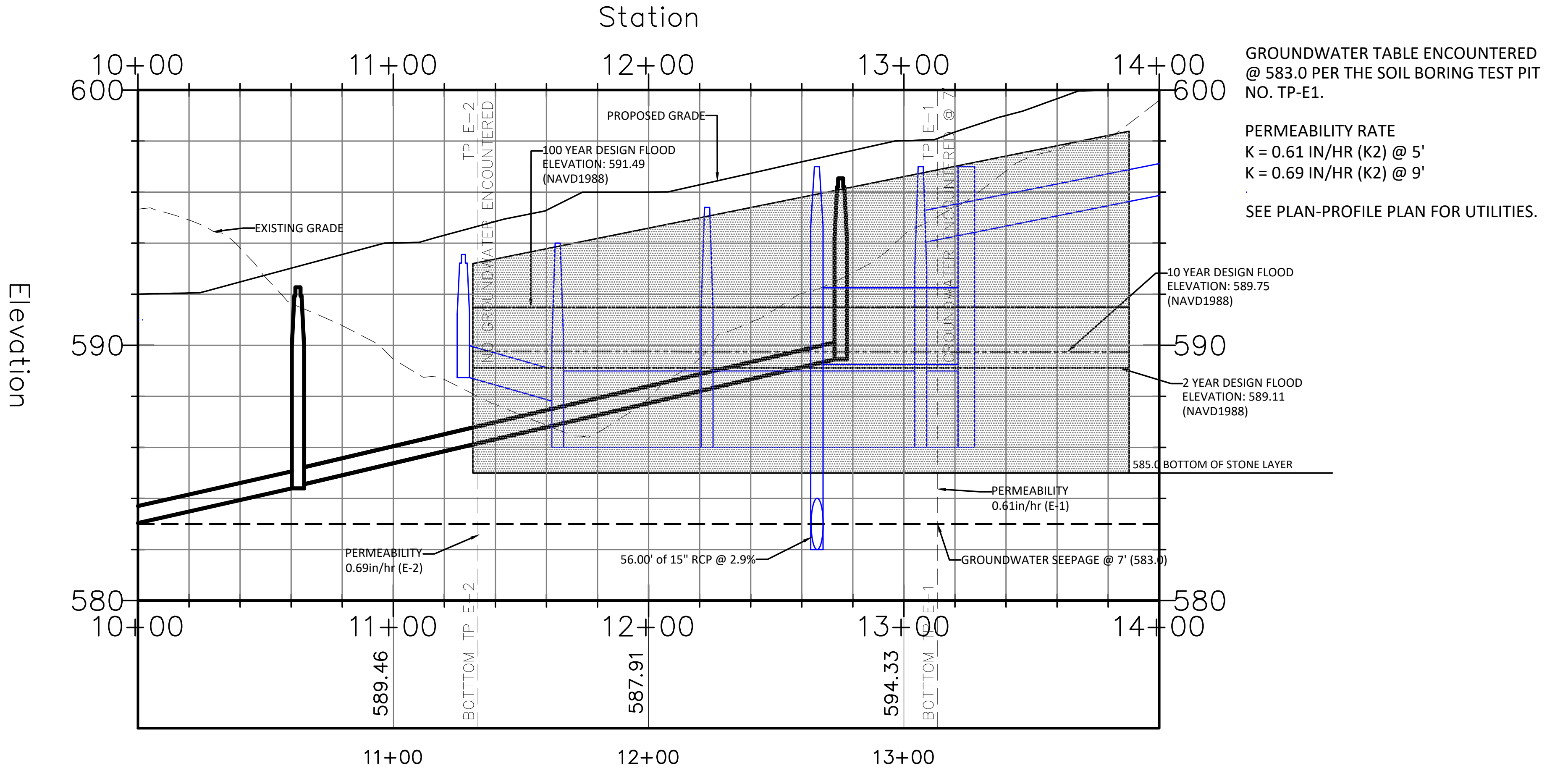

Station
0+00
1+00
2+00
3+00
540
530
524
Elevation
PROPOSED GRADE
EXISTING GRADE
100 YEAR DESIGN FLOOD ELEVATION: 531.69 (NAVD1988)
10 YEAR DESIGN FLOOD ELEVATION: 530.77 (NAVD1988)
2 YEAR DESIGN FLOOD ELEVATION: 530.38 (NAVD1988)
PERMEABILITY 0.74in/hr @ 530
6" SAND LAYER PERMEABILITY 10.0in/hr MAX
PERMEABILITY 0.95in/hr @ 528
TP G-2 NO GROUNDWATER ENCOUNTERED
TP G-1 NO GROUNDWATER ENCOUNTERED
BOTTOM TP G-2
BOTTOM TP G-1
542.88
537.38
54.00' of 18" RCP CLASS 5 @ 0.6%

NO GROUNDWATER ENCOUNTERED
PERMEABILITY RATES
TP-G1 - K = 0.95 IN/HR (K2) @ 6'
TP-G2 - K = 0.74 IN/HR (K2) @ 9'

OUTLET STRUCTURE (#3)
STA:2+82.10 OFF:6.57R
TG:531.45 (100YR OVERFLOW)
18"X6" ORIFICE:530.60
6" ORIFICE:530.05
INV OUT:528.93 18" Reinforced Concrete Pipe

BASIN #3 - WARNER ROAD

ROAD D PROFILE


Station
10+00
11+00
12+00
13+00
14+00
600
590
580
Elevation
PROPOSED GRADE
EXISTING GRADE
100 YEAR DESIGN FLOOD ELEVATION: 591.49 (NAVD1988)
10 YEAR DESIGN FLOOD ELEVATION: 589.75 (NAVD1988)
2 YEAR DESIGN FLOOD ELEVATION: 589.11 (NAVD1988)
585.0 BOTTOM OF STONE LAYER
PERMEABILITY 0.61in/hr (E-1)
PERMEABILITY 0.69in/hr (E-2)
56.00' of 15" RCP @ 2.9%
GROUNDWATER SEEPAGE @ 7' (583.0)
TP E-2 NO GROUNDWATER ENCOUNTERED
TP E-1 GROUNDWATER ENCOUNTERED @ 7
BOTTOM TP E-2
BOTTOM TP E-1
589.46
587.91
594.33

GROUNDWATER TABLE ENCOUNTERED @ 583.0 PER THE SOIL BORING TEST PIT NO. TP-E1.

PERMEABILITY RATE
K = 0.61 IN/HR (K2) @ 5'
K = 0.69 IN/HR (K2) @ 9'

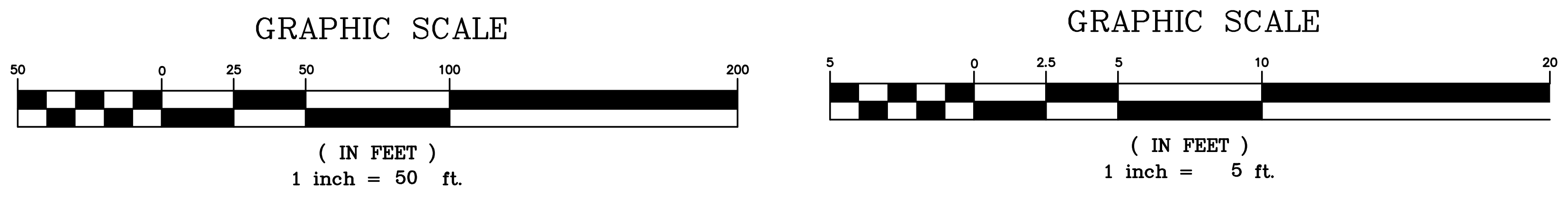
SEE PLAN-PROFILE PLAN FOR UTILITIES.

ROAD D POROUS PAVEMENT

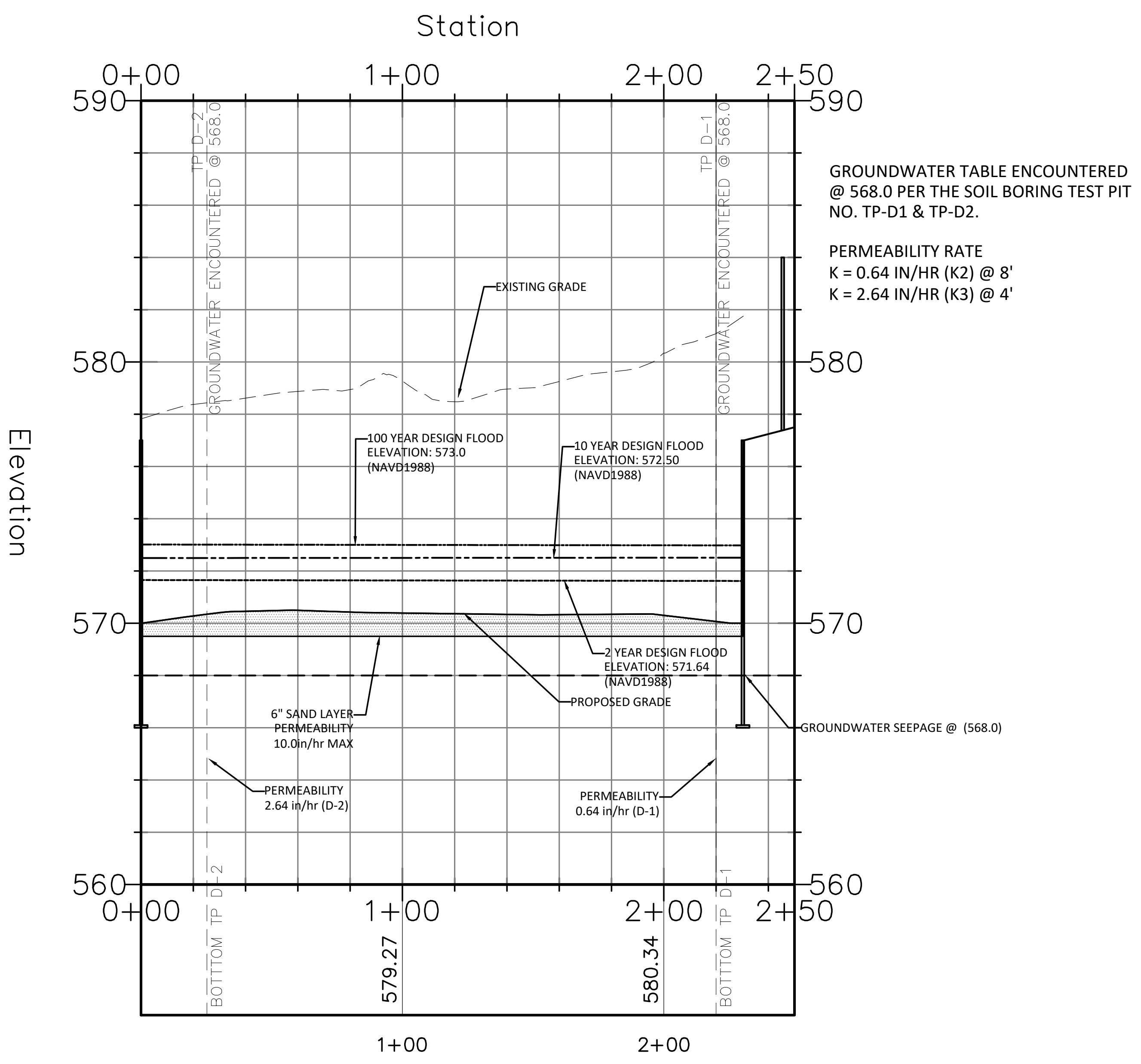
BASIN 4

HORIZONTAL

VERTICAL



ROAD D – BASIN PROFILE


Station
0+00
1+00
2+00
2+50
590
580
570
560
Elevation
EXISTING GRADE
100 YEAR DESIGN FLOOD ELEVATION: 573.0 (NAVD1988)
10 YEAR DESIGN FLOOD ELEVATION: 572.50 (NAVD1988)
2 YEAR DESIGN FLOOD ELEVATION: 571.64 (NAVD1988)
PROPOSED GRADE
6" SAND LAYER PERMEABILITY 10.0in/hr MAX
PERMEABILITY 2.64 in/hr (D-2)
PERMEABILITY 0.64 in/hr (D-1)
GROUNDWATER SEEPAGE @ (568.0)
TP D-2 GROUNDWATER ENCOUNTERED @ 568.0
TP D-1 GROUNDWATER ENCOUNTERED @ 568.0
BOTTOM TP D-2
BOTTOM TP D-1
579.27
580.34

GROUNDWATER TABLE ENCOUNTERED @ 568.0 PER THE SOIL BORING TEST PIT NO. TP-D1 & TP-D2.

PERMEABILITY RATE
K = 0.64 IN/HR (K2) @ 8'
K = 2.64 IN/HR (K3) @ 4'

ROAD D BASIN

BASIN 5

MAP REFERENCE:

1. TOPOGRAPHIC INFORMATION BASED ON SURVEY ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY" TAX LOTS 1, 2.04, & 3 – BLOCK 161 TAX LOT 3.01 – BLOCK 161, 1701–1711 ROUTE 10, TOWNSHIP OF MORRIS PLAINS, MORRIS COUNTY, NEW JERSEY" DATED 1/15/16 AND LAST REVISED 1–20–20 PREPARED BY LAKELAND SURVEYING, ROCKAWAY NJ. SIGNED BY MARC J. CIFONE, PLS
2. VERTICAL DATUM IS NAVD 1988
3. NGVD29 TO NGVD1988 = + 1.03 FT
4. FRESHWATERS WETLANDS/BOUNDARY LINE AS VERIFIED BY NJDEP FILE No. 1423–07–0001.1, FWWW190001

811
Know what's below.
Call before you dig.

NEW JERSEY STATE LAW REQUIRES NOTIFICATION 3 BUSINESS DAYS PRIOR TO ANY LAND DISTURBANCE. CONTRACTOR IS RESPONSIBLE FOR CALLING 811 OR 1–800–272–1000 FOR UTILITY MARKOUTS. UTILITY INFORMATION SHOWN IS PROVIDED BY THE SURVEYOR AND IS CURRENT AT THE TIME OF THE SURVEY. ANDERSON CONSULTING SERVICES IS NOT RESPONSIBLE FOR THE ACCURACY OF THE DATA.

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410
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10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS
Revisions	

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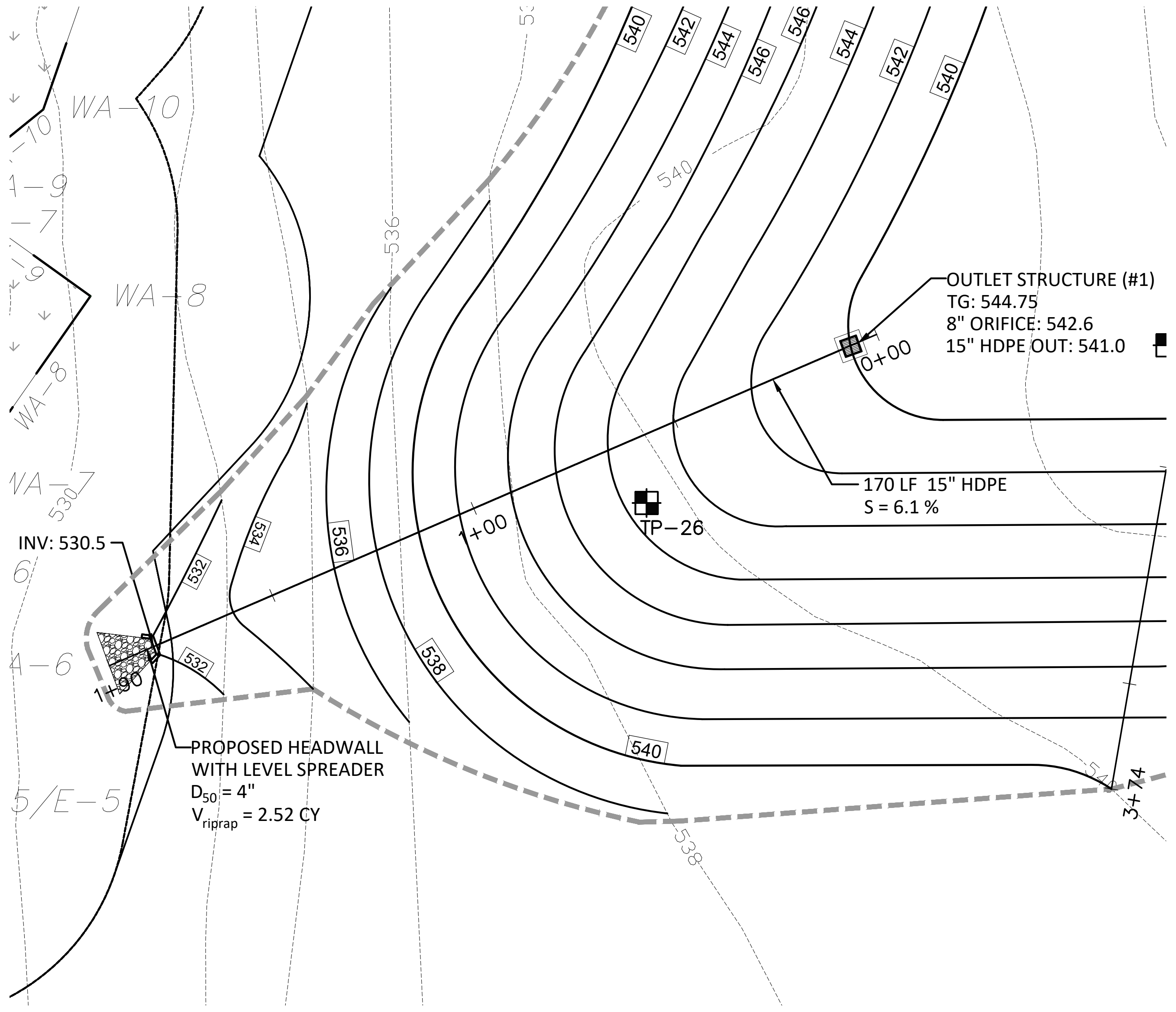
Scale	AS SHOWN

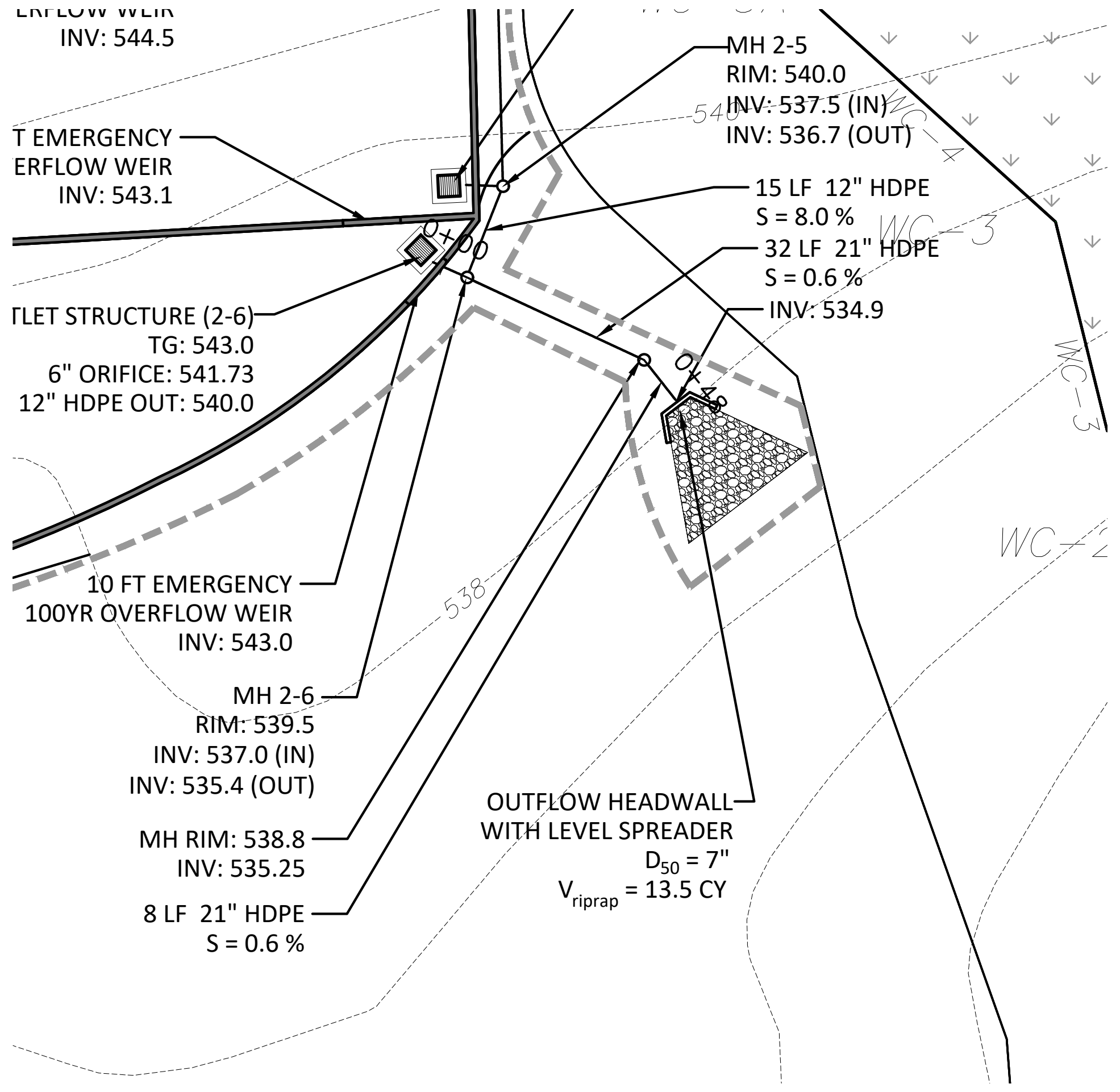
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

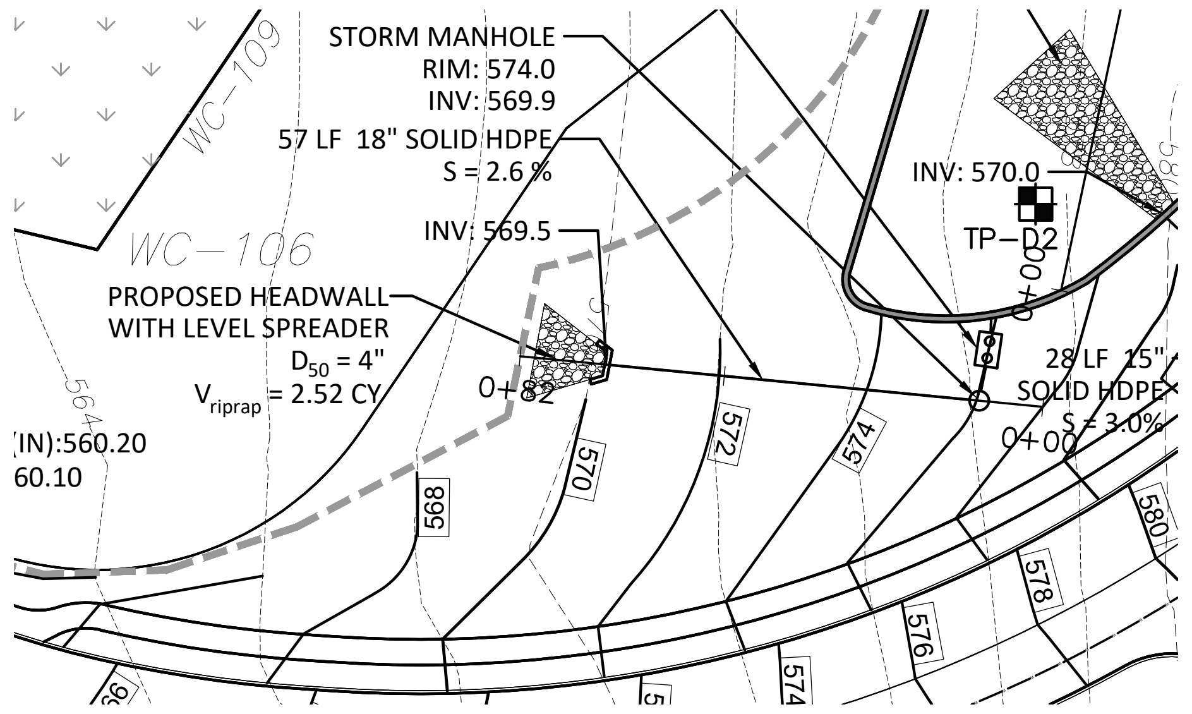
BASIN CROSS SECTIONS-B

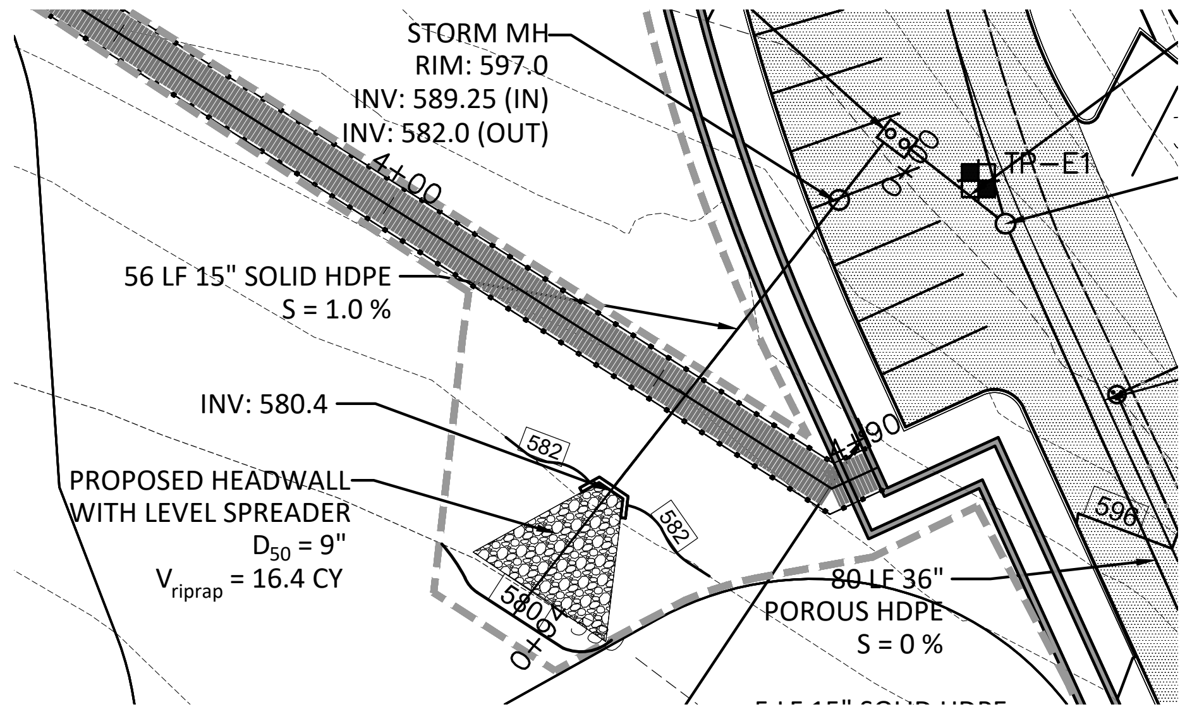
SP-61

SHEET 61 OF 66





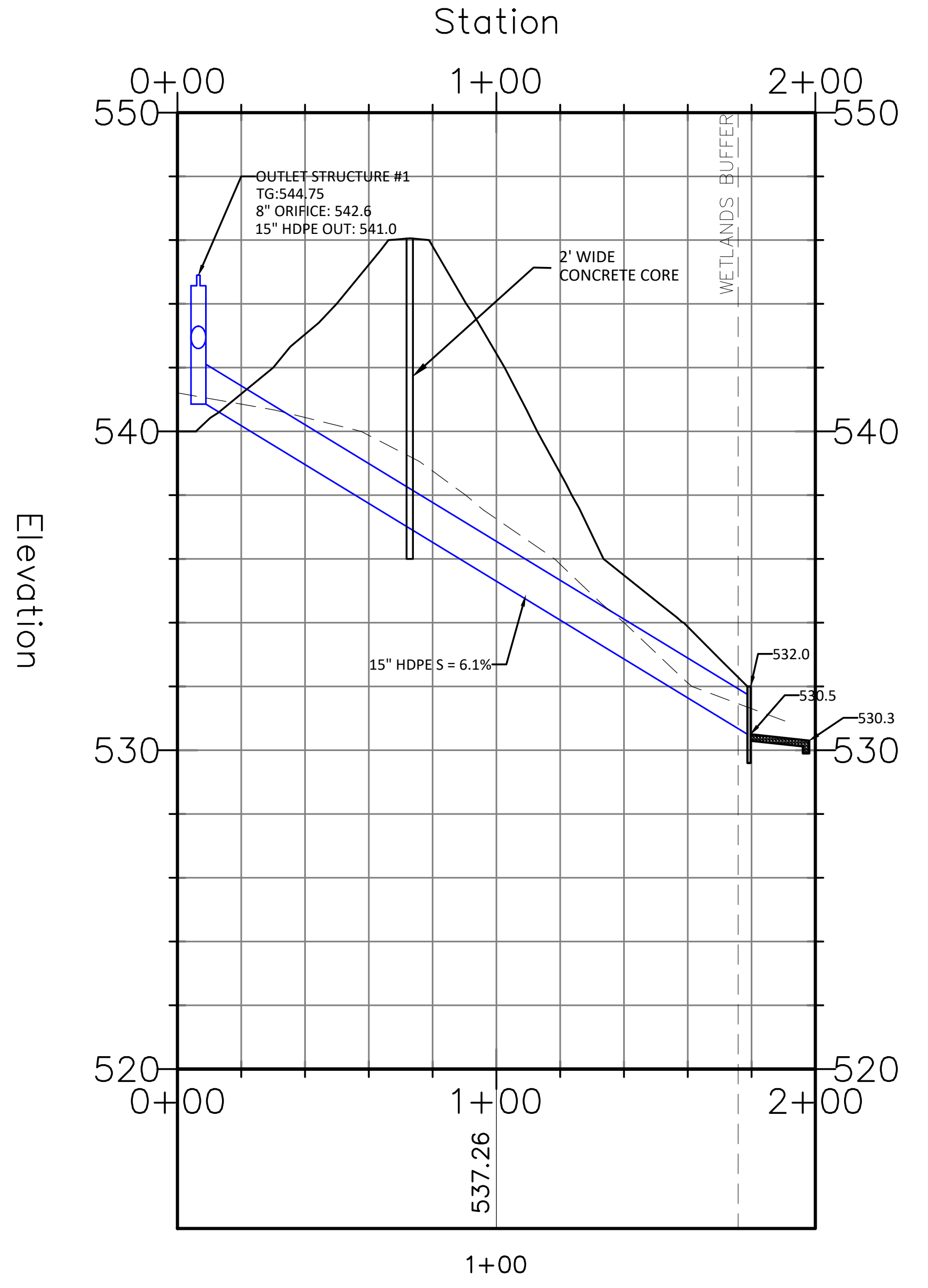




GRAPHIC SCALE

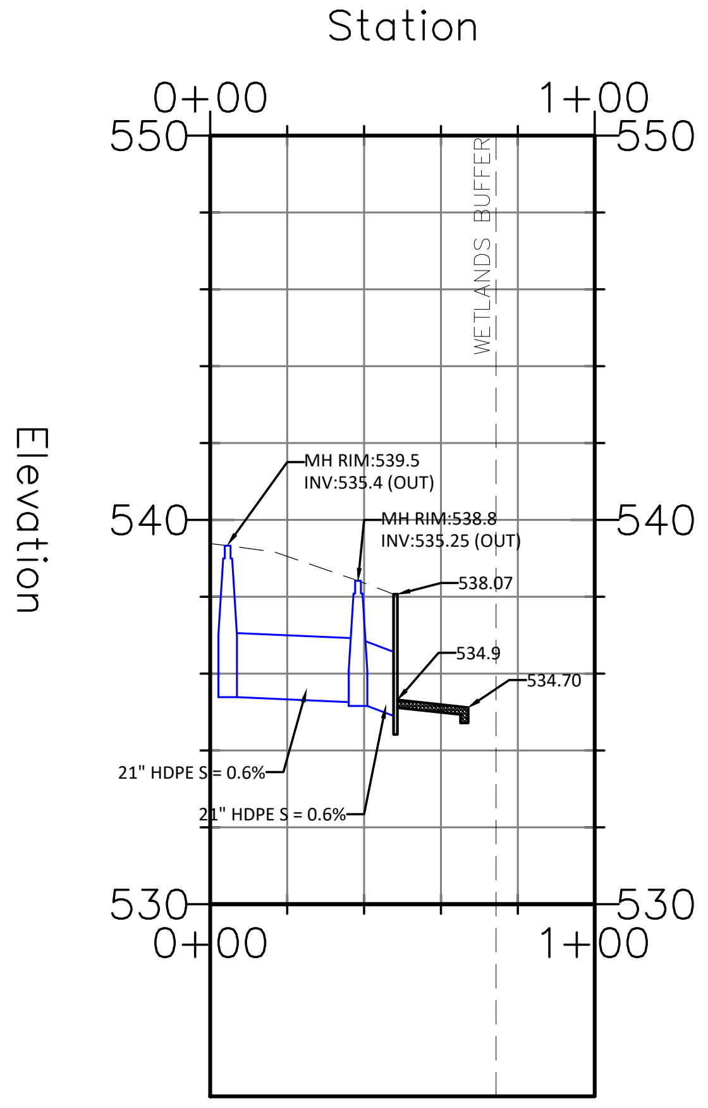
(IN FEET)
1 inch = 30 ft.

BASIN #1–OUTLET PROFILE



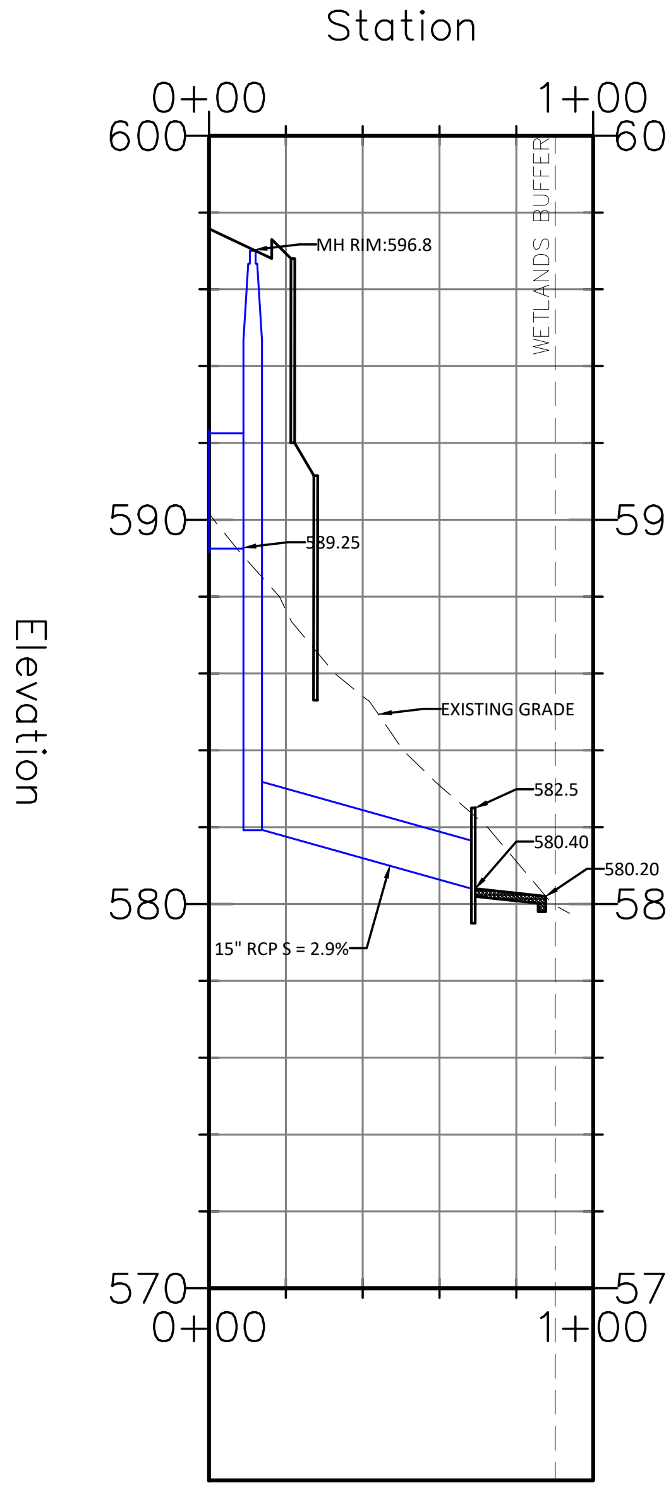
BASIN #1 - DISCHARGE PROFILE

BASIN #2–OUTLET PROFILE



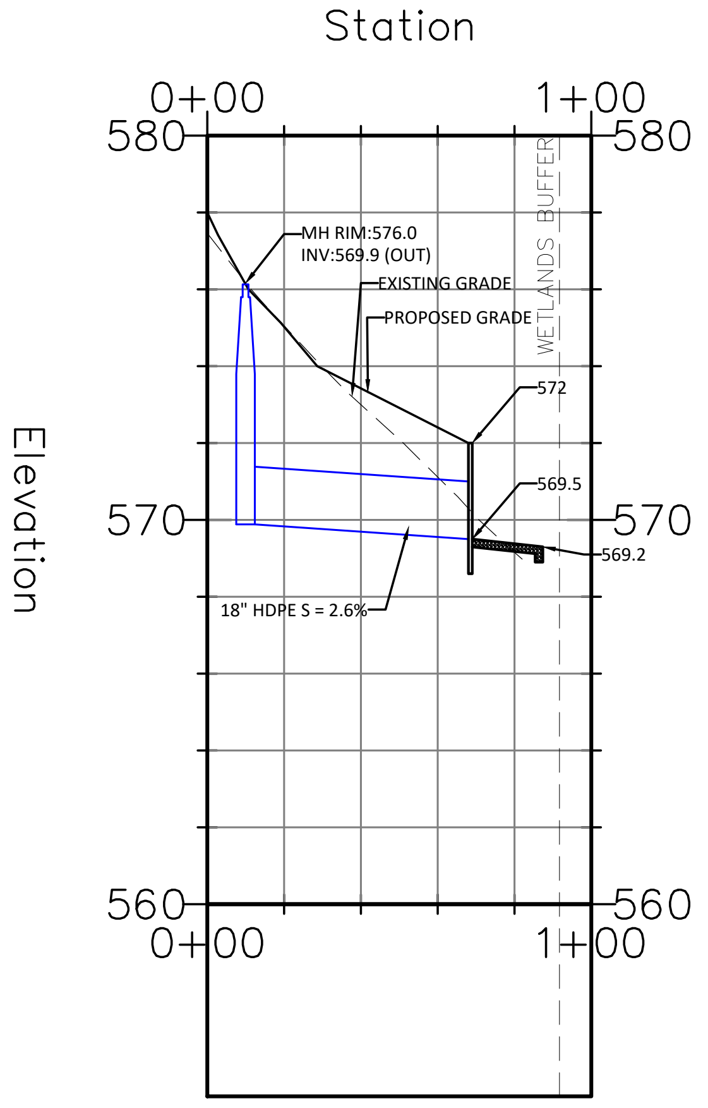
BASIN #2 - DISCHARGE PROFILE

BASIN #4–OUTLET PROFILE



BASIN #4 - DISCHARGE PROFILE

BASIN #5–OUTLET PROFILE



BASIN #5 - DISCHARGE PROFILE

HORIZONTAL

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

VERTICAL

GRAPHIC SCALE

(IN FEET)
1 inch = 5 ft.

MAP REFERENCE:

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811
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www.pwanderson-cs.com

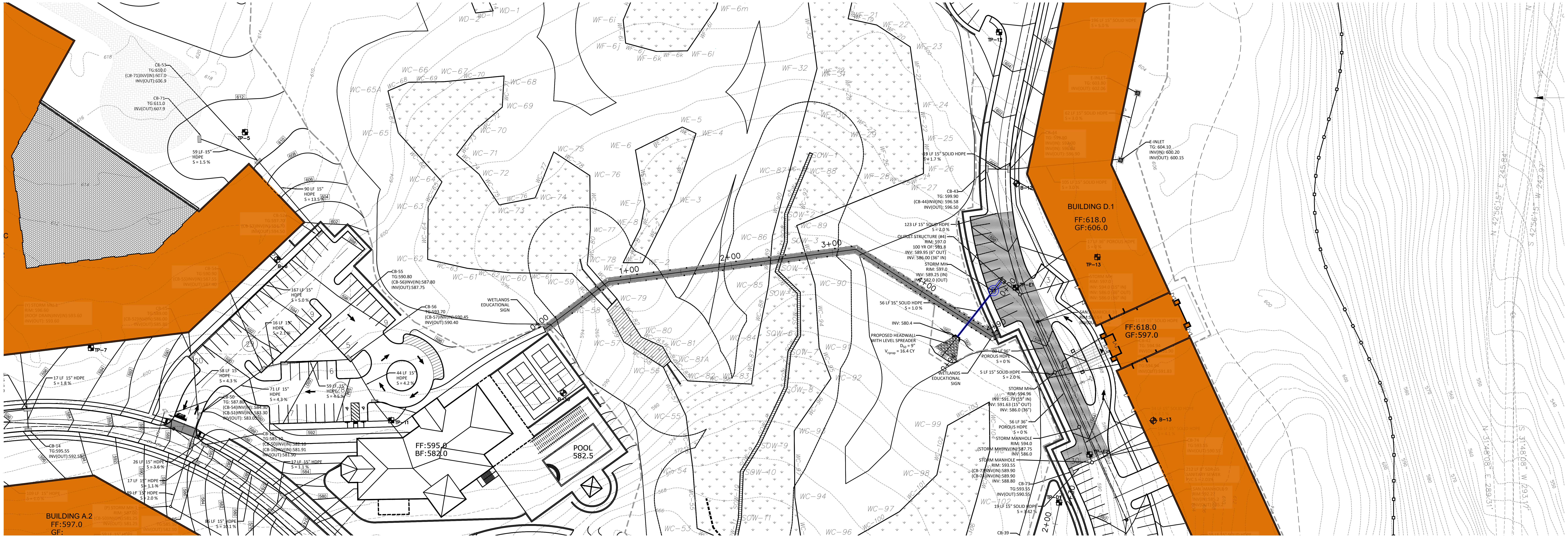
Proj. No.	WEMF2022
Date	9–23–22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

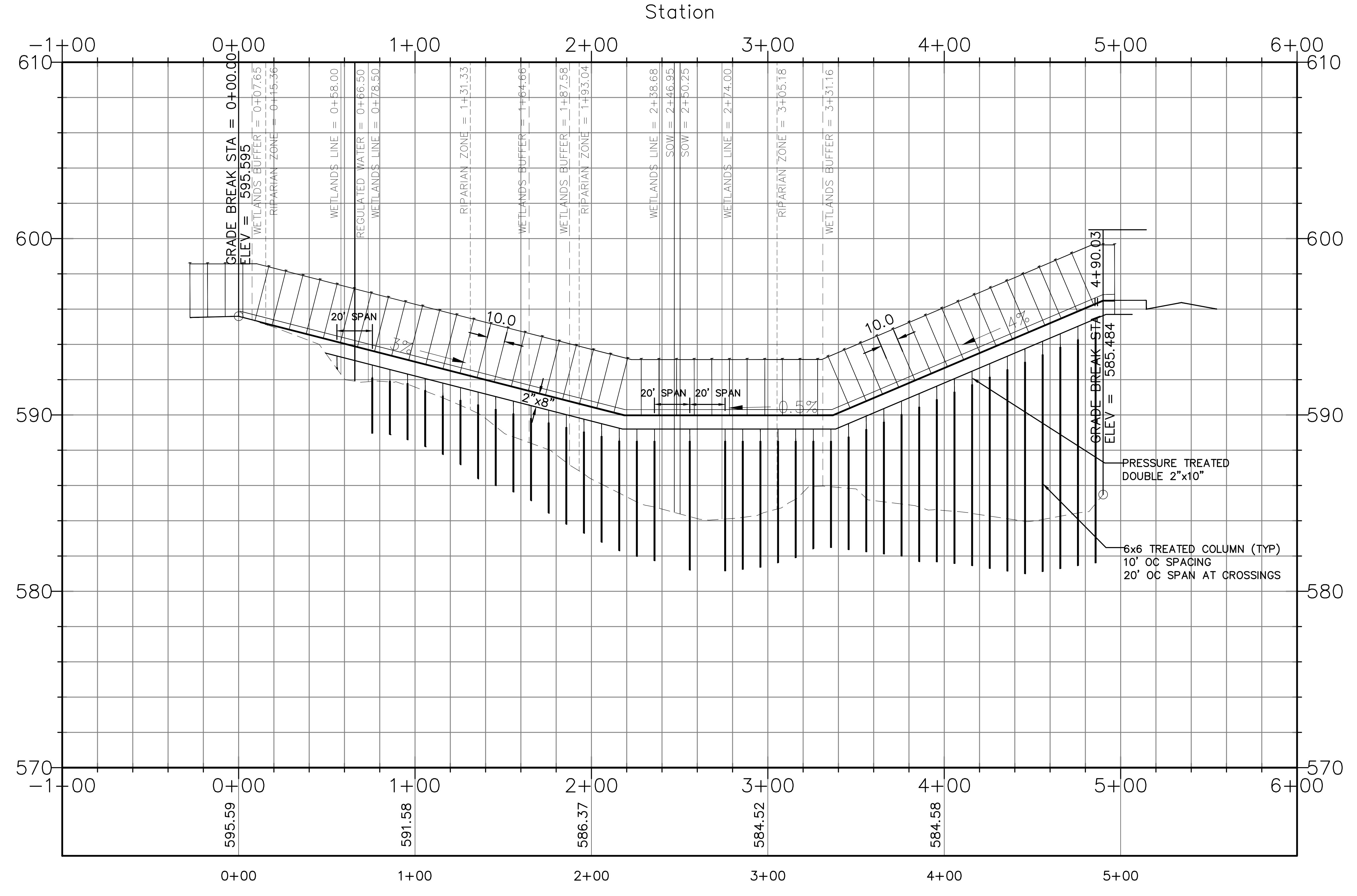
BASIN DISCHARGE PROFILES

SP-62

SHEET 62 OF 66



BOARDWALK PROFILE



HORIZONTAL

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

VERTICAL

GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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Proj. No.	WEMF2022
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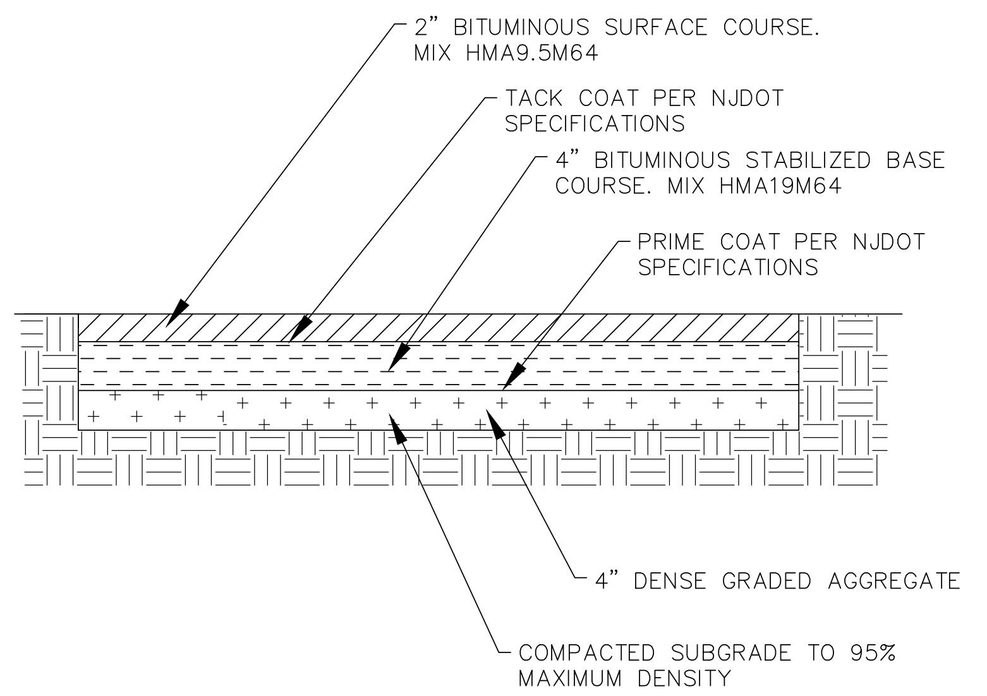
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

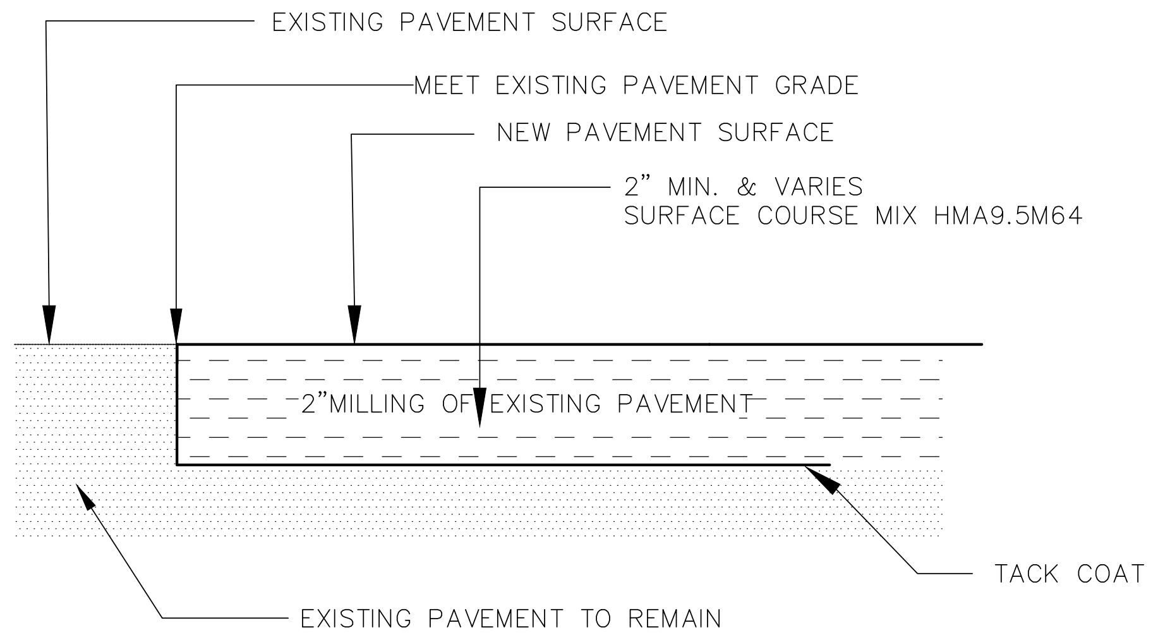
BOARDWALK PROFILE

SP-63


2" BITUMINOUS SURFACE COURSE. MIX HMA9.5M64
TACK COAT PER NJDOT SPECIFICATIONS
4" BITUMINOUS STABILIZED BASE COURSE. MIX HMA19M64
PRIME COAT PER NJDOT SPECIFICATIONS
4" DENSE GRADED AGGREGATE
COMPACTED SUBGRADE TO 95% MAXIMUM DENSITY

1 FULL DEPTH PAVEMENT (SITE)

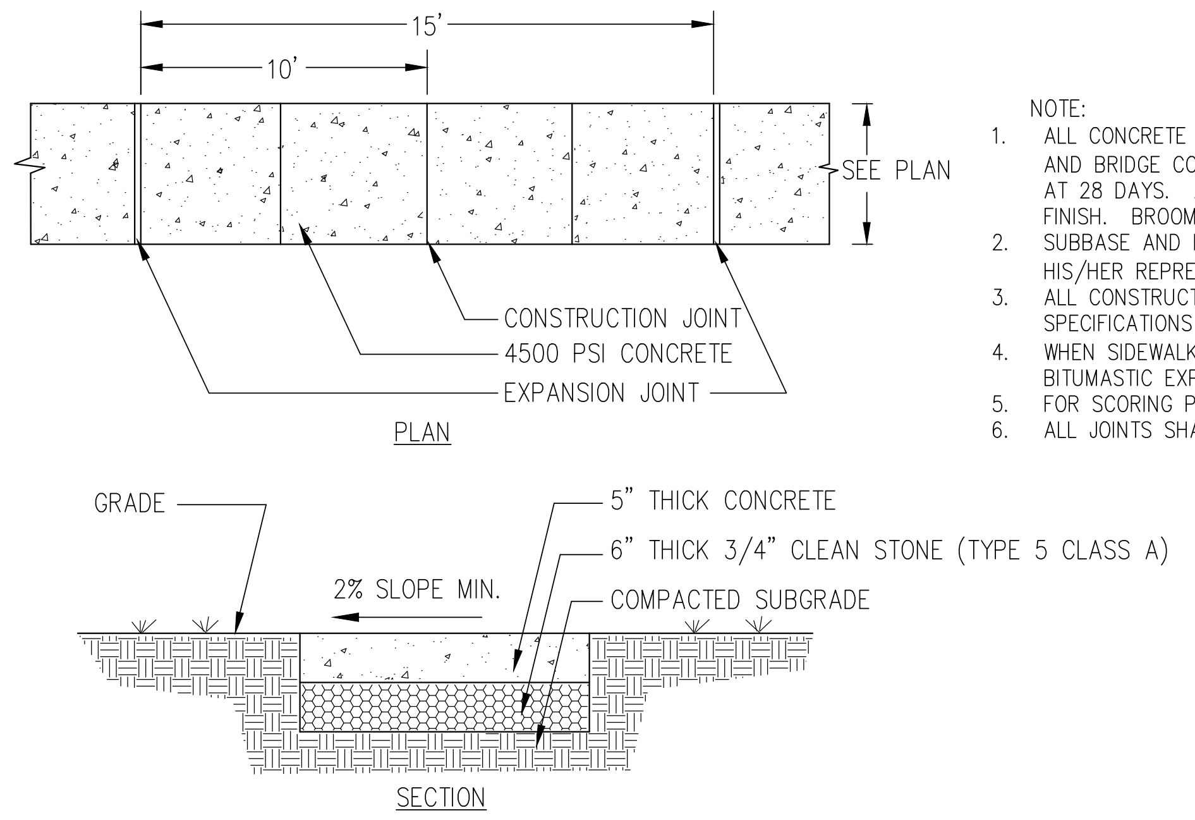
SCALE: NTS


EXISTING PAVEMENT SURFACE
MEET EXISTING PAVEMENT GRADE
NEW PAVEMENT SURFACE
2" MIN. & VARIES SURFACE COURSE MIX HMA9.5M64
2"MILLING OF EXISTING PAVEMENT
TACK COAT
EXISTING PAVEMENT TO REMAIN

ASPHALT ROADWAY REPAIR SHALL CONFORM TO MORRIS PLAINS STANDARD DETAILS AND SPECIFICATIONS

2 ASPHALT MILLING/RESURFACING

SCALE: NTS

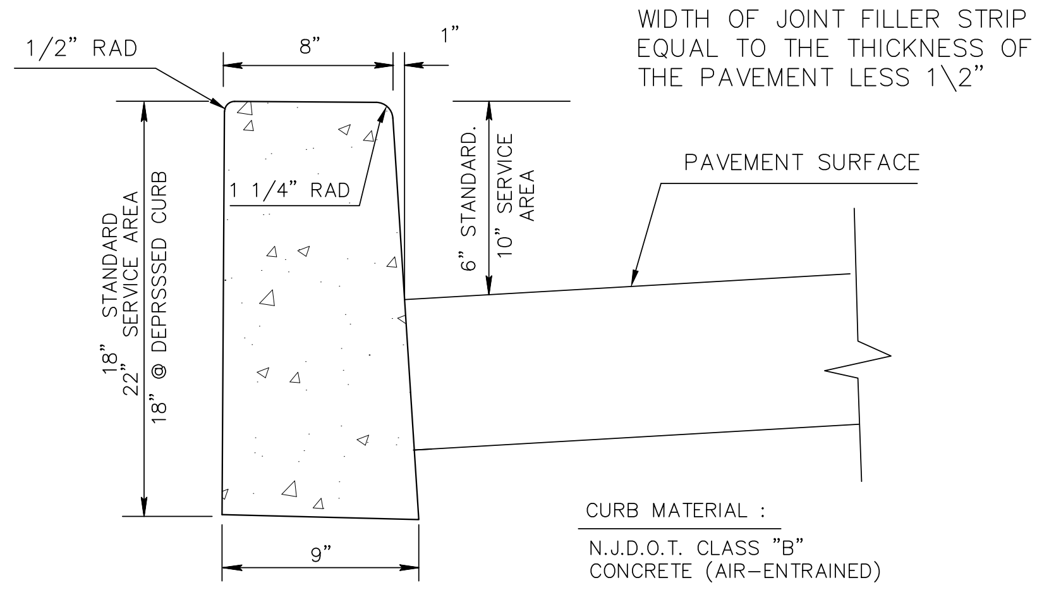


NOTE:
1. ALL CONCRETE SHALL CONFORM TO 2001 STANDARD N.J.D.O.T. SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 914 CLASS "B", AIR-ENTRAINED, 4500 P.S.I. MINIMUM AT 28 DAYS. ALL CONCRETE WORK SHALL HAVE A WOOD FLOAT AND TRANSVERCE BROOM FINISH. BROOMING SHALL BE DONE BEFORE INITIAL SET USING A STEEL OR BARN BROOM.
2. SUBBASE AND FORMWORK SHALL BE FIRM AND APPROVED BY THE CITY ENGINEER OR HIS/HER REPRESENTITIVE PRIOR TO POURING.
3. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO NJDOT 2001 STANDARDS, SPECIFICATIONS AND INSPECTIONS.
4. WHEN SIDEWALK ABUTS CURB OR SIDEWALK, A 1/2" THICK NON-EXTRUDABLE, FIBROUS BITUMASTIC EXPANSION JOINT IS REQUIRED.
5. FOR SCORING PATTERN, SIDEWALK SHALL BE DIVIDED INTO TWO LONGITUDINAL SECTIONS.
6. ALL JOINTS SHALL SAW CUT. NO TOOLED JOINTS ARE PERMITTED.

3 CONCRETE SIDEWALK

SCALE: NTS

SCALE: NTS



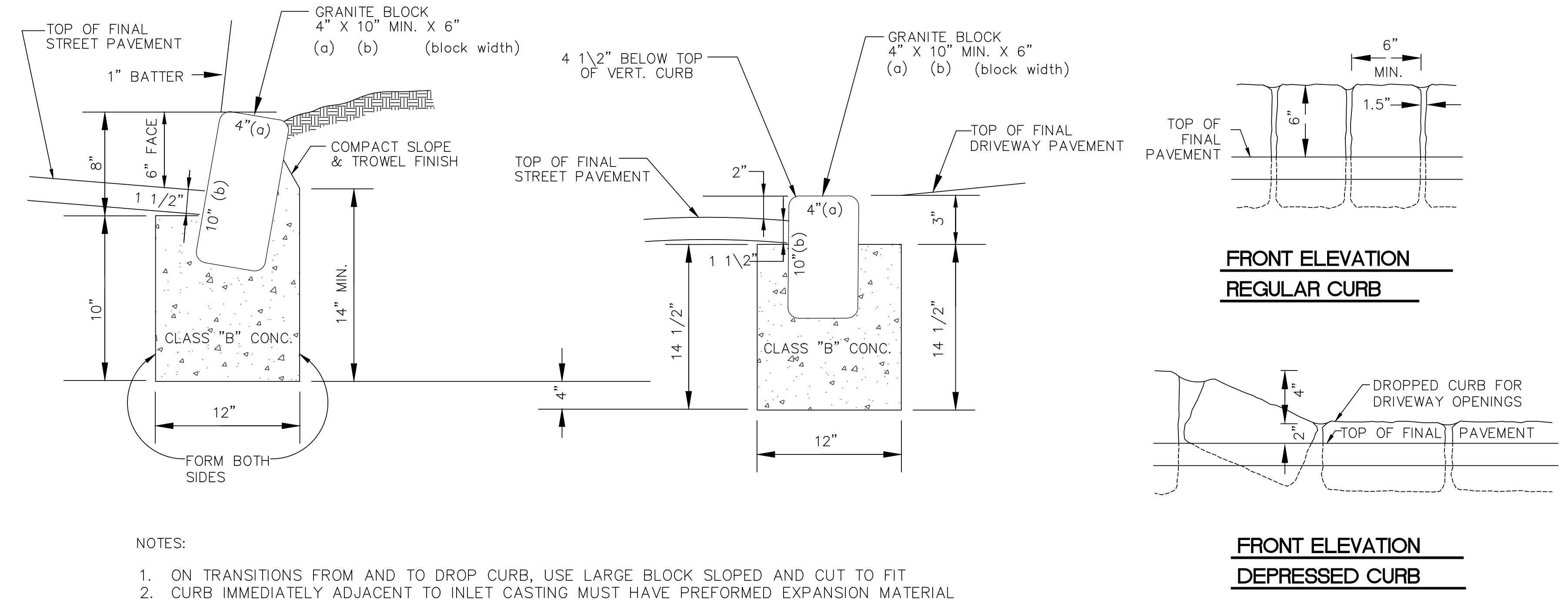
NOTE:

WIDTH OF JOINT FILLER STRIP EQUAL TO THE THICKNESS OF THE PAVEMENT LESS 1\2"

NOTE:
1. TRANSVERSE JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 20'-0" APART AND SHALL BE FILLED WITH PREFORMED, BITUMINOUS-IMPREGNATED FIBER JOINT FILLER, COMPLYING WITH THE REQUIREMENTS OF A.A.S.H.T.O. SPEC. M-213, RECESSED 1/4" IN FROM FRONT FACE AND TOP OF CURB
2. USE 6" CURB REVEAL FOR ALL CURBING EXCEPT ALONG SERVICE DRIVE ADJACENT TO GUIDE RAIL WHERE 10" CURB REVEAL IS TO BE PROVIDED

4 CONCRETE VERTICAL CURB

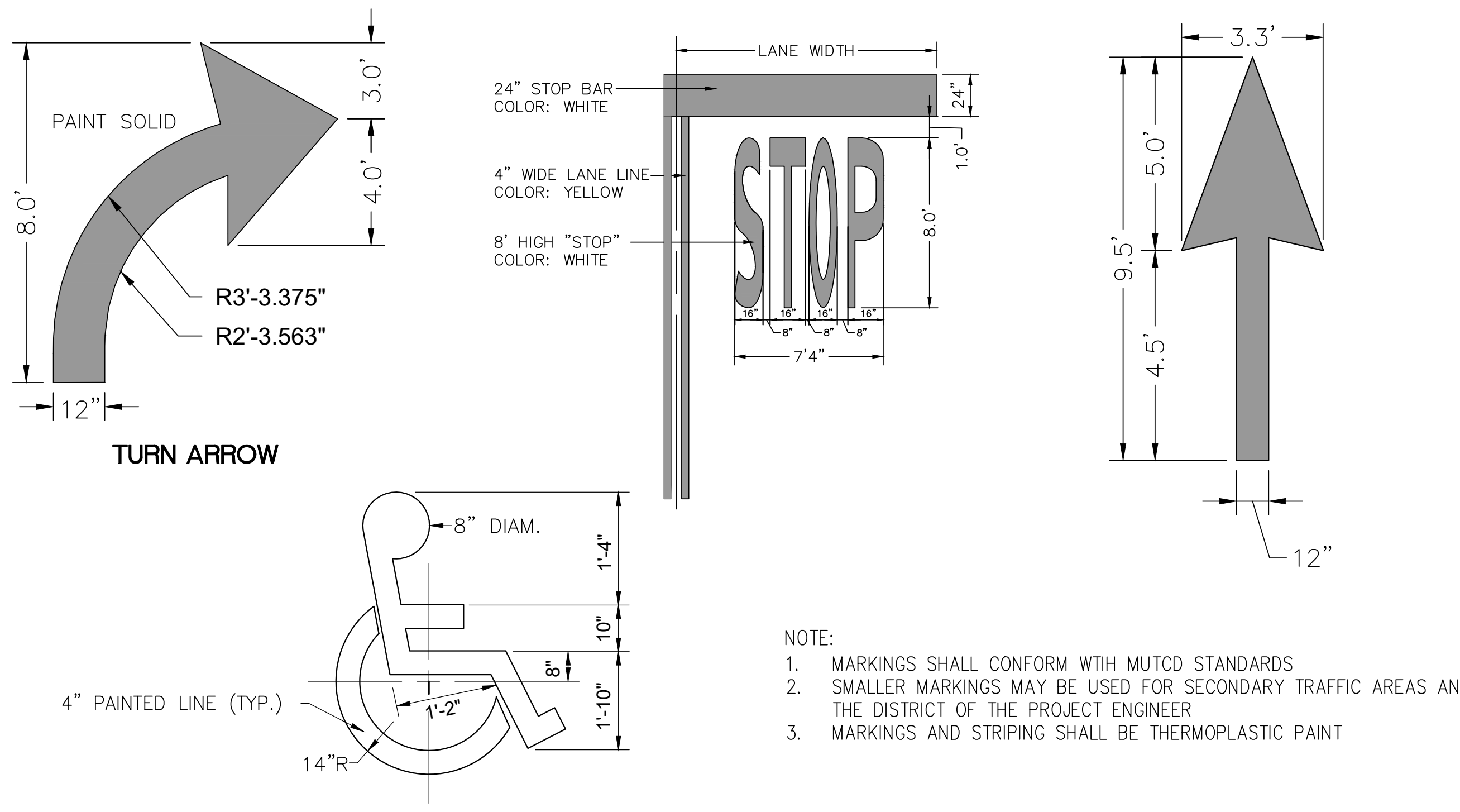
SCALE: NTS



NOTES:
1. ON TRANSITIONS FROM AND TO DROP CURB, USE LARGE BLOCK SLOPED AND CUT TO FIT
2. CURB IMMEDIATELY ADJACENT TO INLET CASTING MUST HAVE PREFORMED EXPANSION MATERIAL
3. CONCRETE JOINTS – 2 SAND, 1 CEMENT.

5 BELGIAN BLOCK CURB

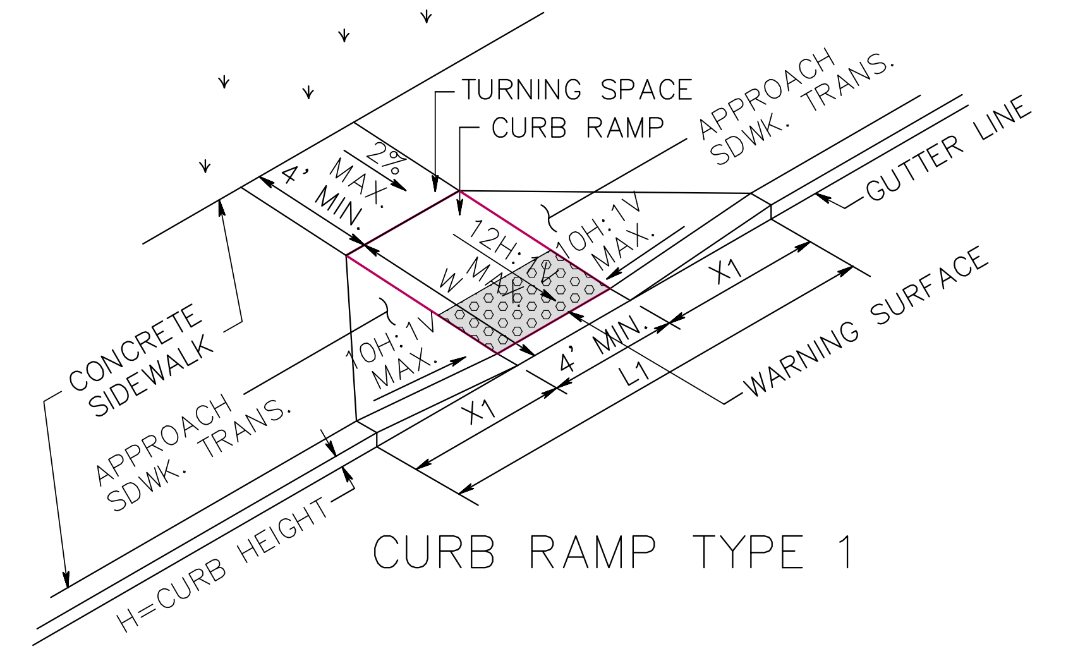
SCALE: NTS



NOTE:
1. MARKINGS SHALL CONFORM WTIH MUTCD STANDARDS
2. SMALLER MARKINGS MAY BE USED FOR SECONDARY TRAFFIC AREAS AND PARKING AISLES THE DISTRICT OF THE PROJECT ENGINEER
3. MARKINGS AND STRIPING SHALL BE THERMOPLASTIC PAINT

6 PAVEMENT MARKINGS

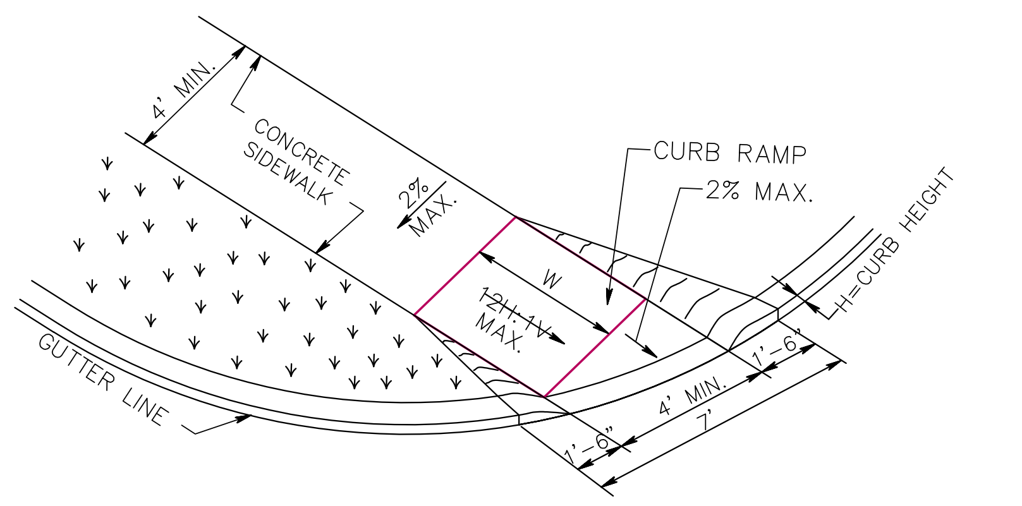
SCALE: NTS



NOTE:
ALL CURB RAMPS, RAMPS AND ACCESS ROUTES SHALL COMPLY WITH ALL ADA REQUIREMENTS. ANY RAMP EXCEEDING 6" RISE SHALL HAVE HANDRAILS.

7 CURB RAMP NJDOT TYPE 1

SCALE: NTS



NOTE:
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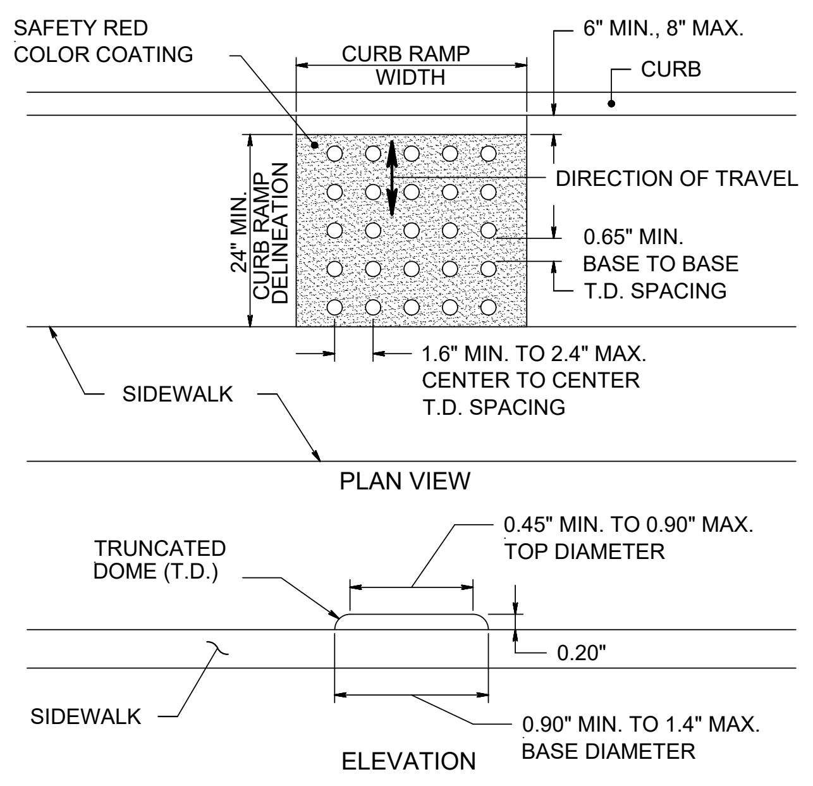
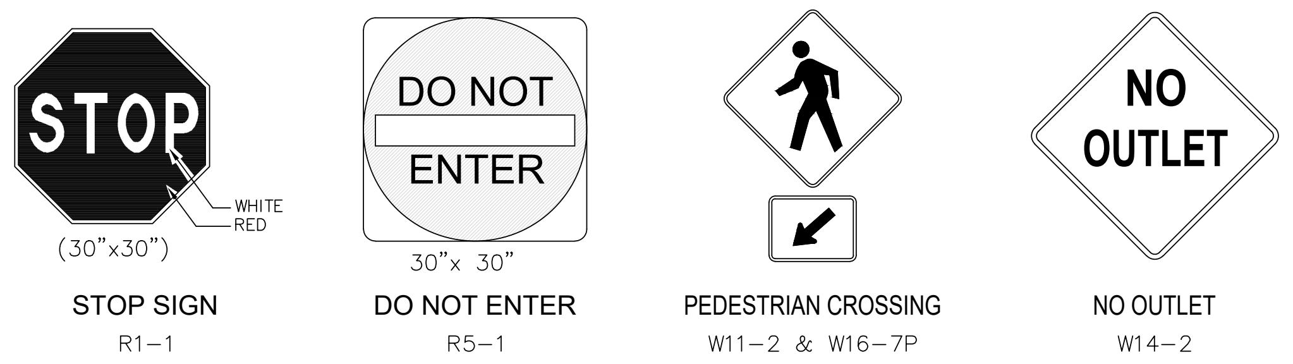
8 CURB RAMP NJDOT TYPE 5

SCALE: NTS


SAFETY RED COLOR COATING
CURB RAMP WIDTH
6" MIN., 8" MAX.
CURB
DIRECTION OF TRAVEL
24" MIN. CURB RAMP DELINEATION
0.65" MIN. BASE TO BASE T.D. SPACING
1.6" MIN. TO 2.4" MAX. CENTER TO CENTER T.D. SPACING
SIDEWALK
PLAN VIEW
TRUNCATED DOME (T.D.)
0.45" MIN. TO 0.90" MAX. TOP DIAMETER
0.20"
SIDEWALK
0.90" MIN. TO 1.4" MAX. BASE DIAMETER
ELEVATION

9 DETECTABLE WARNING SURFACE

SCALE: NTS

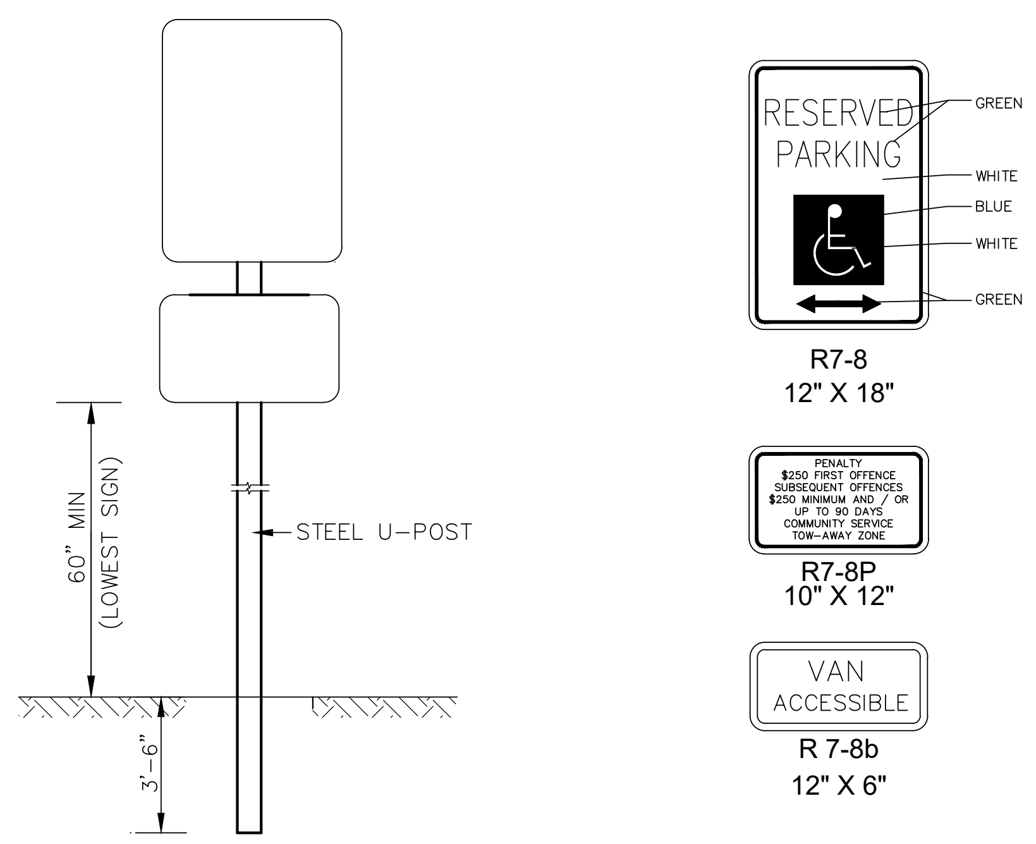


10 TRAFFIC SIGNAGE

SCALE: NTS

-

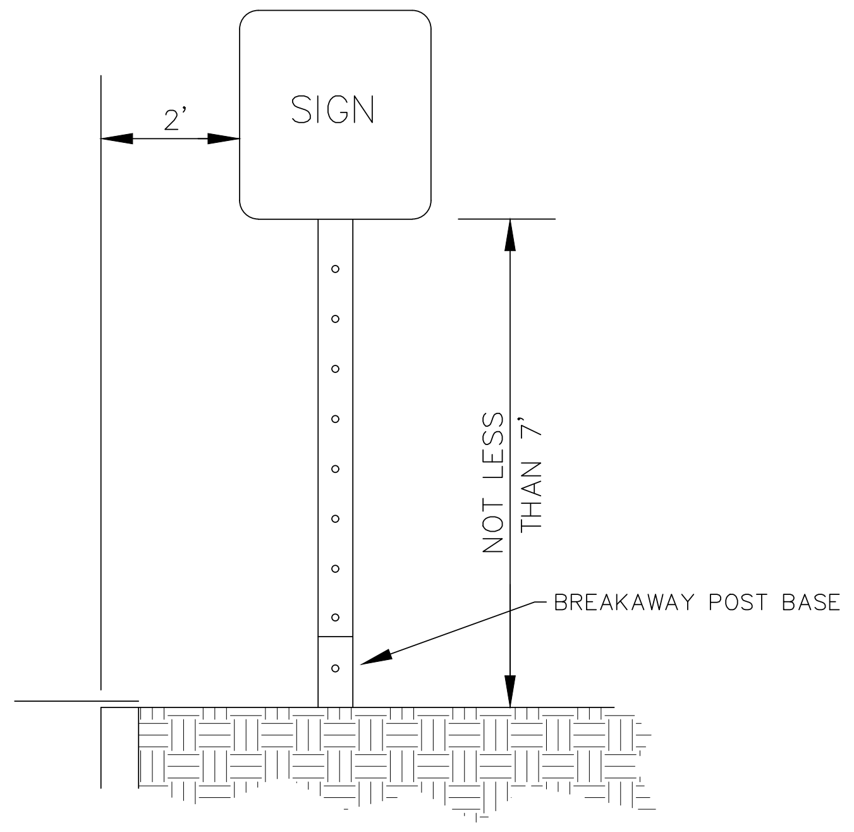
SCALE: NTS



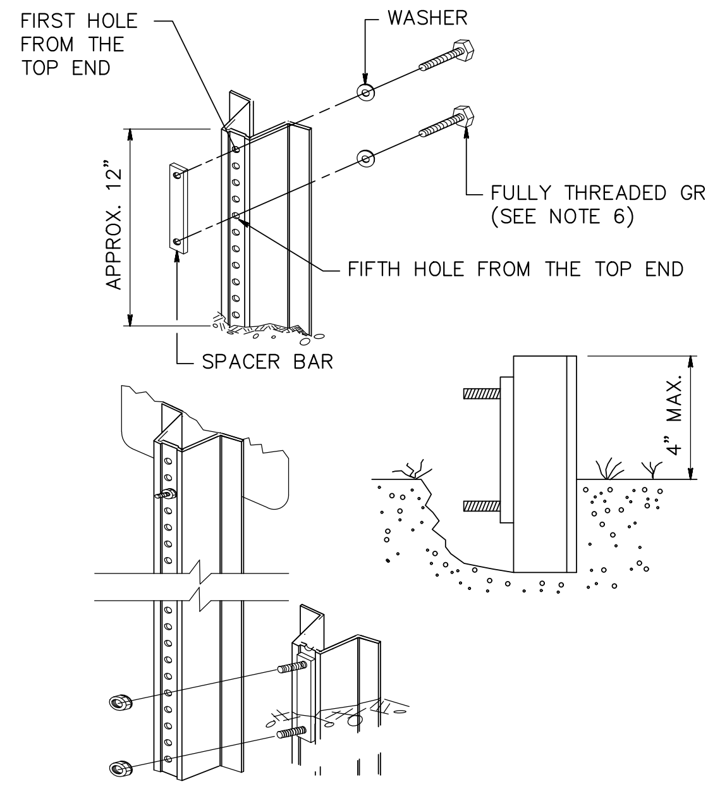
NOTE: SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH ADA AND THE MUTCD.

11 HANDICAP SIGN DETAIL

SCALE: NTS



SIGNAGE INSTALLATION DETAIL


FIRST HOLE FROM THE TOP END
WASHER
APPROX. 12"
FULLY THREADED GRADE L9 CONNECTOR BOLT (SEE NOTE 6)
FIFTH HOLE FROM THE TOP END
SPACER BAR
4" MAX.

BREAKAWAY BASE DETAIL

SEE NJDOT STANDARD ROADWAY DETAILS SHEET CD-612-5 FOR ADDITIONAL INFORMATION

NOTES:
1. DRIVE ANCHOR POST ASSEMBLY TO WITHIN APPROXIMATELY 12 INCHES ABOVE GROUND LEVEL. PLACE BOLT AND WASHER IN FIRST AND FIFTH HOLES FROM THE TOP END, AND SECURE BOLTS ONTO SPACER.
2. DRIVE ANCHOR POST ASSEMBLY TO WITHIN A MAXIMUM OF 4 INCHES ABOVE GROUND LEVEL.
3. DIG OUT AROUND BACK OF ANCHOR POST ASSEMBLY TO ALLOW ROOM FOR TOP POST TO BE ATTACHED.
4. NEST TOP POST ASSEMBLY ONTO PROTRUDING ANCHOR POST ASSEMBLY BOLTS, THROUGH THE FIRST AND FIFTH HOLES FROM THE BOTTOM OF THE TOP POST.
5. PLACE AND TIGHTEN A SELF-LOCKING FLANGE NUT ON EACH BOLT. WHEN INSTALLATION IS COMPLETE, TOP OF GROUND POST NOT TO EXCEED 4 INCHES ABOVE GROUND LEVEL.
6. SIZE OF CONNECTOR BOLT FOR TYPE 1, 5/16" x 11/2"
SIZE OF CONNECTOR BOLT FOR TYPE 2, 5/16" x 2"
7. THE CONNECTOR BOLTS ARE TO BE FULLY THREADED. EACH CONNECTOR BOLT AND NUT TO BE CLEARLY STAMPED WITH MANUFACTURER'S IDENTIFYING MARK.

12 TRAFFIC SIGN INSTALLATION

SCALE: NTS

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
LIC. NO. 33410
SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.

Date	Revisions
10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS

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CERTIFICATE OF AUTHORIZATION
24GA28182400

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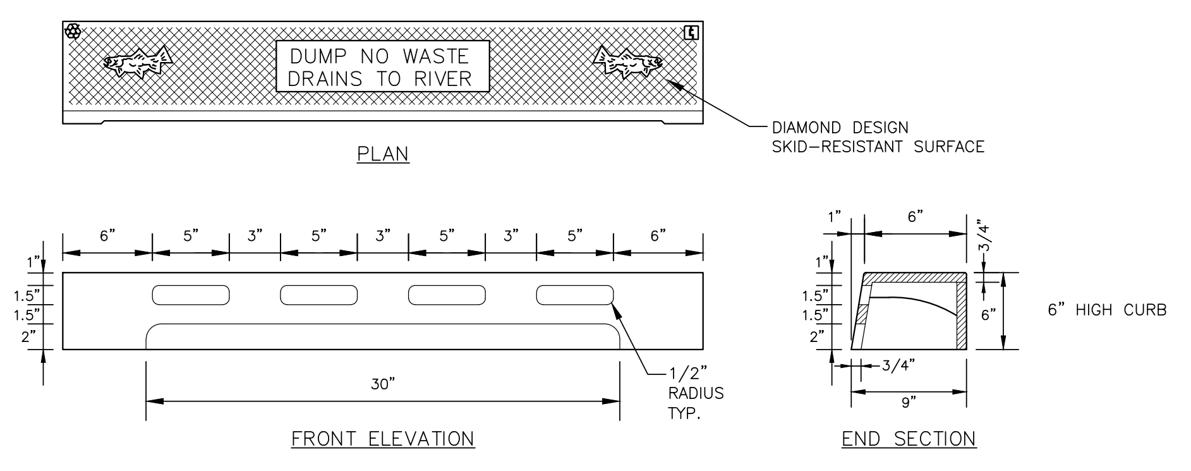
Proj. No.	WEMF2022
Date	9–23–22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

CONSTRUCTION DETAILS A

SP-64

SHEET 64 OF 66



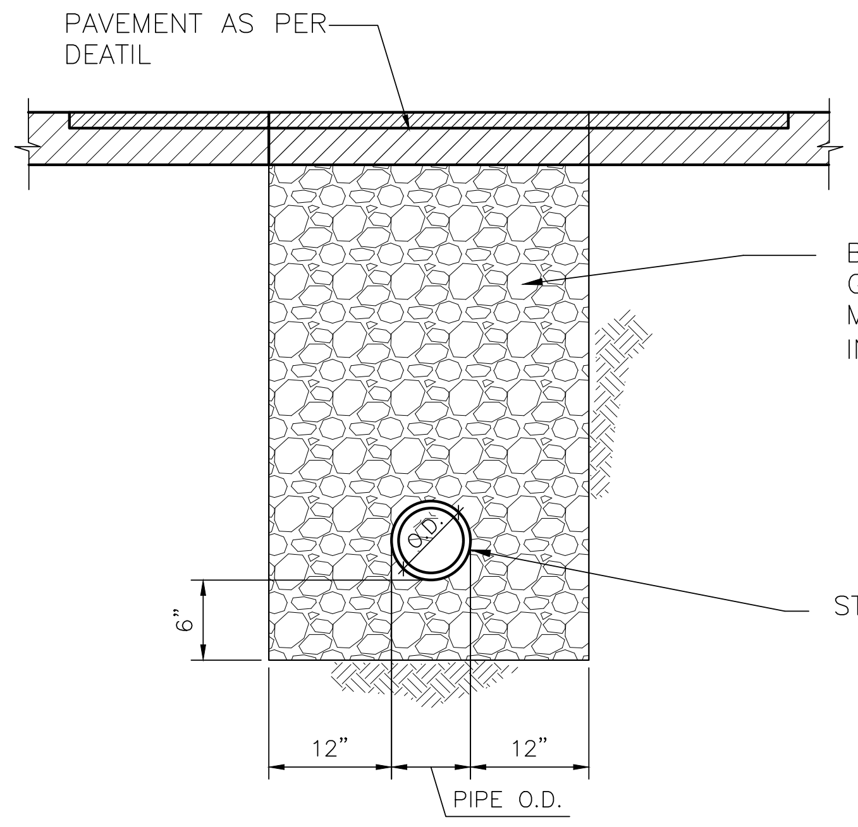
NOTES:

1. MATERIAL: GRAY CAST IRON ASTM A48-83, CLASS 30B
2. IN RETROFIT SITUATIONS THIS CURB PIECE (HEAD) WILL FIT EXISTING CAMPBELL FOUNDARY CO. MANUFACTURED CURB INLETS FOR NJDOT TYPES B, B-1, B-2, D, D-1, AND D-2
3. NAMEPLATE MESSAGE CAN BE MODIFIED TO YOUR SPECIFIC NEEDS WITHIN AREA SHOWN
4. CASTING SUPPLIED WITHOUT SURFACE COATING
5 ALL CURB PIECES ON SITE TO BE REPLACED TO COMPLY WITH MORRIS PLAINS DEP PERMIT

NOTE:
ALL INLET CURB PIECES SHALL COMPLY WITH N.J.D.E.P. REGULATIONS AND MORRIS PLAINS N.J.D.E.P. PERMIT. ANY EXISTING CURB PIECES THAT DO NOT COMPLY SHALL BE REMOVED AND REPLACED WITH N.J.D.E.P. CONFORMING PIECES.

5 TYPE N-ECO CURB PIECE

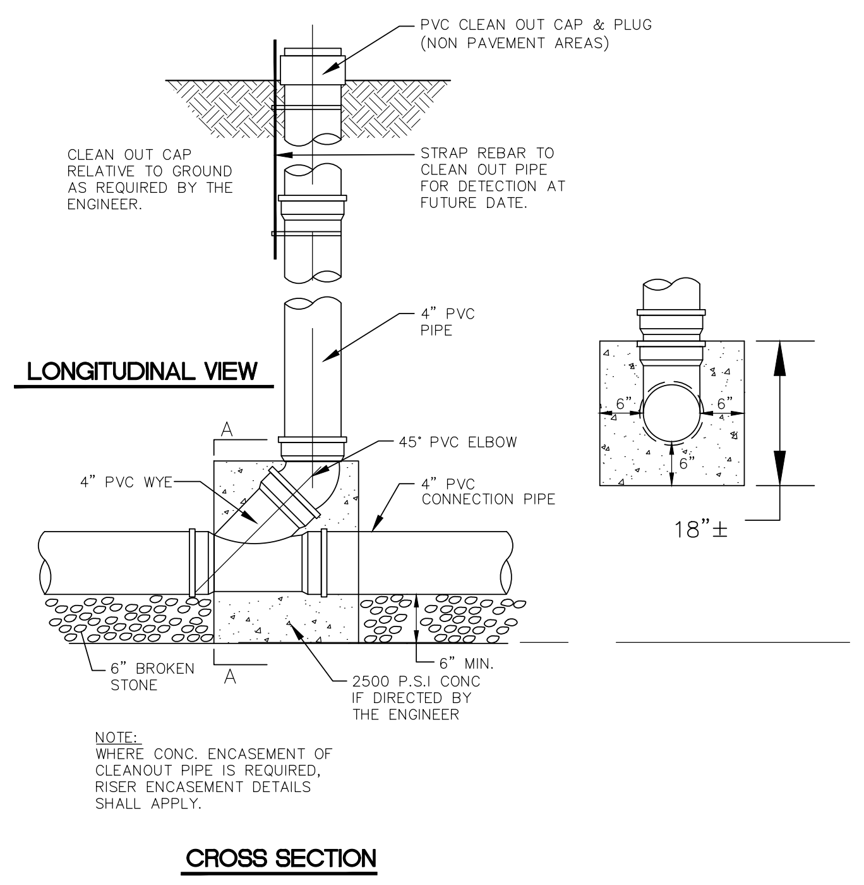
SCALE: NTS


PAVEMENT AS PER DEATIL
BACKFILL WITH DENSE GRADED AGGREGATE MECHANICALLY TAMPED IN 12" LAYERS
O.D.
STORM PIPE
6"
12"
12"
PIPE O.D.

NOTES:

1. TRENCH CONSTRUCTED OUT OF PAVEMENT AREA SHALL REQUIRE 4" OF TOPSOIL AND SEEDING AND SHALL BE BACKFILLED WITH SUITABLE EXCAVATED MATERIAL.
2. MILLINGS SHALL NOT BE AN ACCEPTABLE BACKFILL MATERIAL FOR ANY TRENCHING

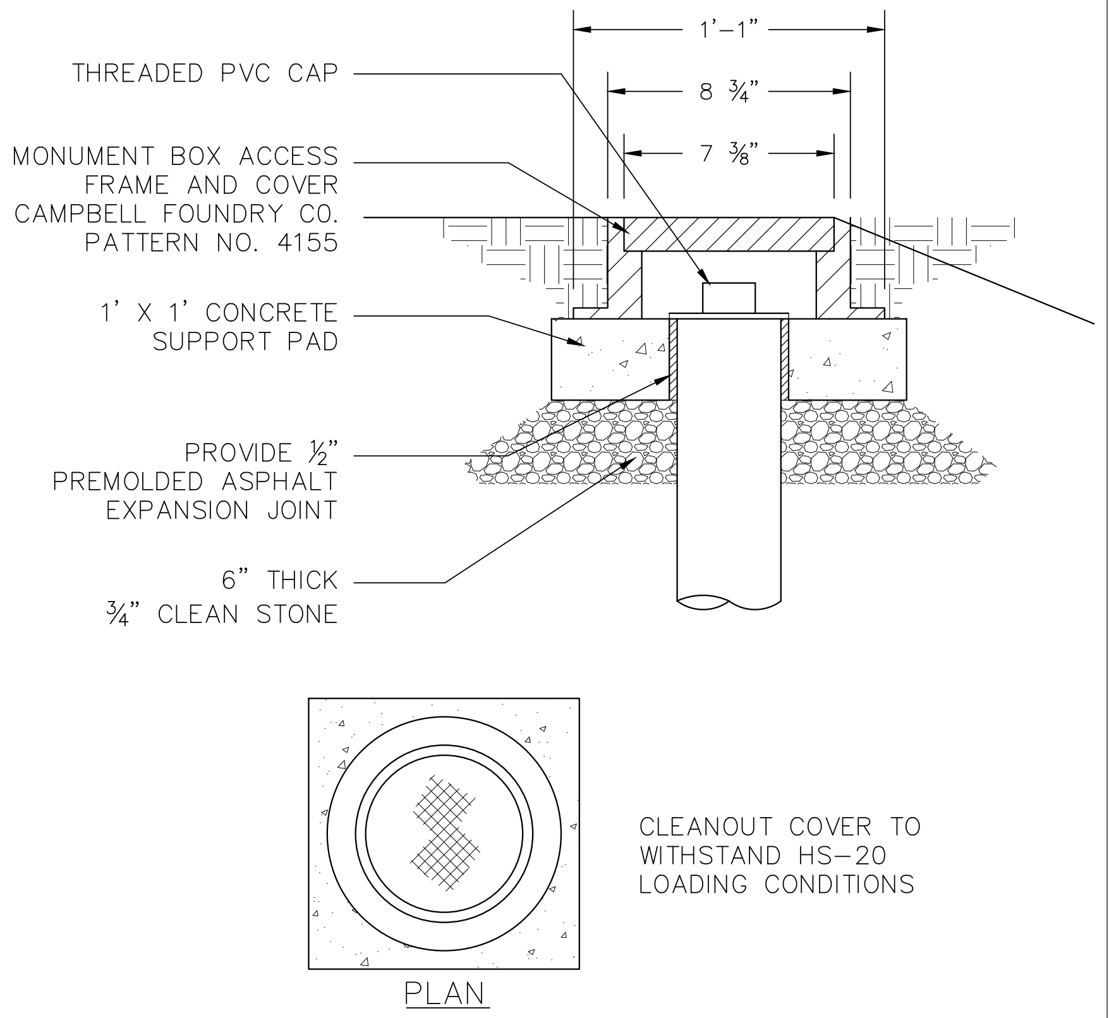
6 STANDARD STORM PIPE TRENCH DETAIL


PVC CLEAN OUT CAP & PLUG (NON PAVEMENT AREAS)
CLEAN OUT CAP RELATIVE TO GROUND AS REQUIRED BY THE ENGINEER.
STRAP REBAR TO CLEAN OUT PIPE FOR DETECTION AT FUTURE DATE.
4" PVC PIPE
LONGITUDINAL VIEW
A
45° PVC ELBOW
4" PVC WYE
4" PVC CONNECTION PIPE
6" BROKEN STONE
A
6" MIN.
2500 P.S.I CONC IF DIRECTED BY THE ENGINEER
6"
6"
6"
18"±
CROSS SECTION

NOTE:
WHERE CONC. ENCASEMENT OF CLEANOUT PIPE IS REQUIRED, RISER ENCASEMENT DETAILS SHALL APPLY.

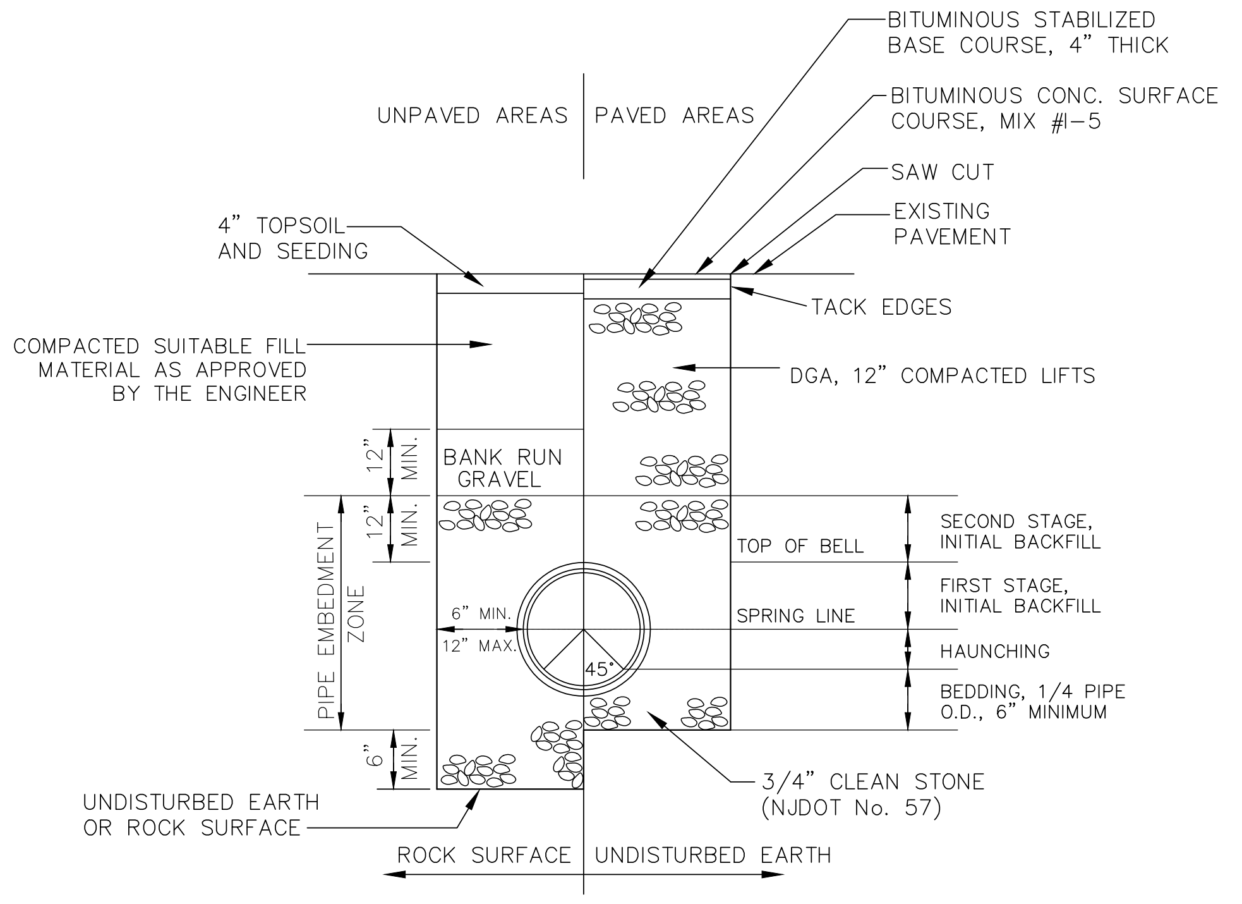
7 CLEAN OUT DETAIL

SCALE: NTS


1'-1"
8 ¾"
7 ⅜"
THREADED PVC CAP
MONUMENT BOX ACCESS FRAME AND COVER CAMPBELL FOUNDRY CO. PATTERN NO. 4155
1' X 1' CONCRETE SUPPORT PAD
PROVIDE ½" PREMOLDED ASPHALT EXPANSION JOINT
6" THICK ¾" CLEAN STONE
PLAN
CLEANOUT COVER TO WITHSTAND HS-20 LOADING CONDITIONS

SCALE: NTS

8 CLEAN OUT COVER (TRAFFIC AREA)

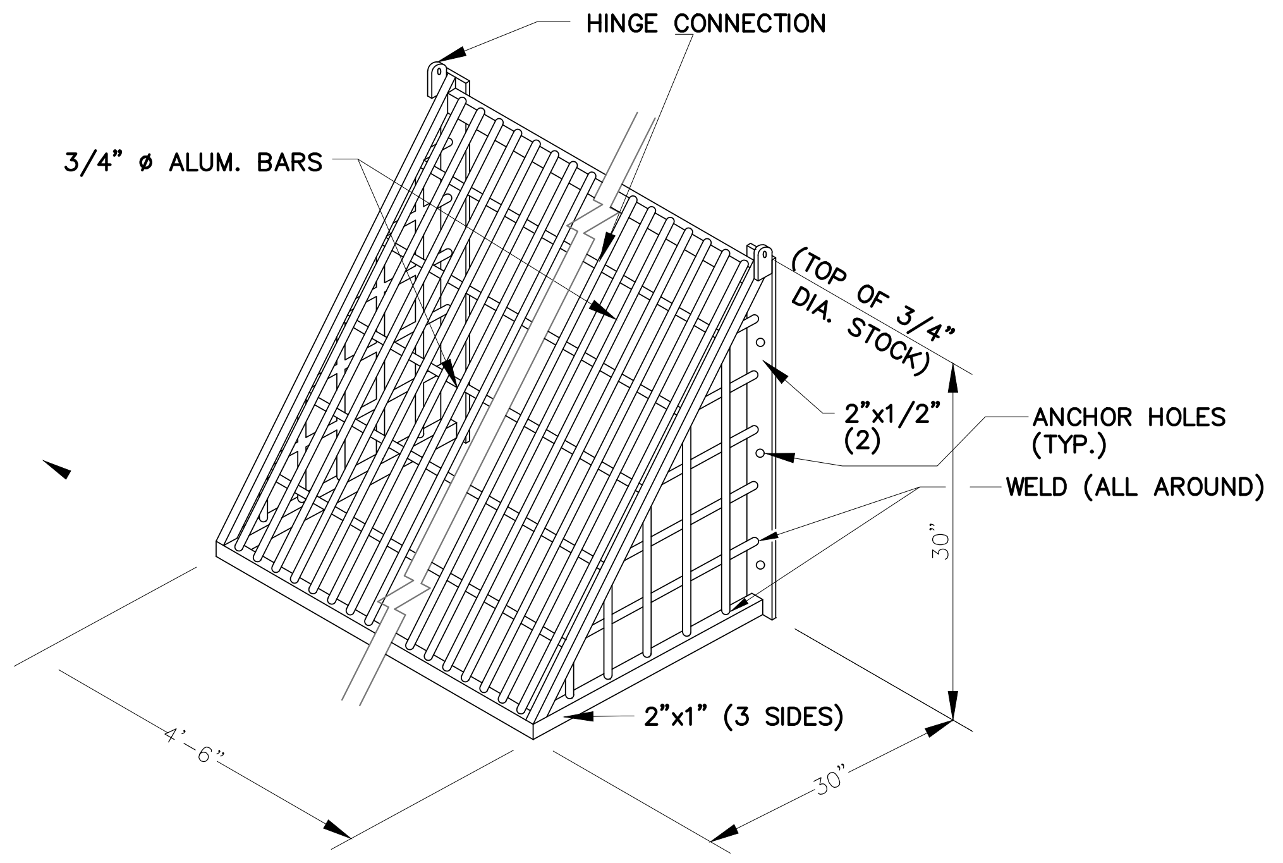

UNPAVED AREAS
PAVED AREAS
BITUMINOUS STABILIZED BASE COURSE, 4" THICK
BITUMINOUS CONC. SURFACE COURSE, MIX #I-5
SAW CUT
EXISTING PAVEMENT
4" TOPSOIL AND SEEDING
TACK EDGES
COMPACTED SUITABLE FILL MATERIAL AS APPROVED BY THE ENGINEER
DGA, 12" COMPACTED LIFTS
12" MIN.
BANK RUN GRAVEL
12" MIN.
PIPE EMBEDMENT ZONE
TOP OF BELL
SECOND STAGE, INITIAL BACKFILL
FIRST STAGE, INITIAL BACKFILL
6" MIN.
12" MAX.
SPRING LINE
HAUNCHING
45°
BEDDING, 1/4 PIPE O.D., 6" MINIMUM
6" MIN.
3/4" CLEAN STONE (NJDOT No. 57)
UNDISTURBED EARTH OR ROCK SURFACE
ROCK SURFACE
UNDISTURBED EARTH

NOTES:

1. TRENCH CONSTRUCTED OUT OF PAVEMENT AREA SHALL REQUIRE 4" OF TOPSOIL AND SEEDING AND SHALL BE BACKFILLED WITH SUITABLE EXCAVATED MATERIAL.
2. MILLINGS SHALL NOT BE AN ACCEPTABLE BACKFILL MATERIAL FOR ANY TRENCHING

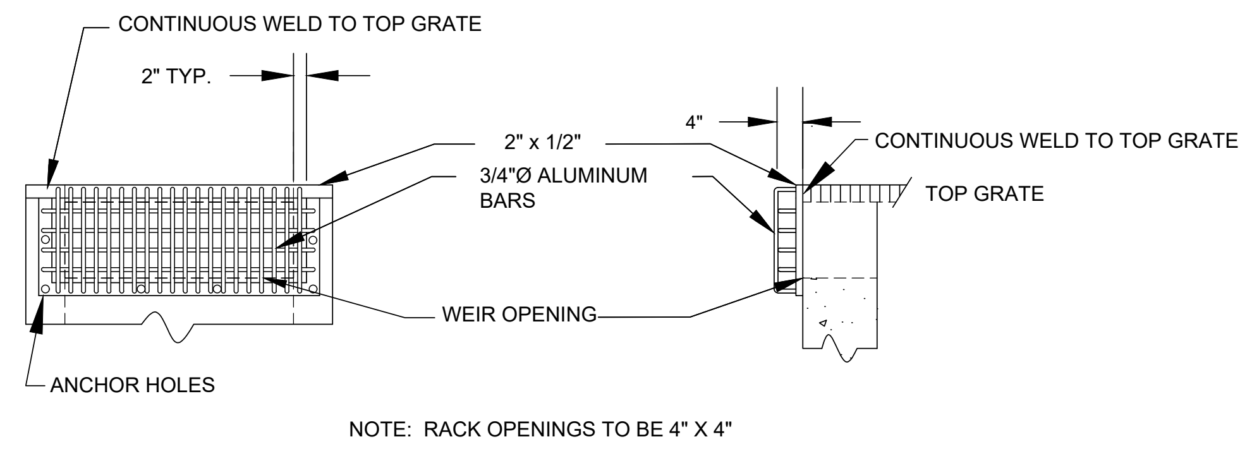
9 PIPE TRENCH AND BEDDING

SCALE: NTS



10 TRASH RACK FOR ORIFICE OPENING

SCALE: NTS



NOTE: RACK OPENINGS TO BE 4" X 4"

11 TRASH GRILL FOR WEIR OPENINGS

SCALE: NTS

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Revisions	

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CERTIFICATE OF AUTHORIZATION
24GA28182400

Proj. No.	WEMF2022
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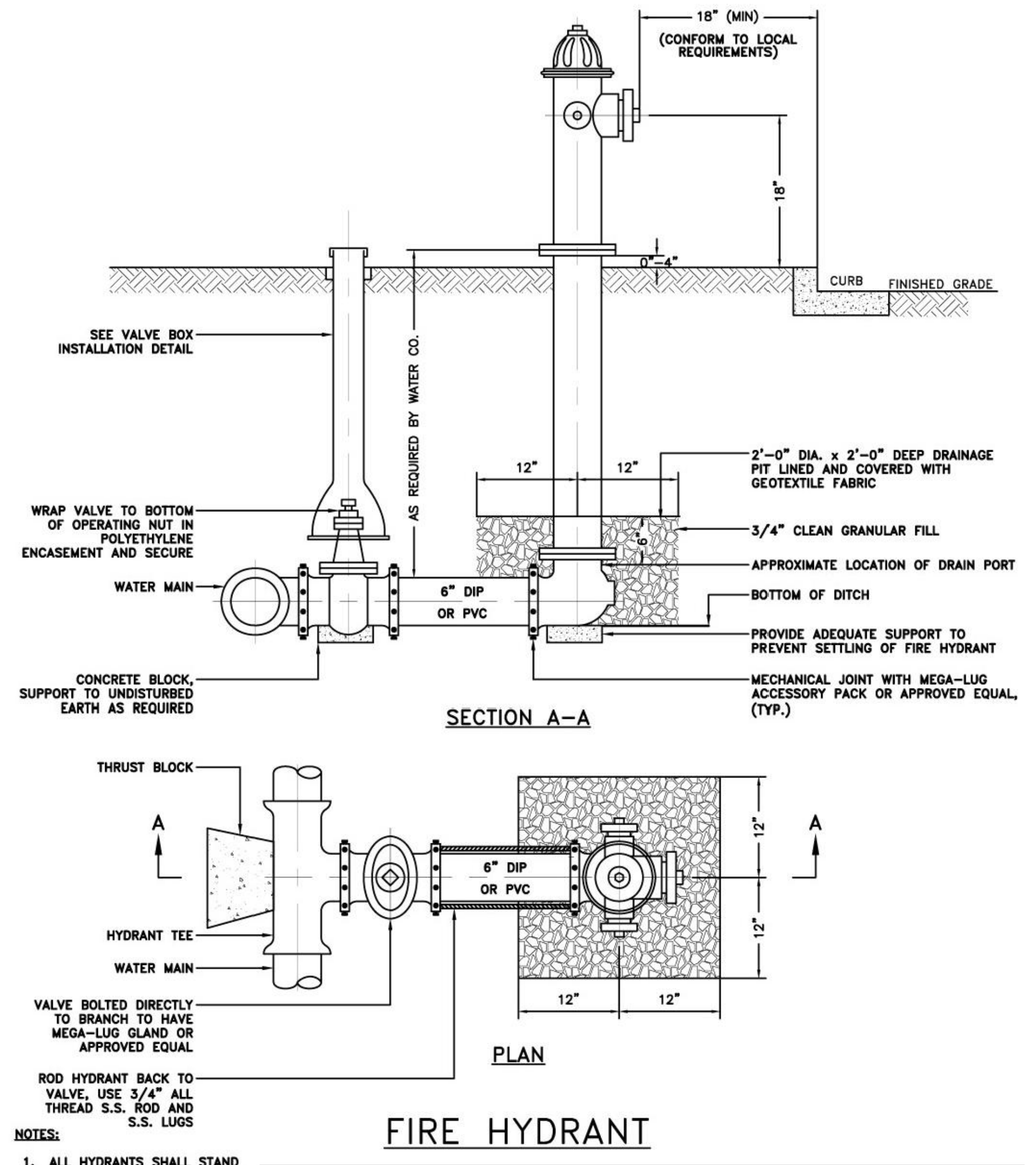
PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

CONSTRUCTION DETAILS B

SP-65


18" (MIN)
(CONFORM TO LOCAL REQUIREMENTS)
18"
0"–4"
CURB
FINISHED GRADE
SEE VALVE BOX INSTALLATION DETAIL
AS REQUIRED BY WATER CO.
12"
12"
2'–0" DIA. x 2'–0" DEEP DRAINAGE PIT LINED AND COVERED WITH GEOTEXTILE FABRIC
3/4" CLEAN GRANULAR FILL
6"
WRAP VALVE TO BOTTOM OF OPERATING NUT IN POLYETHYLENE ENCASEMENT AND SECURE
APPROXIMATE LOCATION OF DRAIN PORT
WATER MAIN
6" DIP OR PVC
BOTTOM OF DITCH
PROVIDE ADEQUATE SUPPORT TO PREVENT SETTLING OF FIRE HYDRANT
CONCRETE BLOCK, SUPPORT TO UNDISTURBED EARTH AS REQUIRED
MECHANICAL JOINT WITH MEGA-LUG ACCESSORY PACK OR APPROVED EQUAL, (TYP.)
SECTION A–A
THRUST BLOCK
A
A
HYDRANT TEE
WATER MAIN
6" DIP OR PVC
12"
12"
12"
12"
VALVE BOLTED DIRECTLY TO BRANCH TO HAVE MEGA-LUG GLAND OR APPROVED EQUAL
ROD HYDRANT BACK TO VALVE, USE 3/4" ALL THREAD S.S. ROD AND S.S. LUGS
PLAN

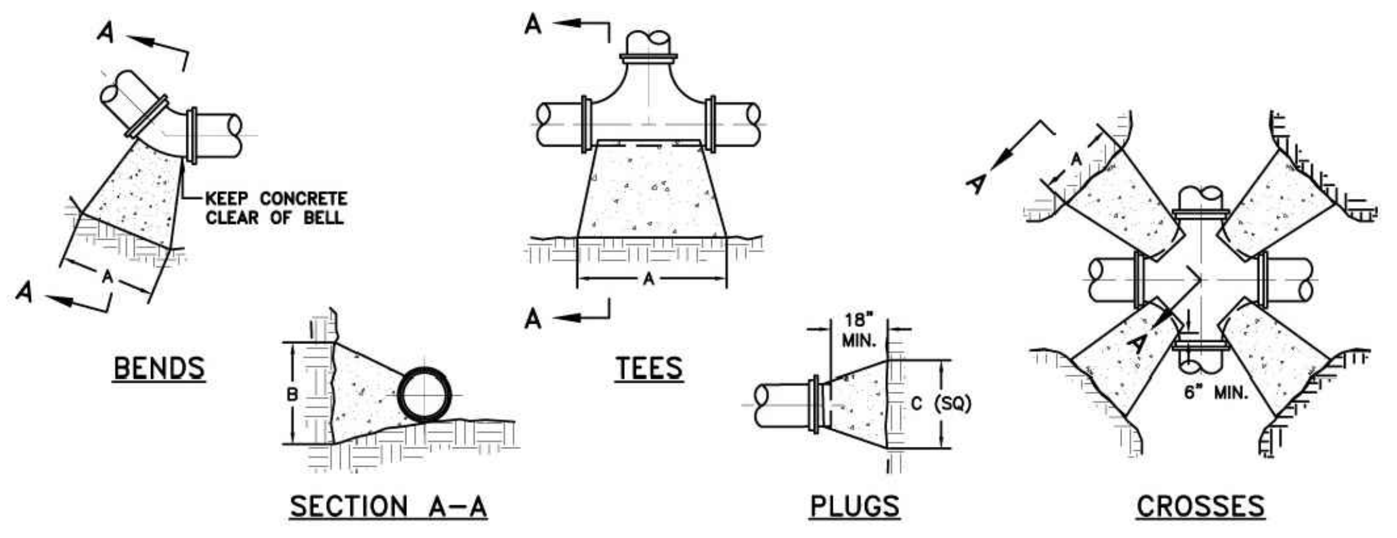
FIRE HYDRANT

NOTES:

1. ALL HYDRANTS SHALL STAND PLUMB AND SHALL HAVE THE PUMPER NOZZLE FACING THE CURB.
2. HYDRANT BONNETS SHALL BE PAINTED TO INDICATE AVAILABLE FIRE FLOW IN ACCORDANCE WITH AMERICAN WATER SPECIFICATIONS.
3. IF HYDRANT LATERAL IS NOT RESTRAINED, CONTRACTOR SHALL PROVIDE A THRUST BLOCK BEHIND HYDRANT SHOE.
4. AMERICAN WATER RESERVES THE RIGHT TO WAIVE STRICT COMPLIANCE WITH THIS DETAIL IN THE EVENT THAT FIELD CONDITIONS OR O&M WORK REQUIRE A WAIVER.

1 TYPICAL HYDRANT INSTALLATION

SCALE: NTS



SIZE	CROSSES/90° BENDS			45° BENDS			11-1/4° BENDS			22-1/2° BENDS			TEES & PLUGS		
	AREA SQ. FT.	"A"	"B"	AREA SQ. FT.	"A"	"B"	AREA SQ. FT.	"A"	"B"	AREA SQ. FT.	"A"	"B"	AREA SQ. FT.	"A"	"B"
6"	4.0	32"	18"	2.2	18"	16"	0.6	5"	18"	1.1	9"	18"	2.8	23"	18"
8"	7.0	42"	24"	3.8	23"	24"	1.0	6"	24"	2.0	12"	24"	5.0	30"	24"
10"	11.0	53"	30"	6.3	30"	30"	1.6	8"	30"	3.1	15"	30"	8.0	38"	30"
12"	16.1	64"	36"	10.0	40"	36"	2.2	9"	36"	4.4	18"	36"	11.3	45"	36"
14"	21.6	74"	42"	12.5	43"	42"	3.0	10"	42"	6.0	21"	42"	15.5	53"	42"
16"	28.3	85"	48"	17.7	53"	48"	4.0	12"	48"	7.7	23"	48"	20.1	60"	48"

REQUIRED BEARING AREA ON UNDISTURBED SOIL AND TYPICAL DIMENSIONS

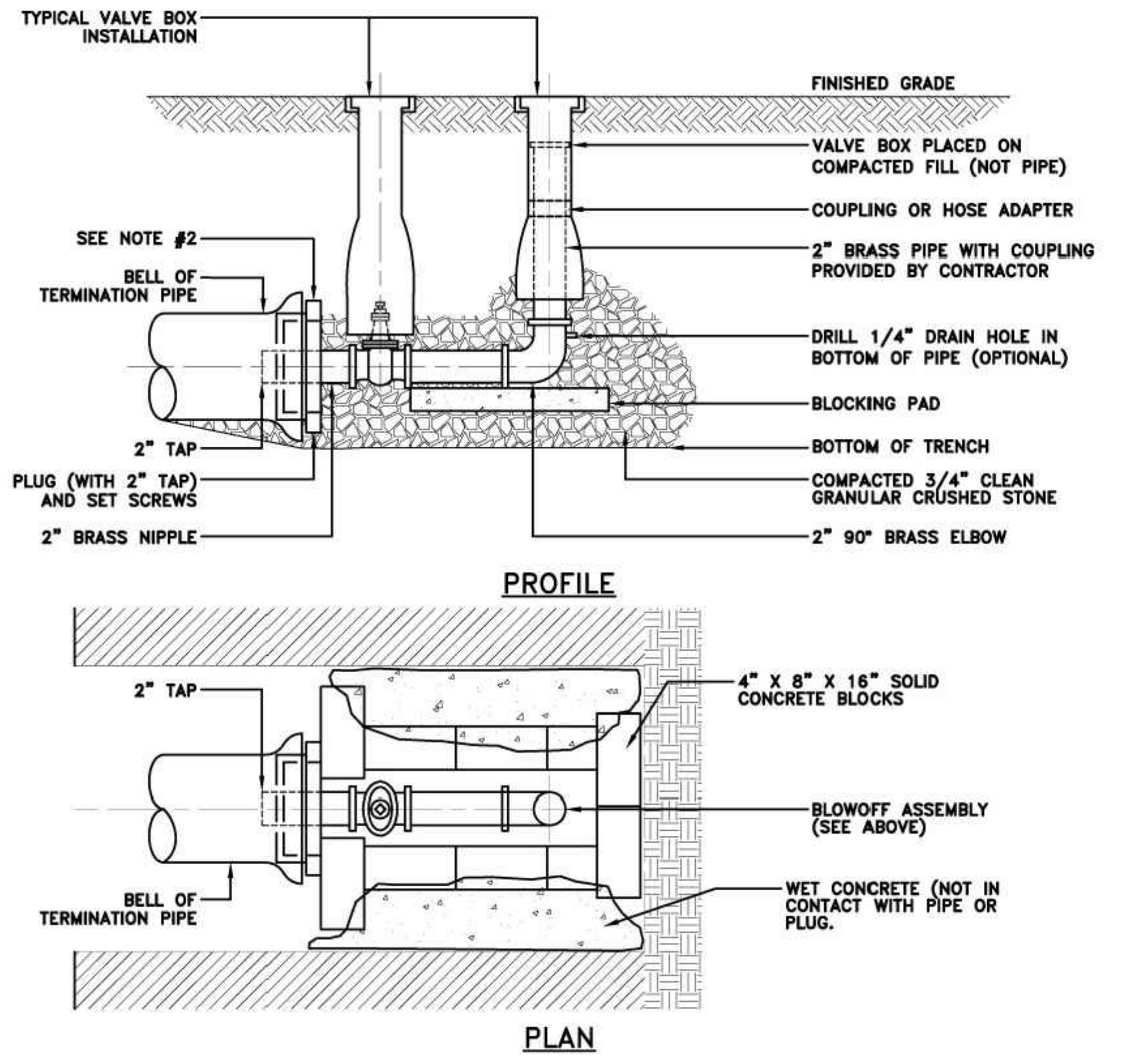
* SURFACE AREA OF BEARING SOIL IS PROVIDED FOR 200 PSI MAXIMUM PRESSURE (INCLUDING SURGE) AND 2000 PSF SOIL BEARING. IF PRESSURE IS HIGHER OR SOIL BEARING IS POTENTIALLY LOWER, CONSULT THE ENGINEER FOR ADJUSTMENTS.

NOTES:

1. COVER OVER TOP OF PIPE SHALL BE BELOW THE FROST LINE OR 30" MINIMUM, 72" MAXIMUM ACCORDING TO REGULATORY REQUIREMENTS. IF GRADING PLANS RECEIVED BY THE ENGINEER/OWNER WITH THE REQUEST FOR WATER MAIN LAYOUT INDICATE ADJUSTMENTS TO EXISTING GRADE, THEN PIPE SHALL BE INSTALLED TO MEET MINIMUM AND MAXIMUM COVER FROM PROPOSED GRADES SHOWN ON THE SAID PLANS.
2. THRUST BLOCKS SHALL BE BUILT AGAINST UNDISTURBED SOIL WITH ADEQUATE BACKING TO PREVENT MOVEMENT OF FITTING.
3. NO THRUST BLOCKS TO BE PLACED IN SEWER LATERAL DITCHES.
4. THRUST BLOCKING MUST FIT WITHIN THE EASEMENT.
5. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED BASED ON 150 PSI STATIC PRESSURE, PLUS 50 PSI WATER HAMMER AND 2000 PSF SOIL BEARING.
6. POLYETHYLENE ENCASEMENT IS REQUIRED ON ALL D.I. PIPE AND FITTINGS.
7. THRUST BLOCKING SHALL BE PERFORMED SUCH THAT PIPE JOINTS AND BOLTS ARE ACCESSIBLE.
8. SUFFICIENT CLEARANCE SHALL BE ALLOWED BETWEEN CONCRETE AND BOLTS FOR FUTURE MAINTENANCE.
9. ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL, MINIMUM 3/4" DIAMETER.
10. ALL M.J. AND FLG. FITTINGS TO RECEIVE THRUST BLOCKS SHALL BE WRAPPED IN POLYWRAP. CONTRACTOR SHALL ENSURE THAT POLYWRAP EXTENDS FAR ENOUGH BEYOND THE FITTING TO ENCLOSE ALL BOLTS WITHIN THE POLYWRAP.
11. THRUST BLOCKING DETAILS ARE SHOWN HERE FOR TYPICAL INSTALLATIONS. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED.
12. PORTLAND CEMENT CONCRETE USED FOR THRUST BLOCKS SHALL BE MIN 3000 PSI CONCRETE.
13. FOR UNSTABLE SOIL CONDITIONS, CHECK WITH ENGINEER FOR THRUST BLOCK DIMENSIONS.
14. FOR MAIN SIZES GREATER THAN 16", SEE ENGINEER FOR THRUST BLOCK DIMENSIONS.

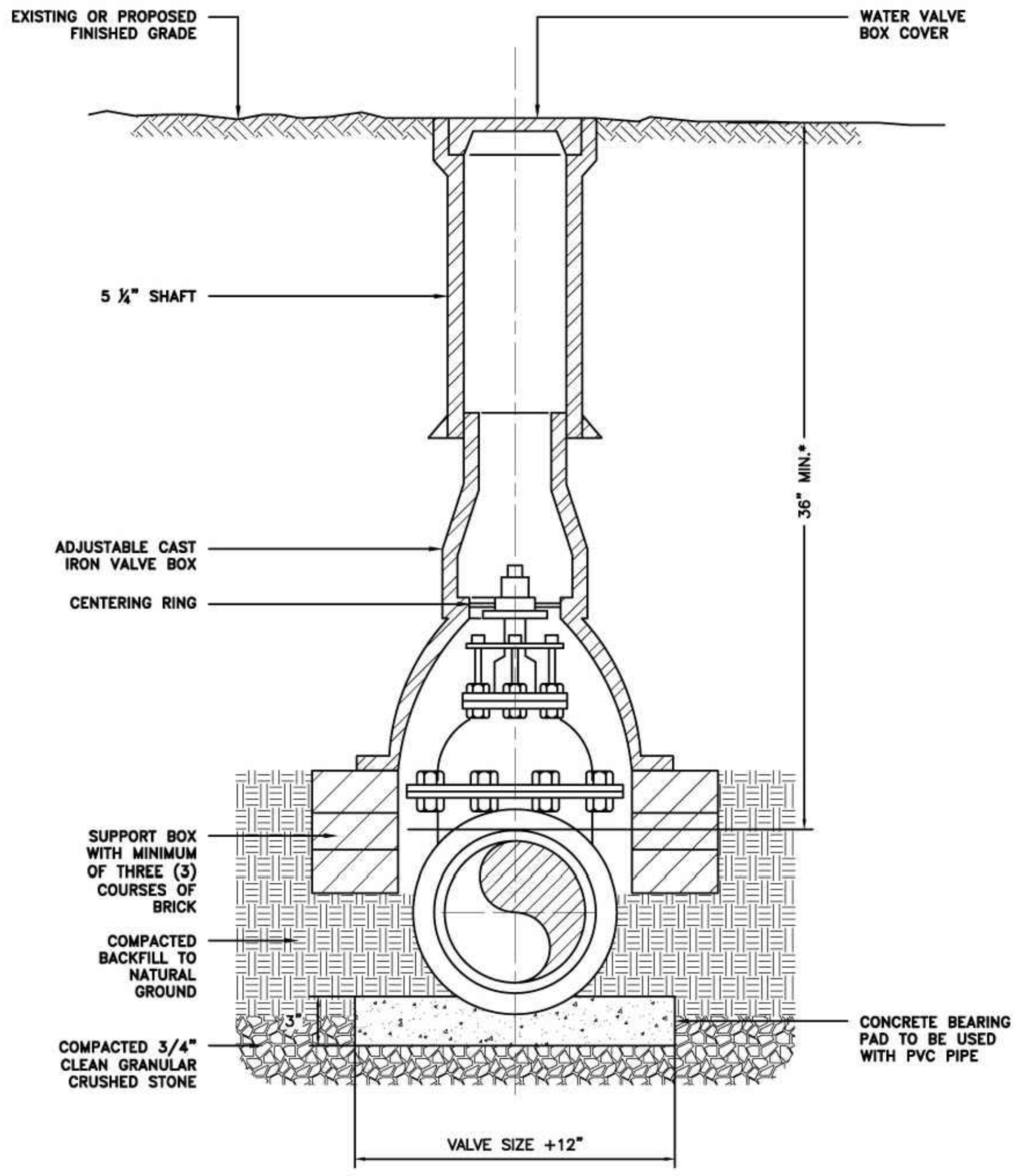
2 THRUST BLOCK SCHEDULE

SCALE: NTS


TYPICAL VALVE BOX INSTALLATION
FINISHED GRADE
VALVE BOX PLACED ON COMPACTED FILL (NOT PIPE)
COUPLING OR HOSE ADAPTER
SEE NOTE #2
2" BRASS PIPE WITH COUPLING PROVIDED BY CONTRACTOR
BELL OF TERMINATION PIPE
DRILL 1/4" DRAIN HOLE IN BOTTOM OF PIPE (OPTIONAL)
BLOCKING PAD
2" TAP
BOTTOM OF TRENCH
PLUG (WITH 2" TAP) AND SET SCREWS
COMPACTED 3/4" CLEAN GRANULAR CRUSHED STONE
2" BRASS NIPPLE
2" 90° BRASS ELBOW
PROFILE
2" TAP
4" X 8" X 16" SOLID CONCRETE BLOCKS
BLOWOFF ASSEMBLY (SEE ABOVE)
BELL OF TERMINATION PIPE
WET CONCRETE (NOT IN CONTACT WITH PIPE OR PLUG.
PLAN

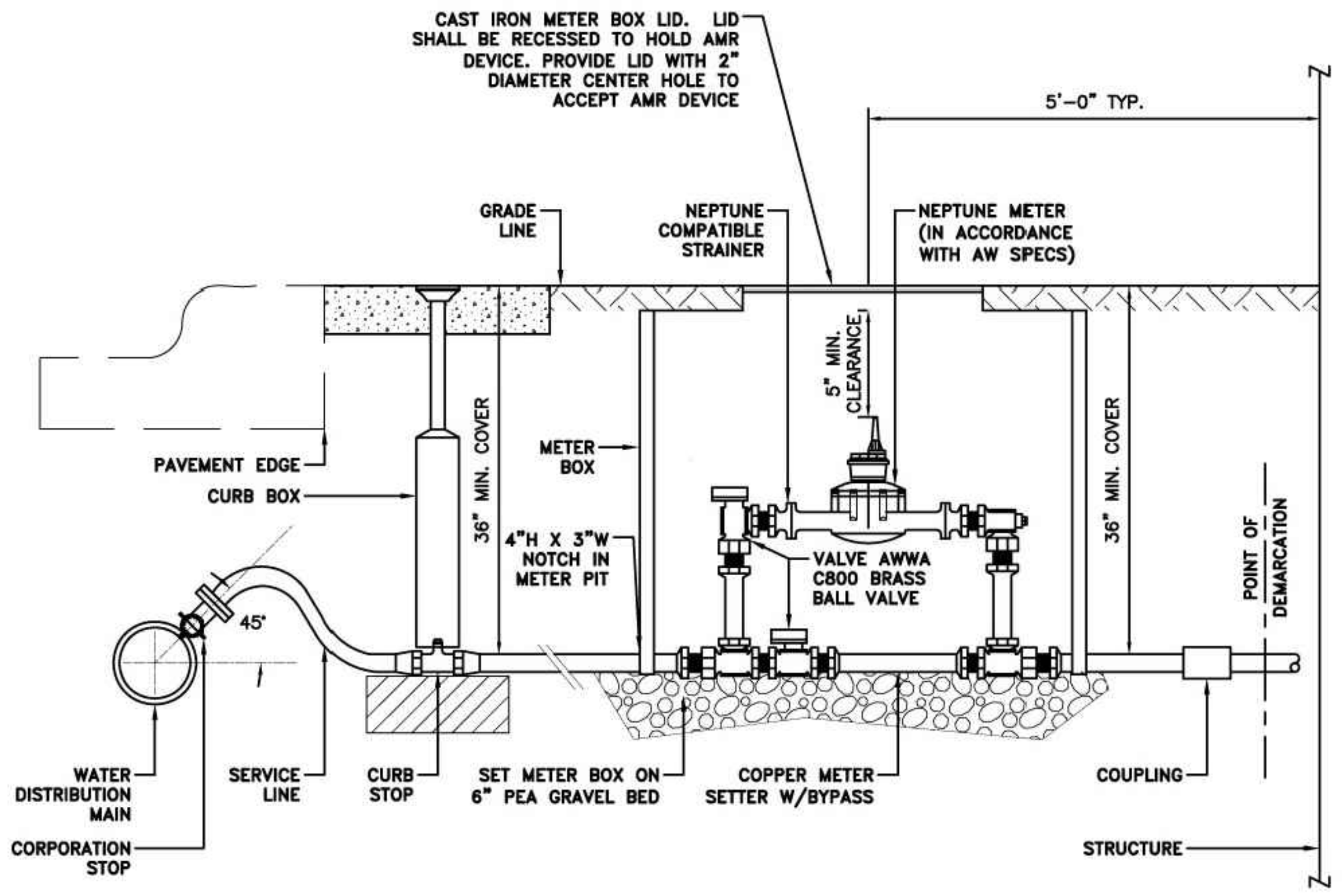
3 BLOW OFF ASSEMBLY DETAIL

SCALE: NTS


EXISTING OR PROPOSED FINISHED GRADE
WATER VALVE BOX COVER
5 ¼" SHAFT
36" MIN.*
ADJUSTABLE CAST IRON VALVE BOX
CENTERING RING
SUPPORT BOX WITH MINIMUM OF THREE (3) COURSES OF BRICK
COMPACTED BACKFILL TO NATURAL GROUND
3"
COMPACTED 3/4" CLEAN GRANULAR CRUSHED STONE
CONCRETE BEARING PAD TO BE USED WITH PVC PIPE
VALVE SIZE +12"

4 TYPICAL VALVE BOX INSTALLATION

SCALE: NTS

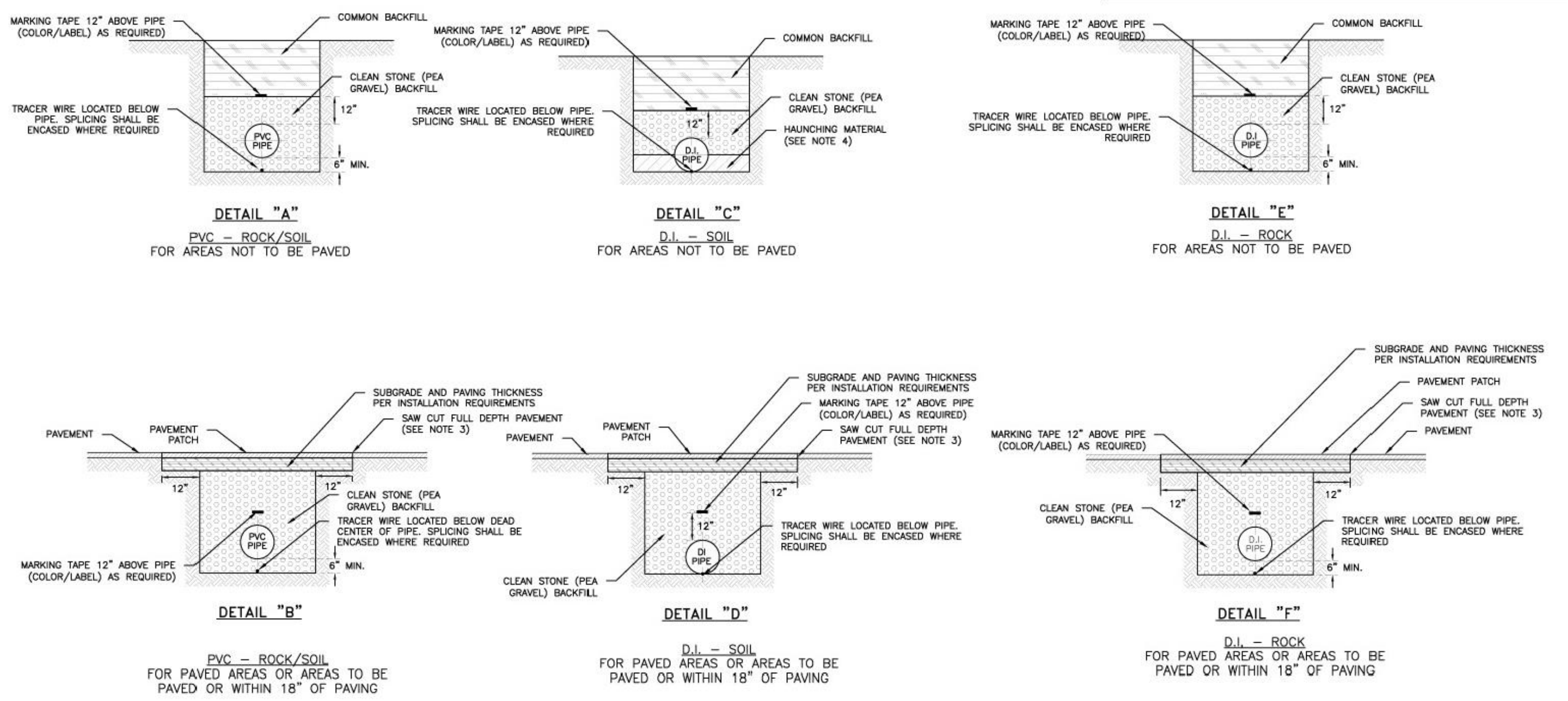

CAST IRON METER BOX LID. LID SHALL BE RECESSED TO HOLD AMR DEVICE. PROVIDE LID WITH 2" DIAMETER CENTER HOLE TO ACCEPT AMR DEVICE
5'–0" TYP.
GRADE LINE
NEPTUNE COMPATIBLE STRAINER
NEPTUNE METER (IN ACCORDANCE WITH AW SPECS)
5" MIN. CLEARANCE
PAVEMENT EDGE
CURB BOX
36" MIN. COVER
METER BOX
4"H X 3"W NOTCH IN METER PIT
VALVE AWWA C800 BRASS BALL VALVE
36" MIN. COVER
POINT OF DEMARCATION
45°
WATER DISTRIBUTION MAIN
CORPORATION STOP
SERVICE LINE
CURB STOP
SET METER BOX ON 6" PEA GRAVEL BED
COPPER METER SETTER W/BYPASS
COUPLING
STRUCTURE

NOTES:

1. CENTER METER IN BOX, MIN 3" CLEARANCE ON ALL SIDES.
2. TRENCH, INSTALL, AND BACKFILL SERVICE LINE IN ACCORDANCE WITH AW SPECIFICATIONS.
3. POINT OF DEMARCATION FOR SERVICE LINE OWNERSHIP PER PRIME CONTRACT BETWEEN AW AND GOVERNMENT.
4. SERVICE LINE MATERIALS SHALL MEET AW SPECIFICATIONS.
5. SERVICE LINE BEDDING SHALL BE IN ACCORDANCE WITH AW SPECIFICATIONS.
6. PROVIDE TRACE WIRE ALONG WATER SERVICE LINE. TRACE WIRE SHALL EXTEND INTO THE CURB BOX AND METER PIT AND TERMINATE IN THE METER PIT.

5 TYPICAL 1" SERVICE OUTSIDE METER TILE

SCALE: NTS

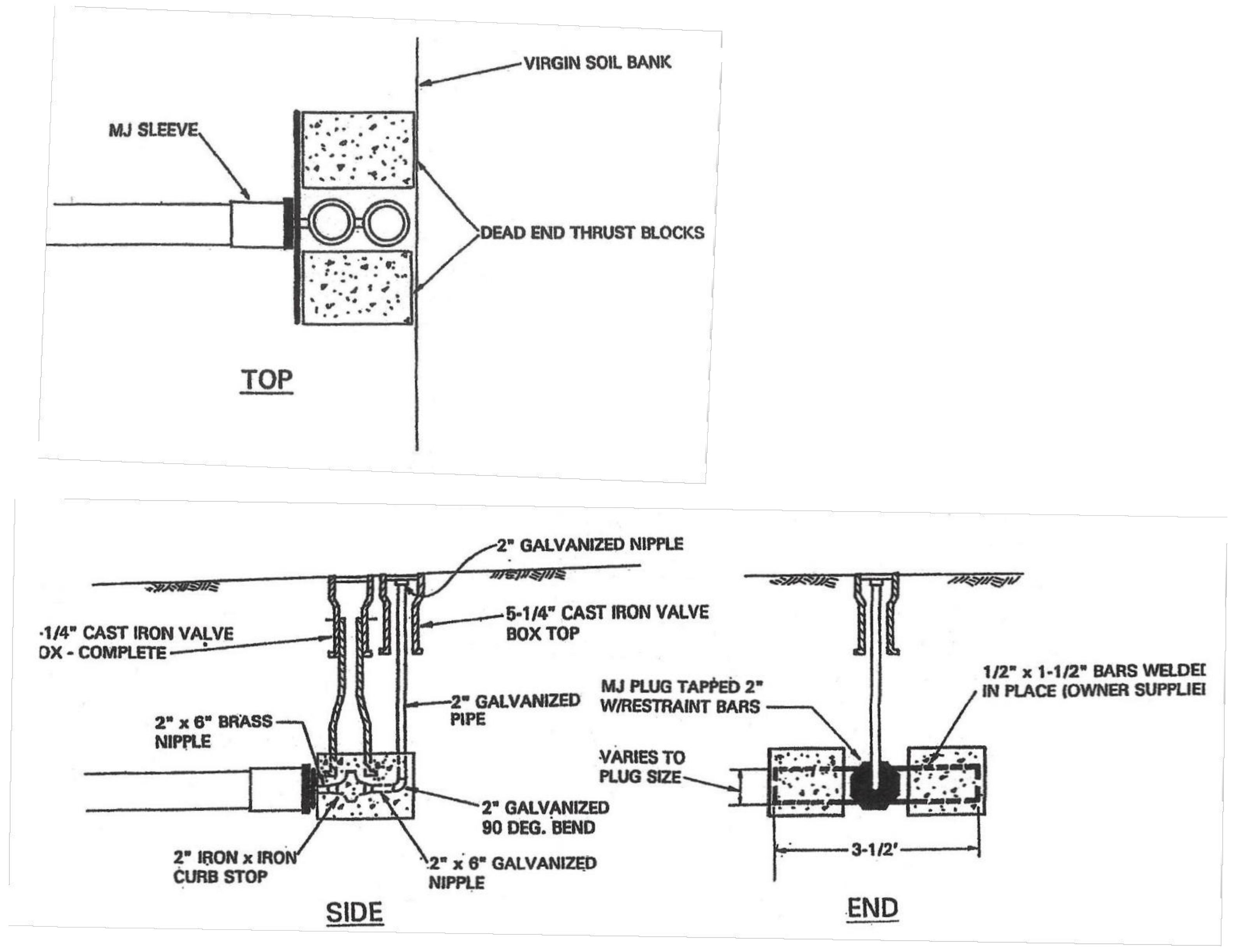

MARKING TAPE 12" ABOVE PIPE (COLOR/LABEL) AS REQUIRED
COMMON BACKFILL
CLEAN STONE (PEA GRAVEL) BACKFILL
TRACER WIRE LOCATED BELOW PIPE. SPLICING SHALL BE ENCASED WHERE REQUIRED
12"
PVC PIPE
6" MIN.
DETAIL "A"
PVC – ROCK/SOIL
FOR AREAS NOT TO BE PAVED
MARKING TAPE 12" ABOVE PIPE (COLOR/LABEL) AS REQUIRED
COMMON BACKFILL
CLEAN STONE (PEA GRAVEL) BACKFILL
TRACER WIRE LOCATED BELOW PIPE. SPLICING SHALL BE ENCASED WHERE REQUIRED
12"
HAUNCHING MATERIAL (SEE NOTE 4)
D.I. PIPE
DETAIL "C"
D.I. – SOIL
FOR AREAS NOT TO BE PAVED
MARKING TAPE 12" ABOVE PIPE (COLOR/LABEL) AS REQUIRED
COMMON BACKFILL
CLEAN STONE (PEA GRAVEL) BACKFILL
TRACER WIRE LOCATED BELOW PIPE. SPLICING SHALL BE ENCASED WHERE REQUIRED
12"
D.I PIPE
6" MIN.
DETAIL "E"
D.I. – ROCK
FOR AREAS NOT TO BE PAVED
PAVEMENT
PAVEMENT PATCH
SUBGRADE AND PAVING THICKNESS PER INSTALLATION REQUIREMENTS
SAW CUT FULL DEPTH PAVEMENT (SEE NOTE 3)
12"
12"
CLEAN STONE (PEA GRAVEL) BACKFILL
TRACER WIRE LOCATED BELOW DEAD CENTER OF PIPE. SPLICING SHALL BE ENCASED WHERE REQUIRED
PVC PIPE
MARKING TAPE 12" ABOVE PIPE (COLOR/LABEL) AS REQUIRED
6" MIN.
DETAIL "B"
PVC – ROCK/SOIL
FOR PAVED AREAS OR AREAS TO BE PAVED OR WITHIN 18" OF PAVING
PAVEMENT
PAVEMENT PATCH
SUBGRADE AND PAVING THICKNESS PER INSTALLATION REQUIREMENTS
MARKING TAPE 12" ABOVE PIPE (COLOR/LABEL) AS REQUIRED
SAW CUT FULL DEPTH PAVEMENT (SEE NOTE 3)
12"
12"
12"
TRACER WIRE LOCATED BELOW PIPE. SPLICING SHALL BE ENCASED WHERE REQUIRED
DI PIPE
CLEAN STONE (PEA GRAVEL) BACKFILL
DETAIL "D"
D.I. – SOIL
FOR PAVED AREAS OR AREAS TO BE PAVED OR WITHIN 18" OF PAVING
SUBGRADE AND PAVING THICKNESS PER INSTALLATION REQUIREMENTS
PAVEMENT PATCH
SAW CUT FULL DEPTH PAVEMENT (SEE NOTE 3)
PAVEMENT
MARKING TAPE 12" ABOVE PIPE (COLOR/LABEL) AS REQUIRED
CLEAN STONE (PEA GRAVEL) BACKFILL
12"
12"
TRACER WIRE LOCATED BELOW PIPE. SPLICING SHALL BE ENCASED WHERE REQUIRED
D.I. PIPE
6" MIN.
DETAIL "F"
D.I. – ROCK
FOR PAVED AREAS OR AREAS TO BE PAVED OR WITHIN 18" OF PAVING

GENERAL NOTE:

1. CAUTION MUST BE EXERCISED TO ENSURE PROPER PLACEMENT OF EMBEDMENT MATERIAL UNDER THE HAUNCHES OF THE PIPE.
2. POLYETHYLENE ENCASING ON ALL D.I. PIPE, FITTINGS, VALVES & APPURTENANCES.
3. IF EDGE OF SAW CUT IS <= 4LF FROM CURB LINE, REMOVE PAVEMENT TO CURB.
4. STONE BACKFILL TO BE MECHANICALLY COMPACTED IN 6"–12" LIFTS.
5. REFER SPECIFICATION SECTIONS FOR DESCRIPTION OF BACKFILL AND BEDDING MATERIAL.

6 TRENCH RESTORATION DETAIL

SCALE: NTS



7 2" BLOW-OFF INSTALLATION

SCALE: NTS

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6/07/23	PER NJDEP COMMENTS
Revisions	

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Proj. No.	WEMF2022
Date	9–23–22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

CONSTRUCTION DETAILS C

SP-66

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