TREE PRESERVATION AREA

Wallbrook	Area (SF)	Acres	
Lot 1A (Publix)	289,488.0	6.65	
Lot 1B	100,018.8	2.30	
Lot 1C	82,590.5	1.90	
Lot 2	74,702.8	1.71	
Lot 3	47,515.5	1.09	
Lot 4	78,725.4	1.81	
Lot 5 (Boat Tract)	220,767.8	5.07	
Lot 6 (Townhomes)	876,206.2	20.11	
Lot 7	119,306.6	2.74	
Lot 8	232,868.9	5.35	
Right-of-Way (Future)	290,799.5	6.68	
WALLBROOK GROSS ACREAGE		55.39	
TREE PRESERVATION AREA	368,616.2	8.46	15.28%
QUALIFYING REPLACEMENT DECIDUOUS			12
QUALIFYING REPLACEMENT EVERGREEN			8

Paris Tract	Area (SF)	Acres	
Lot 9	86,013.5	1.97	
Lot 10	136,382.3	3.13	
Lot 11	70,406.6	1.62	
Right-of-Way (Future)	13,978.4	0.32	
PARIS TRACT GROSS ACREAGE		7.04	
TREE PRESERVATION AREA	16,399.5	0.38	5.35%
QUALIFYING REPLACEMENT DECIDUOUS			2
QUALIFYING REPLACEMENT EVERGREEN			0

MBW Tract	Area (SF)	Acres	
Lot 12	223,658.5	5.13	
Lot 13	60,807.1	1.40	
Lot 14	17,893.2	0.41	
MBW GROSS ACREAGE		6.94	
TREE PRESERVATION AREA	0.0	0.00	0.00%
QUALIFYING REPLACEMENT DECIDUOUS			1
QUALIFYING REPLACEMENT EVERGREEN			0

TREE REPLACEMENT - WALLBROOK

Date	ToR Project #	Project Description	Deciduous	Total Provided / Required	Evergreen	Total Provided / Required
18-AUG-23	SDP 23-05	Publix at Wallbrook	12	12 / 12	8	8 / 8

TREE REPLACEMENT - PARIS

Date	ToR Project #	Project Description	Deciduous	Total Provided / Required	Evergreen	Total Provided / Required
-	-	-	-	0 / 2	0	n/a

TREE REPLACEMENT - MBW

Date	ToR Project #	Project Description	Deciduous	Total Provided / Required	Evergreen	Total Provided / Required
-	-	-	-	0 / 1	0	n/a

NOTE: 1

PER FINAL REVIEW MEETING WITH TOWN STAFF, TREE PRESERVATION PLAN TO ACCOMPANY FUTURE SITE DEVELOPMENT PLANS (SDP) FOR LOTS PROPOSED BY THIS PRELIMINARY PLAT. TABLE ABOVE TO BE UPDATED WITH EACH SDP SUBMITTAL, IN ORDER TO TRACK REPLACEMENT TREES PROVIDED.

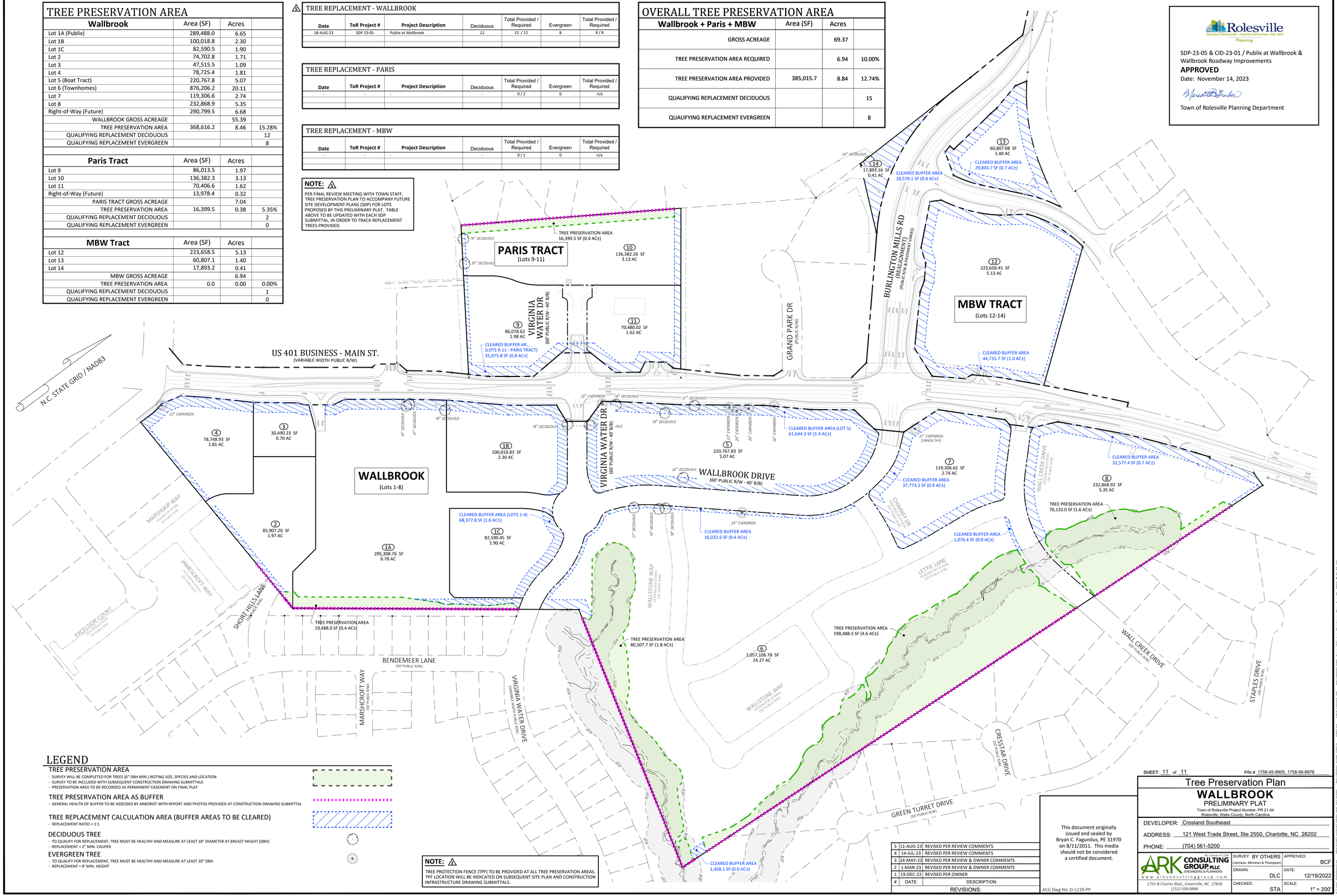
OVERALL TREE PRESERVATION AREA

Wallbrook + Paris + MBW	Area (SF)	Acres	
GROSS ACREAGE		69.37	
TREE PRESERVATION AREA REQUIRED		6.94	10.00%
TREE PRESERVATION AREA PROVIDED	385,015.7	8.84	12.74%
QUALIFYING REPLACEMENT DECIDUOUS			15
QUALIFYING REPLACEMENT EVERGREEN			8

Rolesville
Genuine Community • Coupled Connection • Est. 1837
Planning

SDP-23-05 & CID-23-01 / Publix at Wallbrook & Wallbrook Roadway Improvements
APPROVED
Date: November 14, 2023

Town of Rolesville Planning Department



LEGEND

TREE PRESERVATION AREA
- SURVEY WILL BE COMPLETED FOR TREES (6" DBH MIN.) NOTING SIZE, SPECIES AND LOCATION
- SURVEY TO BE INCLUDED WITH SUBSEQUENT CONSTRUCTION DRAWING SUBMITTALS
- PRESERVATION AREA TO BE RECORDED AS PERMANENT EASEMENT ON FINAL PLAT

TREE PRESERVATION AREA AS BUFFER
- GENERAL HEALTH OF BUFFER TO BE ASSESSED BY ARBORIST WITH REPORT AND PHOTOS PROVIDED AT CONSTRUCTION DRAWING SUBMITTAL

TREE REPLACEMENT CALCULATION AREA (BUFFER AREAS TO BE CLEARED)
- REPLACEMENT RATIO = 1:1

DECIDUOUS TREE
- TO QUALIFY FOR REPLACEMENT, TREE MUST BE HEALTHY AND MEASURE AT LEAST 18" DIAMETER AT BREAST HEIGHT (DBH)
- REPLACEMENT = 2" MIN. CALIPER

EVERGREEN TREE
- TO QUALIFY FOR REPLACEMENT, TREE MUST BE HEALTHY AND MEASURE AT LEAST 20" DBH
- REPLACEMENT = 8' MIN. HEIGHT

NOTE: 2

TREE PROTECTION FENCE (TPF) TO BE PROVIDED AT ALL TREE PRESERVATION AREAS. TPF LOCATION WILL BE INDICATED ON SUBSEQUENT SITE PLAN AND CONSTRUCTION INFRASTRUCTURE DRAWING SUBMITTALS.

#	DATE	DESCRIPTION
5	11-AUG-23	REVISED PER REVIEW COMMENTS
4	14-JUL-23	REVISED PER REVIEW COMMENTS
3	24-MAY-23	REVISED PER REVIEW & OWNER COMMENTS
2	1-MAR-23	REVISED PER REVIEW & OWNER COMMENTS
1	19-DEC-22	REVISED PER OWNER

REVISIONS:

ACG Dwg No. D-1219-PP

This document originally issued and sealed by Bryan C. Fagundus, PE 31970 on 8/11/2011. This media should not be considered a certified document.

SHEET: 11 of 11 PIN # 1758-45-8905, 1758-56-8976

Tree Preservation Plan

WALLBROOK

PRELIMINARY PLAT
Town of Rolesville Project Number: PR 21-04
Rolesville, Wake County, North Carolina

DEVELOPER: Crosland Southeast
ADDRESS: 121 West Trade Street, Ste 2550, Charlotte, NC 28202
PHONE: (704) 561-5200

ARK CONSULTING GROUP PLLC ENGINEERS & PLANNERS
Licensed in NC
www.arkconsultinggroup.com
2755-B Charles Blvd., Greenville, NC 27858
(252) 558-0888

SURVEY: BY OTHERS (Johnson, Mirniran & Thompson) | APPROVED: BCF
DRAWN: DLC | DATE: 12/19/2022
CHECKED: STA | SCALE: 1" = 200'

GENERAL NOTES:

1. THIS ALTA/NSPS LAND TITLE SURVEY WAS PREPARED FOR THE BENEFIT OF WALLBROOK LANDCO, LLC, ITS SUCCESSORS AND/OR ASSIGNS AS THEIR INTERESTS MAY APPEAR, AND INVESTORS TITLE INSURANCE COMPANY.
2. THE PROPERTY AS SHOWN HEREON IS BASED ON A FIELD-RUN BOUNDARY SURVEY WITH A RAW CLOSURE OF 1:34,600.
3. THE IMPROVEMENTS SHOWN HEREON ARE BASED ON A FIELD-RUN PLANIMETRIC SURVEY PERFORMED BY JOHNSON, MIRMIRAN & THOMPSON FROM DECEMBER 2019 THROUGH MARCH 2020 AND REFLECTS SITE CONDITIONS AS OF THAT DATE.
4. ELEVATIONS ARE BASED ON NAVD88 DATUM.
5. THE SURVEY IS REFERENCED TO THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM (NCSPCS), NORTH AMERICAN DATUM, 1983, 2001 ADJUSTMENT, NAD83(2001).
6. THE USE OF THE WORD CERTIFY OR CERTIFICATION CONSTITUTES AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THOSE FACTS OR FINDINGS WHICH ARE THE SUBJECT OF THE UNDERSIGNED PROFESSIONAL'S KNOWLEDGE, INFORMATION AND BELIEF, AND IN ACCORDANCE WITH THE COMMONLY ACCEPTED PROCEDURE CONSISTENT WITH THE APPLICABLE STANDARDS OF PRACTICE AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE EITHER EXPRESSED OR IMPLIED.
7. THE SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE X, AREA OF MINIMAL FLOODING, AS SHOWN ON NATIONAL FLOOD INSURANCE RATE MAP (FIRM), WAKE COUNTY, NORTH CAROLINA, PANEL 1758, MAP NO. 3720175800J, EFFECTIVE DATE: MAY 2, 2006.
8. AT THE TIME OF THE SURVEY, THERE WERE NO PARKING SPACES.
9. AT THE TIME OF THE SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF THE SITE BEING USED AS A SOLID WASTE DUMP, SUMP OR LANDFILL.
10. AT THE TIME OF THE SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF A CEMETERY.
11. AT THE TIME OF THE SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF BUILDING CONSTRUCTION OR BUILDING ADDITIONS.

AREA TABULATION

PARCEL	PIN#	NET (AC.)	GROSS (AC.)
A	1758-48-9229	0.828	0.828
B	1758-58-2090	10.742	11.168
C	1758-56-8976	42.324	44.100
D	1758-45-8905	15.024	15.024
	TOTALS:	68.918	71.120

MATCH LINE

RECORD LEGAL DESCRIPTIONS FOR TAX PARCELS 1758-48-9229 & 1758-58-2090:

PER INVESTORS TITLE INSURANCE COMPANY, TITLE COMMITMENT NO. 201800776CA2, WITH AN EFFECTIVE DATE OF SEPTEMBER 14, 2018 AT 5:00 P.M.

IN THE STATE OF NC, COUNTY OF WAKE,

PARCEL ONE (REID #: 0224145) (PIN #1758-58-2090) (PARCEL 'B'):

BEING LOT 2-3, CONTAINING 10.723 NET ACRES, AS THE SAME IS SHOWN ON THAT PLAT RECORDED IN BOOK OF MAPS 1996, PAGE 1582, WAKE COUNTY REGISTRY.

PARCEL TWO (REID #: 0092211) (PIN #1758-48-9229) (PARCEL 'A'):

BEING THAT PARCEL DESCRIBED AS FOLLOWS:

BEGINNING AT A STAKE IN THE EDGE OF THE ROLESVILLE-WALKERS CROSSROAD ROAD, CORNER OF O. V. WIGGINS; THENCE IN A SOUTHWESTERN DIRECTION ABOUT 300 FEET TO A STAKE AND W. H. MARSHALL'S LINE; THENCE IN A NORTHWESTERN DIRECTION 246 FEET WITH MARSHALL'S LINE TO THE EDGE OF THE ROAD; THENCE IN AN EASTERN DIRECTION WITH SAID ROAD ABOUT 410 FEET TO THE POINT OF BEGINNING, CONTAINING 1/8 OF AN ACRE BY ESTIMATION. BEING A PART OF THE LAND FORMERLY OWNED BY JAMES WALL.

RECORD LEGAL DESCRIPTIONS FOR TAX PARCELS 1758-56-8976 & 1758-45-8905:

PER INVESTORS TITLE INSURANCE COMPANY, TITLE COMMITMENT NO. 201800751CA2, WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2018 AT 5:00 P.M.

IN THE STATE OF NC, COUNTY OF WAKE,

TRACT 1 (PIN #1758-56-8976) (PARCEL 'C'):

BEING ALL OF TRACT 2A (2.894 ACRES) AND TRACT 3 (41.221 ACRES) AS SHOWN ON PLAT ENTITLED "RECOMBINATION SURVEY FOR TOMMY TWITTY" DATED NOVEMBER 17, 1995, PREPARED BY W. GRAHAM HAWTHORNE, JR., RLS AND RECORDED IN BOOK OF MAPS 1995, PAGE 2034, WAKE COUNTY REGISTRY.

LESS AND EXCEPT FROM TRACT 1 THAT 0.175 ACRE PORTION AS CONVEYED TO THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION IN DEED RECORDED IN BOOK 14395, PAGE 2080, WAKE COUNTY REGISTRY.

TRACT 2 (PIN #1758-45-8905) (PARCEL 'D'):

BEING ALL OF TRACT 2 (15.057 ACRE) AS SHOWN ON PLAT ENTITLED "RECOMBINATION MAP OF BOBBY L. MURRAY TRUST, TRACTS 1 & 2" DATED NOVEMBER 7, 2002, PREPARED BY MICHAEL D. GOODFRED, RLS, AND RECORDED IN BOOK OF MAPS 2005, PAGES 1195 AND 1196, WAKE COUNTY REGISTRY.

LESS AND EXCEPT FROM TRACT 2 THAT 0.03 ACRE PORTION AS CONVEYED TO CARLTON GROUP OF NORTH CAROLINA, LLC IN DEED RECORDED IN BOOK 13993, PAGE 2591, WAKE COUNTY REGISTRY.

SCHEDULE B, PART II EXCEPTIONS:

PER INVESTORS TITLE INSURANCE COMPANY, TITLE COMMITMENT NO. 201800776CA2, WITH AN EFFECTIVE DATE OF SEPTEMBER 14, 2018 AT 5:00 P.M.

1. (ITEM 3) MATTERS SHOWN ON RECORDED BOOK OF MAPS 1996 AT PAGE 1582 SHOWS THE FOLLOWING LOCATED ON THE LAND:
   (a) OVERHEAD LINES [PLOTTED HEREON]
   (b) POWER POLE [PLOTTED HEREON]
   (c) RIGHT OF WAY FOR U.S. HWY 401 LOUISBURG ROAD [PLOTTED HEREON]
2. (ITEM 4) EASEMENT(S) AND/OR RIGHT(S) OF WAY RECORDED IN BOOK 3868 AT PAGE 917 (PARCEL ONE). [PLOTTED HEREON]

SCHEDULE B, PART II EXCEPTIONS:

PER INVESTORS TITLE INSURANCE COMPANY, TITLE COMMITMENT NO. 201800751CA2, WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2018 AT 5:00 P.M.

3. (ITEM 2) TITLE TO THAT PORTION OF THE LAND WITHIN THE RIGHT-OF-WAY OF U.S. HIGHWAY 401 (LOUISBURG ROAD). [PLOTTED HEREON]
4. (ITEM 3) RIGHTS OF OTHERS THERETO ENTITLED IN AND TO THE CONTINUED UNINTERRUPTED FLOW OF THE CREEK, LOCATED ON THE LAND. [CREEK LOCATION PLOTTED HEREON]
5. (ITEM 4) ELECTRIC LINE RIGHT-OF-WAY EASEMENT TO WAKE ELECTRIC MEMBERSHIP CORPORATION RECORDED IN BOOK 3868 AT PAGE 917. [PLOTTED HEREON]

AS TO TRACT 1 ONLY (PIN #1758-56-8976):

6. (ITEM 8) SUBJECT TO MATTERS SHOWN ON RECORDED BOOK OF MAPS 1995 AT PAGE 2034 SHOWS THE FOLLOWING LOCATED ON THE LAND:
   (a) OVERHEAD LINE [PLOTTED HEREON]
   (b) POWER POLE [PLOTTED HEREON]
7. (ITEM 9) EASEMENT(S) TO WAKE ELECTRIC MEMBERSHIP CORPORATION RECORDED IN BOOK 863 AT PAGES 211 AND 212. [BLANKET EASEMENT - EXISTING ELECTRIC LINES PLOTTED HEREON]
8. (ITEM 10) RURAL LINE PERMIT TO CAROLINA TELEPHONE AND TELEGRAPH COMPANY RECORDED IN BOOK 1338 AT PAGES 143 AND 145. [LOCATIONS CANNOT BE DETERMINED FROM THE RECORD DOCUMENT, EXISTING POLES AND GUY WIRES PLOTTED HEREON]
9. (ITEM 11) SLOPE EASEMENT RECORDED IN BOOK 14395 AT PAGE 2087 AS SHOWN ON PLAT RECORDED IN BOOK OF MAPS 2011 AT PAGE 383. [PLOTTED HEREON]

AS TO TRACT 2 ONLY (PIN #1758-45-8905):

10. SUBJECT TO MATTERS SHOWN ON RECORDED BOOK OF MAPS 2005 AT PAGES 1195 AND 1196 SHOWS THE FOLLOWING LOCATED ON THE LAND:
    (a) UNDERGROUND SEWER MAIN MARKER [NOT FOUND]
    (b) POWER BOX [NOT FOUND]
    (c) RIGHTS OF OTHERS IN AND TO THE USE OF THE SOIL PATH (TO BE ABANDONED) [PATH NO LONGER VISIBLE]
11. (ITEM 13) DEED OF EASEMENT WITH GENERAL WARRANTY FOR WATERLINE EASEMENT TEMPORARY CONSTRUCTION EASEMENT RECORDED IN BOOK 16679 AT PAGE 132. [WATERLINE EASEMENT PLOTTED HEREON, TEMPORARY CONSTRUCTION EASEMENT NOT PLOTTED]
12. (ITEM 14) SANITARY SEWER EASEMENT RECORDED IN BOOK 10071 AT PAGE 2179 AS SHOWN ON PLAT RECORDED IN BOOK OF MAPS 2003 AT PAGE 647. [PLOTTED HEREON]
13. (ITEM 15) RESERVATION OF EASEMENT RECORDED IN BOOK 13993 AT PAGE 2591. [PLOTTED HEREON]
14. (ITEM 16) TITLE TO THAT PORTION OF THE LAND WITHIN THE RIGHT-OF-WAY OF S.R. 2226. [RIGHT OF WAY OF S.R. 2226 PLOTTED HEREON - PROPERTY DOES NOT EXTEND INTO RIGHT OF WAY]
15. (ITEM 17) RIGHT OF WAY AGREEMENT TO STATE HIGHWAY COMMISSION RECORDED IN BOOK 2052 AT PAGE 545. [RIGHT OF WAY OF S.R. 2226 PLOTTED HEREON]
16. (ITEM 18) RIGHTS OF OTHERS THERETO ENTITLED IN AND TO THE CONTINUED UNINTERRUPTED FLOW OF BRANCH/CREEK, LOCATED ON THE LAND. [BRANCH/CREEK LOCATION PLOTTED HEREON]

MATCH LINE

NEW LEGAL DESCRIPTIONS

PARCEL 'A' (PIN #1758-48-9229)

ALL THAT CERTAIN REAL PROPERTY SITUATED IN THE TOWN OF ROLESVILLE, COUNTY OF WAKE, STATE OF NORTH CAROLINA, DESCRIBED AS FOLLOWS:

BEGINNING AT A FOUND IRON PIPE MARKING THE NORTHWEST CORNER OF LOT 2-3 AS SAID LOT IS SHOWN AND SO DESIGNATED ON THAT CERTAIN PLAT ENTITLED "RECOMBINATION SURVEY FOR TOMMY TWITTY, TRACTS 2-2 & 2-3, TWITTY PROP.", BY W. GRAHAM CAWTHORNE, JR., RLS, DATED NOVEMBER 17, 1995, REVISED JANUARY 12, 1996 AND RECORDED IN BOOK OF MAPS 1996, PAGE 1582, WAKE COUNTY RECORDS, SAID PIPE ALSO BEING ON THE EAST LINE OF TRACT #3 AS SAID TRACT IS SHOWN AND SO DESIGNATED ON THAT CERTAIN PLAT ENTITLED "W. H. MARSHALL ESTATE", BY C. W. RUSSUM, RLS, DATED JULY, 1961 AND RECORDED IN BOOK OF MAPS 1961, PAGE 97, WAKE COUNTY RECORDS; THENCE ALONG SAID EAST LINE OF TRACT 3 N01°11'04"W 240.24' TO AN IRON PIPE ON THE SOUTHWEST RIGHT OF WAY LINE OF BURLINGTON MILLS ROAD (S.R. 2051); THENCE ALONG SAID SOUTHWEST RIGHT OF WAY LINE THE FOLLOWING FOUR COURSES: (1) S47°12'51"E 130.81'; (2) ALONG THE ARC OF A TANGENT CURVE TO THE LEFT, CONCAVE TO THE NORTHEAST, HAVING A RADIUS OF 600.00', THROUGH A CENTRAL ANGLE OF 26°22'04", AN ARC LENGTH OF 276.12' AND BEING SUBTENDED BY A CHORD BEARING S60°23'53"E 273.69'; (3) S75°02'10"E 50.12'; AND (4) S77°31'31"E 22.85' TO THE NORTH LINE OF AFORESAID LOT 2-3; THENCE ALONG SAID NORTH LINE OF LOT 2-3 N89°45'02"W 399.74' TO THE POINT OF BEGINNING.

CONTAINING 0.828 ACRES, MORE OR LESS.

PARCEL 'B' (PIN #1758-58-2090)

ALL THAT CERTAIN REAL PROPERTY SITUATED IN THE TOWN OF ROLESVILLE, COUNTY OF WAKE, STATE OF NORTH CAROLINA, DESCRIBED AS FOLLOWS:

BEGINNING AT A FOUND IRON PIPE MARKING THE SOUTHWEST CORNER OF PARCEL 2 AS SAID PARCEL IS DESCRIBED IN DEED BOOK 15498, PAGE 1302, WAKE COUNTY RECORDS; THENCE ALONG THE SOUTH LINE OF SAID PARCEL 2 S89°45'02"E 399.74' TO THE SOUTHWEST RIGHT OF WAY LINE OF BURLINGTON MILLS ROAD (S.R. 2051); THENCE CONTINUING S89°45'02"E 200.72' TO THE NORTHWEST CORNER OF LOT 2-4 AS SAID LOT IS SHOWN AND SO DESIGNATED ON THAT CERTAIN PLAT ENTITLED "RECOMBINATION SURVEY FOR TOMMY TWITTY, TRACTS 2-2 & 2-3, TWITTY PROP.", BY W. GRAHAM CAWTHORNE, JR., RLS, DATED NOVEMBER 17, 1995, REVISED JANUARY 12, 1996 AND RECORDED IN BOOK OF MAPS 1996, PAGE 1582, WAKE COUNTY RECORDS; THENCE ALONG THE SOUTHWEST LINE OF SAID LOT 2-4 S37°53'38"E 39.01' TO A FOUND BENT IRON PIPE AT AN ANGLE POINT IN THE SOUTH RIGHT OF WAY LINE OF BURLINGTON MILLS ROAD; THENCE CONTINUING S37°53'38"E 454.70' TO A FOUND IRON PIPE AT AN ANGLE POINT IN THE NORTHWEST RIGHT OF WAY LINE OF LOUISBURG ROAD (U.S. 401); THENCE CONTINUING S37°53'38"E 45.31' TO THE CENTERLINE OF LOUISBURG ROAD; THENCE ALONG THE CENTERLINE OF SAID ROAD, ALONG THE ARC OF A CURVE TO THE LEFT, CONCAVE TO THE SOUTHEAST, HAVING A RADIUS OF 3,750.00', THROUGH A CENTRAL ANGLE OF 08°13'06", AN ARC LENGTH OF 537.89' AND BEING SUBTENDED BY A CHORD BEARING S41°12'09"W 537.43'; THENCE LEAVING SAID CENTERLINE, ALONG THE NORTHEAST LINE OF LOTS 1 AND 2 AS SAID LOTS ARE SHOWN AND SO DESIGNATED ON THAT CERTAIN PLAT ENTITLED "SURVEY FOR GRAND PARK PROPERTIES, LOTS 1 AND 2", BY CAWTHORNE, MOSS & PANCIERA, P.C., DATED OCTOBER 7, 1998 AND RECORDED IN BOOK OF MAPS 1999, PAGE 1039, WAKE COUNTY RECORDS, N49°16'09"W 479.09' TO A FOUND IRON PIPE MARKING AN ANGLE POINT IN SAID LOT 2; THENCE CONTINUING ALONG THE NORTHEAST LINE OF SAID LOT 2 N66°40'58"W 215.40' TO A FOUND IRON PIPE AT THE NORTHWEST CORNER THEREOF, SAID PIPE ALSO BEING ON THE EAST LINE OF TRACT #3 AS SAID TRACT IS SHOWN AND SO DESIGNATED ON THAT CERTAIN PLAT ENTITLED "W. H. MARSHALL ESTATE", BY C. W. RUSSUM, RLS, DATED JULY, 1961 AND RECORDED IN BOOK OF MAPS 1961, PAGE 97, WAKE COUNTY RECORDS; THENCE ALONG SAID EAST LINE OF TRACT 3 N01°36'18"W 428.68' TO THE POINT OF BEGINNING.

THIS PARCEL IS THE SAME AS LOT 2-3 AS SHOWN AND SO DESIGNATED ON THAT CERTAIN PLAT ENTITLED "RECOMBINATION SURVEY FOR TOMMY TWITTY, TRACTS 2-2 & 2-3, TWITTY PROP.", BY W. GRAHAM CAWTHORNE, JR., RLS, DATED NOVEMBER 17, 1995, REVISED JANUARY 12, 1996 AND RECORDED IN BOOK OF MAPS 1996, PAGE 1582, WAKE COUNTY RECORDS.

CONTAINING 11.168 ACRES, MORE OR LESS.

NEW LEGAL DESCRIPTIONS

PARCEL 'C' (PIN #1758-56-8976)

ALL THAT CERTAIN REAL PROPERTY SITUATED IN THE TOWN OF ROLESVILLE, COUNTY OF WAKE, STATE OF NORTH CAROLINA, DESCRIBED AS FOLLOWS:

BEGINNING AT A FOUND IRON PIPE MARKING THE NORTHEAST CORNER OF TRACT 2 AS SAID TRACT IS SHOWN AND SO DESIGNATED ON THAT CERTAIN PLAT ENTITLED "RECOMBINATION MAP OF BOBBY L. MURRAY TRUST, TRACTS 1+2", BY KENNETH CLOSE, INC., DATED NOVEMBER 7, 2002 AND RECORDED IN BOOK OF MAPS 2005, PAGES 1195 AND 1196, WAKE COUNTY RECORDS; THENCE ALONG THE NORTH LINE OF SAID TRACT 2 N75°27'01"W 704.12' TO A FOUND IRON PIPE ON THE SOUTHEAST RIGHT OF WAY LINE OF LOUISBURG ROAD (U.S. 401); THENCE CONTINUING N75°27'01"W 32.34' TO THE CENTERLINE OF LOUISBURG ROAD; THENCE ALONG THE CENTERLINE OF SAID ROAD N36°33'22"E 1,116.98'; THENCE CONTINUING ALONG SAID CENTERLINE, ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, CONCAVE TO THE SOUTHEAST, HAVING A RADIUS OF 3,750.00', THROUGH A CENTRAL ANGLE OF 18°18'05", AN ARC LENGTH OF 1,197.82' AND BEING SUBTENDED BY A CHORD BEARING N45°42'25"E 1,192.73'; THENCE LEAVING SAID CENTERLINE S89°44'38"E 134.33' TO AN ANGLE POINT IN THE SOUTHWEST LINE OF THAT CERTAIN PARCEL DESCRIBED IN DEED BOOK 6821, PAGE 005, WAKE COUNTY RECORDS; THENCE ALONG THE SOUTHWEST LINE OF SAID PARCEL AND ALONG THE WEST LINE OF WALL CREEK SUBDIVISION, PHASES 2, 4 AND 5-A AS RECORDED IN BOOK OF MAPS 1997, PAGE 1162, BOOK OF MAPS 2001, PAGE 628 AND BOOK OF MAPS 2002, PAGE 825, WAKE COUNTY RECORDS, S03°05'32"W 2,131.93' TO A POINT ON THE NORTH LINE OF CARLTON POINTE SUBDIVISION, PHASE I AS RECORDED IN BOOK OF MAPS 2008, PAGES 5 TO 10, WAKE COUNTY RECORDS; THENCE ALONG SAID NORTH LINE OF CARLTON POINTE SUBDIVISION N75°27'01"W 852.86' TO THE POINT OF BEGINNING.

THIS PARCEL IS THE SAME AS TRACTS 2A AND 3 AS SHOWN AND SO DESIGNATED ON THAT CERTAIN PLAT ENTITLED "RECOMBINATION SURVEY FOR TOMMY TWITTY", BY W. GRAHAM CAWTHORNE, JR., RLS, DATED NOVEMBER 17, 1995 AND RECORDED IN BOOK OF MAPS 1995, PAGE 2034, WAKE COUNTY RECORDS.

CONTAINING 44.100 ACRES, MORE OR LESS.

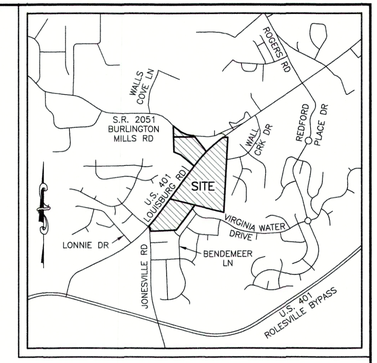
PARCEL 'D' (PIN #1758-45-8905)

ALL THAT CERTAIN REAL PROPERTY SITUATED IN THE TOWN OF ROLESVILLE, COUNTY OF WAKE, STATE OF NORTH CAROLINA, DESCRIBED AS FOLLOWS:

BEGINNING AT A FOUND IRON PIPE ON THE SOUTH LINE OF TRACT 3 AS SAID TRACT IS SHOWN AND SO DESIGNATED ON THAT CERTAIN PLAT ENTITLED "RECOMBINATION SURVEY FOR TOMMY TWITTY", BY W. GRAHAM CAWTHORNE, JR., RLS, DATED NOVEMBER 17, 1995 AND RECORDED IN BOOK OF MAPS 1995, PAGE 2034, WAKE COUNTY RECORDS, SAID PIPE ALSO BEING AN ANGLE POINT IN THE NORTHWEST LINE OF CARLTON POINTE SUBDIVISION, PHASE I AS RECORDED IN BOOK OF MAPS 2008, PAGES 5 TO 10, WAKE COUNTY RECORDS; THENCE ALONG THE NORTHWEST LINE OF SAID CARLTON POINTE SUBDIVISION S36°44'45"W 877.98' TO AN ANGLE POINT; THENCE CONTINUING ALONG SAID NORTHWEST LINE AND ALONG THE NORTH LINE OF LOTS 1, 2 AND 3 AS SAID LOTS ARE SHOWN AND SO DESIGNATED ON THAT CERTAIN PLAT ENTITLED "SUBDIVISION PLAT FOR BARRETT VENTURES, LLC", BY CAWTHORNE, MOSS & PANCIERA, P.C., DATED APRIL 4, 2007 AND RECORDED IN BOOK OF MAPS 2008, PAGE 702, WAKE COUNTY RECORDS, S87°10'58"W 737.24' TO AN ANGLE POINT IN THE EAST RIGHT OF WAY LINE OF JONESVILLE ROAD (S.R. 2226) AND THE SOUTHEAST CORNER OF THAT CERTAIN PARCEL DESCRIBED IN DEED BOOK 13993, PAGE 2591, WAKE COUNTY RECORDS; THENCE ALONG THE EAST LINE OF SAID PARCEL N02°07'15"W 48.32'; THENCE CONTINUING ALONG SAID EAST LINE, ALONG THE ARC OF A CURVE TO THE LEFT, CONCAVE TO THE WEST, HAVING A RADIUS OF 123.92', THROUGH A CENTRAL ANGLE OF 30°27'05", AN ARC LENGTH OF 65.86' AND BEING SUBTENDED BY A CHORD BEARING N17°21'49"W 65.09' TO THE EAST RIGHT OF WAY LINE OF JONESVILLE ROAD; THENCE ALONG SAID EAST RIGHT OF WAY LINE N03°10'03"W 17.67' TO THE SOUTHEAST RIGHT OF WAY LINE OF LOUISBURG ROAD (U.S. 401); THENCE ALONG SAID SOUTHEAST RIGHT OF WAY LINE THE FOLLOWING EIGHT COURSES: (1) N41°10'16"E 41.30'; (2) N40°37'47"E 49.15'; (3) N39°31'43"E 50.83'; (4) N38°52'58"E 49.80'; (5) N38°22'04"E 50.40'; (6) N37°17'31"E 50.37'; (7) N36°44'45"E 304.20'; AND (8) N36°27'57"E 396.53' TO A FOUND IRON PIPE ON THE SOUTH LINE OF THE AFORESAID TRACT 3; THENCE ALONG SAID SOUTH LINE OF TRACT 3 S75°27'01"E 704.12' TO THE POINT OF BEGINNING.

CONTAINING 15.024 ACRES, MORE OR LESS.

MATCH LINE



VICINITY MAP
SCALE: 1"=2000'

LEGEND

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R/W = RIGHT OF WAY
C&G = CURB AND GUTTER
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GUY = GUY WIRE
RCP = REINFORCED CONCRETE PIPE
S.F. = SQUARE FEET (AREA)
SIGN = SIGN
SIGNAL = TRAFFIC SIGNAL POLE
SS = SANITARY SEWER MANHOLE
SSVM = SANITARY SEWER FORCE MAIN VALVE
SD = STORM DRAIN MANHOLE
TEL = TELEPHONE PEDESTAL
TRAF = TRAFFIC BOX
WATER = WATER BOX
WM = WATER METER
WMH = WATER MANHOLE
WV = WATER VALVE
WELL = WELL
X-WALK = PEDESTRIAN X-WALK POLE
E = ELECTRIC LINE
FM = SANITARY SEWER FORCE MAIN
FO = FIBER OPTIC LINE
G = GAS LINE
OHE = OVERHEAD ELECTRIC LINE
S = SANITARY SEWER LINE
T = TELEPHONE LINE
TV = CABLE TV LINE
W = WATER LINE

CURRENT ZONING SETBACK REQUIREMENTS:

TAX PARCEL 1758-48-9229: R-1 (SINGLE FAMILY RESIDENTIAL)
TAX PARCEL 1759-58-2090: R-1-SUD (SINGLE FAMILY RESIDENTIAL SPECIAL USE DISTRICT)
TAX PARCEL 1758-56-8976: CO-SUD (COMMERCIAL OUTLYING SPECIAL USE DISTRICT)
TAX PARCEL 1758-45-8905: CO-SUD

	FRONT	SIDE	CORNER	REAR	
R-1	30'	12'	22'	25'	(SETBACKS INCLUDE SPECIAL USE DISTRICTS)
CO	20'	15'	25'	35'	

NOTE: ZONING INFORMATION BASED ON INFORMATION AS SUPPLIED BY CURRENT COUNTY ZONING DEPARTMENT, NO ZONING REPORT OR LETTER WAS PROVIDED TO SURVEYOR AT TIME OF SURVEY.

SURVEYOR'S CERTIFICATION:

TO WALLBROOK LANDCO, LLC, ITS SUCCESSORS AND/OR ASSIGNS AS THEIR INTERESTS MAY APPEAR, AND INVESTORS TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6A, 7A, 7B1, 8, 9, 11, 13, 16 AND 17 OF TABLE "A" THEREOF. THE FIELDWORK WAS COMPLETED ON MARCH 6, 2020.

10/1/2020
WILLIAM T. ROBBINS, II — DATE
P.L.S. #L-4192

NORTH CAROLINA PROFESSIONAL SEAL L-4192 LAND SURVEYOR WILLIAM T. ROBBINS II

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®
9201 Arboretum Parkway Suite 310 Richmond, Virginia 23236
PHONE: (804)-323-9900 FAX: (804)-323-0596
EMAIL: jmtva@jmt-engineering.com

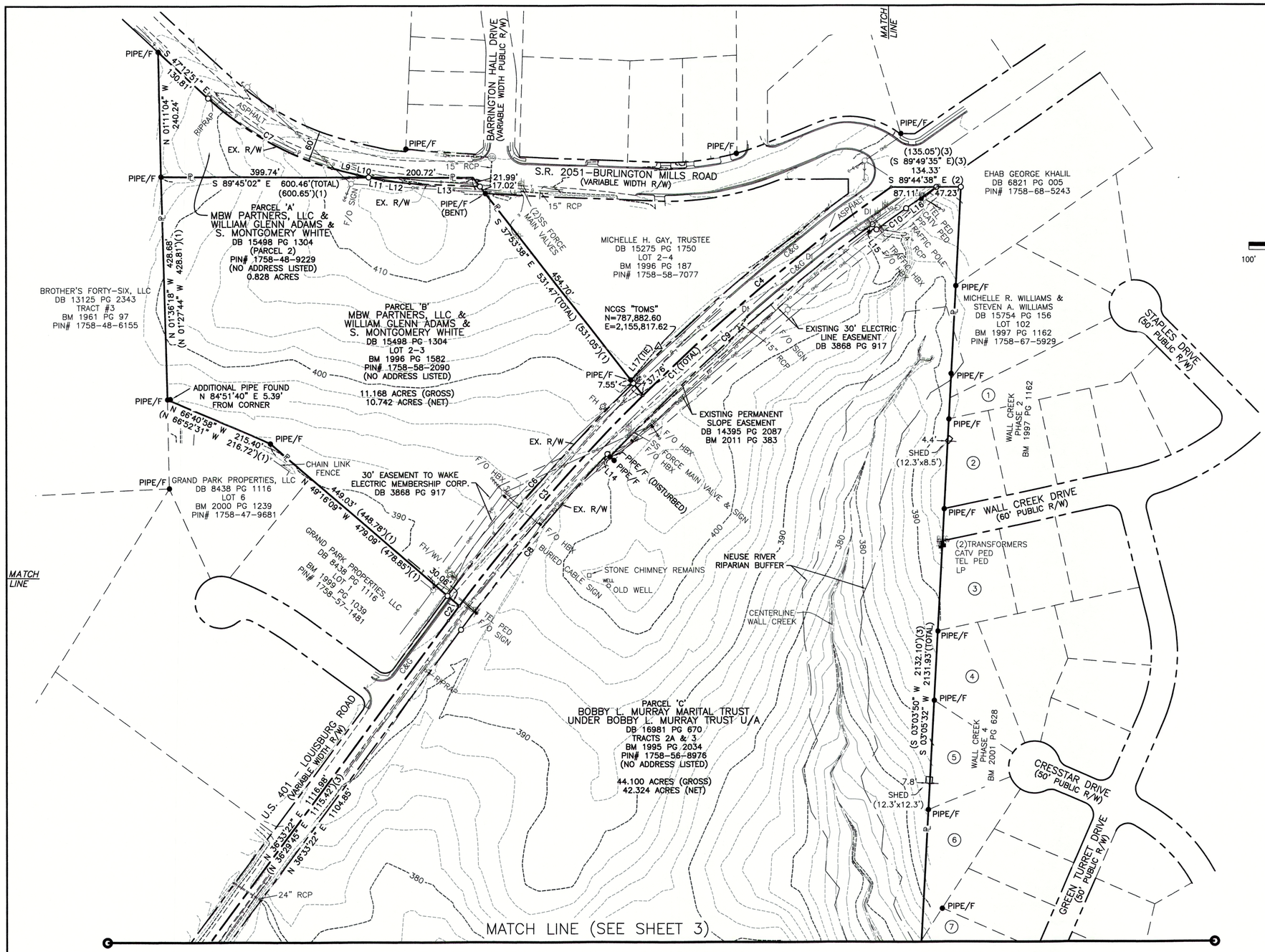
REVISION #	DATE	REASON FOR REVISION
1	10/01/2020	ADDED RIPARIAN BUFFER ALONG WALL CREEK

ALTA/NSPS LAND TITLE SURVEY

PREPARED FOR
WALLBROOK LANDCO, LLC

WAKE FOREST TOWNSHIP
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

DRAWN BY: JSZ	PROJECT#:	
CHECKED BY: WTR	CONTRACT#:	JMT#: 17-10946-001
DATE: 03/25/2020	SCALE: 1"=100'	SHEET 1 OF 3



LINE	BEARING	DISTANCE	
L1	N 02°07'15" W	48.32'	(6)
L2	N 03°10'03" W	17.67'	
L3	N 41°10'16" E	41.30'	(5)
L4	N 40°37'47" E	49.15'	(5)
L5	N 39°31'43" E	50.83'	(5)
L6	N 38°52'58" E	49.80'	(5)
L7	N 38°22'04" E	50.40'	(5)
L8	N 37°17'31" E	50.37'	(5)
L9	S 75°02'10" E	50.12'	
L10	S 77°31'31" E	22.85'	
L11	S 77°31'31" E	29.16'	
L12	S 84°03'28" E	50.67'	
L13	S 87°10'20" E	135.52'	
L14	S 46°39'44" E	7.50'	(2)
L15	S 36°12'58" E	12.50'	(2)
L16	N 55°13'38" E	70.99'	(71.01')(2)
L17	N 39°21'58" E	83.92'	

CURVE TABLE						
CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH	
C1	1197.82'	3750.00'	18°18'05"	S 45°42'25" W	1192.73'	(R=3750.00', L=1199.06')(3)
C2	35.15'	3750.00'	0°32'13"	S 36°49'29" W	35.15'	
C3	537.89'	3750.00'	8°13'06"	S 41°12'09" W	537.43'	
C4	624.78'	3750.00'	9°32'45"	S 50°05'04" W	624.06'	
C5	65.86'	123.92'	30°27'05"	S 17°21'49" E	65.09'	
C6	543.86'	3780.00'	8°14'37"	S 41°14'38" W	543.40'	
C7	276.12'	600.00'	26°22'04"	N 60°23'53" W	273.69'	
C8	440.32'	3720.00'	6°46'55"	S 39°56'50" W	440.07'	
C9	675.88'	3712.50'	10°25'52"	S 48°33'13" W	674.95'	
C10	70.31'	3700.00'	1°05'20"	S 54°18'48" W	70.31'	(2)

ADJOINING PROPERTY OWNERS

(1) RODERICK BLACKWELL & CHRISTINE BLACKWELL
DB 8769 PG 1894
LOT 101
BM 1997 PG 1162
PIN# 1758-67-6836

(2) CHARLES CULBERTSON & TERESA CULBERTSON
DB 17393 PG 896
LOT 96
BM 1997 PG 1162
PIN# 1758-67-4619

(3) ANTONIO G. CATTARUZZA & SHELIA B. CATTARUZZA
DB 8149 PG 422
LOT 92
BM 1997 PG 1162
PIN# 1758-67-4416

(4) JOHN DANIEL BONO, III & SABRINA MICHELE BONO
DB 13369 PG 2170
LOT 85
BM 2001 PG 628
PIN# 1758-67-4204

(5) RONALD G. PATTERSON & LAURA A. PATTERSON
DB 10087 PG 2409
LOT 84
BM 2001 PG 628
PIN# 1758-67-4100

(6) MICHAEL A. HADDER & JENNIFER H. HADDER
DB 16143 PG 2477
LOT 83
BM 2001 PG 628
PIN# 1758-66-3984

(7) JOSEPH L. KEELEY, III & SARAH E. KEELEY
DB 10496 PG 1314
LOT 79
BM 2002 PG 825
PIN# 1758-66-4723

LEGEND

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REVISION #	DATE	REASON FOR REVISION
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NORTH CAROLINA PROFESSIONAL SEAL L-4192 LAND SURVEYOR WILLIAM T. ROBBINS, II

ALTA/NSPS LAND TITLE SURVEY

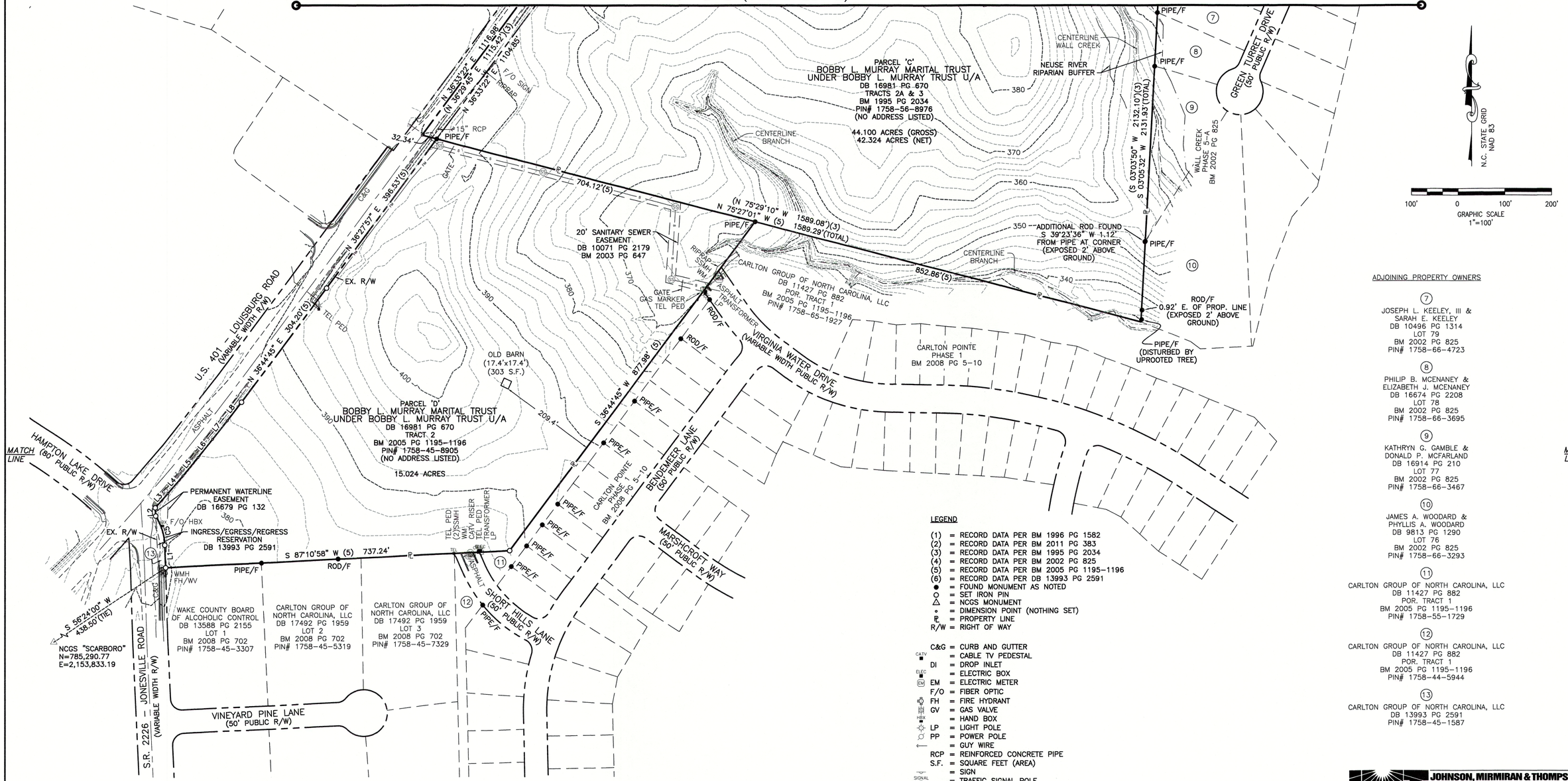
PREPARED FOR
WALLBROOK LANDCO, LLC

WAKE FOREST TOWNSHIP
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

DRAWN BY: JSZ	PROJECT#:	
CHECKED BY: WTR	CONTRACT#:	JMT#: 17-10946-001
DATE: 03/25/2020	SCALE: 1"=100'	SHEET 2 OF 3

MATCH LINE (SEE SHEET 2)

MATCH LINE



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SARAH E. KEELEY
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LOT 79
BM 2002 PG 825
PIN# 1758-66-4723

(8)
PHILIP B. MCENANEY &
ELIZABETH J. MCENANEY
DB 16674 PG 2208
LOT 78
BM 2002 PG 825
PIN# 1758-66-3695

(9)
KATHRYN G. GAMBLE &
DONALD P. MCFARLAND
DB 16914 PG 210
LOT 77
BM 2002 PG 825
PIN# 1758-66-3467

(10)
JAMES A. WOODARD &
PHYLLIS A. WOODARD
DB 9813 PG 1290
LOT 76
BM 2002 PG 825
PIN# 1758-66-3293

(11)
CARLTON GROUP OF NORTH CAROLINA, LLC
DB 11427 PG 882
POR. TRACT 1
BM 2005 PG 1195-1196
PIN# 1758-55-1729

(12)
CARLTON GROUP OF NORTH CAROLINA, LLC
DB 11427 PG 882
POR. TRACT 1
BM 2005 PG 1195-1196
PIN# 1758-44-5944

(13)
CARLTON GROUP OF NORTH CAROLINA, LLC
DB 13993 PG 2591
PIN# 1758-45-1587

LEGEND

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REVISION #	DATE	REASON FOR REVISION
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NORTH CAROLINA PROFESSIONAL SEAL L-4192 LAND SURVEYOR WILLIAM V. RUBISH

ALTA/NSPS LAND TITLE SURVEY

PREPARED FOR
WALLBROOK LANDCO, LLC

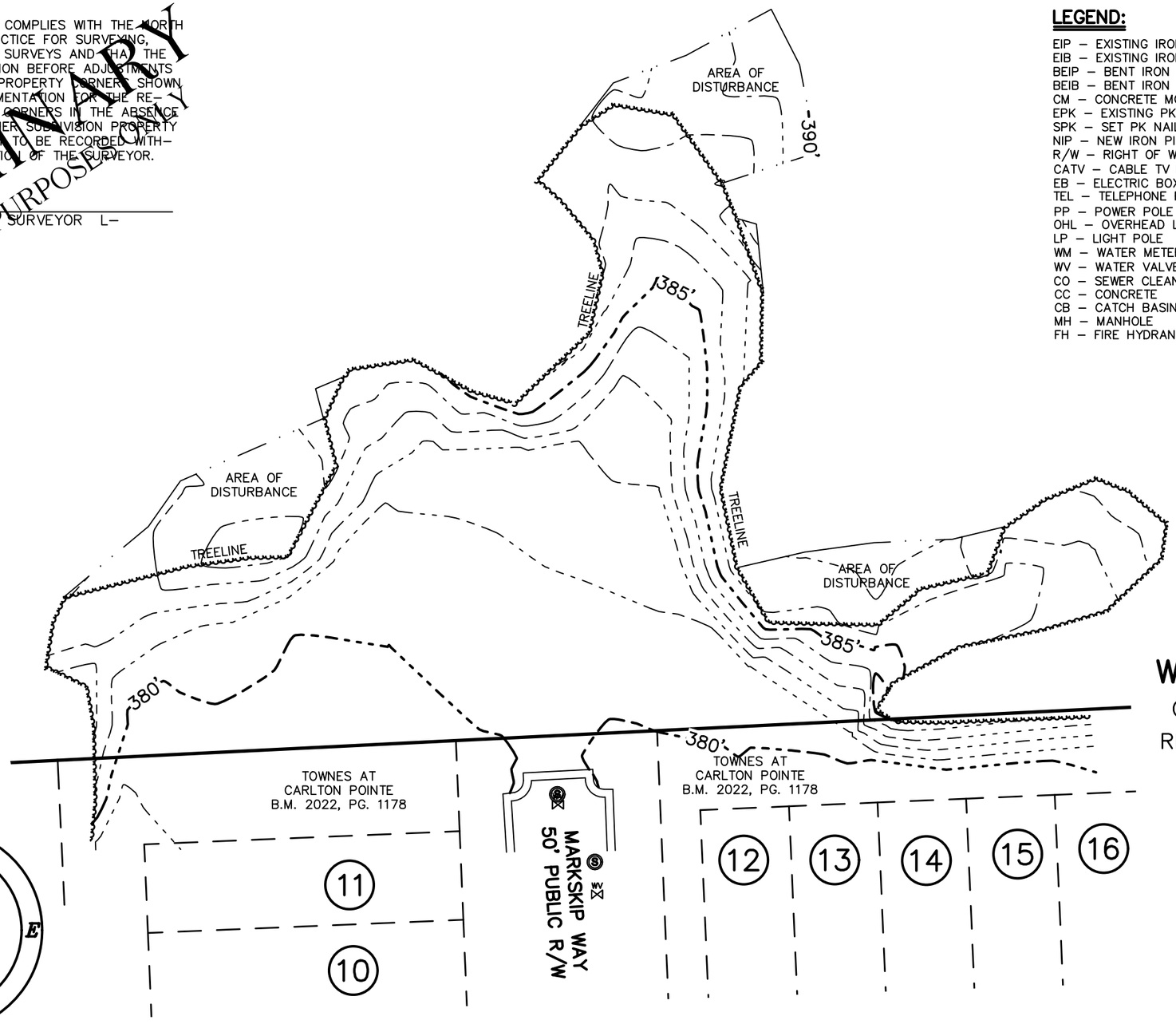
WAKE FOREST TOWNSHIP
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

DRAWN BY: JSZ	PROJECT#:	
CHECKED BY: WTR	CONTRACT#:	JMT#: 17-10946-001
DATE: 03/25/2020	SCALE: 1"=100'	SHEET 3 OF 3

I DECLARE THAT THIS SURVEY COMPLIES WITH THE NORTH CAROLINA STANDARDS OF PRACTICE FOR SURVEYING, (SECTION 1600) FOR CLASS A SURVEYS AND THAT THE CALCULATED RATIO OF PRECISION BEFORE ADJUSTMENTS IS 1:10,000+. FURTHERMORE, PROPERTY CORNERS SHOWN ARE PRIMARY CONTROL MONUMENTATION FOR THE RE-ESTABLISHMENT OF PROPERTY CORNERS IN THE ABSENCE OF GRID MONUMENTS AND OTHER SUBDIVISION PROPERTY CORNERS. THIS SURVEY IS NOT TO BE RECORDED WITH-OUT THE WRITTEN AUTHORIZATION OF THE SURVEYOR.

PROFESSIONAL LAND SURVEYOR L-

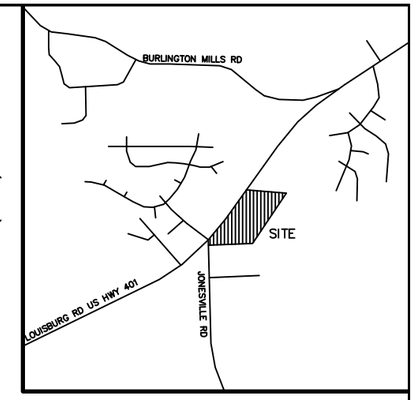
PRELIMINARY
FOR REVIEW PURPOSES ONLY



LEGEND:

EIP – EXISTING IRON PIPE
EIB – EXISTING IRON BAR
BEIP – BENT IRON PIPE
BEIB – BENT IRON BAR
CM – CONCRETE MONUMENT
EPK – EXISTING PK NAIL
SPK – SET PK NAIL
NIP – NEW IRON PIPE SET
R/W – RIGHT OF WAY
CATV – CABLE TV BOX
EB – ELECTRIC BOX
TEL – TELEPHONE PEDESTAL
PP – POWER POLE
OHL – OVERHEAD LINE
LP – LIGHT POLE
WM – WATER METER
WV – WATER VALVE
CO – SEWER CLEAN-OUT
CC – CONCRETE
CB – CATCH BASIN
MH – MANHOLE
FH – FIRE HYDRANT

NC GRID NAD 83' (2011)



VICINITY MAP

LINE TYPE LEGEND

PROPERTY LINE – LINE SURVEYED
RIGHT-OF-WAY
ADJOINING LINE – LINE NOT SURVEYED
OVERHEAD LINE
BUILDING SETBACK
EASEMENT
BUFFER
FLOOD HAZARD SOILS

TOPOGRAPHIC SURVEY FOR

WALLBROOK LANDCO, LLC

OWNER: WALLBROOK LANDCO, LLC
REF: DEED BOOK 18103, PAGE 1563
REF: B.M. 1995, PG. 2034
TOWN OF ROLESVILLE
WAKE COUNTY, NORTH CAROLINA

30 15 0 30 60

SCALE 1"=30'

JULY 7, 2022
REVISED JULY 13, 2022
ZONED GC-CZ
PIN #1758.01-45-8905

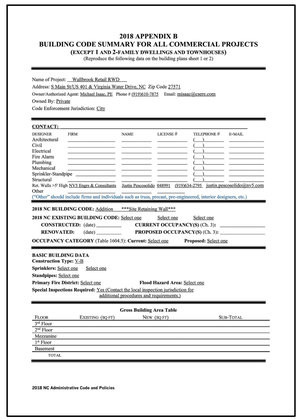
(CARLTON TOWNHOMES-TOPO AREA.DWG - TW)

CMP
PROFESSIONAL LAND SURVEYORS, C-1525, 333 S. WHITE STREET, P.O. BOX 1253, WAKE FOREST N.C., 27588, (919) 556-3148

CONCRETE RETAINING WALL DESIGN FOR

WALLBROOK SHOPPING CENTER

ROLESVILLE, NORTH CAROLINA



2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Wallbrook Retail RWD
Address: S Main St/US 401 & Virginia Water Drive, NC *Zip Code* 27571
Owner/Authorized Agent: Michael Isaac, PE Phone # (919)610-7872 Email: misaac@cuneo.com
Owned By: Private
Code Enforcement Jurisdiction: City

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural				(___) ___	
Civil				(___) ___	
Electrical				(___) ___	
Fire Alarm				(___) ___	
Plumbing				(___) ___	
Mechanical				(___) ___	
Sprinkler-Standpipe				(___) ___	
Structural				(___) ___	
Soi. Wals +F High	CES Engrs & Consultants	Justin Pescosolido	048991	(919)426-2792	justin.pescosolido@ces5.com
Other					

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: Addition ***Site Retaining Wall***

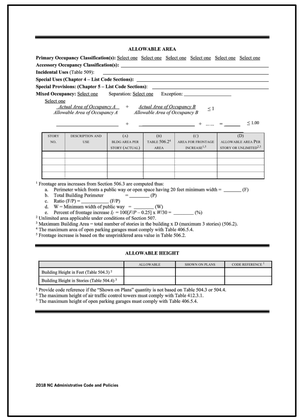
2018 NC EXISTING BUILDING CODE: Select one Select one Select one
CONSTRUCTED: (date) _____ **CURRENT OCCUPANCY(S)** (Ch. 3): _____
RENOVATED: (date) _____ **PROPOSED OCCUPANCY(S)** (Ch. 3): _____
OCCUPANCY CATEGORY (Table 1604.5): **Current:** Select one **Proposed:** Select one

BASIC BUILDING DATA
Construction Type: V-B
Sprinklers: Select one Select one
Standpipes: Select one
Primary Fire District: Select one **Flood Hazard Area:** Select one
Special Inspections Required: Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

Gross Building Area Table

FLOOR	EXISTING (SQ/FT)	NEW (SQ/FT)	SUB-TOTAL
4th Floor			
3rd Floor			
Mezzanine			
1st Floor			
Basement			
TOTAL			

2018 NC Administrative Code and Policies



ALLOWABLE AREA

Primary Occupancy Classification(s): Select one Select one Select one Select one Select one Select one
Accessory Occupancy Classification(s): _____
Incidental Uses (Table 509): _____
Special Uses (Chapter 4 – List Code Sections): _____
Special Provisions: (Chapter 5 – List Code Sections): _____
Mixed Occupancy: Select one Separation: Select one Exception: _____

Select one
Actual Area of Occupancy A / *Allowable Area of Occupancy A* + *Actual Area of Occupancy B* / *Allowable Area of Occupancy B* + ... = _____ ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BASE ALLOWABLE FOR STORY (ACTUAL)	(B) TABLE 506.2[1] AREA	(C) AREA FOR FRONTAGE INCREASE[1,2]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[3,4]

[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. Width of public way = _____ (W)
e. Percent of frontage increase I = 100(F/P – 0.25) x W/30 = _____ (%)
[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4.
[5] Frontage increase is based on the nonsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
Building Height in Feet (Table 504.3)[2]			
Building Height in Stories (Table 504.4)[3]			

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1.
[3] The maximum height of open parking garages must comply with Table 406.5.4.

2018 NC Administrative Code and Policies

Special Inspection and Material Testing Items

RETAINING WALL CONSTRUCTION (IBC 1806.2)

Item			Detailed Instructions and Frequencies
Verify the properties of the in-place and proposed soil materials	☐ Continuous	☑ Periodic	See Retaining Wall Details and Specifications
Verify the suitability of in-place and proposed soil materials	☐ Continuous	☑ Periodic	See Retaining Wall Details and Specifications
Verify subgrade is adequate to achieve design bearing capacity	☐ Continuous	☑ Periodic	See Retaining Wall Details and Specifications
Verify size, grade and layout of reinforcing steel	☐ Continuous	☑ Periodic	See Retaining Wall Details and Specifications
Perform testing of concrete (slump, air, compressive strength)	☐ Continuous	☑ Periodic	See Retaining Wall Details and Specifications
Verify installation of drainage system	☐ Continuous	☑ Periodic	See Retaining Wall Details and Specifications
Verify density, moisture content, and lift thickness for fill	☑ Continuous	☐ Periodic	See Retaining Wall Details and Specifications

A summary of testing services, signed and sealed by a registered professional engineer shall be provided to the Registered Design Professional prior to issuance of the final inspection report.

4905 Professional Court
Raleigh, North Carolina 27609
Phone (919) 876-9799 Fax (919) 876-8291

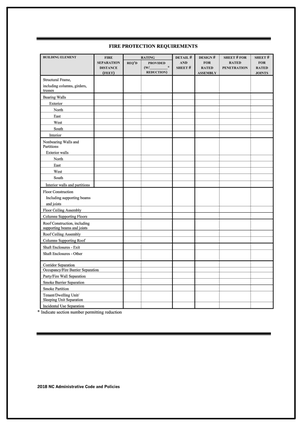
Registered Design Professional
Justin R. Pescosolido, P.E.

Plan Sheet Index:

RW-1 Title Sheet

RW-2 Retaining Wall Layout

RW-3 Retaining Wall Details and Specifications

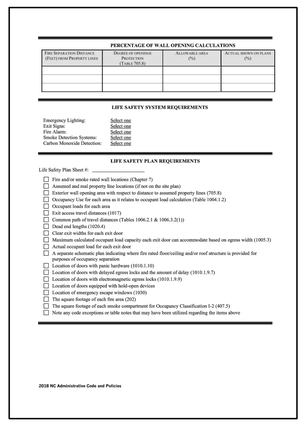


FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQUIRED (hr) ____ * WITH UL#	TYPE	DETAIL # AND SHEET #	DESIGN # FOR RATED CONSTR'N	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing Walls and Partitions							
Exterior walls							
North							
East							
West							
South							
Interior walls and partitions							
Floor Construction Including supporting beams and joints							
Floor/Ceiling Assembly							
Columns supporting Floors							
Roof Construction, including supporting beams and joints							
Roof/Ceiling Assembly							
Columns Supporting Roof							
Shaft Enclosures - Exit							
Shaft Enclosures - Other							
Corridor Separation							
Occupancy/Fire Barrier Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Smoke Partition							
Tenant Sep/Excpt 1/Unit Separation							
Dwelling Unit Separation							
Incidental Use Separation							

* Indicate section number permitting reduction

2018 NC Administrative Code and Policies



PERCENTAGE OF WALL-OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) (EXTERIOR PROPERTY LINES)	DEGREE OF OPENING PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: Select one
Exit Signs: Select one
Fire Alarm: Select one
Smoke Detection Systems: Select one
Carbon Monoxide Detection: Select one

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: _____

☐ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations (if not on the site plan)
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☐ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
☐ Occupant loads for each area
☐ Exit access travel distances (1017)
☐ Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
☐ Dead end lengths (1020.4)
☐ Clear exit widths for each exit door
☐ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☐ Actual occupant load for each exit door
☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☐ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with electromagnetic egress locks (1010.1.9.9)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

2018 NC Administrative Code and Policies

NV5 Engineers & Consultants, Inc.

4905 Professional Court
Raleigh, North Carolina 27609
Phone: (919) 876-9799 Fax: (919) 876-8291
North Carolina Corporate License No. F-1333

Seal
SEAL 048991 ENGINEER JUSTIN R. PESCOSOLIDO
Digitally signed by Justin Pescosolido
Date: 2023.02.21 16:41:55 -05'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

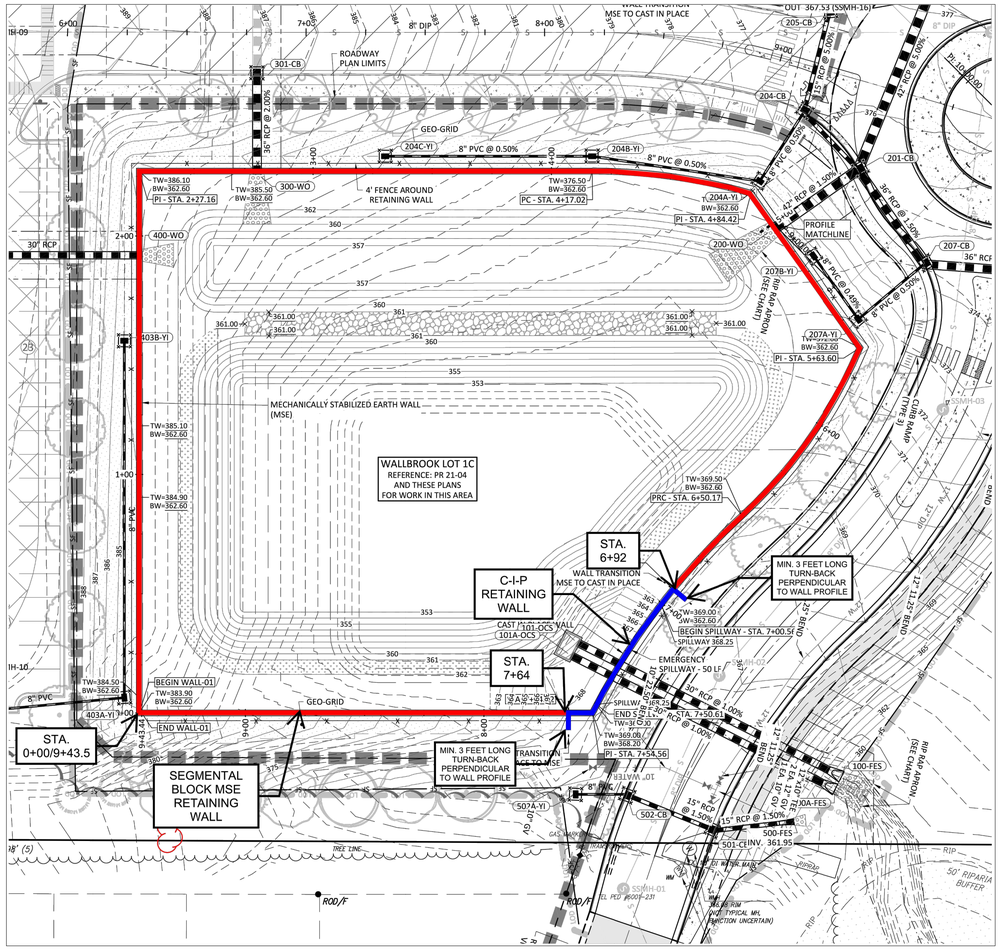
REV	DATE	DESCRIPTION	BY
1	8/9/2022	ADDED TO RCW EXTENTS	JRP
2	2/21/2023	CHANGE TO RCW EXTENTS	JRP

Title Sheet

Designed by: Justin R. Pescosolido, P.E. Date: 5-26-22
Drawn By: Jalen Deatherage Date: 5-26-22
Reviewed By: Brock Horsley, P.E. Date: 5-26-22

SHEET **RW-1**

Retaining Wall Design



Note: This site plan was provided to NV5 Engineers & Consultants, Inc. by Crosland Southeast. This site plan is for general reference only and is not intended to be used for construction layout of the retaining walls. Actual retaining wall layout shall be staked in the field by a qualified surveyor and approved by the Site/Civil Engineer of Record prior to construction. Top-of-Wall elevations to be dictated by site/civil drawings, within the maximum height parameters described, herein.

General Notes

This retaining wall has been designed using active earth pressure theory. Therefore, outward movement at the top of the wall should be expected. Some cracks could develop at the ground surface due to lateral movement of the wall. These cracks should be filled in as soon as they are observed to help protect the soils below the ground surface from softening related to water infiltration that could affect the support characteristics for nearby construction.

External stability analyses for bearing capacity, global stability, and total and differential settlement was performed based on soil parameters derived from our previous Report of Subsurface Investigation and Geotechnical Engineering Evaluation.

The Engineer requests that representatives of the owner and/or general contractor arrange a pre-construction meeting with all pertinent parties involved for the construction of the retaining wall shown on these plans. The Engineer's responsibility is limited to providing only the design services of the project's retaining wall contained herein. Retaining wall construction monitoring and retaining wall certifying are beyond the scope of these design services. The Engineer shall not be required to sign any document, no matter by whom requested, in which the Engineer is required to certify, guarantee, or warrant conditions of which the Engineer has not or cannot ascertain.

This wall has been designed as a reinforced concrete wall considering the maximum expected soil backfill and lowest planned (during construction) bottom-of-wall grades (EL. 362.6). A live load surcharge of 250 psf was utilized at appropriate setbacks so as to model the planned asphalt pavement loading conditions. With the exception of these conditions no additional dead loading conditions, no live loading, and no additional lateral loading conditions were considered. Structures such as light poles, handrail, guardrail, or drainage structures to be installed in the vicinity of the retaining wall shall be designed and constructed to resist imposing additional lateral loads on the retaining wall. If future construction alters the assumed loading conditions of the retaining wall, NV5 Engineers & Consultants, Inc. shall be notified to review the design criteria for the imposed loads.

This reinforced concrete retaining wall shall include a turn-back at 90 degrees from the path of the wall at either end to facilitate connection with the adjacent MSE retaining wall. See Site Layout Figure for minimum acceptable turn-back distances. We understand that flow over the weir portion of this wall, from the adjacent SCM, is expected to occur periodically. It is imperative that the Site/Civil Engineer provide specifications for suitable scour protection at and around the weir portion of this wall so as to prevent loss of soils at any portion of the wall. We also note that this retaining wall design is intended to address ONLY the geotechnical and structural design characteristics of the wall. We have not performed design services related to the hydrologic components of the weir or SCM. It is also imperative that, prior to construction, the Site/Civil Engineer perform design substantiation to verify that this design submittal complies with the required storm water and hydrologic components of the weir wall system and pond, as a whole.

Construction Notes

1. *Prior to construction, confirmation of the distances to property lines, buffers of any kind, curb and gutter, and/or buildings to the face of the proposed walls shall be performed.*
2. *Prior to construction, confirmation of existing utility line locations (Stormwater, Sewer, Water,Electrical, Communications, and Gas) and the locations of future utility lines shall be performed.*
3. *Prior to construction, confirmation of the in-situ and proposed grades shall be performed.*
4. *During construction, care must be exercised to prevent the undermining of any existing structures. Construction of nearby structures, after construction of this wall, shall be carried out in such a way as to avoid damaging and/or undermining of this wall system.*
5. *After construction, heavy equipment should not be operated within 3 feet of the completed walls.*
6. *After construction, surface water drainage from adjacent tyard areas and roadways shall be directed to the stormwater drainage system, and away from the retaining walls.*
7. *The project civil engineer shall be consulted for recommendations related to environmental requirements for finished slopes.*

NV5 Engineers & Consultants, Inc.

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North Carolina Corporate License No. F-1333

Seal

NORTH CAROLINA SEAL 048991 ENGINEER JUSTIN R. PESCOSOLIDO

Digitally signed by Justin Pescosolido
Date: 2023.02.21 16:44:37-05'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

REV	DATE	DESCRIPTION	BY
1	8/9/2022	ADDED TO RCW EXTENTS	JRP
2	2/21/2023	CHANGE TO RCW EXTENTS	JRP

Retaining Wall Layout

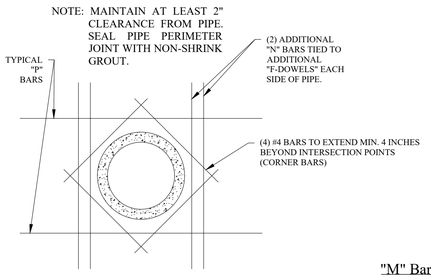
Designed by: Justin R. Pescosolido, P.E. Date: 5-26-22

Drawn By: Jalen Deatherage Date: 5-26-22

Reviewed By: Brock Horsley, P.E. Date: 5-26-22

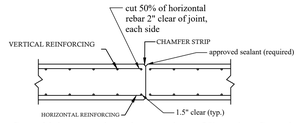
SHEET **RW-2**

Retaining Wall Design



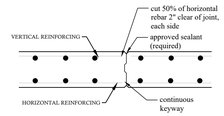
REINFORCEMENT AT REINFORCED CONCRETE PIPE PENETRATION
NOT TO SCALE

TYPICAL CONCRETE WALL CROSS-SECTION



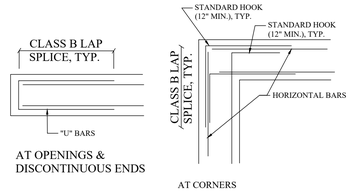
Control joints spaced evenly at maximum 20' spacing. Control joints shall not be placed within the weir portion of the wall.

TYPICAL CONTROL JOINT DETAIL
NOT TO SCALE

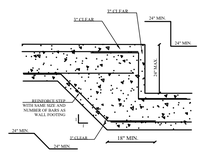


Construction joints spaced evenly at maximum 40' spacing. Construction joints shall not be placed within the weir portion of the wall.

TYPICAL CONSTRUCTION JOINT DETAIL
NOT TO SCALE



TYPICAL WALL INTERSECTION DETAILS
NOT TO SCALE



TYPICAL FOOTING STEP
NOT TO SCALE

Concrete Retaining Wall Schedule

Mark	Max. Height	Footing							Footing Key		Wall				
		A	B	C	"D" bars	"E" bars	"F" dowels	G	H	J	L	"M" bars	"N" bars	"O" bars	"P" bars
Type-A	10'	8'-10"	12"	1'-4"	6-#7	#7 @ 16"	#7 @ 12"	48"	NO KEY		12"	NONE	#7 @ 12"	#7 @ 12"	#7 @ 18"
Type-B	15'	14'-3"	16"	2'-9"	8-#7	#9 @ 10"	#9 @ 18"	60"	NO KEY		18"	NONE	#9 @ 9"	#9 @ 9"	#7 @ 18"
Type-C	20'	20'-9"	18"	3'-9"	15-#7	#9 @ 8"	#9 @ 16"	66"	NO KEY		24"	#7 @ 18"	#9 @ 8"	#9 @ 8"	#7 @ 18"
Type-D	27'	28'	26"	5'-6"	20-#9	#10 @ 8"	#10 @ 16"	72"	NO KEY		30"	#7 @ 18"	#10 @ 8"	#10 @ 8"	#7 @ 18"

General Specifications:

1. These drawings are the sole property of NV5 Engineers & Consultants, Inc. (NV5) for use on this project, and shall not be copied, reproduced or used for other purposes without permission of NV5.
2. This retaining wall has been designed as a reinforced concrete retaining wall. The details on this page shall be considered applicable to the construction of this retaining wall.
3. Dimensions and structural components shown on these drawings are based on information provided by others. Construction shall not begin until Site/Civil Engineer has provided design substantiation and Contractor has reviewed existing conditions and verified all items that may affect new construction. NV5 shall be made aware of all discrepancies.
4. The wall is only stable in its completed form. Contractor shall provide all temporary bracing during construction to stabilize the structure. Design of temporary shoring and bracing is not the responsibility of NV5 and is beyond the scope of these drawings.
5. These drawings should be used in conjunction with architectural, structural, and civil drawings. Any discrepancies should be brought to the attention of NV5 prior to construction.
6. All construction shall be in accordance with applicable sections of the 2018 North Carolina Building Code and local building codes, including Special Inspections.
7. Contractor is responsible for obtaining all required building permits or other required legal documents.
8. Both sides of control joints and construction joints shall be sealed with elastomeric sealant approved by NV5.
9. Waterproofing shall be applied to both sides of the wall along the entirety of the wall face.

Foundations :

1. The scope of services provided by NV5 begins from the bottom of the footing. The foundation systems shown on these drawings are based on an available bearing pressure of 4,000 pounds per square foot. Verification of bearing capacity is the responsibility of the contractor, owner and/or owner's agent.
2. Top of all footings shall be at least 24 inches below grade. See wall design details for embedment requirements. The bottom-of-wall elevation (lowest exposed elevation) for the concrete wall shall be maintained at Elevation 362.6' UNO.
3. Excavate to elevations specified on site civil drawings (or as described in item 2 above) and to the specified dimensions within a tolerance of 1 inch. Do not disturb soils in the bottom of footing excavations. Excavate by hand to final elevations. All excavations should be performed so as not to undermine existing footings or damage existing structures. The contractor is responsible for locating all underground utilities and other structures, and for maintaining excavations in a safe condition in accordance with all OSHA guidelines.
4. Excavation for footings shall be temporarily lined with a 6 MIL polyethylene if placement of concrete does not occur within 24 hours of excavation.
5. No concrete shall be placed on any subgrade containing standing water, ice, frost or loose soil.

Soils and Wall Backfill:

1. Any fill that will support the wall and wall backfill shall be placed under the direction or recommendation of a licensed professional engineer using suitable soils. Scarify, bench or break up sloped surfaces steeper than 1(V) to 4(H) so that soils bond with existing materials, except where these operations could undermine existing construction. Place fill soils in layers not more than 8 inches in loose depth for materials to be compacted by heavy compaction equipment and 4 inches loose depth for materials compacted by hand operated equipment. Compact soil to at least 95 percent of the standard Proctor (ASTM D-698) maximum dry density. Minimum soil wet density shall be 120 pounds per cubic foot.
2. Retaining wall backfill shall have a minimum compacted unit weight of 120 pounds per cubic foot.
4. Minimum 12" wide drainage layer of washed No. 57 stone to be constructed at rear face of RW in maximum 8 inch lifts (loose measurement) and consolidated utilizing 2 passes (minimum) of suitable compaction equipment.
5. Geotextile fabric, such as Amoco 2006 or equivalent, shall be placed between soil and washed #57 stone when such materials are placed adjacent to each other.

Concrete:

1. Concrete shall be proportioned, mixed, placed, consolidated and tested in accordance with ACI 318, ACI 301, ACI 350, and ACI 117.
2. Reinforcing steel shall comply with ASTM A615, grade 60, deformed.
3. No admixtures or fly ash shall be added to wall concrete without written permission from NV5. A concrete mixture design (with a w/c ratio of < 0.45) shall be submitted to NV5 for approval prior to construction.
4. Concrete shall have the following properties: 28-day compressive strength of 4,000 psi; maximum slump of 4.5 inches; air content of 4% +/- 1%.
5. Comply with CRSI Manual of Standard Practice for fabricating, placing and supporting reinforcement.
6. Provide clear cover of reinforcement of at least 3 inches or as shown on drawings.
7. Splice reinforcement as detailed or authorized by NV5. Make bars continuous around corners. Splices shall be made by contact tension lap splices unless otherwise noted.
8. Welding of reinforcement not permitted.
9. Placing of sleeves through concrete elements not permitted unless shown on drawings.
10. Field bending of reinforcement partially embedded in concrete is not permitted unless approved by NV5.
11. Chamfer exposed concrete corners ¾ inch by ¾ inch, minimum, unless otherwise noted.
12. Water may be added to concrete at the project site, subject to the limitations of ACI 301.
13. See architectural drawings for finishing requirements of formed concrete surfaces.
14. Cure formed and unformed concrete for at least 7 days by one of the following methods; Moist curing, moisture retaining cover, application of curing compound, or application of curing and sealing compound.

NV5 Engineers & Consultants, Inc.

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Seal
SEAL 048991 ENGINEER JUSTIN R. PESCOSOLIDO
Digitally signed by Justin Pescosolido
Date: 2023.02.21 16:44:09-05'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

REV	DATE	DESCRIPTION	BY
1	8/9/2022	ADDED TO RCW EXTENTS	JRP
2	2/21/2023	CHANGE TO RCW EXTENTS	JRP

Concrete Retaining Wall Details

Designed by: Justin R. Pescosolido, P.E. Date: 5-26-22
Drawn By: Jalen Deatherage Date: 5-26-22
Reviewed By: Brock Horsley, P.E. Date: 5-26-22

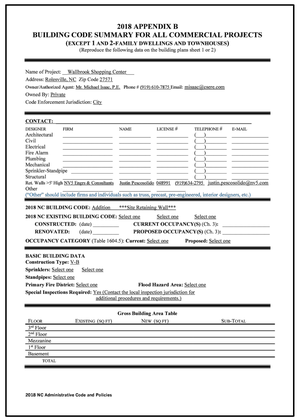
SHEET
RW-3

Retaining Wall Design

RETAINING WALL DESIGN FOR

WALLBROOK SHOPPING CENTER

ROLESVILLE, NORTH CAROLINA



2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Wallbrook Shopping Center
Address: Rolesville, NC Zip Code 27571
Owner/Authorized Agent: Mr. Michael Isaac, P.E. Phone # (919) 610-7873 Email: misaac@cnserv.com
Owned By: Private
Code Enforcement Jurisdiction: City

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural				( )	
Civil				( )	
Electrical				( )	
Fire Alarm				( )	
Plumbing				( )	
Mechanical				( )	
Sprinkler-Standpipe				( )	
Structural				( )	
Ret. Walls >5' High	NV5 Engrs.& Consultants	Justin Pescosolido	048991	(919)876-2791	justin.pescosolido@nv5.com
Other				( )	

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

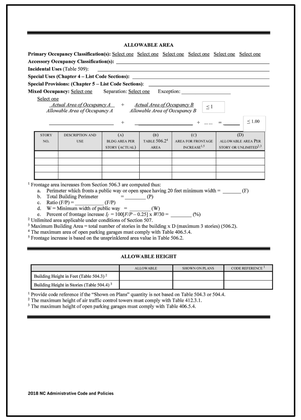
2018 NC BUILDING CODE: Addition ****Site Retaining Wall****
2018 NC EXISTING BUILDING CODE: Select one Select one Select one
CONSTRUCTED: (date) _____ **CURRENT OCCUPANCY(S)** (Ch. 3): _____
RENOVATED: (date) _____ **PROPOSED OCCUPANCY(S)** (Ch. 3): _____
OCCUPANCY CATEGORY (Table 1604.5): **Current:** Select one **Proposed:** Select one

BASIC BUILDING DATA
Construction Type: V-B
Sprinklers: Select one Select one
Standpipes: Select one
Primary Fire District: Select one **Flood Hazard Area:** Select one
Special Inspections Required: Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

Gross Building Area Table

FLOOR	EXISTING (SQ.FT)	NEW (SQ.FT)	SUB-TOTAL
3rd Floor			
2nd Floor			
Mezzanine			
1st Floor			
Basement			
TOTAL			

2018 NC Administrative Code and Policies



ALLOWABLE AREA

Primary Occupancy Classification(s): Select one Select one Select one Select one Select one Select one
Accessory Occupancy Classification(s): _____
Incidental Uses (Table 509): _____
Special Uses (Chapter 4 – List Code Sections): _____
Special Provisions (Chapter 5 – List Code Sections): _____
Mixed Occupancy: Select one Separation: Select one Exception: _____

Select one: Actual Area of Occupancy A / Allowable Area of Occupancy A + Actual Area of Occupancy B / Allowable Area of Occupancy B + ... ≤ 1

STORY NO.	DESCRIPTION AND USE	(1) BLDG AREA PER STORY (SQ.FT)	(2) TABLE 506.2[1] AREA	(3) AREA FOR FRONTAGE INCREASE[2]	(4) ALLOWABLE AREA PER STORY (SQ.FT) [3][4]

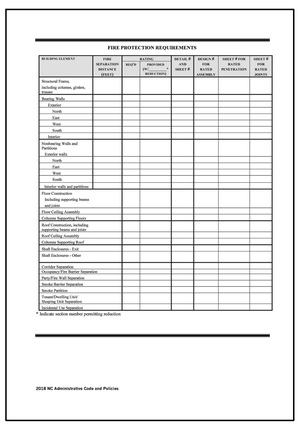
[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase I = 100 [F/P – 0.25] x W/30 = _____ (%)
[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
Building Height in Feet (Table 504.3)[2]			
Building Height in Stories (Table 504.4)[3]			

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1.
[3] The maximum height of open parking garages must comply with Table 406.5.4.

2018 NC Administrative Code and Policies

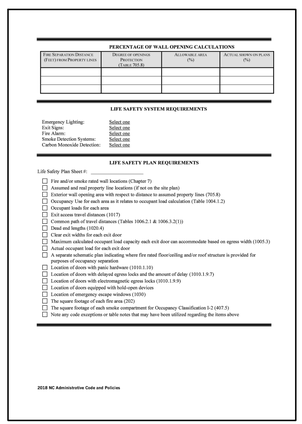


FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING PROVIDED (HOURS)	RATING REQUIRED (HOURS)	DETAIL # AND SHEET #	DESIGN # FOR RATED PENETRATIONS	SHEET # FOR RATED PENETRATIONS	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing Walls and Partitions							
Exterior walls							
North							
East							
West							
South							
Interior walls and partitions							
Floor Construction including supporting beams and joists							
Floor/Ceiling Assembly							
Columns Supporting Floors							
Roof Construction including supporting beams and joists							
Roof/Ceiling Assembly							
Columns Supporting Roof							
Shaft Enclosures - Exit							
Shaft Enclosures - Other							
Corridor Separation							
Occupancy/Fire Barrier Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Smoke Partition							
Tenant/Dwelling Unit							
Sleeping Unit Separation							
Incidental Use Separation							

* Indicate section number permitting reduction

2018 NC Administrative Code and Policies



PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) (FROM PROPERTY LINE)	DEGREE OF OPENING PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: Select one
Exit Signs: Select one
Fire Alarm: Select one
Fire Detection Systems: Select one
Carbon Monoxide Detection: Select one

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: _____

- ☐ Fire and/or smoke rated wall locations (Chapter 7)
- ☐ Assumed and real property line locations (if not on the site plan)
- ☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
- ☐ Occupancy Use for each area in it relates to occupant load calculation (Table 1004.1.2)
- ☐ Occupant loads for each area
- ☐ Exit access travel distances (1017)
- ☐ Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
- ☐ Dead end lengths (1020.4)
- ☐ Clear exit widths for each exit door
- ☐ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
- ☐ Actual occupant load for each exit door
- ☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
- ☐ Location of doors with panic hardware (1010.1.10)
- ☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
- ☐ Location of doors with electromagnetic egress locks (1010.1.9.9)
- ☐ Location of doors equipped with hold-open devices
- ☐ Location of emergency escape windows (1030)
- ☐ The square footage of each fire area (202)
- ☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
- ☐ Note any code exceptions or table notes that may have been utilized regarding the items above

2018 NC Administrative Code and Policies

Special Inspection and Material Testing Items

IT-4 MODULAR RETAINING WALLS (NCSBC SECTION 1610 AND 1704.13)

Item			Detailed Instructions and Frequencies
Verify the properties of the in-place and proposed soil materials	☐ Continuous	☑ Periodic	Materials shall meet the assumed design values in the "Back Fill Materials" and "Soil Properties" sections of the Specifications
Verify the suitability of in-place and proposed soil materials	☐ Continuous	☑ Periodic	Materials shall meet the requirements of the "Soil Properties", "Unsuitable Material", "Foundation Requirements", and "Structural Fill Placement" sections of the Specifications
Verify subgrade is adequate to achieve design bearing capacity	☐ Continuous	☑ Periodic	Bearing capacity of foundation and reinforced zone shall be in accordance with the "Foundation Load" and "Foundation Requirements" sections of the Specifications
Verify leveling pad material and proper depth	☐ Continuous	☑ Periodic	Materials shall meet requirements of the "Leveling Pad" section of the Specifications
Verify placement, setback, and connection method of units	☑ Continuous	☐ Periodic	Retaining Wall Plans Detail and "Wall Batter", "Retaining Wall Shear Connections", "First Block Course" and "Retaining Wall Cap Units" sections of the Specifications
Verify installation of drainage tile and drainage system	☑ Continuous	☐ Periodic	Retaining Wall Plans Detail and "Unit Fill" and "Hydrostatic Pressure Potential" sections of the Specifications
Verify geogrid material, length, and elevation placement	☑ Continuous	☐ Periodic	Materials shall be as indicated on the RW Profile and meet the requirements of the "Geogrid Reinforcement", "Geogrid Installation", & "Acceptable Geogrid" sections of the Specifications
Verify density, moisture content, and lift thickness for wall fill	☑ Continuous	☑ Periodic	Placement of fill shall meet requirements of the "Structural Fill Placement" and "Soil Testing" sections of the Specifications

A summary of testing services, signed and sealed by a registered professional engineer shall be provided to the Registered Design Professional prior to issuance of the final inspection report.

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Raleigh, North Carolina 27609
Phone (919) 876-9799 Fax (919) 876-8291
www.nv5.com

Registered Design Professional
Justin R. Pescosolido, P.E.

Plan Sheet Index:

RW-1 Title Sheet

RW-2 Retaining Wall Layout

RW-3 Retaining Wall Profile Part 1

RW-4 Retaining Wall Profile Part 2

RW-5 Retaining Wall Profile Part 3

RW-6 Retaining Wall Profile Part 4

RW-7 Retaining Wall Profile Part 5

RW-8 Retaining Wall Profile Part 6

RW-9 Retaining Wall Profile Part 7

RW-10 Retaining Wall Profile Part 8

RW-11 Anchor Diamond Pro PS Unit Details

RW-12 Anchor Diamond Pro PS Unit Details (Cont'd)

RW-13 Specifications

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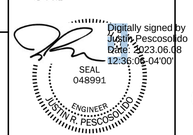

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Title Sheet

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

SHEET
RW-1

Segmental Retaining Wall Design

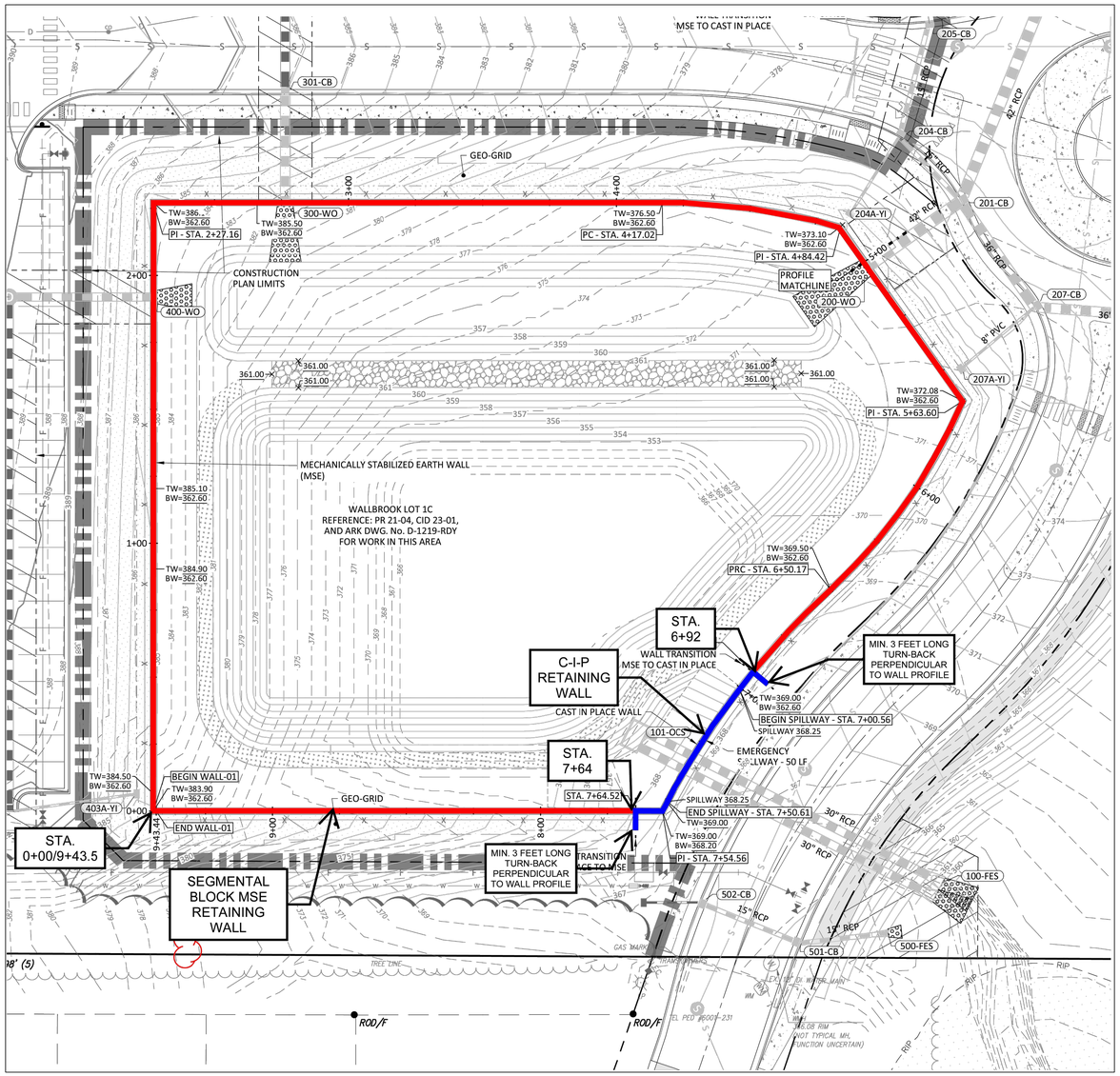

IMAGE FROM PROVIDED SITE PLAN. THIS SITE LAYOUT FIGURE IS APPROXIMATE. STAKING OF THE ACTUAL WALL LOCATIONS IN THE FIELD BASED ON SITE/CIVIL DRAWINGS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

General Notes

The retaining wall(s) contained herein have been designed using active earth pressure theory. Therefore, outward movement at the top of the wall(s) should be expected. Some cracks could develop at the ground surface due to lateral movement of the wall(s). These cracks should be filled in as soon as they are observed to help protect the soils below the ground surface from softening related to water infiltration that could affect the support characteristics for adjacent construction.

Preliminary analyses for global stability and total and differential settlement were performed as part of the design services for the segmental retaining wall(s). Our analyses were based, in part, on assumed in-situ soil properties derived from our previous experience with similar conditions in close geographic proximity to this site. If soil conditions encountered during construction are significantly different than those assumed herein, NV5 Engineers and Consultants, Inc. shall be contacted immediately for review of and possible alterations to this design.

The Engineer requests that representatives of the owner and/or general contractor arrange a pre-construction meeting with all pertinent parties involved for the construction of the retaining wall(s) shown on these plans. The Engineer's responsibility is limited to providing only the design services of the project's retaining wall(s) contained herein. Retaining wall construction monitoring and retaining wall certifying are beyond the scope of these design services. The Engineer shall not be required to sign any document, no matter by whom requested, in which the Engineer is required to certify, guarantee, or warrant conditions of which the Engineer has not or cannot ascertain.

The retaining wall was designed using a live load surcharge of 250 pounds per square foot (psf) at the appropriate setback distances so as to model the planned roadway and parking lot pavement structures. Structures such as light poles, handrail, guardrail, or drainage structures to be installed in the vicinity of the retaining wall(s) shall be designed and constructed to resist imposing additional lateral loads on the retaining wall(s). If future construction alters the assumed loading conditions of the retaining wall(s), NV5 Engineers and Consultants, Inc. shall be notified to review the design criteria for the imposed loads.

Scour protection shall be included at all bottom-of-wall areas at which water from the pond pool and/or surface flow over the top of the wall, is expected to be present/occur, even temporarily, during the service life of the wall. Scour protection design shall be specified by the site/civil engineer of record.

Construction Notes

1. *Prior to construction, confirmation of the distances to property lines, Tree Buffers, roadways, sidewalks, and/or curb and gutter to the face(s) of the proposed wall(s) shall be performed.*
2. *Prior to construction, confirmation of existing utility line locations (Stormwater, Sewer, Water, Electrical, and Gas) and the locations of future utility lines shall be performed.*
3. *Prior to construction, confirmation of the in-situ and proposed grades shall be performed by a qualified surveyor. NV5 Engineers and Consultants, Inc. shall be notified if the site grades are different than those shown on these drawings.*
4. *During construction, care must be exercised to prevent the undermining of any existing structures.*
5. *Utility structures and underground lines located within the reinforced zone of the retaining wall(s) shall be installed prior to or during construction of the retaining wall(s) to prevent damage to the reinforcement layers. If the presence of utility structures interferes with the integrity of the reinforcement, NV5 Engineers and Consultants, Inc. shall be notified during construction to recommend suitable remedial measures that will ensure proper operation of the retaining wall(s).*
6. *After construction, heavy equipment should not operate within 3 feet of the top portion of the wall(s) to prevent adverse impacts to the structural integrity of the retaining wall(s).*
7. *After construction, care must be exercised to prevent damage to the upper layers of reinforcement and degrading of the retained soils of the retaining wall(s). Installation of light poles, signs, handrails, guardrails, shrubs, or trees (etc.) in the reinforced zone of this retaining wall(s) shall not damage the upper layers of reinforcement. Any damaged reinforcement shall be repaired.*
8. *Surface water drainage shall be designed by others to discharge surface water away from the wall face(s) and away from the foundations of adjacent construction at all times during and after construction of the retaining wall(s).* ***All downspouts from the surrounding structures should be directed away from the wall(s) and slope(s) above the wall(s).***
9. ***Regular inspection and maintenance of the planned stormwater pond(s) is critical to long term performance of the retaining wall(s). Improper or irregular stormwater pond maintenance could negatively impact wall stability.***

NV5 Engineers and Consultants, Inc.

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SEAL 048991 ENGINEER JUSTIN R. PESCOSOLIDO

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

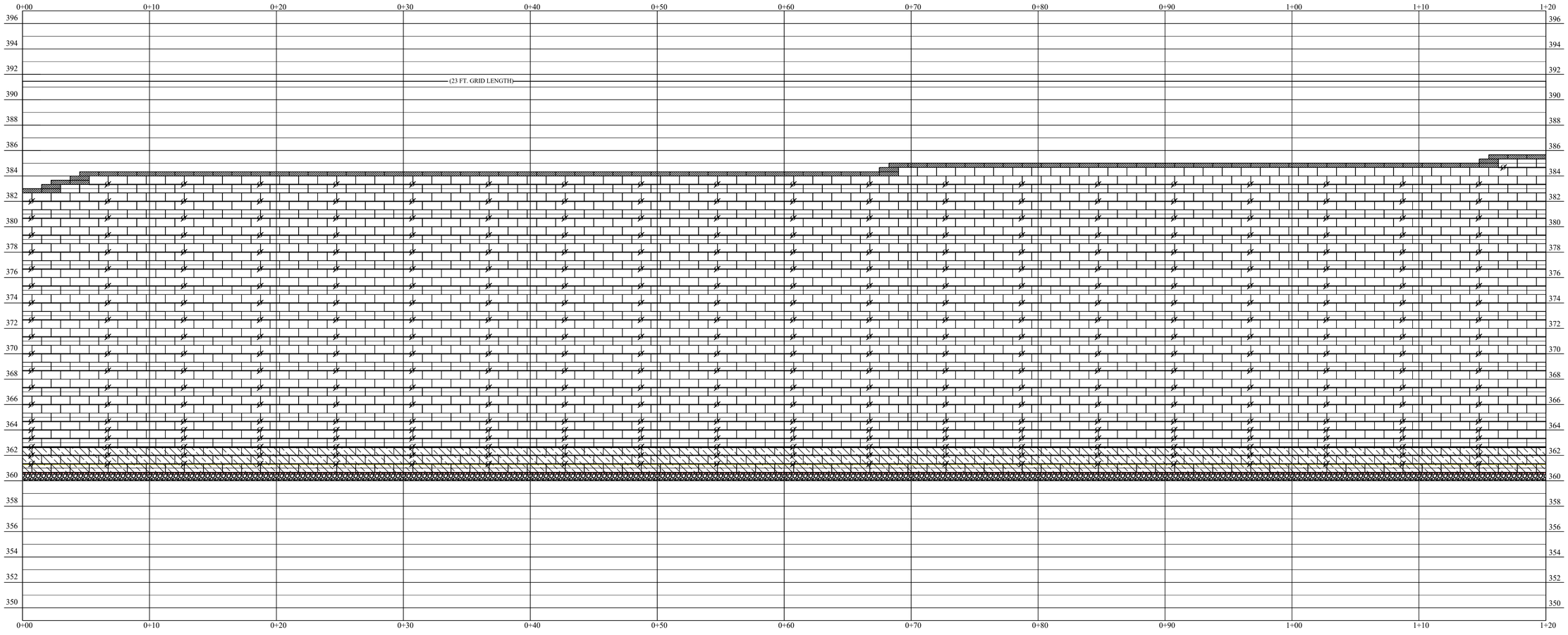
REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Retaining Wall Layout

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

SHEET **RW-2**

Segmental Retaining Wall Design



NOTE: SIX (6) GRID LAYERS ARE UTILIZED WITHIN FIRST SEVEN (7) COURSES WHERE GRID LENGTHS ARE GREATER THAN OR EQUAL TO 19 FEET.

NOTE: WASHED #57 STONE USED IN REINFORCED ZONE BELOW ELEVATION 370'. SELECT FILL USED IN REINFORCED ZONE ABOVE ELEVATION 370'. REFER TO DETAILS.

RETAINING WALL PROFILE - PART 1

LEGEND:
1). MIRAFI 3XT GEOGRID DESIGNATION
2) EMBEDDED BLOCK DESIGNATION
3). LEVELING PAD DESIGNATION

NV5 Engineers and Consultants, Inc.

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Raleigh, North Carolina 27609
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Seal

Digitally signed by Justin Pescosolido
Date: 2023.06.08 12:35:37-04'00'

048991 ENGINEER JUSTIN R. PESCOSOLIDO

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

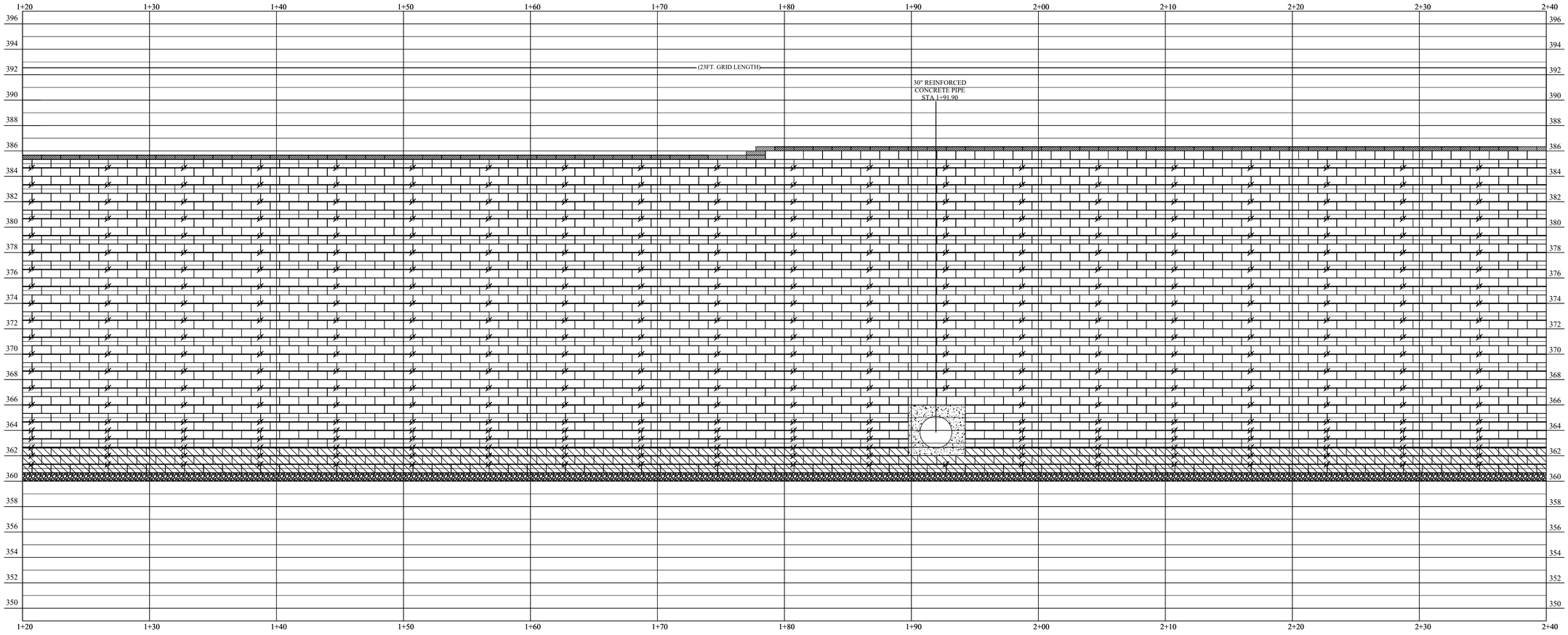
REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Retaining Wall Profile - Part 1

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

SHEET
RW-3

Segmental Retaining Wall Design



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RETAINING WALL PROFILE - PART 2

LEGEND:
1). MIRAFI 3XT GEOGRID DESIGNATION
2) EMBEDDED BLOCK DESIGNATION
3). LEVELING PAD DESIGNATION

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Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

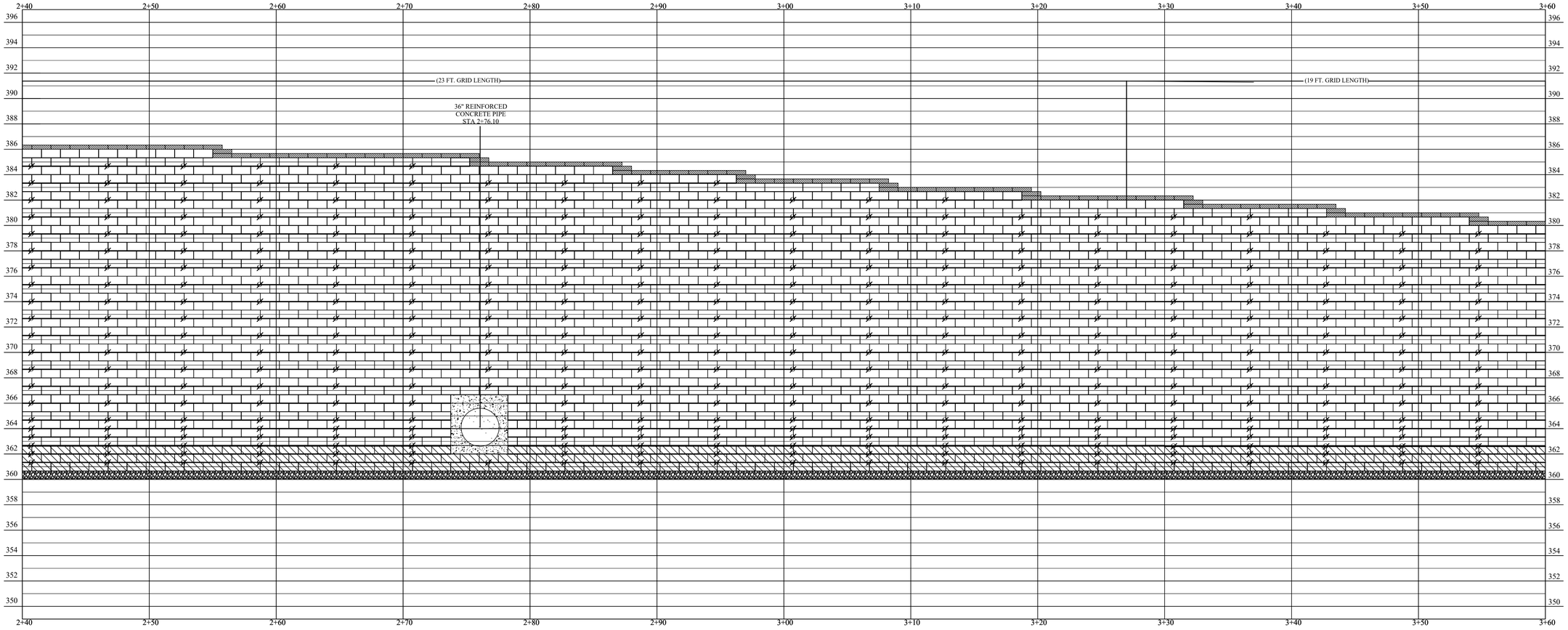
REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Retaining Wall Profile - Part 2

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

SHEET
RW-4

Segmental Retaining Wall Design



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NOTE: WASHED #57 STONE USED IN REINFORCED ZONE BELOW ELEVATION 370'. SELECT FILL USED IN REINFORCED ZONE ABOVE ELEVATION 370'. REFER TO DETAILS.

RETAINING WALL PROFILE - PART 3

LEGEND:
1). MIRAFI 3XT GEOGRID DESIGNATION
2) EMBEDDED BLOCK DESIGNATION
3). LEVELING PAD DESIGNATION

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SEAL 048991 ENGINEER JUSTIN R. PESCOSOLIDO

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Date: 2023.06.08 12:35:10-04'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

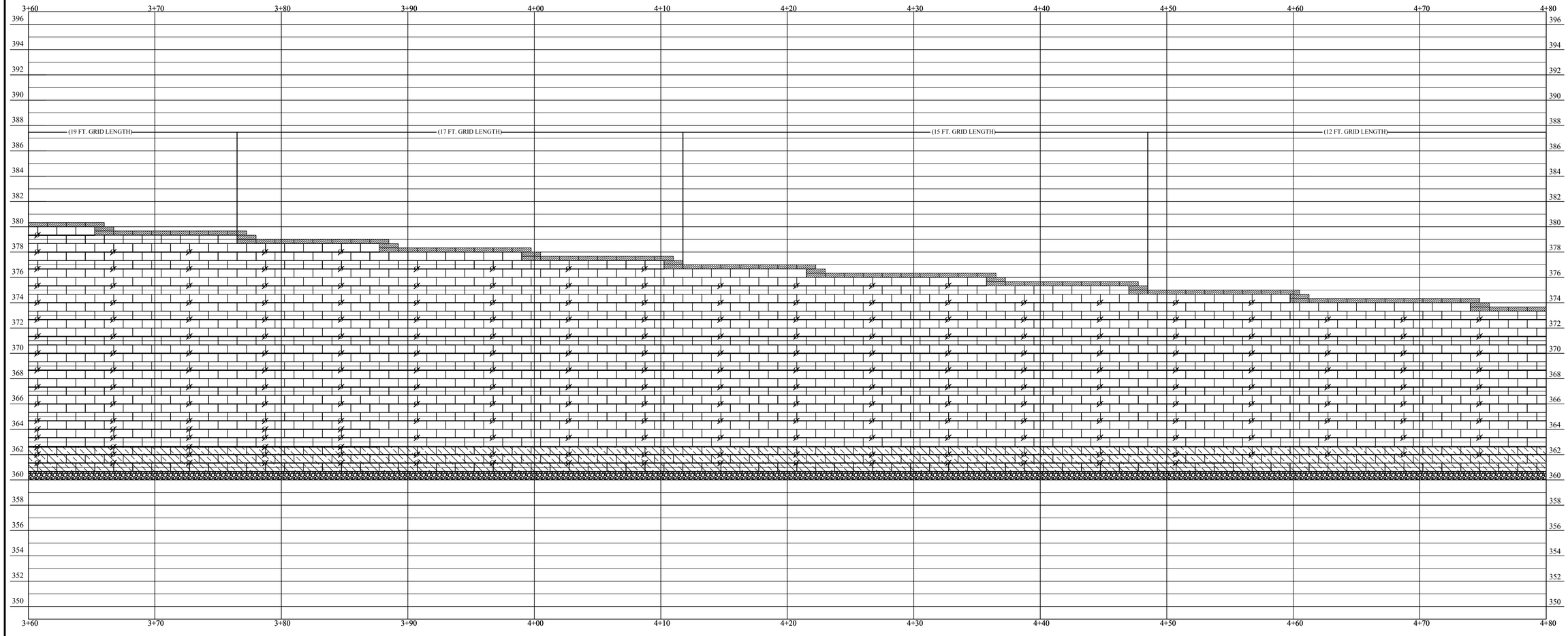
REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Retaining Wall Profile - Part 3

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

SHEET
RW-5

Segmental Retaining Wall Design



NOTE: TWO (2) GRID LAYERS ARE UTILIZED WITHIN FIRST THREE (3) COURSES WHERE GRID LENGTHS ARE GREATER THAN OR EQUAL TO 15 FEET.

NOTE: SIX (6) GRID LAYERS ARE UTILIZED WITHIN FIRST SEVEN (7) COURSES WHERE GRID LENGTHS ARE GREATER THAN OR EQUAL TO 19 FEET.

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RETAINING WALL PROFILE - PART 4

LEGEND:
1). MIRAFI 3XT GEOGRID DESIGNATION
2) EMBEDDED BLOCK DESIGNATION
3). LEVELING PAD DESIGNATION

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SEAL 048991 ENGINEER JUSTIN R. PESCOSOLIDO

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Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

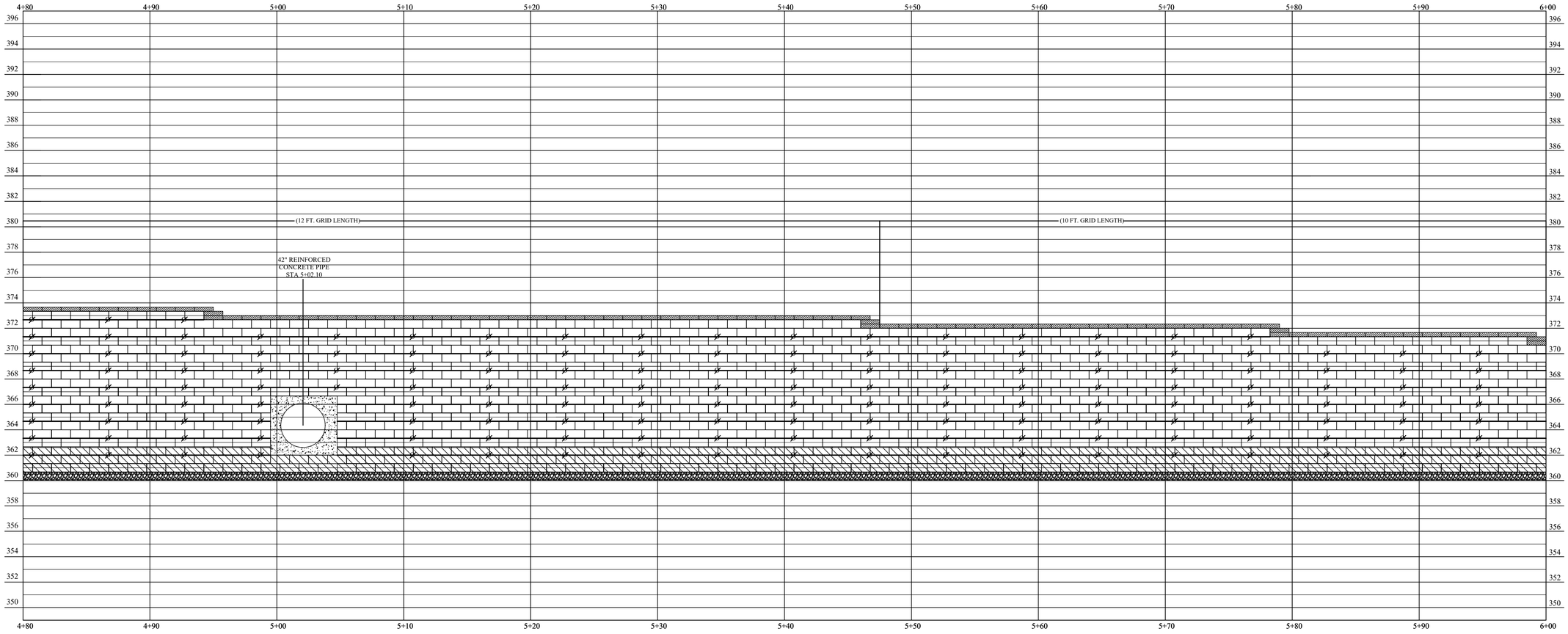
REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Retaining Wall Profile - Part 4

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

SHEET
RW-6

Segmental Retaining Wall Design



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RETAINING WALL PROFILE - PART 5

LEGEND:
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Wallbrook Shopping Center
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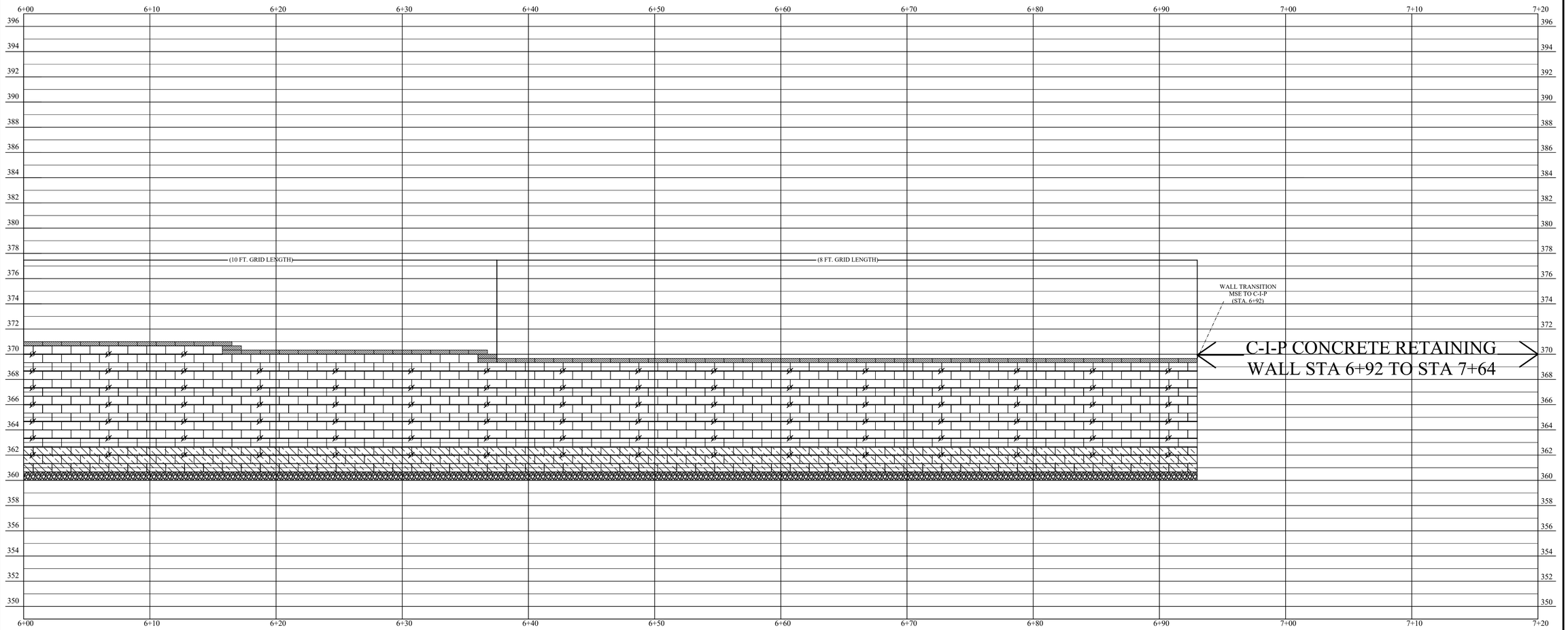
REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Retaining Wall Profile - Part 5

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

SHEET
RW-7

Segmental Retaining Wall Design



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RETAINING WALL PROFILE - PART 6

LEGEND:
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ENGINEER JUSTIN R. PESCOSOLIDO

Wallbrook Shopping Center
Rolesville, North Carolina
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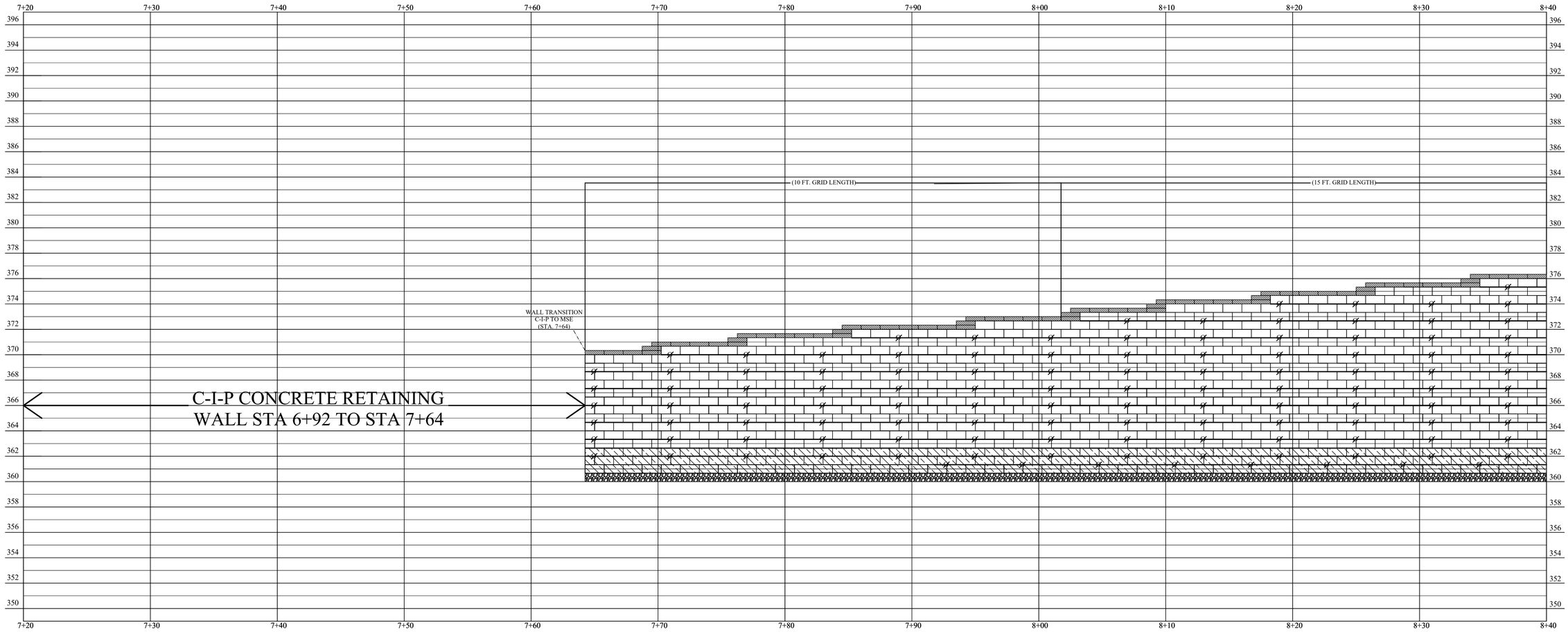
REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Retaining Wall Profile - Part 6

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

SHEET
RW-8

Segmental Retaining Wall Design



NOTE: TWO (2) GRID LAYERS ARE UTILIZED WITHIN FIRST THREE (3) COURSES WHERE GRID LENGTHS ARE GREATER THAN OR EQUAL TO 15 FEET.

NOTE: WASHED #57 STONE USED IN REINFORCED ZONE BELOW ELEVATION 370'. SELECT FILL USED IN REINFORCED ZONE ABOVE ELEVATION 370'. REFER TO DETAILS.

RETAINING WALL PROFILE - PART 7

LEGEND:
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SEAL 048991 ENGINEER JUSTIN R. PESCOSOLIDO

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

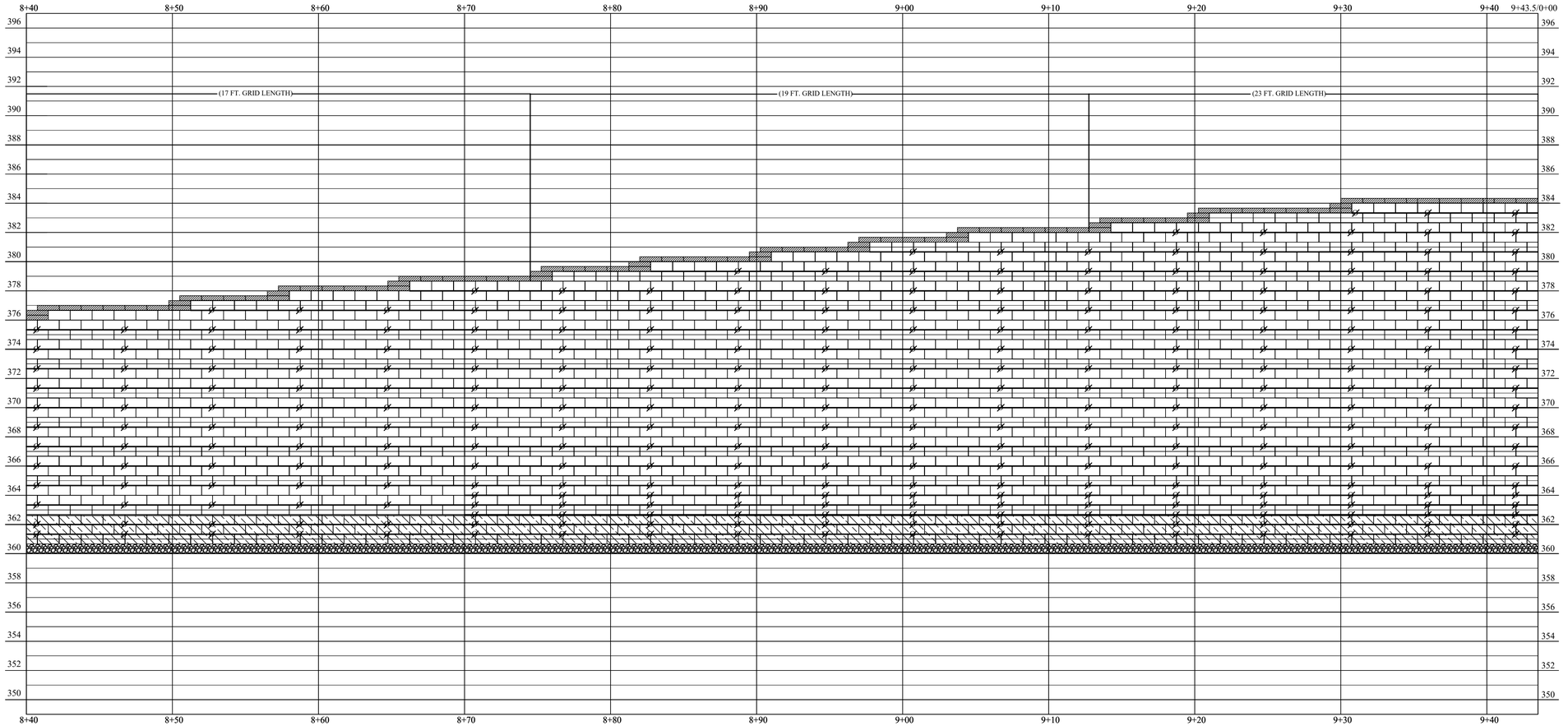
REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Retaining Wall Profile - Part 7

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

SHEET
RW-9

Segmental Retaining Wall Design



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RETAINING WALL PROFILE - PART 8

LEGEND:
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NV5 Engineers and Consultants, Inc.

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Seal

Digitally signed by Justin Pescosolido
Date: 2023.06.08 12:31:25 -04'00'
SEAL 048991 ENGINEER JUSTIN R. PESCOSOLIDO

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

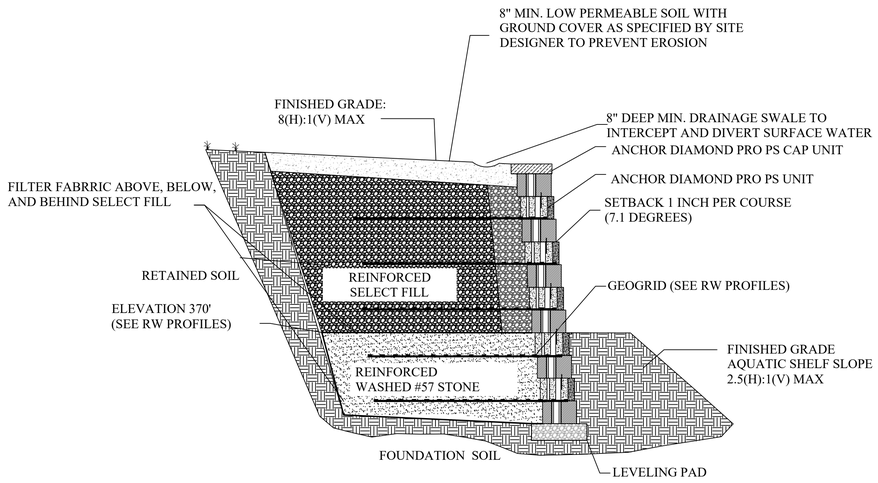
REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Retaining Wall Profile - Part 8

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

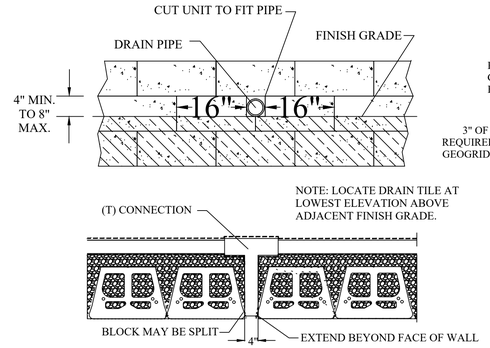
SHEET
RW-10

Segmental Retaining Wall Design



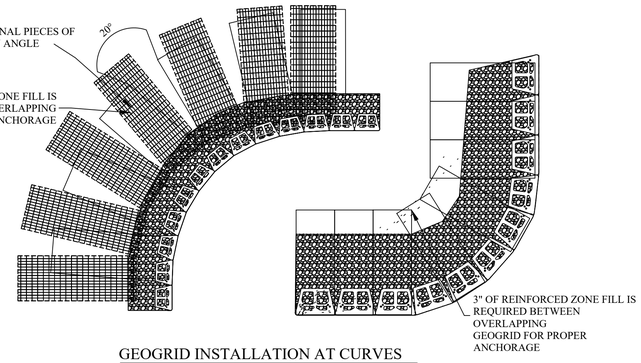
ANCHOR DIAMOND PRO PS RETAINING WALL DETAIL **(WALL #1)**

SCALE: NONE



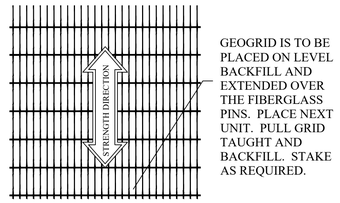
FACE OUTLET DRAIN DETAIL

SCALE: NONE



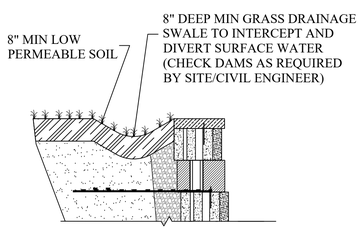
GEOGRID INSTALLATION AT CURVES

SCALE: NONE



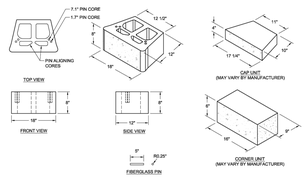
GRID AND PIN CONNECTION

SCALE: NONE



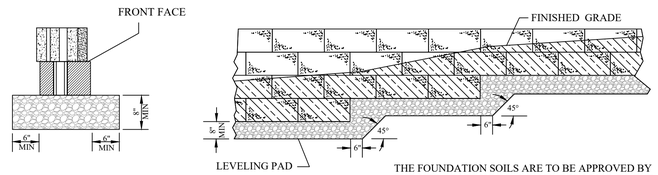
DRAINAGE SWALE DETAIL

SCALE: NONE



DIAMOND PRO PS UNIT DETAILS

SCALE: NONE

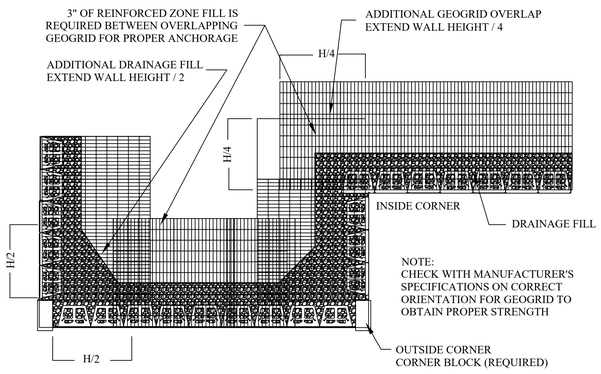


THE FOUNDATION SOILS ARE TO BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF THE LEVELING PAD

THE LEVELING PAD IS TO BE CONSTRUCTED OF WASHED NO. 57 STONE, ABC STONE, OR UNREINFORCED CONCRETE.

LEVELING PAD DETAILS

SCALE: NONE



GEOGRID INSTALLATION AT CORNERS

SCALE: NONE

NV5 Engineers and Consultants, Inc.

4905 Professional Court
Raleigh, North Carolina 27609
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North Carolina Corporate License No. F-1333

Seal

Digitally signed by Justin R. Pescosolido
Date: 2023.06.08 12:37:29 -04'00'

SEAL 048991 ENGINEER JUSTIN R. PESCOSOLIDO

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Anchor Diamond Pro PS Unit Details

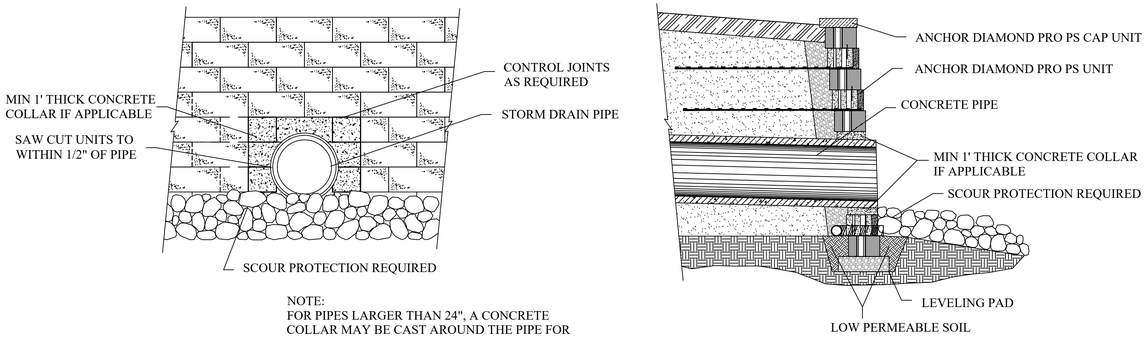
Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23

Designed by: Jalen G. Deatherage Date: 6/7/23

Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

SHEET **RW-11**

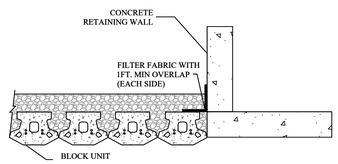
Segmental Retaining Wall Design



NOTE:
FOR PIPES LARGER THAN 24", A CONCRETE COLLAR MAY BE CAST AROUND THE PIPE FOR EASE OF CONSTRUCTION AND APPEARANCE

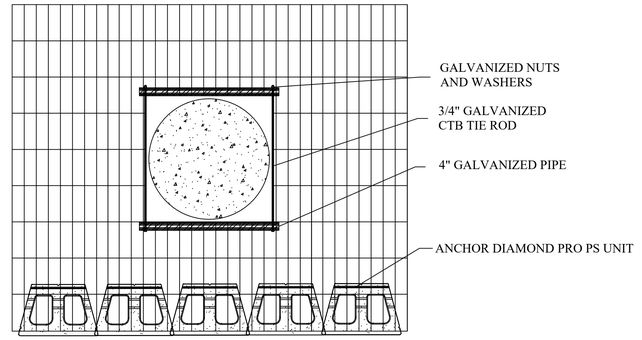
ANCHOR DIAMOND PRO PS WALL PIPE OUTLET

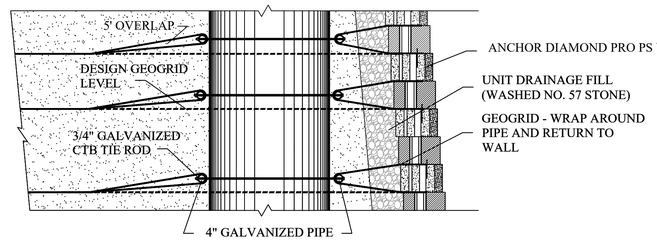
SCALE: NONE



MSE TO CONCRETE WALL CONNECTION DETAIL

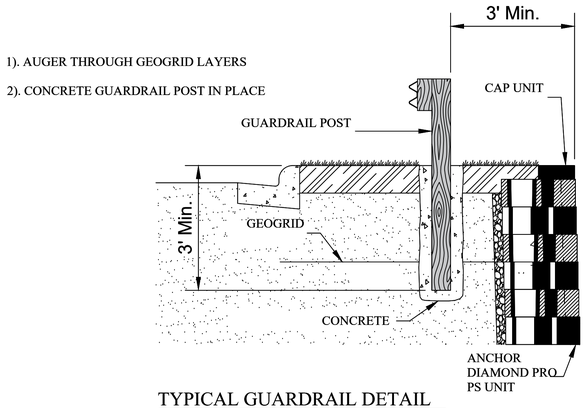
SCALE: NONE





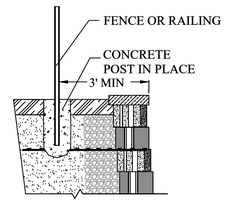
ANCHOR DIAMOND PRO PS WALL AT PIER / MANHOLE

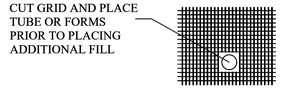
SCALE: NONE



TYPICAL GUARDRAIL DETAIL

SCALE: NONE





CUT SUCCESSIVE LAYERS OF GEOGRID AROUND PROPOSED FENCE POST INSTALLATION POINTS AND SET CONCRETE TUBE OR FORMS DURING WALL CONSTRUCTION. CHECK FENCE DESIGN FOR EMBEDMENT DEPTH OF FENCE POST

RAILING REQUIREMENTS FOR THE RETAINING WALL SHALL BE DETERMINED BY THE GENERAL CONTRACTOR. THE RAILING SHOULD BE DESIGNED IN ACCORDANCE WITH THE NORTH CAROLINA BUILDING CODE BY A REGISTERED DESIGN PROFESSIONAL. THE RAILING SHOULD BE DESIGNED SUCH THAT IT DOES NOT ADD ANY ADDITIONAL LATERAL FORCES TO THE RETAINING WALL. THE CONCRETE TUBES OR SLEEVE-IT FORMS FOR THE RAILINGS SHALL BE INSTALLED BY THE SITE CONTRACTOR AND COORDINATED WITH THE RETAINING WALL CONTRACTOR DURING CONSTRUCTION OF THE RETAINING WALL.

TYPICAL HAND RAILING DETAIL

SCALE: NONE

NV5 Engineers and Consultants, Inc.

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North Carolina Corporate License No. F-1333

Seal

SEAL 048991 ENGINEER JUSTIN R. PESCOSOLIDO

Digitally signed by Justin Pescosolido
Date: 2023.06.08 12:30:55-04'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Anchor Diamond Pro PS Unit Details (Cont'd)

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

SHEET
RW-12

Segmental Retaining Wall Design

1.0 GENERAL

SEGMENTAL RETAINING WALL SYSTEMS ARE DESIGNED AS GRAVITY RETAINING WALLS WHICH UTILIZES A HIGH DENSITY POLYESTER GEOGRID TO REINFORCE THE SOIL ZONE BEHIND THE WALL. THE GEOGRID IS POSITIVELY CONNECTED TO THE MODULAR CONCRETE BLOCK CREATING A REINFORCED SOIL MASS CAPABLE OF RESISTING LATERAL EARTH PRESSURES AND SURCHARGE LOADS. ALL REFERENCES TO THE ENGINEER REFER TO NV5 ENGINEERS AND CONSULTANTS, INC.

1.1 QUALITY ASSURANCE

WORK SHALL BE PERFORMED ONLY BY AN EXPERIENCED CONTRACTOR. CONTRACTOR SHALL SUBMIT TO THE CERTIFYING ENGINEER EVIDENCE OF QUALIFICATIONS AND REFERENCES ON PROJECTS OF SIMILAR SCOPE. THE CERTIFYING ENGINEER RESERVES THE RIGHT TO REJECT ANY AND ALL QUALIFICATIONS SUBMITTALS. THE OWNER AND/OR GENERAL CONTRACTOR SHOULD PROVIDE AN INSPECTOR AS A FULL-TIME, CONTINUOUS MONITOR OF WORK QUALITY.

1.2 BACK FILL MATERIALS

THE SOIL MATERIAL ASSOCIATED WITH THE RETAINING WALL(S) IN THE REINFORCED ZONE, THE RETAINED ZONE, OR THE FOUNDATION BEDDING SHALL HAVE, AT A MINIMUM, THE FOLLOWING PROPERTIES:

A.)	FOUNDATION SOILS	Φ = 34 DEGREES, COHESION = 0 PSF, WET UNIT WEIGHT = 125 LBS/CU.FT
B.)	RETAINED SOILS	Φ = 30 DEGREES, COHESION = 0 PSF, WET UNIT WEIGHT = 120 LBS/CU.FT
D.)	REINFORCED WASHED NO. 57 STONE	Φ = 34 DEGREES, COHESION = 0 PSF, WET UNIT WEIGHT = 105 LBS/CU.FT (BELOW Elevation 370')
E.)	REINFORCED SELECT FILL	Φ = 32 DEGREES, COHESION = 0 PSF, WET UNIT WEIGHT = 120 LBS/CU.FT (ABOVE Elevation 370')

LABORATORY TESTING OF THE ACTUAL SOIL TO BE USED SHALL BE PERFORMED PRIOR TO CONSTRUCTION OF THE RETAINING WALL. IF THE ASSUMED VALUES DO NOT REPRESENT THE ACTUAL SOIL CONDITIONS, THE ENGINEER SHALL BE NOTIFIED PRIOR CONSTRUCTION FOR POSSIBLE ALTERATIONS TO THIS DESIGN.

1.3 FOUNDATION LOADS

MAXIMUM DESIGN BEARING PRESSURES: **3 KIPS/SQ.FT WHERE WALL HEIGHT IS LESS THAN 18 FEET**
5 KIPS/SQ.FT WHERE WALL HEIGHT IS GREATER THAN OR EQUAL TO 18 FEET

1.4 WALL BATTER

BATTER FOR THE ENTIRETY OF THE WALL SHALL BE MAINTAINED AT 7.1 DEGREES (REAR-PIN SETTING).

2.0 CONCRETE MASONRY WALL UNITS

CONCRETE WALL UNITS SHALL BE SEGMENTAL UNITS MANUFACTURED IN ACCORDANCE WITH ASTM C-1372 AND ASTM C-140, AND SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI. UNITS SHALL BE INTERLOCKED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

2.1 RETAINING WALL SHEAR CONNECTIONS

SEGMENTAL UNITS SHALL BE INTERLOCKED WITH SUITABLE SHEAR PINS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

2.2 GEOGRID REINFORCEMENT

GEOSYNTHETIC REINFORCEMENT FOR THE WALL SHALL CONSIST OF HIGH TENACITY GEOGRIDS MANUFACTURED FOR SOIL REINFORCEMENT APPLICATIONS. THE TYPE, LENGTH, AND PLACEMENT OF THE REINFORCING GEOSYNTHETIC SHALL BE AS SHOWN ON THE PLANS.

2.3 GEOTEXTILE FILTER FABRIC

GEOTEXTILE FILTER FABRIC (IF REQUIRED) SHALL CONSIST OF NEEDLE PUNCHED NON-WOVEN POLYPROPYLENE MATERIAL WHICH MEETS THE AASHTO M288-2006 CLASS 3 STRENGTH CRITERIA. IT SHALL HAVE A MAXIMUM AVERAGE ROLL VALUE OF 0.25 MM FOR ITS APPARENT OPENING SIZE AND PERMITIVITY OF AT LEAST 0.2/SEC. PRE-APPROVED NON-WOVEN GEOTEXTILES INCLUDE AMOCO 4546, CARTHAGE MILLS FX-40HS, SYNTHETIC INDUSTRIES GEOTEX 401, AND TENCATE MIRAFI 140N.

2.4 LEVELING PAD

MATERIAL SHALL CONSIST OF COMPACTED AGGREGATE BASE COURSE (ABC) STONE, WASHED NO. 57 STONE, OR UNREINFORCED CONCRETE. THE LEVELING PAD SHALL BE AT LEAST 8" IN DEPTH. IF ABC STONE IS USED, IT SHALL BE COMPACTED TO 95% OF THE MODIFIED PROCTOR (ASTM D-698) MAXIMUM DRY DENSITY. AGGREGATE MATERIAL SHALL RECEIVE A MINIMUM OF ONE PASS OF THE COMPACTION EQUIPMENT. THE LEVELING PAD TOP FOR THE WALL SECTIONS SHALL BE MAINTAINED AS SHOWN ON THE RETAINING WALL PROFILES.

2.5 UNIT FILL

THE VOID WITHIN AND BETWEEN EACH UNIT SHALL BE FILLED WITH WASHED (NO. 57) STONE HAVING 100% OF THE AGGREGATE PASSING THE 2" SIEVE. MINIMUM 3/8" WASHED STONE SIZE IS REQUIRED (NO MORE THAN 5% PASSING THE NO. 200 SIEVE). A MINIMUM OF 12 INCHES OF THIS SAME MATERIAL SHALL BE PLACED AT THE BACK OF EACH BLOCK AS INDICATED ON THE ROCKWOOD CLASSIC 8 UNIT DETAILS SHEET. EACH COURSE SHALL BE COMPLETELY FILLED AND EXCESS MATERIAL SWEPT CLEAN FROM THE TOP BLOCK BEFORE INSTALLING THE NEXT COURSE.

2.6 SOIL PROPERTIES

THE FILL MATERIALS IN THE UPPER REINFORCED ZONE (ABOVE EL 370') SHALL CONSIST OF SELECT FILL. THE FILL MATERIALS IN THE LOWER REINFORCED ZONE (BELOW EL. 370') WASHED NO. 57 STONE (BELOW ELEVATION 370') (REFER TO DETAILS). ABC STONE SHALL BE UTILIZED BELOW POND BASIN ELEVATION. "SELECT FILL" SHALL CLASSIFY AS GM, GP, SP, SP-SM, SM OR SC WITH NO MORE THAN 30% FINES (W/W). THE MINIMUM INTERNAL ANGLE OF FRICTION, COHESION, AND WET UNIT WEIGHT SHALL BE EQUAL TO OR GREATER THAN THE DESIGN VALUES PROVIDED IN SECTION 1.2. LABORATORY TESTING OF THE PROPOSED FILL MATERIALS SHALL BE PERFORMED PRIOR TO PLACEMENT TO VERIFY DESIGN CRITERIA. COPIES OF ALL LABORATORY TESTING SHALL BE PROVIDED TO THE CERTIFYING ENGINEER PRIOR TO USE IN CONSTRUCTION OF THE RETAINING WALL.

2.7 UNSUITABLE MATERIAL

SOILS CONTAINING ROOTS, BRUSH, SOD, OR OTHER ORGANIC MATERIAL SHALL NOT BE PERMITTED AS FILL. FROZEN SOILS, SNOW, ICE, HEAVY CLAYS, OR WET SOILS SHALL NOT BE PERMITTED AS FILL. MATERIAL PASSING THE NO. 40 SIEVE SHALL NOT HAVE A LIQUID LIMIT GREATER THAN 40 AND A PLASTICITY INDEX OF GREATER THAN 15, UNLESS WRITTEN CONSENT IS OBTAINED FROM THE DESIGN ENGINEER PRIOR TO PLACEMENT.

3.0 FOUNDATION REQUIREMENTS

THE FOUNDATION BEARING CAPACITY ASSUMED FOR THIS DESIGN SHALL BE VERIFIED IN THE FIELD AND COPIES OF THE TESTS PROVIDED TO THE CERTIFYING ENGINEER. THE FOUNDATION SURFACE SHALL BE CLEARED OF ALL DEBRIS AND LOOSE SOIL. FOUNDATION SOILS NOT MEETING THE MINIMUM DESIGN CRITERIA, SHALL BE REMOVED AND REPLACED UTILIZING AGGREGATE BASE COURSE (ABC) STONE, PLACED IN LIFTS NOT EXCEEDING 9", AND COMPACTED TO AT LEAST 95% OF THE MODIFIED PROCTOR (ASTM D-698) MAXIMUM DRY DENSITY.

3.1 FIRST BLOCK COURSE

THE FIRST COURSE OF BLOCK SHALL BE PLACED ON TOP OF AND IN FULL CONTACT WITH THE LEVELING PAD. THE UNITS SHALL MAINTAIN A MINIMUM DISTANCE OF 6" FROM THE FRONT AND BACK OF THE LEVELING PAD. PROPER ALIGNMENT MAY BE ACHIEVED WITH THE AID OF A STRING LINE. PROCEED TO THE NEXT COURSE OF BLOCK. EACH UNIT SHALL BE IN CONTACT WITH THE UNITS ON BOTH SIDES AS WELL AS ABOVE AND BELOW. SOME ADJUSTMENTS MAY BE REQUIRED FOR WALLS WITH CURVES AND A BATTER.

3.2 GEOGRID INSTALLATION

THE GEOGRID REINFORCEMENT SHALL BE LAID HORIZONTALLY ON COMPACTED FILL AND CONNECTED TO THE CONCRETE WALL UNITS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. GEOGRID SHALL BE PULLED TAUT REMOVING ALL SLACK FROM THE MATERIAL AND ANCHORED BEFORE ADDING FILL. GEOGRID SHALL BE INSTALLED AT THE ELEVATIONS AND LENGTHS REQUIRED AS SHOWN ON THE PLANS. THE SOIL SURFACE SHALL BE SMOOTH AND LEVEL AND HAVE BEEN COMPACTED BEFORE INSTALLING THE GEOGRID.

3.3 REINFORCED ZONE FILL PLACEMENT

SELECT FILL (OR ABC STONE) SHALL BE PLACED IN A MAXIMUM 8" LOOSE LIFT THAT IS COMPACTED TO AT LEAST 95% OF THE STANDARD (MODIFIED) PROCTOR MAXIMUM DRY DENSITY AT A MOISTURE CONTENT WITHIN 3% OF THE OPTIMUM MOISTURE CONTENT. CLEAN STONE FILL SHALL RECEIVE AT LEAST 3 PASSES OF SUITABLE COMPACTION EQUIPMENT. ONLY HAND OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET OF THE SEGMENTAL UNITS. FILL SHALL BE PLACED FROM THE WALL REARWARD TO INSURE TAUTNESS OF THE GEOGRID. CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID.

3.4 RETAINING WALL CAPS

APPLY A CONSTRUCTION ADHESIVE TO THE UNITS TO PREVENT THEIR REMOVAL.

4.0 SOIL TESTING

FOR ABC STONE FILL MATERIALS, AT LEAST ONE COMPACTION TEST SHALL BE PERFORMED FOR EVERY 100 LINEAR FEET, FOR EVERY LIFT ELEVATION REQUIRING GEOGRID OR EVERY 3RD LIFT AT A MINIMUM. TEST RESULTS SHALL BE PROVIDED TO THE CERTIFYING ENGINEER.

5.0 HYDROSTATIC PRESSURE POTENTIAL

THE ENGINEER SHALL BE NOTIFIED IF ANY OF THE FOLLOWING SHOULD BECOME EVIDENT: WATER OR WETNESS FROM OR IN A CUT BANK; LOCAL SPRINGS, LOCAL STORM DRAINS, SEWER, OR WATER LINES UNDER OR BEHIND THE WALL.

6.0 ACCEPTABLE BLOCK

SEGMENTAL BLOCK UNITS SHALL BE USED AND KEPT FREE OF DEFECTS THAT WOULD INTERFERE WITH THE PLACING OR POSITIONING OF THE UNIT OR IMPAIR ITS STRENGTH. THE CONTRACTOR SHALL PREVENT EXCESS MUD, WET CEMENT, EPOXY, AND THE LIKE MATERIALS FROM COMING IN CONTACT WITH AND AFFIXING TO THE UNITS. MINOR CRACKS INCIDENTAL TO THE USUAL METHOD MANUFACTURING OR MINOR CHIPPING RESULTING FROM SHIPMENT AND DELIVERY ARE NOT GROUNDS FOR REJECTION.

7.0 ACCEPTABLE GEOGRID

GEOGRID SHALL BE REJECTED IF 20% OR MORE OF A STRUCTURAL RIB HAS BEEN CUT OR RIPPED. THE CONTRACTOR SHALL INSPECT ALL GEOGRID DELIVERED TO THE SITE AND REJECT MATERIALS THAT MEET THIS CRITERIA. THE CONTRACTOR SHALL PREVENT EXCESS MUD, WET CEMENT, EPOXY, AND THE LIKE MATERIALS FROM COMING IN CONTACT WITH AND AFFIXING TO THE GEOGRID MATERIAL. IF THE GEOGRID IS DAMAGED ONSITE, IT SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

8.0 DRAINAGE COMPOSITE

DRAINAGE COMPOSITE IS NOT REQUIRED.

9.0 SPECIAL PROVISIONS

A). MAINTAIN DRAINAGE AWAY FROM THE WALL FACE AT ALL TIMES DURING CONSTRUCTION OF THE RETAINING WALL.
B). THE ENGINEER SHALL BE NOTIFIED BY THE INSTALLING CONTRACTOR IF THE EMBEDMENT DEPTH OF THE RETAINING WALL(S) IS LESS THAN THAT SHOWN ON THE RETAINING WALL PROFILES.
C). AS PER THE NORTH CAROLINA STATE BUILDING CODE, A BUILDING PERMIT MUST BE OBTAINED PRIOR TO WALL CONSTRUCTION. THE CONTRACTOR SHALL CONTACT THE LOCAL MUNICIPALITY CODE ENFORCEMENT DIVISION TO OBTAIN A BUILDING PERMIT.
D). PLACEMENT OF STRUCTURAL FILL SOILS IS EXPECTED TO OCCUR AT PORTIONS OF THE LOW-SIDE OF THE RETAINING WALL TO ACCOMMODATE THE PLANNED EMERGENCY SPILLWAY. RIP-RAP SCOUR PROTECTION (DESIGNED BY OTHERS) SHALL BE PLACED AT THE BASE OF THE WALL IN THESE AREAS. ADDITIONALLY, RIP-RAP SCOUR PROTECTION (DBO) SHOULD BE INSTALLED AS PER SHEET RW-2.
E). PLACEMENT OF LOW PERMEABLE SOILS AND CONSTRUCTION OF THE TOP-OF-WALL DRAINAGE SWALE SHALL OCCUR IMMEDIATELY AFTER WALL CONSTRUCTION. IF LOCALIZED LOW-LYING AREAS ARE PRESENT AT THE BOTTOM OF THE WALL, SCOUR PROTECTION SHALL BE COORDINATED WITH NV5.
F). IF ANY PORTION OF THE REINFORCED ZONE OF THIS WALL IS EXPECTED TO ENCROACH INTO ANY ADJACENT PROPERTY, BUILDING AREA, OR PAVEMENT AREA, A PERMANENT CONSTRUCTION EASEMENT SHALL BE FILED FOR THE AFFECTED ENTITIES.
G). LARGE VEGETATION WITHIN FIVE FEET OF THE TOP OF THE WALL SHALL BE COORDINATED WITH NV5 TO PREVENT DAMAGE TO THE REINFORCED ZONE OF THE RETAINING WALL.
H). PROPER FUNCTIONALITY OF THE ADJACENT STORMWATER POND IS CRITICAL TO LONG-TERM WALL PERFORMANCE. REGULAR MAINTENANCE OF THE POND IS SOLELY THE RESPONSIBILITY OF THE OWNER.

10.0 QUALIFICATION OF DESIGN

A). STABILITY OF ANY TEMPORARY SLOPES REQUIRED BY THE INSTALLATION OF A SEGMENTAL RETAINING WALL SHALL BE ADDRESSED BY A QUALIFIED GEOTECHNICAL ENGINEER. RESPONSIBILITY OF THESE TEMPORARY SLOPES RESTS WITH THE OWNER AND/OR THE CONTRACTOR OF THE PROJECT. ALL SLOPES SHALL MEET CURRENT OSHA STANDARDS.
B). HANDRAIL/GUARDRAIL REQUIREMENTS SHALL BE DETERMINED BY THE ARCHITECT OR GENERAL CONTRACTOR.
C). NOTIFY THE DESIGN ENGINEER PRIOR TO MODIFYING WALL CONSTRUCTION IF EXISTING SITE CONDITIONS DEVIATE FROM CONDITIONS OUTLINED ON THE RETAINING WALL PROFILE.

NV5 Engineers and Consultants, Inc.

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Raleigh, North Carolina 27609
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North Carolina Corporate License No. F-1333

Seal

Digitally signed by Justin Pescosolido
Date: 2023.06.08 12:39:38-04'00'
SEAL 048991 ENGINEER JUSTIN R. PESCOSOLIDO

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number: 121-22-108262

REV	DATE	DESCRIPTION	BY
1	4-26-23	WALL TYPE/LAYOUT SCHEME 2	JRP

Specifications

Designed by: Justin R. Pescosolido, P.E. Date: 6/7/23
Designed by: Jalen G. Deatherage Date: 6/7/23
Reviewed by: Justin R. Pescosolido, P.E. Date: 6/7/23

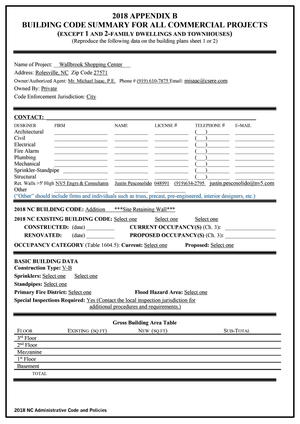
SHEET
RW-13

Segmental Retaining Wall Design

RETAINING WALL DESIGN FOR

SHOPS AT WALLBROOK

ROLESVILLE, NORTH CAROLINA



2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Wallbrook Shopping Center
Address: Rolesville, NC Zip Code 27571
Owner Authorized Agent: Mr. Michael Isaac, P.E. Phone # (919) 610-7875 Email: misaac@cserre.com
Owned By: Private
Code Enforcement Jurisdiction: City

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural				( )	
Civil				( )	
Electrical				( )	
Fire Alarm				( )	
Plumbing				( )	
Mechanical				( )	
Sprinkler-Standpipe				( )	
Structural				( )	
Rsr. Walls >5' High	NV5 Engrs & Consultants	Justin Pescosolido	040591	(919)434-2795	justin.pescosolido@nv5.com
Other					

(a "Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

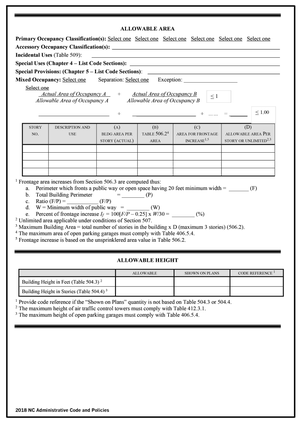
2018 NC BUILDING CODE: Addition ***Site Retaining Wall***
2018 NC EXISTING BUILDING CODE: Select one Select one Select one
CONSTRUCTED: (date) _____ **CURRENT OCCUPANCY(S)** (Ch. 3): _____
RENOVATED: (date) _____ **PROPOSED OCCUPANCY(S)** (Ch. 3): _____
OCCUPANCY CATEGORY (Table 1604.5): **Current:** Select one **Proposed:** Select one

BASIC BUILDING DATA
Construction Type: V-B
Sprinklers: Select one Select one
Standpipes: Select one
Primary Fire District: Select one **Flood Hazard Area:** Select one
Special Inspections Required: Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

Gross Building Area Table

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
2nd Floor			
2nd Floor			
Mezzanine			
1st Floor			
Basement			
TOTAL			

2018 NC Administrative Code and Policies



ALLOWABLE AREA

Primary Occupancy Classification(s): Select one Select one Select one Select one Select one Select one
Accessory Occupancy Classification(s): _____
Incidental Uses (Table 509): _____
Special Uses (Chapter 4 – List Code Sections): _____
Special Provisions: (Chapter 5 – List Code Sections): _____
Mixed Occupancy: Select one Separation: Select one Exception: _____
Select one

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} + \text{____} + \text{____} \leq 1.00$$

STORY No.	DESCRIPTION AND USE	(A) [1] BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[2] AREA	(C) AREA FOR FRONTAGE INCREASE [3,4]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED [1,5]

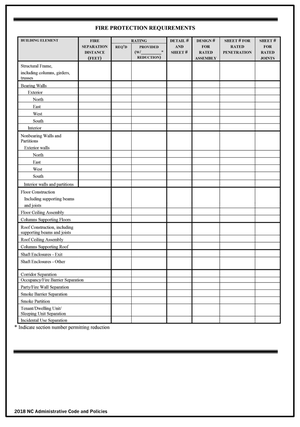
[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase I$_f$ = 100[(F/P) - 0.25] x W/30 = _____ (%)
[1] Unlimited area applicable under conditions of Section 507.
[2] Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
[3] The maximum area of open parking garages must comply with Table 406.5.4.
[4] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
Building Height in Feet (Table 504.3) [2]			
Building Height in Stories (Table 504.4) [3]			

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1.
[3] The maximum height of open parking garages must comply with Table 406.5.4.

2018 NC Administrative Code and Policies

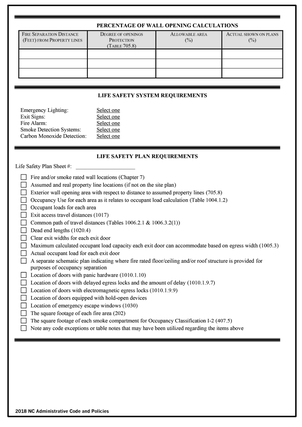


FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED W/ REDUCTION*	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing Walls and Partitions							
Exterior walls							
North							
East							
West							
South							
Interior walls and partitions							
Floor Construction including supporting beams and joists							
Floor Ceiling Assembly							
Columns Supporting Floors							
Roof Construction, including supporting beams and joists							
Roof Ceiling Assembly							
Columns Supporting Roof							
Shaft Enclosures - Exit							
Shaft Enclosures – Other							
Corridor Separation							
Occupancy/Fire Barrier Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Smoke Partition							
Tenant/Dwelling Unit/ Sleeping Unit Separation							
Incidental Use Separation							

* Indicate section number permitting reduction

2018 NC Administrative Code and Policies



PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) (FROM PROPERTY LINES)	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: Select one
Exit Signs: Select one
Fire Alarms: Select one
Smoke Detection Systems: Select one
Carbon Monoxide Detection: Select one

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: _____

- ☐ Fire and/or smoke rated wall locations (Chapter 7)
- ☐ Assumed and real property line locations (if not on the site plan)
- ☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
- ☐ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
- ☐ Occupant loads for each area
- ☐ Exit access travel distances (1017)
- ☐ Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
- ☐ Dead end lengths (1020.4)
- ☐ Clear exit widths for each exit door
- ☐ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
- ☐ Actual occupant load for each exit door
- ☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
- ☐ Location of doors with panic hardware (1010.1.10)
- ☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
- ☐ Location of doors with electromagnetic egress locks (1010.1.9.9)
- ☐ Location of doors equipped with hold-open devices
- ☐ Location of emergency escape windows (1030)
- ☐ The square footage of each fire area (202)
- ☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
- ☐ Note any code exceptions or table notes that may have been utilized regarding the items above

2018 NC Administrative Code and Policies

Special Inspection and Material Testing Items

IT-4 MODULAR RETAINING WALLS (NCSBC SECTION 1610 AND 1704.13)

Item			Detailed Instructions and Frequencies
Verify the properties of the in-place and proposed soil materials	☐ Continuous	☑ Periodic	Materials shall meet the assumed design values in the "Back Fill Materials" and "Soil Properties" sections of the Specifications
Verify the suitability of in-place and proposed soil materials	☐ Continuous	☑ Periodic	Materials shall meet the requirements of the "Soil Properties", "Unsuitable Material", "Foundation Requirements", and "Structural Fill Placement" sections of the Specifications
Verify subgrade is adequate to achieve design bearing capacity	☐ Continuous	☑ Periodic	Bearing capacity of foundation and reinforced zone shall be in accordance with the "Foundation Load" and "Foundation Requirements" sections of the Specifications
Verify leveling pad material and proper depth	☐ Continuous	☑ Periodic	Materials shall meet requirements of the "Leveling Pad" section of the Specifications
Verify placement, setback, and connection method of units	☑ Continuous	☐ Periodic	Retaining Wall Plans Detail and "Wall Batter", "Retaining Wall Shear Connections", "First Block Course" and "Retaining Wall Cap Units" sections of the Specifications
Verify installation of drainage tile and drainage system	☑ Continuous	☐ Periodic	Retaining Wall Plans Detail and "Unit Fill" and "Hydrostatic Pressure Potential" sections of the Specifications
Verify geogrid material, length, and elevation placement	☑ Continuous	☐ Periodic	Materials shall be as indicated on the RW Profile and meet the requirements of the "Geogrid Reinforcement", "Geogrid Installation", & "Acceptable Geogrid" sections of the Specifications
Verify density, moisture content, and lift thickness for wall fill	☑ Continuous	☑ Periodic	Placement of fill shall meet requirements of the "Structural Fill Placement" and "Soil Testing" sections of the Specifications

A summary of testing services, signed and sealed by a registered professional engineer shall be provided to the Registered Design Professional prior to issuance of the final inspection report.

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www.nv5.com

Registered Design Professional
Justin R. Pescosolido, P.E.

Plan Sheet Index:

RW-1	***Title Sheet***
RW-2	***Retaining Wall Layout***
RW-3	***Wall 2S Profile Part 1***
RW-4	***Wall 2S Profile Part 2***
RW-5	***Wall 4S Profile***
RW-6	***Anchor Diamond Pro PS Unit Details***
RW-7	***Additional Details***
RW-8	***Specifications***

NV5 Engineers and Consultants, Inc.
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North Carolina Corporate License No. F-1333

Seal

NORTH CAROLINA PROFESSIONAL ENGINEER JUSTIN R. PESCOSOLIDO

Digitally signed by Justin Pescosolido
Date: 2023.06.23 13:39:08 -04'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number 121-23-108265

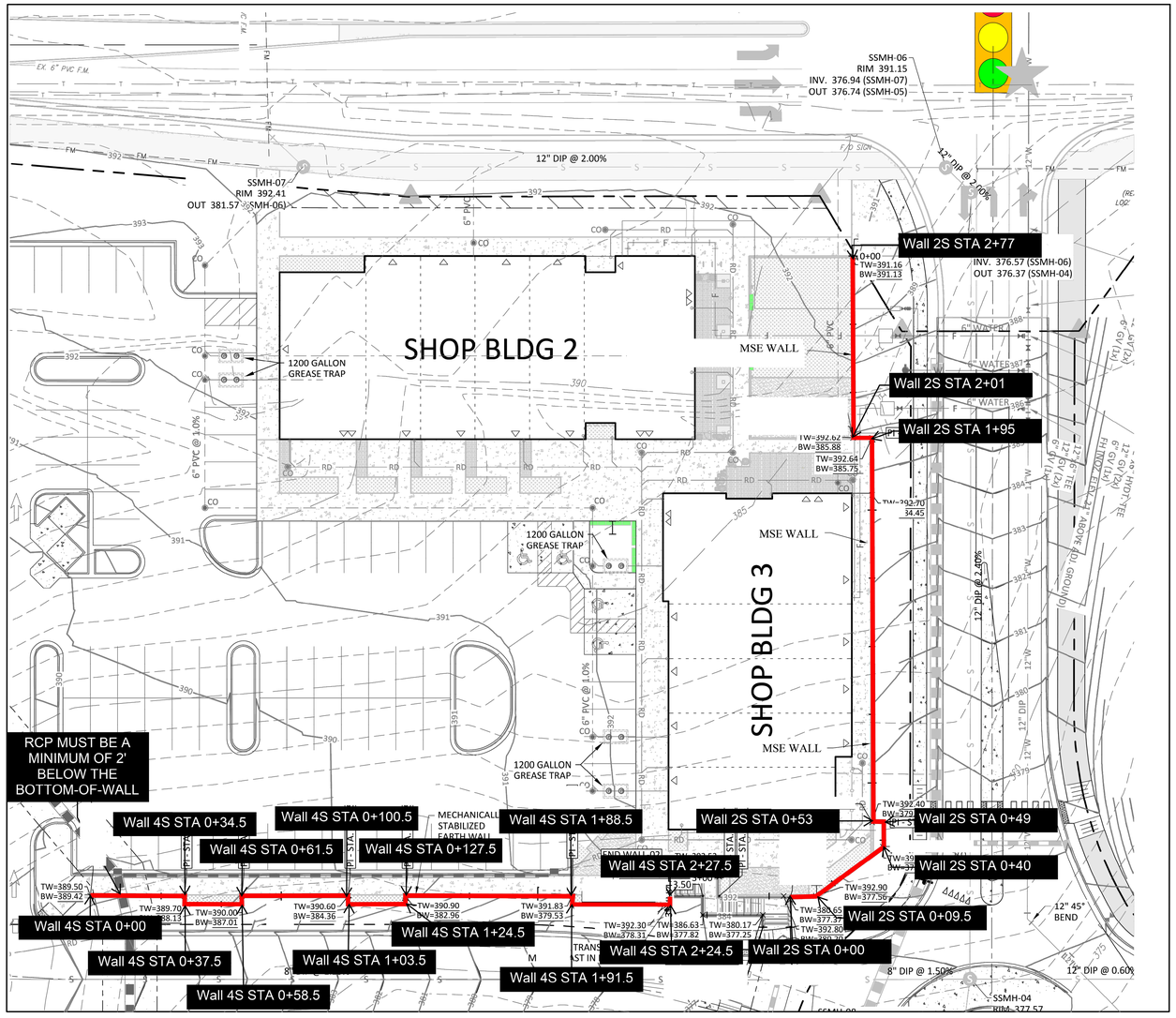
REV	DATE	DESCRIPTION	BY
1	6/14/23	Wall 2S, Site Layout, Details	JGD

Title Sheet

Designed by: Justin R. Pescosolido, P.E. Date: 1-17-23
Drawn By: Jaxon Dean Date: 1-17-23
Reviewed By: Justin R. Pescosolido, P.E. Date: 1-17-23

SHEET **RW-1**

Retaining Wall Design



WE NOTE THAT THIS SITE LAYOUT IS APPROXIMATE. STAKING OF THE ACTUAL WALL LOCATIONS IN THE FIELD IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND SHOULD BE PERFORMED BASED ON THE APPROVED SITE/CIVIL DRAWINGS. OUR REPRESENTATIVE SHOULD BE ALLOWED TO REVIEW STAKING PRIOR TO WALL CONSTRUCTION.

General Notes

The retaining wall(s) contained herein have been designed using active earth pressure theory. Therefore, outward movement at the top of the wall(s) should be expected. Outward movement of the retaining wall(s) may be limited by using high quality fill soils with a low fines content within the reinforced zone of the wall(s). Some cracks could develop at the ground surface due to lateral movement of the wall(s). These cracks should be filled in as soon as they are observed to help protect the soils below the ground surface from softening related to water infiltration that could affect the support characteristics for adjacent construction.

Preliminary analyses for global stability and total and differential settlement were performed as part of the design services for the segmental retaining wall(s). Our analyses were based, in part, on assumed in-situ soil properties derived from our previous Report of Subsurface Investigation and Geotechnical Engineering Evaluation and our previous experience with similar conditions in close geographic proximity to this site. If soil conditions encountered during construction are significantly different than those assumed herein, NV5 Engineers and Consultants, Inc. shall be contacted immediately for review of and possible alterations to this design.

The Engineer requests that representatives of the owner and/or general contractor arrange a pre-construction meeting with all pertinent parties involved for the construction of the retaining wall(s) shown on these plans. The Engineer's responsibility is limited to providing only the design services of the project's retaining wall(s) contained herein. Retaining wall construction monitoring and retaining wall certifying are beyond the scope of these design services. The Engineer shall not be required to sign any document, no matter by whom requested, in which the Engineer is required to certify, guarantee, or warrant conditions of which the Engineer has not or cannot ascertain.

Retaining Wall 4S was designed considering an additional 250 pounds per square foot (psf) live load at a setback of approximately 10 feet from top-of-wall to account for vehicle traffic in the planned parking lot and drive aisles. Retaining Wall 2S was designed considering foundation surcharge loads as provided to us by the structural engineer of record. No other dead load surcharge conditions were considered in the wall design. Structures such as light poles, handrail, guardrail, or drainage structures to be installed in the vicinity of the retaining wall(s) shall be designed and constructed to resist imposing additional lateral loads on the retaining wall(s). If future construction alters the assumed loading conditions of the retaining wall(s), NV5 Engineers and Consultants, Inc. shall be notified to review the design criteria for the imposed loads.

Construction Notes

1. *Prior to construction, confirmation of the distances to property lines, Tree Buffers, roadways, sidewalks, and/or curb and gutter to the face(s) of the proposed wall(s) shall be performed.*
2. *Prior to construction, confirmation of existing utility line locations (Stormwater, Sewer, Water, Electrical, and Gas) and the locations of future utility lines shall be performed.*
3. *Prior to construction, confirmation of the in-situ and proposed grades shall be performed by a qualified surveyor. NV5 Engineers and Consultants, Inc. shall be notified if the site grades are different than those shown on these drawings.*
4. *During construction, care must be exercised to prevent the undermining of any existing structures.*
5. *Utility structures and underground lines located within the reinforced zone of the retaining wall(s) shall be installed prior to or during construction of the retaining wall(s) to prevent damage to the reinforcement layers. If the presence of utility structures interferes with the integrity of the reinforcement, NV5 Engineers and Consultants, Inc. shall be notified during construction to recommend suitable remedial measures that will ensure proper operation of the retaining wall(s).*
6. *After construction, heavy equipment should not operate within 3 feet of the top portion of the wall(s) to prevent adverse impacts to the structural integrity of the retaining wall(s).*
7. *After construction, care must be exercised to prevent damage to the upper layers of reinforcement and degrading of the retained soils of the retaining wall(s). Installation of light poles, signs, handrails, guardrails, shrubs, or trees (etc.) in the reinforced zone of this retaining wall(s) shall not damage the upper layers of reinforcement. Any damaged reinforcement shall be repaired.*
8. *Surface water drainage shall be designed by others to discharge surface water away from the wall face(s) and away from the foundations of adjacent construction at all times during and after construction of the retaining wall(s).* ***All downspouts from the nearby structures should be directed away from the wall(s) and slope(s) above the wall(s).***

NV5 Engineers and Consultants, Inc.

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Seal

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL JUSTIN R. PESCOSOLIDO

Digitally signed by Justin Pescosolido
Date: 2023.06.23 13:38:59-04'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number 121-23-108265

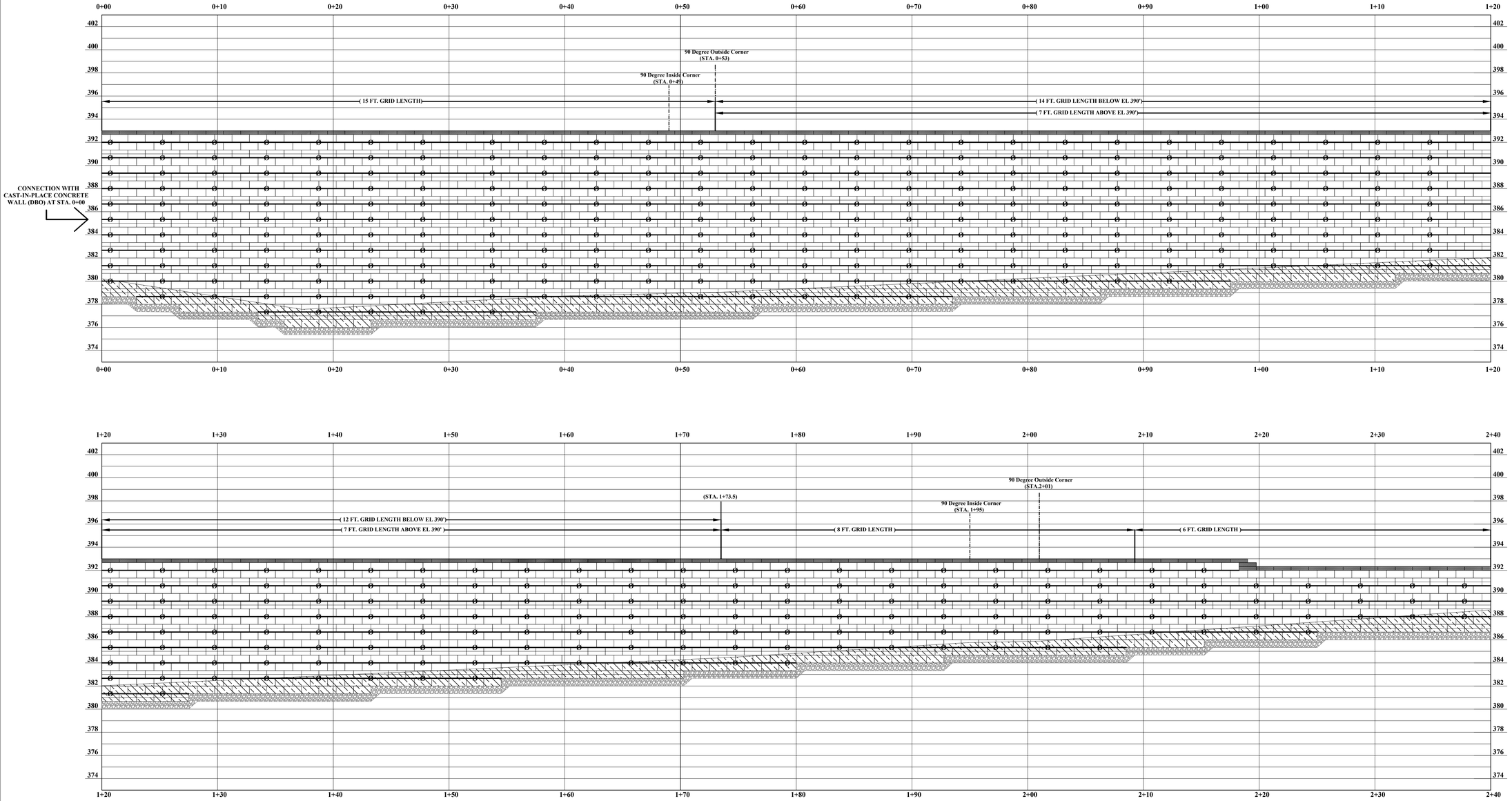
REV	DATE	DESCRIPTION	BY
1	6/14/23	Wall 2S, Site Layout, Details	JGD

Retaining Wall Layout

Designed by: Justin R. Pescosolido, P.E. Date: 1-17-23
Drawn By: Jaxon Dean Date: 1-17-23
Reviewed By: Justin R. Pescosolido, P.E. Date: 1-17-23

SHEET
RW-2

Retaining Wall Design



NOTE: CONNECTION TO CAST-IN-PLACE CONCRETE WALL (CONCRETE WALL DESIGNED BY OTHERS)

NOTE: TOP 2 GRID LAYERS (ABOVE EL 390') 7 FEET
REMAINING GRID LAYERS (BELOW EL 390') 14 FEET
(FROM STA 0+53 TO STA 1+20)

NOTE: TOP 2 GRID LAYERS (ABOVE EL 390') 7 FEET
REMAINING GRID LAYERS (BELOW EL 390') 12 FEET
(FROM STA 1+20 TO STA 1+73.5)

LEGEND:
1). MIRAFI 3XT GEOGRID DESIGNATION
2). EMBEDDED BLOCK DESIGNATION
3). LEVELING PAD DESIGNATION

RETAINING WALL 2S PROFILE Part 1

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NORTH CAROLINA PROFESSIONAL ENGINEER JUSTIN R. PESCOSOLIDO

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Date: 2023.06.23 13:36:48 -04'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number 121-23-108265

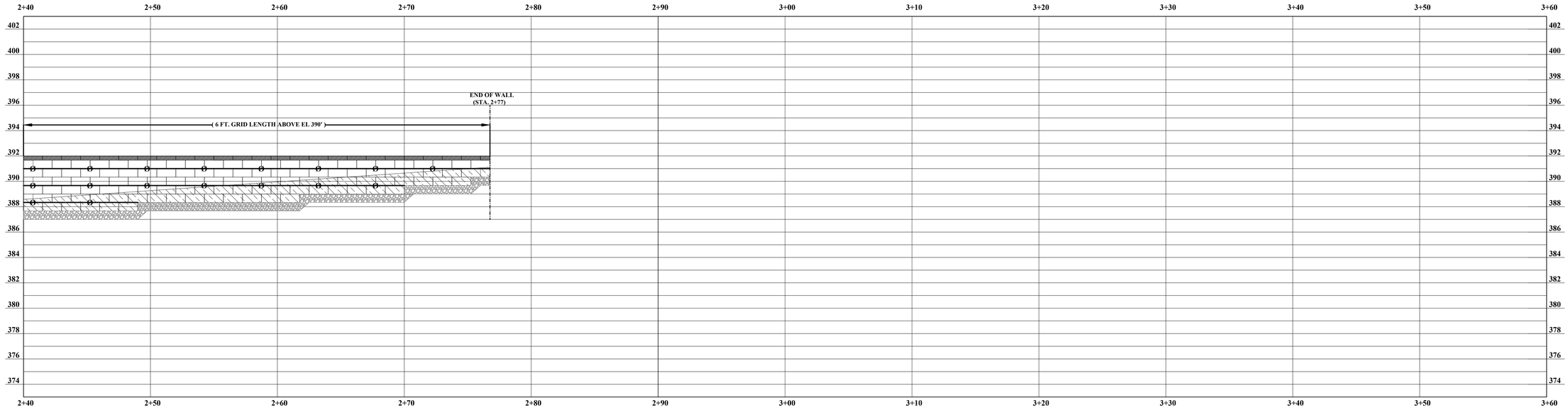
REV	DATE	DESCRIPTION	BY
1	6/14/23	Wall 2S, Site Layout, Details	JGD

Retaining Wall 2S Profile Part 1

Designed by: Justin R. Pescosolido, P.E. Date: 1-17-23
Drawn By: Jaxon Dean Date: 1-17-23
Reviewed By: Justin R. Pescosolido, P.E. Date: 1-17-23

SHEET
RW-3

Retaining Wall Design



LEGEND:
1). MIRAFI 3XT GEOGRID DESIGNATION
2). EMBEDDED BLOCK DESIGNATION
3). LEVELING PAD DESIGNATION

RETAINING WALL 2S PROFILE Part 2

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Wallbrook Shopping Center
Rolesville, North Carolina
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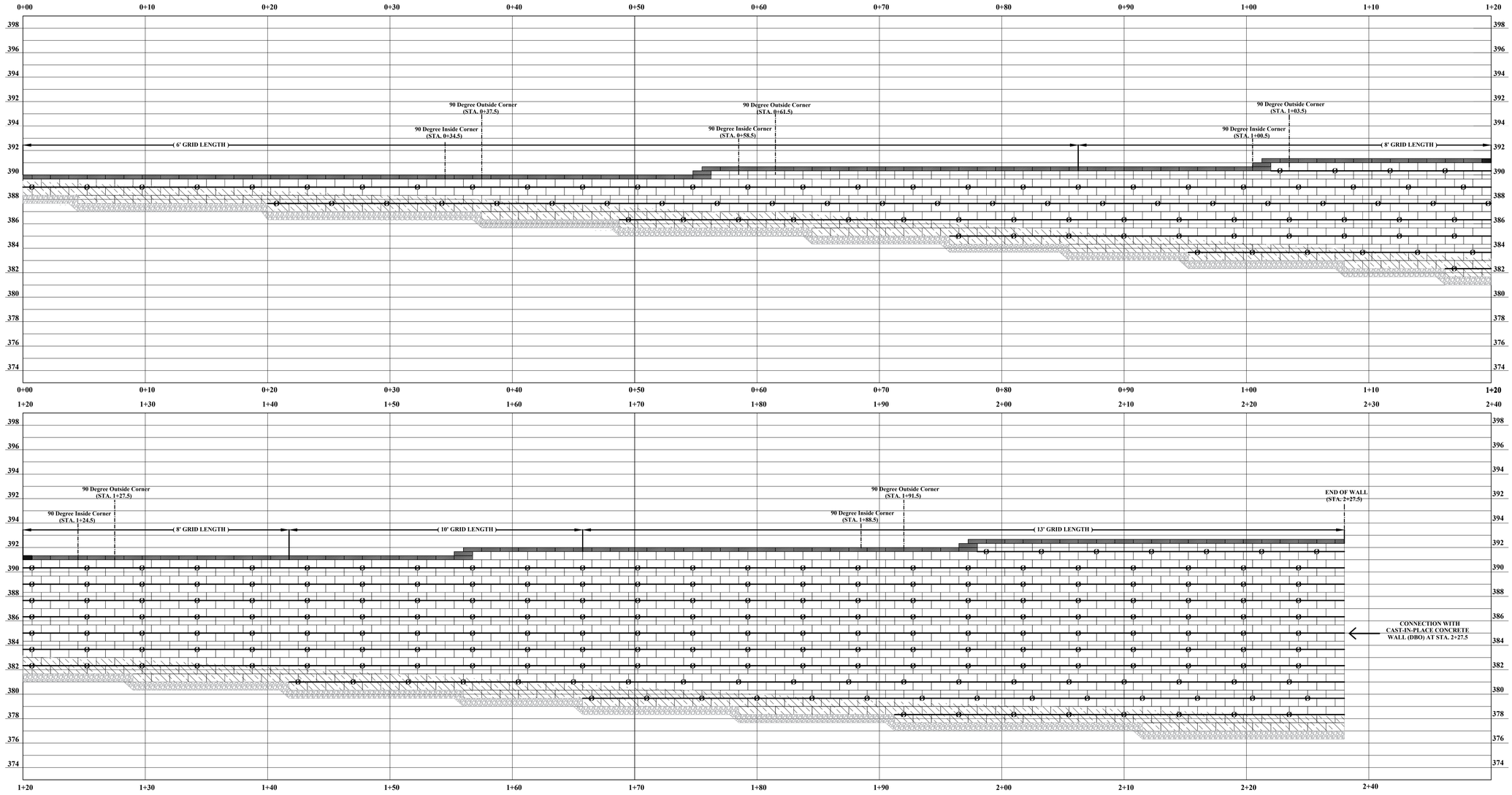
1	6/14/23	Wall 2S, Site Layout, Details	JGD

Retaining Wall 2S Profile Part 2

Designed by: Justin R. Pescosolido, P.E. Date: 1-17-23
Drawn By: Jaxon Dean Date: 1-17-23
Reviewed By: Justin R. Pescosolido, P.E. Date: 1-17-23

SHEET
RW-4

Retaining Wall Design



NOTE: CONNECTION TO CAST-IN-PLACE CONCRETE WALL (CONCRETE WALL DESIGNED BY OTHERS)

LEGEND:
1). MIRAFI 3XT GEOGRID DESIGNATION
2). EMBEDDED BLOCK DESIGNATION
3). LEVELING PAD DESIGNATION

RETAINING WALL #4S

NV5 Engineers and Consultants, Inc.
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NORTH CAROLINA PROFESSIONAL ENGINEER JUSTIN R. PESCOSOLIDO
Digitally signed by Justin Pescosolido
Date: 2023.06.23 13:36:27-04'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number 121-23-108265

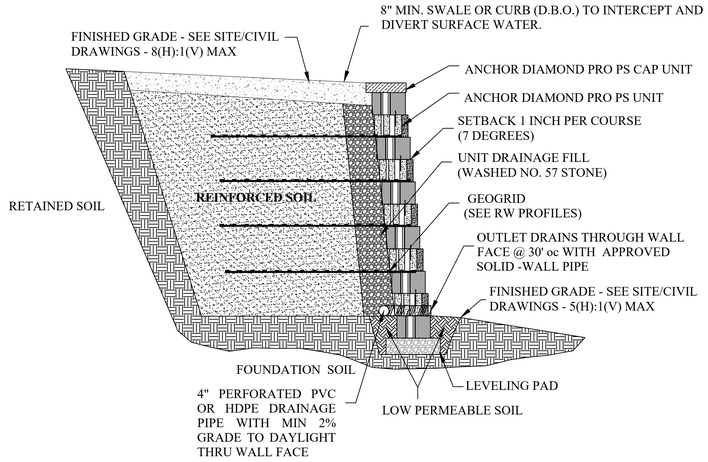
REV	DATE	DESCRIPTION	BY
1	6/14/23	Wall 2S, Site Layout, Details	JGD

Retaining Wall 4S Profile

Designed by: Justin R. Pescosolido, P.E. Date: 1-17-23
Drawn By: Jaxon Dean Date: 1-17-23
Reviewed By: Justin R. Pescosolido, P.E. Date: 1-17-23

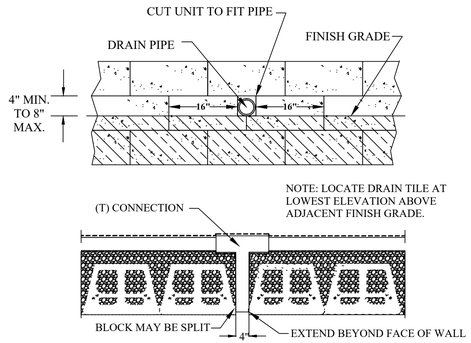
SHEET
RW-5

Retaining Wall Design



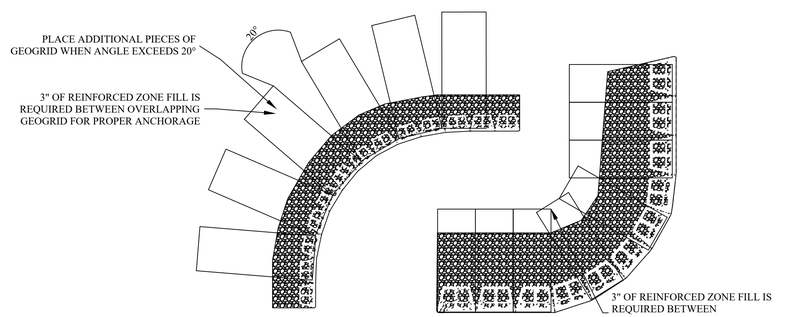
ANCHOR DIAMOND PRO PS RETAINING WALL DETAIL

SCALE: NONE



FACE OUTLET DRAIN DETAIL

SCALE: NONE



GEOGRID INSTALLATION AT CURVES

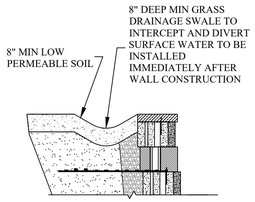
SCALE: NONE

LEGEND:

1). **STRATA SG-200 GEOGRID DESIGNATION**

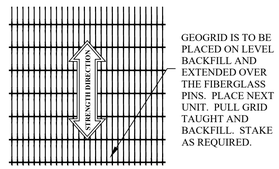
2). **EMBEDDED BLOCK DESIGNATION**

3). **LEVELING PAD DESIGNATION**



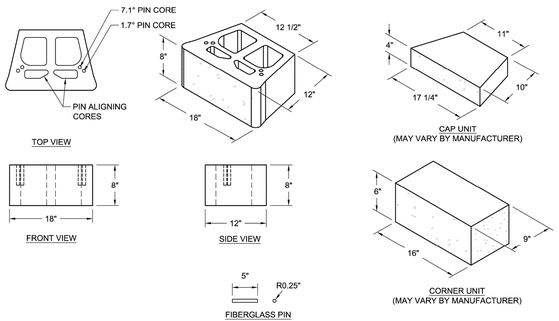
DRAINAGE SWALE DETAIL

SCALE: NONE



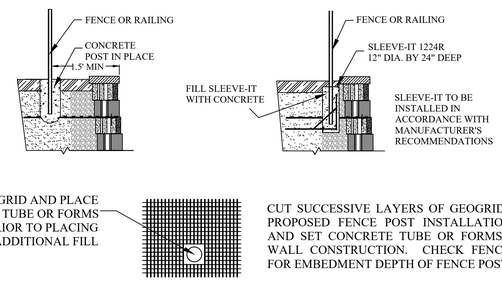
GRID AND PIN CONNECTION

SCALE: NONE



DIAMOND PRO UNIT DETAILS

SCALE: NONE

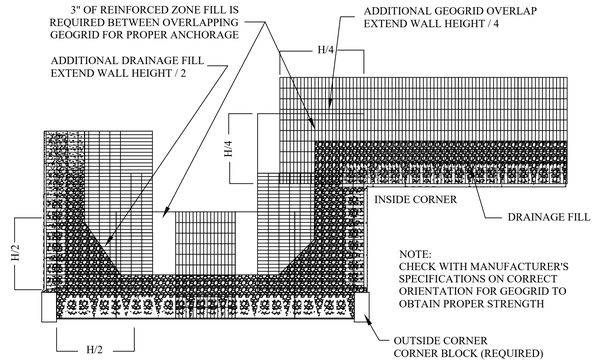


CUT SUCCESSIVE LAYERS OF GEOGRID AROUND PROPOSED FENCE POST INSTALLATION POINTS AND SET CONCRETE TUBE OR FORMS DURING WALL CONSTRUCTION. CHECK FENCE DESIGN FOR EMBEDMENT DEPTH OF FENCE POST

RAILING REQUIREMENTS FOR THE RETAINING WALL SHALL BE DETERMINED BY THE SITE DESIGNER. THE RAILING SHOULD BE DESIGNED IN ACCORDANCE WITH THE NORTH CAROLINA BUILDING CODE BY A REGISTERED DESIGN PROFESSIONAL. THE RAILING SHOULD BE DESIGNED SUCH THAT IT DOES NOT ADD ANY ADDITIONAL LATERAL FORCES TO THE RETAINING WALL. THE CONCRETE TUBES OR SLEEVE-IT FORMS FOR THE RAILINGS SHALL BE INSTALLED BY THE SITE CONTRACTOR AND COORDINATED WITH THE RETAINING WALL CONTRACTOR DURING CONSTRUCTION OF THE RETAINING WALL.

TYPICAL HAND RAILING DETAIL

SCALE: NONE



GEOGRID INSTALLATION AT CORNERS

SCALE: NONE

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047102 JUSTIN R. PESCOSOLIDO

Digitally signed by Justin Pescosolido
Date: 2023.06.23 13:38:26-04'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number 121-23-108265

REV	DATE	DESCRIPTION	BY
1	6/14/23	Wall 2S, Site Layout, Details	JGD

Anchor Diamond Pro PS Unit Details

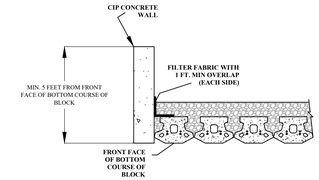
Designed by: Justin R. Pescosolido, P.E. Date: 1-17-23

Drawn By: Jaxon Dean Date: 1-17-23

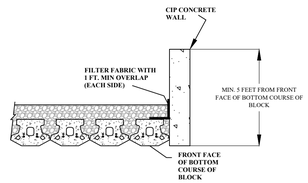
Reviewed By: Justin R. Pescosolido, P.E. Date: 1-17-23

SHEET **RW-6**

Retaining Wall Design



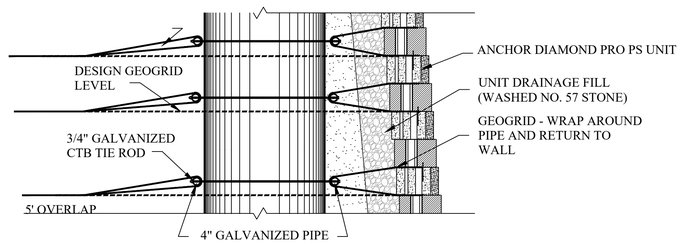
MSE TO CIP CONNECTION: WALL 2S AT STA. 0+00

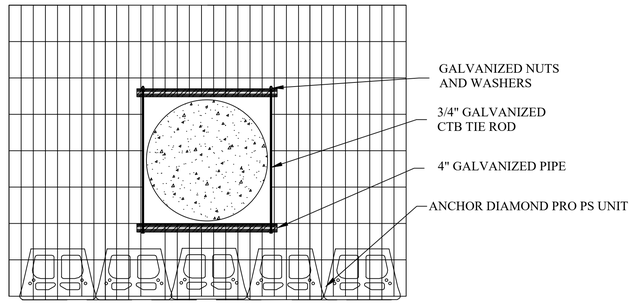


MSE TO CIP CONNECTION: WALL 4S AT STA. 2+27.5

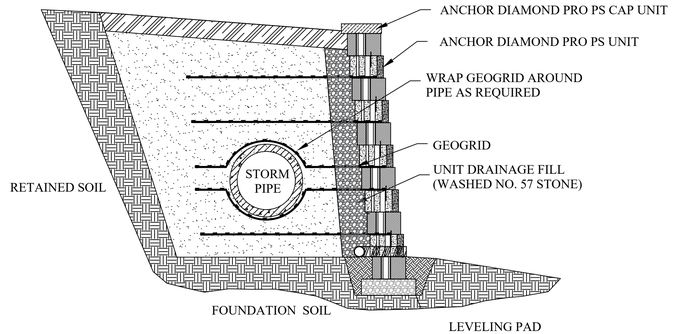
MSE WALL & CIP WALL CONNECTION DETAIL

SCALE: NONE

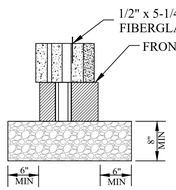


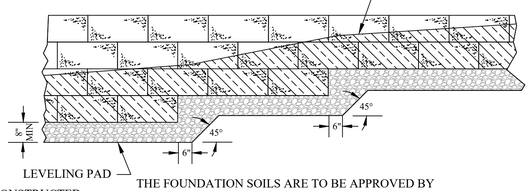


WALL AT PIER / MANHOLE



WALL WITH PIPE IN REINFORCED ZONE





THE LEVELING PAD IS TO BE CONSTRUCTED OF WASHED NO. 57 STONE, ABC STONE, OR UNREINFORCED CONCRETE.

THE FOUNDATION SOILS ARE TO BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF THE LEVELING PAD

LEVELING PAD DETAILS

SCALE: NONE

NV5 Engineers and Consultants, Inc.

4905 Professional Court
Raleigh, North Carolina 27609
Phone: (919) 876-9799 Fax: (919) 876-8291
North Carolina Corporate License No. F-1333

Seal

NORTH CAROLINA PROFESSIONAL ENGINEER JUSTIN R. PESCOSOLIDO

Digitally signed by Justin Pescosolido
Date: 2023.06.23 13:37:42 -05'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number 121-23-108265

REV	DATE	DESCRIPTION	BY
1	6/14/23	Wall 2S, Site Layout, Details	JGD

Additional Details

Designed by: Justin R. Pescosolido, P.E. Date: 1-17-23
Drawn By: Jaxon Dean Date: 1-17-23
Reviewed By: Justin R. Pescosolido, P.E. Date: 1-17-23

Retaining Wall Design

SHEET **RW-6**

1.0 GENERAL

SEGMENTAL RETAINING WALL SYSTEMS ARE DESIGNED AS GRAVITY RETAINING WALLS UTILIZING A HIGH DENSITY POLYESTER GEOGRID TO REINFORCE THE SOIL ZONE BEHIND THE WALL. THE GEOGRID IS POSITIVELY CONNECTED TO THE MODULAR CONCRETE BLOCK CREATING A REINFORCED SOIL MASS CAPABLE OF RESISTING CERTAIN LATERAL EARTH PRESSURES AND SURCHARGED LOADS. ALL REFERENCES TO THE ENGINEER REFER TO NV5 ENGINEERS AND CONSULTANTS, INC.

1.1 QUALITY ASSURANCE

WORK SHALL BE PERFORMED ONLY BY AN EXPERIENCED CONTRACTOR. CONTRACTOR SHALL SUBMIT TO THE CERTIFYING ENGINEER EVIDENCE OF QUALIFICATIONS AND REFERENCES ON PROJECTS OF SIMILAR SCOPE. THE CERTIFYING ENGINEER RESERVES THE RIGHT TO REJECT ANY AND ALL QUALIFICATIONS SUBMITTALS. THE OWNER AND/OR GENERAL CONTRACTOR SHOULD PROVIDE AN INSPECTOR AS A FULL-TIME CONTINUOUS MONITOR OF WORK QUALITY.

1.2 BACK FILL MATERIALS

THE SOIL MATERIAL ASSOCIATED WITH THE RETAINING WALL(S) IN THE REINFORCED ZONE, THE RETAINED ZONE, OR THE FOUNDATION BEDDING SHALL HAVE, AT A MINIMUM, THE FOLLOWING PROPERTIES:

A.) FOUNDATION SOILS	Φ = 26 DEGREES, COHESION = 0 PSF, WET UNIT WEIGHT = 115 LBS/CU.FT
B.) RETAINED SOILS	Φ = 26 DEGREES, COHESION = 0 PSF, WET UNIT WEIGHT = 115 LBS/CU.FT
B.) REINFORCED SOILS	Φ = 30 DEGREES, COHESION = 0 PSF, WET UNIT WEIGHT = 125 LBS/CU.FT

SEE PROFILE SHEETS FOR BOTTOM OF WALL ELEVATIONS. IF THE ASSUMED VALUES DO NOT REPRESENT THE ACTUAL SOIL CONDITIONS, THE ENGINEER SHALL BE NOTIFIED AND THE WALL(S) SHALL BE REDESIGNED.

1.3 FOUNDATION LOADS

THE MAXIMUM APPLIED FOUNDATION LOAD FOR THE WALL(S) IS **2.5 KIPS/SQ.FT.**

1.4 WALL BATTER

BATTER FOR THE ENTIRE WALL SHALL BE MAINTAINED AT 1-INCH PER COURSE.

2.1 CONCRETE MASONRY WALL UNITS

CONCRETE WALL UNITS SHALL BE SEGMENTAL UNITS MANUFACTURED IN ACCORDANCE WITH ASTM C-1372 AND ASTM C-140, AND SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI.

2.2 RETAINING WALL SHEAR CONNECTIONS

SEGMENTAL WALL UNITS SHALL BE INTERLOCKED UTILIZING MANUFACTURER SPECIFIED FIBERGLASS SHEAR PINS AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

2.3 GEOGRID REINFORCEMENT

GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF HIGH TENACITY GEOGRIDS MANUFACTURED FOR SOIL REINFORCEMENT APPLICATIONS. THE TYPE, LENGTH, AND PLACEMENT OF THE REINFORCING GEOSYNTHETIC SHALL BE AS SHOWN ON THE PLANS.

2.4 LEVELING PAD

MATERIAL SHALL CONSIST OF COMPACTED AGGREGATE BASE COURSE (ABC) STONE, WASHED NO. 57 STONE, OR UNREINFORCED CONCRETE AND BE A MINIMUM OF 8" THICK (UNO). ABC STONE SHALL BE COMPACTED TO 95% OF THE STANDARD PROCTOR (ASTM D-698) MAXIMUM DRY DENSITY. AGGREGATE MATERIAL SHALL RECEIVE A MINIMUM OF ONE PASS OF THE COMPACTION EQUIPMENT. THE TOP OF THE LEVELING PAD FOR THE WALL SECTIONS SHALL BE MAINTAINED AS INDICATED ON THE RETAINING WALL PROFILE.

2.5 UNIT FILL

THE VOID WITHIN EACH UNIT SHALL BE FILLED WITH WASHED NO. 57 STONE HAVING 100% OF THE AGGREGATE PASSING THE 2" SIEVE WITH A MINIMUM OF 3/8" WASHED STONE SIZE AND NO MORE THAN 5% PASSING THE NO. 200 SIEVE. THE UNIT FILL SHALL EXTEND AT LEAST 12" BEHIND THE UNITS. GRAVITY FILL ZONE SHALL CONSIST OF WASHED #57 STONE.

2.6 SOIL PROPERTIES

REINFORCED ZONE SELECT FILL MATERIALS SHALL CLASSIFY AS GM, GP, SP, SP-SM, SM OR SC WITH NO MORE THAN 20% FINES. THE MINIMUM INTERNAL ANGLE OF FRICTION, COHESION, AND WET UNIT WEIGHT SHALL BE EQUAL TO OR GREATER THAN THE DESIGN VALUES PROVIDED IN SECTION 1.2.

2.7 UNSUITABLE MATERIAL

SOILS CONTAINING ROOTS, BRUSH, SOD, OR OTHER ORGANIC MATERIAL SHALL NOT BE PERMITTED AS FILL. FROZEN SOILS, SNOW, ICE, HEAVY CLAYS, OR WET SOILS SHALL NOT BE PERMITTED AS FILL. MATERIAL PASSING THE NO. 40 SIEVE SHALL NOT HAVE A LIQUID LIMIT OF GREATER THAN 40 AND A PLASTICITY INDEX OF GREATER THAN 15, UNLESS WRITTEN CONSENT IS OBTAINED FROM THE DESIGN ENGINEER PRIOR TO PLACEMENT.

3.1 FOUNDATION REQUIREMENTS

THE FOUNDATION BEARING CAPACITY THAT WAS ASSUMED FOR THE DESIGN SHALL BE VERIFIED IN THE FIELD WITH A MINIMUM FACTOR OF SAFETY OF 2.0, AND COPIES OF THE TESTS PROVIDED TO THE CERTIFYING ENGINEER. THE FOUNDATION ZONE SHALL BE CLEARED OF ALL DEBRIS AND LOOSE SOIL. FOUNDATION SOILS NOT MEETING THE MINIMUM DESIGN CRITERIA, SHALL BE REMOVED AND REPLACED UTILIZING AGGREGATE BASE COURSE (ABC) STONE, PLACED IN LIFTS NOT EXCEEDING 8", AND COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR (ASTM D-698) MAXIMUM DRY DENSITY.

3.2 FIRST BLOCK COURSE

THE FIRST COURSE OF BLOCK SHALL BE PLACED ON TOP OF AND IN FULL CONTACT WITH THE LEVELING PAD. THE UNITS SHALL MAINTAIN A MINIMUM DISTANCE OF 6" FROM THE FRONT AND BACK OF THE LEVELING PAD. PROPER ALIGNMENT MAY BE ACHIEVED WITH THE AID OF A STRING LINE. PROCEED TO THE NEXT COURSE OF BLOCK. EACH UNIT SHALL BE IN CONTACT WITH THE UNITS ON BOTH SIDES AS WELL AS ABOVE AND BELOW. SOME ADJUSTMENTS MAY BE REQUIRED FOR WALLS WITH CURVES AND A BATTER.

3.3 GEOGRID INSTALLATION

THE GEOGRID REINFORCEMENT SHALL BE LAID HORIZONTALLY ON COMPACTED REINFORCED ZONE FILL AND POSTITIVELY CONNECTED TO THE CONCRETE WALL UNITS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. GEOGRID SHALL BE PULLED TAUT, REMOVING ALL SLACK, AND ANCHORED BEFORE ADDING FILL. GEOGRID SHALL BE INSTALLED AT THE ELEVATIONS AND LENGTHS INDICATED ON THE RETAINING WALL PROFILE. THE SOIL SURFACE SHALL BE SMOOTH AND LEVEL AND HAVE BEEN COMPACTED BEFORE INSTALLING THE GEOGRID.

3.4 REINFORCED ZONE FILL PLACEMENT

REINFORCED ZONE SELECT FILL OR ABC STONE SHALL BE PLACED IN A MAXIMUM 6" LIFT THAT IS COMPACTED TO 95% OF THE STANDARD OR NCDOT MODIFIED PROCTOR MAXIMUM DRY DENSITY AT A MOISTURE CONTENT WITHIN 3% OF THE OPTIMUM MOISTURE CONTENT. ONLY HAND OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET OF THE SEGMENTAL UNITS. FILL SHALL BE PLACED FROM THE WALL REARWARD TO INSURE TAUTNESS OF THE GEOGRID. CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID.

3.5 RETAINING WALL CAP UNITS

RETAINING WALL CAPS TO BE SECURED TO TOP COURSE OF BLOCK WITH APPROPRIATE ADHESIVE.

4.0 SOIL TESTING

WHERE REINFORCED PROCESSED FILL OR ABC STONE MATERIALS ARE PLACED, COMPACTION TESTING SHALL BE PERFORMED FOR EVERY LIFT ELEVATION REQUIRING GEOGRID OR EVERY THIRD LIFT AS A MINIMUM. TEST RESULTS SHALL BE PROVIDED TO THE CERTIFYING ENGINEER. VERIFICATION OF SUFFICIENT COMPACTIVE EFFORT SHOULD BE PERFORMED FOR CLEAN AGGREGATE PLACEMENT.

5.0 HYDROSTATIC PRESSURE POTENTIAL

ANY SURFACE RUNOFF OR STORMWATER SHALL BE DISCHARGED AWAY FROM THE WALL FOUNDATION AND ANY ADJACENT FOUNDATION SYSTEMS. FOUNDATION DRAINS FOR ADJACENT STRUCTURES SHOULD BE ADEQUATELY PIPED AWAY FROM THE RETAINING WALL. ROOF DRAINAGE SYSTEMS SHOULD BE DESIGNED TO PREVENT ROOF RUNOFF FROM BEING DISCHARGED BEHIND THE RETAINING WALL. SURFACE WATER COLLECTION AND PIPING SYSTEMS SHALL BE DESIGNED BY OTHERS FOR YARD AREAS BEHIND THE RETAINING WALL. DRAINAGE SYSTEMS SHALL BE DESIGNED AND MAINTAINED TO AVOID EROSION OF THE SOILS AT THE AREA BELOW THE WALL.

6.0 ACCEPTABLE BLOCK

SEGMENTAL BLOCK UNITS SHALL BE USED AND KEPT FREE OF DEFECTS THAT WOULD INTERFERE WITH THE PLACING OR POSITIONING OF THE UNIT OR IMPAIR ITS STRENGTH. THE CONTRACTOR SHALL PREVENT EXCESS MUD, WET CEMENT, EPOXY, AND THE LIKE MATERIALS FROM COMING IN CONTACT WITH AND AFFIXING TO THE UNITS. MINOR CRACKS INCIDENTAL TO THE USUAL METHOD OF MANUFACTURING OR MINOR CHIPPING RESULTING FROM SHIPMENT AND DELIVERY ARE NOT GROUNDS FOR REJECTION.

7.0 ACCEPTABLE GEOGRID

GEOGRID SHALL BE REJECTED IF 20% OR MORE OF A STRUCTURAL RIB HAS BEEN CUT OR RIPPED. THE CONTRACTOR SHALL INSPECT ALL GEOGRID DELIVERED TO THE SITE AND REJECT MATERIALS THAT MEET THIS CRITERIA. THE CONTRACTOR SHALL PREVENT EXCESS MUD, WET CEMENT, EPOXY, AND THE LIKE MATERIALS FROM COMING IN CONTACT WITH AND AFFIXING TO THE GEOGRID MATERIAL. IF THE GEOGRID IS DAMAGED ONSITE, IT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

8.0 DRAINAGE COMPOSITE

DRAINAGE COMPOSITE REQUIREMENTS TO BE DETERMINED BY PROJECT GEOTECHNICAL ENGINEER AT TIME OF CONSTRUCTION.

9.0 SPECIAL PROVISIONS

A). MAINTAIN THE DIRECTION OF DRAINAGE AWAY FROM THE WALL FACE AT ALL TIMES DURING CONSTRUCTION OF THE RETAINING WALL(S) AND FINISHED GRADING AS SHOWN ON THE DRAINAGE PLANS TO BE PREPARED BY OTHERS.

B). NV5 ENGINEERS SHALL BE CONTACTED FOR REVIEW OF THE ADJOINING REINFORCED CONCRETE WALL DESIGNS AS THEY BECOME AVAILABLE.

C). THE ENGINEER SHALL BE NOTIFIED BY THE INSTALLING CONTRACTOR SHOULD THE EMBEDMENT DEPTH OF THE RETAINING WALL BE LESS THAN THAT WHICH IS SHOWN ON THE RETAINING WALL PROFILE.

D). AS PER THE NORTH CAROLINA STATE BUILDING CODE, A BUILDING PERMIT MUST BE OBTAINED PRIOR TO WALL CONSTRUCTION. THE CONTRACTOR SHALL CONTACT THE LOCAL MUNICIPALITY CODE ENFORCEMENT DIVISION TO OBTAIN A BUILDING PERMIT.

10.0 QUALIFICATION OF DESIGN

A). STABILITY OF ANY TEMPORARY SLOPES REQUIRED BY THE INSTALLATION OF A SEGMENTAL RETAINING WALL SHALL BE ADDRESSED BY A QUALIFIED GEOTECHNICAL ENGINEER. RESPONSIBILITY OF THESE TEMPORARY SLOPES RESTS WITH THE OWNER AND/OR THE CONTRACTOR OF THE PROJECT. ALL SLOPES SHALL MEET CURRENT OSHA STANDARDS.

B). HANDRAIL/GUARDRAIL REQUIREMENTS SHALL BE DETERMINED BY THE ARCHITECT OR GENERAL CONTRACTOR.

C). NOTIFY THE DESIGN ENGINEER PRIOR TO MODIFYING WALL CONSTRUCTION IF EXISTING SITE CONDITIONS DEVIATE FROM CONDITIONS OUTLINED ON THE RETAINING WALL PROFILE.

NV5 Engineers and Consultants, Inc.

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Raleigh, North Carolina 27609
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North Carolina Corporate License No. F-1333

Seal

NORTH CAROLINA ENGINEER JUSTIN R. PESCOSOLIDO
Digitally signed by Justin Pescosolido
Date: 2023.05.23 13:37:20-04'00'

Wallbrook Shopping Center
Rolesville, North Carolina
Our Project Number 121-23-108265

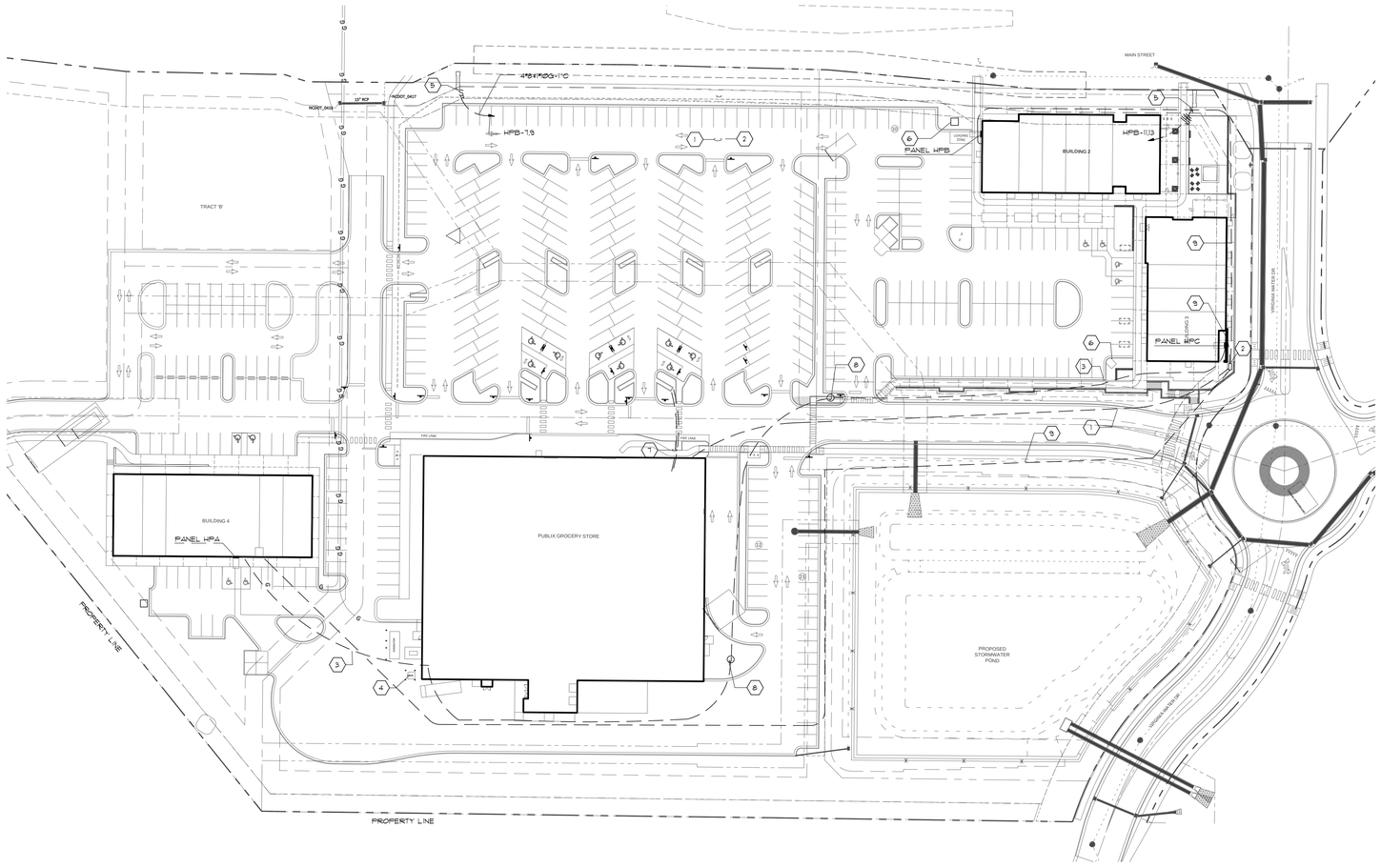
REV	DATE	DESCRIPTION	BY
1	6/14/23	Wall 2S, Site Layout, Details	JGD

Specifications

Designed by: Justin R. Pescosolido, P.E. Date: 1-17-23
Drawn By: Jaxon Dean Date: 1-17-23
Reviewed By: Justin R. Pescosolido, P.E. Date: 1-17-23

SHEET
RW-8

Retaining Wall Design



LEGEND NOTES:

1. (2) 3" PVC CONDUITS TO TELEPHONE UTILITY CONNECTION LOCATION. COORDINATE LOCATION AND REQUIREMENTS WITH TELEPHONE COMPANY, PRIOR TO BID. TERMINATE 5 FEET OUTSIDE BUILDING. FOR CONTINUATION BY PUBLIX BLDG CONTRACTOR. COORDINATE TERMINATION LOCATION AT PUBLIX WITH PUBLIX CONTRACTOR.
2. COMMUNICATION DEMARC LOCATION. COORDINATE EXACT LOCATION WITH UTILITY PROVIDER.
3. PROVIDE A 1"C WITH PULL WIRE FROM CONTACTOR CABINET TO EMS PANEL IN PUBLIX ELECTRICAL ROOM. FOR FUTURE EXTENSION TO PUBLIX EMS. COORDINATE LOCATION AND REQUIREMENTS WITH PUBLIX, PRIOR TO ROUGH IN.
4. PUBLIX DEDICATED TRANSFORMER
5. 20A/2P/ NEMA 3R DISCONNECT FOR PYLON SIGN AND CONVENIENCE OUTLET. PROVIDE A GFCI RECEPTACLE AT SIGN - COORDINATE LOCATION OF SWITCH AND SIGN WITH ARCHITECT. MAKE ALL CONNECTIONS.
6. 208Y/120V PAD MOUNTED POWER COMPANY TRANSFORMER.
7. (2) 2" SCHEDULE 40 PVC CONDUITS FROM PANEL 'B' INSIDE PUBLIX, TO A 12" X 12" IN GRADE, WATERTIGHT JUNCTION BOX IN THE ISLAND. PROVIDE PULLSTRINGS AND LABELS.
8. 12"X24"X12"D PULL BOX FOR PUBLIX CONTROL WIRING. INSTALL FLUSH IN GRADE.
9. (2) 4" PVC CONDUITS FROM COMMUNICATION CABINET TO COMMUNICATION UTILITY DEMARC LOCATION. COORDINATE EXACT LOCATION WITH UTILITY PROVIDER.

GENERAL NOTES:

1. 2#6#10G-1/2"C MINIMUM IN ALL EXTERIOR CIRCUITING.
2. CIRCUITS HPA-2-4 AND 13-15 SHALL BE DUSK ON /DAWN OFF.
3. ALL OTHER POLE LIGHTS SHALL BE DUSK ON/TIMER OFF.

1 SE-1.1 ELECTRICAL SITE PLAN
SCALE 1'-50'-0"

Savant Engineering, PLLC
5064 Roswell Road, Suite D-301
Sandy Springs GA 30342 770.319.7400

Hiscutt & Associates ARCHITECTURE
3625 Brookside Parkway
Suite 395
Alpharetta, Georgia 30022
Phone: 770.753.8787
Web: www.hiscutt-aia.com

NORTH CAROLINA PROFESSIONAL SEAL 037133 ENGINEER SCOTT W. LINDLOW 12-15-22

PROJECT:
WALLBROOK
US 401 at Virginia Water Drive
WAKE COUNTY, NORTH CAROLINA

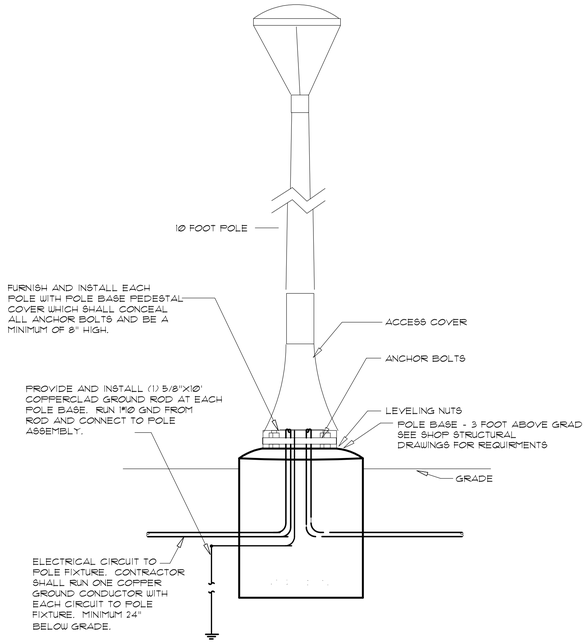
FOR:
CROSLAND SOUTHEAST
CHARLOTTE, NC

SHEET TITLE:
ELECTRICAL SITE PLAN

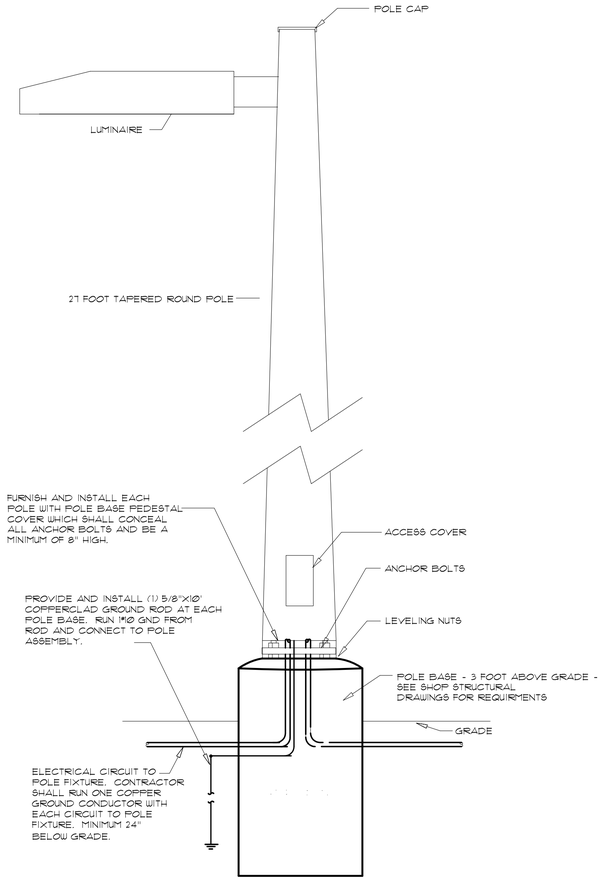
ISSUE DATE:
05.04.22 - PERMIT & PERMITTING
10.07.22 - TOWN COMMENTS - RESUBMITTAL

PROJECT NO: 20–117
FILE: 22922SE11
DRAWN BY: NJJ

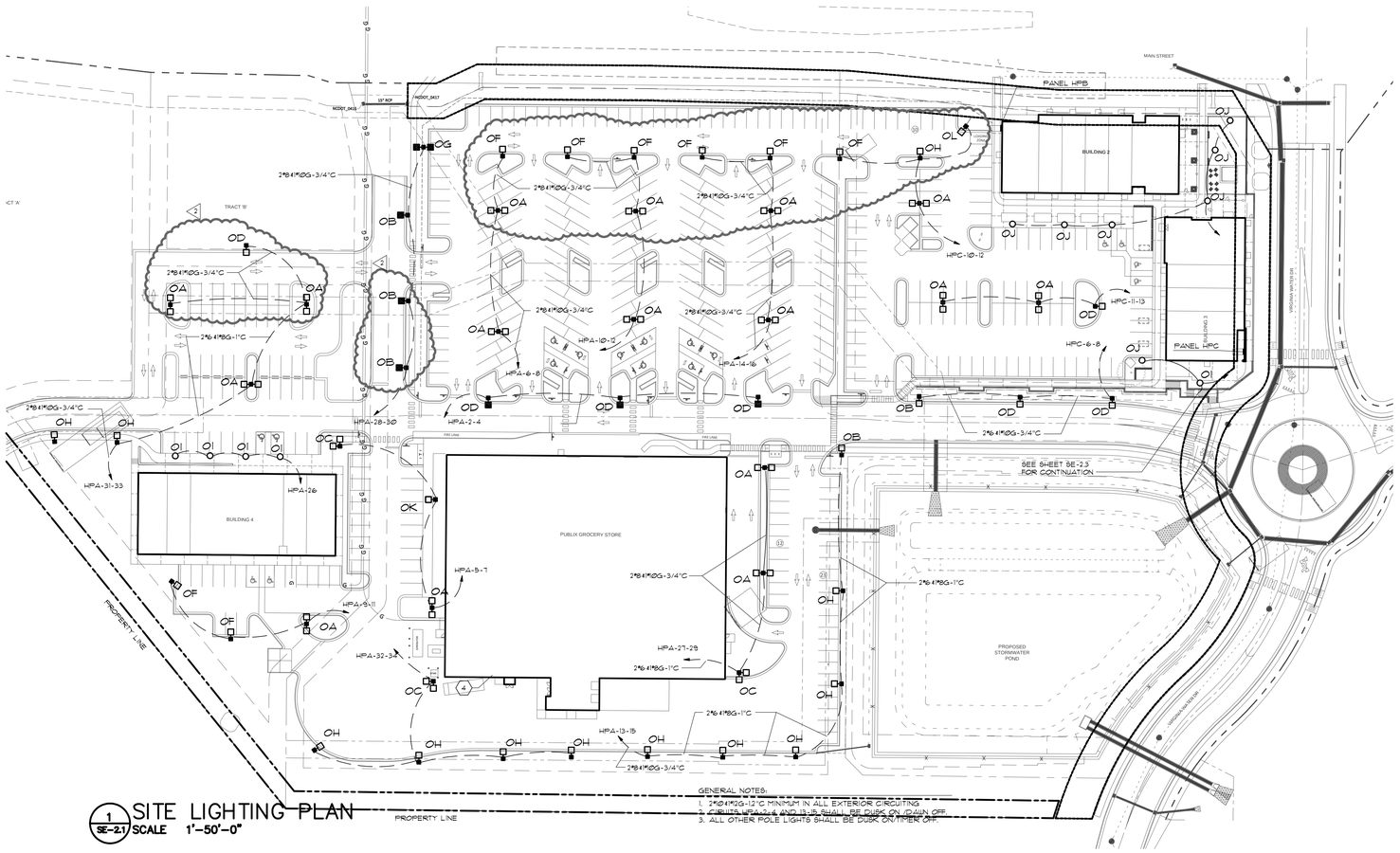
SHEET OF
SE-1.1



3 SE-2.1 POLE BASE DETAIL – POLE MOUNTED FIXTURE
NOT TO SCALE
FLUSH POLE BASE



2 SE-2.1 POLE BASE DETAIL – POLE MOUNTED FIXTURE
NOT TO SCALE
ELEVATED POLE BASE



1 SE-2.1 SITE LIGHTING PLAN
SCALE 1"–50'–0"

GENERAL NOTES:
1. 2#6#10G-1/2"C MINIMUM IN ALL EXTERIOR CIRCUITING
2. CIRCUITS HPA-2-4 AND 13-15 SHALL BE DUSK ON /DAWN OFF.
3. ALL OTHER POLE LIGHTS SHALL BE DUSK ON/DAWN OFF.

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	MOUNTING	VOLT	LAMPS		WATTS	MANUFACTURER
				TYPE	NO.		
OA	DUAL HEAD LED POLE LIGHT ON 27.0 FOOT TAPERED STEEL POLE. BACK TO BACK. BRONZE	DETAIL 2/SE-1.1	208	LED, 4000K	2	558	McGRAW EDISON (2)GLEON-SA5C-740-U-SWQ-B2B-BZ
OB	SINGLE HEAD LED POLE LIGHT ON 27.0 FOOT TAPERED STEEL POLE. BRONZE.	DETAIL 2/SE-1.1	208	LED, 4000K	1	279	McGRAW EDISON GLEON-SA5C-740-U-SWQ-BZ
OC	DUAL HEAD LED POLE LIGHT ON 27.0 FOOT TAPERED STEEL POLE. 2@90. BRONZE	DETAIL 2/SE-1.1	208	LED, 4000K	2	558	McGRAW EDISON (2)GLEON-SA5C-740-U-SWQ-2@90-BZ
OD	SINGLE HEAD LED POLE LIGHT ON 27.0 FOOT TAPERED STEEL POLE. BRONZE.	DETAIL 2/SE-1.1	208	LED, 4000K	1	279	McGRAW EDISON GLEON-SA5C-740-U-T4W-BZ
OE	SINGLE HEAD LED POLE LIGHT ON 27.0 FOOT TAPERED STEEL POLE. BRONZE.	DETAIL 2/SE-2.1	208	LED, 4000K	1	279	McGRAW EDISON GLEON-SA5C-740-U-SL2-BZ
OF	SINGLE HEAD LED POLE LIGHT ON 12.0 FOOT TAPERED STEEL POLE. BRONZE.	DETAIL 2/SE-2.1	208	LED, 4000K	1	113	McGRAW EDISON GLEON-SA2C-740-U-T4FT-BZ
OG	DUAL HEAD LED POLE LIGHT ON 12.0 FOOT TAPERED STEEL POLE. BACK TO BACK. BRONZE	DETAIL 2/SE-2.1	208	LED, 4000K	2	226	McGRAW EDISON (2)GLEON-SA2C-740-U-SWQ-B2B-BZ
OH	SINGLE HEAD LED POLE LIGHT ON 12.0 FOOT TAPERED STEEL POLE. BACK TO BACK. BRONZE	DETAIL 2/SE-2.1	208	LED, 4000K	1	113	McGRAW EDISON GLEON-SA2C-740-U-T4W-BZ
OI	PEDESTRIAN FIXTURE ON 10 FOOT POLE. BRONZE FINISH.	DETAIL 3/SE-2.1	208	LED, 4000K	1	48	INVUE LXS-VA-2-740-U-AST-S-BZ WITH ARP-5-L-6-10-A-BZ-5 POLE
OJ	PEDESTRIAN FIXTURE ON 10 FOOT POLE. BRONZE FINISH.	DETAIL 3/SE-2.1	208	LED, 4000K	1	41	INVUE LXS-VA-2-740-U-SYM-S-BZ WITH ARP-5-L-6-10-A-BZ-5 POLE
OK	SINGLE HEAD LED POLE LIGHT ON 27.0 FOOT TAPERED STEEL POLE. BRONZE.	DETAIL 2/SE-2.1	208	LED, 4000K	1	279	McGRAW EDISON GLEON-SA5C-740-U-T4FT-BZ
OL	SINGLE HEAD LED POLE LIGHT ON 27.0 FOOT TAPERED STEEL POLE. BRONZE.	DETAIL 2/SE-2.1	208	LED, 4000K	1	279	McGRAW EDISON GLEON-SA5C-740-U-SL3-BZ

LIGHTING FIXTURE SCHEDULE NOTES:
1. ALTERNATE SUPPLIERS OF SPECIFIED EQUIPMENT WILL BE ACCEPTABLE ONLY BY FORMAL SUBMITTAL 10 DAYS PRIOR TO BID, WITH PHOTOMETRIC PLAN.
2. POLES BY KW INDUSTRIES.

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Sandy Springs GA 30342 770.319.7400

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NORTH CAROLINA PROFESSIONAL SEAL 037133 ENGINEER SCOTT W. LINDLOW 12-15-22

PROJECT:
WALLBROOK
US 401 at Virginia Water Drive
WAKE COUNTY, NORTH CAROLINA

FOR:
CROSLAND SOUTHEAST
CHARLOTTE, NC

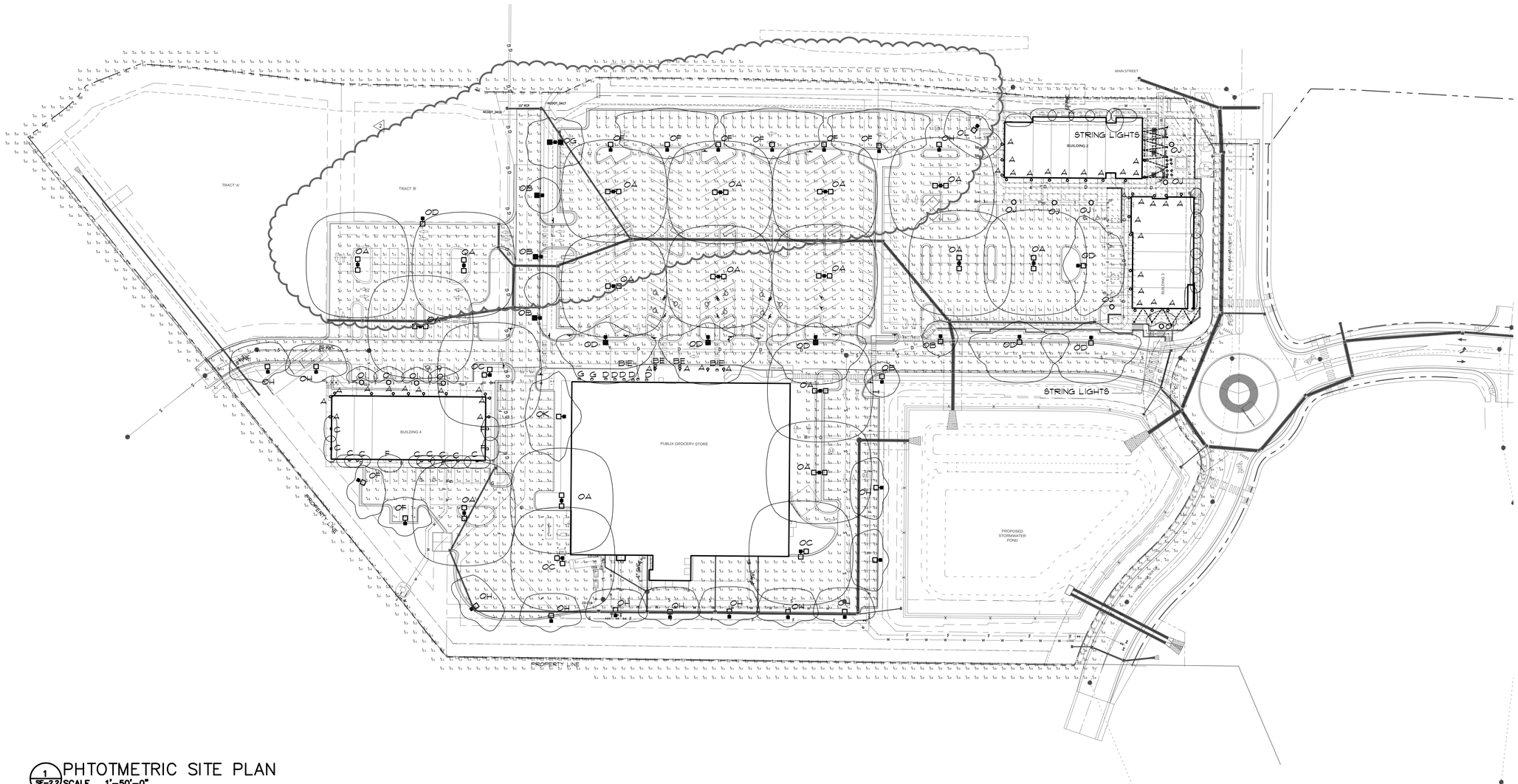
SHEET TITLE:
SITE LIGHTING PLAN

ISSUE DATE:
05/18/22 PERMIT & PRICING
05/25/22 TOWN CIVIL/ELEC RESUBMITTAL
06/15/22 TOWN CIVIL/ELEC RESUBMITTAL

PROJECT NO: 20–117
FILE: 22922SE21
DRAWN BY: NJJ

SHEET OF
SE-2.1

Calculation Summary									
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	PtSpcLr	PtSpcTb
Bldg 4 Parking Lot	Illuminance	Fc	6.47	8.3	2.7	2.40	3.07	10	10
Property Line	Illuminance	Fc	0.16	0.5	0.0	N.A.	N.A.	10	N.A.
20' Beyond Property Line	Illuminance	Fc	0.10	0.5	0.0	N.A.	N.A.	10	10
Entrance Drive & Parking	Illuminance	Fc	5.12	9.0	0.2	25.60	45.00	10	10
Publix Drive-Thru	Illuminance	Fc	6.03	8.9	5.1	1.18	1.75	10	10
Publix Front Parking & Drives	Illuminance	Fc	5.35	8.8	0.7	7.64	12.57	10	10
Publix & Retail 4 Rear & Sides	Illuminance	Fc	5.14	9.7	0.1	51.40	97.00	10	10
Retail Walkway Area	Illuminance	Fc	1.88	5.5	0.0	N.A.	N.A.	6	6
Retail Parking	Illuminance	Fc	5.16	9.6	2.5	2.06	3.84	10	10
SITE	Illuminance	Fc	5.34	9.7	0.1	53.40	97.00		



1 SE-2.2 PHTOTMETRIC SITE PLAN
SCALE 1'–50'–0"

Savant Engineering, PLLC
5064 Roswell Road, Suite D-301
Sandy Springs GA 30342 770.319.7400

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Phone: 770.753.8787
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NORTH CAROLINA PROFESSIONAL SEAL 037133 ENGINEER SCOTT W. LINDSLOW

PROJECT:
WALLBROOK
US 401 at Virginia Water Drive
WAKE COUNTY, NORTH CAROLINA

FOR:
CROSLAND SOUTHEAST
CHARLOTTE, NC

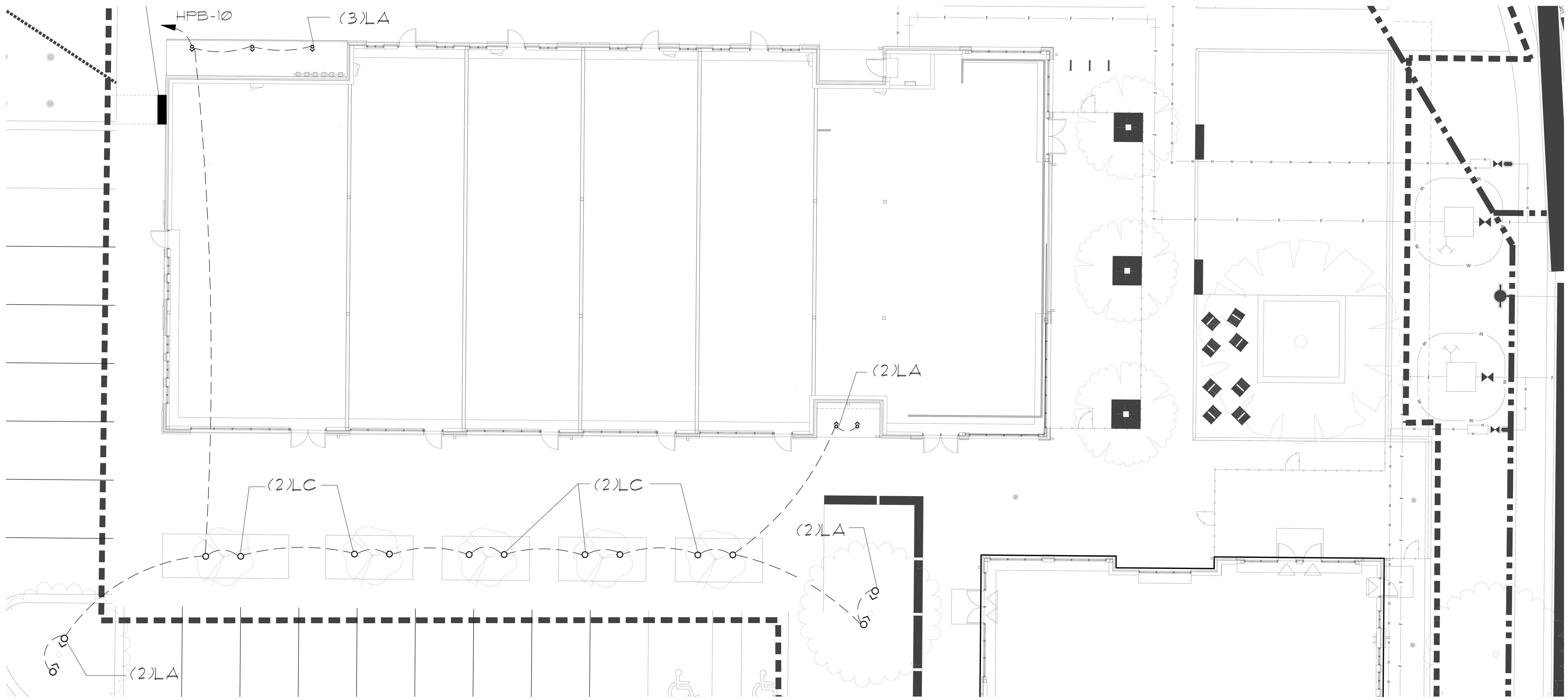
SHEET TITLE:
PHOTOMETRIC SITE PLAN

ISSUE DATE:
05/10/22 - PERMIT & PRICING
1. 09/12/22 - TOWN CIVIL/E.E.C. RESUBMITTAL
2. 09/19/23 - TOWN CIVIL/E.E.C. RESUBMITTAL

ISSUED FOR CONSTRUCTION

PROJECT NO: 20–117
FILE: 22909SE22
DRAWN BY: NJJ

SHEET OF
SE-2.2

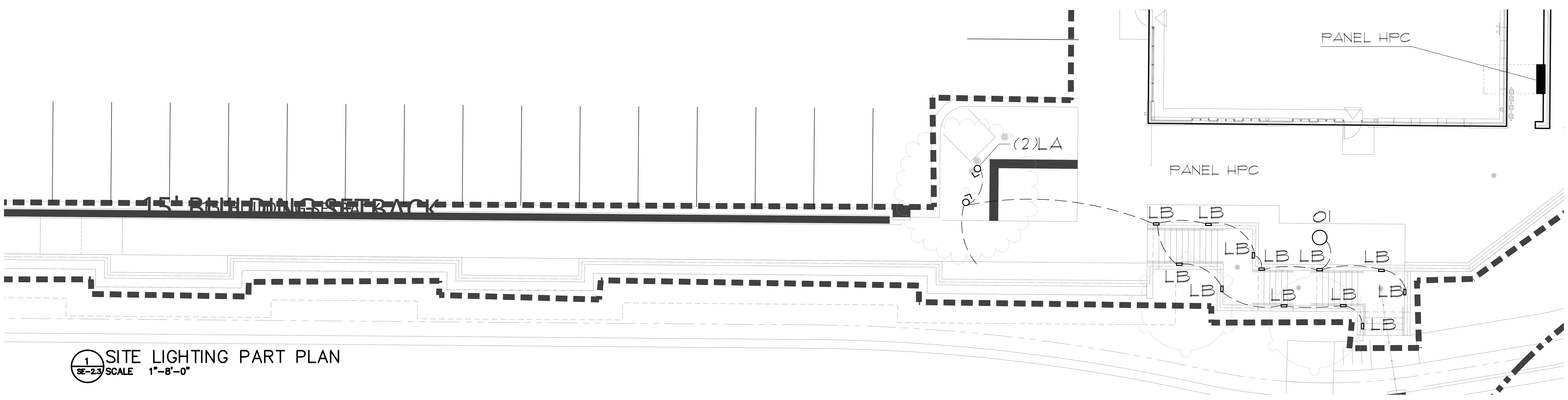


2 SE-2.3 SITE LIGHTING PART PLAN
SCALE 1"-8'-0"

GENERAL NOTES:
1. ALL CIRCUITING TO BE 2#10&#10G-1/2"C MINIMUM
2. AIM ACCENT LIGHTS PER OWNERS REPRESENTATIVE'S DIRECTION.

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	MOUNTING	VOLT	LAMPS TYPE	LAMPS NO.	WATTS	MANUFACTURER
LA	EXTERIOR ACCENT LIGHT WITH BLACK FINISH	IN GROUND BOX	120	LED, 4000K	1	10	LANTERA 1002 A1 RCS RW LED 4080 M BK U L1 UNV MB
LB	STEP LIGHT. COORDINATE FINISH WITH ARCHITECT PRIOR TO ORDERING.	RECESSED IN WALL	120	LED, 4000K	1	3	BEGA 24 202 K4 *
LC	INGROUND ACCENT LIGHT - WALK OVER TYPE. PROVIDE FLUSH IN GRADE BOX FOR REMOTE DRIVER.	GROUND MOUNT	208	LED, 4000K	1	3	BEGA 77 018
LD	STRING LIGHTS WITH LED LAMPS. COORDINATE MOUNTING REQUIREMENTS AND LENGTHS WITH ARCHITECT.	SEE ARCH DETAILS	120	LED, 4000K	1	1.5	PRIMUS DSW 24 PLED S14 27K * TBK



1 SE-2.3 SITE LIGHTING PART PLAN
SCALE 1"-8'-0"

Savant Engineering, PLLC
5064 Roswell Road, Suite D-301
Sandy Springs GA 30342 770.319.7400

Hiscutt & Associates
ARCHITECTURE
3625 Brookside Parkway
Suite 395
Alpharetta, Georgia 30022
Phone: 770.753.8787
Web: www.hiscutt-aia.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 037133 SCOTT W. LINDELOW 9-18-22

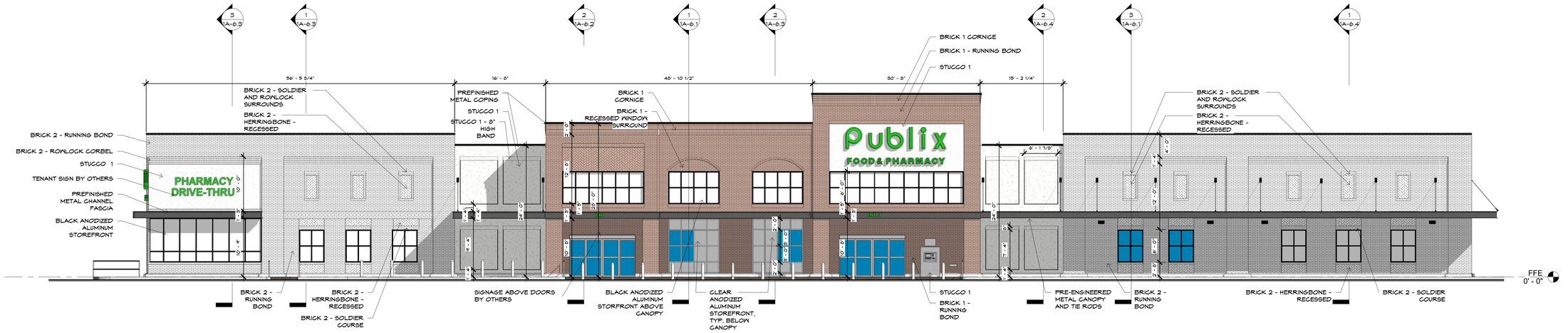
PROJECT:
WALLBROOK
US 401 at Virginia Water Drive
WAKE COUNTY, NORTH CAROLINA

FOR:
CROSLAND SOUTHEAST
CHARLOTTE, NC

SHEET TITLE:
SITE LIGHTING PART PLANS

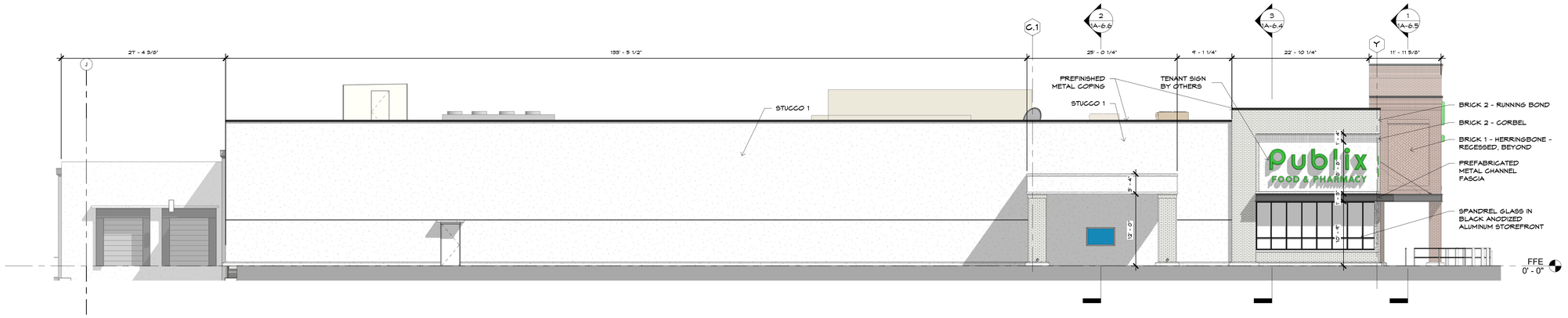
ISSUE DATE:
06/10/22 PERMIT & PRICING
09/12/22 TOWN CIVIL/ELEC RESUBMITTAL

PROJECT NO: 20-117
FILE: 22922SE23
DRAWN BY: NJJ
SHEET OF
SE-2.3



1 1A-4.1 FRONT ELEVATION

SCALE 1/8" = 1'-0"



2 1A-4.1 LEFT ELEVATION

SCALE 1/8" = 1'-0"

EXTERIOR FINISH SCHEDULE

MATERIAL DESCRIPTION	MANUFACTURER	COLOR	REMARKS:
BR-1 - BRICK 1	CHEROKEE BRICK	"MELROSE"	MODULAR
BR-2 - BRICK 2	CHEROKEE BRICK	"BROOKHAVEN"	MODULAR
BR-2 - BRICK 3	CHEROKEE BRICK	"MELROSE"	MODULAR THIN BRICK
BRICK MORTAR	CEMEX	"IVORY"	
STC 1 - FIELD STUCCO	FINESTONE STUCCO	MATCH DRYVIT 110 "VAN DYKE"	SAND FINE
SF-1 - ALUMINUM STOREFRONT FRAME 1		CLEAR ANODIZED FRAME	
SF-2 ALUMINUM STOREFRONT FRAME 2		BLACK ANODIZED FRAME	
PREFINISHED ALUMINUM SCUPPERS & DOWNSPOUTS	PAC-CLAD	"MATTE BLACK"	
MTL-1 - PREFINISHED METAL PANEL	PAC-CLAD	"WEATHERED STEEL"	FLUSH PANELS
MTL-2 - PREFINISHED METAL CANOPY & COPING	PAC-CLAD	"MATTE BLACK"	STANDING SEAM JOINTS
MTL-3 - PREFINISHED METAL COPING	PAC-CLAD	"BONE WHITE"	STANDING SEAM JOINTS

FINISH MATERIAL NOTES:

1. SUBMIT AND OBTAIN APPROVED SAMPLES BEFORE PROCEEDING WITH WORK.
2. ALL MASONRY VENEER SHALL BE OBTAINED FROM SAME MANUFACTURER'S RUN FOR COLOR CONSISTENCY. MASON TO BREAK APART AND MIX PALETTES ON JOB SITE FOR CONSISTENT COLOR MIXING. NO EXCEPTIONS.
3. A MOCK UP PANEL IS REQUIRED TO BE APPROVED BY ARCHITECT AND/ OR OWNER'S REPRESENTATIVE BEFORE FINISH WORK MAY BEGIN.

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01/06/23

PROJECT:
PUBLIX CANOPY at WALLBROOK
US 401 at Virginia Water Drive
WAKE COUNTY, NORTH CAROLINA

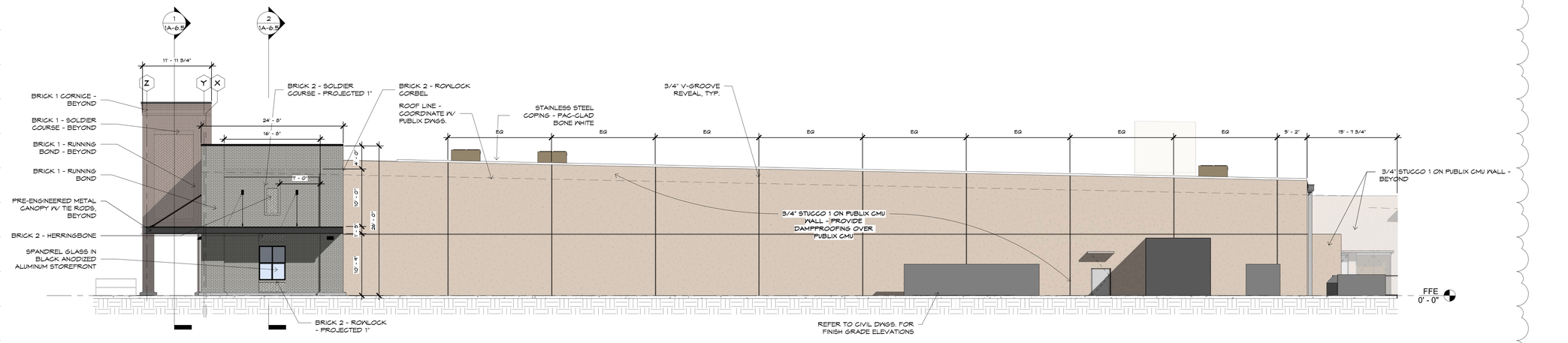
FOR:
CROSLAND SOUTHEAST
CHARLOTTE, NC

SHEET TITLE:
EXTERIOR ELEVATIONS

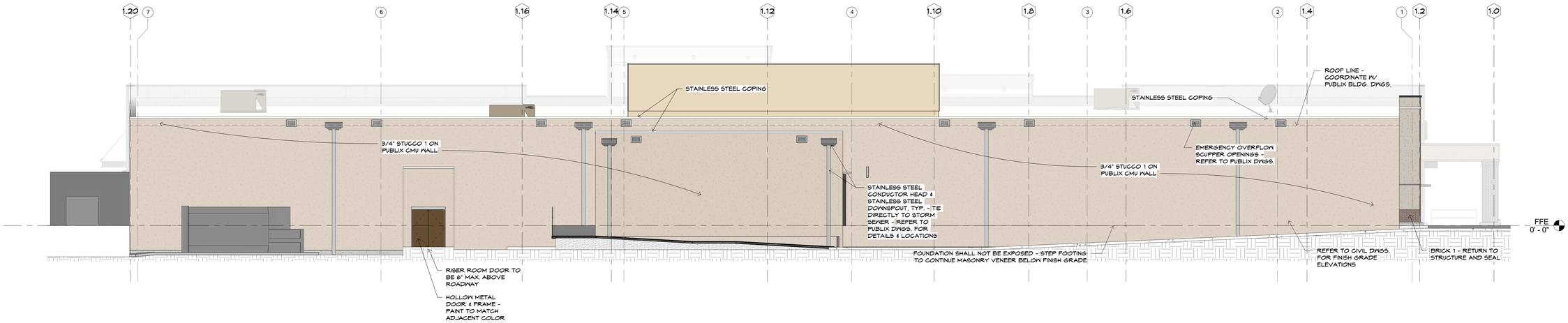
ISSUE DATE:
1 3/04/22 PUBLIX SUBMITTAL
2 5/04/22 PUBLIX COMMENTS
4 6/23/22 PUBLIX COMMENTS

PROJECT NO: 20-117
FILE: 20-117
DRAWN BY: SML

SHEET OF
1A-4.1



1 RIGHT ELEVATION
1A-4.2 SCALE 1/8" = 1'-0"



2 REAR ELEVATION
1A-4.2 SCALE 1/8" = 1'-0"

Hiscutt & Associates ARCHITECTURE

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01/16/23

PROJECT:
PUBLIX CANOPY at WALLBROOK
US 401 at Virginia Water Drive
WAKE COUNTY, NORTH CAROLINA

FOR:
CROSLAND SOUTHEAST
CHARLOTTE, NC

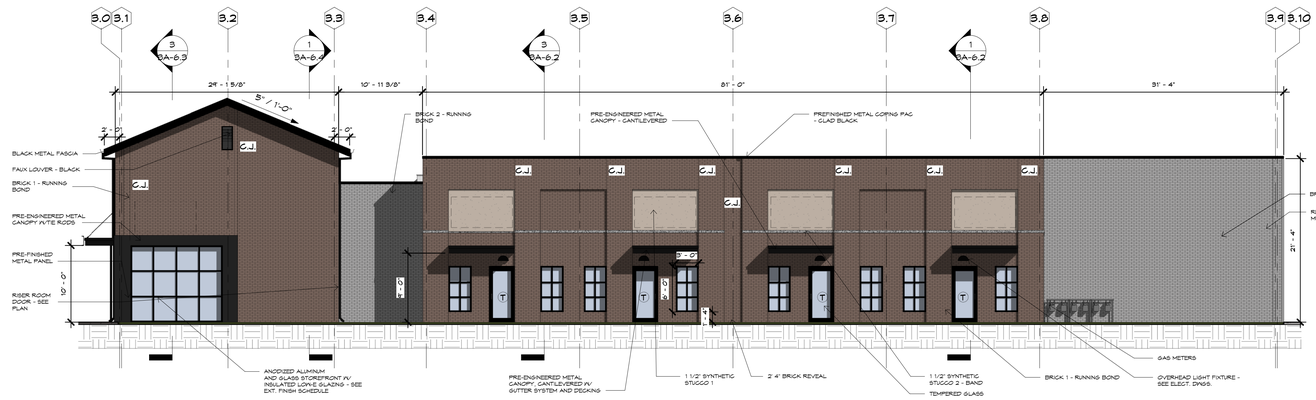
SHEET TITLE:
EXTERIOR ELEVATIONS

ISSUE DATE:
1 3/04/22 PUBLIX SUBMITTAL
T 01/16/23 PUBLIX SHIFT REVISION

PROJECT NO: 20-117
FILE: 20-117
DRAWN BY: SML

SHEET OF
1A-4.2

4 3A-1.1 **LEFT ELEVATION**
SCALE 1/8" = 1'-0"



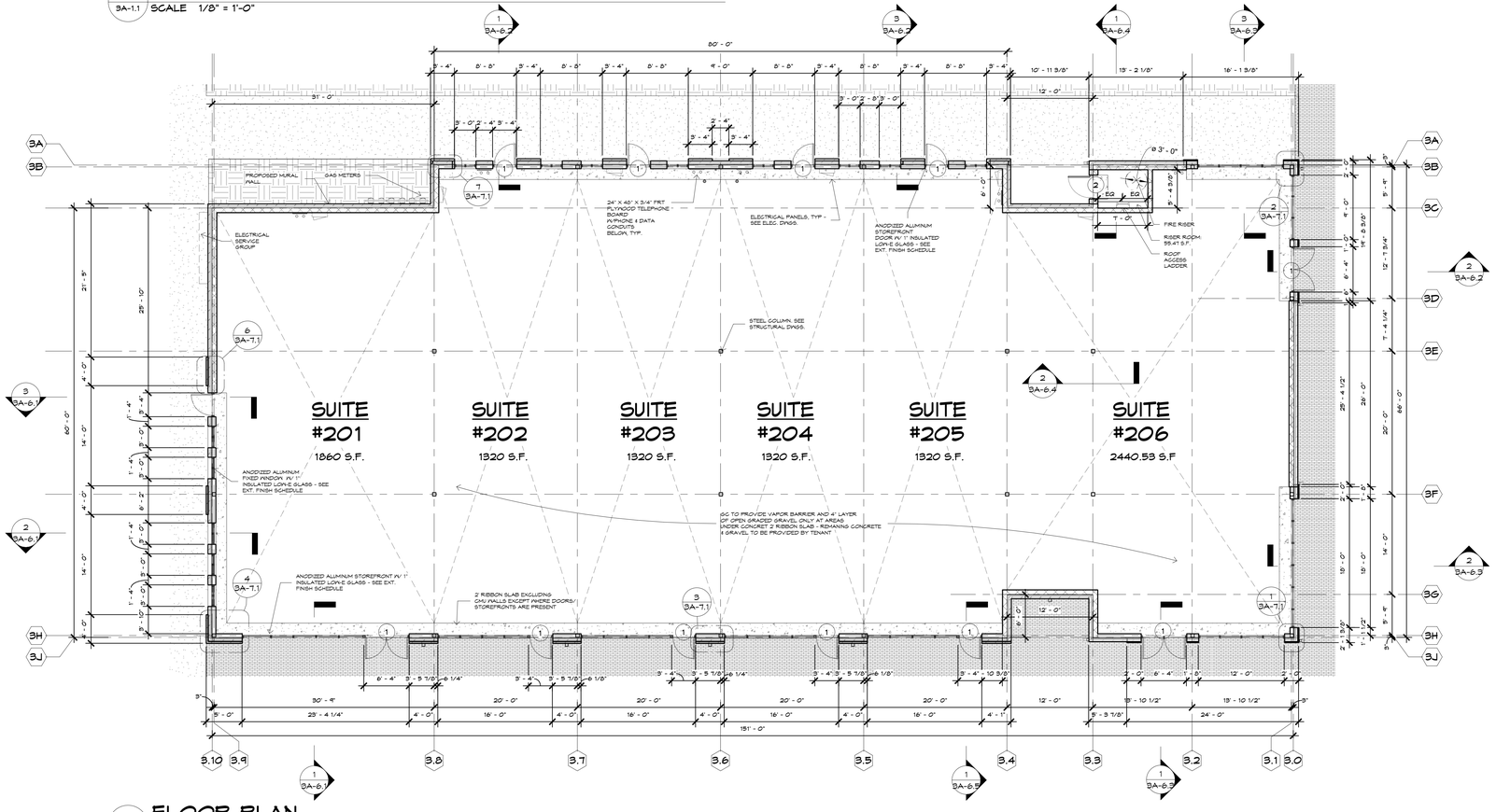
2 3A-1.1 **STREET ELEVATION**
SCALE 1/8" = 1'-0"

EXTERIOR FINISH SCHEDULE

MATERIAL DESCRIPTION	MANUFACTURER	COLOR	REMARKS:
BR-1 - BRICK 1	TRIANGLE BRICK	"SAVANNAH"	MODULAR
BR-2 - BRICK 2	LEE BRICK	"453 WILLIAMSBURG"	PAINTED - COLOR TBD
BRICK MORTAR	CEMEX	"IVORY"	
SYNTHETIC STUCCO 1	DRYVIT	110 "VAN DYKE"	SAND FINE
SYNTHETIC STUCCO 2	DRYVIT	132 "MOUNTAIN FOG"	SAND FINE
ALUMINUM STOREFRONT FRAME	KAWNEER, YKK	BLACK ANODIZED FRAME	
PREFINISHED ALUMINUM SCUPPERS & DOWNSPOUTS	PAC-CLAD	"MATTE BLACK"	
MTL-2 - PREFINISHED METAL CANOPY & COPING	PAC-CLAD	"BONE WHITE"	
MTL-3 - PREFINISHED METAL CANOPY & COPING	PAC-CLAD	"MATTE BLACK"	STANDING SEAM JOINTS
MTL-4 - PREFINISHED METAL PANEL	PAC-CLAD	"MATTE BLACK"	FLUSH PANELS

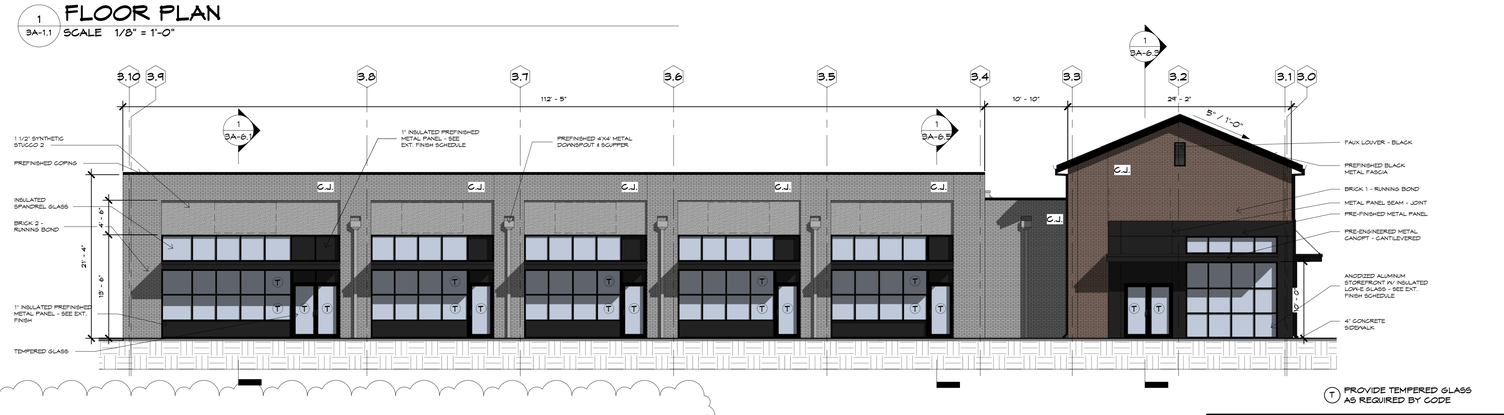
FINISH MATERIAL NOTES:

1. SUBMIT AND OBTAIN APPROVED SAMPLES BEFORE PROCEEDING WITH WORK.
2. ALL MASONRY VENEER SHALL BE OBTAINED FROM SAME MANUFACTURER'S RUN FOR COLOR CONSISTENCY. MASON TO BREAK APART AND MIX PALETTES ON JOB SITE FOR CONSISTENT COLOR MIXING. NO EXCEPTIONS.
3. A MOCK UP PANEL IS REQUIRED TO BE APPROVED BY ARCHITECT AND/ OR OWNER'S REPRESENTATIVE BEFORE FINISH WORK MAY BEGIN.



1 3A-1.1 **FLOOR PLAN**
SCALE 1/8" = 1'-0"

5 3A-1.1 **RIGHT ELEVATION**
SCALE 1/8" = 1'-0"



3 3A-1.1 **PARKING LOT ELEVATION**
SCALE 1/8" = 1'-0"

T PROVIDE TEMPERED GLASS AS REQUIRED BY CODE

DENOTES AREA OF 4'X8' PLYWOOD BACKING FOR SIGNAGE ATTACHMENT

NOTE: ELEVATIONS ARE BASED ON DESIGN GRADES AND G.C. IS RESPONSIBLE FOR ADJUSTING EXTERIOR FINISHES TO MEET FINAL GRADES

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PETER J. HISCUTT REGISTERED ARCHITECT 6838 NORTH CAROLINA ALPHARETTA, GA

01/13/23

HISCUTT & ASSOCIATES, INC. REGISTERED ARCHITECT 51022 NORTH CAROLINA ALPHARETTA, GA

PROJECT:
BLDG.2 SHOPS at WALLBROOK
US 401 at Virginia Water Drive
WAKE COUNTY, NORTH CAROLINA

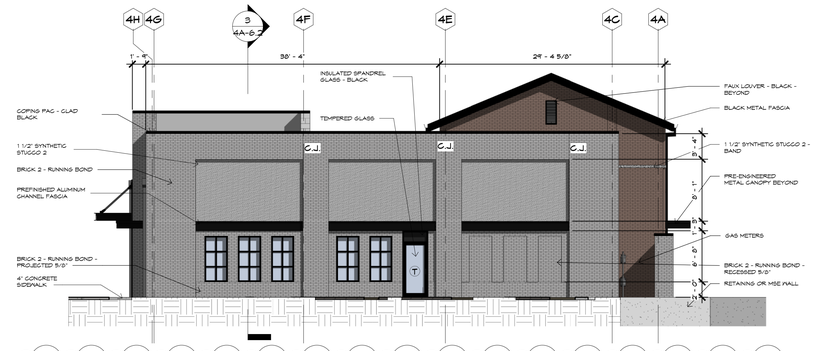
FOR:
CROSLAND SOUTHEAST
CHARLOTTE, NC

SHEET TITLE:
BLDG.2 FLOOR PLAN & ELEVATIONS

ISSUE DATE:
1/17/23 OWNER'S COMMENTS

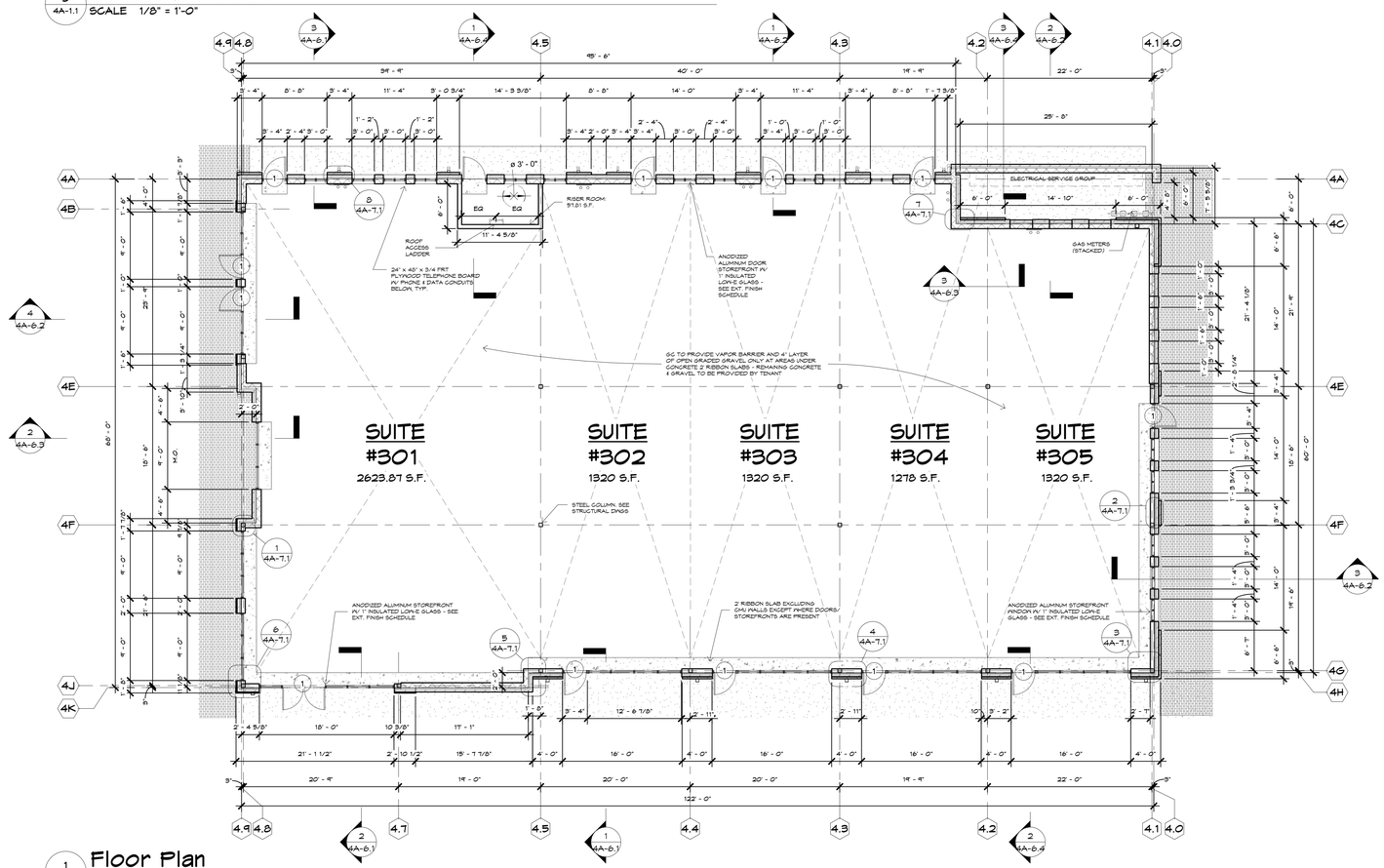
PROJECT NO: 20-117
FILE: 20-117
DRAWN BY: KDM

SHEET OF
3A-1.1



4 4A-1.1 **Right Elevation**
SCALE 1/8" = 1'-0"

3 4A-1.1 **Street Elevation**
SCALE 1/8" = 1'-0"



1 4A-1.1 **Floor Plan**
SCALE 1/8" = 1'-0"

EXTERIOR FINISH SCHEDULE			
MATERIAL DESCRIPTION	MANUFACTURER	COLOR	REMARKS:
BR-1 - BRICK 1	TRIANGLE BRICK	"SAVANNAH"	MODULAR
BR-2 - BRICK 2	LEE BRICK	"453 WILLIAMSBURG"	PAINTED - COLOR TBD
BRICK MORTAR	CEMEX	"IVORY"	
SYNTHETIC STUCCO 1	DRYVIT	110 "VAN DYKE"	SAND FINE
SYNTHETIC STUCCO 2	DRYVIT	132 "MOUNTAIN FOG"	SAND FINE
ALUMINUM STOREFRONT FRAME	KAWNEER, YKK	BLACK ANODIZED FRAME	
PREFINISHED ALUMINUM SCUPPERS & DOWNSPOUTS	PAC-CLAD	"MATTE BLACK"	
MTL-2 - PREFINISHED METAL CANOPY & COPING	PAC-CLAD	"BONE WHITE"	
MTL-3 - PREFINISHED METAL CANOPY & COPING	PAC-CLAD	"MATTE BLACK"	STANDING SEAM JOINTS
MTL-4 - PREFINISHED METAL PANEL	PAC-CLAD	"MATTE BLACK"	FLUSH PANELS

FINISH MATERIAL NOTES:

1. SUBMIT AND OBTAIN APPROVED SAMPLES BEFORE PROCEEDING WITH WORK.

2. ALL MASONRY VENEER SHALL BE OBTAINED FROM SAME MANUFACTURER'S RUN FOR COLOR CONSISTENCY. MASON TO BREAK APART AND MIX PALETTES ON JOB SITE FOR CONSISTENT COLOR MIXING. NO EXCEPTIONS.

3. A MOCK UP PANEL IS REQUIRED TO BE APPROVED BY ARCHITECT AND/ OR OWNER'S REPRESENTATIVE BEFORE FINISH WORK MAY BEGIN.

5 4A-1.1 **Left Elevation**
SCALE 1/8" = 1'-0"

2 4A-1.1 **Parking Lot Elevation**
SCALE 1/8" = 1'-0"

T PROVIDE TEMPERED GLASS AS REQUIRED BY CODE

DENOTES AREA OF 4'X8' PLYWOOD BACKING FOR SIGNAGE ATTACHMENT

NOTE: ELEVATIONS ARE BASED ON DESIGN GRADES AND G.C. IS RESPONSIBLE FOR ADJUSTING EXTERIOR FINISHES TO MEET FINAL GRADES

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PETER J. HISCUTT REGISTERED ARCHITECT 6838 NORTH CAROLINA ALPHARETTA, GA

02/06/23

HISCUTT & ASSOCIATES, INC. REGISTERED ARCHITECT 51022 NORTH CAROLINA ALPHARETTA, GA

PROJECT:
BLDG.3 SHOPS at WALLBROOK
US 401 at Virginia Water Drive
WAKE COUNTY, NORTH CAROLINA

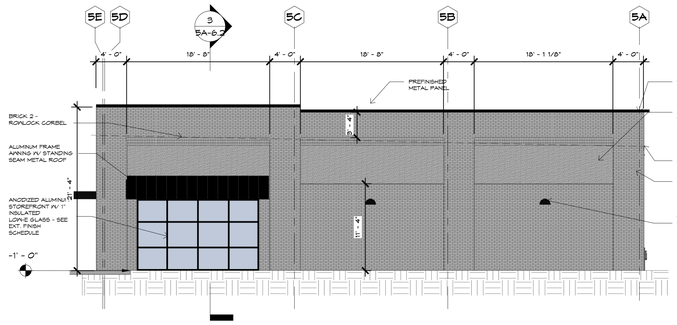
FOR:
CROSLAND SOUTHEAST
CHARLOTTE, NC

SHEET TITLE:
BLDG. 3 FLOOR PLAN & ELEVATIONS

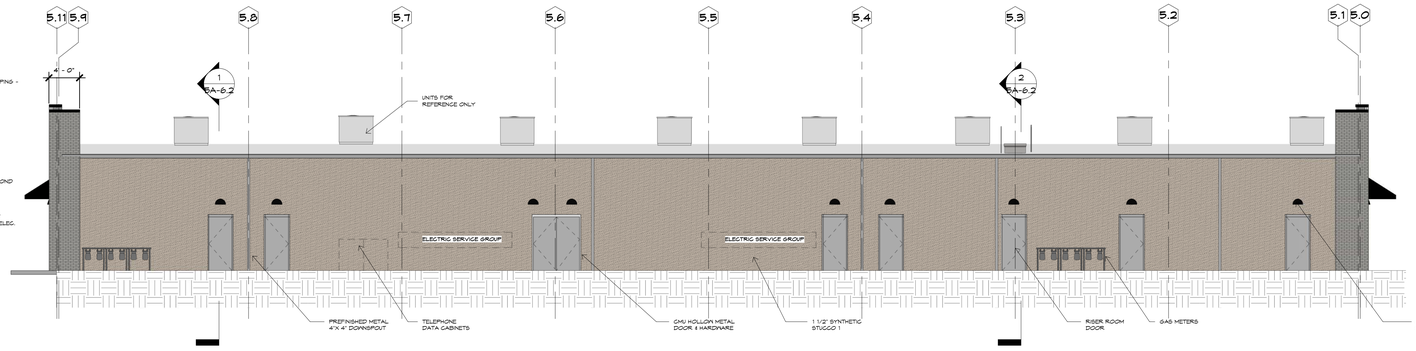
ISSUE DATE:
8/1/23 OWNER'S COMMENTS

PROJECT NO: 20-117
FILE: 20-117
DRAWN BY: KDM

SHEET OF
4A-1.1



4 5A-1.1 **RIGHT ELEVATION**
SCALE 1/8" = 1'-0"



3 5A-1.1 **REAR ELEVATION**
SCALE 1/8" = 1'-0"

EXTERIOR FINISH SCHEDULE

MATERIAL DESCRIPTION	MANUFACTURER	COLOR	REMARKS:
BR-1 - BRICK 1	CHEROKEE BRICK	"MELROSE"	MODULAR
BR-2 - BRICK 2	LEE BRICK	"453 WILLIAMSBURG"	PAINTED - COLOR TBD
BRICK MORTAR	CEMEX	"IVORY"	
SYNTHETIC STUCCO 1	DRYVIT	110 "VAN DYKE"	SAND FINE
SYNTHETIC STUCCO 2	DRYVIT	132 "MOUNTAIN FOG"	SAND FINE
ALUMINUM STOREFRONT FRAME	KAWNEER, YKK	BLACK ANODIZED FRAME	
PREFINISHED ALUMINUM SCUPPERS & DOWNSPOUTS	PAC-CLAD	"MATTE BLACK"	
MTL-2 - PREFINISHED METAL CANOPY & COPING	PAC-CLAD	"BONE WHITE"	
MTL-3 - PREFINISHED METAL CANOPY & COPING	PAC-CLAD	"MATTE BLACK"	STANDING SEAM JOINTS
MTL-4 - PREFINISHED METAL PANEL	PAC-CLAD	"MATTE BLACK"	FLUSH PANELS

FINISH MATERIAL NOTES:

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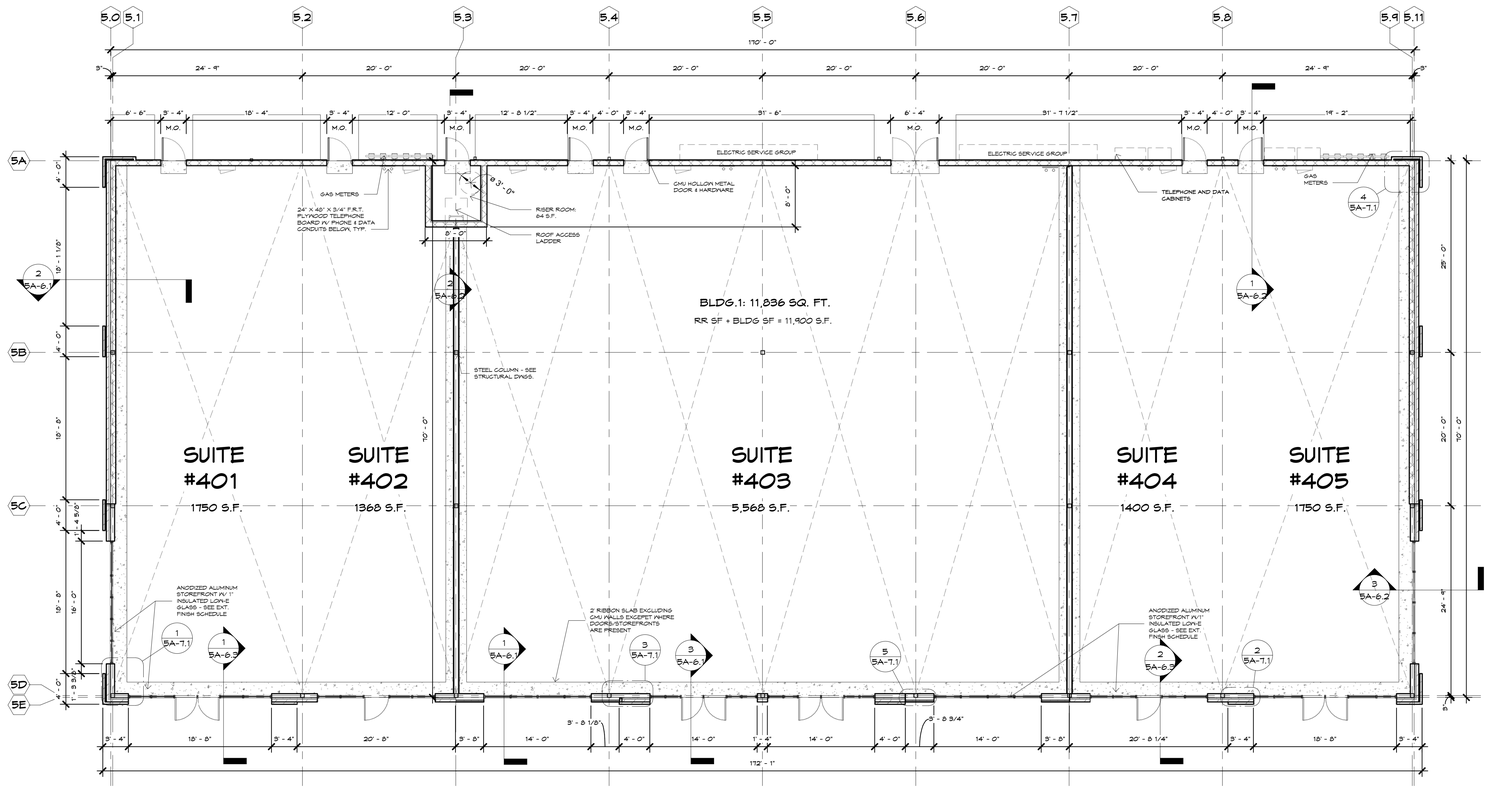
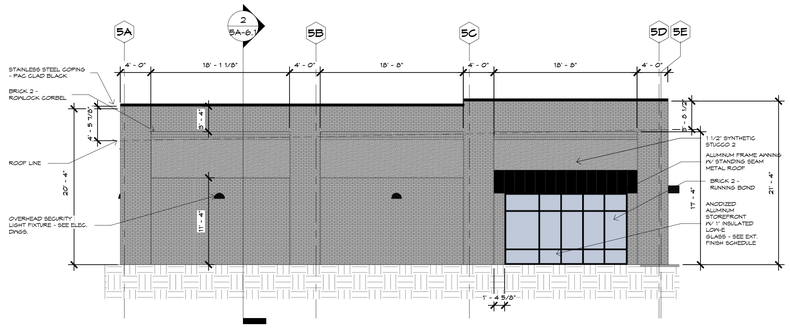
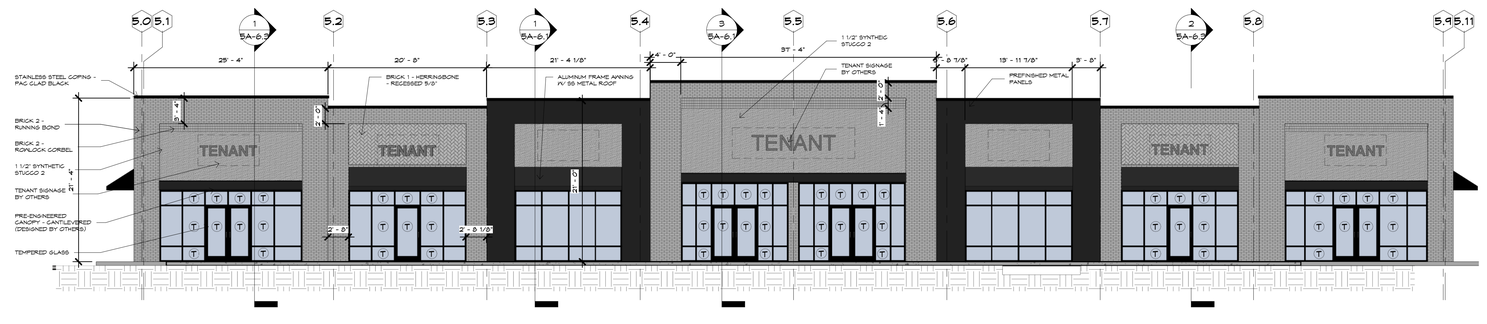
3. A MOCK UP PANEL IS REQUIRED TO BE APPROVED BY ARCHITECT AND/ OR OWNER'S REPRESENTATIVE BEFORE FINISH WORK MAY BEGIN.



1 5A-1.1 **FLOOR PLAN**
SCALE 1/8" = 1'-0"



5 5A-1.1 **LEFT ELEVATION**
SCALE 1/8" = 1'-0"



2 5A-1.1 **FRONT ELEVATION**
SCALE 1/8" = 1'-0"

DENOTES AREA OF 4'X8' PLYWOOD BACKING FOR SIGNAGE ATTACHMENT

T PROVIDE TEMPERED GLASS AS REQUIRED BY CODE

FACADE PERCENTAGES:
57.6% BRICK
31% GLASS

NOTE: ELEVATIONS ARE BASED ON DESIGN GRADES AND G.C. IS RESPONSIBLE FOR ADJUSTING EXTERIOR FINISHES TO MEET FINAL GRADES

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01/16/23

PROJECT:
BLDG.4 SHOPS at WALLBROOK
US 401 at Virginia Water Drive
WAKE COUNTY, NORTH CAROLINA

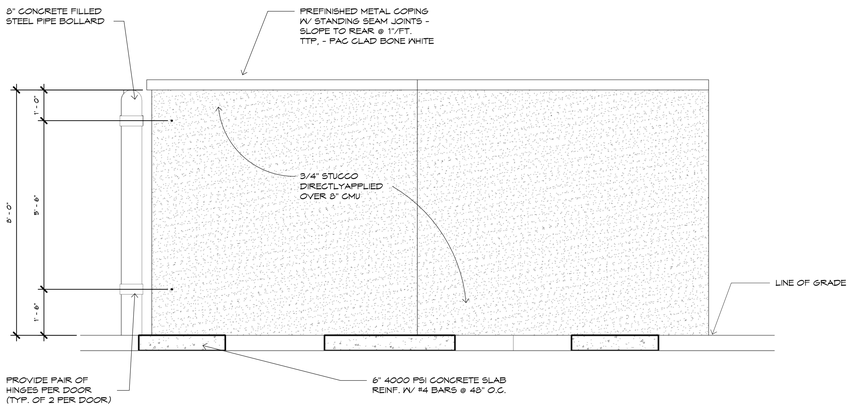
FOR:
CROSLAND SOUTHEAST
CHARLOTTE, NC

SHEET TITLE:
BLDG. 4 FLOOR PLAN & ELEVATIONS

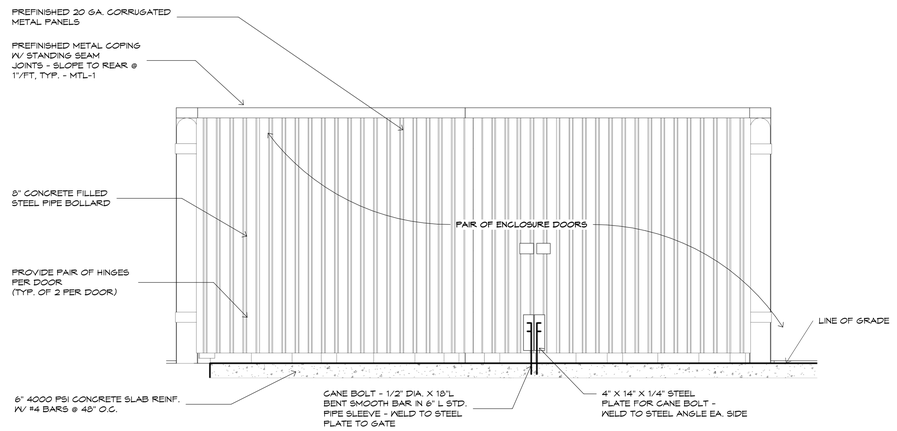
ISSUE DATE:

PROJECT NO: 20-117
FILE: 20-117
DRAWN BY: KDM

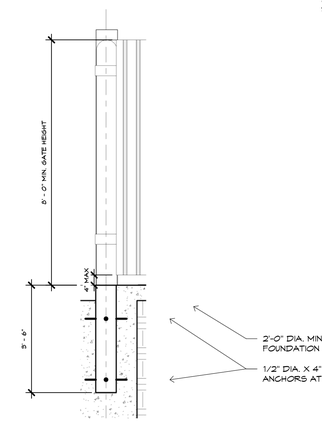
SHEET OF
5A-1.1

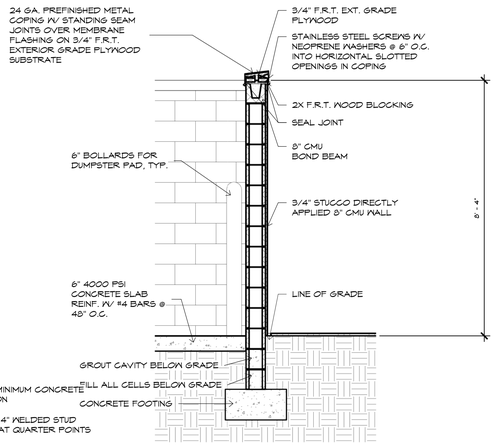


7 Dumpster Right Elevation
3A-8.0 SCALE 1/2" = 1'-0"



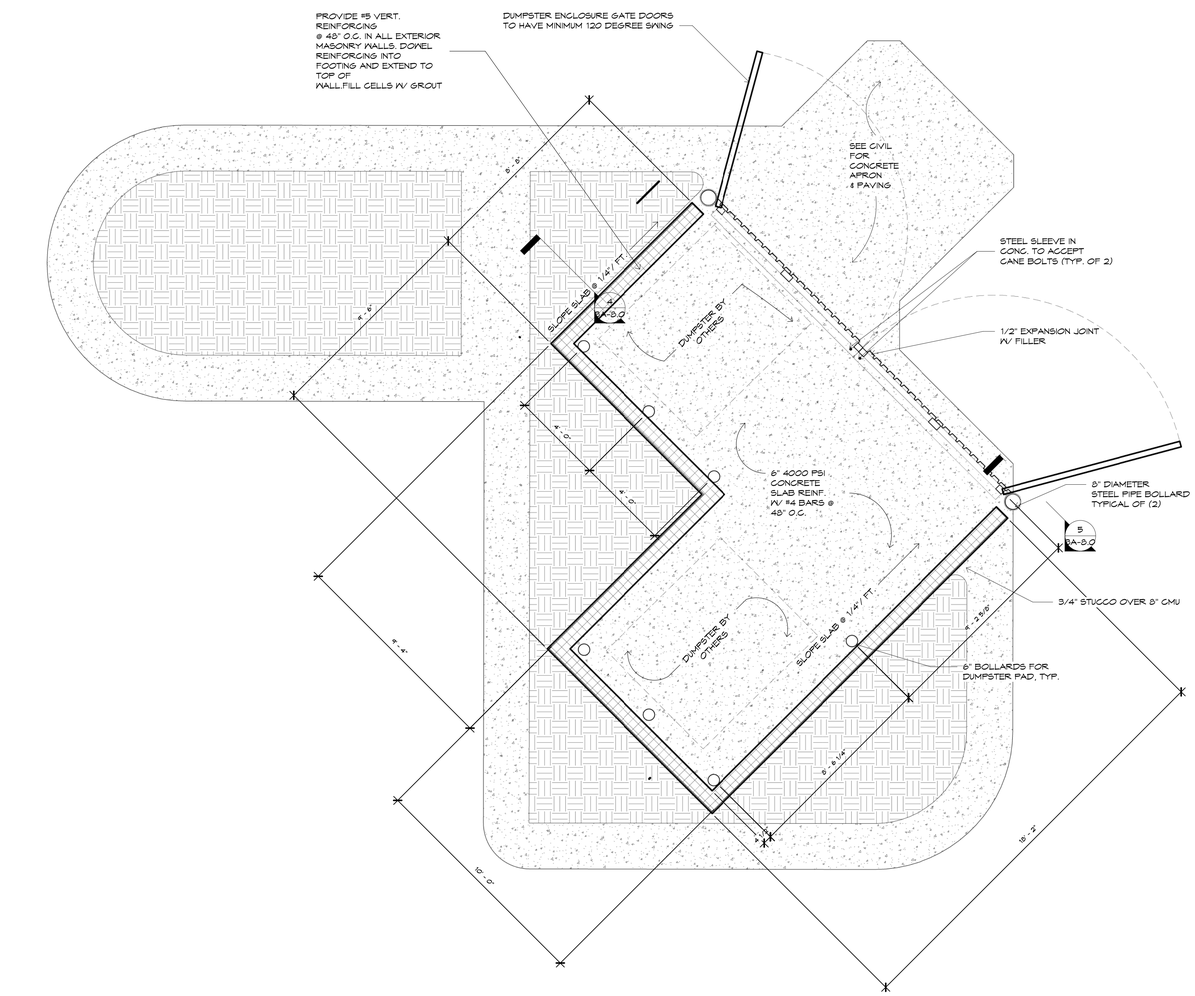
6 Dumpster Front Elevation
3A-8.0 SCALE 1/2" = 1'-0"



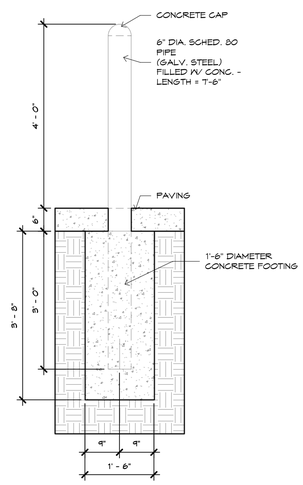


5 Gate Detail
3A-8.0 SCALE 1/2" = 1'-0"

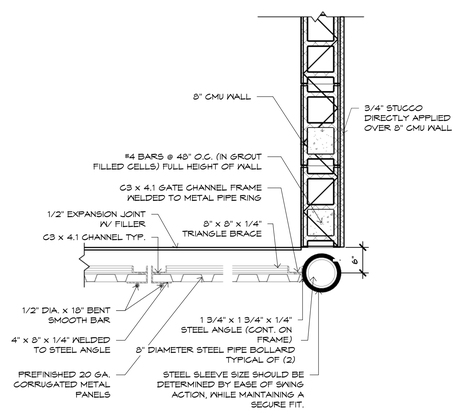
4 Dumpster Wall Section
3A-8.0 SCALE 1/2" = 1'-0"



1 Dumpster Plan
3A-8.0 SCALE 3/8" = 1'-0"



2 Bollard Detail
3A-8.0 SCALE 3/4" = 1'-0"



3 Dumpster Hinge Detail
3A-8.0 SCALE 1" = 1'-0"

Hiscutt & Associates ARCHITECTURE
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Phone: 770.753.8787
Web: www.hiscutt-aia.com

STATE OF GEORGIA
PETER J. HISCUTT
CERTIFICATE NO. 24659
REGISTERED ARCHITECT

10/11/22

PROJECT:
BLDG.2 SHOPS at WALLBROOK
US 401 at Virginia Water Drive
WAKE COUNTY, NORTH CAROLINA

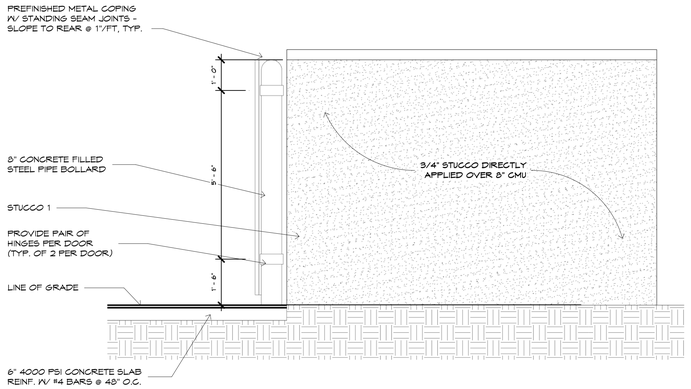
FOR:
CROSLAND SOUTHEAST
CHARLOTTE, NC

SHEET TITLE:
DUMPSTER ENCLOSURE & DETAILS

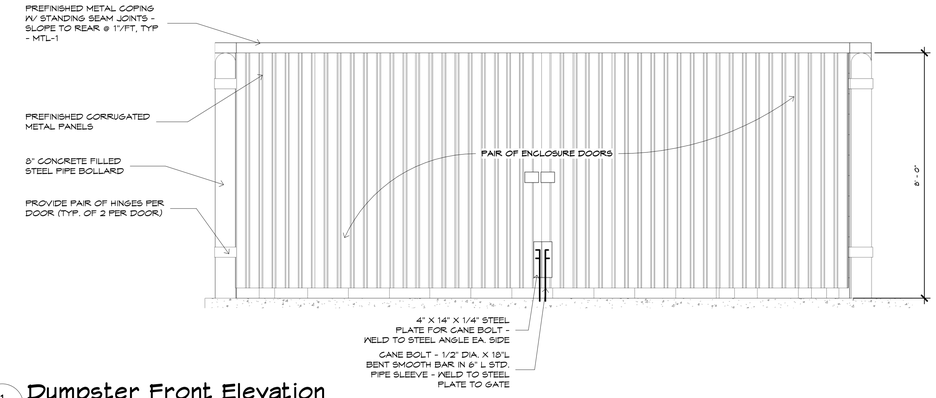
ISSUE DATE:

PROJECT NO: 20-117
FILE: 20-117
DRAWN BY: KDM

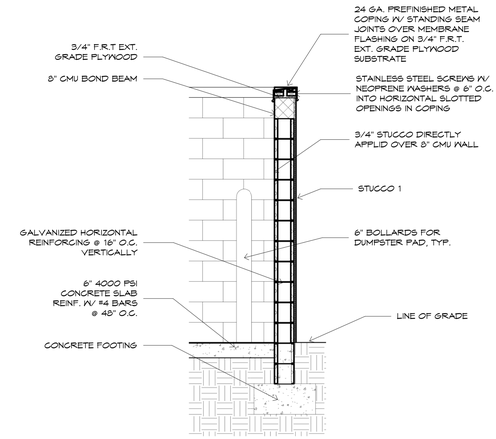
SHEET OF
3A-8.0



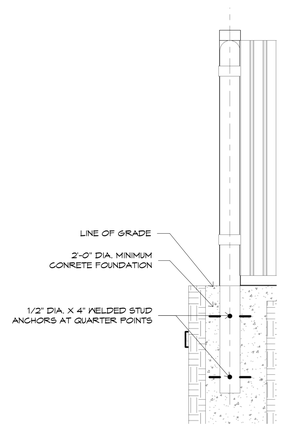
2 5A-8.0 **Dumpster Right Elevation**
SCALE 1/2" = 1'-0"



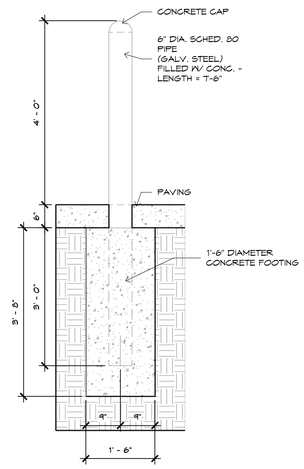
1 5A-8.0 **Dumpster Front Elevation**
SCALE 1/2" = 1'-0"



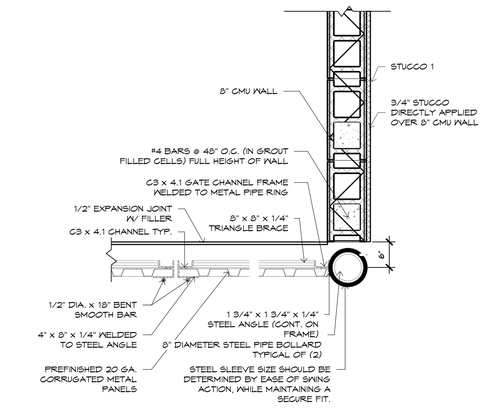
3 5A-8.0 **Dumpster Wall Section**
SCALE 1/2" = 1'-0"



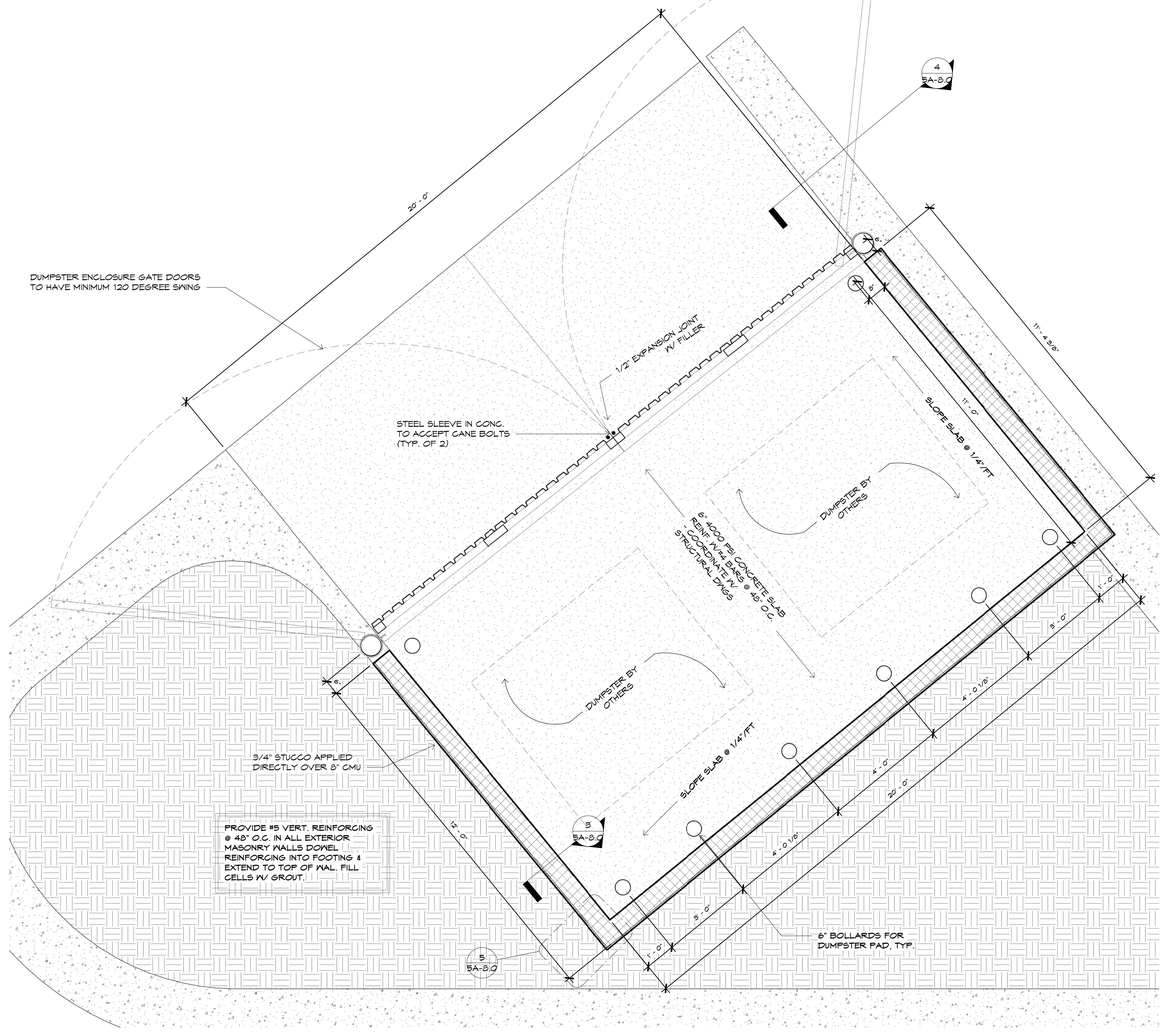
4 5A-8.0 **Gate Detail**
SCALE 1/2" = 1'-0"



6 5A-8.0 **Bollard Detail**
SCALE 3/4" = 1'-0"



5 5A-8.0 **Dumpster Hinge Detail**
SCALE 1" = 1'-0"



7 5A-8.0 **Dumpster Plan**
SCALE 1/2" = 1'-0"

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1/06/23

PROJECT:
BLDG.4 SHOPS at WALLBROOK
US 401 at Virginia Water Drive
WAKE COUNTY, NORTH CAROLINA

FOR:
CROSLAND SOUTHEAST
CHARLOTTE, NC

SHEET TITLE:
DUMPSTER ENCLOSURE & DETAILS

ISSUE DATE:

PROJECT NO: 20-117
FILE: 20-117
DRAWN BY: KDM

SHEET OF
5A-8.0