

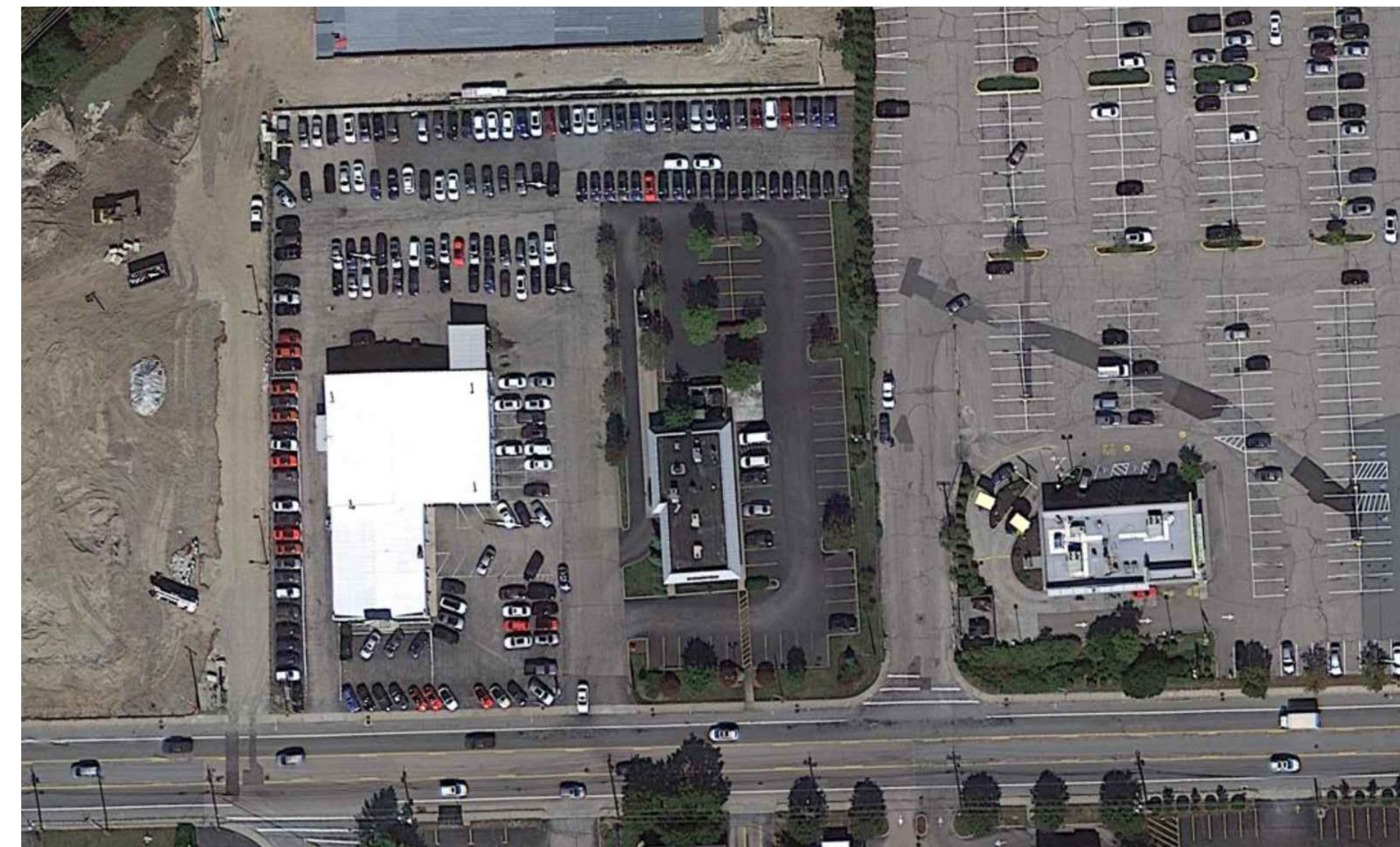


# SITE DEVELOPMENT PLANS

## FOR

# BURGER KING - VILLAGE OF WAKEFIELD, RI

126 OLD TOWER HILL ROAD  
WAKEFIELD, RI, 02879



**LOCATION SKETCH**  
N.T.S.

**DRAWING LIST:**

- CS Cover Sheet
- SV1 Survey
- C1 Demolition Plan
- C2 Site Plan
- C3 Grading & Drainage Plan
- C6 Details Sheet
- C8 Specifications

NOTES:  
1. REFER TO LANDSCAPE PLAN PREPARED BY REBECCA M. NOLAN, RLA FOR LANDSCAPE DESIGN.

**CLIENT:**

JSC MANAGEMENT GROUP  
BURGER KING FRANCHISEE  
PO BOX 217  
LYNDONVILLE NY 14098  
(585) 735-7198

**ENGINEER:**

APD ENGINEERING & ARCHITECTURE  
615 FISHERS RUN  
VICTOR, NY 14564  
(585) 742-0222  
CONTACT: TODD MARKEVICZ, P.E.

Issued:	Date:
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H	

Revisions:	Date:
1	Revised per TRC comments 1/22/21
2	Revised per TRC comments 12/29/21
3	Revised per TRC comments 2/03/22
4	Revised per PB comments 3/30/22
5	
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ONLY/NOT FOR  
CONSTRUCTION

Seal 03/30/2022 Seal  
CIVIL ENGINEER OF RECORD  
Name: Todd G. Markevicz  
Rhode Island Registration No.: 13329  
Exp. Date: June 30, 2023  
Firm No.: PE.00LLC73-COA  
Exp. Date: June 30, 2022

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**Burger King**  
JSC Management Group  
Attn: James Camilleri  
Burger King Franchisee  
585.735.7198

**Burger King #3384**

126 Old Tower Hill Road  
Village of Wakefield, RI 02879  
Washington County  
Project Name & Location:

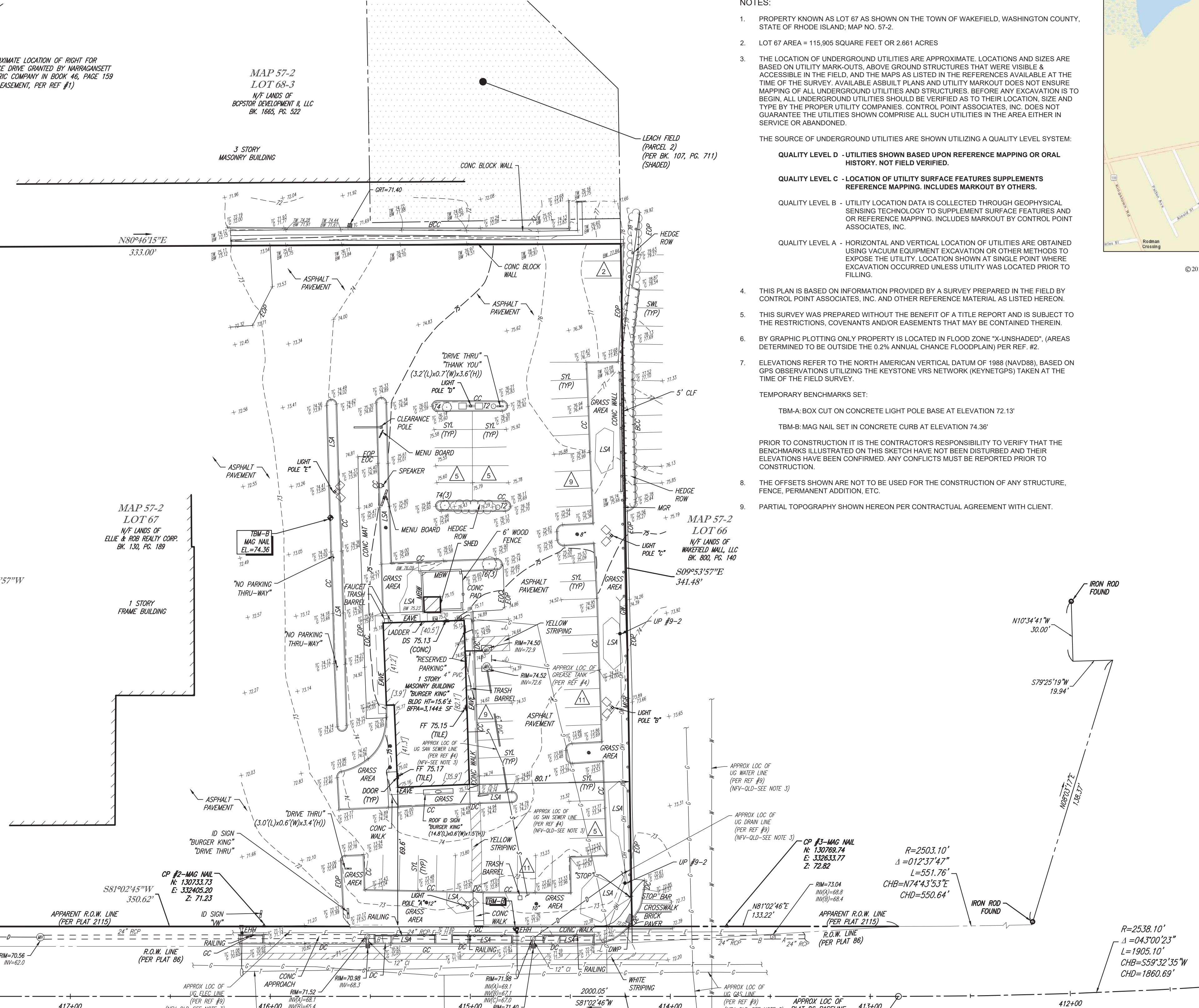
<b>Cover Sheet</b>	
Drawing Name:	
Date: 8/12/21	Project No. 20-0206
Type: Type	
Drawn By: ASH	CS
Scale: N.T.S.	Drawing No.

**LEGEND**

- 124 --- EXISTING CONTOUR
- 125 --- EXISTING CONTOUR
- X 123.45 EXISTING SPOT ELEVATION
- X TC 123.45 EXISTING TOP OF CURB ELEVATION
- X TW 123.45 EXISTING TOP OF WALL ELEVATION
- X BW 123.45 EXISTING BOTTOM OF WALL ELEVATION
- X FF 123.45 EXISTING FINISHED FLOOR ELEVATION
- X BS 123.45 EXISTING DOOR SILL ELEVATION
- GM GAS METER
- EM ELECTRIC METER
- OH OVERHEAD WIRES
- G APPROX. LOC. UNDERGROUND GAS LINE
- E APPROX. LOC. UNDERGROUND ELECTRIC LINE
- D APPROX. LOC. UNDERGROUND DRAINAGE LINE
- S APPROX. LOC. UNDERGROUND SANITARY / SEWER LINE
- T APPROX. LOC. UNDERGROUND TELEPHONE LINE
- W APPROX. LOC. UNDERGROUND WATER LINE
- UP / + UTILITY POLE
- GW GUY WIRE
- STREET LIGHT
- SIGN
- MGR METAL GUIDE RAIL
- PAINTED ARROWS
- DMH DRAINAGE/STORM MANHOLE
- SMH SANITARY/SEWER MANHOLE
- UMH UNKNOWN MANHOLE
- CB CATCH BASIN OR INLET
- TREE STUMP & SIZE
- TREE & TRUNK SIZE
- PARKING SPACE COUNT
- DEPRESSED CURB
- DWP DETECTABLE WARNING PAD
- SWL SOLID WHITE LINE
- SYL SOLID YELLOW LINE
- HT HEIGHT
- BLDG BUILDING
- BFPA BUILDING FOOTPRINT AREA
- GRT GRATE ELEVATION
- MW MASONRY BLOCK WALL
- CLF CHAIN LINK FENCE
- DC DEPRESSED CURB
- EDC EDGE OF CONCRETE
- EOP EDGE OF PAVEMENT
- (TYP) TYPICAL
- LSA LANDSCAPED AREA
- MC METAL COVER
- GC GRANITE CURB
- CC CONCRETE CURB
- BCC BITUMINOUS CONCRETE CURB
- EHH ELECTRIC HAND HOLE
- 1.0' OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE
- (S) SURVEY DIMENSION
- (D) DEED DIMENSION



APPROXIMATE LOCATION OF RIGHT FOR SERVICE DRIVE GRANTED BY NARRAGANSETT ELECTRIC COMPANY IN BOOK 46, PAGE 159 (125' EASEMENT, PER REF #1)

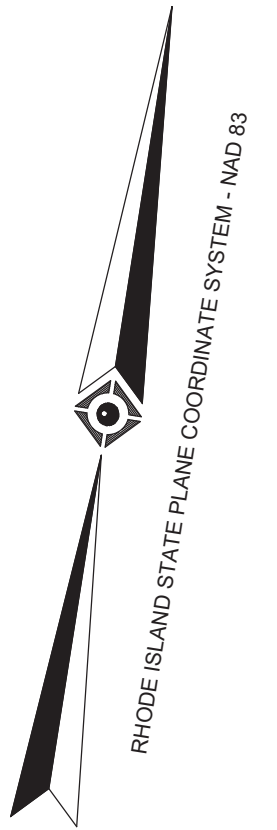


**NOTES:**

1. PROPERTY KNOWN AS LOT 67 AS SHOWN ON THE TOWN OF WAKEFIELD, WASHINGTON COUNTY, STATE OF RHODE ISLAND; MAP NO. 57-2.
  2. LOT 67 AREA = 115,905 SQUARE FEET OR 2.661 ACRES
  3. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE ASBUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES. CONTROL POINT ASSOCIATES, INC. DOES NOT GUARANTEE THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED.
- THE SOURCE OF UNDERGROUND UTILITIES ARE SHOWN UTILIZING A QUALITY LEVEL SYSTEM:
- QUALITY LEVEL D - UTILITIES SHOWN BASED UPON REFERENCE MAPPING OR ORAL HISTORY. NOT FIELD VERIFIED.**
  - QUALITY LEVEL C - LOCATION OF UTILITY SURFACE FEATURES SUPPLEMENTS REFERENCE MAPPING. INCLUDES MARKOUT BY OTHERS.**
  - QUALITY LEVEL B - UTILITY LOCATION DATA IS COLLECTED THROUGH GEOPHYSICAL SENSING TECHNOLOGY TO SUPPLEMENT SURFACE FEATURES AND OR REFERENCE MAPPING. INCLUDES MARKOUT BY CONTROL POINT ASSOCIATES, INC.**
  - QUALITY LEVEL A - HORIZONTAL AND VERTICAL LOCATION OF UTILITIES ARE OBTAINED USING VACUUM EQUIPMENT EXCAVATION OR OTHER METHODS TO EXPOSE THE UTILITY. LOCATION SHOWN AT SINGLE POINT WHERE EXCAVATION OCCURRED UNLESS UTILITY WAS LOCATED PRIOR TO FILLING.**
4. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC. AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
  5. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO THE RESTRICTIONS, COVENANTS AND/OR EASEMENTS THAT MAY BE CONTAINED THEREIN.
  6. BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD ZONE "X-UNSHADED", (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) PER REF. #2.
  7. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88), BASED ON GPS OBSERVATIONS UTILIZING THE KEYSTONE VRS NETWORK (KEYNETGPS) TAKEN AT THE TIME OF THE FIELD SURVEY.
- TEMPORARY BENCHMARKS SET:
- TBM-A-BOX CUT ON CONCRETE LIGHT POLE BASE AT ELEVATION 72.13'
  - TBM-B-MAG NAIL SET IN CONCRETE CURB AT ELEVATION 74.36'
- PRIOR TO CONSTRUCTION IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE BENCHMARKS ILLUSTRATED ON THIS SKETCH HAVE NOT BEEN DISTURBED AND THEIR ELEVATIONS HAVE BEEN CONFIRMED. ANY CONFLICTS MUST BE REPORTED PRIOR TO CONSTRUCTION.
8. THE OFFSETS SHOWN ARE NOT TO BE USED FOR THE CONSTRUCTION OF ANY STRUCTURE, FENCE, PERMANENT ADDITION, ETC.
  9. PARTIAL TOPOGRAPHY SHOWN HEREON PER CONTRACTUAL AGREEMENT WITH CLIENT.



LOCUS MAP  
© 2013 ESRI WORLD STREET MAPS  
NOT TO SCALE



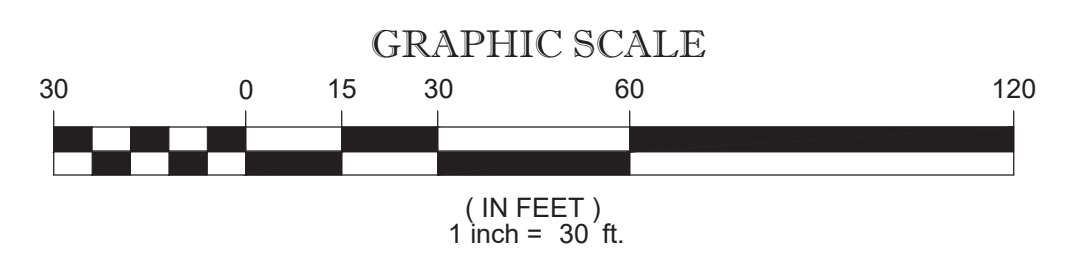
**REFERENCES:**

1. THE TAX ASSESSOR'S MAP OF WAKEFIELD, WASHINGTON COUNTY, MAP 57-2.
2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, WASHINGTON COUNTY, RHODE ISLAND, PANEL 203 OF 368", COMMUNITY-PANEL NUMBER 445407 0203 K, MAP NUMBER 44009C0203K REVISED: APRIL 3, 2020.
3. MAP ENTITLED "PROPOSED OFFSITE SEWER IMPROVEMENTS TOWER HILL ROAD WAKEFIELD MEADOWS IN SOUTH KINGSTOWN, RI PREPARED FOR: PULTE HOMES OF NEW ENGLAND LLC.", PREPARED BY: MARCHIONDA & ASSOCIATES, L.P., DATED: SEPTEMBER 17, 2008, PROVIDED BY TOWN OF WAKEFIELD ENGINEERING DEPARTMENT.
4. SEWER LATERAL PLAN RECEIVED BY THE WAKEFIELD DEPARTMENT OF PUBLIC WORKS.
5. MAP ENTITLED "ALTA/CASM LAND TITLE SURVEY McDONALD'S USA, LLC 140 OLD TOWER HILL ROAD PART OF LOT 66, MAP 57-2 TOWN OF SOUTH KINGSTOWN WASHINGTON COUNTY, RHODE ISLAND", PREPARED BY: CONTROL POINT ASSOCIATES, INC., DATED: SEPTEMBER 18, 2008, LAST REVISED: SEPTEMBER 12, 2008.
6. PLAN SET ENTITLED "PLAT CONSISTING OF A TITLE SHEET AND 18 ADDITIONAL SHEETS NUMBERED 1 TO 19 INCLUSIVE SHOWING LAND IN THE TOWN OF SOUTH KINGSTOWN RHODE ISLAND TAKEN OF BEHALF OF THE STATE OF RHODE ISLAND BY VOTE OF STATE BOARD OF PUBLIC ROADS", DATED: JUNE 24, 1925, PROVIDED AND ON FILE WITH THE DEPARTMENT OF TRANSPORTATION AS PLAT NO. 86.
7. MAP ENTITLED "AS-BUILT PLAN ASSESSORS PLAT 57-2 LOT 68 84 OLD TOWER HILL ROAD SOUTH KINGSTOWN, RHODE ISLAND PREPARED FOR: BOPSTOR DEVELOPMENT II, LLC", PREPARED BY: ALPHA ASSOCIATES, L.T.D., DATED: APRIL 6, 2020, LAST REVISED: APRIL 22, 2020, PROVIDED BY TOWN OF WAKEFIELD ENGINEERING DEPARTMENT.
8. UNDERGROUND GAS MAPPING PROVIDED BY NATIONAL GRID.
9. PLAN SET ENTITLED "STATE OF RHODE ISLAND DEPARTMENT OF TRANSPORTATION PLAN OF PROPOSED IMPROVEMENTS TO OLD TOWER HILL ROAD SOUTH KINGSTOWN, RHODE ISLAND WASHINGTON COUNTY P.L.I. CONTRACT NO. 2019-CH-083 F.A. PROJECT NO. STP-RES(401) & STP-RES(066)", DATED: AUGUST 2019, ON FILE WITH THE DEPARTMENT OF TRANSPORTATION AS FILE 2019-CH-083.
10. MAP ENTITLED "PLAT SHOWING LAND IN SOUTH KINGSTOWN TAKEN FOR STATE HIGHWAY PURPOSES ON BEHALF OF THE STATE OF RHODE ISLAND & PROVIDENCE PLANTATIONS BY THE DIRECTOR OR TRANSPORTATION", DATED: SEPTEMBER 1988, AND ON FILE WITH THE DEPARTMENT OF TRANSPORTATION AS PLAT 2115.

ITEMS	HEIGHT	WIDTH
PYLON B.K. SITE ID SIGN	19.0'	4.5'
BUILDING MOUNTED B.K. SIGN (F)	14.6'	14.8'
PARKING LOT LIGHT BASE (A)	0.3'	-
PARKING LOT LIGHT POLE (A)	22.5'	-
PARKING LOT LIGHT (OVERALL)(A)	22.8'	-
PARKING LOT LIGHT BASE (B)	0.2'	-
PARKING LOT LIGHT POLE (B)	23.1'	-
PARKING LOT LIGHT (OVERALL)(B)	23.3'	-
PARKING LOT LIGHT BASE (C)	0.2'	-
PARKING LOT LIGHT POLE (C)	24.8'	-
PARKING LOT LIGHT (OVERALL)(C)	25.0'	-
PARKING LOT LIGHT BASE (D)	0.2'	-
PARKING LOT LIGHT POLE (D)	25.8'	-
PARKING LOT LIGHT (OVERALL)(D)	26.0'	-
PARKING LOT LIGHT BASE (E)	0.2'	-
PARKING LOT LIGHT POLE (E)	24.0'	-
PARKING LOT LIGHT (OVERALL)(E)	24.2'	-

\* OVERALL HEIGHT CALCULATED FROM GROUND ELEVATION TO TOP OF LIGHT  
 \*\* POLE HEIGHT CALCULATED FROM TOP OF CONCRETE BASE TO TOP OF POLE  
 (F) = FRONT BUILDING MOUNTED SIGN

**OLD TOWER HILL ROAD**  
(PUBLIC - VARIABLE WIDTH)  
(ASPHALT ROADWAY)  
TWO WAY TRAFFIC



FIELD DATE: 9-08-21  
 FIELD BOOK NO: 2110 MA  
 FIELD BOOK PG: 29  
 FIELD CREW: B.S.B.  
 DRAWN: M.R.D.  
 REVIEWED: S.P.C.  
 APPROVED: C.E.L.  
 DATE: 2-09-2022  
 SCALE: 1" = 30'  
 FILE NO: 03-210342-00  
 DWG. NO: SV1

**FINAL BOUNDARY & TOPOGRAPHIC SURVEY**  
**BURGER KING**  
 104 OLD TOWER HILL ROAD  
 LOT 67, MAP 57-2  
 VILLAGE OF WAKEFIELD, WASHINGTON COUNTY  
 STATE OF RHODE ISLAND

**CONTROL POINT ASSOCIATES, INC.**  
 WARREN, NJ 908-668-0099  
 CHALFONTS, PA 215-713-9800  
 MT LAUREL, NJ 609-857-2099  
 352 TURNPIKE ROAD  
 SOUTH BOKROGH, MA 01772  
 508.948.3000 - 508.948.3003 FAX  
 WWW.CPASURVEY.COM

THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO §§§-R§-0-0-6, 1-3 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON DECEMBER 31, 2020 AS FOLLOWS:

1. TYPE OF BOUNDARY SURVEY: COMPREHENSIVE BOUNDARY SURVEY MEASUREMENT SPECIFICATION: I
2. OTHER TYPE OF SURVEY: DATA ACCUMULATION SURVEY (TOPOGRAPHIC SURVEY) VERTICAL CONTROL STANDARD TOPOGRAPHIC SURVEY ACCURACY MEASUREMENT SPECIFICATION: III V-3 T-1
3. THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR THE PREPARATION OF THIS PLAN IS AS FOLLOWS: PREPARE BOUNDARY SURVEY AND OBTAIN TOPOGRAPHIC AND PLANIMETRIC INFORMATION FOR USE AS A BACKGROUND DOCUMENT FOR SITE PLAN PREPARATION.

NOT A VALID ORIGINAL DOCUMENT UNLESS EMBOSSED WITH RAISED IMPRESSION OR STAMPED WITH A BLUE INK SEAL.

**CHARLES E. LENT**  
 No. 1947  
 PROFESSIONAL LAND SURVEYOR  
 2-09-2022  
 DATE

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**DEMOLITION LEGEND**

- (A) CURBING TO BE REMOVED
- (B) DIRECTIONAL SIGN TO BE REPLACED
- (C) PAVEMENT STRIPING/MARKINGS TO BE REMOVED
- (D) MISCELLANEOUS LANDSCAPING TO BE REMOVED
- (E) REMOVE EXISTING DRIVE-THRU MENU BOARD AND APPURTENANCES
- (F) PYLON SIGN TO BE REPLACED
- (G) RELOCATE EXISTING LIGHT POLE AND REMOVE EXISTING CONCRETE BASE
- (H) APPROXIMATE LIMITS OF PAVEMENT REMOVAL
- (I) RELOCATE TRASH RECEPTACLE.

**REFERENCE:**  
 1. SURVEY LAST REVISED ON 02/09/2022, PREPARED BY CONTROL POINT  
 2. LANDSCAPE PLAN LAST REVISED ON 03/30/2022, PREPARED BY REBECCA M. NOLAN, RLA

0 15 30 60 90  
 Graphic Scale: 1"=30'

CONTRACTOR SHALL CONTACT DIGSAFE AT 811 FOR LOCATION STAKE-OUT OF ALL UTILITIES. AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION. REFER TO WWW.DIGSAFE.COM FOR ADDITIONAL INFORMATION.

**DIGSAFE**  
 MA, NE, NH, RI, VT

NORTH

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Revisions:	
1	Revised per TRC comments 1/22/21
2	Revised per TRC comments 12/29/21
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**Todd G. Markevicz**  
 No. 13329  
 REGISTERED PROFESSIONAL ENGINEER CIVIL

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Seal 03/30/2022 Seal

CIVIL ENGINEER OF RECORD  
 Name: Todd G. Markevicz  
 Rhode Island Registration No.: 13329  
 Exp. Date: June 30, 2023  
 Firm No.: PE.00LLC73-COA  
 Exp. Date: June 30, 2022

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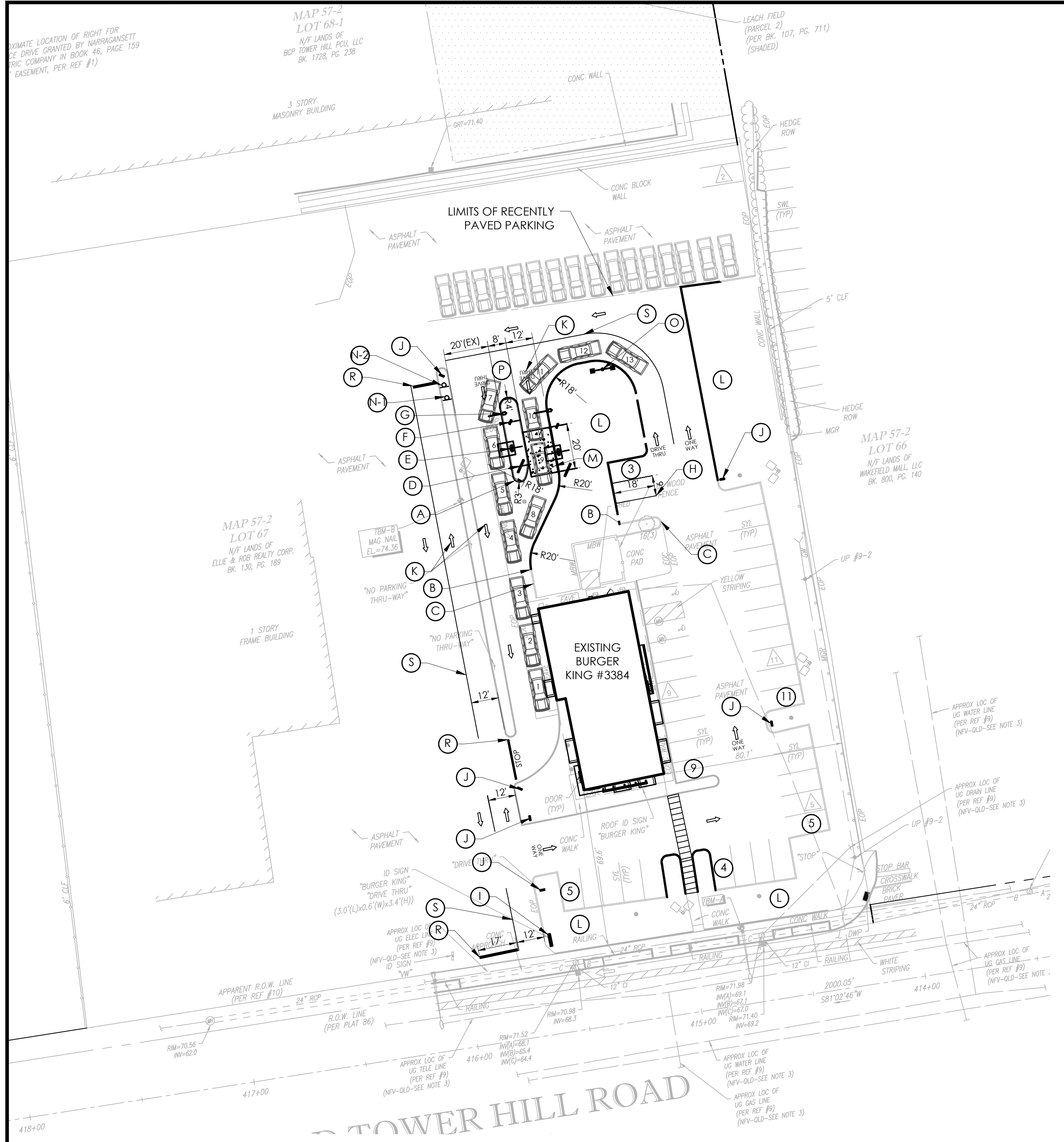
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 585.735.7198

**Burger King #3384**  
 126 Old Tower Hill Road  
 Village of Wakefield, RI 02879  
 Washington County  
 Project Name & Location:

**Demolition Plan**

Drawing Name:	Project No.
Date: 8/12/21	20-0206
Type: Type	
Drawn By: ASH	C1
Scale: 1"=30'	Drawing No.



**SITE LEGEND:**

- (A) CONCRETE CURB
- (B) CONNECT INTO EXISTING CURB AND PAVEMENT GRADE
- (C) EXISTING CONCRETE CURB TO REMAIN
- (D) DIGITAL MENU BOARD (TYP)
- (E) ORDER CONFIRMATION UNIT (TYP)
- (F) OPTIONAL PREVIEW BOARD (TYP)
- (G) CLEARANCE SIGN (TYP)
- (H) PROPOSED 4" SINGLE YELLOW SOLID STRIPING
- (I) PYLON SIGN (TYP)
- (J) DIRECTIONAL SIGN 4 SF MAXIMUM SIZE (REFER TO SIGNAGE PACKAGE)
- (K) PAVEMENT ARROW (TYP)
- (L) PROPOSED LANDSCAPING (REFER TO REFERENCE 2)
- (M) 12' x 20' CONCRETE PAD
- (N) POST-MOUNTED SIGN
  - 1. "NO RIGHT TURN"
  - 2. "STOP"
- (O) RELOCATED LIGHT POLE AND NEW CONCRETE BASE
- (P) PROPOSED ASPHALT PAVEMENT
- (Q) CURB CUT - SEE GRADING AND DRAINAGE PLAN
- (R) PAINTED STOP BAR (TYP)
- (S) SYSL/4" CENTERLINE STRIPING

SITE DATA:	
LOCAL JURISDICTION:	Wakefield, RI
ZONING CLASSIFICATION:	CH - Commercial Highway
PERMITTED USES:	Fast Food Establishment
OWNER:	Elle & Rob Realty Corp.
PROPERTY ACREAGE:	± 2.7 ACRES
PARKING REQUIREMENT:	1 Space for each 90 sq. ft. floor area= ±3140 SF = 35 Spaces
PROPOSED PARKING:	37 Spaces
EXISTING IMPERVIOUS:	± 0.71 ACRES
PROPOSED IMPERVIOUS:	± 0.63 ACRES

**REFERENCE:**  
 1. SURVEY LAST REVISED ON 02/09/2022, PREPARED BY CONTROL POINT  
 2. LANDSCAPE PLAN LAST REVISED ON 03/30/2022, PREPARED BY REBECCA M. NOLAN, RLA

0 15 30 60 90  
 Graphic Scale: 1"=30'

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NORTH

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Seal 03/30/2022 Seal

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**Burger King**  
 JSC Management Group  
 Attn: James Camilleri  
 Burger King Franchisee  
 585.735.7198

**Burger King #3384**

126 Old Tower Hill Road  
 Village of Wakefield, RI 02879  
 Washington County  
 Project Name & Location:

Site Plan	
Drawing Name:	Project No.
Date: 8/12/21	20-0206
Type: Type	C2
Drawn By: ASH	Drawing No.
Scale: 1"=30'	

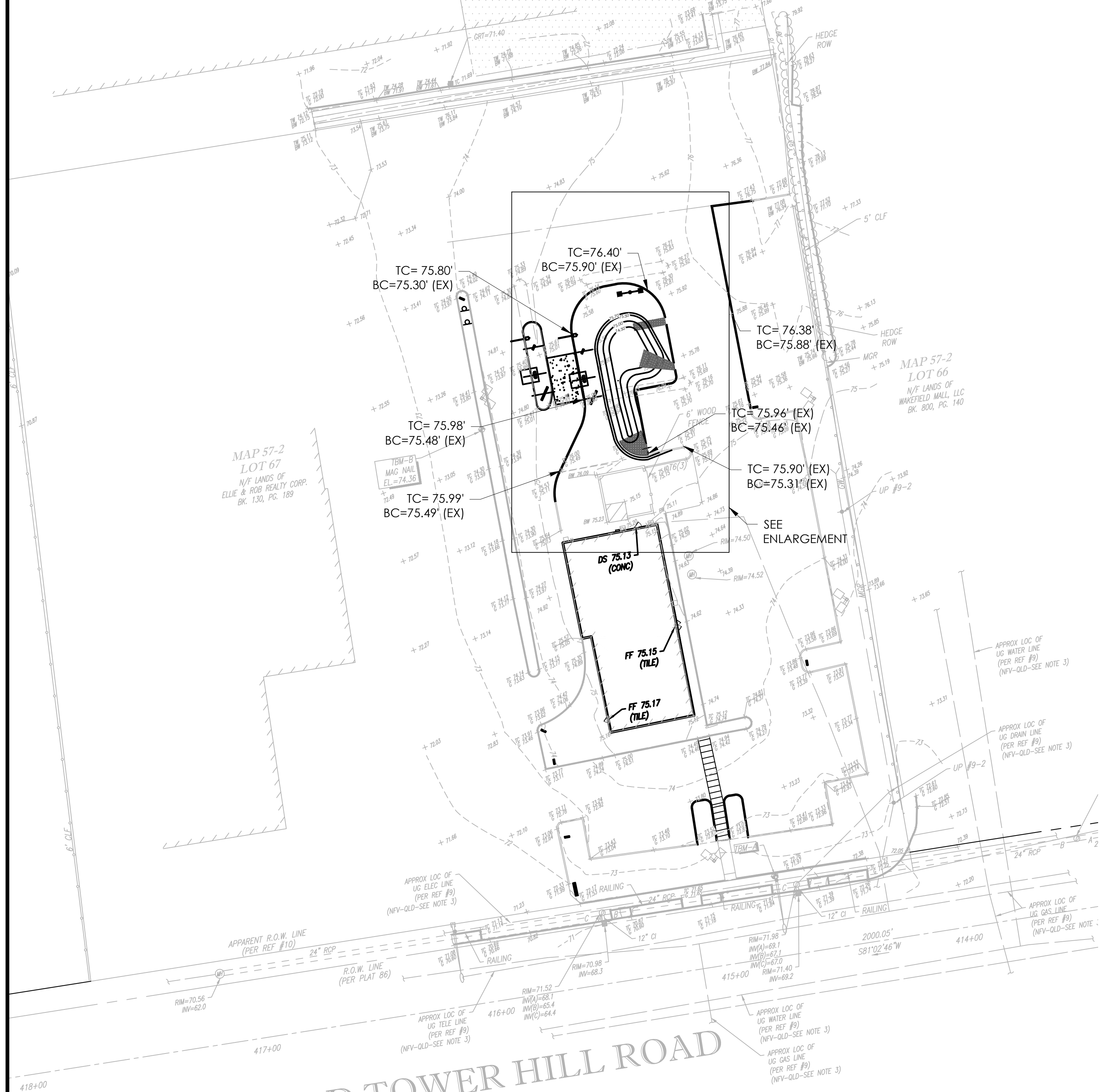
PERMITS LOCATION OF RIGHT FOR DRIVE GRANTED BY MARRAGANSETT P.C. COMPANY IN BOOK 46, PAGE 159 EASEMENT, PER REF #1)

MAP 57-2 LOT 68-1 N/F LANDS OF BCP TOWER HILL ROLL LLC BK. 1728, PG. 238

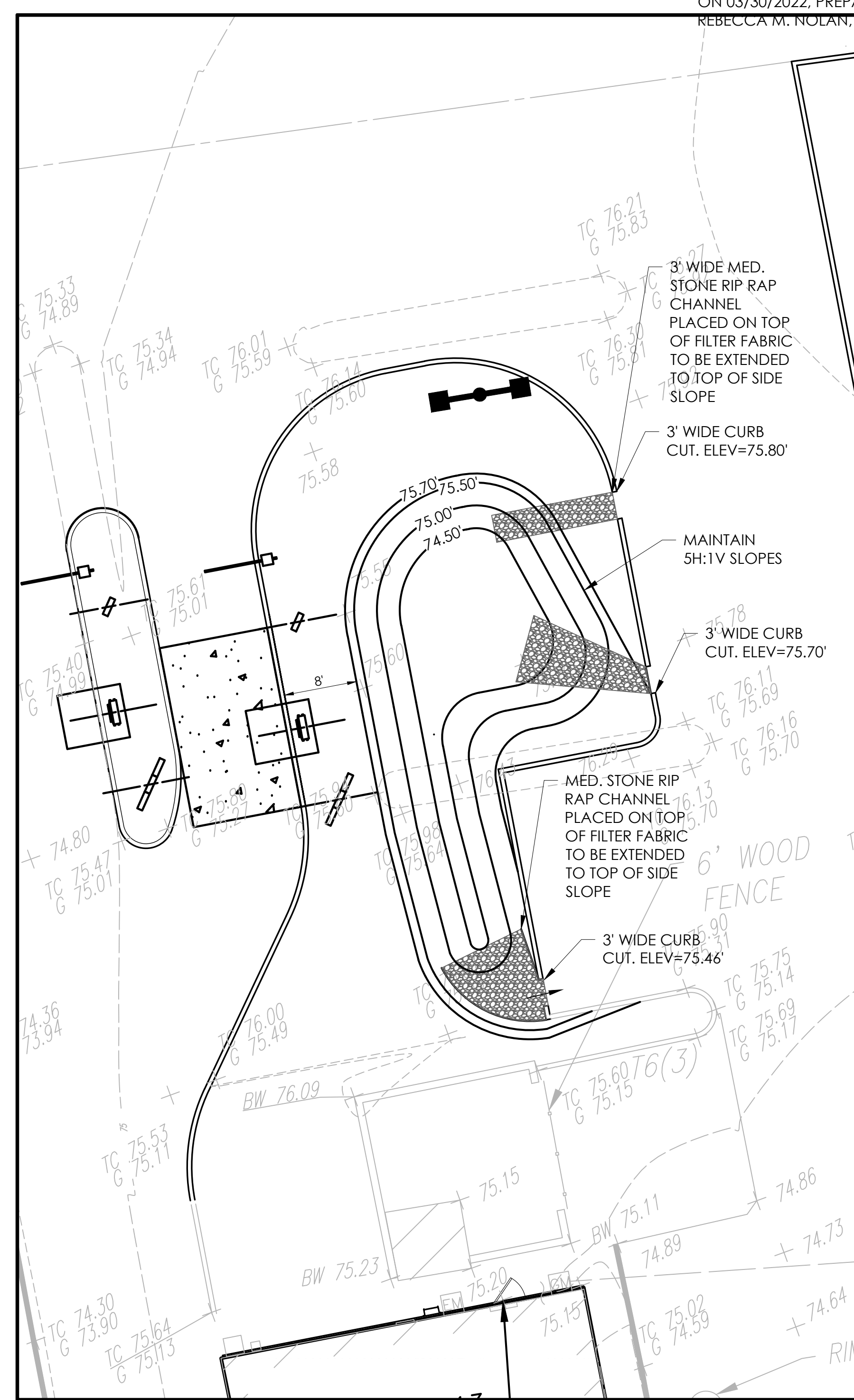
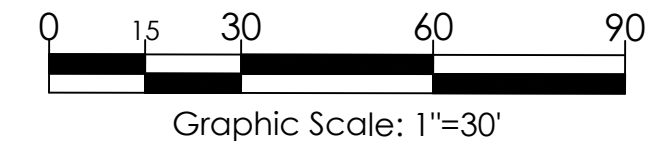
LEACH FIELD (PARCEL 2) (PER BK. 107, PG. 711) (SHADED)

MAP 57-2 LOT 66 N/F LANDS OF WAKEFIELD WALL, LLC BK. 800, PG. 140

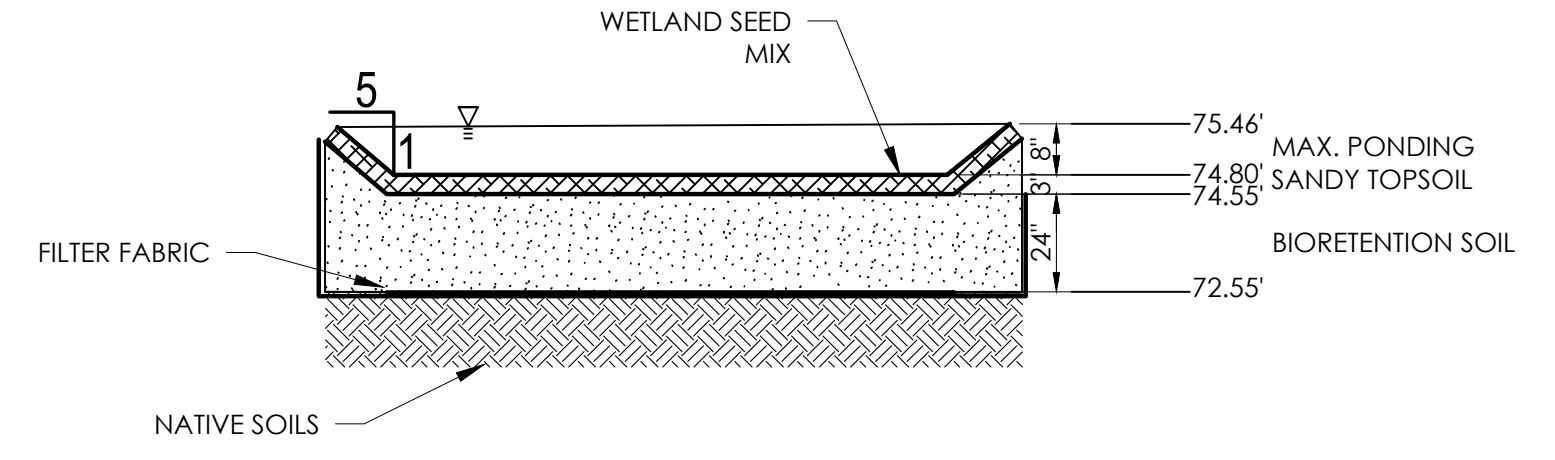
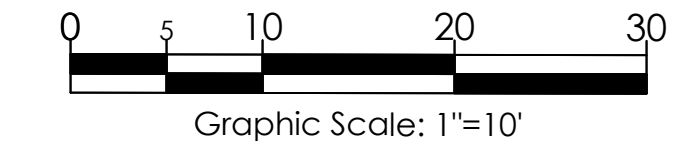
MAP 57-2 LOT 67 N/F LANDS OF CLUE & ROSS REALTY CORP. BK. 130, PG. 189



**GRADING PLAN**



**GRADING ENLARGEMENT**



NOTES:  
1. SOILS SHALL CONSIST OF USDA LOAMY SAND TO SANDY LOAM CLASSIFICATION AND MEET THE FOLLOWING GRADUATION: SAND 85-88%, SILT 8-12%, CLAY 0-2%, AND ORGANIC MATTER (IN THE FORM OF LEAF COMPOST) 3-5%.

**BIORETENTION DETAIL**

N.T.S.

- REFERENCE:**
1. SURVEY LAST REVISED ON 02/09/2022, PREPARED BY CONTROL POINT
  2. LANDSCAPE PLAN LAST REVISED ON 03/30/2022, PREPARED BY REBECCA M. NOLAN, P.E.



- ABBREVIATION**
- AC -ASPHALT CONCRETE
  - LF -LINEAR FEET
  - SF -SQUARE FEET
  - DIA -DIAMETER
  - INV -INVERT
  - CPP -CORRUGATED POLYETHYLENE PIPE (SMOOTHED LINE)
  - HDPE -HIGH DENSITY POLYETHYLENE PIPE
  - PVC -POLYVINYL CHLORIDE
  - TG -TOP OF GRATE
  - GE -GROUND ELEVATION
  - TC -TOP OF CURB
  - BC -BOTTOM OF CURB/EDGE OF PAVEMENT
  - HP -HIGH POINT
  - F.F.E. -FINISH FLOOR ELEVATION
  - TW -TOP OF WALL
  - BW -BOTTOM OF WALL

**GRADING AND DRAINAGE NOTES:**

1. CONTRACTOR SHALL NOTE THAT THIS PROJECT WILL DISTURB LESS THAN 1 ACRE AND THEREFORE A NPDES/SPDES PERMIT IS NOT REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE EROSION CONTROL DEVICES IF NEEDED.
2. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ENSURE A SMOOTH FIT, CONTINUOUS GRADE, AND POSITIVE DRAINAGE (AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS). THE CONTRACTOR SHALL ADJUST TOPS OF CLEANOUTS, MANHOLES, VALVES, HANDHOLES, ETC. TO REMAIN TO PROPOSED FINISHED GRADE, AS NECESSARY.
3. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
4. EARTHWORK SHOULD INCLUDE THE COMPLETE REMOVAL OF ALL VEGETATION, TOPSOIL, ORGANIC SUBSOIL, AND ANY SURFACE DEBRIS IN AREAS WHERE REGRADING IS REQUIRED. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE TOPSOIL AT A DEPTH AS NOTED IN THE SPECIFICATIONS.
5. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

Issued:	Date:
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Revisions:	Date:
1	Revised per TRC comments 1/12/21
2	Revised per TRC comments 12/29/21
3	Revised per TRC comments 2/03/22
4	Revised per PB comments 3/30/22
5	
6	
7	
8	

Seal: 03/30/2022 Seal

**Todd G. Markevitz**  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL

FOR APPROVAL ONLY NOT FOR CONSTRUCTION

CIVIL ENGINEER OF RECORD  
Name: Todd G. Markevitz  
Rhode Island Registration No.: 13329  
Exp. Date: June 30, 2023  
Firm No.: PE.00LLC73-COA  
Exp. Date: June 30, 2022

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1450 W. 10th St.  
Wichita, KS 67202  
913.381.1111

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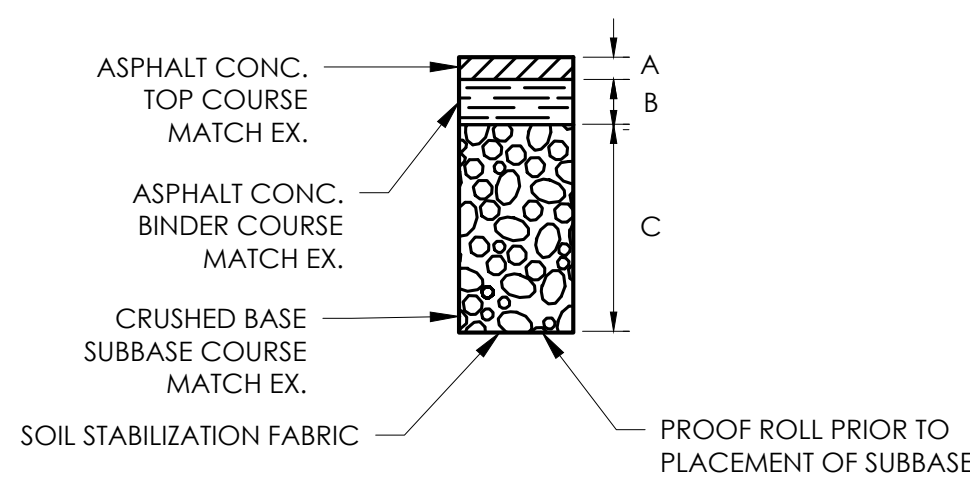
**APD ENGINEERING ARCHITECTURE**  
615 Fishers Run Victor, NY 14564  
585.742.2222 - www.apd.com

**Burger King**  
JSC Management Group  
Attn: James Camilleri  
Burger King Franchisee  
585.735.7198

Burger King #3384

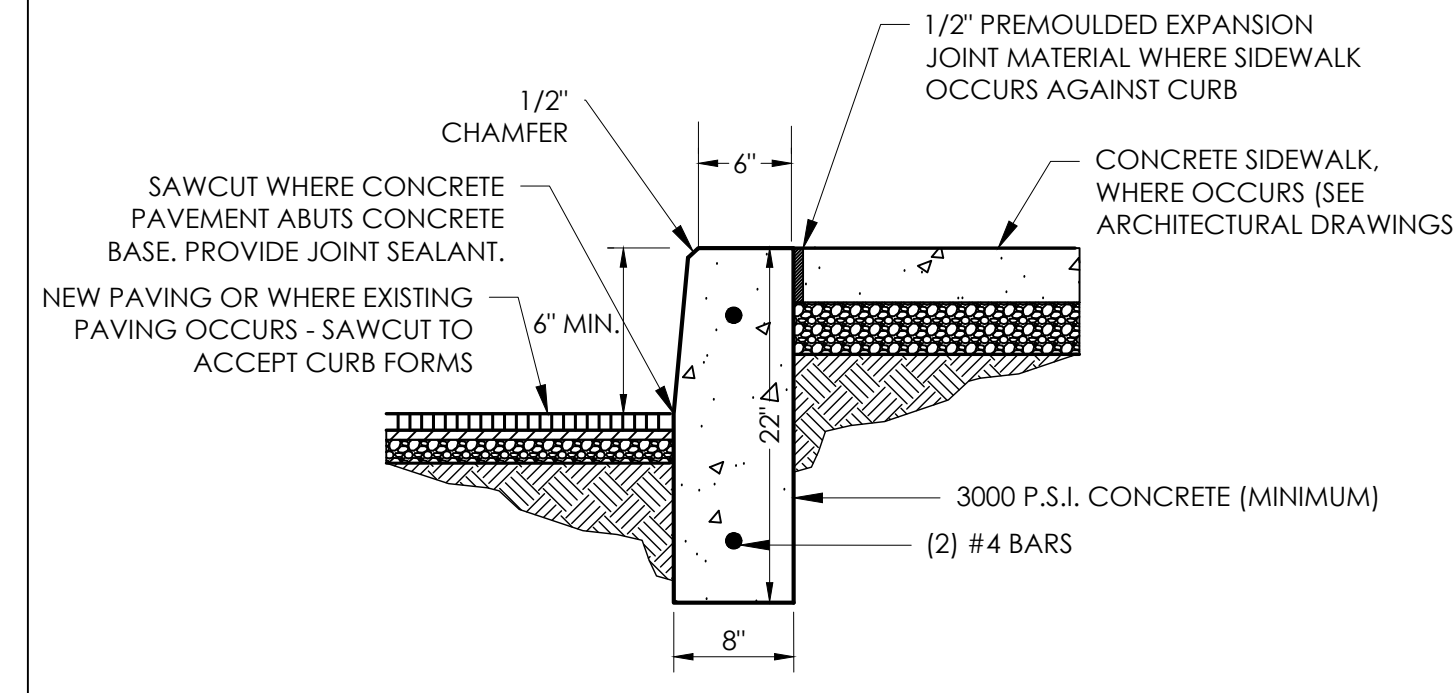
126 Old Tower Hill Road  
Village of Wakefield, RI 02879  
Washington County  
Project Name & Location:

Grading & Drainage Plan	
Drawing Name:	
Date: 8/12/21	Project No. 20-0206
Type: Type	
Drawn By: ASH	C3
Scale: As Noted	Drawing No.



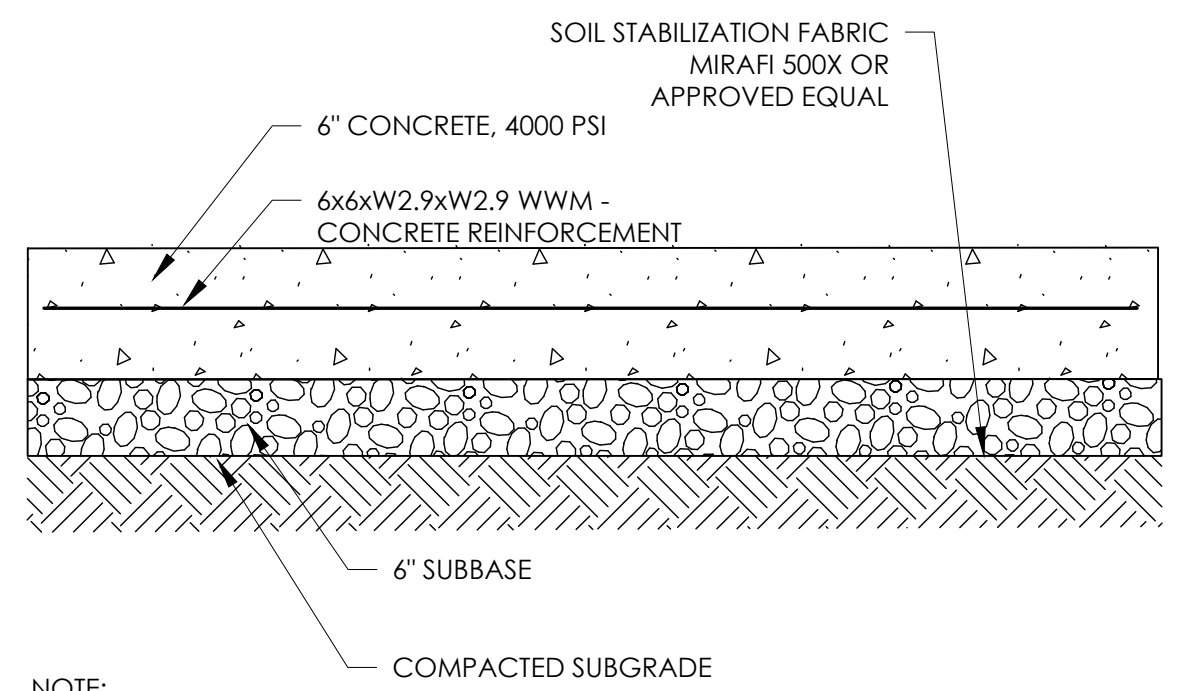
	REGULAR DUTY	HEAVY DUTY
A	MATCH EX.	MATCH EX.
B	MATCH EX.	MATCH EX.
C	MATCH EX.	MATCH EX.

**PAVING SECTION DETAIL**  
N.T.S.



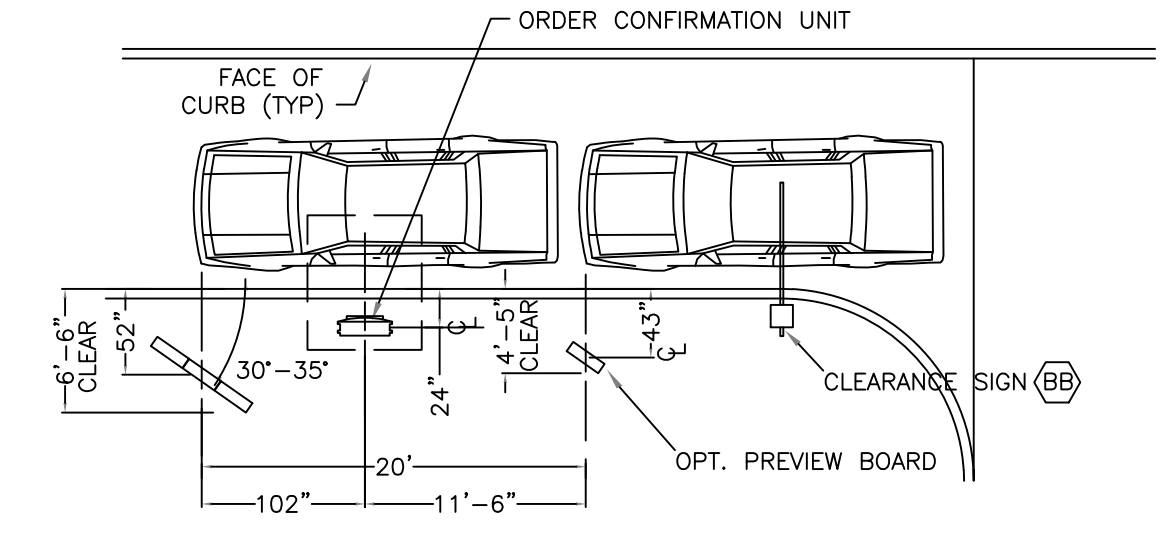
NOTES:  
 1. ALL CONCRETE IS TO MEET ACI-318 CONSTRUCTION STANDARDS.  
 2. WHERE NEW CURB IS TO BE INSTALLED WITHIN EXISTING PAVING, PROVIDE NEW BASE AND PAVING TO MATCH EXISTING.  
 3. INSTALL 1/2" PREMOULDED EXPANSION JOINT MATERIAL @ 20' C./C. IN SIDEWALK AND CURB.

**CONCRETE CURB DETAIL**  
N.T.S.



NOTE:  
 1. EXPOSED CONCRETE SURFACE TO HAVE A LIGHT BROOM FINISH. CONTRACTION JOINTS 20' ON CENTER MAX., BOTH DIRECTIONS. SAWCUT 1/8" - 1/4" WIDE TO 1/4 THE SLAB DEPTH. STEEL REINFORCING TO BE DISCONTINUOUS THROUGH JOINT.

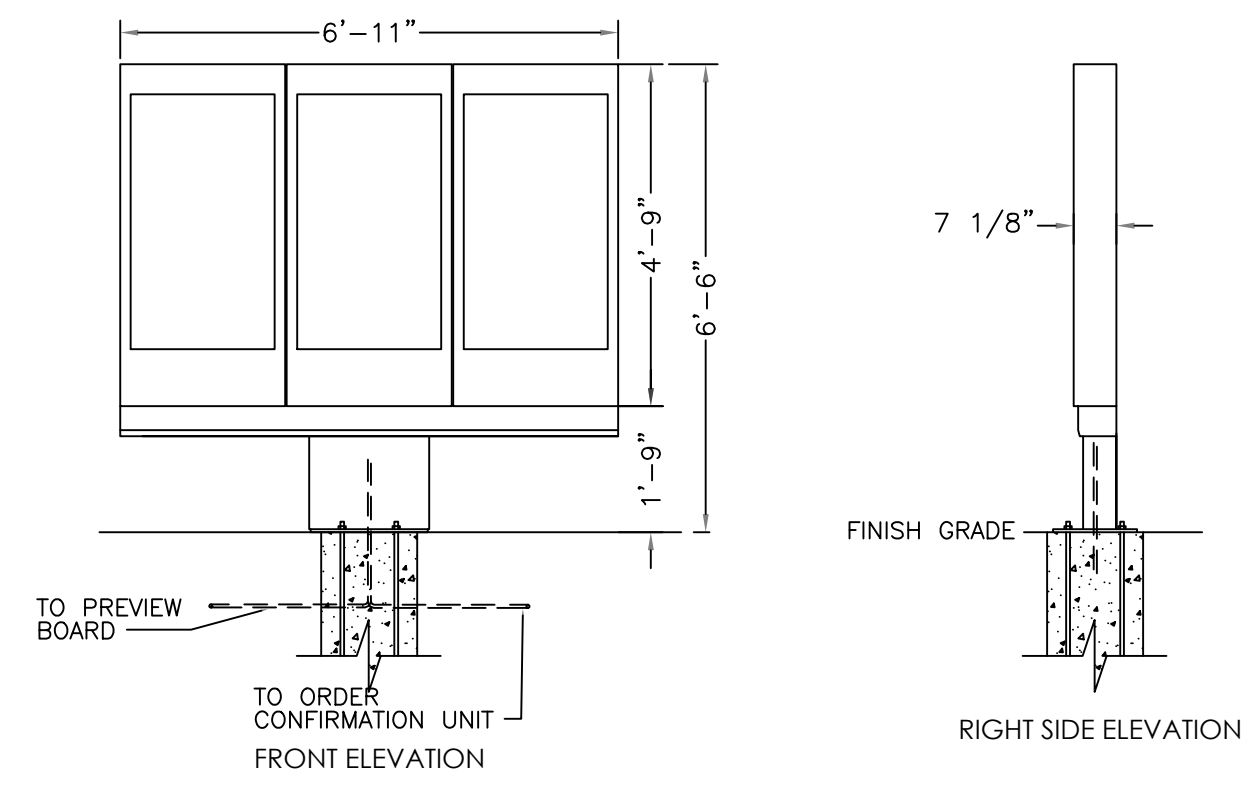
**HEAVY DUTY CONCRETE (DRIVE THRU) DETAIL**  
N.T.S.



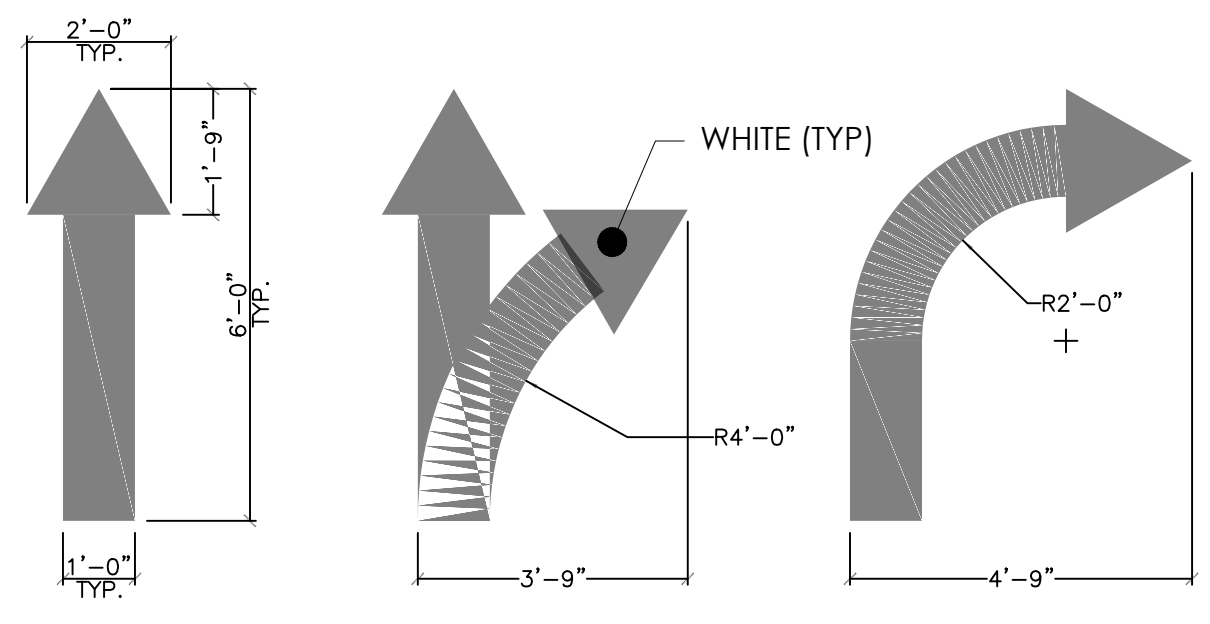
**PREFERRED LAYOUT**  
NOTE THAT DIMENSIONS ARE CRITICAL.

NOTE: THE PREFERRED LAYOUT SHOULD BE USED WHENEVER SPACE ALLOWS. 30° ROTATION ANGLE SHOULD BE CONSIDERED OPTIMAL. ANGLES BETWEEN THE PREFERRED LAYOUT AND MINIMUM LAYOUT ARE ACCEPTABLE AS LONG AS:  
 (1) THE DISTANCES FROM THE CENTERLINES OF THE SUPPORT POLES OF THE MENU BOARD AND PREVIEW BOARD TO THE FACE OF CURB ARE REDUCED BY 4" FOR EVERY 5 DEGREES OF ROTATION, AND;  
 (2) THE DISTANCE FROM THE CENTERLINE OF THE ORDER CONFIRMATION UNIT AND THE CENTERLINE OF THE MENU BOARD IS REDUCED BY 3" FOR EVERY 5 DEGREES OF ROTATION. THE CENTERLINE OF MENU BOARD TO CENTERLINE OF PREVIEW BOARD REMAINS AT 20'.

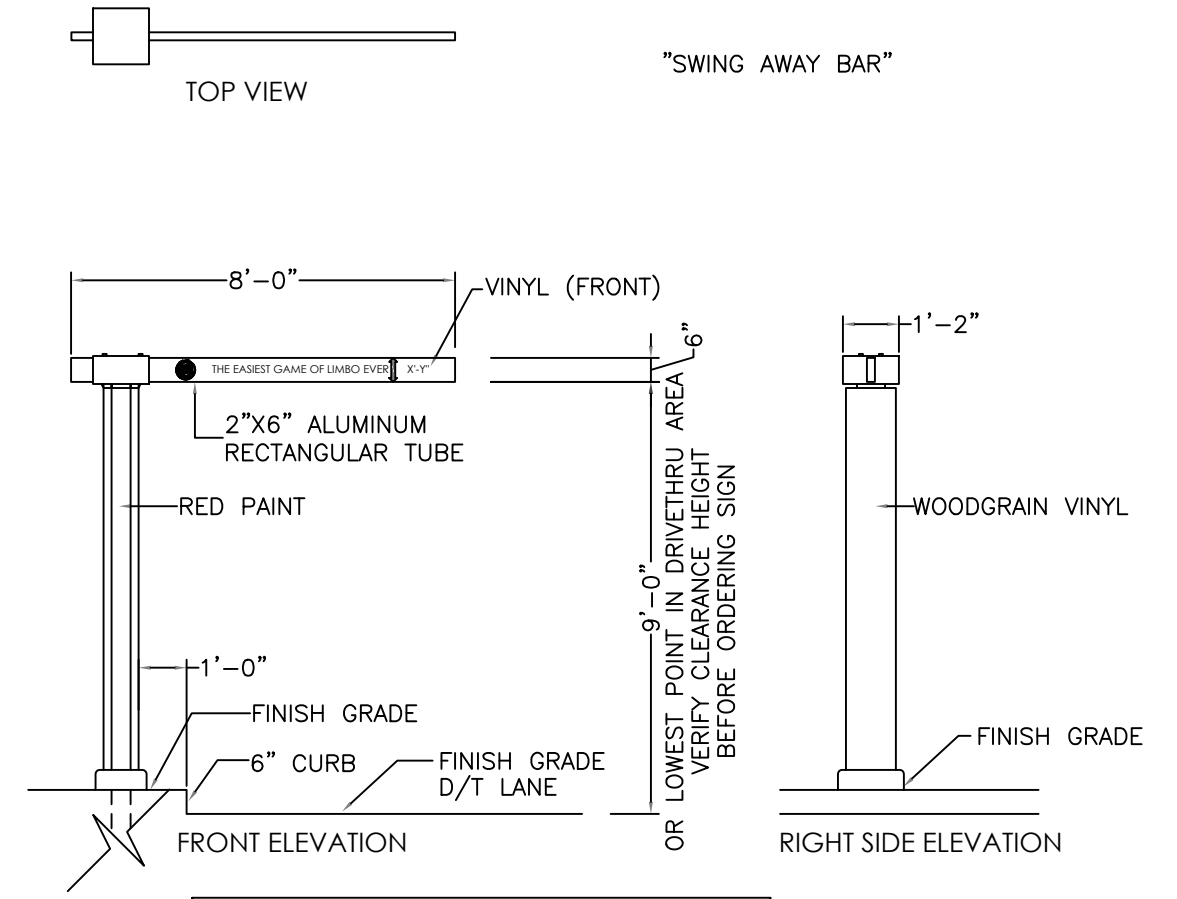
**DRIVE-THRU ORDER STATION 2020 IMAGE**  
N.T.S.



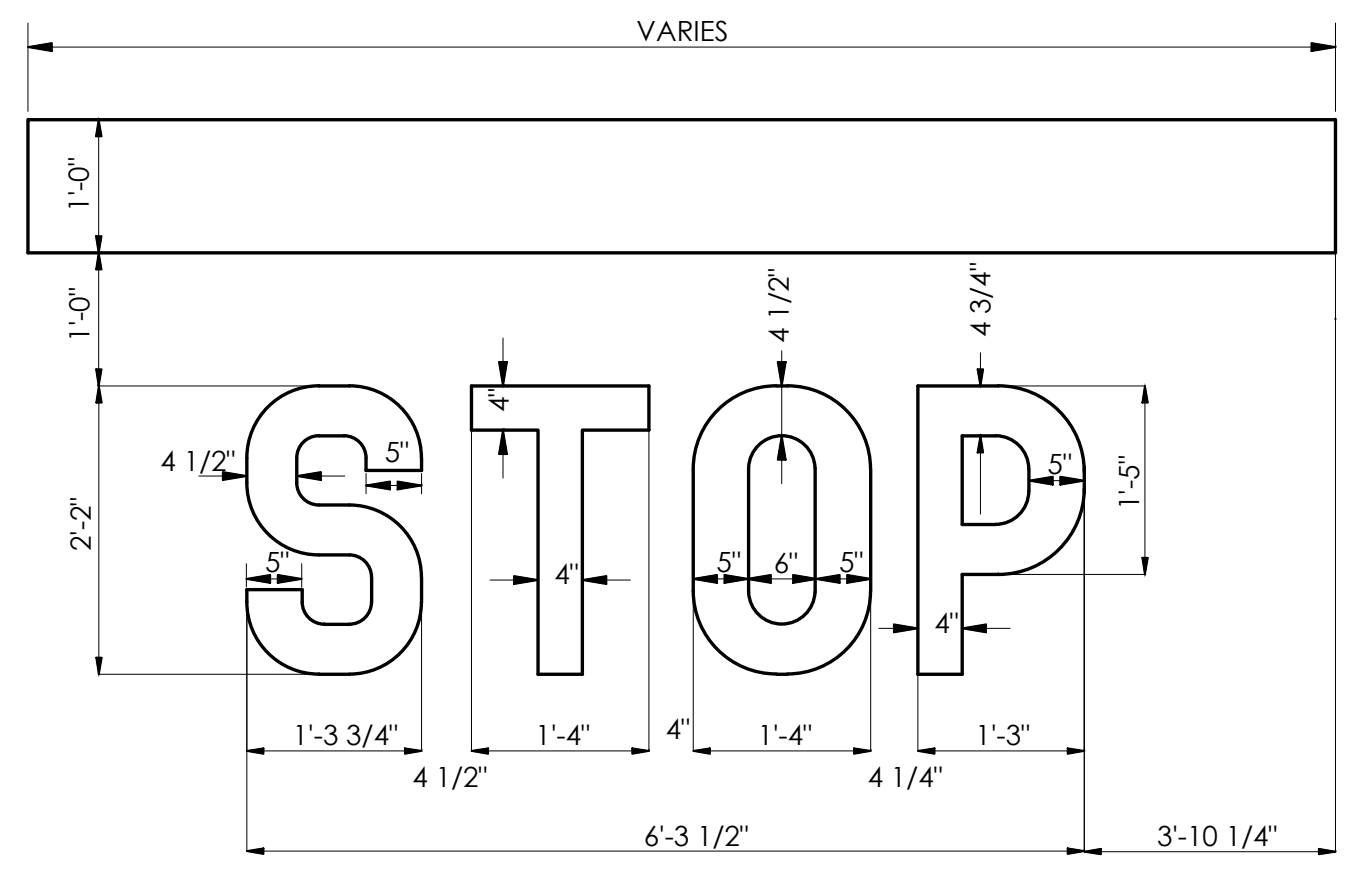
**MENUBOARD ELEVATIONS**  
N.T.S.



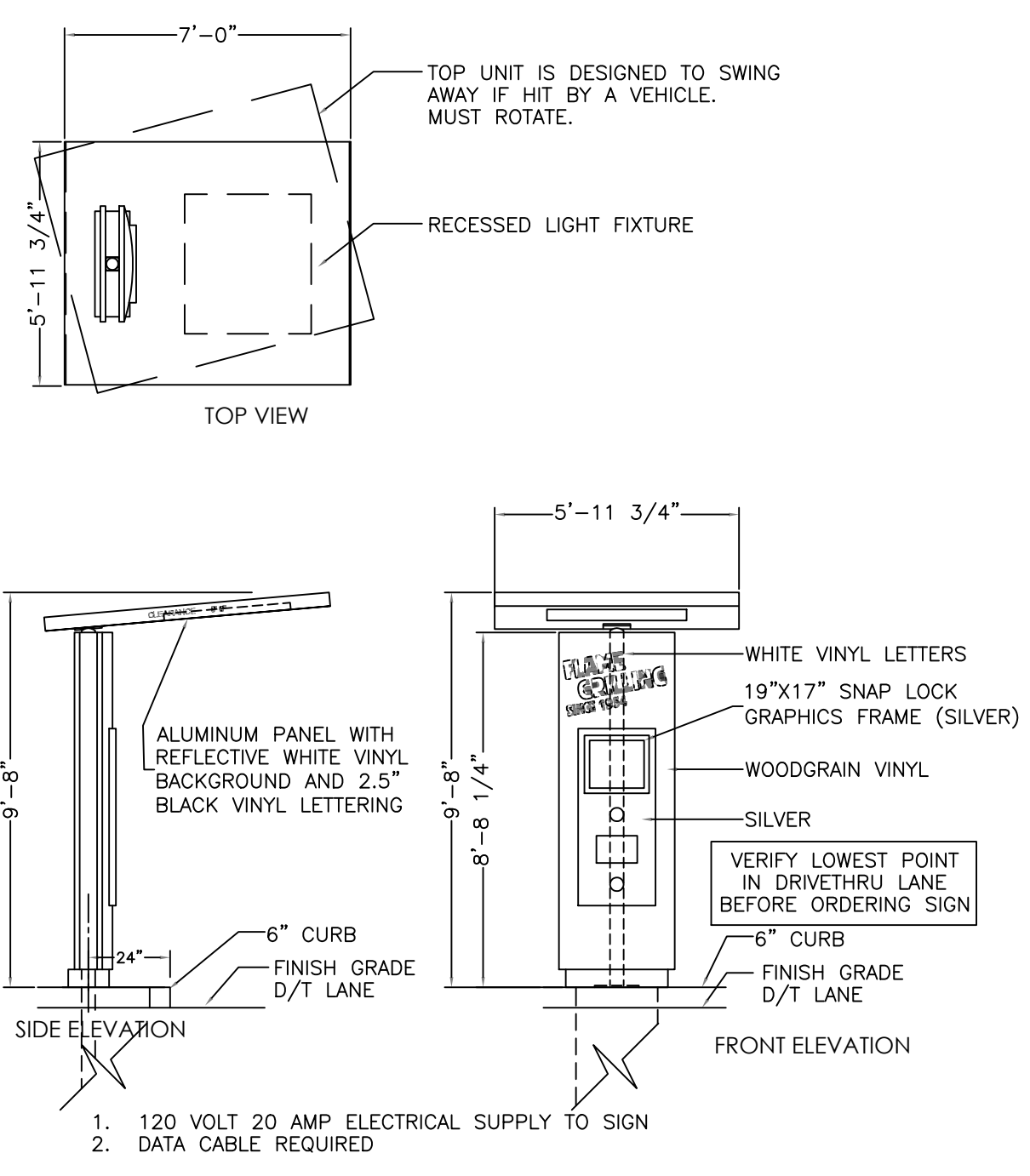
**PAINTED TRAFFIC ARROWS**  
N.T.S.



**DRIVE-THRU CLEARANCE SIGN 2020 STANDARD IMAGE**  
N.T.S. NOVEMBER 1, 2017



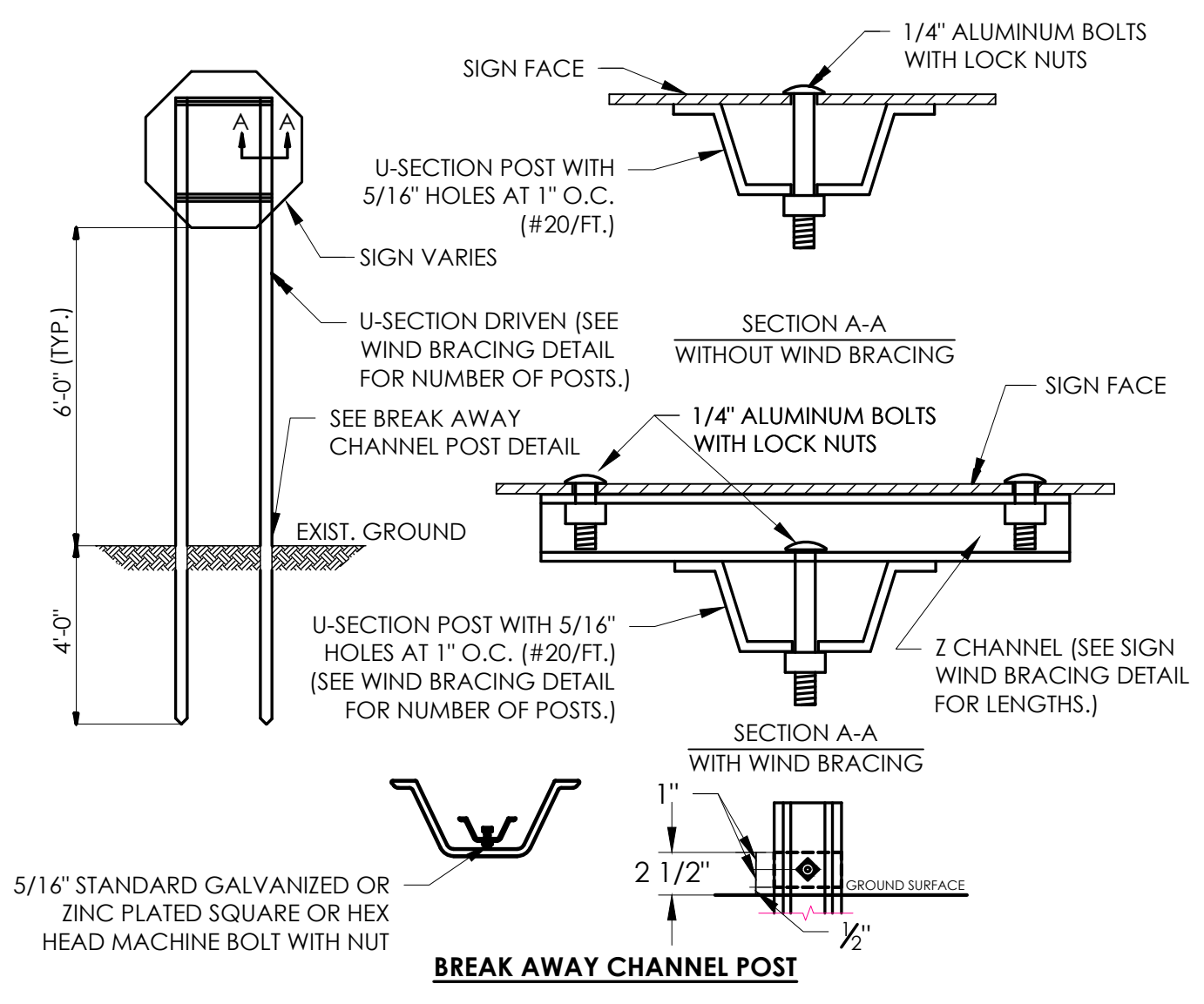
**PARKING LOT DRIVE AISLE STOP BAR DETAIL**  
(ALWAYS WHITE)  
N.T.S.



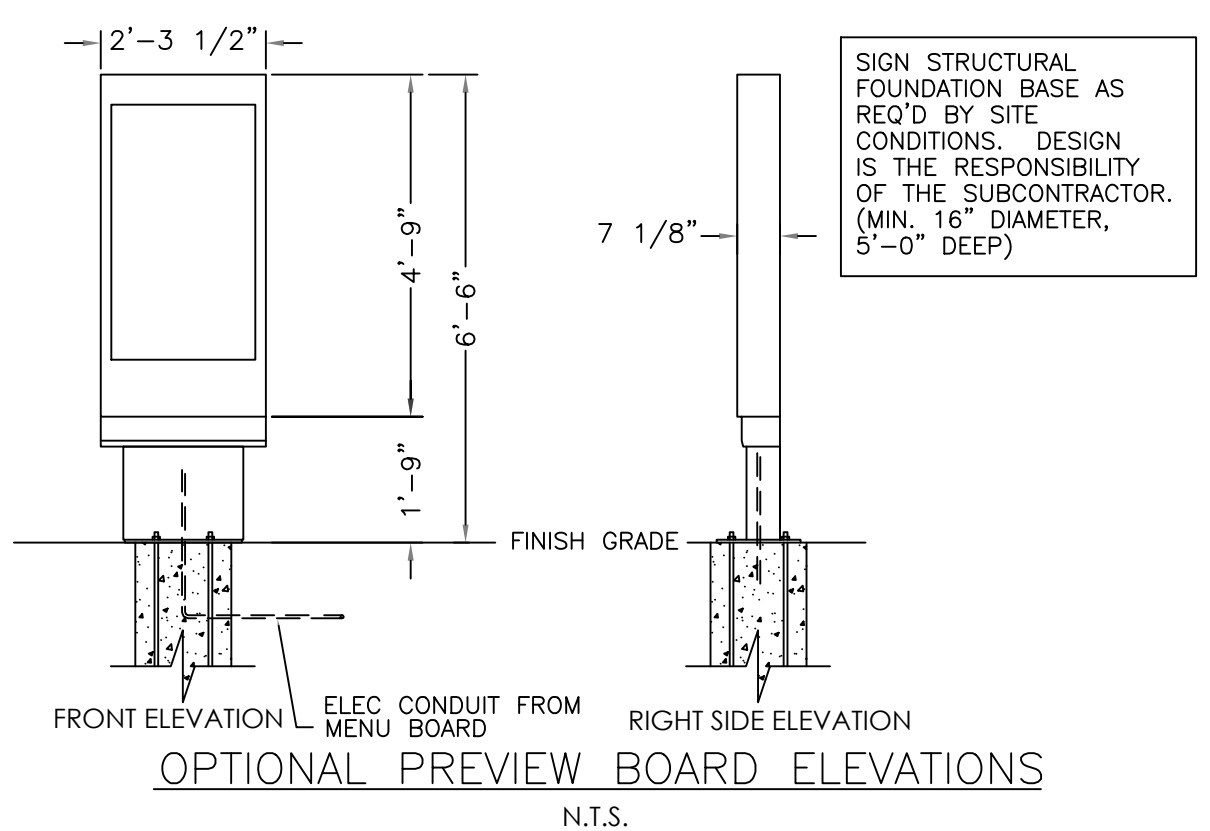
NOTE:  
 SIGN STRUCTURAL FOUNDATION AS REQUIRED BY SITE CONDITIONS. DESIGN IS THE RESPONSIBILITY OF THE SUBCONTRACTOR.

**ORDER CONFIRMATION UNIT**  
N.T.S.

TEXT	KEY	DESCRIPTION	TYPE OF MOUNT	QUANTITY
	R 1-1	30" x 30" OCTAGONAL WHITE ON RED	POST MOUNTED	1
	R 3-1S	24" X 24" RED ON BLACK WHITE BACKGROUND	POST MOUNTED IN GRASS	1



**TYPICAL POST MOUNTED SIGN INSTALLATION IN GRASS AREAS**  
N.T.S.



**OPTIONAL PREVIEW BOARD ELEVATIONS**  
N.T.S.

Issued: \_\_\_\_\_ Date: \_\_\_\_\_

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Revisions: \_\_\_\_\_ Date: \_\_\_\_\_

1	Revised per TRC comments	11/22/21
2	Revised per TRC comments	12/29/21
3	Revised per TRC comments	2/03/22
4	Revised per PB comments	3/30/22
5		
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Seal: FOR APPROVAL ONLY/NOT FOR CONSTRUCTION

CIVIL ENGINEER OF RECORD  
 Name: Todd G. Markevicz  
 Rhode Island Registration No.: 13329  
 Exp. Date: June 30, 2023  
 Firm No.: PE.00LLC73-COA  
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 JSC Management Group  
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 Burger King Franchisee  
 585.735.7198

**Burger King #3384**  
 126 Old Tower Hill Road  
 Village of Wakefield, RI 02879  
 Washington County  
 Project Name & Location:

**Details Sheet**

Drawing Name:	Project No.
Date: 8/12/21	20-0206
Type: Type	
Drawn By: ASH	C6
Scale: N.T.S.	Drawing No.

THE SPECIFICATIONS ARE NOT PROVIDED AS AN INDICATION OF WORK, BUT PROVIDE REQUIREMENTS AND STANDARDS OF WORK REQUIRED, OR COULD BECOME REQUIRED, DUE TO UNFORESEEN CONDITIONS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH AUTHORITY HAVING JURISDICTIONS REQUIREMENTS. WHEN THESE SPECIFICATIONS ARE IN CONFLICT WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION THE MORE STRINGENT SHALL BE REQUIRED AS DETERMINED BY THE ENGINEER AND AUTHORITY HAVING JURISDICTION.

**GENERAL CONSTRUCTION CONDITIONS**

- The term of Owner as used in these specifications and notes shall include the owner of the property, the company or party that hired the Contractor, the company or party that signed the contract for this work, and the agents of each. The Owner's representative shall be the individual or party assigned by the Owner to be the Owner's representative. Owners of adjacent properties shall include the property owner, lessee, legal occupier, and operator of any business on that property.
- All work and materials shall comply with all local, state, and federal regulations, codes, and GSHA standards and be constructed to meet or exceed those codes.
- The Contractor shall be responsible for all temporary permits, connection permits, fees, inspections and record keeping required by all municipal, utility, health, environmental, state, or federal agencies that may have jurisdiction. Furthermore, the Contractor shall be responsible to meet or exceed all requirements of the agencies or authorities having jurisdiction over his work. All conflicts in requirements of different agencies, authorities, and/or the design shall be brought to the attention of the owner's representative before proceeding.
- The Contractor shall be responsible to locate and maintain the property and project limits throughout the project. All conflicts between the design and the project/property limits shall be brought to the attention of the owner's representative before proceeding. Unless described in the contract documents or shown on the drawings the Owner has not secured any right of way, easements or agreements with other property owners or property users. Therefore, it shall be the Contractor's responsibility to secure and maintain any temporary right of way, easements, permits, or agreements he may need to perform his work. All such agreements shall hold the Owner, Engineer of Record, and his agents harmless and the responsibility of the Contractor to bear all costs. The Contractor shall copy the Owner on releases of all agreements prior to final payment by the Owner to the Contractor. The Contractor shall not interfere with operations of adjacent businesses and work shall be completed off-hours, as necessary. Coordinate with Municipality for any restrictions on allowable working hours.
- Unless otherwise noted on the drawings or in the contract documents the Contractor shall be responsible for all construction survey, layout, and record drawings for this contract. Any conflicts in survey/layout and the design or agencies requirements shall be brought to the attention of the owner's representative prior to proceeding with the work. The Contractor shall protect and safeguard all existing survey corners, monuments, control and tie-lines. The Contractor shall pay all costs to repair or replace damaged survey monuments, control and tie-lines. Record drawings shall be provided in accordance with any requirements of the authorities having jurisdiction including the required information to be provided, and signatures, seals, and certifications that may be required.
- No changes to the design or materials specified may be made without written authorization by the Engineer of Record or in the case of utilities or road work to be dedicated, the authority receiving dedication. At the end of the contract, the Contractor shall provide to the Owner a record set of drawings reflecting all changes made by the Contractor during construction.
- Erosion control is necessary whenever sediment, dust, erosion, or contaminated run-off may occur. The Contractor shall be responsible to place and maintain whatever erosion control or run-off protection is required to protect his work, the work of others, the project, adjacent properties and the health and safety of the natural resources. The Contractor shall pay all costs to repair or replace damaged erosion control measures beyond the project limits, as necessary. They shall be familiar with all federal, state, and local requirements regarding erosion and run-off control.
- The Contractor shall be familiar with the project site and all adjacent pedestrian, traffic, and business uses. The Contractor shall take whatever precautions and steps necessary to maintain safety and operation of these uses in accordance with federal, state, county, and local requirements. The Contractor shall be responsible for costs and damages caused from his failure to take proper and adequate precautions. The Contractor shall be familiar with all federal, state, and local requirements regarding these uses.
- The Contractor shall be responsible for costs and delays associated with weather, groundwater, and other occurrences that could be expected or occur common with this type of work. The Contractor shall review all pertinent documents including soils reports, soils borings, and other soil or site data.
- The Contractor shall be responsible to save and protect his work throughout the contract. Any damages requiring repairs or replacement shall be corrected by the Contractor at his expense.
- When work is done within a road, utility or private easement, right of way, or other property agreement, the Contractor shall do all work within that area per the authority having jurisdiction.
- When separate site and building contracts are performed, the site Contractor shall be responsible to bring utilities to within 5 feet of building foot unless noted otherwise on drawings or contract documents.
- All utilities are shown per surface surveys and/or record maps and may vary from actual in-field locations. The Contractor is responsible for all utility utilities prior to commencing work. Any damage to utilities prior to commencing work, or to utilities during the course of work, or the failure to verify differences between drawings and actual field conditions will be the responsibility of the Contractor to repair, replace, or pay damages at no expense to the contractor.
- Contractor shall comply to the fullest extent with the latest standards of OSHA directives or any other agency having jurisdiction for excavation and trenching procedures. The Contractor shall use support systems, sloping, benching, and other means of protection. This includes, but is not limited to, access and egress from all excavation and trenching. Contractor is responsible to comply with performance criteria for OSHA Trench excavation requiring shoring, shoring or other shoring devices shall be designed by a Professional Engineer and meet all OSHA requirements. All excavations shall maintain safe side slopes in accordance with local, state and O.S.H.A. requirements. No sloping of material placed to an open cut or steep slope will be permitted in an effort to prevent cave-ins.
- The contractor shall select the means and methods for providing support of excavations in accordance with safety requirements, plans, and project specifications. The contractor must evaluate soil conditions during excavations since variations in the soil can occur across the site. The excavations should be monitored continuously for signs of deterioration such as seepage of water or sloughing of soil into the excavation. The contractor is ultimately responsible for excavation safety.
- The Contractor shall notify the Owner immediately and stop all work in areas where hazardous materials are discovered. When required, the Contractor shall notify the appropriate environmental and health agencies.
- The Contractor shall coordinate with the Authority having jurisdiction for all required inspections and be responsible to hire any required third party inspectors.
- For any testing, inspections, and/or certifications requiring a Professional Engineer, the Contractor shall be responsible to hire a third party engineer. A copy of all tests shall be provided to the Engineer of Record.
- Any discrepancies between plans, details, and specifications shall be immediately brought to the attention of the Engineer of Record.
- Stabilization fabric (woven geotextiles), if required, shall meet the following requirements "modulus (load at 10% elongation)=1150 per ASTM D1682-64", "Grab tensile strength 200lb per ASTM D 1682-64", "mullen burst strength = 400psi per ASTM D 3786-87", "trapezoid tear strength when applicable = 115lb per ASTM D1117-87", "coefficient of permeability K<sub>Q</sub>/SEC = .015 per ASTM D 4491-85", "water flow rate (PM)=5= 60 per ASTM D 4491-85". When stabilization fabric is used it shall be pulled tight and all wrinkles removed. Overlaps shall be in accordance with manufacturer's recommendations. Refer to Geotechnical Engineers report, if available, for additional information.

**DEMOLITION**

- The Contractor shall inspect all structures, facilities and areas slated for demolition to gain a full understanding of the work required. The Contractor shall take whatever measures necessary to protect the safety of the public, his employees and agents during the inspections and subsequent work. The Owner, Client, and Engineer of Record are not responsible for the condition of the buildings, facilities, or other areas slated for demolition.
- All materials not slated for reuse must be disposed of off site in a legal manner. The Contractor may salvage any equipment or materials not designated by the Owner to be saved. All salvaged material or items shall be removed from the site immediately upon removal. No such materials shall be stored on the site. Access to any sides of salvaged materials will be allowed on the project site. All salvaged material must be removed, transported, and disposed of in a legal manner.
- Upon approval by Owner, the Contractor shall be responsible to remove and store safely all materials slated to be saved or reused. The Contractor shall document existing conditions using photographs prior to start of work and notify Owner of any existing damage prior to construction start. The Contractor shall be responsible for all costs to repair or replace existing features to remain (including but not limited to fencing, lighting, curbing, pavement, utilities, storm structures, landscaping, etc.) that are damaged due to his work or failure to protect throughout the duration of his contract.
- No burning, explosives, or other potentially dangerous methods of demolition will be allowed unless written permission is granted by the Owner and all appropriate permits are granted.
- The Contractor will provide whatever safety equipment and devices are necessary to protect the adjacent properties, structures and other areas slated to remain. This will also include erosion control, dust control, and settlement.
- All areas shall be brought back to their original grade or that of the surrounding area, which ever is closer to the final grades of the project for that area. All areas requiring fill shall be compacted to the requirements of the area but in no case less than 90% of modified proctor (ASTM D 1557).
- All demolition within the proposed building footprint shall be coordinated with the building drawings.
- Light pole removal shall include complete removal, backfill of concrete base, and capping of any conduit/wiring in to be abandoned in place.

**CLEAR AND GRUB**

- Clearing and grubbing shall not commence until erosion control plans, including applicable BMP's, are in place, in accordance with the project plans.
- The Contractor shall review plans and identify and safely mark all plants and trees to be saved. The Contractor shall protect all plants and trees to be saved throughout the contract. This shall include prohibiting any work within the drip line of the tree, except under the supervision of a licensed Landscape Architect.
- All areas to be cleared and grubbed shall be surveyed in the field to establish the appropriate limits of work.
- The Contractor shall take whatever measures necessary to locate and protect existing utilities, structures, wetlands, and other facilities to remain.
- All trees, shrubs, stumps, roots, and other debris shall be removed from site and disposed of in a legal manner.
- No burning will be allowed on site.

**PAVEMENT AND STRUCTURAL SUBBASE**

- The type of subbase required for each use shall be called out on the drawings. If no reference is made on the drawings or details to the type of subbase required the following shall be used:
  - 1.a. The source of the material shall be one approved for use by the State Department of Transportation.
  - 1.b. The material shall be a crushed stone conforming to AASHTO M 147-65 (1980 or latest revision), grade A.
  - 1.c. Gravel or other materials can only be substituted for crushed stone when approved in writing by the Owner and Engineer of Record.
  - 1.d. Material supplied for use as subbase shall have 100% passing the 2 inch sieve, 30% to 65% passing the 3/8 inch sieve, 25% to 55% passing the No. 4 sieve, 15% to 40% passing the No. 10 sieve and 2% to 10% passing the No. 200 sieve.
- Subbase shall be placed in lifts not to exceed 8 inches and compacted to the requirements stated in the soils report. If not stated, the compaction requirement shall be 95% of maximum dry density per ASTM D1557 (modified proctor).
- The Contractor will be responsible for all costs in preparing the subgrade to receive subbase. This shall include fine grading and compacting as necessary to meet the requirements stated here and under Earthwork.
- The amount of testing required to verify the compaction shall be the same as stated under Earthwork.
- Refer to General Construction Conditions for filter fabric requirements, if applicable.

**EARTHWORK**

- Earthwork shall not commence until erosion control plans, including applicable BMP's, are in place, in accordance with the project plans.
- Refer to Project Geotechnical Report for full project recommendations. Where Geotechnical Report is not clear or does not give requirements, the following may be used.
- Prior to starting any cuts or fills the Contractor shall strip and stockpile all topsoil. Stripping of topsoil can only commence after the clear and grub operations are complete and all erosion control devices are in place and in place. Topsoil shall be stockpiled in areas designated on the plans or approved by the owner's representative. The Contractor shall review the soils reports, boring logs, and, when necessary, his own field verification so as to be familiar with the depth of topsoil. The Contractor shall take all reasonable precautions to prevent over and under removal.
- Unless otherwise noted, the grades shown on the plans are finished grades. Therefore, pavement, floors, subbase, and other improvements must be subtracted to calculate subgrade elevations.
- The Contractor shall maintain a survey grid that is not less than 100' x 100' or other means acceptable to the Owner's representative that will indicate location and amount of cut or fills remaining. All subgrade this grid shall be 5' x 5' with location and final grade marked grade or survey shall be completed demonstrating that the subgrade is +/- 0.1 feet of required subgrade.
- Unless otherwise noted on the drawings or in the contract documents, the Contractor shall retain and pay all cost for soil compaction testing to be performed by an independent testing laboratory. For each lift placed, compaction testing shall be done every 2000 sq. ft. In trenches, compaction testing shall be done every other lift with at least 1 test every 50 ft.
- Structural fill placed 2 feet or deeper below the finished subgrade elevation or finished grade of graded areas shall have a maximum particle size of 6 inches. Structural fill placed within the upper 2 feet of proposed subgrade or finished grade of graded areas shall have a maximum particle size of 3 inches.
- Compaction requirements shall be those outlined in the soils report, if provided. If the soils report is not clear or does not give requirements, the following will be used:
  - 8.a. Under and to 20 feet outside the building envelope the soils shall be compacted to a minimum of 95% maximum dry density per ASTM D 1557 (modified proctor).
  - 8.b. Under proposed or future pavement areas, including 10 feet outside such areas, the soil shall be compacted to a minimum of 93% maximum dry density per ASTM D 1557 (modified proctor).
  - 8.c. All landscape and lawn areas shall be compacted to 90% maximum dry density per ASTM D 1557 (modified proctor).
  - 8.d. The testing lab test soil in accordance with ASTM D 2922 (nuclear method) with protocols for each soil type.
  - 8.e. Constructed berms shall be compacted to 95% maximum dry density per ASTM D1557.
- All material to be used for fill shall be free of organics, frozen material, contaminated material, debris, and any rocks larger than 4 inches. For fill placement within 1 foot of subgrade, no rock shall be greater than 2 inches in diameter. The Contractor shall bear all cost associated with drying, segregating, or required methods to treat soils to meet compaction and other requirements.
- All fill placed within berms that detain/retain water shall be a minimum of 20 percent by weight of material placed the No. 200 sieve, and a maximum particle size of 6 inches. The limit of the berm areas shall include both the upstream and downstream slopes down to an elevation equal to the bottom of the planting soil media (including this planting soil media area). Any on-site out-crop areas could be utilized as fill material for the berm, as long as all construction requirements and specifications were met (placement, compaction, gradation, permeability, etc.). Inclusion of vegetation, organics, or frozen soil in the embankment, as well as placing of embankment material on a frozen surface is prohibited. Bedding material for all pipes and conduits within berm area shall be placed in layers not thicker than 4 inches before compaction with particle size limited to 3 inches in the greatest dimension, and compacted to required density of fill material for berm. Anti-seep collars are required for all pipes/utilities within the berm area.
- The Contractor shall take all necessary precautions to protect earthwork operations from weather and ground water including keeping positive drainage, sheet drainage, dewatering, and nesting disturbed areas with a steel drum roller prior to treatment weather.
- If imported material is required, the source and a random composite sample shall be reviewed by the testing laboratory prior to being brought to site. The testing laboratory shall test for percent passing the 200 sieve that does not exceed the existing on site material or in no case greater than 10%. They shall also verify consistency with existing on site materials and all other requirements. Waivers to these requirements can only be given jointly by Engineer of Record and the Geotechnical Engineer that prepared the soils report.
- The testing lab may restrict some on site materials from being used as fill in building or pavement area when it is their opinion that the material will not meet requirements stated here. In such conditions do exist and other material is not available on site, the owner's representative must authorize the use of import material unless there will be no additional cost to the contractor.
- Fills shall be placed in lifts not to exceed 8 inches in mass fills and 6 inches in trench or restricted areas. All subgrades shall be thoroughly profiled using a smooth drum roller with a minimum static drum weight of 20 tons, operated in static mode. A minimum of 2 overlapping passes in opposite directions shall be used. The maximum lift shall be 12 inches for the first 2 passes. Areas which are unsuitable and which cannot be stabilized with repeated compaction effort shall be overexcavated to a suitable subgrade. The undercut shall be of adequate depth such that, after backfilling is complete the resulting subgrade surface is firm and stable under proofrolling. On-site structural fill may be used to obtain proposed subgrade elevation to replace the removed unsuitable material. If imported structural fill, base, or subbase course materials are used to backfill the undercuts within the building or pavement areas, a woven geotextile shall be placed at the bottom of the undercut, one prior to placement of the fill.
- Contractor is to remove any debris or artificial organic soils (i.e. topsoil, organic subsoil, reworked soil) which may be encountered within the proposed building footprint, floor slabs, and pavement areas prior to the placement of any fill.
- All fill subgrade under proposed pavement, building, or other structure shall be proof rolled as described above for the identifying of soft areas. Areas found to be unacceptable shall be scarified, filled, and re-compact. Resist by proof roll as necessary.
- All fill material to be in place and compacted prior to installation of proposed utilities. Refer to pipe bedding details for trench dimensions. Additional work will only be allowed when approved in writing by the Engineer of Record. No more trench shall be open in one day than can be properly backfilled in that same day to minimize weather and safety concerns. When backfilling around pipes, provide uniform support to invert and proper compaction under, along, and over the pipe. Care shall be given while backfilling around pipes to prevent damage to fits including: placing backfill/bedding by hand, using hand operated plate tamps or jacking jacks, and all hand restrictive techniques until fills are a minimum of 2 feet or manufacturers recommended depth, which ever is greater, above the top of the pipe. Compaction requirements are not relaxed in these areas and will remain as stated on the drawings or above. If clean stone is used as a bedding or encasement, filter fabric shall be placed between the natural soils and backfill and the stone to prevent migration of fines. Anti-seep collars shall be provided in accordance with the drawings. The Contractor is cautioned against the migration of fines from soils adjacent to voids. Where such conditions exist, the Contractor shall install or wrap those areas with filter fabric to prevent fines from migrating into voids.
- If rock is encountered that was not indicated on the plans or soils report, the area for removal should be measured and reviewed with the owner's representative prior to rock removal. Rock will be defined as the natural earth materials that can not be removed with conventional earth working equipment.
- Where rock is adjacent to a structure or utility, the rock shall be removed to a minimum of 6 inches below and 1 times the diameter, but not less than 1 foot or greater than 3 feet on any side.
- No explosives will be allowed until all permits are granted and the Owner has signed off. Pre and post blast reports must be kept and recorded. All structures within the area of the blast must receive a pre-blast survey. All blasting must be performed by a licensed blaster.
- Unless otherwise noted on the drawings, the Contractor shall remove all excess topsoil, cut material, or waste material from site and dispose of in a legal manner.

**TRAFFIC SIGNAGE AND PAVEMENT MARKINGS**

- Pavement markings shall be the type, color, size, and locations shown on the plans. Contractor shall provide two (2) coats of paint for all pavement markings. If the information on the plans and details is not complete and the authority having jurisdiction does not have requirements regarding this, use the following:
  - 1.a. Paint shall be applied in accordance with AASHTO M 248 latest addition.
  - 1.b. Colors shall be as follows:
    - 1.a.1. YELLOW - parking stalls, parking islands, and fire lanes
    - 1.a.2. WHITE - stop bars and lettering pedestrian crossings, handicap parking symbol and characters, and traffic control lettering and characters
    - 1.a.3. BLUE - background of handicap parking symbol
- The pavement shall be clean and free of dirt, dust, moisture, oils, and other foreign materials. Any old pavement markings shall be removed unless points are compatible and overlay identically. The surface of the pavement prior to application shall be 45 degrees F and rising unless manufacturer's recommendations are greater. All painting shall be applied in appropriate weather conditions (e.g. temperature, wind, precipitation), and in accordance with manufacturer's recommendations.
- The signage and pavement markings shall be the type and of the general location shown on the drawings. The signage and pavement markings shall be provided and located in accordance with the Local Highway, County Highway, and State Department of Transportation. If local, county or state codes do not exist, use MUTCD.
- Posts, brackets, and frames shall be steel per ASTM A-36, A-242, A-441, A-572, A588, Grade 50, and hot dip galvanized in accordance with ASTM A123. All cutting, drilling, or other pole modifications shall be painted with galvanizing paint. All bolts, nuts, and washers shall be stainless steel.
- Post holes in pavement shall be a minimum of four feet deep and 12 inches in diameter unless poor soils or frost conditions require greater depth. Sign posts shall be kept plumb, 6 inches off bottom and centered as 4000 psi concrete is placed around the post. The overall sign and post system should be able to withstand 33 pounds per square foot.
- Contractor can place signs on posts after concrete has cured for seven days or 3/4 strength is achieved.
- All handicap striping and signage, including signs, crosswalk, accessible path, and curb ramps, shall meet Americans with Disabilities Act (ADA) requirements. Fine line striping and signage shall meet the requirements of the local building inspection and fire department.

**SITE CONCRETE - INCLUDING CURB, SIDEWALKS AND GUTTERS**

- The dimensions shall be those shown on the drawings. The Concrete mix shall be 4000 psi at 28 days made with type I or type II cement per ASTM C 150 and aggregates meeting State Department of Transportation requirements, unless otherwise noted. Slump for slip forming shall be 1 inch +/- 1/2 inch and for formed concrete the slump shall be 3 inch +/- 1 inch. Air entraining mixture shall meet the requirements of ASTM C 260 4% +/- 1/2% for slip form work and 6% +/- 1/2% for formed and placed concrete. Water reducing agent shall conform to ASTM C 494, type A. Curing compounds shall conform with ASTM C309, type I, class A moisture cure of not more than .055 g/sq in when applied at 200 sq ft per gallon.
- Sidewalks, gutters and curbs shall be placed on compacted subbase consistent with the pavement subbase as shown on the drawings. When subbase details are missing and no agency has jurisdiction use the following: sidewalks and gutters shall be placed on a minimum of 6 inches of compacted subbase and curbs shall be placed on a minimum of 4 inches of compacted subbase.
- All formwork, placement, materials and curing shall conform to the latest addition of ACI 308 Building code requirements for reinforced concrete and all similar State Department of Transportation requirements.
- Reinforcing shall be in accordance with that specified on the drawings and the Concrete Reinforcing Steel Institute (CRS) "Manual of standard practices". Reinforcing steel shall be ASTM A 615, grade 60, deformed. Welded wire fabric shall be ASTM A 185, welded wire steel fabric.
- Sidewalks, and gutters shall have a broom finish perpendicular to flow with a picture frame edge joint all the way around. Curbs shall have a smooth finish or light rub finish but consistent throughout the project.
- Expansion joints shall be placed as per details and at adjoining structures such as walls, manholes and vaults. Expansion joint material shall be provided, 1/2 inch material with 23/64 inch cap in accordance with ASTM D1751. After concrete has set the cap should be removed and void filled with waterproof joint filler. Curb and gutter shall be cut or tied jointed to 1/3 the depth every 10 feet. Sidewalks should have topped or cut joints to 1/3 the depth in areas or close to square as possible not exceeding 5ft. depth.

**WATER SYSTEMS AND SERVICES**

- The water systems and services shall be supplied and placed in accordance with all local, state and federal requirements. When the requirements of the authority having jurisdiction differ from those shown on this plan, Contractor shall adhere to the more stringent standards.
- Refer to Pipe Bedding Detail for pipe bedding requirements.
- All water piping, fittings and appurtenances shall be placed a minimum of 5 feet of cover in lawn and 6 feet of cover in paved areas. Pipe sizes 4 inches and up shall be ductile iron or polyvinyl chloride as indicated on the drawings (if not shown use ductile iron). Pipe sizes below 4 inches shall be copper or polyethylene as indicated on the drawings (if not shown use copper).
- The minimum separation between water services and sewer lines shall be 18 inches measured vertically from outside to outside of pipe at the crossing. A standard length of water pipe shall be centered at the crossing to maintain the distance between the crossing and the nearest water service pipe joint. The sanitary line shall be ductile iron pipe with mechanical joints at least 10 feet on both sides of crossing, the waterline shall have mechanical joints with appropriate thrust blocking as required to provide a minimum of 16" diaphragm meeting requirements of ANSI A21.10 or ANSI 21.11 (AWWA C-151) (Class 35). Contractor shall adjust elevation of water as needed to maintain adequate separation and burial depth. When the water service runs under the sewer line, a gravel or crushed stone backfill meeting the requirements of subbase shall be placed and compacted around the water pipe up half the diameter of the water pipe to provide adequate support to the sewer line. Ductile iron pipe shall be provided in accordance with AWWA C104, (6 inch diameter and greater shall be Class 50 and 6 inches and smaller shall be Class 55). Ductile iron pipe shall be lined with a cement mortar and seal coated in accordance with AWWA C104. Gaskets shall be provided in accordance with AWWA C111. Fittings shall be ductile iron in accordance with AWWA C153 compact fittings with a pressure rating of 350 psi. Water services and sewer lines running parallel shall have a minimum separation of 10 feet measured from outside of pipe to outside of pipe. At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible. Special structural support for the water and sewer pipes may be required.
- All pipes shall be installed per manufacturer's recommendations. Ten gauge copper tracer wire shall be placed with all plastic pipe. Pipe material shall be as follows:
  - 5.a. PVC (Polyvinyl Chloride) pipe shall be furnished in accordance with AWWA C900 for pipe sizes 4 inches or greater and ASTM D 1785, schedule 40, gaskets per ASTM F 477 - elastomeric seal, solvent cement per ASTM D 2564 for pipe smaller than 4 inches.
  - 5.b. PE (Polyethylene) pipe shall be furnished in accordance with AWWA C901 and ASTM D2737. Ten gauge copper tracer wire will be placed with all plastic pipes.
  - 5.c. DP (Ductile Iron pipe) shall be provided and installed in accordance with AWWA C151 and C900 (6 inches and greater shall be Class 50, smaller than 6 inches shall be Class 55). Ductile iron pipe shall be lined with a cement mortar and seal coated in accordance with AWWA C104. Gaskets shall be provided in accordance with AWWA C111. Fittings shall be ductile iron in accordance with AWWA C153 compact fittings with a pressure rating of 350 psi. Standard ductile iron or cast iron fittings shall be supplied in accordance with AWWA C110 with a pressure rating of 250 psi. The lining and gaskets for the fitting shall meet the same requirements as the pipe. If recommended in the soils report, ductile iron pipes shall be encased in polyethylene in accordance with AWWA C105 and for cast iron fittings both witness soils are primarily clay or not pH balanced.
  - 5.d. Copper water pipe shall be supplied in accordance with ASTM B 98 - type K, seamless with fittings per AWWA C800.
- Gate Valves shall be nonrising stem, double disc, bronze disc Resilient seated, cast iron or ductile iron body and bonnet in accordance with AWWA C509 and pressure rated for 250 psi. Ten gauge copper tracer wire will be placed with all pipes.
- Valve box shall be cast iron with a base compatible with valve, 5 inches in diameter, screw type extension at top and a cover that reads "WATER".
- All tap and/or connection material and work shall be done in accordance with and coordinated with the local Water Authority and Health Department. When the Authority so requires, the taps and/or connections shall be done by the Authority themselves and paid for by the Contractor.
- Thrust restraints shall be used at all fittings, flugs and appurtenances that cause a change in direction, flow or are subject to thrust or hammering by water flow. Thrust restraints will include concrete thrust blocks (3000 psi), anchoring joints and tie rods. Concrete thrust blocks shall be used unless spacers, access or maintenance restraints prohibit their use.
- Curb stops shall have a brass body, ground key lug or ball with wide lead heel. The curb stop shall be compatible with adjoining pipes. The service box shall have a telescoping top section that will allow the adjustment centered when buried to the appropriate depth. The service box shall be of a size and type that is compatible with the curb stop. The cover shall have the lettering "WATER".
- All meters, vaults and backflow shall meet the requirements of the health department and other agencies having jurisdiction.
- Fire hydrants shall conform to the requirements of the local water authority, fire department and AWWA C502. Drain stone shall have 100% passing the 1 1/2 inch sieve, 10% - 100% passing the 1/2 inch sieve and 0 - 15% passing the 3/8 inch sieve. All hydrants will include a gate valve and box located at the hydrant branch to shut off the hydrant line.
- All bedding and encasements shall be compacted with care to achieve proper compaction without damaging the pipe, fittings, or appurtenances.
- If clean stone is required by the local authority having jurisdiction and is approved by Owner and/or Engineer of Record, then the bedding material shall be wrapped in filter fabric and anti-seep collars shall be provided to prevent the migration of fines.
- All water main fittings and valves shall be tested for pressure and leakage in accordance with AWWA G200. Test water shall be potable. Test pressures shall not be less than 1.25 times the working pressure at the highest point of the waterline during the testing point. The pressure will not drop more than 5 psi during the 2 hour test. Leakage will not exceed more than (L=SDP)<sup>2</sup>/2, (3,332,000 where L = "inches leakage, in gallons per hour." S = length of pipe tested, in feet." D = nominal diameter of pipe, in inches." P = average test pressure during test, in pounds per square inch (psig) during the same 2 hour duration.
- Other fitting and appurtenances not part of the main line testing shall be tested by visual inspection for leakage under normal working pressures.
- All main lines and appropriate appurtenances shall be flushed and disinfected in accordance with AWWA G551 and the requirements of the appropriate health department.
- The Contractor will coordinate all testing and disinfecting with the water authority and health department.
- Any testing failure shall require the Contractor to repair or replace the failed section at no additional expense to the contractor.

**STORM WATER SYSTEM**

- The storm water system shall be supplied and placed in accordance with all local, state and federal requirements.
- Storm design includes many variables, such as pipe roughness coefficient, that can affect the actual final run-off. If no alternative materials are listed on the utility drawings, no substitutions may be made by the Contractor unless first reviewed and accepted by the Engineer of Record.
- Refer to Pipe Bedding Detail for pipe bedding and anti-seep collar requirements.
- Storm pipe material shall be as follows:
  - 4.a. 12 inches and up shall be corrugated polyethylene pipe (PEP) with smooth interior, in accordance with AASHTO M252 & M254 and ASTM F405 & F667, with a Manning friction number (n) of 0.013 or less. Install in accordance with ASTM F449 and the manufacturer's recommendations.
  - 4.b. Smaller than 12 inches shall be CPP, as per requirements above, or Polyvinyl Chloride (PVC) per ASTM D 3034, SR 35 with gaskets per ASTM D 3212, elastomeric seal.
- End sections shall be the same material as the preceding pipe and appropriate collar.
- Increase size of manhole if in the same horizontal plane there is two areas where the area between two pipes is less than 8 inches or 1/2 of the circumference is supported by less than 1/2 of the diameter of the manhole. Inverts shall be smooth cast in place concrete. Gaskets between risers shall be rubber per ASTM C 443. Adjustment rings shall be precast concrete 4000 psi and 5 to 8% air entrainment.
- Inlets shall meet the same requirements as those listed for manholes, except surps shall be provided as per details, rather than a smooth invert.
- Gates grates shall be galvanized per ASTM A123. Minimum grate opening size shall be 24 inches x 24 inches and design for a minimum of H-20 loading. Refer to details for additional information.
- Dry wells shall meet the same requirements as those listed for manholes with the addition of openings of approximately 15% of the rings interior surface. The openings shall be 1 x 3 inch slots at 1 inch diameter on the inside surface. Dry wells shall be backfilled with a minimum of 1 foot of clean stone and dry well between 3 and 4 inches. Outside the stone, the entire structure shall be wrapped in filter fabric to prevent outside soils from entering the stone and dry well.
- Unless otherwise noted, underdrains and trench drains shall be made with 4 inch perforated corrugated polyethylene pipe encased in clean stone sized between 2 inch and 1/2 inch and then wrapped in filter fabric. Outside dimensions of the trench drain will not be less than 1 foot.
- All storm pipe entering structures shall be graded to ensure connection of structure is watertight and structurally sound. All storm sewer pipes entering and exiting structures shall be flush with the inside of the structure wall.
- All pipe shall be placed in accordance with the manufacturer's recommendation and to the lines and grades shown on the drawings. Care shall be given during backfill operations not to move or damage pipe or appurtenances while achieving the appropriate compaction requirements.
- All systems shall be visually inspected for alignment and workmanship. All debris, dirt or other foreign objects shall be removed from system by a method of thin flushing and material removed shall be disposed of properly.
- Any pipes found with diameter deflections greater than 5% of the specified pipe diameter will be repaired or replaced. Any alignment differentials greater than 5% of the diameter of the pipe will be corrected or replaced.
- Any cleaning, repairs, or replacement required due to failure of testing or poor workmanship shall be done by the Contractor at no additional expense to the contractor.

**ASPHALT PAVEMENT**

- Asphalt shall be the type or types specified on the drawings. If no type is indicated the Contractor shall use a mix specified by the State Department of Transportation for top and binder. All asphalt shall be produced in state approved plants with state approved products.
- Asphalt will only be placed when the outside temperature is 45 degrees F and rising. Asphalt will never be placed on frozen material, during medium or heavy precipitation or when preceding precipitation has saturated the subbase on/s/ subgrade.
- Surfaces that will dust the new asphalt shall be tack coated prior placement of asphalt including curbs, gutter, existing asphalt and structures. Tack coat shall be applied evenly to match the lines and grades of the proposed dusting asphalt at a rate of .05 to .15 gallons per square yard.
- When binder is used as a working surface during construction, or there is a prolonged time period between binder and top placement, the surface must be power washed, not just swept, and a tack coat shall be applied prior to installation of top course. In addition, any jacking area of pavement binder shall be removed and replaced prior to application of the top course.
- Asphalt shall be placed in layers equal to those specified on the plans. Thickness of each layer or the thickness of all layers combined shall not vary more than 1/4 inch for thickness of 0 to 4 inches and 1/2 inch for thickness of 4 inches or greater, from those specified on the drawings. The asphalt shall also be tested for smoothness by laying a 16 inch straight edge on the pavement and verifying that there are no gaps greater than 1/4" in any direction.
- Placement and compaction requirements shall be the same as those specified by the State Department of Transportation of which the project is located. The rolling shall be done in a manner that will match joints and leave a smooth uniform surface while providing the proper compaction which will be 95% of laboratory density.
- When matching into existing pavement, all match joints shall be saw cut, to provide a straight smooth joint. The asphalt depth at the match point shall be equal to that of the proposed or existing which ever is greater.
- Paving equipment shall be of good condition and quality. Asphalt shall be placed by mechanical equipment except in small areas that are inaccessible to a paver. The binder joints and the top joints shall be offset. The top course shall be placed parallel to the direction of travel. Asphalt shall be transported in covered trucks and scheduled in such a manner that will maintain asphalt temperature. Asphalt shall be rejected when temperatures fall below 250 degrees F or the minimum temperature specified by the State Department of Transportation.
- All sub-base, asphalt, curb or other work performed in a State, County or Municipal right-of-way shall be finished, installed, inspected and completed in accordance with their specifications, details and other requirements.

**SEEDING AND LANDSCAPING**

- Topsoil shall be removed from stockpiles and spread in the areas shown on the plans. The depth of topsoil shall be a minimum of 4 inches in lawn areas and a minimum of 12 inches in landscape planting areas. If enough topsoil is not available onsite, the Contractor is required to import as necessary. All disturbed lawn areas are to receive topsoil, seed, mulching and water until a healthy stand of grass is established.
- Topsoil shall consist of fertile, natural agricultural soil substantially free of subsoil, stumps, roots, brush, stone, clay lumps, or similar objects larger than 2 inches in the greatest dimension. Topsoil for reuse shall be covered if required to meet seed and debris removal. Topsoil shall be approved by the owner at his source prior to transporting. The topsoil shall be fine graded to the lines and grades shown on the plans. The Contractor is responsible for keeping topsoil, seed, fertilizer, etc. off structures, pavements, and other site amenities, and will clean up unwanted deposits, at his expense.
- Mow all lawn to be cleared & seeded to 6" height minimum prior to beginning any new lawn work.
- Loosen and fill subgrade of lawn areas to a minimum depth of four inches. Remove stones measuring 1.5 inches in any dimension. remove sticks, sod, rubbish, and other extraneous matter. Limit preparation to areas which will be planted primarily after preparation.
- Preparation of unchanged grades: where laws are to be planted in areas that have not been altered or disturbed by excavating, grading or stripping operations, prepare soil for lawn planting as follows: till to a depth of six inches; apply soil amendments and initial fertilizers as specified. till soil to a homogeneous mixture and fine texture and complete fine grading.
- Clean all new lawn areas to be seeded of all debris, branches, stumps, brush, logs, metal, sticks, stones, etc. larger than two inches in diameter.
- Roll, rike, and/or drag lawn area to remove ridges and fill depressions to meet. Finish grades and to create a smooth, mowable lawn surface.
- Line natural diatomic limestone containing at least 85% of total carbonates, and 30% magnesium carbonates; ground so that at least 90% passes a ten mesh sieve, and at least 50% passes a 100 mesh sieve.
- The topsoil shall have a pH of 6.0 to 6.8 and an organic content of 3 to 20%. The gradation of the topsoil shall be 100% passing 2 inch sieve, 85 to 100% passing the 1 inch sieve, 65 to 100% passing the 1/4 inch sieve and 20 to 80% passing the No. 200 sieve.
- Lawn fertilizer shall be 55% nitrogen, 10% phosphorus and 10% potash where 50% of the nitrogen is derived from urea form source. Work into soil at a rate of 1000 lbs per acre before seeding.
- Lawn seed shall be "50% by weight, 85% purity, 85% germination of Pennine Perennial Ryegrass", "30% by weight, 97% purity, 85% germination of Pennine Red Fescue", "20% by weight, 85% purity, 80% germination of Common Kentucky Bluegrass" at a rate of 200 lbs per acre. Much all seed areas with approved straw at rate of 4000 lbs per acre. Maintain mulch as necessary and clean up upon satisfactory germination.
- Seed mix (Type B Unmowed - 1V,3I or steep) apply at a rate of 100 lbs. per acre using the following proportions by weight: 15% Creeping Red Fescue, 35% Ornamental Oenothera, 25% Kentucky 31 Tall Fescue, and 25% Empire Birdfoot Trefoil.
- Hydroseeding shall be applied in accordance with the following: fertilizer shall be placed at 80 pounds per acre, hydrochaul at 1,200 pounds per acre, water at 500 gallons per acre, and seed at a minimum of 200 pounds per acre. Inoculate at 4x manufacturer's rate. A non-harmful color additive which colors the hydroseed mixture green shall be added to the mixture to allow visual maturing of its application. The hydroseed mixture shall be sprayed uniformly and uniformly on the surface of the soil to form an absorbent cover, allowing penetration of water to the underlying soil.
- The Contractor will be responsible to water, reseed, or any other means necessary to ensure the growth of the lawn until a complete and uniform stand of grass has grown and been cut at least three times. Water by approved means immediately after mulching and thereafter a minimum of two times each week, or more when weather conditions require to a depth of one inch soil saturation. Mow all seeded areas to two inch height until final acceptance. In the event grass becomes too long resulting in excessive clippings that could damage the lawn, the Contractor shall remove all clippings at his expense. Lawn shall be presented to Owner in a condition that it may be maintained with standard mowing equipment.
- Where substantial lawn remains (cut it, mow, rake, aerate (if compacted), fill low spots, remove bumps, and scarify soil, fertilize, and seed. Remove weeds before seeding, if extensive. Apply selective chemical weed killers as required. Apply mulch if required to maintain moist condition.
- Plantings shall be supplied in accordance with the plans and ANSI 2601 "American Standard for Nursery Stock" in good health, vigorous, and free of insects, larvae, eggs, defects and disease.
- Plants shall be located per the plans. The holes shall be excavated per the details on the drawings with the contour slightly higher to promote drainage. Use a topsoil backfill mix of 4 parts topsoil, 1 part peat moss, 1/2 part well rotted manure, 10 pounds 5-10-5 planting fertilizer properly mixed per cubic yard. Berm around plants to form a low bowl shape.
- Two layers of weed barrier made from fiberglas and ultraviolet light resistant shall be placed under all planting beds prior to mulching.
- All trees and shrubs shall be staked as detailed on the drawings. Tree wrapping will be provided at the base of all trees as detailed.
- Mulch shall be 50% shredded bark and 50% wood chips, 3/4 to 2 inch in size, uniformly raked and free of fern wood. Mulch shall be placed uniformly over the planting bed allowing no weed barrier to be seen to a minimum depth of 3". Color to be chosen by Owner.
- All landscaping shall be guaranteed for two years after final acceptance. Any plantings requiring replacement will be guaranteed from the time of replacement if after final acceptance. Contractor shall maintain plants until completion and final acceptance of the entire project. Maintenance shall include pruning, cultivating, edging, mulching, fertilizing, weeding, watering as required for healthy growth, and application of appropriate insecticides and fungicides necessary to maintain plants free of insect and disease. Repair all weabouts, gullies, and areas of unsatisfactory germination by replacing topsoil, reseedling, and reseedling as required. Re-settled plants to proper grade and position. Restore planting square and remove dead material. Tighten and repair guide wires and defences within the first 24 hours of initial planting, and not less than twice per week until final acceptance. Contractor shall request an inspection by the Owner upon establishment of the uniformly germinated lawn. Following the final acceptance, the Owner shall be responsible for maintenance of all landscaping on the premises.
- Artificial: protective film emulsion, providing a protective film over plant surfaces, but permeable to permit transpiration. Mixed and applied in accordance with manufacturer's instructions. Apply to all broadleaf evergreen shrubs per manufacturer's recommendations.

**SANITARY SEWER SYSTEMS**

- The sanitary sewer system shall be supplied and placed in accordance with all local, state and federal requirements.
- Refer to pipe bedding detail for bedding and anti-seep collar requirements.
- Unless otherwise noted, sanitary pipe and fittings shall be Polyvinyl Chloride (PVC) per ASTM D 3034, SR 35, with gaskets per ASTM D 3212, elastomeric seal.
- Forsamain pipe shall be Polyvinyl Chloride (PVC) per ASTM D 2241, SR 21 (or lower if pressures are high in system) with gaskets per ASTM D 3133, and elastomeric seal. The pipe shall be encased in a run of crushed stone or gravel material with 100% passing the 1.0" sieve and 10% to 3% passing the 200 sieve. The mix shall be supplemented as needed to remove voids. Incorporate filter fabric around bedding or cradle stone if ground water, silt, or sands are encountered.
- All pipe shall be placed in accordance with the manufacturer's recommendation and to the lines and grades