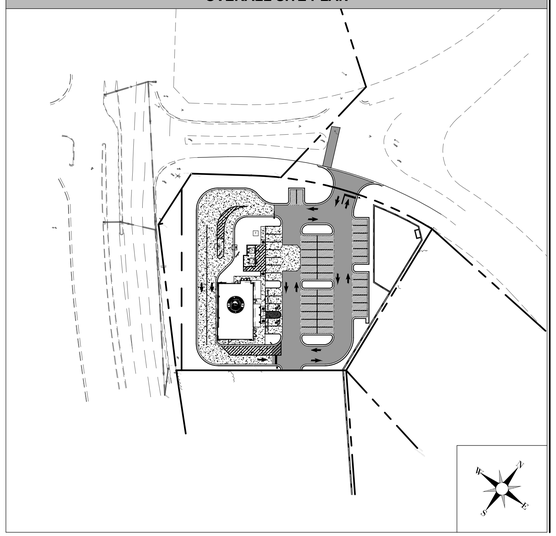
SITE DEVELOPMENT PLANS FOR:

D24956, STORE #TBD
450 KANNAPOLIS PARKWAY
CONCORD, NORTH CAROLINA 28027

OVERALL SITE PLAN



PANDA EXPRESS STANDARD NOTES

1. THESE PLANS WERE PREPARED WITHOUT THE USE OF A GEOTECH REPORT. PAVEMENT AND CONCRETE SECTIONS ARE SUBJECT TO CHANGE.
2. CONTRACTOR SHALL COORDINATE AND VERIFY LOCATION OF ALL SIGNAGE WITH OWNER PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL COORDINATE AND ADJUST LOCATION OF LOOP DETECTORS TO AVOID UTILITY CONFLICTS PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL ENSURE 100% COVERAGE OF ALL LANDSCAPED AREAS WITHIN LIMITS OF WORK, INCLUDING POTENTIAL OFFSITE AREAS. COVERAGE SHALL INCLUDE BOTH LANDSCAPING AND IRRIGATION.

PREPARED BY:

INGENIUM

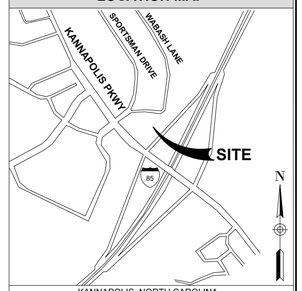
PREPARED FOR:

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE
ROSEMEAD, CA 91770
PHONE: (626) 799-9898

REGIONAL MAP

CABARRUS COUNTY, NORTH CAROLINA
N.T.S.

LOCATION MAP



KANNAPOLIS, NORTH CAROLINA
N.T.S.

PROJECT CONTACTS

SELLER/LANDLORD	DEVELOPER	CIVIL ENGINEER	LANDSCAPE ARCHITECT
NELSON PROPERTIES 450 KANNAPOLIS PARKWAY CONCORD, NC 28297	PANDA EXPRESS REAL ESTATE MR. DAN WAGUESPACK EMAIL: DAN.WAQUESPACK@PANDARG.COM PHONE: (941) 320-7208	INGENIUM ENTERPRISES, INC. MR. JEREMY PETTIT, P.E. 19445 SHUMARD OAK DRIVE, SUITE 102 LAND O LAKES, FLORIDA 34638 EMAIL: JEREMY@INGENIUMENTERPRISES.COM PHONE: (813) 387-0084	WAS DESIGN JARED ACY 1510 NORTH STATE STREET SUITE 300 JACKSON, MISSISSIPPI 39202 JACY@WAS-DESIGN.COM
ARCHITECT	**MEP**	**LAND SURVEYOR**	**SITE LIGHTING**
CUHACHI AND PERSON MR. JACHIN VEREEN 2600 MAITLAND CENTER PARKWAY SUITE 200 MAITLAND, FLORIDA 32751 PHONE: (407) 661-9100 JACHIN.VEREEN@C-P.COM	CUHACHI AND PERSON MR. JACHIN VEREEN 2600 MAITLAND CENTER PARKWAY SUITE 200 MAITLAND, FLORIDA 32751 PHONE: (407) 661-9100 JACHIN.VEREEN@C-P.COM	R.B. PHARR & ASSOCIATES, P.A. MR. KEITH MCGUINNESS 969 E. 7TH STREET, SUITE 100 CHARLOTTE, NC 28204 PHONE: (704) 376-2186	VILLA LIGHTING RYAN ZINSELMEIER 2929 CHOUTEAU AVENUE SAINT LOUIS, MISSOURI 63103 PHONE: (341) 633-0423 RYAN.ZINSELMEIER@VILLALIGHTING.COM
SIGNAGE	**MUNICIPAL SEWER AGENCY**	**MUNICIPAL WATER AGENCY**	**ELECTRIC**
CITY OF KANNAPOLIS MR. BEN BARCROFT 401 LAUREATE WAY KANNAPOLIS, NC 28081 EMAIL: BBARCROFT@KANNAPOLISNC.GOV PHONE: (704) 723-2913	CITY OF KANNAPOLIS WATER RESOURCES MR. ALEX ANDERSON 1401 BETHPAGE ROAD KANNAPOLIS, NC 28081 EMAIL: AANDERSON@KANNAPOLISNC.GOV PHONE: (704) 920-4444	CITY OF KANNAPOLIS WATER RESOURCES MR. ALEX ANDERSON 1401 BETHPAGE ROAD KANNAPOLIS, NC 28081 EMAIL: AANDERSON@KANNAPOLISNC.GOV PHONE: (704) 920-4444	DUKE ENERGY MR. MALCOLM SIMMONS EMAIL: MALCOLM.SIMMONS@DUKE-ENERGY.COM PHONE: (704) 788-4958
GAS	**TELEPHONE/CABLE**	**FIRE**	
DOMINION ENERGY MR. BRENT BEAM EMAIL: JEFFREY.BEAM@DOMINIONENERGY.COM PHONE: (704) 718-3069	SPECTRUM PHONE: (877) 574-7230	CITY OF KANNAPOLIS MR. TRACY WINECOFF – FIRE CHIEF 401 LAUREATE WAY KANNAPOLIS, NC 28081 EMAIL: TWINECOFF@KANNAPOLISNC.GOV PHONE: (704) 920-4260	

SITE INFORMATION

JURISDICTION: KANNAPOLIS, NORTH CAROLINA

ZONING: RURAL RESIDENTIAL (R1)

REQUIRED BUILDING SETBACKS:
FRONT: 10'
SIDE: NONE
SIDE: NONE
REAR: NONE

REQUIRED PARKING:
(8) PARKING SPACES REQUIRED PER 1000 SF OF BUILDING AREA
2,600SF BUILDING / (8 SPACES / 1000 SF) =
21 SPACES

PROPOSED PARKING :
9' X 18' (REGULAR) = 48
9' X 18' (HC) = 2
TOTAL = 50

DRIVE AISLE: 25'

SITE AREA CALCULATIONS:
SITE: ±1.30 AC.
PERVIOUS AREA: ±0.56 AC.
IMPERVIOUS AREA: ±0.74 AC.
DISTURBED AREA: ±1.50 AC.

FLOOD HAZARD:
NO PORTION OF THIS PROPERTY IS LOCATED IN A SPECIAL FLOOD AREA AS PER F.I.R.M. MAP NO. 11/16/2018, DATED 3710560100K.

EXISTING INFORMATION:
PROVIDED BY R.B. PHARR & ASSOCIATES, DATED 11/11/2022 (SEE SHEET C02.0).

SHEET INDEX

NO.	TITLE	ISSUE 01 - ISSUE FOR PERMIT 03/09/2023
C01.0	COVER SHEET	●
C01.1	GENERAL NOTES	●
C02.0*	ALTA/ACSM SURVEY (BY OTHERS)	●
C02.1	DEMOLITION PLAN	●
C03.0	SITE PLAN	●
C03.1	STAKING PLAN	●
C03.2	HARDSCAPE DETAILS I	●
C03.3	HARDSCAPE DETAILS II	●
C04.0	UTILITY PLAN	●
C04.1	UTILITY DETAILS I	●
C04.2	UTILITY DETAILS II	●
C04.3	UTILITY DETAILS III	●
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C05.0	GRADING AND DRAINAGE PLAN	●
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C06.0	SWPPP PLAN	●
C06.1	ESPC PLAN	●
C06.2	ESPC DETAILS I	●
C06.3	ESPC DETAILS II	●
C06.4	ESPC DETAILS III	●

SHEETS DENOTED WITH AN ASTERISK ("") ARE NOT INCLUDED IN THE DIGITAL/ELECTRONIC SEAL OF THE CIVIL ENGINEER (JEREMY PETTIT, P.E.) AND ARE INCLUDED FOR REFERENCE PURPOSES ONLY.

THESE PLANS WERE PREPARED WITHOUT THE USE OF A GEOTECH REPORT. PAVEMENT AND CONCRETE SECTIONS ARE SUBJECT TO CHANGE.

PANDA EXPRESS, INC. SHALL OWN AND MAINTAIN THE UTILITIES ON-SITE.

SITE PLAN APPROVAL DOES NOT CONSTITUTE SIGN APPROVAL

North Carolina 811 www.nc811.org

24-HOUR CONTACT:
JOE CELENTO
(912) 272-4811

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770
TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

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REVISIONS:

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

INGENIUM

INGENIUM ENTERPRISES, INC.
19445 SHUMARD OAK DR.
SUITE 102
LAND O LAKES, FL 34638
PHONE: (813) 387-0084

NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETTIT
3/9/2023

COVER SHEET

C01.0

PANDA HOME REV4

GENERAL NOTES

1. INGENIUM ENTERPRISES, INC. (IE) REGULARLY UPDATES ELECTRONIC FILES DURING THE DEVELOPMENT OF A PROJECT. AS A RESULT, THE DATA INCLUDED IN ANY CAD FILE OR DRAWING PRIOR TO ITS FINAL RELEASE DOES NOT NECESSARILY REFLECT THE COMPLETE SCOPE OR CONTENT AS DEFINED IN THE CONTRACT. THE CONTENTS IN THESE FILES MAY THEREFORE BE PRELIMINARY, INCOMPLETE WORK IN PROGRESS, AND SUBJECT TO CHANGE. FURTHERMORE, THE INFORMATION CONTAINED HEREIN IS THE EXCLUSIVE PROPERTY OF IE. THE ORIGINAL IDEAS REPRESENTED HERE BY THIS INFORMATION SHALL NOT BE USED, ALTERED, OR REPRODUCED IN ANY MANNER WITHOUT THE EXPRESSED WRITTEN CONSENT OF IE.
2. DEVIATIONS FROM THESE PLANS AND NOTES WITHOUT PRIOR CONSENT OF THE OWNER, HIS REPRESENTATIVE, OR THE ENGINEER MAY CAUSE THE WORK TO BE UNACCEPTABLE.
3. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO COVER A COMPLETE PROJECT, READY TO USE, AND ALL ITEMS NECESSARY FOR A COMPLETE AND WORKABLE JOB SHALL BE FURNISHED AND INSTALLED. THIS INCLUDES ALL STRIPING AND SIGNAGE.
4. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND WILL NOT BE LIMITED TO NORMAL WORKING HOURS. THE DUTY OF THE OWNER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE. CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL BARRICADES, WARNING SIGNS, FLASHING LIGHTS AND TRAFFIC CONTROL DEVICES DURING CONSTRUCTION. CONTRACTOR TO COMPLY WITH ALL OSHA REGULATIONS REQUIREMENTS AND SAFETY MEETING REQUIREMENTS.
5. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION, MEANS, METHODS, TECHNIQUES, OR PROCEDURES UTILIZED BY THE CONTRACTOR, NOR FOR THE SAFETY OF PUBLIC OR CONTRACTOR'S EMPLOYEES, OR FOR THE FAILURE OF THE CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL LOCAL, STATE, AND FEDERAL CERTIFICATION AND LICENSING REQUIREMENTS FOR CONSTRUCTION, INCLUDING BUT NOT LIMITED TO: LAND DISTURBANCE PERMITS, BUILDING PERMITS, DEMOLITION PERMITS, NPDES PERMITS, DEWATERING PERMITS, ETC.

GRADING & DRAINAGE NOTES

1. SEE LANDSCAPE PLAN FOR REQUIRED TREES AND GROUND COVER.
2. SLOPE OF SURFACE GRADE SHALL BE A MINIMUM OF 1.00%
3. MAXIMUM CUT OF FILL SLOPES IS 2H:1V.
4. THE CONTRACTOR SHALL PROVIDE CLEAN, SUITABLE MATERIAL FOR REQUIRED FILL. SHOULD A SUFFICIENT QUANTITY OF SUITABLE MATERIAL NOT BE AVAILABLE FROM THE REQUIRED EXCAVATION ON THE SITE.
5. ALL FILL SHOULD BE PLACED IN THIN, HORIZONTAL LOOSE LIFTS (MAXIMUM 6-INCH) AND COMPACTED TO AT LEAST 98 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698). THE UPPER 8 INCHES OF SOIL BENEATH PAVEMENTS AND SLAB-ON-GRADE SHOULD BE COMPACTED TO AT LEAST 100 PERCENT. COMPACTION MUST BE CERTIFIED BY A NORTH CAROLINA REGISTERED PROFESSIONAL SOILS ENGINEER PRIOR TO THE INSTALLATION OF PAVEMENTS, CURBS, SIDEWALKS OR FOOTINGS OF ANY TYPE.
6. DETENTION POND, DETENTION OUTLET STRUCTURES AND TEMPORARY SEDIMENT POND FEATURES ARE TO BE FULLY CONSTRUCTED AND OPERATIONAL PRIOR TO ANY OTHER CONSTRUCTION OR GRADING ON THE SITE AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
7. LENGTH OF RIP-RAP PADS AT PIPE OUTLET STRUCTURES TO BE A MINIMUM LENGTH OF (6) SIX TIMES THE DIAMETER OF THE PIPE.
8. JURISDICTIONAL LAND DISTURBANCE PERMIT MUST BE DISPLAYED ON SITE AT ALL TIMES DURING CONSTRUCTION AND IN PLAIN VIEW FROM A PUBLIC ROAD OR STREET.

GENERAL DEMOLITION NOTES

1. ALL ITEMS TO BE PROTECTED SHALL BE PROTECTED THROUGH ALL THE PHASES OF CONSTRUCTION UNTIL FINAL ACCEPTANCE BY CITY OF KANNAPOLIS/CABARRUS COUNTY IS RECEIVED.
2. CONTRACTOR TO COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS WITH ALL DEMOLITION ACTIVITIES. IF ADDITIONAL REQUIREMENTS ARE REQUIRED FOR HAZARDOUS WASTE REMOVAL INCLUDING BUT NOT LIMITED TO ASBESTOS, SEPTIC FIELDS, LEAD, PCB, TCP, OR OTHER WASTE OR CONTAMINANT, IT IS THE CONTRACTORS RESPONSIBILITY TO COMPLY WITH MANDATES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. CONTRACTORS SHALL COORDINATE WITH ALL UTILITY COMPANIES CONCERNING THE ABANDONMENT, RELOCATION AND/OR DEMOLITIC OF UTILITIES PRIOR TO CONSTRUCTION. NO WORK IS TO BE PERFORMED ON LIVE LINES UNLESS APPROVED IN WRITING BY THE UTILITY IN ALL CASES. A REPRESENTATIVE FROM THE UTILITY SHALL BE PRESENT FOR INITIAL ABANDONMENT AND/OR LIVE CUTS. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR UTILITIES AND SHALL PROTECT THEM AT ALL TIMES.
4. CONTRACTOR IS RESPONSIBLE FOR PROCUREMENT OF ALL NECESSARY PERMITS.
5. DEMOLITION SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, HAULING, PERMITTING, FEES, AND COORDINATION WITH PUBLIC AND/OR PRIVATE UTILITY REQUIRED TO REMOVE AND PROPERLY DISPOSE OF ANY ITEM NECESSARY TO PERFORM THE REQUIRED DEMOLITION AS INDICATED ON THE PLANS.
6. RELOCATION SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, HAULING, PERMITTING, FEES, AND COORDINATION WITH PUBLIC AND/OR PRIVATE UTILITY REQUIRED TO REMOVE, RELOCATE, AND INSTALL NEW ITEMS AS INDICATED ON THE PLANS.
7. ABANDONMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, PERMITTING, FEES, AND COORDINATION WITH PUBLIC AND/OR PRIVATE UTILITY REQUIRED TO ADEQUATELY ABANDON ITEMS AS INDICATED ON THE PLANS.
8. THE CONTRACTOR SHALL COORDINATE ALL TREE AND LANDSCAPE REMOVAL WITH THE LANDSCAPE PLANS. ANY DISCREPANCY BETWEEN THIS DEMOLITION PLAN AND THE LANDSCAPE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY.
9. THE CONTRACTOR IS FULLY AND COMPLETELY RESPONSIBLE FOR LOCATION, VERIFICATION, PROTECTION, STORAGE, MAINTENANCE, DEMOLITION, REMOVAL, RELOCATION OR ALTERATION OF ALL EXISTING SITE UTILITIES, SITE IMPROVEMENTS, STRUCTURES, OR CONSTRUCTION ELEMENTS AS REQUIRED TO COMPLETE THE WORK THAT ARE SHOWN ON THE PLANS AND OR THAT ARE OBSERVABLE IN THE FIELD, WHETHER CONSPICUOUSLY VISIBLE OR NOT. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH ALL EXISTING IMPROVEMENTS, UTILITIES, AND SITE CONDITIONS PRIOR TO BIDDING AND CONSTRUCTION.
10. THIS DEMOLITION PLAN IS FOR GRAPHICAL REFERENCE ONLY. ITEMS NOT DEPICTED ON THESE PLAN MAY BE REQUIRED TO BE PROTECTED, REMOVED, OR RELOCATED. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE LOCATIONS OF ALL EXISTING STRUCTURES, UTILITIES, AND APPURTENANCES WITHIN THE LIMITS OF CONSTRUCTION. DEMOLITION INCLUDES BUT IS NOT LIMITED TO THE ITEMS SHOWN ON THIS PLAN.
11. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR ANY EXISTING UNDERGROUND OR OVERHEAD UTILITIES.
12. SAWCUT DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD STAKE AND CONSULT ENGINEER TO VERIFY PRIOR TO CONSTRUCTION.
13. CONTRACTOR SHALL PROTECT ALL ITEMS OUTSIDE LIMITS OF CONSTRUCTION UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS OR SPECIFICATIONS.

GENERAL SITE NOTES

1. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING IMPROVEMENTS AND TREES AND OTHER DEBRIS WITHIN THE LIMITS OF THE WORK FROM THE SITE. ON SITE BURIAL OF TREES AND OTHER DEBRIS WILL NOT BE ALLOWED. THERE ARE NO KNOWN INERT BURY PITS ON THE SITE AND NONE WILL BE ALLOWED DURING CONSTRUCTION OF THE PROJECT.
2. ALL WORK SHALL COMPLY WITH KANNAPOLIS/CABARRUS COUNTY, STATE OF NORTH CAROLINA, AND FEDERAL CODES AND ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE UNLESS PREVIOUSLY OBTAINED BY THE OWNER.
3. ALL WORK SHALL BE PERFORMED IN A FINISHED AND WORKMANLIKE MANNER TO THE ENTIRE SATISFACTION OF THE OWNER, AND IN ACCORDANCE WITH THE BEST RECOGNIZED TRADE PRACTICES.
4. ALL MATERIALS SHALL BE NEW UNLESS USED OR SALVAGED MATERIALS ARE AUTHORIZED BY THE OWNER PRIOR TO USE.
5. ALL WORK PERFORMED ON CITY, COUNTY, AND/OR STATE OR FEDERAL RIGHT-OF-WAY SHALL BE IN STRICT CONFORMANCE WITH APPLICABLE STANDARDS AND SPECIFICATIONS OF THE APPROPRIATE GOVERNING AGENCIES.
6. BASE COURSE MATERIALS, EQUIPMENT, METHODS OF CONSTRUCTION AND WORKMANSHIP SHALL CONFORM TO "STATE OF NORTH CAROLINA" TRANSPORTATION STANDARD SPECIFICATIONS", CURRENT EDITION.
7. ALL BUILDING DIMENSIONS SHALL BE CHECKED AND COORDINATED WITH THE ARCHITECTURAL PLANS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
8. PHOTOMETRIC DESIGNED BY OTHERS. POLE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY FINAL LOCATION OF POLES WITH PHOTOMETRIC PLAN AND OWNER PRIOR TO CONSTRUCTION.
9. CONTRACTOR SHALL ENSURE 100% COVERAGE OF ALL LANDSCAPED AREAS WITHIN LIMITS OF WORK, INCLUDING POTENTIAL OFFSITE AREAS. COVERAGE SHALL INCLUDE BOTH LANDSCAPING AND IRRIGATION.

DEFINITIONS

"ISSUED FOR PERMITTING"
DRAWINGS ARE INTENDED FOR SUBMITTAL TO THE JURISDICTION(S) HAVING AUTHORITY FOR REVIEW, COMMENT, AND/OR APPROVAL. DRAWINGS ARE NOT INTENDED FOR PRICING, BID, OR CONSTRUCTION.

"NOT ISSUED FOR CONSTRUCTION"
DRAWINGS ARE INTENDED FOR SUBMITTAL TO THE JURISDICTION(S) HAVING AUTHORITY FOR REVIEW, COMMENT, AND/OR APPROVAL. DRAWINGS ARE NOT INTENDED FOR CONSTRUCTION.

"ISSUED FOR CONSTRUCTION"
DRAWINGS ARE INTENDED FOR PRICING, BID, AND/OR CONSTRUCTION.

"RIM"
1. THROAT OR GRATE ELEVATION FOR CURB INLETS.
2. TOP OF STRUCTURE FOR JUNCTION BOXES/OCS.
3. TOP OF STRUCTURE FOR SANITARY MANHOLES AND CLEANOUTS.

BUILDING AREA NOTES

1. MAINTAIN ACCESS FOR EMERGENCY VEHICLES AROUND AND TO ALL BUILDINGS UNDER CONSTRUCTION; i.e. IN TIMES OF RAIN OR MUD, ROADS SHALL BE PASSABLE TO EMERGENCY VEHICLES BY BEING PAVED OR HAVING A CRUSHED STONE BASE ETC., WITH A MINIMUM WIDTH OF 20 FEET. THE ACCESS TO BUILDINGS HAVING SPRINKLER OR STANDPIPE SYSTEMS SHALL BE TO WITHIN 40 FEET OF THE FIRE DEPARTMENT CONNECTION (NFPA 1141 3-1).
2. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING IN ALL AREAS AROUND BUILDING. INSTALL FRENCH DRAIN IN LANDSCAPED AREAS ADJACENT TO BUILDING AND CONNECT TO DRAINAGE SYSTEM.

GENERAL STAKING NOTES

1. ALL RADII ARE 3.0' UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE MEASURED TO FACE OF CURB UNLESS OTHERWISE NOTED.
3. ALL SITE LIGHTING POLE DIMENSIONS ARE TO THE CENTERLINE OF THE POLE, UNLESS OTHERWISE NOTED.
4. STAKING OF STRIPING IS TO THE CENTERLINE OF THE STRIPE, UNLESS OTHERWISE NOTED.

GENERAL UTILITY NOTES

1. SEE MEP PLANS FOR CONTINUATION OF ALL UTILITIES INTO BUILDING.
2. SANITARY LATERALS SHALL HAVE A MINIMUM FALL OF 1.00%.
3. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND THEIR LOCATIONS AND ELEVATIONS PRIOR TO STARTING CONSTRUCTION AND ALERT ENGINEER TO ANY DISCREPANCIES IMMEDIATELY.
4. THE FINAL LOCATION OF FIRE HYDRANTS, VALVES, WATER LINES, BACKFLOW PREVENTERS, ETC. SHALL BE DETERMINED DURING CONSTRUCTION. NOTIFY THE ENGINEER OF ANY CHANGES TO LOCATION OR CONFIGURATION. NFPA CODES SHALL BE ADHERED TO.
5. THE CONTRACTOR SHALL CONTACT PUBLIC UTILITIES INSPECTIONS AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY.
6. ALL WORK TO BE DONE IN STRICT ACCORDANCE WITH LOCAL GOVERNING CODES.
7. UTILITY CONDUIT MATERIAL FOR ELECTRIC, TELEPHONE, AND CABLE SHALL BE INSTALLED PER UTILITY PROVIDER SPECIFICATIONS.
8. CONTRACTOR TO BUILD CONCRETE TRANSFORMER PAD AND INSTALL SCHEDULE 80 PVC CONDUIT AND PULL STRING WITH SWEEPING BENDS.
9. CONTRACTOR SHALL COORDINATE AND VERIFY LOCATION OF ALL SIGNAGE WITH OWNER PRIOR TO CONSTRUCTION.
10. CONTRACTOR SHALL COORDINATE AND ADJUST LOCATION OF LOOP DETECTORS TO AVOID UTILITY CONFLICTS PRIOR TO CONSTRUCTION.
11. CONTRACTOR SHALL INSTALL GENERAL UTILITY CONDUITS TO PLANTERS AROUND BUILDING AND PATIO. SEE ARCHITECTURAL/MEP PLANS FOR CONTINUATION.

ABBREVIATIONS

ASPH	=	ASPHALT
BC	=	BOTTOM OF CURB
BFP	=	BACKFLOW PREVENTER
BW	=	SURFACE DIRT GRADE ELEVATION AT BOTTOM OF WALL
C&G	=	CURB AND GUTTER
C.B.	=	CHORD BEARING
CB	=	CATCH BASIN
CF	=	CUBIC FEET
CL	=	CENTERLINE
CMP	=	CORRUGATED METAL PIPE
Co	=	GENERAL CLEAN OUT
CONC.	=	CONCRETE
CW	=	COLD WATER SUPPLY
CY	=	CUBIC YARD
DOT	=	DEPARTMENT OF TRANSPORTATION
DI	=	DROP INLET
DS	=	DOWN SPOUT
DIP	=	DUCTILE IRON PIPE
E	=	EAST
EL.	=	ELEVATION
EGL	=	ENERGY GRADE LINE
EXIST.	=	EXISTING
FDC	=	FIRE DEPARTMENT CONNECTION
FES	=	FLARED END SECTION
FFE	=	FINISH FLOOR ELEVATION
FH	=	FIRE HYDRANT
GC	=	GENERAL CONTRACTOR
GSF	=	GROSS SQUARE FOOT
GT	=	GREASE TRAP
GV	=	GATE VALVE
HDPE	=	HIGH DENSITY POLYETHYLENE
HGL	=	HYDRAULIC GRADE LINE
HW	=	HOT WATER SUPPLY
IA	=	INTERNAL ANGLE
INV.	=	INVERT
IRR	=	IRRIGATION
L	=	LENGTH OF CURVE
L.C.	=	LENGTH OF CHORD
LFFE	=	LOWER FINISH FLOOR ELEVATION
LP	=	LIGHT POLE/FIXTURE
LS	=	LANDSCAPE
MH	=	MANHOLE
N	=	NORTH
PC	=	POINT OF CURVATURE
PI	=	POINT OF INTERSECTION
PIV	=	POST INDICATOR VALVE
PROP.	=	PROPOSED
PT	=	POINT OF TANGENCY
PVC	=	POLYVINYL CHLORIDE PIPE
R	=	RADIUS OF CURVE
RCP	=	REINFORCED CONCRETE PIPE
RD	=	ROOF DRAIN
R/W	=	RIGHT-OF-WAY
S	=	SOUTH
SF	=	SQUARE FEET
SSE	=	SANITARY SEWER EASEMENT
STD	=	STANDARD
SY	=	SQUARE YARD
T	=	TANGENT OF CURVE LENGTH
TC	=	TOP OF CURB
TB	=	THRUST BLOCKING
TW	=	TOP OF WALL
TYP.	=	TYPICAL
W	=	WEST
WM	=	WATER METER
W.S.	=	WATER SURFACE
W.S.E.	=	WATER SURFACE ELEVATION
YR	=	YEAR

SEE SURVEY/EXISTING CONDITIONS FOR ABBREVIATIONS SPECIFIC TO THAT SHEET

EXISTING CONDITIONS LEGEND

DESCRIPTION	SYMBOL
IRRIGATION CONTROL VALVE	ICV
IRON PIN FOUND	IPF
IRON PIN SET (1/2" RB)	IPS
OPEN TOP PIPE	OT
CRIMP TOP PIPE	CT
CONCRETE MONUMENT FOUND	CMF
NAIL AND CAP	N & C
REBAR	RB
POWER POLE	PP
TELEPHONE POLE	TP
LAND LOT	LL
LAND LOT LINE	LLL
POINT OF BEGINNING	POB
BUILDING LINE	BL
CENTER LINE	CL
PROPERTY LINE	PL
FIRE HYDRANT	FH
CATCH BASIN	CB
DROP INLET	DI
HEADWALL	HW
JUNCTION BOX	JB
DRAINAGE EASEMENT	DE
WATER METER	WM
WATER VALVE	WV
GAS VALVE	GV
MANHOLE	MH
RIGHT-OF-WAY MONUMENT FOUND	☒
GAS LINE	GAS
WATER LINE	WAT
SANITARY SEWER LINE	SAN
STORM DRAINAGE PIPE	
OVERHEAD ELECTRIC LINE	
OVERHEAD ELECTRIC/TELEPHONE/TV LINE	OH E/T/TV
OVERHEAD ELECTRIC/TELEPHONE LINE	OH E/T

PROPOSED LEGEND

GENERAL	LINETYPE/SYMBOL
RIGHT-OF-WAY / PROPERTY LINE	
CENTERLINE	
LIMITS OF CONSTRUCTION	LOC
LIMITS OF GRADING / DISTURBANCE	LOD
DETAIL REFERENCE	6 / B
ADDENDUM AND/OR REVISION REFERENCE	1 / B

SITE / HARDSCAPE	LINETYPE/SYMBOL
CHAIN LINK FENCE	
RETAINING WALL	
SCREEN WALL / DUMPSTER ENCLOSURE	
CURB & GUTTER	
HEADER CURB	
CONCRETE SIDEWALK	

UTILITIES	LINETYPE/SYMBOL
DOMESTIC WATER LINE	DW
FIRE WATER LINE	FW
BUILDING FIRE SPRINKLER LINE	FWS
IRRIGATION WATER LINE	IRR
DOMESTIC WATER METER (WM)	WM
IRRIGATION METER (IRR)	IRR
BACKFLOW PREVENTER (RPZ)	RPZ
DC BACKFLOW PREVENTER	
FIRE VAULT (DDC)	DDC
WATER TAP OR TEE	
GATE VALVE (GV)	GV
THRUST BLOCK (TB)	TB
FIRE HYDRANT (FH)	FH
FIRE DEPARTMENT CONNECTION (FDC)	FDC
SANITARY SEWER (SS)	SS
GREASE TRAP VENT LINE (GTV)	GTV
SANITARY MANHOLE (SSMH)	S
GENERAL CLEAN OUT (Co)	Co
SANITARY STRUCTURE NUMBER	S2
UNDERGROUND ELECTRIC LINE-PRIMARY	UGE-P
UNDERGROUND ELECTRIC LINE-SECONDARY	UGE-S
POST INDICATOR VALVE	PIV
SITE LIGHTING POLE	
TRANSFORMER PAD	T
METER/CT PEDESTAL	CT
UNDERGROUND TELEPHONE LINE	UGT
GENERAL UTILITY CONDUIT	GU
GAS LINE	G
GAS METERS	

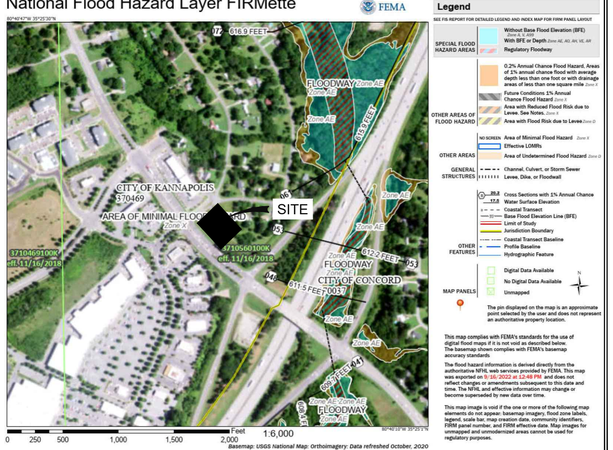
** ALL UTILITIES SHALL BE INSTALLED ACCORDING TO UTILITY PROVIDERS AND JURISDICTION STANDARDS AND SPECIFICATIONS.

GRADING / DRAINAGE	LINETYPE/SYMBOL
GRADE	1000
SPOT ELEVATION	1000.00
STORM DRAIN	
HEADWALL (HW) / FLARED END SECTION (FES)	
DROP INLET (GRATE)	
DROP INLET (GRATE AND HOOD)	
JUNCTION BOX (JB) / OCS	
CATCH BASIN (SINGLE WING)	
CATCH BASIN (DOUBLE WING)	
PEDESTAL TOP	
STORM STRUCTURE NUMBER	A3

ESPC / BMP	LINETYPE/SYMBOL
CONSTRUCTION EXIT (CO)	
SILT FENCE (SF)	
SILT FENCE (SF)	
INLET PROTECTION (IP)	
OUTLET PROTECTION (OP)	
DUST CONTROL	DC
TEMPORARY SEEDING	TS
PERMANENT SEEDING	PS
CONSTRUCTION ROAD STABILIZATION	CRS
CONCRETE WASHOUT	CWO
SLOPE STABILIZATION	
HAY BALES	
TREE PROTECTION	TPP

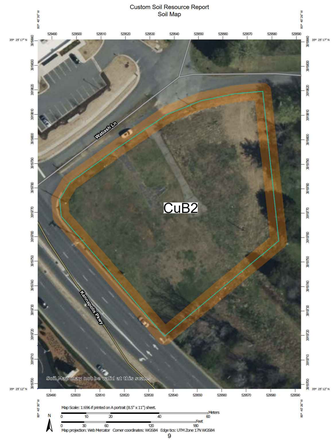
SEE LANDSCAPE/TREE PROTECTION PLANS FOR LEGEND SPECIFIC TO THOSE SHEETS

FLOOD INSURANCE RATE MAP FIRMETTE



FEMA FLOOD INSURANCE RATE MAP 11/16/2018, DATED 3710560100K
N.T.S.

SOILS MAP



CuB2; CULLEN CLAY LOAM, 2 TO 8 PERCENT SLOPES, MODERATELY ERODED
N.T.S.

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770
TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

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REVISIONS:

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PLAN CHECK	03-08-23
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CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

INGENIUM ENTERPRISES, INC.
19445 SHUMARD OAK DR.
SUITE 102
LAND O LAKES, FL 34638
PHONE: (813) 387-0084
NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETTIT
3/3/2023

GENERAL NOTES

C01.1

PANDA HOME REV4

LEGEND:

BFP - BACK FLOW PREVENTOR
C&G - CURB & GUTTER
CB - CATCH BASIN
CMP - CORRUGATED METAL PIPE
CP - CALCULATED POINT
CPP - CORRUGATED PLASTIC PIPE
C/O - CLEAN OUT
D.B. - DEED BOOK
DI - DROP INLET
DIP - DUCTILE IRON PIPE
ECM - EXISTING CONCRETE MONUMENT
EIP - EXISTING IRON PIPE
EIR - EXISTING IRON ROD
EMM - EXISTING METAL MONUMENT
EN - EXISTING NAIL
EU - END UNKNOWN
FFE - FINISHED FLOOR ELEVATION
FH - FIRE HYDRANT
GDP - GUARD POST
GLT - GROUND LIGHT
GM - GAS METER
GP - GATE POST
GV - GAS VALVE
GW - GUY WIRE
HVAC - HEATING, VENTILATION, AIR COND.
ICV - IRRIGATION CONTROL VALVE
JBX - JUNCTION BOX
LP - LIGHT POLE
(M) - MEASURED
MBX - MAILBOX
M.B. - MAP BOOK
N.G.S. - NATIONAL GEODETIC SURVEY
NIR - NEW IRON ROD
NN - NEW NAIL
O/HANG - OVERHANG
PB - POWER BOX
PIN - PARCEL IDENTIFICATION NUMBER
PM - POWER METER
PP - POWER POLE
PG. - PAGE
PVC - PLASTIC PIPE
(R) - RECORDED
R/W - RIGHT-OF-WAY
RCP - REINFORCED CONCRETE PIPE
RW - RETAINING WALL
SDMH - STORM DRAIN MANHOLE
SSMH - SANITARY SEWER MANHOLE
(T) - TOTAL
TB - TELEPHONE BOX
TBM - TEMPORARY BENCHMARK
TERR. - TERRACOTTA PIPE
WB - WATER BOX
WM - WATER METER
WV - WATER VALVE

LINE LEGEND:

EASEMENT
FENCE — X —
GUARD RAIL — o —
PROPERTY LINE
PROPERTY LINE (NOT SURVEYED)
RIGHT-OF-WAY
RIGHT-OF-WAY (NOT SURVEYED)
SETBACK
CABLE TV LINE — C —
FIBER OPTIC LINE — FO —
GAS LINE — G —
POWER LINE — E —
POWER LINE (UNDERGROUND) — UE —
SANITARY SEWER PIPE — SS —
STORM DRAIN PIPE — SD —
STORM DRAIN PIPE >12"
TELEPHONE LINE — T —
TELEPHONE LINE (UNDERGROUND) — UT —
WATER LINE — W —
WOOD FENCE

TREE LEGEND:

BCH - BEECH
BRC - BIRCH
BRAD - BRADFORD PEAR
CED - CEDAR
CHY - CHERRY
CRP - CREPE MYRTLE
DGW - DOGWOOD
HIC - HICKORY
HOL - HOLLY
LOC - LOCUST
MAG - MAGNOLIA
MAP - MAPLE
PEC - PECAN
PIN - PINE
POP - POPLAR
SYC - SYCAMORE
WLN - WALNUT
WLC - WILD CHERRY

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

POSSIBLE ENCROACHMENTS:

NO OBSERVABLE ENCROACHMENTS AT THE TIME OF THIS SURVEY.

PARKING:

NO MARKED PARKING SPACES ON SUBJECT PROPERTY.

MAP REFERENCES:

M.B. 19, PG. 1 - (R1)
D.B. 2082, PG. 221 - (R2)
D.B. 6658, PG. 330 - (R3)

ZONING:

ZONING RESTRICTIONS AS PER ZONING ORDINANCE:
SUBJECT PROPERTY ZONED: R1 Residential 1 District

MINIMUM SETBACK:	*45'*
MINIMUM SIDE YARD:	*20'*
MINIMUM REAR YARD:	*30'*
MAXIMUM BUILDING HEIGHT:	*35'*

FOR FURTHER INFORMATION CONTACT THE CITY OF KANNAPOLIS PLANNING DEPARTMENT AT 704-920-4350.

NOTE: SURVEYOR WAS NOT PROVIDED WITH ZONING INFORMATION BY THE CLIENT PURSUANT TO ALTA/NSPS TABLE A ITEM 6.

UTILITIES:

POWER
DUKE ENERGY
(704) 788-4958

WATER & SEWER
CITY OF KANNAPOLIS
(704) 920-4444 WATER
(704) 920-4444 SEWER

GAS
DOMINION ENERGY
(704) 718-3069

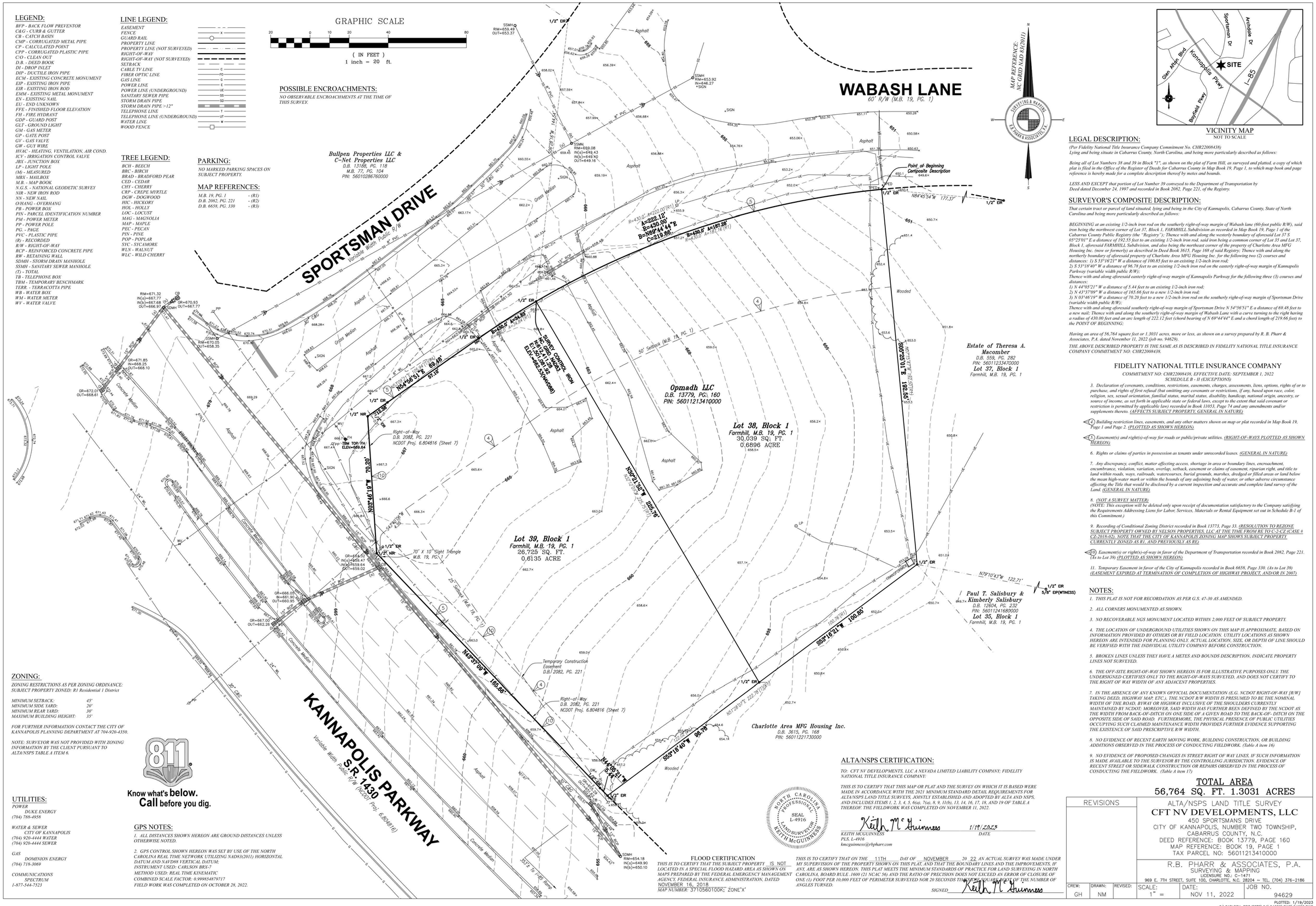
COMMUNICATIONS
SPECTRUM
1-877-544-7523

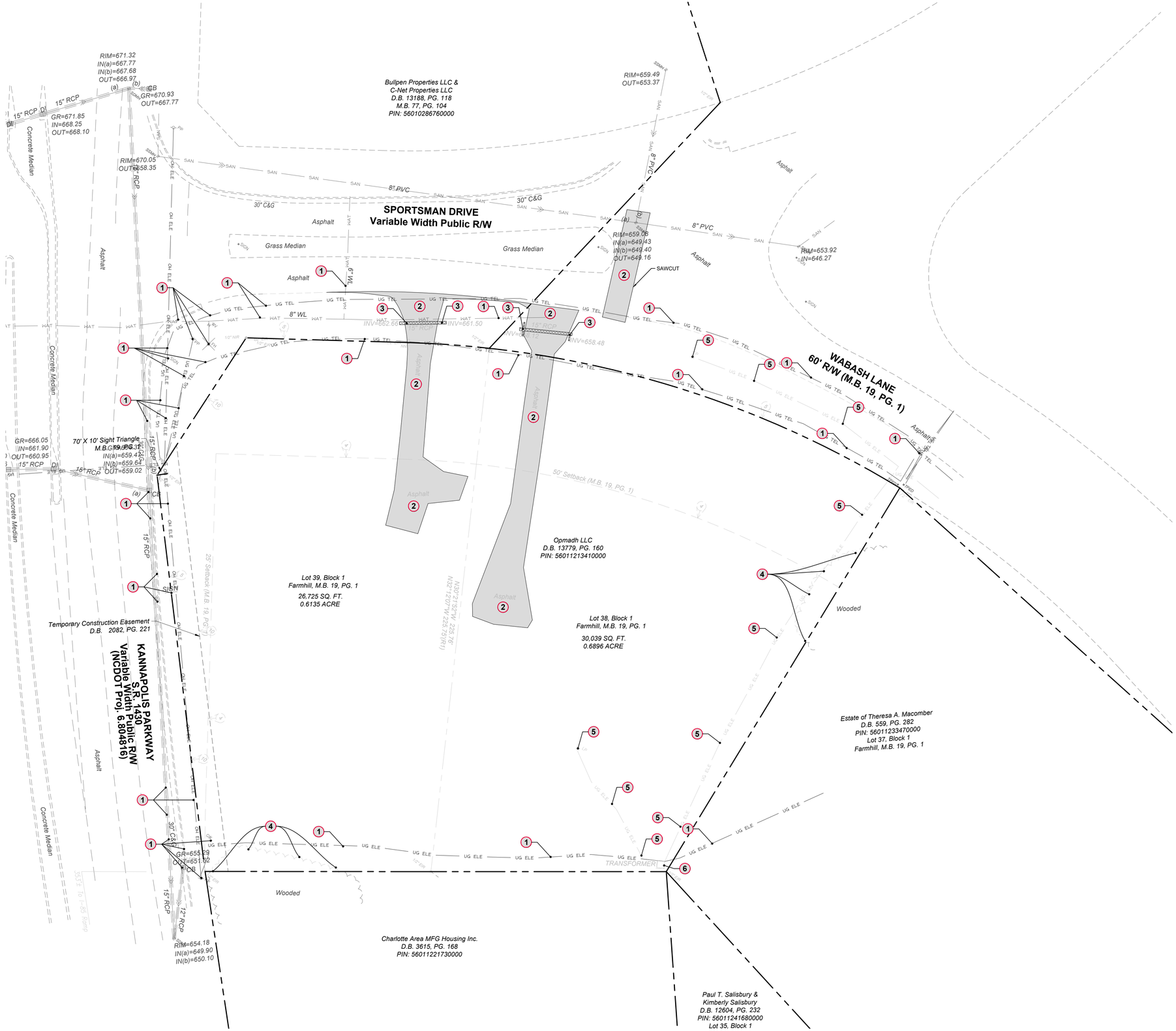
Know what's **below.**
Call before you dig.

GPS NOTES:

1. ALL DISTANCES SHOWN HEREON ARE GROUND DISTANCES UNLESS OTHERWISE NOTED.

2. GPS CONTROL SHOWN HEREON WAS SET BY USE OF THE NORTH CAROLINA REAL TIME NETWORK UTILIZING NAD83(2011) HORIZONTAL DATUM AND NAVD88 VERTICAL DATUM;
INSTRUMENT USED: CARLSON BRX7
METHOD USED: REAL TIME KINEMATIC
COMBINED SCALE FACTOR: 0.999854879717
FIELD WORK WAS COMPLETED ON OCTOBER 28, 2022.


SPORTSMAN DRIVE
Variable Width Public R/W
WABASH LANE
60' R/W (M.B. 19, PG. 1)
KANNAPOLIS PARKWAY
S.R. 1430
Variable Width Public R/W (NCDOT Proj. 6.804816)
MAP REFERENCE:
NC GRID NAD 83(2011)
N
S
E
W
SURVEYING & MAPPING
R.B. PHARR & ASSOCIATES, P.A.
VICINITY MAP
NOT TO SCALE
Sportsmen Dr
Archdale Dr
Glen Afton Blvd
Kannapolis Pkwy
SITE
I-85
Bonfield Pkwy
Point of Beginning
Composite Description
649.6
1/2" ER
N84°45'54"W 177.37'
Bullpen Properties LLC &
C-Net Properties LLC
D.B. 13188, PG. 118
M.B. 77, PG. 104
PIN: 56010286760000
Estate of Theresa A. Macomber
D.B. 559, PG. 282
PIN: 56011233470000
Lot 37, Block 1
Farmhill, M.B. 19, PG. 1
Opmadh LLC
D.B. 13779, PG. 160
PIN: 56011213410000
Lot 38, Block 1
Farmhill, M.B. 19, PG. 1
30,039 SQ. FT.
0.6896 ACRE
Lot 39, Block 1
Farmhill, M.B. 19, PG. 1
26,725 SQ. FT.
0.6135 ACRE
Paul T. Salisbury &
Kimberly Salisbury
D.B. 12604, PG. 232
PIN: 56011241680000
Lot 35, Block 1
Farmhill, M.B. 19, PG. 1
Charlotte Area MFG Housing Inc.
D.B. 3615, PG. 168
PIN: 56011221730000
Right-of-Way
D.B. 2082, PG. 221
NCDOT Proj. 6.804816 (Sheet 7)
Temporary Construction Easement
D.B. 2082, PG. 221
SURVEY CONTROL IRON
NCGS GRID (NAD83)
N:576,421.08 m
E:1,462,081.29 m
ELEV=662.52(NAVD88)
TBM TOP/FH
ELEV=669.64
70' X 10' Sight Triangle
M.B. 19, PG. 1
25' Setback (M.B. 19, PG. 1)
50' Setback (M.B. 19, PG. 1)
Grass Median
Concrete Median
Asphalt
Wooded
S54°56'51"E 69.48'
S55°16'21"W 100.85'
S55°18'40"W 98.76'
N44°59'21"W 8.98'
N49°37'09"W 185.66'
N30°21'59"W 225.76'
N54°56'51"W 87.10'
N35°19'53"W 70.20'
S05°55'10"E 182.55'
N79°10'43"W 122.71'
N51°28'02"E 222.39'(R1)
1/2" ER
1/2" NR
1/2" EIR
3/8" EIP(WITNESS)
SSMH RIM=659.49 OUT=653.37
SSMH RIM=653.92 IN=646.27 +SIGN
SSMH RIM=659.08 IN(o)=649.43 IN(i)=649.90 OUT=649.16
SSMH RIM=670.05 OUT=658.35
SDMH RIM=654.18 IN(o)=649.90 IN(i)=650.10
CB RIM=671.32 IN(o)=667.77 IN(i)=667.68 OUT=666.97
DR=670.93 OUT=667.77
DR=671.85 IN=658.25 OUT=668.10
DR=672.01 OUT=668.61
GR=666.52 IN(o)=659.47 IN(i)=659.64 OUT=659.02
GR=666.05 IN=661.90 OUT=660.95
GR=667.00 OUT=662.25
GR=654.47 OUT=654.17
GR=654.47 OUT=654.17
GR=654.47 OUT=654.17



DEMOLITION LEGEND

1. PROTECT ALL ITEMS DURING ALL PHASES OF CONSTRUCTION (SEE GENERAL DEMOLITION NOTE #1). THE CONTRACTOR SHALL ENSURE THE INTEGRITY OF ALL ITEMS DENOTED TO BE PROTECTED THAT ARE ADJACENT TO ITEMS DENOTED TO BE DEMOLISHED AND WILL SAFELY REPAIR ANY SUCH ITEMS TO THE REQUIRED JURISDICTIONAL STANDARDS. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR EXISTING OVERHEAD ELECTRICAL LINES.
2. REMOVE EXISTING ASPHALT AND ALL ASSOCIATED APPURTENANCES INCLUDING, BUT NOT LIMITED TO, REINFORCEMENT AND STONE BASE.
3. CONTRACTOR SHALL REMOVE STORM PIPE AND THE EXISTING STRUCTURE/HEADWALL INCLUDING, BUT NOT LIMITED TO, REINFORCEMENT AND FOOTINGS.
4. CONTRACTOR SHALL REMOVE EXISTING LANDSCAPING AS NOTED, ITEMS INCLUDE, BUT NOT LIMITED TO, ANY SHRUBS OR TREES, TRUNK, STUMP, BASE, AND ROOT STRUCTURE.
5. CONTRACTOR SHALL REMOVE EXISTING SITE LIGHTING AND ALL ASSOCIATED APPURTENANCES INCLUDING, BUT NOT LIMITED TO, REINFORCEMENT AND CONCRETE BASE. CONTRACTOR SHALL COORDINATE WITH THE UTILITY PROVIDER TO DISCONNECT ELECTRICAL SERVICE FROM THE EXISTING LIGHT POLES.
6. CONTRACTOR SHALL RELOCATE THE EXISTING TRANSFORMER AS SHOWN ON SHEET C04.0.

GENERAL NOTES SEE SHEET C01.1

24-HOUR CONTACT:
JOE CELENTO
(912) 272-4811

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770
TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

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BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

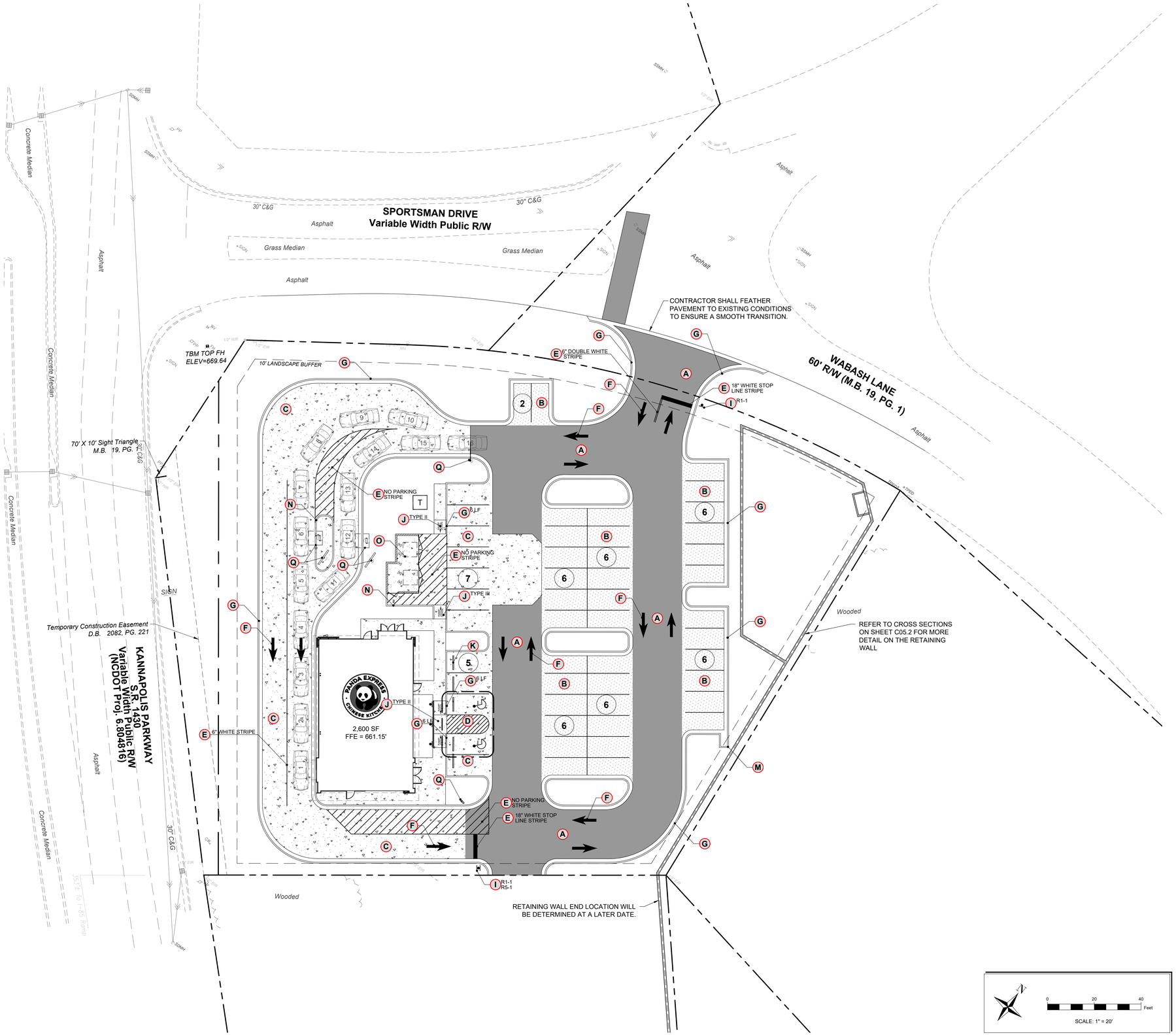
INGENIUM ENTERPRISES, INC.
19445 SHUMARD OAK DR.
SUITE 102
LAND O LAKES, FL 34638
PHONE: (813) 387-0084
NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETTIT
3/8/23

DEMOLITION PLAN

C02.1

PANDA HOME REV4



SITE LEGEND

- (A) HEAVY DUTY ASPHALT PAVEMENT SECTION: DETAIL 3, SHEET C03.2
- (B) LIGHT DUTY ASPHALT PAVEMENT SECTION: DETAIL 3, SHEET C03.2
- (C) CONCRETE SECTIONS: PARKING: DETAIL 1, SHEET C03.2; DRIVE-THRU LANE: DETAIL 1, SHEET C03.2; DUMPSTER ENCLOSURE: DETAIL 1, SHEET C03.2; SIDEWALKS: DETAIL 2, SHEET C03.2
- (D) ACCESSIBLE AREA & PAVEMENT MARKINGS: DETAIL 4, SHEET C03.3
- (E) STRIPING & PAVEMENT MARKINGS: DETAIL 3, SHEET C03.3
- (F) DIRECTIONAL ARROWS: DETAIL 6, SHEET C03.3
- (G) 24" CURB & GUTTER (TYP.): DETAIL 1, SHEET C03.3
- (H) CURB TRANSITIONS: DETAIL 2, SHEET C03.3
- (I) SITE SIGNAGE: DETAIL 4, SHEET C03.3
- (J) SIDEWALK RAMP: DETAIL 5, SHEET C03.3
- (K) WHEELSTOP DETAIL: DETAIL 7, SHEET C03.3
- (L) TRANSFORMER PAD: DETAIL 8, SHEET C03.3
- (M) CONCRETE FLUME: DETAIL 9, SHEET C03.3
- (N) UPRIGHT CURB: DETAIL 10, SHEET C03.3
- (O) DUMPSTER ENCLOSURE: SEE ARCHITECTURAL PLANS.
- (P) MONUMENT SIGN: SEE SIGNAGE PLANS.
- (Q) DRIVE-THRU ORDERING ELEMENTS: SEE ARCHITECTURAL PLANS.

SITE INFORMATION

JURISDICTION: CONCORD, NORTH CAROLINA
CABARRUS COUNTY

ZONING: RURAL RESIDENTIAL (R1)

REQUIRED BUILDING SETBACKS:
FRONT: 10'
SIDE: NONE'
SIDE: NONE'
REAR: NONE'

REQUIRED PARKING:
(8) PARKING SPACES REQUIRED PER 1000 SF OF BUILDING AREA
2,600SF BUILDING / (8 SPACES / 1000 SF) = 21 SPACES

PROPOSED PARKING:

9' X 18' (REGULAR)	= 48
9' X 18' (HC)	= 2
TOTAL	= 50

DRIVE AISLE: 25'

SITE AREA CALCULATIONS:
SITE: ±1.30 AC.
PERVIOUS AREA: ±0.56 AC.
IMPERVIOUS AREA: ±0.74 AC.
DISTURBED AREA: ±1.50 AC.

FLOOD HAZARD:
NO PORTION OF THIS PROPERTY IS LOCATED IN A SPECIAL FLOOD AREA AS PER F.I.R.M. MAP NO. 11/16/2018, DATED 3710560100K.

EXISTING INFORMATION:
PROVIDED BY R.B. PHARR & ASSOCIATES, DATED 11/11/2022 (SEE SHEET C02.0).

SITE & BUILDING AREA NOTES
SEE SHEET C01.1

North Carolina 811
www.nc811.org

24-HOUR CONTACT:
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(912) 272-4811

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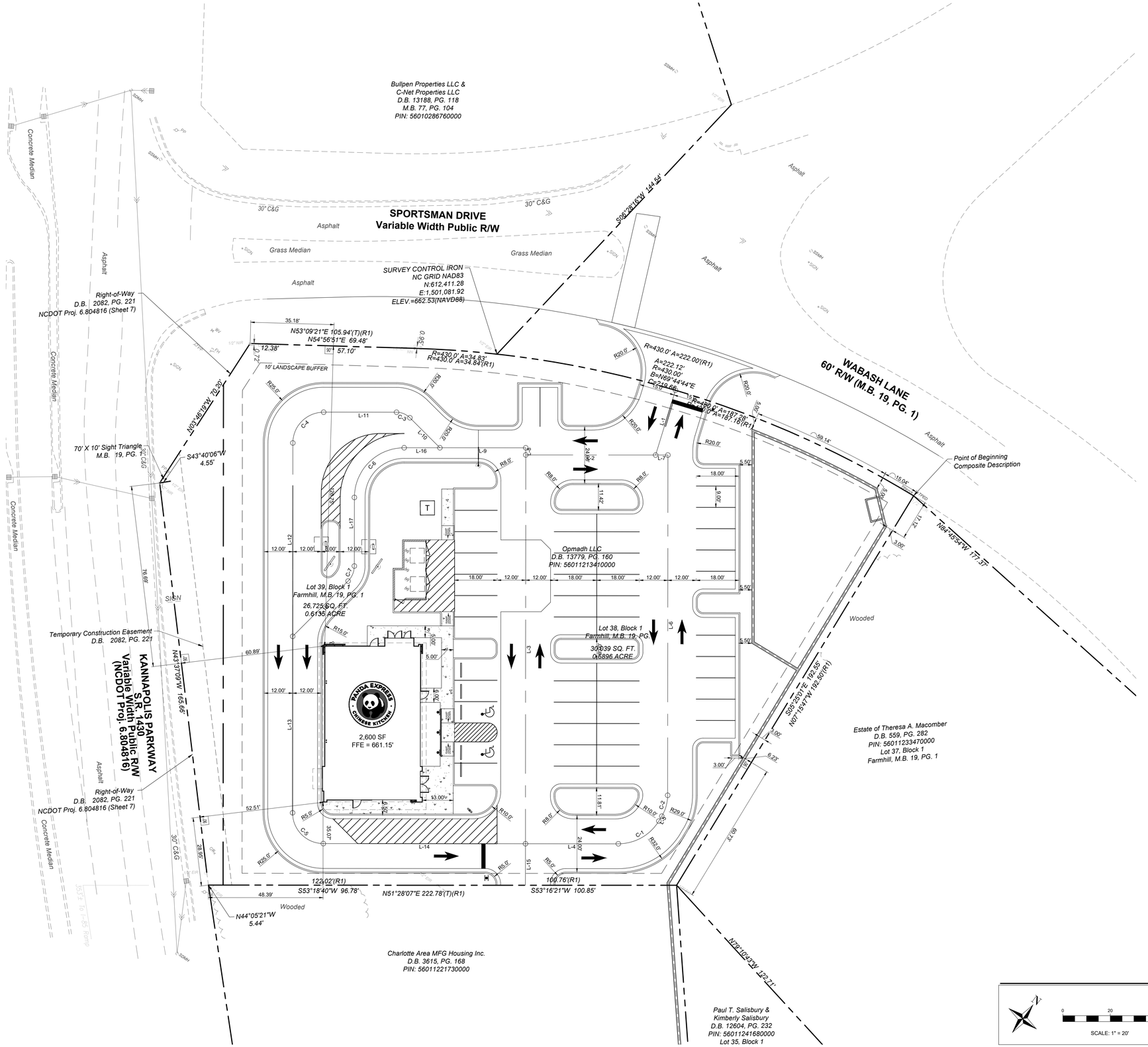
NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETITT
3/3/23

SITE PLAN

C03.0

PANDA HOME REV4



LINE TABLE				
LINE #	LENGTH	DIRECTION	START POINT	END POINT
L-1	28.63'	S19°43'47"E	1501151.42, 612444.13	1501161.08, 612417.19
L-2	54.82'	N53°18'40"E	1501117.12, 612384.43	1501161.08, 612417.19
L-3	164.23'	N36°41'20"W	1501215.24, 612252.73	1501117.12, 612384.43
L-4	39.19'	N53°18'40"E	1501215.24, 612252.73	1501246.67, 612276.15
L-5	2.41'	N05°25'01"W	1501254.63, 612294.07	1501254.40, 612296.47
L-6	143.73'	N36°41'20"W	1501251.11, 612305.02	1501165.23, 612420.28
L-7	5.18'	N53°18'40"E	1501161.08, 612417.19	1501165.23, 612420.28
L-8	3.00'	N36°41'20"W	1501117.12, 612384.43	1501115.33, 612386.84
L-9	36.25'	N53°18'40"E	1501086.26, 612365.18	1501115.33, 612386.84
L-10	17.90'	S81°41'20"E	1501068.55, 612367.77	1501086.26, 612365.18
L-11	30.77'	N53°18'40"E	1501037.94, 612347.88	1501062.61, 612366.27
L-12	81.70'	S36°41'20"E	1501035.28, 612329.69	1501084.09, 612264.17
L-13	74.53'	S36°41'20"E	1501084.09, 612264.17	1501128.62, 612204.41
L-14	85.33'	N53°18'40"E	1501146.81, 612201.75	1501215.24, 612252.73
L-15	17.54'	N36°41'20"W	1501225.72, 612238.67	1501215.24, 612252.73
L-16	15.08'	N53°18'40"E	1501074.16, 612356.17	1501086.26, 612365.18
L-17	28.97'	S36°41'20"E	1501069.87, 612326.78	1501087.18, 612303.55
L-18	33.04'	N08°18'40"E	1501084.09, 612264.17	1501088.87, 612296.87

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD LENGTH	CHORD BEARING
C-1	20.50'	20.00'	58.7282	19.61'	N23°56'50"E
C-2	9.28'	17.00'	31.2718	9.16'	N21°03'10"W
C-3	6.28'	8.00'	45.0000	6.12'	S75°48'40"W
C-4	20.42'	13.00'	90.0000	18.38'	S8°18'40"W
C-5	20.42'	13.00'	90.0000	18.38'	S81°41'20"E
C-6	32.99'	21.00'	90.0000	29.70'	S8°18'40"W
C-7	7.07'	9.00'	45.0000	6.89'	N14°11'20"W

SITE STAKING NOTES SEE SHEET C01.1

North Carolina 811
www.nc811.org

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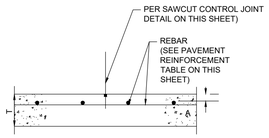
PHONE: (813) 387-0084
NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETIT
3/9/2023

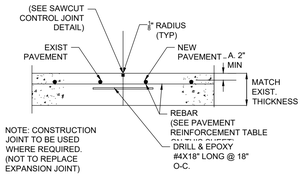
STAKING PLAN

C03.1

PANDA HOME REV4



SAWCUT JOINT
N.T.S.



CONCRETE TO CONCRETE TIE IN
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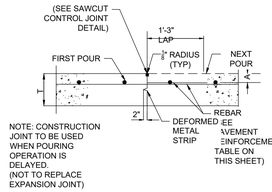

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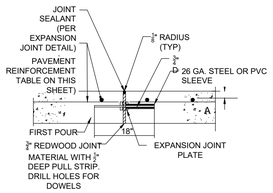

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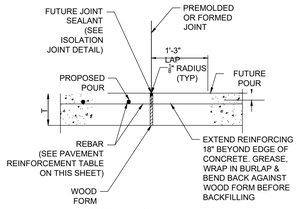

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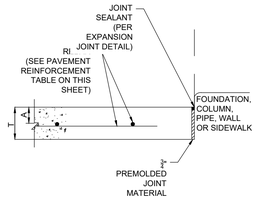

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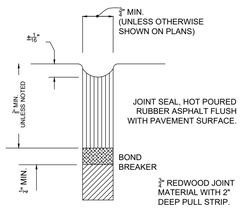

EXPANSION JOINT
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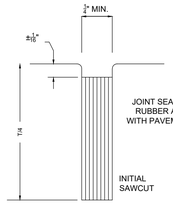


SAW CUT CONTROL JOINT
N.T.S.

NOTES:

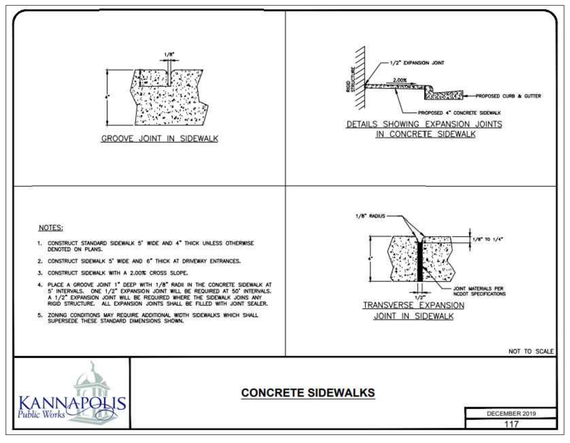
1. REINFORCING STEEL BAR SIZE/SPACING SPECIFICATIONS IN GEOTECH REPORT SHALL SUPERSEDE ABOVE TABLE.
2. REINFORCING STEEL SIZE/SPACING IS BASED ON MIN. 60,000 PSI TENSILE STRENGTH REINFORCING STEEL AS SHOWN.
3. CONCRETE PAVING MIX DESIGN SHALL HAVE MINIMUM 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. GEOTECHNICAL REPORT CONCRETE PAVING MIX DESIGN SHALL SUPERSEDE VALUES HEREIN.
4. MAXIMUM JOINT SPACING SHALL BE PER JOINT LAYOUT PLAN (IF PROVIDED) BUT SHALL NOT EXCEED VALUES IN TABLE.
5. MAXIMUM JOINT SPACING IN GEOTECHNICAL REPORT SHALL SUPERSEDE VALUES IN ABOVE TABLE.
6. USE STATE DOT SUBBASE UNLESS OTHERWISE SPECIFIED BY GEOTECHNICAL REPORT.
7. ALL JOINTS IN PAVING SHALL BE REFLECTED IN CURBING AND SHALL HAVE ALL THEIR RESPECTIVE JOINTING MATERIALS PRESENT (I.E. EXPANSION JOINTS SHALL HAVE THEIR RESPECTIVE FILLER BOARD AND CAULK REPLACED).
8. CURB EXPANSION JOINTS: - IF THERE IS AN EXPANSION JOINT IN THE PAVING, THE EXPANSION JOINT MUST FOLLOW THROUGH THE CURB. THE REINFORCING STEEL MUST ALSO BE CUT AT THE EXPANSION JOINT AND NOT ALLOWED TO RUN THROUGH THE JOINT CONTINUOUSLY. A SAW CUT EXPANSION JOINT IS NOT ACCEPTABLE BECAUSE NORMAL EXPANSION AND CONTRACTION WILL CAUSED THE CONCRETE TO PUSH AGAINST THE TWO SECTIONS AND ONE SIDE WILL EVENTUALLY FAIL. IF AN EXPANSION JOINT IS LEFT OUT AND MUST BE SAW CUT IN, THE CURB SHOULD BE CUT TWICE AND A ¾" PIECE OF CONCRETE IS REMOVED. IN ALL CASES THE JOINT SHOULD BE CAULKED WITH NP1.
9. CONCRETE TOUCHING THE BACK OF CURBS:- ANY CONCRETE THAT TOUCHES THE BACK OF A CURB INCLUDING SIDEWALKS, ISLAND NOSINGS AND PAYPHONE PADS SHALL BE ISOLATED FROM THE CURB USING ½" BLACK ASPHALT IMPREGNATED FIBERBOARD. CONTRACTOR SHALL USE A REMOVABLE STRIP OR A ZIP-STRIP AND SEAL THE JOINT WITH SLT. THE ONLY EXCEPTION IS IF THE ISLAND NOSINGS ARE POURED MONOLITHICALLY WITH THE CURB AND PARKING LOT.
10. CURBS AT THE BUILDING FOUNDATION:- IF A CURB TOUCHES THE BUILDING FOUNDATION, IT NEEDS TO BE ISOLATED WITH EXPANSION JOINT MATERIAL JUST LIKE THE PAVING. IF AN EXPANSION JOINT IS LEFT OUT AND MUST BE SAW CUT IN, A ½" PIECE OF CONCRETE SHOULD BE REMOVED. THE JOINT SHOULD BE CAULKED WITH NP1.
11. EXPANSION JOINTS AT ISLAND NOSINGS:- IF THE ISLAND NOSINGS ARE POURED MONOLITHICALLY WITH THE CUB AND PARKING LOT, THEN PAVING EXPANSION JOINTS SHOULD CONTINUE THROUGH THE NOSINGS.

REINFORCEMENT TABLE

CONCRETE SECTION DESIGNATION	(T) SLAB THICKNESS (IN.)	(COVER) COVER (IN.) (2" MIN)	MAX. EXPANSION JOINT SPACING (FT.)	60,000 PSI STEEL REINFORCING STEEL BAR SIZE & SPACING*
TYPE "A"	5	2	10' X 10'	#3 @ 24" C-C
TYPE "B"	6	2	14' X 14'	#3 @ 24" C-C

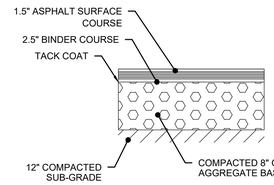
THESE PLANS WERE PREPARED WITHOUT THE USE OF A GEOTECH REPORT. PAVEMENT SECTIONS ARE SUBJECT TO CHANGE

1 CONCRETE SECTIONS
NTS

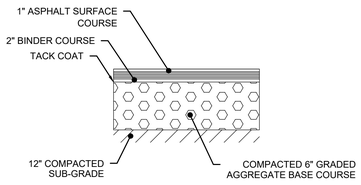


2 CONCRETE SIDEWALK
1" = 10'

HEAVY DUTY ASPHALT



LIGHT DUTY ASPHALT



3 PAVEMENT SECTION
NTS

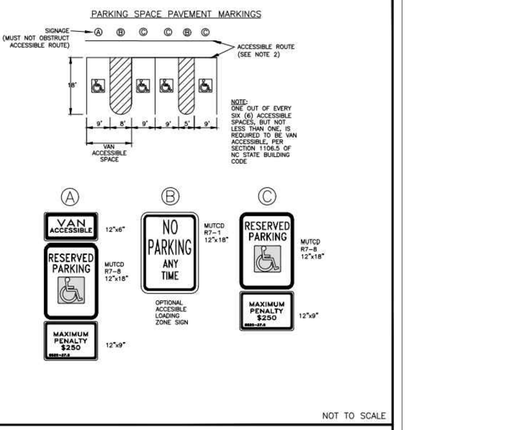
THESE PLANS WERE PREPARED WITHOUT THE USE OF A GEOTECH REPORT. PAVEMENT SECTIONS ARE SUBJECT TO CHANGE

ACCESSIBLE PARKING REQUIREMENTS

TOTAL PARKING SPACES PROVIDED	MINIMUM NUMBER OF ACCESSIBLE SPACES SPACES REQUIRED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED TO BE VAN ACCESSIBLE
1 TO 25	1	1
26 TO 50	2	1
51 TO 75	3	1
76 TO 100	4	1
101 TO 150	5	1
151 TO 200	6	1
201 TO 300	7	2
301 TO 400	8	2
401 TO 500	9	2
501 TO 1000	2% OF TOTAL	1 IN EVERY 6 ACCESSIBLE SPACES
1001 AND OVER	20 PLUS 1 FOR EACH 100 OVER 1000	1 IN EVERY 6 ACCESSIBLE SPACES
REFERENCE: SECTION 1106 OF NC BUILDING CODE & CH. 4 OF NC ACCESSIBILITY CODE		

NOTES:
1. ALL 12"x18" ACCESSIBLE SIGNS (MUTCD R7-8 & R7-1) SHALL BE MOUNTED AT 7 FEET FROM GRADE TO BOTTOM EDGE OF SIGN FACE (MUTCD). MOUNTING HEIGHT CAN BE REDUCED TO 5 FEET IF PLACED IN AN AREA BETWEEN SIDEWALK AND BUILDING FACE IN WHICH PEDESTRIANS ARE NOT EXPECTED TO USE.
2. IF ACCESSIBLE ROUTE IS A RAISED SIDEWALK AREA, THEN RAMPS ARE REQUIRED AT LOADING ZONE AREA. MAINTAIN MIN. 5' WIDE CONTINUOUS PASSAGE.
3. VERTICAL CLEARANCE FOR VANS MUST BE GREATER THAN 98-INCHES.
4. THIS DETAIL IS TO PROVIDE GENERAL GUIDANCE FOR PARKING LAYOUT AND DESIGN; REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) U.S. DEPARTMENT OF TRANSPORTATION AND NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SUPPLEMENT AND NC BUILDING CODE FOR ADDITIONAL INFORMATION.

PARKING SPACE PAVEMENT MARKINGS

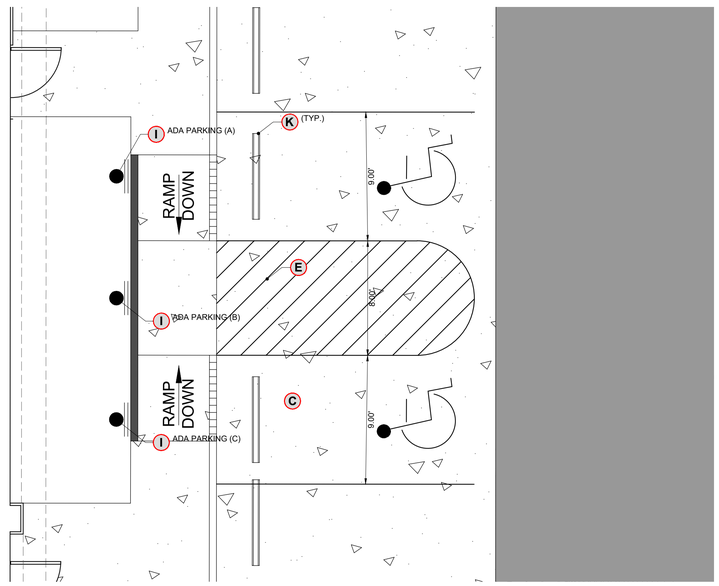


NOT TO SCALE

KANNAPOLIS Public Works

ACCESSIBLE PARKING AND SIGNAGE STANDARDS

DECEMBER 2019
409



4 ADA PARKING
NTS

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770

TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

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REVISIONS:

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

INGENIUM ENTERPRISES, INC.
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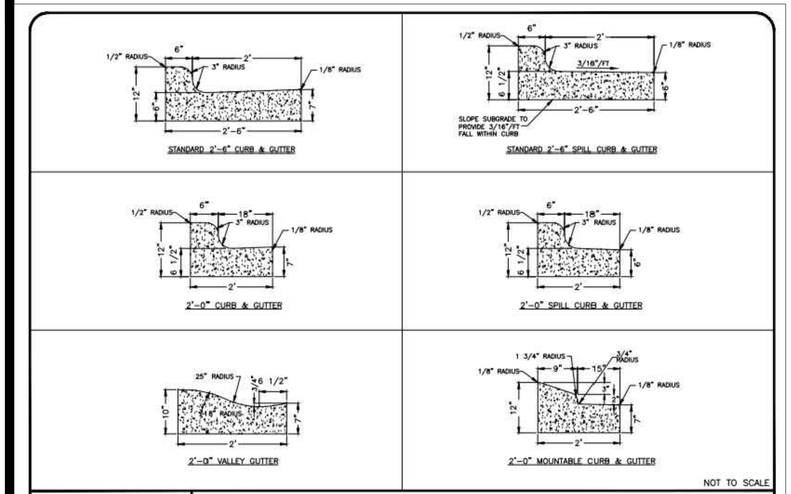
NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETTY
3/9/23

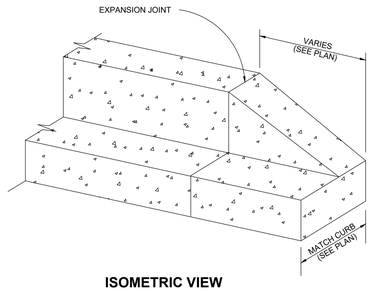
HARDSCAPE DETAILS I

C03.2

PANDA HOME REV4

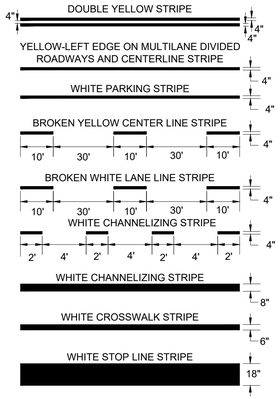


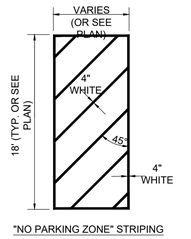
1 CURB & GUTTER 1" = 10'



ISOMETRIC VIEW
TYPICAL CURB & GUTTER

2 CURB TRANSITIONS 1" = 10'

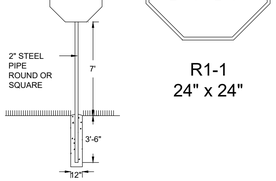




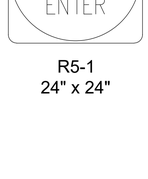
"NO PARKING ZONE" STRIPING

NOTE:
STAKING OF STRIPING IS TO THE CENTERLINE OF THE STRIPE UNLESS OTHERWISE NOTED.

3 PAVEMENT MARKINGS 1" = 10'



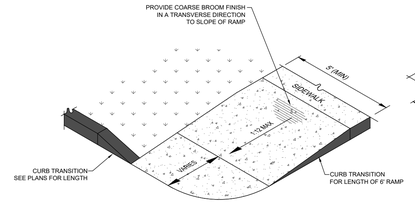
R1-1
24" x 24"



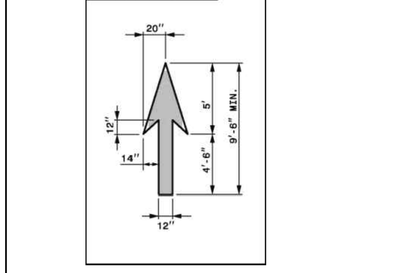
R5-1
24" x 24"

HEIGHT & CLEARANCE OF SIGNS (FOR ROADWAY SIGN)

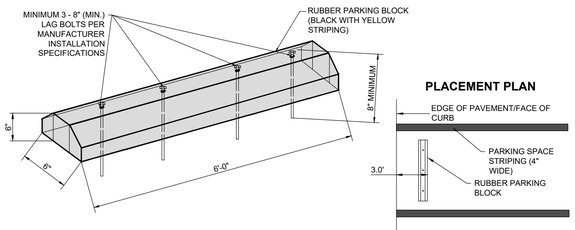
4 SITE SIGNAGE NTS



5 CURB RAMPS NTS



6 DIRECTIONAL ARROWS NTS



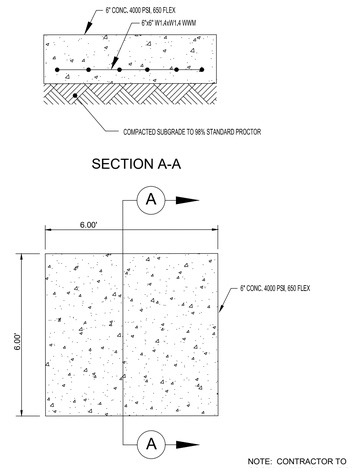
LAG BOLT METHOD: RECOMMENDED FOR ASPHALT OR CONCRETE ONLY.

REFER TO MANUFACTURERS INSTALLATION SPECIFICATIONS.

TOOLS NEEDED:
-HIGH SPEED HAMMER DRILL WITH A ¾" MASONRY DRILL BIT
-IMPACT WRENCH OR HEAVY RATCHET WITH ¾" SOCKET

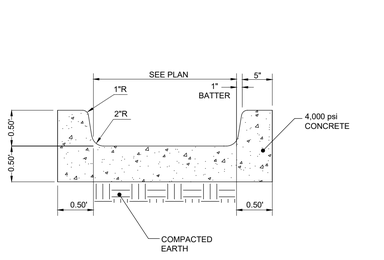
1. POSITION THE PARKING BLOCK WHERE YOU WANT TO INSTALL IT. USING THE HOLES MOLDED IN THE PARKING BLOCK AS TEMPLATES, MARK THE LOCATION OF EACH HOLE ON THE SURFACE.
2. REMOVE THE PARKING BLOCK. USING A HIGH-SPEED HAMMER DRILL WITH ¾" MASONRY BIT, DRILL A 4" TO 4 ½" DEEP HOLE AT EACH MARKED LOCATION.
3. INSERT A LAG ANCHOR (WITH THE LARGE ROUND HOLE IN THE ANCHOR FACING UP) INTO EACH HOLE. TAP THE ANCHOR INTO THE HOLES WITH A HAMMER SO THAT THE TOP OF EACH ANCHOR IS FLUSH WITH THE SURFACE.
4. REPOSITION THE PARKING BLOCK SO THAT THE MOLDED HOLES LINE UP VERTICALLY WITH THE PILOT HOLES YOU DRILLED. BEGINNING IN THE CENTER HOLE, APPLY FIRM HAND PRESSURE. SLIP A WASHER ONTO A LAG BOLT, INSERT THE BOLT THROUGH THE HOLE IN THE PARKING BLOCK AND TIGHTEN THE BOLT ABOUT THREE QUARTERS OF THE WAY WITH A ¾" SOCKET. REPEAT FOR EACH HOLE IN THE PARKING BLOCK. FINISH TIGHTENING EACH BOLT UNTIL JUST SNUG. DO NOT OVER TIGHTEN! EXCESSIVE TIGHTENING MAY DAMAGE THE PARKING BLOCK AND WILL VOID THE WARRANTY.

7 RUBBER WHEELSTOP NTS



NOTE: CONTRACTOR TO COORDINATE ACTUAL SIZE OF PAD WITH UTILITY COMPANY PRIOR TO CONSTRUCTION.

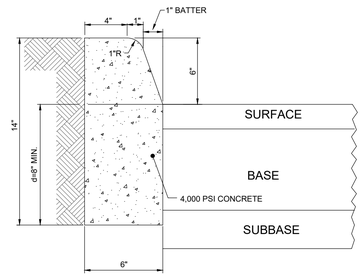
8 TRANSFORMER PAD NTS



GENERAL NOTES:
- SLOPE FLUME ACCORDING TO GRADING & DRAINAGE PLAN
- ENGINEER SHALL ENSURE POSITIVE DRAINAGE

CONCRETE NOTES:
- fc = 4,000 PSI
- PROVIDE CONTROL JOINTS AT 5' O.C.
- PROVIDE EXPANSION JOINTS ONLY WHERE CONCRETE PAVEMENT ABUTS FIXED OBJECTS, CURB AND GUTTER, AND OTHER PAVEMENT TYPES.
- 6"X6" WWM MAY BE SUBSTITUTED WITH EQUILEVENT STRENGTH FIBER MESH.

9 CONCRETE FLUME NTS



NOTES
- THE DIMENSION d MAY INCREASE AT CONTRACTOR'S OPTION SO BOTTOM OF HEADER CURB WILL ALIGN WITH BOTTOM OF PAVING.
- THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

10 HEADER CURB NTS

[redacted]

PANDA EXPRESS, INC.

1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770

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[redacted]

REVISIONS:

[redacted]

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	PLAN CHECK	03-08-23
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	CONSTRUCTION	XX-XX-XX

[redacted]

DRAWN BY: INGENIUM ENTERPRISES

[redacted]

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

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NCBEES CERTIFICATE #C-4114

[redacted]

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043800 JEREMY M. PETTIT
3/8/2023

[redacted]

HARDSCAPE DETAILS II

C03.3

[redacted]

PANDA HOME REV4

STORM STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE TYPE	RIM ELEVATION	INVERT IN	INVERT OUT
A0	WQ UNIT STUB-IN	657.85	652.50 (PA1)	
A1	JUNCTION BOX DETAIL 5, SHEET C04.3	657.62	652.85 (PA1.1) 652.85 (PA2)	652.65 (PA1)
A1.1	CURB INLET DETAIL 2, SHEET C04.4	657.45	653.20 (PA1.2)	653.01 (PA1.1)
A1.2	CURB INLET DETAIL 2, SHEET C04.4	660.00		655.00 (PA1.2)
A2	JUNCTION BOX DETAIL 5, SHEET C04.3	657.41	653.19 (PA3)	652.99 (PA2)
A3	JUNCTION BOX DETAIL 5, SHEET C04.3	657.29	653.74 (PA4) 653.74 (PA3.1)	653.54 (PA3)
A3.1	CURB INLET DETAIL 2, SHEET C04.4	657.79		653.89 (PA3.1)
A4	DROP GRATE INLET DETAIL 1, SHEET C04.4	660.67	655.54 (PA5)	655.34 (PA4)
A5	CURB INLET DETAIL 2, SHEET C04.4	660.94		655.61 (PA5)

STORM PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
PA1	18"	15.09'	1.00%	HDPE
PA1.1	18"	15.42'	1.00%	HDPE
PA1.2	18"	179.35'	1.00%	HDPE
PA2	18"	13.46'	1.00%	HDPE
PA3	18"	35.71'	1.00%	HDPE
PA3.1	18"	14.37'	1.00%	HDPE
PA4	18"	159.71'	1.00%	HDPE
PA5	18"	6.64'	1.00%	HDPE

SANITARY PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
PS1	6"	68.69'	2.80%	PVC
PS2	6"	31.93'	2.75%	PVC
PS3	6"	50.00'	2.75%	PVC
PS4	6"	50.01'	2.75%	PVC
PS5	6"	55.23'	2.75%	PVC
PS5.1	6"	6.33'	1.83%	PVC
PS5.2	6"	21.08'	1.85%	PVC
PS5.3	6"	14.55'	1.85%	PVC
PS5.4	6"	15.28'	1.85%	PVC
PS5.5	6"	5.01'	1.85%	PVC
PS6	6"	5.00'	2.00%	PVC
PS7	6"	5.00'	2.00%	PVC
PS8	6"	21.25'	2.00%	PVC
PS9	6"	13.32'	2.00%	PVC
PS10	6"	3.01'	2.00%	PVC

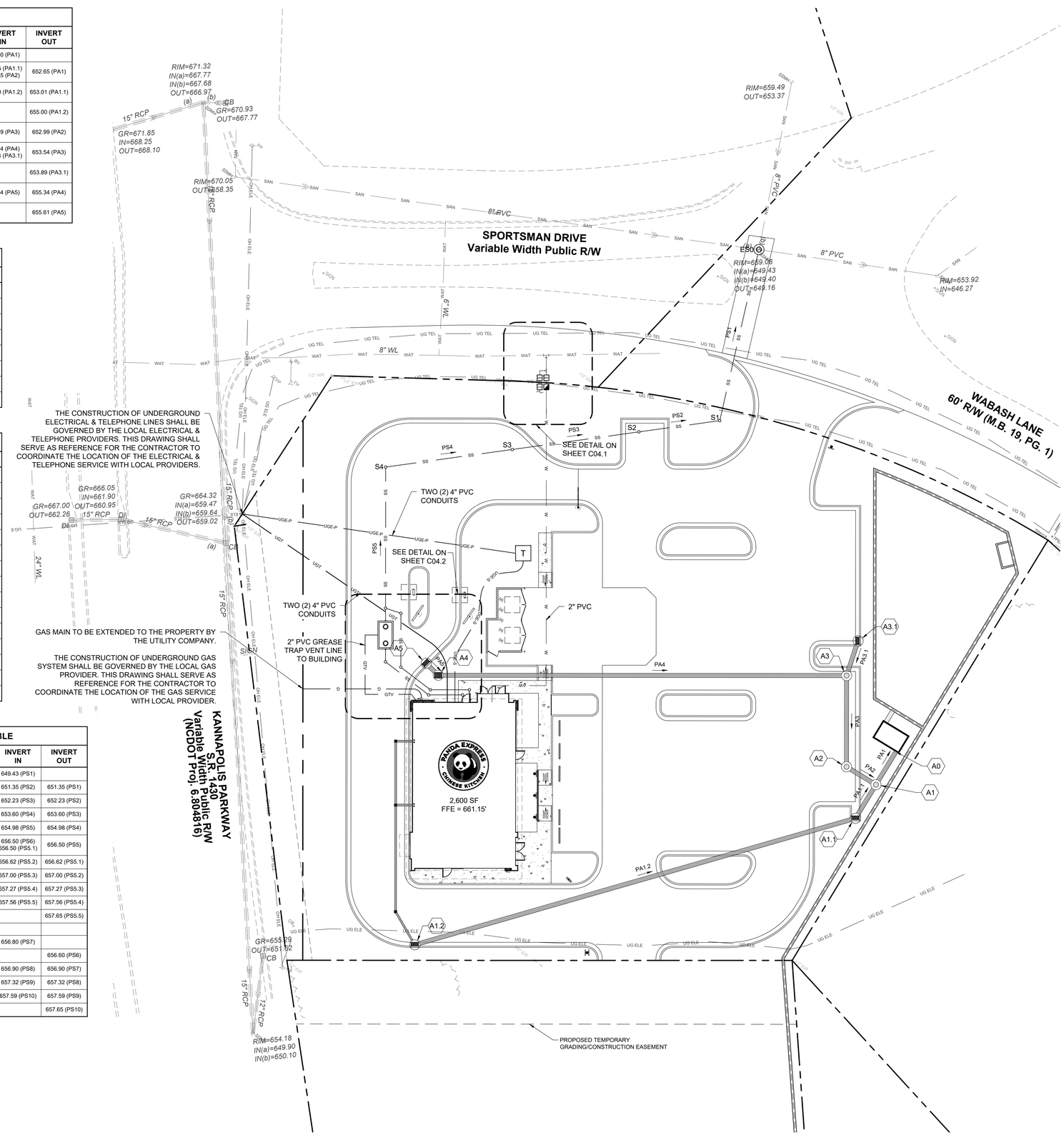
SANITARY STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE TYPE	RIM ELEVATION	INVERT IN	INVERT OUT
ES0	EXISTING SEWER MANHOLE	659.20	649.43 (PS1)	
S1	6" CLEANOUT	659.51	651.35 (PS2)	651.35 (PS1)
S2	6" CLEANOUT	660.24	652.23 (PS3)	652.23 (PS2)
S3	6" CLEANOUT	661.83	653.60 (PS4)	653.60 (PS3)
S4	6" CLEANOUT	663.78	654.98 (PS5)	654.98 (PS4)
S5	6" CLEANOUT	661.08	656.50 (PS6) 656.50 (PS5.1)	656.50 (PS5)
S5.1	6" CLEANOUT	661.00	656.62 (PS5.2)	656.62 (PS5.1)
S5.2	6" CLEANOUT	661.00	657.00 (PS5.3)	657.00 (PS5.2)
S5.3	6" CLEANOUT	660.58	657.27 (PS5.4)	657.27 (PS5.3)
S5.4	6" CLEANOUT	660.56	657.56 (PS5.5)	657.56 (PS5.4)
S5.5	6" CLEANOUT	660.48		657.65 (PS5.5)
S6	GREASE TRAP	661.00		
S6 IN	GREASE TRAP IN	661.00	656.80 (PS7)	
S6 OUT	GREASE TRAP OUT	661.00		656.60 (PS6)
S7	6" CLEANOUT	661.00	656.90 (PS8)	656.90 (PS7)
S8	6" CLEANOUT	660.55	657.32 (PS9)	657.32 (PS8)
S9	6" CLEANOUT	660.53	657.59 (PS10)	657.59 (PS9)
S10	BUILDING STUB OUT	660.49		657.65 (PS10)

THE CONSTRUCTION OF UNDERGROUND ELECTRICAL & TELEPHONE LINES SHALL BE GOVERNED BY THE LOCAL ELECTRICAL & TELEPHONE PROVIDERS. THIS DRAWING SHALL SERVE AS REFERENCE FOR THE CONTRACTOR TO COORDINATE THE LOCATION OF THE ELECTRICAL & TELEPHONE SERVICE WITH LOCAL PROVIDERS.

GAS MAIN TO BE EXTENDED TO THE PROPERTY BY THE UTILITY COMPANY.

THE CONSTRUCTION OF UNDERGROUND GAS SYSTEM SHALL BE GOVERNED BY THE LOCAL GAS PROVIDER. THIS DRAWING SHALL SERVE AS REFERENCE FOR THE CONTRACTOR TO COORDINATE THE LOCATION OF THE GAS SERVICE WITH LOCAL PROVIDER.



UTILITY LEGEND

UTILITIES	LINETYPE/SYMBOL
DOMESTIC WATER LINE	DW
FIRE WATER LINE	FW
BUILDING FIRE SPRINKLER LINE	FWS
IRRIGATION WATER LINE	IRR
DOMESTIC WATER METER (WM)	WM
IRRIGATION METER (IRR)	IRR
BACKFLOW PREVENTER (RPZ)	RPZ
DC BACKFLOW PREVENTER	
FIRE VAULT (DDC)	DDC
WATER TAP OR TEE	
GATE VALVE (GV)	GV
THRUST BLOCK (TB)	TB
FIRE HYDRANT (FH)	FH
FIRE DEPARTMENT CONNECTION (FDC)	FDC
SANITARY SEWER (SS)	SS
GREASE TRAP VENT LINE (GTV)	GTV
SANITARY MANHOLE (SSMH)	
GENERAL CLEAN OUT (Co)	Co
SANITARY STRUCTURE NUMBER	S2
UNDERGROUND ELECTRIC LINE-PRIMARY	UGE-P
UNDERGROUND ELECTRIC LINE-SECONDARY	UGE-S
POST INDICATOR VALVE	PIV
SITE LIGHTING POLE	
TRANSFORMER PAD	T
METER/CT PEDESTAL	CT
UNDERGROUND TELEPHONE LINE	UGT
GENERAL UTILITY CONDUIT	GU
GAS LINE	G
GAS METERS	

** ALL UTILITIES SHALL BE INSTALLED ACCORDING TO UTILITY PROVIDERS AND JURISDICTION STANDARDS AND SPECIFICATIONS.

UTILITY NOTES SEE SHEET C01.1

SEE SHEET C04.1 FOR THE UTILITY RESPONSIBILITY MATRIX

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING FEATURES, INCLUDING BUT NOT LIMITED TO, UTILITIES, EXISTING IMPROVEMENTS, ETC. CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND ELEVATIONS PRIOR TO STARTING CONSTRUCTION AND ALERT ENGINEER TO ANY DISCREPANCIES IMMEDIATELY

North Carolina 811 www.nc811.org

24-HOUR CONTACT:
JOE CELENTO
(912) 272-4811

0 20 40 Feet
SCALE: 1" = 20'

[redacted]

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[redacted]

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[redacted]

REVISIONS:

[redacted]

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

[redacted]

DRAWN BY: INGENIUM ENTERPRISES

[redacted]

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

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NCBEES CERTIFICATE #C-4114

[redacted]

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETTIT
3/31/23

[redacted]

UTILITY PLAN

C04.0

PANDA HOME REV4

UTILITY INFORMATION

WATER

	GC	SELLER	OWNER	UTILITY	ADDITIONAL NOTES
LINE EXTENSION TO PROPERTY LINE	●				**
PIPING FROM PROPERTY LINE TO BUILDING	●				**
TAPPING THE MAIN	●				**
WATER VAULT	●				**
WATER (METER) PIT	●				**
DOMESTIC METER	●				**
FIRE METER					N/A
IRRIGATION METER	●				**
DOMESTIC BFP	●				**
FIRE BFP					N/A
IRRIGATION BFP	●				**
OBTAINING EASEMENTS	●				**
OBTAINING ROW WORK PERMITS	●				**

SANITARY SEWER

	GC	SELLER	OWNER	UTILITY	ADDITIONAL NOTES
LINE EXTENSION TO PROPERTY LINE	●				**
TAPPING THE MAIN	●				**
SERVICE LATERAL (INSIDE PROPERTY)	●				**
OBTAINING EASEMENTS	●				**
OBTAINING ROW WORK PERMITS	●				**

ELECTRIC

	GC	SELLER	OWNER	UTILITY	ADDITIONAL NOTES
PRIMARY CONDUIT	●				**
PRIMARY CABLE				●	**
PRIMARY FINAL CONNECTION				●	**
TRANSFORMER				●	**
TRANSFORMER PAD	●				**
POLE					N/A
SECONDARY CONDUIT	●				**
SECONDARY CABLE	●				**
SECONDARY FINAL INSPECTION	●				**
METER				●	**
CT CABINET	●				**
CT METER CONDUIT	●				**
SOCKET	●				**
OBTAINING EASEMENTS	●				**
OBTAINING ROW WORK PERMITS	●				**

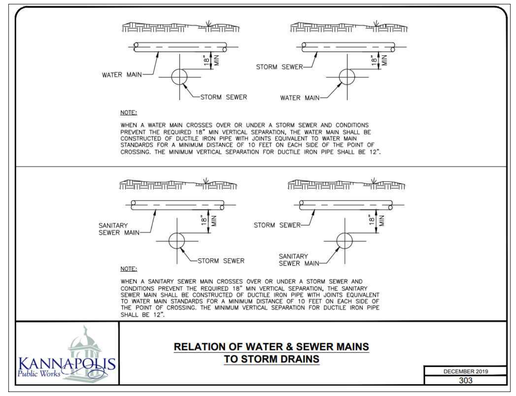
TELEPHONE

	GC	SELLER	OWNER	UTILITY	ADDITIONAL NOTES
CONDUIT	●				**
TRENCH & BACKFILL				●	**
CABLE & WIRE				●	**
OBTAINING EASEMENTS	●				**
OBTAINING ROW WORK PERMITS	●				**

GAS

	GC	SELLER	OWNER	UTILITY	ADDITIONAL NOTES
TAP				●	**
TRENCH & BACKFILL				●	**
PIPING				●	**
METER				●	**
REGULATOR				●	**
OBTAINING EASEMENTS				●	**
OBTAINING ROW WORK PERMITS				●	**

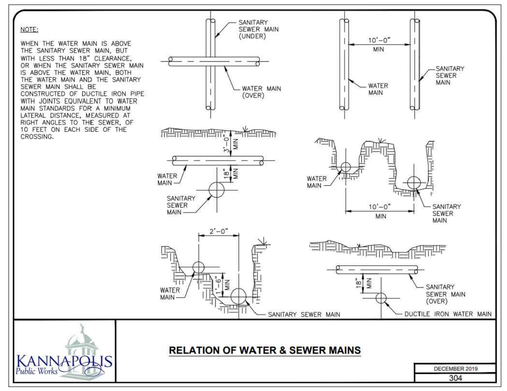
1 UTILITY
NTS



KANNAPOLIS Public Works

RELATION OF WATER & SEWER MAINS TO STORM DRAINS

DECEMBER 2019
303

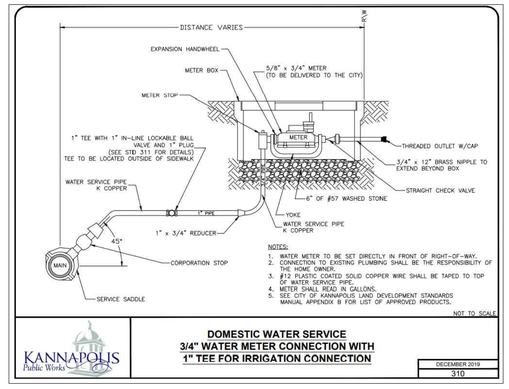


KANNAPOLIS Public Works

RELATION OF WATER & SEWER MAINS

DECEMBER 2019
304

2 WATER & SEWER MAINS
NTS

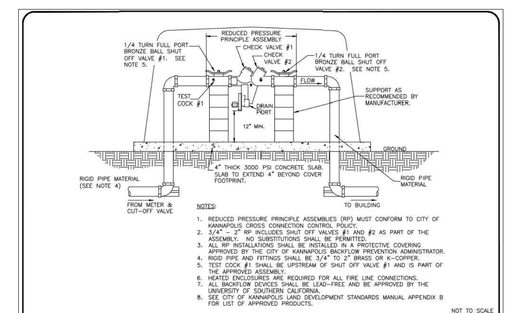


KANNAPOLIS Public Works

DOMESTIC WATER SERVICE 3/4" WATER METER CONNECTION WITH 1" TEE FOR IRRIGATION CONNECTION

DECEMBER 2019
310

3 DOMESTIC WATER SERVICE
NTS

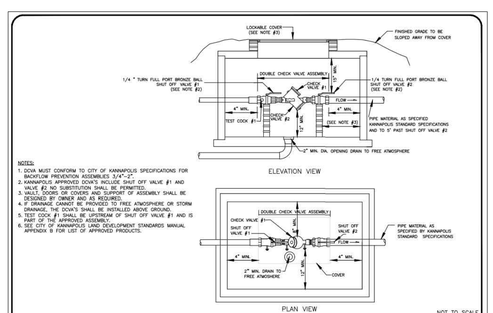


KANNAPOLIS Public Works

BACKFLOW PREVENTION 3/4"-2" REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP)

DECEMBER 2019
317

4 BACKFLOW PREVENTION
NTS

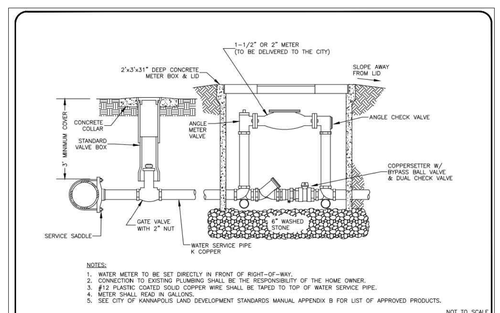


KANNAPOLIS Public Works

BACKFLOW PREVENTION 3/4"-2" DOUBLE CHECK VALVE ASSEMBLY (DCVA)

DECEMBER 2019
319

5 BACKFLOW OF PREVATION
NTS



KANNAPOLIS Public Works

WATER SERVICE DETAIL 1½"-2" WATER METER CONNECTION

DECEMBER 2019
315

6 WATER SERVICE DETAIL
NTS

PANDA EXPRESS, INC.

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	CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

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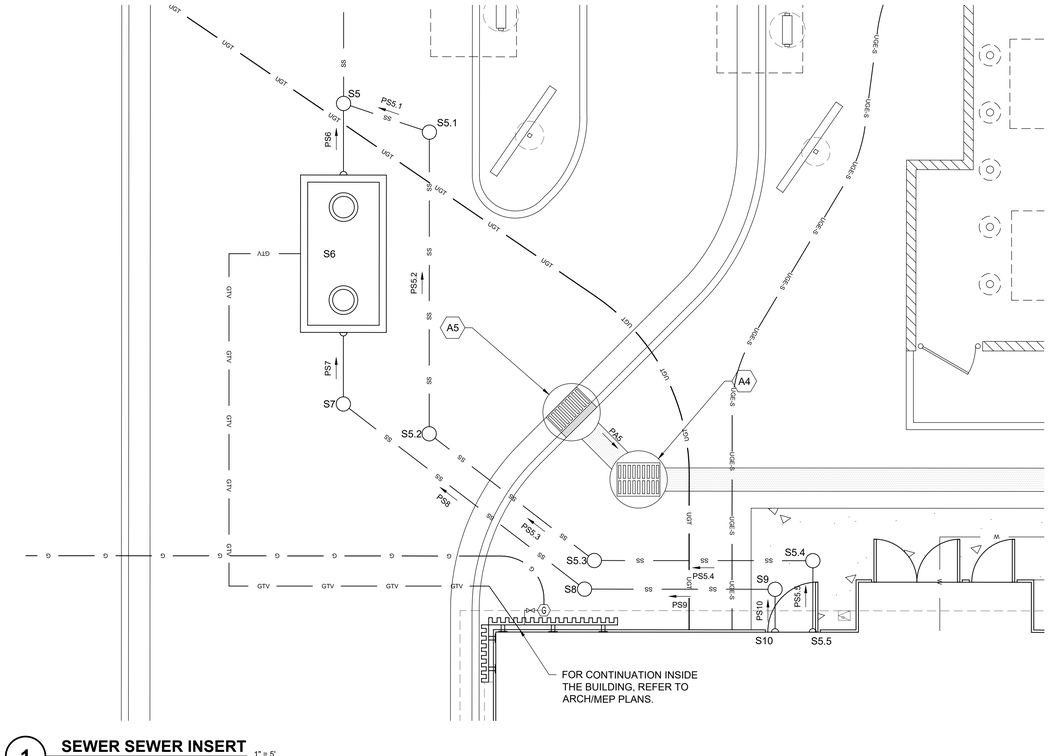
NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETTIT
3/8/2023

UTILITY DETAILS I

C04.1

PANDA HOME REV4



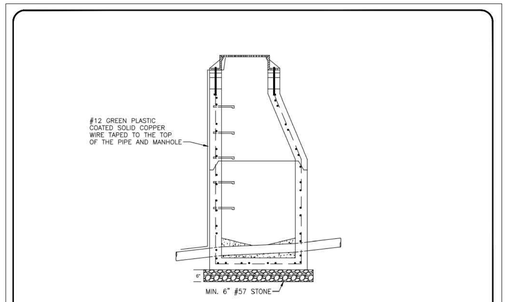
1 **SEWER SEWER INSERT** 1" = 5'

SANITARY STRUCTURE TABLE

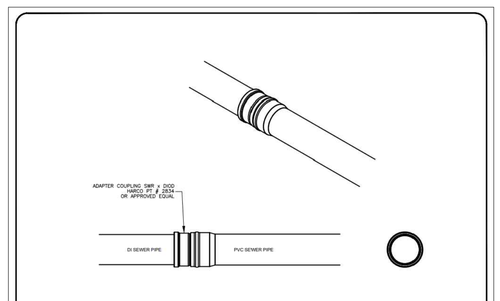
STRUCTURE NAME	STRUCTURE TYPE	RIM ELEVATION	INVERT IN	INVERT OUT
ES0	EXISTING SEWER MANHOLE	659.20	649.43 (PS1)	
S1	6" CLEANOUT	659.51	651.35 (PS2)	651.35 (PS1)
S2	6" CLEANOUT	660.24	652.23 (PS3)	652.23 (PS2)
S3	6" CLEANOUT	661.83	653.60 (PS4)	653.60 (PS3)
S4	6" CLEANOUT	663.78	654.98 (PS5)	654.98 (PS4)
S5	6" CLEANOUT	661.08	656.50 (PS6) 656.50 (PS5.1)	656.50 (PS5)
S5.1	6" CLEANOUT	661.00	656.62 (PS5.2)	656.62 (PS5.1)
S5.2	6" CLEANOUT	661.00	657.00 (PS5.3)	657.00 (PS5.2)
S5.3	6" CLEANOUT	660.58	657.27 (PS5.4)	657.27 (PS5.3)
S5.4	6" CLEANOUT	660.56	657.56 (PS5.5)	657.56 (PS5.4)
S5.5	6" CLEANOUT	660.48		657.65 (PS5.5)
S6	GREASE TRAP	661.00		
S6 IN	GREASE TRAP IN	661.00	656.80 (PS7)	
S6 OUT	GREASE TRAP OUT	661.00		656.60 (PS6)
S7	6" CLEANOUT	661.00	656.90 (PS8)	656.90 (PS7)
S8	6" CLEANOUT	660.55	657.32 (PS9)	657.32 (PS8)
S9	6" CLEANOUT	660.53	657.59 (PS10)	657.59 (PS9)
S10	BUILDING STUB OUT	660.49		657.65 (PS10)

SANITARY PIPE TABLE

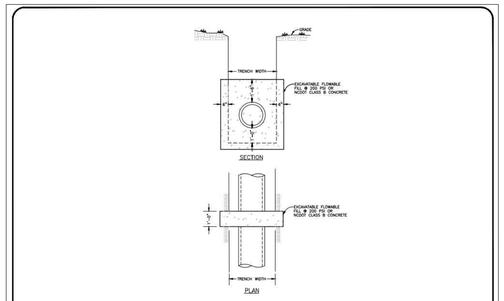
PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
PS1	**6"**	**68.69'**	2.80%	**PVC**
PS2	**6"**	**31.93'**	2.75%	**PVC**
PS3	**6"**	**50.00'**	2.75%	**PVC**
PS4	**6"**	**50.01'**	2.75%	**PVC**
PS5	**6"**	**55.23'**	2.75%	**PVC**
PS5.1	**6"**	**6.33'**	1.83%	**PVC**
PS5.2	**6"**	**21.08'**	1.85%	**PVC**
PS5.3	**6"**	**14.55'**	1.85%	**PVC**
PS5.4	**6"**	**15.28'**	1.85%	**PVC**
PS5.5	**6"**	**5.01'**	1.85%	**PVC**
PS6	**6"**	**5.00'**	2.00%	**PVC**
PS7	**6"**	**5.00'**	2.00%	**PVC**
PS8	**6"**	**21.25'**	2.00%	**PVC**
PS9	**6"**	**13.32'**	2.00%	**PVC**
PS10	**6"**	**3.01'**	2.00%	**PVC**



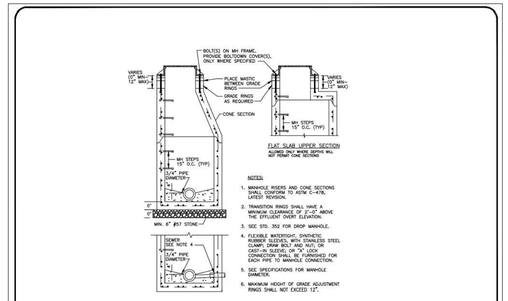
2 **SEWER TRACER WIRE** NTS



3 **PIPE ADAPTER DIP TO PVC** NTS



4 **ANTI-SLEEP COLLAR** NTS



5 **STANDARD PRECAST CONCRETE MANHOLE** NTS

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DRAWN BY: INGENIUM ENTERPRISES

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PANDA STORE #: TBD
CIVIL PROJECT #: 220148

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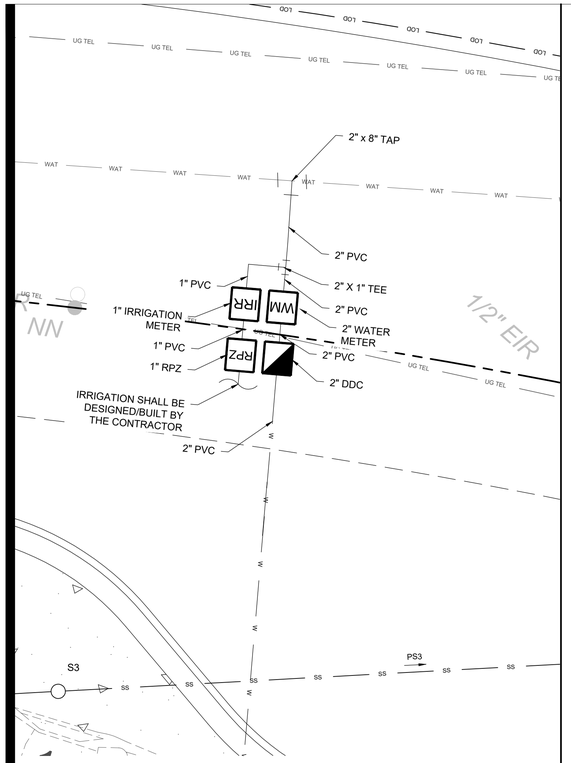
NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. BETTIS
3/8/2023

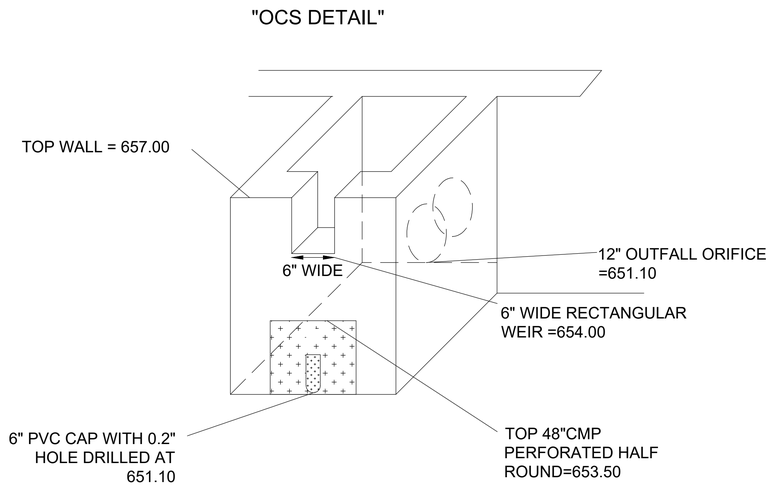
UTILITY DETAILS II

C04.2

PANDA HOME REV4

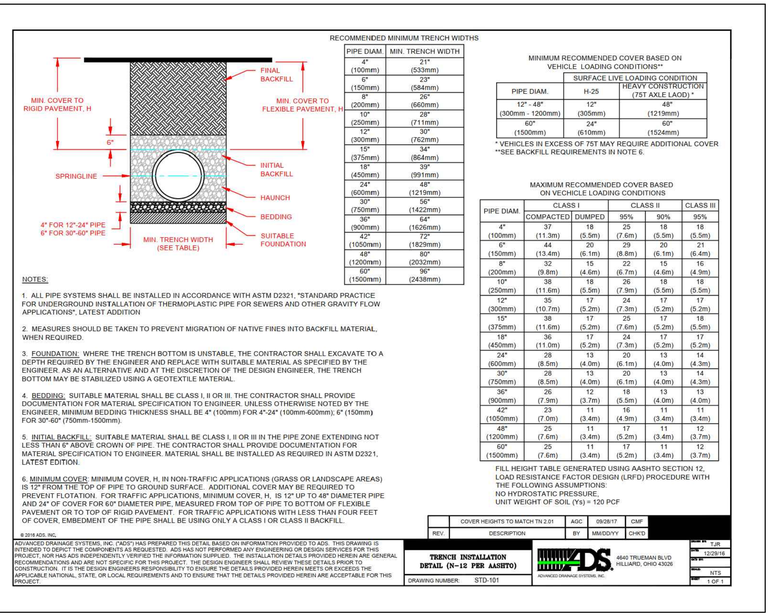


1 WATER METER DETAIL 1" = 5'



2 OUTLET CONTROL STRUCTURE NTS

3 RESERVED NTS



PIPE DIAM.	MIN. TRENCH WIDTH
4" (100mm)	21" (533mm)
6" (150mm)	23" (584mm)
8" (200mm)	26" (660mm)
10" (250mm)	28" (711mm)
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	96" (2438mm)

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS**

PIPE DIAM.	SURFACE LIVE LOADING CONDITION H-25	HEAVY CONSTRUCTION (75T AXLE LAOD) *
12" - 48" (300mm - 1200mm)	12" (305mm)	48" (1219mm)
60" (1500mm)	24" (610mm)	60" (1524mm)

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER
**SEE BACKFILL REQUIREMENTS IN NOTE 6.

MAXIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM.	CLASS I COMPACTED	CLASS I DUMPED	CLASS II 95%	CLASS II 90%	CLASS III 95%
4" (100mm)	37 (11.3m)	18 (5.5m)	25 (7.6m)	18 (5.5m)	18 (5.5m)
6" (150mm)	44 (13.4m)	20 (6.1m)	29 (8.8m)	20 (6.1m)	21 (6.4m)
8" (200mm)	32 (9.8m)	15 (4.6m)	22 (6.7m)	15 (4.6m)	16 (4.9m)
10" (250mm)	38 (11.6m)	18 (5.5m)	26 (7.9m)	18 (5.5m)	18 (5.5m)
12" (300mm)	35 (10.7m)	17 (5.2m)	24 (7.3m)	17 (5.2m)	17 (5.2m)
15" (375mm)	38 (11.6m)	17 (5.2m)	25 (7.6m)	17 (5.2m)	18 (5.5m)
18" (450mm)	36 (11.0m)	17 (5.2m)	24 (7.3m)	17 (5.2m)	17 (5.2m)
24" (600mm)	28 (8.5m)	13 (4.0m)	20 (6.1m)	13 (4.0m)	14 (4.3m)
30" (750mm)	28 (8.5m)	13 (4.0m)	20 (6.1m)	13 (4.0m)	14 (4.3m)
36" (900mm)	26 (7.9m)	12 (3.7m)	18 (5.5m)	13 (4.0m)	13 (4.0m)
42" (1050mm)	23 (7.0m)	11 (3.4m)	16 (4.9m)	11 (3.4m)	11 (3.4m)
48" (1200mm)	25 (7.6m)	11 (3.4m)	17 (5.2m)	11 (3.4m)	12 (3.7m)
60" (1500mm)	25 (7.6m)	11 (3.4m)	17 (5.2m)	11 (3.4m)	12 (3.7m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE,
UNIT WEIGHT OF SOIL (γs) = 120 PCF

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR TRAFFIC APPLICATIONS WITH LESS THAN FOUR FEET OF COVER, EMBEDMENT OF THE PIPE SHALL BE USING ONLY A CLASS I OR CLASS II BACKFILL.

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ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

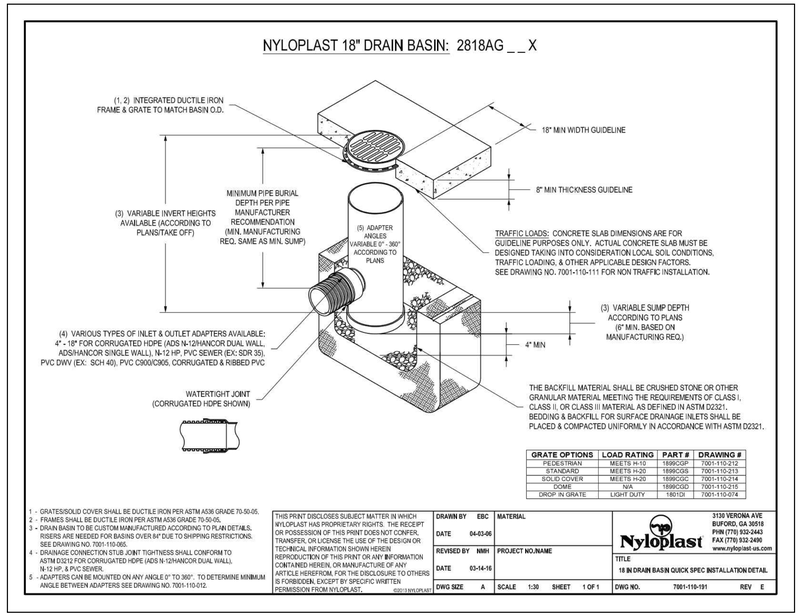
REV:	DESCRIPTION	BY	MM/DD/YY	CHK'D
	COVER HEIGHTS TO MATCH TN 2.01	AGC	09/28/17	CMF

TRENCH INSTALLATION DETAIL (N-12 PER AASHTO)
DRAWING NUMBER: STD-101

ADS ADVANCED DRAINAGE SYSTEMS, INC.
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026

DRAWN BY	TJR
DATE	12/29/16
SCALE	NTS
SHEET	1 OF 1

4 STORM PIPE BEDDING NTS



GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1899CGP	7001-110-212
STANDARD	MEETS H-20	1899CGS	7001-110-213
SOLID COVER	MEETS H-20	1899CGC	7001-110-214
DOME	N/A	1899CGD	7001-110-215
DROP IN GRATE	LIGHT DUTY	1801DI	7001-110-074

1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 8/4" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

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DRAWN BY	EBC	MATERIAL	
DATE	04-03-06		
REVISED BY	NMH	PROJECT NO./NAME	
DATE	03-14-16		
DWG SIZE	A	SCALE 1:30	SHEET 1 OF 1

Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

TITLE: 18 IN DRAIN BASIN QUICK SPEC INSTALLATION DETAIL
DWG NO. 7001-110-191 REV E

5 18" DRAIN BASIN NTS

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770
TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

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REVISIONS:

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

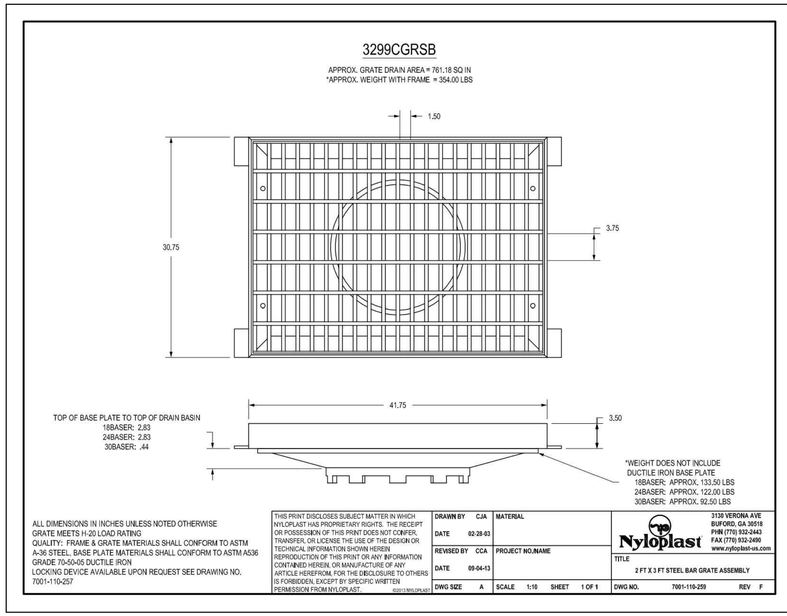
INGENIUM ENTERPRISES, INC.
19445 SHUMARD OAK DR.
SUITE 102
LAND O LAKES, FL 34638
PHONE: (813) 387-0084
NCBEES CERTIFICATE #C-4114

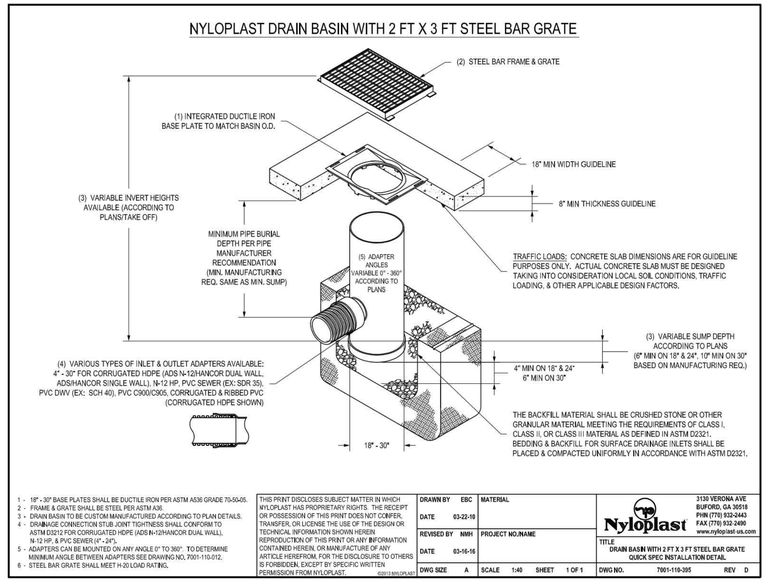
NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETTIT 3/3/2023

UTILITY DETAILS III

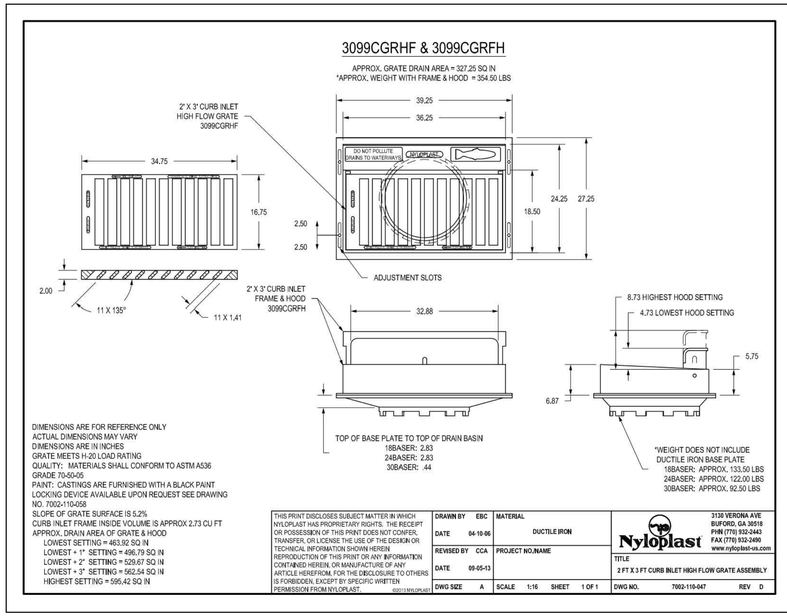
C04.3

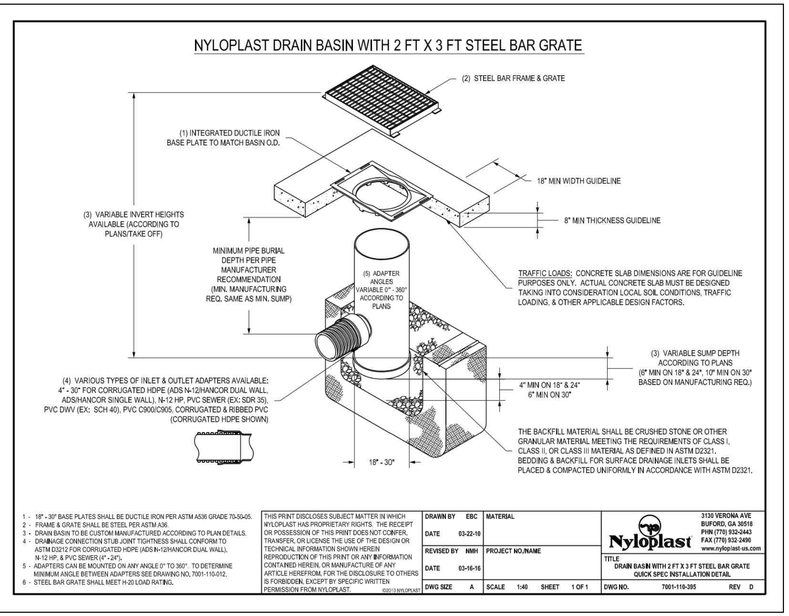
PANDA HOME REV4





1 DROP GRATE INLET NTS





2 CURB INLET NTS

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770
TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

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ISSUE DATE:

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	CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

INGENIUM ENTERPRISES, INC.
19445 SHUMARD OAK DR.
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LAND O LAKES, FL 34638
PHONE: (813) 387-0084
NCBEES CERTIFICATE #C-4114

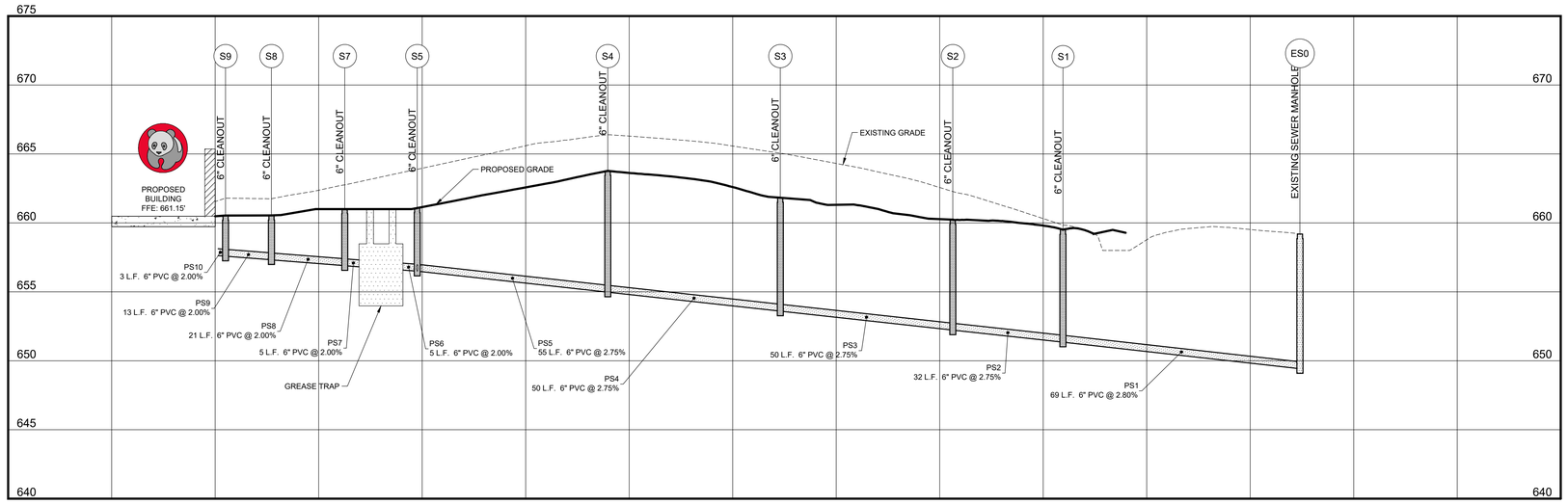
NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETIT 3/9/2023

UTILITY DETAILS IV

C04.4

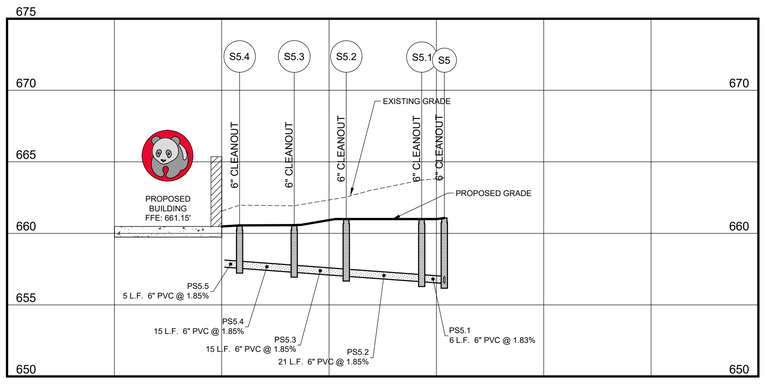
PANDA HOME REV4

SANITARY PROFILE S10-ES0



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

SANITATY PROFILE S5.5-S5



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

PROFILE NOTES

1. CONTROLLED BACK FILL TO BE PLACED IN 6" LOOSE LIFT AND COMPACTED TO 100% ASTM D698 PRIOR TO STORM AND SANITARY SEWER CONSTRUCTION, BACK FILL SHALL BE PLACED TO A MINIMUM OF ±2' ABOVE THE CROWN ELEVATION OF THE PIPES.
2. STORM DRAIN AND SANITARY SEWER LENGTHS ARE MEASURED FROM CENTER LINE OF STRUCTURE TO CENTERLINE OF STRUCTURE OR FACE OF HEADWALL.
3. ALL PIPE LENGTHS SHOWN ARE ROUNDED TO THE NEAREST FOOT.
4. ALL STORM DRAIN PIPING SHALL BE TRENCHED, BEDDED AND BACK FILLED ACCORDING WITH DETAIL 4 ON SHEET C04.3 UNLESS SPECIFICALLY NOTED OTHERWISE.
5. ALL SANITARY SEWER PIPING SHALL BE TRENCHED, BEDDED AND BACK FILLED ACCORDING WITH DETAIL __ ON SHEET ____ UNLESS SPECIFICALLY NOTED OTHERWISE.
6. UNFORESEEN SUBSURFACE CONDITIONS SHALL BE BROUGHT TO THE OWNER'S AND ENGINEER'S ATTENTION IMMEDIATELY IMPLEMENTATION OF CORRECTIVE BEDDING MEASURES WITHOUT THE OWNER'S APPROVAL SHALL BE AT THE CONTRACTOR'S OWN RISK AND AT NO ADDITIONAL COMPENSATION.
7. EXISTING GRADES SHOWN ARE APPROXIMATE AND DO NOT REFLECT TOP SOIL REMOVAL, CLEARING, AND GRUBBING OPERATIONS. THE CONTRACTOR SHALL ASCERTAIN FOR HIMSELF THE EXTENT OF DISTURBANCE FOR THESE ACTIVITIES.
8. EXCAVATIONS FOR STRUCTURES SHALL BE TAKEN AS A TRENCHING EXCAVATION WITHOUT FURTHER COMPENSATION.
9. SEE SHEET C01.1 FOR GENERAL NOTES.

SANITARY STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE TYPE	RIM ELEVATION	INVERT IN	INVERT OUT
ES0	EXISTING SEWER MANHOLE	659.20	649.43 (PS1)	
S1	6" CLEANOUT	659.51	651.35 (PS2)	651.35 (PS1)
S2	6" CLEANOUT	660.24	652.23 (PS3)	652.23 (PS2)
S3	6" CLEANOUT	661.83	653.60 (PS4)	653.60 (PS3)
S4	6" CLEANOUT	663.78	654.98 (PS5)	654.98 (PS4)
S5	6" CLEANOUT	661.08	656.50 (PS6) 656.50 (PS5.1)	656.50 (PS5)
S5.1	6" CLEANOUT	661.00	656.62 (PS5.2)	656.62 (PS5.1)
S5.2	6" CLEANOUT	661.00	657.00 (PS5.3)	657.00 (PS5.2)
S5.3	6" CLEANOUT	660.58	657.27 (PS5.4)	657.27 (PS5.3)
S5.4	6" CLEANOUT	660.56	657.56 (PS5.5)	657.56 (PS5.4)
S5.5	6" CLEANOUT	660.48		657.65 (PS5.5)
S6	GREASE TRAP	661.00		
S6 IN	GREASE TRAP IN	661.00	656.80 (PS7)	
S6 OUT	GREASE TRAP OUT	661.00		656.60 (PS6)
S7	6" CLEANOUT	661.00	656.90 (PS8)	656.90 (PS7)
S8	6" CLEANOUT	660.55	657.32 (PS9)	657.32 (PS8)
S9	6" CLEANOUT	660.53	657.59 (PS10)	657.59 (PS9)
S10	BUILDING STUB OUT	660.49		657.65 (PS10)

SANITARY PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
PS1	6"	68.69'	2.80%	PVC
PS2	6"	31.93'	2.75%	PVC
PS3	6"	50.00'	2.75%	PVC
PS4	6"	50.01'	2.75%	PVC
PS5	6"	55.23'	2.75%	PVC
PS5.1	6"	6.33'	1.83%	PVC
PS5.2	6"	21.08'	1.85%	PVC
PS5.3	6"	14.55'	1.85%	PVC
PS5.4	6"	15.28'	1.85%	PVC
PS5.5	6"	5.01'	1.85%	PVC
PS6	6"	5.00'	2.00%	PVC
PS7	6"	5.00'	2.00%	PVC
PS8	6"	21.25'	2.00%	PVC
PS9	6"	13.32'	2.00%	PVC
PS10	6"	3.01'	2.00%	PVC

PANDA EXPRESS, INC.
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REVISIONS:

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

INGENIUM ENTERPRISES, INC.
19445 SHUMARD OAK DR.
SUITE 102
LAND O LAKES, FL 34638
PHONE: (813) 387-0084
NCBEES CERTIFICATE #C-4114

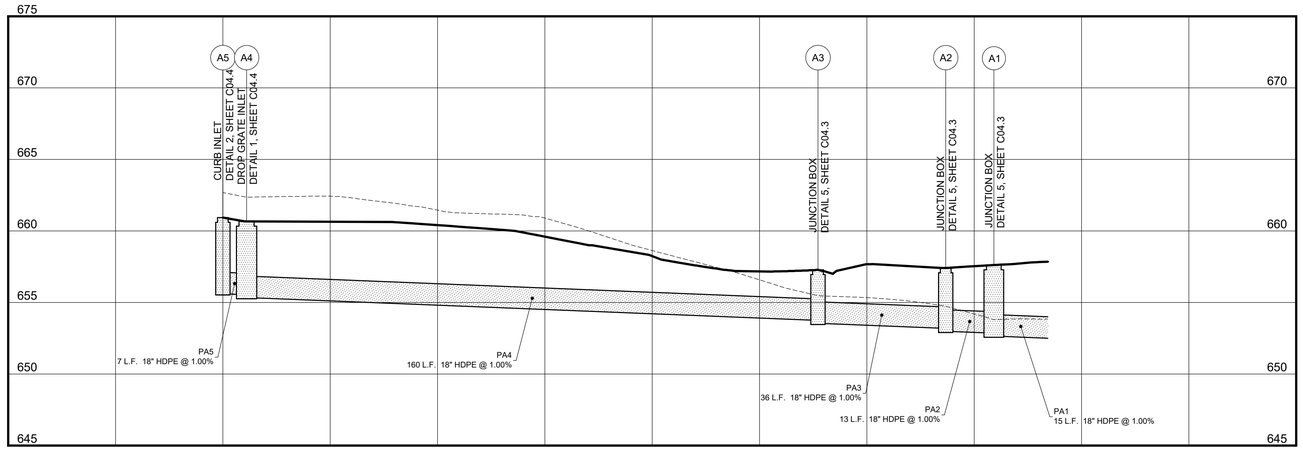
NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETTIS
3/8/2023

PIPE PROFILES I

C04.5

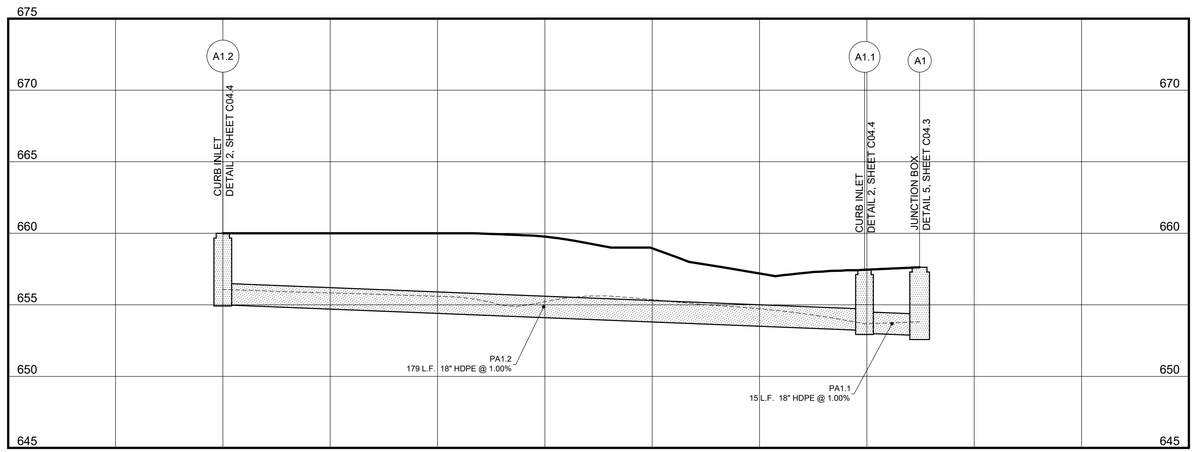
PANDA HOME REV4

STORM PROFILE A5-A0



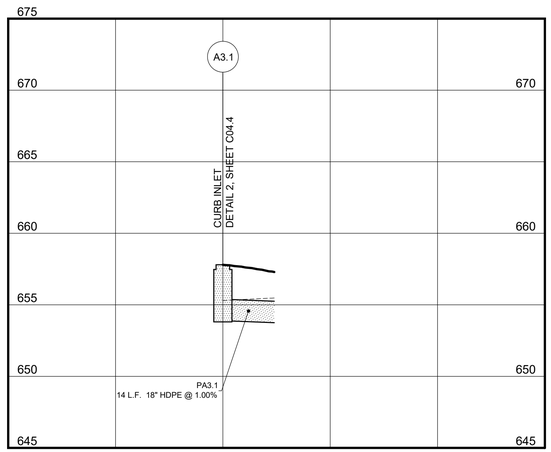
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

STORM PROFILE A1.2-A1



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

STORM PROFILE C1-C0



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

PROFILE NOTES

1. CONTROLLED BACK FILL TO BE PLACED IN 6" LOOSE LIFT AND COMPACTED TO 100% ASTM D698 PRIOR TO STORM AND SANITARY SEWER CONSTRUCTION, BACK FILL SHALL BE PLACED TO A MINIMUM OF ±2' ABOVE THE CROWN ELEVATION OF THE PIPES.
2. STORM DRAIN AND SANITARY SEWER LENGTHS ARE MEASURED FROM CENTER LINE OF STRUCTURE TO CENTERLINE OF STRUCTURE OR FACE OF HEADWALL.
3. ALL PIPE LENGTHS SHOWN ARE ROUNDED TO THE NEAREST FOOT.
4. ALL STORM DRAIN PIPING SHALL BE TRENCHED, BEDDED AND BACK FILLED ACCORDING WITH DETAIL 4 ON SHEET C04.3 UNLESS SPECIFICALLY NOTED OTHERWISE.
5. ALL SANITARY SEWER PIPING SHALL BE TRENCHED, BEDDED AND BACK FILLED ACCORDING WITH DETAIL __ ON SHEET ____ UNLESS SPECIFICALLY NOTED OTHERWISE.
6. UNFORESEEN SUBSURFACE CONDITIONS SHALL BE BROUGHT TO THE OWNER'S AND ENGINEER'S ATTENTION IMMEDIATELY IMPLEMENTATION OF CORRECTIVE BEDDING MEASURES WITHOUT THE OWNER'S APPROVAL SHALL BE AT THE CONTRACTOR'S OWN RISK AND AT NO ADDITIONAL COMPENSATION.
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8. EXCAVATIONS FOR STRUCTURES SHALL BE TAKEN AS A TRENCHING EXCAVATION WITHOUT FURTHER COMPENSATION.
9. SEE SHEET C01.1 FOR GENERAL NOTES.

STORM STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE TYPE	RIM ELEVATION	INVERT IN	INVERT OUT
A0	WQ UNIT STUB-IN	657.85	652.50 (PA1)	
A1	JUNCTION BOX DETAIL 5, SHEET C04.3	657.62	652.85 (PA1.1) 652.85 (PA2)	652.65 (PA1)
A1.1	CURB INLET DETAIL 2, SHEET C04.4	657.45	653.20 (PA1.2)	653.01 (PA1.1)
A1.2	CURB INLET DETAIL 2, SHEET C04.4	660.00		655.00 (PA1.2)
A2	JUNCTION BOX DETAIL 5, SHEET C04.3	657.41	653.19 (PA3)	652.99 (PA2)
A3	JUNCTION BOX DETAIL 5, SHEET C04.3	657.29	653.74 (PA4) 653.74 (PA3.1)	653.54 (PA3)
A3.1	CURB INLET DETAIL 2, SHEET C04.4	657.79		653.89 (PA3.1)
A4	DROP GRATE INLET DETAIL 1, SHEET C04.4	660.67	655.54 (PA5)	655.34 (PA4)
A5	CURB INLET DETAIL 2, SHEET C04.4	660.94		655.61 (PA5)

STORM PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
PA1	**18"**	**15.09'**	1.00%	**HDPE**
PA1.1	**18"**	**15.42'**	1.00%	**HDPE**
PA1.2	**18"**	**179.35'**	1.00%	**HDPE**
PA2	**18"**	**13.46'**	1.00%	**HDPE**
PA3	**18"**	**35.71'**	1.00%	**HDPE**
PA3.1	**18"**	**14.37'**	1.00%	**HDPE**
PA4	**18"**	**159.71'**	1.00%	**HDPE**
PA5	**18"**	**6.64'**	1.00%	**HDPE**

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
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TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

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REVISIONS:

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

INGENIUM ENTERPRISES, INC.
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LAND O LAKES, FL 34638
PHONE: (813) 387-0084
NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETTIT
3/31/23

PIPE PROFILES II

C04.6

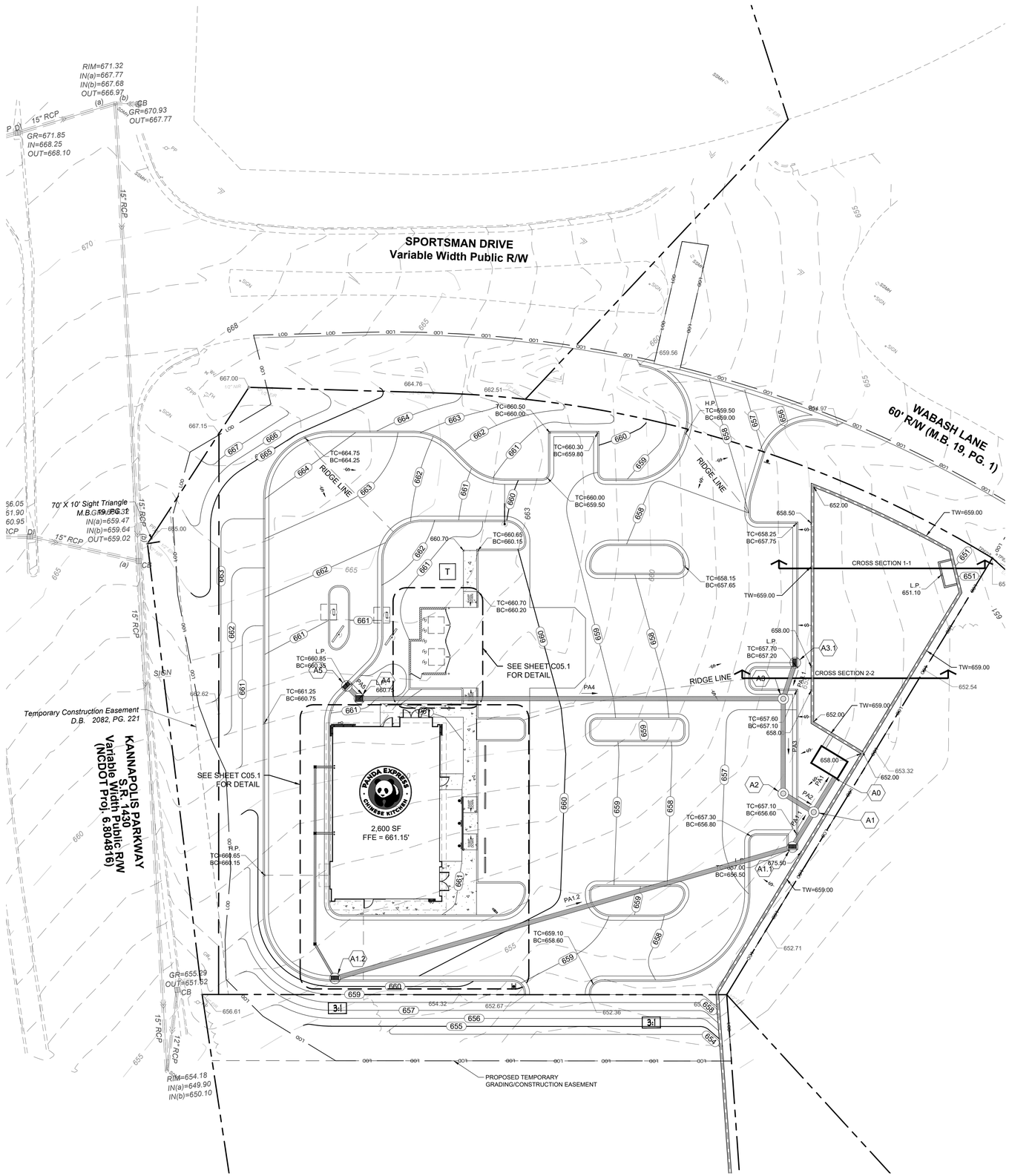
PANDA HOME REV4

STORM STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE TYPE	RIM ELEVATION	INVERT IN	INVERT OUT
A0	WQ UNIT STUB-IN	657.85	652.50 (PA1)	
A1	JUNCTION BOX DETAIL 5, SHEET C04.3	657.62	652.85 (PA1.1) 652.85 (PA2)	652.65 (PA1)
A1.1	CURB INLET DETAIL 2, SHEET C04.4	657.45	653.20 (PA1.2)	653.01 (PA1.1)
A1.2	CURB INLET DETAIL 2, SHEET C04.4	660.00		655.00 (PA1.2)
A2	JUNCTION BOX DETAIL 5, SHEET C04.3	657.41	653.19 (PA3)	652.99 (PA2)
A3	JUNCTION BOX DETAIL 5, SHEET C04.3	657.29	653.74 (PA4) 653.74 (PA3.1)	653.54 (PA3)
A3.1	CURB INLET DETAIL 2, SHEET C04.4	657.79		653.89 (PA3.1)
A4	DROP GRATE INLET DETAIL 1, SHEET C04.4	660.67	655.54 (PA5)	655.34 (PA4)
A5	CURB INLET DETAIL 2, SHEET C04.4	660.94		655.61 (PA5)

STORM PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
PA1	18"	15.09'	1.00%	HDPE
PA1.1	18"	15.42'	1.00%	HDPE
PA1.2	18"	179.35'	1.00%	HDPE
PA2	18"	13.46'	1.00%	HDPE
PA3	18"	35.71'	1.00%	HDPE
PA3.1	18"	14.37'	1.00%	HDPE
PA4	18"	159.71'	1.00%	HDPE
PA5	18"	6.64'	1.00%	HDPE



GRADING & DRAINAGE LEGEND

GRADING / DRAINAGE	LINETYPE/SYMBOL
GRADE	1000
PROPOSED SPOT ELEVATION	1000.00
MATCH EXISTING SPOT	M.E.E.
MATCH EXISTING SPOT W/ ESTIMATED EXISTING ELEVATION	M.E.E. 1000.00
STORM DRAIN	
HEADWALL (HW) / FLARED END SECTION (FES)	
DROP INLET (GRATE)	
DROP INLET (GRATE AND HOOD)	
JUNCTION BOX (JB) / OCS	
CATCH BASIN (SINGLE WING)	
CATCH BASIN (DOUBLE WING)	
PEDESTAL TOP	
STORM STRUCTURE NUMBER	A3

GRADING NOTES SEE SHEET C01.1

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING FEATURES, INCLUDING BUT NOT LIMITED TO, UTILITIES, EXISTING IMPROVEMENTS, ETC. CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND ELEVATIONS PRIOR TO STARTING CONSTRUCTION AND ALERT ENGINEER TO ANY DISCREPANCIES IMMEDIATELY

North Carolina 811 www.nc811.org

24-HOUR CONTACT:
JOE CELENTO
(912) 272-4811

SCALE: 1" = 20'

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REVISIONS:

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

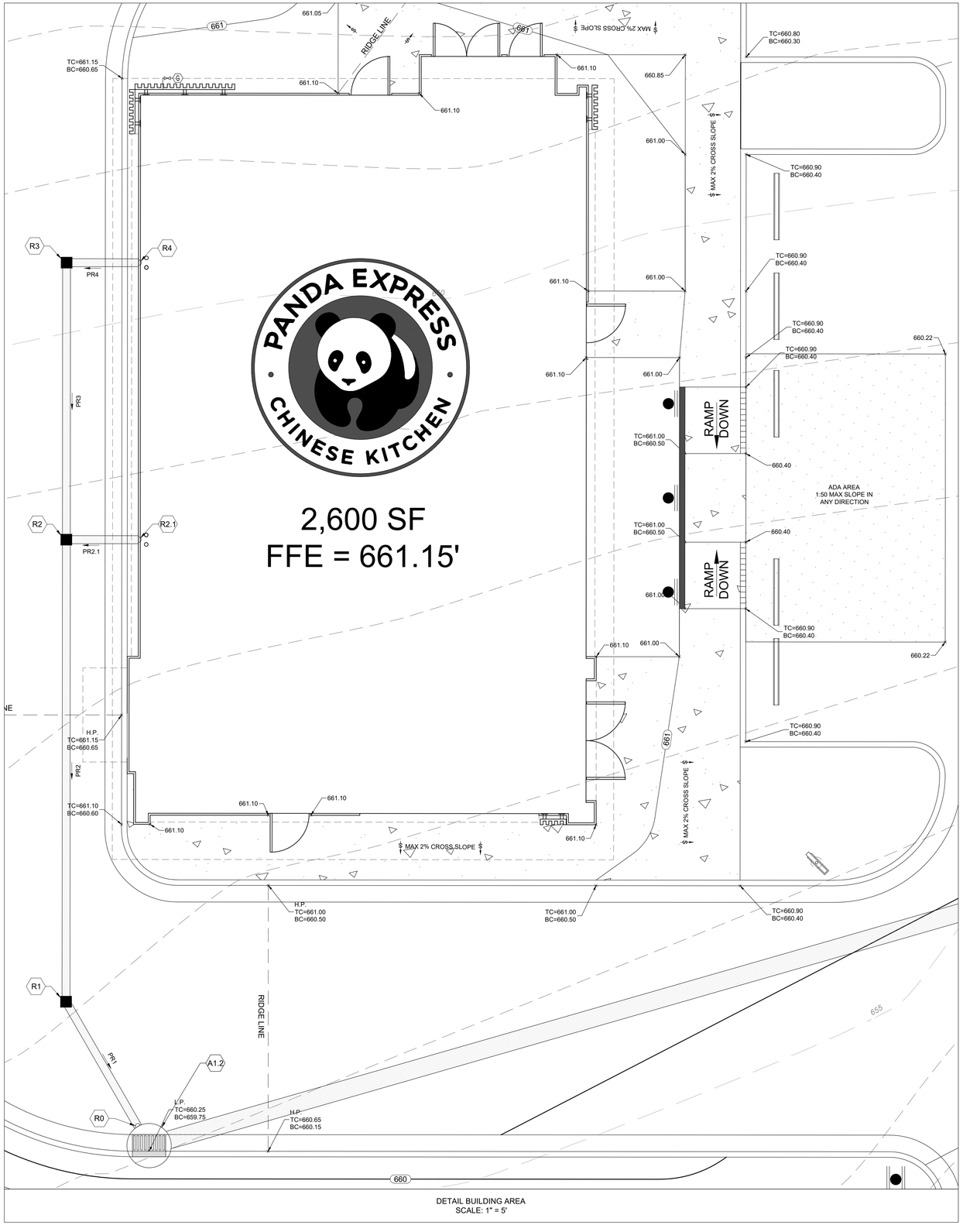
INGENIUM ENTERPRISES, INC.
19445 SHUMARD OAK DR.
SUITE 102
LAND O LAKES, FL 34638
PHONE: (813) 387-0084
NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETIT 3/9/2023

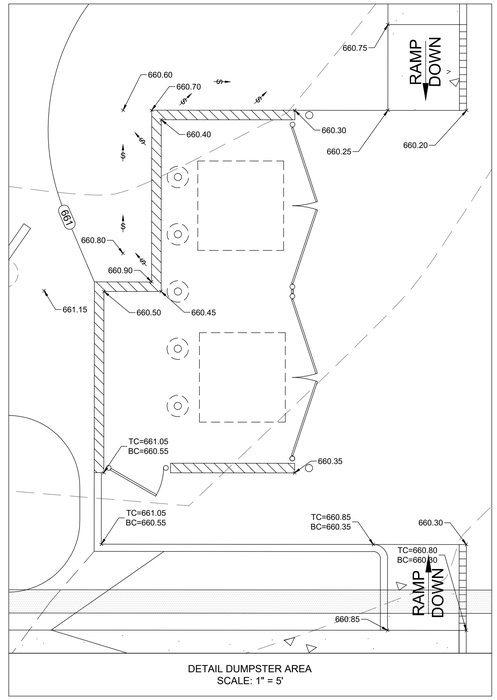
GRADING AND DRAINAGE PLAN

C05.0

PANDA HOME REV4



DETAIL BUILDING AREA
SCALE: 1" = 5'



DETAIL DUMPSTER AREA
SCALE: 1" = 5'

GRADING & DRAINAGE LEGEND

GRADING / DRAINAGE	LINETYPE/SYMBOL
GRADE	1000
PROPOSED SPOT ELEVATION	1000.00
MATCH EXISTING SPOT	M.E.E.
MATCH EXISTING SPOT W/ ESTIMATED EXISTING ELEVATION	M.E.E. 1000.00
STORM DRAIN	
HEADWALL (HW) / FLARED END SECTION (FES)	
DROP INLET (GRATE)	
DROP INLET (GRATE AND HOOD)	
JUNCTION BOX (JB) / OCS	
CATCH BASIN (SINGLE WING)	
CATCH BASIN (DOUBLE WING)	
PEDESTAL TOP	
STORM STRUCTURE NUMBER	A3

ROOF DRAINS STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE TYPE	INVERT IN	INVERT OUT
R0	ROOF DRAIN STRUCTURE STUB-IN	655.80 (PR1)	
R1	60 DEGREE BEND	655.93 (PR2)	655.93 (PR1)
R2	TEE	656.35 (PR3) 656.35 (PR2.1)	656.35 (PR2)
R2.1	ROOF DRAIN BUILDING STUB-OUT		656.66 (PR2.1)
R3	90 DEGREE BEND	656.60 (PR4)	656.60 (PR3)
R4	ROOF DRAIN BUILDING STUB-OUT		656.66 (PR4)

ROOF DRAINS PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
PR1	8"	13.01'	1.00%	PVC
PR2	8"	41.71'	1.00%	PVC
PR2.1	8"	6.50'	4.85%	PVC
PR3	8"	25.01'	1.00%	PVC
PR4	8"	6.50'	1.00%	PVC

GRADING NOTES SEE SHEET C01.1

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING FEATURES, INCLUDING BUT NOT LIMITED TO, UTILITIES, EXISTING IMPROVEMENTS, ETC. CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND ELEVATIONS PRIOR TO STARTING CONSTRUCTION AND ALERT ENGINEER TO ANY DISCREPANCIES IMMEDIATELY

North Carolina 811 www.nc811.org

24-HOUR CONTACT:
JOE CELENTO
(912) 272-4811

0 5 10 Feet
SCALE: 1" = 5'

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770
TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

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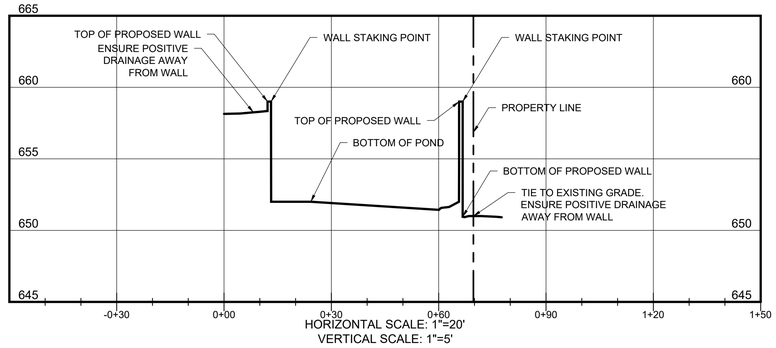
NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETTIT
3/8/2023

GRADING PLAN DETAIL

C05.1

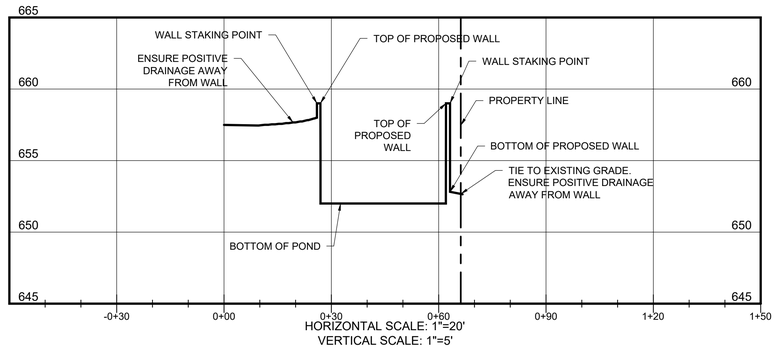
PANDA HOME REV4

POND CROSS SECTION 1-1



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

POND CROSS SECTION 2-2



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

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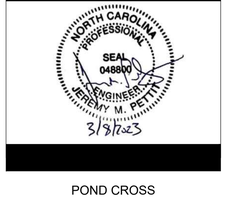


POND CROSS SECTIONS

C05.2

PANDA HOME REV4

ESPCP GENERAL NOTES:

THE EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN (ESPCP) IS PROVIDED BY THE OWNER. IF THE CONTRACTOR ELECTS TO ALTER THE STAGE CONSTRUCTION FROM THAT SHOWN IN THE PLANS, AND THE ENGINEER APPROVES THE REQUEST, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVISE THE ESPCP TO REFLECT ALL CHANGES IN STAGING. THIS WILL ALSO INCLUDE ANY REVISIONS TO EROSION AND SEDIMENTATION CONTROL ITEM QUANTITIES. MAJOR MODIFICATION OR DELETION OF SPECIFIED STRUCTURAL BMP'S THAT ARE SPECIFIED IN THE ESPCP WILL REQUIRE A FORMAL REVISION OF THE ESPCP BY THE ENGINEER OF RECORD. ADDITIONAL BMPS MAY BE ADDED AS DIRECTED BY THE ENGINEER.

SILT FENCE INSTALLATIONS WITH J-HOOKS AND SPURS:

SILT FENCE SHOULD NEVER RUN CONTINUOUS WITHOUT J-HOOKS OR SPURS. THE SILT FENCE SHOULD TURN BACK INTO THE FILL OR SLOPE TO CREATE SMALL POCKETS THAT TRAP SILT AND FORCE STORMWATER TO FLOW THROUGH THE SILT FENCE. THIS TECHNIQUE OR CONFIGURATION IS COMMONLY REFERRED TO AS J-HOOKS OR SPURS. THE J-HOOKS OR SPURS SHALL BE INSTALLED ON ALL SILT FENCES THAT ARE LOCATED AROUND THE PERIMETER OF THE PROJECT AND ALONG THE TOE OF EMBANKMENTS OR SLOPES. THE J-HOOKS AND SPURS SHALL BE PLACED IN ACCORDANCE WITH THE TYPICAL LOCATION DETAILS FOR SILT FENCES / BALED STRAW. SPACING FOR J-HOOKS OR SPURS SHALL NOT BE LESS THAN 50 FEET EXCEPT AS NOTED. SILT FENCES THAT ARE NEAR THE OUTLET OF CULVERTS, CROSS DRAINS, AND SWALES SHALL HAVE A MINIMUM OF 3 J-HOOKS OR SPURS ON BOTH SIDES OF THE STRUCTURE AT SPACING NOT TO EXCEED 30 FEET. J-HOOKS OR SPURS SHALL BE PAID FOR AS SILT FENCE ITEMS PER FOOT. ALL COSTS AND OTHER INCIDENTAL ITEMS ARE INCLUDED IN COST OF INSTALLING AND MAINTAINING THE SILT FENCE.

MAINTENANCE AND STABILIZATION MEASURES:

ALL STRUCTURAL BMP'S SHALL BE MAINTAINED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ALL SEDIMENT CONTROL DEVICES (EXCEPT SEDIMENT BASINS) INSTALLED ON A PROJECT SHALL, AT A MINIMUM, BE CLEANED OF SEDIMENT WHEN ONE-HALF THE CAPACITY, BY HEIGHT, DEPTH, OR VOLUME HAS BEEN REACHED. SEDIMENT BASINS SHALL BE CLEANED OF SEDIMENT WHEN ONE-THIRD THE CAPACITY BY VOLUME HAS BEEN REACHED.

AS A MINIMUM, THE CONTRACTOR SHALL COMPLETE THE PERMANENT GRASSING, OR TEMPORARY GRASSING, OR MULCHING, AS APPROPRIATE AND IN ACCORDANCE WITH CONTRACT DOCUMENTS, ON ALL CUT AND FILL SLOPES ON A WEEKLY BASIS DURING GRADING OPERATIONS. PROJECTS WITH A TOTAL OF 3 ACRES OR LESS OF GRASSING MAY BE TREATED EVERY TWO WEEKS. WHEN CONDITIONS WARRANT, THE ENGINEER MAY REQUIRE MORE FREQUENT INTERVALS FOR THIS WORK. IT IS EXTREMELY IMPORTANT TO GET A STABILIZING COVER IN PLACE, WHETHER IT IS MULCH, TEMPORARY GRASS, OR PERMANENT GRASS. ADEQUATE MULCH IS A MUST.

WHEN GRADING OPERATIONS OR OTHER SOIL DISTURBING ACTIVITIES HAVE BEEN SUSPENDED, FOR WHATEVER REASON, THE CONTRACTOR SHALL PROMPTLY PERFORM NEEDED GRASSING WORK AND/OR EROSION CONTROL WORK AS SHOWN IN THE PLANS, SUBMITTED BY THE CONTRACTOR OR AS DIRECTED BY THE ENGINEER.

TEMPORARY GRASS SHALL BE USED WHEN REQUIRED BY THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE ENGINEER TO CONTROL EROSION IN AREAS WHERE PERMANENT GRASSING CANNOT BE PLANTED. TEMPORARY GRASS SHALL BE USED WHERE AN AREA WILL BE PROTECTED FOR LONGER THAN MULCH IS EXPECTED TO LAST WHICH IS 60 CALENDAR DAYS. AFTER 60 CALENDAR DAYS, AREAS WITH ONLY MULCH SHALL BE PLANTED WITH TEMPORARY GRASS AND MULCHED AGAIN.

TEMPORARY GRASS SHALL BE A QUICK GROWING SPECIES SUITABLE TO THE AREA AND SEASON AND SHALL CONFORM TO THE REQUIREMENTS OF CONTRACT DOCUMENTS. SEEDING SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, EXCEPT THAT GROUND PREPARATION SHALL BE THE MINIMUM REQUIRED TO PROVIDE A SEED BED WHERE FURTHER GRADING WILL BE REQUIRED. AREAS THAT REQUIRE NO FURTHER GRADING SHALL BE PREPARED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. LIME SHALL BE OMITTED UNLESS THE AREA WILL LATER BE PLANTED IN PERMANENT GRASS WITHOUT FURTHER GRADING; IN WHICH CASE, LIME WILL BE APPLIED ACCORDING TO THE CONTRACT DOCUMENTS. MIXED GRADE FERTILIZER SHALL BE APPLIED AT THE RATE OF 400 POUNDS PER ACRE. NITROGEN SHALL BE OMITTED. ALL TEMPORARY GRASS SHALL BE MULCHED IN ACCORDANCE WITH CONTRACT DOCUMENTS.

ALL AREAS WHERE TEMPORARY GRASS HAS BEEN PLANTED SHALL BE PREPARED IN ACCORDANCE WITH CONTRACT DOCUMENTS PRIOR TO PLANTING PERMANENT GRASS.

WHERE STAGED CONSTRUCTION (OR OTHER CONDITIONS NOT CONTROLLED BY THE CONTRACTOR) PROHIBITS THE COMPLETION OF A ROADWAY SECTION IN A CONTINUOUS MANNER, THE CONTRACTOR SHALL APPLY MULCH TO CONTROL EROSION FOR A PERIOD OF 60 CALENDAR DAYS OR LESS. AFTER 60 CALENDAR DAYS, AREAS STABILIZED WITH ONLY MULCH SHALL BE PLANTED WITH TEMPORARY GRASS AND MULCHED AGAIN.

MULCH SHALL BE APPLIED AND UNIFORMLY SPREAD IN ACCORDANCE WITH CONTRACT DOCUMENTS.

WHEN GRASSING OPERATIONS BEGIN, MULCH SHALL BE LEFT IN PLACE AND PLOWED INTO THE SOIL DURING THE PROCESS OF SEEDBED PREPARATION, THEREBY BECOMING BENEFICIAL PLANT FOOD FOR THE NEWLY PLANTED GRASS. MULCH REQUIRED FOR PROTECTION OF NEWLY PLANTED GRASS SHALL BE IN ADDITION TO THE MULCH SPECIFIED HEREIN.

WASTE DISPOSAL:

SOLID MATERIALS, INCLUDING BUILDING MATERIALS, SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF ONCE PER WEEK OR MORE OFTEN IF NECESSARY AND TRASH WILL BE HAULED AS REQUIRED BY LOCAL REGULATIONS. NO CONSTRUCTION WASTE WILL BE BURIED ONSITE.

ALL PERSONNEL WILL BE INSTRUCTED ON PROPER PROCEDURES FOR WASTE DISPOSAL. A NOTICE STATING THESE PRACTICES WILL BE PASTED AT THE JOBSITE AND THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

NON-STORM WATER DISCHARGES:

NON-STORM WATER DISCHARGES AS DEFINED IN PART III.A.2 OF THE NPDES PERMIT WILL BE IDENTIFIED AFTER CONSTRUCTION HAS COMMENCED AND SHALL BE SUBJECT TO THE SAME REQUIREMENTS AS STORM WATER DISCHARGES AS REQUIRED BY THE NCDENR.

PETROLEUM SPILLS AND LEAKS:

LOCAL, STATE, AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.

MATERIALS & EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MAPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST, AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.

SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.

ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATIONS.

FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-4262675.

FOR SPILLS THAT OF AN UNKNOWN AMOUNT. THE NATIONAL CENTER (NRC) WILL BE CONTACTED WITH 24 HOURS AT 1-800-426-2675.

ESPCP GENERAL NOTES (CONT.):

FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, NCDENR SHALL BE CONTACTED WITHIN 24 HOURS OR AS REQUIRED BY FEDERAL, STATE, AND LOCAL REQUIREMENTS.

FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY THAT LICENSED PROFESSIONAL.

OTHER CONTROLS:

THE CONTRACTOR SHALL FOLLOW THIS ESPCP AND ENSURE AND DEMONSTRATE COMPLIANCE WITH APPLICABLE STATE AND/OR LOCAL WASTE DISPOSAL, SANITARY SEWER OR SEPTIC SYSTEM REGULATIONS.

SEDIMENT BASINS:

THE DISTURBED AREA WITHIN THE DRAINAGE AREA IS 1.50 ACRES. THE DISTURBANCE ACTIVITIES CONSIST OF SITE GRADING AND PAVING FOR THE CONSTRUCTION OF A BUILDING WITH ASSOCIATED PARKING AND LANDSCAPE AREAS. BMP'S AS SHOWN ON THE EROSION CONTROL PLANS WILL BE ADEQUATE TO CONTROL SEDIMENT RUNOFF AT THIS LOCATION.

STREAM BUFFER ENCROACHMENT:

STREAM BUFFERS ARE NOT IMPACTED BY THIS PROJECT.

INSPECTIONS:

ALL INSPECTIONS, MONITORING, AND REPORTING SHALL CONFORM TO THE MINIMUM STANDARDS SET FORTH IN STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY GENERAL PERMIT - NCG 010000.

RECEIVING WATER SAMPLING:

MANUAL SAMPLING:

SAMPLES WILL BE TAKEN AT THE APPROPRIATE TIME AS STATED IN PART IV.D. 5. D. OF THE PERMIT. SAMPLING WILL BEGIN AT THE DESIGNATED REPRESENTATIVE RECEIVING WATER AT THE DOWNSTREAM LOCATION FIRST. THE SAMPLE WILL BE TAKEN AS FAR DOWNSTREAM (WITHIN THE PROJECT RIGHT OF WAY) OF THE CONFLUENCE OF THE LAST STORM WATER DISCHARGE POINT, AND UPSTREAM OF ANY ADDITIONAL DISCHARGES NOT ASSOCIATED WITH THE PROJECT. THE SAMPLE WILL BE TAKEN IN THE CENTER OF THE RECEIVING WATER AT A POINT WHERE MIXING OF THE RECEIVING WATERS AND THE PROJECT OUTFALL HAS OCCURRED AND PRODUCED A HOMOGENOUS SAMPLE. ON RECEIVING WATERS WHERE ACCESS TO THE CENTER OF THE RECEIVING WATERS IS NOT PRACTICAL, SEVERAL SAMPLES FROM ACROSS THE RECEIVING WATERS WILL BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES WILL BE USED FOR THE UPSTREAM VALUE. A LARGE MOUTH, CLEAN, GLASS OR PLASTIC JAR/BOTTLE, LABELED WITH PROJECT NUMBER AND LOCATION WILL BE USED TO COLLECT THE SAMPLE. THE SAMPLE CONTAINER WILL BE HELD SUCH THAT THE OPENING FACES UPSTREAM. ONCE THE SAMPLE JAR/BOTTLE IS FULL AND CAPPED, IT WILL BE TRANSPORTED TO THE LOCATION WHERE THE TURBIDITY TESTING WILL BE CONDUCTED. ALL TURBIDITY TESTS WILL BE CONDUCTED IMMEDIATELY BUT IN NO CASE, LATER THAN 48 HOURS AFTER THE TIME THE SAMPLE WAS OBTAINED.

UPSTREAM SAMPLES WILL BE TAKEN AFTER DOWNSTREAM SAMPLES HAVE BEEN ACQUIRED. THE SAMPLE WILL BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORM WATER DISCHARGE FROM THE PROJECT (WITHIN THE PROJECT RIGHT OF WAY). THE SAMPLE WILL BE TAKEN IN THE CENTER OF THE RECEIVING WATER. ON RECEIVING WATERS WHERE ACCESS TO THE CENTER OF THE RECEIVING WATERS IS NOT PRACTICAL, SEVERAL SAMPLES FROM ACROSS THE RECEIVING WATERS WILL BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES WILL BE USED FOR THE UPSTREAM VALUE. A LARGE MOUTH, CLEAN, GLASS OR PLASTIC JAR, LABELED WITH PROJECT NUMBER AND LOCATION WILL BE USED TO COLLECT THE SAMPLE. THE SAMPLE CONTAINER WILL BE HELD SUCH THAT THE OPENING FACES UPSTREAM. ONCE THE SAMPLE JAR/BOTTLE IS FULL AND CAPPED, IT WILL BE TRANSPORTED TO THE LOCATION WHERE THE TURBIDITY TESTING WILL BE CONDUCTED. SAMPLES MAY BE ANALYZED AT THE SITE WITH PROPERLY CALIBRATED PORTABLE TURBIDIMETERS. ALL TURBIDITY TESTS WILL BE CONDUCTED IMMEDIATELY BUT IN NO CASE, LATER THAN 48 HOURS AFTER THE TIME THE SAMPLE WAS OBTAINED.

AUTOMATIC SAMPLING:

SAMPLES WILL BE TAKEN AT THE APPROPRIATE TIMES AS SPECIFIED IN PART IV.D. 5. D. OF THE PERMIT. AUTOMATIC SAMPLING CAN BE ACCOMPLISHED AT BOTH UPSTREAM AND DOWNSTREAM SIMULTANEOUSLY BY USING A SAMPLING DEVICE SIMILAR TO THIS ISCO MODEL 3700 OR 6700. THESE DEVICES CAN BE TRIGGERED BY FLOW METERS OR RAIN GAGES TO OBTAIN THE REQUIRED SAMPLES. THIS DETERMINATION WILL BE MADE ON A PROJECT BY PROJECT BASIS. THE PROBE FOR THE AUTOMATIC SAMPLER WILL BE PLACED IN THE CENTER OF THE RECEIVING WATER AT A POINT AS FAR DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORM WATER DISCHARGE POINT AND UPSTREAM OF ANY ADDITIONAL DISCHARGES NOT ASSOCIATED WITH THE PROJECT. SAMPLES WILL REMAIN IN THE AUTOMATIC SAMPLER UNTIL THE NEXT BUSINESS DAY, WHEN THEY WILL BE COLLECTED AND TESTED.

THE PROBE FOR UPSTREAM SAMPLING WILL BE POSITIONED IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORM WATER DISCHARGE POINT FROM THE PROJECT. THE PROBE WILL BE PLACED IN THE CENTER OF THE RECEIVING WATER. SAMPLES WILL REMAIN IN THE AUTOMATIC SAMPLER UNTIL THE NEXT BUSINESS DAY, WHEN THEY WILL BE COLLECTED AND TESTED.

TESTING:

ALL TURBIDITY TESTS SHALL BE DONE IN ACCORDANCE WITH 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE NCDENR. TURBIDITY RESULTS WILL BE RECORDED AND REPORTED TO NCDENR IN ACCORDANCE WITH PART IV.E OF THE PERMIT.

OUTFALL SAMPLING:

MANUAL SAMPLING:

SAMPLES WILL BE TAKEN AT THE APPROPRIATE TIME AS STATED IN PART IV.D. 5. D. OF THE PERMIT. SAMPLING WILL OCCUR AT THE DESIGNATED REPRESENTATIVE OUTFALL. THE SAMPLE WILL BE TAKEN IN THE CENTER OF THE OUTFALL CHANNEL. A LARGE MOUTH, CLEAN, GLASS OR PLASTIC JAR/BOTTLE, LABELED WITH PROJECT NUMBER AND LOCATION WILL BE USED TO COLLECT THE SAMPLE. THE SAMPLE CONTAINER WILL BE HELD SUCH THAT THE OPENING FACES UPSTREAM. ONCE THE SAMPLE JAR/BOTTLE ISFULL AND CAPPED, IT WILL BE TRANSPORTED TO THE LOCATION WHERE THE TURBIDITY TESTING WILL BE CONDUCTED. SAMPLES MAY BE ANALYZED AT THE SITE WITH PROPERLY CALIBRATED PORTABLE TURBIDIMETERS. ALL TURBIDITY TESTS WILL BE CONDUCTED IMMEDIATELY BUT IN NO CASE, LATER THAN 48 HOURS AFTER THE TIME THE SAMPLE WAS OBTAINED.

OUTFALL SAMPLING (CONT.):

AUTOMATIC SAMPLING:

SAMPLES WILL BE TAKEN AT THE APPROPRIATE TIMES AS SPECIFIED IN PART IV.D. 5. D. OF THE PERMIT. AUTOMATIC SAMPLING CAN BE ACCOMPLISHED BY USING A SAMPLING DEVICE SIMILAR TO THE ISCO MODEL 3700 OR 6700. THESE DEVICES CAN BE TRIGGERED BY FLOW METERS OR RAIN GAGES TO COLLECT THE REQUIRED SAMPLES. THIS DETERMINATION WILL BE MADE ON A PROJECT BY PROJECT BASIS. THE PROBE FOR THE AUTOMATIC SAMPLER WILL BE PLACED IN THE CENTER OF THE OUTFALL CHANNEL. SAMPLES WILL REMAIN IN THE AUTOMATIC SAMPLER UNTIL THE NEXT BUSINESS DAY, WHEN THEY WILL BE COLLECTED AND TESTED.

TESTING:

ALL TURBIDITY TESTS SHALL BE DONE IN ACCORDANCE WITH 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE NCDENR. TURBIDITY RESULTS WILL BE RECORDED AND REPORTED TO NCDENR IN ACCORDANCE WITH PART IV.E OF THE PERMIT.

SAMPLING BY THE CONTRACTOR'S ENVIRONMENT ENGINEER SHALL OCCUR FOR THE FOLLOWING EVENTS:

A. FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING DURING NORMAL BUSINESS HOURS* (MONDAY THRU FRIDAY, 8:00 AM TO 5:00 PM AND SATURDAY 8:00 AM TO 5:00 PM WHEN CONSTRUCTION ACTIVITY IS BEING CONDUCTED BY THE PRIMARY PERMITTEE) THAT OCCURS AFTER ALL CLEARING AND GRUBBING OPERATION HAVE BEEN COMPLETED IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION.
B. IN ADDITION TO (A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING STREAM, THE FIRST RAIN EVENT THAT REACHS OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING DURING NORMAL BUSINESS HOURS* THAT OCURS EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION, WHICHEVER COMES FIRST:
C. AT THE TIME OF SAMPLING PERFORMED PURSUANT TO (A) AND (B) ABOVE, IF BMPS ARE FOUND TO BE PROPERLY DESIGNED, INSTALLED AND MAINTAINED, NO FURTHER ACTION SHALL BE REQUIRED WITHIN 2 BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS* UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNITIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPS ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED; AND

*NOTE THAT THE PERMITTEE MAY CHOOSE TO MEET THE REQUIREMENTS OF (A) AND (B) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR MONITORING AT ANY TIME OF THE DAY OR WEEK.

10.INSPECTIONS AND RAINFALL MEASUREMENTS

INSPECTIONS OF EROSION CONTROL MEASURES SHALL OCCUR IN ACCORDANCE WITH EROSION CONTROL NOTES NUMBER 31 AND 32 ON THIS SHEET. RECORDS OF RAINFALL MEASUREMENTS SHALL BE KEPT ON A DAILY BASIS IN ACCORDANCE WITH EROSION CONTROL NOTE NUMBER 31 ON THIS SHEET. RAINFALL MUST BE MEASURED ADJACENT TO THE ACTIVE PHASE(S) OF THE PROJECT.

11.REPORTS AND RECORDS

THE CONTRACTOR'S ENVIRONMENTAL ENGINEER SHALL SUBMIT A SUMMARY OF THE MONITORING RESULTS TO THE EPD AT THE ADDRESS BELOW BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING HT REPORT PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. THE EPD MAY REQUIRE ADDITIONAL MONITORING RESULTS ON A MORE FREQUENT BASIS. SAMPLING RESULTS SHALL BE SUBMITTED UNTIL A NOT IS SUBMITTED. THE CONTRACTOR SHALL BE FAMILIAR WITH AND ADHERE TO ALL REQUIREMENTS INCLUDED IN THIS NCDENR'S GENERAL PERMIT NO. NCG - 010000 (NPDES) WITH REGARDS TO INSPECTIONS, MONITORING AND REPORTING.

THE ENVIRONMENT ENGINEER SHALL ALSO SUBMIT COPIES OF ALL REPORTS AND MONITORING RESULTS TO THE CONTRACTOR, THE OWNER AND THE DESIGN PROFESSIONAL. THE CONTRACTOR, OWNER AND THE DESIGN PROFESSIONAL SHALL RETAIN COPIES OF ALL REPORTS AND OTHER INFORMATION IN ACCORDANCE WITH THIS PERMIT. IN ADDITION TO OTHER REQUIREMENTS, THE MONITORING INFORMATION SHALL INCLUDE:

A. THE DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS
B. THE NAME(S) OF THE INDIVIDUAL(S) WHO PERFORMED THE SAMPLING AND MEASUREMENTS.
C. THE DATE ANALYSES WERE PERFORMED.
D. THE TIME ANALYSES WERE INITIATED.
E. THE NAMES OF THE INDIVIDUALS WHO PERFORMED THE ANALYSES.
F. REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL METHODS USED. A QUALITY CONTROL PROGRAM MUST BE INCLUDED IN THE WRITTEN PROCEDURES.
G. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS.
H. RESULTS WHICH EXCEED A SPECIFIED NTU VALUE SHALL BE REPORTED AS SUCH.
I. THE SUMMARY REPORT DETAILING THE FINDINGS OF THE DAILY, 14-DAY AND MONTHLY INSPECTIONS OF THE BMPS, INCLUDING THE LOG OF THE EROSION CONTROL MEASURES AND RAINFALL. SUMMARY REPORTS SHALL BE SUBMITTED AS REQUIRED.

THE CONTRACTOR SHALL KEEP A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN ON SITE AT ALL TIMES FROM PROJECT BEGINNING UNTIL FINAL STABILIZATION IS ACHIEVED.

COPIES OF ALL NOI'S, NOT'S, REPORTS, PLANS, MONITORING REPORTS, MONITORING INFORMATION, BACKUP MATERIAL AND CALIBRATIONS, DATA, AND ALL OTHER RECORDS REQUIRED BY THE NPDES PERMIT SHALL BE RETAINED BY THE CONTRACTOR AND THE OWNER FOR A PERIOD OF THREE YEARS FOLLOWING THE DATE OF FINAL STABILIZATION. THIS PERIOD MAY BE LENGTHENED UPON WRITTEN REQUEST BY THE NCDENR.

EROSION CONTROL NOTES:

1. ALL TIMES THE CONTRACTOR SHALL ADHERE TO LOCAL, STATE AND FEDERAL EROSION AND SEDIMENT CONTROL REGULATIONS AND TO THE LATEST EDITION OF THE "NCDENR EROSION AND SEDIMENTATION CONTROL PLANNING AND DESIGN MANUAL" MANAGEMENT PRACTICES (BMPS) SHALL BE EXERCISED TO CONTROL EROSIOIN AND SEDIMENTATION FOR ALL RAINFALL EVENTS UP TO AND INCLUDING A 25 YEAR, 24 HOUR RAINFALL EVENT.

2. STRIPPING OF VEGETATION, REGRADING, AND OTHER DEVELOPMENT ACTIVITIES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO MINIMIZE EROSION.

3. CUT AND FILL OPERATION SHALL BE KEPT TO A MINIMUM.

4. DEVELOPMENT PLANS MUST CONFORM TO TOPOGRAPHY AND SOIL TYPE, SO AS TO CREATE THE LOWEST PRACTICABLE EROSION POTENTIAL.

5. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED.

6. THE DISTURBED AREA AND THE DURATION OF EXPOSURE TO EROSIVE ELEMENTS SHALL BE KEPT TO A PRACTICABLE MINIMUM.

7. DISTURB SOIL SHALL BE STABILIZED AS QUICKLY AS PRACTICAL.

8. TEMPORARY VEGETATION OR MULCHING SHALL BE EMPLOYED TO PROTECT EXPOSED CRITICAL AREA DURING DEVELOPMENT.

9. PERMANENT VEGETATION AND STRUCTURAL EROSION CONTROL MEASURE SHALL BE INSTALLED AS SOON AS PRACTICABLE.

10. TO THE EXTENT NECESSARY, SEDIMENT IN RUN-OFF WATER SHALL BE TRAPPED BY THE USE OF DEBRIS BASINS, SILT TRAPS, OR SIMILAR MEASURES UNTIL THE DISTURBED AREA IS STABILIZED.

11. ADEQUATE PROVISIONS SHALL BE PROVIDED TO MINIMIZE DAMAGE FROM SURFACE WATER TO THE CUT FACE OF EXCAVATIONS OR THE SLOPING SURFACES OF FILLS.

EROSION CONTROL NOTES (CONT.):

12. CUTS AND FILLS SHALL NOT ENDANGER ADJOINING PROPERTY.

13. FILLS SHALL NOT ENCROACH UPON NATURAL WATER COURSES OR CONSTRUCTED CHANNELS IN A MANNER SO AS TO ADVERSELY AFFECT OTHER PROPERTY OWNERS.

14. GRADING EQUIPMENT SHALL CROSS FLOWING STREAMS BY THE MEANS OF BRIDGES OR CULVERTS, EXCEPT WHEN SUCH METHODS ARE NOT FEASIBLE, PROVIDED IN ANY CASE THAT SUCH CROSSINGS SHALL BE KEPT TO A MINIMUM.

15. PROVISIONS SHALL BE PROVIDED FOR TREATMENT OR CONTROL OF ANY SOURCE OF SEDIMENT AND ADEQUATE SEDIMENTATION CONTROL FACILITIES TO RETAIN SEDIMENTS ON SITE OR PRECLUDE SEDIMENTATION OF ADJACENT WATERS BEYOND THE LEVELS SPECIFIED IN THE NPDES PERMIT.

16. WASHING DOWN AND CLEANING OF CONCRETE TRUCKS IS TO BE CONFINED TO SPECIFIC AREA SET ASIDE ON-SITE FOR THAT PURPOSE. EXCESS CONCRETE AND WASH WATER ARE TO BE TRAPPED ON-SITE BY MEANS OF A PIT DUG FOR THAT PURPOSE.

17. ALL WASTE AND DEBRIS GENERATED BY THE PROPOSED CONSTRUCTION IS TO BE DISPOSED OF PROPERLY AND IN AN APPROVED AREA. ALL AREA. ALL DISTURBED AREAS ARE TO STABILIZED WITH PERMANENT VEGETATION AS SOON AS PRACTICAL.

18. CLEANUP AND/OR CONTAIN FUEL AND OIL SPILLS IMMEDIATELY. REPORT ANY CHEMICAL SPILLS INTO WATER IMMEDIATELY TO THE NCDENR EMERGENCY RESPONSE PROGRAM. IF FUEL AND OIL ARE TO BE STORED ON-SITE, THEY MUST BE STORED IN ACCORDANCE WITH THE NORTH CAROLINA FIRE MARSHALL'S RULES AND REGULATIONS. A DIKE OF SUFFICIENT HEIGHT TO CONTAIN THE VOLUME OF FUEL OR OIL BEING STORED ALONG WITH MATERIALS AND PRODUCTS MADE FOR THE ABSORPTION OF PETROLEUM PRODUCTS ARE REQUIRED ON-SITE. ANY USED ABSORBING MATERIAL MUST BE DISPOSED OF IN AN APPROVED WASTE DISPOSAL SITE.

19. THE C-FACTOR PRIOR TO CONSTRUCTION ACTIVITIES AT THE SITE IS APPROXIMATELY 0.40, THE C-FACTOR AFTER CONSTRUCTION ACTIVITIES AT THIS SITE IS APPROXIMATELY 0.47.

20. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLANS DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL MEASURE SHALL BE INSTALLED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

21. THE PROPOSED LAND USE AT THE PROJECT SITE IS: A RESTAURANT AND ASSOCIATED PARKING AREA. THE TOTAL AREA OF THE PROJECT 1.30 ACRES. THE PROJECT IS LOCATED IN CONCORD, NORTH CAROLINA.

22. THE TOTAL AREA ENCOMPASSED AND EXPECTED TO BE DISTURBED BY THIS PROJECT IS APPROXIMATELY 1.50 ACRES.

23. THIS PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD ZONE. SEE FIRM 11/16/2018 DATED 3710560100K.

24. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.

25. THE CONTRACTOR SHALL PLACE TEMPORARY MULCH OR GRASSING WITHIN TWO DAYS AFTER THE COMPLETION OF ANY LAND DISTURBING ACTIVITY OR IF THE ACTIVITY IS DISCONTINUED FOR A PERIOD OF ONE WEEK OR LONGER. PERMANENT GRASSING SHALL BE PLACED AS SOON AS PRACTICABLE.

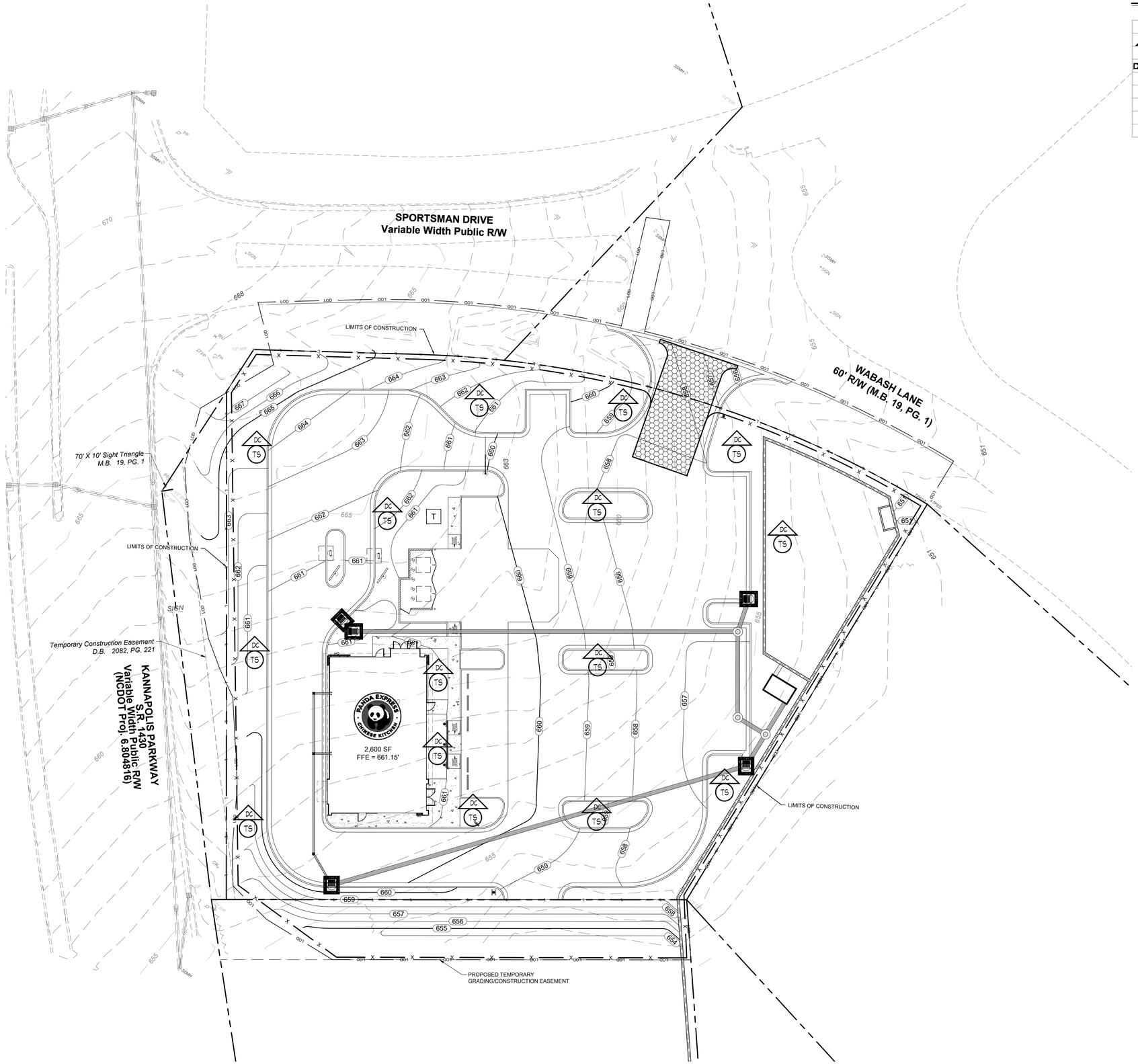
26. THE CONTRACTOR SHALL PERFORM REGULAR MAINTENANCE ON EROSION CONTROL DEVICES AND KEEP THE REQUIRED RECORD OF THE MAINTENANCE AND REPAIR OF THE DEVICES IN ACCORDANCE WITH THE NCDENR'S GENERAL PERMIT NO. NCG - 010000 (NPDES). SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER.

27. ANY FILL DIRT OVER THE PIPE SHALL BE GRADED TO PRE-CONSTRUCTION ELEVATIONS.

28. THE LIMITS OF DISTURBANCE LINE (AS INDICATED ON THE PLANS) REPRESENTS THE LIMITS OF CLEARING FOR THE PROJECT. THE CONTRACTOR SHALL NOT CLEAR BEYOND THIS LIMIT. THE CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO ANY SPECIAL CONDITIONS REGARDING CLEARING THAT ARE ATTACHED TO THE EASEMENT AGREEMENTS.

29. NOT USED.

30. OFF-SITE VEHICLE TRACKING OF DIRT, SOILS, AND SE



EROSION CONTROL LEGEND

ESPC BMP	LINETYPE/SYMBOL	REFERENCE
DUST CONTROL	DC	DETAIL 10, SHEET C06.4
CONSTRUCTION EXIT	CE	DETAIL 9, SHEET C06.4
SEDIMENT FENCE	SF	DETAIL 5, SHEET C06.3
TEMPORARY SEEDING	TS	DETAIL 11, SHEET C06.4
INLET PROTECTION	IP	DETAIL 7, SHEET C06.3
PERMANENT SEEDING	PS	DETAIL 11, SHEET C06.4
SODDING	SOD	DETAIL 12, SHEET C06.4
LIMITS OF CONSTRUCTION	L	SEE PLANS

SEE LANDSCAPE/TREE PROTECTION PLANS FOR LEGEND SPECIFIC TO THOSE SHEETS.

ESPC NOTES

GENERAL

1. EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION CONTROL MEASURES AND PRACTICES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE AT THE EXPENSE OF THE CONTRACTOR.
2. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.
3. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
4. ANY AMENDMENT TO THE EROSION CONTROL PLANS WHICH HAVE A SIGNIFICANT EFFECT ON BMPS WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
5. THE PERMITEE IS ONLY RESPONSIBLE FOR THE FOR THE INSTALLATION AND MAINTENANCE OF STORM WATER MANAGEMENT DEVICES PRIOR TO STABILIZATION OF THE SITE AND NOT THE OPERATION AND MAINTENANCE OF SUCH STRUCTURES AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
6. EROSION CONTROL AND TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY AND MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
7. SEE GRADING & DRAINAGE NOTES.

SLOPES AND DISTURBED AREA STABILIZATION

1. CONCENTRATED FLOW AREAS AND ALL SLOPES 2H:1V OR STEEPER SHALL BE STABILIZED WITH THE APPROPRIATE EROSION CONTROL MATTING OR BLANKET.
2. ALL CUT AND FILL SLOPES MUST BE SURFACE ROUGHENED AND VEGETATED WITHIN (7) DAYS OF THEIR CONSTRUCTION.
3. ALL DISTURBED AREAS SHALL BE GRASSED AS SOON AS CONSTRUCTION PHASES PERMIT. NO EXPOSED GRADE WILL BE LEFT UNSTABLE FOR MORE THAN 7 DAYS.
4. PERMANENT GRASSING AND LANDSCAPING OF DISTURBED AREAS SHALL BE COMPLETED AS QUICKLY AS POSSIBLE. TEMPORARY STABILIZATION BY MULCHING AND/OR TEMPORARY SEEDING WILL BE REQUIRED IN THE EVENT OF PROJECT DELAYS.
5. WIRE MESH REINFORCED SEDIMENT BARRIERS SHALL BE PLACED AT THE TOE OF ALL FILL SLOPES.

DRAINAGE

1. ALL DRAINAGE STRUCTURES SHALL BE EROSION PROOFED.
2. CONTRACTOR SHALL SELECT APPROPRIATE INLET PROTECTION FOR EACH INLET PER FIELD CONDITIONS.

MAINTENANCE AND INSPECTIONS

1. SEDIMENT AND EROSION CONTROL MEASURES AND PRACTICES SHALL BE INSPECTED DAILY.
2. SEDIMENT STORAGE MAINTENANCE INDICATORS MUST BE INSTALLED IN SEDIMENT STORAGE STRUCTURES, INDICATING THE 1/3 FULL VOLUME.
3. SEDIMENT CONTROL DEVICES MUST BE INSPECTED DAILY AND CHECKED AFTER EACH STORM EVENT AND CLEANED OR REPLACED WHEN THEY REACH 1/3 OF DESIGN CAPACITY.
4. MAINTENANCE OF ALL SOIL AND SEDIMENTATION CONTROL MEASURES AND PRACTICES, WHETHER TEMPORARY OR PERMANENT, SHALL BE AT ALL TIMES THE RESPONSIBILITY OF THE CONTRACTOR.

BASED IN THE WEB SOIL SURVEY INFORMATION, ALL SOILS AT THIS SITE ARE CLASSIFIED AS CuB2 - CULLEN CLAY LOAM, 2 TO 8 PERCENT SLOPES, MODERATELY ERODED.

TOTAL DISTURBED AREA THIS PHASE: 1.50 AC.

North Carolina 811 www.nc811.org

24-HOUR CONTACT:
JOE CELENTO
(912) 272-4811

0 20 40 Feet
SCALE: 1" = 20'

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
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REVISIONS:

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

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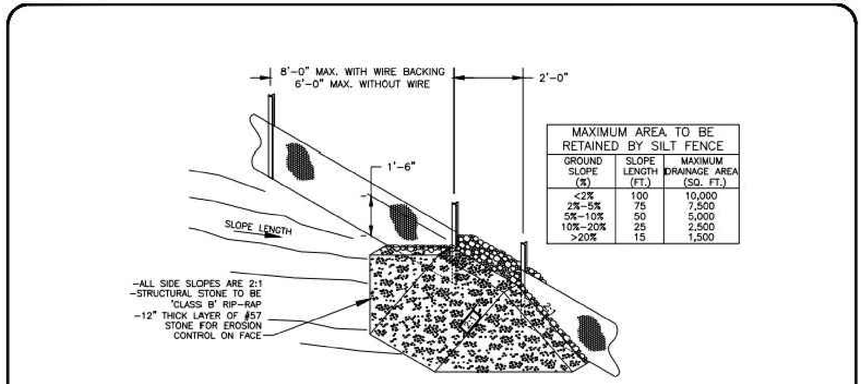
NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETTIT
3/31/23

ESPC PLAN

C06.1

PANDA HOME REV4



MAXIMUM AREA TO BE RETAINED BY SILT FENCE		
GROUND SLOPE (%)	SLOPE LENGTH (FT.)	MAXIMUM DRAINAGE AREA (SQ. FT.)
<2%	100	10,000
2%-5%	75	7,500
5%-10%	50	5,000
10%-20%	25	2,500
>20%	15	1,500

NOTES:
1. NON-EROSIVE OUTLETS ARE TO BE PLACED IN THE SILT FENCE AS SHOWN ON THE PROJECT PLANS AS DIRECTED BY THE CONSTRUCTION INSPECTOR.
2. NON-EROSIVE OUTLETS ARE TO BE LOCATED AT ALL NATURAL DRAINAGE AREAS AND DEPRESSIONS, WITH THE EXCEPTION OF PERENNIAL STREAMS.
3. THE MAXIMUM DRAINAGE AREA IMPOUNDED AT EACH OUTLET MUST NOT EXCEED 1/4 ACRE.

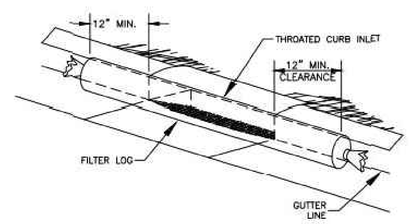
NOT TO SCALE

KANNAPOLIS Public Works

SILT FENCE OUTLET DETAIL

DECEMBER 2019
204

1 **SILT FENCE OUTLET DETAIL** NTS



NOTES:
1. INSTALL THE FILTER LOG IN FRONT OF THE CURB INLET OPENING. EACH END OF THE FILTER LOG SHOULD OVERLAP THE CURB INLET APPROXIMATELY 12".
2. THE FILTER LOG SHALL BE A PRE-MANUFACTURED SYNTHETIC FILTER OR A SYNTHETIC SOCK MATERIAL FILLED WITH AN ACCEPTABLE FILTERING MATERIAL SUCH AS COMPOST, #57 CRUSHED STONE OR 100% SHREDDED RUBBER (TYPICALLY FROM TIRES).
3. THE FILTER LOG SOCK FABRIC SHALL BE HIGH DURABILITY NETTING MATERIAL TO RESIST PUNCTURE AND WEAR IN THE TRAFFIC AREAS.
4. SAND BAGS SHALL BE USED TO AID IN THE LOG SHAPE AND PREVENT IT FROM ENTERING INTO THE THROAT. THEY SHOULD BE PLACED BETWEEN THE LOG AND THE THROAT OPENING, AND USED TO SECURE THE ENDS OF THE LOG AGAINST THE CURB IF NEEDED. THE END OF THE LOG SHALL EXTEND A MINIMUM OF 1 FOOT PAST THE END OF THE THROAT OPENING.
5. IN ALL CASES, THE LOG SHALL PROVIDE A PHYSICAL BARRIER TO THE CATCH BASIN TO ALLOW FOR PONDING AND SEDIMENTATION ALONG THE UPSTREAM SIDE OF THE LOG. THE LOGS SHALL BE PLACED ON FLAT SURFACES AND MAINTAIN CONSTANT CONTACT WITH THE PAVED SURFACE. ANY DAYLIGHT WILL ALLOW FOR UNTREATED DISCHARGE AND IS NOT PERMITTED.
6. ALL FILTER LOGS MUST BE INSPECTED FREQUENTLY (24 HOURS AFTER A STORM EVENT AND WEEKLY) FOR PROPER FUNCTION. ACCUMULATED SEDIMENT AND DEBRIS SHALL BE REMOVED TO AVOID FUTURE FAILURE, AND MUST NOT EXCEED HALF OF THE EFFECTIVE HEIGHT OF THE LOG. REFERENCE MANUFACTURER'S RECOMMENDATIONS FOR ADDITIONAL MAINTENANCE.
7. REMOVE FILTER LOGS WHEN THE SITE HAS BEEN STABILIZED.

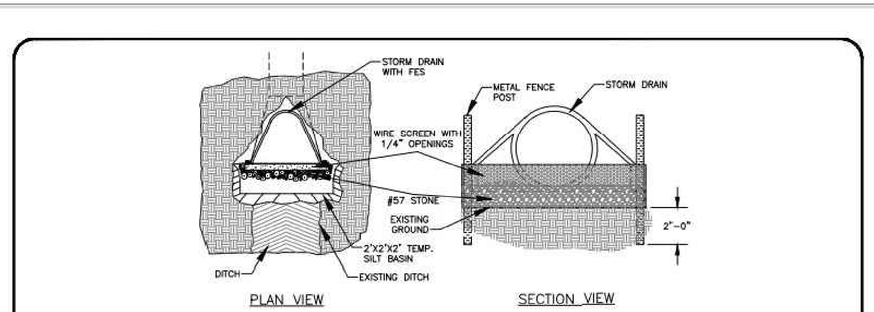
NOT TO SCALE

KANNAPOLIS Public Works

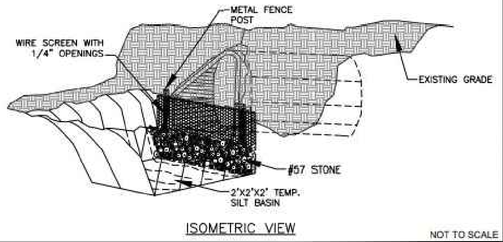
THROATED INLET PROTECTION

DECEMBER 2019
206

2 **THROATED INLET PROTECTION** NTS



NOTES:
1. THIS MEASURE IS USED WHERE A DISTURBED DITCH FLOWS INTO A PROPOSED FES.
2. WIRE SCREEN SHALL BE 3/4" AND THE BOTTOM SHALL BE TRENCHED A MINIMUM OF 6" INTO THE GROUND AND HELD IN PLACE WITH #57 STONE.
3. ONCE DITCH IS STABILIZED, REMOVE WIRE SCREEN AND FILL BASIN WITH SUITABLE MATERIAL. INSTALL EXCELSIOR MATTING OVER BASIN TO STABILIZE FILL.



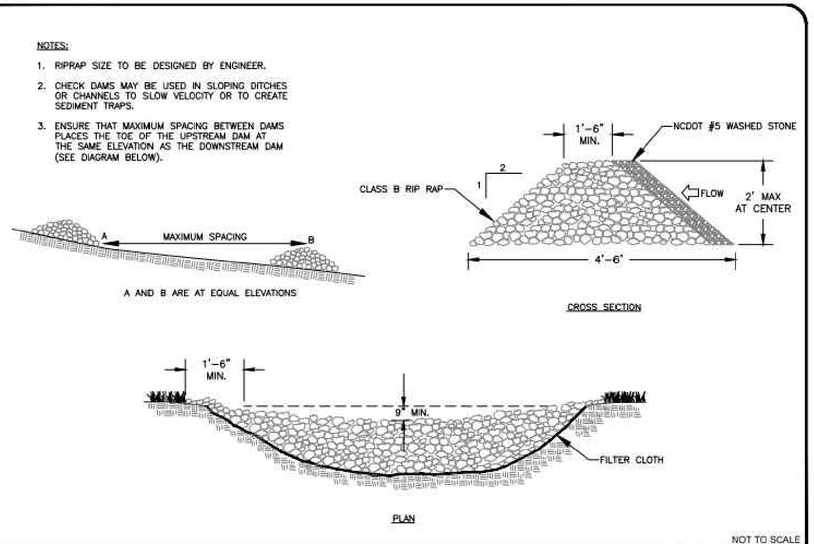
NOT TO SCALE

KANNAPOLIS Public Works

FLARED END SECTION INLET PROTECTION

DECEMBER 2019
211

3 **FLARED END SECTION INLET PROTECTION** NTS



NOT TO SCALE

KANNAPOLIS Public Works

TEMPORARY ROCK CHECK DAM

DECEMBER 2019
209

4 **TEMPORARY ROCK CHECK DAM** NTS

[redacted]

PANDA EXPRESS CHINESE KITCHEN

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[redacted]

REVISIONS:

[redacted]

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

[redacted]

DRAWN BY: INGENIUM ENTERPRISES

[redacted]

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

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[redacted]

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETITT
3/9/2023

[redacted]

ESPC DETAILS I

C06.2

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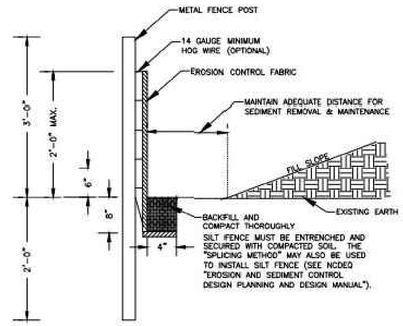
PANDA HOME REV4



NOTES:

1. SPACING OF POSTS USING HOG WIRE WITH APPROVED EROSION CONTROL FABRICS TO BE 8'-0" ON CENTER.
2. SPACING OF POSTS WITHOUT HOG WIRE USING APPROVED EROSION CONTROL FABRICS TO BE 6'-0" ON CENTER.

POST: METAL T-POST 5'-0" OR 6'-0" IN HEIGHT DEPENDING ON FILL SLOPE (MIN 1.33 LB/LF STEEL CONSTRUCTION).
FABRIC: 3'-0" IN WIDTH (MUST BE STANDARD SPECIFICATIONS FOR SILT FENCE – ASTM D) WITH 12" BURIED IN TRENCH.
STONE: (IF USED) #4 WASHED STONE PLACED 1'-0" DEEP AT SILT FENCE.

1. SPLICES IN FABRIC SHOULD BE OVERLAPPED A MIN. OF 4 FT.
2. MAXIMUM DRAINAGE AREA = 1/4 ACRE PER 100 FT OF FENCE FOR 2% OR LESS SLOPE.
3. SILT FENCE TO BE REMOVED AFTER CONSTRUCTION IS COMPLETE AS DIRECTED BY THE CONSTRUCTION INSPECTOR.

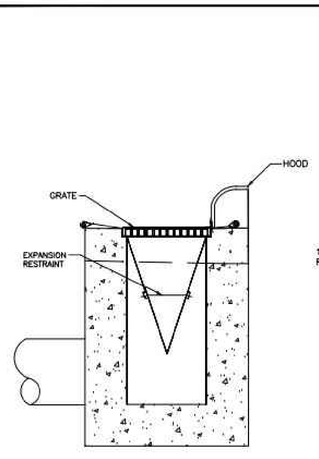
NOT TO SCALE

KANNAPOLIS Public Works

SILT FENCE DETAIL

DECEMBER 2019
203

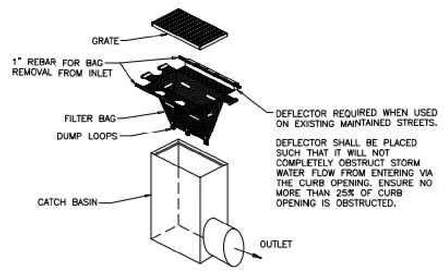
5 **SILT FENCE DETAIL** NTS



SECTION

NOTES:

1. INLET MAINTENANCE SHALL BE DOCUMENTED IN PROJECT LOG BOOK.
2. FILTER TYPES SHALL BE APPROVED BY THE CITY INSPECTOR PRIOR TO INSTALLATION.
3. FILTER BAGS MAY BE REMOVED WHEN SITE IS STABILIZED AT THE DIRECTION OF THE ENGINEER.
4. FILTER BAGS SHALL BE REMOVED PRIOR TO STREET ACCEPTANCE AND/OR CLOSE OUT OF GRADING PERMIT.
5. FILTER BAGS SHALL BE CLEANED OR REPLACED ON A REGULAR BASIS (NOT BE MORE THAN HALF FULL AT ANY TIME).
6. FILTER BAGS MAY BE INSTALLED IN EXISTING CITY OR NCDOT ROADS AS LONG AS STORM DRAINAGE IS NOT IMPEDED.



INSTALLATION

NOT TO SCALE

KANNAPOLIS Public Works

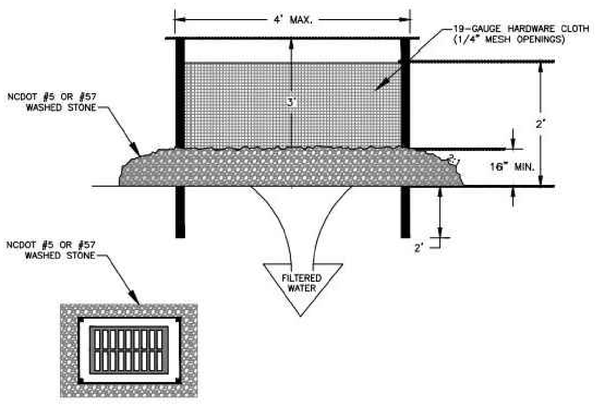
SILT BAG INLET PROTECTION

DECEMBER 2019
205

6 **SILT BAG INLET PROTECTION** NTS

NOTES:

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NC DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
6. COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUNDCOVER.



NOT TO SCALE

KANNAPOLIS Public Works

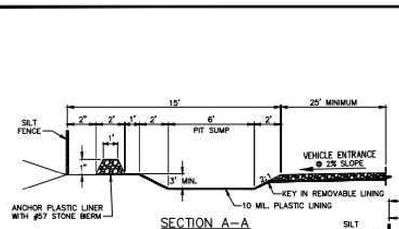
HARDWARE CLOTH AND GRAVEL INLET PROTECTION

DECEMBER 2019
207

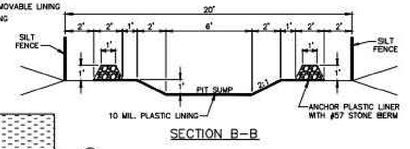
7 **HARDWARE CLOTH AND GRAVEL INLET PROTECTION** NTS

NOTES:

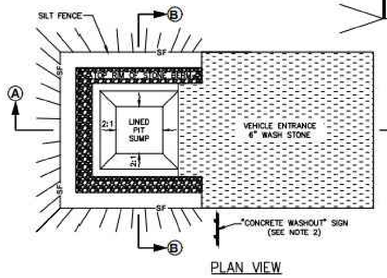
1. ACTUAL LOCATION DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT FACILITY SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
3. CONCRETE WASHOUT FACILITY SHALL BE CLEARLY MARKED WITH SIGN INSTALLED WITHIN 30 FEET OF THE CONCRETE WASHOUT FACILITY.



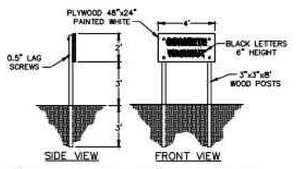
SECTION A–A



SECTION B–B



PLAN VIEW



"CONCRETE WASHOUT" SIGN DETAILS

NOT TO SCALE

KANNAPOLIS Public Works

CONCRETE WASHOUT PIT

DECEMBER 2019
212

8 **CONCRETE WASHOUT PIT** NTS

PANDA EXPRESS CHINESE KITCHEN

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770
TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

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REVISIONS:

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

INGENIUM
INGENIUM ENTERPRISES, INC.
19445 SHUMARD OAK DR.
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LAND O LAKES, FL 34638
PHONE: (813) 387-0084
NCBEES CERTIFICATE #C-4114

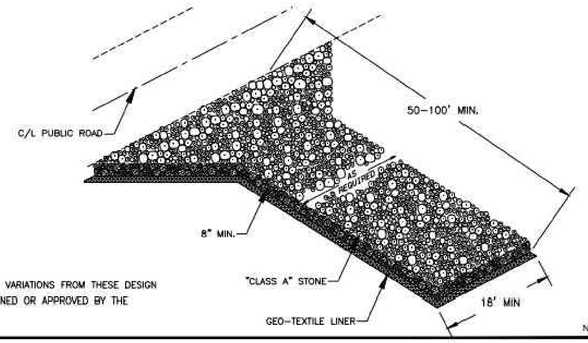
NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETITT
3/9/2023

ESPC DETAILS II

C06.3

PANDA HOME REV4

DEFINITION: GRAVELED AREA TO BE LOCATED AT POINTS WHERE VEHICLES ENTER AND LEAVE A CONSTRUCTION SITE.
PURPOSE: TO PROVIDE A BUFFER AREA WHERE VEHICLES CAN DROP THEIR MUD AND SEDIMENT TO AVOID TRANSPORTING IT ONTO PUBLIC ROADS, TO CONTROL EROSION FROM SURFACE RUNOFF, AND TO HELP CONTROL DUST.
CONDITIONS: TO BE USED WHEREVER TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE AND MOVING DIRECTLY ONTO A PUBLIC ROAD OR OTHER PAVED OFF-SITE AREA. CONSTRUCTION PLANS SHOULD LIMIT TRAFFIC TO PROPERLY CONSTRUCTED ENTRANCES.
DESIGN CRITERIA: AGGREGATE SIZE – USE "CLASS A" STONE WITH GEO-TEXTILE LINER.
DIMENSIONS OF GRAVEL PAD – THICKNESS = 8" MINIMUM
WIDTH = 18' MINIMUM
LENGTH = 50-100' MINIMUM, AS DETERMINED BY CITY STAFF
LOCATION = LOCATE CONSTRUCTION ENTRANCES TO LIMIT SEDIMENT FROM LEAVING THE SITE AND TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES. AVOID STEEP GRADES AND ENTRANCES AT CURVES IN PUBLIC ROADS.



NOTE: SITE CONDITIONS MAY REQUIRE VARIATIONS FROM THESE DESIGN CRITERIA. VARIATIONS WILL BE DETERMINED OR APPROVED BY THE APPROPRIATE CITY STAFF.

NOT TO SCALE

KANNAPOLIS Public Works

TEMPORARY CONSTRUCTION ENTRANCE

DECEMBER 2019
202

9 **TEMPORARY CONSTRUCTION ENTRANCE** NTS

Practice Standards and Specifications

6.84 DC **DUST CONTROL**

Definition The control of dust resulting from land-disturbing activities.

Purpose To prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems.

Conditions Where Practice Applies On construction routes and other disturbed areas subject to surface dust movement, and dust blowing where off-site damage may occur if dust is not controlled.

Planning Considerations Construction activities that disturb soil can be a significant source of air pollution. Large quantities of dust can be generated, especially in "heavy" construction activities such as land grading for road construction and commercial, industrial, or subdivision development.

In planning for dust control, it is important to schedule construction operations so that the least area is disturbed at one time.

Leave undisturbed buffer areas between graded areas wherever possible.

The greatest dust problems occur when the probability of rainfall erosion is least. Therefore, do not expose large areas of soil, especially during drought conditions.

Install temporary or permanent surface stabilization measures immediately after completing land grading.

Design Criteria No formal design procedure is given for dust control. See Construction Specifications below for the most common dust control methods.

Construction Specifications **Vegetative cover**—For disturbed areas not subject to traffic, vegetation provides the most practical method of dust control (*References: Surface Stabilization*).

Mulch (including gravel mulch)—When properly applied, mulch offers a fast, effective means of controlling dust.

Spray-on adhesive—Examples of spray-on adhesives for use on mineral soils are presented in Table 6.84a.

Table 6.84a Spray-on Adhesive for Dust Control on Mineral Soil

	Water Dilution	Type of Nozzle	Apply Gallons/Acre
Anionic asphalt emulsion	7:1	Coarse Spray	1,200
Latex emulsion	12.5:1	Fine Spray	235
Resin in water	4:1	Fine Spray	300

6.84.1

10 **DUST CONTROL** NTS

Practice Standards and Specifications

6.11 PS **PERMANENT SEEDING**

Definition Controlling runoff and erosion on disturbed areas by establishing perennial vegetative cover with seed.

Purpose To reduce erosion and decrease sediment yield from disturbed areas, to permanently stabilize such areas in a manner that is economical, adapts to site conditions, and allows selection of the most appropriate plant materials.

Conditions Where Practice Applies Fine-graded areas on which permanent, long-lived vegetative cover is the most practical or most effective method of stabilizing the soil. Permanent seeding may also be used on rough-graded areas that will not be brought to final grade for a year or more.

Areas to be stabilized with permanent vegetation must be seeded or planted within 15 working days or 90 calendar days after final grade is reached, unless temporary stabilization is applied.

Introduction During the initial phase of all land disturbing projects, the protective layer, either natural or man-made, is removed from the earth's surface. As the protective layer is removed, the resulting bare areas are exposed to the natural forces of rainfall, freezing, thawing, and wind. The result is soil erosion that leads to sediment pollution of North Carolina streams, rivers, lakes, and estuaries.

This design manual presents many alternative strategies for preventing erosion and reducing sediment loss during the construction process. Establishment of protective vegetative cover during the construction project, however, is the crucial step in achieving soil stabilization, controlling soil erosion, and preventing sedimentation of waterways. Without a sufficient amount of root mat and leaf cover to protect and hold the soil in place, large volumes of soil will be lost and waterways will be degraded long after projects are considered complete.

Sections of this practice standard address many of these various situations and set forth selection criteria for the appropriate cover based on purpose and adaptability. Some sediment and erosion control practices recommended in earlier editions of the manual may no longer be applicable. For example, many popular and commonly used seed and plant varieties have been identified as invasive. Invasive plants are defined as species that aggressively compete with, and displace, locally adapted native plant communities. In select cases where no practical alternative is available, these plants may be considered on a limited basis for soil stabilization, understanding that the goal is to eliminate the use of all invasive plants in favor of non-invasive native and/or introduced species that will provide an equally acceptable vegetative cover. Where there is no alternative to the use of invasive species, measures need to be incorporated in the installation and maintenance of these plants to limit their impacts.

Rev. 5/08 6.11.1

11 **PERANENT SEEDING** NTS

Practice Standards and Specifications

6.12 S **SODDING**

Definition Permanently stabilizing areas by laying a continuous cover of grass sod.

Purpose To prevent erosion and damage from sediment and runoff by stabilizing the soil surface with permanent vegetation where specific goals might be:

- to provide immediate vegetative cover of critical areas,
- to stabilize disturbed areas with a suitable plant material that cannot be established by seed, or
- to stabilize drainageways, channels, and other areas of concentrated flow where flow velocities will not exceed that specified for a grass lining (*Appendix 8.05*).

Conditions Where Practice Applies Disturbed areas which require immediate and permanent vegetative cover, or where sodding is preferred to other means of grass establishment. Locations particularly suited to stabilization with sod are:

- waterways and channels carrying intermittent flow at acceptable velocities (*Appendix 6.05*),
- areas around drop inlets, when the drainage area has been stabilized (Practice 6.53, *Sod Drop Inlet Protection*),
- residential or commercial lawns and golf courses where prompt use and aesthetics are important, and
- steep critical areas.

Planning Considerations Quality turf can be established with either seed or sod; site preparation for the two methods is similar. The practice of sodding for soil stabilization eliminates both the seeding and mulching operations, and is a much more reliable method of producing adequate cover and sediment control. However, compared to seed, sod is more difficult to obtain, transport, and store.

Advantages of properly installed sod include:

- immediate erosion and dust control,
- nearly year-round establishment capability,
- less chance of failure than with seedings,
- freedom from weeds, and
- rapid stabilization of surfaces for traffic areas, channel linings, or critical areas.

Sod can be laid during times of the year when seeded grasses may fail, provided there is adequate water available for irrigation in the early weeks. Irrigation is essential, at all times of the year, to install sod. It is initially more costly to install sod than to plant seed. However, the higher cost may be justified for specific applications where sod performs better than seed.

6.12.1

12 **SODDING** NTS

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REVISIONS:

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

DRAWN BY: INGENIUM ENTERPRISES

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

INGENIUM ENTERPRISES, INC.
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LAND O LAKES, FL 34638
PHONE: (813) 387-0084
NCBEES CERTIFICATE #C-4114

NORTH CAROLINA PROFESSIONAL SEAL 048800 ENGINEER JEREMY M. PETIT 3/9/2023

ESPC DETAILS III

C06.4

PANDA HOME REV4

City of Concord Development Ordinance
Site Area: +/- 1.3 AC.

Green Space Requirements
20% Total Site Area = +/- .26 AC. Required
+/- .56 AC. **Proposed**

Street Yard Requirements Level 3
1 Tree per 45 LF and 0.5 points per LF

Points for Plant Types

Type of Plant	Points
Shade Tree	12
Ornamental Tree	6
Large Shrub (8')	3
Medium Shrub (4-8')	2
Small Shrub (<4')	1

8' Street Yard Requirements Level 3 (Along Wabash Lane)
Total LF: 261.00 LF
Required Shade Trees
1 Tree per 45 LF = 6 Trees Required
6 Trees **Proposed**
62 shrubs **Proposed**
Required Points
0.5 Points per 1 LF = 131 Points Required
134 Points **Proposed**

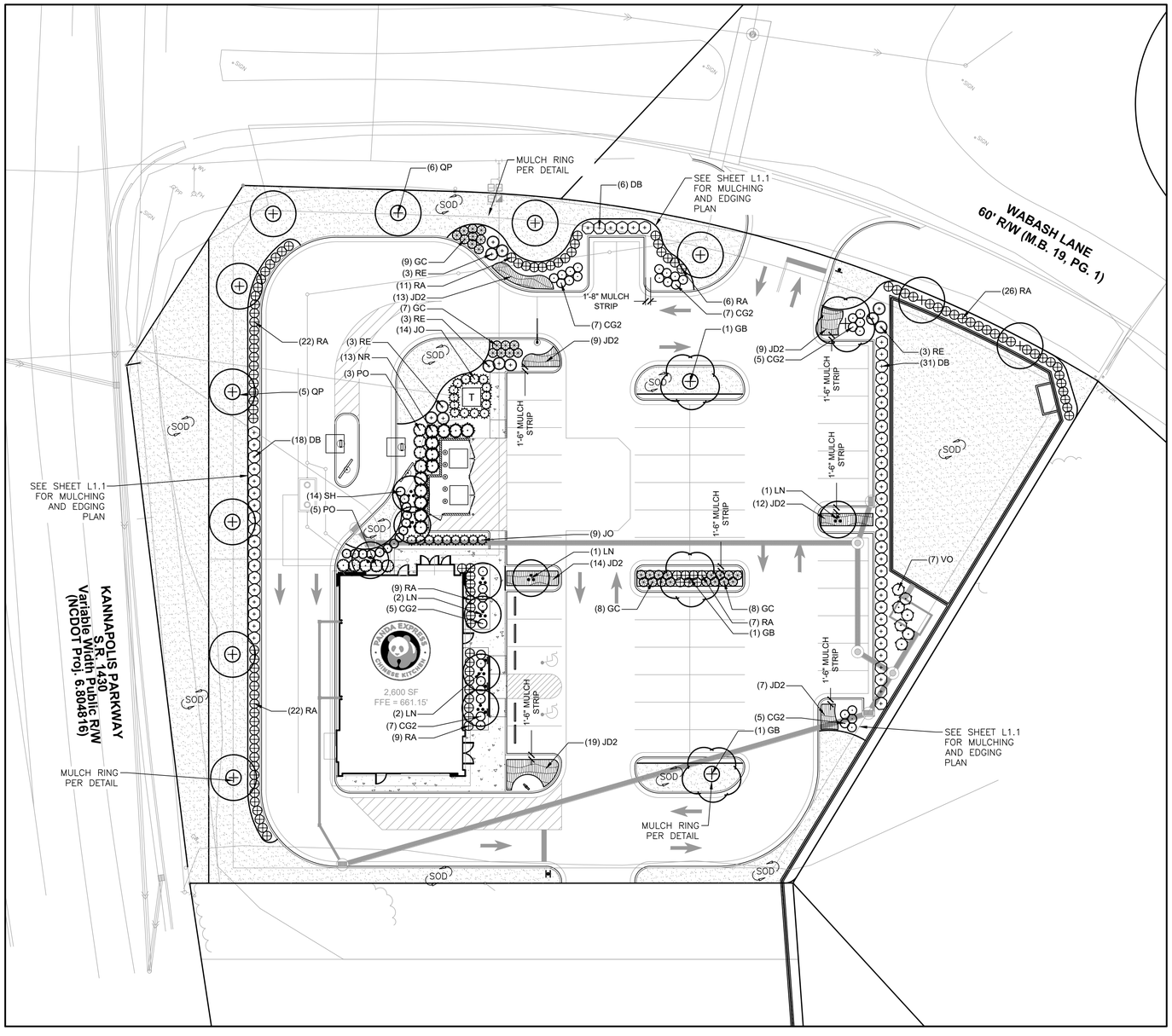
8' Street Yard Requirements Level 3 (Along Kannapolis Parkway)
Total LF: 242.00 LF
Required ShadeTrees
1 Tree per 45 LF = 5 Trees Required
5 Trees **Proposed**
62 shrubs **Proposed**
Required Points
0.5 Points per 1 LF = 121 Points Required
122 **Proposed**

Parking Lot Landscape Requirements
Total VUA: 18,746 SF
Total spaces: 50 spaces
Required Landscape Area
10% of VUA = 1875 SF Required
2121 SF **Proposed**
Required Trees & Shrubs
1 Tree per 10 spaces = 5 Trees Required
5 Trees **Proposed**
8 shrubs per 10 spaces = 40 shrubs Required
147 shrubs **Proposed**

Building Yard Landscape Requirements Category 2
Total 219 LF
Required Shade Trees & Shrubs
1 Ornamental Tree per 30 LF = 7 Trees Required
7 Trees **Proposed**
8 shrubs per 30 LF = 58 shrubs Required
58 shrubs **Proposed**
Required Points
0.4 Points per 1 LF = 88 Points Required
100 Points **Proposed**

CALL BEFORE YOU DIG

QUANTITY TAKEOFF DISCLAIMER:
QUANTITIES NOTED ON PLANS ARE OFFERED AS A CONVENIENCE TO THE CONTRACTOR FOR BID PURPOSES ONLY. CONTRACTOR SHALL VERIFY ALL QUANTITIES AND REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT.



1 LANDSCAPE PLANTING PLAN
Scale: 1"= 20'

NOTES

1. PROVIDE 18" CONCRETE OR ROCK MULCH STRIP ADJACENT TO ALL PARKING, VERIFY WITH OWNER PRIOR TO INSTALLATION.
2. PROVIDE RIVER ROCK MULCH AROUND BASE OF TREES PLACED IN LAWN AREAS AND ALL LANDSCAPE BEDS UNLESS SPECIFICALLY PROHIBITED BY THE JURISDICTION. IF PROHIBITED, UNACCEPTABLE MULCHES LISTED UNDER THE GUYING, STAKING AND MULCHING SECTION OF THE GENERAL NOTES ON SHEET L0.3 SHALL NOT BE USED.
3. CONTRACTOR SHALL PROVIDE LARGER MULCH STONE AROUND ALL DRAIN INLETS WITHIN LANDSCAPE BEDS TO PREVENT ANY MULCH FROM FALLING INTO DRAIN INLET.
4. CONTRACTOR SHALL PROVIDE MULCH MATERIAL SAMPLE TO OWNER FOR APPROVAL PRIOR TO INSTALLATION.
5. MULCH IS THE MATERIAL OF THE OWNERS CHOICE COVERING THE GROUND TO SUPPRESS WEEDS AND ANY UNDESIRABLE PLANTS FROM GROWING.
6. CONTRACTOR SHALL EDGE ALL LANDSCAPE BEDS AND TREE MULCH RINGS WITH ALUMINUM BED EDGING PER PLANT BED EDGING DETAILS. IF ORGANIC MULCH IS REQUIRED, CONTRACTOR SHALL PLACE ALUMINUM BED EDGING WHERE ANY CHANGE IN MULCH TYPES OCCUR. EDGING SHALL BE ALUMINUM AND BLACK IN COLOR, PERMALOC ALUMINUM ALLOY BLACK ANODIZED EDGING OR EQUIVALENT.
7. SOD TYPE SHALL MATCH THAT OF THE SURROUNDING DEVELOPMENT. VERIFY TYPE OF SOD WITH OWNER PRIOR TO INSTALLATION.
8. IRRIGATION PLAN AND SPECIFICATIONS TO BE SUBMITTED WITH CONSTRUCTION DRAWINGS PER CODE REQUIREMENTS.
9. SHOULD ANY OF THE PROPOSED LANDSCAPE CONFLICT WITH EXISTING OR PROPOSED SIGNAGE OR UTILITIES, CONTRACTOR SHALL NOTIFY ARCHITECT IMMEDIATELY AND PRIOR TO PLANT INSTALLATION.
10. ALL EXISTING TURF GRASS AREAS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW SOD OF SAME SPECIES OF EXISTING TURF.
11. CONTRACTOR TO OBTAIN ALL RELEVANT PERMITS FOR TREE REMOVAL AND PLANTING RENOVATIONS PRIOR TO STARTING WORK.
12. INSTALL AUTOMATIC IRRIGATION SYSTEM AS REQUIRED TO ACHIEVE 100% HEAD TO HEAD COVERAGE.
13. ALL PLANT MATERIALS TO BE INSTALLED SHALL BE NURSERY GROWN AND ROOT PRUNED STOCK FREE OF INSECTS, DISEASE AND DEFECTS AND SHALL SATISFY THE REQUIREMENTS OF FLORIDA GRADE NO. 1 QUALITY OR BETTER AS DEFINED IN THE MOST CURRENT EDITION OF GRADES AND STANDARDS FOR NURSERY PLANTS, FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES.
14. ANY AREAS NOTED ON THE PLANS AS "SEED" OR "MULCH" WHERE THERE IS AN EXISTING LAWN AREA, MULCH AREA OR NATURAL AREA THAT IS DEEMED TO BE IN GOOD CONDITION, MAY INSTEAD BE MAINTAINED AS EXISTING. AREAS VOID OF VEGETATION OR GROUNDCOVER OR THAT EXHIBIT EVIDENCE OF EROSION, SHALL BE IMPROVED AS NECESSARY.

CONTRACTOR RESPONSIBLE FOR MAINTENANCE OF LANDSCAPE FOR 90 DAYS FOLLOWING INSTALLATION.

CONTRACTOR SHALL PROTECT ALL ITEMS OUTSIDE LIMITS OF CONSTRUCTION UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS OR SPECIFICATIONS.

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES (LOCATIONS AND ELEVATIONS) PRIOR TO STARTING CONSTRUCTION AND ALERT ENGINEER TO ANY DISCREPANCIES IMMEDIATELY.

24-HOUR CONTACT:
JOE CELENTO
912-272-4811

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770
TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

REVISIONS:

ISSUE DATE:

PLAN CHECK	03-08-23
BID	XX-XX-XX
CONSTRUCTION	XX-XX-XX

DRAWN BY: LDC, WAS DESIGN, INC.

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

WAS DESIGN landscape architects
landscape architecture
land planning
placemaking
Foley, Alabama
P. 251.948.7181
Mobile, Alabama
P. 251.344.4023
Jackson, Mississippi
P. 601.790.0781
www.was-design.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2239 JARED LANE ACE

04.06.23

LANDSCAPE PLANTING PLAN
L1.0

STONE MULCH	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	HT
	SM	7,079 SF	MULCH	STONE MULCH	MULCH	

REFERENCE NOTES SCHEDULE

SYMBOL	32 EXTERIOR IMPROVEMENTS DESCRIPTION	QTY	DETAIL
32-04	ALUMINUM BED EDGING	944 LF	

QUANTITY TAKEOFF DISCLAIMER:
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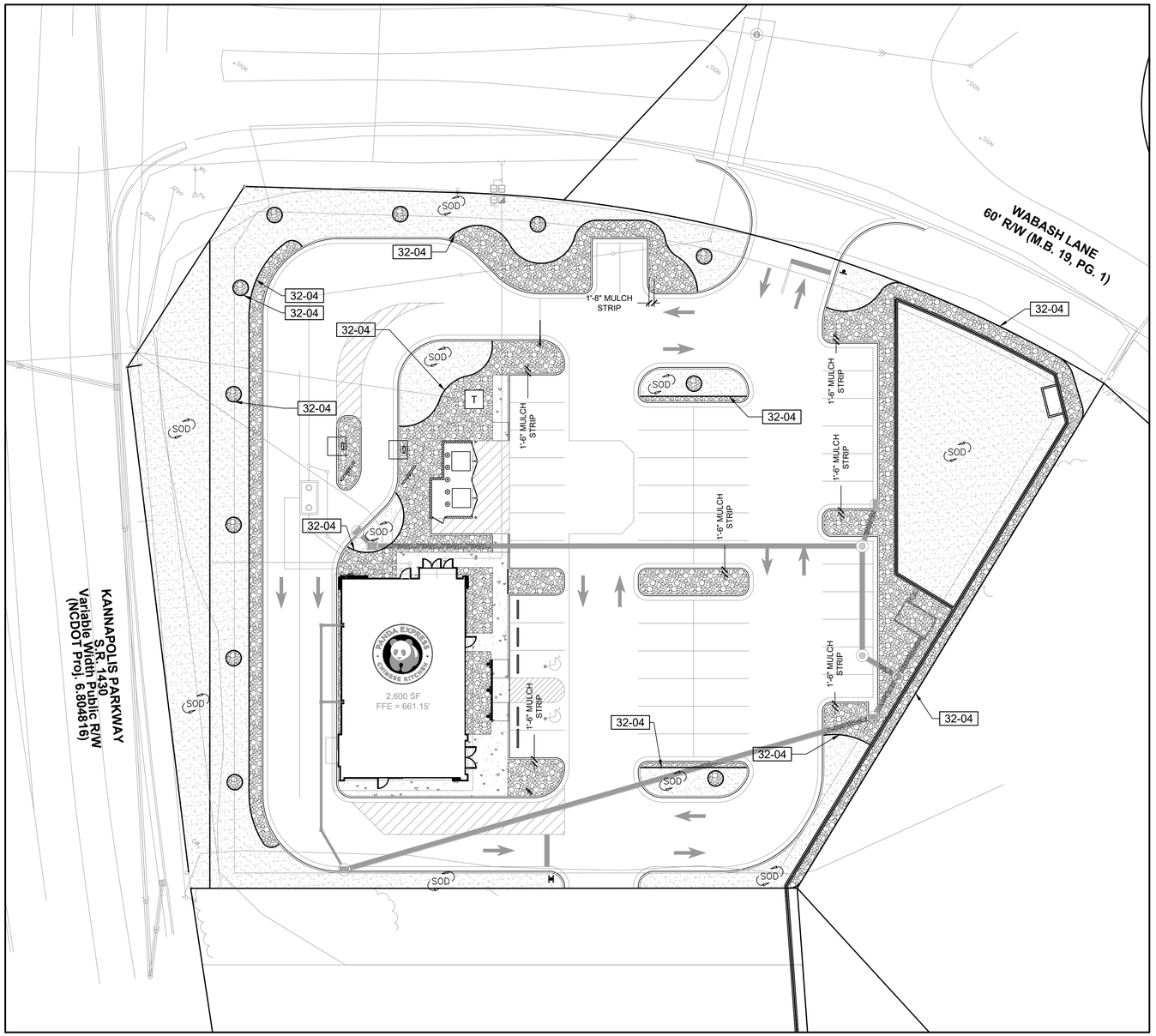

1 MULCHING AND EDGING PLAN
Scale: 1"= 20'

0 20' 40' NORTH

PANDA EXPRESS, INC.

1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770

TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2239 SHARED LANE, ALCY
04.06.23

MULCHING AND EDGING PLAN

L1.1

PANDA HOME REV4

DeWitt
DOWN TO EARTH PROTECTION

Pro 5 Weed Barrier

DeWitt Pro 5 Weed Barrier is a woven, needle-punched polypropylene fabric for commercial grade weed control. Specified by leading architects, the fabric is designed to allow air, water, and nutrients through. The fabric will not rot or mildew, and is formulated to resist uv degradation.

Property	Test Method	Unit	Minimum Average Roll Value
Woven Material Fiber Backing			Polypropylene Polyester
Color			Black with Gold Stripe every 12''
Construction Weave			15 x 10 or 10 x 15
Weight	ASTM D 5261	OZ/SY	5.0 Scrim 2.8 Cap 2.2
Grab Tensile Strength	ASTM D 4632	LBS	Warp 80 Weft 65
Grab Elongation	ASTM D 4632	%	Warp 15 Weft 15
Trapezoid Tear	ASTM D 4533	LBS	Warp 35 Weft 30
Puncture	ASTM D 6241	LBS	300
Water Permeability	ASTM D 4491	GAL/MIN/SF	10
Ultraviolet Exposure	ASTM D 4355	% Strength Retained	>70% after 2500 Hrs Carbon Arc Exposure

Date: 12/13/16. This data sheet supersedes all previously issued data.
The above properties are typical averages.

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905 South Kingshighway Sikeston, MO 63801
www.dewittcompany.com
573.472.0048 phone / 800.888.9669 / 573.471.6715 fax

THE ABOVE IS THE MINIMUM STANDARD. OTHER BRANDS MAY BE SUBSTITUTED AS LONG AS THE SPECIFICATIONS ARE MET OR EXCEEDED. HOWEVER, ANY SUBSTITUTION MUST BE SUBMITTED BY THE CONTRACTOR FOR PANDA PM APPROVAL, PRIOR TO INSTALLATION.

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	HT	REMARKS
	GB	4	GINKGO BILOBA	MAIDENHAIR TREE	45 GAL	2"CAL	10`-12`	FULL FORM, SPECIMAN QUALITY, MALE SPECIMAN
	NR	13	ILEX `NELLIE R. STEVENS`	NELLIE R. STEVENS HOLLY	45 GAL		8`-10`	FULL TO GROUND
	LN	9	LAGERSTROEMIA INDICA `NATCHEZ`	`NATCHEZ` CRAPE MYRTLE	30 GAL	1.5"CAL	8`-10`	MINIMUM 3 TRUNKS; FULL HEAD
	QP	11	QUERCUS PHELLOS	WILLOW OAK	45 GAL	2"CAL	10`-12`	FULL HEAD, SPECIMEN QUALITY

SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	HT	W	SPACING	REMARKS
	RA	112	ABELIA X GRANDIFLORA `ROSE CREEK`	ROSE CREEK ABELIA	3 GAL			36" o.c.	FULL FORM
	GC	32	CHAMAECYPARIS PISIFERA `GOLDEN MOP`	GOLDEN MOP THREADLEAF FALSE CYPRESS	3 GAL			36" o.c.	FULL FORM
	CG2	36	CRYPTOMERIA JAPONICA `NANA GRACILIS`	DWARF JAPANESE CEDAR	7 GAL			36" o.c.	FULL FORM
	DB	55	ILEX CORNUTA `BURFORDII NANA`	DWARF BURFORD HOLLY	3 GAL			48" o.c.	FULL FORM
	SH	14	ILEX CRENATA `SOFT TOUCH`	SOFT TOUCH JAPANESE HOLLY	3 GAL			36" o.c.	FULL FORM
	JO	23	JUNIPERUS × PFITZERIANA 'ARMSTRONGIIL'	ARMSTRONG JUNIPER	3 GAL			42" o.c.	FULL FORM
	PO	8	PRUNUS LAUROCERASUS `OTTO LUYKEN`	LUYKENS LAUREL	3 GAL			48" o.c.	FULL FORM
	RE	13	RHODODENDRON X `P.J.M.`	P.J.M. RHODODENDRON	3 GAL			48" o.c.	FULL FORM
	VO	7	VIBURNUM ODORATISSIMUM	SWEET VIBURNUM	7 GAL			48" o.c.	FULL FORM

SHRUB AREAS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	HT	W	SPACING	REMARKS
	JD2	83	JUNIPERUS CHINENSIS `PARSONII`	PARSON`S JUNIPER	3 GAL			30" o.c.	

SOD/SEED	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	HT	SPACING
	SOD	14,867 SF	CYNODON DACTYLON `TIFWAY 419`	TIFWAY 419 BERMUDA GRASS	SOD		

STONE MULCH	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	HT	SPACING
	SM	7,079 SF	MULCH	STONE MULCH	MULCH		

QUANTITY TAKEOFF DISCLAIMER:
QUANTITIES NOTED ON PLANS ARE OFFERED AS A CONVENIENCE TO THE CONTRACTOR FOR BID PURPOSES ONLY. CONTRACTOR SHALL VERIFY ALL QUANTITIES AND REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT.

PANDA EXPRESS CHINESE KITCHEN

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REVISIONS:

ISSUE DATE:

	PLAN CHECK	03-08-23
	BID	XX-XX-XX
	CONSTRUCTION	XX-XX-XX

DRAWN BY: LDC, WAS DESIGN, INC.

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

WAS DESIGN landscape architects
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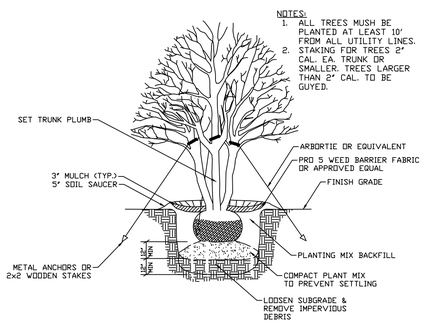
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2239 JARED LANE, ASLA
04.06.23

PLANTING SCHEDULE

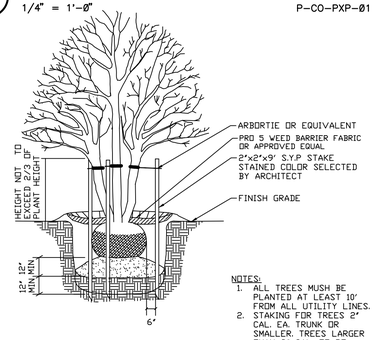
L1.2

PANDA HOME REV4



1 MULTI-TRUNK TREE PLANTING

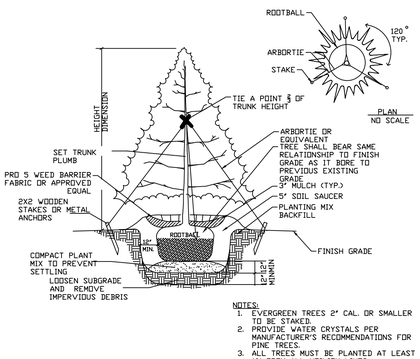
1/4" = 1'-0" P-CO-PXP-01



NOTES:
1. ALL TREES MUSH BE PLANTED AT LEAST 10' FROM ALL UTILITY LINES.
2. STAKING FOR TREES 2" CAL. EA. TRUNK OR SMALLER. TREES LARGER THAN 2" CAL. TO BE GUYED.

2 MULTI-TRUNK TREE STAKING

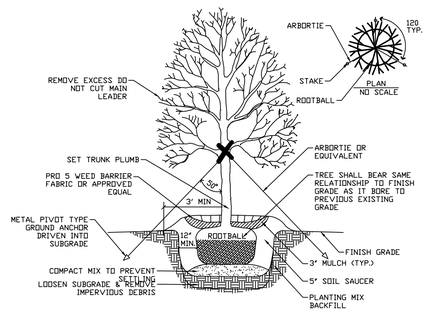
1/4" = 1'-0"



NOTES:
1. EVERGREEN TREES 2" CAL. OR SMALLER TO BE STAKED.
2. PROVIDE WATER CRYSTALS PER MANUFACTURER'S RECOMMENDATIONS FOR PINE TREES.
3. ALL TREES MUST BE PLANTED AT LEAST 10' FROM ALL UTILITY LINES.

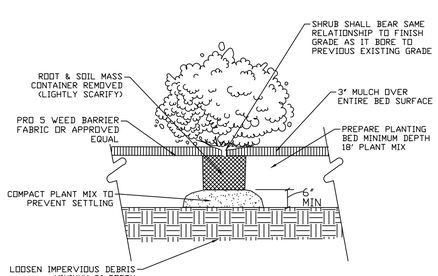
3 EVERGREEN TREE PLANTING

1/4" = 1'-0"



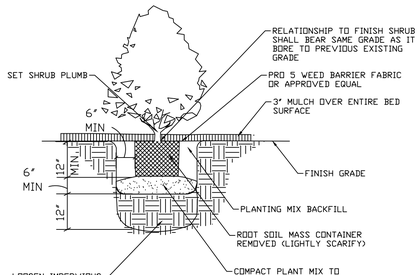
4 TYPICAL TREE PLANTING AND GUYING

1/4" = 1'-0"



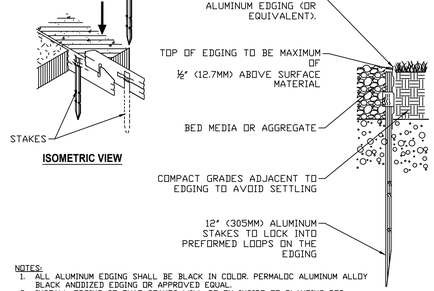
5 PLANTS SPACED LESS THAN 36" O.C.

1/2" = 1'-0" P-CO-PXP-05



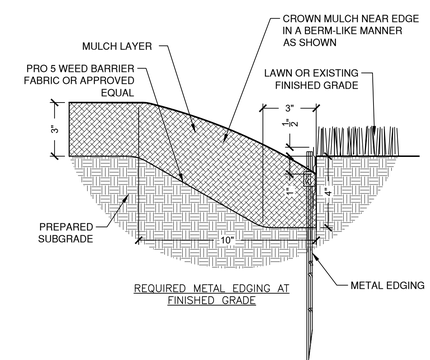
6 CONTAINERIZED SHRUB PLANTING

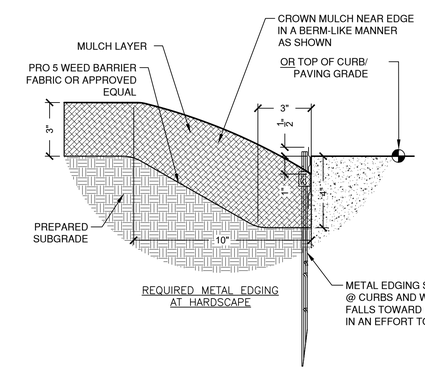
1/2" = 1'-0" P-CO-PXP-06

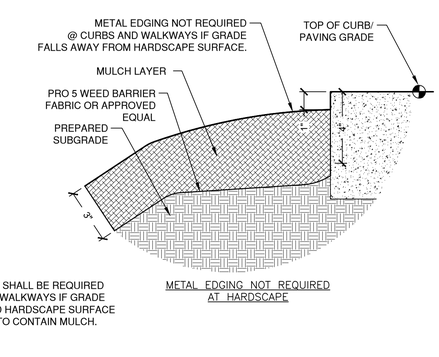


7 METAL EDGING STAKING

3" = 1'-0" P-CO-PXP-08







8 PLANT BED EDGING

1/4" = 1'-0" P-CO-PXP-10

NOTES:
1. ALL ALUMINUM EDGING SHALL BE BLACK IN COLOR. PERMALOC ALUMINUM ALLOY BLACK ANODIZED EDGING OR APPROVED EQUAL.
2. INSTALL EDGING SO THAT STAKES WILL BE ON INSIDE OF PLANTING BED.
3. TOP OF MULCH MATERIAL SHALL BE ½" LOWER THAN TOP OF EDGING.

DELIVERY, STORAGE AND HANDLING:

A. DELIVER MATERIALS IN SUCH A MANNER AS TO NOT DAMAGE OR DECREASE THE HEALTH AND VIGOR OF THE PLANT MATERIALS.

B. STORE MATERIALS AWAY FROM DETRIMENTAL ELEMENTS. COORDINATE WITH GENERAL CONTRACTOR TO SECURE A SAFE STAGING AREA.

C. HANDLE, LOAD, UNLOAD, AND TRANSPORT MATERIALS CAREFULLY TO AVOID DAMAGE.

D. MAINTAIN AND PROTECT PLANT MATERIALS AS NECESSARY TO INSURE HEALTH AND VIGOR.

GUARANTEE:

GUARANTEE PLANT MATERIALS AND LAWN AREAS FOR YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. CONTRACTOR SHALL REPLACE PLANTS AND LAWNS, THAT FAIL TO GROW PROPERLY WITH PLANTS AS ORIGINALLY SPECIFIED AT THE EARLIEST PRACTICAL DATE FOLLOWING PLANT FAILURE, WITHOUT ADDITIONAL CHARGES TO THE OWNER. REPLACEMENT MATERIALS WILL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF REPLACEMENT. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR REPLACING PLANTS WHICH ARE DAMAGED BY ABUSE OR IMPROPER MAINTENANCE BY OWNER, OR BY ACTS OF GOD OCCURRING AFTER ACCEPTANCE.

MATERIAL FOR STAKING:

A. STAKES FOR SUPPORTING TREES SHALL BE SOUND TIMBER, STRAIGHT, SIZED AS SHOWN IN PLANTING DETAILS AND OF SUFFICIENT LENGTH TO ADEQUATELY SUPPORT THE PLANT.

B. DEADMEN OR STAKES FOR ANCHORING STRAPS IN THE GROUND SHALL BE OF SIZE MATERIAL, AND STRENGTH ADEQUATE TO HOLD STRAPS TOUT AND MAINTAIN TREE FIRMLY IN AN UPRIGHT POSITION.

GUYING, STAKING AND MULCHING:

A. USE ARBORTIE OR EQUIVALENT FOR ANY NEEDED STAKING TO ELIMINATE USE OF WIRE AND HOSE. STRAPS SHALL BE WIDE, SOFT, FLEXIBLE MATERIAL MANUFACTURED FOR THE PURPOSE OF TREE ANCHORING SUCH AS WOVEN POLYPROPYLENE WEBBING. ANY STAKING MATERIAL IS TO BE REMOVED AFTER THE FIRST GROWING SEASON.

B. STAKE TREES TWO-INCH CALIPER AND OVER. SPACE THREE STRAPS EQUALLY ABOUT EACH TREE, ATTACHED AT APPROXIMATELY TWO-FIFTHS UP THE TRUNK. STRAPS SHOULD BE AT A 45-DEGREE ANGLE AND ANCHORED IN THE GROUND WITH STAKES. THESE STRAPS SHALL BE EQUALLY TOUT.

C. STAKE TREES LESS THAN TWO INCHES CALIPER WITH TWO OR THREE WOOD STAKES DRIVEN TWO FEET INTO THE GROUND WITH THE PORTION EXTENDING ABOVE THE GROUND APPROXIMATELY ONE-HALF OF THE TRUNK HEIGHT. STAKE ONE FOOT FROM TRUNK, FASTENED AT APPROXIMATELY TWO-FIFTHS OF TRUNK HEIGHT.

D. PRIOR TO INSTALLING MULCH MATERIAL, ALL PLANTING BEDS SHALL BE COVERED WITH LANDSCAPE FABRIC IN AN EFFORT TO REDUCE WEEDS. LANDSCAPE FABRIC SHALL BE DEWITT 5 OZ GEOTEXTILE OR APPROVED EQUAL. TWO TO THREE INCHES OF MULCH MATERIAL SHALL BE PLACED ON TOP OF THE LANDSCAPE FABRIC.

E. MULCH ALL PLANTING BEDS AND OTHER AREAS DESIGNATED TO BE MULCHED (WITH THE EXCEPTION OF ANY ANNUAL, SEASONAL COLOR OR PERENNIAL BEDS) WITH TWO TO THREE INCHES OF RIVER ROCKS, ROCKS SHALL BE BETWEEN 1" AND 3" IN SIZE. OWNER TO APPROVE MULCH TYPE FOR SEASONAL COLOR OR PERENNIAL BEDS PRIOR TO INSTALLATION. CONTRACTOR TO PROVIDE A MULCH MATERIAL SAMPLE TO OWNER PRIOR TO INSTALLATION FOR COLOR, TYPE AND SIZE APPROVAL. ALL RIVER ROCKS SHALL BE RINSED CLEAN ON SITE PRIOR TO INSTALLATION IN PLANTING BEDS. IF JURISDICTION DOES NOT ALLOW ROCK-MULCH, CONTRACTOR SHALL NOT USE UNACCEPTABLE MULCHES. CONTRACTOR TO ENSURE MULCH IS PROPERLY INSTALLED AND NO MULCH WASHES ONTO ANY PAVED SURFACES POST CONSTRUCTION. THIS MAY REQUIRE THE INSTALLATION OF ADDITIONAL EDGING NOT SHOWN ON THE LANDSCAPE PLAN.

UNACCEPTABLE MULCHES:

- PINE STRAW MULCH
- PINE BARK MULCH

EXCAVATION FOR PLANTING TREES AND SHRUBS:

A. CIRCULAR PLANT PITS WITH VERTICAL SIDES SHALL BE DUG BY HAND OR MACHINE METHODS FOR PLANTING OF TREES AND SHRUBS.

B. TREE PIT DIAMETERS SHALL BE A MINIMUM OF TWO FEET GREATER THAN THE SPREAD OF THE ROOT MASS.

C. SHRUB PIT DIAMETER SHALL BE A MINIMUM OF ONE FOOT GREATER THAN THE SPREAD OF THE ROOT MASS.

D. CONTRACTOR SHALL TEST EXCAVATED PLANT PITS TO SATISFY THAT SUFFICIENT DRAINAGE IS PRESENT FOR PROPER PLANT SURVIVAL.

E. IF THE INDIVIDUAL PITS ARE ARRANGED IN A GROUP, THE AREA BETWEEN PITS SHALL BE FILLED TO THE REQUIRED GRADE WITH EXISTING SOIL AND MULCHED WITH MULCH MATERIAL THREE INCHES DEEP. PLANT BEDS SHALL BE NEATLY EDGED AND KEPT FREE OF WEEDS UNTIL THE WORK IS ACCEPTED.

TOPSOIL:

TOPSOIL SHALL BE FERTILE, FRIABLE, SANDY LOAM, AND SHALL BE NATURAL SURFACE SOIL OBTAINED FROM WELL DRAINED AREAS. TOPSOIL SHALL BE CHARACTERISTIC OF REPRESENTATIVE SOILS IN THE PROJECT VICINITY THAT PRODUCE HEAVY GROWTHS OF CROPS, GRASS OR OTHER VEGETATION. TOPSOIL SHALL BE FREE OF SUBSOIL, BRUSH, ORGANIC LITTER, OBJECTIONABLE WEEDS, CLAY, CLOTS, STUMPS, ROOTS OR OTHER MATERIAL HARMFUL TO PLANT GROWTH OR HINDRANCE TO PLANTING OR MAINTENANCE OPERATIONS. SHOULD REGENERATIVE MATERIALS BE PRESENT IN THE SOIL, CONTRACTOR SHALL ERADICATE AND REMOVE SUCH GROWTH, BOTH SURFACE AND ROOT, WHICH MAY APPEAR IN THE IMPORTED MATERIAL WITHIN ONE YEAR FOLLOWING ACCEPTANCE OF THE WORK. TOPSOIL SHALL NOT BE HANDLED IN A FROZEN OR MUDDY CONDITION. THE ACIDITY RANGE SHALL BE BETWEEN 5.0 AND 7.0 INCLUSIVE.

FERTILIZER:

A. FERTILIZER FOR ALL TREES, SHRUBS AND GROUNDCOVERS SHALL BE STA GREEN NURSERY SPECIAL OR EQUIVALENT AND DELIVERED TO THE SITE IN UNOPENED CONTAINERS.

B. FERTILIZER FOR GRASS SHALL BE STA-GREEN FERTILIZER OR EQUIVALENT CONTAINING THE FOLLOWING PERCENTAGES BY WEIGHT:
10% NITROGEN
24% PHOSPHOROUS
10% POTASH

C. FERTILIZER SHALL BE UNIFORM IN COMPOSITION, DRY AND FREE FLOWING, AND SHALL LIST THE MANUFACTURER'S GUARANTEED ANALYSIS. FERTILIZER SHALL NOT HAVE BEEN EXPOSED TO WEATHER PRIOR TO DELIVERY TO THE SITE. AFTER DELIVERY UNTIL USED, IT SHALL BE COMPLETELY PROTECTED AT ALL TIMES. IT SHALL NOT BE STORED IN CONTACT WITH THE THE GROUND.

LANDSCAPE BED EDGING:

CONTRACTOR SHALL EDGE ALL LANDSCAPE BEDS AND TREE MULCH RINGS WITH ALUMINUM BED EDGING PER PLANT BED EDGING DETAILS. IF ORGANIC MULCH IS REQUIRED, CONTRACTOR SHALL PLACE ALUMINUM BED EDGING WHERE ANY CHANGE IN MULCH TYPES OCCUR. EDGING SHALL BE ALUMINUM AND BLACK IN COLOR, PERMALOC ALUMINUM ALLOY BLACK ANODIZED EDGING OR EQUIVALENT.

DRAINAGE TEST

A. REPRESENTATIVE TREE AND SHRUB PITS FROM EACH PLANTING AREA SHALL BE FILLED WITH WATER. IF PERCOLATION IS LESS THAN 100 TWELVE-INCH AUGER TO A DEPTH OF FOUR FEET BELOW THE BOTTOM OF THE TREE PIT, RETEST THE PIT. IN CASE DRAINAGE IS STILL UNSATISFACTORY NOTIFY THE LANDSCAPE ARCHITECT, IN WRITING OF THE CONDITION BEFORE PLANTING TREES IN THE QUESTIONABLE AREAS. CONTRACTOR IS FULLY RESPONSIBLE FOR THE WARRANTY OF PLANTINGS.

B. GROUNDCOVER BEDS SHALL ALSO BE SPOT TESTED FOR DRAINAGE.

C. DISPOSE OF SUBSOIL REMOVED FROM LANDSCAPE EXCAVATIONS. DO NOT MIX WITH THE PLANTING SOIL. DO NOT USE AS BACKFILL OR USE TO CONSTRUCT SAUCERS AROUND PITS.

SETTING TREES, SHRUBS AND GROUNDCOVERS:

A. BALLED AND CONTAINER PLANTS SHALL BE PLACED FIRMLY UPON SCARIFIED SUB-GRADE AND BACKFILLED WITH PLANTING SOIL MIXTURE. REMOVE ALL WIRE, CARDS AND BURLAP FROM TOP OF ROOT BALL. HAND TAMP CAREFULLY AROUND AND UNDER BALL TO FILL ALL VOIDS. WATER DURING BACKFILLING. FORM SAUCER FROM PLANTING SOIL MIXTURE IN ORDER TO RETAIN WATER.

B. GENTLY LOOSEN OUTER ROOTS OF CONTAINER GROWN PLANTS TO ENCOURAGE OUTWARD GROWTH.

C. FERTILIZER SHALL BE THOROUGHLY MIXED AND SOAKED INTO THE TOP TWO INCHES OF SOIL FOR ALL PLANT PITS.

TREE TRANSPORTATION:

THE CONTRACTOR SHALL BE RESPONSIBLE NOT ONLY FOR THE SAFE TRANSPORTATION OF THE PLANTS TO THE SITE BUT ALSO THEIR CONDITION UPON ARRIVAL. TREES WITH ABRASIONS OF THE BARK, SUNSCALDS, FRESH CUTS OR BREAKS OF LIMBS WHICH HAVE NOT COMPLETELY CALLOUSED WILL BE REJECTED. TREES WHICH HAVE BEEN DAMAGED DURING TRANSIT WILL BE REPLACED BY CONTRACTOR AT NO ADDITIONAL COST. ALL PLANT UNIT COSTS WILL REFLECT ALL THE ABOVE LISTED SPECIFICATIONS.

PRUNING:

A. DECIDUOUS TREES AND SHRUBS SHALL HAVE DEAD, BROKEN AND CROWDED WOOD PRUNED TO COMPENSATE FOR THE LOSS OF ROOTS IN TRANSPLANTING. REQUESTED AND REQUIRED ADDITIONAL PRUNING MAY BE NECESSARY AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.

B. EVERGREEN TREES AND SHRUBS SHALL BE PRUNED ONLY TO THINK OUT HEAVY GROWTH.

C. CUTS OVER 3/4 INCH IN DIAMETER SHALL BE PAINTED WITH TREE DRESSING PAINT. NO PAINT CONTAINING LEAD SHALL BE PERMITTED.

PREPARATION OF GRASS AREAS:

A. FINE GRADE ALL GRASS AREAS TO FINISH GRADE. ALL AREAS SHALL HAVE SMOOTH AND CONTINUAL GRADE BETWEEN THE EXISTING AND FIXED CONTROLS SUCH AS WALKS AND CURBS. ROLL, SCARIFY, RAKE AND LEVEL AS NECESSARY TO OBTAIN TRUE, EVEN AND FIRM LAWN SURFACES. ALL FINISHED GRADES SHALL MEET APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE BEFORE GRASSING OPERATIONS BEGIN.

B. AREAS TO RECEIVE GRASS
I. TYPE OF TURF TO BE APPROVED BY OWNER.
II. CONTRACTOR TO BE RESPONSIBLE FOR FIELD VERIFICATION OF SOD AREAS TO CONFIRM SQUARE FOOTAGES.
III. GRADE WILL BE BROUGHT TO THE LEVEL OF +/- 1" OF THE FINISHED GRADE BY THE GENERAL CONTRACTOR. THE LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE FOR THE TOP +/- 1" OF SOIL WORK. THIS IS TO INCLUDE ALL TOPSOIL HAULING AND PLACEMENT; SPREADING; DEBRIS REMOVAL AND ANY GRADING REQUIRED TO BRING THE FINISHED TOPSOIL GRADE TO THE PROPER LEVEL FOR GRASS.
IV. THOROUGHLY TILL EXISTING SOIL TO A MINIMUM DEPTH OF FOUR INCHES BY RUNNING TILLING DEVICE TWO DIRECTIONS AT RIGHT ANGLES OVER THE ENTIRE SURFACE TO BE GRASSED. FINE GRADE TO ACHIEVE UNIFORMITY AND DRAINAGE.
V. SPREAD SPECIFIED FERTILIZER AS PER MANUFACTURER'S RECOMMENDATIONS.
VI. WORK SOIL TO A UNIFORM GRADE SO THAT ALL AREAS HAVE POSITIVE DRAINAGE AWAY FROM DRIVES, BUILDINGS AND LANDSCAPED AREAS.
VII. CONTRACTOR TO COORDINATE WITH OWNER FOR TURF SELECTION PRIOR TO INSTALLATION.

CLEANUP & PROTECTION:

A. DURING PLANTING OPERATIONS KEEP PROJECT SITE CLEAN AND ORDERLY.

B. UPON COMPLETION OF WORK, CLEAR GROUNDS OF DEBRIS, SUPERFLUOUS MATERIALS AND ALL EQUIPMENT. REMOVE FROM SITE TO SATISFACTION OF THE LANDSCAPE ARCHITECT AND OWNER.

C. PROTECT ALL WORK AND MATERIALS FROM DAMAGE DUE TO IRRIGATION OPERATIONS AND OPERATIONS BY OTHER CONTRACTORS, TRADES, AND TRESPASSERS. MAINTAIN PROTECTION UNTIL DATE OF SUBSTANTIAL COMPLETION.

D. CONTRACTOR IS RESPONSIBLE FOR THEFT OF EQUIPMENT AND MATERIAL AT THE JOB SITE BEFORE, DURING AND AFTER INSTALLATION, UNTIL DATE OF SUBSTANTIAL COMPLETION OF THE WORK IN TOTAL.

PANDA EXPRESS, INC.
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ROSEMEAD, CALIFORNIA 91770
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FACSIMILE: 626.372.8288

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2239 LICENSED LANDSCAPE ARCHITECT
04.06.23

PLANTING DETAILS AND SPECIFICATIONS

L1.3

PANDA HOME REV4

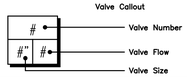
IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
Q H F	RAIN BIRD 1806-SAM-PRS 5 SERIES MPR TURF SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING.	26	30
Q T H F	RAIN BIRD 1806-SAM-PRS 8 SERIES MPR TURF SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING.	6	30
Q T H F	RAIN BIRD 1806-SAM-PRS 10 SERIES MPR TURF SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING.	9	30
Q T H TQ F	RAIN BIRD 1806-SAM-PRS 12 SERIES MPR TURF SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING.	7	30
Q T H TQ F	RAIN BIRD 1806-SAM-PRS 15 SERIES MPR TURF SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING.	5	30
4 6 8 10 12 15 17	RAIN BIRD 1806-SAM-PRS ADJ TURF SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING.	1	30
2Q 2H 2F 4Q 4H 4F	RAIN BIRD 1812-SAM-PRS SQ SERIES SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	1	30
EST LCS RCS CST SST	RAIN BIRD 1812-SAM-PRS 15 STRIP SERIES SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	43	30
Q H F	RAIN BIRD 1812-SAM-PRS 5 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	4	30
Q T H F	RAIN BIRD 1812-SAM-PRS 8 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	11	30
Q T H F	RAIN BIRD 1812-SAM-PRS 10 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	30	30
Q T H TQ F	RAIN BIRD 1812-SAM-PRS 12 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	2	30
Q T H TQ F	RAIN BIRD 1812-SAM-PRS 15 SERIES MPR SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	2	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	GPM	RADIUS
ARC 25	RAIN BIRD 5006-SAM-R-PC,FC-MPR 25 TURF ROTOR, 6.0" POP-UP, PLASTIC RISER, MATCHED PRECIPITATION ROTOR (MPR NOZZLE). ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE. WITH SEAL-A-MATIC CHECK VALVE. PRESSURE REGULATING.	16	35		24'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD PGA GLOBE 1" 1IN., 1-1/2IN., 2IN. ELECTRIC REMOTE CONTROL VALVE, GLOBE.	7
BF	FEBCO 765 1" PRESSURE VACUUM BREAKER, BRASS WITH BALL VALVE SOV. INSTALL 12" (305MM) ABOVE HIGHEST DOWNSTREAM OUTLET AND THE HIGHEST POINT IN THE DOWNSTREAM PIPING.	1
C	RAIN BIRD ESP4ME WITH (1) ESP-SM3 (2) ESP-SM6 19 STATION, HYBRID MODULAR OUTDOOR CONTROLLER. FOR RESIDENTIAL OR LIGHT COMMERCIAL APPLICATIONS.	1
M	WATER METER 1" BASIS OF DESIGN 37.5 GPM @ 54.6 PSI, CONTRACTOR TO VERIFY PRIOR TO INSTALLATION	1
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21 ONLY LATERAL TRANSITION PIPE SIZES 1 1/4" AND ABOVE ARE INDICATED ON THE PLAN, WITH ALL OTHERS BEING 1" IN SIZE.	109.1 L.F.
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21 1" ONLY LATERAL TRANSITION PIPE SIZES 1 1/4" AND ABOVE ARE INDICATED ON THE PLAN, WITH ALL OTHERS BEING 1" IN SIZE.	2,106 L.F.
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21 1 1/2" ONLY LATERAL TRANSITION PIPE SIZES 1 1/4" AND ABOVE ARE INDICATED ON THE PLAN, WITH ALL OTHERS BEING 1" IN SIZE.	14.4 L.F.
	IRRIGATION MAINLINE: PVC CLASS 200 SDR 21 1 1/2"	872.8 L.F.
	PIPE SLEEVE: PVC SCHEDULE 40	235.2 L.F.

Valve Callout

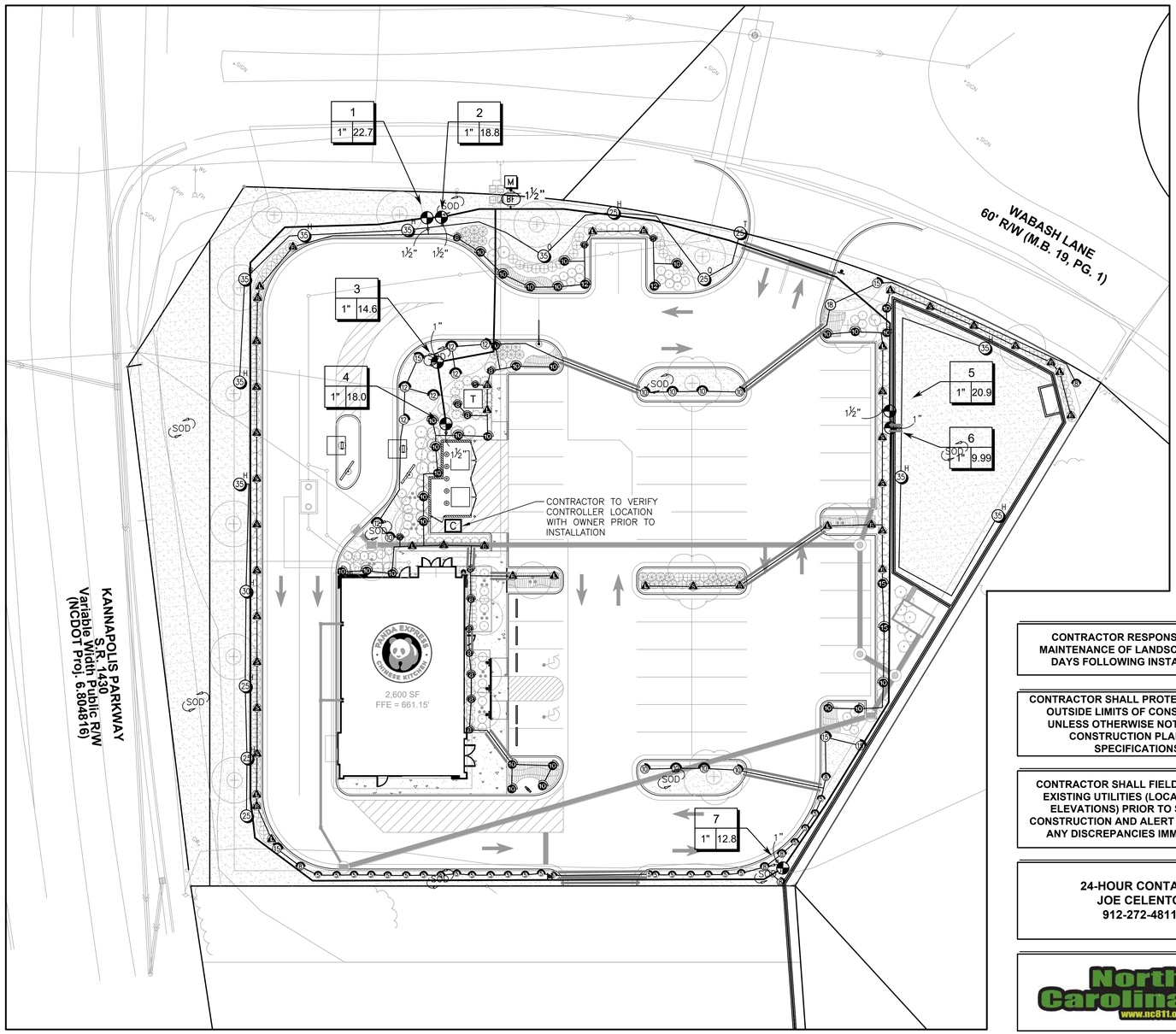


QUANTITY TAKEOFF DISCLAIMER:
QUANTITIES NOTED ON PLANS ARE OFFERED AS A CONVENIENCE TO THE CONTRACTOR FOR BID PURPOSES ONLY. CONTRACTOR SHALL VERIFY ALL QUANTITIES AND REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT.

NOTE:
MAINLINE AND VALVES SHOWN OUTSIDE OF TRENCH FOR GRAPHIC CLARITY. ALL EQUIPMENT AND PIPE SHALL BE WITHIN PROPERTY BOUNDARIES UNLESS OTHERWISE NOTED. SLEEVE SIZES TO BE DETERMINED BY CONTRACTOR.

IRRIGATION NOTES:

1. LOCATE ALL UTILITIES BEFORE DIGGING. PROTECT ALL UTILITIES FROM DAMAGE DURING CONSTRUCTION.
2. IRRIGATION SYSTEM WILL USE RECLAIMED WATER WHEN IT IS AVAILABLE. PROVIDE IRRIGATION COMPONENTS WITH NON-POTABLE MARKINGS.
3. PIPE ROUTING IS DIAGRAMMATIC. PLACE IRRIGATION LINES WITHIN PLANTING AND TURF AREAS UNLESS SLEEVING IS INDICATED. ROUTE PIPING TO AVOID TREE LOCATIONS. LOCATE MAINLINE AND VALVE BOXES WITHIN PROPERTY LINES.
4. ROCURE ALL NECESSARY PERMITS TO COMPLETE INSTALLATION OF IRRIGATION SYSTEM PER STATE AN LOCAL CODES.
5. JET OR BORE FOR SLEEVING WHERE NECESSARY TO ACCOMMODATE LATERAL LINES, MAIN LINES, OR CONTROL WIRE.
6. PROVIDE A MINIMUM 12 INCH COVER OVER LATERAL LINES AND A MINIMUM OF 18 INCH COVER OVER MAINLINES
7. INSTALL ALL ELECTRICAL SERVICE TO MEET LOCAL CODES.
8. PROVIDE POP-UP SPRINKLERS ONLY. MOUNT SPRINKLERS ON POLY PIPE WITH BARBED FASTENERS UNLESS OTHERWISE SPECIFIED IN PROVIDED DETAILS.
9. MOUNT HEADS FLUSH WITH FINISHED GRADE. INSTALL HEADS 6 INCH OFF ALL SIDEWALKS AND 1 FOOT FROM BUILDING WALLS.
10. INSTALL VALVES IN 15 INCH BOXES WITH TAMPER RESISTANT LIDS.
11. ALL IRRIGATION CONTROL WIRE TO BE 14-GAUGE WIRE. PROVIDE WHITE FOR COMMON, RED FOR HOT, AND SPARE BLUE WIRE PARALLEL TO COMMON THROUGH OUT THE ENTIRE SYSTEM.
12. MAKE ALL WIRE SPICES WITH WATERPROOF SPLICE KITS RATED FOR DIRECT BURIAL, NEATLY COIL 30 INCHES OF SLACK WIRE IN VALVE BOX.
13. ADJUST HEADS TO MAXIMIZE COVERAGE AND MINIMIZE OVER SPRAY.



1 IRRIGATION PLAN
Scale: 1"= 20'

0 20' 40'

CONTRACTOR RESPONSIBLE FOR MAINTENANCE OF LANDSCAPE FOR 90 DAYS FOLLOWING INSTALLATION.

CONTRACTOR SHALL PROTECT ALL ITEMS OUTSIDE LIMITS OF CONSTRUCTION UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS OR SPECIFICATIONS.

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES (LOCATIONS AND ELEVATIONS) PRIOR TO STARTING CONSTRUCTION AND ALERT ENGINEER TO ANY DISCREPANCIES IMMEDIATELY.

24-HOUR CONTACT:
JOE CELENTO
912-272-4811

PANDA EXPRESS, INC.
1683 WALNUT GROVE AVE.
ROSEMEAD, CALIFORNIA 91770
TELEPHONE: 626.799.9898
FACSIMILE: 626.372.8288

REVISIONS:

ISSUE DATE:

PLAN CHECK	03-08-23
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DRAWN BY: LDC, WAS DESIGN, INC.

PANDA PROJECT #: D24956
PANDA STORE #: TBD
CIVIL PROJECT #: 220148

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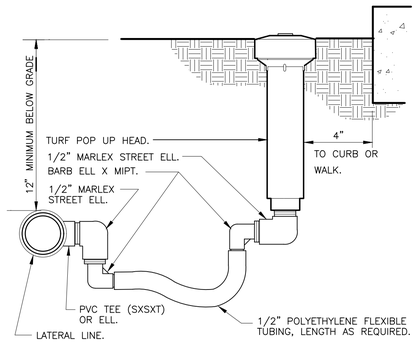
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2239 SHARED LANE ACT

04.06.23

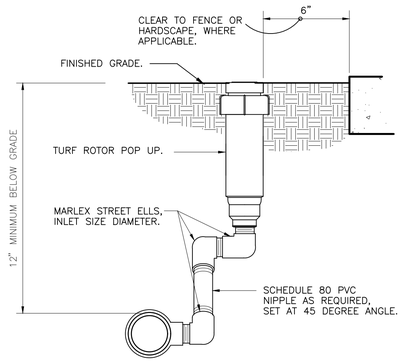
IRRIGATION PLAN

L02.0

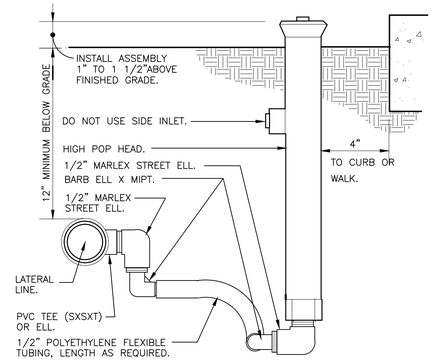
PANDA HOME REV4



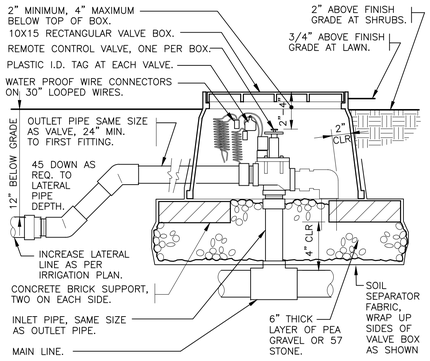
2 TURF SPRAY FLEX ASSEMBLY
3" = 12" 328413.76-13



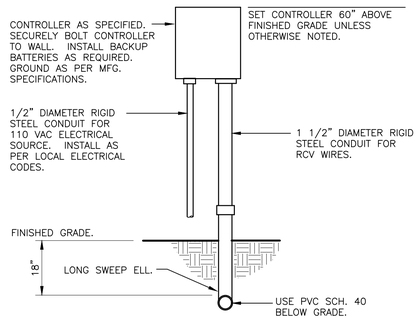
3 TURF ROTOR MARLEX ASSEMBLY
3" = 12" 328403.16-01



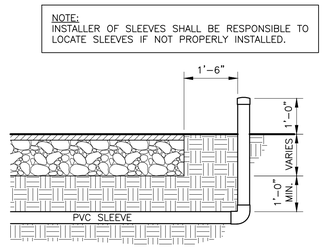
4 SHRUB SPRAY HIGHPOP W/ FLEX ASSEMBLY
3" = 12" 328403.29-01



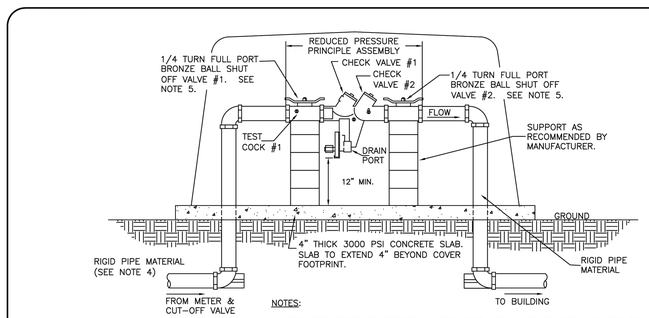
5 ELECTRIC REMOTE CONTROL VALVE
1 1/2" = 12" 328413.76-13



6 WALL MOUNT CONTROLLER
1" = 12" 328409.13-01



7 SLEEVING DETAIL
1/2" = 1'-0" 328413.76-13



NOTES:

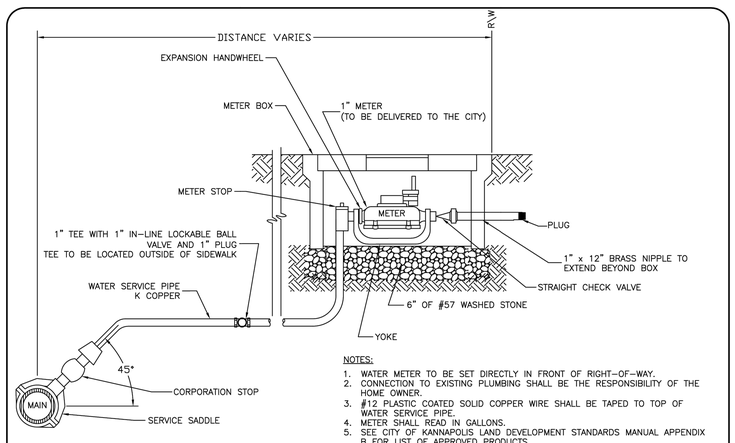
1. REDUCED PRESSURE PRINCIPLE ASSEMBLIES (RP) MUST CONFORM TO CITY OF KANNAPOLIS CROSS CONNECTION CONTROL POLICY.
2. 3/4" – 2" RP INCLUDES SHUT OFF VALVES #1 AND #2 AS PART OF THE ASSEMBLY. NO SUBSTITUTIONS SHALL BE PERMITTED.
3. ALL RP INSTALLATIONS SHALL BE INSTALLED IN A PROTECTIVE COVERING APPROVED BY THE CITY OF KANNAPOLIS BACKFLOW PREVENTION ADMINISTRATOR.
4. RIGID PIPE AND FITTINGS SHALL BE 3/4" TO 2" BRASS OR K-COPPER.
5. TEST COCK #1 SHALL BE UPSTREAM OF SHUT OFF VALVE #1 AND IS PART OF THE APPROVED ASSEMBLY.
6. HEATED ENCLOSURES ARE REQUIRED FOR ALL FIRE LINE CONNECTIONS.
7. ALL BACKFLOW DEVICES SHALL BE LEAD-FREE AND BE APPROVED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA.
8. SEE CITY OF KANNAPOLIS LAND DEVELOPMENT STANDARDS MANUAL APPENDIX B FOR LIST OF APPROVED PRODUCTS.

NOT TO SCALE

KANNAPOLIS Public Works

8 BACKFLOW PREVENTION
3/4"-2" REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP)

DECEMBER 2019
317



NOTES:

1. WATER METER TO BE SET DIRECTLY IN FRONT OF RIGHT-OF-WAY.
2. CONNECTION TO EXISTING PLUMBING SHALL BE THE RESPONSIBILITY OF THE HOME OWNER.
3. #12 PLASTIC COATED SOLID COPPER WIRE SHALL BE TAPED TO TOP OF WATER SERVICE PIPE.
4. METER SHALL READ IN GALLONS.
5. SEE CITY OF KANNAPOLIS LAND DEVELOPMENT STANDARDS MANUAL APPENDIX B FOR LIST OF APPROVED PRODUCTS.

NOT TO SCALE

KANNAPOLIS Public Works

9 DOMESTIC WATER SERVICE DETAIL
1" WATER METER CONNECTION WITH
1" TEE FOR IRRIGATION CONNECTION

DECEMBER 2019
313

PANDA EXPRESS · CHINESE KITCHEN

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2239 JARED LANE, ASLA
04.06.23

IRRIGATION DETAILS

L02.1

SECTION 328400 - PLANTING IRRIGATION

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
A. Section Includes:
1. Piping.
2. Manual valves.
3. Automatic control valves.
4. Sprinklers.
5. Controllers.
6. Boxes for automatic control valves.

1.3 DEFINITIONS
A. Circuit Piping: Downstream from control valves to sprinklers, specialties, and drain valves. Piping is under pressure during flow.
B. Main Piping: Downstream from point of connection to water distribution piping to, and including, control valves. Piping is under water-distribution-system pressure.
C. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, signaling power-limited circuits.

1.4 PERFORMANCE REQUIREMENTS
A. Irrigation zone control shall be automatic operation with controller and automatic control valves.
B. Location of Sprinklers and Specialties: Design location is approximate. Make minor adjustments necessary to avoid plantings and obstructions such as signs and light standards. Maintain 100 percent irrigation coverage of areas indicated.
C. Minimum Working Pressures: The following are minimum pressure requirements for piping, valves, and specialties unless otherwise indicated.
1. Irrigation Main Piping: 200 psig .
2. Circuit Piping: 150 psig .

1.5 ACTION SUBMITTALS
A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

1.6 INFORMATIONAL SUBMITTALS
A. Qualification Data: For qualified Installer.
B. Zoning Chart: Show each irrigation zone and its control valve.
C. Controller Timing Schedule: Indicate timing settings for each automatic controller zone.
D. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS
A. Operation and Maintenance Data: For sprinklers and controllers to include in operation and maintenance manuals.

1.8 QUALITY ASSURANCE
A. Installer Qualifications: An employer of workers that include a supervisor with at least five years of experience on projects of similar size, scope, and budget..
B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.9 DELIVERY, STORAGE, AND HANDLING
A. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.
B. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

1.10 PROJECT CONDITIONS
A. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary water service according to requirements indicated:
1. Notify Owner no fewer than two days in advance of proposed interruption of water service.
2. Do not proceed with interruption of water service without Owner's written permission.

1.11 PIPES, TUBES, AND FITTINGS
A. Comply with requirements in the piping schedule for applications of pipe, tube, and fitting materials, and for joining methods for specific services, service locations, and pipe sizes.
B. Galvanized-Steel Pipe: ASTM A 53/A 53M, Standard Weight, Type E, Grade B.
1. Malleable-Iron Unions: ASME B16.39, Class 150, hexagonal-stock body with ball-and-socket, metal-to-metal, bronze seating surface, and female threaded ends.
2. Cast-Iron Flanges: ASME B16.1, Class 125.
C. PE Pressure Pipe: AWWA C906, with DR of 7.3, 9, or 9.3 and PE compound number required to give pressure rating not less than 200 psig
D. PVC Pipe: ASTM D 1785, PVC 1120 compound, Schedule 40.
1. PVC Socket Fittings: ASTM D 2466, Schedule 40.
2. PVC Threaded Fittings: ASTM D 2464, Schedule 80.
3. PVC Socket Unions: Construction similar to MSS SP-107, except both headpiece and tailpiece shall be PVC with socket ends.
E. PVC Pipe, Pressure Rated: ASTM D 2241, PVC 1120 compound, SDR 26.
1. PVC Socket Fittings: ASTM D 2467, Schedule 80.
2. PVC Socket Unions: Construction similar to MSS SP-107, except both headpiece and tailpiece shall be PVC with socket or threaded ends.

1.12 PIPING JOINING MATERIALS
A. Pipe-Flange Gasket Materials: AWWA C110, rubber, flat face, 1/8 inch thick unless otherwise indicated; full-face or ring type unless otherwise indicated.
B. Metal, Pipe-Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.
C. Brazing Filler Metals: AWS A5.8/A5.8M, BCuP Series, copper-phosphorus alloys for general-duty brazing unless otherwise indicated.
D. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
E. Solvent Cements for Joining PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.
F. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer unless otherwise indicated.

1.13 MANUAL VALVES
A. Plastic Ball Valves:
1. Description:
a. Standard: MSS SP-122.
b. Pressure Rating: 125 psig minimum.
c. Body Material: PVC.
d. Type: Union.
e. End Connections: Socket or threaded.
f. Port: Full.

1.14 AUTOMATIC CONTROL VALVES
A. Plastic, Automatic Control Valves:
1. Description: Molded-plastic body, normally closed, diaphragm type with manual-flow adjustment, and operated by 24-V ac solenoid.

1.15 SPRINKLERS
A. General Requirements: Designed for uniform coverage over entire spray area indicated at available water pressure.
B. Plastic, Pop-up Spray Sprinklers:
1. Description:
a. Body Material: ABS.
b. Nozzle: ABS.
c. Retraction Spring: Stainless steel.
d. Internal Parts: Corrosion resistant.
e. Pattern: Fixed, with flow adjustment.
C. Plastic Shrub Sprinklers:
1. Description:
a. Body Material: ABS or other plastic.
b. Pattern: Fixed, with flow adjustment.

1.16 CONTROLLERS
A. Description:
1. Controller Stations for Automatic Control Valves: Each station is variable from approximately 5 to 60 minutes. Include switch for manual or automatic operation of each station.
2. Irrigation controller: As indicated on Drawings.
3. Control Transformer: 24-V secondary, with primary fuse.
4. Moisture Sensor: As indicated on Drawings.
5. Wiring: UL 493, Type UF multiconductor, with solid-copper conductors; insulated cable; suitable for direct burial.
a. Feeder-Circuit Cables: No. 12 AWG minimum, between building and controllers.
b. Low-Voltage, Branch-Circuit Cables: No. 14 AWG minimum, between controllers and automatic control valves; color-coded different from feeder-circuit-cable jacket color; with jackets of different colors for multiple-cable installation in same trench.
c. Splicing Materials: Manufacturer's packaged kit consisting of insulating, spring-type connector or crimped joint and epoxy resin moisture seal; suitable for direct burial.

1.17 BOXES FOR AUTOMATIC CONTROL VALVES
A. Plastic Boxes:
1. Description: Box and cover, with open bottom and openings for piping; designed for installing flush with grade.
a. Size: As required for valves and service.
b. Shape: Rectangular.
c. Sidewall Material: PE, ABS, or FRP.
d. Cover Material: PE, ABS, or FRP.
1) Lettering: " IRRIGATION."

1.18 EARTHWORK
A. Excavating, trenching, and backfilling are specified in Section 312000 "Earth Moving."
B. Install warning tape directly above pressure piping, 12 inches below finished grades, except 6 inches below subgrade under pavement and slabs.
C. Drain Pockets: Excavate to sizes indicated. Backfill with cleaned gravel or crushed stone, graded from 3/4 to 3 inches , to 12 inches below grade. Cover gravel or crushed stone with sheet of asphalt-saturated felt and backfill remainder with excavated material.
D. Provide minimum cover over top of underground piping according to the following:
1. Irrigation Main Piping: Minimum depth of 24-inches below finished grade, or not less than 18 inches below average local frost depth, whichever is deeper.
2. Circuit Piping: 12 inches.
3. Drain Piping: 12 inches.
4. Sleeves: 24 inches.

1.19 PREPARATION
A. Set stakes to identify locations of proposed irrigation system. Obtain Architect's approval before excavation.

1.20 PIPING INSTALLATION
A. Location and Arrangement: Drawings indicate location and arrangement of piping systems. Install piping as indicated unless deviations are approved on Coordination Drawings.
B. Install piping at minimum uniform slope of 0.5 percent down toward drain valves.
C. Install piping free of sags and bends.
D. Install groups of pipes parallel to each other, spaced to permit valve servicing.
E. Install fittings for changes in direction and branch connections.
F. Install flanges adjacent to valves and to final connections to other components with NPS 2-1/2 or larger pipe connection.
G. Install underground thermoplastic piping according to ASTM D 2774.
H. Install expansion loops in control-valve boxes for plastic piping.
I. Lay piping on solid subbase, uniformly sloped without humps or depressions.
J. Install PVC piping in dry weather when temperature is above 40 deg F . Allow joints to cure at least 24 hours at temperatures above 40 deg F before testing.
K. Install piping in sleeves under parking lots, roadways, and sidewalks.
L. Install sleeves made of Schedule 40 PVC pipe and socket fittings, and solvent-cemented joints.

1.21 JOINT CONSTRUCTION
A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
D. Flanged Joints: Select rubber gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.
E. PE Piping Fastener Joints: Join with insert fittings and bands or fasteners according to piping manufacturer's written instructions.
F. PE Piping Heat-Fusion Joints: Clean and dry joining surfaces by wiping with clean cloth or paper towels. Join according to ASTM D 2657.
1. Plain-End PE Pipe and Fittings: Use butt fusion.
2. Plain-End PE Pipe and Socket Fittings: Use socket fusion.
G. PVC Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
2. PVC Pressure Piping: Join schedule number, ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule-number PVC pipe and socket fittings according to ASTM D 2855.
3. PVC Nonpressure Piping: Join according to ASTM D 2855.

1.22 VALVE INSTALLATION
A. Aboveground Valves: Install as components of connected piping system.
B. Throttling Valves: Install in underground piping in boxes for automatic control valves.

1.23 SPRINKLER INSTALLATION
A. Install sprinklers after hydrostatic test is completed.
B. Install sprinklers at manufacturer's recommended heights.
C. Locate part-circle sprinklers to maintain a minimum distance of 4 inches from walls and 2 inches from other boundaries unless otherwise indicated.

1.24 AUTOMATIC IRRIGATION-CONTROL SYSTEM INSTALLATION
A. Equipment Mounting: Install interior controllers on wall.
1. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor bolts to elevations required for proper attachment to supported equipment.
B. Install control cable in same trench as irrigation piping and at least 2 inches below or beside piping. Provide conductors of size not smaller than recommended by controller manufacturer. Install cable in separate sleeve under paved areas.

1.25 CONNECTIONS
A. Comply with requirements for piping specified in Section 221113 "Facility Water Distribution Piping" for water supply from exterior water service piping, water meters, protective enclosures, and backflow preventers. Drawings indicate general arrangement of piping, fittings, and specialties.
B. Install piping adjacent to equipment, valves, and devices to allow service and maintenance.
C. Connect wiring between controllers and automatic control valves.

1.26 IDENTIFICATION
A. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplates and signs on each automatic controller.
1. Text: In addition to identifying unit, distinguish between multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations.
B. Warning Tapes: Arrange for installation of continuous, underground, detectable warning tapes over underground piping during backfilling of trenches. See Section 312000 "Earth Moving" for warning tapes.

1.27 FIELD QUALITY CONTROL
A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
B. Tests and Inspections:
1. Leak/Hydrostatic Test: After installation, charge system at 150% of operating pressure continuously for 2 hours with open trenches and observe for leaks. Repair leaks and retest until no leaks exist.
2. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
C. Any irrigation product will be considered defective if it does not pass tests and inspections.
D. Prepare test and inspection reports.

1.28 STARTUP SERVICE
A. Perform startup service.
1. Complete installation and startup checks according to manufacturer's written instructions.
2. Verify that controllers are installed and connected according to the Contract Documents.
3. Verify that electrical wiring installation complies with manufacturer's submittal.

1.29 ADJUSTING
A. Adjust settings of controllers.
B. Adjust automatic control valves to provide flow rate at rated operating pressure required for each sprinkler circuit.
C. Adjust sprinklers and devices, except those intended to be mounted aboveground, so they will be flush with, or not more than 1/2 inch above, finish grade.

1.30 CLEANING
A. Flush dirt and debris from piping before installing sprinklers and other devices.

1.31 DEMONSTRATION
A. Train Owner's maintenance personnel to adjust, operate, and maintain automatic control valves and controllers.

1.32 PIPING SCHEDULE
A. Install components having pressure rating equal to or greater than system operating pressure.
B. Piping in control-valve boxes and aboveground may be joined with flanges or unions instead of joints indicated.
C. Underground irrigation main piping, NPS 4 and smaller, shall be one of the following as indicated on Drawings:
1. Schedule 40, PVC pipe and socket fittings, and solvent-cemented joints.
2. SDR 21, PVC, pressure-rated pipe; Schedule 80, PVC socket fittings; and solvent-cemented joints.
D. Circuit piping, NPS 2 and smaller, shall be one of the following as indicated on Drawings:
1. Schedule 40, PVC pipe and socket fittings; and solvent-cemented joints.
2. SDR 21, PVC, pressure-rated pipe; Schedule 40, PVC socket fittings; and solvent-cemented joints.
3. SDR 26, PVC, pressure-rated pipe; Schedule 40, PVC socket fittings; and solvent-cemented joints.
E. Underground Branches and Offsets at Sprinklers and Devices: Schedule 80, PVC pipe; threaded PVC fittings; and threaded joints.
1. Option: Plastic swing-joint assemblies, with offsets for flexible joints, manufactured for this application.

PANDA EXPRESS, INC.
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REVISIONS:

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2239 SHARED LANE, ACT
04.06.23

IRRIGATION SPECIFICATIONS

L02.2

PANDA HOME REV4