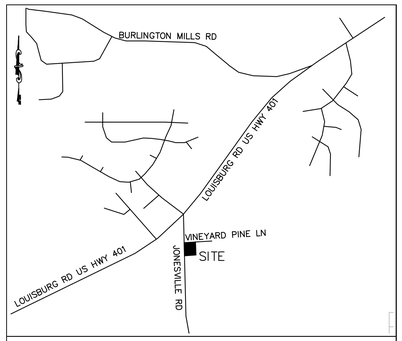
Site Development Plan
SDP-26-0005 (SDP-23-06)
Rolesville, Wake County, North Carolina
Oatland Commercial
4502 Vineyard Pine Lane (PIN:1758453022)



VICINITY MAP
SCALE: 1"=250'

PROJECT INFORMATION:

PROJECT:	VINEYARD PINE COMMERCIAL
OWNER / DEVELOPER:	MRR DEVELOPMENT, LLC 10121 CAPITOL BLVD, SUITE 105 WAKE FOREST, NC 27587
PHONE:	(330) 573-4030
CONTACT:	OMAR EL-KAISSI
EMAIL:	OMAR@SASSOMLLC.COM
ENGINEER:	KEITH P. GETTLE, PE GETTLE ENGINEERING AND DESIGN, PLLC LICENSE: P-2538 3616 WAXWING CT. WAKE FOREST, NC 27587
PHONE:	(919) 210-3934
EMAIL:	KPGETTLE@GMAIL.COM
SURVEYOR:	CAWTHORNE MOSS AND PANCIERA P.C. 333 SOUTH WHITE STREET WAKE FOREST NORTH CAROLINA 27588
PHONE:	(919) 556- 3148

REZONING - REZ-23-04- APPROVED ON 2023-07-06 - APPLICATION TO REZONE PIN 1758453022 FROM THE OP-CZ (OFFICE PARK CONDITIONAL ZONING) DISTRICT TO A GENERAL COMMERCIAL CONDITIONAL ZONING (GC-CZ) DISTRICT, WITH A CONDITION OF APPROVAL THAT PROHIBITS A LIST OF OTHERWISE PERMITTED USES IN THE GC DISTRICT

CONDITIONS OF APPROVAL
REZ-23-04
4502 Vineyard Pine Lane
Date: 04-11-2023

Proposed Rezoning Conditions:

1. Exhibit A shall govern the Permitted by-right, Permitted by Special Use Permit, and Prohibited principal zoning uses that may be established at the subject property.

   Per Exhibit A attached, the following list of 19 otherwise Permitted Principal Zoning Uses in the General Commercial zoning district per LDO Table 5.1. shall be prohibited: (not permitted).
   - College/University
   - Bank
   - Carwash
   - Funeral Home
   - Gas Station
   - Golf Course
   - Lodging
   - Recreation, Outdoor
   - Tattoo Establishment
   - Vape and Tobacco Store
   - Vehicle, Rental and Sales
   - Vehicle, Minor Service
   - Vehicle, Major Service
   - Hospital
   - Fulfillment Center
   - Major Utility
   - Major Transportation Installation
   - Telecommunication Tower
   - Water Storage Tower

EXHIBIT A - Conditions of Approval — REZ-23-04 / V1 rcvd 4-11-2023

4502 Vineyard Pine Ln — List of Permitted, Special Use Permit, and Prohibited Zoning Uses.

PERMITTED - 29

COMMERCIAL		OFFICE/MEDICAL	CIVIC		INFRASTRUCTURE	INDUSTRIAL	RESIDENTIAL
Bars and Nightclubs	Recreation, Indoor	Animal Care	Assembly/Church	Parks / Public Recreation Facilities	Minor Utility	Artisanal Manufacturing	Dwelling, Upper-Story Unit
Brewery/ Distillery	Retail Sales & Service, Neighborhood	Dental Facility	Cultural Facility	Preserved Open Space	Minor Transportation Installation	Flex	
Commercial Parking	Retail Sales & Service, Community	Medical Facility	Day Care	Public Facility			
Eating Establish.	Retail Sales & Service, Shopping Center	Professional Office	Govt. Office	Public Safety Facility			
Event Center		Urgent Care	Lodge or Private club	School (K-12)			

Permitted by Special Use Permit - 1

COMMERCIAL		OFFICE/MEDICAL	CIVIC	INFRASTRUCTURE	INDUSTRIAL	RESIDENTIAL
		Social Services				

PROHIBITED - 18

COMMERCIAL		OFFICE/MEDICAL	CIVIC	INFRASTRUCTURE	INDUSTRIAL	RESIDENTIAL
Bank	Recreation, Outdoor	Hospital	Colleges / University	Major Utility	Fulfillment Center	
Car wash	Tattoo Establishment			Major Transportation Installation		
Funeral Home	Vape & Tobacco Store			Telecommunication Tower		
Gas Station	Vehicle, Rental & Sales			Water Storage Tower		
Golf Course	Vehicle, Minor Service					
Lodging						

SITE DATA:

SITE ADDRESS:	4502 VINEYARD PINE LANE
LEGAL DESCRIPTION:	LOT 6 BARRETT VENTURES LLC
BOM / PAGE:	BM2008 / PG 702
PIN:	1758453022
SITE AREA	1.45 AC (63,259 SF)
ZONING DISTRICT:	GC-CZ (GENERAL COMMERCIAL CONDITIONAL ZONING) (REZ-23-04)
OVERLAY:	NONE
EXISTING USE:	VACANT
PROPOSED USE:	COMMERCIAL USE - RETAIL
IMPERVIOUS EXISTING:	0 ACRES (0 SF)
IMPERVIOUS PROPOSED :	1.04 ACRES (45,302 SF)
IMPERVIOUS PERCENT (%):	72%
WATERSHED:	MILBURNIE LAKE - NEUSE
HUC:	0302020107
LATITUDE:	35.906033
LONGITUDE:	-79.688333
FLOOD ZONE:	NONE PER FEMA FIRM
FEMA FIRM MAP:	3720175800K (7-19-2022)
OPEN SPACE SIZE REQ'D:	3163 SF (63,259 * 5%)
OPEN SPACE SIZE PROVIDED:	6,830 SF (11%)
SUMMARY OPEN SPACE:	
ACTIVE OPEN AREA 1 = 2293 SF	
ACTIVE OPEN AREA 2 = 1205 SF	
TOTAL ACTIVE = 3498 SF (3498 / 3163 = 111%)	
PASSIVE OPEN AREA = 3332 SF	
TOTAL OPEN SPACE = 6,830 SF	
BUILDING SETBACKS (GC)	20' (FRONT - JONESVILLE) 20'x 65% REDUCTION = 13' FRONT - JONESVILLE) 15' (SIDE) 35' (REAR) 25' (CORNER - VINEYARD PINES) 25'x 65% REDUCTION = 16.25' (CORNER - VINEYARD PINES)
BUILDING COMMERCIAL (SF)	15,247 SF
BUILDING HEIGHT (MAX)	35'
BUILDING HEIGHT (PROVIDED)	22.67'
PARKING SUMMARY:	
RETAIL SALES: MIN 2.5 / 1000 SF	15,247 / 1000 * 2.5 = 38 SPACES'
RETAIL SALES: MAX 7.5 / 1000 SF	15,247 / 1000 * 7.5 = 114 SPACES'
PARKING PROVIDED:	59 SPACES = 3.9 /1000
HANDICAP PARKING REQUIRED:	3 SPACES (1 - VAN ACCESSIBLE)
HANDICAP PARKING PROVIDED:	3 SPACES (1 - VAN ACCESSIBLE)
BIKE PARKING (REQUIRED)	1 PER 5000 SF BLDG (15,247 / 5000 = 3)
BIKE PARKING (PROVIDED)	3
TOTAL DENUDED AREA	66,036 SF (1.52 ACRES)

Stormwater Summary

	Square Feet	Acres
Overall Site	63,259.00	1.45
Impervious Summary	**Square Feet**	**Acres**
Pre		
Managed Pervious	63,162.00	1.45
Post (on site)		
Parking Lot	22,806.00	0.52
Roof	15,247.00	0.35
Sidewalk	7,429.00	0.17
Total Impervious		**1.04**
Open Landscape	3,332.00	0.08
Managed Pervious	14,312.00	0.33
Total		**1.45**

KEY- PEDESTRIAN AMENITIES - 4 REQUIRED

(1) - PATIO SEATING IN OPEN AREA 2
(2) - ACTIVE USE IN OPEN AREA 1
(3) - PUBLIC ART - MURAL ON EXTERIOR PORTION OF BUILDING
(4) - DECORATIVE PLANTERS (SEE SITE PLAN FOR LOCATIONS)

SETBACK REDUCTIONS (TA-23-04)

SETBACK REDUCTIONS OF UP TO SIXTY-FIVE (65) PERCENT SHALL BE ALLOWED WITHIN THE MAIN STREET CORRIDOR (PER TA-23-04) IF ALL THE FOLLOWING ARE PROVIDED:

1. BUILDINGS AND COMMUNITY GATHERING SPACES DEFINE NO LESS THAN TWO-THIRDS OF STREET FRONTAGE;

   *JONESVILLE AND VINEYARD PINE STREET FRONTAGE TOTAL APPROX 540 FT
   BUILDING LENGTH TOTAL = 349 FT
   349 / 540 = 65%

2. VEHICULAR SURFACE AREAS ARE LIMITED TO NO MORE THAN ONE-THIRD OF PROPERTY FRONTAGE; AND

   *JONESVILLE AND VINEYARD PINE STREET FRONTAGE TOTAL APPROX 540 FT
   PARKING AREA LENGTH = 63 FT
   63 / 540 = 12%

3. A MINIMUM TEN-FOOT WIDE SIDEWALK OR MULTI-USE TRAIL IS PROVIDED ALONG MAIN STREET. IN ADDITION TO THE FOREGOING, AT LEAST TWO OF THE FOLLOWING SHALL BE PROVIDED:

   *10' WIDE TRAIL TO BE ADDED ALONG JONESVILLE ROAD AS SHOWN ON PLANS

4. ENHANCED LANDSCAPING, VISIBLE FROM THE PUBLIC RIGHT-OF-WAY, THAT EXCEEDS LDO STANDARDS BY AT LEAST TWENTY-FIVE (25) PERCENT;

   *ADDITIONAL LANDSCAPING PROVIDED AS SHOWN ON THE LANDSCAPE PLAN

5. A PRIVATELY MAINTAINED COMMUNITY GATHERING SPACE OR GREEN SPACE, AT LEAST ONE-THOUSAND TWO HUNDRED (1,200) SQUARE FEET, THAT IS PUBLICLY ACCESSIBLE;

   *NOT USED

6. ART INSTALLATIONS VISIBLE FROM THE PUBLIC RIGHT-OF-WAY.

   *ART INSTALLATION TO BE PROVIDED ON SITE TO BE VISIBLE FROM THE ROW.

SHEET	DESCRIPTION
C0	Cover Sheet
	Survey
C1	Existing Conditions and Demolition Plan
C2	Site Plan
C3	Grading and Stormwater Plan
C4	Utility Plan
C5	Landscaping Plan
C6	Fire Access Plan
D1	Site Details
D2	Water and Sewer Details
D3	Storm Drain & NCDOT Traffic
D4	Detention System Details
D5	Detention System Details
D6	Storm Filter Details
EC1	Erosion Control Plan Phase 1
EC2	Erosion Control Plan Phase 2
EC3	Erosion Control Plan Phase 3
EC4	Erosion Control Plan Phase 4
EC5	Erosion Control Details
EC6	Erosion Control Details
EC7	NCG01 Requirements
SL1	Site Lighting Plan
SL2	Site Lighting Fixtures
SL3	Site Lighting Fixtures
A1.1	Architectural Floor Plan
A6.0	Building Elevations

RALEIGH WATER INSPECTIONS QUANTITIES (SUBDIVISIONS AND SITE PLANS) JAN2025M

Phase Number(s)	PHASE 1	PHASE 2	PHASE 3
Number of Lot(s)	1		
Number of Units	1		
Public Water (LF)	0		
Public Sewer (LF)	0		
Public Force Main (LF)	0		
Private Sewer* (LF)	314		
Water Service Stubs (Quantity)	1		
Sewer Service Stubs (Quantity)	1		
Average Daily Flow per Phase**			
COMMERCIAL PROJECTS WITH SINGLE WATER AND SEWER SERVICE			
Fire Service (Size)	6"		
Domestic Meter Size	2"		
Irrigation Meter Size	0		
Average Daily Flow per Phase**	1276 gpd (1.45 x 880)		

*Sewer mains and manholes as part of a collection system.
**Entire Project Flow. Based on 75gpd per bedroom for residential (apartments, single family dwelling, townhouse, condos), or based on 15A NCAC 02T .0114 Wastewater Design Flow Rates for Commercial and Industrial.
The meter size must match domestic service size (exemption - 3/4" service tap with 5/8" meter).

811 Know what's **below.** **Call** before you dig.
(Or call: 1-800-632-4949)

EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT

APPROVED

EROSION CONTROL ☐ SEC-_____
STORMWATER MGMT.☐SWF-_____
FLOOD STUDY ☐ SWF-_____
DATE_____

_____
ENVIRONMENTAL ENGINEER SIGNATURE

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	KPG
2	5-22-2026	Town / Wake County Commnet	KPG
3	07-28-2026	WAKE COUNTY AND TOWN REVIEW	KPG
4	10-03-2026	Rev per COR Comments	KPG
5	10-08-2026	Rev per COR Comments	KPG
6	10-22-2026	SIGNATURE SET	KPG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038115 KEITH P. GETTLE 10/22/26

Cover Sheet
Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.23005

Dwg No.
C0

DocuSign Envelope ID: C89BE130-B6E0-47D8-8A92-757697739386

I, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY PERFORMED UNDER MY SUPERVISION FROM REFERENCES AS NOTED HERE ON; THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION SHOWN IN THE REFERENCES; THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY AS CALCULATED IS GREATER THAN 1:10000; THIS SURVEY IS NOT TO BE RECORDED WITHOUT THE WRITTEN CONSENT OF THE SURVEYOR.

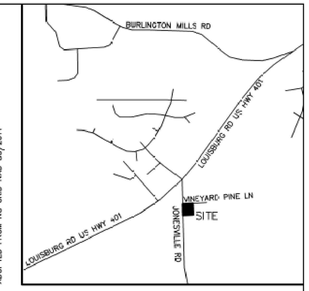
DocuSigned by: Larry Jordan Parker, Jr. 7/9/2021

PROFESSIONAL LAND SURVEYOR LICENSE NUMBER L-4685

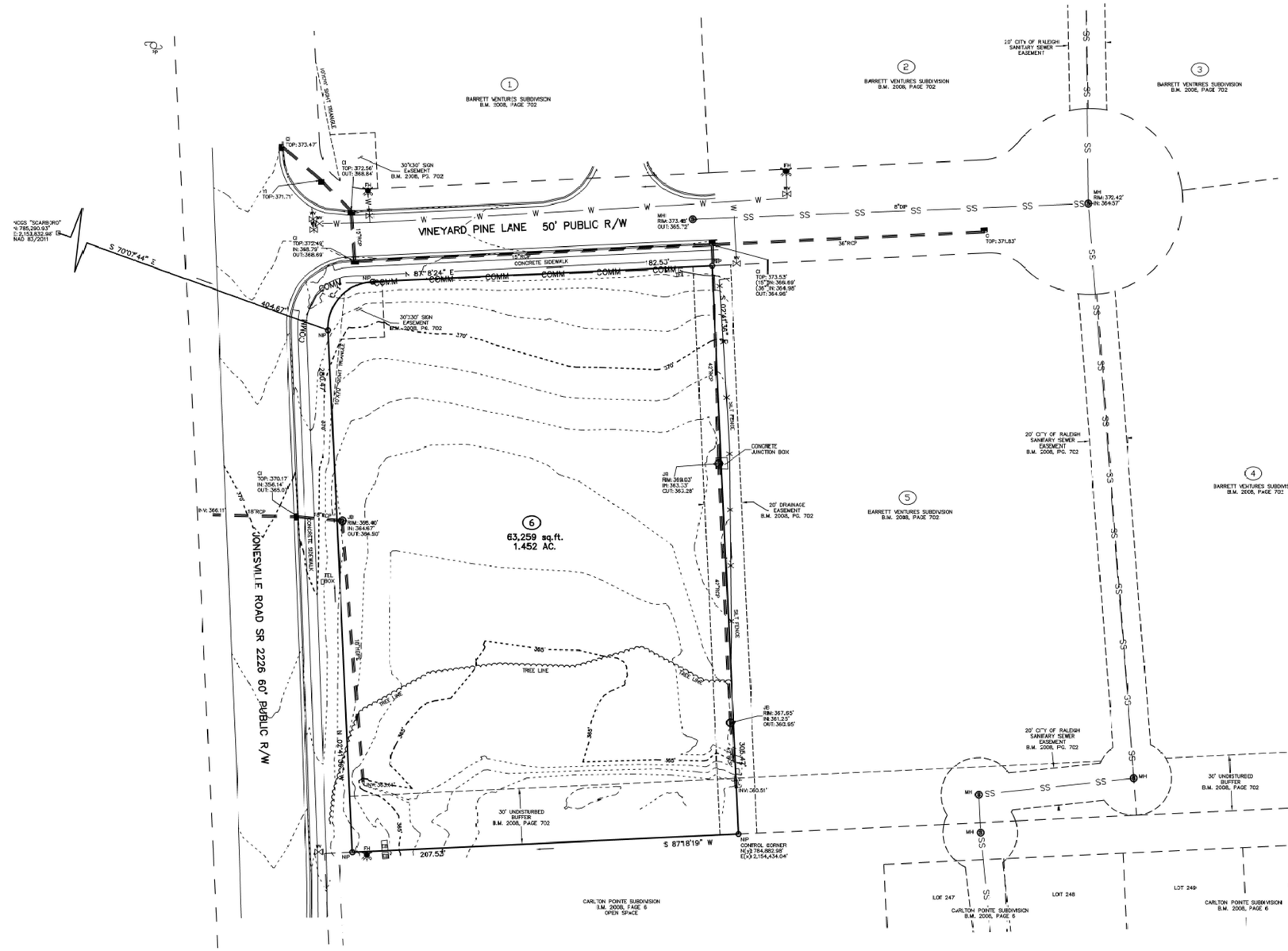
NORTH CAROLINA PROFESSIONAL SEAL L-4685 LAND SURVEYOR L JORDAN PARKER JR

CURVE TABLE				
CURVE	ARC LENGTH	RADIUS	CHORD LENGTH	CHORD BEAPING
C-1	39.27'	25.00'	35.36'	N 42°8'24" E

ADOPTED FROM NC GRID NAD 83/2011



VICINITY MAP



LEGEND:

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

NOTES:

1. THIS PLAT SUBJECT TO ALL EASEMENTS, AGREEMENTS AND RIGHTS OF WAY OF RECORD PRIOR TO THE DATE OF THIS PLAT.
2. NO UNDERGROUND UTILITIES HAVE BEEN MARKED OR LOCATED FOR THIS PLAT.
3. ALL BEARINGS AND DISTANCES ARE HORIZONTAL GROUND MEASUREMENTS
4. ALL ELEVATIONS ARE BASED ON NAVD 88
5. ALL CONTOURS ARE AT 1' INTERVALS HIGHLIGHTED EVERY 5'.

LINE TYPE LEGEND

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

TOPOGRAPHIC SURVEY FOR

LOT 6, BARRETT VENTURES, LLC

4502 VINEYARD PINE LANE
OWNER: HAYNES INVESTMENT PROPERTIES, LLC
REF: D.B. 13382, PAGE 1030
REF: B.M. 2008, PAGE 702
TOWN OF ROLESVILLE
WAKE COUNTY, NORTH CAROLINA

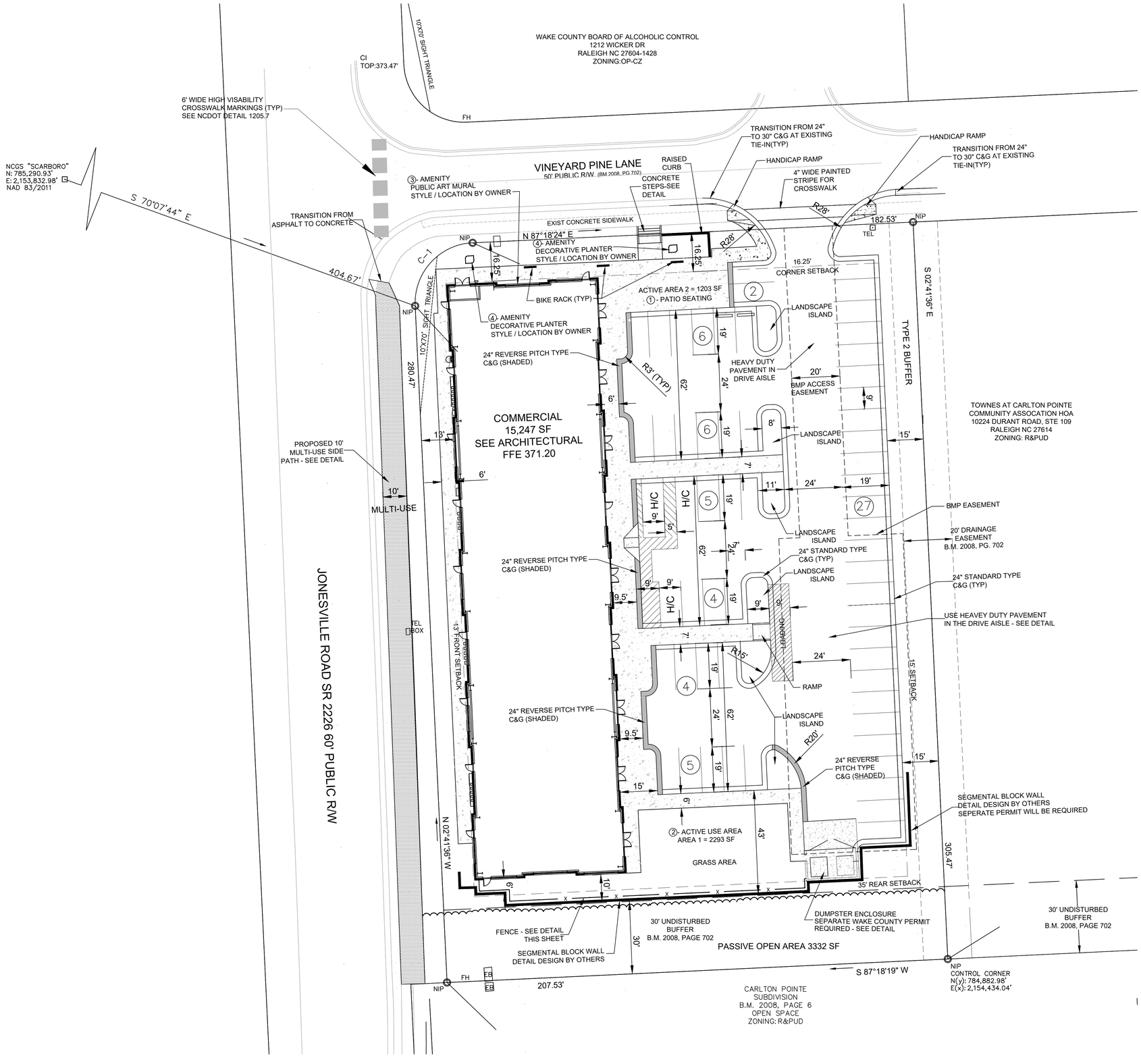
30 15 0 30 60
SCALE 1"=30'

JUNE 24, 2021
ZONED OP-SUD
PIN #1758.01-45-3022

(X:\PROJECTS\VINEYARDPINE4502 - JG)

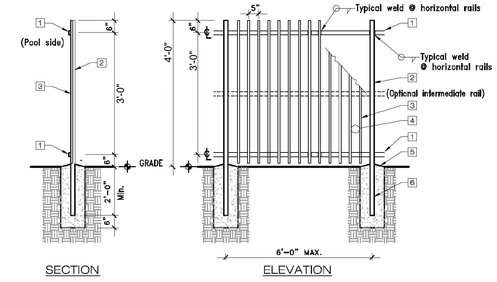
CMP

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



SITE NOTES

1. WHERE NEW CURB AND GUTTER IS INSTALLED IN A PUBLIC STREET RIGHT-OF-WAY, USE 30" CURB AND GUTTER. IN OTHER LOCATIONS, USE 24" CURB AND GUTTER.
2. ALL CURB DIMENSIONS ARE MEASURED TO BACK OF CURB, AND ALL CURB RADII ARE 3 FEET, UNLESS INDICATED OTHERWISE.
3. ALL SITE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE INDICATED.
4. ALL BASE AND PAVING WORK SHALL COMPLY WITH LOCAL STANDARDS. INDICATED PAVEMENT THICKNESSES REFER TO COMPACTED THICKNESS.
5. INSTALL ALL PAVEMENT WITH POSITIVE SURFACE DRAINAGE.
6. ALL HANDICAPPED PARKING SPACES, AISLES, RAMPS, SIGNAGE, PAVEMENT MARKINGS, CROSSWALKS, AND ACCESSIBLE ROUTES SHALL MEET APPLICABLE REQUIREMENTS OF THE NORTH CAROLINA ACCESSIBILITY CODE.
7. ALL HANDICAP ACCESSIBLE PARKING SPACES SHALL HAVE AN R7-8 AND R7-8D SIGN. ALL SIGNS FOR VAN ACCESSIBLE SPACES SHALL ALSO INCLUDE A "VAN ACCESSIBLE" SIGN.
8. CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL MEASURES DURING THE COURSE OF PROJECT WORK IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS, THE N.C. SUPPLEMENT TO THE MUTCD, ANY REGULATORY AGENCY REQUIREMENTS, AND PROJECT-SPECIFIC SAFETY CONSIDERATIONS.
9. TIE-INS TO EXISTING PAVEMENT, CURBS, WALKS, ETC. SHALL BE MADE WITH NEAT EDGES AND SMOOTH, GRADUAL TRANSITIONS THAT ARE SAFE, FUNCTIONAL, DURABLE, AND VISUALLY ACCEPTABLE TO THE OWNER AND REVIEW AUTHORITIES.



Materials allowed:
ALUMINUM--- alloy 6063-T6 OR alloy 6061-T6.
STEEL--- square tubes: ASTM A500 OR A501.

1. Horizontal rails: Minimum 2"x1"x14 ga., welded to posts at all 4 sides --OR-- pipe 1-1/2" diameter.
2. Posts: Minimum 2"x2"x14 ga., embedded in concrete footing --OR-- pipe 2-1/4" diameter.
3. Pickets: Minimum 1"x1"x 0.065" wall thickness, welded to rails at all 4 sides --OR-- pipe 2-1/4" diameter.
5. Concrete footing at each post--- minimum diameter of 10", with a minimum depth of 30" from finish grade. Top surface of footing shall be sloped 1" to shed water. Minimum post embedment shall be 24 inches. Concrete strength shall be not less than 2500 psi at 28 days.
6. Protect aluminum embedded in concrete with a coat of bituminous paint.

BLACK METAL FENCE DETAIL

Graphic Scale 1"=20'

20 0 10 20 40 80

NORTH

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

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6			

NORTH CAROLINA PROFESSIONAL SEAL 033973 ENGINEER KEITH P GETTLE
10/22/26

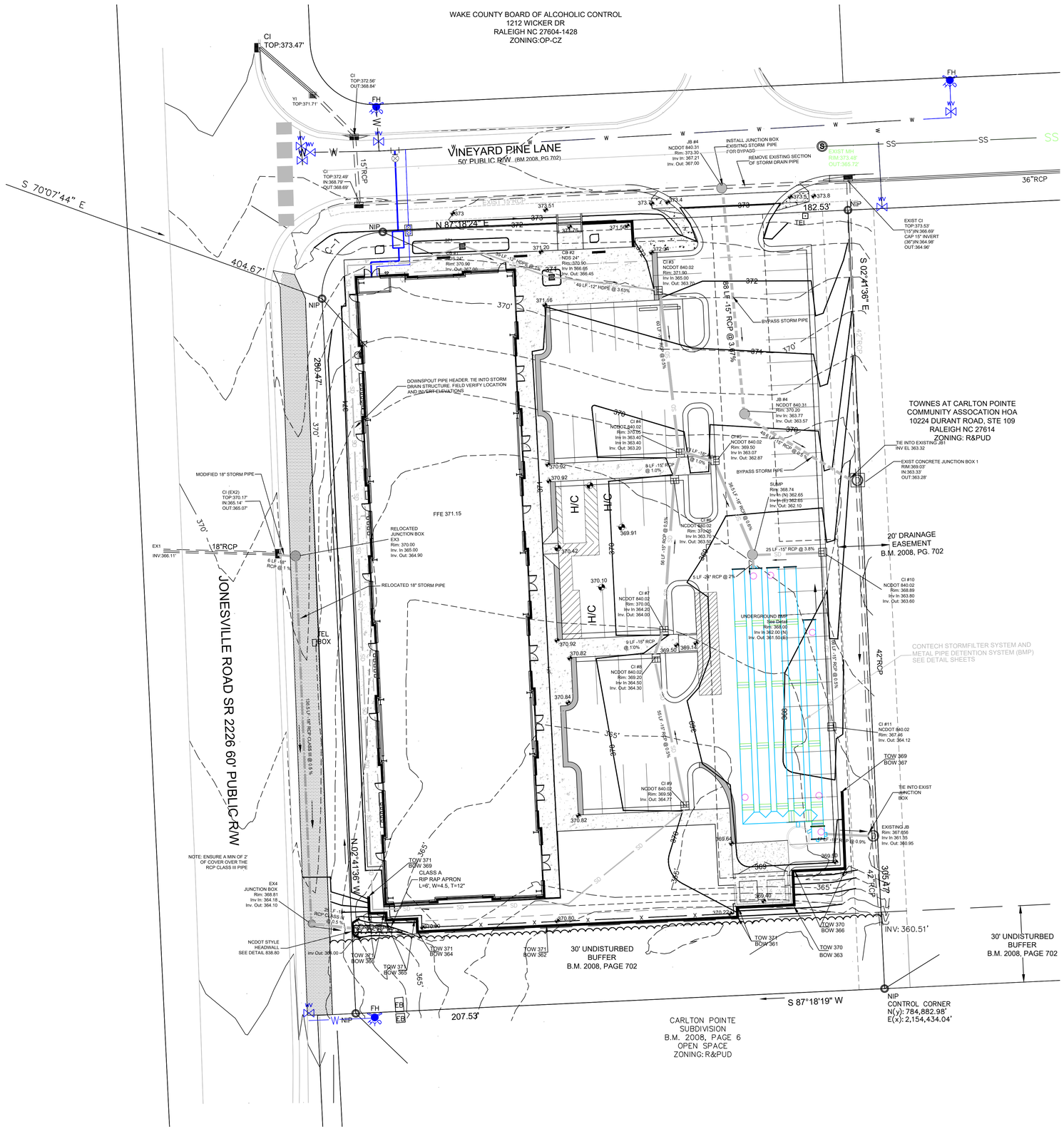
Site Plan

Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.

C2



GENERAL GRADING AND STORM DRAINAGE SPECIFICATIONS

EXISTING CONDITIONS

* INFORMATION ABOUT EXISTING UNDERGROUND FACILITIES AND SUBSURFACE CONDITIONS INDICATED ON THESE DRAWINGS IS NOT BASED ON AN EXHAUSTIVE INVESTIGATION OF SUCH FACILITIES OR CONDITIONS, AND THE ENGINEER MAKES NO WARRANTY TO ANY PARTY REGARDING THEM. EXISTING UTILITY LINE LOCATIONS SHOWN SHOULD BE CONSIDERED APPROXIMATE, AND ACTUAL UTILITIES AND CONDITIONS MAY DIFFER FROM THOSE INDICATED. IF DIFFERING UTILITIES OR CONDITIONS EXIST, THEY MAY BE ENCOUNTERED DURING THE COURSE OF THE PROJECT WORK, AND MAY IMPACT THE PROJECT SCOPE AND TIME REQUIREMENTS.

PROTECTION AND SAFETY

* PRIOR TO BEGINNING WORK, AND AS NEEDED DURING THE COURSE OF PROJECT WORK, CONTRACTOR SHALL NOTIFY ALL APPLICABLE UTILITY LOCATION SERVICES AND UTILITY PROVIDERS TO REASONABLY VERIFY THE LOCATION OF ALL KNOWN OR SUSPECTED UTILITIES, IN ACCORDANCE WITH STATE REGULATIONS. CONTRACTOR IS ADVISED THAT SOME UTILITY PROVIDERS DO NOT SUBSCRIBE TO ONE-CALL SERVICES, AND MUST BE CONTACTED SEPARATELY.
* CONTRACTOR SHALL PROVIDE ADEQUATE MEANS AND METHODS FOR PROTECTION OF ALL EXISTING UTILITIES AND SITE FEATURES WHICH ARE INTENDED TO REMAIN IN SERVICE OR IN PLACE.
* CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL MEASURES DURING THE COURSE OF PROJECT WORK IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS, THE N.C. SUPPLEMENT TO THE MUTCD, ANY REGULATORY AGENCY REQUIREMENTS, AND PROJECT-SPECIFIC SAFETY CONSIDERATIONS.
* CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY PROGRAMS AND MEASURES ON THE PROJECT SITE OR OTHERWISE RELATING TO THE PROJECT WORK, AND SHALL COMPLY WITH ALL SAFETY CODES AND REGULATIONS APPLICABLE THERETO, FOR THE PROTECTION OF WORKERS, VISITORS, AND THE GENERAL PUBLIC.

COMPLIANCE

* ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE STANDARDS AND REQUIREMENTS OF THE CITY OF RALEIGH, TOWN OF ROLESVILLE, WAKE COUNTY SEDIMENTATION AND EROSION CONTROL OFFICE, AND THE N.C. STATE BUILDING CODES.

GRADING

* STRUCTURAL FILL IS DEFINED AS SOIL CLASSIFIED AS SM, SC, ML, AND CL, FREE OF VEGETATIVE MATTER, DEBRIS OR OTHER UNSUITABLE MATTER, FREE OF ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION, CAPABLE OF BEING COMPACTED TO THE REQUIRED DENSITY, AND WHICH HAS BEEN APPROVED FOR USE BY THE GEOTECHNICAL ENGINEER.
* OTHER SOIL NOT MEETING THE DEFINITION FOR STRUCTURAL FILL MAY BE APPROVED BY THE GEOTECHNICAL ENGINEER FOR USE UNDER LIMITED CONDITIONS OR IN LIMITED AREAS.
* STRUCTURAL FILL SHALL GENERALLY BE PLACED AND COMPACTED WHEN THE SOIL'S MOISTURE CONTENT IS WITHIN 4 PERCENTAGE POINTS OF THE SOIL'S OPTIMUM MOISTURE CONTENT, IN LIFTS NOT TO EXCEED 8 INCHES LOOSE THICKNESS. THE IN-PLACE COMPACTED DENSITY SHALL BE AT LEAST 90 PCF. TIGHTER SPECIFICATIONS MAY BE REQUIRED FOR CERTAIN AREAS, SOIL TYPES, OR COMPACTION METHODS.
* STRUCTURAL ZONES SHALL INCLUDE ALL AREAS SUBJECT TO DIRECT BEARING PRESSURE PLUS 10 FEET HORIZONTAL PLUS A 1:1 DOWNWARD SLOPE IN ANY AREAS OF FILL.
* ALL SOIL UNDER PAVEMENTS, BUILDINGS, AND WALKWAYS, OR IN STRUCTURAL ZONES ASSOCIATED WITH THESE AREAS SHALL BE APPROVED IN-SITU SOIL OR STRUCTURAL FILL, COMPACTED TO AT LEAST 95% OF THE SOIL'S MAXIMUM DRY DENSITY (MDD) PER ASTM D-698. TIGHTER REQUIREMENTS MAY APPLY FOR CERTAIN AREAS.
* IN THE BUILDING AREA, THE REQUIRED DENSITY OF FILL SHALL BE 100% MDD, EXCEPT THE TOP 12 INCHES OF FILL SHALL BE AT LEAST 98% MDD. WHERE THE BUILDING WILL BE PLACED ON IN-SITU SOIL, THE SOIL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER AND COMPACTED TO AT LEAST 98% MDD.
* ALL EXCESS OR UNSUITABLE SOIL SHALL BE LEGALLY DISPOSED IN AN OFFSITE OR APPROVED ONSITE LOCATION.
* WHERE LANDSCAPED OR YARD AREAS ABUT EXTERIOR BUILDING WALLS, FINISHED GROUND ELEVATIONS ADJACENT TO THE WALL SHALL BE AT LEAST 3 INCHES BELOW THE FINISHED FLOOR ELEVATION, AND SHALL SLOPE AWAY FROM THE BUILDING WITH POSITIVE DRAINAGE.

TRENCHING AND BACKFILLING

* WHERE ROCK OR OTHER HARD MATERIAL OCCURS AT THE DESIGNED TRENCH BOTTOM, OVEREXCAVATE TRENCH DEPTH 6 INCHES AND REPLACE OVEREXCAVATION MATERIAL WITH #57 STONE BEDDING.
* WHERE THE DESIGNED TRENCH BOTTOM CONSISTS OF UNSTABLE BEARING SOIL, UNDERCUT TRENCH BOTTOM AND REPLACE UNDERCUT MATERIAL IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
* BACKFILL SOIL SHALL BE STRUCTURAL FILL, PLACED AND COMPACTED IN ACCORDANCE WITH REQUIREMENTS FOR THE SPECIFIC AREA OF WORK, WITHOUT DAMAGING OR DISPLACING PIPE OR STRUCTURES

Stormwater Summary (051526)

	Square Feet	Acres
Overall Site	63,259.00	1.45
Impervious Summary	**Square Feet**	**Acres**
Pre		
Parking Lot	0.00	0.00
Managed Pervious	63,162.00	1.45
Total		**1.45**
Post		
Parking Lot	22,806.00	0.52
Roof	15,247.00	0.35
Sidewalk	7,429.00	0.17
Open Landscape	3,332.00	0.08
Managed Pervious	14,312.00	0.33
Total		**1.45**

NOTIFICATIONS

* NOTIFY THE ENGINEER AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING OR RESUMING ANY STORM DRAINAGE OR STORMWATER IMPOUNDMENT BASIN WORK.
* NOTIFY THE APPLICABLE LOCAL GOVERNMENT AUTHORITIES IN ACCORDANCE WITH THEIR REQUIREMENTS PRIOR TO BEGINNING ANY WORK.
* NOTIFY THE GEOTECHNICAL ENGINEER AND TESTING SERVICE AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING OR RESUMING ANY GRADING OR STORMWATER IMPOUNDMENT BASIN WORK.

QUALITY CONTROL

* ALL EARTHWORK OPERATIONS, INCLUDING TOPSOIL STRIPPING, STOCKPILING, EXCAVATION, FILLING, COMPACTING, TRENCHING, BACKFILLING, RETAINING WALLS, AND FINE-GRADING, SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER, WHO SHALL VERIFY THE SUITABILITY OF SOIL MATERIALS, MONITOR EARTHWORK ACTIVITIES, DIRECT AND OBSERVE PROOFROLLING, AND PROVIDE COMPACTION AND STABILITY TESTING DURING THE PROGRESS OF THE WORK.
* NO SOIL SHALL BE PLACED IN A PERMANENT LOCATION UNLESS IT HAS BEEN APPROVED BY THE GEOTECHNICAL ENGINEER FOR THE INTENDED USE AND LOCATION.
* PRIOR TO PLACEMENT OF ANY FILL, THE SUBGRADE OR PREVIOUS LIFT OF FILL SHALL BE SUCCESSFULLY TESTED OR OTHERWISE APPROVED, AND DETERMINED TO BE READY FOR SUBSEQUENT WORK.
* PRIOR TO PLACEMENT OF ANY AGGREGATE, PAVING, SLABS, STRUCTURES, FOOTINGS, PIPING, OR OTHER WORK, SUBGRADES AND OTHER BEARING SURFACES SHALL BE SUCCESSFULLY TESTED OR OTHERWISE APPROVED, AND DETERMINED TO BE READY FOR SUBSEQUENT WORK.
* CONTRACTOR SHALL ALLOW AND PARTICIPATE IN SOIL TESTING ACTIVITIES, INCLUDING ACTIVE COORDINATION WITH THE GEOTECHNICAL ENGINEER AND FURNISHING PROOFROLLING EQUIPMENT, MATERIALS, AND MANPOWER AS NEEDED.

CLEARING & GRUBBING

* ALL VEGETATIVE MATERIAL DISLOCATED BY CLEARING AND GRUBBING ACTIVITIES SHALL BE COMPLETELY REMOVED FROM THE PROJECT SITE AND LEGALLY DISPOSED. NO ONSITE BURNING OF CLEARING WASTE SHALL OCCUR.
* ALL PAVEMENT, CURB, PIPE, STRUCTURES AND OTHER PHYSICAL SITE FEATURES THAT ARE INDICATED OR REQUIRED TO BE REMOVED SHALL BE LEGALLY DISPOSED IN AN OFFSITE LOCATION.

STORM DRAINAGE SYSTEM

* STORM DRAINAGE STRUCTURES SHALL CONFORM TO ROLESVILLE AND NCDOT STANDARDS, AND MAY BE CONSTRUCTED OF EITHER SOLID MASONRY OR PRE-CAST CONCRETE. "KNOCK-OUT" TYPE PRE-CAST STRUCTURES SHALL NOT BE USED WHERE THE DESIGNED PIPE CONFIGURATION WOULD REQUIRE REMOVAL OF STRUCTURAL CORNERS OR ALTERATION OF DESIGNED PIPE ENTRY ANGLES.
* STORM DRAINAGE PIPE LENGTHS SHOWN ARE APPROXIMATE, AS MEASURED FROM THE CENTER OF DRAINAGE STRUCTURES, AND TO THE END OF ANY FLARED END SECTION (FES), AS APPLICABLE.
* CONTRACTOR SHALL VERIFY AND COORDINATE EXACT POSITIONING OF STORM DRAINAGE PIPING AND STRUCTURES, AND SHALL MAKE ADJUSTMENTS AS NEEDED TO PROVIDE PROPER CONNECTIONS, STRUCTURE LOCATIONS, ORIENTATIONS, DIMENSIONS, ELEVATIONS, FRAME PLACEMENT, AND SURFACE DRAINAGE. REFER TO STORM DRAINAGE STRUCTURE DETAILS FOR DIMENSIONS, OFFSETS, CLEARANCES, SETBACKS FROM CURB, AND OTHER REQUIREMENTS. MODIFY STRUCTURES AS NEEDED TO ACCOMMODATE LARGE-DIAMETER PIPING, MULTIPLE PIPE PENETRATIONS, AND PIPE CONNECTION ANGLES.
* STORM DRAINAGE PIPING SHALL BE REINFORCED CONCRETE PIPE (RCP), CLASS III, CONFORMING TO ASTM C76, UNLESS OTHERWISE SPECIFIED. ALL JOINTS SHALL BE FULLY SEALED USING PREFORMED FLEXIBLE BUTYL RUBBER SEALING COMPOUND.

SURFACE DRAINAGE

* ALL SPOT ELEVATIONS SHOWN ARE FINISHED SURFACE ELEVATIONS. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER ELEVATION CONTOURS. ALL ELEVATIONS SHOWN ON CURB AND GUTTER REFER TO TOP OF CURB, UNLESS OTHERWISE INDICATED.
* ALL FINISHED PAVEMENT AND YARD SURFACES SHALL BE FINE-GRADED AND FINISHED TO HAVE POSITIVE SURFACE DRAINAGE TO A FREE-FLOWING DRAINAGE OUTLET, WITH NO IRREGULARITIES OR DEPRESSIONS THAT WOULD CAUSE UNINTENDED WATER PONDING.
* USE REVERSE-PITCH CURB AND GUTTER WHERE ADJACENT PAVEMENT SLOPES AWAY FROM CURB, AND STANDARD-PITCH CURB AND GUTTER ELSEWHERE, UNLESS OTHERWISE NOTED. PROVIDE POSITIVE DRAINAGE ALONG AND FROM ALL GUTTERS.
* TIE-INS TO EXISTING PAVEMENT, CURBS, WALKS, ETC. SHALL BE MADE WITH NEAT EDGES AND SMOOTH, GRADUAL TRANSITIONS THAT ARE SAFE, FUNCTIONAL, DURABLE, AND VISUALLY ACCEPTABLE TO THE OWNER AND REVIEW AUTHORITIES.

Graphic Scale 1"=20'

20 0 10 20 40 80

NORTH

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

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5	10-23-2026	SIGNATURE SET	KPG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030913 KEITH P. GETTLE

10/23/26

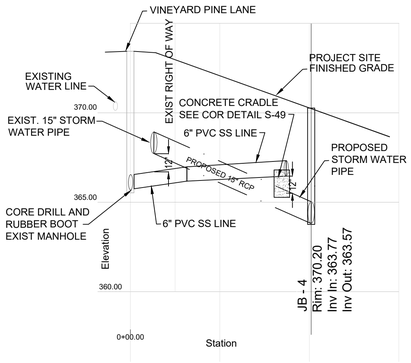
Grading and Stormwater Plan

Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

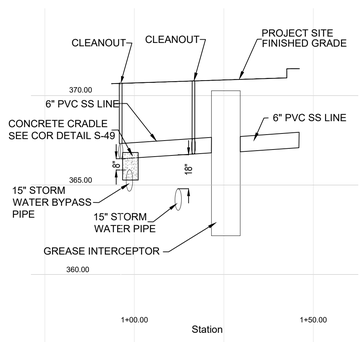
Project No.

Dwg No.

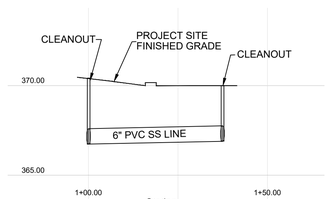
C3



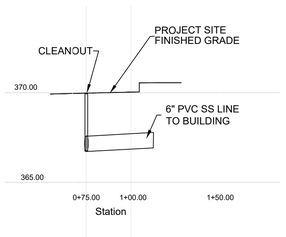
LINE "A" SS PROFILE



LINE "A" SS PROFILE



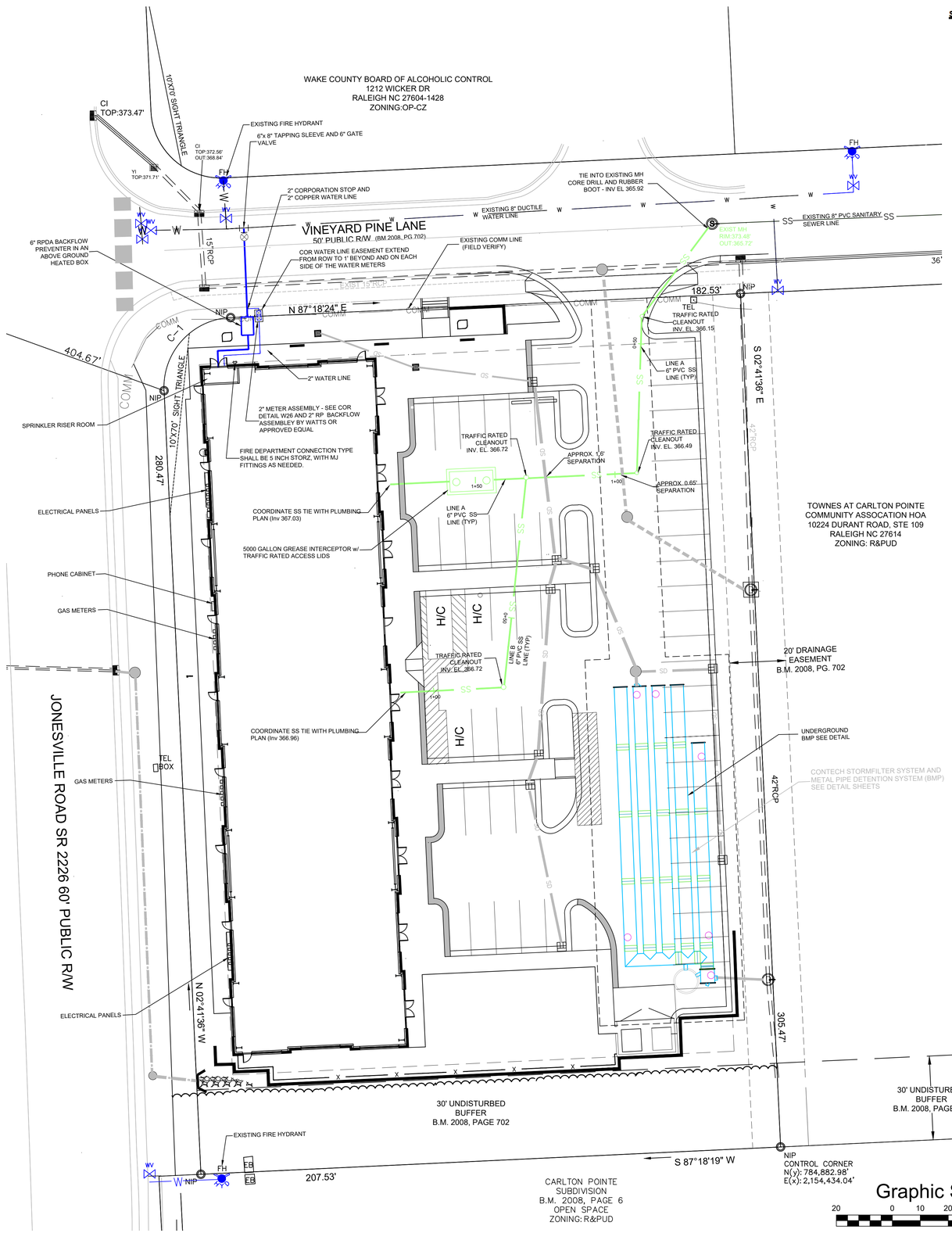
LINE "B" SS PROFILE



LINE "B" SS PROFILE

Profiles Graphic Scale 1" = 40' (H) 1" = 4' (V)

40' 0 20' 40' 80' 160'



STANDARD UTILITY NOTES:

1. All materials & construction methods shall be in accordance with City of Raleigh design standards, details & specifications (reference: CORPUD Handbook, current edition)
2. Utility separation requirements:
   a) A distance of 100' shall be maintained between sanitary sewer & any private or public water supply source such as an impounded reservoir used as a source of drinking water. If adequate lateral separation cannot be achieved, ferrous sanitary sewer pipe shall be specified & installed to waterline specifications. However, the minimum separation shall not be less than 25' from a private well or 50' from a public well.
   b) When installing water &/or sewer mains, the horizontal separation between utilities shall be 10'. If this separation cannot be maintained due to existing conditions, the variation allowed is the water main in a separate trench with the elevation of the water main at least 18" above the top of the sewer & must be approved by the Public Utilities Director. All distances are measured from outside diameter to outside diameter.
   c) Where it is impossible to obtain proper separation, or anytime a sanitary sewer passes over a watermain, DIP materials or steel encasement extended 10' on each side of crossing must be specified & installed to waterline specifications.
   d) 5.0' minimum horizontal separation is required between all sanitary sewer & storm sewer facilities, unless DIP material is specified for sanitary sewer
   e) Maintain 18" min. vertical separation at all watermain & RCP storm drain crossings; maintain 18" min. vertical separation at all sanitary sewer & RCP stormdrain crossings. Where adequate separations cannot be achieved, specify DIP materials & a concrete cradle having 6" min. clearance (per CORPUD details W- 41 & S-49).
   f) All other underground utilities shall cross water & sewer facilities with 18" min. vertical separation required.
3. Any necessary field revisions are subject to review & approval of an amended plan &/or profile by the City of Raleigh Public Utilities Department prior to construction.
4. Developer shall provide 30 days advance written notice to owner for any work required within an existing City of Raleigh Utility Easement traversing private property.
5. Contractor shall maintain continuous water & sewer service to existing residences & businesses throughout construction of project. Any necessary service interruptions shall be preceded by a 24-hour advance notice to the City of Raleigh Public Utilities Department.
6. SEWER BYPASS PUMPING – A bypass plan sealed by an NC Professional Engineer shall be provided to Raleigh Water prior to pumping operations for approval. The operations and equipment shall comply with the Public Utilities Handbook.
7. 3.0' minimum cover is required on all water mains & sewer force mains. 4.0' minimum cover is required on all reuse mains.
8. It is the developer's responsibility to abandon or remove existing water & sewer services not being used in redevelopment of a site unless otherwise directed by the City of Raleigh Public Utilities Department. This includes abandoning tap at main & removal of service from ROW or easement per CORPUD Handbook procedure.
9. Install water services with meters located at ROW or within a 2'x2' Waterline Easement immediately adjacent. NOTE: it is the applicant's responsibility to properly size the water service for each connection to provide adequate flow & pressure.
10. Inspections of 4" and larger water mains of the private distribution system will be inspected as part of the infrastructure permit.
11. Private sewer mains as part of a collection system are permitted and inspected under the private infrastructure permit for sewer.
12. Any water or sewer services on private property that will be installed under Construction Drawings may require a Plumbing Utility Permit in the City of Raleigh. Consult with the Engineering Inspection Coordinator during the pre-construction meeting on the necessary permits.
13. Install sewer services with cleanouts located at ROW or easement line & spaced per the current NC Plumbing code.
14. Pressure reducing valves are required on all water services exceeding 80 psi; backwater valves are required on all sanitary sewer services having building drains lower than 1.0' above the next upstreammanhole.
15. All environmental permits applicable to the project must be obtained from NCDWQ, USACE &/or FEMA for any riparian buffer, wetland &/or floodplain impacts (respectively) prior to construction.
16. NCDOT / Railroad Encroachment Agreements are required for any utility work (including main extensions & service taps) within state or railroad ROW prior to construction.
17. Grease Interceptor / Oil Water Separator sizing calculations & installation specifications shall be approved by the RW FOG Program Coordinator prior to issuance of a UC and/or Building Permit. Contact (919) 996-4516 or fog@raleighnc.gov for more information.
18. Cross-connection control protection devices are required based on the degree of health hazard involved as listed in Appendix B of the Rules Governing Public Water Systems in North Carolina.
19. The devices shall meet the American Society of Sanitary Engineering (ASSE) standards and be on the University of Southern California approval list.
20. The device and installation shall meet the guidelines of Appendix A – Guidelines and Requirements for the Cross Connection Program in Raleigh's Service Area.
21. The devices shall be installed and tested (both, initial and periodic testing thereafter) in accordance with the manufacturer's recommendations or the local cross connection control program, whichever is more stringent. Contact Cross.connection@raleighnc.gov for more information.
22. NOTICE for projects that involve an oversized main or urban main replacement. Any City reimbursement greater than $250,000.00 must undergo the public bidding process.
23. Private sub-metering - No resale of water shall occur without approval of the North Carolina Utility Commission. Sub-metering shall be in accordance with Section 1400 of the "SAFE DRINKING WATER ACT".

SEPARATION NOTES:

1. MINIMUM SEPARATION BETWEEN STORM DRAINAGE AND SANITARY SEWER IS 24 INCHES.

2. MINIMUM SEPARATION BETWEEN WATER AND STORM DRAINAGE IS 18 INCHES. MAINTAIN EIGHTEEN (18) INCHES MINIMUM VERTICAL SEPARATION AT ALL SANITARY SEWER AND RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DI PMATERIALS AND A CONCRETE CRADLE HAVING SIX (6) INCH MINIMUM CLEARANCE (PER RALEIGH WATER DETAIL S-49)."

3. MINIMUM SEPARATION BETWEEN WATER AND SANITARY SEWER IS 18 INCHES.

HYDRANT, METER, AND CLEAN-OUT NOTES:
ALL HYDRANTS, METERS, AND SEWER SERVICES ARE SHOWN AT APPROXIMATE LOCATIONS. HYDRANTS, AND METERS, ARE TO BE PLACED WITHIN THE RIGHT-OF-WAY AS INDICATED ON CITY OF RALEIGH DETAIL. SEWER SERVICE SHALL BE PLACED INSIDE LOT AS SHOWN ON CITY OF RALEIGH DETAIL. CONTRACTOR SHALL VERIFY AND CONFIRM PROPER LOCATION ACCORDING TO MUNICIPALITY REQUIREMENTS PRIOR TO INSTALLATION. CONTRACTOR SHALL VERIFY PROPER LOCATION WITH MUNICIPALITY INSPECTOR PRIOR TO INSTALLATION.

ATTENTION CONTRACTORS

The ***Construction Contractor*** responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for ***contacting*** the ***Public Works Department*** at ***(919) 996-2409***, and the ***Public Utilities Department*** at ***(919) 996-4540*** at least ***twenty four hours*** prior to beginning any of their construction.

Failure to notify both ***City Departments*** in advance of beginning construction, will result in the issuance of ***monetary fines***, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.

Failure to call for ***Inspection***, ***Install a Downstream Plug***, have ***Permitted Plans*** on the ***Jobsite***, or any other ***Violation*** of ***City of Raleigh Standards*** will result in a ***Fine and Possible Exclusion*** from future work in the ***City of Raleigh***.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State, and Federal Rules and Regulations.

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

City of Raleigh Review Officer

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

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5	10-09-2026	Rev per COR Comment	KPG
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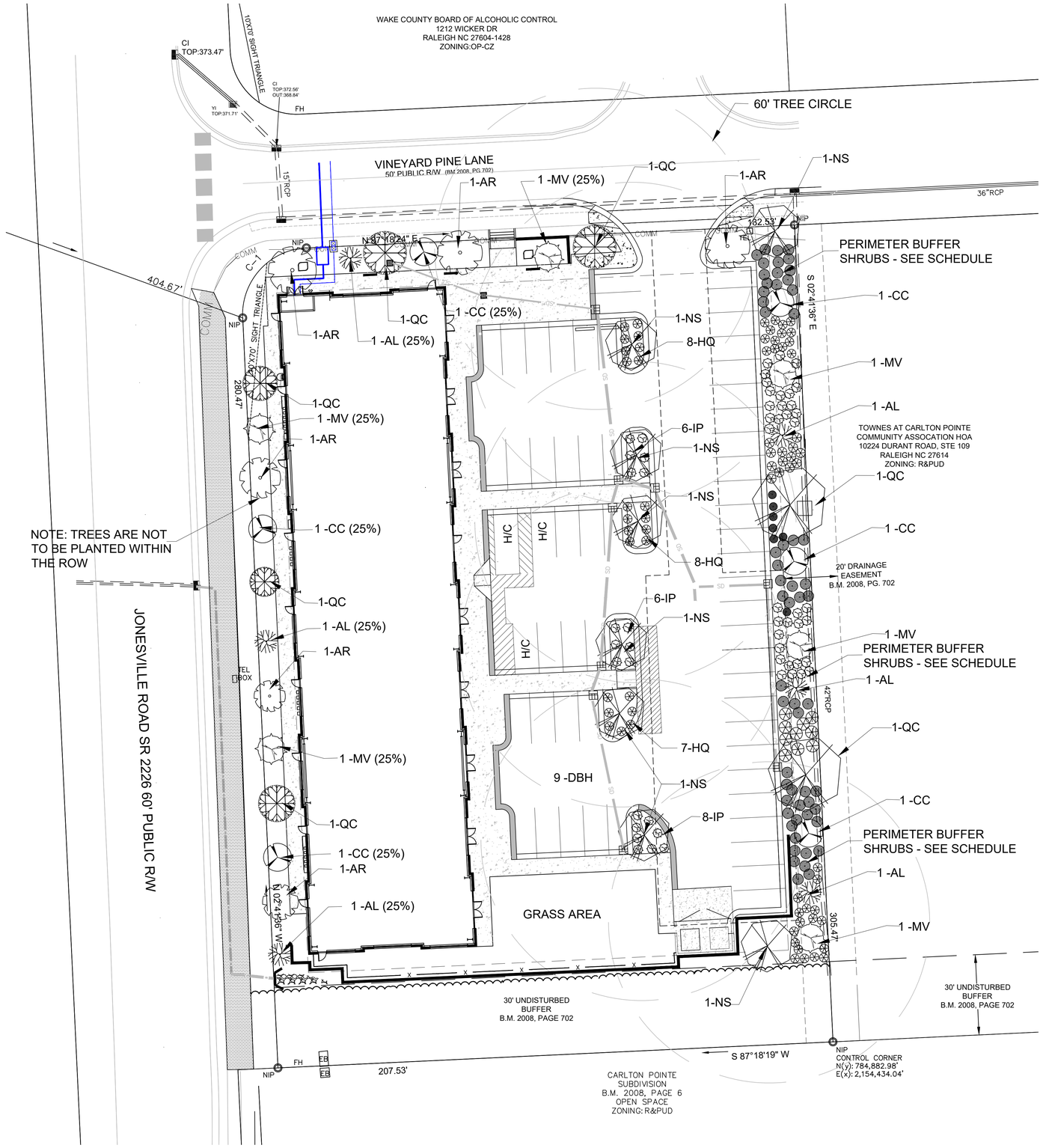
Utility Plan

Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.

C4



LANDSCAPE NOTES:

1. LS1 IS FOR PLANTING PURPOSES ONLY. FOR INFORMATION RELATING TO GRADING, REFER TO GRADING PLAN.

2. VERIFICATION OF TOTAL QUANTITIES AS SHOWN IN THE PLANT LIST SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.

3. ALL PLANTS AND PLANTING PROCEDURES SHALL CONFORM TO ACCEPTED STANDARDS ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN LATEST EDITION.

4. ALL SAUCERS SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING PLANTING.

5. ALL TREES AND SHRUBS SHALL BE FULL WELL BRANCHED PLANTS WHICH ARE CHARACTERISTIC OF THE SPECIES.

6. ALL PERMANENT GRASS IS TO BE BERMUDA.

7. ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.

8. REMOVE ALL STRING AND WIRE FROM BASE OF ALL PLANT MATERIAL.

9. MULCH ALL BEDS WITH 3" OF HARDWOOD MULCH, UNLESS OTHERWISE NOTED.

10. IF SHRUB PLANTING BEDS DO NOT HAVE A MIN. 6" TOPSOIL THEN AMENDED WITH 3" PINE PARK TILLED INTO THE SOIL TO A DEPTH OF 8".

11. ALL AREAS NOT COVERED WITH PAVING, GRAVEL, BUILDINGS OR PLANTING BEDS SHALL BE SEEDED AS SHOWN IN THE SEEDBED PREP. AND SEEDING SCHEDULE

12. LAWN AREAS SHALL BE RAKED TO REMOVE ROCKS, STICKS, ROOTS AND OTHER TRASH AND DEBRIS AND SHALL BE SMOOTH FOR EASE OF MOWING.

13. ALL PLANTINGS OF TREES AND SHRUBS SHALL BE A MINIMUM 4' FROM EDGE OF PARKING SPACES,

PLANT LIST - PARKING LOT

	KEY	BOTANICAL NAME	COMMON NAME	CALIPER / HT	QUAN.
CANOPY	NS	NYSSA SYLVATICA	TUPELO	3" / 12'	7
SHRUBS	IP	ILLICIUM PARVIFLORUM 'FOREST GREEN'	ANISE	3 GAL/24"	20
	HQ	HYDRANGEA QUERCIFOLIA 'ALICE'	OAKLEAF HYDRA.	3GAL/24"	23

PLANT LIST - TYPE 2 PERIMETER BUFFER

	KEY	BOTANICAL NAME	COMMON NAME	CALIPER / HT	QUAN.
REQUIRED					
CANOPY 305 /100 *1 = 3	QC	QUERCUS COCCINEA	SCARLET OAK	3" / 12'	2
	NS	NYSSA SYLVATICA	TUPELO	3" / 12'	1
UNDERSTORY 305 /100 *3 = 9	AL	AMELANCHIER LAEVIS	ALLEGHANY SERVICEBERRY	2" / 8'	3
	CC	CERCIS CANADENSIS	REDBUD	2" / 8'	3
	MV	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	2" / 8'	3
SHRUBS 305 /100 *50 = 153					
EVERGREEN	IV	ILEX VOMITORIA	YAUPON HOLLY	3GAL/24"	28
EVERGREEN	LP	LEUCOTHOE POPULIFOLIA	FLORIDA LEUCOTHOE	3GAL/24"	40
EVERGREEN	MC	MYRICA CERIFERA	WAX MYRTLE	3GAL/24"	28
DECIDUOUS SHRUBS	VA	VACCINIUM ASHEI 'PREMIER'	RABBETEYE	3GAL/24"	23
EVERGREEN	VP	VIBURNUM PRUNIFOLIUM	BLACKHAW	3GAL/24"	19
DECIDUOUS SHRUBS	HQ	HYDRANGEA QUERCIFOLIA 'ALICE'	OAKLEAF HYDRA.	3GAL/24"	15
NOTE: EVERGREEN SHRUBS ARE 75% OPACITY					

PLANT LIST STREETS - JONESVILLE AND VINEYARD PINE

REQUIRED	KEY	BOTANICAL NAME	COMMON NAME	CALIPER / HT	QUAN.
CANOPY 462 / 40 = 11.5	QC	QUERCUS COCCINEA	SCARLET OAK	3" / 12'	5
	AR	RED MAPLE	ACER RUBRUM 'SUN VALLEY'	3" / 12'	6
UNDERSTORY (25%)	AL	AMELANCHIER LAEVIS	ALLEGHANY SERVICEBERRY	2" / 8'	3
	CC	CERCIS CANADENSIS	REDBUD	2" / 8'	3
	MV	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	2" / 8'	3

Graphic Scale 1"=20'

30 0 15 30 60 120

NORTH

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NORTH CAROLINA PROFESSIONAL SEAL 030018 ENGINEER KEITH P. GETTLE

12/22/25

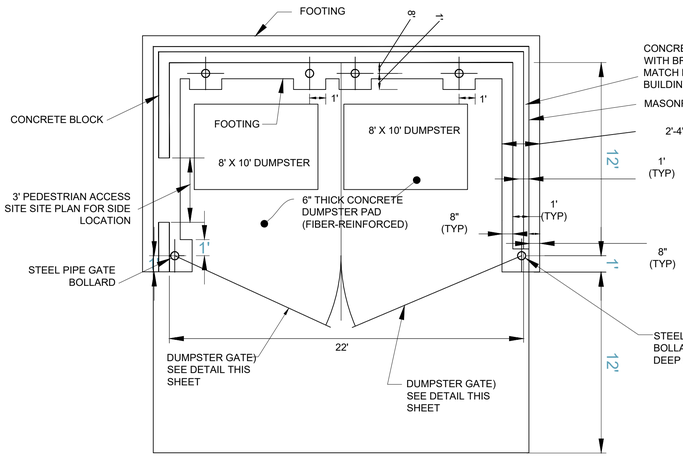
Landscape Plan

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4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

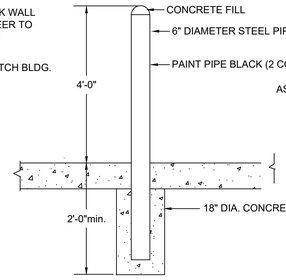
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C5

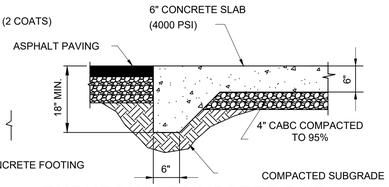


PLAN VIEW - DUMPSTER ENCLOSURE & PAD

NTS

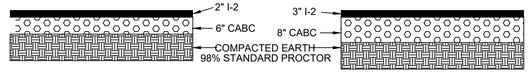


6" STEEL PIPE BOLLARD



TURNDOWN DUMPSTER PAD

NTS

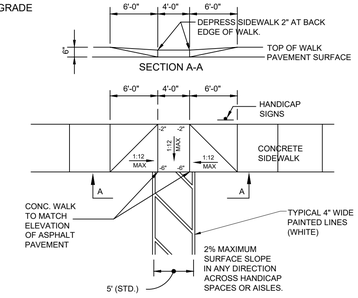


STANDARD PAVEMENT

HEAVY DUTY

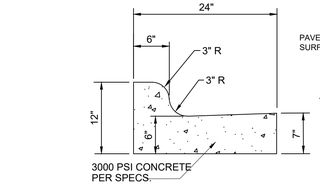
PAVEMENT

CONSTRUCTION PROCEDURES, MIX RATIOS, AGGREGATE SIZES, AND COMPACTED DENSITIES SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES 1995 EDITION.



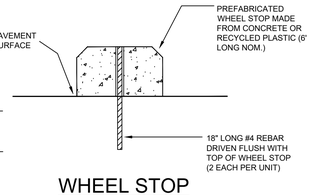
HANDICAP RAMP CURB CUT

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STANDARD 24" CURB & GUTTER SECTION

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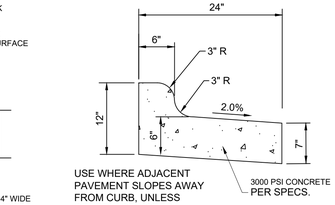


WHEEL STOP

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CURB AND GUTTER NOTES:

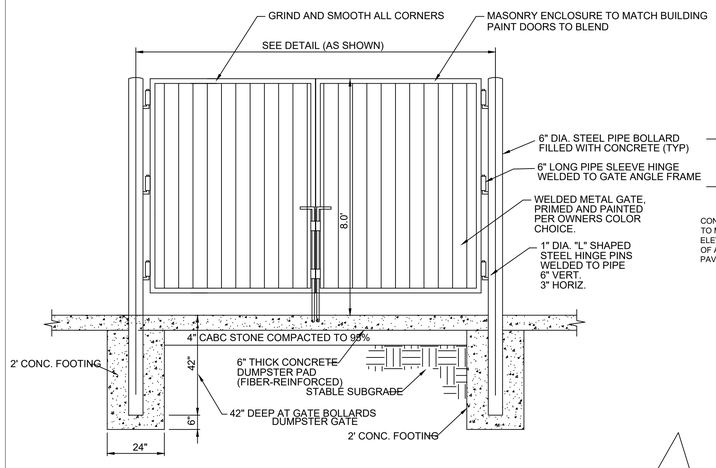
1. *10' MAXIMUM BETWEEN CONSTRUCTION JOINTS. 15' MAXIMUM BETWEEN CONSTRUCTION JOINTS ON MACHINE POURS.*
2. *1/2" EXPANSION JOINT EVERY 90'.*
3. *3000 PSI CONCRETE MINIMUM, 4" SLUMP MAXIMUM.*
4. *LIQUID MEMBRANE CURING COMPOUND SHALL MEET THE REQUIREMENTS OF SECTION 1026-2 OF NCDOT STANDARDS & SPECIFICATIONS FOR ROADS AND STRUCTURES.*
5. *ALL CONSTRUCTION JOINTS SHALL BE FILLED WITH JOINT FILLER AND SEALER IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DETAIL 846.01. THE JOINT MATERIAL SHALL CONFORM TO SECTION 1028-2 OF NCDOT'S STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.*
6. *ABC STONE REQUIRED UNDER ALL CURB & GUTTER.*

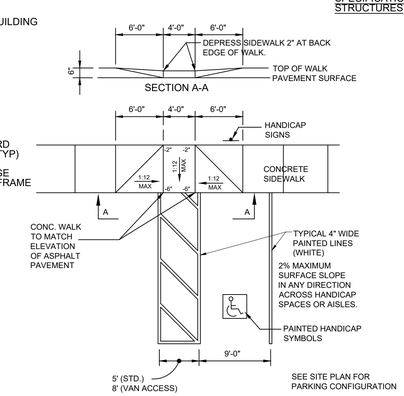


USE WHERE ADJACENT PAVEMENT SLOPES AWAY FROM CURB, UNLESS OTHERWISE NOTED.

24" REVERSE PITCH CURB & GUTTER SECTION

NTS



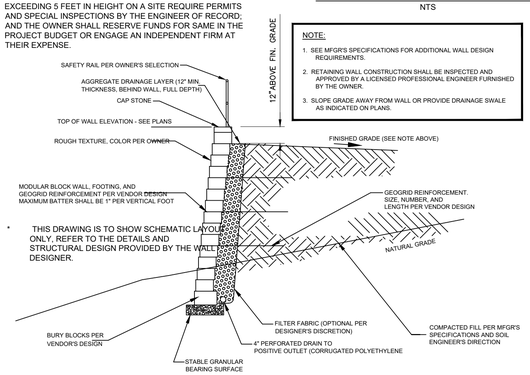


SEE SITE PLAN FOR PARKING CONFIGURATION

HANDICAP PARKING AND RAMP

NTS

RETAINING OR MECHANICALLY STABILIZED EARTH WALLS EXCEEDING 5 FEET IN HEIGHT ON A SITE REQUIRE PERMITS AND SPECIAL INSPECTIONS BY THE ENGINEER OF RECORD; AND THE OWNER SHALL RESERVE FUNDS FOR SAME IN THE PROJECT BUDGET OR ENGAGE AN INDEPENDENT FIRM AT THEIR EXPENSE.

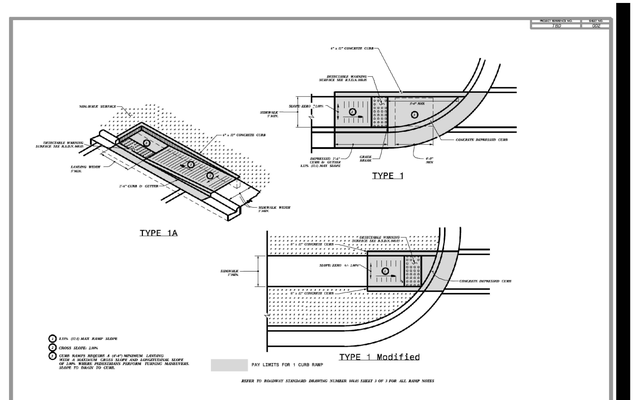


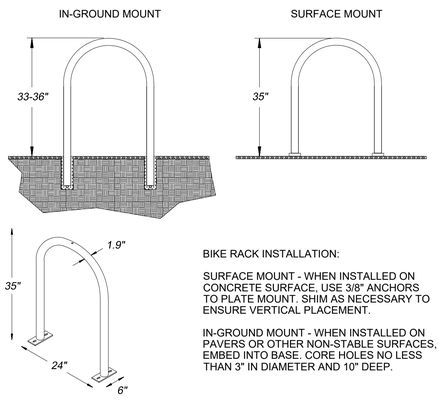
NOTE:
1. SEE MFGR'S SPECIFICATIONS FOR ADDITIONAL WALL DESIGN REQUIREMENTS.
2. RETAINING WALL CONSTRUCTION SHALL BE INSPECTED AND APPROVED BY A LICENSED PROFESSIONAL ENGINEER FURNISHED BY THE OWNER.
3. SLOPE GRADE AWAY FROM WALL OR PROVIDE DRAINAGE SWALE AS INDICATED ON PLANS.

* THIS DRAWING IS TO SHOW SCHEMATIC LAYOUT ONLY. REFER TO THE DETAILS AND STRUCTURAL DESIGN PROVIDED BY THE WALL DESIGNER.

MODULAR BLOCK RETAINING WALL - SCHEMATIC

NTS





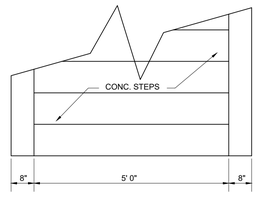
BIKE RACK INSTALLATION:

SURFACE MOUNT - WHEN INSTALLED ON CONCRETE SURFACE, USE 3/8" ANCHORS TO PLATE MOUNT. SHIM AS NECESSARY TO ENSURE VERTICAL PLACEMENT.

IN-GROUND MOUNT - WHEN INSTALLED ON PAVERS OR OTHER NON-STABLE SURFACES, EMBED INTO BASE. CORE HOLES NO LESS THAN 3" IN DIAMETER AND 10" DEEP.

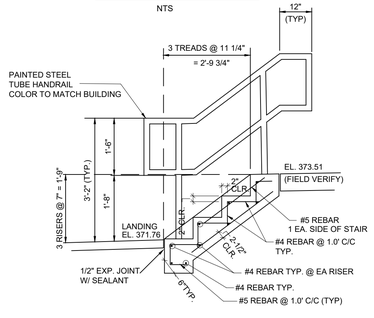
STANDARD BIKE RACK

NTS



TYPICAL - STAIR PLAN

NTS



TYPICAL SECTION - REINFORCEMENT

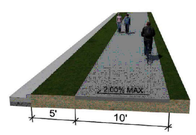
NTS

iii. Sidepaths

Sidepaths shall be constructed as defined by the Rolesville Community Transportation Plan and the Town of Rolesville Greenway Plan.

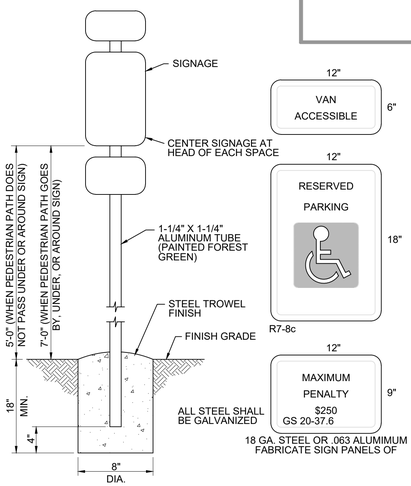
Sidepaths shall be located at a minimum of 5 feet off the back of curb to provide a utility strip.

Sidepaths shall consist of 2-inch asphalt and 6-inch aggregate base course (ABC). Geotextile stabilization fabric shall be placed under the compacted ABC for the entire length and width of the sidepaths. Concrete may be required instead of asphalt to accommodate site conditions as determined by the Town of Rolesville; when concrete is used, a minimum of 6-inch concrete shall be required. The minimum width for sidepaths shall be 10 feet and sidepaths shall be constructed with a uniform slope toward the street of no more than 2%.



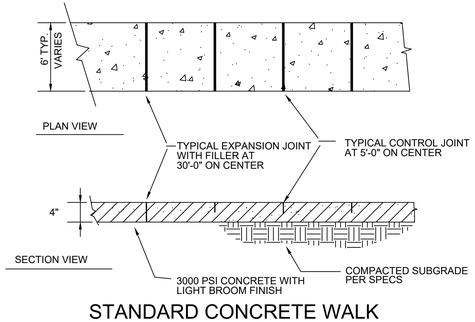
MULTI-USE PATH DETAIL

NTS



DETAIL HANDICAP SIGNAGE

NTS



STANDARD CONCRETE WALK

NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	KPG
2	5-22-2026	Town / Wake County Commnet	KPG
3	07-28-2026	WAKE COUNTY AND TOWN REVIEW	KPG
4	08-23-2026	Rev Per Town Of Rolesville Comments	KPG
5	10-22-2026	SIGNATURE SET	KPG

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036918 ENGINEER KEITH P. GETTLE

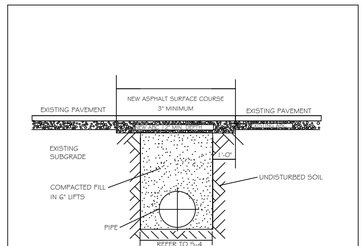
Site Details

Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.

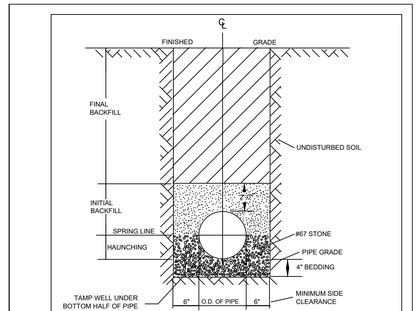
D1



NOTES:
1. IN NCDOT MAINTAINED ROADWAYS ENCROACHMENT PAVEMENT PATCH REQUIREMENTS SHALL TAKE PRECEDENCE.
2. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAWCUT MACHINE.
3. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
4. THE FINAL 1' OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-180 AS MODIFIED BY NCDOT.
5. THE ENTIRE THICKNESS AND VERTICAL EDGE OF CUT SHALL BE TACKED.
6. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK.
7. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.
8. REFER TO CITY OF RALEIGH STANDARDS FOR TRENCHES AND PIPE BEDDING (S-4 & S-5) FOR ADDITIONAL DETAILS.
9. NO HAND PATCHING ALLOWED.
10. PAVEMENT CUTS WITHIN NCDOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD ASPHALT PAVEMENT PATCH DETAIL

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-9	D.W.C.	11-1-99	A.B.B.	4-19-04
	RRH	3-30-00	J.P.S.	10-8-10

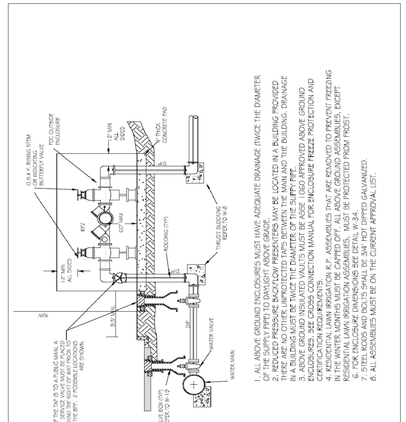


TYPICAL TRENCH BOTTOM DIMENSIONS
FOR SDR 35 PVC GRAVITY PIPE

NOTES:
1. FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS FOR PVC GRAVITY SEWER MAIN

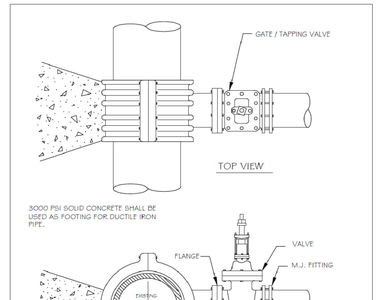
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-5	TO NOTES	3-1-87	D.W.C.	9-3-99
		7-2-82	RRH	3-30-00



1. ALL ABOVE GROUND ENCLOSURES MUST HAVE ADEQUATE DRAINAGE (TWICE THE DIAMETER OF THE BACKFLOW PREVENTER) AND MUST BE LOCATED IN A BUILDING PROVIDED
2. REDUCED PRESSURE BACKFLOW PREVENTERS MAY BE LOCATED IN A BUILDING PROVIDED IN THE AIR GAP OUTLET IS UNOBSTRUCTED AND DRAINS TO THE BUILDING DRAINAGE
3. ABOVE GROUND INSULATED VAULTS MUST BE ASSE 1060 APPROVED ABOVE GROUND
4. RESIDENTIAL LAWN IRRIGATION R.P. ASSEMBLIES THAT ARE REMOVED TO PREVENT FREEZING
5. FOR ENCLOSURE DIMENSIONS SEE DETAIL W-34.
6. ALL ASSEMBLIES MUST BE ON THE CURRENT APPROVAL LIST.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL REDUCED PRESSURE ZONE BACKFLOW PREVENTER ASSEMBLY

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-36	Y.C.A.	12-31-91	A.B.B.	7-10-04
	D.W.C.	11-8-99	D.H.L.	6/18/08

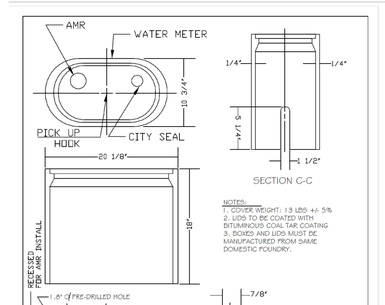


3000 PSI SOLID CONCRETE SHALL BE USED AS FOOTING FOR DUCTILE IRON PIPE.

NOTES:
1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
2. SEE STANDARD REACTION BLOCK TABLES, W-10 AND W-11 FOR AREA OF CONCRETE REQUIRED.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
4" - 24" STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-14	Y.C.A.	12-31-91	RRH	3-31-00
	D.W.C.	9-7-99	J.P.S.	11-1-10



NOTES:
1. COVER WEIGHT: 13 LBS +/- 5%
2. LIDS TO BE COATED WITH BITUMINOUS COAL TAR COATING
3. BOXES AND LIDS MUST BE MANUFACTURED FROM SAME DOMESTIC FOUNDRY.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
WATER METER BOX DETAIL

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-25			ABB	1-20-05
	R.K.V.	8-20-13	J.P.S.	11-4-10

NOTES:
1) ALL MANHOLE FRAMES SHALL BE DOMESTICALLY CAST.
2) FRAME SHALL BE A MINIMUM WEIGHT OF 152 LBS. WITHIN PUBLIC ROW AND 160 LBS. WITHIN EASEMENTS.
3) COVER SHALL WEIGH A MIN. OF 120 LBS.
4) ALL MANHOLE FRAMES OUTSIDE OF PAVED SURFACES SHALL BE BOLTED TO THE CONE SECTION OR RING WITH A MINIMUM OF 4 BOLTS PER FRAME.

5/8"X3" LAGSHIELD IN HOLE DRILLED INTO CONE OR RING WITH ANCHOR SUNK TO DESIGN DEPTH, AND 3/8"X3" HOT DIPPED GALVANIZED LAG BOLT AND WASHER.

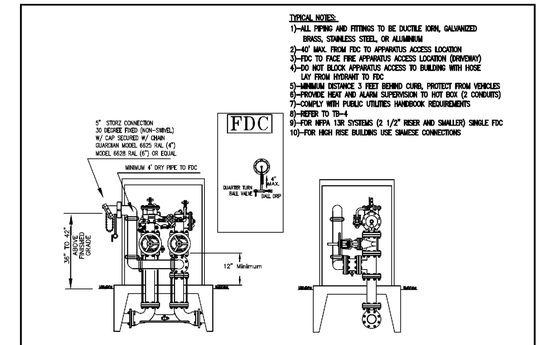
CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD MANHOLE COVER

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-25	3-1-87	A.B.B.	2-9-05	
	RRH	3-30-00	D.H.L.	6-18-08

NOTES:
1. INSTALLATIONS OF GREATER THAN 4' IN DEPTH MAY REQUIRE MANHOLE.
2. VALVES MUST BE INSTALLED IN A LOCATION AT WHICH THEY CAN BE CLEANED AND SERVICED REGULARLY.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL SANITARY SEWER SERVICE BACK-WATER VALVE INSTALLATION

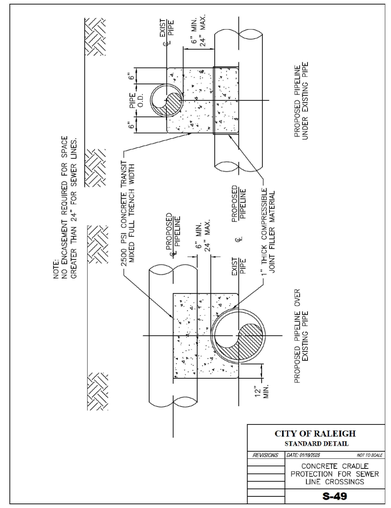
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-35	RRH	3-31-00		



TYPICAL NOTES:
1)-ALL PIPING AND FITTINGS TO BE DUCTILE IRON, GALVANIZED BRASS, STAINLESS STEEL, OR ALUMINUM
2)-40' MAX. FROM FDC TO APPARATUS ACCESS LOCATION
3)-FDC TO FACE FIRE APPARATUS ACCESS LOCATION (DRIVEWAY)
4)-DO NOT BLOCK APPARATUS ACCESS TO BUILDING WITH HOSE LAY FROM HYDRANT TO FDC
5)-MINIMUM DISTANCE 3 FEET BEHIND CURB, PROTECT FROM VEHICLES
6)-PROVIDE HEAT AND ALARM SUPERVISION TO HOT BOX (2 CONDUITS)
7)-COMPLY WITH PUBLIC UTILITIES HANDBOOK REQUIREMENTS
8)-REFER TO 7B-1
9)-FOR NFPA 13R SYSTEMS (2 1/2" RISER AND SMALLER) SINGLE FDC
10)-FOR HIGH RISE BUILDINGS USE SIAMESE CONNECTIONS

CITY OF RALEIGH FIRE DEPARTMENT
FIRE PROTECTION DIVISION
310 WEST MARTIN ST. RALEIGH, NC 27602

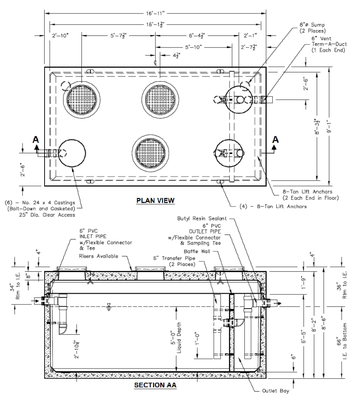
DESCRIPTION:	REVISIONS:	DATE:	DRAWING NO.
HOTBOX FDC DETAIL REQUIREMENTS	5-1-2017	4-1-06	FP-16



NOTE:
NO ENCASEMENT REQUIRED FOR SPACE GREATER THAN 24" FOR SEWER LINES.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/08/2008	NOT TO SCALE
	CONCRETE CRADLE PROTECTION FOR SEWER LINE CROSSINGS	
	S-49	



Gravity Grease Interceptor
- Precast concrete tank with IAPMO/ANSI Z1001, Manufactured per ASTM C1613
- Loading per ASTM C850 for AASHTO HS20-44 vehicle loading and maximum soil cover of 5'-0"
- Maximum allowable DFUs (Drainage Fixture Units) = 576 (equivalent to 5,000 gallon size)
- Corrosion resistant plastic liner available to extend the life of the tank.

Manufacturer's recommendations:
- Tank to anchor pad to be set level.
- Tank vent must penetrate atmosphere.
- Prior to "Start Up" of System, fill with clean water through inlet bay to bottom of transfer pipe (approx. one foot deep).
- Follow Regular Inspection, Cleaning, & Maintenance Schedule (See Clean Out & Maintenance Instructions).

Oldcastle Precast®
PO Box 323, Wilsonville, Oregon 97070-0323
Tel: (503) 682-2444 Fax: (503) 682-2857

816-GGI-5000
File Name: 020-816GGI-5000
Issue Date: 2016
oldcastleprecast.com/wilsonville

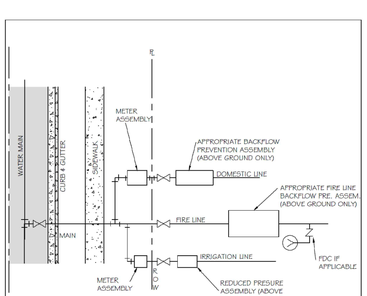
816-GGI-5000
GRAVITY GREASE INTERCEPTOR 5000 GALLON

LOCALLY AVAILABLE SIZES	
INTERCEPTORS CAPACITY (GAL.)	SEPARATORS CAPACITY (GAL.)
300	1000
550	1200
750	1600
1000	
1200	
1500	
2000	
2500	
3000	
4000	
5000	
6000	
8000	

NOTES:
1. BAFFLE WALL LOCATED AT A DISTANCE FROM INLET WALL ⅔ TO ¾ OF THE TOTAL LENGTH OF THE INTERCEPTOR OR SEPARATOR AS SHOWN ON DETAIL S-40.
2. BAFFLE WALLS LOCATED AT A DISTANCE APPROXIMATELY OF ⅓ OF THE TOTAL LENGTH OF THE SEPARATOR AS SHOWN ON DETAIL S-40.01.
3. EACH INTERCEPTOR OR SEPARATOR SHALL HAVE INLET AND OUTLET TEES. THE OUTLET TEE SHALL EXTEND 50% INTO THE LIQUID DEPTH. THE INLET TEE SHALL EXTEND 25% INTO THE LIQUID DEPTH. INLET AND OUTLET TEES MUST BE OPEN TO ALLOW THE COLLECTION OF F.O.G. SAMPLE.
4. ACCESS OPENINGS OVER EACH COMPARTMENT WITHIN THE INTERCEPTOR OR SEPARATOR SHALL BE 24 INCHES IN DIAMETER AND CONTAIN PICK HOLES. ALL COVERS SHALL BE CONSTRUCTED OF CAST IRON OR EQUIVALENT TRAFFIC BEARING MATERIAL. MANHOLE COVERS MUST EXTEND TO FINISH GRADE AND BE INSTALLED TO EXCLUDE THE ENTRANCE OF STORMWATER INTO THE INTERCEPTOR OR SEPARATOR.
5. FULL SIZE DUAL SWEEP CLEANOUTS SHALL BE INSTALLED ON THE INLET AND OUTLET SIDES OF THE INTERCEPTOR OR SEPARATOR.
6. INTERCEPTORS AND SEPARATORS MUST BE VENTED IN ACCORDANCE WITH THE NC STATE PLUMBING CODE.
7. CONCRETE: 4000 PSI @ 28 DAYS.
8. DESIGN: ACI 318 BUILDING CODE
   ASTM C913-02 FOR PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES
   ASTM C890-06 FOR MINIMAL STRUCTURAL DESIGN LOADING
9. INTERCEPTORS AND SEPARATORS SHALL BE DESIGNED TO WITHSTAND AN H-20 WHEEL LOAD.
10. INTERCEPTORS OR SEPARATORS MADE OF POLYETHYLENE OR FIBERGLASS SHALL INCLUDE A MINIMUM 12,000 PSI TENSILE STRENGTH, 19,000 PSI FLEXURAL STRENGTH, AND 800,000 PSI FLEXURAL MODULUS.
11. ALL INTERCEPTORS AND SEPARATORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
DIMENSIONS: GREASE INTERCEPTORS OIL-WATER-SAND SEPARATORS

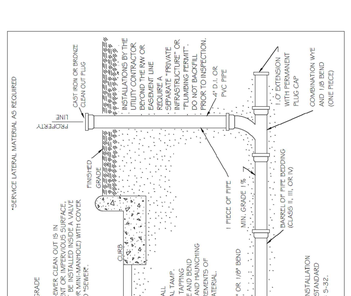
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-41	RRH	3/1900		
	ADD	03/1904	D.H.L.	6/18/08



1. SERVICE TAPS FOR 2" AND SMALLER DOMESTIC SERVICES MAY BE BY CORPORATION COCKS. LARGER SERVICES WILL REQUIRE A TEE AND GATE VALVE OR TAPPING SLEEVE AND VALVE ASSEMBLY AND BOP. BEND.
2. DOMESTIC SERVICE TAPS SHALL BE ALLOWED ONLY ON 6" OR LARGER FIRE LINES BEFORE THE BACKFLOW ASSEMBLY.
3. ONE DOMESTIC TAP PER FIRE LINE ON STREET SIDE OF BACKFLOW. 4. FIRE LINE SHALL HAVE A FIRE HYDRANT OR BLOW OFF ASSEMBLY AT ITS END TO FACILITATE FLUSHING WHEN NEEDED.
5. IRRIGATION METER SHALL BE LOCATED ON THE SIDE OF DOMESTIC METER WITH INCREASING ADDRESSES.
6. THE BACKFLOW SHALL BE INSTALLED NO MORE THAN 10' FROM THE METER IN A VISIBLE LOCATION.
7. DOMESTIC/IRRIGATION BACKFLOW RISER/STANDPIPE SHALL BE OF COPPER OR BRASS.
8. THE RP RELIEF VALVE SHALL BE A MINIMUM OF 12" ABOVE ANY MATERIAL (MULCH INCLUDED) OR GRADE.
9. A SERVICE VALVE IS REQUIRED AFTER THE METER BUT BEFORE THE BACKFLOW ASSEMBLY FOR MAINTENANCE AND REPLACEMENT PURPOSES.
10. THE INSTALLATION MUST ALSO MEET ALL CODE REQUIREMENTS PER THE NC PLUMBING CODE.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
FIRE, DOMESTIC & IRRIGATION OPTIONS SCHEMATIC

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-34	D.W.C.	11-18-99	A.B.B.	7-10-04
	RRH	3-31-00	D.H.L.	6/18/08



NOTE:
THE FULL LENGTH OF THE SERVICE DITCH SHALL BE COMPACTED IN 6" LIFTS WITH MECHANICAL TAMP EQUIPMENT SUCH AS A VIBRATORY COMPACTION MACHINE. FOR PVC INSTALLATIONS, SAND AND SEND SHALL BE PLACED TO A MINIMUM OF 6" ABOVE CROWN OF PIPE BARREL. MUST COMPLY WITH REQUIREMENTS OF DETAILS S-4 OR S-5 ACCORDING TO PIPE MATERIAL.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL SANITARY SEWER LATERAL CONNECTION

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-30	Y.C.A.	6-90	A.B.B.	4-19-04
	RRH	3-30-00	D.H.L.	6-18-08

SITE PERMITTING APPROVAL

Water and Sewer Permits (If applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit # S-5195**

The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** _____

The City of Raleigh consents to the connection to its public sewer system and extension of the private sewer collection system as shown on this plan. The material and constructions methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit # _____

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State, and Federal Rules and Regulations.

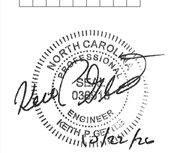
Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

City of Raleigh Review Officer

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	KPG
2	5-22-2026	Town / Wake County Commnet	KPG
3	07-28-2026	WAKE COUNTY AND TOWN REVIEW	KPG
4	09-23-2026	Rev Per Town Of Rolesville Comments	KPG
5	10-08-2026	Rev per COR Comment	KPG
6	10-22-2026	SIGNATURE SET	KPG



Water and Sewer Details
Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.

D2

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

CONSTRUCT WITH PIPE CROWNS MATCHING.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 1 OF 2
840.02

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

CONSTRUCT WITH PIPE CROWNS MATCHING.

SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

INSTALL STONE DRAIN, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)								
DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FT. HT.	CRITICAL CONCRETE FOR MINIMUM HEIGHT	C.M.	R.C.
D	A	B	H					
12"	3'-0"	2'-0"	2'-0"	0.222	0.222	0.592	0.015	0.026
15"	/	/	2'-3"	/	/	0.648	0.023	0.036
18"	/	/	2'-6"	/	/	0.703	0.033	0.049
24"	/	/	3'-0"	/	/	0.814	0.059	0.085
30"	3'-0"	2'-0"	3'-6"	0.222	0.222	0.925	0.092	0.127

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

SHEET 1 OF 1
840.14

GENERAL NOTES

1- REFER TO RSD. 1101.11, SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.

2- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.

3- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE BEGINNING OF THE APPROACH SHIFT TAPER (REFER TO RSD. 1101.11, SHEET 2).

4- TMAS ARE REQUIRED WHEN ADEQUATE BUFFER SPACE CANNOT BE ATTAINED. POSITION TMAS TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY RSD 1163.01.

5- DRUMS OR SKINNY DRUMS MAY BE USED IN LIEU OF CONES. REFER TO RSD. 1180.01 FOR SKINNY DRUM REQUIREMENTS.

6- DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

7- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH PORTABLE TRAFFIC SIGNALS (W30-7S) WHERE THE SIGNALS CAN BE SET TO FLASH RED IN ALL DIRECTIONS AT THE LANE CLOSURE INTERSECTIONS. PLACE SIGNALS IN THE FLASH MODE AND USE LAW ENFORCEMENT.

8- THIS DETAIL IS APPLICABLE FOR OPERATIONS IN PLACE FOR 72 HOURS OR LESS. FOR LONGER DURATION OPERATIONS, SIGNING AND PAVEMENT MARKINGS MAY NEED TO BE ALTERED.

LEGEND
- FLAGGER
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY WITH 2-WAY TURN LANE
1 THRU LANE CLOSED

SHEET 2 OF 19
1101.02

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *																		
DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V		BARS-H		TOTAL LBS.	CU.YDS. CONC. IN BOX		DEDUCTIONS ONE PIPE	
PIPE D	SPAN A	WIDTH B	WIDTH C	SPAN G	WIN. HEIGHT B	E	F	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH		TOP SLAB	BOTTOM SLAB	C.M.	R.C.
12"	3'-0"	2'-2"	--	--	2'-9"	--	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"			3'-0"										0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"			3'-3"										0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"			3'-9"										0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"		4'-3"	1'-2"	4'-0"	4	1'-6"	2	3'-9"	3	3'-9"	39	0.123	0.321	0.092	0.127
36"	3'-0"	2'-2"	3'-10"		4'-9"	1'-8"	4'-0"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.161	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"		4'-5"	5'-3"	1'-5"	3'-2"	4	1'-8"	4	2'-11"	3	3'-9"	52	0.115	0.318	1.758	0.180	0.243
48"	3'-0"	2'-2"		5'-0"	5'-9"	2'-0"	3'-2"	4	2'-3"	3	2'-11"	3	3'-11"	55	0.145	0.359	2.052	0.235	0.317
54"	3'-0"	2'-2"		5'-7"	6'-3"	2'-7"	3'-2"	4	2'-10"	3	2'-11"	3	3'-11"	61	0.180	0.398	2.287	0.297	0.401

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
PRECAST CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 2 OF 2
840.02

GENERAL NOTES:

CHAMFER ALL EXPOSED CORNERS 1".

USE CLASS "B" CONCRETE THROUGHOUT.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS TO CONSTRUCT THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.

ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.)

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES														
DIMENSIONS OF BOX AND PIPE				REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS		CUBIC YARDS IN BOX			TOTAL QUANTITIES BOX AND SLABS		DEDUCTIONS FOR ONE PIPE CU.YDS.	
PIPE D	SPAN A	WIDTH B	HEIGHT H	NO.	LENGTH	E	F	TOP SLAB	BOTTOM SLAB	WALL/ FT. OF HT.	LBS. REINF	CU. YDS. MIN. "H"	C.S.	R.C.
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0"	3'-0"	0.167	0.167	0.185	22	0.750	0.015	0.024
15"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.196	0.196	0.204	24	0.902	0.023	0.036
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.222	30	1.065	0.033	0.049
24"	3'-0"	3'-0"	3'-3"	16	3'-9"	4'-0"	4'-0"	0.296	0.296	0.259	40	1.434	0.059	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.375	0.375	0.296	51	1.860	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.463	0.463	0.333	64	2.341	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.370	77	2.878	0.180	0.243
48"	5'-4"	5'-4"	5'-3"	26	6'-3"	6'-4"	6'-4"	0.743	0.743	0.407	111	3.623	0.235	0.317
54"	5'-10"	5'-10"	5'-9"	28	6'-7"	6'-10"	6'-10"	0.865	0.865	0.444	126	4.283	0.297	0.401
60"	6'-6"	6'-6"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	0.481	145	5.090	0.367	0.495
66"	7'-1"	7'-1"	6'-9"	32	7'-10"	8'-1"	8'-1"	1.210	1.210	0.518	169	5.917	0.444	0.589

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

SHEET 1 OF 1
840.31

GENERAL NOTES

1- ACHIEVE BALLASTING BY USING SPECIAL WEIGHTED BASES SUCH AS SAND BAG RINGS, DOUBLING CONES, OR BASES THAT CAN BE FILLED WITH BALLAST. SEVENTY PERCENT OF THE WEIGHT OF THE CONE MUST BE IN THE BASE. USE BALLAST'S THAT DO NOT PRESENT A HAZARD WHEN STRUCK.

2- ALL CONES MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCTS LIST.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
CONES

SHEET 1 OF 1
1135.01

NOTES:

* THIS PRECAST ENDWALL MAY BE USED FOR THE FOLLOWING STANDARDS: 838.01, 838.11, 838.21, 838.27, 838.33, 838.39, 838.51, 838.57, 838.63 AND 838.69.
* INSTALL PRECAST ENDWALLS WITH WINGS AND PAY FOR IN ACCORDANCE WITH SPECIFICATION SECTION 838.
* USE 4000 PSI CONCRETE.
* PROVIDE ALL REINFORCING STEEL WHICH MEETS ASTM A615 FOR GRADE 60 AND WELDED WIRE FABRIC CONFORMING TO ASTM A185 WITH 2" MIN. CLEARANCE.
* PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704.
* PIPE TO BE GROUTED INTO HEADWALL AT JOB SITE BY CONTRACTOR
* ALL ELEMENTS PRECAST TO MEET ASTM C913.
* WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR AS LONG AS THE SAME AREA OF STEEL IS PROVIDED.
* CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

NOTE: THE MINIMUM BAR SIZE SHALL BE #5 BARS AT 8" CTS.THE CONTRACTOR WILL HAVE THE OPTION TO INCREASE THIS BAR SIZE AS NEEDED.

ENDWALL DIMENSIONS						
FT.	MINIMUM	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.
PIPE DIA.	BAR SIZE	H1(FT.)	H2(FT.)	D (FT.)	W1	W2
1.0	#5 @ 8"	1.25/2.00	2.00/3.75	1.25/1.75	3.00/3.75	5.50/6.00
1.25	#5 @ 8"	1.25/2.00	3.00/3.75	1.25/2.00	3.50/3.75	6.50/6.75
1.50	#5 @ 8"	1.25/2.00	3.00/4.25	1.50/2.50	3.50/3.75	6.50/6.75
2.0	#5 @ 8"	1.50/2.50	4.00/4.75	1.75/2.50	4.00/4.25	7.50/8.25
2.5	#5 @ 8"	2.50/3.50	4.00/6.00	2.00/3.00	4.50/5.50	10.00/11.50
3.0	#5 @ 8"	3.00/3.50	5.00/6.00	2.75/3.50	5.25/5.75	11.50/11.75
3.5	#5 @ 8"	3.25/4.50	6.00/6.75	3.25/3.50	6.00/6.75	12.00/13.25
4.0	#5 @ 8"	3.50/4.50	6.50/7.00	3.25/3.50	6.50/6.75	13.00/13.25
4.5	#5 @ 8"	4.00/5.00	6.50/8.50	3.25/4.00	7.00/9.25	13.50/15.75
5.0	#5 @ 8"	4.50/5.00	7.00/8.50	3.25/4.00	7.25/9.25	13.75/15.75
5.5	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.25/9.25	14.00/15.75
6.0	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.75/9.25	14.75/16.75

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
PRECAST CONCRETE ENDWALL
FOR SINGLE 12" THRU 72" PIPE - 90° SKEW

SHEET 1 OF 1
838.80

SUMP DETAIL
NTS

GENERAL NOTES

1- USE HAND SIGNALING DEVICES SUCH AS STOP-SLOW PADDLES, FLASHLIGHTS TO CONTROL TRAFFIC. USE STOP-SLOW PADDLES AS THE PRIMARY DEVICE.

2- FABRICATE STOP-SLOW PADDLES FROM SHEET METAL OR OTHER LIGHT SEMI RIGID MATERIAL. PROVIDE A RIGID HANDLE OF SUFFICIENT LENGTH SO THE PADDLE IS HELD AT 6-7' ABOVE GROUND LEVEL.

3- PROVIDE STOPPING SIGHT DISTANCE TO EACH FLAGGER STATION. REFER TO RSD. 1101.11, SHEET 2.

4- ILLUMINATE FLAGGER STATIONS DURING NIGHT OPERATIONS.

5- FOLLOW FLAGGER QUALIFICATIONS AND METHODS OF HAND-SIGNALING PROCEDURES IN ACCORDANCE WITH PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

6- ALL FLAGGERS MUST BE CERTIFIED BY AN NCDOT APPROVED TRAINING RESOURCE.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
FLAGGERS

SHEET 1 OF 1
1150.01

NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2020	Initial Submittal	KPG
2	9-22-2020	Town / Wake County Comment	KPG
3	07-28-2020	WAKE COUNTY AND TOWN REVIEW	KPG
4	09-23-2020	Rev Per Town Of Rolesville Comments	KPG
5	10-22-2020	SIGNATURE SET	

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036773 KEITH P. GETTLE
10/22/20

Storm Drain & NCDOT Traffic
Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.

D3

PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 489 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = 7634 CF
- PIPE STORAGE VOLUME = 7,777 CF
- BACKFILL STORAGE VOLUME = 0 CF
- TOTAL STORAGE PROVIDED = 7,777 CF

PIPE DETAILS
- DIAMETER = 54"
- CORRUGATION = 5x1
- GAGE = 14
- COATING = ALT2
- WALL TYPE = SOLID
- BARREL SPACING = 27"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 0"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 0"

Pre and Post Summary Table

	Pre	Post
Q1	1.35	0.07
Q10	4.74	3.87

BACKFILL REQUIREMENTS FOLLOW THE GUIDELINES OF AASHTO LRFD BRIDGE DESIGN (SEC 12) AND CONSTRUCTION (SEC 26)

1 MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE.
THE MINIMUM TRENCH WIDTH (12.6.6.1):
PIPE ≤ 12": D + 16"
PIPE > 12": 1.5D + 12"

1a MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE (12.6.6.2):
PIPE < 24": 3.0D
PIPE 24" - 144": D + 4'0"
PIPE > 144": D + 10'0"

2 THE FOUNDATION UNDER THE PIPE AND SIDE BACKFILL SHALL BE ADEQUATE TO SUPPORT THE LOADS ACTING UPON IT (26.5.2).

3 BEDDING MATERIAL SHALL BE A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE FROM SPRINGLINE OF PIPE TO 4"-6" BELOW BOTTOM OF PIPE.

4 CORRUGATED STEEL PIPE (CSP / HEL-COR).

5 HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION (26.5.4).

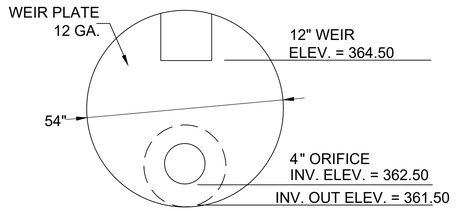
5a GEOTEXTILE SHALL BE USED IF REQUIRED BY ENGINEER TO PREVENT SOIL MIGRATION INTO VARYING SOIL TYPES.

5b BACKFILL PLACED ABOVE SPRINGLINE TO MEET AASHTO 145, A-1, A-2 OR A-3 CLASSIFICATION, OR APPROVED EQUAL, COMPACTED TO 90% STANDARD PROCTOR (T 99). MAXIMUM PARTICLE SIZE NOT TO EXCEED 3" (12.4.1.2). ALL LIFTS PLACED IN A CONTROLLED MANNER. IT IS RECOMMENDED THAT LIFTS NOT EXCEED AN 8" UNCOMPACTED LIFT HEIGHT TO PREVENT UNEVEN LOADING, AND THE LESSER OF 1/3 THE DIAMETER OR 24" AS THE MAXIMUM DIFFERENTIAL SIDE-TO-SIDE (26.5.4).

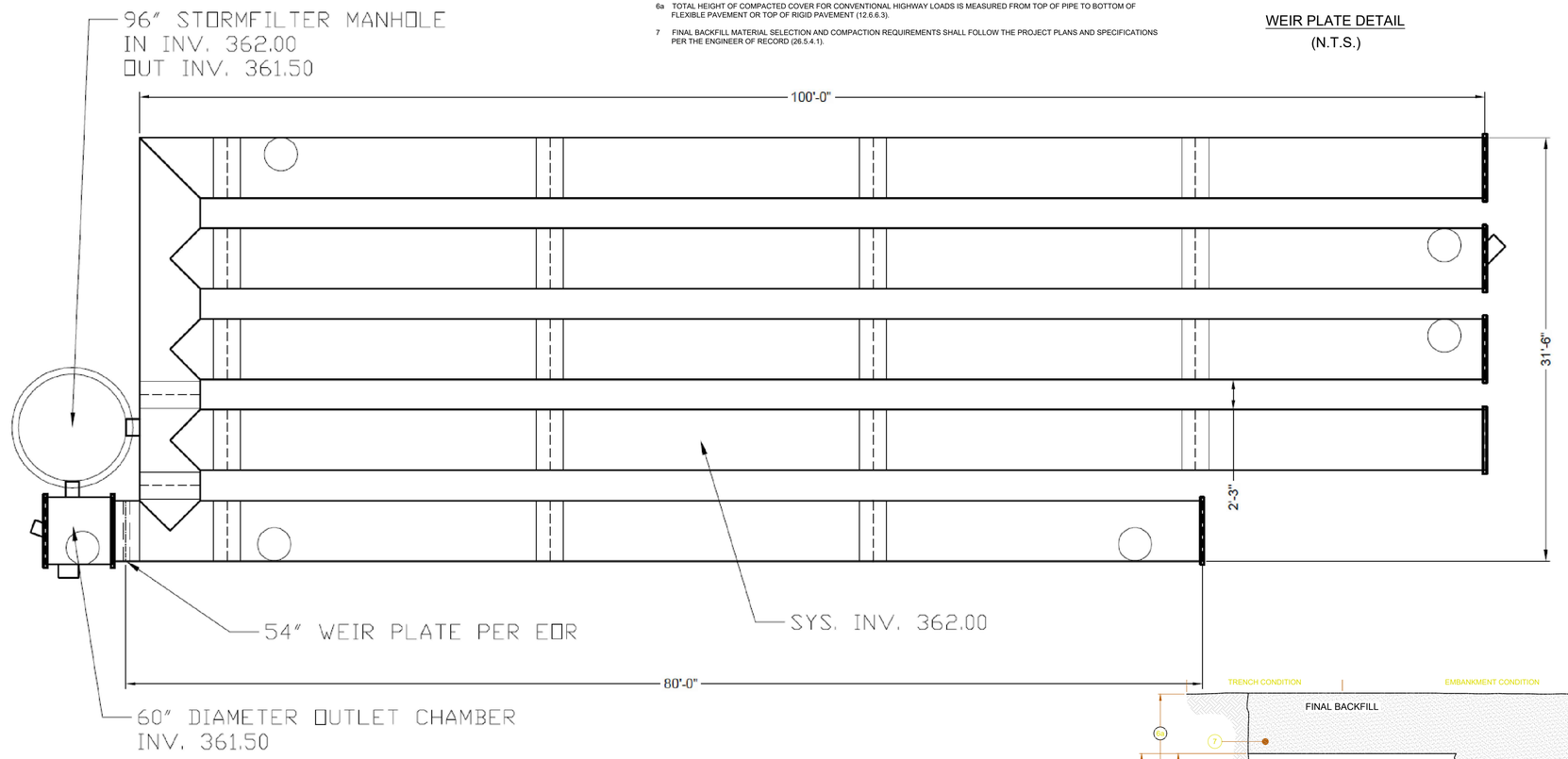
6 INITIAL BACKFILL ABOVE PIPE MAY INCLUDE ROAD BASE MATERIAL (AND RIGID PAVEMENT IF APPLICABLE). SEE TABLE ABOVE.

6a TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT (12.6.6.3).

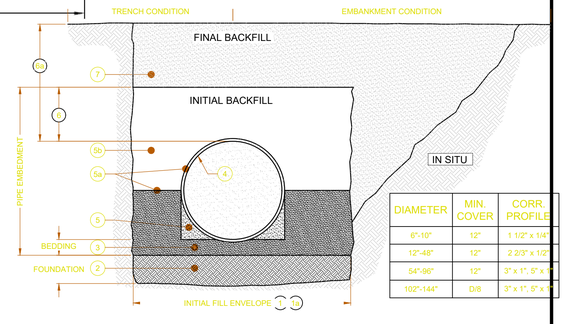
7 FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD (26.5.4.1).



WEIR PLATE DETAIL
(N.T.S.)



ASSEMBLY
SCALE: 1" = 10'



DIAMETER	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
54"-96"	12"	3" x 1", 5" x 1"
102"-144"	D/8	3" x 1", 5" x 1"

NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2⅔" x ½" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
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CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

Jonesville Road Rolesville Commercial Site
CMP System
Rolesville, NC
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
24294	35777	8/2/2023
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

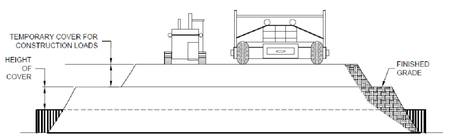
NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	KPG
2	5-22-2026	Town / Wake County Comment	KPG
3	07-28-2026	WAKE COUNTY AND TOWN REVIEW	KPG
4	08-23-2026	Rev Per Town Of Rolesville Comments	KPG
5	10-22-2026	SIGNATURE SET	KPG

NORTH CAROLINA PROFESSIONAL SEAL 036473 ENGINEER KEITH R GETTLE
10/22/26

Detention System Details
Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.
Dwg No.
D4

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CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM
SCALE: N.T.S.

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL
THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

PIPE
THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

POLYMER COATED: AASHTO M-245 OR ASTM A-762

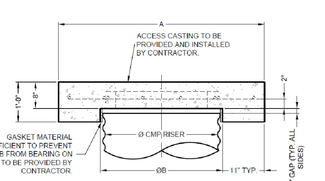
ALUMINUM: AASHTO M-196 OR ASTM B-745

HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH NCSPS (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.

INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

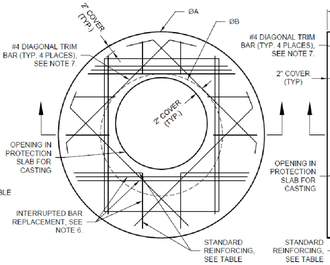
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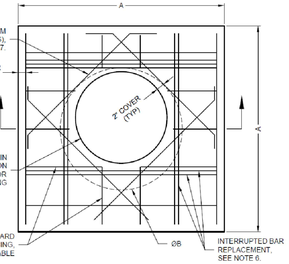
SECTION VIEW

REINFORCING TABLE				
Ø CMP RISER	A	Ø B	REINFORCING	**BEARING PRESSURE (PSF)
24"	Ø 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	Ø 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	Ø 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	Ø 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	Ø 6' 6' X 6'	56"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:
1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING. BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL
SCALE: N.T.S.

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CONTECH CMP DETENTION SYSTEMS

DETENTION SYSTEM DETAILS

PROJECT No.: | SEQ No.: | DATE:
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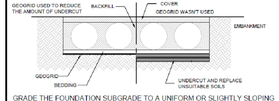
CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

FOUNDATION

CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.

IF SOFT OR UNSUITABLE SOILS ARE ENCOUNTERED, REMOVE THE POOR SOILS DOWN TO A SUITABLE DEPTH AND THEN BUILD UP TO THE APPROPRIATE ELEVATION WITH A COMPETENT BACKFILL MATERIAL. THE STRUCTURAL FILL MATERIAL GRADATION SHOULD NOT ALLOW THE MIGRATION OF FINES, WHICH CAN CAUSE SETTLEMENT OF THE DETENTION SYSTEM OR PAVEMENT ABOVE. IF THE STRUCTURAL FILL MATERIAL IS NOT COMPATIBLE WITH THE UNDERLYING SOILS AN ENGINEERING FABRIC SHOULD BE USED AS A SEPARATOR. IN SOME CASES, USING A STIFF REINFORCING GEOGRID REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.

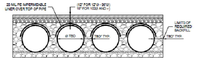


GRADE THE FOUNDATION SUBGRADE TO A UNIFORM OR SLIGHTLY SLOPING GRADE. IF THE SUBGRADE IS CLAY OR RELATIVELY NON-POROUS AND THE CONSTRUCTION SEQUENCE WILL LAST FOR AN EXTENDED PERIOD OF TIME, IT IS BEST TO SLOPE THE GRADE TO ONE END OF THE SYSTEM. THIS WILL ALLOW EXCESS WATER TO DRAIN QUICKLY, PREVENTING SATURATION OF THE SUBGRADE.

GEOMEMBRANE BARRIER

A SITE'S RESISTIVITY MAY CHANGE OVER TIME WHEN VARIOUS TYPES OF SALTING AGENTS ARE USED, SUCH AS ROAD SALTS FOR DEICING AGENTS. IF SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM THE USE OF SUCH AGENTS INCLUDING PREMATURE CORROSION AND REDUCED ACTUAL SERVICE LIFE.

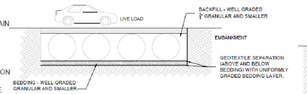
THE PROJECT'S ENGINEER OF RECORD IS TO EVALUATE WHETHER SALTING AGENTS WILL BE USED ON OR NEAR THE PROJECT SITE, AND USE HIS/HER BEST JUDGEMENT TO DETERMINE IF ANY ADDITIONAL PROTECTIVE MEASURES ARE REQUIRED. BELOW IS A TYPICAL DETAIL SHOWING THE PLACEMENT OF A GEOMEMBRANE BARRIER FOR PROJECTS WHERE SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE.



IN-SITU TRENCH WALL

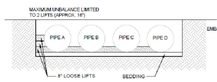
IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT. PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.



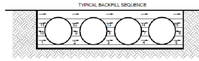
BACKFILL PLACEMENT

MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.

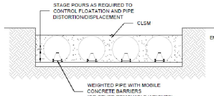


IF AASHTO T99 PROCEDURES ARE DETERMINED INFEASIBLE BY THE GEOTECHNICAL ENGINEER OF RECORD, COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE GEOTECHNICAL ENGINEER OF RECORD (OR REPRESENTATIVE THEREOF) IS SATISFIED WITH THE LEVEL OF COMPACTION.

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR DRAGLINES WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADING ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE SEQUENCE AGAIN UNTIL THE SYSTEM IS COMPLETELY BACKFILLED. THIS TYPE OF CONSTRUCTION SEQUENCE PROVIDES ROOM FOR STOCKPILED BACKFILL DIRECTLY BEHIND THE BACKHOE, AS WELL AS THE MOVEMENT OF CONSTRUCTION TRAFFIC. MATERIAL STOCKPILES ON TOP OF THE BACKFILLED DETENTION SYSTEM SHOULD BE LIMITED TO 8- TO 10-FEET HIGH AND MUST PROVIDE BALANCED LOADING ACROSS ALL BARRELS. TO DETERMINE THE PROPER COVER OVER THE PIPES TO ALLOW THE MOVEMENT OF CONSTRUCTION EQUIPMENT SEE TABLE 1, OR CONTACT YOUR LOCAL CONTECH SALES ENGINEER.



WHEN FLOWABLE FILL IS USED, YOU MUST PREVENT PIPE FLOATATION. TYPICALLY, SMALL LIFTS ARE PLACED BETWEEN THE PIPES AND THEN ALLOWED TO SET-UP PRIOR TO THE PLACEMENT OF THE NEXT LIFT. THE ALLOWABLE THICKNESS OF THE CSLM LIFT IS A FUNCTION OF A PROPER BALANCE BETWEEN THE UPLIFT FORCE OF THE CLSM, THE OPPOSING WEIGHT OF THE PIPE, AND THE EFFECT OF OTHER RESTRAINING MEASURES. THE PIPE CAN CARRY LIMITED FLUID PRESSURE WITHOUT PIPE DISTORTION OR DISPLACEMENT, WHICH ALSO AFFECTS THE CLSM LIFT THICKNESS. YOUR LOCAL CONTECH SALES ENGINEER CAN HELP DETERMINE THE PROPER LIFT THICKNESS.

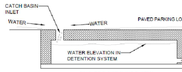


CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION, POTENTIALLY CAUSING FLOATATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.



CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS TAKE PLACE, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE/CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM

MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVACUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS RECOMMENDED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALT/DEICING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED, INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THAW AS PART OF THE MAINTENANCE PROGRAM FOR THE SYSTEM.

MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM. FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANOUT DURING DRY WEATHER.

THE FOREGOING INSPECTION AND MAINTENANCE EFFORTS HELP ENSURE UNDERGROUND PIPE SYSTEMS USED FOR STORMWATER STORAGE CONTINUE TO FUNCTION AS INTENDED BY IDENTIFYING RECOMMENDED REGULAR INSPECTION AND MAINTENANCE PRACTICES. INSPECTION AND MAINTENANCE RELATED TO THE STRUCTURAL INTEGRITY OF THE PIPE OR THE SOUNDNESS OF PIPE JOINT CONNECTIONS IS BEYOND THE SCOPE OF THIS GUIDE.

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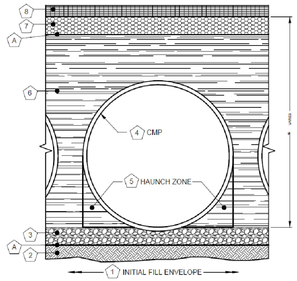
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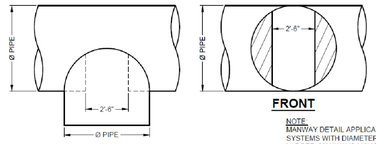
CONTECH CMP DETENTION SYSTEMS

SOLID DETENTION SYSTEM DETAILS

PROJECT No.: | SEQ No.: | DATE:
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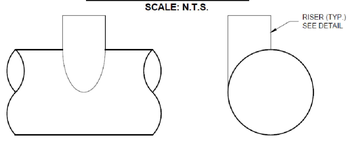
DETENTION SYSTEMS - CMP DETENTION / CMP DRAINAGE			
Material Location	Description	Material Designation	Designation
B	Rigid or Flexible Pavement (if applicable)		
7	Road Base (if applicable)		
A	Geotextile Layer	Non-Woven Geotextile	CONTECH C-40 or C-45	Engineer Decision for consideration to prevent soil migration into varying soil types
6	Backfill	Well graded granular material which may contain small amounts of silt or clay.	AASHTO M 145- A-1, A-2, A-3	Placed in 8" +/- loose lifts and compacted to 90% Standard Proctor Per AASHTO T 99
5	Bedding Stone	Well graded granular bedding material w/maximum particle size of 3"	AASHTO M43 - 5,357,4,467, 5, 56, 57	Engineer to determine if bedding is required. Pipe may be placed on the trench bottom of a relatively loose, native suitable well graded & granular material. For Aech pipes it is recommended to be shaped to a relatively flat bottom or fine-grade the foundation to a slight v-shape. Unsuitable material should be over-excavated and re-placed with a 4"-6" layer of well graded & granular stone per the material designation. See AASHTO 26.3.8.1 / 26.6.3 Bedding info.
A	Geotextile Layer	Non-Woven Geotextile	CONTECH C-40 or C-45	Engineer Decision for consideration to prevent soil migration into varying soil types
*	*Note: Backfill using controlled low-strength material CLSM, "flash fill" or "flowable fill") when the spacing between the pipes will not allow for placement and adequate compaction of the backfill.*			



PLAN — FRONT

TYPICAL MANWAY DETAIL
SCALE: N.T.S.

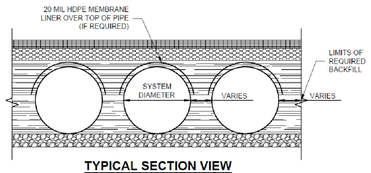
NOTE:
MANWAY DETAIL APPLICABLE FOR CMP SYSTEMS WITH DIAMETERS 48" AND LARGER. MANWAYS MAY BE REQUIRED ON SMALLER SYSTEMS DEPENDING ON ACTUAL SITE SPECIFIC CONDITIONS.



ELEVATION — END

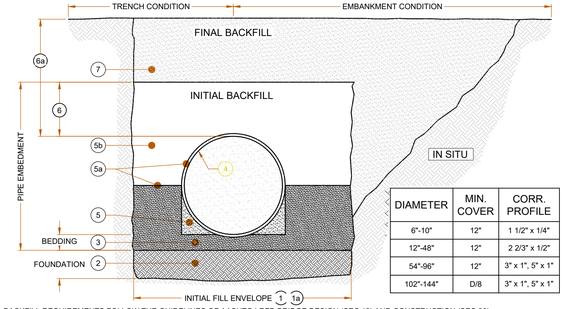
TYPICAL RISER DETAIL
SCALE: N.T.S.

NOTE:
LADDERS ARE OPTIONAL AND ARE NOT REQUIRED FOR ALL SYSTEMS.



TYPICAL SECTION VIEW
LINER OVER ROWS
SCALE: N.T.S.

NOTE: IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, AN HDPE MEMBRANE LINER IS RECOMMENDED WITH THE SYSTEM. THE IMPERMEABLE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.



DIAMETER	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
54"-96"	12"	3" x 1", 5" x 1"
102"-144"	D/8	3" x 1", 5" x 1"

BACKFILL REQUIREMENTS FOLLOW THE GUIDELINES OF AASHTO LRFD BRIDGE DESIGN (SEC 12) AND CONSTRUCTION (SEC 26)

1 MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE.
THE MINIMUM TRENCH WIDTH (12.6.6.1):
PIPE ≤ 12": D + 16"
PIPE > 12": 1.5D + 12"

1a MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE (12.6.6.2):
PIPE < 24": 3.0D
PIPE 24" - 144": D + 4'0"
PIPE > 144": D + 10'0"

2 THE FOUNDATION UNDER THE PIPE AND SIDE BACKFILL SHALL BE ADEQUATE TO SUPPORT THE LOADS ACTING UPON IT (26.5.2).

3 BEDDING MATERIAL SHALL BE A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE FROM SPRINGLINE OF PPE TO 4"-6" BELOW BOTTOM OF PIPE.

4 CORRUGATED STEEL PIPE (CSP / HEL-COR).

5 HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION (26.5.4).

5a GEOTEXTILE SHALL BE USED IF REQUIRED BY ENGINEER TO PREVENT SOIL MIGRATION INTO VARYING SOIL TYPES.

5b BACKFILL PLACED ABOVE SPRINGLINE TO MEET AASHTO 145, A-1, A-2 OR A-3 CLASSIFICATION, OR APPROVED EQUAL, COMPACTED TO 90% STANDARD PROCTOR (T 99). MAXIMUM PARTICLE SIZE NOT TO EXCEED 3" (12.4.1.2). ALL LIFTS PLACED IN A CONTROLLED MANNER. IT IS RECOMMENDED THAT LIFTS NOT EXCEED AN 8" UNCOMPACTED LIFT HEIGHT TO PREVENT UNEVEN LOADING, AND THE LESSER OF 1/3 THE DIAMETER OR 24" AS THE MAXIMUM DIFFERENTIAL SIDE-TO-SIDE (26.5.4).

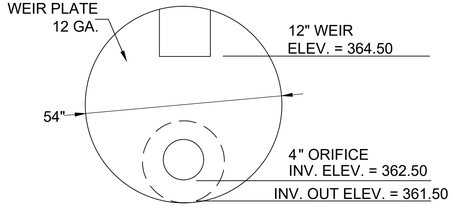
6 INITIAL BACKFILL ABOVE PIPE MAY INCLUDE ROAD BASE MATERIAL (AND RIGID PAVEMENT IF APPLICABLE). SEE TABLE ABOVE.

6a TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT (12.6.6.3).

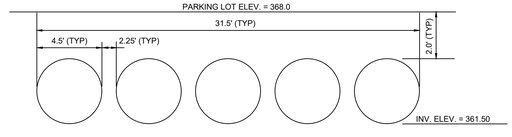
7 FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD (26.5.4.1).

NOTES:
- ΦΟΡ ΜΥΑΤΙΠΙΑΕ ΒΑΡΡΕΑ ΙΝΣΤΑΛΑΑΤΙΟΝΣ ΤΗΕ ΡΕΧΟΜΜΕΝΔΕΔ ΣΤΑΝΔΑΡΔ ΣΠΑΧΙΝΓ ΒΕΤΩΕΕΝ ΠΑΡΑΛΛΕΛ ΠΙΠΕ ΡΥΝΣ ΣΗΑΛ ΒΕ ΠΙΠΕ ΔΙΑ./2 ΒΥΤ ΝΟ ΛΕΣΣ ΤΗΑΝ 12V, ΟΡ 36V ΦΟΡ ΠΙΠΕ ΔΙΑΜΕΤΕΡΣ 72V ΑΝΔ ΛΑΡΓΕΡ. ΧΟΝΤΑΧΤ ΨΟΥΡ ΧΟΝΤΕΧΗ ΡΕΤΡΕΣΕΝΤΑΤΙΕ ΦΟΡ ΝΟΝΣΤΑΝΔΑΡΔ ΣΠΑΧΙΝΓ (ΤΑΒΑΕ Χ12.6.7–1).

PIPE DETENTION DETAIL
NTS



WEIR PLATE DETAIL
(N.T.S.)



DETENTION PIPE SECTION (TYPICAL)
(N.T.S.)

NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	KPG
2	5-22-2026	Town / Wake County Commnet	KPG
3	07-28-2026	WAKE COUNTY AND TOWN REVIEW	KPG
4	09-23-2026	Rev Per Town Of Rolesville Comments	KPG
5	10-22-2026	SIGNATURE SET	KPG

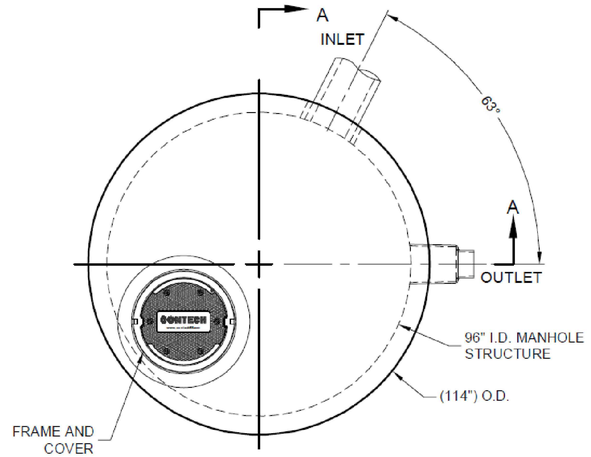
Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NORTH CAROLINA PROFESSIONAL SEAL 038013 ENGINEER KEITH P. GETTLE

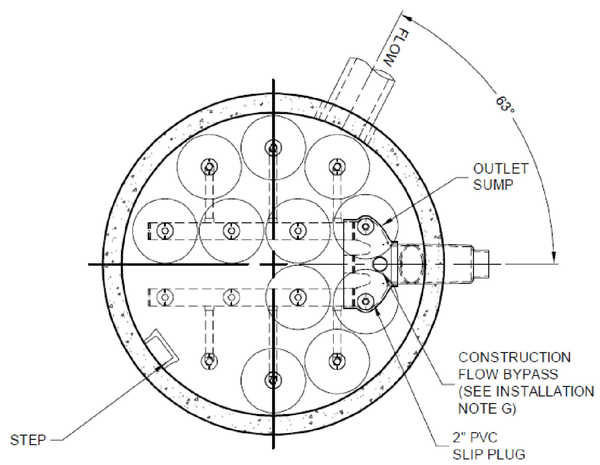
Detention System Details
Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.
D5



PLAN VIEW



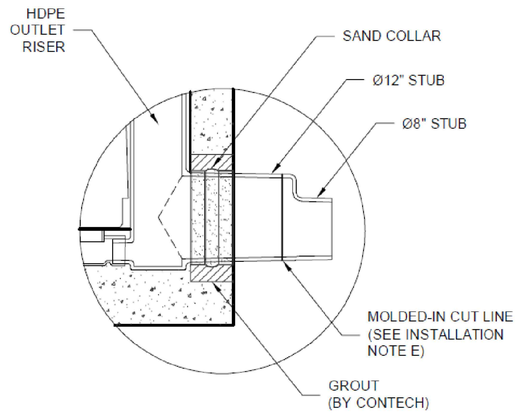
SECTION B-B

SEALED OUTLET RISER

FLOWKIT: 43A

MATERIAL LIST - PROVIDED BY CONTECH

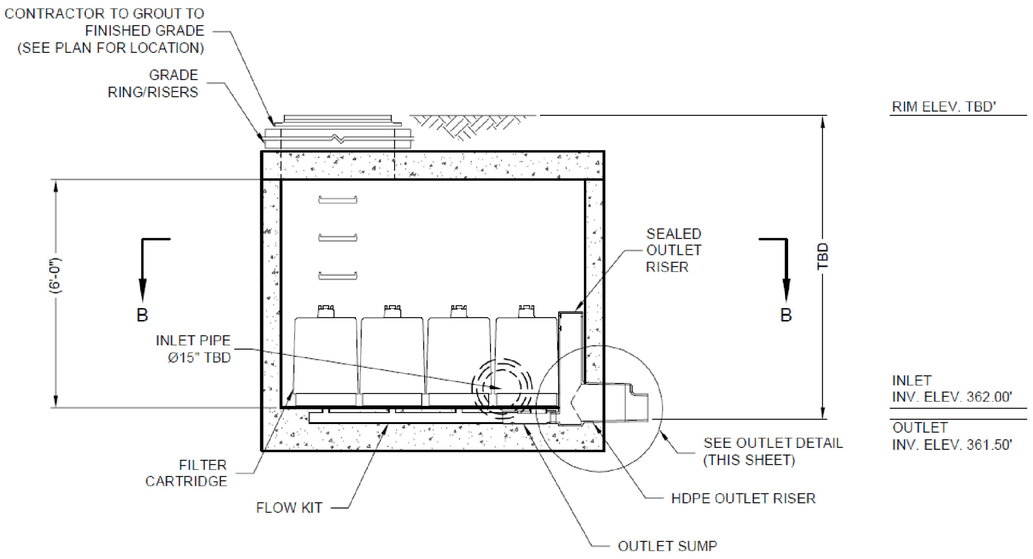
COUNT	DESCRIPTION	INSTALLED BY
11	18", VOLUME GPM, PHOSPHOSORB CARTRIDGE (PRP)	PRECASTER
3	2" PVC SLIP PLUG	PRECASTER
1	SEALED OUTLET RISER	PRECASTER
1	FLOW KIT	PRECASTER
1	JOINT SEALANT (BY PRECASTER)	CONTRACTOR
1 PLC	GRADE RINGS/RISERS	CONTRACTOR
1	Ø30" x 4" FRAME AND COVER	CONTRACTOR



OUTLET DETAIL

SITE DESIGN DATA

WATER QUALITY FLOW RATE	XX CFS
PEAK FLOW RATE	XX CFS
RETURN PERIOD OF PEAK FLOW	XX YRS
FILTER MEDIA TYPE	PHOSPHOSORB



SECTION A-A

PERFORMANCE SPECIFICATION

FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. **RADIAL MEDIA DEPTH SHALL BE 7-INCHES**. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST **38 SECONDS**.
SPECIFIC FLOW RATE SHALL BE **1, 1.67, or 2 GPM/SF (MAXIMUM)**. SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE **6 GPM/CF OF MEDIA (MAXIMUM).**

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 5' AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. STORMFILTER STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR METHOD.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGNCONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET PIPE(S). ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO PROVIDE AND INSTALL CONNECTOR TO THE OUTLET RISER STUB. STORMFILTER EQUIPPED WITH A DUAL DIAMETER HDPE OUTLET STUB. IF OUTLET PIPE IS LARGER THAN 8 INCHES, CONTRACTOR TO REMOVE THE 8 INCH OUTLET STUB AT MOLDED IN CUT LINE. COUPLING BY FERNCO OR EQUAL AND PROVIDED BY CONTRACTOR.
F. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
G. CONTRACTOR TO INSTALL SUPPLIED PLUG IN CONSTRUCTION FLOW BYPASS WHEN SYSTEM IS BROUGHT ON LINE (PRESSURE FIT ONLY, DO NOT GLUE).

STRUCTURE WEIGHT

APPROXIMATE HEAVIEST PICK = T.B.D. LBS.
OF X PIECES
MAX. FOOTPRINT = Ø96" MANHOLE STORMFILTER

CONTECH
PROPOSAL
DRAWING

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If discrepancies between the supplied information upon which this drawing is based and actual field conditions are encountered, it is the responsibility of the user to inform Contech of any such discrepancies and those discrepancies must be reported to Contech immediately for re-evaluation of the design. Contech also expressly disclaims any liability for errors in or omissions from this drawing and for reliance on incomplete or inaccurate information supplied by others.

MARK	DATE	REVISION DESCRIPTION	BY

Ø96" MANHOLE STORMFILTER - 765974-010
JONESVILLE ROAD COMMERCIAL
ROLESVILLE, NC
SITE DESIGNATION: TBD

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

The StormFilter Manager™ System is designed for the treatment of stormwater runoff for pollutants of concern, including sediment and dissolved media. For more information, refer to the StormFilter Manager™ System Design Manual.

DATE:	08/02/23
DESIGNED: BY	DRAWN: N/A
CHECKED: BY	APPROVED: BY
PROJECT No.: 765974	SEQUENCE No.: 010
SHEET: 1 OF 1	

NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	KPG
2	5-22-2026	Town / Wake County Commnet	KPG
3	07-28-2026	WAKE COUNTY AND TOWN REVIEW	KPG
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Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030873 KEITH P. GETTLE
10/22/26

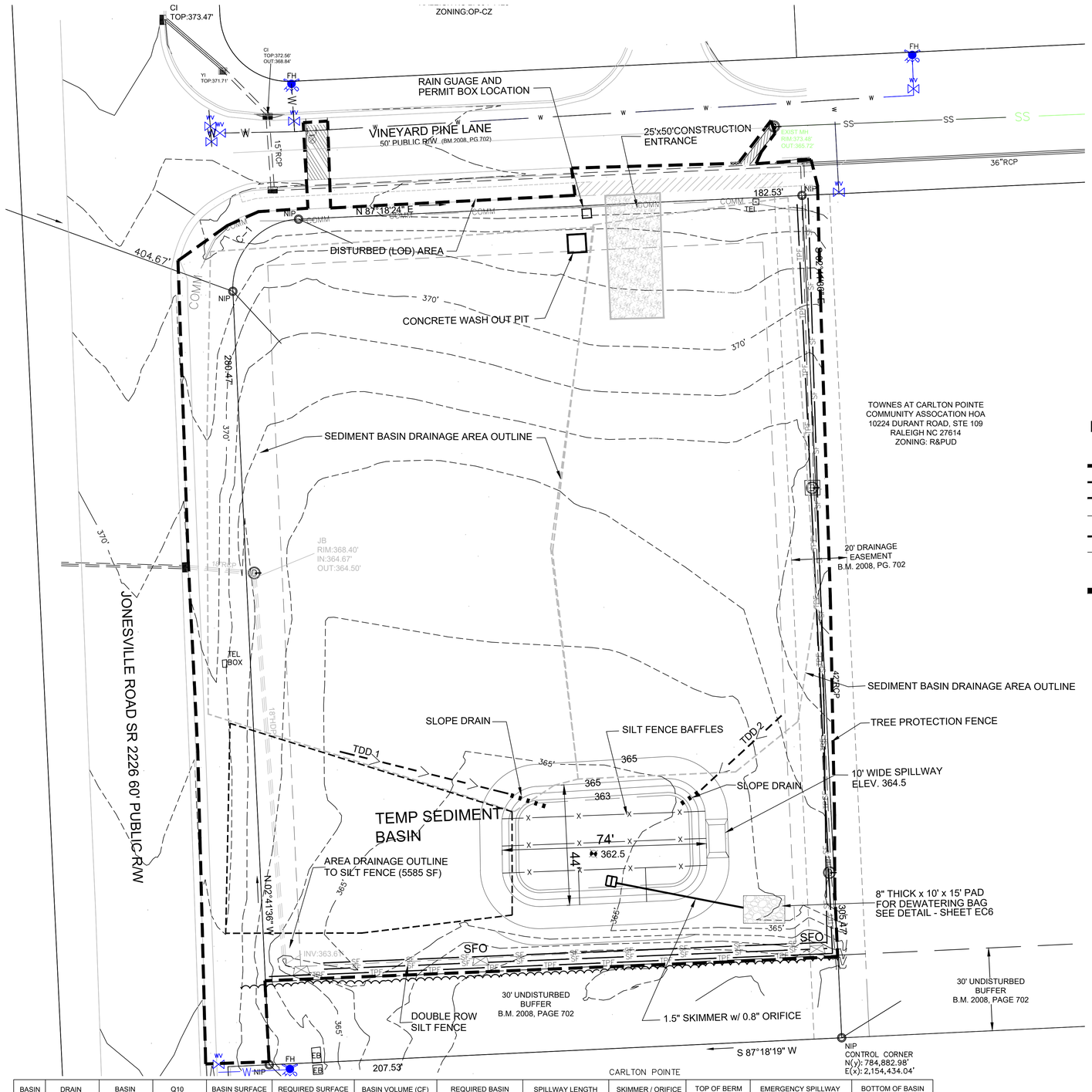
Storm Filter Details
Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.
Dwg No.
D6

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Channel Design Calculations

Channel	Drain Area, ac	Channel Length, ft	Channel Drop, ft	C	Q10 I, in/hr	Flow cfs	Channel Slope, ft/ft	n	Side Slope:1	Bottom Width, ft	Depth of Flow, ft	Velocity fps	Liner
TDD1	0.48	72	3	0.55	5.48	1.4	0.0417	0.024	3.00	2.0	0.17	3.39	NAG C350 Blanket
TDD2	0.39	43	3	0.55	5.48	1.2	0.0698	0.020	3.00	2.0	0.12	4.25	NAG C350 Blanket



BASIN NUMBER	DRAIN AREA(ACRES)	BASIN SIZE	Q10 FLOW(CFS)	BASIN SURFACE AREA(SF)	REQUIRED SURFACE AREA(SF)	BASIN VOLUME (CF)	REQUIRED BASIN VOLUME (CF)	SPILLWAY LENGTH (FT)	SKIMMER / ORIFICE DIAMETER (IN.)	TOP OF BERM ELEV.	EMERGENCY SPILLWAY ELEV.	BOTTOM OF BASIN
1	0.87	34' x 64'	5.48	3256	2387	5399	1566	10'	1.5 / 0.8	365	364.5	362.5

EROSION CONTROLGENERAL NOTES

1. PER NPDES REQUIREMENTS, A RAIN GUAGE, SELF INSPECTION RECORDS, PERMIT, CERTIFICATE OF COVERAGE, AND S&E PLANS ARE REQUIRED TO BE MAINTAINED ON SITE AND ACCESSIBLE DURING INSPECTION. IT IS RECOMMENDED THESE ITEMS ARE TO BE PLACED IN A PERMIT BOX AT THE ENTRANCE OF THE PROJECT. (NCG01 PART III SECTIONS A AND B, 15A NCAC 04B .0131)

2. THE CONTRACTOR SHALL CONDUCT SELF-INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES AND COMPETE THE FOLLOWING COMBINED SELF-INSPECTION FORM FOUND ON THE DEMLR WEBSITE HTTPS://DEQ.NC.GOV/ABOUT/DIVISIONS/ENERGY-MINERAL-LAND-RESOURCES/EROSION-SEDIMENT CONTROL/FORMS. TWELVE MONTHS OF COMPLETED INSPECTION FORMS SHALL BE KEPT ON-SITE AND AVAILABLE FOR INSPECTION AT ALL TIMES. IT IS RECOMMENDED A COPY BE KEPT IN A PERMIT BOX. (GS 113A-54.1 (E), 15A NCAC 04B.0131, NCG01 PART III SECTIONS A AND B) .

3. STOCKPILES, LAYDOWN OR WASTE AREAS, CONCRETE WASHOUTS, PORTABLE TOILETS, AND FUELS MUST BE LOCATED AT LEAST 50 FEET AWAY FROM ANY OPEN WATER CONVEYANCES, SUCH AS BASINS, DITCHES, STORM DRAIN INLETS, ETC. THE LOCATION OF THESE ACTIVITIES MAY BE FIELD ADJUSTED IF THE DISTANCE REQUIREMENTS ARE MET." (GS113A-57(3), 15A NCAC 04B .0105, 15A NCAC 04B .0106(5), GS113A-57(4), NCG01 SECTION II.F)

4. PERIMETER MEASURES MUST BE LEFT IN PLACE UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED. AFTER SITE IS PERMANENTLY STABILIZED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND PROVIDE PERMANENT SEEDING WHERE TEMPORARY MEASURES HAVE BEEN REMOVED AND GROUND COVER IS NOT ADEQUATE. SEDIMENT BASINS MAY NOT BE REMOVED OR CONVERTED TO PERMANENT SCMS UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED.

5. WAKE COUNTY SHOULD BE NOTIFIED 10-DAYS PRIOR TO REMOVAL OF A BASIN." (GS 113A-57(3), 15A NCAC 04B .0113). GROUND STABILIZATION WILL BE APPLIED WITHIN 14 CALENDAR DAYS FROM LAST LAND DISTURBING ACTIVITY. FOR STEEP SLOPES, THAT AREA MUST BE STABILIZED WITHIN 7 CALENDAR DAYS." (15A NCAC 04B .0106, NCG01 PART II SECTION E (1).

6. SILT BAG(S) WILL BE CONTINUOUSLY MONITORED DURING OPERATION. (GS 113A-57(3), 15A NCAC 04B .0113).

7. SELF-INSPECTIONS FOR EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO BE PERFORMED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF EVERY RAIN EVENT OF GREATER THAN 1 INCH. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED. ALL ESC MEASURES SHALL BE MAINTAINED AS SPECIFIED IN THE CONSTRUCTION DETAILS ON THIS PLAN. A RAIN GAUGE SHALL BE INSTALLED AT THE PROJECT SITE FOR MONITORING." (GS 113A-54.1 (E), 15A NCAC 04B.0131, NCG01 PART III SECTIONS A AND B) .

8. INSTALL POLYACRYLAMIDE IMPREGNATED STRAW WATTLES (IE: TERRA TUBES) DIRECTLY BELOW STORM WATER OUTFALL. PLACE EROSION CONTROL LINER UNDERNEATH A SERIES OF WATTLES (SEE DETAIL)

9. SURROUND THE SKIMMER WITH A BAFFLE AND "KEY" BOTH ENDS INTO THE SIDE OF THE BASIN. INSTALL A TARP UNDERNEATH THE SKIMMER, COVERING THE ENTIRE AREA AROUND THE SKIMMER. PROVIDE A 6"-8" BLOCK TO PLACED UNDER THE SKIMMER ALLOWING THE DEVICE TO REST ON AFTER DEWATERING.

10. INSTALL STANDARD GRAVEL YARD INLET PROTECTION UNTIL CURB IS INSTALLED. INSTALL STANDARD GRAVEL BAG CURB INLET PROTECTION AT ALL CURB INLETS.

LINE AND SYMBOL LEGEND

- SFO — SILT FENCE OUTLET
- DENUDED AREA OUTLINE
- SF — SILT FENCE
- TEMPORARY DIVERSION DITCH
- X — BAFFLES
- TPF — TREE PROTECTION FENCE
- CHECK DAM
- INLET PROTECTION
- SLOPE DRAIN

Temporary Sediment Basin *Simplified design*

Okay

0.87 Disturbed Area (Acres)	Imported from t
5.48 Peak Flow from 10-year Storm (cfs)	
1566 Required Volume ft^3	Minimum sedin
2387 Required Surface Area ft^2	Required surfa
34.5 Suggested Width ft	
69.1 Suggested Length ft	
44 Trial Top Width at Emergency Spillway Invert ft	
74 Trial Top Length at Emergency Spillway Invert ft	
2.5 Trial Side Slope Ratio Z:1	(2.5:1 or flatter)
2 Trial Depth ft	(2 to 13.5 feet above grade)
34 Bottom Width ft	
64 Bottom Length ft	
2176 Bottom Area ft^2	
5399 Actual Volume ft^3	**Okay**
3256 Actual Surface Area ft^2	**Okay**

Use Spillway Capacity Sheet to Size Primary and Emergency Spillw

1.5 Skimmer Size (inches)	
0.125 Head on Skimmer (feet)	
0.8 Orifice Size (1/4 inch increments)	
3.00 Dewatering Time (days)	
Suggest about 3 days	

Skimmer Size (Inches)
1.5
2
2.5
3

EROSION CONTROL CONSTRUCTION SEQUENCE - PHASE 1

1. SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL WATERSHED MANAGER. OBTAIN A LAND DISTURBING PERMIT.

2. INSTALL TREE PRETECTION FENCE AND PERIMETER SILT FENCE AS SHOWN ON THE PLANS.

3. INSTALL EROSION CONTROL MEASURES INCLUDING GRAVEL CONSTRUCTION ENTRANCE /EXIT, PERMIT BOX, SEDIMENT TRAPPING MEASURES, STABILIZATION AT PIPE OUTLETS, AND OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS AND BASINS IMMEDIATELY AFTER CONSTRUCTION.

4. CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT, (919) 856-7436, FOR AN ONSITE INSPECTION TO OBTAIN A CERTIFICATE OF COMPLIANCE.

5. EXCAVATE AREAS FOR TEMPORARY SEDIMENT BASIN 1, AND SKIMMER BASIN NO 2. INSTALL EMBANKMENTS, SPILLWAYS AS SHOWN ON THE APPROVED PLANS. EMERGENCY SPILLWAYS ARE TO BE LOCATED IN CUT OR UNDISTURBED GRADE. PROVIDE STONE PADS AND ROPE FOR THE SKIMMER TO REST AND MAINTENANCE ACCESS. SEE SHEET D5 FOR THE RISER INSTALLATION USED IN TEMPORARY BASIN 1. SURROUND THE SKIMMER WITH A BAFFLE AND "KEY" BOTH ENDS INTO THE SIDE OF THE BASIN. INSTALL A TARP UNDERNEATH THE SKIMMER, COVERING THE ENTIRE AREA AROUND THE SKIMMER. PROVIDE A 6"-8" BLOCK TO PLACED UNDER THE SKIMMER ALLOWING THE DEVICE TO REST ON AFTER DEWATERING.

6. INSPECT TEMPORARY SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN IT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH. PLACE REMOVED SEDIMENT IN AN AREA WITH SEDIMENT CONTROLS. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA.

7. BEGIN CLEARING AND GRUBBING AND PERFORM ROUGH GRADING AS SHOWN ON SHEET C3, INSTALLING AND MAINTAINING TEMPORARY DIVERSIONS AS NECESSARY. SEED AND MULCH PERIMETER SLOPES AS SOON AS POSSIBLE.

8. STABILIZE DISTURBED AREAS WITHIN 14 WORKING DAYS AFTER COMPLETION OF ANY PHASE OF GRADING. STABILIZATION CONSISTS OF EITHER TEMPORARY MULCHING OR PERMANENT VEGETATION ON AREAS THAT ARE NOT PAVED.

9. REGULARLY INSPECT AND MAINTAIN THE EROSION CONTROL DEVICES SO THEY CONTINUE TO FUNCTION PROPERLY.

10. KEEP MUD AND DEBRIS OFF THE PUBLIC STREETS AT ALL TIMES. IF MUD OR DEBRIS IS TRACKED FROM THE SITE, USE A SHOVEL AND BROOM TO REMOVE IT IMMEDIATELY. IF MUD AND DEBRIS ARE NOT KEPT OFF THE STREET, ENFORCEMENT ACTION (REVOKING THE GRADING PERMIT AND/OR STOP WORK ORDER) MAY BE TAKEN.

11. IF IT IS DETERMINED DURING THE COURSE OF CONSTRUCTION THAT SIGNIFICANT SEDIMENT IS LEAVING THE SITE DESPITE PROPER IMPLEMENTATION AND MAINTENANCE OF THE APPROVED EROSION CONTROL PLAN, THE PERSON RESPONSIBLE FOR THE LAND-DISTURBING ACTIVITY IS OBLIGATED TO TAKE ADDITIONAL PROTECTIVE ACTION.

12. CONTINUE TO PHASE 2 EROSION CONTROL ACTIVITIES.

STOCKPILE DESIGN CRITERIA

1. STOCKPILING MATERIALS ADJACENT TO A DITCH, DRAINAGEWAY, WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.

2. A 25-FOOT TEMPORARY MAINTENANCE AND ACCESS EASEMENT SHALL BE SHOWN AROUND ALL PROPOSED STOCKPILES (EROSION CONTROL MEASURES SURROUNDING THE STOCKPILE SHALL BE SHOWN AT THE OUTER LIMIT OF THIS EASEMENT).

3. STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.

4. STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.

5. STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.

6. STOCKPILING MATERIALS ADJACENT TO A DITCH, DRAINAGEWAY, WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.

7. ANY CONCENTRATED FLOW LIKELY TO AFFECT THE STOCKPILE SHALL BE DIVERTED TO AN APPROVED BMP.

8. OFF-SITE SPOIL OR BORROW AREAS MUST BE IN COMPLIANCE WITH WAKE COUNTY UDO AND STATE REGULATIONS. ALL SPOIL AREAS OVER AN ACRE ARE REQUIRED TO HAVE AN APPROVED SEDIMENT CONTROL PLAN. DEVELOPER/CONTRACTOR SHALL NOTIFY WAKE COUNT OF ANY OFFSITE DISPOSAL OF SOIL, PRIOR TO DISPOSAL. FILL OF FEMA FLOODWAYS AND ON-ENCROACHMENT AREAS ARE PROHIBITED EXCEPT AS OTHERWISE PROVIDED BY SUBSECTION 14-19-2 OF THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE (CERTIFICATIONS AND PERMITS REQUIRED).

9. SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEYED IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.

10. IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.

11. THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.

12. ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

DRAINAGE AREA TO SEDIMENT BASIN = 37,897 SF (.87 AC)

TOTAL DENUDED AREA 66,036 SF (1.52 AC)

Graphic Scale 1"=20'

20 0 10 20 40 80

NORTH

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3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036213 KEITH P. GETTLE
10/22/26

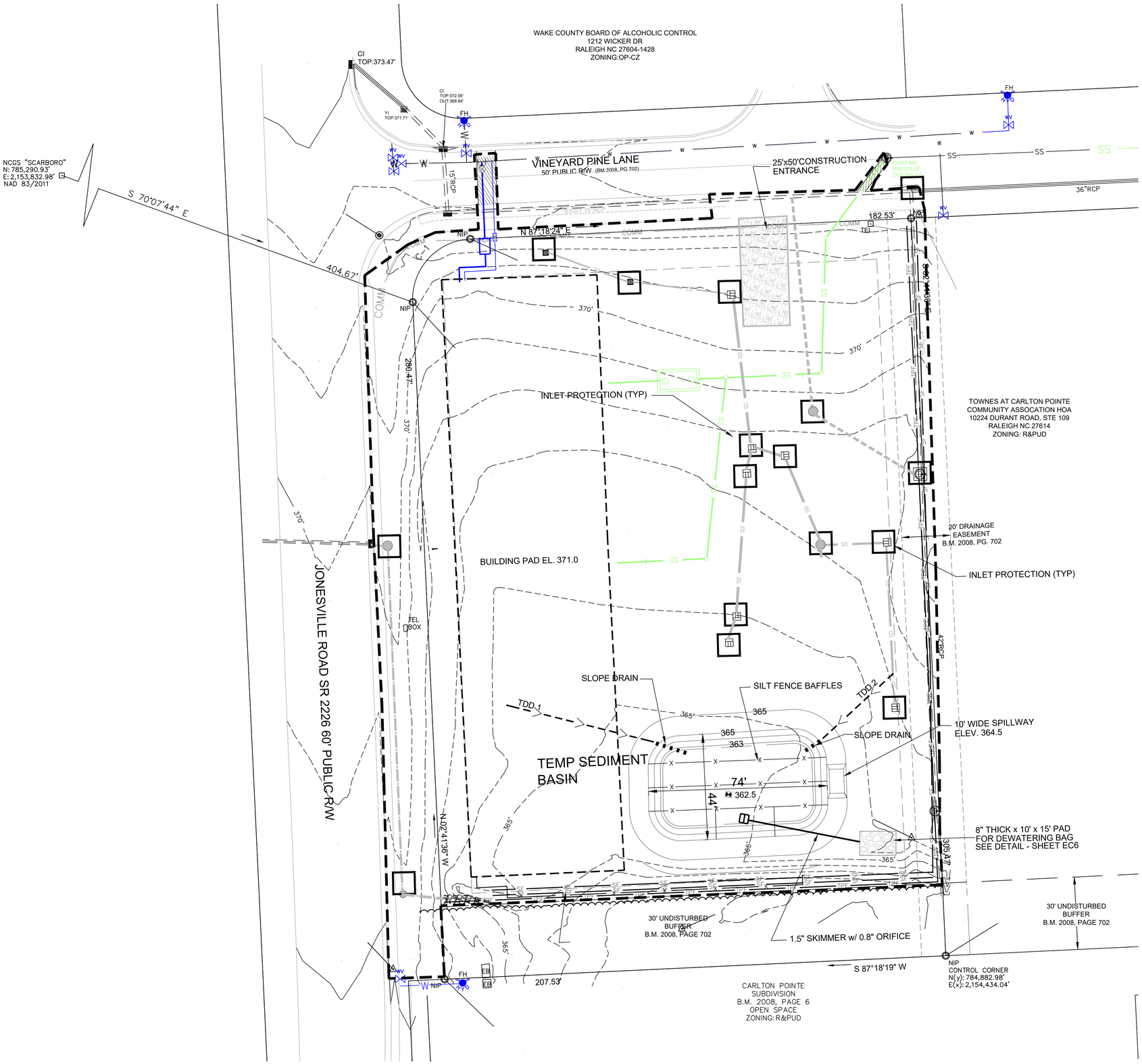
Erosion Control Phase 1

Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.

EC1



EROSION CONTROL CONSTRUCTION SEQUENCE - PHASE 2

1. INSTALL THE STORM DRAINAGE SYSTEM AND INLET PROTECTION, PROTECTING PIPE OPENINGS AND UNCOVERED STRUCTURES AS SHOWN.

2. INSTALL SANITARY SEWER SYSTEM AND WATER LINE PIPING PER UTILITY PLAN. ENSURE EXISTING UTILITES ARE PROTECTED DURING CONSTRUCTION ACTIVITIES.

3. STABILIZE DISTURBED AREAS WITHIN 14 WORKING DAYS AFTER COMPLETION OF ANY PHASE OF GRADING. STABILIZATION CONSISTS OF EITHER TEMPORARY MULCHING OR PERMANENT VEGETATION ON AREAS THAT ARE NOT PAVED.

4. REGULARLY INSPECT AND MAINTAIN THE EROSION CONTROL DEVICES SO THEY CONTINUE TO FUNCTION PROPERLY. NSPECT TEMPORARY SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN IT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH. PLACE REMOVED SEDIMENT IN AN AREA WITH SEDIMENT CONTROLS. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA

5. KEEP MUD AND DEBRIS OFF THE PUBLIC STREETS AT ALL TIMES. IF MUD OR DEBRIS IS TRACKED FROM THE SITE, USE A SHOVEL AND BROOM TO REMOVE IT IMMEDIATELY. IF MUD AND DEBRIS ARE NOT KEPT OFF THE STREET, ENFORCEMENT ACTION (REVOKING THE GRADING PERMIT AND/OR STOP WORK ORDER) MAY BE TAKEN.

6. IF IT IS DETERMINED DURING THE COURSE OF CONSTRUCTION THAT SIGNIFICANT SEDIMENT IS LEAVING THE SITE DESPITE PROPER IMPLEMENTATION AND MAINTENANCE OF THE APPROVED EROSION CONTROL PLAN, THE PERSON RESPONSIBLE FOR THE LAND DISTURBING ACTIVITY IS OBLIGATED TO TAKE ADDITIONAL PROTECTIVE ACTION.

7. CONTINUE TO PHASE 3 ACITIVITES.

LINE AND SYMBOL LEGEND

- SFO — SILT FENCE OUTLET
- DENUDED AREA OUTLINE
- SF — SILT FENCE
- TEMPORARY DIVERSION DITCH
- X — BAFFLES
- TPF — TREE PROTECTION FENCE
- CHECK DAM
- INLET PROTECTION
- SLOPE DRAIN

Graphic Scale

20 0 10 20 40 80

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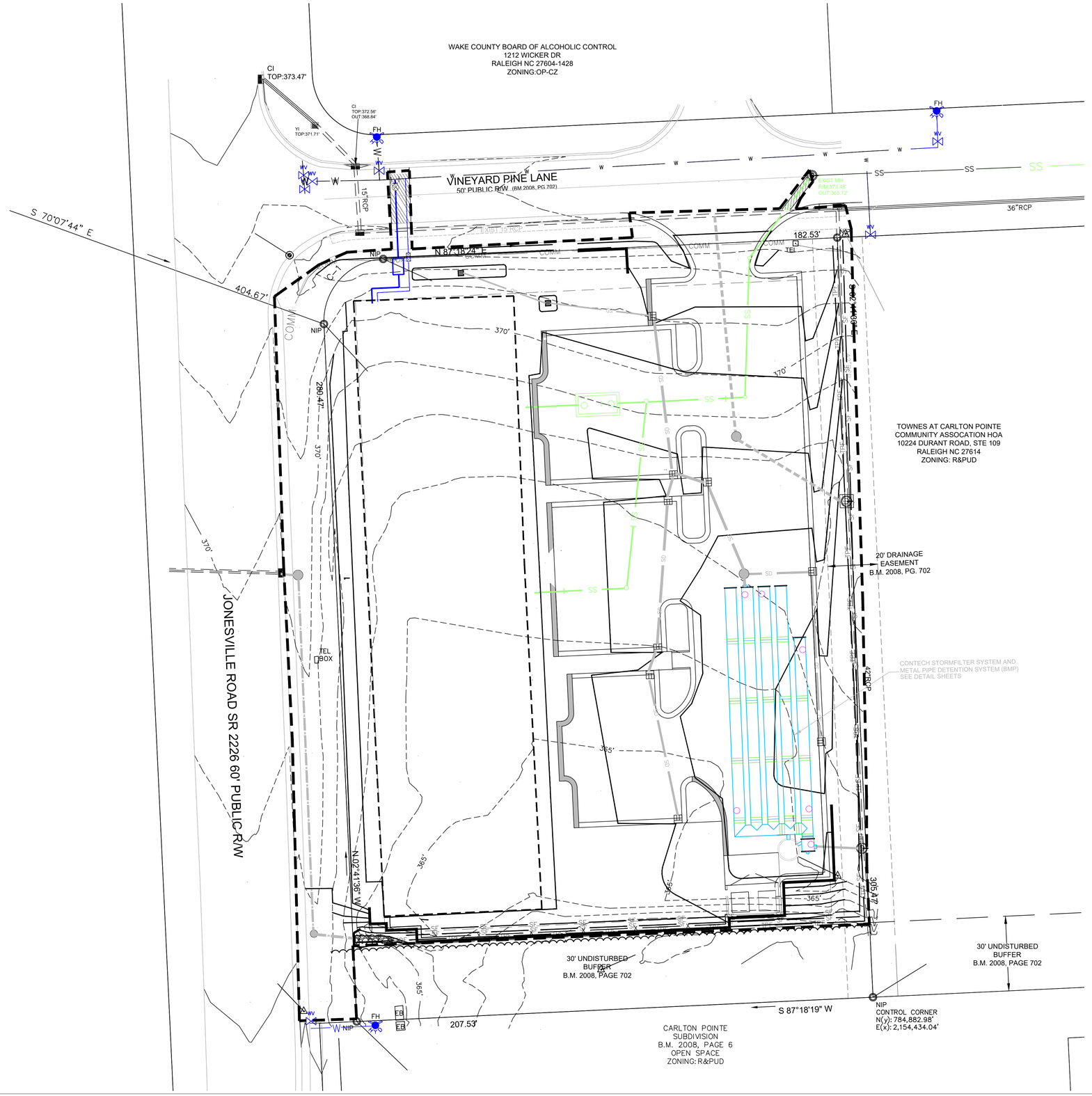
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NORTH CAROLINA
PROFESSIONAL
SEAL
030113
ENGINEER
KEITH P. GETTLE

Erosion Control Phase 2
Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.
EC2



LINE AND SYMBOL LEGEND

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- SLOPE DRAIN

BASIN DEWATERING SPECIFICATIONS

SEDIMENT FILTER BAG

- SEDIMENT FILTER BAGS ARE SPECIFICALLY DESIGNED TO CONTROL PUMPED WATER AND CONNECT DIRECTLY TO THE PUMP DISCHARGE LINE.
- BAGS SHOULD BE PLACED ON A LEVEL, STABLE SURFACE THAT IS PREPARED WITH MULCH, STRAW, SMALL AGGREGATE, OR OTHER MATERIAL AS RECOMMENDED BY THE MANUFACTURER. THE BAG SHOULD BE MADE OF A NON-WOVEN, NEEDLE-PUNCHED, GEOTEXTILE THAT MEETS THE FOLLOWING MINIMUM CRITERIA: 205 LBS MINIMUM TENSILE STRENGTH USING ASTM D4632 TEST METHOD FOR GRAB BREAKING LOAD AND ELONGATION OF GEOTEXTILES.
- 130 LBS MINIMUM PUNCTURE STRENGTH USING ASTM D4833 TEST METHOD FOR INDEX PUNCTURE RESISTANCE OF GEOTEXTILES, GEOMEMBRANES, AND RELATED PRODUCTS.
- 400 PSI MINIMUM MULLEN BURST STRENGTH USING ASTM D3786 STANDARD TEST METHOD FOR HYDRAULIC BURSTING STRENGTH OF TEXTILE FABRICS-DIAPHRAGM BURSTING STRENGTH TESTER METHOD.
- MINIMUM 70 PERCENT AT 500 HOURS ULTRAVIOLET RESISTANCE USING ASTM D4355 STANDARD TEST METHOD FOR DETERIORATION OF GEOTEXTILES BY EXPOSURE TO LIGHT, MOISTURE, AND HEAT IN A XENON ARC TYPE APPARATUS.
- 85 TO 110 GPM/FT2 WATER FLOW RATE USING ASTM D4491 STANDARD TEST METHODS FOR WATER PERMEABILITY OF GEOTEXTILES BY PERMITTIVITY.

DEWATERING PUMP

- THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

CONSTRUCTION SEQUENCE - PHASE 3

1. CONSTRUCT CONCRETE CURB IN ROADWAYS AND PARKING LOT. PLACE AND COMPACT STONE IN THE ROADWAYS AND PARKING LOT. REMOVE THE GRAVEL ENTRACE.

2. COMPLETE FINE GRADING AND STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE.

3. ONCE THE SITE IS STABILIZED AND APPROVAL FROM STORMWATER INSPECTIONS TO SCHEDULE THE REMOVAL OF THE SEDIMENT BASIN (SEE NOTES BELOW). DEWATER SEDIMENT BASIN USING A SILT BAG AND MUCK OUT REMAINING SEDIMENT.

2. BEGIN INSTALLATION OF THE BMP AND ASSOCIATED STRUCTURES. CONTACT PROJECT ENGINEER TO INSPECT DURING INSTALLATION PROCESS. SURVEY INVERT ELEVATIONS FOR AS-BUILT INFORMATION REQUIRED BY THE TOWN OF ROLESVILLE AND WAKE COUNTY.

3. GRADE ANY REMAINING AREAS TO FINAL GRADE. UPON COMPLETION THE GROUND COVER SHALL BE PROVIDED AS FOLLOWS:
A. STABILIZE BASINS WITH GROUND COVER IMMEDIATELY AFTER INSTALLATION.
B. STABILIZE DIVERSION DITCHES INTENDED TO BE IN SERVICE FOR 30 DAYS OR MORE WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING.
C. FOR ALL AREAS OF MODERATE AND/OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF FOURTEEN (14) DAYS.
D. PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN WITHIN FOURTEEN (14) CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY
E. ESTABLISH PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION WITHIN FOURTEEN (14) CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT AND/OR PRIOR TO FINAL INSPECTION.

4. ONCE THE BMP INSTALLATION IS COMPLETE, TEMPORARY MEASURES ARE REMOVED, THE SITE IS STABILIZED, CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT, (919) 856-7436, TO SCHEDULE A STORMWATER INSPECTION.

REQUIRED WAKE COUNTY BASIN REMOVAL SEQUENCE

1. SCHEDULE A SITE MEETING WITH THE WAKE COUNTY ENVIRONMENTAL, (919) 856-7436, TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.

2. CONTACT NCDEQ – RALEIGH REGIONAL OFFICE (919) 791-4200 TO DETERMINE THE DIVISION OF ENERGY, MINERAL AND LAND RESOURCES CONTACT PERSON TO RECEIVE DEWATERING NOTIFICATIONS. AT LEAST 10 DAYS PRIOR TO BEGINNING DEWATERING ACTIVITY, SEND EMAIL TO NCDEQ-DEMLR CONTACT PERSON AND COPY ENVIRONMENTAL CONSULTANT THAT MET YOU ONSITE. THE EMAIL SHOULD INCLUDE: E&SC JURISDICTION: WAKE COUNTY, WAKE COUNTY PROJECT: NAME, NUMBER, AND LOCATION (CITY/TOWN), ENVIRONMENTAL CONSULTANT NAME, AND ADDRESS THE FOLLOWING: A)REASON FOR CONVERSION, B)BASIN #, C)DEWATERING METHOD, AND D) ALL OTHER NECESSARY INFO FROM PART II, SECTION G, ITEM 4 OF THE NCG01.(KEEP EMAIL FOR YOUR NPDES MONITORING DOCUMENTATION)

3. AFTER RECEIVING POSITIVE CONFIRMATION FROM NCDEQ-DEMLR THAT YOU MAY REMOVE THE BASIN OR ON > DAY 11, WHICHEVER IS SOONER, REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES. IF PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.

4. PERFORM SEEDBED PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY.

5. INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.

6. WHEN SITE IS FULLY STABILIZED, CALL WAKE COUNTY ENVIRONMENTAL CONSULTANT, (919) 856-7436, FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVICE ON WHEN SITE CAN BE ISSUED A CERTIFICATE OF COMPLETION. NOTE: A MEETING SHOULD ALSO BE SCHEDULED WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE WHEN A BASIN MAY BE CONVERTED FOR STORMWATER USE.

Graphic Scale
20 0 10 20 40 80

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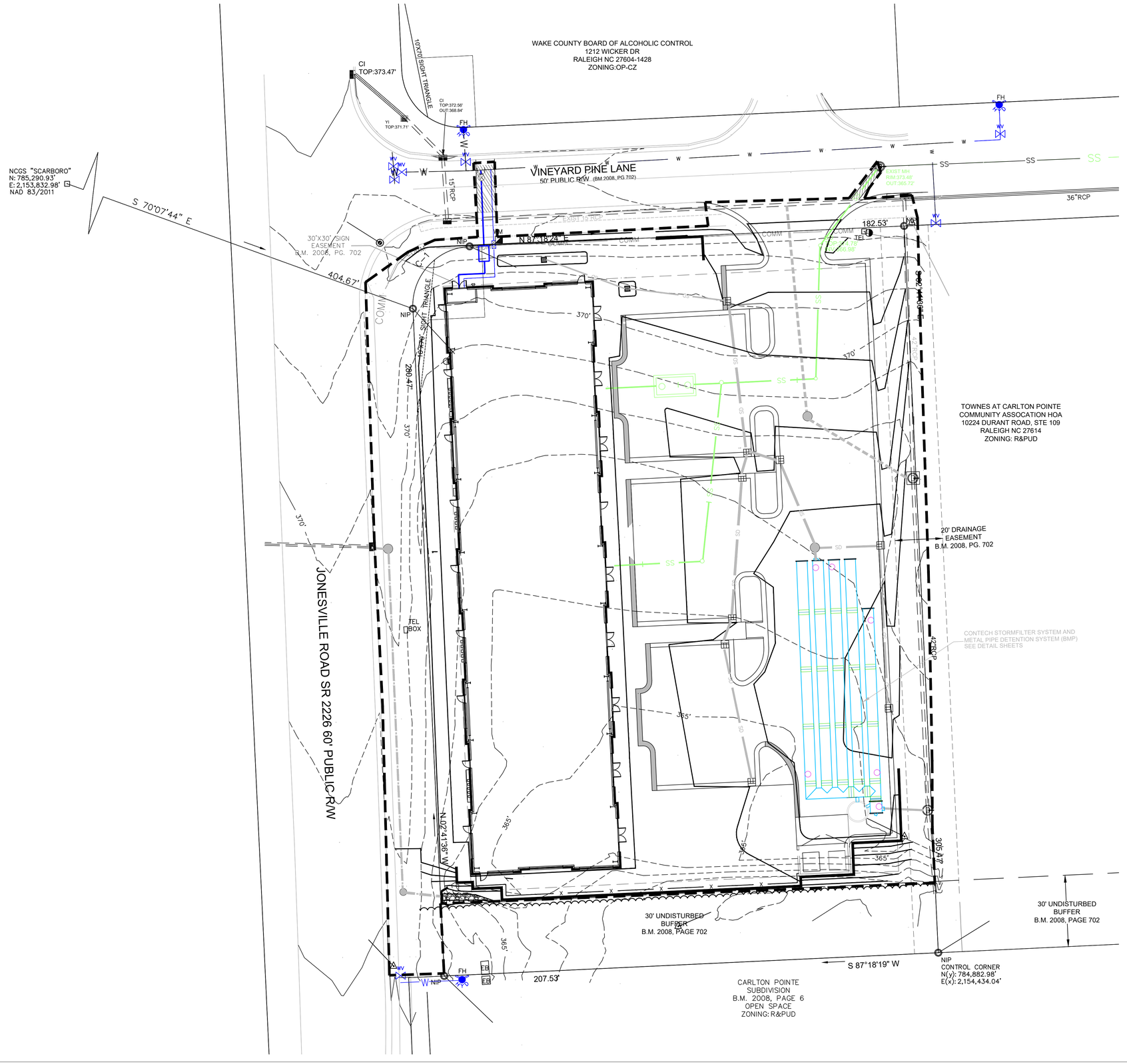
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049618 ENGINEER KEITH P. GETTLE

Erosion Control Phase 3
Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.
EC3



LINE AND SYMBOL LEGEND

- SFO — SILT FENCE OUTLET
- DENUDED AREA OUTLINE
- SF — SILT FENCE
- TEMPORARY DIVERSION DITCH
- X — BAFFLES
- TPF — TREE PROTECTION FENCE
- CHECK DAM
- INLET PROTECTION
- SLOPE DRAIN

CONSTRUCTION SEQUENCE - PHASE 4

1. ENSURE THE SITE IS COMPLIANT WITH THE NCG01 SELF INSPECTION AND GROUND STABILIZATION AND MATERIAL HANDLING.

2. FOR ALL AREAS OF MODERATE AND / OR STEEP SLOPES, PROVIDE TEMPORARY GROUND COVER IF THE SLOPE HAS NOT BEEN DISTURBED FOR A PERIOD OF FOURTEEN (14) DAYS.

3. PROVIDE GROUND COVER SUFFICIENT TO RESTRAIN EROSION ON ANY PORTION OF THE SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN WITHIN FOURTEEN (14) CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY.

4. REMOVE SILT FENCE AND TREE PROTECTION FENCING WHEN GRADING ACTIVITIES ARE COMPLETE AND THE PROJECT SITE IS STABLIIZED.

5. ONCE THE BMP INSTALLATION IS COMPLETE, TEMPORARY MEASURES ARE REMOVED, THE SITE IS STABILIZED, CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT, (919) 856-7436, TO SCHEDULE A STORMWATER FINAL INSPECTION. BMP CERTIFICATIONS AND AS-BUILT PLANS MUST BE PROVIDED TO WAKE COUNTY / TOWN OF ROLESVILLE PRIOR TO FINAL PLATTING.

6. ONCE THE STORMWATER FINAL INSPECTION IS APPROVED, CLOSE THE GRADING PERMIT AND OBTAIN A CERTIFICATE OF COMPLETION.

NPDES NOTES

1. THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER PERMIT NCG010000.

2. THIS PAGE CAN BE APPROVED BY THE CITY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000 ONLY.

3. THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCLUSIVELY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000.

4. THE CITY / COUNTY IS NOT AUTHORIZED TO ENFORCE THIS PAGE OF THE PLANS AND IT IS NOT A PART OF THE APPROVED PLANS FOR PURPOSES OF ENFORCEMENT ACTION UNDER THE CITY / COUNTY CODE.

5. DOCUMENTATION REQUIRED UNDER THE SITE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY SHALL BE SUBMITTED TO WAKE COUNTY.

NPDES GROUND STABILIZATION SCHEDULE

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS	APPLICABLE AREA ON THIS SITE
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED	NONE
SLOPES 3:1 OR FLATTER	14 DAYS	7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH	AS SHOWN
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)	REMAINDER OF SITE

Graphic Scale

20 0 10 20 40 80

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10/22/26

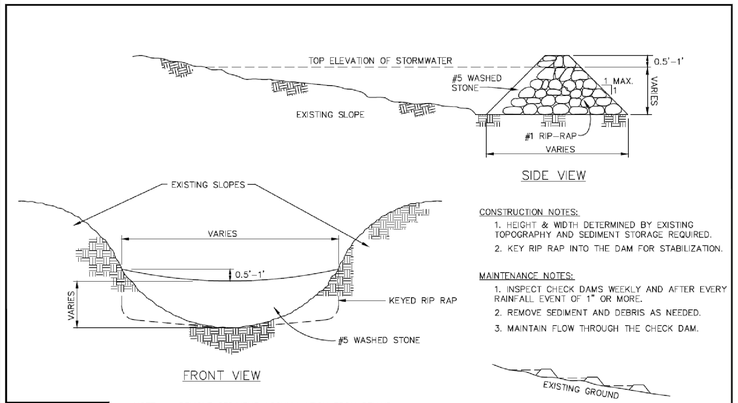
Erosion Control Phase 4

Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
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Dwg No.

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CONSTRUCTION NOTES:

1. HEIGHT & WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.
2. KEY RIP RAP INTO THE DAM FOR STABILIZATION.

MAINTENANCE NOTES:

1. INSPECT CHECK DAMS WEEKLY AND AFTER EVERY RAINFALL EVENT OF 1" OR MORE.
2. REMOVE SEDIMENT AND DEBRIS AS NEEDED.
3. MAINTAIN FLOW THROUGH THE CHECK DAM.

NOTE: REMOVE SEDIMENT ACCUMULATION FROM BEHIND CHECK DAMS TO PREVENT DAMAGE TO CHANNEL VEGETATION. FLOW SHOULD BE MAINTAINED THROUGH THE DAM.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

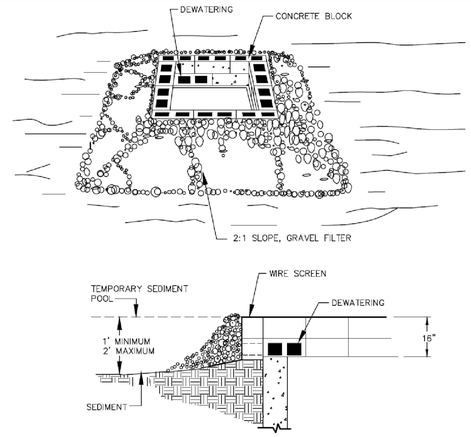
STANDARD CHECK DAM

CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCHES BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. IF NEEDED, GIVE LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2x4 WOOD STUDS THROUGH BLOCK OPENINGS.
2. CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2 INCH OPENINGS OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
3. USE CLEAN GRAVEL, 3/4 TO 1/2 INCH IN DIAMETER, PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE. DOT #57 WASHED STONE IS RECOMMENDED.

MAINTENANCE NOTES:

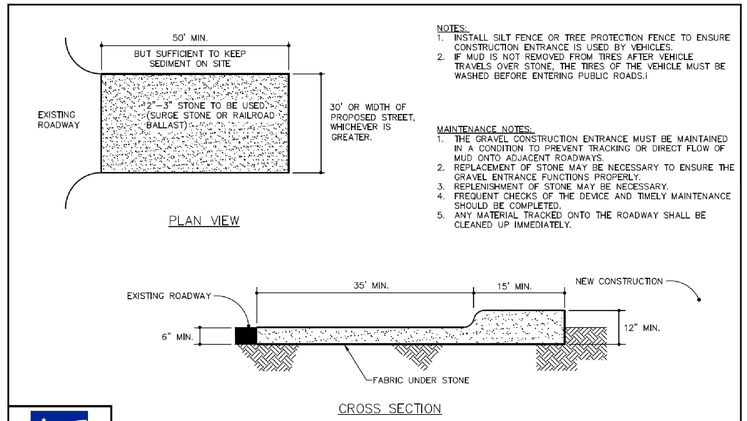
1. INSPECT INLET PROTECTION AND REMOVE SEDIMENT AFTER EACH 1" RAIN EVENT.
2. REMOVE SEDIMENT WHEN VOLUME OF THE BASIN IS REDUCED BY ONE-HALF.
3. GRAVEL SHOULD BE REPLACED AND REPAIRS MADE AS NEEDED.



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

STANDARD BLOCK & GRAVEL DROP INLET PROTECTION



NOTES:

1. INSTALL SILT FENCE OR TREE PROTECTION FENCE TO ENSURE CONSTRUCTION ENTRANCE IS USED BY VEHICLES.
2. IF MUD IS NOT REMOVED FROM TIRES AFTER VEHICLE TRAVELS OVER STONE, THE TIRES OF THE VEHICLE MUST BE WASHED BEFORE ENTERING PUBLIC ROADS.I

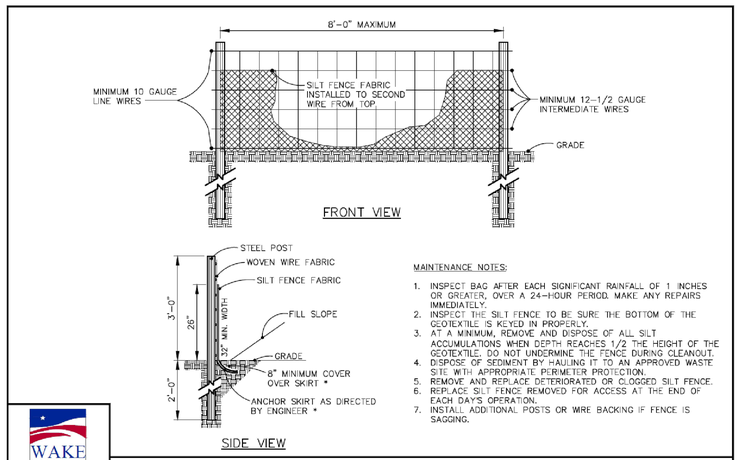
MAINTENANCE NOTES:

1. THE GRAVEL CONSTRUCTION ENTRANCE MUST BE MAINTAINED IN A CONDITION TO PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO ADJACENT ROADWAYS.
2. REPLACEMENT OF STONE MAY BE NECESSARY TO ENSURE THE GRAVEL ENTRANCE FUNCTIONS PROPERLY.
3. REPLENISHMENT OF STONE MAY BE NECESSARY.
4. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE SHOULD BE COMPLETED.
5. ANY MATERIAL TRACKED ONTO THE ROADWAY SHALL BE CLEANED UP IMMEDIATELY.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

STANDARD CONSTRUCTION ENTRANCE



MAINTENANCE NOTES:

1. INSPECT BAG AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24-HOUR PERIOD. MAKE ANY REPAIRS IMMEDIATELY.
2. INSPECT THE SILT FENCE TO BE SURE THE BOTTOM OF THE GEOTEXTILE IS KEYED IN PROPERLY.
3. AT A MINIMUM, REMOVE AND DISPOSE OF ALL SILT ACCUMULATIONS WHEN DEPTH REACHES 1/2 THE HEIGHT OF THE GEOTEXTILE. DO NOT UNDERMINE THE FENCE DURING CLEANOUT.
4. DISPOSE OF SEDIMENT BY HAULING IT TO AN APPROVED WASTE SITE WITH APPROPRIATE PERIMETER PROTECTION.
5. REMOVE AND REPLACE DETERIORATED OR CLOGGED SILT FENCE.
6. REPLACE SILT FENCE REMOVED FOR ACCESS AT THE END OF EACH DAY'S OPERATION.
7. INSTALL ADDITIONAL POSTS OR WIRE BACKING IF FENCE IS SAGGING.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

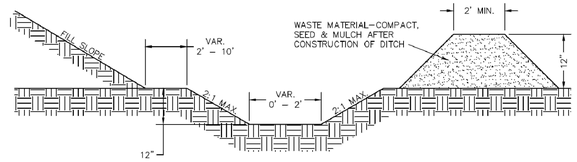
STANDARD TEMPORARY SILT FENCE

NOTES:

1. TEMPORARY DIVERSION DITCH TO BE USED TO INTERCEPT FLOW AND/OR DIVERT TO A SEDIMENT CONTROL MEASURE OR BMP.
2. STABILIZE DIVERSION DITCH BERM WITH TEMPORARY SEEDING, MULCH WITH TAC, AND/OR EROSION CONTROL NETTING.

MAINTENANCE NOTES:

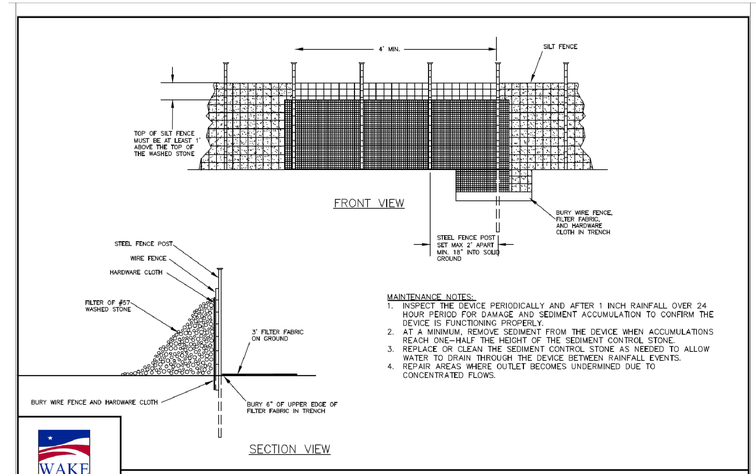
1. INSPECT ONCE A WEEK AND AFTER EVERY 1" RAINFALL.
2. SILT SHALL BE REMOVED WHEN DITCH IS ONE-HALF FULL.
3. DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.
4. CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.
5. AFTER DRAINAGE AREA IS PERMANENTLY STABILIZED, PLACE WASTE MATERIAL IN DITCH TO BLEND WITH NATURAL GROUND AND STABILIZE.



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

STANDARD TEMPORARY DIVERSION DITCH



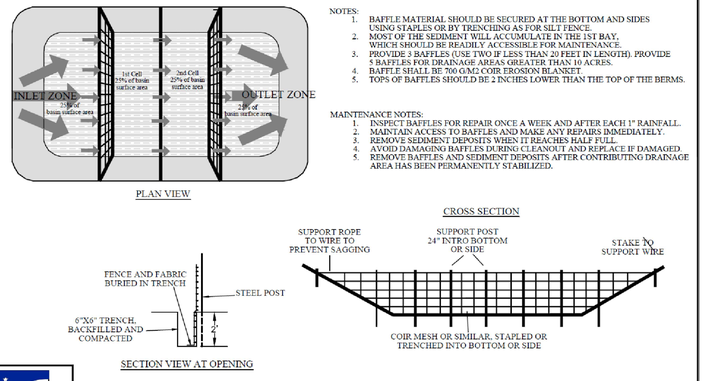
MAINTENANCE NOTES:

1. INSPECT THE DEVICE PERIODICALLY AND AFTER 1 INCH RAINFALL OVER 24 HOUR PERIOD FOR DAMAGE AND SEDIMENT ACCUMULATION TO CONFIRM THE DEVICE IS FUNCTIONING PROPERLY.
2. AT A MINIMUM, REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL STONE.
3. REPLACE OR CLEAN THE SEDIMENT CONTROL STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS.
4. REPAIR AREAS WHERE OUTLET BECOMES UNDERMINED DUE TO CONCENTRATED FLOWS.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

STANDARD SILT FENCE OUTLET



NOTES:

1. BAFFLE MATERIAL SHOULD BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
2. MOST OF THE SEDIMENT WILL ACCUMULATE IN THE 1ST BAY, WHICH SHOULD BE READILY ACCESSIBLE FOR MAINTENANCE.
3. PROVIDE 3 BAFFLES (USE TWO IF LESS THAN 20 FEET IN LENGTH). PROVIDE 5 BAFFLES FOR DRAINAGE AREAS GREATER THAN 10 ACRES.
4. BAFFLE SHALL BE 700 G/M2 COIR EROSION BLANKET.
5. TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE BERMS.

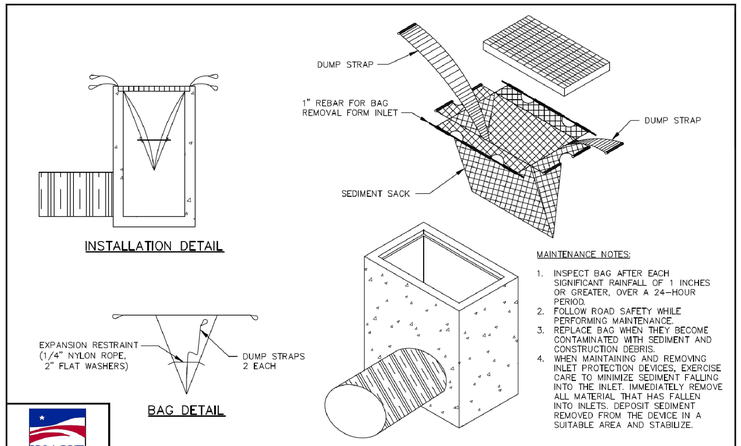
MAINTENANCE NOTES:

1. INSPECT BAFFLES FOR REPAIR ONCE A WEEK AND AFTER EACH 1" RAINFALL.
2. MAINTAIN ACCESS TO BAFFLES AND MAKE ANY REPAIRS IMMEDIATELY.
3. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL.
4. AVOID DAMAGING BAFFLES DURING CLEANOUT AND REPLACE IF DAMAGED.
5. REMOVE BAFFLES AND SEDIMENT DEPOSITS AFTER CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

STANDARD BAFFLES DETAIL



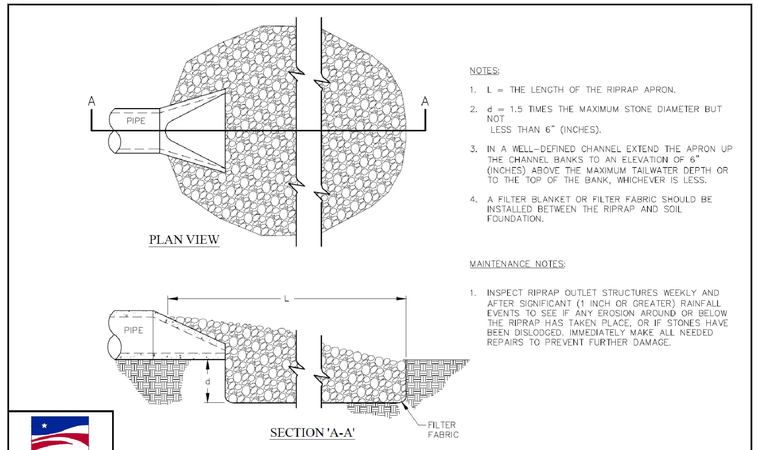
MAINTENANCE NOTES:

1. INSPECT BAG AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24-HOUR PERIOD.
2. FOLLOW ROAD SAFETY WHILE PERFORMING MAINTENANCE.
3. REPLACE BAG WHEN THEY BECOME CONTAMINATED WITH SEDIMENT AND CONSTRUCTION DEBRIS.
4. WHEN MAINTAINING AND REMOVING INLET PROTECTION DEVICES, EXERCISE CARE TO MINIMIZE SEDIMENT FALLING INTO THE INLET. IMMEDIATELY REMOVE ALL MATERIAL THAT HAS FALLEN INTO INLETS. DEPOSIT SEDIMENT REMOVED FROM THE DEVICE IN A SUITABLE AREA AND STABILIZE.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

STANDARD SILT BAG - INLET SEDIMENT CONTROL DEVICE



NOTES:

1. L = THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" (INCHES) ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

MAINTENANCE NOTES:

1. INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

STANDARD PIPE OUTLET TO WELL-DEFINED CHANNEL

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	KPG
2	5-22-2026	Town / Wake County Commnet	KPG
3	07-28-2026	WAKE COUNTY AND TOWN REVIEW	KPG
4	09-23-2026	Rev Per Town Of Rolesville Comments	KPG
5	10-22-2026	SIGNATURE SET	KPG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038473 KEITH P GETTLE 10/22/26

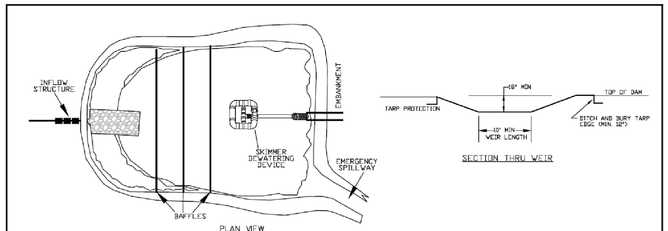
Erosion Control Details

Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.

EC5



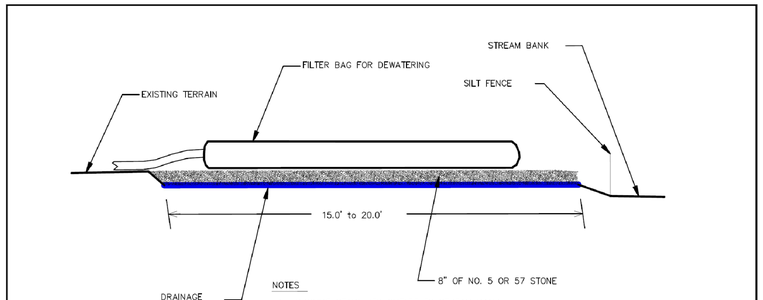
MAINTENANCE NOTES:

1. INSPECT THE BASIN ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (1 INCH OR GREATER).
2. CLEAN OUT THE BASIN WHEN SEDIMENT ACCUMULATIONS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE FIRST BAFFLE.
3. CHECK THE SKIMMER TO MAKE SURE THAT IT IS NOT CLOGGED WITH SEDIMENT.
4. CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE.
5. CHECK THE COIR FIBER MAT AT THE OUTLET OF THE SKIMMER TO DETERMINE IF A REPLACEMENT IS NEEDED.
6. DURING WINTER, SUPPORT THE SKIMMER AT AN ANGLE SUCH THAT WATER DOES NOT STAND INSIDE THE BARREL. THIS COULD RESULT IN THE WATER FREEZING AND PLUGGING THE SKIMMER.
7. REPAIR SEED AND REPLACE MATTING ON THE SIDE SLOPE AREAS THAT HAVE ERODED OR HAVE BECOME DAMAGED BY EQUIPMENT FROM SILT CLEANOUT.
8. REMOVE SEDIMENT THAT MAY ACCUMULATE ON THE STONE PAD UNDERNEATH THE SKIMMER DEVICE.
9. INSPECT THE BAFFLES AFTER EACH RAIN EVENT FOR EROSION DAMAGE AND SEDIMENT ACCUMULATIONS.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

STANDARD SKIMMER BASIN



NOTES

1. PROVIDE STABILIZED OUTLET TO STREAM BANK.
2. WOOD PALLETS MAY BE USED IN LIEU OF STONE AND GEOTEXTILE AS DIRECTED. A SUFFICIENT NUMBER OF PALLETS MUST BE PROVIDED TO ELEVATE THE ENTIRE FILTER BAG FOR DEWATERING ABOVE NATURAL GROUND.

MAINTENANCE NOTES

1. REPLACE AND DISPOSE OF FILTER BAG(S) WHEN IT IS ½ FULL OF SEDIMENT OR WHEN IT IS IMPRACTICAL FOR BAG TO FILTER SEDIMENT.
2. PROVIDE A SUFFICIENT QUANTITY OF FILTER BAGS TO CONTAIN SILT FROM PUMPED EFFLUENT.

NOT TO SCALE

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

STANDARD FILTER BAG FOR DEWATERING ACTIVITIES

BASIN CONSTRUCTION SPECIFICATIONS

1. SITE PREPARATIONS- CLEAR, GRUB, AND STRIP TOPSOIL FROM AREAS UNDER THE EMBANKMENT TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. DELAY CLEARING THE POOL AREA UNTIL THE DAM IS COMPLETE AND THEN REMOVE BRUSH, TREES, AND OTHER OBJECTIONABLE MATERIALS TO FACILITATE SEDIMENT CLEANOUT. STOCKPILE ALL TOPSOIL OR SOIL CONTAINING ORGANIC MATTER FOR USE ON THE OUTER SHELL OF THE EMBANKMENT TO FACILITATE VEGETATIVE ESTABLISHMENT. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW THE BASIN AS NEEDED.

2. CUT-OFF TRENCH- EXCAVATE A CUT-OFF TRENCH ALONG THE CENTER LINE OF THE EARTH FILL EMBANKMENT. CUT THE TRENCH TO STABLE SOIL MATERIAL, BUT IN NO CASE MAKE IT LESS THAN 2 FEET DEEP. THE CUT-OFF TRENCH MUST EXTEND INTO BOTH ABUTMENTS TO AT LEAST THE ELEVATION OF THE RISER CREST. MAKE THE MINIMUM BOTTOM WIDTH WIDE ENOUGH TO PERMIT OPERATION OF EXCAVATION AND COMPACTION EQUIPMENT, BUT IN NO CASE LESS THAN 2 FEET. MAKE SIDE SLOPES OF THE TRENCH NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS ARE THE SAME AS THOSE FOR THE EMBANKMENT. KEEP THE TRENCH DRY DURING BACKFILLING AND COMPACTION OPERATIONS.

3. EMBANKMENT- TAKE FILL MATERIAL FROM THE APPROVED AREAS SHOWN ON THE PLANS. IT SHOULD BE CLEAN MINERAL SOIL, FREE OF ROOTS, WOODY VEGETATION, ROCKS, AND OTHER OBJECTIONABLE MATERIAL. SCARIFY AREAS ON WHICH FILL IS TO BE PLACED BEFORE PLACING FILL. THE FILL MATERIAL MUST CONTAIN SUFFICIENT MOISTURE SO IT CAN BE FORMED BY HAND INTO A BALL WITHOUT CRUMBLING. IF WATER CAN BE SQUEEZED OUT OF THE BALL, IT IS TOO WET FOR PROPER COMPACTION. PLACE FILL MATERIAL IN 6 TO 8 INCH CONTINUOUS LAYERS OVER THE ENTIRE LENGTH OF THE FILL AREA AND COMPACT IT. COMPACTION MAY BE OBTAINED BY ROUTING THE CONSTRUCTION HAULING EQUIPMENT OVER THE FILL SO THAT THE ENTIRE SURFACE OF EACH LAYER IS TRAVERSED BY AT LEAST ONE WHEEL OR TREAD TRACK OF HEAVY EQUIPMENT, OR A COMPACTOR MAY BE USED. CONSTRUCT THE EMBANKMENT TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLING.

4. CONDUIT SPILLWAYS- SECURELY ATTACH THE RISER TO THE BARREL OR BARREL STUB TO MAKE A WATERTIGHT STRUCTURAL CONNECTION. SECURE ALL CONNECTIONS BETWEEN BARREL SECTIONS BY APPROVED WATERTIGHT ASSEMBLIES. PLACE THE BARREL AND RISER ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL. DO NOT USE PERVIOUS MATERIAL SUCH AS SAND, GRAVEL, OR CRUSHED STONE AS BACKFILL AROUND THE PIPE OR ANTI-SEEP COLLARS. PLACE THE FILL MATERIAL AROUND THE PIPE SPILLWAY IN 4-INCH LAYERS, AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. CARE MUST BE TAKEN NOT TO RAISE THE PIPE FROM FIRM CONTACT WITH ITS FOUNDATION WHEN COMPACTING UNDER THE PIPE HAUNCHES. PLACE A MINIMUM DEPTH OF 2 FEET OF COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. ANCHOR THE RISER IN PLACE BY CONCRETE OR OTHER SATISFACTORY MEANS TO PREVENT FLOTATION. IN NO CASE SHOULD THE PIPE CONDUIT BE INSTALLED BY CUTTING A TRENCH THROUGH THE DAM AFTER THE EMBANKMENT IS COMPLETE.

5. EMERGENCY SPILLWAY- INSTALL THE EMERGENCY SPILLWAY IN UNDISTURBED SOIL. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADE, DESIGN WIDTH, AND ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE EMERGENCY SPILLWAY.

6. INLETS- DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. USE DIVERSIONS WITH OUTLET PROTECTION TO DIVERT SEDIMENT-LADEN WATER TO THE UPPER END OF THE POOL AREA TO IMPROVE BASIN TRAP EFFICIENCY (REFERENCES: RUNOFF CONTROL MEASURES AND OUTLET PROTECTION).

7. EROSION CONTROL- CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED. DIVERT SURFACE WATER AWAY FROM BARE AREAS. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT AND ALL OTHER DISTURBED AREAS ABOVE THE CREST OF THE PRINCIPAL SPILLWAY IMMEDIATELY AFTER CONSTRUCTION (REFERENCES: SURFACE STABILIZATION).

8. INSTALL POROUS BAFFLES .

9. SAFETY- SEDIMENT BASINS MAY ATTRACT CHILDREN AND CAN BE DANGEROUS. AVOID STEEP SIDE SLOPES, AND FENCE AND MARK BASINS WITH WARNING SIGNS IF TRESPASSING IS LIKELY. FOLLOW ALL STATE AND LOCAL REQUIREMENTS.

GROUND STABILIZATION PER NCG01 NPDES STORMWATER DISCHARGE PERMIT FOR CONSTRUCTION ACTIVITIES

REQUIRED GROUND STABILIZATION TIMEFRAMES

SITE AREA DESCRIPTION: PERIMETER DIKES, SWALES, DITCHES AND PERIMETER SLOPES STABILIZE WITHIN THIS MANY CALENDAR DAYS AFTER CEASING LAND DISTURBANCE: 7
TIMEFRAME VARIATIONS:NONE
SITE AREA DESCRIPTION: HIGH QUALITY WATER (HQW) ZONES STABILIZE WITHIN THIS MANY CALENDAR DAYS AFTER CEASING LAND DISTURBANCE: 7
TIMEFRAME VARIATIONS: NONE
SITE AREA DESCRIPTION:SLOPES STEEPER THAN 3:1 STABILIZE WITHIN THIS MANY CALENDAR DAYS AFTER CEASING LAND DISTURBANCE: 7
TIMEFRAME VARIATIONS:IF SLOPES ARE 10 FT OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.

SITE AREA DESCRIPTION: SLOPES 3:1 TO 4:1STABILIZE WITHIN THIS MANY CALENDAR DAYS AFTER CEASING LAND DISTURBANCE: 14
TIMEFRAME VARIATIONS:7 DAYS FOR SLOPES GREATER THAN 50 FT IN LENGTH AND STEEPER THAN 4:1,7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND HQW ZONE, 10 DAYS FOR FALLS LAKE WATERSHED

SITE AREA DESCRIPTION: SLOPES FLATTER THAN 4:1,STABILIZE WITHIN THIS MANY CALENDAR DAYS AFTER CEASING LAND DISTURBANCE: 14,
TIMEFRAME VARIATIONS: 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND HQW ZONES, 10 DAYS FOR FALLS LAKE WATERSHED UNLESS THERE IS ZERO SLOPE
NOTE: AFTER THE PERMANENT CESSATION OF CONSTRUCTION ACTIVITIES, ANY AREAS WITH TEMPORARY GROUND STABILIZATION MUST BE CONVERTED TO PERMANENT STABILIZATION AS SOON AS PRACTICABLE, BUT NO LATER THAN 90 CALENDAR DAYS AFTER THE LAST LAND-DISTURBING ACTIVITY. TEMPORARY STABILIZATION MUST BE MAINTAINED TO PREVENT EROSION UNTIL PERMANENT STABILIZATION IS ACHIEVED.

GROUND STABILIZATION SPECIFICATION TEMPORARY STABILIZATION, TEMPORARY GRASS SEED COVERED WITH STRAW OR OTHER MULCHES AND TACKIFIERS, HYDROSEEDING, ROLLED EROSION CONTROL PRODUCTS WITH OR WITHOUT TEMPORARY GRASS SEED APPROPRIATELY APPLIED STRAW OR OTHER MULCHPLASTIC SHEETING PERMANENT STABILIZATION

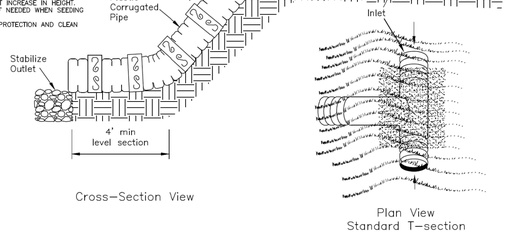
PERMANENT GRASS SEED COVERED WITH STRAW OR OTHER MULCHES AND TACKIFIERS GEOTEXTILE FABRICS SUCH AS PERMANENT SOIL REINFORCEMENT MATTINGHYDROSEEDING SHRUBS OR OTHER PERMANENT PLANTINGS COVERED WITH MULCH UNIFORM, EVENLY DISTRIBUTED GROUND COVER SUFFICIENT TO RESTRAIN EROSION STRUCTURAL METHODS SUCH AS CONCRETE, ASPHALT OR RETAINING WALLS ROLLED EROSION CONTROL PRODUCTS WITH GRASS SEEDSEEDBED PREPARATION CHISEL COMPACTED AREAS AND SPREAD TOPSOIL THREE INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE. RIP THE ENTIRE AREA TO SIX INCHES DEEP. REMOVE ALL LOOSE ROCK, ROOTS AND OTHER OBSTRUCTIONS, LEAVING THE SURFACE REASONABLY SMOOTH AND UNIFORM. APPLY AGRICULTURAL LIME, FERTILIZER AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH THE SOIL (SEE MIXTURE BELOW). CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED FOUR TO SIX INCHES DEEP.SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDING WITHIN THE PLANTING SEASON. IF POSSIBLE. IF THE STAND IS MORE THAN 60% DAMAGED, REESTABLISH IT USING THE ORIGINAL LIME, FERTILIZER AND SEEDING RATES.CONSULT WAKE COUNTY SOIL & WATER OR NC STATE COOPERATIVE EXTENSION ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

SEEDING MIXTURES
MIXTURE APPLICATION RATES MIXTURE: AGRICULTURAL LIMESTONE
APPLICATION: 2 TONS PER ACRE, OR 3 TONS PER ACRE IN CLAY SOILS MIXTURE: FERTILIZER
APPLICATION:1,000 LBS PER ACRE (APPLY 10-10-10)
MIXTURE:SUPERPHOSPHATE
APPLICATION:500 LBS PER ACRE (20% ANALYSIS)
MIXTURE:MULCH OR SMALL GRAIN STRAW
APPLICATION:2 TONS PER ACRE
MIXTURE: ANCHOR
APPLICATION: ASPHALT EMULSION AT 400 GAL PER ACRE
SEEDING SCHEDULE FOR SHOULDERS, SIDE DITCHES, SLOPES (MAX 3:1)
DATE: AUG 15 – NOV 1
TYPE: TALL FESCUE
PLANTING RATE: 300 LBS PER ACRE
DATE: NOV 1 – MAR 1
TYPE: TALL FESCUE & ABRUZZI RYE
PLANTING RATE:300 LBS PER ACRE
DATE:MAR 1 – APR 15
TYPE:TALL FESCUE
PLANTING RATE: 300 LBS PER ACRE
DATE: APR 15 – JUN 30
TYPE: HULLED COMMON BERMUDAGRASS
PLANTING RATE: 25 LBS PER ACRE
DATE: JUL 1 – AUG 15
*TYPE: ALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS**
PLANTING RATE: 125 LBS PER ACRE (TALL FESCUE), 35 LBS PER ACRE (BROWNTOP MILLET), 30 LBS PER ACRE (SORGHUM-SUDAN HYBRIDS), FOR SHOULDERS, SIDE DITCHES, SLOPES (3:1 TO 2:1)
DATE: MAR 1 – JUN 1
TYPE: SERICEA LESPEDEZA (SCARIFIED)
PLANTING RATE: 50 LBS PER ACRE
DATE: MAR 1 – APR 15
TYPE: ADD TALL FESCUE
PLANTING RATE: 120 LBS PER ACRE
DATE: MAR 1 – JUN 30
TYPE: ADD WEEPING LOVEGRASS
PLANTING RATE: 10 LBS PER ACRE
DATE: MAR 1 – JUN 30
TYPE: ADD HULLED COMMON BERMUDAGRASS
PLANTING RATE: 25 LBS PER ACRE
DATE: JUN 1 – SEPT 1
*TYPE: TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS**
PLANTING RATE:120 LBS PER ACRE (TALL FESCUE)
35 LBS PER ACRE (BROWNTOP MILLET)
30 LBS PER ACRE (SORGHUM-SUDAN HYBRIDS)
DATE: SEPT 1 – MAR 1
TYPE: SERICEA LESPEDEZA (UNHULLED, UNSCARIFIED) AND TALL FESCUE
PLANTING RATE: 70 LBS PER ACRE (SERICEA LESPEDEZA), 120 LBS PER ACRE (TALL FESCUE)
DATE: NOV 1 – MAR 1
TYPE: ADD ABRUZZI RYE
PLANTING RATE: 25 LBS PER ACRE

**FOR SORGHUM-SUDAN HYBRIDS, RESEED ACCORDING TO THE OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW MORE THAN 12 INCHES BEFORE MOWING; OTHERWISE, FESCUE MAY BE SHADED OUT. CONSULT WAKE COUNTY SOIL & WATER CONSERVATION DISTRICT OR NC STATE COOPERATIVE EXTENSION FOR ADDITIONAL INFORMATION. THE ABOVE VEGETATION RATES PERFORM WELL UNDER LOCAL CONDITIONS.*

MAINTENANCE NOTES:

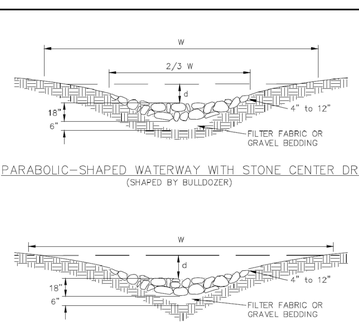
1. CONSTRUCT THE ENTRANCE TO THE SLOPE DRAIN OF A STANDARD FLARED-END SECTION OF PIPE WITH A MINIMUM 6-INCH METAL TOE PLATE (CROSS-SECTION VIEW). MAKE ALL FITTINGS WATERTIGHT. A STANDARD T-SECTION FITTING MAY ALSO BE USED AT THE INLET.
2. USE AN EARTHEN DIVERSION TO DIRECT SURFACE RUNOFF INTO THE TEMPORARY SLOPE DRAIN. MAKE THE HEIGHT OF THE BERM OVER THE DRAIN CONDUIT A MINIMUM OF 1.5 FT AND AT LEAST 6 INCHES HIGHER THAN THE ADJOINING BERM ON EITHER SIDE.
3. THE LOWEST POINT OF THE DIVERSION BERM SHOULD BE A MINIMUM OF 1 FT.
4. ABOVE THE TOP OF THE DRAIN SO THAT DESIGN FLOW CAN FREELY ENTER THE PIPE.
5. PROTECT THE OUTLET OF THE SLOPE DRAIN FROM EROSION WITH RIPRAP DISSIPATOR.
6. INSPECT SLOPE DRAINS AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24-HOUR PERIOD.
7. REBUILD EARTH BERMS AND INLETS THAT HAVE WEAKENED DUE TO SCOURING.
8. EXTEND SLOPE DRAINS AND REBUILD INLET PROTECTION AS SLOPE IS BUILT, AFTER EACH 2-FOOT INCREASE IN HEIGHT.
9. REBUILD OR REPAIR SLOPE DRAINS IF NEEDED WHEN SEEDING AND MULCHING IS PERFORMED.
10. REFURBISH CLASS B STONE OUTLET PROTECTION AND CLEAN AS NEEDED.



WAKE COUNTY NORTH CAROLINA

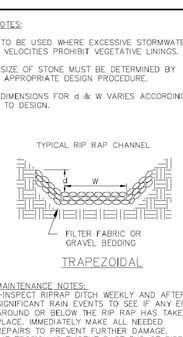
EFFECTIVE: 10/15/2025

STANDARD TEMPORARY SLOPE DRAIN



NOTES:

- TO BE USED WHERE EXCESSIVE STORMWATER VELOCITIES PROHIBIT VEGETATIVE LININGS.
- SIZE OF STONE MUST BE DETERMINED BY APPROPRIATE DESIGN PROCEDURE.
- DIMENSIONS FOR d & W VARIES ACCORDING TO DESIGN.



MAINTENANCE NOTES:
-INSPECT RIPRAP DITCH WEEKLY AND AFTER SIGNIFICANT RAIN EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIP RAP HAS TAKEN PLACE. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.
-IF EROSION IS EVIDENT PAST END OF RIPRAP DITCH DUE TO RUNOFF DISCHARGING FROM DITCH, INCREASE DIMENSIONS OF RIPRAP PAD PROVIDED SPACE IS AVAILABLE WITHIN THE APPROVED LIMITS OF DISTURBANCE.
-MAINTAIN ALL VEGETATION ADJACENT TO CHANNEL IN A HEALTHY, VIGOROUS CONDITION TO PROTECT DITCH FROM EROSION AND SCOUR DURING OUT-OF-BANK FLOW.

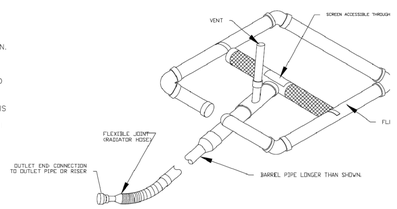
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

STANDARD RIP-RAP LINED CHANNELS

MAINTENANCE NOTES:

1. INSTALL A PAD FOR SKIMMER TO REST ON STONE OR WOOD PALLETS OR H-BEAM SECTION.
2. INSTALL SKIMMER AND PAD AWAY FROM BAFFLES.
3. ATTACH ROPE TO SKIMMER FOR MAINTENANCE.
4. INSPECT THE BASIN ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (1 INCH OR GREATER).
5. CHECK THE SKIMMER TO MAKE SURE THAT IT IS NOT CLOGGED WITH SEDIMENT.
6. REMOVE SEDIMENT THAT MAY ACCUMULATE ON THE STONE PAD UNDERNEATH THE SKIMMER DEVICE.



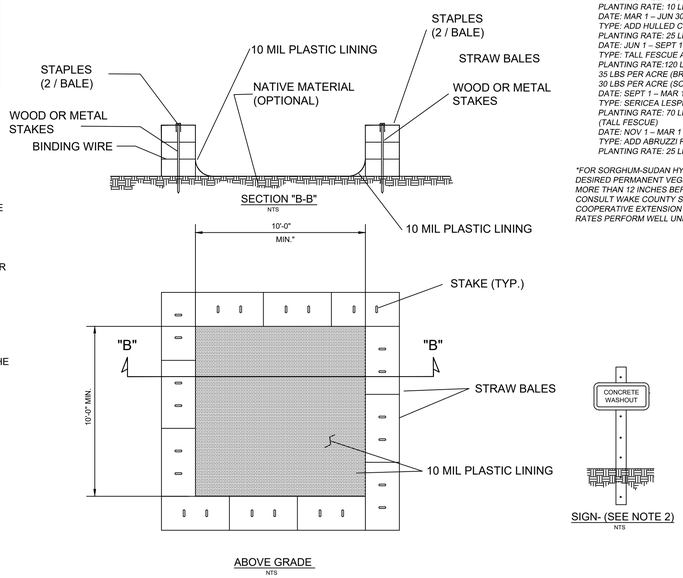
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 10/15/2025

STANDARD SKIMMER DETAIL

CONCRETE WASH OUT AREA NOTES:

1. ACTUAL LAYOUT DETERMINED IN THE FIELD - SEE EC1 PLAN FOR LOCATION.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE FACILITY.
3. LOCATE THE WASHOUT AREA AT LEAST 50-FEET FROM SENSITIVE AREAS SUCH AS STORM DRAINS, OPEN DITCHES OR WATER BODIES, INCLUDING WETLANDS.
4. THE PLASTIC LINING MATERIAL SHOULD BE A MIN OF 10 MIL. POLYETHLENE MATERIAL AND FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT MAY COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
5. WHEN THE FACILITY IS NO LONGER REQUIRED THE HARDENED CONCRETE, SLURRIES AND LIQUIDS SHALL BE PROPERLY DISPOSED OF OFF-SITE. MATERIAL USED TO CONSTRUCT THE FACILITY SHALL BE PROPERLY DISPOSED OF OFF-SITE. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY FACILITY SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.



TEMPORARY CONCRETE WASHOUT AREA

NTS

NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	KPG
2	5-22-2026	Town / Wake County Commnet	KPG
3	07-28-2026	WAKE COUNTY AND TOWN REVIEW	KPG
4	09-23-2026	Rev Per Town Of Rolesville Comments	KPG
5	10-22-2026	SIGNATURE SET	KPG

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036194 ENGINEER KEITH GETTLE

Erosion Control Details

Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.

EC6

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E. GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10 feet or less in length and are not steeper than 2:1, 14 days are allowed.
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers. • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting (PRSM) • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

Note: The use of techniques listed above which promote and assist in establishment of vegetation does not consitute permanet stabilization prior to the establishment of permanent vegetation.

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the NC DWR List of Approved PAMS/Flocculants
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the NC DWR List of Approved PAMS/Flocculants and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

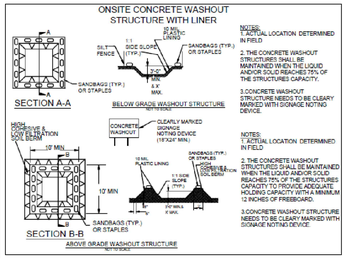
EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets and surface waters unless it can be shown no other alternatives are reasonably available. It is recommended to locate stockpile areas at least 50 feet away from skimmer basins and anywhere stormwater flow is concentrated.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



NOTES:
1. AXTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

NOTES:
1. AXTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

DEQ NORTH CAROLINA Department of Environmental Quality

GROUND COVER & MATERIALS HANDLING

Effective: April 1, 2024

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts If no daily rain gauge observations are made during weekend on holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "Zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours.	1. Identification of the measures inspected 2. Date and Time of the inspection 3. Name of the person performing the inspection 4. Indication of whether the measures were operating properly 5. Description of maintenance needs for the measure 6. Description, Evidence, and date of corrective actions taken
(3) Stormwater discharge outfalls(SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours.	1. Identification of the discharge outfalls inspected 2. Date and Time of the inspection 3. Name of the person performing the inspection 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration 5. Indication of visible sediment leaving the site 6. Description, Evidence, and date corrective actions taken
(4) Perimeter of Site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours.	If visible Sedimentation is found outside site limits, then record of the following shall be made: 1) Actions taken to clean up or stabilize sediment that has left the site limits 2) Description, Evidence and date of corrective actions taken 3) An explanation as to the actions taken to control future releases
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours.	If the stream or wetland has increased visible sedimentation or has visible increased turbidity from the construction activity, then a record of the following shall be made: 1) Description, Evidence and date of corrective actions taken 2)Records of required reports to the appropriate Division Regional Office per Part III, Section C, Item(2)(a) of this permit
(6) Ground Stabilization Measures	After each phase of grading.	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation
The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Document Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site
In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years*
*All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported
Permittees shall report the following occurrences:
(a) Visible sediment deposition in a stream or wetland.
(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
(d) Anticipated bypasses and unanticipated bypasses.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements
After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframe (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	- Within 24 hours, an oral or electronic notification. - Within 7 Calendar Days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. - If the stream is named on the NC 303(d) list as impaired for sediment-related caused, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per item 1(b)-(c) above	- Within 24 Hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	- *A report at least ten days before the date of the bypass, if possible.* The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	- Within 24 Hours, an oral or electronic notification - Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41((l)(7)]	- Within 24 Hours, an oral or electronic notification - Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance. [40 CFR 122.41((l)(6).
	- Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

DEQ NORTH CAROLINA Department of Environmental Quality

INSPECTION, RECORD KEEPING AND REPORTING

Effective: April 1, 2024

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
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2	9-30-2025	Town Wake County Comment	KPG
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5	10-22-2026	SIGNATURE SET	KPG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049818 KEITH R. GETTLE

10/22/26

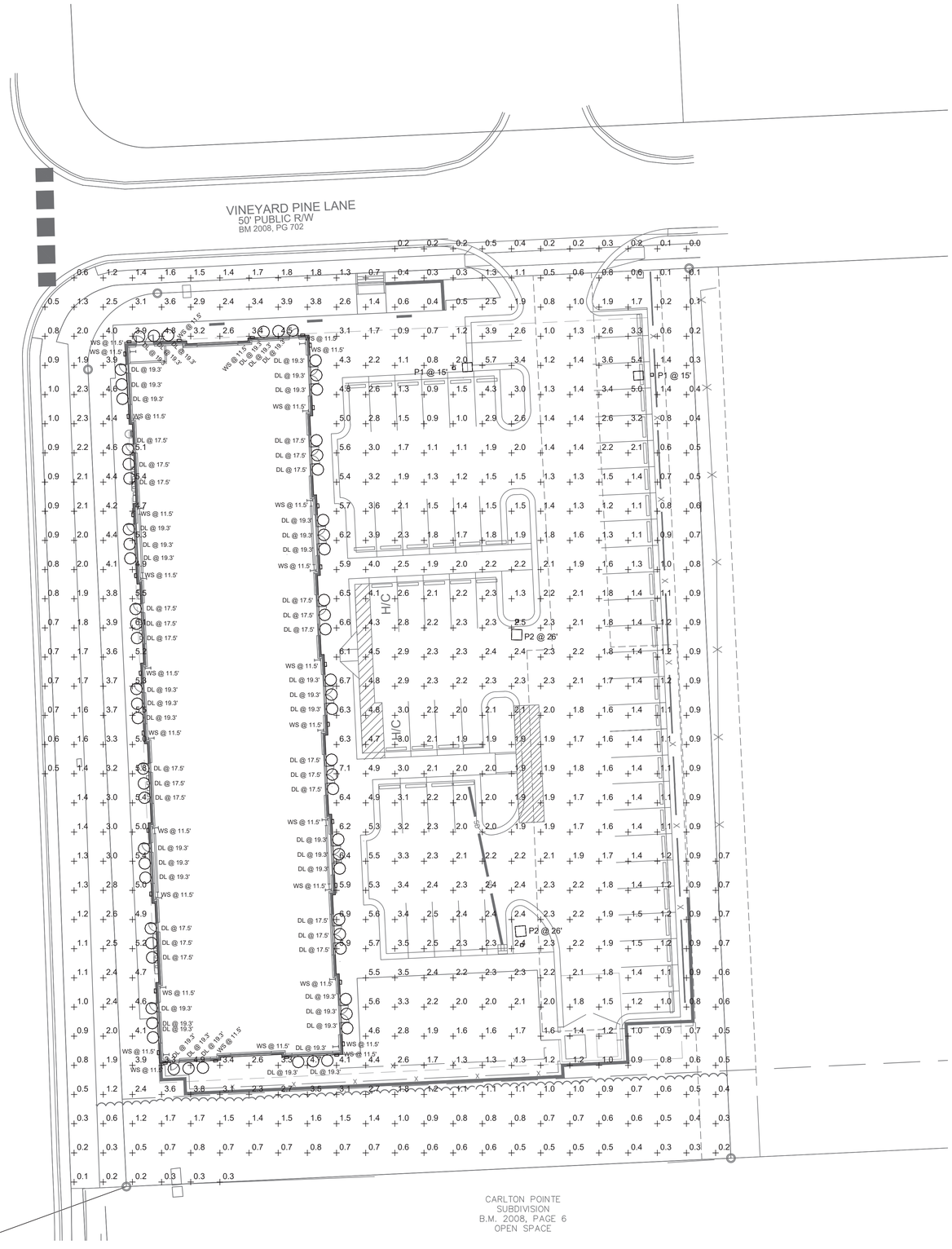
NCG01 Requirements

Oatland Commercial (SDP-26-0005)
4502 Vineyard Pine Lane
Rolesville, Wake County, North Carolina

Project No.

Dwg No.

EC7



Schedule

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Number Lamps	Lumens per Lamp	LLF	Wattage	Notes
◯	DL	66	TMS LIGHTING INC	2W-15LED-35K-WM-F05	Gooseneck Wall Fixture	1	1417	1	15	MOUNTING HEIGHTS AS INICATED ON PLAN.
□ ▫	P1	2	Lithonia Lighting	RSX1 LED P1 40K R4 HS	RSX LED Area Luminaire Size 1 P1 Lumen Package 4000K CCT Type R4 Distribution with HS shield	1	4725	1	51.34	MOUNTING HEIGHT/POLE HEIGHT AS INICATED ON PLAN.
□ ▫	P2	2	Lithonia Lighting	RSX2 LED P4 40K R5	RSX Area Fixture Size 2 P4 Lumen Package 4000K CCT Type R5 Distribution	1	25667	1	189.54	MOUNTING HEIGHT/POLE HEIGHT AS INICATED ON PLAN.
▭	WS	28	OCL ORIGINAL CAST LIGHTING INC - ST. LOUIS, MISSOURI	AU1-O1OA-24 LED1	Wall Mounted Sconce, Decorative Alum with White Acrylic Lens	1	1616	1	29	MOUNTING HEIGHTS AS INICATED ON PLAN.

Statistics

Description	Symbol	Avg	Max	Min	Avg/Min
PARKING LOT	+	2.0 fc	4.8 fc	0.8 fc	2.5:1
PROPERTY LINE	+	1.4 fc	3.8 fc	0.1 fc	14.0:1

Graphic Scale

20 0 10 20 40 80

NORTH

ANGUS CLARK
ENGINEERING PC
P.O. Box 1507
CARY NORTH CAROLINA 27512
C-2728
919.859.2674

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
1	Date	Comment	By
2			
3			
4			
5			
6			
8			

NORTH CAROLINA
PRELIMINARY
NOT FOR
CONSTRUCTION
ANGUS CLARK
5/8/2026

Site Lighting Plan
Vineyard Pine Commercial
MRR Development, LLC
Rolesville, Wake County, North Carolina

Project No.

Dwg No.
SL1

FIXTURE TYPE "P1"



RSX1 LED
Area Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

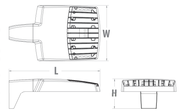
Introduction

The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX1 delivers 7,000 to 17,000 lumens allowing it to replace 70W to 400W HID luminaires.

The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

Specifications

EPA (Ft²@0°):	0.57 ft² (0.05 m²)
Length:	21.8" (55.4 cm) (SPA mount)
Width:	13.3" (33.8 cm)
Height:	3.0" (7.6 cm) Main Body 7.2" (18.4 cm) Arm
Weight: (SPA mount):	22.0 lbs (10.0 kg)



Ordering Information

EXAMPLE: RSX1 LED P4 40K R3 MVOLT SPA DDBXD

RSX1 LED

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX1 LED	P1 Performance Package P2 P3 P4	30K 3000K 40K 4000K 50K 5000K	R2 Type 2 Wide R3 Type 3 Wide R3S Type 3 Short R4 Type 4 Wide R4S Type 4 Short R5 Type 5 Wide [1] R5S Type 5 Short [1] AFR Automotive Front Row AFRR90 Automotive Front Row Right Rotated AFRL90 Automotive Front Row Left Rotated	MVOLT (120V-277V) [2] HVOLT (347V-480V) [3] XVOLT (277V-480V) [4] **(use specific voltage for options as noted)** 120 [5] 277 [5] 208 [5] 347 [5] 240 [5] 480 [5]	SPA Square pole mounting (3.0" min. SQ pole for 1 at 90°, 3.5" min. SQ pole for 2, 3, 4 at 90°) RPA Round pole mounting (3.2" min. dia. RND pole for 2, 3, 4 at 90°, 3.0" min. dia. RND pole for 1 at 90°, 2 at 180°, 3 at 120°) MA Mast arm adaptor (fits 2-3/8" OD horizontal tenon) IS Adjustable slipfitter (fits 2-3/8" OD tenon) [6] WBA Wall bracket [7] WBASC Wall bracket with surface conduit box AASP Adjustable tilt arm square pole mounting [8] AARP Adjustable tilt arm round pole mounting [8] AAWB Adjustable tilt arm with wall bracket [8] AAWSC Adjustable tilt arm wall bracket and surface conduit box [8]

Options		Finish	
Shipped Installed		DDBXD	Dark Bronze
HS House-side shield [7]		DBLXD	Black
PE Photocontrol, button style [9]		DNAXD	Natural Aluminum
PER7 Seven-wire twist-lock receptacle only (no controls) [9,10,11]		DWHXD	White
SF Single fuse (120, 277, 347) [5]		DDBTXD	Textured Dark Bronze
DF Double fuse (208, 240, 480) [5]		DBLBXD	Textured Black
SPD20KV 20KV Surge pack (10KV standard)		DNATXD	Textured Natural Aluminum
FAO Field adjustable output [9]		DWHGXD	Textured White
DMG 0-10V dimming extend out back of housing for external control (control ordered separate) [9,12]			
Shipped Separately (requires some field assembly)			
EGS External glare shield [7]			
EGFV External glare full visor (360° around light aperture) [7]			
BS Bird spikes [9]			
Shipped Installed			
***Standalone and Networked Sensors/Controls (factory default settings, see table page 9)**			
NLTAIR2 PIRHN nLight AIR generation 2, with Networked, Bi-Level motion/ambient sensor [9, 12, 13, 14]			
BAA Buy American(n) Act Compliant			
CCE Coastal Construction [15]			
***Note: NLTAIR2 PIRHN with nLight Air can be used as a standalone or networked solution. Sensor coverage pattern is affected when luminaire is tilted.**			

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Ordering Information

Accessories
Ordered and shipped separately.

RSX1HS	RSX1 House side shield (includes 1 shield)
RSX1HSAFRR U	RSX1 House side shield for AFR rotated optics (includes 1 shield)
RSX1EGS (FINISH) U	External glare shield (specify finish)
RSX1EGFV (FINISH) U	External glare full visor (specify finish)
RSXRPA (FINISH) U	RSX Universal round pole adaptor plate (specify finish)
RSXWBA (FINISH) U	RSX WBA wall bracket (specify finish) [7]
RSXSCB (FINISH) U	RSX Surface conduit box (specify finish, for use with WBA, WBA not included)
DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [11]
DLL347F 1.5 CEL JU	Photocell - SSL twist-lock (347V) [11]
DLL480F 1.5 CEL JU	Photocell - SSL twist-lock (480V) [11]
DSHORT SBK U	Shorting cap [16]

NOTES
1. Any Type 5 distribution, is not available with WBA.
2. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
3. HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
4. XVOLT driver not available with P1 or P2. XVOLT driver operates on any line voltage from 277V-480V (50/60 Hz). XVOLT not available with fusing (SF or DF) and not available with PE.
5. Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
6. Maximum tilt is 90° above horizontal.
7. It may be ordered as an accessory.
8. Requires MVOLT or 347V.
9. Two or more of the following options cannot be combined: including PE, DMG, DS, PIRHN, Exception: PE or PER and FAO can be combined, HS and EGS, EGFV and BS, SCE can be combined.
10. Compatible with standard twist-lock photocells for dusk to dawn operation or advanced control modes that provide 3-10V dimming signals. Wire 4/Wire 5 wired to dimming leads on driver. Wire6/Wire7 capped inside luminaire. Twistlock photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
11. For units with option PER7, the mounting must be restricted to +/- 45° from horizontal per ANSI C136.10-2010.
12. Must be ordered with PIRHN.
13. Requires MVOLT or HVOLT.
14. Must be ordered with NLTAIR2. For additional information on PIRHN visit here.
15. CCE option not available with WBA, WBASC, AASP, AARP, AAWB, AAWBSC, EGS, EGFV and BS.
16. Must be ordered with fixture for factory pre-drilling.
17. Requires luminaire to be specified with PER7 option. Ordered and shipped as a separate line item from Acuity Brands Controls.

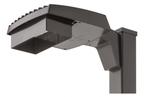
External Shields



House Side Shield



External Glare Shield



External 360 Full Visor

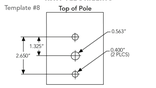
Pole/Mounting Informatiion

Accessories including bullhorns, cross arms and other adpaters are available under the accessories tab at Lithonia's Outdoor Poles and Arms product page. Click here to visit Accessories.

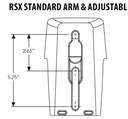
HANDHOLE ORIENTATION



RSX POLE DRILLING



RSX STANDARD ARM & ADJUSTABLE ARM



Round Tenon Mount - Pole Top Slipfitters

Tenon O.D.	RSX Mounting	Single	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2 - 3/8"	RPA, AARP	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 320	AS3-5 390	AS3-5 490
2 - 7/8"	RPA, AARP	AS725-190	AS725-280	AS725-290	AS725-320	AS725-390	AS725-490
4"	RPA, AARP	AS735-190	AS735-280	AS735-290	AS735-320	AS735-390	AS735-490

Drill/Side Location by Configuration Type

Drilling Template	Mounting Option	Single	2 @ 180	2 @ 90	3 @ 120	3 @ 90	4 @ 90
	Head Location	Side B	Side B & D	Side B & C	Round Pole Only	Side B, C & D	Side A, B, C & D
#8	**Drill Nomenclature**	DM19AS	DM28AS	DM29AS	DM32AS	DM39AS	DM49AS

RSX1 - Luminaire EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration		Single	2 @ 90	2 @ 180	3 @ 90	3 @ 120	4 @ 90	2 Side by Side	3 Side by Side	4 Side by Side
Mounting Type	**Tilt**									
SPA - Square Pole Adaptor	0°	0.57	1.03	1.05	1.52	1.36	2.03	1.31	1.7	2.26
RPA - Round Pole Adaptor	0°	0.62	1.08	1.15	1.62	1.46	2.13	1.36	1.8	2.36
MA - Mast Arm Adaptor		0.49	0.95	0.89	1.36	1.2	1.87	1.23	1.54	2.1
IS - Integral Slipfitter AASP/AARP - Adjustable Arm Square/Round Pole	0°	0.57	1.03	1.05	1.52	1.36	2.03	1.31	1.7	2.26
	10°	0.68	1.34	1.33	2	1.74	2.64	1.35	2.03	2.71
	20°	0.87	1.71	1.73	2.56	2.26	3.42	1.75	2.62	3.49
	30°	1.24	2.19	2.3	3.21	2.87	4.36	2.49	3.73	4.97
	40°	1.81	2.68	2.98	3.85	3.68	5.30	3.62	5.43	7.24
	45°	2.11	2.92	3.44	4.2	4.08	5.77	4.22	6.33	8.44
	50°	2.31	3.17	3.72	4.52	4.44	6.26	4.62	6.94	9.25
	60°	2.71	3.66	4.38	5.21	5.15	7.24	5.43	8.14	10.86
	70°	2.78	3.98	4.54	5.67	5.47	7.91	5.52	8.27	11.03
	80°	2.76	4.18	4.62	5.97	5.76	8.31	5.51	8.27	11.03
	90°	2.73	4.25	4.64	6.11	5.91	8.47	5.45	8.18	10.97

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FIXTURE TYPE "P2"



RSX2 LED
Area Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

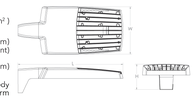
Introduction

The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX2 delivers 11,000 to 31,000 lumens allowing it to replace 250W to 1000W HID luminaires.

The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

Specifications

EPA (Ft²@0°):	0.69 ft² (0.06 m²)
Length:	29.3" (74.4 cm) (SPA mount)
Width:	13.4" (34.0 cm)
Height:	3.0" (7.6 cm) Main Body 7.2" (18.3 cm) Arm
Weight: (SPA mount)	30.0 lbs (13.6 kg)



Ordering Information

EXAMPLE: RSX2 LED P6 40K R3 MVOLT SPA DDBXD

RSX2 LED

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX2 LED	P1 Performance Package P2 P3 P4 P5 P6	30K 3000K 40K 4000K 50K 5000K	R2 Type 2 Wide R3 Type 3 Wide R3S Type 3 Short R4 Type 4 Wide R4S Type 4 Short R5 Type 5 Wide [1] R5S Type 5 Short [1] AFR Automotive Front Row AFRR90 Automotive Front Row Right Rotated AFRL90 Automotive Front Row Left Rotated	MVOLT (120V-277V) [2] HVOLT (347V-480V) [3] XVOLT (277V-480V) [4] **(use specific voltage for options as noted)** 120 [5] 277 [5] 208 [5] 347 [5] 240 [5] 480 [5]	SPA Square pole mounting (3.0" min. SQ pole for 1 at 90°, 3.5" min. SQ pole for 2, 3, 4 at 90°) RPA Round pole mounting (3.2" min. dia. RND pole for 2, 3, 4 at 90°, 3.0" min. dia. RND pole for 1 at 90°, 2 at 180°, 3 at 120°) MA Mast arm adaptor (fits 2-3/8" OD horizontal tenon) IS Adjustable slipfitter (fits 2-3/8" OD tenon) [6] WBA Wall bracket [7] WBASC Wall bracket with surface conduit box AASP Adjustable tilt arm square pole mounting [8] AARP Adjustable tilt arm round pole mounting [8] AAWB Adjustable tilt arm with wall bracket [8] AAWSC Adjustable tilt arm wall bracket and surface conduit box [8]

Options		Finish	
Shipped Installed		DDBXD	Dark Bronze
HS House-side shield [7]		DBLXD	Black
PE Photocontrol, button style [9]		DNAXD	Natural Aluminum
PEX Photocontrol external threaded, adjustable [9,10]		DWHXD	White
PER7 Seven-wire twist-lock receptacle only (no controls) [9,10,11]		DDBTXD	Textured Dark Bronze
CE34 Conduit entry 3/4" NPT (Qty 2)		DBLBXD	Textured Black
SF Single fuse (120, 277, 347) [5]		DNATXD	Textured Natural Aluminum
DF Double fuse (208, 240, 480) [5]		DWHGXD	Textured White
FAO Field adjustable output [9,11]			
SPD20KV 20KV Surge pack (10KV standard)			
DMG 0-10V dimming extend out back of housing for external control (control ordered separate) [9,12]			
DS Dual switching [9,14]			
Shipped Installed			
***Standalone and Networked Sensors/Controls (factory default settings, see table page 9)**			
NLTAIR2 nLight AIR generation 2 [13,15,16]			
PIRHN Networked, Bi-Level motion/ambient sensor (for use with NLTAIR2). [13,16,17]			
BAA Buy American(n) Act Compliant			
***Note: PIRHN with nLight Air can be used as a standalone dimming sensor with out-of-box settings or as a wireless networked solution. See factory default settings table. Sensor coverage pattern is affected when luminaire is tilted.**			
Shipped Separately (requires some field assembly)			
EGS External glare shield [7]			
EGFV External glare full visor (360° around light aperture) [7]			
BS Bird spikes [9]			

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Ordering Information

Accessories
Ordered and shipped separately.

RSX2HS	RSX2 House side shield (includes 2 shields)
RSX2EGS (FINISH) U	External glare shield (specify finish)
RSX2HSAFRR (FINISH) U	RSX2 House side shields for AFR rotated optics (includes 2 shields)
RSX2EGFV (FINISH) U	External glare full visor (specify finish)
RSXRPA (FINISH) U	RSX Universal round pole adaptor plate (specify finish)
RSXWBA (FINISH) U	RSX WBA wall bracket (specify finish) [7]
RSXSCB (FINISH) U	RSX Surface conduit box (specify finish, for use with WBA, WBA not included)
DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [11]
DLL347F 1.5 CEL JU	Photocell - SSL twist-lock (347V) [11]
DLL480F 1.5 CEL JU	Photocell - SSL twist-lock (480V) [11]
DSHORT SBK U	Shorting cap [18]

NOTES
1. Any Type 5 distribution, is not available with WBA.
2. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
3. HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
4. XVOLT driver not available with P1. XVOLT driver operates on any line voltage from 277V-480V (50/60 Hz). XVOLT not available with fusing (SF or DF) and not available with PE, or PEX.
5. Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
6. Maximum tilt is 90° above horizontal.
7. It may be ordered as an accessory.
8. Requires MVOLT or 347V.
9. Two or more of the following options cannot be combined including DMG, DS, PERT, FAO and PIRHN.
10. Compatible with standard twist-lock photocells for dusk to dawn operation or advanced control modes that provide 3-10V dimming
11. Twistlock photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
12. For units with option PERT, the mounting must be restricted to +/- 45° from horizontal per ANSI C136.10-2010.
13. Two or more of the following options cannot be combined including DMG, DS, PERT, FAO and PIRHN.
14. DS only available on performance package P5 and P6.
15. Must be ordered with PIRHN.
16. Requires MVOLT or HVOLT.
17. Must be ordered with NLTAIR2. For additional information on PIRHN visit here.
18. Must be ordered with fixture for factory pre-drilling.
19. Requires luminaire to be specified with PERT option. Ordered and shipped as a separate line item from Acuity Brands Controls.

External Shields



House Side Shield



External Glare Shield

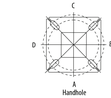


External 360 Full Visor

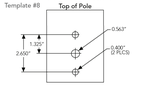
Pole/Mounting Informatiion

Accessories including bullhorns, cross arms and other adpaters are available under the accessories tab at Lithonia's Outdoor Poles and Arms product page. Click here to visit Accessories.

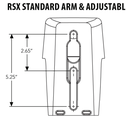
HANDHOLE ORIENTATION



RSX POLE DRILLING



RSX STANDARD ARM & ADJUSTABLE ARM



Round Tenon Mount - Pole Top Slipfitters

Tenon O.D.	RSX Mounting	Single	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2 - 3/8"	RPA, AARP	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 320	AS3-5 390	AS3-5 490
2 - 7/8"	RPA, AARP	AS725-190	AS725-280	AS725-290	AS725-320	AS725-390	AS725-490
4"	RPA, AARP	AS735-190	AS735-280	AS735-290	AS735-320	AS735-390	AS735-490

Drill/Side Location by Configuration Type

Drilling Template	Mounting Option	Single	2 @ 180	2 @ 90	3 @ 120	3 @ 90	4 @ 90
	Head Location	Side B	Side B & D	Side B & C	Round Pole Only	Side B, C & D	Side A, B, C & D
#8	**Drill Nomenclature**	DM19AS	DM28AS	DM29AS	DM32AS	DM39AS	DM49AS

RSX2 - Luminaire EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration		Single	2 @ 90	2 @ 180	3 @ 90	3 @ 120	4 @ 90	2 Side by Side	3 Side by Side	4 Side by Side
Mounting Type	**Tilt**									
SPA - Square Pole Adaptor	0°	0.69	1.22	1.27	1.8	1.61	2.39	1.37	2.06	2.74
RPA - Round Pole Adaptor		0.74	1.27	1.37	1.9	1.71	2.49	1.42	2.16	2.84
MA - Mast Arm Adaptor		0.61	1.14	1.11	1.64	1.45	2.23	1.29	1.2	2.58
IS - Integral Slipfitter AASP/AARP - Adjustable Arm Square/Round Pole	0°	0.69	1.22	1.27	1.8	1.61	2.39	1.37	2.06	2.74
	10°	0.53	1.06	1.05	1.58	1.37	2.08	1.06	1.59	2.12
	20°	0.52	1.02	1.03	1.52	1.33	2.02	1.03	1.55	2.07
	30°	0.64	1.11	1.18	1.63	1.45	2.21	1.27	1.91	2.54
	40°	0.81	1.21	1.35	1.74	1.65	2.39	1.62	2.43	3.23
	45°	0.91	1.25	1.5	1.81	1.75	2.48	1.82	2.73	3.64
	50°	1.34	1.83	2.17	2.61	2.56	3.62	2.68	4.02	5.36
	60°	2.2	2.97	3.57	4.24	4.17	5.89	4.41	6.61	8.82
	70°	2.86	4.13	4.7	5.89	5.71	8.21	5.71	8.57	11.42
	80°	3.4	5.13	5.67	7.34	7.09	10.21	6.79	10.19	13.59
	90°	3.85	5.96	6.55	8.58	8.31	11.88	7.70	11.56	15.41

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ANGUS CLARK ENGINEERING PC
P.O. Box 1507
CARY NORTH CAROLINA 27512
C-2726
919.859.2674

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
1			
2			
3			
4			
5			
6	Date	Comment	By
8			

NORTH CAROLINA PRELIMINARY NOT FOR CONSTRUCTION 5/5/2026

Site Lighting Fixtures
Vineyard Pine Commercial
MRR Development, LLC
Rolesville, Wake County, North Carolina

Project No.

Dwg No.

SL2

FIXTURE TYPE "DL"

CALVIN™ WALL

PROJECT: 4502 Vineyard Pine Lane
TYPE: Display Light
QUANTITY: _____



PN: 2W

APPLICATION	• WALL MOUNT • INDOOR OR OUTDOOR RATED
DIMENSION	• 16" (41CM)
ILLUMINATION	• DIRECT • LED 90CRI • INCANDESCENT MEDIUM BASE SOCKET • 753 - 1602 LUMENS
ELECTRICAL	• 120V, 277V, AND 347V • 10kA SURGE SUPRESSION STANDARD
DIFFUSERS	• CLEAR OR FROSTED, ELONGATED, GLASS GLOBE • CLEAR, FLAT LENS
DRIVER	• WALL MOUNT (INTEGRAL) • REMOTE MOUNT (INDOOR OR OUTDOOR)
MOUNTING	• WALL, MOUNTED TO A 4"(10CM) J-BOX
CONSTRUCTION	• ALUMINUM
FINISHES	• AVAILABLE ANODIZED, BRUSHED, AND IN SEVERAL TMS POWDER COATED FINISHES • CUSTOM RAL FINISHES AVAILABLE
DIMMING	• 0 - 10V STANDARD DIMMING
WEIGHT	• 7.5 LBS MAXIMUM

DIRECT

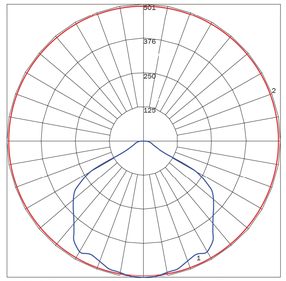
CALVIN™ WALL

DIRECT

PN	ILLUMINATION	LUMENS	WATTAGE
2W	15LED	1351	15
	16LED	1440	16
	19LED	1803	19
	150IN	2158	150

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 2W 15LED 35K WM F05.IES

POLAR GRAPH

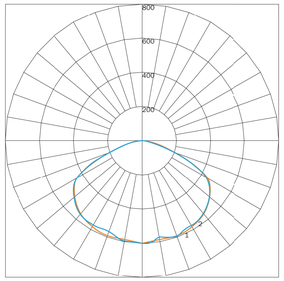


MAXIMUM CANDELA = 500.83 LOCATED AT HORIZONTAL ANGLE = 22.5, VERTICAL ANGLE = 5
1 - VERTICAL PLANE THROUGH HORIZONTAL ANGLES (22.5 - 202.5) (THROUGH MAX. CD.)
2 - HORIZONTAL CONE THROUGH VERTICAL ANGLE (60) (THROUGH MAX. CD.)

LUMINAIRE LUMENS	1351
TOTAL LUMINAIRE EFFICIENCY	95%
LUMINAIRE EFFICACY RATING	90
TOTAL LUMINAIRE WATTS	15

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 2W 150IN.IES

POLAR GRAPH



MAXIMUM CANDELA = 604.377 LOCATED AT HORIZONTAL ANGLE = 0, VERTICAL ANGLE = 5
1 - VERTICAL PLANE THROUGH HORIZONTAL ANGLES (90 - 270)
2 - VERTICAL PLANE THROUGH HORIZONTAL ANGLES (0 - 180)

LUMINAIRE LUMENS	2158
TOTAL LUMINAIRE EFFICIENCY	81%
LUMINAIRE EFFICACY RATING	14
TOTAL LUMINAIRE WATTS	150

FIXTURE TYPE "WS"

OCL ARCHITECTURAL LIGHTING

PROJECT NAME: _____ TYPE: _____
QTY: _____



Allure™

SCONCE/OUTDOOR

FEATURES

- THE ALLURE SCONCE FEATURES SOLID ALUMINUM DIE-CAST ENDS WITH A DOMED TOP
- 0.125" THICK ALUMINUM EXTRUDED BACK CHANNEL
- DECORATIVE ALUMINUM DIE-CAST HORIZONTAL BARS WITH DISTINCTIVE TAPERING ARCH DESIGN
- 3/16" THICK EXTRUDED VIRGIN WHITE ACRYLIC IS 45% DR HIGH IMPACT, UV STABLE, F1 RATED, AND UL-94 HB FLAME CLASS RATED
- ALLURE CAN BE MOUNTED VERTICALLY OR HORIZONTALLY
- HINGED FRONT FACE SIMPLIFIES MAINTENANCE

MADE IN USA | bios | ETL

CATALOG CODES

AU1	-		-		-		-		-		-	UNV	-	DM1	-	
SERIES		HANGING SYSTEM		SIZE		DIFFUSER		FINISH		LIGHT SOURCE		VOLTAGE		CONTROL		OPTIONS

SPECIFY CATALOG CODE

A	B	C	D	E
SERIES	**HANGING SYSTEM**	**SIZE**	**DIFFUSER**	**FINISH**
 AU1 ALLURE	**S15A** INDOOR ADA COMPLIANT SCONCE **O10A** OUTDOOR ADA COMPLIANT SCONCE	**18** **24** **36** **48**	**GW** GLOSS WHITE ACRYLIC **NOTE:** REQUIRED FOR **O10A** **MW** MATTE WHITE ACRYLIC	**POWDER COAT FINISHES** **BKP** BLACK **BMP** BRASS METALLIC **BNP** BRONZE **BTP** BLACK TEXTURED **GRP** GRAPHITE **GLP** GOLDTASTIC **MWP** MATTE WHITE **SGP** STEEL GRAY **SMP** SILVER METALLIC **SWP** SKY WHITE **WTP** WHITE TEXTURED

F	G	H	I
LIGHT SOURCE	**VOLTAGE**	**CONTROL**	**OPTIONS**
LED OUTPUT **LED1** **LED2** **COLOR TEMP** **27K** **30K** **35K** **40K**	**UNV** 120-277	**DM1** 0-10V DIMMING 1%	**ULD** DAMP LABEL (**S15A** ONLY) **BIOS** BIOS SKYBLUE™ OR BIOS SKYBLUE™ "DYNAMIC LIGHT ENGINE" **MOD** MODIFIED LUMINAIRE (CONTACT LOCAL REP)

SAMPLE CODE: AU1-S15A-24-GW-WTP-LED1/27K-UNV-DM1

*Contact factory for **BIOS SkyBlue®** or **BIOS SkyBlue® Dynamic** light engine and control options. Visit **ocl.com/BIOS** for more information.

UP TO 58 LM/W

LUMENS AND WATTAGE CHART

		18"	24"	36"	48"
LED1	LUMENS DELIVERED	1050	1600	2603	3700
	SYSTEM WATTAGE	20	30	45	65
LED2	LUMENS DELIVERED	1350	2000	3259	4600
	SYSTEM WATTAGE	25	35	60	80

This chart was created for a 35K color temp. Multiply by 0.95 for 27k color temp, 0.97 for 30k color temp, and 1.03 for 40k color temp. Wattage and lumen data approx. pending LM-79 testing.

MODS, NOTES, & COMMENTS

OCL
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Designed and Fabricated in St. Louis, Missouri • USA

CALVIN™ WALL



PROJECT: 4502 Vineyard Pine Lane
TYPE: Display Light
QUANTITY: _____

2W – ____ – ____ – ____ – ____ – ____ – ____ – ____ – ____ – ____ – ____
1 2 3 4 5 6 7 8 9 10

1.	I	0
APPLICATION	INDOOR	OUTDOOR

2.	ILLUMINATION			
	150IN	15LED	16LED	19LED
LED (W)	150W	15W	16W PAR38 40° E26 MEDIUM BASE, 1400 LUMENS (27/30/35/40/50K) REFER TO PAGE 6	19W
LUMENS	2158	1351	1440	1803

3.	—	30K	35K	40K
LED CCT	NONE	3000K	3500K	4000K

4.	120	277	347
VOLTAGE	120V	277V	347V

5.	—	WM	N1	N4
DRIVER	NONE	WALL MOUNT (INTEGRAL)	REMOTE INDOOR MOUNT (NEMA 1)	REMOTE OUTDOOR MOUNT (NEMA 4)

6.										
FINISH	F04	F05	F15	F16	F09	F31	F18	F06	F07	F08
	MATTE WHITE	GLOSS WHITE	MATTE BLACK	GLOSS BLACK	PEWTER	SILVER METALLIC	SATIN ALUMINUM	CLAY BROWN	ZEUS BROWN	MIDNIGHT BLUE
	F10	F11	F13	F14	F21	F22	F24	F25	F26	F28
	FIRE RED	CITRUS ORANGE	FOREST GREEN	SUNSHINE YELLOW	ARCH. BRONZE	HARVEST GOLD	MELTED PLATINUM	MELTED GOLD	MELTED COPPER	DARK CAMPAGNE
	F32	F33	F38	F39	F40	F41	F42	F43	F44	F45
	BRONZE METALLIC	PYRITE BRONZE	MEADOW GREEN	AQUA BLUE	BUBBLE PINK	ELECTRIC PURPLE	FAUX CHROME	FAUX GOLD	FAUX COPPER	COPPER METALLIC
	RAL	BR	AN							
	CUSTOM (SPECIFY RAL)	BRUSHED ALUMINUM	ANODIZED							

7.	—	DIML
DIMMING	NONE	LED DIMMING (0 - 10V, CURRENT - SINKING)

8.	—	EM	EMC	EMR	EMCR
EMERGENCY[1]	NONE	INTEGRAL	INTEGRAL COLD PACK	REMOTE	REMOTE COLD PACK

9.	—	G1	G2	LNC
GLOBE/LENS	NONE	CLEAR, ELONGATED GLOBE	FROSTED GLOBE	CLEAR LENS

10.	—	W16
WIRE GUARD	NONE	W16" WIRE GUARD

1. 10W AT 90 MINUTES. EMERGENCY OPTION IS ONLY AVAILABLE IN 120 - 277V SYSTEMS
NOTE: SOME OPTIONS MAY NOT BE COMPATIBLE WITH OTHERS. **ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.** CONTACT TMS LIGHTING FOR UPDATED SPECIFICATIONS.

ANGUS CLARK ENGINEERING PC
P.O. Box 1507
CARY NORTH CAROLINA 27512
C-2726
919.859.2674

Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934
Firm License P-2538

NO.	Date	Comment	By
1			
2			
3			
4			
5			
6			
8			

DATE REVISION DESCRIPTION BY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 13719 ANGUS CLARK

PRELIMINARY NOT FOR CONSTRUCTION

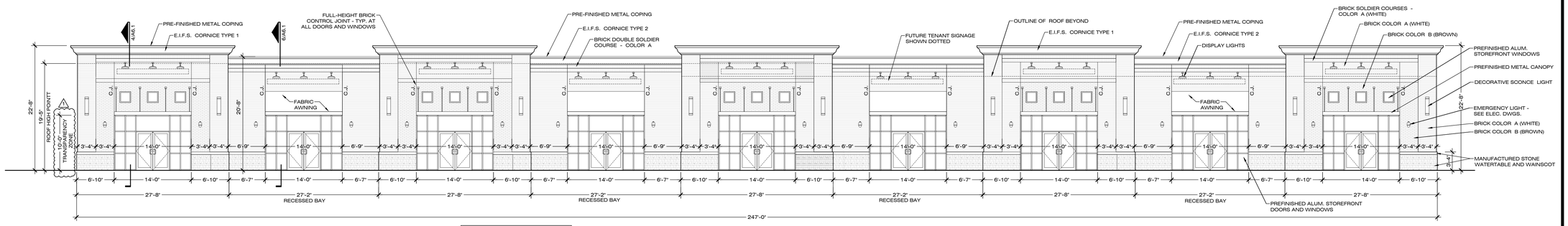
5/8/2026

Site Lighting Fixtures
Vineyard Pine Commercial
MRR Development, LLC
Rolesville, Wake County, North Carolina

Project No.

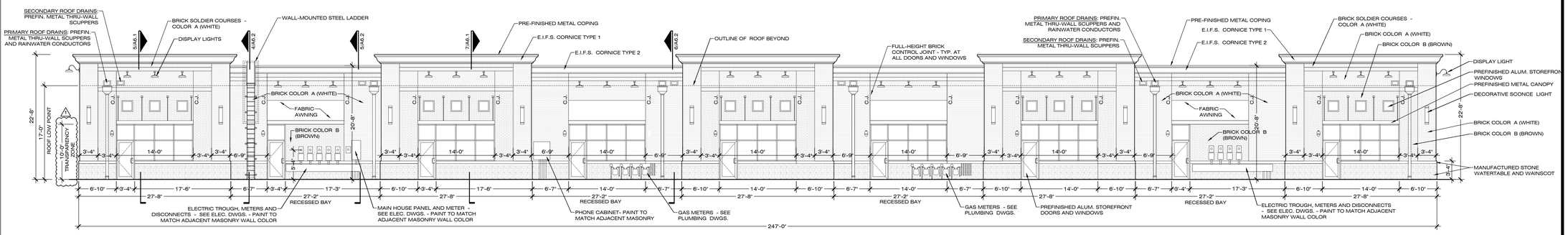
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SL3



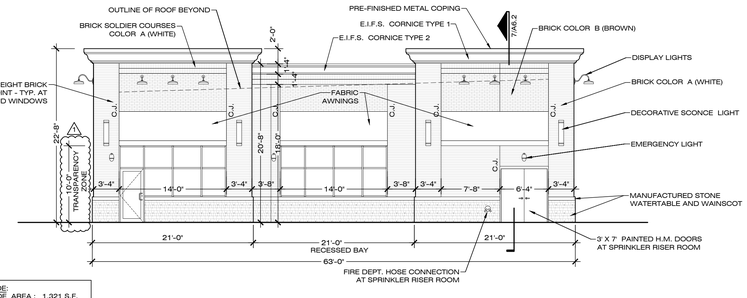
WEST FACADE:
GROSS FACADE AREA : 2,980 S.F.
MASONRY AREA : 2,006 S.F. = 67.3 %
EIFS PERCENTAGE : 274 S.F. = 9.2 %
TRANSPARENCY ZONE: 2,470 S.F.
GLASS AREA : 1,260 S.F. = 51.0 %

1 EAST ELEVATION (FACING PARKING LOT)
SCALE: 1/8" = 1'-0"



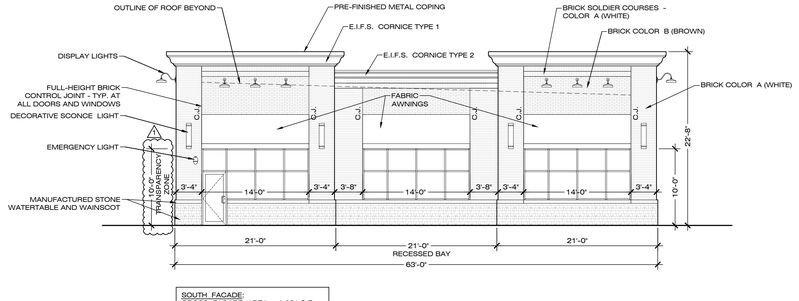
EAST FACADE:
GROSS FACADE AREA : 5,302 S.F.
MASONRY AREA : 4,087 S.F. = 77.0 %
EIFS PERCENTAGE : 494 S.F. = 9.3 %
TRANSPARENCY ZONE: 2,470 S.F.
GLASS AREA : 802 S.F. = 32.4 %

2 WEST ELEVATION (FACING JONESVILLE ROAD)
SCALE: 1/8" = 1'-0"



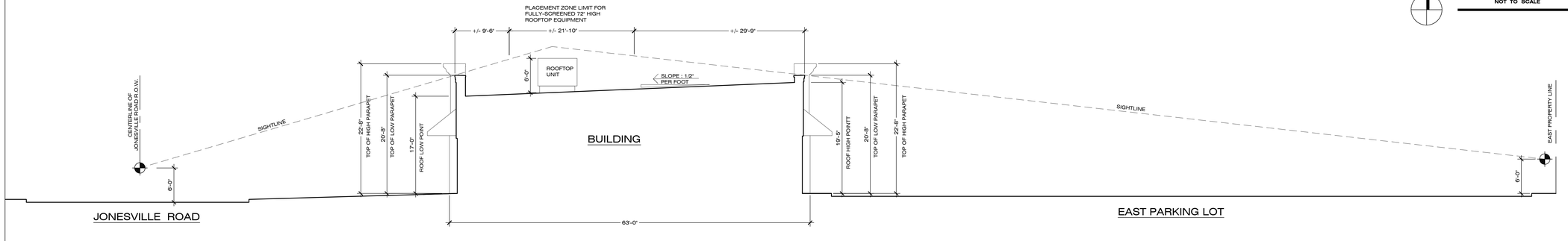
NORTH FACADE:
GROSS FACADE AREA : 1,321 S.F.
MASONRY AREA : 973 S.F. = 73.6 %
EIFS PERCENTAGE : 120 S.F. = 9.0 %
TRANSPARENCY ZONE: 630 S.F.
GLASS AREA : 198 S.F. = 31.4 %

3 NORTH ELEVATION (FACING VINEYARD PINE LANE)
SCALE: 1/8" = 1'-0"

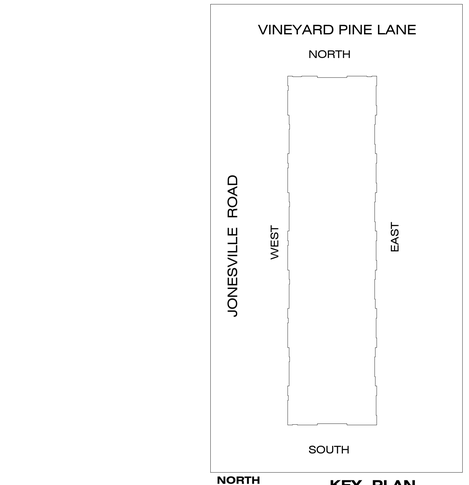


SOUTH FACADE:
GROSS FACADE AREA : 1,321 S.F.
MASONRY AREA : 922 S.F. = 70.0 %
EIFS PERCENTAGE : 120.5 S.F. = 9.0 %
TRANSPARENCY ZONE: 630 S.F.
GLASS AREA : 291 S.F. = 46.2 %

4 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



5 SIGHT LINE STUDY
SCALE: 1/8" = 1'-0"



NORTH

KEY PLAN
NOT TO SCALE

REDLINE

6601 Six Forks Rd.
Suite 130
Raleigh, NC 27615

919.878.1660

www.redlinedg.com

xx.xx.26

OATLAND COMMERCIAL BUILDING

5402 VINEYARD PINE LANE
ROLESVILLE, NC

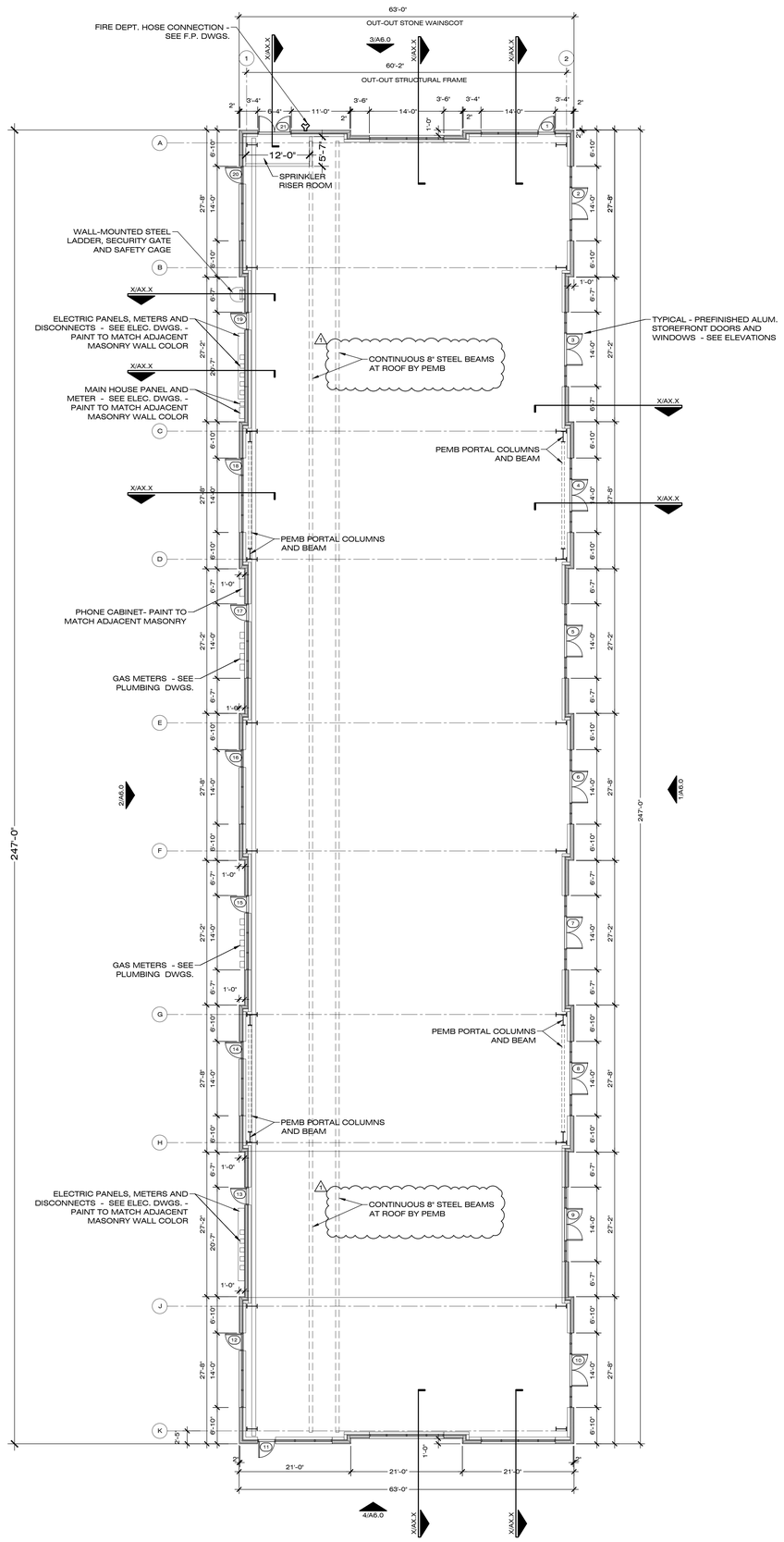
#	△	DESCRIPTION	DATE
1		SITE PLAN SUBMITTAL	04.29.26
2	1	ROLESVILLE PLANNING DEPT. REVISION	07.14.26
3			
4			
5			
6			
7			
8			
9			
10			

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PROJECT # RDU 23-039

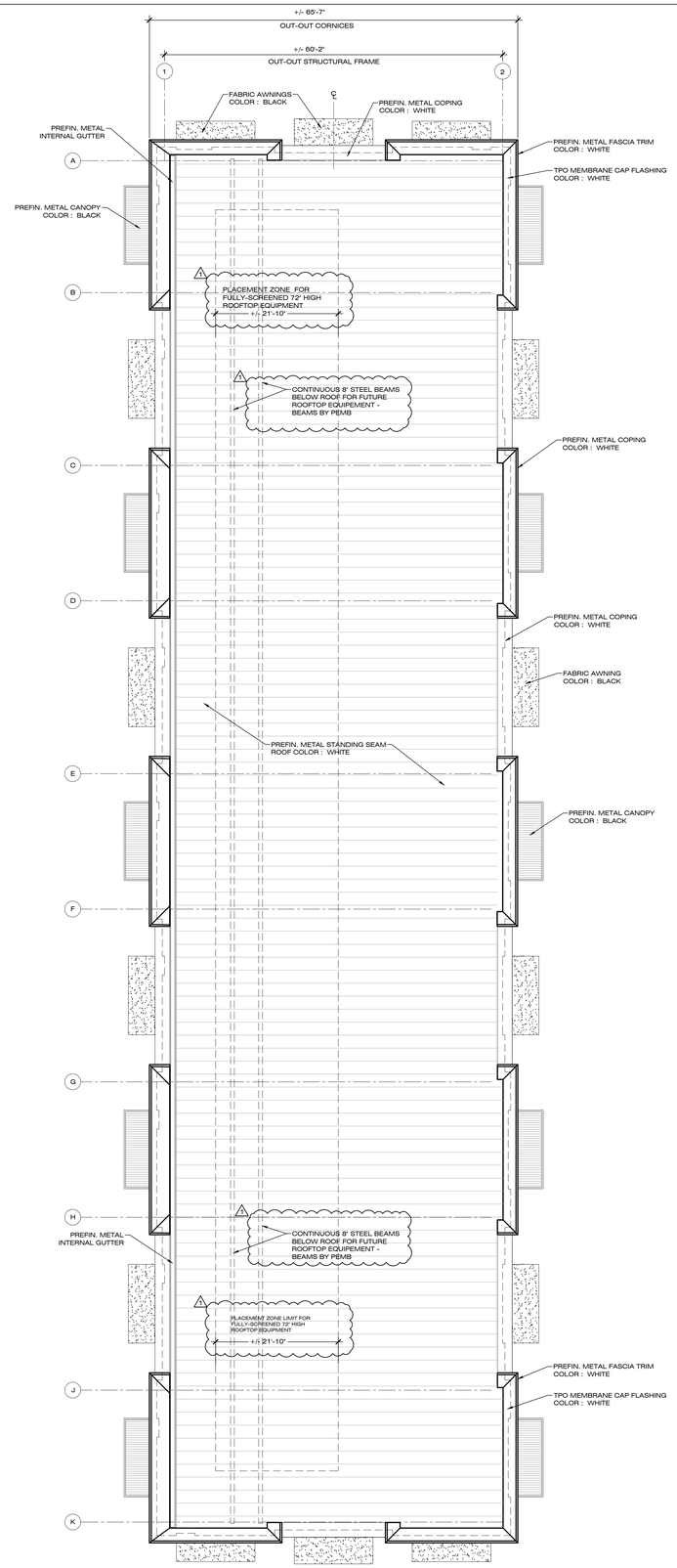
BUILDING ELEVATIONS

SHEET # A6.0



NORTH

1 FLOOR PLAN
SCALE: 3/32" = 1'-0"



NORTH

2 ROOF PLAN
SCALE: 3/32" = 1'-0"

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ROLESVILLE, NC

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1		SITE PLAN SUBMITTAL	04.29.26
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FLOOR PLAN AND ROOF PLAN

SHEET # A1.1