

# Construction / Site Plan SDP-23-06

## Rolesville, Wake County, North Carolina

# Vineyard Pine Commercial

## 4502 Vineyard Pine Lane

September 2023

**SITE DATA:**

SITE ADDRESS: 4502 VINEYARD PINE LANE  
 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: 1.09 ACRES (47,652 SF)  
 IMPERVIOUS PERCENT (%): 75%  
 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  
 RETAIL SALES: MAX 7.5 / 1000 SF  
 PARKING PROVIDED: 59 SPACES = 3.9 / 1000  
 HANDICAP PARKING REQUIRED: 3 SPACES (1 - VAN ACCESSIBLE)  
 HANDICAP PARKING PROVIDED: 3 SPACES (2 - VAN ACCESSIBLE)

BIKE PARKING (REQUIRED)  
 1 PER 5000 SF BLDG (15,247 / 5000 = 3)  
 BIKE PARKING (PROVIDED)  
 3  
 TOTAL DENUDED AREA  
 64,597 SF (1.48 ACRES)

**PEDESTRIAN AMENITIES - 4 REQUIRED**

PATIO SEATING IN OPEN AREA 2  
 ACTIVE USE IN OPEN AREA 1  
 PUBLIC ART - MURAL ON EXTERIOR PORTION OF BUILDING  
 DECORATIVE PLANTERS

**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:

- 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%
- 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%
- 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
- 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
- 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
- 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
C1	Existing Conditions and Demolition Plan
C2	Site Plan
C3	Grading and Stormwater Plan
C4	Utility Plan
C5	Landscaping Plan
C6	Truck Turn & Fire Access Plan
D1	Site Details
D2	Water and Sewer Details
D3	Storm Drainage Details
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	Sight Lighting Plan
SL2	Sight Lighting Fixtures
A1.1	Architectural Floor Plan
A6.0	Building Elevations

**PUBLIC IMPROVEMENT QUANTITIES**

PHASE NUMBER(S)	PHASE 1
NUMBER OF LOT (S)	1
LOT NUMBERS BY PHASE	1
NUMBER OF UNITS	1
RESIDENTIAL UNITS	0
OPEN SPACE (YES/NO)	YES
PUBLIC WATER (LF)	0
PUBLIC 8" PVC SEWER	0
WATER SERVICE STUBS	1
WATER SERVICE ABANDONED	0
SEWER SERVICE STUBS (NEW)	1
SEWER SERVICE REMOVED	1

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

**EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT**

**APPROVED**

EROSION CONTROL  S-\_\_\_\_\_

STORMWATER MGMT.  S-\_\_\_\_\_

FLOOD STUDY  S-\_\_\_\_\_

DATE \_\_\_\_\_

ENVIRONMENTAL CONSULTANT SIGNATURE \_\_\_\_\_

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 \_\_\_\_\_

**PROJECT INFORMATION:**

PROJECT: VINEYARD PINE COMMERCIAL

OWNER / DEVELOPER: MRR DEVELOPMENT, LLC  
 10121 CAPITOL BLVD, SUITE 105  
 WAKE FOREST, NC 27587  
 (330) 573-4030

PHONE: \_\_\_\_\_  
 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  
 (919) 210-3934  
 KPGETTLE@GMAIL.COM

PHONE: \_\_\_\_\_  
 EMAIL: \_\_\_\_\_

SURVEYOR: CAWTHORNE MOSS AND PANCIERA P.C.  
 333 SOUTH WHITE STREET  
 WAKE FOREST NORTH CAROLINA 27588  
 (919) 556- 3148

PHONE: \_\_\_\_\_

**PRELIMINARY  
DO NOT USE FOR  
CONSTRUCTION**

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

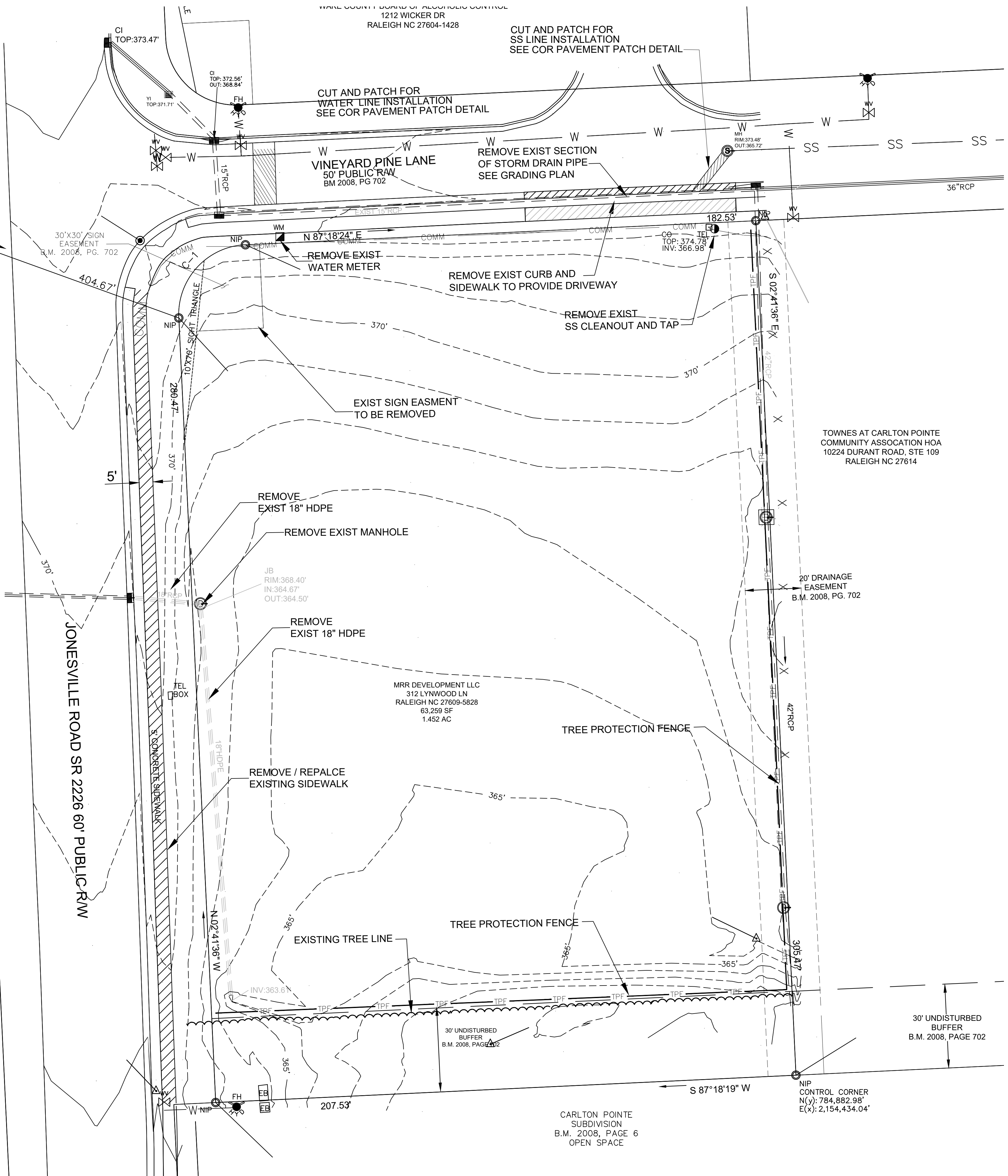
NO.	DATE	INITIALS	DESCRIPTION	BY
1	8/25/2023		Initial Submittal	
2	8/25/2023		Final Water County Comment	
3			DATE COMMENT	
4			DATE COMMENT	
5			DATE COMMENT	
6			DATE COMMENT	
7			DATE COMMENT	
8			DATE COMMENT	
9			DATE COMMENT	
10			DATE COMMENT	

**Cover Sheet**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

Project No. 23005  
 Dwg No.  
**C0**

NCGS "SCARBORO"  
N: 785,290.93'  
E: 2,153,832.98'  
NAD 83/2011

S 70°07'44" E



Legend



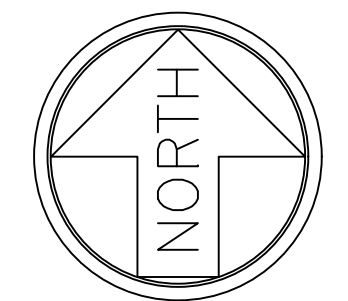
To Be Removed

SITE NOTES

1. PROPERTY BOUNDARY AND EXISTING CONDITIONS INFORMATION TAKEN FROM A FIELD SURVEY BY CAWTHORNE, MOSS AND PANCIERA, ENTITLED "LOT 6, BARRETT VENTURES, 4502 VINEYARD PINE LANE.
2. NO FLOOD HAZARD AREAS WITHIN PROJECT BOUNDARY PER FEMA MAP 3720174700J.
3. ALL EXISTING ELEVATIONS, FEATURES, AND UTILITIES TO BE FIELD VERIFIED.

NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	KPG
2	5-22-2026	Town / Wake County Comment	KPG
3	DATE	COMMENT	BY
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	DATE	COMMENT	BY

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**Exist. Conditions & Demo Plan**  
Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina

Project No. 23005  
Dwg No. **C1**

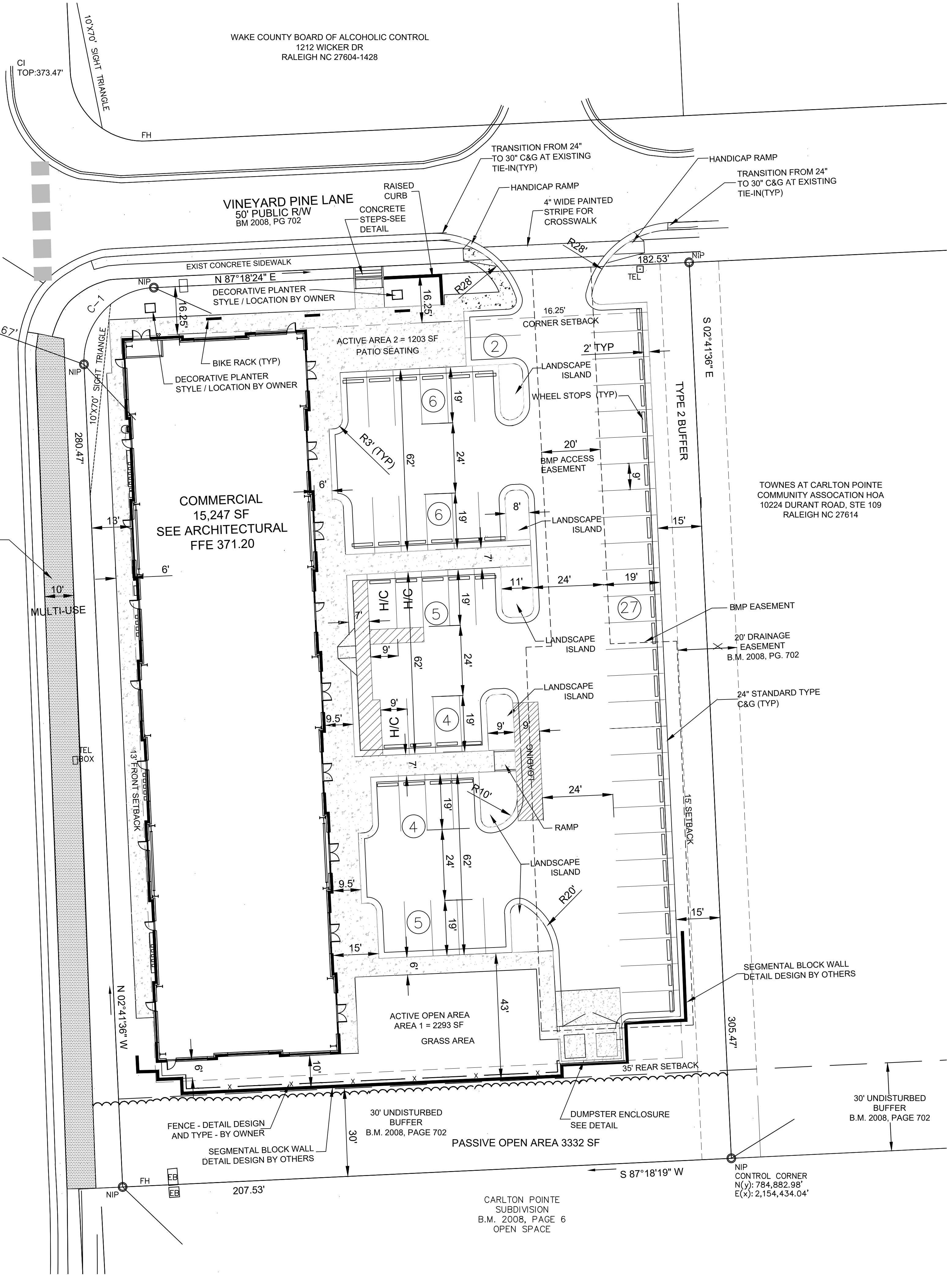
NCGS "SCARBORO"  
N: 785,290.93'  
E: 2,153,832.98'  
NAD 83/2011

6' WIDE HIGH VISIBILITY  
CROSSWALK MARKINGS (TYP)  
SEE NCDOT DETAIL 1205.7

S 70°07'44" E

PROPOSED 10'  
MULTI-USE TRAIL

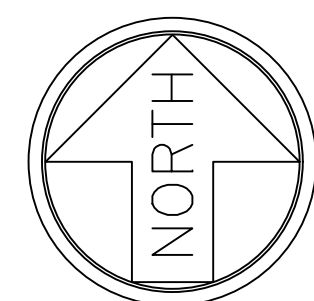
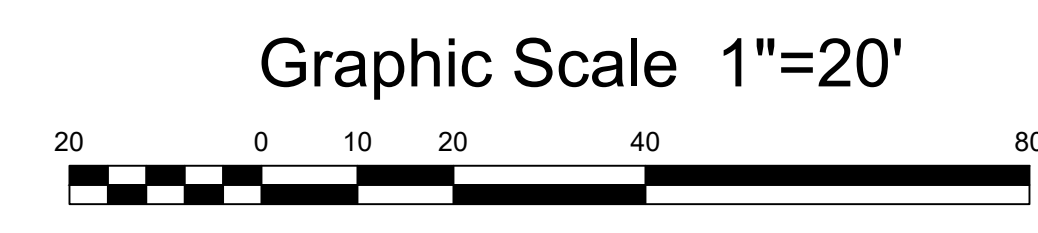
JONESVILLE ROAD SR 2226 60' PUBLIC RW



**SITE NOTES**

- 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.
- ALL CURB DIMENSIONS ARE MEASURED TO BACK OF CURB, AND ALL CURB RADII ARE 3 FEET, UNLESS INDICATED OTHERWISE.
- ALL SITE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE INDICATED.
- ALL BASE AND PAVING WORK SHALL COMPLY WITH LOCAL STANDARDS. INDICATED PAVEMENT THICKNESSES REFER TO COMPACTED THICKNESS.
- INSTALL ALL PAVEMENT WITH POSITIVE SURFACE DRAINAGE.
- ALL HANDICAPPED PARKING SPACES, AISLES, RAMPS, SIGNAGE, PAVEMENT MARKINGS, CROSSWALKS, AND ACCESSIBLE ROUTES SHALL MEET APPLICABLE REQUIREMENTS OF THE NORTH CAROLINA ACCESSIBILITY CODE.
- 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.
- 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.
- 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.

**PRELIMINARY  
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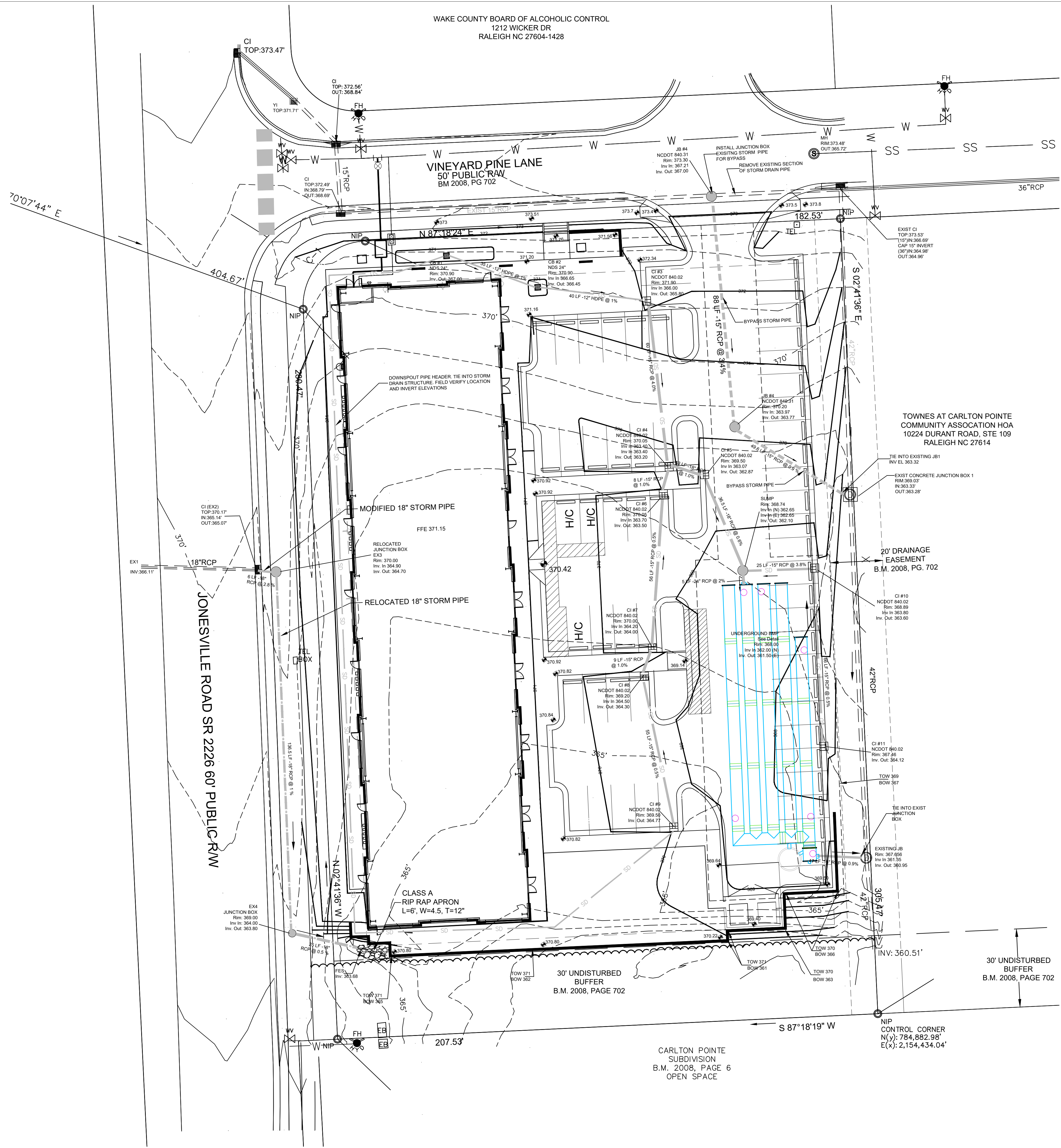


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8	DATE	COMMENT	BY

**Site Plan**  
Vineyard Pine Commercial  
MRR Development, LLC  
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. 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 ADJACENT TO 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 #67 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
<b>Overall Site</b>	63,259.00	1.45
<b>Impervious Summary</b>		
Pre		
Parking Lot	0.00	0.00
Managed Pervious	63,162.00	1.45
<b>Total</b>		
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
<b>Total</b>		<b>1.45</b>

**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.

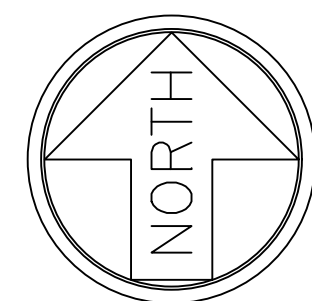
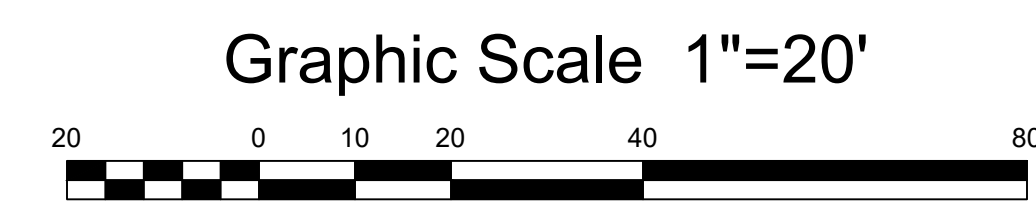
**STORM DRAINAGE SYSTEM**

- 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 CURBS 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.

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DO NOT USE FOR  
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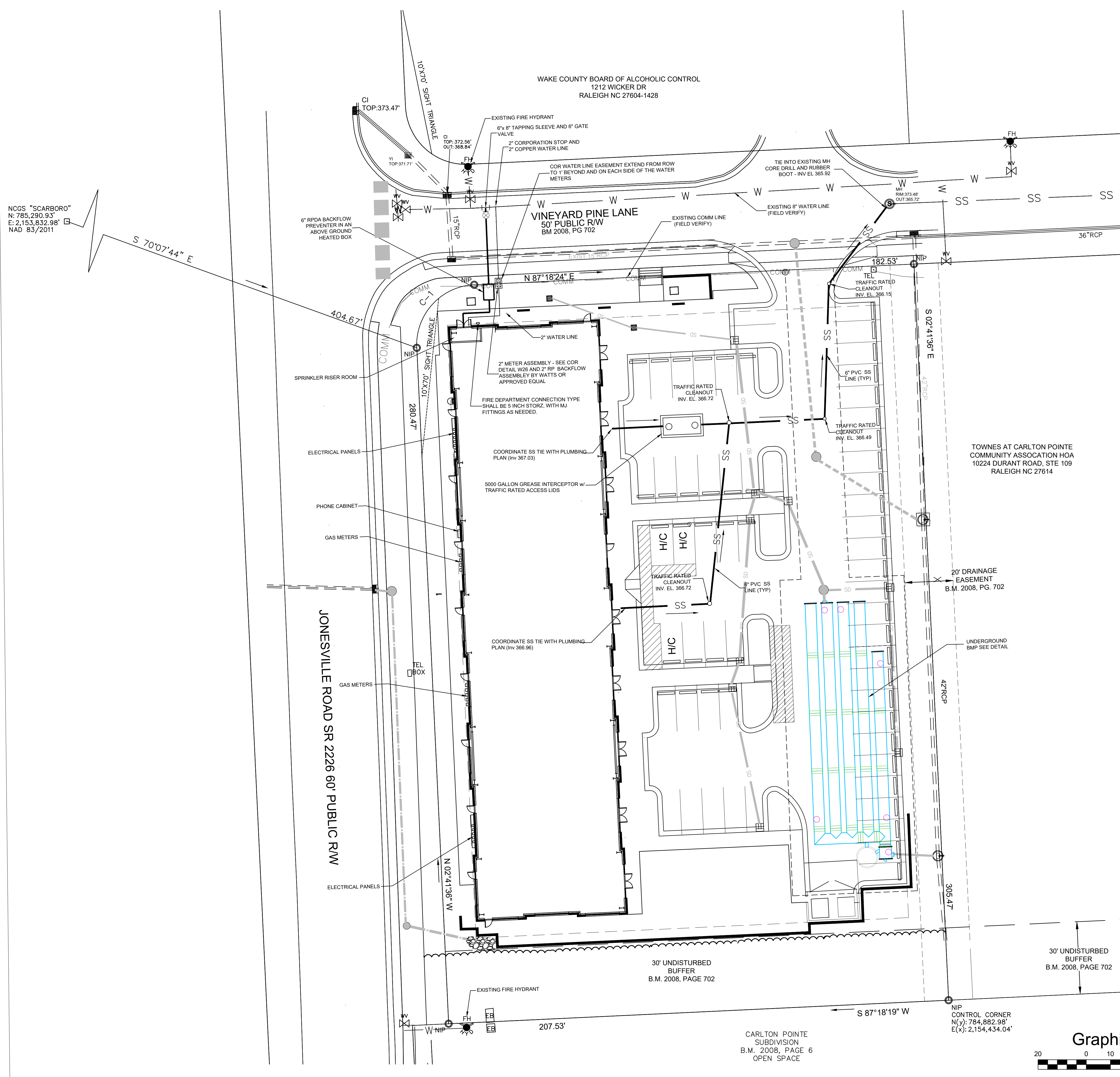


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3	DATE	COMMENT	BY
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5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	DATE	COMMENT	BY
NO.	DATE	REVISION DESCRIPTION	BY

**Grading and Stormwater Plan**  
Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina

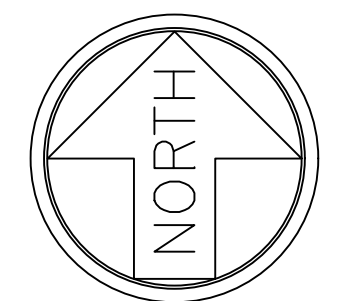
Project No.  
Dwg No.  
**C3**



- CITY OF RALEIGH UTILITY NOTES:
- ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: COR PUD HANDBOOK, CURRENT EDITION)
  - UTILITY SEPARATION REQUIREMENTS:
    - 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, FERRUGIOUS 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.
    - 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.
    - 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.
    - 5' 0" MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
    - MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS. MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49).
    - ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
  - 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.
  - CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER 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.
  - 3' 0" MINIMUM COVER IS REQUIRED ON ALL WATER MAINS. 4' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
  - IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER AND 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.
  - INSTALL 3/4" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. (NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW AND PRESSURE).
  - INSTALL 4" PVC SEWER SERVICES AT 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE AND SPACED EVERY 75 LINEAR FEET MAXIMUM.
  - 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 UPSTREAM MANHOLE.
  - 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.
  - NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS AND SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
  - GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS AND INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT APPROVAL LIST - 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 JOANIE HARTLEY AT (919) 212-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.
  - CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST - 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 JOANIE HARTLEY AT (919) 212-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.

- SEPARATION NOTES:
- MINIMUM SEPARATION BETWEEN STORM DRAINAGE AND SANITARY SEWER IS 24 INCHES.
  - MINIMUM SEPARATION BETWEEN WATER AND STORM DRAINAGE IS 18 INCHES.
  - 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.

**PRELIMINARY  
DO NOT USE FOR  
CONSTRUCTION**



**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.

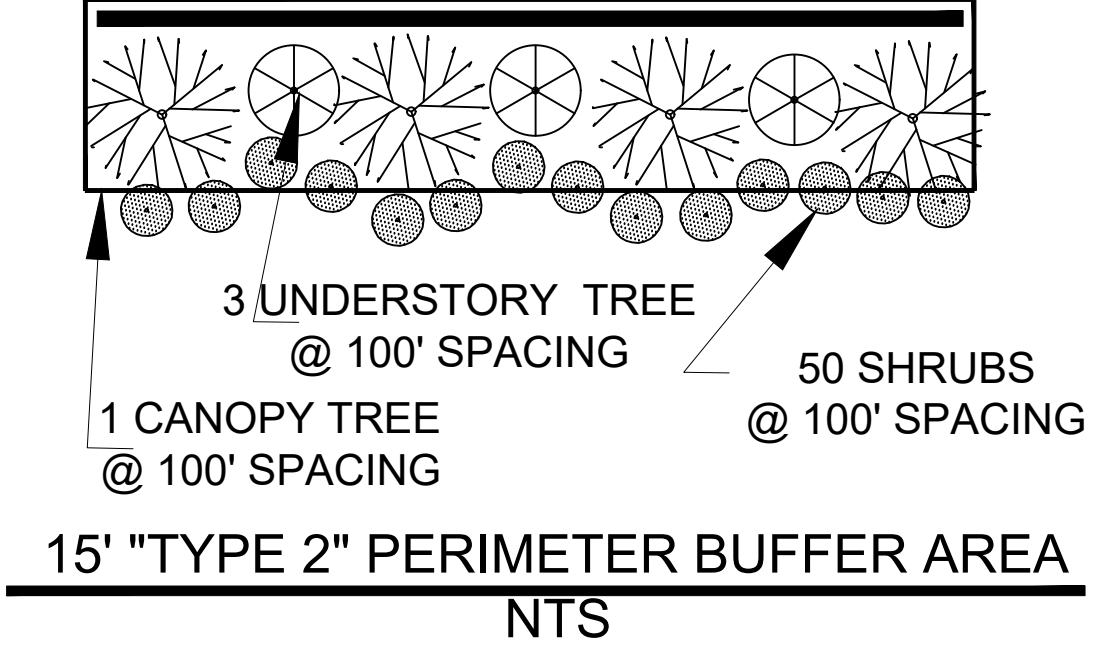
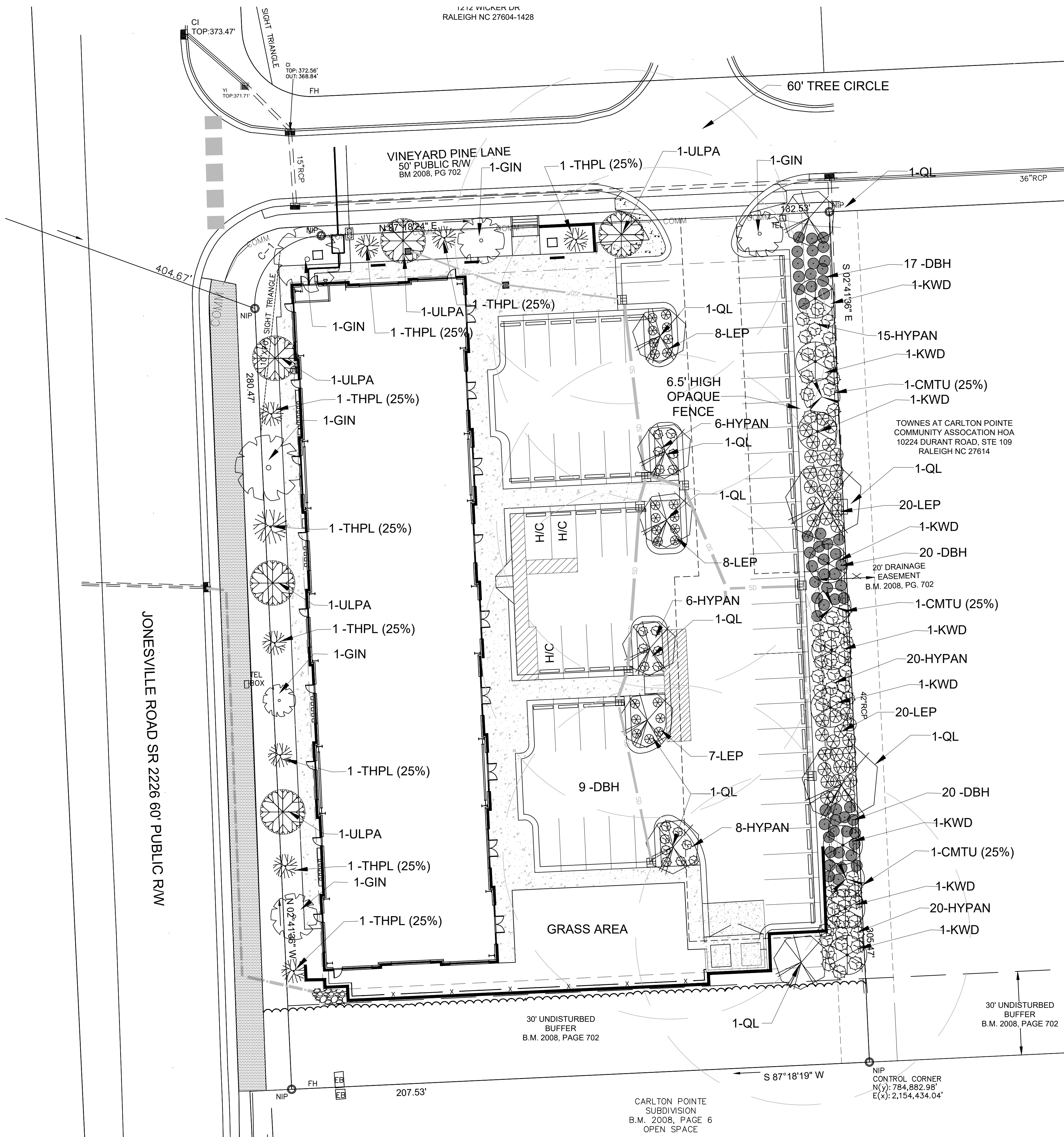
City of Raleigh Development Approval \_\_\_\_\_  
City of Raleigh Review Officer \_\_\_\_\_

NO.	DATE	DESCRIPTION	BY
1	8-25-2023	Initial Submittal	KPS
2	8-25-2023	Town/Village/County Comment	KPS
3		COMMENT	BY
4		DATE	BY
5		DATE	BY
6		DATE	BY
7		DATE	BY
8		DATE	BY
9		DATE	BY
10		DATE	BY

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

**Utility Plan**  
Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina

Project No. \_\_\_\_\_  
Dwg No. **C4**

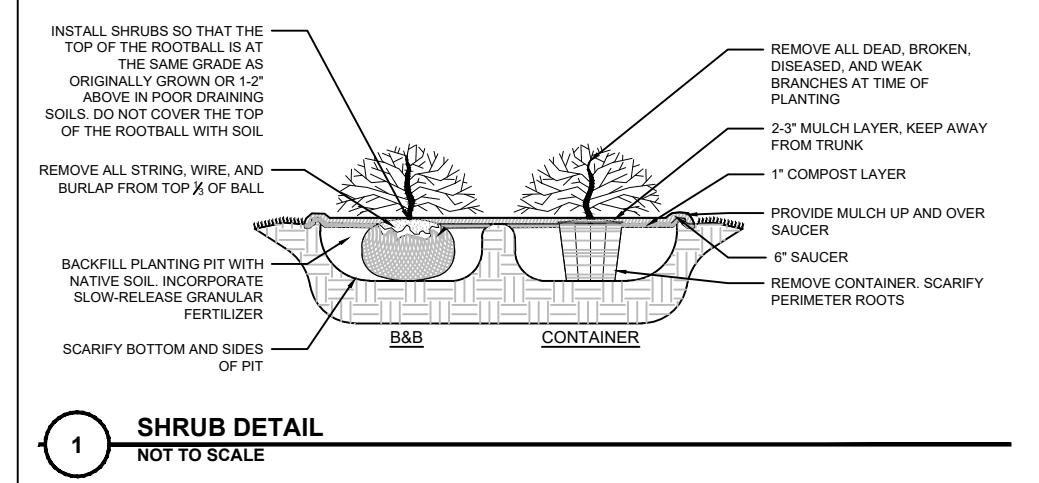
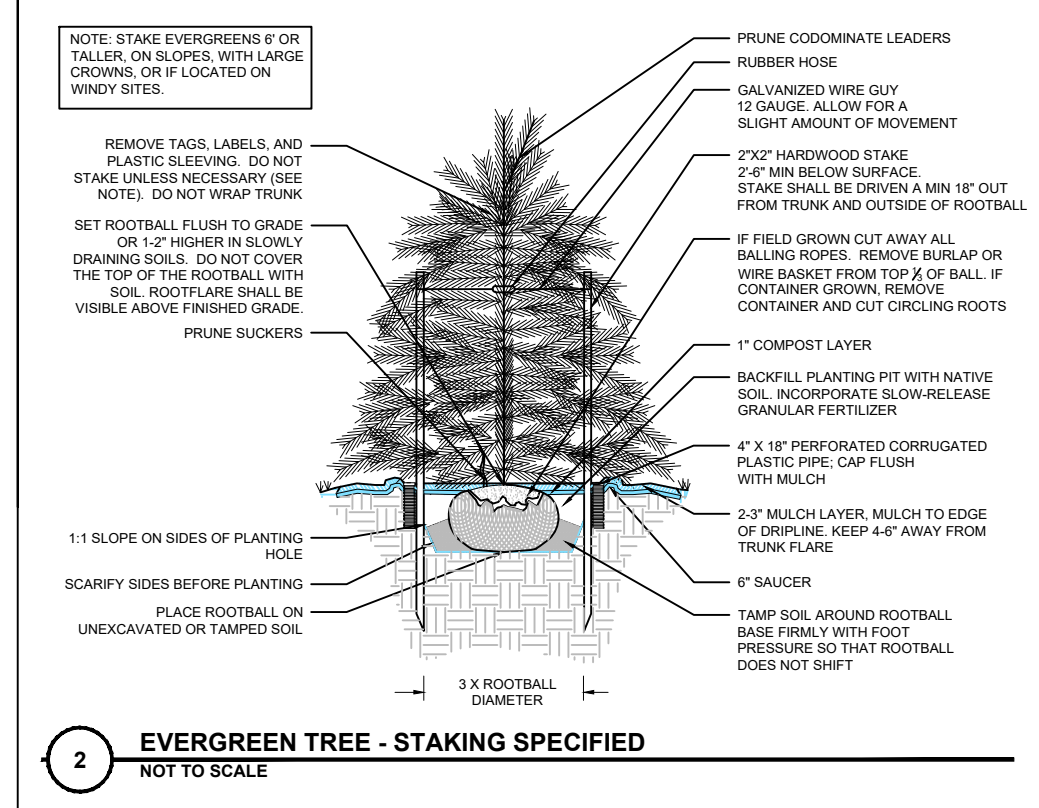
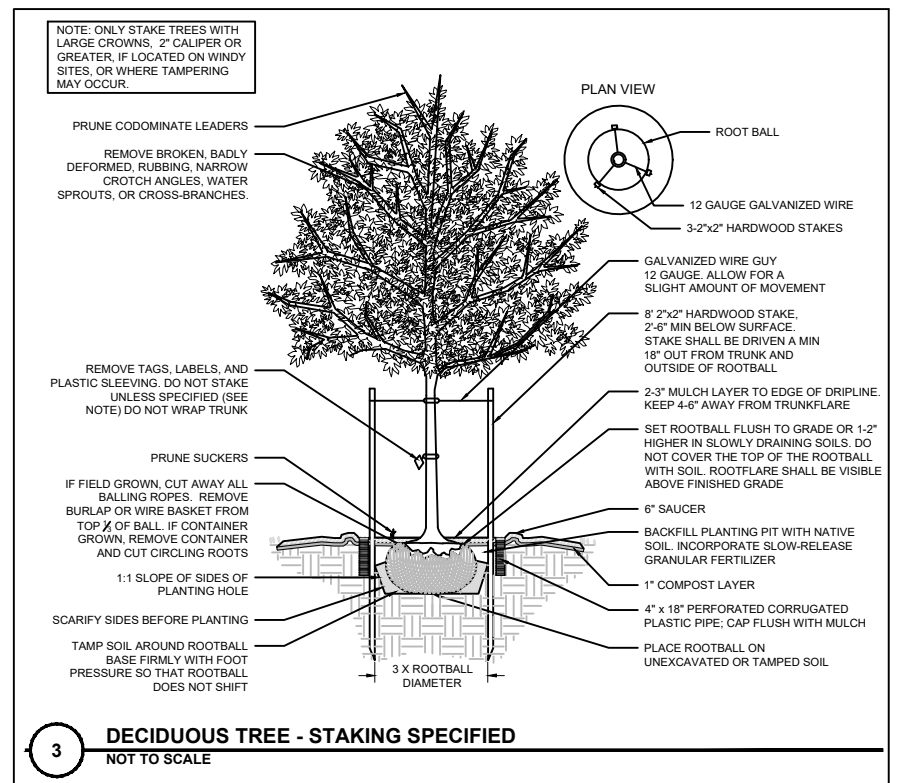


- LANDSCAPE NOTES:**
1. LS1 IS FOR PLANTING PURPOSES ONLY. FOR INFORMATION RELATING TO GRADING, REFER TO GRADING PLAN.
  2. VERIFICATION OF TOTAL QUANTITIES AS SHOWN IN THE PLANT LIST SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
  3. ALL PLANTS AND PLANTING PROCEDURES SHALL CONFORM TO ACCEPTED 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,

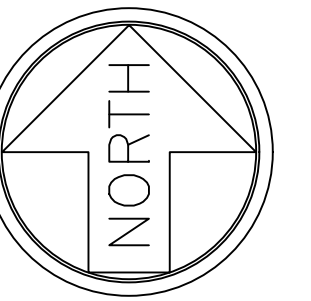
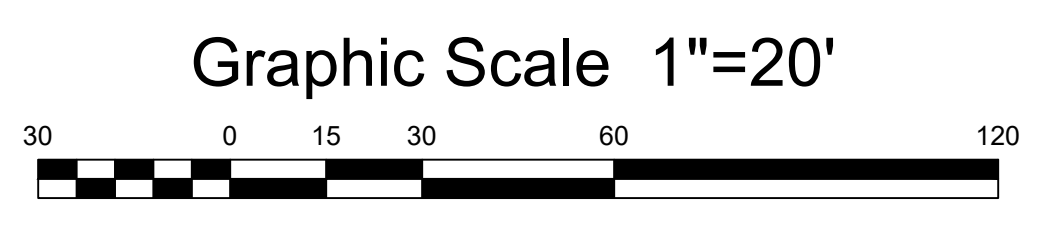
PLANT LIST - PARKING LOT				
KEY	BOTANICAL NAME	COMMON NAME	CALIPER / HT	QUAN.
CANOPY	QL	OVERCUP OAK	Quercus lyrata	2.5" 7
UNDERSTORY	THPL	NATCHES CREPE MYRTLE	Lag. Indica 'Natchez'	2.5" 4
SHRUBS	HYPAN	LITTLE LIME HYDRANGEA	Hydrangea paniculata "Littel Lime"	36" HT 20
	LEP	PURPLE DIAMOND LOROPETAIUM	Lorepetalum ch. purple Diamond"	36" HT 17

PLANT LIST - TYPE 2 PERIMETER BUFFER					
REQUIRED	KEY	BOTANICAL NAME	COMMON NAME	CALIPER / HT	QUAN.
CANOPY 305 / 100 * 1 = 3	QL	OVERCUP OAK	Quercus lyrata	2.5"	3
UNDERSTORY 305 / 100 * 3 = 9	KWD	KOUASA DOGWOOD	Cornus kousa	2.5"	9
EVERGREEN 305 / 100 * 1 = 3 (25%)	CMTU	GREEN GIANT ARBORVIATE	Thuja plicata "Green Giant"	8" HT	3
SHRUBS 305 / 100 * 50 = 152	HYPAN	LITTLE LIME HYDRANGEA	Hydrangea paniculata "Littel Lime"	36" HT	55
	LEP	PURPLE DIAMOND LOROPETAIUM	Lorepetalum ch. purple Diamond"	36" HT	40
	DBH	Dwarf Burford Holly	Ilex cornuta "Bufordii Nana"	36"	39

PLANT LIST STREETS - JONESVILLE AND VINEYARD PINE					
REQUIRED	KEY	BOTANICAL NAME	COMMON NAME	CALIPER / HT	QUAN.
CANOPY 462 / 40 = 11.5	ULPA	CHINESE ELM	Ulmus Parvifolia	2.5"	5
	GIN	MAIDENHAIR TREE	Ginkgo biloba (Male)	2.5"	6
UNDERSTORY (25%)	THPL	NATCHES CREPE MYRTLE	Lag. Indica 'Natchez'	2.5"	9



**PRELIMINARY  
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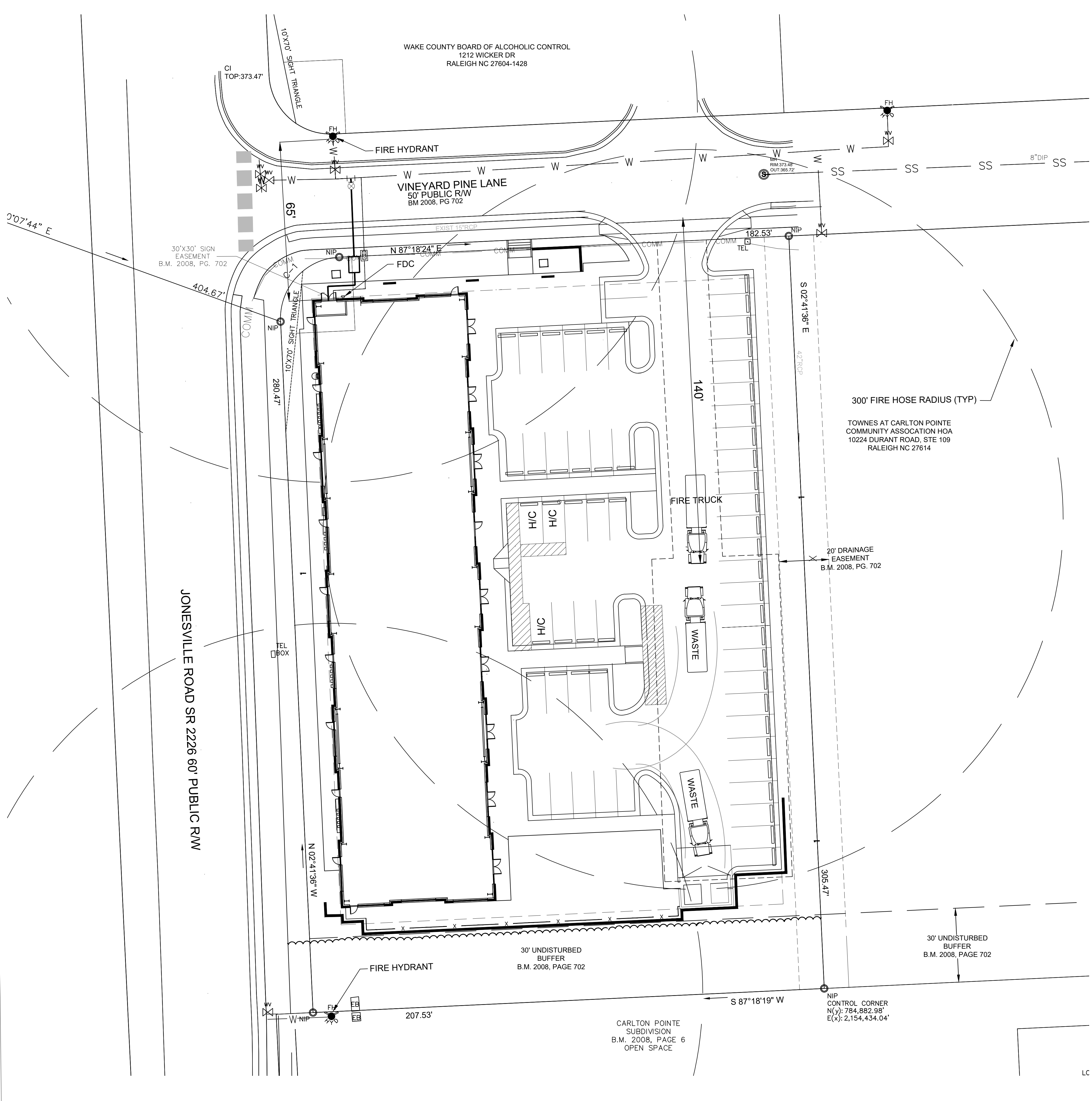


**Gettle Engineering and Design, PLLC**  
3616 Waxwing Court,  
Wake Forest, North Carolina 27587  
(919) 210-3934  
Firm License P-2538

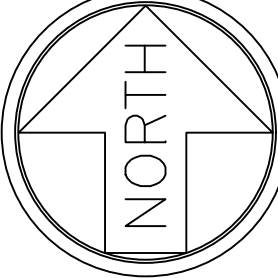
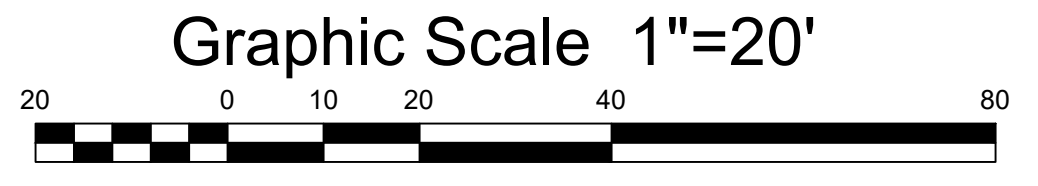
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2	02-22-2024	Town/Village/County Comment	
3		DATE	COMMENT
4		DATE	COMMENT
5		DATE	COMMENT
6		DATE	COMMENT
7		DATE	COMMENT
8		DATE	COMMENT
9		DATE	COMMENT

**Landscape Plan**  
Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina

Project No.  
Dwg No.  
**C5**



**PRELIMINARY  
DO NOT USE FOR  
CONSTRUCTION**

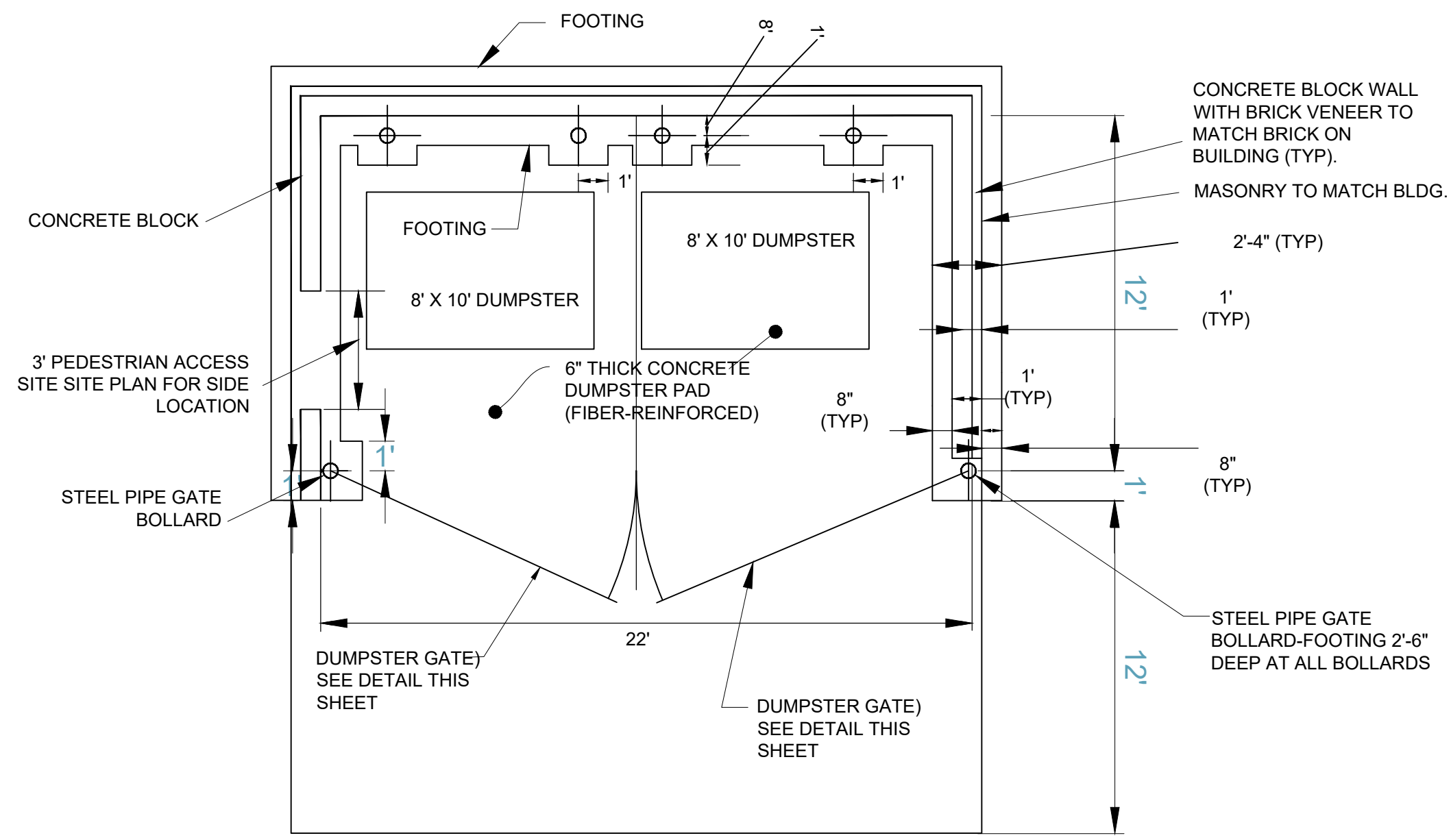


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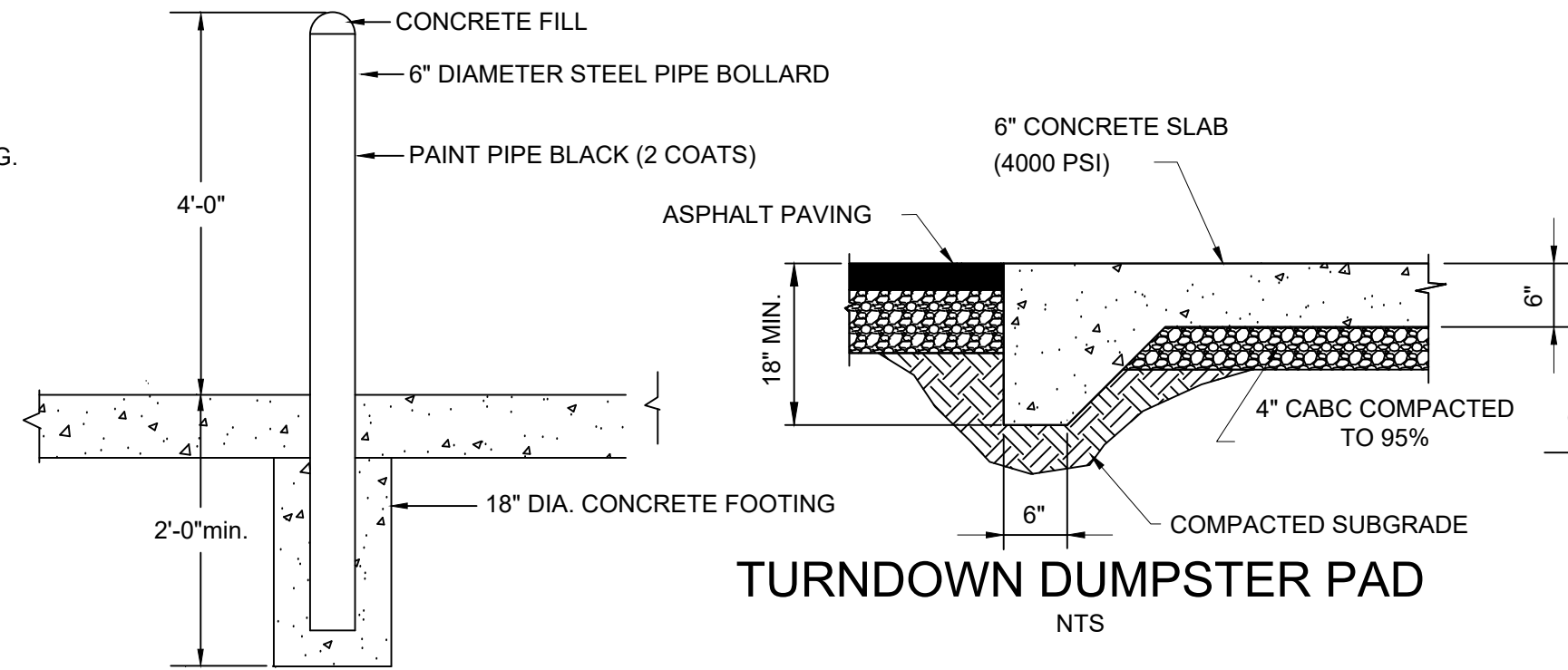
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2	5-22-2028	Town / Wake County Comment	KPS
3	DATE	COMMENT	BY
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
7	DATE	COMMENT	BY
8	DATE	COMMENT	BY
NO.	DATE	REVISION DESCRIPTION	BY

**Truck Turn & Fire Access Plan**  
Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina

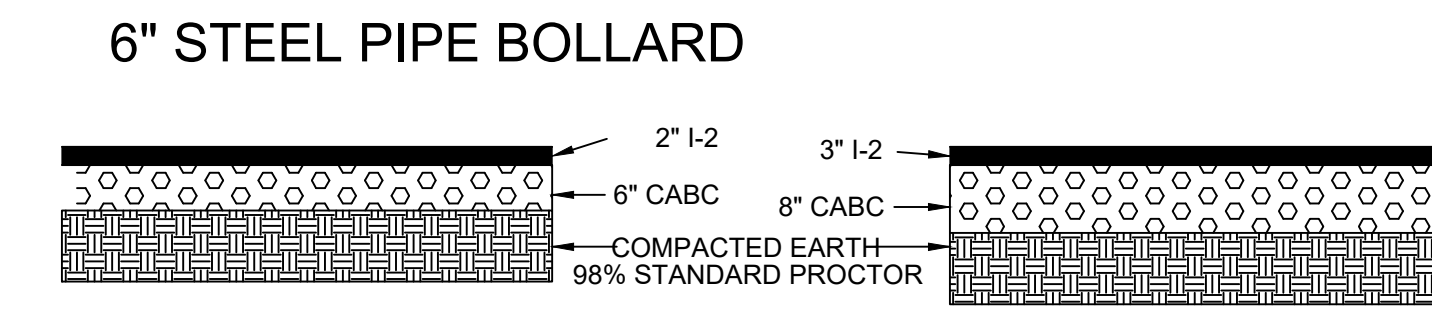
Project No.  
Dwg No.  
**C6**



PLAN VIEW - DUMPSTER ENCLOSURE & PAD  
NTS



TURNDOWN DUMPSTER PAD  
NTS

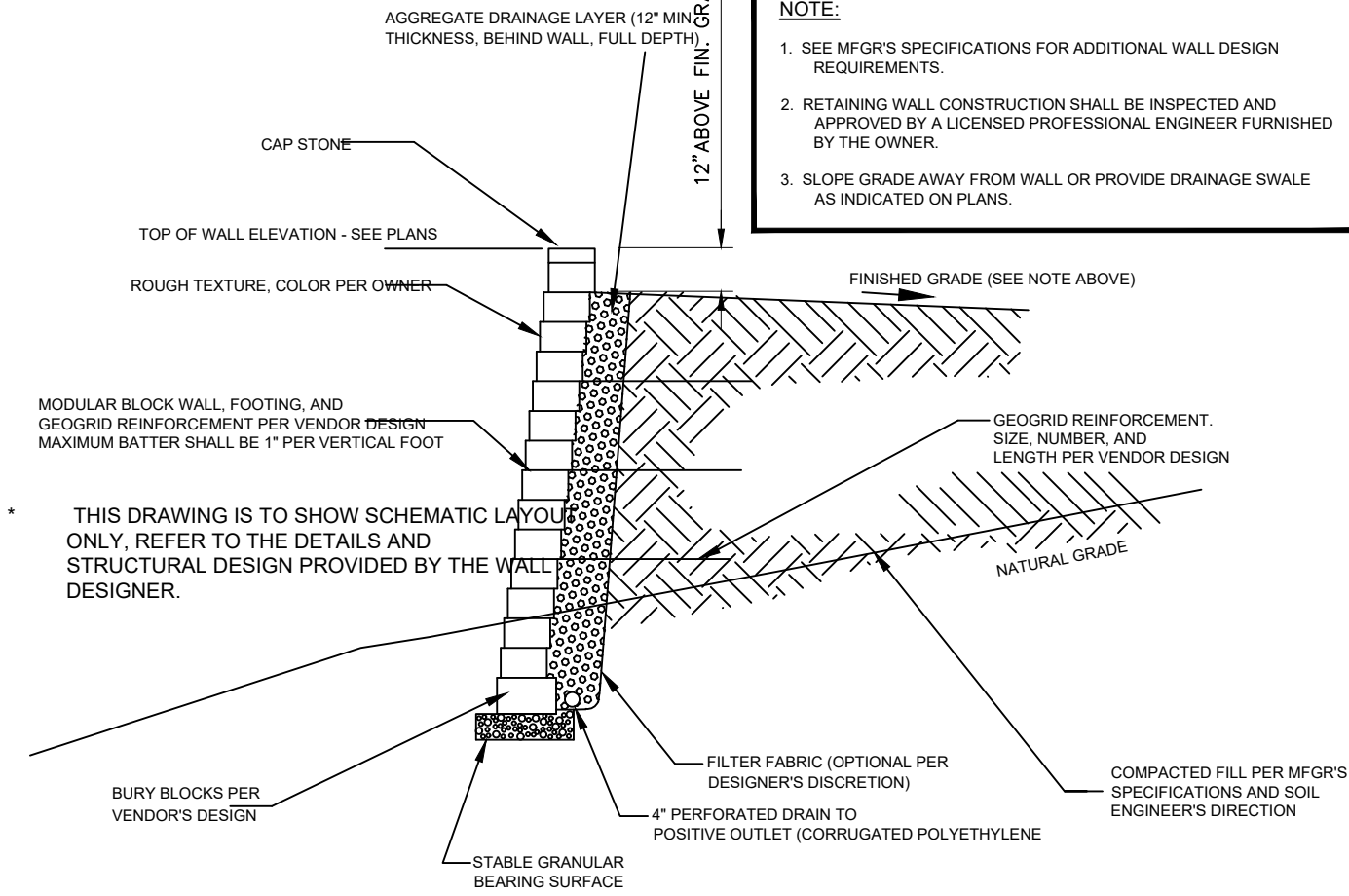


STANDARD PAVEMENT HEAVY DUTY PAVEMENT

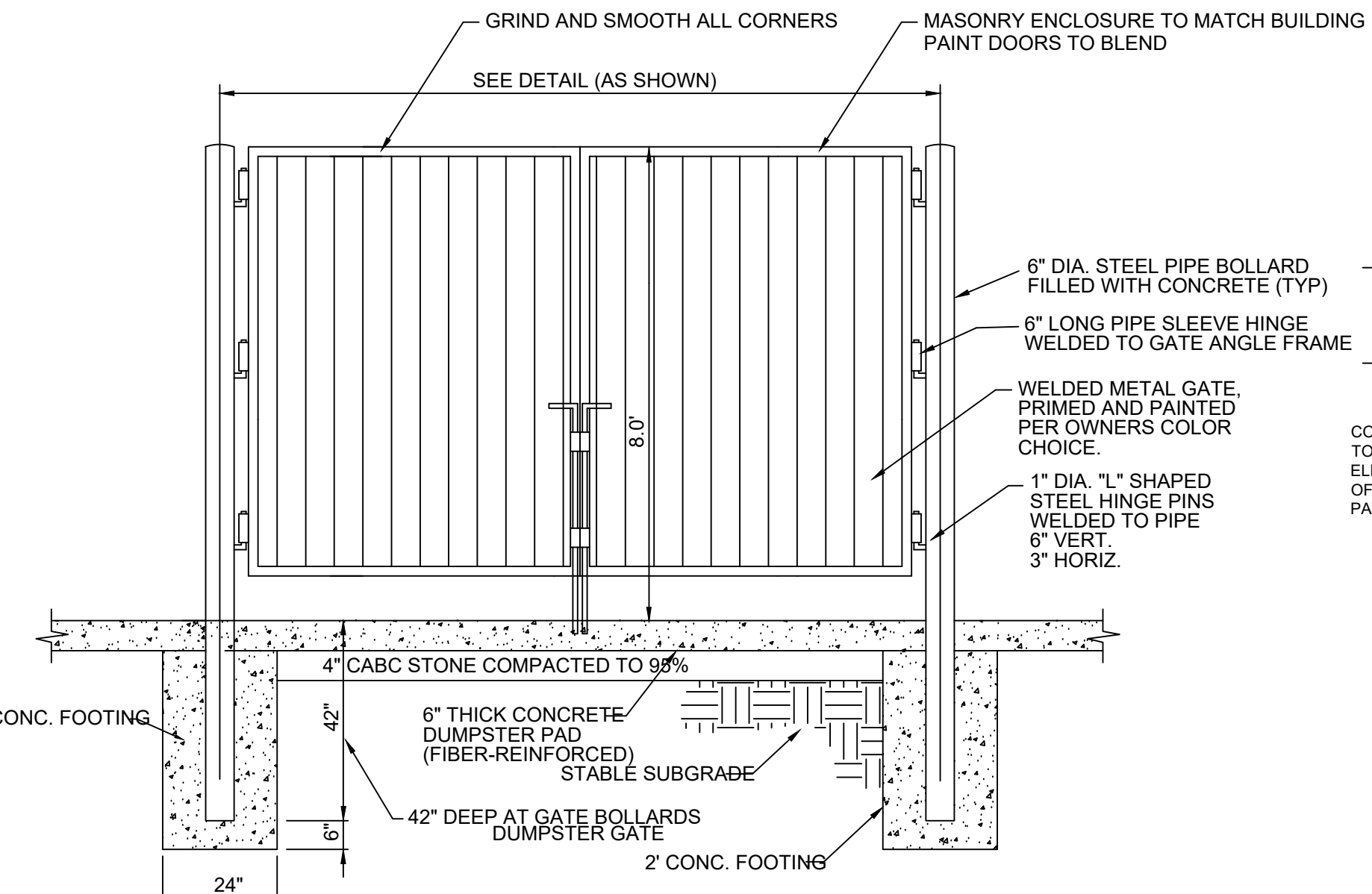
CONSTRUCTION PROCEDURES, MIX RATIOS, AGGREGATE SIZES, AND COMPACTED DENSITIES SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES 1995 EDITION.

RETAINING OR MECHANICALLY STABILIZED EARTH WALLS EXCEEDING 6 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.

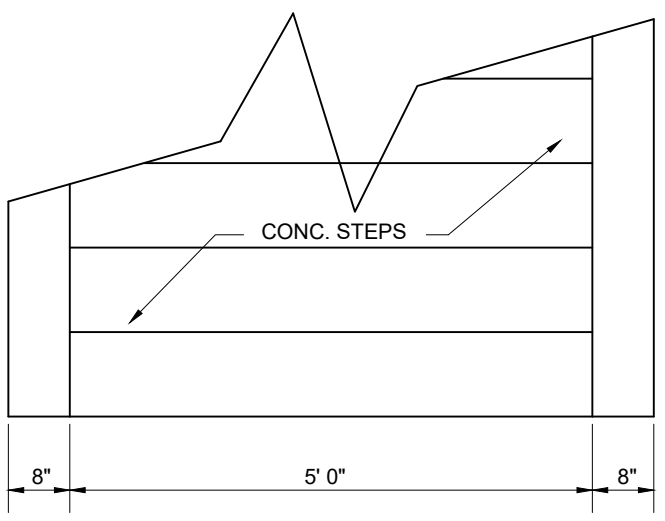
NOTE:  
1. SEE MFG'S SPECIFICATIONS FOR ADDITIONAL WALL DESIGN REQUIREMENTS.  
2. RETAINING WALL CONSTRUCTION SHALL BE INSPECTED AND APPROVED BY A LICENSED PROFESSIONAL ENGINEER FURNISHED BY THE OWNER.  
3. SLOPE GRADE AWAY FROM WALL OR PROVIDE DRAINAGE SWALE AS INDICATED ON PLANS.



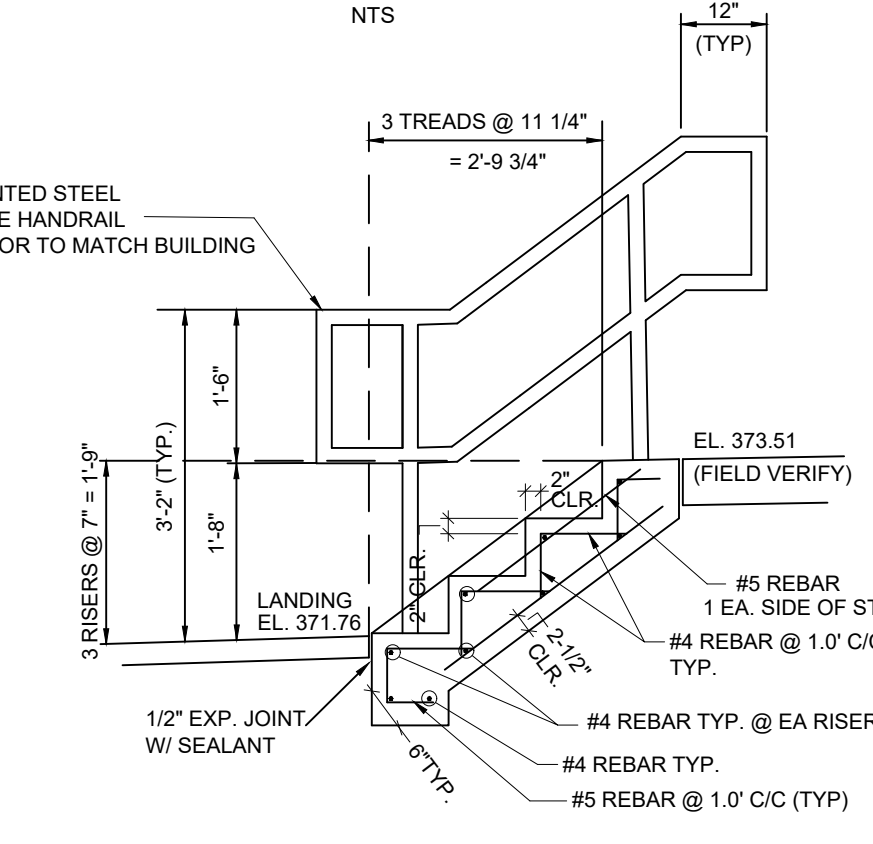
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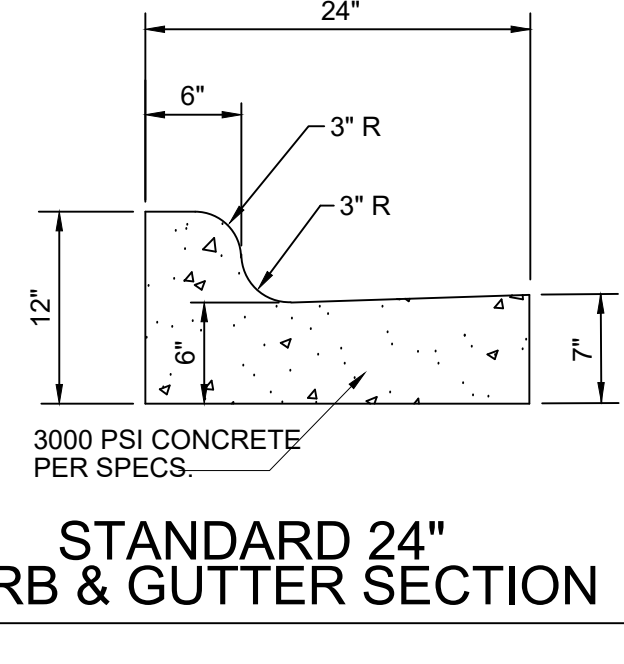
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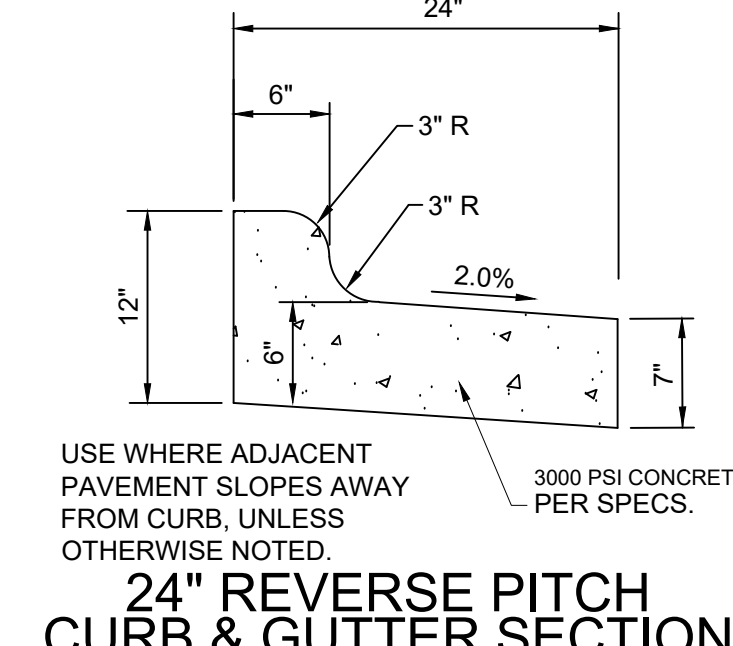
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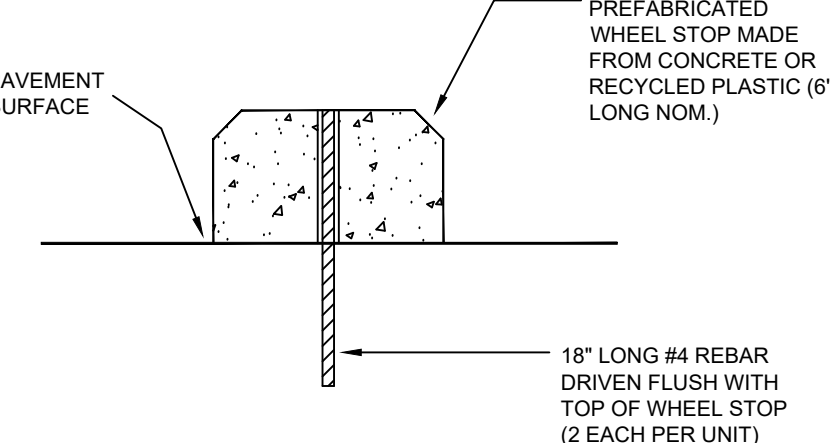
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STANDARD 24\"/>

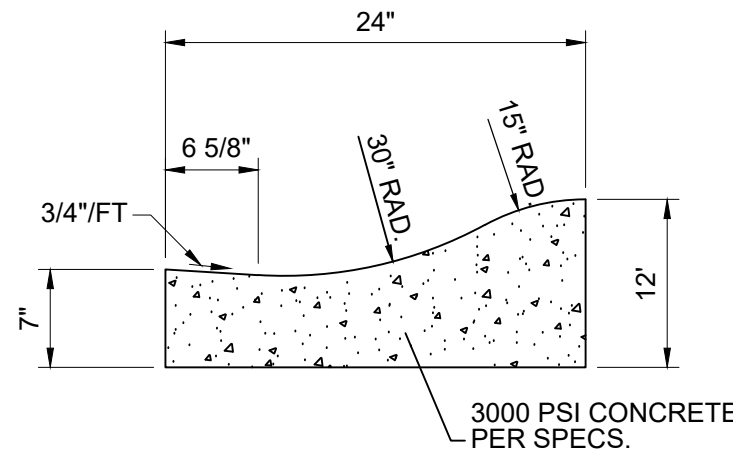


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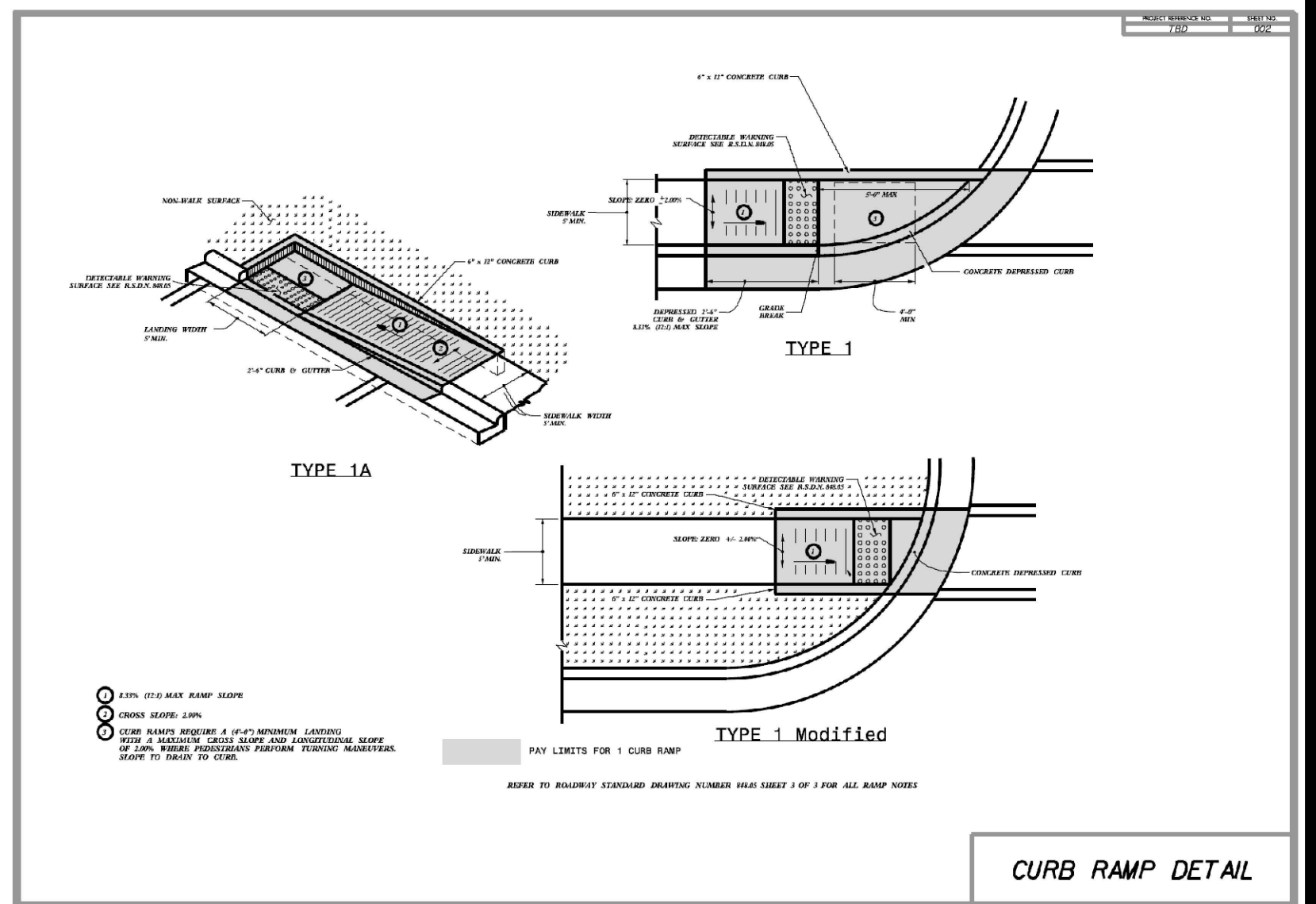


WHEEL STOP  
NTS

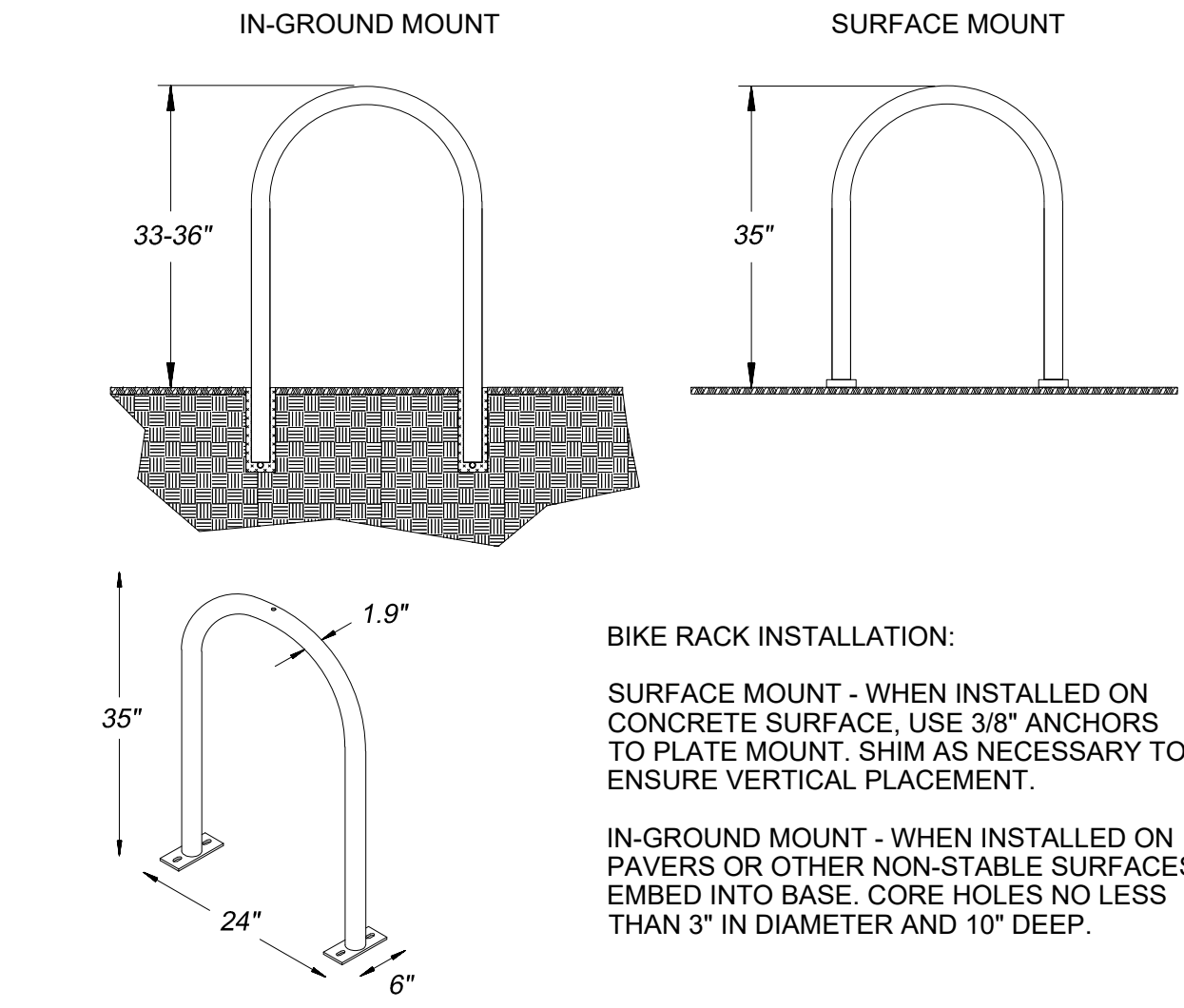
- CURB AND GUTTER NOTES:
- 10' MAXIMUM BETWEEN CONSTRUCTION JOINTS. 15' MAXIMUM BETWEEN CONSTRUCTION JOINTS ON MACHINE POURS.
  - 1/2" EXPANSION JOINT EVERY 90'.
  - 3000 PSI CONCRETE MINIMUM. 4" SLUMP MAXIMUM.
  - LIQUID MEMBRANE CURING COMPOUND SHALL MEET THE REQUIREMENTS OF SECTION 1028-2 OF NCDOT STANDARDS & SPECIFICATIONS FOR ROADS AND STRUCTURES.
  - 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.
  - ABC STONE REQUIRED UNDER ALL CURB & GUTTER.



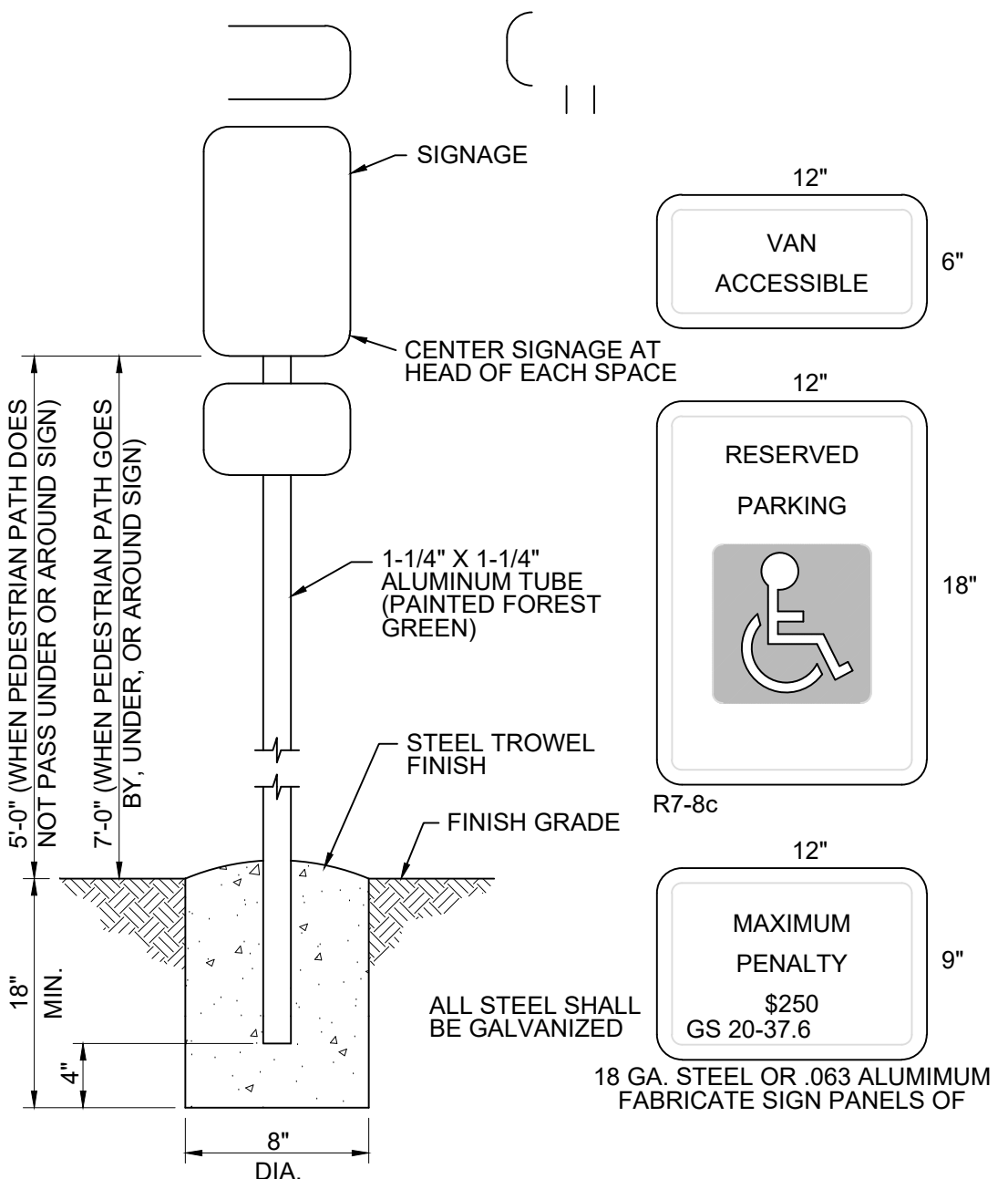
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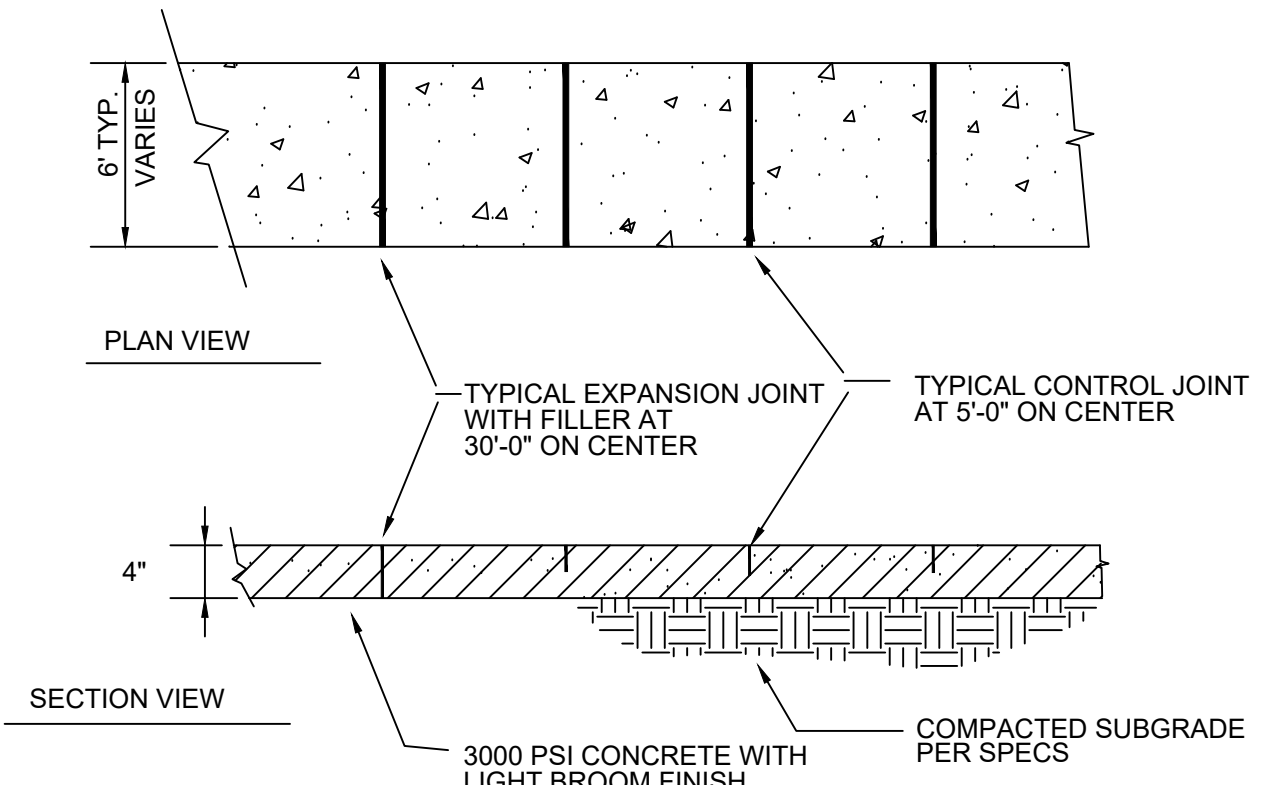
CURB RAMP DETAIL



STANDARD BIKE RACK  
NTS



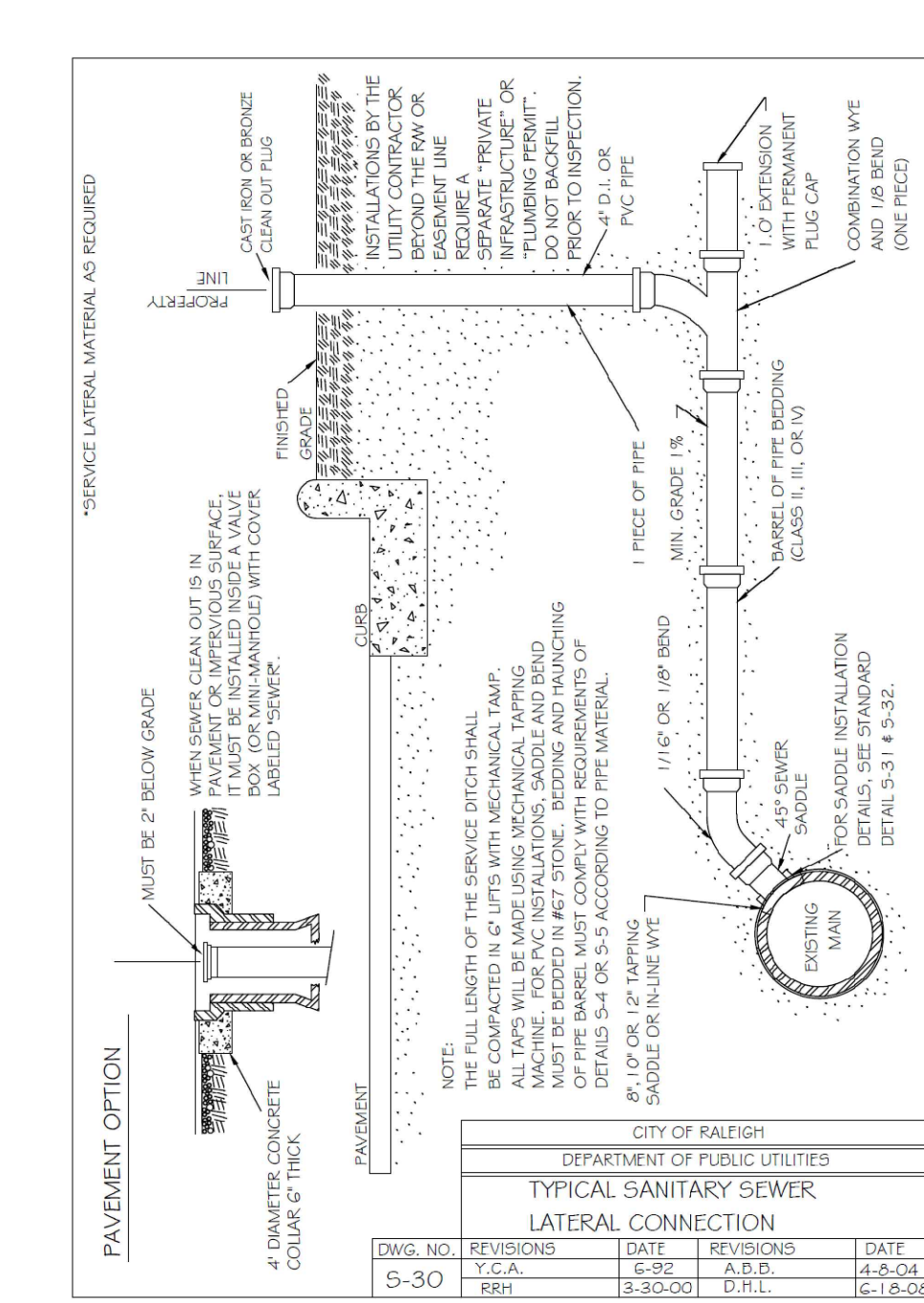
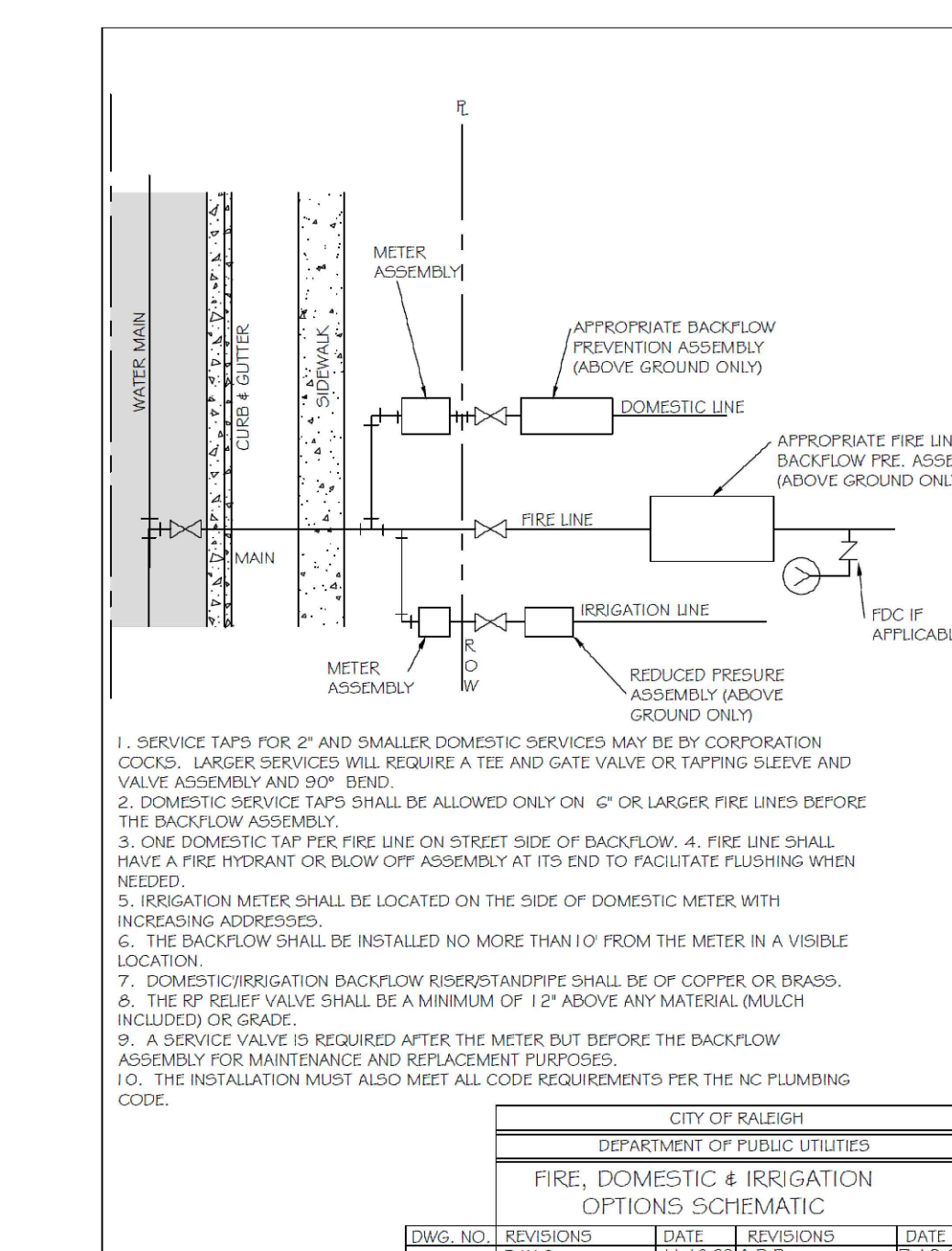
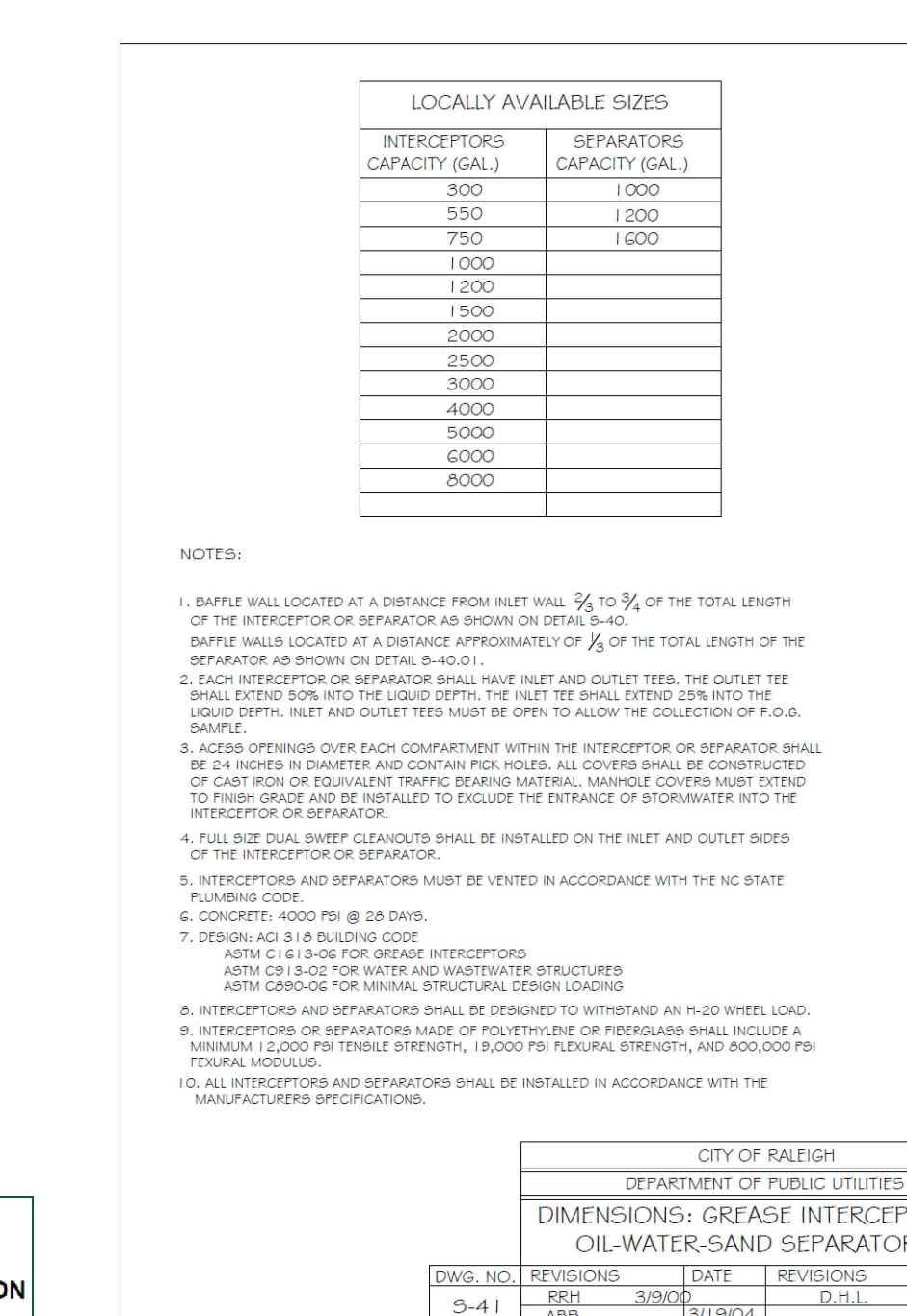
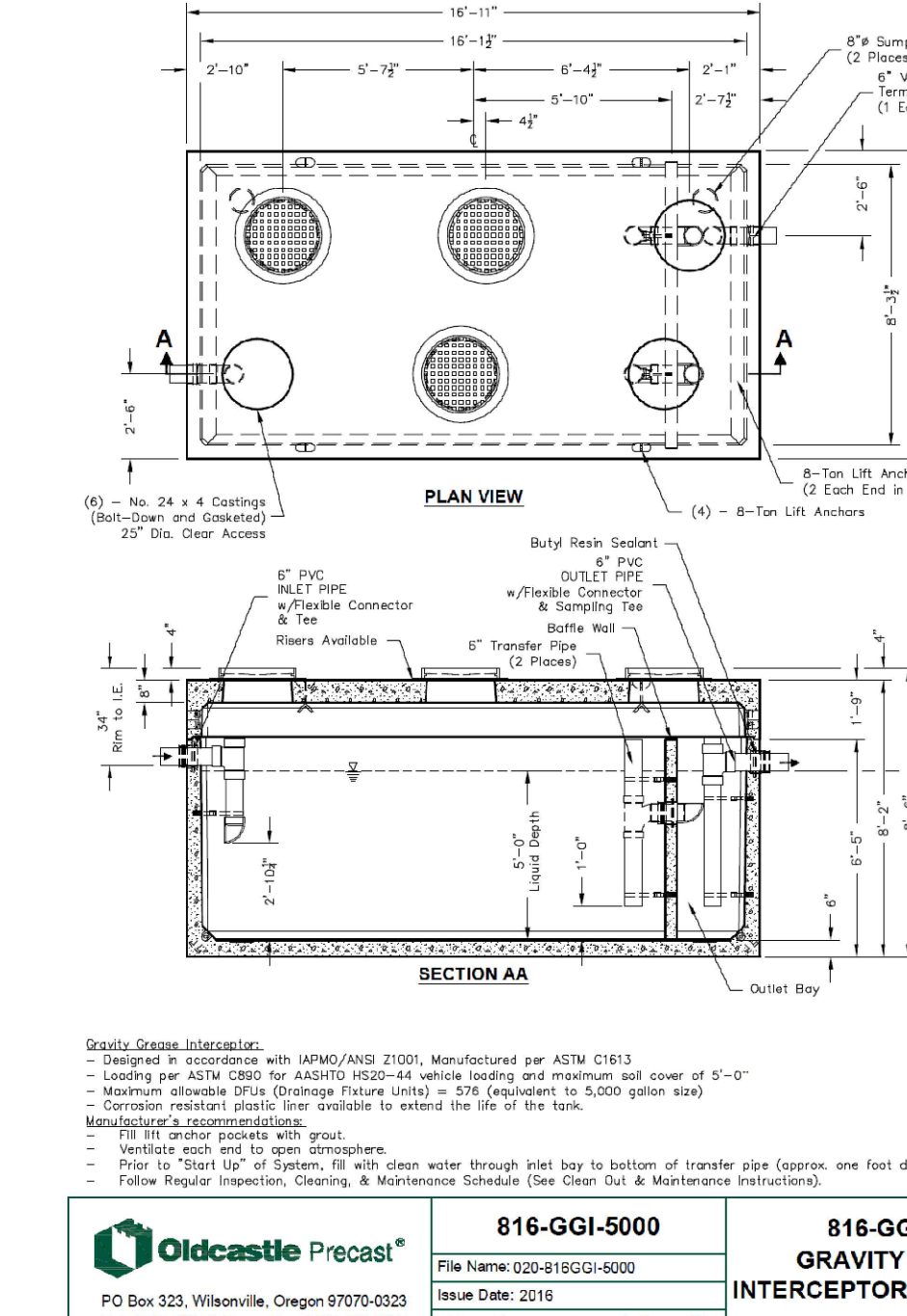
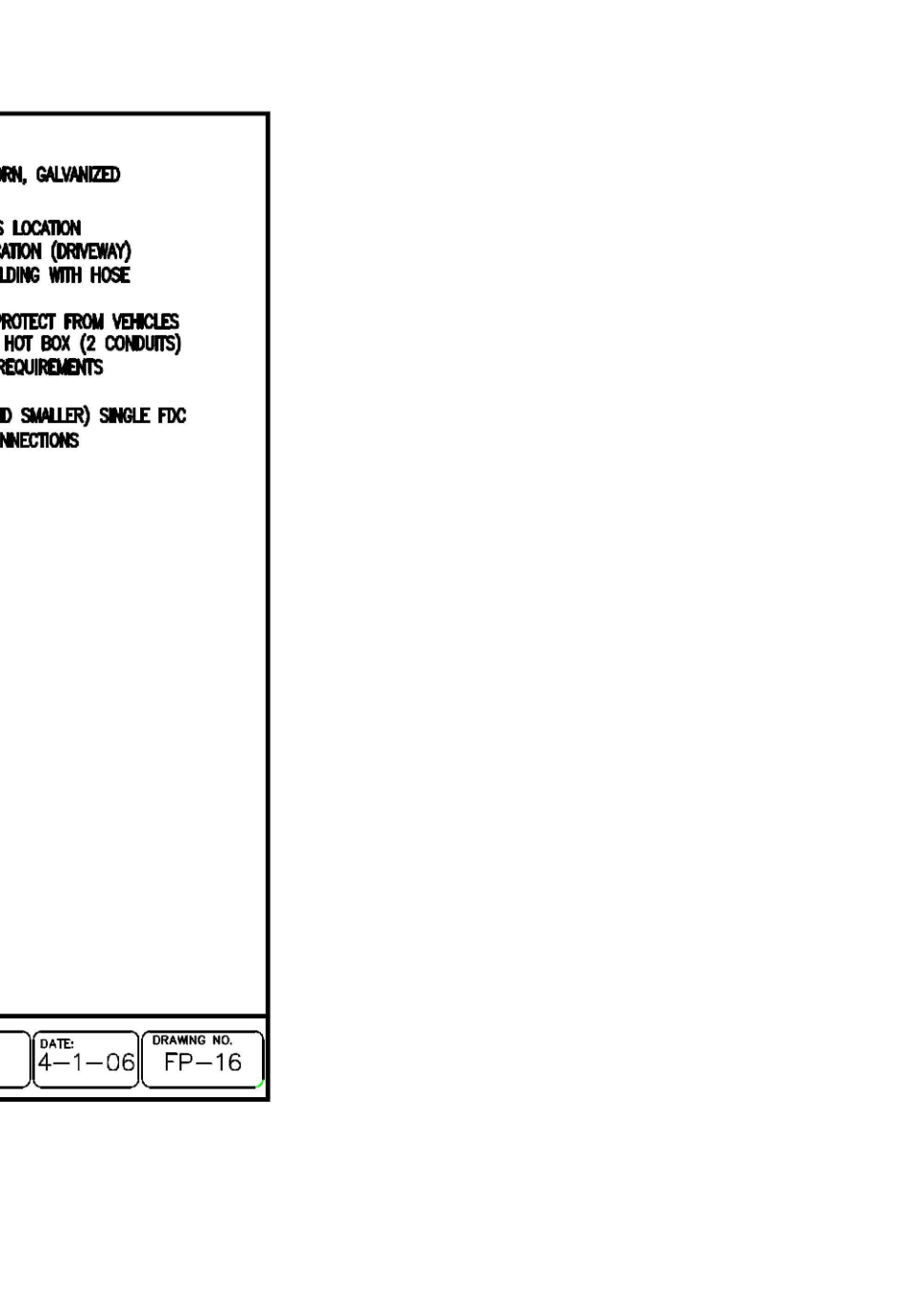
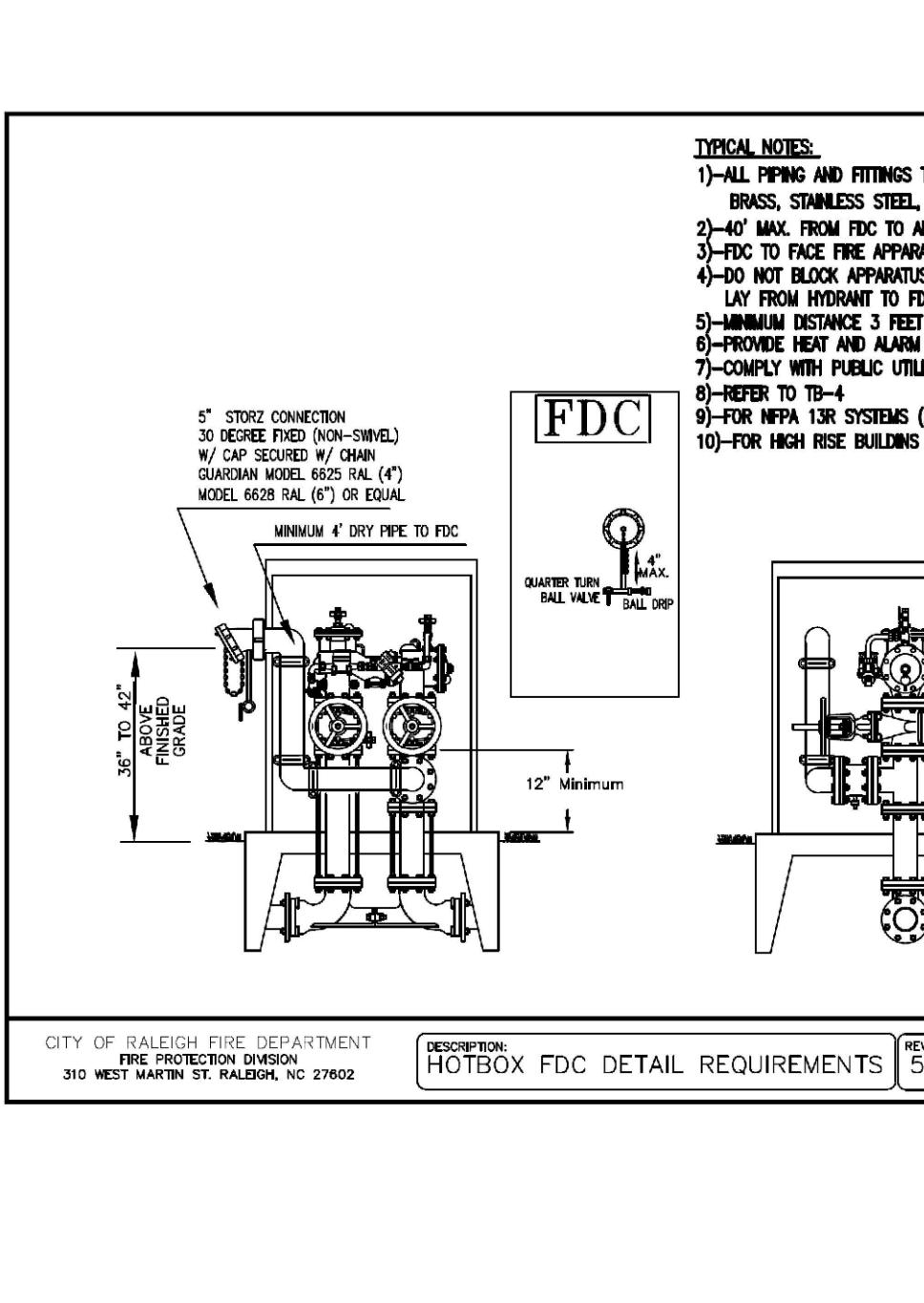
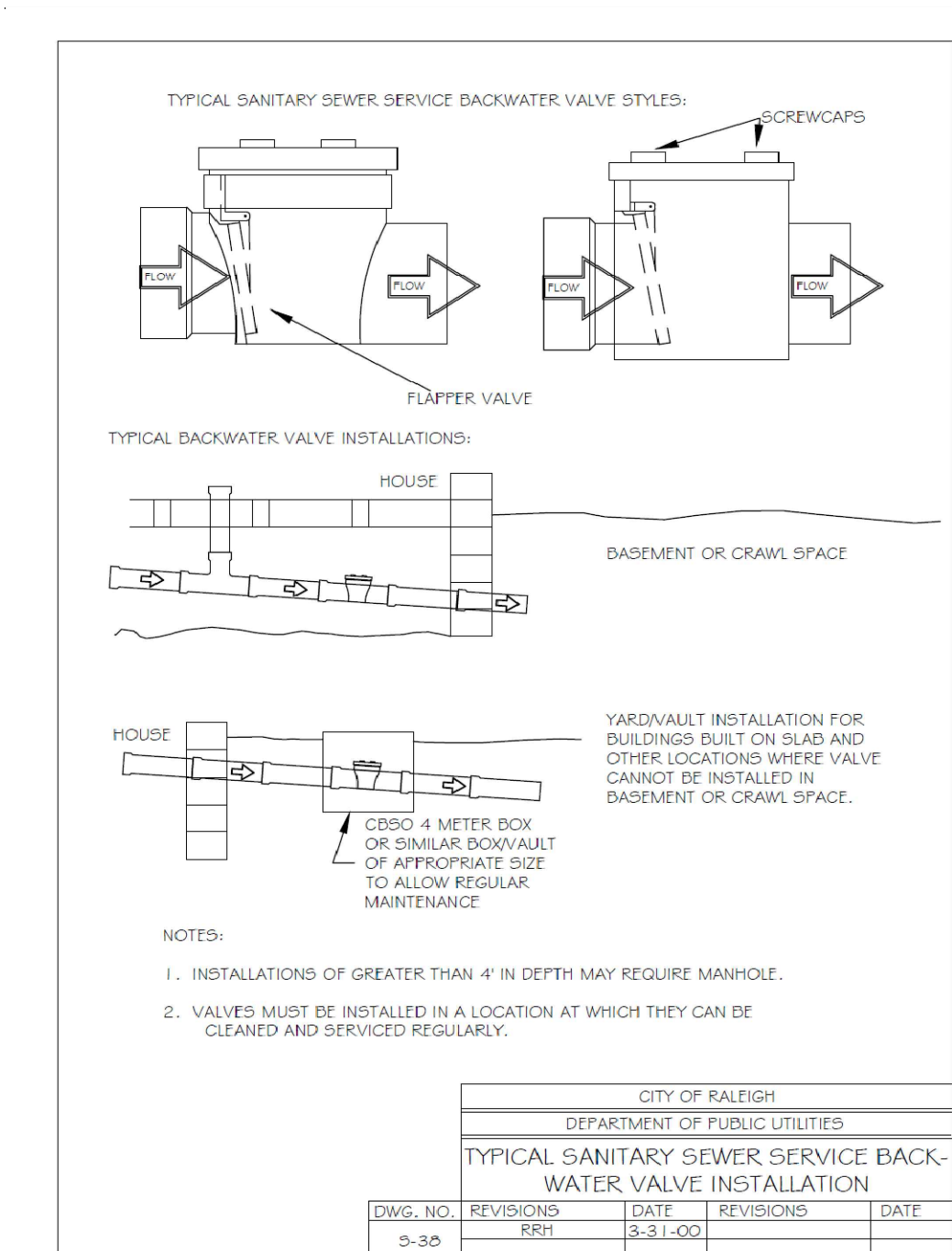
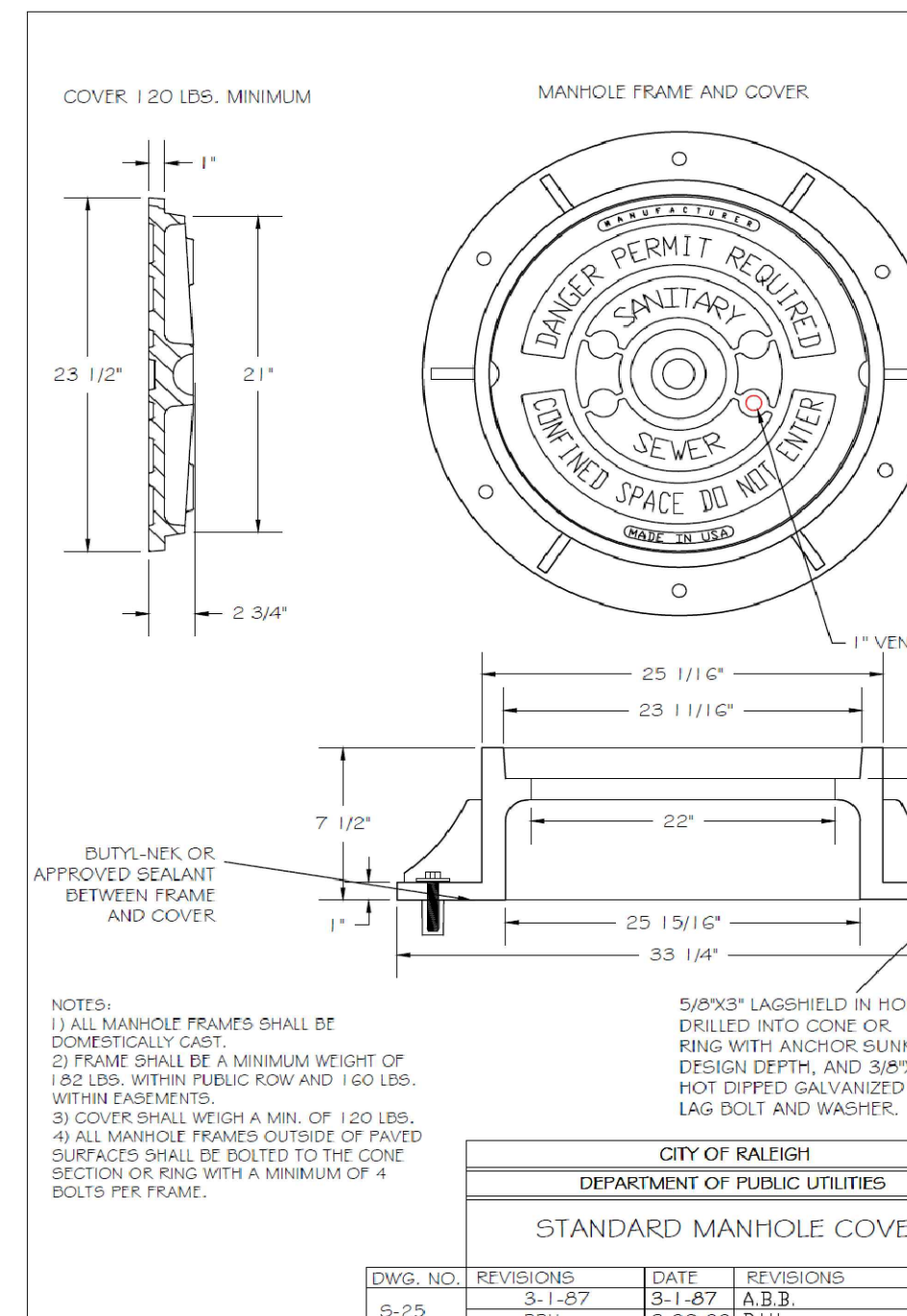
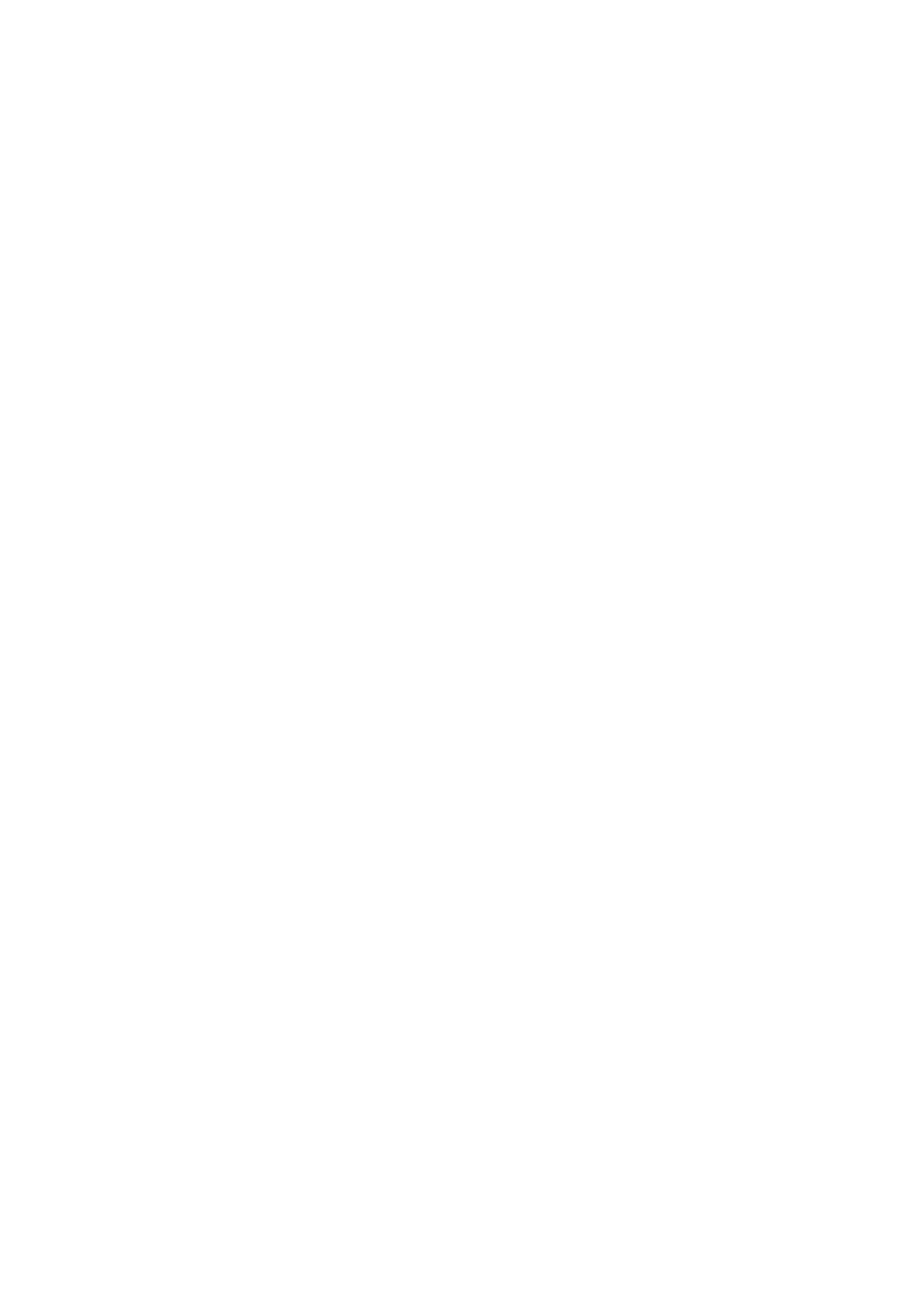
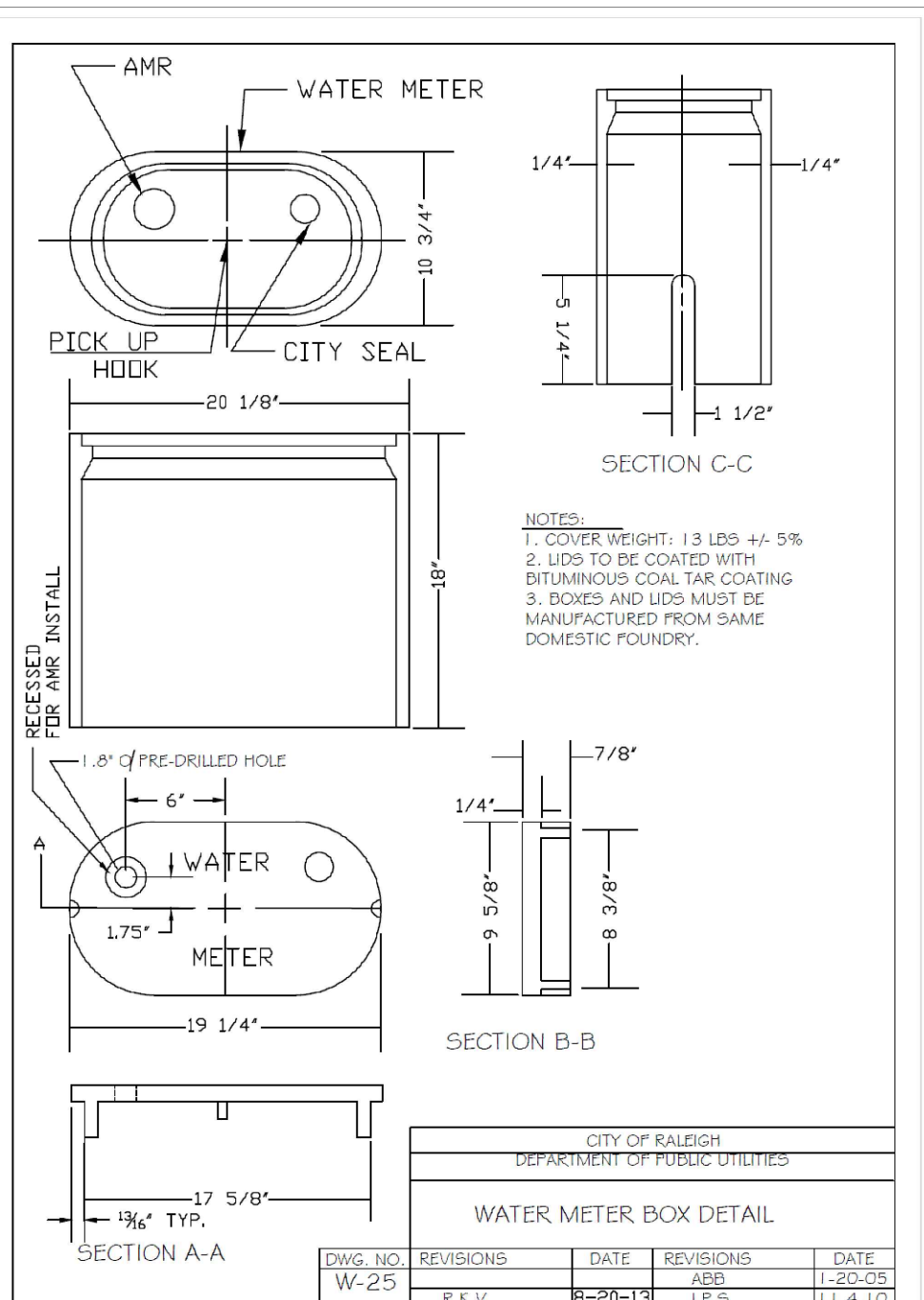
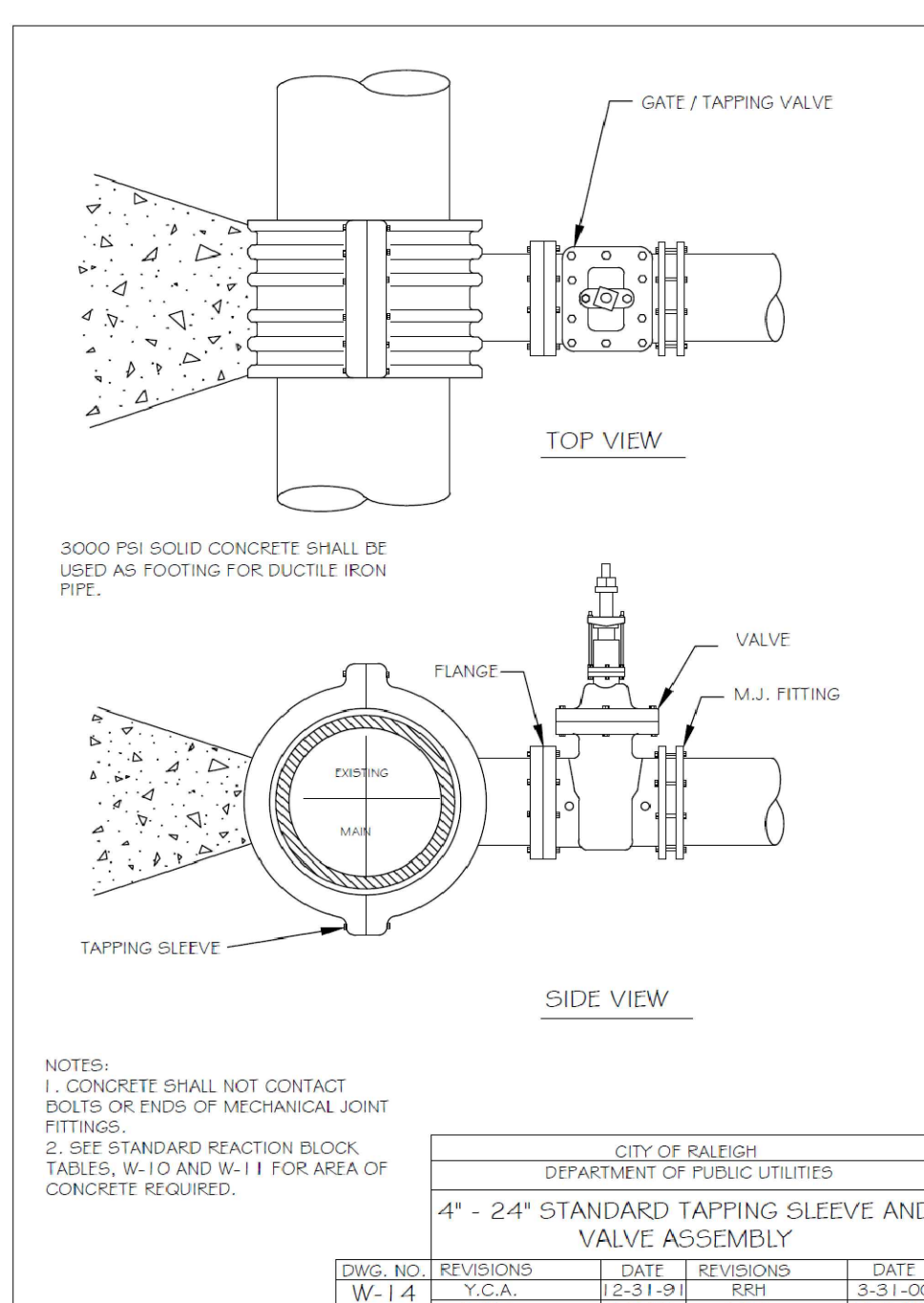
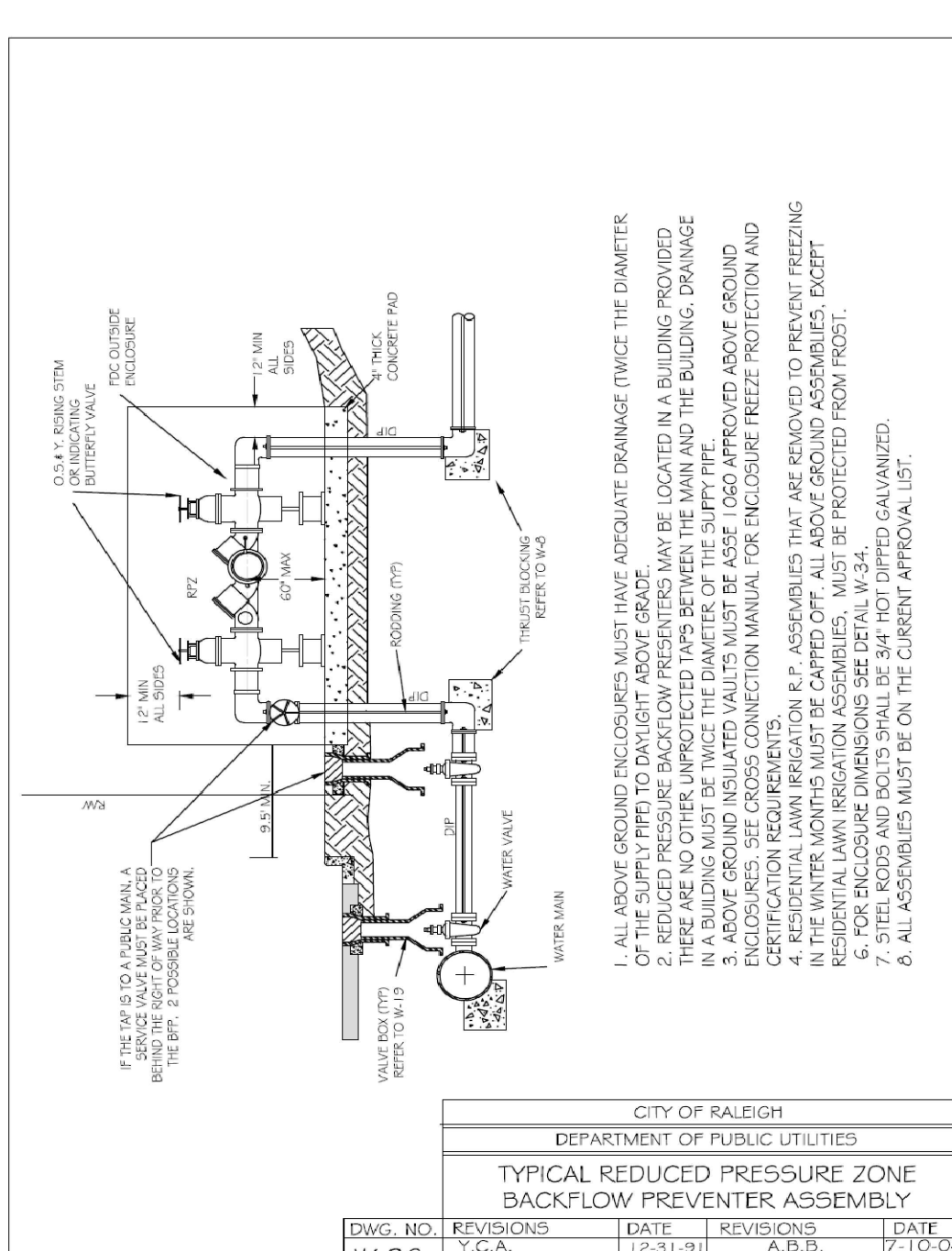
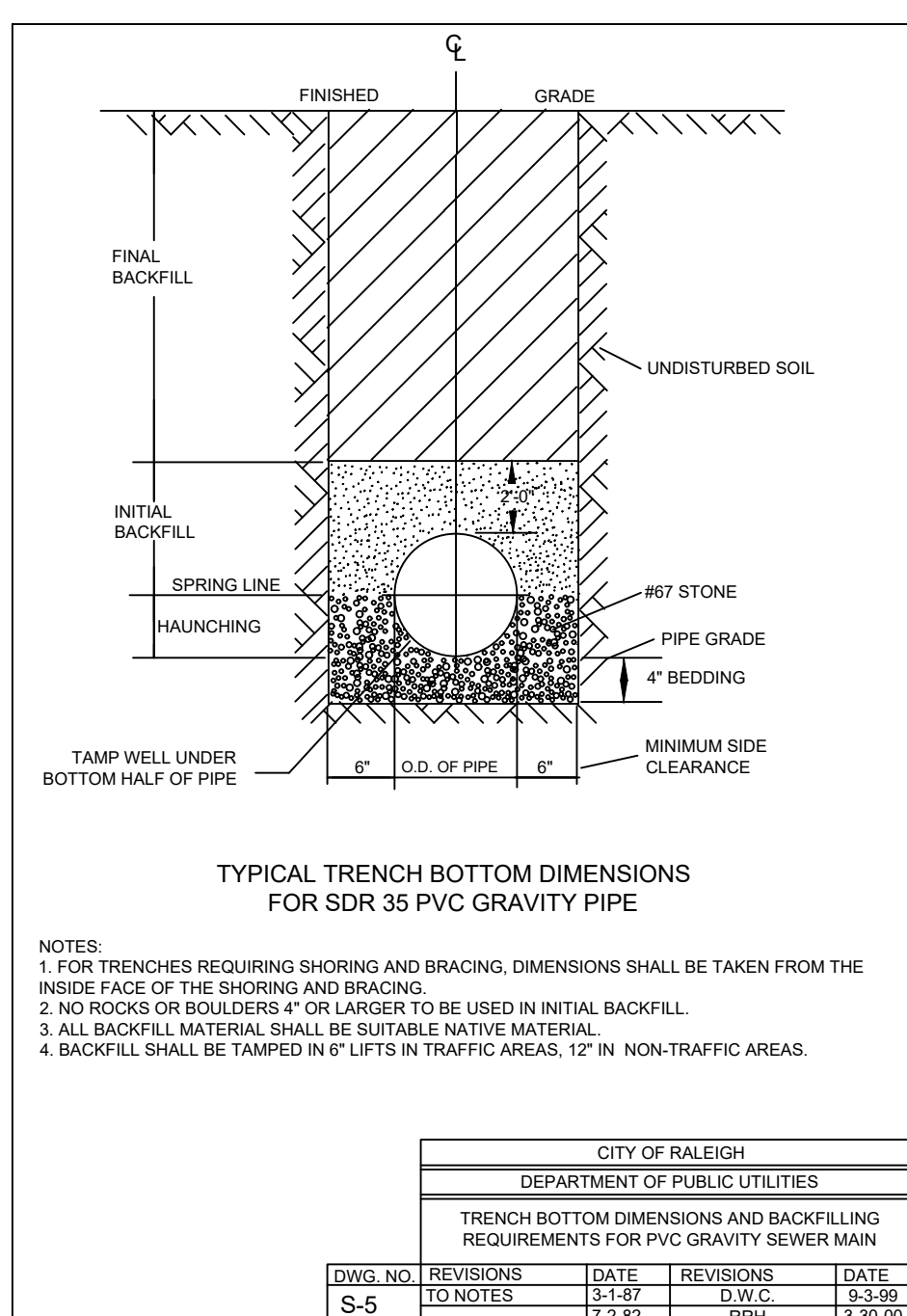
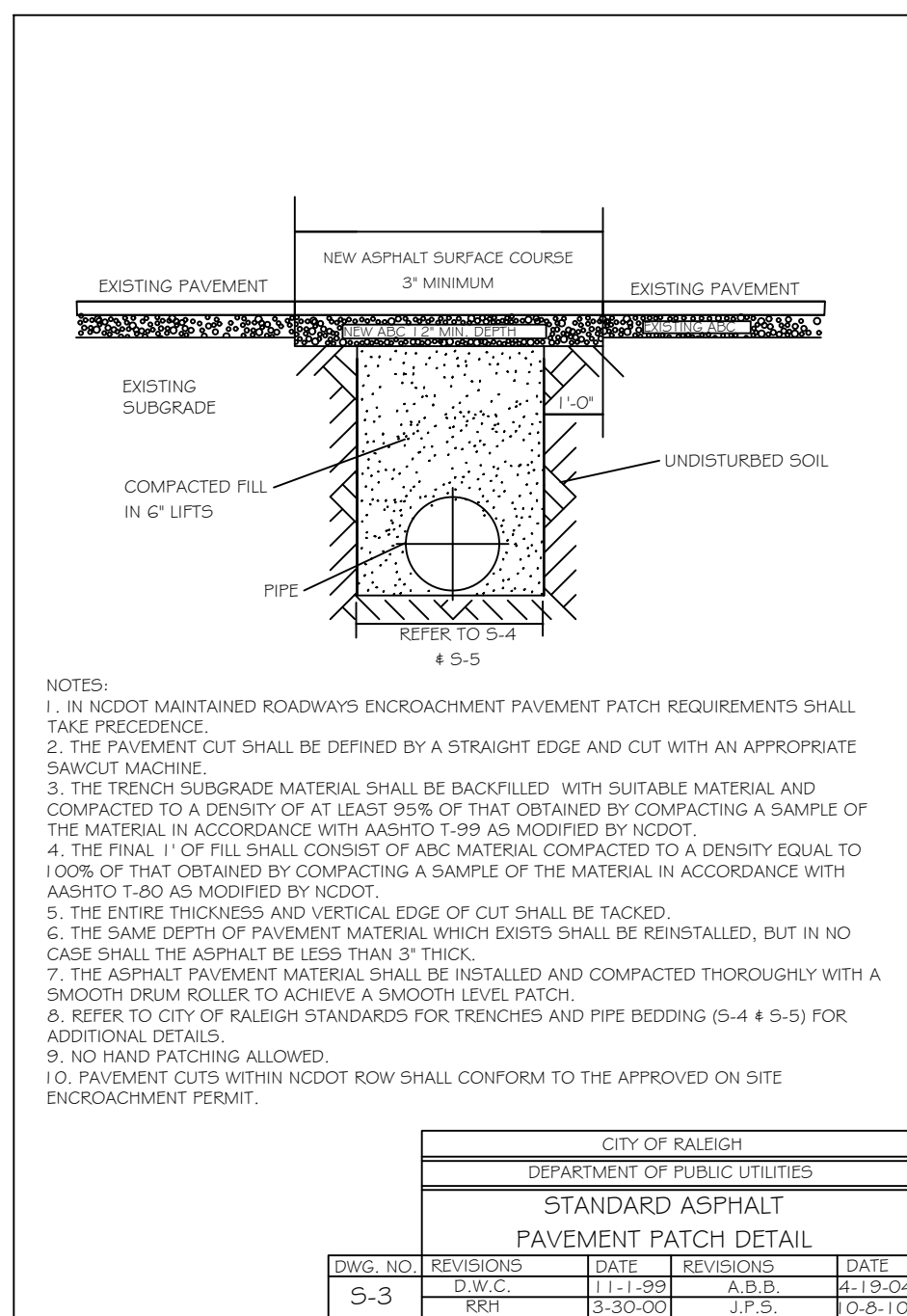
DETAIL HANDICAP SIGNAGE  
NTS



STANDARD CONCRETE WALK

**PRELIMINARY  
DO NOT USE FOR  
CONSTRUCTION**

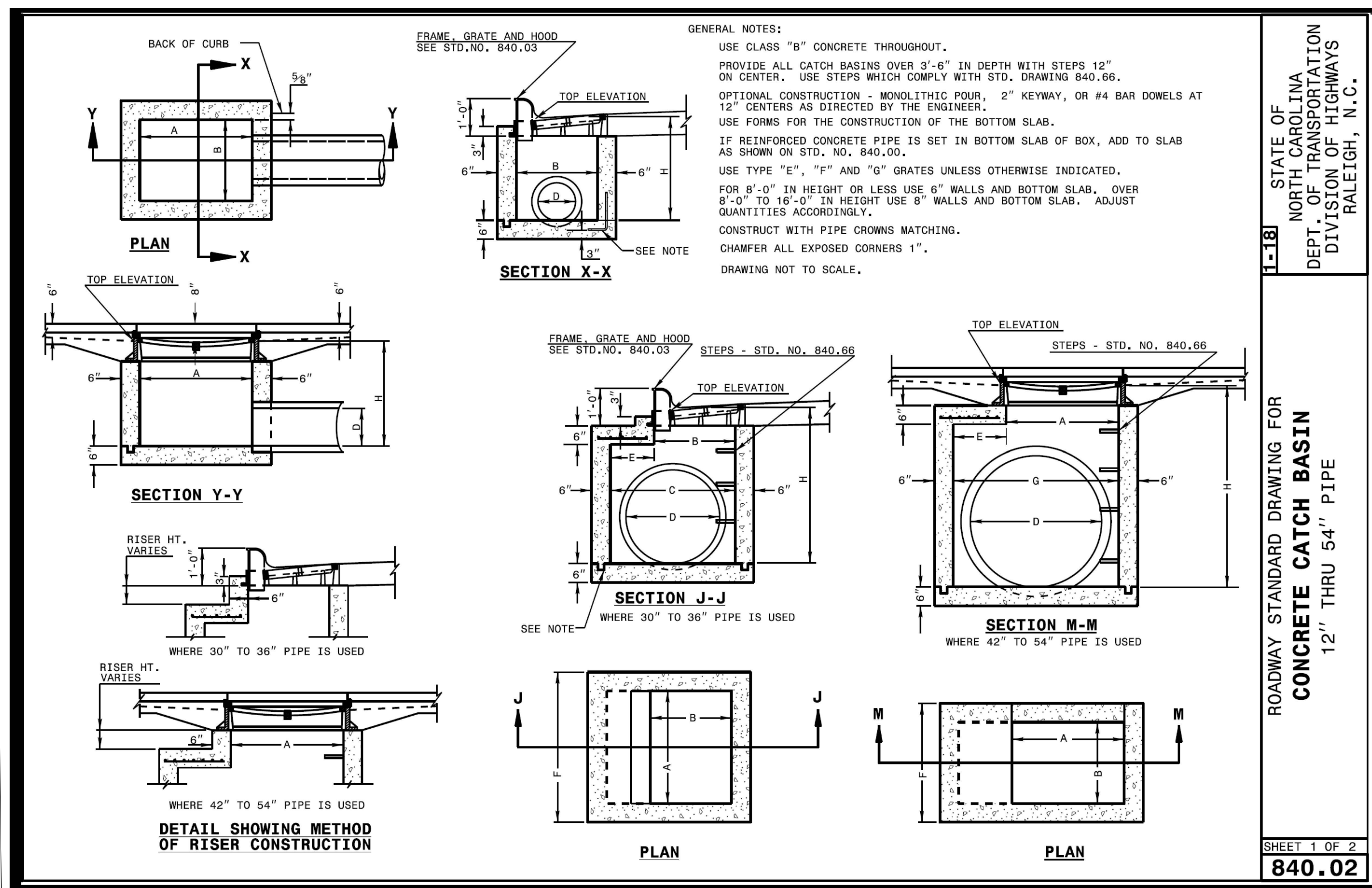
NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	KPG
2	8-22-2026	Trans Wake County Comment	KPG
3	DATE	COMMENT	BY
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
7	DATE	COMMENT	BY
8	DATE	COMMENT	BY



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NO.	DATE	INITIALS	DESCRIPTION	BY
1	6-25-2023		Initial Submittal	KPG
2	2-22-2028		Town/Village/County Comment	KPG
3	DATE	COMMENT	BY	BY
4	DATE	COMMENT	BY	BY
5	DATE	COMMENT	BY	BY
6	DATE	COMMENT	BY	BY
7	DATE	COMMENT	BY	BY
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NO.	DATE	REVISION DESCRIPTION	BY	BY

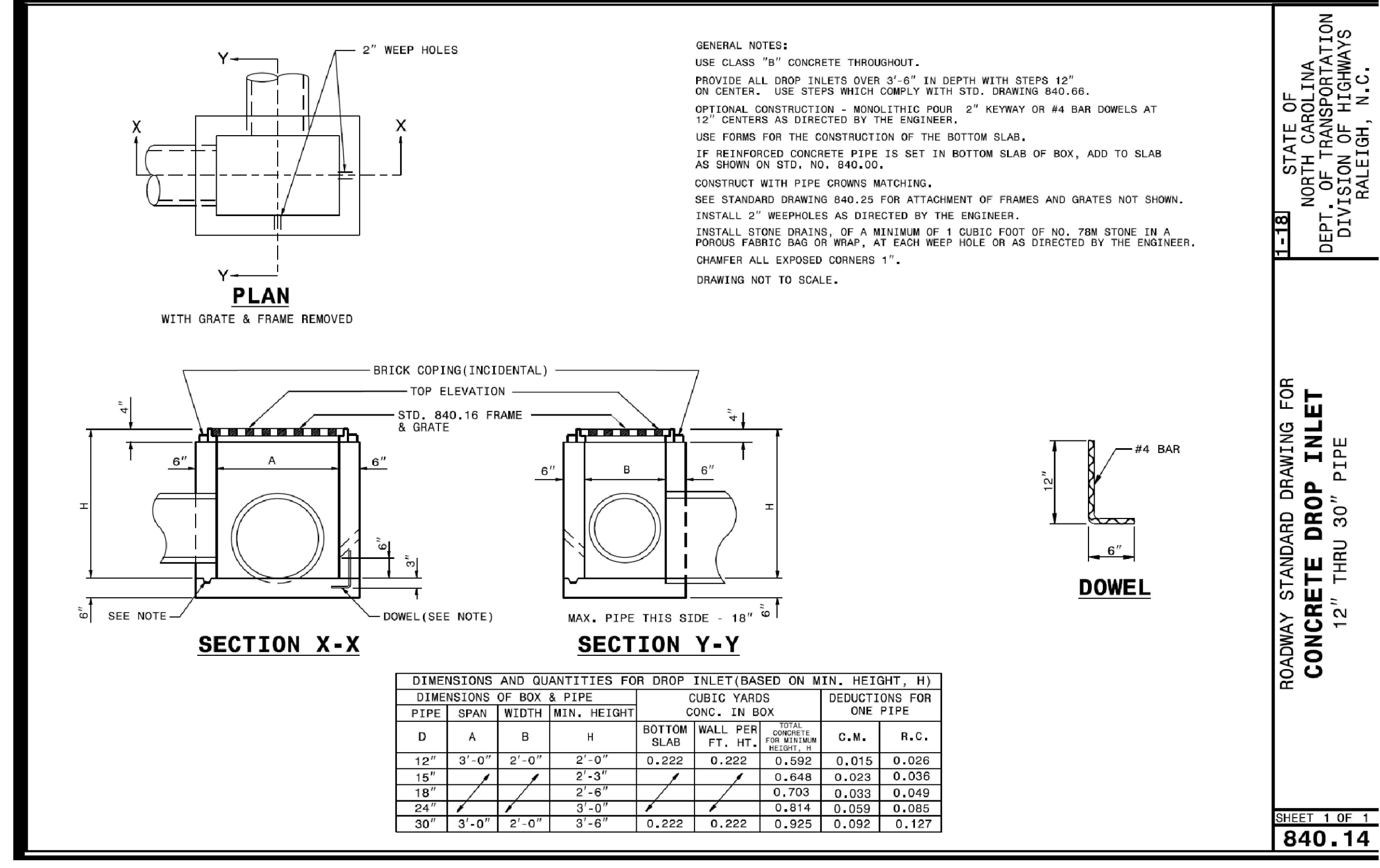
City of Raleigh Review Office



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

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

SHEET 1 OF 2  
**840.02**



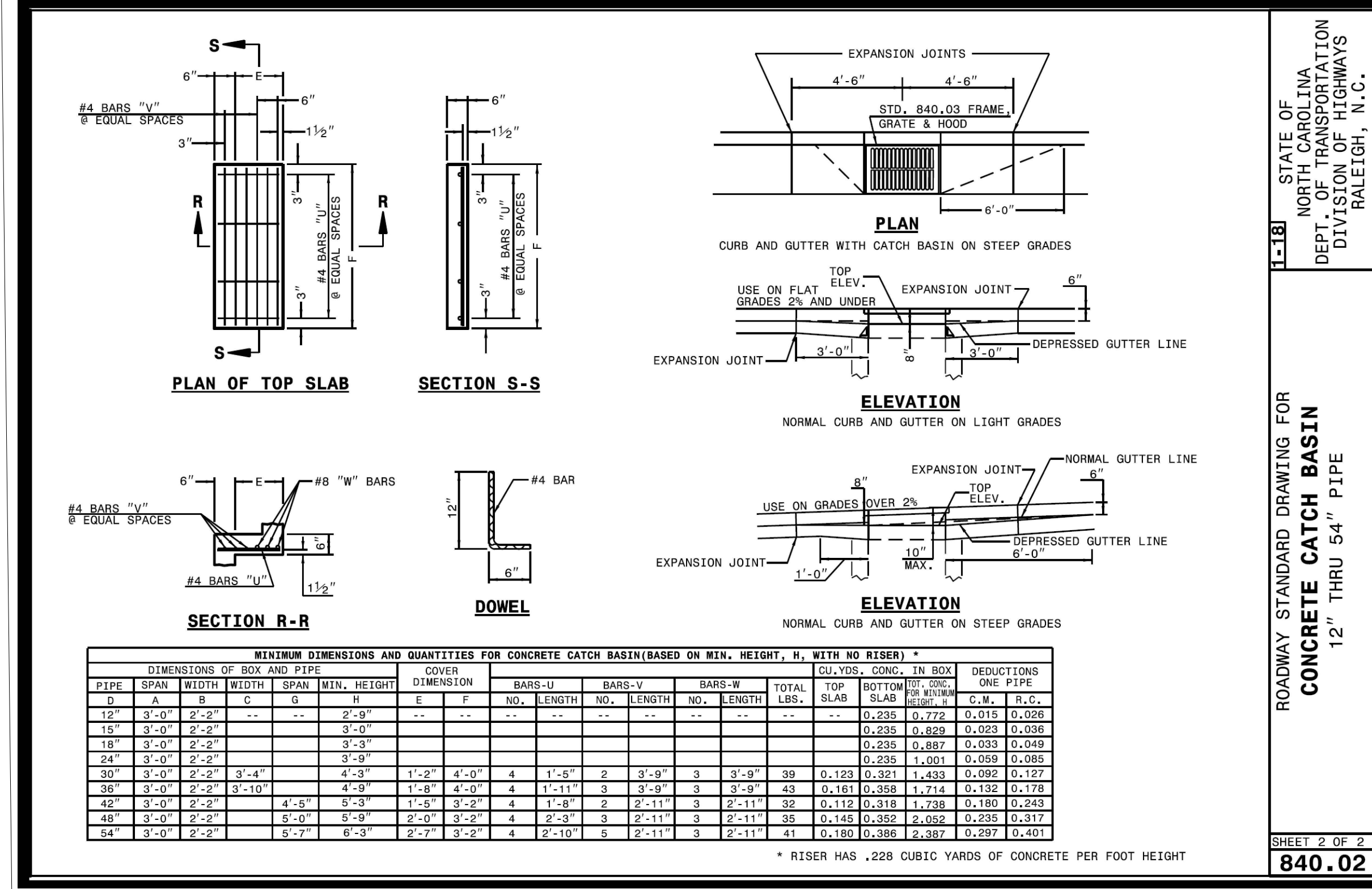
DIMENSIONS AND QUANTITIES FOR DROP INLET (BASED ON MIN. HEIGHT, H)

PIPE	DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX		DEDUCTIONS FOR ONE PIPE		
	SPAN	WIDTH	MIN. HEIGHT	H	TOP SLAB	BOTTOM WALL PER FT. OF HT.	C.W.	R.C.	
12"	3'-0"	2'-0"	2'-0"	2'-0"	0.222	0.222	0.592	0.015	0.026
15"	3'-0"	2'-3"	2'-3"	2'-3"	0.248	0.248	0.648	0.023	0.036
18"	3'-0"	2'-6"	2'-6"	2'-6"	0.273	0.273	0.703	0.033	0.049
24"	3'-0"	3'-0"	3'-0"	3'-0"	0.314	0.314	0.814	0.050	0.085
30"	3'-0"	3'-6"	3'-6"	3'-6"	0.322	0.322	0.925	0.092	0.127

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

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

SHEET 1 OF 1  
**840.14**



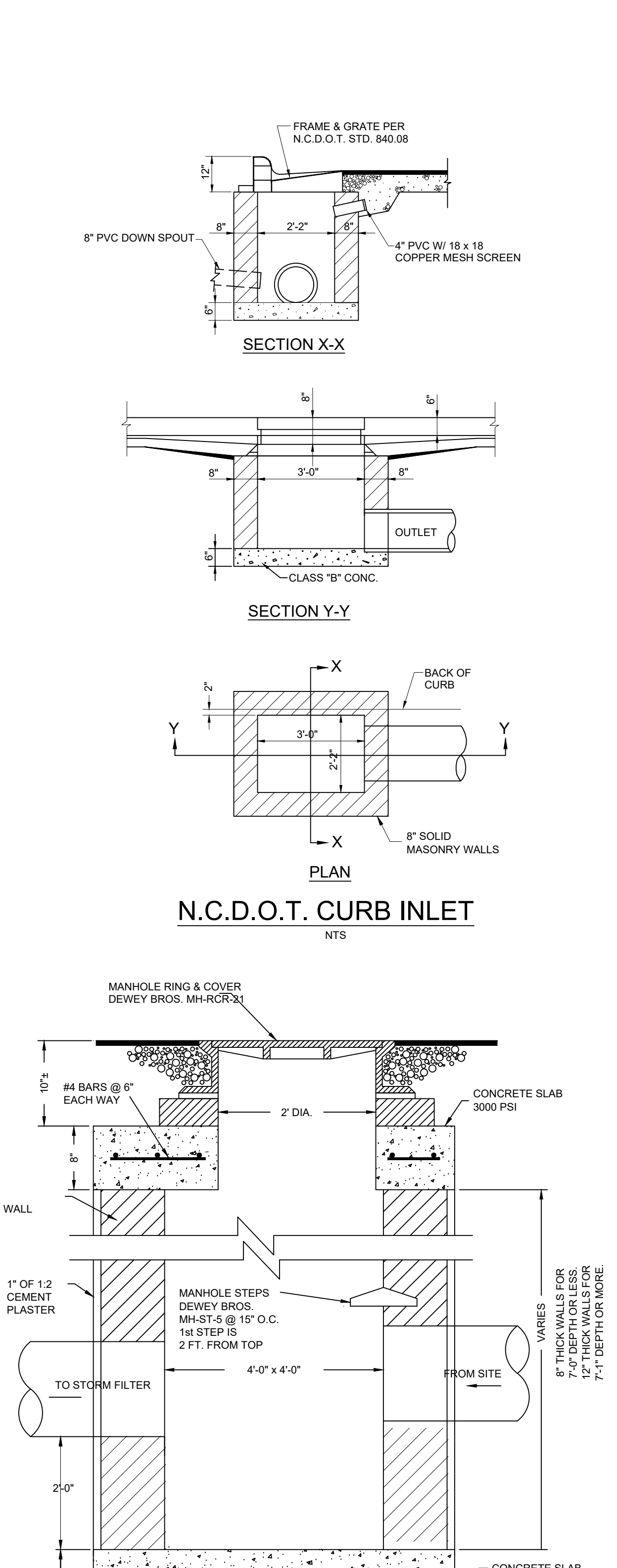
DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES

PIPE	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.			
	SPAN	WIDTH	HEIGHT	H		E	F	TOP SLAB	BOTTOM SLAB	MLL/ FT. OF HT.	LSB. REINF.	CU. YDS. MIN. "H"	C.S.	R.C.	
12"	2'-0"	2'-0"	2'-3"	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"	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"	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"	3'-3"	16	3'-9"	4'-0"	4'-0"	0.296	0.296	0.259	40	1.434	0.050	0.085
30"	3'-6"	3'-6"	3'-9"	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"	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"	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"	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"	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"	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"	6'-9"	32	7'-10"	8'-1"	8'-1"	1.210	1.210	0.516	169	5.917	0.444	0.589

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

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

SHEET 1 OF 1  
**840.31**



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

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

SHEET 2 OF 2  
**840.02**

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

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

SHEET 1 OF 1  
**840.31**

Storm Drainage Details  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

Project No.  
 Dwg No.  
**D3**

PRELIMINARY  
 DO NOT USE FOR  
 CONSTRUCTION

NO.	DATE	REVISION/DESCRIPTION	BY
1	9-25-2023	Initial Submittal	KPG
2	9-25-2023	Down Wake County Comment	KPG
3		COMMENT	BY
4		DATE	BY
5		DATE	BY
6		DATE	BY
7		DATE	BY
8		DATE	BY
9		DATE	BY
10		DATE	BY

# 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"

## NOTES

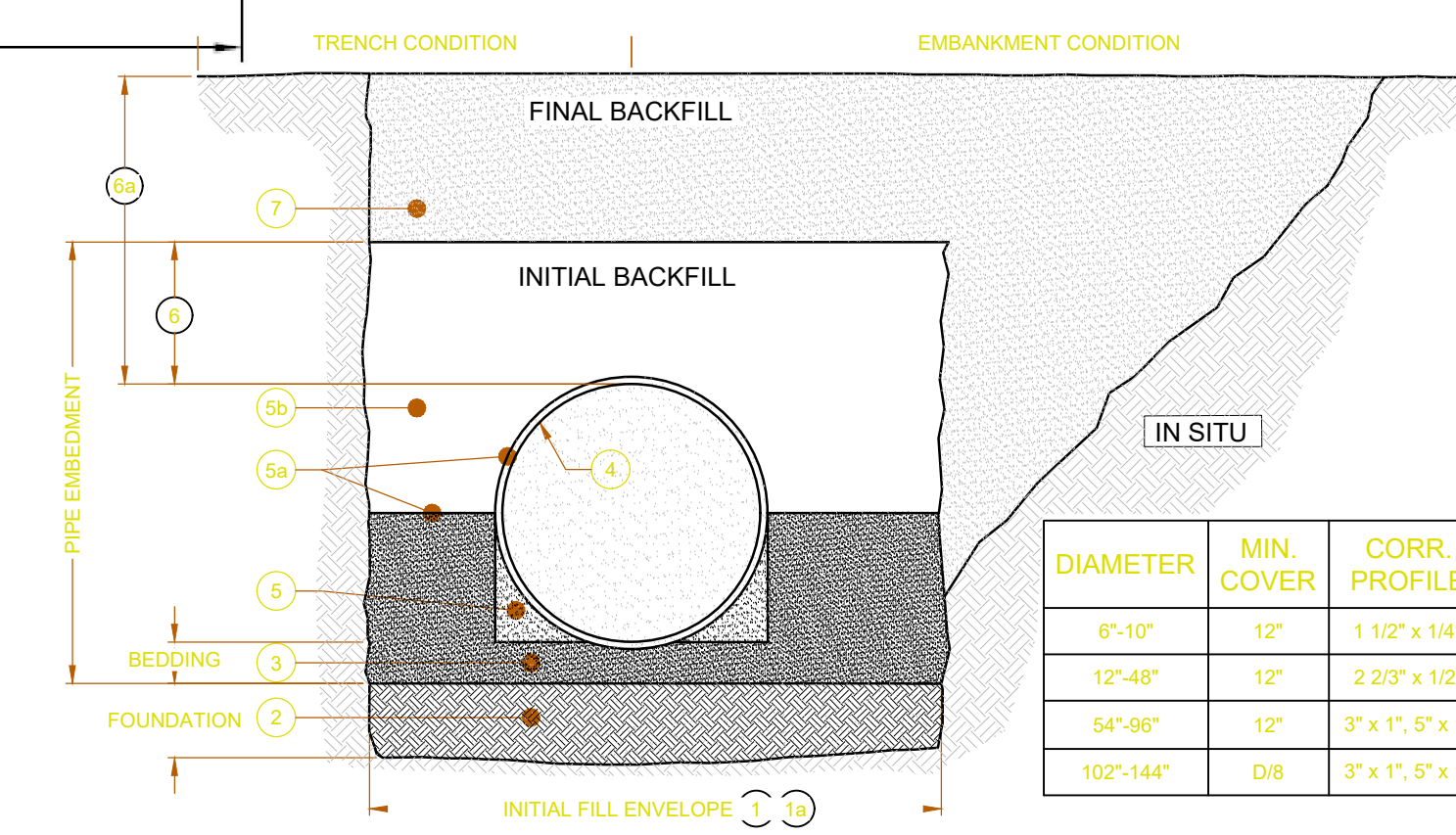
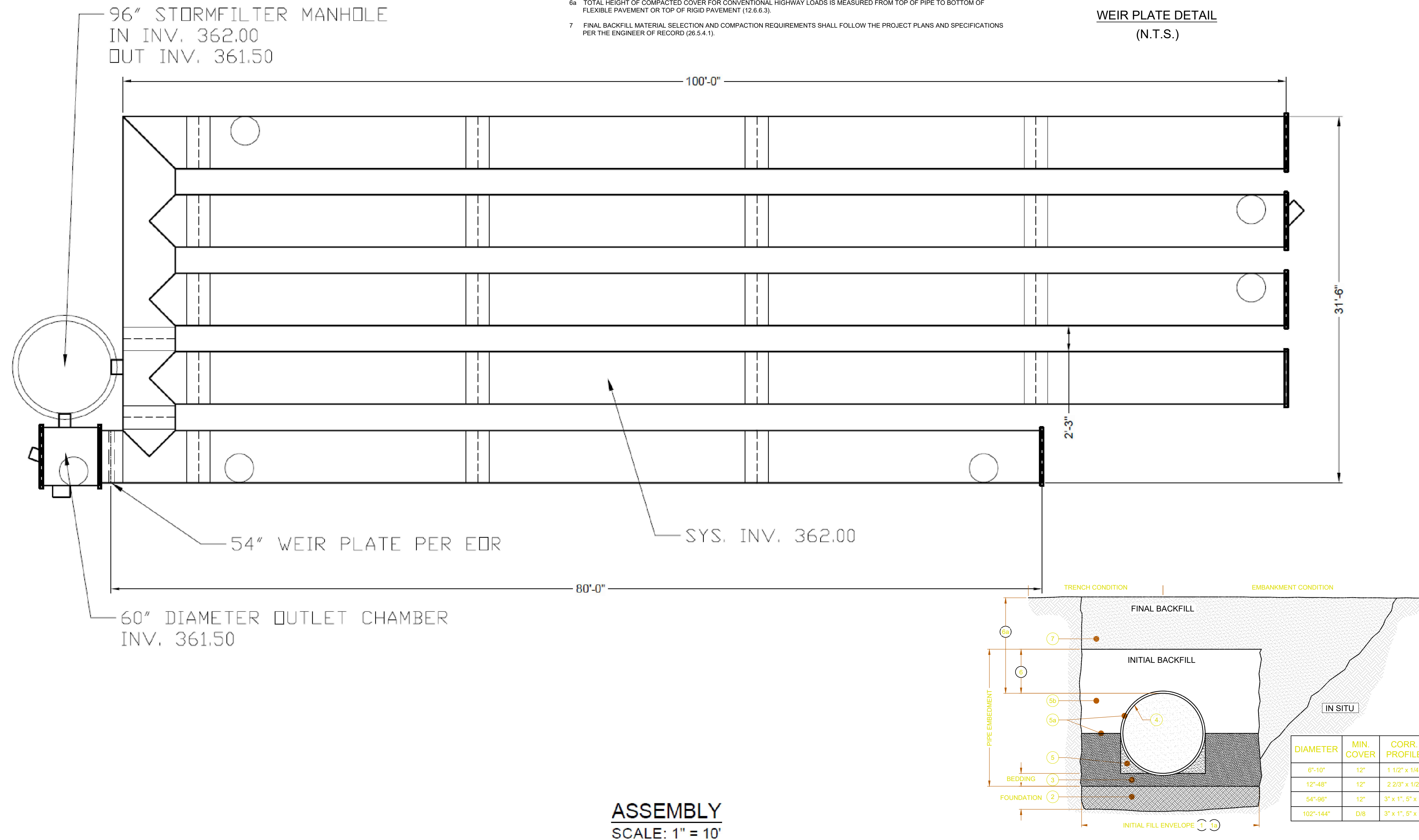
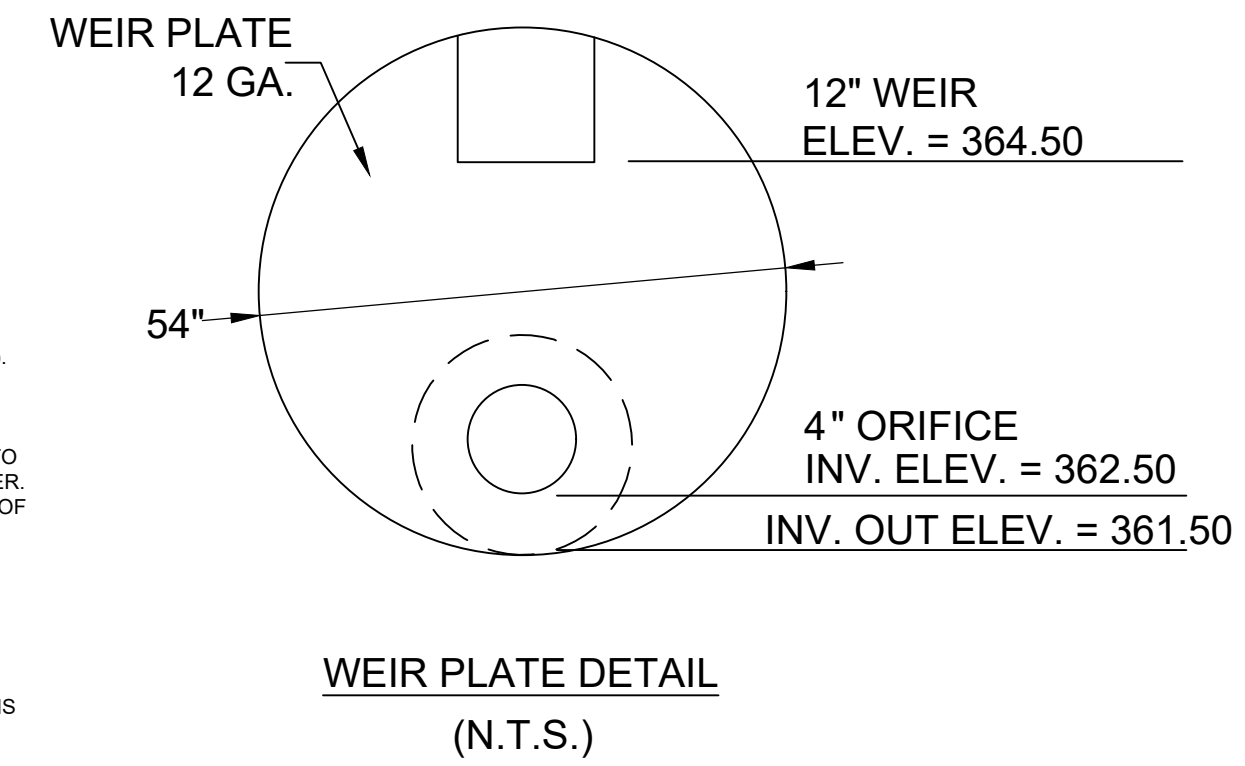
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2 3/8" x 1/2" CORRUGATION 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.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

## 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)

- 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"
- 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"
- THE FOUNDATION UNDER THE PIPE AND SIDE BACKFILL SHALL BE ADEQUATE TO SUPPORT THE LOADS ACTING UPON IT (26.5.2)
- 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.
- CORRUGATED STEEL PIPE (CSP / HEL-COR)
- HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION (26.5.4)
- GEOTEXTILE SHALL BE USED IF REQUIRED BY ENGINEER TO PREVENT SOIL MIGRATION INTO VARYING SOIL TYPES.
- BACKFILL PLACED ABOVE SPRINGLINE TO MEET AASHTO 145, A-1, A-2 OR A-3 CLASSIFICATION, OR APPROVED EQUAL, COMPACTED TO 98% 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).
- INITIAL BACKFILL ABOVE PIPE MAY INCLUDE ROAD BASE MATERIAL (AND RIGID PAVEMENT IF APPLICABLE). SEE TABLE ABOVE.
- 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).
- FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD (26.5.4.1).



I:\SUMMIT\CONTRACT\PROJECTS\ACTIVE\REVISED\15-CMP DETENTION\DRAWINGS\PROPOSAL\54 INCH DIAMETER - CMP DETENTION - 1502 - JONESVILLE COMMERCIAL - CES 786874 - DWG - 8/17/2023 3:48 PM

DATE	REVISION DESCRIPTION	BY

DATE	REVISION DESCRIPTION	BY

**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

**CONTECH**  
CMP DETENTION SYSTEMS  
CONTECH  
DYODS  
DRAWING

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

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

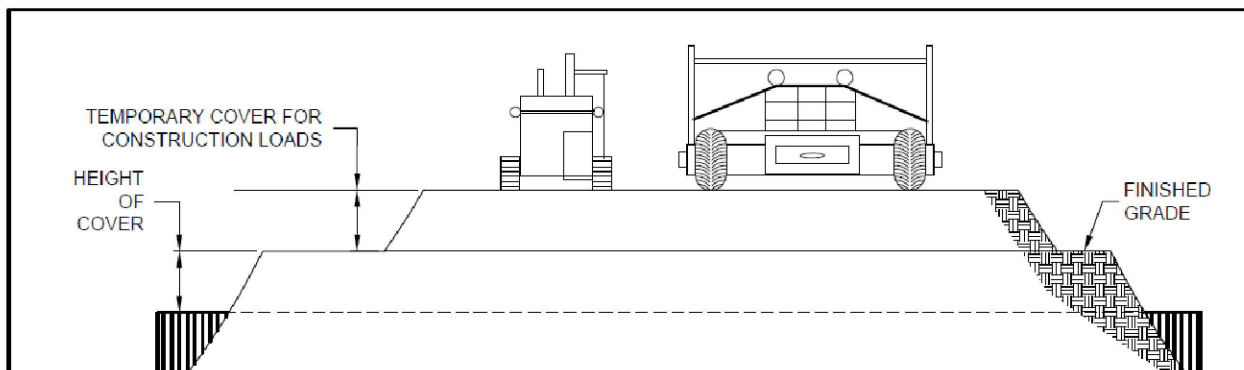
Gettle Engineering and Design, PLLC  
3616 Waxwing Court,  
Wake Forest, North Carolina 27587  
(919) 210-3934 Firm License P-2538

NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submit	KPG
2	8-22-2026	Trans Wake County Comment	KPG
3	DATE	COMMENT	BY
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
8	DATE	COMMENT	BY

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DO NOT USE FOR  
CONSTRUCTION

Detention System Details  
Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina

Project No.  
Dwg No.  
**D4**



**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)			
	10-50	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
125-144	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.**

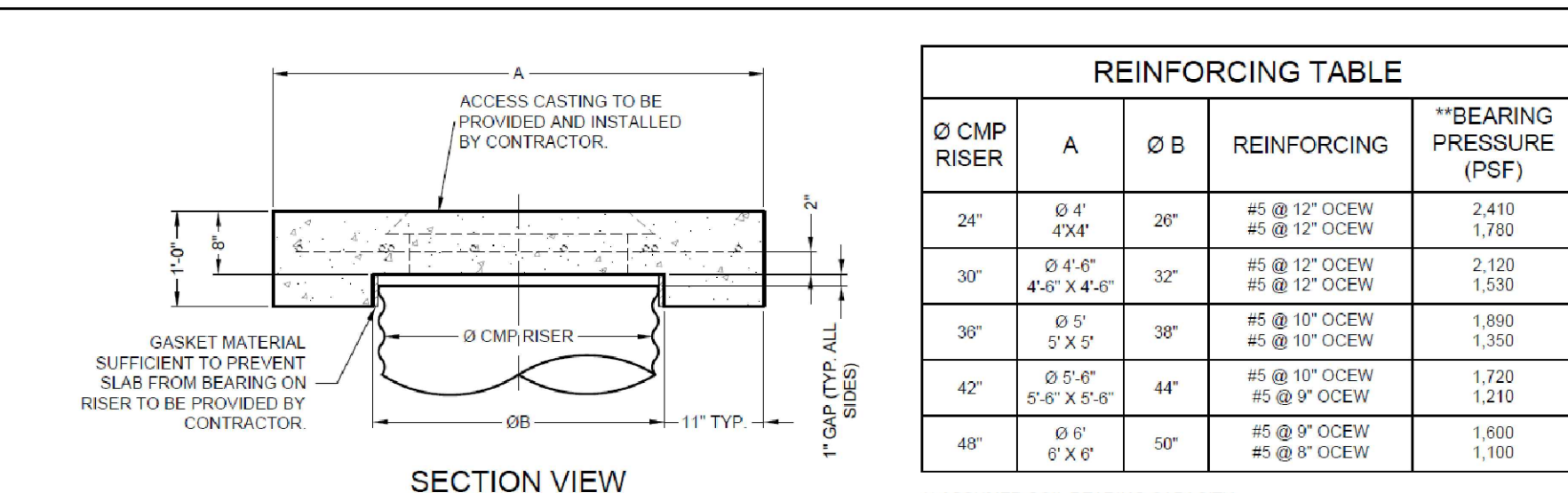
**THE GALVANIZED STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-278 OR ASTM A-92.**

**THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-245 OR ASTM A-702.**

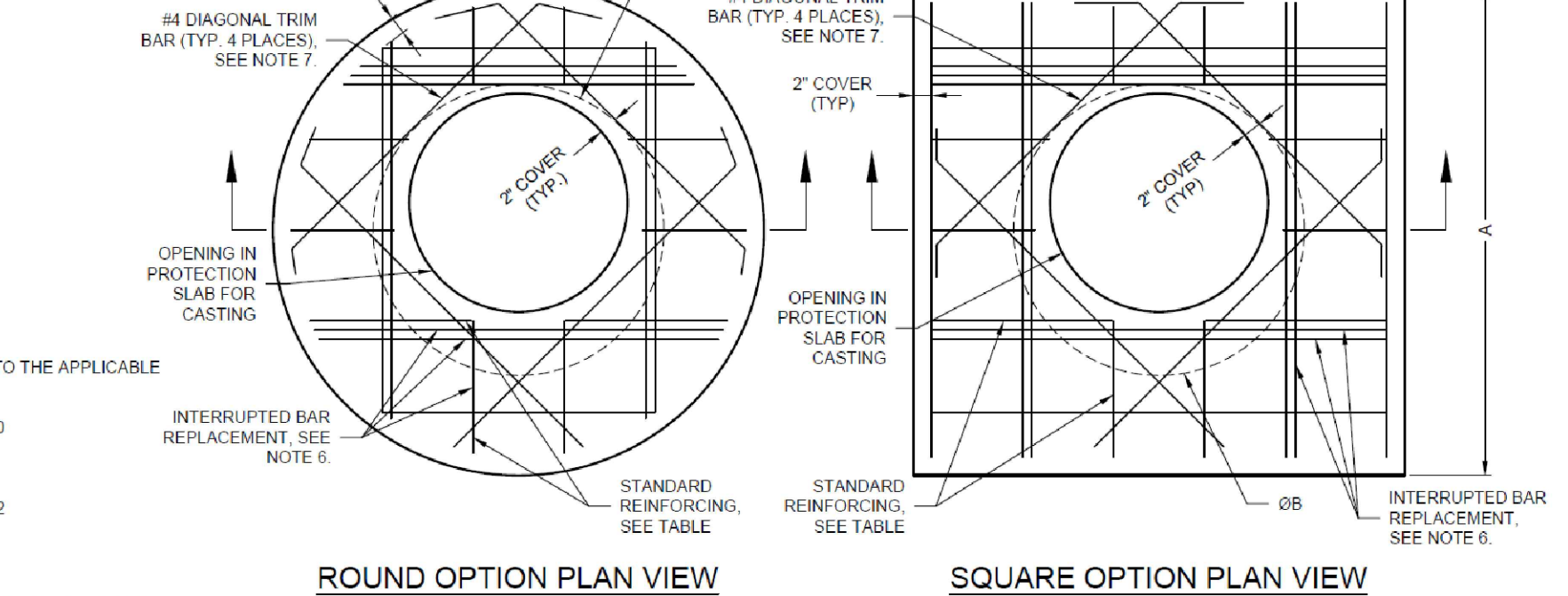
**THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-167 OR ASTM B-744.**

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

**NOTE**  
 THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.



REINFORCING TABLE				
Ø CMP RISER	A	Ø B	REINFORCING	**BEARING PRESSURE (PSF)
24"	Ø 4"	20"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,790
30"	Ø 4" 4"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	Ø 5" X 2"	36"	#5 @ 10" OCEW #5 @ 10" OCEW	1,850 1,350
42"	Ø 5" 4"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	Ø 6"	50"	#5 @ 9" OCEW #5 @ 9" OCEW	1,600 1,100

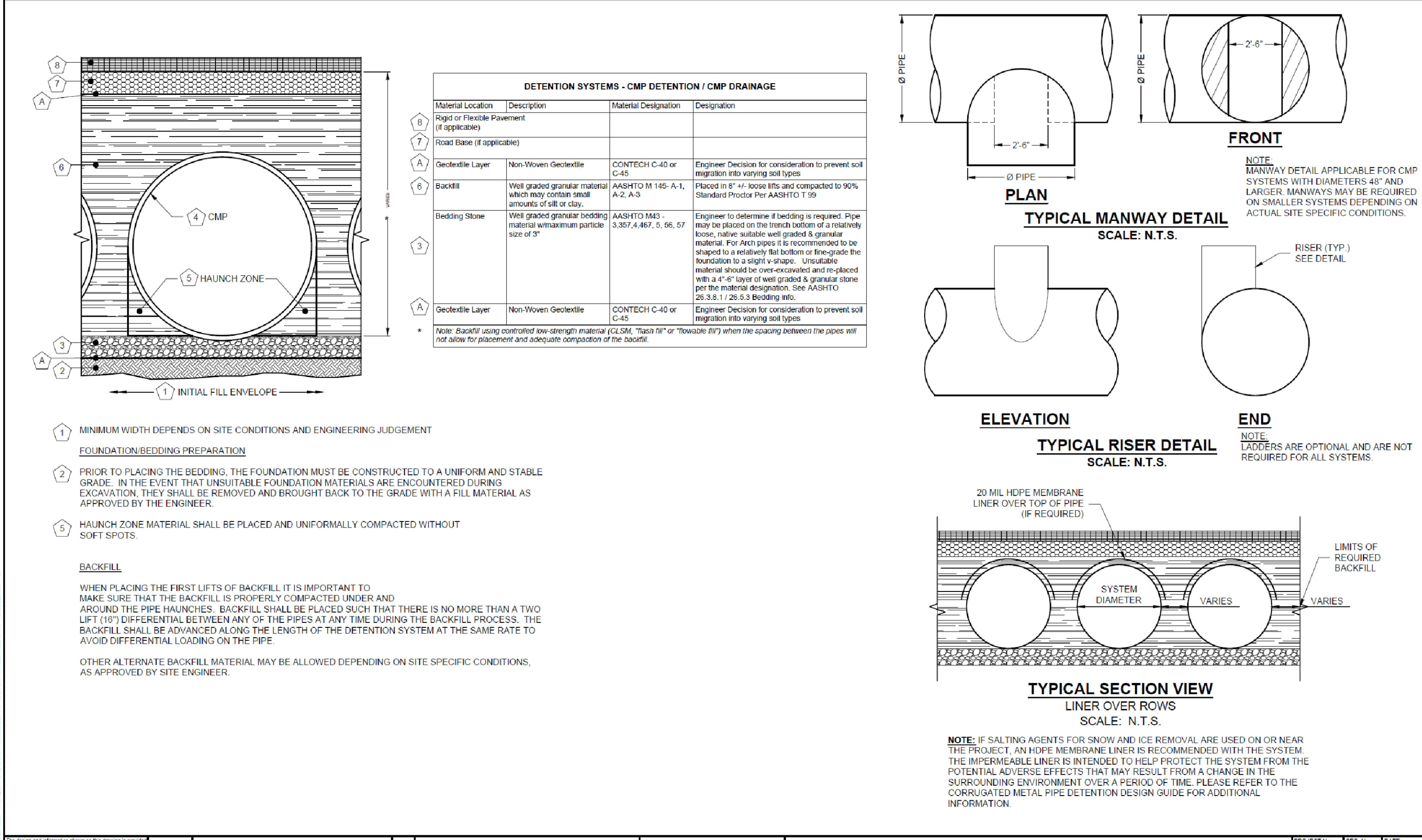


**NOTES:**

- DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
- DESIGN LOAD HS25.
- EARTH COVER = 1' MAX.
- CONCRETE STRENGTH = 3,000 psi
- REINFORCING STEEL = ASTM A615, GRADE 60.
- PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
- TRIM OPENINGS WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING. BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
- PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
- DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

**MANHOLE CAP DETAIL**  
 SCALE: N.T.S.

DETENTION SYSTEM DETAILS			
PROJECT NO.	REV. NO.	DATE	
DESIGNED	DRAWN		
CHECKED	APPROVED		
SHEET NO.			1



SOLID DETENTION SYSTEM DETAILS			
PROJECT NO.	REV. NO.	DATE	
DESIGNED	DRAWN		
CHECKED	APPROVED		
SHEET NO.			1

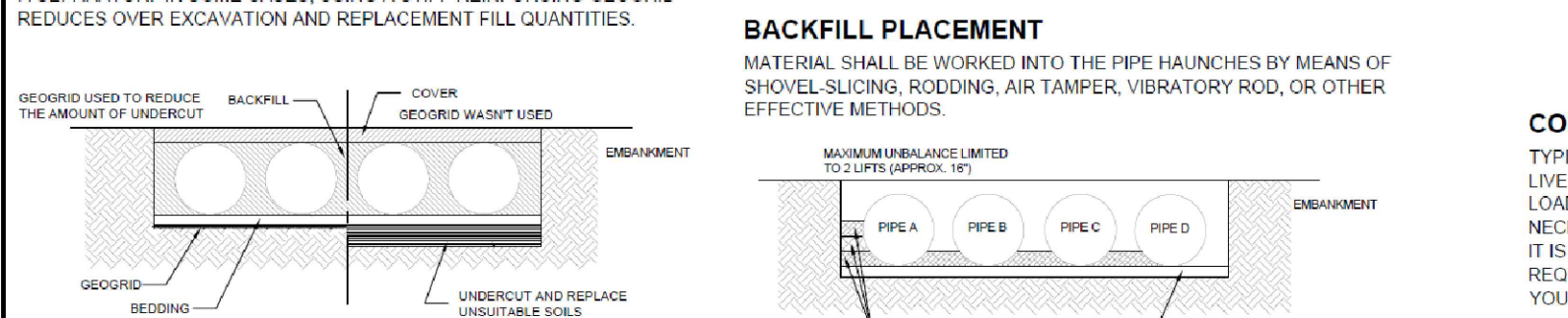
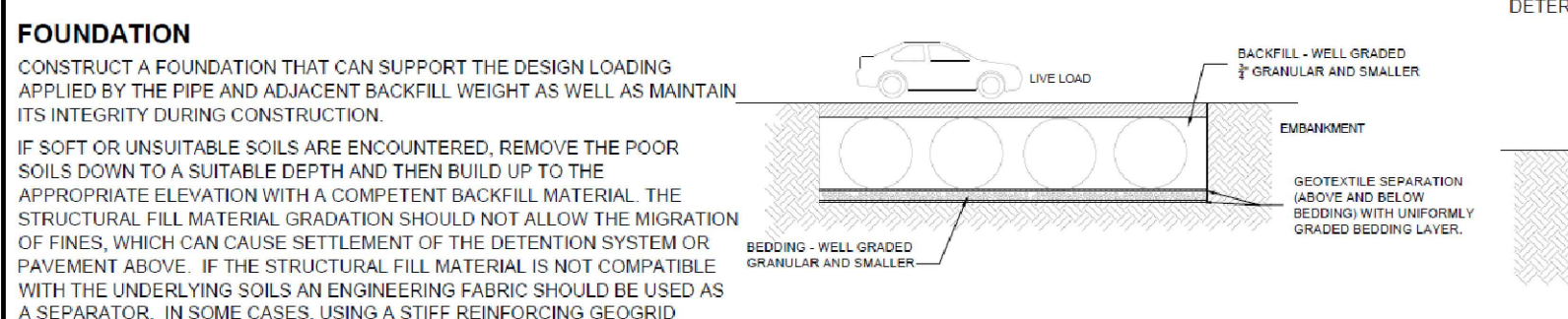
**CMP DETENTION INSTALLATION GUIDE**  
 PROPER INSTALLATION OF A FLEXIBLE DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY 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 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 GEOTEXTILE REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.

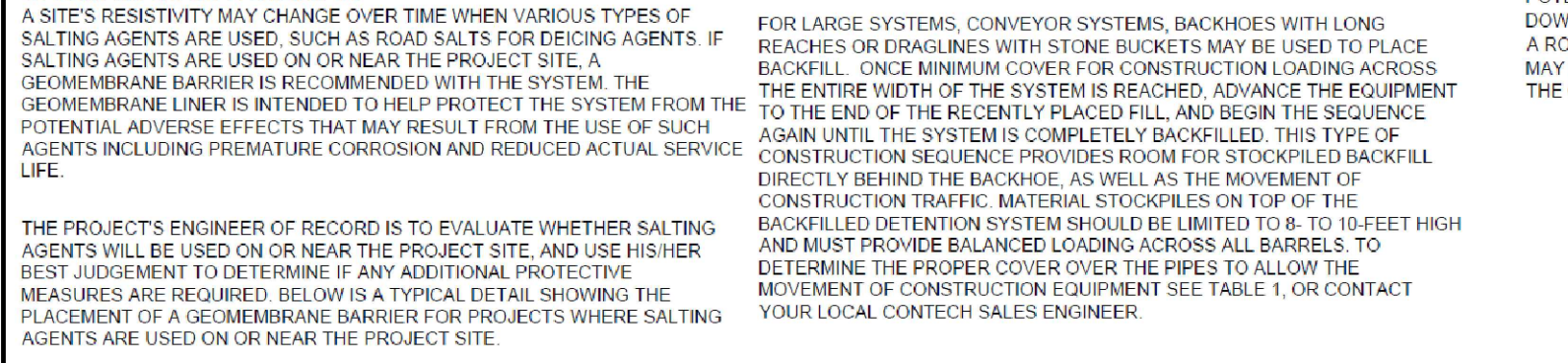
**GEOMEMBRANE BARRIER**  
 A SITE'S RESISTIVITY MAY CHANGE OVER TIME WHEN VARIOUS TYPES OF SALTING AGENTS ARE USED, SUCH AS ROAD SALTS FOR DEICING AGENTS. IF SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO 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.



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

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR GRAPPLERS WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADS ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE 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 BARRIERS. 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.



DETENTION SYSTEM DETAILS			
PROJECT NO.	REV. NO.	DATE	
DESIGNED	DRAWN		
CHECKED	APPROVED		
SHEET NO.			1

**CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE**  
 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.

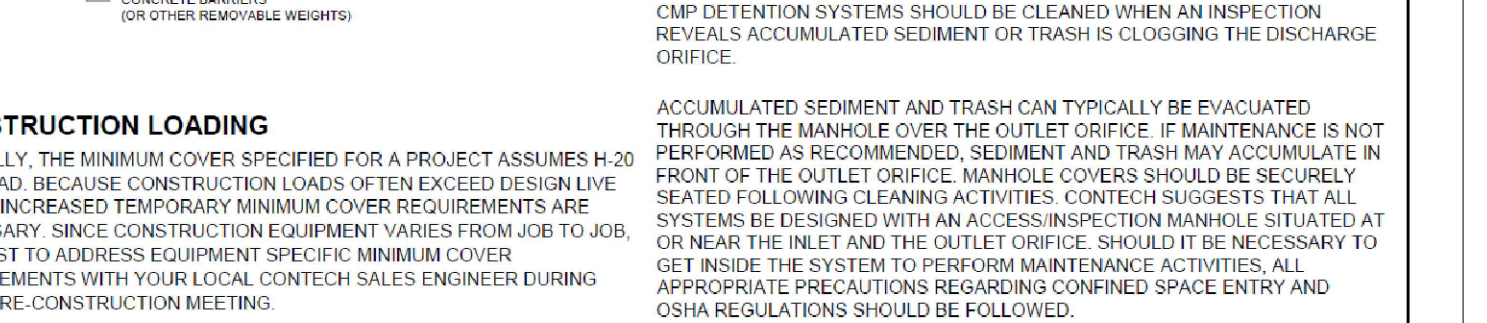
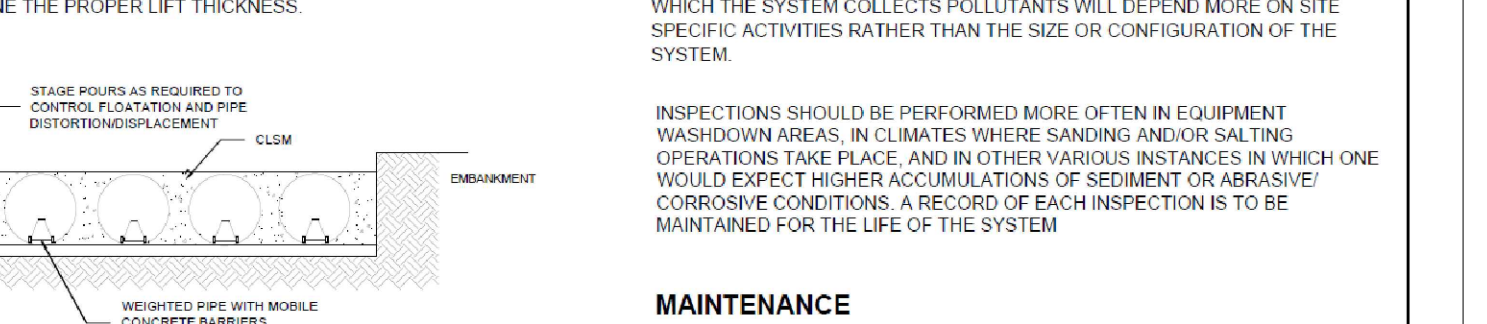
**MAINTENANCE**  
 CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

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 SEALED 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 SALTING/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.

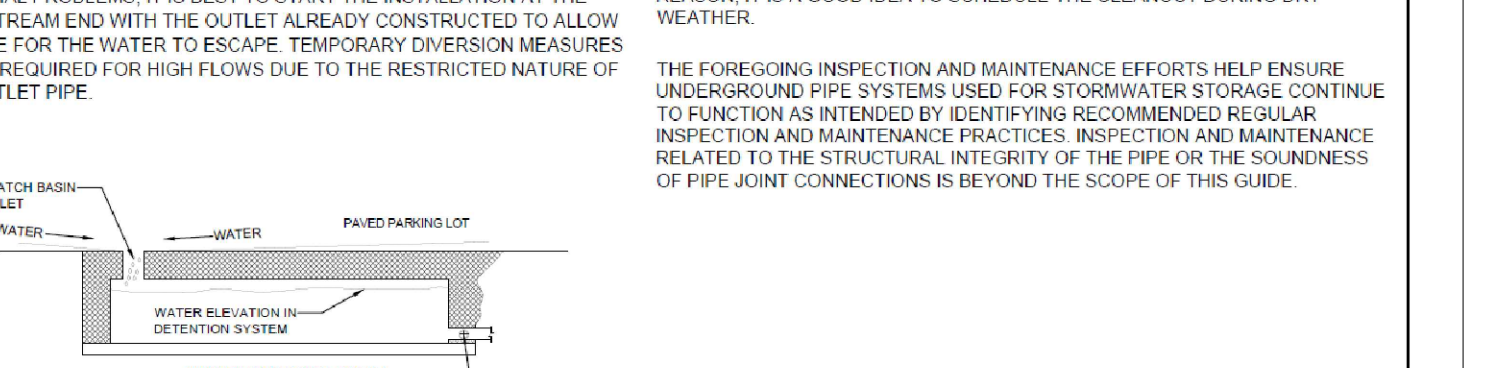
MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANUP DURING DRY WEATHER.

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.

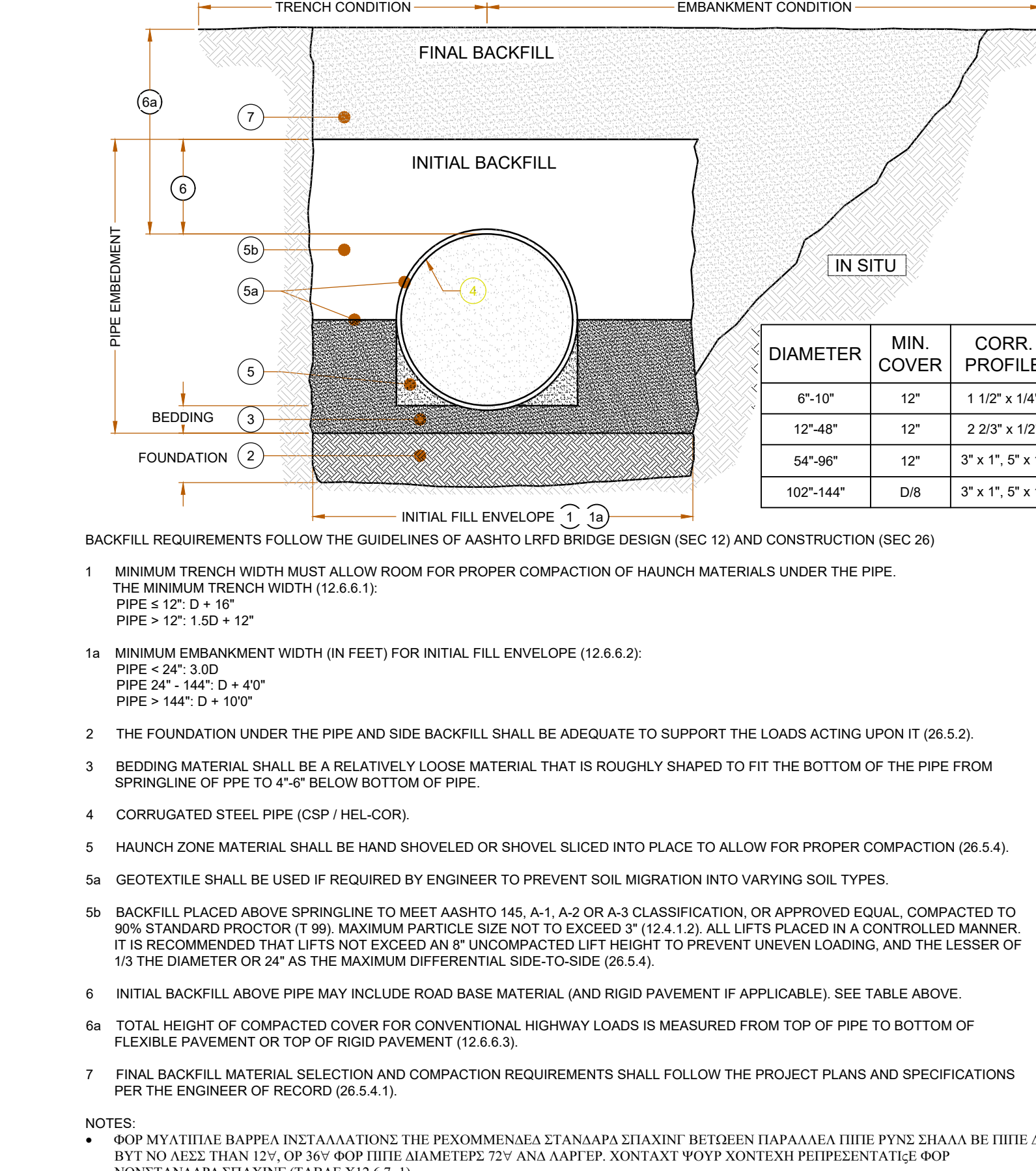


**CONSTRUCTION LOADING**  
 TYPICALLY THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES A 30 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB. IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

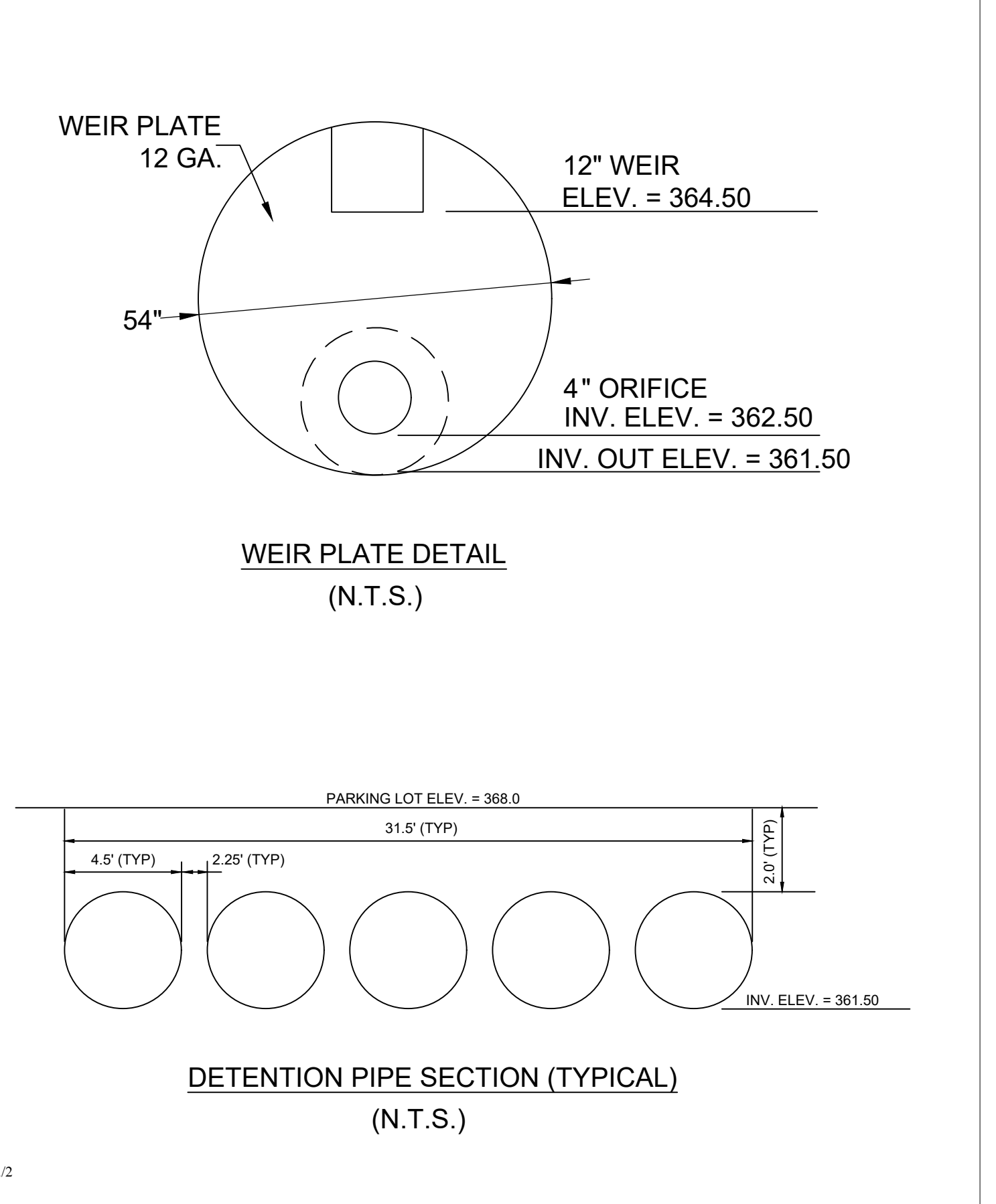
**ADDITIONAL CONSIDERATIONS**  
 BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION; POTENTIALLY CAUSING FLOATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE 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.



DETENTION SYSTEM DETAILS			
PROJECT NO.	REV. NO.	DATE	
DESIGNED	DRAWN		
CHECKED	APPROVED		
SHEET NO.			1



PIPE DETENTION DETAIL			
PROJECT NO.	REV. NO.	DATE	
DESIGNED	DRAWN		
CHECKED	APPROVED		
SHEET NO.			1



DETENTION PIPE SECTION (TYPICAL)			
PROJECT NO.	REV. NO.	DATE	
DESIGNED	DRAWN		
CHECKED	APPROVED		
SHEET NO.			1

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

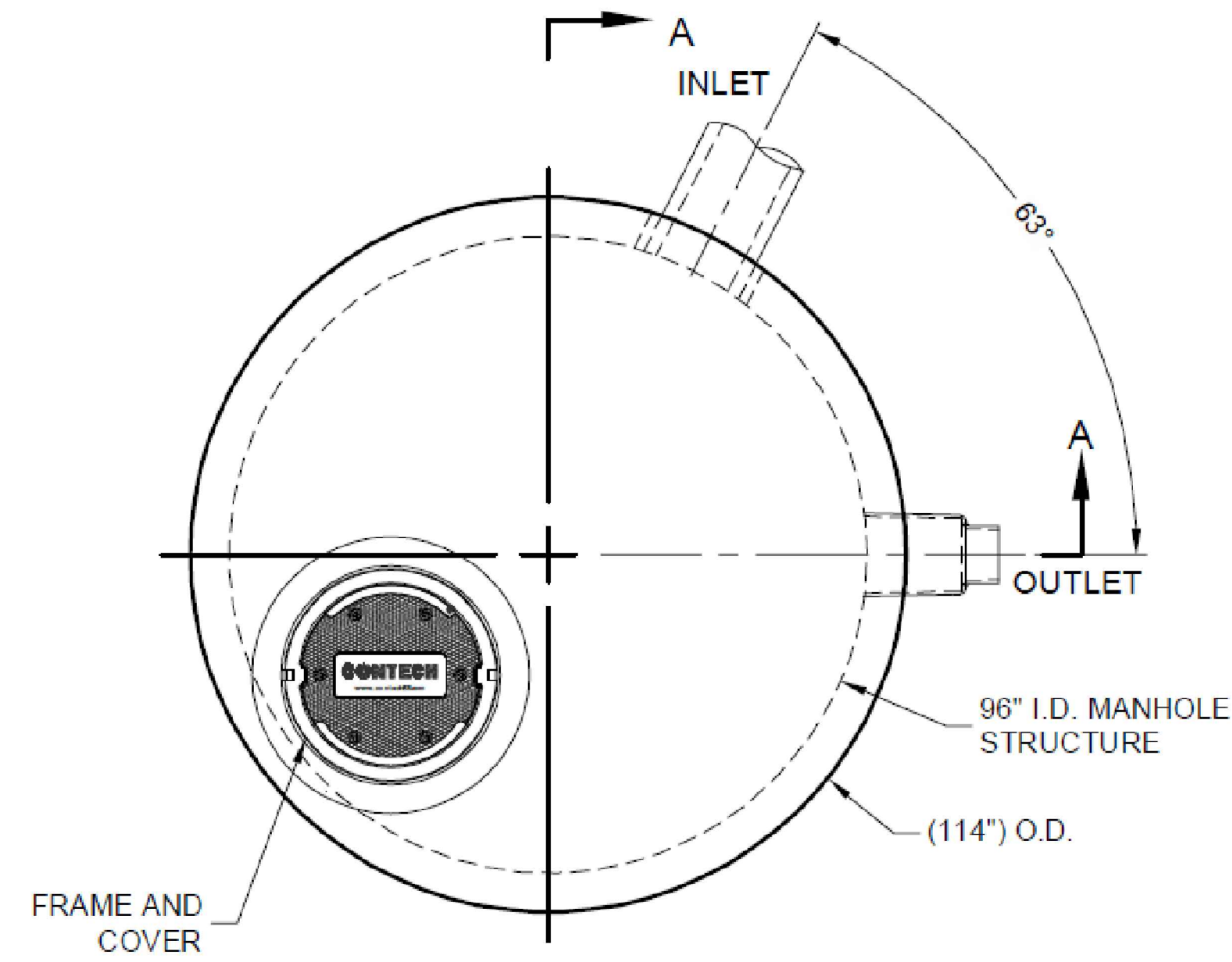
NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	
2	9-22-2028	Town Water Utility Comment	
3	DATE	COMMENT	BY
4	DATE	COMMENT	BY
5	DATE	COMMENT	BY
6	DATE	COMMENT	BY
7	DATE	COMMENT	BY
8	DATE	COMMENT	BY

**PRELIMINARY**  
 DO NOT USE FOR  
 CONSTRUCTION

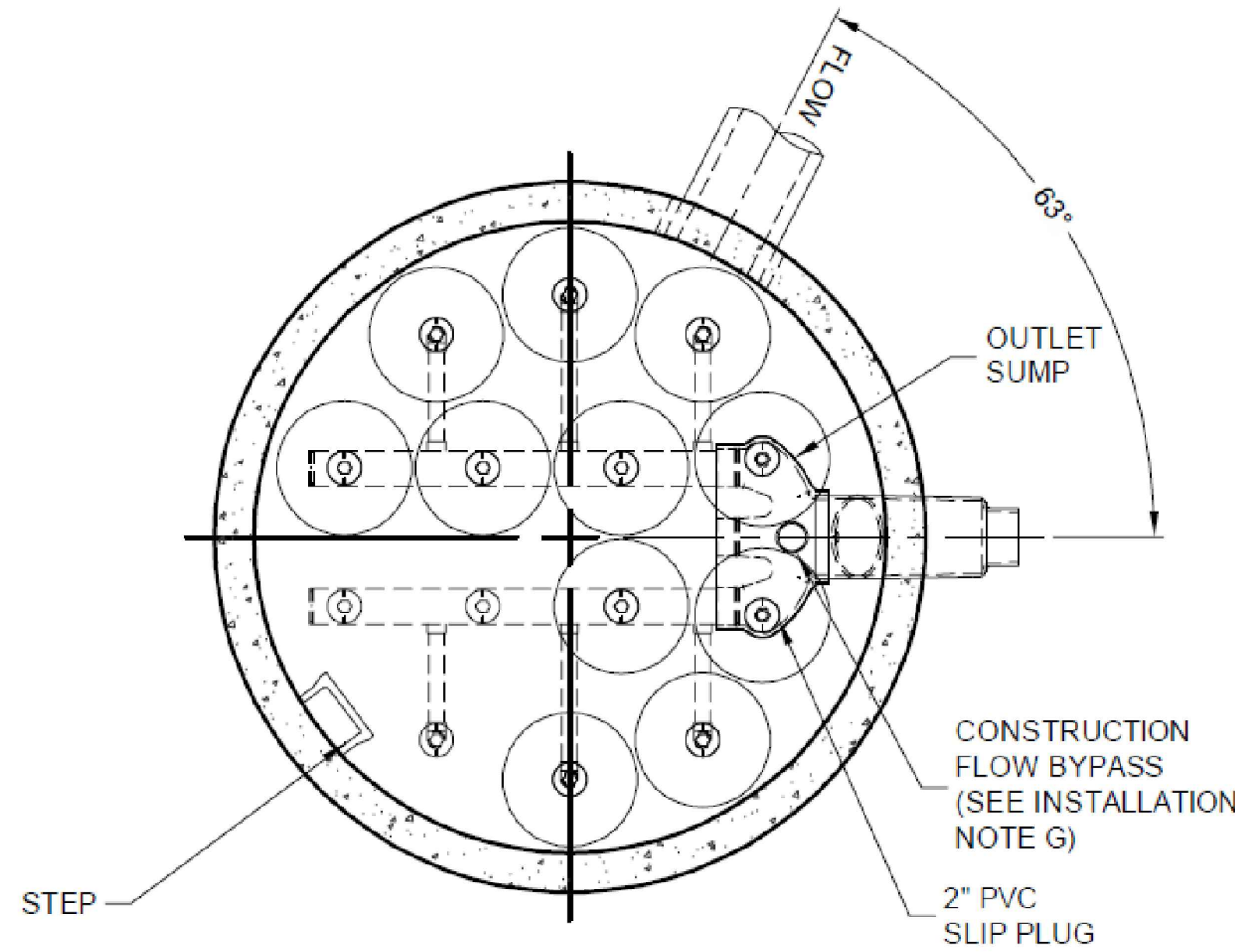
**Detention System Details**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

Project No.  
 Dwg No.  
**D5**

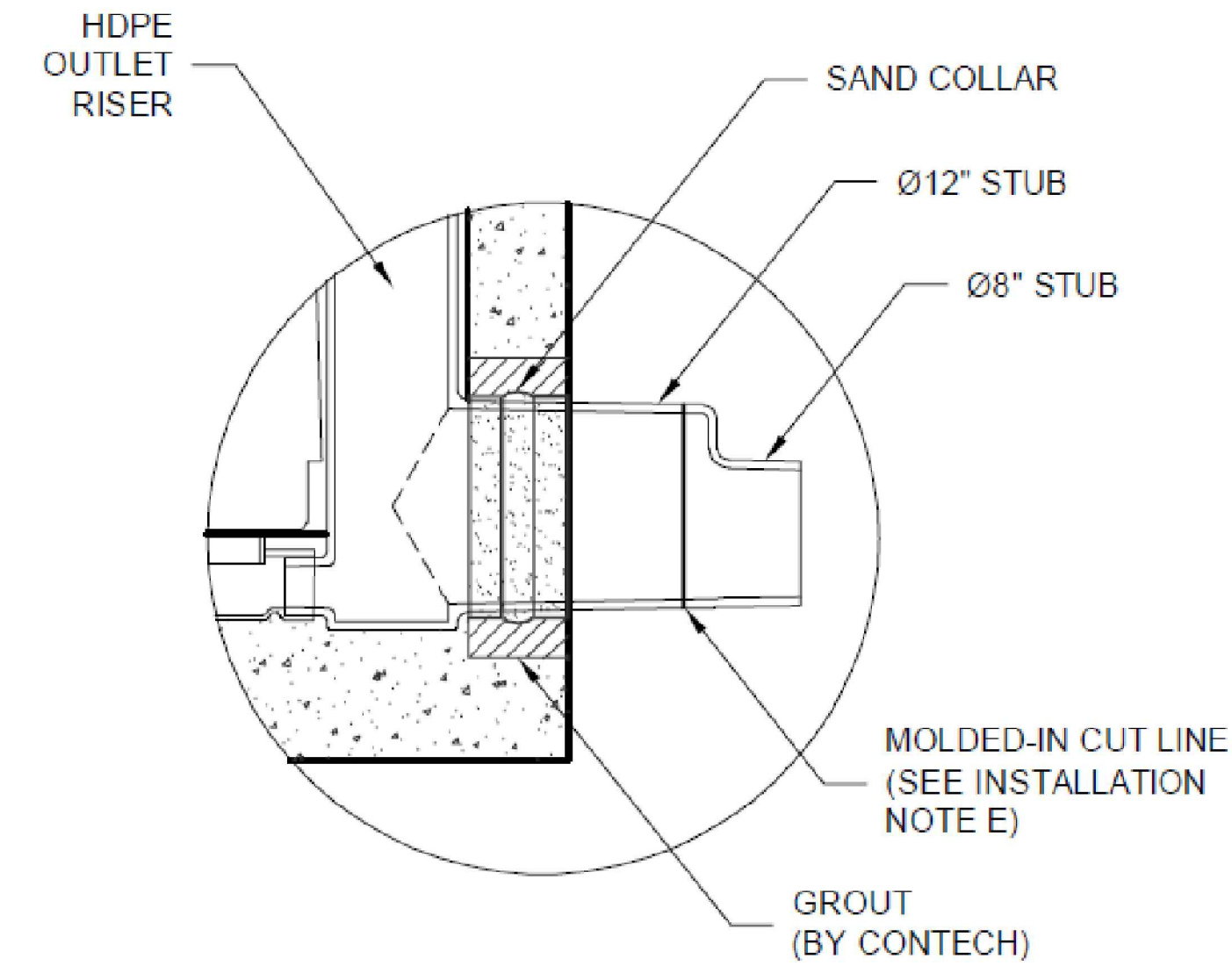
UP:\S\WORKING\B\MF01\_00\KRETE\NET\MERLIN\PROJECT\ACTIVE\765974\10\STORMFILTER\DRAWINGS\PROF\CSA\US\574-010-SFM-186-PRO-A.DWG 8/7/2023 3:40 PM



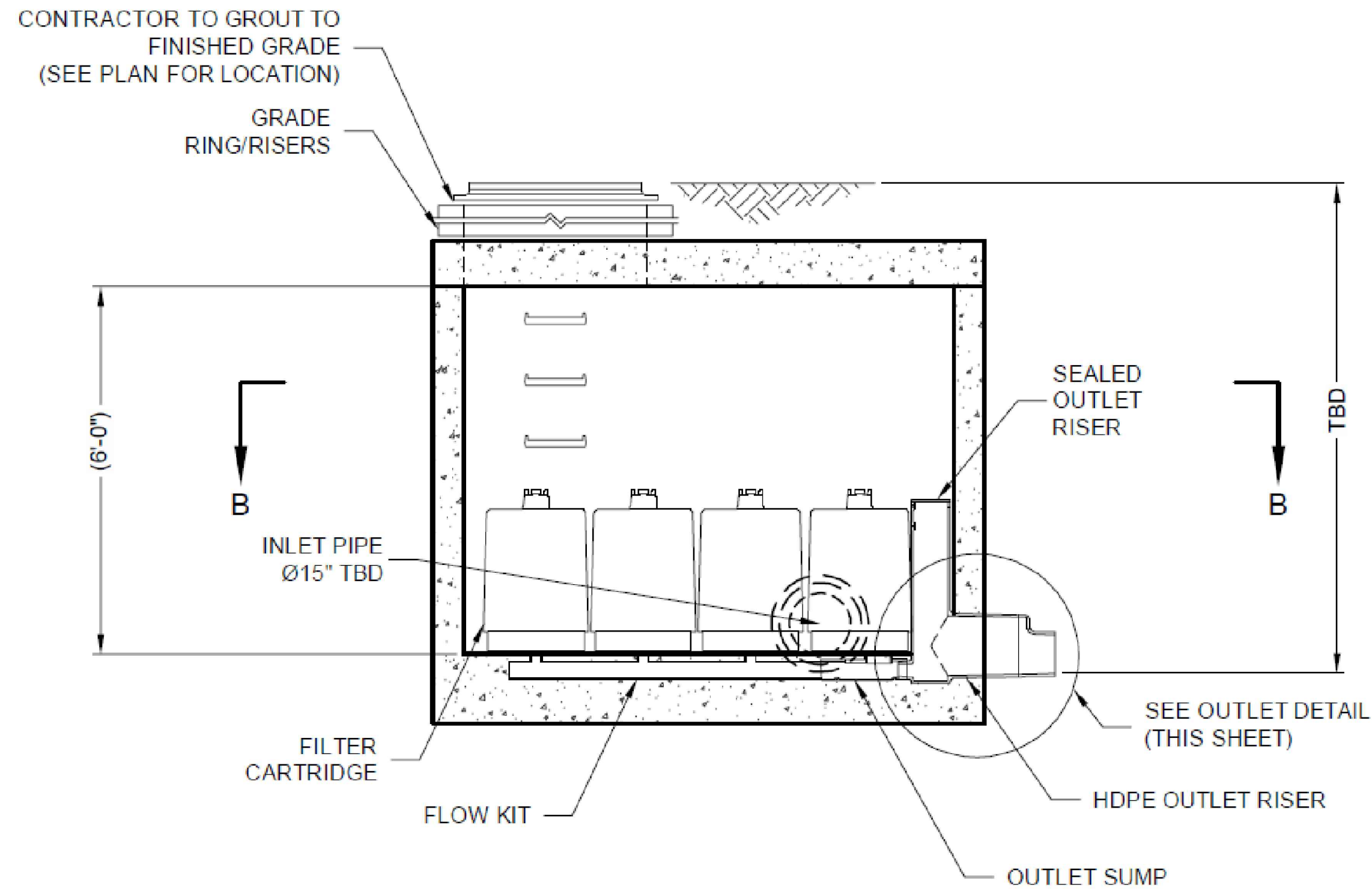
PLAN VIEW



SECTION B-B



OUTLET DETAIL



SECTION A-A

SEALED OUTLET RISER

MATERIAL LIST - PROVIDED BY CONTECH

Table with 3 columns: COUNT, DESCRIPTION, INSTALLED BY. Lists items like 18-inch volume GPM phosphosorb cartridge, 2-inch PVC slip plug, sealed outlet riser, flow kit, joint sealant, grade rings/risers, and frame and cover.

SITE DESIGN DATA

Table with 2 columns: Parameter and Value. Includes Water Quality Flow Rate, Peak Flow Rate, Return Period of Peak Flow, and Filter Media Type.

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.
3. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
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.
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 DESIGN CONSIDERATIONS 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.
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.
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.

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

CONTECH PROPOSAL DRAWING

The design and information shown on this drawing is provided as a service to the project owner, engineer or contractor. It is not to be used, reproduced or modified in any manner without the prior written consent of Contech Engineered Solutions LLC. Contech Engineered Solutions LLC does not accept any liability or responsibility for such use. If discrepancies between the supplied information and the actual field conditions are identified, the contractor shall immediately notify Contech Engineered Solutions LLC for re-evaluation of the design. Contech Engineered Solutions LLC shall not be responsible for any inaccuracies or omissions of information supplied by others.

Revision table with columns: NO., DATE, REVISION DESCRIPTION, MARK, DATE, BY.

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

CONTECH ENGINEERED SOLUTIONS LLC logo and contact information including website, phone, and fax numbers.

Design and drawing information table with fields for DATE, DESIGNED, DRAWN, CHECKED, APPROVED, PROJECT No., SEQUENCE No., SHEET.

Small revision table with columns: NO., DATE, REVISION DESCRIPTION, MARK, DATE, BY.

PRELIMINARY DO NOT USE FOR CONSTRUCTION

Storm Filter Details Vineyard Pine Commercial MRR Development, LLC Rolesville, Wake County, North Carolina

Project No. D6 Dwg No.

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

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

WAKE COUNTY BOARD OF ALCOHOLIC CONTROL  
1212 WICKER DR  
RALEIGH NC 27604-1428

### EROSION CONTROL GENERAL NOTES

- PER NPDES REQUIREMENTS, A RAIN GAUGE, 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)
- THE CONTRACTOR SHALL CONDUCT SELF-INSPECTIONS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES AND COMPLETE 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)
- 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)
- 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.
- 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))
- SILT BAG(S) WILL BE CONTINUOUSLY MONITORED DURING OPERATION. (GS 113A-57(3), 15A NCAC 04B.0113).
- 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)
- INSTALL POLYACRYLAMIDE IMPREGNATED STRAW WATTLES (IE: TERRA TUBES) DIRECTLY BELOW STORM WATER OUTFALL. PLACE EROSION CONTROL LINER UNDERNEATH A SERIES OF WATTLES (SEE DETAIL)
- 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.
- INSTALL STANDARD GRAVEL YARD INLET PROTECTION UNTIL CURB IS INSTALLED. INSTALL STANDARD GRAVEL BAG CURB INLET PROTECTION AT ALL CURB INLETS.

### EROSION CONTROL CONSTRUCTION SEQUENCE - PHASE 1

- SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL WATERSHED MANAGER. OBTAIN A LAND DISTURBING PERMIT.
- INSTALL TREE PROTECTION FENCE AND PERIMETER SILT FENCE AS SHOWN ON THE PLANS.
- 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.
- CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT, JEEVEAN NEUPANE (919) 819-8907, FOR AN ONSITE INSPECTION TO OBTAIN A CERTIFICATE OF COMPLIANCE.
- 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.
- 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.
- 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.
- 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.
- REGULARLY INSPECT AND MAINTAIN THE EROSION CONTROL DEVICES SO THEY CONTINUE TO FUNCTION PROPERLY.
- 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.
- 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.
- CONTINUE TO PHASE 2 EROSION CONTROL ACTIVITIES.

### STOCKPILE DESIGN CRITERIA

- 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.
- 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).
- STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.
- STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.
- STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.
- 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.
- ANY CONCENTRATED FLOW LIKELY TO AFFECT THE STOCKPILE SHALL BE DIVERTED TO AN APPROVED BMP.
- 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 COUNTY OF ANY OFFSITE DISPOSAL OF SOIL. PRIOR TO DISPOSAL, FILL OF FEMA FLOODWAYS AND ON-ENROACHMENT AREAS ARE PROHIBITED EXCEPT AS OTHERWISE PROVIDED BY SUBSECTION 14-19.2 OF THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE (CERTIFICATIONS AND PERMITS REQUIRED).
- SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEYS IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
- 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.
- THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
- ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

### LINE AND SYMBOL LEGEND

- SILT FENCE OUTLET
- DENUDED AREA OUTLINE
- SILT FENCE
- TEMPORARY DIVERSION DITCH
- BAFFLES
- 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 <sup>3</sup>	Minimum sedin
2387 Required Surface Area ft <sup>2</sup>	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 <sup>2</sup>	
5399 Actual Volume ft <sup>3</sup>	Okay
3256 Actual Surface Area ft <sup>2</sup>	Okay

### Use Spillway Capacity Sheet to Size Primary and Emergency Spillway

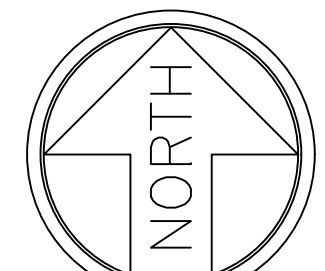
1.5 Skimmer Size (inches)	Skimmer Size (Inches)
0.125 Head on Skimmer (feet)	1.5
0.8 Orifice Size (1/4 inch increments)	2
3.00 Dewatering Time (days)	2.5
Suggest about 3 days	3

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

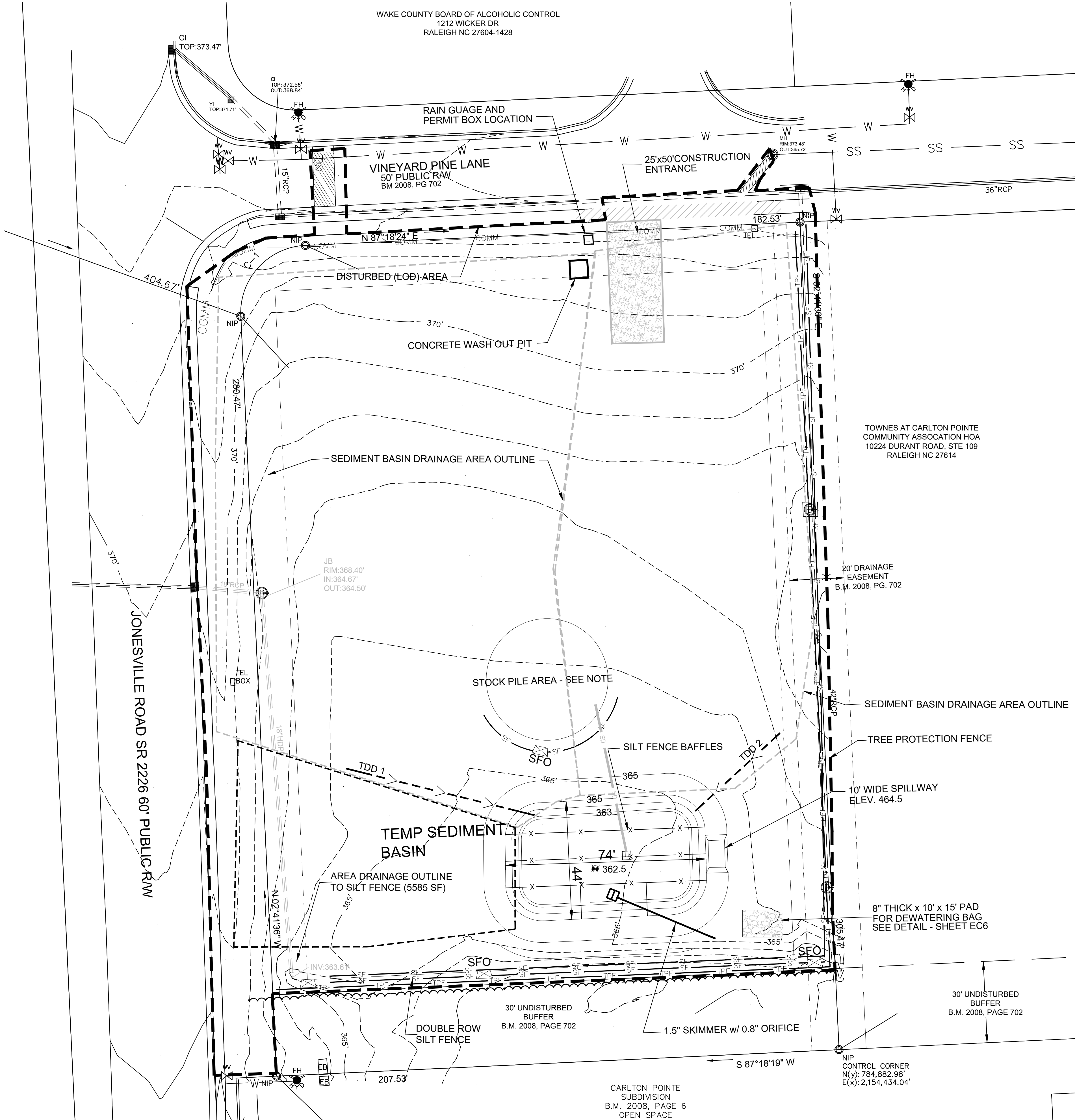
TOTAL DENUDED AREA 64,597 SF (1.48 AC)

**PRELIMINARY  
DO NOT USE FOR  
CONSTRUCTION**

Graphic Scale 1"=20'



NO.	DATE	BY	REVISION DESCRIPTION
1	8-28-2023	Initial Submittal	
2	8-29-2023	Trans Wake County Comment	
3	DATE	COMMENT	
4	DATE	COMMENT	
5	DATE	COMMENT	
6	DATE	COMMENT	
7	DATE	COMMENT	
8	DATE	COMMENT	



NGCS "SCARBORO"  
N: 785,290.93'  
E: 2,153,832.98'  
NAD 83/2011

WAKE COUNTY BOARD OF ALCOHOLIC CONTROL  
1212 WICKER DR  
RALEIGH NC 27604-1428

VINEYARD PINE LANE  
50' PUBLIC RAW  
BM 2008, PG 702

TOWNES AT CARLTON POINT  
COMMUNITY ASSOCIATION HOA  
10224 DURANT ROAD, STE 109  
RALEIGH NC 27614

JONESVILLE ROAD SR 2226 60' PUBLIC RAW

TEMP SEDIMENT  
BASIN

30' UNDISTURBED  
BUFFER  
B.M. 2008, PAGE 702

CARLTON POINT  
SUBDIVISION  
B.M. 2008, PAGE 6  
OPEN SPACE



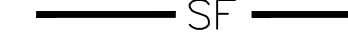

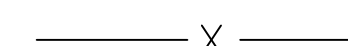


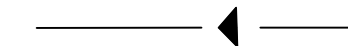

8" THICK x 10' x 15' PAD  
FOR DEWATERING BAG  
SEE DETAIL - SHEET EC6

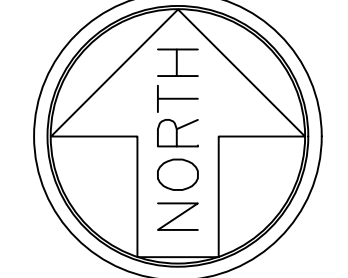
**PRELIMINARY  
DO NOT USE FOR  
CONSTRUCTION**

**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 UTILITIES 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. 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.
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 ACTIVITIES.

**LINE AND SYMBOL LEGEND**

-  SILT FENCE OUTLET
-  DENUDED AREA OUTLINE
-  SILT FENCE
-  TEMPORARY DIVERSION DITCH
-  BAFFLES
-  TREE PROTECTION FENCE
-  CHECK DAM
-  INLET PROTECTION
-  SLOPE DRAIN

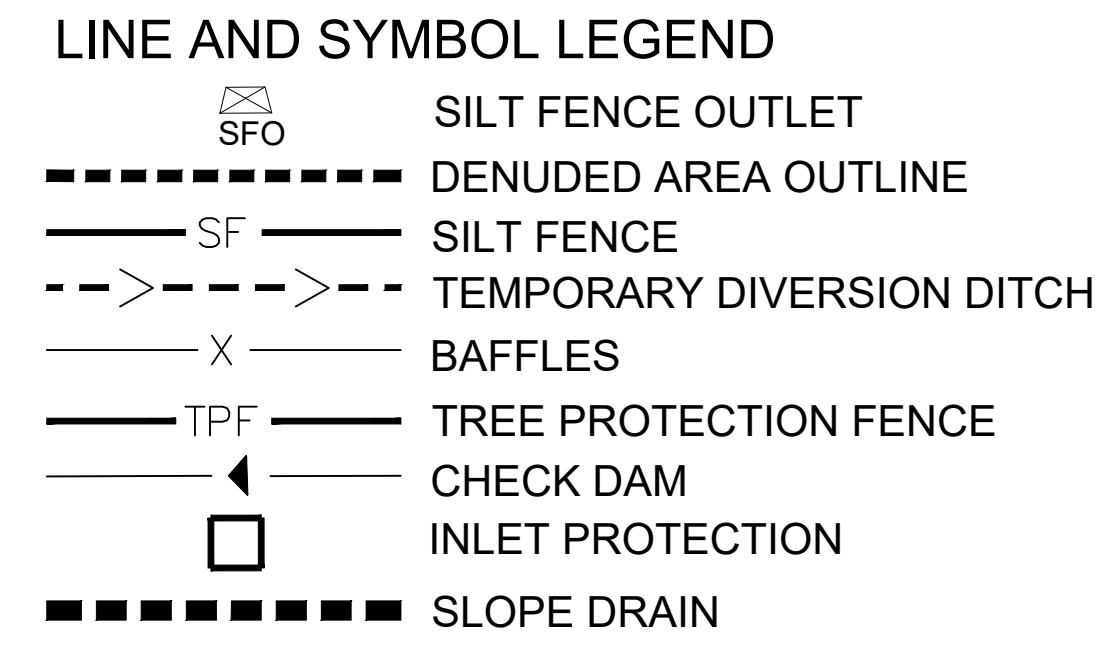
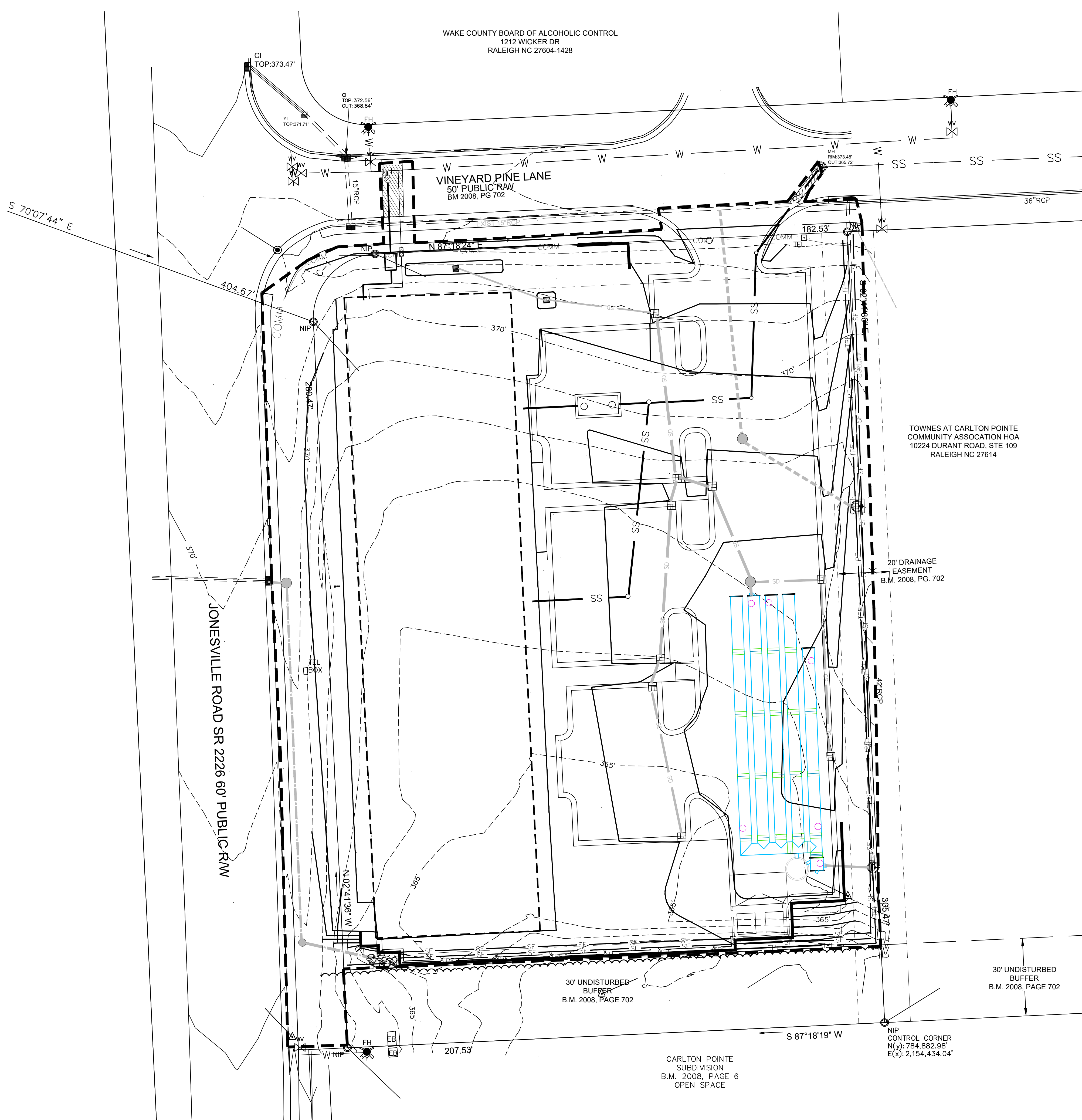


**Gettle Engineering and Design, PLLC**  
3616 Waxwing Court,  
Wake Forest, North Carolina 27587  
(919) 210-3934 Firm License P-2538

**Erosion Control Phase 2**  
Vineyard Pine Commercial  
MRR Development, LLC  
Rolesville, Wake County, North Carolina

Project No.  
Dwg No.  
**EC2**

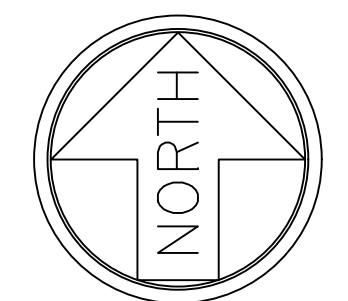
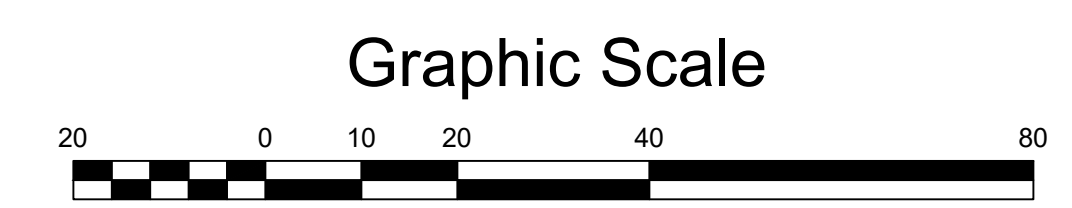
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2	8-22-2026	Town (Wake County Comment)	KPG
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- #### CONSTRUCTION SEQUENCE - PHASE 3
- CONSTRUCT CONCRETE CURB IN ROADWAYS AND PARKING LOT. PLACE AND COMPACT STONE IN THE ROADWAYS AND PARKING LOT. REMOVE THE GRAVEL ENTRANCE.
  - COMPLETE FINE GRADING AND STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE.
  - 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.
    - STABILIZE BASINS WITH GROUND COVER IMMEDIATELY AFTER INSTALLATION.
    - STABILIZE DIVERSION DITCHES INTENDED TO BE IN SERVICE FOR 30 DAYS OR MORE WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING.
    - 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.
    - 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
    - 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.
  - ONCE THE BMP INSTALLATION IS COMPLETE, TEMPORARY MEASURES ARE REMOVED, THE SITE IS STABILIZED, CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT, JEEVAN NEUPANE AT (919) 819-8907, TO SCHEDULE A STORMWATER INSPECTION.

- #### REQUIRED WAKE COUNTY BASIN REMOVAL SEQUENCE
- SCHEDULE A SITE MEETING WITH THE WAKE COUNTY ENVIRONMENTAL, JEEVAN NEUPANE AT (919) 819-8907, 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.
  - 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 ON SITE. THE EMAIL SHOULD INCLUDE: E&S 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)
  - 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.
  - PERFORM SEEDBED PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY.
  - INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
  - WHEN SITE IS FULLY STABILIZED, CALL WAKE COUNTY ENVIRONMENTAL CONSULTANT, JEEVAN NEUPANE AT (919) 819-8907, 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.

**PRELIMINARY  
DO NOT USE FOR  
CONSTRUCTION**



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**Erosion Control Phase 3**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

Project No.  
 Dwg No.  
**EC3**

NO.	DATE	REVISION DESCRIPTION	BY
1	8-28-2023	Initial Submittal	KPG
2	5-22-2026	Town (Wake County) Comment	BY
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**LINE AND SYMBOL LEGEND**

- SILT FENCE OUTLET
- DENUDED AREA OUTLINE
- SILT FENCE
- TEMPORARY DIVERSION DITCH
- BAFFLES
- 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 STABILIZED.
5. ONCE THE BMP INSTALLATION IS COMPLETE, TEMPORARY MEASURES ARE REMOVED, THE SITE IS STABILIZED, CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT JEEVAN NEUPANE AT (919) 819-8907 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**

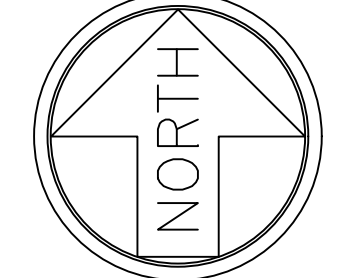
1. THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER PERMIT NCG010000.
2. THIS PAGE CAN BE APPROVED BY THE CITY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000 ONLY.
3. THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCLUSIVELY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000.
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 (HOW) 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 HOW ZONES)	REMAINDER OF SITE

**PRELIMINARY  
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CONSTRUCTION**

Graphic Scale

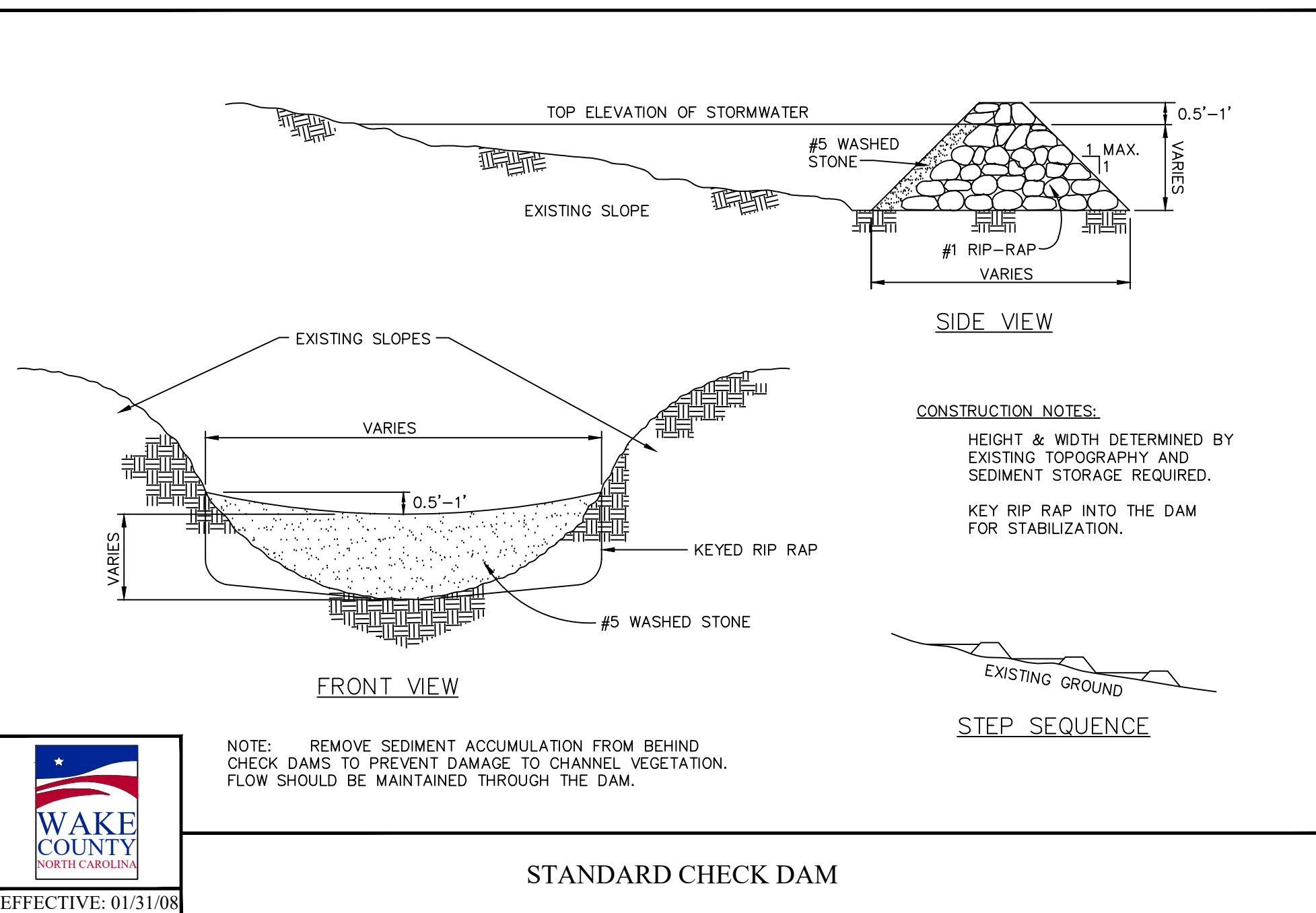


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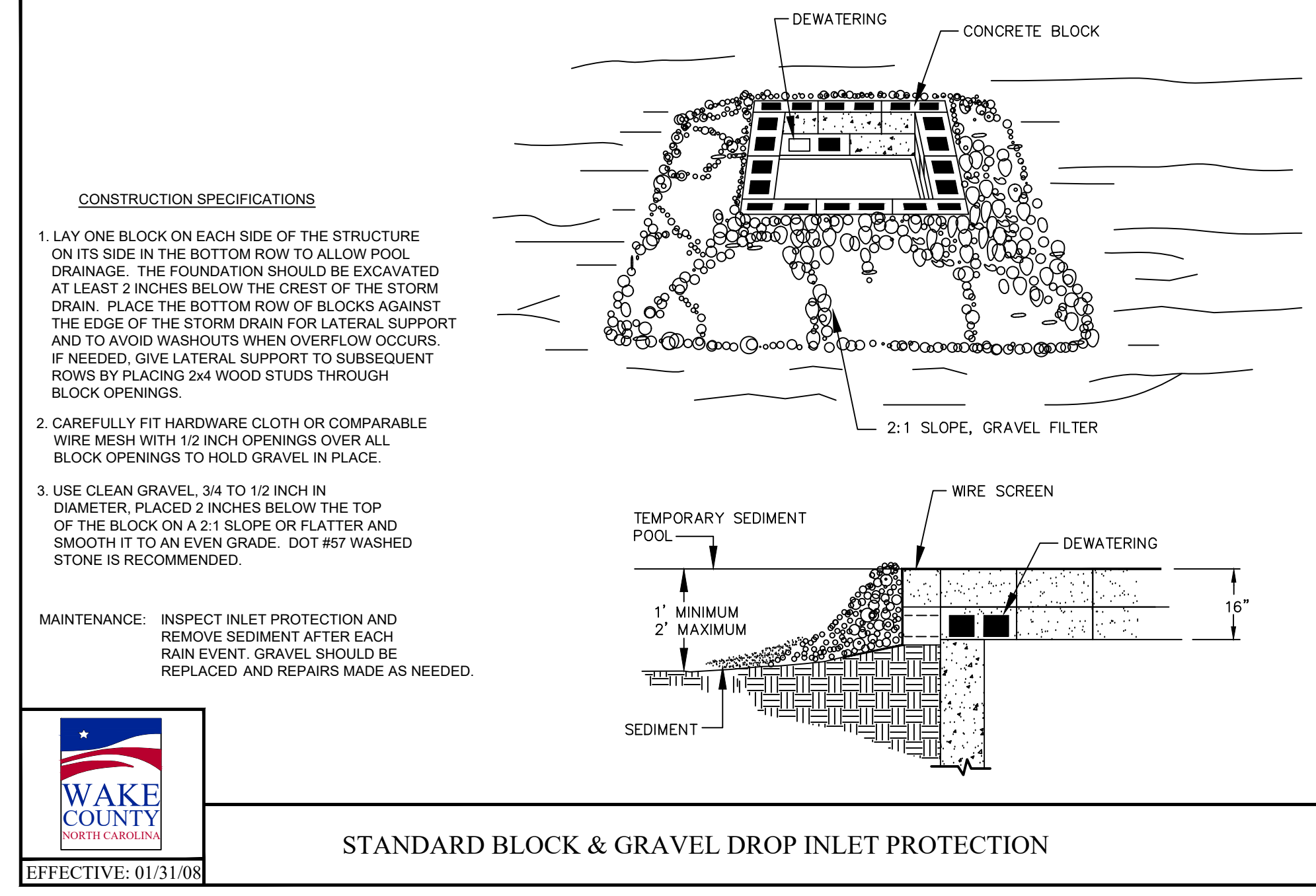
**Erosion Control Phase 4**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

Project No.  
 Dwg No.  
**EC4**

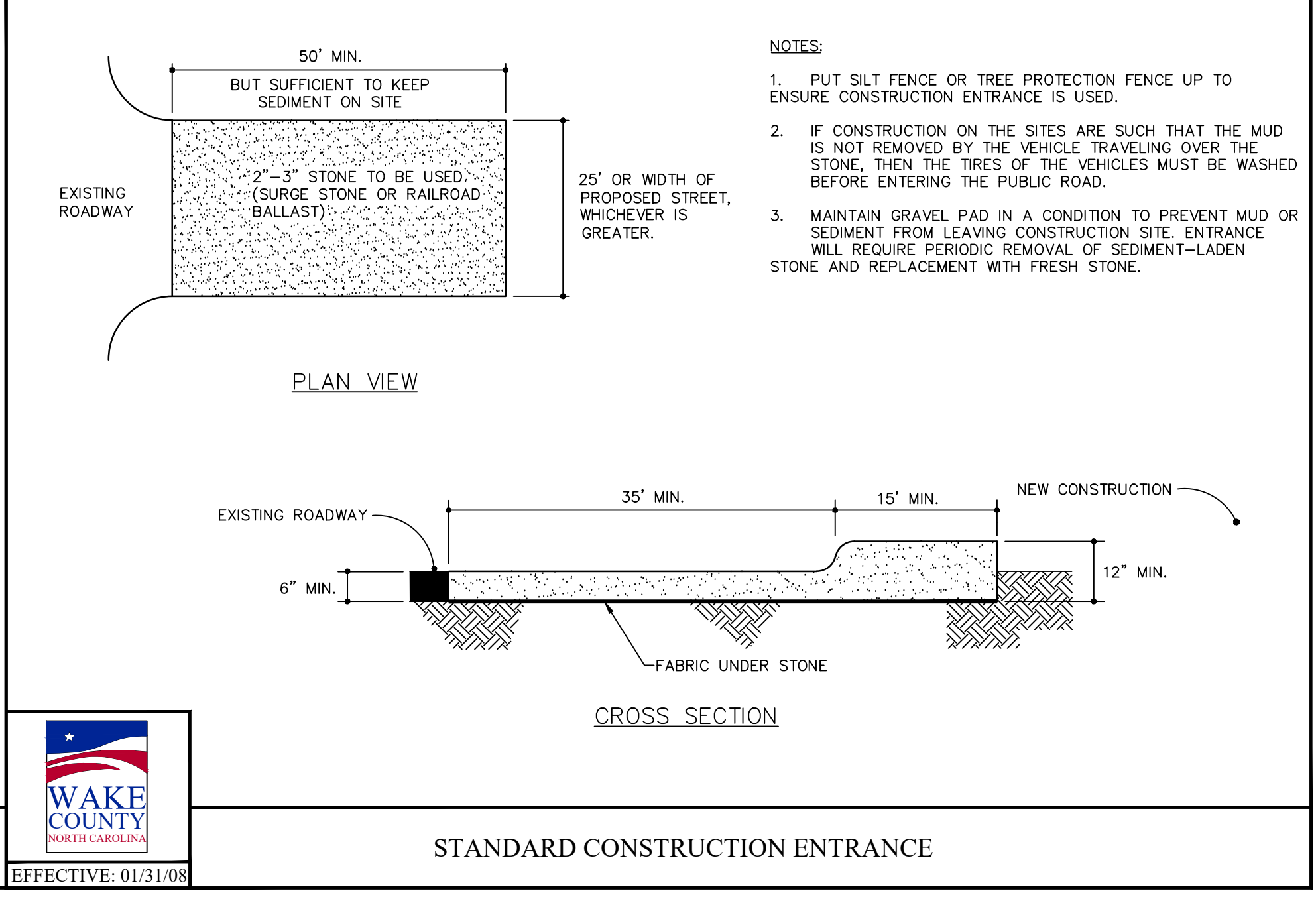
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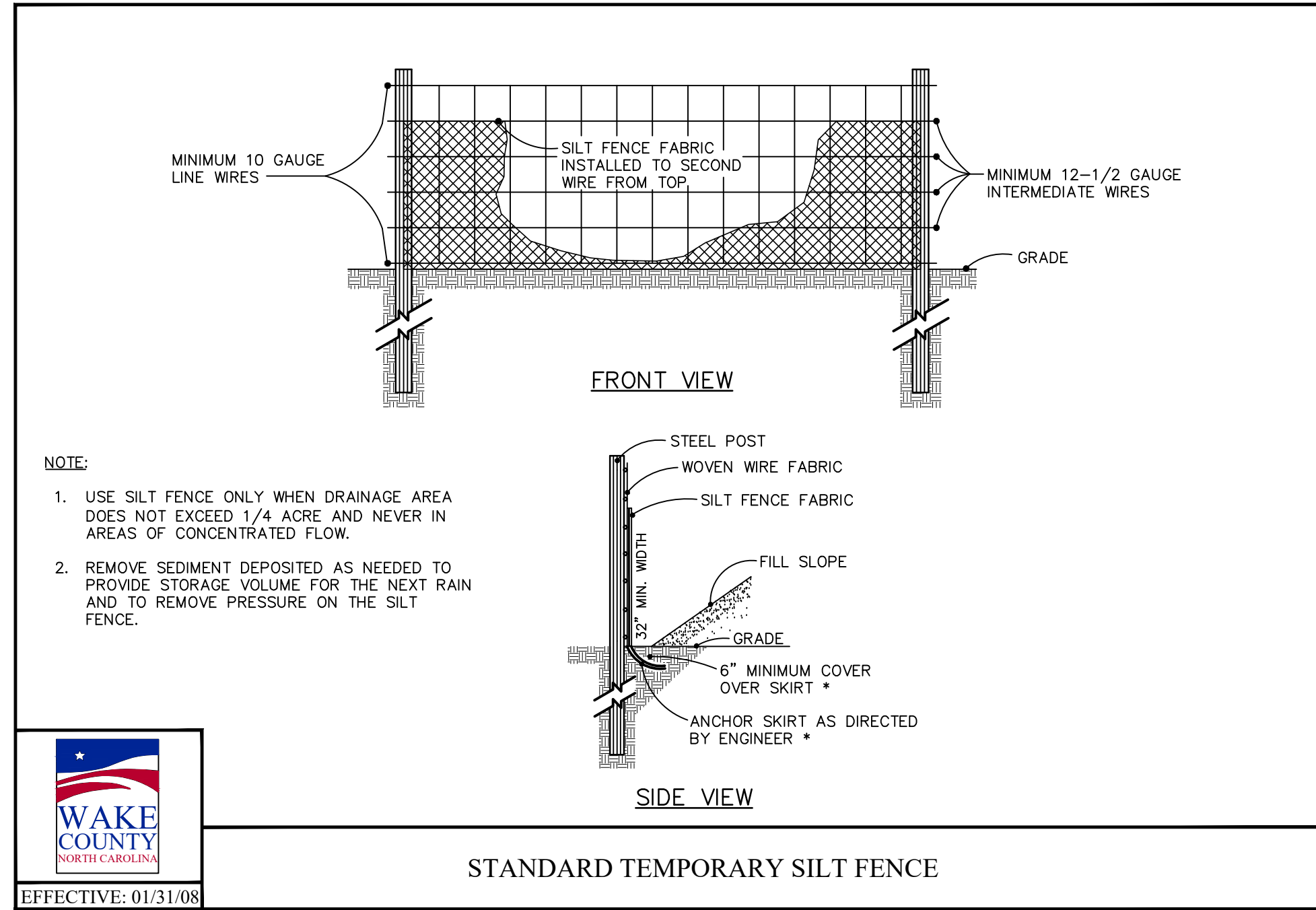
STANDARD CHECK DAM



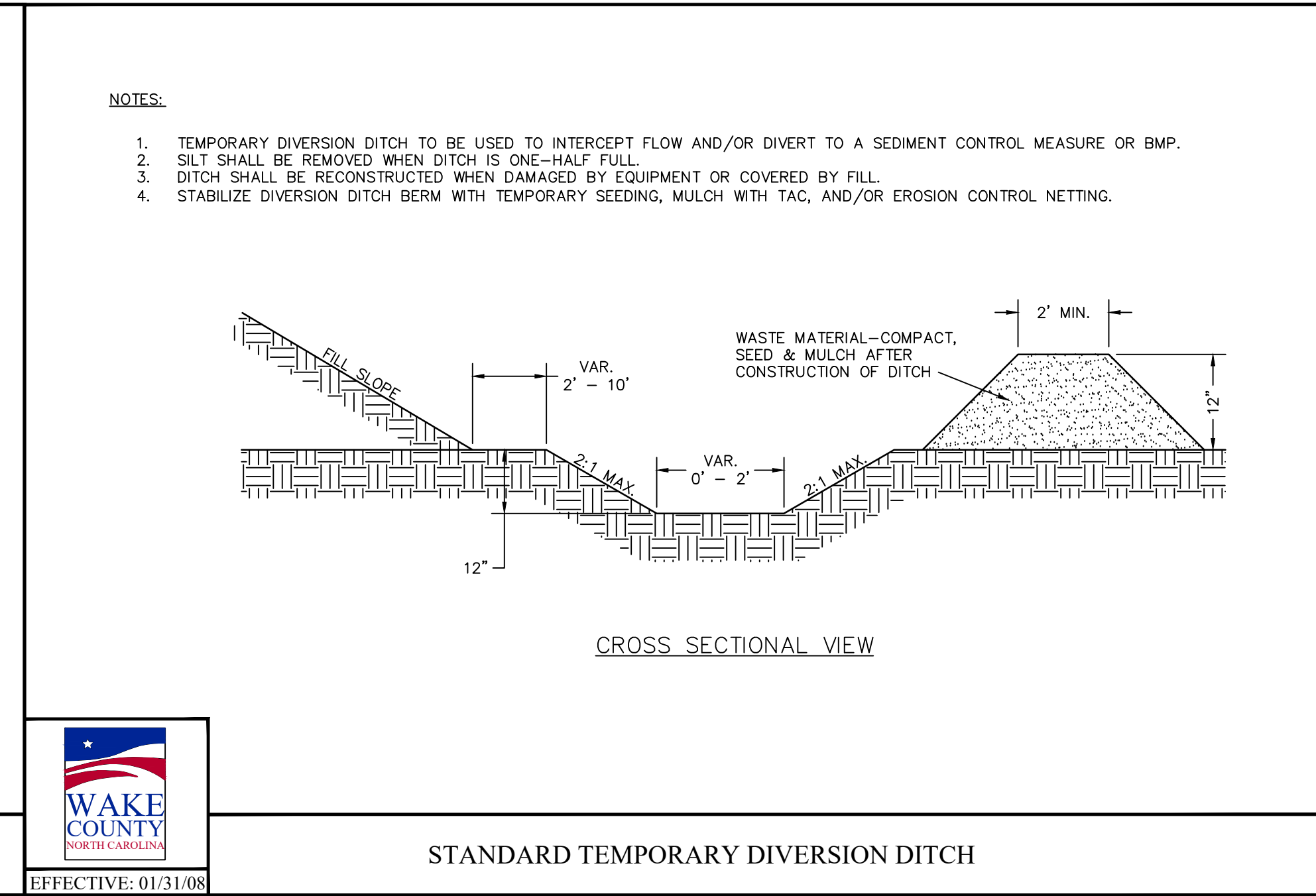
STANDARD BLOCK & GRAVEL DROP INLET PROTECTION



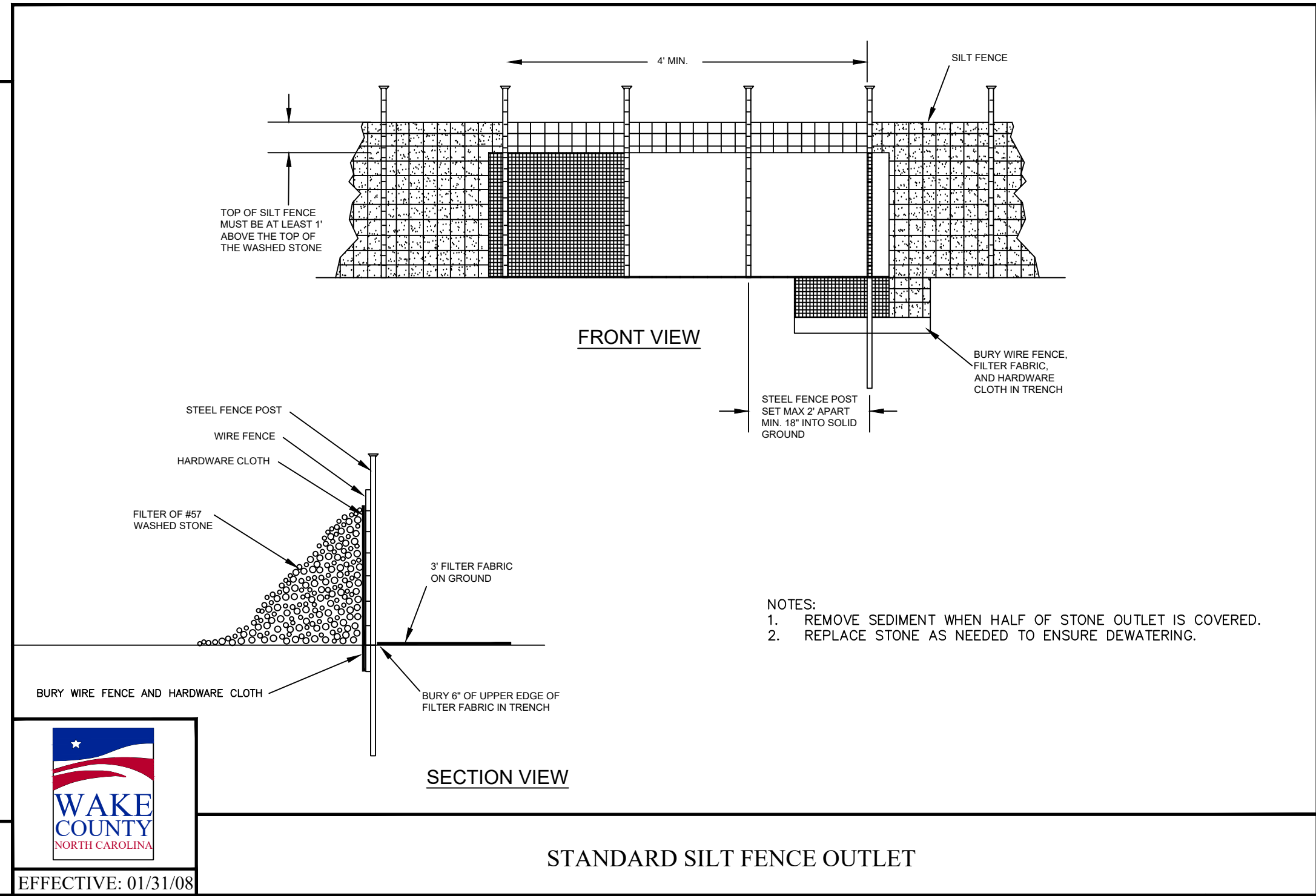
STANDARD CONSTRUCTION ENTRANCE



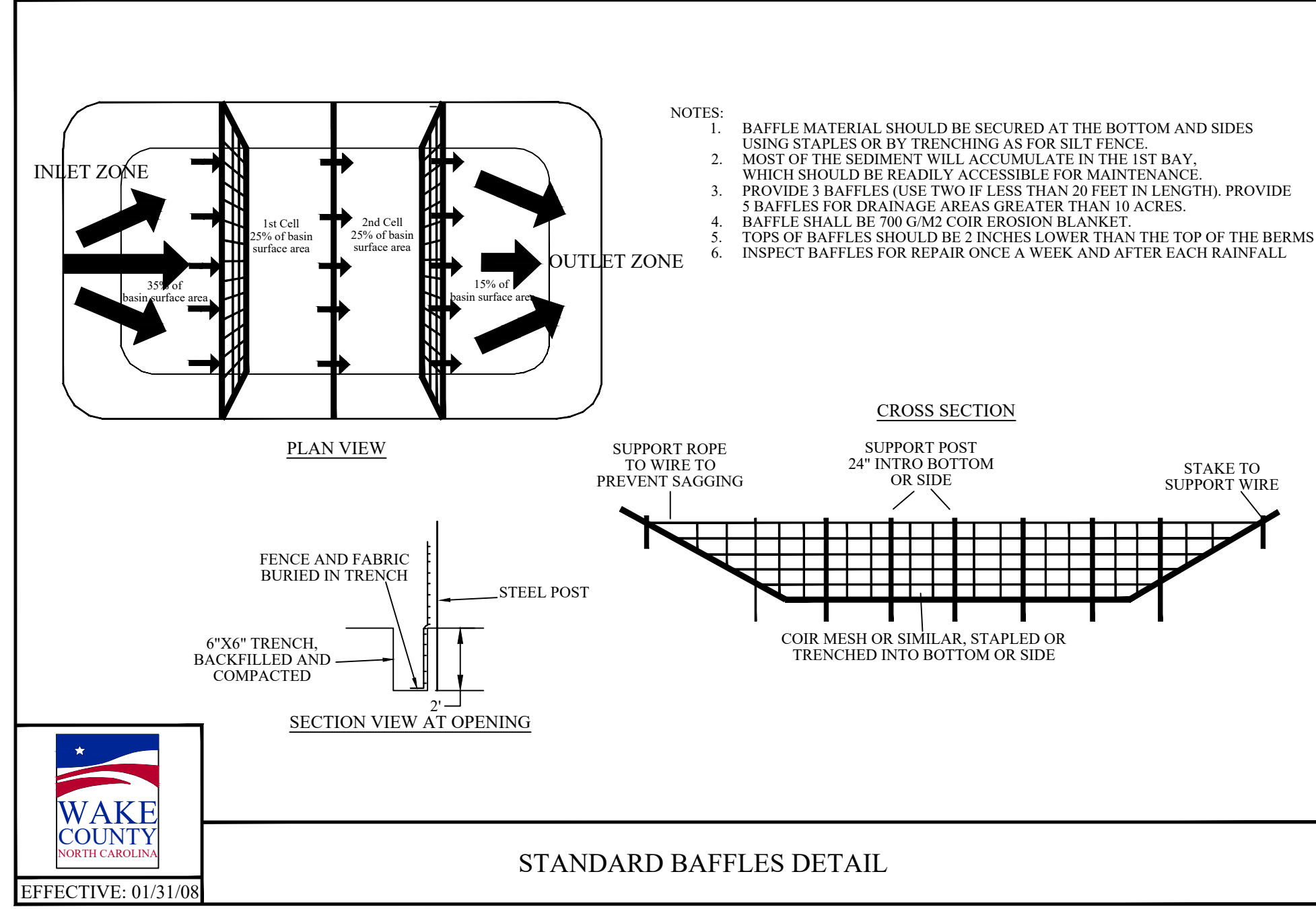
STANDARD TEMPORARY SILT FENCE



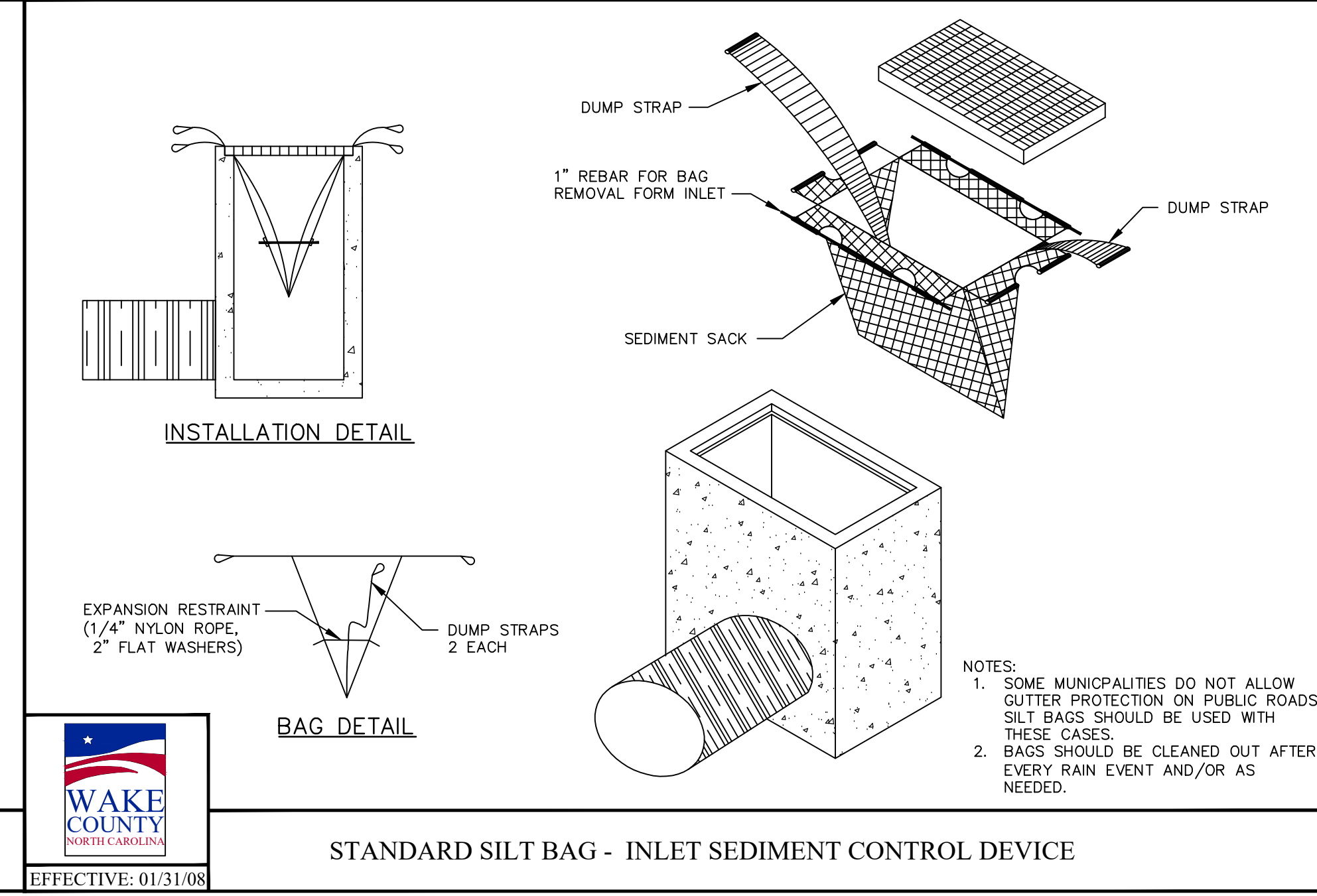
STANDARD TEMPORARY DIVERSION DITCH



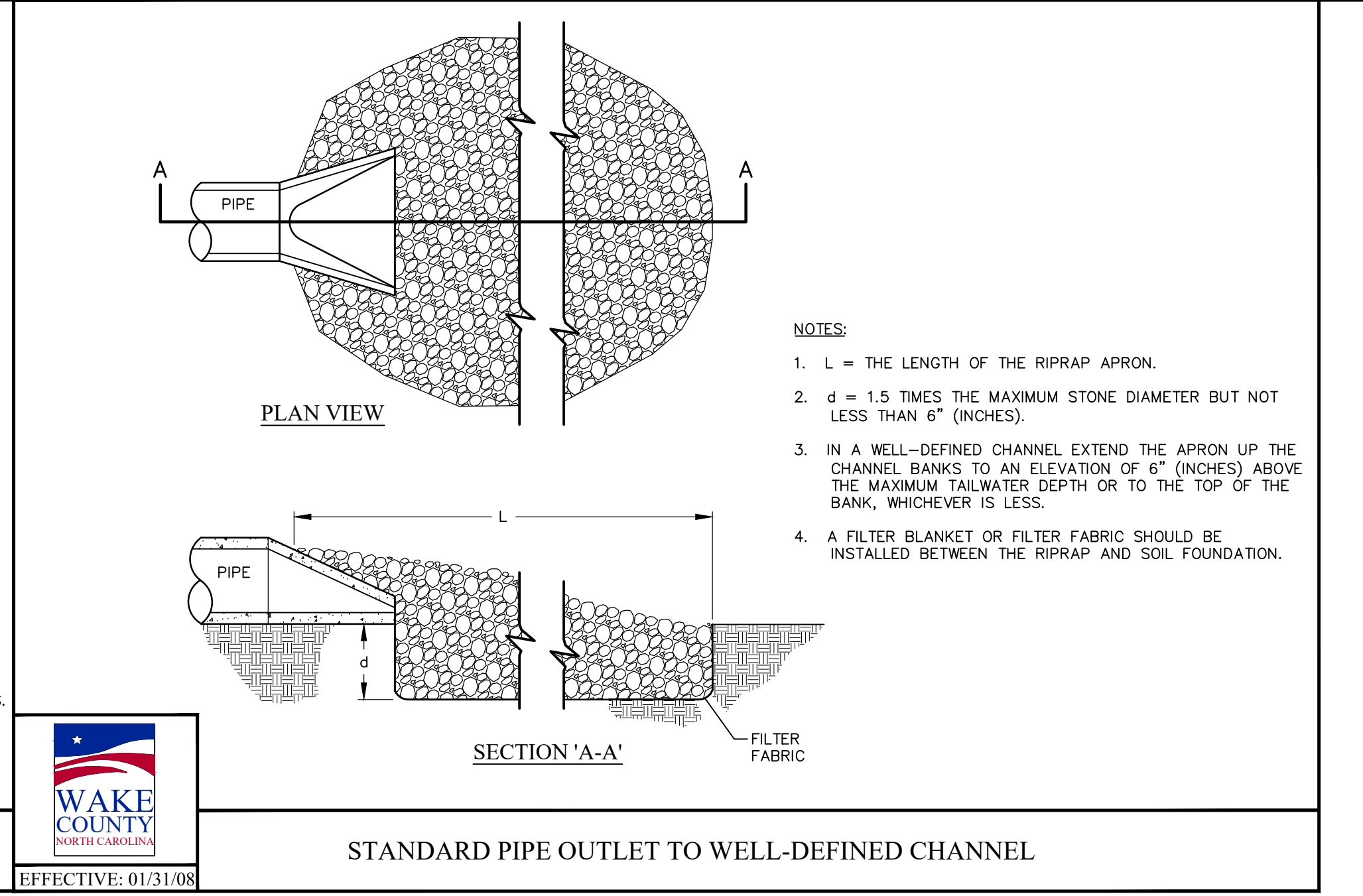
STANDARD SILT FENCE OUTLET



STANDARD BAFFLES DETAIL



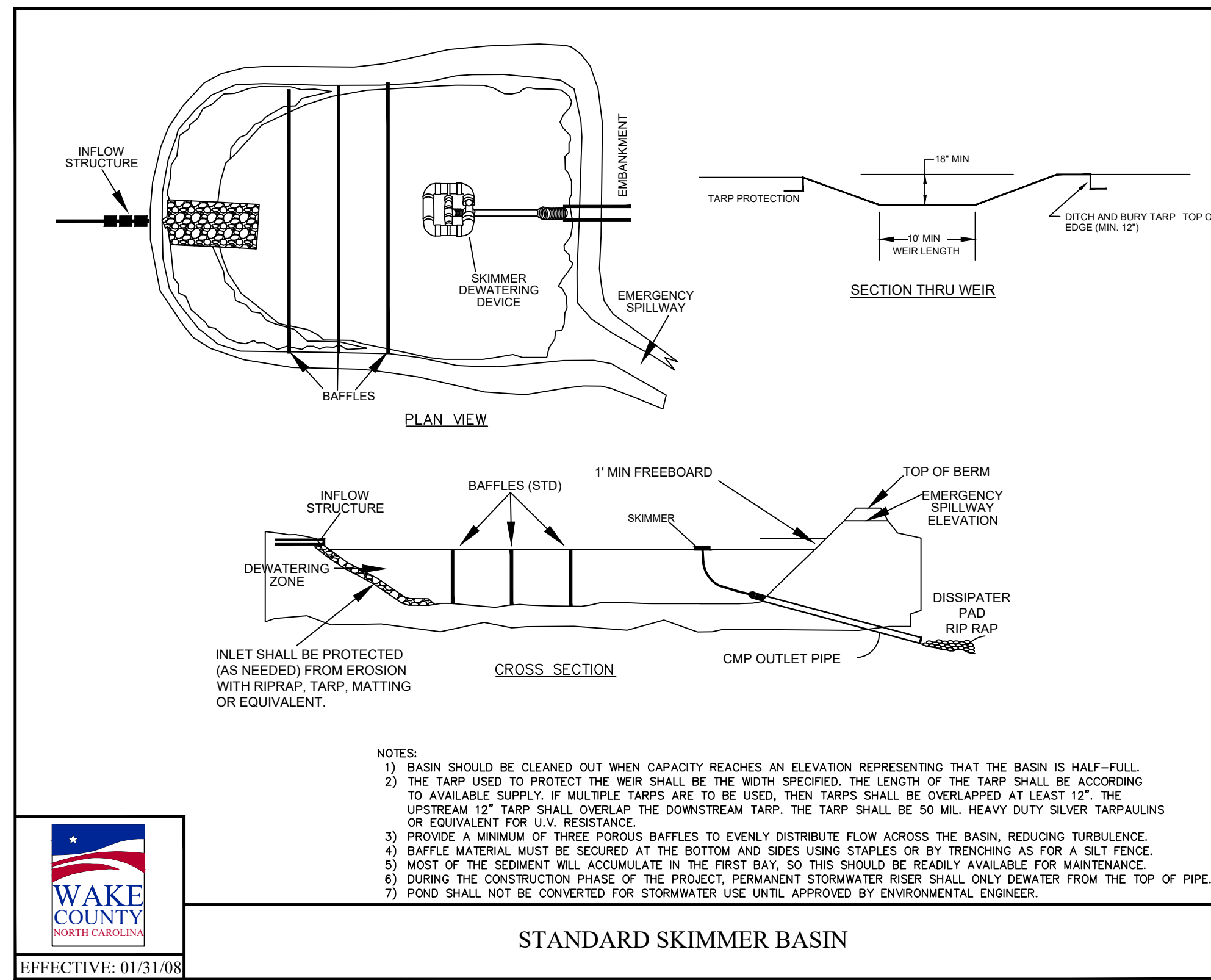
STANDARD SILT BAG - INLET SEDIMENT CONTROL DEVICE



STANDARD PIPE OUTLET TO WELL-DEFINED CHANNEL

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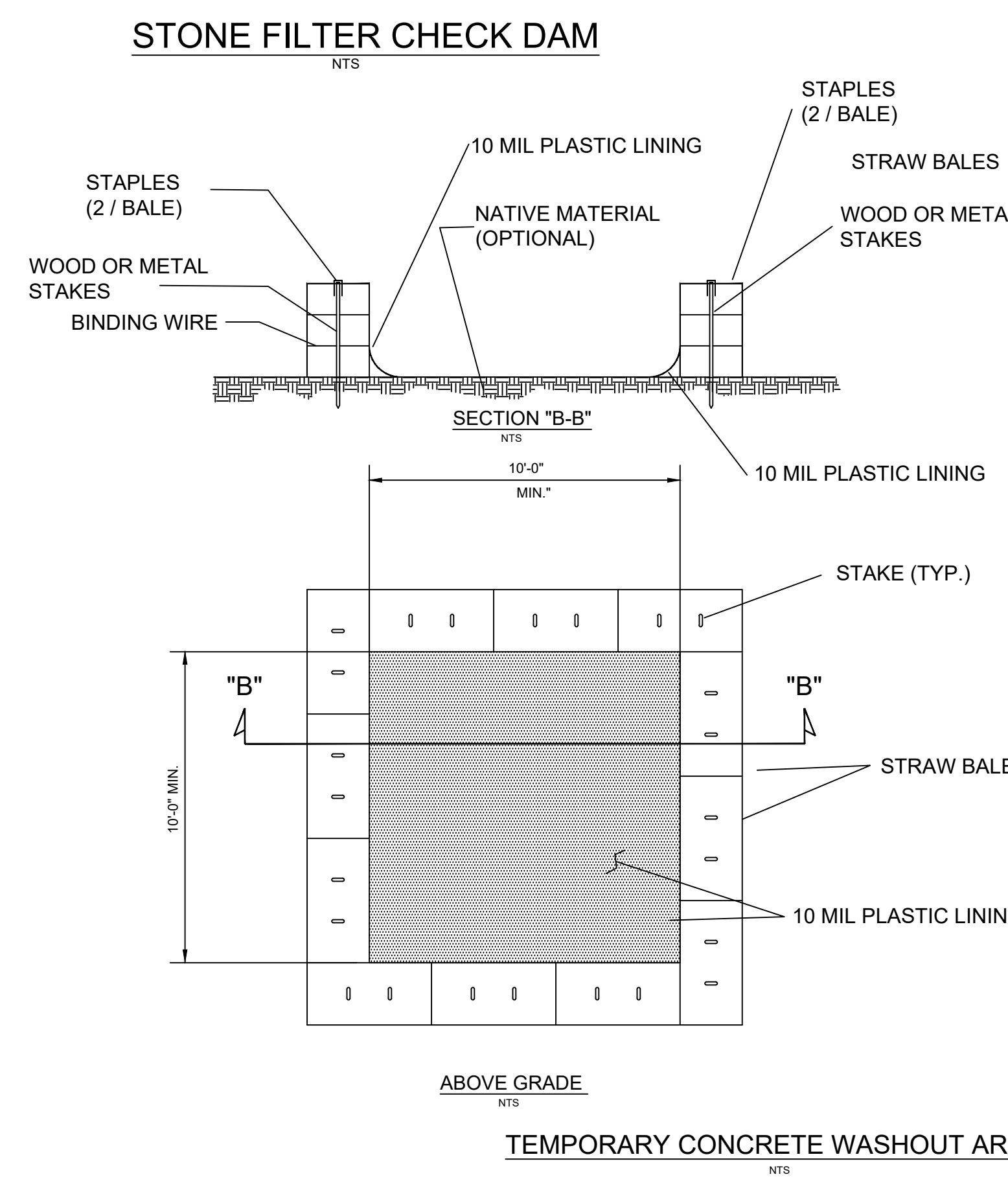
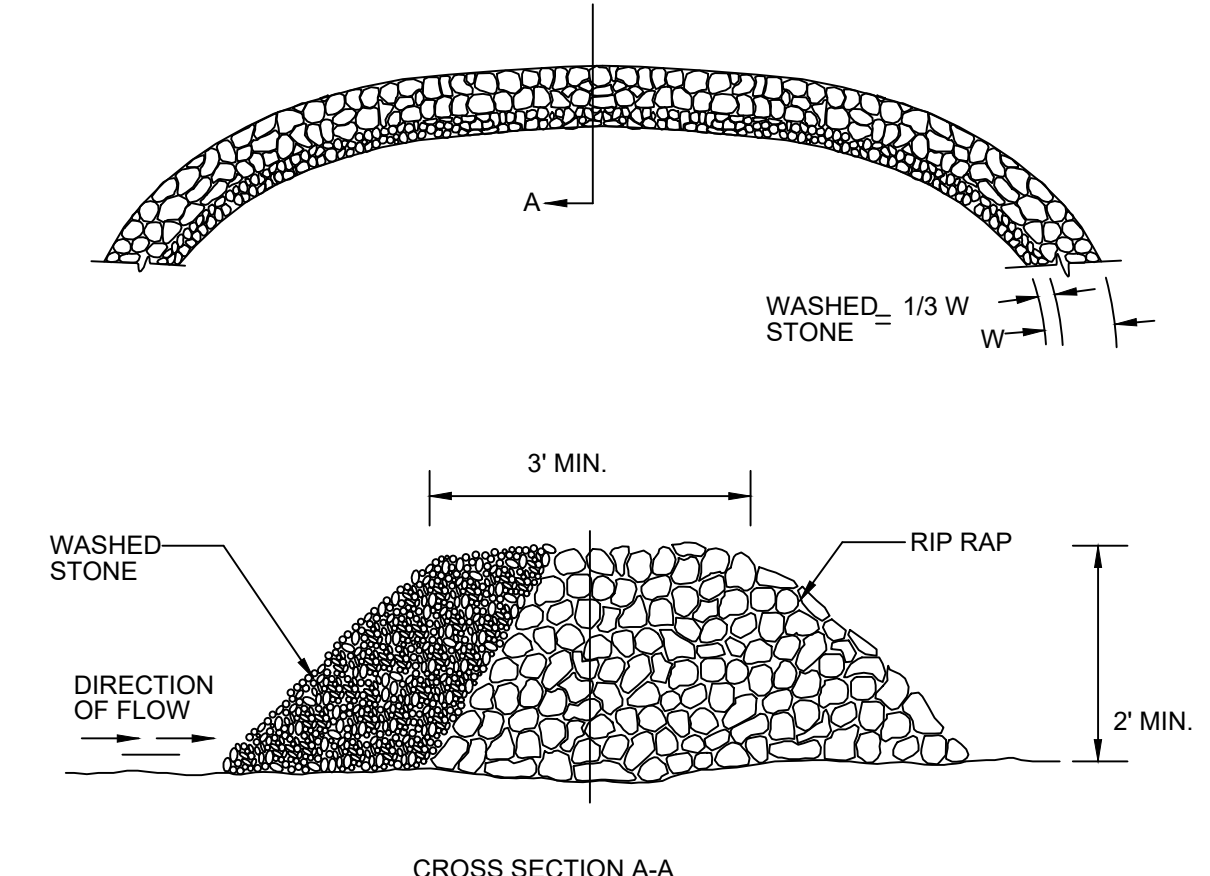
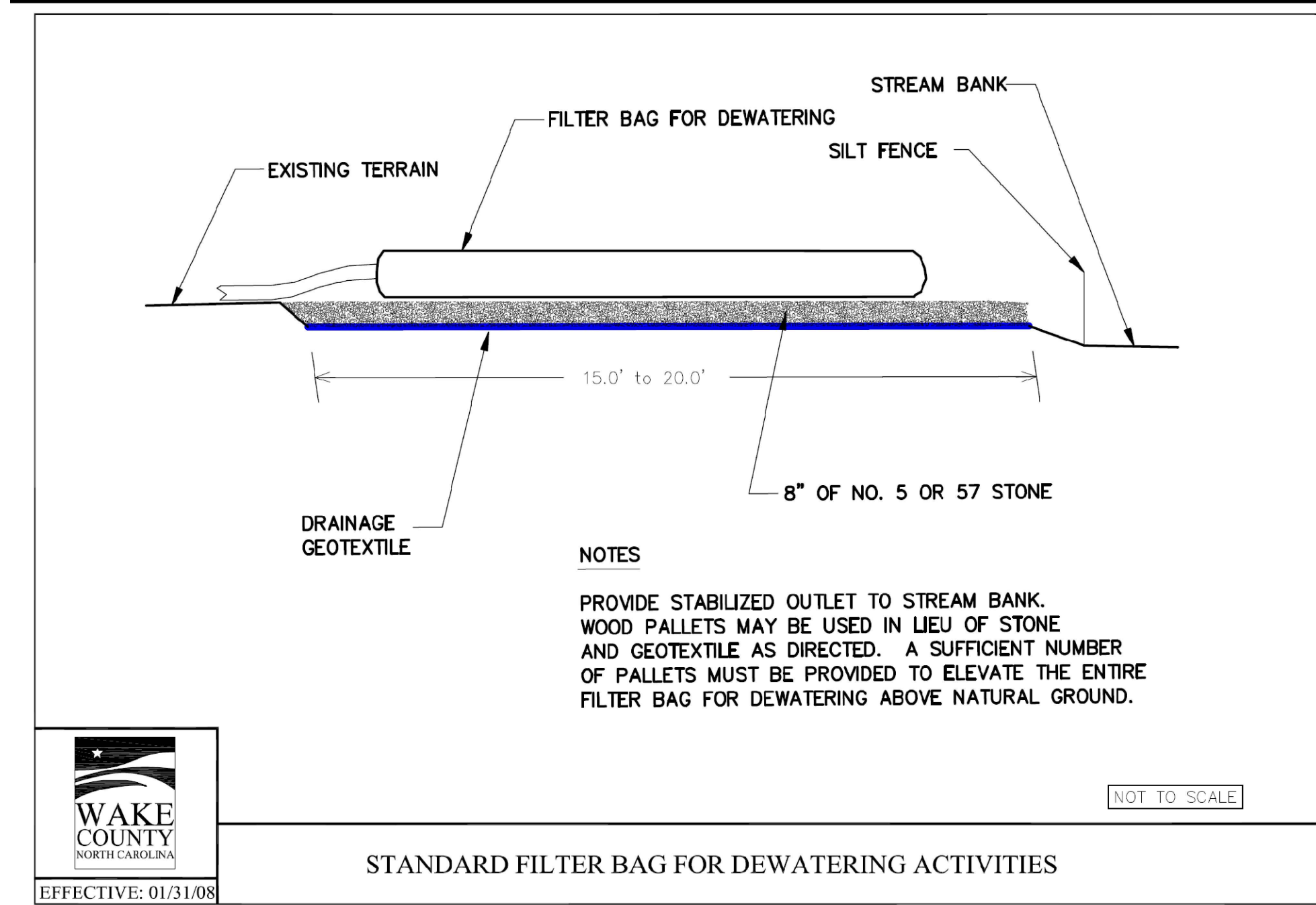


**BASIN CONSTRUCTION SPECIFICATIONS**

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 WATER-TIGHT STRUCTURAL CONNECTION. SECURE ALL CONNECTIONS BETWEEN BARREL SECTIONS BY APPROVED WATER-TIGHT 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.

**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 1/2 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.



**MIXTURE:**

AGRICULTURAL LIMESTONE:	2 TONS/ACRE (3 TONS/ACRE IN CLAY SOILS)
FERTILIZER:	1,000 LBS/ACRE - 10-10-10
SUPERPHOSPHATE:	500 LBS/ACRE - 20% ANALYSIS
MULCH:	2 TONS/ACRE - SMALL GRAIN STRAW
ANCHOR:	ASPHALT EMULSION AT 300 GAL/ACRE

**SEEDING SCHEDULE**

FOR SHOULDERS, SIDE DITCHES, SLOPES (MAX 3:1):

DATE	TYPE	PLANTING RATE
AUG 15 - NOV 1	TALL FESCUE	300 LBS/ACRE
NOV 1 - MAR 1	TALL FESCUE & ABRUZZI RYE	300 LBS/ACRE
MAR 1 - APR 15	TALL FESCUE	300 LBS/ACRE
APR 15 - JUN 30	HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUL 1 - AUG 15	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS**	125 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)

FOR SHOULDERS, SIDE DITCHES, SLOPES (3:1 TO 2:1):

DATE	TYPE	PLANTING RATE
MAR 1 - JUN 1	SERICEA LESPEDEZA (SCARIFIED) AND TALL FESCUE	50 LBS/ACRE (SERICEA LESPEDEZA); USE THE FOLLOWING COMBINATIONS:
MAR 1 - APR 15	ADD TALL FESCUE	120 LBS/ACRE
MAR 1 - JUN 30	OR ADD WEEPING LOVE GRASS	10 LBS/ACRE
MAR 1 - JUN 30	OR ADD HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUN 1 - SEPT 1	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS***	120 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)
SEPT 1 - MAR 1	SERICEA LESPEDEZA (UNHULLED - UNSCARIFIED) AND TALL FESCUE	70 LBS/ACRE (SERICEA LESPEDEZA); 120 LBS/ACRE (TALL FESCUE)
NOV 1 - MAR 1	AND ABRUZZI RYE	25 LBS/ACRE

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

NO.	DATE	BY	REVISION DESCRIPTION
1	01/31/08	NTS	Initial Submittal
2	02/22/08	NTS	Third Water County Comment
3	DATE	BY	COMMENT
4	DATE	BY	COMMENT
5	DATE	BY	COMMENT
6	DATE	BY	COMMENT
7	DATE	BY	COMMENT
8	DATE	BY	COMMENT

**PRELIMINARY  
DO NOT USE FOR  
CONSTRUCTION**

**Erosion Control Details**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 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.

**Temporary and Permanent Groundcover\***

STABILIZATION TIMEFRAMES (Effective Aug. 1, 2011)	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	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.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

\*For Falls Lake watershed, in disturbed areas where grading activities are incomplete, provide temporary groundcover no later than seven (7) days for slopes steeper than 3:1; ten (10) days for slopes equal to or flatter than 3:1; fourteen (14) days for areas with no slope.

**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
<ul style="list-style-type: none"> <li>Temporary grass seed covered with straw or other mulches and tackifiers</li> <li>Hydroseeding</li> <li>Roll-on erosion control products with or without temporary grass seed</li> <li>Appropriately applied straw or other mulch</li> <li>Plastic sheeting</li> </ul>	<ul style="list-style-type: none"> <li>Permanent grass seed covered with straw or other mulches and tackifiers</li> <li>Geotextile fabrics such as permanent soil reinforcement matting</li> <li>Hydroseeding</li> <li>Shrubs or other permanent plantings covered with mulch</li> <li>Uniform and evenly distributed ground cover sufficient to restrain erosion</li> <li>Structural methods such as concrete, asphalt or retaining walls</li> </ul>

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

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



**EQUIPMENT AND VEHICLE MAINTENANCE**

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- 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**

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number of waste containers on site to manage the quantity of waste produced.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- 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.
- Cover waste containers at the end of each workday and before storm events. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow.
- Dispose waste off-site at an approved disposal facility.

**PAINT AND OTHER LIQUID WASTE**

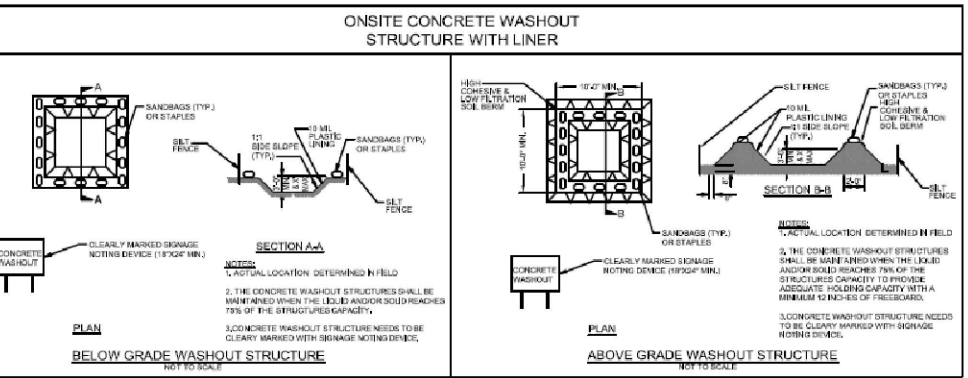
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled,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

**PORTABLE TOILETS**

- 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.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- 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**

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- 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.



**CONCRETE WASHOUTS**

- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulators and at an approved facility.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Remove loadings 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.
- At the completion of the concrete work, remove remaining loadings 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**

- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- 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.
- 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.
- Do not stockpile these materials onsite.

**HAZARDOUS AND TOXIC WASTE**

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

**NCG01 GROUND STABILIZATION AND MATERIALS HANDLING EFFECTIVE: 03/01/19**

**Gettle Engineering and Design, PLLC**  
 3616 Waxwing Court,  
 Wake Forest, North Carolina 27587  
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NO.	DATE	BY	REVISION DESCRIPTION
1	8-28-2023	Initial Submittal	
2	9-22-2026	Town / Wake County Comment	
3	DATE	COMMENT	
4	DATE	COMMENT	
5	DATE	COMMENT	
6	DATE	COMMENT	
7	DATE	COMMENT	
8	DATE	COMMENT	

**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 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 [40 CFR 122.41]:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amount. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if 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. Corrective actions taken, and 7. Date of 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. Actions taken to correct/prevent sedimentation, and 7. Date of 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 a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits. 2. Date of actions taken, and 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 a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Evidence and actions taken to reduce sediment contributions, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.

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 documented in the manner described:

Item to Document	Documentation 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**

In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency 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:

- This general permit as well as the certificate of coverage, after it is received.
- Records of inspections made during the previous 30 days. 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.
- All data used to complete the Notice of Intent and older 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:

- Visible sediment deposition in a stream or wetland.
- 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).
- 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.
- Anticipated bypasses and unanticipated bypasses.
- 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 Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> <li>Within 24 hours, an oral or electronic notification.</li> <li>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.</li> <li>If the stream is named on the NC 303(d) list as impaired for sediment-related causes, 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.</li> </ul>
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	<ul style="list-style-type: none"> <li>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.</li> </ul>
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li>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.</li> </ul>
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li>Within 24 hours, an oral or electronic notification.</li> <li>Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.</li> </ul>
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(d)(7)]	<ul style="list-style-type: none"> <li>Within 24 hours, an oral or electronic notification.</li> <li>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 recurrence of the noncompliance. [40 CFR 122.41(d)(6).</li> <li>Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>

**NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING EFFECTIVE: 03/01/19**



**NCG01 Requirements**  
 Vineyard Pine Commercial  
 MRR Development, LLC  
 Rolesville, Wake County, North Carolina

**PRELIMINARY DO NOT USE FOR CONSTRUCTION**

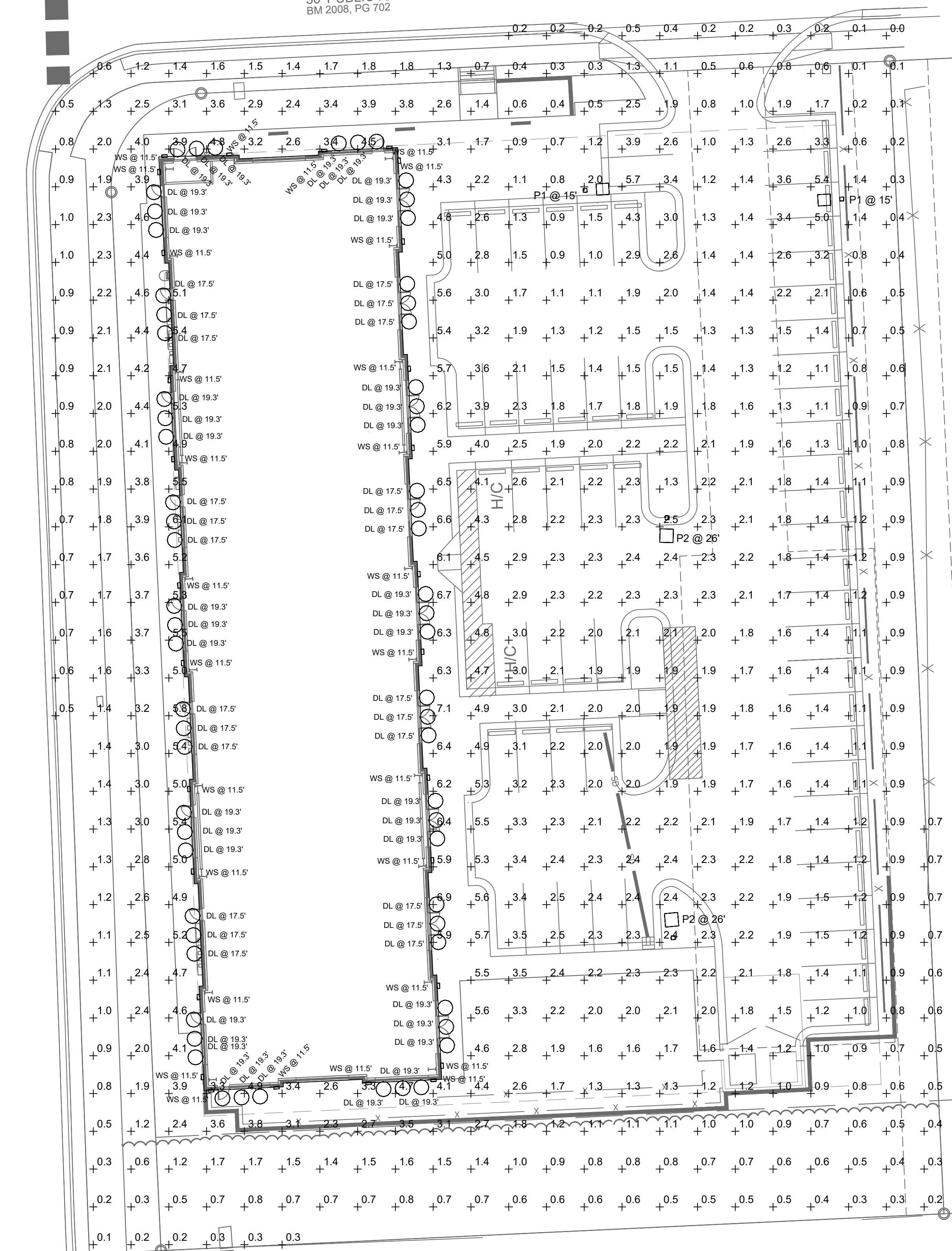
Project No.

Dwg No.

**EC7**

JONESVILLE ROAD SR 2226 60' PUBLIC R/W

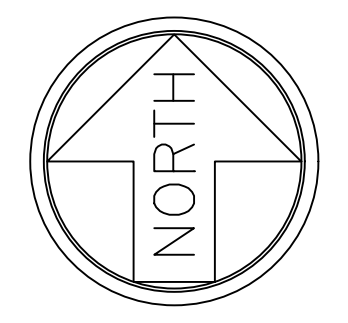
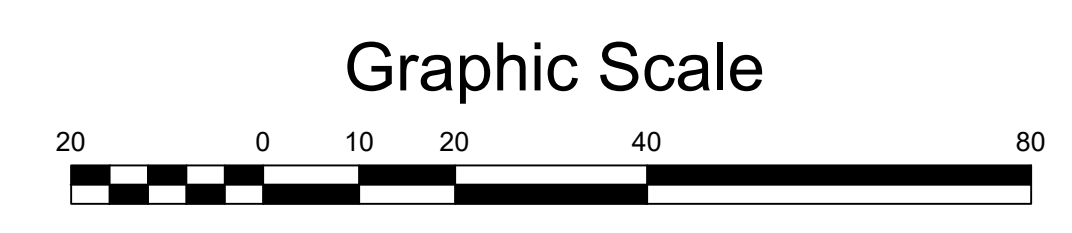
VINEYARD PINE LANE  
50' PUBLIC R/W  
BM 2008, PG 702



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 INDICATED 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 INDICATED 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 INDICATED ON PLAN.
□	WS	28	OCL ORIGINAL CAST LIGHTING INC - ST. LOUIS, MISSOURI	AU1-O10A-24 LED1	Wall Mounted Sconce, Decorative Alum with White Acrylic Lens	1	1616	1	29	MOUNTING HEIGHTS AS INDICATED ON PLAN.

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

CARLTON POINTE  
SUBDIVISION  
B.M. 2008, PAGE 6  
OPEN SPACE



NO.	DATE	BY	REVISION DESCRIPTION
1			
2			
3			
4			
5			
6			
7			
8			



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

Project No.  
Dwg No.  
**SL1**



FIXTURE TYPE "DI"

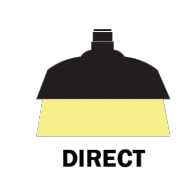


**CALVIN™ WALL**

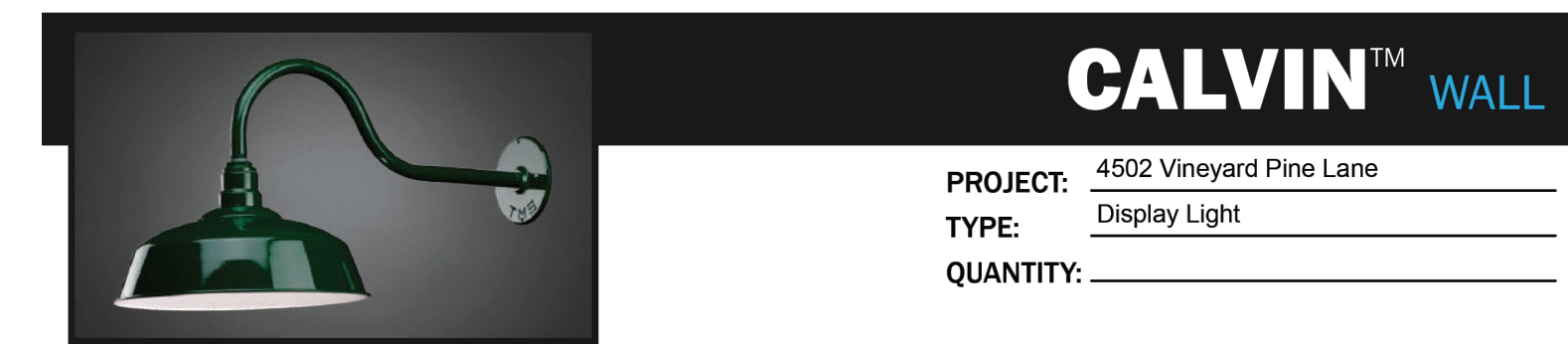
PROJECT: 4502 Vineyard Pine Lane  
 TYPE: Display Light  
 QUANTITY: \_\_\_\_\_

PN: 2W

<b>APPLICATION</b>	<ul style="list-style-type: none"> <li>WALL MOUNT</li> <li>INDOOR OR OUTDOOR RATED</li> </ul>
<b>DIMENSION</b>	<ul style="list-style-type: none"> <li>16" (41CM)</li> </ul>
<b>ILLUMINATION</b>	<ul style="list-style-type: none"> <li>DIRECT</li> <li>LED 90CRI</li> <li>INCANDESCENT MEDIUM BASE SOCKET</li> <li>753 - 1602 LUMENS</li> </ul>
<b>ELECTRICAL</b>	<ul style="list-style-type: none"> <li>120V, 277V, AND 347V</li> <li>10KA SURGE SUPPRESSION STANDARD</li> </ul>
<b>DIFFUSERS</b>	<ul style="list-style-type: none"> <li>CLEAR OR FROSTED, ELONGATED, GLASS GLOBE</li> <li>CLEAR, FLAT LENS</li> </ul>
<b>DRIVER</b>	<ul style="list-style-type: none"> <li>WALL MOUNT (INTEGRAL)</li> <li>REMOTE MOUNT (INDOOR OR OUTDOOR)</li> </ul>
<b>MOUNTING</b>	<ul style="list-style-type: none"> <li>WALL, MOUNTED TO A 4"(10CM) J-BOX</li> </ul>
<b>CONSTRUCTION</b>	<ul style="list-style-type: none"> <li>ALUMINUM</li> </ul>
<b>FINISHES</b>	<ul style="list-style-type: none"> <li>AVAILABLE ANODIZED, BRUSHED, AND IN SEVERAL TMS POWDER COATED FINISHES</li> <li>CUSTOM RAL FINISHES AVAILABLE</li> </ul>
<b>DIMMING</b>	<ul style="list-style-type: none"> <li>0 - 10V STANDARD DIMMING</li> </ul>
<b>WEIGHT</b>	<ul style="list-style-type: none"> <li>7.5 LBS MAXIMUM</li> </ul>



**TMSLIGHTING**



**CALVIN™ WALL**

PROJECT: 4502 Vineyard Pine Lane  
 TYPE: Display Light  
 QUANTITY: \_\_\_\_\_

2W

1.	I				O					
APPLICATION	INDOOR				OUTDOOR					
2.	ILLUMINATION									
	150IN	15LED	16LED	19LED						
LED (W)	150W	15W	16W PAR38 40" E26 MED. 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	WALL MOUNT (INTEGRAL)		REMOTE INDOOR MOUNT (NEMA 1)		REMOTE OUTDOOR MOUNT (NEMA 4)					
6.	F04	F05	F15	F16	F09	F31	F18	F06	F07	F08
FINISH	MATTE WHITE	GLOSS WHITE	MATTE BLACK	GLOSS BLACK	PEWTER	SILVER METALLIC	SATIN ALUMINUM	CLAY BROWN	ZELUS 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	FALX CHROME	FALX GOLD	FALX COPPER	COPPER METALLIC
	RAL	BR	AN							
	CUSTOM (SPECIFY RAL)	BRUSHED ALUMINUM	ANODIZED							
7.	DIMM									
DIMMING	NONE LED DIMMING (0 - 10V, CURRENT - SINKING)									
8.	EM		EMC		EMR		EMCR			
EMERGENCY	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. 15W 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.

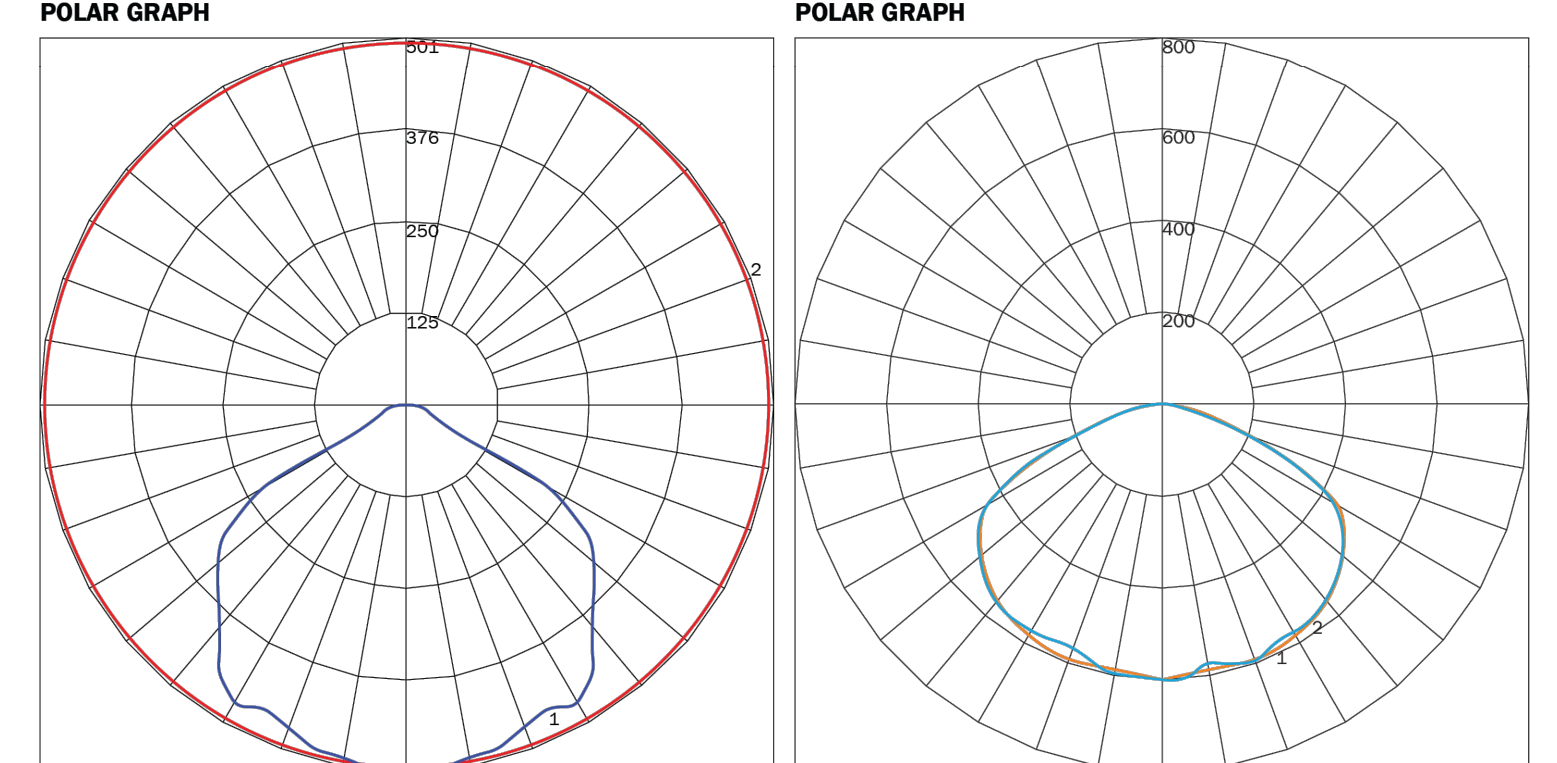
**TMSLIGHTING**

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



<b>LUMINAIRE LUMENS</b>	1351	<b>LUMINAIRE LUMENS</b>	2158
<b>TOTAL LUMINAIRE EFFICIENCY</b>	95%	<b>TOTAL LUMINAIRE EFFICIENCY</b>	81%
<b>LUMINAIRE EFFICACY RATING</b>	90	<b>LUMINAIRE EFFICACY RATING</b>	14
<b>TOTAL LUMINAIRE WATTS</b>	15	<b>TOTAL LUMINAIRE WATTS</b>	150

**TMSLIGHTING**

FIXTURE TYPE "WS" 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 45IN OR 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

CATALOG CODES

AU1	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	S15A	18	GW	POWDER COAT FINISHES
	O10A	24	MW	POWDER COAT FINISHES
		36		POWDER COAT FINISHES
		48		POWDER COAT FINISHES

LIGHT SOURCE	VOLTAGE	CONTROL	OPTIONS
LED1 LED2	UNV 120-277	DM1 Q-10V DIMMING (N)	ULD (DAMP LABEL (S15A ONLY) BIOS (BIOS SKYBLUE™ OR BIOS SKYBLUE™ DYNAMIC LIGHT ENGINE™ MODIFIED LUMINAIRE (CONTACT LOCAL REP)

UP TO 58 LM/W

	18"	24"	36"	48"
LED1	LUMENS DELIVERED 1050	1620	2600	3700
	SYSTEM WATTAGE 20	30	45	65
LED2	LUMENS DELIVERED 1850	2000	3250	4600
	SYSTEM WATTAGE 25	35	60	80

MOOS, NOTES, & COMMENTS

OCCL ARCHITECTURAL LIGHTING | P. 314.963.1895 | F. 314.963.2776 | www.occl.com | A brand of Legrand  
 Designed and Fabricated in St. Louis, Missouri • USA

**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

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NO.									
DATE									
REVISION DESCRIPTION									
BY									



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

Project No.  
 Dwg No.  
**SL3**



REDLINE

6601 Six Forks Rd.  
Suite 130  
Raleigh, NC 27615  
919.878.1660  
www.redlinedg.com

xx.xx.26

# JONESVILLE ROAD COMMERCIAL BUILDING

5402 VINEYARD PINE LANE  
ROLESVILLE, NC

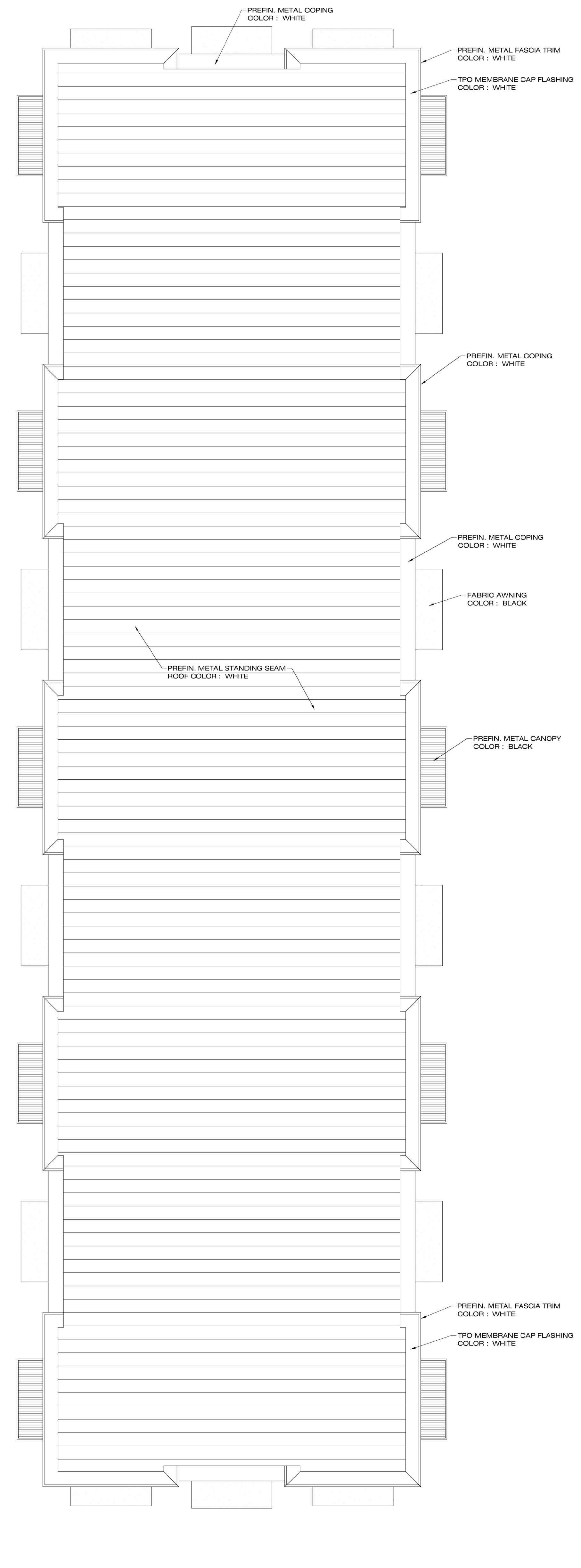
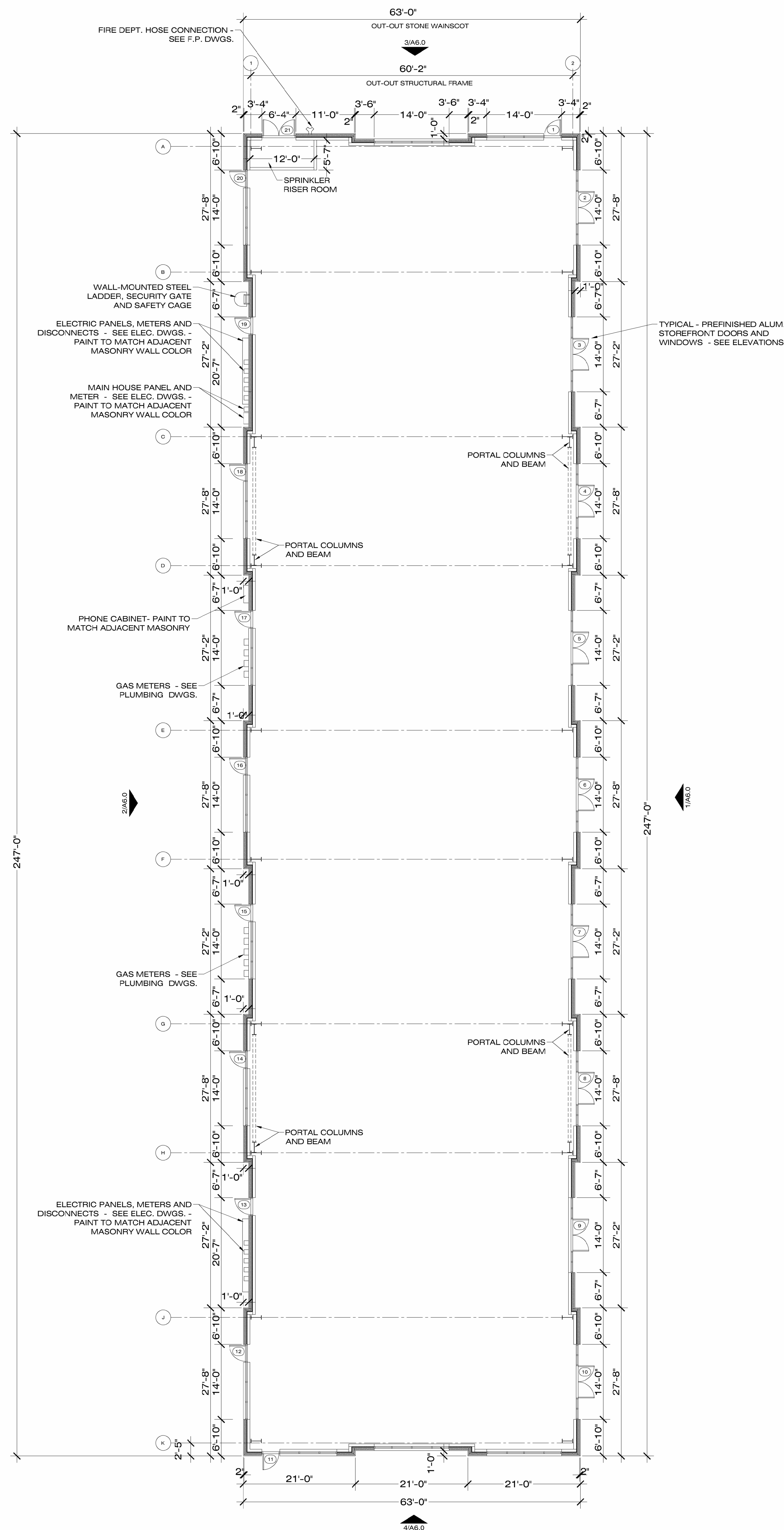
#	DESCRIPTION	DATE
1	SITE PLAN SUBMITTAL	04.29.26
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PROJECT # RDU 23-039

## FLOOR PLAN

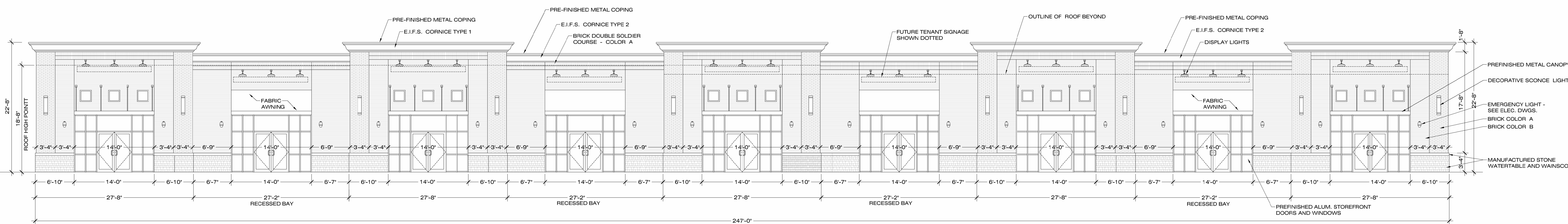
SHEET # A1.1





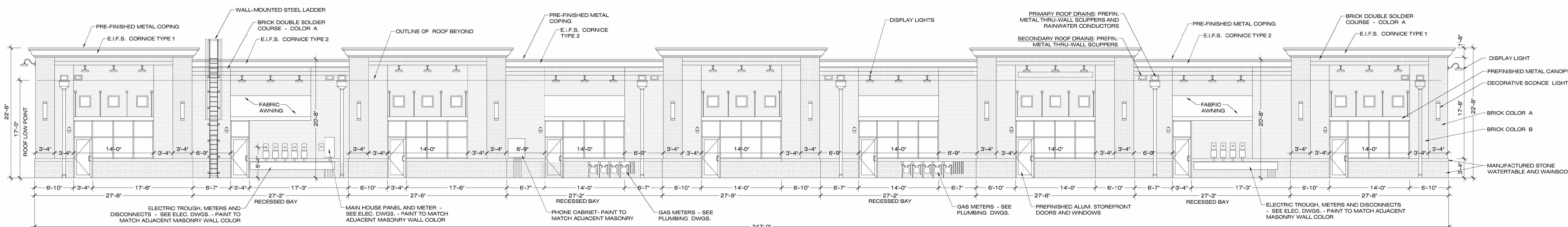
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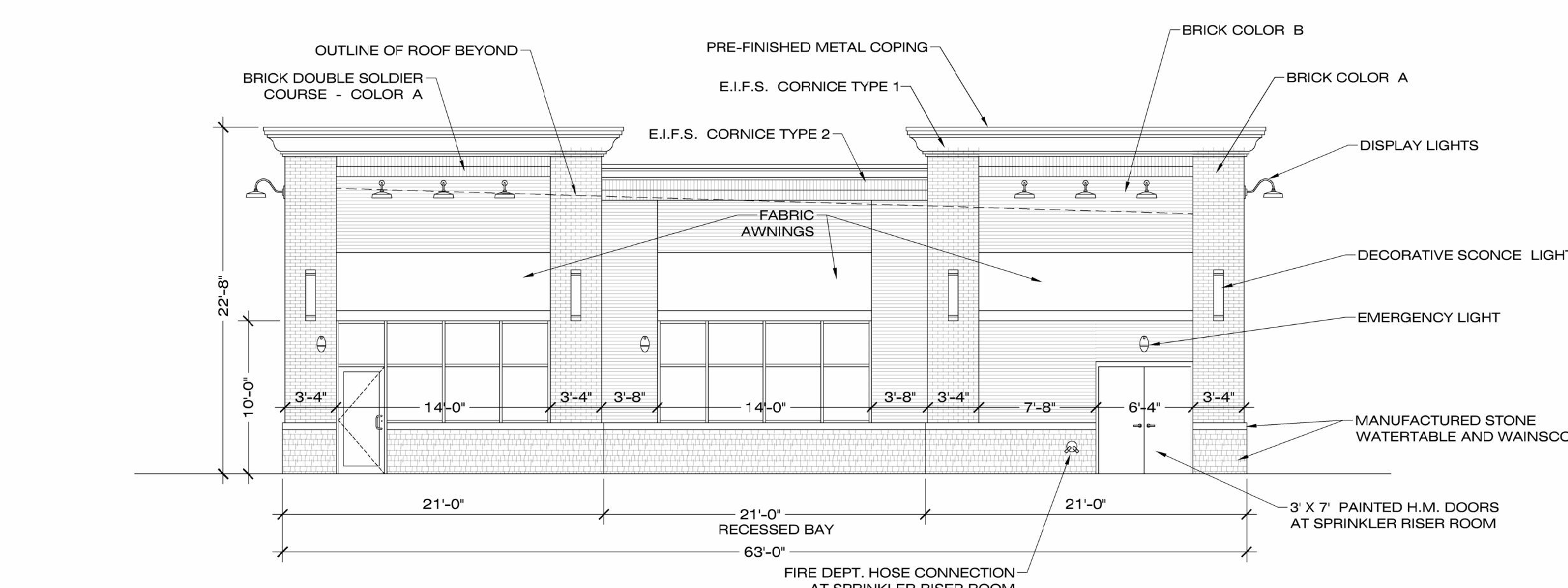
WEST FACADE:  
GROSS FACADE AREA: 2,080 S.F.  
MASONRY AREA: 2,006 S.F. = 97.0%  
EFS PERCENTAGE: 274 S.F. = 13.2%  
TRANSPARENCY ZONE: 1,370 S.F.  
GLASS AREA: 700 S.F. = 33.7%

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



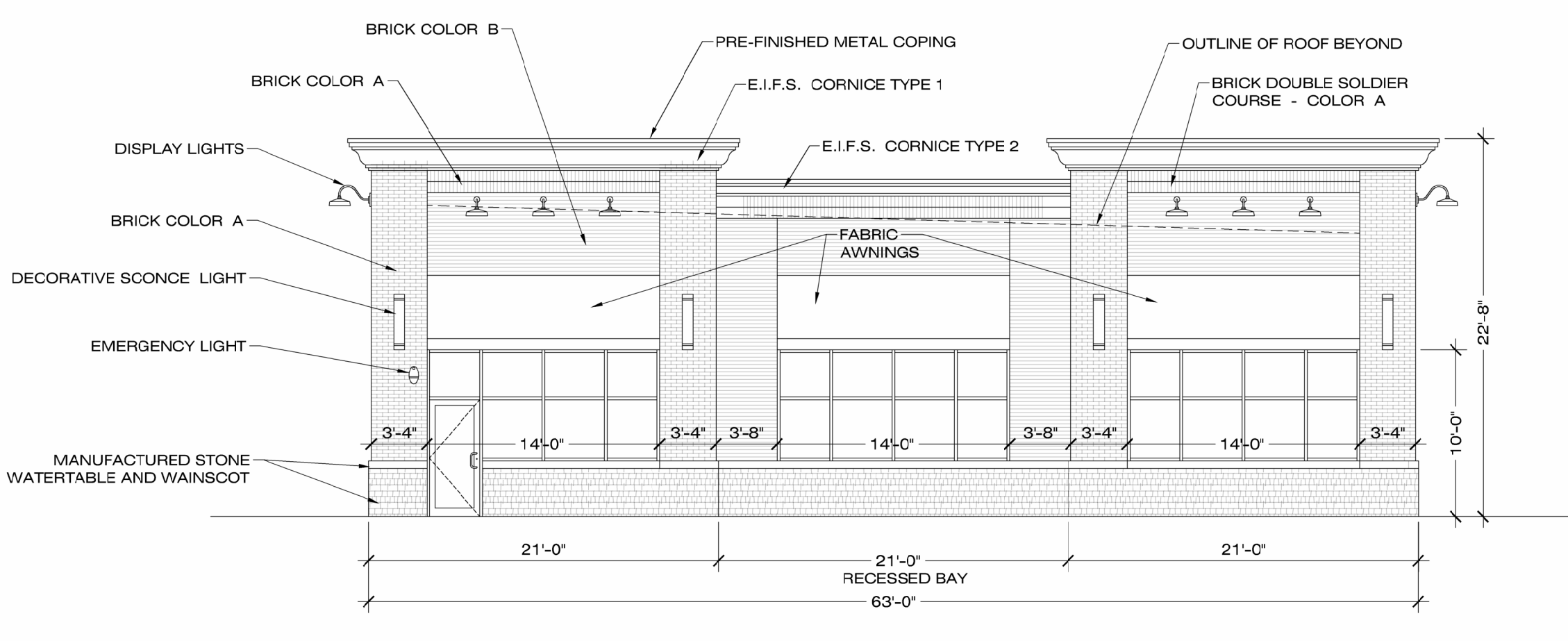
EAST FACADE:  
GROSS FACADE AREA: 5,302 S.F.  
MASONRY AREA: 4,087 S.F. = 77.0%  
EFS PERCENTAGE: 494 S.F. = 9.3%  
TRANSPARENCY ZONE: 2,470 S.F.  
GLASS AREA: 615 S.F. = 24.7%

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



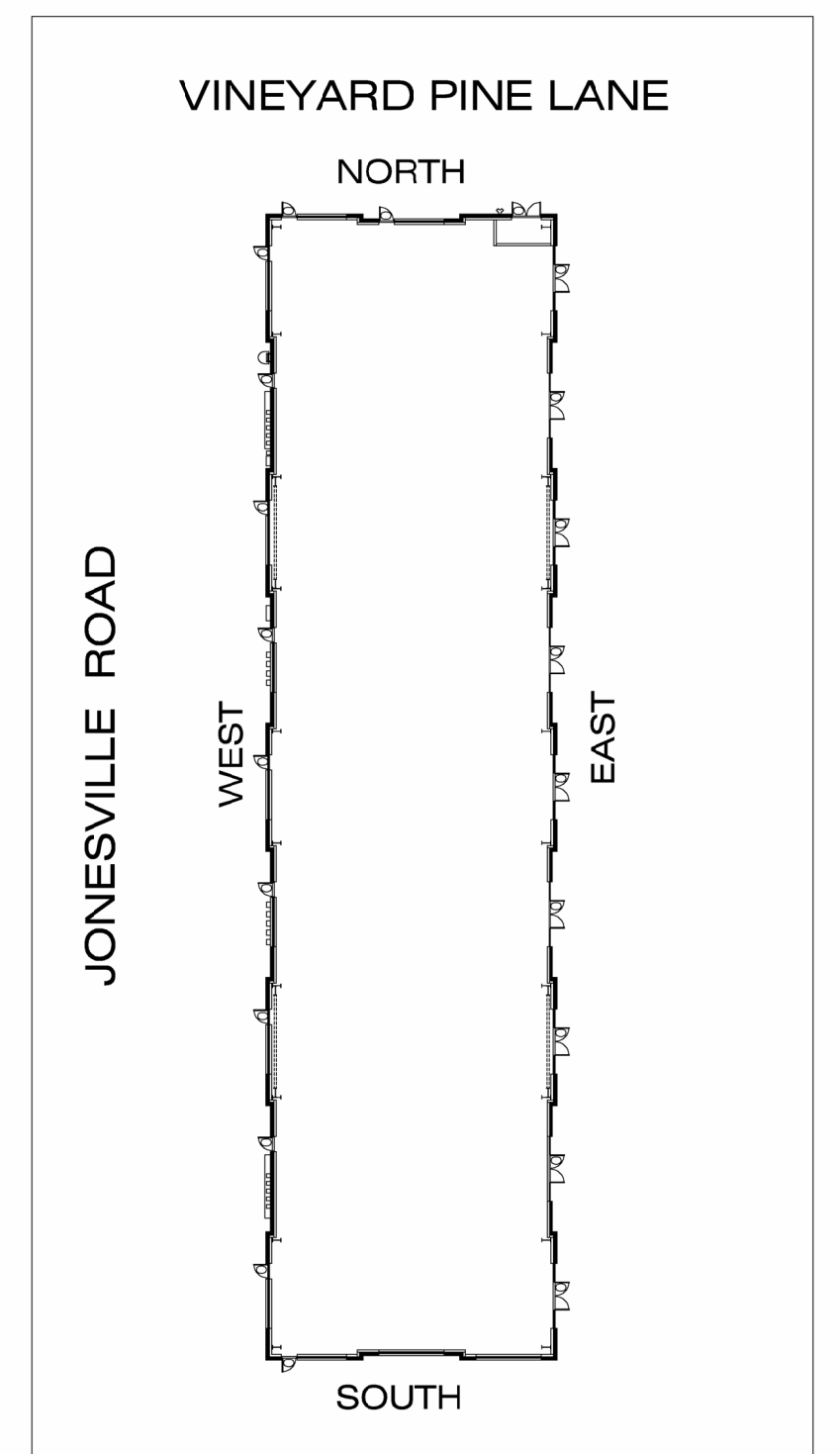
NORTH FACADE:  
GROSS FACADE AREA: 1,321 S.F.  
MASONRY AREA: 973 S.F. = 73.6%  
EFS PERCENTAGE: 120 S.F. = 9.0%  
TRANSPARENCY ZONE: 630 S.F.  
GLASS AREA: 228 S.F. = 17.3%

**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%  
EFS PERCENTAGE: 120 S.F. = 9.0%  
TRANSPARENCY ZONE: 630 S.F.  
GLASS AREA: 279 S.F. = 21.1%

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



### JONESVILLE ROAD COMMERCIAL BUILDING

5402 VINEYARD PINE LANE  
ROLESVILLE, NC

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PROJECT # RDU 23-039

### BUILDING ELEVATIONS

SHEET # **A6.0**