

R6.00 THRU R6.02

-L- CROSS SECTIONS



GENERAL NOTES

- WORK IN THIS PROJECT SHALL CONFORM TO THESE PLANS, THE LATEST EDITIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) ROAD AND BRIDGE SPECIFICATIONS. THE NCDOT ROAD AND BRIDGE STANDARDS, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, TOWN OF ROLESVILLE SPECIFICATIONS, AND GENERAL DESIGN STANDARDS. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT SHALL GOVERN UNLESS OTHERWISE NOTED IN THESE PLANS.
- 2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL JOBSITE SAFETY, INCLUDING BUT NOT LIMITED TO TRENCH SAFETY, DURING ALL PHASES OF CONSTRUCTION.
- 3. THE LOCATION AND SIZE OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING AND PROTECTING ALL PUBLIC OR PRIVATE UTILITIES (SHOWN OR NOT SHOWN) WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. AT LEAST 72 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE NORTH CAROLINA ONE-CALL UTILITIES LOCATION SERVICE (ULOCO) AT I-800-632-4949 FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE SITE.
- 4. THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC. DURING ALL CONSTRUCTION PHASES. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- TRAFFIC MANAGEMENT ON PUBLIC STREETS IS THE RESPONSIBILITY OF THE CONTRACTOR AND 5. SHALL BE IN CONFORMANCE WITH THE TRAFFIC CONTROL PLAN, THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES," AND AS FURTHER DIRECTED BY THE TOWN AND STATE INSPECTORS.
- 6. ALL MANUFACTURERS' PRODUCTS SPECIFIED IN THESE PLANS OR USED AS APPROVED ALTERNATES SHALL BE INSTALLED PER THE MANUFACTURERS' SPECIFICATIONS.
- 7. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
- 8. CONSTRUCTION STAKEOUT FOR THIS PROJECT SHALL BE PROVIDED BY THE CONTRACTOR.
- 9. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE THE MEETING WITH NCDOT AND THE TOWN OF ROLESVILLE.
- IO. CONTRACTOR IS RESPONSIBLE FOR VERIFYING OR OBTAINING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION. NCDOT ENCROACHMENTS SHALL BE OBTAINED BY THE ENGINEER.
- THE FRAMES AND COVERS OF ALL EXISTING AND PROPOSED DRAINAGE, SANITARY SEWER, WATER MAIN, GAS, AND WIRE UTILITY STRUCTURES SHALL BE ADJUSTED TO MATCH PROPOSED FINISHED ELEVATIONS AND SLOPES.
- 12. ROADWAYS MUST BE CAPABLE OF SUPPORTING FIRE APPARATUS DURING CONSTRUCTION.
- 13. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT NCDOT STANDARDS, SPECIFICATIONS, DETAILS AND ENCROACHMENT AGREEMENTS.
- 14. NO CHANGES TO ANY ASPECT OF THIS ROADWAY PLAN, INCLUDING BUT NOT LIMITED TO, LANDSCAPING, GRADING, BUILDING ELEVATIONS, LIGHTING, OR UTILITIES WILL BE MADE WITHOUT THE APPROVAL OF NCDOT.
- 15. ALL TREE PROTECTION FENCING SHALL BE MAINTAINED UNTIL ALL SITE WORK IS COMPLETED. THE FENCING SHALL BE REMOVED PRIOR TO THE FINAL SITE INSPECTION FOR THE CERTIFICATE OF OCCUPANCY (CO).
- 16. CONTRACTOR TO ENSURE THAT ALL STREETS WITHIN THE LIMITS OF THE PROJECT AND IN FRONT OF THE PROJECT ARE KEPT CLEAN AT ALL TIMES OR A WASH STATION WILL BE REQUIRED.
- 17. LIMITS OF OFFSITE IMPROVEMENTS NOT WITHIN FLOODPLAIN.

UTILITY NOTES

- I. WATER VALVE BOXES THAT ARE ENCOUNTERED WITHIN THE PROJECT LIMITS ARE TO BE RAISED OR LOWERED TO MATCH THE ADJACENT FINISHED WORK.
- 2. WATER METER BOXES THAT ARE ENCOUNTERED WITHIN THE PROJECT LIMITS OUTSIDE THE PROPOSED PAVEMENT SECTION ARE TO BE RAISED OR LOWERED TO MATCH THE ADJACENT FINISHED WORK.
- 3. WATER METER BOXES THAT ARE ENCOUNTERED WITHIN THE PROPOSED PAVEMENT SECTION ARE TO BE RELOCATED OUT OF THE PROPOSED PAVEMENT.

GRADING

- THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AND EXISTING PAVEMENT AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.
- 2. REFER TO EROSION CONTROL SHEETS FOR CLEARING LIMITS AND TEMPORARY EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
- 3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY, AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RESEEDED, AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS.
- 4. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, AND AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. IN ADDITION TO THE MEASURES SHOWN IN THESE PLANS, THE CONTRACTOR SHALL USE INTERIM SILT FENCES, DIVERSION DITCHES, BERMS, OR OTHER METHODS AS REQUIRED TO DIRECT DRAINAGE AS SHOWN ON THESE PLANS, TO BEST UTILIZE THE EROSION CONTROL DEVICES IN PLACE, AND TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION.
- 5. GRADING CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS.
- 6. ALL MATERIALS USED FOR BACKFILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS, OR ANY OTHER NON-COMPATIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
- 7. ALL GRADING / SOIL COMPACTION OPERATIONS WITHIN THE LIMITS OF STATE RIGHT OF WAYS SHALL ADHERE TO NCDOT REQUIREMENTS, IN ACCORDANCE WITH AASHTO T99 AS MODIFIED BY THE DEPARTMENT. COPIES OF THESE MODIFIED TESTING PROCEDURES ARE AVAILABLE UPON REQUEST FROM THE DEPARTMENT'S MATERIALS AND TESTS UNIT.
- 8. ALL DEMOLITION DEBRIS AND OTHER EXCESS MATERIAL SHALL BE HAULED OFF-SITE AS DIRECTED BY THE OWNER AND PROPERLY DISPOSED OF.
- 9. PROPOSED CONTOURS AND GUTTER GRADIENTS ARE APPROXIMATE. PROPOSED ROADWAY PROFILES/SUPERELEVATIONS ARE TO BE USED IN CASE OF DISCREPANCY.
- IO. REFER TO ROADWAY PLAN FOR HORIZONTAL DIMENSIONS.
- II. WHERE FILL IS TO BE PLACED ON EXISTING SLOPES STEEPER THAN 4:, CONTRACTOR SHALL EXCAVATE BENCHES WITH A MAXIMUM DEPTH OF 3'.
- 12. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR BLASTING ROCK IF BLAST ROCK IS ENCOUNTERED. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL BLASTING AND SAFETY REQUIREMENTS.
- 13. TREE PROTECTION FENCING SHALL BE INSTALLED AND INSPECTED BEFORE THE GRADING PERMIT IS ISSUED.
- 14. CROSS SLOPES AND ELEVATIONS SHOWN ON CROSS SECTIONS ARE APPROXIMATE. PROPOSED PAVEMENT CROSS SLOPES ARE TO BE BASED ON EXISTING CROSS SLOPE DETERMINED IN FIELD. IF FIELD CONDITIONS VARY FROM THOSE SHOWN ON PLANS, NOTIFY ENGINEER IMMEDIATELY.

PAVING/CURBING

- EARTHWORK.
- PLACEMENT.
- SPECIFICATIONS.

- SECTIONS.

I. WHERE PROPOSED CURB AND GUTTER TIES TO EXISTING CURB OR CURB AND GUTTER. A TRANSITION OF IO' SHALL BE MADE TO CONFORM TO THE EXISTING HEIGHTS AND SHAPES.

2. BEFORE ANY EARTHWORK IS DONE, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF PAVEMENT AND OTHER ITEMS ESTABLISHED IN THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO

3. ALL PAVEMENT SUB GRADES SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES AND COMPACTED TO A MINIMUM DENSITY OF 100 PERCENT OF ASTM D-1557 DENSITY AT OPTIMUM MOISTURE CONTENT UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION PLANS OR AS DIRECTED BY THE GEOTECHICAL ENGINEER. FILL SHALL BE PLACED AND COMPACTED IN MAXIMUM 8" LIFTS. IN AREAS WHERE ROCK IS ENCOUNTERED AT FINAL SUB GRADE ELEVATION, THE EXPOSED ROCK SHALL BE TOPPED WITH A LEVELING COURSE OF SANDY CLAY OR CLAYEY SAND (P.I. BETWEEN 4 AND 15) AS NEEDED TO PROVIDE A SMOOTH SURFACE FOR PAVING.

4. THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND MOISTURE CONDITION ALL FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO

5. ALL CURB JOINTS SHALL EXTEND THROUGH THE CURB. MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS IS 1.5 FEET. ALL JOINTS SHALL BE SEALED WITH JOINT SEALANT.

6. TESTING OF MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE PAVING IMPROVEMENTS SHALL BE PERFORMED BY AN APPROVED AGENCY FOR TESTING MATERIALS. THE NOMINATION OF THE TESTING LABORATORY AND THE PAYMENT OF SUCH TESTING SERVICES SHALL BE MADE BY THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SHOW BY STANDARD TESTING PROCEDURES THAT THE WORK CONSTRUCTED DOES MEET THE REQUIREMENTS OF THE NCDOT

7. ALL REINFORCING STEEL SHALL BE NEW DOMESTIC BILLET STEEL CONFORMING TO ASTM A-615, GRADE 60, AND SHALL BE SUPPORTED BY BAR CHAIRS.

8. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES ON PUBLIC STREETS SHALL CONFORM TO MUTCD, AND NCDOT STANDARDS.

9. ALL HANDICAP RAMPING, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA REQUIREMENTS AND THE "NORTH CAROLINA STATE BUILDING CODE, VOL I-C ACCESSIBILITY CODE." ALL RAMPS SHALL COMPLY WITH THE LATEST NCDOT STANDARDS. WHEELCHAIR RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS.

IO. CONTRACTOR SHALL SAWCUT & REMOVE ANY THE EXISTING PAVEMENT WHEN THE EXISTING PAVEMENT IS BEING WIDENED OR WHERE NEW CURB AND GUTTER IS PROPOSED.

II. ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. 225.04 & 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL

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SHEET NUMBER

R0.01

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. This approval of this electronic document is only valid if the document has not been modified and the digital signature below is valid:

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

City of Raleigh Development Approval _____

Note: Not to Scale *S.U.E. = Subsurface Utility Engineering

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	· ·
Property Line	
Existing Iron Pin	€IP
Property Corner —	×
Property Monument	ECM
Parcel/Sequence Number	(23)
Existing Fence Line	_xxx-
Proposed Woven Wire Fence	•
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	— — — — WLB — — — —
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	ЕРВ ————
BUILDINGS AND OTHER CULTU	RE:
Gas Pump Vent or U/G Tank Cap ———	0
Sign	⊙ s
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Small Mine	☆
Foundation ————	
Area Outline	
Cemetery	†
Building ———	
School	
Church	
Dam	

HYDROLOGY:

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BZ 2
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RAILROADS.

RAILROADS:				WATER:	0
Standard Gauge				Water Manhole	W
RR Signal Milepost	_ O MILEPOST 35	EXISTING STRUCTURES:		Water Meter	
Switch		MAJOR:		Water Valve	×
RR Abandoned		Bridge, Tunnel or Box Culvert	CONC	Water Hydrant	۳Ç
RR Dismantled		Bridge Wing Wall, Head Wall and End Wall –) CONC WW (Recorded U/G Water Line	
RIGHT OF WAV		MINOR:		Above Ground Water Line (S.U.E.)	— — — — ₩ — - A/G Water
Recoling Control Point		Head and End Wall —————	CONC HW		
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Existing Right of Way Line		Footbridge ————————————————————————————————————		TV Satellite Disn	
Existing Right of Way Line	\square	Drainage Box: Catch Basin, DI or JB ———	СВ	TV Pedestal	
Proposed Right of Way Line		Paved Ditch Gutter			\bigotimes
Iron Pin and Cap Marker		Storm Sewer Manhole	S	U/G IV Cable Hand Hole	Ľн
Proposed Right of Way Line with	\square \bigcirc \bigcirc	Storm Sewer	s	Recorded U/G TV Cable	TV
Concrete or Granite Marker				Designated U/G TV Cable (S.U.E.*)	— — — TV— -
Existing Control of Access		UTILITIES:		Recorded U/G Fiber Optic Cable	TV FO
Proposed Control of Access		POWER:		Designated U/G Fiber Optic Cable (S.U.E.*)—	— — — TV FO—
Existing Easement Line	———— E ———	Existing Power Pole	•	GAS:	
Proposed Temporary Construction Easement –	E	Proposed Power Pole	6	Gas Valve	\diamond
Proposed Temporary Drainage Easement ——	TDE	Existing Joint Use Pole		Gas Meter	\diamond
Proposed Permanent Drainage Easement ——	PDE	Proposed Joint Use Pole	-0-	Recorded U/G Gas Line	G
Proposed Permanent Utility Easement ———	PUE	Power Manhole	P	Designated U/G Gas Line (S.U.E.*)	c
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Existing Curb	C	Recorded U/G Power Line	P	Sanitary Sewer Cleanout	(abla)
	F	Designated U/G Power Line (S.U.E.*)	— — — P— — — —	U/G Sanitary Sewer Line	ss
				Above Ground Sanitary Sewer	A/G Sanitary S
Proposed wheel Chair Ramp	WCR	TELEPHONE:		Recorded SS Forced Main Line	FSS
Curb Cut for Future wheel Chair Ramp		Existing Telephone Pole	-•	Designated SS Forced Main Line (S.U.E.*) —	— — — — FSS—
Existing Metal Guardrail	<u>_</u>	Proposed Telephone Pole	-0-		
Proposed Guardrall		Telephone Manhole	1	MISCELLANEOUS:	
Existing Cable Guiderail		Telephone Booth	3	Utility Pole	•
Proposed Cable Guiderail		Telephone Pedestal	T	Utility Pole with Base	·
Equality Symbol	$\mathbf{\Theta}$	Telephone Cell Tower ————	, Ŧ,	Utility Located Object	\odot
Pavement Removal	XXXXXX	U/G Telephone Cable Hand Hole	Нн	Utility Traffic Signal Box	S
VEGETATION:		Recorded U/G Telephone Cable	T	Utility Unknown U/G Line	
Single Tree	-	Designated U/G Telephone Cable (S.U.E.*) $-$	T	U/G Tank; Water, Gas, Oil	
Single Shrub	- ¢	Recorded U/G Telephone Conduit	тс	A/G Tank; Water, Gas, Oil	
Hedge ————		Designated U/G Telephone Conduit (S.U.E.*)-	— — — TC— — — –	U/G Test Hole (S.U.E.*)	
Woods Line	سريسريسريسريس	Recorded U/G Fiber Optics Cable	T F0	Abandoned According to Utility Records —	AATUR
Orchard	- හි හි හි හි	Designated U/G Fiber Optics Cable (S.U.E.*)-	— — — — T FO— — — ·	End of Information	E.O.I
Vineyard	- Vineyard				

Single Tree ——
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STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

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SHEET NUMBER

R0.02

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. This approval of this electronic document is only valid if the document has not been modified and the digital signature below is valid:

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E.O.I.

City of Raleigh Development Approval

	PAVEMENT SCHEDULE
C/	PROPOSED APPROX 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROPOSED APPROX.3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.IN EACH OF TWO LAYERS
DI	PROPOSED APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE 119.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
EI	PROPOSED APPROX.5" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS.PER SQ.YD.
S	PROPOSED 4" CONCRETE SIDEWALK
Т	EARTH MATERIAL
U	EXISTING PAVEMENT
NOTES: I.REFER 2.PAVEME	TO PLAN SHEETS FOR VARIABLE WIDTHS. NT EDGE SLOPES ARE I:IUNLESS OTHERWISE INDICATED





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SHEET NUMBER R1.02

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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. This approval of this electronic document is only valid if the document has not been modified and the digital signature below is valid:

City of Raleigh Development Approval _____





TRAFFIC NOTES ALL TRAFFIC CONTROL SHALL CONFORM TO THE LATEST MUTCD AND 2018 NCDOT STANDARDS ADAPT THE TRAFFIC CONTROL CONCEPTS, WHEN DIRECTED BY THE ENGINEER, TO MEET FIELD CONDITIONS TO PROVIDE PAVEMENT MARKINGS AND MARKERS SAFE AND EFFICIENT TRAFFIC MOVEMENT. CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE, OR RESULT IN DUPLICATE, OR S) INSTALL PAVEMENT MARKINGS AS SHOWN ON PLAN SHEETS. UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR T) REFER TO SECTION 1205 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES REMOVAL OF DEVICES. DATED JANUARY 2018 FOR APPLICATION TIMES AND TEMPERATURE CONDITIONS FOR PAVEMENT MARKINGS. THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER. ASPHALT PAVEMENT. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS TIME RESTRICTIONS DETERMINED BY THE ENGINEER. A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS: V) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES. DAY AND TIME RESTRICTIONS ROAD NAME 1. E YOUNG STREET MONDAY THROUGH FRIDAY W) REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION. FROM 7 AM TO 9 AM AND FROM 4 PM TO 6 PM DRYING TIME, AS DETERMINED BY THE ENGINEER. B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS: ROAD NAME Y) CONTRACTOR SHALL MAINTAIN ALL TEMPORARY PAINT PAVEMENT MARKINGS UNTIL COMPLETION OF THERMOPLASTIC PAVEMENT MARKING INSTALLATION. 1. E YOUNG STREET WITH THE NEW TRAFFIC PATTERN(S). AA) CHANGES TO THE TRAFFIC CONTROL REQUIRE APPROVAL FROM CITY OF DURHAM AND NCDOT HOLIDAY PRIOR TO COMMENCING FIELD OPERATIONS. 1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER. PEDESTRIAN AND BICYCLIST SAFETY 2. FOR NEW YEAR'S DAY, BETWEEN THE HOURS OF 7:00 A.M. DECEMBER 31st AND 6:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 P.M. THE FOLLOWING FENCING, AND SIGNAGE. TUESDAY. 3. FOR EASTER, BETWEEN THE HOURS OF 7:00 A.M. THURSDAY AND MISCELLANEOUS 6:00 P.M. MONDAY CC) POLICE MAY BE USED TO MAINTAIN TRAFFIC THROUGH INTERSECTIONS. 4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 6:00 P.M. TUESDAY. 5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 A.M. THE EE) ACCESS SHALL BE MAINTAINED TO ALL RESIDENCES, MAILBOXES, AND BUSINESSES AT ALL TIMES. DAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE DAY AFTER INDEPENDENCE DAY. FF) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 7:00 A.M. THE THURSDAY BEFORE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS. INDEPENDENCE DAY AND 6:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY. 6. FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 6:00 P.M. TUESDAY. ADVANCE WARNING SIGNS 7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY AND 6:00 P.M. MONDAY. 8. FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY - USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 P.M. THE FOLLOWING WORK ZONE SIGNS. TUESDAY AFTER THE WEEK OF CHRISTMAS. - DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK. 9. HOLIDAYS AND HOLIDAY WEEKENDS SHALL INCLUDE NEW YEAR'S, EASTER, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING, AND CHRISTMAS. - SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR THE CONTRACTOR SHALL SCHEDULE HIS WORK SO THAT LANE CLOSURES WILL NOT SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; BE REQUIRED DURING THESE PERIODS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED. C) DO NOT STOP TRAFFIC AS FOLLOWS: ADVANCE WARNING SIGN SPACING IS RECOMMENDED TO BE THE FOLLOWING: DAY AND TIME RESTRICTIONS ROAD NAME -E YOUNG ST - 500' BEFORE CONSTRUCTION LIMITS 1. E YOUNG STREET MONDAY THROUGH FRIDAY FROM 7 AM TO 9 AM AND FROM 4 PM TO 6 PM - ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED. D) DO NOT STOP TRAFFIC FOR MORE THAN 15 MINUTES AS FOLLOWS: - USE 3 LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3 LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B). ROAD NAME DAY AND TIME RESTRICTIONS OPERATIONS MAY BE GALVANIZED STEEL. OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL MONDAY THROUGH FRIDAY TUBING POSTS HAVING EQUÍVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO 1. E YOUNG STREET FROM 7 AM TO 9 AM AND FROM 4 PM TO 6 PM TRAFFIC SHIFTS ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS. 3 LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110. E) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR OTHERWISE DIRECTED BY THE ENGINEER. WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS. LANE AND SHOULDER CLOSURE REQUIREMENTS - DO NOT BACK BRACE SIGN SUPPORTS. F) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER. G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 40 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" -H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED ARE CONSIDERED A PART OF THESE PLANS: FACILITY, CLOSE THE LANE ACCORDING TO BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR ÉQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE. J) DO NOT WORK SIMULTANEOUSLY, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD. K) DO NOT PERFORM WORK INVOLVING HEAVY EQUIPMENT WITHIN 15 FT OF THE EDGE OF TRAVELWAY WHEN WORK IS BEING PERFORMED BEHIND A LANE CLOSURE ON THE OPPOSITE SIDE OF THE TRAVELWAY. PAVEMENT EDGE DROP OFF REQUIREMENTS L) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS A DROP-OFF AS FOLLOWS: BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH. BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER. M) DO NOT EXCEED A DIFFERENCE OF 1.5 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT IN ADVANCE OF THE UNEVEN AREA. SIGNING N) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 100 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION. WHEN NO WORK IS BEING CONDUCTED FOR A PERIOD LONGER THAN ONE WEEK, REMOVE OR COVER ALL ADVANCE WORK ZONE WARNING SIGNS, AS DIRECTED BY THE ENGINEER. 0) PROVIDE PERMANENT SIGNING. P) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN. TRAFFIC CONTROL DEVICES Q) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. R) PLACE SETS OF THREE DRUMS PERPENDICULAR TO THE EDGE OF THE TRAVELWAY ON 300 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC. THESE DRUMS SHALL BE IN ADDITION TO CHANNELIZING DEVICES.

- U) PLACE AT LEAST TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE ON NEW

- X) PLACE AT LEAST TWO APPLICATIONS OF PAINT ON NEW ASPHALT WITH TEMPORARY TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE OVER THREE (3) MONTHS. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT
- Z) BEFORE SHIFTING TRAFFIC TO NEW LOCATIONS, CONTRACTOR SHALL REMOVE ANY MARKINGS WHICH CONFLICT
- BB) PEDESTRIAN AND BICYCLIST SAFETY MUST BE MAINTAINED AT ALL TIMES BY ADEQUATE PROJECT LIMITS,
- DD) STOCKPILE EXISTING SIGNS FOR USE WHEN NEEDED IN TEMPORARY LOCATIONS DURING CONSTRUCTION.
- APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) AND RESPECTIVELY IN ADVANCE OF THE

ROADWAY STANDARD DRAWINGS

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1180.01	SKINNY DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.13	PAVEMENT MARKINGS - NEW INTERCHANGES AND INTERSECTIONS
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS

PHASE 1

STREET IMPROVEMENTS INCLUDING:

- 1. PAVEMENT WIDENING 2. STORM DRAINAGE
- 4. MILLING

PHASE 2

STREET IMPROVEMENTS INCLUDING:

1. PAVEMENT WIDENING 2. STORM DRAINAGE

4. MILLING

PHASE 3

TRAFFIC CONTROL DEVICES.









CONSTRUCTION SEQUENCE

CONSTRUCTION SPECIFICATIONS

I. Request preconstruction meeting.

2. Obtain grading permit;

3. Install all erosion control measures as shown;

4. Obtain certificate of compliance through on-site inspection by Erosion Control Officer;

5. Proceed with grading;

6. Clean sediment basins when one-half full:

7. Seed and mulch denuded area within 15 days or duration shown on ground stabilization requirements, whichever is shorter, after any phase of grading;

8. Maintain soil erosion control measures until permanent ground cover is established:

9. Request final approval by Erosion Control Officer;

IO. Remove soil erosion control measures and stabilize these areas. MAINTENANCE

Follow the construction sequence throughout project development. When changes in construction activities are needed, amend the sequence schedule in advance to maintain management control.

Notification of Land Resources Sediment and Erosion Control Self-Inspection Program:

The Sedimentation Pollution Control Act was amended in 2006 to require that persons responsible for land-disturbing activities inspect a project after each phase of the project to make sure that the approved erosion and sedimentation control plan is being followed. Rules detailing the documentation of these inspections took effect October 1,2010. The self –inspection program is separate from the weekly self –monitoring program of the NPDES Stormwater Permit for Construction Activities. The focus of the self-inspection report is the installation and maintenance of erosion and sedimentation control measures according to the approved plan. The inspections must be conducted after each phase of the project, and continue until permanent ground cover is established in accordance with NCGS II3A-54.1 and ISA NCAC 4B.0131. The Self-Inspection Report form is available as an Excel spreadsheet from http://portal.ncdenr.org/web/Ir/erosion.If you have questions or cannot access the form, please contact NCDENR Division of Land Resources at (919) 791–4200.

MAINTENANCE PLAN

- I. The Contractor shall inspect all erosion and sediment control practices for stability and operation within 24 hours following every runoff producing 0.5" rainfall (in a 24 hour period) but in no case less than once every week. Any needed repairs will be made immediately by the Contractor to maintain all practices as designed. Also per National Pollutant Discharge Elimination System (NPDES) general stormwater permit, a rain gauge must be installed on site. The rain gauge must be kept onsite and inspections by the Contractor must be made and logged after every half inch of rainfall and once a week.
- 2. The Contractor shall remove sediment from sediment basin when storage capacity has been approximately 50%. filled. Gravel will be cleaned or replaced when the sediment pool no longer drains properly.
- 3. The Contractor shall remove sediment from behind silt fence when it becomes 0.5 feet deep at the fence. Silt fence will be repaired as necessary to maintain a barrier.
- 4. The Contractor shall fertilize, reseed as necessary, and mulch all seeded areas according to specifications in the vegetative plan to maintain a vigorous, dense vegetative cover.
- 5. The Contractor must inspect all outlets where stormwater runoff leaves the site and evaluate the effect on nearby streams or wetlands. Corrective action must be taken in sediment is deposited off site or into stream or wetland. or causes a visible increase in turbidity of any waterbody.
- 6.The Contractor shall provide ground cover on exposed slopes or other areas within the timeframe speficied in the stabilization table or sooner of completion of any phase of grading.

GROUND STABILIZATION REQUIREMENTS

Contractor shall stabilize (temporary or permanent) all disturbed areas within 7 or 14 days of termination of grading operations per the following guidlines.

Perimeter dikes, swales, ditches and slopes - 7 days High Quality Water Zones – 7 days Slopes 2:1 or steeper – 7 days

Slopes between 2:1 and 3:1 greater than 10' in length- 7 days Slopes between 2:1 and 3:1 less than 10' in length- 14 days Slopes between 3:1 and 4:1 less than 50' in length-14 days Slopes between 3:1 and 4:1 greater than 50' in length- 7 days Slopers flatter than 4:1- 14 days

SEEDING AND MULCHING

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined by the Engineer.

Date	Туре	
Mar.1-Aug.31 Sep.1-Feb.28	Tall Fescue Centipede Hulled Common Fertilizer Limestone Tall Fescue Centipede Unhulled Common Fertilizer Limestone	Bermudagrass n Bermudagrass
Slopes (2:1 c	and steeper) and W	laste & Borrow Loo
Jan.1-Dec.31	Tall Fescue Unhulled Common Fertilizer Limestone	n Bermudagrass
:	<u>Approved</u> I dil F es	<u>scue cuitivars</u>
Adventure Apache Brookstone Chesapeake Debutante Finelawn Petite Grande Jaguar Monarch Pacer Rebel Safari Tomahawk Wolf pack	Adventure II Apache II Bonanza Chieftain Duster Finelawn Guardian Jaguar III Montauk Phoenix Rebel Jr. Shenandoah Trailblazer Wrangle	Amigo Arid Bonanza II Coronado Falcon Finelawn I Hawk Kentucky 3I Mustang Pixie Rebel II Tempo Tribute

SEEDING AND MULCHING

On cut and fill slopes 2:1 or steeper, add 30* (23kg) Sericea Lespefeza January I-December 31.

Fertilizer shall be 10-20-20 analysis. Upon written approval of the Engineer, a different analysis of fertilizer may be used provided the I-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant flood as a IO-2O-2O analysis.

SEEDBED PREPARATION

The Contractor shall cut and satisfactorily dispose of weeds or other unacceptable growth on the areas to be seeded. Uneven and rough areas outside of the graded section, such as crop rows, farm contours, ditches, and ditch spoil banks, fence line and hedgerow soil accumulations, and other minor irregularities which cannot be obliterated by normal seedbed preparation operations, shall be shaped and smoothed as directed by the Engineer to provide for more effective seeding and for ease of subsequent mowing operations.

The soil shall then be scarified or otherwise loosened to a depth of not less than 5 inches except as otherwise provided below or otherwise directed by the Engineer. Clods shall be broken and the top 2 to 3 inches of soil shall be worked into an acceptable seedbed by the use of soil pulverizers, drags, or harrows; or by other methods approved by the Engineer. All rock and debris 3 inches or larger shall be removed on median, shoulder, and ditch cut or fill slopes which are 3: I or flatter, prior to the application of seed and fertilizer.

On cut slopes that are 2: and steeper, both the depth of preparation and the degree of smoothness of the seedbed may be reduced as permitted by the Engineer, but in all cases the slope surface shall be scarified, grooved, trenched, or punctured so as to provide pockets, ridges, or trenches in which the seeding materials can lodge. Contractor shall be responsible for providing the required seed bed. It may be necessary to seed these sections with a hydro-seeded.

On cut slopes that are either 2: or steeper, the Engineer may permit the preparation of a partial or complete seedbed during the grading of the slope. If at the time of seeding and mulching operations such preparation is still in a condition acceptable to the Engineer, additional seedbed preparation may be reduced or eliminated.

Seedbed preparation within 2 feet of the edge of any pavement shall be limited to a depth of 2 to 3 inches.

The preparation of seedbeds shall not be done when the soil is frozen, extremely wet, or when the Engineer determines that it is an otherwise unfavorable working condition.

APPLYING AND COVERING LIMESTONE, FERTILIZER, AND SEED

A) GENERAL:

Seasonal limitation for seeding operations; the kinds of grades of fertilizers; the kinds of seed; and the rates of application of limestone, fertilizer, and seed shall be as stated in the special provisions.

Equipment to be used for the application, covering, or compaction of limestone, fertilizer, and seed shall have been approved by the Engineer before being used on the project. Approval may be revoked at any time if equipment is not maintained in satisfactory working condition, or if the equipment operation damages the seed.

Limestone, fertilizer, and seed shall be applied within 24 hours after completion of seedbed preparation unless otherwise permitted by the Engineer, but no limestone or ferilizer shall be distributed and no seed shall be sown when the Engineer determines the weather and soil conditions are unfavorable for such operations.

During the application of fertilizer, adequate precautions shall be taken to prevent damage to traffic, structures, quardrails. traffic control devices or any other appurtenances. The Contractor shall either provide adequate drainage covering or change methods of application as required to avoid such damage. When such damage occurs the Contractor shall repair it, including any cleaning that may be necessary.

VEGETATIVE PLAN (NCDENR 6.11)

APPLYING AND COVERING LIMESTONE, FERTILIZER, AND SEED

Planting Rate 50 Ibs./acre

5 Ibs**.**/acre 25 Ibs./acre 500 Ibs./acre 4000 Ibs./acre 50 Ibs./acre lbs**.**/acre 35 Ibs./acre 500 Ibs./acre 4000 Ibs./acre

<u>cations</u> 75 Ibs./acre 35 Ibs./acre 500 Ibs./acre 4000 Ibs./acre

Anthem Austin Chapel Hill Crossfire II Falcon II Genesis Houndog Kitty Olympic Pyramid Renegade Titan Vegas

B) LIMESTONE AND FERTILIZER:

Limestone may be applied as a part of the seedbed preparation, provided it is immediately worked into the soil. If not so applied, limestone and fertilizer shall be distributed uniformly over the prepared seedbed at the specified rate of application and then harrowed, raked, or otherwise thoroughly worked or mixed into the seedbed.

If liquid fertilizer is used.storage containers for the liquid fertilizer shall be located on the project and shall be equipped for agitation of the liquid prior to its use. The storage containers shall be equipped with approved measuring or metering devices which will enable the Engineer to record at any time the amount of liquid that has been removed from the container. Application equipment for liquid fertilizer, other than a hydraulic seeder, shall be calibrated to ensure that the required rate of fertilizer is applied uniformly.

C) SEED:

Seed shall be distributed uniformly over the seedbed at the required rate of application, and immediately harrowed, dragged, raked, or otherwise worked so as to over the seed with a layer of soil. The depth of covering shall be as directed by the Engineer. If 2 kinds of seed are to be used which require different depths of covering, they shall be sown separately.

When a combination seed and fertilizer drill is used, fertilizer may be drilled in with the seed after limestone has been applied and worked into the soil. If 2 kinds of seed are being used which require different depth of covering, the seeding requiring the lighter covering may be sown broadcast or with a special attachment to the drill, or drilled lightly following the initial drilling operation.

When a hydraulic seeder is used for application of seed and fertilizer, the seed shall not remain in water containing fertilizer for more than 30 minutes prior to application unless otherwise permitted by the Engineer.

Immediately after seed has been properly covered the seedbed shall be compacted in the manner and degree approved by the Engineer.

MULCHING

A) GENERAL:

All seeded areas shall be mulched unles otherwise indicated in the special provisions or directed by the Engineer.

Grain straw may be used as mulch at any time of year. If permissions to use material other than grain straw is requested by the Contractor and the use of such material is approved by the Engineer, the seasonal limitations, the methods and rates of application, the type of binding material.or other conditions adverning the use of such material will be established by the Engineer at the time of approval.

B) APPLYING MULCH:

Mulch shall be applied within 24 hours after completion of seeding unless otherwise permitted by the Engineer.Care shall be exercised to prevent displacement of soil or seed or other damage to the seeded area during the mulching operations. Mulch shall be uniformly spread by hand or by approved mechanical spreaders or blowers that will provide an acceptable application. An acceptable application will be that which will allow some sunlight to penetrate and air to circulate but will also partially shade the ground, reduce erosion, and conserve soil moisture.

C) HOLDING MULCH:

Mulch shall be held in place by applying a sufficient amount of asphalt or other approved binding material to assure that the mulch is properly held in place. The rate and method of application of binding material shall meet the approval of the Engineer. Where the binding material is not applied directly with the mulch it shall be applied immediately following the mulch application.

During the application of asphalt binding material, or other approved binding materials which may cause damage, adequate precautions shall be taken to prevent damage to traffic, structures, guardails, traffic control devices, or any other appurtenances. The Contractor shall either provide adequate covering or change methods of application as required to avoid such damage. When such damage occurs the Contractor shall repair it, including any cleaning that may be necessary.

The Contractor shall take sufficient precautions to prevent mulch from entering drainage structures through displacemen by wind, water, or other causes and shall promptly remove any blockage to drainage facilities that may occur.

CONSTRUCTION SPECIFICATIONS

MATERIALS

Determine whether the quality and quantity of available topsoil justifies selective handling. Quality topsoil has the following characteristics:

Texture — loam,sandy loam,and silt loam are best;sandy clay loam,silty clay loam,clay loam,and loamy sand are fair. Do not use heavy clay and organic soils such as peat or muck as topsoil.

Organic matter content – (sometimes referred to as "humic matter") should be greater than 1.5% by weight.

Acidity – pH should be areater than 3.6 before limina.and limina is reauired if it is less than 6.0.

Soluble salts - should be less than 500 ppm.

Sodium - sodium adsorption ratio should be less than 12.

The depth of material meeting the above qualifications should be at least 2 inches. Soil factors such as rock fragments, slope, depth to water table, and layer thickness affect the ease of excavation and spreading of topsoil.

Generally, the upper part of the soil, which is richest in organic matter, is most desirable; however, material excavated from deeper layers may be worth storing if it meets the other criteria listed above.

Organic soils such as mucks and peats do not make good topsoil. They can be identified by their extremely light weight when dry.

STRIPPING

Strip topsoil only from those areas that will be disturbed by excavation, filling, roadbuilding, or compaction by equipment. A 4 to 6-inch stripping depth is common, but depth varies depending on the site. Determine depth of stripping by taking soil cores at several locations within each area to be stripped. Topsoil depth generally varies along a gradient from hilltop to toe of the slope. Put sediment basins, diversions, and other controls into place before stripping. STOCKPILING

Select stockpile location to avoid slopes and natural drainageways, avoiding traffic routes. On large sites, respreading is easier and more economical when topsoil is stockpiled in small piles located near areas where they will be used. All stockpile areas used shall be stabilized with silt fence and seeded.

Sediment barriers – Use sediment fences or other barriers where necessary to retain sediment.

RIP RAP (6.15)

CONSTRUCTION SPECIFICATIONS

Subgrade Preparation – Prepare the subgrade for riprap and i lines and grades shown on the plans. Compact any fill required i to a density approximating that of the surrounding undisturbed m depressions with riprap. Remove brush, trees, stumps and other obj material. Cut the subgrade sufficiently deep that the finished grade will be at the elevation of the surrounding area. Channels should sufficiently to allow placement of the riprap in a manner such th inside dimensions and grade of the riprap meet design specificat

Sand and gravel filter blanket – Place the filter blanket immedia foundation is prepared. For gravel, spread filter stone in a unifo specified depth. Where more than one layer of filter material is us layers with minimal mixing.

Synthetic filter fabric – Place the cloth filter directly on the prep Overlap the edges by at least 12 inches, and space anchor pins even the overlap. Bury the upstream end of the cloth a minimum of 12 ground and where necessary, bury the lower end of the cloth or a next section as required. Take care not to damage the cloth when If damage occurs remove the riprap and repair the sheet by addi of filter material with a minimum overlap of 12 inches around the If extensive damage is suspected, remove and replace the entire su

Where large stones are used or machine placement is difficult, a fine aravel or sand may be needed to protect the filter cloth.

Stone Placement – Placement of riprap should follow immediately of the filter. Place riprap so that if forms a dense, well-graded a minimum of voids. The desired disbribution of stones through be obtained by selective loading at the quarry and controlled dump final placement. Place riprap to its full thickness in one operation. riprap by dumping through chutes or other methods that cause seg stone sizes. Take care not to dislodge the underlying base or filte the stones.

The finished slope should be free of pockets of small stone or cla stones. Hand placing may be necessary to achieve the proper disti stone sizes to produce a relatively smooth, uniform surface. The of the riprap should blend with the surrounding area. No overfall riprap should be apparent.

MAINTENANCE

Inspect channels at regular intervals as well as after major rains promptly. Give special attention to the outlet and inlet sections and where concentrated flow enters. Carefully check stability at road look for indications of piping, scour holes, or bank failures. Make in immediately. Maintain all vegetation adjacent to the channel in a her vigorous condition to protect the area from erosion and scour du flow. Control of weed and brush growth may be needed in some I

CONSTRUCTION SPECIFICATIONS

Remove all trees, brush, stumps, and other objectionable material from the foundation area and dispose of properly.

2. Excavate the channel and shape it to neat lines and dimensions shown on the plans plus a 0.2-ft overcut around the channel perimeter to allow for bulking during seedbed preparations and sod buildup.

3. Remove and properly dispose of all excess soil so that surface water may enter the channel freely.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION 4. The procedure used to establish grass in the channel will depend upon the severity of the conditions and selection of species. Protect the channel with mulch Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and or a temporary liner sufficient to withstand anticipated velocities during the authorization for construction is not to be considered to represent total compliance with all legal requirements for establishment period. 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. This approval of this electronic document is only valid if the document has not been modified and the diaital signature below is valid:

TOPSOILING (6.04) Temporary seeding – Protect topsoil stockpiles by temporarily seeding as soon as possible, no more than 30 working days or 120 calendar days after the formation of the stockpile. Permanent vegetation – If stockpiles will not be used within 12 months they must be stabilized with permanent vegetation to control erosion and weed growth. SITE PREPARATION

SPREADING TOPSOIL

Before spreading topsoil, establish erosion and sedimentation control practices such as diversions, berms, dikes, waterways, and sediment basins.

Grading – Maintain grades on the areas to be topsoiled according to the approved plan and do not alter them by adding topsoil.

Liming of subsoil - Where the pH of the existing subsoil is 6.0 or less, or the soil is composed of heavy clays, incorporate agricultural limestone in amounts recommended by soil tests or specified for the seeding mixture to be used. Incorporate lime to a depth of at least 2 inches by disking.

Roughening – Immediately prior to spreading the topsoil.loosen the subgrade by disking or scarifying to a depth of at least 4 inches, to ensure bonding of the topsoil and subsoil. If no amendments have been incorporated, loosen the soil to a depth of at least 6 inches before spreading topsoil.

Do not spread topsoil while it is frozen or muddy or when subgrade is wet or frozen. Correct any irregularities in the surface that result from topsoiling or other operations to prevent the formation of depressions or water pockets.

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Compact the topsoil enough to ensure good contact with the underlying soil, but avoid excessive compaction, as it increases runoff and inhibits seed germination. Light packing with a roller is recommended where high-maintenance turf is to be established.

On slopes and areas that will not be mowed,the surface may be left rough after spreading topsoil. A disk may be used to promote bonding at the interface between topsoil and subsoil.

After topsoil application, follow procedure for seedbed preparation, taking care to avoid excessive mixing of topsoil into the subsoil.

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	LAND GRADING (6.02)	m m
	CONSTRUCTION SPECIFICATIONS	
ilter to the required In the subgrade Material or overfill	I. Construct and maintain all erosion and sedimentation control practices and measures in accordance with the approved sedimentation control plan and construction schedule.	PRELIMINARY PLANS
te of the riprap be excavated pat the finished	2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.	NGI NEL
tions.	3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil.	CAR D. Within
orm layer to the sed,spread the	4. Clear and grub areas to be filled to remove trees,vegetation,roots,or other objectionable material that would affect the planned stability of the fill.	5 07 3 10w 1HV 1Dw 1Dw
epared foundation. erv 3 ft along	5. Ensure that fill material is free of brush,rubbish,rocks,logs,stumps, building debris,and other materials inappropriate for constructing stable fills.	PROJE 38290 DATE 3/202: 1 1 1 1 8 1 8 1 8 7 8 7 8 7 8 7 8 7
pinches below overlap with the placing riprap.	6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.	KHA 01 6/2: SCALE DESIGNE DRAWN CHECKEI
he damaged area. sheet.	7. Do not incorporate frozen material or soft or highly compressible materials into fill slopes.	
4-inch layer of	8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.	0 2 0
v after placement mass of stone with	9. Keep diversions and other water conveyance measures free of sediment during all phases of development.	
ping during Do not place areaation of	10. Handle seeps or springs encountered during construction in accordance with approved methods.	
er when placing	II. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 15 working days or longer.	N C
ribution of finished grade lor protrusion of	12. Show topsoil stockpiles, borrow areas, and spoil areas on the plans, and make sure they are adequately protected from erosion. Include final stabilization of these areas in the plan.	SIO
	MAINTENANCE	0
s,and make repairs other points crossings and repairs ealthy,	Periodically check all graded areas and the supporting erosion and sedimentation control practices,especially after heavy rainfalls. Promptly remove all sediment from diversion and other water—disposal practices. If washouts or breaks occur,repair them immediately. Prompt maintenance of small eroded areas before they become significant gullies	ER
uring out-ot-bank ocations.	is an essential part of an effective erosion and sedimentation control plan.	ANIJC
ASS-LINED C	HANNELS (6.30)	
	ΜΛΙΝΤΕΝΛΝΩΕ	

GRASS-LINED CHANNELS (6.30)

MAINTENANCE

During the establishment period, check grass-lined channels after every rainfall. After grass is established, periodically check the channel; check it after every heavy rainfall event. Immediately make repairs. It is particularly important to r check the channel outlet and all road crossings for bank stability and evidence of piping or scour holes. Remove all significant sediment accumulations to maintain the designed carrying capacify. Keep the grass in a healthy, vigorous condition at all times, since it is the primary erosion protection for the channel.

City of Raleigh Development Approval _____





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. This approval of this electronic document is only valid if the document has not been

City of Raleigh Development Approval

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EXIST ROW

19 + 50.00

EXIST ROW





70

50

60

