

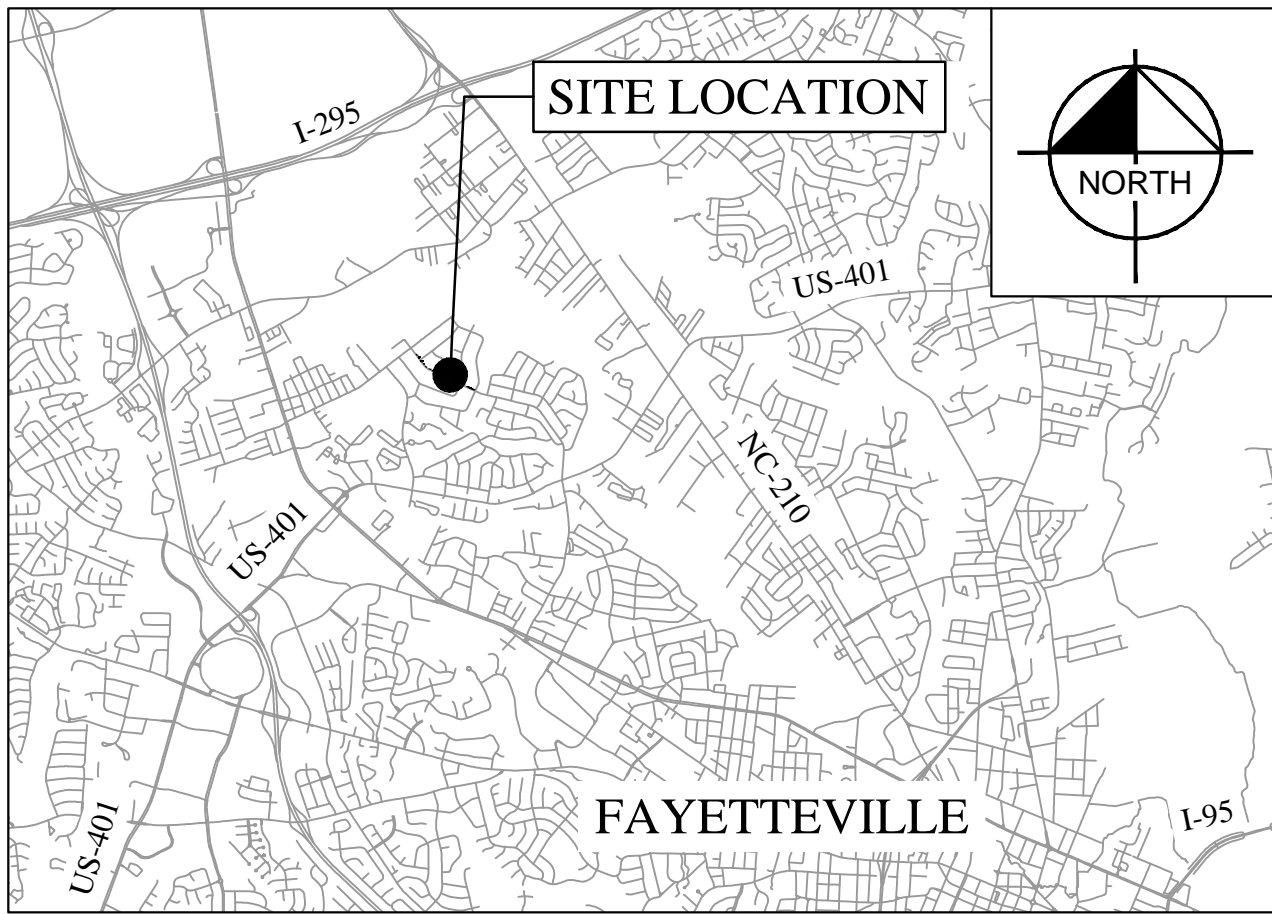
Helen Street Sidewalk



APPENDIX A

Drawings

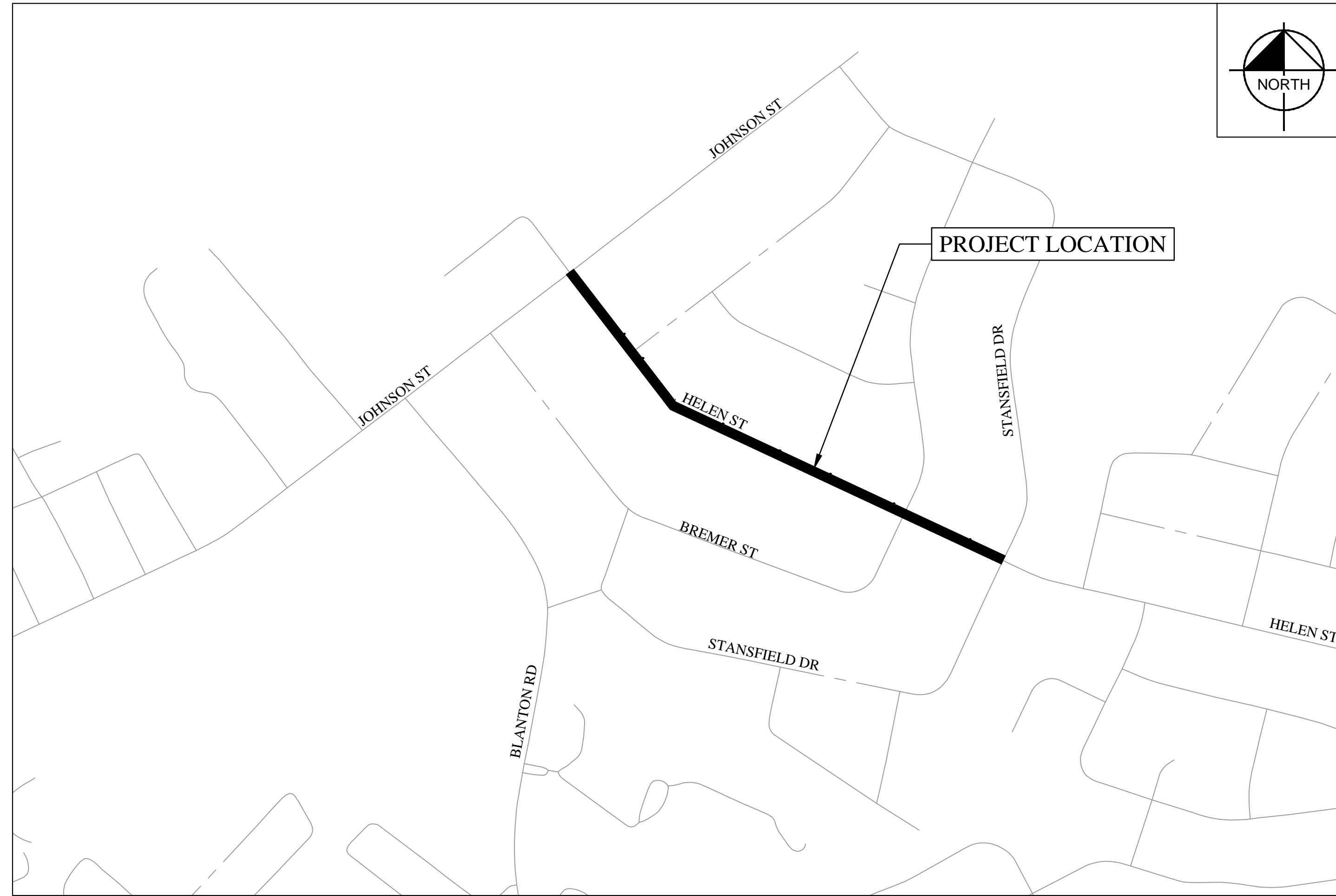
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VICINITY MAP



HELEN ST SIDEWALK



LOCATION MAP

INDEX

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28 THRU 40	CROSS SECTIONS

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Construction Management	Jeff Riddle, PLS Construction Manager 339 Alexander Street, Fayetteville, NC 28301 (910) 433-1613 JeffreyRiddle@FayettevilleNC.gov
Traffic Services	Brian McGill, PE, PTOE Interim Assistant Public Services Director 339 Alexander Street, Fayetteville, NC 28301 (901) 433-1660 BrianMcGill@FayettevilleNC.gov



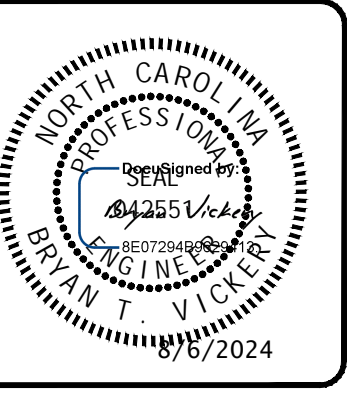
**Know what's below.
Call before you dig.**

PROJECT SCOPE
THIS PROJECT CONSISTS OF:
ROADWAY, DRAINAGE, AND PEDESTRIAN
FACILITY IMPROVEMENTS
SIDEWALK: 2400'

COVER SHEET
 PLAN TYPE: 100% PLANS
 SHEET NUMBER: 1

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 300 N MAIN STREET, SUITE 200,
 HOLLY SPRINGS, NC 27526
 PHONE: (919) 695-5003
 WWW.KIMLEY-HORN.COM
 NC FIRM #F-0102

FAYETTEVILLE NC
 PUBLIC SERVICES
ENGINEERING DIVISION
 ENGINEERING & INFRASTRUCTURE DEPARTMENT
 433 HAY STREET FAYETTEVILLE, NC 28301



REV #	DESCRIPTION	REV. BY	DATE

CONSTRUCTION APPROVAL	
Construction Management	
Engineering	
Parks & Recreation	
Real Estate	
Street Maintenance	
Traffic Services	
Utilities - Electrical Services	
Utilities - Sewer Services	
Utilities - Water Services	

DRAWN: ALT	PROJECT: HELEN ST SIDEWALKS
DESIGN: GTG	SCALE: AS NOTED
CHECK: GTG	DATE: 7/25/2024
APPROVED: BTJ	
PROJECT NO. 011017030	
SUB-LEDGER NO.	

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ABBREVIATIONS

ASPH - ASPHALT
 B/C - BACK OF CURB
 BM - BENCHMARK
 CB - CATCH BASIN
 CP - CABLEVISION PEDISTAL
 C&G - CURB AND GUTTER
 C/L - CHAIN LINK
 CMP - CORRUGATED METAL PIPE
 CO - CLEANOUT
 CONC - CONCRETE
 CONST - CONSTRUCTION
 CP - CONTROL POINT
 CTR - CENTER
 DB - DEED BOOK
 DEPT - DEPARTMENT
 DI - DROP INLET
 DIP - DUCTILE IRON PIPE
 DWA - DRIVEWAY ASPHALT
 DWB - DRIVEWAY BRICK
 DWC - DRIVEWAY CONCRETE
 DWD - DRIVEWAY DIRT
 DWG - DRIVEWAY GRAVEL
 E - EAST/EASTING
 EOP - EDGE OF PAVEMENT
 ESMT - EASEMENT
 EV - ELECTRICAL VAULT
 F/C - FACE OF CURB
 FES - FLARED END SECTION
 FH - FIRE HYDRANT
 FOB - FIBER OPTIC BURIED
 FP - FLAG POLE
 GV - GAS VALVE
 GW - GUY WIRE
 GWV - GATE WATER VALVE
 HDPE - HIGH DENSITY POLYETHYLENE
 INV - INVERT
 JB - JUNCTION BOX
 LF - LINEAR FOOT
 LOD - LIMITS OF DISTURBANCE
 LP - LIGHT POLE
 MAX - MAXIMUM
 MB - MAILBOX
 MHEL - MANHOLE ELECTRIC
 MHSD - MANHOLE STORM DRAIN
 MHSS - MANHOLE SANITARY SEWER
 MHTP - MANHOLE TELEPHONE
 N - NORTH/NORTHING
 O.C. - ON CENTER
 O/H - OVERHEAD
 PVMT - PAVEMENT
 PC - POINT OF CURVATURE
 PERM - PERMANENT
 PG - PAGE
 PI - POINT OF INTERSECTION
 PVC - POLYVINYL CHLORIDE
 PP - POWER POLE
 RCP - REINFORCED CONCRETE PIPE
 R/W - RIGHT OF WAY
 S - SOUTH
 SC - SAWCUT
 SD - STORM DRAIN
 S/R - SPLIT RAIL
 SS - SANITARY SEWER
 STA - STATION
 STB - SIGNAL TRAFFIC BOX
 STD - STANDARD
 SWA - SIDEWALK ASPHALT
 SWB - SIDEWALK BRICK
 SWC - SIDEWALK CONCRETE
 SY - SQUARE YARD
 TC - TRASH CAN
 TD - TRUNCATED DOME
 TCE - TEMPORARY CONSTRUCTION EASEMENT
 TCP - TERRA COTTA PIPE
 TP - TELEPHONE PEDISTAL
 TVP - TRAVERSE POINT
 TYP - TYPICAL
 U.O.N. - UNLESS OTHERWISE NOTED
 UP - UTILITY POLE
 W - WEST
 WCR - WHEELCHAIR RAMP
 WM - WATER METER
 WV - WATER VAULT

	PROPOSED RIGHT-OF-WAY
	PROPOSED FENCE
	PROPOSED UNDERGROUND GAS
	PROPOSED TEMPORARY CONSTRUCTION EASEMENT
	PROPOSED UNDERGROUND WATER
	PROPOSED EASEMENT
	PROPOSED SANITARY SEWER
	PROPOSED STORM DRAIN
	SILT FENCE - LIMITS OF DISTURBANCE
	PROPOSED SWALE
	PROPOSED SANITARY SEWER MAN HOLE
	PROPOSED STORM SEWER MAN HOLE
	PROPOSED CATCH BASIN
	PROPOSED DROP INLET
	PROPOSED ELECTRICAL VAULT
	PROPOSED ELECTRICAL MAN HOLE
	PROPOSED WATER METER
	PROPOSED WATER VAULT
	PROPOSED SANITARY SEWER CLEAN OUT
	PROPOSED TREE
	PROPOSED SHRUB
	PROPOSED CONCRETE CURB AND GUTTER
	PROPOSED SIDEWALK
	PROPOSED CONCRETE
	PROPOSED POWER POLE
	INLET PROTECTION
	TEMPORARY WATTLE
	PROPOSED FLARED END SECTION
	PROPOSED HEADWALL
	PROPOSED GATE WATER VALVE
	PROPOSED GAS VALVE
	PROPOSED FIRE HYDRANT
	PROPOSED LIGHT POLE

LEGEND

	EXISTING RIGHT-OF-WAY
	EXISTING OVERHEAD ELECTRIC
	EXISTING UNDERGROUND ELECTRIC
	EXISTING FIBER OPTIC BURIED
	EXISTING FENCE
	EXISTING UNDERGROUND GAS
	EXISTING UNDERGROUND WATER
	EXISTING TELEPHONE CABLE
	EXISTING CABLEVISION
	EXISTING EASEMENT
	EXISTING SANITARY SEWER
	EXISTING TRAIN TRACKS
	EXISTING STORM SEWER
	EXISTING SWALE
	EXISTING SANITARY SEWER MAN HOLE
	EXISTING STORM SEWER MAN HOLE
	EXISTING TELEPHONE MAN HOLE
	EXISTING CATCH BASIN
	EXISTING DROP INLET
	EXISTING ELECTRICAL VAULT
	EXISTING ELECTRICAL MAN HOLE
	EXISTING WATER METER
	EXISTING CONCRETE MONUMENT
	SURVEY CONTROL MARKER
	PROPERTY CORNER (EIR/ERBR/SIR/EIP)
	EXISTING WATER VALVE
	EXISTING FIBER OPTIC MARKER
	EXISTING SANITARY SEWER CLEAN OUT
	EXISTING CONCRETE CURB AND GUTTER
	EXISTING CONCRETE/SIDEWALK
	WETLANDS
	EXISTING POWER POLE
	EXISTING MAILBOX

	EXISTING FLARED END SECTION
	EXISTING HEADWALL
	EXISTING GATE WATER VALVE
	EXISTING GAS VALVE
	EXISTING FIRE HYDRANT
	EXISTING LIGHT POLE
	EXISTING TREE
	EXISTING SHRUB

CONVENTIONAL SYMBOLS

300 N MAIN STREET, SUITE 200,
 HOLLY SPRINGS, NC 27526
 PHONE: (919) 985-5033
 WWW.KH.COM
 NC FIRM #P-0102

ENGINEERING DIVISION
 ENGINEERING & INFRASTRUCTURE DEPARTMENT
 433 HAY STREET FAYETTEVILLE, NC 28301



REVISIONS	
REV #	DESCRIPTION

DRAWN: ALT	PROJECT: HELEN ST SIDEWALKS
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PLAN TYPE
 100% PLANS
 SHEET NUMBER
 2

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GENERAL NOTES:

ACCESS TO SITES SHALL BE BY PUBLIC RIGHT-OF-WAYS AND UTILITY EASEMENTS. OTHER ACCESS LOCATIONS REQUIRED SHALL BE SECURED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. SUPPLEMENTAL EROSION CONTROL MEASURES SHALL BE REQUIRED TO INCLUDE CONSTRUCTION ENTRANCES, SILT FENCING, RESTORATION, ETC.

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE CONSTRUCTION STAGING AREA AT IT'S EXPENSE. A TEMPORARY USE PERMIT IS REQUIRED FOR THE STAGING AREA (ZONING 433-1705).

THE CONTRACTOR IS EXPECTED AND REQUIRED TO COOPERATE WITH THE PROPERTY OWNERS AFFECTED BY THE WORK. PRIVATE AGREEMENTS WITH PROPERTY OWNERS MUST BE IN WRITING ON A FORM APPROVED BY THE ENGINEER AND A COPY SHALL BE PROVIDED TO THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES AFFECTED BY SAID AGREEMENT. THE AGREEMENT MUST SPECIFY THAT THE CITY AND THE ENGINEER SHALL BE HELD HARMLESS AGAINST ALL CLAIMS ARISING FROM THE AGREEMENT. THE OWNER DISCOURAGES PRIVATE AGREEMENTS. BEFORE FINAL ACCEPTANCE, A RELEASE FROM EACH PROPERTY OWNER THAT THE CONTRACTOR MADE AN AGREEMENT WITH SHALL BE REQUIRED. THE PROPERTY OWNER'S RELEASE IS A CONDITION OF FINAL ACCEPTANCE.

CONTRACTOR SHALL MAINTAIN A NEAT AND CLEAN JOB-SITE TO INCLUDE STAGING/STORAGE AREAS AS FOLLOWS:

- PERFORM DUST CONTROL BY WATERING DAILY OR AS DIRECTED BY THE ENGINEER.
- SWEEP STREETS A MINIMUM OF ONCE WEEKLY (FRIDAY) OR AS DIRECTED BY THE ENGINEER.
- BLADE, LEVEL AND RE-COMPACT ALL EXPOSED TRENCHES WEEKLY (OR AS DIRECTED BY THE ENGINEER) TO PRODUCE A SMOOTH "RIDE".
- PERFORM DAILY CLEAN-UP OF ALL DIRT, DEBRIS AND SCRAP MATERIALS.
- REMOVE EXCESS EQUIPMENT, MATERIALS, TOOLS, ETC. NOT NEEDED.

CONTRACTOR SHALL PROVIDE MEASURES DURING CONSTRUCTION TO SECURE THE SITE AND EXCAVATION FROM THE GENERAL PUBLIC AND COMPLY WITH ALL OSHA REGULATIONS. JOB SITE SAFETY IS THE EXCLUSIVE AND SOLE RESPONSIBILITY OF THE CONTRACTOR. OPEN EXCAVATION LEFT UNATTENDED OR OVER NIGHT IS NOT ACCEPTABLE AND SHALL BE FILLED IMMEDIATELY.

CONTRACTOR SHALL REPAIR OR REPLACE DRIVES DISTURBED BY CONSTRUCTION TO EXISTING OR BETTER CONDITIONS. NO SEPARATE PAYMENT UNLESS OTHERWISE INDICATED.

CONTRACTOR SHALL PROVIDE TEMPORARY FENCING WHERE FENCES ARE REMOVED FOR CONSTRUCTION. CONTRACTOR SHALL COORDINATE REMOVAL OF EXISTING FENCE AND INSTALLATION OF TEMPORARY FENCE WITH PROPERTY OWNER PRIOR TO CONSTRUCTION. REMOVAL OF TEMPORARY FENCE AND INSTALLATION OF PERMANENT FENCE MUST ALSO BE COORDINATED WITH PROPERTY OWNER. ALL REMOVAL, TEMPORARY, AND REPLACEMENT FENCING SHALL BE CONSIDERED INCIDENTAL TO THE CITY INSTALLATION AND NO SEPARATE PAYMENT SHALL BE MADE. CONTRACTOR SHALL REINSTALL ALL SHEDS, FENCES, ETC. TO AS GOOD OR BETTER THAN EXISTING CONDITIONS UNLESS OTHERWISE INDICATED. (NO SEPARATE PAYMENT).

CONTRACTOR SHALL REPLACE ALL DISTURBED MAILBOXES, SIGNS, ETC. DISTURBED DURING CONSTRUCTION WITHIN 24 HOURS OF DISTURBANCE. PERMANENT ROAD SIGNAGE DISTURBED SHALL BE REPLACED IMMEDIATELY AND IF NECESSARY ROADWAY SIGNS SHALL BE TEMPORARILY INSTALLED IN A LOCATION CONSISTENT WITH THE NCMUTCD TO PROVIDE CONTINUOUS TRAFFIC AWARENESS OF ROADWAY CONDITIONS. (NO SEPARATE PAYMENT).

CONTRACTOR SHALL PROVIDE SECURITY FENCING, SECURITY GUARD, AND ANY AND ALL OTHER MEASURES CONTRACTOR DEEMS NECESSARY TO PROTECT EQUIPMENT AND MATERIALS STORED ON THE PROJECT. (NO SEPARATE PAYMENT).

WHERE CONTRACTOR CEASES WORK OPERATION FOR A 72 HOUR PERIOD OR LONGER, SUCH AS HOLIDAYS, ETC., THE FOLLOWING SHALL BE ACCOMPLISHED PRIOR TO THE WORK STOPPAGE.

- CONTRACTOR WILL STORE ALL EQUIPMENT IN THE CONTRACTOR STAGING AREA OR OFF SITE.
- RETURN SERVICES AND ACCESS TO PROPERTY OWNERS
- THE CONTRACTOR SHALL SWEEP ALL STREETS, PERFORM GENERAL CLEANUP AND SHALL PERFORM MAINTENANCE ON ALL EXPOSED PATCHES.

CONTRACTOR SHALL SCHEDULE WORK AND MATERIAL DELIVERIES SO THAT STORED MATERIAL QUANTITIES ON THE JOB SITE SHALL BE MINIMIZED.

CONTRACTOR SHALL STORE ALL MATERIALS IN THE CONTRACTOR STAGING AREA 72 HOURS PRIOR TO INCORPORATING INTO THE WORK TO REDUCE OBSTRUCTIONS TO TRAFFIC AND INCONVENIENCE TO RESIDENTS.

GENERAL NOTES FOR RESIDENT RELATIONS (MANDATORY):
THE PROPOSED WORK WILL BE CONSTRUCTED WITHIN A THREE BLOCK SECTION OF HELEN STREET FROM JOHNSON STREET TO STANSFIELD. THE CONTRACTOR IS REQUIRED TO DEVELOP GOOD RELATIONS WITH THE RESIDENTS WHICH INCLUDE THE FOLLOWING MANDATORY MINIMUM REQUIREMENTS:

- NO SPEEDING WITH EQUIPMENT AND/OR VEHICLES (25 MPH MAX.)
- DO NOT BLOCK DRIVEWAYS AT ANY TIME
- DO NOT LITTER AT ANY TIME
- DO NOT USE RESIDENT'S WATER WITHOUT THEIR PERMISSION (SIGNED AGREEMENT REQUIRED)
- ALL PLUMBING CODE REQUIREMENTS FOR BACK FLOW PREVENTION WILL BE ADHERED TO
- RESPOND TO RESIDENT'S COMPLAINTS WITHIN 24 HOURS
- DO NOT USE ABUSIVE LANGUAGE, PROFANITY OR CAT-CALLING
- WEAR PROPER PROTECTIVE CLOTHING (HARD HATS, PROPER SHOES, SHIRTS, ETC.) AT ALL TIMES.
- MAINTAIN PROPER SAFETY MEASURES, PARTICULARLY ALONG OPEN TRENCHES, PLACING CONES ON RAISED MANHOLES AND BACK FILLING OPEN TRENCHES IF CONSTRUCTION IS STOPPED AND THE OPEN TRENCH IS NOT MANNED.
- PERSONNEL MUST WEAR CITY APPROVED SAFETY VEST AT ALL TIMES WHILE WORKING IN THE CITY AND/OR NCDOT RIGHT-OF-WAY
- ALL TRAFFIC CONTROL FLAG PERSONS AND AT LEAST ONE PERSON ON EACH WORK CREW MUST BE FLUENT IN THE ENGLISH LANGUAGE

IF THE CONTRACTOR AND/OR SUBCONTRACTORS CANNOT ADQUATELY PERFORM AND/OR COMPLY WITH THESE REQUIREMENTS, THE INDIVIDUAL, SUBCONTRACTOR,

OR EMPLOYEES MAY BE DIRECTED TO LEAVE THE PROJECT PERMANENTLY. INCONSIDERATE, NON-COOPERATIVE ATTITUDES AND ACTIONS WILL NOT BE TOLERATED.

UTILITIES:
UTILITIES ARE ILLUSTRATED FOR INFORMATION PURPOSES ONLY. THE CITY OR ENGINEER WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF UTILITY LOCATIONS, SIZES, DEPTHS, OR FOR COMPLETENESS OF UTILITY INFORMATION SHOWN.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY AND MEET WITH ALL UTILITY OWNERS. THE CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE CAUSED BY HIS OPERATIONS OR THOSE OF HIS AGENTS. THE CONTRACTOR SHALL HOLD THE CITY HARMLESS FOR ANY THIRD-PARTY INCONVENIENCE CREATED BY WORK OF HIS OWN FORCES OR THAT OF HIS AGENTS. ANY DAMAGES INCURRED SHALL BE THE CONTRACTORS FINANCIAL RESPONSIBILITY.

ADJUSTMENTS/RELOCATIONS WILL BE PERFORMED BY THE VARIOUS UTILITY OWNERS. THE CONTRACTOR SHALL COORDINATE WORK WITH UTILITY OWNERS SO AS NOT TO ADVERSELY AFFECT THE PROJECT SCHEDULE. THE CITY WILL NOT BE HELD RESPONSIBLE FOR ANY DELAYS OR DISRUPTIONS TO THE WORK SCHEDULE OF OTHER UTILITY OWNERS.

- FOR UTILITY LOCATES CALL NORTH CAROLINA ONE-CALL @ 811.
- FOR LOCATES OF UTILITIES NOT MEMBERS OF NORTH CAROLINA ONE-CALL CONTACT PROJECT MANAGER OR UTILITY COORDINATOR.

THE CONTRACTOR SHALL ADJUST ALL WATER VALVES, WATER METER BOXES AND WATER VAULTS TO FINISHED GRADE. WATER METERS, MANHOLES, AND CLEANOUTS LOCATED IN SIDEWALKS OR CONCRETE DRIVEWAYS SHALL BE INSTALLED IN ACCORDANCE WITH PWC REQUIREMENTS. NO ABOVE GROUND UTILITY BOXES, POWER POLE, OR OTHER STRUCTURES ARE TO BE LOCATED WITHIN THE SIDEWALK AREA. THE SIDEWALK AREA IS TO BE FREE OF OBSTACLES.

PRIOR TO COMMENCEMENT OF ANY WORK WITHIN EASEMENTS OR RIGHT-OF-WAYS, THE CONTRACTOR IS REQUIRED TO NOTIFY CONCERNED UTILITY COMPANIES IN ACCORDANCE TO GS 87-102. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. NO SEPARATE PAYMENT. EXISTING UTILITIES SHOWN ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED (i.e. GAS, FIBER OPTIC, ETC.).

THE CONTRACTOR SHALL DIG UP EACH UTILITY WHICH MAY CONFLICT WITH CONSTRUCTION 14 DAYS IN ADVANCE TO VERIFY LOCATIONS (HORIZONTALLY AND VERTICALLY) TO ALLOW THE ENGINEER AN OPPORTUNITY TO ADJUST THE DESIGN TO AVOID CONFLICTS (NO SEPARATE PAYMENT).

WHERE DEEMED NECESSARY BY THE ENGINEER THAT A SUBSURFACE DRAINAGE SYSTEM IS REQUIRED, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, TIE-INS TO EXISTING DRAINAGE STRUCTURES AND ALL OTHER INCIDENTALS NECESSARY TO PROVIDE COMPLETE INSTALLATION IN ACCORDANCE WITH CITY OF FAYETTEVILLE STANDARDS. IMPROPERLY INSTALLED AND NON-FUNCTIONING DRAINAGE SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING FRENCH DRAINAGE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AND/OR REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER.

STORM DRAINAGE REPAIRS BY CONTRACTOR DUE TO CONSTRUCTION DAMAGE AND JOINTS EXPOSED DURING CONSTRUCTION SHALL BE INSPECTED BY THE OWNER PRIOR TO BACKFILLING.

MAIL BOXES:
THE CONTRACTOR SHALL RELOCATE ALL MAIL BOXES AS REQUIRED BY SECTION 107-12 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. COORDINATE THIS WORK WITH THE U.S. POSTAL SERVICE. MAILBOXES SHALL BE REPLACED IN ACCORDANCE WITH THE DETAIL ON SHEET 9.

TREES, SHRUBS, AND HEDGES:
ALL TREES THAT ARE TO REMAIN ARE TO BE PROTECTED WITH TREE PROTECTION BARRIERS ACCEPTABLE TO THE CITY ARBORIST OR LANDSCAPE ARCHITECT. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE CITY ARBORIST OR LANDSCAPE ARCHITECT PRIOR TO ROOT PRUNING. WHEN ROOT PRUNING IS ABSOLUTELY NECESSARY, CUT ROOTS CLEANLY USING A DISC TRENCHER OR OTHER APPROVED METHOD.

CONTRACTOR SHALL OBTAIN APPROVAL FROM THE CITY PRIOR TO REMOVING ANY TREES. ALL TREES LOCATED WITHIN THE LOT THAT ARE TO REMAIN AFTER CONSTRUCTION SHALL BE INSPECTED BY THE CITY TO VERIFY THEY ARE SUITABLE TO REMAIN.

GRADING:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BORROW MATERIAL REQUIRED TO CONSTRUCT PROJECT AS SHOWN ON THE CONTRACT DOCUMENTS.

ALL EXCAVATED MATERIALS THAT ARE NOT REQUIRED OR ARE UNSUITABLE FOR THE PROJECT SHALL BE CONSIDERED WASTE AND SHALL BE HAULED OFF SITE AND DISPOSED IN A SAFE AND LEGAL MANNER AT THE CONTRACTOR'S EXPENSE.

EROSION CONTROL:
CONTRACTOR SHALL NOT DISTURB ANY AREAS OUTSIDE OF THE DESIGNATED EASEMENT AREAS.

THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL DEVICES IN ACCORDANCE WITH THE APPROPRIATE CITY AND STATE EROSION AND SEDIMENT CONTROL ORDINANCES. THE CONTRACTOR SHALL PREVENT STANDING WATER DUE TO CONSTRUCTION.

SAWCUTS:
THE CONTRACTOR SHALL SAWCUT EXISTING ASPHALT AND/OR CONCRETE SURFACES PRIOR TO REMOVAL UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SAW CUT WIDTH SHALL BE 1 FOOT MINIMUM FOR THE EXISTING EDGE OF PAVEMENT. SAWCUT PAVEMENT SHALL BE REPLACED AS WELL AS ADDITIONAL PAVEMENT REQUIRED TO TIE-IN TO FACE OF PROPOSED CURB OR GUTTER.

STORM DRAINAGE STRUCTURE, PIPE & GRADING NOTES:
PIPE INVERT ELEVATIONS HAVE PRECEDENCE OVER SLOPES. HOWEVER, SLOPES SHALL NOT BE DECREASED FROM THOSE SHOWN ON PLAN WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

ALL STORM DRAINAGE PIPE TO BE CLASS III REINFORCED CONCRETE UNLESS

OTHERWISE NOTED. PIPE LENGTHS INDICATED ON PLAN ARE APPROXIMATE ONLY.

NO SOIL DISTURBANCE OR COMPACTION, CONSTRUCTION MATERIALS, TRAFFIC, TRENCHING, OR OTHER LAND DISTURBING ACTIVITY SHALL BE PERMITTED BEYOND LIMITS OF GRADING WITHOUT PRIOR APPROVAL FROM THE OWNER AND CITY ENGINEERING DEPT.

THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE ENGINEER OF RECORD (EOR) OF ANY DISCREPANCIES FOUND BETWEEN ACTUAL CONDITION AND CONSTRUCTION DOCUMENTS AND SHALL WAIT FOR INSTRUCTION FROM THE EOR PRIOR TO PROCEEDING.

MANHOLE RIM ELEVATIONS SHOWN ON THE PLANS ARE APPROXIMATE. NEW MANHOLE RING AND COVERS SHALL BE INSTALLED FLUSH WITH THE SURROUNDING GRADE SO AS TO AVOID DAMAGE TO MOTOR VEHICLES DURING CONSTRUCTION. THEY ARE TO BE ADJUSTED TO MATCH THE SURROUNDING PROPOSED GRADE PRIOR TO PLACING THE NEW SURFACE COURSE.

THE CONTRACTOR SHALL DESIGN, FURNISH, AND INSTALL ANY TRENCH STABILIZATION NECESSARY TO MAINTAIN EXCAVATION FOR PIPE AND DRAINAGE STRUCTURE INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND REMOVAL OF ANY TRENCH STABILIZATION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ANY DAMAGE TO ADJACENT STRUCTURES RESULTING FROM THE INSTALLATION, REMOVAL OR ABSENCE OF TRENCH STABILIZATION.

GRADES, ELEVATIONS AND LOCATIONS SHOWN ARE APPROXIMATE, AS DIRECTED BY THE ENGINEER. THEY MAY BE ADJUSTED TO ACCOMMODATE UNFORESEEN CONDITIONS. ALL PROPOSED GRADES ARE FINISH GRADES.

THE CONTRACTOR SHALL BACKFILL OPEN EXCAVATIONS AT THE END OF EACH WORKING DAY. AT DRAINAGE STRUCTURE LOCATIONS, THE EXCAVATION SHALL BE COVERED WITH METAL PLATES WHEN PRACTICAL OR COMPLETEY ENCLOSED WITH SAFETY NETTING.

STOCKPILING NOTE:
ANY ONSITE STOCKPILING IS TO BE COORDINATED AND APPROVED BY A CITY INSPECTOR. THE STOCKPILE WILL BE PROVIDED WITH GROUND COVER WITHIN 15 WORKING DAYS OF PROJECT COMPLETION.

EXCESS SUITABLE SOIL EXCAVATED DURING CONSTRUCTION SHALL BE STOCKPILED FOR USE ON THE PROJECT OR DISPOSED OF OFF-SITE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT BE ALLOWED TO STOCKPILE MATERIALS OR EXCESS MATERIALS IN THE STREET RIGHT-OF-WAYS AT ANY TIME UNLESS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE A SUFFICIENT AND SUITABLE STOCKPILE AREA AND LOCATION AT THE CONTRACTOR'S EXPENSE.

ORDER OF PRECEDENCE GENERAL NOTES/TECHNICAL SPECIFICATIONS/PHOTOS:
THE NOTES CONTAINED HEREIN ARE INTENDED TO SUPPLEMENT THE TECHNICAL SPECIFICATIONS AND PROVIDE EASY REFERENCE FOR THE CONTRACTOR. IN NO CASE SHALL THESE NOTES VOID ANY PART, SECTION OR REQUIREMENT OUTLINED IN THE TECHNICAL SPECIFICATIONS CONTAINED IN THE CONTRACT DOCUMENTS. IF CONFLICTS OCCUR BETWEEN THE TECHNICAL SPECIFICATIONS AND THE NOTES CONTAINED HEREIN, THE TECHNICAL SPECIFICATIONS SHALL SUPSEDE.

NCDOT ENCROACHMENT SPECIAL PROVISIONS:
CONTRACTOR TO NOTIFY MR. KEITH RIVENBARK, COUNTY MAINTENANCE ENGINEER, (910) 364-0602, A MINIMUM OF THREE (3) DAYS BEFORE CONSTRUCTION IS TO BEGIN.

AN EXECUTED COPY OF THE ENCROACHMENT AGREEMENT SHALL BE PRESENT AT THE CONSTRUCTION SITE AT ALL TIMES DURING CONSTRUCTION. THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RESERVES THE RIGHT TO STOP ALL WORK UNLESS EVIDENCE OF APPROVAL CAN BE SHOWN.

SEE THE ENCROACHMENT AGREEMENT FOR A FULL LIST OF SPECIAL PROVISIONS.

TRAFFIC CONTROL
CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS FOR WORK ZONE TRAFFIC CONTROL TO CITY TRAFFIC SERVICES DEPARTMENT (910-433-1660) FOR CITY STREETS AND TO MR. TROY BAKER (910-364-0601) FOR NCDOT STREETS. CONTRACTOR SHALL NOT PLACE ANY TRAFFIC CONTROL DEVICES WITHOUT HAVING APPROVAL FROM APPLICABLE TRANSPORTATION DEPARTMENT EITHER NCDOT OR THE CITY OF FAYETTEVILLE.

CONTRACTOR SHALL INSURE ACCESS TO ALL PROPERTIES BY PROPERTY OWNERS AT ALL TIMES.

CONTRACTOR SHALL NOTIFY CITY ENGINEERING OFFICE ONE WEEK IN ADVANCE OF ANY ROAD CLOSING AND COORDINATE ALL ROAD CLOSINGS/UTILITY INTERRUPTIONS WITH PROPERTY OWNERS AFFECTED 48 HOURS PRIOR TO CLOSING/INTERRUPTING SERVICES.

MINIMUM ONE WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES UNLESS ROAD CLOSURE IS APPROVED BY CITY OF FAYETTEVILLE TRAFFIC SERVICES DEPARTMENT IN WRITING, 5 DAYS IN ADVANCE OF ROAD CLOSURE. AN APPROVED DETOUR PLAN PREPARED BY THE CONTRACTOR SHALL BE REQUIRED AND THE MEASURES INSTALLED PRIOR TO CLOSURE.

CONTRACTOR SHALL COORDINATE/NOTIFY TRAFFIC SERVICES DAILY (BEFORE 2:00 P.M.) AS TO WHICH STREETS WILL BE UNDER CONSTRUCTION IMPEDING TRAFFIC FLOW THE FOLLOWING DAY.

THE CONTRACTOR SHALL NOT IMPEDE TRAFFIC AT ANY TIME UNTIL THE APPROVED TRAFFIC CONTROL DEVICES ARE IN PLACE.

ALL TRAFFIC CONTROL MEASURES, DEVICES, INSTALLATION, METHODS, SEQUENCING AND PLANS SHALL BE IN STRICT ACCORDANCE WITH MUTCD, NCDOT, AND CITY OF FAYETTEVILLE TRAFFIC SERVICES.

- UTILITY CONSTRUCTION NOTES**
1. ALL WATER MAINS, LATERALS AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
 2. ALL SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
 3. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.

- STANDARDS.
4. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 5. CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR ALL WATER OUTAGES.
 6. CONSTRUCTION STAKING IS REQUIRED FOR ALL PWC WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, SIGNED AND SEALED BY A NC PLS, SHALL BE PROVIDED TO THE PWC WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR PWC WATER AND SEWER UTILITIES.
 7. CONTRACTOR SHALL MAINTAIN A COPY OF THE SIGNED AND SEALED CUT SHEET ON THE JOB SITE. CONSTRUCTION ON PWC WATER AND SEWER UTILITIES CANNOT BEGIN UNTIL THE CONTRACTOR POSSESSES, ON SITE, A SIGNED AND SEALED CUT SHEET FROM THE PROFESSIONAL LAND SURVEYOR.
 8. ALL NEW WATER AND SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE TESTED AND/OR DISINFECTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS PRIOR TO PLACING INTO SERVICE.
 9. CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE PWC PROJECT COORDINATOR.
 10. ALL DUCTILE IRON PIPE IN SANITARY SEWER SERVICE SHALL HAVE AN INTERIOR LINING OF PROTECTO 401 OR APPROVED EQUAL.
 11. ALL NEW MANHOLES ARE TO BE VACUUM-TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
 12. CONTRACTOR SHALL ABANDON ("KILL-OUT") ANY EXISTING WATER SERVICES THAT WILL NOT BE UTILIZED BY CUTTING THE SERVICE AT THE MAIN, PLUGGING THE CORPORATION, AND TURNING OFF THE CORPORATION. AT THE METER BOX, THE ABANDONED SERVICE IS TO BE CUT OR CRIMPED, AND BURIED A MINIMUM OF 3 FEET BELOW GRADE.
 13. CONTRACTOR SHALL ABANDON ("KILL-OUT") ANY EXISTING SEWER SERVICES THAT WILL NOT BE UTILIZED BY UNCOVERING THE EXISTING LATERAL

ADJUSTMENT OF PRECAST CONCRETE MANHOLES SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

1. INSPECT EXISTING MANHOLE TO DETERMINE IF GRADE RINGS ARE ALREADY IN USE.
2. MEASURE THE INSIDE DIAMETER OF EXISTING MANHOLE TO SELECT APPROPRIATE DIAMETER OF NEW PRECAST RISERS AND OR CONE, IF NEEDED.
3. CONCRETE GRADE RINGS SHALL NOT BE USED FOR ABOVE GRADE ADJUSTMENT FOR OUTFALL PRECAST CONCRETE MANHOLES. USE OF GRADE RINGS ARE ALLOWABLE IN PRECAST CONCRETE MANHOLES IN MANICURED AREAS AND PAVEMENT, WHERE THE RING AND COVER ARE AT GROUND LEVEL. CONCRETE GRADE RING MAXIMUM ADJUSTMENT INCLUDES THREE (3) 4-INCH RINGS, TWO (2) 6-INCH RINGS OR ONE (1) 2-INCHRING (FOR A 12-INCH MAXIMUM ADJUSTMENT).
4. THE CONTRACTOR SHALL REMOVE ALL CONCRETE GRADE RINGS TO THE TOP OF THE CONE SECTION. ALL LOOSE MATERIAL SHALL BE REMOVED AND PROPERLY DISPOSED OF. THE CONTRACTOR SHALL UTILIZE NEW CONCRETE GRADE RINGS TO ENSURE THAT THE NEW MANHOLE RING AND COVER WILL BE AT FINAL IF NO CONCRETE GRADE RINGS ARE REQUIRED TO ADJUST THE STRUCTURE TO FINAL GRADE, THE CONTRACTOR SHALL SET THE RING AND COVER IN A BED OF CLEAN FRESH MORTAR.
5. IF THE MANHOLE NEEDS TO BE LOWERED, AND THERE ARE NO EXISTING CONCRETE GRADE RINGS, THEN THE CONTRACTOR SHALL TEAR DOWN THE EXISTING MANHOLE AND REBUILD IT, UTILIZING NEW RISER AND CONE SECTIONS, TO ENSURE THAT THE INSTALLED RING AND COVER WILL BE AT FINAL GRADE. THE CONTRACTOR SHALL REMOVE ALL NECESSARY SECTIONS OF THE EXISTING MANHOLE TO MAKE THE ADJUSTMENT.
6. IF THE MANHOLE NEEDS TO BE RAISED, AND THERE ARE 12-INCHES OF CONCRETE GRADE RINGS ALREADY IN PLACE, THE CONTRACTOR SHALL TEAR DOWN THE EXISTING MANHOLE AND RE-BUILD IT. THE CONTRACTOR SHALL UTILIZE NEW RISER AND CONE SECTIONS, AS REQUIRED, TO ENSURE THAT THE INSTALLED RING AND COVER WILL BE AT FINAL GRADE. THE CONTRACTOR SHALL REMOVE ALL NECESSARY SECTIONS OF THE EXISTING MANHOLE TO MAKE THE ADJUSTMENT.
7. VISUALLY INSPECT JOINTS AND FRAME TO CONE SEAL TO ENSURE WATER-TIGHTNESS.
8. ALL WORK SHALL BE IN ACCORDANCE WITH PWC REQUIREMENTS.

GENERAL NOTES

PLAN TYPE: 100% PLANS

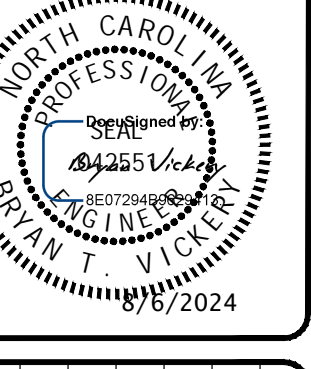
SHEET NUMBER: 3

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PUBLIC SERVICES

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ENGINEERING & INFRASTRUCTURE DEPARTMENT
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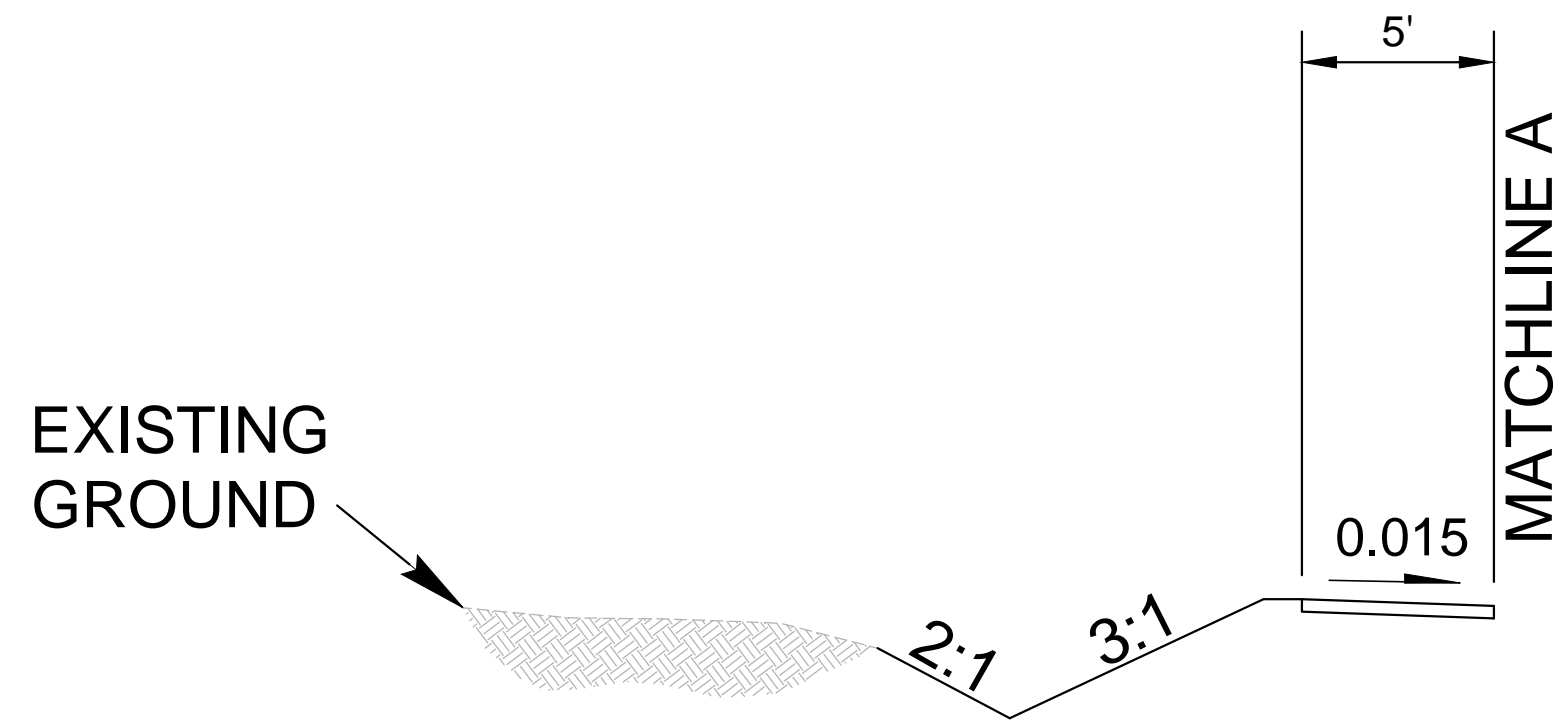
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DESIGN: GTG	SCALE: AS NOTED
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APPROVED: BTJ	

PROJECT NO. 011017030
SUB-LEDGER NO.

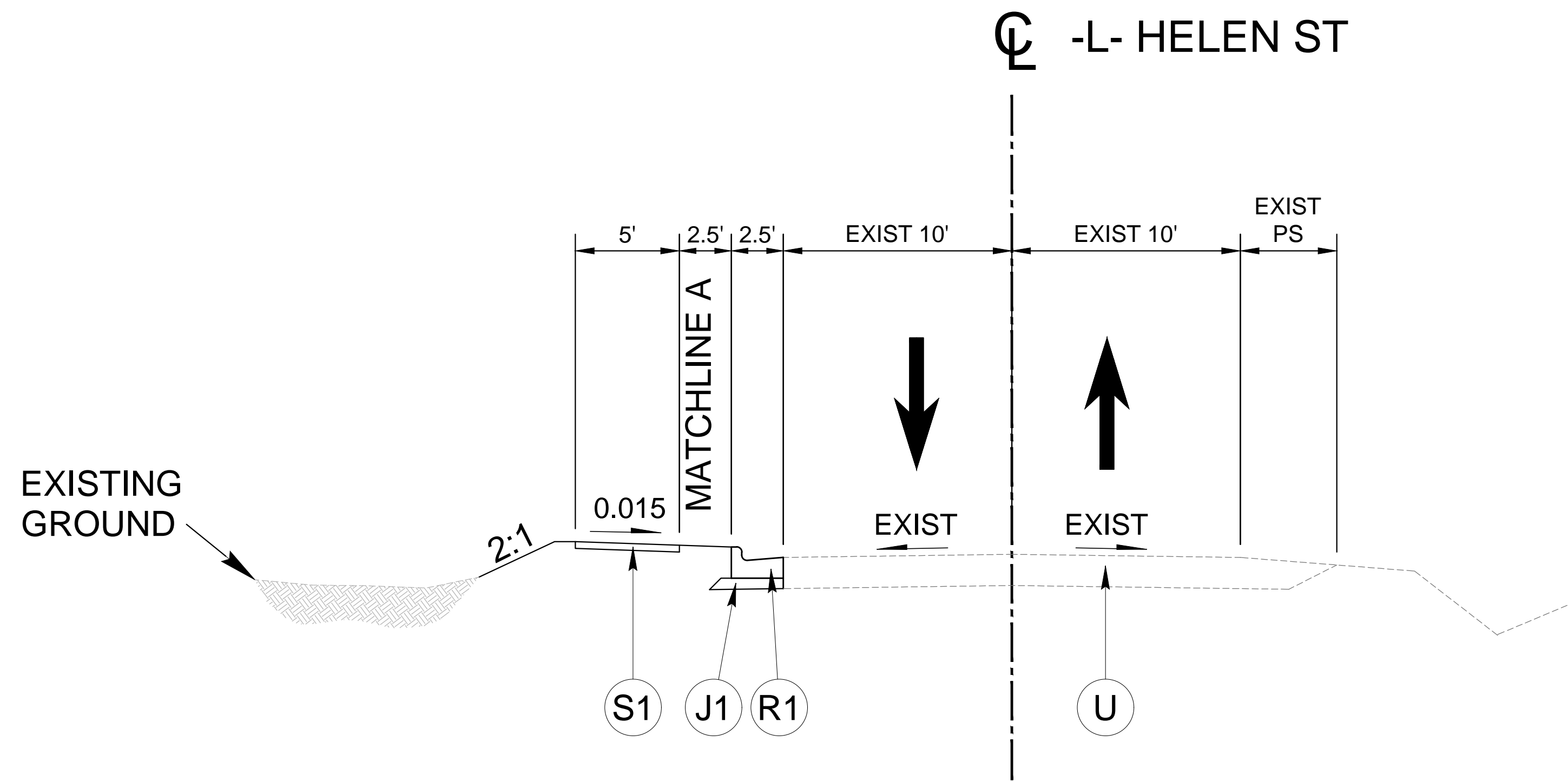
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PAVEMENT SCHEDULE (PRELIMINARY PAVEMENT DESIGN PROVIDED BY NCDOT)	
(J1)	PROP. APPROX. 6" AGGREGATE BASE COURSE
(R1)	2' - 6" CONCRETE CURB AND GUTTER
(S1)	PROPOSED 4" CONCRETE SIDEWALK - 2.00% MAX CROSS SLOPE
(U)	EXISTING PAVEMENT



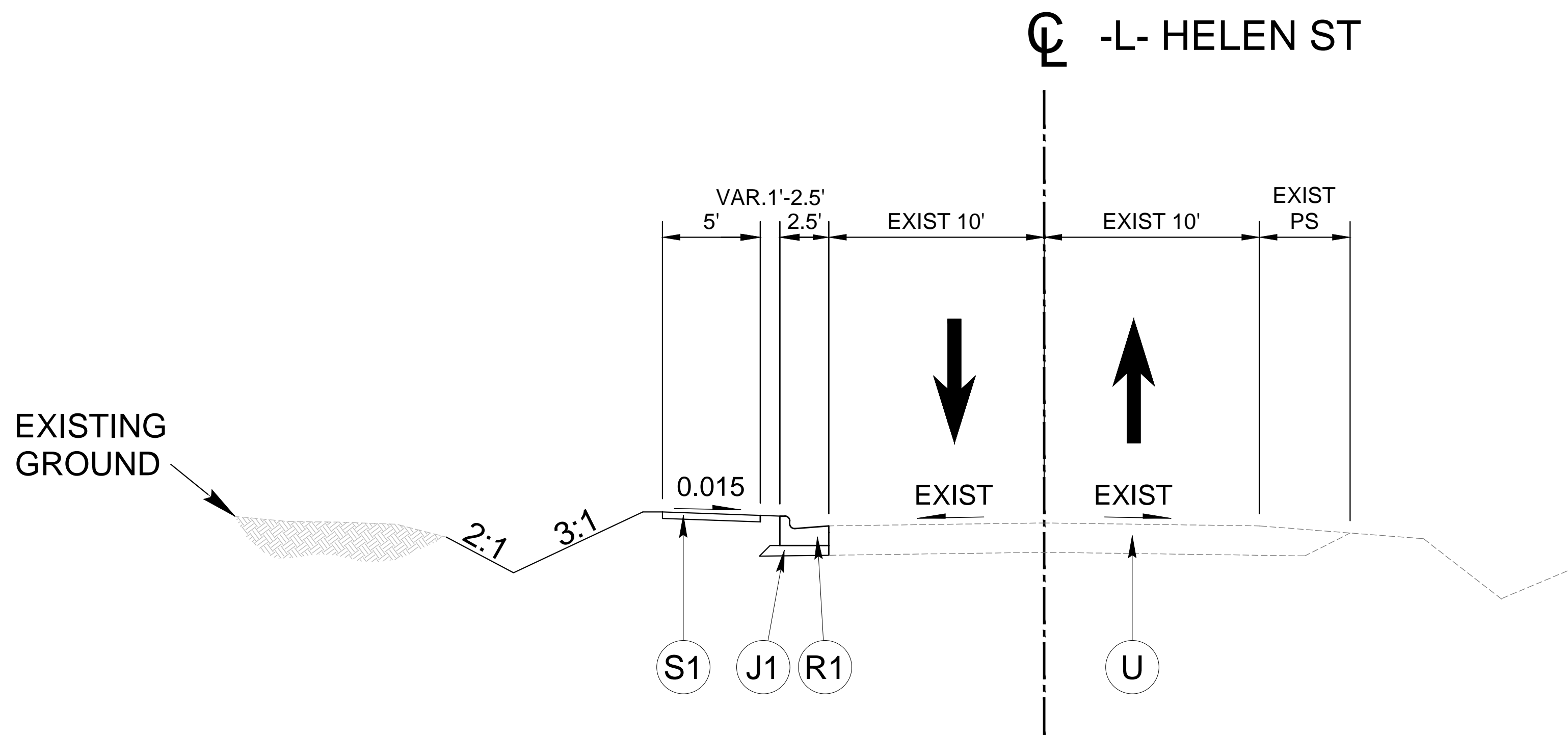
TYPICAL SECTION NO. 1A

-L- STA 12+49 TO STA 15+24



TYPICAL SECTION NO. 1

-L- STA 10+21 TO STA 19+00



TYPICAL SECTION NO. 2

-L- STA 19+00 TO STA 34+22

TYPICAL SECTIONS

PLAN TYPE
100% PLANS

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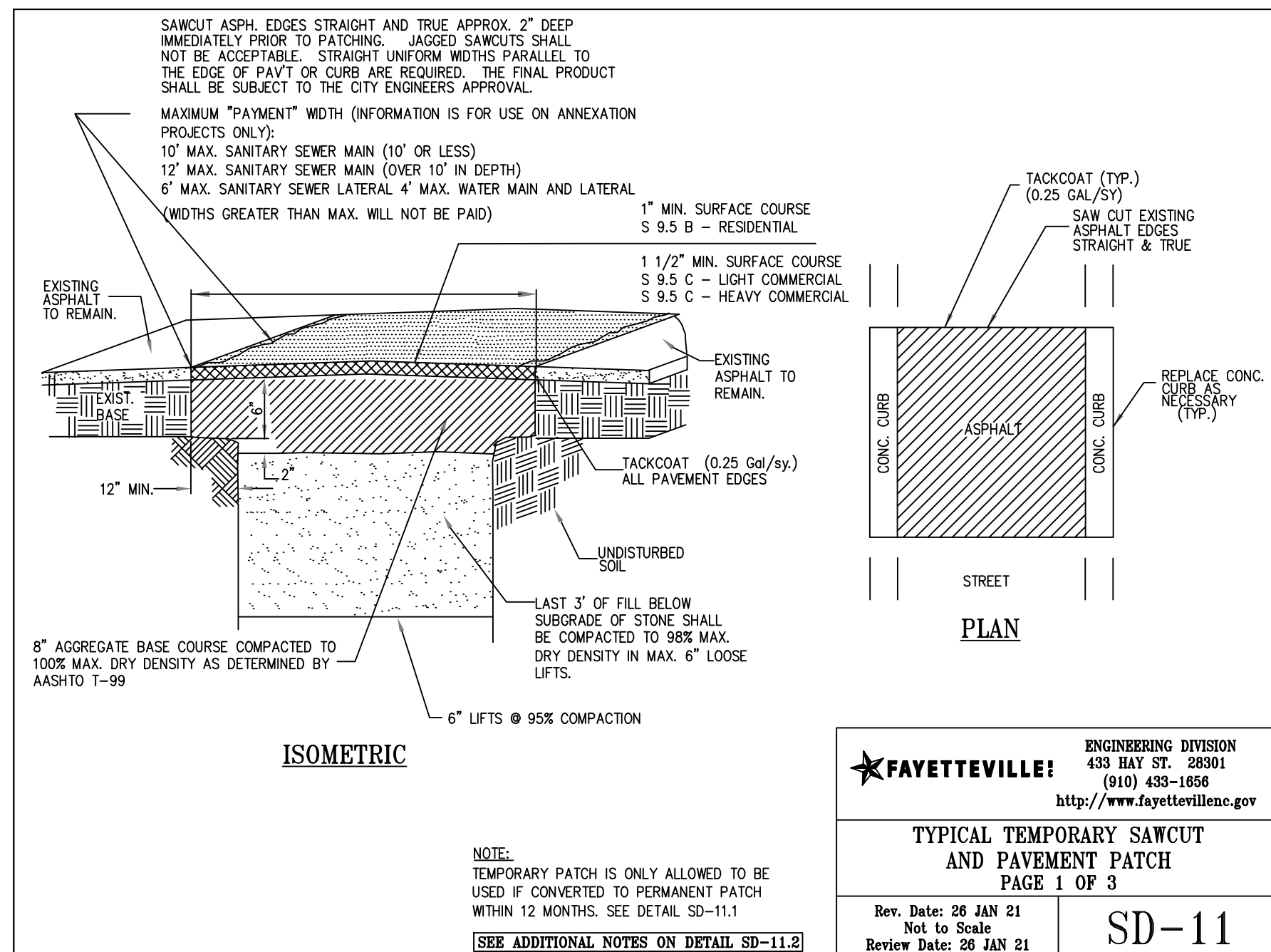
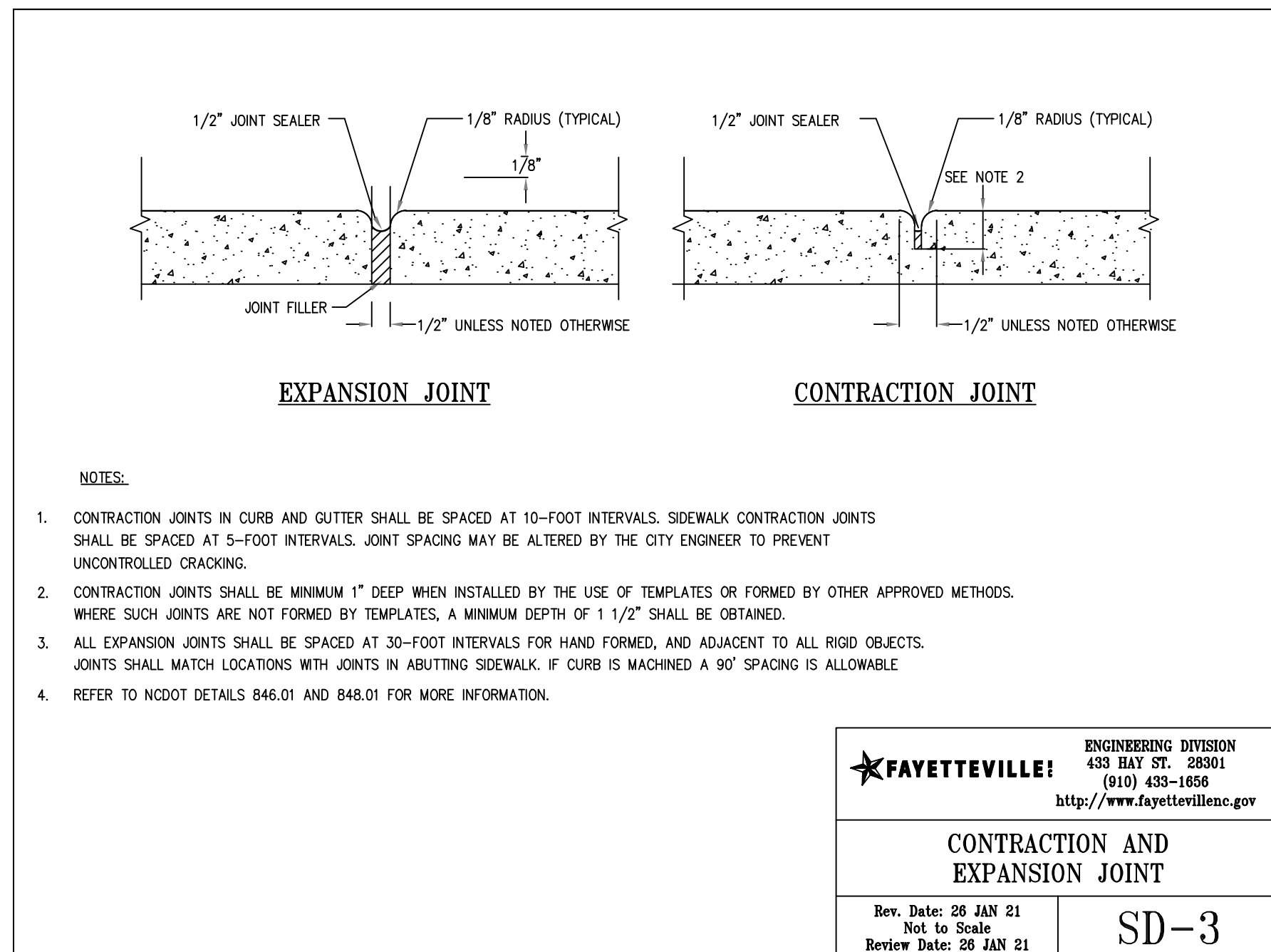
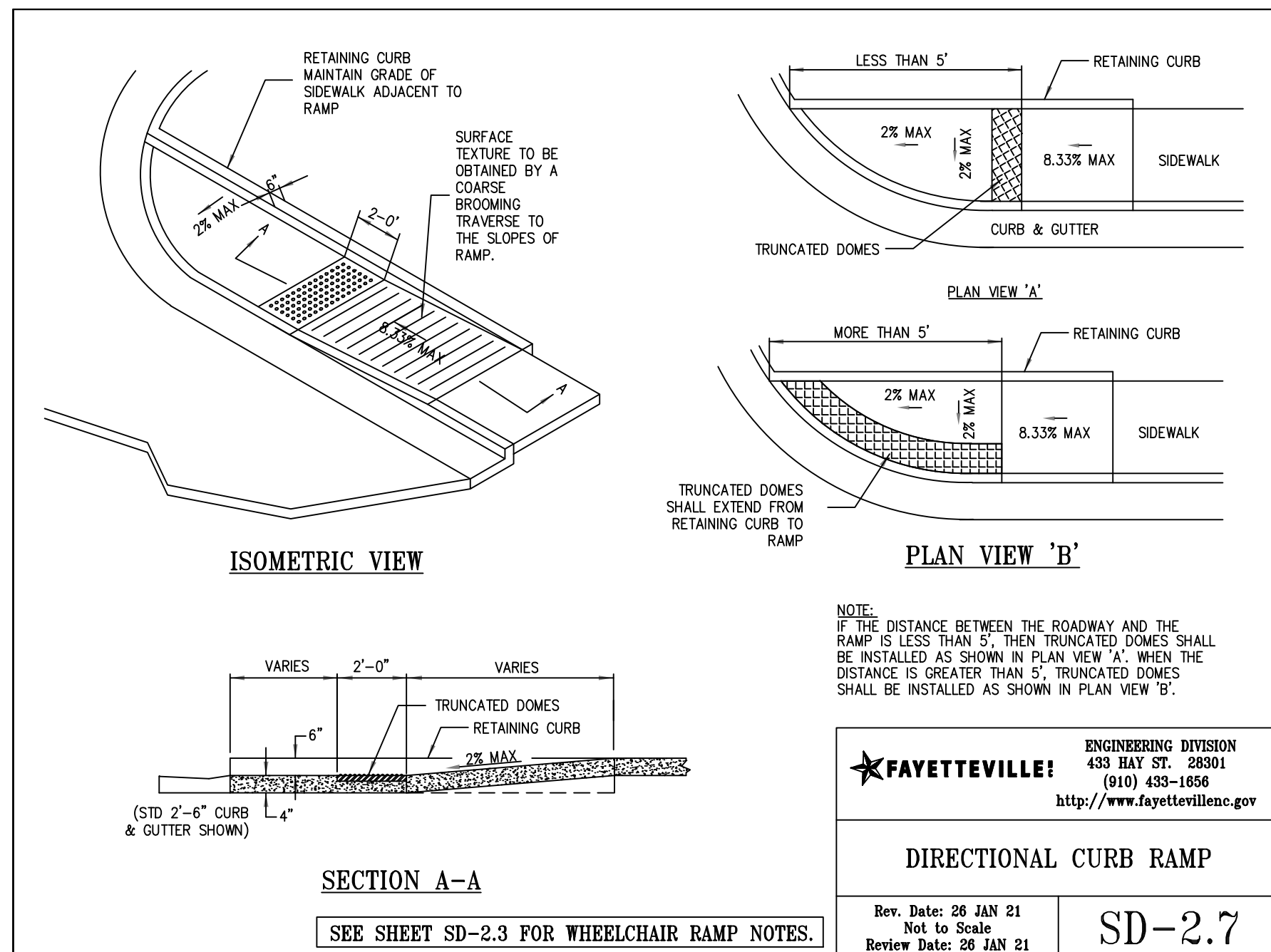
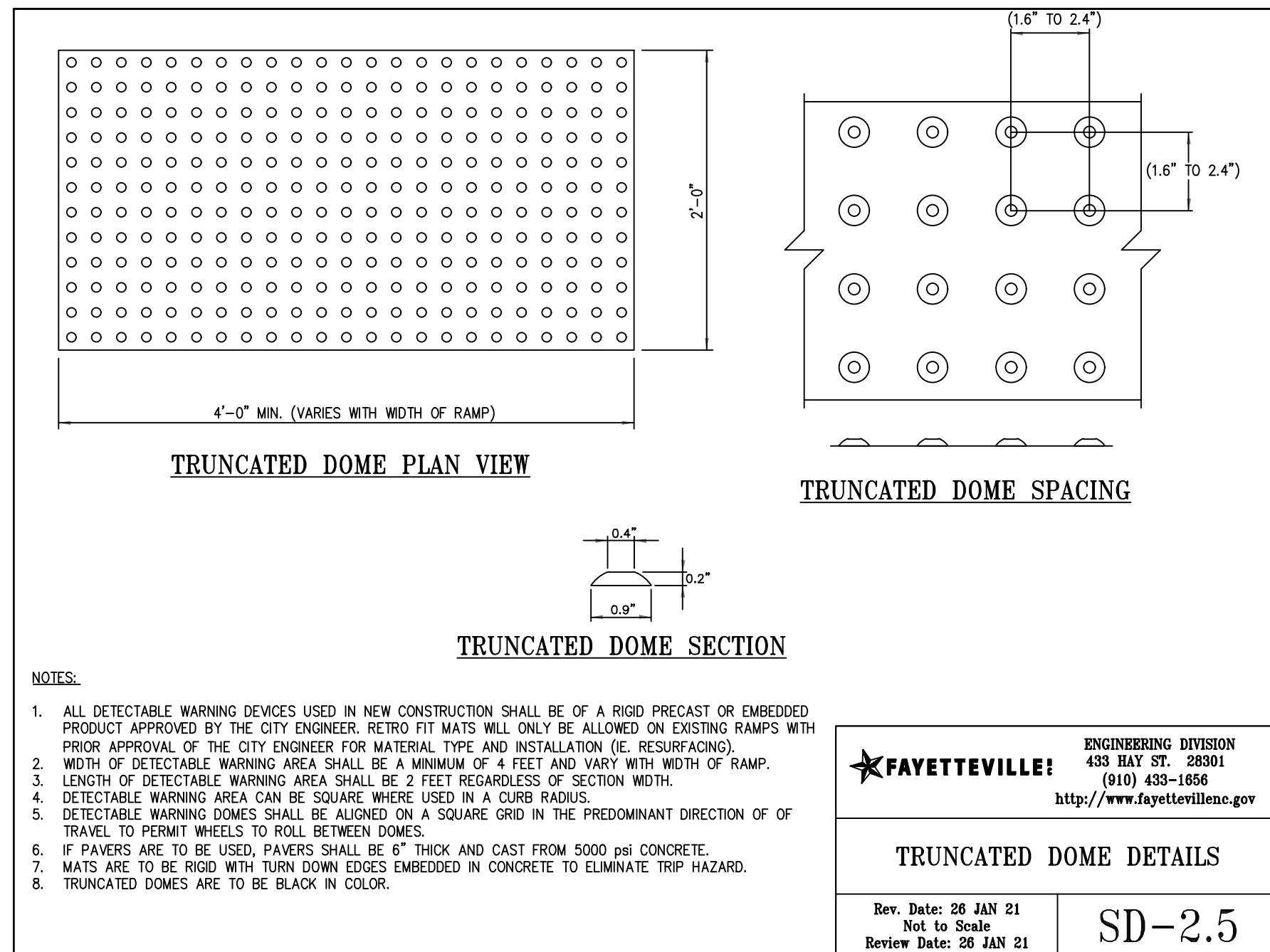
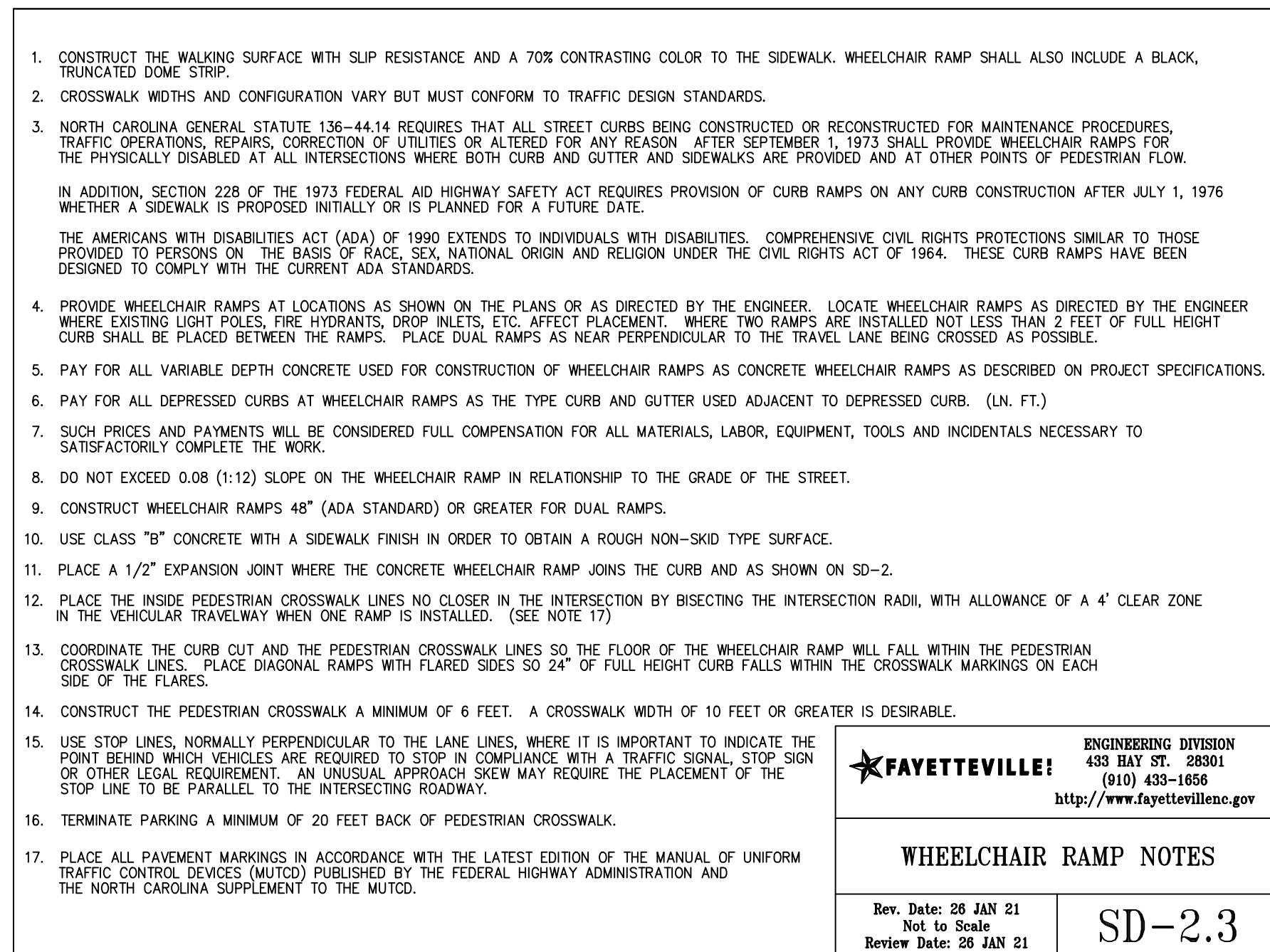
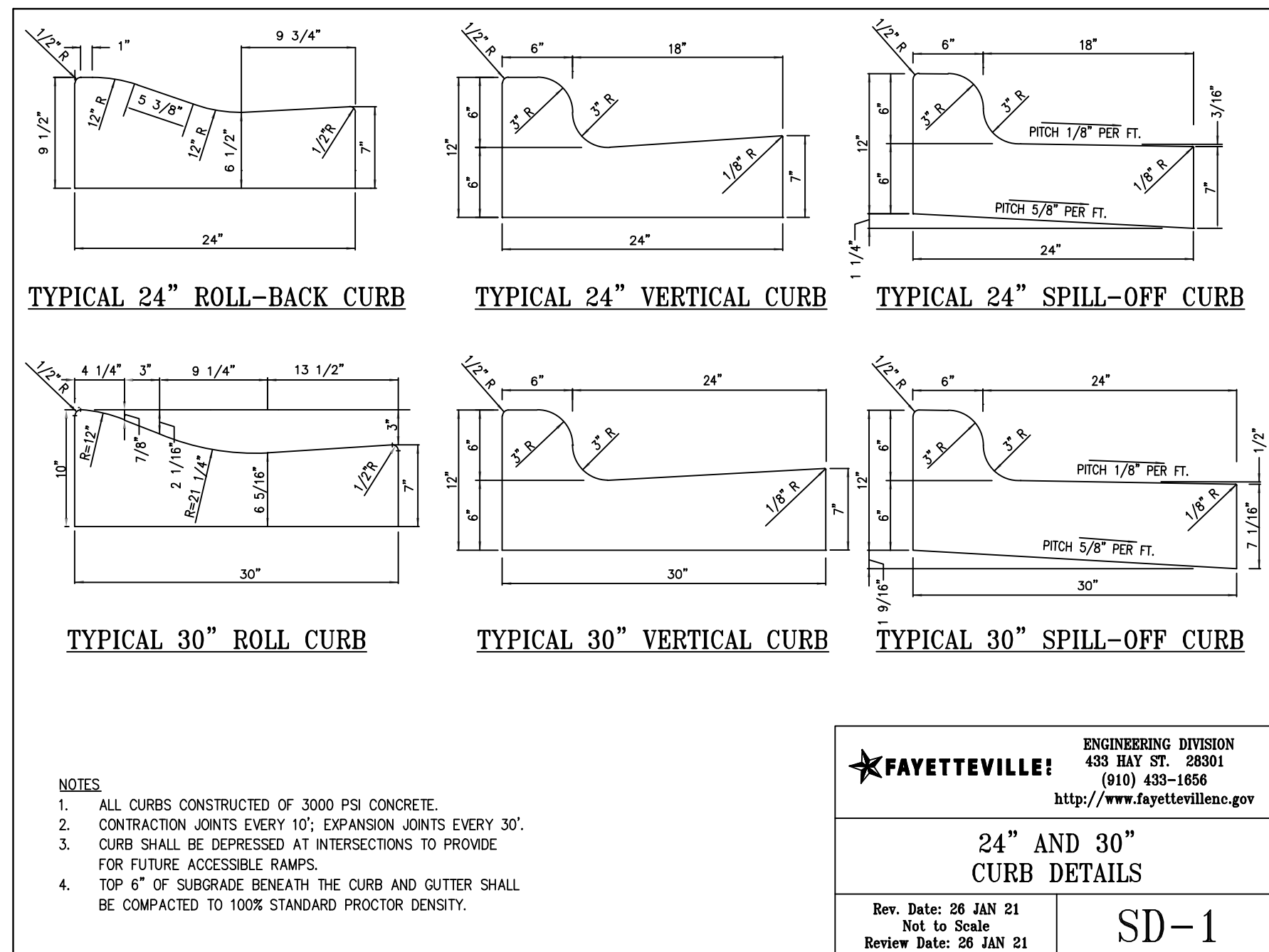
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SUB-LEDGER NO.	

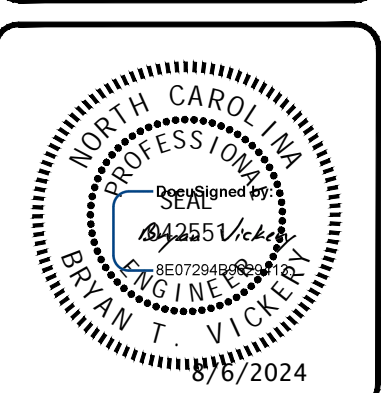
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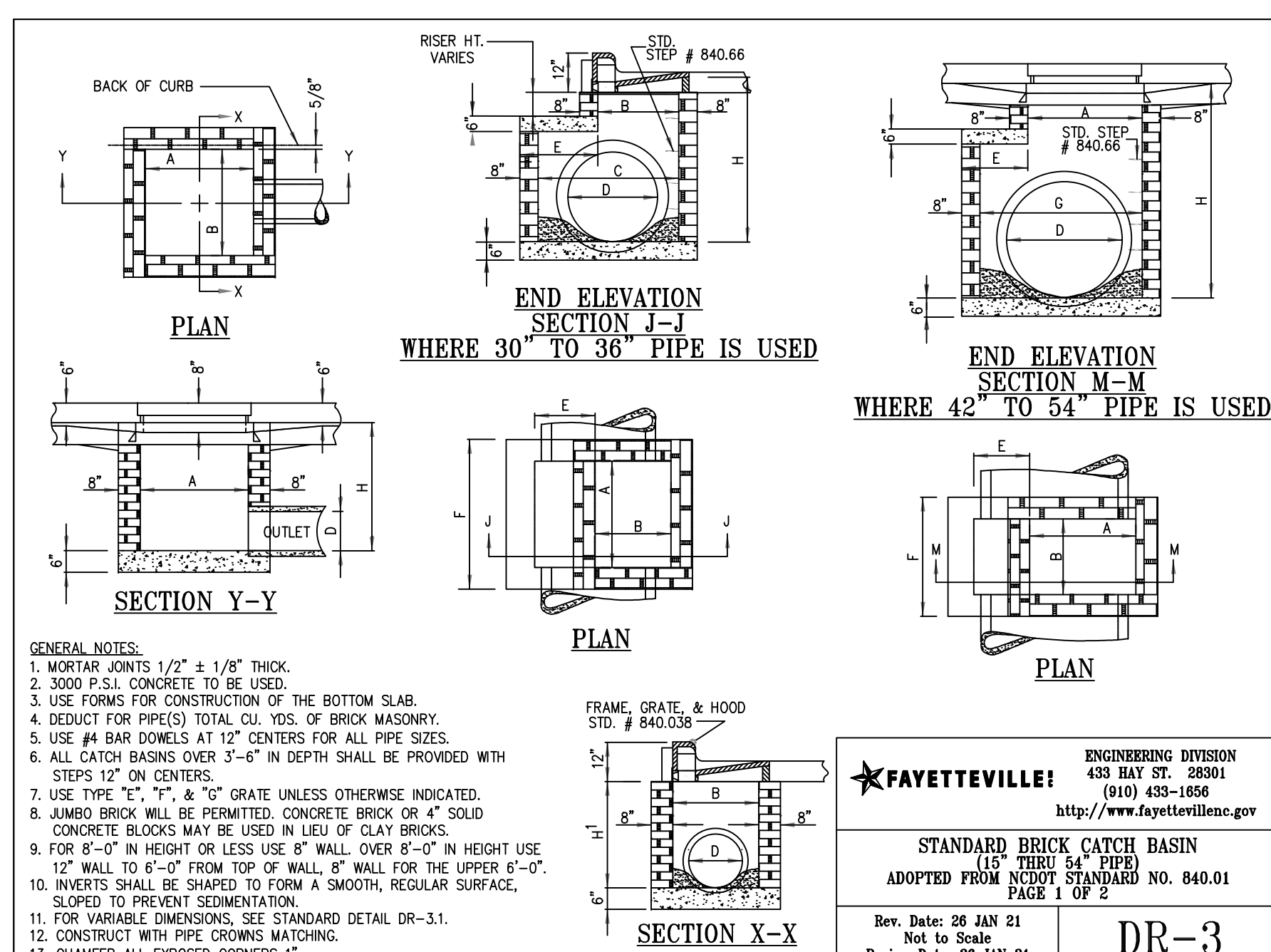
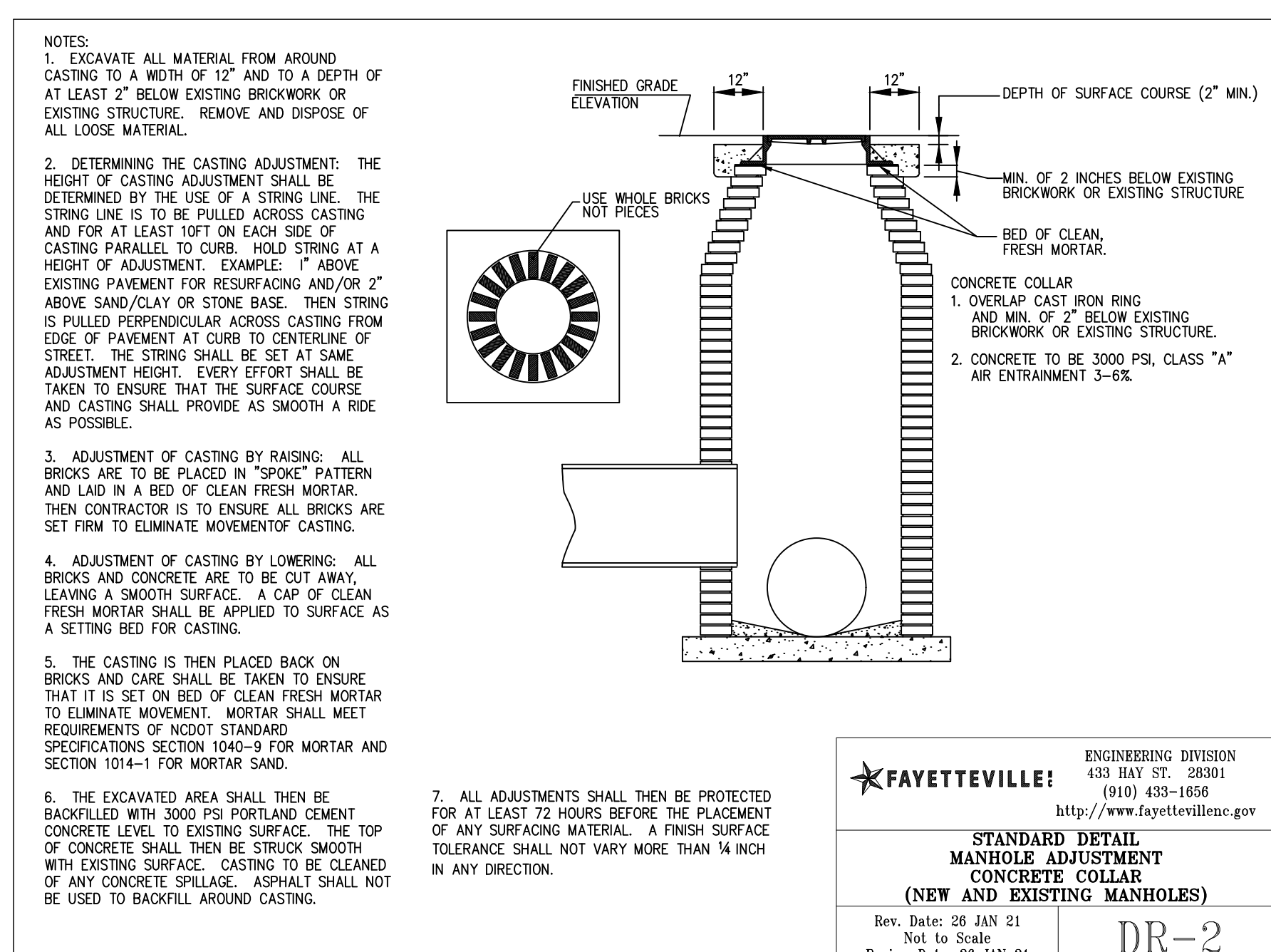
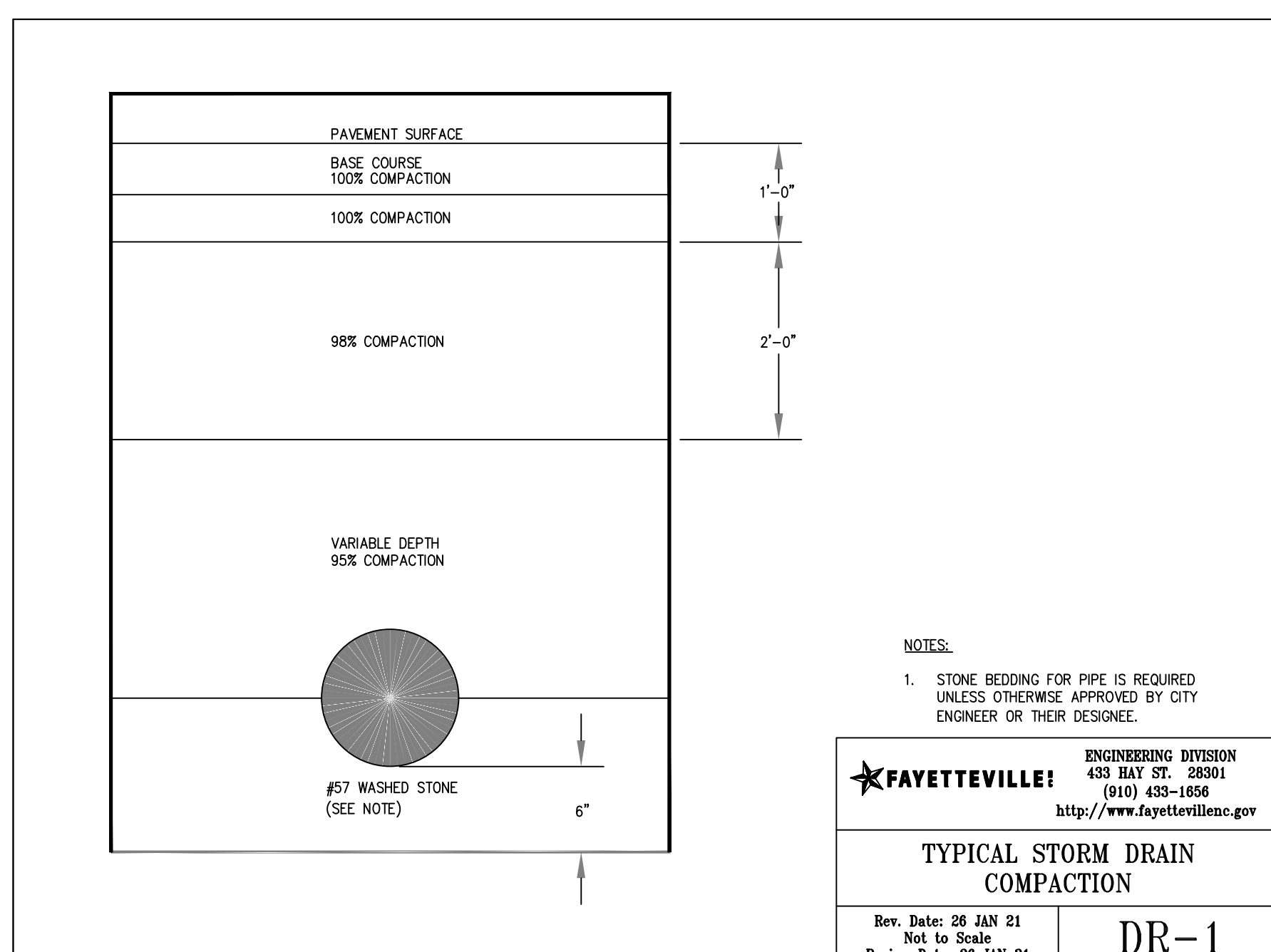
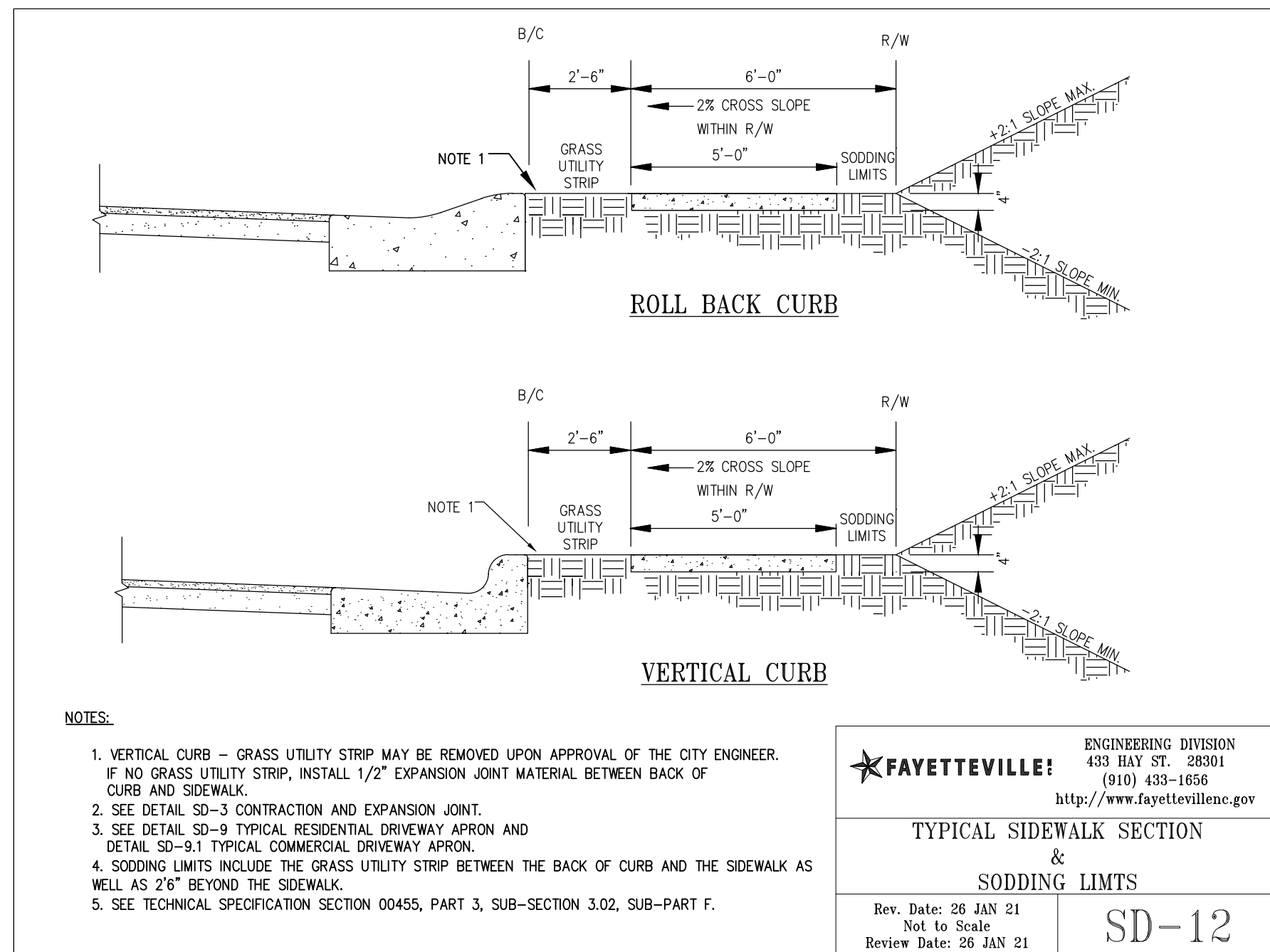
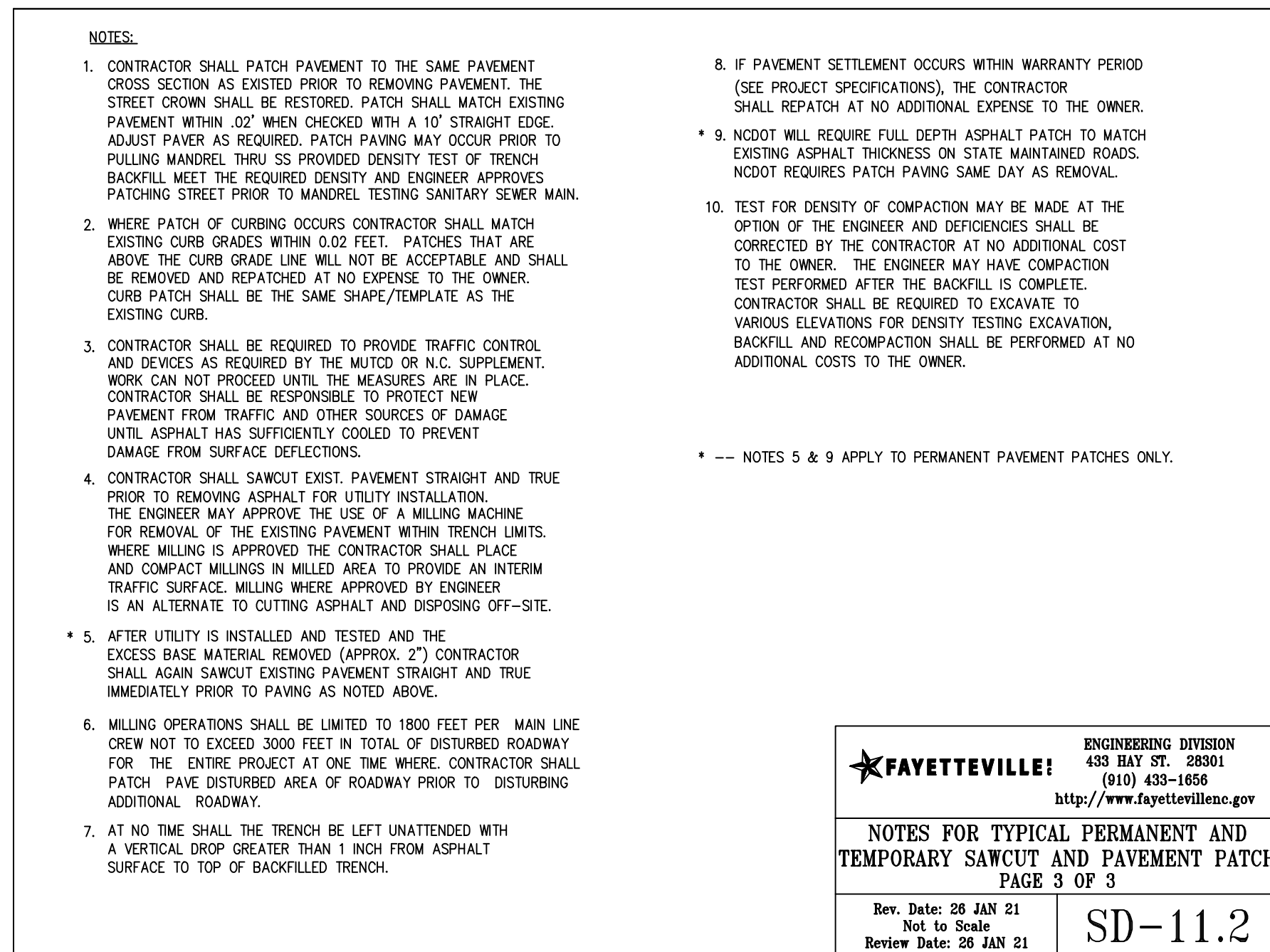
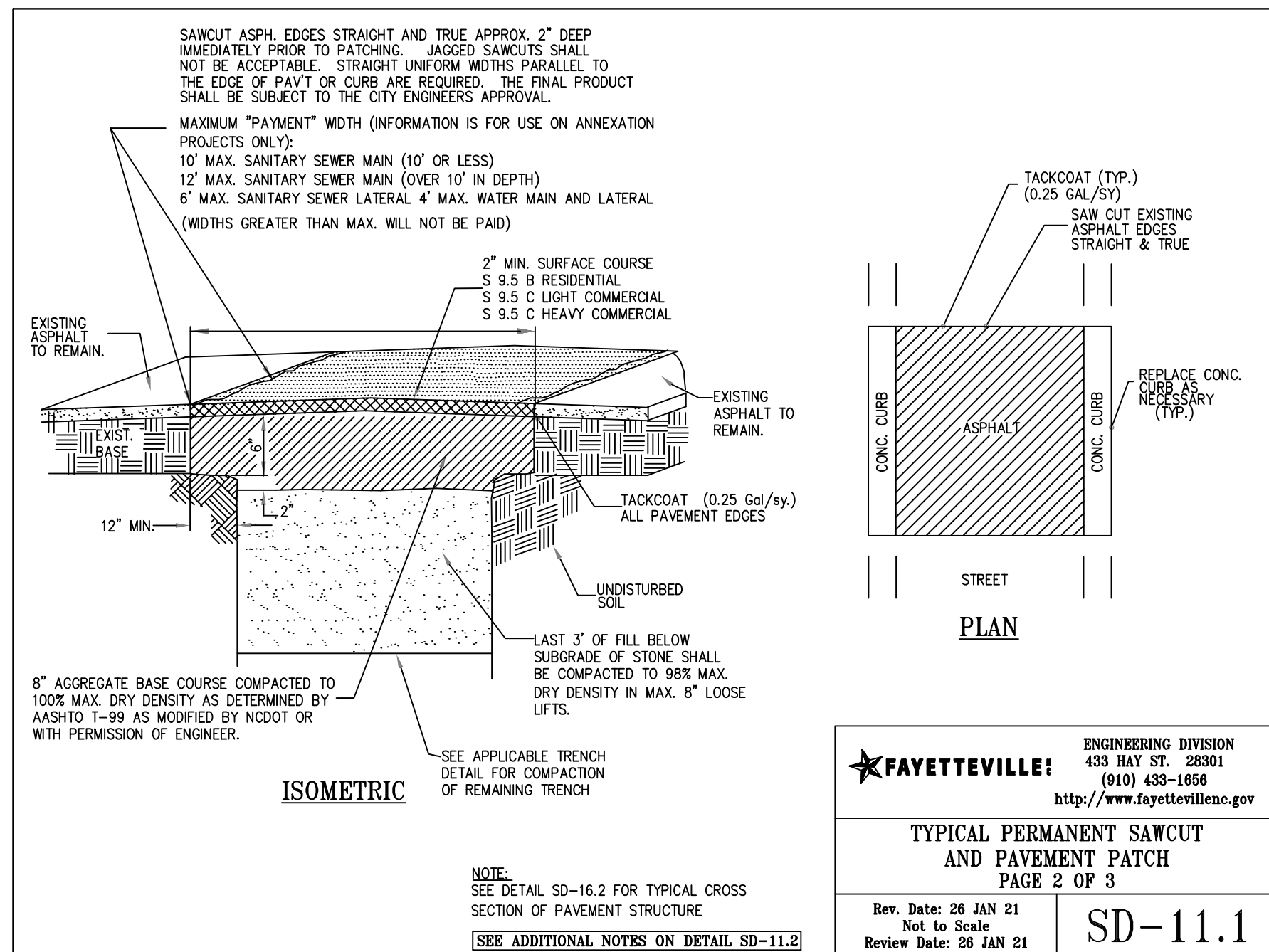
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DRAWN: ALT
 DESIGN: GTG
 CHECK: GTG
 APPROVED: BTJ

PROJECT: HELEN ST SIDEWALKS
 SCALE: AS NOTED
 DATE: 7/25/2024

PROJECT NO. 011017030
 SUB-LEDGER NO. _____

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DIMENSIONS AND QUANTITIES FOR BRICK CATCH BASIN
(LOCATION OF SOME VARIABLES SHOWN IN STANDARD DETAIL SD-3)

PIPE	DIMENSIONS OF BOX AND PIPE			COVER DIMENSION	REINFORCING			TOTAL LBS.	* CUBIC YARDS OF CONCRETE IN BOX		BRICK MASONRY		DEDUCTIONS FOR ONE PIPE			
	SPAN	WIDTH	HEIGHT		NO.	LENGTH	NO.		LENGTH	NO.	LENGTH	IN WALL	IN CONCRETE	C.M.	R.C.	
12"	3'-0"	2'-0"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
15"	3'-0"	2'-2"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
18"	3'-0"	2'-2"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
24"	3'-0"	2'-2"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
30"	3'-0"	2'-2"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
36"	3'-0"	2'-2"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
42"	3'-0"	2'-2"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
48"	3'-0"	2'-2"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
54"	3'-0"	2'-2"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
60"	3'-0"	2'-2"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
66"	3'-0"	2'-2"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
72"	3'-0"	2'-2"	2'-0"	4'-8"	4	4'-0"	4	4'-0"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261

* CONCRETE TO BE PAID FOR AS BRICK MASONRY

NOTE: SEE GENERAL NOTES ON STANDARD DETAIL SD-3

STANDARD BRICK CATCH BASIN
(15" THROUGH 54" PIPE)
ADOPTED FROM NCDOT STANDARD NO. 840.01
PAGE 2 OF 2

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DR-3.1

PART SECTION 6" WALL
PART SECTION 6" WALL WITH 4" LIP
PART SECTION 8" WALL
PART SECTION 8" WALL WITH 4" LIP

PIPE	D	TABLES OF QUANTITIES FOR PIPE SET IN PAD			C.Y. QUANTITIES WHEN "L" IS		
		"W"	"W"	"T"	12"	16"	20"
15"	1'-3 5/8"	0'-9 1/8"	0'-2"	0.006	0.008	0.010	
18"	1'-5 1/4"	0'-10 3/8"	0'-2"	0.007	0.010	0.012	
24"	1'-8 3/4"	1'-0 1/8"	0'-3"	0.011	0.014	0.018	
30"	2'-0 1/4"	1'-2 3/4"	0'-3 1/2"	0.014	0.018	0.023	
36"	2'-3 3/4"	1'-5 3/8"	0'-4"	0.017	0.023	0.025	
42"	2'-7 1/8"	1'-7"	0'-5 1/4"	0.025	0.030	0.038	
48"	2'-10 5/8"	1'-8 3/4"	0'-5 3/4"	0.028	0.038	0.047	
54"	3'-2 1/8"	1'-10 1/2"	0'-6 1/4"	0.035	0.047	0.058	
60"	3'-5 5/8"	2'-0 1/4"	0'-6 3/4"	0.042	0.056	0.071	
66"	3'-9"	2'-2 1/4"	0'-7 1/4"	0.050	0.067	0.084	
72"	4'-0 1/2"	2'-3 3/4"	0'-7 3/4"	0.059	0.078	0.098	

PART SECTION OF END ELEVATION

GENERAL NOTES:
THIS STANDARD SHALL BE USED WITH ALL DRAINAGE STRUCTURES USING REINFORCED CONCRETE PIPE SET IN BASE SLAB.

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CONCRETE BASE PAD FOR
FOR DRAINAGE STRUCTURES
ADOPTED FROM NCDOT
STANDARD NO. 840.00

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DR-9

PLAN WITH COPING REMOVED
SECTION X-X
SECTION Y-Y

DOWEL

DROP INLET WITH GRATE
12" TO 30" PIPE
NCDOT STANDARD NO. 840.15

GENERAL NOTES:
1. MORTAR JOINTS 1/2" +/- 1/8" THICK.
2. USE CLASS "B" CONCRETE THROUGHOUT.
3. USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB.
4. USE #4 BAR DOWELS AT 12" CENTERS.
5. DEDUCT FOR PIPE(S) FROM TOTAL C.Y. YDS. OF BRICK MASONRY.
6. PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
7. USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.
8. IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
9. FOR 6'-0" IN HEIGHT OR LESS USE 8" WALL OVER 6'-0" IN HEIGHT, USE 12" WALL TO 6'-0" FROM TOP OF WALL AND 8" WALL FOR THE UPPER 6'-0". QUANTITIES TO BE ADJUSTED ACCORDINGLY.
10. CONSTRUCT WITH PIPE CROWNS MATCHING.
11. SEE NCDOT STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES.
12. DO NOT USE BRICK MASONRY DROP INLET IN LOCATIONS SUBJECT TO TRAFFIC.
13. CHAMFER ALL EXPOSED CORNERS 1".

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DR-11

TOP OF MANHOLE
SECTION C - C

STANDARD MANHOLE RING AND COVER
ADOPTED FROM NCDOT
STANDARD NO. 840.54

1. MANHOLE RING AND COVER TO BE MADE OF GREY CAST IRON CONFORMING TO ASTM SPECIFICATIONS A 48-74, CLASS 30. ALL CASTINGS SHALL CONFORM TO THE SHAPE AND DIMENSIONS SHOWN. THEY SHALL BE CLEAN AND PERFECT WITHOUT BLOW OR SANDHOLES OR DEFECTS OF ANY KIND, TENDING TO IMPAIR THEIR STRENGTH. NO PLUGGING OR STOPPING OF DEFECTIVE HOLES WILL BE PERMITTED.

2. MANHOLE RING AND COVER TO WITHSTAND VEHICULAR TRAFFIC WITHOUT OBJECTIONABLE NOISE.

3. MINIMUM AVERAGE HEIGHT:

FRAME:	180 LBS
COVER:	120 LBS

US FOUNDRY 669-KL RING & COVER OR APPROVED EQUAL

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DR-13

EQUIMY VARIANA PLANT SPECIFICATIONS:
ASTM C 478 - LATEST
AASHTO M 199 - LATEST

WITH AASHTO M-1998 PREFORMED PLASTIC OR ASTM C-443 RUBBER GASKET JOINTS, REINFORCED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS.

HEIGHT	FEET	INCHES	WEIGHT POUNDS	RISER	
				FEET	INCHES
1.00'	12"		1290		
1.33'	16"		1716		
2.67'	32"		3444		
4.00'	48"		5160		
				REGULAR MONOLITHIC BASE	
				WITH 8" BASE INCLUDED IN HEIGHT SHOWN.	
				2.67'	32"
				3.00'	36"
				3.33'	40"
				3.67'	44"
				4.00'	48"
				4.33'	52"
				4.67'	56"
				5.00'	60"
				5.33'	64"
				5.67'	68"
				6.00'	72"
				6.33'	76"
				6.67'	80"

ECCENTRIC CONE
4.00' 48" 4360

FLAT TOP
1.00' 12" 2825

FLAT TOPS ARE AVAILABLE IN ECCENTRIC (AS SHOWN) AND CONCENTRIC UNITS. FLAT TOPS MEET H-20 LOADINGS.

NOTES:
1. PRECAST MANHOLES MAY BE USED WITH PRIOR APPROVAL FROM THE CITY ENGINEER.
2. PRECAST MANHOLES ARE NOT PERMITTED INSIDE RIGHT-OF-WAY OR EASEMENTS.

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5-FOOT DIAMETER PRECAST REINFORCED CONCRETE MANHOLE SECTIONS

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DR-14.1

SIZE	D	T	L	POUNDS PER FOOT	ASTM SPEC. & CLASS	OD	A	B	C	E	F	G	J	K	M	N	PLANT
15	B2 1/4"	8"	8'	134	ASTM C78 III IV V	19 1/2	2	16 15/16	17 1/4	2	17 3/4	17	21 3/8	4 1/2	7 1/4	1 1/4	SR
18	B2 1/2"	8"	8'	173	ASTM C78 III IV V	23	2	20 3/4	2	21 1/2	20 1/2	23 1/2	6 1/2	3 1/4	1 1/4	1 1/4	SR
24	B3 8"	8"	8'	268	ASTM C78 III IV V	30	2 1/2	26 3/16	26 7/8	2	27 3/4	27	31 1/2	4 1/2	4 1/2	1 1/2	SR
30	B3 1 1/2"	8"	8'	396	ASTM C78 III IV V	37	2 1/2	32 1/16	33 1/16	3	34 3/16	33 1/2	38 1/2	5 1/2	5 1/2	1 1/2	SR-K
36	B4 8"	8"	8'	543	ASTM C78 III IV V	44	3 3/4	39 1/4	39 29/32	3	40 19/32	40 5/16	46 1/2	6	1 1/2	1 1/2	SR-K

A MINIMUM OF 6" OF #57 WASHED STONE IS REQUIRED FOR ALL PIPE INSTALLATION. SEE CITY OF FAYETTEVILLE STANDARD DETAIL DR-1.

MODIFIED TONGUE AND GROOVE
8 FOOT LENGTH
MORTAR OF FLEXIBLE PLASTIC TYPE JOINT

SPECIFICATIONS:
ASTM C 76-LATEST
NCDOT REINFORCED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS
LIFT HOLES STANDARD ON 36" AS ALLOWED PER ASTM SPECIFICATIONS

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<http://www.fayettevillenc.gov>

REINFORCED CONCRETE SEWER, STORM DRAIN AND CULVERT 15" THRU 36" PIPE

Rev. Date: 26 JAN 21
Not to Scale
Review Date: 26 JAN 21

DR-19

DETAILS

PLAN TYPE
100% PLANS

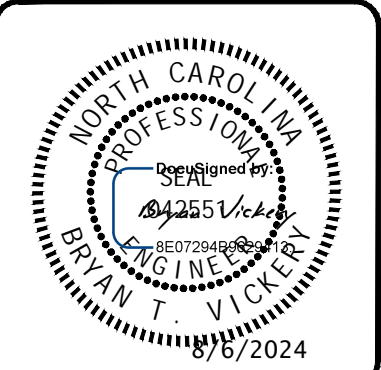
SHEET NUMBER
7

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WWW.KIMLEY-HORN.COM
NC REG. #1-0102

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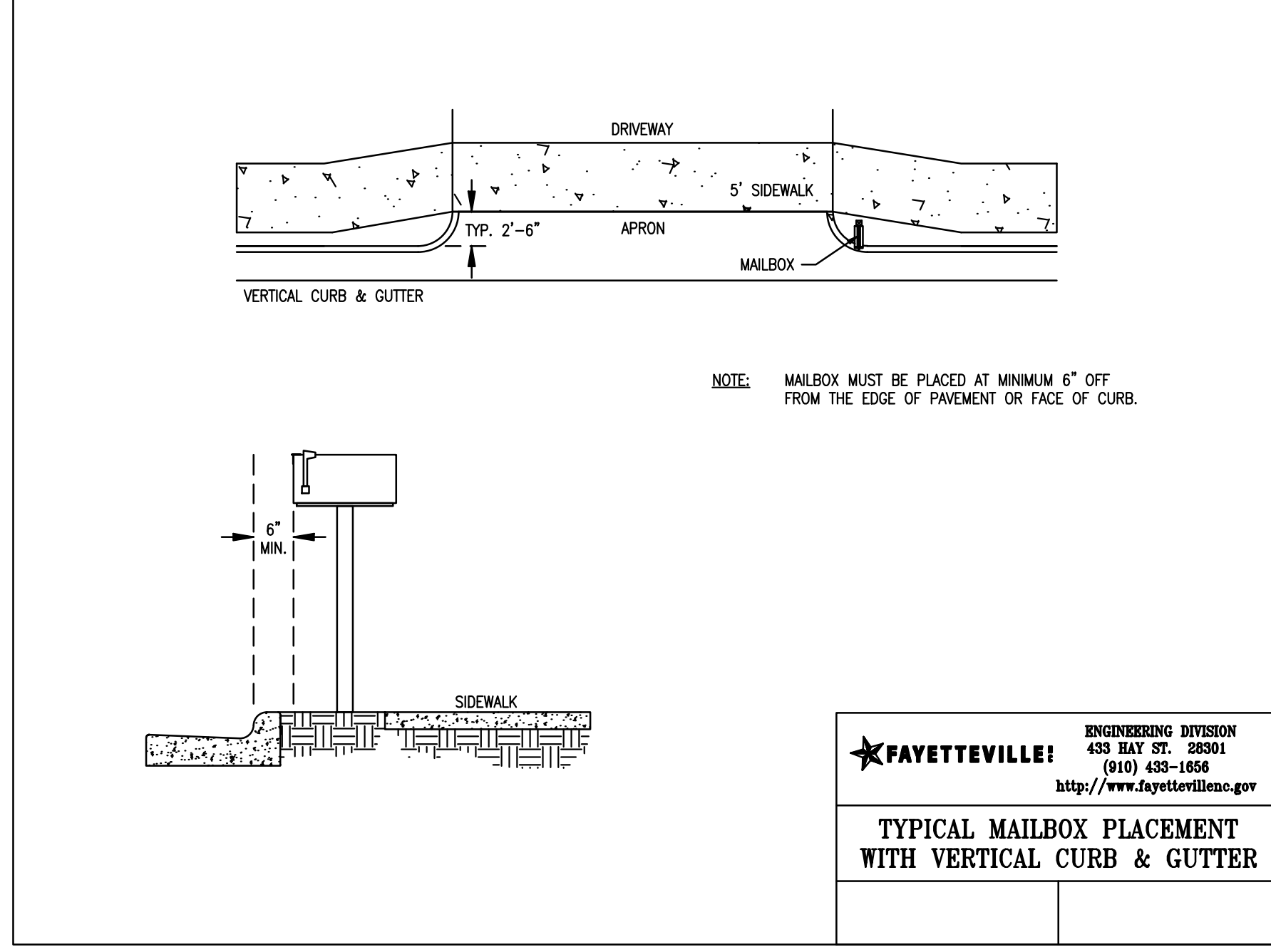
REV. #	REV. BY	DATE	DESCRIPTION

DRAWN: ALT
DESIGN: GTG
CHECK: GTG
APPROVED: BTJ

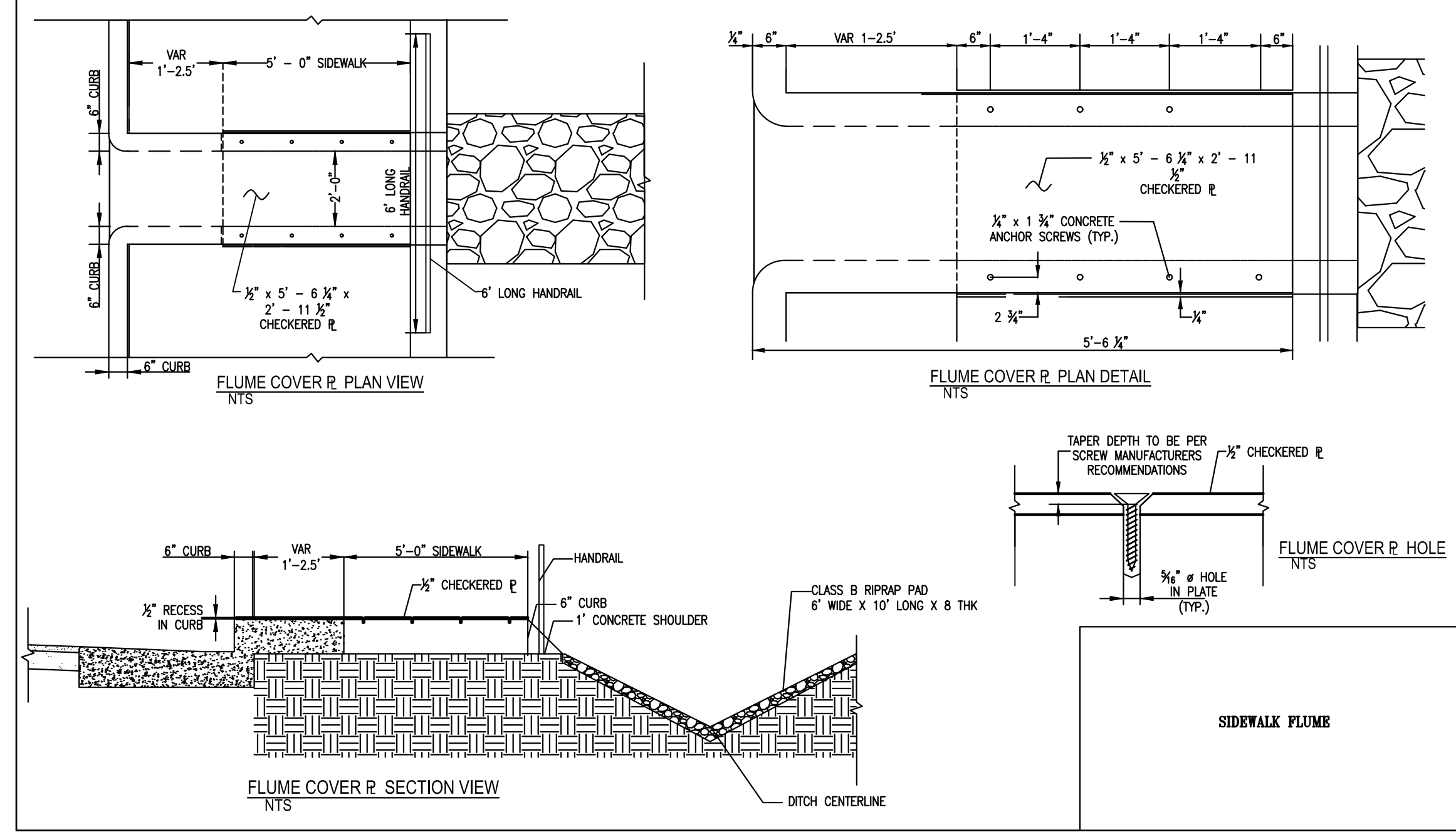
PROJECT: HELEN ST. SIDEWALKS
SCALE: AS NOTED
DATE: 7/25/2024

PROJECT NO. 011017030
SUB-LEDGER NO. _____

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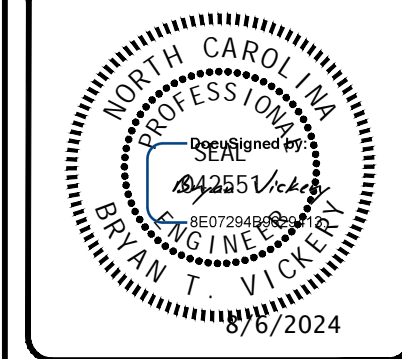


DRAWN: ALT
DESIGN: GTG
CHECK: GTG
APPROVED: BTJ

PROJECT: HELEN ST SIDEWALKS
SCALE: AS NOTED
DATE: 7/25/2024

PROJECT NO. 011017030
SUB-LEDGER NO. _____

REV #	REVISIONS DESCRIPTION	REV. BY	DATE



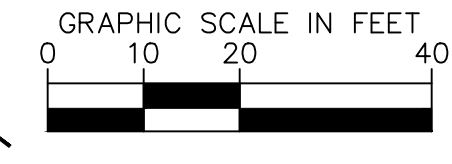
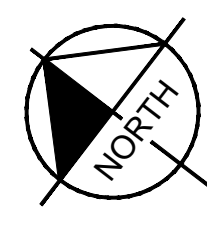
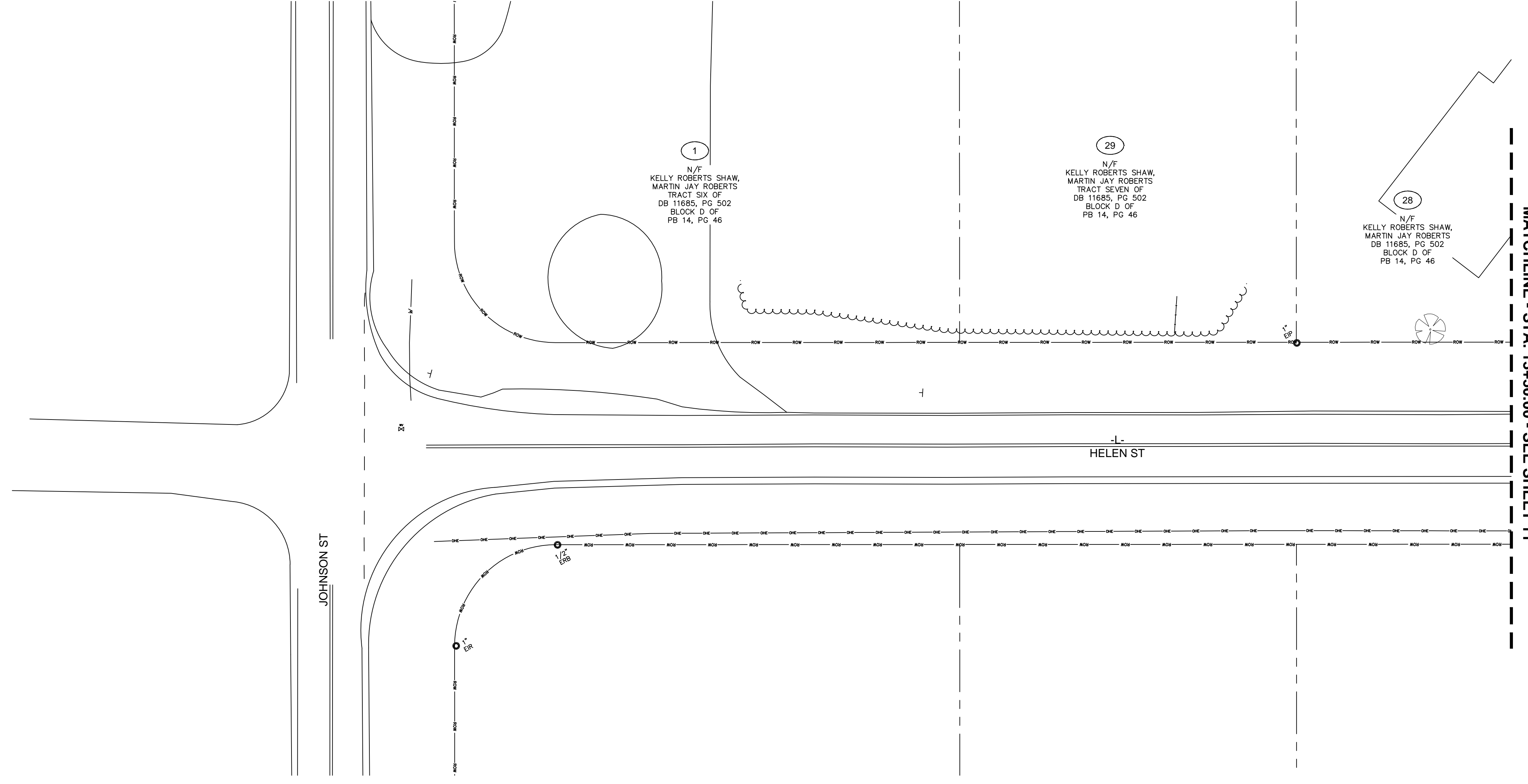
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 NC FIRM #P-0102

DETAILS

PLAN TYPE: 100% PLANS
 SHEET NUMBER: 9

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MATCHLINE - STA. 13+50.00 - SEE SHEET 11

JOHNSON ST

HELEN ST

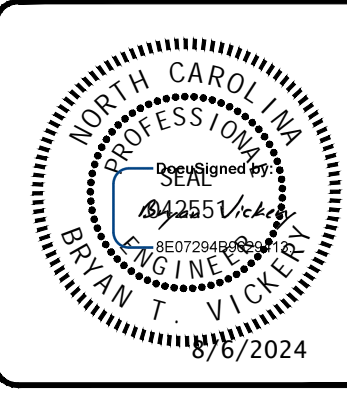
1
N/F
KELLY ROBERTS SHAW,
MARTIN JAY ROBERTS
TRACT SIX OF
DB 11685, PG 502
BLOCK D OF
PB 14, PG 46

29
N/F
KELLY ROBERTS SHAW,
MARTIN JAY ROBERTS
TRACT SEVEN OF
DB 11685, PG 502
BLOCK D OF
PB 14, PG 46

28
N/F
KELLY ROBERTS SHAW,
MARTIN JAY ROBERTS
TRACT SEVEN OF
DB 11685, PG 502
BLOCK D OF
PB 14, PG 46

DRAWN: ALT	PROJECT: ALT	PROJECT: ALT
DESIGN: GTG	HELEN ST SIDEWALKS	HELEN ST SIDEWALKS
CHECK: GTG	SCALE: AS NOTED	SCALE: AS NOTED
APPROVED: BTJ	DATE: 7/25/2024	DATE: 7/25/2024
PROJECT NO. 011017030		
SUB-LEDGER NO.		

REV #	DESCRIPTION	REV. BY	DATE



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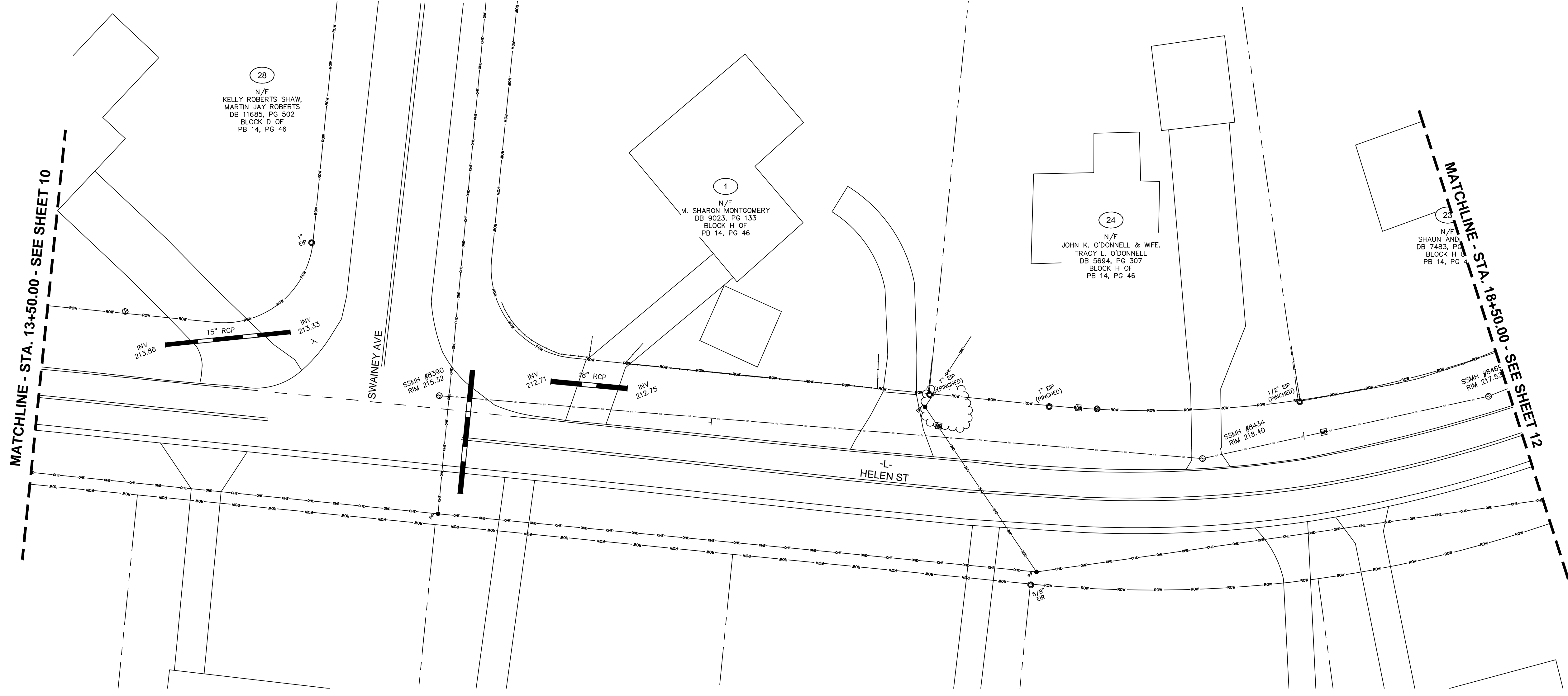
300 N MAIN STREET, SUITE 200,
HOLLY SPRINGS, NC 27526
PHONE: (704) 998-4003
WWW.KIMLEY-HORN.COM
NC FIRM #P-0102

EXISTING CONDITIONS

PLAN TYPE
100% PLANS

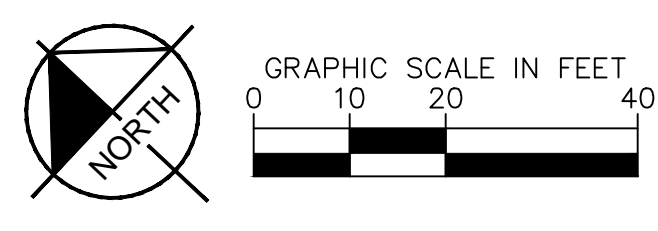
SHEET NUMBER
10

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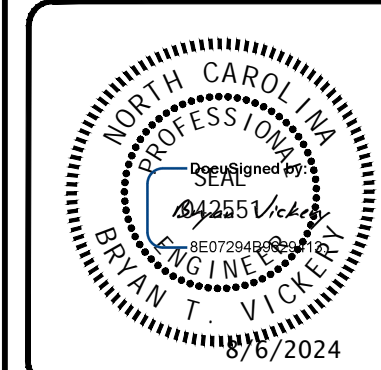
MATCHLINE - STA. 13+50.00 - SEE SHEET 10

MATCHLINE - STA. 18+50.00 - SEE SHEET 12



DRAWN: ALT	PROJECT: HELEN ST SIDEWALKS
DESIGN: GTG	HELEN ST SIDEWALKS
CHECK: GTG	SCALE: AS NOTED
APPROVED: BTV	DATE: 7/25/2024
PROJECT NO. 011017030	
SUB-LEDGER NO. _____	

REV #	REVISIONS DESCRIPTION	REV. BY	DATE

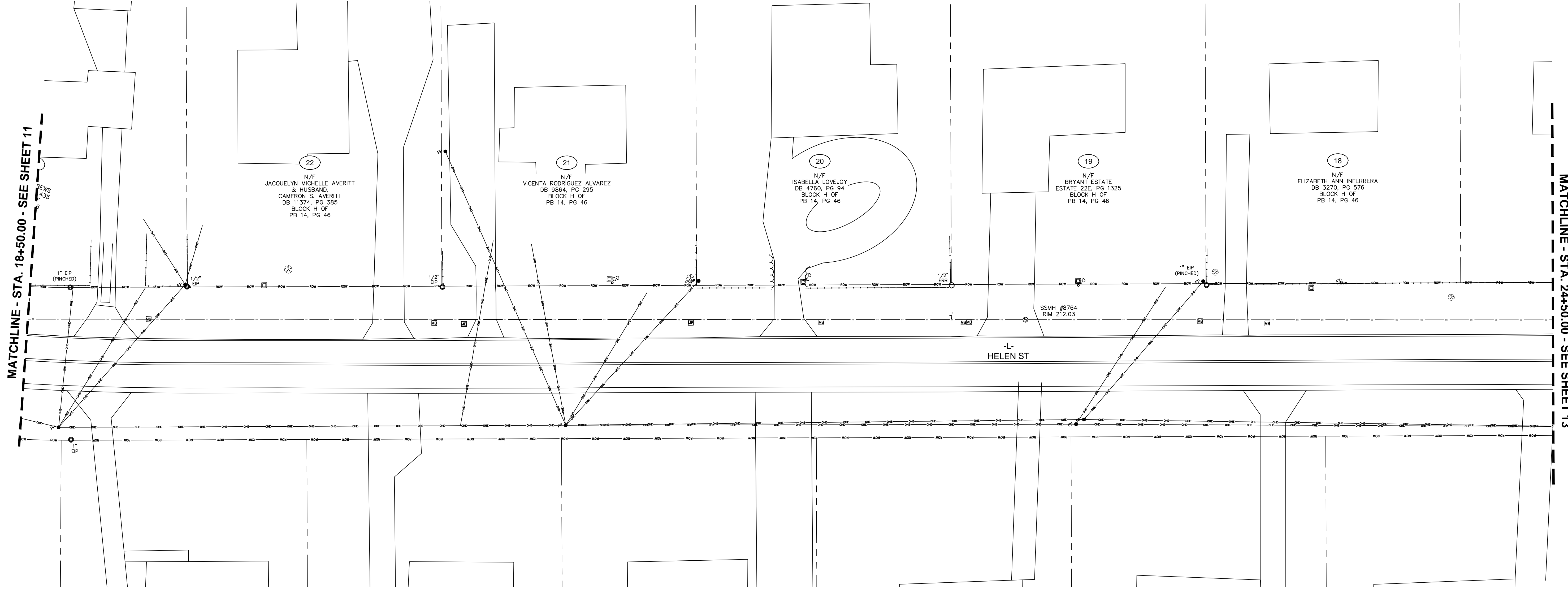


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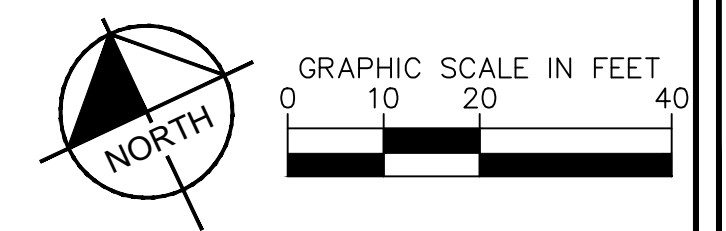
EXISTING CONDITIONS
PLAN TYPE
100% PLANS
SHEET NUMBER
11

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MATCHLINE - STA. 18+50.00 - SEE SHEET 11

MATCHLINE - STA. 24+50.00 - SEE SHEET 13



DRAWN: ALT	PROJECT: HELEN ST SIDEWALKS
DESIGN: GTG	HELEN ST SCALE: AS NOTED
CHECK: GTG	DATE: 7/25/2024
APPROVED: BTJ	
PROJECT NO. 011017030	
SUB-LEDDER NO.	

REV #	REVISIONS	REV. BY	DATE

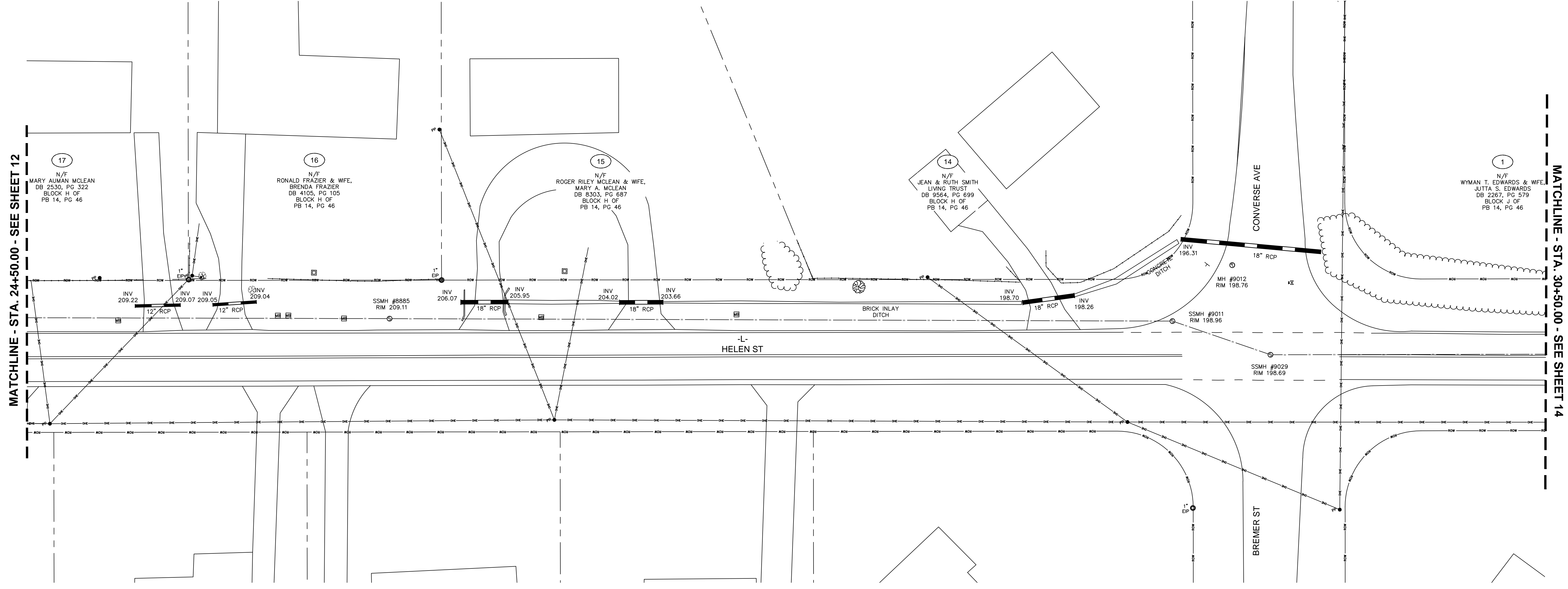


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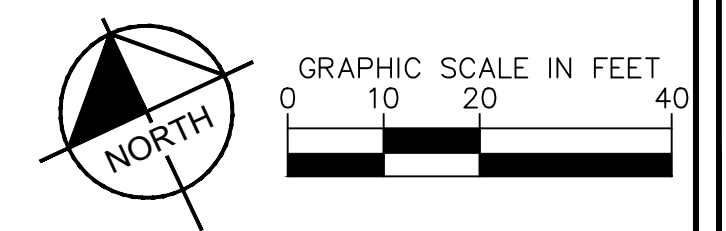
EXISTING CONDITIONS
PLAN TYPE
100% PLANS
SHEET NUMBER
12

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MATCHLINE - STA. 24+50.00 - SEE SHEET 12

MATCHLINE - STA. 30+50.00 - SEE SHEET 14



17 N/F MARY AUMAN MCLEAN DB 2530, PG 322 BLOCK H OF PB 14, PG 46
 INV 209.22
 INV 209.07
 INV 209.05
 INV 209.04
 12" RCP
 12" RCP
 SSMH #8885 RIM 209.11
 INV 206.07
 18" RCP
 INV 205.95
 INV 204.02
 INV 203.66
 18" RCP
 18" RCP
 BRICK INLAY DITCH
 INV 198.70
 INV 198.26
 INV 196.31
 MH #9012 RIM 198.76
 SSMH #9011 RIM 198.96
 SSMH #9029 RIM 198.69
 18" RCP
 CONVERSE AVE
 BREMER ST
 HELEN ST
 1 N/F WYMAN T. EDWARDS & WIFE, JUTTA S. EDWARDS DB 2287, PG. 579 BLOCK J OF PB 14, PG 46

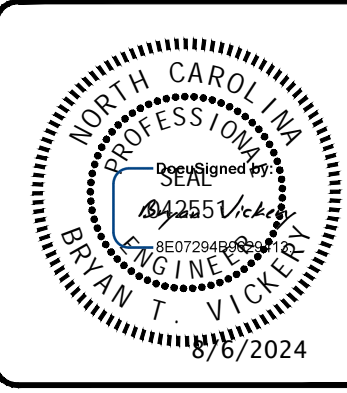
16 N/F RONALD FRAZIER & WIFE, BRENDA FRAZIER DB 4105, PG 105 BLOCK H OF PB 14, PG 46

15 N/F ROGER RILEY MCLEAN & WIFE, MARY A. MCLEAN DB 8303, PG 687 BLOCK H OF PB 14, PG 46

14 N/F JEAN & RUTH SMITH LIVING TRUST DB 9564, PG 699 BLOCK H OF PB 14, PG 46

DRAWN: ALT	PROJECT: HELEN ST SIDEWALKS
DESIGN: GTG	HELEN ST SCALE: AS NOTED
CHECK: GTG	DATE: 7/25/2024
APPROVED: BTJ	
PROJECT NO. 011017030	
SUB-LEDGER NO.	

REV #	REVISIONS DESCRIPTION	REV. BY	DATE

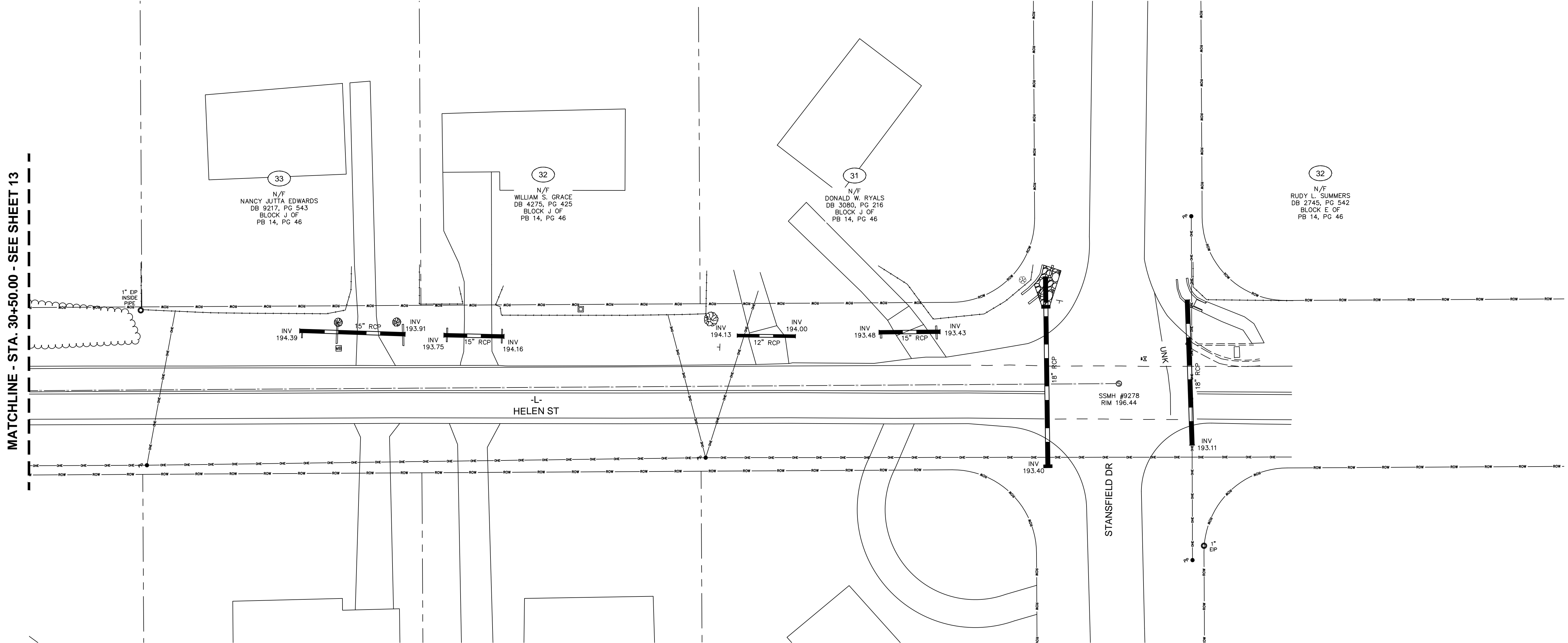


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EXISTING CONDITIONS
PLAN TYPE
100% PLANS
SHEET NUMBER
13

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MATCHLINE - STA. 30+50.00 - SEE SHEET 13

33
N/F
NANCY JUTTA EDWARDS
DB 9217, PG 543
BLOCK J OF
PB 14, PG 46

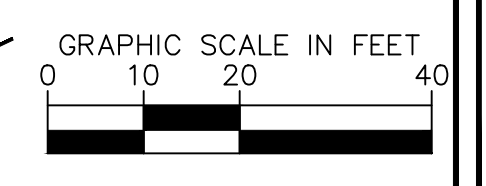
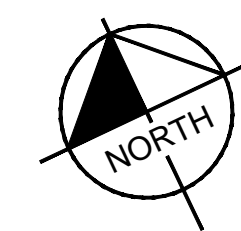
32
N/F
WILLIAM S. GRACE
DB 4275, PG 425
BLOCK J OF
PB 14, PG 46

31
N/F
DONALD W. RYALS
DB 3080, PG 216
BLOCK J OF
PB 14, PG 46

32
N/F
RUDY L. SUMMERS
DB 2745, PG 542
BLOCK E OF
PB 14, PG 46

-L-
HELEN ST

STANSFIELD DR



DRAWN: ALT	PROJECT: HELEN ST SIDEWALKS
DESIGN: GTG	SCALE: AS NOTED
CHECK: GTG	DATE: 7/25/2024
APPROVED: BTJ	
PROJECT NO. 011017030	
SUB-LEDGER NO.	

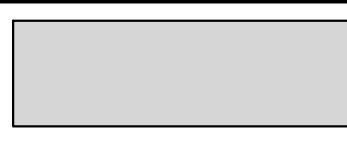
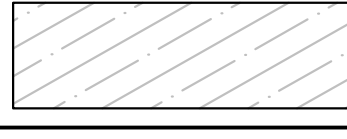


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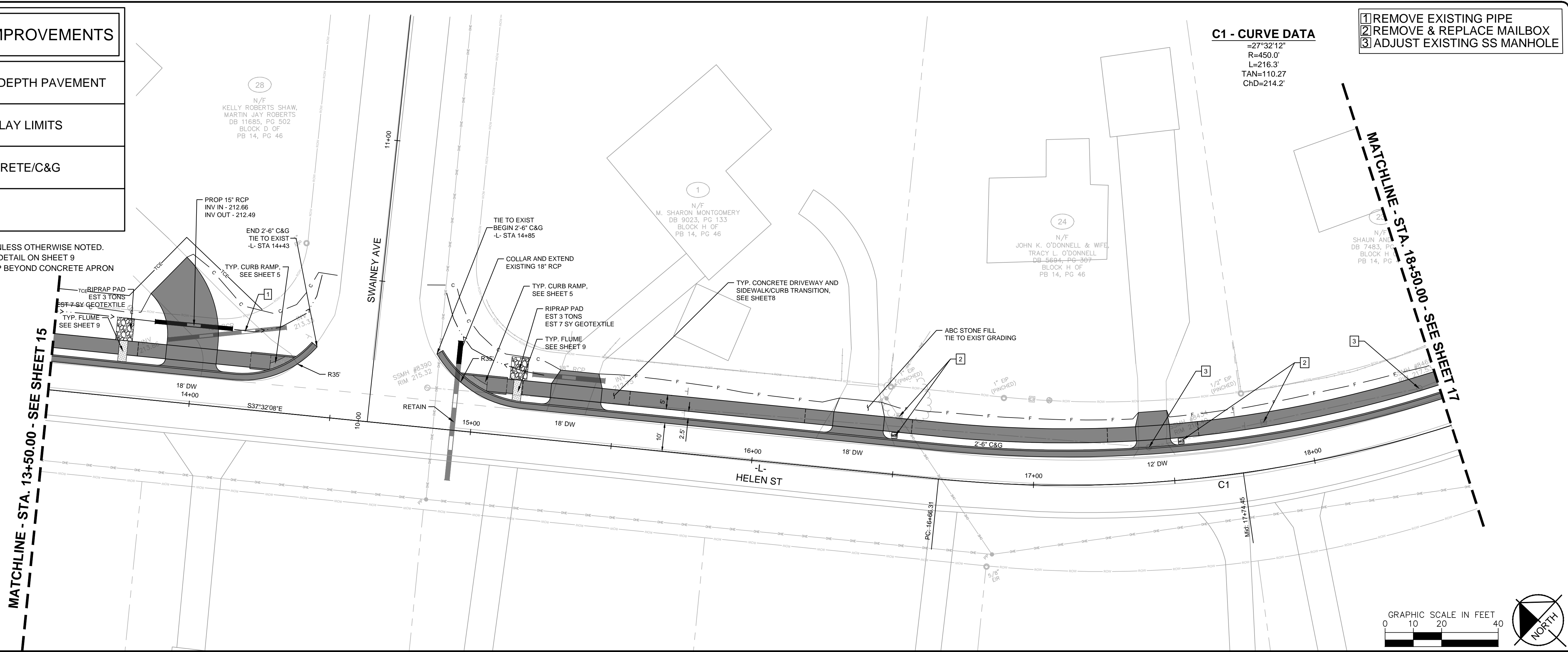
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EXISTING
CONDITIONS
PLAN TYPE
100% PLANS
SHEET NUMBER
1-4

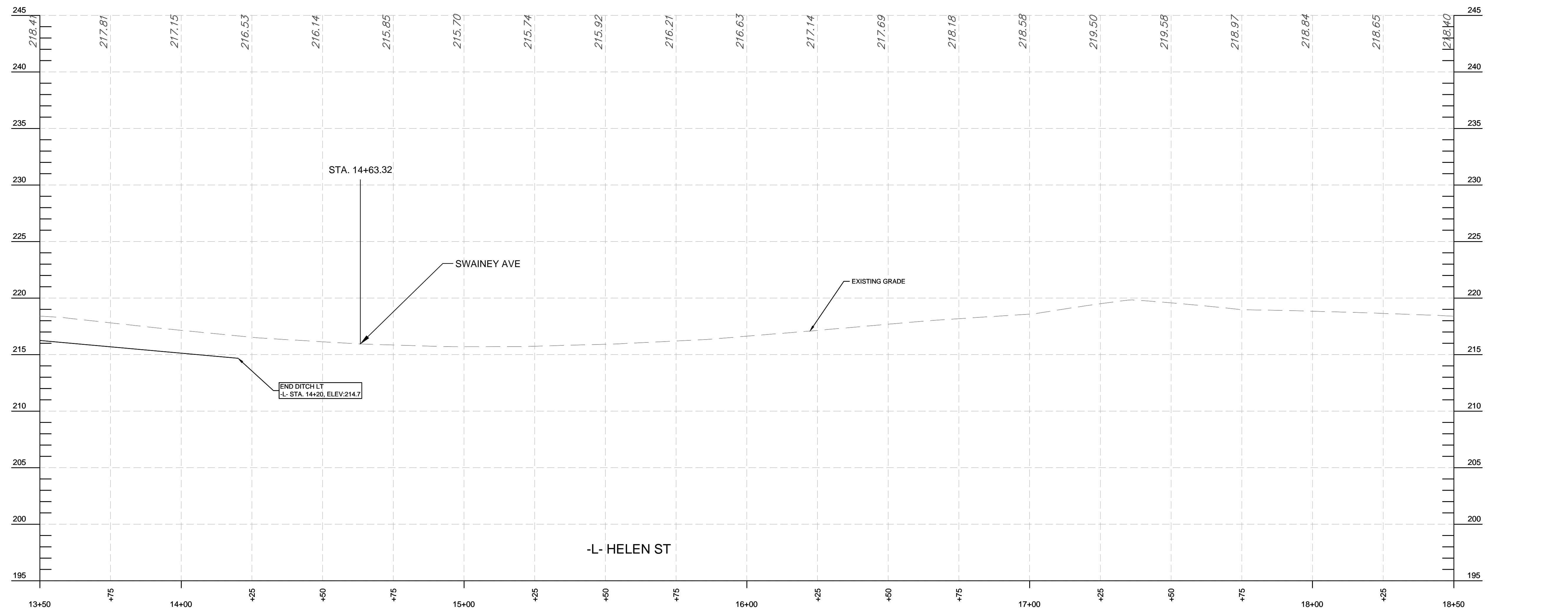
LEGEND FOR PROPOSED IMPROVEMENTS	
	PROPOSED FULL DEPTH PAVEMENT
	PROPOSED OVERLAY LIMITS
	PROPOSED CONCRETE/C&G
	FLUME COVER

- NOTES:
 1. RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
 2. REMOVE/RESET OR REPLACE EXISTING MAILBOX- SEE DETAIL ON SHEET 9
 3. CONTRACTOR TO MATCH EXISTING DRIVEWAY BUILDUP BEYOND CONCRETE APRON



C1 - CURVE DATA
 $\Delta = 27^{\circ}32'12''$
 $R = 450.0'$
 $L = 216.3'$
 $TAN = 110.27$
 $ChD = 214.2'$

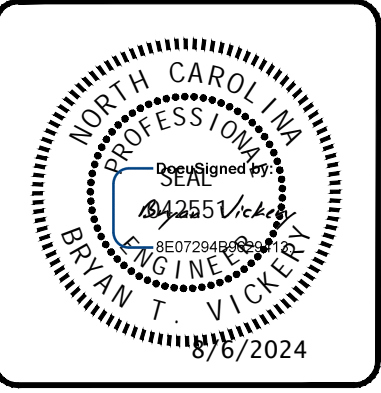
- 1 REMOVE EXISTING PIPE
- 2 REMOVE & REPLACE MAILBOX
- 3 ADJUST EXISTING SS MANHOLE



PLAN & PROFILE
 PLAN TYPE: 100% PLANS
 SHEET NUMBER: 16

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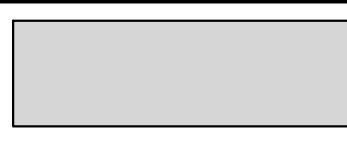
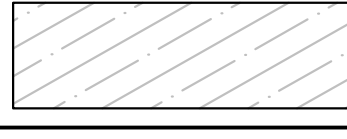


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REV #	REVISIONS DESCRIPTION	REV. BY	DATE

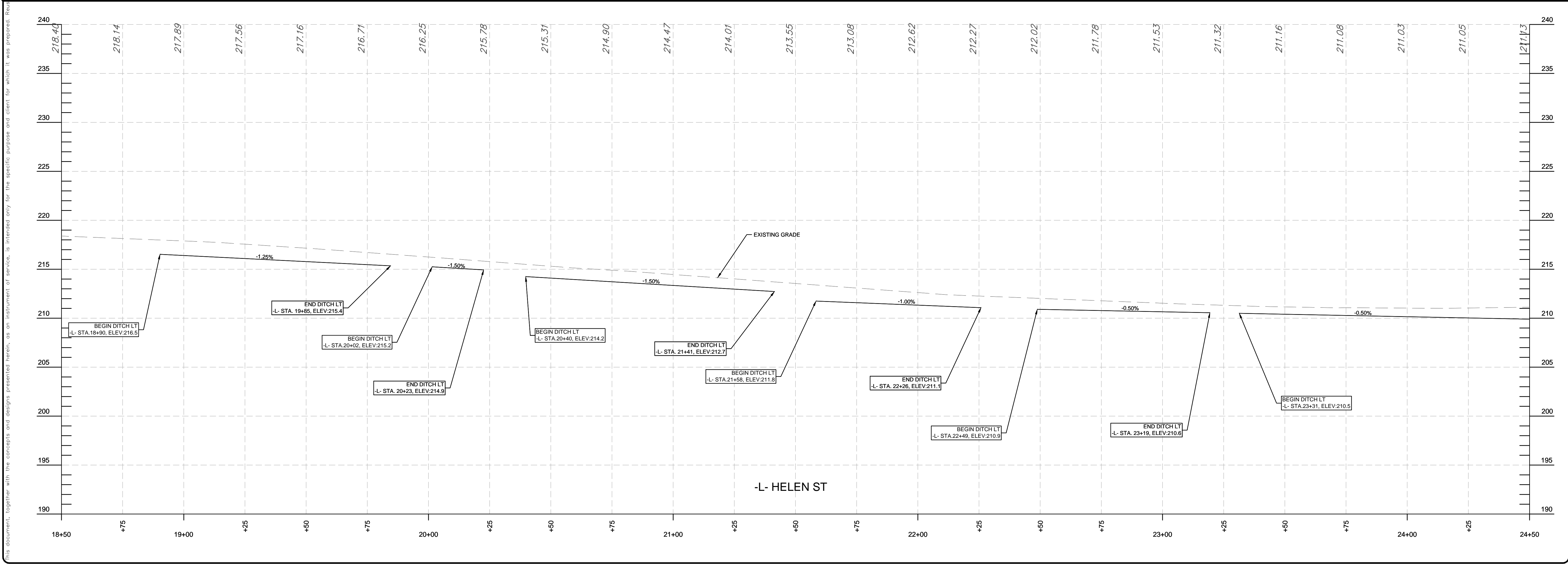
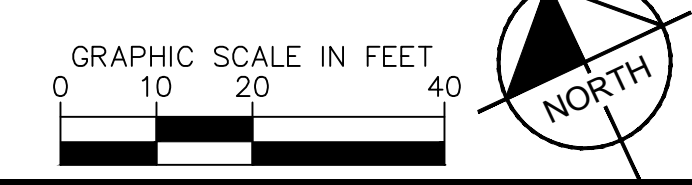
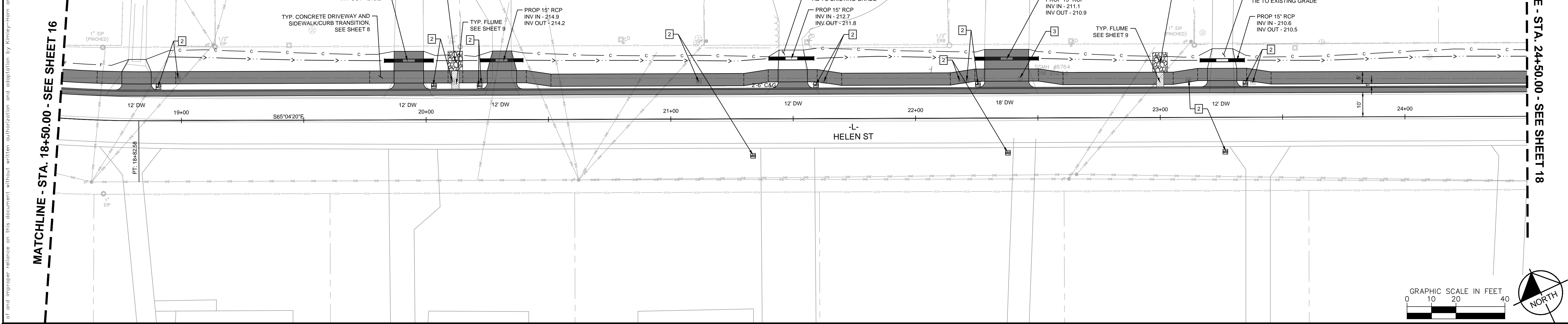
DRAWN: ALT	PROJECT: HELEN ST SIDEWALKS
DESIGN: GTG	SCALE: AS NOTED
CHECK: GTG	DATE: 7/25/2024
APPROVED: BTJ	
PROJECT NO. 011017030	
SUB-LEDGER NO.	

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LEGEND FOR PROPOSED IMPROVEMENTS	
	PROPOSED FULL DEPTH PAVEMENT
	PROPOSED OVERLAY LIMITS
	PROPOSED CONCRETE/C&G
	FLUME COVER

- NOTES:
 1. RADI DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
 2. REMOVE/RESET OR REPLACE EXISTING MAILBOX- SEE DETAIL ON SHEET 9
 3. CONTRACTOR TO MATCH EXISTING DRIVEWAY BUILDUP BEYOND CONCRETE APRON

- 1 REMOVE EXISTING PIPE
- 2 REMOVE & REPLACE MAILBOX
- 3 ADJUST EXISTING SS MANHOLE



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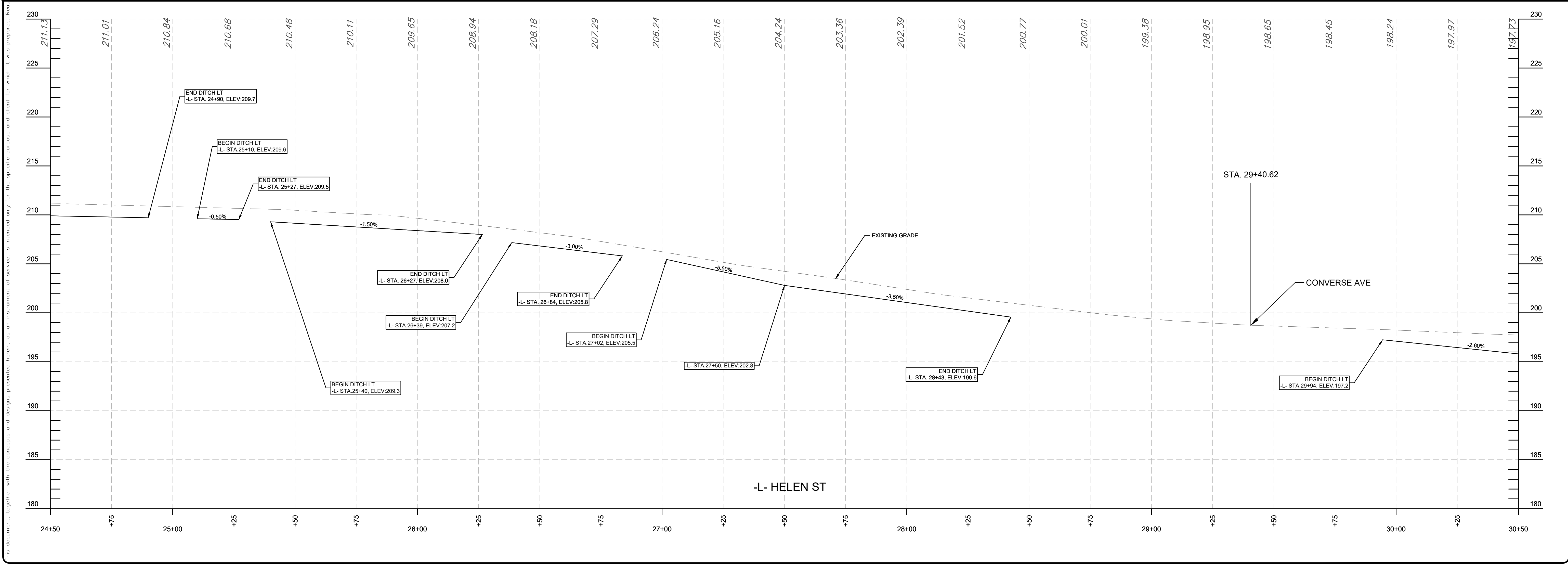
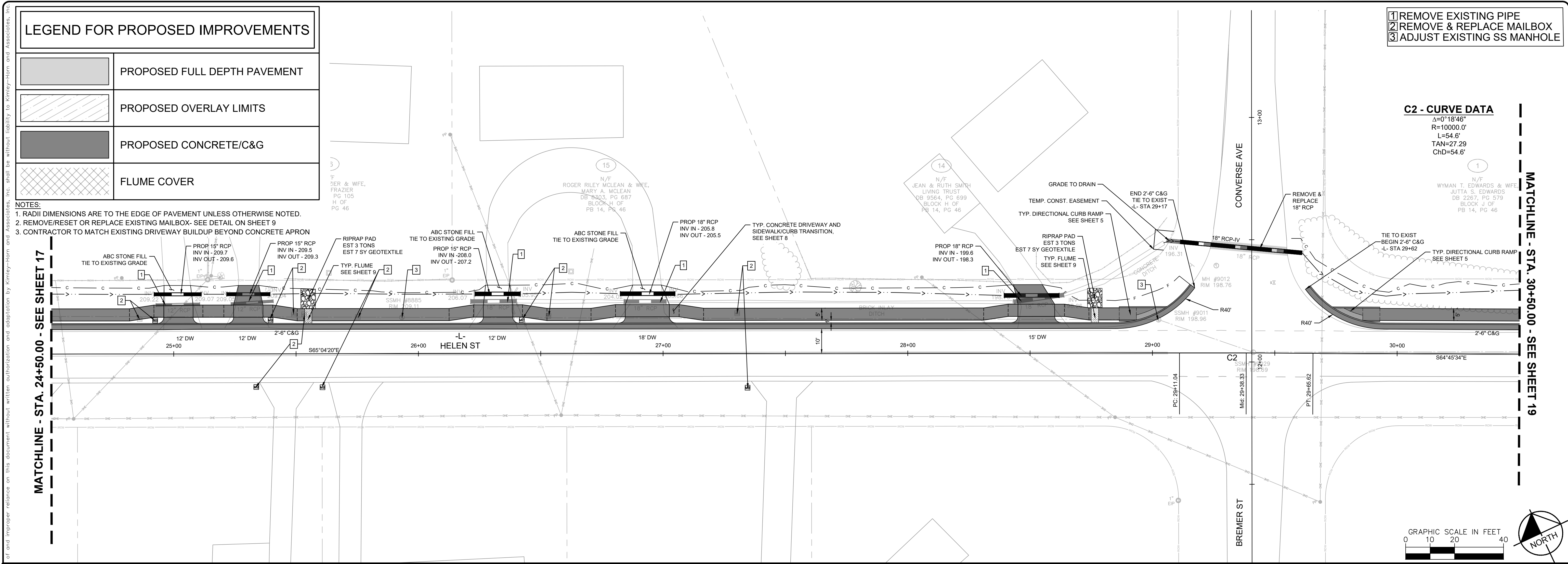
PLAN TYPE: 100% PLANS
 SHEET NUMBER: 17

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 433 HAY STREET FAYETTEVILLE, NC 28301

REV #	REVISIONS	REV. BY	DATE

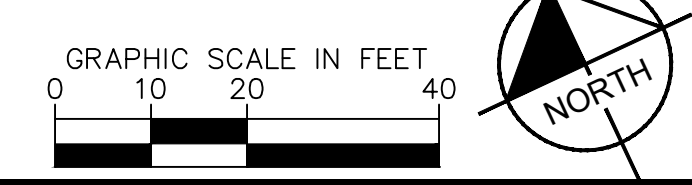
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DESIGN: GTG	SCALE: AS NOTED
CHECK: GTG	DATE: 7/25/2024
APPROVED: BTJ	
PROJECT NO. 011017030	
SUB-LEDGER NO.	



- LEGEND FOR PROPOSED IMPROVEMENTS**
- PROPOSED FULL DEPTH PAVEMENT
 - PROPOSED OVERLAY LIMITS
 - PROPOSED CONCRETE/C&G
 - FLUME COVER

- NOTES:**
1. RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
 2. REMOVE/RESET OR REPLACE EXISTING MAILBOX- SEE DETAIL ON SHEET 9
 3. CONTRACTOR TO MATCH EXISTING DRIVEWAY BUILDUP BEYOND CONCRETE APRON

C2 - CURVE DATA
 $\Delta=0^{\circ}18'46''$
 $R=10000.0'$
 $L=54.6'$
 $TAN=27.29'$
 $CHD=54.6'$



PLAN & PROFILE

PLAN TYPE: 100% PLANS
 SHEET NUMBER: 18

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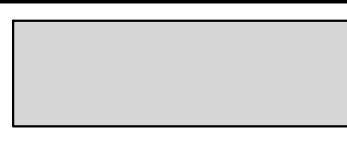
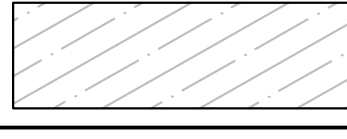


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REV #	REVISIONS	REV. BY	DATE

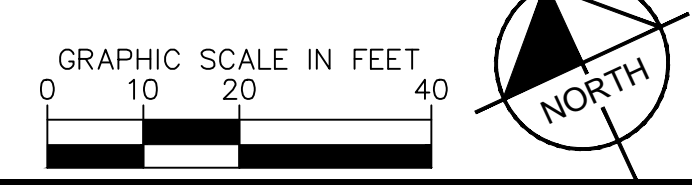
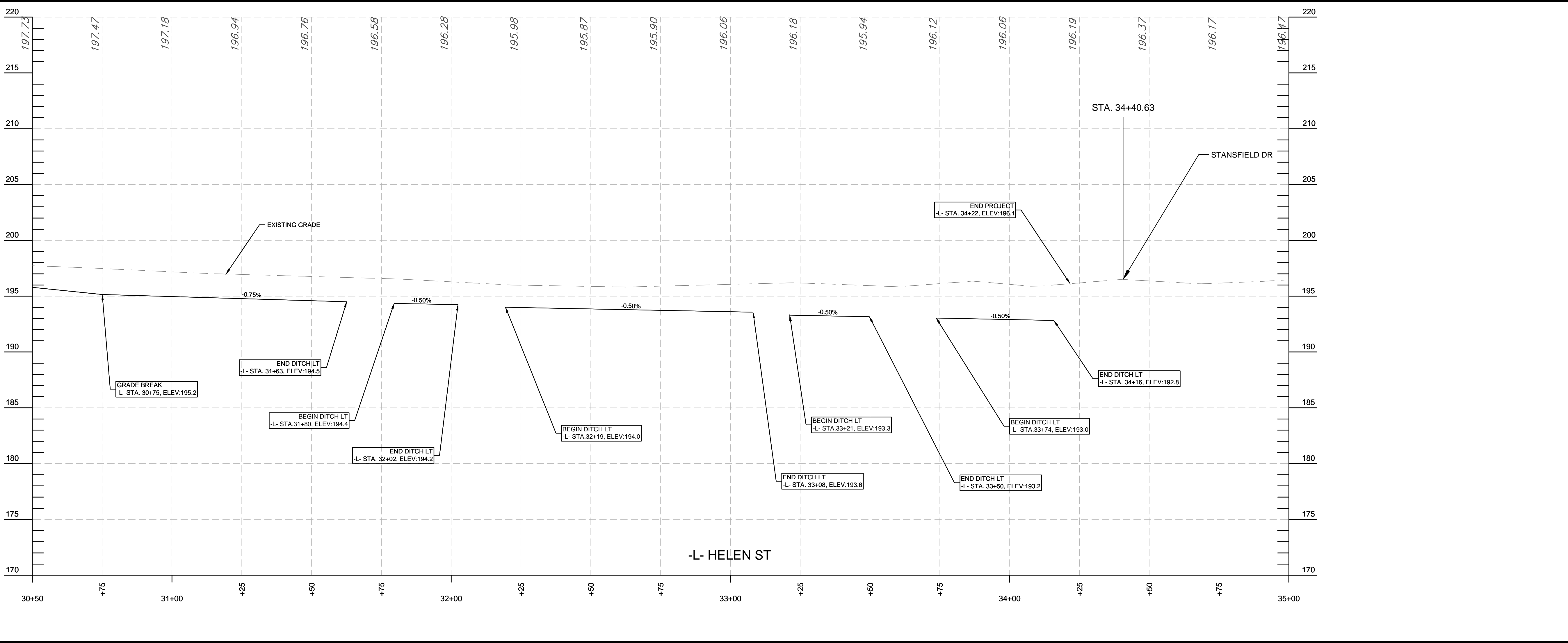
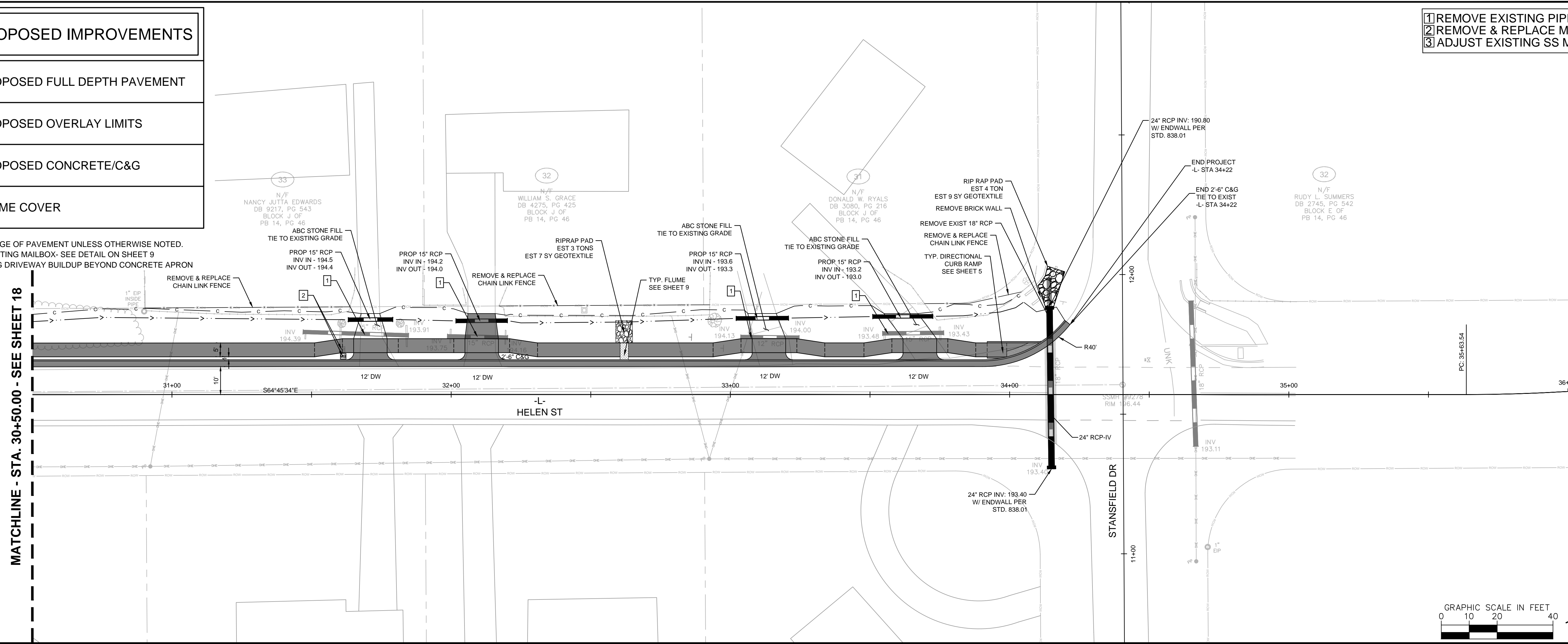
DRAWN: ALT	PROJECT: HELEN ST SIDEWALKS
DESIGN: GTG	SCALE: AS NOTED
CHECK: GTG	DATE: 7/25/2024
APPROVED: BTJ	
PROJECT NO. 011017030	
SUB-LEDGER NO.	

LEGEND FOR PROPOSED IMPROVEMENTS

	PROPOSED FULL DEPTH PAVEMENT
	PROPOSED OVERLAY LIMITS
	PROPOSED CONCRETE/C&G
	FLUME COVER

NOTES:
 1. RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
 2. REMOVE/RESET OR REPLACE EXISTING MAILBOX- SEE DETAIL ON SHEET 9
 3. CONTRACTOR TO MATCH EXISTING DRIVEWAY BUILDUP BEYOND CONCRETE APRON

- 1 REMOVE EXISTING PIPE
- 2 REMOVE & REPLACE MAILBOX
- 3 ADJUST EXISTING SS MANHOLE



PLAN & PROFILE
 PLAN TYPE: 100% PLANS
 SHEET NUMBER: 19

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REV #	REVISIONS	REV. BY	DATE

DRAWN: ALT	PROJECT: HELEN ST SIDEWALKS
DESIGN: GTG	CHECK: GTG
APPROVED: BTJ	SCALE: AS NOTED
	DATE: 7/25/2024
PROJECT NO. 011017030	
SUB-LEDGER NO.	

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TRAFFIC NOTES

ALL TRAFFIC CONTROL SHALL CONFORM TO THE LATEST MUTCD AND 2024 NCDOT STANDARDS

ADAPT THE TRAFFIC CONTROL CONCEPTS WHEN DIRECTED BY THE ENGINEER, TO MEET FIELD CONDITIONS TO PROVIDE SAFE AND EFFICIENT TRAFFIC MOVEMENT. CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWING, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES.

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.

TIME RESTRICTIONS:
A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. HELEN ST	MONDAY THROUGH FRIDAY (FROM 6AM TO 9AM AND FROM 4PM TO 6PM)

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME
1. HELEN ST

- HOLIDAY**
- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER
 - FOR NEW YEAR'S, BETWEEN THE HOURS OF 9 PM DECEMBER 31ST TO 6AM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6 AM THE FOLLOWING TUESDAY.
 - FOR EASTER, BETWEEN THE HOURS OF 9PM THURSDAY AND 6AM TUESDAY.
 - FOR MEMORIAL DAY, BETWEEN THE HOURS OF 9PM FRIDAY TO 6AM TUESDAY.
 - FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 9PM THE DAY BEFORE INDEPENDENCE DAY AND 6 AM THE DAY AFTER INDEPENDENCE DAY.
- IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 9PM THE THURSDAY BEFORE INDEPENDENCE DAY AND 6AM THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 9PM FRIDAY AND 6AM TUESDAY.
 - FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 9PM TUESDAY TO 6AM MONDAY.
 - FOR CHRISTMAS, BETWEEN THE HOURS OF 9PM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6AM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
 - FOR SPECIAL EVENTS, NOTED BY THE ENGINEER, BETWEEN THE HOURS OF 9PM THE DAY BEFORE THE SPECIAL EVENT AND 6AM THE DAY FOLLOWING THE SPECIAL EVENT.
- IF THE SPECIAL EVENT IS ON A FRIDAY, SATURDAY, OR SUNDAY, THEN BETWEEN THE HOURS OF 9PM THE THURSDAY BEFORE THE SPECIAL EVENT AND 6AM THE MONDAY AFTER THE SPECIAL EVENT, OR AS OTHERWISE DIRECTED BY THE ENGINEER.

C) DO NOT STOP TRAFFIC FOR MORE THAN 15 MINS AS FOLLOWS

ROAD NAME	DAY AND TIME RESTRICTIONS	OPERATIONS
1. HELEN ST	MONDAY THROUGH FRIDAY (FROM 6AM TO 9AM AND FROM 4PM TO 6PM)	TRAFFIC SHIFTS

D) 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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NOT LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF ANY 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.
- G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN LANE USING ROADWAY STANDARD DRAWING NO 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- I) DO NOT WORK SIMULTANEOUSLY, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.
- J) 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

K) 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.

L) 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

M) 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.

N) NO PERMANENT SIGNING.

O) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

P) 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.

Q) 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.

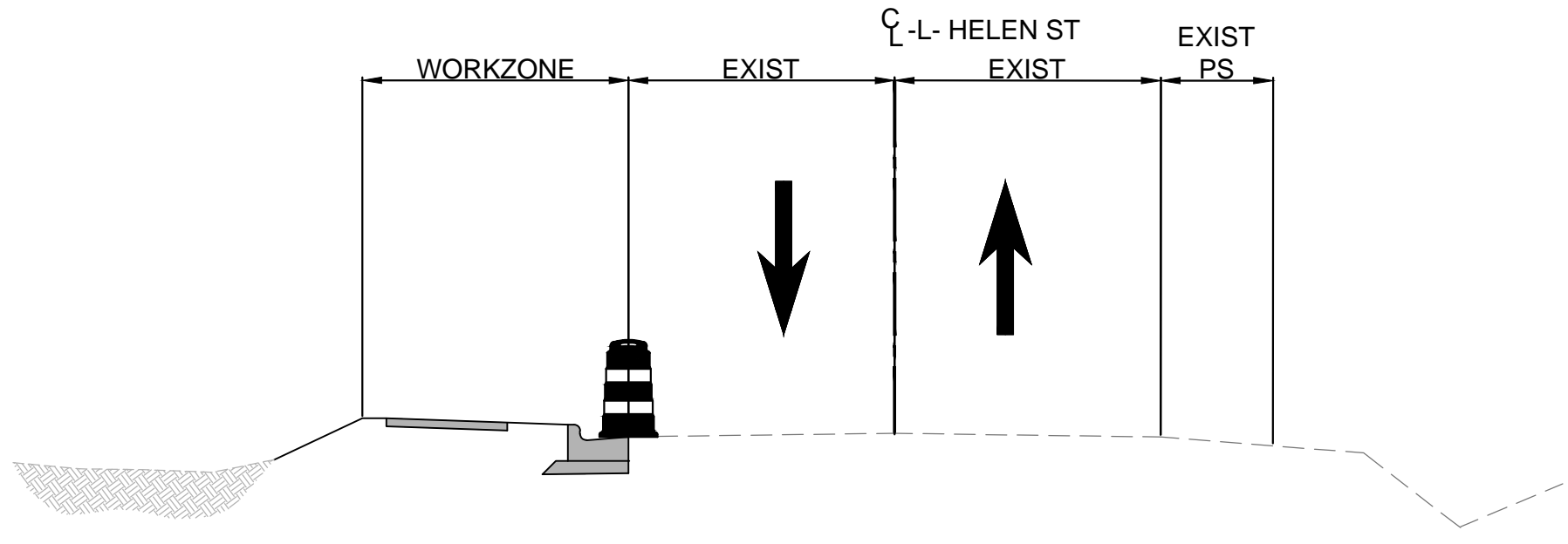
PAVEMENT MARKINGS AND MARKERS

- S) INSTALL PAVEMENT MARKINGS AS SHOWN ON PLAN SHEETS.
- T) REFER TO SECTION 1205 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2018 FOR APPLICATION TIMES AND TEMPERATURE CONDITIONS FOR PAVEMENT MARKINGS.
- U) PLACE AT LEAST TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE ON NEW ASPHALT PAVEMENT. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.
- V) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- W) REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.
- 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 DRYING TIME, AS DETERMINED BY THE ENGINEER.
- Y) CONTRACTOR SHALL MAINTAIN ALL TEMPORARY PAINT PAVEMENT MARKINGS UNTIL COMPLETION OF THERMOPLASTIC PAVEMENT MARKING INSTALLATION.
- Z) BEFORE SHIFTING TRAFFIC TO NEW LOCATIONS, CONTRACTOR SHALL REMOVE ANY MARKINGS WHICH CONFLICT WITH THE NEW TRAFFIC PATTERN(S).
- AA) CHANGES TO THE TRAFFIC CONTROL REQUIRE APPROVAL FROM TOWN OF WAKE FOREST AND NCDOT PRIOR TO COMMENCING FIELD OPERATIONS.
- PEDESTRIAN AND BICYCLIST SAFETY**
- BB) PEDESTRIAN AND BICYCLIST SAFETY MUST BE MAINTAINED AT ALL TIMES BY ADEQUATE PROJECT LIMITS, FENCING, AND SIGNAGE.
- MISCELLANEOUS**
- CC) POLICE MAY BE USED TO MAINTAIN TRAFFIC THROUGH INTERSECTIONS.
- DD) STOCKPILE EXISTING SIGNS FOR USE WHEN NEEDED IN TEMPORARY LOCATIONS DURING CONSTRUCTION.
- EE) ACCESS SHALL BE MAINTAINED TO ALL RESIDENCES, MAILBOXES, AND BUSINESSES AT ALL TIMES.
- FF) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK OR ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK OR ORANGE "PAVEMENT ENDS" SIGNS (W8-3) AND RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL. MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ADVANCE WARNING SIGN SPACING IS RECOMMENDED TO BE THE FOLLOWING:
HELEN ST - 500' BEFORE CONSTRUCTION LIMITS
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- 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 1094-11(B). MAY BE GALVANIZED STEEL OR PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO 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.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICE UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS.

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

THE CONTRACTOR SHALL PLACE ALL ADVANCE WARNING SIGNS PRIOR TO BEGINNING WORK ACCORDING TO NCDOT STANDARD DRAWING NO. 1101.01. SIGNS SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.

WHILE MAINTAINING EXISTING TRAFFIC AND USING NCDOT STANDARD DRAWING 1101.02, SHEET 1 OF 19 FOR TEMPORARY LANE CLOSURES AS NEEDED, THE CONTRACTOR SHALL CONSTRUCT IMPROVEMENTS ALONG HELEN ST INCLUDING:

- PAVING
- CURB AND GUTTER INSTALLATION
- STORM DRAINAGE
- SIDEWALK

UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE PAVEMENT.

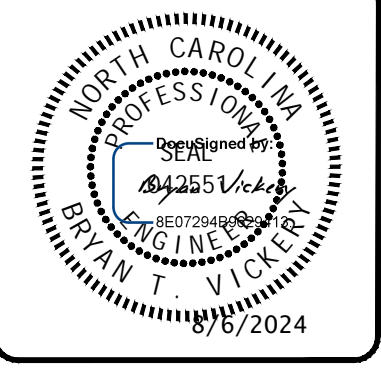
PHASE 2

USING NCDOT STANDARD DRAWING 1101.01 AS REQUIRED PLACE THE FINAL SURFACE COURSE AND FINAL PAVEMENT MARKINGS. REMOVE ALL TRAFFIC CONTROL DEVICES AND OPEN TRAFFIC TO THE FINAL PATTERN.

TRAFFIC MANAGEMENT PLAN
PLAN TYPE: 100% PLANS
SHEET NUMBER: 20

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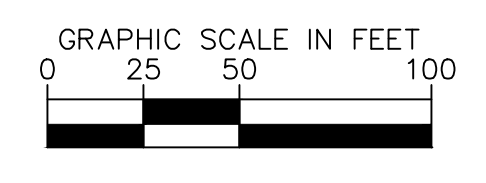
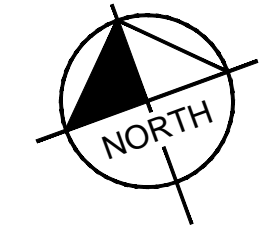
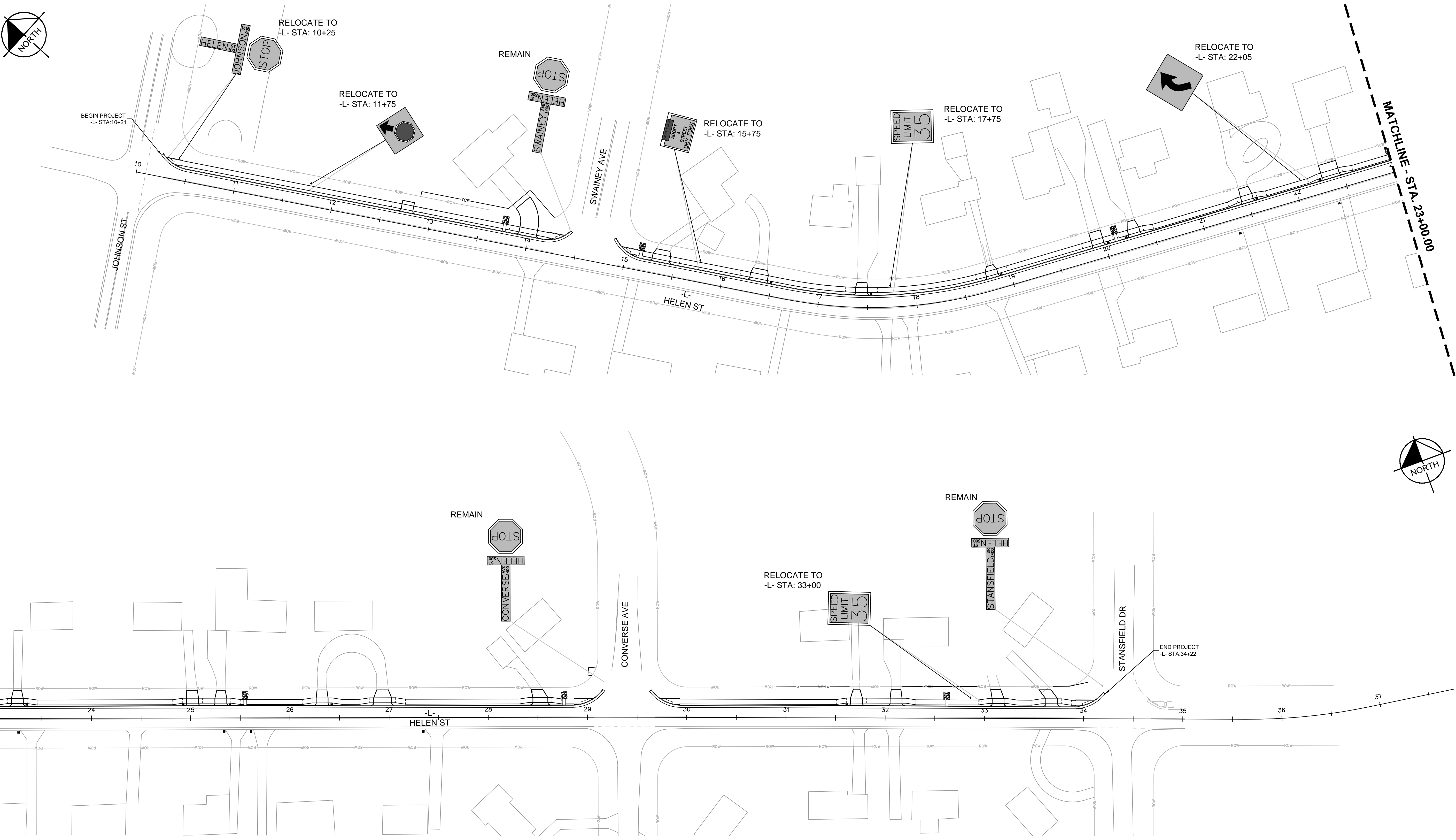
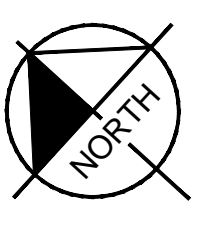
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SIGNING LEGEND

- ◆ DENOTES EXISTING SIGN
- ┆ DENOTES NEW "U" CHANNEL POST/PROPOSED SIGN LOCATION
- ┆ DENOTES EXISTING "U" CHANNEL POST/EXISTING SIGN LOCATION

SIGNING NOTES

1. REMOVE AND DISPOSE OF EXISTING U CHANNEL POST
2. ERECT EXISTING SIGN ON NEW "U" CHANNEL POST
3. REMOVE AND DISPOSE OF EXISTING SIGNS AND "U" CHANNEL POST
4. THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING
5. ALL STREET NAME SIGNS SHALL ADHERE TO THE LATEST MUTCD. ALL STREET NAME SIGNS SHALL BE APPROVED BY THE TRANSPORTATION AND FACILITIES DEPARTMENT STAFF PRIOR TO INSTALLATION

PAVEMENT MARKING & SIGNING

PLAN TYPE: 100% PLANS
SHEET NUMBER: 21

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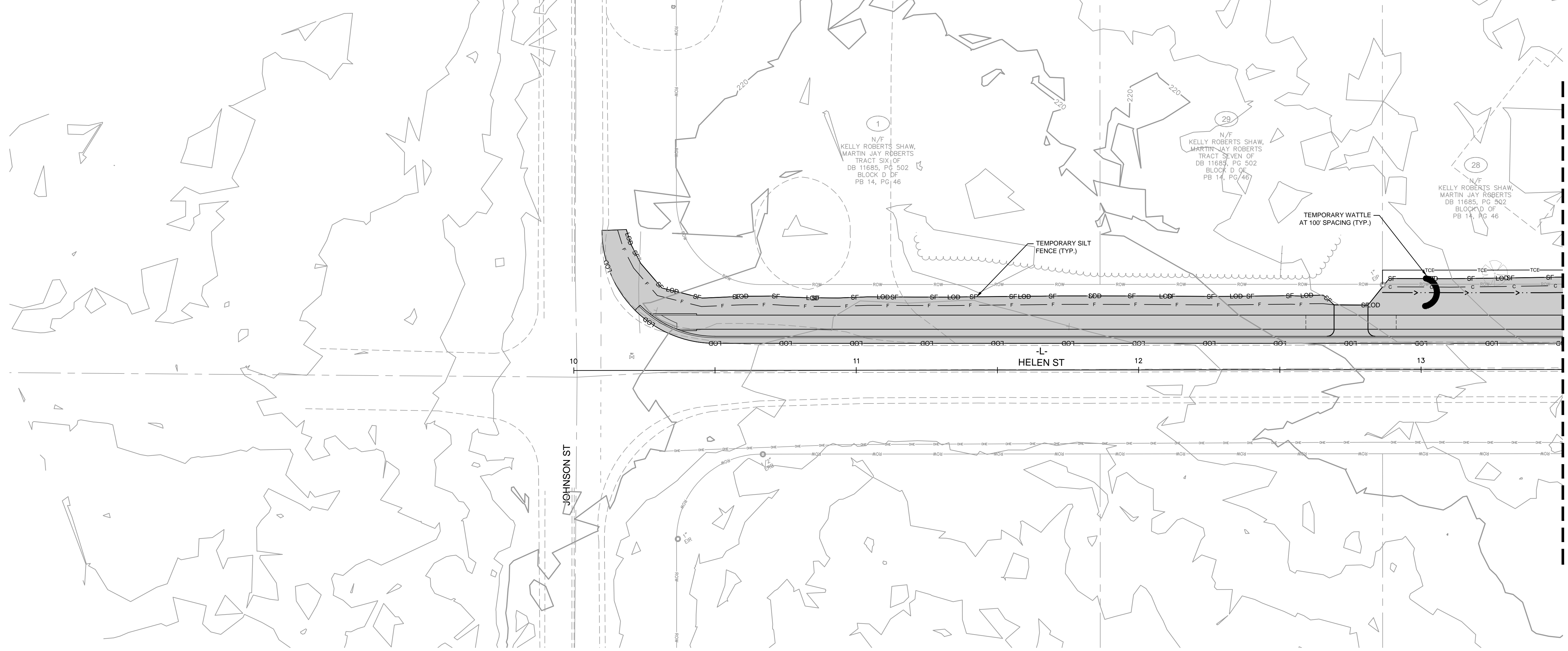
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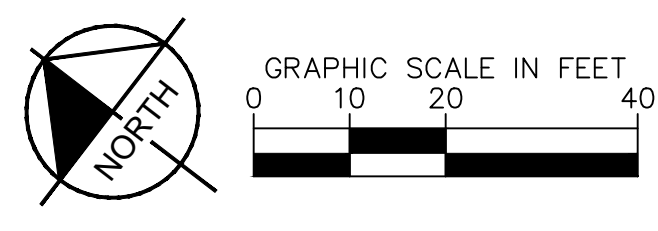
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NOTES:
 1. TOTAL DISTURBED AREA FOR OFFSITE IMPROVEMENTS = 0.36 AC
 2. ALL PUBLIC STREETS TO BE KEPT CLEAN OF SEDIMENT AT ALL TIMES OR A WASH STATION WILL BE REQUIRED

EROSION CONTROL LEGEND

SILT FENCE - LIMITS OF DISTURBANCE	SF
INLET PROTECTION	
TEMPORARY WATTLE	



EROSION CONTROL PLAN

PLAN TYPE: 100% PLANS
 SHEET NUMBER: 22

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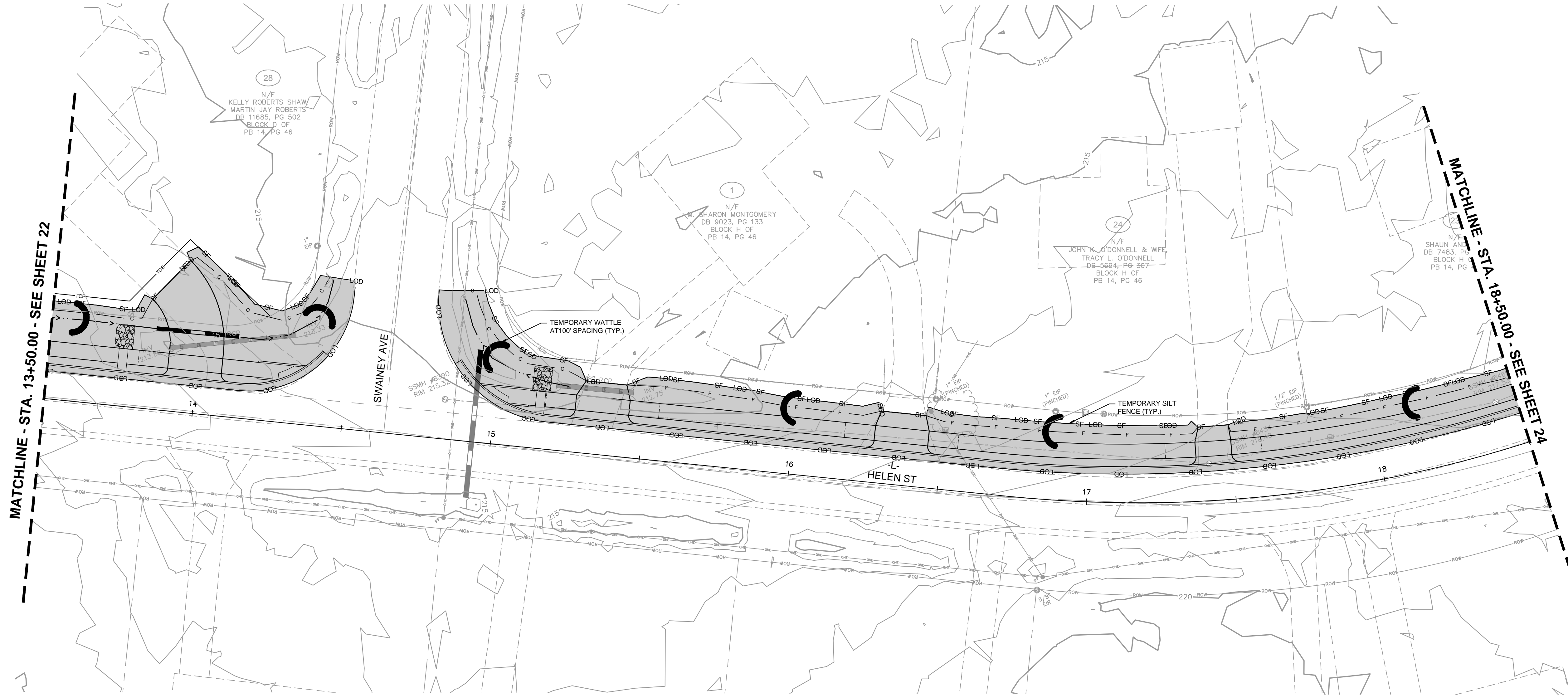
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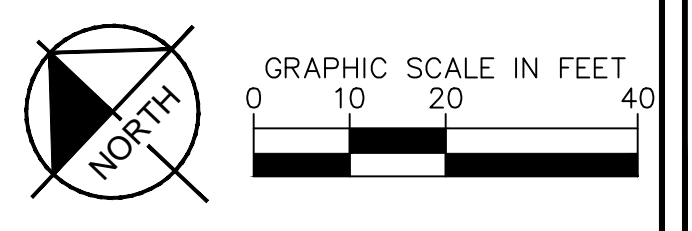


MATCHLINE - STA. 13+50.00 - SEE SHEET 22

NOTES:
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 2. ALL PUBLIC STREETS TO BE KEPT CLEAN OF SEDIMENT AT ALL TIMES OR A WASH STATION WILL BE REQUIRED

EROSION CONTROL LEGEND

SILT FENCE - LIMITS OF DISTURBANCE	SF
INLET PROTECTION	
TEMPORARY WATTLE	



EROSION CONTROL PLAN

PLAN TYPE: 100% PLANS
 SHEET NUMBER: 23

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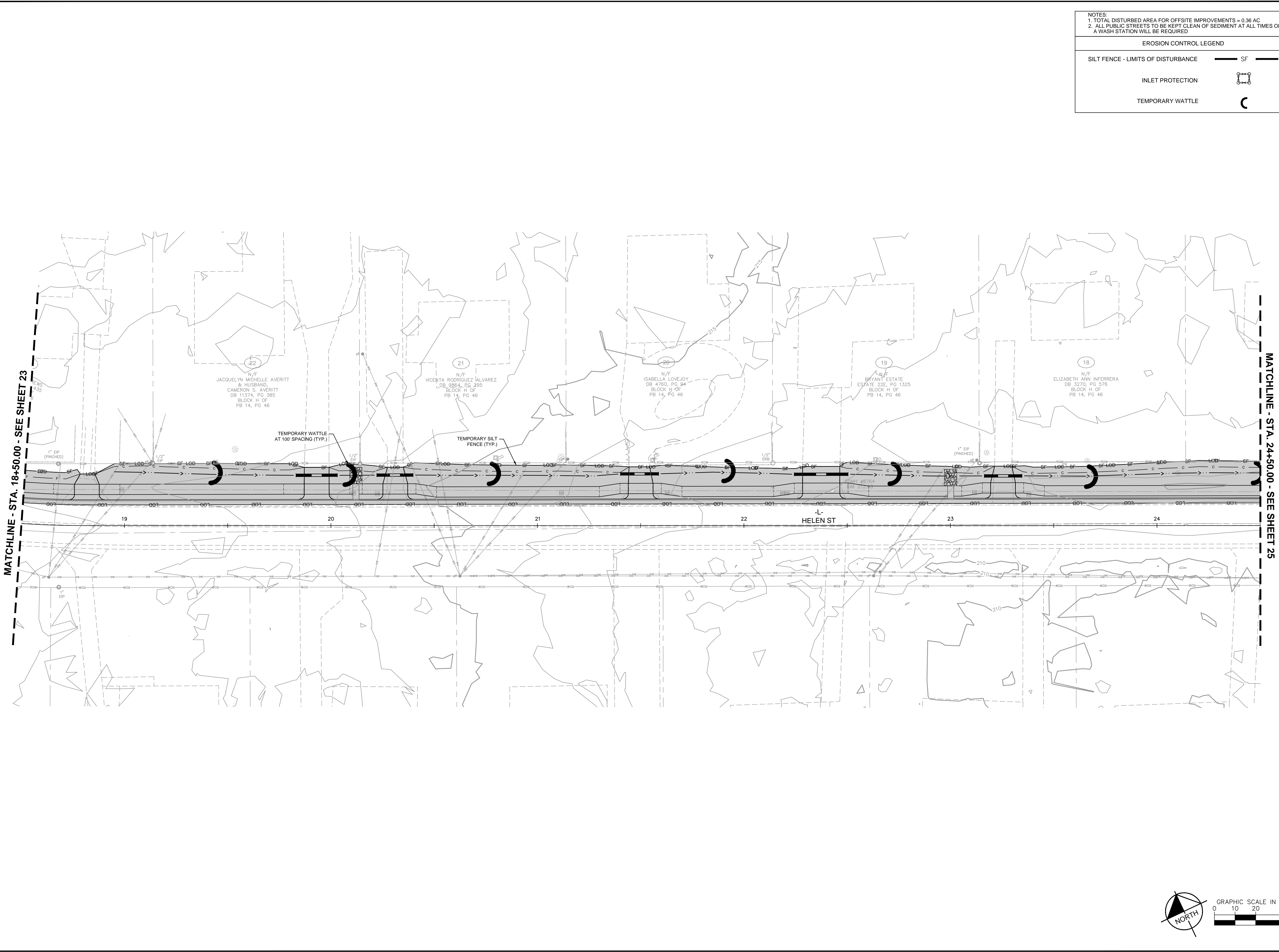
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EROSION CONTROL PLAN

PLAN TYPE: 100% PLANS

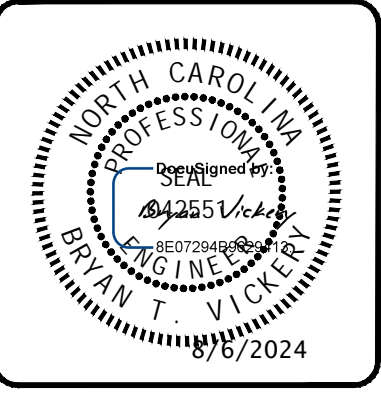
SHEET NUMBER: 24

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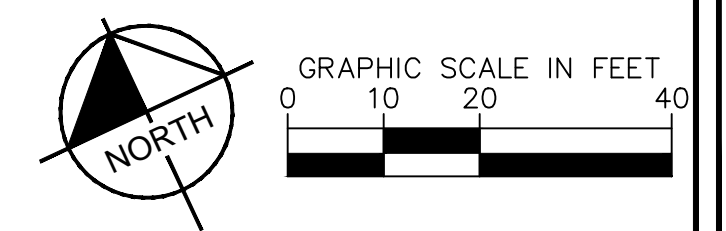
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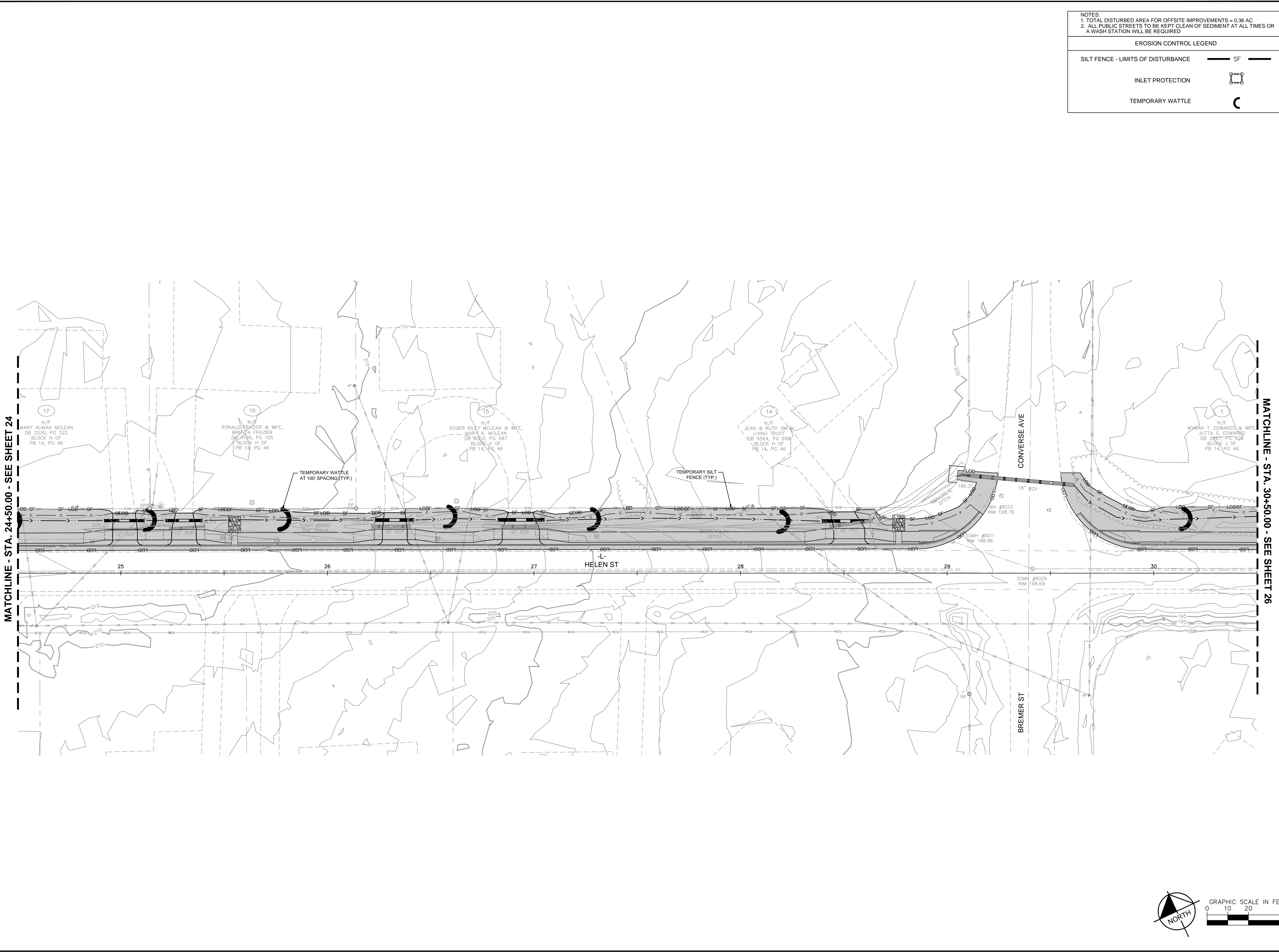


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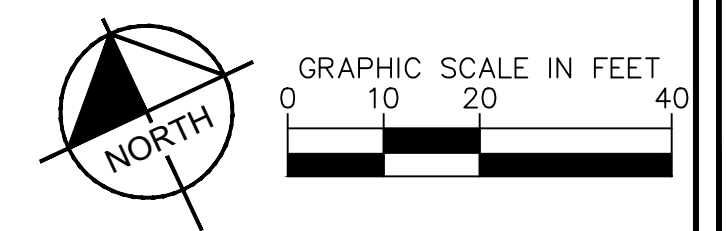
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 2. ALL PUBLIC STREETS TO BE KEPT CLEAN OF SEDIMENT AT ALL TIMES OR A WASH STATION WILL BE REQUIRED

EROSION CONTROL LEGEND

SILT FENCE - LIMITS OF DISTURBANCE **SF**

INLET PROTECTION

TEMPORARY WATTLE

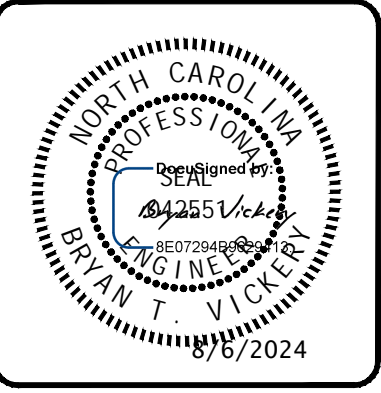


MATCHLINE - STA. 24+50.00 - SEE SHEET 24

MATCHLINE - STA. 30+50.00 - SEE SHEET 26

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SUB-LEDGER NO.	

REV #	REVISIONS	REV. BY	DATE

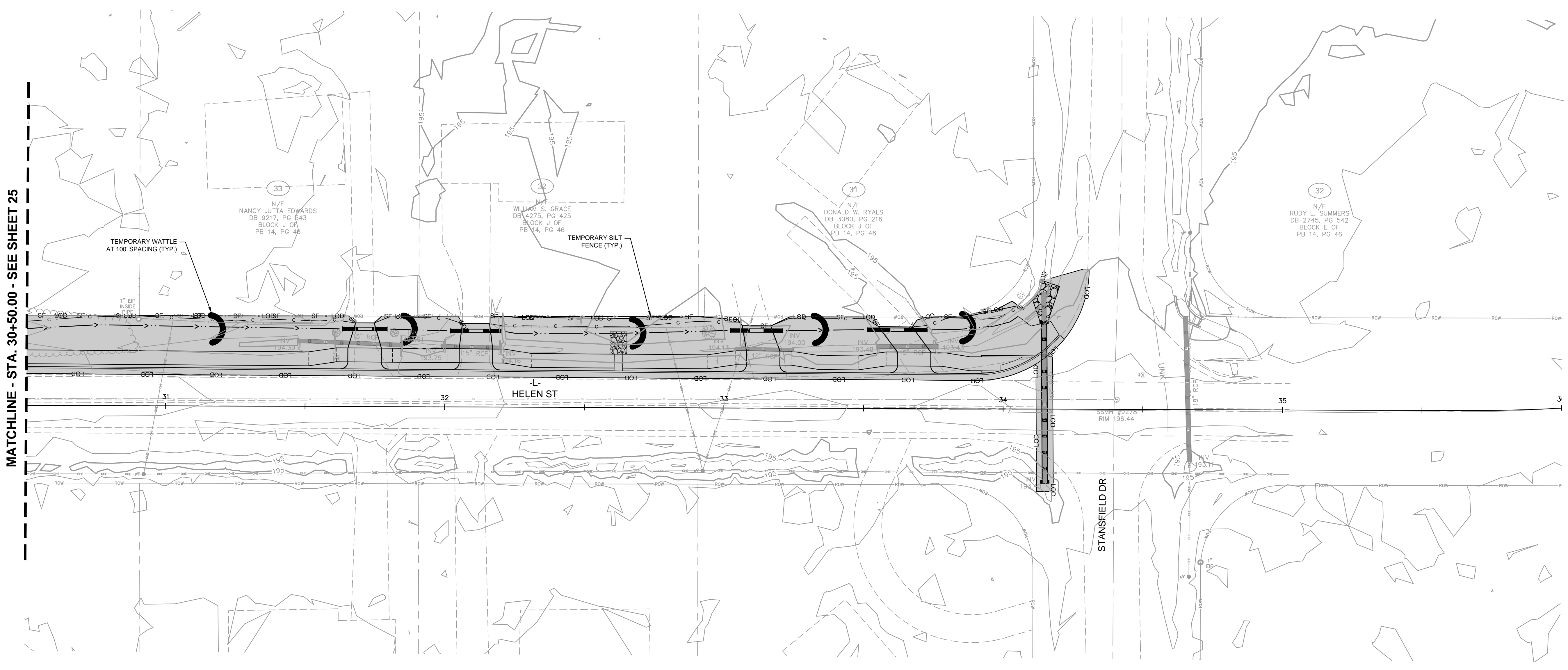


FAYETTEVILLE
 PUBLIC SERVICES
 ENGINEERING DIVISION
 ENGINEERING & INFRASTRUCTURE DEPARTMENT
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EROSION CONTROL PLAN
 PLAN TYPE: 100% PLANS
 SHEET NUMBER: 25

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NOTES:
 1. TOTAL DISTURBED AREA FOR OFFSITE IMPROVEMENTS = 0.36 AC
 2. ALL PUBLIC STREETS TO BE KEPT CLEAN OF SEDIMENT AT ALL TIMES OR A WASH STATION WILL BE REQUIRED

EROSION CONTROL LEGEND

SILT FENCE - LIMITS OF DISTURBANCE	SF
INLET PROTECTION	IP
TEMPORARY WATTLE	W

EROSION CONTROL PLAN

PLAN TYPE
100% PLANS

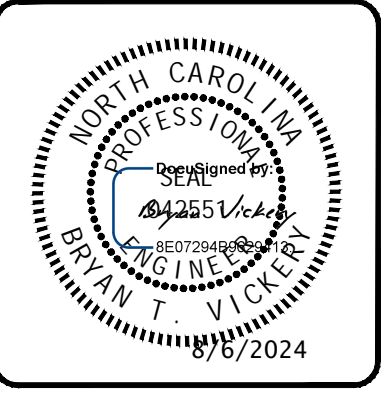
SHEET NUMBER
26

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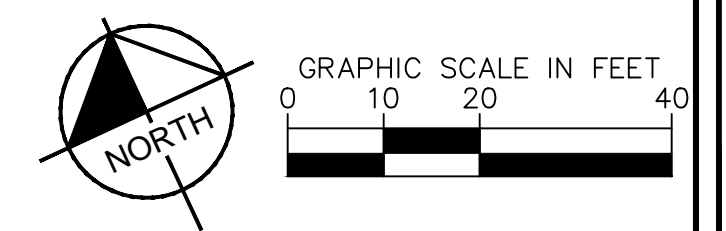
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REV #	REVISIONS	REV. BY	DATE
	DESCRIPTION		

DRAWN: ALT	PROJECT: HELEN ST SIDEWALKS
DESIGN: GTG	HELEN ST SIDEWALKS
CHECK: GTG	SCALE: AS NOTED
APPROVED: BTG	DATE: 7/25/2024
PROJECT NO. 011017030	
SUB-LEDGER NO.	



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CONSTRUCTION SEQUENCE

CONSTRUCTION SPECIFICATIONS

- 1. 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 DENUDE 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;
- 10. 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 113A-54.1 AND 15A NCAC 4B.0131. THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM [HTTP://PORTAL.NCDENR.ORG/WATER/EROSION](http://portal.ncdenr.org/water/erosion). IF YOU HAVE QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT NCDENR DIVISION OF LAND RESOURCES AT (919) 791-4200.

MAINTENANCE PLAN

- 1. 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 NATION POLLUTION 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 WHEN STORAGE CAPACITY HAS BEEN APPROXIMATELY 50% FILLED. SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
- 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 IF 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 SPECIFIED 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 GUIDELINES:

- 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
- SLOPES FLATTER THAN 4:1	14 DAYS

LAND GRADING (6.02)

CONSTRUCTION SPECIFICATIONS

- 1. CONSTRUCT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL PRACTICES AND MEASURES IN ACCORDANCE WITH THE APPROVED SEDIMENTATION CONTROL PLAN AND CONSTRUCTION SCHEDULE.
- 2. REMOVE GOOD TOPSOIL FROM AREAS TO BE GRADED AND FILLED, AND PRESERVE IT FOR USE IN FINISHING THE GRADING OF ALL CRITICAL AREAS.
- 3. SCARIFY AREAS TO BE TOPSOILED TO A MINIMUM DEPTH OF 2 INCHES BEFORE PLACING TOPSOIL.
- 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. ENSURE THAT FILL MATERIAL IS FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER MATERIALS INAPPROPRIATE FOR CONSTRUCTING STABLE FILLS.
- 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.
- 7. DO NOT INCORPORATE FROZEN MATERIAL OR SOFT OR HIGHLY COMPRESSIBLE MATERIALS INTO FILL SLOPES.
- 8. DO NOT PLACE FILL ON A FROZEN FOUNDATION, DUE TO POSSIBLE SUBSIDENCE AND SLIPPAGE.
- 9. KEEP DIVERSIONS AND OTHER WATER CONVEYANCE MEASURES FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
- 10. HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH APPROVED METHODS.
- 11. 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.
- 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.

MAINTENANCE

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 IS AN ESSENTIAL PART OF AN EFFECTIVE EROSION AND SEDIMENTATION CONTROL PLAN.

VEGETATIVE PLAN (NCDENR 6.11)

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	TYPE	PLANTING RATE
MAR 1 - AUG 31	TALL FESCUE CENTIPEDE HULLED COMMON BERMUDA GRASS FERTILIZER LIMESTONE	50 LBS/ ACRE 5 LBS / ACRE 25 LBS/ ACRE 500 LBS/ ACRE 4000 LBS/ ACRE
SEPT 1 - FEB 28	TALL FESCUE CENTIPEDE UNHULLED COMMON BERMUDAGRASS FERTILIZER LIMESTONE	50 LBS/ ACRE 5 LBS/ ACRE 35 LBS/ ACRE 500 LBS/ ACRE 4000 LBS/ ACRE

SLOPES (2:1 AND STEEPER) AND WASTE & BORROW LOCATIONS

JAN 1 - DEC 31	TALL FESCUE UNHULLED COMMON BERMUDAGRASS FERTILIZER LIMESTONE	75 LBS/ ACRE 35 LBS/ ACRE 500 LBS/ ACRE 4000 LBS/ ACRE
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APPROVED TALL FESCUE CULTIVARS

ADVENTURE	ADVENTURE II	AMIGO	ANTHEM
APACHE	APACHE II	ARID	AUSTIN
BROOKSTONE	BONANZA	BONANZA II	CHAPEL HILL
CHEESAPEAKE	CHIEFTAIN	CORONADO	CROSSFIRE II
DEBUTANTE	DUSTER	FALCON	FALCON II
FINELAWN PETTIE	FINELAWN	FINELAWN I	GENESIS
GRANDE	GUARDIAN	HAWK	HOUNDOOG
JAGUAR	JAGUAR III	KENTUCKY 31	KITTY
MONARCH	MONTAUK	MUSTANG	OLYMPIC
PACER	PHOENIX	PIXIE	PYRAMID
REBEL	REBEL JR	REBEL II	PREGEGADE
SAFARI	SHENANDOAH	TEMPO	TITAN
TOMAHAWK	TRAILBLAZER	TRIBUTE	VEGAS
WOLFPACK	WRANGLE		

SEEDING AND MULCHING

ON CUT AND FILL SLOPES 2:1 OR STEEPER, ADD 30# (23KG) SERICEA LESPEPFEZA JANUARY 1 - 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 1-2-2 RATIO IS MAINTAINED AND THE RATE OF APPLICATION ADJUSTED TO PROVIDE THE SAME AMOUNT OF PLANT FLOOD AS A 10-20-20 ANALYSIS.

SEEDBED PREPARATION

THE CONTRACTOR SHALL CUT AND SATISFACTORILY DISPOSE OF WEEDS OR OTHER UNACCEPTABLE GROWTH ON THE AREAS TO BE SEEDDED. 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 LOOSEMED 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 3:1 OR FLATTER, PRIOR TO THE APPLICATION OF SEED AND FERTILIZER.

ON CUT SLOPES THAT ARE 2:1 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-SEEDER.

ON CUT SLOPES THAT ARE EITHER 2:1 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 FERTILIZER 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, GUARDRAILS, 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.

APPLYING AND COVERING LIMESTONE, FERTILIZER, AND SEED

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 SEEDDED AREAS SHALL BE MULCHED UNLESS 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 GOVERNING 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 SEEDDED 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, GUARDRAILS, 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 DISPLACEMENT BY WIND, WATER, OR OTHER CAUSES AND SHALL PROMPTLY REMOVE ANY BLOCKAGE TO DRAINAGE FACILITIES THAT MAY OCCUR.

RIP RAP (6.15)

CONSTRUCTION SPECIFICATIONS

SUBGRADE PREPARATION - PREPARE THE SUBGRADE FOR RIPRAP AND FILTER TO THE REQUIRED LINES AND GRADES SHOWN ON THE PLANS. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY APPROXIMATING THAT OF THE SURROUNDING UNDISTURBED MATERIAL OR OVERFILL DEPRESSIONS WITH RIPRAP. REMOVE BRUSH, TREES, STUMPS AND OTHER OBJECTIONABLE MATERIAL. CUT THE SUBGRADE SUFFICIENTLY DEEP THAT THE FINISHED GRADE OF THE RIPRAP WILL BE AT THE ELEVATION OF THE SURROUNDING AREA. CHANNELS SHOULD BE EXCAVATED SUFFICIENTLY TO ALLOW PLACEMENT OF THE RIPRAP IN A MANNER SUCH THAT THE FINISHED INSIDE DIMENSIONS AND GRADE OF THE RIPRAP MEET DESIGN SPECIFICATIONS.

SAND AND GRAVEL FILTER BLANKET - PLACE THE FILTER BLANKET IMMEDIATELY AFTER THE GROUND FOUNDATION IS PREPARED. FOR GRAVEL, SPREAD FILTER STONE IN A UNIFORM LAYER TO THE SPECIFIED DEPTH. WHERE MORE THAN ONE LAYER OF FILTER MATERIAL IS USED, SPREAD THE LAYERS WITH MINIMAL MIXING.

SYNTHETIC FILTER FABRIC - PLACE THE CLOTH FILTER DIRECTLY ON THE PREPARED FOUNDATION. OVERLAP THE EDGES BY AT LEAST 12 INCHES, AND SPACE ANCHOR PINS EVERY 3 FT ALONG THE OVERLAP. BURY THE UPSTREAM END OF THE CLOTH A MINIMUM OF 12 INCHES BELOW GROUND AND WHERE NECESSARY, BURY THE LOWER END OF THE CLOTH OR OVERLAP WITH THE NEXT SECTION AS REQUIRED. TAKE CARE NOT TO DAMAGE THE CLOTH WHEN PLACING RIPRAP. IF DAMAGE OCCURS REMOVE THE RIPRAP AND REPAIR THE SHEET BY ADDING ANOTHER LAYER OF FILTER MATERIAL WITH A MINIMUM OVERLAP OF 12 INCHES AROUND THE DAMAGED AREA. IF EXTENSIVE DAMAGE IS SUSPECTED, REMOVE AND REPLACE THE ENTIRE SHEET.

WHERE LARGE STONES ARE USED OR MACHINE PLACEMENT IS DIFFICULT, A 4-INCH LAYER OF FINE GRAVEL OR SAND MAY BE NEEDED TO PROTECT THE FILTER CLOTH.

STONE PLACEMENT - PLACEMENT OF RIPRAP SHOULD FOLLOW IMMEDIATELY AFTER PLACEMENT OF THE FILTER. PLACE RIPRAP SO THAT IF FORMS A DENSE, WELL-GRADED MASS OF STONE WITH A MINIMUM OF VOIDS. THE DESIRED DISTRIBUTION OF STONES THROUGHOUT THE MASS MAY BE OBTAINED BY SELECTIVE LOADING AT THE QUARRY AND CONTROLLED DUMPING DURING FINAL PLACEMENT. PLACE RIPRAP TO ITS FULL THICKNESS IN ONE OPERATION. DO NOT PLACE RIPRAP BY DUMPING THROUGH CHUTES OR OTHER METHODS THAT CAUSE SEGREGATION OF STONE SIZES. TAKE CARE NOT TO DISLodge THE UNDERLYING BASE OR FILTER WHEN PLACING THE STONES.

THE FINISHED SLOPE SHOULD BE FREE OF POCKETS OF SMALL STONE OR CLUSTERS OF LARGE STONES HAND PLACING MAY BE NECESSARY TO ACHIEVE THE PROPER DISTRIBUTION OF STONE SIZES TO PRODUCE A RELATIVELY SMOOTH, UNIFORM SURFACE. THE FINISHED GRADE OF THE RIPRAP SHOULD BLEND WITH THE SURROUNDING AREA. NO OVERFALL OR PROTRUSION OF RIPRAP SHOULD BE APPARENT.

MAINTENANCE

INSPECT CHANNELS AT REGULAR INTERVALS AS WELL AS AFTER MAJOR RAINS, AND MAKE REPAIRS PROMPTLY. GIVE SPECIAL ATTENTION TO THE OUTLET AND INLET SECTIONS AND OTHER POINTS WHERE CONCENTRATED FLOW ENTERS. CAREFULLY CHECK STABILITY AT ROAD CROSSINGS AND LOOK FOR INDICATIONS OF PIPING, SCOUR HOLES, OR BANK FAILURES. MAKE REPAIRS IMMEDIATELY. MAINTAIN ALL VEGETATION ADJACENT TO THE CHANNEL IN A HEALTHY, VIGOROUS CONDITION TO PROTECT THE AREA FROM EROSION AND SCOUR DURING OUT-OF-BANK CONTROL OF WEED AND BRUSH GROWTH MAY BE NEEDED IN SOME LOCATIONS.

TOPSOILING (6.04)

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 GREATER THAN 3.6 BEFORE LIMING, AND LIMING IS REQUIRED 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 SEEDDED.

SEDIMENT BARRIERS - USE SEDIMENT FENCES OR OTHER BARRIERS WHERE NECESSARY TO RETAIN SEDIMENT.

GRASS-LINED CHANNELS (6.30)

CONSTRUCTION SPECIFICATIONS

- 1. 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.
- 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 OR A TEMPORARY LINER SUFFICIENT TO WITHSTAND ANTICIPATED VELOCITIES DURING THE ESTABLISHMENT PERIOD.

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 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 CAPACITY. KEEP THE GRASS IN A HEALTHY, VIGOROUS CONDITION AT ALL TIMES, SINCE IT IS THE PRIMARY EROSION PROTECTION FOR THE CHANNEL.

EROSION CONTROL DETAIL

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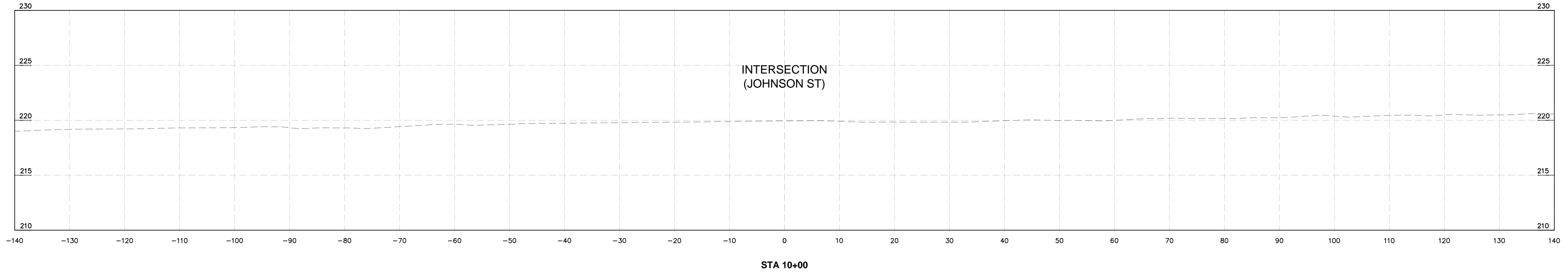
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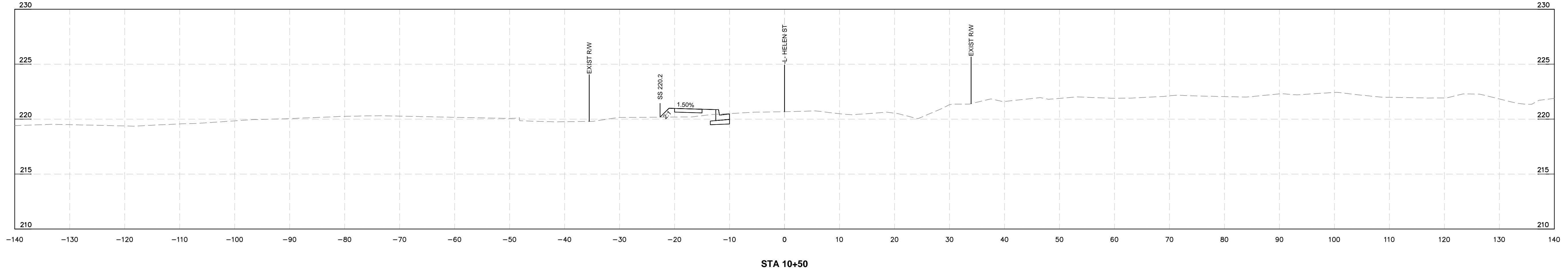
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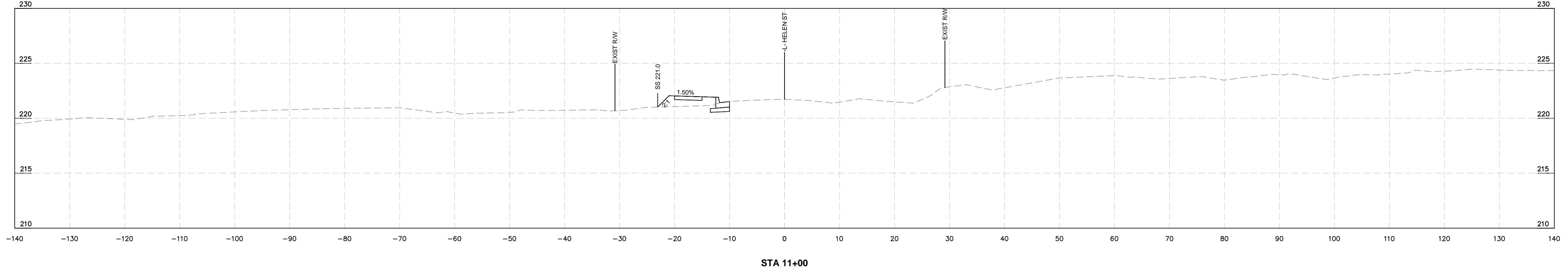
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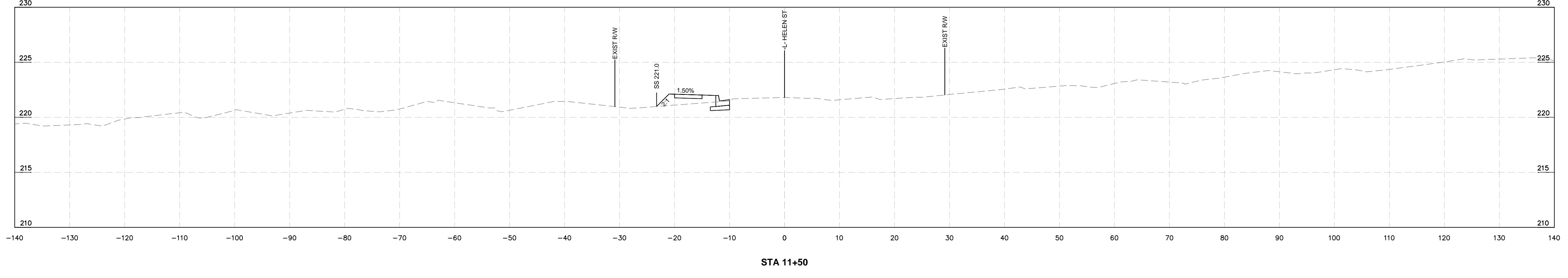
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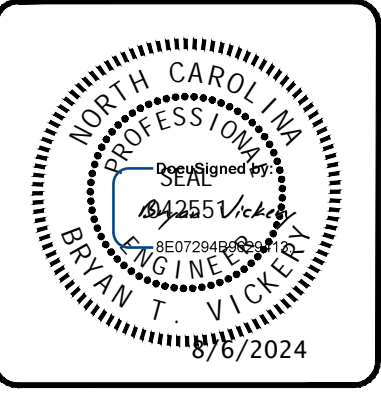
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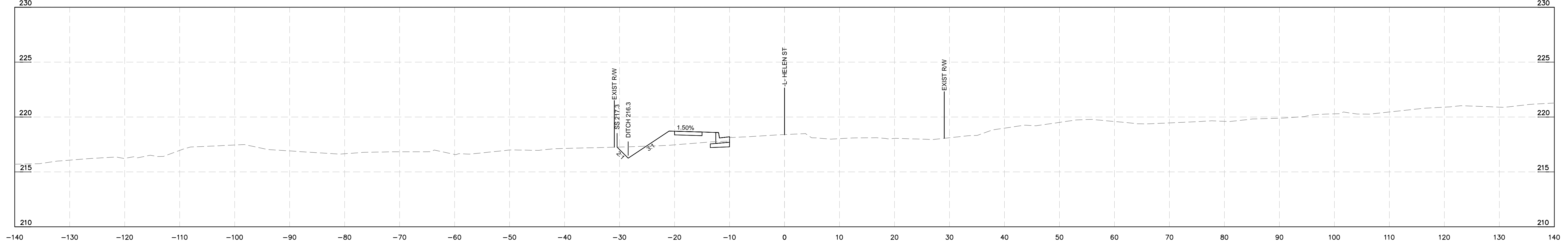
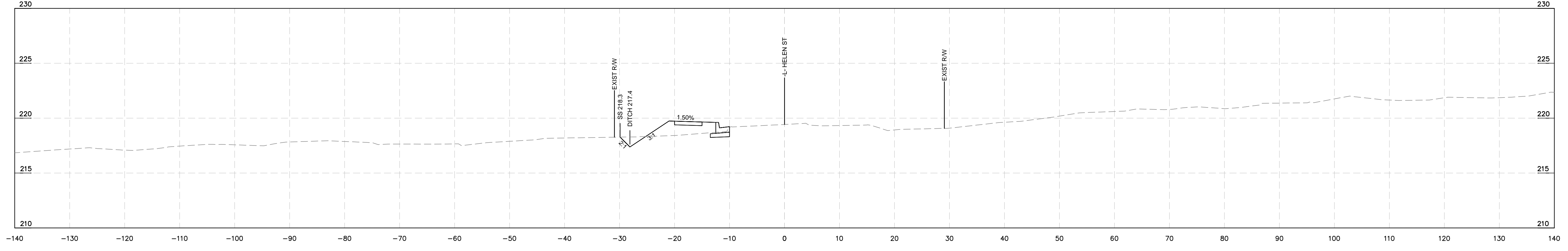
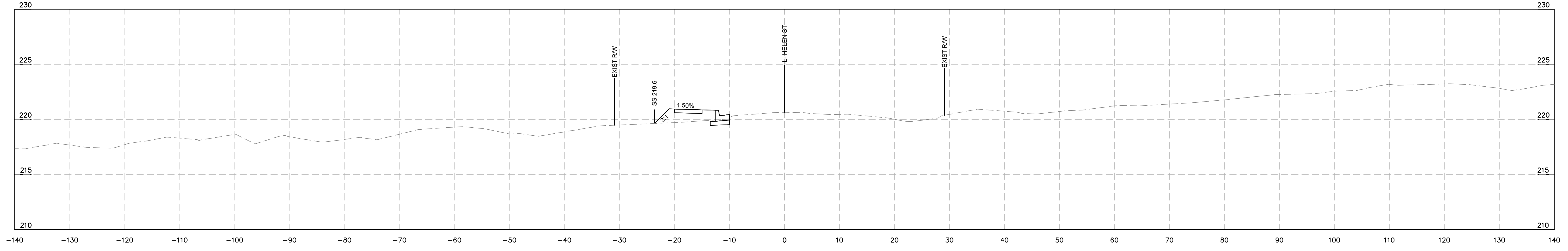
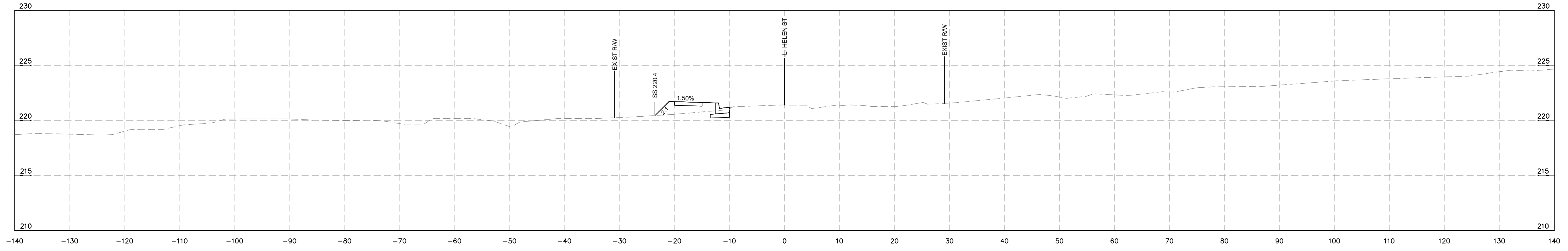
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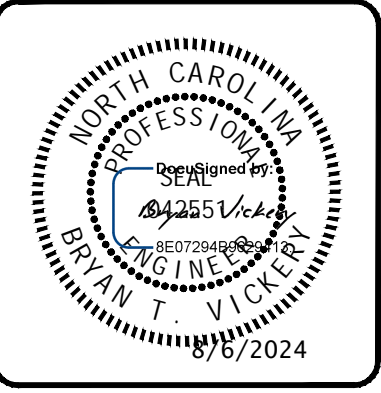
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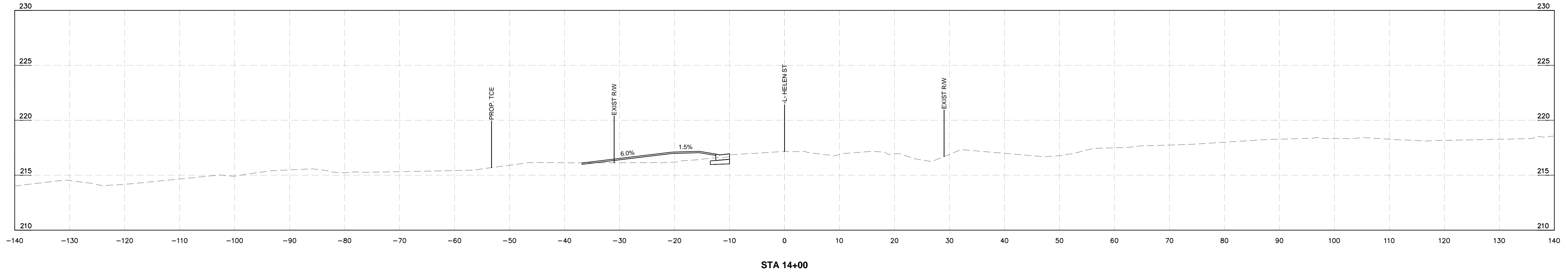
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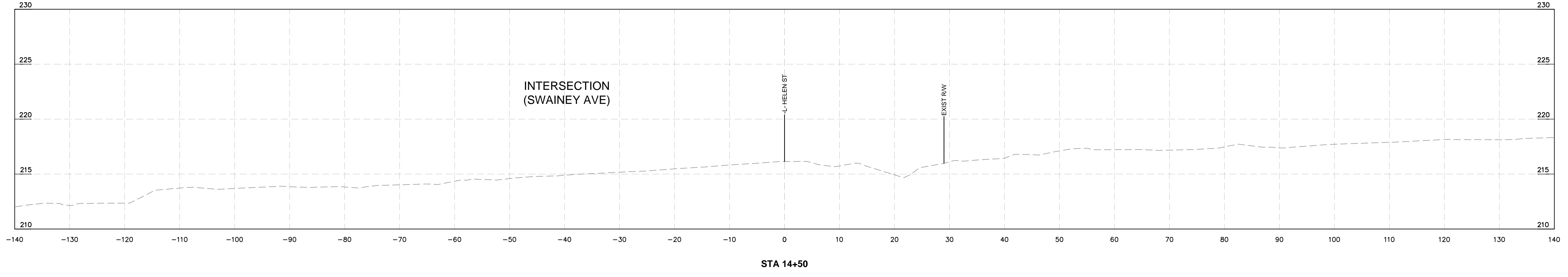
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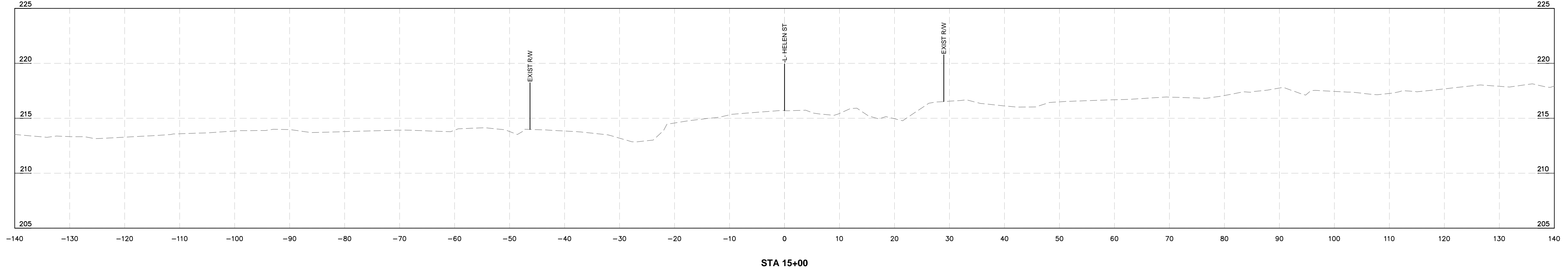
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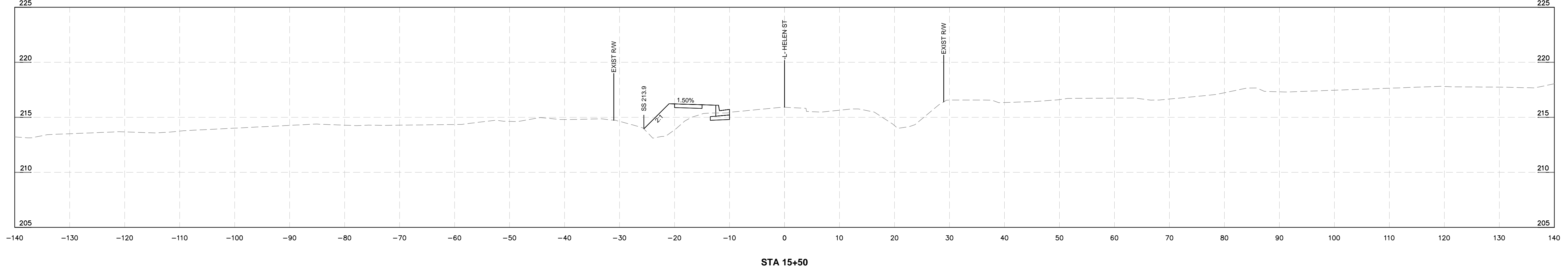
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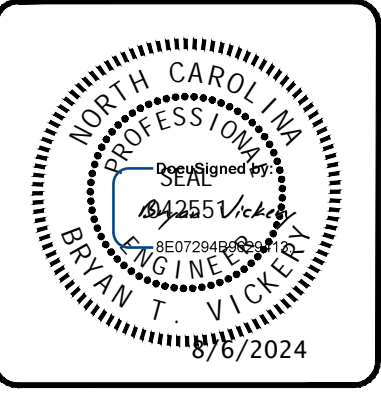


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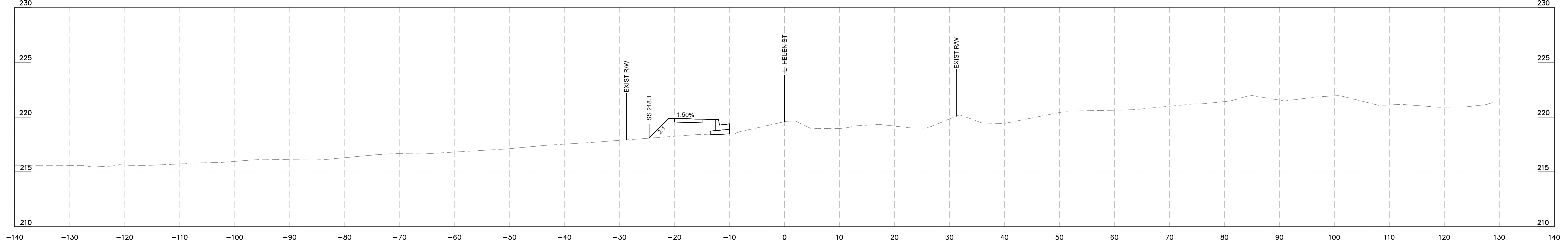
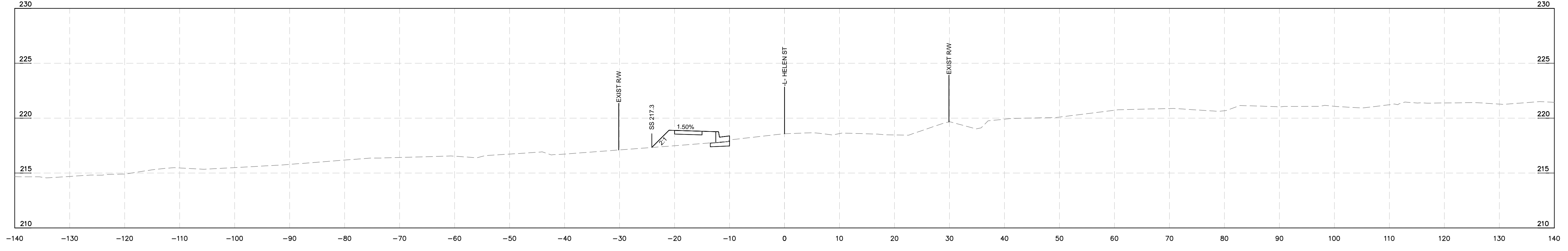
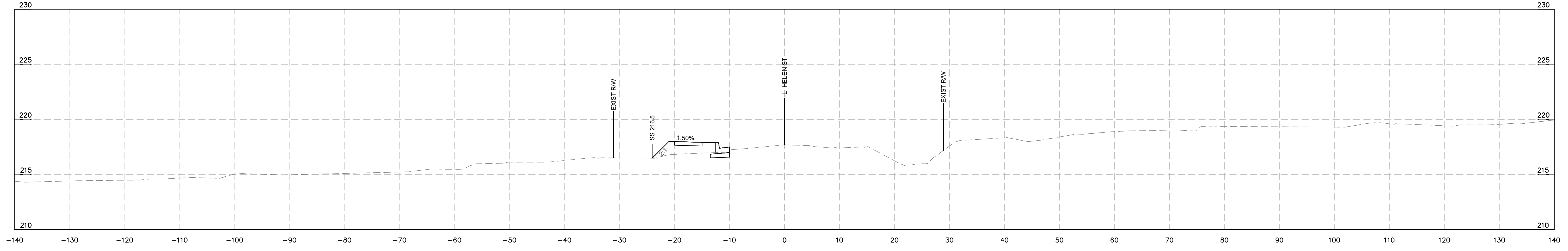
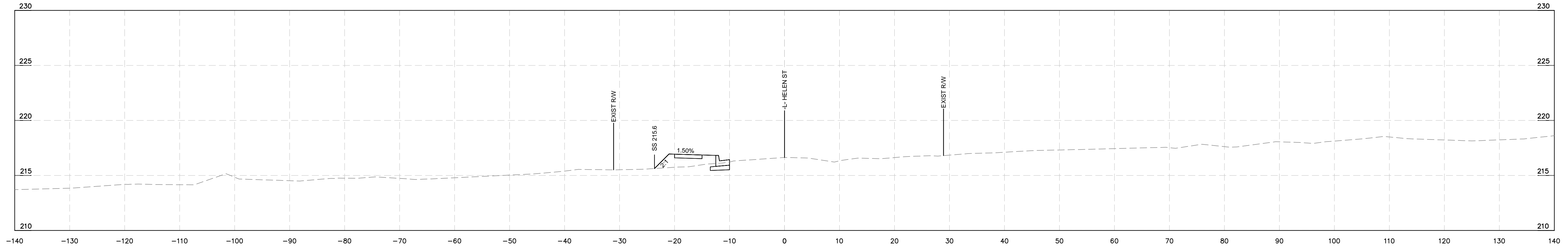
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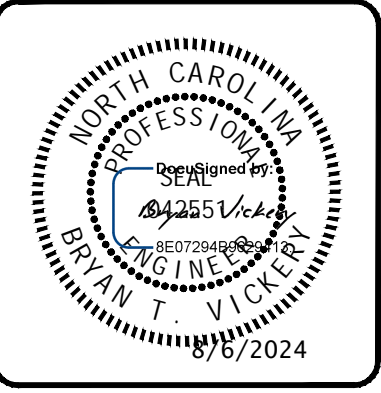
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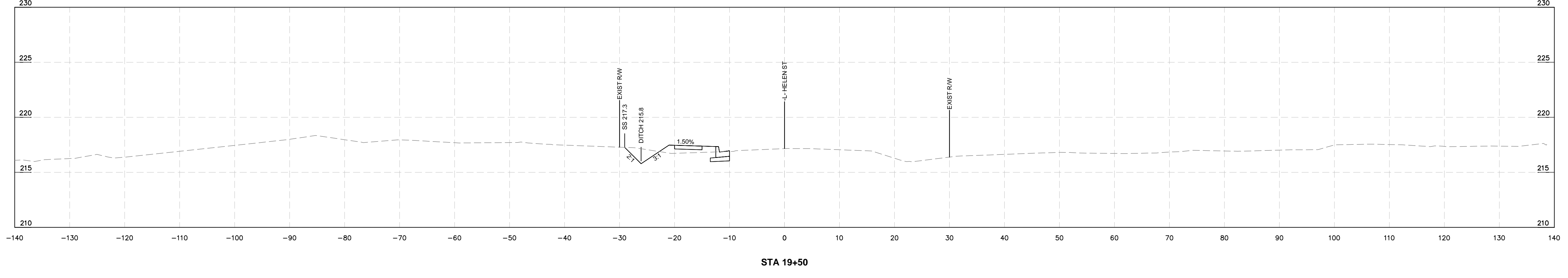
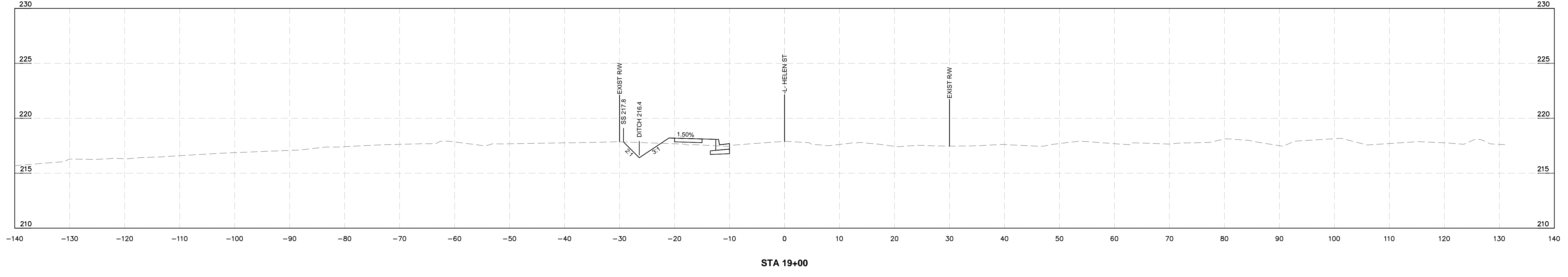
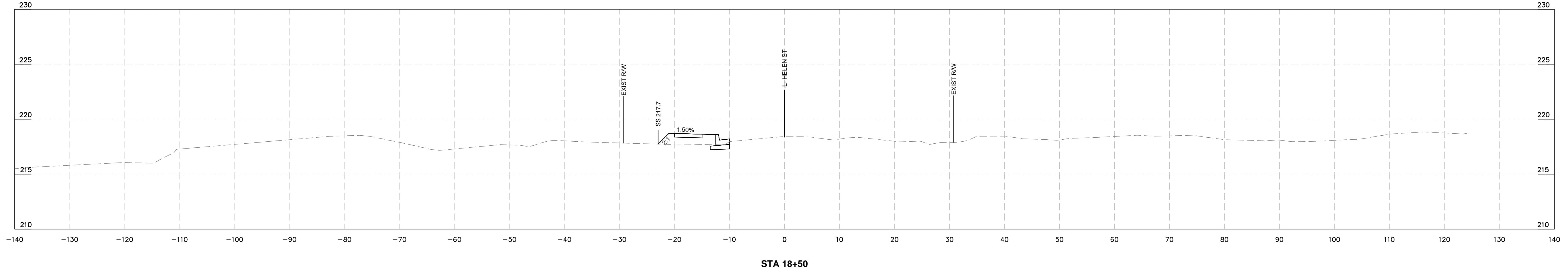
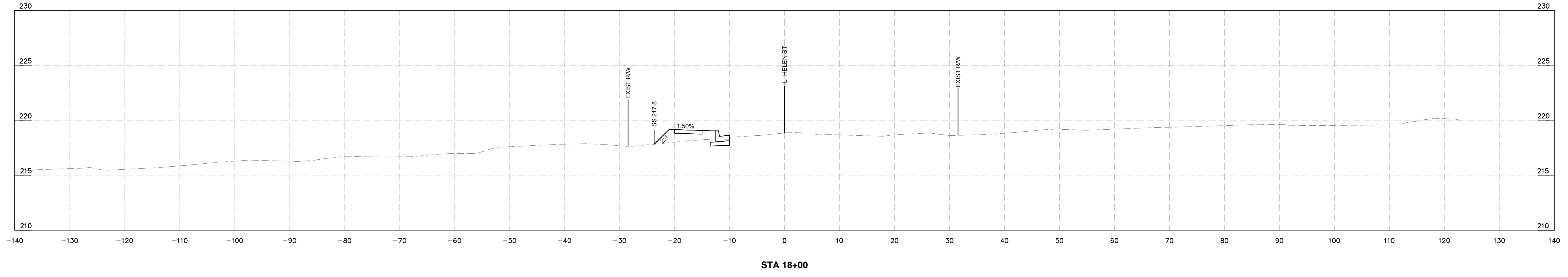
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PLAN TYPE
100% PLANS

SHEET NUMBER
32

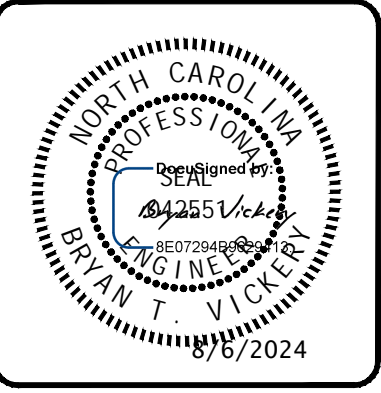
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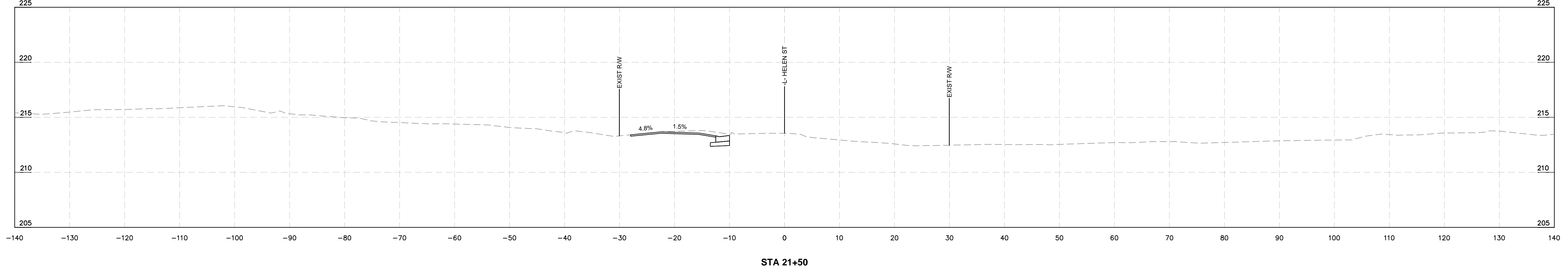
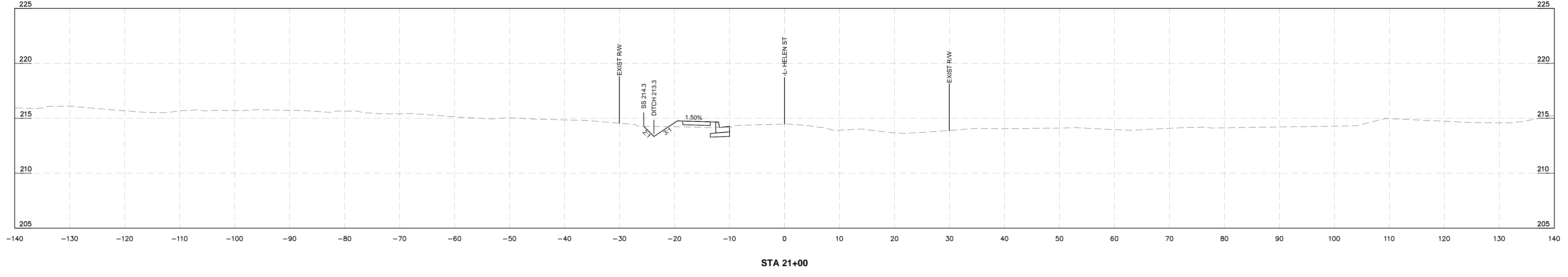
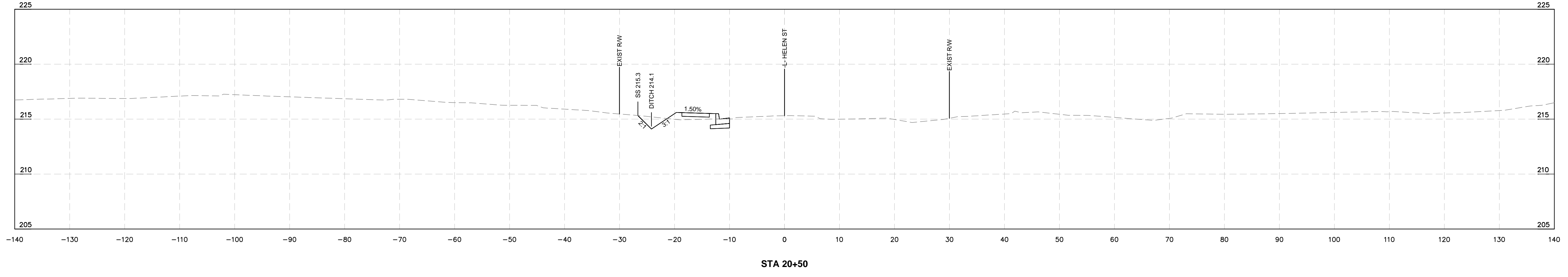
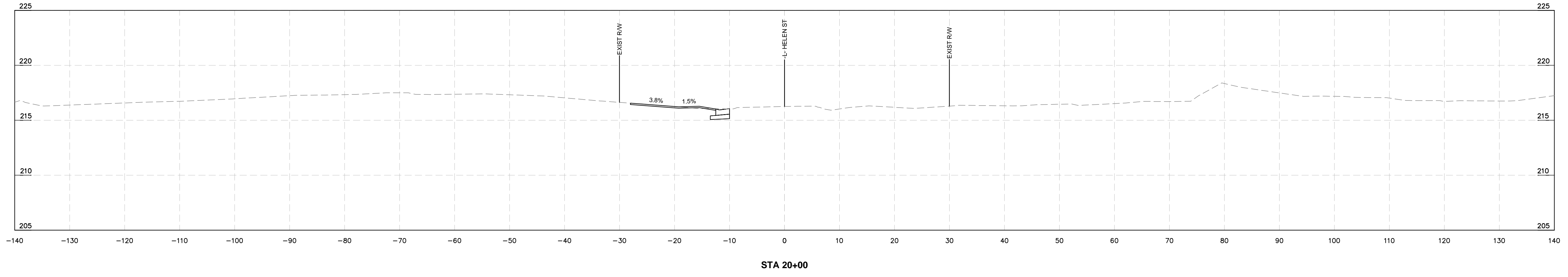
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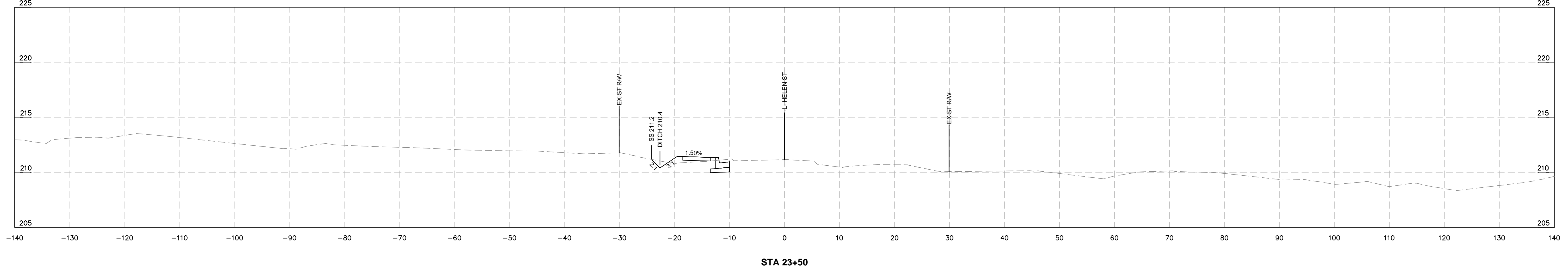
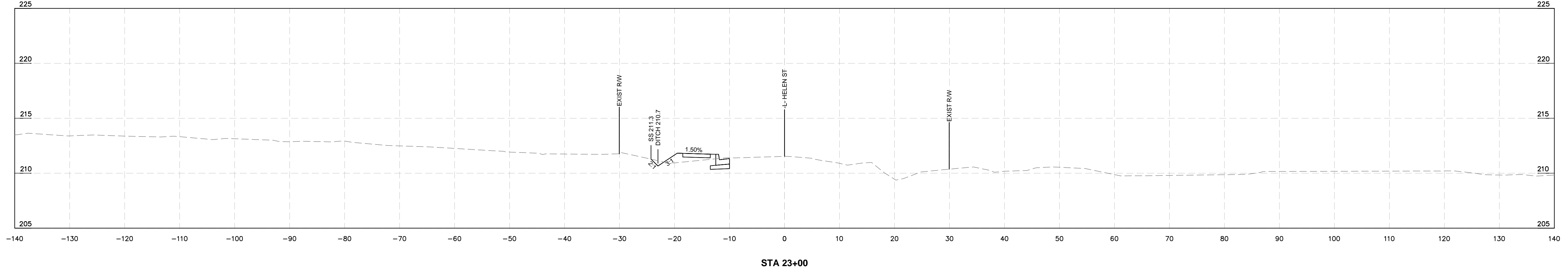
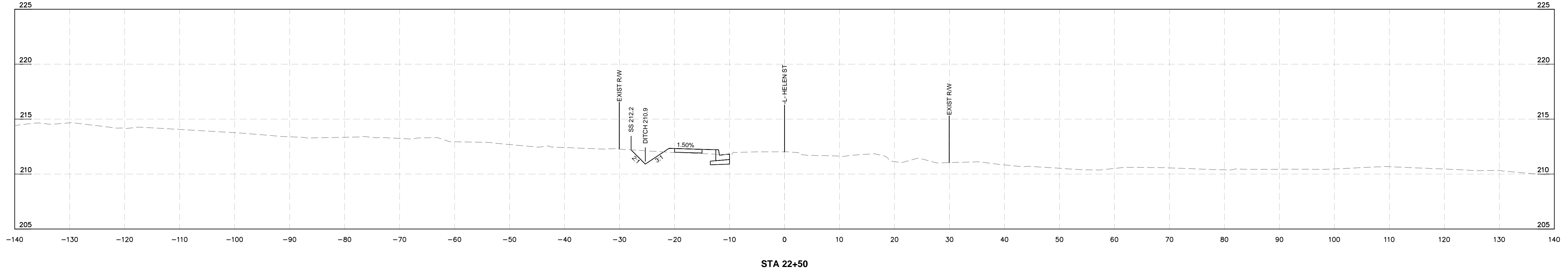
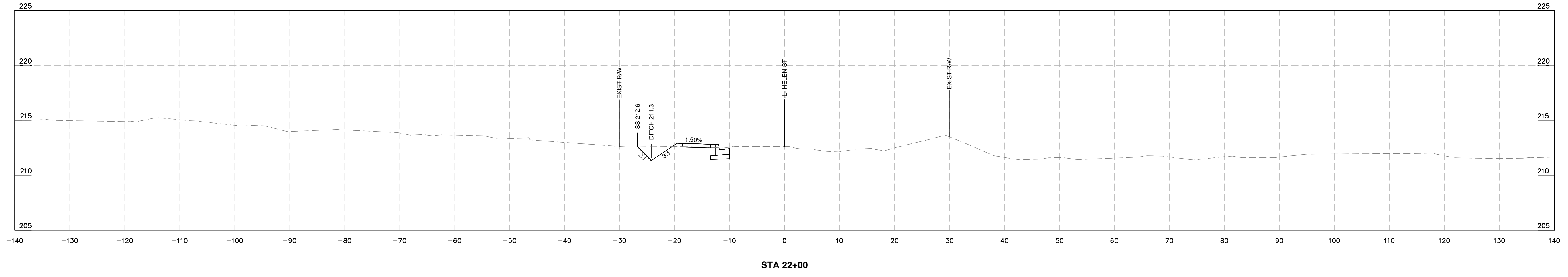
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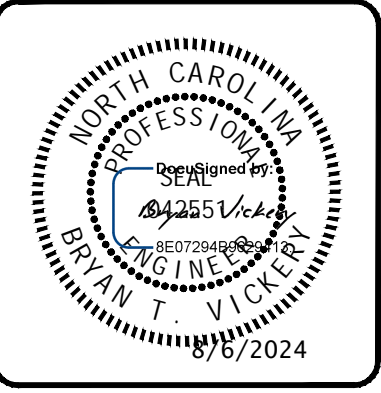
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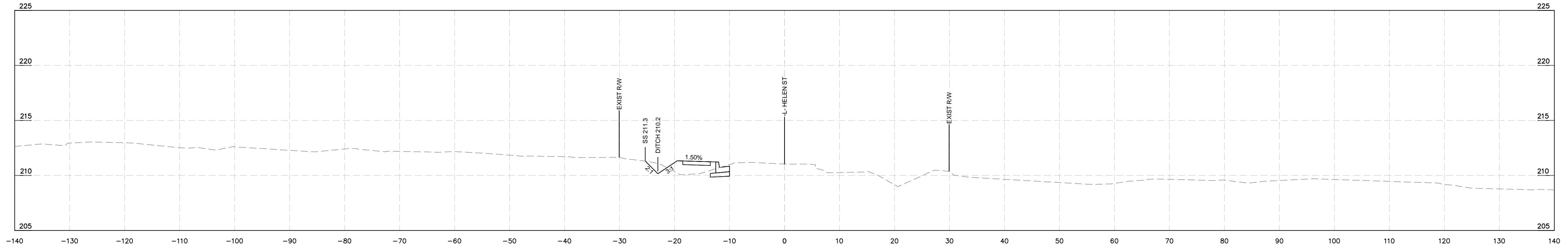
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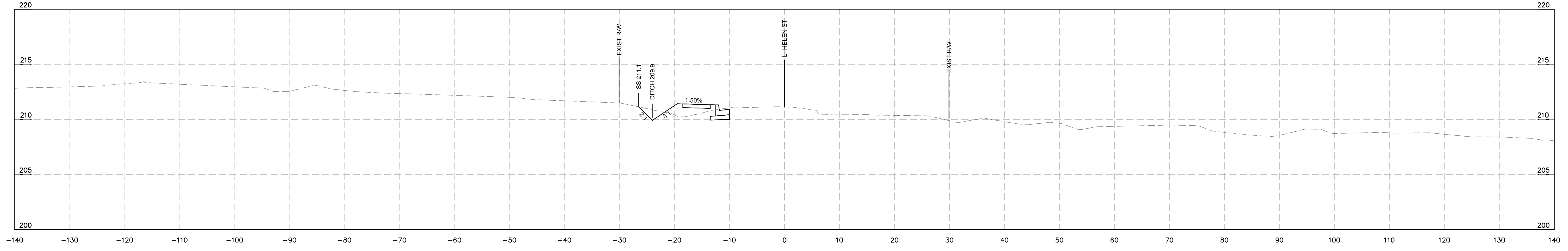
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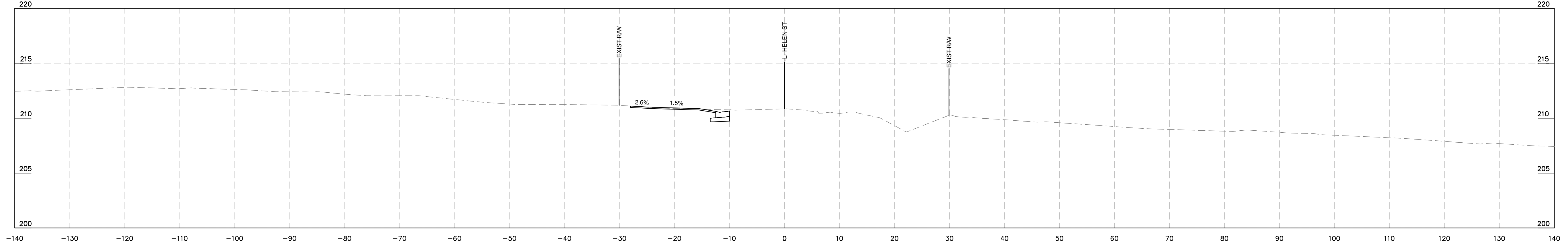
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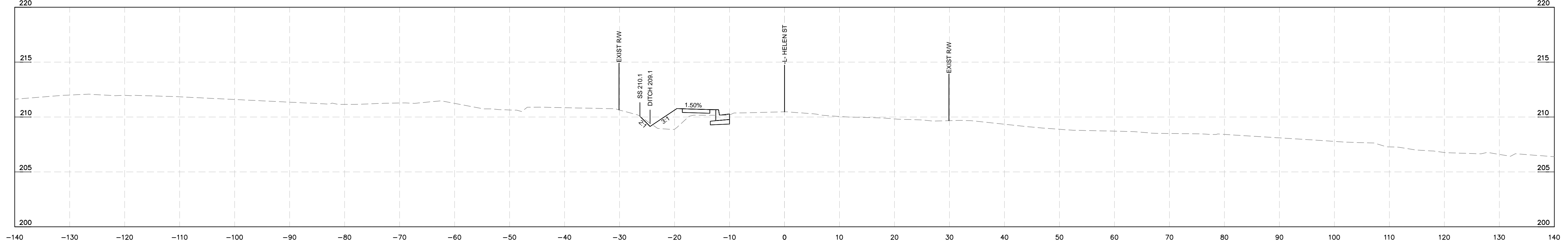
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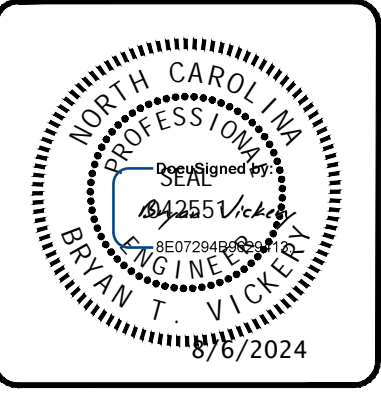


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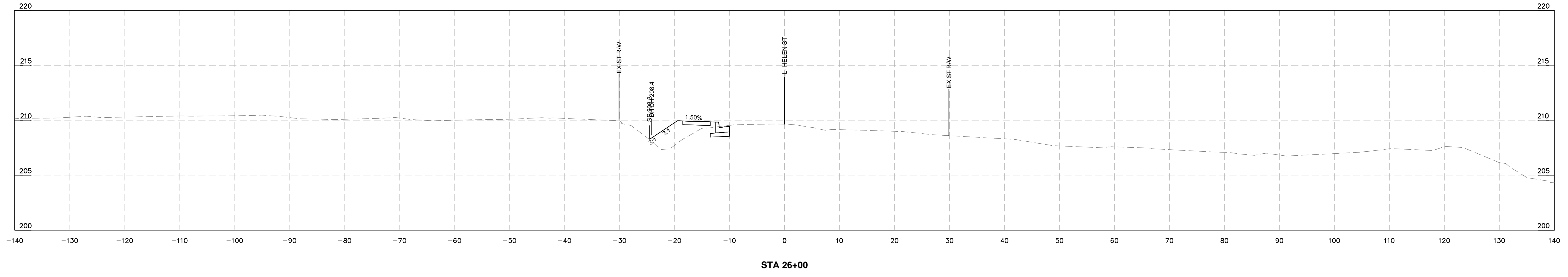
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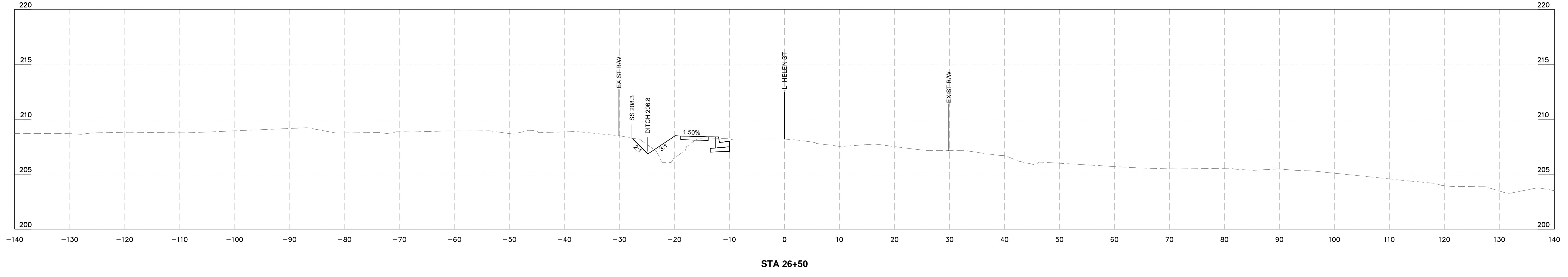
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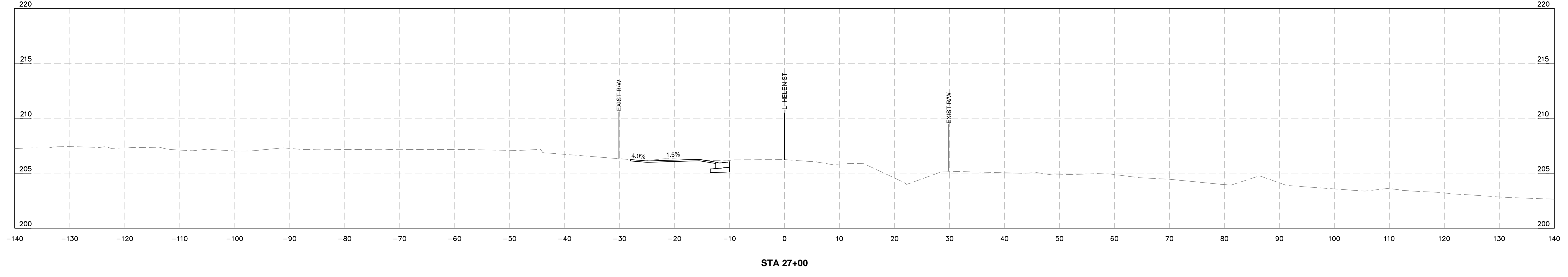
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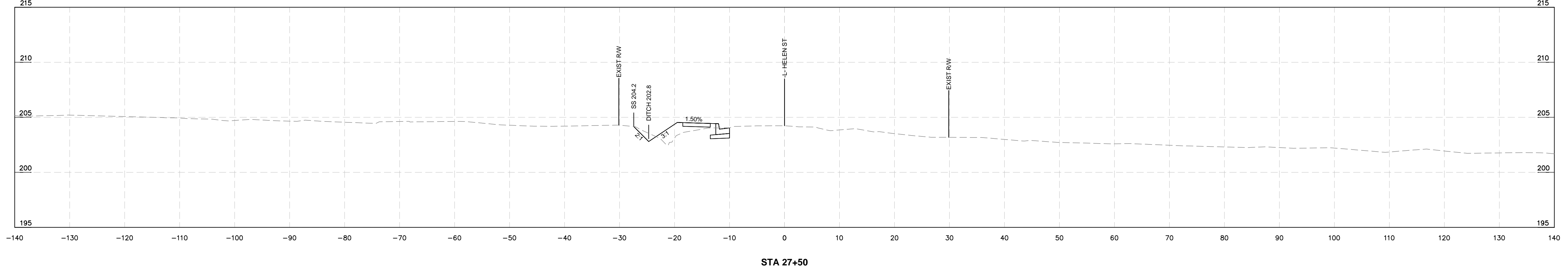
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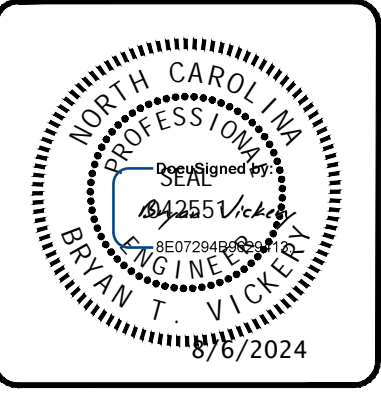
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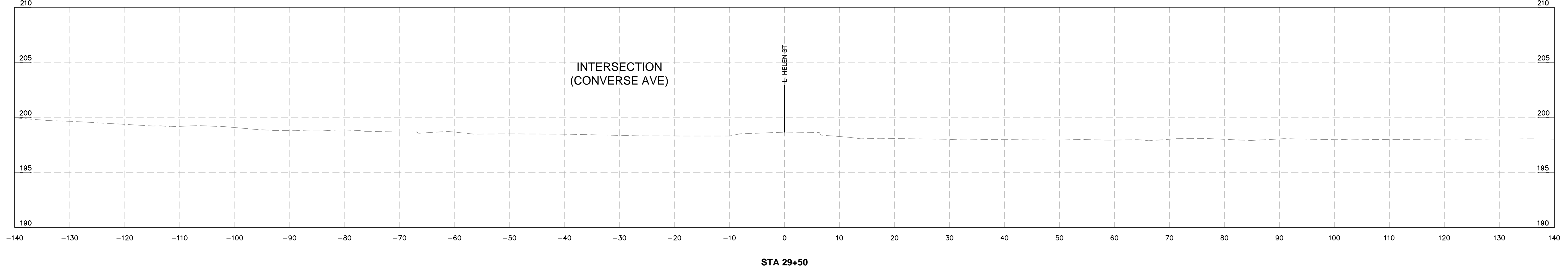
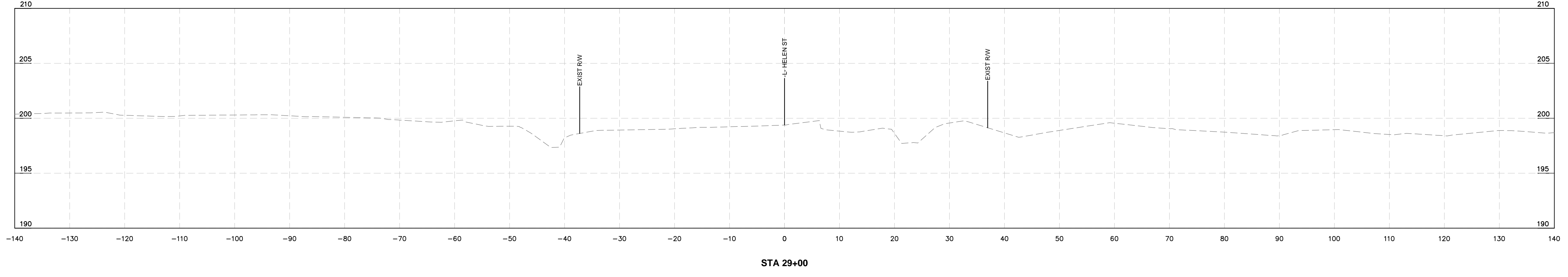
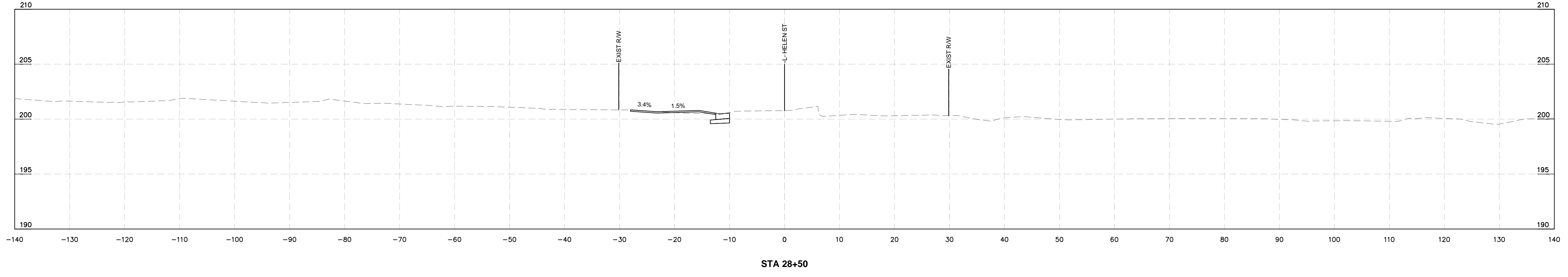
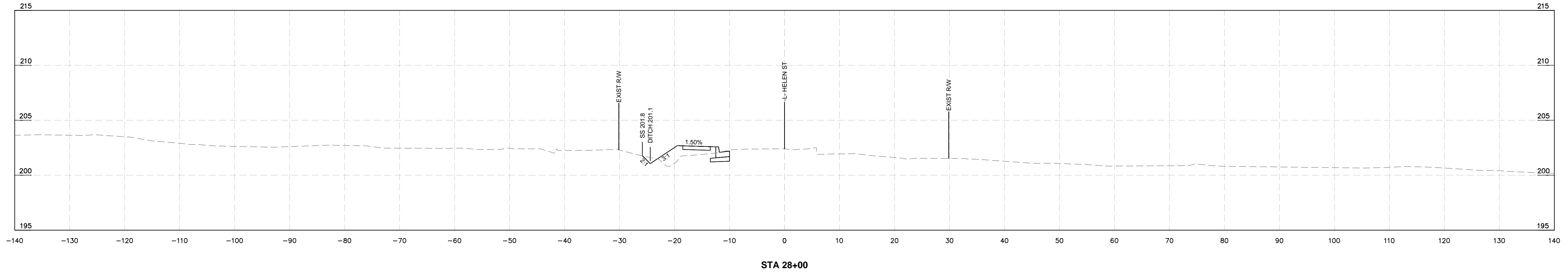
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CROSS SECTIONS

PLAN TYPE
100% PLANS

SHEET NUMBER
37

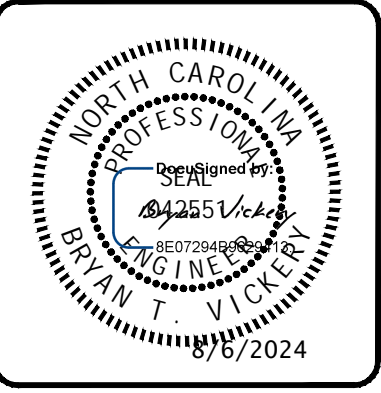
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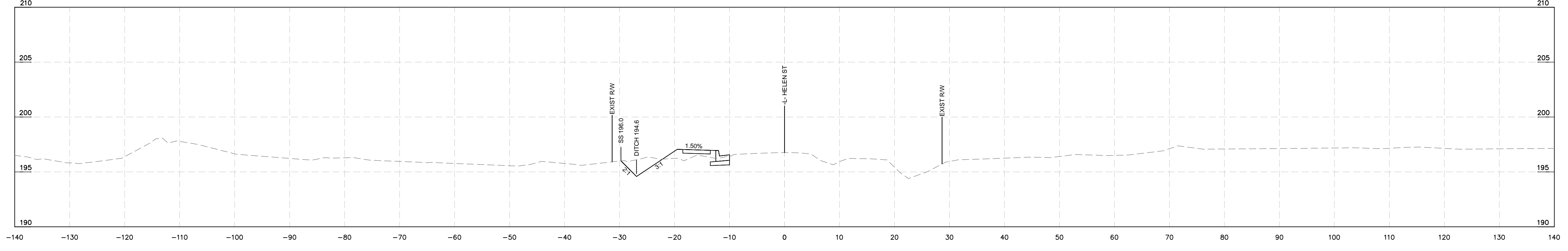
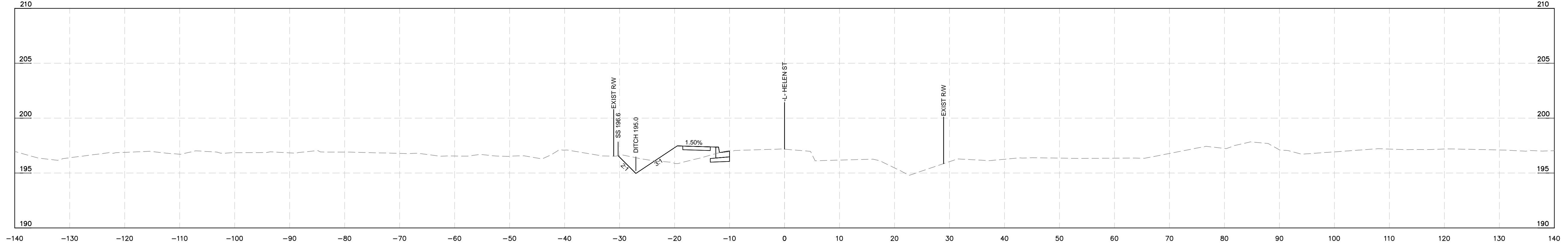
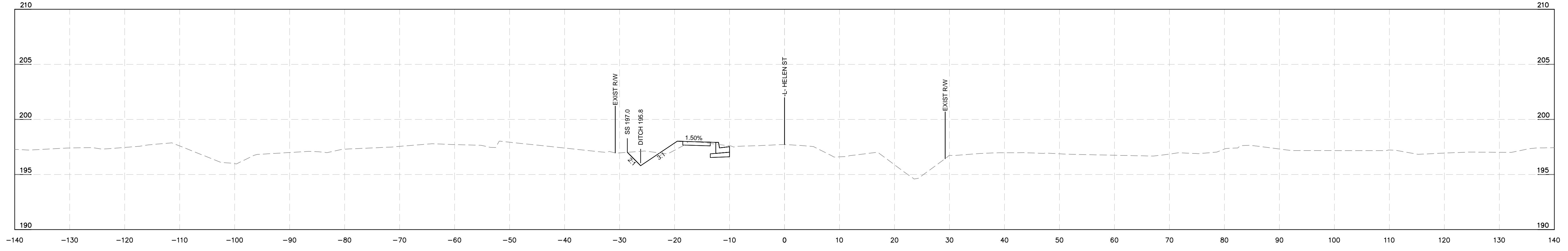
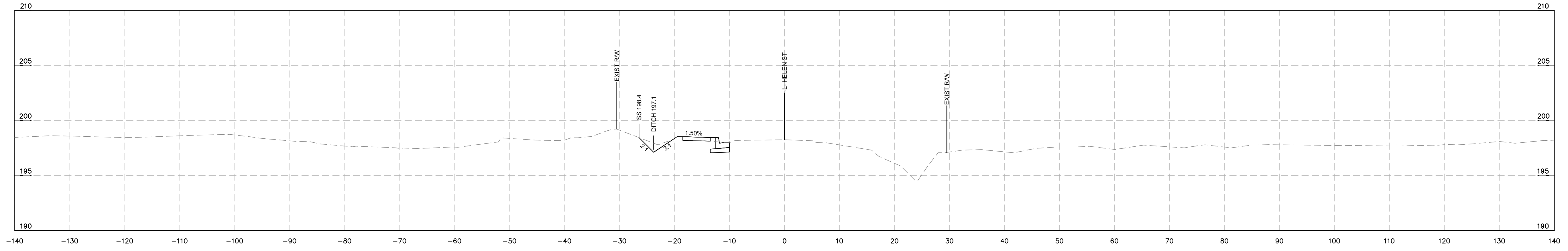
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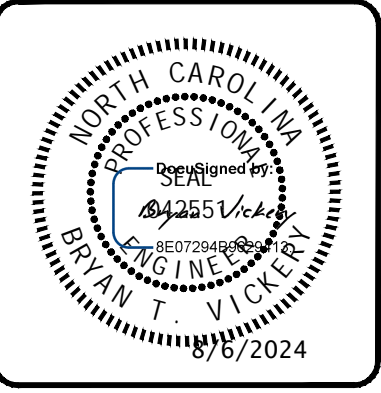
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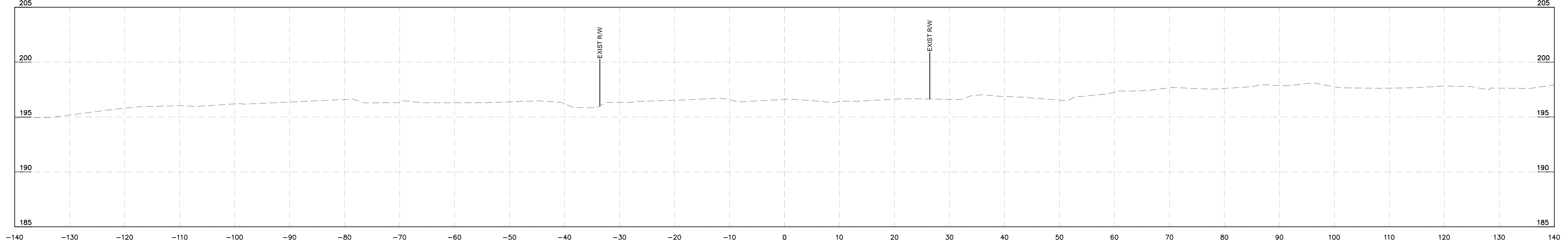
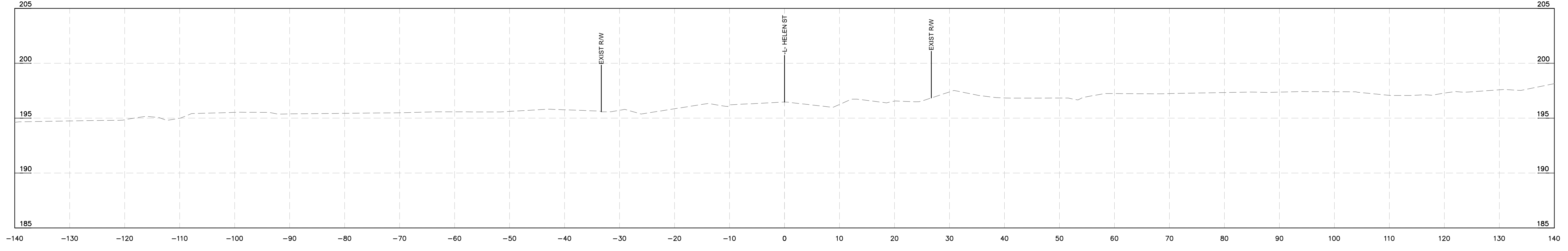
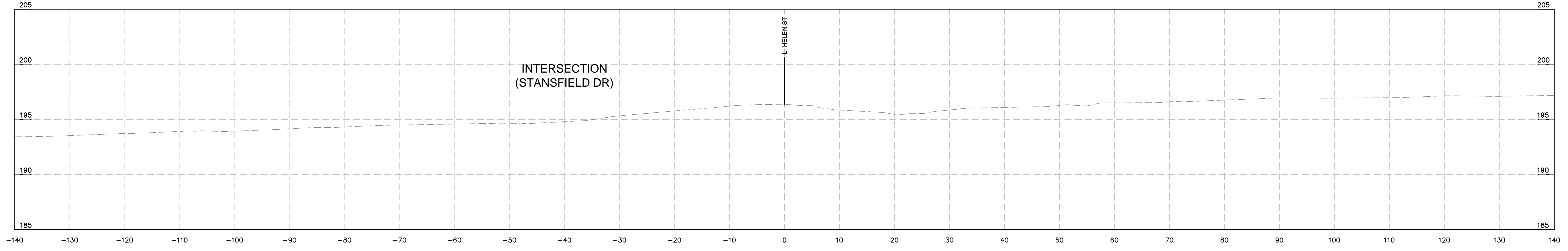
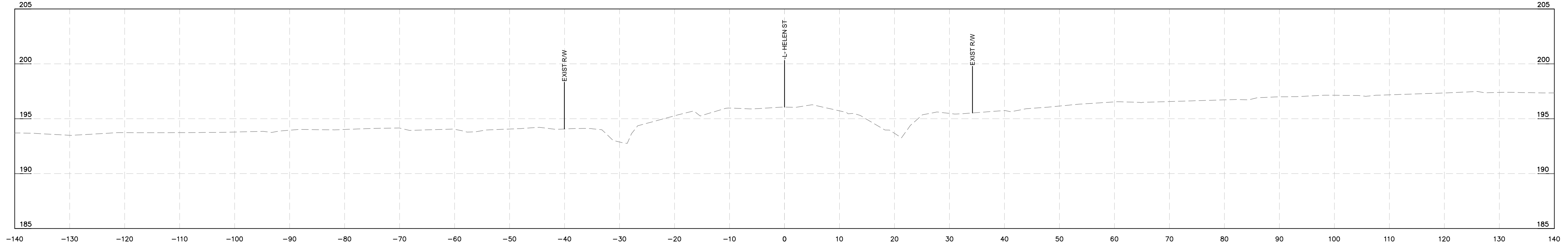
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PLAN TYPE
100% PLANS

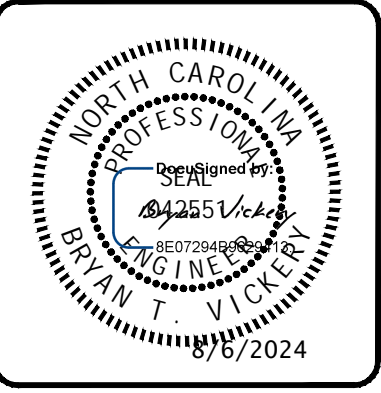
SHEET NUMBER
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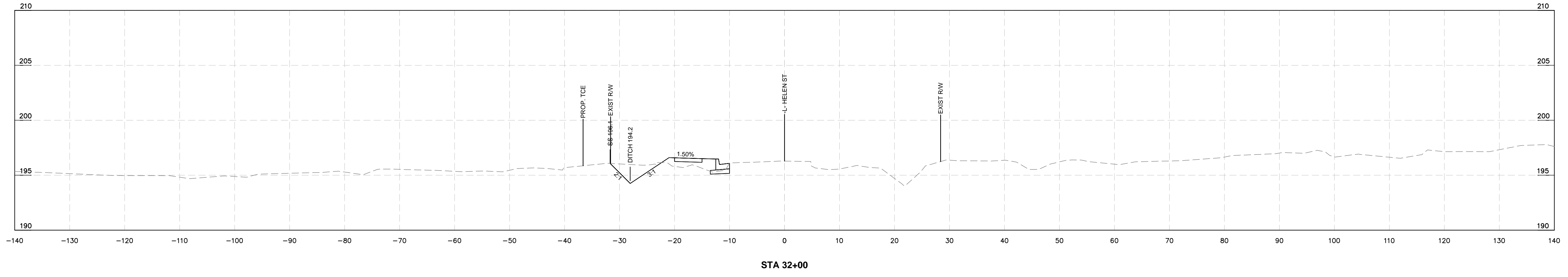
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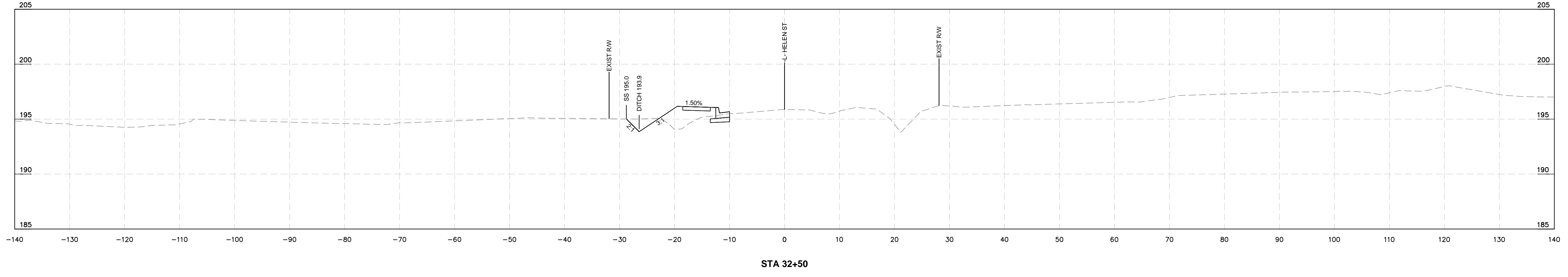
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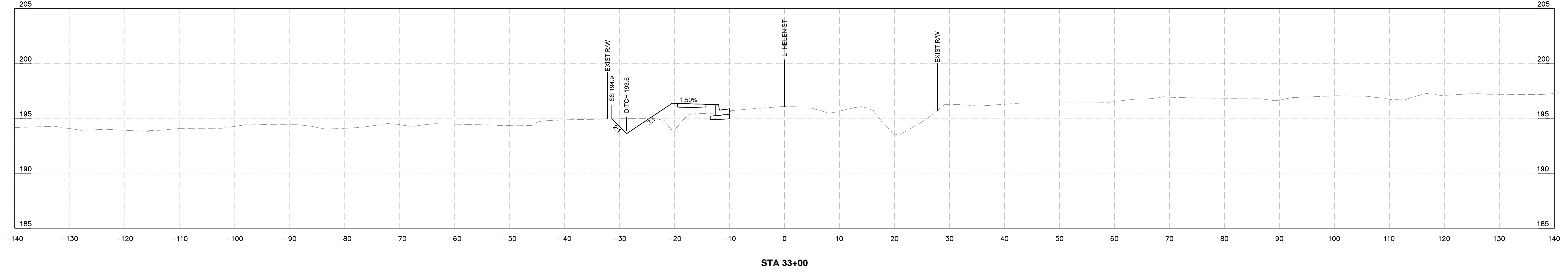
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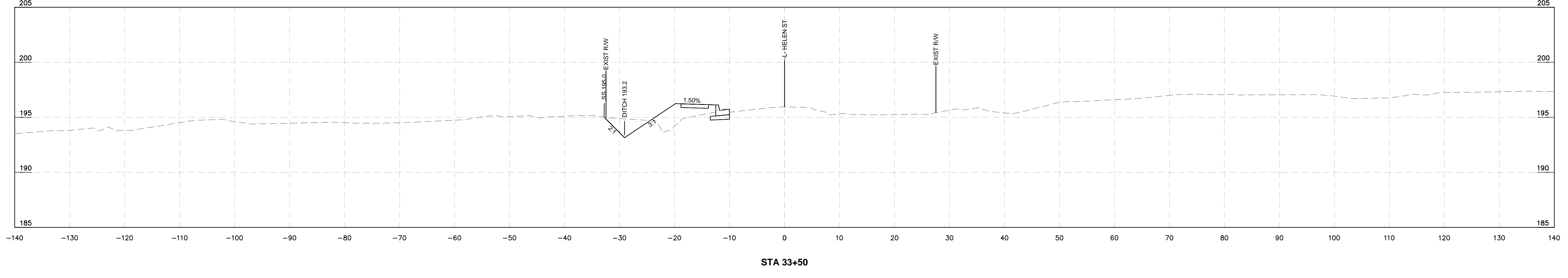
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STA 32+50



STA 33+00

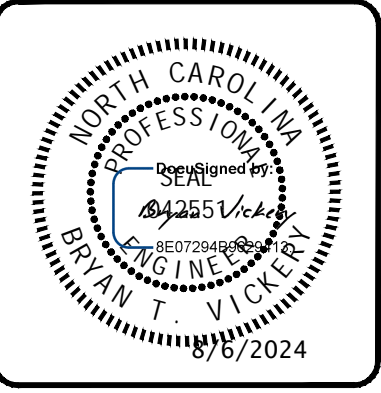


STA 33+50

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