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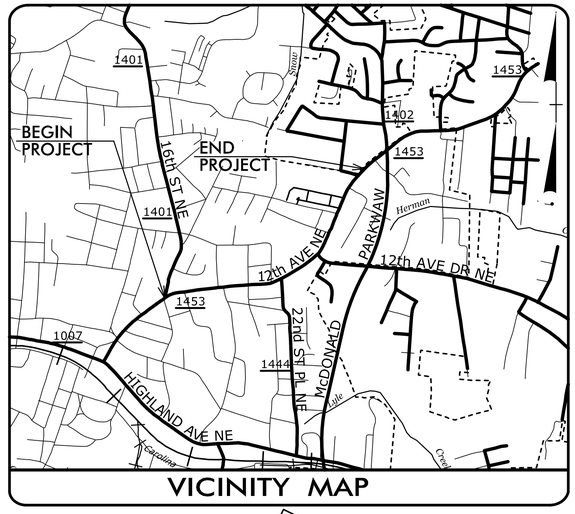
09/08/99

TIP PROJECT: BL-0066

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Plan Sheet Symbols



VICINITY MAP

STATE OF NORTH CAROLINA
CATAWBA COUNTY

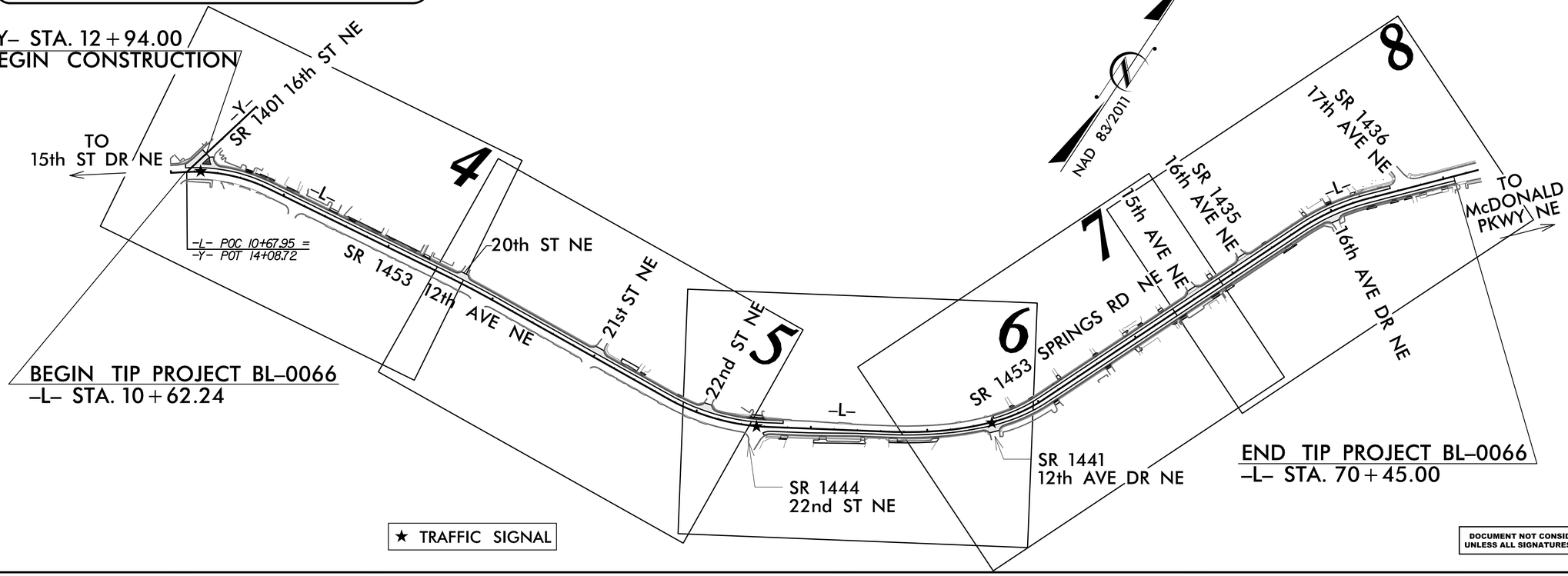
CITY OF HICKORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BL-0066	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
50628.1.1	1143028	PE
50628.2.1	1143028	RW
50628.2.2	1143028	UTIL.
50628.3.1	1143028	CONST.

LOCATION: SIDEWALKS ALONG BOTH SIDES OF SR 1453 (12th AVE. NE/SPRINGS RD NE) BETWEEN SR 1401 (16th ST NE/SANDY RIDGE RD) AND McDONALD PARKWAY NE

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND SIGNALS



★ TRAFFIC SIGNAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BL-0066 = 1.133 MILES
TOTAL LENGTH TIP PROJECT BL-0066 = 1.133 MILES

CITY CONTACT: KELLY WINKLER, PE

PLANS PREPARED BY:

TGS ENGINEERS
201 W. MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PLANS PREPARED FOR:

HICKORY
North Carolina
Life. Well Crafted.
76 N CENTER ST
HICKORY, NC 28601

RIGHT OF WAY DATE:
OCTOBER 25, 2024

LETTING DATE:
SEPTEMBER 24, 2026

2024 STANDARD SPECIFICATIONS

JIMMY L. TERRY, PE
PROJECT ENGINEER

CLINTON B. PRUETT, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

8/13/2026
Signed by: David B. Petty
P.E.
SIGNATURE:

NORTH CAROLINA PROFESSIONAL SEAL 038697 ENGINEER DAVID B. PETTY

ROADWAY DESIGN ENGINEER

8/13/2026
DocuSigned by: Jimmy Terry
P.E.
SIGNATURE:

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

8/13/2026
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 ENGINEER JIMMY L. TERRY 4/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

EFF. 08-11-2025
REV. 11-26-2025

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1 THRU 2C-2	SPECIAL DETAILS - METHOD OF PIPE INSTALLATION
2C-3	SPECIAL DETAILS - CONCRETE SIDEWALK
3B-1	ROADWAY AND DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 8	PLAN SHEETS
RW01 THRU RW08	SURVEY CONTROL SHEETS
PMP-1 THRU PMP-6	PAVEMENT MARKING AND SIGNING PLANS
EC-1 THRU EC-23	EROSION CONTROL PLANS
SIG-1.0 THRU SIG-4.3	SIGNAL PLANS
UC-1 THRU UC-8	UTILITIES CONSTRUCTION PLANS
UO-1 THRU UO-6	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-20	CROSS-SECTIONS

GENERAL NOTES:

2024 SPECIFICATIONS
EFFECTIVE: 01-16-2024
REVISED:

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE CITY OF HICKORY, DUKE ENERGY, BRIGHTSPEED, SEGRA, METRONET, AND RIPPLE FIBER.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.06.

2024 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2024 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation (Use Details in Lieu of Standards for Sheets 1 and 2 of 2)
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
840.00	Concrete Base Pad for Drainage Structures
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk (Use Detail in Lieu of Standard for Sheet 1 of 1)
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
848.06	Curb Ramp (Use Details in Lieu of Standards for Sheets 9 and 10 of 13)
852.01	Concrete Islands

4/2/2026
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PROJECT REFERENCE NO.	SHEET NO.
BL-0066	1B

05/20/24

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (EIP) — EIP
- Computed Property Corner
- Existing Concrete Monument (ECM) — ECM
- Parcel / Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Secondary Horiz and Vert Control Point
- Vertical Benchmark
- Existing Right of Way Monument
- Proposed Right of Way Monument (Rebar and Cap)
- Proposed Right of Way Monument (Concrete)
- Existing Permanent Easement Monument
- Proposed Permanent Easement Monument (Rebar and Cap)
- Existing C/A Monument
- Proposed C/A Monument (Rebar and Cap)
- Proposed C/A Monument (Concrete)
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Existing Control of Access Line — CA
- Proposed Control of Access Line — CA
- Proposed ROW and CA Line — RW CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage/Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

** SUE - Subsurface Utility Engineering*
LOS - Level of Service - A,B,C or D (Accuracy)

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H-Frame Pole
- U/G Power Line Test Hole (SUE - LOS A)*
- U/G Power Line (SUE - LOS B)* — P
- U/G Power Line (SUE - LOS C)* — P
- U/G Power Line (SUE - LOS D)* — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Test Hole (SUE - LOS A)*
- U/G Telephone Cable (SUE - LOS B)* — T
- U/G Telephone Cable (SUE - LOS C)* — T
- U/G Telephone Cable (SUE - LOS D)* — T
- U/G Telephone Conduit (SUE - LOS B)* — TC
- U/G Telephone Conduit (SUE - LOS C)* — TC
- U/G Telephone Conduit (SUE - LOS D)* — TC
- U/G Fiber Optics Cable (SUE - LOS B)* — T FO
- U/G Fiber Optics Cable (SUE - LOS C)* — T FO
- U/G Fiber Optics Cable (SUE - LOS D)* — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line Test Hole (SUE - LOS A)*
- U/G Water Line (SUE - LOS B)* — W
- U/G Water Line (SUE - LOS C)* — W
- U/G Water Line (SUE - LOS D)* — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Test Hole (SUE - LOS A)*
- U/G TV Cable (SUE - LOS B)* — TV
- U/G TV Cable (SUE - LOS C)* — TV
- U/G TV Cable (SUE - LOS D)* — TV
- U/G Fiber Optic Cable (SUE - LOS B)* — TV FO
- U/G Fiber Optic Cable (SUE - LOS C)* — TV FO
- U/G Fiber Optic Cable (SUE - LOS D)* — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line Test Hole (SUE - LOS A)*
- U/G Gas Line (SUE - LOS B)* — G
- U/G Gas Line (SUE - LOS C)* — G
- U/G Gas Line (SUE - LOS D)* — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Force Main Line Test Hole (SUE - LOS A)*
- SS Force Main Line (SUE - LOS B)* — FSS
- SS Force Main Line (SUE - LOS C)* — FSS
- SS Force Main Line (SUE - LOS D)* — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line (SUE - LOS B)* — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

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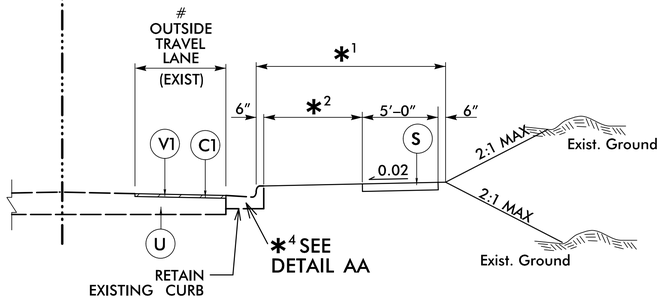
FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 1 ½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	2'-6" CONCRETE CURB & GUTTER
R2	8" X 12" CONCRETE CURB
R3	5" MONOLITHIC CONCRETE ISLAND - SURFACE MOUNTED
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	1 ½" MILLLING

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

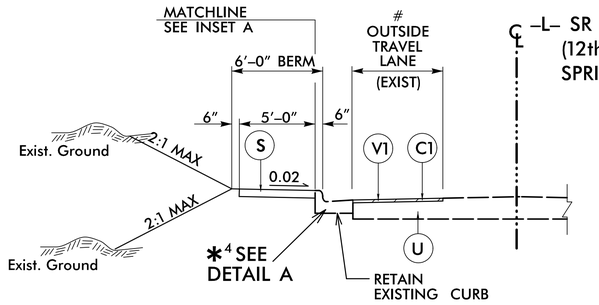


TYPICAL SECTION NO. 2

STATION TO STATION	*1 BERM WIDTH	*2 WIDTH
–L– STA. 38+07.85 TO –L– STA. 41+45.00, RT	12'–6"	6'–6"
–L– STA. 41+45.00 TO –L– STA. 41+95.00, RT	12'–6" TO 14'–0"	6'–6" TO 8'–0"
–L– STA. 41+95.00 TO –L– STA. 42+36.10, RT	14'–0"	8'–0"
–L– STA. 43+31.67 TO –L– STA. 43+82.00, RT	13'–0"	7'–0"
–L– STA. 62+38.00 TO –L– STA. 62+87.00, RT	10'–6"	4'–6"

NOTE: TRANSITION BETWEEN TYP. SECT. NO.1 AND TYP. SECT. NO.2 AS FOLLOWS:

–L– STA. 42+36.10 TO –L– STA. 42+46.10, RT
–L– STA. 43+21.67 TO –L– STA. 43+31.67, RT
–L– STA. 43+82.00 TO –L– STA. 44+07.00, RT
–L– STA. 62+13.00 TO –L– STA. 62+38.00, RT
–L– STA. 62+87.00 TO –L STA. 63+12.00, RT

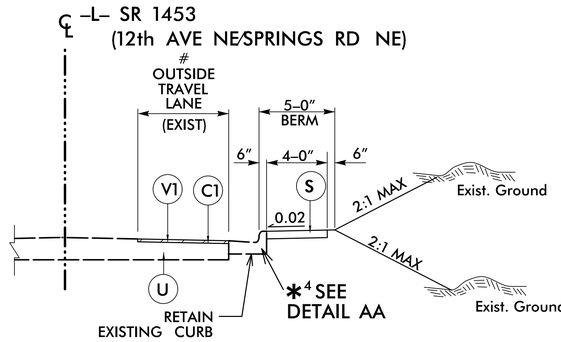


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

–L– STA. 10+64.14 TO –L– STA. 38+80.45, LT
–L– STA. 47+92.25 TO –L– STA. 66+33.00, LT

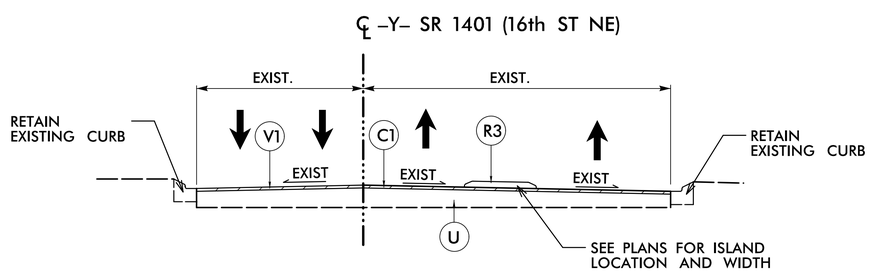
–L– STA. 42+46.10 TO –L– STA. 43+21.67, RT (MIRRORED)
–L– STA. 44+07.00 TO –L– STA. 45+47.09, RT (MIRRORED)
–L– STA. 47+52.04 TO –L– STA. 62+13.00, RT (MIRRORED)
–L– STA. 63+12.00 TO –L– STA. 70+20.00, RT (MIRRORED)



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

–L– STA. 45+47.09 TO –L– STA. 47+52.04, RT
–L– STA. 58+11.28, RT (POLE LOCATION)
–L– STA. 59+11.46, RT (POLE LOCATION)
–L– STA. 59+93.63, RT (POLE LOCATION)
–L– STA. 61+45.68, RT (POLE LOCATION)
–L– STA. 62+83.57, RT (POLE LOCATION)
–L– STA. 65+38.70, RT (POLE LOCATION)
–L– STA. 67+02.80, RT (POLE LOCATION)
NOTE: SEE DETAIL B PSH. 8 FOR SIDEWALK AT POLES



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

–Y– STA. 12+94.00 TO –Y– STA. 13+60.94

MILL AND RESURFACE THE OUTSIDE TRAVEL LANE AS FOLLOWS:

–L– STA. 10+64.14 TO –L– STA. 38+80.45, LT
–L– STA. 37+99.04 TO –L– STA. 70+45.00, RT
–L– STA. 47+92.25 TO –L– STA. 67+68.85, LT

NOTE: TRANSITION BETWEEN TYP. SECT. NO.1 AND EXISTING AS FOLLOWS:

–L– STA. 66+33.00 TO –L– STA. 66+58.00, LT
–L– STA. 70+20.00 TO –L– STA. 70+45.00, RT (MIRRORED)

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	2A-1

ROADWAY & PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY

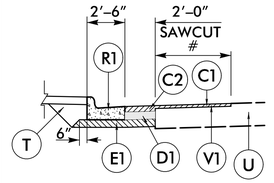
5/15/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST., STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

DETAIL AA

MIRRORED FOR RT SIDE



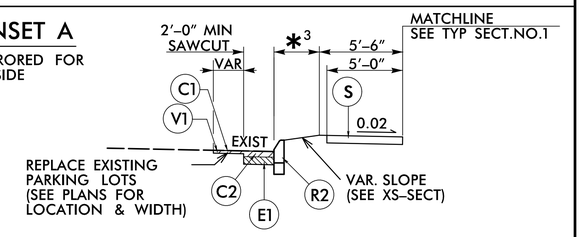
*4
REPLACE EXISTING CURB BETWEEN THE FOLLOWING STATIONS: SEE PLANS FOR DRIVEWAY LOCATIONS

–L– STA. 15+61.13 TO –L– STA. 15+86.14, LT
–L– STA. 16+90.41 TO –L– STA. 17+50.46, LT
–L– STA. 21+37.61 TO –L– STA. 21+93.03, LT
–L– STA. 37+07.16 TO –L– STA. 38+15.95, LT
–L– STA. 50+87.08 TO –L– STA. 51+41.08, LT

–L– STA. 45+15.41 TO –L– STA. 45+52.48, RT
–L– STA. 50+42.92 TO –L– STA. 50+82.61, RT
–L– STA. 53+10.12 TO –L– STA. 53+55.23, RT
–L– STA. 56+61.71 TO –L– STA. 57+42.89, RT
–L– STA, 58+54.48 TO –L– STA. 59+16.23, RT
–L– STA. 62+31.54 TO –L– STA. 62+83.70, RT

INSET A

MIRRORED FOR RT SIDE



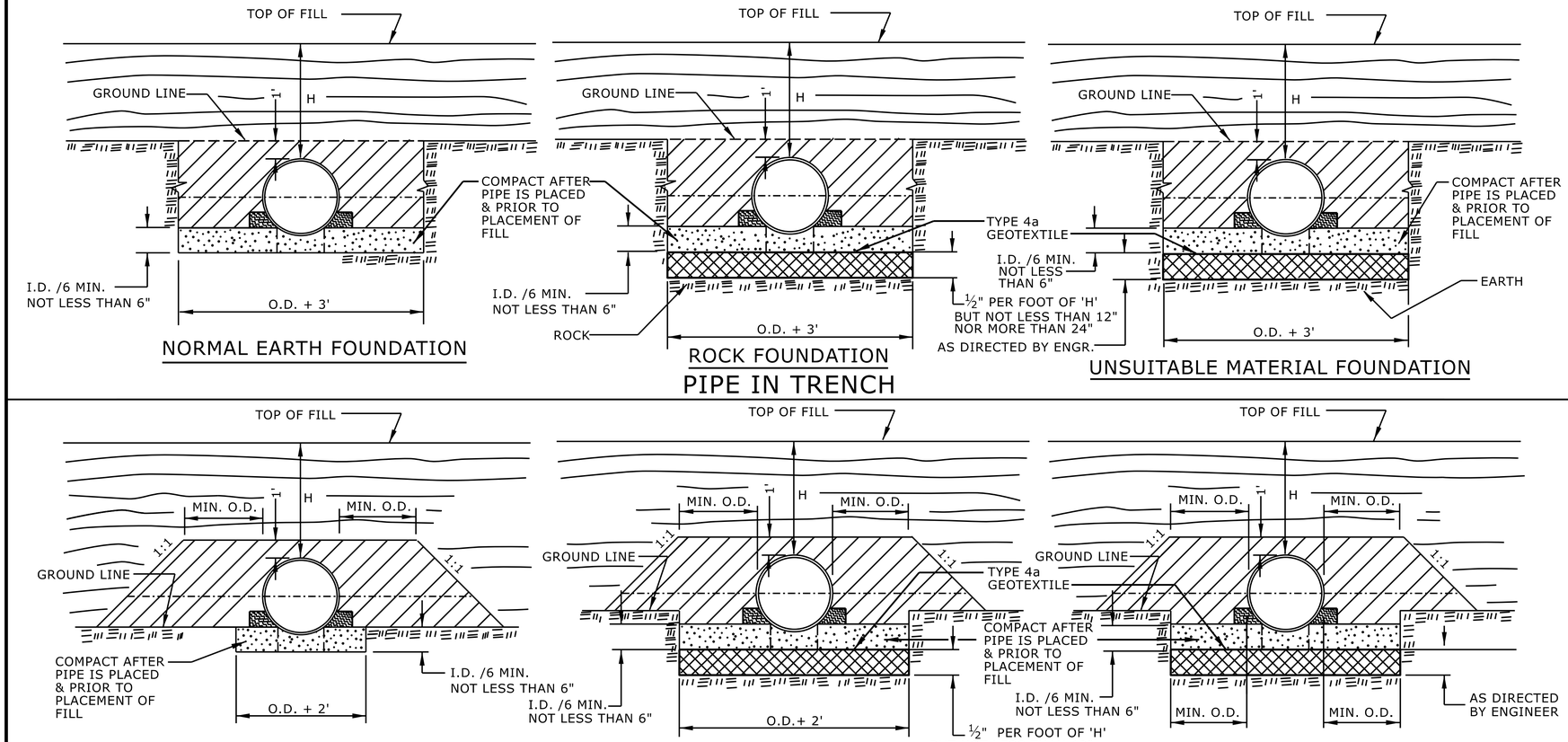
USE INSET A

*3	STATION TO STATION
1'–6"	–L– STA. 19+38.83 TO –L– STA. 19+48.68, LT
2'–0"	–L– STA. 15+32.18 TO –L– STA. 15+54.29, LT –L– STA. 19+76.78 TO –L– STA. 19+86.42, LT
2'–3"	–L– STA. 20+09.95 TO –L– STA. 20+18.81, LT –L– STA. 20+84.68 TO –L– STA. 20+92.98, LT –L– STA. 66+89.07 TO –L– STA. 66+92.91, RT –L– STA. 67+54.21 TO –L– STA. 67+61.37, RT –L– STA. 68+16.44 TO –L– STA. 68+25.69, RT
2'–6"	–L– STA. 13+54.17 TO –L– STA. 13+75.76, LT –L– STA. 14+03.40 TO –L– STA. 14+15.94, LT –L– STA. 18+28.81 TO –L– STA. 19+04.06, LT –L– STA. 31+34.03 TO –L– STA. 31+71.87, LT
2'–9"	–L– STA. 14+34.32 TO –L– STA. 14+37.93, LT –L– STA. 17+88.95 TO –L– STA. 17+94.41, LT –L– STA. 67+84.10 TO –L– STA. 67+87.95, RT
3'–0"	–L– STA. 43+71.44 TO –L– STA. 43+82.00, RT –L– STA. 65+41.65 TO –L– STA. 66+53.64, RT
3'–0" TO 6'–6"	–L– STA. 43+82.00 TO –L– STA. 44+07.69, RT
3'–9" TO 7'–6"	–L– STA. 54+78.81 TO –L– STA. 54+88.29, LT
4'–0"	–L– STA. 21+17.43 TO –L– STA. 21+35.25, LT –L– STA. 31+11.15 TO –L– STA. 31+15.20, LT –L– STA. 40+14.37 TO –L– STA. 40+38.58, RT
6'–6"	–L– STA. 44+07.69 TO –L– STA. 45+18.44, RT
9'–0"	–L– STA. 40+67.57 TO –L– STA. 42+16.16, RT –L– STA. 42+32.16 TO –L– STA. 42+35.87, RT
11'–0"	–L– STA. 54+89.66 TO –L– STA. 54+96.44, RT

5/15/2026
X:\Consultants\Hickory\BL-0066 - Springs Rd\Roadway\Proj\BL-0066_Rdy_typ.dgn
User:rpratt

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	2C-1



GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

FLEXIBLE PIPE

SHEET 1 OF 2

300.01

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKER
Signed by: Nicole M. Hacker
4/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

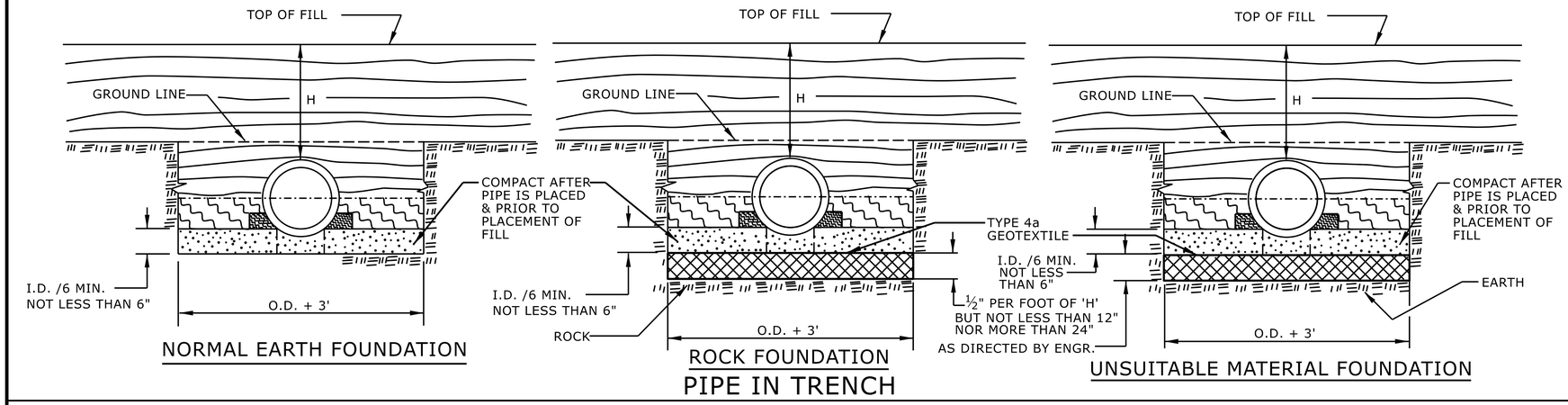
CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	2C-2



GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

RIGID PIPE

SHEET 2 OF 2

300.01

NORTH CAROLINA PROFESSIONAL Registered SEAL 033144 ENGINEER NICOLE M. HACKLER

4/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACTS STANDARDS AND DEVELOPMENT UNIT

Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

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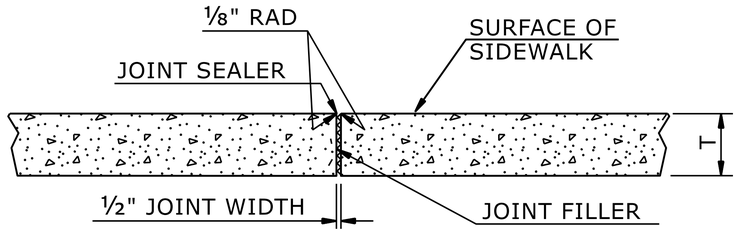
PROJECT REFERENCE NO.	SHEET NO.
BL-0066	2C-3

NOTES:

CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

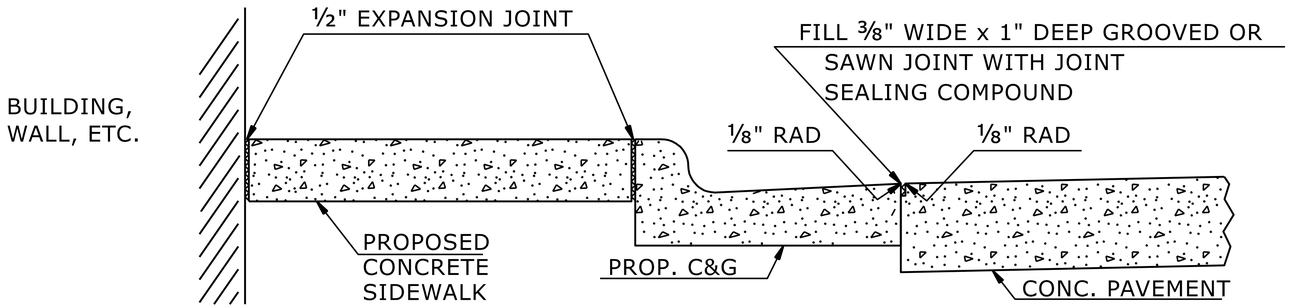
PLACE A GROOVE JOINT 1" DEEP WITH ⅛" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE ½" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A ½" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

SEE STD. DWG. 848.06 FOR CURB RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



T = SIDEWALK THICKNESS

TRANSVERSE EXPANSION JOINT IN SIDEWALK



DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

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

ROADWAY DETAIL DRAWING FOR

CONCRETE SIDEWALK

SHEET 1 OF 1

848D01

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER
Signed by: Nicole M Hackler
4/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

COMPUTED BY: SGM DATE: 2/5/2026
CHECKED BY: DATE:

PROJECT NO.	SHEET NO.
BL-0066	3B-1

STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Undercut	Embank. +%	Borrow	Waste
-L- 10+64.14, LT	-L- 38+80.45, LT	253		81		172
SUBTOTAL 1		253		81		172
-L- 37+99.04, RT	-L- 70+45.00, RT	421		185		236
SUBTOTAL 2		421		185		236
-L- 47+92.55, LT	-L- 66+58.00, LT	296		35		261
SUBTOTAL 3		296		35		261
TOTALS:		970		301		669
LOSS DUE TO CLEARING & GRUBBING		-350				-350
ADDITIONAL UNDERECUT			200			200
PROJECT TOTALS:		620	200	301		519
GRAND TOTALS:		620	200	301		519
SAY		**700**	**200**			

Note: Approximate quantities only. Unclassified Excavation and Clearing and Grubbing will be paid for at the contract lump sum price for grading.

Note: Earthwork quantities are calculated by TGS Engineers. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

COMPUTED BY: ZACHARY RICHARD, PE DATE: 9/4/2024
CHECKED BY: DAVID PETTY, PE DATE: 9/4/2024

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
L 19+46	41 LT	0401		1150.7															
		0401	0402		1147.0	1146.8			4								X	X	
L 19+46	36 LT	0402		1150.5															
L 49+69	39 RT	0701		1146.2															
		0701	0702		1143.2	1141.9			48								X	X	
L 50+14	41 RT	0702		1144.9															
L 50+18	36 RT	0703		1144.5															
L 52+71	34 RT	0704																	
L 53+66	35 RT	0705																	
L 55+00	35 RT	0706																	
L 68+58	38 RT	0801																	
L 69+44	38 RT	0802																	
L 49+95	36 RT																		
L 50+17	36 RT																		
TOTALS									**52**										

LINE & STATION	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"
L 19+46																
L 19+46																
L 49+69																
L 50+14																
L 50+18																
L 52+71																
L 53+66																
L 55+00																
L 68+58																
L 69+44																
L 49+95																
L 50+17																
TOTALS																

LINE & STATION	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	** " R.C. PIPE (CLASS V)	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
L 19+46															
L 19+46															
L 49+69															
L 50+14															
L 50+18															
L 52+71															
L 53+66															
L 55+00															
L 68+58															
L 69+44															
L 49+95															
L 50+17															
TOTALS															

LINE & STATION	QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') A: PER EACH (0' THRU 5.0') EACH	5.0' THRU 10.0' LIN.FT	B: 10.0' AND ABOVE LIN.FT	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	CONVERT EXISTING D.I. TO J.B.	ADJUST M.H.	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
L 19+46	1									1	1						
L 19+46												1					
L 49+69	1									1	1						
L 50+14	1									1	1						
L 50+18												1					
L 52+71													1				Adjust MH Top as necessary
L 53+66													1				Adjust MH Top as necessary
L 55+00													1				Adjust MH Top as necessary
L 68+58													1				Adjust MH Top as necessary
L 69+44													1				Adjust MH Top as necessary
L 49+95																49	Remove 15" RCP
L 50+17														0.045			15" Pipe Plug
TOTALS	**3**									**3**	**3**	**2**	**5**	**0.045**		**49**	

ABBREVIATIONS

- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I.(N.S.) (NARROW SLOT)
- J.B. JUNCTION BOX
- M.H. MANHOLE
- T.B.D.I. TRAFFIC BEARING DROP INLET
- T.B.J.B. TRAFFIC BEARING JUNCTION BOX

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Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

COMPUTED BY: D. Matthew Brewer DATE: 02/19/2025
CHECKED BY: D. Matthew Brewer DATE: 02/19/2025

(9-17-24)

PROJECT NO.	SHEET NO.
BL-0066	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

*UD = Underdrain
*BD = Blind Drain
*SD = Subsurface Drain

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU1	12	100	200	300		
				TOTAL CY/TONS/SY:	100	200**	300**	0	0

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)
*AST = Aggregate Stabilization
**Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Subgrade Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

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PROJ. REFERENCE NO.	SHEET NO.
BL-0066	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	1811 12TH, LLC
2	4	JERRY M. LEDFORD, CAROLYN M. LEDFORD
3	4	JEWELS, LLC
4	4	ADVANCE STORES COMPANY, INC.
5	4	RRTM PROPERTIES, LLC
6	4	CASA NOSTRA, INC.
7	4 & 5	BOULEVARD EAST, LLC
8	5	LUTHERAN HOME HICKORY PROPERTY, INC.
9	5	RRTM PROPERTIES, LLC
10	5	ASE INVESTMENTS, LLC
11	5	PEH PROPERTIES, LLC
12	5 & 6	HAMPTON 570, INC.
13	6	ST. STEPHEN'S LUTHERAN CHURCH, ELCA HICKORY NC
14	6	COOK'S CORNER PROPERTIES, LLC
15	6	MILLERS LUTHERAN CHURCH
16	6 & 7	ST. STEPHEN'S EVANGELICAL LUTHERAN CHURCH
17	7	ST. STEPHENS LUTHERAN CHURCH, MISSOURI SYNOD OF HICKORY
18	7	CITY OF HICKORY
19	7	EVERETTE A. HOUSTON, MARTHA M. HOUSTON
20	7	JESSE G. WATERS REVOCABLE TRUST
21	7	LINN R. GARDNER, CYNTHIA W. GARDNER
22	7	STEADFAST HOLDINGS, INC.
23	7 & 8	H5 RENTALS, LLC
24	7	ST. STEPHENS LUTHERAN CHURCH MISSOURI SYNOD OF HICKORY, NC
25	7 & 8	DHRUVKUMAR K. PATEL
26	8	CHARLES A. MORETZ ESTATE
27	8	PAULINE S. MORETZ HEIRS
28	8	BURTONS WJ, LLC; ROPPS. LLC
29	8	SAXON PROPERTIES, LLC
30	8	ROBUST PROPERTIES, LLC
31	8	AL CROUSE OFFICE, LLC
32	8	SAXON PROPERTIES, LLC
33	8	CHRIST CHURCH GLOBAL, INC.
34	8	BOBBY A. LITTLE CONSTRUCTION CO., INC.
35	8	ANNA M. WARD
36	8	EARL E. PROPST HEIRS, DORIS P. FASTENAU
37	8	CATAWBA COUNTY

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 035018 ENGINEER JIMMY L. TERRY

5/15/2026

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 038697 ENGINEER DAVID B. PETTY

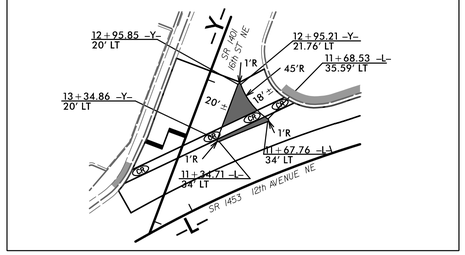
5/15/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST. STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

DETAIL – CONCRETE ISLAND



NOTE:
CONTRACTOR TO RECONSTRUCT C&G TO MATCH EXISTING CONDITIONS ON ALL APPLICABLE DRIVEWAY TIE-INS.

-L- CURVE DATA

PI Sta 12+51.91	PI Sta 23+92.20
Δ = 29° 20' 53.2" (RT)	Δ = 3° 11' 42.5" (RT)
D = 7° 59' 59.9"	D = 1° 12' 00.0"
L = 366.85'	L = 266.26'
T = 187.55'	T = 133.17'
R = 716.20'	R = 4,774.65'

-Y- POT 10+00.00

S 14°04'20" W 128.79'

S 75°55'00" E 151.98'

S 13°27'57.5" W

-Y- STA 12+94.00
BEGIN MILLING & RESURFACING (1 ½")

-L- STA 10+62.24
BEGIN PROJECT BL-0066

S 89°21'30" W 132.43'

1 1811 12TH, LLC DB 3679 PG 354

2 JERRY M. LEDFORD CAROLYN M. LEDFORD DB 1369 PG 228

3 JEWELS, LLC DB 3065 PG 526 PB 35 PG 61

4 ADVANCE STORES COMPANY, INC. DB 3004 PG 788 PB 35 PG 61

5 RRTM PROPERTIES, LLC DB 2534 PG 1050

6 CASA NOSTRA, INC. DB 3805 PG 1085 PB 84 PG 154

7 BOULEVARD EAST, LLC DB 2474 PG 1275

PROP. CONC ISLAND SURFACE MOUNTED

PROP. 5' SIDEWALK

DO NOT DISTURB POLES

PROP. ASPHALT DRIVE

DO NOT DISTURB TREE

PROP. ASPHALT DRIVE

PROP. CONC DRIVE

DO NOT DISTURB POLE

DO NOT DISTURB SIGN

DO NOT DISTURB SIGN

DO NOT DISTURB BLOCK WALL

DO NOT DISTURB LIGHT

RETAIN SYSTEM

PROP. ASPHALT DRIVE

PROP. CONC DRIVE

2'-6" C&G

8" CURB

N 87°49'50" E 114.81'

N 03°53'04" W 142.25'

N 82°27'50" E 33.85'

N 82°09'46" E 35.80'

N 82°18'18" E 75.27'

N 82°08'04" E 69.07'

N 82°08'04" E 85.68'

N 03°38'07" W 175.28'

N 03°49'45" W 145.82'

N 87°42'51" E 202.22'

N 87°59'16" E 167.38'

N 03°29'41" W 162.69'

S 88°16'48" E 80.99'

N 88°05'56" E 110.18'

N 04°26'20" W 146.35'

N 04°06'47" W 130.97'

N 03°54'03" W 142.28'

N 03°25'49" W 174.56' (RR SPIKE-CORR) 174.02' (RW-CORR)

N 82°48'54.0" E

MATCH LINE STA. -L- 23+00
MATCH TO SHEET NO. 5

BROWN OPERATING COMPANY, INC. DB 956 PG 170 PB 77 PG 122

POWELL RENTALS, INC. DB 3748 PG 107

ARC CAFEUSAOOI, LLC DB 3198 PG 626

NHIM TAN ANH N. TAN DB 1712 PG 24

LEMONADE MM HICKORY NC, LLC DB 3759 PG 912

BB&T DB 1423 PG 614

BOB KILLIAN TIRE, INC. DB 1599 PG 649

FELKER DAY, INC. DB 3207 PG 909 PB 20 PG 5

FAMILY COIN LAUNDRY, LLC DB 2805 PG 1683 PB 20 PG 5

ALECK J. BEARD FAMILY TRUST ESTATE FILE 2009E PG 306 DB 1137 PG 768 PB 1PG 106

N 53°28'00.7" E

-L- POT 10+00.00

-L- POC 10+67.95 = -Y- POT 14+08.72

-L- PC 10+64.36

-L- PT 14+31.21

-L- PC 22+59.04

-L- STA 10+64.14, LT
BEGIN MILLING & RESURFACING OUTSIDE LANE (1 ½")

S 72°04'10" W 185.17'

S 72°01'46" W 325.49'

N 71°59'28" E 117.00'

S 71°59'28" W 144.00'

S 73°05'00" W 200.00'

S 83°02'33" E 253.46'

S 83°03'45" E 128.55'

★ TRAFFIC SIGNAL

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY

5/15/2026

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038697 DAVID B. PETTY

5/15/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST. STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

-L- CURVE DATA

PI Sta 23+92.20	PI Sta 35+94.89
Δ = 3° 11' 42.5" (RT)	Δ = 27° 03' 53.4" (LT)
D = 1° 12' 00.0"	D = 5° 59' 58.4"
L = 266.26'	L = 451.11'
T = 133.17'	T = 229.85'
R = 4,774.65'	R = 955.00'

NOTE:
CONTRACTOR TO RECONSTRUCT C&G TO MATCH EXISTING CONDITIONS ON ALL APPLICABLE DRIVEWAY TIE-INS.

NAD 83/2011

MATCH LINE STA. -L- 23+00 MATCH TO SHEET NO. 4

MATCH LINE STA. -L- 36+00 MATCH TO SHEET NO. 6

-L- PT 25+25.30

-L- PC 33+65.05

8 LUTHERAN HOME HICKORY PROPERTY, INC. DB 3951 PG 217

9 RRTM PROPERTIES, LLC DB 3831 PG 1336 PB 1 PG 19

10 ASE INVESTMENTS, LLC DB 3373 PG 1762 PB 1 PG 19

11 PEH PROPERTIES, LLC DB 3642 PG 1119 DB 3652 PG 1049 PB 1PG 77 PB 1PG 19

ALECK J. BEARD FAMILY TRUST ESTATE FILE 2009E PG 306 DB 1137 PG 768 PB 1PG 106

MCKINNEY COMMERCIAL RENTALS, LLC DB 3621PG 245 PB 1PG 106

JORDAN R. BINGHAM DB 3785 PG 1858 PB 1PG 106

JAVIER MORA MARIA D. MORA DB 2975 PG 388 PB 1PG 106

PETER ANTINARELLI DB 3708 PG 1973

BRADFORD N. COOK JEFFREY M. COOK DB 2943 PG 1127 PB 19 PG 191

JET KLEEN, LLC DB 2278 PG 126

HICKORY PROPERTY, INC. DB 2999 PG 994

WESLEY E. STARNES DB 2013 PG 1087

MEMBERS CREDIT UNION DB 2827 PG 887

COOK OUT-HICKORY, INC. DB 3685 PG 940 PB 2 PG 28

SR 1453 12th AVENUE NE 60' BST

N 86°00'36.5" E

EXISTING R/W + PROPERTY LINE

PROP. 5' SIDEWALK

RETAIN SYSTEM

DO NOT DISTURB POLE

DO NOT DISTURB LIGHT POLE

DO NOT DISTURB FENCE

~100' OF FENCE TO BE RELOCATED (BY OWNER)

DO NOT DISTURB SIGN

PROP. ASPHALT DRIVE

8" CURB

PROP. CONC DRIVE

MONITORING WELL

60" BLK ALUM

BL-6

BL-7

EXISTING R/W

30' C&G

15" RCP

18" RCP

6" VCP

6" PVC/6" VCP

2 ", STL

EOS

SOUNDING

BLK WALL

CONC PLANTER

20'DR

(2) REBARS

REBAR

EIP

EFP

CB

JB

S 85°43'56" W 59.00'

N 85°43'56" E 75.00'

N 85°43'56" E 75.00'

S 04°16'04" E 41.48'

N 86°10'04" E 100.18'

S 04°26'36" E 145.22'

N 86°10'04" E 199.90'

S 04°26'36" E 28.71'

S 85°53'26" E 225.00'

S 83°55'57" W 100.09'

N 83°58'18" E 75.00'

S 03°30'52" E 127.18'

S 03°30'52" E 217.77'

S 04°19'51" E 287.53'

N 85°33'59" E 100.00'

N 85°33'59" E 239.01'

N 85°33'59" E 250.00'

N 86°16'54" E 100.00'

S 02°31'54" W 147.30'

N 02°31'54" E 377.32' (EIP-COR) 377.34' (RW-COR)

N 02°31'54" E 377.34' (REBAR-COR) 377.32' (RW-COR)

005 M+/- TO 12th AVE NE

007 M+/- TO 12th AVE CT NE

21st NE

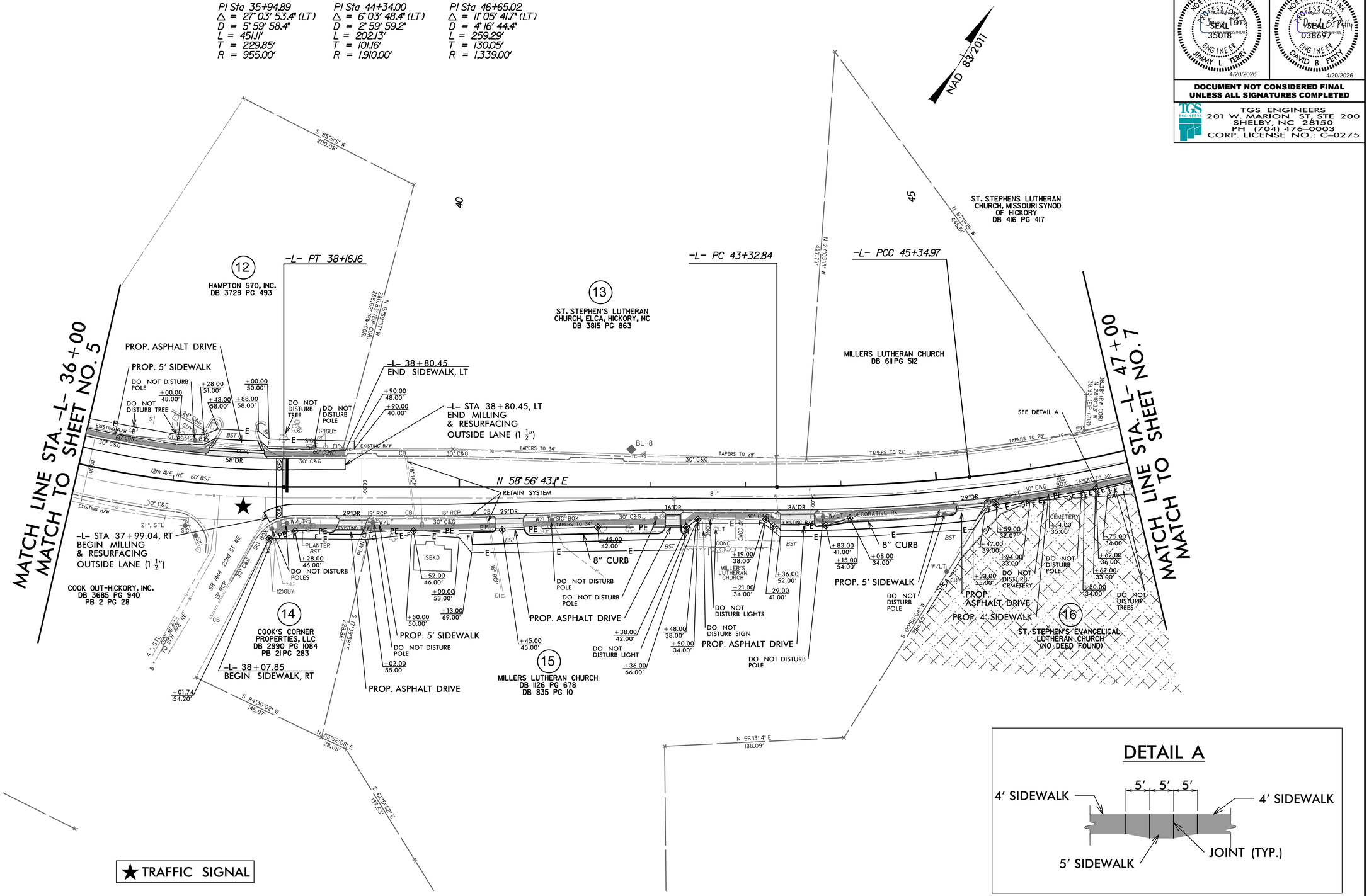
22nd ST NE

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

NOTE:
CONTRACTOR TO RECONSTRUCT C&G TO MATCH EXISTING CONDITIONS ON ALL APPLICABLE DRIVEWAY TIE–INS.

–L– CURVE DATA

PI Sta 35+94.89	PI Sta 44+34.00	PI Sta 46+65.02
Δ = 27° 03' 53.4" (LT)	Δ = 6° 03' 48.4" (LT)	Δ = 11° 05' 41.7" (LT)
D = 5° 59' 58.4"	D = 2° 59' 59.2"	D = 4° 16' 44.4"
L = 451.11'	L = 202.13'	L = 259.29'
T = 229.85'	T = 101.16'	T = 130.05'
R = 955.00'	R = 1,910.00'	R = 1,339.00'



DETAIL A

ESA – ENVIRONMENTAL SENSITIVE AREA

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	6
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY
4/20/2026

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038697 DAVID B. PETTY
4/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST. STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS 8/17/99

3/27/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\Proj\BL-0066_Rdy_psh_06.dgn
User:cpruett

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

8/17/99

REVISIONS

NOTE:
CONTRACTOR TO RECONSTRUCT C&G TO MATCH EXISTING CONDITIONS ON ALL APPLICABLE DRIVEWAY TIE-INS.

-L- CURVE DATA

PI Sta 46+65.02	PI Sta 49+11.00
Δ = 11° 05' 41.7" (LT)	Δ = 18° 44' 15.4" (LT)
D = 4° 16' 44.4"	D = 8° 05' 52.4"
L = 259.29'	L = 231.39'
T = 130.05'	T = 116.74'
R = 1,339.00'	R = 707.54'

NAD 83/2011

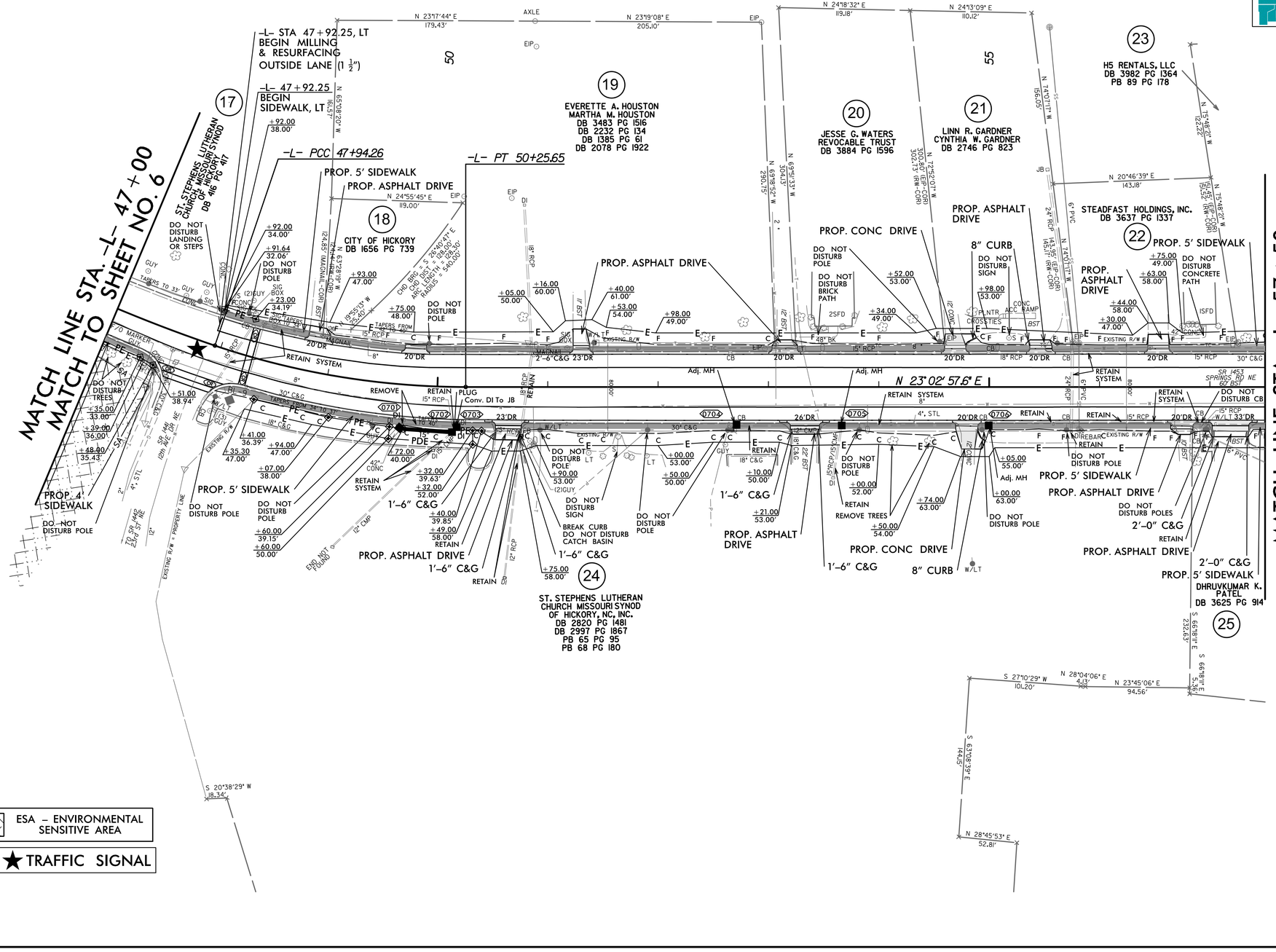
PROJECT REFERENCE NO.	SHEET NO.
BL-0066	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 035018 ENGINEER JIMMY L. TERRY
4/20/2026

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 038697 ENGINEER DAVID B. PETTY
4/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST. STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275



4/20/2026
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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY
4/20/2026

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 038697 ENGINEER DAVID B. PETTY
4/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST. STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NOTE:
CONTRACTOR TO RECONSTRUCT C&G TO MATCH EXISTING CONDITIONS ON ALL APPLICABLE DRIVEWAY TIE-INS.

-L- CURVE DATA
PI Sta 65+08.02
△ = 19°05'42.2" (RT)
D = 5°59'58.4"
L = 318.27'
T = 160.63'
R = 955.00'

NAD 83/2011

MATCH LINE STA. -L- 57+50
MATCH TO SHEET NO. 7

(23) PROP. ASPHALT DRIVE; PROP. 5' SIDEWALK; 15" RCP; 8" EOL; RETAIN SYSTEM; 20' DR; 15" RCP; 42" CONC; 8" CONC; 15TH AVE NE; EXISTING R/W = PROPERTY LINE; W/LT; 4', STL; 60; 65; 70

(26) CHARLES A. MORETZ ESTATE
DB 2338 PG 298

(27) PAULINE S. MORETZ HEIRS
DB 2523 PG 1467

(28) BURTONS WJ, LLC
ROPPS, LLC
DB 3224 PG 295
PB 81 PG 149

(29) SAXON PROPERTIES LLC
DB 3843 PG 722
PROP. ASPHALT DRIVE; DO NOT DISTURB STEPS; 2SBKD; 48" CONC; (2) GUY; PROP. CONC DRIVE; F/O MARKER; REBAR; BST; 20' DR; 30" C&G; W/LT; EIP

(30) ROBUST PROPERTIES, LLC
DB 3269 PG 687

(31) AL CROUSE OFFICE, LLC
DB 3331 PG 1572
PROP. CONC DRIVE; RETAIN SYSTEM; DO NOT DISTURB SIGN; PROP. ASPHALT DRIVE; DO NOT DISTURB SIGN; 30" CONC; PLANTER; (4) GUY; CLF; EXISTING R/W; 27' DR; W/LT; 20' DR; REBAR; 2' MOPE; 20' CONC SHOULDER; 10.72" HDPE; 15" RCP; 24" RCP; 48" BK WALL; GENERATOR; GROUND LIGHT W/CONC BASE (3); ISBKBUS; F/O MARKER

(32) SAXON PROPERTIES, LLC
DB 2211 PG 160

SXCW PROPERTIES, LLC
DB 3335 PG 1542
PB 75 PG 100

MICHAEL DIGIACOMO AND LINDA DIGIACOMO
REVOCABLE LIVING TRUST
DB 3422 PG 1368
PB 75 PG 100

(33) CHRIST CHURCH GLOBAL, INC.
DB 3827 PG 1948
DB 3377 PG 204

(25) DHRUVKUMAR K. PATEL
DB 3625 PG 914

(34) PROP. ASPHALT DRIVE
BOBBY A. LITTLE CONSTRUCTION CO., INC.
DB 1093 PG 389

(35) ANNA M. WARD
DB 3236 PG 1649

(36) PROP. CONC DRIVE
EARL E. PROPST HEIRS
DORIS P. FASTENAU
DB 3430 PG 820

(37) CATAWBA COUNTY
DB 2069 PG 16

SR 1453 SPRINGS RD NE; 80.00'; 8"; 35' DR; 4', STL; 30" C&G; 24" C&G; 2'-0" C&G; BL-10; BL-11; CONC; F/O (3) GUY; U/G TANKS; END NO FOUND; BST; DO NOT DISTURB LIGHT; DO NOT DISTURB SIGN; DO NOT DISTURB POLE SEE DETAIL B; PROP. 5' SIDEWALK; PROP. ASPHALT DRIVE; PROP. CONC DRIVE; PROP. ASPHALT DRIVE; PLANTER; 8" CURB; RETAIN SYSTEM; 23' DR; 18" RCP; Adj. MH; 30" DR; 18" CONC C&G; 4', STL; 2'-11" HDPE; 2'-6" STL; 6'; 2' STL; 10'; 70' R/W; 60' R/W; 66' R/W; 80' R/W; 8' SIDEWALK; 5' SIDEWALK; 5' 5' 5'; JOINT (TYP.); 4' SIDEWALK; EXIST. POLE (SEE PLAN); EXISTING R/W = PROPERTY LINE; EIP; REBAR; GAS MARKER; GPS-3; GUY; (2) GUY; PLANTER; 2' MOPE; 10' CONC SHOULDER; 24" RCP; 48" BK WALL; GENERATOR; GROUND LIGHT W/CONC BASE (3); ISBKBUS; F/O MARKER; SR 1436 WOLF CREEK RD NE; 60' BST; SR 1435 15TH AVE NE; 66' R/W; 70' R/W; 80' R/W; 8' SIDEWALK; 5' SIDEWALK; 5' 5' 5'; JOINT (TYP.); 4' SIDEWALK; EXIST. POLE (SEE PLAN)

-L- PC 63+47.40

-L- PT 66+65.67

-L- 66+58.00
END PROP. SIDEWALK, LT
TIE TO EXIST WALK

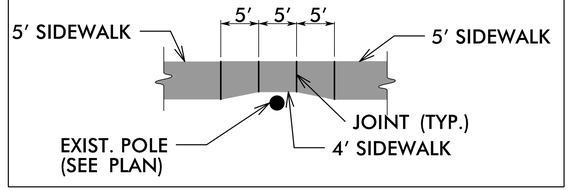
-L- STA 67+68.85, LT
END MILLING & RESURFACING OUTSIDE LANE (1 ½")

-L- STA 70+45.00, RT
END MILLING & RESURFACING OUTSIDE LANE (1 ½")

-L- POT 71+52.42

-L- STA 70+45.00
END PROJECT BL-0066
END PROP. SIDEWALK, RT
TIE TO EXIST WALK

DETAIL B
SIDEWALK AT POLE LOCATIONS



3/27/2026
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jbertsch1

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BL-0066	RW01	9

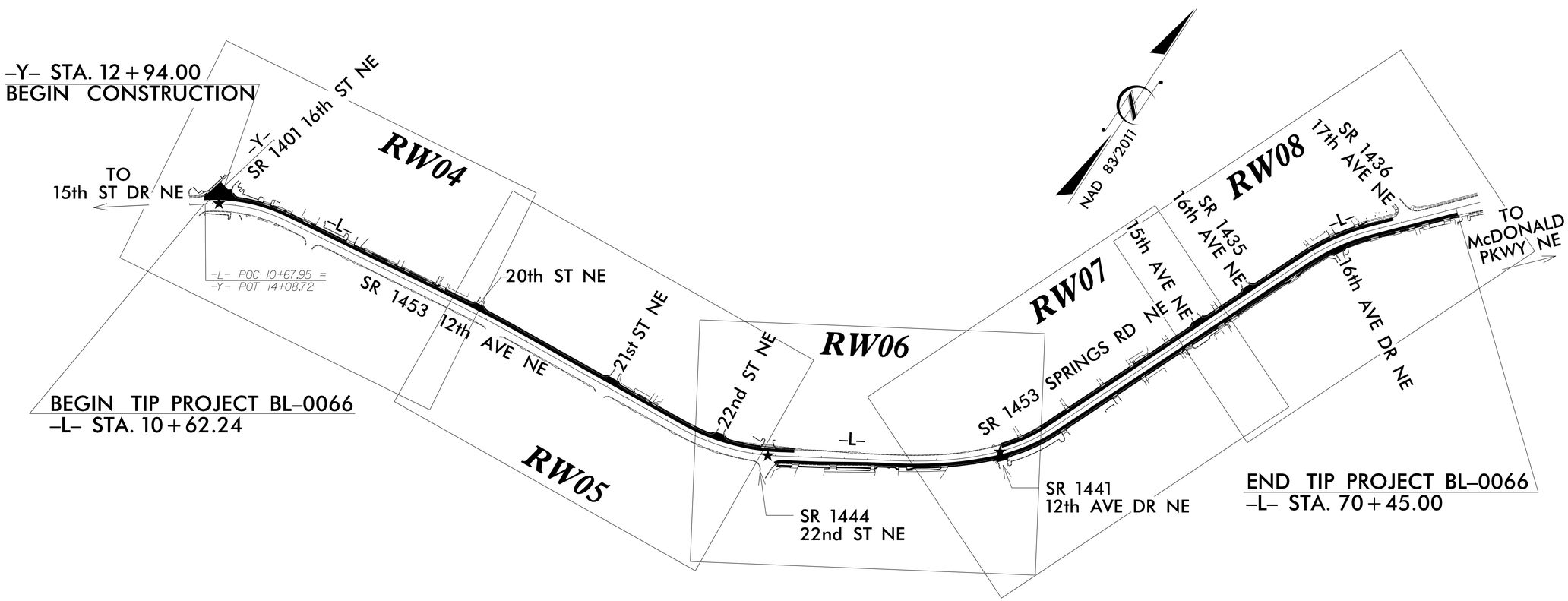
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

CATAWBA COUNTY (CITY OF HICKORY)

TIP PROJECT: BL-0066

2/2025



GRAPHIC SCALE

50 25 0 50 100

PLANS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY TGS ENGINEERS FOR MONUMENT "GPS2" WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 733,089.598(ft) EASTING: 1,316,443.637(ft) ELEVATION: 1,162.16(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985976 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS2" TO -L- STATION 10+00.00 IS S 18° 55' 38.72" W 103.025(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

TGS ENGINEERS
201 WEST MARION STREET
SUITE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	*LETTING DATE:*
10/25/2024	*9/24/2026*

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4775 LAND SURVEYOR MATTHEW T CORNWELL

Signed by: Matthew Cornwell 3/4/2025
EB036F114735475...

SIGNATURE: *Date:*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

12-FEB-2025 14:34
S:\Surveyor-s\projects\municipal\Hickory\BL-0066\2025 RW STAKING\MTC\BL-0066 RW\bl0066_ls_rw01.dgn
mcornwell AT MCORNWELLLAPTOP

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SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	RW02C-1

Location and Surveys

TGS ENGINEERS
201 WEST MARION STREET
SUITE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PROJECT SURVEYOR

Signed by: Matthew Cornwell
EBD36F11473E475...
3/4/2025

NORTH CAROLINA PROFESSIONAL SEAL L-4775 LAND SURVEYOR MATTHEW T CORNWELL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, Matthew T. Cornwell, PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: ***AA***
Type of GPS field procedure: RTN
Dates of survey: 10/16/2023
Datum/Epoch: NAD83/2011
Published/Fixed-control use: N/A
Localized around: GPS2
Northing: 733089.598
Easting: 1316443.637
Combined grid factor: 0.99985976
Geoid model: GEOID18
Units: US Survey Feet

I also certify that the Baseline Control for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed November 2023, and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 3/4/2025

Signed by: Matthew Cornwell
EBD36F11473E475...

Professional Land Surveyor L-4775

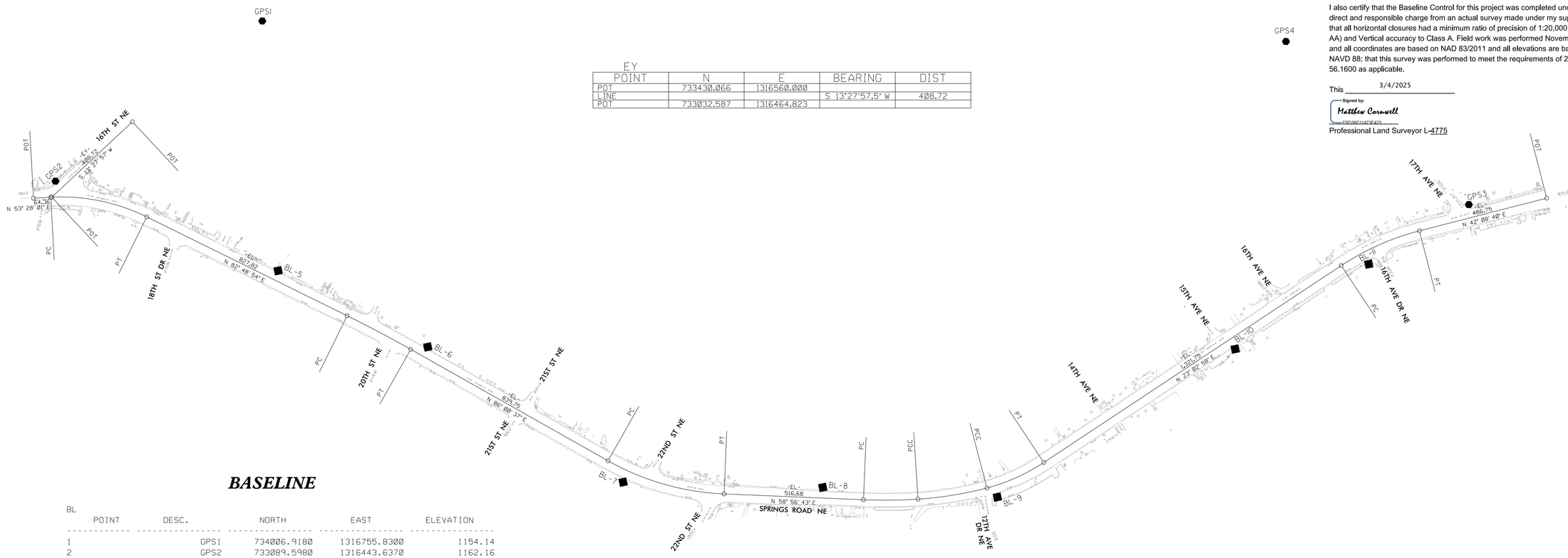
NC GRID NAD 83 NA 2011

EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	732992.144	1316410.219							
LINE			N 53°28'00.7" E	64.36					
PC	733030.457	1316461.934							
CURVE			N 68°08'27.4" E	362.86	29°20'53.2"(RT)	07°59'59.9"	366.85	187.55	716.20
PT	733165.557	1316798.701							
LINE			N 82°48'54.0" E	827.82					
PC	733269.096	1317620.023							
CURVE			N 84°24'45.2" E	266.23	03°11'42.5"(RT)	01°12'00.0"	266.26	133.17	4774.65
PT	733295.017	1317884.986							
LINE			N 86°00'36.5" E	839.75					
PC	733353.447	1318722.700							
CURVE			N 72°28'39.8" E	446.93	27°03'53.4"(LT)	05°59'58.4"	451.11	229.85	955.00
PT	733488.008	1319148.893							
LINE			N 58°56'43.1" E	516.68					
PC	733754.540	1319591.520							
CURVE			N 55°54'48.9" E	202.04	06°03'48.4"(LT)	02°59'59.2"	202.13	101.16	1910.00
PCC	733867.769	1319758.844							
CURVE			N 47°20'03.9" E	258.88	11°05'41.7"(LT)	04°16'44.4"	259.29	130.05	1339.00
PCC	734043.219	1319949.206							
CURVE			N 32°25'05.3" E	230.36	18°44'15.4"(LT)	08°05'52.4"	231.39	116.74	707.54
PT	734237.678	1320072.701							
LINE			N 23°02'57.6" E	1321.75					
PC	735453.908	1320590.196							
CURVE			N 32°35'48.7" E	316.80	19°05'42.2"(RT)	05°59'58.4"	318.27	160.63	955.00
PT	735720.810	1320760.866							
LINE			N 42°08'39.8" E	486.75					
POT	736081.713	1321087.475							

EY

POINT	N	E	BEARING	DIST
POT	733430.066	1316560.000		
LINE			S 13°27'57.5" W	408.72
POT	733032.587	1316464.823		



BASELINE

BL

POINT	DESC.	NORTH	EAST	ELEVATION
1	GPS1	734006.9180	1316755.8300	1154.14
2	GPS2	733089.5980	1316443.6370	1162.16
5	BL-5	733267.1611	1317314.4116	1151.30
6	BL-6	733337.2979	1317932.6025	1147.99
7	BL-7	733318.1826	1318812.4302	1156.32
8	BL-8	733709.6240	1319440.5081	1146.76
9	BL-9	734036.1191	1319999.8632	1148.82
10	BL-10	734979.1673	1320432.5036	1142.60
11	BL-11	735514.4200	1320671.9999	1144.83
3	GPS3	735902.9510	1320860.0490	1140.37
4	GPS4	736033.6390	1319961.6650	1128.79

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

REVISIONS 2/2025

12-FEB-2025 14:32
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mcornwell AT MCORNWELLLAPTOP

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	RW02D-1

Location and Surveys

TGS ENGINEERS
201 WEST MARION STREET
SUITE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PROJECT SURVEYOR

Signed by: Matthew Cornwell
EBD36F11473E475...

3/4/2025

NORTH CAROLINA PROFESSIONAL SEAL L-4775 LAND SURVEYOR MATTHEW T. CORNWELL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, Matthew T. Cornwell, PLS, certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

This 3/4/2025

Signed by: Matthew Cornwell
EBD36F11473E475...

Professional Land Surveyor L-4775

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	732992.1439	1316410.2189
PC	10+64.36	733030.4573	1316461.9339
PT	14+31.21	733165.5574	1316798.7011
PC	22+59.04	733269.0962	1317620.0232
PT	25+25.30	733295.0173	1317884.9860
PC	33+65.05	733353.4470	1318722.6998
PT	38+16.16	733488.0076	1319148.8934
PC	43+32.84	733754.5397	1319591.5199
PCC	45+34.97	733867.7688	1319758.8440
PCC	47+94.26	734043.2185	1319949.2063
PT	50+25.65	734237.6783	1320072.7006
PC	63+47.40	735453.9084	1320590.1959
PT	66+65.67	735720.8096	1320760.8657
POT	71+52.42	736081.7128	1321087.4749

Y

TYPE	STATION	NORTH	EAST
POT	10+00.00	733430.0659	1316559.9999
POT	14+08.72	733032.5867	1316464.8233

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

REVISIONS

2/2025

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mcornwell AT MCORNWELL_LAPTOP

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PERMANENT EASEMENT CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	RW03E-1

Location and Surveys

TGS ENGINEERS
201 WEST MARION STREET
SUITE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PROJECT SURVEYOR

Signed by:
Matthew Cornwell
EBD36F11473E475...

3/4/2025

NORTH CAROLINA PROFESSIONAL SEAL L-4775 LAND SURVEYOR MATTHEW T CORNWELL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I , Matthew T. Cornwell , certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed February 2025, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 3/4/2025 .

Signed by:
Matthew Cornwell
EBD36F11473E475...
Professional Land Surveyor L-4775

ROW MARKER PERMANENT EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST	
L	19+38.00	-55.00	733283.5111	1317294.6284	MAGNAIL
L	19+38.00	-40.00	733268.6289	1317296.5045	PAINT MARK
L	19+55.00	-55.00	733285.6373	1317311.4949	
L	19+55.00	-40.00	733270.7551	1317313.3710	
L	38+01.74	54.20	733433.8124	1319163.7380	CONC MON
L	38+28.00	46.00	733454.7074	1319182.7644	
L	39+52.00	46.00	733518.6735	1319288.9922	
L	40+45.00	45.00	733567.5048	1319368.1471	MAGNAIL
L	41+45.00	42.00	733621.6604	1319452.2671	
L	42+38.00	42.00	733669.6350	1319531.9379	
L	42+50.00	34.00	733682.6787	1319538.0911	
L	43+21.00	34.00	733719.3045	1319598.9151	
L	43+29.00	41.00	733717.4346	1319609.3795	
L	43+83.00	41.00	733746.4195	1319656.2102	MAGNAIL
L	44+08.00	34.00	733766.1531	1319673.7988	
L	45+59.00	32.07	733857.2205	1319797.6821	
L	46+62.00	33.00	733924.8030	1319878.6684	
L	47+35.00	33.00	733976.8648	1319932.3628	
L	47+48.00	35.43	733984.7564	1319943.3805	MAGNAIL
L	47+91.64	-32.06	734062.6810	1319923.5937	CONC MON
L	47+92.00	-34.00	734064.2349	1319922.3869	MAGNAIL
L	48+23.00	-34.19	734086.7624	1319941.5193	
L	48+41.00	36.39	734056.6686	1320007.8547	
L	49+07.00	38.00	734112.3940	1320049.3250	
L	49+60.00	39.15	734159.9474	1320078.6885	
L	49+60.00	50.00	734154.7950	1320088.2314	MAGNAIL
L	49+72.00	40.00	734170.7527	1320085.3606	
L	50+32.00	52.00	734223.1644	1320123.0365	
L	50+32.00	39.63	734228.0095	1320111.6495	
L	50+40.00	39.85	734235.2826	1320114.9889	

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED FEBRUARY 2025.

REVISIONS

2/2025

04-MAR-2025 10:0
S:\Surveys\Projects\municipal\Hickory\BL-0066\2025 RW STAKING\MTC\BL-0066 RW\bl0066_ls_rw03e-1.dgn
mcornwell MCORNWELL_LAPTOP

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	RW04

Location and Surveys

TGS ENGINEERS
201 WEST MARION STREET
SUITE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PROJECT SURVEYOR

Signed by: Matthew Cornwell
EBD36FF11473E475...

3/4/2025

NORTH CAROLINA PROFESSIONAL SEAL L-4775 LAND SURVEYOR MATTHEW T CORNWELL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I , Matthew T. Cornwell, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed February 2025, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 3/4/2025.

Signed by: Matthew Cornwell
EBD36FF11473E475...

Professional Land Surveyor L-4775

NAD 83/2011

REVISIONS

2/2025

-L- CURVE DATA

PI Sta 12+51.91
△ = 29° 20' 53.2" (RT)
D = 7° 59' 59.9"
L = 366.85'
T = 187.55'
R = 716.20'

PI Sta 23+92.20
△ = 3° 11' 42.5" (RT)
D = 1° 12' 00.0"
L = 266.26'
T = 133.17'
R = 4,774.65'

-Y- POT 10+00.00

S 14°09'20" W 129.19'

S 75°55'00" E 151.38'

-L- POT 10+00.00

N 58° 28' 00.7" E

S 13° 27' 57.5" W

S 89°21'30" W 132.43'

N 87°49'50" E 114.81'

N 03°53'04" W 142.25'

N 03°49'45" W 145.28'

N 87°42'51" E 202.22'

N 87°59'16" E 167.38'

N 82°09'46" E 35.80'

N 82°27'50" E 33.85'

N 82°18'18" E 75.27'

N 82°08'04" E 69.07'

N 82°08'04" E 85.68'

N 03°53'02" W 175.26'

N 03°38'07" W 175.26'

N 02°54'03" W 35.00'

N 02°54'03" W 142.28'

N 02°59'49" W 174.52' (RRSPIKE-CORNER RW-COR)

N 03°29'49" W 162.68'

N 04°27'26" W 144.63' (RRSPIKE-EIP)

N 04°06'47" W 128.60' (EIP-CORNER RW-COR) 130.17' (RW-COR)

1 1811 12TH, LLC
DB 3679 PG 354

2 JERRY M. LEDFORD
CAROLYN M. LEDFORD
DB 1343 PG 995

3 JEWELS, LLC
DB 3065 PG 526
PB 35 PG 61

4 ADVANCE STORES COMPANY, INC.
DB 3004 PG 788
PB 35 PG 61

5 RRTM PROPERTIES, LLC
DB 2534 PG 1050

6 CASA NOSTRA, INC.
DB 3805 PG 1085
PB 84 PG 154

7 BOULEVARD EAST, LLC
DB 2474 PG 1275

BROWN OPERATING COMPANY, INC.
DB 956 PG 170
PB 77 PG 122

POWELL RENTALS, INC.
DB 3748 PG 107

ARC CAFEUSAOOI, LLC
DB 3198 PG 626

NHIM TAN
ANH N. TAN
DB 1712 PG 24

LEMONADE MM HICKORY NC, LLC
DB 3759 PG 912

BB&T
DB 1429 PG 614

BOB KILLIAN TIRE, INC.
DB 1599 PG 649

FELKER DAY, INC.
DB 3207 PG 909
PB 20 PG 5

FAMILY COIN LAUNDRY, LLC
DB 2805 PG 1683
PB 20 PG 5

ALECK J. BEARD FAMILY TRUST ESTATE FILE
2009E PG 306
DB 1137 PG 768
PB 1PG 106

-L- PC 10+64.36

-L- POC 10+67.95
-Y- POT 14+08.72

-L- PT 14+31.21

-L- PC 22+59.04

N 82° 48' 54.0" E

S 71°59'28" W 144.00'

N 71°59'28" E 117.00'

S 72°04'10" W 185.17'

S 72°01'46" W 325.49'

S 73°05'00" W 200.00'

S 83°02'33" E 253.46'

S 83°03'45" E 128.55'

S 08°42'08" E 110.19'

S 07°50'08" E 145.08' (RW-COR) 143.00' (EIP-COR)

S 06°37'20" E 207.01' (RW-COR) 206.31' (REBAR-COR)

S 06°38'26" E 238.38'

S 81°31'17" E 40.28'

S 81°31'17" E 25.39'

S 81°31'17" E 63.67'

S 16°43'00" E 74.09'

S 17°32'59" E 183.72'

S 19°22'44" E 226.20' (REBAR-COR) 225.36' (RW-COR)

S 23°20'36" E 242.97'

S 71°48'41" E 30.27'

MATCH LINE STA. -L- 23+00
MATCH TO SHEET NO. RW05

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED FEBRUARY 2025.

12-FEB-2025 11:20
J:\TGS_Projects\Municipal\Hickory\BL-0066\2025 RW STAKING\MTC\BL-0066 RW\b10066_ls_rw04.dgn
mcornwell AT MCORNWELLLAPTOP

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

2/2025

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	RW05

Location and Surveys

TGS ENGINEERS
201 WEST MARION STREET
SUITE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PROJECT SURVEYOR

Signed by: Matthew Cornwell EB036F11473E475...

3/4/2025

NORTH CAROLINA PROFESSIONAL SEAL L-4775 LAND SURVEYOR MATTHEW T. CORNWELL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- CURVE DATA

PI Sta 23+92.20
△ = 3° 11' 42.5" (RT)
D = 1° 12' 00.0"
L = 266.26'
T = 133.17'
R = 4,774.65'

PI Sta 35+94.89
△ = 27° 03' 53.4" (LT)
D = 5° 59' 58.4"
L = 451.11'
T = 229.85'
R = 955.00'

NAD 83/2011

MATCH LINE STA. -L- 23+00
MATCH TO SHEET NO. RW04

MATCH LINE STA. -L- 36+00
MATCH TO SHEET NO. RW06

SR 1453 12th AVENUE NE 60' BST

N 86°00'36.5" E

EXISTING R/W

80.00'

-L- PT 25+25.30

-L- PC 33+61.05

ALECK J. BEARD FAMILY TRUST ESTATE FILE 2009E PT 306 DB 1137 PG 768 PB 1 PG 106

MCKINNEY COMMERCIAL RENTALS, LLC DB 3621 PG 245 PB 1 PG 106

JORDAN R. BINGHAM DB 3785 PG 1858 PB 1 PG 106

JAVIER MORA MARIA D. MORA DB 2975 PG 388 PB 1 PG 106

PETER ANTINARELLI DB 3708 PG 1973

BRADFORD N. COOK JEFFREY M. COOK DB 2943 PG 1127 PB 19 PG 191

8 LUTHERAN HOME HICKORY PROPERTY, INC. DB 3119 PG 402 DB 2612 PG 994

9 RRTM PROPERTIES, LLC DB 3831 PG 1336 PB 1 PG 19

10 ASE INVESTMENTS, LLC DB 3373 PG 1762 PB 1 PG 19

11 PEH PROPERTIES, LLC DB 3642 PG 1119 DB 3652 PG 1049 PB 1 PG 77 PB 1 PG 19

JET KLEEN, LLC DB 2278 PG 126

HICKORY PROPERTY, INC. DB 2999 PG 994

WESLEY E. STARNES DB 2013 PG 1087

MEMBERS CREDIT UNION DB 2827 PG 887

COOK OUT-HICKORY, INC. DB 3685 PG 940 PB 2 PG 28

I, Matthew T. Cornwell, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed February 2025, and all coordinates are based on NAD83/2011. That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 3/4/2025.

Signed by: Matthew Cornwell EB036F11473E475...

Professional Land Surveyor L-4775

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED FEBRUARY 2025.

12-FEB-2025 11:20
S:\Surveys\Projects\municipal\Hickory\BL-0066\2025 RW STAKING\MTC\BL-0066 RW\b10066_1s_rw05.dgn
mcornwell AT MCORNWELL-LAPTOP

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	RW06

Location and Surveys

TGS ENGINEERS
201 WEST MARION STREET
SUITE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PROJECT SURVEYOR

Signed by: Matthew Cornwell
EBD36F11473E475...

NORTH CAROLINA PROFESSIONAL SEAL L-4775 LAND SURVEYOR MATTHEW T. CORNWELL

3/4/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

2/2025

-L- CURVE DATA

PI Sta 35+94.89	PI Sta 44+34.00	PI Sta 46+65.02
△ = 27° 03' 53.4" (LT)	△ = 6° 03' 48.4" (LT)	△ = 11° 05' 41.7" (LT)
D = 5° 59' 58.4"	D = 2° 59' 59.2"	D = 4° 16' 44.4"
L = 451.11'	L = 202.13'	L = 259.29'
T = 229.85'	T = 101.16'	T = 130.05'
R = 955.00'	R = 1,910.00'	R = 1,339.00'

NAD 83/2011

MATCH LINE STA. -L- 36+00
MATCH TO SHEET NO. RW05

MATCH LINE STA. -L- 47+00
MATCH TO SHEET NO. RW07

-L- PT 38+16.16

-L- PC 43+32.84

-L- PCC 45+34.97

S 85°51'11" W
200.08'

N 15°59'37" W
286.62' (286.62' (CD) (RAW (CD))

N 27°03'19" W
427.77'

N 67°18'55" W
485.51'

N 58° 56' 43.1" E

S 84°30'02" W
145.97'

N 83°52'08" E
128.08'

S 62°20'52" E
137.63'

S 38°59'17" W
228.86'

S 00°58'04" W
284.60'

N 56°13'14" E
188.09'

40

45

12th AVE NE 60' BST

SR 1444 22nd ST NE

OFF MAP TO 11TH AVE NE

EXISTING R/W

BST

CONC

CB

EIP

PE

E

TAPERS TO 34'

TAPERS TO 29'

TAPERS TO 27'

TAPERS TO 28'

TAPERS TO 30'

TAPERS TO 25'

+00.00 48.00'
+28.00 51.00'
+43.00 58.00'
+88.00 58.00'
+00.00 50.00'
+90.00 48.00'
+90.00 40.00'
+67.37 41.42'
+18.26 41.12'
+69.65 29.11'
+77.81 43.33'
+01.74 54.20'
+28.00 46.00'
+02.00 55.00'
+50.00 50.00'
+13.00 69.00'
+52.00 46.00'
+00.00 53.00'
+45.00 45.00'
+45.00 42.00'
+36.00 66.00'
+38.00 42.00'
+48.00 38.00'
+50.00 34.00'
+21.00 34.00'
+19.00 38.00'
+29.00 41.00'
+36.00 52.00'
+83.00 41.00'
+15.00 54.00'
+08.00 34.00'
+33.00 55.00'
+47.00 39.00'
+59.00 32.07'
+94.00 33.00'
+50.00 34.00'
+14.00 35.00'
+62.00 36.00'
+75.00 34.00'
+62.00 33.00'

12
HAMPTON 570, INC.
DB 3729 PG 493

13
ST. STEPHEN'S LUTHERAN CHURCH, ELCA, HICKORY, NC
DB 3815 PG 863

ST. STEPHENS LUTHERAN CHURCH, MISSOURI SYNOD OF HICKORY
DB 416 PG 417

MILLERS LUTHERAN CHURCH
DB 611 PG 512

38.28' (RW-CORD)
N 28°18'33" W
38.28' (EP-COM)

COOK OUT-HICKORY, INC.
DB 3685 PG 940
PB 2 PG 28

14
COOK'S CORNER PROPERTIES, LLC
DB 2990 PG 1084
PB 21 PG 283

15
MILLERS LUTHERAN CHURCH
DB 1126 PG 678
DB 611 PG 512

MILLER LUTHERAN CHURCH

16
ST. STEPHEN'S EVANGELICAL LUTHERAN CHURCH
(NO DEED FOUND)

I, Matthew T. Cornwell, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed February 2025, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 3/4/2025.

Signed by: Matthew Cornwell
EBD36F11473E475...

Professional Land Surveyor L-4775

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED FEBRUARY 2025.

12-FEB-2025 13:35
S:\LSurvey\Projects\Municipal\Hickory\BL-0066\2025 RW STAKING\MTC\BL-0066 RW\b10066_ls_rw06.dgn
mcornwell
A1 MCORNWELL_LAPTOP

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	RW07

Location and Surveys

TGS ENGINEERS
201 WEST MARION STREET
SUITE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PROJECT SURVEYOR

Signed by: Matthew Cornwell EBD36F11473E475...

3/4/2025

NORTH CAROLINA PROFESSIONAL SEAL L-4775 LAND SURVEYOR MATTHEW T. CORNWELL

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I, Matthew T. Cornwell, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed February 2025, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 3/4/2025.

Signed by: Matthew Cornwell EBD36F11473E475...

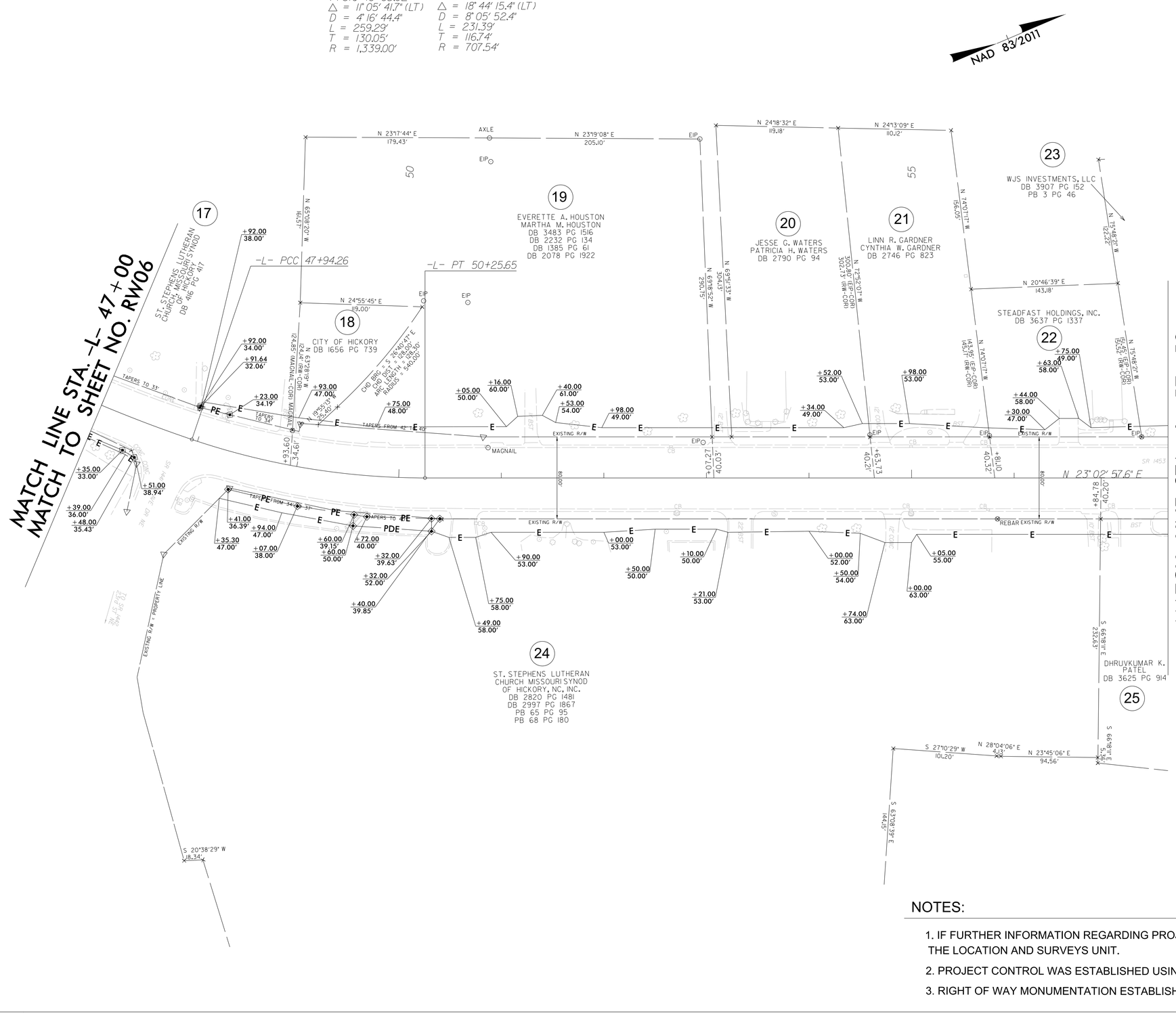
Professional Land Surveyor L-4775

-L- CURVE DATA

PI Sta 46+65.02
△ = 11° 05' 41.7" (LT)
D = 4° 16' 44.4"
L = 259.29'
T = 130.05'
R = 1,339.00'

PI Sta 49+11.00
△ = 18° 44' 15.4" (LT)
D = 8° 05' 52.4"
L = 231.39'
T = 116.74'
R = 707.54'

NAD 83/2011



NOTES:

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2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED FEBRUARY 2025.

REVISIONS

04-MAR-2025 10:20
C:\Surveyor Projects\municipal\Hickory\BL-0066\2025 RW STAKING\MTC\BL-0066 RW\bl0066_1s_r#07.dgn
mcornwell
AT MORNWELL1APT0P

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	RW08

Location and Surveys

TGS ENGINEERS
201 WEST MARION STREET
SUITE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PROJECT SURVEYOR

Signed by: Matthew Cornwell
EBD36F11473E475...

NORTH CAROLINA PROFESSIONAL SEAL L-4775 LAND SURVEYOR MATTHEW T CORNWELL

3/4/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

MATCH LINE STA. -L- 57+50
MATCH TO SHEET NO. RW07

-L- CURVE DATA
PI Sta 65+08.02
△ = 19° 05' 42.2" (RT)
D = 5° 59' 58.4"
L = 318.27'
T = 160.63'
R = 955.00'

NAD 83/2011

23 — ±82.46 52.00' — EXISTING R/W = PROPERTY LINE — 15th AVE NE

26 CHARLES A. MORETZ ESTATE DB 2338 PG 298 — S 22°08'18" W 100.00' — N 77°22'42" W 186.94' — N 77°22'42" W 123.56' — EXISTING R/W = PROPERTY LINE — ±47.00 58.83' — ±98.00 61.00' — ±90.00 57.00' — ±21.00 61.00' — ±50.00 55.00' — ±31.79 53.00' — CONC — CB — CONC

27 PAULINE S. MORETZ HEIRS DB 2523 PG 1467 — N 22°06'32" E 66.63' — N 77°22'42" W 186.94' — 60 — S 11°01'54" W 149.64' — EXISTING R/W = PROPERTY LINE

N 22°51'13" E 49.01' — S 77°22'42" E 79.49' — S 79°55'16" E 63.84' — S 79°17'31" E 100.58'

28 BURTONS WJ, LLC ROPPS, LLC DB 3224 PG 295 PB 81PG 149 — S 46°18'46" W 222.49' — N 25°31'50" E 193.89' — N 75°32'59" W 179.08'

N 23°48'18" E 100.02' — SAXON PROPERTIES LLC DB 3843 PG 0722 — 29 — N 12°39'35" W 174.45' (IRW-CORD) — N 75°43'37" W 175.91' (EIP-CORD) 175.98' (IRW-CORD) — ±00.00 49.00' — ±84.00 59.00' — ±65.00 48.00' — ±96.00 59.00' — ±12.00 52.00' — REBAR — ±05.36 52.00' — ±49.00 48.00' — ±90.00 52.00' — ±50.00 52.00' — EIP — EXISTING R/W — SPRINGS RD NE 60' BST — SR 1453 — 80.00'

30 ROBUST PROPERTIES, LLC DB 3269 PG 687 — N 25°30'39" E 28.56' — N 42°48'06" E 181.59' — 65 — N 65°56'56" W 359.03' (EIP-CORD) 358.97' (IRW-CORD) — N 76°28'29" W 388.08' (REBAR-CORD) 388.00' (IRW-CORD)

31 AL CROUSE OFFICE, LLC DB 3331PG 1572 — ±28.00 50.00' — ±29.00 51.00' — ±68.00 51.00' — ±68.00 40.00' — REBAR — ±49.00 44.90' — EXISTING R/W = PROPERTY LINE

32 SAXON PROPERTIES, LLC DB 2211PG 160

S 14°37'24" W 66.33' — CHD BRG = N 28°55'10" E CHD DIST = 194.83' ARC LENGTH = 196.87' RADIUS = 394.50' — CHD BRG = N 45°04'58" E CHD DIST = 25.71' ARC LENGTH = 25.71' RADIUS = 394.50' — N — 70 — EXISTING R/W = PROPERTY LINE

SXCW PROPERTIES, LLC DB 3335 PG 1542 PB 75 PG 100

MICHAEL DIGIACOMO AND LINDA DIGIACOMO REVOCABLE LIVING TRUST DB 3422 PG 1368 PB 75 PG 100

25 DHRUVKUMAR K. PATEL DB 3625 PG 914 — S 66°03'38" E 262.64' (EIP-CORD) 262.86' (IRW-CORD)

33 CHRIST CHURCH GLOBAL, INC. DB 3827 PG 1948 DB 3377 PG 204

-L- PC 63+47.40

N 29°15'21" E 229.91' — N 29°18'20" E 292.49' — S 63°52'23" E 198.28'

EXISTING R/W = PROPERTY LINE — EXISTING R/W = PROPERTY LINE

±47.00 55.00' — ±60.05 55.00' — ±38.91 55.00' — ±65.67 55.00' — -L- PT 66+65.67

34 BOBBY A. LITTLE CONSTRUCTION CO., INC. DB 1093 PG 389 — BK1 1493ORD4 = R/W DWL5X3

35 ANNA M. WARD DB 3236 PG 1649 — S 45°09'44" E 167.48' — S 45°09'44" E 167.84' — N 42°31'16" E 100.00' — S 45°09'44" E 92.74'

36 EARL E. PROPST HEIRS DORIS P. FASTENAU DB 3430 PG 820

37 CATAWBA COUNTY DB 2069 PG 16 — ±55.00 55.00' — ±55.00 40.00' — ±42.10 40.84' — 100.00' — EXISTING R/W — S 36°40'05" E 238.33' — -L- POT 71+52.42

EIP — S 30°23'16" W 261.09' — N 30°23'16" E 113.37' — N 31°04'08" E 19.68' — EIP — REBAR — N 30°19'12" E 330.49'

N 42°08'39.8" E — ±71.25 42.48' — REBAR — REBAR — EXISTING R/W = PROPERTY LINE — EXISTING

I, Matthew T. Cornwell, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed February 2025, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 3/4/2025.

Signed by: Matthew Cornwell
EBD36F11473E475...

Professional Land Surveyor L-4775

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED FEBRUARY 2025.

12-FEB-2025 13:56
S:\Surveys\Projects\municipal\Hickory\BL-0066\2025 RW STAKING\MTC\BL-0066 RW\bl0066_ls_rw08.dgn
mcornwell APTOP

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

T.I.P.: BL-0066

STATE OF NORTH CAROLINA
CATAWBA COUNTY

PAVEMENT MARKING AND SIGNING PLAN
CITY OF HICKORY

LOCATION: SIDEWALKS ALONG BOTH SIDES OF SR 1453 (12th AVE. NE/SPRINGS RD NE) BETWEEN SR 1401 (16th ST NE/SANDY RIDGE RD) AND McDONALD PARKWAY

TIP NO.	SHEET NO.
BL-0066	PMP-1

APPROVED: Signed by: Don A. Parker 75DB9E90ADEF440...

DATE: 4/22/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GENERAL NOTES PAVEMENT MARKINGS

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
-L- SR 1453 12th AVE NE/SPRINGS RD	THERMOPLASTIC	POLYCARBONATE H-SHAPED MARKERS
-Y- SR 1401 16th ST NE	THERMOPLASTIC	POLYCARBONATE H-SHAPED MARKERS

D) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

E) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

F) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

I) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

M) SEE ROADWAY PLANS FOR ALTERNATE CURB RAMP DESIGNS WHEN INDICATED ON PAVEMENT MARKING DETAIL SHEETS.

GENERAL NOTES SIGNING

- SIGNS FURNISHED BY CONTRACTOR
- IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
- ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
- STREET SIGNS TO BE PROVIDED BY CITY OF HICKORY.

FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
PAVEMENT MARKINGS	
THERMOPLASTIC (4",90 MILS)	
T1	(4") WHITE EDGELINE
T2	(4") WHITE SOLID LANE LINE
T3	(4") 10 FT. WHITE SKIP
T13	(4") YELLOW DOUBLE CENTER
THERMOPLASTIC (8", 90 MILS)	
T46	(8") WHITE CROSSWALK LINE
THERMOPLASTIC (24", 90 MILS)	
T61	(24") WHITE STOPBAR
T62	(24") WHITE CROSSWALK LINE
THERMOPLASTIC PAVEMENT MARKING SYMBOLS AND CHARACTERS	
T71	RIGHT TURN ARROW (90 MIL)
T72	STRAIGHT ARROW (90 MIL)
T73	COMBO. LEFT/STRAIGHT ARROW (90 MIL)
T74	COMBO. RIGHT/STRAIGHT ARROW (90 MIL)
T100	ALPHANUMERIC CHARACTER (90 MIL)
GENERIC PAVEMENT MARKING ITEM (SEE SPECIAL PROVISION)	
T103	(24") YIELD LINE TRIANGLE (90 MIL)
PAVEMENT MARKERS - SNOWPLOWABLE (POLYCARBONATE H-SHAPED)	
ME	YELLOW & YELLOW
MF	CRYSTAL & RED

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES 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
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
910.20	SCHOOL MARKED AND UNMARKED CROSSWALKS / SPEED REDUCTION REQUIREMENTS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE 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
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING AND SIGNING PLAN TITLE, GENERAL NOTES, INDEX OF SHEETS, FINAL PAVEMENT MARKING SCHEDULE, LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND SUMMARY OF SIGNING QUANTITIES.
PMP-1A	REVISED ROADWAY STANDARD DRAWING (1205D01)
PMP-1B	REVISED ROADWAY STANDARD DRAWING (1250D01)
PMP-1C	TYPE 'E' SIGNS
PMP-2 THRU PMP-6	PAVEMENT MARKING AND SIGNING DETAIL

SUMMARY OF QUANTITIES

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4025000000	901	CONTRACTOR FURNISHED, TYPE E SIGN	187	S.F.
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	276	L.F.
4102000000	904	SIGN ERECTION, TYPE E	20	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	14	EA.

PLAN PREPARED BY: TGS ENGINEERS

DON A. PARKER, P.E. PROJECT ENGINEER

CODA BRANNAN, E.I. DESIGN ENGINEER

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

4/22/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Traffic\Pavement Markings\BL-0066_Sgn_PMP_01.dgn
User:cbrannan

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PROJECT REFERENCE NO.	SHEET NO.
BL-0066	PMP-1A

CONTINUOUS LINES

EDGE LINE
YELLOW OR WHITE — 4″/6″

LANE LINE
WHITE — 4″/6″

CENTER LINE
YELLOW — 4″/6″

GORE LINE
WHITE — 8″/12″

DIAGONAL LINE
YELLOW OR WHITE — 12″ 45 MPH OR HIGHER
8″ LESS THAN 45 MPH
4″-6″ FOR BICYCLE FACILITIES

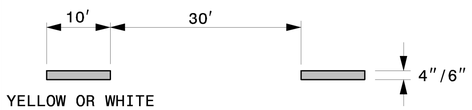
CROSSWALK LINE
WHITE — 8″ TRANSVERSE
24″ LONGITUDINAL

RxR LINE
WHITE — 16″

STOP OR TRANSVERSE BAR
WHITE — 24″

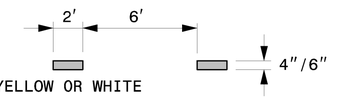
10′-30′/SP SKIP LINE

UNLESS OTHERWISED SHOWN, USE 10′-30′/SP SKIPS FOR SKIP LANE LINES AND SKIP CENTER LINES.



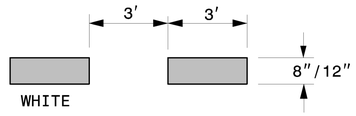
2′-6′/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 2′-6′/SP MINI-SKIPS FOR LANE LINE EXTENSIONS THROUGH INTERSECTIONS, EDGE LINE EXTENSIONS THROUGH INTERSECTIONS AND BICYCLE LANE EXTENSIONS.



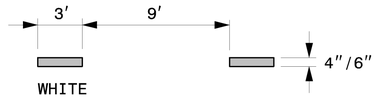
3′-3′/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 3′-3′/SP MINI-SKIPS FOR THE WHITE EDGE LINE ENTENSIONS AT ROUNDABOUTS.



3′-9′/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 3′-9′/SP MINI-SKIPS FOR MINI-SKIP LANE LINES, LINE EXTENSIONS THROUGH TAPERS, AND MINI-SKIPS USED FOR BICYCLE LANE LINES.



GENERAL NOTES:

1- USE 6″ LANE, EDGE, AND CENTER LINES ON ALL FULL CONTROL OF ACCESS FACILITIES AND OTHER ROUTES AS DIRECTED BY THE ENGINEER.

2- LANE LINES INDICATED AS "WIDE" ON THE ROADWAY STANDARD DRAWINGS SHALL BE AT LEAST TWICE THE WIDTH OF THE NORMAL LINE.

3- GORE LINES SHALL BE TWICE THE WIDTH OF THE NORMAL LINE.

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

ROADWAY DETAIL DRAWING FOR

PAVEMENT MARKINGS

LINE TYPES AND OFFSETS

SHEET 1 OF 2

1205D01

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042546 MATTHEW V. SPRINGER
Matthew V. Springer, PE
Signed by: 4/20/2026
4/20/2026

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-8950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: M.V. SPRINGER DATE: 2-15-24
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

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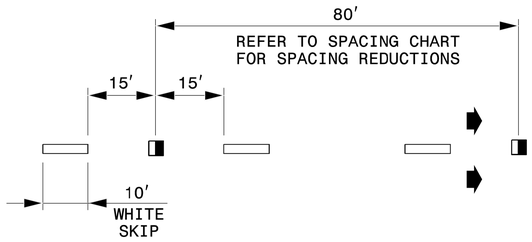
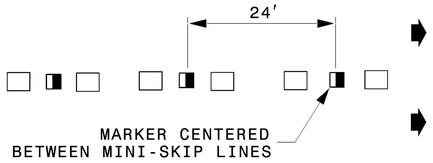
PROJECT REFERENCE NO.	SHEET NO.
BL-0066	PMP-1B

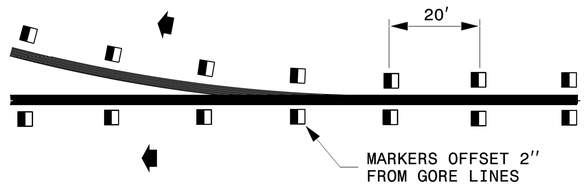
10′-30′/SP SKIP LINE



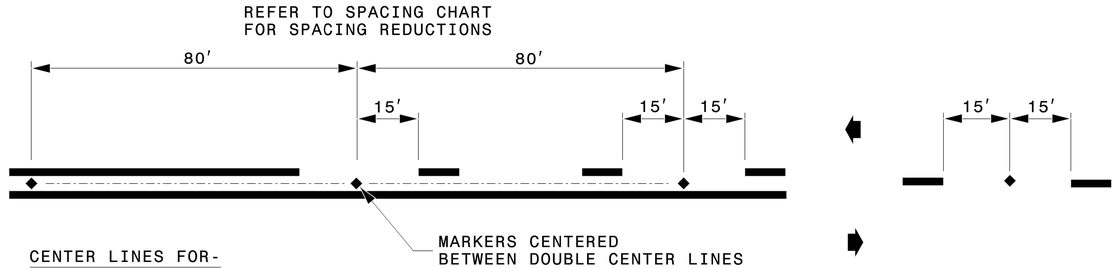
3′-9′/SP MINI-SKIP LINE



GORE LINES



YELLOW CENTER LINES

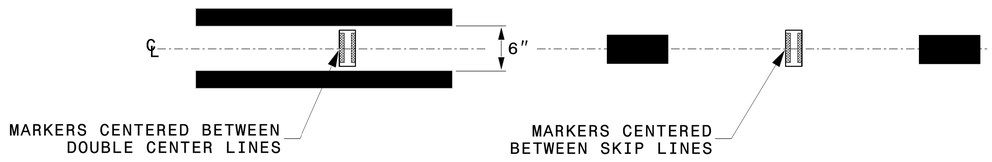


CENTER LINES FOR-

TWO-LANE, TWO-WAY ROADWAYS
UNDIVIDED ROADWAYS
TWO-WAY LEFT TURN LANES

DETAIL OF PAVEMENT MARKER PLACEMENT

RAISED REFLECTIVE PAVEMENT MARKERS



LEGEND

- CRYSTAL/RED PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- DIRECTION OF TRAFFIC FLOW

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

ROADWAY DETAIL DRAWING FOR

RAISED PAVEMENT MARKERS

INSTALLATION SPACING

SHEET 2 OF 3

1250D01

NORTH CAROLINA
PROFESSIONAL
SEAL
042546
ENGINEER
MATTHEW V. SPRINGER
Matthew V. Springer, PE
4/20/2026

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-8950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: M.V. SPRINGER DATE: 2-15-24
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

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401 QUANTITY REQ'D 1

36 X 36
W11-2

YELLOW/GREEN REFLECTIVE SHEETING

ONE "U" POSTS PER SIGN

406 QUANTITY REQ'D 2

36 X 36
S4-5

YELLOW/GREEN REFLECTIVE SHEETING

ONE "U" POSTS PER SIGN

411 QUANTITY REQ'D 2

24 X 30
S5-2

ONE "U" POSTS PER SIGN

402 QUANTITY REQ'D 1

21 X 15
W16-7PL

YELLOW/GREEN REFLECTIVE SHEETING

MOUNT BELOW SIGN 401
IN 1 INSTALLATION

407 QUANTITY REQ'D 2

36 X 36
S1-1

YELLOW/GREEN REFLECTIVE SHEETING

ONE "U" POSTS PER SIGN

412 QUANTITY REQ'D 1

24 X 30
R6-2R

ONE "U" POSTS PER SIGN

403 QUANTITY REQ'D 1

48 X 48 X 48
R1-2

ONE "U" POSTS PER SIGN

408 QUANTITY REQ'D 4

24 X 9
S4-3P

YELLOW/GREEN REFLECTIVE SHEETING

MOUNT BELOW SIGN 407
IN 2 INSTALLATIONS

MOUNT ABOVE SIGN 409
IN 2 INSTALLATIONS

413 QUANTITY REQ'D 1

24 X 30
R6-2L

MOUNT BACK-TO-BACK WITH SIGN 412
IN 1 INSTALLATION

404 QUANTITY REQ'D 7

36 X 36
R1-1

ONE "U" POSTS PER SIGN

409 QUANTITY REQ'D 2

30 X 36
R2-1

ONE "U" POST PER SIGN

405 QUANTITY REQ'D 2

30 X 36
R2-1

ONE "U" POST PER SIGN

410 QUANTITY REQ'D 2

SNC4-1a

MOUNT BELOW SIGN 409
IN 2 INSTALLATIONS

TIP NO.	SHEET NO.
BL-0066	PMP-1C

APPROVED: Signed by: Don A. Parker 75DB9E90ADEF440...

DATE: 4/22/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH STREET
(SUITE 200)
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

TYPE "E" SIGNS

4/22/2026
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User:cbrannan

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

NOTE:

1. DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2. ALL PROPOSED SIGNS TO BE MOUNTED ON ONE U-CHANNEL POST UNLESS OTHERWISE NOTED

TIP NO.	SHEET NO.
BL-0066	PMP-2

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DATE: 4/22/2026

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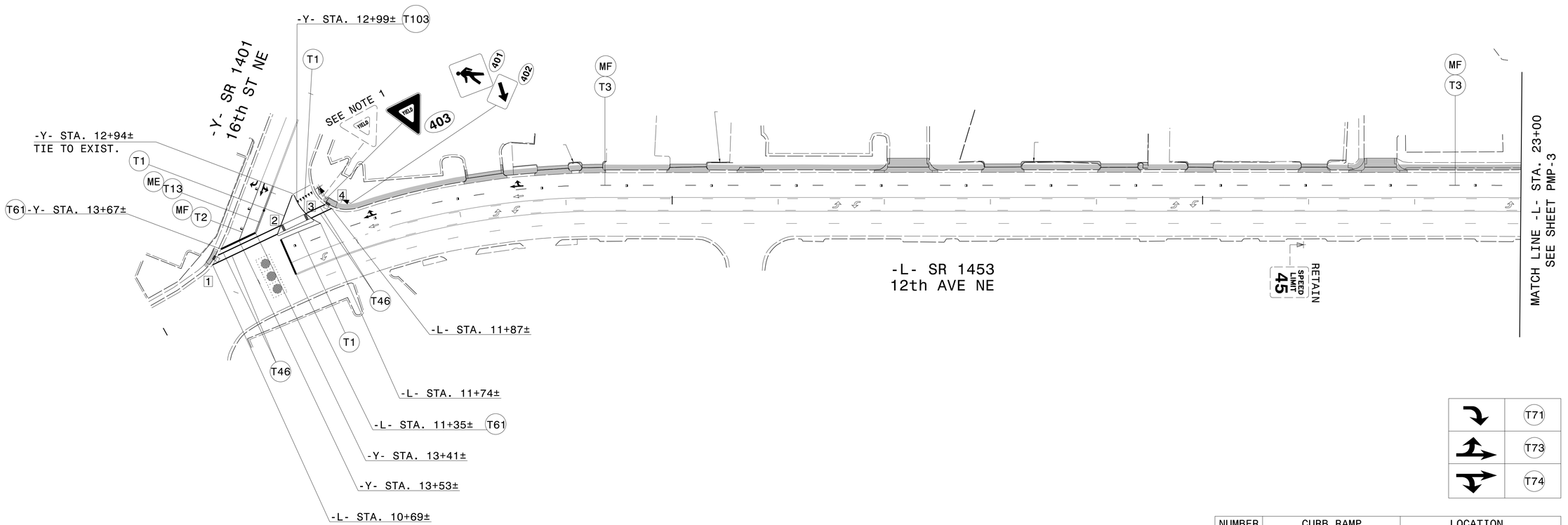
706 HILLSBOROUGH STREET
(SUITE 200)
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



	T71
	T73
	T74

NUMBER	CURB RAMP	LOCATION
1	TYPE 2	-L- STA. 10+74±, 42′ RT
2	TYPE 7	-L- STA. 11+40±, 39′ RT
3	TYPE 7	-L- STA. 11+64±, 40′ LT
4	TYPE 1A	-L- STA. 11+85±, 44′ LT

PAVEMENT MARKING AND SIGNING DETAIL

4/22/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Traffic\Pavement Markings\BL-0066_Sgn_PMP_02.dgn
User:rcarman

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

NOTE:

1. DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2. ALL PROPOSED SIGNS TO BE MOUNTED ON ONE U-CHANNEL POST UNLESS OTHERWISE NOTED

TIP NO.	SHEET NO.
BL-0066	PMP-3

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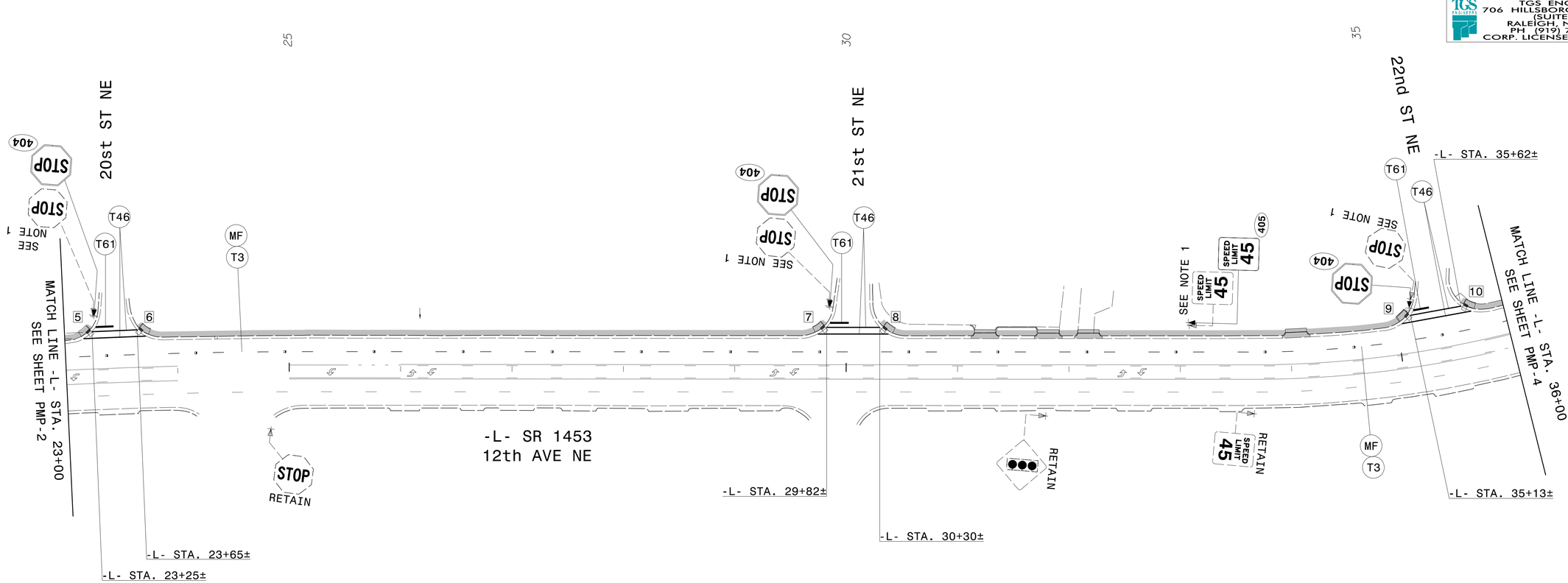
DATE: 4/22/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH STREET
(SUITE 200)
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



NUMBER	CURB RAMP	LOCATION
5	TYPE 1A	-L- STA. 23+21±, 40′ LT
6	TYPE 1A	-L- STA. 23+68±, 40′ LT
7	TYPE 1A	-L- STA. 29+79±, 40′ LT
8	TYPE 1A	-L- STA. 30+35±, 40′ LT
9	TYPE 1A	-L- STA. 35+10±, 40′ LT
10	TYPE 1A	-L- STA. 35+66±, 40′ LT

PAVEMENT MARKING AND SIGNING DETAIL

4/22/2026
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User:rcarmon

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

NOTE:

1. DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2. ALL PROPOSED SIGNS TO BE MOUNTED ON ONE U-CHANNEL POST UNLESS OTHERWISE NOTED

TIP NO.	SHEET NO.
BL-0066	PMP-4

APPROVED: Signed by: Don A. Parker 75DB9E90ADEF440...

DATE: 4/22/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A PARKER

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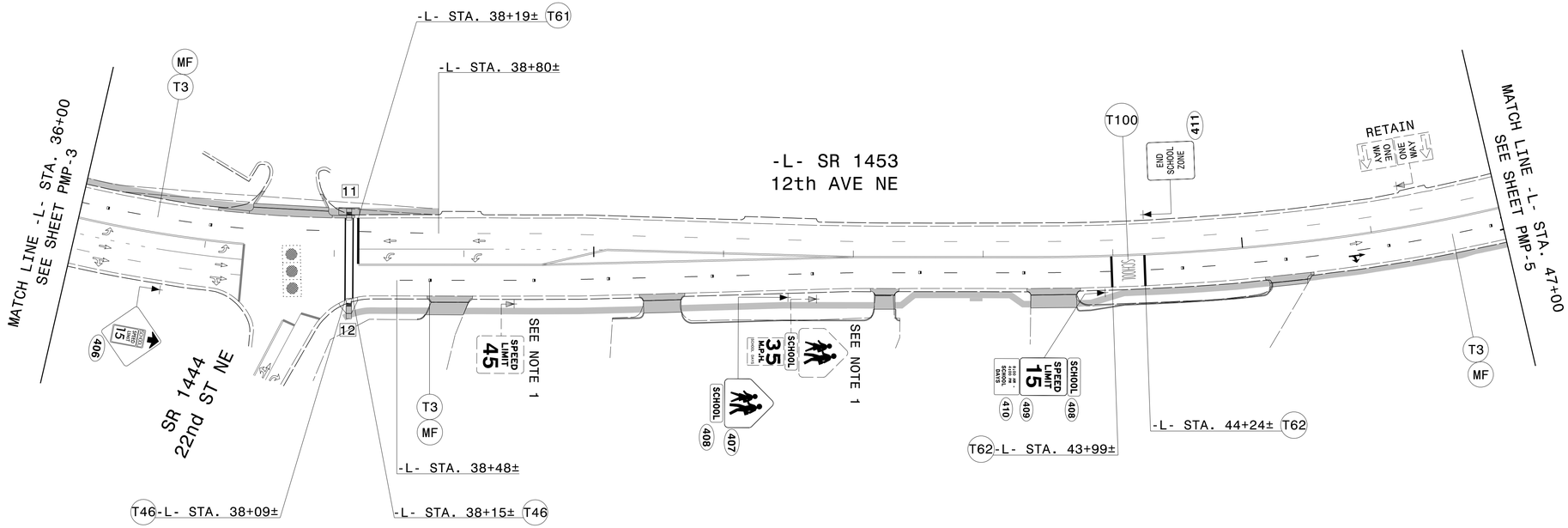
TGS ENGINEERS
706 HILLSBOROUGH STREET
(SUITE 200)
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



T74

NUMBER	CURB RAMP	LOCATION
11	TYPE 1A	-L- STA. 38+12±, 32′ LT
12	TYPE 1A	-L- STA. 38+12±, 35′ RT

PAVEMENT MARKING AND SIGNING DETAIL

4/22/2026
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User:cpcarman

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

NOTE:

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TIP NO.	SHEET NO.
BL-0066	PMP-5

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SEAL

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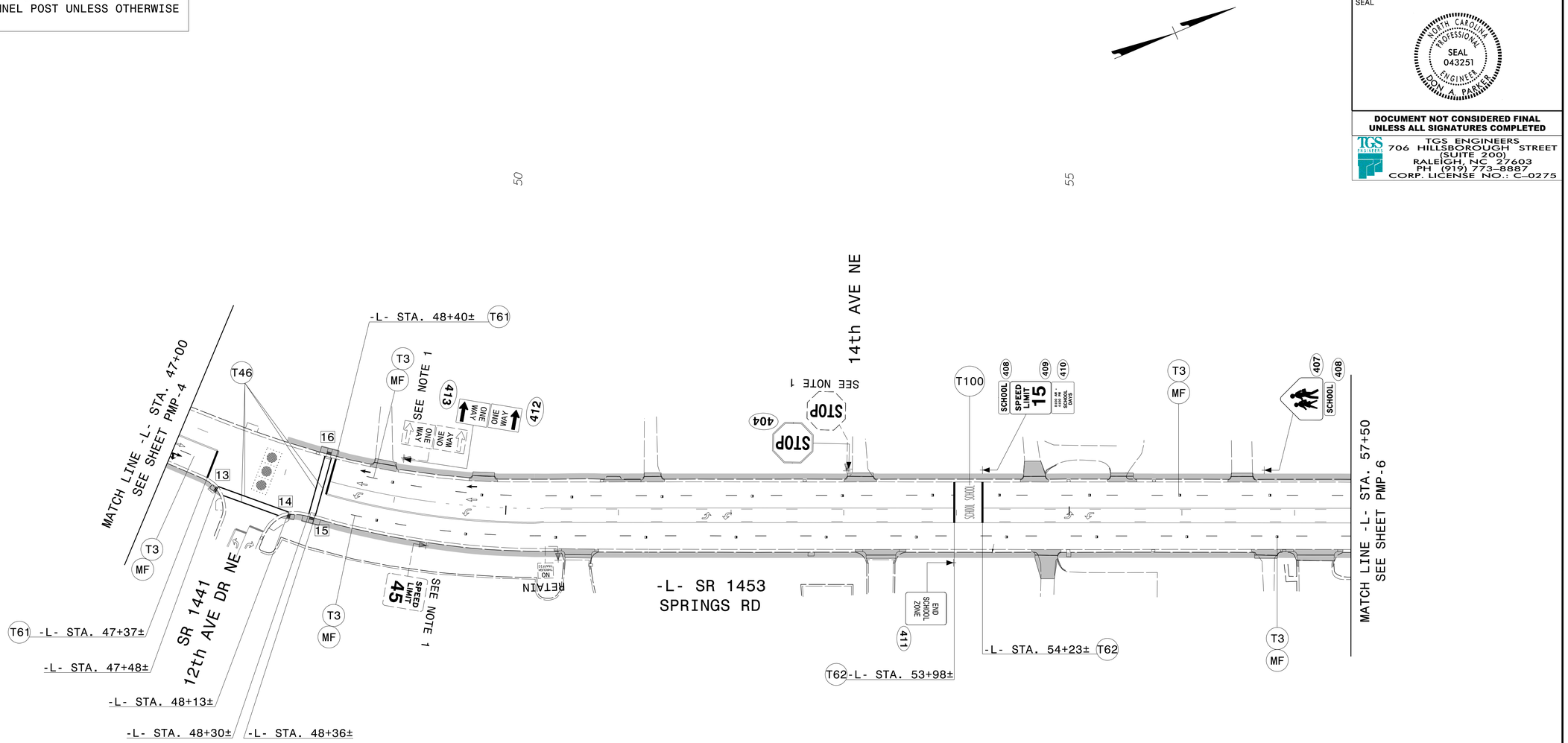
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



→	T72
⮑	T74
SCHOOL	T100

NUMBER	CURB RAMP	LOCATION
13	TYPE 1	-L- STA. 47+48±, 33′ RT
14	TYPE 1	-L- STA. 48+13±, 33′ RT
15	TYPE 2	-L- STA. 48+33±, 29′ RT
16	TYPE 2	-L- STA. 48+33±, 29′ LT

PAVEMENT MARKING AND SIGNING DETAIL

4/22/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Traffic\Pavement Markings\BL-0066_Sgn_PMP_05.dgn
User:cdcramon

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

NOTE:

1. DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2. ALL PROPOSED SIGNS TO BE MOUNTED ON ONE U-CHANNEL POST UNLESS OTHERWISE NOTED

TIP NO.	SHEET NO.
BL-0066	PMP-6

APPROVED: Signed by: Don A. Parker 750B9E90ADEF440...

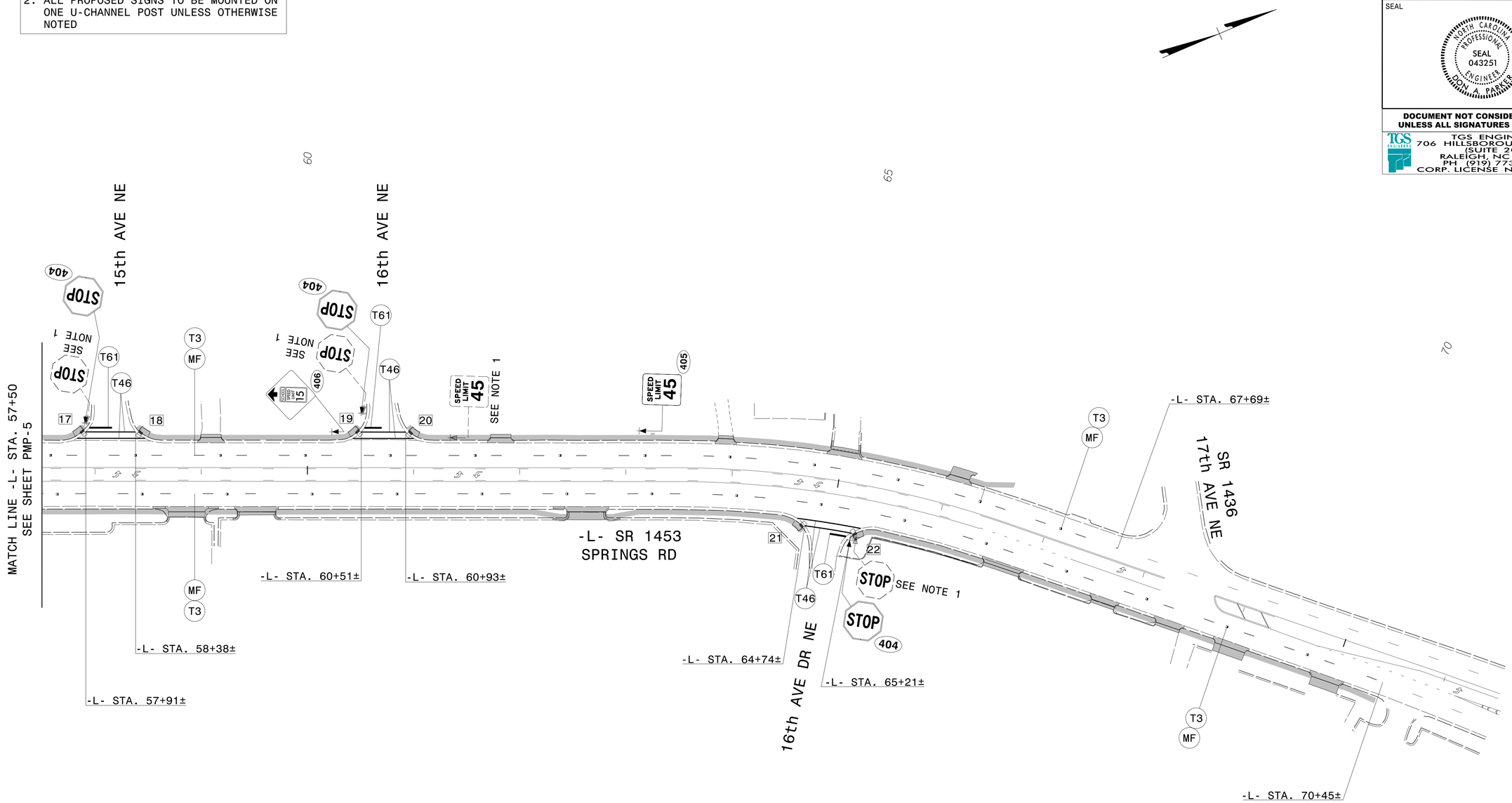
DATE: 4/22/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH STREET
(SUITE 200)
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275



NUMBER	CURB RAMP	LOCATION
17	TYPE 1A	-L- STA. 57+88±, 39′ LT
18	TYPE 1A	-L- STA. 58+42±, 39′ LT
19	TYPE 1A	-L- STA. 60+48±, 39′ LT
20	TYPE 1A	-L- STA. 60+96±, 39′ LT
21	TYPE 1A	-L- STA. 64+71±, 39′ RT
22	TYPE 1A	-L- STA. 65+23±, 39′ RT

PAVEMENT MARKING AND SIGNING DETAIL

4/22/2026
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User:cbrannon

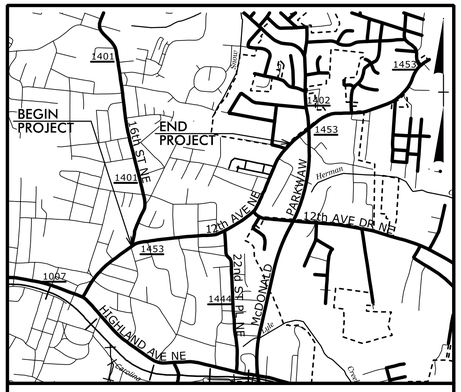
Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

CATAWBA COUNTY

PLAN FOR PROPOSED EROSION CONTROL

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.
N.C.	BL-0066	EC-1

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



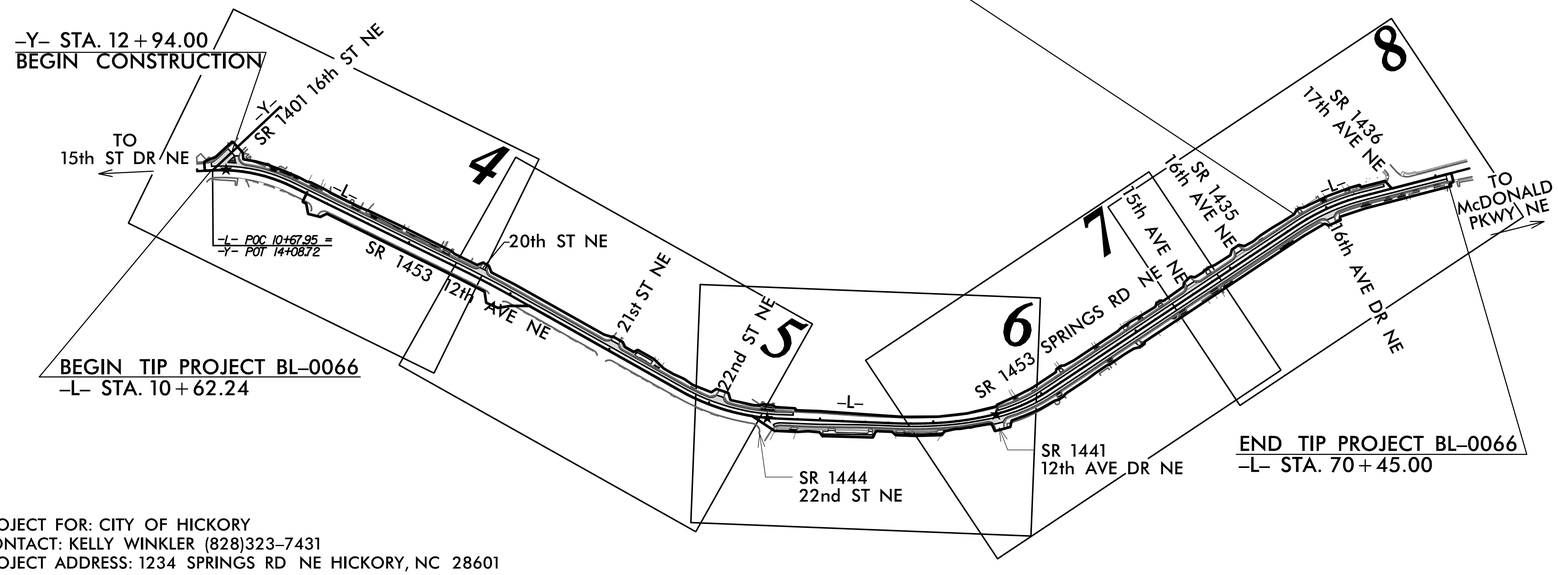
VICINITY MAP

LOCATION: SIDEWALKS ALONG BOTH SIDES OF SR 1453 (12TH AVE NE/SPRINGS RD NE) BETWEEN SR 1401 (16TH ST NE/SANDY RIDGE RD) AND MCDONALD PARKWAY NE

TYPE OF WORK: GRADING, DRAINAGE, PAVING, & SIGNALS

CUT = 1,000 +/– CY
FILL = 300 +/– CY
NET CUT = 700 +/– CY

PROPOSED CONSTRUCTION AREA
TOTAL DISTURBED AREA = 11.9 ACRES
AREA TO BE SEEDED UPON COMPLETION = 1.6 ACRES

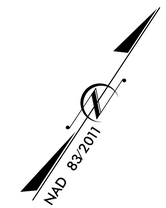


PROJECT FOR: CITY OF HICKORY
CONTACT: KELLY WINKLER (828)323–7431
PROJECT ADDRESS: 1234 SPRINGS RD NE HICKORY, NC 28601

EROSION AND SEDIMENT CONTROL MEASURES

Refer to NC DEQ Erosion & Sediment Control Planning & Design Manual

Std. #	Description	Symbol
6.20	Temporary Diversion	TD
6.22	Diversion Dike (Perimeter Protection)	CWD
6.32	Temporary Slope Drains	
6.41	Outlet Stabilization Structures	
6.41 + 6.86	Outlet Stabilization Structures with Flocculants	
6.51	Hardware Cloth & Gravel Inlet Protection	
6.54	Rock Donut Inlet Protection (Temporary)	
6.55	Rock Pipe Inlet Protection	
6.61	Sediment Basin (Riser Basin)	
6.62	Sediment Fence (Silt Fence)	
6.64	Skimmer Sediment Basin	
6.64	Tiered Skimmer Sediment Basin	
6.66	Compost Sock	RW CFW
6.66 + 6.86	Compost Sock with Flocculants	
6.83	Check Dams	



GRAPHIC SCALE

25 0 50

PLANS
1" = 50'

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG 010000 GENERAL STORMWATER CONSTRUCTION PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES.

Prepared In the Office of:

TGS ENGINEERS

201 W. MARION ST–STE 200
SHELBY, NC 28150

Designed by:

Andrew H. Cochrane, PE
NAME

Reviewed In the Office of:

NC DEQ – MOORESVILLE REGIONAL

610 EAST CENTER AVE.
MOORESVILLE, NC 28115

Roadway Standard Drawings

The "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

5/15/2026
...\Hickory\BL-0066 - Springs Rd\Drainage\Erosion Control - DEQ\Microstation\BL-0066_EC_dsn_EC-01_TSH.dgn
...\Hickory\BL-0066 - Springs Rd\Drainage\Erosion Control - DEQ\Microstation\BL-0066_EC_dsn_EC-01_TSH.dgn

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6.06

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

Definition A graveled area or pad located at points where vehicles enter and leave a construction site.

Purpose To provide a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff, and to help control dust.

Conditions Where Practice Applies Wherever traffic will be leaving a construction site and moving directly onto a public road or other paved off-site area. Construction plans should limit traffic to properly constructed entrances.

Design Criteria **Aggregate Size**—Use 2-3 inch washed stone.

Dimensions of gravel pad—
Thickness: 6 inches minimum
Width: 12-feet minimum or full width at all points of the vehicular entrance and exit area, whichever is greater
Length: 50-feet minimum

Location—Locate construction entrances and exits to limit sediment from leaving the site and to provide for maximum utility by all construction vehicles (Figure 6.06a). Avoid steep grades, and entrances at curves in public roads.

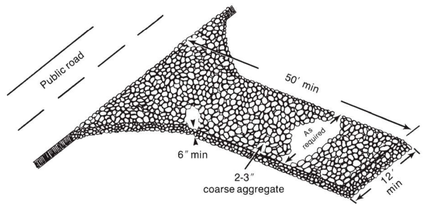


Figure 6.06a Gravel entrance/exit keeps sediment from leaving the construction site (modified from Va SWCC).

6.41

OUTLET STABILIZATION STRUCTURE

Definition A structure designed to control erosion at the outlet of a channel or conduit.

Purpose To prevent erosion at the outlet of a channel or conduit by reducing the velocity of flow and dissipating energy.

Conditions Where Practice Applies This practice applies where the discharge velocity of a pipe, box culvert, diversion, open channel, or other water conveyance structure exceeds the permissible velocity of the receiving channel or disposal area.

Planning Considerations The outlets of channels, conduits, and other structures are points of high erosion potential because they frequently carry flows at velocities that exceed the allowable limit for the area downstream. To prevent scour and undermining, an outlet stabilization structure is needed to absorb the impact of the flow and reduce the velocity to non-erosive levels. A riprap-lined apron is the most commonly used practice for this purpose because of its relatively low cost and ease of installation. The riprap apron should be extended downstream until stable conditions are reached even though this may exceed the length calculated for design velocity control.

Riprap-stilling basins or plunge pools reduce flow velocity rapidly. They should be considered in lieu of aprons where pipe outlets are cantilevered or where high flows would require excessive apron length (Figure 6.41a). Consider other energy dissipaters such as concrete impact basins or paved outlet structures where site conditions warrant.

Alternative methods of energy dissipation can be found in Hydraulic Design of Energy Dissipaters for Culverts and Channels, Hydraulic Engineering Circular No. 14, U.S. Department of Transportation, Federal Highway Administration.

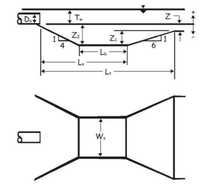
The installation of a culvert in a stream is subject to the conditions of a U.S. Army Corps of Engineers 404 Permit and a N.C. Division of Water Quality 401 Certification. These permit conditions may not allow the use of a riprap apron, and may require that the bottom of the culvert be buried below the natural stream bed elevation. A pre-formed scour pool or plunge pool should be considered in these situations. Plunge pool designs in streams should not use a cantilevered outlet because it would pose a barrier to migration of aquatic life through the culvert. Reducing the outlet velocity may require a combination of techniques, including a culvert with a flat bottom, a downstream cross vane to create tail-water at the pipe outlet, and/or a preformed scour pool.

Design Criteria **Capacity**—10-year, peak runoff or the design discharge of the water conveyance structure, whichever is greater.

Tail-water depth—Determine the tail-water depth immediately below the culvert or pipe outlet based on the design discharge. The ratio of tail-water depth to pipe diameter must be determined in order to select the appropriate riprap apron or plunge pool design method.

Plunge Pools—Two plunge pool methods are presented in Appendix 8.06, the USDA Plunge Pool Design at Submerged Pipe Spillway Outlets, and the USDA Riprap Lined Plunge Pool for Cantilevered Outlet. Software from the Federal Highway Administration can be downloaded at http://www.fhwa.dot.gov/engineering/hydraulics/software.cfm. Excel spreadsheets for the USDA methods are available through the Land Quality web-site at http://www.dlr.enr.state.nc.us/pages/links.htm.

Figure 6.41a Typical plunge pool design showing variable dimensions.



Riprap Aprons size—The apron length and width can be determined according to the tail-water condition. If the water conveyance structure discharges directly into a well-defined channel, extend the apron across the channel bottom and up the channel banks to an elevation of 0.5 foot above the maximum tail-water depth or to the top of the bank, whichever is less (Figure 6.41c).

Determine the maximum allowable velocity for the receiving stream, and design the riprap apron to reduce flow to this velocity before flow leaves the apron. Calculate the apron length for velocity control or use the length required to meet stable conditions downstream, whichever is greater.

Grade—Ensure that the apron has zero grade. There should be no overfall at the end of the apron; that is, the elevation of the top of the riprap at the downstream end should be the same as the elevation of the bottom of the receiving channel or the adjacent ground if there is no channel.

Alignment—The apron should be straight throughout its entire length, but if a curve is necessary to align the apron with the receiving stream, locate the curve in the upstream section of riprap.

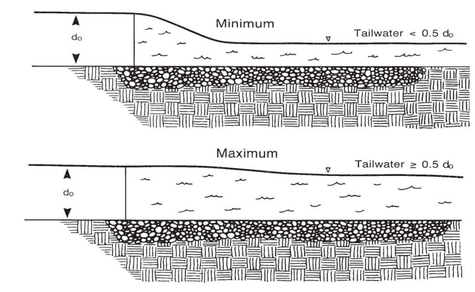


Figure 6.41b Stage showing maximum and minimum tailwater condition.

Materials—Ensure that riprap consists of a well-graded mixture of stone. Larger stone should predominate, with sufficient smaller sizes to fill the voids between the stones. The diameter of the largest stone size should be no greater than 1.5 times the d_{50} size.

Thickness—Make the minimum thickness of riprap 1.5 times the maximum stone diameter.

Stone quality—Select stone for riprap from field stone or quarry stone. The stone should be hard, angular, and highly weather-resistant. The specific gravity of the individual stones should be at least 2.5.

Filter—Install a filter to prevent soil movement through the openings in the riprap. The filter should consist of a graded gravel layer or a synthetic filter cloth. Design filter blankets by the method described in Practice 6.15, *Riprap*.

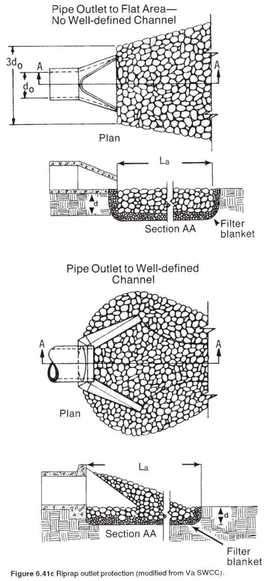


Figure 6.41c Riprap outlet protection (modified from Va SWCC).

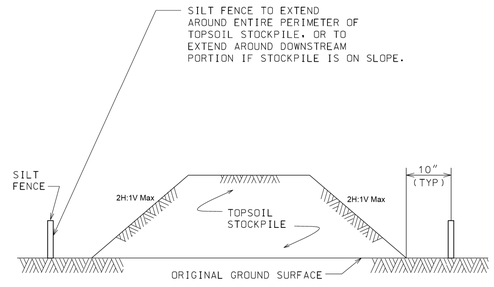
Notes

1. L_a is the length of the riprap apron.
2. d = 1.5 times the maximum stone diameter but not less than 6".
3. In a well-defined channel extend the apron up the channel banks to an elevation of 6" above the maximum tailwater depth or to the top of the bank, whichever is less.
4. A filter blanket or filter fabric should be installed between the riprap and soil foundation.

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-2

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PROJECT DETAILS



NOTES:

1. AN ON-SITE DRAINAGE SWALE SHALL BE LOCATED BETWEEN THE TOPSOIL STOCKPILE AND OFF-SITE PROPERTY.
2. REFERENCE IS MADE TO THE SILT FENCE DETAIL FOR MATERIALS AND INSTALLATION METHODS.
3. IF THE STOCKPILE IS TO REMAIN FOR MORE THAN 14 DAYS, IT SHALL BE STABILIZED WITH BURLAP MATTING OR SEEDED WITHIN 7 DAYS OF COMPLETION TO MINIMIZE EROSION.
4. INSPECTION OF SILT FENCES SHALL BE AT LEAST ONCE PER WEEK AND AFTER RAIN EVENTS IN EXCESS OF ½". REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. SEDIMENT TRAPPED BY THE FENCES SHALL BE REMOVED AND PROPERLY DISPOSED OF WHENEVER SIGNIFICANT ACCUMULATION OCCURS.
6. SILT FENCES SHALL BE MAINTAINED IN PLACE UNTIL TOPSOIL STOCKPILE HAS BEEN ELIMINATED AND SHALL BE REMOVED ONLY WHEN DIRECTED BY THE CITY.

NOT TO SCALE

TEMPORARY TOPSOIL STOCKPILE DETAIL

DATE: 3-31-09

F-3

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PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-2A

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PROJECT DETAILS

SEEDING NOTES

SCALE = NTS

1. AREAS TO BE SEEDED SHALL BE DEFINED AS ALL AREAS WITHIN GRADING LIMITS THAT ARE NOT OCCUPIED BY PAVING, CRUSHED STONE SURFACING, OR STRUCTURES. SEEDING SHALL INCLUDE FINAL SHAPING, LIMING, FERTILIZATION, AND SEEDING.
2. THE CONTRACTOR SHALL DELIVER A SATISFACTORY STAND OF PERENNINAL GRASS. THIS SATISFACTORY STAND SHALL PROVIDE FULL COVER OVER AREAS TO BE SEEDED. THE STAND SHALL BE ALIVE AND GROWING, WITH NO BARE SPOTS LARGER THAN 3/4 SQUARE YARD WITHIN A RADIUS OF TEN FEET.
3. PERMANENT SEEDING MIXTURE (GENTLE SLOPES, AVERAGE SOILS, LOW MAINTENANCE)

SEEDING MIXTURE SPECIES	RATE (#/acre)
TALL FESCUE	80
KENTUCKY BLUEGRASS	10
KOREAN LESPEDEZA	40

PERMANENT SEEDING MIXTURE (STEEP SLOPES, LOW MAINTENANCE)

SEEDING MIXTURE SPECIES	RATE (#/acre)
TALL FESCUE	100
SERICEA LESPEDEZA	30
KOBE LESPEDEZA	10
RYE (GRAIN)	10
RYE (GRAIN)	10

NOTES: SERICEA LESPEDEZA SEED SHALL BE UNSCARIFIED.
SLOPES 3:1 AND STEEPER SHALL BE STABILIZED USING NORTH AMERICAN GREEN C125 COCONUT MATRIX OR EQUAL.

4. FERTILIZER SHALL BE 10-10-10 COMPLETE FERTILIZE OF UNIFORM COMPOSITION.
5. LIME SHALL BE AGRICULTURAL GRADE GROUND LIMESTONE WITH NOT LESS THAN 88 F CALCIUM CARBONATE CONTENT.
   LIME SHALL BE SPREAD AT A RATE OF 2000 POUNDS PER ACRE.
   FERTILIZER SHALL BE SPREAD UNIFORMLY AT A RATE OF 1000 POUNDS PER ACRE, AND SHALL BE INCORPORATED INTO SOIL TO A DEPTH OF AT LEAST 2 INCHES BY DISKING HARROWING. FERTILIZER MAY BE INCORPORATED AS PART OF TILLAGE OPERATION.
6. IMMEDIATELY AFTER FERTILIZING AND SEEDING HAVE BEEN COMPLETED, ENTIRE AREA SHALL BE COMPACTED BY MEANS OF CULTIPACKER, ROLLER, OR APPROVED EQUIPMENT.
7. PARTICULAR ATTENTION SHALL BE GIVEN TO EMBANKMENTSS AND SWALES TO PROVIDE PROTECTION FROM EROSION AND PROVIDE MOWABLE SLOPES AND SWALES.
8. IF NECESSARY, TOPS AND TOES OF EMBANKMENTS AND SWALES SHALL BE TREATED WITH A CUTBACK ASPHALT AND STRAW EMULSION OR HYDROSEEDED.
9. GROUND COVER SHALL BE ESTABLISHED ON EXPOSED SLOPES WITHIN 15 WORKING DAYS BUT NO MORE THAN 21 CALENDER DAYS OF COMPLETION OF ANY PHASE OF GRADING. PERMANENT GROUND COVER SHALL BE ESTABLISHED ON ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR NO MORE THAN 90 CALENDER DAYS FOLLOWING COMPLETION OF CONSTRUCTION.
10. TEMPORARY SEEDING SCHEDULE SHALL BE USED WHEN NECESSARY TO MEET THE TIME LIMITATION ON GROUND COVER.

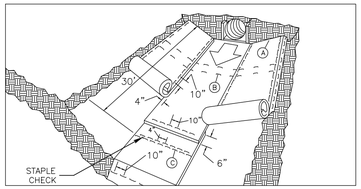
TEMP. SEEDING NOTES

TEMPORARY SEEDING SCHEDULE
SUMMER (MAY 1 - AUG. 15)
- SOIL AMENDMENTS : APPLY 2000 #/acre GROUND AGRICULTURAL LIMESTONE AND 750 #/acre 10-10-10 FERTILIZER
- SEED WITH GERMAN MILLET AT RATE OF 40 #/acre OR SMALL-STEMMED SUNDANGRASS AT RATE OF 50 #/acre
- APPLY 4000 #/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL.

TEMPORARY SEEDING SCHEDULE
FALL (AUG. 15 - DEC. 30)
- SOIL AMENDMENTS : APPLY 2000 #/acre GROUND AGRICULTURAL LIMESTONE AND 1000 #/acre 10-10-10 FERTILIZER
- SEED WITH RYE (GRAIN) AT RATE OF 120 #/acre.
  APPLY 4000 #/acre STRAW. ANCHOR STRAW BY TACKING WITH
- ASPHALT, NETTING, OR A MULCH ANCHORING TOOL.

MATTING INSTALLATION DETAIL

PROJECT REFERENCE NO.	SHEET NO.
N/A	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



MATTING IN DITCHES

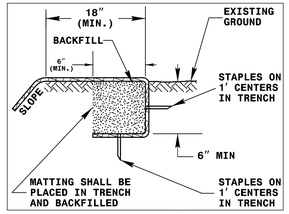
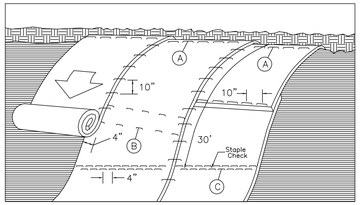


DIAGRAM (A)



MATTING ON SLOPES

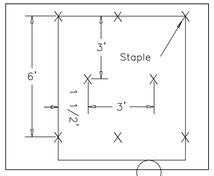


DIAGRAM (B)

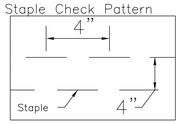


DIAGRAM (c)

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

CONSTRUCTION SCHEDULE

1. Obtain plan approval and other applicable permits.
2. Flag or stake the work limits.
3. Notify NCDEQ and hold pre-construction conference at least one week prior to starting construction.
4. Resolve any utility conflicts which may be revealed by NC One Call.
5. Install the Temporary Silt Fence and Compost Sock as shown on plans.
6. Ensure that the entire perimeter is protected from silt runoff.
7. Perform clearing and grubbing for the site.
8. Perform rough grading for the site.
9. Install all drainage improvements as shown on the roadway plans.
10. Perform Temporary Seeding and Mulching according to the Erosion Control Special Provisions.
11. Dress up and reshape the shoulders, ditches, and other earthen areas and permanently stabilize the project according to the plans.
12. **BEFORE proceeding to step 13, consult with a representative of the Land Quality Section to obtain approval before removing any erosion control devices.**
13. After approval by the Land Quality Section, remove all temporary measures and install permanent vegetation on the disturbed areas according to the Erosion Control Special Provisions.
14. Estimated time to stabilize site: 12 months

Ground Stabilization

Soil stabilization shall be achieved on any area of a site where land disturbing activities have temporarily or permanently ceased according to the following schedule:

1. All slopes should be stabilized with matting and all perimeter dikes, swales ditches, perimeter slopes and all slopes steeper than 3 horizontal to one vertical (3:1) shall be provided temporary or permanent stabilization with ground cover as soon as practicable but in any event within 7 calendar days from the last land disturbing activity.

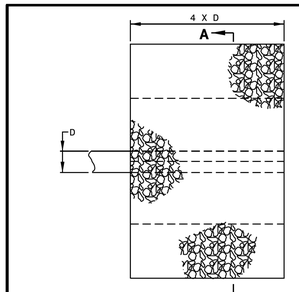
2. All other disturbed areas shall be provided temporary or permanent stabilization with ground cover as soon as practicable but in any event within 14 calendar days from the last land disturbing activity.

Maintenance Requirements

All erosion control measures shall be inspected at least weekly and after each significant (1/2" or greater) rainfall. Trapped sediment shall be properly removed from the erosion control measure and disposed of properly.

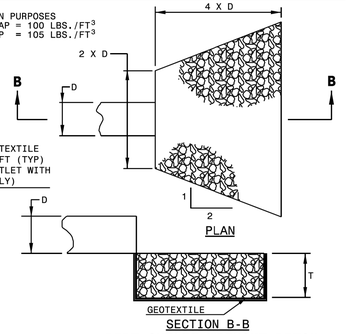
General Notes

1. This project is located within the Catawba Basin.
2. The Limits of Disturbed Area for the project are shown on the plans.
3. Any off-site borrow and waste required for this project must come from a site with an approved erosion control plan, a site regulated under the Mining Act of 1971, or a landfill regulated by the Division of Solid Waste Management. Trash/debris from demolition activities or generated by any activities on site must be disposed of at a facility regulated by the Division of Solid Waste Management or per Division of Solid Waste Management or Division of Water Resources rules and regulations.
4. If stockpiling of dirt on roadways is necessary, sand must be used as the base. Cleanup of roadways must occur immediately after line installation.
5. For maintenance responsibility contact Kelly Winkler (828)323-7431



D	OUTLET W/DITCH					OUTLET W/O DITCH				
	CLASS 'B' RIP RAP		CLASS I RIP RAP			CLASS 'B' RIP RAP		CLASS I RIP RAP		
	TONS	CU.YDS. (EXTRA)	S.Y.	TONS	CU.YDS. (EXTRA)	TONS	CU.YDS. (EXTRA)	S.Y.	TONS	CU.YDS. (EXTRA)
12"	2	5	5	2	5	1	4	2	1	4
15"	2	7	7	3	7	1	5	3	2	6
18"	3	10	9	4	10	2	7	4	2	8
24"	5	14	15	7	15	3	11	7	4	12
30"	8	21	21	11	22	5	16	11	7	17
36"	11	28	29	15	30	7	22	16	10	23
42"	15	37	39	20	39	10	28	22	13	30
48"	-	-	49	26	50	-	-	28	17	38
54"	-	-	60	33	62	-	-	36	21	47
60"	-	-	73	40	75	-	-	44	26	56
66"	-	-	87	48	89	-	-	54	32	67
72"	-	-	102	57	104	-	-	64	38	78

NOTE:
FOR CALCULATION PURPOSES
CLASS 'B' RIP RAP = 100 LBS./FT^3
CLASS I RIP RAP = 105 LBS./FT^3



TUCK GEOTEXTILE MIN OF 1FT (TYP) (PIPE OUTLET WITH DITCH ONLY)

H= RIP RAP TO TOP OF PIPE (MAX. H = D + T)
T= 18" CLASS I RIP RAP, UNLESS OTHERWISE SHOWN ON PLANS
T= 12" CLASS 'B' RIP RAP, UNLESS OTHERWISE SHOWN ON PLANS
KEY-IN RIP-RAP

[1-24] STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR

GUIDE FOR RIP RAP AT PIPE OUTLETS

SHEET 1 OF 1

876.02

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PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-2B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

EROSION & SEDIMENT CONTROL LEGEND

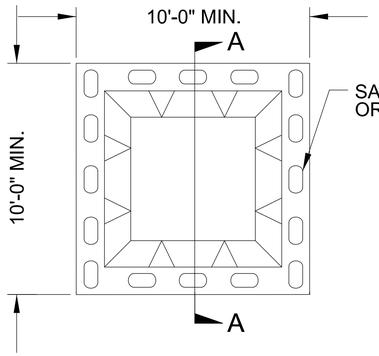
Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.04	Stilling Basin	
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1630.07	Skimmer Basin	
1630.08	Tiered Skimmer Basin	
1630.09	Earthen Dam with Skimmer	
	Infiltration Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C

Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet Sediment Trap Type A	A
1635.02	Rock Pipe Inlet Sediment Trap Type B	B
1636.01	Excelsior Wattle Check	
1636.01	Excelsior Wattle Check with Flocculant	
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	EW
	Silt Fence Coir Fiber Wattle Break	CFW
1636.03	Excelsior Wattle Barrier	EW EW EW
1636.03	Coir Fiber Wattle Barrier	CFW CFW CFW

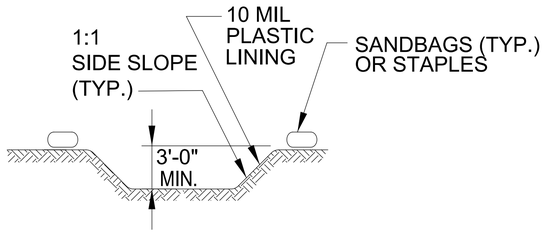
Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-02C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A

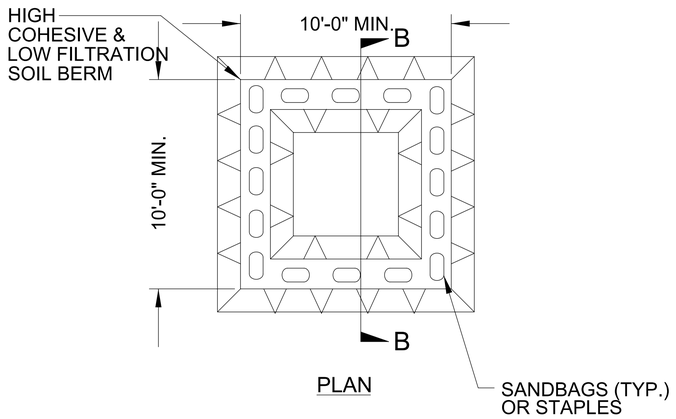
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

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

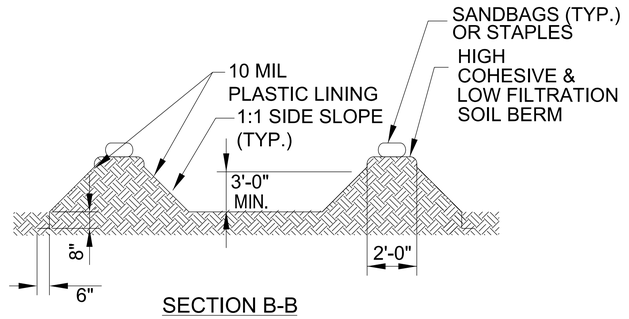
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE

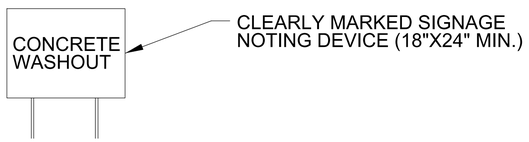
NOT TO SCALE



PLAN



SECTION B-B



NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

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

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

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-02D

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES

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

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

SECTION E: GROUND STABILIZATION

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

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

GROUND STABILIZATION SPECIFICATION

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

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

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

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

PAINT AND OTHER LIQUID WASTE

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

PORTABLE TOILETS

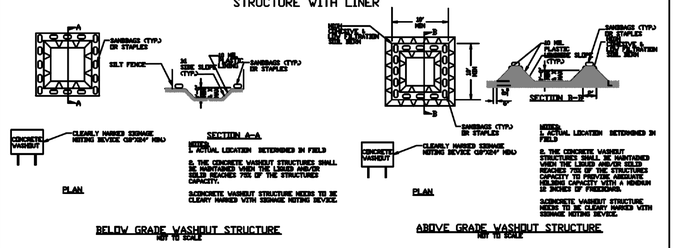
1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.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

EARTHEN STOCKPILE MANAGEMENT

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

NORTH CAROLINA
Environmental Quality

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

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

HAZARDOUS AND TOXIC WASTE

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

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

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PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

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

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

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

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

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

2. Additional Documentation to be Kept on Site

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

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

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

3. Documentation to be Retained for Three Years

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

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

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

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

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

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

NORTH CAROLINA *Environmental Quality*

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PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

SEE TITLE SHEET FOR LEGEND
CLEARING & GRUBBING PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-04/CONST.4

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

SILT FENCE

EXCELSIOR WATTLE SILT FENCE BREAK USED AS OUTLET IN SILT FENCE

INSTALL INLET PROTECTION AT EACH EXISTING DROP INLET LOCATION. REFER TO RDY STD 1632.03

EXCELSIOR WATTLE

SUGGESTED STOCKPILE LOCATION & SEDIMENT CONTROL AREA SEE DETAIL ON EC-26

MATCH LINE STA. -L- 23+00
MATCH TO SHEET NO. 5

Disturbed Area = 11.9 ac

1 1811 12TH, LLC DB 3679 PG 354
2 JERRY M. LEDFORD DB 1384 PG 228
3 JEWELS, LLC DB 3065 PG 526 PB 35 PG 61
4 ADVANCE STORES COMPANY, INC. DB 3004 PG 788 PB 35 PG 61
5 RRTM PROPERTIES, LLC DB 2534 PG 1050
6 CASA NOSTRA, INC. DB 3805 PG 1085 PB 84 PG 154
7 BOULEVARD EAST, LLC DB 2474 PG 1275

BROWN OPERATING COMPANY, INC. DB 956 PG 170 PB 77 PG 122
POWELL RENTALS, INC. DB 3748 PG 107
ARC CAFEUSAOOI, LLC DB 3198 PG 626
NHIM IAN ANH N. TAN DB 1712 PG 24
LEMONADE MM HICKORY NC, LLC DB 3759 PG 912
BB&T DB 1429 PG 614
BOB KILLIAN TIRE, INC. DB 1599 PG 649
FELKER DAY, INC. DB 3207 PG 909 PB 20 PG 5
FAMILY COIN LAUNDRY, LLC DB 2805 PG 1683 PB 20 PG 5
ALECK J. BEARD FAMILY TRUST ESTATE FILE 2009E PG 306 DB 1137 PG 768 PB 1 PG 106

SR 1453 12th AVENUE NE 60' RCR
SR 1453 18th ST NE
OFF MT TO 18th ST NE
OFF MT TO 19th ST DR NE
OFF MT TO 11th AVE NE
EXISTING R/W
PROPERTY LINE
30' C&G
6' VCP
15" RCP
18" RCP
24" RCP
6' CONC CURB
6' CURB & GUTTER
EW

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

SEE TITLE SHEET FOR LEGEND
CLEARING & GRUBBING PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-05/CONST.5

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

Disturbed Area = 11.9 ac

MATCH LINE STA. -L- 23+00
MATCH TO SHEET NO. 4

MATCH LINE STA. -L- 36+00
MATCH TO SHEET NO. 6

LUTHERAN HOME HICKORY PROPERTY, INC.
DB 3951 PG 217

RRTM PROPERTIES, LLC
DB 3831 PG 1336
PB 1 PG 19

ASE INVESTMENTS, LLC
DB 3373 PG 1762
PB 1 PG 19

RCH PROPERTIES, LLC
DB 3642 PG 1119
DB 3652 PG 1049
PB 1 PG 77
RB 1 PG 19

ALECK J. BEARD
FAMILY TRUST
ESTATE FILE 2009E PG 306
DB 1137 PG 768
PB 1 PG 106

MCKINNEY
COMMERCIAL
RENTALS, LLC
DB 3621 PG 245
PB 1 PG 106

JORDAN R. BINGHAM
DB 3785 PG 1858
PB 1 PG 106

JAVIER MORA
MARIA D. MORA
DB 2975 PG 388
PB 1 PG 106

PETER ANTINARELLI
DB 3708 PG 1973

BRADFORD N. COOK
JEFFREY M. COOK
DB 2943 PG 1127
PB 19 PG 191

JET KLEEN, LLC
DB 2278 PG 126

HICKORY PROPERTY, INC.
DB 2399 PG 994

WESLEY E. STARNES
DB 2013 PG 1087

MEMBERS CREDIT UNION
DB 2827 PG 887

COOK OUT-HICKORY, INC.
DB 3685 PG 940
PB 2 PG 28

SR 1453 12th AVENUE NE 60' BST

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

SEE TITLE SHEET FOR LEGEND
CLEARING & GRUBBING PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-06/CONST.6

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

Disturbed Area = 11.9 ac

MATCH LINE STA. -L- 36+00
MATCH TO SHEET NO. 5

MATCH LINE STA. -L- 47+00
MATCH TO SHEET NO. 7

12 HAMPTON 570, INC.
DB 3729 PG 493

13 ST. STEPHEN'S LUTHERAN CHURCH, ELCA, HICKORY, NC
DB 3815 PG 863

ST. STEPHENS LUTHERAN CHURCH, MISSOURI SYNOD OF HICKORY
DB 416 PG 417

MILLERS LUTHERAN CHURCH
DB 611 PG 512

COOK OUT-HICKORY, INC.
DB 3685 PG 940
PB 2 PG 28

14 COOK'S CORNER PROPERTIES, LLC
DB 2990 PG 1084
PB 21 PG 283

15 MILLERS LUTHERAN CHURCH
DB 1126 PG 678
DB 835 PG 10

16 ST. STEPHEN'S EVANGELICAL LUTHERAN CHURCH
(NO DEED FOUND)

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

SEE TITLE SHEET FOR LEGEND
CLEARING & GRUBBING PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-07/CONST.7

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'

50 0 50 100

NAD 83/2011

MATCH LINE STA. -L- 47+00
MATCH TO SHEET NO. 6

MATCH LINE STA. -L- 57+50
MATCH TO SHEET NO. 8

17 ST. STEPHENS LUTHERAN CHURCH-MISSOURI SYNOD OF HICKORY DB 416 PG 417

18 CITY OF HICKORY DB 1656 PG 739

19 EVERETTE A. HOUSTON
MARTHA M. HOUSTON
DB 3483 PG 1516
DB 2232 PG 134
DB 1385 PG 61
DB 2078 PG 1922

20 JESSE G. WATERS REVOCABLE TRUST DB 3884 PG 1596

21 LINN R. GARDNER
CYNTHIA W. GARDNER
DB 2746 PG 823

22 STEADFAST HOLDINGS, INC. DB 3687 PG 1337

23 H5 RENTALS, LLC
DB 3982 PG 1364
PB 89 PG 178

24 ST. STEPHENS LUTHERAN CHURCH MISSOURI SYNOD OF HICKORY, NC, INC.
DB 2820 PG 1481
DB 2997 PG 1867
PB 65 PG 95
PB 68 PG 180

25 DHRUVKUMAR K. PATEL
DB 3625 PG 914

Disturbed Area = 11.9 ac

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

SEE TITLE SHEET FOR LEGEND
CLEARING & GRUBBING PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-08/CONST.8

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

MATCH LINE STA. -L- 57+50
MATCH TO SHEET NO. 7

Disturbed Area = 11.9 ac

SUGGESTED STOCKPILE & LAYDOWN AREA SEE DETAIL ON EC-20

23 DHRUVKUMAR K. PATEL DB 3625 PG 914
25 CHRIST CHURCH GLOBAL, INC. DB 3827 PG 1948 DB 3377 PG 204
26 CHARLES A. MORETZ ESTATE DB 2338 PG 298
27 PAULINE S. MORETZ HEIRS DB 2523 PG 1467
28 BURTONS WJ, LLC ROPPS, LLC DB 3224 PG 295 PB 81 PG 49
29 SAXON PROPERTIES LLC DB 3843 PG 722
30 ROBUST PROPERTIES, LLC DB 3269 PG 687
31 AL CROUSE OFFICE, LLC DB 3331 PG 1572
32 SAXON PROPERTIES, LLC DB 2218 PG 160
33 CHRIST CHURCH GLOBAL, INC. DB 3827 PG 1948 DB 3377 PG 204
34 BOBBY A. LITTLE CONSTRUCTION CO., INC. DB 1093 PG 389
35 ANNA M. WARD DB 3236 PG 1649
36 EARL E. PROPST HEIRS DORIS P. FASTENAU DB 3430 PG 820
37 CATAWBA COUNTY DB 2069 PG 16

SXCW PROPERTIES, LLC DB 3335 PG 1542 PB 75 PG 100
MICHAEL DIGIACOMO AND LINDA DIGIACOMO REVOCABLE LIVING TRUST DB 3422 PG 1368 PB 75 PG 100

SR 1453 SPRINGS RD NE

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

ADDITIONAL EC ITEMS ARE NOT NEEDED IN INTERMEDIATE PHASE

SEE TITLE SHEET FOR LEGEND
INTERMEDIATE PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-09/CONST.4

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

EXCELSIOR WATTLE SILT FENCE BREAK USED AS OUTLET IN SILT FENCE

SILT FENCE

INSTALL INLET PROTECTION AT EACH EXISTING DROP INLET LOCATION. REFER TO RDY STD 1632.03

EXCELSIOR WATTLE

SUGGESTED STOCKPILE LOCATION & SEDIMENT BASIN AREA SEE DETAIL ON EC-26

1 18112TH, LLC DB 3679 PG 354
2 JERRY M. LEDFORD & CAROLYN K. LEDFORD DB 1384 PG 228
3 JEWELS, LLC DB 3065 PG 526 PB 35 PG 61
4 ADVANCE STORES COMPANY, INC. DB 3004 PG 788 PB 35 PG 61
5 RRTM PROPERTIES, LLC DB 2534 PG 1050
6 CASA NOSTRA, INC. DB 3805 PG 1085 PB 84 PG 154
7 BOULEVARD EAST, LLC DB 2474 PG 1275

BROWN OPERATING COMPANY, INC. DB 956 PG 170 PB 77 PG 122
POWELL RENTALS, INC. DB 3748 PG 107
ARC CAFEUSA001, LLC DB 3198 PG 626
NHIM IAN ANH N. TAN DB 1712 PG 24
LEMONADE MM HICKORY NC, LLC DB 3759 PG 912
BB&T DB 1429 PG 614
BOB KILLIAN TIRE, INC. DB 1599 PG 649
FELKER DAY, INC. DB 3207 PG 909 PB 20 PG 5
FAMILY COIN LAUNDRY, LLC DB 2805 PG 1683 PB 20 PG 5
ALECK J. BEARD FAMILY TRUST ESTATE FILE 2009E PG 306 DB 1137 PG 768 PB 1 PG 106

SR 1453 12th AVENUE NE 60' RCR
SR 1453 18th ST NE
OFF MAP TO 18th ST NE
OFF MAP TO 11TH AVE NE

Disturbed Area = 11.9 ac

MATCH LINE STA. -L- 23+00
MATCH TO SHEET NO. 5

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

ADDITIONAL EC ITEMS ARE NOT NEEDED IN INTERMEDIATE PHASE

SEE TITLE SHEET FOR LEGEND
INTERMEDIATE PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-10/CONST.5

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

Disturbed Area = 11.9 ac

MATCH LINE STA. -L- 23+00
MATCH TO SHEET NO. 4

MATCH LINE STA. -L- 36+00
MATCH TO SHEET NO. 6

LUTHERAN HOME HICKORY PROPERTY, INC.
DB 3951 PG 217

RRTM PROPERTIES, LLC
DB 3831 PG 1336
PB 1 PG 19

ASE INVESTMENTS, LLC
DB 3373 PG 1762
PB 1 PG 19

RRH PROPERTIES, LLC
DB 3642 PG 1119
DB 3652 PG 1049
PB 1 PG 77
RB 1 PG 19

ALECK J. BEARD
FAMILY TRUST
ESTATE FILE 2009E PG 306
DB 1137 PG 768
PB 1 PG 106

MCKINNEY
COMMERCIAL
RENTALS, LLC
DB 3621 PG 245
PB 1 PG 106

JORDAN R. BINGHAM
DB 3785 PG 1858
PB 1 PG 106

JAVIER MORA
MARIA D. MORA
DB 2975 PG 388
PB 1 PG 106

PETER ANTINARELLI
DB 3708 PG 1973

BRADFORD N. COOK
JEFFREY M. COOK
DB 2943 PG 1127
PB 19 PG 191

JET KLEEN, LLC
DB 2278 PG 126

HICKORY PROPERTY, INC.
DB 2399 PG 994

WESLEY E. STARNES
DB 2013 PG 1087

MEMBERS CREDIT UNION
DB 2827 PG 887

COOK OUT-HICKORY, INC.
DB 3685 PG 940
PB 2 PG 28

SR 1453 12th AVENUE NE 60' BST

EXISTING R/W

30' C&G

6" PVC/6" VCP

2 " STL

8 " W

8 " SAN

8 " STL

MONITORING WELL

60" BLK ALUM

PLANTER CONT

GUY

CB

DI

JB

SMH

+12.85 49.00'
+83.20 49.00'
+00.00 51.00'
+49.00 51.00'
+83.15 59.00'
+11.00 65.00'
+00.00 49.00'
+55.86 49.00'
+93.00 65.00'
+52.00 50.00'
+00.00 49.00'
+00.00 49.00'
+50.00 54.00'
+93.05 53.00'
+88.78 48.00'

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

ADDITIONAL EC ITEMS ARE NOT NEEDED IN INTERMEDIATE PHASE

SEE TITLE SHEET FOR LEGEND
INTERMEDIATE PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-II/CONST.6

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

Disturbed Area = 11.9 ac

MATCH LINE STA. -L- 36+00
MATCH TO SHEET NO. 5

MATCH LINE STA. -L- 47+00
MATCH TO SHEET NO. 7

12 HAMPTON 570, INC.
DB 3729 PG 493

13 ST. STEPHEN'S LUTHERAN CHURCH, ELCA, HICKORY, NC
DB 3815 PG 863

ST. STEPHENS LUTHERAN CHURCH, MISSOURI SYNOD OF HICKORY
DB 416 PG 417

MILLERS LUTHERAN CHURCH
DB 611 PG 512

14 COOK'S CORNER PROPERTIES, LLC
DB 2990 PG 1084
PB 21 PG 283

COOK OUT-HICKORY, INC.
DB 3685 PG 940
PB 2 PG 28

15 MILLERS LUTHERAN CHURCH
DB 1126 PG 678
DB 835 PG 10

16 ST. STEPHEN'S EVANGELICAL LUTHERAN CHURCH
(NO DEED FOUND)

12th AVE NE 60' BST
SR 1444 (22nd ST NE)
30' C&G
EXISTING R/W
TAPERS TO 34'
TAPERS TO 29'
TAPERS TO 30'
TAPERS TO 28'
IR RCP
ISBKD
W/L
SIG
PE
EW
E
F
BST
CONC
CEMETERY

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

ADDITIONAL EC ITEMS ARE NOT NEEDED IN INTERMEDIATE PHASE

SEE TITLE SHEET FOR LEGEND
INTERMEDIATE PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-12/CONST.7

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'

NAD 83/2011

MATCH LINE STA. -L- 47+00
MATCH TO SHEET NO. 6

MATCH LINE STA. -L- 57+50
MATCH TO SHEET NO. 8

17 ST. STEPHENS LUTHERAN CHURCH MISSOURI SYNOD DB 416 PG 417

18 CITY OF HICKORY DB 1656 PG 739

19 EVERETTE A. HOUSTON
MARTHA M. HOUSTON
DB 3483 PG 1516
DB 2232 PG 134
DB 1385 PG 61
DB 2078 PG 1922

20 JESSE G. WATERS REVOCABLE TRUST DB 3884 PG 1596

21 LINN R. GARDNER
CYNTHIA W. GARDNER
DB 2746 PG 823

23 H5 RENTALS, LLC
DB 3982 PG 1364
PB 89 PG 178

STEADFAST HOLDINGS, INC.
DB 3687 PG 1337

22

24 ST. STEPHENS LUTHERAN CHURCH MISSOURI SYNOD OF HICKORY, NC, INC.
DB 2820 PG 1481
DB 2997 PG 1867
PB 65 PG 95
PB 68 PG 180

DHRUVKUMAR K. PATEL
DB 3625 PG 914

25

Disturbed Area = 11.9 ac

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

ADDITIONAL EC ITEMS ARE NOT NEEDED IN INTERMEDIATE PHASE

SEE TITLE SHEET FOR LEGEND
INTERMEDIATE PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-13/CONST.8

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

MATCH LINE STA. -L- 57+50
MATCH TO SHEET NO. 7

23 CHARLES A. MORETZ ESTATE DB 2338 PG 298
26 CHARLES A. MORETZ ESTATE DB 2338 PG 298
27 PAULINE S. MORETZ HEIRS DB 2523 PG 1467
28 BURTONS WJ, LLC ROPPS, LLC DB 3224 PG 295 PB 81 PG 19
29 SAXON PROPERTIES LLC DB 3843 PG 722
30 ROBUST PROPERTIES, LLC DB 3269 PG 687
31 AL CROUSE OFFICE, LLC DB 3331 PG 1572
32 SAXON PROPERTIES, LLC DB 2218 PG 160
SXCW PROPERTIES, LLC DB 3335 PG 1542 PB 75 PG 100
MICHAEL DIGIACOMO AND LINDA DIGIACOMO REVOCABLE LIVING TRUST DB 3422 PG 1368 PB 75 PG 100
25 DHRUVKUMAR K. PATEL DB 3625 PG 914
33 CHRIST CHURCH GLOBAL, INC. DB 3827 PG 1948 DB 3377 PG 204
34 BOBBY A. LITTLE CONSTRUCTION CO., INC. DB 1093 PG 389
35 ANNA M. WARD DB 3236 PG 1649
36 EARL E. PROPST HEIRS DORIS P. FASTENAU DB 3430 PG 820
37 CATAWBA COUNTY DB 2069 PG 16

SR 1453 SPRINGS RD NE

Disturbed Area = 11.9 ac

SUGGESTED STOCKPILE & LAYDOWN AREA SEE DETAIL ON EC-20

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

SEE TITLE SHEET FOR LEGEND
FINAL PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-14/CONST.4

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

-Y- POT 10+00.00

SILT FENCE

EXCELSIOR WATTLE SILT FENCE BREAK USED AS OUTLET IN SILT FENCE

INSTALL INLET PROTECTION AT EACH PROPOSED DROP INLET LOCATION. REFER TO RDY STD 1632.03

EXCELSIOR WATTLE

-Y- STA 12+94.00
BEGIN MILLING
& RESURFACING (1 1/2")

-L- STA 10+62.24
BEGIN PROJECT BL-0066

1 1811 12TH, LLC
DB 3679 PG 354
PROP. CONC ISLAND
SURFACE MOUNTED
8" CURB
PROP. 5' SIDEWALK
DO NOT DISTURB POLES
PROP. ASPHALT DRIVE
DO NOT DISTURB TREE

2 JERRY M. LEDFORD
DB 1514 PG 228

3 JEWELS, LLC
DB 3065 PG 526
PB 35 PG 61
DO NOT DISTURB
PAVERS & STONE
PLANTERS
8" CURB

PROP. ASPHALT DRIVE
PROP. CONC DRIVE
8" CURB
2'-6" C&G

4 ADVANCE STORES COMPANY, INC.
DB 3004 PG 788
PB 35 PG 61

5 RRTM PROPERTIES, LLC
DB 2534 PG 1050
DO NOT DISTURB POLE
PROP. ASPHALT DRIVE
8" CURB

6 CASA NOSTRA, INC.
DB 3805 PG 1085
PB 84 PG 154
DO NOT DISTURB SIGN
RETAIN SYSTEM
PROP. ASPHALT DRIVE
8" CURB

7 BOULEVARD EAST, LLC
DB 2474 PG 1275
DO NOT DISTURB SIGN
PROP. CONC DRIVE
2'-6" C&G
PROP. 5' SIDEWALK
DO NOT DISTURB BLOCK WALL
DO NOT DISTURB LIGHT

0401 DI
0402 Conv. DI To JB
0455 DI
15" RCP
15" CMP 2 ", STL

-L- STA 10+64.14, LT
BEGIN MILLING
& RESURFACING
OUTSIDE LANE (1 1/2")

-L- POT 10+00.00

-L- POC 10+67.95
-Y- POT 14+08.72

-L- PC 10+64.36

-L- PT 14+31.21

-L- PC 22+59.04

BROWN OPERATING COMPANY, INC.
DB 956 PG 170
PB 77 PG 122

POWELL RENTALS, INC.
DB 3748 PG 107

ARC CAFEUSAOOI, LLC
DB 3198 PG 626

NHIM IAN
ANH N. TAN
DB 1712 PG 24

LEMONADE MM HICKORY NC, LLC
DB 3759 PG 912

BB&T
DB 1429 PG 614

BOB KILLIAN TIRE, INC.
DB 1599 PG 649

FELKER DAY, INC.
DB 3207 PG 909
PB 20 PG 5

FAMILY COIN LAUNDRY, LLC
DB 2805 PG 1683
PB 20 PG 5

ALECK J. BEARD FAMILY TRUST ESTATE FILE
2009E PG 306
DB 1137 PG 768
PB 1 PG 106

SR 1453 12th AVENUE NE
SR 1453 10th ST NE
10th ST NE - PROPERTY LINE
EXISTING R/W - PROPERTY LINE
EXISTING R/W
EOS
EOP
EOC
EOG
EOW
EOA
EOL
EOR
EOM
EOD
EOE
EOT
EOB
EOH
EOF
EOI
EOJ
EOK
EOQ
EOU
EOV
EOX
EOY
EOZ

RETAIN SYSTEM

Disturbed Area = 11.9 ac

MATCH LINE STA. -L- 23+00
MATCH TO SHEET NO. 5

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

SEE TITLE SHEET FOR LEGEND
FINAL PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-15/CONST.5

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

Disturbed Area = 11.9 ac

MATCH LINE STA. -L- 23+00
MATCH TO SHEET NO. 4

MATCH LINE STA. -L- 36+00
MATCH TO SHEET NO. 6

-L- PT 25+25.30
-L- PC 33+65.05

8 LUTHERAN HOME HICKORY PROPERTY, INC. DB 3951 PG 217

9 RRTM PROPERTIES, LLC DB 3831 PG 1336 PB 1PG 19

10 ASE INVESTMENTS, LLC DB 3373 PG 1762 PB 1PG 19

11 RCH PROPERTIES, LLC DB 3642 PG 1119 DB 3652 PG 1049 PB 1PG 77 RB 1PG 19

PROP. 5' SIDEWALK
RETAIN SYSTEM
DO NOT DISTURB POLE
DO NOT DISTURB LIGHT POLE
DO NOT DISTURB FENCE
100' OF FENCE TO BE RELOCATED (BY OWNER)
DO NOT DISTURB SIGN
PROP. ASPHALT DRIVE
8" CURB
PROP. CONC DRIVE
MONITORING WELL
60" BLK ALUM
30" C&G
6" VCP
6" PVC/6" VCP
18" RCP
15" RCP
CB
SR 1453 | 12th AVENUE NE 60' BST
EXISTING R/W
2" STL EOS
20'DR

ALECK J. BEARD FAMILY TRUST ESTATE FILE 2009E PG 306 DB 1137 PG 768 PB 1PG 106

MCKINNEY COMMERCIAL RENTALS, LLC DB 3621PG 245 PB 1PG 106

JORDAN R. BINGHAM DB 3785 PG 1858 PB 1PG 106

JAVIER MORA| MARIA D. MORA DB 2975 PG 388 PB 1PG 106

PETER ANTINARELLI DB 3708 PG 1973

BRADFORD N. COOK JEFFREY M. COOK DB 2943 PG 1127 PB 19 PG 191

JET KLEEN, LLC DB 2278 PG 126

HICKORY PROPERTY, INC. DB 2399 PG 994

WESLEY E. STARNES DB 2013 PG 1087

MEMBERS CREDIT UNION DB 2827 PG 887

COOK OUT-HICKORY, INC. DB 3685 PG 940 PB 2 PG 28

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

SEE TITLE SHEET FOR LEGEND
FINAL PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-16/CONST.6

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

MATCH LINE STA. -L- 36+00
MATCH TO SHEET NO. 5

MATCH LINE STA. -L- 47+00
MATCH TO SHEET NO. 7

-L- PT 38+16.16
-L- PC 43+32.84
-L- PCC 45+34.97

Disturbed Area = 11.9 ac

12 HAMPTON 570, INC. DB 3729 PG 493
13 ST. STEPHEN'S LUTHERAN CHURCH, ELCA, HICKORY, NC DB 3815 PG 863
ST. STEPHENS LUTHERAN CHURCH, MISSOURI SYNOD OF HICKORY DB 416 PG 417
MILLERS LUTHERAN CHURCH DB 611 PG 512
14 COOK'S CORNER PROPERTIES, LLC DB 2990 PG 1084 PB 21PG 283
15 MILLERS LUTHERAN CHURCH DB 1126 PG 678 DB 835 PG 10
16 ST. STEPHEN'S EVANGELICAL LUTHERAN CHURCH (NO DEED FOUND)
COOK OUT-HICKORY, INC. DB 3685 PG 940 PB 2 PG 28

-L- STA 37+99.04, RT
BEGIN MILLING & RESURFACING OUTSIDE LANE (1 1/2")

-L- STA 38+07.85
BEGIN SIDEWALK, RT

-L- 38+80.45
END SIDEWALK, LT

-L- STA 38+80.45, LT
END MILLING & RESURFACING OUTSIDE LANE (1 1/2")

RETAIN SYSTEM

PROP. ASPHALT DRIVE
PROP. 5' SIDEWALK
PROP. 4' SIDEWALK
8" CURB
DO NOT DISTURB POLE
DO NOT DISTURB TREE
DO NOT DISTURB POLES
DO NOT DISTURB LIGHTS
DO NOT DISTURB SIGN
DO NOT DISTURB TREES
SEE DETAIL A

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

SEE TITLE SHEET FOR LEGEND
FINAL PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-17/CONST.7

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

MATCH LINE STA. -L- 47+00
MATCH TO SHEET NO. 6

MATCH LINE STA. -L- 57+50
MATCH TO SHEET NO. 8

-L- STA 47+92.25, LT
BEGIN MILLING
& RESURFACING
OUTSIDE LANE (1 1/2")

-L- 47+92.25
BEGIN
SIDEWALK, LT

-L- PCC 47+94.26

-L- PT 50+25.65

17 ST. STEPHENS LUTHERAN CHURCH MISSOURI SYNOD DB 416 PG 417

18 CITY OF HICKORY DB 1656 PG 739

19 EVERETTE A. HOUSTON
MARTHA M. HOUSTON
DB 3483 PG 1516
DB 2232 PG 134
DB 1385 PG 61
DB 2078 PG 1922

20 JESSE G. WATERS REVOCABLE TRUST DB 3884 PG 1596

21 LINN R. GARDNER
CYNTHIA W. GARDNER
DB 2746 PG 823

23 H5 RENTALS, LLC
DB 3982 PG 1364
PB 89 PG 178

22 STEADFAST HOLDINGS, INC.
DB 3687 PG 1337

24 ST. STEPHENS LUTHERAN CHURCH MISSOURI SYNOD OF HICKORY, NC, INC.
DB 2820 PG 1481
DB 2997 PG 1867
PB 65 PG 95
PB 68 PG 180

25 DHRUVKUMAR K. PATEL
DB 3625 PG 914

PROP. 5' SIDEWALK
PROP. ASPHALT DRIVE
PROP. 4' SIDEWALK
PROP. CONC DRIVE
PROP. 8" CURB
PROP. ASPHALT DRIVE
PROP. 5' SIDEWALK
PROP. ASPHALT DRIVE
PROP. 5' SIDEWALK
PROP. ASPHALT DRIVE
PROP. 5' SIDEWALK

DO NOT DISTURB LANDING OR STEPS
DO NOT DISTURB POLE
DO NOT DISTURB TREES
DO NOT DISTURB SIGN
DO NOT DISTURB BRICK PATH
DO NOT DISTURB CONCRETE PATH
DO NOT DISTURB CB
REMOVE TREES
REMOVE
RETAIN
PLUG Conv. DI To JB
RETAIN SYSTEM
1'-6" C&G
2'-0" C&G
BREAK CURB
DO NOT DISTURB CATCH BASIN
Adj. MH

0701 0702 0703 0704 0705 0706 0750 0751 0752 0753

Disturbed Area = 11.9 ac

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

SEE TITLE SHEET FOR LEGEND
FINAL PHASE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-18/CONST.8

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

MATCH LINE STA. -L- 57+50
MATCH TO SHEET NO. 7

-L- 66+58.00
END PROP. SIDEWALK, LT
TIE TO EXIST WALK

-L- STA 67+68.85, LT
END MILLING
& RESURFACING
OUTSIDE LANE (1 1/2")

-L- STA 70+45.00, RT
END MILLING
& RESURFACING
OUTSIDE LANE (1 1/2")

-L- STA 70+45.00
END PROJECT BL-0066
END PROP. SIDEWALK, RT
TIE TO EXIST WALK

Disturbed Area = 11.9 ac

23 — +82.46 52.00'
PROP. ASPHALT DRIVE — +47.00 58.83' — +98.00 61.00' — +90.00 57.00'
PROP. 5' SIDEWALK — +21.00 61.00' — +50.00 55.00'
+31.79 53.00'
RETAIN SYSTEM
15" RCP — 8" EOL — 20' DR
42" CONC — 20' DR
26 — CHARLES A. MORETZ ESTATE — DB 2338 PG 298
27 — PAULINE S. MORETZ HEIRS — DB 2523 PG 1467
28 — BURTONS WJ, LLC / ROPPS, LLC — DB 3224 PG 295 — PB 81 PG 49
SAXON PROPERTIES LLC — DB 3843 PG 722
29 — PROP. ASPHALT DRIVE — DO NOT DISTURB STEPS — +84.00 59.00' — +55.00 48.00'
PROP. CONC DRIVE — +05.36 52.00' — C/O MARKER — +50.00 52.00' — +90.00 52.00' — +00.00 49.00' — +49.00 48.00'
30 — ROBUST PROPERTIES, LLC — DB 3269 PG 687
PROP. ASPHALT DRIVE — DO NOT DISTURB SIGN — +96.00 59.00' — +12.00 52.00'
31 — AL CROUSE OFFICE, LLC — DB 3331 PG 1572
PROP. CONC DRIVE — RETAIN SYSTEM — +28.00 50.00' — DO NOT DISTURB SIGN
32 — SAXON PROPERTIES, LLC — DB 2218 PG 160
ISBKBUS — +29.00 51.00' — F/O MARKER — +68.00 51.00' — +68.00 40.00'
GROUND LIGHT W/CONC BASE (3) — GENERATOR
SXCW PROPERTIES, LLC — DB 3335 PG 1542 — PB 75 PG 100
MICHAEL DIGIACOMO AND LINDA DIGIACOMO / REVOCABLE LIVING TRUST — DB 3422 PG 1368 — PB 75 PG 100
GAS MARKER — (2) GUY
SR 1453 SPRINGS RD NE
30' C&G — 4' STL — 35' DR — 24" C&G — 30" C&G — 14' DR — 27' DR — 20' DR
2'-0" C&G — PROP. ASPHALT DRIVE — PROP. 5' SIDEWALK
DO NOT DISTURB POLE SEE DETAIL B — DO NOT DISTURB LIGHT — DO NOT DISTURB SIGN
NOT DISTURB POLE SEE DETAIL B — +60.05 55.00' — +47.00 55.00'
PLANTER — 30" CONC — 48" CONC — (2) CONC U/G TANKS — (3) GUY
33 — CHRIST CHURCH GLOBAL, INC. — DB 3827 PG 1948 — DB 3377 PG 204
-L- PC 63+47.40
25 — DHRUVKUMAR K. PATEL — DB 3625 PG 914
34 — PROP. ASPHALT DRIVE — BOBBY A. LITTLE CONSTRUCTION CO., INC. — DB 1093 PG 389
RETAIN SYSTEM — 8" CURB — +38.91 55.00' — +65.67 55.00' — -L- PT 66+65.67
35 — ANNA M. WARD — DB 3236 PG 1649
36 — PROP. CONC DRIVE — EARL E. PROPST HEIRS / DORIS P. FASTENAU — DB 3430 PG 820 — DO NOT DISTURB POLES
37 — CATAWBA COUNTY — DB 2069 PG 16 — +55.00 55.00' — +55.00 40.00' — -L- POT 71+52.42
Adj. MH 0801 — Adj. MH 0802
EW

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY

GREEN ITEMS IN BOTH PHASES

ORANGE ITEMS IN FINAL PHASE ONLY

ADDITIONAL DRAINAGE AREAS ARE VERY SMALL OR DRAIN TO EXISTING DEVICES

SEE TITLE SHEET FOR LEGEND

DRAINAGE AREAS

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-19/CONST.4

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

ADDITIONAL DRAINAGE AREAS ARE VERY SMALL OR DRAIN TO EXISTING DEVICES

SEE TITLE SHEET FOR LEGEND
DRAINAGE AREAS

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-20/CONST.5

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

MATCH LINE STA. -L- 23+00
MATCH TO SHEET NO. 4

MATCH LINE STA. -L- 36+00
MATCH TO SHEET NO. 6

-L- PT 25+25.30

-L- PC 33+65.05

0.63 AC

PROP. 5' SIDEWALK

RETAIN SYSTEM

DO NOT DISTURB POLE

DO NOT DISTURB FENCE

100' OF FENCE TO BE RELOCATED (BY OWNER)

DO NOT DISTURB LIGHT POLE

DO NOT DISTURB SIGN

PROP. ASPHALT DRIVE

8" CURB

PROP. CONC DRIVE

MONITORING WELL

60" BLK ALUM

EW

30" C&G

6" VCP

6" PVC/6" VCP

SR 1453 12th AVENUE NE 60' BST

EXISTING R/W

2", STL EOS

20'DR

LUTHERAN HOME HICKORY PROPERTY, INC.
DB 3951 PG 217

RRTM PROPERTIES, LLC
DB 3831 PG 1336
PB 1 PG 19

ASE INVESTMENTS, LLC
DB 3373 PG 1762
PB 1 PG 19

RCH PROPERTIES, LLC
DB 3642 PG 1119
DB 3652 PG 1049
PB 1 PG 77
RB 1 PG 19

ALECK J. BEARD FAMILY TRUST ESTATE FILE 2009E PG 306
DB 1137 PG 768
PB 1 PG 106

MCKINNEY COMMERCIAL RENTALS, LLC
DB 3621 PG 245
PB 1 PG 106

JORDAN R. BINGHAM
DB 3785 PG 1858
PB 1 PG 106

JAVIER MORA
MARIA D. MORA
DB 2975 PG 388
PB 1 PG 106

PETER ANTINARELLI
DB 3708 PG 1973

BRADFORD N. COOK
JEFFREY M. COOK
DB 2943 PG 1127
PB 19 PG 191

JET KLEEN, LLC
DB 2278 PG 126

HICKORY PROPERTY, INC.
DB 2399 PG 994

WESLEY E. STARNES
DB 2013 PG 1087

MEMBERS CREDIT UNION
DB 2827 PG 887

COOK OUT-HICKORY, INC.
DB 3685 PG 940
PB 2 PG 28

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

ADDITIONAL DRAINAGE AREAS ARE VERY SMALL OR DRAIN TO EXISTING DEVICES

SEE TITLE SHEET FOR LEGEND
DRAINAGE AREAS

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-2I/CONST.6

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'
50 0 50 100

NAD 83/2011

MATCH LINE STA. -L- 36+00
MATCH TO SHEET NO. 5

MATCH LINE STA. -L- 47+00
MATCH TO SHEET NO. 7

-L- PT 38+16.16
-L- PC 43+32.84
-L- PCC 45+34.97
-L- 38+80.45
END SIDEWALK, LT
-L- STA 38+80.45, LT
END MILLING
& RESURFACING
OUTSIDE LANE (1 1/2")
-L- STA 37+99.04, RT
BEGIN MILLING
& RESURFACING
OUTSIDE LANE (1 1/2")
-L- 38+07.85
BEGIN SIDEWALK, RT
RETAIN SYSTEM
SEE DETAIL A

HAMPTON 570, INC.
DB 3729 PG 493
ST. STEPHEN'S LUTHERAN CHURCH, ELCA, HICKORY, NC
DB 3815 PG 863
ST. STEPHENS LUTHERAN CHURCH, MISSOURI SYNOD OF HICKORY
DB 416 PG 417
MILLERS LUTHERAN CHURCH
DB 611 PG 512
COOK OUT-HICKORY, INC.
DB 3685 PG 940
PB 2 PG 28
COOK'S CORNER PROPERTIES, LLC
DB 2990 PG 1084
PB 21 PG 283
MILLERS LUTHERAN CHURCH
DB 1126 PG 678
DB 835 PG 10
ST. STEPHEN'S EVANGELICAL LUTHERAN CHURCH
(NO DEED FOUND)

PROP. ASPHALT DRIVE
PROP. 5' SIDEWALK
PROP. 4' SIDEWALK
8" CURB
DO NOT DISTURB POLE
DO NOT DISTURB TREE
DO NOT DISTURB POLES
DO NOT DISTURB LIGHTS
DO NOT DISTURB SIGN
DO NOT DISTURB LIGHT
DO NOT DISTURB CEMETERY
DO NOT DISTURB TREES

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

ADDITIONAL DRAINAGE AREAS ARE VERY SMALL OR DRAIN TO EXISTING DEVICES

SEE TITLE SHEET FOR LEGEND

DRAINAGE AREAS

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-22/CONST.7

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'

50 0 50 100

NAD 83/2011

MATCH LINE STA. -L- 47+00
MATCH TO SHEET NO. 6

MATCH LINE STA. -L- 57+50
MATCH TO SHEET NO. 8

-L- STA 47+92.25, LT
BEGIN MILLING
& RESURFACING
OUTSIDE LANE (1 1/2")

-L- 47+92.25
BEGIN
SIDEWALK, LT

-L- PCC 47+94.26

-L- PT 50+25.65

ST. STEPHENS LUTHERAN CHURCH-MISSOURI SYNOD
DB 416 PG 417

EVERETTE A. HOUSTON
MARTHA M. HOUSTON
DB 3483 PG 1516
DB 2232 PG 134
DB 1385 PG 61
DB 2078 PG 1922

CITY OF HICKORY
DB 1656 PG 739

JESSE G. WATERS
REVOCABLE TRUST
DB 3884 PG 1596

LINN R. GARDNER
CYNTHIA W. GARDNER
DB 2746 PG 823

H5 RENTALS, LLC
DB 3982 PG 1364
PB 89 PG 178

STEADFAST HOLDINGS, INC.
DB 3637 PG 1337

ST. STEPHENS LUTHERAN CHURCH MISSOURI SYNOD OF HICKORY, NC, INC.
DB 2829 PG 1481
DB 2997 PG 1867
PB 65 PG 95
PB 68 PG 180

DHRUVKUMAR K. PATEL
DB 3625 PG 914

PROP. 5' SIDEWALK
PROP. ASPHALT DRIVE
PROP. CONC DRIVE
PROP. 4' SIDEWALK
8" CURB

0.27 AC
0.02 AC
0.42 AC
0.50 AC
0.93 AC

RETAIN SYSTEM
REMOVE
RETAIN
PLUG
Conv. DI To JB
Adj. MH
REMOVE TREES

DO NOT DISTURB POLE
DO NOT DISTURB LANDING OR STEPS
DO NOT DISTURB TREES
DO NOT DISTURB SIGN
DO NOT DISTURB BRICK PATH
DO NOT DISTURB CONCRETE PATH
DO NOT DISTURB POLES
DO NOT DISTURB CB
DO NOT DISTURB CATCH BASIN

1'-6" C&G
2'-0" C&G
18" C&G 23' DR
30" C&G

0750 0751 0752 0753 0701 0702 0703 0704 0705 0706

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PURPLE ITEMS IN CG PHASE ONLY
GREEN ITEMS IN BOTH PHASES
ORANGE ITEMS IN FINAL PHASE ONLY

ADDITIONAL DRAINAGE AREAS ARE VERY SMALL OR DRAIN TO EXISTING DEVICES

SEE TITLE SHEET FOR LEGEND

DRAINAGE AREAS

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	EC-23/CONST.8

TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

SCALE: 1"=50'

NAD 83/2011

MATCH LINE STA. -L- 57+50
MATCH TO SHEET NO. 7

CHARLES A. MORETZ ESTATE
DB 2338 PG 298

PAULINE S. MORETZ HEIRS
DB 2523 PG 1467

BURTONS WJ, LLC
ROPPS, LLC
DB 3224 PG 295
PB 81 PG 49

SAXON PROPERTIES LLC
DB 3843 PG 722

ROBUST PROPERTIES, LLC
DB 3269 PG 687

AL CROUSE OFFICE, LLC
DB 3331 PG 1572

SAXON PROPERTIES, LLC
DB 2218 PG 160

SXCW PROPERTIES, LLC
DB 3335 PG 1542
PB 75 PG 100

MICHAEL DIGIACOMO AND
LINDA DIGIACOMO
REVOCABLE LIVING TRUST
DB 3422 PG 1368
PB 75 PG 100

CHRIST CHURCH GLOBAL, INC.
DB 3827 PG 1948
DB 3377 PG 204

DHRUVKUMAR K. PATEL
DB 3625 PG 914

BOBBY A. LITTLE CONSTRUCTION CO., INC.
DB 1093 PG 389

ANNA M. WARD
DB 3236 PG 1649

EARL E. PROPST HEIRS
DORIS P. FASTENAU
DB 3430 PG 820

CATAWBA COUNTY
DB 2069 PG 16

PROP. ASPHALT DRIVE
PROP. 5' SIDEWALK
PROP. CONC DRIVE
PROP. ASPHALT DRIVE
DO NOT DISTURB STEPS
PROP. ASPHALT DRIVE
DO NOT DISTURB SIGN
PROP. CONC DRIVE
RETAIN SYSTEM
DO NOT DISTURB SIGN
PROP. 5' SIDEWALK
PROP. ASPHALT DRIVE
2'-0" C&G
DO NOT DISTURB POLE SEE DETAIL B
DO NOT DISTURB LIGHT
DO NOT DISTURB SIGN
PROP. ASPHALT DRIVE
8" CURB
DO NOT DISTURB POLES SEE DETAIL B
DO NOT DISTURB POLE
PROP. CONC DRIVE
DO NOT DISTURB LIGHT
PROP. CONC DRIVE
DO NOT DISTURB POLES

-L- PC 63+47.40
-L- PT 66+65.67
-L- 66+58.00
END PROP. SIDEWALK, LT
TIE TO EXIST WALK

-L- STA 67+68.85, LT
END MILLING
& RESURFACING
OUTSIDE LANE (1 1/2")
0.08 AC

-L- STA 70+45.00, RT
END MILLING
& RESURFACING
OUTSIDE LANE (1 1/2")
0.1 AC

-L- POT 71+52.42

-L- STA 70+45.00
END PROJECT BL-0066
END PROP. SIDEWALK, RT
TIE TO EXIST WALK

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

09/08/99

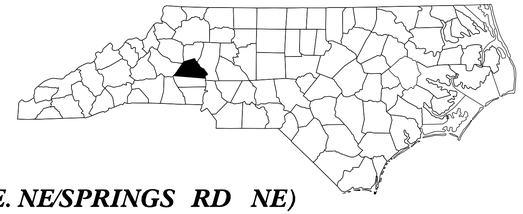
CONTRACT: **TIP PROJECT: BL–0066**

38536.53

STATE OF NORTH CAROLINA
CATAWBA COUNTY

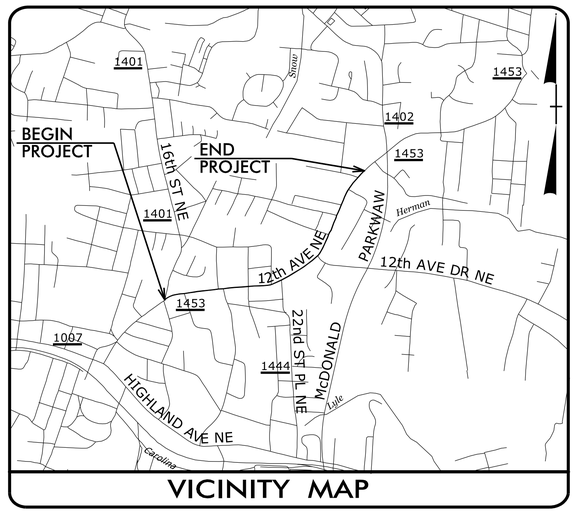
CITY OF HICKORY

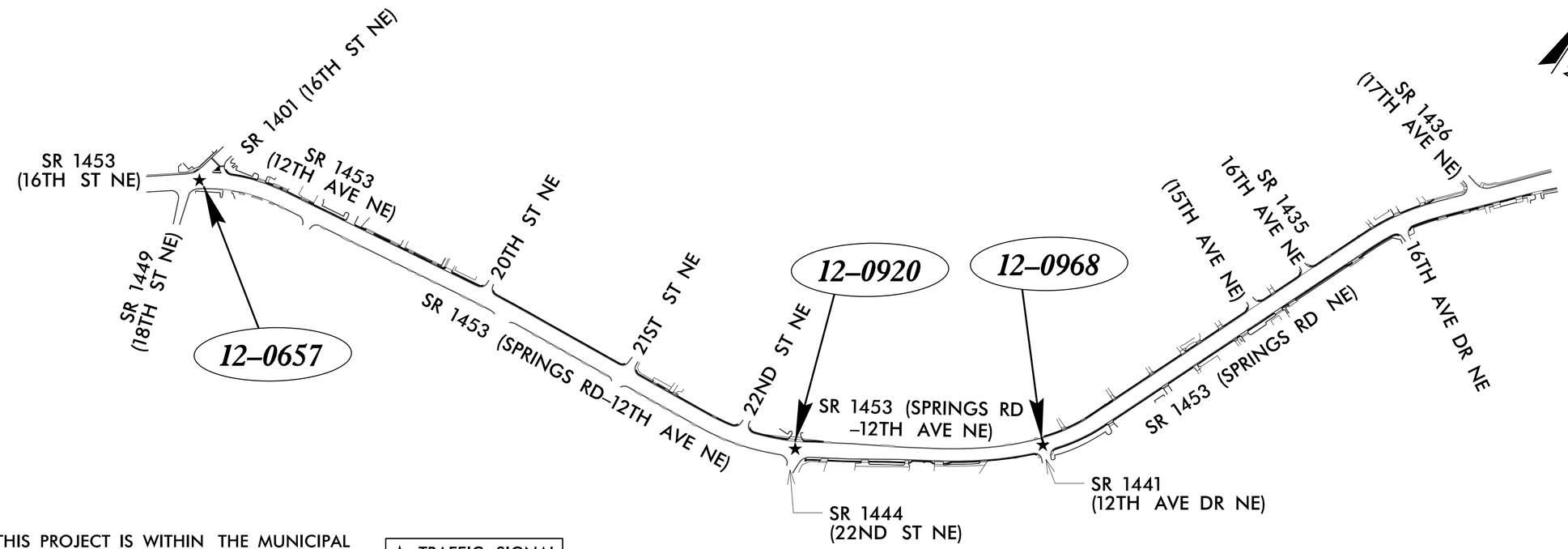
Project No.	Sheet No.
BL–0066	Sig. 1.0



LOCATION: SIDEWALKS ALONG BOTH SIDES OF SR 1453 (12th AVE. NE/SPRINGS RD NE) BETWEEN SR 1401 (16th ST NE/SANDY RIDGE RD) AND McDONALD PARKWAY NE

TYPE OF WORK: TRAFFIC SIGNALS





THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF HICKORY.

★ TRAFFIC SIGNAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF PLANS

Sheet #	Reference #	Location /Description
Sig. 1.0	––––––––	Title Sheet
Sig. 2.0–2.4	12–0657	SR 1453 (16th St. NE & 12th Ave. NE) at SR 1401 (16th St. NE) and SR 1449 (18th St. NE)
Sig. 3.0–3.3	12–0920	SR 1453 (12th Ave. NE) at 22nd St. NE /Private Drive
Sig. 4.0–4.3	12–0968	SR 1453 (12th Ave. NE /Springs Rd. NE) at SR 1441 (12th Ave. Dr. NE)

LEGEND

(##-####) *SIGNAL INVENTORY NUMBER*

TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS UNIT

Contacts:

R. Nicholas Zinser, PE – Western Region Signals Engineer

Todd Joyce, PE – Signal Equipment Design Engineer

CITY CONTACT: WILL HAMBLIN

PLANS PREPARED BY:	*PLANS PREPARED FOR:*
vhb 940 Main Campus Drive Suite 500 Raleigh, NC 27606 NC License No. C-3705	HICKORY North Carolina Life Well Crafted. 76 N CENTER ST HICKORY, NC 28601
Refer to Roadway Standard Drawings NCDOT" dated January 2024 and Standard Specifications for Roads and Structures" dated January 2024.	JIMMY L. TERRY, PE *PROJECT ENGINEER* JIANXIN (JUSTINE) MA, PE, PTOE, PTP *PROJECT DESIGN ENGINEER*

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma 827E1953081444F...
SIGNATURE

1/6/2026
DATE

DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY AND SAFETY DIVISION

Transportation Mobility and Safety Division · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

TSMO Unit

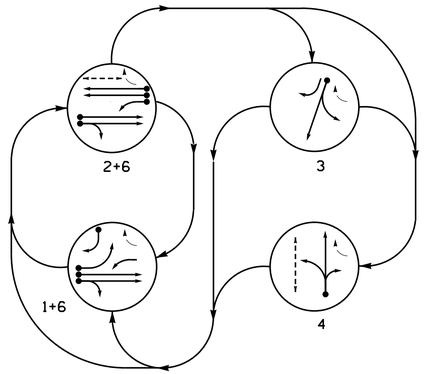
750 N. Greenfield Parkway, Garner, NC 27529

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig.2.0

4 Phase Fully Actuated Hickory Signal System With EVP

PHASING DIAGRAM



EV PREEMPT PHASES

(Medium Priority)

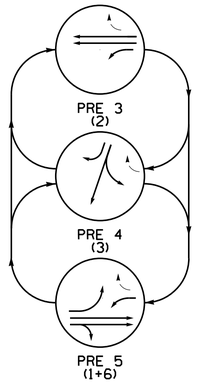


TABLE OF OPERATION

SIGNAL FACE	PHASE 1+6	2+6	3	4	PRE 3	PRE 4	PRE 5	FLASH
11	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
21	~~F~~	~~F~~	~~R~~	~~R~~	~~F~~	~~R~~	~~F~~	~~R~~
22, 23	R	G	R	R	G	R	R	R
31	R	R	G	R	R	G	R	R
32	~~R~~	R	G	R	R	G	R	R
41	R	R	R	G	R	R	R	R
42	R	R	R	G	R	R	R	R
61, 62	G	G	R	R	R	R	G	R
P21, P22	DW	W	DW	DW	DW	DW	DW	DRK
P41, P42	DW	DW	DW	W	DW	DW	DW	DRK
* Sign D	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF

*Only "ON" during Phase 4 Walk and PED Clear.

SE-PAC 2070 LOOP & DETECTOR UNIT INSTALLATION CHART

INDUCTIVE LOOPS						DETECTOR PROGRAMMING																
							TIMING		OPERATION MODE											STATUS	
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	ASSIGNED PHASE	DELAY	EXTEND (STRETCH)	0 VEHICLE	1 PEDESTRIAN	2 CALL	3 STOP A	4 STOP B	5 PROTIFER LEFT PROTIFER THROUGH	6 AND	7 SWITCH	SYSTEM LOOPS	NEW	EXISTING
1A	6X60	EXISTING	0	-	X	1	3 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X
1B	6X40	2-4-2	0	X	-	1	10 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X
2A	6X6	4	300	-	X	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X
2B	6X6	4	300	-	X	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X
2C	6X40	2-4-2	0	-	X	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X
3A	6X40	2-4-2	0	X	-	3	3 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X
4A	6X60	EXISTING	0	-	X	4	10 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X
6A	6X6	4	300	-	X	6	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X
6B	6X6	4	300	-	X	6	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X

NOTES

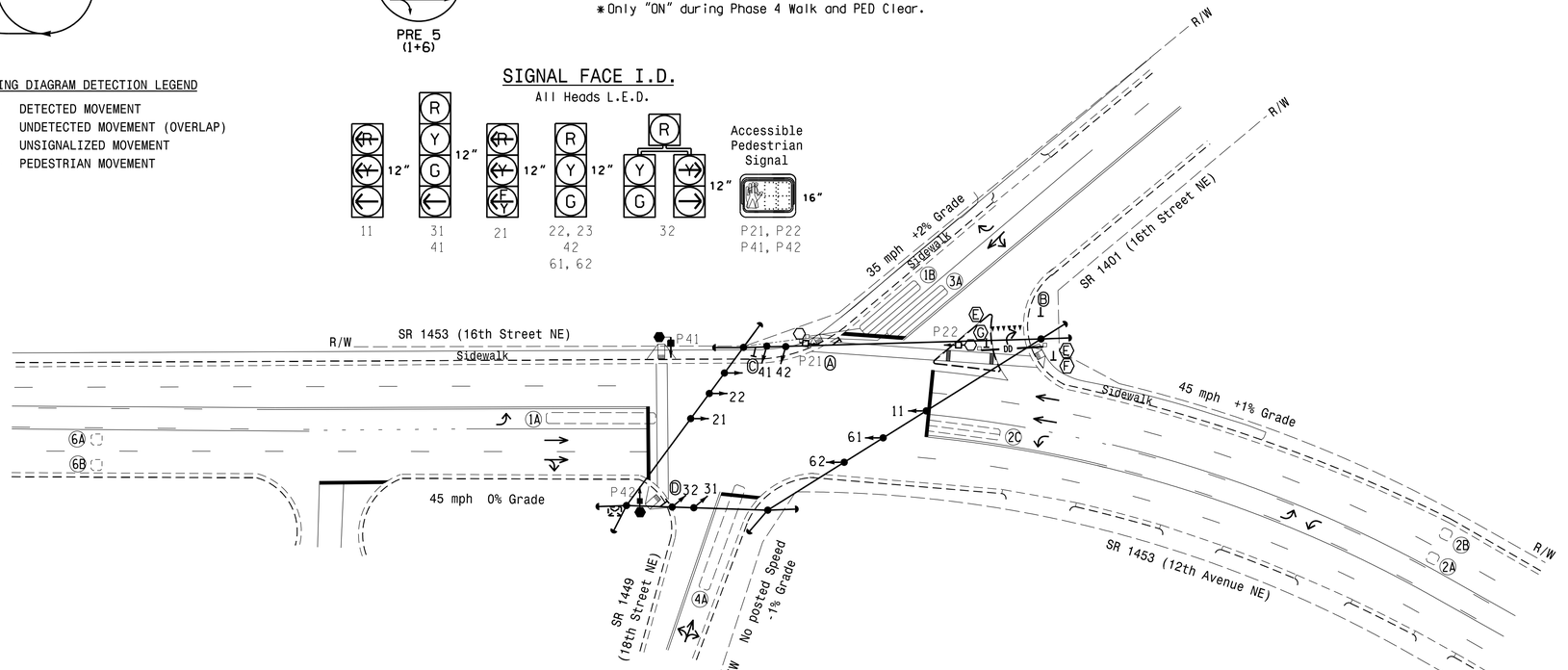
1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Refer to Pavement Marking Plans for pavement markings.
6. Set all detector units to presence mode.
7. In the event of loop replacement. refer to the current TSMO Design Manual and submit a Plan of Record to the Signal Design Section.
8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
9. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
10. Replace existing pushbuttons with APS Pushbuttons.
11. This intersection features accessible pedestrian signals utilizing percussive tone walk indications.
12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
13. City of Hickory # 1002

PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.

All Heads L.E.D.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
N/A	Curb Ramp	
	Type II Signal Pedestal	
DD	Directional Drill	N/A
(A)	Right Arrow "ONLY" Sign (R3-5R)	(A)
(B)	"YIELD" Sign (R1-2)	(B)
(C)	" TURNING TRAFFIC MUST YIELD TO PEDESTRIANS" Sign	(C)
(D)	"NO TURN ON RED " Blankout Sign	(D)
(E)	Pedestrian Crossing Sign (W11-2)	(E)
(F)	Left Downward Diagonal Arrow Plaque (W16-7L)	(F)
(G)	Right Downward Diagonal Arrow Plaque (W16-7R)	(G)

SE-PAC 2070 TIMING CHART

FEATURE	PHASE 1	2	3	4	6
Min Green *	7	12	7	7	12
Passage Gap *	2.0	6.0	2.0	2.0	6.0
Maximum Green *	30	50	30	30	50
Yellow Change	3.0	4.5	3.7	3.2	4.5
Red Clear	3.9	2.2	2.4	3.2	2.2
Walk *	-	7	-	7	-
Pedestrian Clear	-	16	-	20	-
Advance Walk	-	7	-	7	-
Added Initial *	-	1.5	-	-	1.5
Maximum Initial *	-	34	-	-	34
Time Before Reduction *	-	0	-	-	0
Time To Reduce *	-	15	-	-	15
Minimum Gap	-	3.0	-	-	3.0
Recall Mode	-	MIN RECALL	-	-	MIN RECALL
Vehicle Call Memory	NON-LOCK	LOCK	NON-LOCK	NON-LOCK	LOCK
Dual Entry	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all phases should not be lower than 4 seconds.

SE-PAC Preemption

FUNCTION	PRE 3	PRE 4	PRE 5
MIN GRN / WLK	1	1	1
EXIT PHASES	2+6	2+6	2+6
DELAY	0	0	0
MXCALL	120	120	120
SEL PED CLR	20	20	20
SEL YEL / 10	45*	45*	45*
SEL RED / 10	22*	22*	22*
TRACK GREEN	0	0	0
TRK PED CLR	0	0	0
TRK YEL / 10	0	0	0
TRK RED / 10	0	0	0
DWELL GRN	12	12	12
RET PED CLR	0	0	0
RET YEL / 10	0*	0*	0*
RET RED / 10	0*	0*	0*
PREEMPT EXTEND **	2	2	2

* Time defaults to time used for phase during normal operation.

** Program extend time on Optical Detector Unit.

ACCESSIBLE PEDESTRIAN SIGNAL OPERATION

SIGNAL FACE	VOICE	TONES	INTERVAL	SPEECH MESSAGE
P21	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross 16th Street.
P22	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross 16th Street.
P41	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross 16th Street.
P42	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross 16th Street.

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Signal Upgrade

Prepared for the Offices of:

North Carolina Department of Transportation, State of North Carolina, Signal Design Section

750 N.Greenfield Pkwy,Garner,NC 27529

SR 1453 (16th St NE & 12th Ave NE) at SR 1401 (16th St NE) and SR 1449 (18th St NE)

Division 12 Catawba County Hickory

PLAN DATE:	January 2026	REVIEWED BY:	G. Pierro
PREPARED BY:	J. Ma	REVIEWED BY:	L. Britt

REVISIONS	INIT.	DATE

SCALE 0 40' 1"=40'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIAXIN MA

DocuSigned by: Jiaxin Ma 827E1953081444E... 1/6/2026

SIGNATURE DATE

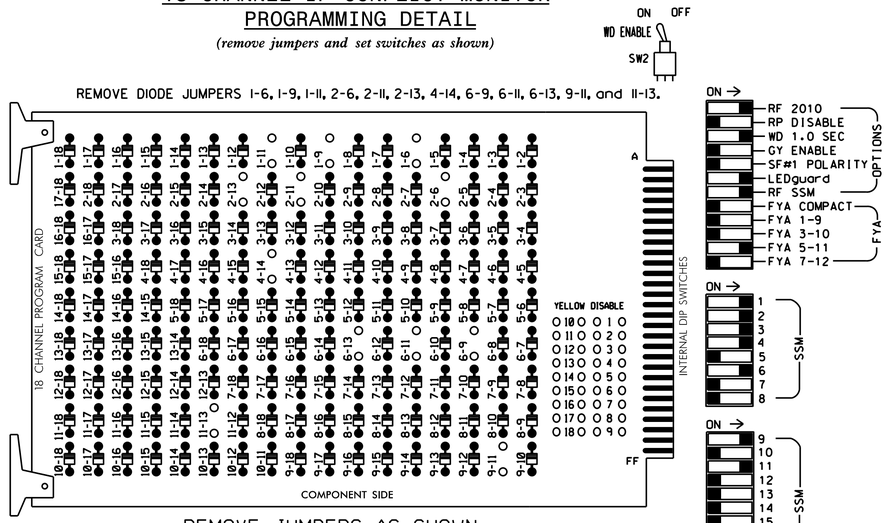
SIG. INVENTORY NO. 12-0657

38536.53

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Integrate monitor with Ethernet network in cabinet.

■ = DENOTES POSITION OF SWITCH

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program controller to start up in phases 2 and 6 Green/Don't Walk.
3. Enable simultaneous gap-out feature for all phases.
4. Program phases 2 and 6 for volume density operation.
5. The cabinet and controller are part of the Hickory Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....SE-PAC2070
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX FILE
LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S8,AUX S1,AUX S4
PHASES USED.....1,2,2PED,3,4,4PED,6
OVERLAP A.....*
OVERLAP B.....NOT USED
OVERLAP C.....*
OVERLAP D.....NOT USED
* SEE SHEET 2 FOR OVERLAP PROGRAMMING

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig 2.1

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4		S5		S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3		4		14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3		4		4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	22,23	P21, P22	31	32	41	42	P41, P42	NU	61,62	NU	NU	NU	NU	32	NU	NU	21 ★	NU	NU
RED		128		116	116	101	101			134					*					
YELLOW		129		117	117	102	102			135										
GREEN		130		118	118	103	103			136										
RED ARROW	125																	A114		
YELLOW ARROW	126														A122			A115		
FLASHING YELLOW ARROW																		A116		
GREEN ARROW	127			118		103									A123					
✋			113					104												
🚶			115					106												

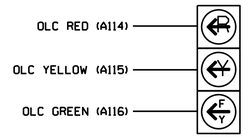
NU = Not Used

* Denotes install load resistor. See load resistor installation detail below.

★ See pictorial of head wiring in detail below.

FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



NOTE: See sheet 2 for Protected & Permitted Phases programming.

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	ø1 1A	ø2 2A	ø2 2C	ø3 3A	ø4 4A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	ø2 PED DC ISOLATOR	SLOT EMPTY	FS DC ISOLATOR
	L		ø1 1B	ø2 2B	NOT USED	NOT USED	NOT USED						ø4 PED DC ISOLATOR		ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	ø6 6A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	CH. 3 PRE-3	CH. 1 PRE-4	SLOT EMPTY
	L		ø6 6B										CH. 4 PRE-5	CH. 2 UNUSED	

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME
PRE 3,4,5 = EV PREEMPTS

4 CHANNEL TOMAR OSP CARD INSERT CARD INTO SLOT J13

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	DELAY TIME	EXTEND (STRETCH) TIME
1A	TB2-5,6	I2U	39	3	1	3	
1B	TB2-7,8	I2L	43	4	1	10	
2A	TB2-9,10	I3U	63	5	2		
2B	TB2-11,12	I3L	76	6	2		
2C	TB4-1,2	I4U	47	7	2		
3A	TB4-5,6	I5U	58	9	3	3	
4A	TB4-9,10	I6U	41	11	4	10	
6A	TB3-5,6	J2U	40	21	6		
6B	TB3-7,8	J2L	44	22	6		
PED PUSH BUTTONS							
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED		
P41,P42	TB8-5,6	I12L	69	PED 4	4 PED		

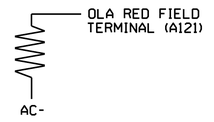
NOTE:
INSTALL DC ISOLATOR IN INPUT FILE SLOT I12.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

LOAD RESISTOR INSTALLATION DETAIL

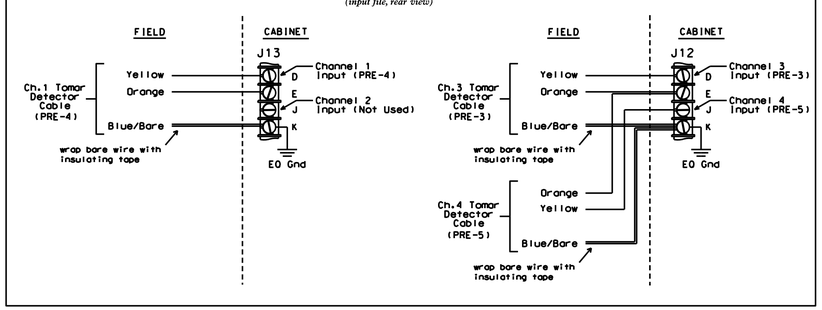
(install resistor as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



TYPICAL TOMAR FIELD WIRE DETAIL

(input file, rear view)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 12-0657
DESIGNED: January 2026
SEALED: 1/6/2026
REVISED: N/A

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Electrical Detail - Sheet 1 of 4

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1453 (16th St NE & 12th Ave NE) at SR 1401 (16th St NE) and SR 1449 (18th St NE)

Division 12 Catawba County Hickory

PLAN DATE:	January 2026	REVIEWED BY:	G. Pierro
PREPARED BY:	J. Ma	REVIEWED BY:	L. Britt

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma 1/6/2026
827E1053D8144AF DATE

SIG. INVENTORY NO. 12-0657

Transportation Mobility and Safety Division NC DEPARTMENT OF TRANSPORTATION Traffic Engineering Branch Signals Management Section

750 N. Greenfield Pkwy, Garner, NC 27529

38536.53

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig 2.2

FLASHING YELLOW ARROW PROTECTED/PERMISSIVE SEQUENCE FOR OVERLAP C, AND PARENT PHASE PROGRAMMING FOR OVERLAP A

(program controller as shown below)

FROM MAIN MENU PRESS 4 (UNIT DATA)

```
SE-PAC UNIT DATA          PRESS # DESIRED

 1-STARTUP & MISC      6-ALT SEQUENCES
 2-REMOTE FLASH        7-PORT 1 DATA
[3-OVERLAP STANDARD]   8-I/O MISC
 4-OVERLAP SPECIAL     9-SIG DRV OUT
 5-RING STRUCTURE

                              F-PRIOR MENU
```

Enter parent phase '1' →

```
SE-PAC OVERLAP - A                (0-NO/1-YES)

 OVL PHASES:  100000000 0000000
    PHS/CHN:  123456789 0123456789 01234
 OVL CHN(S):  000000000 000100000 00000


A-UP B-DN D-DspChn   E-EDIT  F-PRIOR MENU
```

PRESS "B" TWICE

DO NOT enter any OVL PHASES! →

```
SE-PAC OVERLAP - C                (0-NO/1-YES)

 OVL PHASES:  000000000 0000000
    PHS/CHN:  123456789 0123456789 01234
 OVL CHN(S):  000000000 000001000 00000


A-UP B-DN D-DspChn   E-EDIT  F-PRIOR MENU
```

OVERLAP PROGRAMMING COMPLETE

PRESS 'F' TO RETURN TO UNIT DATA

ALL RED FLASH STARTUP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS 4 (UNIT DATA)

```
EPAC UNIT DATA            PRESS # DESIRED

[1- STARTUP & MISC]    6- ALT SEQUENCES
 2- REMOTE FLASH       7- PORT 1 DATA
 3- OVERLAP STANDARD   8- I/O MISC
 4- OVERLAP SPECIAL    9- SIG DRV OUT
 5- RING STRUCTURE

                              F- PRIOR MENU
```

```
EPAC STARTUP & MISC
STARTUP TIME.:  6 (SEC) STATE: 1 (0-FL
RED REV/10...: 40 (TSEC)          1-RED)
AUTO PED CLR.:  0 (0-NO  1-YES)
STOP T RESET.:  0 (0-NO  1-YES)
ALT SEQUENCE.:  0 (0-18)
I'NAT'L SEQ  :  0 (0-NO  1-YES)
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

STARTUP PROGRAMMING COMPLETE

PRESS 'F' TO RETURN TO UNIT DATA

REMOTE FLASH PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS 4 (UNIT DATA)

```
EPAC UNIT DATA            PRESS # DESIRED

 1- STARTUP & MISC     6- ALT SEQUENCES
[2- REMOTE FLASH]      7- PORT 1 DATA
 3- OVERLAP STANDARD   8- I/O MISC
 4- OVERLAP SPECIAL    9- SIG DRV OUT
 5- RING STRUCTURE

                              F- PRIOR MENU
```

```
EPAC FLASH      TST-A=FLSH: 0  (0-NO/1-YES)
 FLSH 2=Y, 3=S: 111101000 0001010000 00000
 ALT FLSH     : 101001000 0001000000 00000
      CHN/PHS: 123456789 0123456789 01234
  ENTRY PHASE: 010001000 0000000
   EXIT PHASE: 010001000 0000000
   FIELD NAME: CHN 1/LSW 1/PHS 1 V DRVR
A-UP  B-DN  C-LT  D-RT        F-PRIOR MENU
```

REMOTE FLASH PROGRAMMING COMPLETE

PRESS 'F' TO RETURN TO UNIT DATA

PROTECTED AND PERMISSIVE PHASES FOR FLASHING YELLOW ARROW

(program controller as shown below)

FROM MAIN MENU PRESS 4 (UNIT DATA)

```
SE-PAC UNIT DATA          PRESS # DESIRED

 1-STARTUP & MISC      6-ALT SEQUENCES
 2-REMOTE FLASH        7-PORT 1 DATA
 3-OVERLAP STANDARD    8-I/O MISC
[4-OVERLAP SPECIAL]    9-SIG DRV OUT
 5-RING STRUCTURE

                              F-PRIOR MENU
```

```
SE-PAC OVLP.A...B...C...D...E...F...G...H.
   TR GRN   0   0   0   0   0   0   0   0
   YEL/10  40  40  40  40  40  40  40  40
   RED/10  20  20  20  20  20  20  20  20
   -G/Y     0   0   5   0   0   0   0   0
   +GRN     0   0   6   0   0   0   0   0
(-) #-PH G/Y KILLS OVLP= (+) #-PH G STRT
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

PROTECTED PHASES →
PERMISSIVE PHASES →

NOTE: THIS PROGRAMMING IS REQUIRED FOR SIGNAL HEAD 21 SO THAT THE FLASHING YELLOW ARROW TURNS ON EXCLUSIVELY DURING PERMITTED GREEN PHASE 6.

PPLT DEFINITION PROGRAMMING COMPLETE

PRESS 'F' TO RETURN TO UNIT DATA

INIT & N.A. RESP PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu, press '3' (Phase Data)

```
SE-PAC PHASE DATA         PRESS # DESIRED

 1-VEHICLE TIMES       6-N.LOCK & MISC
 2-DENSITY TIMES       7-SPEC. SEQUENCE
 3-PEDEST. TIMES       8-SPEC. DETECTOR
[4-INIT & N.A. RESP]   9-PHASE COPY
 5-V & P RECALLS       0-MISC PED OPTIONS

                              F-PRIOR MENU
```

```
PHASE.....1...2...3...4...5...6...7...8...9
 INITIAL   1   6   1   1   0   6   0   0   0
 NA RESP   0   1   0   2   0   1   0   0   0

CODES.....0....1....2....3....4....5....6
 INITIAL  NONE INACT RED  YEL  GRN  DRK  G/DW
 NA RESP  NONE  NA1  NA2 BOTH  ---  ---  ---
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

Phases 5,7 & 8 NOT used! →

INIT & N.A. RESP programming complete.

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Electrical Detail - Sheet 2 of 4

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THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-0657
DESIGNED: January 2026
SEALED: 1/6/2026
REVISED: N/A

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1453 (16th St NE & 12th Ave NE) at
SR 1401 (16th St NE) and SR 1449 (18th St NE)

Division 12 | Catawba County | Hickory

PLAN DATE:	January 2026	REVIEWED BY:	G. Pierro
PREPARED BY:	J. Ma	REVIEWED BY:	L. Britt

REVISIONS	INIT.	DATE

Transportation Mobility and Safety Division
NC DEPARTMENT OF TRANSPORTATION
Traffic Engineering Branch
Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JANXIN MA

Docusigned by: Janxin Ma 1/6/2026
SIG. INVENTORY NO. 12-0657

38536.53

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig 2.3

EMERGENCY VEHICLE PREEMPTION PROGRAMMING DETAIL

(program controller as shown below)

SELECT (7) FROM MAIN MENU

- PREEMPT 3 -

```
SE-PAC PREEMPT DATA          PRESS # DESIRED

 1- ALL PREEMPTS          5- PREEMPT 4
 2- PREEMPT 1             6- PREEMPT 5
 3- PREEMPT 2             7- PREEMPT 6
[4- PREEMPT 3]            8- LOAD DEFAULT
```

```
SE-PAC PREEMPT 3             PRESS # DESIRED

[1- MISCELLANEOUS]        4- PEDEST. STATUS
 2- INTERVAL TIMES        5- OVERLAP STATUS
 3- VEHICLE STATUS        6- LOW PRIORITY
                             F-PRIOR MENU
```

```
SE-PAC PREEMPT 3 MISC DATA (O-NO & 1-YES)

 TEST.:   0  N-LOCK:   0  LINK PE#:   0
 DELAY:   0  EXTEND:   0  DURATION:   0
             MXCALL: 120  LOCK OUT:   0
PHASE....1.2.3.4.5.6.7.8.9.0.1.2.3.4.5.6
 EXIT    0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0
 CALLS   0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

select F – return to Preempt 3 menu, then
select 2 – Interval Times

```
SE-PAC PREEMPT 3 INTERVAL TIMES

 SEL PED CLR:  20     TRK YEL/10 :  00
 SEL YEL/10 :  45     TRK RED/10 :  00
 SEL RED/10 :  22     DWELL GREEN:  12
 TRACK GREEN:  00     RET PED CLR:  00
 TRK PED CLR:  00     RET YEL/10 :  00
                      RET RED/10 :  00
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

select F – return to Preempt 3 menu, then
select 3 – Vehicle Status

```
SE-PAC PREEMPT 3 VEHICLE STATUS

PHASE....1.2.3.4.5.6.7.8.9.0.1.2.3.4.5.6
 TRK GRN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 DWELL   0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 (0-RED.1-GRN.2-FLR.3-FLY.4-DARK.5-FLG)
 CYCLE   0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
    (0-NO..1-ACT..2-MN REC..3-MX REC)
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

select F – return to Preempt 3 menu, then
select 5 – Overlap Status

```
SE-PAC PREEMPT 3 OVERLAP STATUS

PHASE....A.B.C.D.E.F.G.H.I.J.K.L.M.N.O.P
 TRK GRN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 DWELL   0 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0
 (0-RED.1-GRN.2-FLR.3-FLY.4-DARK.5-FLG)
 CYCLE   0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
          (0-NO..1-ACT)
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

select F as needed to return
to SE–PAC preempt data menu

NOTE: options 4 and 6 not used for Preempt 3.
Be sure values are set at default = 0

- PREEMPT 4 -

```
SE-PAC PREEMPT DATA          PRESS # DESIRED

 1- ALL PREEMPTS          5- PREEMPT 4
 2- PREEMPT 1             6- PREEMPT 5
 3- PREEMPT 2             7- PREEMPT 6
 4- PREEMPT 3             8- LOAD DEFAULT
```

```
SE-PAC PREEMPT 4             PRESS # DESIRED

[1- MISCELLANEOUS]        4- PEDEST. STATUS
 2- INTERVAL TIMES        5- OVERLAP STATUS
 3- VEHICLE STATUS        6- LOW PRIORITY
                             F-PRIOR MENU
```

```
SE-PAC PREEMPT 4 MISC DATA (O-NO & 1-YES)

 TEST.:   0  N-LOCK:   0  LINK PE#:   0
 DELAY:   0  EXTEND:   0  DURATION:   0
             MXCALL: 120  LOCK OUT:   0
PHASE....1.2.3.4.5.6.7.8.9.0.1.2.3.4.5.6
 EXIT    0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0
 CALLS   0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

select F – return to Preempt 4 menu, then
select 2 – Interval Times

```
SE-PAC PREEMPT 4 INTERVAL TIMES

 SEL PED CLR:  20     TRK YEL/10 :  00
 SEL YEL/10 :  45     TRK RED/10 :  00
 SEL RED/10 :  22     DWELL GREEN:  12
 TRACK GREEN:  00     RET PED CLR:  00
 TRK PED CLR:  00     RET YEL/10 :  00
                      RET RED/10 :  00
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

select F – return to Preempt 4 menu, then
select 3 – Vehicle Status

```
SE-PAC PREEMPT 4 VEHICLE STATUS

PHASE....1.2.3.4.5.6.7.8.9.0.1.2.3.4.5.6
 TRK GRN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 DWELL   0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
 (0-RED.1-GRN.2-FLR.3-FLY.4-DARK.5-FLG)
 CYCLE   0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
    (0-NO..1-ACT..2-MN REC..3-MX REC)
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

select F as needed to return
to SE–PAC preempt data menu

NOTE: options 4,5,6 not used for Preempt 4.
Be sure values are set at default = 0

- PREEMPT 5 -

```
SE-PAC PREEMPT DATA          PRESS # DESIRED

 1- ALL PREEMPTS          5- PREEMPT 4
 2- PREEMPT 1            [6- PREEMPT 5]
 3- PREEMPT 2             7- PREEMPT 6
 4- PREEMPT 3             8- LOAD DEFAULT
```

```
SE-PAC PREEMPT 5             PRESS # DESIRED

[1- MISCELLANEOUS]        4- PEDEST. STATUS
 2- INTERVAL TIMES        5- OVERLAP STATUS
 3- VEHICLE STATUS        6- LOW PRIORITY
                             F-PRIOR MENU
```

```
SE-PAC PREEMPT 5 MISC DATA (O-NO & 1-YES)

 TEST.:   0  N-LOCK:   0  LINK PE#:   0
 DELAY:   0  EXTEND:   0  DURATION:   0
             MXCALL: 120  LOCK OUT:   0
PHASE....1.2.3.4.5.6.7.8.9.0.1.2.3.4.5.6
 EXIT    0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0
 CALLS   0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

select F – return to Preempt 5 menu, then
select 2 – Interval Times

```
SE-PAC PREEMPT 5 INTERVAL TIMES

 SEL PED CLR:  20     TRK YEL/10 :  00
 SEL YEL/10 :  45     TRK RED/10 :  00
 SEL RED/10 :  22     DWELL GREEN:  12
 TRACK GREEN:  00     RET PED CLR:  00
 TRK PED CLR:  00     RET YEL/10 :  00
                      RET RED/10 :  00
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

select F – return to Preempt 5 menu, then
select 3 – Vehicle Status

```
SE-PAC PREEMPT 5 VEHICLE STATUS

PHASE....1.2.3.4.5.6.7.8.9.0.1.2.3.4.5.6
 TRK GRN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 DWELL   1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
 (0-RED.1-GRN.2-FLR.3-FLY.4-DARK.5-FLG)
 CYCLE   0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
    (0-NO..1-ACT..2-MN REC..3-MX REC)
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

select F – return to Preempt 5 menu, then
select 5 – Overlap Status

```
SE-PAC PREEMPT 5 OVERLAP STATUS

PHASE....A.B.C.D.E.F.G.H.I.J.K.L.M.N.O.P
 TRK GRN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 DWELL   0 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0
 (0-RED.1-GRN.2-FLR.3-FLY.4-DARK.5-FLG)
 CYCLE   0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
          (0-NO..1-ACT)
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

select F as needed to return
to SE–PAC preempt data menu

NOTE: options 4 and 6 not used for Preempt 5.
Be sure values are set at default = 0

- ALL PREEMPTS -

```
SE-PAC PREEMPT DATA          PRESS # DESIRED

[1- ALL PREEMPTS]         5- PREEMPT 4
 2- PREEMPT 1             6- PREEMPT 5
 3- PREEMPT 2             7- PREEMPT 6
 4- PREEMPT 3             8- LOAD DEFAULT
```

```
SE-PAC ALL PREEMPTS DATA

RING TIMES.....1.....2.....3.....4
 MIN GRN/WLK    1     1     0     0
PRIORITY...FL....1/2..2/3..3/4..4/5..5/6.
 STATUS     0     1     0     0     0     0
CODES........O-NO....1-YES..............
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

end of programming

Program extend time on optical detector units for 2.0 sec for PRE3. PRE4. and PRE5.

ADVANCE WALK PED PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu, press '3' (Phase Data)

```
SE-PAC PHASE DATA          PRESS # DESIRED

 1-VEHICLE TIMES          6-N.LOCK & MISC
 2-DENSITY TIMES          7-SPEC. SEQUENCE
 3-PEDEST. TIMES          8-SPEC. DETECTOR
 4-INIT & N.A. RESP       9-PHASE COPY
 5-V & P RECALLS         [0-MISC PED OPTIONS]
                             F-PRIOR MENU
```

```
PHASE......1...2...3...4...5...6...7...8
 WOFF/10   0  70   0  70   0   0   0   0
 MODE      0   0   0   0   0   0   0   0
WOFF MODE: 0-ADVANCE WALK  1-DELAY WALK

A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

Advance Walk PED programming complete.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-0657
DESIGNED: January 2026
SEALED: 1/6/2026
REVISED: N/A

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

Electrical Detail - Sheet 3 of 4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1453 (16th St NE & 12th Ave NE) at SR 1401 (16th St NE) and SR 1449 (18th St NE)

Division 12 | Catawba County | Hickory

PLAN DATE:	January 2026	REVIEWED BY:	G. Pierro
PREPARED BY:	J. Ma	REVIEWED BY:	L. Britt

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma 827E1953081444F 1/6/2026 DATE

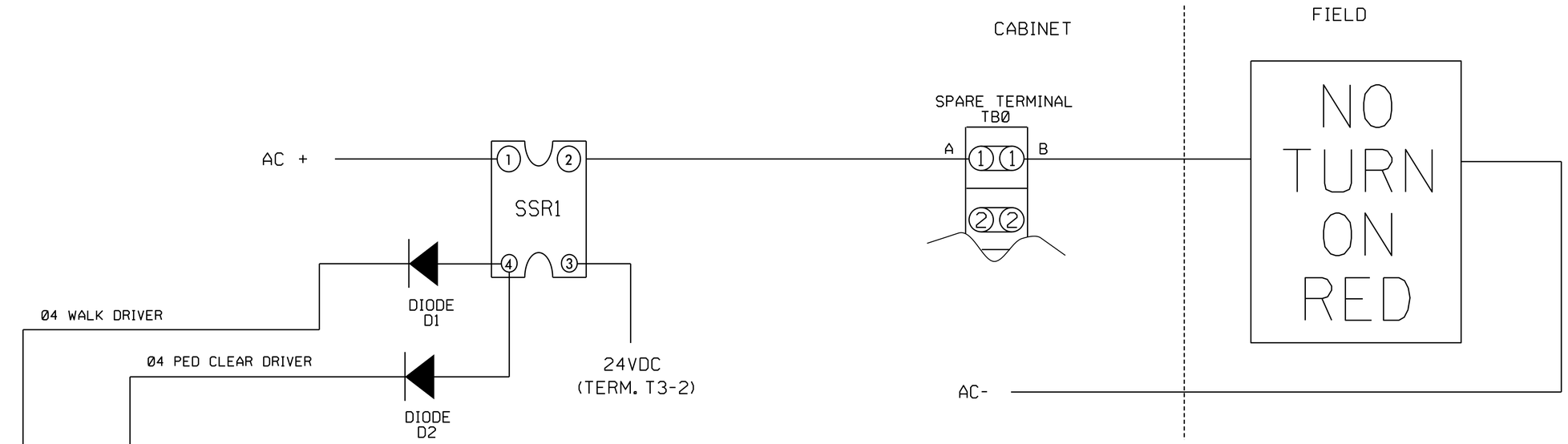
SIG. INVENTORY NO. 12-0657

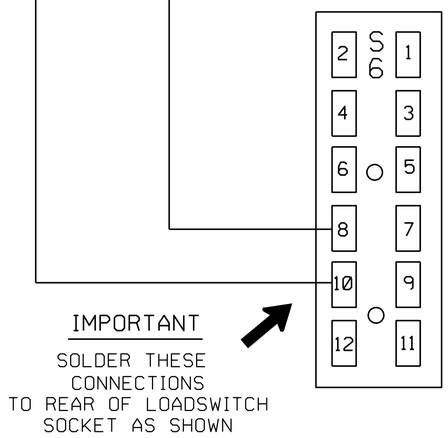
Transportation Mobility and Safety Division
NC DEPARTMENT OF TRANSPORTATION
Traffic Engineering Branch - Traffic Control & Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

38536.53

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig 2.4





NOTES

1. DIODES ARE VALUED AT 600V PIV, 1 AMP (MINIMUM).

2. SSR1 IS A SPST SOLID STATE RELAY
   24VDC INPUT, 120V/10A AC OUTPUT,
   ZERO VOLTAGE TURN ON,
   OPERATING AMBIENT TEMP -37C TO +74C,
   MIN TURN ON VOLTAGE = +12 VDC,
   MAX TURN OFF VOLTAGE = +8 VDC.

ACCESSIBLE PEDESTRIAN SIGNAL (APS) INSTALLATION NOTES

1. Install push buttons and APS equipment per manufacturer's instructions.
2. Provide a dedicated cable to each push button per manufacturer's instructions.
3. If APS equipment is mounted in cabinet, use filtered power (i.e., Controller Receptacle) to power APS equipment. Do not use Equipment Receptacle, which is a GFCI outlet.
4. Never attempt to operate a standard contact closure push button with the APS system unless cabinet is re-wired for standard button operation or unless explicitly allowed by the manufacturer.
5. Place manufacturer's instructions in cabinet with cabinet prints, signal plans, and electrical details.
6. An APS push button station that is designed to work without the need for interfacing with a pedestrian signal head shall be installed for applications where a push button is installed in a median without a pedestrian signal head.
7. A push button with a single tactile arrow that point in both directions of travel shall be installed if the median separates two parallel crosswalks.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-0657
DESIGNED: January 2026
SEALED: 1/6/2026
REVISED: N/A

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

Electrical Detail - Sheet 4 of 4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Transportation Mobility and Safety Division
Traffic Engineering Branch
Traffic Signals Management Section
DEPARTMENT OF TRANSPORTATION

750 N. Greenfield Pkwy, Garner, NC 27529

SR 1453 (16th St NE & 12th Ave NE) at SR 1401 (16th St NE) and SR 1449 (18th St NE)

Division 12 | Catawba County | Hickory

PLAN DATE:	January 2026	REVIEWED BY:	G. Pierro
PREPARED BY:	J. Ma	REVIEWED BY:	L. Britt

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma 1/6/2026
827E19530814444F... DATE

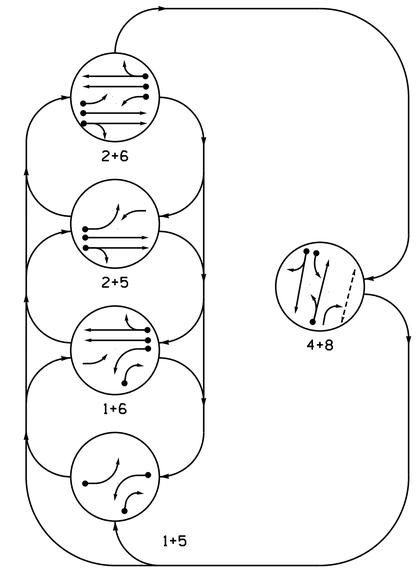
SIG. INVENTORY NO. 12-0657

38536-53

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig.3.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

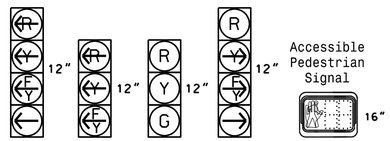
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE 1+5	1+6	2+5	2+6	4+8	FLASH
11	—	—	F↓	F↓	~~R~~	~~R~~
21,22	R	R	G	G	R	R
41	~~R~~	~~R~~	~~R~~	~~R~~	F↓	~~R~~
42,43	R	R	R	R	G	R
51	—	F↓	—	F↓	~~R~~	~~R~~
61,62	R	G	R	G	R	R
81,82	R	R	R	R	G	R
83	—	—	R	R	F↓	R
P81, P82	DW	DW	DW	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.

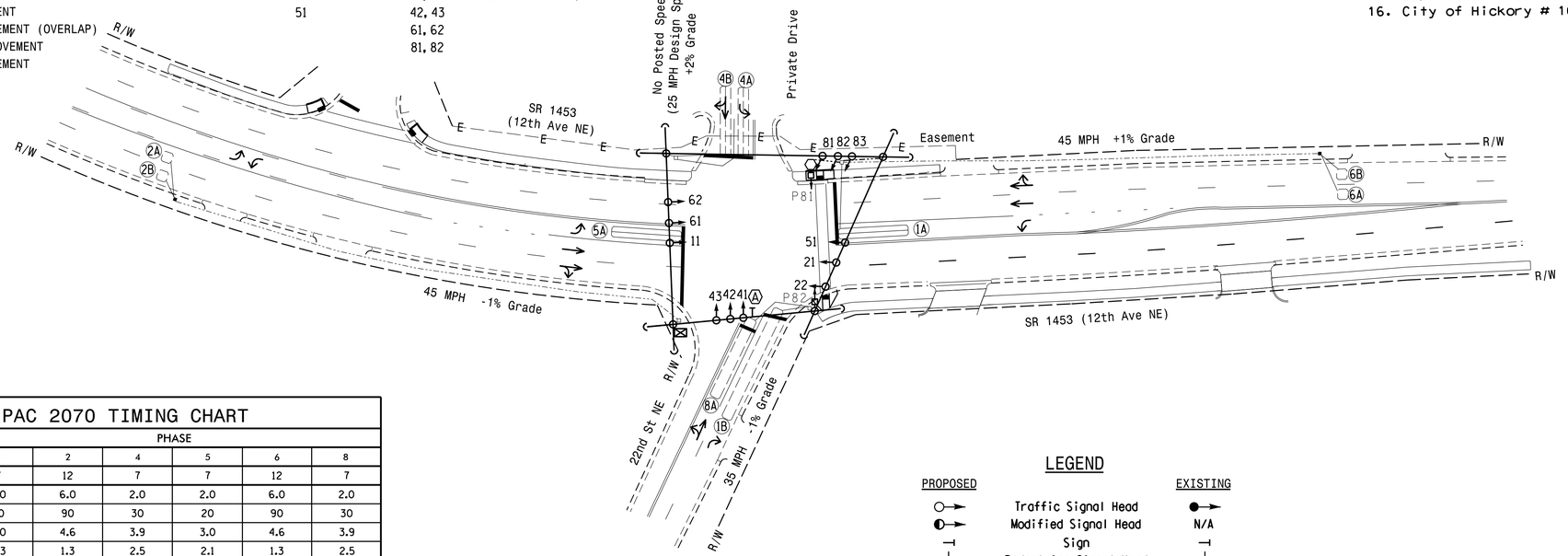


SE-PAC 2070 LOOP & DETECTOR UNIT INSTALLATION CHART

INDUCTIVE LOOPS						DETECTOR PROGRAMMING														
								OPERATION MODE										STATUS	
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	ASSIGNED PHASE	TIMING DELAY	TIMING EXTEND (STRETCH)	0 VEHICLE	1 PEDESTRIAN	2 1 CALL	3 STOP A	4 STOP B	5 PROTPER LEFT	6 PROTPER EXTENSION	7 AND	SWITCH	SYSTEM LOOPS	NEW	EXISTING
1A	6X40	2-4-2	0	X	-	1	5.0 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
1B	6X70	2	0	-	X	1	15.0 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
2A	6X6	4	300	-	X	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
2B	6X6	4	300	-	X	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
4A	6X40	2-4-2	0	-	X	4	3.0 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
4B	6X40	2-4-2	0	-	X	4	10.0 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
5A	6X40	2-4-2	0	X	-	5	5.0 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	X	-
6A	6X6	6	290	-	X	6	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
6B	6X6	6	290	-	X	6	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
8A	6X50	2	0	-	X	8	3.0 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X

ACCESSIBLE PEDESTRIAN SIGNAL OPERATION

SIGNAL FACE	VOICE	TONES	INTERVAL	SPEECH MESSAGE
P81	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross 12th Avenue.
P82	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross 12th Avenue.



SE-PAC 2070 TIMING CHART

FEATURE	PHASE 1	2	4	5	6	8
Min Green *	7	12	7	7	12	7
Passage Gap *	2.0	6.0	2.0	2.0	6.0	2.0
Maximum Green *	20	90	30	20	90	30
Yellow Change	3.0	4.6	3.9	3.0	4.6	3.9
Red Clear	2.3	1.3	2.5	2.1	1.3	2.5
Walk *	-	-	-	-	-	7
Pedestrian Clear	-	-	-	-	-	17
Advance Walk	-	-	-	-	-	5
Added Initial *	-	1.5	-	-	1.5	-
Maximum Initial *	-	34	-	-	33	-
Time Before Reduction *	-	15	-	-	15	-
Time To Reduce *	-	30	-	-	30	-
Minimum Gap	-	3.0	-	-	3.0	-
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-
Vehicle Call Memory	NON-LOCK	LOCK	NON-LOCK	NON-LOCK	LOCK	NON-LOCK
Dual Entry	-	-	ON	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
	Pedestrian Signal Head With Push Button & Sign	
○	Signal Pole with Guy	●
○	Signal Pole with Sidewalk Guy	●
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊠
□	Junction Box	■
-----	2-in Underground Conduit	-----
N/A	Right of Way	-----
→	Directional Arrow	→
N/A	Curb Ramp	
⬡	Type II Signal Pedestal	⬢
Ⓐ	Left "TURNING VEHICLES" Yield "TO" Pedestrians Sign (R10-15L)	Ⓐ

5 Phase
Fully Actuated
Hickory City System

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Set all detector units to presence mode.
5. Refer to Pavement Marking Plans for pavement markings.
6. In the event of loop replacement, refer to the current TSMO Design Manual and submit a Plan of Record to the Signal Design Section.
7. Locate new cabinet so as not to obstruct sight distance of vehicles turning on red.
8. The new controller shall be 2070 LX controller running SE-PAC2070, Version 5.2.2, purchased from Mobotrex.
9. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
10. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
11. Replace all existing lead-in cable.
12. Replace all existing signal wood poles and guys.
13. Renumber existing loop 8B as 1A.
14. This intersection features accessible pedestrian signals utilizing percussive tone walk indications.
15. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
16. City of Hickory # 1003

VHB Engineering NC, P.C. (C-3705)
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919.829.0328

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Signal Upgrade

Prepared for the Offices of:
Traffic Engineering, Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1453 (12th Ave NE)
at
22nd St NE / Private Drive

Division 12 Catawba County Hickory

PLAN DATE:	January 2026	REVIEWED BY:	G. Pierro
PREPARED BY:	J. Ma	REVIEWED BY:	L. Britt

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA
DocuSigned by: Jianxin Ma 1/6/2026
SIG. INVENTORY NO. 12-0920

38536.53

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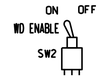
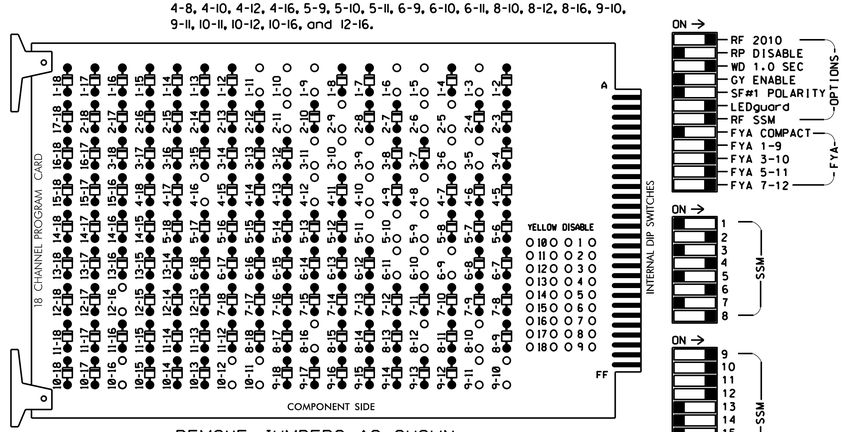
PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig.3.1

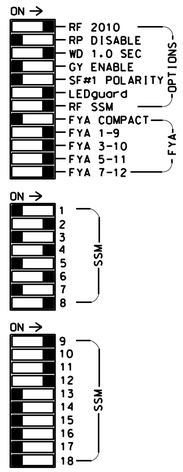
18 CHANNEL CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE DIODE JUMPERS 1-3, 1-5, 1-6, 1-9, 1-10, 1-11, 2-5, 2-6, 2-9, 2-11, 3-5, 3-6, 3-9, 3-10, 3-11, 4-8, 4-10, 4-12, 4-16, 5-9, 5-10, 5-11, 6-9, 6-10, 6-11, 8-10, 8-12, 8-16, 9-10, 9-11, 10-11, 10-12, 10-16, and 12-16.





REMOVE JUMPERS AS SHOWN

■ = DENOTES POSITION OF SWITCH

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program controller to start up in phases 2 and 6 green/Don't Walk.
3. Enable simultaneous gap-out feature for all phases.
4. Program phases 4 and 8 for dual entry.
5. Program phases 2 and 6 for volume density operation.
6. The cabinet and controller are part of the Hickory Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070LX-MoboTrex
CABINET.....332 W/ AUX
SOFTWARE.....SE-PAC2070 (version 5.2.2)
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S4,S5,S7,S8,S11,S12, AUX S1,AUX S2,AUX S4,AUX S5
PHASES USED.....1,2,4,5,6,8,8PED
OVERLAP A.....*
OVERLAP B.....*
OVERLAP C.....*
OVERLAP D.....*
OVERLAP E.....NOT USED
OVERLAP F.....NOT USED
OVERLAP G.....*

* SEE SHEET 2 FOR OVERLAP PROGRAMMING

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	OLG	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11 ★	21,22	NU	83 ★	42,43	NU	51 ★	61,62	NU	NU	81,82	P81, P82	11 ★	83 ★	NU	51 ★	41 ★	NU
RED		128			101			134			107			A124				
YELLOW	*	129		*	102		*	135			108							
GREEN		130			103			136			109							
RED ARROW													A121			A114	A101	
YELLOW ARROW													A122	A125		A115	A102	
FLASHING YELLOW ARROW													A123	A126		A116	A103	
GREEN ARROW	127			118			133											
✋												110						
🚶												112						

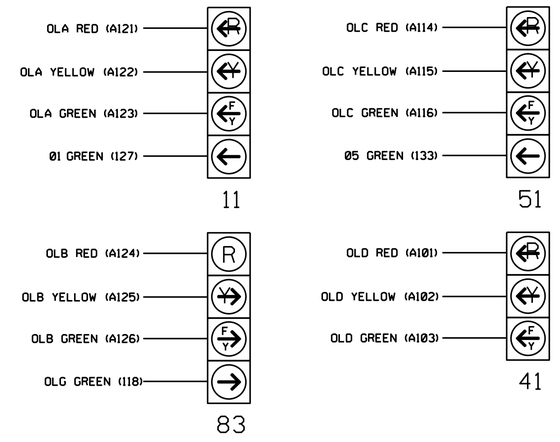
NU = Not Used

* Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail below.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	ø1 1A	ø2 2A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	ø4 4A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	NOT USED	FS DC ISOLATOR
	L	NOT USED	ø2 2B				ø4 4B							ø8 PED DC ISOLATOR	ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	ø5 5A	ø6 6A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	ø8 8A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L		NOT USED	ø6 6B				ø1 1B							

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	DELAY TIME	EXTEND (STRETCH) TIME
1A	TB2-1,2	I1U	56	1	1	5	
1B	TB7-3,4	J7L	79	34	1	15	
2A	TB2-5,6	I2U	39	3	2		
2B	TB2-7,8	I2L	43	4	2		
4A	TB4-9,10	I6U	41	11	4	3	
4B	TB4-11,12	I6L	45	12	4	10	
5A	TB3-5,6	J2U	40	21	5	5	
6A	TB3-9,10	J3U	64	23	6		
6B	TB3-11,12	J3L	77	24	6		
8A	TB7-1,2	J7U	66	33	8	3	
PED PUSH BUTTONS							
P81,P82	TB8-8,9	I13L	70	PED 8	8 PED		

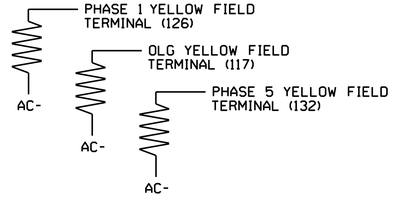
NOTE:
INSTALL DC ISOLATOR IN INPUT FILE SLOT 113.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-0920
DESIGNED: January 2026
SEALED: 1/6/2026
REVISED: N/A

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
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P: 919-829-0328

Electrical Detail - Sheet 1 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

750 N.Greenfield Pkwy,Garner,NC 27529

SR 1453 (12th Ave NE)
at
22nd St NE / Private Drive
Division 12 Catawba County Hickory

PLAN DATE:	January 2026	REVIEWED BY:	G. Pierro
PREPARED BY:	J. Ma	REVIEWED BY:	L. Britt

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma 1/6/2026
827E1963081444F... DATE

SIG. INVENTORY NO. 12-0920

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig.3.2

OVERLAP PROGRAMING DETAIL

1. From Main Menu select [4 - UNIT DATA]
2. From UNIT DATA Submenu select [3 - OVERLAP DATA]

Use Up/Dn/Left/Right keys to position cursor on the desired Overlap.
Use the NEXT key to select the overlap type.
Press the ENT key and then program as per the Overlap screen(s) shown.

```
OVERLAP DATA

   A: FYA   E: ---   I: ---   M: ---
   B: FYA   F: ---   J: ---   N: ---
   C: FYA   G: STD   K: ---   O: ---
   D: FYA   H: ---   L: ---   P: ---

 PREV/NEXT TO CYCLE
```

↓

OVERLAP A

Use Up/Dn/Left/Right keys to position cursor on Overlap 'A', use the NEXT key to select 'FYA', then press ENT

```
FYA OVERLAP - A                MIN PERM: 1
       PHASES..12345678 90123456
  PROT PHASES: 10000000 00000000 DELAY/10
  PERM PHASES: 01000000 00000000   FYA: 0
  -PED PHASES: 00000000 00000000 -PED: 30
     OVERLAPS..ABCDEFGH IJKLMNOP
PROT OVERLAPS: x0000000 00000000
PERM OVERLAPS: x0000000 00000000
```

← NOTICE FYA = 0

Press ESC

↓

OVERLAP B

Use Up/Dn/Left/Right keys to position cursor on Overlap 'B', use the NEXT key to select 'FYA', then press ENT

```
FYA OVERLAP - B                MIN PERM: 1
       PHASES..12345678 90123456
  PROT PHASES: 00000000 00000000 DELAY/10
  PERM PHASES: 00000001 00000000   FYA: 0
  -PED PHASES: 00000000 00000000 -PED: 30
     OVERLAPS..ABCDEFGH IJKLMNOP
PROT OVERLAPS: 0x000010 00000000
PERM OVERLAPS: 0x000000 00000000
```

← NOTICE FYA = 0

Press ESC

↓

OVERLAP C

Use Up/Dn/Left/Right keys to position cursor on Overlap 'C', use the NEXT key to select 'FYA', then press ENT

```
FYA OVERLAP - C                MIN PERM: 1
       PHASES..12345678 90123456
  PROT PHASES: 00001000 00000000 DELAY/10
  PERM PHASES: 00000100 00000000   FYA: 0
  -PED PHASES: 00000000 00000000 -PED: 30
     OVERLAPS..ABCDEFGH IJKLMNOP
PROT OVERLAPS: 00x00000 00000000
PERM OVERLAPS: 00x00000 00000000
```

← NOTICE FYA = 0

Press ESC

↓

OVERLAP D

Use Up/Dn/Left/Right keys to position cursor on Overlap 'D', use the NEXT key to select 'FYA', then press ENT

```
FYA OVERLAP - D                MIN PERM: 1
       PHASES..12345678 90123456
  PROT PHASES: 00100010 00000000 DELAY/10
  PERM PHASES: 00010001 00000000   FYA: 0
  -PED PHASES: 00000000 00000000 -PED: 30
     OVERLAPS..ABCDEFGH IJKLMNOP
PROT OVERLAPS: 00000000 00000000
PERM OVERLAPS: 000x0000 00000000
```

← NOTICE FYA = 0

Press ESC

↓

OVERLAP G

Use Up/Dn/Left/Right keys to position cursor on Overlap 'G', use the NEXT key to select 'STD', then press ENT

```
OVERLAP - G       12345678 90123456
          PARENTS: 10000000 00000000
      +GRN PHASES: 00000000 00000000
      -G/Y PHASES: 00000000 00000000
      -PED PHASES: 00000000 00000000
 TRAIL GREEN STANDARD:   0  YEL/10:  0
 TRAIL GREEN  PREEMPT:   0  RED/10:  0
```

END OVERLAP PROGRAMMING

LOAD SWITCH MAPPING DETAIL

1. From Main Menu select [4 - UNIT DATA]
2. From UNIT DATA Submenu select [9 - OUTPUT MAPPING]

USE ENTER AND NEXT KEYS
TO MAP 'LDSW 4' AS 'OLG'.

```
OUTPUT MAPPING              EDIT MODE: LDSW
                                E-TOGGLE MODE
LDSW ..1.. ..2.. ..3.. ..4.. ..5.. ..6..
RED  PH1   PH2   PD2   [OLG]  PH4   PD4
YEL   -     -     -     -     -     -
GRN   -     -     -     -     -     -
FIO   1     2     3     4     5     6
PREV/NEXT TO CYCLE        D-DISPLAY COMPAT
```

LOAD SWITCH MAPPING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-0920
DESIGNED: January 2026
SEALED: 1/6/2026
REVISED: N/A

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P: 919-829-0328

Electrical Detail - Sheet 2 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

NC Department of Transportation — Traffic Engineering Branch — Traffic Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1453 (12th Ave NE)
at
22nd St NE / Private Drive
Division 12 Catawba County Hickory

PLAN DATE:	January 2026	REVIEWED BY:	G. Pierro
PREPARED BY:	J. Ma	REVIEWED BY:	L. Britt

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma 1/6/2026
827E1953081444F DATE

SIG. INVENTORY NO. 12-0920

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig 3.3

ACCESSIBLE PEDESTRIAN SIGNAL (APS) INSTALLATION NOTES

1. Install push buttons and APS equipment per manufacturer's instructions.
2. Provide a dedicated cable to each push button per manufacturer's instructions.
3. If APS equipment is mounted in cabinet, use filtered power (i.e., Controller Receptacle) to power APS equipment. Do not use Equipment Receptacle, which is a GFCI outlet.
4. Never attempt to operate a standard contact closure push button with the APS system unless cabinet is re-wired for standard button operation or unless explicitly allowed by the manufacturer.
5. Place manufacturer's instructions in cabinet with cabinet prints, signal plans, and electrical details.
6. An APS push button station that is designed to work without the need for interfacing with a pedestrian signal head shall be installed for applications where a push button is installed in a median without a pedestrian signal head.
7. A push button with a single tactile arrow that point in both directions of travel shall be installed if the median separates two parallel crosswalks.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

INIT & N.A. RESP PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu, press '3' (Phase Data)

PHASE MENU

1-VEHICLE DATA	6-SPEC. SEQUENCE+
2-DENSITY TIMES+	7-DETECTOR DATA
3-PEDESTRIAN DATA	8-PHASE & BANK COPY
4-INIT & N.A. RESP+	9-SELECT PHASE BANK
5-N.LOCK & MISC+	

'+' DENOTES BANKABLE DATA

PHASE	1	2	3	4	5	6	7	8
INITIAL	1	6	0	1	1	6	0	1
NA RESP	0	1	0	2	0	1	0	2
UPDT GRN	0	0	0	0	0	0	0	0

CODES	0	1	2	3	4	5	6
INIL	NONE	INACT	RED	YEL	GRN	DRK	G/DW
NA RSP	NONE	NA1	NA2	1&2	---	---	---

INIT & N.A. RESP PROGRAMMING COMPLETE

ALL RED FLASH STARTUP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS 4 (UNIT DATA)

UNIT DATA	PRESS # DESIRED
1- STARTUP & MISC	6 - ALT SEQUENCES
2- REMOTE FLASH	7- PORT 1 DATA
3- OVERLAP STANDARD	8- I/O MISC
4- OVERLAP SPECIAL	9- SIG DRV OUT
5- RING STRUCTURE	
	F- PRIOR MENU

STARTUP & MISC

STARTUP TIME . :	6 (SEC)	STATE: 2	(0-FL
RED REV/10 . . . :	40 (TSEC)		1-RED)
AUTO PED CLR . :	0 (0-NO 1-YES)		2-RAF)
STOP T RESET . :	0 (0-NO 1-YES)		
SEQUENCE . . . . . :	1 (1-19)		
SPECIAL SEQ :	0 (SEE HELP)		

A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU

STARTUP PROGRAMMING COMPLETE

ADVANCE WALK PED PROGRAMMING DETAIL

(program controller as shown below)

1. From Main Menu select 3 - PHASE DATA
2. From PHASE DATA Submenu select 3 - PEDESTRIAN DATA
3. From PEDESTRIAN DATA Submenu 3 - PED OFFSET+

PHASE	1	2	3	4	5	6	7	8
WOFF/10	0	0	0	0	0	0	0	50
MODE	0	0	0	0	0	0	0	0

CODES: * 0 - ADVANCE 1 - DELAY

ADVANCE WALK PED PROGRAMMING COMPLETE

REMOTE FLASH PROGRAMMING DETAIL

(program controller as shown below)

1. From Main Menu select 4 - UNIT DATA
2. From UNIT DATA Submenu select 2 - REMOTE FLASH
3. From FLASH Submenu select 1 - FLASH SETTINGS

FLASH SETTINGS TEST-A AS FLASH: 0

LDSW:	123456789 0123456789 0123456789 012
FLSH:	110110110 0101101100 0000000000 000
ALT:	100100010 0101100000 0000000000 000

0-DARK 1-RED 2-YELLOW 3-STEADY YELLOW

PRESS 'F' TO RETURN TO FLASH

4. From REMOTE FLASH Submenu select 2 - ENTRY/EXIT PHASES

FLASH ENTRY/EXIT PHASES

PHASES:	12345678 90123456
ENTRY:	01000100 00000000
EXIT:	01000100 00000000

REMOTE FLASH PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 12-0920
DESIGNED: January 2026
SEALED: 1/6/2026
REVISED: N/A

VHB Engineering NC, P.C. (C-3705)
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Electrical Detail - Sheet 3 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signals Management Section

750 N.Greenfield Pkwy.Garner,NC 27529

SR 1453 (12th Ave NE)
at
22nd St NE / Private Drive

Division 12	Catawba County		Hickory
PLAN DATE: January 2026		REVIEWED BY:	G. Pierro
PREPARED BY: J. Ma		REVIEWED BY:	L. Britt

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma 827E1953D81444F... 1/6/2026
DATE

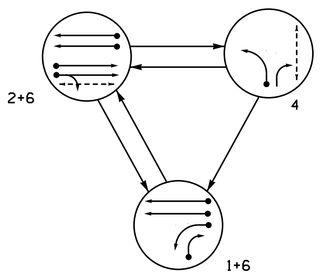
SIG. INVENTORY NO. 12-0920

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig.4.0

3 Phase
Fully Actuated
Hickory Signal System

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

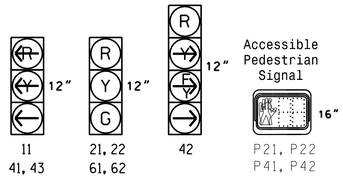
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE 1+6	PHASE 2+6	PHASE 4	FLASH
11	~~R~~	~~R~~	~~R~~	~~R~~
21,22	R	G	R	R
41,43	~~R~~	~~R~~	~~R~~	~~R~~
42	~~R~~	R	~~FY~~	R
61,62	G	G	R	R
P21, P22	DW	W	DW	DRK
P41, P42	DW	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.

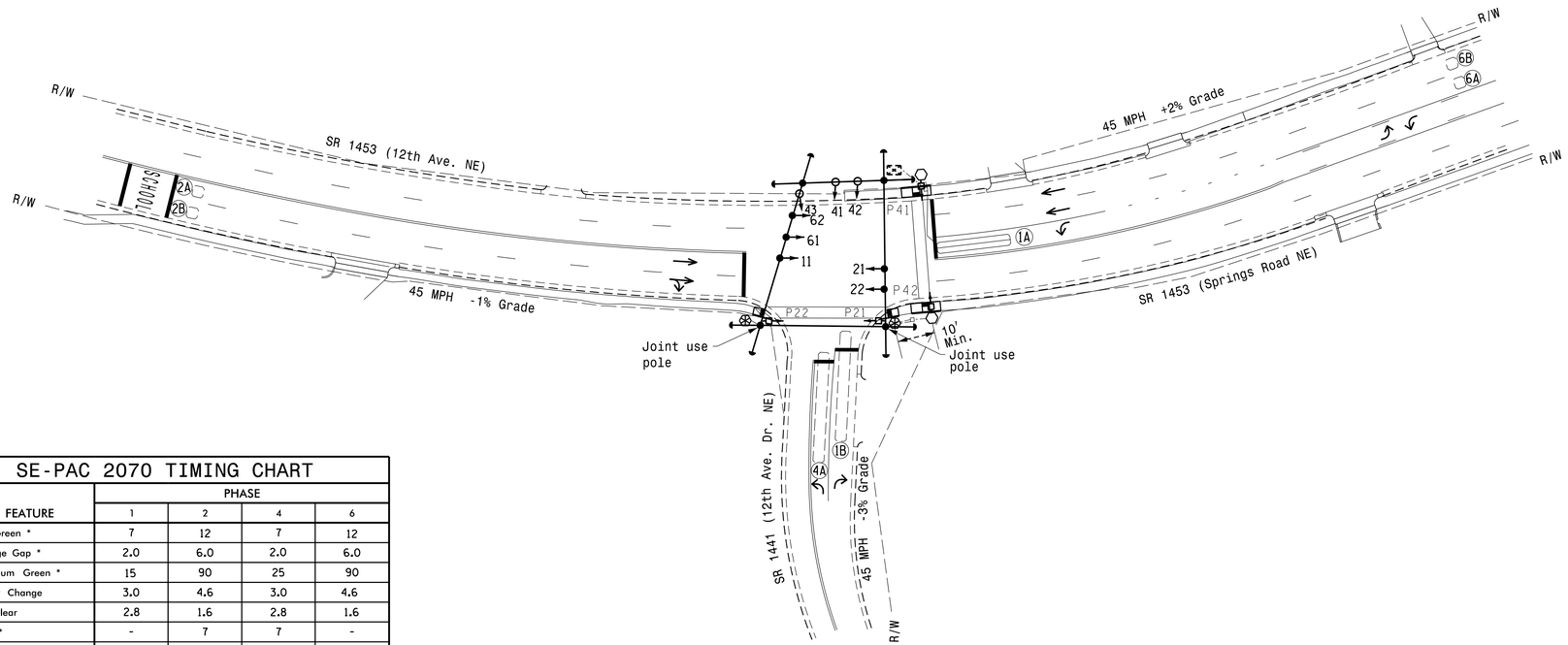


SE-PAC 2070 LOOP & DETECTOR UNIT INSTALLATION CHART

INDUCTIVE LOOPS						DETECTOR PROGRAMMING															
							TIMING		OPERATION MODE 0	1	2	3	4	5	6	7			STATUS	
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	ASSIGNED PHASE	DELAY	EXTEND (STRETCH)	VEHICLE	PEDESTRIAN	1 CALL	STOP A	STOP B	FROM/PER LEFT	FROM/PER THROUGH	AND	SWITCH	SYSTEM LOOPS	NEW	EXISTING
1A	6X40	2-4-2	0	X	-	1	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
1B	6X60	1	0	-	X	1	15.0 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
2A	6X6	5	300	-	X	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
2B	6X6	5	300	-	X	2	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
4A	6X60	1	0	-	X	4	3.0 SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
6A	6X6	5	294	-	X	6	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X
6B	6X6	5	294	-	X	6	- SEC.	- SEC.	X	-	-	-	-	-	-	-	-	-	-	X

ACCESSIBLE PEDESTRIAN SIGNAL OPERATION

SIGNAL FACE	VOICE	TONES	INTERVAL	SPEECH MESSAGE
P21	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross 12th Avenue Drive.
P22	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross 12th Avenue Drive.
P41	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Springs.
P42	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Springs.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
N/A	Curb Ramp	
	Type II Signal Pedestal	
	Type I Pushbutton Post	

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 may be lagged.
4. Set all detector units to presence mode.
5. Refer to Pavement Marking Plans for pavement markings.
6. In the event of loop replacement, refer to the current TSMO Design Manual and submit a Plan of Record to the Signal Design Section.
7. Renumber the existing loop 8A as 4A.
8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
9. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
10. This intersection features accessible pedestrian signals utilizing percussive tone walk indications.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
12. City of Hickory # 1004

SE-PAC 2070 TIMING CHART

FEATURE	PHASE 1	PHASE 2	PHASE 4	PHASE 6
Min Green *	7	12	7	12
Passage Gap *	2.0	6.0	2.0	6.0
Maximum Green *	15	90	25	90
Yellow Change	3.0	4.6	3.0	4.6
Red Clear	2.8	1.6	2.8	1.6
Walk *	-	7	7	-
Pedestrian Clear	-	16	15	-
Advance Walk	-	7	4	-
Added Initial *	-	1.5	-	1.5
Maximum Initial *	-	34	-	34
Time Before Reduction *	-	15	-	15
Time To Reduce *	-	30	-	30
Minimum Gap	-	3.0	-	3.0
Recall Mode	-	MIN RECALL	-	MIN RECALL
Vehicle Call Memory	NON-LOCK	LOCK	NON-LOCK	LOCK
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

VHB Engineering NC, P.C. (C-3705)
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Signal Upgrade

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1453 (12th Ave NE / Springs Rd NE)
at
SR 1441 (12th Ave Dr NE)

Division 12 | Catawba County | Hickory

PLAN DATE: January 2026 | REVIEWED BY: G. Pierro
PREPARED BY: J. Ma | REVIEWED BY: L. Britt

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma 827E19530814444F... 1/6/2026 DATE

SIG. INVENTORY NO. 12-0968

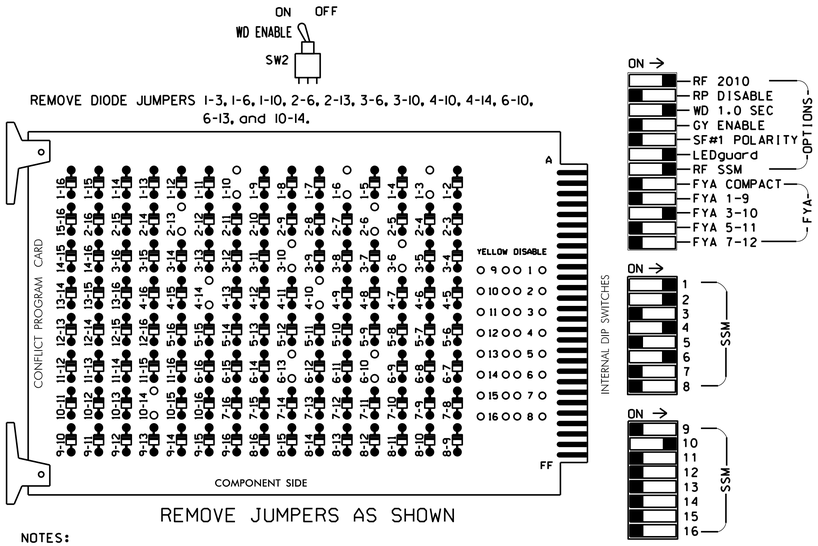
38536.53

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig 4.1

16 CHANNEL CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Make sure jumpers SEL2-SEL5 are present on the monitor board.

■ = DENOTES POSITION OF SWITCH

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program controller to start up in phases 2 and 6 Green/Don't Walk.
3. Enable simultaneous gap-out feature for all phases.
4. Program phases 2 and 6 for volume density operation.
5. The cabinet and controller are part of the Hickory Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....SE-PAC2070
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX FILE
LOAD SWITCHES USED.....S1,S2,S2P,S3,S4,S4P,S6,S10
PHASES USED.....1,2,2PED,4,4PED,6
OVERLAP A.....NOT USED
OVERLAP B.....*
OVERLAP C.....NOT USED
OVERLAP D.....NOT USED
OVERLAP E.....NOT USED
OVERLAP F.....NOT USED
OVERLAP G.....*

* SEE SHEET 2 FOR OVERLAP PROGRAMMING

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	OLG	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	21,22	P21, P22	42 ★	41,43	P41, P42	NU	61,62	NU	NU	NU	NU	NU	42 ★	NU	NU	NU	NU
RED		128						134						A124				
YELLOW		129		*				135										
GREEN		130						136										
RED ARROW	125				101													
YELLOW ARROW	126				102									A125				
FLASHING YELLOW ARROW														A126				
GREEN ARROW	127			118	103													
✋			113			104												
🚶			115			106												

NU = Not Used

* Denotes install load resistor. See load resistor installation detail below.

★ See pictorial of head wiring in detail below.

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	Ø1 1A	Ø2 2A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	Ø2 PED DC ISOLATOR	SLOT EMPTY	FS DC ISOLATOR
	L		Ø1 1B	Ø2 2B									Ø4 PED DC ISOLATOR		ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	Ø6 6A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	Ø4 4A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L		Ø6 6B				NOT USED								

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

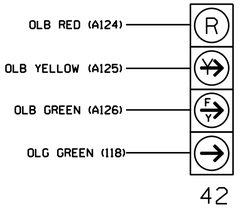
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	DELAY TIME	EXTEND (STRETCH TIME
1A	TB2-5,6	I2U	39	3	1		
1B	TB2-7,8	I2L	43	4	1	15	
2A	TB2-9,10	I3U	63	5	2		
2B	TB2-11,12	I3L	76	6	2		
4A	TB5-9,10	J6U	42	31	4	3	
6A	TB3-5,6	J2U	40	21	6		
6B	TB3-7,8	J2L	44	22	6		
PED PUSH BUTTONS							
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED		
P41,P42	TB8-5,6	I12L	69	PED 4	4 PED		

NOTE:
INSTALL DC ISOLATOR IN INPUT FILE SLOT I12.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



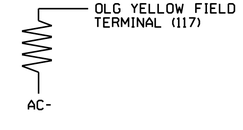
NOTE: See sheet 2 for Protected & Permitted Phases programming.

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-0968
DESIGNED: January 2026
SEALED: 1/6/2026
REVISED: N/A

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Electrical Detail - Sheet 1 of 3

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1453 (12th Ave NE / Springs Rd NE)
at
SR 1441 (12th Ave Dr NE)

Division 12 | Catawba County | Hickory

PLAN DATE:	January 2026	REVIEWED BY:	G. Pierro
PREPARED BY:	J. Ma	REVIEWED BY:	L. Britt

REVISIONS	INIT.	DATE

NCDOT Transportation Mobility and Safety Division
Traffic Engineering Branch
Traffic & Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma
827E1953081444F...
1/6/2026
DATE

SIG. INVENTORY NO. 12-0968

38536.53

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig.4.2

FLASHING YELLOW ARROW PROTECTED/PERMISSIVE SEQUENCE FOR OVERLAPS B & G

(program controller as shown below)

FROM MAIN MENU PRESS 4 (UNIT DATA)

```
SE-PAC UNIT DATA          PRESS # DESIRED

 1-STARTUP & MISC      6-ALT SEQUENCES
 2-REMOTE FLASH        7-PORT 1 DATA
 3-OVERLAP STANDARD    8-I/O MISC
 4-OVERLAP SPECIAL     9-SIG DRV OUT
 5-RING STRUCTURE

                                F-PRIOR MENU
```

DO NOT enter any OVL PHASES! →

```
SE-PAC OVERLAP - B                (0-NO/1-YES)

 OVL PHASES:  000000000 0000000
    PHS/CHN:  123456789 0123456789 01234
 OVL CHN(S):  000000000 000010000 00000


A-UP B-DN D-DspChn   E-EDIT  F-PRIOR MENU
```

PRESS "B" FIVE TIMES

```
SE-PAC OVERLAP - G                (0-NO/1-YES)

 OVL PHASES:  100000000 0000000
    PHS/CHN:  123456789 0123456789 01234
 OVL CHN(S):  001000000 000000000 00000


A-UP B-DN D-DspChn   E-EDIT  F-PRIOR MENU
```

OVERLAP PROGRAMMING COMPLETE

PRESS 'F' TO RETURN TO UNIT DATA

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

PROTECTED AND PERMISSIVE PHASES FOR FLASHING YELLOW ARROW

(program controller as shown below)

FROM MAIN MENU PRESS 4 (UNIT DATA)

```
SE-PAC UNIT DATA          PRESS # DESIRED

 1-STARTUP & MISC      6-ALT SEQUENCES
 2-REMOTE FLASH        7-PORT 1 DATA
 3-OVERLAP STANDARD    8-I/O MISC
 4-OVERLAP SPECIAL     9-SIG DRV OUT
 5-RING STRUCTURE

                                F-PRIOR MENU
```

```
SE-PAC OVLP.A...B...C...D...E...F...G...H.
   TR GRN   0   0   0   0   0   0   0   0
   YEL/10  40  40  40  40  40  40  40  40
   RED/10  20  20  20  20  20  20  20  20
PROTECTED PHASES →  -G/Y   0   1   0   0   0   0   0   0
PERMISSIVE PHASES → +GRN   0   4   0   0   0   0   0   0
(-) #-PH G/Y KILLS OVLP= (+) #-PH G STRT
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

NOTE: THIS PROGRAMMING IS REQUIRED FOR SIGNAL HEAD 42 SO THAT THE SOLID GREEN ARROW TURNS ON EXCLUSIVELY DURING PROTECTED GREEN PHASE 1. AND THE FLASHING YELLOW ARROW TURNS ON EXCLUSIVELY DURING PERMITTED GREEN PHASE 4.

PPLT DEFINITION PROGRAMMING COMPLETE

PRESS 'F' TO RETURN TO UNIT DATA

INIT & N.A. RESP PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu, press '3' (Phase Data)

```
SE-PAC PHASE DATA         PRESS # DESIRED

 1-VEHICLE TIMES       6-N.LOCK & MISC
 2-DENSITY TIMES       7-SPEC. SEQUENCE
 3-PEDEST. TIMES       8-SPEC. DETECTOR
 4-INIT & N.A. RESP    9-PHASE COPY
 5-V & P RECALLS       0-MISC PED OPTIONS

                                F-PRIOR MENU
```

Phases 3, 5, 7, & 8 NOT used! →

```
PHASE.....1...2...3...4...5...6...7...8...9
 INITIAL   1   6   0   1   0   6   0   0   0
 NA RESP   0   1   0   2   0   1   0   0   0

CODES.....0....1....2....3....4....5....6
 INITIAL  NONE INACT RED  YEL  GRN  DRK  G/DW
 NA RESP  NONE  NA1  NA2 BOTH  ---  ---  ---
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

INIT & N.A. RESP programming complete.

Electrical Detail - Sheet 2 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-0968
DESIGNED: January 2026
SEALED: 1/6/2026
REVISED: N/A

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
P: 919-829-0328

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1453 (12th Ave NE / Springs Rd NE)
at
SR 1441 (12th Ave Dr NE)

Division 12 Catawba County Hickory

PLAN DATE:	January 2026	REVIEWED BY:	G. Pierro
PREPARED BY:	J. Ma	REVIEWED BY:	L. Britt

REVISIONS	INIT.	DATE

750 N.Greenfield Pkwy,Garner,NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma 1/6/2026
DATE

SIG. INVENTORY NO. 12-0968

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	Sig 4.3

ALL RED FLASH STARTUP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS 4 (UNIT DATA)

```
EPAC UNIT DATA                PRESS # DESIRED

 1- STARTUP & MISC          6- ALT SEQUENCES
 2- REMOTE FLASH            7- PORT 1 DATA
 3- OVERLAP STANDARD        8- I/O MISC
 4- OVERLAP SPECIAL         9- SIG DRV OUT
 5- RING STRUCTURE
                                F- PRIOR MENU
```

```
EPAC STARTUP & MISC
STARTUP TIME.:  6 (SEC) STATE: 1 (0-FL
RED REV/10...: 40 (TSEC)          1-RED)
AUTO PED CLR.:  0 (0-NO  1-YES)
STOP T RESET.:  0 (0-NO  1-YES)
ALT SEQUENCE.:  0 (0-18)
I'NAT'L SEQ  :  0 (0-NO  1-YES)
A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

STARTUP PROGRAMMING COMPLETE

PRESS 'F' TO RETURN TO UNIT DATA

REMOTE FLASH PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS 4 (UNIT DATA)

```
EPAC UNIT DATA                PRESS # DESIRED

 1- STARTUP & MISC          6- ALT SEQUENCES
 2- REMOTE FLASH            7- PORT 1 DATA
 3- OVERLAP STANDARD        8- I/O MISC
 4- OVERLAP SPECIAL         9- SIG DRV OUT
 5- RING STRUCTURE
                                F- PRIOR MENU
```

```
EPAC FLASH     TST-A=FLSH: 0  (0-NO/1-YES)
 FLSH 2=Y, 3=S: 111101000 0000100000 00000
 ALT FLSH     : 101001000 0000000000 00000
      CHN/PHS: 123456789 0123456789 01234
  ENTRY PHASE: 010001000 0000000
   EXIT PHASE: 010001000 0000000
   FIELD NAME: CHN 1/LSW 1/PHS 1 V DRVR
A-UP  B-DN  C-LT  D-RT        F-PRIOR MENU
```

REMOTE FLASH PROGRAMMING COMPLETE

PRESS 'F' TO RETURN TO UNIT DATA

ACCESSIBLE PEDESTRIAN SIGNAL (APS) INSTALLATION NOTES

1. Install push buttons and APS equipment per manufacturer's instructions.
2. Provide a dedicated cable to each push button per manufacturer's instructions.
3. If APS equipment is mounted in cabinet, use filtered power (i.e., Controller Receptacle) to power APS equipment. Do not use Equipment Receptacle, which is a GFCI outlet.
4. Never attempt to operate a standard contact closure push button with the APS system unless cabinet is re-wired for standard button operation or unless explicitly allowed by the manufacturer.
5. Place manufacturer's instructions in cabinet with cabinet prints, signal plans, and electrical details.
6. An APS push button station that is designed to work without the need for interfacing with a pedestrian signal head shall be installed for applications where a push button is installed in a median without a pedestrian signal head.
7. A push button with a single tactile arrow that point in both directions of travel shall be installed if the median separates two parallel crosswalks.

ADVANCE WALK PED PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu, press '3' (Phase Data)

```
SE-PAC PHASE DATA          PRESS # DESIRED

 1-VEHICLE TIMES          6-N.LOCK & MISC
 2-DENSITY TIMES          7-SPEC. SEQUENCE
 3-PEDEST. TIMES          8-SPEC. DETECTOR
 4-INIT & N.A. RESP       9-PHASE COPY
 5-V & P RECALLS          0-MISC PED OPTIONS
                                F-PRIOR MENU
```

```
PHASE......1...2...3...4...5...6...7...8
 WOFF/10   0  70   0  40   0   0   0   0
 MODE      0   0   0   0   0   0   0   0
WOFF MODE: 0-ADVANCE WALK  1-DELAY WALK



A-UP B-DN C-LT D-RT E-ENTER F-PRIOR MENU
```

Advance Walk PED programming complete.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 12-0968
DESIGNED: January 2026
SEALED: 1/6/2026
REVISED: N/A

Electrical Detail - Sheet 3 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

SR 1453 (12th Ave NE / Springs Rd NE)
at
SR 1441 (12th Ave Dr NE)

Division 12 | Catawba County | Hickory

PLAN DATE:	January 2026	REVIEWED BY:	G. Pierro
PREPARED BY:	J. Ma	REVIEWED BY:	L. Britt

REVISIONS	INIT.	DATE

750 N. Greenfield Pkwy, Garner, NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

DocuSigned by: Jianxin Ma 1/6/2026
B2FE1953381444F... DATE

SIG. INVENTORY NO. 12-0968

38536.53

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

TIP PROJECT: BL–0066

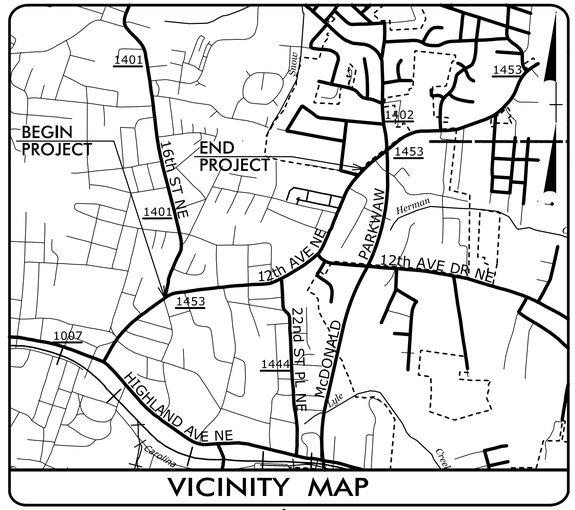
T.I.P. NO.	SHEET NO.
BL–0066	UC–1

CITY OF HICKORY

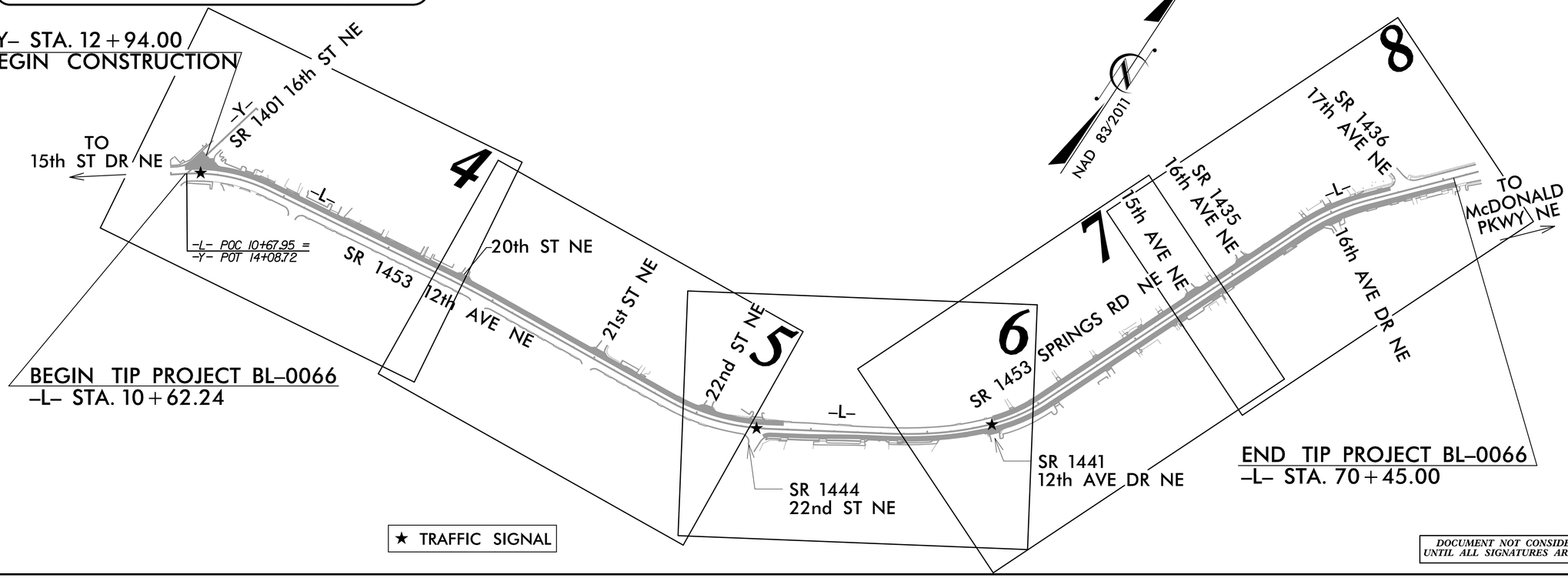
UTILITY CONSTRUCTION PLANS
CATAWBA COUNTY

LOCATION: SIDEWALKS ALONG BOTH SIDES OF SR 1453 (12th AVE. NE/SPRINGS RD NE) BETWEEN SR 1401 (16th ST NE/SANDY RIDGE RD) AND MCDONALD PARKWAY NE

TYPE OF WORK: RELOCATION OF WATER METERS AND FIRE HYDRANTS



VICINITY MAP



DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC–1	TITLE SHEET
UC–2	UTILITY SYMBOLOGY
UC–3	NOTES
UC–3A	DETAILS
UC–4 THRU UC–8	UTILITY CONSTRUCTION SHEET

WATER AND SEWER OWNERS ON PROJECT

(A) CITY OF HICKORY

PREPARED IN THE OFFICE OF

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

CHAD HOUSER PE, PLS UTILITIES DESIGN ENGINEER

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 30499 ENGINEER Bobby Chad Houser BOBBY C. HOUSER

4/17/2026

CITY OF HICKORY

76 North Center St
Hickory, NC 28601
PHONE (919) 707–6690
FAX (919) 250–4151

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	UC-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

- Water Line (Sized as Shown) — 12" WL
- 11¼ Degree Bend
- 22½ Degree Bend
- 45 Degree Bend
- 90 Degree Bend
- Plug
- Tee
- Cross
- Reducer
- Gate Valve — GV
- Butterfly Valve — BV
- Tapping Valve — TGV
- Line Stop — LS
- Line Stop with Bypass — LS/BP
- Blow Off — BO
- Fire Hydrant — PFH
- Relocate Fire Hydrant — RFH
- Remove Fire Hydrant — REM FH
- Water Meter — PWM
- Relocate Water Meter — RWM
- Remove Water Meter — REM WM
- Water Pump Station — PS(W)
- RPZ Backflow Preventer — PRPZ
- DCV Backflow Preventer — PBFP
- Relocate RPZ Backflow Preventer — RRPZ
- Relocate DCV Backflow Preventer — RBFP

PROPOSED SEWER SYMBOLS

- Gravity Sewer Line (Sized as Shown) — 12" SS
- Force Main Sewer Line (Sized as Shown) — 12" FSS
- Manhole (Sized per Note)
- Sewer Pump Station — PS(SS)

REV: 2/1/2012

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Telephone Pedestal — TEL PED
- Utility Line by Others (Type as Shown) — PROP O/H POW LINES
- Trenchless Installation — 12" TL INSTALL
- Encasement by Open Cut — 24" ENCAS BY OC
- Encasement — 24" ENCASEMENT
- Thrust Block
- Air Release Valve — AR
- Utility Vault — UV
- Concrete Pier — CP
- Steel Pier — SP
- Plan Note — NOTE
- Pay Item Note — PAY ITEM

EXISTING UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Utility Pole
- Utility Pole with Base
- H-Frame Pole
- Power Transmission Line Tower
- Water Manhole
- Power Manhole
- Telephone Manhole
- Sanitary Sewer Manhole
- Hand Hole for Cable
- Power Transformer
- Telephone Pedestal
- CATV Pedestal
- Gas Valve
- Gas Meter
- Located Miscellaneous Utility Object
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.
- *Underground Power Line
- *Underground Telephone Cable
- *Underground Telephone Conduit
- *Underground Fiber Optics Telephone Cable
- *Underground TV Cable
- *Underground Fiber Optics TV Cable
- *Underground Gas Pipeline
- Aboveground Gas Pipeline — A/G Gas
- *Underground Water Line
- Aboveground Water Line — A/G Water
- *Underground Gravity Sanitary Sewer Line — SS
- Aboveground Gravity Sanitary Sewer Line — A/G Sanitary Sewer
- *Underground SS Forced Main Line
- Underground Unknown Utility Line
- SUE Test Hole
- Water Meter
- Water Valve
- Fire Hydrant
- Sanitary Sewer Cleanout

*For Existing Utilities

- Utility Line Drawn from Record (Type as Shown)
- Designated Utility Line (Type as Shown)

4/17/2026
Scale: 1:1
PLOTTED BY
I:\Projects\0066 - Spring Creek Road\Utilities\Engineering\UC\Proj\BL-0066_Ut_sym_UC2_psh.dgn

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

5/14/99

UTILITY CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	UC-3
DESIGNED BY: BCH	
DRAWN BY: ADC	
CHECKED BY:	
APPROVED BY:	
REVISED:	
CITY OF HICKORY	

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER BOBBY C HOUNSER 4/17/2026

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE THE CITY OF HICKORY ENGINEERING DEPARTMENT MANUAL OF PRACTICE

2. THE EXISTING UTILITIES BELONG TO THE CITY OF HICKORY.

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE OWNER.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE OWNER.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

1. CONTRACTOR SHALL NOT OPERATE ANY VALVES ON THE EXISTING UTILITY SYSTEMS. CONTRACTOR SHALL CONTACT THE UTILITY OWNER TO CONDUCT STRATEGIC OPERATION OF VALVES FOR SERVICE INTERRUPTION IN ORDER TO PERFORM SPECIFIC WORK.

2. ALL MATERIALS, EQUIPMENT, LABOR, AND WORKSMANSHIP SHALL BE IN ACCORDANCE WITH CITY OF HICKORY STANDARDS AND NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR PROPOSED WATER LINES. IN THE EVENT OF CONFLICT BETWEEN STANDARDS, THE MORE RESTRICTIVE REQUIREMENTS SHALL APPLY.

3. UTILITY OWNER MUST BE PRESENT FOR ANY TESTING OR CONNECTIONS TO THE EXISTING SYSTEM INCLUDING BUT NOT LIMITED TO ALL TAPS AND TEMPORARY CONSTRUCTION CONNECTIONS. A NOTICE OF 72 HOURS MUST BE PROVIDED.

4. IF IT IS DETERMINED THAT ADJUSTING AN EXISTING MANHOLE SHALL CAUSE SIGNIFICANT DAMAGE OR THAT THE STRUCTURAL INTEGRITY OF A GIVEN MANHOLE IS IN QUESTION, THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY.

5. EXISTING WATER SERVICE LINES WHICH ARE GALVANIZED OR IN WHICH THE EXISTING SERVICE COUPLING IS BENEATH THE PROPOSED EDGE OF PAVEMENT SHALL BE INSTALLED FROM THE WATER MAIN TO THE METER.

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	UC-3A
DESIGNED BY: BCH	
DRAWN BY: ADC	
CHECKED BY:	
APPROVED BY:	
REVISED:	
CITY OF HICKORY	

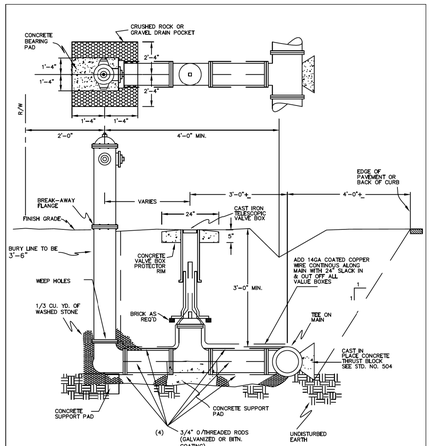
NORTH CAROLINA PROFESSIONAL SEAL Bobby C Housser ENGINEER BOBBY C HOUSSER 4/7/2026

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT TYPICAL DETAILS

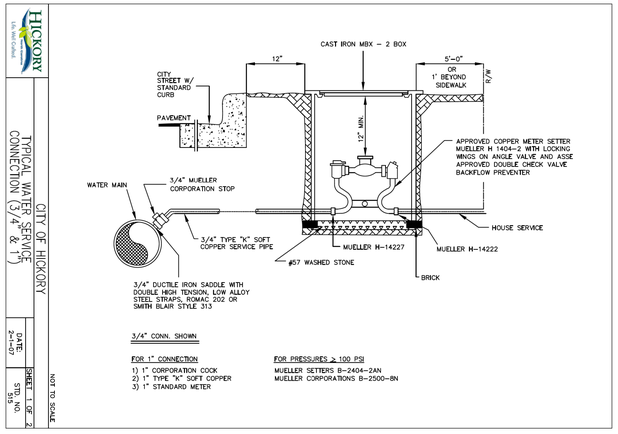


SECTION

NOTES: FIRE HYDRANTS SHALL BE ONE OF THE FOLLOWING THREE TYPES WITH THE 4 1/2" PUMPER NOZZLES BEING NATIONAL STANDARD PIPE THREADS AND 2 (TWO) 2 1/2" HOSE NOZZLES BEING NATIONAL STANDARD THREADS.
A) CENTURION, MANUFACTURED BY MUELLER COMPANY
B) SUPER CENTURION, MANUFACTURED BY MUELLER COMPANY
C) MARK-73 TRAFFIC MODEL, MANUFACTURED BY AMERICAN CAST IRON PIPE COMPANY

NOT TO SCALE

HICKORY	CITY OF HICKORY		
Life. Well Crafted.	FIRE HYDRANT INSTALLATION DETAIL	DATE: 2-1-07	SHEET 1 OF 1 STD. NO. 503



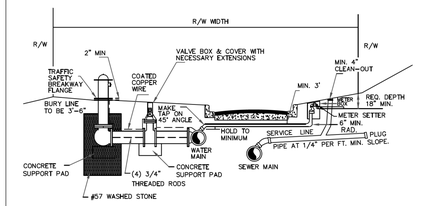
3/4" CONN. SHOWN

FOR 1" CONNECTION
1) 1" CORPORATION COCK
2) 1" TYPE "K" SOFT COPPER
3) 1" STANDARD METER

FOR PRESSURES ≥ 100 PSI
MUELLER SETTERS B-2404-2AN
MUELLER CORPORATIONS B-2500-8N

HICKORY	CITY OF HICKORY		
Life. Well Crafted.	TYPICAL WATER SERVICE CONNECTION (3/4" & 1")	DATE: 2-1-07	SHEET 1 OF 2 STD NO 515

NOT TO SCALE



NOTE:
1. ADD 14GA COATED COPPER WIRE CONTINOUS ALONG MAIN WITH 24" SLACK IN & OUT OFF ALL VALVE BOXES

NOT TO SCALE

HICKORY	CITY OF HICKORY		
Life. Well Crafted.	TYPICAL RESIDENTIAL CONNECTION AND HYDRANT SETTING DETAIL	DATE: 2-1-07	SHEET 1 OF 1 STD. NO. 502

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	UC-4

DESIGNED BY:	BCH
DRAWN BY:	ADC
CHECKED BY:	
APPROVED BY:	
REVISED:	
CITY OF HICKORY	

NORTH CAROLINA PROFESSIONAL SEAL 30499 ENGINEER BOBBY C HOUSER — Bobby Chad Houser — 4/17/2026

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

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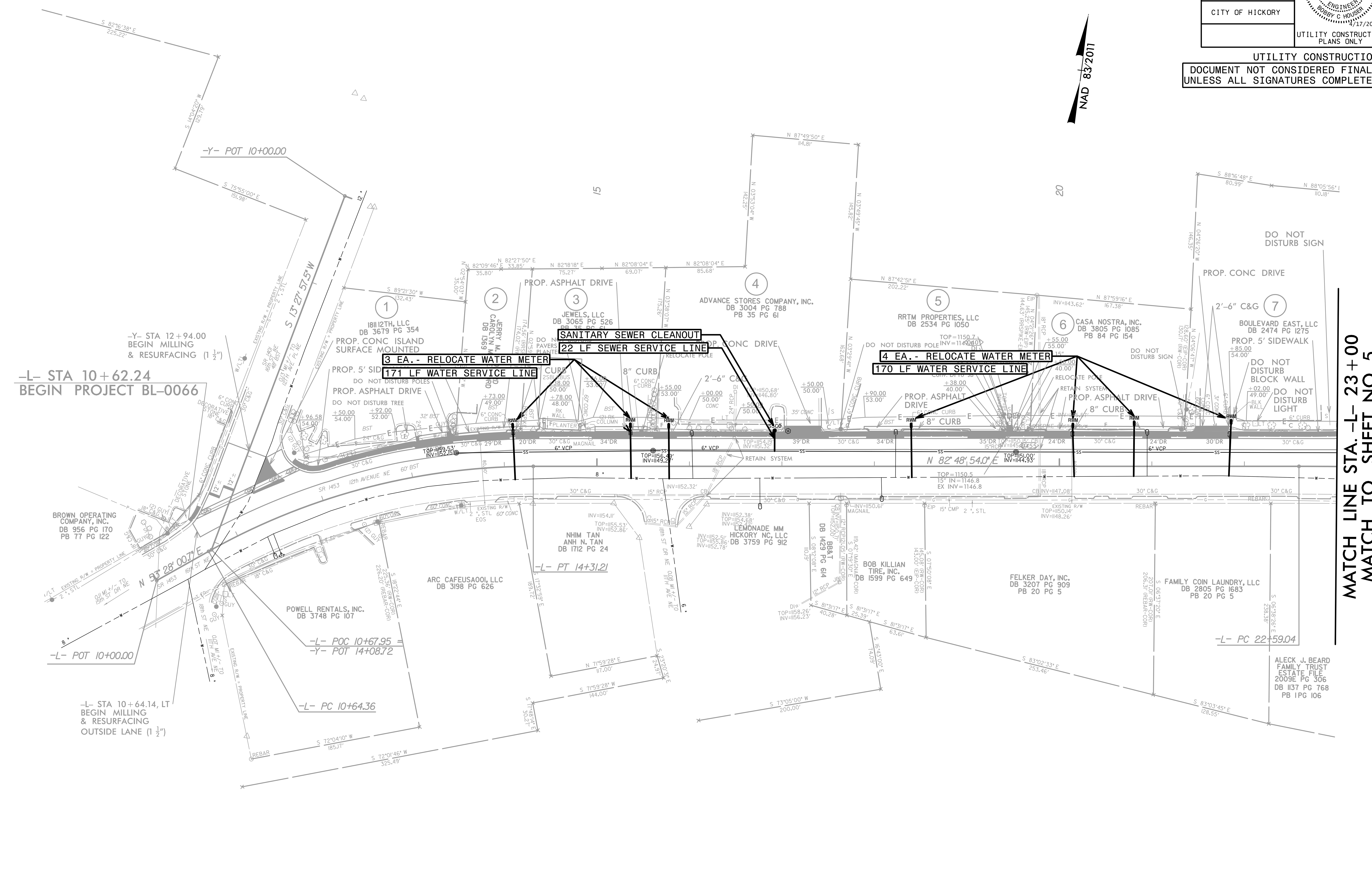

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	UC-5
DESIGNED BY: BCH	
DRAWN BY: ADC	
CHECKED BY:	
APPROVED BY:	
REVISED:	
CITY OF HICKORY	

NORTH CAROLINA PROFESSIONAL SEAL 30499 ENGINEER BOBBY C HOUSER
1/17/2026

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

MATCH LINE STA. -L- 23+00
MATCH TO SHEET NO. 4

MATCH LINE STA. -L- 36+00
MATCH TO SHEET NO. 6

-L- PT 25+25.30

-L- PC 33+65.05

4 EA.- RELOCATE WATER METER
215 LF WATER SERVICE LINE

PROP. 5' SIDEWALK
PROP. CONC DRIVE
RETAIN SYSTEM
DO NOT DISTURB POLE
DO NOT DISTURB LIGHT POLE
DO NOT DISTURB FENCE
~100' OF FENCE TO BE RELOCATED (BY OWNER)
RELOCATE POLE (BY OTHERS)
DO NOT DISTURB SIGN
MONITORING WELL
60" BLK ALUM
8' CURB
BLK WALL
EXISTING R/W
SR 1453 12th AVENUE NE 60' BST
N 86°00'36.5" E
30" C&G
20'DR
2 ", STL
EOS
SOUNDING

8 LUTHERAN HOME HICKORY PROPERTY, INC.
DB 3951 PG 217

9 RRTM PROPERTIES, LLC
DB 3831PG 1336
PB 1PG 19

10 ASE INVESTMENTS, LLC
DB 3373 PG 1762
PB 1PG 19

11 PEH PROPERTIES, LLC
DB 3642 PG 1119
DB 3652 PG 1049
PB 1PG 77
PB 1PG 19

ALECK J. BEARD FAMILY TRUST ESTATE FILE 2009E PG 306
DB 1137 PG 768
PB 1PG 106

MCKINNEY COMMERCIAL RENTALS, LLC
DB 3621PG 245
PB 1PG 106

JORDAN R. BINGHAM
DB 3785 PG 1858
PB 1PG 106

JAVIER MORA
MARIA D. MORA
DB 2975 PG 388
PB 1PG 106

PETER ANTINARELLI
DB 3708 PG 1973

BRADFORD N. COOK
JEFFREY M. COOK
DB 2943 PG 1127
PB 19 PG 191

JET KLEEN, LLC
DB 2278 PG 126

HICKORY PROPERTY, INC.
DB 2999 PG 994

WESLEY E. STARNES
DB 2013 PG 1087

MEMBERS CREDIT UNION
DB 2827 PG 887

COOK OUT-HICKORY, INC.
DB 3685 PG 940
PB 2 PG 28

S 86°01'18" W 200.12'
N 86°01'18" E 99.88'
N 86°01'18" E 99.09'
S 02°31'54" W 147.30'
N 86°16'54" E 100.00'
N 02°31'54" E 377.32' (REP-COR) 377.34' (RW-COR)
N 02°31'54" E 377.34' (REBAR-COR) 377.32' (RW-COR)
S 85°43'26" E 225.00'
S 85°43'56" W 59.00'
N 85°43'56" E 75.00'
N 85°43'56" E 75.00'
S 04°16'04" E 136.30'
S 04°16'04" E 135.59' (REP-COR) 135.59' (RW-COR)
S 04°16'04" E 41.48'
N 86°10'04" E 100.18'
S 04°26'36" E 149.52'
S 04°26'36" E 28.17'
N 86°10'04" E 199.90'
S 83°55'57" W 100.09'
N 83°58'18" E 75.00'
S 03°45'44" E 154.03'
S 03°58'33" E 154.26' (RW-EIP) 154.24' (EIP-EIP)
S 03°30'52" E 271.77'
S 03°30'52" E 127.18'
S 04°19'05" E 287.53'
N 85°33'59" E 100.00'
N 85°33'59" E 239.01'
N 85°33'59" E 250.00'

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	UC-6
DESIGNED BY: BCH	
DRAWN BY: ADC	
CHECKED BY:	
APPROVED BY:	
REVISED:	
CITY OF HICKORY	

NORTH CAROLINA PROFESSIONAL SEAL 30499 ENGINEER Bobby Chad Housel BOBBY C HOUSEL
4/17/2026

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

MATCH LINE STA. -L- 36+00 MATCH TO SHEET NO. 5

MATCH LINE STA. -L- 47+00 MATCH TO SHEET NO. 7

S 85°51'11" W 200.08'

40

12 HAMPTON 570, INC. DB 3729 PG 493

-L- PT 38+16.16

N 15°39'17" W 286.62' (286.62' RAW COM)

13 ST. STEPHEN'S LUTHERAN CHURCH, ELCA, HICKORY, NC DB 3815 PG 863

-L- PC 43+32.84

N 27°03'39" W 42.17'

45

N 67°26'15" W 405.51'

ST. STEPHENS LUTHERAN CHURCH, MISSOURI SYNOD OF HICKORY DB 416 PG 417

-L- PCC 45+34.97

MILLERS LUTHERAN CHURCH DB 611 PG 512

PROP. ASPHALT DRIVE

PROP. 5' SIDEWALK

DO NOT DISTURB POLE ±00.00 48.00'

DO NOT DISTURB TREE

±28.00 51.00'

±43.00 58.00'

±00.00 50.00'

±88.00 58.00'

DO NOT DISTURB TREE

DO NOT DISTURB POLE

-L- 38+80.45 END SIDEWALK, LT

±90.00 48.00'

±90.00 40.00'

-L- STA 38+80.45, LT END MILLING & RESURFACING OUTSIDE LANE (1 1/2")

SEE DETAIL A

EXISTING R/W

30' C&G

58' DR

12th AVE, NE 60' BST

TOP=1144.72' INV=1142.18'

TAPERS TO 34'

TAPERS TO 29'

TAPERS TO 27'

TAPERS TO 28'

TAPERS TO 30'

N 58°56'43.1" E

RETAIN SYSTEM

-L- STA 37+99.04, RT BEGIN MILLING & RESURFACING OUTSIDE LANE (1 1/2")

COOK OUT-HICKORY, INC. DB 3685 PG 940 PB 2 PG 28

SR 1444 22nd ST NE

18" RCP

24" RCP

INV=1147.93' INV=1143.43'

INV=1141.86' INV=1140.36'

29"DR

16"DR

36"DR

W/L TO 36" BOX

8" CURB

PROP. 5' SIDEWALK

PROP. ASPHALT DRIVE

PROP. 4' SIDEWALK

DO NOT DISTURB POLES

DO NOT DISTURB POLE

DO NOT DISTURB LIGHTS

DO NOT DISTURB SIGN

DO NOT DISTURB LIGHT

DO NOT DISTURB CEMETERY

DO NOT DISTURB TREES

CEMETERY

1 EA.- RELOCATE WATER METER

37 LF WATER SERVICE LINE

1 EA.- RELOCATE WATER METER

34 LF WATER SERVICE LINE

1 EA. RELOCATE FIRE HYDRANT

30 LF FIRE HYDRANT LEG

1 EA. 6" VALVE

14 COOK'S CORNER PROPERTIES, LLC DB 2990 PG 1084 PB 21PG 283

-L- 38+07.85 BEGIN SIDEWALK, RT

15 MILLERS LUTHERAN CHURCH DB 1126 PG 678 DB 835 PG 10

16 ST. STEPHEN'S EVANGELICAL LUTHERAN CHURCH (NO DEED FOUND)

S 84°10'02" W 145.37'

N 83°52'08" E 28.08'

S 62°15'52" E 15.63'

N 56°13'14" E 188.09'

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	UC-7
DESIGNED BY: BCH	
DRAWN BY: ADC	
CHECKED BY:	
APPROVED BY:	
REVISED:	
CITY OF HICKORY	

NORTH CAROLINA PROFESSIONAL SEAL 30499 ENGINEER BOBBY C HOUSER
4/17/2026

UTILITY CONSTRUCTION PLANS ONLY

NAD 83/2011

UTILITY CONSTRUCTION

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MATCH LINE STA. -L- 47+00
MATCH TO SHEET NO. 6

-L- STA 47+92.25, LT
BEGIN MILLING & RESURFACING OUTSIDE LANE (1 1/2")

-L- 47+92.25
BEGIN SIDEWALK, LT

-L- PCC 47+94.26

-L- PT 50+25.65

17 ST. STEPHENS LUTHERAN CHURCH OF MISSOURI SYNOD DB 416 PG 417

19 EVERETTE A. HOUSTON
MARTHA M. HOUSTON
DB 3483 PG 1516
DB 2232 PG 134
DB 1385 PG 61
DB 2078 PG 1922

20 JESSE G. WATERS REVOCABLE TRUST
DB 3884 PG 1596

LINN R. GARDNER
CYNTHIA W. GARDNER
DB 2746 PG 823

23 H5 RENTALS, LLC
DB 3982 PG 1364
PB 89 PG 178

22 STEADFAST HOLDINGS, INC.
DB 3537 PG 1337

24 ST. STEPHENS LUTHERAN CHURCH MISSOURI SYNOD OF HICKORY, NC, INC.
DB 2820 PG 1481
DB 2997 PG 1867
PB 65 PG 95
PB 68 PG 180

25 DHRUVKUMAR K. PATEL
DB 3625 PG 914

CITY OF HICKORY
DB 1656 PG 739

ADJUST VALVE

3 EA.- RELOCATE WATER METER
190 LF WATER SERVICE LINE

2 EA.- RELOCATE WATER METER
118 LF WATER SERVICE LINE

2 EA.- RELOCATE WATER METER
115 LF WATER SERVICE LINE

PROP. ADJUST VALVE

ADJUST MANHOLE

2 EA.- RELOCATE WATER METER
58 LF WATER SERVICE LINE

PROP. 5' SIDEWALK
PROP. ASPHALT DRIVE
PROP. CONC DRIVE
PROP. 4' SIDEWALK
PROP. ASPHALT DRIVE
PROP. 5' SIDEWALK
PROP. ASPHALT DRIVE
PROP. CONC DRIVE
PROP. ASPHALT DRIVE
PROP. 5' SIDEWALK
PROP. ASPHALT DRIVE
PROP. 5' SIDEWALK

DO NOT DISTURB LANDING OR STEPS
DO NOT DISTURB POLE
DO NOT DISTURB TREES
DO NOT DISTURB BRICK PATH
DO NOT DISTURB SIGN
DO NOT DISTURB CONCRETE PATH
DO NOT DISTURB CB
DO NOT DISTURB LT POLE
DO NOT DISTURB CATCH BASIN
DO NOT DISTURB POLES
REMOVE TREES

8" CURB
BREAK CURB
RETAIN SYSTEM
REMOVE
PLUG Conv. DI To JB
1'-6" C&G
2'-0" C&G
20' DR
26' DR
30" C&G
18" C&G
15" RCP
12" RCP
18" RCP
24" RCP
EXISTING R/W
EX INV IN=1141.4
EX INV OUT=1141.2
EX 15" IN=1141.9
EX 15" OUT=1141.6

N 23°02'57.6" E

MATCH LINE STA. -L- 57+50
MATCH TO SHEET NO. 8

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PROJECT REFERENCE NO.	SHEET NO.
BL-0066	UC-8

DESIGNED BY: BCH
DRAWN BY: ADC
CHECKED BY:
APPROVED BY:
REVISED:

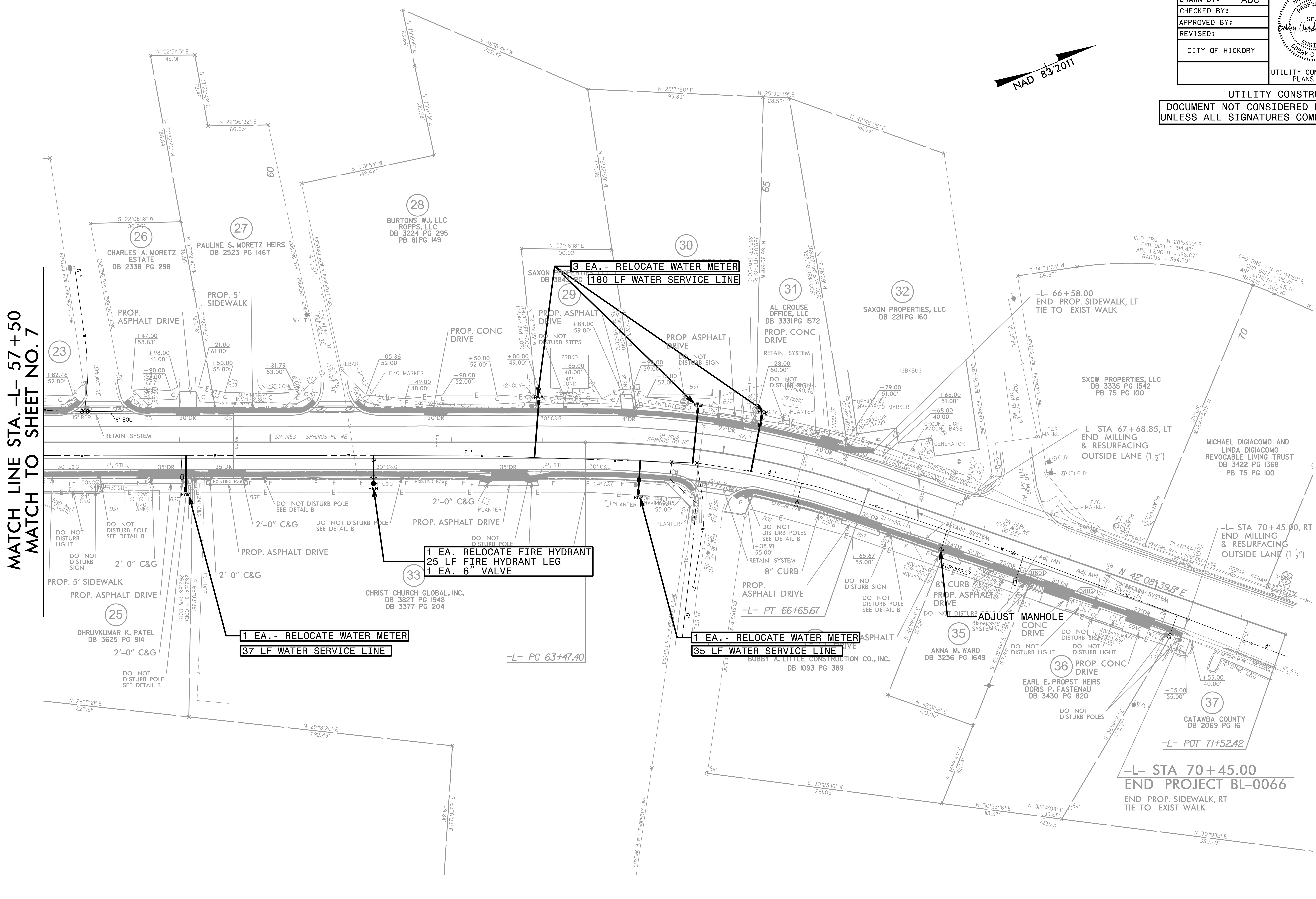
CITY OF HICKORY

NORTH CAROLINA PROFESSIONAL SEAL 030499 ENGINEER BOBBY C HOUSER
Bobby Clark Houser
4/17/2026

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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09/08/99

TIP PROJECT: BL–0066

STATE OF NORTH CAROLINA
CATAWBA COUNTY

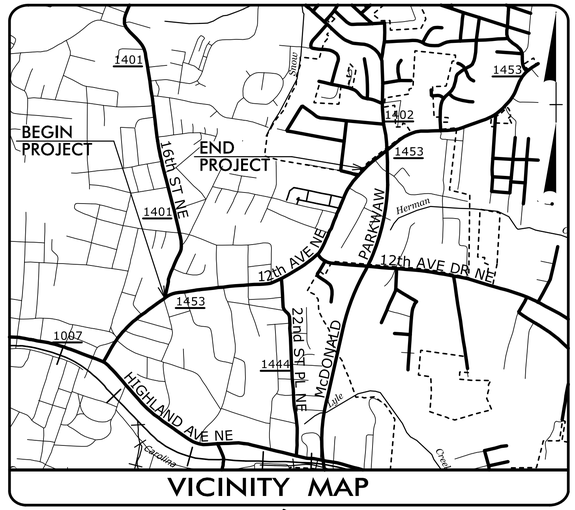
UTILITIES BY OTHERS PLANS
CITY OF HICKORY

T.I.P. NO.	SHEET NO.
BL–0066	UO–1

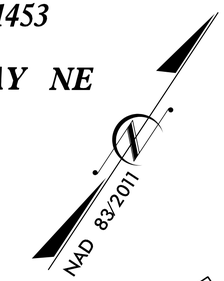
NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

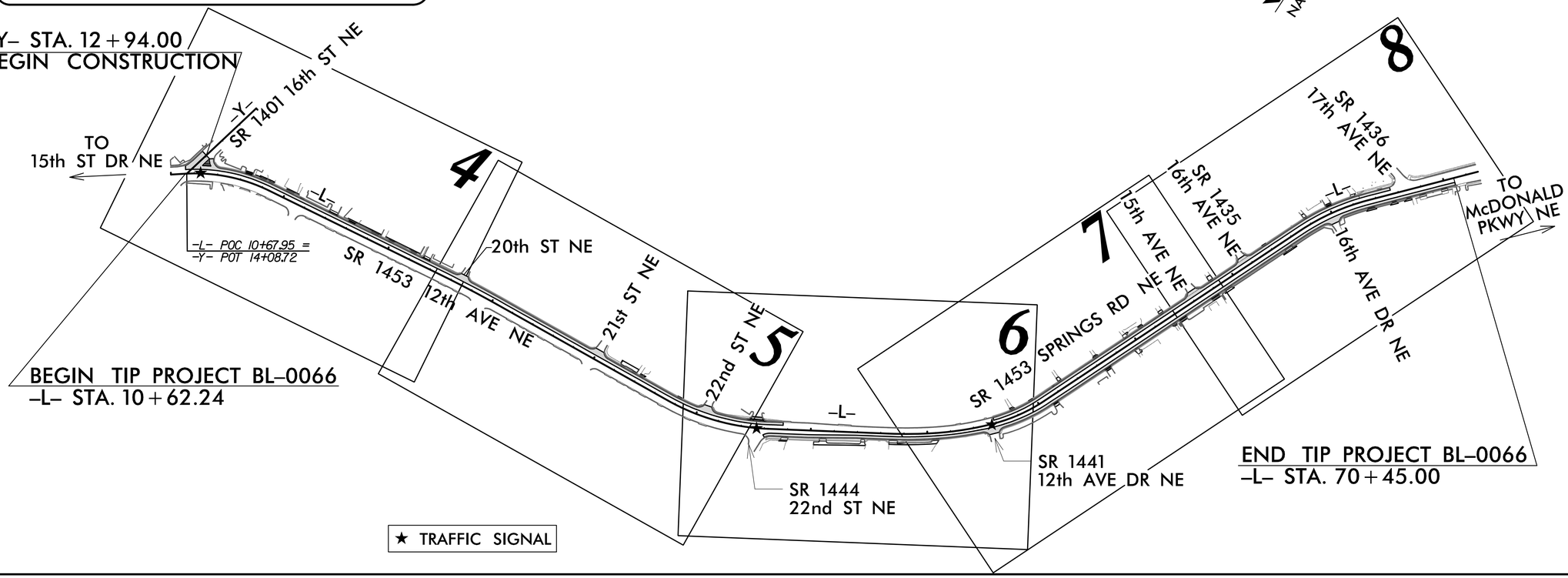
LOCATION: SIDEWALKS ALONG BOTH SIDES OF SR 1453 (12th AVE. NE/SPRINGS RD. NE.) BETWEEN SR 1401 (16th NE/SANDY RIDGE RD.) AND McDONALD PARKWAY NE

TYPE OF WORK: POWER & COMMUNICATIONS



VICINITY MAP





GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.:	*DESCRIPTION:*
UO–1	*TITLE SHEET*
UO–2 – UO–6	*UBO PLAN SHEETS*

UTILITY OWNERS WITH CONFLICTS

(A) POWER – DUKE ENERGY

(B) COMMUNICATIONS – BRIGHTSPEED

(C) COMMUNICATIONS – SEGRA

(D) COMMUNICATIONS – METRONET

(E) COMMUNICATIONS – RIPPLE FIBER

PREPARED IN THE OFFICE OF:

TELICS
119 BROOKSTOWN AVE.
SUITE 305
WINSTON-SALEM, NC 27101
(336) 705-8844

CORY WOOD — *UTILITY PROJECT MANAGER*

CORY WOOD — *PROJECT UTILITY COORDINATOR*

DIVISION OF HIGHWAYS
DIVISION 12
1710 E. MARION ST.
SHELBY, NC 28151

WARREN ANDERSON *DIVISION UTILITY ENGINEER*

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PROJECT REFERENCE NO.	SHEET NO.
BL-0066	UO-2
THIS SHEET CORRESPONDS TO RDY-4	

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

5/14/99

-L- CURVE DATA

PI Sta 12+51.91	PI Sta 23+92.20
Δ = 29° 20' 53.2" (RT)	Δ = 3° 11' 42.5" (RT)
D = 7° 59' 59.9"	D = 1° 12' 00.0"
L = 366.85'	L = 266.26'
T = 187.55'	T = 133.17'
R = 716.20'	R = 4,774.65'

NAD 83/2011

-L- STA 10+62.24
BEGIN PROJECT BL-0066

-Y- POT 10+00.00

-Y- STA 12+94.00
BEGIN MILLING
& RESURFACING (1 ½")

-L- STA 10+64.14, LT
BEGIN MILLING
& RESURFACING
OUTSIDE LANE (1 ½")

-L- POT 10+00.00

-L- POC 10+67.95 =
-Y- POT 14+08.72

-L- PC 10+64.36

-L- PT 14+31.21

-L- PC 22+59.04

MATCH LINE STA. -L- 23+00
MATCH TO SHEET UO-3

S 13° 27' 57.5" W

N 53° 28' 00.7" E

1811 12TH, LLC
DB 3679 PG 354

JERRY M. LEDFORD
CAROLYN M. LEDFORD
DB 1369 PG 228

JEWELS, LLC
DB 3065 PG 526
PB 35 PG 61

ADVANCE STORES COMPANY, INC.
DB 3004 PG 788
PB 35 PG 61

RRTM PROPERTIES, LLC
DB 2534 PG 1050

CASA NOSTRA, INC.
DB 3805 PG 1085
PB 84 PG 154

BOULEVARD EAST, LLC
DB 2474 PG 1275

BROWN OPERATING
COMPANY, INC.
DB 956 PG 170
PB 77 PG 122

POWELL RENTALS, INC.
DB 3748 PG 107

ARC CAFEUSA001, LLC
DB 3198 PG 626

NHIM TAN
ANH N. TAN
DB 1712 PG 24

LEMONADE MM
HICKORY NC, LLC
DB 3759 PG 912

BB&T
DB 1429 PG 614

BOB KILLIAN
TIRE, INC.
DB 1599 PG 649

FELKER DAY, INC.
DB 3207 PG 909
PB 20 PG 5

FAMILY COIN LAUNDRY, LLC
DB 2805 PG 1683
PB 20 PG 5

ALECK J. BEARD
FAMILY TRUST
ESTATE FILE
2009E PG 306
DB 1137 PG 768
PB 1PG 106

PROP. ASPHALT DRIVE
PROP. CONC ISLAND
SURFACE MOUNTED
8" CURB
PROP. 5' SIDEWALK
PROP. CONC DRIVE
2'-6" C&G
PROP. 5' SIDEWALK
DO NOT DISTURB POLES
DO NOT DISTURB TREE
DO NOT DISTURB PAVERS & STONE PLANTERS
DO NOT DISTURB POLE
DO NOT DISTURB SIGN
DO NOT DISTURB BLOCK WALL
DO NOT DISTURB LIGHT
RELOCATE POLE
RETAIN SYSTEM

AERIAL DUKE REMOVED
AERIAL BRIGHTSPEED REMOVED
BRIGHTSPEED GUY
AERIAL DUKE ENERGY
DUKE ENERGY POLE
AERIAL BRIGHTSPEED
DUKE ENERGY POLE REMOVED
BURIED RIPPLE FIBER

PROP. SIGNAL POLE

SR 1453 12th AVENUE NE 60' BST

18th ST NE

EXISTING R/W = PROPERTY LINE

EXISTING R/W 60' CONC EOS

W/LT

N 82° 48' 54.0" E

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	UO-3
THIS SHEET CORRESPONDS TO RDY-5	

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

NAD 83/2011

MATCH LINE STA. -L- 23+00
MATCH TO SHEET UO-2

MATCH LINE STA. -L- 36+00
MATCH TO SHEET UO-4

8 LUTHERAN HOME HICKORY PROPERTY, INC. DB 3951 PG 217

9 RRTM PROPERTIES, LLC DB 3831PG 1336 PB 1PG 19

10 ASE INVESTMENTS, LLC DB 3373 PG 1762 PB 1PG 19

11 PEH PROPERTIES, LLC DB 3642 PG 1119 DB 3652 PG 1049 PB 1PG 77 PB 1PG 19

ALECK J. BEARD FAMILY TRUST ESTATE FILE 2009E PG 306 DB 1137 PG 768 PB 1PG 106

MCKINNEY COMMERCIAL RENTALS, LLC DB 3621PG 245 PB 1PG 106

JORDAN R. BINGHAM DB 3785 PG 1858 PB 1PG 106

JAVIER MORA MARIA D. MORA DB 2975 PG 388 PB 1PG 106

PETER ANTINARELLI DB 3708 PG 1973

BRADFORD N. COOK JEFFREY M. COOK DB 2943 PG 1127 PB 19 PG 191

JET KLEEN, LLC DB 2278 PG 126

HICKORY PROPERTY, INC. DB 2999 PG 994

WESLEY E. STARNES DB 2013 PG 1087

MEMBERS CREDIT UNION DB 2827 PG 887

COOK OUT-HICKORY, INC. DB 3685 PG 940 PB 2 PG 28

AERIAL DUKE ENERGY

DUKE ENERGY POLE

DUKE ENERGY POLE REMOVED

RELOCATE POLE (BY OTHERS)

EXISTING SEGRA HAND HOLE RELOCATED

~100' OF FENCE TO BE RELOCATED (BY OWNER)

DO NOT DISTURB FENCE

DO NOT DISTURB LIGHT POLE

DO NOT DISTURB POLE

DO NOT DISTURB SIGN

PROP. 5' SIDEWALK

PROP. CONC DRIVE

PROP. ASPHALT DRIVE

8" CURB

RETAIN SYSTEM

METRONET HANDHOLE

BURIED METRONET

BURIED RIPPLE FIBER

RIPPLE FIBER HANDHOLE

METRONET HANDHOLE

SR 1453 12th AVENUE NE 60' BST

30" C&G

20'DR

S 86°01'18" W 200.12'

N 86°01'18" E 99.88'

N 86°01'18" 99.09'

S 02°31'54" W 147.30'

N 86°16'54" E 100.00'

S 85°53'26" E 225.00'

N 85°33'59" E 100.00'

N 85°33'59" E 239.01'

N 85°33'59" E 250.00'

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	U0-4
THIS SHEET CORRESPONDS TO RDY-6	

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

5/14/99

NAD 83-2011

MATCH LINE STA. -L- 36+00 MATCH TO SHEET U0-3

MATCH LINE STA. -L- 47+00 MATCH TO SHEET U0-5

12 HAMPTON 570, INC. DB 3729 PG 493

13 ST. STEPHEN'S LUTHERAN CHURCH, ELCA, HICKORY, NC DB 3815 PG 863

ST. STEPHENS LUTHERAN CHURCH, MISSOURI SYNOD OF HICKORY DB 416 PG 417

MILLERS LUTHERAN CHURCH DB 611PG 512

14 COOK'S CORNER PROPERTIES, LLC DB 2990 PG 1084 PB 21PG 283

15 MILLERS LUTHERAN CHURCH DB 1126 PG 678 DB 835 PG 10

16 ST. STEPHEN'S EVANGELICAL LUTHERAN CHURCH (NO DEED FOUND)

COOK OUT-HICKORY, INC. DB 3685 PG 940 PB 2 PG 28

-L- STA 37+99.04, RT BEGIN MILLING & RESURFACING OUTSIDE LANE (1 1/2")

-L- STA 38+07.85 BEGIN SIDEWALK, RT

-L- STA 38+80.45 END SIDEWALK, LT

-L- STA 38+80.45, LT END MILLING & RESURFACING OUTSIDE LANE (1 1/2")

PROP. ASPHALT DRIVE

PROP. 5' SIDEWALK

PROP. 4' SIDEWALK

PROP. SIGNAL POLE

PROP. SIGNAL POLE (2)GUY

METRONET HANDHOLE

BURIED RIPPLE FIBER

BURIED METRONET

RIPPLE FIBER HANDHOLE

RETAIN SYSTEM

8" CURB

DO NOT DISTURB POLE

DO NOT DISTURB TREE

DO NOT DISTURB POLES

DO NOT DISTURB LIGHTS

DO NOT DISTURB SIGN

DO NOT DISTURB LIGHT

DO NOT DISTURB CEMETERY

SEE DETAIL A

★ TRAFFIC SIGNAL

$$$$SYSTIME$$$$
$$$$USERNAME$$$$

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

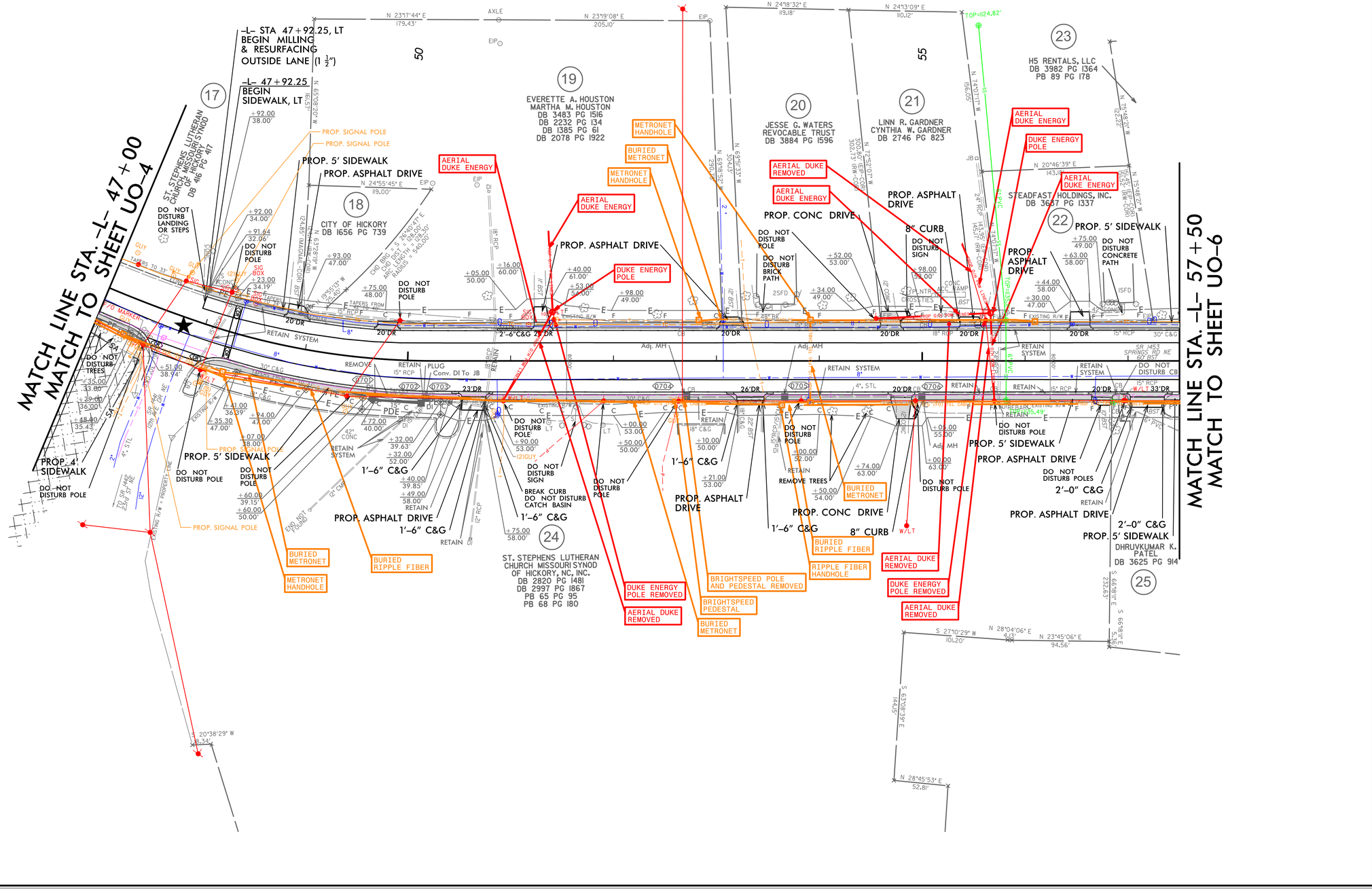
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	U0-5
THIS SHEET CORRESPONDS TO RDY-7	

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

NAD 83/2011



Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
BL-0066	U0-6
THIS SHEET CORRESPONDS TO RDY-8	

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

NAD 83/2011

MATCH LINE STA. –L– 57+50
MATCH TO SHEET U0-5

–L– 66+58.00
END PROP. SIDEWALK, LT
TIE TO EXIST WALK

–L– STA 67+68.85, LT
END MILLING
& RESURFACING
OUTSIDE LANE (1 ½")

–L– STA 70+45.00, RT
END MILLING
& RESURFACING
OUTSIDE LANE (1 ½")

–L– STA 70+45.00
END PROJECT BL-0066
END PROP. SIDEWALK, RT
TIE TO EXIST WALK

23 — PROP. ASPHALT DRIVE; DUKE ENERGY POLE; METRONET HANDHOLE; BURIED METRONET; AERIAL DUKE ENERGY

25 — DHRUVKUMAR K. PATEL, DB 3625 PG 914

26 — CHARLES A. MORETZ ESTATE, DB 2338 PG 298

27 — PAULINE S. MORETZ HEIRS, DB 2523 PG 1467

28 — BURTONS WJ, LLC; ROPPS, LLC, DB 3224 PG 295, PB 81 PG 149

29 — SAXON PROPERTIES LLC, DB 3843 PG 722

30 — ROBUST PROPERTIES, LLC, DB 3269 PG 687

31 — AL CROUSE OFFICE, LLC, DB 3331 PG 1572

32 — SAXON PROPERTIES, LLC, DB 2211 PG 160

33 — CHRIST CHURCH GLOBAL, INC., DB 3827 PG 1948, DB 3377 PG 204

34 — BOBBY A. LITTLE CONSTRUCTION CO., INC., DB 1093 PG 389

35 — ANNA M. WARD, DB 3236 PG 1649

36 — EARL E. PROPST HEIRS, DORIS P. FASTENAU, DB 3430 PG 820

37 — CATAWBA COUNTY, DB 2069 PG 16

SXCW PROPERTIES, LLC, DB 3335 PG 1542, PB 75 PG 100

MICHAEL DIGIACOMO AND LINDA DIGIACOMO REVOCABLE LIVING TRUST, DB 3422 PG 1368, PB 75 PG 100

CPRUETTCOMP 3/27/2026 X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\Earthwork XSC Volume Summary.xlsm
Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

PROJ. REFERENCE NO.	SHEET NO.
BL-0066	X-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

CROSS-SECTION SUMMARY

Station L, LT	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station L, LT	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station L, RT	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station L, LT	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
10+64.14	0	0	36+00.00	0	3	56+75.00	4	1	54+70.00	4	0
11+82.33	0	0	36+50.00	0	0	57+10.00	13	0	54+85.00	3	1
12+00.00	0	1	37+00.00	0	0	57+50.00	8	0	55+00.00	0	1
12+50.00	0	6	37+50.00	9	0	58+10.00	0	0	55+45.00	8	0
13+00.00	0	4	38+00.00	12	3	58+50.00	0	0	56+00.00	10	0
13+25.00	4	0	38+50.00	3	3	58+90.00	7	0	56+50.00	11	0
13+50.00	4	0	38+80.45	0	0	59+10.00	5	0	56+75.00	5	0
14+00.00	10	1				59+50.00	12	0	57+10.00	0	1
14+20.00	8	0	**Station**	**Uncl. Exc.**	**Embt**	60+00.00	11	1	57+50.00	2	1
14+50.00	6	0				60+50.00	0	2	58+10.00	3	0
15+10.00	11	0	**L, RT**	**(cu. yd.)**	**(cu. yd.)**	60+70.00	0	1	58+50.00	2	0
15+50.00	8	0	37+99.04	0	0	61+00.00	0	2	58+90.00	8	0
15+70.00	2	1	38+50.00	0	2	61+50.00	0	3	59+10.00	15	0
16+00.00	2	2	38+90.00	11	1	61+90.00	0	2	59+50.00	27	0
16+50.00	0	2	39+50.00	16	1	62+50.00	14	1	60+00.00	7	0
17+10.00	9	1	40+00.00	0	8	63+00.00	12	0	60+50.00	4	0
17+50.00	9	0	40+50.00	21	8	63+50.00	0	2	61+00.00	1	0
18+00.00	14	0	41+00.00	23	10	63+90.00	0	2	61+50.00	1	0
18+50.00	12	0	41+50.00	3	19	64+50.00	0	3	61+90.00	8	0
19+10.00	15	0	42+00.00	3	23	65+00.00	0	1	62+50.00	18	0
19+50.00	8	0	42+25.00	9	7	65+50.00	0	3	63+00.00	12	0
20+00.00	9	0	42+50.00	8	1	66+10.00	0	6	63+50.00	9	0
20+50.00	9	1	43+50.00	31	3	66+60.00	10	2	63+90.00	23	0
21+00.00	9	1	44+00.00	18	8	67+00.00	8	0	64+50.00	33	0
21+60.00	20	0	44+50.00	5	14	67+50.00	0	1	65+00.00	9	0
22+00.00	6	0	45+00.00	5	10	67+70.00	4	0	65+50.00	8	1
22+50.00	1	0	45+30.00	10	3	68+00.00	5	1	66+10.00	11	1
23+00.00	0	0	45+60.00	9	0	68+40.00	7	1	66+58.00	8	0
24+00.00	0	1	46+00.00	0	2	69+00.00	21	0			
24+50.00	0	1	46+50.00	0	3	69+50.00	8	0			
25+00.00	0	2	47+40.00	1	1	70+00.00	9	0			
25+50.00	0	2	48+50.00	2	0	70+45.00	7	0			
26+00.00	0	1	48+85.00	1	0						
26+50.00	0	1	49+00.00	0	0	**Station**	**Uncl. Exc.**	**Embt**			
27+00.00	0	2	49+50.00	1	0						
27+50.00	0	3	49+75.00	0	0	**L, LT**	**(cu. yd.)**	**(cu. yd.)**			
28+00.00	0	3	50+00.00	1	0	47+92.55	0	0			
28+50.00	0	2	50+60.00	20	0	48+50.00	0	4			
29+00.00	0	1	51+00.00	12	0	48+85.00	7	2			
29+50.00	0	1	51+30.00	1	0	49+00.00	3	0			
30+50.00	0	3	51+50.00	2	0	49+50.00	0	2			
31+00.00	0	1	52+00.00	5	0	49+75.00	3	0			
31+25.00	8	0	52+50.00	4	0	50+00.00	3	0			
31+50.00	10	0	53+10.00	2	0	50+60.00	0	2			
31+80.00	9	0	53+40.00	5	0	51+00.00	1	1			
32+00.00	5	1	54+00.00	10	0	51+30.00	9	0			
32+15.00	3	1	54+50.00	4	0	51+50.00	5	2			
32+50.00	6	1	54+70.00	1	0	52+00.00	0	5			
33+00.00	0	1	54+85.00	6	0	52+50.00	0	1			
33+50.00	0	4	55+00.00	6	0	53+10.00	10	0			
34+00.00	6	4	55+45.00	0	0	53+40.00	5	1			
34+50.00	6	2	56+00.00	0	0	54+00.00	0	2			
35+00.00	0	3	56+50.00	0	2	54+50.00	0	2			

Approximate quantities only. Unclassified excavation and clearing and grubbing will be paid for at the lump sum price for "Grading".

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-2

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1165 1160 1155 1150

4:1

S.S. 1160.04

1158.77

13 + 50.00

1170 1165 1160 1155 1150

5'-0" 5'-6"

1% 2%

PROP. ASPHALT DRIVE

1159.04

13 + 25.00

1165 1160 1155 1150

4:1

S.S. 1160.76

1159.39

13 + 00.00

1165 1160 1155 1150

4:1

S.S. 1160.60

1160.22

12 + 50.00

1165 1160 1155

4:1

S.S. 1161.53

1160.88

12 + 00.00

1165 1160 1155

1161.12

11 + 50.00

1165 1160 1155

1162.04

11 + 00.00

1170 1165 1160 1155

1164.13

10 + 50.00

—℄—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2/10/2026
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User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-3

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1160 1155 1150 1170 1165

3:1

S.S. 1155.65

1155.45
16+00.00

4:1

1156.17

S.S. 1156.04

1156.03
15+70.00

1156.36
15+50.00

5'-0" 5'-6"

0.6% 2%

PROP. ASPHALT DRIVE

1156.90
15+10.00

S.S. 1158.90

1157.75
14+50.00

5'-6" 5'-6"

4.4% 1%

PROP. ASPHALT DRIVE

1158.01
14+20.00

5'-6" 5'-6"

0.4% 2%

PROP. ASPHALT DRIVE

1158.24
14+00.00

—℄—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2/10/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpl_L.dgn
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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1155 1150 1145 1165 1160

S.S. 1151.21

1150.64
19+50.00

5'-0" 5'-6"
7.2% 2%
PROP. ASPHALT DRIVE

1150.96
19+10.00

3.7:1

1151.51
18+50.00

5'-0" 5'-6"
7.3% 2%
PROP. ASPHALT DRIVE

1151.96
18+00.00

S.S. 1153.00
1152.42

1152.59
17+50.00

5'-6" 5'-6"
3.9% 2%
PROP. CONC. DRIVE

1153.31
17+10.00

4:1
S.S. 1154.75

1154.43
16+50.00

2/10/2026
K:\MC Consolidates\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpl_L.dgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-5

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1155 1150 1145 1140

4:1
S.S. 1149.35
1148.37
23+00.00

1155 1150 1145 1140

S.S. 1149.83 4:1
1148.69
22+50.00

1155 1150 1145 1140

S.S. 1150.20 4:1
1149.09
22+00.00

1160 1155 1150 1145 1140

5'-6" 5'-6"
3.4% 2%
PROP. CONC. DRIVE
1149.39
21+60.00

1160 1155 1150 1145 1140

5'-0" 5'-6"
1.1% 2%
PROP. ASPHALT DRIVE
1149.71
21+00.00

1155 1150 1145 1140

4:1
S.S. 1150.19
1149.87
20+50.00

1160 1155 1150 1145 1140

5'-0" 5'-6"
2.3% 2%
PROP. ASPHALT DRIVE
1150.22
20+00.00

—L—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2/10/2026
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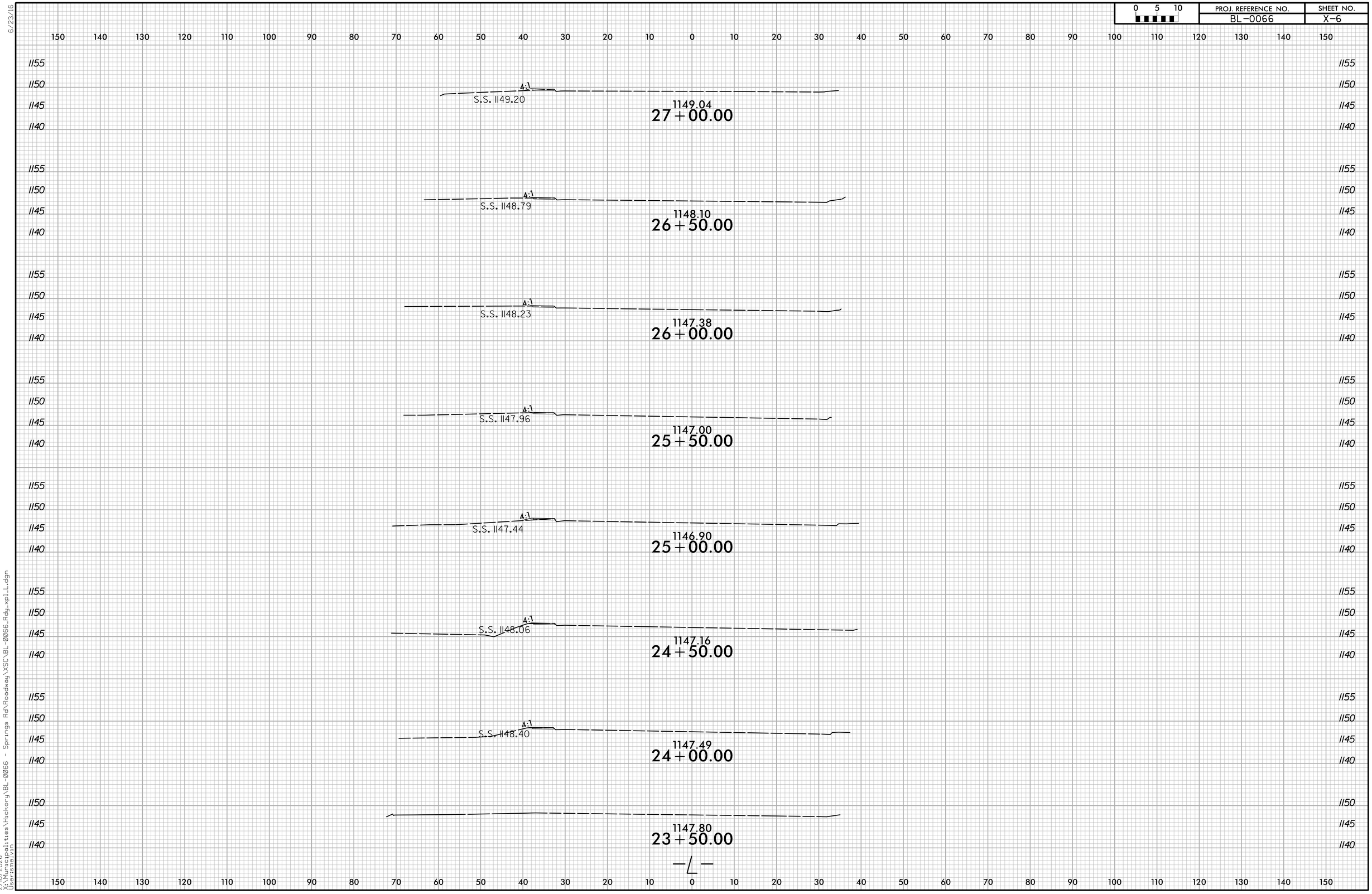
Usersmelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-6



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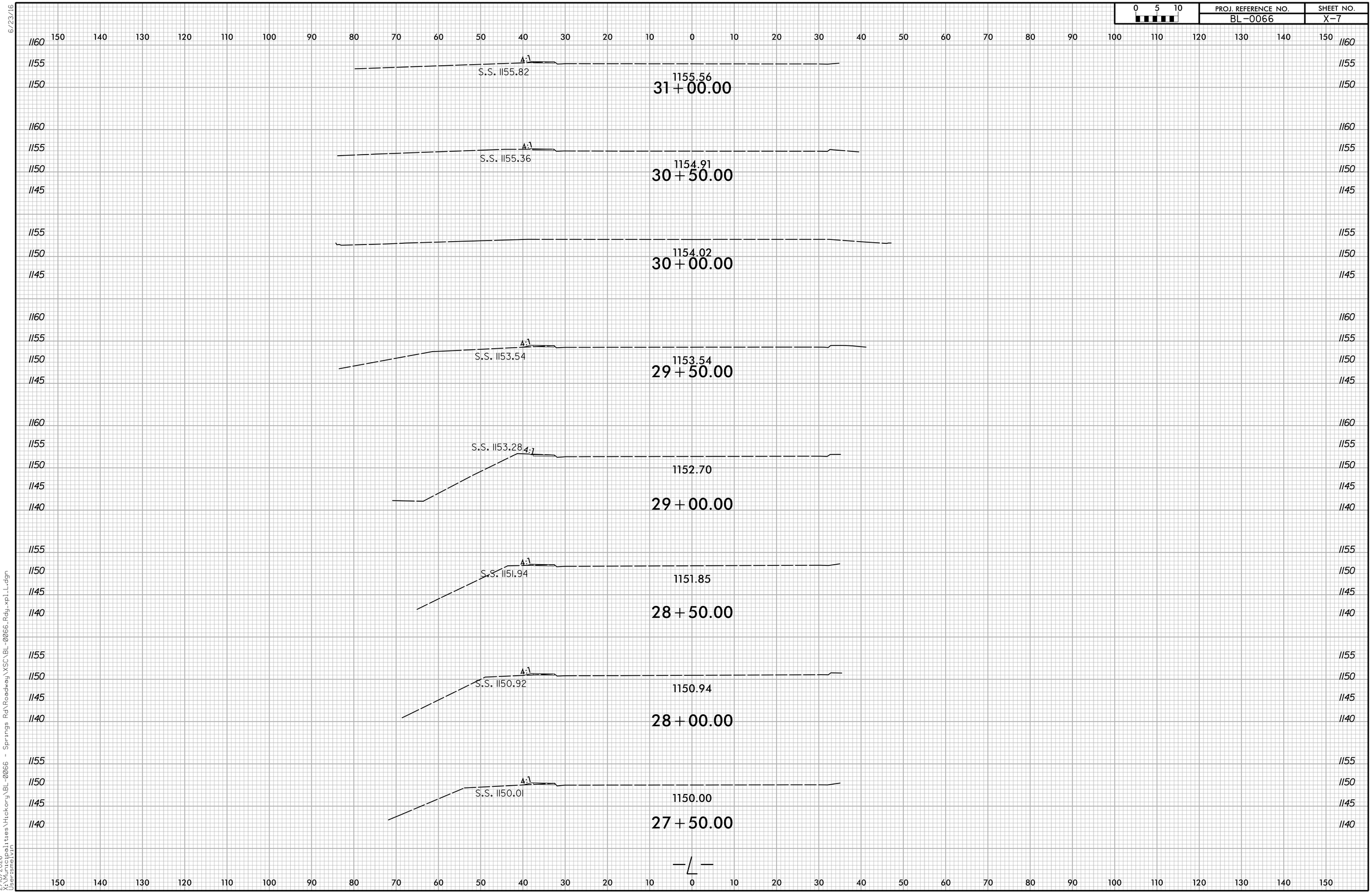
Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-7



2/10/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpLL.dgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-8

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1160 / 1155 / 1150

4:1

S.S. 1154.72

1156.25

33 + 50.00

1160 / 1155 / 1150

4:1

S.S. 1156.37

1156.51

33 + 00.00

1160 / 1155 / 1150

4:1

S.S. 1156.47

1156.57

32 + 50.00

1170 / 1165 / 1160 / 1155 / 1150

5'-0" 5'-6"

2.5% 2%

PROP. ASPHALT DRIVE

1156.48

32 + 15.00

1160 / 1155 / 1150

4:1

S.S. 1156.15

1156.37

32 + 00.00

1170 / 1165 / 1160 / 1155 / 1150

11'-6" 5'-0" 5'-6"

10% 4% 2%

PROP. ASPHALT DRIVE

1156.33

31 + 80.00

1160 / 1155 / 1150

4.8:1

1156.09

31 + 50.00

1170 / 1165 / 1160 / 1155 / 1150

11'-6" 5'-0" 5'-6"

5.5% 4% 2%

PROP. ASPHALT DRIVE

1155.82

31 + 25.00

1170 / 1165 / 1160 / 1155 / 1150 / 1145

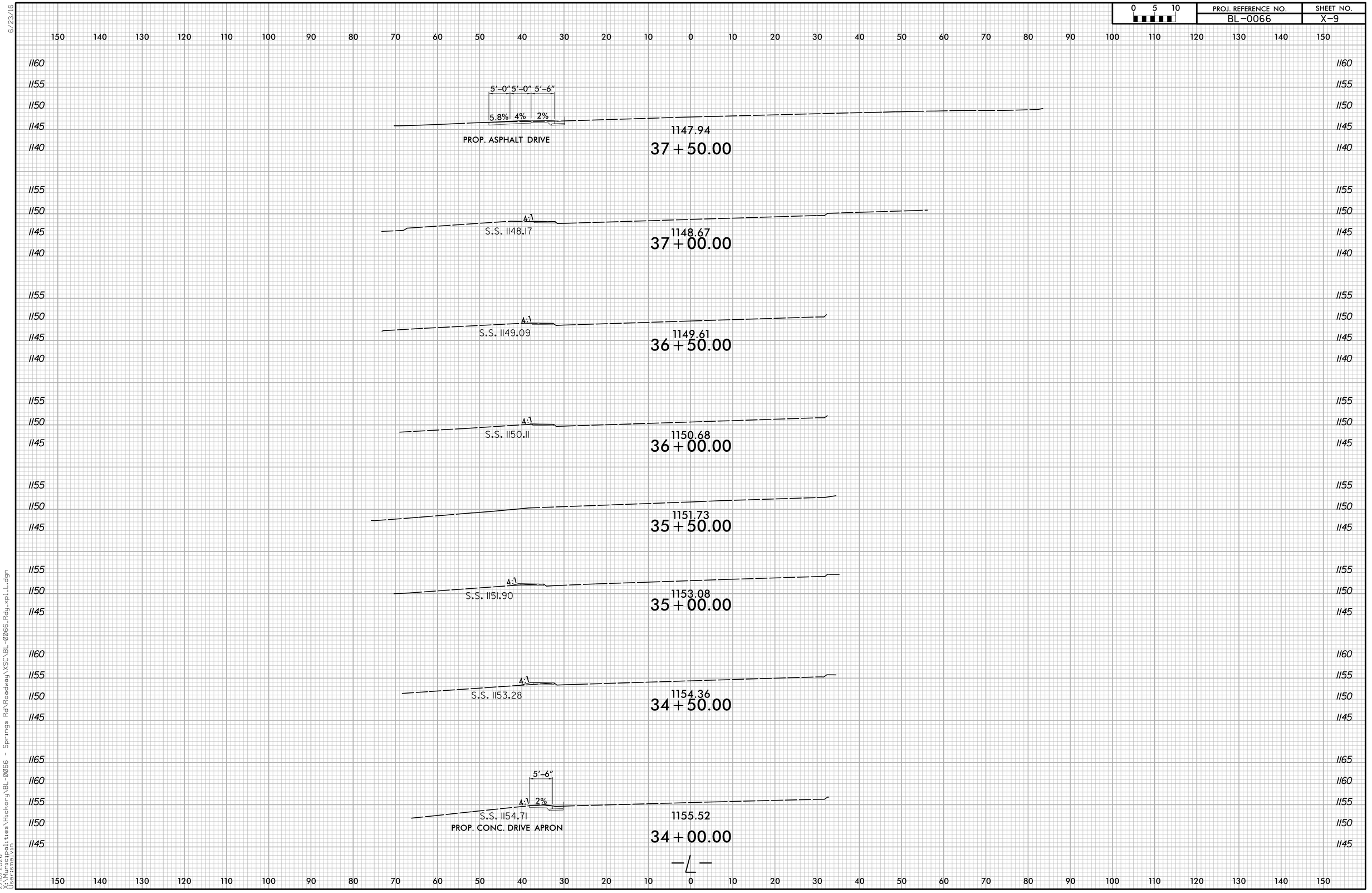
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2/10/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpl_L.dgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-9



2/10/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpLL.dgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-10

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1150 1145 1140

6:1

1146.51
41+50.00

1150 1145 1140

6.2:1

1145.92
41+00.00

1155 1150 1145 1140

12'-0" 5'-0" 10'-0"
2% 8% 10.1%
PROP. ASPHALT DRIVE

1145.57
40+50.00

1150 1145 1140

4:1
S.S. 1145.21

1145.41
40+00.00

1150 1145 1140

4:1
S.S. 1146.33

1145.46
39+50.00

1160 1155 1150 1145 1140

12'-0" 5'-0"
2% 7%
PROP. ASPHALT DRIVE

1146.04
38+90.00

1155 1150 1145 1140

4:1
S.S. 1146.40
S.S. 1147.55

1146.54
38+50.00

1155 1150 1145 1140

1146.34
4:1
S.S. 1146.34

1147.11
38+00.00

—℄—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2/10/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpl_L.dgn
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Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-11

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1155 1150 1145 1140

2:1

1149.96
44+50.00

1155 1150 1145 1140

2:1

1149.51
44+00.00

1160 1155 1150 1145 1140

12'-6" 7'-0"
2% 7.3%

1149.04
43+50.00

PROP. ASPHALT DRIVE

1155 1150 1145 1140

S.S. 1149.27

1148.43
43+00.00

1155 1150 1145 1140

2:1
S.S. 1147.91

1147.84
42+50.00

1160 1155 1150 1145 1140

13'-6" 5'-0" 10'-0"
2% 8% 11.5%

1147.54
42+25.00

PROP. ASPHALT DRIVE

1155 1150 1145 1140

5:1

1147.20
42+00.00

—℄—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpl.Ldgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-12

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1155 / 1150 / 1145 / 1140

1147.69
47+90.00

1155 / 1150 / 1145 / 1140

4:1 S.S. 1150.14
1148.61
47+40.00

1155 / 1150 / 1145 / 1140

S.S. 1150.71
1149.45
47+00.00

1155 / 1150 / 1145 / 1140

2:1
S.S. 1151.28
1150.19
46+50.00

1155 / 1150 / 1145

1:1
S.S. 1150.47
1150.73
46+00.00

1155 / 1150 / 1145

2:1
S.S. 1151.30
1150.77
45+60.00

1165 / 1160 / 1155 / 1150 / 1145

5'-6" 11'-0"
2% 6.2%
PROP. ASPHALT DRIVE
1150.63
45+30.00

1155 / 1150 / 1145

3.4:1
1150.46
45+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2/10/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpLL.dgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-13

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1155 1150 1145 1140 1135

5'-6" 5'-0" 5'-0"
2% 8% 8.8%
4:1
S.S. 1141.82
1142.58
50+60.00
PROP. ASPHALT DRIVE

S.S. 1146.09
4:1
4:1
S.S. 1143.38
1144.00
50+00.00

5'-6"
S.S. 1143.96
4:1 2%
S.S. 1146.14
4:1
1144.51
49+75.00
PROP. CONC. DRIVE APRON

S.S. 1146.90
4:1
4:1
S.S. 1144.39
1145.07
49+50.00

S.S. 1147.86
4:1
4:1
S.S. 1145.34
1146.04
49+00.00

5'-6" 5'-6"
0.5% 2%
S.S. 1147.92
4:1
1146.27
48+85.00
PROP. ASPHALT DRIVE

S.S. 1148.42
4:1
4:1
S.S. 1145.33
1146.70
48+50.00

—℄—

2/10/2026
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User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-14

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1150 1145 1140 1135 1130

5'-0" 5'-6"
2.9% 2%
PROP. ASPHALT DRIVE
4:1
S.S. 1137.75
1136.76
53+10.00

1145 1140 1135 1130

4:1
S.S. 1138.38
4:1
S.S. 1139.21
1138.20
52+50.00

1150 1145 1140 1135 1130

4:1
S.S. 1139.61
3:1
S.S. 1141.70
1139.52
52+00.00

1150 1145 1140 1135 1130

4:1
S.S. 1139.08
3:1
S.S. 1142.86
1140.76
51+50.00

1150 1145 1140 1135 1130

5'-0" 5'-0" 5'-0" 5'-6"
11.7% 10% 4% 2%
PROP. ASPHALT DRIVE
4:1
S.S. 1143.30
1141.23
51+30.00

1155 1150 1145 1140 1135

4:1
S.S. 11+41.26
4:1
S.S. 1143.11
1141.79
51+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpl_L.dgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-15

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1140 1135 1130 1125

4:1 S.S. 1134.68

1134.47
55+00.00

4:1 S.S. 1135.09

1145 1140 1135 1130 1125

25:1

1134.50
54+85.00

5'-6" 5'-0" 13'-0"
2% 8% 11.4%
PROP. CONCRETE DRIVE

1145 1140 1135 1130 1125

5'-6" 5'-0" 5'-6"
13.8% 8% 2%
PROP. CONCRETE DRIVE

1134.58
54+70.00

4:1 S.S. 1135.64

1145 1140 1135 1130 1125

4:1 S.S. 1134.82

1134.74
54+50.00

4:1 S.S. 1136.66

1145 1140 1135 1130 1125

4:1 S.S. 1135.47

1135.17
54+00.00

4:1 S.S. 1136.57

1150 1145 1140 1135 1130

4:1 S.S. 1136.13

1136.13
53+40.00

5'-6" 5'-0"
2% 2%
PROP. ASPHALT DRIVE

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2/10/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpl_L.dgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-16

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1145 1140 1135

4:1 S.S. 1141.30

1140.93
58+10.00

1145 1140 1135 1130

S.S. 1140.11 4:1

4:1
S.S. 1139.26

1138.84
57+50.00

1150 1145 1140 1135 1130

7'-6" 5'-0"

4:1

2% 0.8%

S.S. 1138.00

PROP. ASPHALT DRIVE

1137.73
57+10.00

1150 1145 1140 1135 1130

5'-6" 5'-0"

4:1

2% 1.4%

S.S. 1137.21

PROP. ASPHALT DRIVE

1136.91
56+75.00

1150 1145 1140 1135 1130

5'-0" 5'-0" 5'-6"

4.1% 4% 2%

PROP. ASPHALT DRIVE

4:1
S.S. 1136.35

1136.37
56+50.00

1140 1135 1130

4:1

S.S. 1135.65

4:1 S.S. 1135.93

1135.25
56+00.00

1145 1140 1135 1130

5'-0" 5'-6"

1.9% 2%

PROP. ASPHALT DRIVE

S.S. 1135.14

1134.57
55+45.00

1150 1145 1140 1135 1130 1125

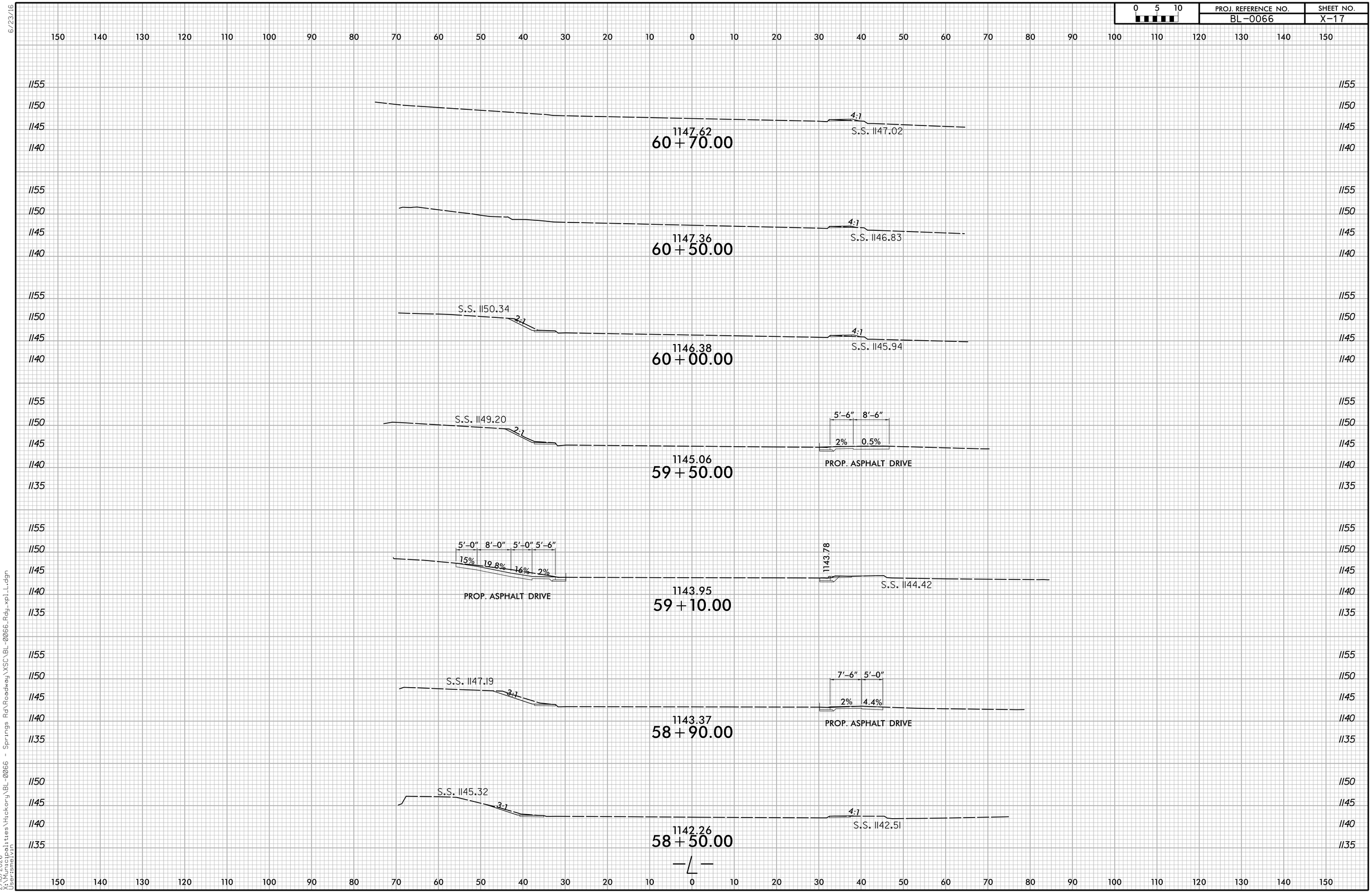
—℄—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2/10/2026
K:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpl_L.dgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-17



6/23/16
2/10/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpLL.dgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-18

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1160 1155 1150 1145 1140

5'-0" 6'-0" 5'-0" 5'-6"
8% 13.9% 8% 2%
PROP. ASPHALT DRIVE
1147.12
63+90.00
4:1
S.S. 1146.35

S.S. 1150.78
2.7:1
1147.58
63+50.00
4:1
S.S. 1146.78

S.S. 1151.97
2.1:1
1148.16
63+00.00
4:1
3.2:1
S.S. 1147.37

S.S. 1151.17
3:1
1148.51
62+50.00
10'-0"
5'-6"
2%
4.6%
PROP. ASPHALT DRIVE

5'-6"
S.S. 1150.30
4:1
2%
PROP. CONC. DRIVE APRON
1148.51
61+90.00
4:1
S.S. 1147.90

4:1
S.S. 1149.33
1148.27
61+50.00
4:1
S.S. 1147.70

S.S. 1149.73
4:1
1147.86
61+00.00
4:1
S.S. 1147.30

—℄—

2/10/2026
K:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpl_L.dgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-19

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1145 1140 1135

4:1
S.S. 1139.65
1140.04
67 + 50.00

1145 1140 1135

4:1
S.S. 1140.43
1140.76
67 + 00.00

1150 1145 1140 1135

5'-6" 6'-0"
2% 4.9%
PROP. ASPHALT DRIVE
1141.34
66 + 60.00

1155 1150 1145 1140 1135

5'-0" 5'-6"
5.2% 2%
PROP. CONCRETE DRIVE
2:1
1142.26
66 + 10.00

1150 1145 1140 1135

4:1
S.S. 1144.82
2:1
1143.51
65 + 50.00

1160 1155 1150 1145 1140 1135

5'-0" 5'-6"
3.7% 2%
PROP. ASPHALT DRIVE
1144.83
65 + 00.00

1155 1150 1145 1140

S.S. 1147.93
4:1
4:1
S.S. 1145.39
1146.03
64 + 50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2/10/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpLL.dgn
User:smelvin

Docusign Envelope ID: 6ACD71FC-011C-83E8-8239-E2A7B045A9AE

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BL-0066	X-20

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1145 1140 1135

1140.30
70+50.00

1150 1145 1140 1135 1130

5'-6" 5'-0"
1.5% 4.4%
PROP. CONCRETE DRIVE

1140.24
70+00.00

1145 1140 1135

4:1
S.S. 1139.57

1140.02
69+50.00

1150 1145 1140 1135 1130

5'-6" 5'-0"
2% 5.9%
PROP. CONCRETE DRIVE

1139.67
69+00.00

1150 1145 1140 1135 1130

5'-6" 6'-6"
2% 6.4%
PROP. ASPHALT DRIVE

1139.53
68+40.00

1145 1140 1135 1130

2:1
S.S. 1138.89

1139.62
68+00.00

1150 1145 1140 1135 1130

5'-6" 6'-6"
2% 5.5%
PROP. ASPHALT DRIVE

1139.79
67+70.00

—℄—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2/10/2026
X:\Municipalities\Hickory\BL-0066 - Springs Rd\Roadway\XSC\BL-0066_Rdy_xpl_L.dgn
User:smelvin