11/14/23

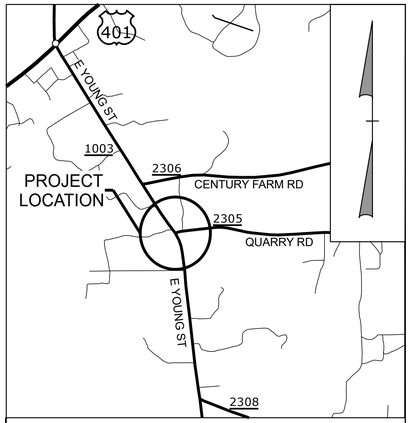
ROADWAY CONSTRUCTION PLANS FOR

YOUNG ST COMMERCIAL

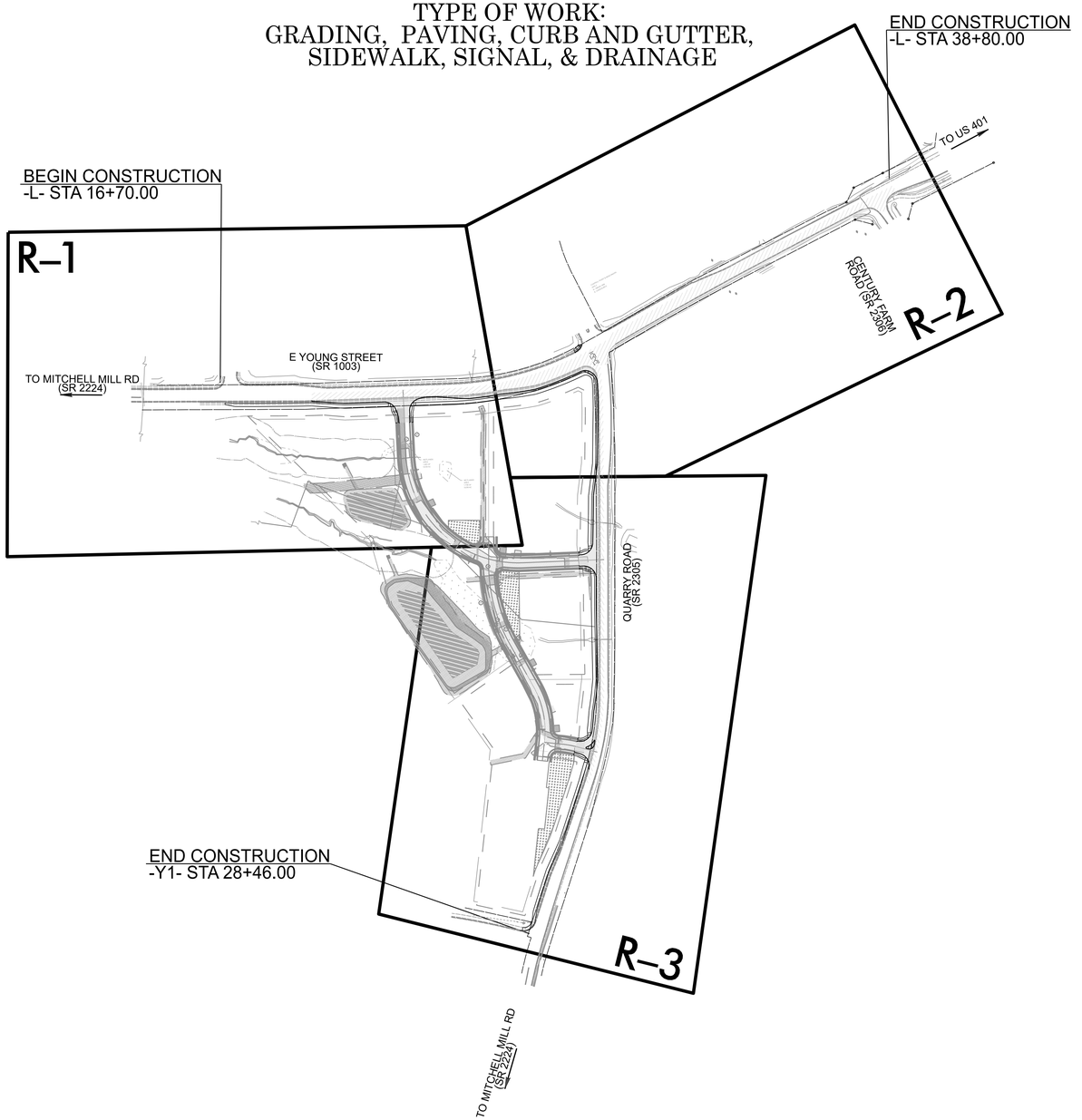
SR 1003 (E YOUNG STREET) AND SR 2305 (QUARRY ROAD)
ROLESVILLE, NORTH CAROLINA

TYPE OF WORK:
GRADING, PAVING, CURB AND GUTTER,
SIDEWALK, SIGNAL, & DRAINAGE

NAD 83/ 2011



VICINITY MAP (NTS)



CLIENT

GRAVITY COMPANIES
664 Ben Greene Industrial Park Drive
PO BOX 2107, Elizabethtown, NC 28337
919–414–5166
Jake Jones

SITE ENGINEER

WITHERSRAVENEL
137 S. Wilmington Street. Suite 200
Raleigh, NC 27601
919–535–5200
Attn: Drew Plato, PE

SURVEYOR

WITHERSRAVENEL
115 Mackenan Dr,
Cary, NC 27511
919–469–3340
Attn: Ben Dayton, PLS

ROADWAY ENGINEER

Exult Engineering
301 S Main Street,
Kannapolis, NC 28081
980–296–5443
Attn: Garrett Boyle, PE

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	CONVENTIONAL SYMBOLS
3	GENERAL NOTES
4A thru 4B	TYPICAL SECTIONS
5 thru 7	DETAILS
8	TRAFFIC MANAGEMENT PLAN
EX–1 thru EX–3	EXISTING CONDITIONS SHEETS
R–1 thru R–3	PLAN SHEETS
R–4 thru R–5	PROFILE SHEETS
ISD–1 thru ISD–3	INTERSECTION SITE DISTANCE SHEETS
EC–1 thru EC–7	EROSION CONTROL PLAN SHEETS, NOTES, AND DETAILS
PMP–1 thru PMP–3	PAVEMENT MARKING AND SIGNING PLAN SHEETS
X–1 thru X–31	ROADWAY CROSS SECTIONS

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

E YOUNG ST
1

NORTH CAROLINA
WAKE COUNTY

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

PREPARED BY
EXULT® ENGINEERING
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YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL IMPROVEMENTS

TITLE SHEET

REVISIONS

05/29/25

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

E YOUNG ST | 2

Note: Not to Scale

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge
- RR Signal Milepost
- 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
- Existing Control of Access Line
- Proposed Control of Access Line
- Proposed ROW and CA Line
- Existing Easement Line
- Proposed Temporary Construction Easement
- Permanent Construction Easement
- Proposed Temporary Drainage Easement
- Proposed Permanent Drainage Easement
- Proposed Permanent Drainage/Utility Easement
- Proposed Permanent Utility Easement
- Proposed Temporary Utility Easement
- Proposed Aerial Utility Easement

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut
- Proposed Slope Stakes Fill
- Proposed Curb Ramp
- 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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

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
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line Test Hole (SUE - LOS A)*
- U/G Power Line (SUE - LOS B)*
- U/G Power Line (SUE - LOS C)*
- U/G Power Line (SUE - LOS D)*

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

2024 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch – 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
200.02	Method of Clearing – Method II
225.02	Guide for Grading Subgrade – Secondary and Local
225.04	Method of Obtaining Superelevation – Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
300.01	Method of Pipe Installation
310.02	Parallel Pipe End Section – Precast Concrete Section for 15" to 24" Pipe
310.03	Cross Pipe End Section – Precast Concrete Section for 18" to 30" Pipe
310.10	Driveway Pipe Construction
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I
654.01	Pavement Repairs
700.05	Tying Proposed Pavement to Existing
838.01	Concrete Endwall for Single and Double Pipe Culverts – 15" thru 48" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin – 12" thru 54" Pipe
840.02	Concrete Catch Basin – 12" thru 54" Pipe
840.03	Frame, Grates and Hood – for Use on Standard Catch Basin
840.04	Concrete Open Throat Catch Basin – 12" thru 48" Pipe
840.05	Brick Open Throat Catch Basin – 12" thru 48" Pipe
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
840.17	Concrete Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' – 12" thru 36" Pipe
840.31	Concrete Junction Box – 12" thru 66" Pipe
840.32	Brick Junction Box – 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box – for Use with Pipes 42" and Under
840.35	Traffic Bearing Grated Drop Inlet – for Cast Iron Double Frame and Grates
840.36	Traffic Bearing Grated Drop Inlet – for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.51	Brick Manhole – 12" thru 36" Pipe
840.52	Precast Manhole – 4', 5' and 6' Diameter
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout – Radius Type
848.03	Driveway Turnout – Drop Curb Type
848.04	Street Turnout
848.06	Curb Ramp – Directional Ramp
848.07	Concrete Sidepath / Shared Use Path
850.01	Concrete Paved Ditches
852.01	Concrete Islands
852.02	Concrete Mountable Median – for Use with Rigid or Flexible Pavement
852.04	Method for Placement of Drop Inlets in Grassed Median – Using 1'–6" Curb and Gutter
852.05	Median Curb for Catch Basin – for Use with 1'–6" Curb and Gutter
852.10	Median Construction – with Curb and Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail – B–77 and B–83 Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

GENERAL NOTES

1. CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THESE PLANS, THE LATEST EDITIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) STANDARD DRAWINGS AND STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK AND REGULATIONS, AND THE STANDARDS, SPECIFICATIONS AND GENERAL DESIGN STANDARDS OF THE LOCAL MUNICIPALITY AND AMENDMENTS OR SUPPLEMENTS THERETO. WHERE CONFLICTS EXIST BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT SHALL APPLY UNLESS OTHERWISE NOTED IN THESE PLANS.

2. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL ENVIRONMENTAL REGULATIONS, AND SHALL VERIFY OR OBTAIN ALL NECESSARY PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION. NCDOT ENCROACHMENTS SHALL BE OBTAINED BY THE ENGINEER. CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL PROVISIONS SET FORTH IN THE THE APPROVED NCDOT DRIVEWAY PERMIT AND ENCROACHMENT AGREEMENTS.

3. THE CONTRACTOR SHALL BE SOLELY RESPONSBILE FOR TRAFFIC MANAGEMENT ON ALL PUBLIC STREETS AND FOR ALL JOBSITE SAFETY THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL DEVICES, LANE CLOSURES, ROAD CLOSURES, POSITIVE PROTECTION AND/OR ANY OTHER WARNING OR POSITIVE PROTECTION DEVICES NECESSARY FOR THE SAFETY OF ROAD USERS DURING CONSTRUCTION AND ANY SUBSEQUENT MAINTENANCE. THIS SHALL BE PERFORMED IN CONFORMANCE WITH THESE PLANS AND THE LATEST NCDOT ROADWAY STANDARD DRAWINGS AND SPECIFICATIONS FOR ROADS AND STRUCTURES AND AMENDMENTS OR SUPPLEMENTS THERETO AND AS FURTHER DIRECTED BY THE LOCAL MUNICIPALITY AND STATE INSPECTORS. WHEN THERE IS NO GUIDANCE PROVIDED IN THE ROADWAY STANDARD DRWAINGS OR SPECIFICATIONS, COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND AMENDMENTS OR SUPPLEMENTS THERETO. NOW WORK SHALL BE PERFORMED IN THE RIGHT OF WAY UNLESS THIS REQUIREMENT IS SATISFIED. THE CONTRACTOR SHALL NOT MAKE ANY LANES CLOSURES OR CHANGES TO THE EXISTING TRAVEL PATTERNS ON ANY PUBLIC STREET WITHOUT PRIOR APPROVAL FROM THE NCDOT AND THE LOCAL MUNICIPALITY.

4. ANY PROPRIETARY PRODUCTS OR APPROVED ALTERNATES SPECIFIED IN THESE PLANS SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.

5. ENGINEER MUST BE NOTIFIED IN WRITING IMMEDIATELY OF ANY VARIATIONS OR AMBIGUITIES BETWEEN THE PLANS AND SPECIFCATIONS AND ACTUAL SITE CONDITIONS. ANY WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH INCONSISTENCIES OR AMBIGUITIES IS AT THE CONTRACTOR'S RISK.

6. THE CONTRACTOR SHALL CONDUCT A PRE–CONSTRUCTION CONFERENCE WITH NCDOT AND THE LOCAL MUNICIPALITY PRIOR TO COMMENCING CONSTRUCTION.

DEMOLITION AND GRADING NOTES

1. THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACE AT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AND EXISTING PAVEMENT AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE–IN.

2. THE CONTRACTOR SHALL REMOVE ALL TREES, STUMPS AND VEGETATIVE MATERIAL FROM THE RIGHT OF WAY AND DISPOSE OF IN A LICENSED LANDFILL OR DISPOSAL SITE UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS REGARDING THE REMOVAL AND DISPOSAL OF MATERIALS AND DEBRIS.

3. ALL MATERIALS USED FOR BACKFILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDRES, OR ANY OTHER NON–COMPATIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN–MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.

4. BACKFILL MATERIAL IS TO BE PLACED AT A MAXIMUM OF 6 INCH LOOSE LAYERS AND EACH LAYER THOROUGHLY COMPACTED. ALL EMBANKMENT BACKFILL SHALL BE COMPACTED TO 95% DENSITY AND ALL SUBGRADE TO 100% DENSITY IN ACCORDANCE WITH AASHTO T–99 AS MODIFIED BY NCDOT. CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT AND MOISTURE CONDITION ALL FILL PER THE GEOTECHNICAL ENGINEER'S SPECIFICATIONS AND ALL FILL MATERIAL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.

5. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DRAINAGE PATTERNS AND PROVIDING POSITIVE DRAINAGE AT ALL TIME THROUGHOUT PROJECT CONSTRUCTION. THE CONTRACTOR SHALL USE INTERIM SILT FENCES, DIVERSION DITCHES, BERMS, OR OTHER METHODS AS REQUIRED TO DIRECT DRAINAGE TO BEST UTILIZE THE EROSION CONTROL DEVICES IN PLACE, AND TO PREVENT SILT AND CONSTRUCTION RUNOFF FROM DRAINING TO PROPERTIES OFFSITE. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL EROSION CONTROL AND CONSERVATION ORDINANCES.

6. TEMPORARY EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION. REFER TO EROSION CONTOL PLANS FOR THE CLEARING LIMITS AND LOCATION AND TYPE OF DEVICES.

PAVING/CURBING

1. PROVIDE 10' TRANSITION TO TIE PROPOSED CURB AND GUTTER TO THE EXISTING HEIGHT, WIDTH AND SHAPE OF EXISTING CURB AND GUTTER AT TIE–IN POINTS.

2. THE CONTRACTOR IS RESPONSIBLE FOR ENGINEERING AND SURVEY WORK REQUIRED FOR LINE AND GRADE CONTROL POINTS REQUIRED FOR EARTHWORK AND FOR STAKING OUT PAVEMENT AND ALL OTHER ITEMS IN THE PLANS.

3. ALL CURB JOINTS SHALL EXTEND THROUGH THE CURB AND ALL JOINTS SHALL BE SEALED WITH JOINT SEALANT.

4. REMOVE EXISTING CONCRETE (WHERE REQUIRED) TO THE FIRST COLD JOINT OR SAW CUT TO OBTAIN A CLEAN EDGE FOR NEW CONSTRUCTION. SAW CUT EXISTING ASPHALT DRIVE AT LIMITS OF NEW CURBING TO OBTAIN A CLEAN EDGE.

5. PAVING SHALL BE IN ACCORDANCE WITH THE REVISED 2024 STANDARD SPECIFICATIONS SECTIONS 610, 1012 AND 1020. THE CONTRACTOR SHALL FOLLOW ALL PROCEDURES IN THE QUALITY MANAGMENT SYSTEM (QMS) FOR ASPHALT PAVEMENT AND MUST ADHERE TO ALL TESTING REQUIREMENTS AND QUALITY CONTROL REQUIREMENTS SPECIFIED IN THE ENCROACHMENT AND/OR DRIVEWAY PERMIT. THE NOMINATION OF THE TESTING LABORATORY AND THE PAYMENT OF SUCH TESTING SERVICES SHALL BE MADE BY THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SHOW STANDARD TESTING PROCEDURES THAT THE WORK CONSTRUCTED DOES MEET THE REQUIREMENTS OF THE NCDOT SPECIFICATIONS.

6. ALL RAMPS SHALL COMPLY WITH THE LATEST NCDOT STANDARDS AND ADA REQUIREMENTS. CURB RAMPS ARE SHOWN ON THE PLANS AT THE APPROXIMATE LOCATIONS.

7. ALL CURVES ARE TO BE SUPERELEVATED IN ACCORDANCE WITH STD. 225.04 AND 225.05 USING THE RATE OF SUPERELEVATION RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

UTILITY NOTES

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION (SHOWN OR NOT SHOWN) OF UTILITIES WITHIN THE PROJECT LIMITS. EXISTING UTILITY LOCATIONS AND SIZES SHOWN HAVE BEEN PROVIDED BY OTHERS AND ARE APPROXIMATE ONLY.

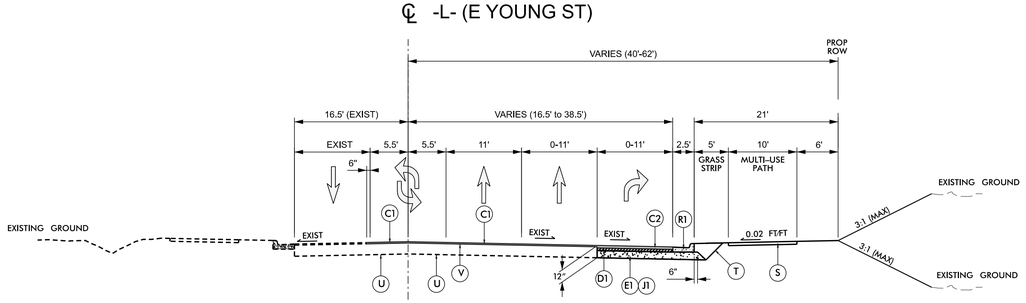
2. CONTRACTOR SHALL NOTIFY THE NORTH CAROLINA 811 AT 1–800–632–4949 AT LEAST 72 HOURS PRIOR TO ANY DEMOLITION, GRADING OR CONSTRUCTION ACTIVITY FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE SITE. CONTRACTOR TO CONTACT LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF NORTH CAROLINA 811.

3. RELOCATION OF EXISTING UTILITIES TO BE COORDINATED WITH LOCAL UTILITY PROVIDER(S).

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY OWNERS AND FOR PROVIDING PROTECTION AND SAFEGUARDS TO PREVENT DAMAGE OR INTERRUPTION TO EXISTING FACILITIES AND TO MAINTAIN ACCESSIBILITY TO EXISTING UTILITIES. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.

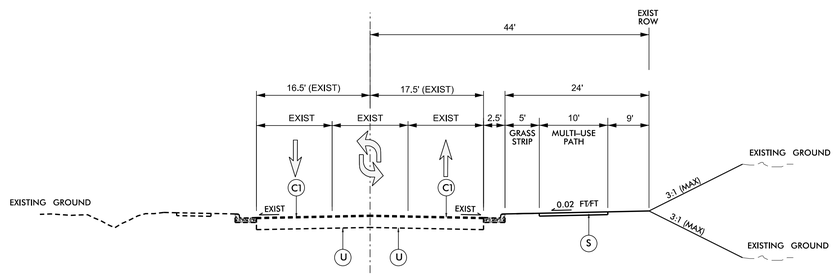
5. WATER VALVE BOXES AND WATER METER BOXES THAT ARE ENCOUNTERED WITHIN THE PROJECT LIMITS ARE TO BE RAISED OR LOWERED TO MATCH THE ADJACENT FINISHED WORK (SEE SECTION 858–1 AND 1510 NCDOT SPECIFICATIONS).

5/26/20



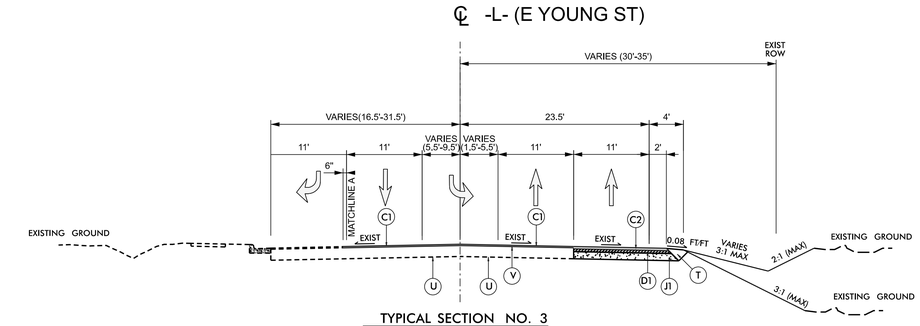
TYPICAL SECTION NO. 1

-L- STA. 19+37.00 TO STA. 27+70.00



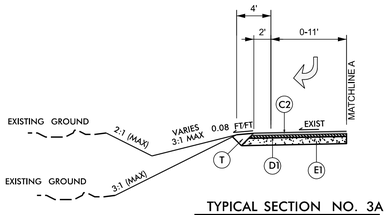
TYPICAL SECTION NO. 2

-L- STA. 16+70.00 TO STA. 19+37.00



TYPICAL SECTION NO. 3

-L- STA. 28+80.00 TO STA. 38+80.00



TYPICAL SECTION NO. 3A

-L- STA. 31+95.00 TO STA. 35+00.00

PRELIMINARY PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½″ ASPHALT CONCRETE SURFACE COURSE,TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD.
C2	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE,TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE,TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD. PER 1″ DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½″ IN DEPTH.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE,TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1″ DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2″ OR GREATER THAN 4″ IN DEPTH.
E1	PROP. APPROX. 5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YARD
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE,TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1″ DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3″ OR GREATER THAN 5½″ IN DEPTH.
J1	PROP. 10″ AGGREGATE BASE COURSE (MAY BE SUBSTITUTED FOR E1 IN AREAS WIDER THAN 6′)
R1	PROPOSED 2′-6″ CURB AND GUTTER
S	PROPOSED 4″ CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING EXISTING PAVEMENT, 1.5″ DEPTH

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
2. REFER TO PLAN SHEETS FOR VARIABLE WIDTHS.
3. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 2′ MINIMUM FULL DEPTH ASPHAT PAVEMENT.
4. CONTRACTOR IS REQUIRED TO PROVIDE ASPHALT PATCH TO REPAIR PAVEMENT AS NEEDED WITHIN PROJECT LIMITS PRIOR TO OVERLAY.

E YOUNG ST

TYP 4A

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

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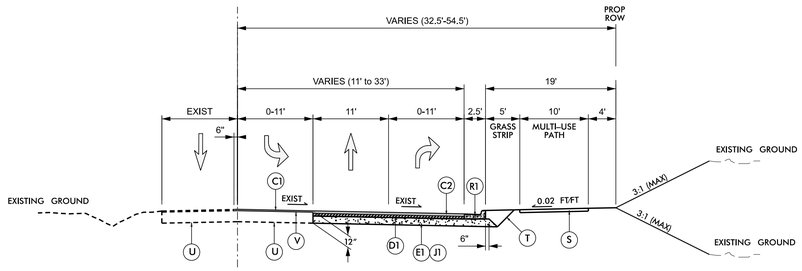
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

TYPICAL SECTIONS

REVISIONS

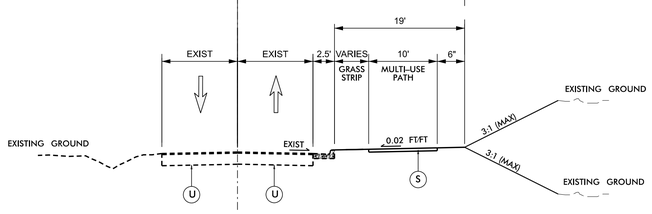
℄ -Y1- (QUARRY RD)



TYPICAL SECTION NO. 4

-Y1- STA. 10+80.00 TO STA. 23+50.00

℄ -Y1- (QUARRY RD)



TYPICAL SECTION NO. 5

-Y1- STA. 23+50.00 TO STA. 28+46.00

PRELIMINARY PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE,TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE,TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE,TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE,TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YARD
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE,TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5½" IN DEPTH.
J1	PROP. 10" AGGREGATE BASE COURSE (MAY BE SUBSTITUTED FOR E1 IN AREAS WIDER THAN 6')
R1	PROPOSED 2'-6" CURB AND GUTTER
S	PROPOSED 4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING EXISTING PAVEMENT, 1.5" DEPTH

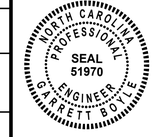
NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
2. REFER TO PLAN SHEETS FOR VARIABLE WIDTHS.
3. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 2' MINIMUM FULL DEPTH ASPHAT PAVEMENT.
4. CONTRACTOR IS REQUIRED TO PROVIDE ASPHALT PATCH TO REPAIR PAVEMENT AS NEEDED WITHIN PROJECT LIMITS PRIOR TO OVERLAY.

E YOUNG ST
TYP 4B

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER



PREPARED BY

EXULT® ENGINEERING
NC License #C-1445
203 W. Millbrook Road, Ste 200
Raleigh, NC 27609
980.495.2250
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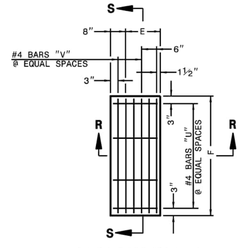
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED.
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

YOUNG STREET COMMERCIAL ROADWAY AND SIGNAL IMPROVEMENTS

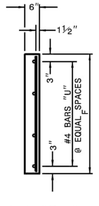
TYPICAL SECTIONS

REVISIONS

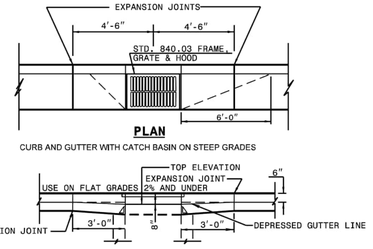
5/26/20



PLAN OF TOP SLAB

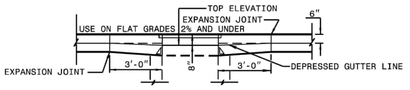


SECTION S-S



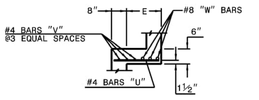
PLAN

CURB AND GUTTER WITH CATCH BASIN ON STEEP GRADES

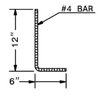


ELEVATION

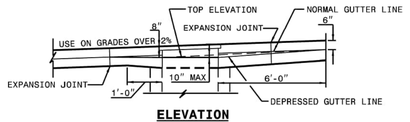
NORMAL CURB AND GUTTER ON LIGHT GRADES



SECTION R-R



DOWEL



ELEVATION

NORMAL CURB AND GUTTER ON STEEP GRADES

MINIMUM DIMENSIONS AND QUANTITIES FOR BRICK CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER)*

DIMENSIONS OF BOX AND PIPE						TOP SLAB DIMENSIONS		BARS-U		BARS-V		BARS-W		TOTAL LBS.	CU.YDS. CONC. IN BOX			BRICK MASONRY		DEDUCTIONS ONE PIPE	
PIPE	SPAN	WIDTH	WIDTH	SPAN	MIN. HEIGHT			NO.	LENGTH	NO.	LENGTH	NO.	LENGTH		TOP SLAB	BOTTOM SLAB	TOTAL CONC.	BRICK MASNR. IN WALLS	TOTAL BRICK AND CONCRETE	C.M.	R.C.
D	A	B	C	G	H	E	F														
12"	3'-0"	2'-2"	--	--	2'-9"	--	--	--	--	--	--	--	--	--	--	0.281	0.281	0.883	1.164	0.020	0.042
15"	3'-0"	2'-2"			3'-0"											0.281	0.281	0.963	1.244	0.031	0.047
18"	3'-0"	2'-2"			3'-3"											0.281	0.281	1.043	1.324	0.044	0.065
24"	3'-0"	2'-2"			3'-9"											0.281	0.281	1.204	1.485	0.078	0.121
30"	3'-0"	2'-2"	3'-4"		4'-3"	1'-2"	4'-4"	4	1'-6"	3	4'-1"	3	4'-1"	45	0.147	0.374	0.521	1.606	2.217	0.122	0.184
36"	3'-0"	2'-2"	3'-10"		4'-9"	1'-8"	4'-4"	4	2'-0"	4	4'-1"	3	4'-1"	49	0.187	0.415	0.602	1.914	2.516	0.176	0.261
42"	3'-0"	2'-2"		4'-5"	5'-3"	1'-5"	3'-6"	4	1'-9"	3	3'-3"	3	3'-3"	38	0.135	0.373	0.508	2.152	2.660	0.240	0.371
48"	3'-0"	2'-2"		5'-0"	5'-9"	2'-0"	3'-6"	4	2'-6"	4	3'-3"	3	3'-3"	41	0.173	0.410	0.583	2.415	2.998	0.313	0.477
54"	3'-0"	2'-2"		5'-7"	6'-3"	2'-7"	3'-6"	4	3'-0"	6	3'-3"	3	3'-3"	47	0.211	0.448	0.659	2.806	3.465	0.396	0.595

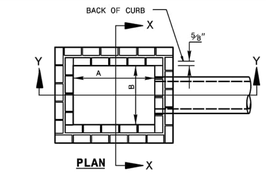
* RISER HAS .321 CUBIC YARDS OF BRICK MASONRY PER FOOT HEIGHT

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

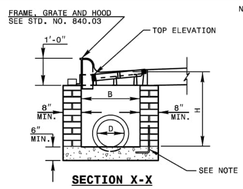
ROADWAY STANDARD DRAWING FOR **BRICK CATCH BASIN** 12" THRU 54" PIPE

SHEET 2 OF 2

840.01

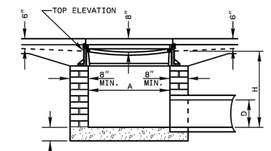


PLAN

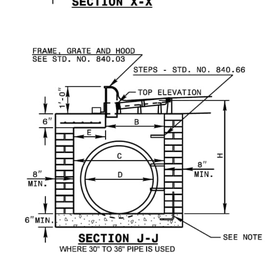


SECTION X-X

NOTES: MORTAR JOINTS ½" +/- ⅛" THICK.
USE CLASS "B" CONCRETE THROUGHOUT.
USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB.
DEDUCT FOR PIPE(S) FROM TOTAL CU. YDS. OF BRICK MASONRY.
USE #4 BAR DOWELS AT 12" CENTERS FOR ALL PIPE SIZES.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
FOR 8'-0" IN HEIGHT OR LESS, USE 8" WALL. OVER 8'-0" IN HEIGHT, USE 12" WALL TO 6'-0" FROM TOP OF WALL AND 8" WALL FOR THE REMAINING 6'-0". QUANTITIES TO BE ADJUSTED ACCORDINGLY.
MAXIMUN DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12'-0". STD. NO. 840.45 CONTROLS MAXIMUM DEPTH OF PRECAST BOX IF USED.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

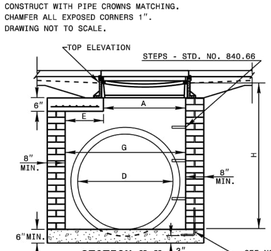


SECTION Y-Y



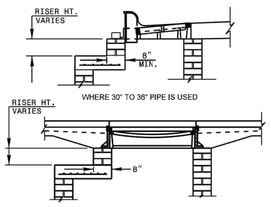
SECTION J-J

WHERE 30" TO 36" PIPE IS USED

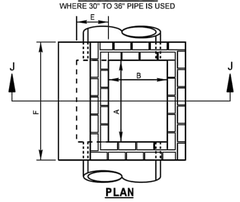


SECTION M-M

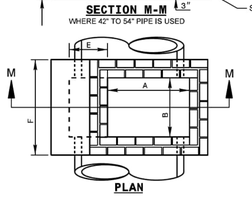
WHERE 42" TO 54" PIPE IS USED



DETAIL SHOWING METHOD OF RISER CONSTRUCTION



PLAN



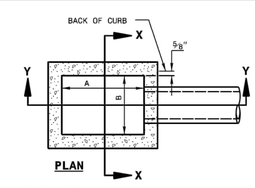
PLAN

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

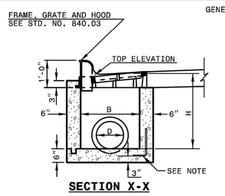
ROADWAY STANDARD DRAWING FOR **BRICK CATCH BASIN** 12" THRU 54" PIPE

SHEET 1 OF 2

840.01

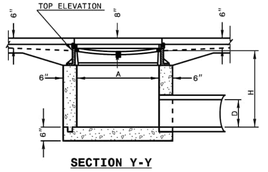


PLAN

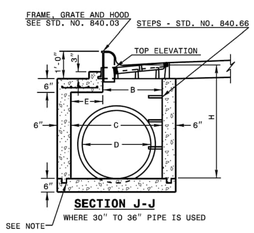


SECTION X-X

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITITES ACCORDINGLY.
MAXIMUM DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 16'-0". STD. NO. 840.45 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

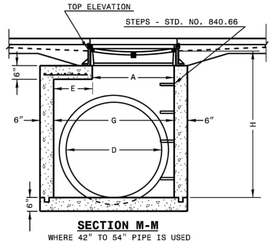


SECTION Y-Y



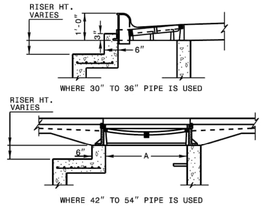
SECTION J-J

WHERE 30" TO 36" PIPE IS USED

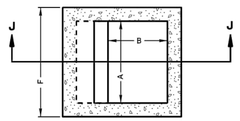


SECTION M-M

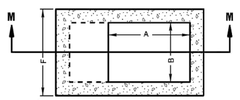
WHERE 42" TO 54" PIPE IS USED



DETAIL SHOWING METHOD OF RISER CONSTRUCTION



PLAN



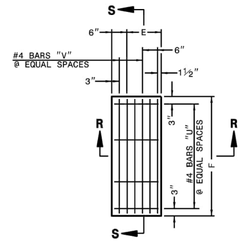
PLAN

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

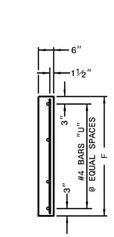
ROADWAY STANDARD DRAWING FOR **CONCRETE CATCH BASIN** 12" THRU 54" PIPE

SHEET 1 OF 2

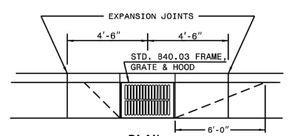
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PLAN OF TOP SLAB

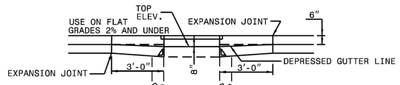


SECTION S-S



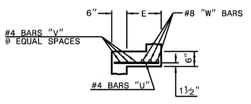
PLAN

CURB AND GUTTER WITH CATCH BASIN ON STEEP GRADES

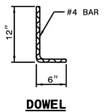


ELEVATION

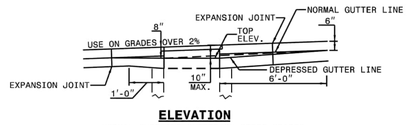
NORMAL CURB AND GUTTER ON LIGHT GRADES



SECTION R-R



DOWEL



ELEVATION

NORMAL CURB AND GUTTER ON STEEP GRADES

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V		BARS-W		TOTAL LBS.	CU.YDS. CONC. IN BOX			DEDUCTIONS ONE PIPE	
PIPE	SPAN	WIDTH	WIDTH	SPAN	MIN. HEIGHT			NO.	LENGTH	NO.	LENGTH	NO.	LENGTH		TOP SLAB	BOTTOM SLAB	TOT. CONC FOR MINIMUM HEIGHT, H	C.M.	R.C.
D	A	B	C	G	H	E	F												
12"	3'-0"	2'-2"	--	--	2'-9"	--	--	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"			3'-0"											0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"			3'-3"											0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"			3'-9"											0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"		4'-3"	1'-2"	4'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"		4'-9"	1'-8"	4'-0"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.161	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"		4'-5"	5'-3"	1'-5"	3'-2"	4	1'-8"	2	2'-11"	3	2'-11"	32	0.112	0.318	1.738	0.180	0.243
48"	3'-0"	2'-2"		5'-0"	5'-9"	2'-0"	3'-2"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.145	0.352	2.052	0.235	0.317
54"	3'-0"	2'-2"		5'-7"	6'-3"	2'-7"	3'-2"	4	2'-10"	5	2'-11"	3	2'-11"	41	0.180	0.386	2.387	0.297	0.401

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

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

SHEET 2 OF 2

840.02

E YOUNG ST

5

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BYLE

PREPARED BY

EXULT® ENGINEERING

NC License #C-1445

203 W. Millbrook Road, Ste 200
Raleigh, NC 27609
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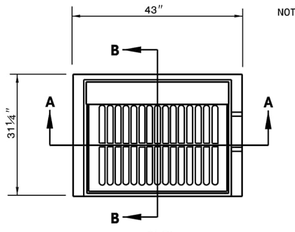
INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

E YOUNG STREET COMMERCIAL ROADWAY AND SIGNAL IMPROVEMENTS

DETAILS

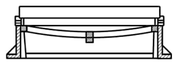
REVISIONS

5/26/20



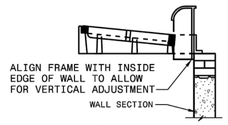
PLAN

FRAME,GRATE, & HOOD ASS'Y



SECTION - AA

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.



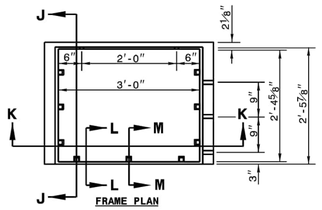
SECTION - BB



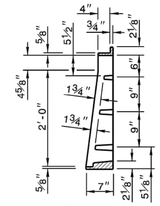
SECTION - LL



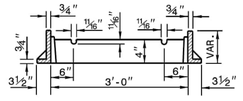
SECTION - MM



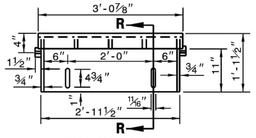
FRAME PLAN



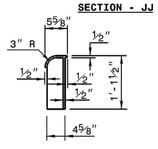
SECTION - JJ



SECTION - KK



HOOD ELEVATION



SECTION - RR

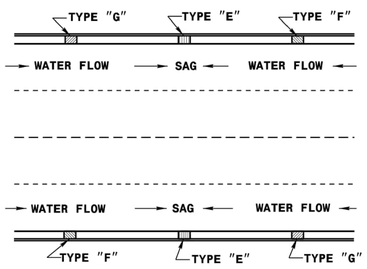
ROADWAY STANDARD DRAWING FOR
FRAME, GRATE, AND HOOD
FOR USE ON STANDARD CATCH BASIN

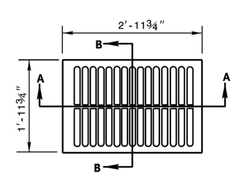
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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

SHEET 1 OF 2
840.03

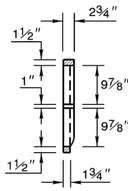
DETAIL SHOWING TYPES OF GRATES
USE ACCORDING TO WATER FLOW.



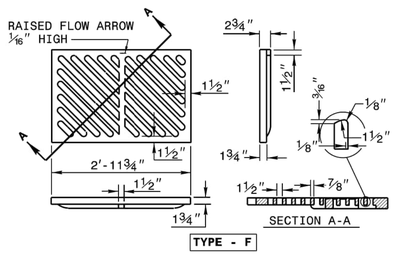


SECTION A-A

TYPE - E

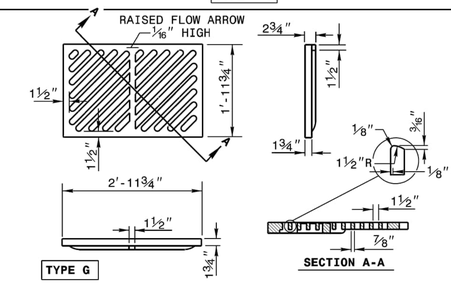


SECTION B-B



SECTION A-A

TYPE - F



TYPE G

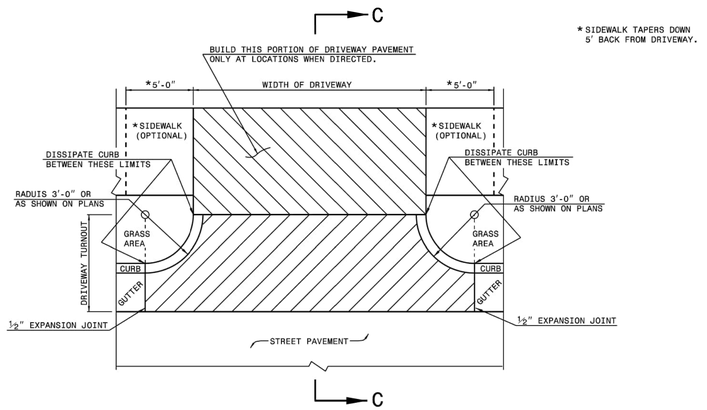
SECTION A-A

ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

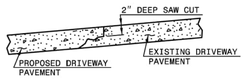
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

SHEET 2 OF 2
840.03

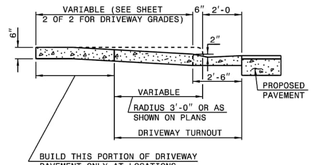


PLAN
DETAIL OF DRIVEWAY



METHOD OF TIE IN

WHEN EXISTING DRIVEWAY PAVEMENT IS CONCRETE, SAW CUT 2" DEEP JOINT AT THE POINT OF TIE-IN. SAW JOINT PERPENDICULAR TO EDGE OF EXISTING DRIVEWAY PAVEMENT.



SECTION C-C

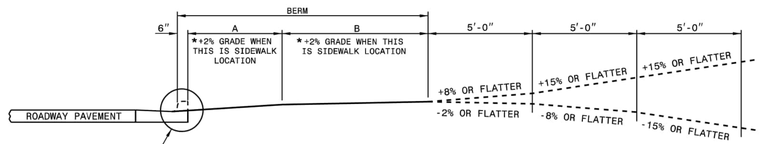
ROADWAY STANDARD DRAWING FOR
DRIVEWAY TURNOUT
RADIUS TYPE

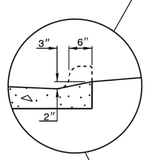
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

SHEET 1 OF 2
848.02

DESIRABLE DRIVEWAY GRADES



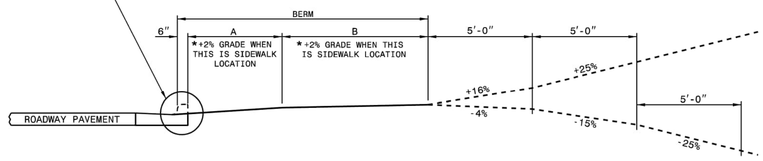


*SIDEWALK LOCATION
(DO NOT PLACE SIDEWALK ON BERMS LESS THAN 6' WIDE.)

DESIRABLE OR MAXIMUM DRIVEWAY GRADES

BERM WIDTH	A		B	
	DIST.	GRADE	DIST.	GRADE
8' OR LESS	5'-0"	+2%*	2'-6"	+5%
8' OR LESS	2'-0"	+6%	5'-6"	+2%*
10'	4'-0"	+4%	5'-6"	+2%*
12' & OVER	4'-6"	+4%	7'-0"	+2%*

MAXIMUM DRIVEWAY GRADES



ROADWAY STANDARD DRAWING FOR
DRIVEWAY TURNOUT
DRIVEWAY GRADES

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

1-24

SHEET 2 OF 2
848.02

E YOUNG ST
6

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

PREPARED BY

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NC License #C-1445
203 W. Millbrook Road, Ste 200
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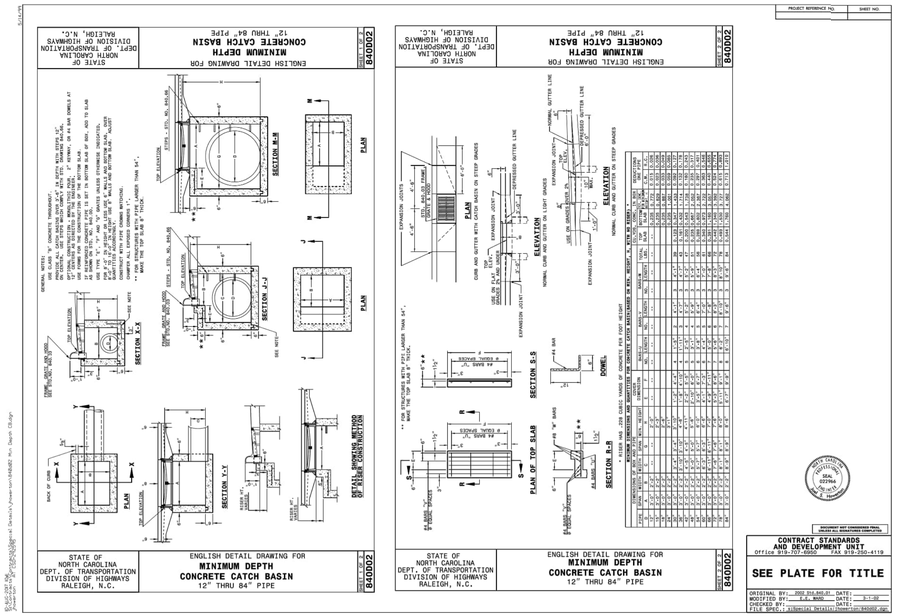
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DO NOT USE FOR R/W ACQUISITION

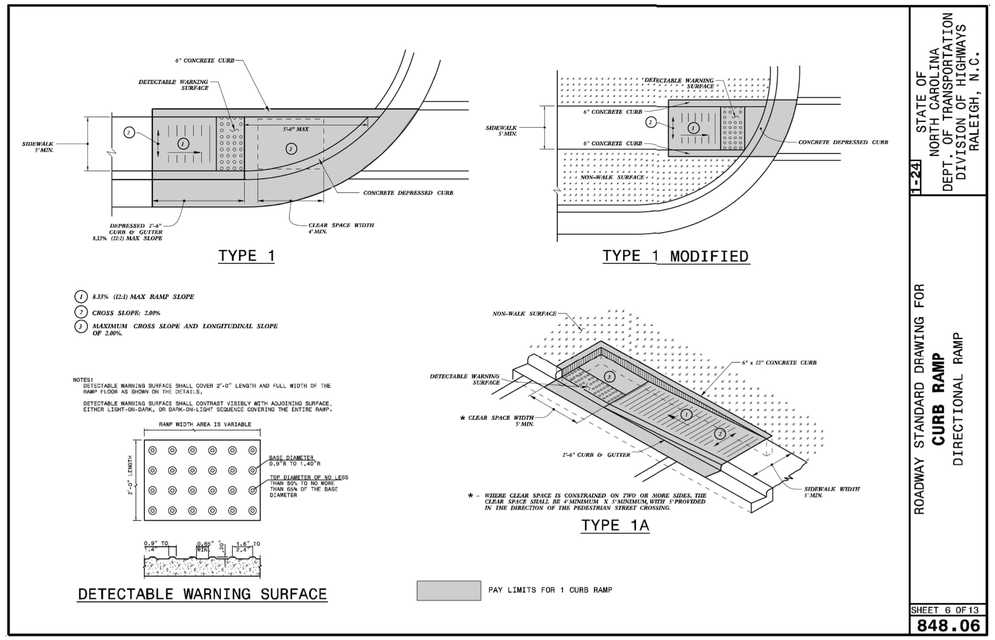
E YOUNG STREET COMMERCIAL ROADWAY AND SIGNAL IMPROVEMENTS

DETAILS

REVISIONS

5/26/20



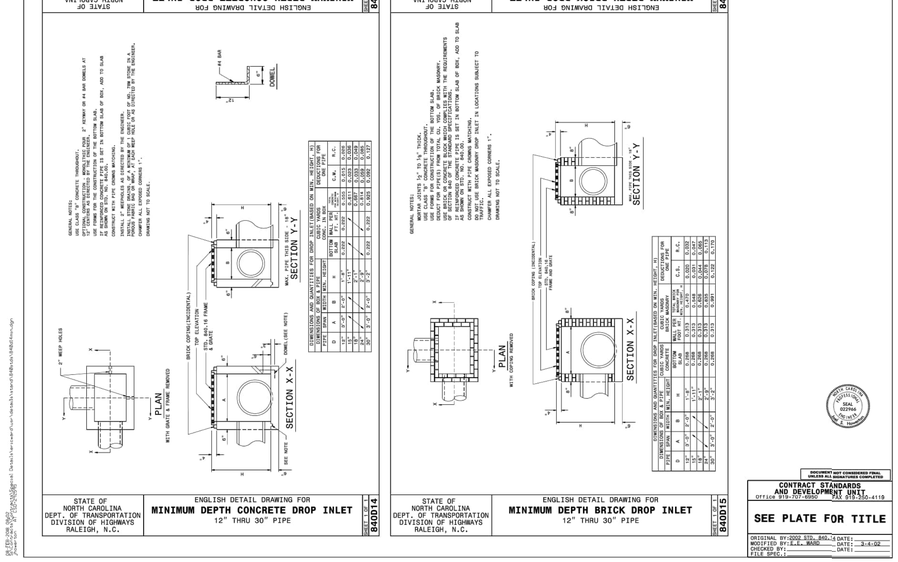


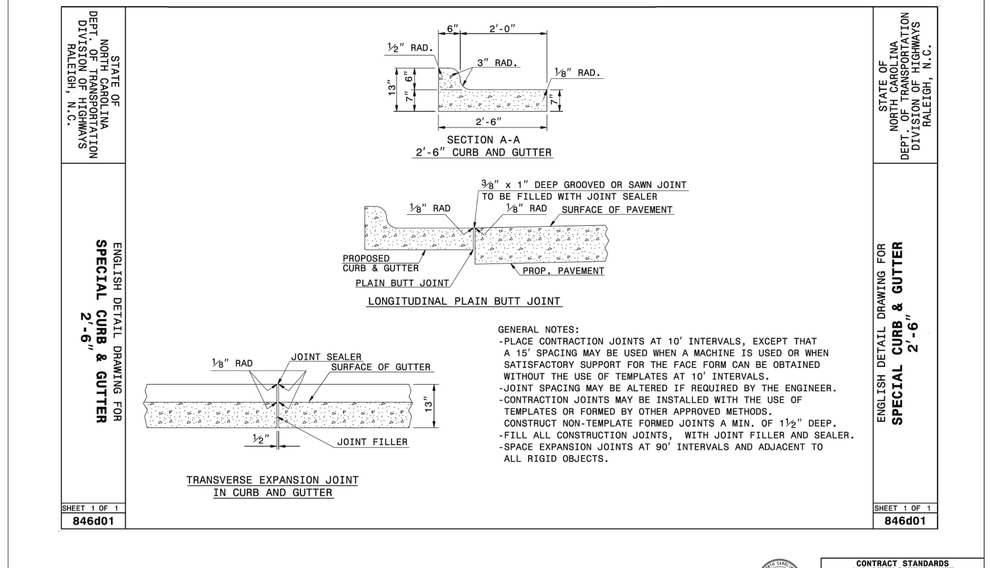
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
DIRECTIONAL RAMP

SHEET 6 OF 13
848.06





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

ENGLISH DETAIL DRAWING FOR
SPECIAL CURB & GUTTER
2'-6"

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

ENGLISH DETAIL DRAWING FOR
SPECIAL CURB & GUTTER
2'-6"

SHEET 1 OF 1
846d01

SHEET 1 OF 1
846d01

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. WARD DATE: MAY 1997
MODIFIED BY: R.A. KIMBY DATE: MAY 2015
CHECKED BY: DATE:
FILE SPEC.: N:\engineering\traffic\RTE_846d01.dgn

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7
NORTH CAROLINA
WAKE COUNTY

ROADWAY DESIGN ENGINEER
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E YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

DETAILS

REVISIONS

5/26/20

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

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

TIME RESTRICTIONS

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

ROAD NAME	DAY AND TIME RESTRICTIONS
SR 1003 (E YOUNG STREET) SR 2305 (QUARRY ROAD)	6:00 AM TO 9:00 AM 4:00 PM TO 7:00 PM MONDAY THRU FRIDAY

B) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
SR 1003 (E YOUNG STREET) SR 2305 (QUARRY ROAD)	6:00 AM TO 9:00 AM 4:00 PM TO 7:00 PM MONDAY THRU FRIDAY

C) DO NOT STOP TRAFFIC FOR MORE THAN 15 MINUTES WITHIN THE PROJECT LIMITS.

LANE AND SHOULDER CLOSURE REQUIREMENTS

D) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDEDFACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1191,92 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONELL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

H) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

I) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

J) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 350 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

SIGNING

K) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

WHEN NO WORK IS BEING CONDUCTED FOR A PERIOD LONGER THAN ONE WEEK, REMOVE OR COVER ALL ADVANCE WORK ZONE WARNING SIGNS, AS DIRECTED BY THE ENGINEER.

L) PROVIDE PERMANENT SIGNING.

M) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 500' IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

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

TRAFFIC CONTROL DEVICES

O) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

PAVEMENT MARKINGS AND MARKERS

P) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE OF ROADWAY AS SHOWN IN THE PAVEMENT MARKING AND SIGNING PLANS.

Q) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

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

S) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

PEDESTRIAN AND BICYCLIST SAFETY

T) PEDESTRIAN AND BICYCLIST SAFETY MUST BE MAINTAINED AT ALL TIMES BY ADEQUATE PROJECT LIMITS, FENCING, AND SIGNAGE.

MISCELLANEOUS

U) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

V) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 200 FT AND 200 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

W) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.

X) CONTRACTOR SHALL MAINTAIN EXISTING SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

Y) EMERGENCY VEHICLE ACCESS SHALL BE MAINTAINED THROUGH THE PROJECT CONSTRUCTION AREA FOR THE DURATION OF THE PROJECT.

Z) ACCESS SHALL BE MAINTAINED TO ALL RESIDENCES AND BUSINESSES AT ALL TIMES.

PHASING NOTES

PHASE 1:

THE CONTRACTOR SHALL PLACE ALL ADVANCE WARNING SIGNS PRIOR TO BEGINNING WORK ACCORDING TO NCDOT STANDARD DRAWING NO. 1101.01(SHEET 3 OF 3). SIGNS SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.

WHILE MAINTAINING EXISTING TRAFFIC AND USING NCDOT STANDARD DRAWING NO. 1101.02 (SHEET 1 OF 19) FOR TEMPORARY LANE CLOSURES AS NEEDED, THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED IMPROVEMENTS ALONG SR 1003 (E YOUNG STREET) AND SR 2305 (QUARRY ROAD) INCLUDING:

1. GRADING ALONG THE SHOULDER.
2. INSTALL DRAINAGE.
3. INSTALL CURB AND GUTTER, SIDEPATH, ASPHALT BASE COURSE, INTERMEDIATE COURSE AND SURFACE COURSE UP TO BUT NOT INCLUDING THE FINAL 1.5" OF SURFACE COURSE ALONG WIDENED PORTION.

PHASE 2:

WHILE MAINTAINING EXISTING TRAFFIC AND USING NCDOT STANDARD DRAWING NO. 1101.02 (SHEET 1 OF 19) FOR TEMPORARY LANE CLOSURES AS NEEDED, THE CONTRACTOR SHALL:

1. INSTALL 5" CONCRETE MEDIAN ISLAND.
2. INSTALL PROPOSED SIGNAL WORK AS SHOWN ON THE PLANS.
3. INSTALL THE FINAL 1.5 INCH LAYER OF SURFACE COURSE.
4. INSTALL FINAL THERMOPLASTIC PAVEMENT MARKINGS AND RAISED REFLECTIVE PAVEMENT MARKERS.
5. PLACE TRAFFIC ONTO FINAL PATTERN.
6. REMOVE ALL TRAFFIC CONTROL DEVICES AND SIGNAGE.

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1160.01	TEMPORARY CRASH CUSHION
1180.01	SKINNY - DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

E YOUNG ST

8

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

PREPARED BY

EXULT® ENGINEERING

NC License #C-1445

203 W. Millbrook Road, Ste 200
Raleigh, NC 27609
980.495.2250
www.exultengineering.com

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

E YOUNG STREET COMMERCIAL ROADWAY AND SIGNAL IMPROVEMENTS

TRAFFIC MANAGEMENT PLAN

REVISIONS

5/26/20

ASHTON RALEIGH RESIDENTIAL LLC
DB 20059, PG 373
BM 2024, PG 2187
PIN: 1768-35-3261

VARIABLE WIDTH DUKE ENERGY EASEMENT
BM 2024 PG 2184

RLS POINT LLC
DB 19946, PG 75
BM 2025, PG 1425
PIN: 1768-34-6972

CB
TOP: 377.76'
INV. IN (N): 374.25'
INV. OUT (S): 374.12'

48" RCP
INV: 370.83'

CB
TOP: 377.90'
INV. IN (N): 373.53'
INV. IN (E): 371.05'
INV. OUT (W): 371.00'

CB
TOP: 381.03'
INV. IN (N): 377.45'
INV. OUT (S): 377.35'

SDMH
TOP: 380.39'
INV. IN (N): 376.32'
INV. OUT (S): 376.02'

CB
TOP: 381.68'
INV. IN (X): 377.98'
INV. OUT (X): 377.88'

CB
TOP: 383.36'
INV. IN (N): 378.50'
INV. OUT (S): 378.46'

CB
TOP: 390.26'
INV. IN (N): 385.14'
INV. OUT (S): 385.01'

CB
TOP: 395.23'
INV. OUT (S): 390.64'

ASHTON RALEIGH RESIDENTIAL LLC
PIN:1768365071
DB 20059, PG 373
BM 2024, PG 2186

DRAINAGE EASEMENT
BM 2024 PG 2184

SDMH
TOP: 399.53'
INV. IN (N): 395.45'
INV. IN (E): 393.99'
INV. OUT (W): 393.93'

24" CMP
INV, OUT : 392.49'

18" RCP

CB
TOP: 399.23'
INV. IN (E): 394.68'
INV. OUT (W): 394.67'

MATCH LINE - SEE SHEET EX 2

EXIST. RIGHT OF WAY

City of Raleigh

48" RCP
INV: 372.37'

CB
TOP: 377.58'
INV. IN (E): 372.19'
INV. OUT (W): 371.78'

CB
TOP B.O.C: 379.58'
INV. IN: 375.67'
INV. OUT: 375.63'

N 06°17'45" W 226.72'

CATCH BASIN
TOP B.O.C=389.69'
IN=384.93'
OUT=384.80'

EXISTING CITY OF RALEIGH WATER EASEMENT
BM 2012, PG 466

CATCH BASIN
TOP B.O.C=395.04'
IN=390.66'
OUT=390.66'

N 08°08'55" W 296.00'

EXISTING CITY OF RALEIGH WATER EASEMENT
BM 2012, PG 467

S 38°15'53" W 396.32'

SEWER MANHOLE
RIM=386.82'
IN=377.96'
OUT=377.84'

SEWER MANHOLE
RIM=389.80'
IN=377.08'
OUT=377.04'

8" PVC

EXISTING CITY OF RALEIGH WATER EASEMENT
BM 2012, PG 467

FES
INV=396.92'

CATCH BASIN
TOP B.O.C=400.96'
IN=395.34'
OUT=395.01'

EXISTING PUBLIC DRAINAGE EASEMENT
BM 2012, PG 466

WETLANDS
AREA
1,663 SF
0.038 AC

WETLANDS
AREA
1,708 SF
0.039 AC

SEWER MANHOLE
RIM=396.88'
IN=387.23'
OUT=387.20'

50′ 0′ 50′ 100′
25′

E YOUNG ST
EX | 1

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

PREPARED BY

EXULT® ENGINEERING

NC License #C-1445

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INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

EXISTING CONDITIONS

REVISIONS

5/26/20

VARIABLE WIDTH DUKE ENERGY EASEMENT
BM 2024 PG 2184

CAMERON EDWIN SHEARON;
BEVERLY W SHEARON
DB 17719, PG 1847
BM 2018, PG 931
PIN: 1768-36-0873

MITCHELL FR RABIL JR;
MARY KAYE R COPLEY
DB 19590, PG 382
PIN: 1768-17-9167

NAD 83
NA 2011

CONTROL POINT & BENCHMARK
GPS 2
N: 786639.1408
E: 2163618.9973

CB
TOP: 403.96'
INV. OUT (S): 400.86'

CITY OF RALEIGH WATER EASEMENT
BM 2024 PG 2184

>10" High Pressure (Enbridge)

CB
TOP: 406.70'
INV. OUT (NW): 403.55'

FES
INV. OUT: 403.11'

24" RCP
INV: 398.72'

EXIST. RIGHT-OF-WAY

8" Unknown Material (Enbridge)

City of Raleigh

24" RCP
INV: 399.64'

24" RCP
INV: 403.97'

24" RCP
INV: 404.25'

MATCH LINE - SEE SHEET EX 1

EXISTING CITY OF RALEIGH WATER EASEMENT
BM 2012, PG 466

APPROXIMATE LOCATION
PUBLIC UTILITY EASEMENT
BM 2012, PG 463

EXISTING 30' CAROLINA POWER & LIGHT EASEMENT
DB 4132, PG 683

EXISTING HIGH CAP HWY

N/F
GLENN C HARRISON
SANDRA SCARBORO
PIN: 1768-48-8786
DB 17315, PG 2379
BM 1967, PG 159

N/F
GLENN C HARRISON
SANDRA SCARBORO
PIN: 1768-48-8786
DB 17315, PG 2379
BM 1967, PG 159

MATCH LINE - SEE SHEET EX 3

50′ 0′ 50′ 100′
25′

E YOUNG ST
EX | 2

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

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YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

EXISTING CONDITIONS

REVISIONS

5/26/20

N/F
ROBERTSON FAMILY
PARTNERSHIP
ANN ROBERTSON
PIN; 1768467947
DB 6041, PG 537
BM 2006, PG 1350

NAD 83
NA 2011

18" RCP
INV=402.51'

CATCH BASIN
TOP B.O.C=406.45'
(A)IN=402.26
(B)IN=402.27'
(C)OUT=402.23'

CATCH BASIN
TOP B.O.C=408.31'
IN=403.77'
OUT=403.56'

CATCH BASIN
TOP B.O.C=412.50'
IN=406.12'
OUT=406.10'

CATCH BASIN
TOP B.O.C=414.16'
IN=408.48'
OUT=408.31'

18" RCP
INV=404.35'

CATCH BASIN
TOP B.O.C=408.45'
(FLOODED)

MATCH LINE - SEE SHEET EX 2

EXIST. RIGHT-OF-WAY

City of Raleigh

15" RCP

L9

L10

L11

N 83°52'42" E 329.55'

S 78°14'07" E 181.18'

S 83°52'42" E 150.49'

S 78°14'07" E 155.15'

WALL

18" RCP
INV=402.84'

EXISTING PUBLIC DRAINAGE
EASEMENT
BM 2012, PG 463

EXISTING PUBLIC DRAINAGE
EASEMENT
BM 2012, PG 464

(C)
30" RCP
INV=401.66'

EXISTING 30' CAROLINA POWER & LIGHT
EASEMENT
DB 4132, PG 683

WAKE COUNTY BOARD OF
EDUCATION
RE SERVICES DIRECTOR
PIN: 1768464343
DB 14097, PG 2016
BM 2011, PG 1220
916,339 SF
21.036 AC

CATCH BASIN
TOP B.O.C=413.12'
OUT=408.77'

S 06°09'42" W 211.28'

N 89°54'51" W 482.92'

WETLANDS
AREA
34,765 SF
0.798 AC

S 48°44'04" W 586.22'

JS

405.0'
400.0'
395.0'
410.0'

50' 0' 50' 100'
25'

E YOUNG ST

EX | 3

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN
ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

PREPARED BY

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INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

EXISTING CONDITIONS

REVISIONS

5/26/20

E YOUNG ST

RDY | R1

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

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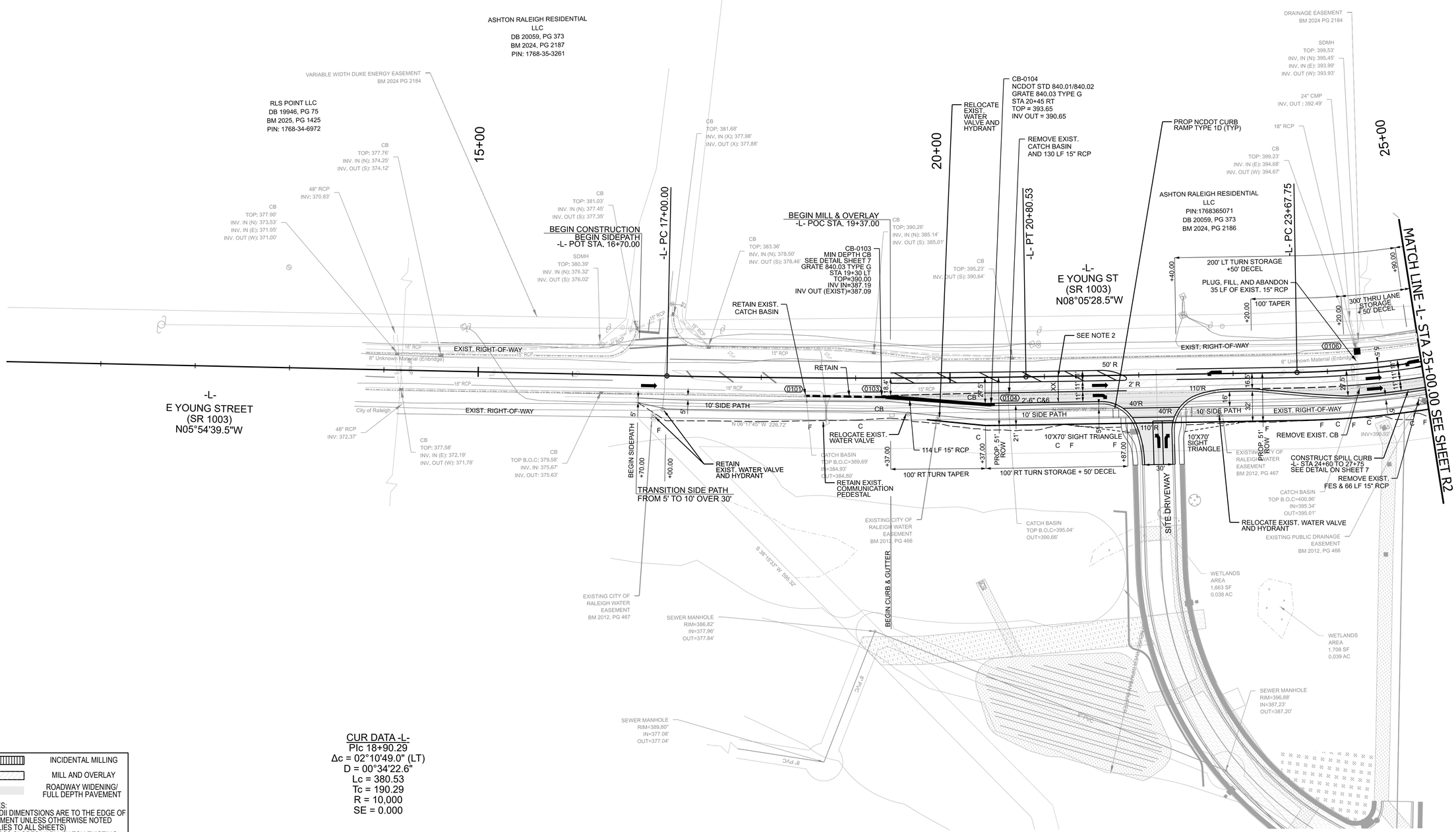
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INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

PLAN SHEET

REVISIONS



CUR DATA -L-
PIc 18+90.29
Δc = 02°10'49.0" (LT)
D = 00°34'22.6"
Lc = 380.53
Tc = 190.29
R = 10,000
SE = 0.000

INCIDENTAL MILLING

MILL AND OVERLAY

ROADWAY WIDENING/
FULL DEPTH PAVEMENT

NOTES:
1. RADII DIMENTSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED (APPLIES TO ALL SHEETS)
2.CROSS SLOPES VARY. MATCH EXISTING CROSS SLOPES FOR OVERLAY. REFER TO CROSS SECTIONS.
3.RELOCATE EXISTING COMMUNICATION AND FIBER OPTIC UTILITY LINES OUTSIDE THE LIMITS OF THE PROPOSED WIDENING.

50′ 0′ 50′ 100′
25′

5/26/20

E YOUNG ST

RDY | R2

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BYLE

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INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

PLAN SHEET

REVISIONS

NAD 83
NA 2011

-L- POC 28+42.19
-Y1- POT 10+00.00

MATCH LINE -L- STA 24+71.44 SEE SHEET R1

MATCH LINE -Y1- STA 14+13.17 SEE SHEET R3

VARIABLE WIDTH DUKE ENERGY EASEMENT
BM 2024 PG 2184

CAMERON EDWIN SHEARON;
BEVERLY W SHEARON
DB 17719, PG 1847
BM 2018, PG 931
PIN: 1768-36-0873

MITCHELL FR RABIL JR;
MARY KAYE R COPLEY
DB 19590, PG 382
PIN: 1768-17-9167

CONTROL POINT & BENCHMARK
GPS 2
N: 786639.1408
E: 2163618.9973

CITY OF RALEIGH WATER EASEMENT
BM 2024 PG 2184

>10" High Pressure (Enbridge)

8" Unknown Material (Enbridge)

-L-
N35°32'49.7"W

-L-
E YOUNG ST
(SR 1003)
N34°10'12.5"W

-L-
N33°05'58.0"W

-Y1-
QUARRY RD
(SR 2305)
N83°26'14.7"E

-L-
QUARRY RD
N16°36'41.6"E

CENTURY FARM RD
(SR 2306)

-L- PT 28+22.99

-L- PC 30+90.57

-L- PT 34+51.07

-L- PC 35+53.60

-L- PT 37+40.47

-L- POE 39+00.00

-Y1- POB 10+00.00

-Y1- PC 10+59.17

-Y1- PT 11+96.17

30+00

35+00

10+00

END CONSTRUCTION
END MILL & OVERLAY
-L- POT STA. 38+80.00

100' TAPER

100' LT TURN STORAGE + 50' DECEL

300' THRU LANE STORAGE + 50' DECEL

105' RT TURN STORAGE + 50' DECEL

EXIST.

PROP NCDOT CURB RAMP TYPE 2

PROP NCDOT CURB RAMP 848.06 (SHEET 2 OF 13)

10' SIDE PATH

2'-6" C&G

EXIST. RIGHT-OF-WAY

PROP. RIGHT-OF-WAY

PROP. 51' ROW

PROP. 62' ROW

55'R

50'R

35'R

2'R

RELOCATE EXIST. UTILITY GUY POLE

RELOCATE EXIST. WATER VALVE AND HYDRANT

RELOCATE EXIST. COMMUNICATION HANDHOLE

RELOCATE EXIST. UTILITY POLE

CONSTRUCT SPILL CURB
-L- STA 24+60 TO 27+75
SEE DETAIL ON SHEET 7

RELOCATE EXIST. COMMUNICATION PEDESTAL

RELOCATE EXIST. WATER VALVE, HYDRANT, AND WATER MANHOLE

RELOCATE EXIST. WATER VALVE AND HYDRANT

ADJUST EXIST. WATER VALVE

ADJUST EXIST. COMMUNICATION PEDESTAL & HANDHOLE

ADJUST EXISTING WATER VALVE

REMOVE EXIST. WATER VALVE AND HYDRANT

PROP. TEMPORARY CONSTRUCTION EASEMENT

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 1

SEE NOTE 2

RETAIN

RETAIN EXIST. COMMUNICATION PEDESTAL

ADDITIONAL WIDENING CONSTRUCTED BY OTHERS

RELOCATE EXIST. WATER VALVE AND HYDRANT NORTH OF CENTURY FARM ROAD TO AVOID GAS MAIN EASEMENT

EXIST. RIGHT-OF-WAY

EXIST. RIGHT OF-WAY

EXISTING CITY OF RALEIGH WATER EASEMENT
BM 2012, PG 466

APPROXIMATE LOCATION PUBLIC UTILITY EASEMENT
BM 2012, PG 463

EXISTING 30' CAROLINA POWER & LIGHT EASEMENT
DB 4132, PG 683

EXIST. RIGHT-OF-WAY OF SIDE PATH

2'-6" C&G

200' LANE SHIFT TAPER

100' TAPER/
100' LANE
SHIFT
TAPER

200' LANE SHIFT TAPER

550' LANE SHIFT TAPER

100' TAPER

CB
TOP: 403.96'
INV. OUT (SE): 400.86'

CB
TOP: 406.70'
INV. OUT (NW): 403.55'

CB
INV. OUT: 403.11'

24" RCP
INV: 398.72'

24" RCP
INV: 399.64'

24" RCP
INV: 403.97'

24" RCP
INV: 404.25'

CB-0203
MIN DEPTH DI
SEE DETAIL ON SHEET 7
GRATE 840.03 TYPE E
STA 34+43.50, 29.9 RT
TOP = 402.37
INV OUT = 399.70
4 LF 24" RCP

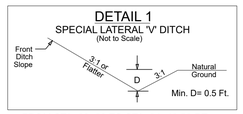
PIPE COLLAR-0202
EX INV = 399.64
REMOVE EXIST. HEADWALL

0201
0202
0203
DI

N/F
GLENN C HARRISON
SANDRA SCARBORO
PIN: 1768-48-8786
DB 17315, PG 2379
BM 1967, PG 159

N/F
GLENN C HARRISON
SANDRA SCARBORO
PIN: 1768-48-8786
DB 17315, PG 2379
BM 1967, PG 159

DETAIL 1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 28+58 TO STA. 34+43.50 RT
FROM STA. 34+43.50 TO STA. 35+00 RT
FROM STA. 36+70 TO STA. 37+50 RT

CUR DATA -L-
PIc 25+99.83
Δc = 27°27'21.2" (LT)
D = 06°01'52.1"
Lc = 455.24
Tc = 232.08
R = 950
SE = 0.000

CUR DATA -L-
PIc 32+70.83
Δc = 01°22'37.1" (RT)
D = 00°22'55.1"
Lc = 360.49
Tc = 180.26
R = 15,000
SE = 0.000

CUR DATA -L-
PIc 36+47.04
Δc = 01°04'14.5" (RT)
D = 00°34'22.6"
Lc = 186.87
Tc = 93.44
R = 10,000
SE = 0.000

CUR DATA -Y1-
PIc 11+27.75
Δc = 06°49'33.0" (RT)
D = 04°58'56.1"
Lc = 137.00
Tc = 68.58
R = 1,150
SE = 0.000

INCIDENTAL MILLING

MILL AND OVERLAY

ROADWAY WIDENING/
FULL DEPTH PAVEMENT

NOTES:
1. RADII DIMENTSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED (APPLIES TO ALL SHEETS)
2.CROSS SLOPES VARY. MATCH EXISTING CROSS SLOPES FOR OVERLAY. REFER TO CROSS SECTIONS.
3.RELOCATE EXISTING COMMUNICATION AND FIBER OPTIC UTILITY LINES OUTSIDE THE LIMITS OF THE PROPOSED WIDENING.

50′ 0′ 50′ 100′
25′

5/26/20

MATCH LINE -Y1- STA 14+00.00 SEE SHEET R2

-Y1-
N83°26'14.7"E

-Y1- PC 15+19.34

-Y1- PT 16+18.93

15+00

20+00

-Y1- PC 20+54.86

-Y1- PT 23+44.87

25+00

-Y1- PC 27+00.49

-Y1-
QUARRY ROAD
(SR 2305)
N83°54'46.4"E

-Y1-
QUARRY ROAD
(SR 2305)
S78°08'33.2"E

END MILL & OVERLAY
-Y1- POT STA. 23+50.00

END CONSTRUCTION
-Y1- POC STA. 28+46.00

N/F
ROBERTSON FAMILY
PARTNERSHIP
ANN ROBERTSON
PIN; 1768467947
DB 6041, PG 537
BM 2006, PG 1350

PROP NCDOT CURB
RAMP TYPE 1D (TYP)

550' LANE SHIFT TAPER

125' RT TURN
STORAGE + 50' DECEL

100' TAPER

+55.00

+100.00

RETAIN

CATCH BASIN
TOP B.O.C=408.48'
(FLOODED)

18" RCP
INV=404.35'

PIPE COLLAR-0308
EX INV = 402.66
REMOVE EXIST. CB

(0309)

(0308)

(0307)

(0313)

EXIST. RIGHT-OF-WAY

20 LF
18" RCP

50' LT TURN STORAGE
+ 50' DECEL

SEE NOTE 2

9 LF 18" RCP

2'-6" C&G

40'R

50'R

2' R

10' SIDE PATH

10'X70' SIGHT
TRIANGLE

18" RCP
INV=402.84'

155 LF
24" RCP

77 LF
15" RCP

CB-0307
NCDOT STD 840.01/840.02
GRATE 840.03 TYPE E
STA 15+39.50 RT
TOP = 407.33
INV IN (W) = 404.02
INV IN (N) = 401.77
INV OUT = 401.67
REMOVE EXIST. 15 LF 18" RCP
& HEADWALL

CB-0313
NCDOT STD 840.01/840.02
GRATE 840.03 TYPE F
STA 14+60 RT
TOP = 408.18
INV OUT = 405.18

EXISTING PUBLIC DRAINAGE
EASEMENT
BM 2012, PG 46

SITE DRIVEWAY

RELOCATE EXIST.
UTILITY POLE

PROP 43.5'
ROW

202 LF 24" RCP

CONNECT TO SDMH-105
IN SITE STORM SYSTEM
SEE PLANS BY
WITHERSRAVENEL

18" RCP
INV=402.51'

PIPE COLLAR-0303
EX INV = 402.26
REMOVE EXIST. CB

550' LANE SHIFT TAPER

100' TAPER

50' RT TURN STORAGE
+ 50' DECEL

+25.00

CATCH BASIN
TOP B.O.C=406.45'
(A)IN=402.26
(B)IN=402.27'
(C)OUT=402.23'

111 LF 15" RCP

REMOVE
CATCH BASIN
& PIPES

CATCH BASIN
TOP B.O.C=408.31'
IN=403.77'
OUT=403.56'

5" MONOLITHIC
CONCRETE
ISLAND (SURFACE
MOUNTED)
PROP NCDOT CURB
RAMP TYPE 6 MOD

REMOVE EXIST.
SEWER MANHOLE
SEE PLANS BY
WITHERSRAVENEL

CB-0302
MIN DEPTH CB SEE DETAIL
ON SHEET 7
GRATE 840.03 TYPE E
STA 19+02 RT
TOP = 405.28
INV IN (E) = 401.85
INV IN (N) = 402.20
INV OUT (S)= 401.75
REMOVE EXIST. 15 LF 36" RCP
& HEADWALL

CB-0305
NCDOT STD 840.01/840.02
GRATE 840.03 TYPE G
STA 20+15 RT
TOP = 406.05
INV IN = 403.05
INV OUT = 402.95

CB-0311
NCDOT STD 840.01/840.02
GRATE 840.03 TYPE G
STA 21+30 RT
TOP = 407.03
INV IN = 404.03
INV OUT = 403.93

RETAIN EXIST CB-0310
INV OUT = 406.10' (EXIST)

CATCH BASIN
TOP B.O.C=412.50'
IN=406.12'
OUT=406.10'

CATCH BASIN
TOP B.O.C=414.16'
IN=408.48'
OUT=408.31'

RETAIN EXIST.
CURB & GUTTER

PROP NCDOT CURB
RAMP TYPE 2

END SIDEPATH

EXISTING PUBLIC DRAINAGE
EASEMENT
BM2002, PG 464

30" RCP
INV=401.66'

(C)

(A)

(B)

(0301)

(0302)

(0303)

(0304)

(0305)

(0310)

(0311)

CB

1'R

15'R

40'R

2.5'R

10'X70' SIGHT
TRIANGLE

30'

SITE DRIVEWAY

EXISTING 30' CAROLINA POWER & LIGHT
EASEMENT
DB 4132, PG 683

220 LF 15" RCP

RELOCATE EXIST. UTILITY POLE

WAKE COUNTY BOARD OF
EDUCATION
RE SERVICES DIRECTOR
PIN: 1768464343
DB 14097, PG 2016
BM 2011, PG 1220
916,339 SF
21.036 AC

PROP NCDOT CURB
RAMP TYPE 1D (TYP)

PROP. TEMPORARY CONSTRUCTION EASEMENT

RETAIN EXIST. UTILITY POLE,
PEDESTAL, HANDHOLE

ROLESVILLE HIGHSCHOOL DRIVEWAY

S 89°54'51" W 215.28'

N 89°54'51" W 482.92'

+44.10

+75.00

+105.00

PROP. 43.5'
ROW

CATCH BASIN
TOP B.O.C=413.12'
OUT=408.77'

WETLANDS
AREA
24,705 SF
0.708 AC

S 48°44'04" W 638.22'

JS

<u>CUR DATA -Y1-</u>
PIc 15+69.14
Δc = 00°28'31.7" (RT)
D = 00°28'38.9"
Lc = 99.5856'
Tc = 49.7931'
R = 12000.0000'
0.0000

<u>CUR DATA -Y1-</u>
PIc 22+01.06
Δc = 17°56'40.4" (RT)
D = 06°11'14.8"
Lc = 290.0156'
Tc = 146.2048'
R = 926.0000'
0.0000

<u>CUR DATA -Y1-</u>
PIc 28+50.77
Δc = 05°44'07.7" (LT)
D = 01°54'35.5"
Lc = 300.3086'
Tc = 150.2798'
R = 3000.0000'
0.0000

50′ 0′ 50′ 100′
25′

INCIDENTAL MILLING

MILL AND OVERLAY

ROADWAY WIDENING/
FULL DEPTH PAVEMENT

NOTES:
1. RADII DIMENTSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED (APPLIES TO ALL SHEETS)
2.CROSS SLOPES VARY. MATCH EXISTING CROSS SLOPES FOR OVERLAY. REFER TO CROSS SECTIONS.
3.RELOCATE EXISTING COMMUNICATION AND FIBER OPTIC UTILITY LINES OUTSIDE THE LIMITS OF THE PROPOSED WIDENING.

NAD 83
NA 2011

E YOUNG ST

RDY | R3

NORTH CAROLINA
WAKE COUNTY

ROADWAY DESIGN
ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

PREPARED BY

EXULT® ENGINEERING

NC License #C-1445

203 W. Millbrook Road, Ste 200
Raleigh, NC 27609
980.895.2250
www.exultengineering.com

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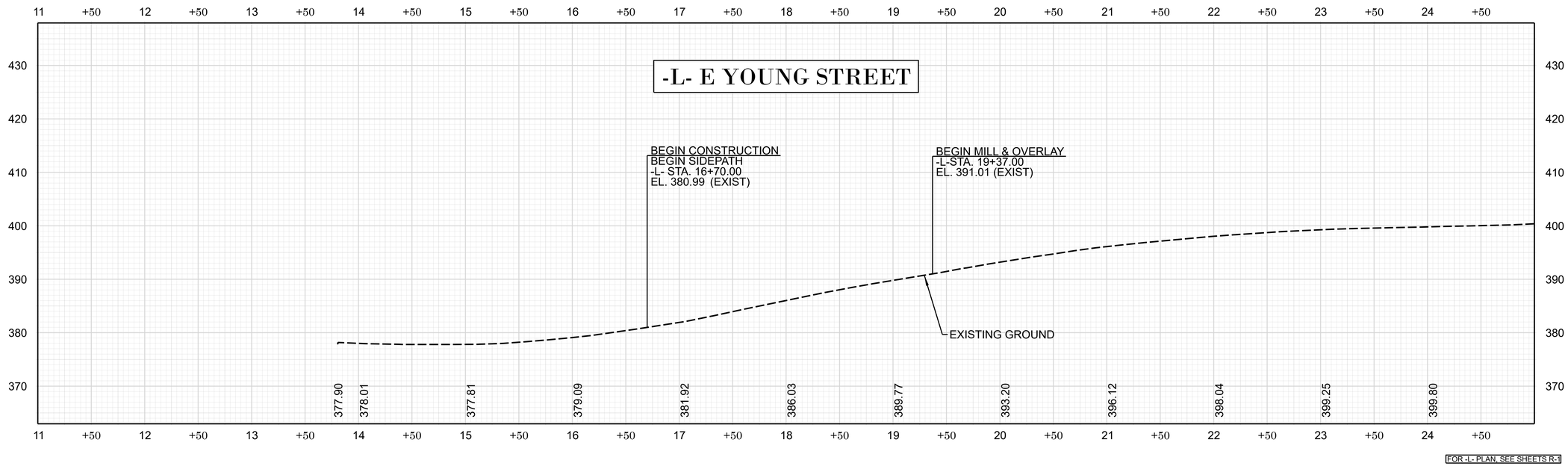
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

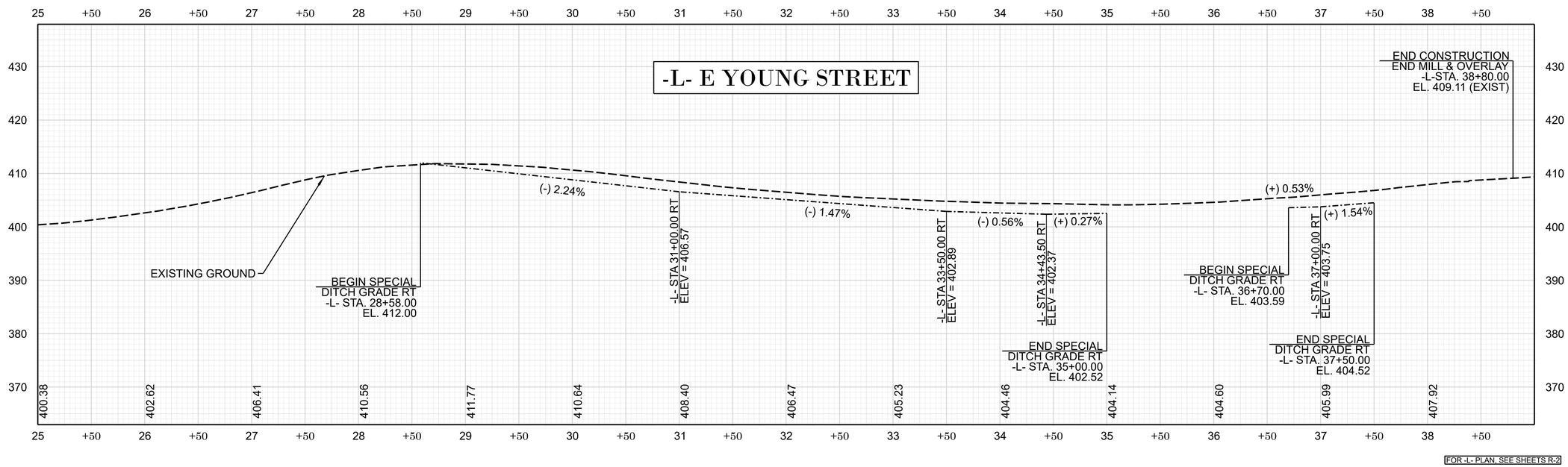
YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

PLAN SHEET

REVISIONS

11/14/23





E YOUNG ST

RDY | R4

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT T. DYLE

PREPARED BY

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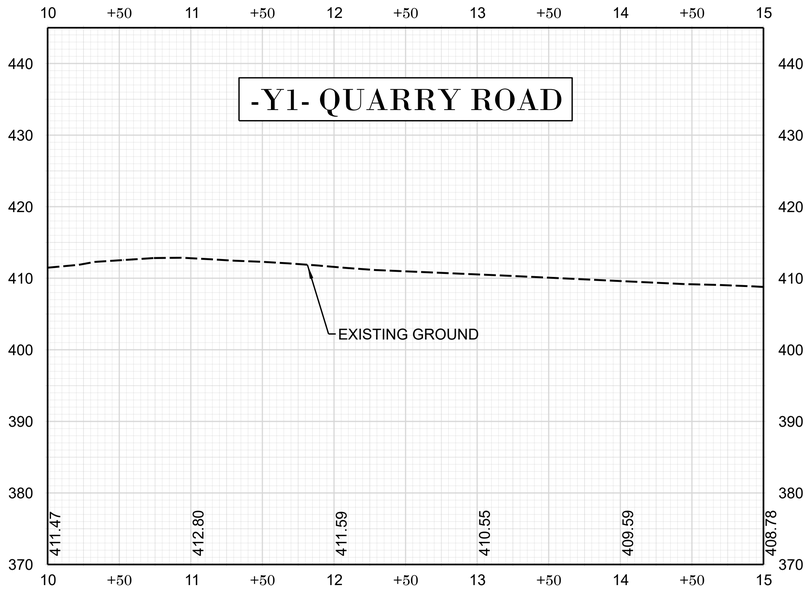
INCOMPLETE PLANS
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YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

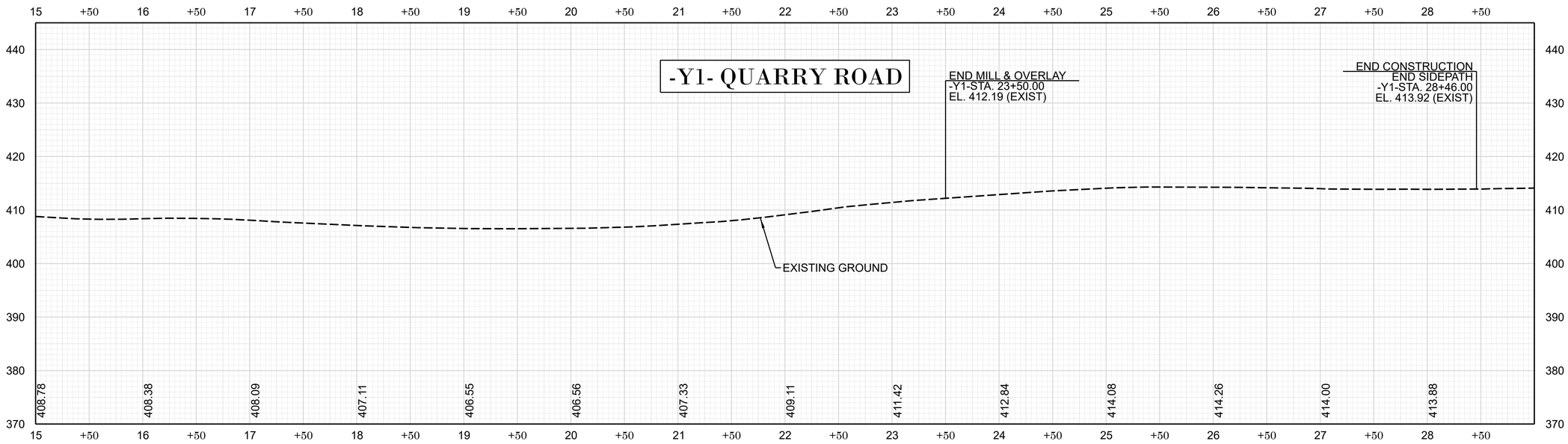
PROFILE SHEET

REVISIONS

11/14/23



FOR -Y1- PLAN, SEE SHEETS R-2 AND R-3



FOR -Y1- PLAN, SEE SHEETS R-2 AND R-3

E YOUNG ST

RDY | R5

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 51970 GARRETT DOLLE

PREPARED BY

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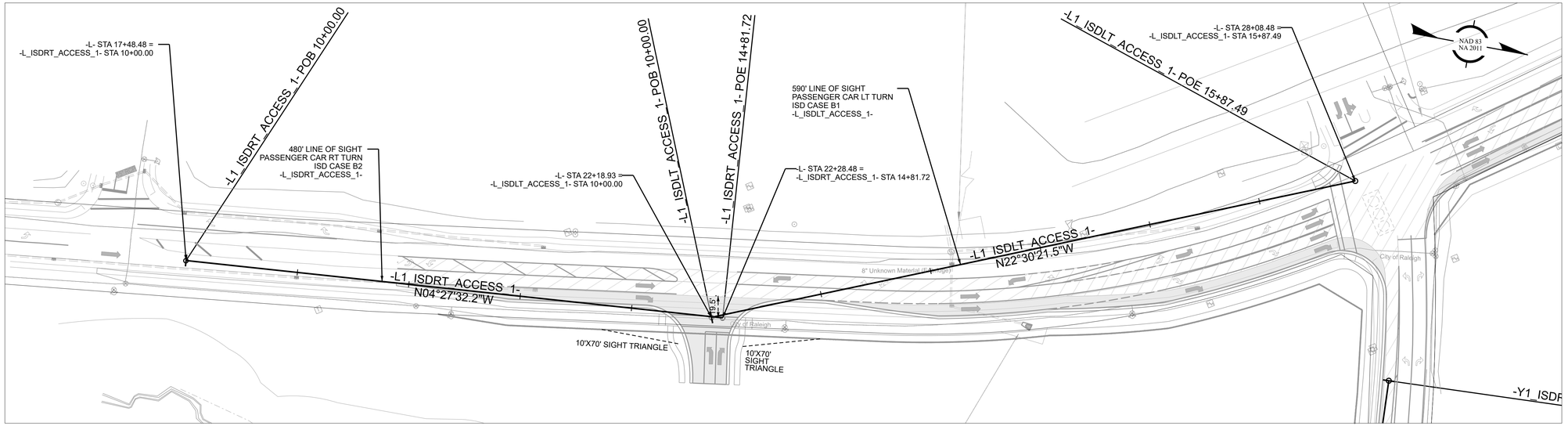
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DO NOT USE FOR R/W ACQUISITION

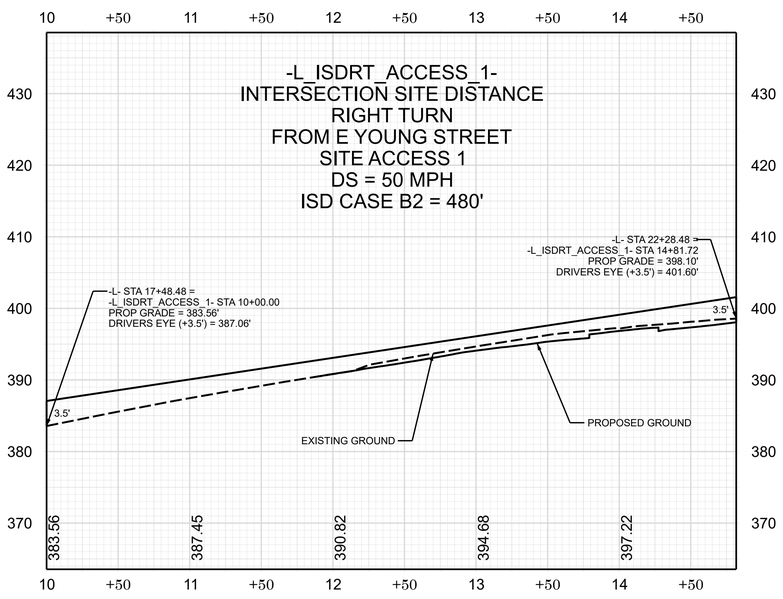
YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

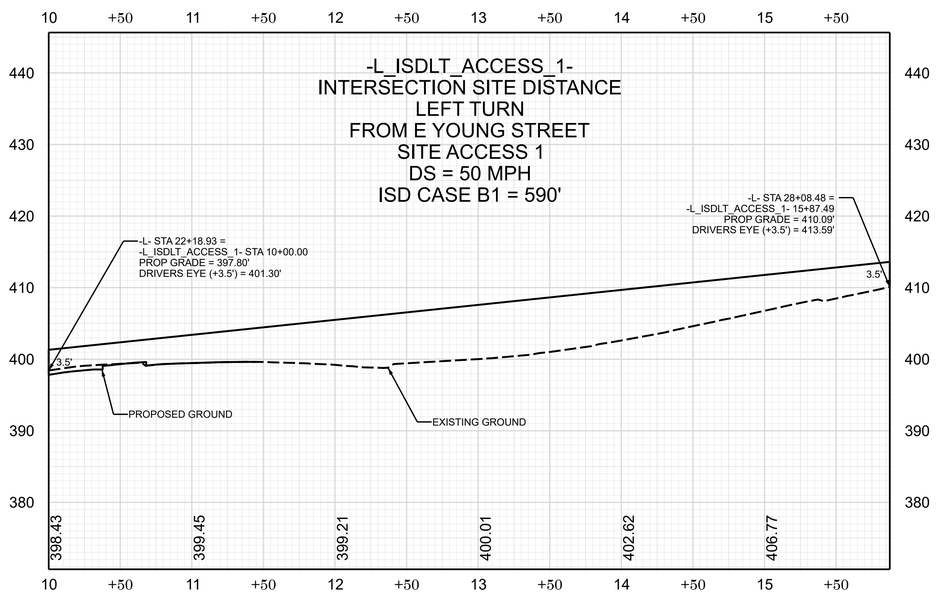
PROFILE SHEET

REVISIONS

11/14/23







E YOUNG ST

ISD	1

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

PREPARED BY

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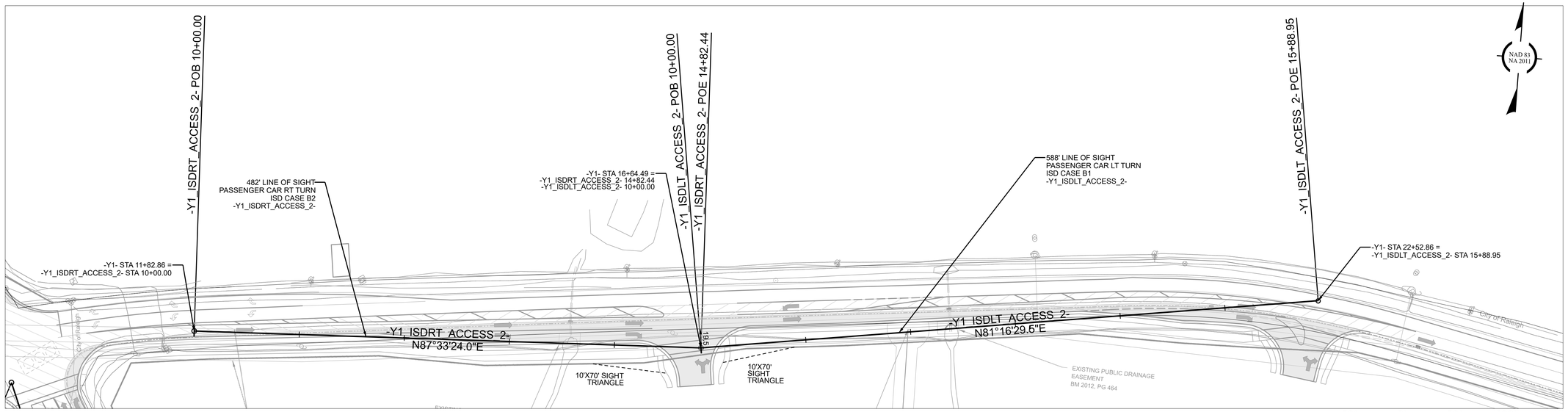
YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

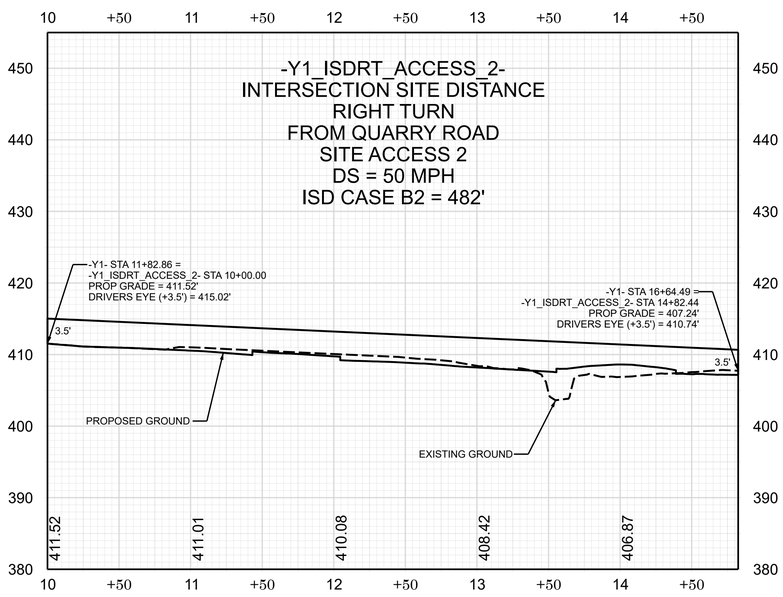
ACCESS 1 INTERSECTION
SIGHT DISTANCE

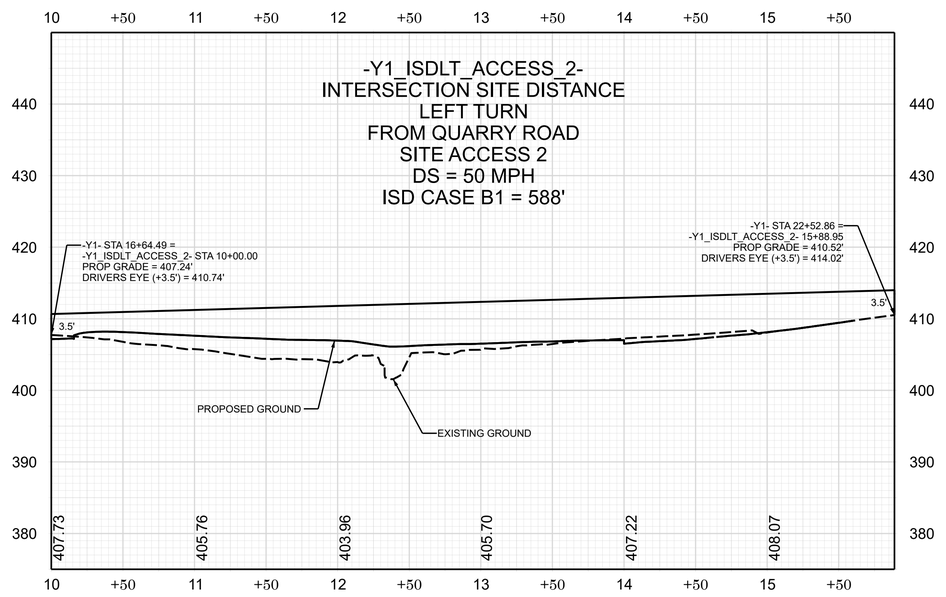
REVISIONS

AzureAD/GarrettBoyle- 7/13/2026

11/14/23







E YOUNG ST

ISD	2

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

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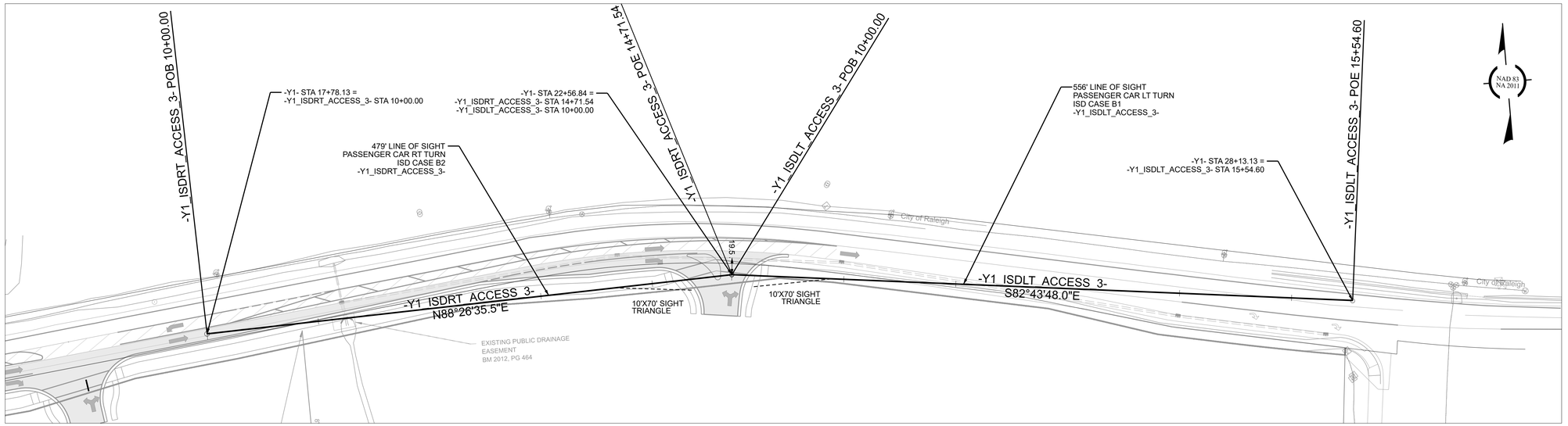
YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

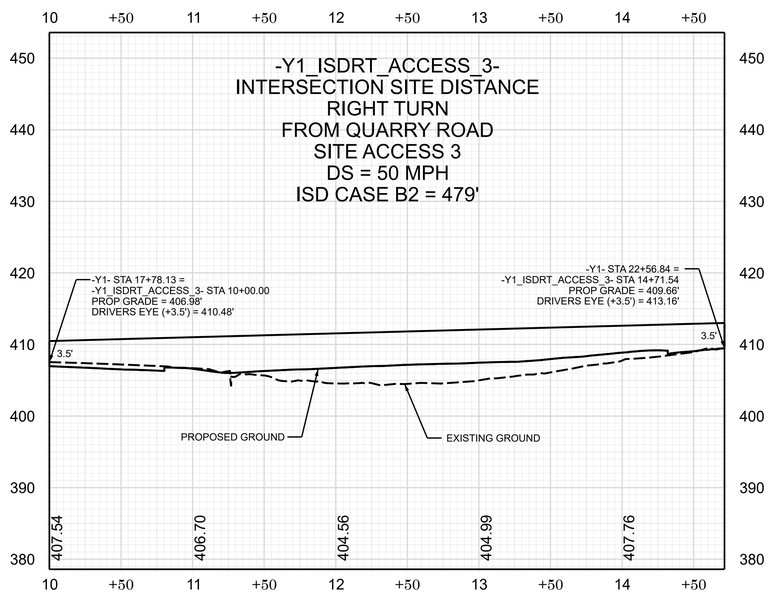
ACCESS 2 INTERSECTION
SIGHT DISTANCE

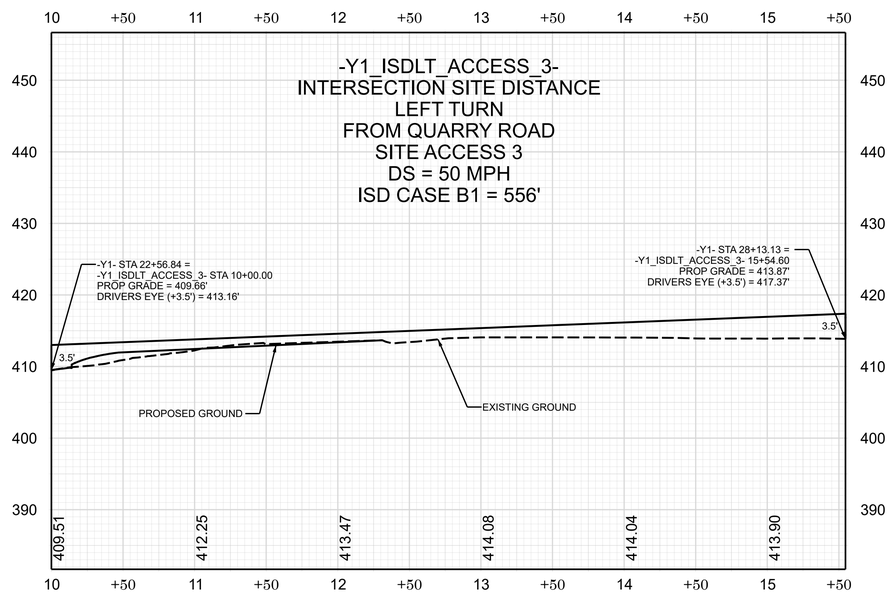
REVISIONS

AzureAD/GarrettBoyle- 7/13/2026

11/14/23







E YOUNG ST

ISD	3

NORTH CAROLINA
WAKE COUNTY

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

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INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

ACCESS 3 INTERSECTION
SIGHT DISTANCE

REVISIONS

AzureAD/GarrettBoyle- 7/13/2026

5/26/20

ASHTON RALEIGH RESIDENTIAL LLC
DB 20059, PG 373
BM 2024, PG 2187
PIN: 1768-35-3261

RLS POINT LLC
DB 19946, PG 75
BM 2025, PG 1425
PIN: 1768-34-6972

ASHTON RALEIGH RESIDENTIAL LLC
PIN:1768365071
DB 20059, PG 373
BM 2024, PG 2186

VARIABLE WIDTH DUKE ENERGY EASEMENT
BM 2024 PG 2184

DRAINAGE EASEMENT
BM 2024 PG 2184

15+00

20+00

25+00

-L- PC 17+00.00

-L- PT 20+80.53

-L- PC 23+67.75

MATCH LINE -L- STA 25+00.00 SEE SHEET EC2

-L-
E YOUNG ST
(SR 1003)
N08°05'28.5"W

-L-
E YOUNG STREET
(SR 1003)
N05°54'39.5"W

EXIST. RIGHT-OF-WAY

CB
TOP: 377.76'
INV. IN (N): 374.25'
INV. OUT (S): 374.12'

48" RCP
INV: 370.83'

CB
TOP: 377.90'
INV. IN (N): 373.53'
INV. IN (E): 371.05'
INV. OUT (W): 371.00'

CB
TOP: 381.03'
INV. IN (N): 377.45'
INV. OUT (S): 377.35'

CB
TOP: 381.68'
INV. IN (X): 377.98'
INV. OUT (X): 377.88'

SDMH
TOP: 380.39'
INV. IN (N): 376.32'
INV. OUT (S): 376.02'

CB
TOP: 383.36'
INV. IN (N): 378.50'
INV. OUT (S): 378.46'

CB
TOP: 390.26'
INV. IN (N): 385.14'
INV. OUT (S): 385.01'

CB
TOP: 395.23'
INV. OUT (S): 390.64'

SDMH
TOP: 399.53'
INV. IN (N): 395.45'
INV. IN (E): 393.99'
INV. OUT (W): 393.93'

24" CMP
INV. OUT : 392.49'

18" RCP

CB
TOP: 399.23'
INV. IN (E):394.68'
INV. OUT (W): 394.67'

15" RCP

18" RCP

8" Unknown Material (Enbridge)

City of Raleigh

48" RCP
INV: 372.37'

CB
TOP: 377.58'
INV. IN (E): 372.19'
INV. OUT (W): 371.78'

CB
TOP B.O.C: 379.58'
INV. IN: 375.67'
INV. OUT: 375.63'

PLACE SPECIAL SEDIMENT CONTROL FENCE AT ALL OUTLET POINTS (TYP)

LIMIT OF DISTURBANCE (TYP)

CATCH BASIN
TOP B.O.C=389.69'
IN=384.93'
OUT=384.86'

PLACE TEMP SILT FENCE ALONG PROPOSED CUT/FILL SLOPE (TYP)

CONSTRUCTION ENTRANCE TO BE INSTALLED AT ALL APPROVED CONSTRUCTION ACCESS POINTS

INSTALL TEMPORARY ROCK INLET SEDIMENT TRAP, TYPE C (TYP)

CATCH BASIN
TOP B.O.C=395.04'
OUT=390.66'

SITE DRIVEWAY

EXISTING CITY OF RALEIGH WATER EASEMENT
BM 2012, PG 467

EXISTING CITY OF RALEIGH WATER EASEMENT
BM 2012, PG 466

SITE DRAINAGE SYSTEM TO BE INSTALLED WITH OFFSITE ROADWAY IMPROVMENTS
IN=SEE PLANS BY WITHERSRAVENEL
OUT=

EXISTING PUBLIC DRAINAGE EASEMENT
BM 2012, PG 466

WETLANDS
AREA
1,663 SF
0.038 AC

WETLANDS
AREA
1,708 SF
0.039 AC

SEWER MANHOLE
RIM=386.82'
IN=377.96'
OUT=377.84'

SEWER MANHOLE
RIM=389.80'
IN=377.08'
OUT=377.04'

SEWER MANHOLE
RIM=396.88'
IN=387.23'
OUT=387.20'

S 38°15'53" W 386.32'

8" PVC

Description	Symbol
Temporary Silt Fence	
Special Sediment Control Fence	
Temporary Berms and Slope Drains	
Silt Basin Type B	
Temporary Silt Ditch	TSD
Temporary Diversion	TD
Special Stilling Basin	
Rock Inlet Sediment Trap Type C	
Temporary Rock Silt Check Type-A	
Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
Temporary Rock Silt Check Type-B	
Wattle	
Wattle with Polyacrylamide (PAM)	
Temporary Rock Sediment Dam Type-B	
Rock Pipe Inlet Sediment Trap Type-A	

50′ 0′ 50′ 100′
25′

NOTES:

1. PLACE TEMPORARY ROCK SILT CHECKS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

2. SLOPES ON THIS PROJECT ARE PRIMARILY 3:1. CONTRACTOR SHALL PROVIDE SOIL STABILIZATION ON SLOPES STEEPER THAN 3:1 AND ON THE SLOPES OF DITCHES, SWALES, AND DIVERSIONS WITHIN 7 DAYS. ALL OTHER SLOPES SHALL BE STABILIZED WITHIN 14 DAYS AS REQUIRED BY NPDES GENERAL STORMWATER PERMIT.

E YOUNG ST

EC | 1

NORTH CAROLINA
WAKE COUNTY

NAD 83
NA 2011

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

PREPARED BY
EXULT ENGINEERING
NC License #C-4445
210 W. Millbrook Road, Ste 200
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980.495.2250
www.exultengineering.com

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DO NOT USE FOR CONSTRUCTION

YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

EROSION CONTROL
PLAN

REVISIONS

5/26/20

MATCH LINE -L- STA 25+00.00 SEE SHEET EC1

VARIABLE WIDTH DUKE ENERGY EASEMENT
BM 2024 PG 2184

CB
TOP: 403.96'
INV. OUT (S): 400.86'

QUARRY RD
-L- PT 28+22.99

CONTROL POINT & BENCHMARK
GPS 2
N: 786639.1408
E: 2163618.9973

CITY OF RALEIGH WATER EASEMENT
BM 2024 PG 2184

-L-
N35°32'49.7"W

>10" High Pressure (Enbridge)

EXIST. RIGHT-OF-WAY

30+00

CAMERON EDWIN SHEARON;
BEVERLY W SHEARON
DB 17719, PG 1847
BM 2018, PG 931
PIN: 1768-36-0873

-L- PC 30+90.57

CB
TOP: 406.70'
INV. OUT (NW): 403.55'

FES
INV. OUT: 403.11'

PLACE SPECIAL SEDIMENT CONTROL FENCE AT ALL OUTLET POINTS (TYP)

24" RCP
INV: 398.72'

PLACE TEMP SILT FENCE ALONG EXISTING RIGHT-OF-WAY (TYP)

LIMIT OF DISTURBANCE (TYP)

8" Unknown Material (Enbridge)

N76°36'41.6"E

LIMIT OF DISTURBANCE (TYP)

-Y1- POB 10+00.00

10+00

PLACE ROCK SILT CHECK TYPE B ALONG EXISTING DITCH LINE

INSTALL TEMP LINER IN DITCH: STAW WITH NET -L- STA 28+58 TO STA 33+50 RT

INSTALL TEMP TREE PROTECTION FENCE ALONG PROPOSED EASEMENTS

PLACE ROCK SILT CHECK TYPE B ALONG PROPOSED DITCH LINE

-Y1- PC 10+59.17

-Y1- PT 11+96.17

EXISTING CITY OF RALEIGH WATER EASEMENT
BM 2012, PG 466

APPROXIMATE LOCATION
PUBLIC UTILITY EASEMENT
BM 2012, PG 463

EXISTING 30' CAROLINA POWER & LIGHT EASEMENT
DB 4132, PG 683

EXIST. RIGHT-OF-WAY

-Y1-
QUARRY RD
(SR 2305)
N83°26'14.7"E

MATCH LINE -Y1- STA 14+00.00 SEE SHEET EC3

N/F
GLENN C HARRISON
SANDRA SCARBORO
PIN: 1768-48-8786
DB 17315, PG 2379
BM 1967, PG 159

35+00

-L- PT 34+51.07

-L- PC 35+53.60

INSTALL TEMPORARY ROCK INLET SEDIMENT TRAP, TYPE C (TYP)

24" RCP
INV: 399.64'

-L-
E YOUNG ST
(SR 1003)
N34°10'12.5"W

-L- PT 37+40.47

-L-
N33°05'58.0"W

EXIST. RIGHT-OF-WAY

8" Unknown Material (Enbridge)

>10" High Pressure (Enbridge)

24" RCP
INV: 403.07'

INSTALL TEMP LINER IN DITCH: STAW WITH NET -L- STA 36+70 TO STA 37+50 RT

-L- POE 39+00.00

EXIST. RIGHT-OF-WAY

24" RCP
INV: 404.25'

MITCHELL FR RABIL JR;
MARY KAYE R COPLEY
DB 19590, PG 382
PIN: 1768-17-9167

CENTURY FARM RD
(SR 2306)

N/F
GLENN C HARRISON
SANDRA SCARBORO
PIN: 1768-48-8786
DB 17315, PG 2379
BM 1967, PG 159

NAD 83
NA 2011

NOTES:

1. PLACE TEMPORARY ROCK SILT CHECKS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

2. SLOPES ON THIS PROJECT ARE PRIMARILY 3:1. CONTRACTOR SHALL PROVIDE SOIL STABILIZATION ON SLOPES STEEPER THAN 3:1 AND ON THE SLOPES OF DITCHES, SWALES, AND DIVERSIONS WITHIN 7 DAYS. ALL OTHER SLOPES SHALL BE STABILIZED WITHIN 14 DAYS AS REQUIRED BY NPDES GENERAL STORMWATER PERMIT.

50′ 0′ 50′ 100′
25′

Description	Symbol
Temporary Silt Fence	
Special Sediment Control Fence	
Temporary Berms and Slope Drains	
Silt Basin Type B	
Temporary Silt Ditch	TSD
Temporary Diversion	TD
Special Stilling Basin	
Rock Inlet Sediment Trap Type C	
Temporary Rock Silt Check Type-A	
Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
Temporary Rock Silt Check Type-B	
Wattle	
Wattle with Polyacrylamide (PAM)	
Temporary Rock Sediment Dam Type-B	
Rock Pipe Inlet Sediment Trap Type-A	

E YOUNG ST
EC 2

NORTH CAROLINA
WAKE COUNTY

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

PREPARED BY
EXULT® ENGINEERING
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YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

EROSION CONTROL
PLAN

REVISIONS

5/26/20

MATCH LINE -Y1- STA 14+00.00 SEE SHEET EC2

-Y1- N83°26'14.7"E

-Y1- PC 15+19.34

-Y1- PT 16+18.93

15+00

20+00

-Y1- PC 20+54.86

-Y1- PT 23+44.87

25+00

-Y1- PC 27+00.49

-Y1- QUARRY ROAD (SR 2305) N83°54'46.4"E

-Y1- QUARRY ROAD (SR 2305) S78°08'33.2"E

N/F
ROBERTSON FAMILY PARTNERSHIP
ANN ROBERTSON
PIN; 1768467947
DB 6041, PG 537
BM 2006, PG 1350

CATCH BASIN
TOP E.O.C=408.48'
(FLOODED)

18" RCP
INV=404.35'

18" RCP
INV=402.51'

CATCH BASIN
TOP B.O.C=406.45'
(A)IN=402.26
(B)IN=402.22'
(C)OUT=402.23'

CATCH BASIN
TOP B.O.C=408.31'
IN=403.77'
OUT=403.56'

CATCH BASIN
TOP B.O.C=412.50'
IN=406.12'
OUT=406.10'

CATCH BASIN
TOP B.O.C=414.16'
IN=408.48'
OUT=408.31'

EXIST. RIGHT-OF-WAY

City of Raleigh

L9

L10

(A)

(B)

(C)

30" RCP
INV=401.66'

EXISTING PUBLIC DRAINAGE EASEMENT
BM2012, PG 464

INSTALL TEMPORARY ROCK INLET SEDIMENT TRAP, TYPE C (TYP)

CONSTRUCTION ENTRANCE TO BE INSTALLED AT ALL APPROVED CONSTRUCTION ACCESS POINTS

SITE DRIVEWAY

15" RCP

EXISTING 30' CAROLINA POWER & LIGHT EASEMENT
DB 4132, PG 683

EXIST. RIGHT-OF-WAY

LIMIT OF DISTURBANCE (TYP)

EXISTING PUBLIC DRAINAGE EASEMENT
BM 2012, PG 463

16" RCP
INV=402.84'

PLACE TEMP SILT FENCE ALONG PROPOSED FILL SLOPE (TYP)

PLACE SPECIAL SEDIMENT CONTROL FENCE AT ALL OUTLET POINTS (TYP)

CONSTRUCTION ENTRANCE TO BE INSTALLED AT ALL APPROVED CONSTRUCTION ACCESS POINTS

SITE DRAINAGE SYSTEM TO BE INSTALLED WITH OFFSITE ROADWAY IMPROVMENTS SEE PLANS BY WITHERSRAVENEL

WAKE COUNTY BOARD OF EDUCATION
RE SERVICES DIRECTOR
PIN: 1768464343
DB 14097, PG 2016
BM 2011, PG 1220
916,339 SF
21.036 AC

CATCH BASIN
TOP B.O.C=413.12'
OUT=408.77'

S 05°19'42" W 211.28'

ROLESVILLE HIGHSCHOOL DRIVEWAY

N 89°54'51" W 482.92'

WETLANDS AREA
44,765 SF
0.798 AC

JS

NAD 83
NA 2011

NOTES:

1. PLACE TEMPORARY ROCK SILT CHECKS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

2. SLOPES ON THIS PROJECT ARE PRIMARILY 3:1. CONTRACTOR SHALL PROVIDE SOIL STABILIZATION ON SLOPES STEEPER THAN 3:1 AND ON THE SLOPES OF DITCHES, SWALES, AND DIVERSIONS WITHIN 7 DAYS. ALL OTHER SLOPES SHALL BE STABILIZED WITHIN 14 DAYS AS REQUIRED BY NPDES GENERAL STORMWATER PERMIT.

50′ 0′ 50′ 100′
25′

Description	Symbol
Temporary Silt Fence	
Special Sediment Control Fence	
Temporary Berms and Slope Drains	
Silt Basin Type B	
Temporary Silt Ditch	TSD
Temporary Diversion	TD
Special Stilling Basin	
Rock Inlet Sediment Trap Type C	
Temporary Rock Silt Check Type-A	
Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
Temporary Rock Silt Check Type-B	
Wattle	
Wattle with Polyacrylamide (PAM)	
Temporary Rock Sediment Dam Type-B	
Rock Pipe Inlet Sediment Trap Type-A	

E YOUNG ST

EC 3

NORTH CAROLINA
WAKE COUNTY

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

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INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

YOUNG STREET COMMERCIAL ROADWAY AND SIGNAL IMPROVEMENTS

EROSION CONTROL PLAN

REVISIONS

5/26/20

CONSTRUCTION NARRATIVE

PROJECT DESCRIPTION

The proposed Young Street Commercial roadway improvements are located along E Young Street (SR 1003) and Quarry Road (SR 2305) in Rolesville, North Carolina. The project includes a site driveway along E Young Street with frontage widening and improvements at the site driveway, 2 site driveways along Quarry Road with frontage widening and improvements at each site driveway, and improvements at the E Young Street and Quarry Road intersection. The existing roadway has curb and gutter along the site frontage and an existing shoulder section with roadside ditches north of the E Young Street and Quarry Road intersection. Each typical section will remain the same for each portion of the project.

The site is generally flat and contains some drainage ways that are bordered by moderate slopes. Land use along the roadways is agricultural and residential, along with the Rolesville High School east of the development. The drainage from this site makes its way through a series of roadside ditches and drainage systems and drains to Harris Creek. The soil types within the project limits are primarily sandy loams (RgB, HeB, and WeB).

The total disturbed area is approximately 3.5 acres.

CONSTRUCTION SEQUENCE

CONSTRUCTION SPECIFICATIONS

1. Request preconstruction meeting with the Environmental Consultant. Hold preconstruction meeting at least one week prior to starting construction and invite a representative from Wake County, contact number is (919) 796–8769.

2. No land disturbing activities, including timbering or demolition activities, are allowed without first obtaining a sediment and erosion control plan approval and Certificate of Coverage.

3. Erosion and Sediment Control (E&SC) permit and a Certificate of Coverage (COC) must be obtained before any land disturbing activities (including timbering and demolition) occur.

4. Flag the work limits and mark the trees to remain and buffer area for protection.

5. Per NPDES requirements, a rain gauge, self–inspections records, permit, Certificate of Coverage, and S&E plan are required to be maintained on site and accessible during inspection. It is recommended that these items be placed in a permits box at the beginning or entrance of project.

6. Install erosion control measures as shown on the approved plan including, but not limited to gravel construction pad, silt fence, inlet protection, and check dams. Clear only as necessary to install these devices. Seed temporary diversions, berms and basins immediately after installation.

7. Stockpiles, laydown or waste areas, concrete washouts, portable toilets, and fuels must be located at least 50 feet away from any open water conveyances, such as basins, ditches, storm drain inlets, etc. The location of these activities may be field adjusted if the distance requirements are met.

8. Call Environmental Consultant for an onsite inspection by the Environmental Consultant to obtain a Certificate of Compliance.

9. Begin clearing and grubbing. Maintain devices as needed. Rough grade site.

10. Per the NPDES Permit, ground stabilization will be applied within 14 calendar days from last land disturbing activity. For steep slopes, that area must be stabilized within 7 calendar days.

11. Install storm sewer, if shown, and protect inlets with inlet protection devices, wattles, or other approved measures as shown on the plan.

12. If dewatering is required, it is to be done through silt bags with a floating intake that is constantly monitored while in use.

13. Begin construction and stabilize site as areas are brought up to finish grade with vegetation, paving, erosion control matting, etc. Seed and mulch denuded areas per Ground Stabilization Time Frames.

14. When construction is complete and all areas are stabilized completely, call Environmental Consultant for an inspection.

15. After site is approved, remove temporary diversions, silt fence, inlet protection, etc., and seed out or stabilize any resulting bare areas. All remaining permanent erosion control devices, such as velocity dissipators, should now be installed.

16. When vegetation has become established, call for a final site inspection by the Environmental Consultant. Obtain a Certificate of Completion.

17. When the project is complete, the permittee shall contact DEMLR to close out the E&SC Plan.

18. Estimated time for before final stabilization – 8 months.

MAINTENANCE

Follow the construction sequence throughout project development. Adequate erosion and sediment control devices shall be in place and adjusted as needed based on the clearing & grubbing, construction, and permanent vegetation phases. All devices shall be maintained in accordance with the devices specific maintenance requirements and remain in place until permanent vegeation on the project is established and a Certificate of Completion is obtained.

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

The self–inspection program is separate from the weekly self–monitoring program of the NPDES Stormwater Permit for Construction Activities. The focus of the self–inspection report is the installation and maintenance of erosion and sedimentation control measures according to the approved plan. The inspections must be conducted after each phase of the project and continue until permanent ground cover is established in accordance with NCGS 113A–54.1 and 15A NCAC 4B.0131.

The self–inspection Report form is available from https://deq.nc.gov/about/divisions/energy–mineral–land–resources/erosion–sediment–control/forms.

If you have questions or cannot access the form, please contact NCDEMLR Divsion of Energy, Mineral and Land Resources at (919)791–4200.

2024 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch – 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
1605.01	Temporary Silt Fence
1606.01	Special Sediment Control Fence
1607.01	Gravel Construction Entrance
1622.01	Guide for Temporary Berms and Slope Drain
1630.03	Temporary Silt Ditch
1631.01	Matting Installation
1632.01	Rock Inlet Sediment Trap Type A
1632.02	Rock Inlet Sediment Trap Type B
1632.03	Rock Inlet Sediment Trap Type C
1633.01	Temporary Rock Silt Check Type A
1633.02	Temporary Rock Silt Check Type B
1635.01	Rock Pipe Inlet Sediment Trap Type A
1635.02	Rock Pipe Inlet Sediment Trap Type B
1636.01	Wattle Check
1640.01	Coir Fiber Baffle

EROSION CONTROL NOTES

1. All construction activities are requried to follow the NCG01 Permit Issued by NCDEQ. Refer to sheet EC–6 and EC–7.

2. Before beginning work, the contractor is required to meet with the town at the site to review all work procedures, access routes, storage areas, and tree protection measures.

3. Temporary fences and/or silt fence should be erected to protect trees to be preserved. Fences define a specific protection zone for each tree or group of trees. Fences are to remain until all site work has been completed. Fences may not be relocated or removed without the written permission of the town.

4. Control sediment on site and prevent from washing onto adjacent roadways. Provide inlet protection at inlets throughout construction and silt fencing or NCDOT #57 stone piled 1' high by 2' wide at base as applicable to prevent sediment from leaving the sites or entering adjacent storm drainage systems. All erosion control measures shall be installed per the local municipality standard details or 2024 NCDOT roadway standard drawings as noted on the plans. Maintenance of erosion control measures is incidental to erosion control.

5. At the start of grading involving the lowering of the existing grade around a tree or stripping of topsoil, a clean, sharp, vertical cut shall be made at the edge of the tree save area at the same time as other erosion control measures are installed.

6. No storage of materials, dumping of waste materials, fill, or parking of equipment/vehicles shall be allowed within the tree protection zone.

7. If existing trees to be retained are damaged or destroyed, the contractor shall replace tree matching existing species and size at no additional cost to the owner. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the town so that appropriate treatments can be applied. Any roots damaged during grading or construction shall be exposed to sound tissue and cut cleanly with a saw.

8. Additional tree pruning required for clearance during construction must be performed by a qualified arborist and not by construction personnel. (incidental to other items in the contract)

9. All underground utilities and drain lines shall be routed outside of the tree protection zone. If lines must traverse the protection area, they shall be tunneled or bored under the tree.

10. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use. Any pesticides used on site must be tree–safe and not easily transported by water.

11. If temporary haul or access roads must pass over the root area of trees to be retained, a road bed of 6 inches of mulch or gravel shall be created to protect the soil. The road bed material shall be replenished as necessary to maintain a 6–inch depth.

MAINTENANCE PLAN

1. The contractor shall install and maintain a rain gauge in good working order on site at all times. Additionally, the Contractor is responsible for inspecting all erosion and sediment control practices for stability and operation following every runoff–producing rainfall (1/2" or greater in a 24–hr period), but in no case less than once every week. Both the rain gauge and inspection/maintenance of practices shall be maintained in accordance with the NCG01 Self–Inspection requirements, shown on page EC–7.

2. The contractor shall remove sediment from sediment basin, sediment traps, and gravel inlet protection devices when storage capacity has been approximately 50% filled. Gravel will be cleaned or replaced when the sediment pool no longer drains properly.

3. The contractor shall remove sediment from behind silt fence when it becomes 0.5 feet deep at the fence. Silt fence will be repaired as necessary to maintain a barrier.

4. The contractor shall fertilize, reseed, as necessary and mulch according to specifications in the vegetative plan to maintain a vigorous, dense, vegetative cover.

5. The contractor must inspect outlets where stormwater runoff leaves the site and evaluate the effect on nearby streams or wetlands. Corrective action must be taken if sediment is deposited off site or into stream or wetlands, or causes a visible increase in turbidity of any water body.

6. The contractor shall provide ground cover on exposed slopes or other areas within the timeframes specified in the stabilization table or sooner of completion of any phase of grading.

7. Contact Karyn Pageau at 919–796–8796 should erosion and sediment control issues arise during land–disturbing activity.

8. The following are specific maintenance requirements for each proposed erosion and sedimentation control device:

STANDARD TEMPORARY SILT FENCE/STANDARD SILT FENCE OUTLET/J–HOOKS:
Inspect sediment fences and fence outlets at least once a week and after each rainfall. Make any required repairs immediately. Should the fabric of a sediment fence collapse, tear, decompose or become ineffective, replace it promptly. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid undermining the fence during cleanout. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

STANDARD CATCH BASIN/YARD INLET PROTECTION:
Inspect inlets at least weekly and after each significant (one–half inch or greater rainfall event.) Clear the mesh wire of any debris or other objects to provide adequate flow for subsequent rains. Take care not to damage or undercut the wire mesh during sediment removal. Replace stone as needed.

STANDARD INLET SEDIMENT CONTROL DEVICE:
Inspect sediment sack weekly and after each significatn rainfall event (1/2 inch or greater). Remove accumulated sediment and any debris. The sediment sack must be replaced if clogged or torn. If ponding becomes excessive, the sediment sack shall may need to be checked daily and replaced more frequently. The sediment sack shall be inspected until land disturbance is complete and teh area above the measure has been permanently stabilized.

OUTLET STABILIZATION STRUCTURE:
Inspect riprap outlet structures weekly and after significant (1/2 or greater) rainfall events to see if any erosion around or below the riprap has taken place or if stones have been dislodged. Immediantly make all needed repairs to prevent further damage.

TREE PROTECTION FENCE:
Inspect tree protection fences at least once a week and after each rainfall. Make any required repairs immediately. Should the fabric of a tree protection fence collapse, tear, decompose or become ineffective, replace it promptly.

STANDARD CONSTRUCTION ENTRANCE:
Maintain the stone pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2–inch stone. After each rainfall, inspect any structure used to trap sediment and clean it out as necessary. Immediately remove all objectionable materials spilled, washed, or tracked onto public roadways.

TEMPORARY ROCK SILT CHECK DAMS, TYPE A AND B:
Inspect check dams and channels at least weekly and after each significant (1/2 inch or greater) rainfall event and repair immediately. Clean out sediment, straw, limbs, or other debris that could clog the channel when needed. Anticipate submergence and deposition above the check dam and erosion from high flows around the edges of the dam. Correct all damage immediately. If significant erosion occurs between dams, additional measures can be taken such as, installing a protective riprap liner in that portion of the channel (Practice 6.31, Riprap–lined and Paved Channels.) Remove sediment accumulated behind the dams as needed to prevent damage to channel vegetation, allow the channel to drain through the stone check dam, and prevent large glows from carrying sediment over the dam. Add stones to dams as needed to maintain design height and cross section.

SPECIAL STILLING BASIN (SEDIMENT FILTER BAG WITH GRAVEL PAD):
The special stilling basin shall be disposed of and replaced when it is $\frac{3}{4}$full of sediment or when it is impractical for the bag to filter the sediment out at a reasonable flow rate. The inlet of the bag should be inspected periodically for damage and/or blockage. The float intake shall be constantly monitored while in use. Sediment control stone shall be replaced if damaged by high flows or bag failure.

WATTLES (COMPOST SOCK):
Inspect wattles weekly and after each significant rainfall event (1/2 inch or greater). Remove accumulated sediment and any debris. The watte must be replaced if clogged or torn. If ponding becomes excessive, the wattle may need to be replaced with a larger diameter or different measure. The wattle needs to be reinstalled if undermined or dislodged. The wattler shall be inspected until land disturbance is complete and the area above the measure has been permanently stabilized.

GROUNDWATER DEWATERING:
The pump shall be monitored 24/7 until construction activity is complete.

CONCRETE WASHOUT:
Inspect after each significant rainfall event. Stormwater acumulated within the washout may not be pumped into or discharged to the storm drainage system or receiving waters. Liquid waste musth be pumped out and removed from the project. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structure components when no longer functional.

E YOUNG ST
EC | 4

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER



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LAND GRADING (NCDENR 6.02)

CONSTRUCTION SPECIFICATIONS

1. Construct and maintain all erosion and sedimentation control practices and measures in accordance with the approved sedimentation control plan and construction schedule.

2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.

3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil (Practice 6.04, Topsoiling).

4. Clear and grub areas to be filled by removing trees, vegetation, roots, or other objectionable material that would affect the planned stability of the fill.

5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.

6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.

7. Do not incorporate frozen, soft, mucky, or highly compressible materials into fill slopes.

8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.

9. Keep diversions and other water conveyance measures free of sediment during all phases of development.

10. Handle seeps or springs encountered during construction in accordance with approved methods (Practice 6.81, Subsurface Drain).

11. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 30 working days or longer.

12. Show topsoil stockpiles, borrow areas, and spoil areas on the plans, and make sure they are adequately protected from erosion. Include final stabilization of these areas in the plan.

MAINTENANCE
Periodically, check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls. Promptly remove all sediment from diversions and other water–disposal practices. If washouts or breaks occur, repair them immediately. Prompt maintenance of small eroded areas before they become
significant gullies is an essential part of an effective erosion and sedimentation control plan.

TOPSOILING (NCDENR 6.04)

CONSTRUCTION SPECIFICATIONS

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

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

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

Acidity – pH should be greater than 3.6 before liming, and liming is required if it is less than 6.0.

Soluble salts – should be less than 500 ppm.

Sodium – sodium adsorption ratio should be less than 12. The depth of material meeting the above qualifications should be at least 2 inches. Soil factors such as rock fragments, slope, depth to water table, and layer thickness affect the ease of excavation and spreading of topsoil. Generally, the upper part of the soil, which is richest in organic matter, is most desirable; however, material excavated from deeper layers may be worth storing if it meets the other criteria listed above. Organic soils such as mucks and peats do not make good topsoil. They can be identified by their extremely light weight when dry.

TOPSOILING (NCDENR 6.04)

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

STOCKPILING
Select stockpile location to avoid slopes, natural drainageways, and traffic routes. On large sites, respreading is easier and more economical when topsoil is stockpiled in small piles located near areas where they will be used.

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

Temporary seeding – Protect topsoil stockpiles by temporarily seeding as soon as possible, no more than 21 calendar days after the formation of the stockpile (Practice 6.10, Temporary Seeding).

Permanent vegetation – If stockpiles will not be used within 90 days they must be stabilized with permanent vegetation to control erosion and weed growth (Practice 6.11, Permanent Seeding).

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

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

Limit of subsoil – Where the pH of the existing subsoil is 6.0 or less, or the soil is composed of heavy clays, incorporate agricultural limestone in amounts recommended by soil tests or specified for the seeding mixture to be used (Practice 6.11, Permanent Seeding). Incorporate lime to a depth of at least 2 inches by disking.

TOPSOILING (NCDENR 6.04) CONTINUED

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

SPREADING TOPSOIL
Uniformly distribute topsoil to a minimum compacted depth of 2 inches on 3:1 slopes and 4 inches on flatter slopes. To determine the volume of topsoil required for application to various depths, use Table 6.04a. Do not spread topsoil while it is frozen or muddy or when the subgrade is wet or frozen. Correct any irregularities in the surface that result from topsoiling or other operations to prevent the formation of depressions or water pockets.

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

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

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

SEEDING SPECIFICATIONS (WAKE COUNTY)

GROUND STABILIZATION

Refer to sheet EC–17 for "Ground Stabilization" requirements per the NPDES Stormwater Discharge Permit for Construction Activities (NCGO1 – 4/1/19)

SEEDBED PREPARATION

1. Chisel compacted areas and spread topsoil three inches deep over adverse soil conditions, if available.

2. Rip the entire area to six inches deep.

3. Remove all loose rock, roots and other obstructions, leaving surface reasonably smooth and uniform.

4. Apply agricultural lime, fertilizer and superphosphate uniformly and mix with soil (see mixture below).

5. Continue tillage until a well–pulverized, firm, reasonably uniform seedbed is prepared four to six inches deep.

6. Seed on a freshly prepared seedbed and cover seed lightly with seeding equipment or cultipack after seeding.

7. Mulch immediately after seeding and anchor mulch.

8. Inspect all seeded areas and make necessary repairs or reseedings within the planting season, if possible. If stand should be more than 60% damaged, reestablish following the original lime, fertilizer and seeding rates.

9. Consult Wake County Soil & Water or NC State Cooperative Extension on maintenance treatment and fertilization after permanent cover is established.

MIXTURE

Agricultural Limestone	2 tons/acre
Fertilizer	1,000 lbs/acre * 10–10–10
Superphosphate	500 lbs/acre * 20% analysis
Mulch	2 tons/acre * small grain straw
Anchor	Asphalt emulsion at 400 gals/acre

SEEDING SCHEDULE

For Shoulders, Side Ditches, Slopes (Max 3:1):

Date	Type	Planting Rate
Aug 15–Nov 1	Tall Fescue	300 lbs/acre
Nov 1–Mar 1	Tall Fescue & Abruzzi Rye	300 lbs/acre
Mar 1–Apr 15	Tall Fescue	300 lbs/acre
Apr 15–Jun 30	Hulled Common Bermudagrass	25 lbs/acre
Jul 1–Aug 15	Tall Fescue AND BrowntopMillet or Sorghum–SudanHybrids***	125 lbs/acre (Tall Fescue); 35 lbs/acre (Browntop Millet); 30 lbs/acre(Sorghum–Sudan Hybrids)

For Shoulders, Side Ditches, Slopes (3:1 to 2:1):

Date	Type	Planting Rate
Mar 1–Jun 1	Sericea Lespedeza (scarified) and use the following combinations:	50 lbs/acre (Sericea Lespedeza);
Mar 1–Apr 15	Add Tall Fescue	120 lbs/acre
Mar 1–Jun 30	Or add Weeping Love grass	10 lbs/acre
Mar 1–Jun 30	Or add Hulled Common Bermudagrass	25 lbs/acre
Jun 1–Sept 1	Tall Fescue AND Browntop Mullet or Sorghum–Sudan Hybrids***	120 lbs/acre (Tall Fescue); 35 lbs/acre (Browntop Mullet); 30 lbs/acre (Sorghum–Sudan Hybrids)
Sept 1–Mar 1	Sericea Lespedeza (unhulled –unscarified) AND Tall Fescue	70 lbs/acre (Sericea Lespedeza); 120 lbs/acre (Tall Fescue)
Nov 1–Mar 1	AND Abruzzi Rye	25 lbs/acre

Consult Wake County Soil & Water Conservation District or NC State Cooperative Extension for additional information concerning other alternatives for vegetation of denuded areas. The above vegetation rates are those that do well under local conditions; other seeding rate combinations are possible.

*** TEMPORARY: Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow more than 12" in height before mowing; otherwise, fescue may be shaded out.

RIP RAP (NCDENR 6.15)

CONSTRUCTION SPECIFICATIONS

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

Sand and gravel filter blanket – Place the filter blanket immediately after the ground foundation is prepared. For gravel, spread filter stone in a uniform layer to the specified depth. Where more than one layer of filter material is used, spread the layers with minimal mixing.

Synthetic filter fabric – Place the cloth filter directly on the prepared foundation. Overlap the edges by at least 12 inches, and space anchor pins every 3 ft along the overlap. Bury the upstream end of the cloth a minimum of 12 inches below ground and where necessary, bury the lower end of the cloth or over lap with the next section as required.

Take care not to damage the cloth when placing riprap. If damage occurs remove the riprap, and repair the sheet by adding another layer of filter material with a minimum overlap of 12 inches around the damaged area. If extensive damage is suspected, remove and replace the entire sheet.

Where large stones are used or machine placement is difficult, a 4–inch layer of fine gravel or sand may be needed to protect the filter cloth.

Stone placement – Placement of riprap should follow immediately after placement of the filter. Place riprap so that it forms a dense, well–graded mass of stone with a minimum of voids. The desired distribution of stones throughout the mass may be obtained by selective loading at the quarry, and controlled dumping during final placement. Place riprap to its full thickness in one operation. Do not place riprap by dumping through chutes or other methods that cause segregation of stone sizes. Take care not to dislodge the underlying base or filter when placing the stones.

The toe of the riprap slope should be keyed to a stable foundation at its base as shown in Figure 6.15b. The toe should be excavated to a depth about 1.5 times the design thickness of the riprap, and should extend horizontally from the slope.

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

MAINTENANCE

In general, once a riprap installation has been properly designed and installed it requires very little maintenance. Riprap should be inspected periodically for scour or dislodged stones. Control of weed and brush growth may be needed in some locations.

GRASS–LINED CHANNELS (NCDENR 6.30)

CONSTRUCTION SPECIFICATIONS

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

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

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

4. The procedure used to establish grass in the channel will depend upon the severity of the conditions and selection of species. Protect the channel with mulch or a temporary liner sufficient to withstand anticipated velocities during the establishment period.

MAINTENANCE

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

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WAKE COUNTY



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5/26/20

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

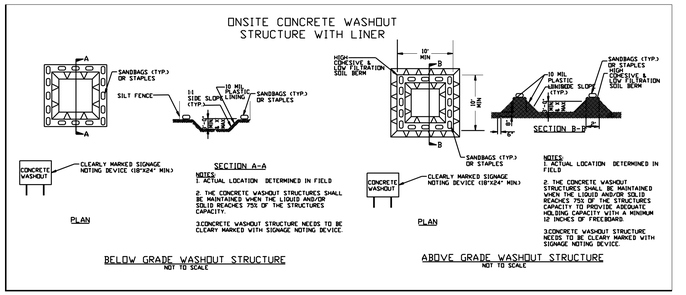
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, 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.



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 un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date 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 grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or 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.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

5/26/20

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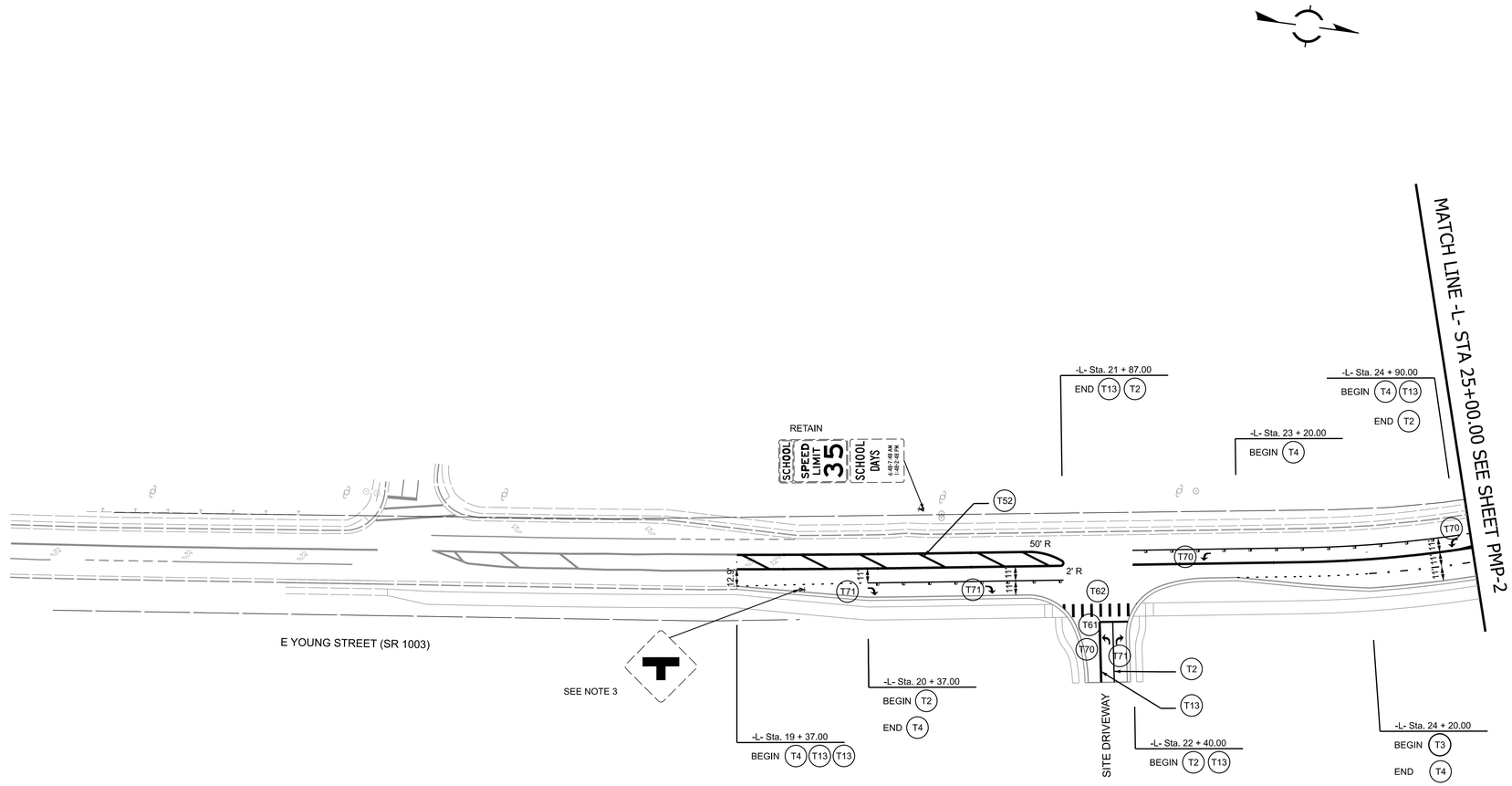
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ROADWAY STANDARD DRAWINGS

STD. NO.	TITLE
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

SIGNING PAY ITEM NOTES

1. ~~REMOVE AND DISPOSE OF EXISTING 'U' CHANNEL POST.~~
2. ERECT EXISTING SIGN ON NEW "U" CHANNEL POST.
3. REMOVE AND DISPOSE OF EXISTING SIGNS AND "U" CHANNEL POST.
4. REMOVE AND REPLACE EXISTING SNOWPLOWABLE MARKER.

LEGEND

- CRYSTAL/RED PAVEMENT MARKERS
- YELLOW/YELLOW PAVEMENT MARKERS
- EXISTING TRAFFIC SIGNAL
- PROPOSED TRAFFIC SIGNAL
- PROPOSED SIGN LOCATION ON "U" CHANNEL POST
- EXISTING SIGN LOCATION ON "U" CHANNEL POST

FINAL PAVEMENT MARKING SCHEDULE

PAVEMENT MARKING LINES

T1	- THERMOPLASTIC (4" WHITE, 90 MILS)	EDGELINE
T2	- THERMOPLASTIC (4" WHITE, 90 MILS)	LANE LINE
T3	- THERMOPLASTIC (4" WHITE, 90 MILS)	10' WHITE SKIP
T4	- THERMOPLASTIC (4" WHITE, 90 MILS)	3' x 9'/SP MINI-SKIP
T13	- THERMOPLASTIC (4" YELLOW, 90 MILS)	DOUBLE CENTER
T52	- THERMOPLASTIC (12" YELLOW, 90 MILS)	DIAGONAL
T61	- THERMOPLASTIC (24" WHITE, 90 MILS)	STOP BAR
T62	- THERMOPLASTIC (24" WHITE, 90 MILS)	CROSSWALK

PAVEMENT MARKING SYMBOLS

T70	- THERMOPLASTIC (WHITE, 90 MILS)	LEFT TURN ARROW
T71	- THERMOPLASTIC (WHITE, 90 MILS)	RIGHT TURN ARROW
T73	- THERMOPLASTIC (WHITE, 90 MILS)	COMBO LEFT/STRAIGHT ARROW
T100	- THERMOPLASTIC (WHITE, 90 MILS)	ALPHANUMERIC CHAR.

50' 0' 50' 100'
25'

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NORTH CAROLINA
WAKE COUNTY



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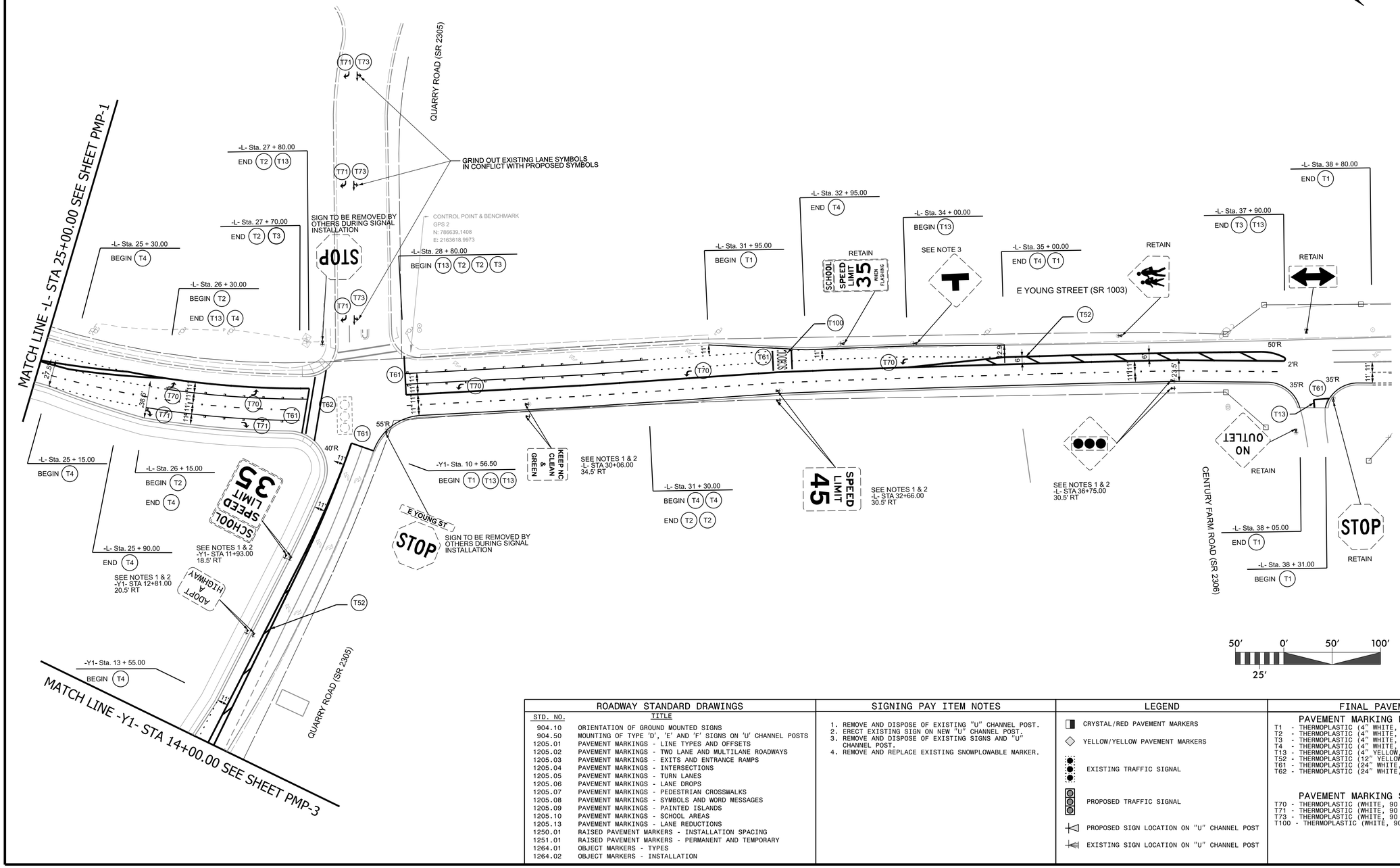
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YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

PAVEMENT MARKING
AND SIGNING PLAN

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T71 - THERMOPLASTIC (WHITE, 90 MILS)	RIGHT TURN ARROW
T73 - THERMOPLASTIC (WHITE, 90 MILS)	COMBO LEFT/STRAIGHT ARROW
T100 - THERMOPLASTIC (WHITE, 90 MILS)	ALPHANUMERIC CHAR.

E YOUNG ST

PMP 2

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

PREPARED BY

EXULT® ENGINEERING

NC License #C-1445

203 W. Millbrook Road, Ste 200
Raleigh, NC 27609
980.495.2250
www.exultengineering.com

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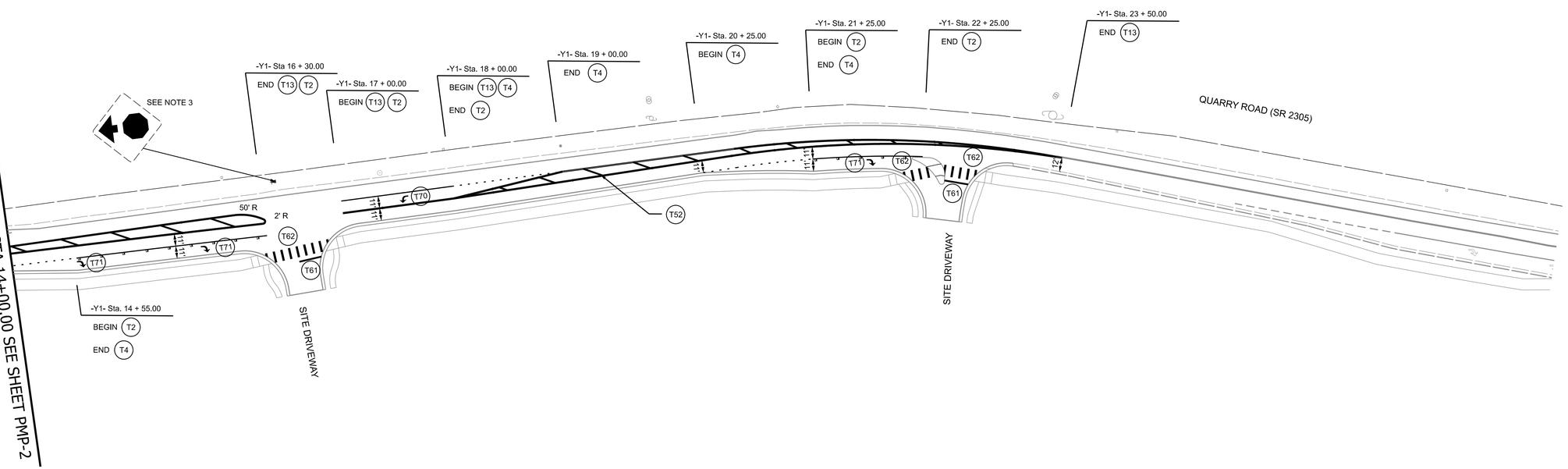
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

YOUNG STREET COMMERCIAL
ROADWAY AND SIGNAL
IMPROVEMENTS

PAVEMENT MARKING
AND SIGNING PLAN

REVISIONS

5/26/20



ROADWAY STANDARD DRAWINGS

STD. NO.	TITLE
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

SIGNING PAY ITEM NOTES

1. REMOVE AND DISPOSE OF EXISTING "U" CHANNEL POST.
2. ERECT EXISTING SIGN ON NEW "U" CHANNEL POST.
3. REMOVE AND DISPOSE OF EXISTING SIGNS AND "U" CHANNEL POST.
4. REMOVE AND REPLACE EXISTING SNOWPLOWABLE MARKER.

LEGEND

- CRYSTAL/RED PAVEMENT MARKERS
- YELLOW/YELLOW PAVEMENT MARKERS
- EXISTING TRAFFIC SIGNAL
- PROPOSED TRAFFIC SIGNAL
- PROPOSED SIGN LOCATION ON "U" CHANNEL POST
- EXISTING SIGN LOCATION ON "U" CHANNEL POST

FINAL PAVEMENT MARKING SCHEDULE

PAVEMENT MARKING LINES

T1	THERMOPLASTIC (4" WHITE, 90 MILS)	EDGELINE
T2	THERMOPLASTIC (4" WHITE, 90 MILS)	LANE LINE
T3	THERMOPLASTIC (4" WHITE, 90 MILS)	10' WHITE SKIP
T4	THERMOPLASTIC (4" WHITE, 90 MILS)	3' x 9'/SP MINI-SKIP
T13	THERMOPLASTIC (4" YELLOW, 90 MILS)	DOUBLE CENTER
T52	THERMOPLASTIC (12" YELLOW, 90 MILS)	DIAGONAL
T61	THERMOPLASTIC (24" WHITE, 90 MILS)	STOP BAR
T62	THERMOPLASTIC (24" WHITE, 90 MILS)	CROSSWALK

PAVEMENT MARKING SYMBOLS

T70	THERMOPLASTIC (WHITE, 90 MILS)	LEFT TURN ARROW
T71	THERMOPLASTIC (WHITE, 90 MILS)	RIGHT TURN ARROW
T73	THERMOPLASTIC (WHITE, 90 MILS)	COMBO LEFT/STRAIGHT ARROW
T10O	THERMOPLASTIC (WHITE, 90 MILS)	ALPHANUMERIC CHAR.

50' 0' 50' 100'
25'

E YOUNG ST
PMP 3

NORTH CAROLINA
WAKE COUNTY



ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 51970 ENGINEER GARRETT BOYLE

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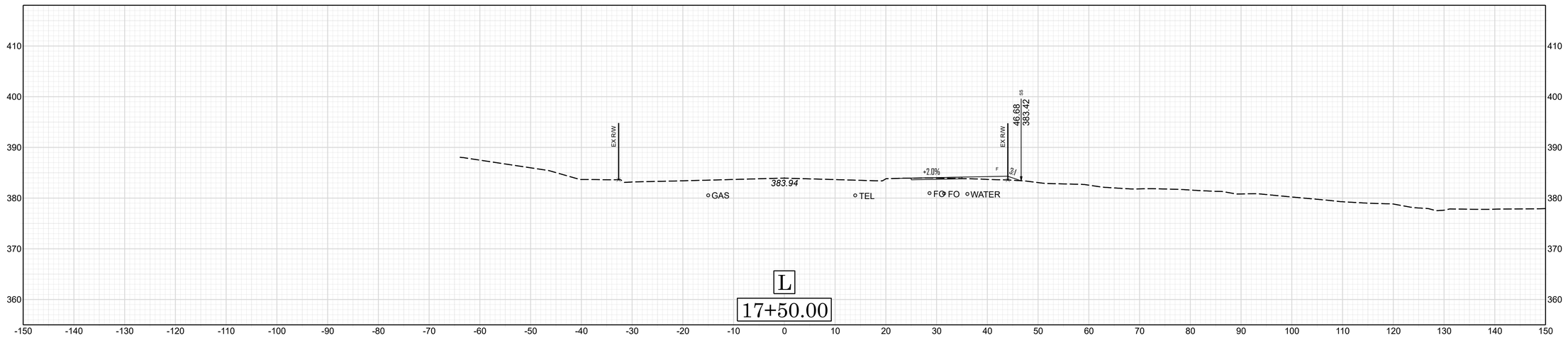
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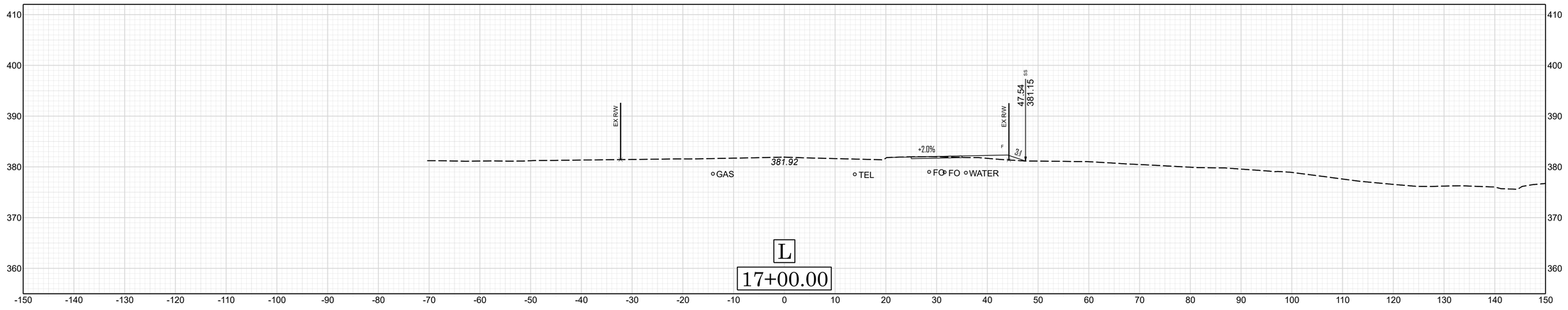
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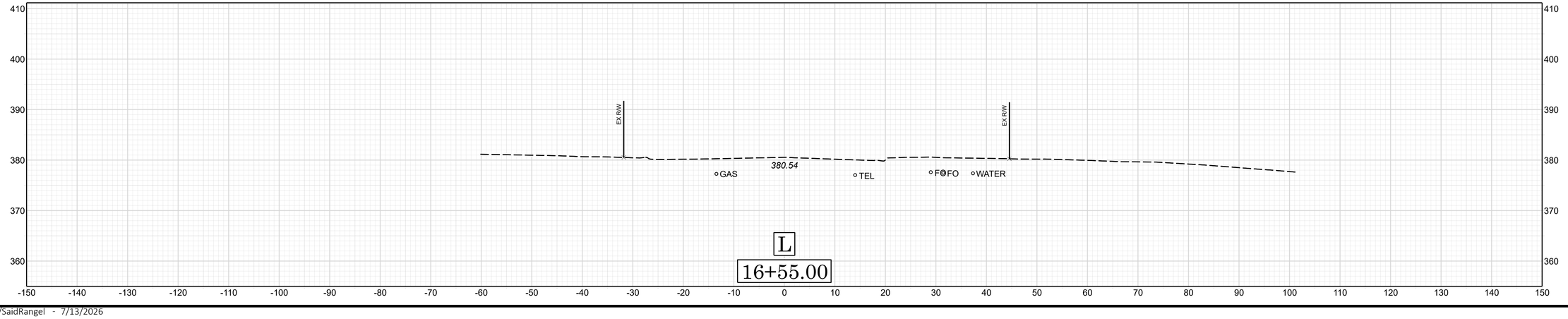
PAVEMENT MARKING AND SIGNING PLAN

REVISIONS

11/14/23







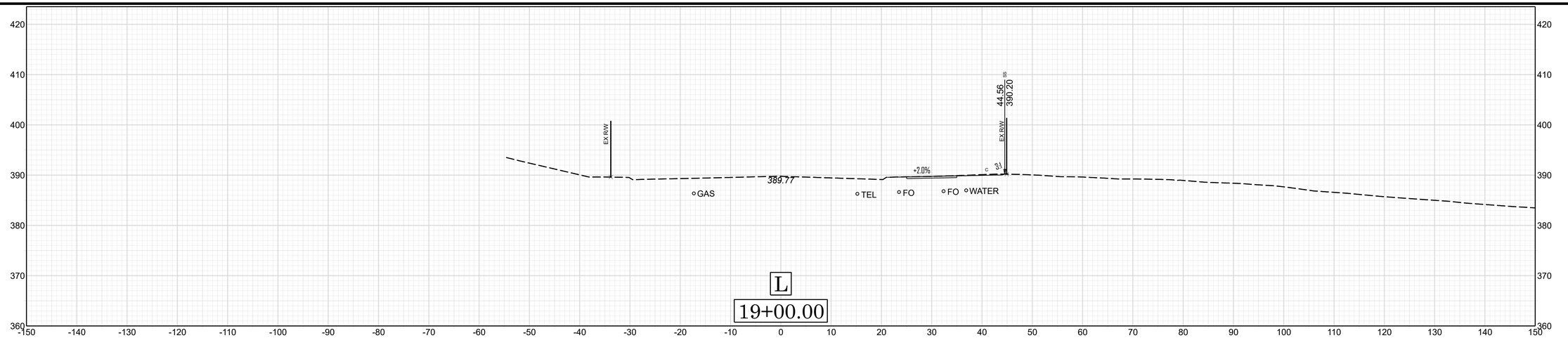
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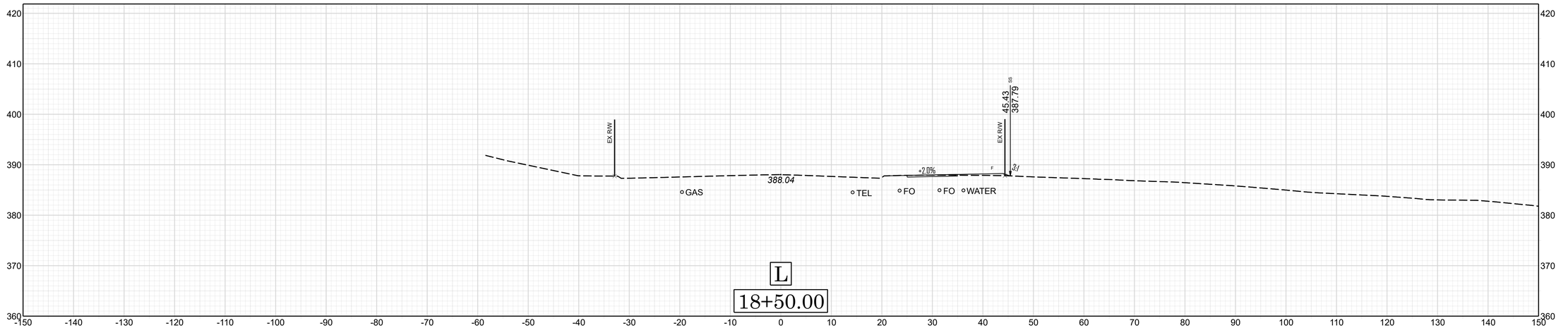
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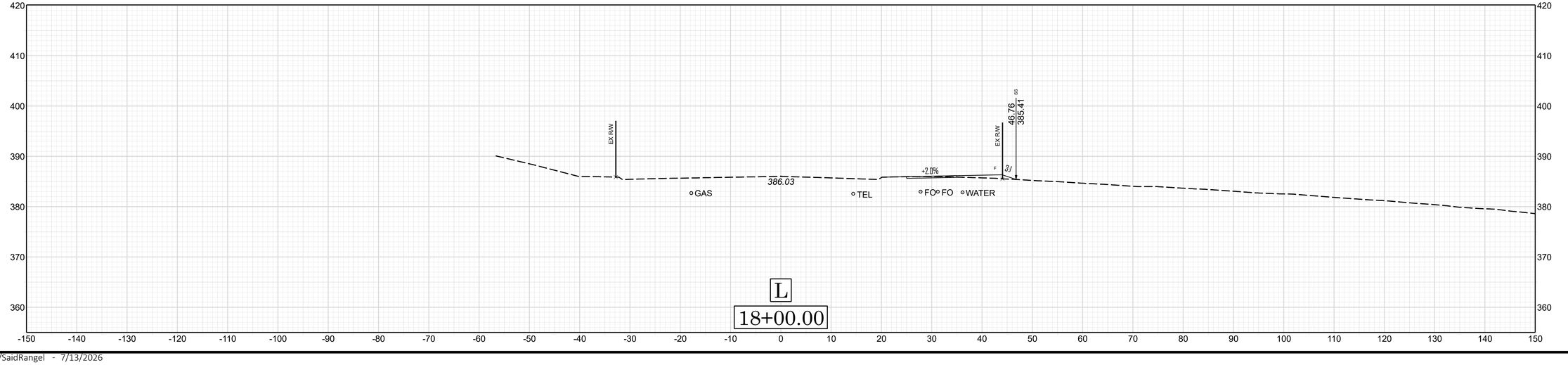
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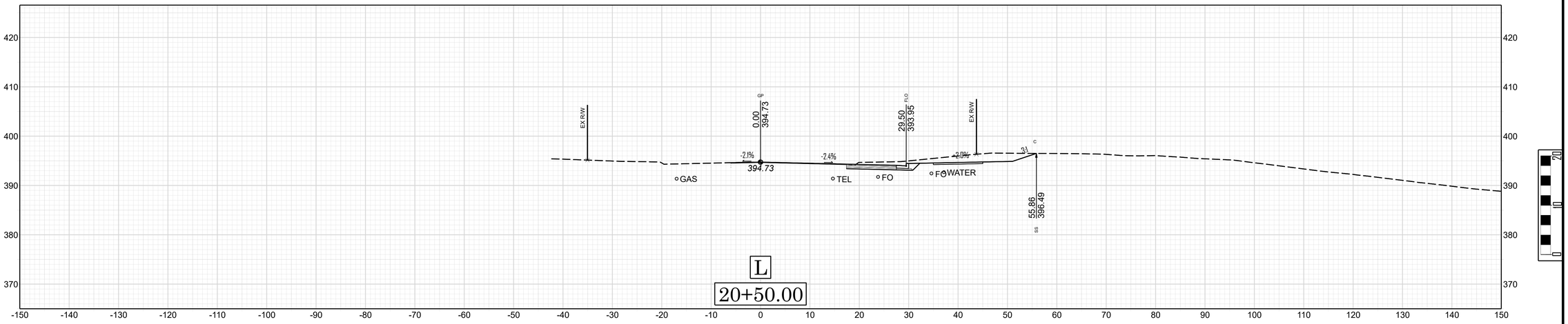


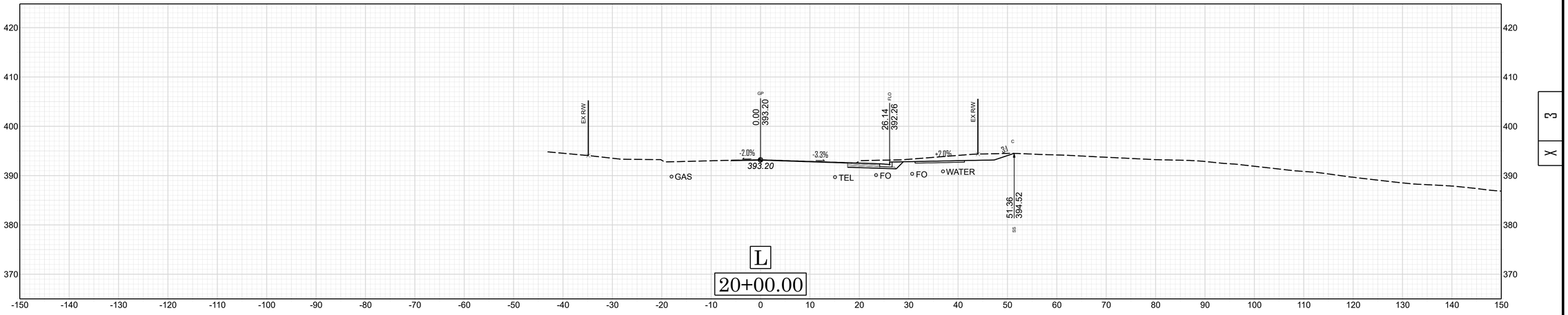
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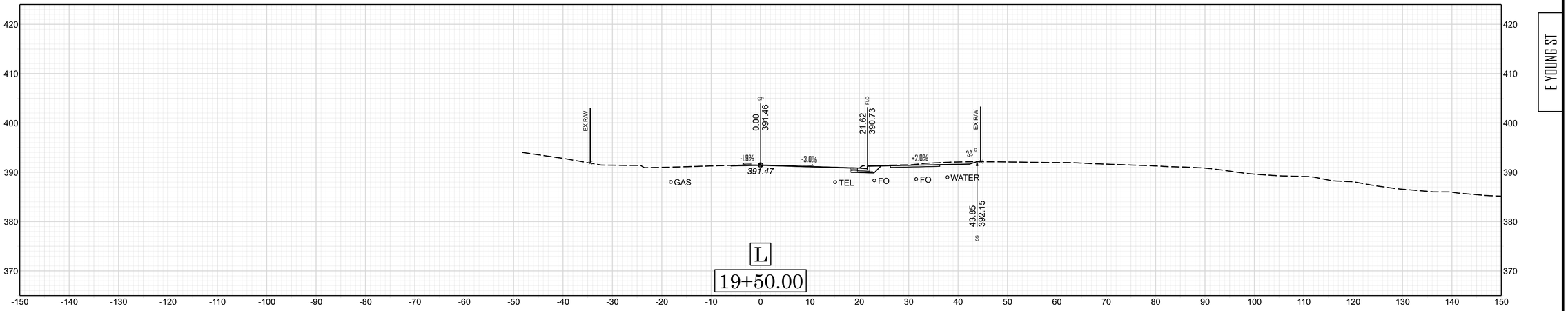
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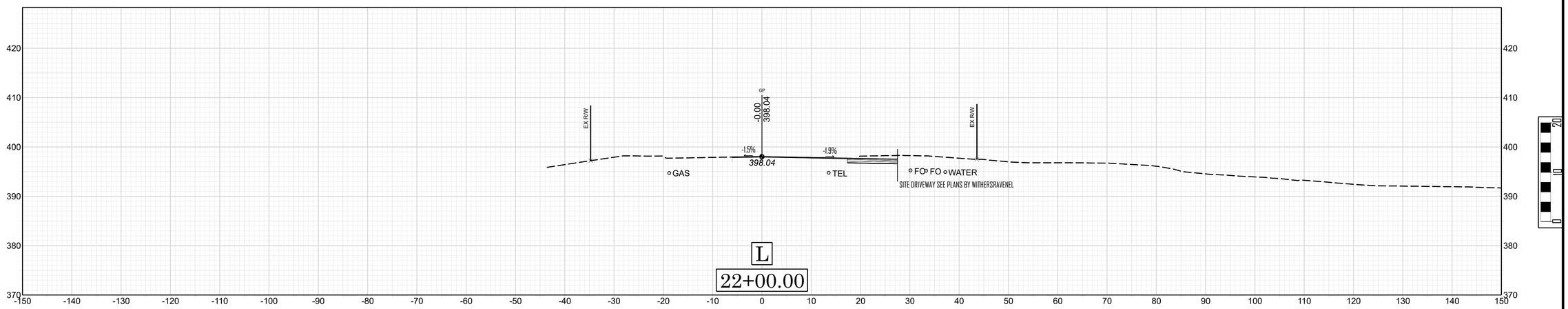


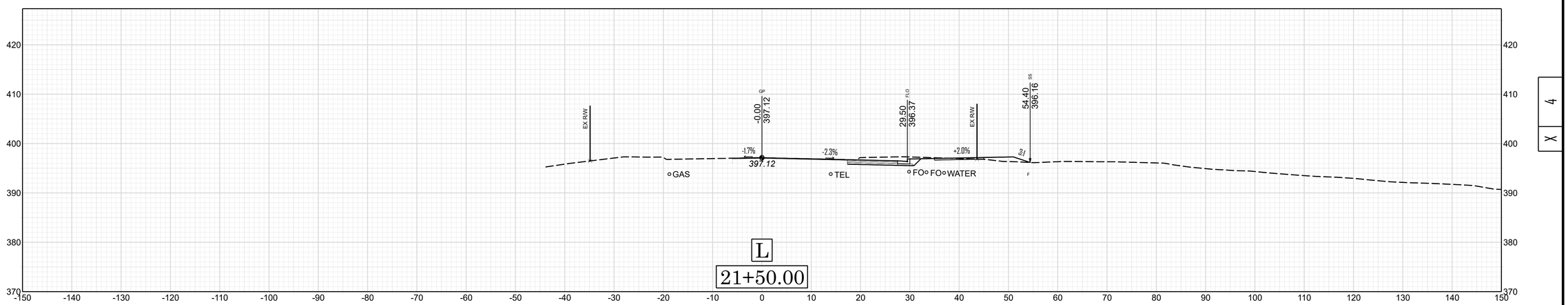


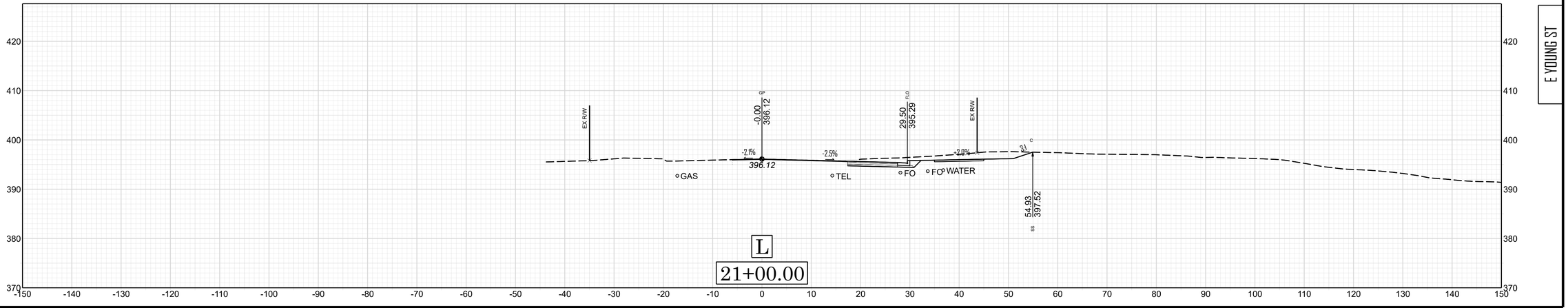
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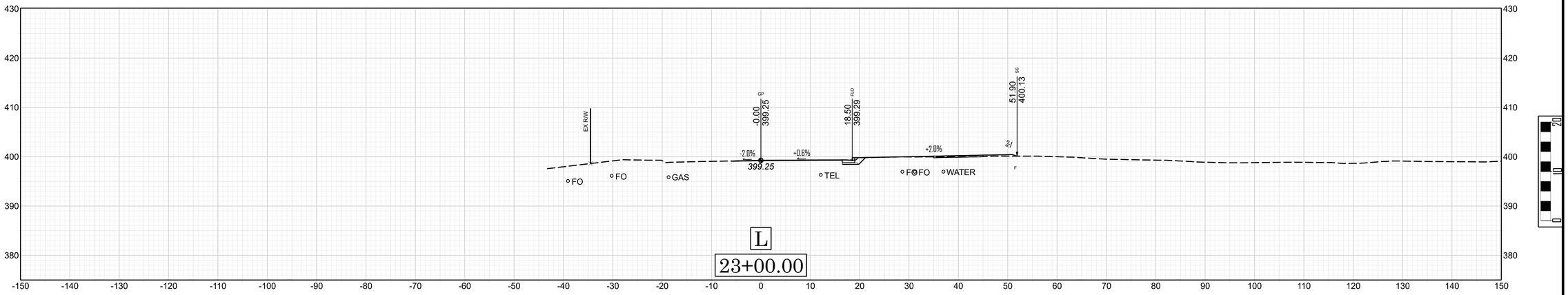


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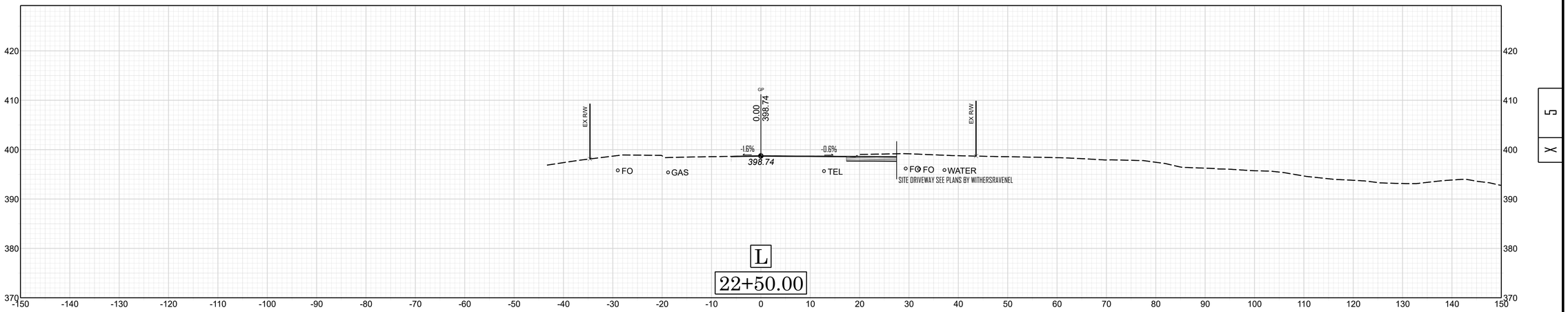
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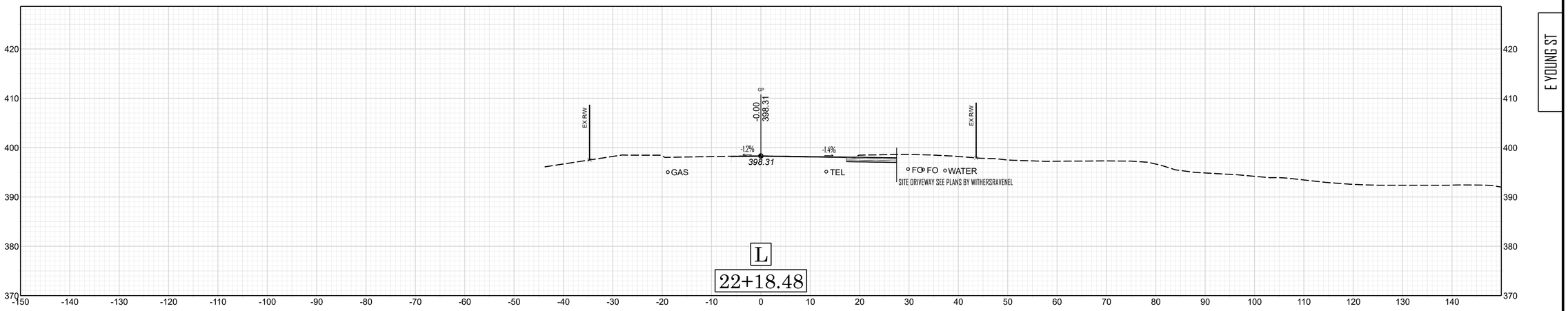
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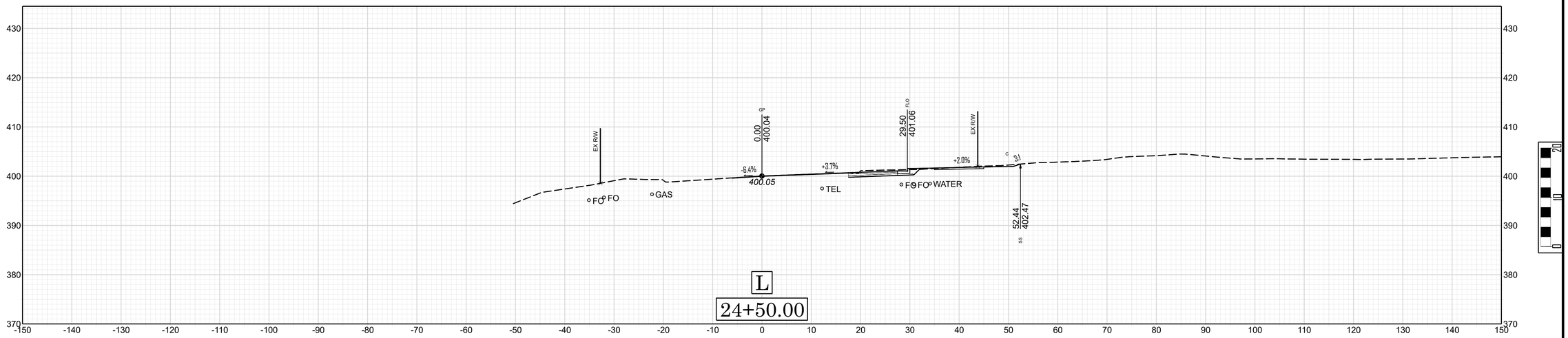
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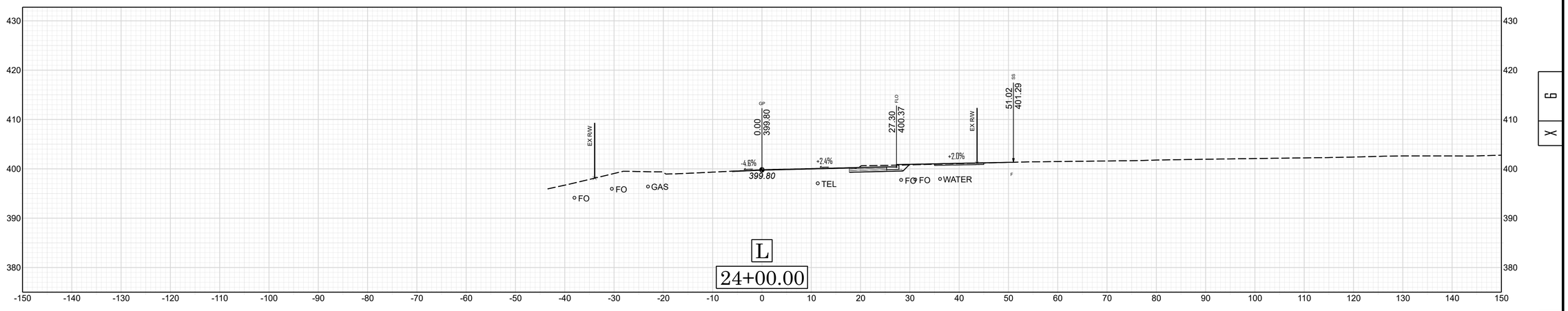
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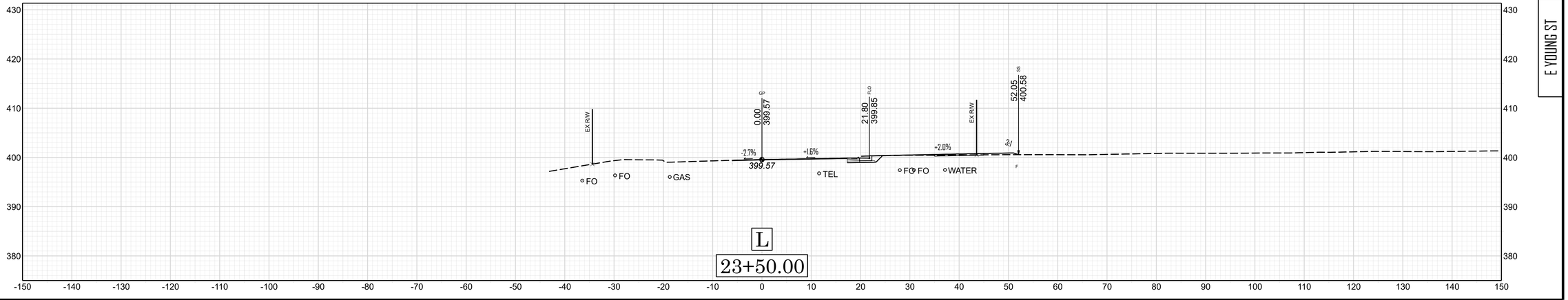
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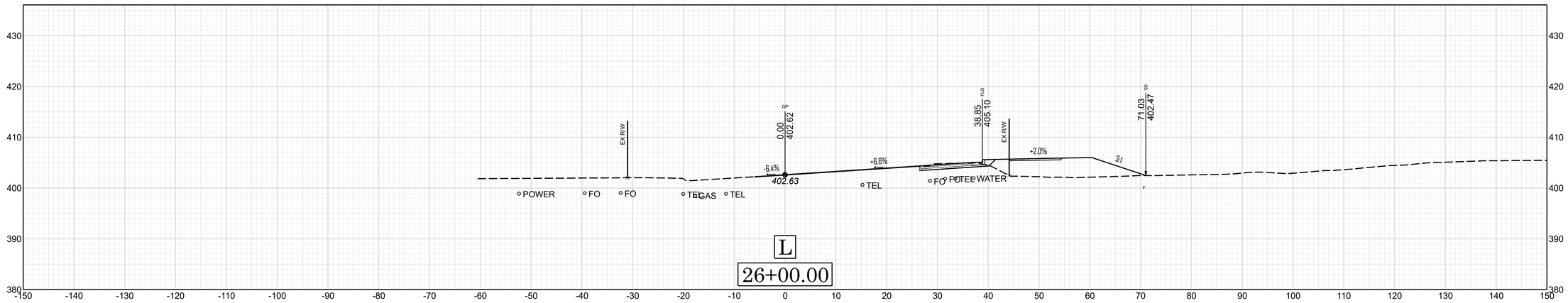
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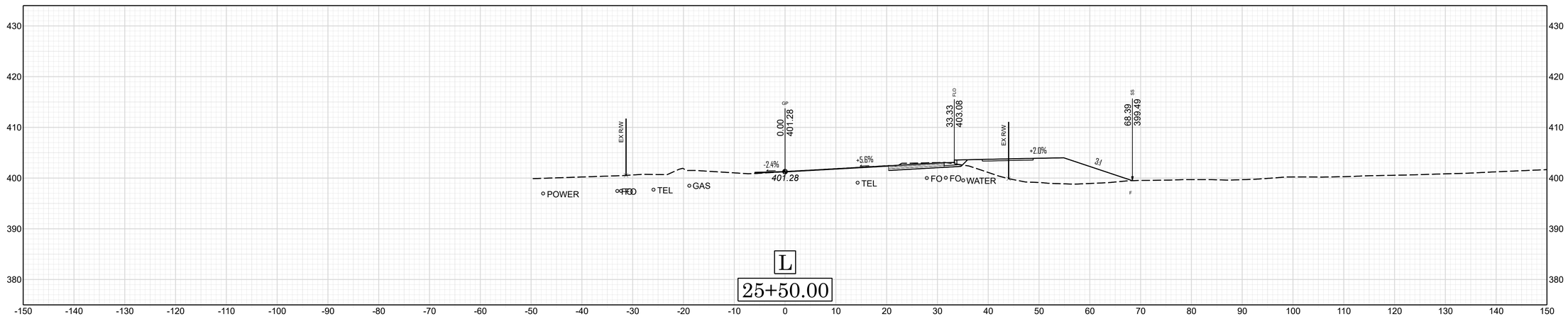
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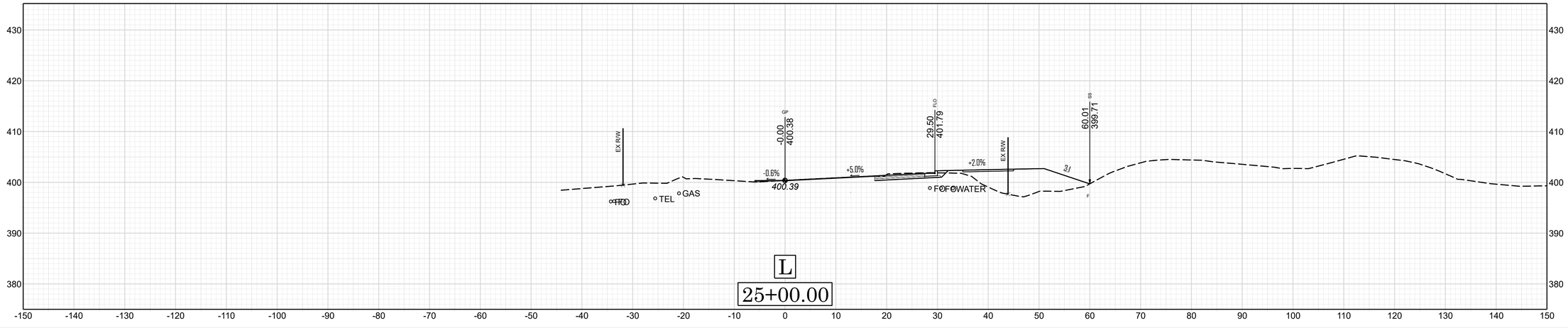
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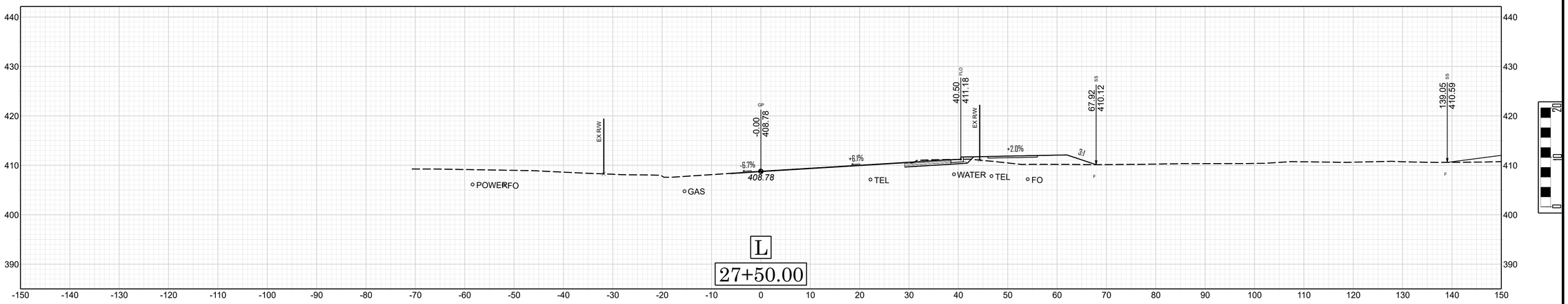


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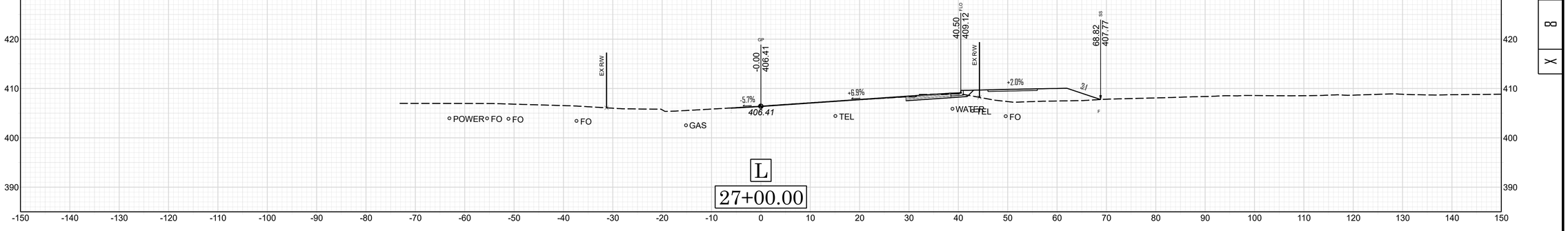
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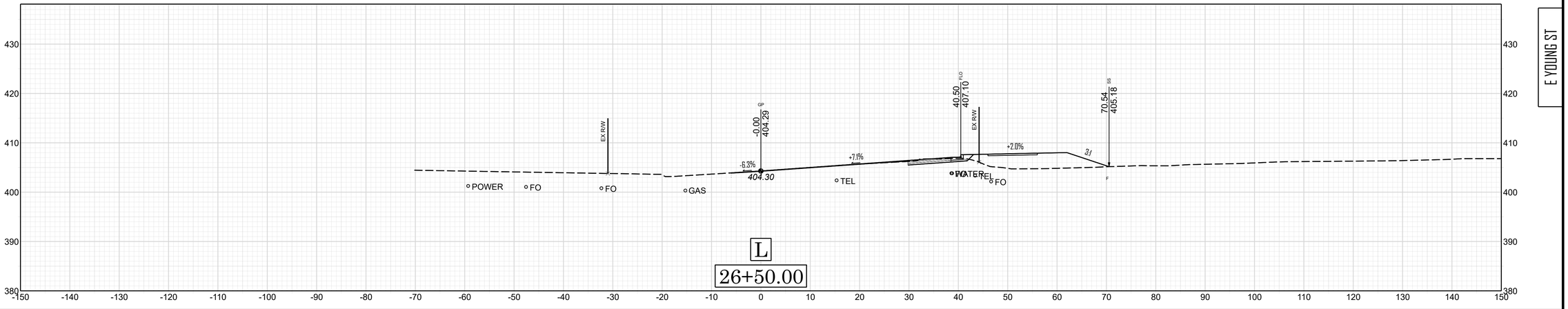
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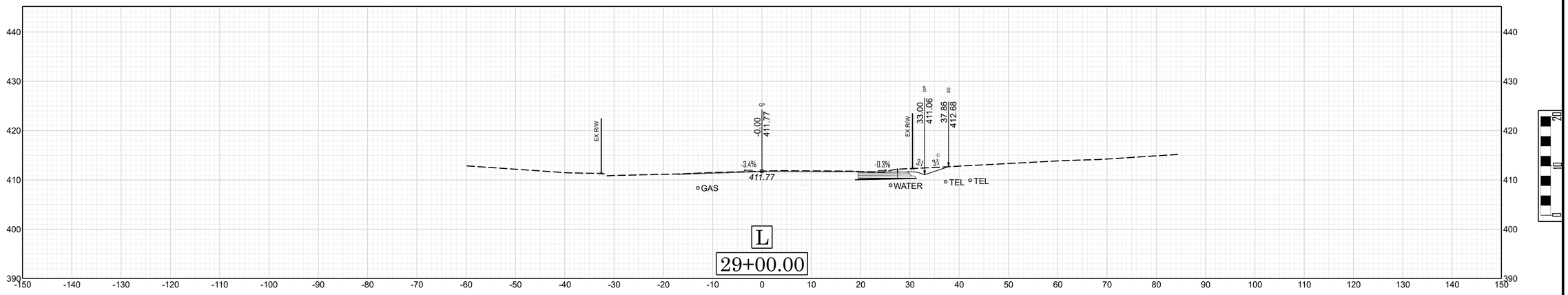
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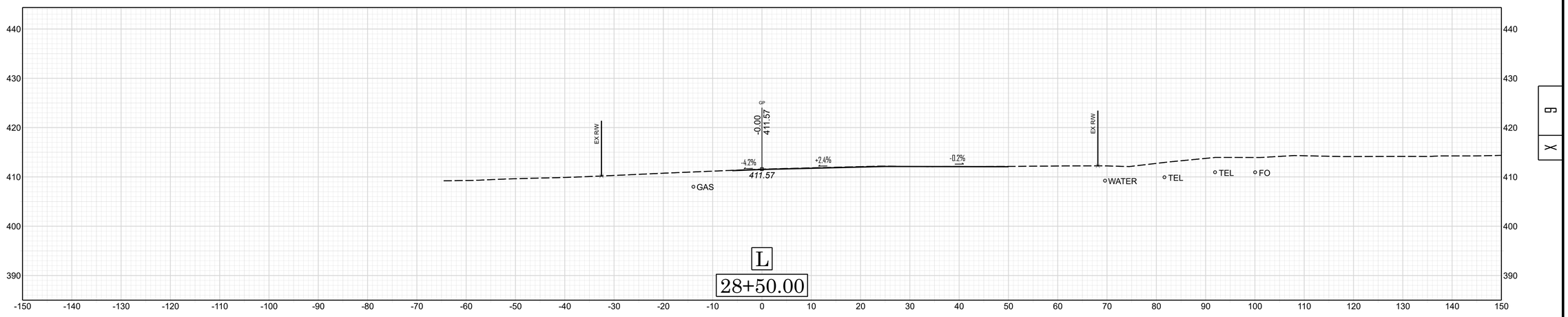
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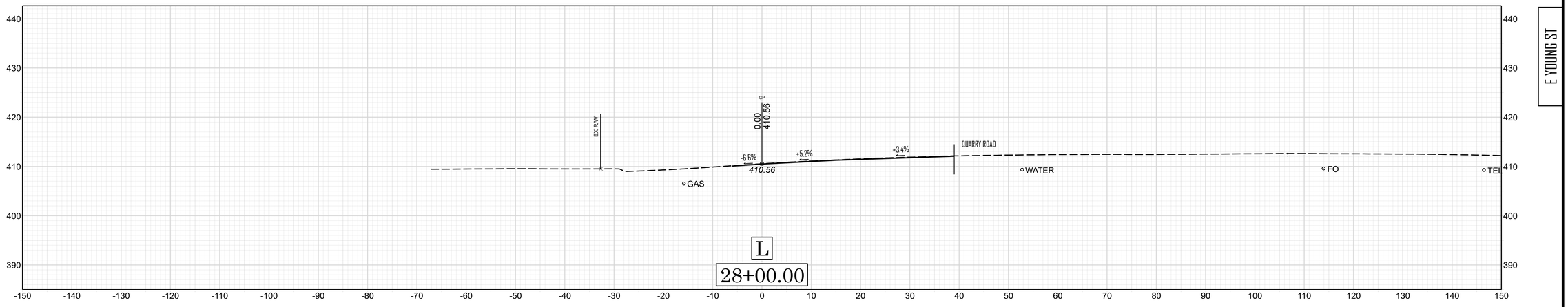
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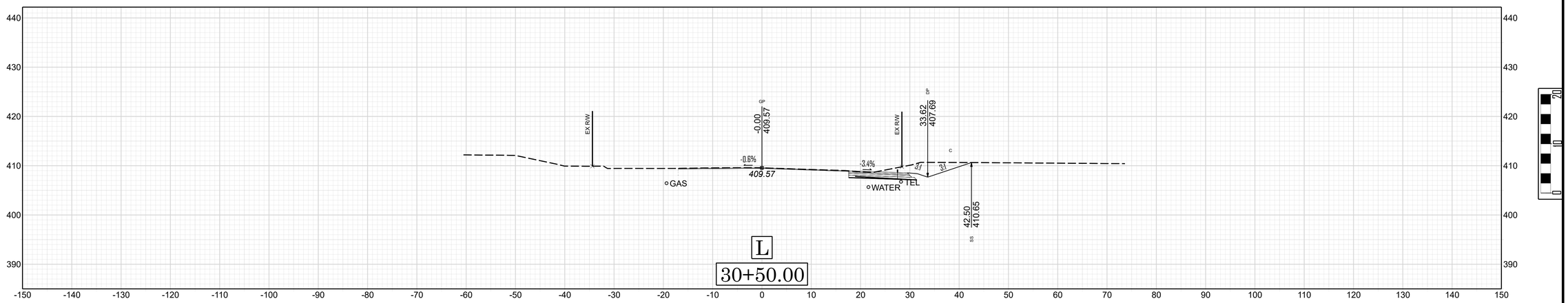


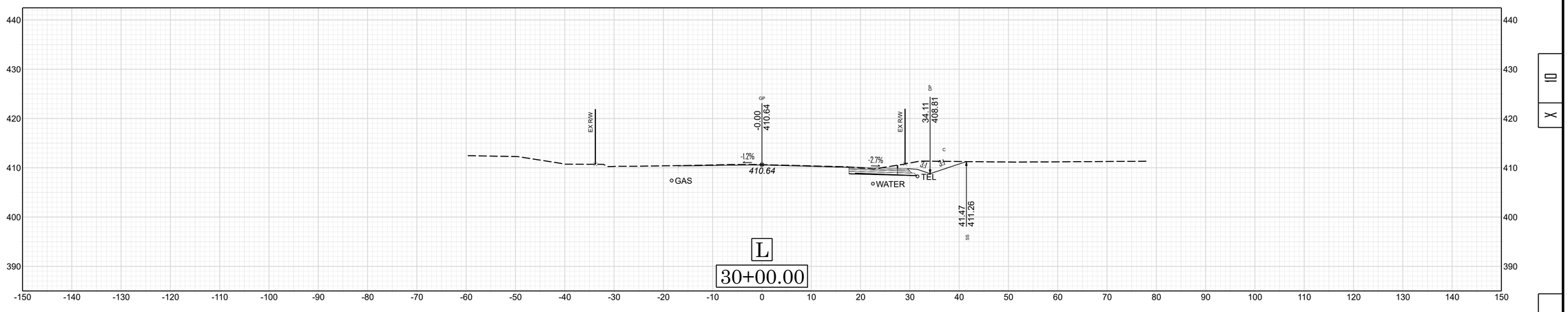


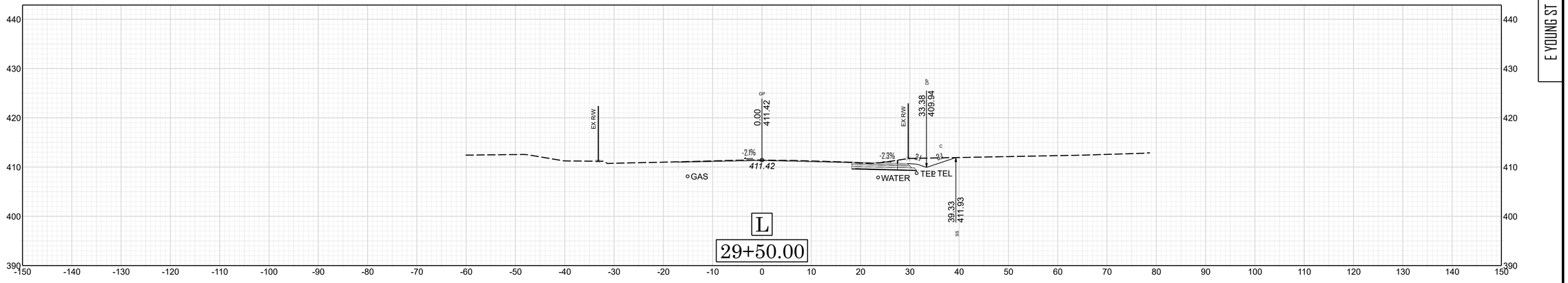
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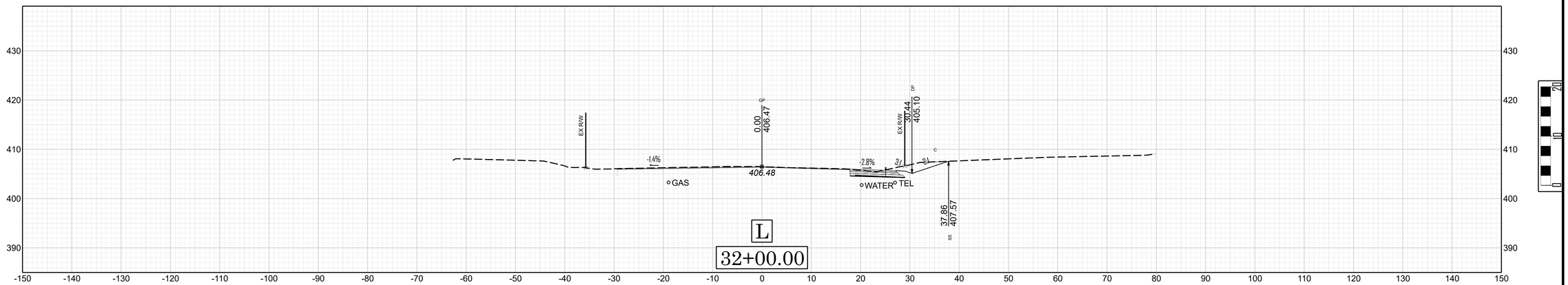
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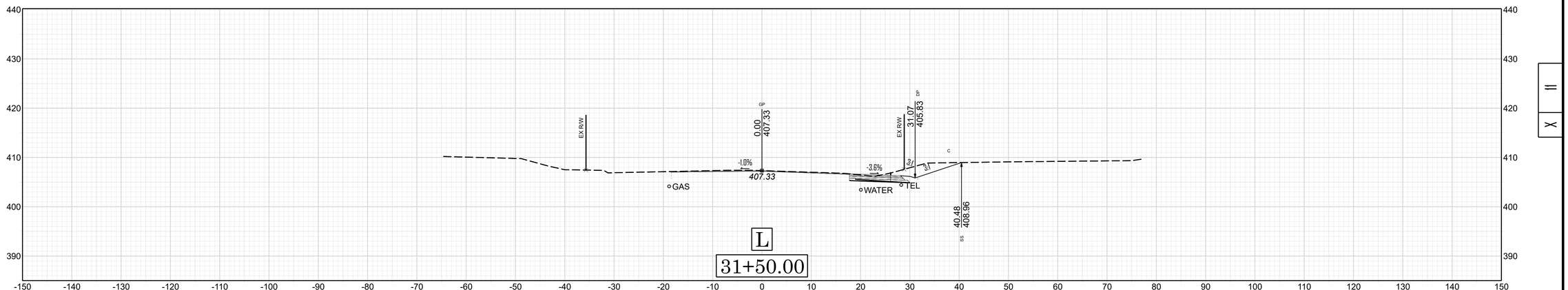
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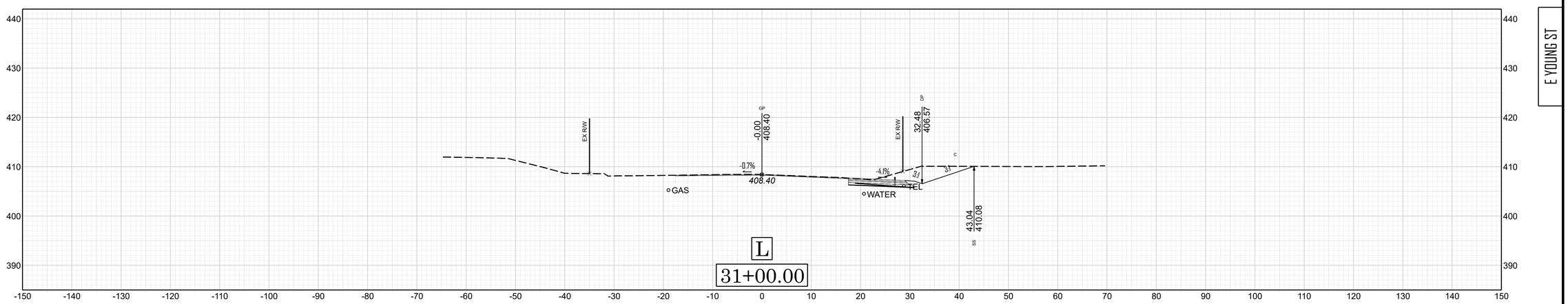
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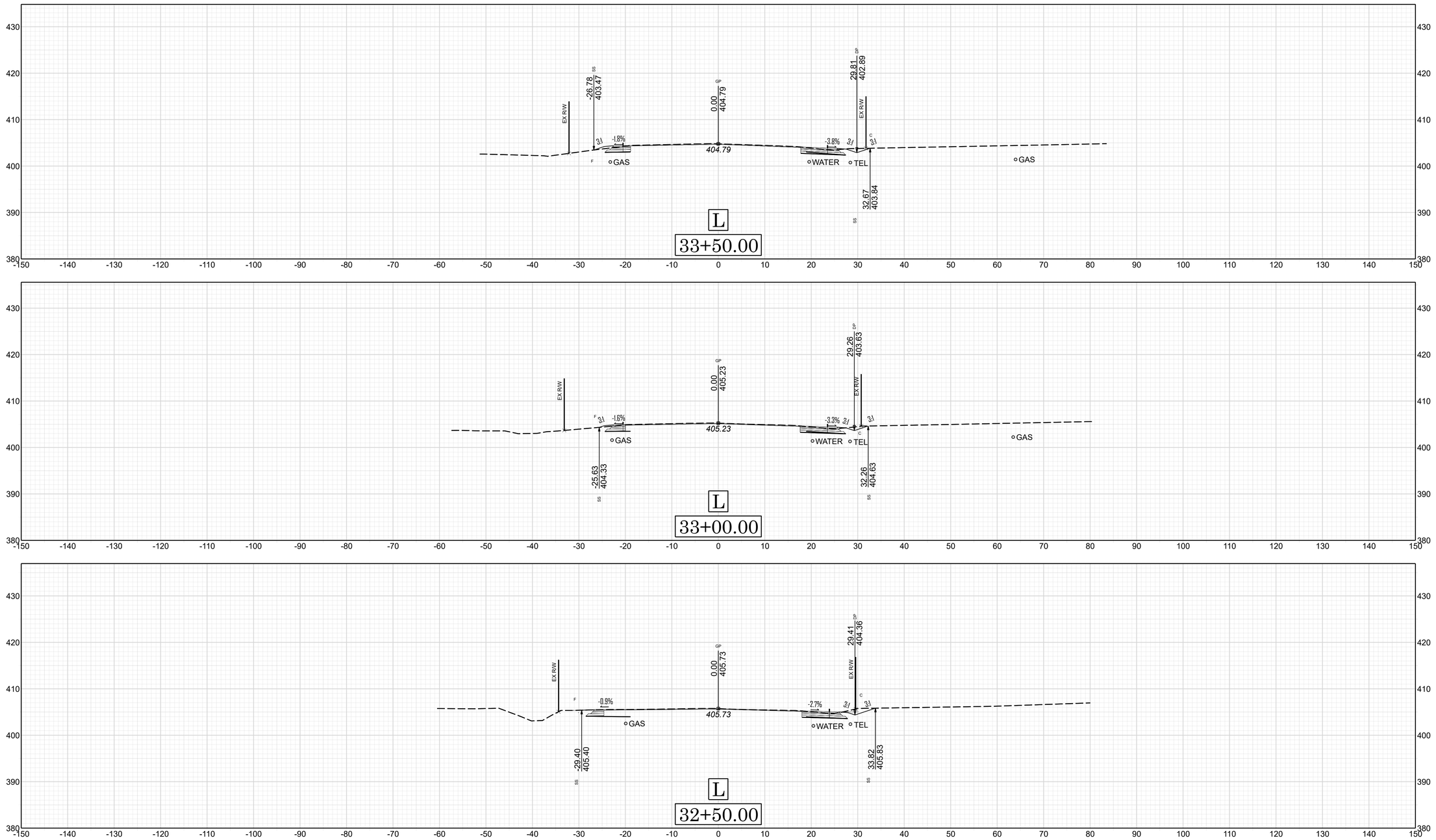




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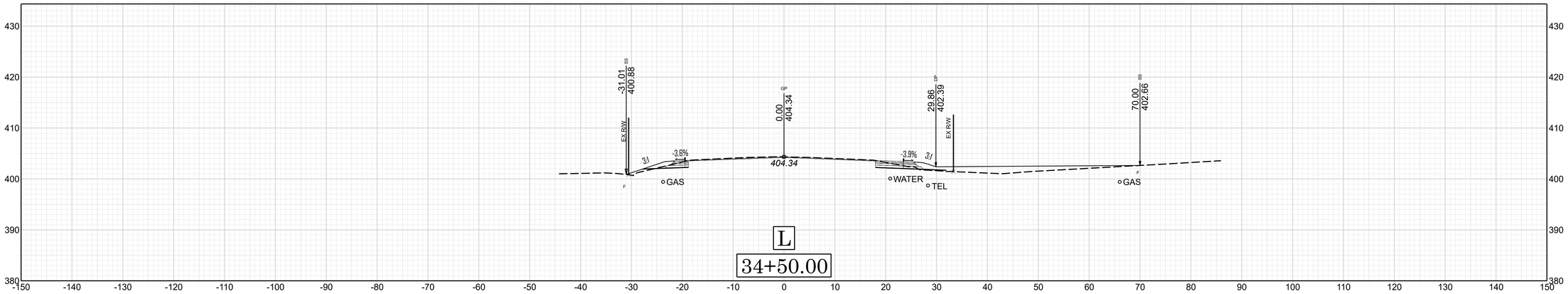
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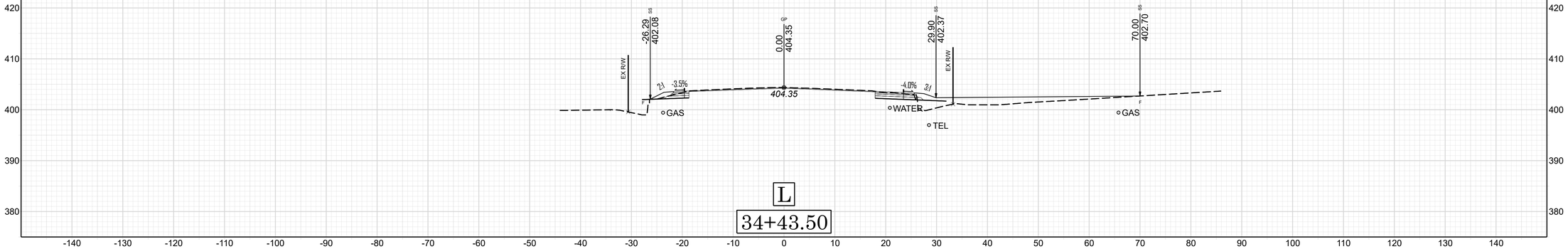
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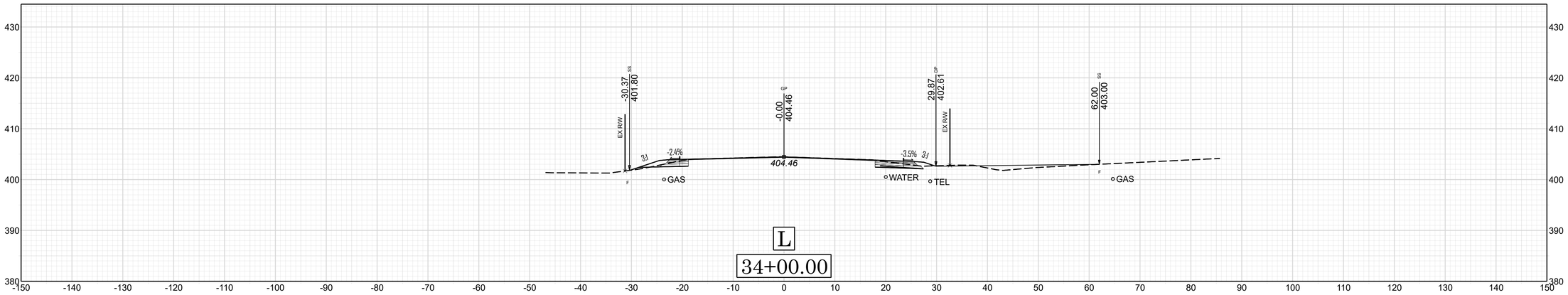
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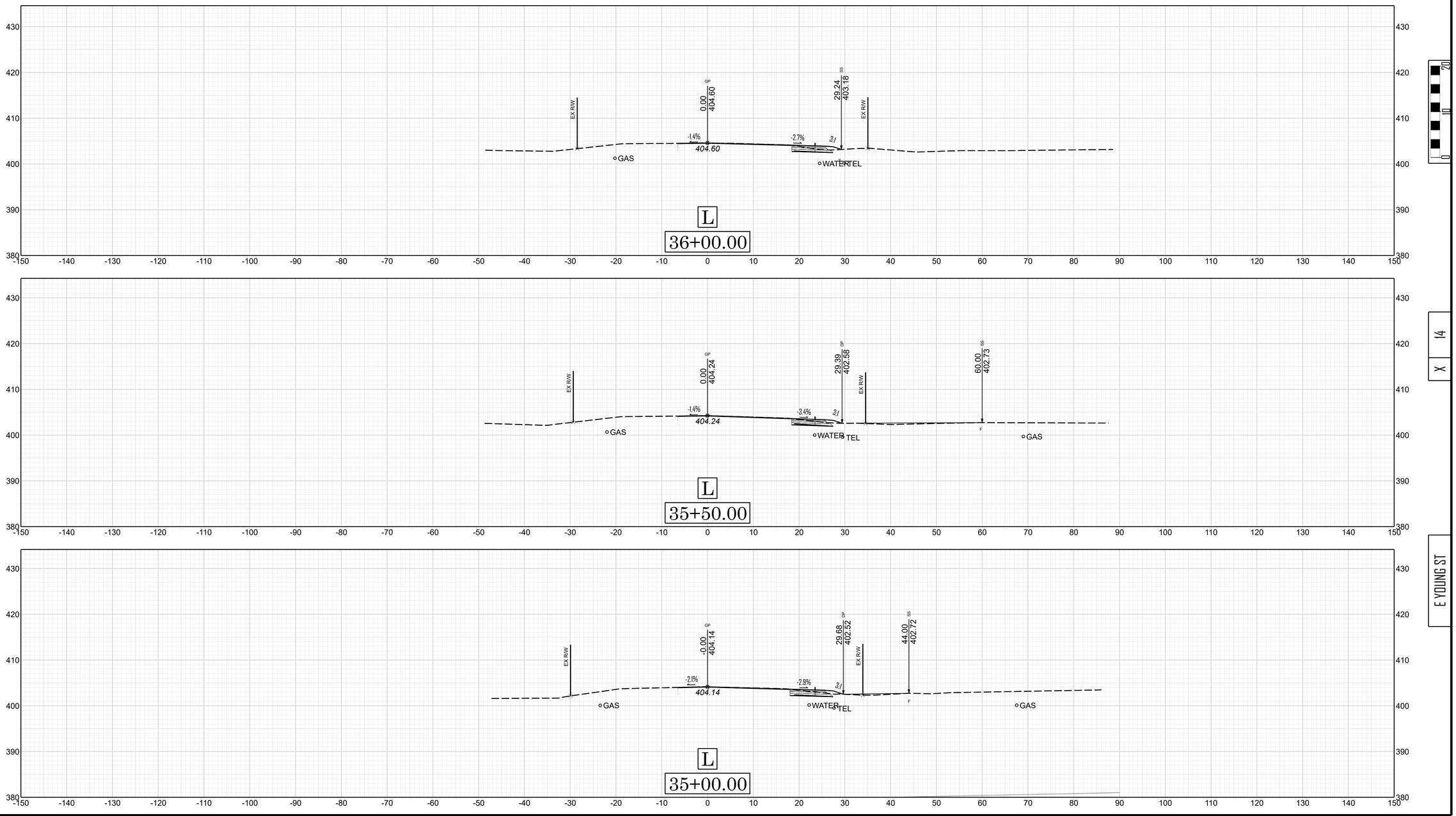
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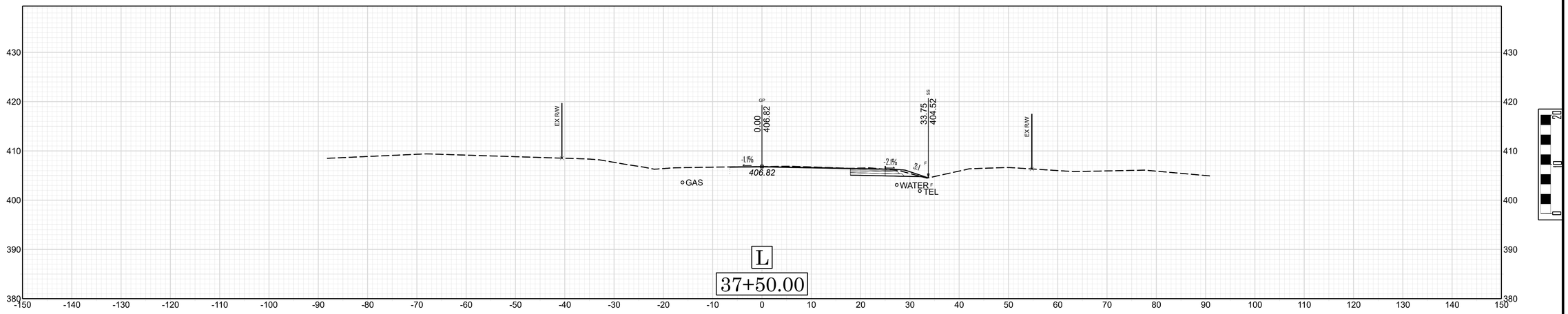
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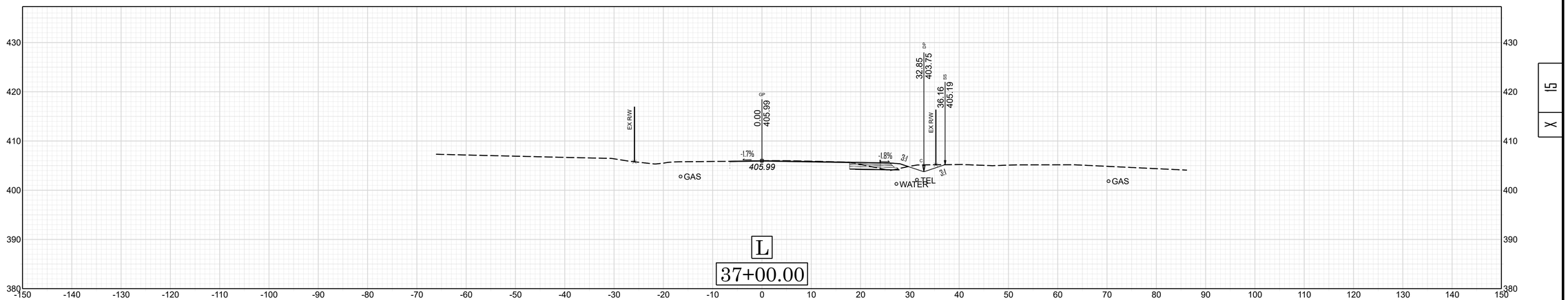
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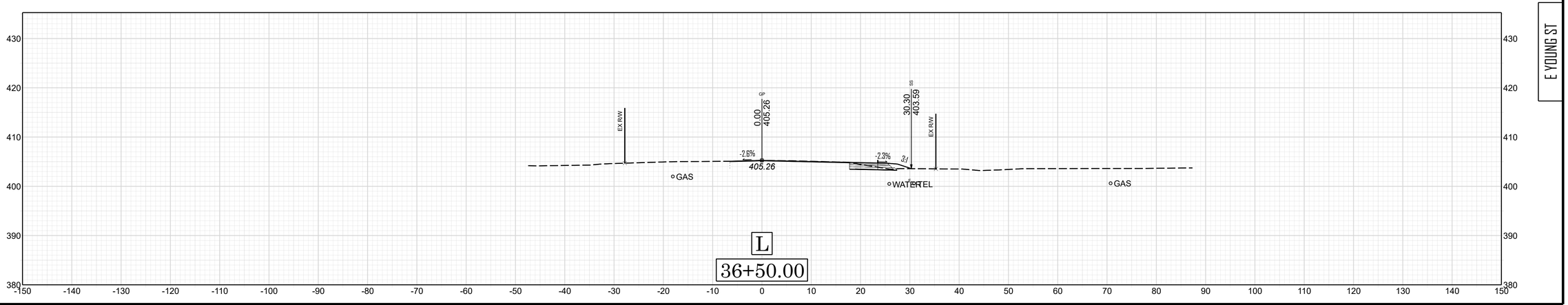


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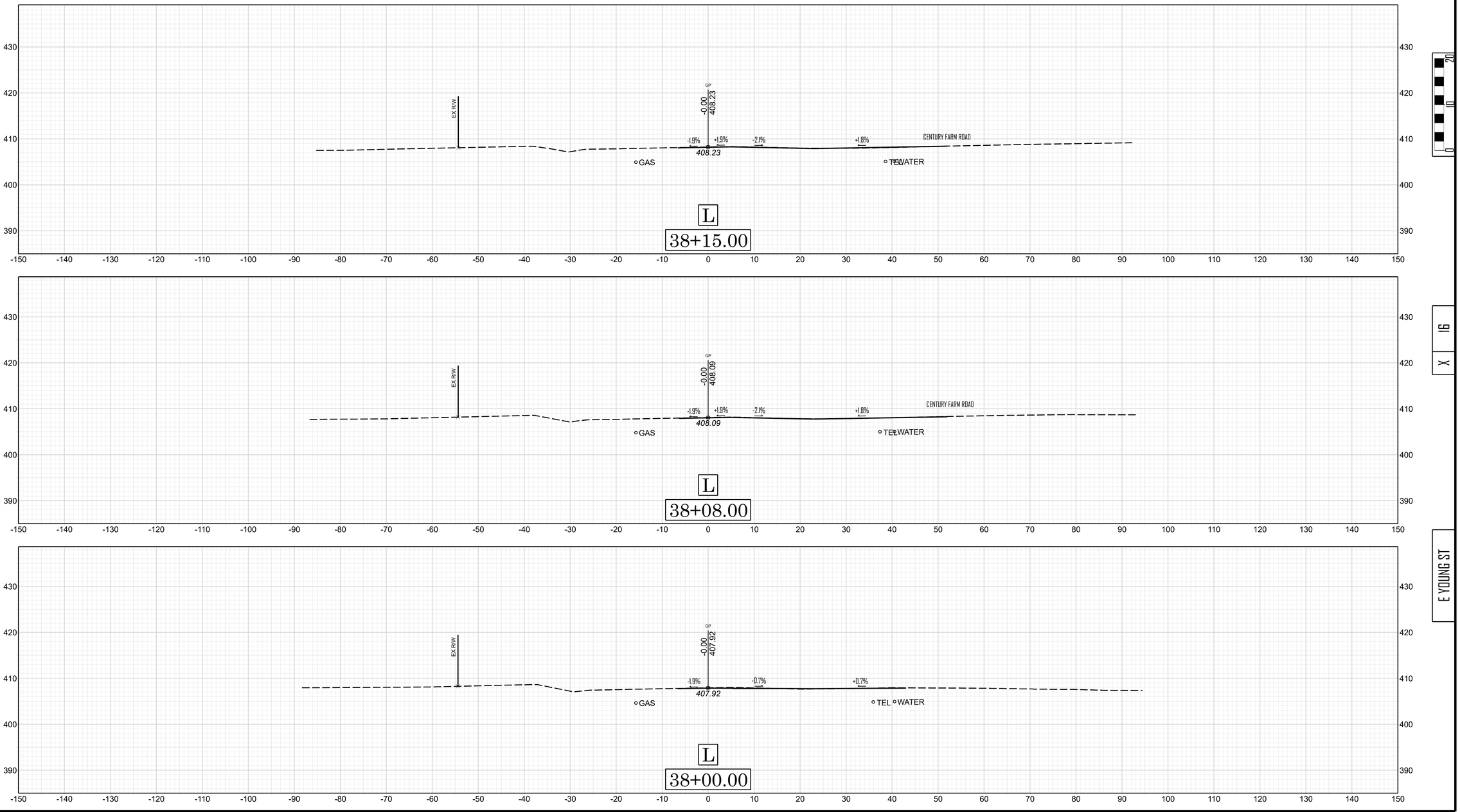


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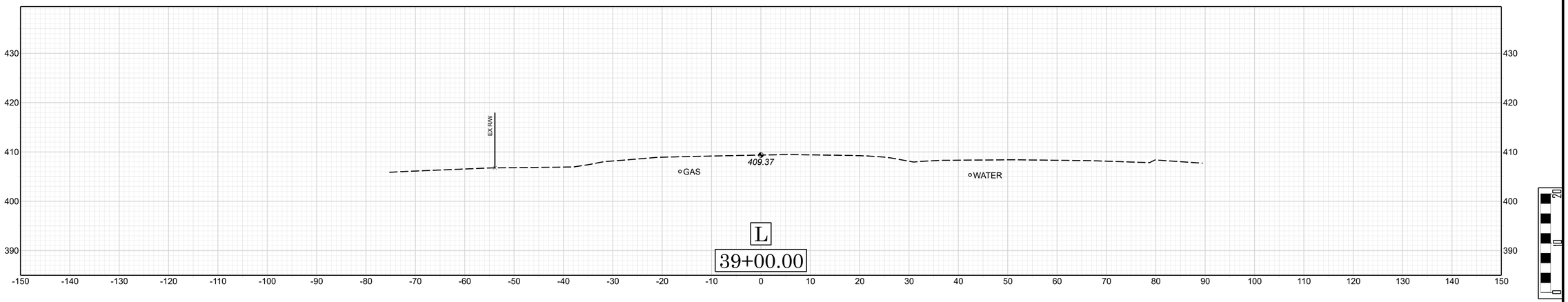
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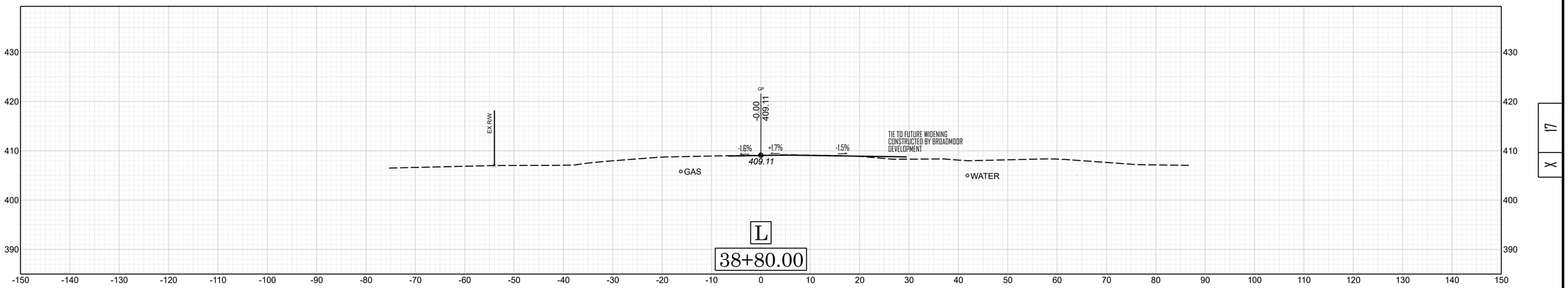
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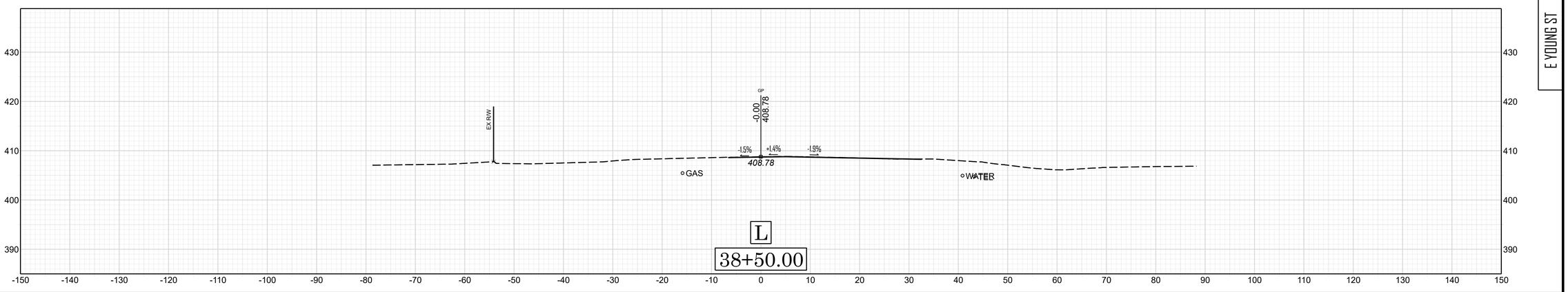
11/14/23


EX R/W
GP
-0.00
408.23
-1.9%
+1.9%
-2.1%
+1.8%
CENTURY FARM ROAD
408.23
GAS
TEL
WATER
L
38+15.00
EX R/W
GP
-0.00
408.09
-1.9%
+1.9%
-2.1%
+1.8%
CENTURY FARM ROAD
408.09
GAS
TEL
WATER
L
38+08.00
EX R/W
GP
-0.00
407.92
-1.9%
-0.7%
+0.7%
407.92
GAS
TEL
WATER
L
38+00.00
430
420
410
400
390
-150
-140
-130
-120
-110
-100
-90
-80
-70
-60
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-10
0
10
20
30
40
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0
16
X
E YOUNG ST

11/14/23







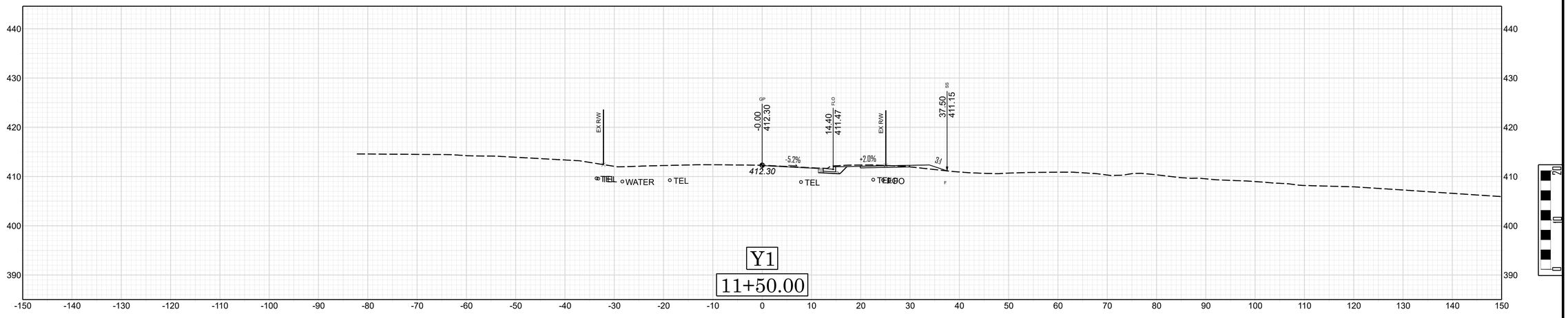
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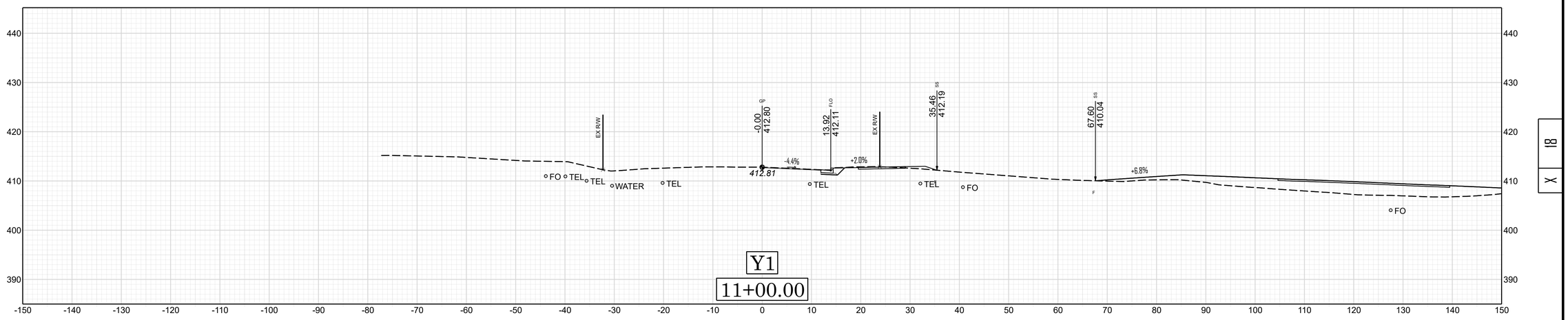
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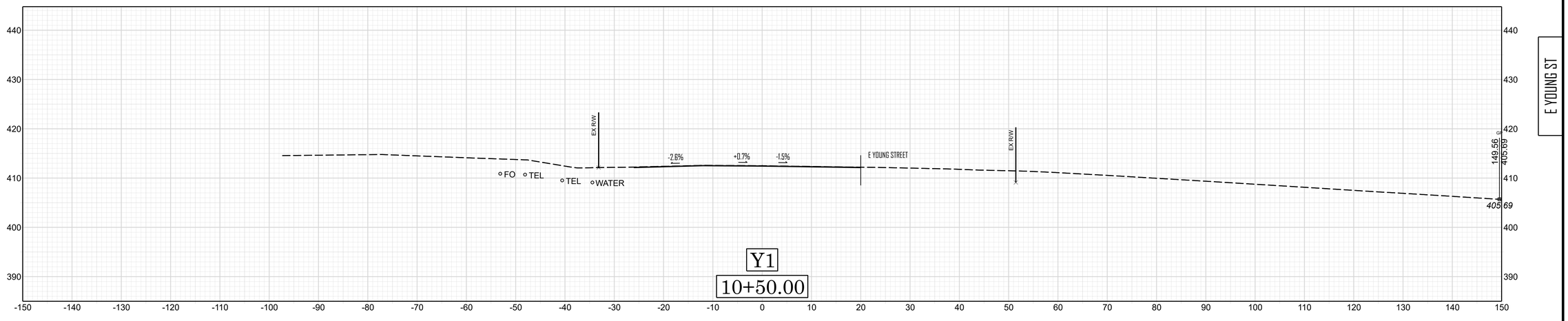
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11/14/23

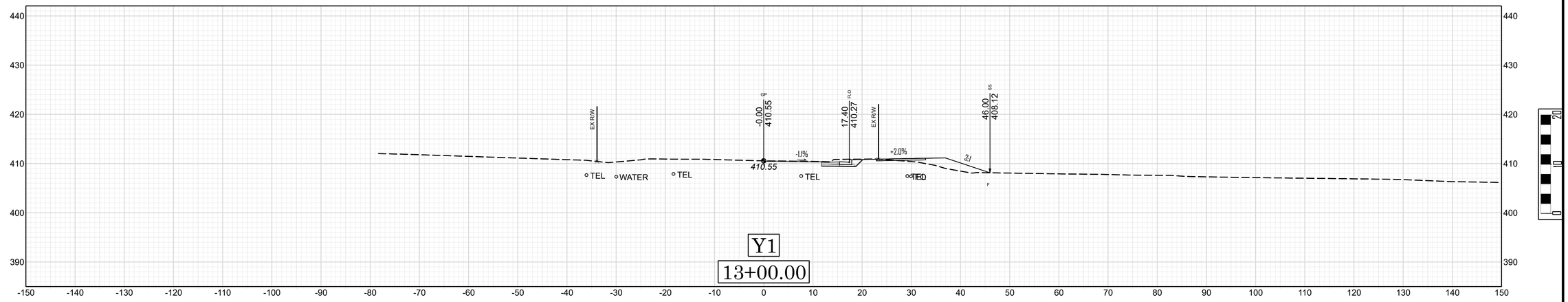






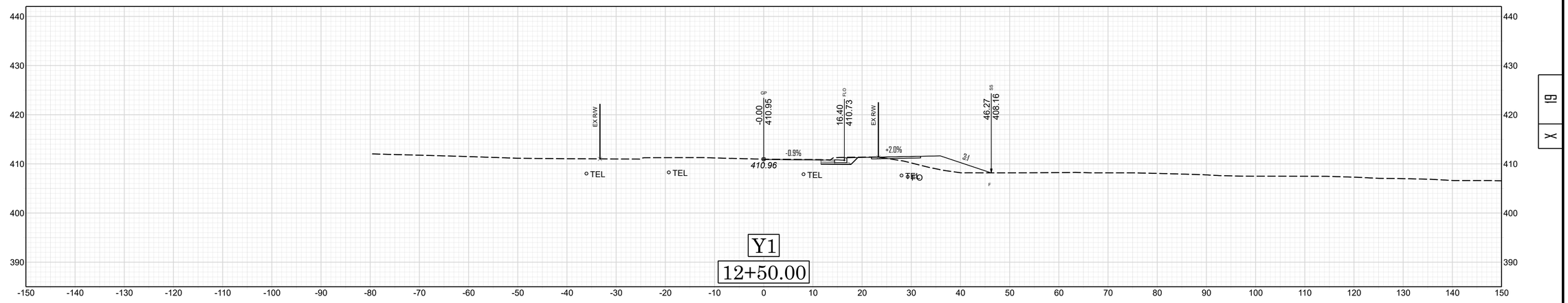
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11/14/23



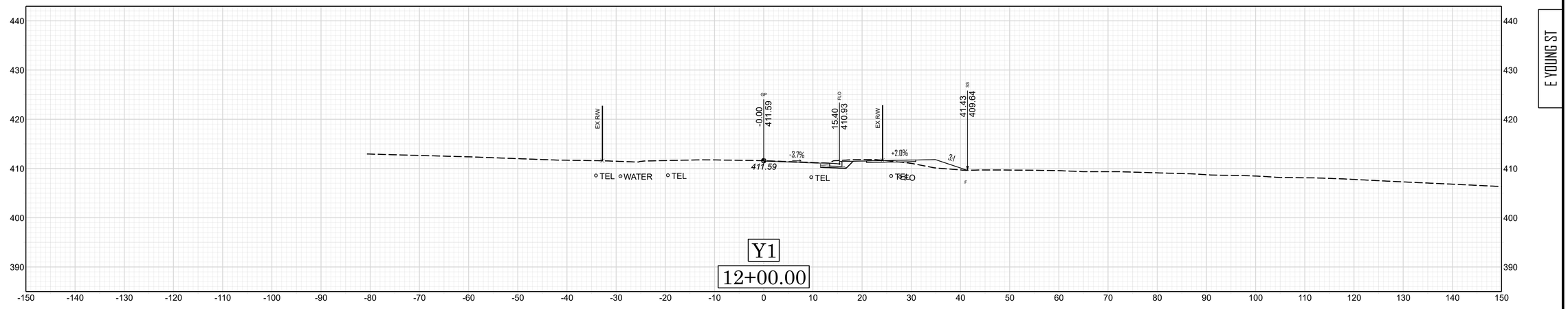
Y1

13+00.00



Y1

12+50.00



Y1

12+00.00

20

0

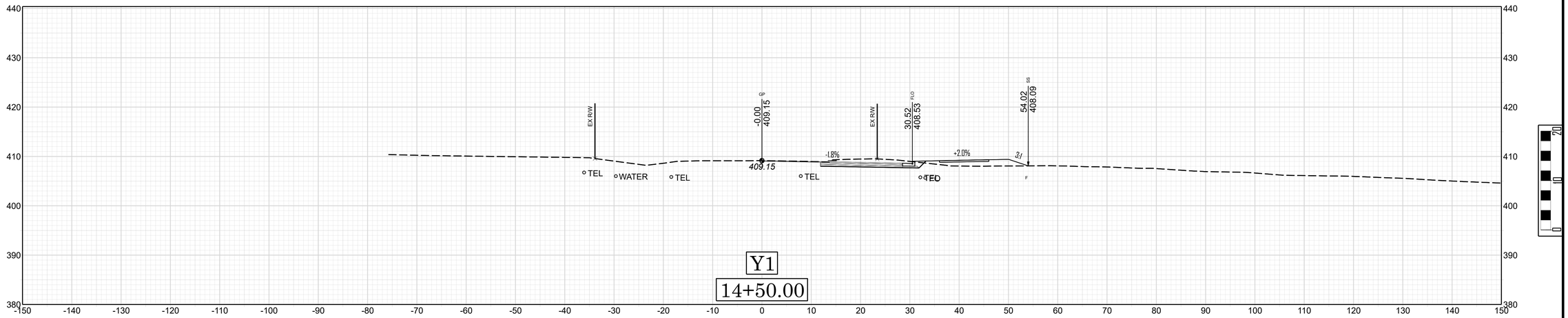
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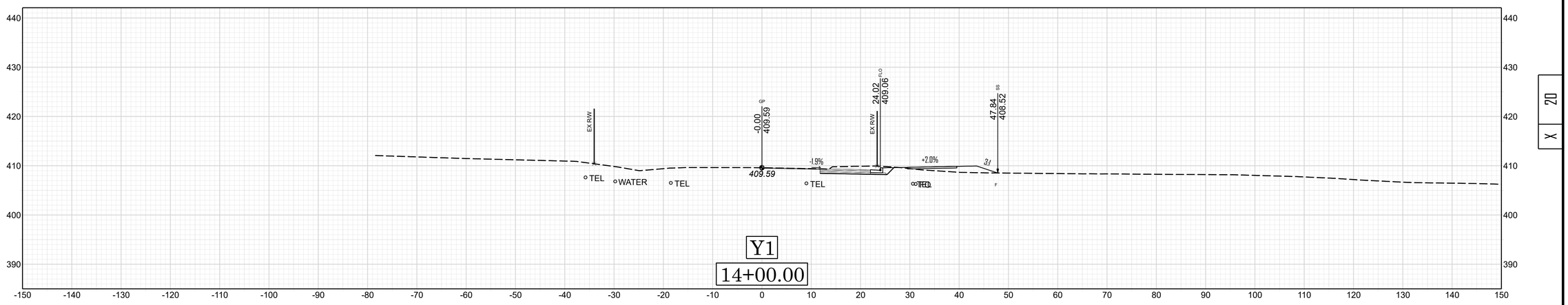
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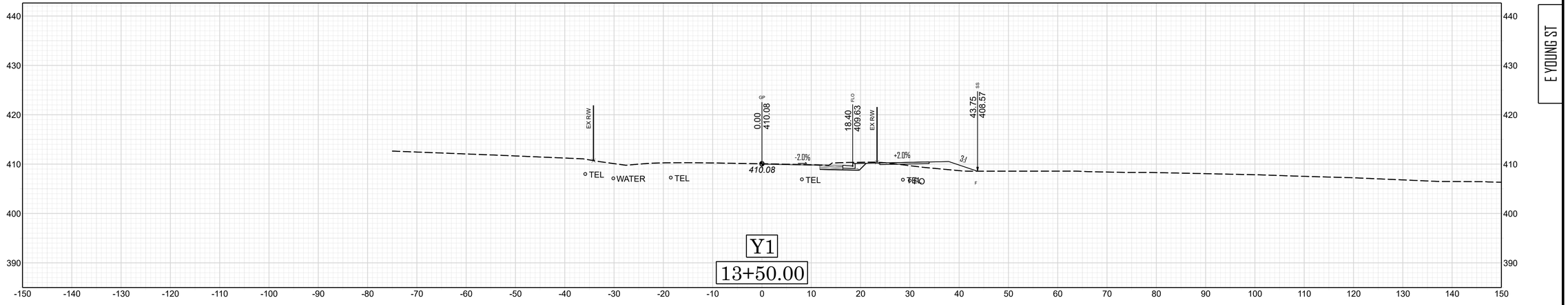
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E YOUNG ST

11/14/23







20

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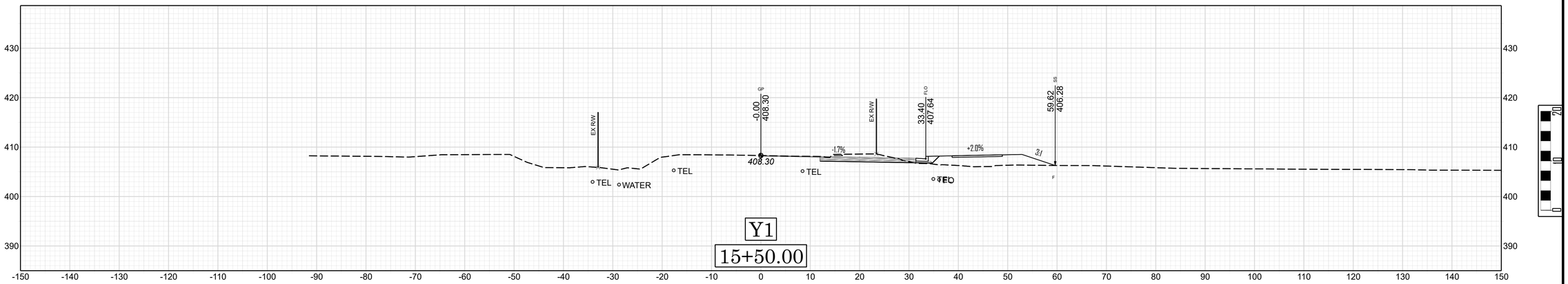
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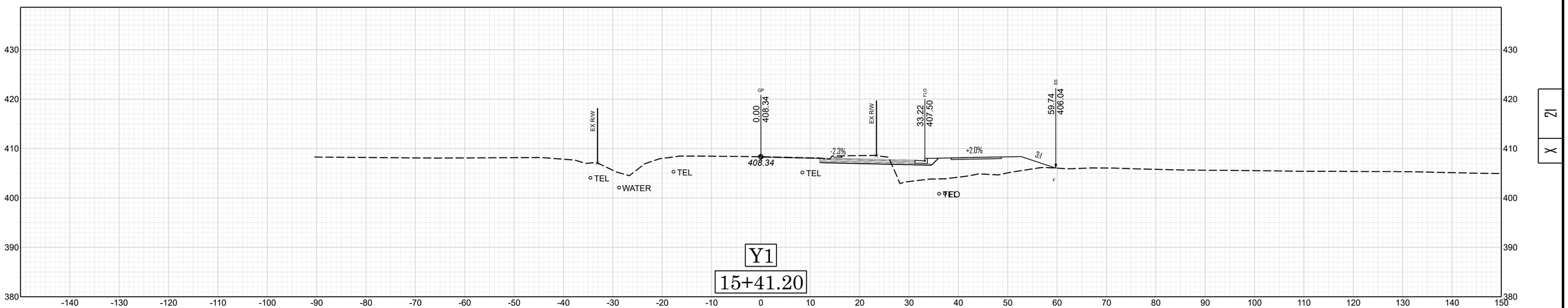
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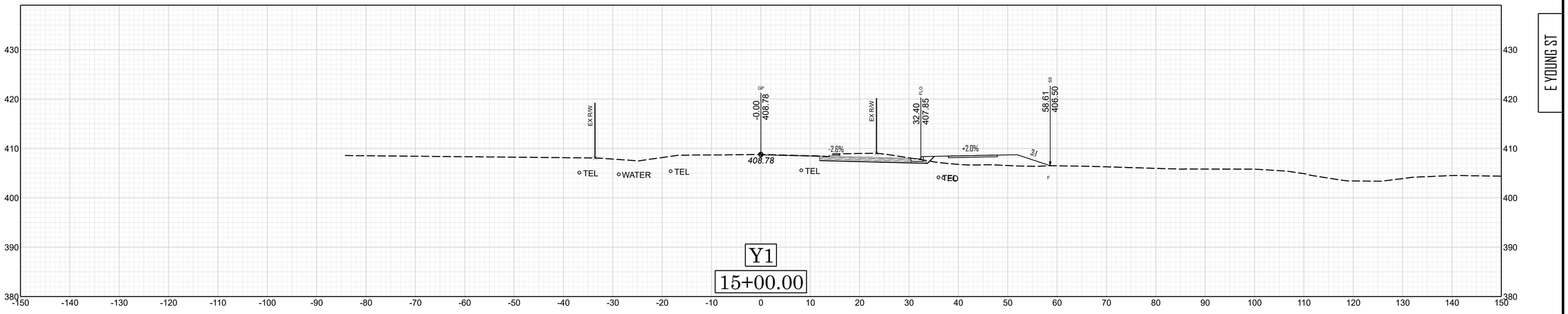
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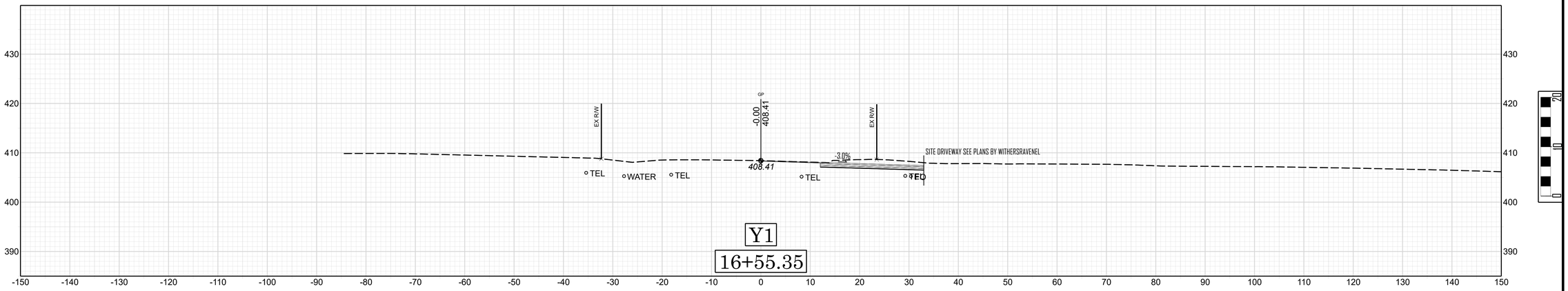
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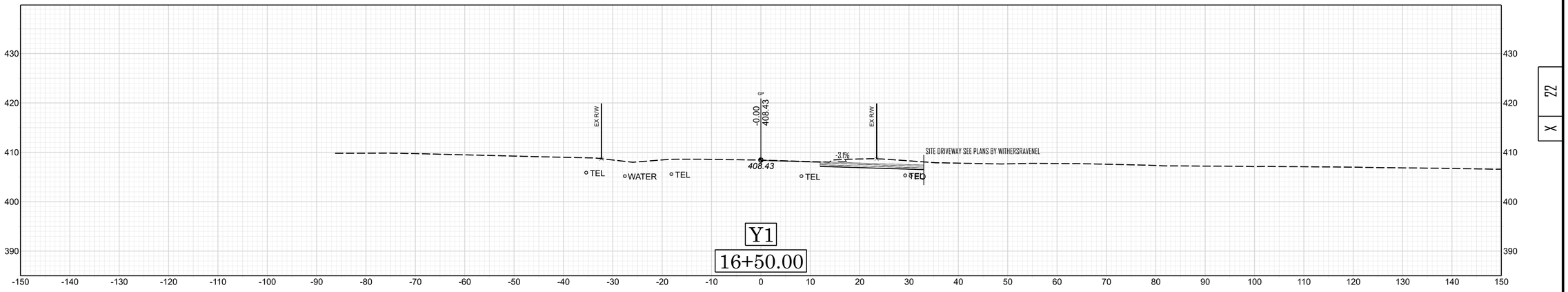
X

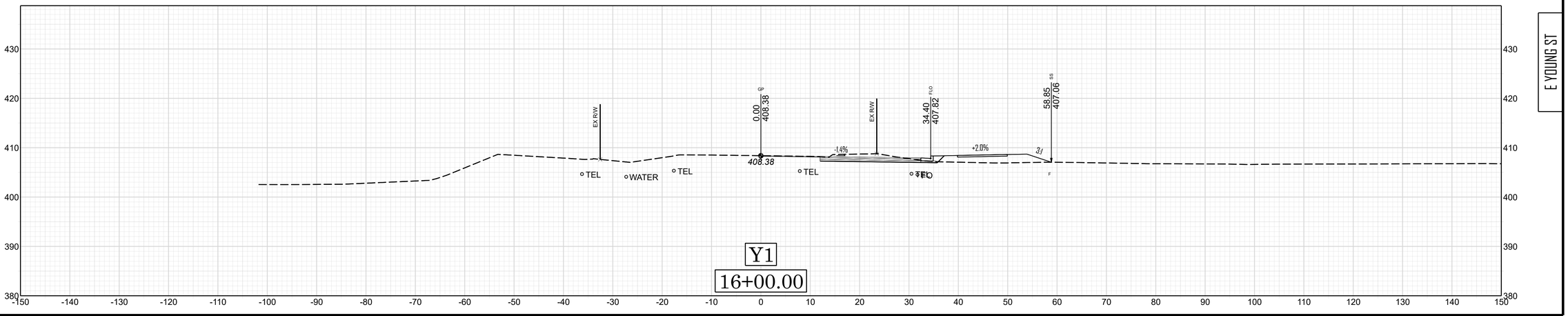
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AzureAD/SaidRangel - 7/13/2026

11/14/23



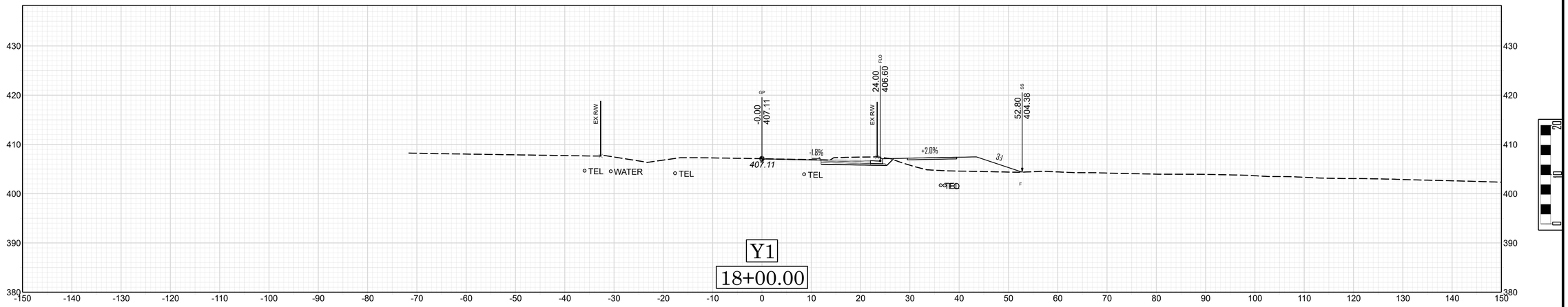




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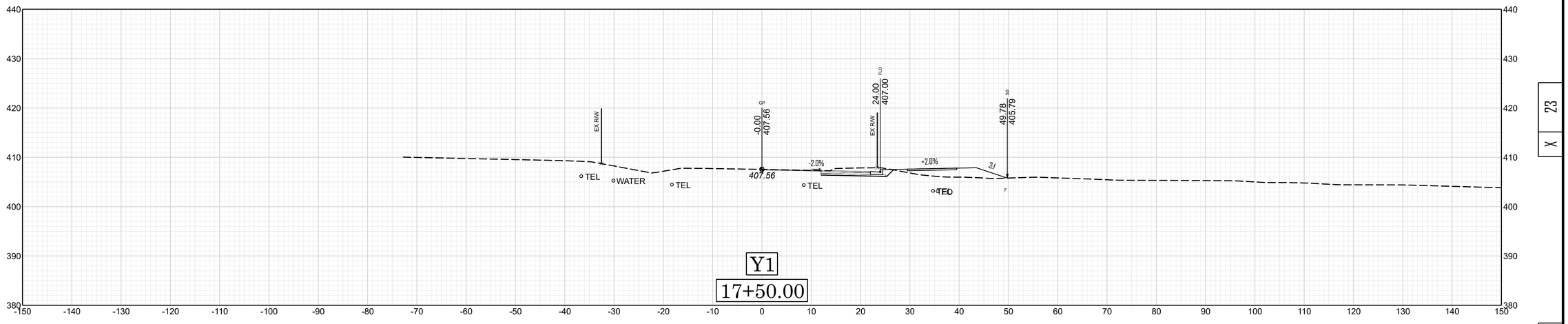
AzureAD/SaidRangel - 7/13/2026

11/14/23



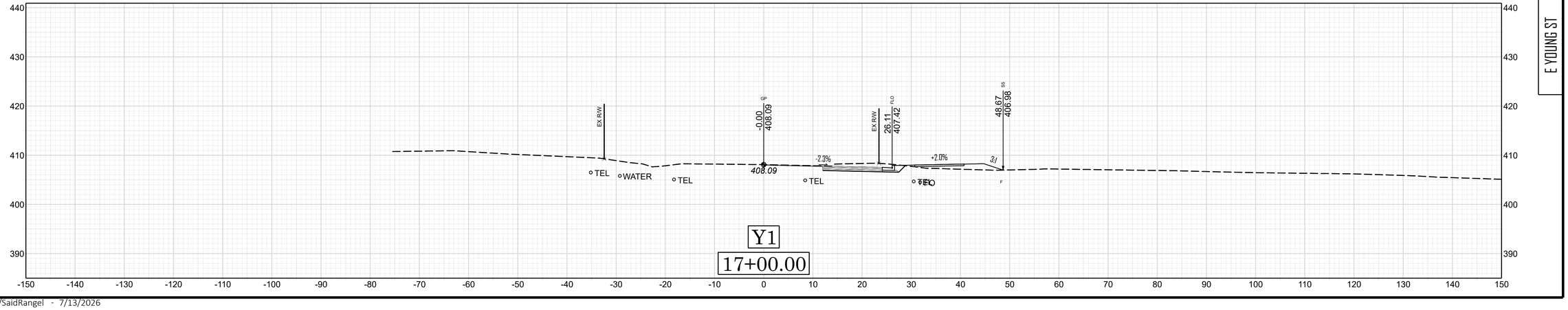
Y1

18+00.00



Y1

17+50.00



Y1

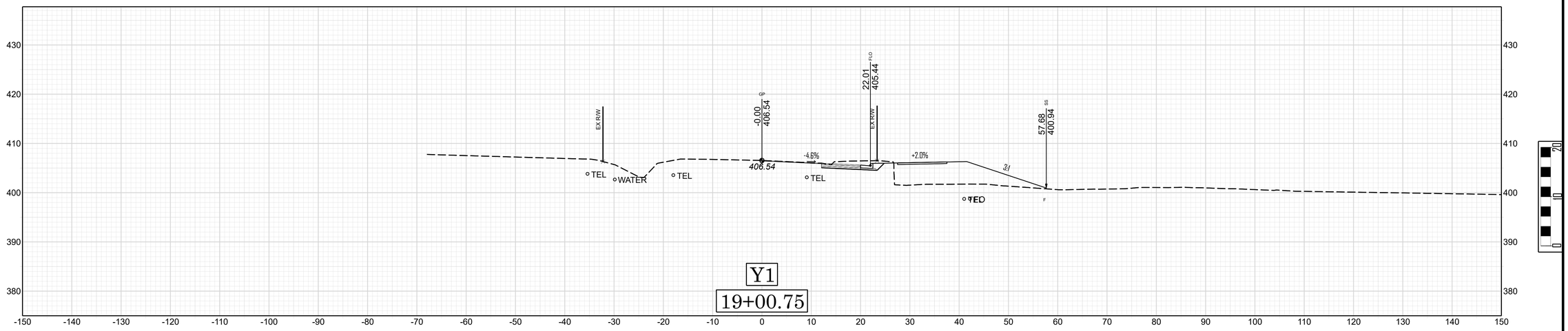
17+00.00

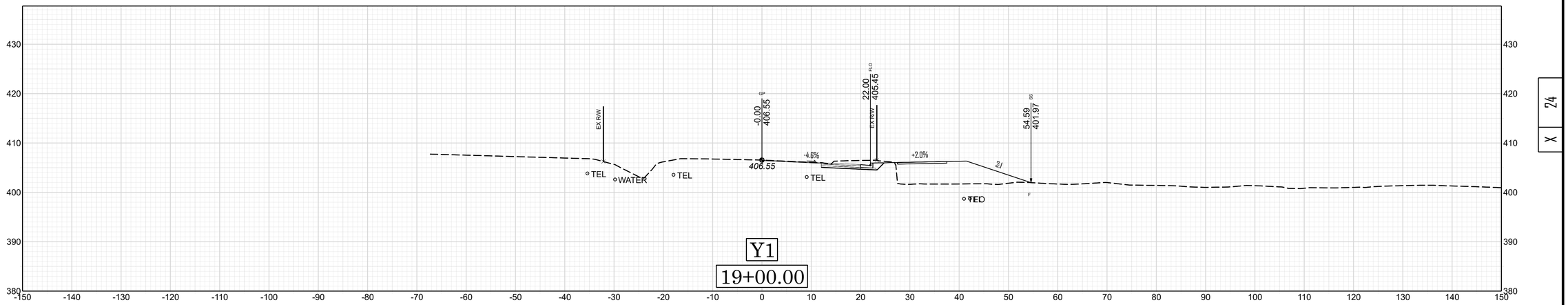
X 23

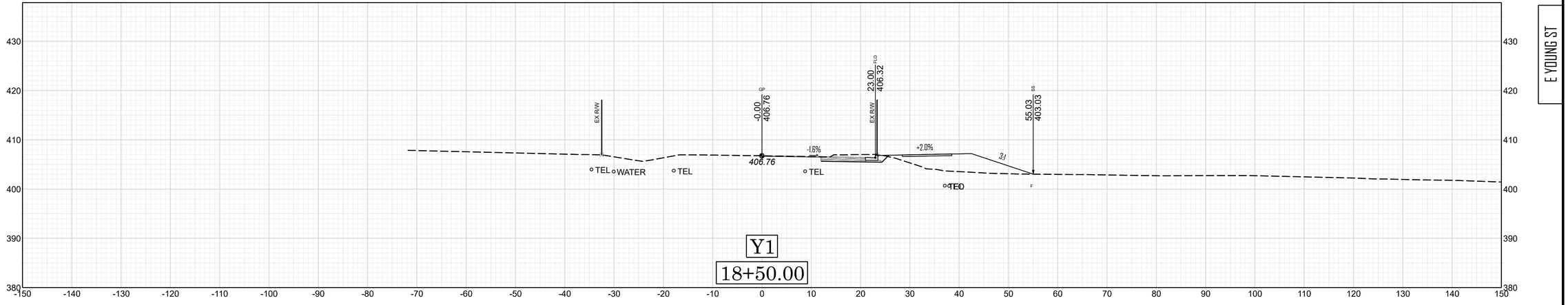
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11/14/23





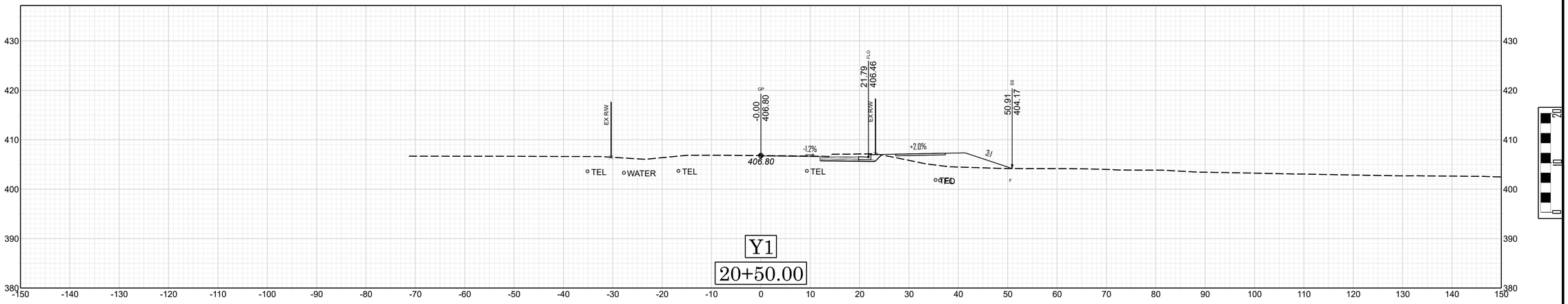


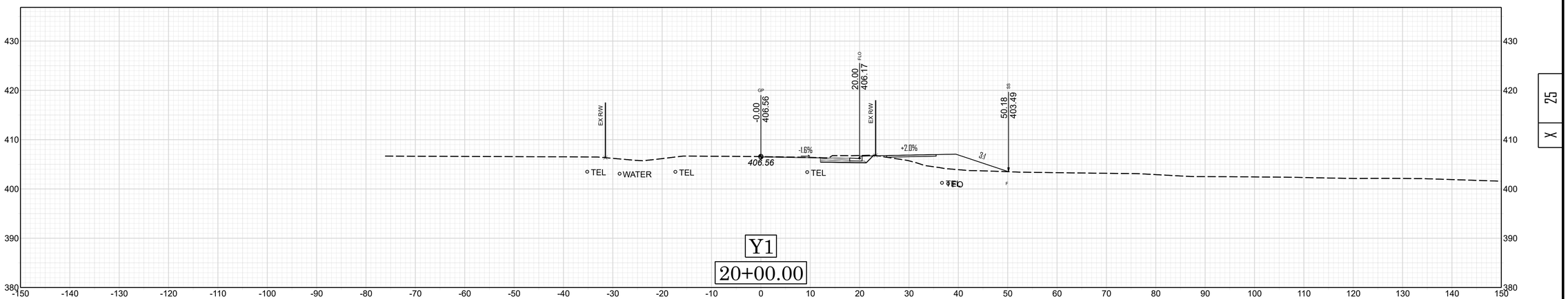
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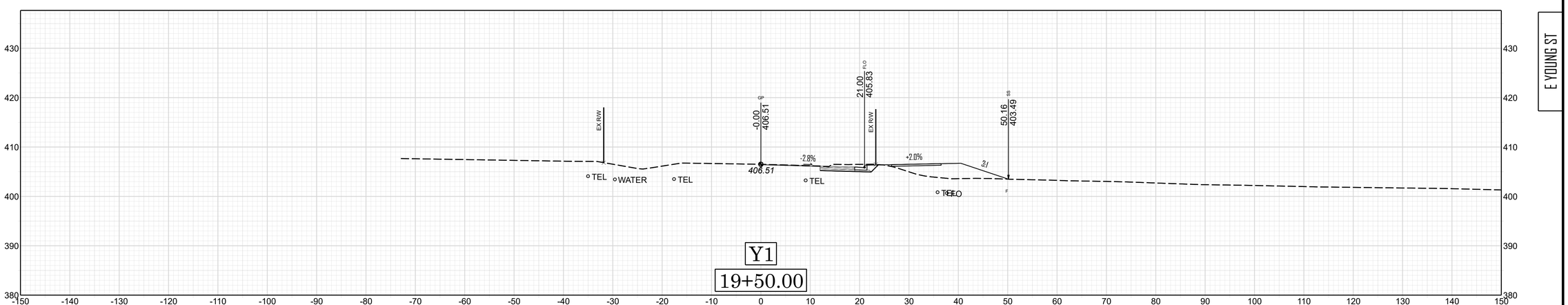
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AzureAD/SaidRangel - 7/13/2026

11/14/23





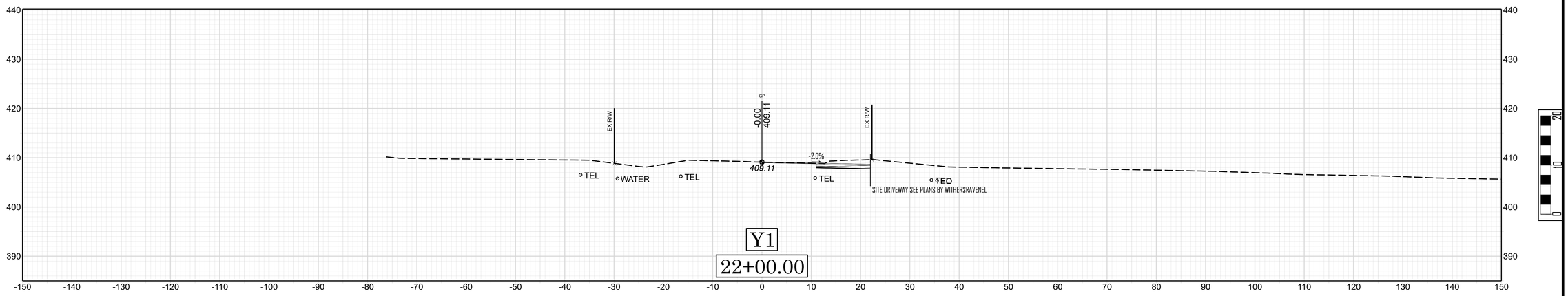


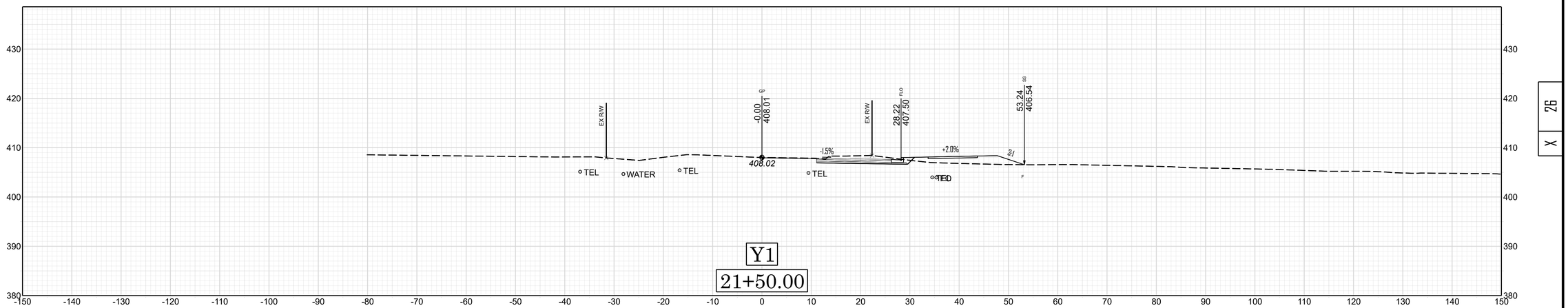
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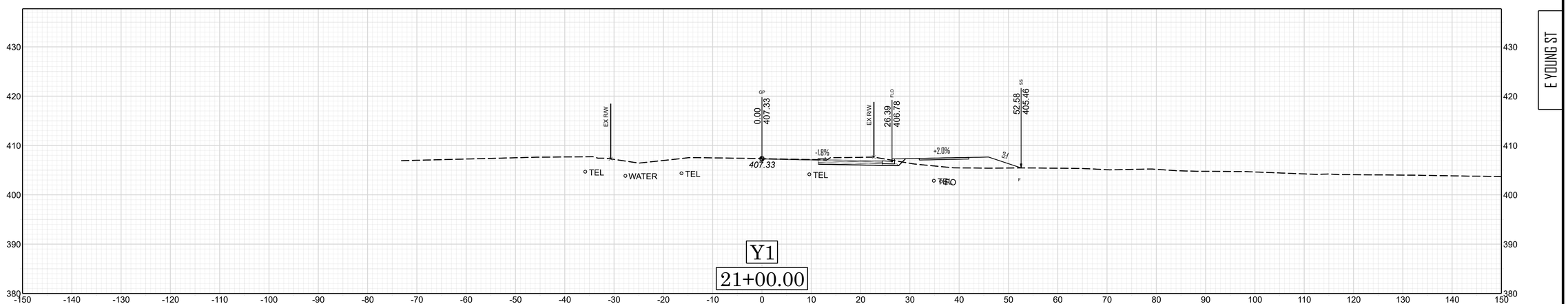
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AzureAD/SaidRangel - 7/13/2026

11/14/23

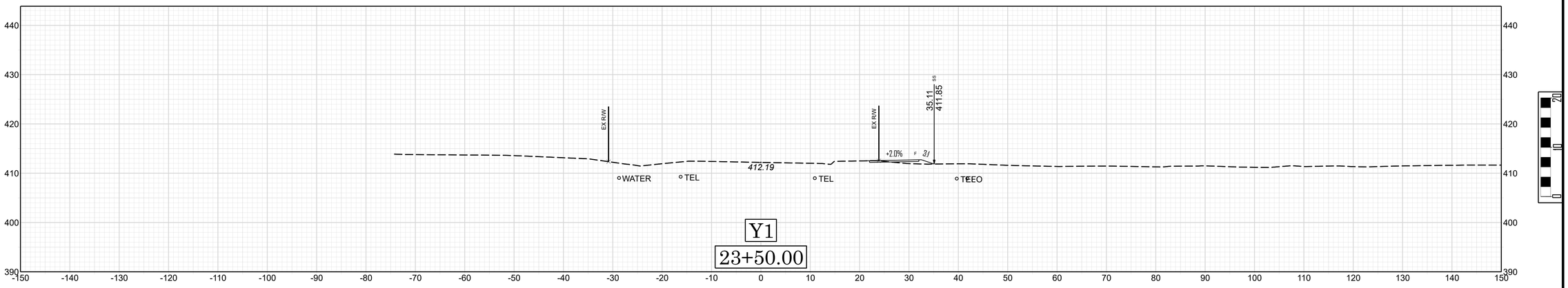






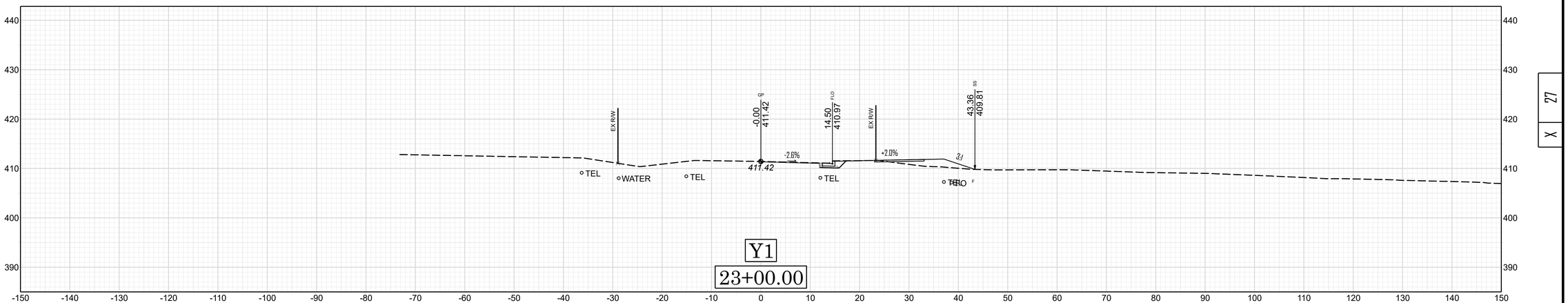
AzureAD/SaidRangel - 7/13/2026

11/14/23



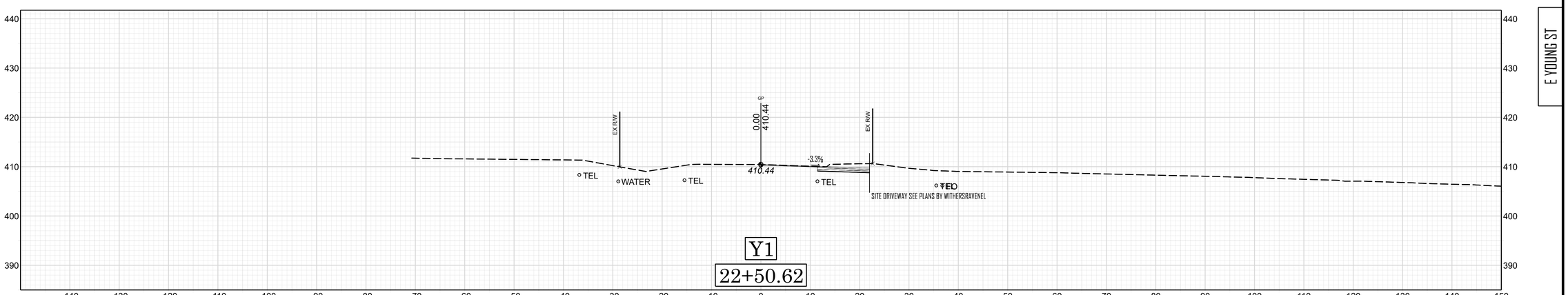
Y1

23+50.00



Y1

23+00.00



Y1

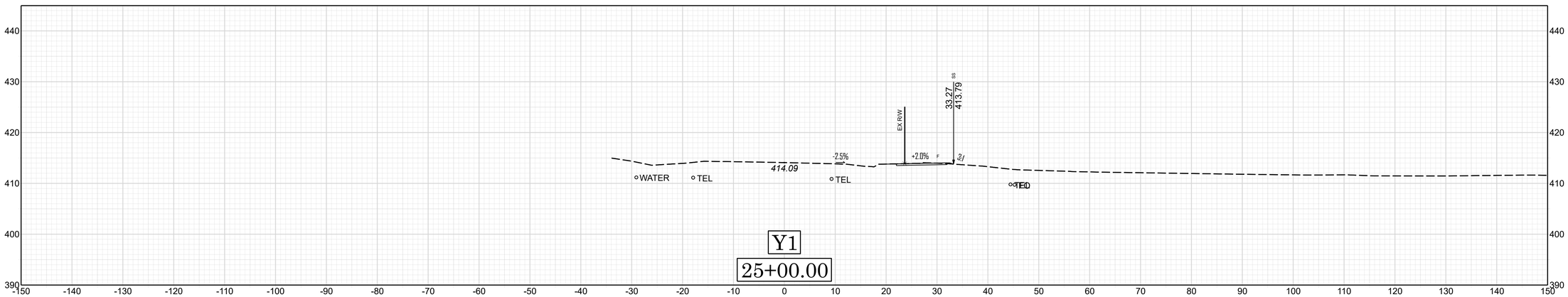
22+50.62

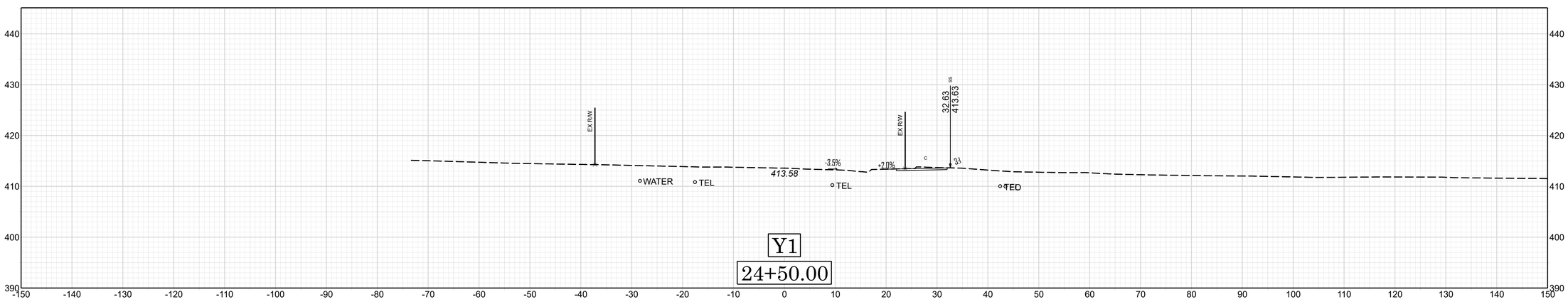
X 27

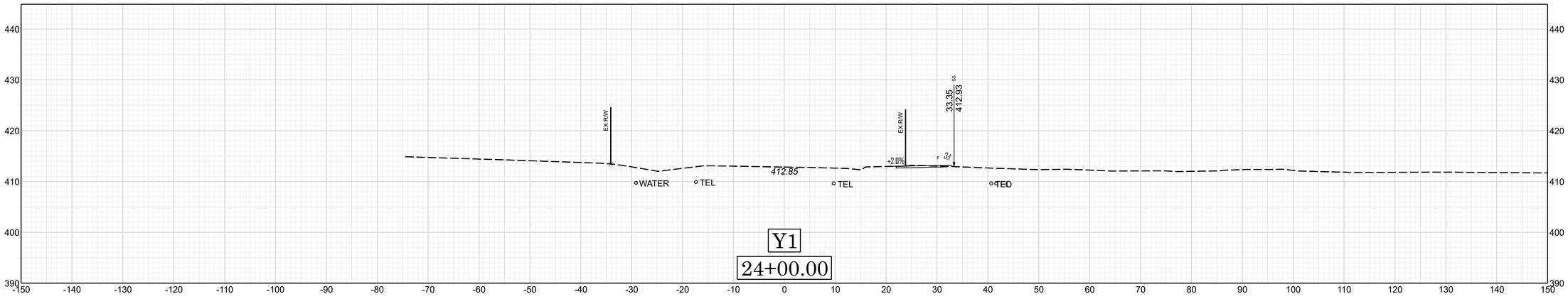
E YOUNG ST

AzureAD/SaidRangel - 7/13/2026

11/14/23





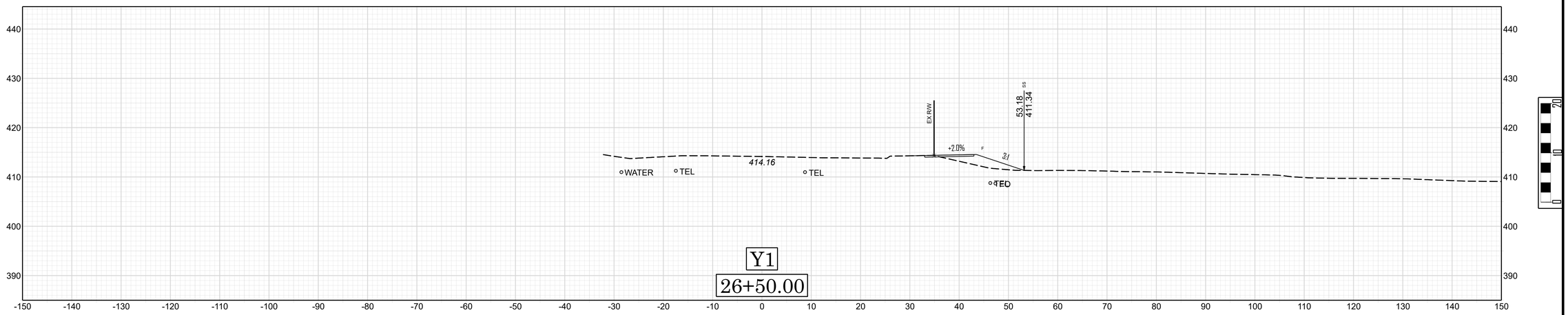


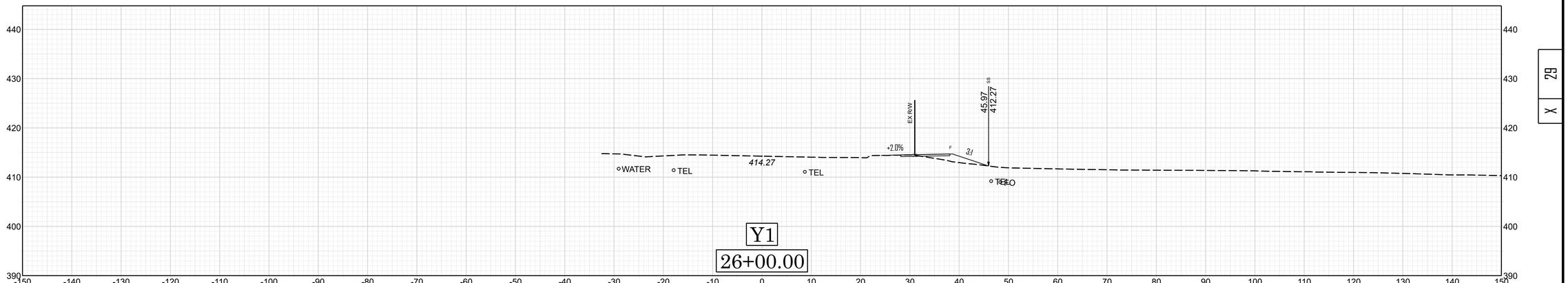
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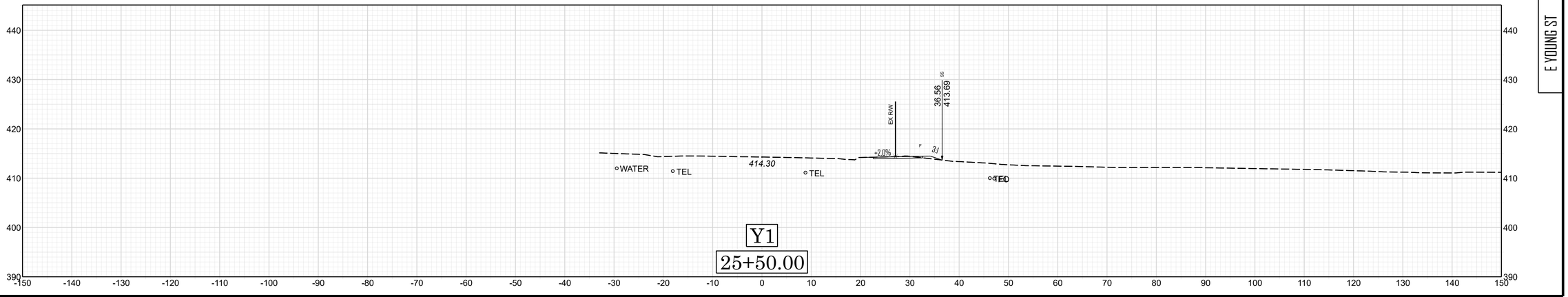
X 28

E YOUNG ST

11/14/23



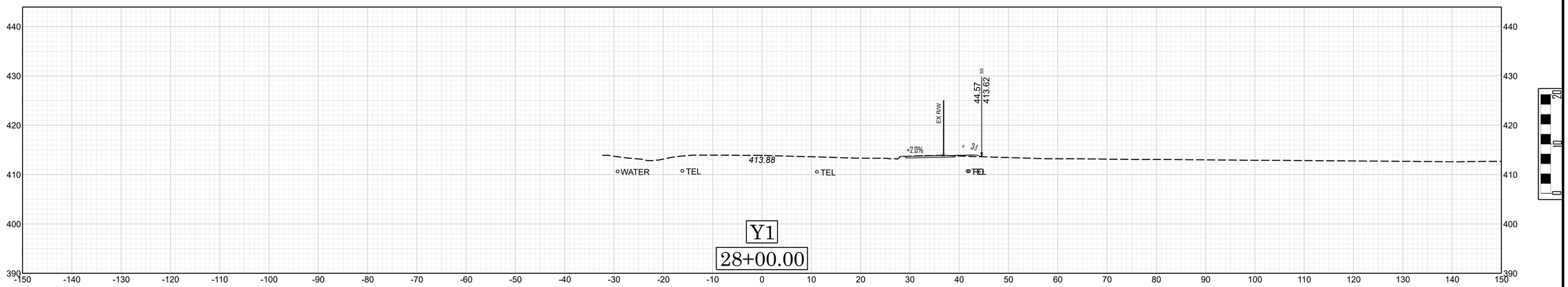


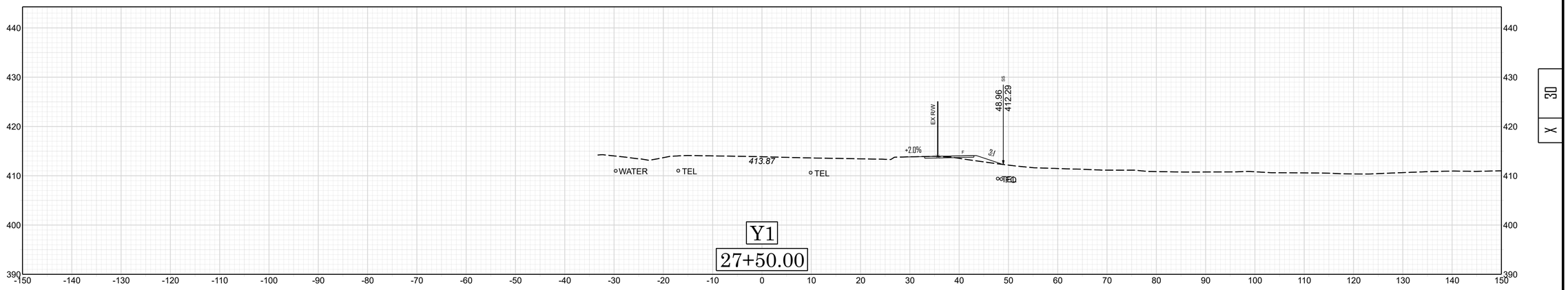


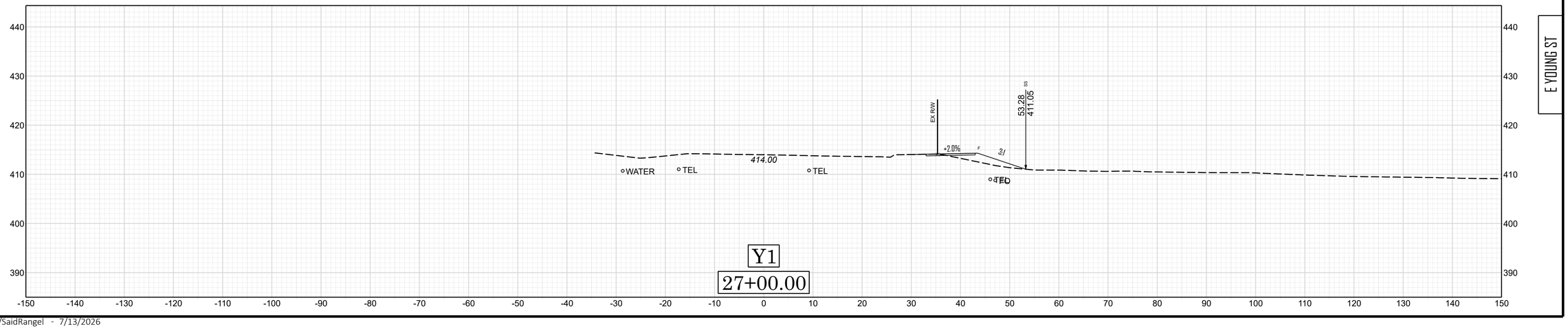
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AzureAD/SaidRangel - 7/13/2026

11/14/23

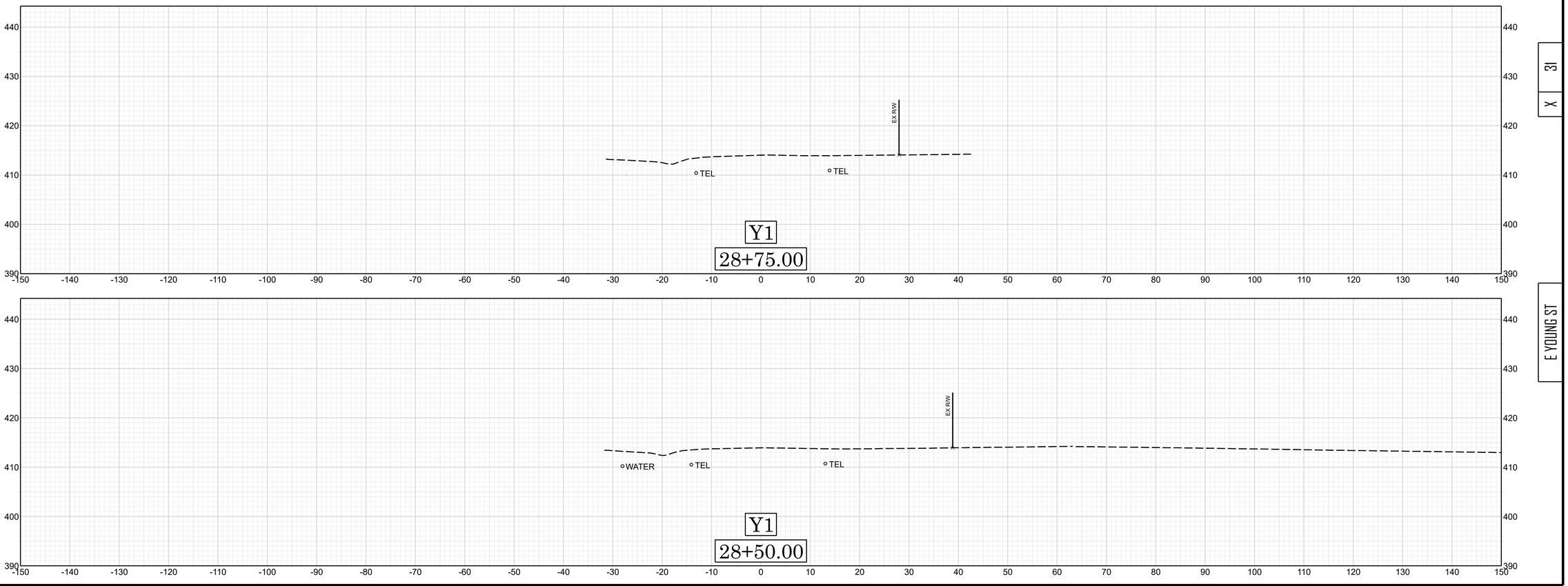

440
430
420
410
400
390
-150 -140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
EX R/W
44.57
413.62
SS
+2.0%
413.88
F
3:1
WATER
TEL
TEL
TEL
Y1
28+00.00


440
430
420
410
400
390
-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
EX R/W
48.96
412.29
SS
+2.0%
413.87
F
3:1
WATER
TEL
TEL
TEL
Y1
27+50.00


440
430
420
410
400
390
-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
EX R/W
53.28
411.05
SS
+2.0%
414.00
F
3:1
WATER
TEL
TEL
TEL
Y1
27+00.00

20
0
0
30
X
E YOUNG ST

11/14/23


440
430
420
410
400
390
-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
EX R/W
TEL
TEL
Y1
28+75.00
WATER
TEL
TEL
Y1
28+50.00
20
0
0
31
X
E YOUNG ST