

09\_08/99

# Town of Chapel Hill

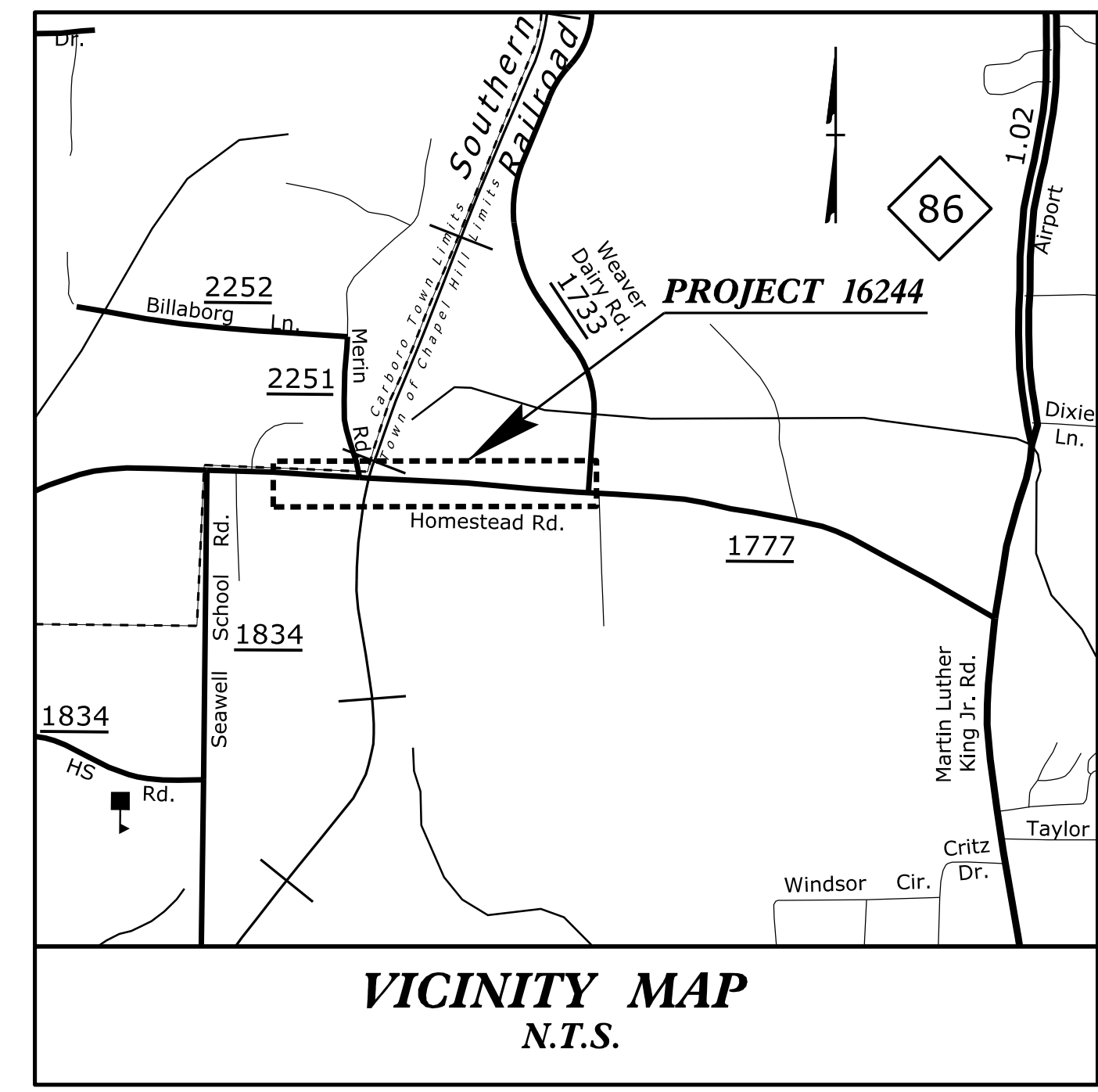
ENGINEERING AND DESIGN SERVICES

**LOCATION: HOMESTEAD ROAD (SR 1777) FROM SEAWELL SCHOOL ROAD (SR 1834) TO WEAVER DAIRY ROAD (SR 1733)**

**TYPE OF WORK: GRADING, PAVING, DRAINAGE, CURB & GUTTER, SIDEWALK, & PAVEMENT MARKING**

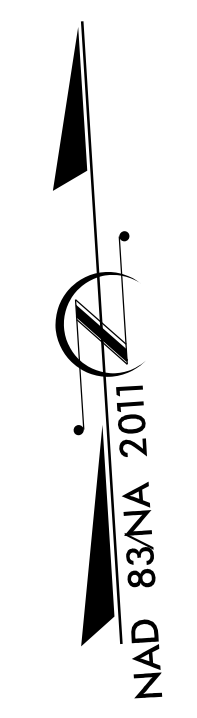
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	16244	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

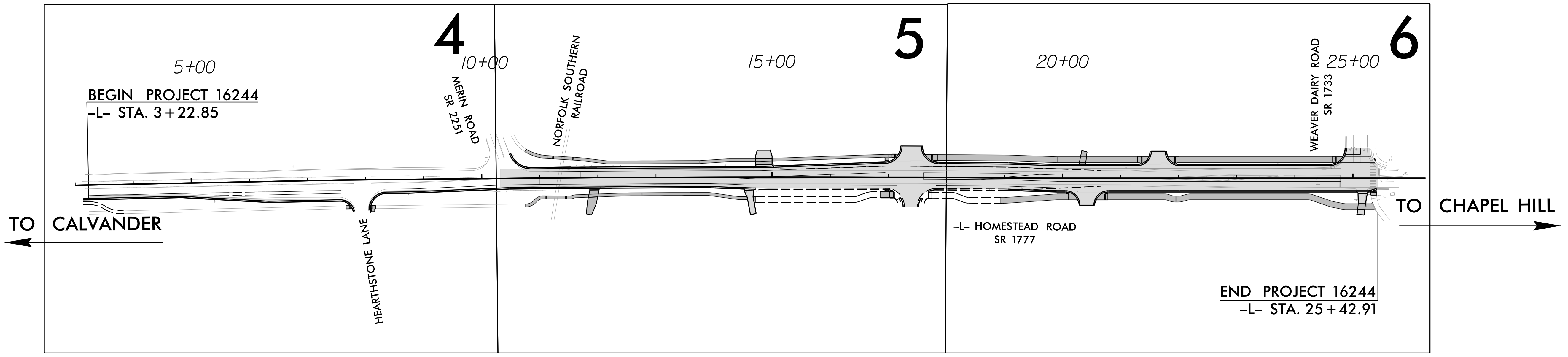


ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF CHAPEL HILL AND/OR NCDOT STANDARDS AND SPECIFICATIONS.

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1B	CONVENTIONAL SYMBOLS
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EC-1 THRU EC-4	EROSION CONTROL PLANS
X-1 THRU X-12	CROSS SECTION SHEETS

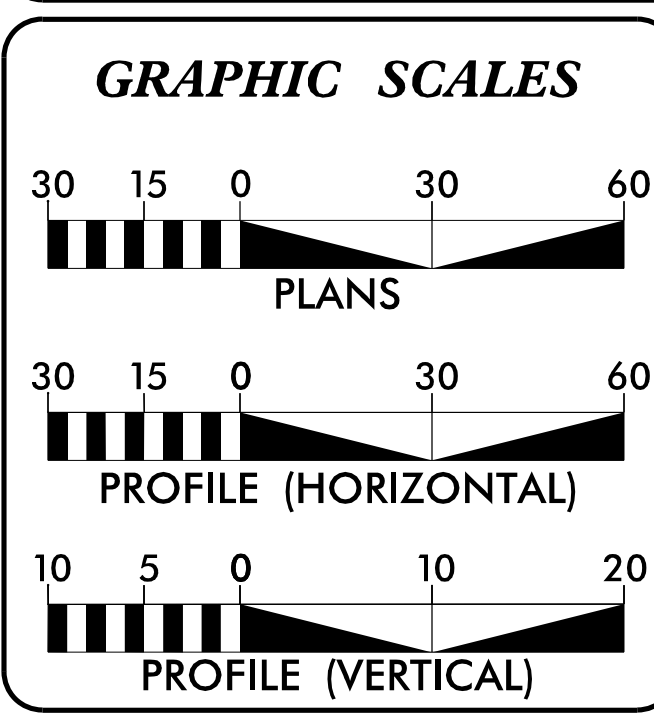


**PROJECT: 16244 - HOMESTEAD ROAD**



THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CHAPEL HILL. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II

90% PLANS  
SUBMITTAL DATE: 11-07-18



**DESIGN DATA**  
 ADT 2013 = 8,800  
 V = 40 MPH

**PROJECT LENGTH**  
 LENGTH ROADWAY PROJECT = 0.420 MILES

**TOWN OF CHAPEL HILL CONTACT**  
 CHRIS ROBERTS, P.E.  
 Phone Number: (919) 968-5091

Prepared in the Office of:  
**RAMEY KEMP ASSOCIATES, INC.**  
 Transportation Engineers  
 5808 Faringdon Place, Suite 100 - Raleigh, North Carolina 27609  
 919-872-5115 Tel. 919-878-5416 Fax. - www.rameykemp.com  
 NC License No. C-0910

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: \_\_\_\_\_  
 LETTING DATE: \_\_\_\_\_

LUCAS S. HELMS, P.E.  
 PROJECT ENGINEER

KAYLA M. WISE, E.I.  
 PROJECT DESIGNER

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_  
 ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_



11/7/2018 I:\Roadway\Proj\16244\_Rdy\_1+sh.dgn User: lhelms

# GENERAL NOTES AND 2018 ROADWAY ENGLISH STANDARD DRAWINGS

GENERAL NOTES: 2018 SPECIFICATIONS

**GRADING AND SURFACING OR RESURFACING AND WIDENING:**

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS AND CROSS-SECTIONS. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

**CLEARING:**

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

**SUPERELEVATION:**

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

**SIDE ROADS:**

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

**DRIVEWAYS:**

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

**STREET TURNOUT:**

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

**SUBSURFACE PLANS:**

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

**UTILITIES:**

UTILITY OWNERS ON THIS PROJECT ARE :

<p><b>WATER AND SEWER:</b> OWASA - ORANGE WATER AND SEWER AUTHORITY ATTN: NICK PARKER PHONE: 919-537-4201</p> <p><b>CABLE:</b> TIME WARNER CABLE / SPECTRUM ATTN: GEORGE STOTLER PHONE: 919-573-7667</p> <p><b>POWER:</b> DUKE ENERGY ATTN: DON DANIELS PHONE: 919-687-3136</p>	<p><b>GAS:</b> PSNC ENERGY ATTN: FRANCES GRIMSLEY PHONE: 919-367-2714</p> <p><b>TELEPHONE:</b> AT&amp;T ATTN: BILLY GRINER PHONE: 919-612 9856</p>
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GENERAL NOTES (CONTINUED):

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS. CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES BEFORE BEGINNING WORK.

**CURB RAMPS**

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS IN ACCORDANCE WITH STD 848.05 and/or 848.06.

2018 ROADWAY ENGLISH STANDARD DRAWINGS EFF. 01-16-2018

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO. TITLE  
DIVISION 2 - EARTHWORK

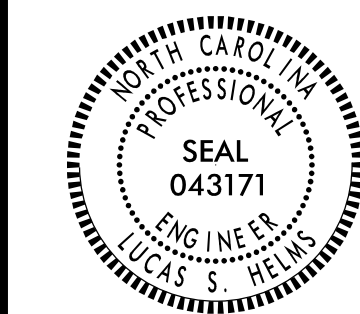
- 200.02 Method of Clearing - Method II
- 225.02 Guide for Grading Subgrade - Secondary and Local
- 225.04 Method of Obtaining Superelevation - Two Lane Pavement
- 225.06 Method of Grading Sight Distance at Intersections
- DIVISION 3 - PIPE CULVERTS
- 300.01 Method of Pipe Installation
- DIVISION 6 - ASPHALT BASES AND PAVEMENTS
- 654.01 Pavement Repairs
- DIVISION 8 - INCIDENTALS
- 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
- 840.14 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
- 840.19 Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
- 840.22 Frames and Wide Slot Sag Grates
- 840.28 Brick 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
- 840.45 Precast Drainage Structure
- 840.46 Traffic Bearing Precast Drainage Structure
- 840.51 Brick Manhole - 12" thru 36" Pipe
- 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
- 848.04 Street Turnout
- 848.05 Curb Ramp - Proposed Curb & Gutter
- 848.06 Curb Ramp - Existing Curb & Gutter
- 862.01 Guardrail Placement
- 862.02 Guardrail Installation
- 876.02 Guide for Rip Rap at Pipe Outlets

SHEET NO.  
**1A**



Town of Chapel Hill  
 ENGINEERING AND DESIGN SERVICES  
 HOMESTEAD ROAD IMPROVEMENTS  
 GENERAL NOTES & STD. DRAWINGS

ROADWAY DESIGN ENGINEER



HYDRAULICS ENGINEER



REVISIONS		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
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SCALES

H-SCALE - NTS

V-SCALE - NTS

DATE: 11/07/18

DESIGNED BY: KMW

CHECKED BY: LSH



5808 Faringdon Place  
Suite 100  
Raleigh, North Carolina 27609  
Phone: (919) 872-5115  
Fax: (919) 878-5416  
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Town of Chapel Hill  
 ENGINEERING AND DESIGN SERVICES  
 HOMESTEAD ROAD IMPROVEMENTS  
 CONVENTIONAL SYMBOLS

# CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

## BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	✕
Property Monument	□ ECM
Parcel/Sequence Number	⑩②③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- WLB ---
Proposed Wetland Boundary	--- WLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---
Existing Historic Property Boundary	--- HPB ---
Known Contamination Area: Soil	☠ --- ☠
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	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

## HYDROLOGY:

Stream or Body of Water	~~~~~
Hydro, Pool or Reservoir	□
Jurisdictional Stream	--- JS ---
Buffer Zone 1	--- BZ 1 ---
Buffer Zone 2	--- BZ 2 ---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	⋆
Proposed Lateral, Tail, Head Ditch	--- FLOW ---
False Sump	▽

## RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

## RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	○ R/W
Proposed Right of Way Line with Concrete or Granite R/W Marker	▲ R/W
Proposed Control of Access Line with Concrete C/A Marker	○ C/A
Existing Control of Access	○ C/A
Proposed Control of Access	○ C/A
Existing Easement Line	--- E ---
Proposed Temporary Construction Easement	--- E ---
Proposed Temporary Drainage Easement	--- TDE ---
Proposed Permanent Drainage Easement	--- PDE ---
Proposed Permanent Drainage / Utility Easement	--- DUE ---
Proposed Permanent Utility Easement	--- PUE ---
Proposed Temporary Utility Easement	--- TUE ---
Proposed Aerial Utility Easement	--- AUE ---
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

## ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	--- C ---
Proposed Slope Stakes Fill	--- F ---
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	--- T ---
Proposed Guardrail	--- T ---
Existing Cable Guiderail	--- □ ---
Proposed Cable Guiderail	--- □ ---
Equality Symbol	⊙
Pavement Removal	⊗

## VEGETATION:

Single Tree	⊕
Single Shrub	⊗
Hedge	~~~~~
Woods Line	~~~~~

Orchard	⊕ ⊕ ⊕ ⊕
Vineyard	□ Vineyard

## EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	□ CONC
Bridge Wing Wall, Head Wall and End Wall	} CONC WW {
MINOR:	
Head and End Wall	--- CONC HW ---
Pipe Culvert	-----
Footbridge	--- } ---
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ S
Storm Sewer	--- S ---

## UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○ P
Power Line Tower	□
Power Transformer	⊗
U/G Power Cable Hand Hole	○
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	--- P ---
U/G Power Line LOS C (S.U.E.*)	--- P ---
U/G Power Line LOS D (S.U.E.*)	--- P ---

## TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○ T
Telephone Pedestal	□
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	--- T ---
U/G Telephone Cable LOS C (S.U.E.*)	--- T ---
U/G Telephone Cable LOS D (S.U.E.*)	--- T ---
U/G Telephone Conduit LOS B (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS C (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS D (S.U.E.*)	--- TC ---
U/G Fiber Optics Cable LOS B (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS C (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS D (S.U.E.*)	--- T FO ---

## WATER:

Water Manhole	○ W
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	--- W ---
U/G Water Line LOS C (S.U.E.*)	--- W ---
U/G Water Line LOS D (S.U.E.*)	--- W ---
Above Ground Water Line	--- A/G Water ---

## TV:

TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	○
U/G TV Cable LOS B (S.U.E.*)	--- TV ---
U/G TV Cable LOS C (S.U.E.*)	--- TV ---
U/G TV Cable LOS D (S.U.E.*)	--- TV ---
U/G Fiber Optic Cable LOS B (S.U.E.*)	--- TV FO ---
U/G Fiber Optic Cable LOS C (S.U.E.*)	--- TV FO ---
U/G Fiber Optic Cable LOS D (S.U.E.*)	--- TV FO ---

## GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	--- G ---
U/G Gas Line LOS C (S.U.E.*)	--- G ---
U/G Gas Line LOS D (S.U.E.*)	--- G ---
Above Ground Gas Line	--- A/G Gas ---

## SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	--- SS ---
Above Ground Sanitary Sewer	--- A/G Sanitary Sewer ---
SS Forced Main Line LOS B (S.U.E.*)	--- FSS ---
SS Forced Main Line LOS C (S.U.E.*)	--- FSS ---
SS Forced Main Line LOS D (S.U.E.*)	--- FSS ---

## MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line LOS B (S.U.E.*)	--- TUL ---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	○ UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	○
Abandoned According to Utility Records	---
End of Information	---

REVISIONS

## SCALES

H-SCALE - NTS

V-SCALE - NTS

DATE: 11/07/2018

DESIGNED BY: KMW

CHECKED BY: LSH

**RAMEY KEMP ASSOCIATES**  
 TRANSPORTATION ENGINEERS  
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 Suite 100  
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 Phone: (919) 872-5115  
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Town of  
*Chapel Hill*  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
TYPICAL SECTIONS

ROADWAY DESIGN ENGINEER



NO.	DATE	DESCRIPTION

REVISIONS

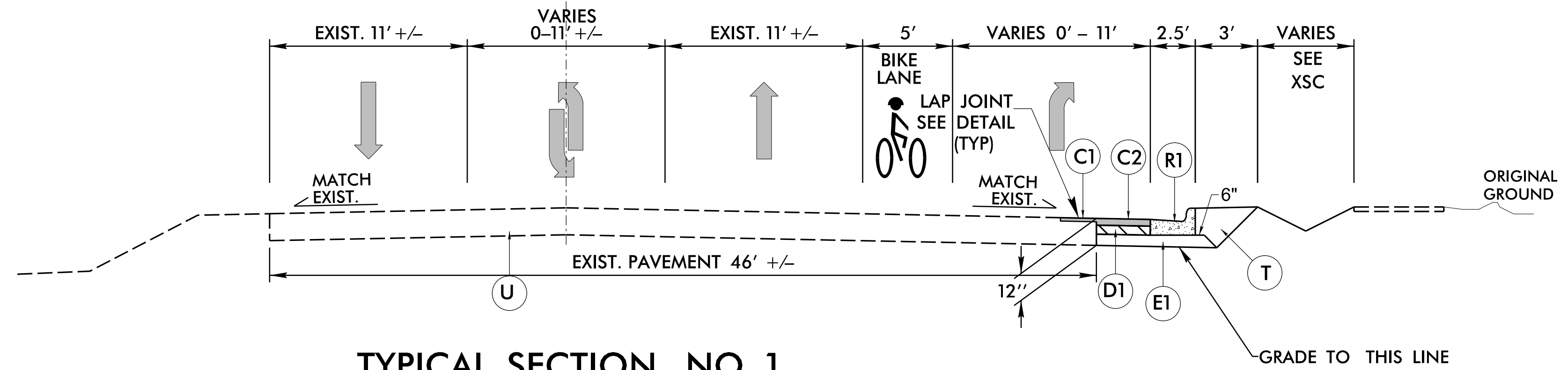
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PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
R1	2'-6" CONCRETE CURB AND GUTTER
S	4" / 6" CONCRETE SIDEWALK
T	COMPACTED EARTH MATERIAL
U	EXISTING PAVEMENT
V	VARIABLE DEPTH MILLING (0" TO 1.5")

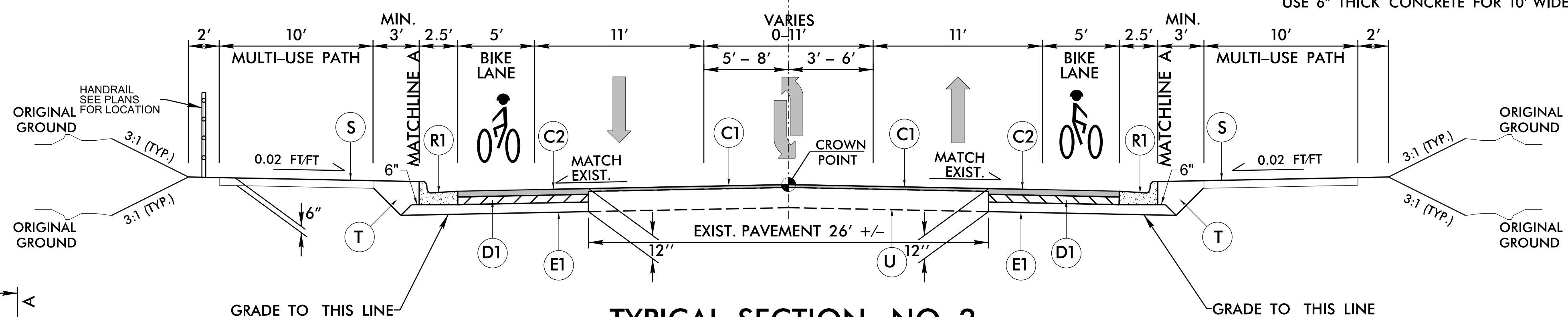
NOTES: 1. ALL PAVEMENT SLOPES ARE 1:1 UNLESS OTHERWISE SPECIFIED.  
2. SEE PLANS FOR LOCATION OF TURN LANES, SIDEWALKS, AND TAPERS AND HANDRAILS.

CL -L- (HOMESTEAD ROAD)



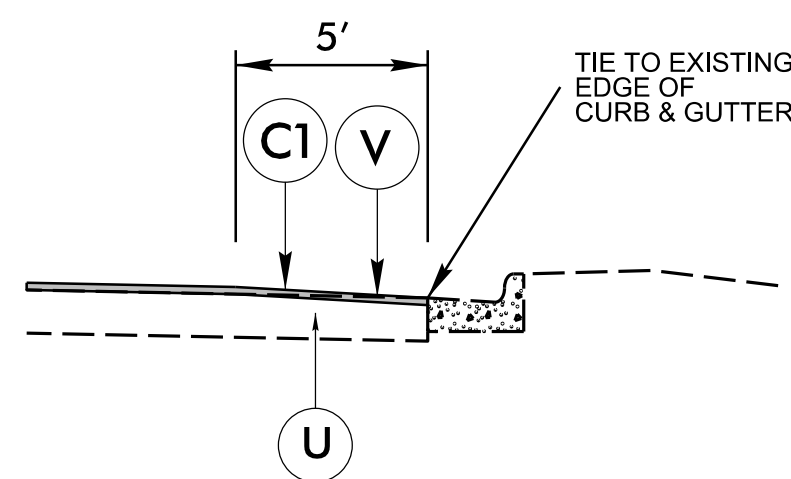
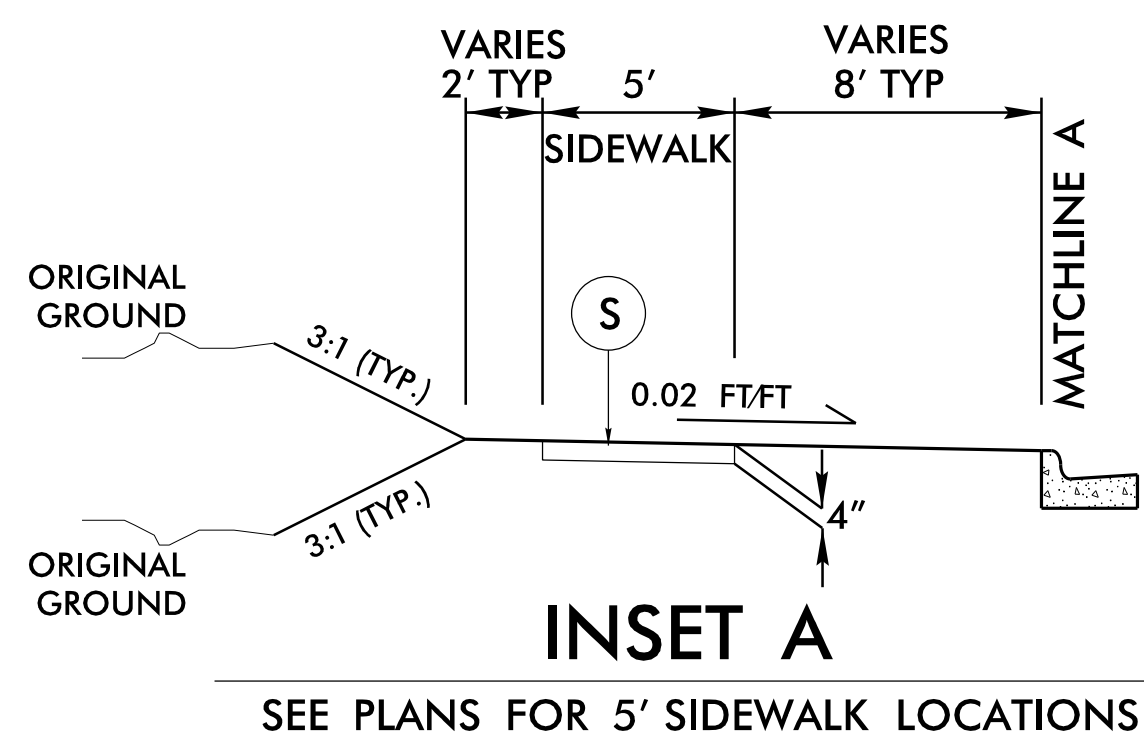
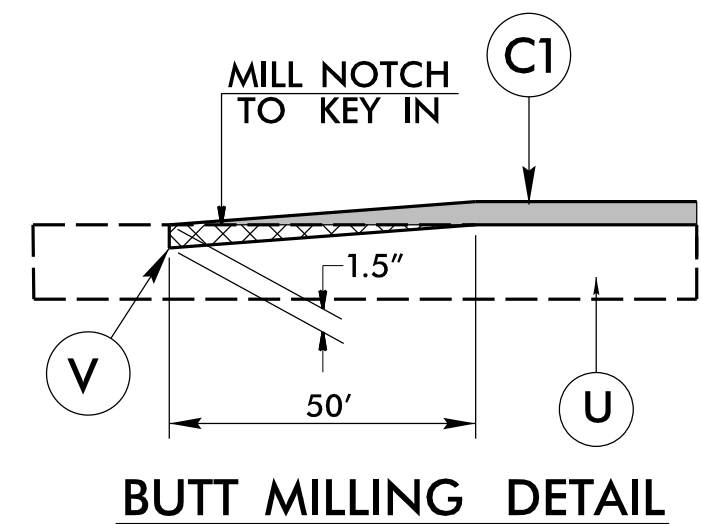
**TYPICAL SECTION NO. 1**  
-L- STA. 3+22.85 TO -L- STA. 10+32.39

CL -L- (HOMESTEAD ROAD)



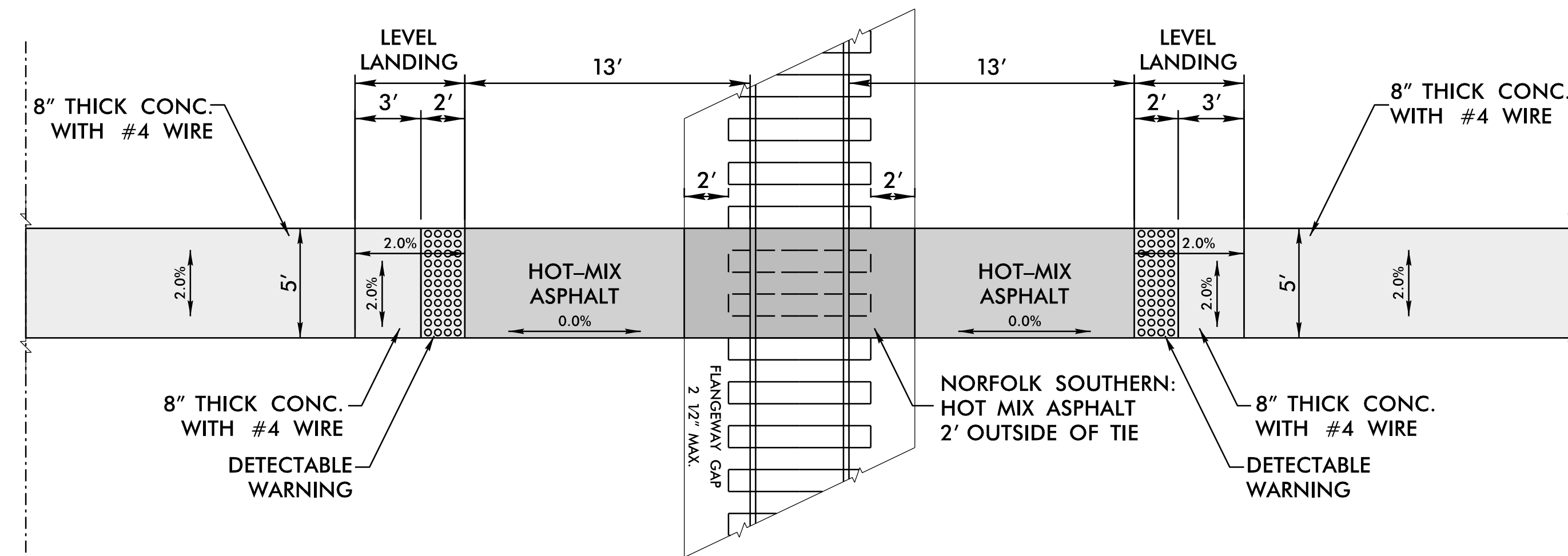
**TYPICAL SECTION NO. 2**  
-L- STA. 10+32.39 TO -L- STA. 25+42.91

NOTE:  
USE 4" THICK CONCRETE FOR SIDEWALK UNDER 10' WIDE UNLESS OTHERWISE NOTED.  
USE 6" THICK CONCRETE FOR 10' WIDE CONCRETE PATH.



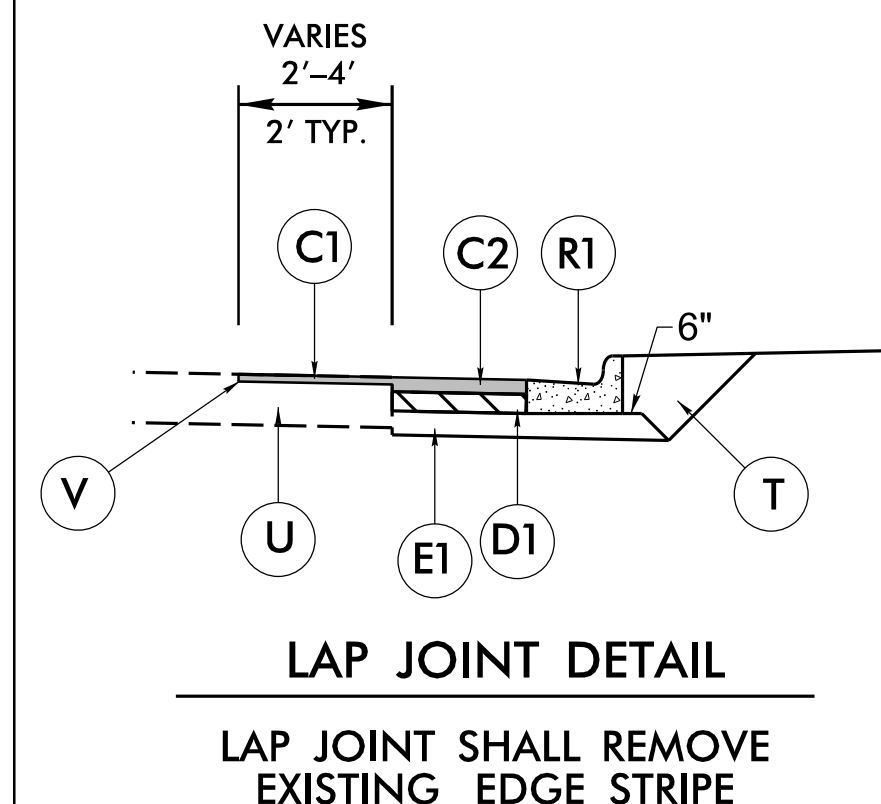
-L1- STA. 14+71.66 TO -L1- STA. 19+06.74  
\*RIGHT SIDE ONLY

EXISTING NORFOLK SOUTHERN RAILWAY COMPANY 100' RIGHT-OF-WAY



**RAILROAD SIDEWALK CROSSING DETAIL**

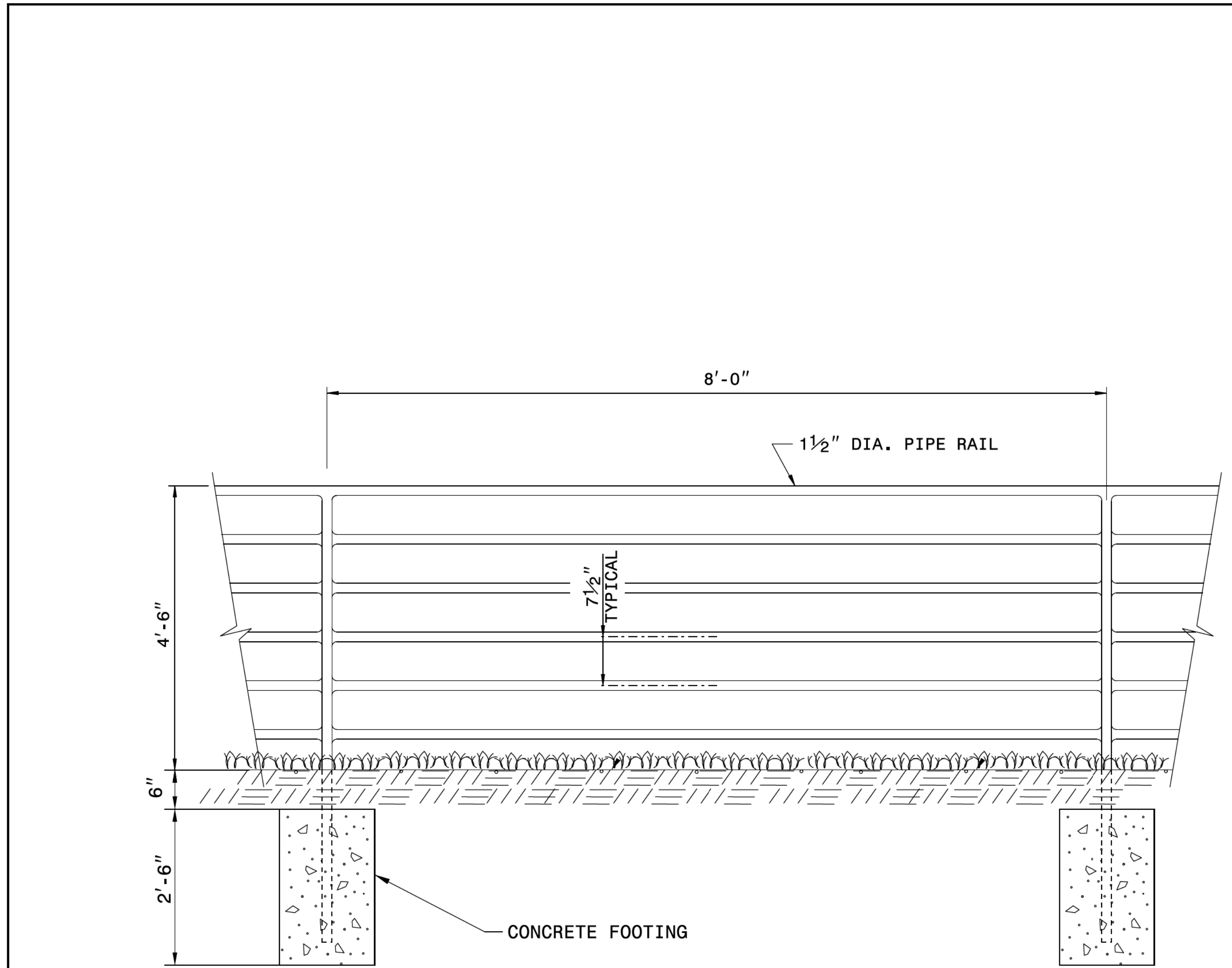
CONTRACTOR MUST COORDINATE WITH NORFOLK SOUTHERN RAILWAY COMPANY PRIOR TO WORKING WITHIN RAILROAD RIGHT-OF-WAY



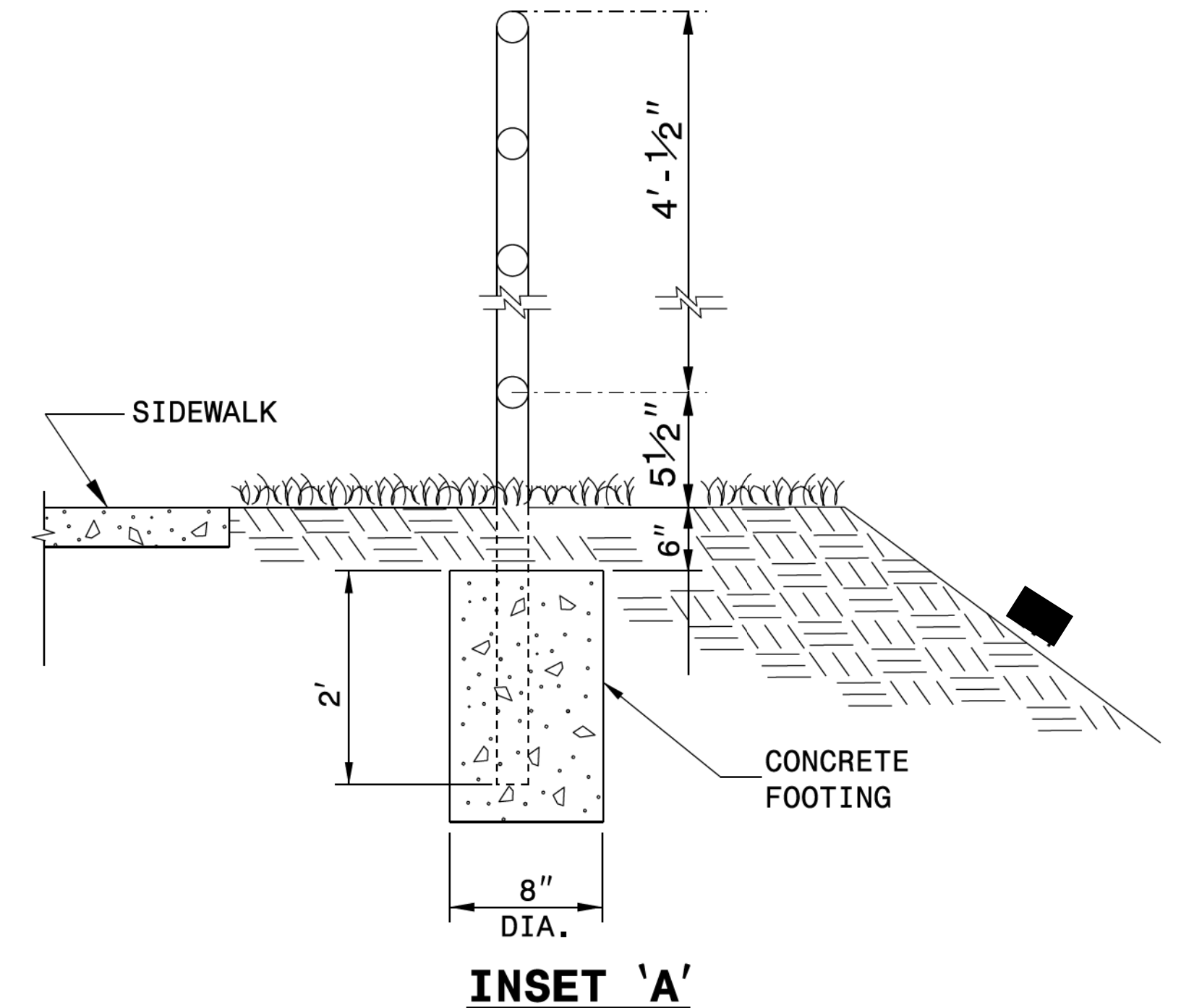


Town of  
*Chapel Hill*  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
HANDRAIL DETAIL

PROJECT REFERENCE NO.	SHEET NO.
-----------------------	-----------



**ELEVATION OF HANDRAIL**



**INSET 'A'**

- NOTES:**
- CONSTRUCT PROPOSED STEEL PIPE RAIL OF 1½" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53.
  - REPAIR GALVANIZING IN ACCORDANCE WITH SECTION 1076 OF THE NCDOT STANDARD SPECIFICATIONS.
  - PAINT, IF REQUIRED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 1080 OF THE STANDARD SPECIFICATIONS.
  - WELD IN ACCORDANCE WITH ARTICLE 1072-18 OF THE STANDARD SPECIFICATIONS.
  - USE CLASS 'B' CONCRETE FOR HANDRAIL FOOTINGS.
  - PLACEMENT OF HANDRAIL IN RELATION TO SHOULDER BREAK POINT AND SIDEWALK MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950	FAX 919-250-4119
<b>PROPOSED BIKE/PED SAFETY RAIL</b>	
ORIGINAL BY: E.E. WARD	DATE: 12-99
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: jhowerton/handrail_on_retaining_wall.dgn	

REVISIONS	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
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SCALES	
H-SCALE - NTS	
V-SCALE - NTS	
DATE:	11/07/18
DESIGNED BY:	KMW
CHECKED BY:	LSH

**RAMEY KEMP ASSOCIATES**  
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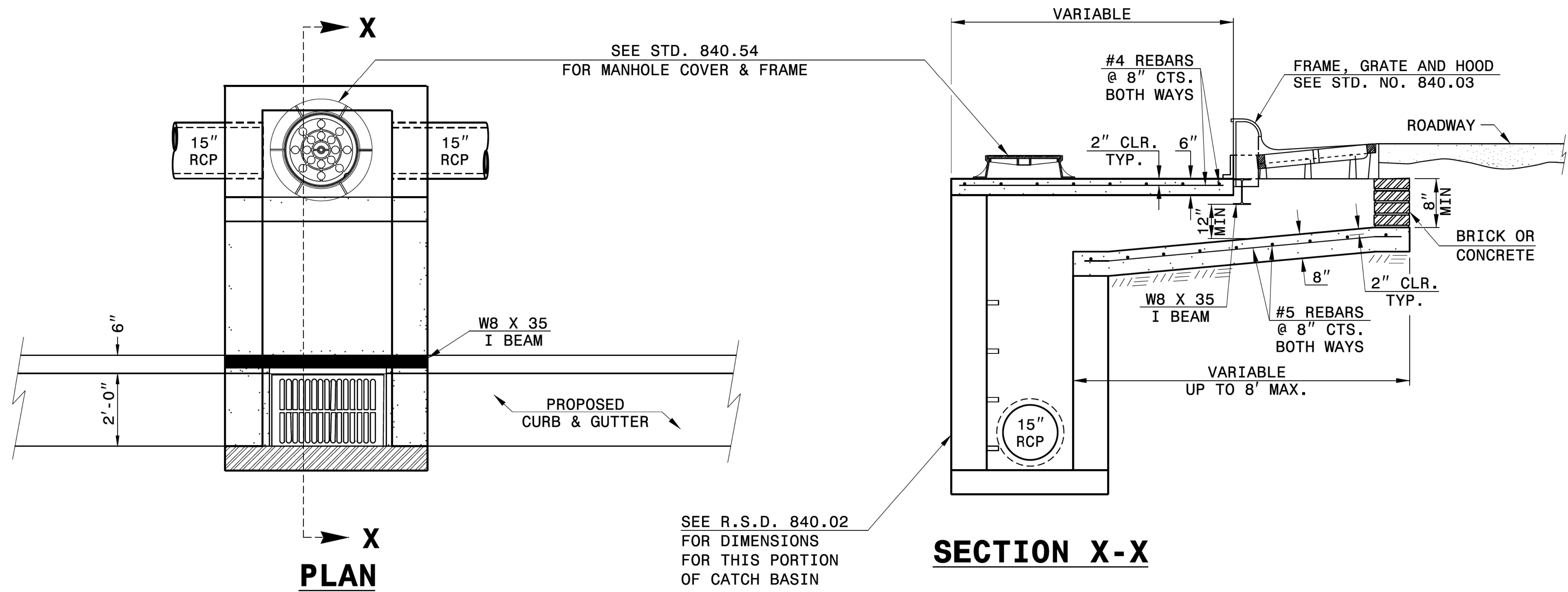
NOTES: SEE PLAN SHEETS FOR HANDRAIL LOCATIONS

11/7/2018  
...\\Roadway\Proj\16244\_Rdy\_.typ.dgn  
User: lsh

\*\*\*\*\*SYSTEMTIME\*\*\*\*\*  
\*\*\*\*\*USERNAME\*\*\*\*\*



Town of  
*Chapel Hill*  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
OFFSET CATCH BASIN DETAIL



**NOTES:**  
 MORTAR JOINTS 1/2" TO 1/4" THICK.  
 USE CLASS "B" CONCRETE THROUGHOUT.  
 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.  
 CHAMFER ALL EXPOSED CORNERS 1".  
 DRAWING NOT TO SCALE.  
 PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66

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

**PROPOSED OFFSET CATCH BASIN**

ORIGINAL BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 MODIFIED BY: K. KEMPF DATE: 11/13/15  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
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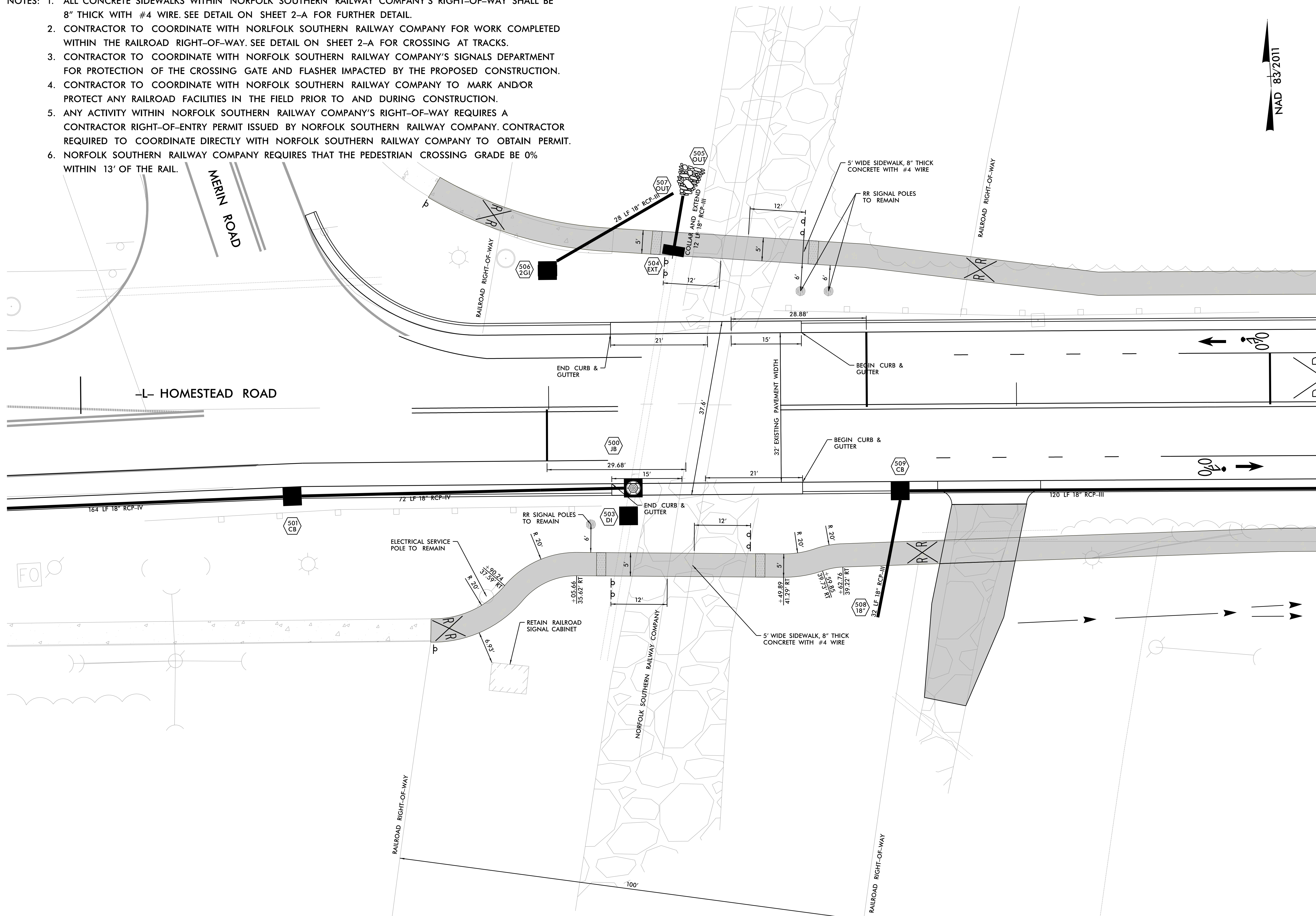
REVISIONS	DATE	DESCRIPTION

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SCALES  
 H-SCALE - NTS  
 V-SCALE - NTS  
 DATE: 11/07/18  
 DESIGNED BY: KMW  
 CHECKED BY: LSH

**RAMEY KEMP ASSOCIATES**  
 TRANSPORTATION ENGINEERS  
 5808 Faringdon Place  
 Suite 100  
 Raleigh, North Carolina 27609  
 Phone: (919) 872-5115  
 Fax: (919) 878-5416  
 www.rameykemp.com  
 NC License No. C-0910

- NOTES: 1. ALL CONCRETE SIDEWALKS WITHIN NORFOLK SOUTHERN RAILWAY COMPANY'S RIGHT-OF-WAY SHALL BE 8" THICK WITH #4 WIRE. SEE DETAIL ON SHEET 2-A FOR FURTHER DETAIL.
2. CONTRACTOR TO COORDINATE WITH NORFOLK SOUTHERN RAILWAY COMPANY FOR WORK COMPLETED WITHIN THE RAILROAD RIGHT-OF-WAY. SEE DETAIL ON SHEET 2-A FOR CROSSING AT TRACKS.
3. CONTRACTOR TO COORDINATE WITH NORFOLK SOUTHERN RAILWAY COMPANY'S SIGNALS DEPARTMENT FOR PROTECTION OF THE CROSSING GATE AND FLASHER IMPACTED BY THE PROPOSED CONSTRUCTION.
4. CONTRACTOR TO COORDINATE WITH NORFOLK SOUTHERN RAILWAY COMPANY TO MARK AND/OR PROTECT ANY RAILROAD FACILITIES IN THE FIELD PRIOR TO AND DURING CONSTRUCTION.
5. ANY ACTIVITY WITHIN NORFOLK SOUTHERN RAILWAY COMPANY'S RIGHT-OF-WAY REQUIRES A CONTRACTOR RIGHT-OF-ENTRY PERMIT ISSUED BY NORFOLK SOUTHERN RAILWAY COMPANY. CONTRACTOR REQUIRED TO COORDINATE DIRECTLY WITH NORFOLK SOUTHERN RAILWAY COMPANY TO OBTAIN PERMIT.
6. NORFOLK SOUTHERN RAILWAY COMPANY REQUIRES THAT THE PEDESTRIAN CROSSING GRADE BE 0% WITHIN 13' OF THE RAIL.

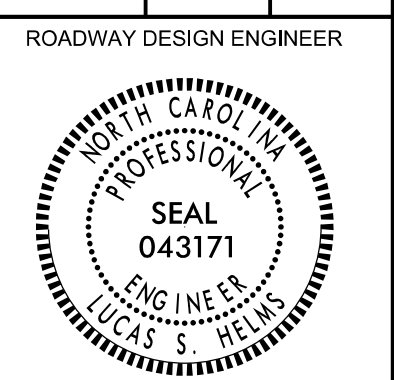


NAD 83/2011

SHEET NO.  
2-D



Town of Chapel Hill  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
RAILROAD DETAIL SHEET



ROADWAY DESIGN ENGINEER

REVISIONS	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SCALES  
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V-SCALE - N/A  
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11/7/2018  
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User: lhelms



Town of Chapel Hill  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
PLAN SHEET

ROADWAY DESIGN ENGINEER



HYDRAULICS ENGINEER



REVISIONS	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SCALES

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V-SCALE - N/A

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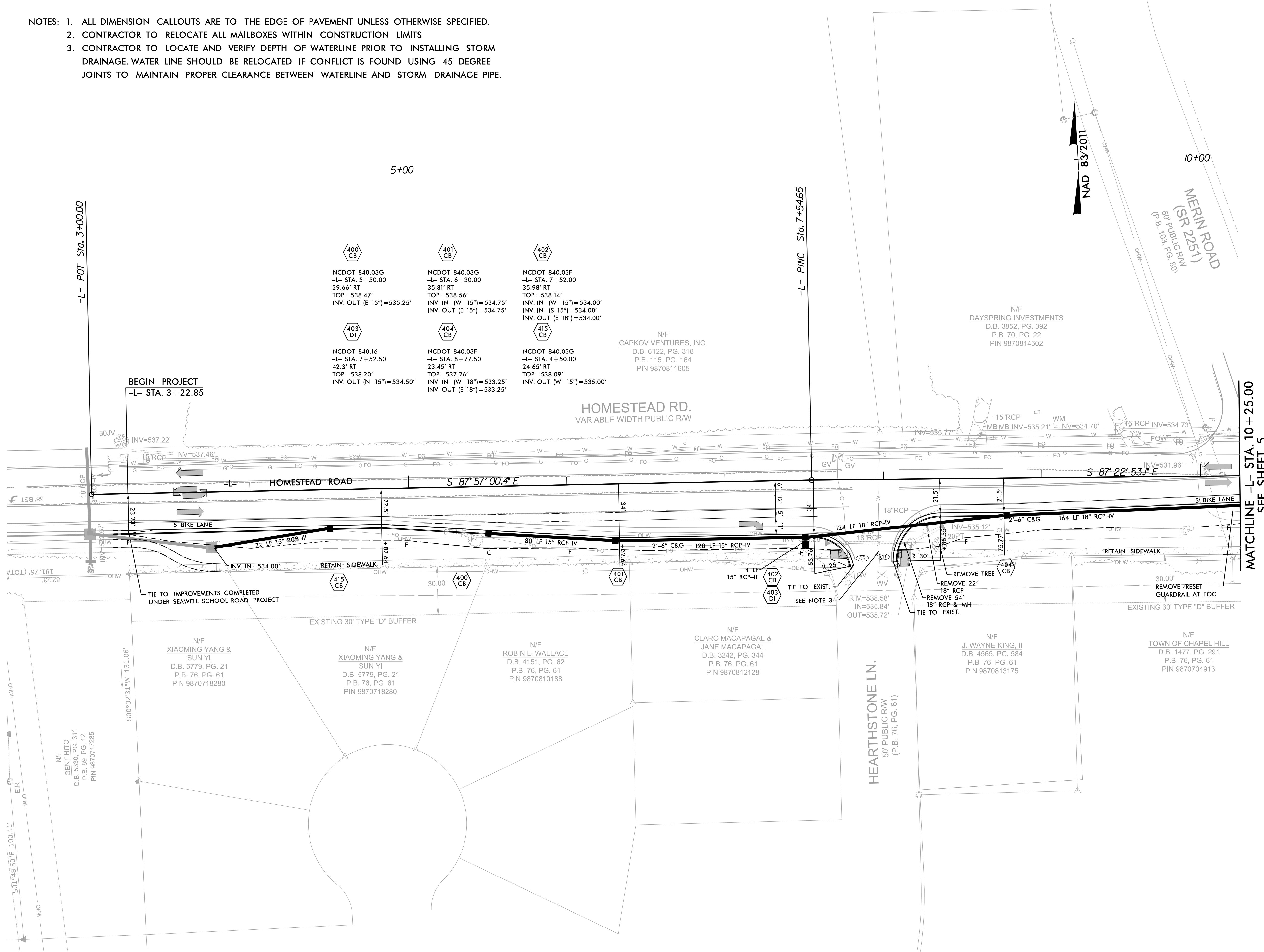
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- NOTES: 1. ALL DIMENSION CALLOUTS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE SPECIFIED.  
2. CONTRACTOR TO RELOCATE ALL MAILBOXES WITHIN CONSTRUCTION LIMITS  
3. CONTRACTOR TO LOCATE AND VERIFY DEPTH OF WATERLINE PRIOR TO INSTALLING STORM DRAINAGE. WATER LINE SHOULD BE RELOCATED IF CONFLICT IS FOUND USING 45 DEGREE JOINTS TO MAINTAIN PROPER CLEARANCE BETWEEN WATERLINE AND STORM DRAINAGE PIPE.







Town of Chapel Hill  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
PLAN SHEET

ROADWAY DESIGN ENGINEER



HYDRAULICS ENGINEER



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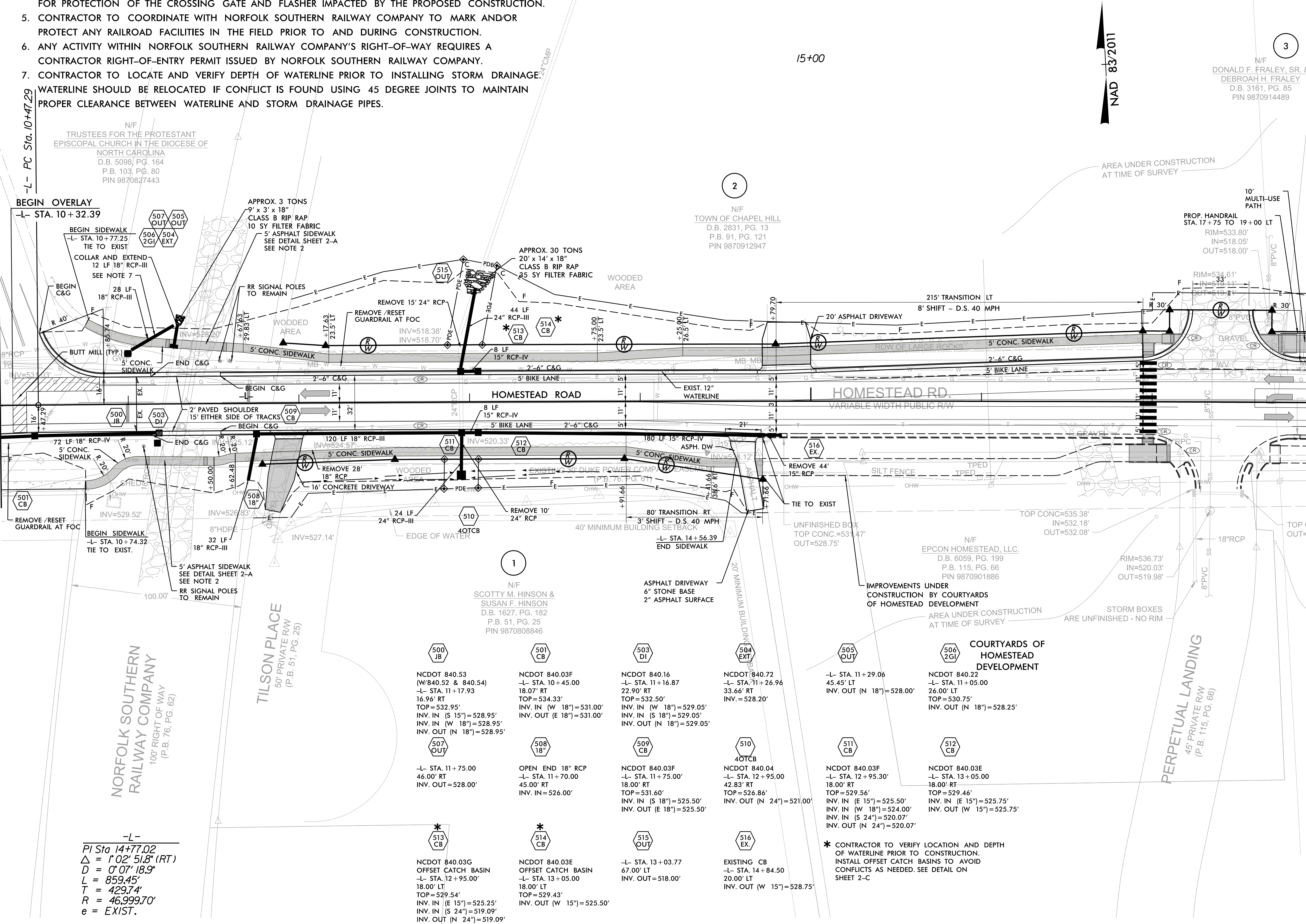
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  3. CONTRACTOR TO COORDINATE WITH NORFOLK SOUTHERN RAILWAY COMPANY FOR WORK COMPLETED WITHIN THE RAILROAD RIGHT-OF-WAY. SEE DETAIL ON SHEET 2-A FOR CROSSING AT TRACKS. SEE SHEET 2-D FOR FURTHER DETAILS.
  4. CONTRACTOR TO COORDINATE WITH NORFOLK SOUTHERN RAILWAY COMPANY'S SIGNALS DEPARTMENT FOR PROTECTION OF THE CROSSING GATE AND FLASHER IMPACTED BY THE PROPOSED CONSTRUCTION.
  5. CONTRACTOR TO COORDINATE WITH NORFOLK SOUTHERN RAILWAY COMPANY TO MARK AND/OR PROTECT ANY RAILROAD FACILITIES IN THE FIELD PRIOR TO AND DURING CONSTRUCTION.
  6. ANY ACTIVITY WITHIN NORFOLK SOUTHERN RAILWAY COMPANY'S RIGHT-OF-WAY REQUIRES A CONTRACTOR RIGHT-OF-ENTRY PERMIT ISSUED BY NORFOLK SOUTHERN RAILWAY COMPANY.
  7. CONTRACTOR TO LOCATE AND VERIFY DEPTH OF WATERLINE PRIOR TO INSTALLING STORM DRAINAGE. WATERLINE SHOULD BE RELOCATED IF CONFLICT IS FOUND USING 45 DEGREE JOINTS TO MAINTAIN PROPER CLEARANCE BETWEEN WATERLINE AND STORM DRAINAGE PIPES.

TEMPORARY AND PERMANENT EASEMENT AREAS				
PARCEL NO.	PROPERTY OWNER'S NAME	TEMP. CONSTRUCTION EASEMENT	PERMANENT DRAINAGE EASEMENT	PERMANENT ROW
1	SCOTTY M. HINSON & SUSAN F. HINSON	4,997.07 SQ. FT.	341.17 SQ. FT.	1,692.90 SQ. FT.
2	TOWN OF CHAPEL HILL	11,220.86 SQ. FT.	981.52 SQ. FT.	4,276.11 SQ. FT.
3	DONALD F. FRALEY, SR. & DEBROAH H. FRALEY	4,662.08 SQ. FT.	730.61 SQ. FT.	2,524.57 SQ. FT.

MATCHLINE -L- STA. 10 + 25.00  
SEE SHEET 4

MATCHLINE -L- STA. 18 + 00.00  
SEE SHEET 6



-L-  
PI Sta 14+77.02  
Δ = 1' 02" 51.8" (RT)  
D = 0' 07" 18.9"  
L = 859.45'  
T = 429.74'  
R = 46,999.70'  
e = EXIST.



Town of Chapel Hill  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
PLAN SHEET

ROADWAY DESIGN ENGINEER



HYDRAULICS ENGINEER



REVISIONS

NO.	DESCRIPTION

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V-SCALE - N/A

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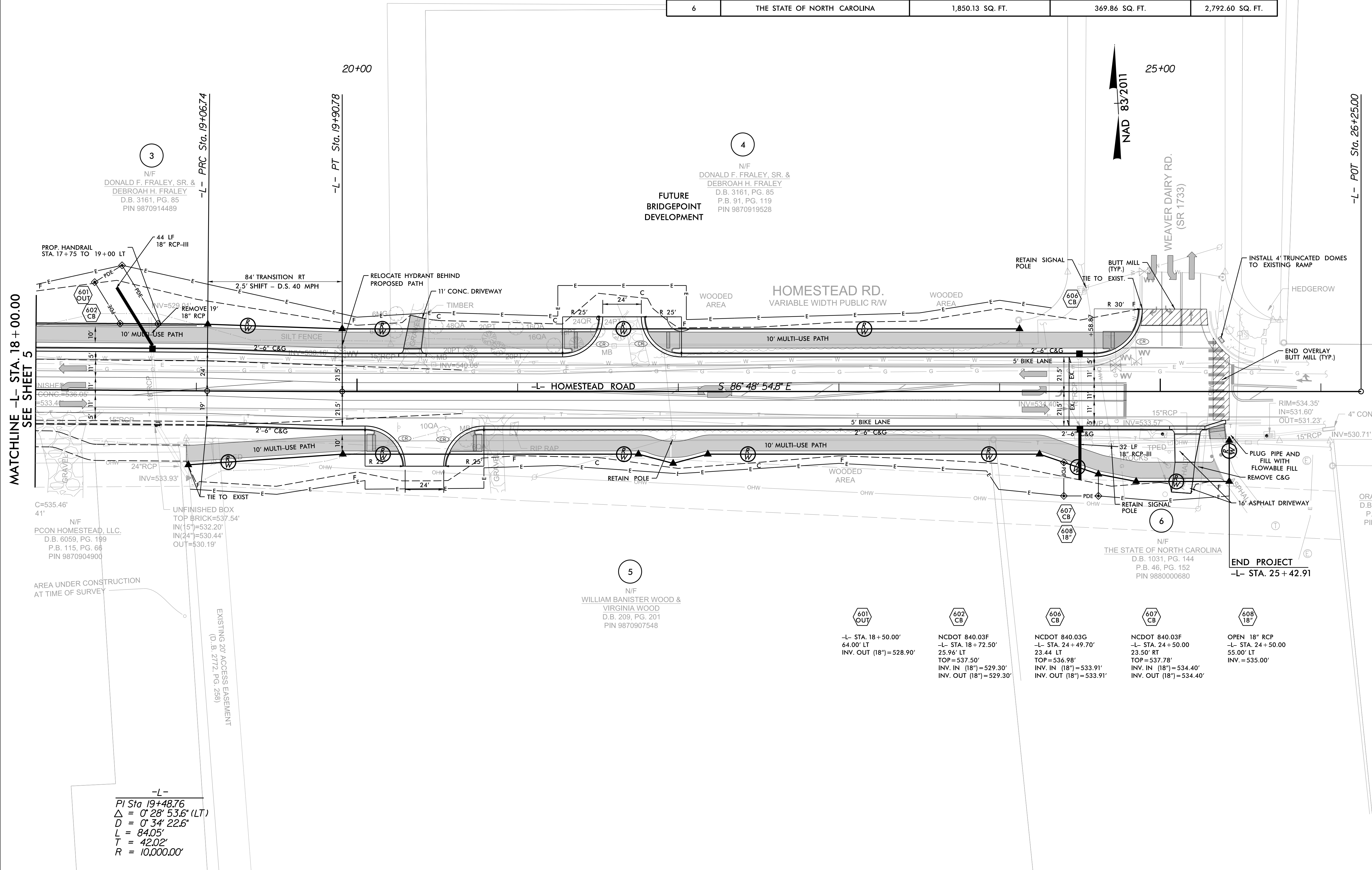
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TEMPORARY AND PERMANENT EASEMENT AREAS				
PARCEL NO.	PROPERTY OWNER'S NAME	TEMP. CONSTRUCTION EASEMENT	PERMANENT DRAINAGE EASEMENT	PERMANENT ROW
3	DONALD F. FRALEY, SR. & DEBROAH H. FRALEY	4,641.56 SQ. FT.	730.61-SQ. FT.	2,524.57 SQ. FT.
4	DONALD F. FRALEY, SR. & DEBROAH H. FRALEY	5,365.55 SQ. FT.	-	3,730.65 SQ. FT.
5	WILLIAM BANISTER WOOD & VIRGINIA WOOD	6,404.22 SQ. FT.	-	4,800.78 SQ. FT.
6	THE STATE OF NORTH CAROLINA	1,850.13 SQ. FT.	369.86 SQ. FT.	2,792.60 SQ. FT.

NOTES: 1. ALL DIMENSION CALLOUTS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE SPECIFIED.  
2. CONTRACTOR TO REPLACE SIGNAL LOOPS IF DAMAGED DURING CONSTRUCTION.



MATCHLINE -L- STA. 18 + 00.00  
SEE SHEET 5

-L- POT Sta. 26+25.00

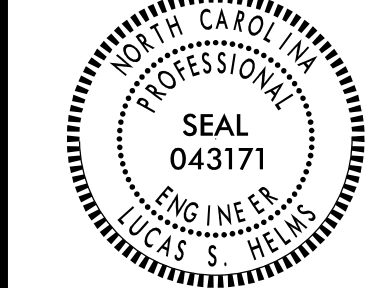
-L-  
 PI Sta 19+48.76  
 $\Delta = 0^\circ 28' 53.6''$  (LT)  
 $D = 0^\circ 34' 22.6''$   
 $L = 84.05'$   
 $T = 42.02'$   
 $R = 10,000.00'$

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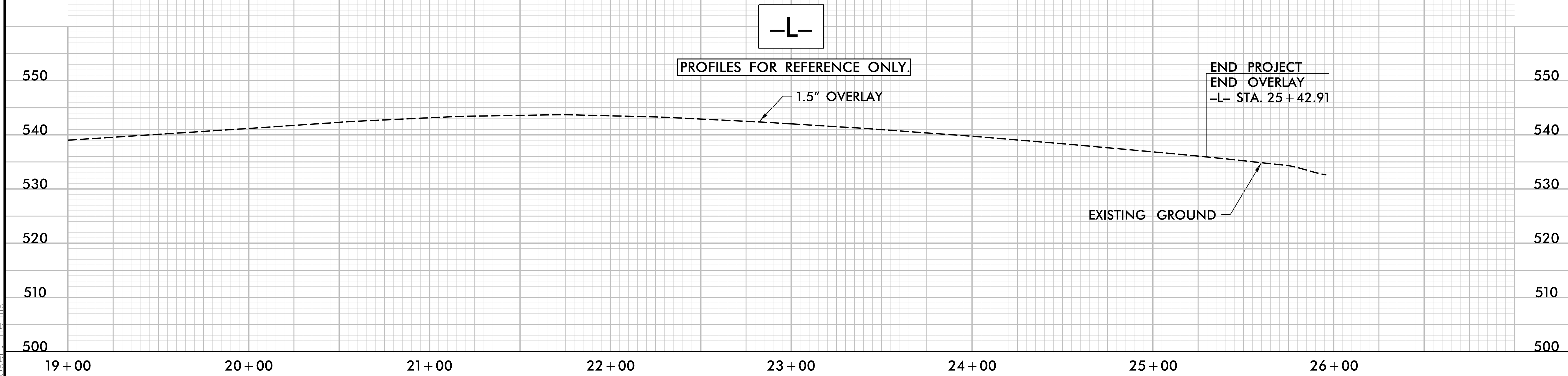
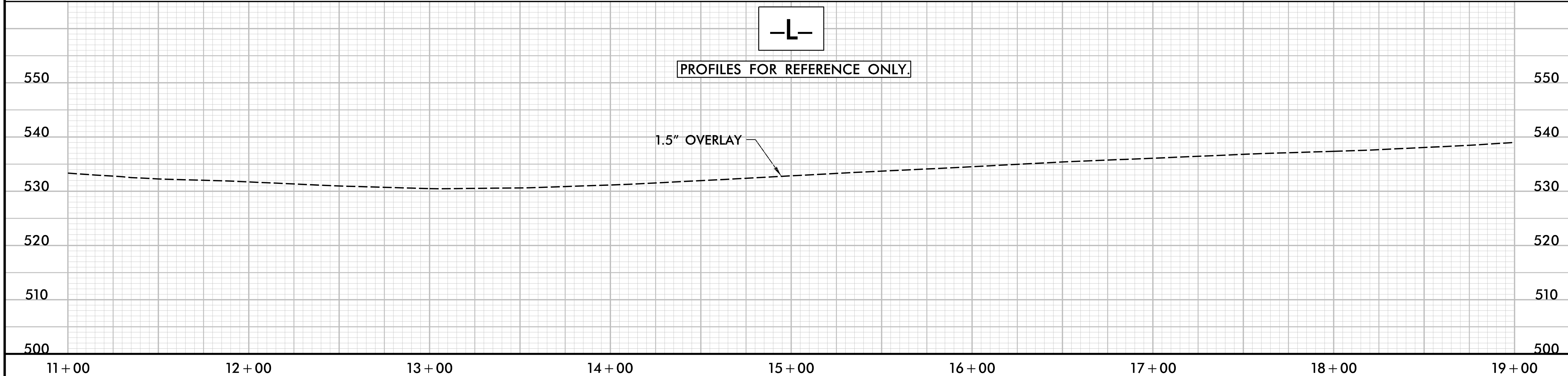
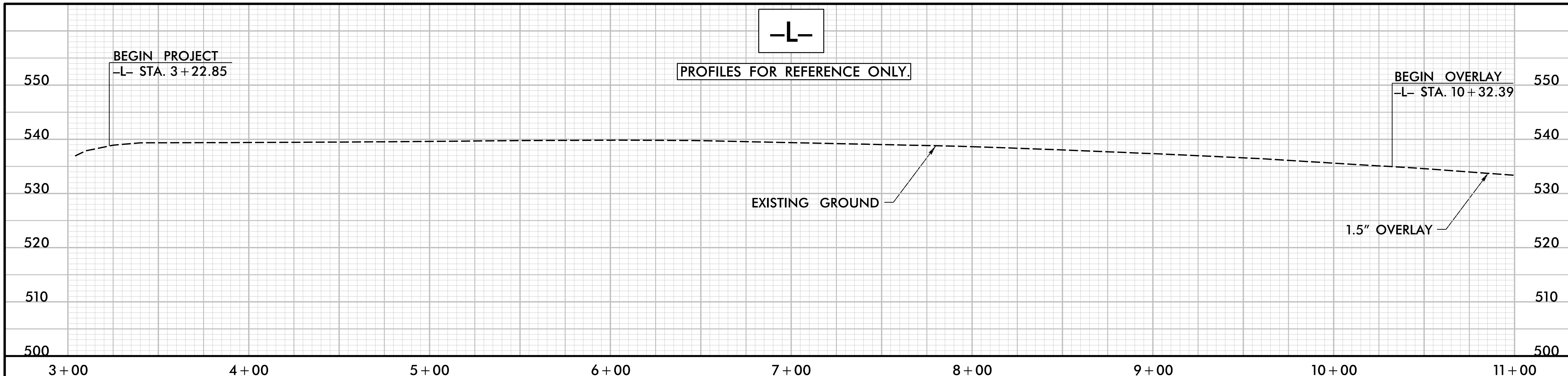
Town of Chapel Hill  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
PROFILE

ROADWAY DESIGN ENGINEER



REVISIONS	SCALES
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11/7/2018  
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User: lhelms

## 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 UNDESIRE 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
-L- HOMESTEAD ROAD	MONDAY THROUGH FRIDAY 6:00 AM - 9:00 AM 4:00 PM - 6:00 PM

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

ROAD NAME  
ALL ROADS

### HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 9:00 P.M. DECEMBER 31st TO 6:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 A.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 9:00 P.M. THURSDAY AND 6:00 A.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 9:00 P.M. FRIDAY TO 6:00 A.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 9:00 P.M. THE DAY BEFORE INDEPENDENCE DAY AND 6:00 A.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 9:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 9:00 P.M. FRIDAY AND 6:00 A.M. TUESDAY.

7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 9:00 P.M. TUESDAY TO 6:00 A.M. MONDAY.

8. FOR CHRISTMAS, BETWEEN THE HOURS OF 9:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

### 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.

## GENERAL NOTES CONTINUED

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 DIVIDED FACILITY AND WITHIN 10 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.

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 PERSONNEL 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.

I) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON HOMESTEAD ROAD.

### PAVEMENT EDGE DROP OFF REQUIREMENTS

J) 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.

### TRAFFIC PATTERN ALTERATIONS

K) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

### SIGNING

L) 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.

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

N) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 200 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

### 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.

P) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

### PAVEMENT MARKINGS AND MARKERS

Q) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT	NONE

## GENERAL NOTES CONTINUED

R) 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.

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

T) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

U) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE TOWN OF CHAPEL HILL OR NCDOT.

## PHASING NOTES

INSTALL WORK ZONE ADVANCED WARNING SIGNS (SEE RSD 1101.01) PRIOR TO BEGINNING WORK. SIGNS SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED. MAINTAIN ACCESS TO ALL BUSINESSES AND RESIDENTAL DRIVEWAYS. COORDINATE DIRECTLY WITH PROPERTY OWNER FOR ACCESS OPTIONS.

PHASE 1 STA. 3+22 +/- TO STA. 9+00 +/-  
WHILE MAINTAINING EXISTING TRAFFIC AND USING NCDOT STANDARD DRAWING 1101.02 SHEET 3 OF 15 FOR TEMPORARY LANE CLOSURES AS NEEDED, THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED IMPROVEMENTS ON -L- HOMESTEAD ROAD FROM -L- 3+22 +/- TO 9+00 +/- INCLUDING MILLING, DRAINAGE, PAVING AND CURB AND GUTTER.

PHASE 2 STA. 9+00 +/- TO STA. 25+42.91 +/-  
UNDER FLAGGER CONTROL USING RSD 1101.02 (SHEET 1 OF 15), CLOSE THE WESTBOUND THROUGH LANE ALONG -L- HOMESTEAD ROAD AND CONSTRUCT WIDENING AND SIDEWALK, INCLUDING DRAINAGE, UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE ALONG THE NORTH SIDE OF HOMESTEAD ROAD.

PHASE 3 STA. 9+00 +/- TO STA. 25+42.91 +/-  
UNDER FLAGGER CONTROL USING RSD 1101.02 (SHEET 1 OF 15), CLOSE THE EASTBOUND THROUGH LANE ALONG -L- HOMESTEAD ROAD AND CONSTRUCT WIDENING AND SIDEWALK, INCLUDING DRAINAGE, UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE ALONG THE SOUTH SIDE OF HOMESTEAD ROAD.

PHASE 4  
UNDER FLAGGER CONTROL USING RSD 1101.02 (SHEET 1 OF 15), INSTALL THE FINAL SURFACE COURSE ALONG -L- HOMESTEAD ROAD. INSTALL FINAL PAVEMENT MARKING. OPEN LANES TO TRAFFIC.

NOTE: CONTRACTOR TO COORDINATE DIRECTLY WITH RAILROAD TRACK SUPERVISOR TO DETERMINE THE CONSTRUCTION SCHEDULE AND WHEN NORFOLK SOUTHERN FLAGMEN WILL BE NEEDED.

## STANDARD DRAWINGS

### ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1150.01	FLAGGING DEVICES

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SHEET NO.  
TMP-1



Town of Chapel Hill  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
TRAFFIC CONTROL NOTES

ROADWAY DESIGN ENGINEER



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### SCALES

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Town of Chapel Hill  
 ENGINEERING AND DESIGN SERVICES  
 HOMESTEAD ROAD IMPROVEMENTS  
 PAVEMENT MARKING PLANS

ROADWAY DESIGN ENGINEER



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# Town of Chapel Hill

ENGINEERING AND DESIGN SERVICES

## PAVEMENT MARKING PLAN

LOCATION: HOMESTEAD ROAD (SR 1777) FROM SEAWELL SCHOOL ROAD (SR 1834)  
TO WEAVER DAIRY ROAD (SR 1733)

### ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

### GENERAL NOTES

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

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

ROAD NAME	MARKING	MARKER
ALL ROADS	THERMOPLASTIC	RAISED
- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

### INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN COVER SHEET AND PAVEMENT MARKING SCHEDULE
PMP-2-4	PAVEMENT MARKING DETAILS

### PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
THERMOPLASTIC(4", 120 MILS)	
T8	2 FT. - 6 FT./SP WHITE MINISKIP
TD	3 FT. - 9 FT./SP WHITE MINISKIP
TE	WHITE SOLID LANE LINE
TF	10 FT. YELLOW SKIP
TH	YELLOW SINGLE CENTER
TI	YELLOW DOUBLE CENTER
THERMOPLASTIC(8", 90 MILS)	
TP	YELLOW DIAGONAL
THERMOPLASTIC(24", 120 MILS)	
T2	WHITE STOPBAR
T3	WHITE CROSSWALK
THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)	
UA	LEFT TURN ARROW
UB	RIGHT TURN ARROW
UC	STRAIGHT ARROW
UE	COMBO. RIGHT/STRAIGHT ARROW
UK	BICYCLE STRAIGHT ARROW
UL	BICYCLE CHARACTER

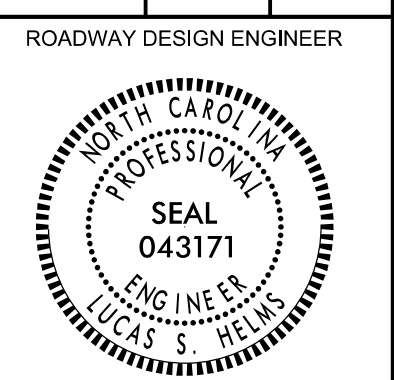
PLANS PREPARED BY: Ramey Kemp & Associates

**LUCAS S. HELMS, P.E.** PROJECT ENGINEER  
**KAYLA M. WISE, E.I.** PROJECT DESIGNER





Town of  
*Chapel Hill*  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
PAVEMENT MARKING PLANS



REVISIONS

NO.	DESCRIPTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SCALES  
H-SCALE - 1" = 30'  
V-SCALE - N/A  
DATE: 11/07/18  
DESIGNED BY: KMW  
CHECKED BY: LSH

**RAMEY KEMP ASSOCIATES**  
TRANSPORTATION ENGINEERS  
5808 Faringdon Place  
Suite 100  
Raleigh, North Carolina 27609  
Phone: (919) 872-5115  
Fax: (919) 878-5416  
www.rameykemp.com  
NC License No. C-0910

**SYMBOL LEGEND**

	UB	RIGHT ARROW
	UK	BICYCLE STRAIGHT ARROW
	UJ	BICYCLE CHAR.

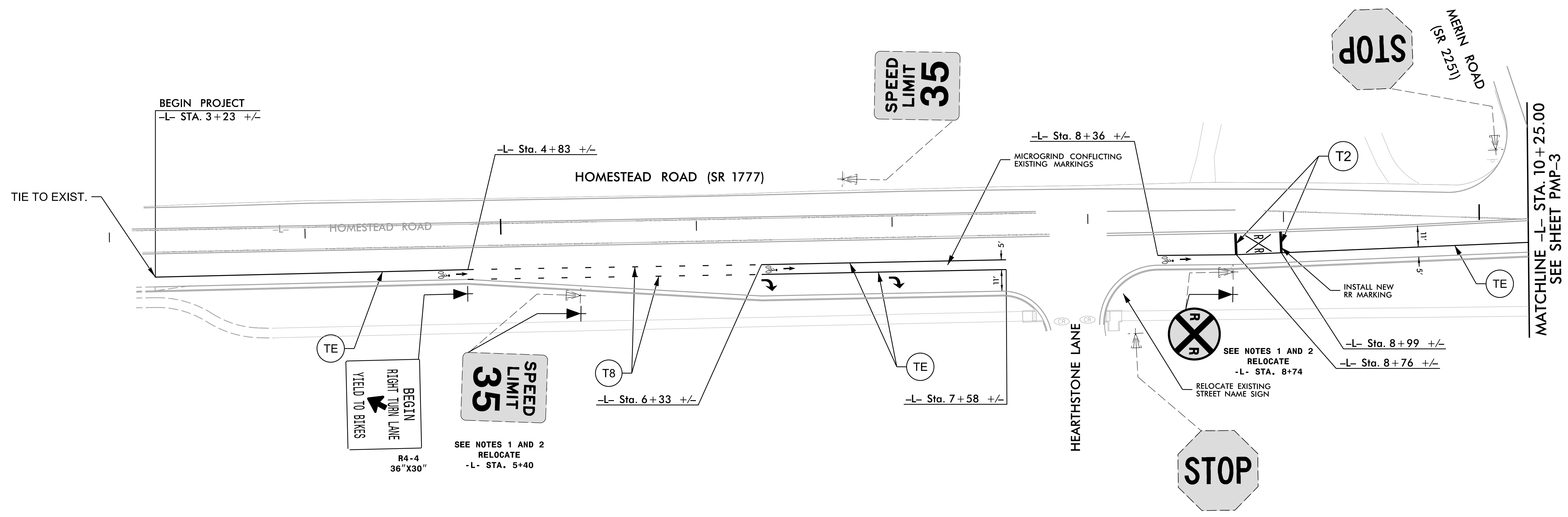
**SIGNING NOTES**

1. IN ALL WIDEN AREAS, REINSTALL EXISTING SIGN SYSTEMS TO MEET 2012 MUTCD STANDARDS AND CLEAR RECOVERY GUIDELINES.
2. ERECT NEW "U" CHANNEL POST FOR ALL SIGNS BEING RELOCATED.
3. REMOVE AND DISPOSE ALL EXISTING "U" CHANNEL POSTS BEING RELOCATED.

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

NAD 83/NA 2011

10+00



11/7/2018  
...:\16244\_TC\_pmp02.dgn  
User: lhelms



Town of  
*Chapel Hill*  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
PAVEMENT MARKING PLANS

ROADWAY DESIGN ENGINEER



REVISIONS

SCALES  
H-SCALE - 1" = 30'  
V-SCALE - N/A

DATE: 11/07/18

DESIGNED BY: KMW

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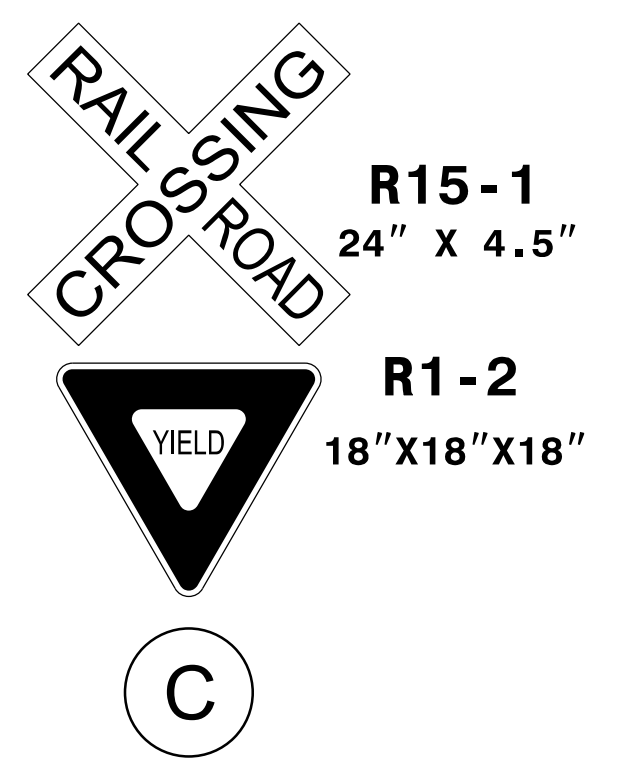
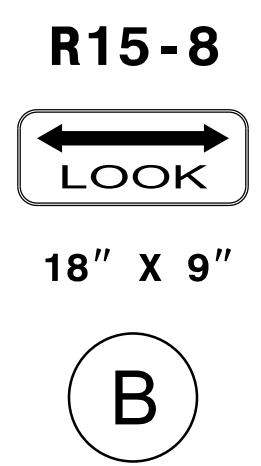
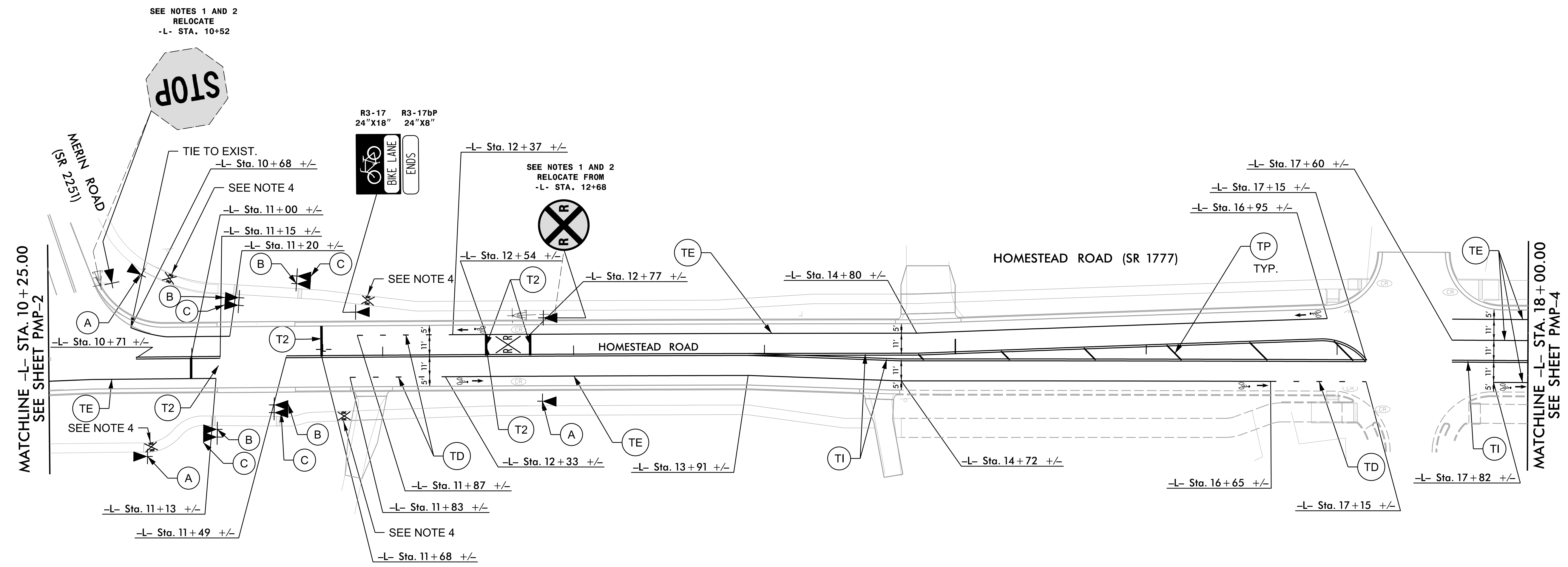
SYMBOL LEGEND	
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	UL BICYCLE CHAR.

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2.	ERECT NEW "U" CHANNEL POST FOR ALL SIGNS BEING RELOCATED.
3.	REMOVE AND DISPOSE ALL EXISTING "U" CHANNEL POSTS BEING RELOCATED.
4.	RAILROAD CROSSING SYMBOL SHALL ADHERE TO NCDOT SD. 1205.08 AND SCALED TO FIT WITHIN PROPOSED SIDEWALK.

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

NAD 83NA 2011

15+00



11/7/2018  
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User: lhelms



ROADWAY DESIGN ENGINEER



REVISIONS	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SCALES

H-SCALE - 1" = 30'

V-SCALE - N/A

DATE: 11/07/18

DESIGNED BY: KMW

CHECKED BY: LSH



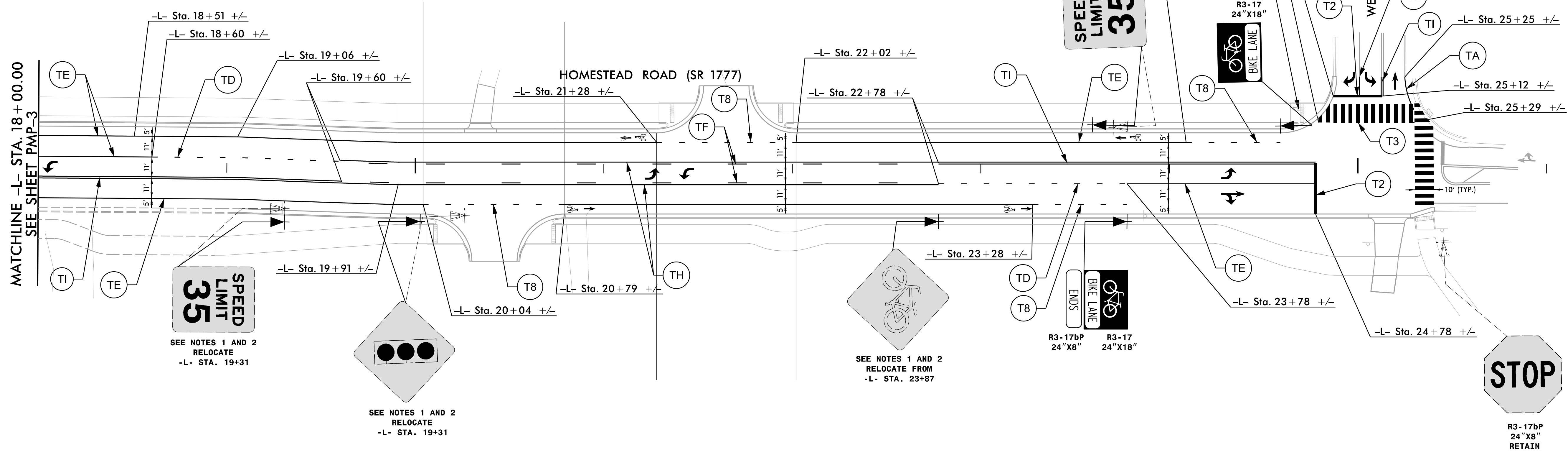
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- DENOTES EXISTING SIGN
- DENOTES NEW "U" CHANNEL POST/PROPOSED SIGN LOCATION
- DENOTES EXISTING "U" CHANNEL POST/EXISTING SIGN LOCATION

NAD 83/NA 2011



MATCHLINE -L- STA. 18+00.00  
SEE SHEET PMP-3

**SPEED LIMIT 35**  
SEE NOTES 1 AND 2  
RELOCATE  
-L- STA. 19+31

SEE NOTES 1 AND 2  
RELOCATE  
-L- STA. 19+31

SEE NOTES 1 AND 2  
RELOCATE FROM  
-L- STA. 23+87

SEE NOTES 1 AND 2  
RELOCATE FROM  
-L- STA. 23+70

RELOCATE EXISTING  
STREET NAME SIGN

R3-17bp  
24"x8"

R3-17  
24"x18"

**STOP**  
R3-17bp  
24"x8"  
RETAIN

11/7/2018  
\\16244\_TC\_pmp04.dgn  
User: lhelms





**NURSE CROP SEEDING**

PREPARATION FOR PRIMARY/PERMANENT STABILIZATION SHALL NOT BEGIN UNTIL ALL CONSTRUCTION AND UTILITY WORK WITHIN THE PREPARATION AREA IS COMPLETE. HOWEVER, IT MAY BE NECESSARY TO PREPARE FOR NURSE CROPS PRIOR TO COMPLETION OF CONSTRUCTION AND INSTALLATION OF UTILITIES.

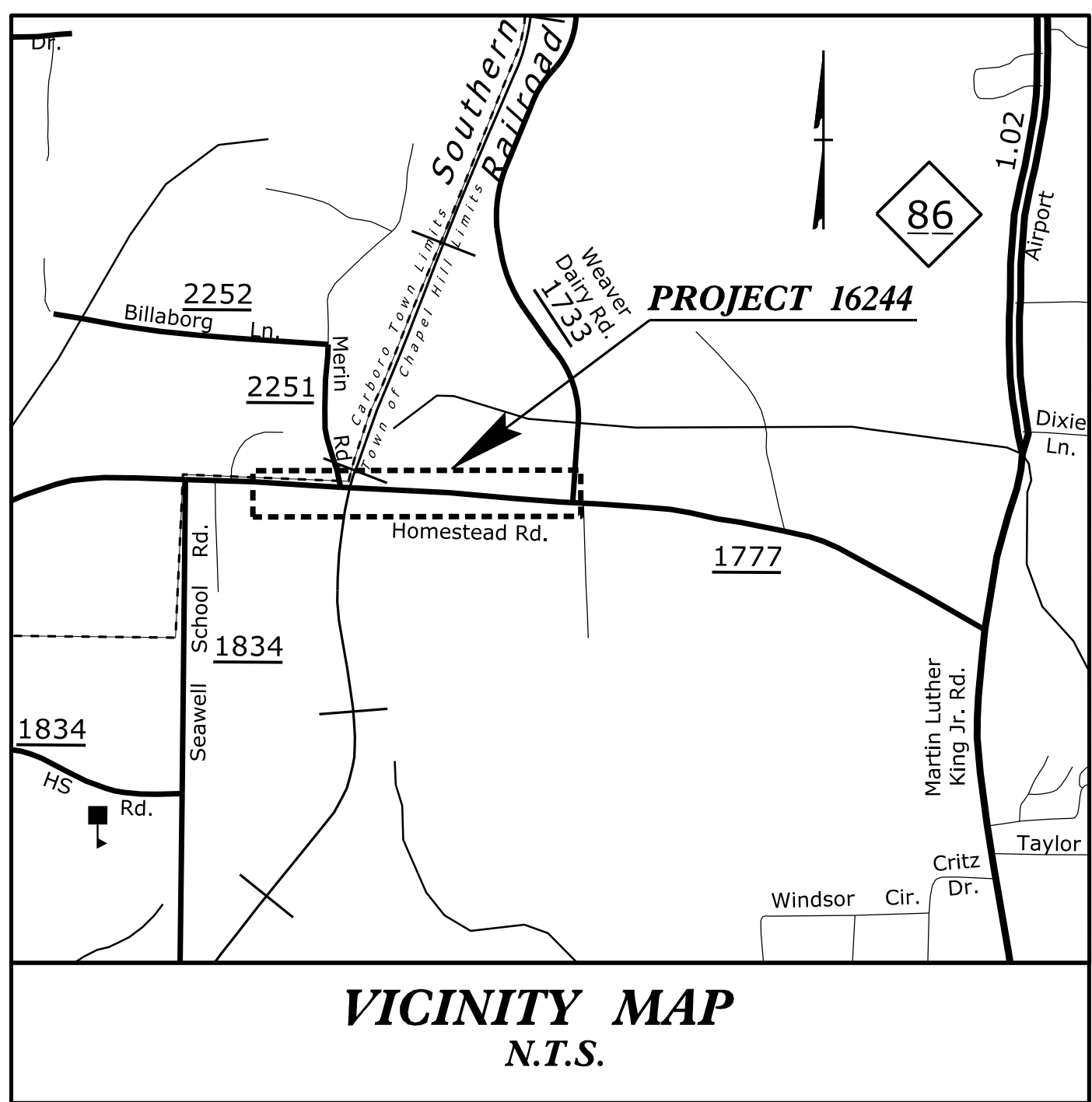
A QUICKLY GERMINATING NURSE CROP OF NON-INVASIVE, NON-COMPETITIVE ANNUAL GRASS SPECIES SHOULD BE USED ALONG WITH NATIVE SEEDING AND/OR MATTING. THESE TEMPORARY MEASURES SHOULD BE PLANTED AT MINIMUM DENSITY AS TO NOT INHIBIT THE GROWTH AND ESTABLISHMENT OF THE PERMANENT, NATIVE SPECIES. REFER TO THE TEMPORARY SEEDING SCHEDULE FOR SPECIFIC NURSE CROP SPECIES AND SEEDING RATES.

# Town of Chapel Hill

ENGINEERING AND DESIGN SERVICES

**LOCATION: HOMESTEAD ROAD (SR 1777) FROM MERIN ROAD (SR 2251) TO WEAVER DAIRY ROAD (SR 1733)**

See Sheet 1B For Conventional Symbols



ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF CHAPEL HILL AND/OR NCDOT STANDARDS AND SPECIFICATIONS.

**TYPE OF WORK: EROSION CONTROL**

**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
SP	Temporary Silt/Tree Protection Fence	TPF
SP	Tree Protection Fence	--- TPF --- TPF --- TPF ---
1606.01	Special Sediment Control Fence	--- / \ / \ / \ / \ ---
<b>Rock Inlet Sediment Trap:</b>		
1632.02	Type B	B
1632.03	Type C	C
SP	Wattle Barrier	--- EW --- EW --- EW ---
1635.02	Rock Pike Sediment Trap Type B	B U
SP	Existing Inlet Protection	---
SP	Concrete Washout	□
	Limits of Disturbance	LOD

**PERMANENT SEEDING SCHEDULE (EAST)**

**SEEDING MIXTURE RATE**  
 MARCH 1ST - AUGUST 31ST  
 LB/ACRE TYPE  
 50 TALL FESCUE  
 10 CENTIPEDE  
 25 BERMUDAGRASS (HULLED)

SEPTEMBER 1ST - FEBRUARY 1ST  
 LB/ACRE TYPE  
 50 TALL FESCUE  
 10 CENTIPEDE  
 35 BERMUDAGRASS (UNHULLED)

ON CUT AND FILL SLOPES 2:1 OR STEEPER CENTIPEDE SHALL BE APPLIED AT THE RATE OF 5 LBS/ACRE AND ADD 20 LBS/ACRE OF SERICEA LESPEDEZA FROM JANUARY 1ST TO DECEMBER 31ST

**FERTILIZER TOP DRESSING**  
 FERTILIZER USED FOR TOPDRESSING ON ALL ROADWAY AREAS EXCEPT SLOPES 2:1 AND STEEPER SHALL BE 10-20-20 GRADE AND SHALL BE APPLIED AT THE RATE OF 500 LBS/ACRE. A DIFFERENT ANALYSIS OF FERTILIZER MAY BE USED PROVIDED THE 1-2-2 RATIO IS MAINTAINED AND THE RATE OF APPLICATION ADJUSTED TO PROVIDE THE SAME AMOUNT OF PLANT FOOD AS 10-20-20 ANALYSIS AND AS DIRECTED.

**FERTILIZER USED FOR TOPDRESSING ON SLOPES 2:1 AND STEEPER AND WASTE AND BORROW AREAS** SHALL BE 16-8-8 GRADE AND SHALL BE APPLIED AT THE RATE OF 500 LBS/ACRE. A DIFFERENT ANALYSIS OF FERTILIZER MAY BE USED PROVIDED THE 2-1-1 RATIO IS MAINTAINED AND RATE OF APPLICATION ADJUSTED TO PROVIDE THE SAME AMOUNT OF PLANT FOOD AS 16-8-8 ANALYSIS AND AS DIRECTED.

**MULCHING**  
 APPLY 2 TONS/ACRE GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKING WITH ASPHALT AT A RATE OF 400 GALLONS OF ASPHALT PER ACRE.

**MAINTENANCE**  
 REFERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY. THE MINIMUM MOWING HEIGHT SHALL BE 4". RESEED, FERTILIZE, AND MULCH DAMAGED AREAS IMMEDIATELY.

**SEEDBED PREPARATION**  
 SEEDBED PREPARATION SHALL BE IN ACCORDANCE WITH NCDOT 2018 STANDARDS & SPECIFICATIONS SECTION 1620-3.

**GENERAL NOTES**

ANY STAGING, MATERIAL LAY DOWN, DIRT OR WASTE PILES WILL BE LOCATED WITHIN THE LIMITS OF DISTURBANCE. IF ANY ADDITIONAL STAGING AREAS, DIRT OR WASTE PILES, BORROW AREAS, ETC. ARE REQUIRED BY THE CONTRACTOR, ANY ADDITIONAL EASEMENTS, AND REGULATORY PERMITS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

ALL MATERIALS WILL BE CONTAINED WITHIN LIMITS OF DISTURBANCE AND WILL BE LOCATED A MINIMUM OF 50' FROM ANY WATERCOURSE OR DRAINAGE STRUCTURES.

ALL CONSTRUCTION TRAFFIC LEAVING THE SITE AND ENTERING ANY PUBLIC ROADWAY MUST UTILIZE A GRAVEL CONSTRUCTION ENTRANCE.

A COPY OF OF THE APPROVED EROSION & SEDIMENT CONTROL PLAN WITH PLACARD AND APPROVAL LETTER MUST BE KEPT ON SITE UNTIL PROJECT CLOSURE BY NCDENR RALEIGH REGIONAL OFFICE.

A RAIN GAUGE MUST BE INSTALLED AND PRESENT ON THE PROJECT SITE UNTIL PROJECT CLOSURE BY THE NCDENR RALEIGH REGIONAL OFFICE.

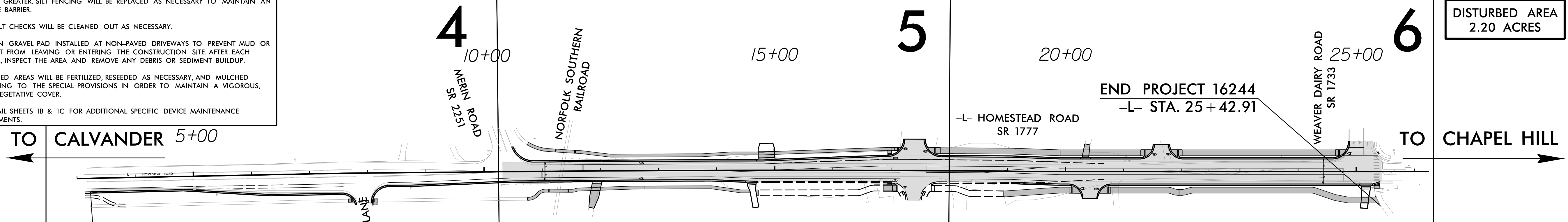
SELF INSPECTION MUST BE CONDUCTED AND DOCUMENTED IN THE INSPECTION & MONITORING FORM PROVIDED BY NCDENR PER STORMWATER GENERAL PERMIT NCG-010000. MEASURES MUST BE INSPECTED AT LEAST ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD. ADDITIONALLY GROUND STABILIZATION MUST BE RECORDED AFTER EACH PHASE OF GRADING. A COPY OF THE NPDES PERMIT WITH A MINIMUM OF 30 DAYS OF SELF-INSPECTION REPORTS MUST BE KEPT ON SITE UNTIL PROJECT CLOSURE BY THE NCDENR RALEIGH REGIONAL OFFICE. THE SELF-INSPECTION FORM CAN BE FOUND AT: <http://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>

THESE EROSION & SEDIMENT CONTROL PLANS SHOW DEVICES REQUIRED DURING THE CLEARING AND GRUBBING AND FINAL PHASE OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL SEDIMENT LADEN RUNOFF IS TREATED BEFORE LEAVING THE LIMITS OF DISTURBANCE. THERE MAY BE INTERMEDIATE GRADES IN WHICH ADDITIONAL TEMPORARY DIVERSIONS, NOT SHOWN ON THE PLANS, ARE REQUIRED TO DIRECT RUNOFF TO BASINS OR ADDITIONAL SILT FENCE TO KEEP SEDIMENT WITHIN THE LIMITS OF DISTURBANCE.

EFFLUENT FROM THIS SITE DRAINS FROM TRIBUTARIES OF BOLIN CREEK (CLASS "WS-V, NSW"), OF THE CAPE FEAR RIVER BASIN.

THE DEVELOPER IS RESPONSIBLE FOR THE CONTROL OF SEDIMENT ON-SITE. IF THE APPROVED EROSION AND SEDIMENTATION CONTROL MEASURES PROVE INSUFFICIENT, THE DEVELOPER MUST TAKE THOSE ADDITIONAL STEPS NECESSARY TO STOP SEDIMENT FROM LEAVING THIS SITE. (NCGS 113A-57(3))

- MAINTENANCE REQUIREMENTS**
1. EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL OR AT A MINIMUM ONCE A WEEK. IF REPAIRS ARE NEEDED THEY WILL BE DONE SO IMMEDIATELY.
  2. SEDIMENT WILL BE REMOVED FROM BEHIND SILT FENCING WHEN IT BECOMES 0.5 FT DEEP OR GREATER. SILT FENCING WILL BE REPLACED AS NECESSARY TO MAINTAIN AN ADEQUATE BARRIER.
  3. ROCK SILT CHECKS WILL BE CLEANED OUT AS NECESSARY.
  4. MAINTAIN GRAVEL PAD INSTALLED AT NON-PAVED DRIVEWAYS TO PREVENT MUD OR SEDIMENT FROM LEAVING OR ENTERING THE CONSTRUCTION SITE. AFTER EACH RAINFALL, INSPECT THE AREA AND REMOVE ANY DEBRIS OR SEDIMENT BUILDUP.
  5. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO THE SPECIAL PROVISIONS IN ORDER TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
  6. SEE DETAIL SHEETS 1B & 1C FOR ADDITIONAL SPECIFIC DEVICE MAINTENANCE REQUIREMENTS.



**SOIL STABILIZATION TIMEFRAMES**

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

**SOIL PREPARATION**

FOR AREAS THAT ARE TO BE SEEDED ALL STONES LARGER THAN 3 INCHES, STICKS, ROOTS, AND OTHER MATERIALS SHALL BE REMOVED. AREAS TO BE SEEDED OR PLANTED SHALL BE TILLED OR RIPPED TO A MINIMUM DEPTH OF 4 INCHES. LIME AND FERTILIZER SHALL BE APPLIED AS SPECIFIED IN THE SEEDING SCHEDULE.

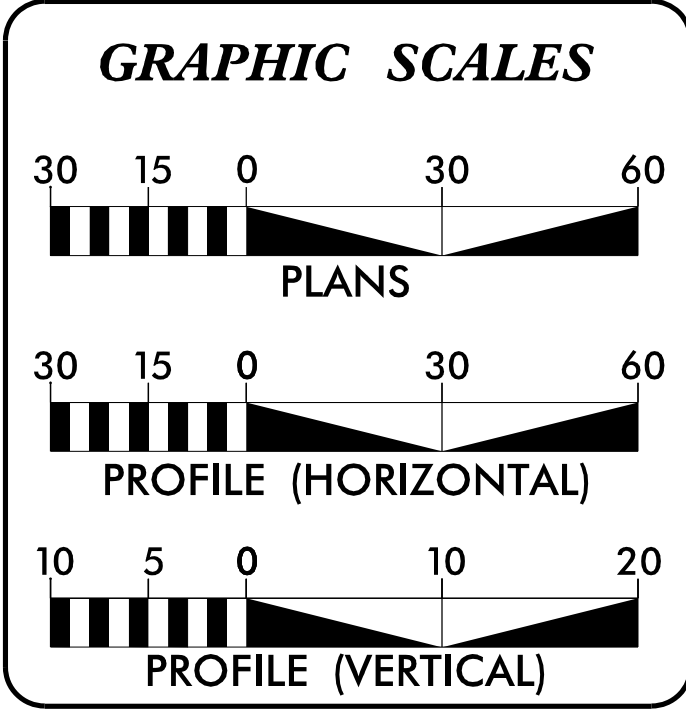
**LAWN FINISH**

ALL AREAS ADJACENT TO LAWNS MUST BE HAND FINISHED AS DIRECTED TO GIVE A LAWN TYPE APPEARANCE. REMOVE ALL TRASH, DEBRIS, AND STONES 3/4" AND LARGER IN DIAMETER OR OTHER OBSTRUCTIONS THAT COULD INTERFERE WITH PROVIDING A SMOOTH LAWN TYPE APPEARANCE. THESE AREAS SHALL BE RESEED TO MATCH THEIR ORIGINAL VEGETATIVE CONDITIONS, UNLESS DIRECTED OTHERWISE BY THE FIELD OPERATIONS ENGINEER.

**TEMPORARY SEEDING SCHEDULE (EAST)**

FERTILIZER SHALL BE THE SAME ANALYSIS AS SPECIFIED FOR SEEDING AND MULCHING AND APPLIED AT THE RATE OF 400 POUNDS AND SEEDED AT THE RATE OF 50 POUNDS PER ACRE. SWEET SUDAN GRASS, GERMAN MILLET, OR BROWNTOP MILLET SHALL BE USED IN SUMMER MONTHS AND 120 POUNDS PER ACRE OF RYE GRAIN DURING THE REMAINDER OF THE YEAR. THE ENGINEER WILL DETERMINE THE EXACT DATES FOR USING EACH KIND OF SEED. APPLY 4,000 POUNDS PER ACRE OF STRAW ANCHOR BY TACKING WITH ASPHALT (400 GALLONS PER ACRE), COMMERCIALY AVAILABLE TACKING SOLUTION (AT MANUFACTURER'S RATE), NETTING OR A MULCH ANCHORING TOOL.

**PROJECT: 16244 - HOMESTEAD ROAD**

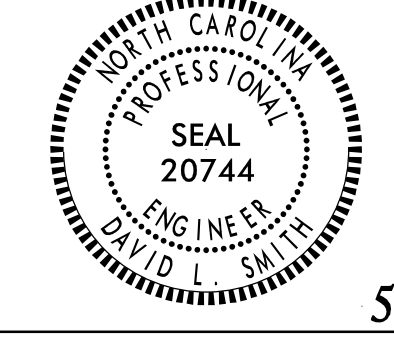


**DESIGN DATA**  
 ADT 2013 = 8,800  
 V = 40 MPH

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

SEE GENERAL PERMIT FOR REQUIREMENTS RELATED TO INSPECTIONS AND REPORTING

Prepared in the Office of:  
**RAMEY KEMP & ASSOCIATES**  
 5808 Faringdon Place, Ste. 100, Raleigh NC, 27609  
 2018 STANDARD SPECIFICATIONS



Designed by:  
**DAVID L. SMITH, P.E.**  
 NAME LEVEL III CERTIFICATION NO. 590

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01	Temporary Silt Fence	Spec.	Existing Inlet Protection
1606.01	Special Sediment Control Fence	Spec.	Concrete Washout
1607.01	Gravel Construction Entrance	Spec.	Wattle Barrier
1632.02	Rock Inlet Sediment Trap Type B	Spec.	Temporary Silt/Tree Protection Fence
1632.03	Rock Inlet Sediment Trap Type C		
1633.01	Matting Installation		
1635.02	Rock Pipe Inlet Sediment Trap Type B		



Town of  
*Chapel Hill*  
ENGINEERING AND DESIGN SERVICES

HOMESTEAD ROAD IMPROVEMENTS

NCDOT STANDARD DRAWINGS



REVISIONS


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SCALES

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V-SCALE - N/A

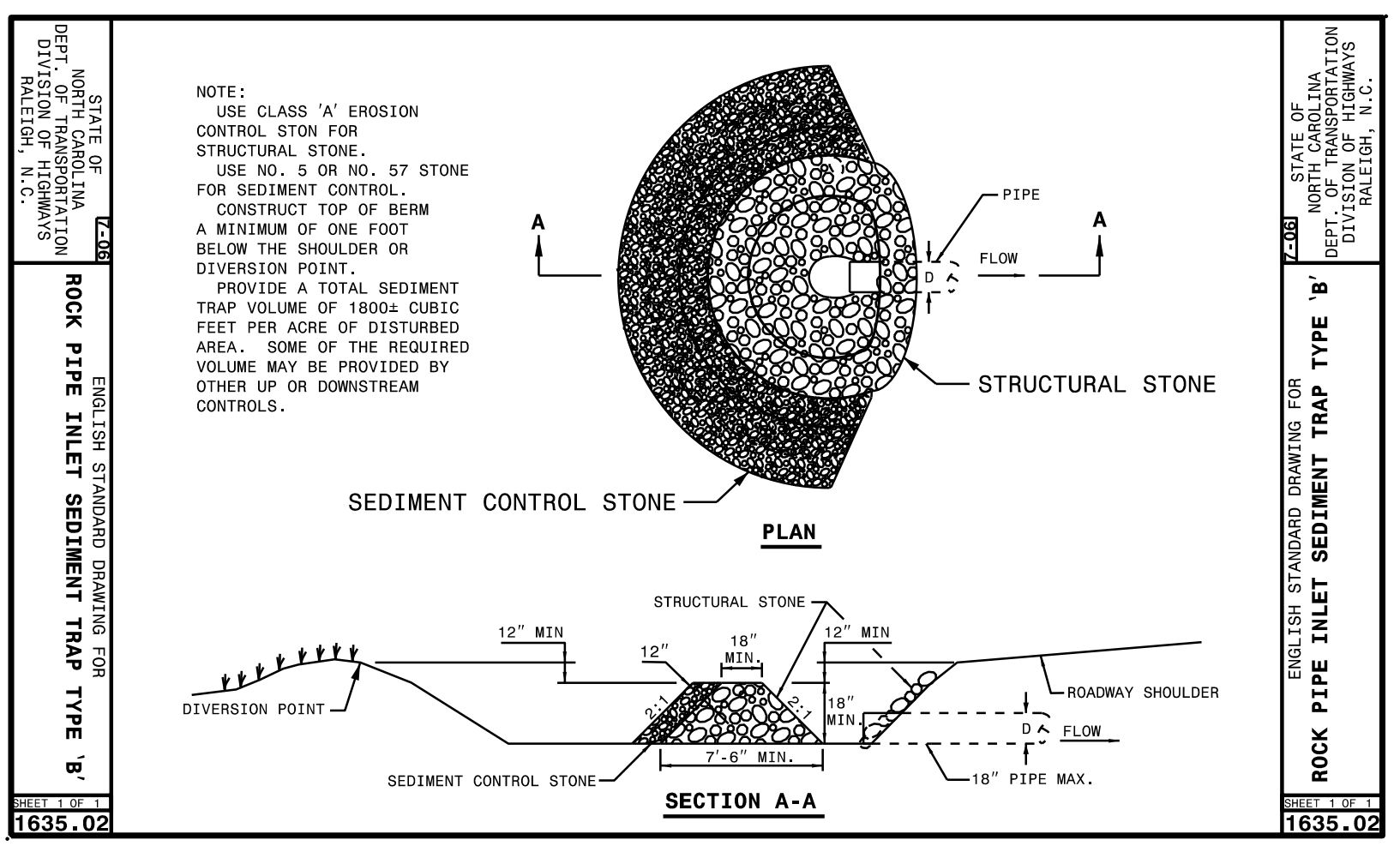
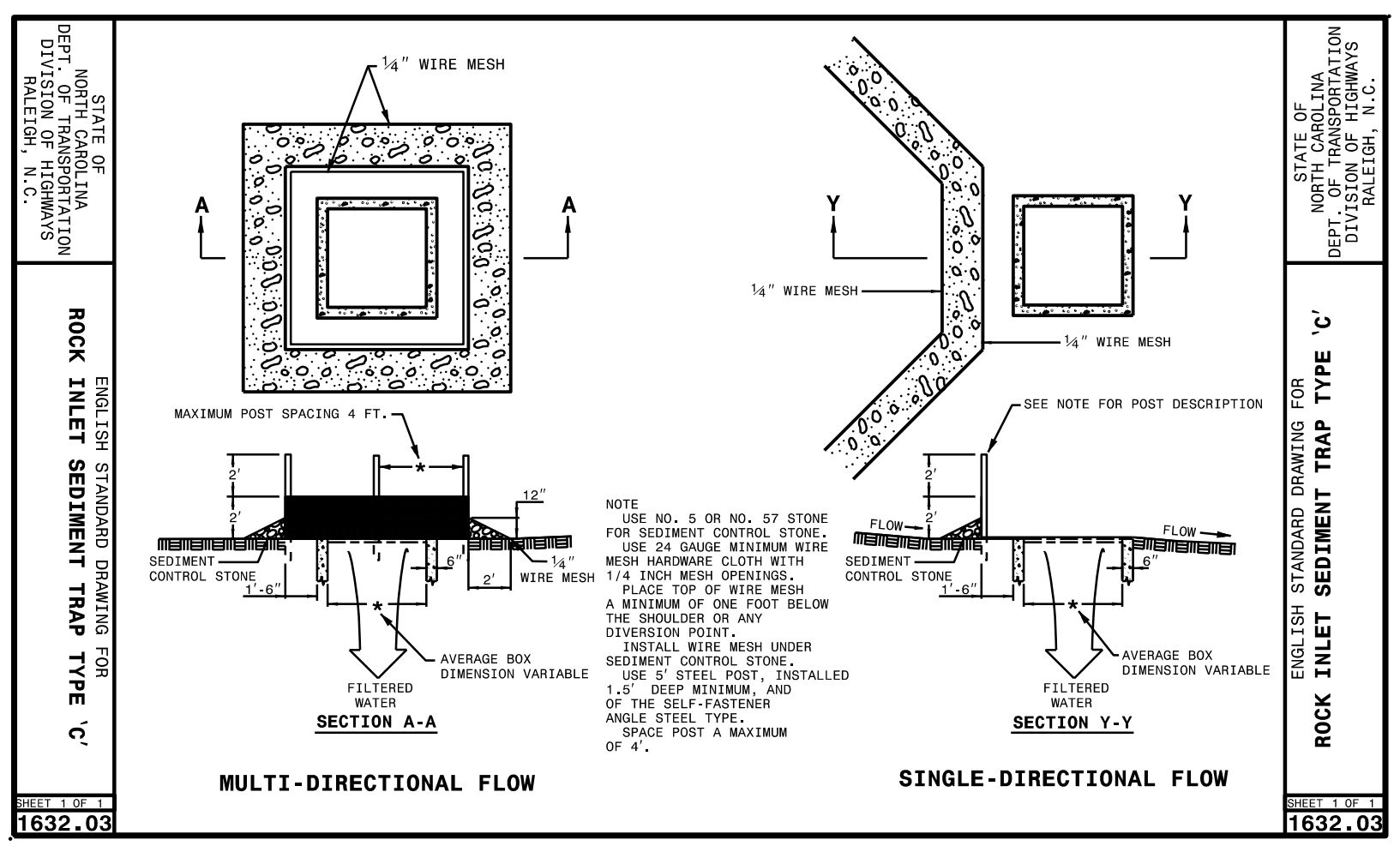
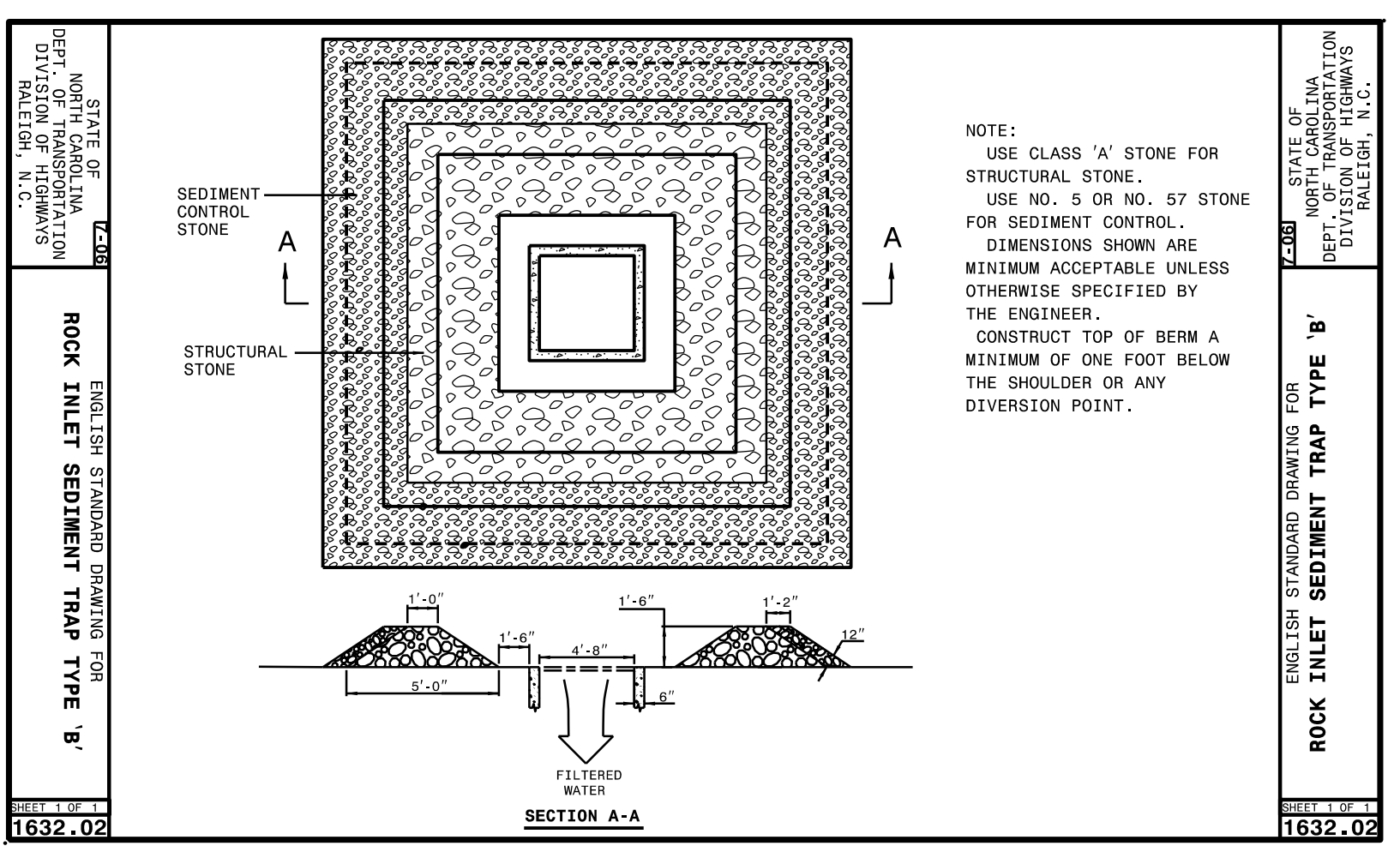
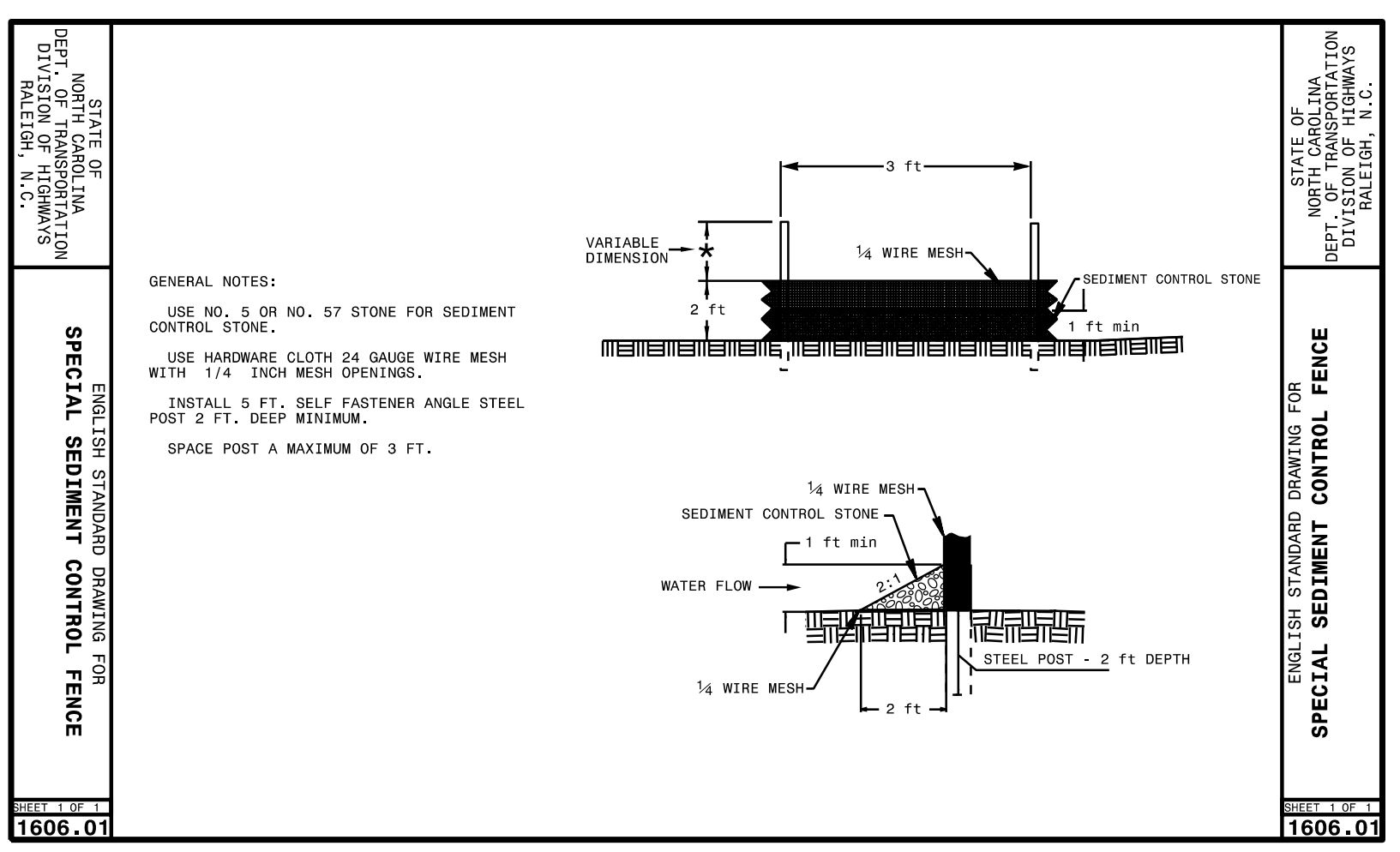
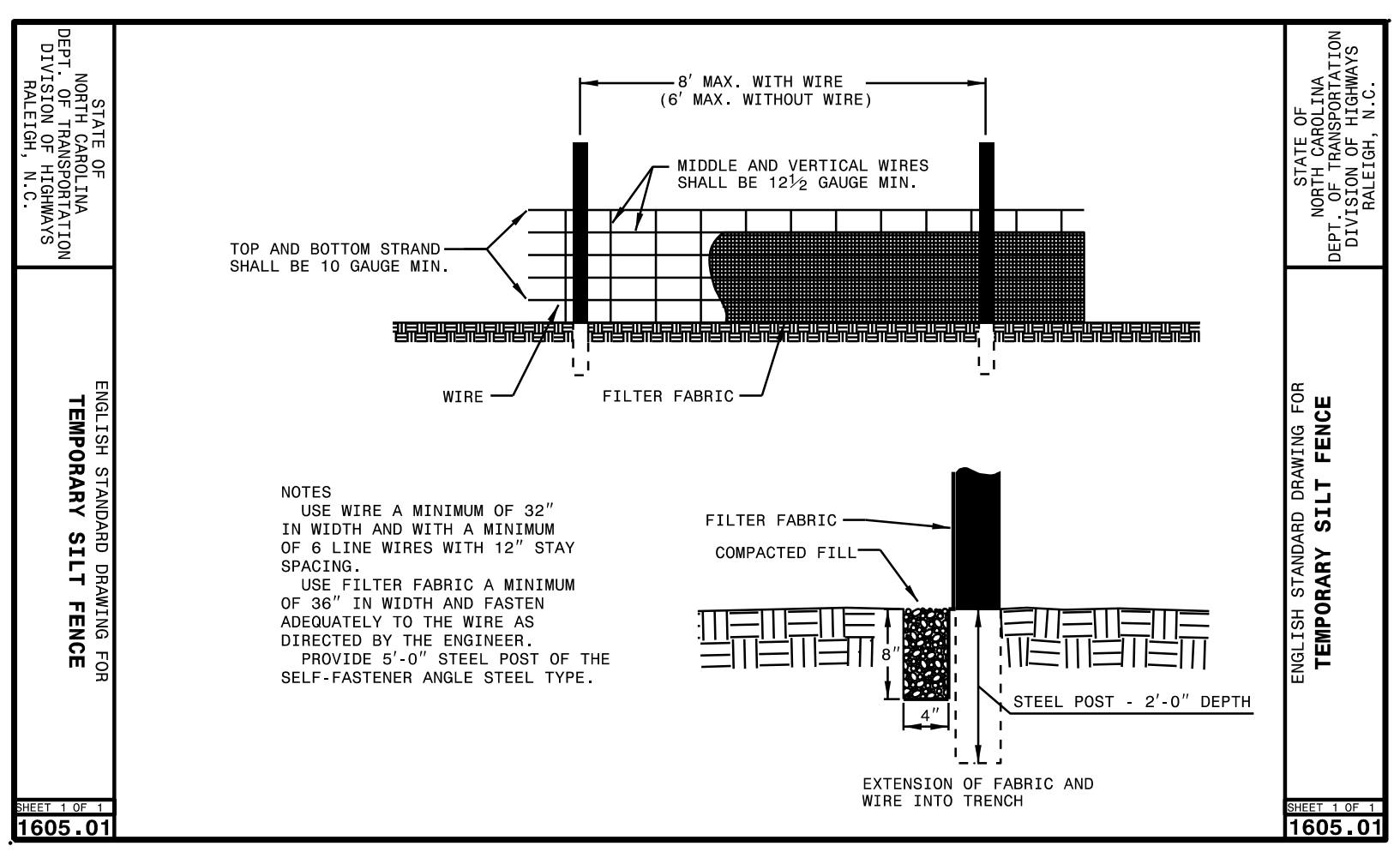
DATE: 11/07/18

DESIGNED BY: GSS

CHECKED BY: DLS

**RAMEY KEMP ASSOCIATES**  
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STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR  
**GUIDE FOR RIP RAP AT PIPE OUTLETS**

876.02

D	CLASS 'B' RIP RAP		CLASS 'C' RIP RAP		CLASS 'B' RIP RAP		CLASS 'C' RIP RAP	
	TONS	S.Y.	TONS	S.Y.	TONS	S.Y.	TONS	S.Y.
12"	2	15	1	5	1	5	2	6
15"	3	20	2	10	2	10	4	12
18"	5	35	3	15	3	15	7	21
24"	10	70	6	30	6	30	14	42
30"	16	110	10	45	10	45	22	66
36"	24	165	15	68	15	68	34	102
42"	34	225	21	95	21	95	47	141
48"	46	295	28	125	28	125	62	186
54"	60	375	37	160	37	160	81	243
60"	76	465	47	200	47	200	103	309
66"	94	565	58	245	58	245	127	381
72"	114	675	71	295	71	295	154	462
78"	136	795	86	350	86	350	184	552
84"	160	925	103	410	103	410	217	651
90"	186	1065	122	475	122	475	254	762
96"	214	1215	143	545	143	545	294	882
102"	244	1375	166	620	166	620	337	1011

MAINTENANCE NOTES

TEMPORARY SILT FENCE

INSPECT SEDIMENT FENCES 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.

SPECIAL SEDIMENT CONTROL FENCE

INSPECT THE DEVICE PERIODICALLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT FOR DAMAGE AND SEDIMENT ACCUMULATION TO CONFIRM THE DEVICE IS FUNCTIONING PROPERLY. AT A MINIMUM, REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL STONE. REPLACE OR CLEAN THE SEDIMENT CONTROL STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS. REBUILD AND/OR REPAIR THE DEVICE WHEN IT IS DAMAGED. REPAIR AREAS WHERE SSCF BECOMES UNDERMINED DUE TO CONCENTRATED FLOWS.

ROCK INLET SEDIMENT TRAP TYPE 'B' & 'C'

INSPECT THE DEVICE AFTER EACH SIGNIFICANT RAINFALL EVENT FOR DAMAGE, SEDIMENT ACCUMULATION AND PROPER FUNCTION. REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL STONE. REPLACE OR CLEAN THE SEDIMENT CONTROL STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS. REBUILD AND/OR REPAIR THE DEVICE WHEN IT IS DAMAGED. IF THE DEVICE IS TO REMAIN AFTER PROJECT COMPLETION, IT SHOULD BE CLEAN AND IN PROPER SHAPE AT THE TIME OF FINAL INSPECTION. IF IT IS REMOVED, ALL ACCUMULATED SILT SHOULD BE REMOVED TO KEEP IT FROM ENTERING THE DRAINAGE SYSTEM.

ROCK PIPE INLET PROTECTION

INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING. CHECK THE STRUCTURE FOR DAMAGE. ANY RIPRAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY. AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND PROVIDE PERMANENT GROUND COVER (SURFACE STABILIZATION).

RIE RAP AT PIPE OUTLETS

RIE RAP SHOULD BE INSPECTED PERIODICALLY FOR SCOUR OR DISLODGED STONES. CONTROL OF WEED AND BRUSH GROWTH MAY BE NEEDED IN SOME LOCATIONS.

MATTING

INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. GOOD CONTACT WITH THE GROUND MUST BE MAINTAINED, AND EROSION MUST NOT OCCUR BENEATH THE MATTING. ANY AREAS OF MATTING THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED. IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREA PROTECTED. MONITOR AND REPAIR THE MATTING AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.

11/7/2018  
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User: libelms



REVISIONS					

SCALES

H-SCALE - 1" = 30'

V-SCALE - N/A

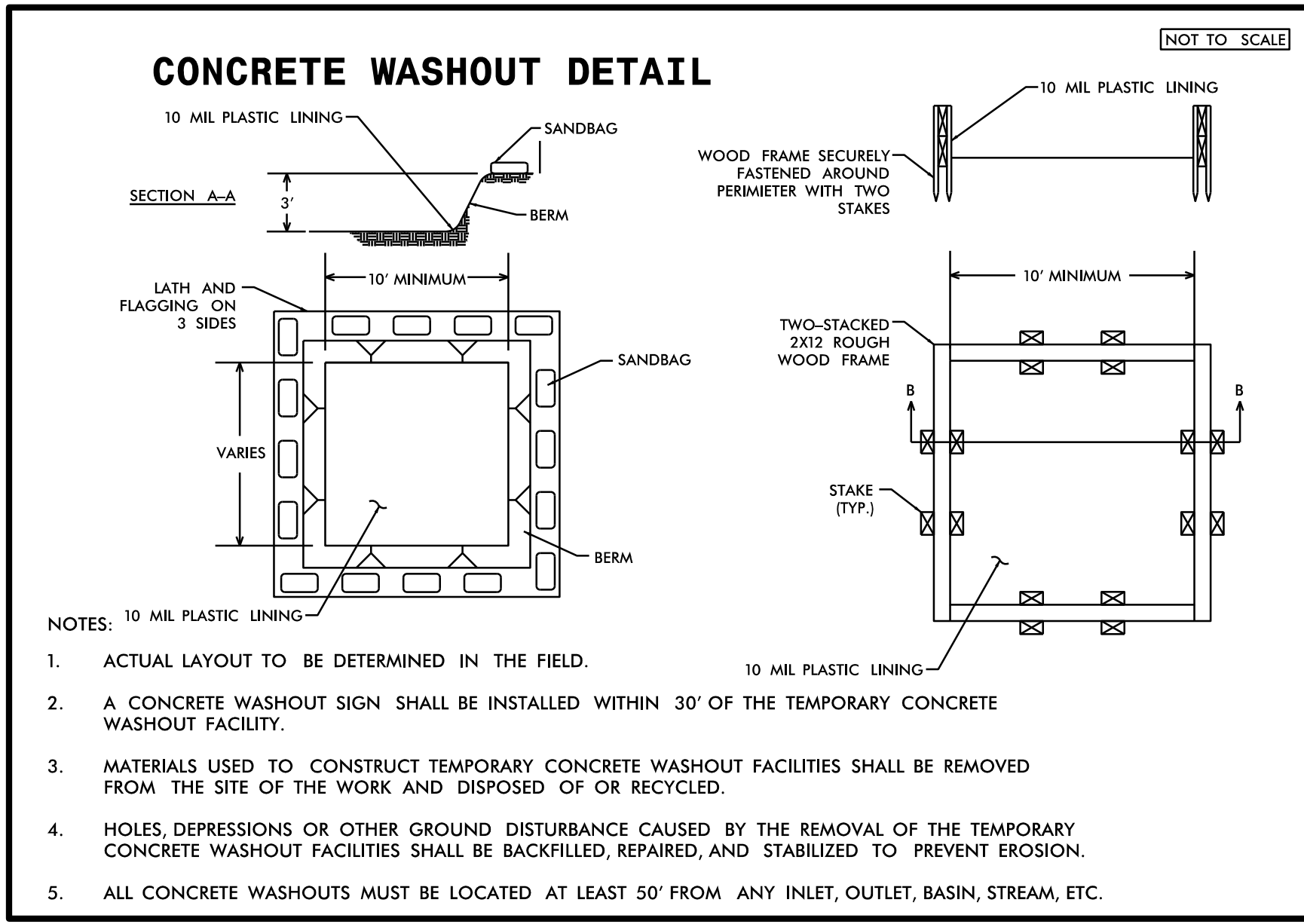
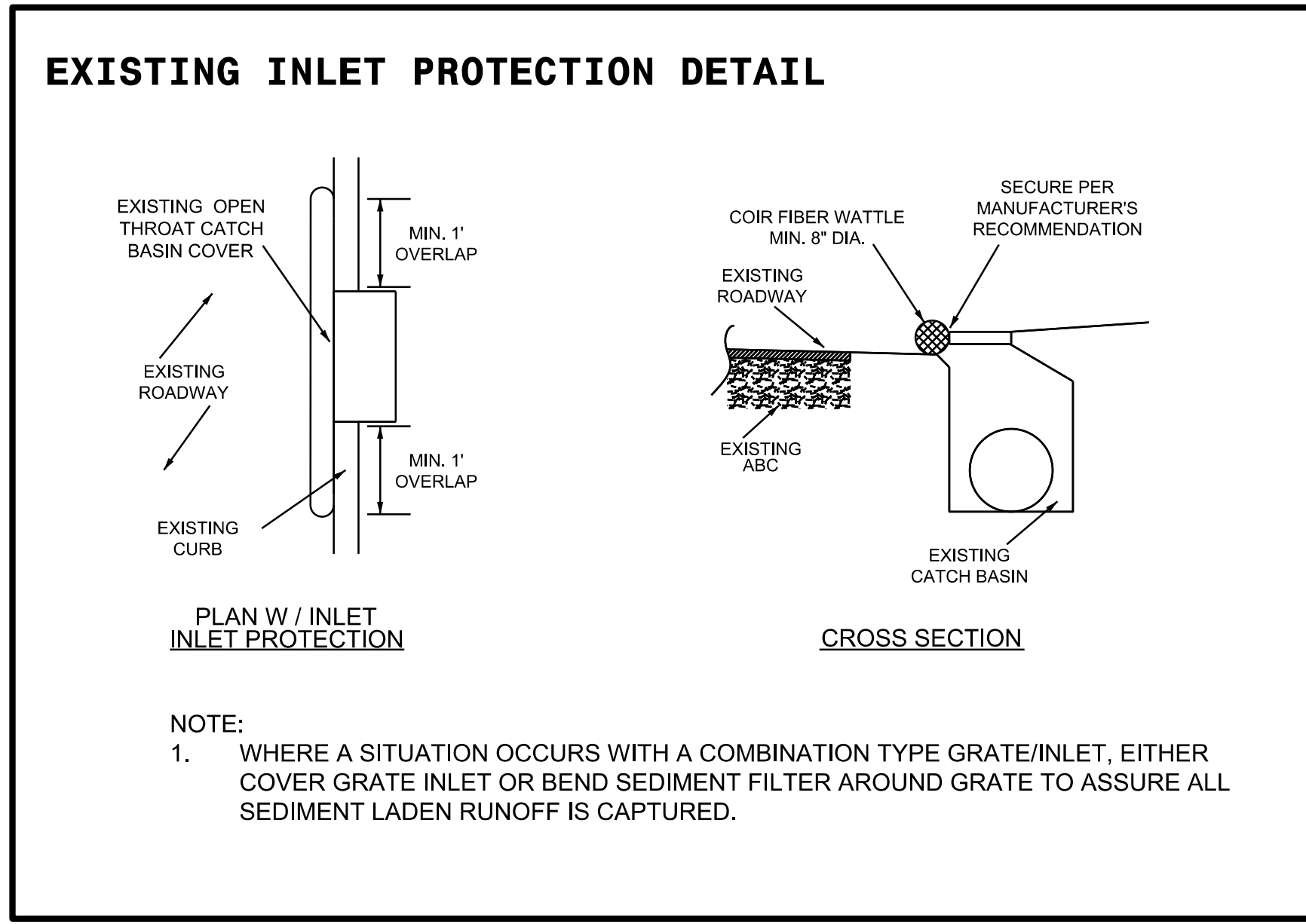
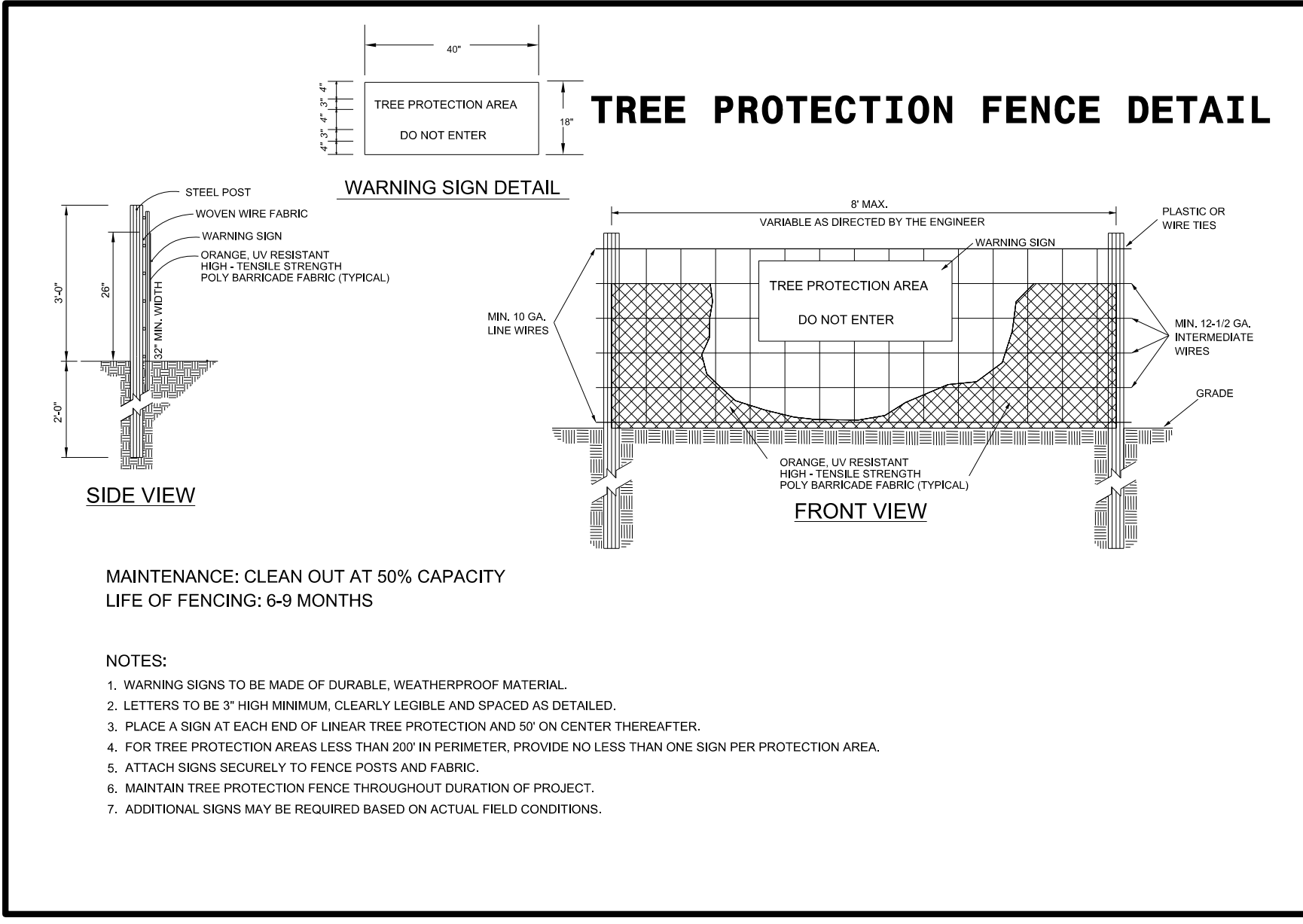
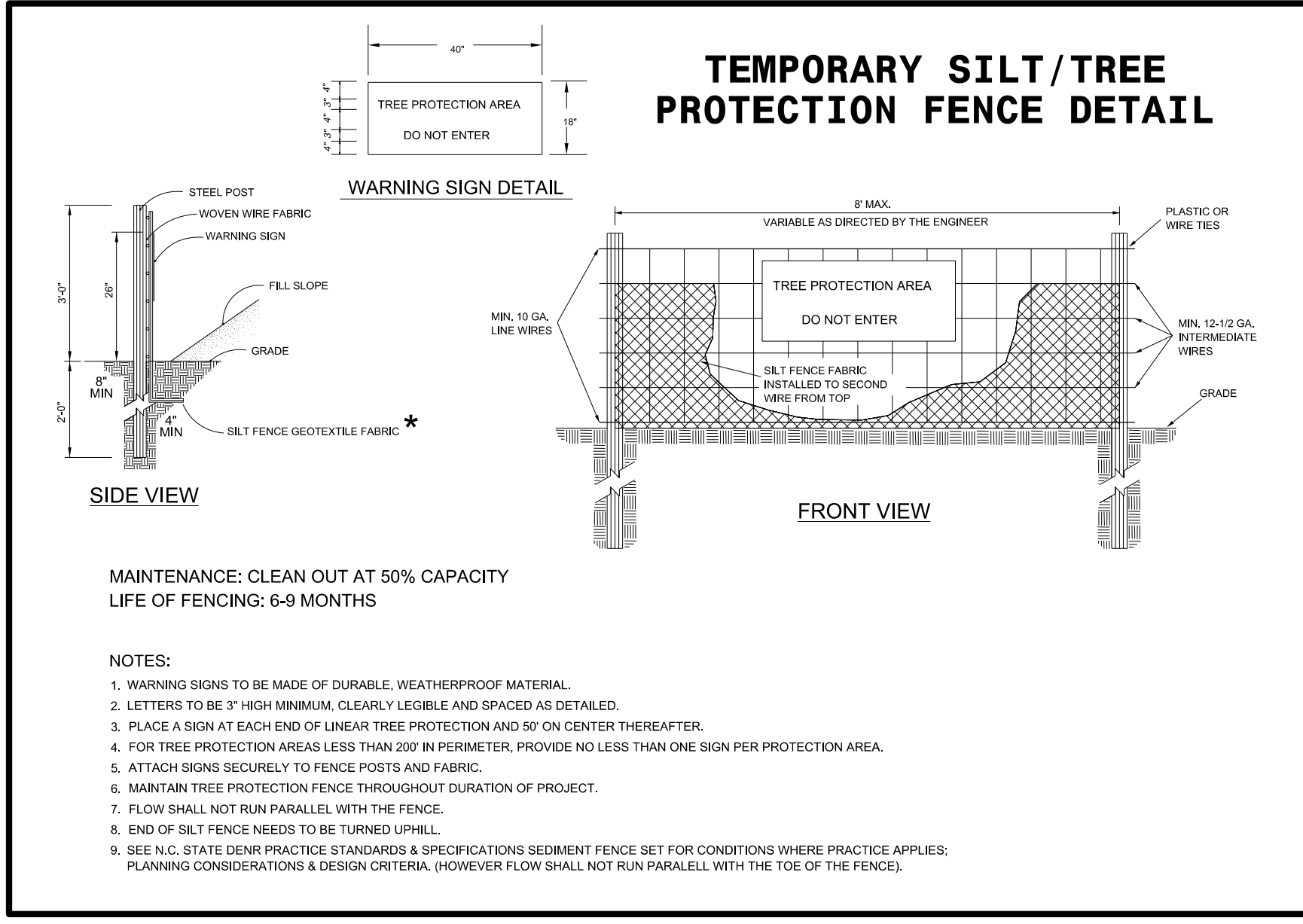
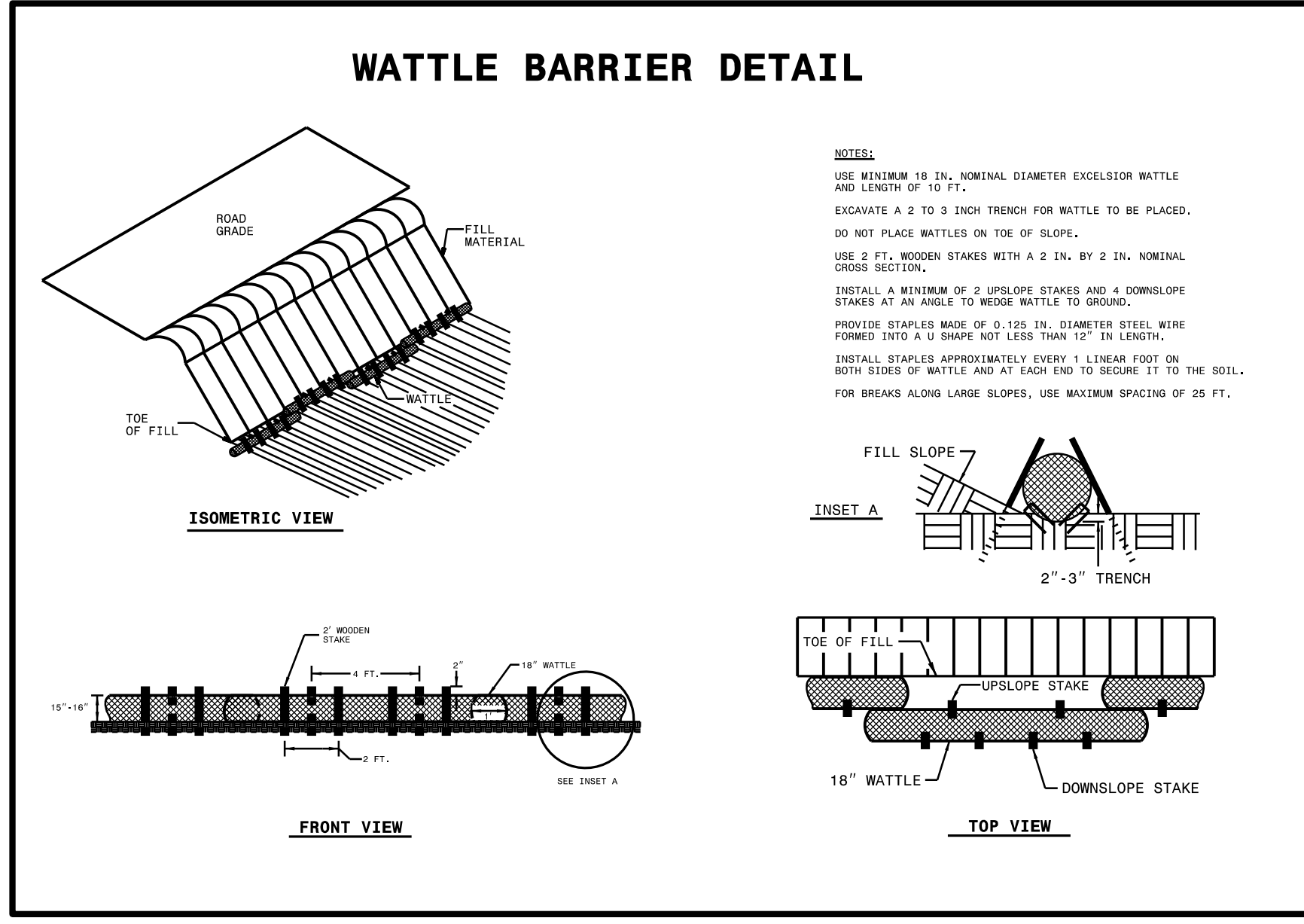
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DESIGNED BY: GSS

CHECKED BY: DLS



5808 Faringdon Place  
Suite 100  
Raleigh, North Carolina 27609  
Phone: (919) 872-5115  
Fax: (919) 878-5416  
www.rameykemp.com  
NC License No. C-0910



## MAINTENANCE NOTES

### TEMPORARY SILT FENCE

INSPECT THE SILT FENCE ON A REGULAR BASIS AND AFTER EACH SIGNIFICANT RAINFALL MAKE ANY REPAIRS IMMEDIATELY. INSPECT THE SILT FENCE TO BE SURE THE BOTTOM OF THE GEOTEXTILE IS KEPT IN PROPERLY. AT A MINIMUM, REMOVE AND DISPOSE OF ALL SILT ACCUMULATIONS WHEN DEPTH REACHES 1/2 THE HEIGHT OF THE GEOTEXTILE. DO NOT UNDERMINE THE FENCE DURING CLEANOUT. DISPOSE OF SEDIMENT BY HAULING IT TO AN APPROVED WASTE SITE WITH APPROPRIATE PERIMETER PROTECTION. REMOVE AND REPLACE DETERIORATED OR CLOGGED SILT FENCE. REPLACE SILT FENCE REMOVED FOR ACCESS AT THE END OF EACH DAY'S OPERATION. INSTALL ADDITIONAL POSTS OR WIRE BACKING IF FENCE IS SAGGING.

### WATTLE BARRIER

IT IS IMPORTANT THAT THE WATTLE BARRIERS BE KEPT CLEAN TO ALLOW WATER TO FLOW THROUGH THE NATURAL FIBERS. THE WATTLE BARRIERS CAN BECOME BLOCKED WITH DEBRIS, SEDIMENT, STRAW AND OTHER ITEMS. THE UP GRADIENT SIDE OF THE WATTLE BARRIER SHOULD BE MAINTAINED TO ALLOW THE WATER TO FLOW THROUGH, REDUCE VELOCITY AND ALLOW SEDIMENTATION TO OCCUR. IF THE NATURAL FIBERS OF THE WATTLE BARRIER BECOME TOO SATURATED WITH DEBRIS, SEDIMENT, ETC., AND REMOVAL OF THESE ITEMS IS NOT POSSIBLE, WATTLE BARRIERS SHOULD BE REPLACED. STAKES SHOULD BE USED TO ANCHOR THE WATTLE BARRIER ADEQUATELY TO THE GROUND TO PREVENT SCOURING AND WASHOUT DURING STORM EVENTS.

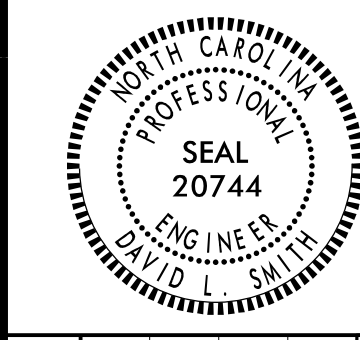
### CONCRETE WASHOUT

REGULARLY INSPECT THE PERIMETER BARRIER FOR DAMAGE BUT WEEKLY AS A MINIMUM. REPLACE SANDBAG ACHORS OR WOOD FRAME IF DAMAGED. REPLACE PLASTIC LINING IF DAMAGED AND NO LONGER WATERTIGHT. REMOVE CONCRETE AND REPAIR ANY DAMAGE TO LINER OR FRAME WHEN VOLUME HAS BEEN REDUCED BY HALF OF THE ORIGINAL VOLUME.





Town of  
*Chapel Hill*  
ENGINEERING AND DESIGN SERVICES  
HOMESTEAD ROAD IMPROVEMENTS  
EROSION CONTROL PLAN



REVISIONS

NO.	DATE	DESCRIPTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SCALES

H-SCALE - 1" = 30'
V-SCALE - N/A
DATE: 11/07/18
DESIGNED BY: KMW
CHECKED BY: LSH

**RAMEY KEMP ASSOCIATES**  
TRANSPORTATION ENGINEERS  
5808 Faringdon Place  
Suite 100  
Raleigh, North Carolina 27609  
Phone: (919) 872-5115  
Fax: (919) 878-5416  
www.rameykemp.com  
NC License No. C-0910

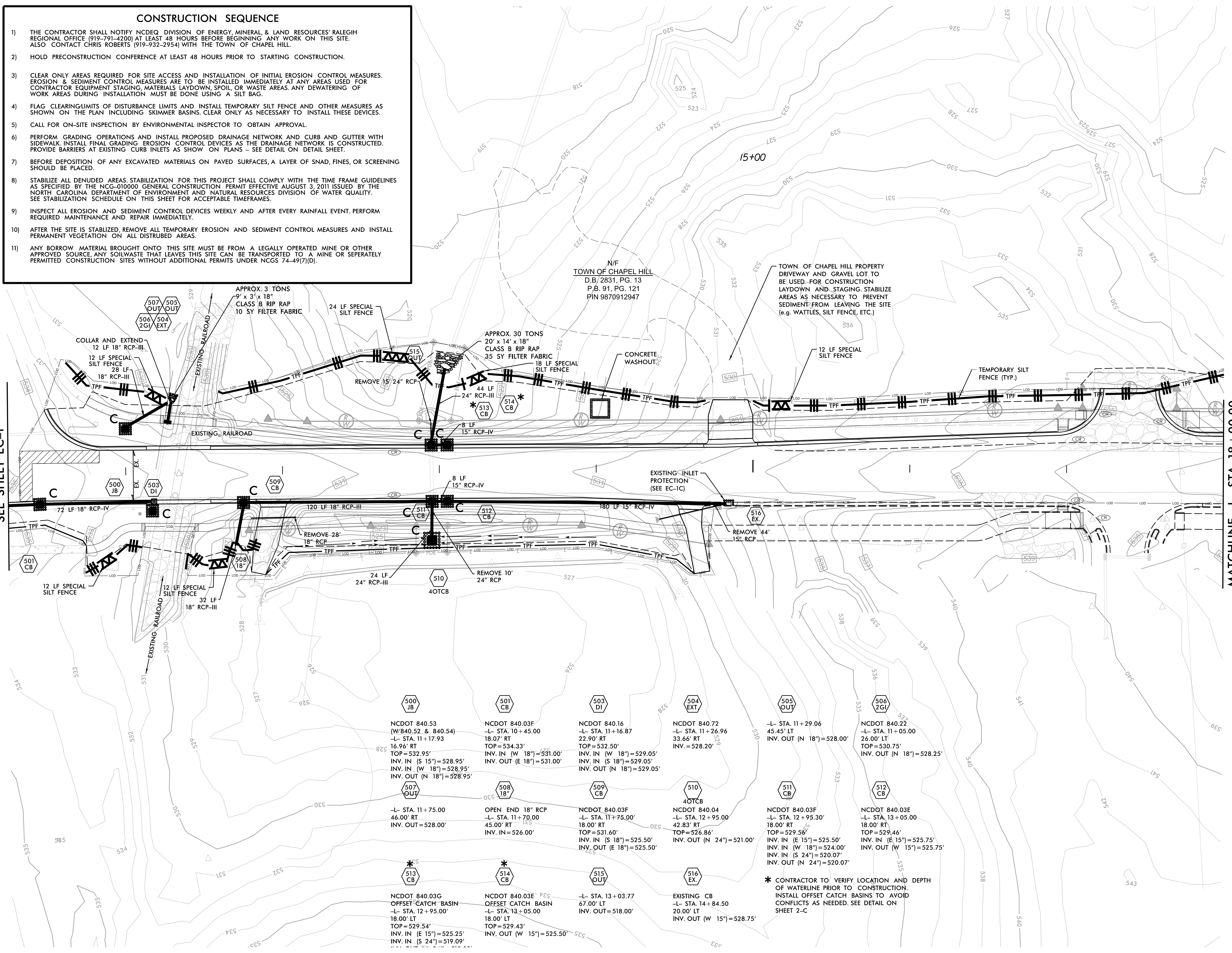
**CONSTRUCTION SEQUENCE**

- 1) THE CONTRACTOR SHALL NOTIFY NCDEQ DIVISION OF ENERGY, MINERAL, & LAND RESOURCES' RALEIGH REGIONAL OFFICE (919-791-4200) AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK ON THIS SITE. ALSO CONTACT CHRIS ROBERTS (919-932-2954) WITH THE TOWN OF CHAPEL HILL.
- 2) HOLD PRECONSTRUCTION CONFERENCE AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION.
- 3) CLEAR ONLY AREAS REQUIRED FOR SITE ACCESS AND INSTALLATION OF INITIAL EROSION CONTROL MEASURES. EROSION & SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED IMMEDIATELY AT ANY AREAS USED FOR CONTRACTOR EQUIPMENT STAGING, MATERIALS LAYDOWN, SPOIL, OR WASTE AREAS. ANY DEWATERING OF WORK AREAS DURING INSTALLATION MUST BE DONE USING A SILT BAG.
- 4) FLAG CLEARING LIMITS OF DISTURBANCE LIMITS AND INSTALL TEMPORARY SILT FENCE AND OTHER MEASURES AS SHOWN ON THE PLAN INCLUDING SKIMMER BASINS. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES.
- 5) CALL FOR ON-SITE INSPECTION BY ENVIRONMENTAL INSPECTOR TO OBTAIN APPROVAL.
- 6) PERFORM GRADING OPERATIONS AND INSTALL PROPOSED DRAINAGE NETWORK AND CURB AND GUTTER WITH SIDEWALK. INSTALL FINAL GRADING EROSION CONTROL DEVICES AS THE DRAINAGE NETWORK IS CONSTRUCTED. PROVIDE BARRIERS AT EXISTING CURB INLETS AS SHOWN ON PLANS - SEE DETAIL ON DETAIL SHEET.
- 7) BEFORE DEPOSITION OF ANY EXCAVATED MATERIALS ON PAVED SURFACES, A LAYER OF SNAD, FINES, OR SCREENING SHOULD BE PLACED.
- 8) STABILIZE ALL DENUDEED AREAS. STABILIZATION FOR THIS PROJECT SHALL COMPLY WITH THE TIME FRAME GUIDELINES AS SPECIFIED BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY. SEE STABILIZATION SCHEDULE ON THIS SHEET FOR ACCEPTABLE TIMEFRAMES.
- 9) INSPECT ALL EROSION AND SEDIMENT CONTROL DEVICES WEEKLY AND AFTER EVERY RAINFALL EVENT. PERFORM REQUIRED MAINTENANCE AND REPAIR IMMEDIATELY.
- 10) AFTER THE SITE IS STABILIZED, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND INSTALL PERMANENT VEGETATION ON ALL DISTURBED AREAS.
- 11) ANY BORROW MATERIAL BROUGHT ONTO THIS SITE MUST BE FROM A LEGALLY OPERATED MINE OR OTHER APPROVED SOURCE. ANY SOILWASTE THAT LEAVES THIS SITE CAN BE TRANSPORTED TO A MINE OR SEPARATELY PERMITTED CONSTRUCTION SITES WITHOUT ADDITIONAL PERMITS UNDER NCGS 74-49(7)(D).

NAD 83/2011

MATCHLINE -L- STA. 10 + 25.00  
SEE SHEET EC-1

MATCHLINE -L- STA. 18 + 00.00  
SEE SHEET EC-3



<p>NCDOT 840.53 (W/840.52 &amp; 840.54) -L- STA. 11 + 17.93 16.96' RT TOP = 532.95' INV. IN (S 15') = 528.95' INV. IN (W 18') = 528.95' INV. OUT (N 18') = 528.95'</p>	<p>NCDOT 840.03F -L- STA. 10 + 45.00 18.00' RT TOP = 534.33' INV. IN (W 18') = 531.00' INV. OUT (E 18') = 531.00'</p>	<p>NCDOT 840.16 -L- STA. 11 + 16.87 22.90' RT TOP = 532.50' INV. IN (W 18') = 529.05' INV. IN (S 18') = 529.05' INV. OUT (N 18') = 529.05'</p>	<p>NCDOT 840.72 -L- STA. 11 + 26.96 33.66' RT INV. = 528.20'</p>	<p>-L- STA. 11 + 29.06 45.45' LT INV. OUT (N 18') = 528.00'</p>	<p>NCDOT 840.22 -L- STA. 11 + 05.00 26.00' LT TOP = 530.75' INV. OUT (N 18') = 528.25'</p>
<p>-L- STA. 11 + 75.00 46.00' RT INV. OUT = 528.00'</p>	<p>OPEN END 18" RCP -L- STA. 11 + 70.00 45.00' RT INV. IN = 526.00'</p>	<p>NCDOT 840.03F -L- STA. 11 + 75.00 18.00' RT TOP = 531.60' INV. IN (S 18') = 525.50' INV. OUT (E 18') = 525.50'</p>	<p>NCDOT 840.04 -L- STA. 12 + 95.00 42.83' RT TOP = 526.86' INV. OUT (N 24') = 521.00'</p>	<p>NCDOT 840.03F -L- STA. 12 + 95.30 18.00' RT TOP = 529.56' INV. IN (E 15') = 525.50' INV. IN (W 18') = 524.00' INV. IN (S 24') = 520.07' INV. OUT (N 24') = 520.07'</p>	<p>NCDOT 840.03E -L- STA. 13 + 05.00 18.00' RT TOP = 529.46' INV. IN (E 15') = 525.75' INV. OUT (W 15') = 525.75'</p>
<p>NCDOT 840.03G OFFSET CATCH BASIN -L- STA. 12 + 95.00' 18.00' LT TOP = 529.54' INV. IN (E 15') = 525.25' INV. IN (S 24') = 519.09'</p>	<p>NCDOT 840.03E OFFSET CATCH BASIN -L- STA. 13 + 05.00 18.00' LT TOP = 529.43' INV. OUT (W 15') = 525.50'</p>	<p>-L- STA. 13 + 03.77 67.00' LT INV. OUT = 518.00'</p>	<p>EXISTING CB -L- STA. 14 + 84.50 20.00' LT INV. OUT (W 15') = 528.75'</p>	<p>* CONTRACTOR TO VERIFY LOCATION AND DEPTH OF WATERLINE PRIOR TO CONSTRUCTION. INSTALL OFFSET CATCH BASINS TO AVOID CONFLICTS AS NEEDED. SEE DETAIL ON SHEET 2-C</p>	

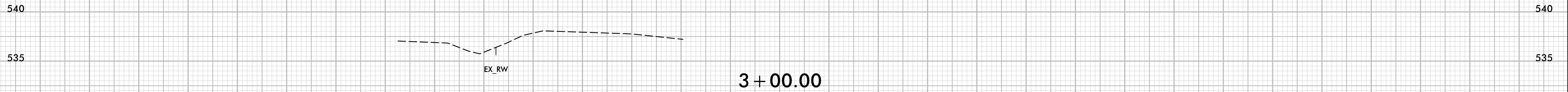
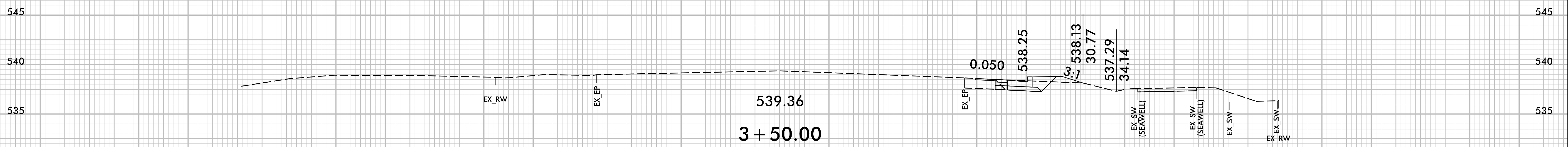
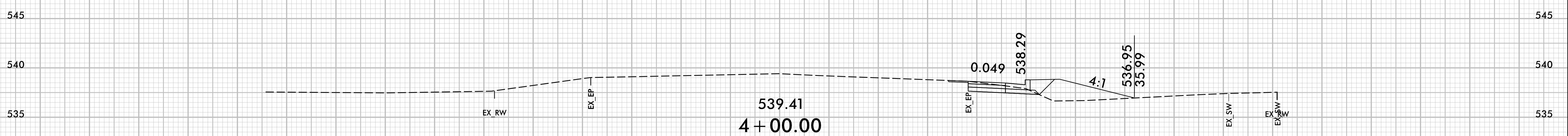
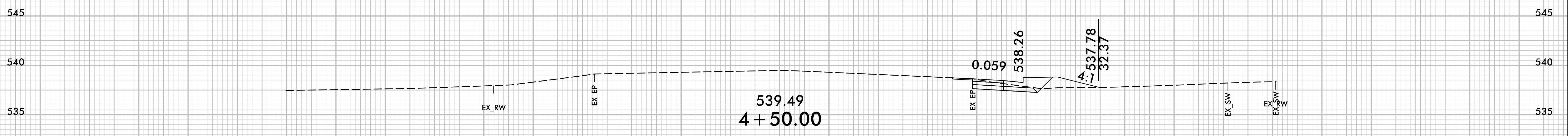


6/23/16



PROJ. REFERENCE NO.	SHEET NO.
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-L- (Homestead Road)

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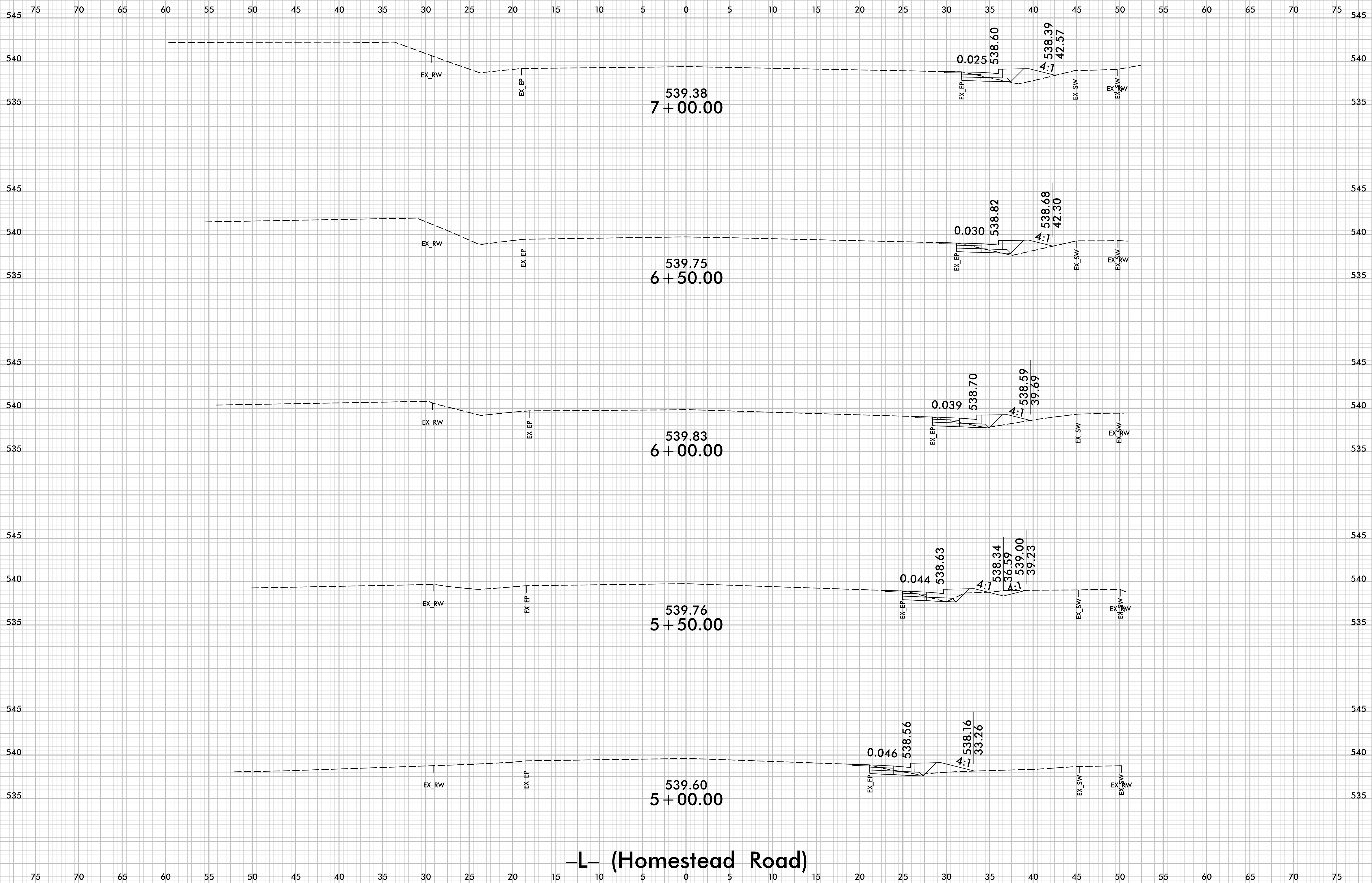
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6/23/16



PROJ. REFERENCE NO.  
16244

SHEET NO.  
X-2



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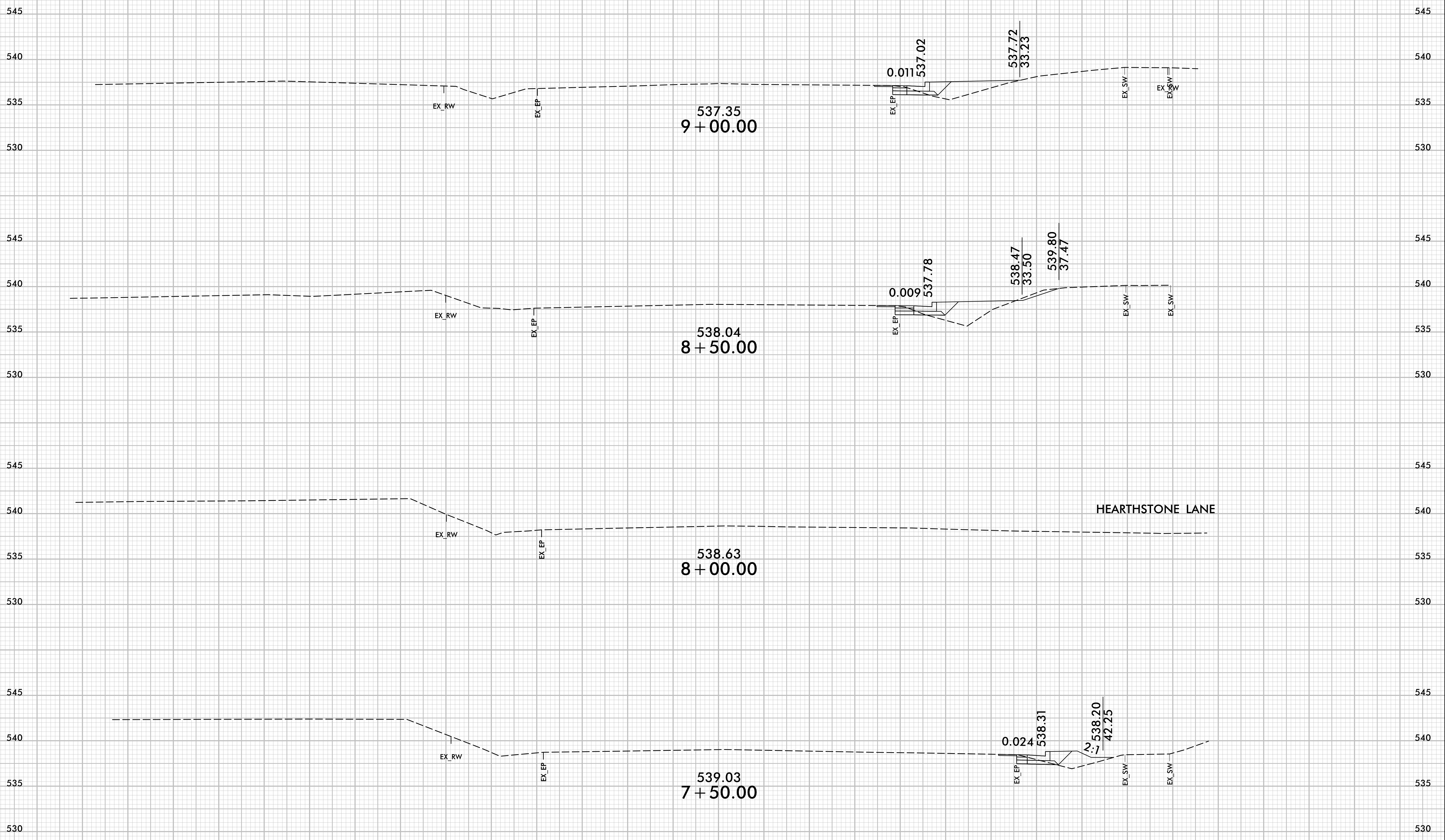


6/22/16



PROJ. REFERENCE NO.	SHEET NO.
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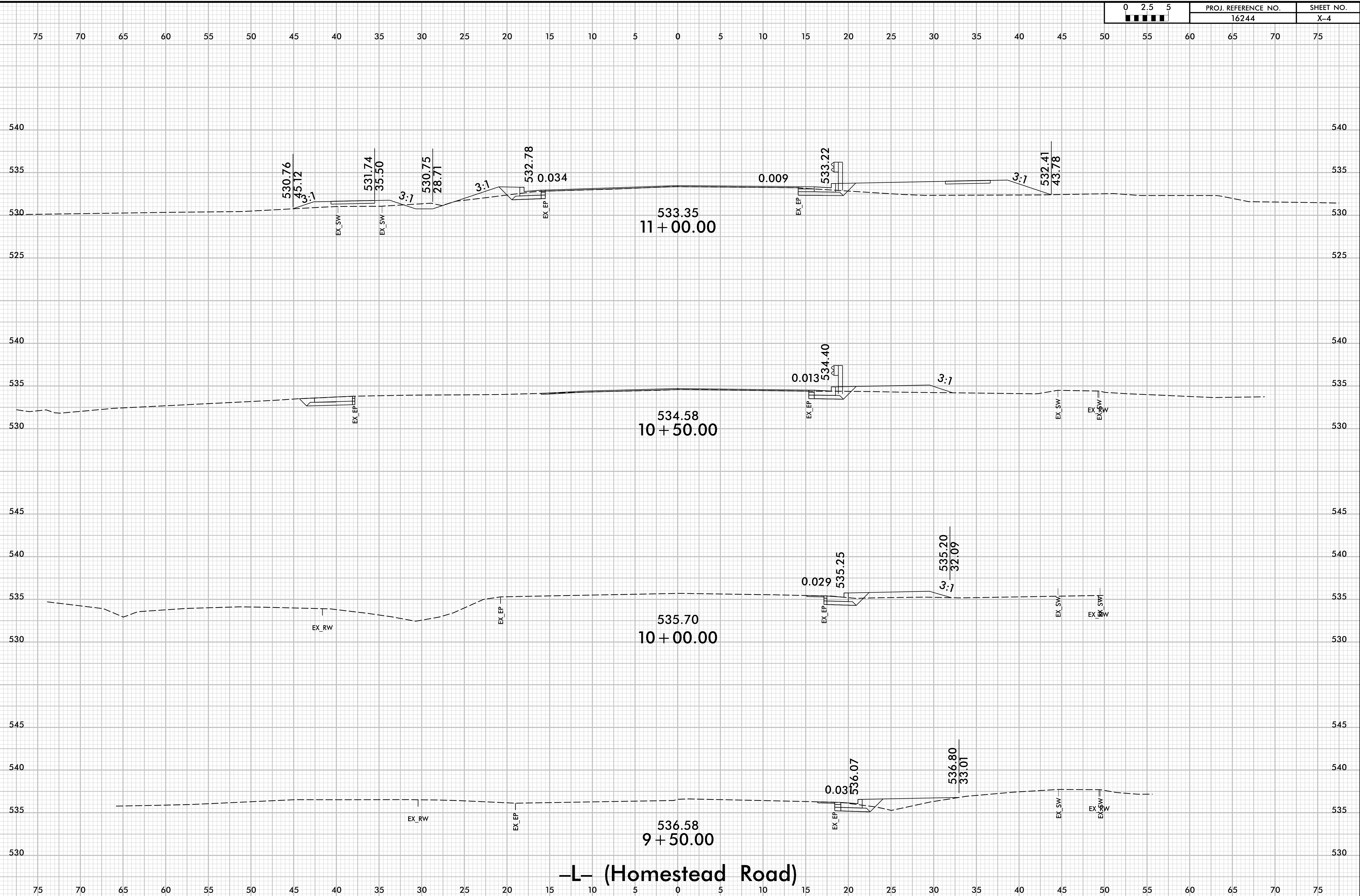
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-L- (Homestead Road)

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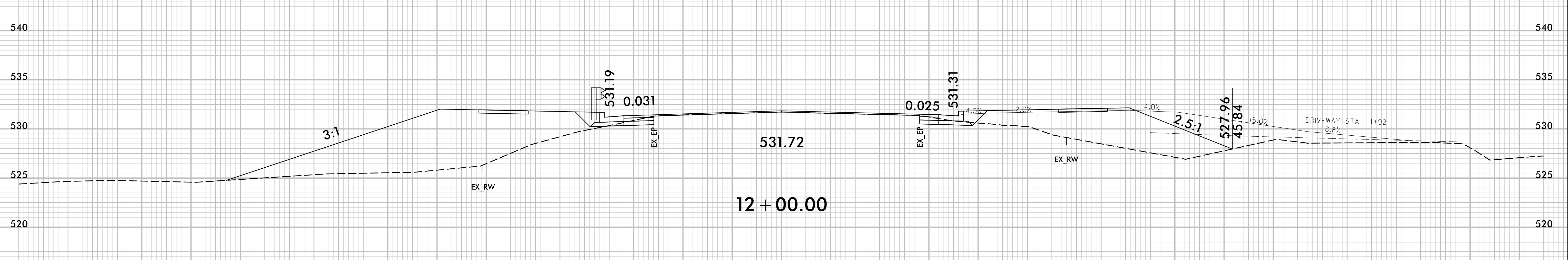
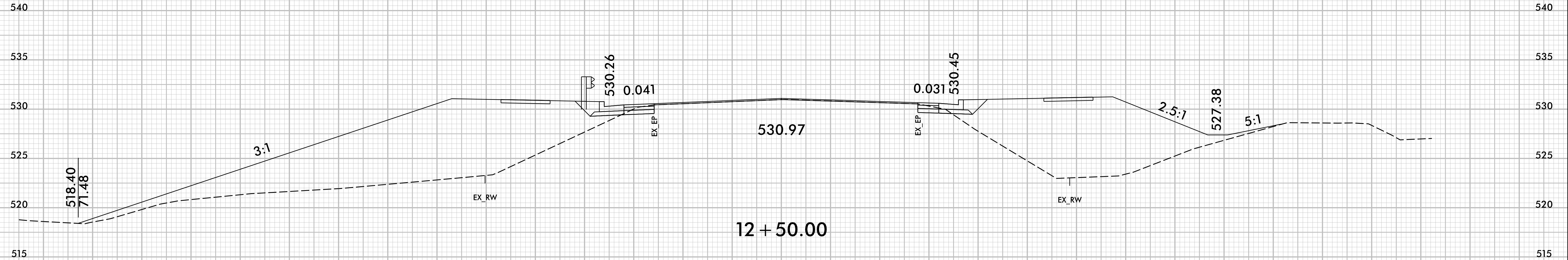
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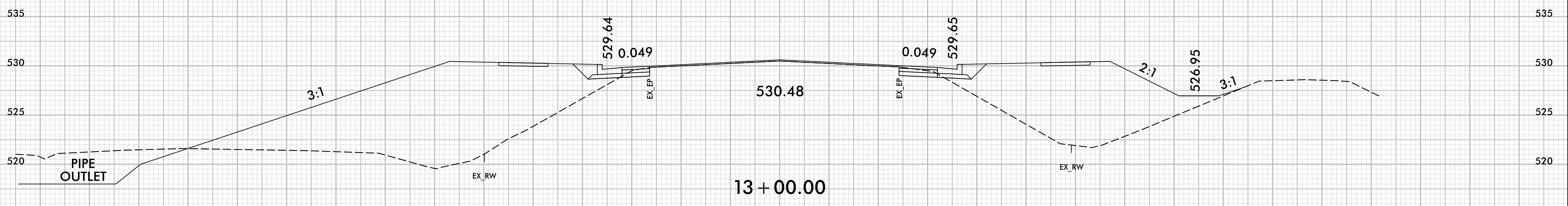
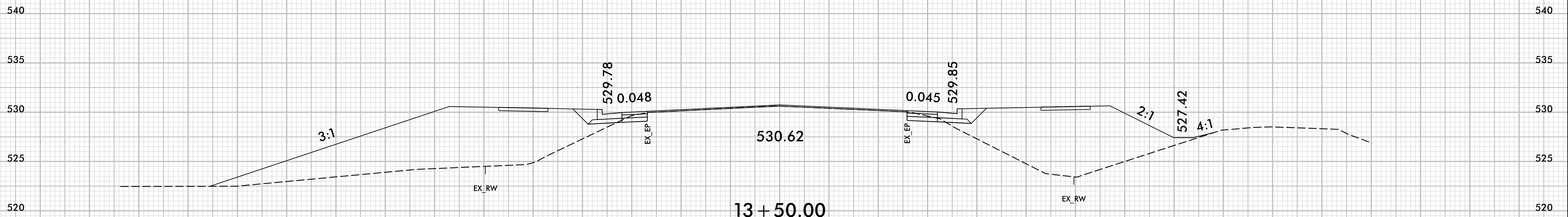
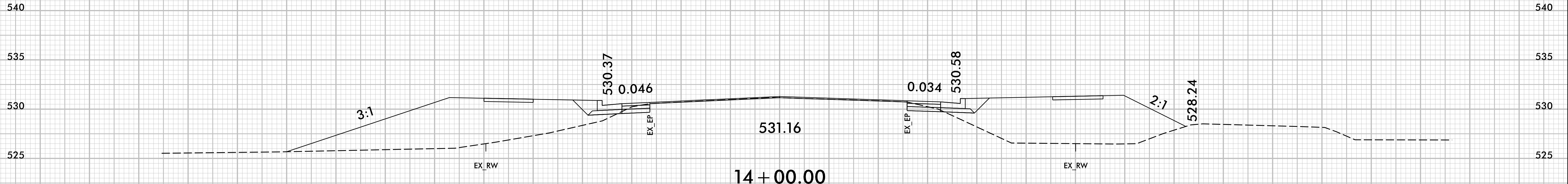
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-L- (Homestead Road)

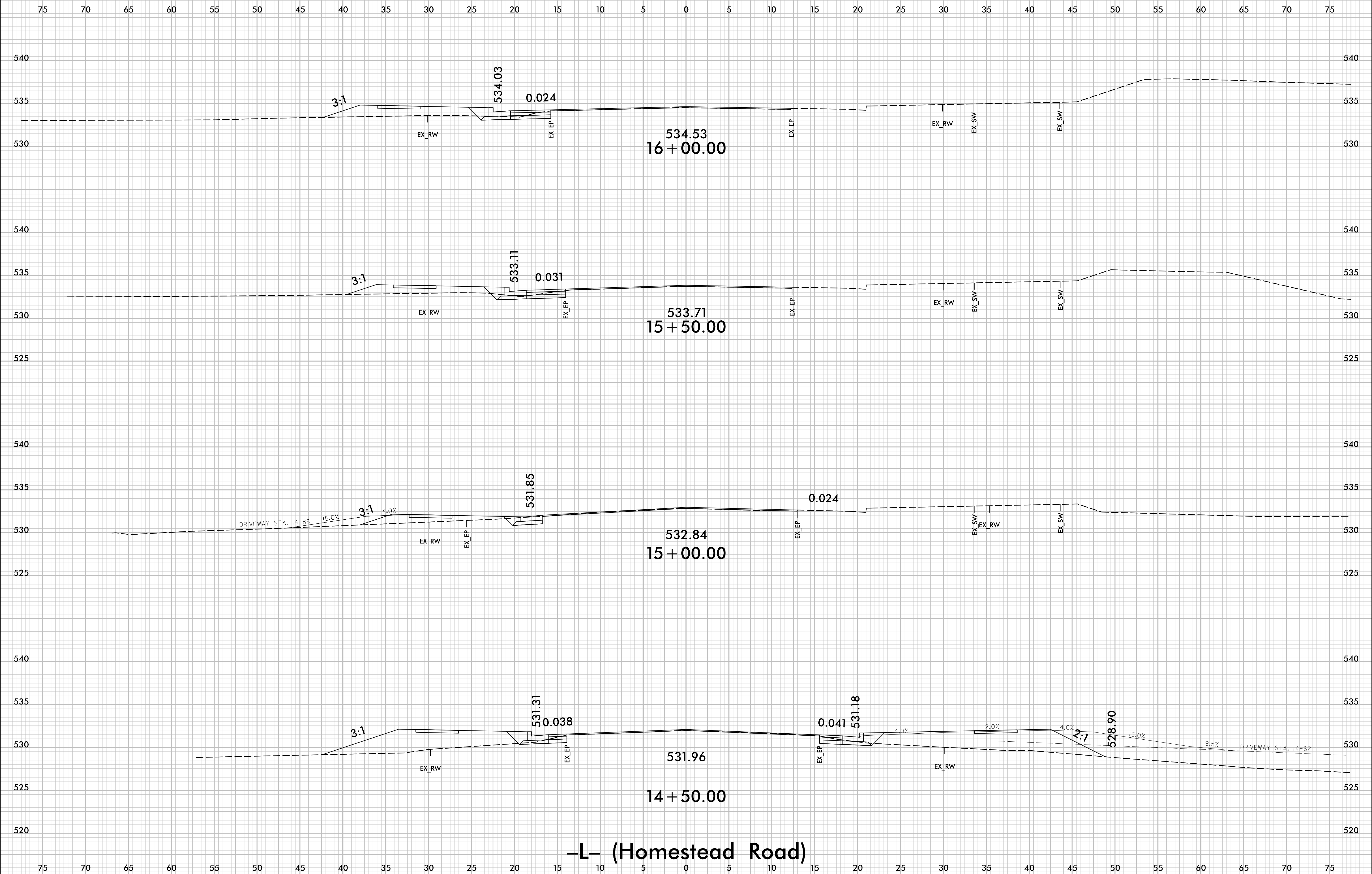
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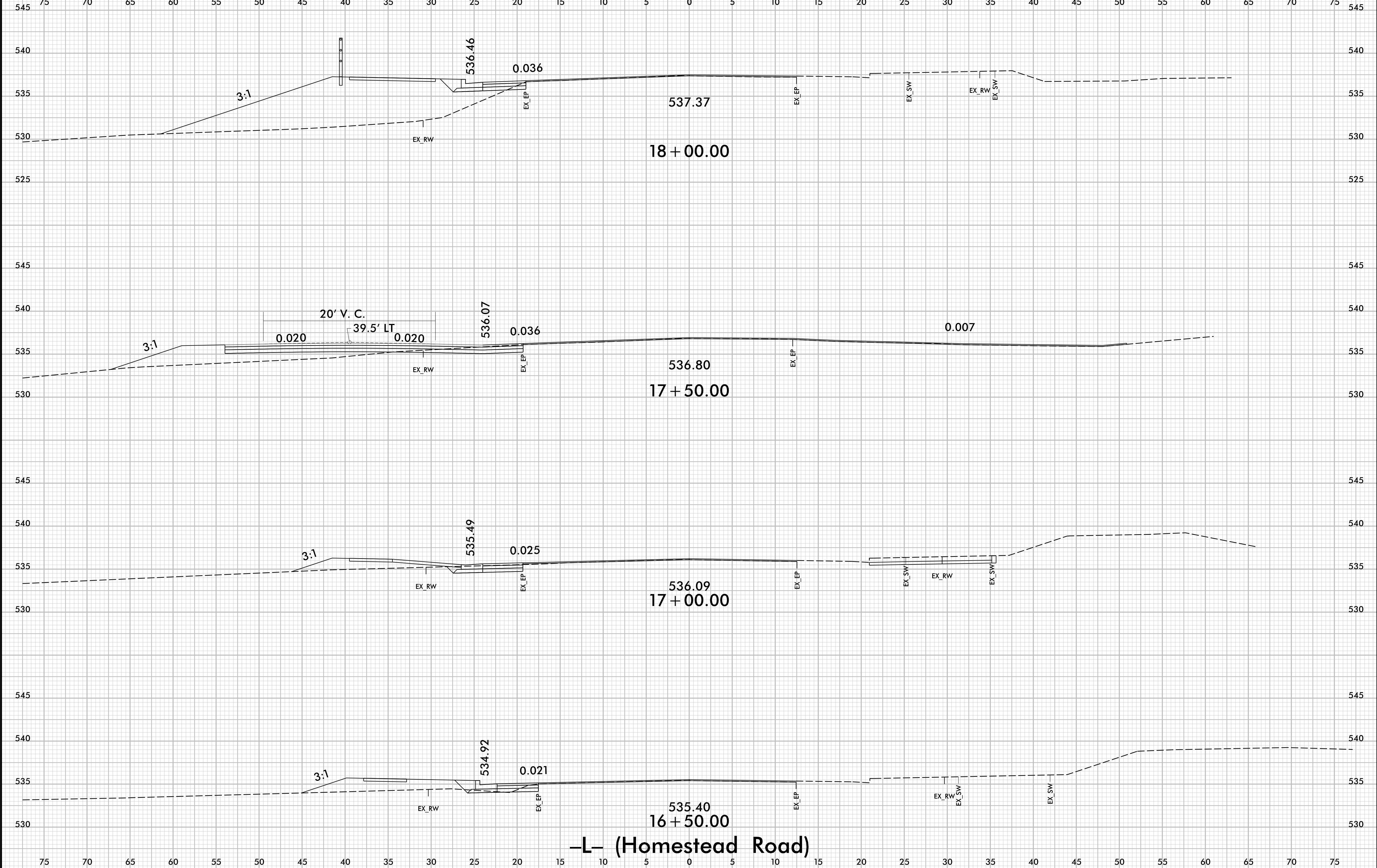
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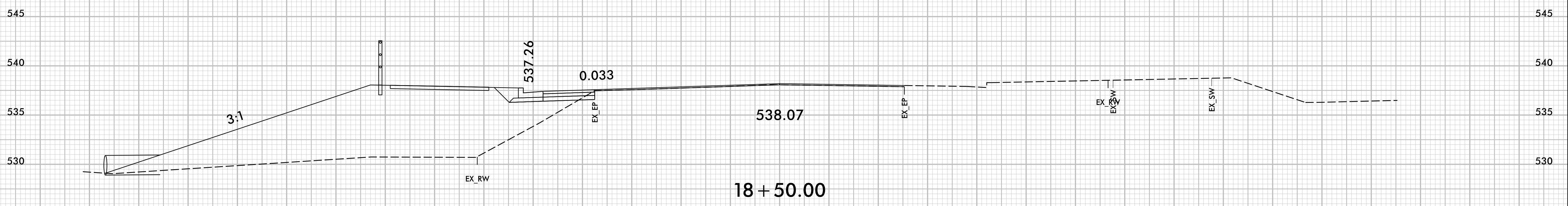
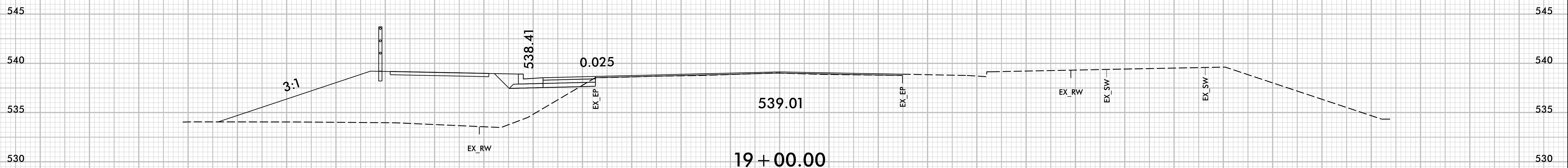
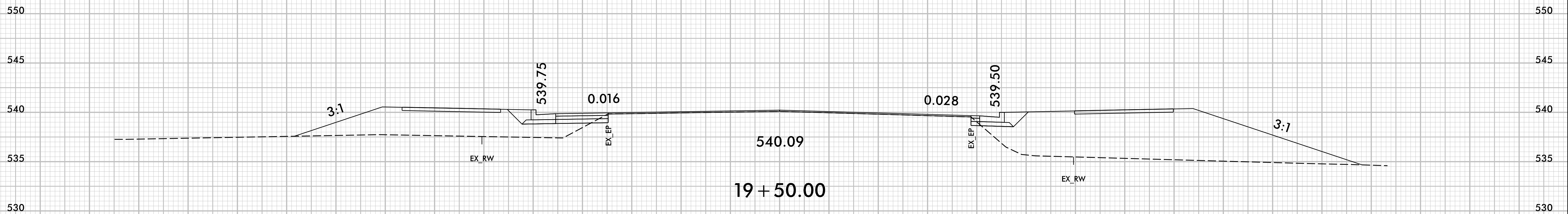
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-L- (Homestead Road)

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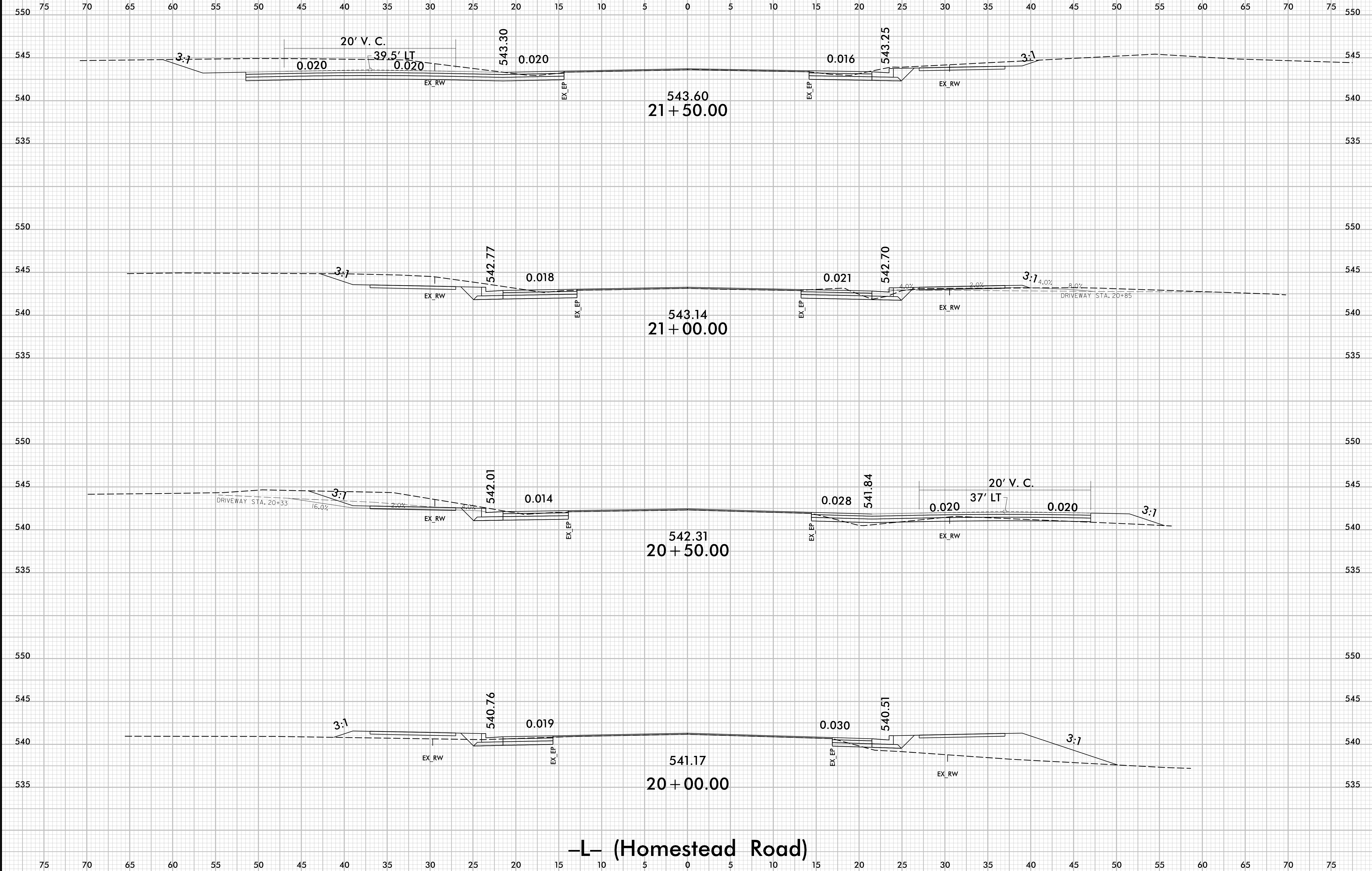
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SHEET NO.  
X-10



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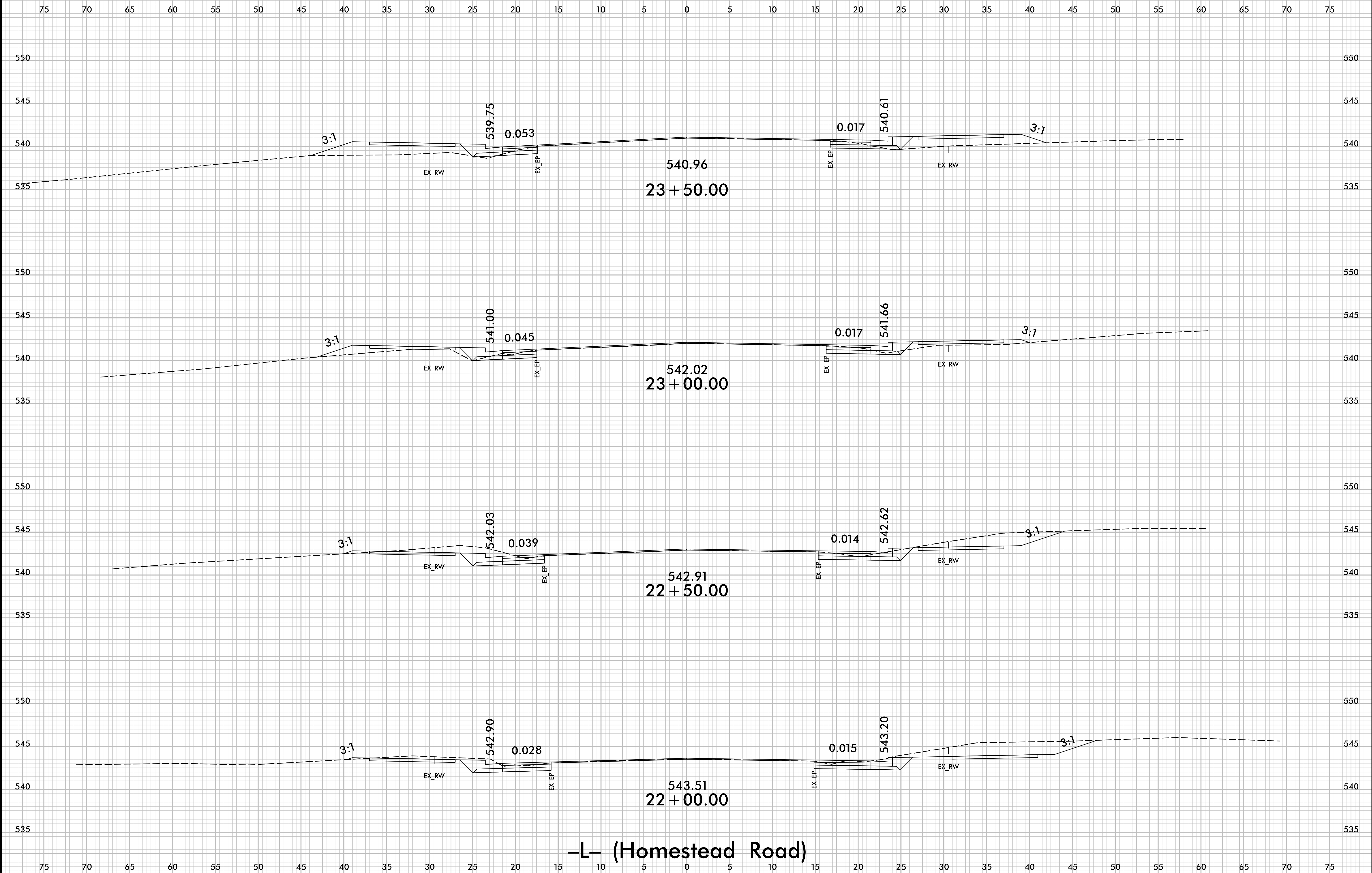
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6/23/16



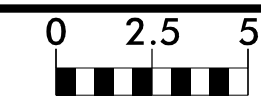
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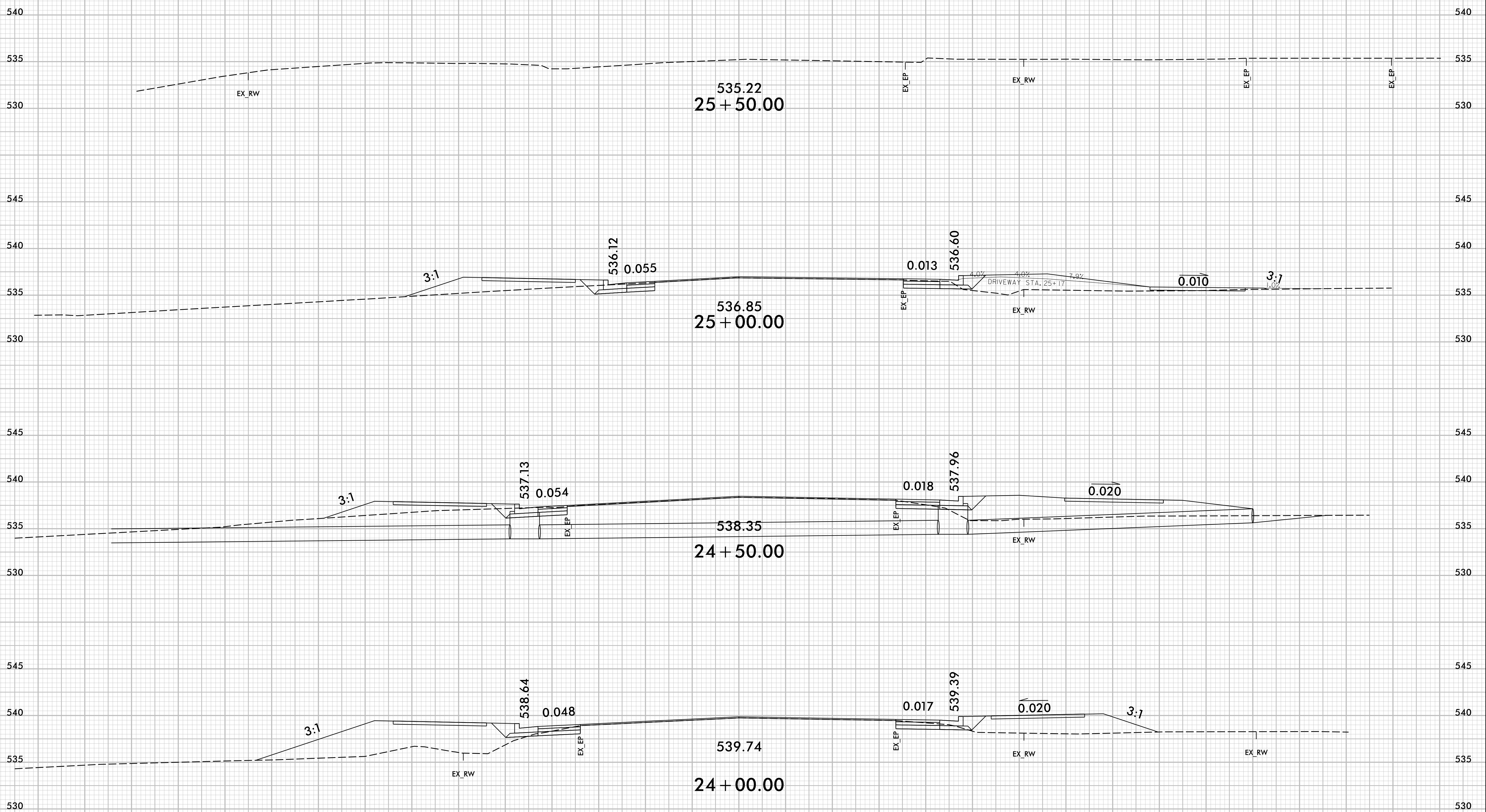
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