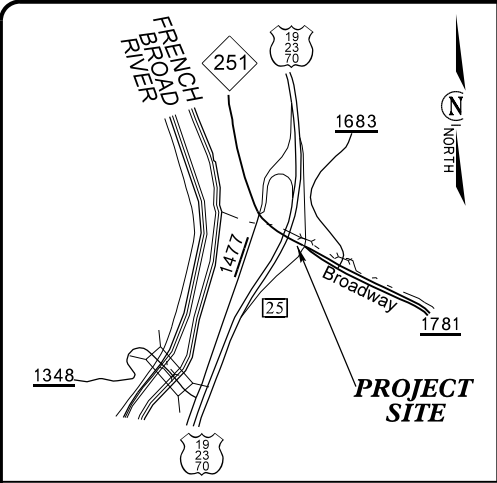


13-OCT-2021 18:14 S:\DDC\JPF\SR 1781 Broadway at NC 251\Roadway\Proj\DM00296 RDY TSH.dgn \$\$\$\$USERNAME\$\$\$\$

09/08/99

TIP PROJECT: BL-0005

CONTRACT: DM00296



See Sheet 1A For Index of Sheets

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

BUNCOMBE COUNTY

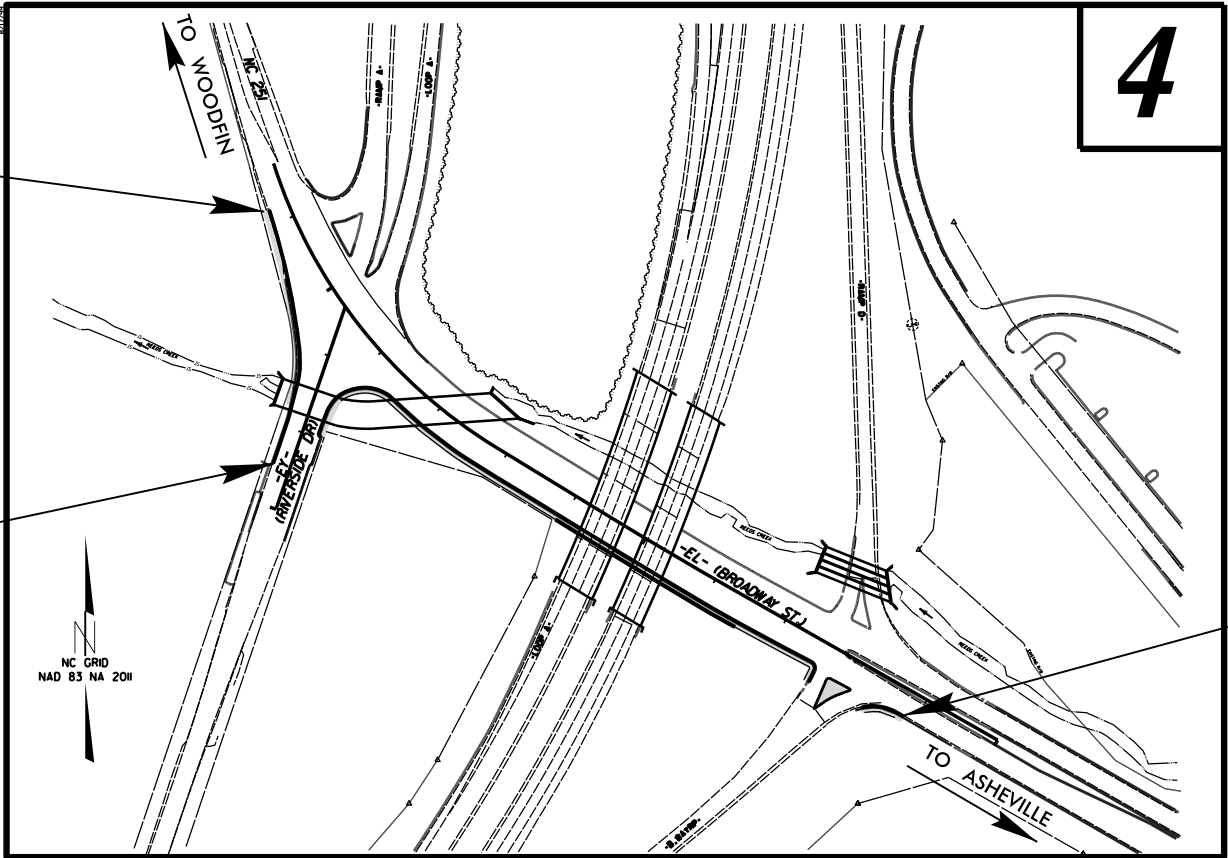
LOCATION: ALONG SR 1781 BROADWAY AND ALONG NC 251 AND  
SR 1477 RIVERSIDE DRIVE

TYPE OF WORK: INSTALL SIDEWALK, CURB RAMPS, CONCRETE ISLAND,  
SIGNALS AND RETAINING WALL

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BL-0005	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
49460.1.1	0251(040)	DESIGN	
49460.3.1	0251(040)	CONST	

END TIP PROJECT BL-0005  
-EL- STA 21+18.27

BEGIN CONSTRUCTION  
-EY- STA 10+49.97



BEGIN TIP PROJECT BL-0005  
-EL- STA 11+16.03

GRAPHIC SCALES



DESIGN DATA

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT W-5713X = 0.20 MILES

Prepared in the Office of:  
**DIVISION 13 DDC UNIT**  
55 Orange St., Asheville NC, 28801

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:  
NOVEMBER 3, 2021

PROJECT ENGINEER

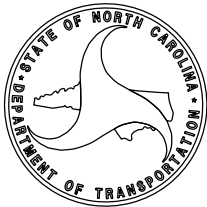
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN  
ENGINEER

SIGNATURE: P.E.



SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2A THRU 2E	ROADWAY DETAILS
3	SURVEY CONTROL SHEET
4	PLAN SHEETS
TMP-1 THRU TMP-5	TRANSPORTATION MANAGEMENT PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
SIG-1 THRU SIG-1.1	SIGNAL PLANS
W-1	RETAINING WALL PLANS

GENERAL NOTES:

2018 SPECIFICATIONS  
EFFECTIVE: 01-16-2018  
REVISED:

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 11.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

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

UTILITIES:

UTILITIES OWNERS ON THIS PROJECT ARE: DUKE ENERGY, AT&T  
DOMINION GAS,& MSD

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

CURB RAMPS:

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

EFF. 01-16-2018  
REV.

2018 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, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 8 - INCIDENTALS	
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.05	Curb Ramp - Proposed Curb & Gutter
852.01	Concrete Islands
DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1101.01	Work Zone Advance Warning Signs
1101.02	Temporary Lane Closures
1101.04	Temporary Shoulder Closures
1101.11	Traffic Control Design Tables
1110.02	Portable Work Zone Signs
1115.01	Flashing Arrow Boards
1130.01	Drum
1165.01	Truck Mounted Attenuator - Delineation
DIVISION 12 - Pavement Markings, Markers and Delineation	
1205.01	Pavement Marking - Line Types and Offsets
1205.04	Pavement Markings - Intersections
1205.07	Pavement Markings - Pedestrian Crosswalks

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS  
CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----x
Property Monument	□ EDM
Parcel/Sequence Number	⑫3
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	-----S-----
Potential Contamination Area: Soil	-----S-----
Known Contamination Area: Water	-----W-----
Potential Contamination Area: Water	-----W-----
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

Note: Not to Scale

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

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Exist Permanent Easment Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	-----
New Right of Way Line with Pin and Cap	-----
New Right of Way Line with Concrete or Granite RW Marker	-----
New Control of Access Line with Concrete CA Marker	-----
Existing Control of Access	-----
New Control of Access	-----
Existing Easement Line	-----E-----
New Temporary Construction Easement	-----E-----
New Temporary Drainage Easement	-----TDE-----
New Permanent Drainage Easement	-----PDE-----
New Permanent Drainage / Utility Easement	-----DUE-----
New Permanent Utility Easement	-----PUE-----
New Temporary Utility Easement	-----TUE-----
New Aerial Utility Easement	-----AUE-----

ROADS AND RELATED FEATURES:

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

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

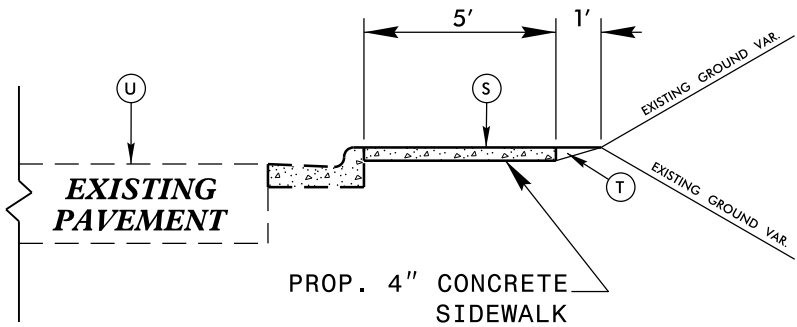
SANITARY SEWER:

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.*)	-----ZUTL-----
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	AATUR
End of Information	E.O.I.

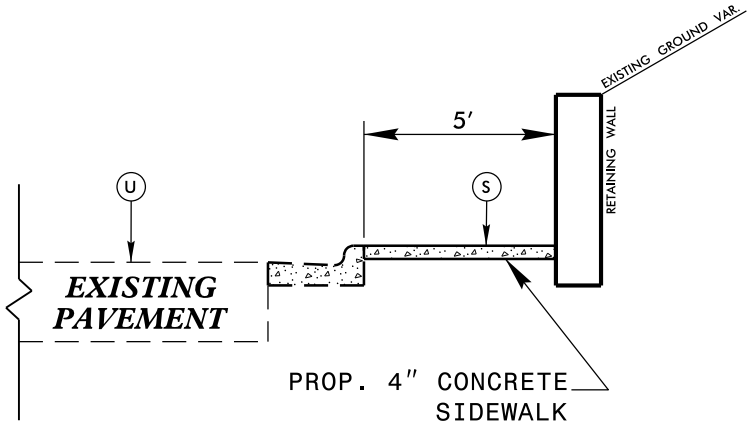
PROJECT REFERENCE NO.	SHEET NO.
BL-0005	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

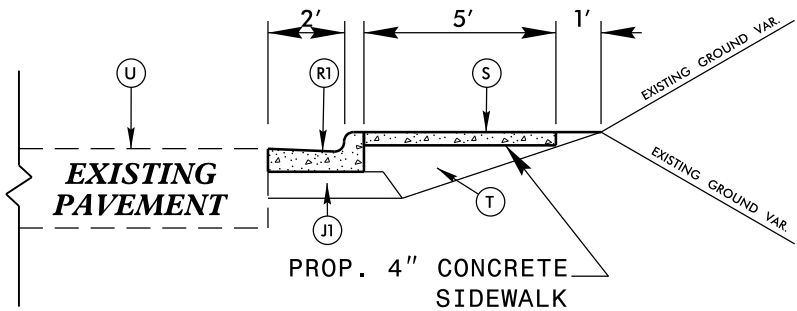
-EL- STA. 11+16.00 TO -EL- STA. 11+61.15  
-EL- STA. 12+44.26 TO -EL- STA. 13+50  
-EL- STA. 16+07.00 TO -EY- STA. 11+03.58



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

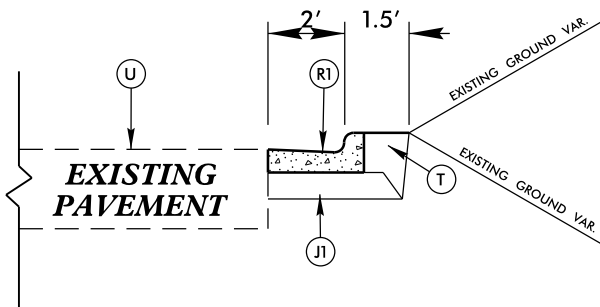
-EL- STA. 13+50 TO -EL- STA. 16+07



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-EL- STA. 21+18.27 TO -EY- STA. 11+43.74



TYPICAL SECTION NO. 4

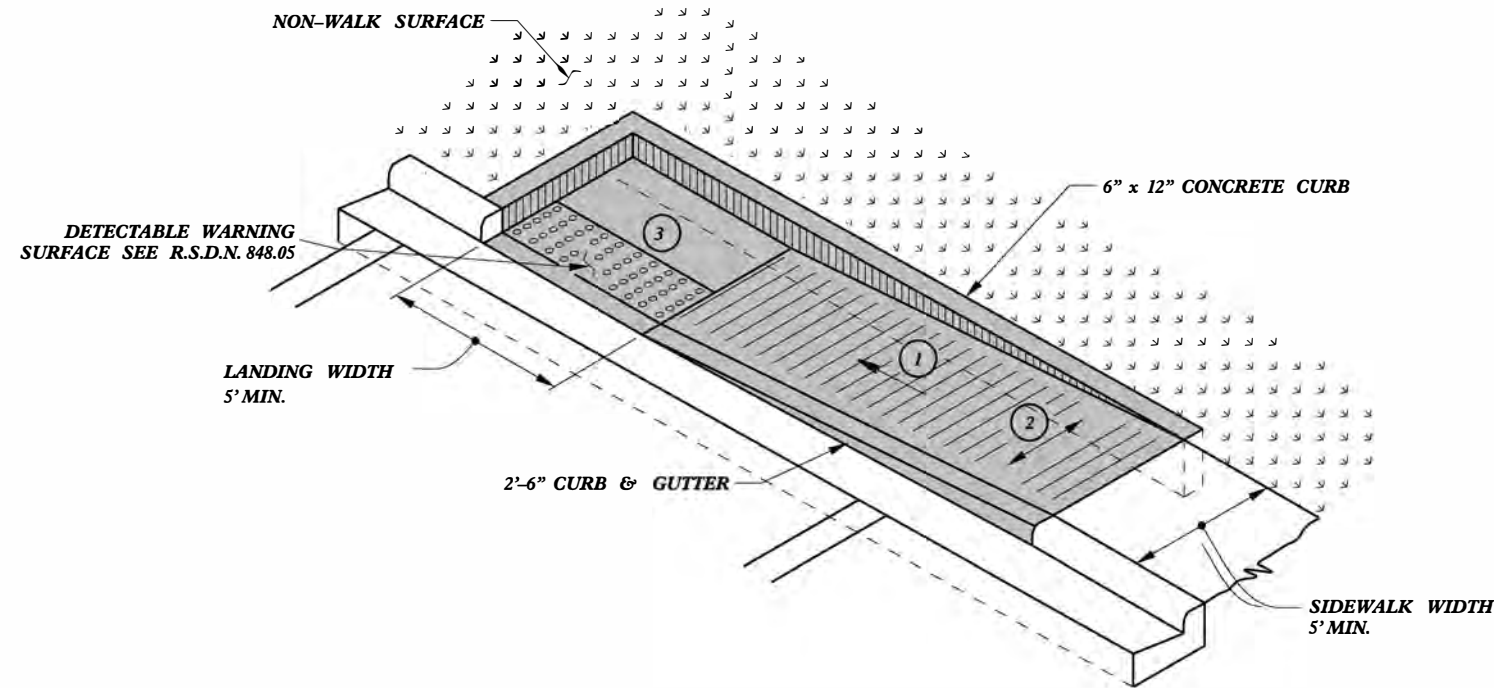
USE TYPICAL SECTION NO. 4

-EL- STA. 10+49.97 TO -EY- STA. 11+43.74

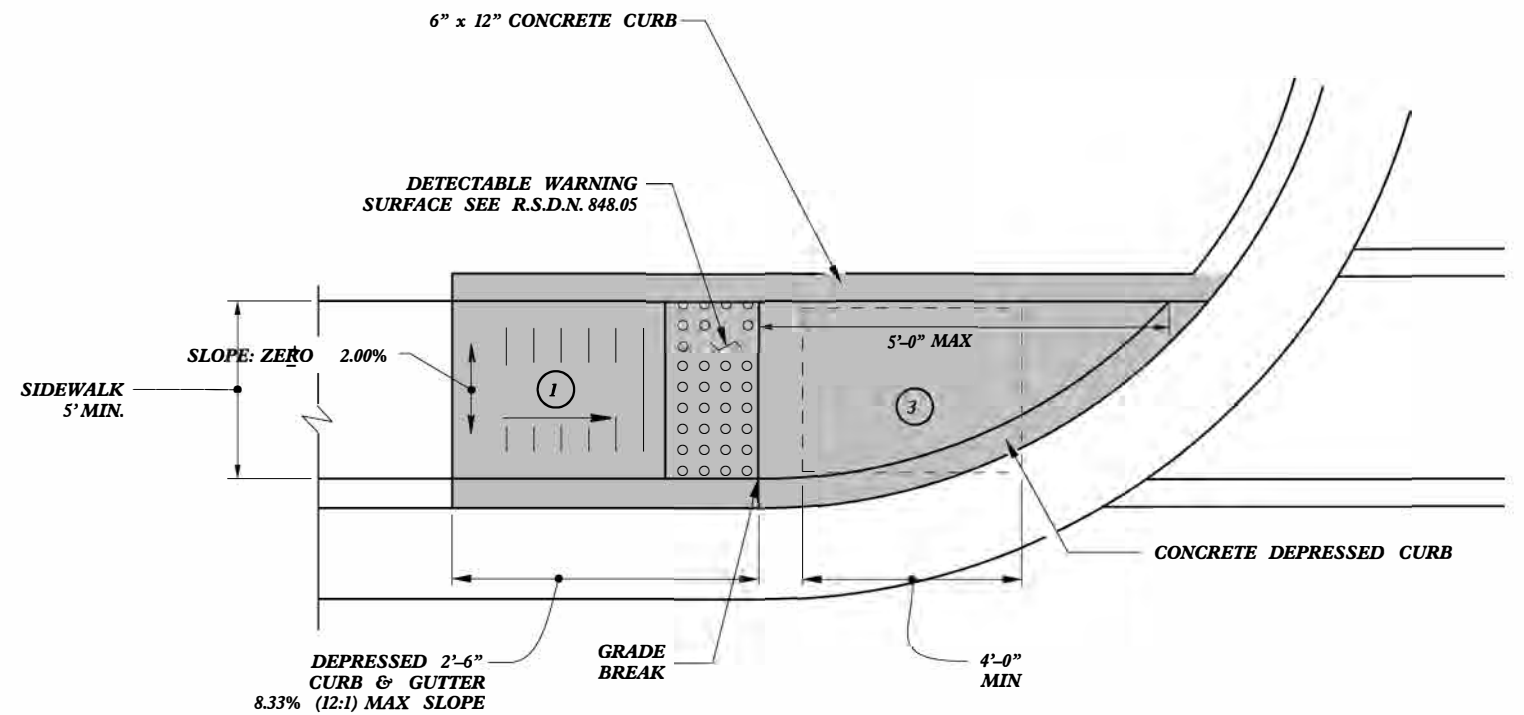
J1	4" INCIDENTAL STONE
R1	2'6" CURB AND GUTTER
S	4" SIDEWALK
T	SHOULDER RECONSTRUCTION
U	EXSISTING ASPHALT







**TYPE 1A**



**TYPE 1**

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

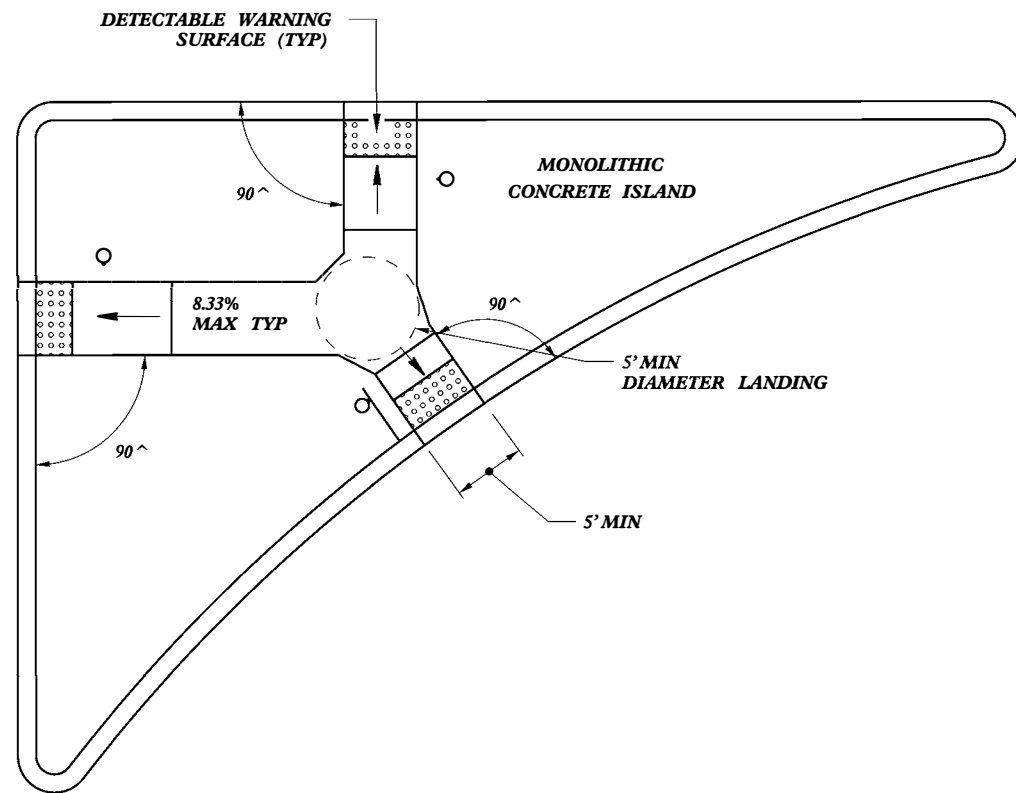
PAY LIMITS FOR CURB RAMP

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Directional Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: s:\stds\2012CurbRamp\CurbRampDetails.dwg	

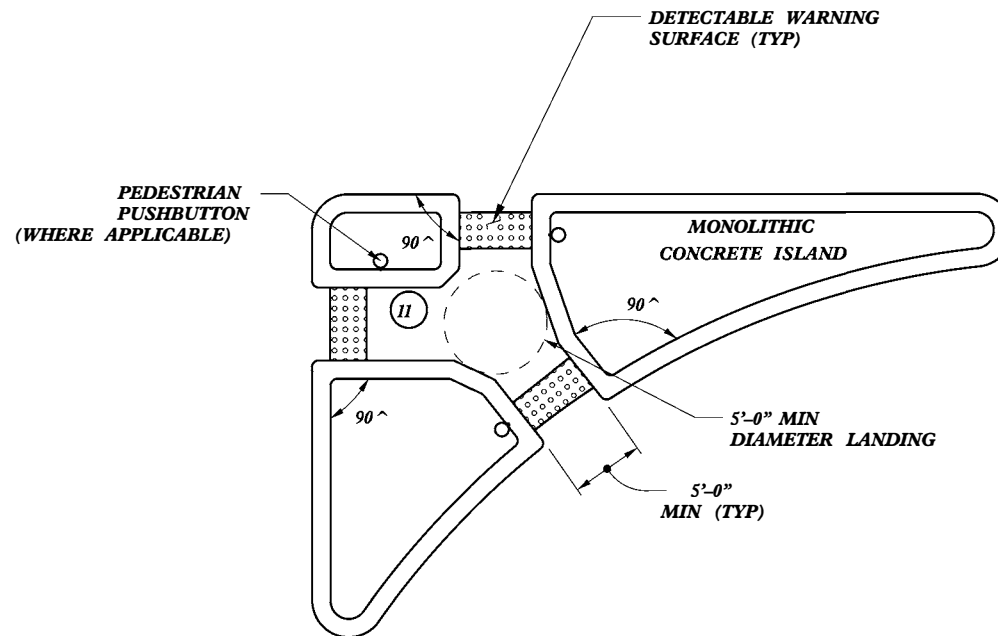
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S:\Projects\2012\Standard Drawings\2012 Curb Ramp Special Details\Curb Ramp Details.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
BL-0005	2C



**LARGE ISLAND**  
**CURB RAMPS**

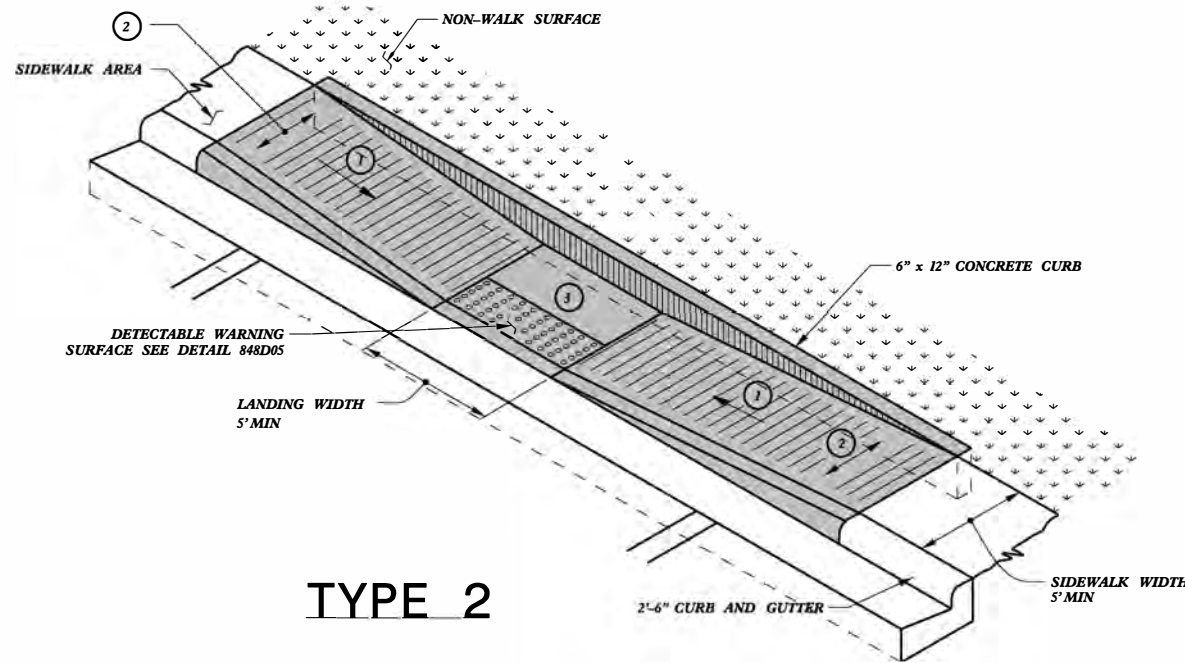


**SMALL ISLAND**  
**WITH CUT THROUGH**

-SEE ROADWAY DETAIL DRAWING 848D05 FOR DETECTABLE WARNING SURFACE  
AND FOR RAMP NOTES.

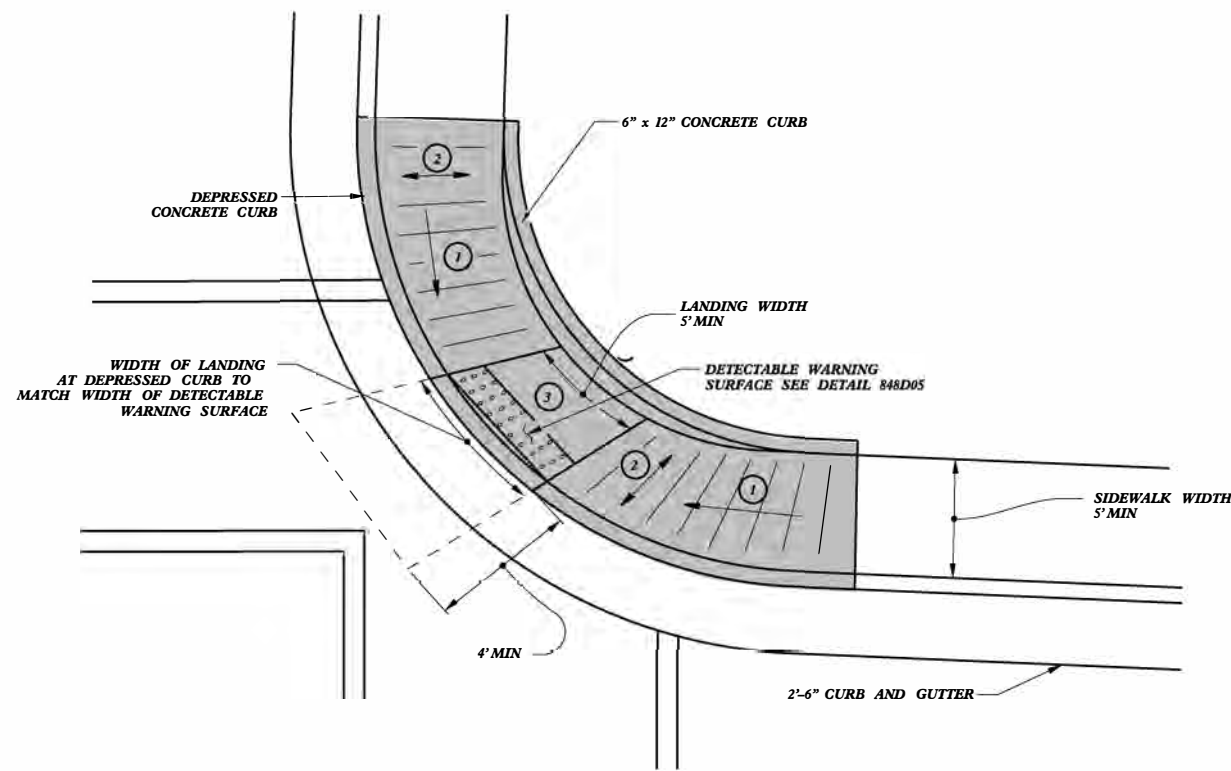
-SEE ROADWAY STANDARD DRAWING 852.01 FOR CONCRETE ISLAND DIMENSIONS.

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Median or Turn Lane Islands	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.:stds/2012CurbRamp/CurbRampDetails.dgn	

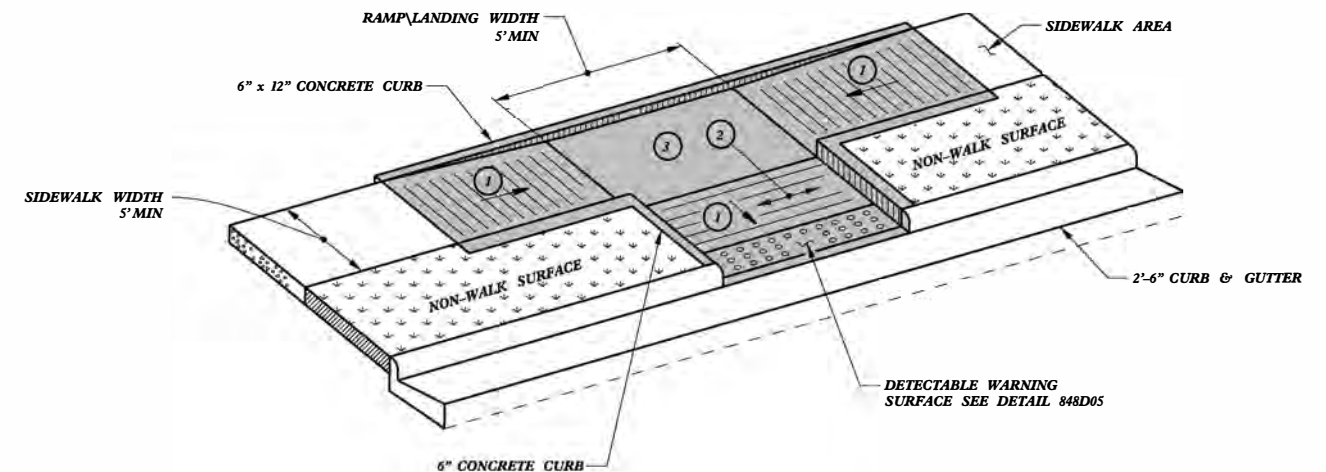


TYPE 2

- PAY LIMITS FOR CURB RAMP
- 1 8.33% (12:1) MAX RAMP SLOPE
  - 2 CROSS SLOPE: 2.00%
  - 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



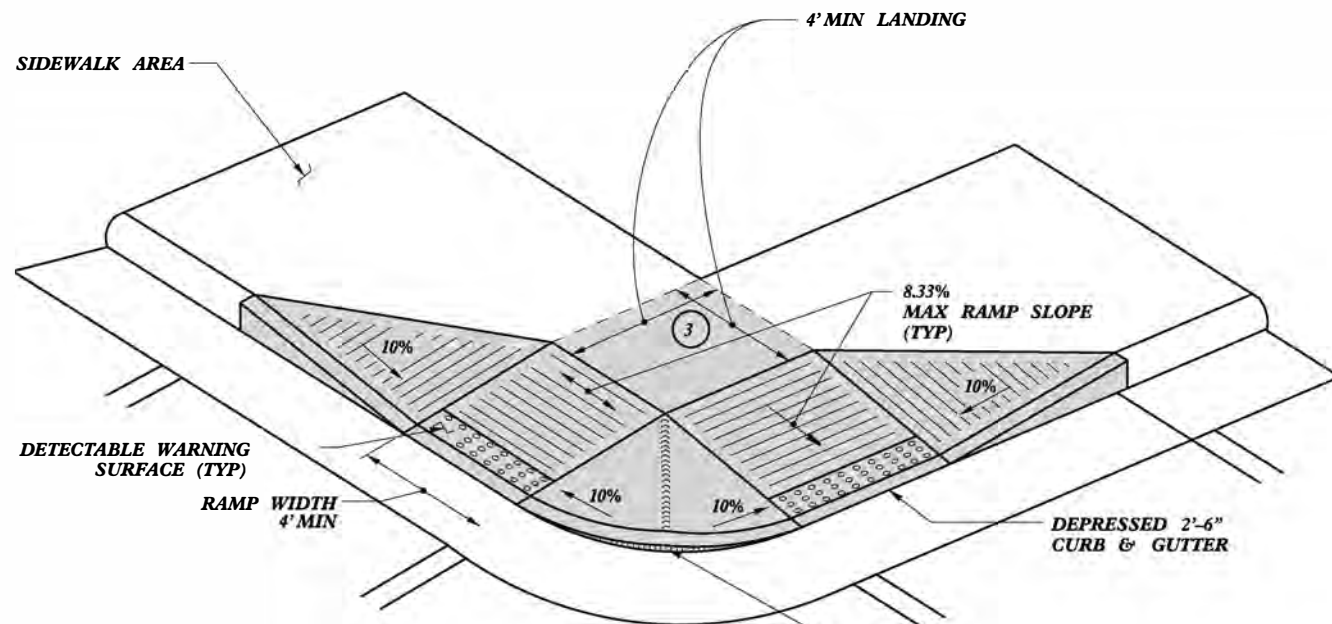
TYPE 2A



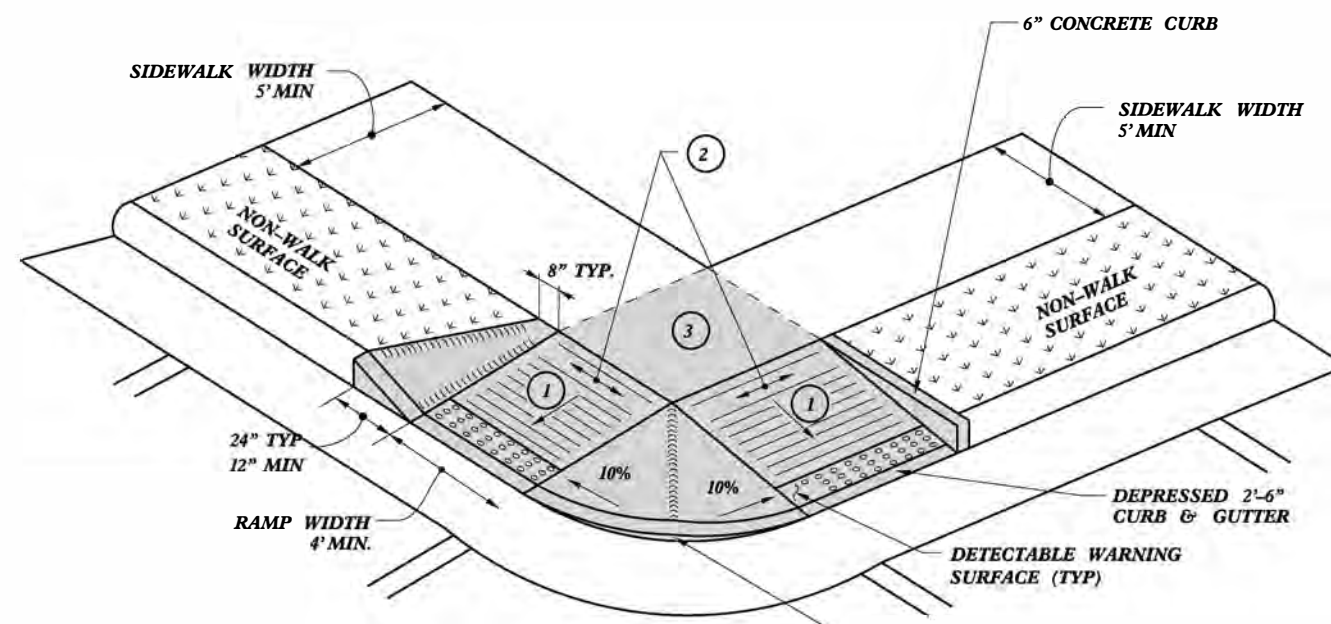
TYPE 3

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Parallel Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC:	stds/2012CurbRamp/CurbRampDetails.dwg

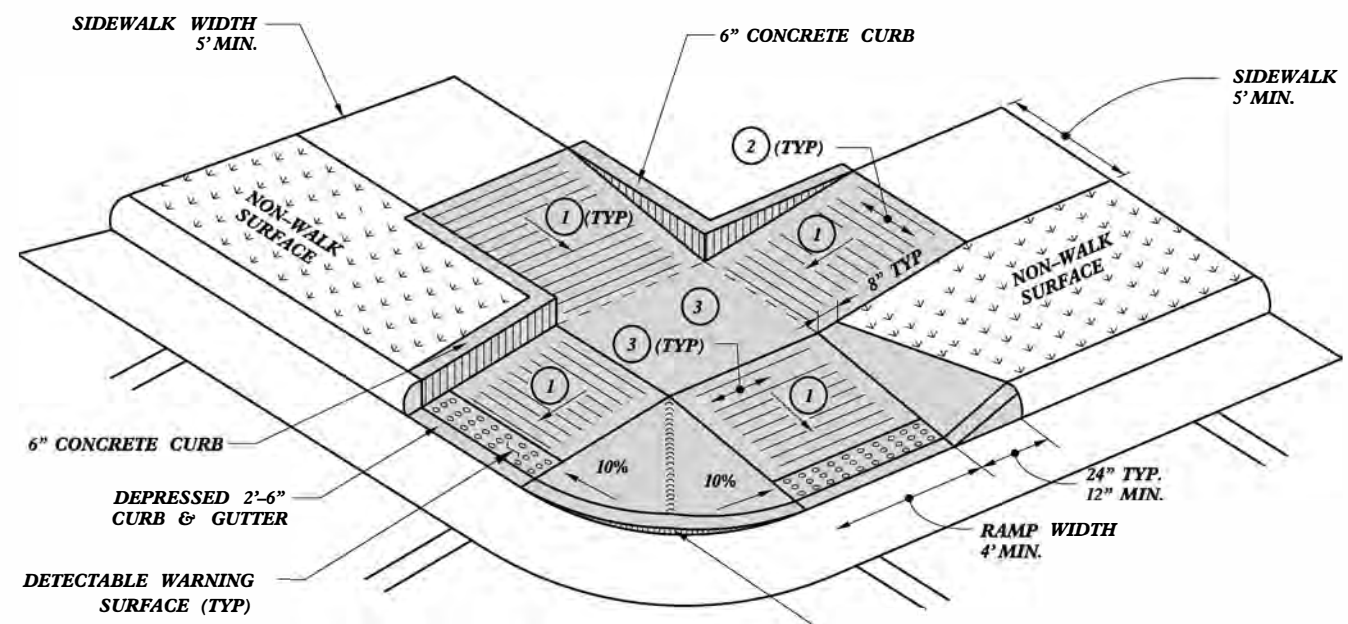
REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES



TYPE 4



TYPE 4A



TYPE 5

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

PAY LIMITS FOR CURB RAMP

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950	FAX 919-250-4119
<b>CURB RAMPS</b>	
Shared Landing	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: sds/2012CurbRamp/CurbRampDetails.dgn	

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

16-SEP-2011 15:06 S:\Contracts\Special Details\Howerton\Standard Drawings\2012 Curb Ramp Special Details\Curb Ramp Details.dgn Howerton AT C50237501

# ***SURVEY CONTROL SHEET***

NC GRID  
NAD 83 NA 2011

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT  
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY  
NCDOT GPS MONUMENT "CALVARY"  
WITH NAD 83 STATE PLANE GRID COORDINATES OF  
NORTHING: 684834.0870(±) EASTING: 934095.9080(±)  
ELEVATION: 2073.54(±)  
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT  
(GROUND TO GRID) IS: 0.9997841  
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
VERTICAL DATUM USED IS NAVD 88

<u>-EL-</u>	<u>-EL-</u>
PI Sta 19+52.36	PI Sta 14+65.34
$\Delta = 40^\circ 54' 34.2''$ (RT)	$\Delta = 1^\circ 47' 00.0''$ (RT)
D = 9'00" 00.0"	D = 1'00" 00.0"
L = 454.55'	L = 178.33'
T = 237.45'	T = 89.17'
R = 636.62'	R = 5729.58'

BL	POINT	DESC.	NORTH	EAST	ELEVATION
	BY17-135		697574.1323	938466.9317	1976.46
	BY16-133		697807.1312	938133.8413	1972.04
	BY16-132		697908.0750	937824.1546	1966.25

EY POINT	N	E	BEARING	DIST
POT LINE	697767.886	937733.101	N 18°51'57.0" E	263.70
POT	698017.421	937818.370		

EL									
POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT LINE	697483.444	938622.096	N 60°21'00.0" W	376.16					
PC CURVE	697669.533	938295.185	N 59°27'30.0" W	178.33	01°47'00.0"(RT)	01°00'00.0"	178.33	89.17	5729.58
PT LINE	697760.152	938141.600	N 58°34'00.0" W	160.42					
PC CURVE	697843.810	938004.725	N 38°06'42.9" W	444.96	40°54'34.2"(RT)	09°00'00.0"	454.55	237.45	636.62
PI	698193.904	937730.098							

NOTE: ALL SURVEY INFORMATION ON THIS PROJECT WAS PROVIDED BY OTHERS.

3-OCT-2021 8:45  
 \\DDC\pr\SR 1781 Broadway at NC 251 Riverside Dr\LocationSurveys\DM002096 RDY PSN 03.dgn  
 \$\$\$USERNAME\$\$\$ 8/17/99

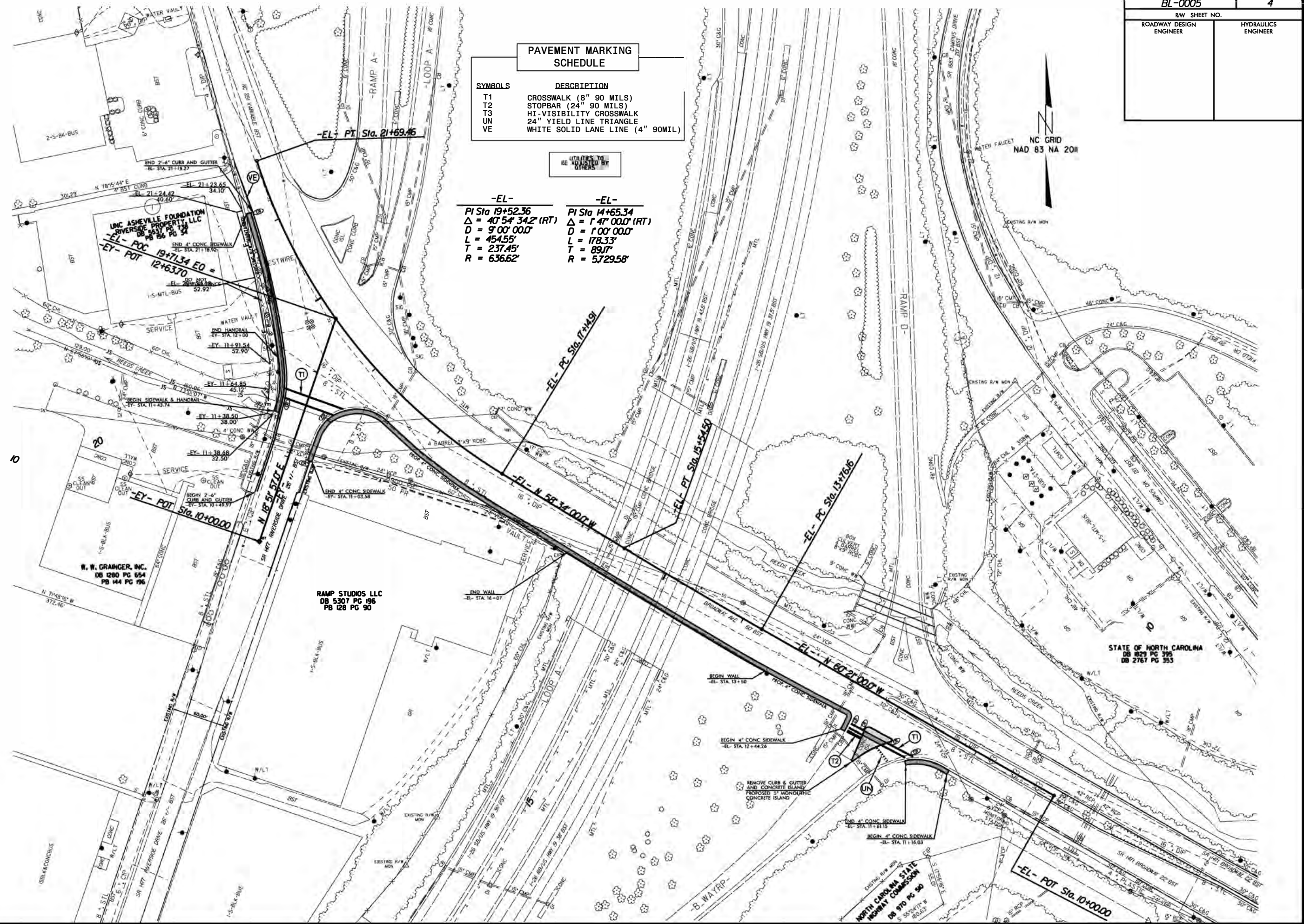


PAVEMENT MARKING SCHEDULE

SYMBOLS	DESCRIPTION
T1	CROSSWALK (8" 90 MILS)
T2	STOPBAR (24" 90 MILS)
T3	HI-VISIBILITY CROSSWALK
UN	24" YIELD LINE TRIANGLE
VE	WHITE SOLID LANE LINE (4" 90MIL)

UTILITIES TO BE ADJUSTED BY OTHERS

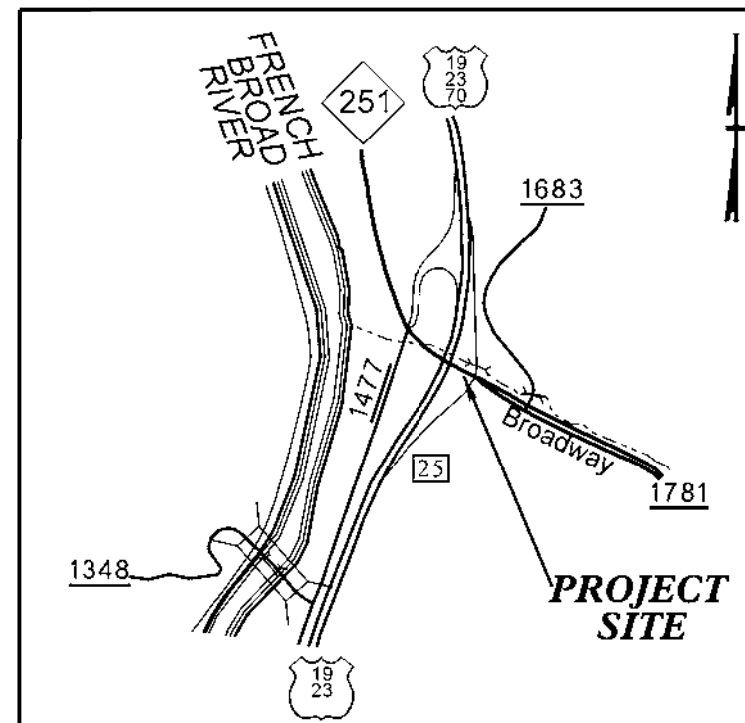
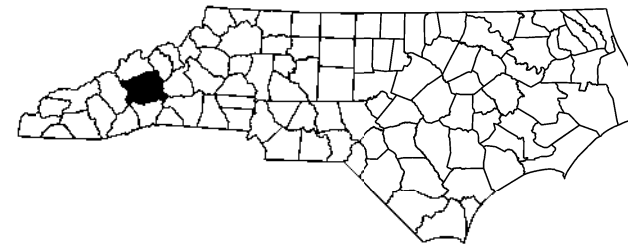
-EL-	-EL-
PI Sta 19+52.36	PI Sta 14+65.34
$\Delta = 40^\circ 54' 34.2"$ (RT)	$\Delta = 1^\circ 47' 00.0"$ (RT)
D = 9'00'00.0"	D = 1'00'00.0"
L = 454.55'	L = 178.33'
T = 237.45'	T = 89.7'
R = 636.62'	R = 572958'



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

BUNCOMBE COUNTY



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, GENERAL NOTES, AND MANAGEMENT STRATEGIES
TMP-2	TEMPORARY TRAFFIC CONTROL PHASING
TMP-3	TEMPORARY TRAFFIC CONTROL PHASE I
TMP-4	TEMPORARY TRAFFIC CONTROL PHASE II
TMP-5	TEMPORARY TRAFFIC CONTROL PHASE III

SHEET NO.

TMP-1

BL-0005

TIP PROJECT:



PLANS PREPARED BY:

NCDOT CONTACTS:

PROJECT ENGINEER

PROJECT DESIGN ENGINEER



APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_



ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANAUARY 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	DRUMS
1150.01	FLAGGERS
1165.01	TRUCK MOUNTED ATTENUATOR

MANAGEMENT STRATEGIES

- MAINTAIN DRIVEWAY ACCESS TO ALL RESIDENCES/BUSINESSES AT ALL TIMES WITHIN THE PROJECT LIMITS
- THE BIKE LANE WILL BE CLOSED AT TIMES AS NEEDED OR AS DIRECTED THE ENGINEER.
- NC 251 SHALL REMAIN OPEN DURING THE PROJECT DURATION USING NCDOT STANDARD DRAWINGS AND FLAGGERS AS NEEDED

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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) 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.
- B) 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.
- C) 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.
- D) 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.
- E) 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.
- F) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- G) 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.
- H) 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) 200' IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- J) 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.
- K) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.  
  
PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- L) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.  
  
COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.
- M) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- N) 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 ND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.
- O) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
N/A	NONE	NONE
- 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.

LOCAL NOTES:  
1) EMERGENCY VEHICLE ACCESS MUST BE MAINTAINED AT ALL TIMES.  
  
2) NOTIFY BUNCOMBE COUNTY SCHOOL BOARD 30 DAYS BEFORE ANY LANE CLOSURES.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

ROADWAY STANDARD DRAWINGS & LEGEND

PROJECT PHASING

PHASE I

STEP 1

ERECT WORK ZONE ADVANCE WARNING SIGNS ON FUTURE I-26 RAMP/LOOP A & B, -EL- SR 1781 (BROADWAY AVE), NC 251, AND -EY- SR 1477 (RIVERSIDE DR). SEE RDWY STD DWG 1101.01.

STEP 2

USING RDWY STD DWG 1101.02 (SHEET 1 OF 14), CONSTRUCT CONCRETE SIDEWALK, CURB RAMPS AND CURB & GUTTER ON -EL- NC 251 AND -EY- SR 1477 (RIVERSIDE DR) SEE TMP-3.

-EY- STA. 11+28 +/- TO -EL- STA. 21+19 +/- (LEFT SIDE ONLY)

STEP 3

ONCE WORK IS COMPLETED, REMOVE ALL TRAFFIC CONTROL DEVICES AND OPEN -EL- NC 251, SR 1781(BROADWAY AVE.) AND -EY- SR 1477 (RIVERSIDE DR) TO TRAFFIC.

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK REQUIRED IN PHASE I, STEP 2, FROM 7:00PM TO 6:00AM (11 CONSECUTIVE HOURS) AS DIRECTED BY THE ENGINEER. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES. HOLIDAY AND SPECIAL EVENTS LANE CLOSURE TIME RESTRICTIONS APPLY DURING THE ICT.

PHASE II

STEP 1

INSTALL CMS BOARD ON -EY- SR 1477 (RIVERSIDE DR).

STEP 2

USING RDWY STD DWG 1101.02 (SHEET 3 OF 14) AND FLAGGERS AS NECESSARY, CONSTRUCT RETAINING WALL, CONCRETE SIDEWALK, CURB RAMP AND CURB & GUTTER ON -EL- SR 1871 (BROADWAY AVE) AND SR 1477 (RIVERSIDE DR) SEE TMP-4.

-EY- STA. 11+04 +/- RT TO -EL- STA. 12+45 +/- LT

STEP 3

ONCE WORK IS COMPLETED, DEACTIVATE PORTABLE CMS, REMOVE ALL TRAFFIC CONTROL DEVICES, AND OPEN -EL- SR 1871 (BROADWAY AVE) AND -EY- SR 1477 (RIVERSIDE DR.) TO TRAFFIC.

PHASE III

STEP 1

INSTALL CMS BOARDS ON I-40 RAMP B, -EL- NC 251, AND SR 1871 (BROADWAY AVE)

STEP 2

USING RDWY STD DWG 1101.02 (SHEET 3 OF 14) AND FLAGGERS AS NECESSARY, REMOVE EXISTING MEDIAN RAISED ISLANDS ON -EL- SR 1871 (BROADWAY AVE) AND DELINEATE REMOVED ISLANDS. SEE SHEET TMP-5.

STEP 3

USING RDWY STD DWG 1101.02 (SHEET 3 OF 14) AND FLAGGERS AS NECESSARY, CONSTRUCT CONCRETE MEDIAN ISLAND, SIDEWALK, CURB RAMP AND CURB & GUTTER ON -EL- SR 1871 (BROADWAY AVE) SEE TMP-5.

-EL- STA. 11+16 +/- TO -EL- STA. 12+20 +/- (LEFT SIDE ONLY)

STEP 4

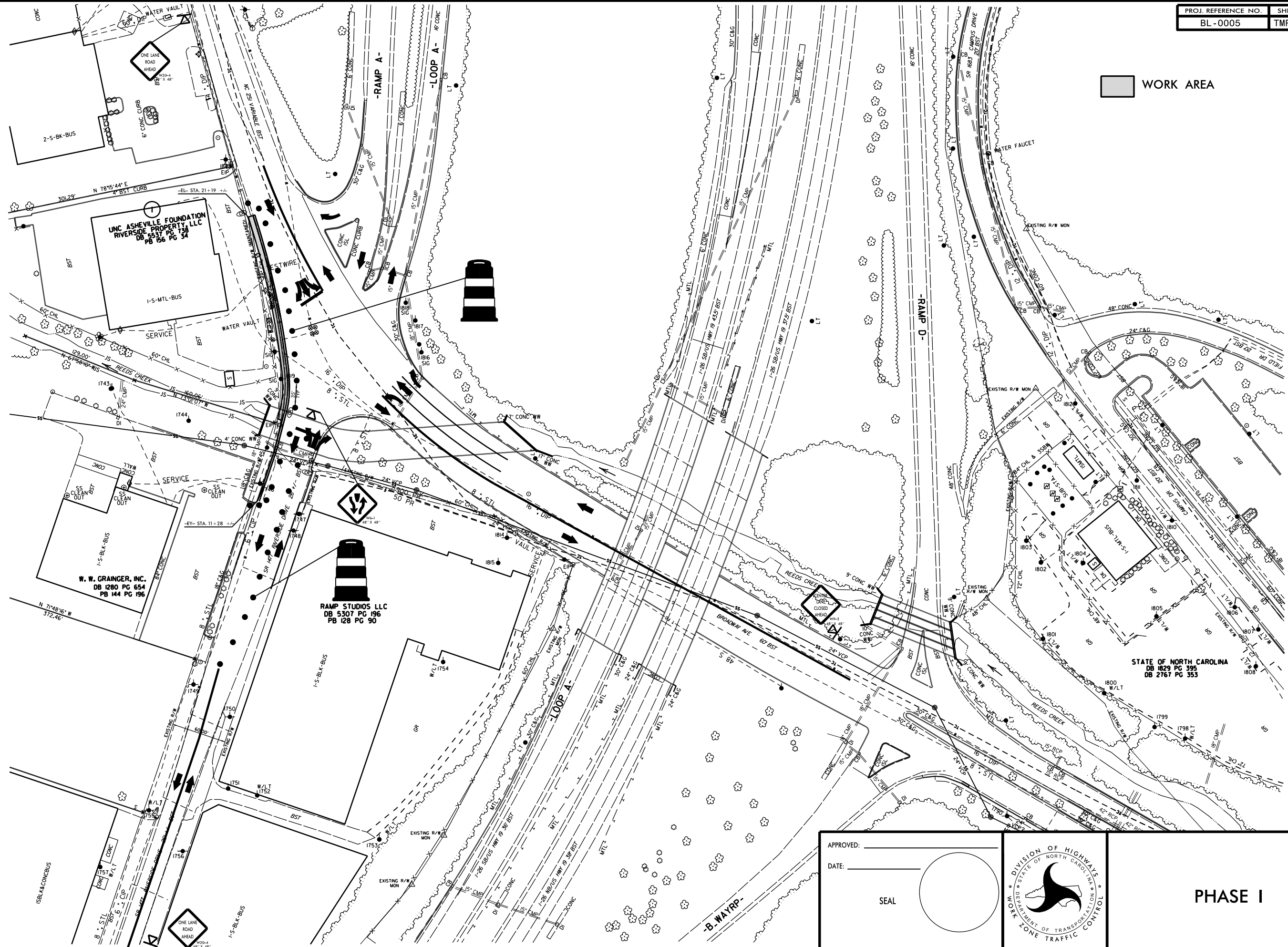
USING RDWY STD DWG 1101.02 (SHEET 3 OF 14) AND FLAGGERS AS NECESSARY, REMOVE ALL TRAFFIC CONTROL DEVICES.

OPEN ALL ROADS AND SIDEWALKS.

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK REQUIRED IN PHASE III STEP 2 AND STEP 3 FROM 7:00PM TO 6:00AM (11 CONSECUTIVE HOURS) AS DIRECTED BY THE ENGINEER. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES. HOLIDAY AND SPECIAL EVENTS LANE CLOSURE TIME RESTRICTIONS APPLY DURING THE ICT.

APPROVED: _____  DATE: _____  SEAL		PHASING
--	---	---------

WORK AREA



I3-OCT-2021/2018  
S:\DDC\JPF\SR 1781Broadway at NC 251Riverside Dr\TrafficControl\TCP\DM00296 RDY TMP 03.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$

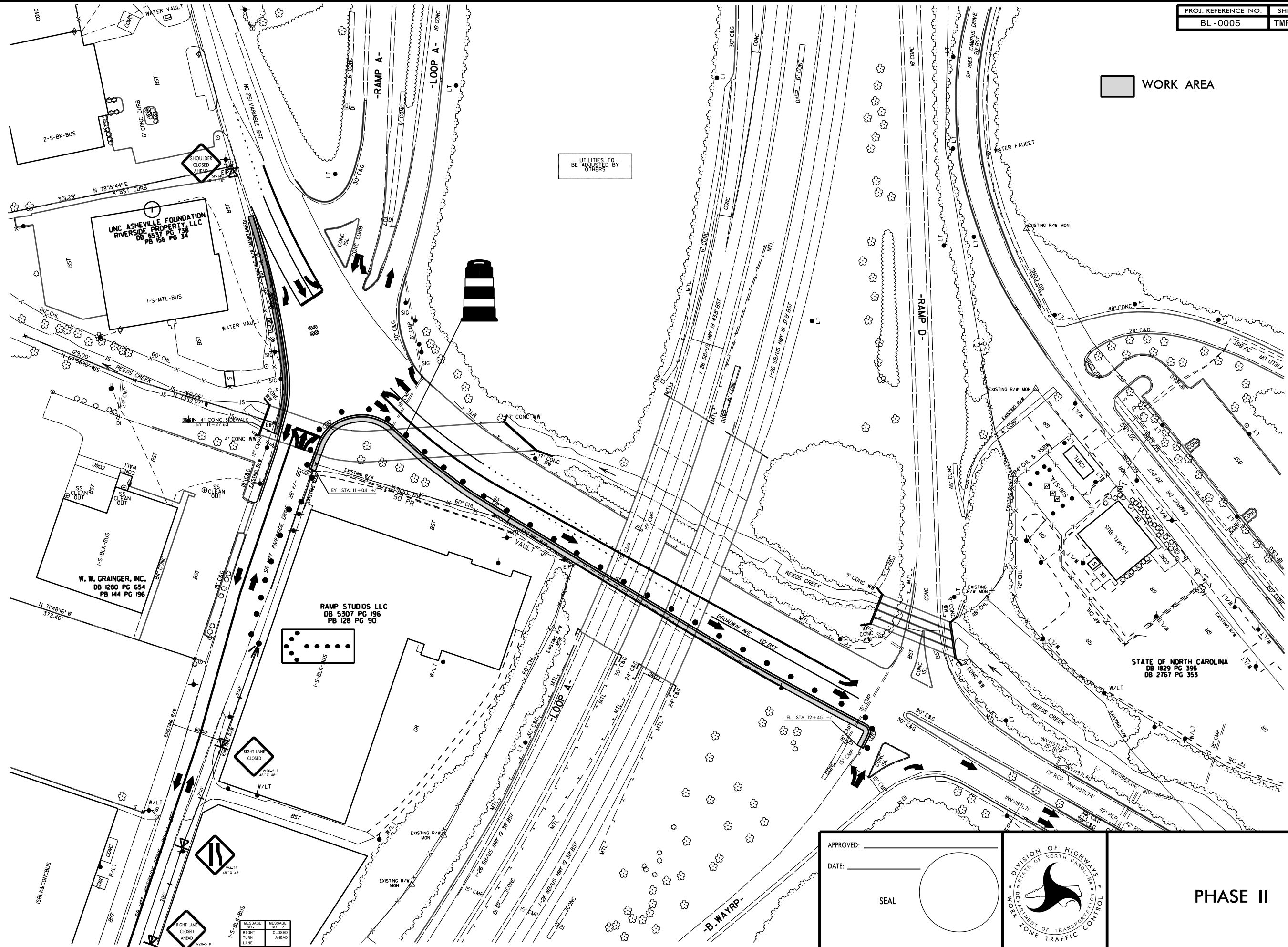
APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_

SEAL



PHASE I

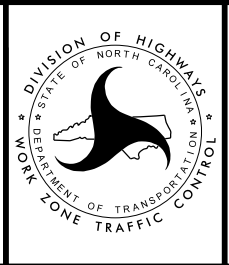
WORK AREA



APPROVED: \_\_\_\_\_

DATE: \_\_\_\_\_

SEAL



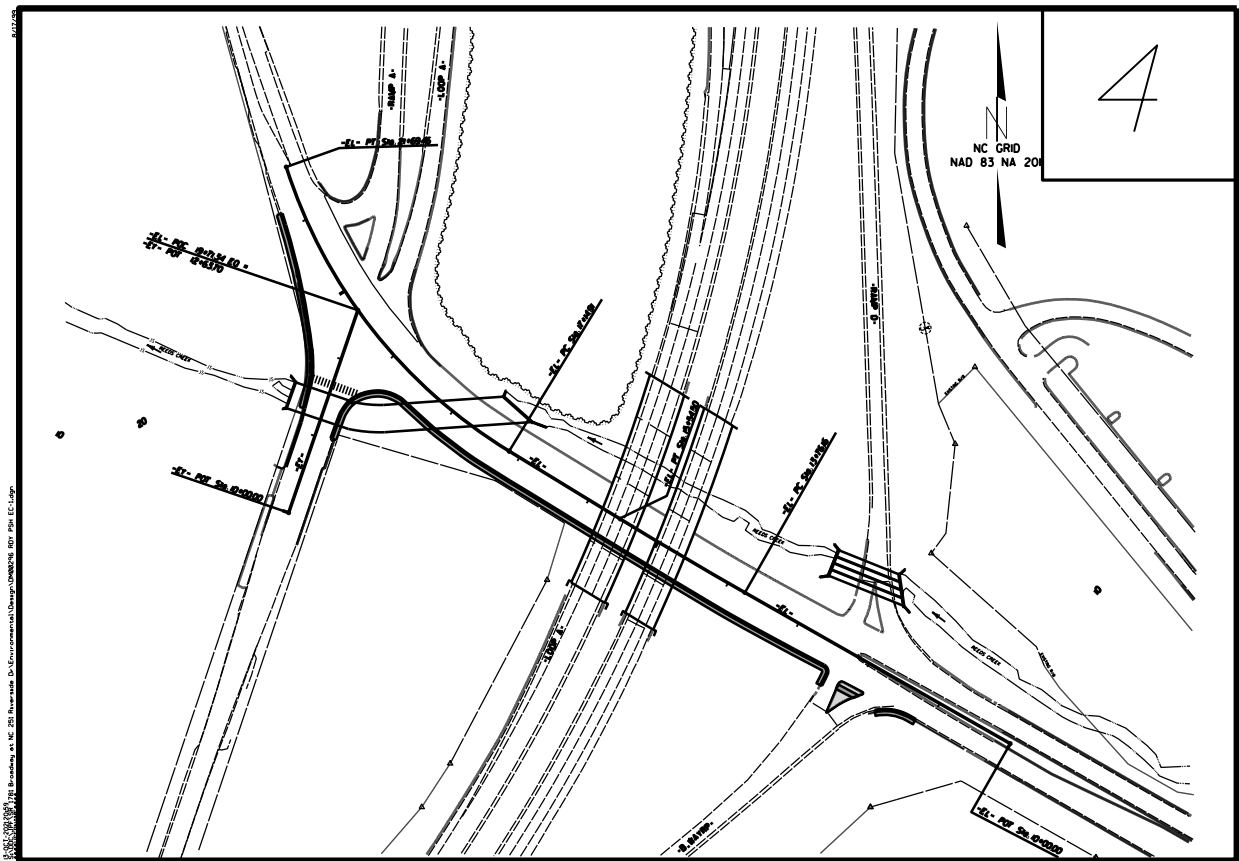
PHASE II



\\NCST20012059 D:\Environmental\Design\DM0296 RDV PSH EC-1.dgn  
ot: 10/21/2010 10:59 AM  
USER: NAME

TIP PROJECT: BL-0005

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL



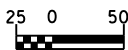
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BL-0005	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

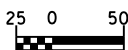
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	
1632.02	Type B	
1632.03	Type C	
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS  
EROSION CONTROL PLANS  
FOR CLEARING AND  
GRUBBING PHASE OF  
CONSTRUCTION.

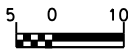
GRAPHIC SCALE



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT  
DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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.

Prepared In the Office of:  
**DIVISION 13 DDC UNIT**  
55 ORANGE STREET  
ASHEVILLE, NC 28801

2018 STANDARD SPECIFICATIONS

Designed by:  
**Hampton Fletcher** 3382  
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

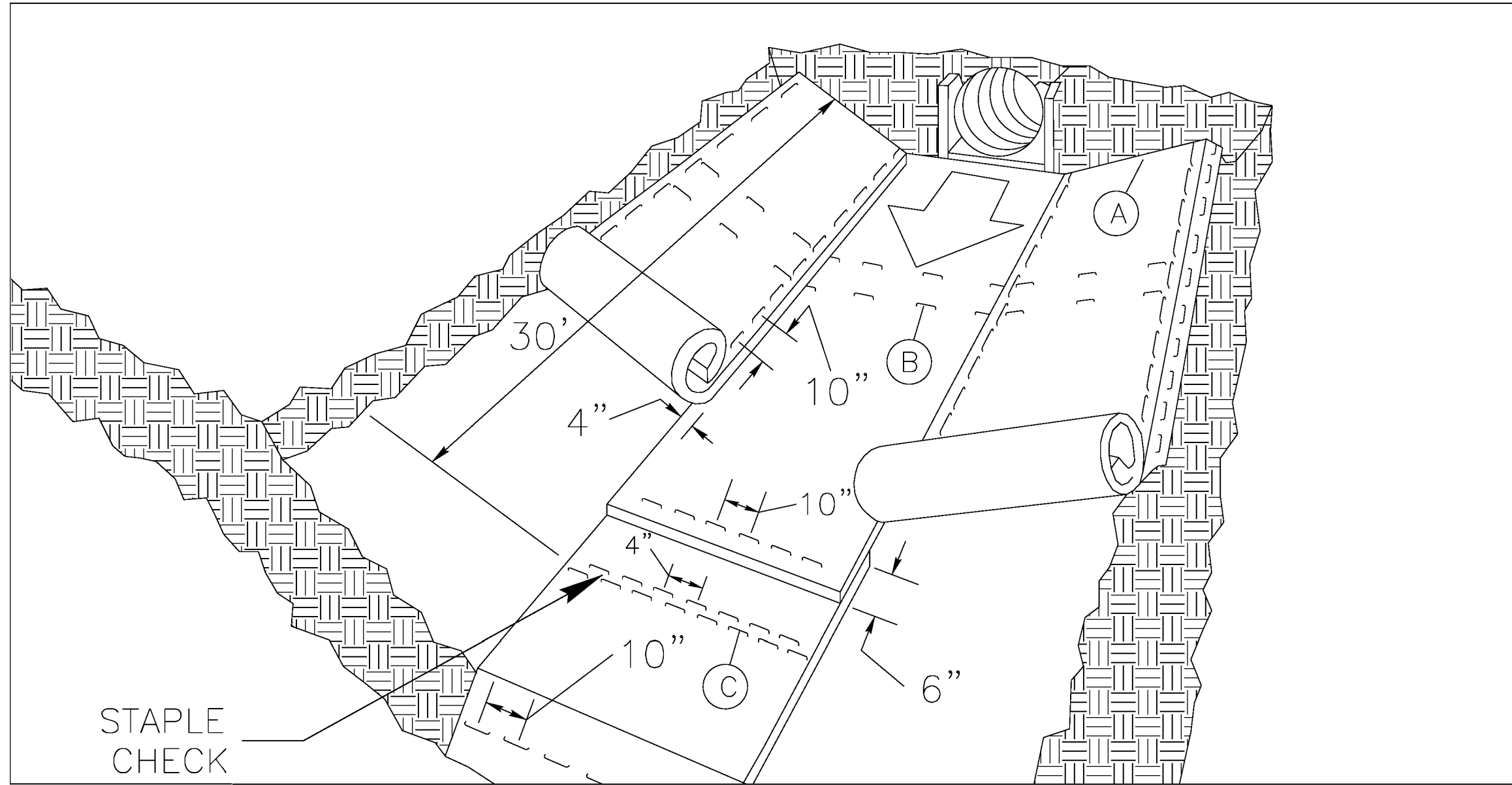
The following roadway english standards as appear in "Roadway Standard Drawings"-- Roadway Design Unit -- N. C. Department of Transportation -- Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type J
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type J
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type J	1634.02	Temporary Rock Sediment Dam Type J
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type J
1630.05	Temporary Diversion	1640.01	Coir Fiber Wattle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		



# MATting INSTALLATION DETAIL

PROJECT REFERENCE NO.	SHEET NO.
BL- 0005	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**MATting IN DITCHES**

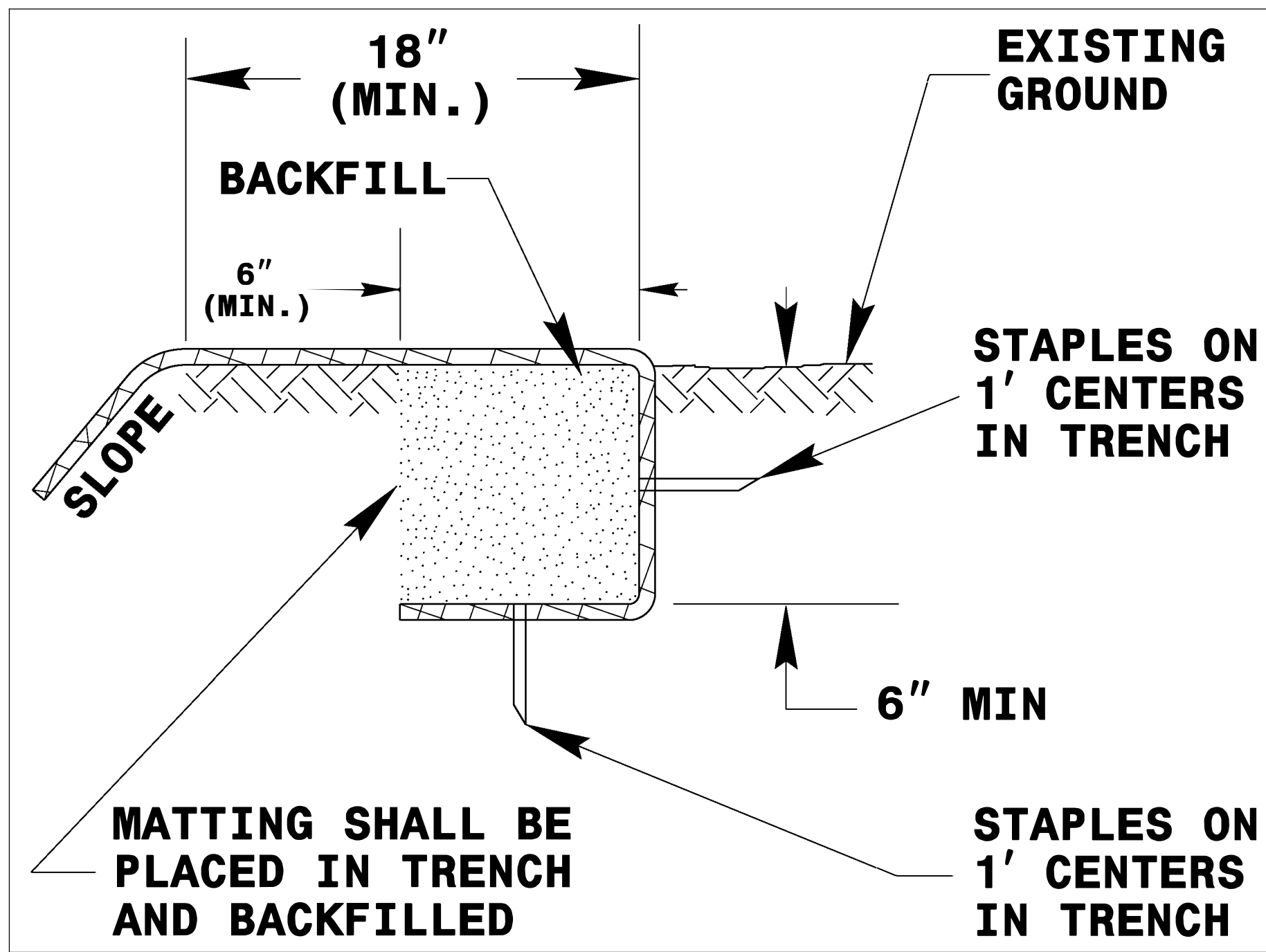
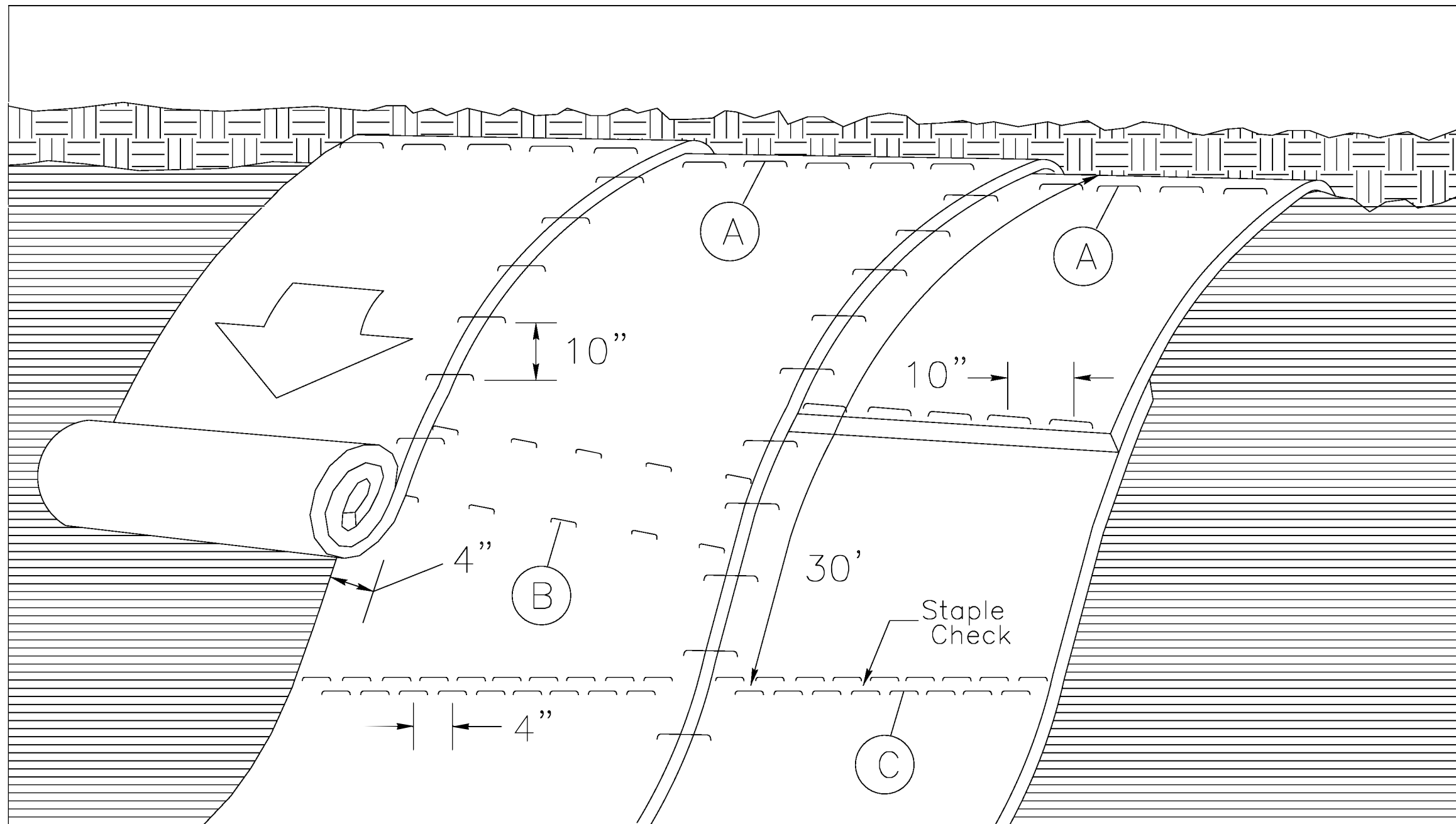


DIAGRAM (A)



**MATting ON SLOPES**

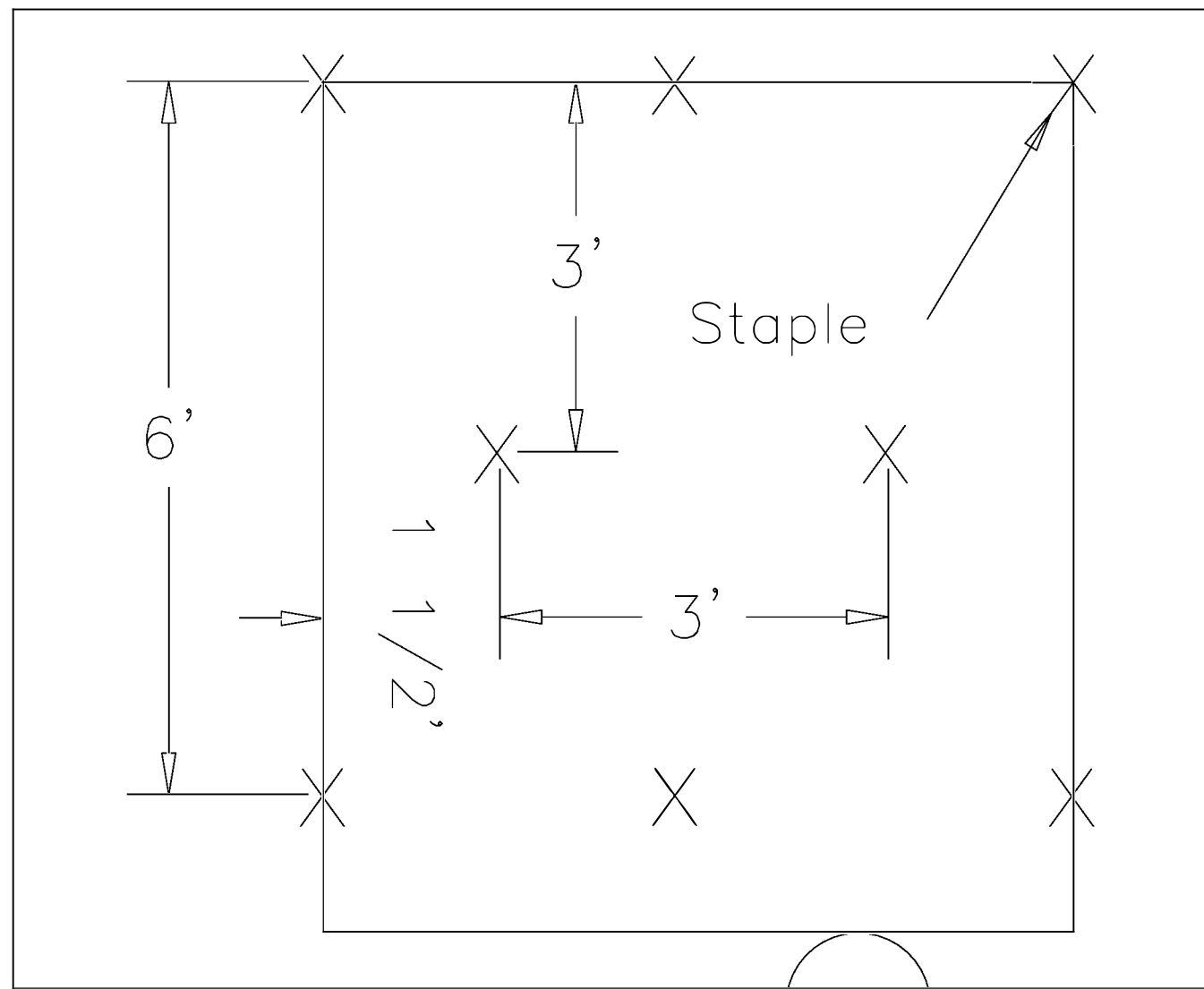


DIAGRAM (B)

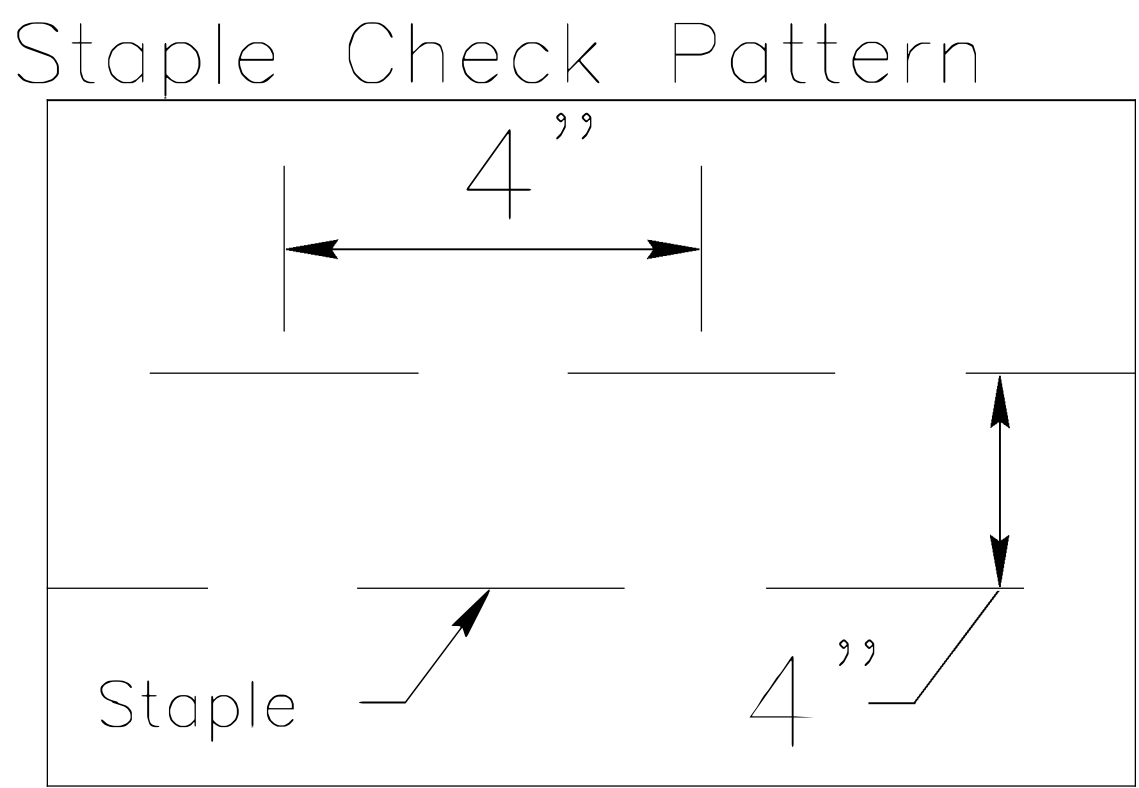


DIAGRAM (C)

**NOTES:**

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

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

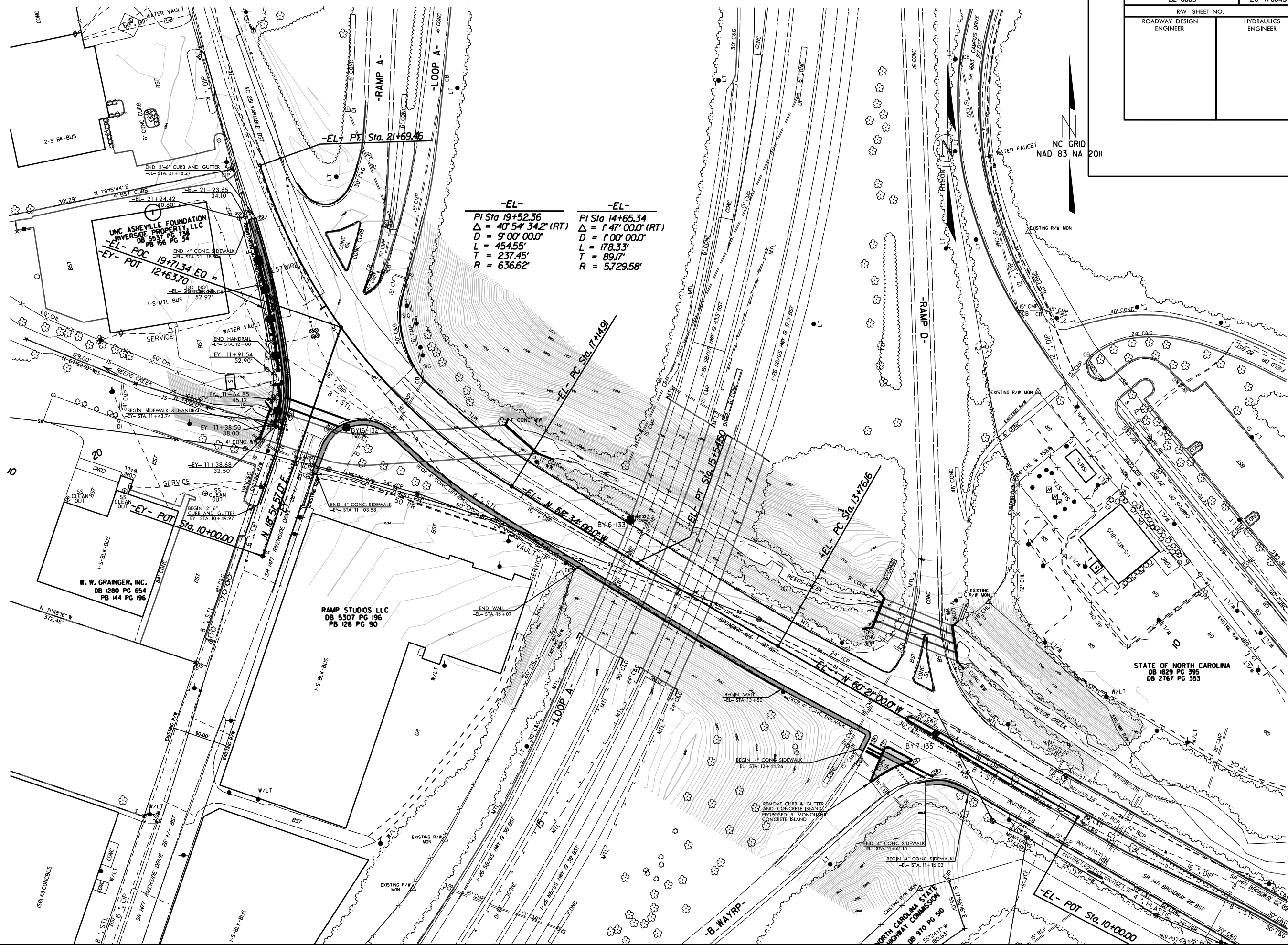
NOT TO SCALE

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

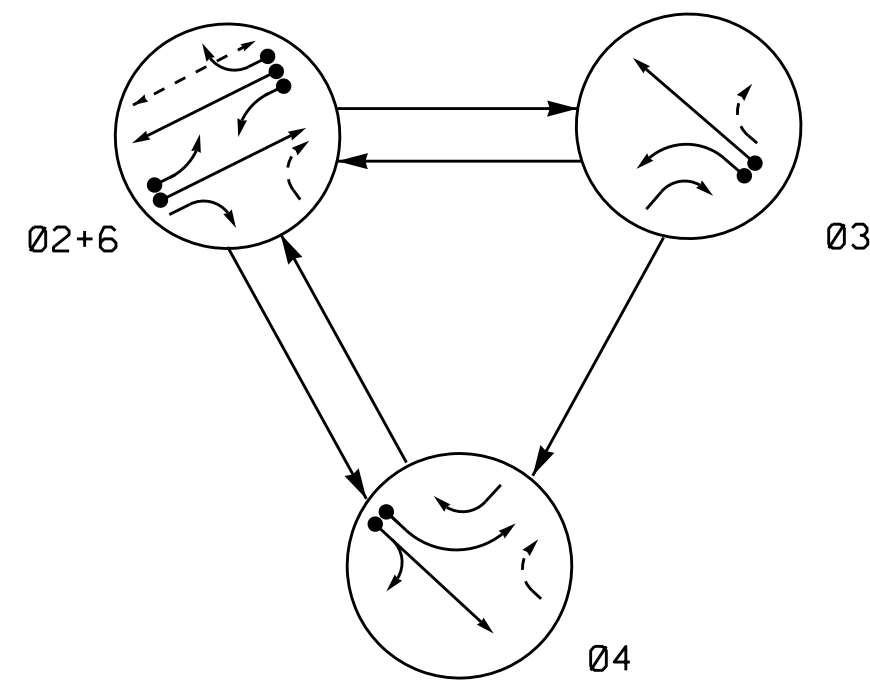
SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10’ OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 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.





### PHASING DIAGRAM

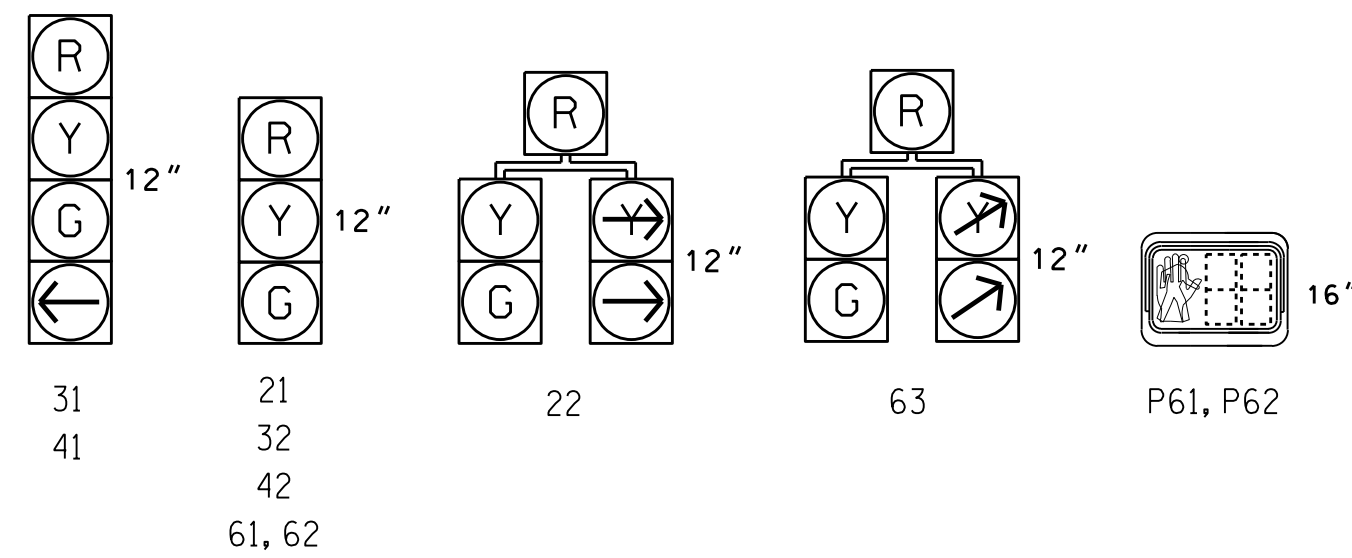


## TABLE OF OPERATION

SIGNAL FACE	PHASE			
	0 2 + 6	0 3	0 4	F L A S H
21	G	R	R	Y
22	G	R	R	Y
31	R	G	R	R
32	R	G	R	R
41	R	R	G	R
42	R	R	G	R
61,62	G	R	R	Y
63	G	R	R	Y
P61,P62	W	DW	DW	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



# OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

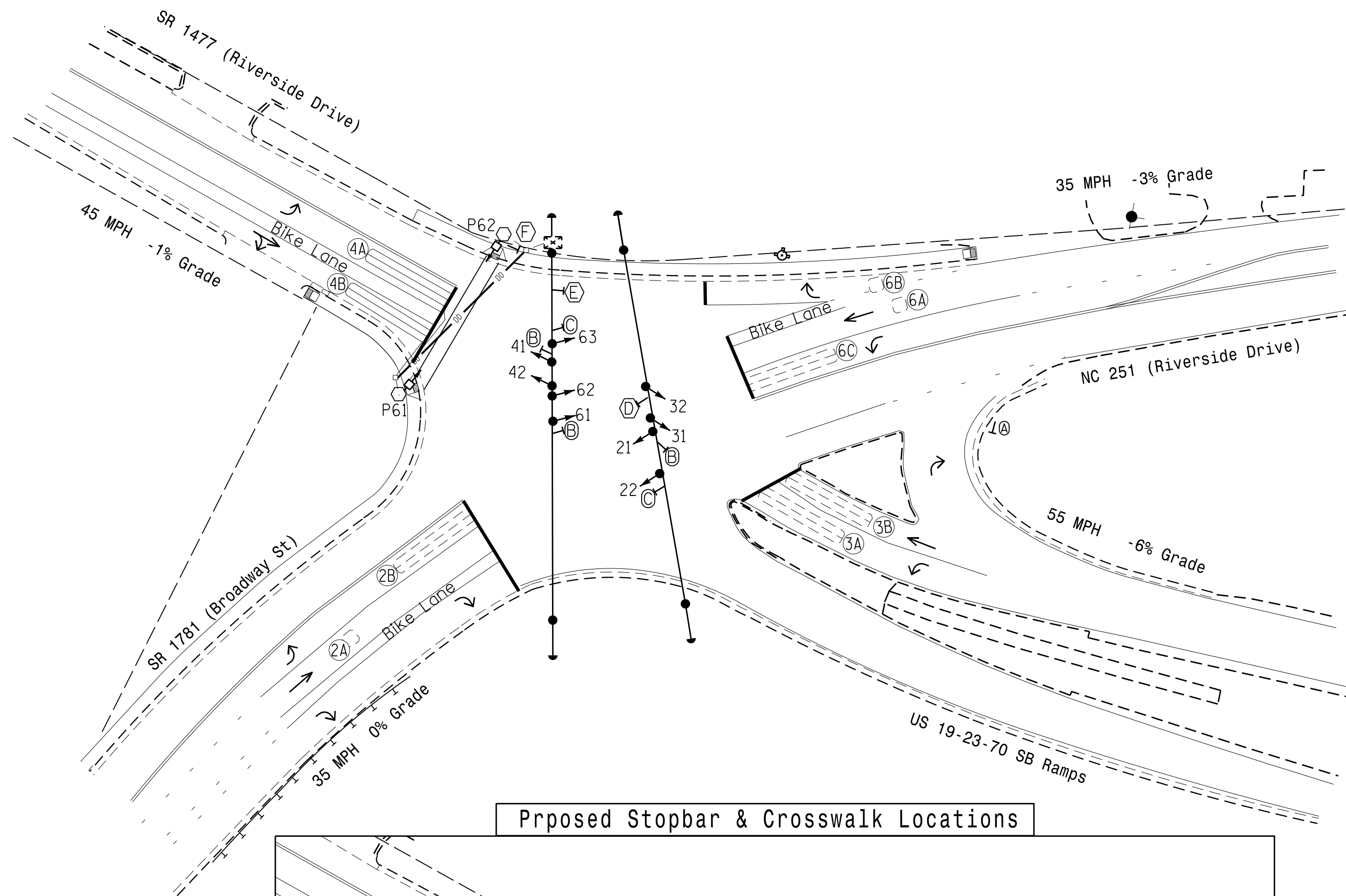
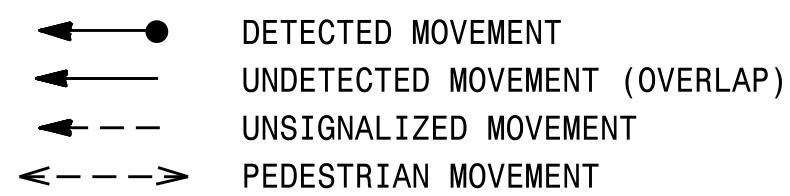
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CLIP
2A	6X6	70	5	-	2	Y	Y	-	-	-	-	-
2B	6X40	0	2-4-2	-	2	Y	Y	-	-	-	-	-
3A	6X40	0	2-4-2	-	3	Y	Y	-	-	-	-	-
3B	6X40	0	2-4-2	-	3	Y	Y	-	-	-	-	-
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	3	-	-
4B	6X40	0	2-4-2	Y	4	Y	Y	-	-	10	-	-
6A,6B	6X6	70	5	-	6	Y	Y	-	-	-	-	-
6C	6X40	0	2-4-2	-	6	Y	Y	-	-	-	-	-

3 Phase  
ly Actuated  
le Signal System

## NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. The order of phase 3 and phase 4 may be reversed.
4. Set all detector units to presence mode.
5. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
6. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

### PHASING DIAGRAM DETECTION LEGEND

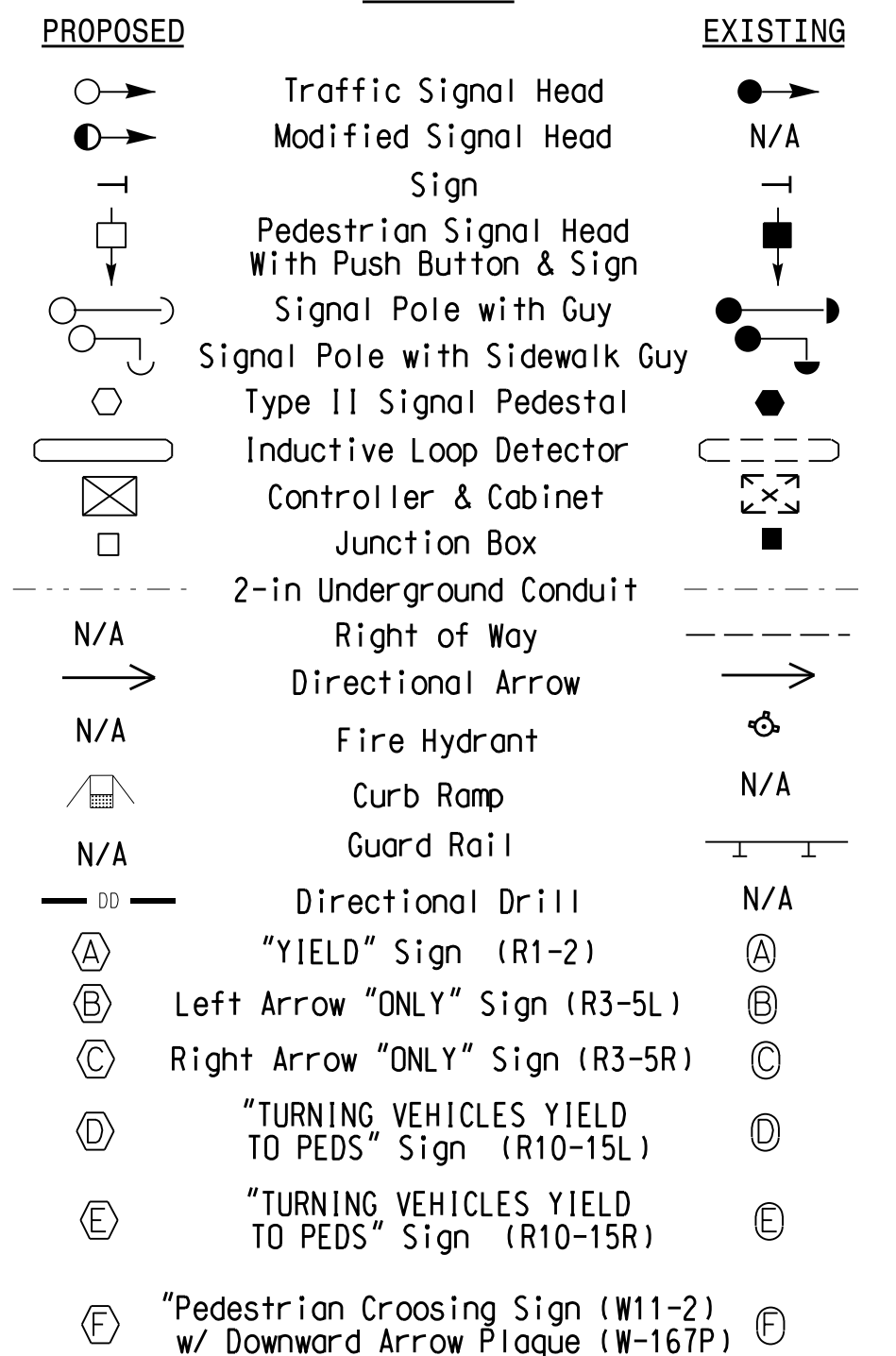


## OASIS 2070 TIMING CHART






FEATURE	PHASE			
	2	3	4	6
Min Green 1 *	10	7	7	10
Extension 1 *	3.0	2.0	2.0	3.0
Max Green 1 *	45	30	30	45
Yellow Clearance	4.1	5.9	4.6	4.1
Red Clearance	2.5	2.0	2.3	2.5
Red Revert	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	7
Don't Walk 1	-	-	-	15
Seconds Per Actuation *	-	-	-	-
Max Variable Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	MIN RECALL	-	-	MIN RECALL
Vehicle Call Memory	YELLOW	-	-	YELLOW
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

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

### LEGEND



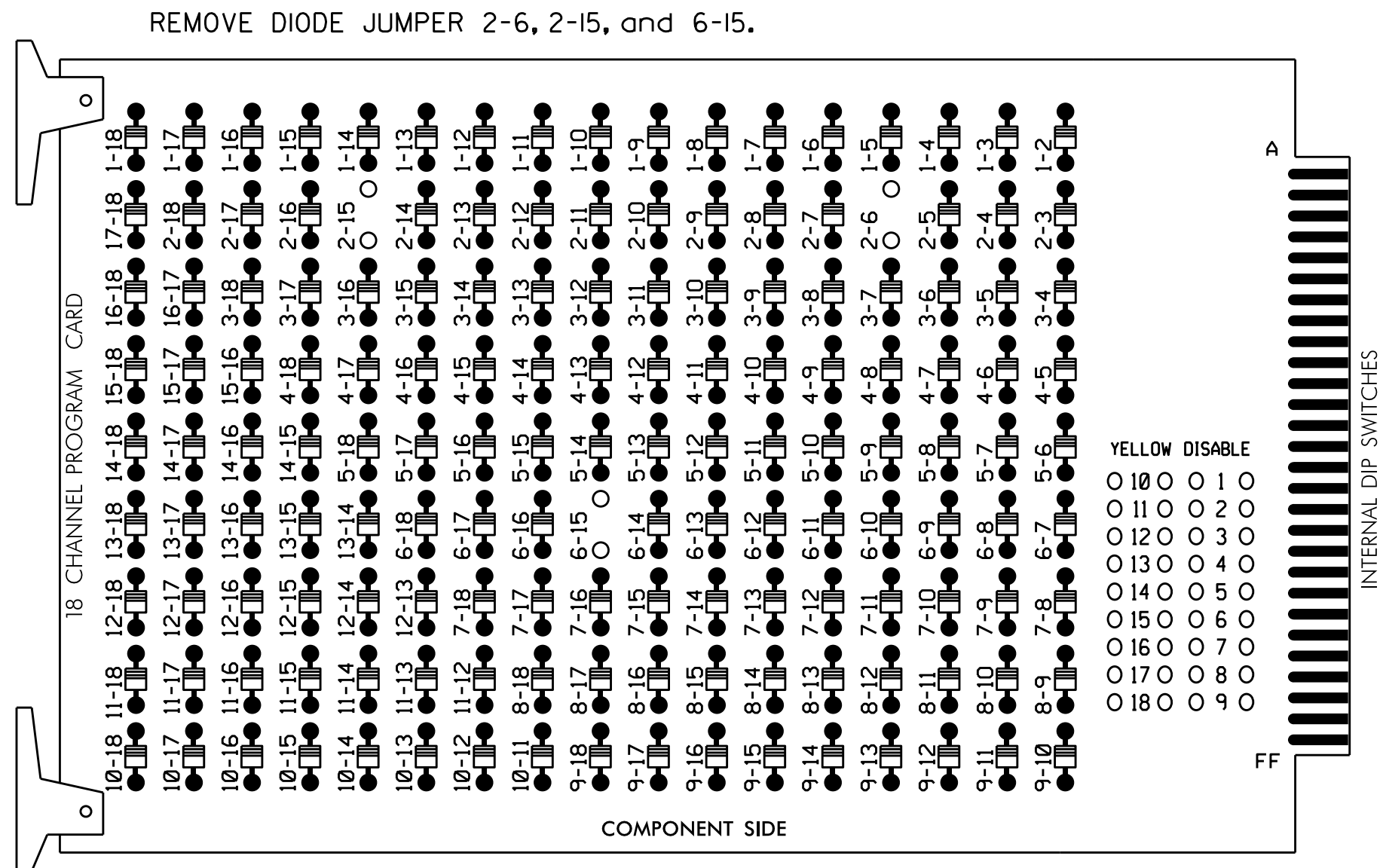
## Signal Upgrade

Prepared In The Offices of: 	NC 251 (Riverside Dr) / SR 1781 (Broadway St) at SR 1477 (Riverside Dr) / US 19-23-70 SB Ramps	SEAL 																																	
Division 13 Buncombe County Asheville																																			
PLAN DATE: March 2021	REVIEWED BY: R.N. Zinser																																		
PREPARED BY: EM Minshew	REVIEWED BY:																																		
REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%;">INIT.</th> <th style="width: 20%;">DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>				INIT.	DATE																														
	INIT.	DATE																																	
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	1" = 40'																																		
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EDI MODEL 2018EClip-NC CONFLICT MONITOR  
PROGRAMMING DETAIL

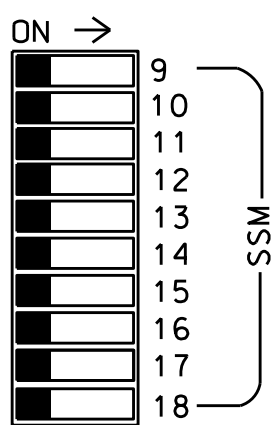
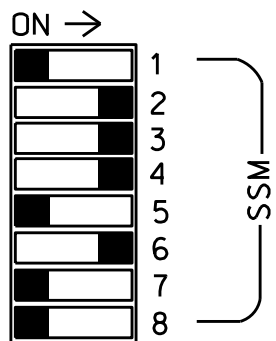
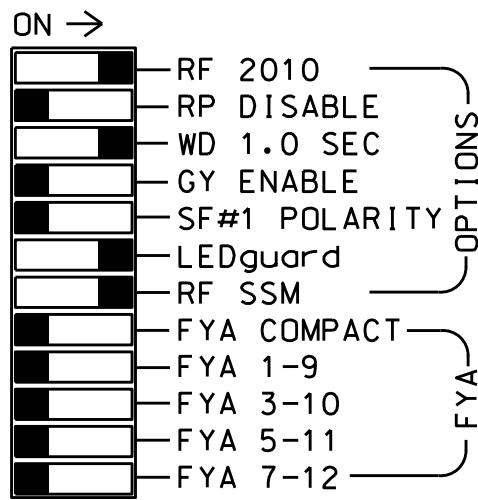
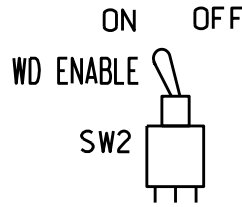
(remove jumper and set switches as shown)



REMOVE JUMPER AS SHOWN

NOTES:

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



■ = DENOTES POSITION OF SWITCH

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Enable Simultaneous Gap-Out for all phases.
- Program phases 2 and 6 for Start Up In Green.
- Program phase 6 for Startup Ped Call.
- Program phases 2 and 6 for Yellow Flash.
- The cabinet and controller are part of the Asheville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070E  
CABINET.....336  
SOFTWARE.....ECONOLITE OASIS  
CABINET MOUNT.....POLE  
OUTPUT FILE POSITIONS...12  
LOAD SWITCHES USED.....S2,S4,S5,S8,S9  
PHASES USED.....2,3,4,6,6PED  
OVERLAPS.....NONE

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	NU	21,22	NU	22	31	32	41	42	63	NU	NU	NU
RED		128		116	116	101	101			134		
YELLOW		129		117	117	102	102			135		
GREEN		130		118	118	103	103			136		
RED ARROW												
YELLOW ARROW				117			102					
GREEN ARROW				118	118	103	103					
Hand icon										119		
Walking person icon										121		

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)

FILE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	S	Ø 2	Ø 3	Ø 4	S	Ø 6	S	S	S	S	S	S	Ø 6 PED	FS
I	2A	3A	4A	2A	6A,6B	2A	2A	2A	2A	2A	2A	2A	DC ISOLATOR	DC ISOLATOR
L	2B	3B	4B	2B	6C	2B	2B	2B	2B	2B	2B	2B	NOT USED	DC ISOLATOR

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

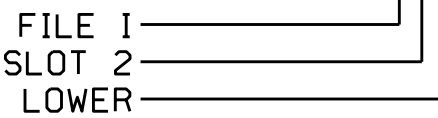
FS = FLASH SENSE  
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
2A	TB21-3,4	I2U	39	1	2	2	Y	Y			
2B	TB23-3,4	I2L	43	5	12	2	Y	Y			
3A	TB21-5,6	I3U	58	20	3	3	Y	Y			
3B	TB23-5,6	I3L	49	11	24	3	Y	Y			
4A	TB21-7,8	I4U	41	3	4	4	Y	Y			3
4B	TB23-7,8	I4L	45	7	14	4	Y	Y			10
6A,6B	TB21-11,12	I6U	40	2	6	6	Y	Y			
6C	TB23-11,12	I6L	44	6	16	6	Y	Y			
PED PUSH BUTTONS											
P61,P62	TB22-11,12	I13U	68	30	PED 6	6 PED					

NOTE:  
INSTALL DC ISOLATOR  
IN INPUT FILE SLOT I13.

INPUT FILE POSITION LEGEND: I2L



COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

THIS ELECTRICAL DETAIL IS FOR  
THE SIGNAL DESIGN: 13-0278  
DESIGNED: March 2021  
SEALED: 3/18/2021  
REVISED: N/A

Electrical Detail

ELECTRICAL AND PROGRAMMING  
DETAILS FOR:

Prepared In the Offices of:



750 N. Greenfield Pkwy, Garner, NC 27529

NC 251 (Riverside Drive)/  
SR 1781 (Broadway Avenue)  
at SR 1477 (Riverside Drive)/  
US 19-23-70 SB Ramps

Division 13 Buncombe County Asheville

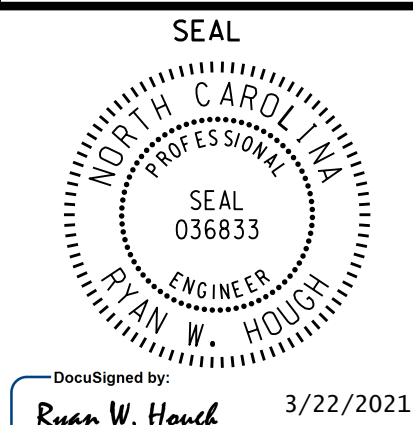
PLAN DATE: March 2021 REVIEWED BY:

PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS INIT. DATE

DATE

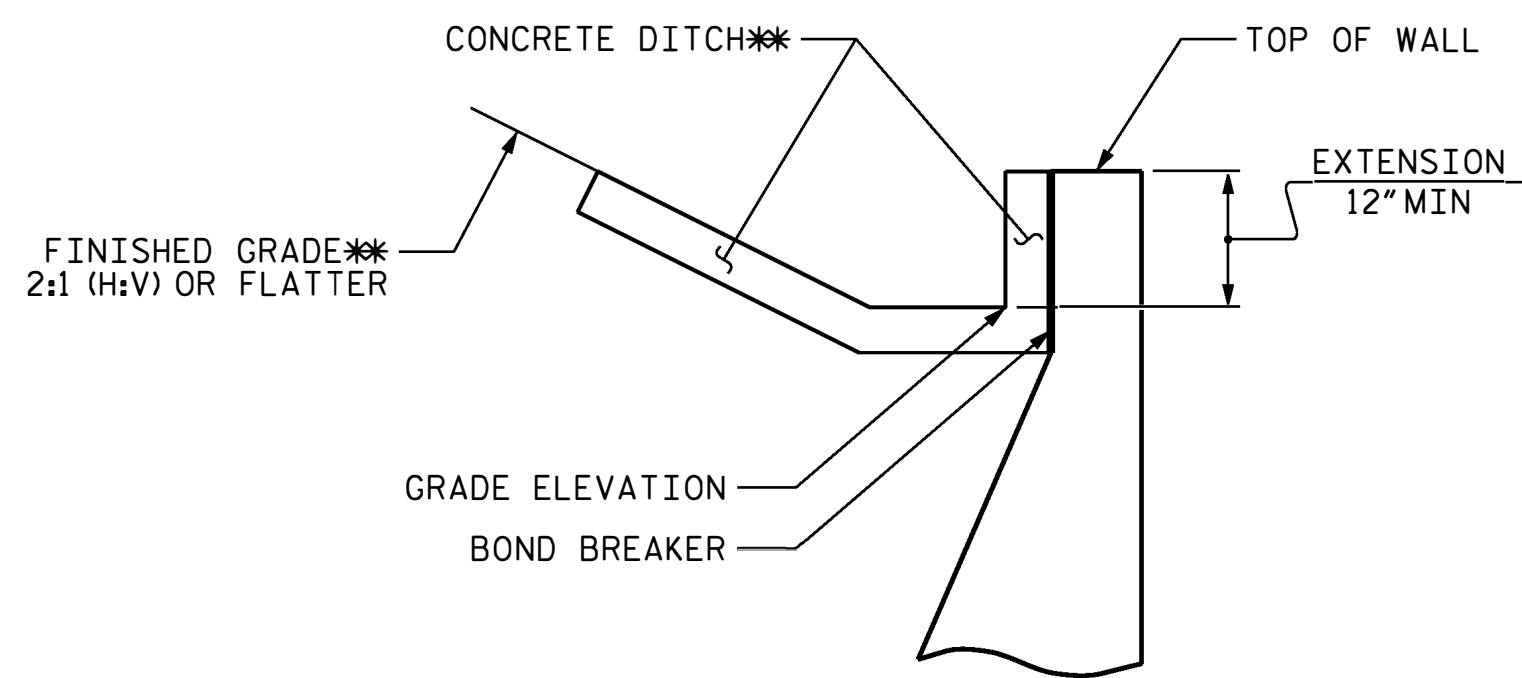
DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED



DocuSigned by: Ryan W. Hough 3/22/2021

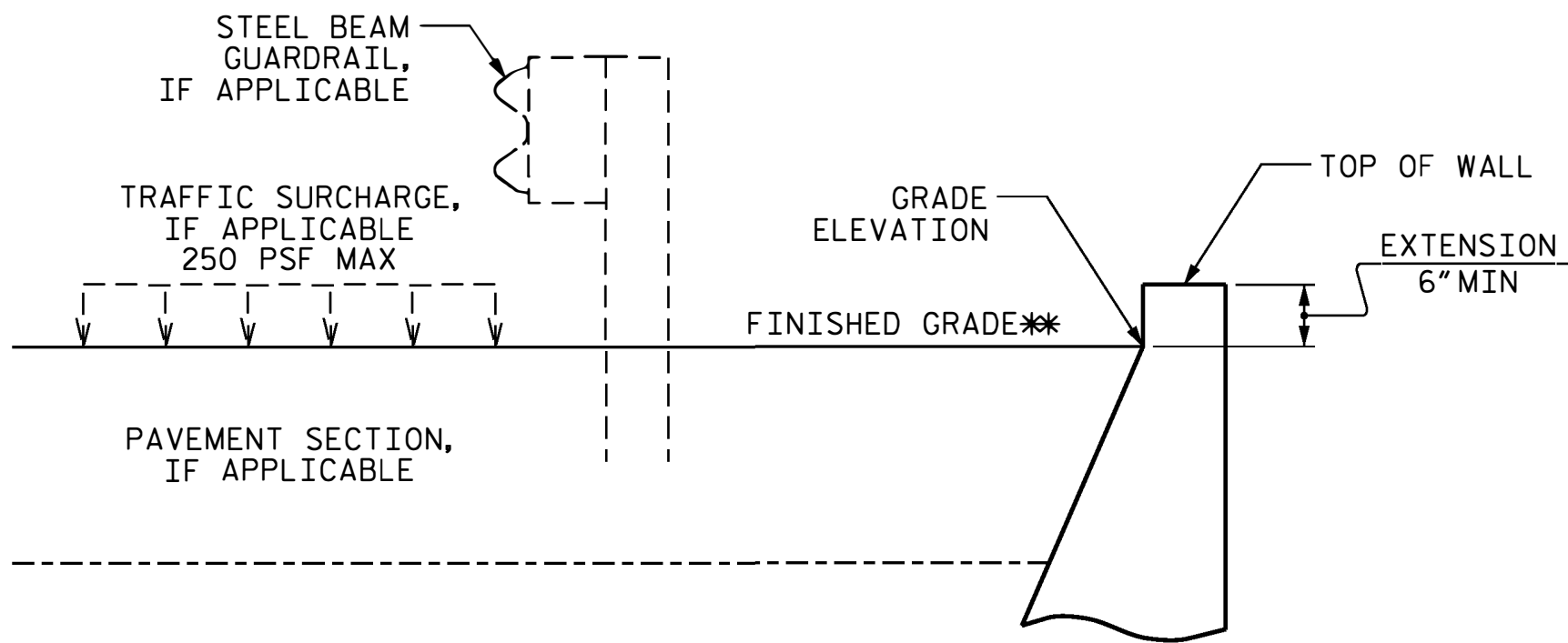
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SIG. INVENTORY NO. 13-0278



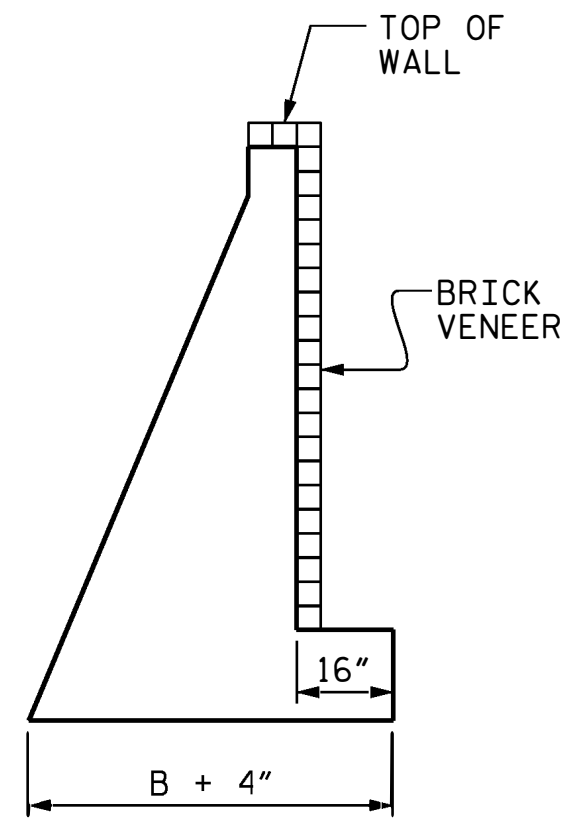
### SLOPE CASE

\*\*SEE ROADWAY PLANS FOR CONCRETE DITCH AND FINISHED GRADE DETAILS.



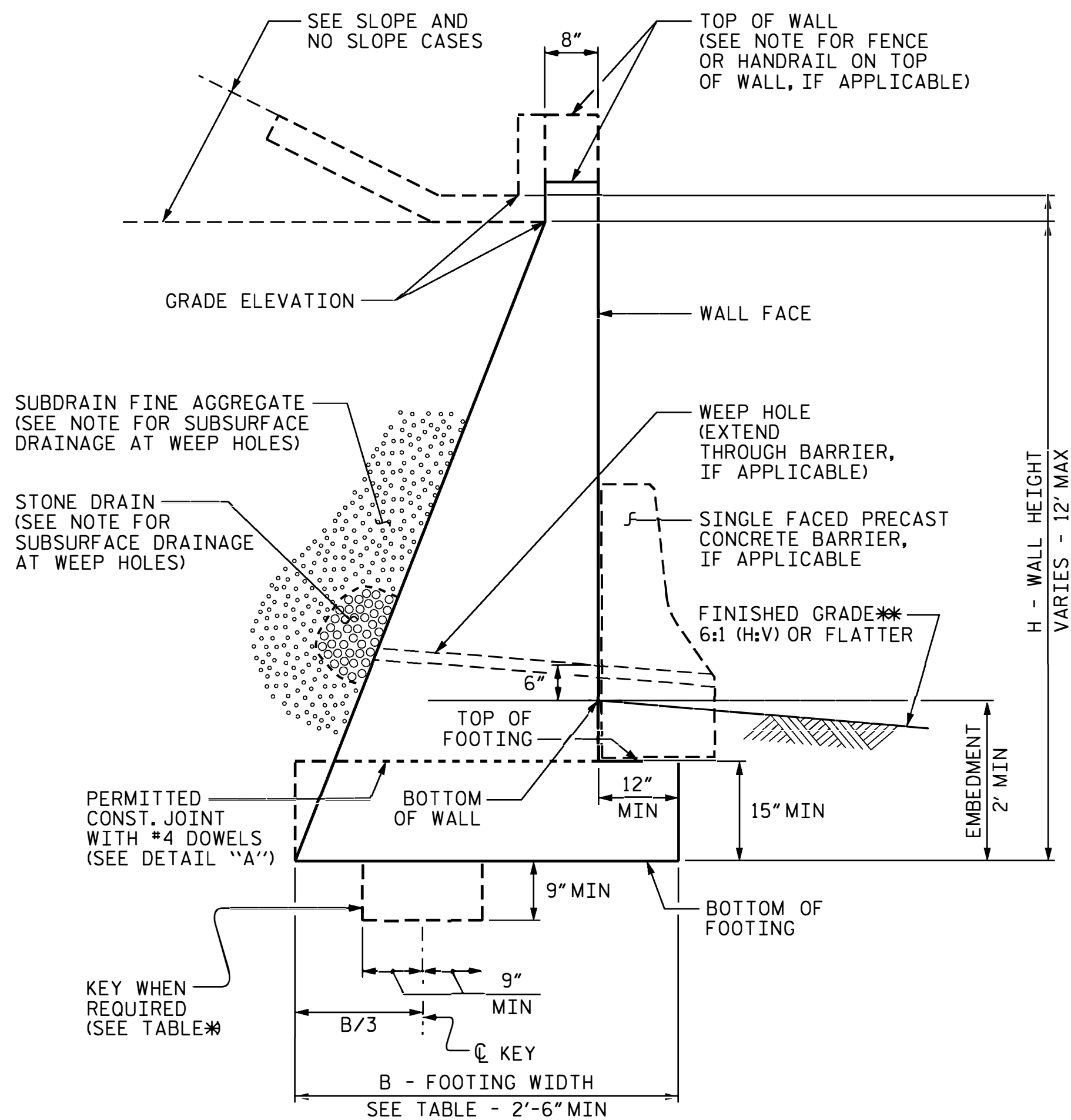
### NO SLOPE CASE

\*\*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.



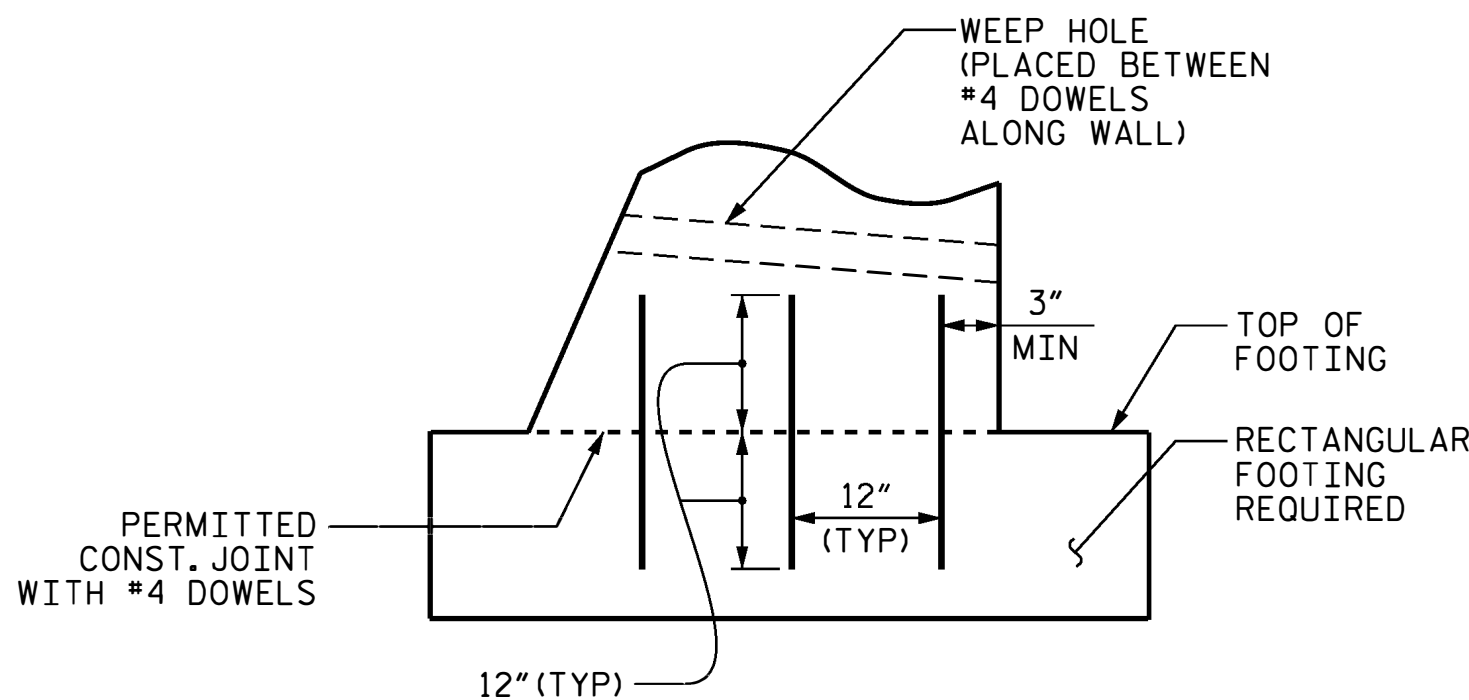
### BRICK VENEER DETAIL

(WHEN APPLICABLE)



### STANDARD CIP GRAVITY WALL

\*\*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.



### DETAIL "A"

H (FT)	3 - < 6	6 - 9	> 9 - 12
SLOPE CASE	.66	.70*	.75*
NO SLOPE CASE WITH TRAFFIC SURCHARGE	.80	.75*	.70*
NO SLOPE CASE WITHOUT TRAFFIC SURCHARGE	.60	.60	.60

### B/H RATIO (B = 2'-6" MIN)

\*KEY IS REQUIRED FOR "SLOPE CASE" OR "NO SLOPE CASE WITH TRAFFIC SURCHARGE" WHEN H IS 6' OR GREATER.

### NOTES:

FOR STANDARD CIP GRAVITY RETAINING WALLS, SEE SECTION 453 OF THE STANDARD SPECIFICATIONS.

FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.

FOR SINGLE FACED PRECAST CONCRETE BARRIER, SEE ROADWAY PLANS AND SECTION 857 OF THE STANDARD SPECIFICATIONS.

FOR FENCES OR HANDRAILS ON TOP OF WALLS, SEE ROADWAY PLANS FOR FENCE OR HANDRAIL ATTACHMENT DETAILS.

FOR SUBSURFACE DRAINAGE AT WEEP HOLES, SEE ARTICLE 414-8 OF THE STANDARD SPECIFICATIONS.

STANDARD CIP GRAVITY WALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:  
UNIT WEIGHT,  $\gamma$  = 120 PCF  
FRICTION ANGLE,  $\phi$  = 35 DEGREES (GROUNDWATER WITHIN 7' OF BOTTOM OF FOOTING)  
FRICTION ANGLE,  $\phi$  = 30 DEGREES (GROUNDWATER MORE THAN 7' BELOW BOTTOM OF FOOTING)  
COHESION,  $c$  = 0 PSF

DO NOT USE STANDARD CIP GRAVITY WALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE BOTTOM OF FOOTING.

DO NOT USE STANDARD CIP GRAVITY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW WALLS.

BEFORE BEGINNING STANDARD CIP GRAVITY WALL CONSTRUCTION, SURVEY WALL LOCATIONS AND SUBMIT WALL PROFILE VIEWS (WALL ENVELOPES) FOR REVIEW. FOR WALL ENVELOPES, INCLUDE BOTTOM OF WALL, EXISTING GROUND AND GRADE ELEVATIONS AND OTHER ELEVATIONS AS NEEDED AT INTERVALS OF 25' OR LESS ALONG WALLS. DO NOT START WALL CONSTRUCTION UNTIL WALL ENVELOPES ARE ACCEPTED.

FOR BRICK VENEERS, SUBMIT BRICK SAMPLES FOR APPROVAL BEFORE BEGINNING STANDARD CIP GRAVITY WALL CONSTRUCTION.

DO NOT PLACE CONCRETE FOR FOOTINGS UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

WHEN CONSTRUCTING STANDARD CIP GRAVITY WALLS WITH A CONSTRUCTION JOINT AS SHOWN IN DETAIL "A", PROVIDE A MINIMUM OF 3 EQUALLY SPACED #4 DOWELS AT INTERVALS OF 1'-6" ALONG WALLS.

PROJECT NO.: BL-0005

BUNCOMBE COUNTY

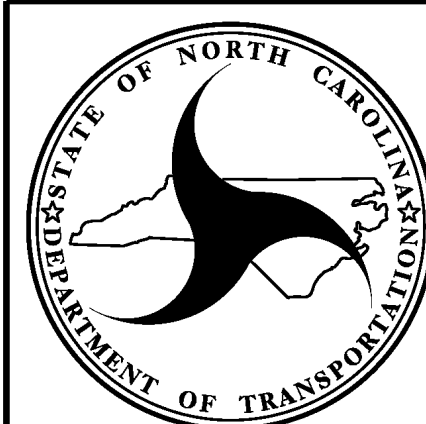
STATION: STA 13+50 to 16+07 +/- -EL-

SHEET 1 OF 1

STANDARD DETAIL NO. 453.01

STANDARD  
CAST-IN-PLACE (CIP)  
GRAVITY RETAINING WALL

DATE: 1-16-18



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GEOTECHNICAL  
ENGINEERING UNIT

SHEET  
NO.  
W-1