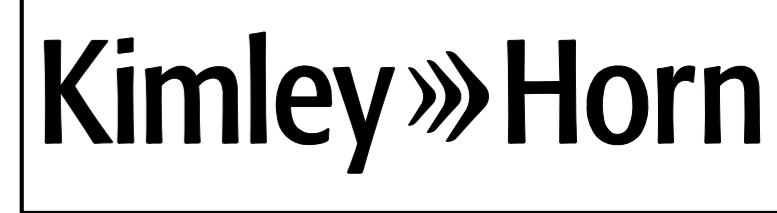


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and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

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NARRATIVE

Project Description
 The North Carolina Department of Transportation proposes to provide intersection improvements along Bryson Walk, Slope Street, Everett Street, Depot Street, Ramseur Street, and to re-align Depot Street and Deep Creek Road. Approximately 0.69 acres will be disturbed during the construction of this project. Also, approximately 0.30 acres will be vegetatively stabilized with grass and permanent plantings.

Site Description
 The site is generally rolling and contains some drainage ways that are bordered by moderate to steep slopes. Land use along the roadway is developed and primarily residential and commercial. The majority of the drainage from the project site makes its way through a series of ditches and storm drain systems and outfalls to the south into the Tuckasegee River which empties into Fontana Lake within the Little Tennessee River Basin. No new drainage patterns were introduced. The fill slopes and drainage ditches around the project appear to be stable and do not show signs of significant erosion soils.

Soils
 The soil types throughout the project limits are shown in the geotechnical report.

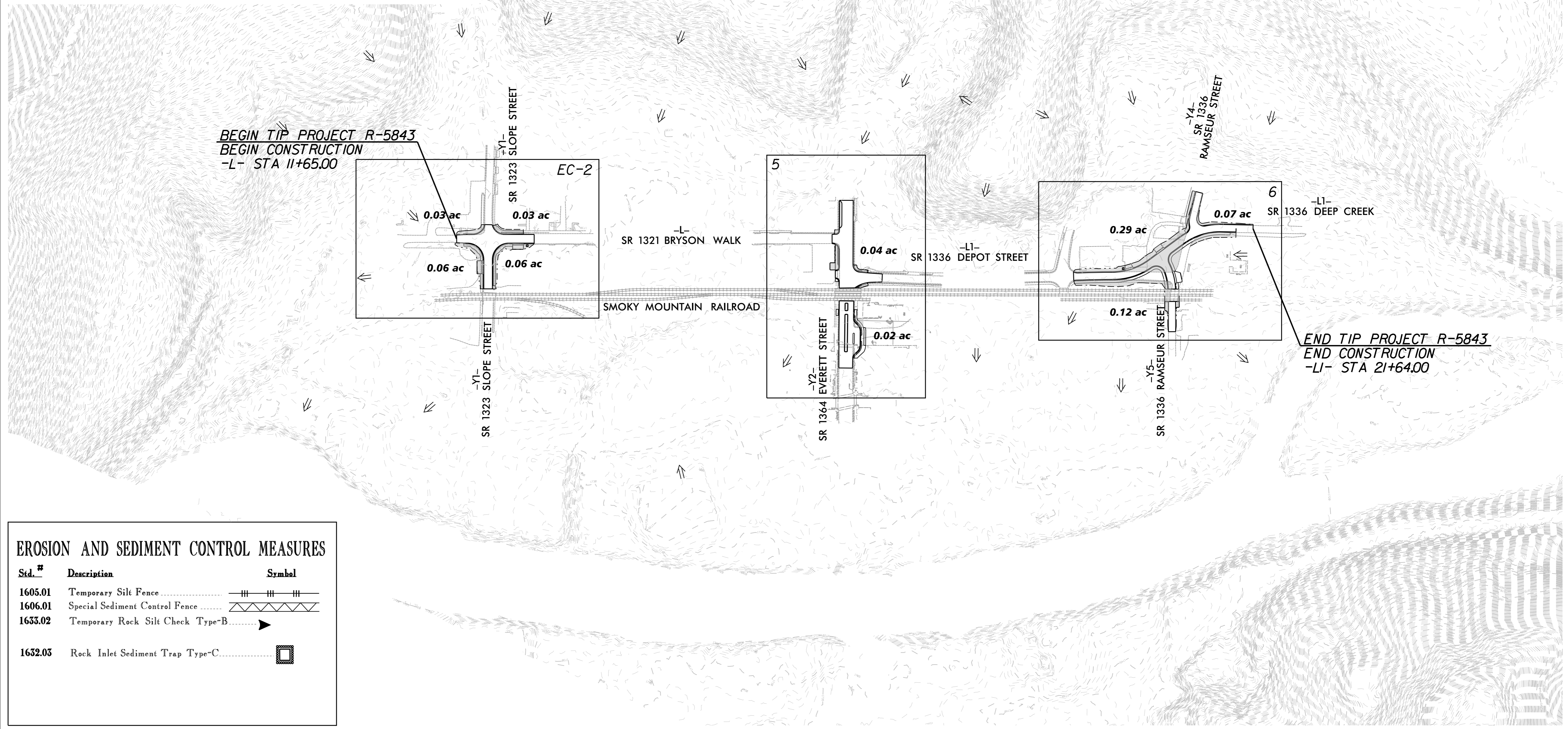
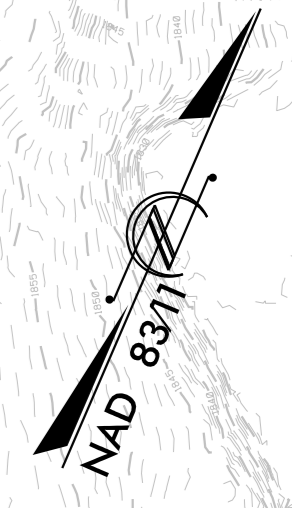
IMPERVIOUS AND PERVIOUS SURFACES IN THE DISTURBED AREA

PROPOSED IMPERVIOUS SURFACE = 0.39 AC
 PROPOSED PERVIOUS SURFACE = 0.30 AC

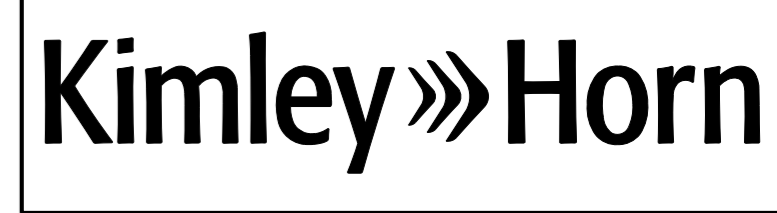
Total Disturbed Area (shaded) = 0.69 acres

⇒ DIRECTION OF FLOW

■ PROJECT DENUDED AREAS



K:\RAL_Roadway\01036387 - Div 14 (R-5843 Bryson Int)\Erosion Control\Plan Sheets\R-5843_ero_tshdgn 12/14/2021



ANN C. ENSLEY AND JOHNNY D. ENSLEY DB 144 PG 258 MB 1PG 26B

J.C. CRISP AND WIFE LINDA B. CRISP DB 92 PG 6 MB 1PG 26B

VALERIE L. ZMUDA AND BROOK J. STILLMAN DB 421 PG 01 MB 1PG 26B

STEVEN & TODD MATZ DB 351 PG 38 MB 1PG 26B

GAMBILL PROFESSIONAL PROPERTIES, LLC DB 439 PG 14

JAMES LEE FREEMAN DB 176 PG 54B

NO ASSOCIATED LINE OR RECORD AVAILABLE FOR THIS STRUCTURE

BEGIN TIP PROJECT R-5843
BEGIN CONSTRUCTION
-L- STA 11+65.00

END CONSTRUCTION
-YI- STA 13+59.00

END CONSTRUCTION
-L- STA 13+80.00

BEGIN CONSTRUCTION
-YI- STA 11+81.00

GENERAL NOTES

- 1) CONTRACTOR TO INSTALL ALL EROSION CONTROL MEASURES BEFORE ANY CLEARING AND GRUBBING IS PERFORMED.
- 2) SILT FENCE TO BE INSTALLED A MINIMUM OF 3' OUTSIDE OF FILL SLOPES.
- 3) CONTRACTOR TO ENSURE THAT ALL ROADWAYS AND CURB LINES ADJACENT TO THIS PROJECT ARE FREE OF DEBRIS, DIRT, AND EQUIPMENT DURING THE PROJECT DURATION UNLESS DIRECTED BY THE ENGINEER. ANY DAMAGE TO EXISTING CURB AND GUTTER AT CONSTRUCTION ENTRANCES MUST BE REPAIRED AT THE CONTRACTORS EXPENSE.
- 4) PIPES SHALL BE INSTALLED IN THE DRY (WITH A MIN. 3 DAYS OF DRY WEATHER DURING INSTALLATION) CONTACT ENGINEER AND INSPECTOR 24 HOURS PRIOR TO INSTALLATION OF STORMDRAIN SYSTEMS.
- 5) AFTER STORMDRAIN SYSTEMS ARE SET, CONTRACTOR IS TO STABILIZE ALL DISTURBED AREAS AND SLOPES USING EROSION CONTROL MATTING, SEEDING, AND MULCH TO MAINTAIN A VIGOROUS, DENSE, VEGETATIVE COVER.
- 6) ADDITIONAL MATTING MAY BE USED ON STEEP SLOPES AS DIRECTED BY THE ENGINEER.

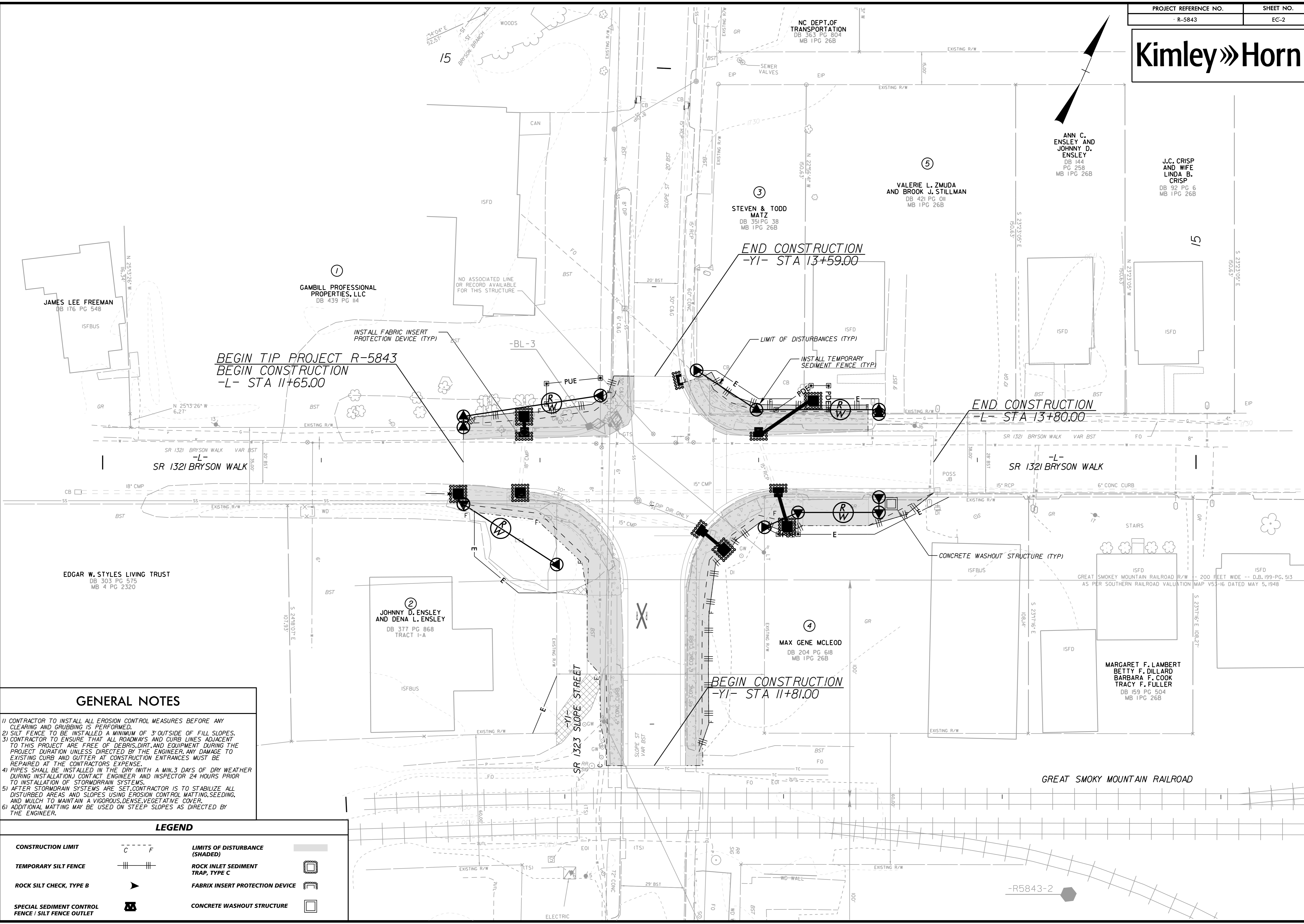
LEGEND

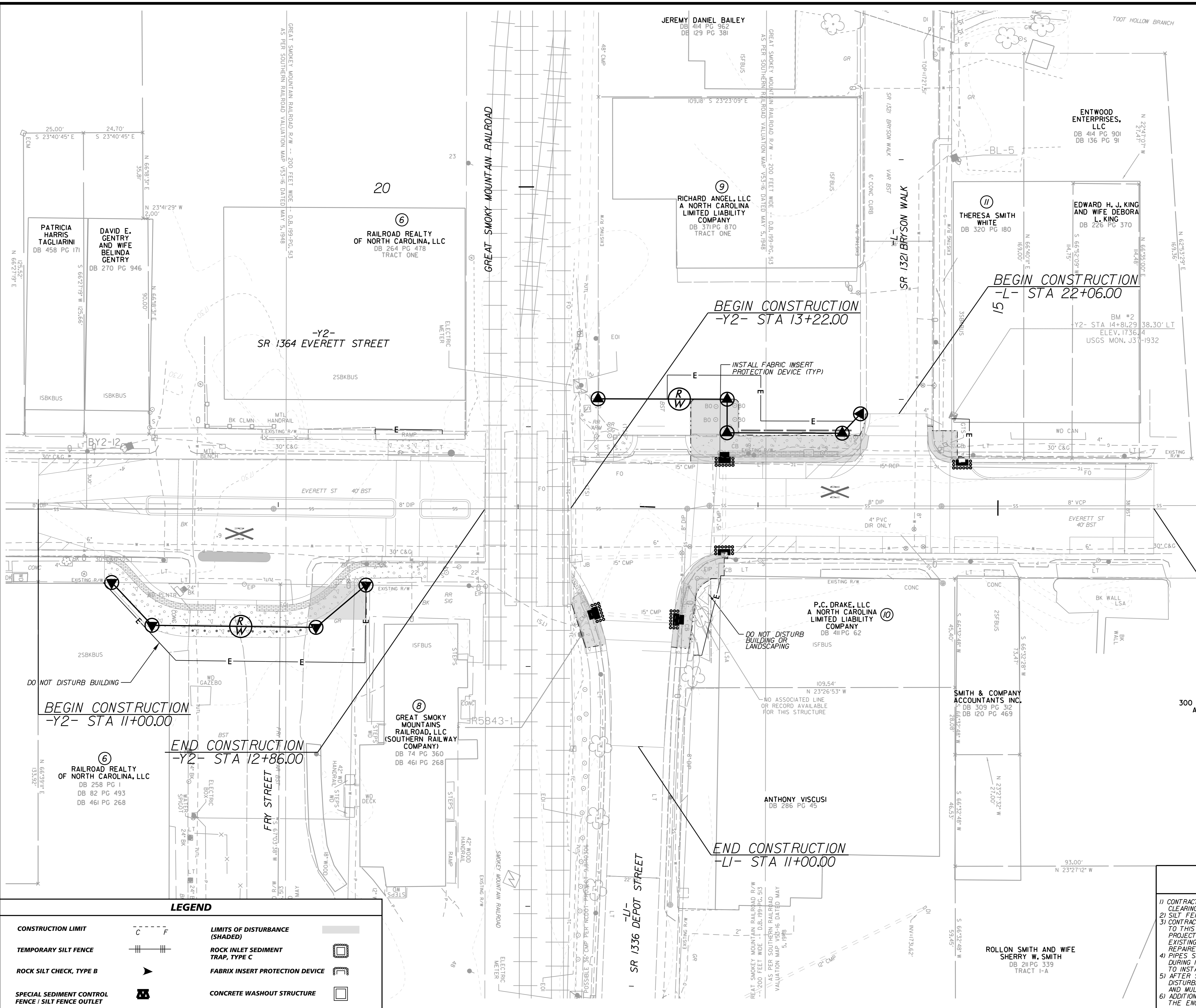
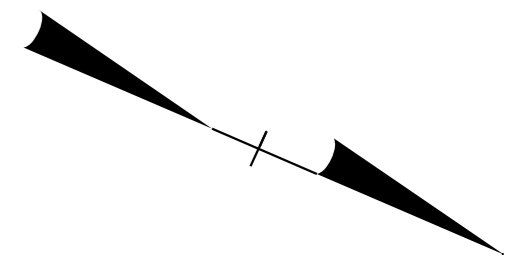
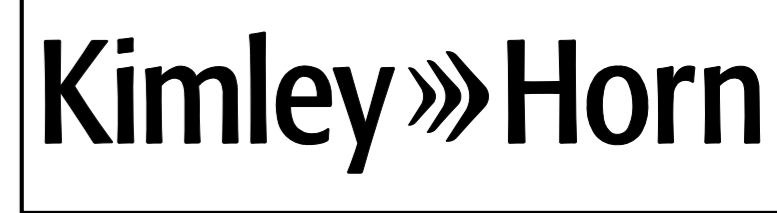
CONSTRUCTION LIMIT		LIMITS OF DISTURBANCE (SHADED)	
TEMPORARY SILT FENCE		ROCK INLET SEDIMENT TRAP, TYPE C	
ROCK SILT CHECK, TYPE B		FABRIC INSERT PROTECTION DEVICE	
SPECIAL SEDIMENT CONTROL FENCE / SILT FENCE OUTLET		CONCRETE WASHOUT STRUCTURE	

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12/14/2021

-R5843-2



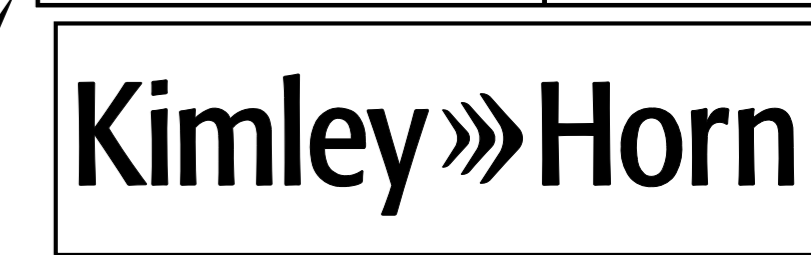


LEGEND

CONSTRUCTION LIMIT	C - F	LIMITS OF DISTURBANCE (SHADED)	
TEMPORARY SILT FENCE		ROCK INLET SEDIMENT TRAP, TYPE C	
ROCK SILT CHECK, TYPE B		FABRIX INSERT PROTECTION DEVICE	
SPECIAL SEDIMENT CONTROL FENCE / SILT FENCE OUTLET		CONCRETE WASHOUT STRUCTURE	

- GENERAL NOTES**
- 1) CONTRACTOR TO INSTALL ALL EROSION CONTROL MEASURES BEFORE ANY CLEARING AND GRUBBING IS PERFORMED.
 - 2) SILT FENCE TO BE INSTALLED A MINIMUM OF 3' OUTSIDE OF FILL SLOPES.
 - 3) CONTRACTOR TO ENSURE THAT ALL ROADWAYS AND CURB LINES ADJACENT TO THIS PROJECT ARE FREE OF DEBRIS, DIRT, AND EQUIPMENT DURING THE PROJECT DURATION UNLESS DIRECTED BY THE ENGINEER. ANY DAMAGE TO EXISTING CURB AND GUTTER AT CONSTRUCTION ENTRANCES MUST BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
 - 4) PIPES SHALL BE INSTALLED IN THE DRY (WITH A MIN. 3 DAYS OF DRY WEATHER DURING INSTALLATION) CONTACT ENGINEER AND INSPECTOR 24 HOURS PRIOR TO INSTALLATION OF STORMDRAIN SYSTEMS.
 - 5) AFTER STORMDRAIN SYSTEMS ARE SET, CONTRACTOR IS TO STABILIZE ALL DISTURBED AREAS AND SLOPES USING EROSION CONTROL MATTING, SEEDING, AND MULCH TO MAINTAIN A VIGOROUS, DENSE, VEGETATIVE COVER.
 - 6) ADDITIONAL MATTING MAY BE USED ON STEEP SLOPES AS DIRECTED BY THE ENGINEER.

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BM #3
-LI- STA 16+86.97 226.65' LT
ELEV. 1744.53
BENCH TIE SET IN 12" PECAN

SMOKY MOUNTAIN PROPERTIES, LLC
A NORTH CAROLINA
LIMITED LIABILITY COMPANY
DB 350 PG 106
DB 34 PG 528

MISSIONARY BAPTIST
CHURCH
DB 49 PG 314
DB 34 PG 528

BRYSON INVESTMENT
GROUP LLC
DB 437 PG 234
MB 4 PG 3017

WHISTLEPIG ALLEY, LLC,
A NORTH CAROLINA LIMITED
LIABILITY COMPANY
DB 422 PG 99
DB 405 PG 439
DB 285 PG 767

NBC HOLDING, LLC
DB 436 PG 647
MB 4 PG 3017

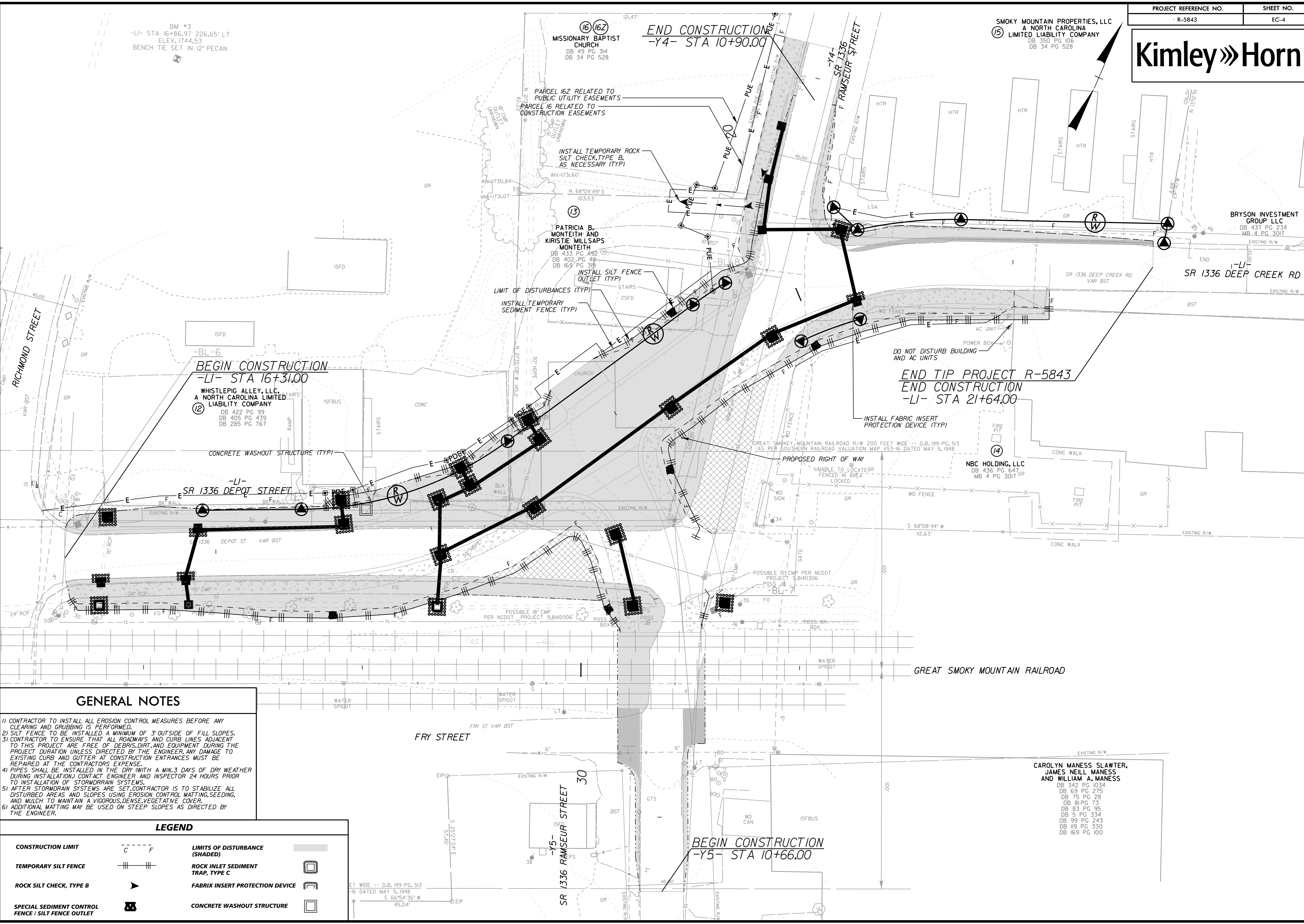
CAROLYN MANESS SLAWTER,
JAMES NEILL MANESS
AND WILLIAM A. MANESS
DB 342 PG 1034
DB 69 PG 275
DB 75 PG 28
DB 81 PG 73
DB 83 PG 95
DB 5 PG 334
DB 99 PG 243
DB 119 PG 330
DB 169 PG 100

GENERAL NOTES

- 1) CONTRACTOR TO INSTALL ALL EROSION CONTROL MEASURES BEFORE ANY CLEARING AND GRUBBING IS PERFORMED.
- 2) SILT FENCE TO BE INSTALLED A MINIMUM OF 3' OUTSIDE OF FILL SLOPES.
- 3) CONTRACTOR TO ENSURE THAT ALL ROADWAYS AND CURB LINES ADJACENT TO THIS PROJECT ARE FREE OF DEBRIS, DIRT, AND EQUIPMENT DURING THE PROJECT DURATION UNLESS DIRECTED BY THE ENGINEER. ANY DAMAGE TO EXISTING CURB AND GUTTER AT CONSTRUCTION ENTRANCES MUST BE REPAIRED AT THE CONTRACTORS EXPENSE.
- 4) PIPES SHALL BE INSTALLED IN THE DRY (WITH A MIN. 3 DAYS OF DRY WEATHER DURING INSTALLATION) CONTACT ENGINEER AND INSPECTOR 24 HOURS PRIOR TO INSTALLATION OF STORMDRAIN SYSTEMS.
- 5) AFTER STORMDRAIN SYSTEMS ARE SET, CONTRACTOR IS TO STABILIZE ALL DISTURBED AREAS AND SLOPES USING EROSION CONTROL MATTING, SEEDING, AND MULCH TO MAINTAIN A VIGOROUS, DENSE, VEGETATIVE COVER.
- 6) ADDITIONAL MATTING MAY BE USED ON STEEP SLOPES AS DIRECTED BY THE ENGINEER.

LEGEND

CONSTRUCTION LIMIT	C - F	LIMITS OF DISTURBANCE (SHADED)	[Shaded Area]
TEMPORARY SILT FENCE	[Symbol]	ROCK INLET SEDIMENT TRAP, TYPE C	[Symbol]
ROCK SILT CHECK, TYPE B	[Symbol]	FABRIX INSERT PROTECTION DEVICE	[Symbol]
SPECIAL SEDIMENT CONTROL FENCE / SILT FENCE OUTLET	[Symbol]	CONCRETE WASHOUT STRUCTURE	[Symbol]



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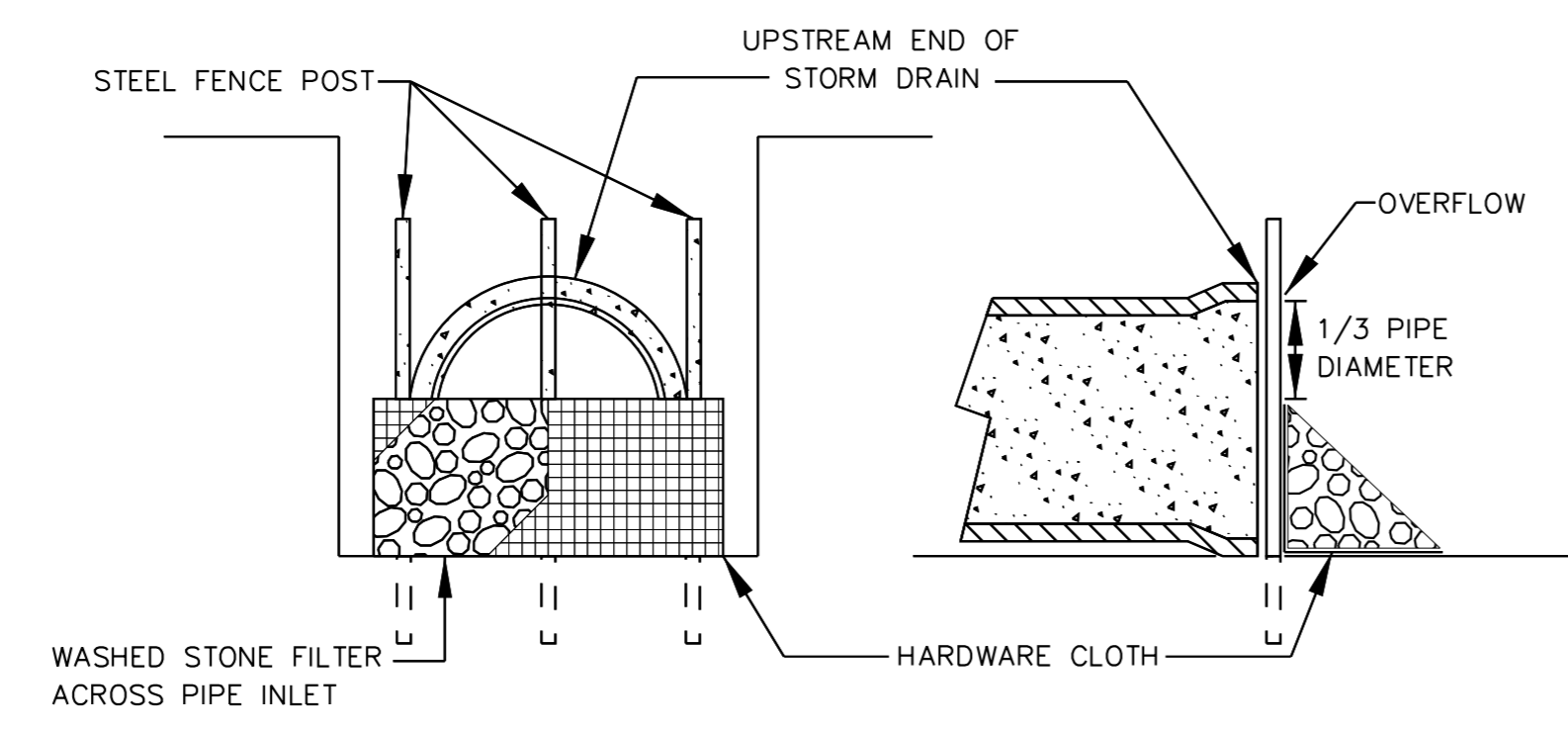
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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.

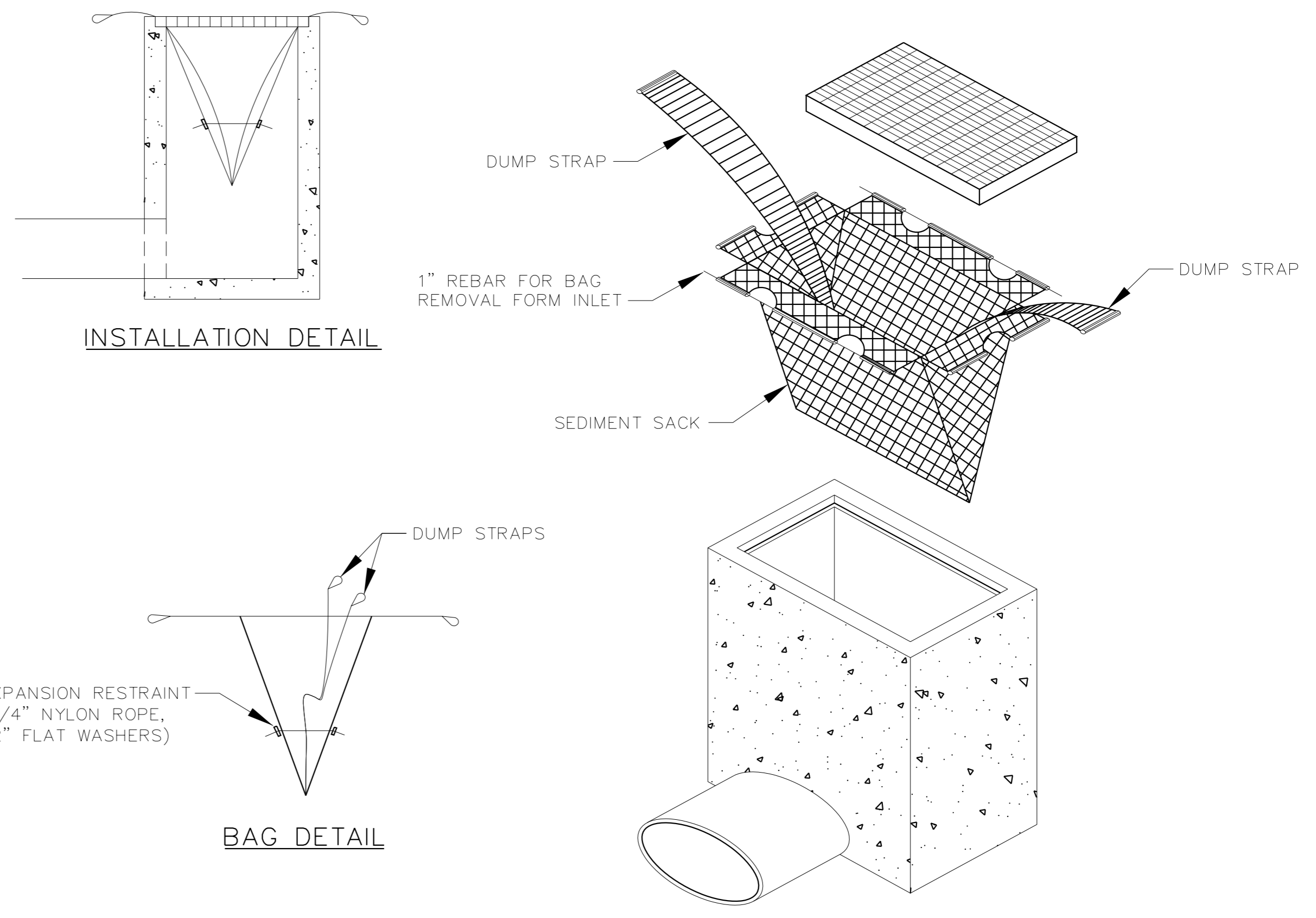
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STONE FILTER INLET PROTECTION FOR STORM DRAIN UNDER CONSTRUCTION



STONE FILTER INLET PROTECTION WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE PER LINEAR FOOT OF PIPE CULVERT INSTALLATION.

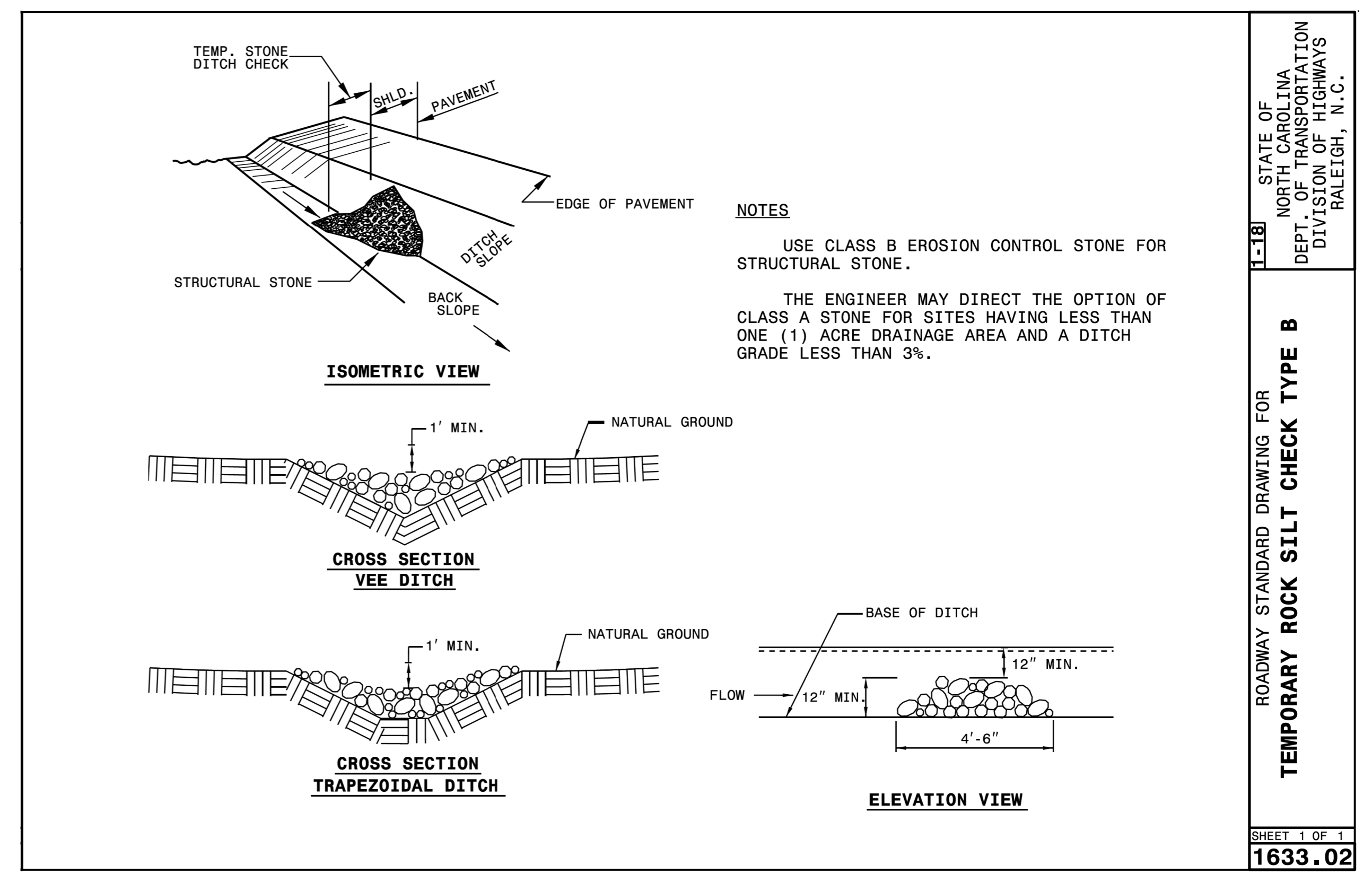
MAINTENANCE:
 INSPECT STANDARD PIPE INLET PROTECTION AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. SHOULD THE STONE COLLAPSE, BREAK, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE FUNCTION FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE INLET PROTECTION MEASURE. TAKE CARE TO AVOID UNDERMINING THE INLET PROTECTION MEASURE DURING CLEANOUT. REMOVE ALL INLET PROTECTION MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



STANDARD INLET SEDIMENT CONTROL DEVICE

NPDES GENERAL STORMWATER PERMIT 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.



NOTES
 USE CLASS B EROSION CONTROL STONE FOR STRUCTURAL STONE.
 THE ENGINEER MAY DIRECT THE OPTION OF CLASS A STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.

11-181 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR TEMPORARY ROCK SILT CHECK TYPE B

SHEET 1 OF 1 1633.02

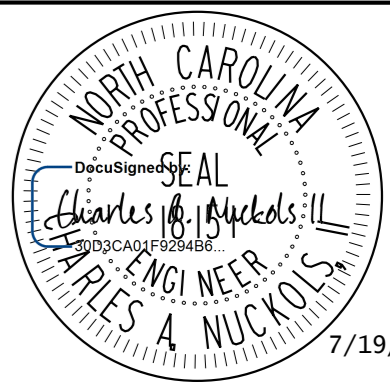
MAINTENANCE:
 INSPECT CHECK DAMS AND CHANNELS FOR DAMAGE AFTER EACH RUNOFF EVENT. ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, INSTALL A PROTECTIVE RIPRAP LINER IN THAT PORTION OF THE CHANNEL. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION. ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SWAIN COUNTY

**LOCATION: INTERSECTIONS: SLOPE STREET (SR 1323) /BRYSON WALK (SR 1321)
EVERETT STREET (SR 1364) /DEPOT STREET (SR 1336)
DEPOT STREET (SR 1336) /RAMSEUR STREET (SR 1336)
DEEP CREEK ROAD (SR 1336) /RAMSEUR STREET (SR 1336)**

PROJECT REFERENCE NO. <i>R-5843</i>	SHEET NO. <i>SIGN-1</i>
APPROVED: _____	
DATE: _____	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

<u>STD. NO.</u>	<u>TITLE</u>
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
910.10	RAIL GRADE CROSSINGS RURAL/BUS

GENERAL NOTES

- WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER.
- WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
- SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

INDEX

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
SIGN-1	TITLE SHEET
SIGN-2	N/A
SIGN-3	TYPE "E" SHEET
SIGN-4 THRU SIGN-6	SIGNING PLAN SHEETS

PLAN PREPARED BY: *Kimley-Horn and Associates*




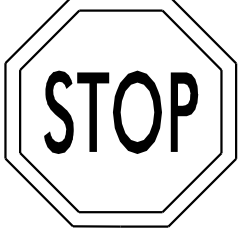
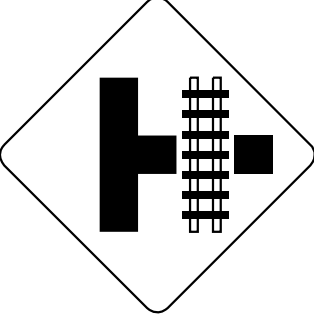
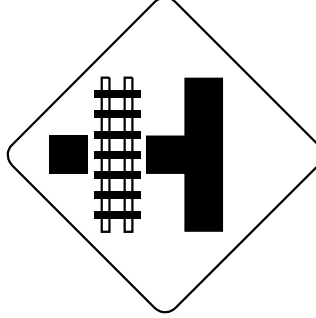
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RALEIGH, NC 27636
PE NO. F-0102

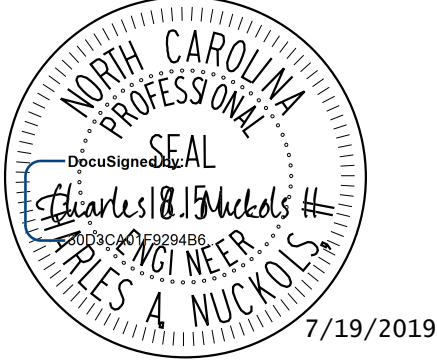
<u>Charles A. Nuckols P.E.</u>	PROJECT ENGINEER
<u>Caleb D. Lowman P.E.</u>	PROJECT DESIGN ENGINEER



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7/17/2019

<p>401 QUANTITY REQ'D 3_</p>  <p>30" X 30" W11-2</p> <p>ONE "U" POST PER SIGN</p>	<p>402 QUANTITY REQ'D 3_</p>  <p>24" X 12" W16-7P</p> <p>MOUNT BELOW SIGN #401</p>	<p>403 QUANTITY REQ'D 3_</p>  <p>12" X 36" R1-6</p> <p>MOUNT BELOW SIGN #402</p>	<p>404 QUANTITY REQ'D 4_</p>  <p>36" X 36" R1-1</p> <p>ONE "U" POST PER SIGN</p>	<p>405 QUANTITY REQ'D 1_</p>  <p>36" X 36" W10-3</p> <p>ONE "U" POST PER SIGN</p>	<p>406 QUANTITY REQ'D 1_</p>  <p>36" X 36" W10-3</p> <p>ONE "U" POST PER SIGN</p>

PROJECT REFERENCE NO. 011036406	SHEET NO. SIGN-3
APPROVED: _____	
DATE: _____	
SEAL	
	
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Kimley » Horn ©2017
 421 FAYETTEVILLE ST, SUITE 600
 RALEIGH, N.C. 27601

RIGHT-OF-WAY REV. _____
 CONST. REV. _____

TYPE "E" SIGNS

Kimley » Horn
 421 FAYETTEVILLE ST, SUITE 600
 RALEIGH, N.C. 27601

PROJECT REFERENCE NO. R-5843 SHEET NO. SIGN-4

APPROVED: _____ DATE: _____

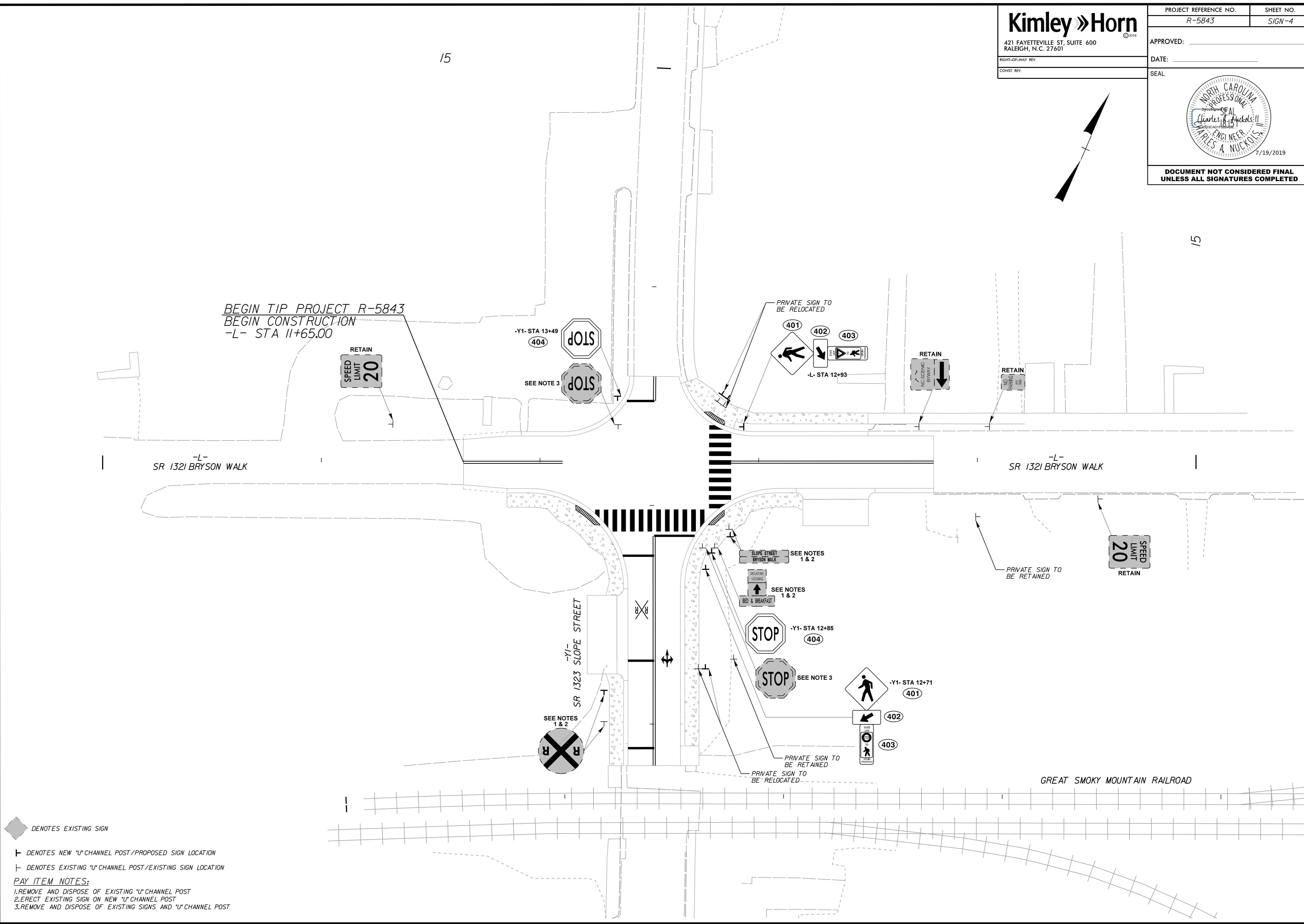
RIGHT-OF-WAY REV. _____

CONST. REV. _____

SEAL

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 UNLESS ALL SIGNATURES COMPLETED**

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- ◆ DENOTES EXISTING SIGN
 - ┆ DENOTES NEW "U" CHANNEL POST/PROPOSED SIGN LOCATION
 - ┆ DENOTES EXISTING "U" CHANNEL POST/EXISTING SIGN LOCATION
- PAY ITEM NOTES:**
1. REMOVE AND DISPOSE OF EXISTING "U" CHANNEL POST
 2. ERECT EXISTING SIGN ON NEW "U" CHANNEL POST
 3. REMOVE AND DISPOSE OF EXISTING SIGNS AND "U" CHANNEL POST

Kimley » Horn
 421 FAYETTEVILLE ST, SUITE 600
 RALEIGH, N.C. 27601

PROJECT REFERENCE NO. R-5843 SHEET NO. SIGN-5

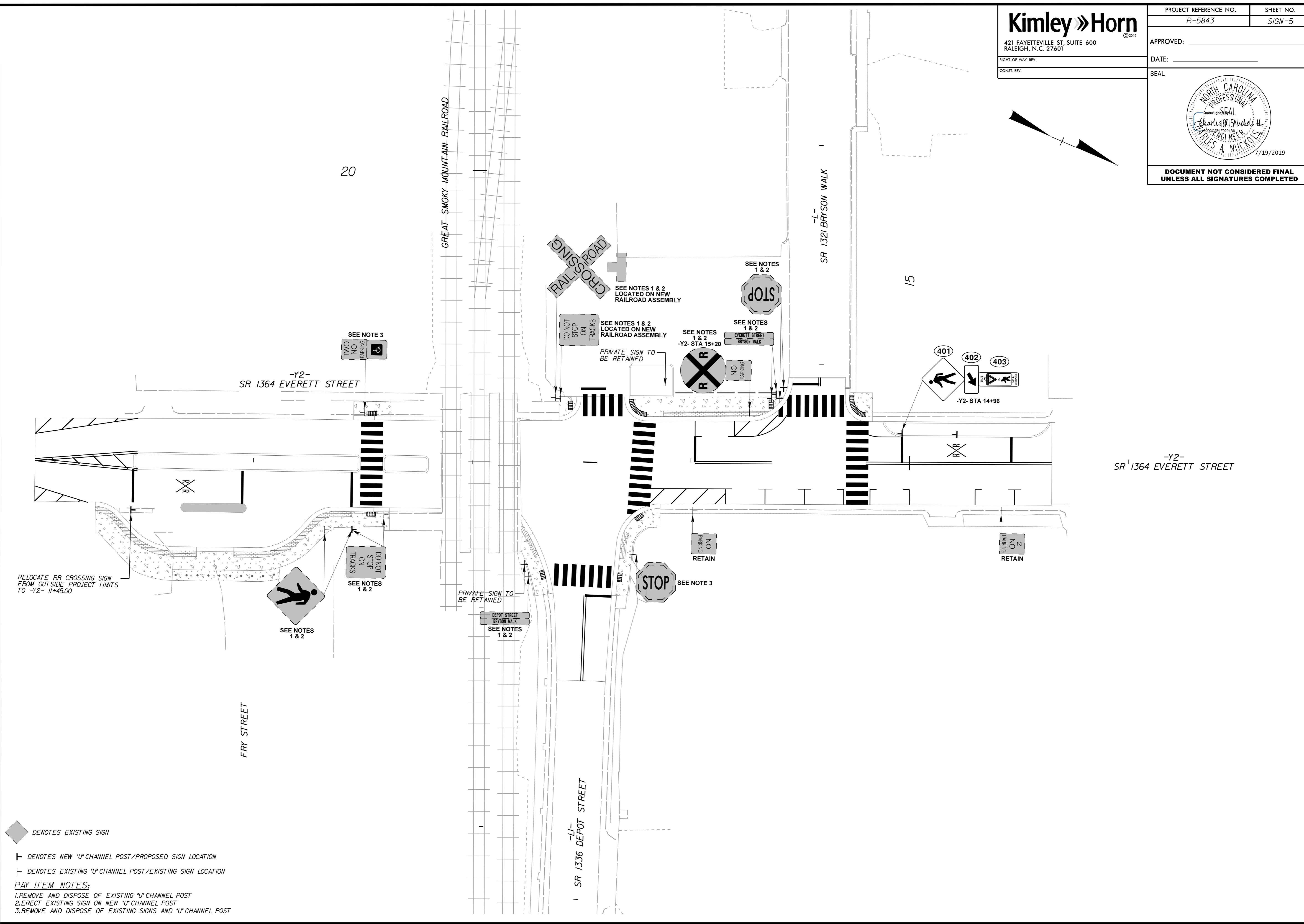
APPROVED: _____ DATE: _____

RIGHT-OF-WAY REV. _____
 CONST. REV. _____

SEAL

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 UNLESS ALL SIGNATURES COMPLETED**

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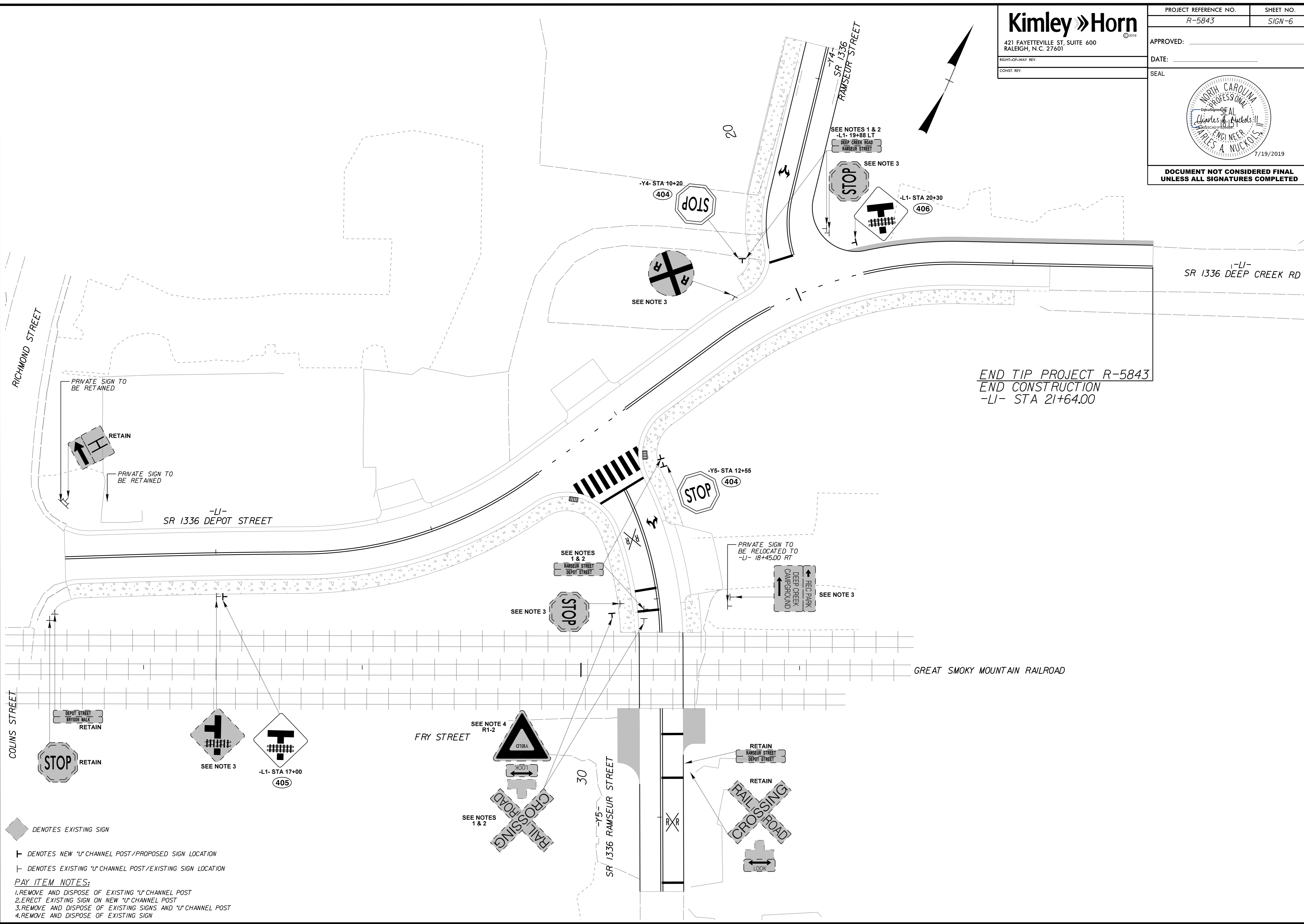
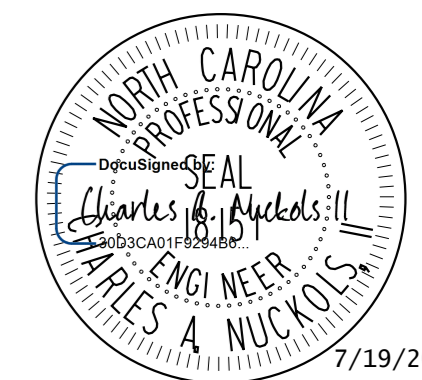
- ◆ DENOTES EXISTING SIGN
 - ┆ DENOTES NEW "U" CHANNEL POST/PROPOSED SIGN LOCATION
 - ┆ DENOTES EXISTING "U" CHANNEL POST/EXISTING SIGN LOCATION
- PAY ITEM NOTES:**
- 1.REMOVE AND DISPOSE OF EXISTING "U" CHANNEL POST
 - 2.ERECT EXISTING SIGN ON NEW "U" CHANNEL POST
 - 3.REMOVE AND DISPOSE OF EXISTING SIGNS AND "U" CHANNEL POST

Kimley Horn
 421 FAYETTEVILLE ST, SUITE 600
 RALEIGH, N.C. 27601
 RIGHT-OF-WAY REV.
 CONST. REV.

PROJECT REFERENCE NO. R-5843	SHEET NO. SIGN-6
APPROVED:	DATE:
SEAL	

7/19/2019

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

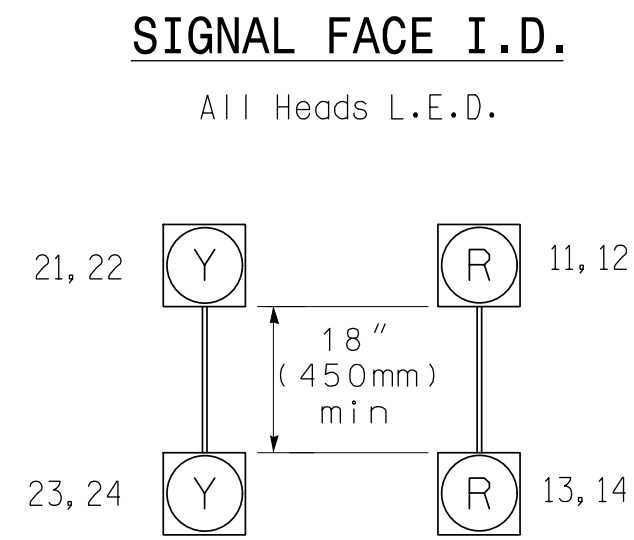


END TIP PROJECT R-5843
 END CONSTRUCTION
 -L1- STA 21+64.00

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- ◆ DENOTES EXISTING SIGN
 - ┆ DENOTES NEW "U" CHANNEL POST/PROPOSED SIGN LOCATION
 - ┆ DENOTES EXISTING "U" CHANNEL POST/EXISTING SIGN LOCATION
- PAY ITEM NOTES:**
1. REMOVE AND DISPOSE OF EXISTING "U" CHANNEL POST
 2. ERECT EXISTING SIGN ON NEW "U" CHANNEL POST
 3. REMOVE AND DISPOSE OF EXISTING SIGNS AND "U" CHANNEL POST
 4. REMOVE AND DISPOSE OF EXISTING SIGN

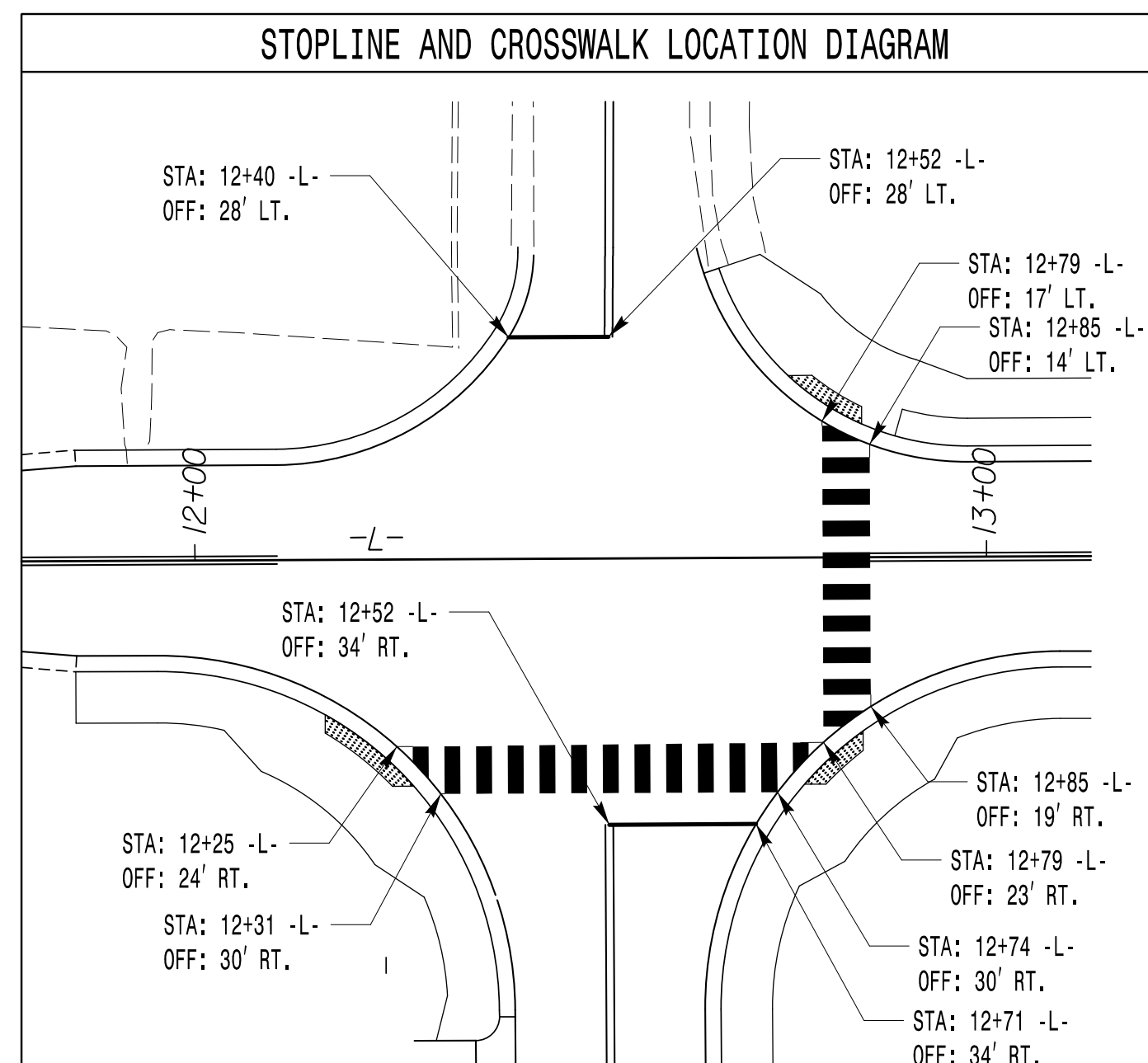
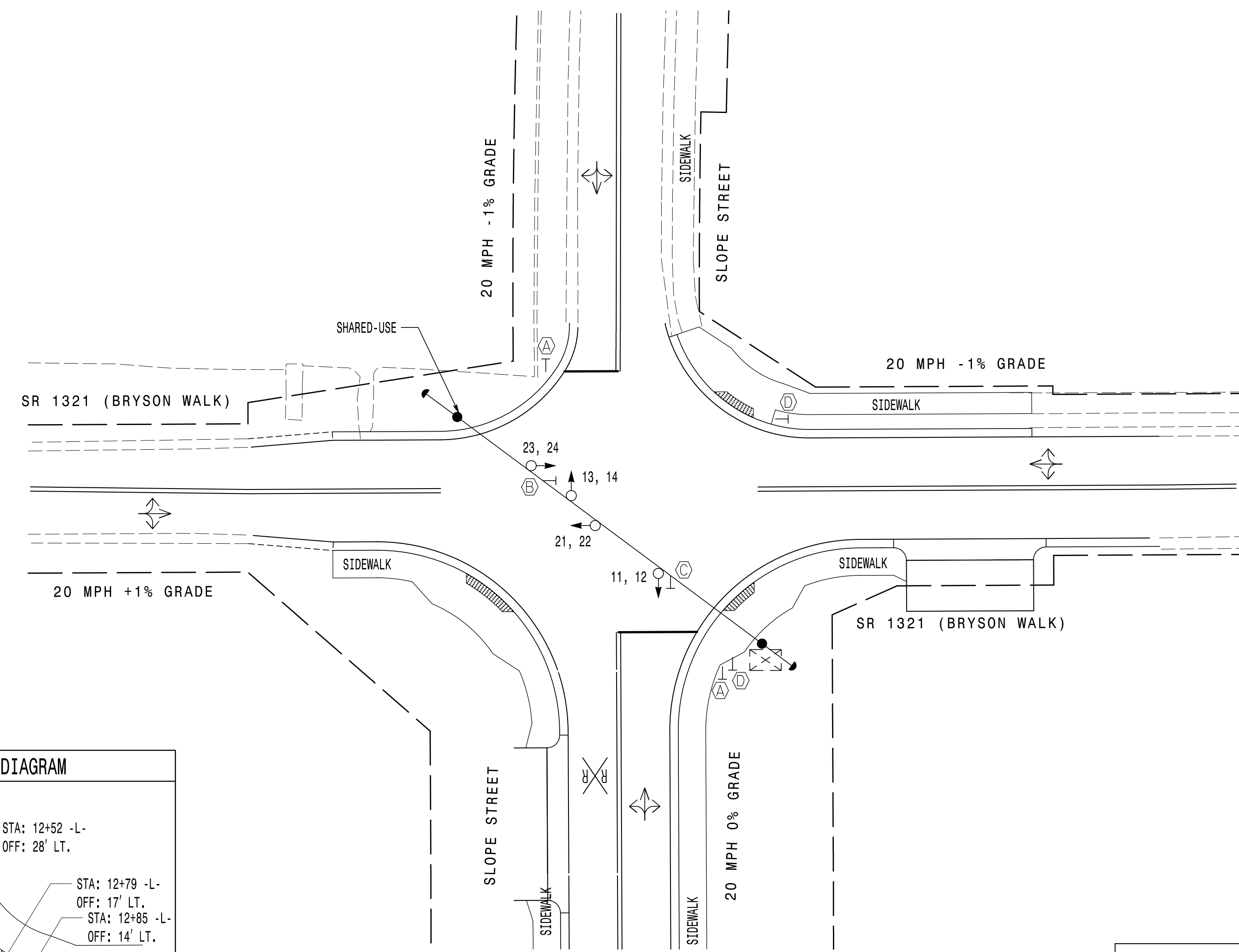
SIGNAL FACE	INTERVAL	
	1	2
11, 12	ON	OFF
21, 22	OFF	ON
13, 14	ON	OFF
23, 24	OFF	ON



2 CIRCUIT FLASHER

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Flash all Beacons continuously.



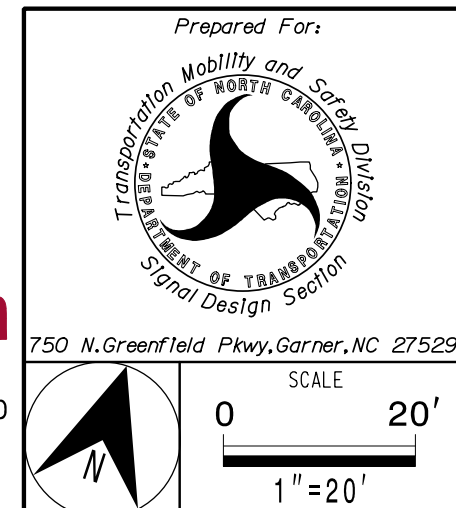
LEGEND

PROPOSED	EXISTING
	N/A
N/A	
N/A	

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/25/2019
DocuSigned by:
R. N. Zinson
ITS & Signals Unit

SIGNAL UPGRADE

PLANS PREPARED IN THE OFFICE OF:
Kimley Horn
NC License #F-0102
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000



Prepared For:		SR 1321 (BRYSON WALK) AT SLOPE STREET	
DIVISION 14 SWAIN COUNTY		BRYSON CITY	
PLAN DATE: JUNE 2018	REVIEWED BY: SL PHILLIPS		
PREPARED BY: SP PENNINGTON	REVIEWED BY:		
REVISIONS	INIT.	DATE	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

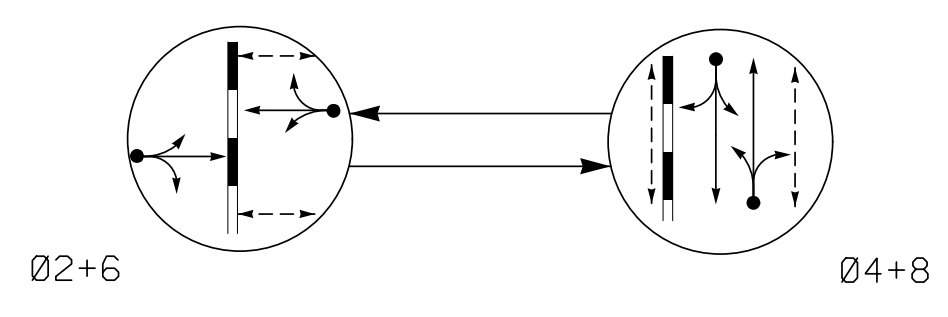
SEAL

DocuSigned by:
Stacie L. Phillips
1/18/2019

SIG. INVENTORY NO. 14-1233

1/17/2019 12:00:55 PM susan.pennington K:\RAL_Roadway\01036387 - Div 14 (R-5843_Bryson_Int)Traffic Signal MS4 - Signal Design\14-1233_2018.dgn

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

RAIL PREEMPT PHASES (High Priority)

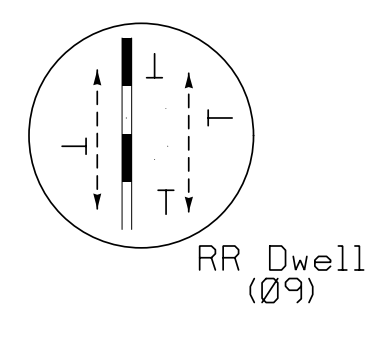
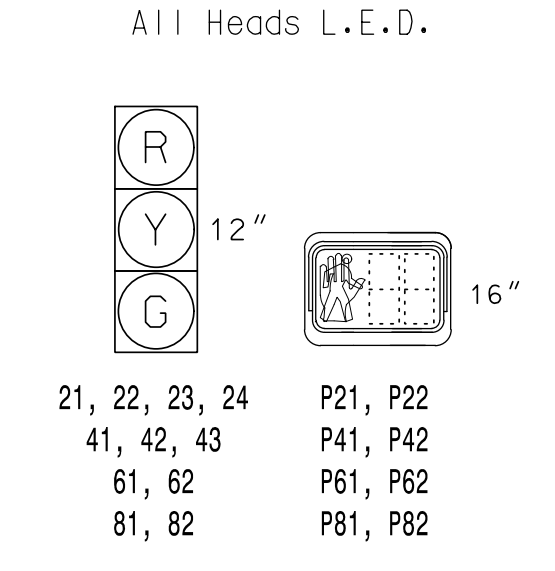


TABLE OF OPERATION

SIGNAL FACE	PHASE			
	Ø2+6	Ø4+8	DW	RR
21, 22, 23, 24	G	R	R	Y
41, 42, 43	R	G	R	R
61, 62	G	R	R	Y
81, 82	R	G	R	Y
P21, P22	W	DW	DW	DRK
P41, P42	DW	W	W	DRK
P61, P62	W	DW	DW	DRK
P81, P82	DW	W	W	DRK

SIGNAL FACE I.D.



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING				LOOP SYSTEM	NEW CARD	
					PHASE	CALLING EXTENSION	FULL TIME DELAY	STRETCH TIME			DELAY TIME
2A	6X40	0	2-4-2	Y	2	Y	Y	-	-	-	Y
4A	6X15	0	2-4-2	Y	4	Y	Y	-	-	5	-
6A	6X30	0	2-4-2	Y	6	Y	Y	-	-	-	Y
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	5	-

2 PHASE FULLY ACTUATED W/ RAILROAD PREEMPTION (ISOLATED)

NOTES

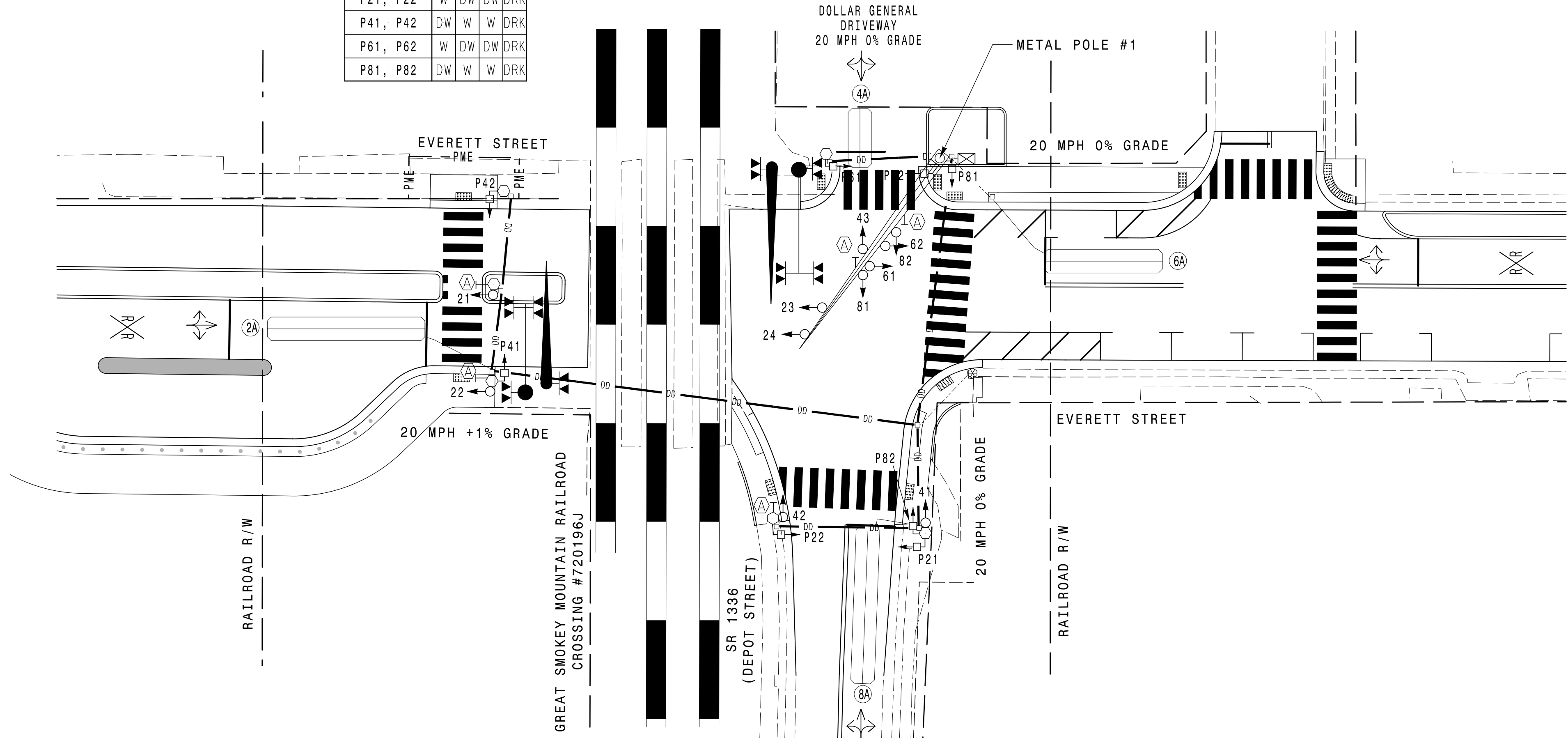
- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Program parent phase for Overlap "P" for all phase used in normal operation.
- Upon completion of Railroad Preemption, controller returns to normal operation based on vehicle demand.
- Pedestrian pedestals are conceptual and shown for reference only. See Roadway Standard Drawing 1705.04 for pushbuttons locations details.
- All signal equipment including signal heads will be black.

OASIS 2070 RR PREEMPT

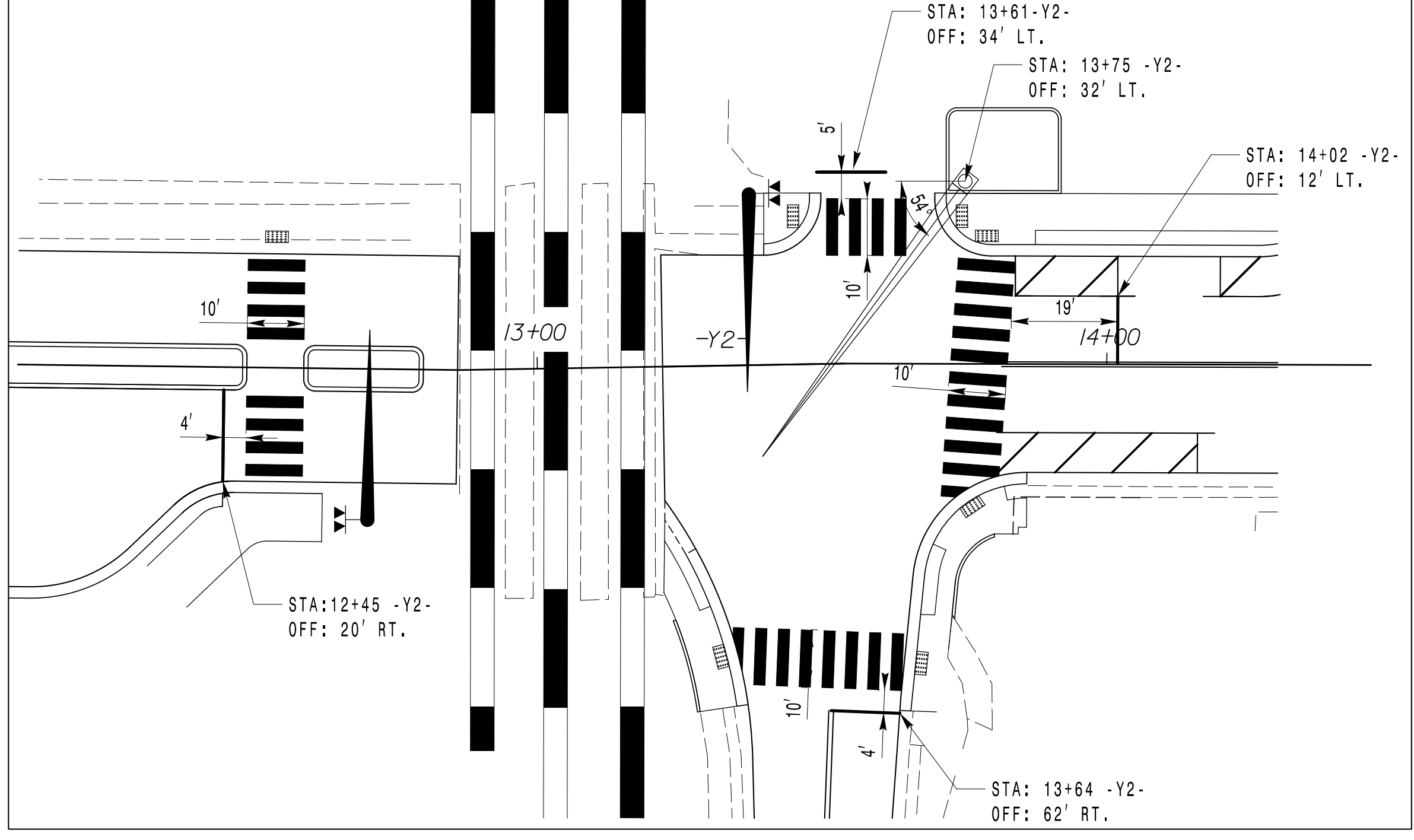
FUNCTION	PRE 1
Interval 1 - Dwell Green	255
Interval 1 - Dwell Yellow	0.0*
Interval 1 - Dwell Red	0.0*
Interval 5 - Exit Green	1
Interval 5 - Yellow	0.0
Interval 5 - Red	0.0
Exit Phase(s)	2,6
Priority	HIGH
Delay Time	0.0
Min Green Before Pre	1
Ped Clear Before Pre	0
Yellow Clear Before Pre	0.0*
Red Clear Before Pre	0.0*
Dwell Min Time	7
Enable Backup Protection	N
Ped Clear Through Yellow	Y
Omit Overlaps	P

* Time defaults to time used for phase during normal operation

THIS SIGNAL WAS DESIGNED FOR SIMULTANEOUS PREEMPTION



STOPLINE AND POLE LOCATION DIAGRAM



OASIS 2070 TIMING CHART

FEATURE	PHASE			
	2	4	6	8
Min Green 1 *	10	7	10	7
Extension 1 *	3.0	2.0	3.0	2.0
Max Green 1 *	0	0	0	0
Yellow Clearance	3.0	3.0	3.0	3.0
Red Clearance	4.5	2.8	4.0	4.7
Red Revert	2.0	2.0	2.0	2.0
Walk 1 *	7	7	7	7
Don't Walk 1	6	10	5	10
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	-	ON	-	ON
Simultaneous Gap	ON	ON	ON	ON

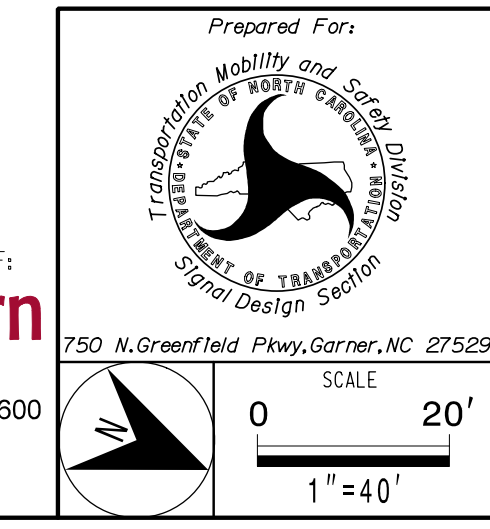
* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/25/2019
Designed by: R. N. Zinner
ITS & Signals Unit

LEGEND

PROPOSED	EXISTING
○ → Traffic Signal Head	● → N/A
● → Modified Signal Head	— Sign
↓ Pedestrian Signal Head	↓ Pedestrian Signal Head
⊕ Type I Pushbutton Post	⊕ Type I Pushbutton Post
⊙ Type II Signal Pedestal	⊙ Type II Signal Pedestal
⊞ Metal Pole with Mastarm	⊞ Metal Pole with Mastarm
⊞ Inductive Loop Detector	⊞ Inductive Loop Detector
⊞ Controller & Cabinet	⊞ Controller & Cabinet
⊞ Junction Box	⊞ Junction Box
--- 2-in Underground Conduit	--- 2-in Underground Conduit
N/A Right of Way	--- Right of Way
N/A Permanent Maintenance Easement	--- PME
→ Directional Arrow	→ Directional Arrow
--- Directional Drill	--- Directional Drill
N/A Railroad Gate and Flasher	--- Railroad Gate and Flasher
N/A Railroad Tracks	--- Railroad Tracks
⊞ "NO TURN ON RED" Sign (R10-11)	⊞ "NO TURN ON RED" Sign (R10-11)

NEW INSTALLATION



EVERETT STREET AT SR 1336 (DEPOT STREET)

DIVISION 14 SWAIN COUNTY BRYSON CITY

PLAN DATE: JUNE 2018 REVIEWED BY: SL PHILLIPS

PREPARED BY: SP PENNINGTON REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

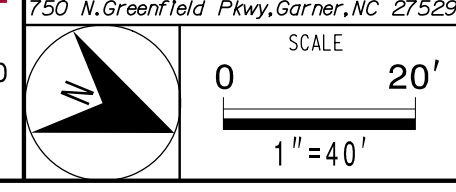
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032607

ENGINEER STACIE L. PHILLIPS

DocuSigned by: SL Phillips 1/18/2019

SIG. INVENTORY NO. 14-1306

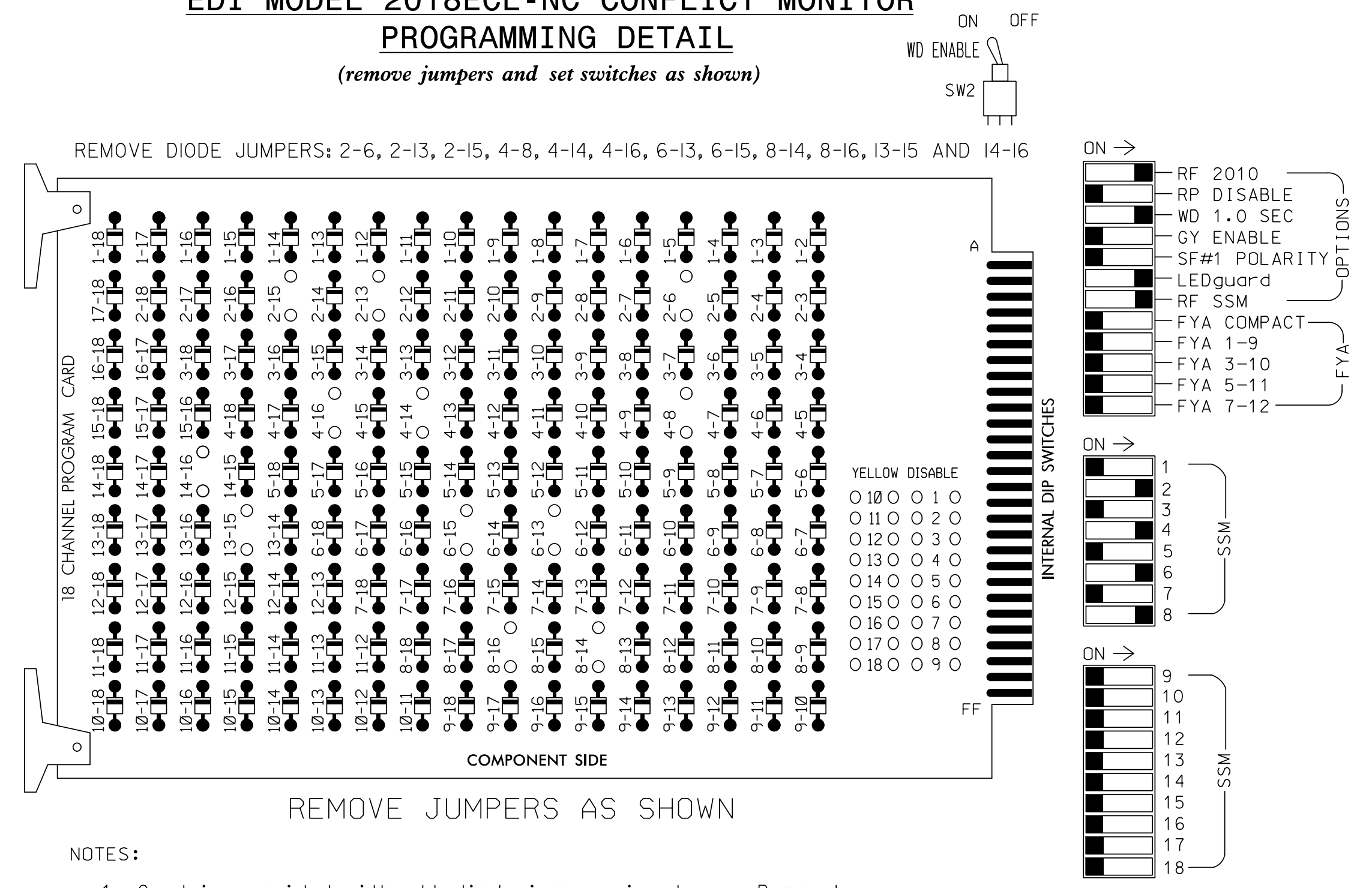
PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn
NC License #F-0102
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 671-2000



1/17/2019 12:00:59 PM susan.pennington K:\RAL_Roadway\01036387 - Div 14 (R-5843 Bryson Int) Traffic Signal MS4 - Signal Design\14-1306-2018.dgn

EDI MODEL 2018ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches 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.
- Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

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.
- Program phases 4 and 8 for Dual Entry.
- Enable Simultaneous Gap-Out for all Phases.
- Program phases 2 and 6 for Startup In Green.
- Program phases 2, 4, 6, and 8 for Startup Ped Call.
- Program phases 2 and 6 for Yellow Flash.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332
 SOFTWARE.....ECONOLITE OASIS 3.03.32E
 OR LATEST APPROVED VERSION
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S2,S3,S5,S6,S8,S9,S11,S12
 PHASES USED.....2,2PED,4,4PED,6,6PED,8,8PED,9*
 OVERLAP P.....2+4+6+8
 PED OVERLAP A.....4+9
 PED OVERLAP B.....8+9
 * Phase used only in Preempt

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 (POLA)	5	6	6 PED	7	8	8 PED (POLB)
SIGNAL HEAD NO.	NU	21,22, 23,24	P21, P22	NU	41,42	P41, P42	NU	61,62	P61, P62	NU	81,82, 83	P81, P82
RED		128			101			134			107	
YELLOW		129			102			135			108	
GREEN		130			103			136			109	
RED ARROW												
YELLOW ARROW												
GREEN ARROW												
Hand icon			113			104			119			110
Walking person icon			115			106			121			112

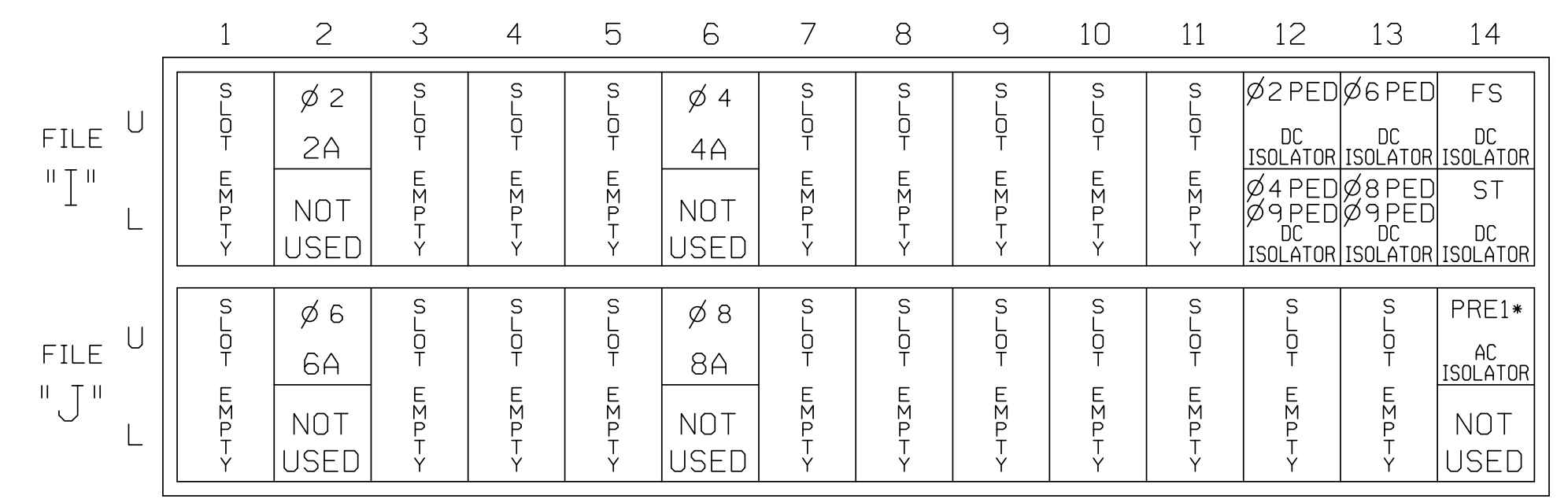
NU = Not Used
 ** See Ped Overlap programming Detail on Sheet 3.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

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

INPUT FILE POSITION LAYOUT

(front view)



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

FS = FLASH SENSE
 ST = STOP TIME
 PRE1 = RR PREEMPT

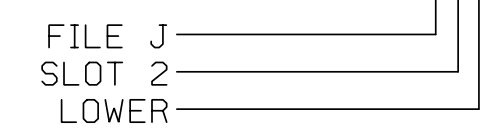
• See AC Isolator Programming Detail sheet 2.

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	TB2-5,6	I2U	39	1	2	2	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			5
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			5
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2 PED					
P41,P42	TB8-5,6	I12L	69	31	PED 4	4 PED PED 9					
P61,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					
P81,P82	TB8-8,9	I13L	70	32	PED 8	8 PED PED 9					

NOTE:
 INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

INPUT FILE POSITION LEGEND: J2L



PED OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '2' (PEDESTRIAN OVERLAP SETTINGS).

PAGE 1: PEDESTRIAN OVERLAP 'A' SETTINGS
 PHASE: |12345678910111213141516
 PED OVL PARENTS: | X X

PAGE 1: PEDESTRIAN OVERLAP 'B' SETTINGS
 PHASE: |12345678910111213141516
 PED OVL PARENTS: | XX

OVERLAP PROGRAMMING COMPLETE

PHASE SEQUENCE PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '4' (PHASE SEQUENCE)

PHASE SEQUENCE: PAGE 1	NEXT: PAGES					
RNG: LEAD	BARRIER 1	X-LAG: LEAD	BARRIER 2	X-LAG: LEAD	BARRIER 3	X-LAG
1 | 0	2 | 0	0 | 0	4 | 0	0 | 0	9 | 0	0 | 0
2 | 0	6 | 0	0 | 0	8 | 0	0 | 0	0 | 0	0 | 0
3 | 0	0 | 0	0 | 0	0 | 0	0 | 0	0 | 0	0 | 0
4 | 0	0 | 0	0 | 0	0 | 0	0 | 0	0 | 0	0 | 0

NC Dept of Transportation
 Division of Highways
 Final Drawing Date: 1/25/2019
 R. N. Zinn
 ITS & Signals Unit

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1306
 DESIGNED: JUNE 2018
 SEALED: 1/18/2018
 REVISED:

New Installation - Electrical Detail - Sheet 1 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:

PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn
 NC License #F-0102
 421 Fayetteville Street, Suite 600
 Raleigh, NC 27601
 (919) 671-2000

EVERETT STREET AT SR 1336 (DEPOT STREET)

DIVISION 14 SWAIN COUNTY BRYSON CITY

PLAN DATE: JUNE 2018 REVIEWED BY: SL PHILLIPS

PREPARED BY: SP PENNINGTON REVIEWED BY:

REVISIONS	INIT.	DATE

DocuSigned By: *SL Phillips* 1/18/2019
 SIGNATURE DATE
 SIG. INVENTORY NO. 14-1306

RAILROAD PREEMPTION PROGRAMMING DETAIL

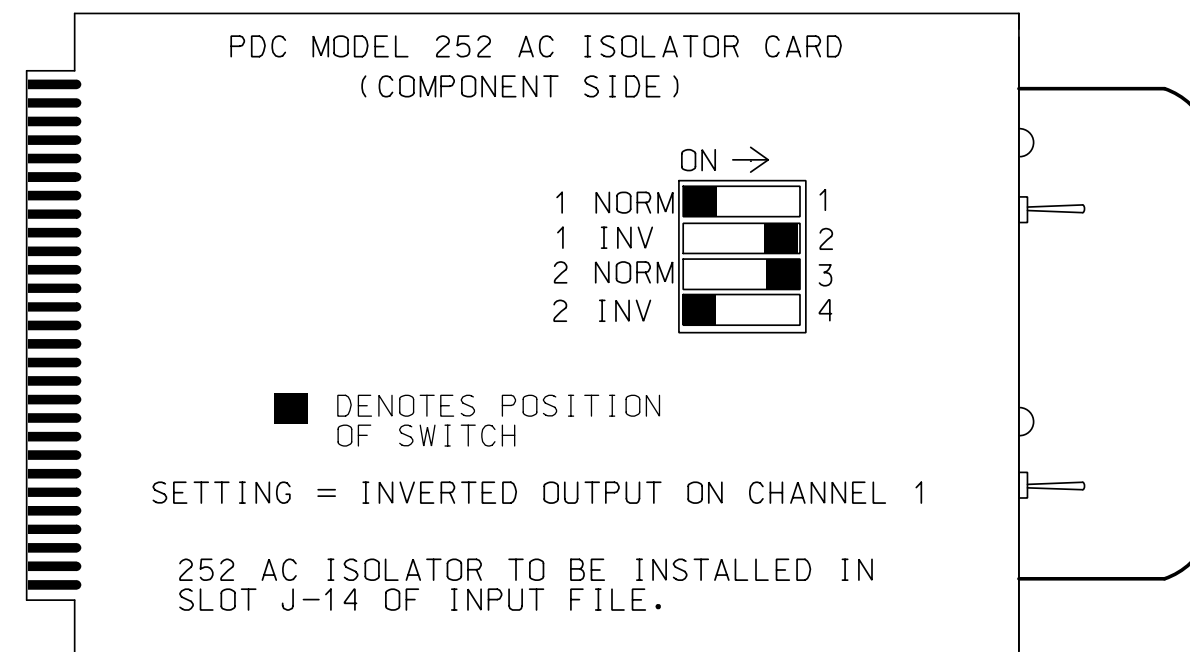
(program controller as shown below)

From Main Menu press 'A' (Preemption), then '1' (Standard Preemptions).

PREEMPTION #1	SETTINGS (NEXT:1-10)
INTERVAL/TIMING	CLEAR/DWELL PHASES
GRN YEL RED	12345678910111213141516
1 255 0.0 0.0	X
2 0 0.0 0.0	
3 0 0.0 0.0	
4 0 0.0 0.0	
5 1 0.0 0.0	X X
EXIT CALLS	
OPTIONS	
PRIORITY (Y/N TO SELECT)	.....HIGH
DELAY TIMER (0-255 SEC)	.....0
MIN GREEN BEFORE PRE (0= DEFAULT)	...1
PED CLEAR BEFORE PRE (0= DEFAULT)	...0
YELLOW CLEAR BEFORE PRE (0= DEFAULT)	...0.0
RED CLEAR BEFORE PRE (0= DEFAULT)	...0.0
DWELL MIN TIMER (0-255 SEC)	.....7
DWELL MAX TIMER (0=OFF,1-255MIN)	....0
DWELL HOLD-OVER TIMER (0-255)	.....0
LATCH CALL?	.....N
LINK TO NEXT PREEMPT?	.....N
ENABLE BACKUP PROTECTION?	.....N
HOLD CLEAR 1 PHASES DURING DELAY?	...N
FAST GREEN FLASH DWELL PHASES?	.....N
PED CLEARANCE THROUGH YELLOW?	.....Y
INHIBIT OVERLAP GREEN EXTENSION?	...N
SERVICE DURING SOFTWARE FLASH?	.....N
REST IN RED DURING DWELL INTERVAL?	..Y
FLASH DWELL INTERVAL?	.....N
ALLOW PEDS IN DWELL INTERVAL?	.....Y
RE-TIME DWELL INTERVAL?	.....N
OVERLAPS:	ABCDEFGHIJKLMNPO
DWELL INT FLASH YELLOW	
OMIT OVERLAPS:	X

PREEMPT 1 AC ISOLATOR (MODEL 252) OUTPUT PROGRAMMING DETAIL

(set DIP switches as shown below)



NOTE: IF ANOTHER MANUFACTURER TYPE OF AC ISOLATOR IS USED, OUTPUT PROGRAMMING IS LIKELY NOT TO EQUATE TO THAT SHOWN ABOVE.

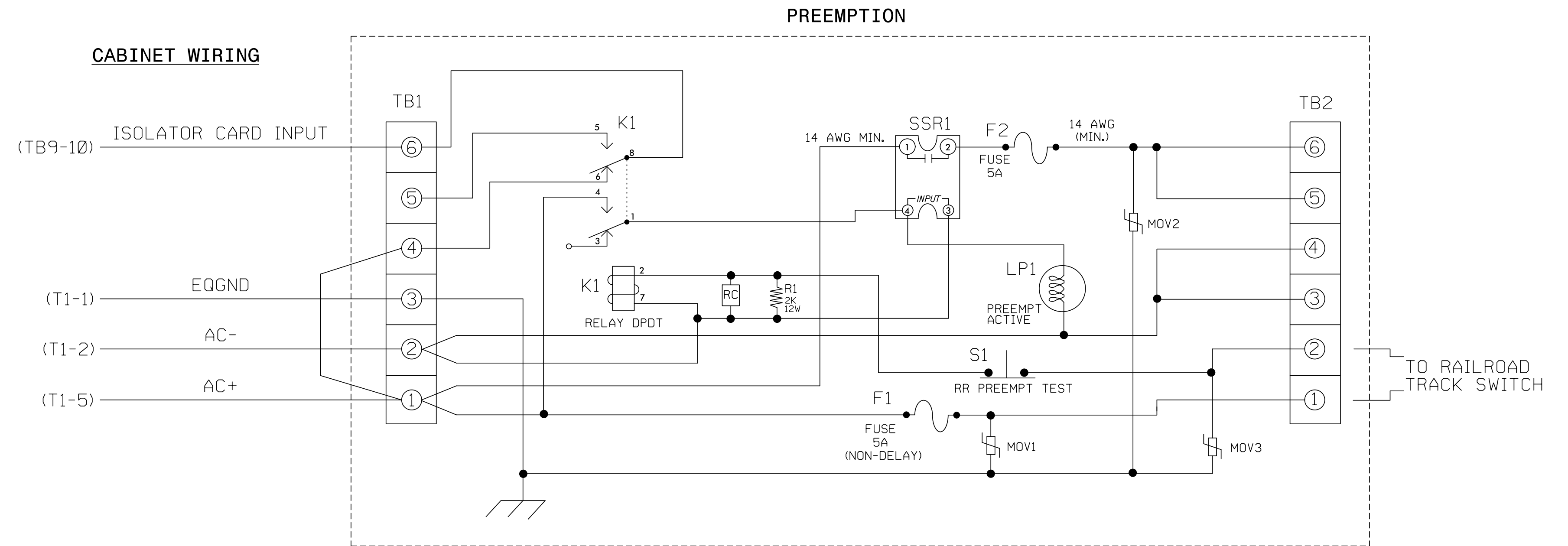
PREEMPT ONLY PHASE OMIT NOTE

(program controller as shown below)

From Main Menu press '2' (Phase Control). Then '1' (Phase Control Functions). Program Phase 9 for 'Omit Phase' and Phases 2, 4, 6 and 8 for 'Startup Calls'. This is to prevent Phase 9 from being served when not in Preempt.

RAILROAD PREEMPTION WIRING DETAIL

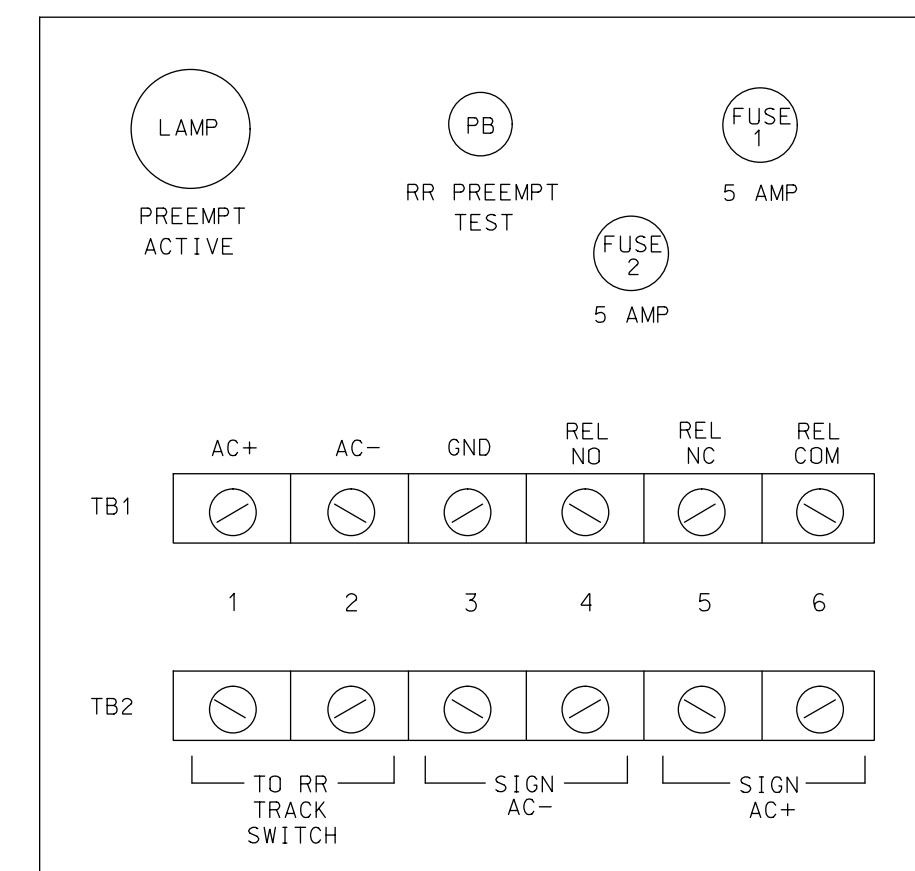
(wire as shown below)



NOTES

- Relay K1 is shown in the energized (Preempt not active) normal operation state.
- Relay K1 is a DPDT with 120VAC coil with octal base.
- Relay SSR1 is a SPST (normally open) Solid State Relay with AC input and AC (25 amp) output.
- AC Isolator Card shall activate preemption upon removal of AC+ from the input (as shown above). To accomplish this set invert dip switch on AC Isolator Card.
- IMPORTANT!! A jumper must be added between input file terminals J14-E and J14-K if not already present. Also, terminal TB9-12 (on input panel) shall be connected to AC neutral (jumper may have to be added).

FRONT VIEW



OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PRESS '-' ONCE

PAGE 1: VEHICLE OVERLAP 'P' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X X X X
VEH OVL NOT VEH: :
VEH OVL NOT PED: :
VEH OVL GRN EXT: :
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW - GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

OVERLAP PROGRAMMING COMPLETE

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/25/2019
DocuSigned by:
R. N. Zinner
ITS & Signals Unit

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 14-1306
DESIGNED: JUNE 2018
SEALED: 1/18/2018
REVISED:

New Installation - Electrical Detail - Sheet 2 of 3

<p>ELECTRICAL AND PROGRAMMING DETAILS FOR:</p> <p>Prepared For: Kimley & Horn 421 Fayetteville Street, Suite 600 Raleigh, NC 27601 (919) 671-2000</p>	<p>EVERETT STREET AT SR 1336 (DEPOT STREET)</p>		<p>SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032607 STACIE L. PHILLIPS</p>					
	<p>DIVISION 14 SWAIN COUNTY BRYSON CITY</p> <p>PLAN DATE: JUNE 2018 REVIEWED BY: SL PHILLIPS</p> <p>PREPARED BY: SP PENNINGTON REVIEWED BY:</p>	<p>REVISIONS</p> <table border="1"> <tr> <th>NO.</th> <th>INIT.</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>		NO.	INIT.	DATE		
NO.	INIT.	DATE						

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PED OVERLAP OUTPUT ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #1 IS REACHED.

```

PAGE:1 C1 PIN:2 PEDESTRIAN PHASE
OUTPUT ASSIGNMENT #.....1
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....Y
VEHICLE OVERLAP.....
PEDESTRIAN OVERLAP.....Y
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

```

```

PAGE:1 C1 PIN:2 NOT ENABLED
SELECT PED OVERLAP (A=1, P=16).....1
SELECT COLOR (0=DWALK,1=YEL,2=WALK).....0

```

WHEN A 'Y' IS ENTERED FOR 'PEDESTRIAN OVERLAP' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' AFTER AFTER INPUTTING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'PEDESTRIAN OVERLAP' AS SHOWN BELOW.

```

PAGE:1 C1 PIN:2 PEDESTRIAN OVERLAP
OUTPUT ASSIGNMENT #.....1
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....Y
VEHICLE OVERLAP.....
PEDESTRIAN OVERLAP.....Y
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #2 (PIN 3) IS REACHED.

```

PAGE:1 C1 PIN:3 PEDESTRIAN PHASE
OUTPUT ASSIGNMENT #.....2
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....Y
VEHICLE OVERLAP.....
PEDESTRIAN OVERLAP.....Y
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

```

```

PAGE:1 C1 PIN:3 NOT ENABLED
SELECT PED OVERLAP (A=1, P=16).....1
SELECT COLOR (0=DWALK,1=YEL,2=WALK).....2

```

WHEN A 'Y' IS ENTERED FOR 'PEDESTRIAN OVERLAP' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' AFTER AFTER INPUTTING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'PEDESTRIAN OVERLAP' AS SHOWN BELOW.

```

PAGE:1 C1 PIN:3 PEDESTRIAN OVERLAP
OUTPUT ASSIGNMENT #.....2
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....Y
VEHICLE OVERLAP.....
PEDESTRIAN OVERLAP.....Y
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

```

PED OVERLAP A (DON'T WALK) LOAD SWITCH S6

PED OVERLAP A (WALK) LOAD SWITCH S6

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #17 IS REACHED.

```

PAGE:1 C1 PIN:19 PEDESTRIAN PHASE
OUTPUT ASSIGNMENT #.....17
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....Y
VEHICLE OVERLAP.....
PEDESTRIAN OVERLAP.....Y
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

```

```

PAGE:1 C1 PIN:19 NOT ENABLED
SELECT PED OVERLAP (A=1, P=16).....1
SELECT COLOR (0=DWALK,1=YEL,2=WALK).....0

```

WHEN A 'Y' IS ENTERED FOR 'PEDESTRIAN OVERLAP' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' AFTER AFTER INPUTTING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'PEDESTRIAN OVERLAP' AS SHOWN BELOW.

```

PAGE:1 C1 PIN:19 PEDESTRIAN OVERLAP
OUTPUT ASSIGNMENT #.....17
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....Y
VEHICLE OVERLAP.....
PEDESTRIAN OVERLAP.....Y
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

```

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS). PRESS '+' UNTIL OUTPUT #18 IS REACHED.

```

PAGE:1 C1 PIN:20 PEDESTRIAN PHASE
OUTPUT ASSIGNMENT #.....18
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....Y
VEHICLE OVERLAP.....
PEDESTRIAN OVERLAP.....Y
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

```

```

PAGE:1 C1 PIN:20 NOT ENABLED
SELECT PED OVERLAP (A=1, P=16).....1
SELECT COLOR (0=DWALK,1=YEL,2=WALK).....2

```

WHEN A 'Y' IS ENTERED FOR 'PEDESTRIAN OVERLAP' THE SCREEN SHOWN ABOVE WILL APPEAR. ENTER DATA AS SHOWN.

PRESS THE 'ENT' AFTER AFTER INPUTTING DATA, THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT ASSIGNED AS 'PEDESTRIAN OVERLAP' AS SHOWN BELOW.

```

PAGE:1 C1 PIN:20 PEDESTRIAN OVERLAP
OUTPUT ASSIGNMENT #.....18
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....Y
VEHICLE OVERLAP.....
PEDESTRIAN OVERLAP.....Y
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

```


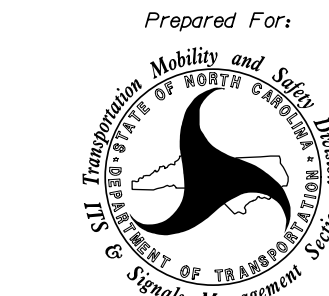
PED OVERLAP B (DON'T WALK) LOAD SWITCH S12

PED OVERLAP B (WALK) LOAD SWITCH S12

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/25/2019
DocuSigned by:
R. N. Ziser
ITS® Signals Unit

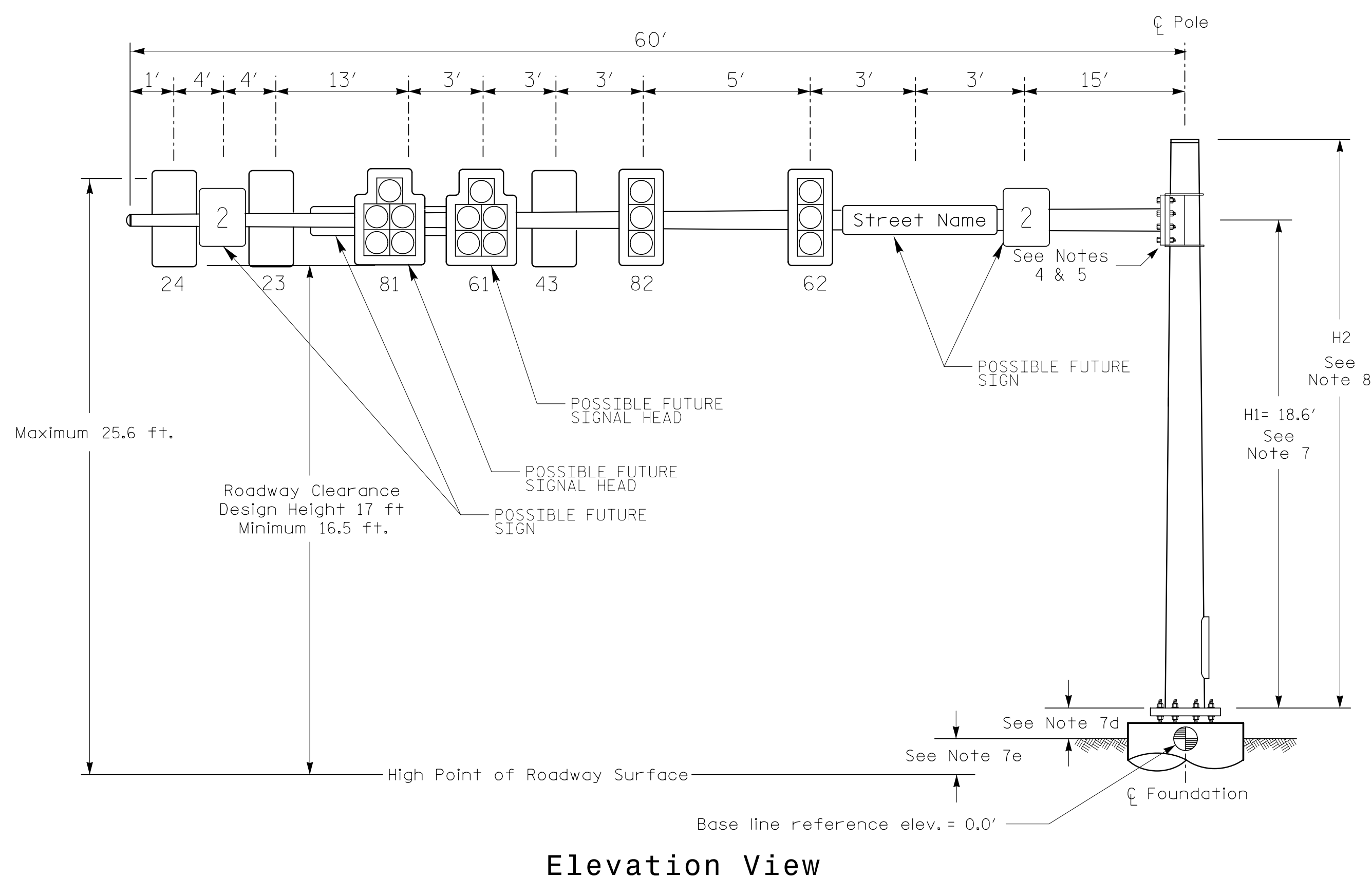
THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 14-1306
DESIGNED: JUNE 2018
SEALED: 1/18/2018
REVISED:

New Installation - Electrical Detail - Sheet 3 of 3

 <p>PLANS PREPARED IN THE OFFICE OF: Kimley-Horn NC License #F-0102 421 Fayetteville Street, Suite 600 Raleigh, NC 27601 (919) 671-2000</p>	<p>Prepared For: </p>	<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>					
	<p>EVERETT STREET AT SR 1336 (DEPOT STREET)</p> <p>DIVISION 14 SWAIN COUNTY BRYSON CITY</p> <p>PLAN DATE: JUNE 2018 REVIEWED BY: SL PHILLIPS</p> <p>PREPARED BY: SP PENNINGTON REVIEWED BY:</p> <table border="1"> <thead> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS	INIT.	DATE			
REVISIONS	INIT.	DATE					

1/17/2019 12:01:02 PM susan.pennington K:\RAL_Roadway\01036387 - Div 14 (R-5843 Bryson Int)Traffic Signal\MS4 - Signal Design\14-1306_2018e3.dgn

Design Loading for METAL POLE NO. 1



Elevation View

SPECIAL NOTE

The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Pole 1
Baseline reference point at ϕ Foundation @ ground level	0.0 ft.
Elevation difference at High point of roadway surface	0.0 ft.
Elevation difference at Edge of travelway or Face of curb	+0.5 ft.

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-5 SECTION-WITH BACKPLATE	16.3 S.F.	42.0" W X 56.0" L	103 LBS
	PEDESTRIAN SIGNAL HEAD WITH MOUNTING HARDWARE	2.2 S.F.	18.5" W X 17.0" L	21 LBS
	STREET NAME SIGN RIGID MOUNTED	12.0 S.F.	18.0" W X 96.0" L	27 LBS
	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS

NOTES

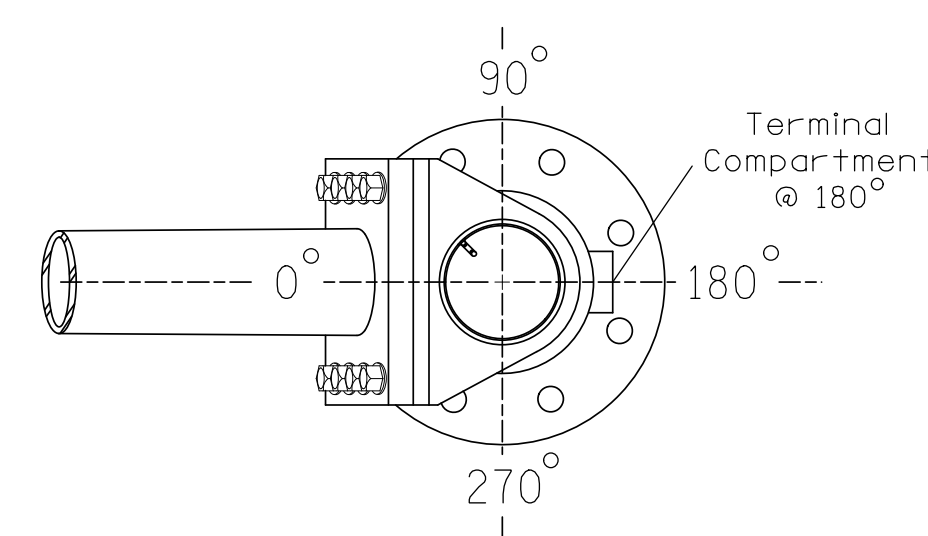
DESIGN REFERENCE MATERIAL

- Design the traffic signal structure and foundation in accordance with:
 - The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
 - The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
 - The 2018 NCDOT Roadway Standard Drawings.
 - The traffic signal project plans and special provisions.
 - The NCDOT "Metal Pole Standards" located at the following NCDOT website: <https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx>

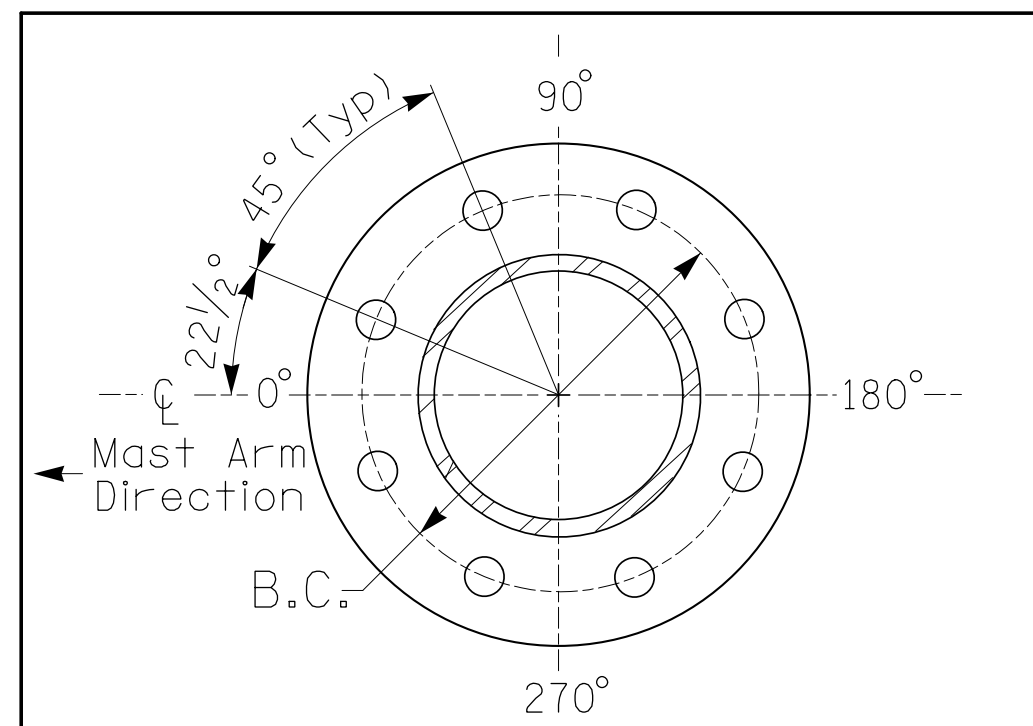
DESIGN REQUIREMENTS

- Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
- Design all signal supports using stress ratios that do not exceed 0.9.
- The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
- A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements.
- Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
- The mast arm attachment height (H1) shown is based on the following design assumptions:
 - Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
 - Signal heads are rigidly mounted and vertically centered on the mast arm.
 - The roadway clearance height for design is as shown in the elevation views.
 - The top of the pole base plate is 0.75 feet above the ground elevation.
 - Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
- The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
 - Mast arm attachment height (H1) plus 2 feet, or
 - H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
- If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-5000.
- The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
- The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

All metal poles and arms should be black in color as specified in the project special provisions.

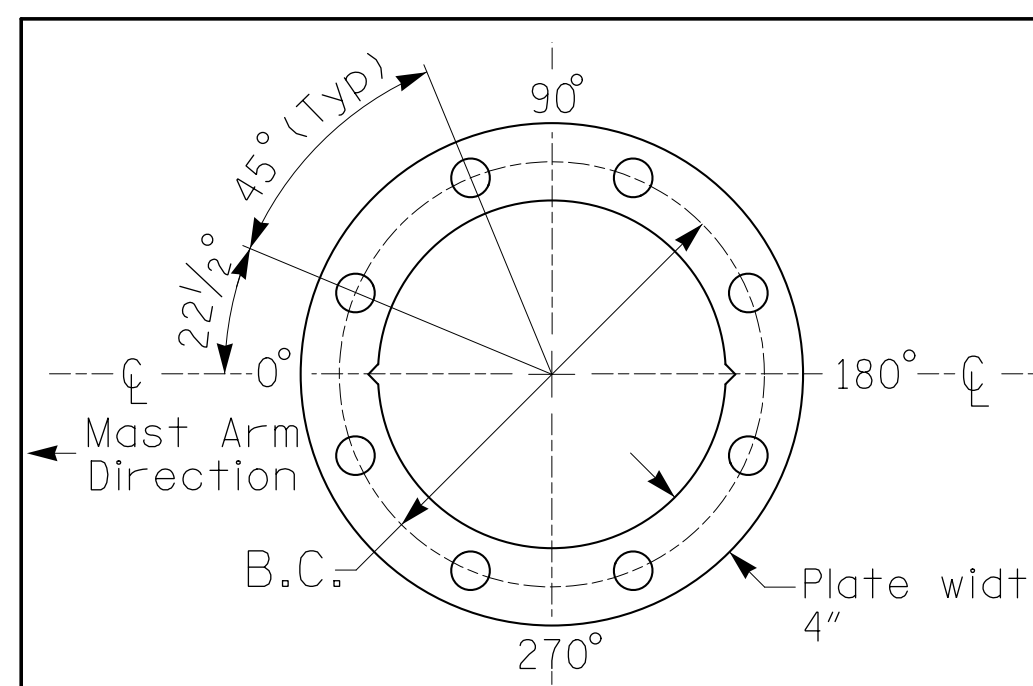


POLE RADIAL ORIENTATION



8 BOLT BASE PLATE DETAIL

See Note 6



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL For 8 Bolt Base Plate

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/25/2019
DocuSigned by:
R. N. Zinn
ITS & Signals Unit

PLANS PREPARED IN THE OFFICE OF:
Kimley»Horn
NC License #F-0102
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000

NCDOT Wind Zone 5 (120MPH)

 Prepared For: TRANSPORTATION MOBILITY AND SAFETY DIVISION DEPARTMENT OF TRANSPORTATION SIGNAL DESIGN SECTION 750 N. Greenfield Pkwy, Garner, NC 27529 SCALE: 0 N/A N/A	EVERETT STREET AT SR 1336 (DEPOT STREET)		SEAL SEAL 032607 ENGINEER STACIE L. PHILLIPS
	DIVISION 14 SWAIN COUNTY BRYSON CITY PLAN DATE: JUNE 2018 REVIEWED BY: SL PHILLIPS PREPARED BY: SP PENNINGTON REVIEWED BY:	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
REVISIONS _____ INIT. DATE		DocuSigned by: DATE: 1/18/2019 SIG. INVENTORY NO. 14-1306	

TIP PROJECT: R-5843

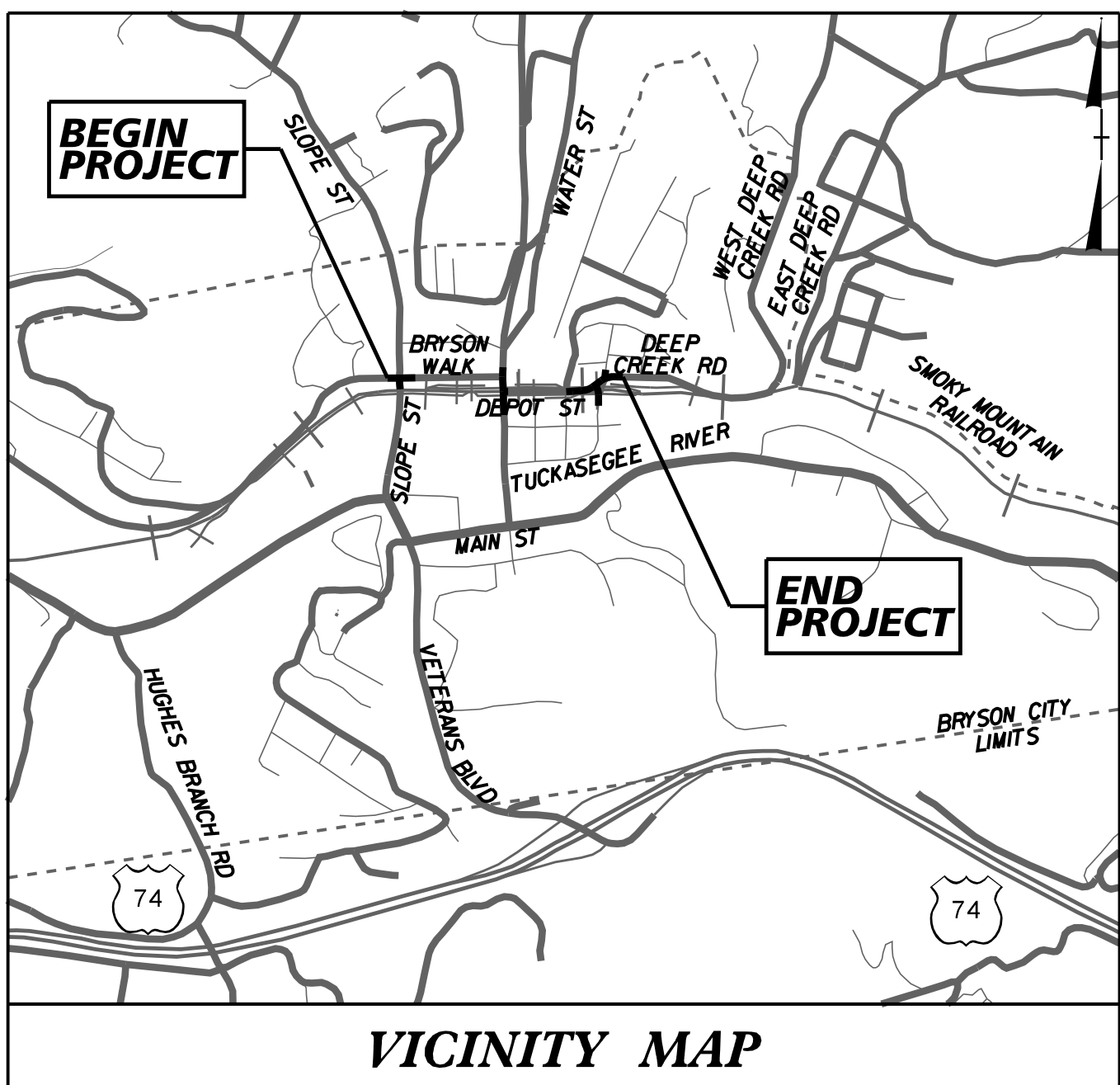
CONTRACT: DN00709

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS SWAIN COUNTY

T.I.P. NO.	SHEET NO.
R-5843	UC-1

*NOTE TO CONTRACTOR: ALL WATER MAINS SHALL BE RESTRAINED JOINT DI PIPE.

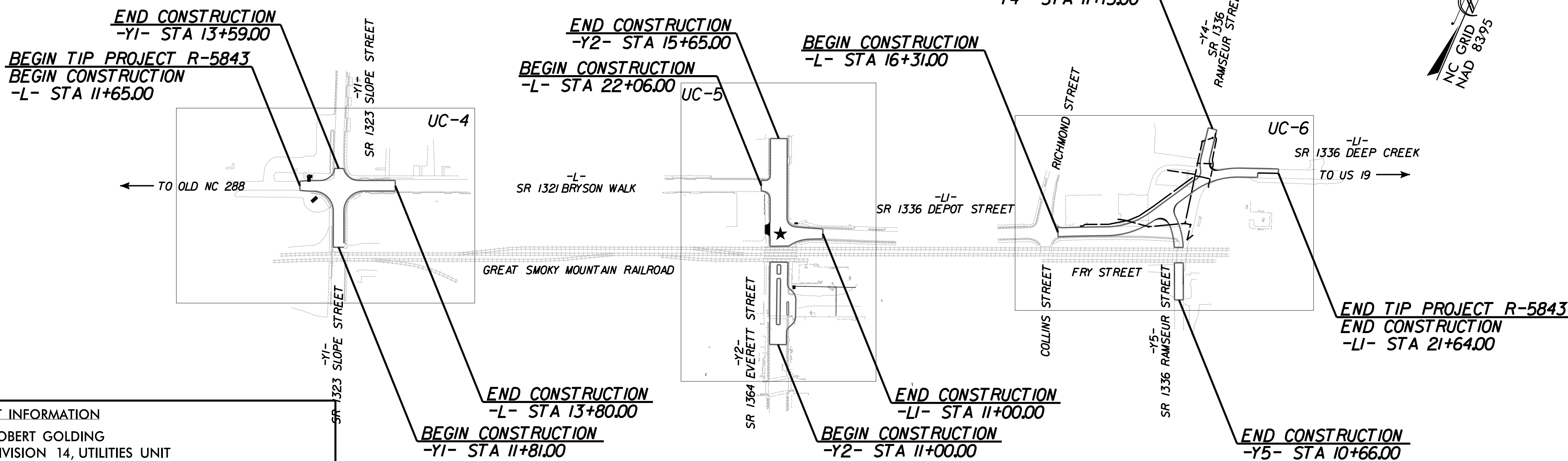
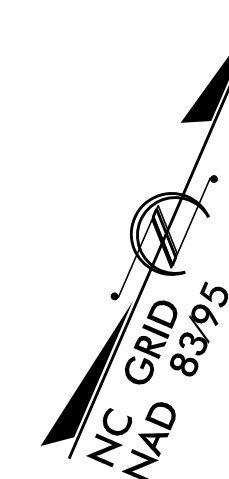
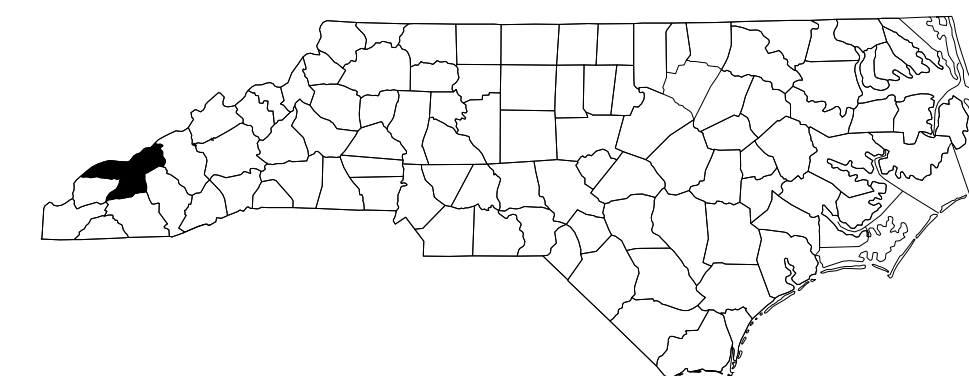


VICINITY MAP

75% PLANS

LOCATION: INTERSECTIONS: SLOPE STREET (SR 1323)/BRYSON WALK (SR 1321)
 EVERETT STREET (SR 1364)/DEPOT STREET (SR 1336)
 DEPOT STREET (SR 1336)/RAMSEUR STREET (SR 1336)
 DEEP CREEK ROAD (SR 1336)/RAMSEUR STREET (SR 1336)

TYPE OF WORK: WATER AND SEWER UTILITY CONSTRUCTION



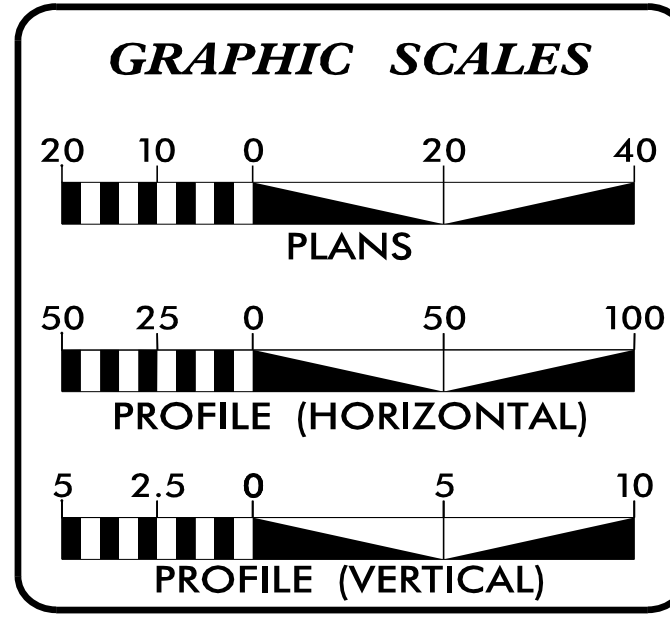
CONTACT INFORMATION

NCDOT CONTACT: ROBERT GOLDING
 DIVISION 14, UTILITIES UNIT
 (828) 524-1964

UTILITY OWNER: TOM SHOOK
 TOWN OF BRYSON CITY PUBLIC WORKS DIRECTOR
 (828) 736-1172

DESIGN ENGINEER: DANIEL BULA, PE
 KIMLEY-HORN & ASSOCIATES, INC.
 200 SOUTH TRYON ST., SUITE 200
 CHARLOTTE, NC 28202
 (704) 409-1805
 DAN.BULA@KIMLEY-HORN.COM

DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3C	DETAILS
UC-4 THRU UC-6	UTILITY CONSTRUCTION SHEETS
UC-7	PROFILE SHEET

WATER AND SEWER OWNERS ON PROJECT

(A) WATER - TOWN OF BRYSON CITY
 (B) SANITARY SEWER - TOWN OF BRYSON CITY

PREPARED IN THE OFFICE OF

Kimley»Horn

NC LICENSE #0102
 P.O. BOX 3366
 RALEIGH, NORTH CAROLINA 27636
 PHONE: (919) 877-2000

DANIEL G. BULA, PE CONSULTANT CONTACT #1
 NOLAN D. RANEY, PE CONSULTANT CONTACT #2

SEAL

DIVISION OF HIGHWAYS
 UTILITIES UNIT
 1555 MAIL SERVICES CENTER
 RALEIGH, NC 27699-1555
 PHONE: (919) 707-6690
 FAX: (919) 250-4151

Michael Bright, PE UTILITIES REGIONAL ENGINEER
 UTILITIES ENGINEER
 UTILITIES AREA COORDINATOR
 UTILITIES COORDINATOR

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS 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
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	②③
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	○
Well	○
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	-----

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 Easment Pin and Cap	◇
Vertical Benchmark	⊕
Existing Right of Way Marker	△
New Right of Way Line	○ RW
New Right of Way Line with Pin and Cap	○ RW ▲
New Right of Way Line with Concrete or Granite RW Marker	○ RW ▲
New Control of Access Line with Concrete CA Marker	○ CA ▲
Existing Control of Access	○ CA
New Control of Access	○ CA
Existing Easement Line	----- E
New Temporary Construction Easement	----- E
New Permanent Sidewalk Easement	----- SWE
New Permanent Drainage Easement	----- PDE
New Permanent Retaining Wall Easement	----- RWE
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	----- CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----

Equality Symbol	⊕
Pavement Removal	⊗

VEGETATION:

Single Tree	☼
Single Shrub	☼

Hedge	-----
Woods Line	-----
Orchard	☼ ☼ ☼
Vineyard	□ Vineyard

EXISTING STRUCTURES:

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

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.*)	----- 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.*)	----- 7uTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
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.

UTILITY CONSTRUCTION

Kimley»Horn

PROJECT REFERENCE NO.		SHEET NO.	
R-5843		UC-3	
DESIGNED BY:	DGB		
DRAWN BY:	DGB		
CHECKED BY:	NDR		
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
		UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

UTILITY CONSTRUCTION

GENERAL NOTES:

- ELEVATIONS SHOWN ARE IN FEET ABOVE MEAN SEA LEVEL.
- LOCATIONS OF EXISTING SHOWN UTILITIES ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXACT LOCATION, ORIENTATION, AND ELEVATION OF EXISTING UTILITIES PRIOR TO EXCAVATION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD ANY FIELD CONDITIONS BE ENCOUNTERED THAT VARY FROM THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS.
- UNLESS OTHERWISE SHOWN OR SPECIFIED, ALL WATER LINE AND SEWER FORCE MAIN TRENCH BEDDING SHALL BE PER DETAIL 3/3A.
- BURIED TELEPHONE AND CATV CABLES (FIBER OPTICS AND CONVENTIONAL) ARE KNOWN TO VARY DUE TO INSTALLATION TECHNIQUES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANY TO DETERMINE SPECIFIC CABLE LOCATIONS AND NOTIFYING THE ENGINEER OF THE EXACT ELEVATION OF THE CABLES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH LOCATING, RELOCATING, OR REPAIRING BURIED CABLES DAMAGED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SHEETING REQUIRED FOR UTILITY CONSTRUCTION. ALL EXCAVATIONS SHALL BE KEPT WITHIN THE DESIGNATED EASEMENT AND/OR RIGHT-OF-WAY WIDTHS. SHEETING SHALL BE INSTALLED AS REQUIRED TO PROTECT EXISTING UTILITIES.
- NCDOT WILL FURNISH DESCRIPTION OF EASEMENTS UPON REQUEST.
- THE CONTRACTOR SHALL RESTORE GRADE TO PRE-CONSTRUCTION CONDITION UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- CONTRACTOR SHALL PROVIDE A MEANS TO KEEP ALL NEW PIPING ISOLATED FROM EXISTING PIPING UNTIL ALL NEW PIPING HAS BEEN PRESSURE TESTED, FLUSHED, AND ACCEPTED BY THE TOWN OF BRYSON CITY FOR SERVICE.
- CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION, ELEVATION, ORIENTATION, DIMENSIONS, MATERIALS, ETC., OF EXISTING PIPE PRIOR TO ORDERING MATERIAL AND SHALL USE NECESSARY FITTINGS FOR THE CONNECTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE TOWN OF BRYSON CITY FOR ANY ADDITIONAL INFORMATION ON EXISTING WATER AND SEWER UTILITIES.
- ALL PROPOSED PIPE SHALL BE RESTRAINED JOINT PIPE. IF A BEND OR FITTING IS RELOCATED BY THE CONTRACTOR FOR HIS CONVENIENCE THEN THE REQUIRED LENGTH OF RESTRAINED JOINTS SHALL BE MAINTAINED AT NO ADDITIONAL COST TO THE OWNER. IF ADDITIONAL BENDS OR FITTINGS ARE INSTALLED BY THE CONTRACTOR FOR HIS CONVENIENCE, THEN THE CONTRACTOR SHALL INSTALL THE REQUIRED LENGTH OF RESTRAINED JOINTS AS DETERMINED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.
- ALL PRESSURIZED PIPE FITTINGS SHALL BE RESTRAINED JOINT.
- WATER LINE AND FORCE MAIN ALIGNMENTS SHOWN ON THE DRAWINGS ARE BASED ON STANDARD FITTINGS AVAILABLE FOR DUCTILE IRON PIPE. JOINT DEFLECTIONS SHALL NOT EXCEED 75 PERCENT OF MANUFACTURER'S RECOMMENDED DEFLECTION.
- DETECTOR TAPE SHALL BE INSTALLED ON ALL BURIED PIPE.
- ALL MANHOLE COVERS AND VALVE BOX LIDS FOR WATER LINE SHALL READ "WATER". ALL MANHOLE COVERS AND VALVE BOX LIDS FOR SEWER LINE AND FORCE MAIN SHALL READ "SEWER".

STANDARD UTILITY NOTES:

- ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH NCDOT 2018 STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- UTILITY SEPARATION REQUIREMENTS:
 - A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.
 - WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
 - WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
 - 50' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
 - MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER DETAIL B/3A).
 - ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
- ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY NCDOT AND THE TOWN OF BRYSON CITY PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 72 HOUR ADVANCE NOTICE TO THE TOWN OF BRYSON CITY.
- 3.5' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS.
- IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE TOWN OF BRYSON CITY. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT.
- INSTALL WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2' X 2' WATERLINE EASEMENT IMMEDIATELY ADJACENT.
- INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
- ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWM, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
- NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
- CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT.

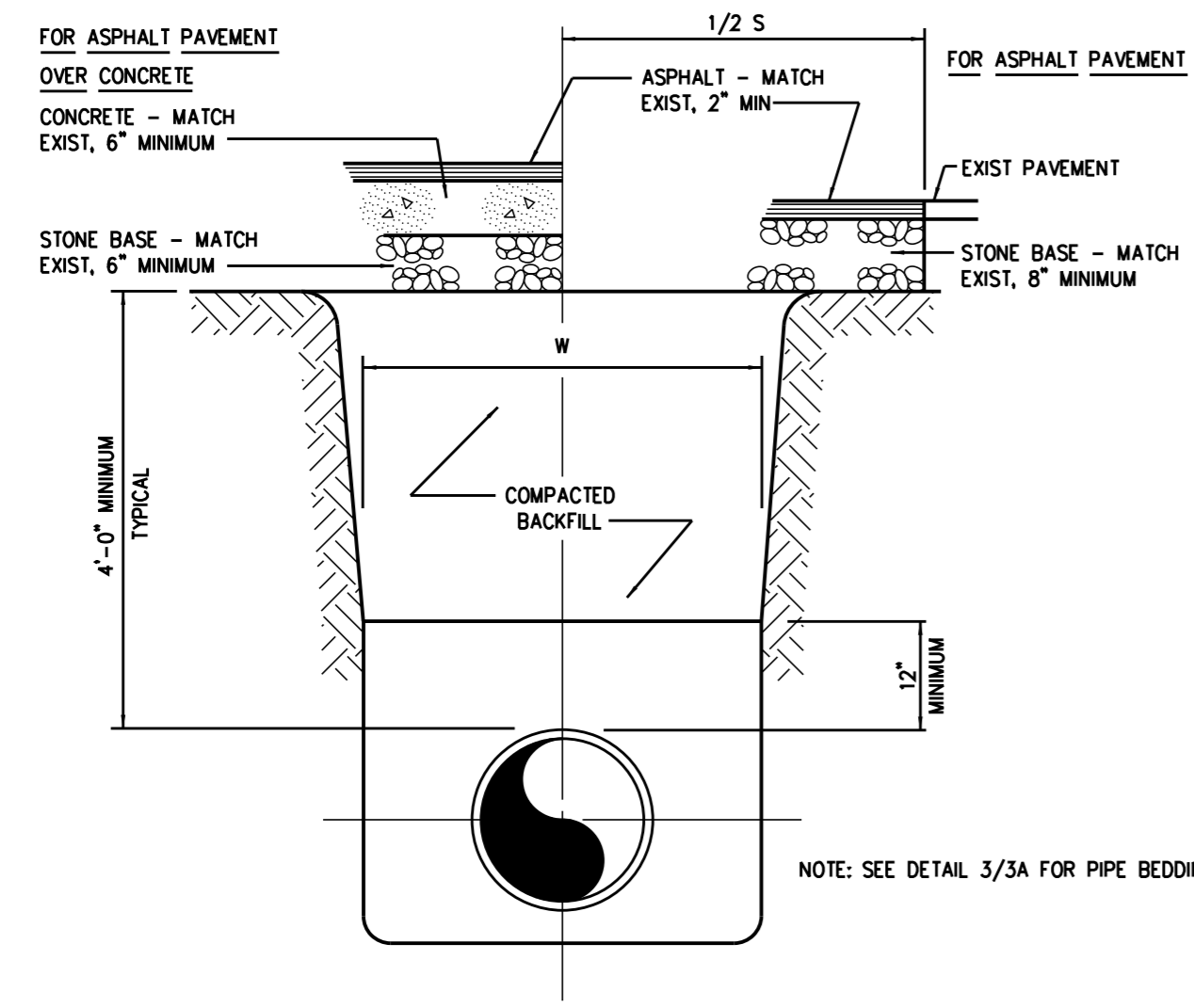
PROJECT SPECIFIC NOTES:

- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF BRYSON CITY AND/OR NCDOT STANDARDS AND SPECIFICATIONS.
- ALL PROPOSED WATER LINE AND PIPE AND FITTINGS 12-INCHES IN DIAMETER AND SMALLER SHALL BE RESTRAINED JOINT PC 350 DUCTILE IRON PIPE, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- ALL PROPOSED GRAVITY SEWER MAIN PIPE AND FITTINGS 12-INCHES IN DIAMETER AND SMALLER SHALL BE PROTECTO 401-LINED PC 350 DUCTILE IRON PIPE.
- A THRUST RESTRAINT DESIGN PRESSURE OF 350 PSI SHALL BE USED.
- THE CONTRACTOR SHALL FIELD VERIFY EXACT ELEVATION, LOCATION, ORIENTATION, DIMENSION, AND MATERIAL OF PIPING TO BE CONNECTED TO PRIOR TO ORDERING MATERIALS.
- THE CONTRACTOR SHALL PROVIDE A MEANS TO KEEP ALL NEW PIPING COMPLETELY ISOLATED FROM EXISTING PIPING UNTIL ALL NEW PIPING HAS BEEN TESTED, DISINFECTED, AND ACCEPTED BY NCDOT AND THE CITY OF DURHAM FOR SERVICE.
- ALL CONNECTION FITTINGS AND JOINTS SHALL BE RESTRAINED DIP USING MECHANICAL JOINT RESTRAINT.
- CONCRETE THRUST COLLARS SHALL BE PLACED AND CURED THREE DAYS PRIOR TO RE-PRESSURIZING THE PIPE.

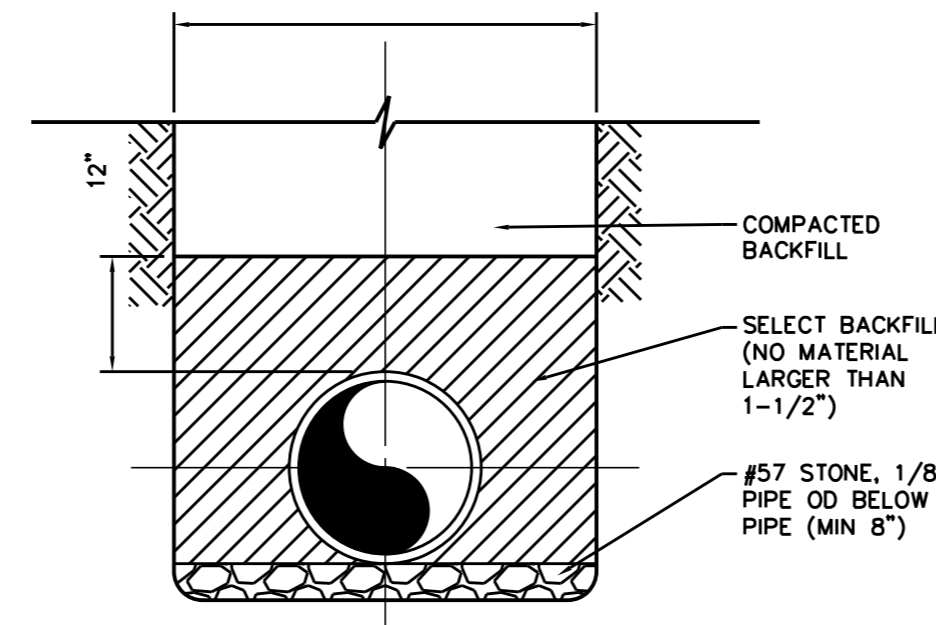
K:\RAL_Roadway\01036387 - Div 14 (R-5843 Bryson Int)\Utilities\Engineer\UC\Pro\280_030_R-5843_uc_notes_03.dgn

7/23/2019

PROJECT REFERENCE NO. R-5843	SHEET NO. UC-3A
DESIGNED BY: DGB	
DRAWN BY: DGB	
CHECKED BY: NDR	
APPROVED BY:	
REVISER:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION	



1 TYPICAL TRENCH
Not to Scale



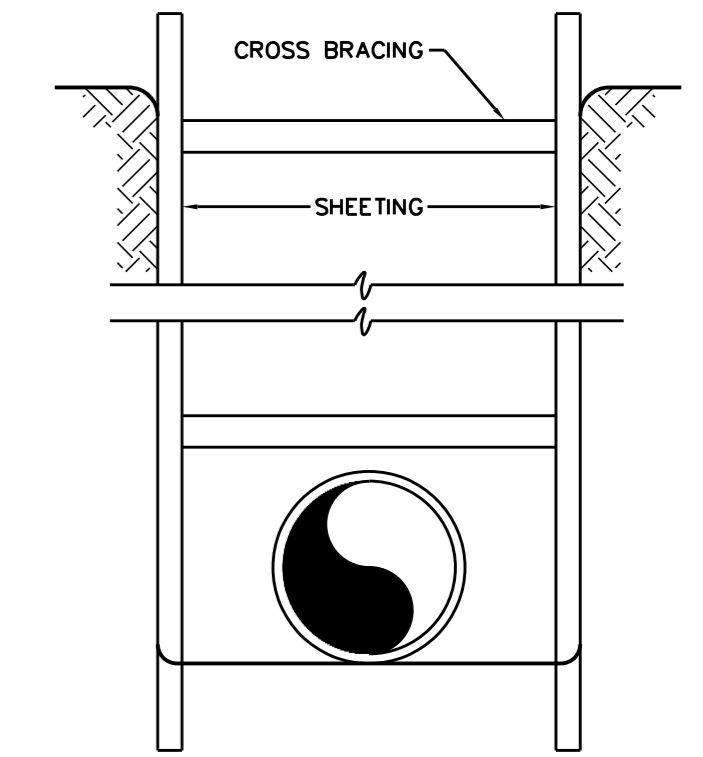
2 TYPE B BEDDING
Not to Scale

INTERNAL DIAMETER OF PIPE	WIDTH OF TRENCH	
	MAX	W=MIN
4'-6"	3'-9"	2'-0"
8'-10"	3'-9"	2'-2"
12"	3'-9"	O.D.+2'
14'-16"	4'-2"	O.D.+2'
18"	4'-4"	O.D.+2'
20'-21"	4'-8"	O.D.+2'
24"	4'-11"	O.D.+2'
27"	5'-9"	O.D.+2'
30"	6'-7"	O.D.+2'
36"	7'-4"	O.D.+2'
42"	8'-2"	O.D.+2'
48"	8'-9"	O.D.+2'
54"	9'-4"	O.D.+2'
60"	9'-10"	O.D.+2'
72"	11'-0"	O.D.+2'
78"	11'-8"	O.D.+2'
84"	12'-0"	O.D.+2'
90"	12'-6"	O.D.+2'
96"	13'-0"	O.D.+2'
108"	14'-0"	O.D.+2'

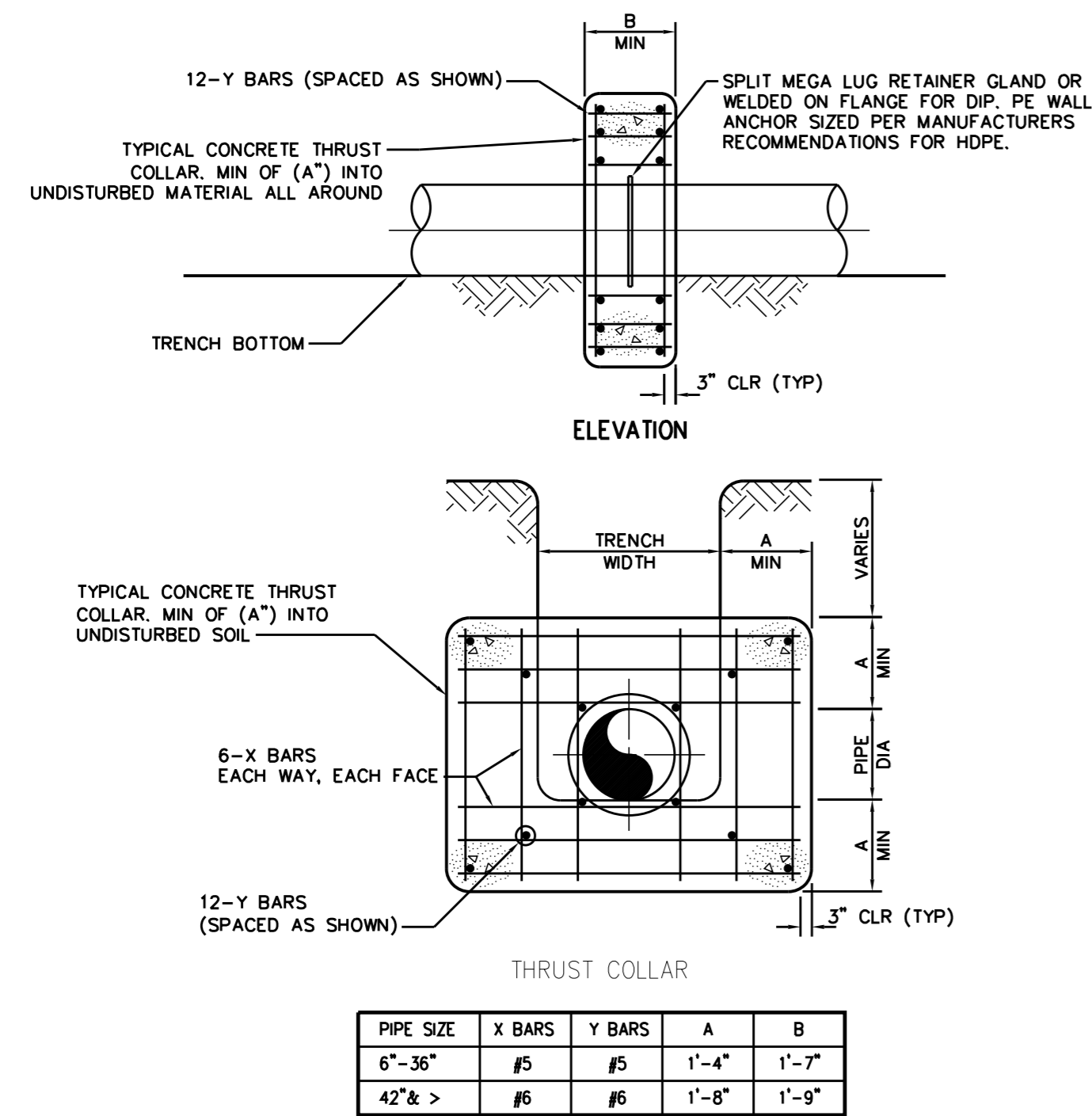
DEPTH OF CUT	S
0-6'	S=W+4'
>6-8'	S=W+8'
>8-10'	S=W+12'
>10-12'	S=W+16'
>12-14'	S=W+20'
>14-16'	S=W+24'
>16-18'	S=W+28'
>18'	S=W+32'

W = TRENCH WIDTH AT BOTTOM OF PIPE. TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS.

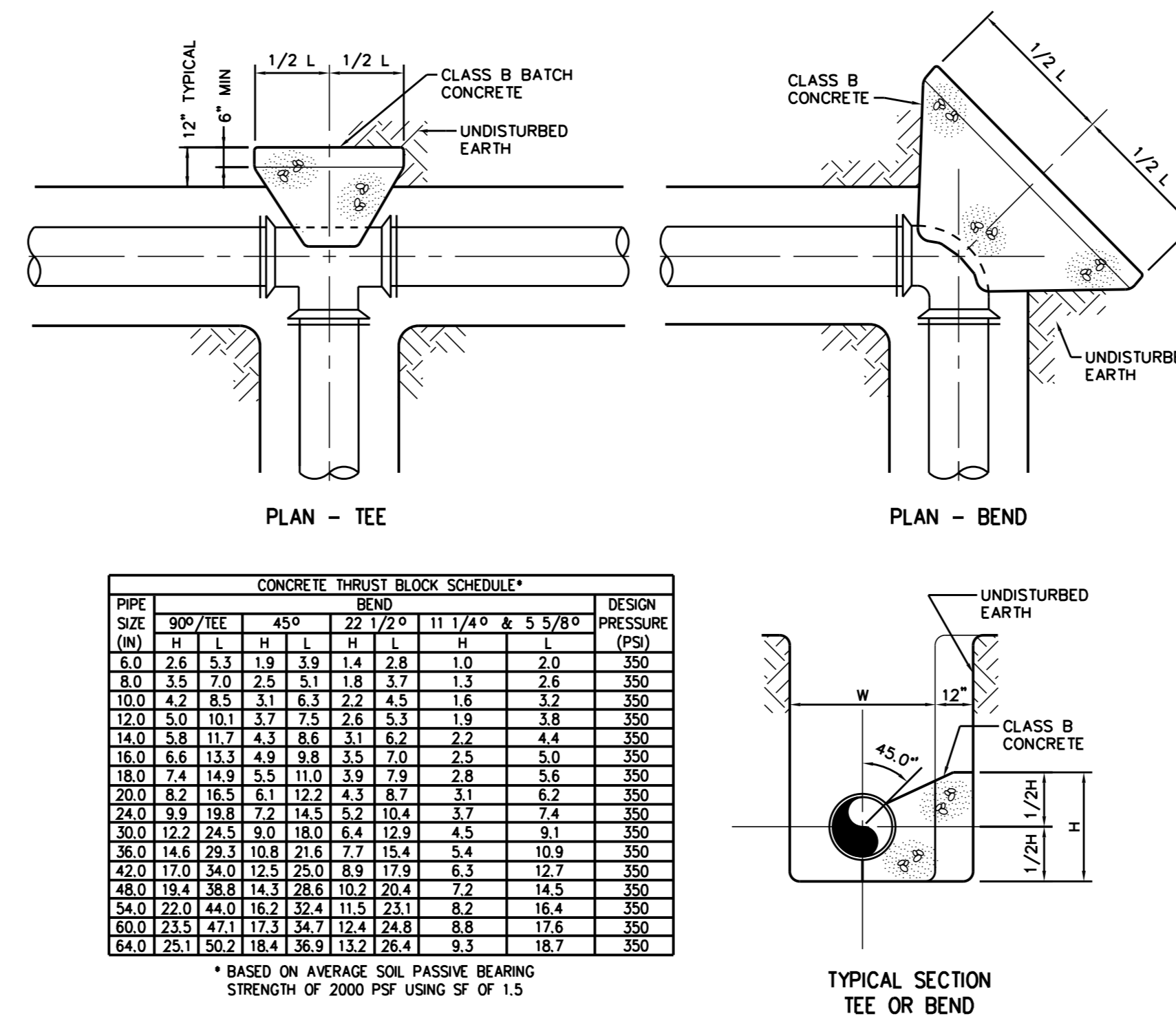
3 TRENCH EXCAVATION LIMITS
Not to Scale



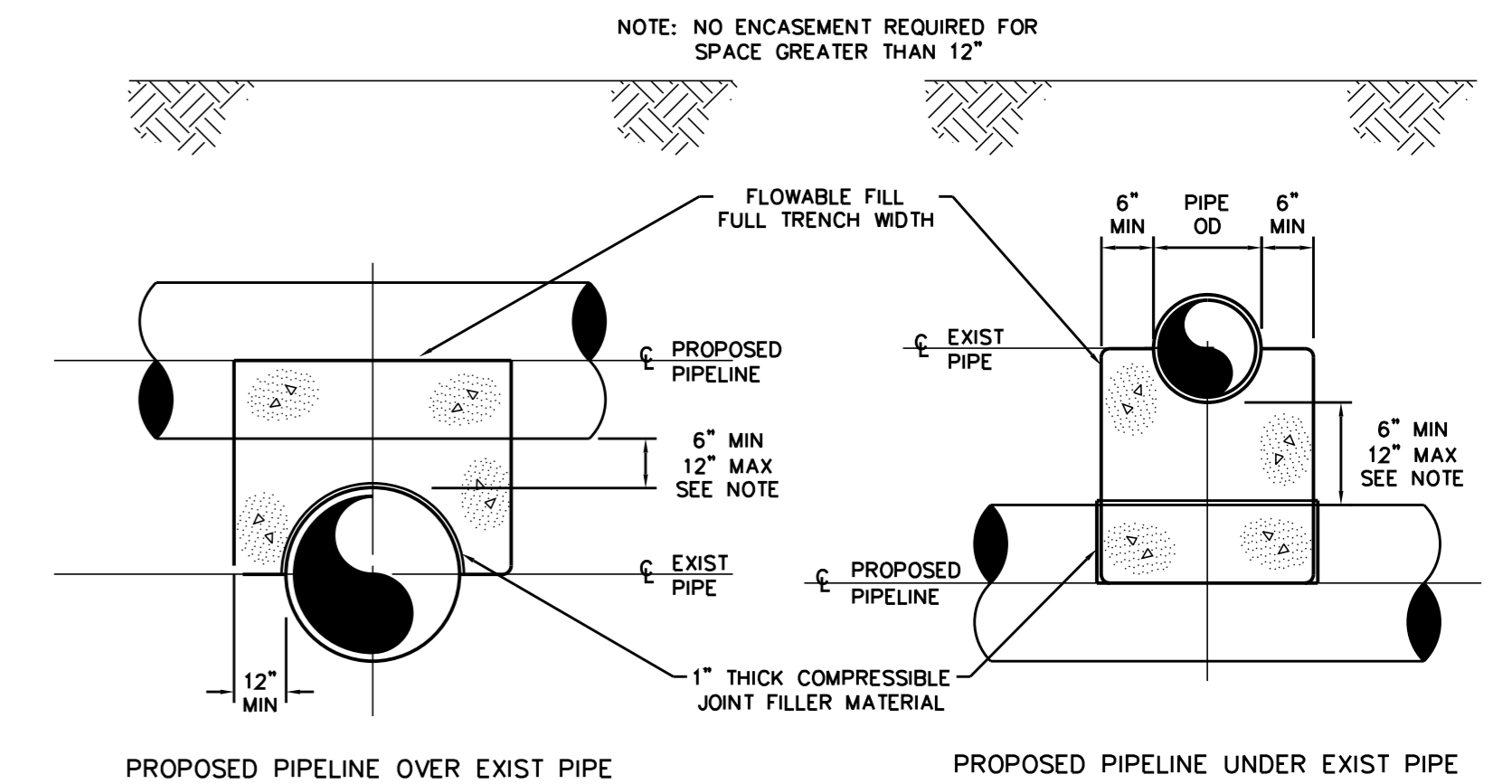
4 TYPICAL SHEETING
Not to Scale



5 THRUST COLLARS
Not to Scale



6 THRUST BLOCKING
Not to Scale

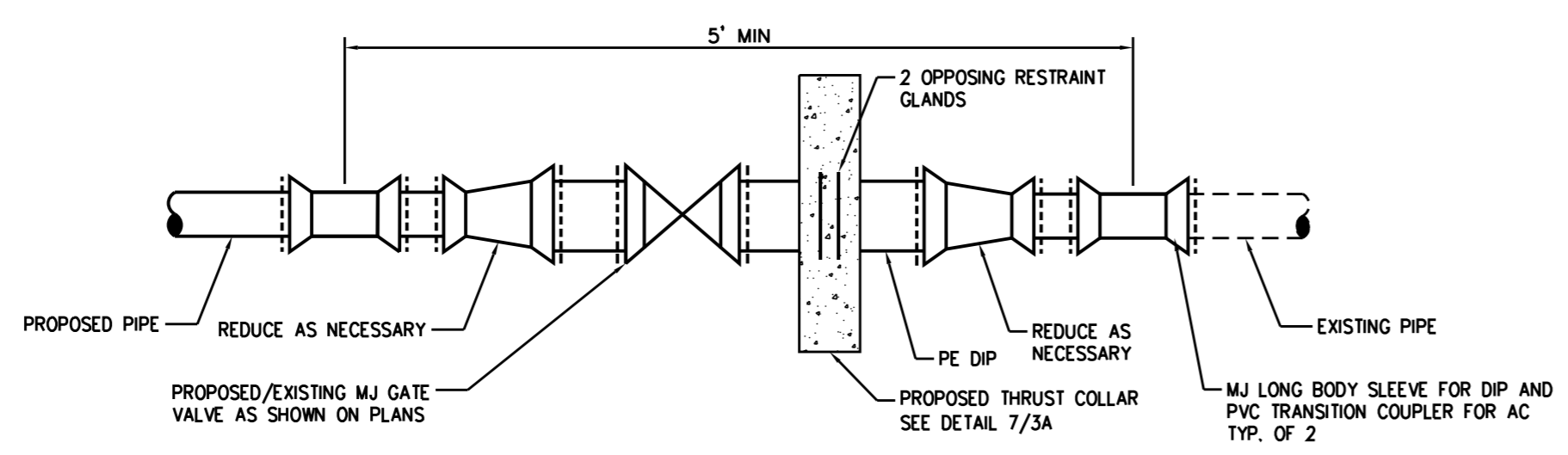


7 PROPOSED PIPE OVER/UNDER EXISTING PIPE
Not to Scale

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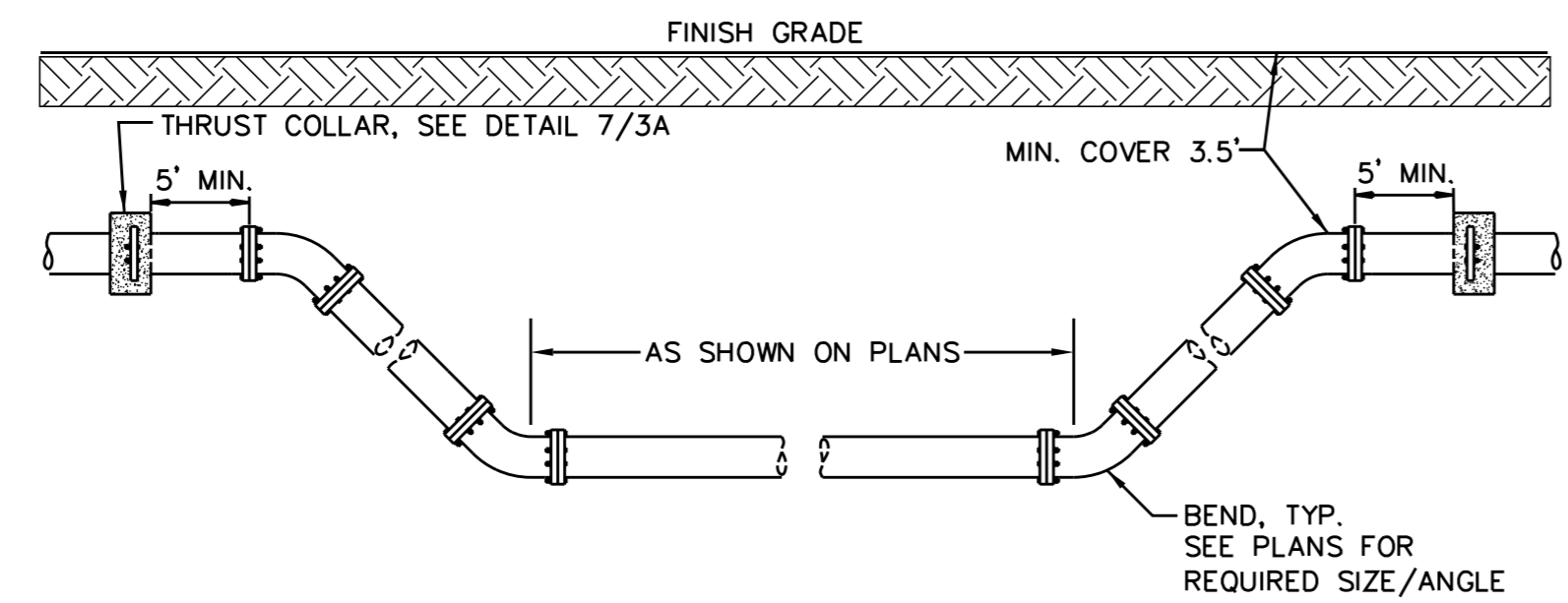
PROJECT REFERENCE NO.	R-5843	SHEET NO.	UC-3B
DESIGNED BY:	DGB		
DRAWN BY:	DGB		
CHECKED BY:	NDR		
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

UTILITY CONSTRUCTION



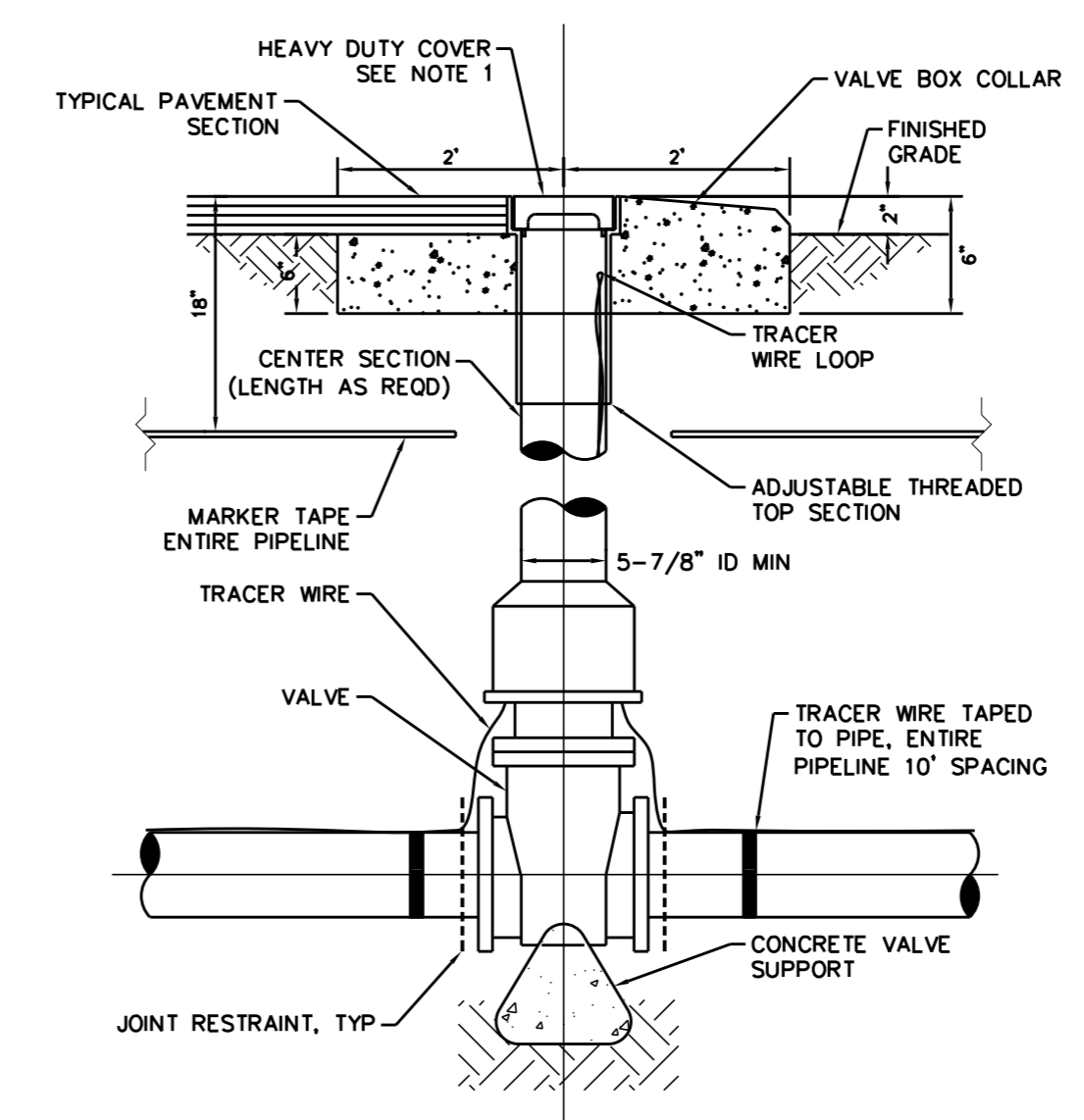
- NOTES:
- CONTRACTOR SHALL ASSEMBLE THE DIP ASSEMBLY PRIOR TO REMOVING THE EXISTING PIPE FROM SERVICE AND BEFORE CUTTING THE EXISTING PIPE. SHUT DOWN TIME OF THE EXISTING LINE SHALL BE MINIMIZED.
 - THE THRUST COLLAR SHALL BE ALLOWED TO CURE A MINIMUM OF 3 DAYS BEFORE ANY BENDS ARE ADDED OR BEFORE GATE VALVE IS CLOSED.

1 THRUST COLLAR CUT-IN
Not to Scale



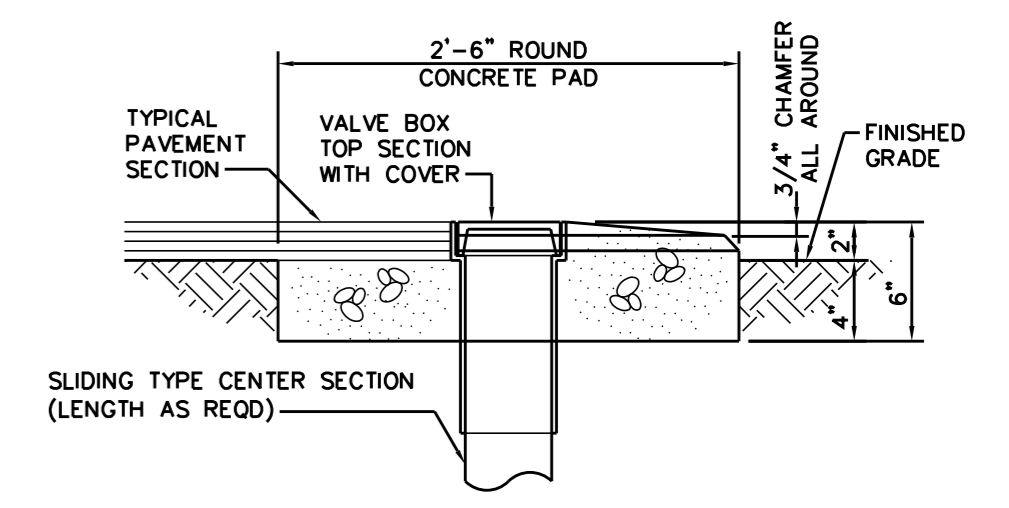
- NOTES:
- MEGALUGS OR RESTRAINED JOINT PIPE AND FITTINGS SHALL BE USED FOR ALL PIPE AND FITTINGS.
 - CONCRETE ENCASED MEGALUGS MAY BE USED IN LIEU OF THRUST COLLARS.
 - ALL PIPE AND FITTINGS BETWEEN THRUST COLLARS SHALL BE RESTRAINED.

2 VERTICAL BENDS
Not to Scale

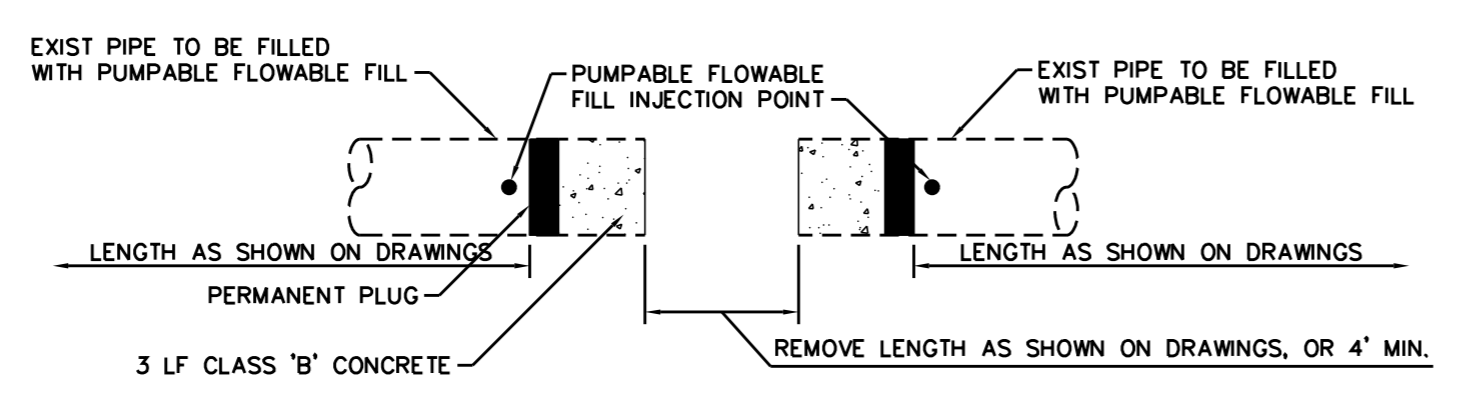


- NOTES:
- LIDS SHALL BE MARKED "WATER" OR "SEWER" AS APPLICABLE AND SHALL BE ASPHALT COATED.

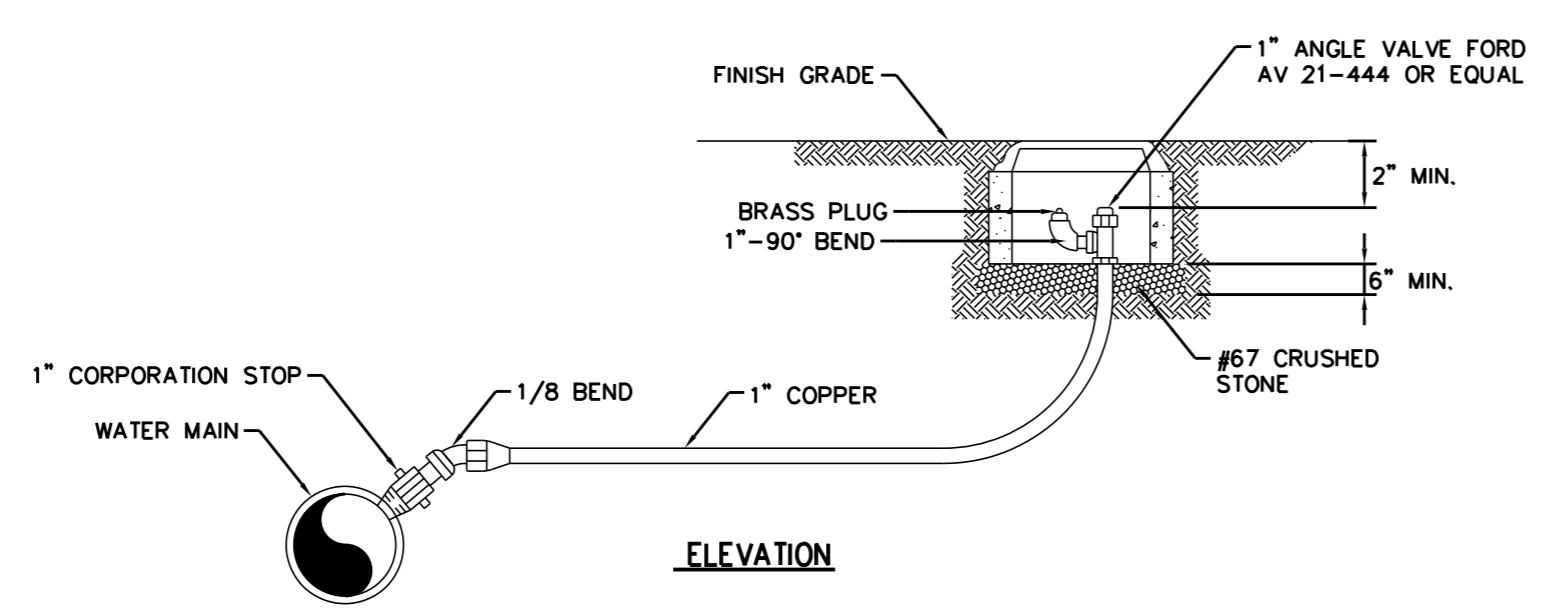
5 GATE VALVE AND VALVE BOX
Not to Scale



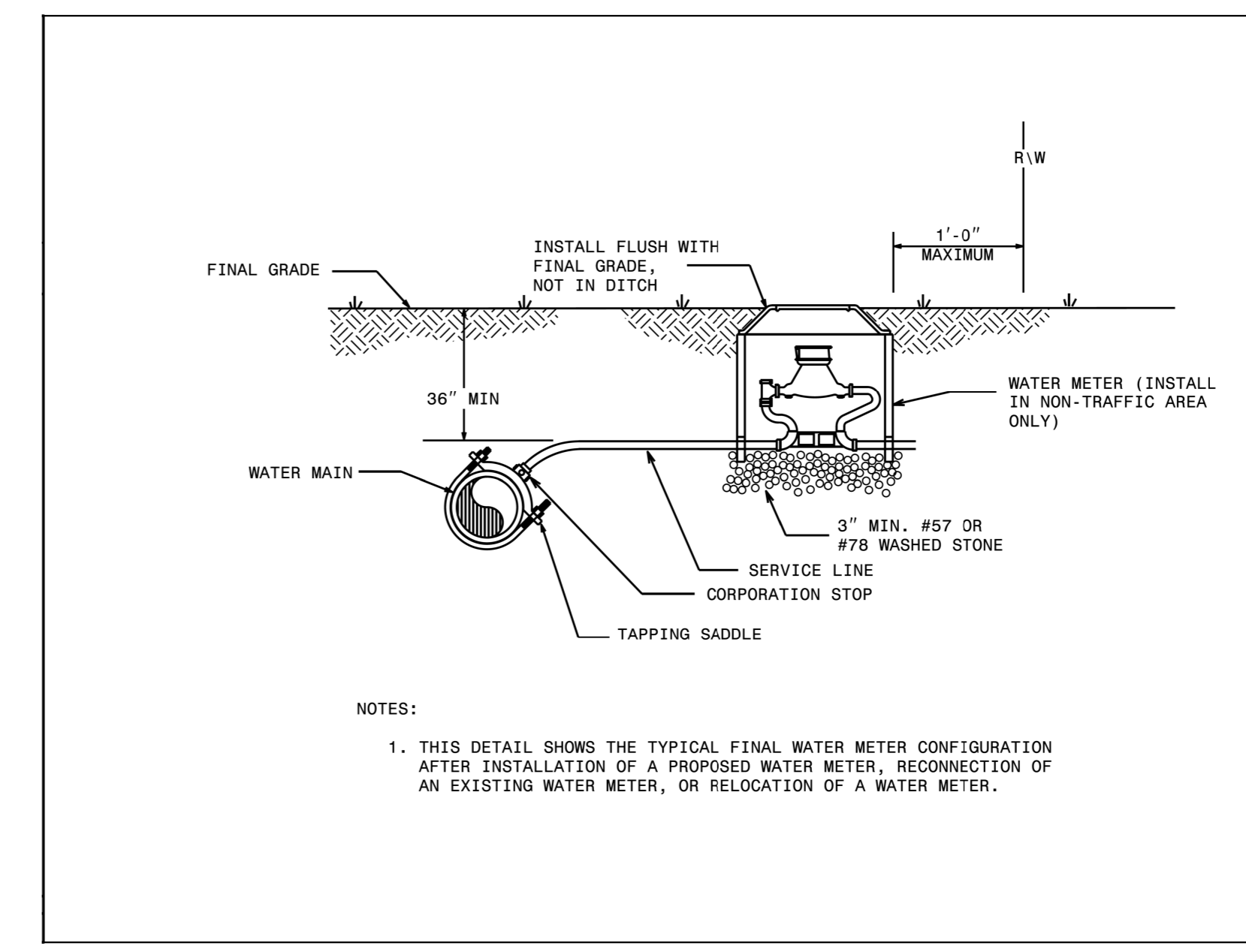
6 VALVE BOX PAD
Not to Scale



3 CUT AND PLUG EXISTING WATERLINE
Not to Scale



4 DISINFECTION AND SAMPLING POINT
Not to Scale

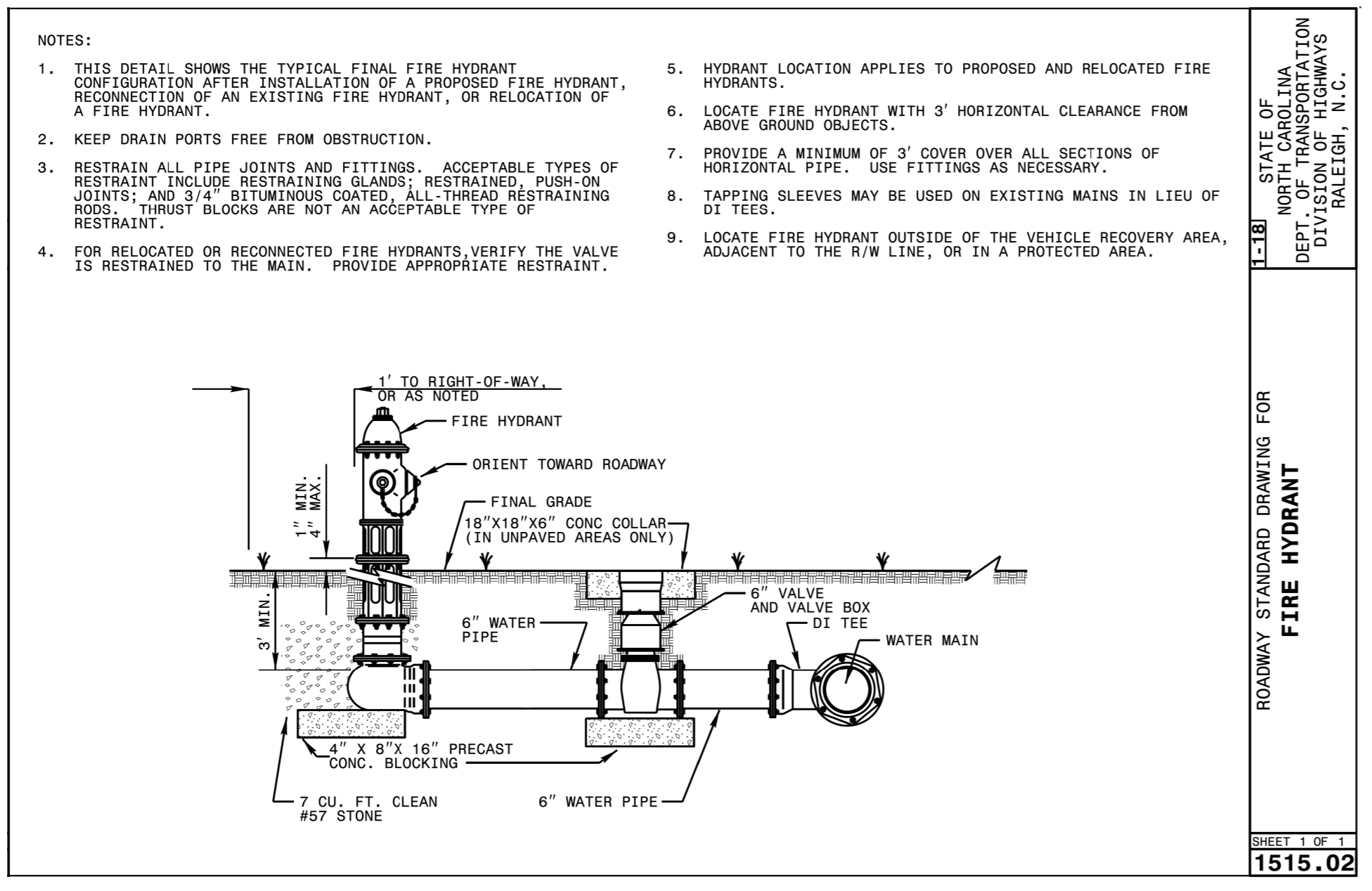


- NOTES:
- THIS DETAIL SHOWS THE TYPICAL FINAL WATER METER CONFIGURATION AFTER INSTALLATION OF A PROPOSED WATER METER, RECONNECTION OF AN EXISTING WATER METER, OR RELOCATION OF A WATER METER.

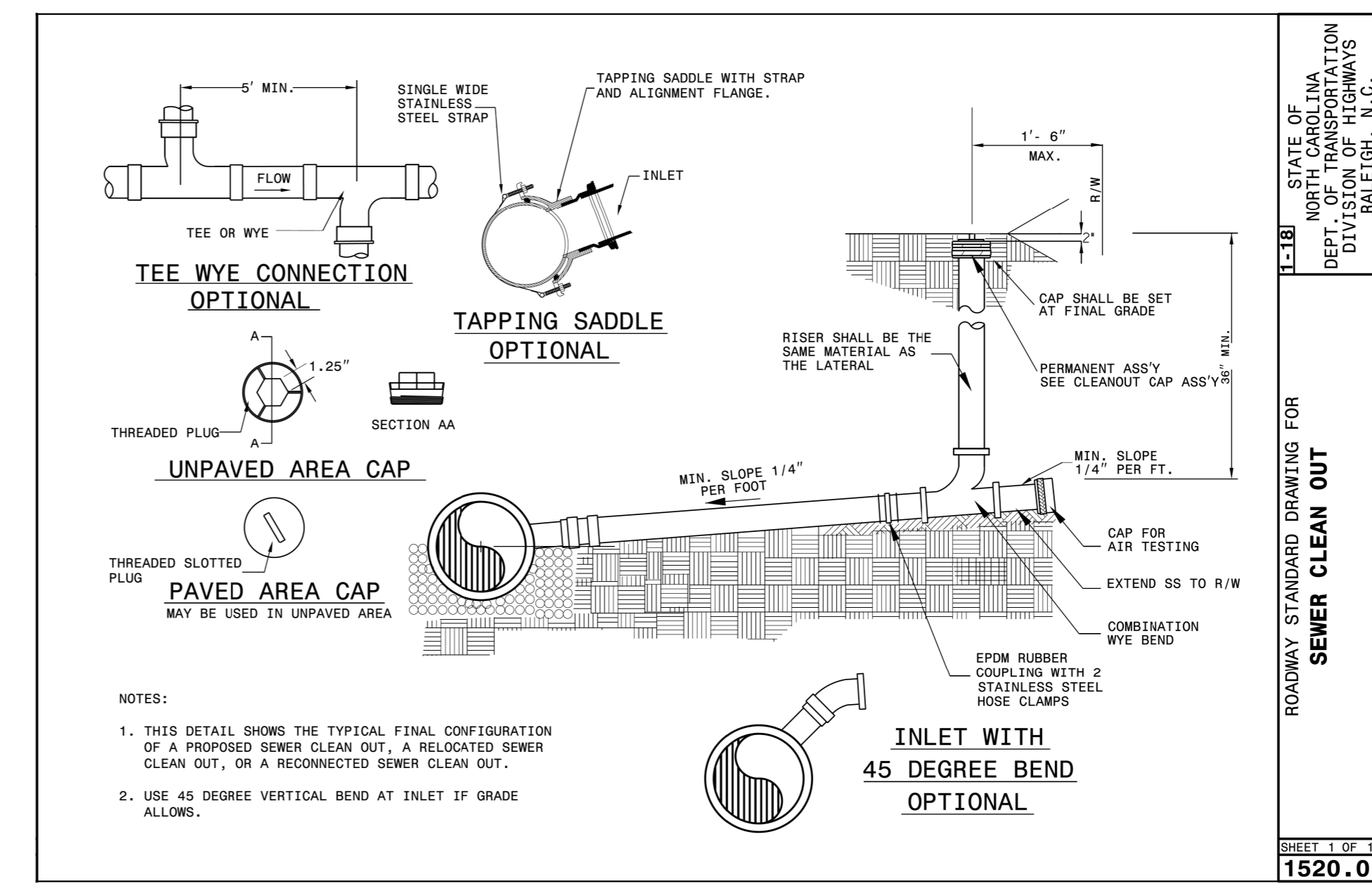
7 NCDOT WATER METER DETAIL
Not to Scale

ROADWAY STANDARD DRAWING FOR
WATER METER
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.
 SHEET 1 OF 1
1515.01

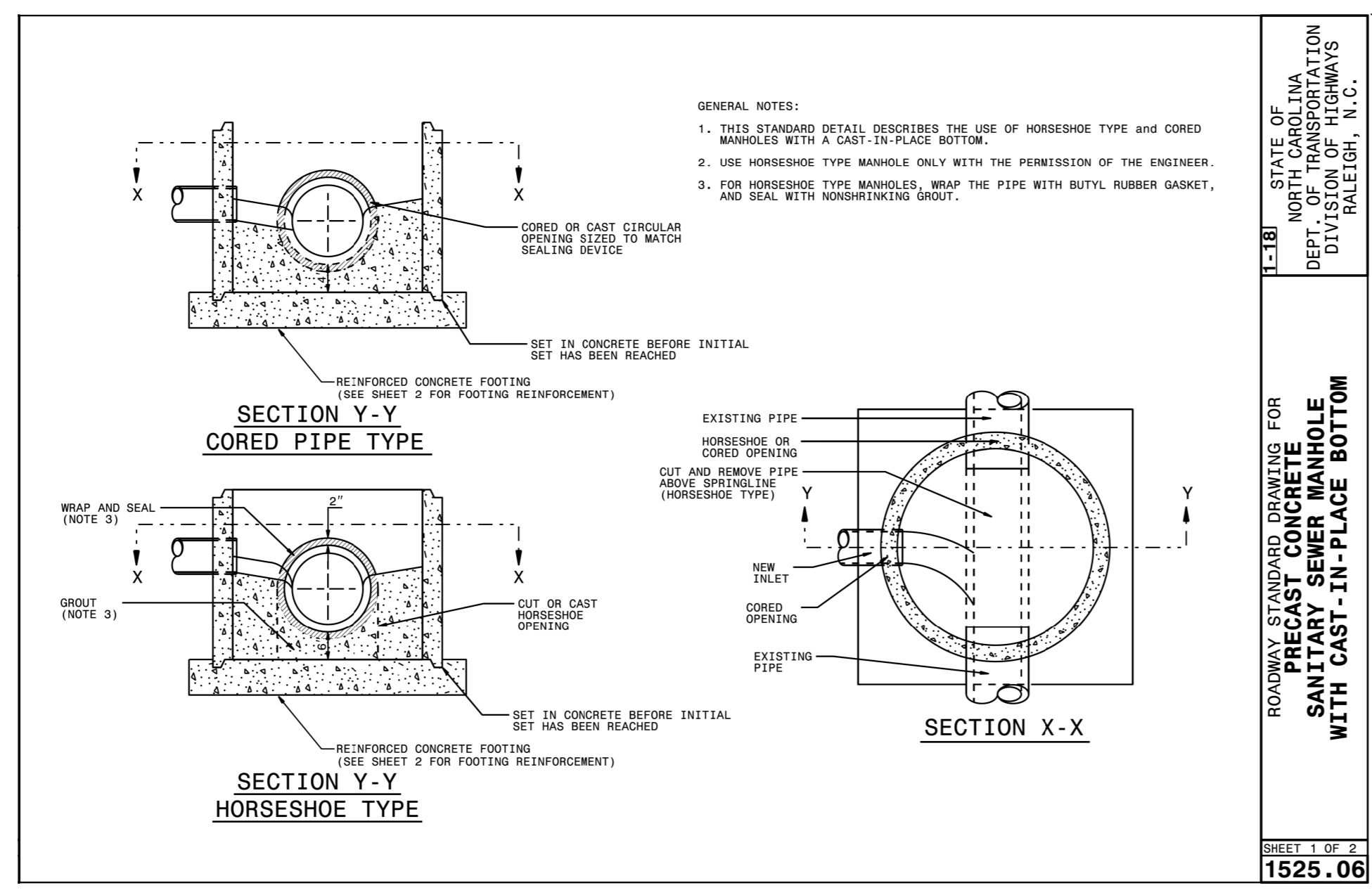
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 7/23/2019



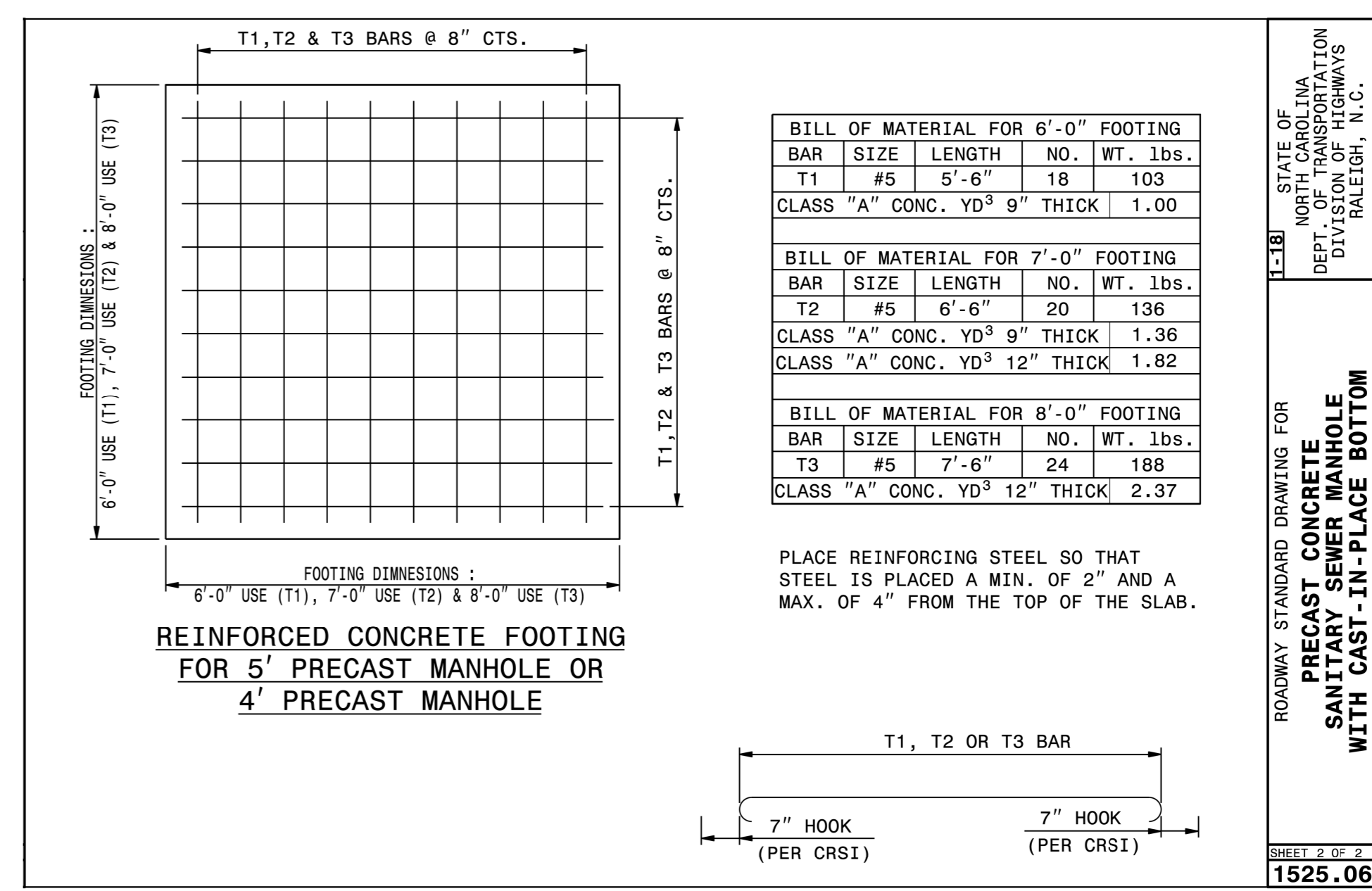
1 NCDOT FIRE HYDRANT DETAIL
Not to Scale



2 NCDOT SEWER CLEAN OUT DETAIL
Not to Scale




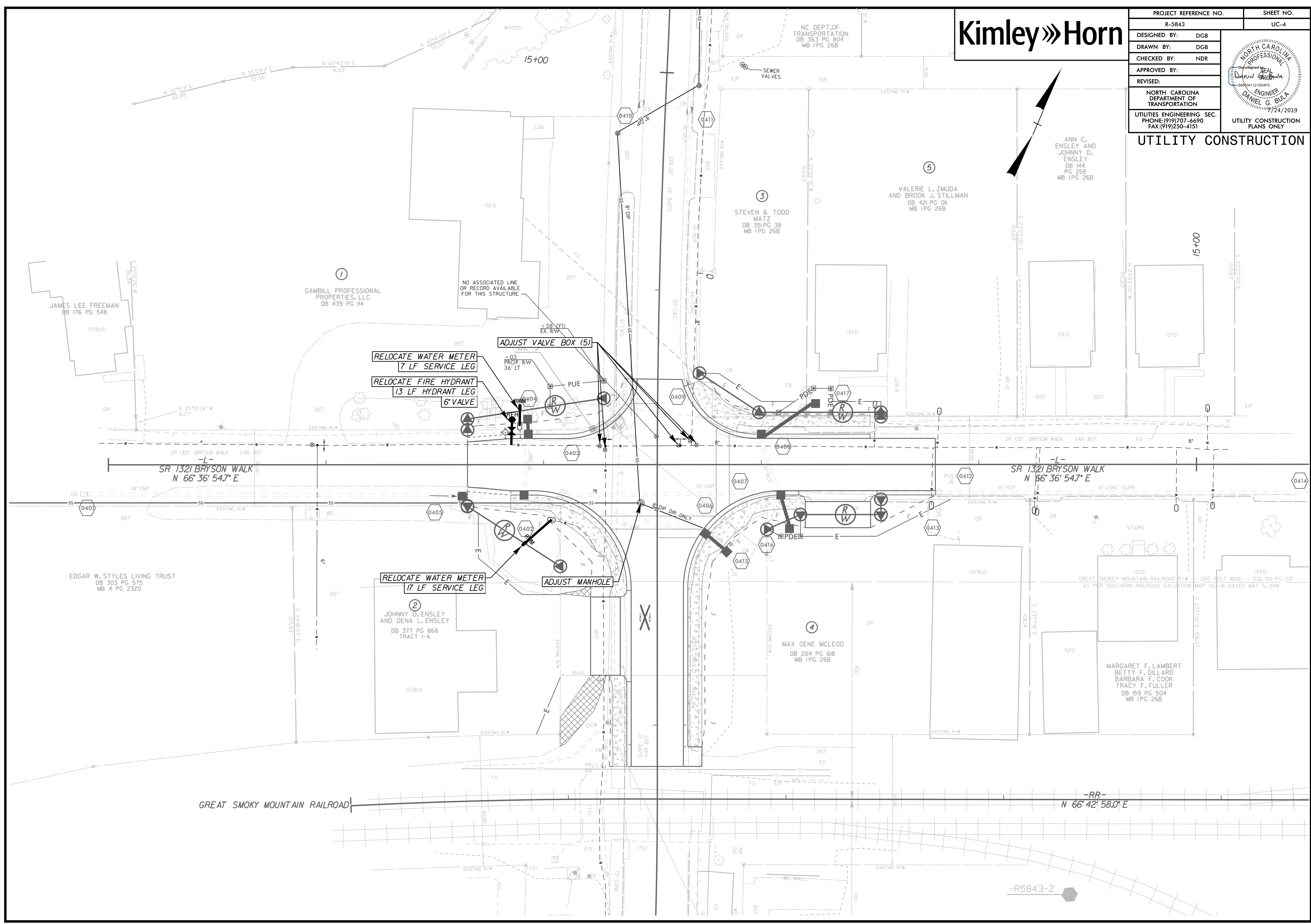
3 NCDOT PRECAST SEWER MANHOLE DETAIL (1 OF 2)
Not to Scale



4 NCDOT PRECAST SEWER MANHOLE DETAIL (2 OF 2)
Not to Scale

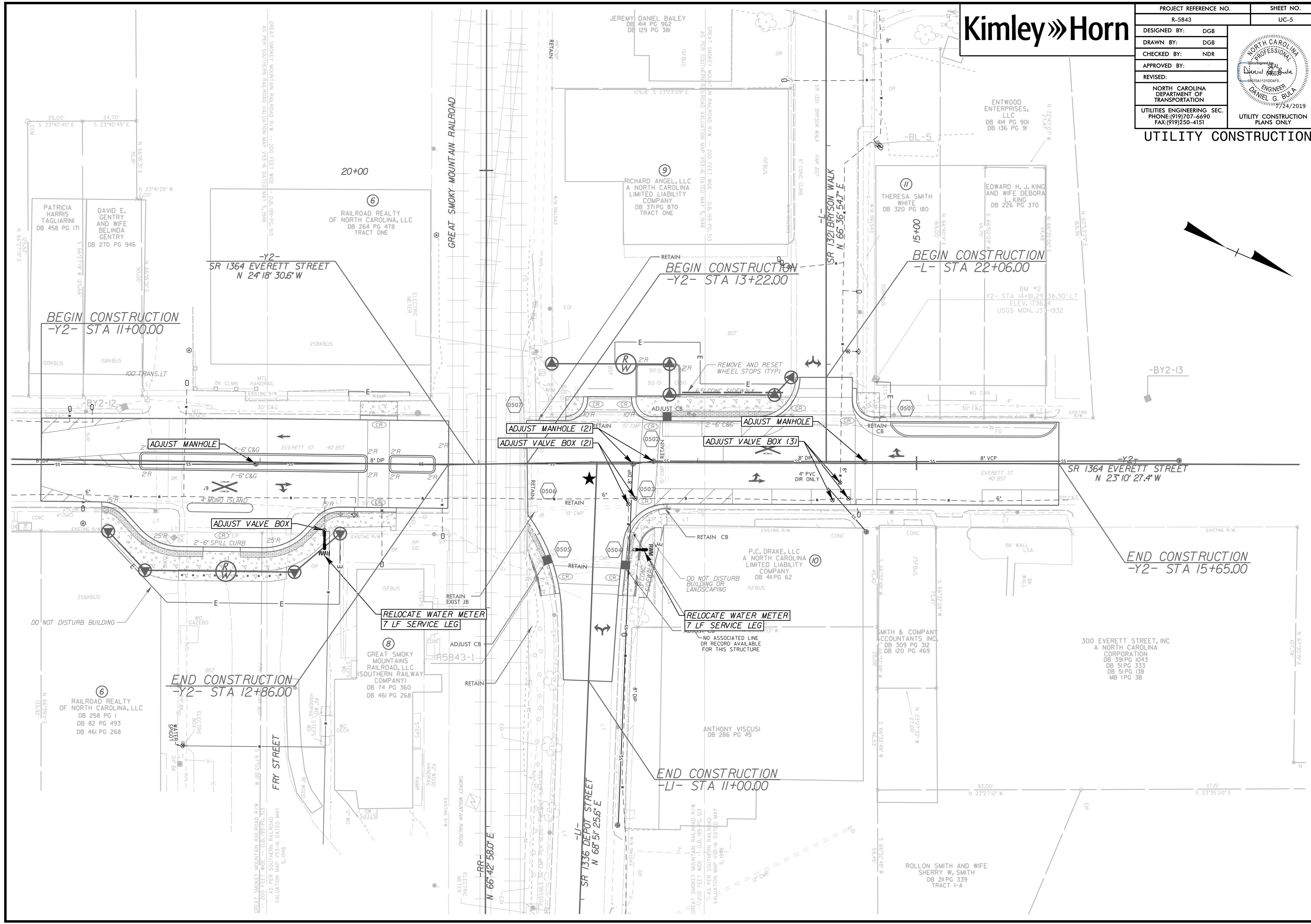
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PROJECT REFERENCE NO.	R-5843	SHEET NO.	UC-4
DESIGNED BY:	DGB		
DRAWN BY:	DGB		
CHECKED BY:	NDR		
APPROVED BY:			
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION			





PROJECT REFERENCE NO.	R-5843	SHEET NO.	UC-5
DESIGNED BY:	DGB		
DRAWN BY:	DGB		
CHECKED BY:	NDR		
APPROVED BY:			
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION			



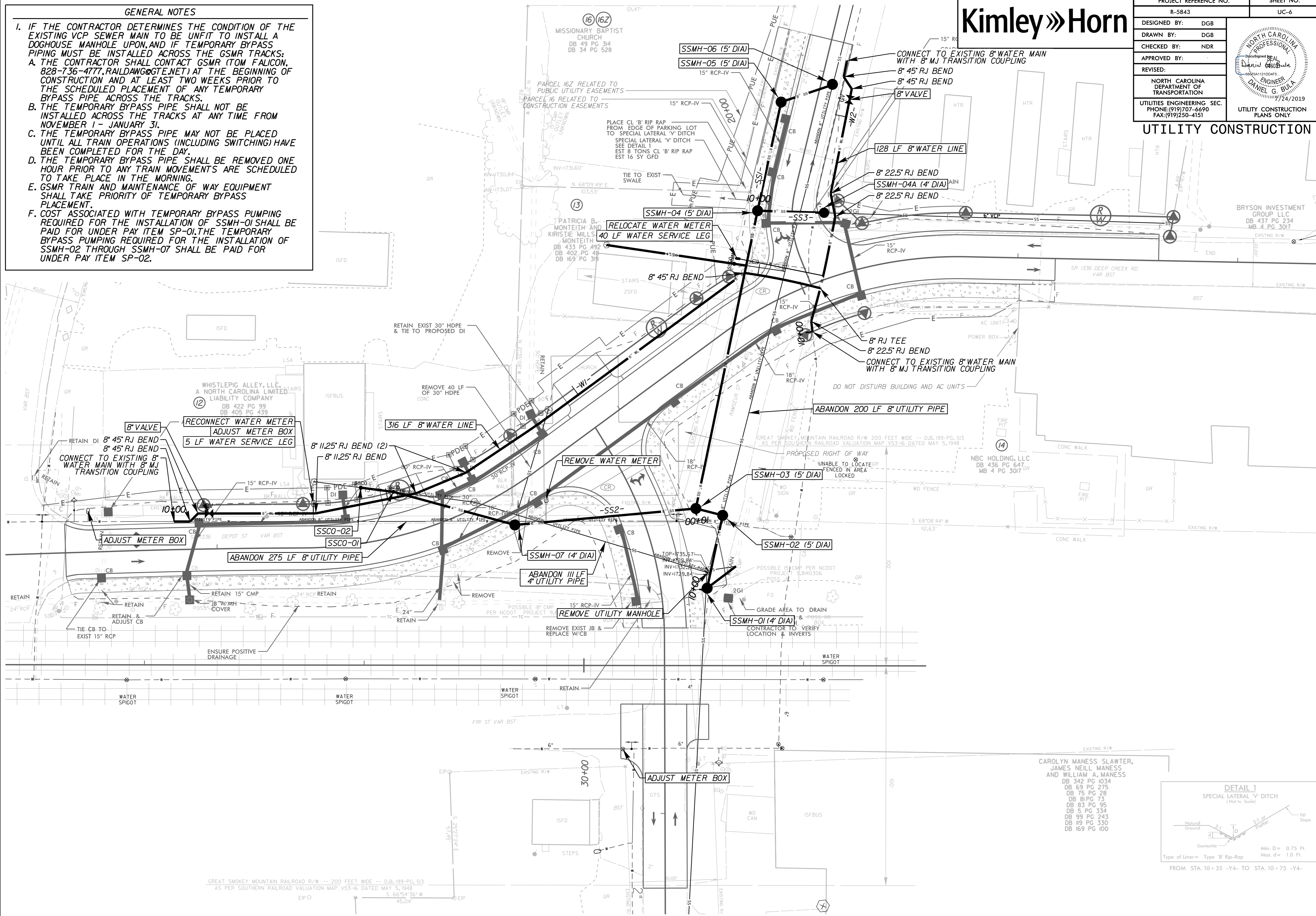
GENERAL NOTES

- I. IF THE CONTRACTOR DETERMINES THE CONDITION OF THE EXISTING VCP SEWER MAIN TO BE UNFIT TO INSTALL A DOGHOUSE MANHOLE UPON, AND IF TEMPORARY BYPASS PIPING MUST BE INSTALLED ACROSS THE GSMR TRACKS;
 - A. THE CONTRACTOR SHALL CONTACT GSMR (TOM FALCON, 828-736-4777, RAILDANG@GTE.NET) AT THE BEGINNING OF CONSTRUCTION AND AT LEAST TWO WEEKS PRIOR TO THE SCHEDULED PLACEMENT OF ANY TEMPORARY BYPASS PIPE ACROSS THE TRACKS.
 - B. THE TEMPORARY BYPASS PIPE SHALL NOT BE INSTALLED ACROSS THE TRACKS AT ANY TIME FROM NOVEMBER 1 - JANUARY 31.
 - C. THE TEMPORARY BYPASS PIPE MAY NOT BE PLACED UNTIL ALL TRAIN OPERATIONS (INCLUDING SWITCHING) HAVE BEEN COMPLETED FOR THE DAY.
 - D. THE TEMPORARY BYPASS PIPE SHALL BE REMOVED ONE HOUR PRIOR TO ANY TRAIN MOVEMENTS ARE SCHEDULED TO TAKE PLACE IN THE MORNING.
 - E. GSMR TRAIN AND MAINTENANCE OF WAY EQUIPMENT SHALL TAKE PRIORITY OF TEMPORARY BYPASS PLACEMENT.
 - F. COST ASSOCIATED WITH TEMPORARY BYPASS PUMPING REQUIRED FOR THE INSTALLATION OF SSMH-01 SHALL BE PAID FOR UNDER PAY ITEM SP-01. THE TEMPORARY BYPASS PUMPING REQUIRED FOR THE INSTALLATION OF SSMH-02 THROUGH SSMH-07 SHALL BE PAID FOR UNDER PAY ITEM SP-02.

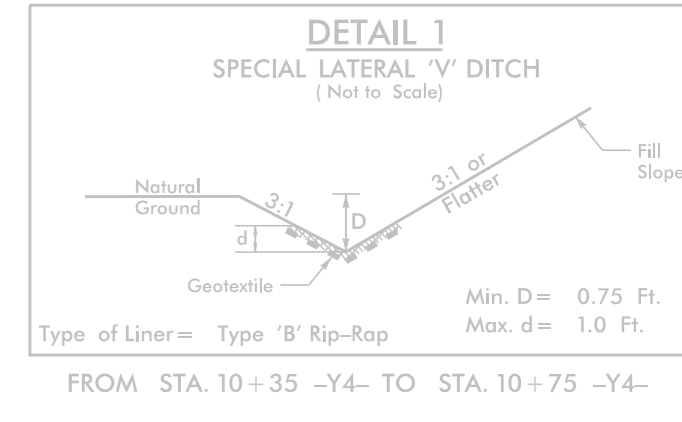
Kimley»Horn

PROJECT REFERENCE NO.	R-5843	SHEET NO.	UC-6
DESIGNED BY:	DGB		
DRAWN BY:	DGB		
CHECKED BY:	NDR		
APPROVED BY:			
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

UTILITY CONSTRUCTION



CAROLYN MANESS SLAWTER,
JAMES NEILL MANESS
AND WILLIAM A. MANESS
DB 342 PG 1034
DB 69 PG 275
DB 75 PG 28
DB 81 PG 73
DB 83 PG 95
DB 85 PG 334
DB 99 PG 243
DB 109 PG 330
DB 169 PG 100

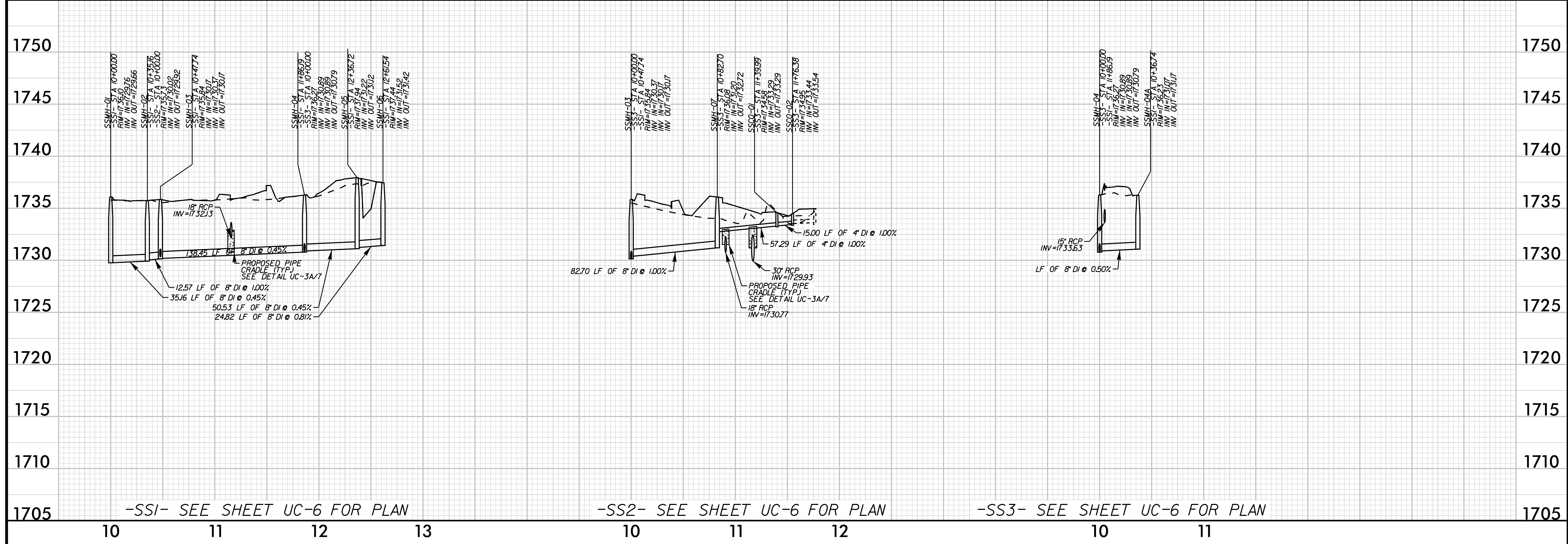
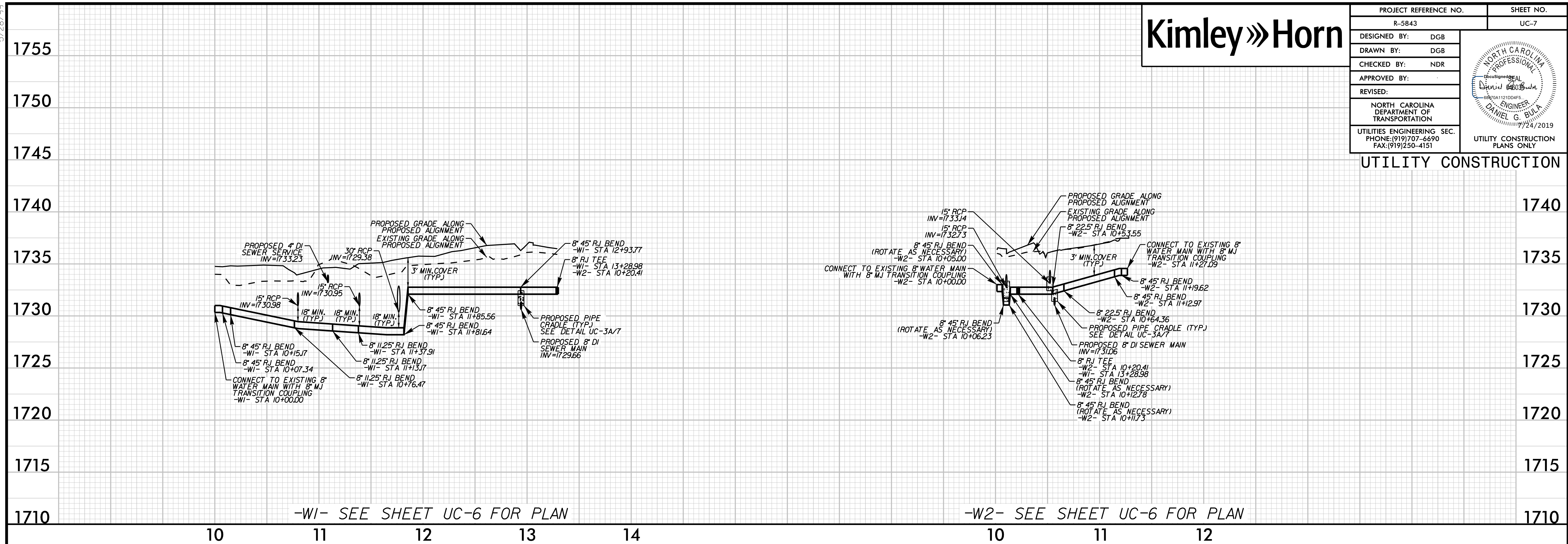


GREAT SMOKEY MOUNTAIN RAILROAD R/W -- 200 FEET WIDE -- D.B. 199-PG. 513
AS PER SOUTHERN RAILROAD VALUATION MAP V53-16 DATED MAY 5, 1948

5/28/19



PROJECT REFERENCE NO. R-5843	SHEET NO. UC-7
DESIGNED BY: DGB	
DRAWN BY: DGB	
CHECKED BY: NDR	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION	



PROJECT: R-5843

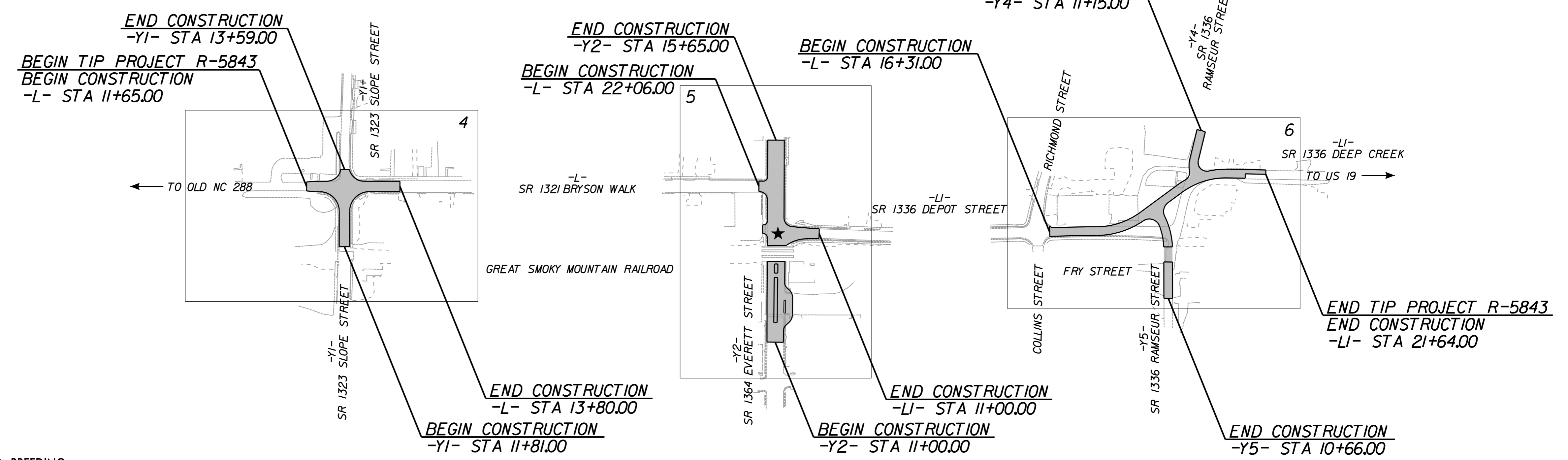
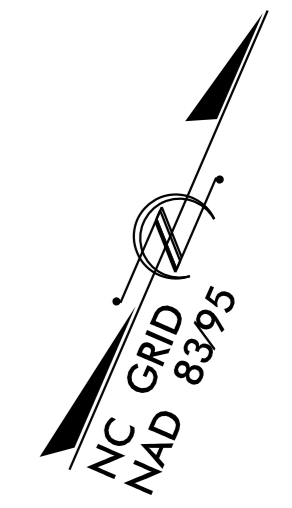
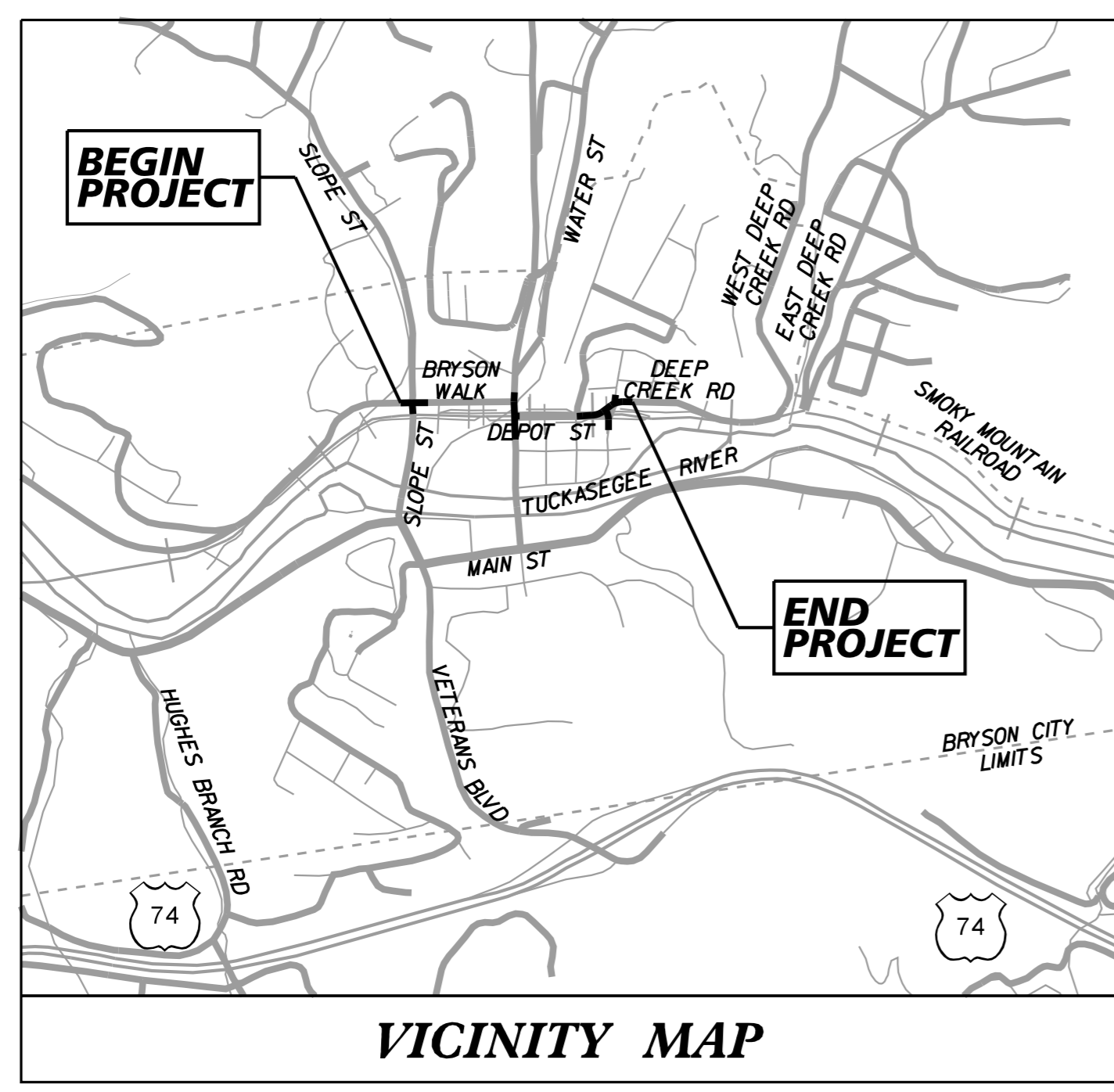
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
SWAIN COUNTY**

LOCATION: SLOPE STREET / BRYSON WALK (SR 1321) INTERCHANGE

TYPE OF WORK: UTILITY RELOCATIONS BY OTHERS

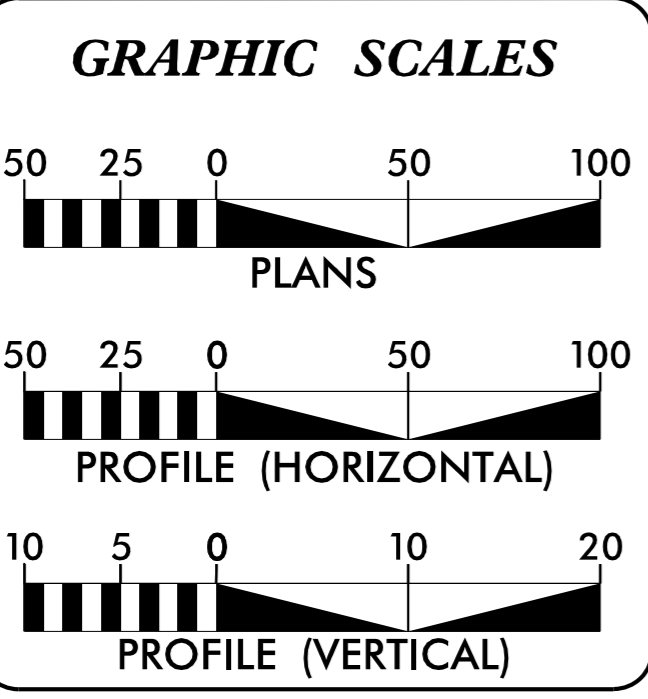
T.I.P. NO.	SHEET NO.
R-5843	UO-1



NCDOT CONTACT: DONALD BREEDING
DIVISION 14
(828) 488-0902

★ TRAFFIC SIGNAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	SYMBOLGY SHEET
UO-3 THRU UO-5	UTILITY BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

(A) POWER - DUKE ENERGY PROGRESS (DISTRIBUTION): ANDY BENTON 864-491-1240
 (B) TELECOMMUNICATIONS - FRONTIER: CHAD FOSTER 919-471-3654
 (C) TELECOMMUNICATIONS - BALSAM WEST: BRANDON BRAUN 828-399-0556
 (D) CATV - ZITO MEDIA: DARRYL CALDWELL 270-445-1584
 (E) GAS - PSNC (DISTRIBUTION): KENNETH OWENBY 828-670-3527
 (F) WATER/SEWER - TOWN OF BRYSON CITY: TOM SHOOK 828-736-1172

PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING**

1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

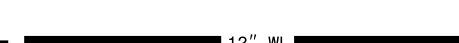























<u>Roger Worthington, P.E.</u>	UTILITIES SECTION ENGINEER
<u>Lee Johnson</u>	UTILITIES PROJECT ENGINEER
<u>Donna Jackson, P.E.</u>	UTILITIES PROJECT DESIGNER

K:\RAL_Roadway\01036387 - Div 14 (R-5843 Bryson Int)\Utilities\Engineer\UO01-R-5843_rdy_ubo_01dgn 7/16/2019

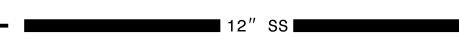
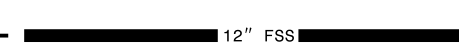


STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS





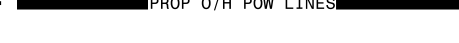
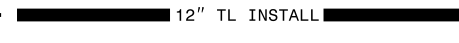
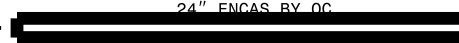

PROPOSED WATER SYMBOLS







- Water Line (Sized as Shown) ----- 
- 11¼ Degree Bend ----- 
- 22½ Degree Bend ----- 
- 45 Degree Bend ----- 
- 90 Degree Bend ----- 
- Plug ----- 
- Tee ----- 
- Cross ----- 
- Reducer ----- 
- Gate Valve ----- 
- Butterfly Valve ----- 
- Tapping Valve ----- 
- Line Stop ----- 
- Line Stop with Bypass ----- 
- Blow Off ----- 
- Fire Hydrant ----- 
- Relocate Fire Hydrant ----- 
- Remove Fire Hydrant ----- REM FH
- Water Meter ----- 
- Relocate Water Meter ----- 
- Remove Water Meter ----- REM WM
- Water Pump Station ----- 
- RPZ Backflow Preventer ----- 
- DCV Backflow Preventer ----- 
- Relocate RPZ Backflow Preventer ----- 
- Relocate DCV Backflow Preventer ----- 

PROPOSED SEWER SYMBOLS






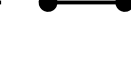












- Gravity Sewer Line (Sized as Shown) ----- 
- Force Main Sewer Line (Sized as Shown) ----- 
- Manhole (Sized per Note) ----- 
- Sewer Pump Station ----- 




















PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

- Power Pole ----- 
- Telephone Pole ----- 
- Joint Use Pole ----- 
- Telephone Pedestal ----- 
- Utility Line by Others (Type as Shown) ----- 
- Trenchless Installation ----- 
- Encasement by Open Cut ----- 
- Encasement ----- 

- Thrust Block ----- 
- Air Release Valve ----- 
- Utility Vault ----- 
- Concrete Pier ----- 
- Steel Pier ----- 
- Plan Note ----- 
- Pay Item Note ----- 

EXISTING UTILITIES SYMBOLS

- Power Pole ----- 
- Telephone Pole ----- 
- Joint Use Pole ----- 
- Utility Pole ----- 
- Utility Pole with Base ----- 
- H-Frame Pole ----- 
- Power Transmission Line Tower ----- 
- Water Manhole ----- 
- Power Manhole ----- 
- Telephone Manhole ----- 
- Sanitary Sewer Manhole ----- 
- Hand Hole for Cable ----- 
- Power Transformer ----- 
- Telephone Pedestal ----- 
- CATV Pedestal ----- 
- Gas Valve ----- 
- Gas Meter ----- 
- Located Miscellaneous Utility Object ----- 
- Abandoned According to Utility Records -- AATUR
- End of Information ----- E.O.I.

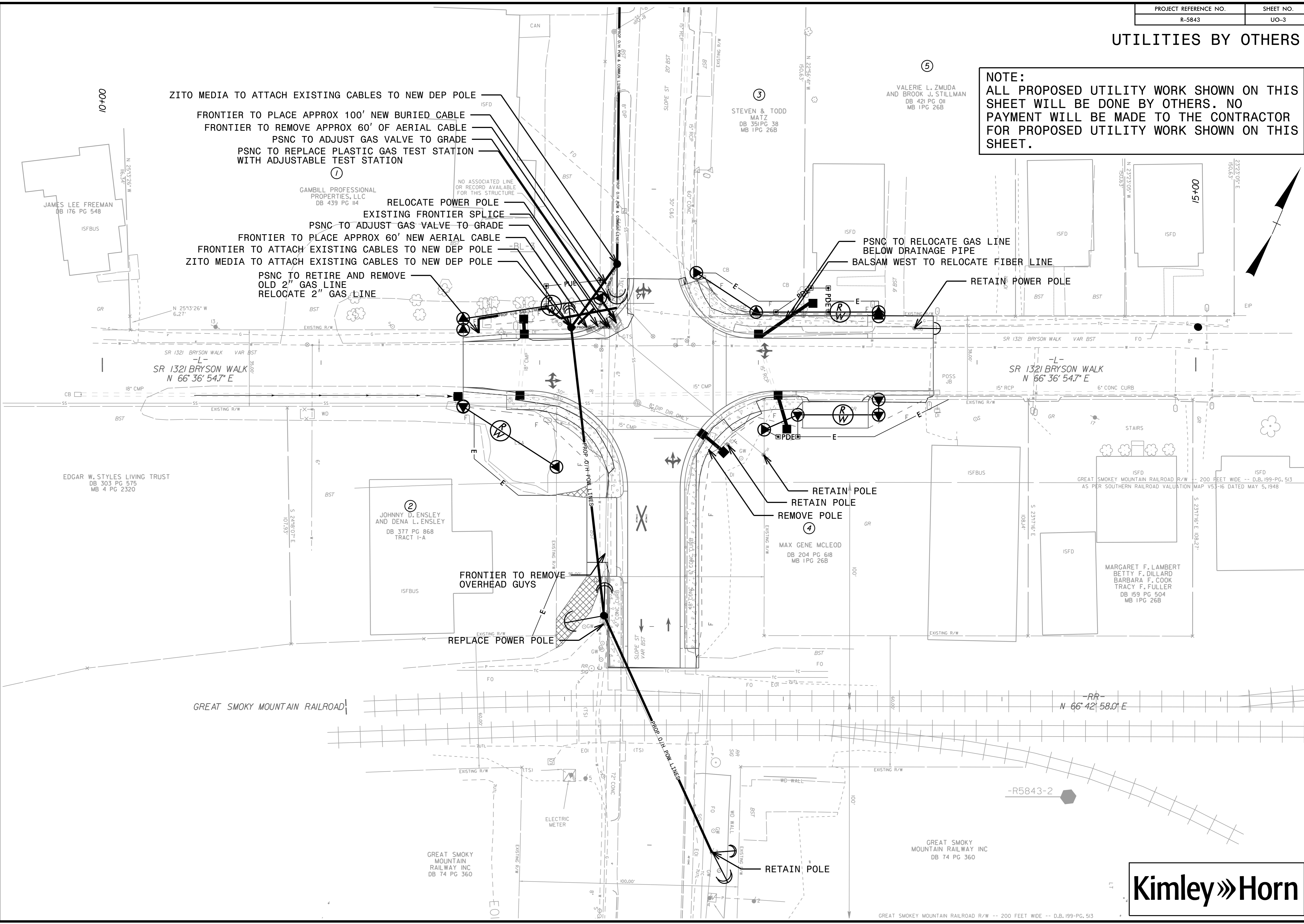
- *Underground Power Line ----- 
- *Underground Telephone Cable ----- 
- *Underground Telephone Conduit ----- 
- *Underground Fiber Optics Telephone Cable ----- 
- *Underground TV Cable ----- 
- *Underground Fiber Optics TV Cable ----- 
- *Underground Gas Pipeline ----- 
- Aboveground Gas Pipeline ----- 
- *Underground Water Line ----- 
- Aboveground Water Line ----- 
- *Underground Gravity Sanitary Sewer Line ----- 
- Aboveground Gravity Sanitary Sewer Line ----- 
- *Underground SS Forced Main Line ----- 
- Underground Unknown Utility Line ----- 
- SUE Test Hole ----- 
- Water Meter ----- 
- Water Valve ----- 
- Fire Hydrant ----- 
- Sanitary Sewer Cleanout ----- 

*For Existing Utilities
 Utility Line Drawn from Record -----
 (Type as Shown)
 Designated Utility Line -----
 (Type as Shown)

5/14/99
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 REV: 2/1/2012

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

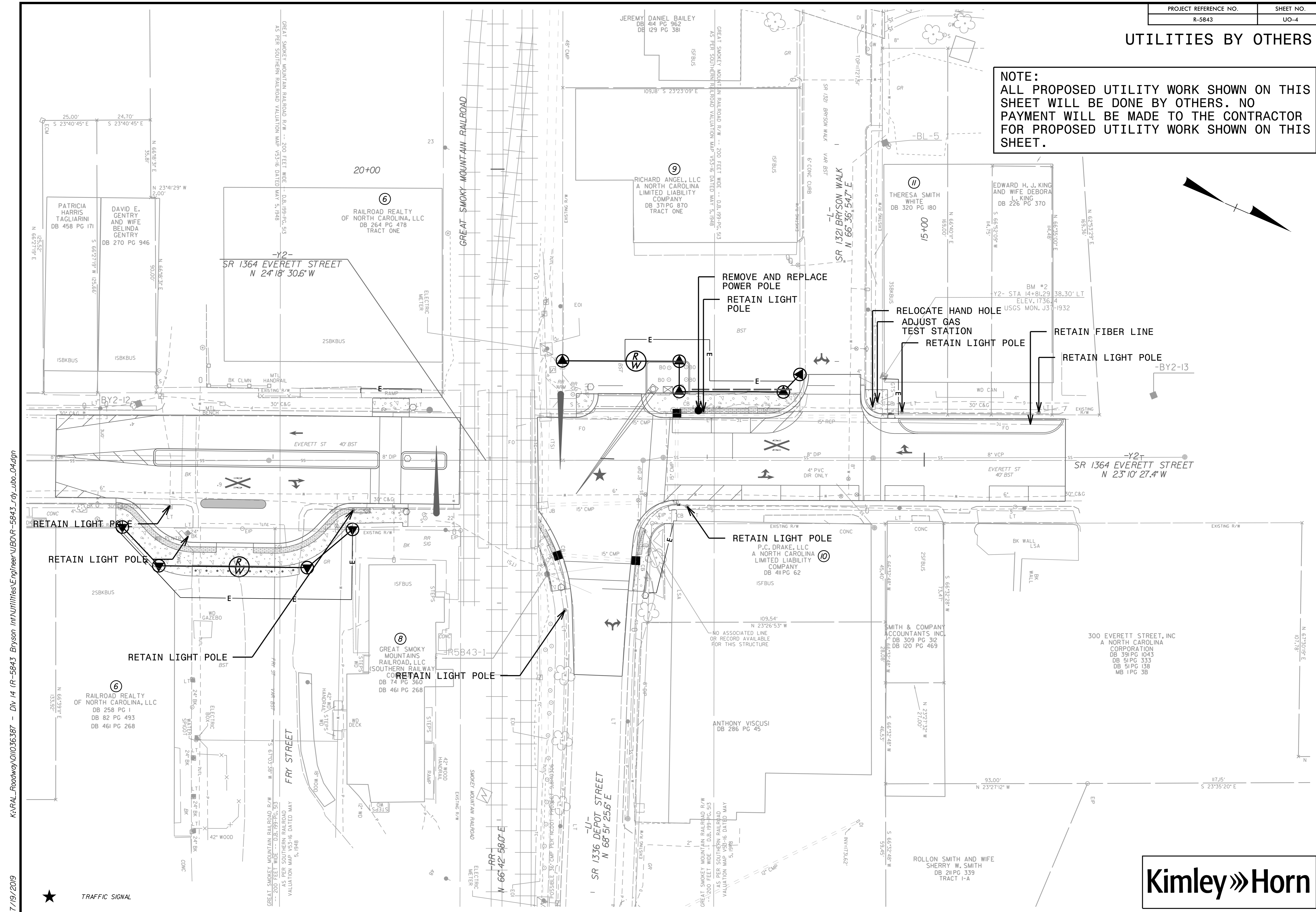
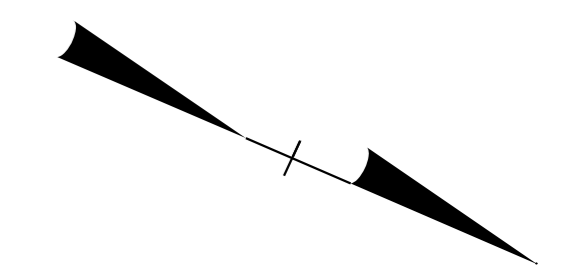


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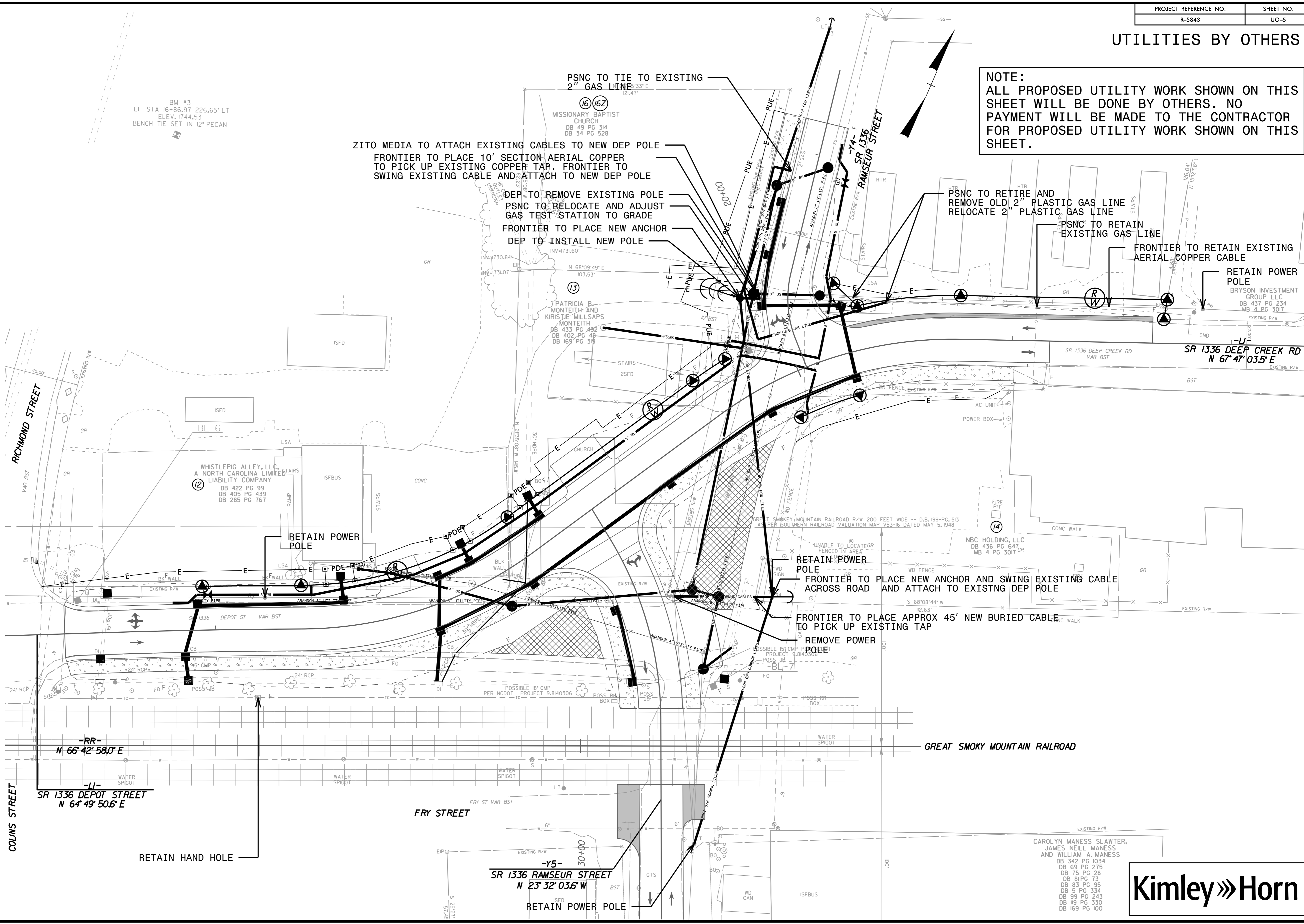
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 7/19/2019

★ TRAFFIC SIGNAL



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CAROLYN MANESS SLAWTER,
 JAMES NEILL MANESS
 AND WILLIAM A. MANESS
 DB 342 PG 1034
 DB 69 PG 275
 DB 75 PG 28
 DB 81 PG 73
 DB 83 PG 95
 DB 5 PG 354
 DB 99 PG 243
 DB 119 PG 330
 DB 169 PG 100

